

April 4, 2023

PRE-INSPECTION REPORT

BRIDGE NO HAM-42-0264R

(I-71S RAMP OVER READING ROAD)

PID No. 105476



**ROUTINE & FRACTURE CRITICAL PIER CAP INSPECTION OF 3
CAPS AND ROUTINE INSPECTION**

INSPECTION DETAILS:

Bridge No.:	HAM-42-0264R
Features intersected:	Northbound Reading Road (US 42)
Locations to Inspect: and 4) No. of Inspection Days:	Routine Insp HAM-42-0264R & 3 steel pier cap (Piers 2, 3, Anticipated 2 days
No. of Caps to Inspect:	3
Anticipated Inspection Dates:	Week of June 19, 2023 (tentative)
Inspection Hours:	8:00 AM to 4:00 PM Inspection Access
Equipment:	Bucket Truck, Ladders

FRACTURE CRITICAL INSPECTION REQUIREMENTS:

The inspection will consist of a Routine and In-Depth "Arms-Reach" inspection, performed in accordance with the guidelines of the current FHWA National Bridge Inspection Standards for Fracture Critical Members.

To perform an effective Fracture Critical Inspection, the following tasks must be performed:

1. Determine Resource Requirements.
(Identify qualified inspection staff, use appropriate inspection access and inspection equipment).
2. Identify the Fracture Critical Members.
3. Develop the Inspection Procedure.
(Contained in this document)
4. Prepare Follow-up Procedure.
(Recommendations will be made as part of this current project)
5. Provide Quality Control/Quality Assurance for the inspection and report.
(Procedures outlined in this document)
6. Develop a Periodic Inspection Plan
(Already in place with the Ohio Department of Transportation, District 8)

BRIDGE DESCRIPTION:

Bridge HAM-42-0264R is a six-span bridge built in 1969. The bridge consists of welded steel plate girders that frame directly into the steel pier caps. The overall length is 525.88'. The steel pier caps are located at Piers 2, 3, and 4. They are welded box caps simply supported with one end cantilevered. Seven welded plate girders frame into caps at Piers 2 and 3; six girders frame into the cap at Pier 4. Refer to Appendix A for existing pier cap plans.

FRACTURE CRITICAL MEMBER LOCATIONS:

This structure has three fracture critical steel pier cap at Piers 2, 3, and 4. The caps are simply supported welded box members and is supported on two square reinforced concrete columns. Six to

seven I- girders frame into the pier caps. The girder webs are connected to the pier cap webs by bolted clip angles.



Aerial View looking east

INSPECTION METHOD & PLAN: The Collins Team will perform a routine inspection and inspections on three fracture critical pier caps on HAM-42-0264R, as defined by the Scope of Services. The caps span the northbound lanes of Reading Road. The work will be performed for 1 night. The inspection will adhere to the Confined Space Entry Procedures defined herein, and in the company safety procedures. Traffic control will be provided by A&A Safety according to the standards shown in the Appendix.

FIELD COORDINATION - The following entities will be involved in coordinating and performing all field work associated with the inspection of these structures.

COLLINS – Field Team Contacts:

Michael Seal, P.E., CBI: Team Leader, Project Manager (614) 849-2277 (C)
mseal@collinsengr.com

Matt Rogers, P.E., CBI: Team Leader (859) 630-2238 (C)
mrogers@collinsengr.com

Kevin Mitchell, CBI, Asst. Team Leader, (606) 344-3000 (C)
kmitchell@collinsengr.com

ODOT (Project and Permitting Contacts) – A right of entry permit is necessary through ODOT District 8. See Appendix C. The following ODOT personnel will be contacts.

Brandon Collett: Project Manager (513) 933-6643
Brandon.Collett@dot.state.oh.us

Jeff Meyer: Assistant Structures Engineer (513) 933-6630

Scott Kraus: District Work Zone Traffic Manager (513) 933-6519
Scott.Kraus@dot.state.oh.us

Chris Bass: Right-of-Way Use Permits (513) 933-6575
Christopher.Bass@dot.state.oh.us

CITY OF CINCINNATI (Permitting) – A right of entry permit is required through the City of Cincinnati. This permit will stipulate lane closure limitations and approve any proposed traffic control. Inspection of the piers will require access to the parking lots at Sentinel St. and Culvert St. intersection beneath I-71. The various parking lot management companies and building owners will be notified of the upcoming fieldwork.

DOTe Permit and License Center (513) 352-3463

Anthony Bennett: ROW Permitting (513)-352-3405
Anthony.Bennett@cincinnati-oh.gov

Tom Klumb: Real Estate (513) 352-1571
Tom.klumb@cincinnati-oh.gov

A&A Safety – A&A Safety will be the traffic control subcontractor for this inspection. Refer to Appendix A for proposed maintenance of traffic schemes. Contacts are:

Don Beagle/Keith Gilbert: A&A Safety (513) 276-2153
donb@aaasafetyinc.com

Approved right of entry permits from both ODOT and the City of Cincinnati will be kept on the job site throughout the inspection period.

TRAFFIC CONTROL – A&A Safety will be responsible for installation of traffic control devices to close lanes of Eden Park Drive, northbound Reading Road exit ramp from IR 71 (US 42) and the Reading Road southbound ramp to IR 71 South. A brief description of the closures is as follows. Refer to Appendix B for sketches.

US 42 SB Ramp to IR 71S – Shoulders of this single lane ramp will be closed from 8:00 AM to 4:00 PM to inspect the cap at Piers 2 and 3. We expect the closure on this ramp to last one day. See the MOT sketches in Appendix B.

US 42 NB Exit Ramp from IR 71N – Single lane closures from 8:00 AM to 4:00 PM will be necessary on the ramp to inspect the cap at Piers 3 and 4. This work is expected to take one day. See the MOT sketches in Appendix B.

Eden Park Drive – Single lane closures from 8:00AM to 4:00PM will be necessary to inspect at Pier 5. This work is expected to take less than one day. See the MOT sketches in Appendix B.

CONFINED SPACE ENTRY PROCEDURE: See below.

INSPECTION PLAN:

The condition inspection of the steel box girder pier caps on HAM-42-0264R will involve 2-days field effort to completely inspect both the interior and exterior. The exterior will be inspected from a 46' bucket truck and ladders for access and the interiors will be inspected by entering the box girder per the procedures outlined below. A 2 to 3-person inspection team will perform the confined space inspection.

Collins will open the pier caps 1 hour prior to entering to ventilate the piers. Prior to the start of the inspection, the inspection team shall meet at the site for a safety meeting and review the details of this inspection plan.

Entry will be performed in accordance with permit-required confined space entry procedures. This includes the use of an entry permit system, pre-entry and continuous air monitoring, and designating qualified entrants, attendants, and supervisor(s). The Project Work Plan will outline safety procedures for confined space work and contain contact information for local EMS services and for the local Hospital.

Prior to the inspection, initial air monitoring for O₂, %LEL, CO, and H₂S will be performed by one designated certified entrant climbing the length of the steel box girder pier caps and the certified attendant documenting the readings every 25 feet. Radios will be used for team communications during the inspection. At the conclusion of the initial entry and air monitoring, the confined space air readings will be evaluated and if no hazards exist, the space will be designated a non-permit required confined space. Members of the inspection team entering the confined space will continuously monitor the air, and the attendant will document readings in the box every 30 minutes for the duration of the work inside of the confined space.

If the monitor alarms go off during the initial entrance indicating that unsafe atmospheric conditions exist, the entrant will immediately exit the steel box girder (using a 10-minute escape pack if needed). If unsafe atmospheric conditions continue to exist, further ventilation will continue and the initial air monitoring performed again at a later time after proper ventilation. A blower and generator will be used to provide proper ventilation to the box girder, if necessary. If the atmospheric hazards cannot be

removed from the confined space, the box girder will NOT be entered and the District's Project Manager will be contacted to notify and to receive further instructions.

FOLLOW-UP PROCEDURES FOR INSPECTION FINDINGS:

Fracture critical inspection findings shall be documented in the final inspection report.

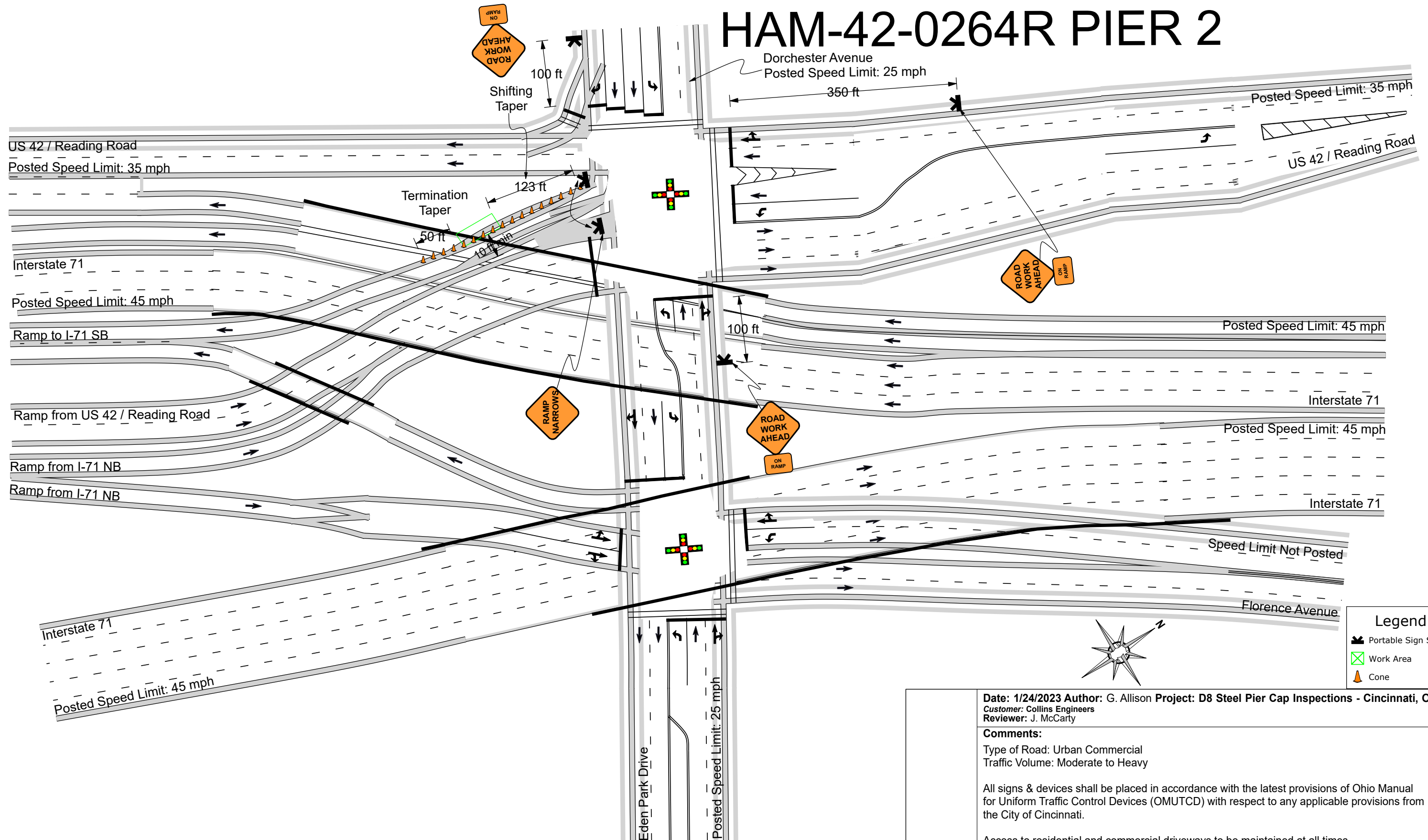
Quality Control/Quality Assurance

The standard Collins Quality Control Plan will be utilized. Such steps include: completion of field task checklist prior to leaving site, team leader review of all field notes and photographs before leaving the site, either the report originator or checker will be part of the field team, the report checker will be an NBI Team Leader, the report corrector cannot be the checker, the backchecker cannot be the corrector, and the field team leader will be involved for at least one phase of the reporting process.

APPENDIX A – RIGHT OF ENTRY PERMIT APPLICATIONS

APPENDIX B – TRAFFIC CONTROL DETAILS

HAM-42-0264R PIER 2



Legend	
	Portable Sign Stand
	Work Area
	Cone

Date: 1/24/2023 **Author:** G. Allison **Project:** D8 Steel Pier Cap Inspections - Cincinnati, OH
Customer: Collins Engineers
Reviewer: J. McCarty

Comments:
 Type of Road: Urban Commercial
 Traffic Volume: Moderate to Heavy

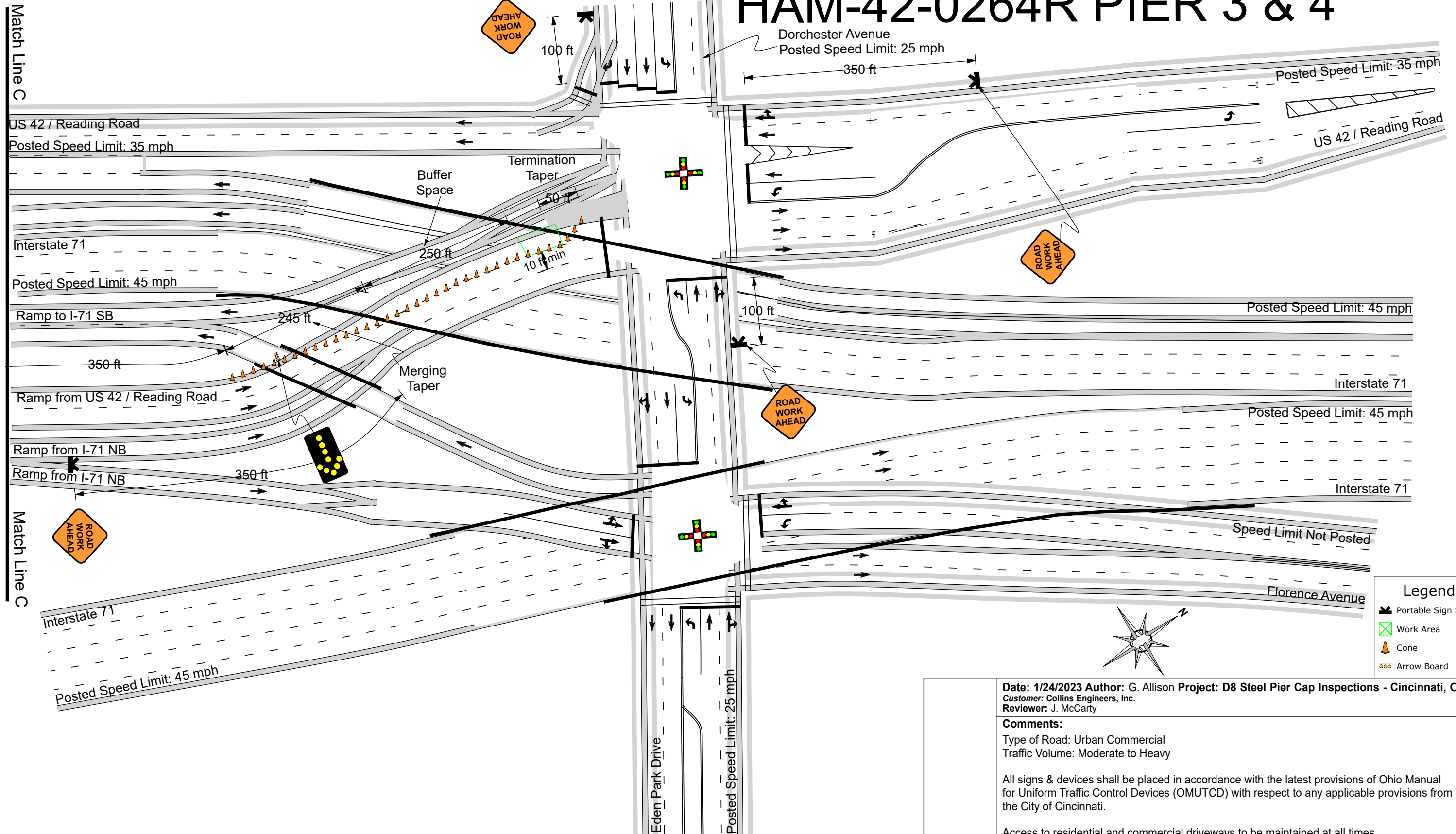
All signs & devices shall be placed in accordance with the latest provisions of Ohio Manual for Uniform Traffic Control Devices (OMUTCD) with respect to any applicable provisions from the City of Cincinnati.

Access to residential and commercial driveways to be maintained at all times.
 Flaggers shall be trained in safe temporary traffic control practices.
 Flaggers shall remain in constant communications, via two-way radio, at all times.
 Parking ban shall be coordinated with the Cincinnati Police Department.

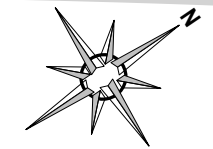
Notes:

- Buffer space omitted to fit field conditions.
- Sign spacing may be adjusted to fit field conditions.
- "Road Work Ahead" signs shall be placed on all cross streets intersecting within the work area. The signs should be placed a minimum of 100 feet in advance of the intersection.

HAM-42-0264R PIER 3 & 4



Legend	
	Portable Sign Stand
	Work Area
	Cone
	Arrow Board



Date: 1/24/2023 **Author:** G. Allison **Project:** D8 Steel Pier Cap Inspections - Cincinnati, OH
Customer: Collins Engineers, Inc.
Reviewer: J. McCarty

Comments:
 Type of Road: Urban Commercial
 Traffic Volume: Moderate to Heavy

All signs & devices shall be placed in accordance with the latest provisions of Ohio Manual for Uniform Traffic Control Devices (OMUTCD) with respect to any applicable provisions from the City of Cincinnati.

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 Flaggers shall remain in constant communications, via two-way radio, at all times.
 Parking ban shall be coordinated with the Cincinnati Police Department.

PLANS ARE NOT TO SCALE

Sheet 8 of 12

Notes:
 - Plan to be applied to opposing side of road.
 - Sign spacing and buffer space may be adjusted to fit field conditions.
 - "Road Work Ahead" signs shall be placed on all cross streets intersecting within the work area. The signs should be placed a minimum of 100 feet in advance of the intersection.

Notes for Figure 6H-22—Typical Application 22
Right-Hand Lane Closure on the Far Side of an Intersection

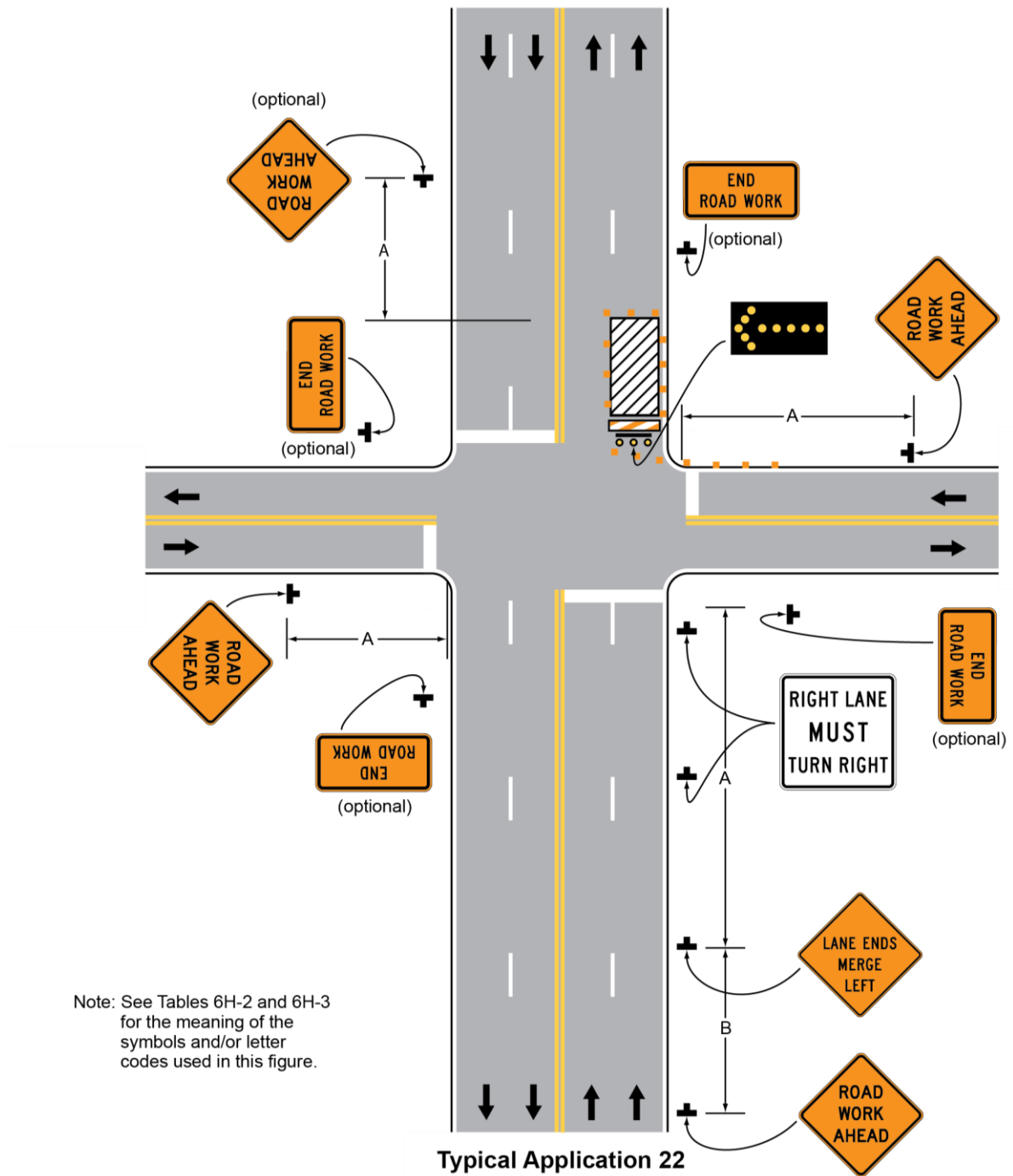
Guidance:

1. *If the work space extends across a crosswalk, the crosswalk should be closed using the information and devices shown in Figure 6H-29.*

Option:

2. The normal procedure is to close on the near side of the intersection any lane that is not carried through the intersection. However, when this results in the closure of a right-hand lane having significant right turning movements, then the right-hand lane may be restricted to right turns only, as shown. This procedure increases the through capacity by eliminating right turns from the open through lane.
3. For intersection approaches reduced to a single lane, left-turning movements may be prohibited to maintain capacity for through vehicular traffic.
4. Flashing warning lights and/or flags may be used to call attention to the advance warning signs.
5. Where the turning radius is large, it may be possible to create a right-turn island using channelizing devices or pavement markings.

Figure 6H-22. Right-Hand Lane Closure on the Far Side of an Intersection (TA-22)



Notes for Figure 6H-29—Typical Application 29

Crosswalk Closures and Pedestrian Detours

Standard:

1. When crosswalks or other pedestrian facilities are closed or relocated, temporary facilities shall be detectable and shall include accessibility features consistent with the features present in the existing pedestrian facility.
2. Curb parking shall be prohibited for at least 50 feet in advance of the midblock crosswalk.

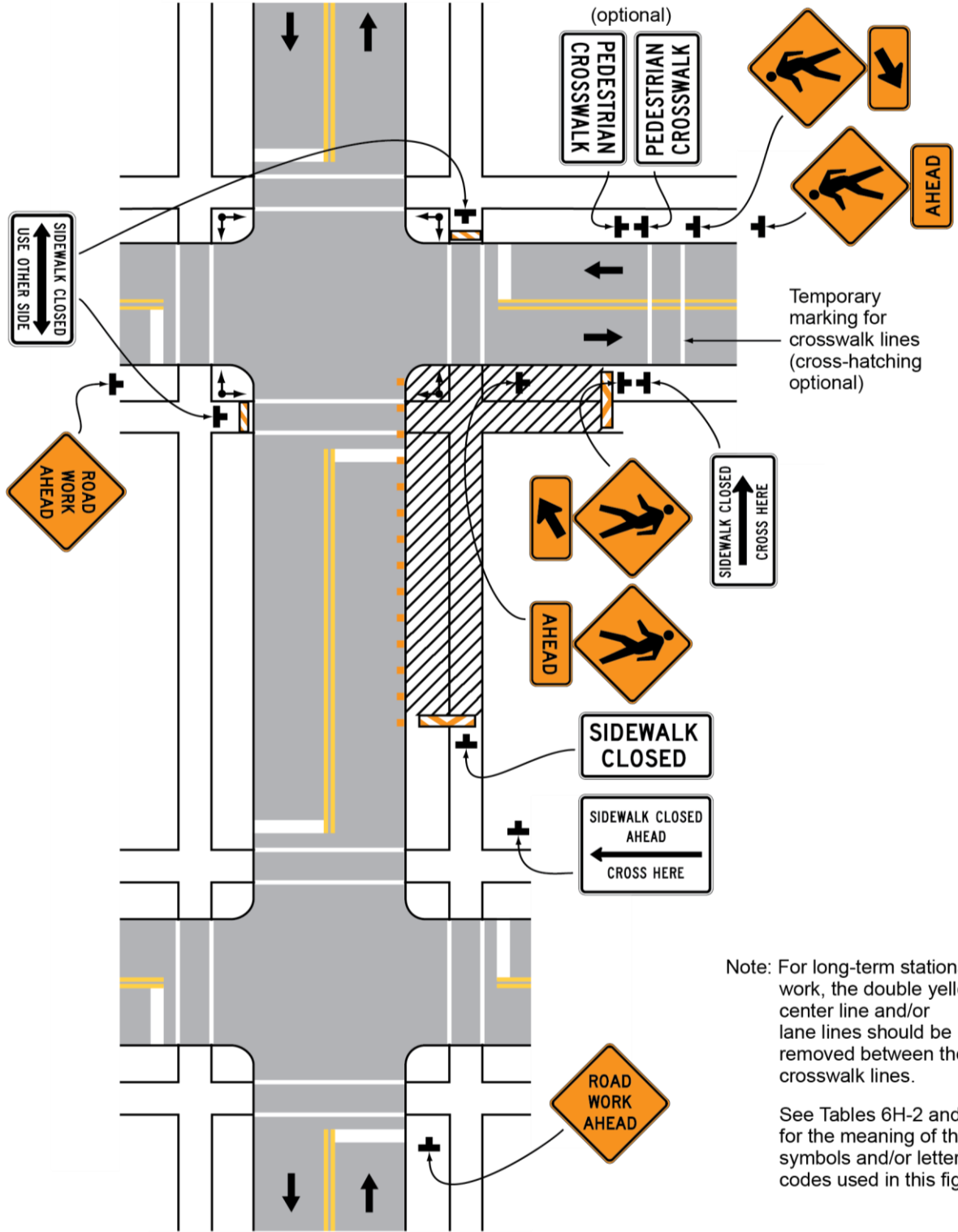
Guidance:

3. Audible information devices should be considered where midblock closings and changed crosswalk areas cause inadequate communication to be provided to pedestrians who have visual disabilities.
4. Pedestrian traffic signal displays controlling closed crosswalks should be covered or deactivated.

Option:

5. Street lighting may be considered.
6. Only the TTC devices related to pedestrians are shown. Other devices, such as lane closure signing or ROAD NARROWS signs, may be used to control vehicular traffic.
7. For nighttime closures, Type A Flashing warning lights may be used on barricades supporting signs and closing sidewalks.
8. Type C Steady-Burn or Type D 360-degree Steady-Burn warning lights may be used on channelizing devices separating the work space from vehicular traffic.
9. In order to maintain the systematic use of the fluorescent yellow-green background for pedestrian, bicycle, and school warning signs in a jurisdiction, the fluorescent yellow-green background for pedestrian, bicycle, and school warning signs may be used in TTC zones.

Figure 6H-29. Crosswalk Closures and Pedestrian Detours (TA-29)



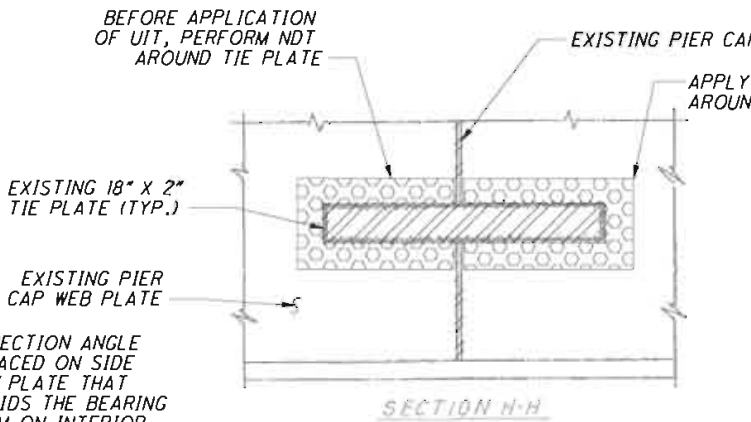
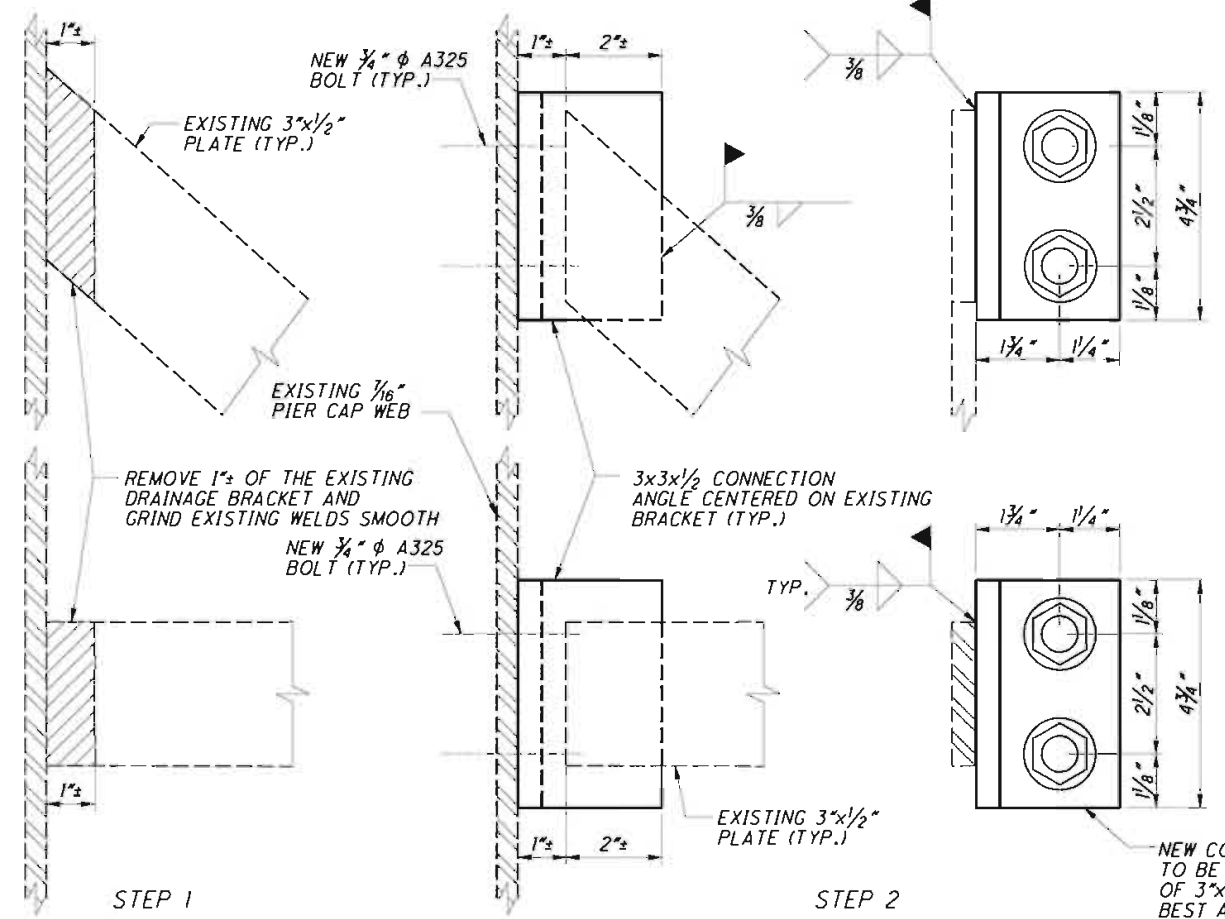
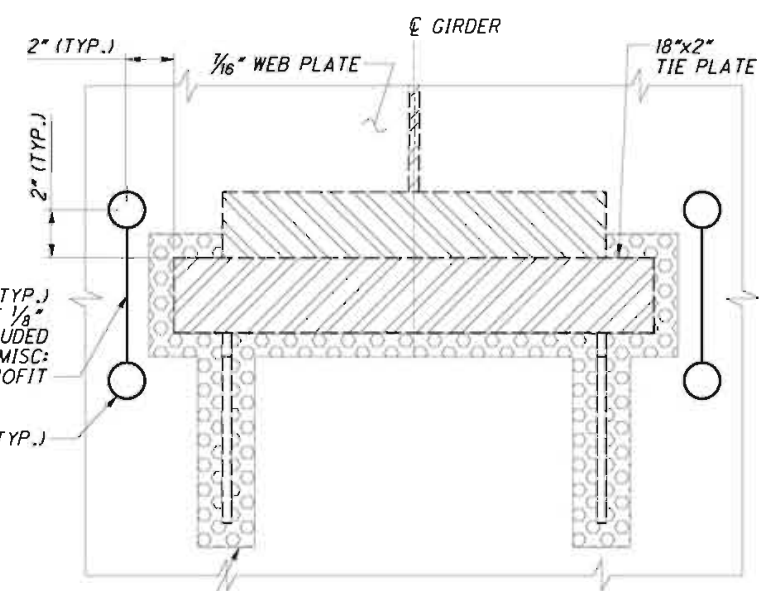
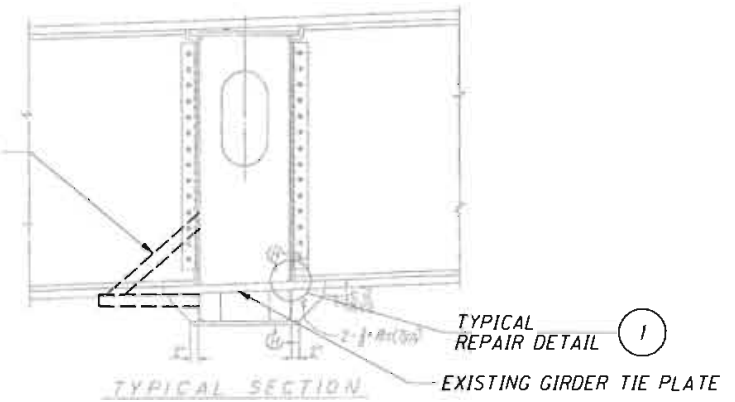
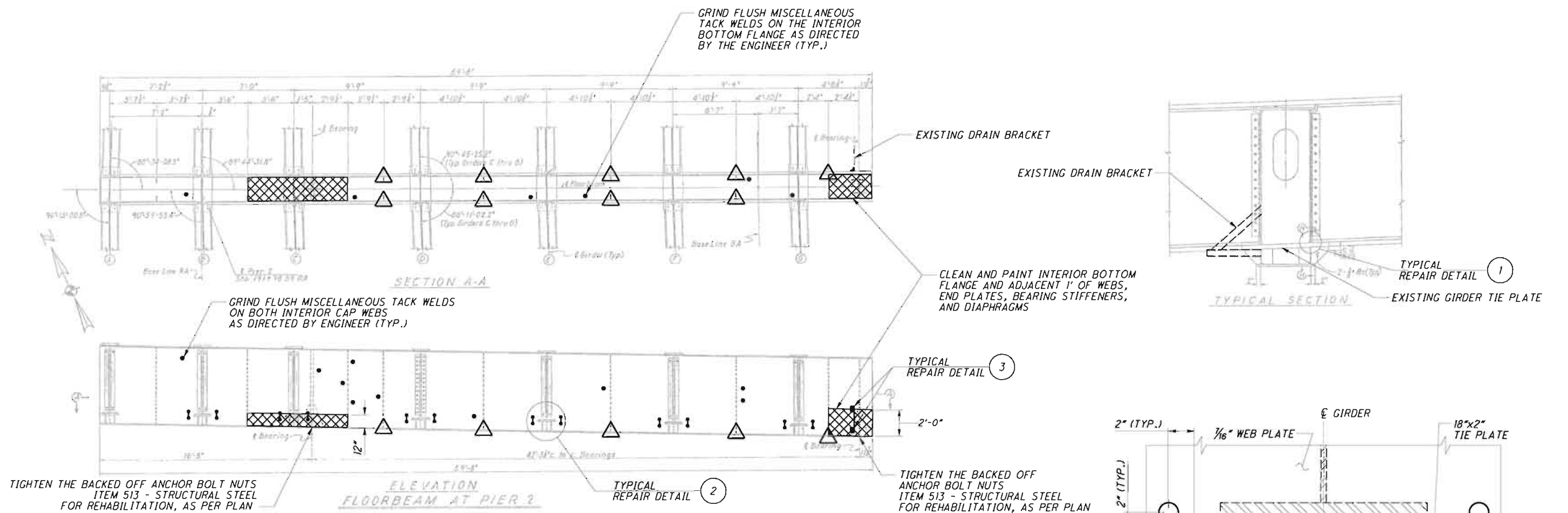
Note: For long-term stationary work, the double yellow center line and/or lane lines should be removed between the crosswalk lines.

See Tables 6H-2 and 6H-3 for the meaning of the symbols and/or letter codes used in this figure.

Typical Application 29

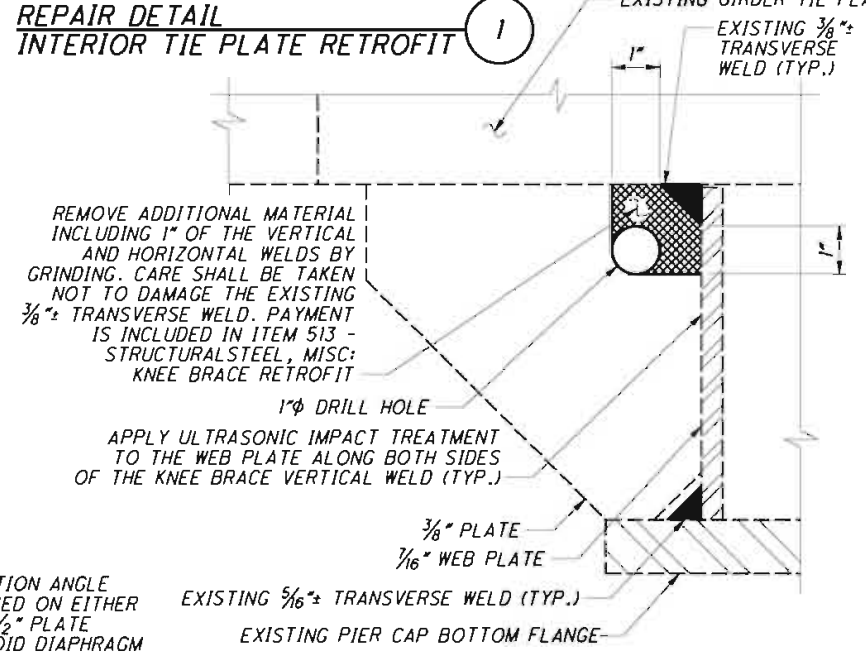
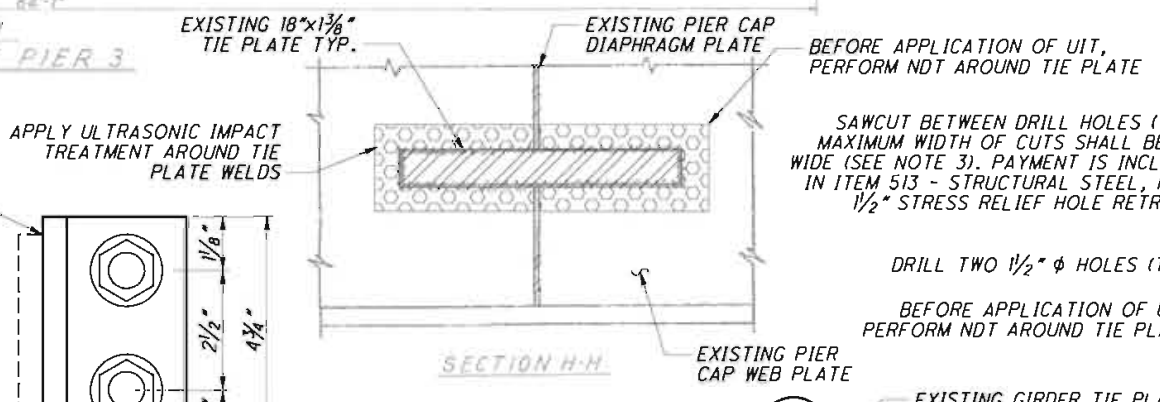
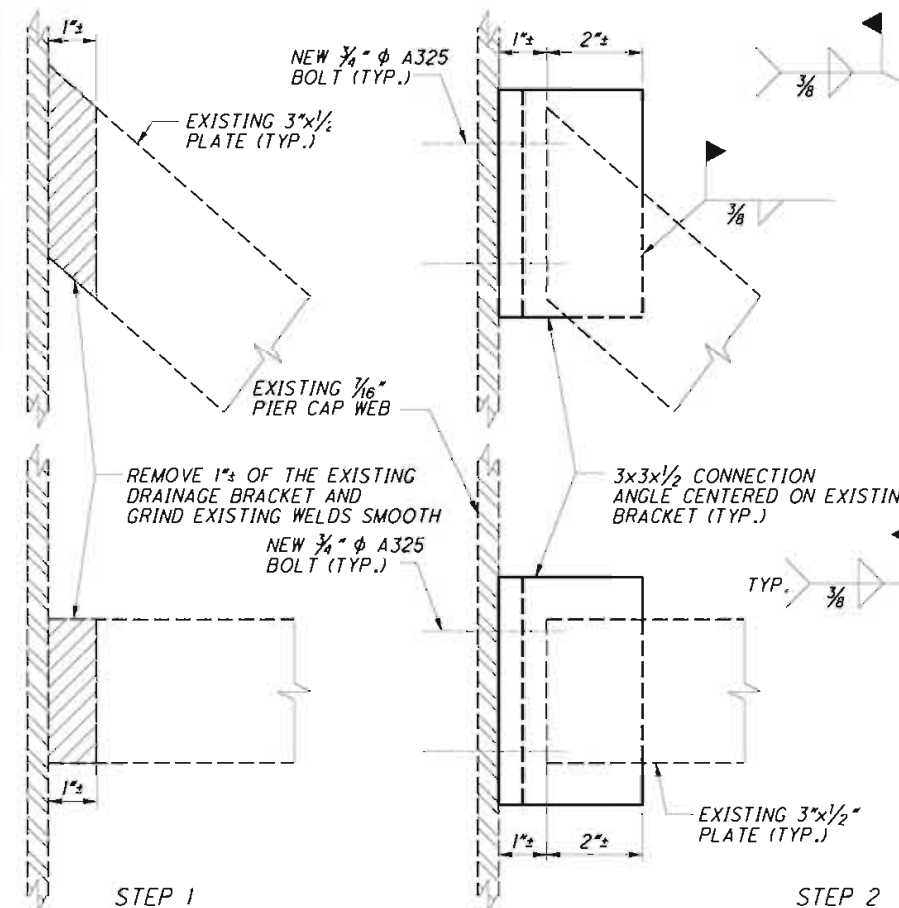
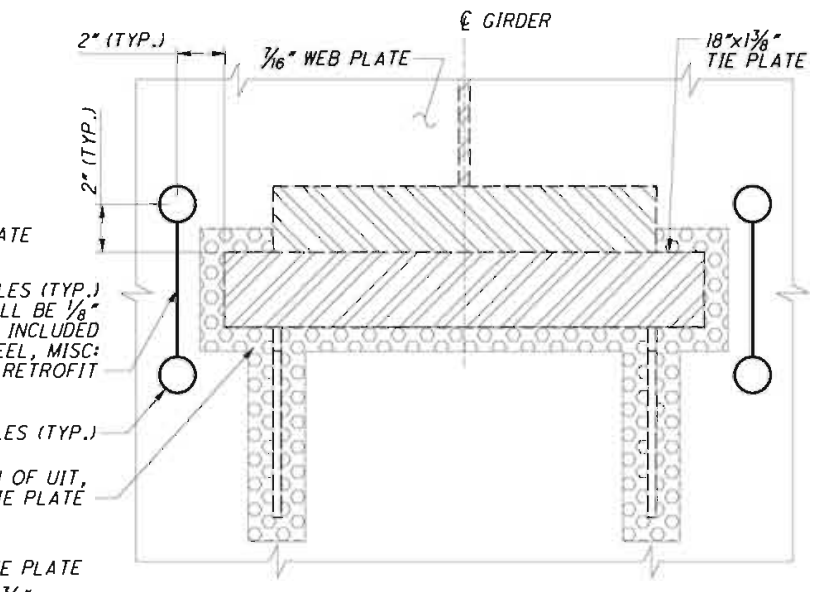
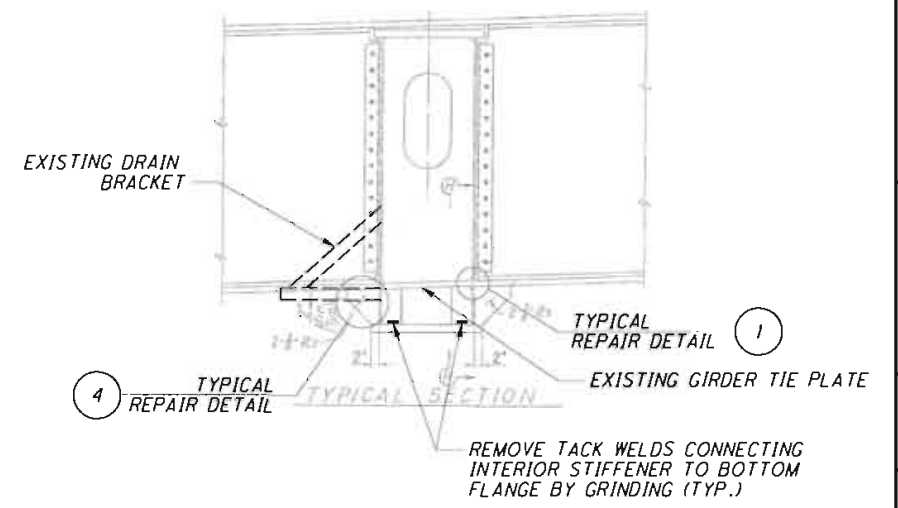
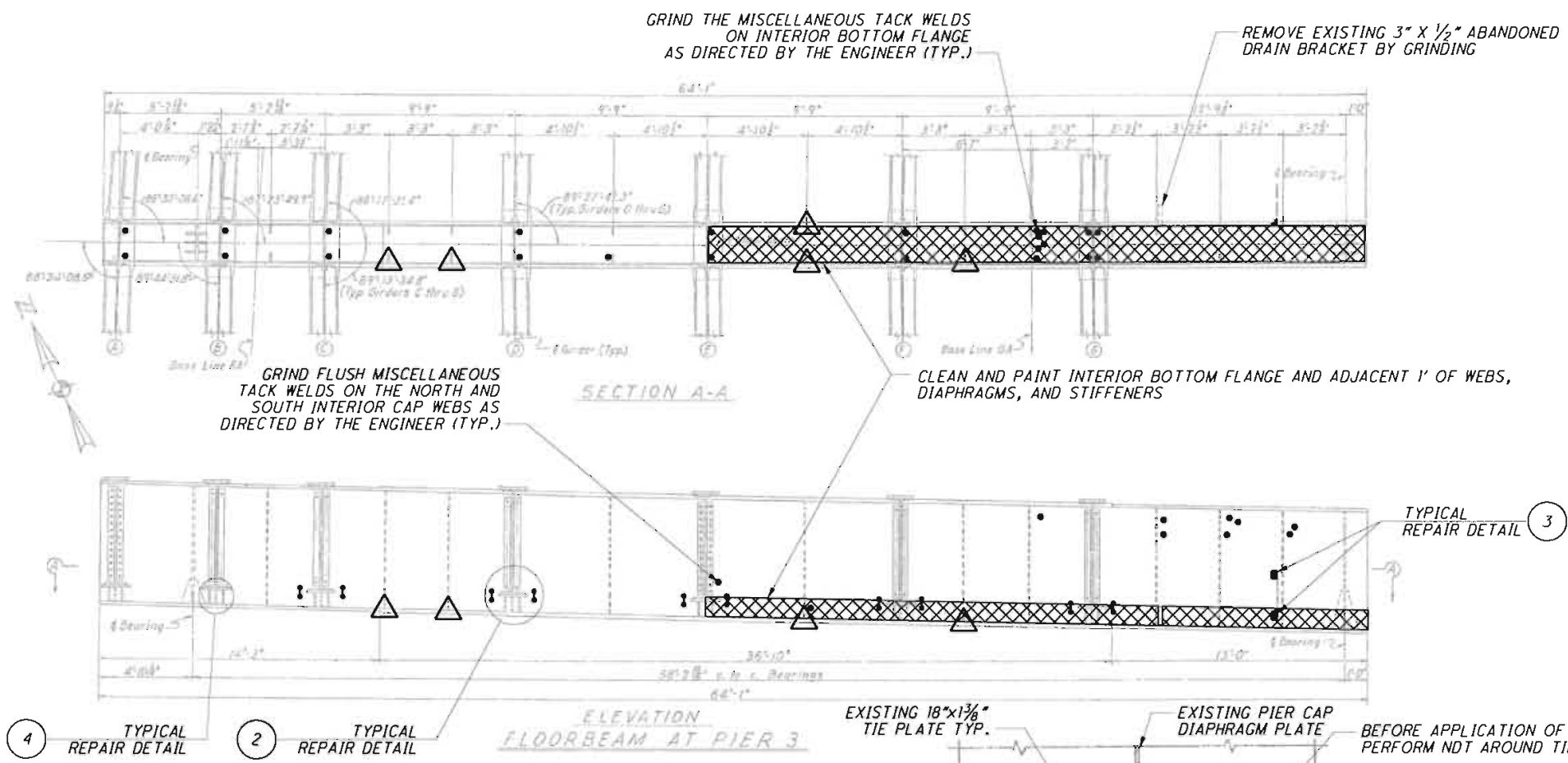
**APPENDIX C – AVAILABLE PLANS FOR
HAM-42-0264R**

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- NOTES:**
1. PIER PLAN, SECTIONS A-A AND H-H, AND TYPICAL SECTION ARE TAKEN FROM THE ORIGINAL PLANS.
 2. CLEAN AND PAINT REPAIR AREAS ON INTERIOR OF PIER CAP.
 3. CARE SHALL BE TAKEN NOT TO OVERCUT SAWCUT BEYOND DRILLED HOLES. FLAME CUTTING IS NOT PERMITTED.
- LIMITS OF 1/2" WIDE ULTRASONIC IMPACT TREATMENT (UIT)
 - LIMITS OF PAINTING INTERIOR OF PIER CAP
 - LOCATION OF INTERSECTING WELD BETWEEN PIER CAP WEB STIFFENER WELD AND PIER CAP FLANGE WELD TO BE REMOVED BY GRINDING

4/17/2008 P:\2426.03-0001 B Pier Cop\2007 PID25374 DRAWINGS\110 HAM-42-0264R HAM-42-0264R P3.dgn



- NOTES:**
1. PIER ELEVATION, SECTIONS A-A AND H-H AND TYPICAL SECTION ARE TAKEN FROM THE ORIGINAL PLANS.
 2. CLEAN AND PAINT REPAIR AREAS ON INTERIOR OF PIER CAP.
 3. CARE SHALL BE TAKEN NOT TO OVERCUT SAWCUT BEYOND DRILLED HOLES. FLAME CUTTING IS NOT PERMITTED.
- [Pattern] - LIMITS OF 1/2" WIDE ULTRASONIC IMPACT TREATMENT (UIT)
 - [Pattern] - LIMITS OF PAINTING ON PIER CAP INTERIOR
 - [Pattern] - LIMITS OF STEEL REMOVAL ON EXTERNAL KNEE BRACES BY GRINDING
 - [Symbol] - LOCATION OF INTERSECTING WELD BETWEEN PIER CAP WEB STIFFENER WELD AND PIER CAP FLANGE WELD TO BE REMOVED BY GRINDING

