

**BOTKINS LANE BRIDGE  
ABUTMENT REPAIR \***

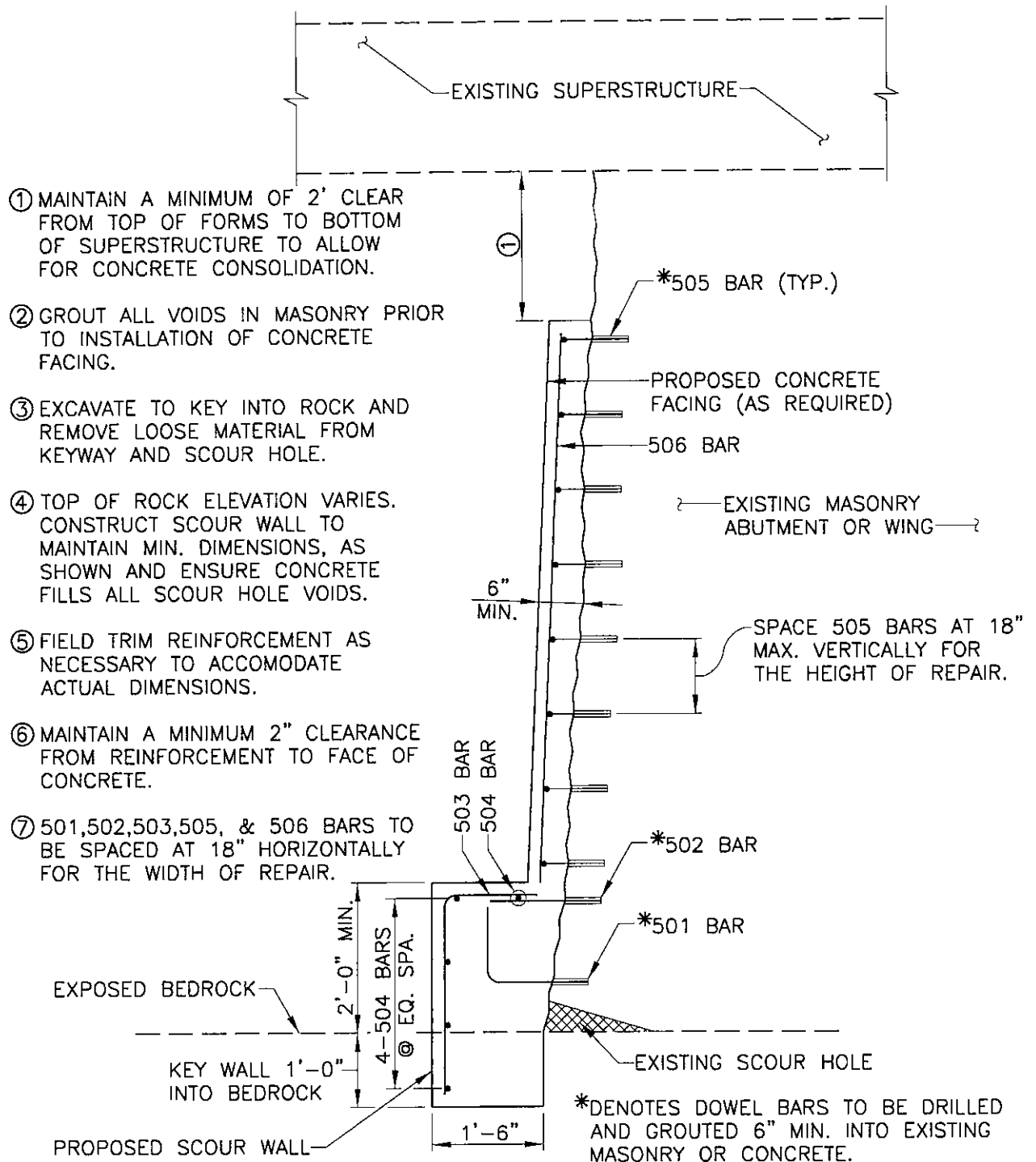
FOOTER(S) = 80 LF X 1.5' W X 3' D = 360 CF  
OR 14 CY +/- (CY FOR UNIT PRICING)

RESURFACING = 80 LF X 12' H = 960 SF  
WALL(S) OR 110 SY +/- (SY FOR UNIT PRICING)

\* APPROXIMATE QUANTITIES

**GENERAL NOTES:**

- 1) ALL BIDDERS MUST FIELD VERIFY CONDITIONS AND DIMENSIONS.
- 2) BIDS MUST INCLUDE ALL CONCRETE, STEEL REINFORCEMENT, OTHER MATERIALS, LABOR AND INCIDENTALS TO COMPLETE WORK PER THE PROVIDED TYPICAL SECTION.
- 3) ROADWAY MUST REMAIN OPEN TO LOCAL TRAFFIC DURING CONSTRUCTION.
- 4) THIS IS A LUMP SUM BID REQUEST, BUT UNIT PRICING FOR FOOTERS AND RESURFACING ARE REQUIRED SHOULD ADDITIONAL WORK BE REQUESTED.



## SCOUR WALL & CONCRETE FACING DETAIL FOR MASONRY ABUTMENT

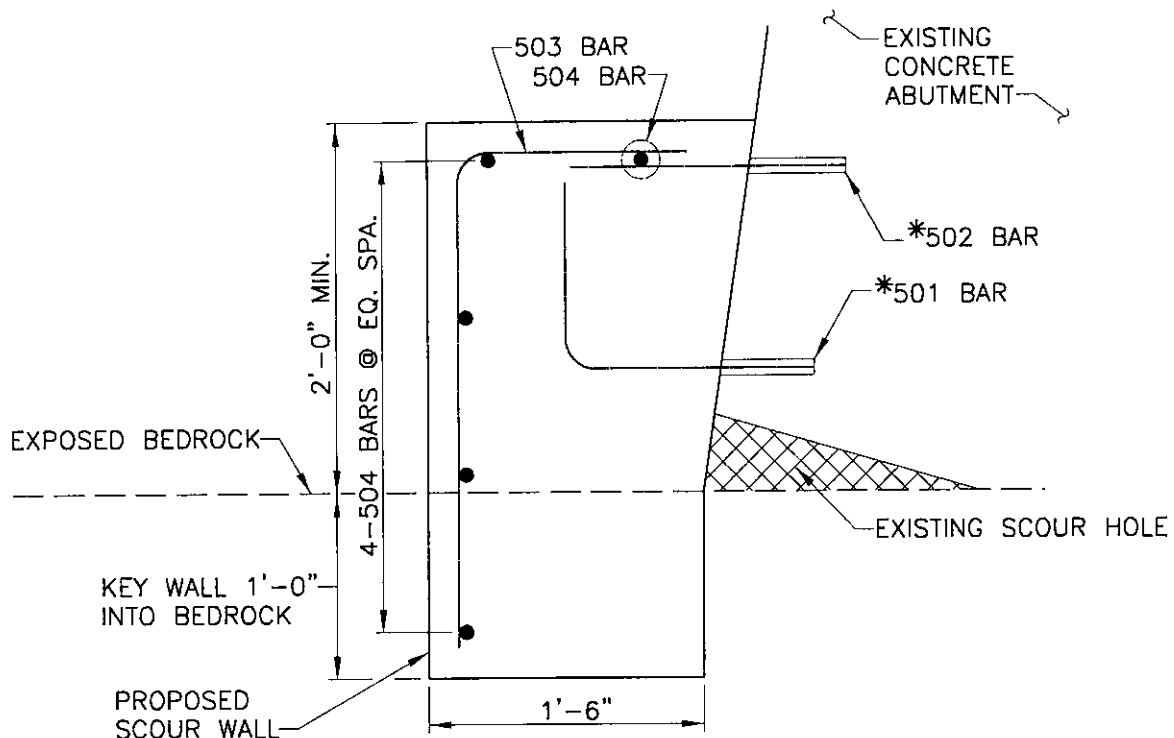
DRAWN BY: DWV	DATE: AUG 2018
CHECKED BY: LNB	SCALE: N.T.S.
JOB NO.: 1831008090	SHEET:

SCOUR REMEDIATION  
EXHIBITS  
MASONRY ABUTMENT

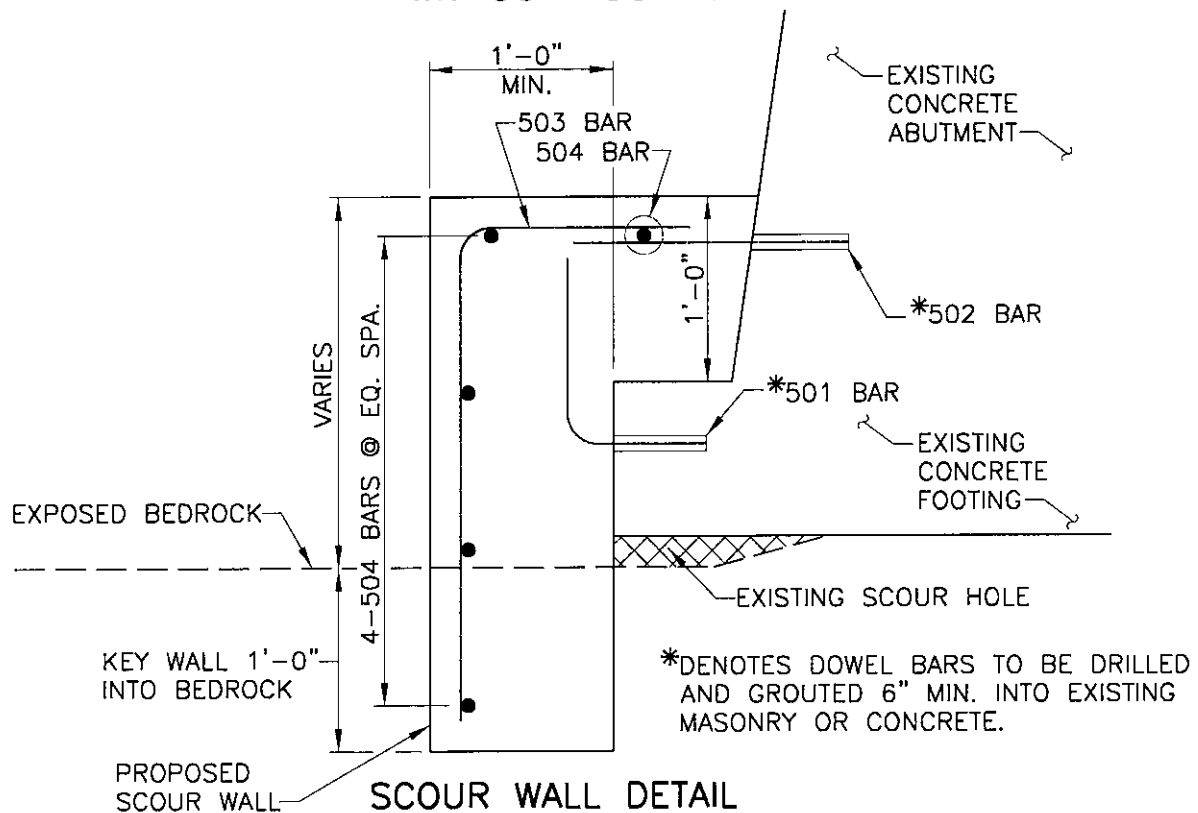
Franklin County Road Department  
100 Lewis Ferry Road  
P.O. Box 280  
Frankfort, KY 40602  
(502) 875-8760



**DLZ KENTUCKY, INC.**  
1850 MAGGARD COURT  
LEXINGTON, KY 40505  
(502) 298-5226



**SCOUR WALL DETAIL  
FOR CONCRETE ABUTMENT  
WITHOUT FOOTING**



**SCOUR WALL DETAIL  
FOR CONCRETE ABUTMENT  
WITH FOOTING**

DRAWN BY: DWW	DATE: AUG 2018
CHECKED BY: LMB	SCALE: N.T.S.
JOB NO.: 1631008090	SHEET:

**SCOUR REMEDIATION  
EXHIBITS  
CONCRETE ABUTMENT**

Franklin County Road Department  
100 Lewis Ferry Road  
P.O. Box 280  
Frankfort, KY 40602  
(502) 875-8760



**DLZ KENTUCKY, INC.**  
1950 HAGGARD COURT  
LEXINGTON, KY 40505  
(252) 299-5226

#### DESIGN DATA

CONCRETE - COMPRESSIVE STRENGTH 4000 PSI

EPOXY COATED REINFORCING STEEL - ASTM A615, A616, OR A617  
GRADE 60,  
MINIMUM YIELD STRENGTH 60,000 psi.

#### EXISTING STRUCTURE VERIFICATION

DETAILS AND DIMENSIONS SHOWN ON THESE PLANS PERTAINING TO THE EXISTING STRUCTURE ARE FOR DETAILING PURPOSES ONLY. THE CONTRACTOR SHALL VERIFY ALL EXISTING DIMENSIONS PRIOR TO START OF WORK.

BASE CONTRACT BID PRICES UPON A RECOGNITION OF THE UNCERTAINTIES DESCRIBED ABOVE AND UPON A PREBID EXAMINATION OF THE EXISTING STRUCTURE. HOWEVER, THE OWNER WILL PAY FOR ALL PROJECT WORK BASED UPON ACTUAL DETAILS AND DIMENSIONS THAT HAVE BEEN VERIFIED IN THE FIELD.

#### MAINTENANCE OF TRAFFIC


MOT SHALL BE AS DIRECTED BY THE OWNER FOR EACH STRUCTURE.

#### DEMOLITION DEBRIS

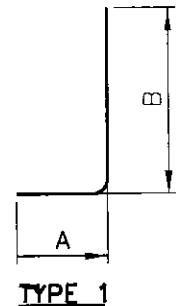
THE CONTRACTOR SHALL TAKE PRECAUTIONS TO AVOID AND/OR LIMIT DEMOLITION/CONSTRUCTION DEBRIS FROM ENTERING THE STREAM. ANY MATERIAL THAT DOES FALL INTO THE STREAM SHALL BE REMOVED AS SOON AS POSSIBLE.

#### IN-STREAM WORK

THE CROSSING OF THE STREAM WITH VEHICLES OR CONSTRUCTION EQUIPMENT AND THE CONSTRUCTION IN THE STREAM OF COFFERDAMS, ACCESS PADS, OR FORDS IS STRICTLY PROHIBITED. IT IS THE INTENT OF THIS PROJECT TO MINIMIZE DISTURBANCE TO THE EXISTING STREAM. TO THE MAXIMUM EXTENT PRACTICABLE, WORK SHALL BE STAGED FROM THE AREAS BEHIND THE EXISTING ABUTMENTS.

DRAWN BY: DWW	DATE: AUG 2018	SCOUR REMEDIATION EXHIBITS  GENERAL NOTES	Franklin County Road Department 100 Lewis Ferry Road P.O. Box 280 Frankfort, KY 40602 (502) 875-8760		<b>DLZ KENTUCKY, INC.</b> 1850 MAGGARD COURT LEXINGTON, KY 40505 (202) 298-3226
CHECKED BY: LNB	SCALE: N.T.S.				
JOB NO.: 1631008090	SHEET:				

REINFORCING STEEL LIST				
MARK	LENGTH	TYPE	DIMENSIONS	
			A	B
501	1'-10"	1	1'-0"	1'-0"
502	1'-6"	STR		
503	D+1'-1"	1	D	1'-3"
504	L	STR		
505	1'-7"	1	1'-0"	0'-9"
506	H	STR		



D = SCOUR WALL HEIGHT LESS CLEAR DISTANCE FOR REINFORCEMENT

L = WIDTH OF SCOUR WALL LESS CLEAR DISTANCE FOR REINFORCEMENT.

H = HEIGHT OF CONCRETE FACING LESS CLEAR DISTANCE FOR REINFORCEMENT.

### REINFORCING STEEL NOTES

1. ALL DIMENSIONS ARE OUT TO OUT.
2. TYPE 'STR' INDICATES A STRAIGHT BAR.
3. THE BAR SIZE NUMBER IS INDICATED IN THE 'MARK' COLUMN THE FIRST DIGIT OF EACH MARK INDICATES THE BAR SIZE NUMBER. FOR EXAMPLE 501 IS A #5 BAR SIZE.
4. ALL REINFORCING STEEL SHALL BE EPOXY COATED.
5. BAR DIMENSIONS AND QUANTITIES SHALL BE VERIFIED BY CONTRACTOR BEFORE ORDERING STEEL.
6. VERIFY BAR LENGTHS PER FIELD MEASUREMENTS.

# SMALL STRUCTURE INSPECTION REPORT

STRUCTURE NAME: Botkins Lane Bridge  
INSPECTED BY: J. Agler 12/11/2022

DLZ KENTUCKY, INC.

## STRUCTURE DATA:

County: Franklin Road Name: Botkins Lane  
Coordinates: Latitude - 38°11'35.80" N Longitude - 84°58'13.70" W  
Structure Type: Concrete Deck Slab with Asphalt Overlay  
Main Material: Reinforced Concrete No. of Spans: 1

## GEOMETRIC DATA:

Span Length: 8'-2" Structure Length: 15'-6"  
Approach Roadway Width: 20'-0" Approx. Skew: 0°  
Horizontal Clearance: 20'-0" Out-to-Out Width: 22'-0"

## RAILING APPRAISAL:

Bridge Railing: Standard ☐ Substandard ☒ N/A ☐ Notes: There are spalls on concrete curb  
Rail Transition: Standard ☐ Substandard ☒ N/A ☐ ends. Damaged post/curb from impact at  
Approach Rail: Standard ☐ Substandard ☒ N/A ☐ SE corner has been repaired, but the concrete  
End Treatments: Standard ☐ Substandard ☒ N/A ☐ patch has spalled (See Photo 29).

## MAINTENANCE RECOMMENDATIONS:

Replace bridge railing, transitions, approach rail, and end treatments to meet standards. Patch curb ends.  
Repair and mortar northeast wing section and repair failing road shoulder.  
Pour 2' concrete footers along base of concrete abutments and full-height facing on masonry.  
Post bridge for 9 Ton gross capacity in eastbound direction.  
Consider for replacement.

## INSPECTION NOTES:

Bridge is only posted for 9 ton gross capacity in the westbound direction.  
Structure should be considered for replacement.  
Could consider pouring a 2' concrete footer along the base of the concrete abutments and a full-height concrete facing along masonry abutments.  
Posted in each direction as One Lane Bridge. Cattle gate hung on downstream (north) end of structure, covering part of the opening of structure.

# SMALL STRUCTURE INSPECTION REPORT

STRUCTURE NAME: Botkins Lane Bridge  
INSPECTED BY: J. Agler 12/11/2022

DLZ KENTUCKY, INC.

## CONDITION:

Deck: NBI 58 Rating: 6

The deck is covered in asphalt overlay. Asphalt shows slight wear and minor cracking.

There is debris along the curb lines, more significantly along the north curb line. Depth of asphalt overlay unable to be measured with presence of roadway base also being under asphalt overlay.

Superstructure: NBI 59 Rating: 6

The deck soffit and fascia has cracking with efflorescence and areas of honeycombing.

Substructure: NBI 60 Rating: 4

The turned back masonry wings on the north quadrants and the SW quadrant are dry laid stone. The previously noted (2016 inspection) large hole in the NW abutment outer face has been patched with formwork left in place and appears to be bulging out from the concrete patch (no change from 11/2021 inspection). Concrete portion of abutments generally have spalling and cracks with efflorescence and honeycombing, more significantly in the west abutment. The west end of the middle bracing W-section of the abutment is corroded with section loss and has a vertical crack leading to it. The masonry portion of the abutments have vertical cracks through stones (see Photos 20-22 for cracked stones at west abutment). The noted full height cracks from the 2016 inspection have been repaired, but the vertical cracking through stones remain.

Both abutments have sections of undermining of up to 12" (see Photos 18 and 19).

**No change in NBI Item 60 rating is warranted since local failures of the substructure are not probable and deterioration does not appear to be progressing significantly based on conditions seen in the previous inspection, dated 11/2021. Bridge should continue to be posted at 9 Tons in each direction.**

Channel: NBI 61 Rating: 5

There is a scour hole at the downstream end of the bridge and undermining of the abutments. Some undermining of the tree at the northwest quadrant. The upstream channel has layered rock with vertical slopes along the bank.

Culvert: NBI 62 Rating: N/A

## Approach Roadway:

The asphalt has minor wear with smooth transitions. Drop offs with little to no shoulder. The NE wing has a 9' wide by 4' tall area of failing stone at the top of the wall (See Photos 10 and 11) which is allowing partial collapse of the approach road. The horizontal displacement is approximately 8" (See Photo 11).



## Botkins Lane Bridge Inspection 12-11-2022



Photo 01. Across Bridge, Looking West



Photo 02. Across Bridge, Looking East



## Botkins Lane Bridge Inspection 12-11-2022



Photo 03. Asphalt Overlay - Minor Cracking



Photo 04. Upstream Bridge Elevation, Looking North



## Botkins Lane Bridge Inspection 12-11-2022



Photo 05. Downstream Bridge Elevation, Looking South



Photo 06. West Abutment Elevation



## Botkins Lane Bridge Inspection 12-11-2022



Photo 07. East Abutment Elevation



Photo 08. Bridge Underside, South End



## Botkins Lane Bridge Inspection 12-11-2022



Photo 09. Bridge Underside, North End



Photo 10. Masonry Wall Embankment at Northeast Quadrant Failing



## Botkins Lane Bridge Inspection 12-11-2022



Photo 11. Masonry Wall Embankment at Northeast Quadrant Failing, Looking West Along Face of Wall.

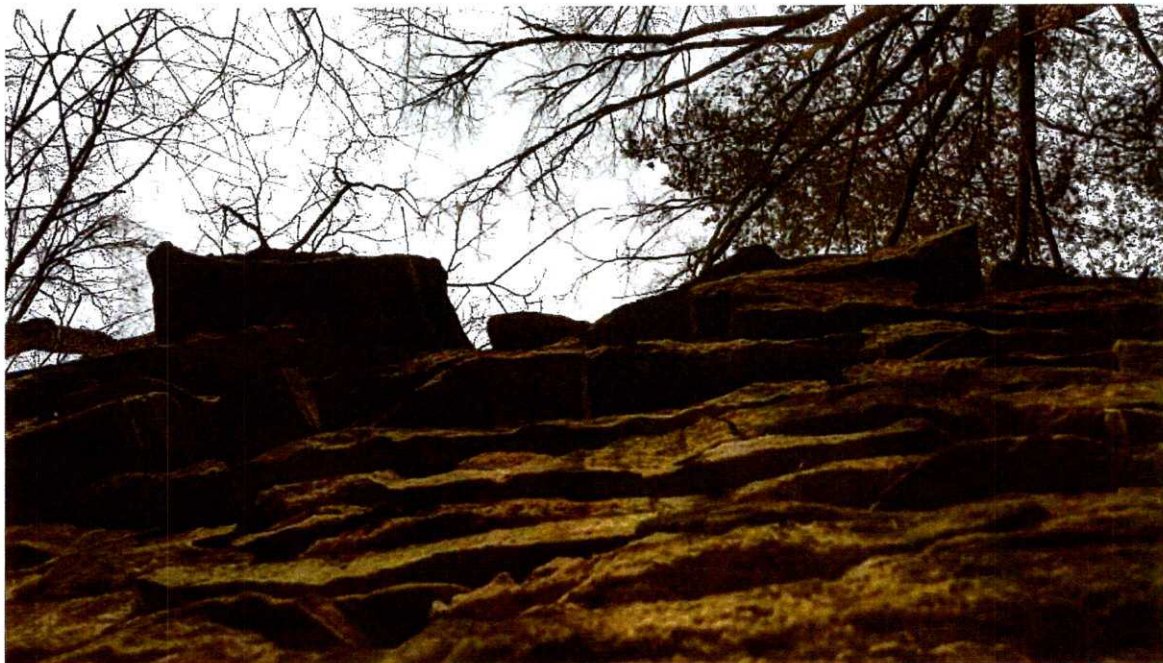


Photo 12. Masonry Wall Embankment at Northeast Quadrant Failing, Looking Up Along Face of Wall, Closer to Bridge Than Photos 10 and 11.



## Botkins Lane Bridge Inspection 12-11-2022



Photo 13. Cracking of Masonry Stones at Northwest Wall



Photo 14. Masonry Wall and Embankment at Northwest Quadrant



## Botkins Lane Bridge Inspection 12-11-2022



Photo 15. Masonry Wall and Embankment at Southwest Quadrant



Photo 16. Honeycombing at North Face of West Abutment



## Botkins Lane Bridge Inspection 12-11-2022

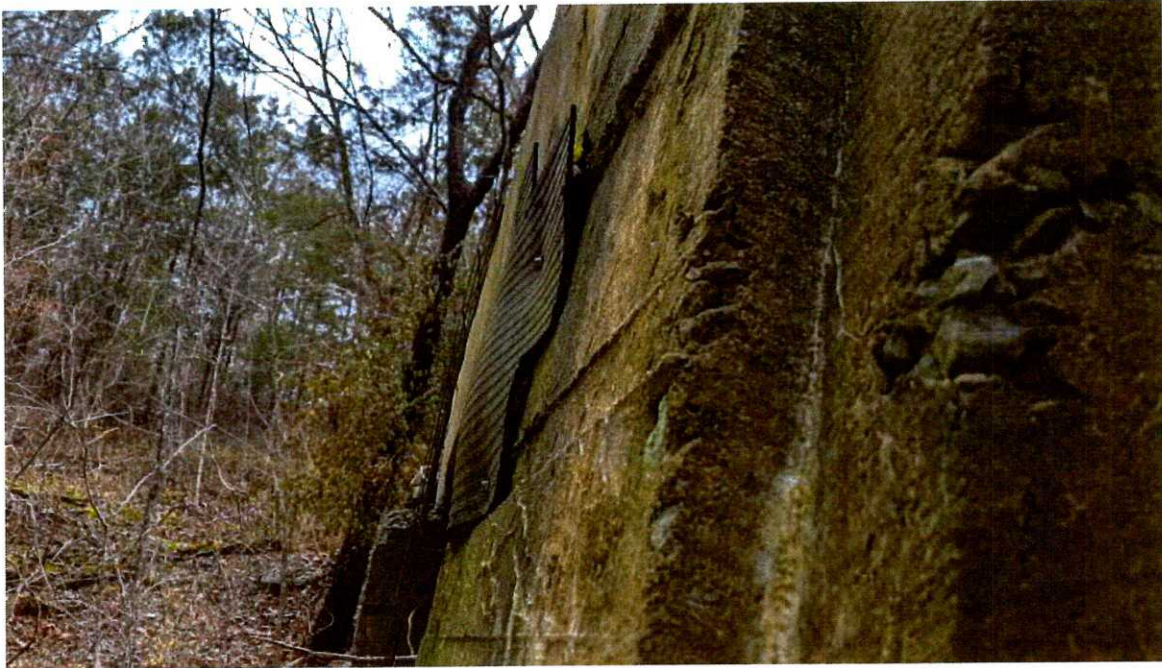


Photo 17. Patch Formwork Left in Place at North Face of West Abutment

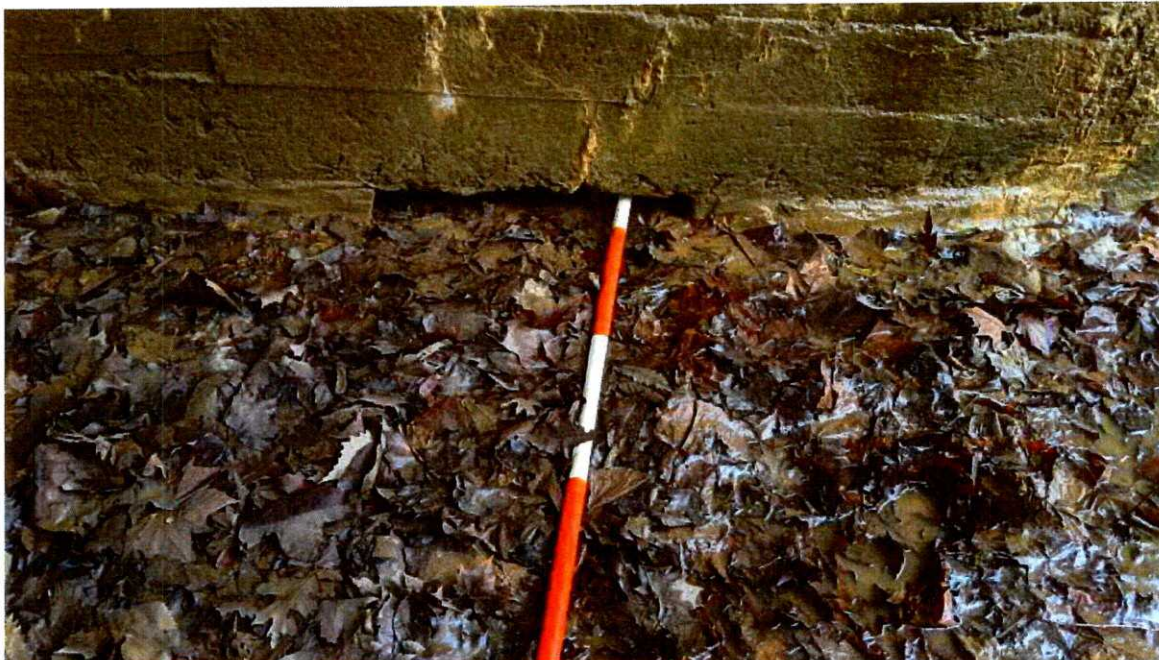


Photo 18. Section of Undermining Near North End of West Abutment, Up to 12"



## Botkins Lane Bridge Inspection 12-11-2022



Photo 19. Undermining Along East Abutment, Up to 12" Along Section



Photo 20. Cracking Through of Stones at South End of West Abutment



## Botkins Lane Bridge Inspection 12-11-2022



Photo 21. Cracking Through of Stones and Grout at South End of West Abutment



Photo 22. Cracking Through of Stones and Grout at South End of West Abutment, Looking Up



## Botkins Lane Bridge Inspection 12-11-2022



Photo 23. Stones Cracking at Southeast Quadrant. Wall also has sections of grout falling out.



Photo 24. West Abutment, Middle Brace Corrosion with Section Loss and Adjacent Cracking with Efflorescence in Concrete.



## Botkins Lane Bridge Inspection 12-11-2022



Photo 25. Vertical Crack at Top of West Abutment Leading to Middle Brace

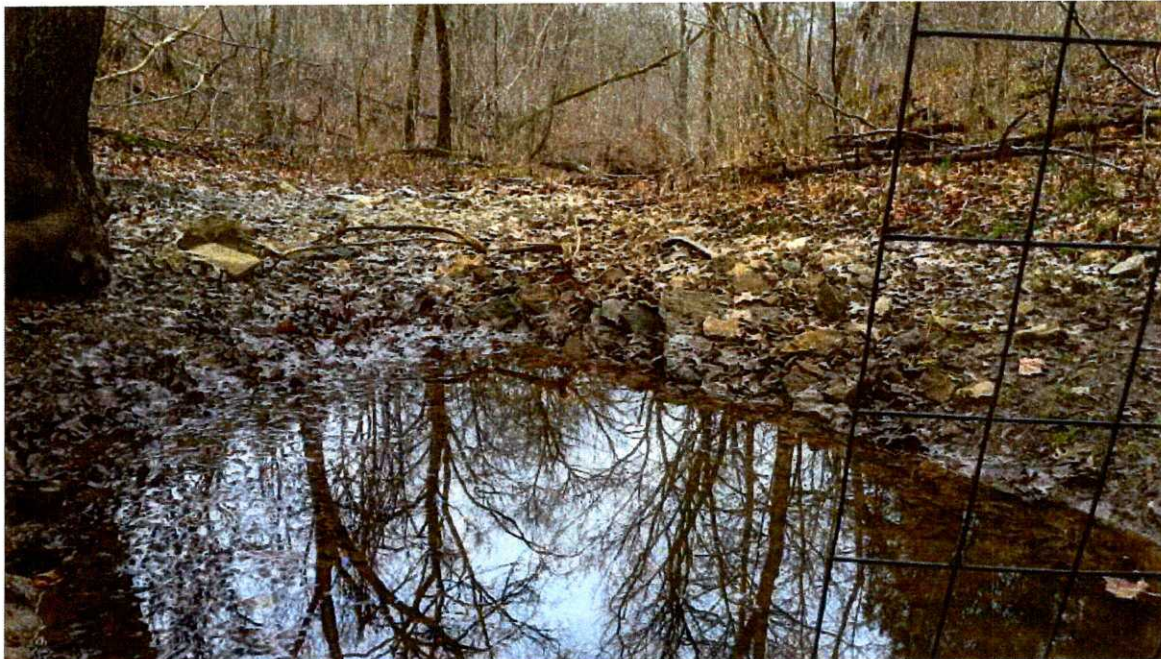


Photo 26. Downstream, Looking North and Scour Hole



## Botkins Lane Bridge Inspection 12-11-2022



Photo 27. Scour with Undermining of Trees at Northwest Quadrant



Photo 28. Spall at End of Curb at Northeast Corner and Debris Along North Gutterline



## Botkins Lane Bridge Inspection 12-11-2022



Photo 29. Spall and Patch at Southeast End of Curb



# NBIP FIELD REVIEW MINI CODING GUIDE

## [58]DECK, [59]SUPERSTRUCTURE, [60]SUBSTRUCTURE

N	NOT APPLICABLE
9	EXCELLENT CONDITION
8	VERY GOOD CONDITION - no problems noted.
7	GOOD CONDITION - some minor problems.
6	SATISFACTORY CONDITION - structural elements show some minor deterioration
5	FAIR CONDITION - all primary structural elements are sound but may have minor section loss, cracking, spalling, or scour.
4	POOR CONDITION - advanced section loss, deterioration, spalling, or scour.
3	SERIOUS CONDITION - loss of section, deterioration, spalling or scour have seriously affected primary structural components. Local failures are possible, Fatigue cracks in steel or shear cracks in concrete may be present.
2	CRITICAL CONDITION - advanced deterioration of primary structural elements. Fatigue cracks in steel or shear cracks in concrete may be present or scour may have removed substructure support. Unless closely monitored it may be necessary to close the bridge until corrective action is taken.
1	"IMMINENT" FAILURE CONDITION - major deterioration or section loss present in critical structural components or obvious vertical or horizontal movement affecting structure stability. Bridge is closed to traffic but corrective action may put it back in light service.
0	FAILED CONDITION - out of service - beyond corrective action.

## [41] STRUCTURE OPEN, POSTED OR CLOSED TO TRAFFIC

A	Open, no restriction
B	Open, posting recommended but not legally implemented (all signs not in place or not correctly implemented)
D	Open, would be posted or closed except for temporary shoring, etc. to allow for unrestricted traffic
E	Open, temporary structure in place to carry legal loads while original structure is closed and awaiting replacement or Rehabilitation
G	New structure not yet open to traffic
K	Bridge closed to all traffic
P	Posted for load (may include other restrictions such as temporary bridges which are load posted)
R	Posted for other load-capacity restriction (speed, number of vehicles on bridge, etc.)

## [43]STRUCTURE TYPE, MAIN

Record the description on the inspection form and indicate the type of structure for the main span(s) with a 3-digit code composed of 2 segments. The first digit indicates the kind of material and/or design and shall be coded using one of the following codes(43A). The second and third digits indicate the predominant type of design and/or type of construction and shall be coded using one of the following codes(43B).

### [43A] STRUCTURE TYPE –

Material/Des.	
1 Concrete	
2 Concrete continuous	
3 Steel	
4 Steel continuous	
5 Prestressed concrete *	
6 Prestressed concrete continuous *	
7 Wood or Timber	
8 Masonry	
9 Aluminum, Wrought Iron, or Cast Iron	
0 Other	
* Post-tensioned concrete should be coded as prestressed concrete.	

### [43B] STRUCTURE TYPE –Des./Constr.

01	Slab
02	Stringer/Multi-beam or Girder
03	Girder and Floorbeam System
04	Tee Beam
05	Box Beam or Girders - Multiple
06	Box Beam or Girders - Single or Spread
07	Frame (except frame culverts)
08	Orthotropic
09	Truss - Deck
10	Truss - Thru
11	Arch - Deck
12	Arch - Thru
13	Suspension
14	Stayed Girder
15	Movable - Lift
16	Movable - Bascule
17	Movable - Swing
18	Tunnel
19	Culvert (includes frame culverts)
20	* Mixed types
21	Segmental Box Girder
22	Channel Beam
00	Other
* Applicable only to appr. spans - Item 44	

Note: all Items listed have been excerpted from the NBI Coding Guide. Some parts of Item descriptions may have been omitted from this sheet. See coding guide for complete coding requirements.

## [62]CULVERTS

This item evaluates the alignment, settlement, joints, structural condition, scour, and other items associated with culverts. The rating code is intended to be an overall condition evaluation of the culvert.	
Integral wingwalls to the first construction or expansion joint shall be included in the evaluation. For a detailed discussion regarding the inspection and rating of culverts, consult Report No. FHWA-IP-86-2, Culvert Inspection Manual, July 1986.	
Item 58 - Deck, Item 59 - Superstructure, and Item 60 - Substructure shall be coded N for all culverts.	
N	Not applicable. Use if structure is not a culvert.
9	No deficiencies.
8	No noticeable or noteworthy deficiencies which affect the condition of the culvert. Insignificant scrape marks caused by drift.
7	Shrinkage cracks, light scaling, and insignificant spalling which does not expose reinforcing steel. Insignificant damage caused by drift with no misalignment and not requiring corrective action. Some minor scouring has occurred near curtain walls, wingwalls, or pipes. Metal culverts have a smooth symmetrical curvature with superficial corrosion and no pitting.
6	Deterioration or initial disintegration, minor chloride contamination, cracking with some leaching, or spalls on concrete or masonry walls and slabs. Local minor scouring at curtain walls, wingwalls, or pipes. Metal culverts have a smooth curvature, non-symmetrical shape, significant corrosion or moderate pitting.
5	Moderate to major deterioration or disintegration, extensive cracking and leaching, or spalls on concrete or masonry walls and slabs. Minor settlement or misalignment. Noticeable scouring or erosion at curtain walls, wingwalls, or pipes. Metal culverts have significant distortion and deflection in one section, significant corrosion or deep pitting.
4	Large spalls, heavy scaling, wide cracks, considerable efflorescence, or opened construction joint permitting loss of backfill. Considerable settlement or misalignment. Considerable scouring or erosion at curtain walls, wingwalls or pipes. Metal culverts have significant distortion and deflection throughout, extensive corrosion or deep pitting.
3	Any condition described in Code 4 but which is excessive in scope. Severe movement or differential settlement of the segments, or loss of fill. Holes may exist in walls or slabs. Integral wingwalls nearly severed from culvert. Severe scour or erosion at curtain walls, wingwalls or pipes. Metal culverts have extreme distortion and deflection in one section, extensive corrosion, or deep pitting with scattered perforations.
2	Integral wingwalls collapsed, severe settlement of roadway due to loss of fill. Section of culvert may have failed and can no longer support embankment. Complete undermining at curtain walls and pipes. Corrective action required to maintain traffic. Metal culverts have extreme distortion and deflection throughout with extensive perforations due to corrosion.
1	Bridge closed. Corrective action may put back in light service.
0	Bridge closed. Replacement necessary.

## [72] APPROACH ROADWAY ALIGNMENT

Code the rating based on the adequacy of the approach roadway alignment. This item identifies those bridges which do not function properly or adequately due to the alignment of the approaches. It is not intended that the approach roadway alignment be compared to current standards but rather to the existing highway alignment. This concept differs from other appraisal evaluations. The establishment of set criteria to be used at all bridge sites is not appropriate for this item. The basic criteria is how the alignment of the roadway approaches to the bridge relate to the general highway alignment for the section of highway the bridge is on. For example, if the highway section requires a substantial speed reduction due to vertical or horizontal alignment, and the roadway approach to the bridge requires only a very minor additional speed reduction at the bridge, the appropriate code would be a 6. This concept shall be used at each bridge site. Speed reductions necessary because of structure width and not alignment shall not be considered in evaluating this item.	
3 or	the horizontal or vertical curvature requires a substantial reduction in the less vehicle operating speed from that on the highway section
6	A very minor speed reduction
8	a speed reduction is not required
Additional codes may be selected between these general values.	



# NBIP FIELD REVIEW MINI CODING GUIDE

## [61] CHANNEL & CHANNEL PROTECTION

This item describes the physical conditions associated with the flow of water through the bridge such as stream stability and the condition of the channel, riprap, slope protection, or stream control devices including spur dikes. The inspector should be particularly concerned with visible signs of excessive water velocity which may affect undermining of slope protection, erosion of banks, and realignment of the stream which may result in immediate or potential problems. Accumulation of drift and debris on the superstructure and substructure should be noted on the inspection form but not included in the condition rating.

- N Not applicable. Use when bridge is not over a waterway (channel).
- 9 There are no noticeable or noteworthy deficiencies which affect the condition of the channel.
- 8 Banks are protected or well vegetated. River control devices such as spur dikes and embankment protection are not required or are in a stable condition.
- 7 Bank protection is in need of minor repairs. River control devices and embankment protection have a little minor damage. Banks and/or channel have minor amounts of drift.
- 6 Bank is beginning to slump. River control devices and embankment protection have widespread minor damage. There is minor stream bed movement evident. Debris is restricting the channel slightly.
- 5 Bank protection is being eroded. River control devices and/or embankment have major damage. Trees and brush restrict the channel.
- 4 Bank and embankment protection is severely undermined. River control devices have severe damage. Large deposits of debris are in the channel.
- 3 Bank protection has failed. River control devices have been destroyed. Stream bed aggradation, degradation or lateral movement has changed the channel to now threaten the bridge and/or approach roadway.
- 2 The channel has changed to the extent the bridge is near a state of collapse.
- 1 Bridge closed because of channel failure. Corrective action may put back in light service.
- 0 Bridge closed because of channel failure. Replacement necessary.

## [103] TEMPORARY STRUCTURE

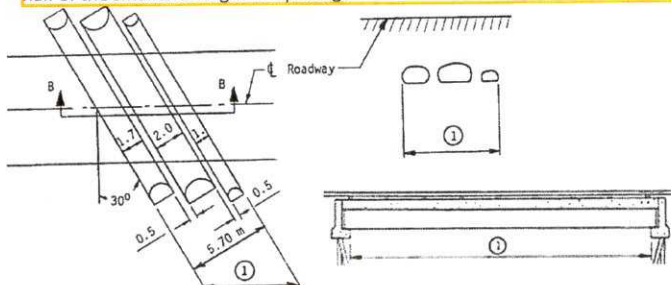
Code this item to indicate situations where temporary structures or conditions exist. This item should be blank if not applicable. Temporary structure(s) or conditions are those which are required to facilitate traffic flow. This may occur either before or during the modification or replacement of a structure found to be deficient. Such conditions include the following:

- ! Bridges shored up, including additional temporary supports.
- ! Temporary repairs made to keep a bridge open.
- ! Temporary structures, temporary runarounds or bypasses.
- ! Other temporary measures, such as barricaded traffic lanes to keep the bridge open.

Any repaired structure or replacement structure which is expected to remain in place without further project activity, other than maintenance, for a significant period of time shall not be considered temporary. Under such conditions, that structure, regardless of its type, shall be considered

## [112] NBIS BRIDGE LENGTH

The following definition of a bridge is to be used: A structure including supports erected over a depression or an obstruction, such as water, highway, or railway, and having a track or passageway for carrying traffic or other moving loads, and having an opening measured along the center of the roadway of more than 20 feet\* between undercopings of abutments or spring lines of arches, or extreme ends of openings for multiple boxes; it may also include multiple pipes, where the clear distance between openings is less than half of the smaller contiguous opening.



## [113] SCOUR CRITICAL BRIDGES

Use a single-digit code as indicated below to identify the current status of the bridge regarding its vulnerability to scour. Whenever a rating factor of 2 or below is determined for this item, the rating factor for Item 60 -- Substructure and other affected items (i.e., load ratings, superstructure rating) should be revised to be consistent with the severity of observed scour and resultant damage to the bridge. A plan of action should be developed for each scour critical bridge. A scour critical bridge is one with abutment or pier foundation rated as unstable due to (1) observed scour at the bridge site (rating factor of 2, 1, or 0) or (2) a scour potential as determined from a scour evaluation study (rating factor of 3). It is assumed that the coding of this item has been based on an engineering evaluation, which includes consultation of the NBIS field inspection findings.

- N Bridge not over waterway.
- U Bridge with "unknown" foundation that has not been evaluated for scour. Until risk can be determined, a plan of action should be developed and implemented to reduce the risk to users from a bridge failure during and immediately after a flood event (see HEC 23).
- T Bridge over "tidal" waters that has not been evaluated for scour, but considered low risk. Bridge will be monitored with regular inspection cycle and with appropriate underwater inspections until an evaluation is performed ("Unknown" foundations in "tidal" waters should be coded U.)
- 9 Bridge foundations (including piles) on dry land well above flood water elevations.
- 8 Bridge foundations determined to be stable for the assessed or calculated scour condition. Scour is determined to be above top of footing (Example A) by assessment (i.e., bridge foundations are on rock formations that have been determined to resist scour within the service life of the bridge), by calculation or by installation of properly designed countermeasures (see HEC 23).
- 7 Countermeasures have been installed to mitigate an existing problem with scour and to reduce the risk of bridge failure during a flood event. Instructions contained in a plan of action have been implemented to reduce the risk to users from a bridge failure during or immediately after a flood event.
- 6 Scour calculation/evaluation has not been made. (Use only to describe case where bridge has not yet been evaluated for scour potential).
- 5 Bridge foundations determined to be stable for assessed or calculated scour condition. Scour is determined to be within the limits of footing or piles (Example B) by assessment (i.e., bridge foundations are on rock formations that have been determined to resist scour within the service life of the bridge), by calculations or by installation of properly designed countermeasures (see HEC 23).
- 4 Bridge foundations determined to be stable for assessed or calculated scour conditions; field review indicates action is required to protect exposed foundations (see HEC 23).
- 3 Bridge is scour critical; bridge foundations determined to be unstable for assessed or calculated scour conditions: -Scour within limits of footing or piles. (Example B) -Scour below spread-footing base or pile tips. (Example C)
- 2 Bridge is scour critical; field review indicates that extensive scour has occurred at bridge foundations, which are determined to be unstable by: -a comparison of calculated scour and observed scour during the bridge inspection, or an engineering evaluation of the observed scour condition reported by the bridge inspector in Item 60.
- 1 Bridge is scour critical; field review indicates that failure of piers/abutments is imminent. Bridge is closed to traffic. Failure is imminent based on: -a comparison of calculated and observed scour during the bridge inspection, or -an engineering evaluation of the observed scour condition reported by the bridge inspector in Item 60.
- 0 Bridge is scour critical. Bridge has failed and is closed to traffic.

