BRIDGE SAFETY INSPECTION
STATE PROJECT NO. 170 - 2357

BRIDGE NO. 03190B

ROUTE 8 SOUTHBOUND
OVER
RIVERSIDE ST. & SUNNYSIDE AVE.

WATERBURY, CONNECTICUT

ROUTINE INSPECTION

Prepared by

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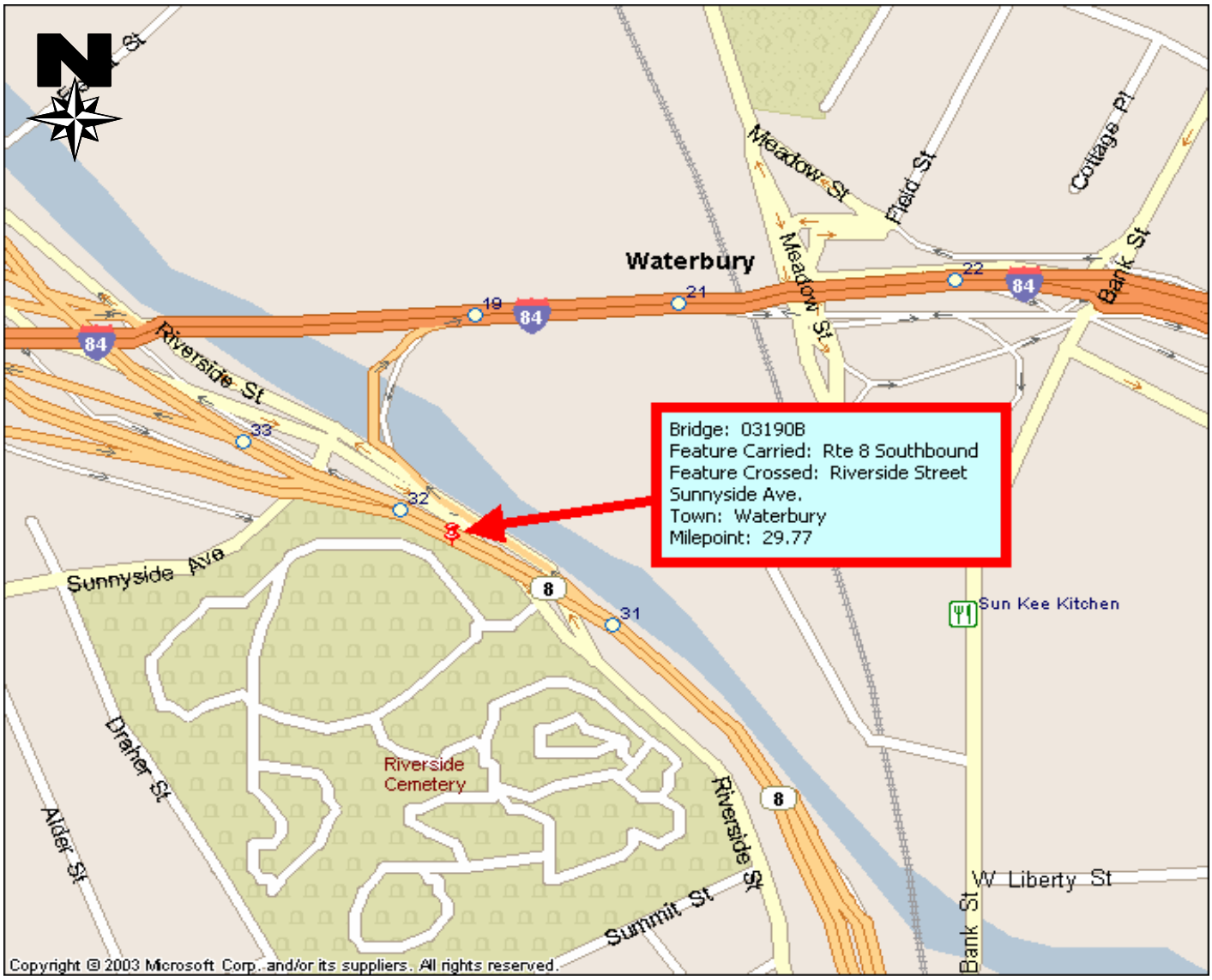
September 25, 2006

LOCATION MAP



STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAYS

INSPECTION REPORT TRANSMITTAL FORM
FORM BRI-27, REV. 9/ 97

STRUCTURE NO. 03190B TOWN Waterbury

Inspectors MAN, ZM Date 9/25/2006

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EXECUTIVE SUMMARY

Bridge No. 03190B was built in 1966 and rehabilitated in 1991. It carries Route 8 Southbound over Riverside Street and Sunnyside Avenue in Waterbury, Connecticut. The bridge is a 21 span, steel superstructure, composite with a reinforced concrete deck, supported by reinforced concrete abutments and piers. Spans 1-13 and 17-21 are simply supported steel rolled beam multi-girder system and spans 14-16 are continuous steel girder-floor beam-stringer system. The curb-to-curb roadway width is 30 feet and the overall length of the bridge is 1589 feet. As per information in the Connecticut Department of Transportation files, the Inventory Rating for an AASHTO HS20 loading is 35 Tons.

A GPR survey of the deck was performed by Infrasense, Inc. in January 2007 using single-polarization methodology. Ultrasonic Testing was performed on cross girder transition weld (previously rejected weld) at pier 13 by JGI Eastern, Inc. in November 2006. During this routine inspection performed in September and October 2006, the bridge was found in fair condition.

Deck

The deck is in fair condition. The bituminous overlay has random longitudinal and transverse cracks up to 1/4 inch wide and random areas of raveling up to 1 inch deep. The underside of deck has random transverse cracks with and without efflorescence and areas of mapcracking, some with efflorescence. There are areas of honeycomb with exposed rebar, hollow areas and spalls with and without exposed rebar up to 2 feet diameter x 3 inches deep, and spalls and hollow areas at deck ends over piers. Top flange concrete haunches have been removed in the past at numerous locations.

The parapets have vertical hairline cracks up to full height with and without efflorescence, large areas with map cracking, hollow areas and spalls with and without exposed rebar. The two pipe bridge railing has numerous locations with heavily rusted railing ends, some with holes up to 4 inches in diameter. There are a few areas of impact damage to railings up to 4 feet long x 3 inches deep. There are a few short weeps in spans 12, 13 and 15 and clogged scuppers in spans 14 and 20. The scupper downspouts and funnels at piers 14, 18 and 19 are filled with debris and drain water onto piers.

The compression seal joints at piers 2-12, 17-20 and south abutment have light to moderate scaling at concrete headers and the seals are depressed up to 3 inches deep at some joints. There is sand in the joints. Active or evidence of leakage was noted at most joints. The following items have shown increased deterioration, have changed since last inspection, or are deficiencies not previously noted:

- Active leakage through the deck haunches was noted at random locations causing rusting and deterioration to steel members mainly along the girder top flanges.
- There are gaps of up to 1/2 inch due to impact rust between the deck and end diaphragms.
- Several locations with loose or hollow sounding concrete were removed by the inspection crew.
- Two priority B maintenance memos (BMM No.'s 06-410 & 06-411) were issued to remove several hollow areas at deck underside over the traffic lanes. ConnDOT maintenance crews removed the delaminated areas during this inspection.
- Based on the visual inspection of the underside of the deck the overall deterioration of the deck is 8.4% with a maximum deterioration of 35% in span 21.

- According to the GPR survey of the deck the overall deterioration is 20% with a maximum deterioration of 41% in span 9. 10 deck cores were collected. See the attached GPR report in Appendix 'A' for more details.
- A priority C maintenance memo (BMM No 06-461) was issued to remove 3 hollow areas on the span 12 west parapet over the left lane of Riverside Street Northbound.
- Granite curbs have chips and scrapes and are missing joint seal between the curb and sidewalk at random locations allowing leakage and causing deterioration to the deck and top flange of the girders. The west curb in span 8 has separated from the safetywalk 10 feet long x 2 1/2 inches wide with sand in the gap and missing joint sealer.
- Bridge ID is missing at northwest approach, other bridge ID's are clear and legible.

Superstructure

The superstructure is in satisfactory condition. There are pot bearings at piers 13 and 16 with light to moderate rust, neoprene shavings and heavy debris around the bearings. The elastomeric expansion bearings are in neutral mode at 60 degrees Fahrenheit and random sole plates have heavy rust and peeling paint. Fixed bearings with curved sole plates have areas of heavy to laminated rust and up to 1/16 inch impact rust at random bearings due to leaking joints. Masonry plates at pier 11 overhang the pedestals by 1 1/2 inches on both sides at pier 11.

Stringers in spans 14-16 have isolated areas of spotty rust and random areas of light rust along the top flanges. There are rolled beam girders in spans 1-13 and 17-21 with areas of moderate to heavy laminated rust along top and bottom flanges mainly at fascia girders, with localized losses up 5/16 inch (3/4 inch original) at girder G1 in span 4. Girder ends have random areas of heavy rust with losses of up to 1/4 inch at bottom flange. Numerous end diaphragm channels have heavy to laminated rust at the top flange with a gap of up to 1/2 inch between the deck and the top flange.

Welded plate girders in spans 14-16 have areas of heavy to laminated rust along the top flanges due to leakage through deck. There are random areas of moderate to heavy rust at bottom flanges with up to 1/8 inch section loss (1 1/4 inch original) at girder G1 in span 15. There are random areas of heavy sand and pigeon debris accumulation on bottom flanges. Floorbeam FB1 in span 15 near girder G1 has heavy rust with up to 1/8 inch section loss to top flange.

Steel cross girders at piers 12-16 have areas of heavy rust at top and bottom flanges and up to 15 feet x 4 inches wide x 3/8 inch loss at bottom flange. Numerous vertical stiffeners have losses up to knife edge, some with perforations at the bottom, some of which have been previously repaired by adding clip angles.

There are random existing and new cracks in the structural steel welds and missing welds at the following locations:

- Span 9: Girder G7, bay 6, 2-1/4" poor fusion weld at the 2nd diaphragm from pier 9. Previously reported as cracked weld.
- Span 12: Missing weld at diaphragm diagonal member connection to vertical stiffener at girder G6 (New).
- Span 12: 4 1/2 inch crack in the weld of top horizontal cross bracing angle to cross girder vertical stiffener at pier 12 (Existing).
- Span 13: Missing welds at the top horizontal cross bracing angle connection to cross girder at pier 13 and girder G8 vertical stiffeners (New).
- Span 13: Bay 2, poor fusion weld at the cross bracing connection to the 3rd diaphragm from pier 13. Previously reported as cracked weld.

- Span 14: (3) – 1 inch cracks at tack welds of pier 13 bracing angle connection to girder G2 (Existing).
- Span 14: (2) cracked tack welds at connection of stringer S2 to top flange of floor beam FB2 and at connection of stringer S3 to shim plate at floor beam FB2 (Existing).
- Span 15: Missing weld at connection of lower cross bracing angle to girder G2 (New)
- Span 17: Missing weld at connection of bottom diaphragm angle to G4 vertical stiffener near midspan (Existing).
- Span 18: 2 1/2 inches long crack on the north side and 1 1/2 inch long crack on the south side of girder G1 bearing stiffener weld to bottom flange at pier 17 (Existing).
- Span 20 bay 2 vertical stiffener for girder G3 has a 3 1/2 inches long cracked weld at connection to top flange (New).
- Pier 16 north cap girder: 14 inch long missing weld on both sides of web connection to bottom flange at the east column (New). This is an as-built condition.

Substructure

The substructure is in fair condition. Abutment stems and backwalls have random vertical hairline cracks. South abutment backwall has spalls up to 2 feet diameter x 4 inches deep near the top of the backwall. Wingwalls have missing joint filler material at expansion joints and there is heavy vegetation growth along the wingwalls. There is a 1 foot diameter hollow area at girder G3 pedestal and a 1 foot x 6 inches x 2 inches deep spall with a 1 foot diameter hollow area at girder G5 pedestal at south abutment.

Concrete pier caps at piers 7-11 and 17-20 have vertical, horizontal, diagonal and map cracks some with efflorescence and open up to 1/8 inch wide. There are hollow areas up to 6 feet x 3 feet and spalls up to 3 feet x 2 feet x 2 inches deep with and without exposed rebar. Random concrete pedestals have hairline cracks and few pedestals at piers 9 and 11 have small spalls with and without exposed rebar, with no undermining of the bearings.

Piers 1-6 have individual columns with no caps. Random columns have vertical and diagonal cracks near the top up to 1/8 inch wide some of which go across the top and down the other side. Some cracks run under the masonry plates into the anchor bolts. There are also hollow areas and spalls with and without rebar up to 2 feet x 2 feet x 4 inches deep near the top of the columns. The bearing masonry plate at girder G1 pedestal at pier 1 is undermined 6 inches by 1/2 inch. Columns 1 & 2 at bent 1 and columns 1, 2 & 3 at bent 5 are in worst condition.
Piers 7-20 columns have random vertical, horizontal and map cracks up to 1/16 inch wide, some with efflorescence. There are random areas up to 3 feet x 2 feet and spalls with and without exposed rebar up to 1 foot x 3 feet x 6 inches deep.

Top of pier 17 footing is exposed up to 6 inches deep due to erosion of material. There is a 3 feet diameter x 1 foot deep area of erosion at pier 9 column 1 from downspout outflow. There is light construction debris on pier caps and bridge seats.

Approach Condition

The approach is in satisfactory condition. The relief joint at south approach has a full width crack x up to 1 inch wide and two potholes up to 1 foot diameter x 3/4 inch wide. The southeast approach concrete jersey barriers has minor scrapes. There is MBR at other corners and the northeast approach MBR has impact damage and several bent posts. The approach pavements have longitudinal, transverse and map cracking up to 1 inch wide. There is a 5 feet x 8 inches x 1 inch deep area of settlement at the southwest approach adjacent to the deck joint. There are several potholes in overlay up to 3 feet x 6 inches x 1 inch deep.

REPAIR RECOMMENDATIONS

Deck

1. Seal the cracks in the bituminous overlay (1500 LF +/-).
2. Replace the missing/deteriorated seal between the curb and sidewalks (300 LF +/-).
3. Remove and patch the hollow areas and areas with spalls on both faces of parapets (< 0.5 CY).
4. Replace/repair bridge railings with heavy rust and holes at railing ends (200 LF +/-). Consider upgrading the railing to meet current standards.
5. Replace the missing/short PVC weeps in spans 12, 13 and 15 (30 LF +/-).
6. Open clogged scuppers in spans 14 and 20 and clean the drain pipes at piers 14, 18 and 19 (4 Locations).
7. Repair the depressed compression seals and remove the sand from the joints (200 LF).
8. Install bridge ID at northwest approach (1 EA).

Superstructure

1. Clean and paint bearings, girder ends and end diaphragms, and areas of steel with rust (2000 SF).
2. Repaired the cracked welds in spans 12, 18 and 20 (10 ½ inches).
3. Monitor the missing or poor fusion welds and cracked tack welds in spans 9, 12-17. (9 Locations).
4. Remove sand and pigeon debris from the bottom flanges and bearings (LS).

Substructure

1. Repair/patch the spalled and delaminated areas on substructures (1 1/2 CY +/-).
2. Monitor the cracks in the columns at bent 1 & 2 during the next inspection or until the repairs are completed.
3. Cover pier 17 footing with approved material (1 CY +/-).

Approaches

1. Repair the relief joint at south approach (50 LF).
2. Repair the MBR at northeast approach (50 LF).
3. Seal the cracks at approach pavements and at relief joint (500 LF).

Connecticut Department of Transportation

Bridge Inspection Report BRI-18

BRIDGE #: 03190B

INSPECTION DATE: 9/25/2006

INSPECTION TYPE: Routine

PREVIOUS INSPECTION DATE: 8/19/2004

SNOOPER REQUIRED: No

INSPECTION PERFORMED BY: HAKS

SNOOPER USED: No

TOWN: WATERBURY

FEATURE CARRIED: ROUTE 8 SOUTHBOUND

YEAR BUILT: 1966

LOCATION: ROUTE 8 SOUTH OF I-84

FEATURE INTERSECTED RIVERSIDE ST-SUNNYSIDE

YEAR REBUILT: 1991

MAIN MATERIAL: Steel

MAIN DESIGN: Girder and Floorbeam Syst

INSPECTION VISITS:

Inspection Date	Temperature	Start Time	End Time
9/25/2006	60 °F	8:30 AM	3:30 PM
9/26/2006	60 °F	8:30 AM	2:15 PM
9/29/2006	60 °F	8:10 AM	1:30 PM
10/10/2006	60 °F	8:30 AM	12:30 PM
10/12/2006	65 °F	9:30 AM	12:30 PM
10/16/2006	55 °F	8:30 AM	3:45 PM
10/17/2006	55 °F	8:30 AM	2:15 PM
10/18/2006	60 °F	8:30 AM	3:25 PM
10/26/2006	55 °F	8:30 AM	3:00 PM

INSPECTORS:

Inspector	Task
M. Najafabadi	Team Leader
Z. Mahiaoui	Team Member

58. DECK

REINFORCED CONCRETE DECK
BITUMINOUS OVERLAY W/MEMBRANE

OVERALL RATING 5

	RATING	
OVERLAY	6	The bituminous overlay has random longitudinal and transverse cracks up to 1/4" wide and random areas of raveling up to 1" deep. See sheets 26-30 and photo 8.
DECK STR. CONDITION	5	The underside of the deck exhibits random transverse hairline cracks and large map cracking areas with and without efflorescence, hollow sounding areas, random honeycomb areas and spalls with and without exposed rebar. There are random areas of active leakage through the deck haunches, some with stalactites and efflorescence, causing rusting & deterioration to steel members along the top flanges of girders. Scattered areas of deck haunches have been removed throughout the bridge, mostly over roadways. Honeycomb areas with exposed rebar were noted (Span 17) up to 10' x full width of east overhang and there are spalls with and without exposed rebar up to 2' diameter x 3". Deck ends over piers have hollow areas and spalls due to past leakage through joints and there are gaps of up to 1/2" between the deck and end diaphragm top flanges at random locations due to pack rust. Several locations with loose or hollow sounding concrete were removed by the inspection crew. Two Priority B memos were issued on 10/30/06 (06-410 & 06-411) to remove hollow sounding concrete over the roadways. ConnDOT Bridge Maintenance responded and removed the delaminated concrete during the inspection. The overall underside of the deck deterioration based on the visual inspection is 8.4% with the maximum deterioration of 35% in span 21.

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BRIDGE #: **03190B** **INSPECTION DATE:** 9/25/2006

58. DECK

REINFORCED CONCRETE DECK
BITUMINOUS OVERLAY W/MEMBRANE

OVERALL RATING **5**

A GPR survey of the deck performed in January 2007 indicated an overall deterioration of 20% with maximum deterioration of 41% in span 9. 10 cores were collected.

See sheets 31-56, photos 9-14 and Appendix A (GPR inspection report).

CURBS	6	Granite block curbs have chips, scrapes and rust stains at random locations. The joint seal between the curb and safetywalk is deteriorated at random locations allowing leakage and causing deterioration to the deck and top flange of the girders. The west curb in span 8 has separated from the safetywalk 10' L x 2 1/2" wide x 5" deep with sand in the gap and missing joint sealer. The average curb reveal is 7 1/4". See sheets 26-30.
MEDIAN	N	
SIDEWALKS	7	Concrete safetywalks: There are random transverse hairline cracks and hollow areas up to 4' x1/2'. See sheets 26-30 and photo 15.
PARAPET	5	Parapets have vertical hairline cracks with and without efflorescence, large areas with map cracking and hollow areas on the inside and the outside faces. There are also spalls with and without exposed rebar on both faces and top of parapets. The west parapet at pier 2 is laterally misaligned up to 1/2". Span 12, the west parapet has 3 hollow areas (up to 3 feet x1.5 feet) on the outside face over the left lane of Riverside Street Northbound. Priority C memo (advance notification) was issued on 11/2/06 (06-461) for this condition. See sheets 26-30 and photos 16-18.
RAILING	5	The 2 pipe steel railing is heavily rusted at the ends at numerous locations, some with holes up to 4" diameter. There are a few areas of impact damage to the rails up to 4' L x 3". One rail section is disconnected from the post at east parapet in span 18. See sheets 26-30 and photos 19-20.
PAINT	N	
FENCE	N	
DRAINS	4	There are 3 short PVC weeps in bay 1 of span 12, one missing weep in bay 1 of span 13 and one short weep in bay 1 of span 15. The scupper grate at the west curb of span 14 and at the east curb of span 20 are clogged. The scupper downspouts and funnels at piers 14, 18 and 19 are filled with debris and drain water onto pier caps. See sheets 26-54 & 61-81 and photos 21-24.
LIGHTING STANDARD	7	There are few missing screws at junction box covers. There are underbridge luminaires in span 13 and 14 with no notable deficiencies. Luminaires were not on at the time of inspection. See photo 25.
UTILITIES TYPE/SIZE	N	
CONSTRUCTION JOINTS	N	
EXPANSION JOINTS	6	Compression seal joints at south abutment, piers 2 -12, and 17 - 20. The concrete headers have light to moderate scaling. Some seals are depressed into the joints up to 3" deep x 20' long. There is sand in the joints. There is active leakage at pier 11 and evidence of leakage at most other joints. There are asphaltic plug joints at pier 1 and north abutment with minor areas of exposed aggregate. There are strip seal joints at piers 13 and 16 with light sand accumulation in the joints.

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58. DECK

REINFORCED CONCRETE DECK
BITUMINOUS OVERLAY W/MEMBRANE

OVERALL RATING 5

See sheets 26-30 and photos 26-30.

59. SUPERSTRUCTURE

ROLLED BEAMS IN SPANS 1-13 & 17-21
GIRDER-FLOOR BEAM SYSTEM IN SPANS 14-16

OVERALL RATING 6

	RATING	
BEARING DEVICES	5	There are pot bearings at piers 13 and 16 with light to moderate rust, neoprene shavings and heavy sand around the bearings. The elastomeric expansion bearings were in neutral mode at 60° F. Random sole plates have heavy rust and peeling paint. Fixed bearings with curved sole plates have areas of heavy rust to laminted rust and up to 1/16" impact rust at random bearings due to leaking joints. Masonry plates overhang the pedestals by 1 1/2" on both sides at pier 11. One bearing masonry plate at girder G1 pedestal at pier 1 is undermined 6"x1/2". See sheets 31-54 and photo 31-32.
STRINGERS	7	Stringers in spans 14-16 exhibit isolated areas of spotty rust and light to moderate rust along the top flanges. See sheets 46-48.
GIRDERS	6	Rolled beams with partial length welded cover plates in spans 1-13 & 17-21 have areas of moderate to heavy laminated rust along top and bottom flanges mainly at fascia girders, with localized losses up to 5/16" (Original 3/4") at girder G1 bottom flange in span 4. Girder ends at piers have random areas of heavy rust with losses of up to 1/4" at the bottom flange. Numerous end diaphragm channels have heavy to laminated rust at the top flange creating a gap of up to 1/2" between the deck and the diaphragms. There are a few minor rolling defects at random locations. The 1/2" notch at cope of girder G2 in span 16 has not propagated. There are welded plate girders in spans 14-16. Girders have areas of heavy to laminated rust along the top flanges due to leakage through deck. There are random areas of moderate to heavy rust at bottom flanges, some near floorbeam connections with up to 1/8" section loss (Original 1 1/4") at girder G1 in span 15. There are random areas of heavy sand and pigeon debris accumulation on bottom flanges. Steel cross girders at piers 12-16. There are areas of heavy rust along the top and bottom flanges with up to 15'x4" W x 3/8" loss (Original 2 1/16") to bottom flange. There are numerous vertical stiffeners with losses to knife edge and perforations at the bottom, some have been previously repaired by bolting clip angles to them. See sheets 31-54 and photos 24, 33-37.
FLOOR BEAMS	6	There are floorbeams in spans 14-16. There is heavy rust with up to 1/8" section loss to top flange of FB1 in span 15 near girder G1. There is a 1/4" notch at the cope for top flange of FB1 & FB2 in span 16 near G1. No change since the last inspection. See sheets 46-48.
TRUSSES-GENERAL	N	
TRUSSES-PORTALS	N	
TRUSSES-BRACING	N	
PAINT	7	Less than 10% of the painted surfaces are rusting. See above items.
RUST	6	See above items.
MACHINERY MOV SPAN	N	
RIVETS & BOLTS	8	

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59. SUPERSTRUCTURE

ROLLED BEAMS IN SPANS 1-13 & 17-21
GIRDER-FLOOR BEAM SYSTEM IN SPANS 14-16

OVERALL RATING 6

WELDS & CRACKS	5	There are random existing and new cracks in structural steel welds and missing welds at the following location: Span 9: Girder G7, bay 6, 2-1/4" poor fusion weld at the 2nd diaphragm from pier 9. Previously reported as cracked weld. Span 12: Missing weld at diaphragm diagonal member connection to vertical stiffener at girder G6 (New). Span 12: 4 1/2" crack in the weld of top horizontal cross bracing angle to cross girder vertical stiffener at pier 12 (Existing). Span 13: Missing welds at the top horizontal cross bracing angle connection to cross girder at pier 13 and girder G8 vertical stiffeners (New). Span 13: Bay 2, poor fusion weld at the cross bracing connection to the 3rd diaphragm from pier 13. Previously reported as cracked weld. Span 14: (3) - 1" cracks at tack welds of pier 13 bracing angle connection to girder G2 (Existing). Span 14: (2) cracked tack welds at connection of stringer S2 to top flange of floorbeam FB2 and at connection of stringer S3 to shim plate at floorbeam FB2 (Existing). Span 15: Missing weld at connection of lower cross bracing angle to girder G2 (New) Span 17: Missing weld at connection of bottom diaphragm angle to G4 vertical stiffener near midspan (Existing). Span 18: 2 1/2" L crack on the north side and 1 1/2" L crack on the south side of girder G1 bearing stiffener weld to bottom flange at pier 17 (Existing). Span 20 bay 2 vertical stiffener for girder G3 has a 3 1/2" cracked weld at connection to top flange (New). Pier 16 north cap girder: 14" L missing weld (7" on each side of the bearing stiffener) on both sides of web connection to bottom flange at the east column (New). This is an as-built condition. All parial length cover plate end welds were checked hands-on and no deficiencies were noted. Span 14 cross girder at pier 13 was tested by ultrasonic method at top flange transition weld and the results indicated no significant change since the last testing. See sheets 42-50, 53, Appendix B (NDT report) and photos 38-43.
TIMBER DECAY	N	
CONCRETE CRACKING	N	
COLLISION DAMAGE	7	There are scrape marks at girder G1 bottom flange in span 20. See sheet 53.
MEMBER ALIGNMENT	7	Stringer S3 in span 14 has a misaligned bearing plate at floorbeam connection.
DEFLECT. UNDER LOAD	N	
VIBR. UNDER LOAD	N	
STAND PIPES	7	Stand pipes on piers - Pier 7 stand pipe has a missing cap at pipe end. See sheet67.
BARREL LADDERS	N	

ARE BARREL LADDERS OSHA COMPLIANT? NA

60. SUBSTRUCTURE

REINFORCED CONCRETE ABUTMENTS AND PIERS

OVERALL RATING 5

	RATING	
ABUTMENTS-STEM	6	There are vertical hairline cracks up to full height at both abutments. Concrete pedestals: There is a 1' diameter hollow area at girder G3 pedestal of south abutment. There is also a 1'x6"x2" spall and a 1' diameter hollow area at girder G5 pedestal at south abutment.

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60. SUBSTRUCTURE REINFORCED CONCRETE ABUTMENTS AND PIERS **OVERALL RATING** 5

See sheets 57 & 59.

ABUTMENTS-BACKWALL	6	There are vertical hairline cracks at both backwalls. South abutment has 5 spalls near the top of backwall up to 2' diameter x 4" deep. There is evidence of leakage at south abutment. See sheets 57 & 59 and photo 44.
ABUTMENTS-FOOTINGS	N	Not visible.
ABUT.-SETTLEMENT	8	
ABUTMENTS-WINGWALLS	7	There is missing joint filler material at expansion joints between deck and wingwall parapets. There is heavy vegetation growth along the wingwalls. See sheets 58 & 60.
PIERS/BENTS-CAPS	5	Concrete pier caps at piers 7-11 & 17-20. There are vertical, horizontal, diagonal and map cracks some with efflorescence and open up to 1/4" wide (Pier 9). There are also hollow areas up to 6'x3' (Pier 10 cap underside) and spalls with and without exposed rebar up to 3' x 2' x 2" deep (pier 11 cap underside). Random previously reported spalls have been patched. Concrete pedestals: There are random hairline cracks. Few concrete pedestals at piers 9 and 11 have spalls with and without exposed rebar with no undermining. See sheets 61-81 and photos 45-48.
PIERS/BENTS-PILE BENT	N	
PIERS/BENTS-COLUMN	5	Piers 1-6 have individual columns with no caps, and girders are set directly on top of the columns. The columns have vertical and diagonal cracks near the top up to 1/8" wide, some of which go across the top and down the other side. Some cracks run under the masonry plates, into the anchor bolts. There are also hollow areas, spalls with and without exposed rebars up to 2'x2'x4" deep near the top of the columns. One bearing masonry plate at girder G1 pedestal at pier 1 is undermined 6"x1/2". Piers 7-20 columns have random vertical, horizontal and map cracks up to 1/16" wide, some with efflorescence. There are random hollow areas up to 3' x 2' (P10) and spalls with and without exposed rebar up to 1'x3'x6" deep (Pier 12 south elevation). See sheets 61-81 and photos 49-50.
PIERS/BENTS-FOOTINGS	7	Top of pier 17 footing is exposed with light scaling. See photo 51.
PIERS/BENTS-SETTLEMent	8	
EROSION-SCOUR	6	Erosion - Rated 6. There is a 7' L x 2' W x 6" deep erosion near the bottom of northeast wingwall embankment. The top of pier 17 footing is exposed up to 6" deep due to erosion. There is a 3' diameter x 1' deep erosion at pier 9 column 1 from downspout outflow. See sheets 60 & 78 and photo 51. Scour - N/A.
CONCRETE CRACK-SPALL	5	See above items.
STEEL CORROSION	N	
PAINT	N	
TIMBER DECAY	N	
COLLISION DAMAGE	8	
DEBRIS	7	There is light construction debris on pier caps and bridge seats.

61. CHANNEL & CHANNEL PROTECTIO **OVERALL RATING** N

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BRIDGE #: 03190B **INSPECTION DATE:** 9/25/2006

62. CULVERTS & RETAINING WALL **OVERALL RATING** N

APPROACH CONDITION BITUMINOUS PAVEMENT **OVERALL RATING** 6

	RATING	
APPROACH SLAB	6	Not visible. The rating is based on the condition of the overlay.
RELIEF JOINTS	6	The relief joint at south approach has a full width crack x up to 1" wide and two potholes up to 1' diameter x 3/4" deep. See sheet 27 and photo 52.
APPROACH GUIDE RAIL	7	There is concrete jersey barriers at southeast approach with minor scrapes and MBR at other corners. The northeast approach MBR has impact damage with several bent posts. See sheets 27 & 30 and photos 53-54.
APPROACH PAVEMENT	6	The approach pavements have longitudinal, transverse and map cracking up to 1" wide. There is a 5'x8"x1" deep area of settlement at the southwest approach adjacent to the deck joint. There are random potholes in overlay up to 3'x6"x1" deep. See sheets 27 & 30 and photo 55-56.
APPROACH EMBANKMENT	7	Southwest embankment has moderate vegetation growth.

TRAFFIC SAFETY FEATURES:

BRIDGE RAILINGS	0	Safetywalk >9" wide.
TRANSITIONS	0	Rubrail is not attached & >3" cooncrete above the rail.
APPROACH GUARDRAILS	0	Steel blockouts.
APPR. GUARDRAIL ENDS	1	

LOAD POSTING

SINGLE UNIT (TONS)		
HS (TONS)		
4 AXLE (TONS)		
3S2 (TONS)		
ADVANCE WARNING Y/N	N	
LEGIBILITY	N	
VISIBILITY/LOCATION	N	

MISC.

MIN VERT. UNDERCLR.	14'	2"	G1 over Sunnyside Avenue.
POSTED CLR. UNDER BRIDGE	13'	9"	
POSTED CLR. ON BRIDGE	'	"	
ADVANCE WARNING (Y/N)	Yes		
SPEED LIMIT (IF ANY)	45 MPH		
CHARACTER OF TRAFFIC			Heavy/Mixed.

ADDITIONAL NOTES

Bridge ID is missing at northwest approach, other bridge ID's are clear and legible. A 45' lift truck and an 80' manlift were used to inspect the bridge.

Connecticut Department of Transportation
Bridge Inspection Report BRI-18

BRIDGE #: 03190B **INSPECTION DATE:** 9/25/2006

ADDITIONAL COMMENTS:

Inspectors' Signatures:

1) _____ Date: 05/09/07

2) _____ Date: 05/09/07

3) _____ Date: __/__/__

4) _____ Date: __/__/__

P.E. Signature: _____ Date: 05/09/07

P.E.#: 21463

Reviewed by: _____ **CDOT** Date: __/__/__

HAKS	JOB NO. 170-2357	BRIDGE NO. 03190B
SUPPLEMENTAL SHEET	DATE: (SEE BELOW)	SHEET 14 OF 122
DESCRIPTION: TIME LOG		

DATE:	9/25/2006		DESCRIPTION	TIME AT SITE		
WEATHER:	60 SUNNY	CREW:	MAN, ZM	8:30 AM	TO	3:30 PM
EQUIP. LIST:	VANLIFT	SNOOPER:			TO	
		SHADOW TRUCK:			TO	
		TROOPER:			TO	
VISITORS:		R.R. FLAGMAN:			TO	
TC & NOTES:	Spans 7-9 & 19.					

DATE:	9/26/2006		DESCRIPTION	TIME AT SITE		
WEATHER:	60 SUNNY	CREW:	MAN, ZM	8:30 AM	TO	2:15 PM
EQUIP. LIST:	VANLIFT	SNOOPER:			TO	
		SHADOW TRUCK:			TO	
		TROOPER:			TO	
VISITORS:		R.R. FLAGMAN:			TO	
TC & NOTES:	Spans 6, 10, 11& 18.					

DATE:	9/29/2006		DESCRIPTION	TIME AT SITE		
WEATHER:	60 CLOUDY	CREW:	MAN, ZM	8:10 AM	TO	1:30 PM
EQUIP. LIST:	VANLIFT	SNOOPER:			TO	
		SHADOW TRUCK:			TO	
		TROOPER:			TO	
VISITORS:		R.R. FLAGMAN:			TO	
TC & NOTES:	Spans 1-5 & portion of 17.					

DATE:	10/10/2006		DESCRIPTION	TIME AT SITE		
WEATHER:	60 SUNNY	CREW:	MAN, ZM	8:30 AM	TO	12:30 PM
EQUIP. LIST:	VANLIFT	SNOOPER:			TO	
		SHADOW TRUCK:			TO	
		TROOPER:			TO	
VISITORS:		R.R. FLAGMAN:			TO	
TC & NOTES	Right lane closure on RTE 8 SB by GARG					
	Top of Deck					

HAKS	JOB NO. 170-2357	BRIDGE NO. 03190B
SUPPLEMENTAL SHEET	DATE: (SEE BELOW)	SHEET 15 OF 122
DESCRIPTION: TIME LOG		

DATE:	10/12/2006		DESCRIPTION	TIME AT SITE		
WEATHER:	65 SUNNY	CREW:	MAN, ZM	9:30 AM	TO	12:30 PM
EQUIP. LIST:	VANLIFT	SNOOPER:			TO	
		SHADOW TRUCK:			TO	
		TROOPER:			TO	
VISITORS:		R.R. FLAGMAN:			TO	
TC & NOTES	LEFT LANE ON RTE 8 SB					
	TOP OF DECK					

DATE:	10/16/2006		DESCRIPTION	TIME AT SITE		
WEATHER:	55 SUNNY	CREW:	MAN, ZM	8:30 AM	TO	3:45 PM
EQUIP. LIST:	INSP. VAN	SNOOPER:			TO	
	80' MANLIFT	SHADOW TRUCK:			TO	
		Local Police:	Laferriere	8:30 AM	TO	12:30 PM
VISITORS:	MAM	Local Police:	Edwards	12:30 PM	TO	3:45 PM
TC & NOTES	RIGHT LANE RIVERSIDE SB					
	Spans 15-17					

DATE:	10/17/2006		DESCRIPTION	TIME AT SITE		
WEATHER:	55 SUNNY	CREW:	MAN, ZM	8:30 AM	TO	2:15 PM
EQUIP. LIST:	INSP. VAN	SNOOPER:			TO	
	80' MANLIFT	SHADOW TRUCK:			TO	
		Local Police:	Torres	8:30 AM	TO	12:30 PM
VISITORS:		Local Police:	Monnerd	12:30 PM	TO	2:15 PM
TC & NOTES	RIGHT & LEFT LANE RIVERSIDE SB					
	Spans 13-15					

DATE:	10/18/2006		DESCRIPTION	TIME AT SITE		
WEATHER:	60 CLOUDY	CREW:	MAN, ZM	8:30 AM	TO	3:25 PM
EQUIP. LIST:	INSP. VAN	SNOOPER:			TO	
	80' MANLIFT	SHADOW TRUCK:			TO	
		Local Police:	Pelosi	8:30 AM	TO	12:30 PM
VISITORS:		Local Police:	Alvelo	12:30 PM	TO	3:25 PM
TC & NOTES	RIGHT LANE RIVERSIDE NB					
	Spans 12-13					

HAKS	JOB NO. 170-2357	BRIDGE NO. 03190B
SUPPLEMENTAL SHEET	DATE: (SEE BELOW)	SHEET 16 OF 122
DESCRIPTION: TIME LOG		

			DESCRIPTION	TIME AT SITE		
DATE:	10/26/2006					
WEATHER:	55 SUNNY	CREW:	MAN, ZM	8:30 AM	TO	3:00 PM
EQUIP. LIST:	CUBE	SNOOPER:			TO	
	45' LIFT TRUCK (E-L)	SHADOW TRUCK:			TO	
		Local Police:	Querino Maia (Shared w/GARG)	9:00 AM	TO	3:00 PM
VISITORS:	N. Statchen, D. Condon	R.R. FLAGMAN:			TO	

TC & NOTES Sunnyside Ave.

Spans 20 & 21. Inspection completed.

			DESCRIPTION	TIME AT SITE		
DATE:						
WEATHER:		CREW:			TO	
EQUIP. LIST:		SNOOPER:			TO	
		SHADOW TRUCK:			TO	
		Local Police:			TO	
VISITORS:		Local Police:			TO	

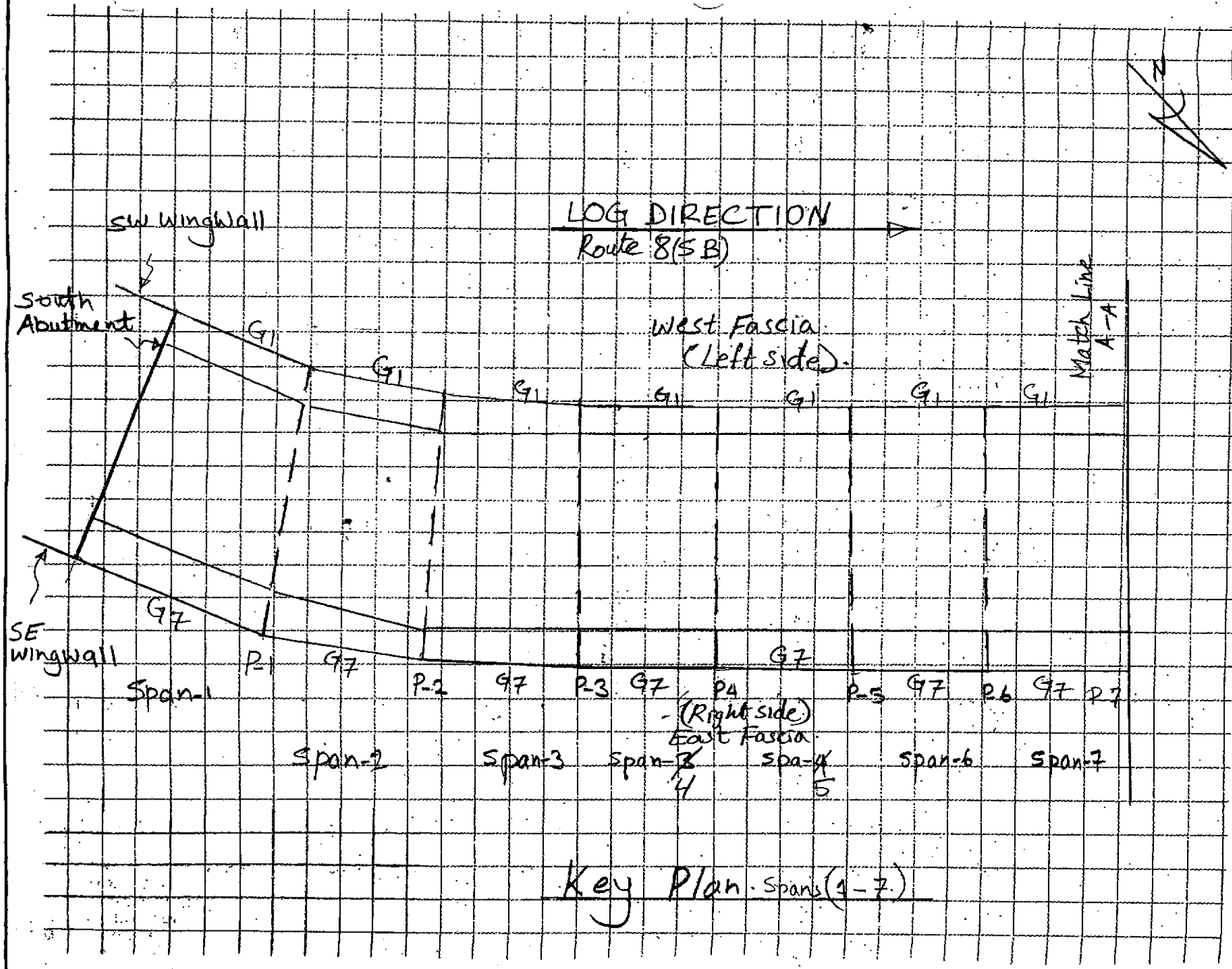
TC & NOTES:

			DESCRIPTION	TIME AT SITE		
DATE:						
WEATHER:		CREW:			TO	
EQUIP. LIST:		SNOOPER:			TO	
		SHADOW TRUCK:			TO	
		Local Police:			TO	
VISITORS:		Local Police:			TO	

TC & NOTES:

			DESCRIPTION	TIME AT SITE		
DATE:						
WEATHER:		CREW:			TO	
EQUIP. LIST:		SNOOPER:			TO	
		SHADOW TRUCK:			TO	
		Local Police:			TO	
VISITORS:		Local Police:			TO	

TC & NOTES:



Key Plan · Spans (1 – 7)

DESCRIPTION: Key Plan

FIELD NOTES

Fuller, Inc.

JOB NO: 170-2357 Ext.

BRIDGE NO: 03190 B.

DATE: 08/19/04

SHEET 117 OF 122

CREW: BNS, MA

FIELD NOTES

DESCRIPTION: Key Plan

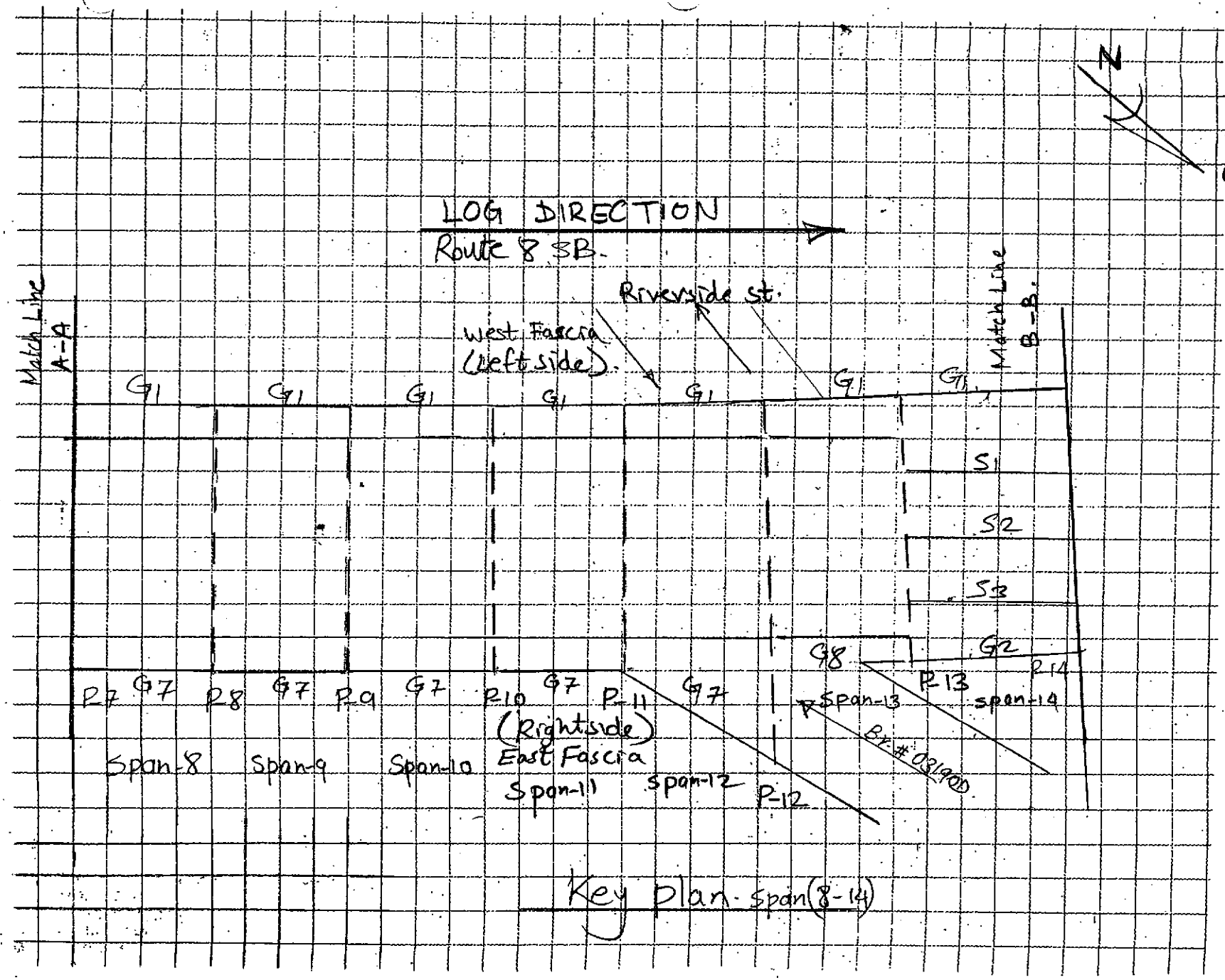
JOB NO: 170-2357 Ext.

DATE: 08/19/04

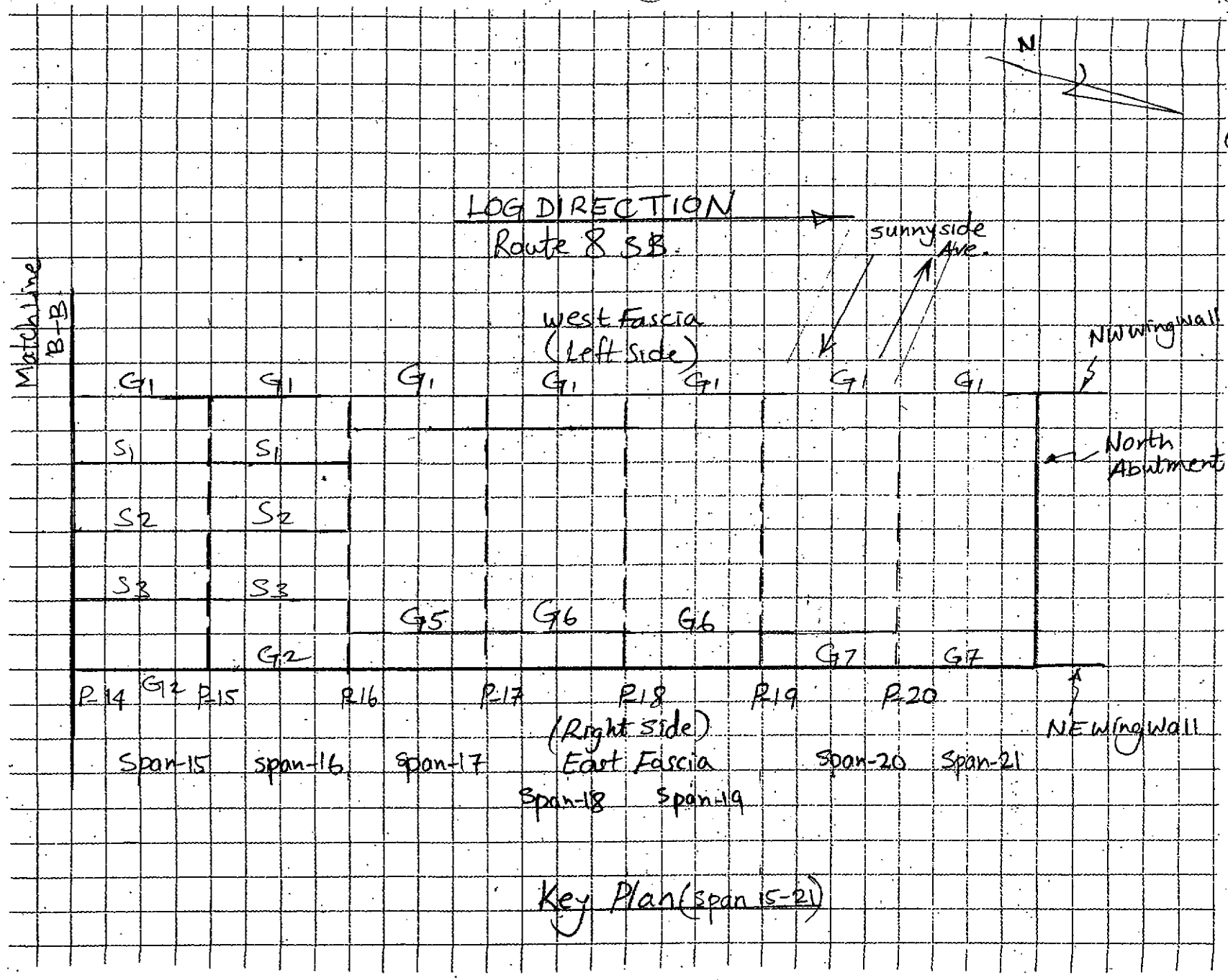
CREW: BNS, MA

BRIDGE NO: 03190 B.

SHEET 8/8 OF 78 122



Key Plan - Span (8-14)



Key Plan (span 15-21)

DESCRIPTION: Key Plan

FIELD NOTES

AT Engineering Inc

JOB NO: 170-2357 Ext

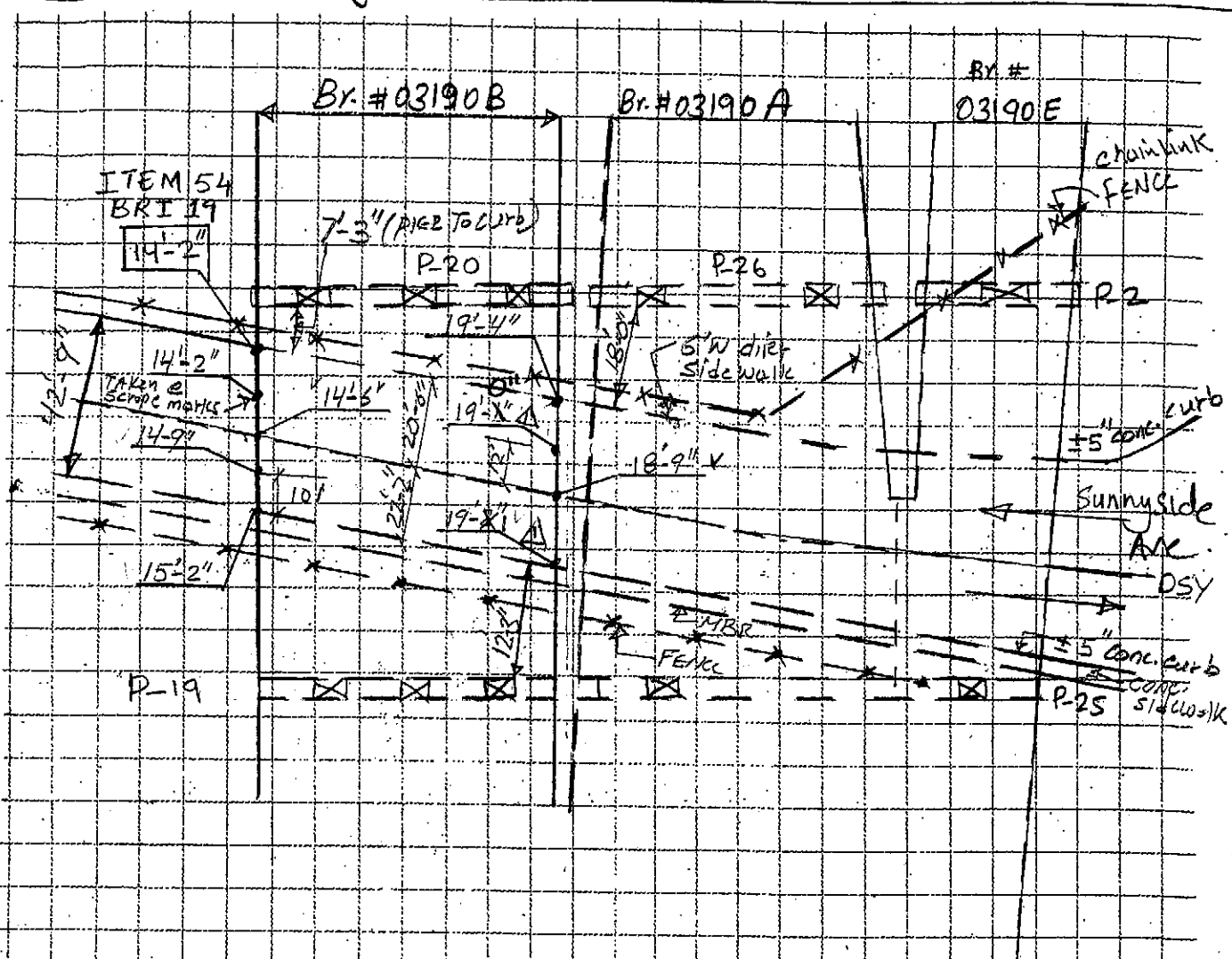
DATE: 08/19/04

CREW: BNS, MA

BRIDGE NO: 03190B-

SHEET 19 OF 78 122

AI Engineers, Inc.	JOB NO: 170-2357 Ext	BRIDGE NO: 03190 B.
	DATE: 08-19-04	SHEET ~~7~~ 20 OF ~~78~~ 122
FIELD NOTES	CREW: BNS, MA	△ 10/26/06 (HAKS) MAN, ZM
DESCRIPTION: Clearance Diagram.		

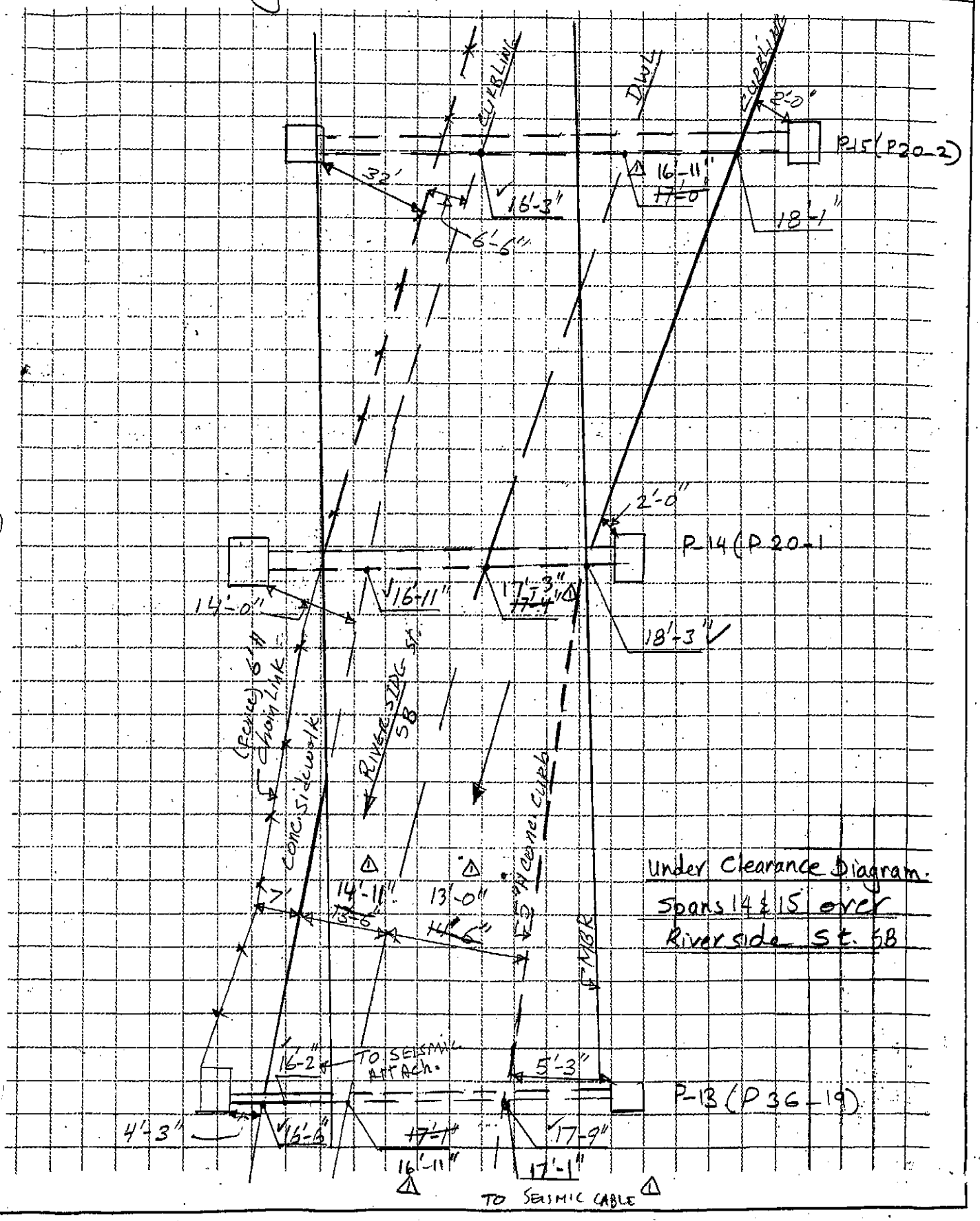


Clearance Diagram over Sunnyside Ave.
Under Rte 8 SB

G. Notes:

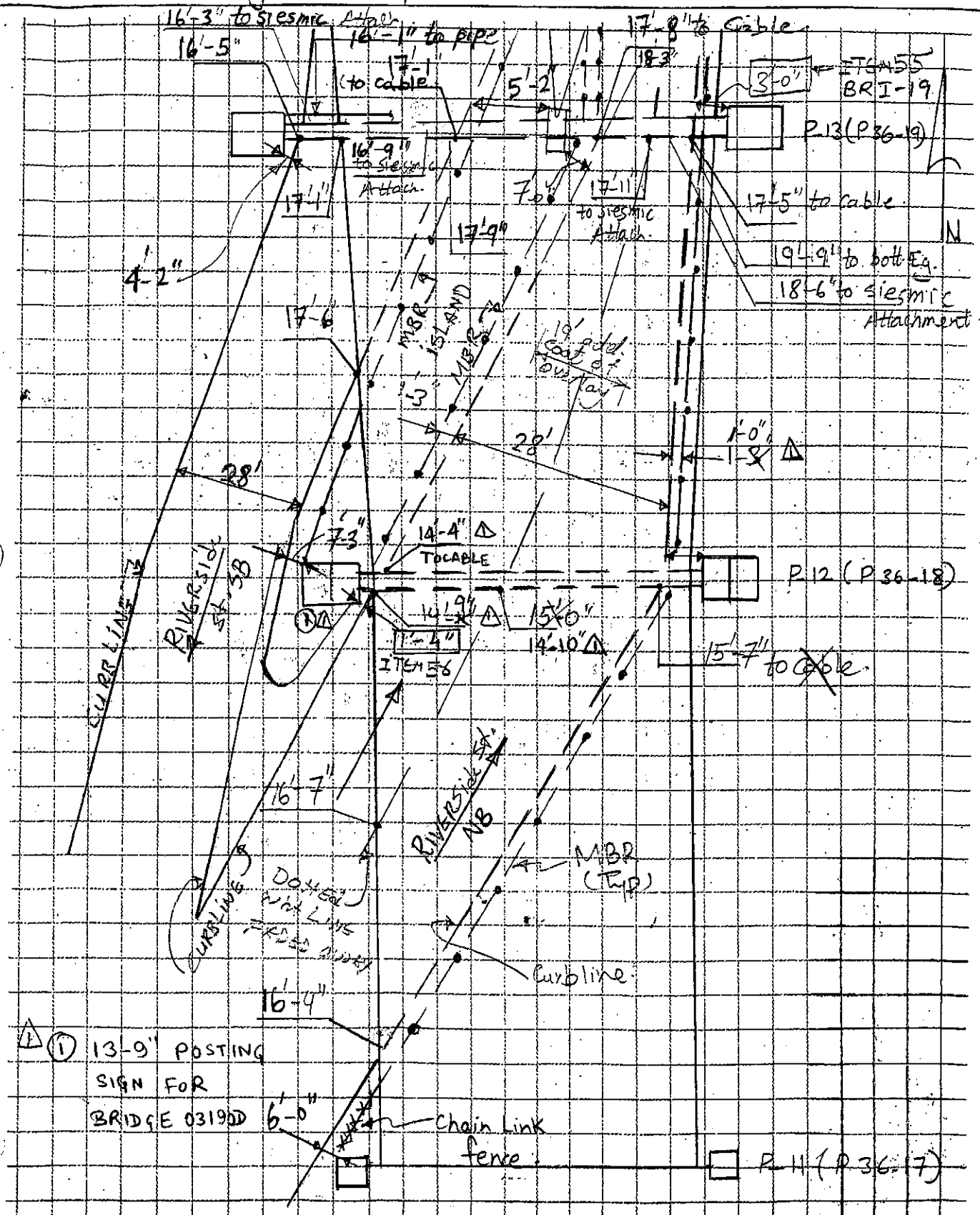
- ~~New overlay/stripping since last inspection~~ △
- Shoulder stripping Does Not exist. Meas. were taken @ establishe. in field 12' wide Travel Lane.

AI Engineers, Inc.	JOB NO: 170-2357 EXU	BRIDGE NO: 03190 B
	DATE: 08-19-04	SHEET 8 21 OF ~~78~~ 122
FIELD NOTES	CREW: BNS, FM	Δ (HAKS) MAN, ZM 10/16/06
DESCRIPTION: Clearance Diagram		



AI Engineers, Inc.	JOB NO: 170-2357 Ext.	BRIDGE NO: 03190 B
	DATE: 08/20/04	SHEET ~~9~~ 22 OF ~~78~~ 122
FIELD NOTES	CREW: ~~AAA~~, FM, AHS, BNS	△(HAKS) 10/26/06 ZM, MAN

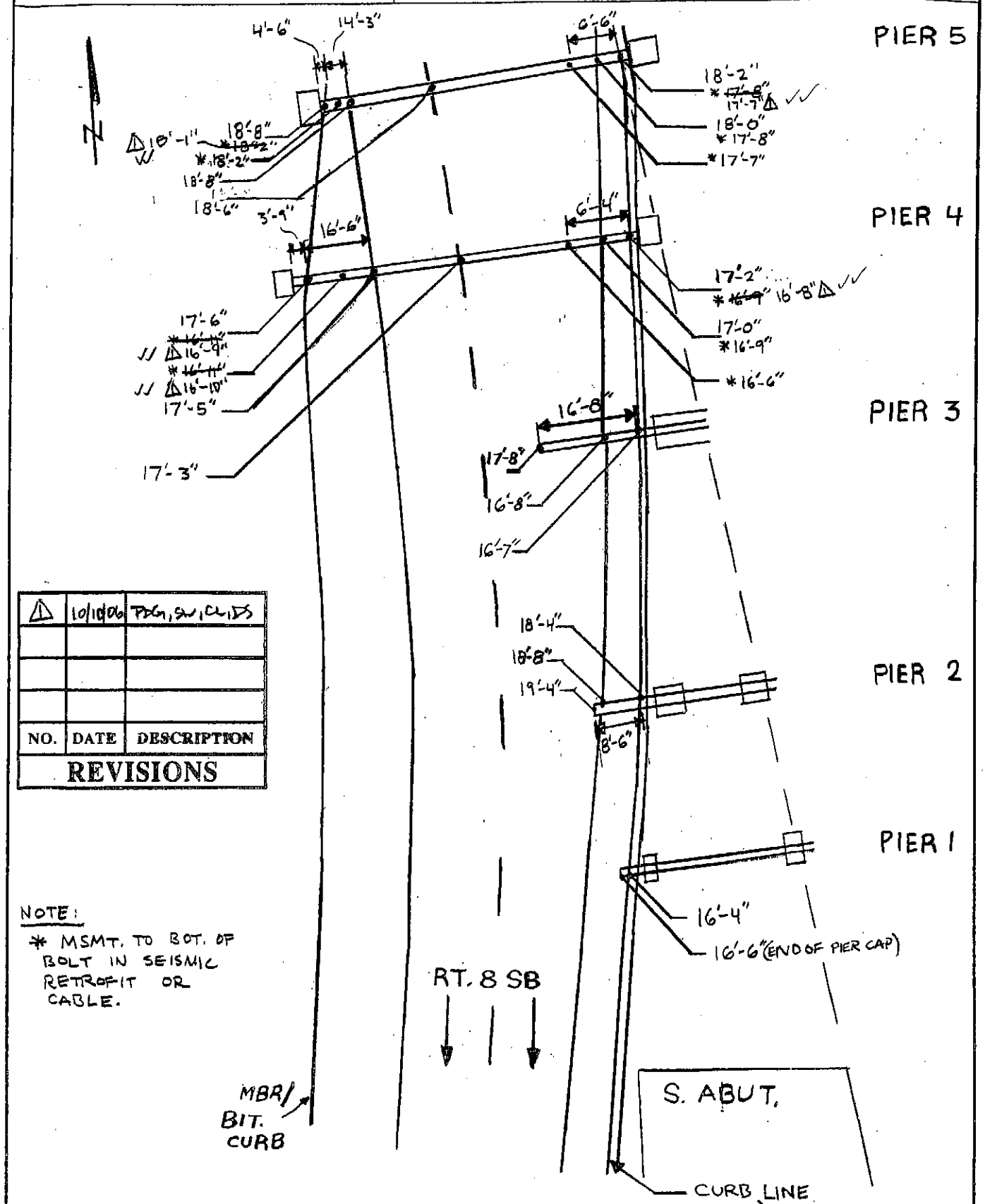
DESCRIPTION: Clearance Diagram



Under Clearance Diagram. Spans 12 & 13 over Riverside st

FIELD NOTES

	JOB NO. 0155	BRIDGE NO. 3190 A / B
	DATE 11/22/04	SHEET ~~20~~ 22A / 122
PREPARED BY: Garg Consulting Services, Inc. ENGINEERS • CONSULTANTS • CONSTRUCTION MANAGERS	CREW ML, FM, PG, SW, CC, JW	



NO.	DATE	DESCRIPTION
1	10/10/06	PDG, SW, CC, DS

REVISIONS

NOTE:

* MSMT. TO BOT. OF BOLT IN SEISMIC RETROFIT OR CABLE.

CLEARANCE DIAGRAM SPANS 1-5 (03190A)

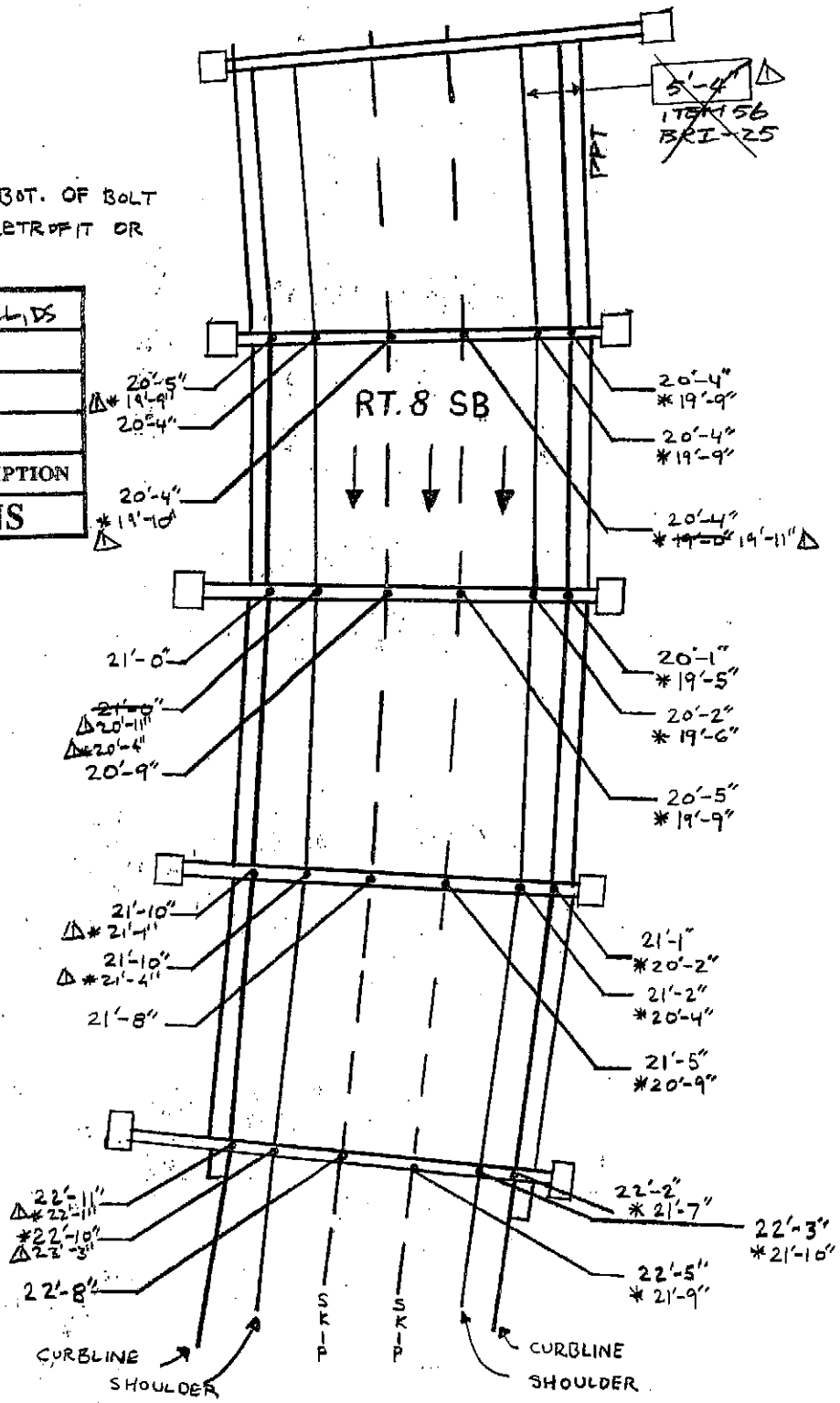
FIELD NOTES

JOB NO. 0155	BRIDGE NO. 3190 A/B	
DATE 11/22/06	SHEET ~~ZT~~ 22B / 122	
PREPARED BY: Garg Consulting Services, Inc. ENGINEERS • CONSULTANTS • CONSTRUCTION MANAGERS	CREW ML, FM, PG, SW, CC, JW	

NOTE:
* MSMT. TO BOT. OF BOLT IN SEISMIC RETROFIT OR CABLE.

NO.	DATE	DESCRIPTION
1	10/10/06	PG, SW, CL, DS

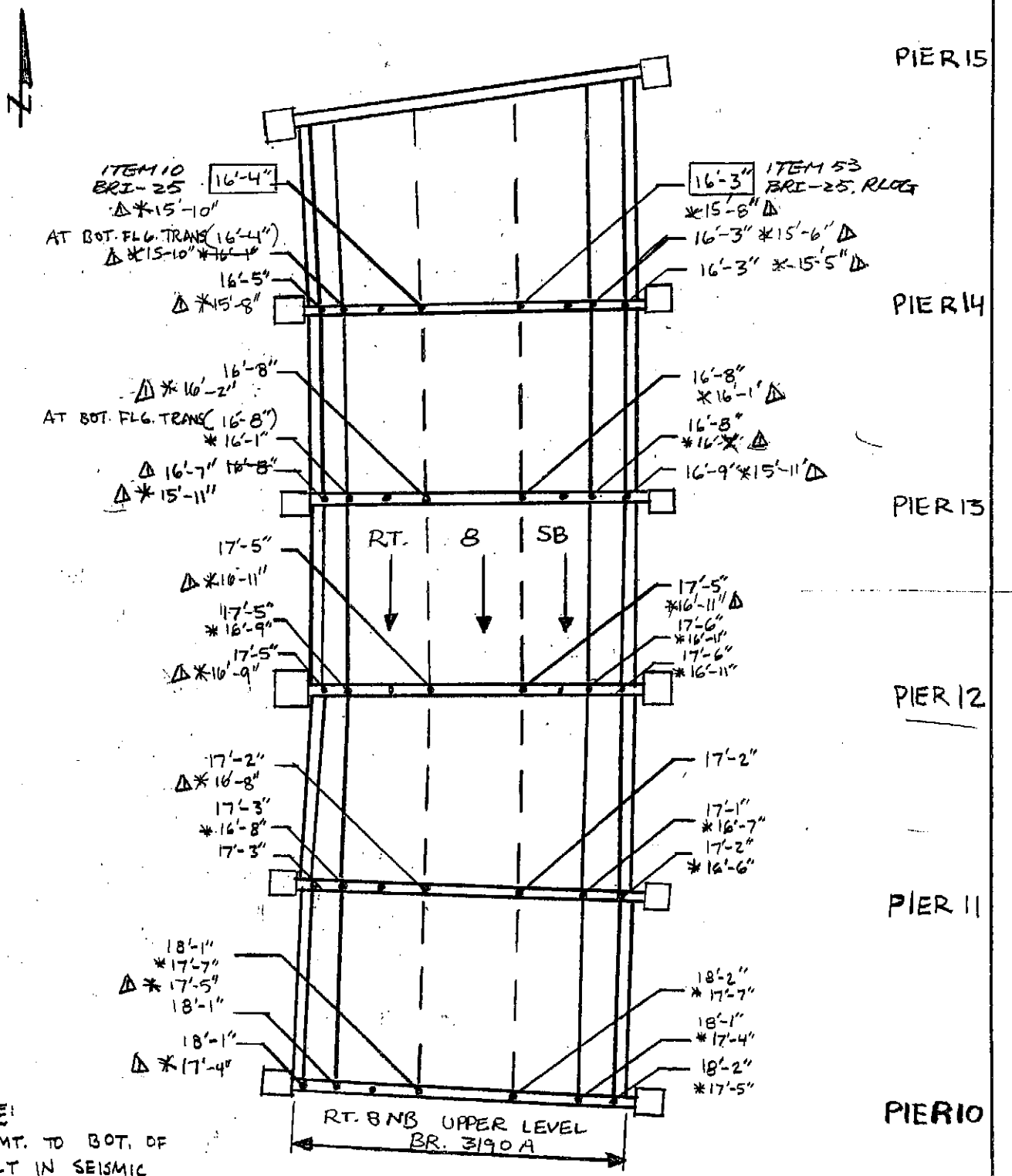
REVISIONS



CLEARANCE DIAGRAM SPANS 6-9 (03190A)

FIELD NOTES

JOB NO. 0155	BRIDGE NO. 3190 A/B	
DATE 11/17/04	SHEET X 22C / 122	
PREPARED BY: Garg Consulting Services, Inc. ENGINEERS • CONSULTANTS • CONSTRUCTION MANAGERS	CREW FM, ML, CC	△ 10/15/06 PDG, SW, CL, DS

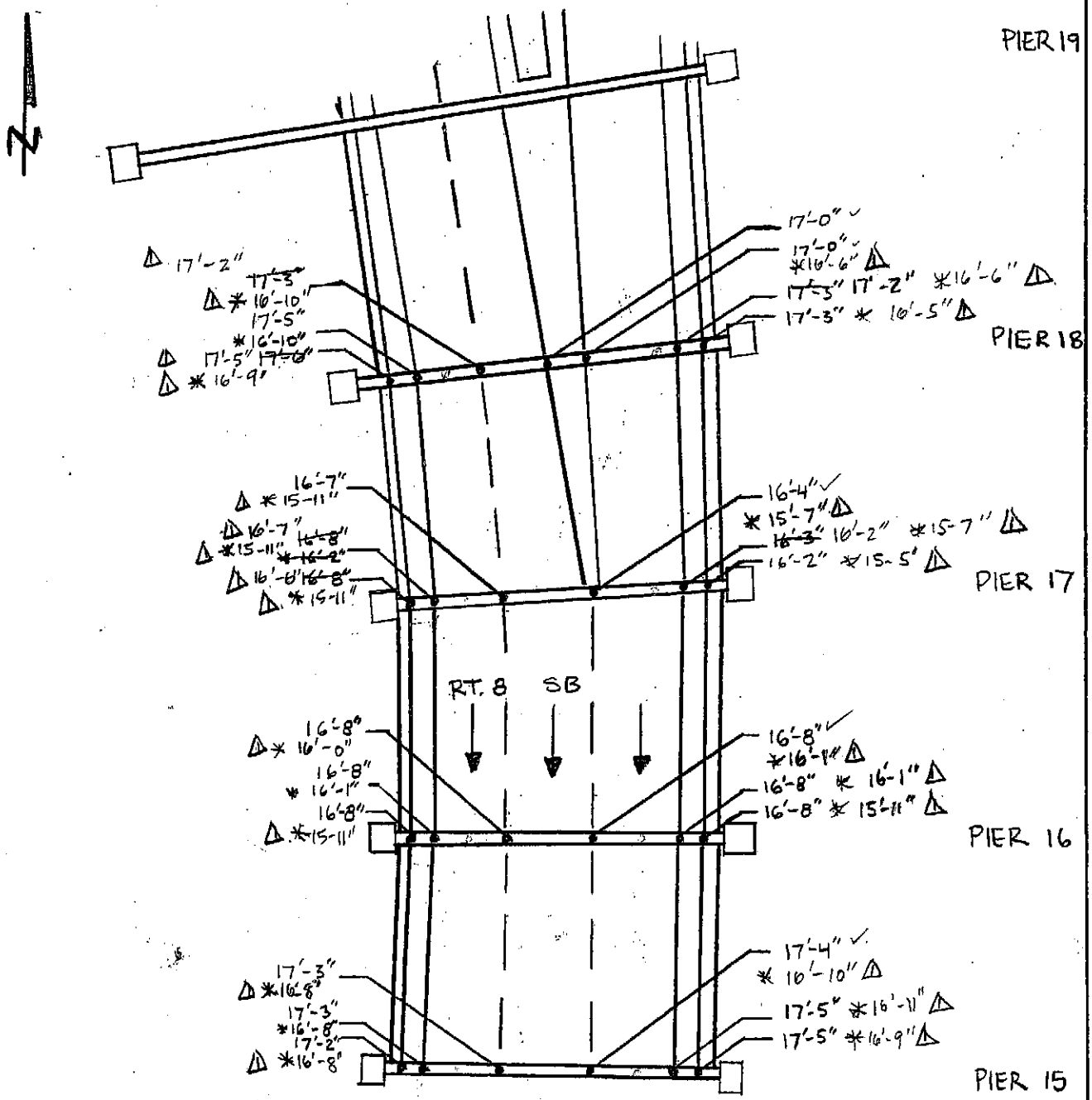


NOTE:
*MSMT. TO BOT. OF BOLT IN SEISMIC RETROFIT OR CABLE

CLEARANCE DIAGRAM SPANS 10-15 (03190A)

FIELD NOTES

	JOB NO. 0155	BRIDGE NO. 3190 A/B
	DATE 11/17/04	SHEET ~~23~~ 22D 1122
PREPARED BY: Garg Consulting Services, Inc. ENGINEERS • CONSULTANTS • CONSTRUCTION MANAGERS	CREW FM, MU, CC	



NOTE:
* MSMT. TO BOT. OF BOLT IN SEISMIC RETROFIT OR CABLE.

NO.	DATE	DESCRIPTION
△	10/11/06	DDG, SW, CL, DS

REVISIONS

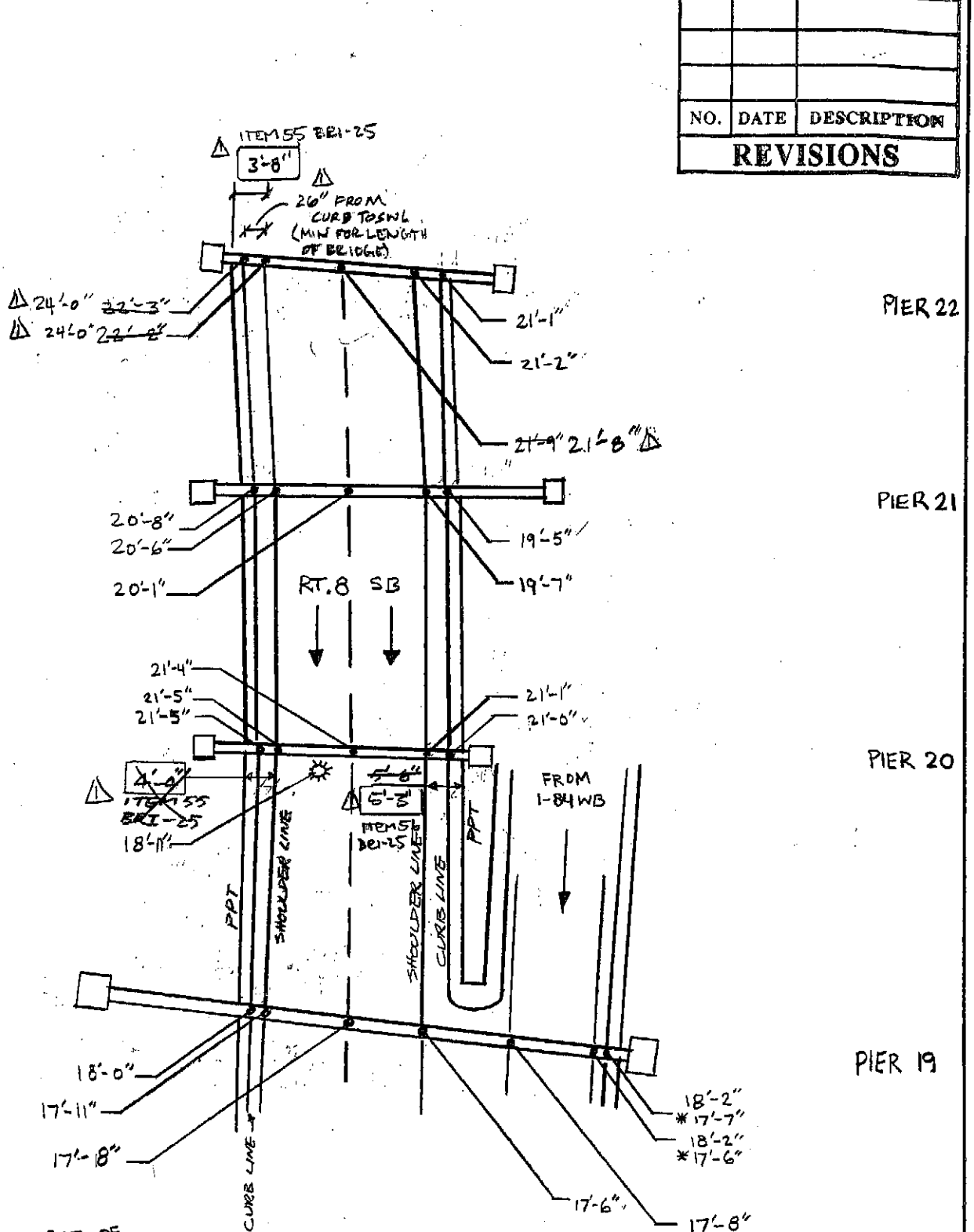
CLEARANCE DIAGRAM SPANS 15-19 (03190A)

FIELD NOTES

	JOB NO. 0155	BRIDGE NO. 3190 A/B
	DATE 11/15/04	SHEET ~~X 24~~ 22E / 122
PREPARED BY: Garg Consulting Services, Inc. ENGINEERS • CONSULTANTS • CONSTRUCTION MANAGERS	CREW FM, ML, CC, SW	

NO.	DATE	DESCRIPTION
1	10/12/06	FM, SW, CL, BS

REVISIONS



NOTE:

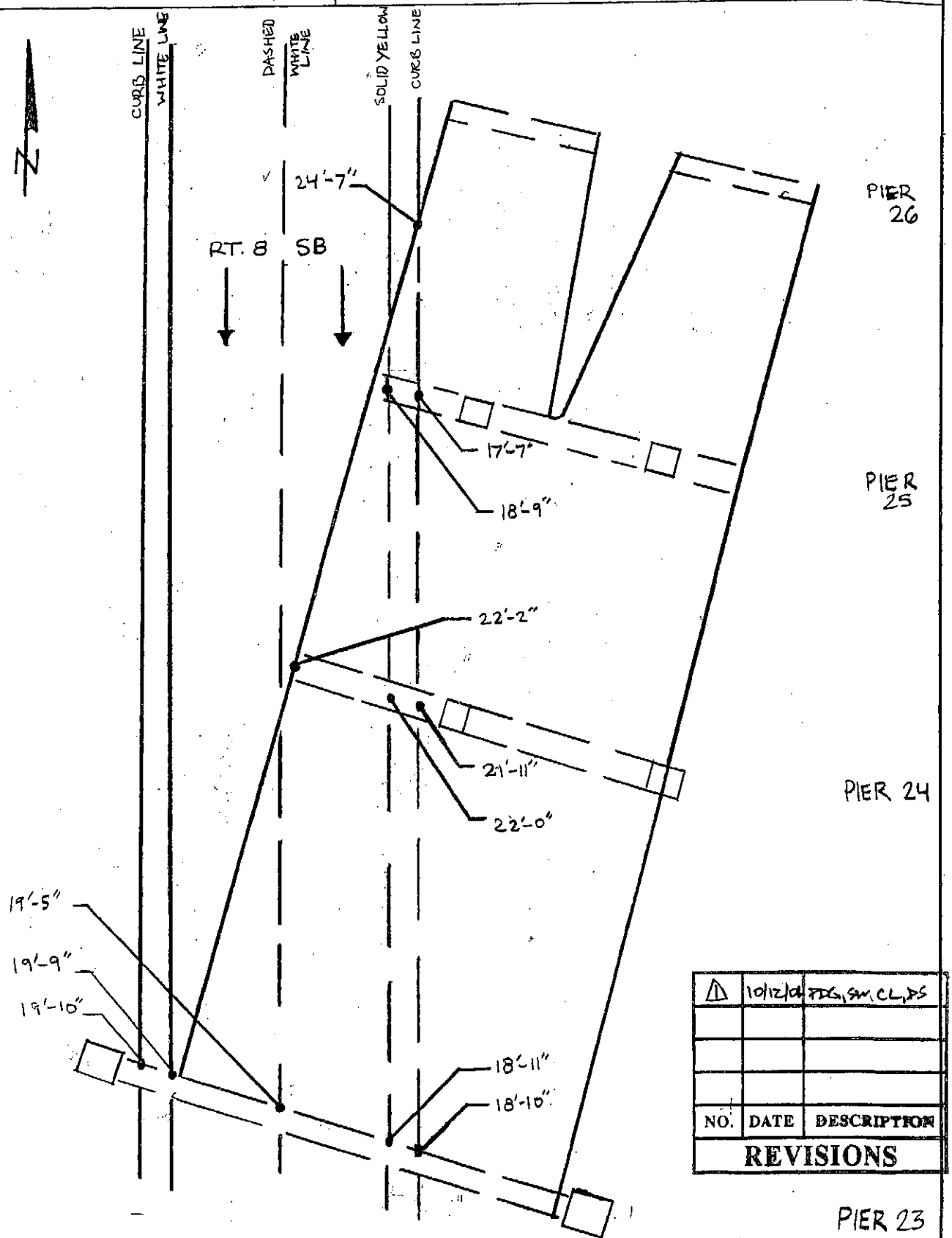
* MSMT. TO BOT. OF BOLT IN SEISMIC RETROFIT OR CABLE.

✲ UNDERDECK LIGHT

CLEARANCE DIAGRAM SPANS 20-22 (03190 A)

FIELD NOTES

JOB NO. 0155	BRIDGE NO. 3190 A/B
DATE 12/13/04	SHEET ~~28~~ 22F/122
PREPARED BY: Garg Consulting Services, Inc. ENGINEERS • CONSULTANTS • CONSTRUCTION MANAGERS	CREW ML, JW, PG



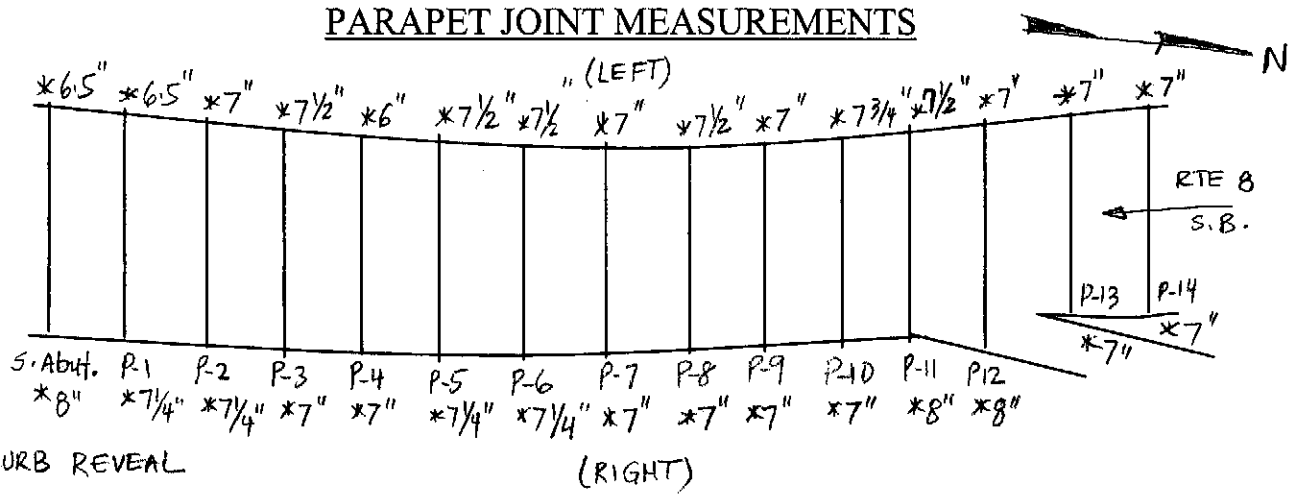
NO.	DATE	DESCRIPTION
1	10/12/04	PDG, SM, CL, DS

REVISIONS

CLEARANCE DIAGRAM UNDER BR 3190 A SPANS 24-26

HAKS	FIELD NOTES	JOB NO. 170-2357	DATE : 10/10/06
		BRIDGE NO. 03190B	SHEET 23/122
		CREW : MAN, ZM	

PARAPET JOINT MEASUREMENTS

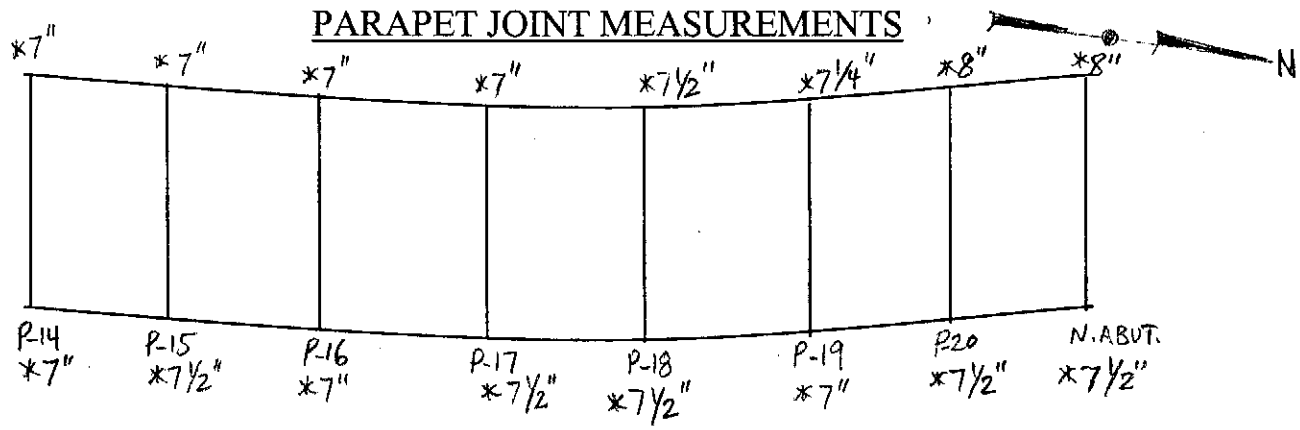


LOCATION	WINTER MEASUREMENT < 50° F				SUMMER MEASUREMENT > 50° F				JOINT TYPE
	LEFT	RIGHT	TEMP	DATE	LEFT	RIGHT	TEMP	DATE	
S. ABUT.	1 5/16	1 7/16	50	11/15/2004	1 1/4	1 5/16	55	10/10/2006	Comp. Seal
P-1	1 1/2	1 1/2	50	11/15/2004	1 1/2	1 7/16	55	10/10/2006	A. Plug
P-2	1 1/4	1 9/16	50	11/15/2004	1 1/2	1 1/2	55	10/10/2006	Comp. Seal
P-3	1 9/16	1 9/16	50	11/15/2004	1 7/16	1 9/16	55	10/10/2006	Comp. Seal
P-4	1 3/8	1 7/16	50	11/15/2004	1 1/4	1 5/16	55	10/10/2006	Comp. Seal
P-5	1 13/16	1 7/8	50	11/15/2004	1 11/16	1 3/4	55	10/10/2006	Comp. Seal
P-6	1 11/16	2 1/16	50	11/15/2004	1 9/16	1 3/4	55	10/10/2006	Comp. Seal
P-7	1 9/16	1 3/4	50	11/15/2004	1 7/16	1 5/8	55	10/10/2006	Comp. Seal
P-8	1 3/8	1 9/16	50	11/15/2004	1 1/4	1 3/8	55	10/10/2006	Comp. Seal
P-9	1 9/16	1 13/16	50	11/15/2004	1 3/8	1 9/16	55	10/10/2006	Comp. Seal
P-10	1 7/16	1 3/4	50	11/15/2004	1 1/4	1 3/8	55	10/10/2006	Comp. Seal
P-11	2 1/8	2 1/8	50	11/15/2004	1 7/8	1 7/8	55	10/10/2006	Comp. Seal
P-12	1 1/2	1 9/16	50	11/15/2004	1 3/16	1 7/16	55	10/10/2006	Comp. Seal
P-13	2 13/16	2 1/4	50	11/15/2004	2 1/2	1 15/16	55	10/10/2006	Strip Seal
P-14	-	-	50	11/15/2004	-	-	55	10/10/2006	No Joint

GENERAL NOTES:

HAKS	FIELD NOTES	JOB NO. 170-2357	DATE : 10/10/06
		BRIDGE NO. 03190B	SHEET 24/122
		CREW : MAN, ZM	

PARAPET JOINT MEASUREMENTS



LOCATION	WINTER MEASUREMENT < 50° F				SUMMER MEASUREMENT > 50° F				JOINT TYPE
	LEFT	RIGHT	TEMP	DATE	LEFT	RIGHT	TEMP	DATE	
P-15	-	-	50	11/15/2004	-	-	55	10/10/2006	No Joint
P-16	2 1/4	3 3/8	50	11/15/2004	1 3/4	3	55	10/10/2006	Strip Seal
P-17	1 13/16	1 3/8	50	11/15/2004	1 1/2	1 1/8	55	10/10/2006	Comp. Seal
P-18	1 3/4	1 1/2	50	11/15/2004	1 1/2	1 1/4	55	10/10/2006	Comp. Seal
P-19	2 1/16	1 3/8	50	11/15/2004	1 11/16	1 3/16	55	10/10/2006	Comp. Seal
P-20	1 5/8	1 1/4	50	11/15/2004	1 1/2	1 1/4	55	10/10/2006	Comp. Seal
N. ABUT.	1 5/16	1 1/4	50	11/15/2004	1 3/16	1 3/8	55	10/10/2006	A. Plug

GENERAL NOTES:

REGULAR INSPECTION ✓ | SUMMER / WINTER JOINT MEASUREMENTS ☐

Date: 9 / 25 / 06 | Summer Winter

JOINT MEASUREMENTS

Form BRI-17, Rev. 9/03 | Measurements Taken By: ZM

Bridge No.: 03190B | Route 8 SB over Riverside St. & Sunnyside Ave. | **Town:** Waterbury | Measurements Reviewed By: MAN

Deck Joint Location	Deck Joint Type[1]	Effect Span[2] (ft.)	Winter Measurements Temp °F	Winter Date: 11/15/2004 Left (in.)	Winter Right (in.)	Summer Measurements Temp °F	Summer Date: 10/10/2006 Left (in.)	Summer Right (in.)	Differential Movements Actual Left (in.)	Actual Right (in.)	by Formula	Comments	Difference Between Actual & Calc'd Mov't Left (in.)	Right (in.)
S. ABUT.	Comp. Seal	69.0	50	1 5/16	1 7/16	55	1- 4/16	1- 5/16	- 1/16	- 2/16	-0.027	Exp.	1/16	2/16
P-1	A. Plug	0.0	50	1 8/16	1 8/16	55	1- 8/16	1- 7/16	0	- 1/16	0.000	Fix/Fix	0	1/16
P-2	Comp. Seal	69.0	50	1- 4/16	1- 9/16	55	1- 8/16	1- 8/16	0.250	-0.063	-0.027	Exp./Fix	- 4/16	1/16
P-3	Comp. Seal	69.0	50	1- 9/16	1- 9/16	55	1- 7/16	1- 9/16	-0.125	0.000	-0.027	Exp./Fix	2/16	-0
P-4	Comp. Seal	69.0	50	1- 6/16	1- 7/16	55	1- 4/16	1- 5/16	-0.125	-0.125	-0.027	Exp./Fix	2/16	2/16
P-5	Comp. Seal	69.0	50	1-13/16	1-14/16	55	1-11/16	1-12/16	-0.125	-0.125	-0.027	Exp./Fix	2/16	2/16
P-6	Comp. Seal	69.0	50	1-11/16	2- 1/16	55	1- 9/16	1-12/16	-0.125	-0.313	-0.027	Exp./Fix	2/16	5/16
P-7	Comp. Seal	69.0	50	1- 9/16	1-12/16	55	1- 7/16	1-10/16	-0.125	-0.125	-0.027	Exp./Fix	2/16	2/16
P-8	Comp. Seal	69.0	50	1- 6/16	1- 9/16	55	1- 4/16	1- 6/16	-0.125	-0.188	-0.027	Exp./Fix	2/16	3/16
P-9	Comp. Seal	69.0	50	1- 9/16	1-13/16	55	1- 6/16	1- 9/16	-0.188	-0.250	-0.027	Exp./Fix	3/16	4/16
P-10	Comp. Seal	57.0	50	1- 7/16	1-12/16	55	1- 4/16	1- 6/16	-0.188	-0.375	-0.022	Exp./Fix	3/16	6/16
P-11	Comp. Seal	57.0	50	2- 2/16	2- 2/16	55	1-14/16	1-14/16	-0.250	-0.250	-0.022	Exp./Fix	4/16	4/16
P-12	Comp. Seal	117.0	50	1- 8/16	1- 9/16	55	1- 3/16	1- 7/16	-0.313	-0.125	-0.046	Exp./Exp.	4/16	1/16
P-13	Strip Seal	252.0	50	2-13/16	2- 4/16	55	2- 8/16	1-15/16	-0.313	-0.313	-0.098	Exp./Exp.	3/16	3/16
P-14	No Joint		50			55					0.000	Fix/Fix		
P-15	No Joint		50			55					0.000	Exp./Exp.		
P-16	Strip Seal	262.0	50	2- 4/16	3- 6/16	55	1-12/16	3	-0.500	-0.375	-0.102	Exp./Exp.	6/16	4/16
P-17	Comp. Seal	78.0	50	1-13/16	1- 6/16	55	1- 8/16	1- 2/16	-0.313	-0.250	-0.030	Fix/Exp.	5/16	4/16
P-18	Comp. Seal	70.0	50	1-12/16	1- 8/16	55	1- 8/16	1- 4/16	-0.250	-0.250	-0.027	Fix./Exp.	4/16	4/16
P-19	Comp. Seal	79.0	50	2- 1/16	1- 6/16	55	1-11/16	1- 3/16	-0.375	-0.188	-0.031	Fix./Exp.	6/16	3/16
P-20	Comp. Seal	0.0	50	1-10/16	1- 4/16	55	1- 8/16	1- 4/16	-0.125	0.000	0.000	Fix/Fix	2/16	0
N. ABUT.	A. Plug	0.0	50	1- 5/16	1- 4/16	55	1- 3/16	1- 6/16	-0.125	0.125	0.000	Fix	2/16	- 2/16

1. The "Deck Joint Type" should be "plug" for Asphaltic Plug joints, "strip" for Strip Seals, "seg." for Segmental Joints, etc.
2. The "Effective Span" is the length contributing to expansion at the joint. This should be 0 at fixed joints of single span bridges.

Reviewer's Comments: _____

Summer / Winter Joint Measurements: (IF ADDING OR REMOVING, SEND A COPY OF THIS FORM TO SUPERVISOR FOR REVIEW/APPROVAL WITH REASONS FOR CHANGE INDICATED)

☐ **ADD** TO SUMMER/WINTER LIST — SUPERVISOR APPROVAL: _____

☐ **REMOVE** FROM SUMMER/WINTER LIST — MASTER LIST ENTRY: _____

25/122

AI Engineers, Inc.	JOB NO: 170-2357	BRIDGE NO: 03190 B
	DATE: 11/15/04	SHEET ~~10~~ 26 OF ~~78~~ 122
FIELD NOTES	CREW: MA, ZRI	△(HAKJ) 10/10/06 MAN, ZM
DESCRIPTION: TOP OF DECK NOTES		

GENERAL NOTES:-

- Bituminous overlay exhibit minor to mod. raveling + map crks open upto ~~1/8~~ 1/4"W △ W. Minor sand + miscellaneous highway debris along curblines. There are long. crks along curblines @ rand. locations.

- Granite curbs have few chipped areas, transverse HL Crks + minor rust stains @ random locations. Avg Curb reveal = 7"

- Concrete Safetywalk @ both sides. There are tr. HL Crks + isolated HA's upto 4'x1/2'.

- Conc. ppts: Vehicular scrape marks @ rand. locations. There are vert hairline + map crks w/ efflo, HA + spalls upto 10x1/2" dp w/ exp. rebar. West ppt misaligned @ P-2 upto 1/2"

- Metal (2) pipe bridge railing. Minor impact damages + lam rust @ end sections. Sand debris in the pockets of base.

- Compression seal w/ conc. headers @ s. abut., piers 2-12, 17-20. Asphaltic plug jt @ Pier 1 + N. Abut. Strip seal w/ armor headers @ piers 13+16.
  Deck jts. have lt. sand accumulation @ shoulder. Conc. headers exhibit moderate scaling. The jt seal is depressed @ rand. locs

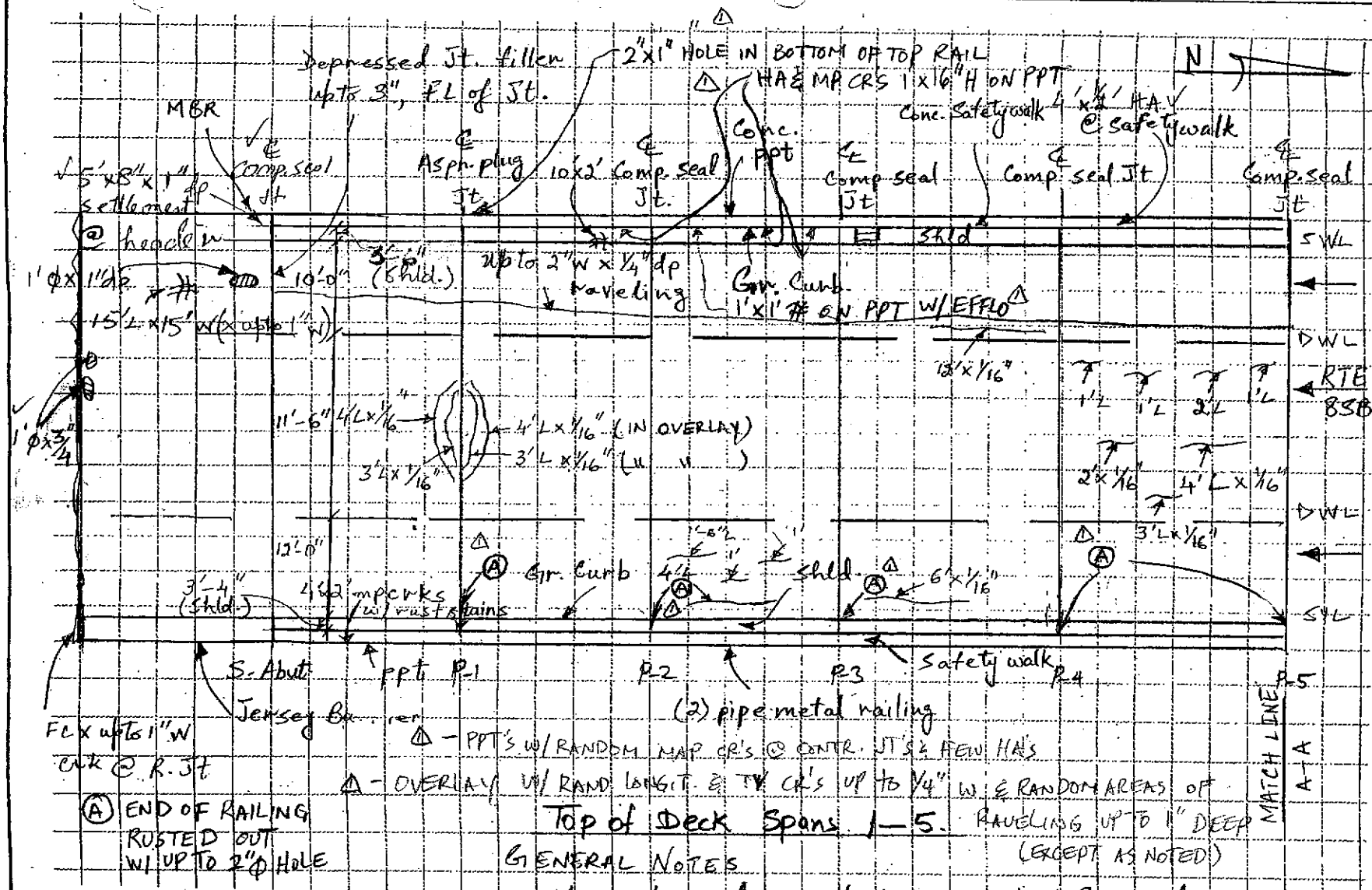
- S.W. approach emb. has minor vegetation growth. Emb. is stable.

- App. overlay exhibit long. + map craks open upto 1" wide.

Abbreveations:-

HA - Hollow Area

emb. - Embankment



DESCRIPTION: Top of Deck

FIELD NOTES

ATI ENGINEERING INC

JOB NO: 170-2357EXT

DATE: 11/15/04

CREW: MA, ZKI

BRIDGE NO: 03190B

SHEET 27 OF ~~78~~ 122

FIELD NOTES

DESCRIPTION: Top of Deck

JOB NO: 170-2357 Ext.

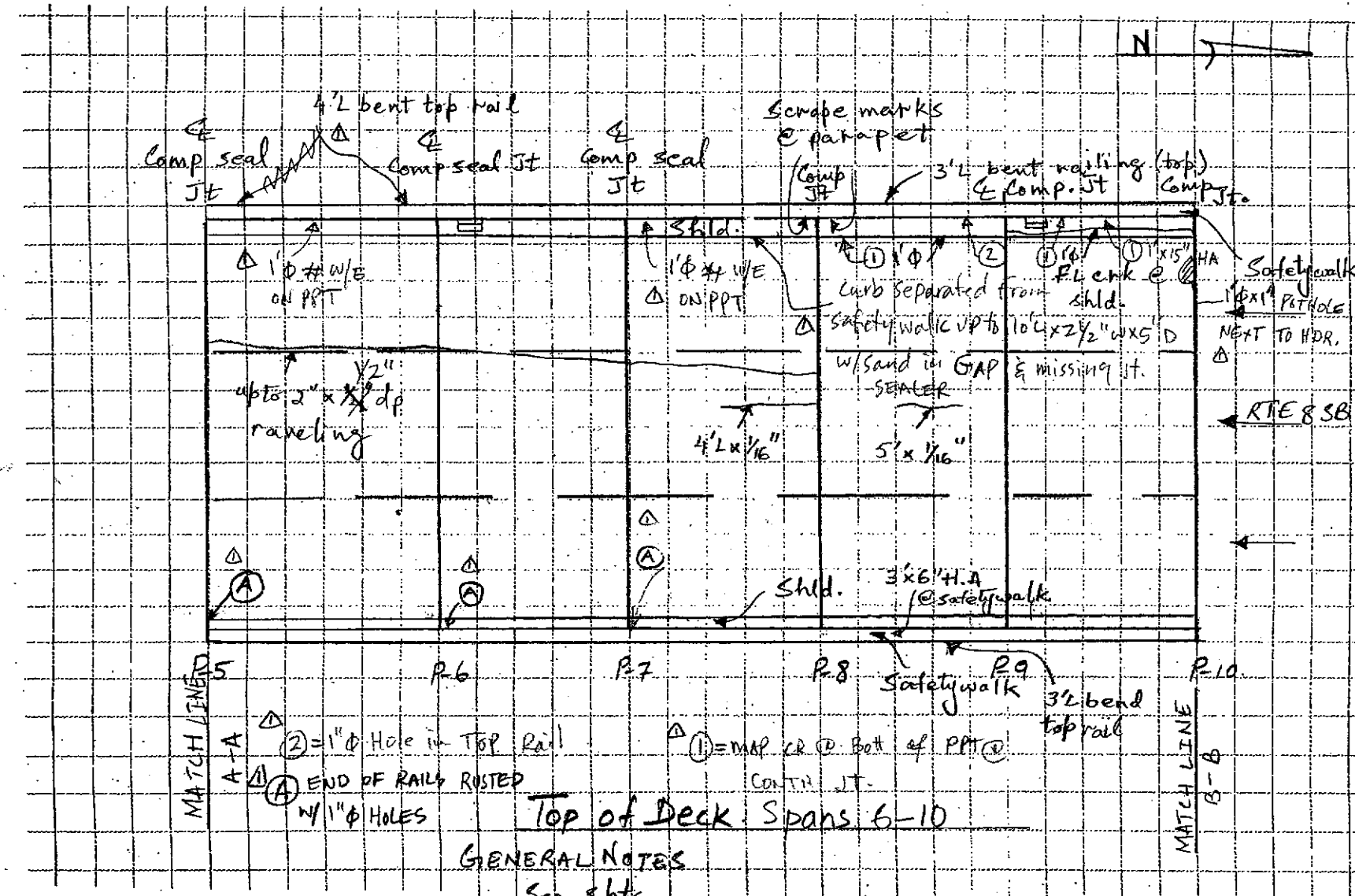
DATE: 11/15/04

CREW: MA, ZRI

BRIDGE NO: 03190B.

SHEET 28 OF 78 122

(HAKS) 10/10/06 MAN, ZM



Top of Deck Spans 6-10

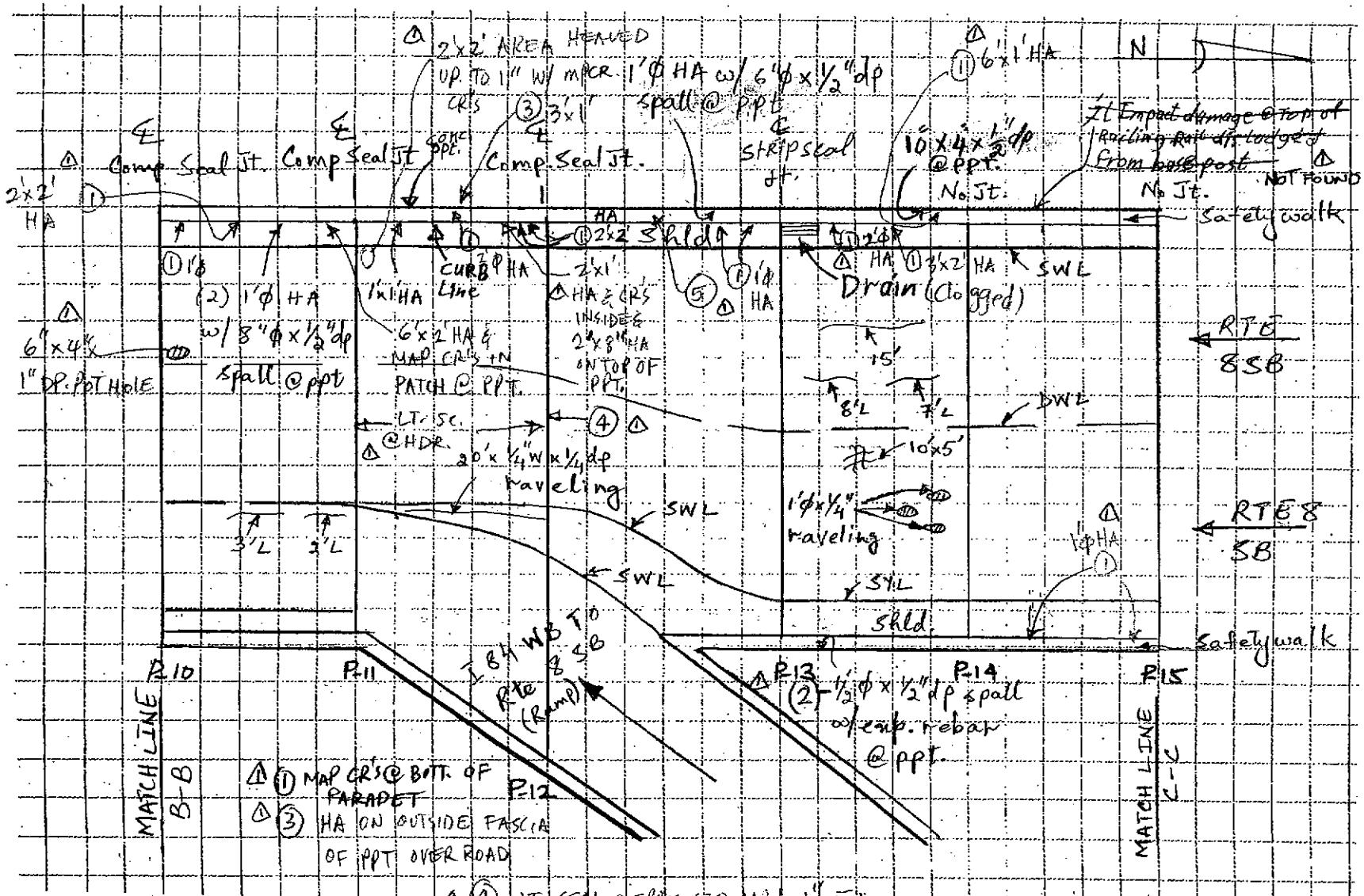
GENERAL NOTES

- See sht's
- Random log. crks open upto 1/16" specially in centre lane
- Random Areas of HVY. RUST ON TOP RAIL IN SPAN 9.
- Jt. SEAL BTWN. CURB & Safetywalk is missing at Random locations.
- LT. SCALE OF DECK JT. HEADERS.

LEGEND

- HAIRLINE CRACKS WITHOUT EFFLORESCENCE
- MAP CRACKS WITHOUT EFFLORESCENCE
- HOLLOW AREA
- SHALLOW REBAR
- SCALE AREA
- SPALL AREA
- SPALL WITH EXPOSE REBAR
- HONEY COMBING

Scupper Grate



DESCRIPTION: Top of Deck

FIELD NOTES

ENGINEERS INC

JOB NO: 70-2357 Ext.

DATE: 11/15/04

CREW: MA-ZRI (HAKS) 10/10/06 MAN/ZM

BRIDGE NO: 03190 B

SHEET 13 OF 78 122 39

DESCRIPTION: Top of Deck

FIELD NOTES

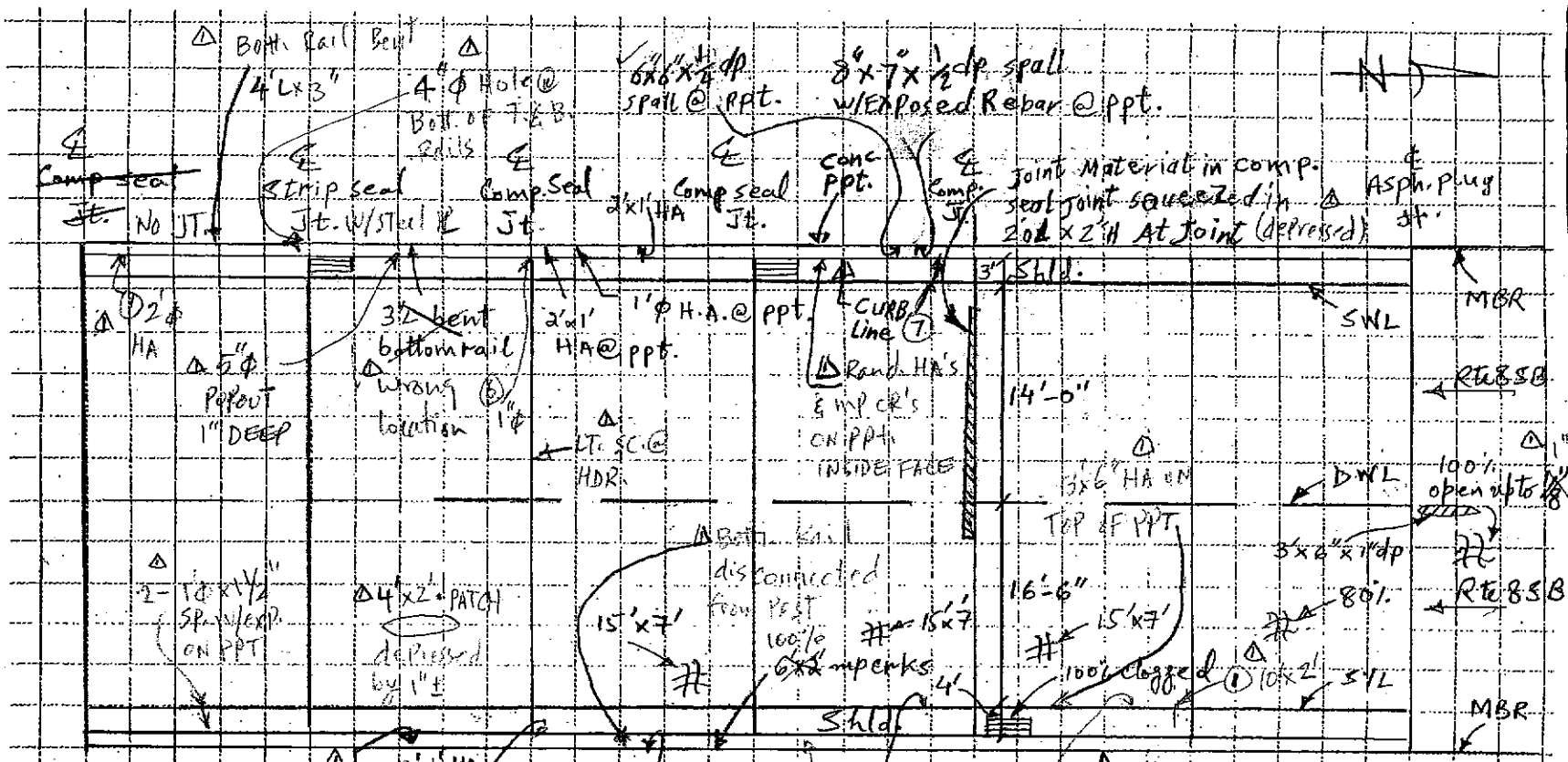
JOB NO: 170-2357 Ext.

BRIDGE NO: 03190 B.

DATE: 11/15/04

CREW: MA-ZRI

SHEET 14 OF 38 12



Top of Deck Spans 16 - 21

(6) Holes @ Bott. of Top & Bott. Rails (7) 11/16 missing screws @ JCT Box Cover

Note: - 11 out of 16 screws are missing from junction box in sp. 19, west ppt.
- Base plates + railing posts have up to 1/8" lam rust
- Random long. + trans. crks, all spans.
- Random patches @ conc ppts have minor HAs w/ mp crks.

(8) 18'x2' AREA OF MPCR'S, HA'S & SPALLS W/EXP. REBAR.

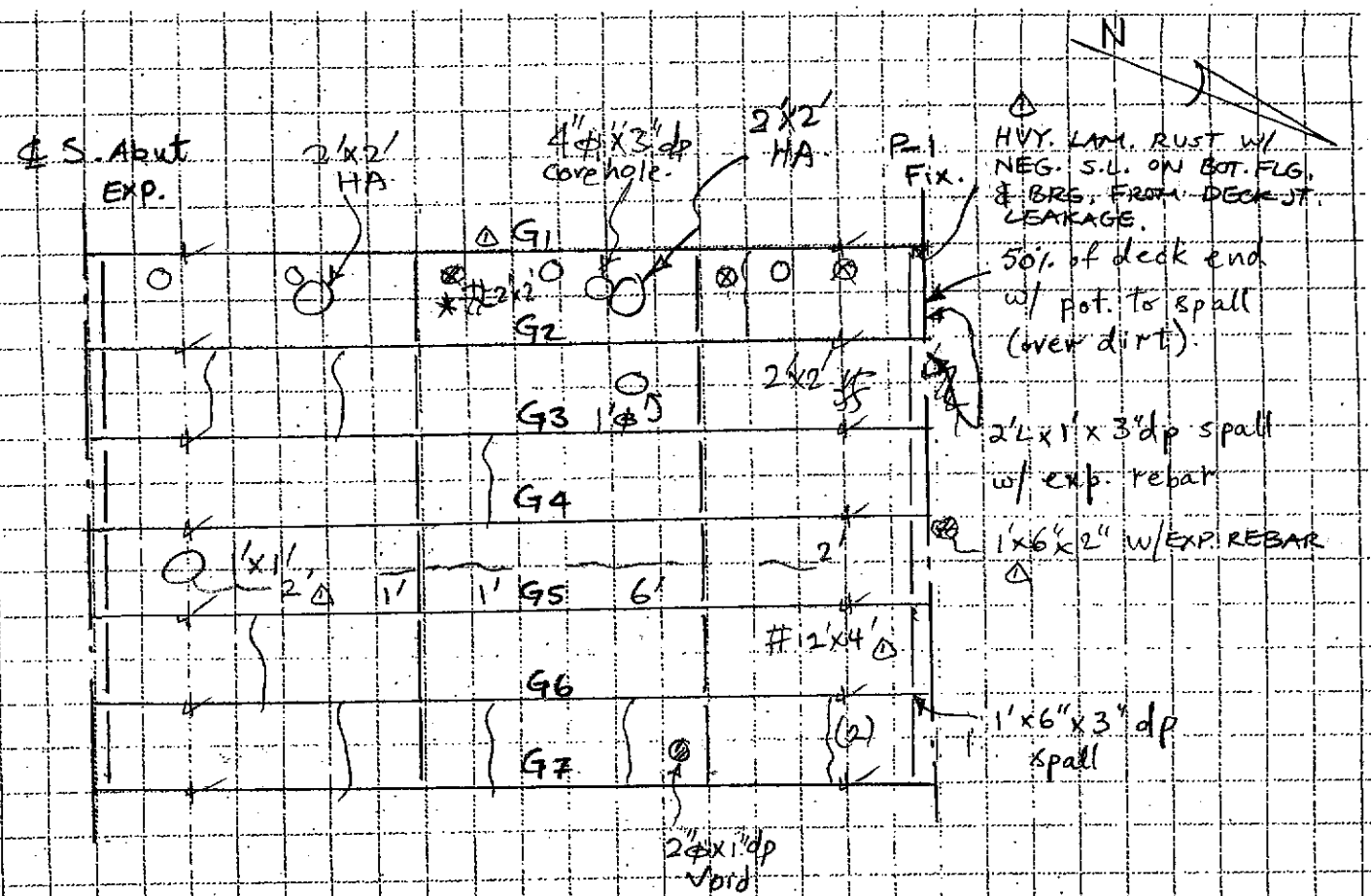
(1) MAP CR @ BOTT. OF PARAPET @ JT.

(HAKS) MAN, ZM 10/10/06

LEGEND

- Scupper Grate
- HAIRLINE CRACKS WITHOUT EFFLORESCENCE
- MAP CRACKS WITHOUT EFFLORESCENCE
- HOLLOW AREA
- SHALLOW REBAR
- SCALE AREA
- ~~SPALL AREA~~ POTHOLE
- SPALL WITH EXPOSE REBAR
- HONEY COMBING

H.A = Hollow Area



Underside of Deck & Framing

Span 1

General Notes:

. See span 4.

LEGEND

- HAIRLINE CRACKS WITHOUT EFFLORESCENCE
- MAP CRACKS WITHOUT EFFLORESCENCE
- HOLLOW AREA
- SHALLOW REBAR
- SCALE AREA
- SPALL AREA
- SPALL WITH EXPOSE REBAR
- HONEY COMBING

✓ = Bolt-Eq Cover Pl's inspected Hands on

O Weep pipes

⊗ Short weep pipes flush w/ deck. (Abandoned)

DESCRIPTION: Superstructure

FIELD NOTES

ENGINEERING

JOB NO: 170-2357 Ext.

BRIDGE NO: 03190 B.

DATE: 8/30/04

SHEET 18-31 OF 78 122

CREW: AAA, AHS

9/29/06 (HAKS) MAN, ZM

DESCRIPTION: Superstructure

FIELD NOTES

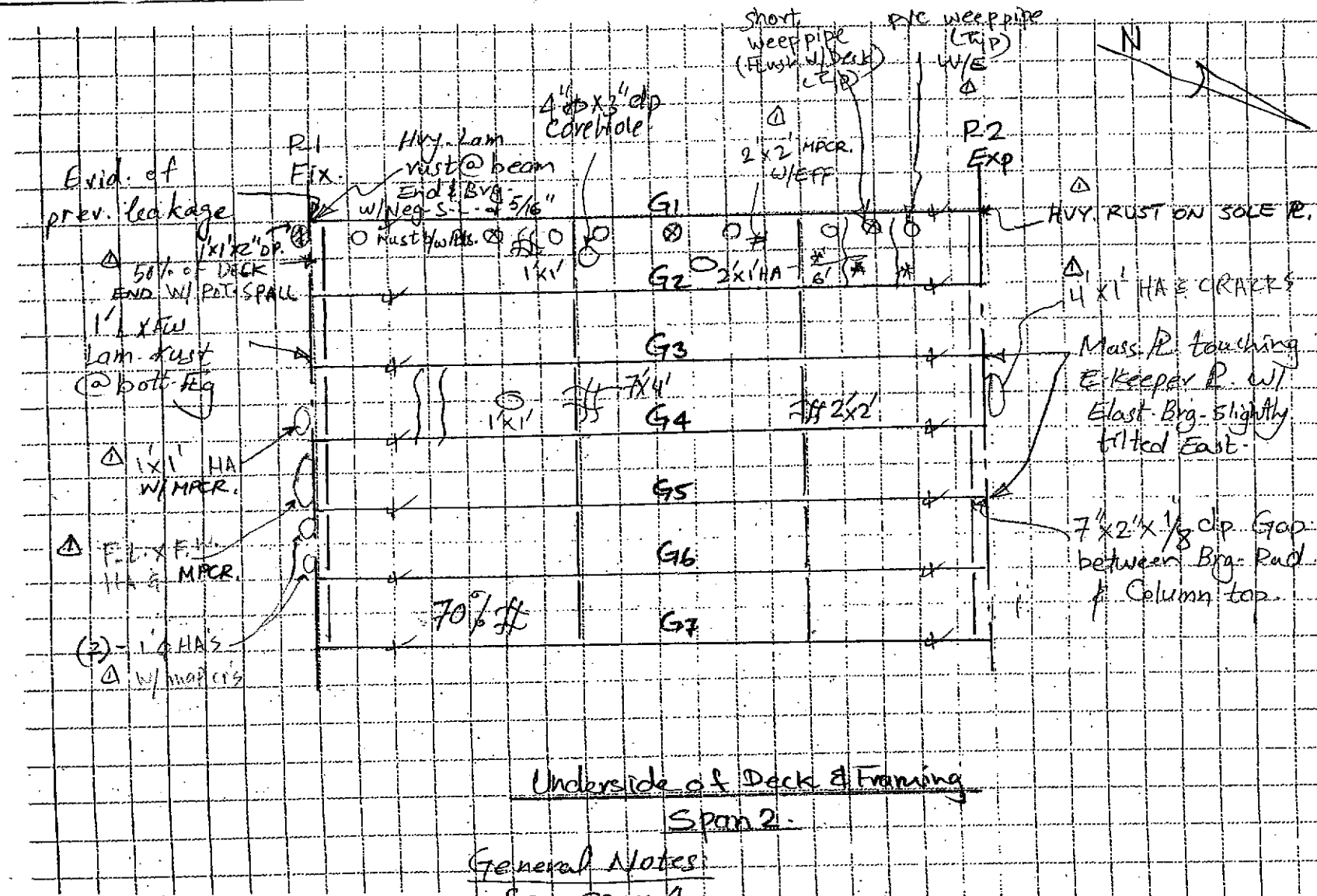
JOB NO: 170-2357 EXT.

DATE: 8/30/04

CREW: AAA, AHS 9/29/06 (HAKS) MAN, ZM

SHEET 19 OF 32 122

BRIDGE NO: 03190 B.



Underside of Deck & Framing

Span 2.

General Notes:

- See Span 4.
- Fix. Brg. over P.1 w/ missing A.B. @ random Location.

LEGEND

- HAIRLINE CRACKS WITHOUT EFFLORESCENCE
- MAP CRACKS WITHOUT EFFLORESCENCE
- HOLLOW AREA
- SHALLOW REBAR
- SCALE AREA
- SPALL AREA
- SPALL WITH EXPOSE REBAR
- HONEY COMBING

* = w/ efflo.

✓ = Bott. Flg cover PL inspected. Hondson

o Weep pipes

⊗ Short weep pipes flush w/ deck. (Abandoned)

DESCRIPTION: Superstructure

FIELD NOTES

ALT ENGINEERING

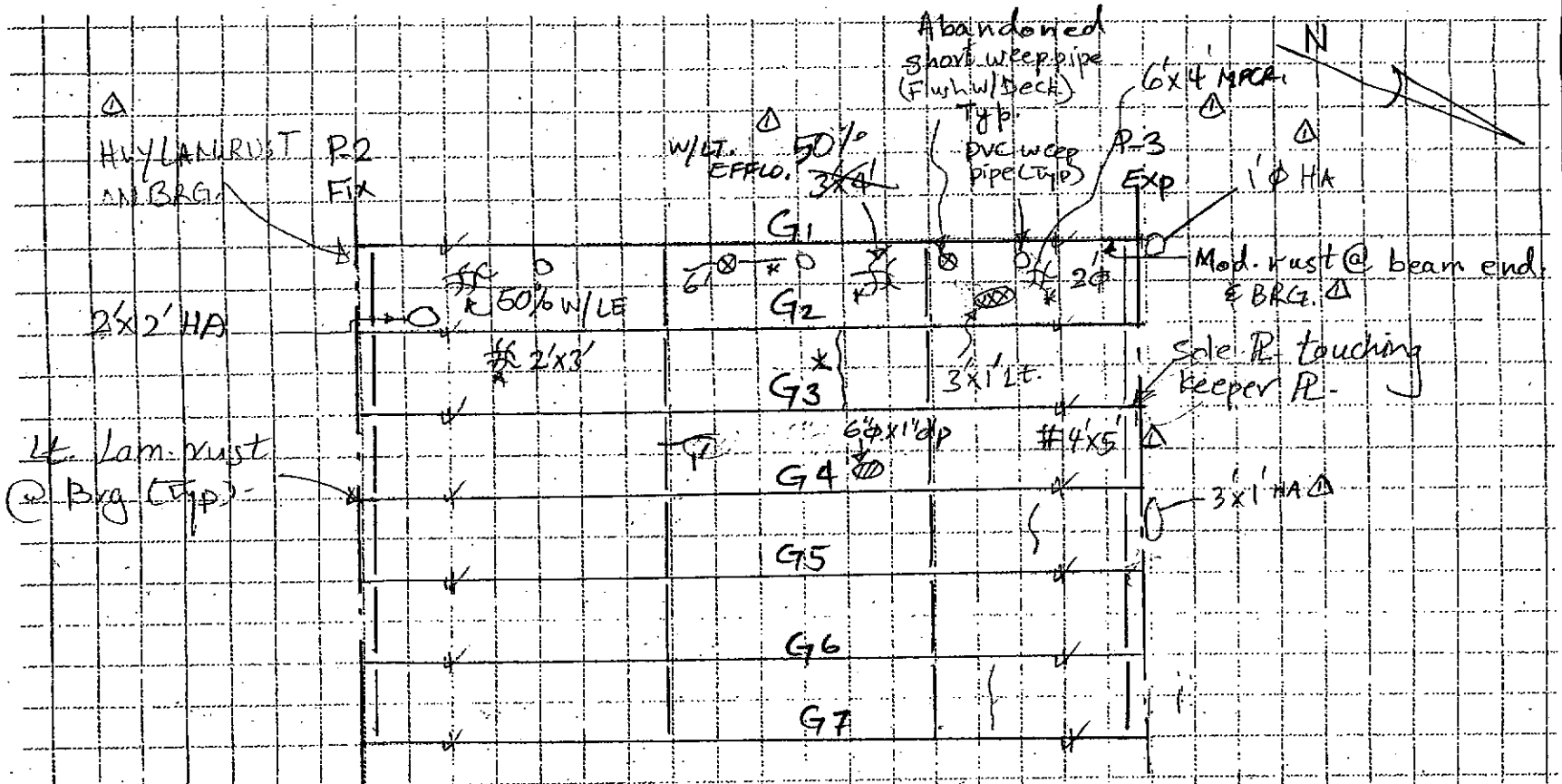
JOB NO: 170-2357 Ext.

BRIDGE NO: 03190 B.

DATE: 8/30/04

SHEET 33 OF 78 122

CREW: AAA, ATLS 9/29/06 MAN, ZM (HAKS)

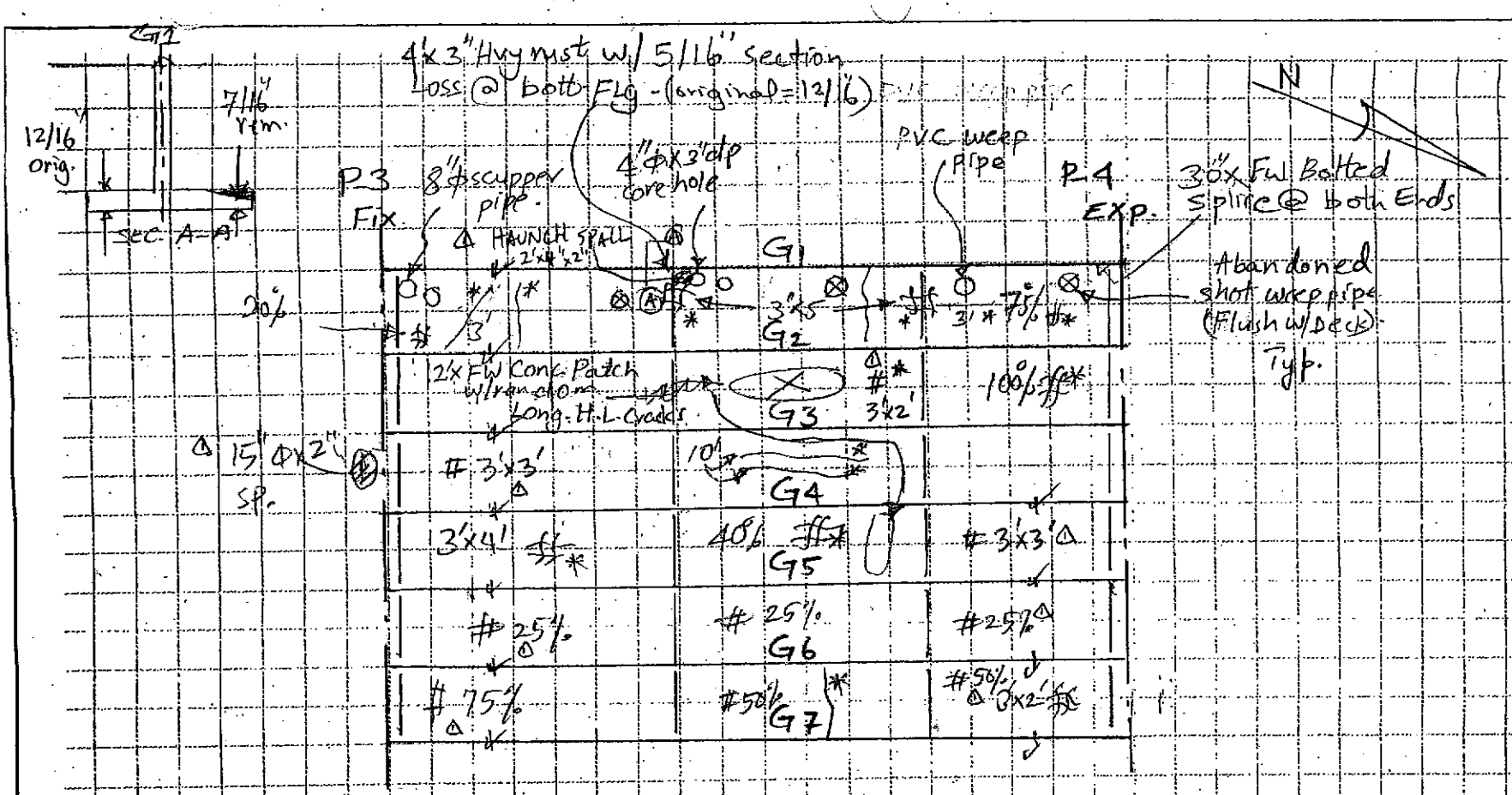


- Beam Ends w/ painted over pitting loss up to 1/8" @ bott Flg @ Random Locations

Underside of Deck & Framing:
Span B:

General Notes:
- See span A
- There are Keeper PL's @ G3 & G5' Brg over P-3.
- ~~1/16" pack rust between Sole PL & Mas PL @~~
~~fix Brg over P2 @ random Locations ONLY @ G1 & G4~~

LEGEND
- HAIRLINE CRACKS WITHOUT EFFLORESCENCE
- MAP CRACKS WITHOUT EFFLORESCENCE
- HOLLOW AREA * = w/ efflo
- SHALLOW REBAR
- SCALE AREA 4 = bott Flg Cover PL
- SPALL AREA inspected Hands on
- SPALL WITH EXPOSE REBAR
- HONEY COMBING



Underside of Deck & Framing:

Span 4

General Notes

* Deck Ends over Piers w/ Hollow Areas & Spall up to 1"Φ x 3'dp w/ exp. rebar @ random locations.

LEGEND

- HAIRLINE CRACKS WITHOUT EFFLORESCENCE
- MAP CRACKS WITHOUT EFFLORESCENCE
- HOLLOW AREA
- SHALLOW REBAR
- SCALE AREA
- SPALL AREA
- SPALL WITH EXPOSE REBAR
- HONEY COMBING

* : w/ efflo.

✓ : Bott. Flg. Cover R. inspected random

DESCRIPTION: Superstructure

FIELD NOTES

ATI ENGINEERS LLC

JOB NO: 170-2357 Ext.

BRIDGE NO: 03190 B.

DATE: 8/27/04

SHEET 34 OF 76 12.2

CREW: AAA/BNS

Δ(HAKS) 9/28/06 MAN, 2M

DESCRIPTION: Superstructure

FIELD NOTES

Hughes Inc

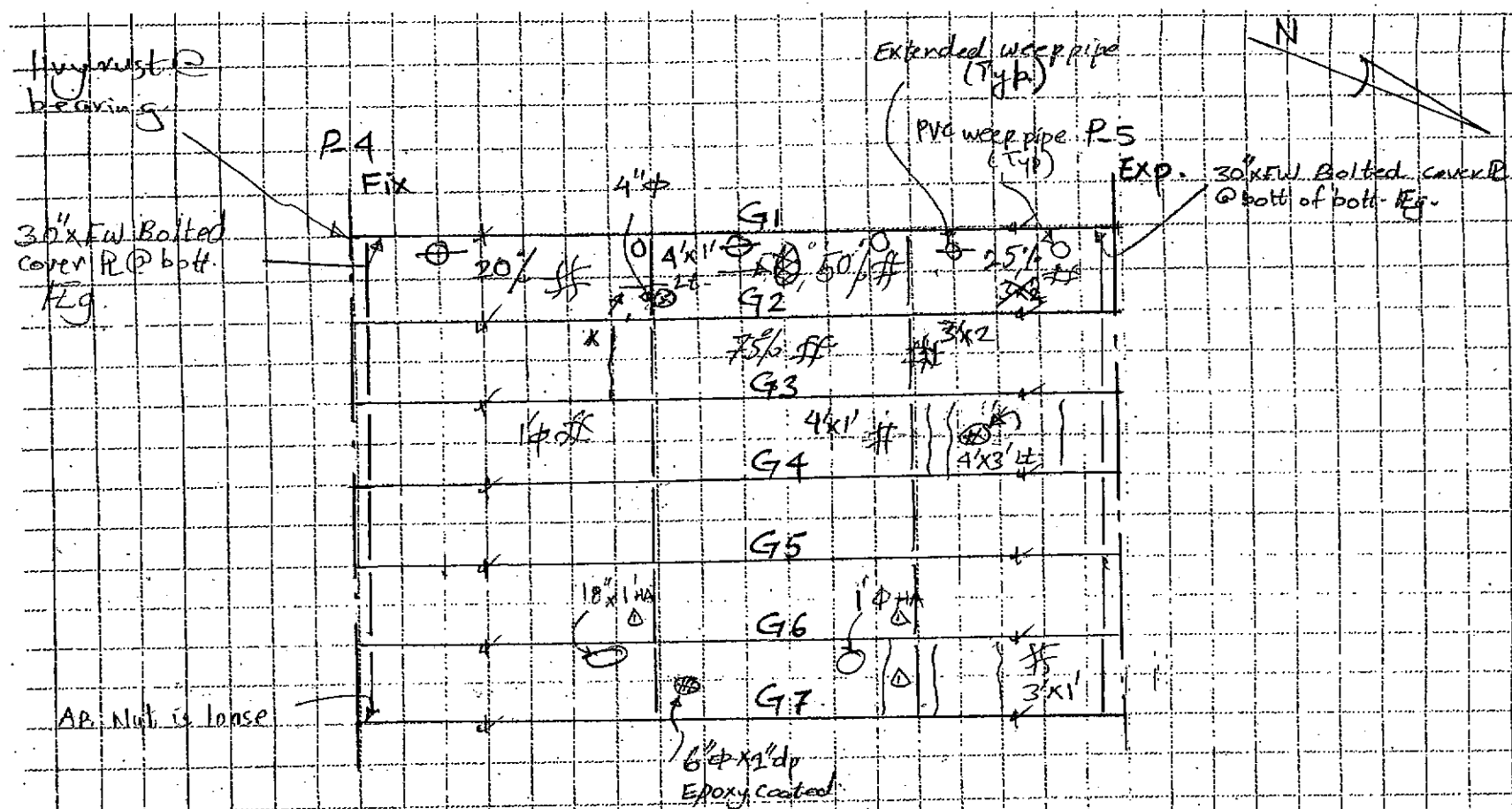
JOB NO: 170-2357 Ext.

BRIDGE NO: 03190 B.

DATE: 8/27/04

SHEET 28 OF 35 78 122

CREW: AAA, BNS, △ (HAKS) 9/29/06 MAN, ZM



Underside of Deck & Framing - Span 5

General Notes:

- Elastomeric Brg. in Nutral Position @ 80°F
- Evidence of water leakage from Deck Jts.
- Deck ends over Piers w/ Random Spalls w/ exp. rebar & Hollow Areas.
- Seismic retrofit attachments & cable @ G2 & G6 are in good condition @ all spans.
- Ht. rust @ Fix Brg. over P4 @ Random Locations.

LEGEND

- HAIRLINE CRACKS WITHOUT EFFLORESCENCE
- MAP CRACKS WITHOUT EFFLORESCENCE
- HOLLOW AREA
- SHALLOW REBAR
- SCALE AREA
- SPALL AREA
- SPALL WITH EXPOSE REBAR
- HONEY COMBING

* Bolt Web Cover PL Inspec. Hands on
* : w/ efflo

DESCRIPTION: Superstructure

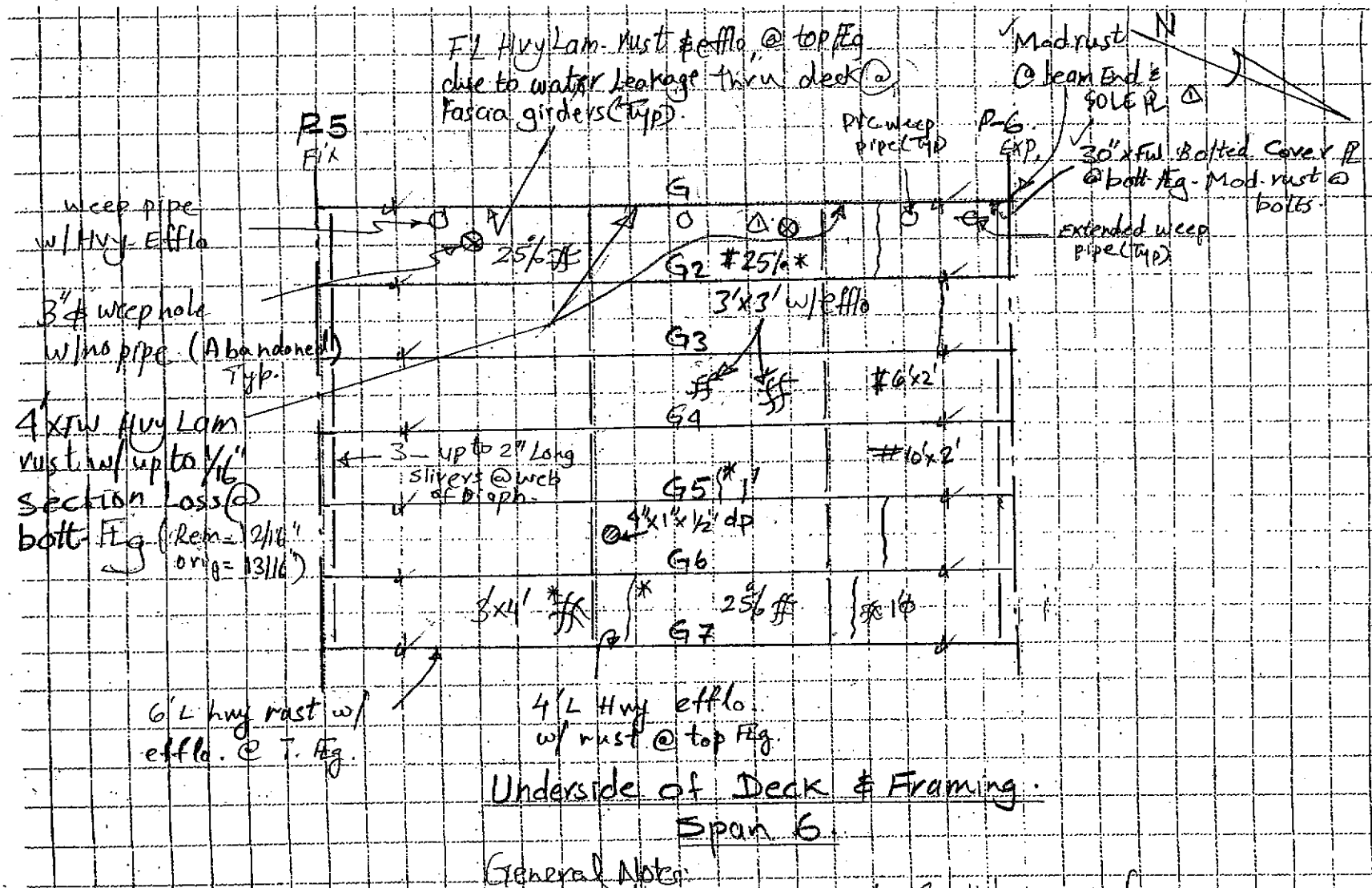
FIELD NOTES

JOB NO: 170-2357 Ext. BRIDGE NO: 03190 B.

DATE: 8/25/04 SHEET 23 OF 36 7/8 12-2

CREW: AAA/AHS

Δ (HAKS) 9/26/06 MW, ZM



Underside of Deck & Framing.

Span 6.

General Notes:

- Deck end w/ 1'ϕ x up to 3" dp Spall & areas of Hvy Honey Combing w/ shallow rebar @ random locations.
- Underside of Deck w/ Random Concrete patches Sounded Solid.

LEGEND

- HAIRLINE CRACKS WITHOUT EFFLORESCENCE
- MAP CRACKS WITHOUT EFFLORESCENCE
- HOLLOW AREA
- SHALLOW REBAR
- SCALE AREA
- SPALL AREA
- SPALL WITH EXPOSE REBAR
- HONEY COMBING

*: w/ efflo

√: Bolt Flg Cover PL inspected Hardson

DESCRIPTION: Superstructure

FIELD NOTES

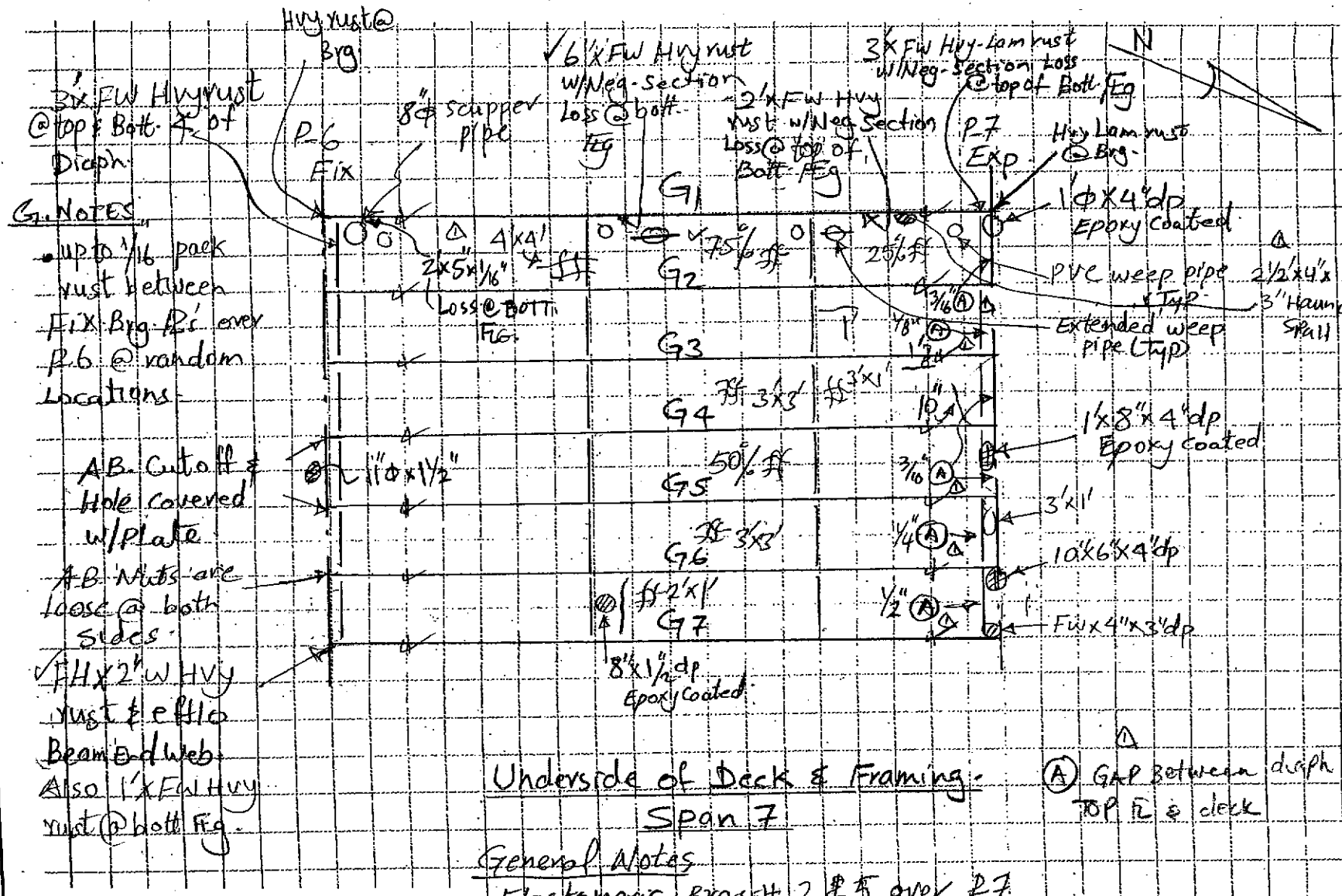
JOB NO: 170-2357 Ext.

BRIDGE NO: 03190 B.

DATE: 8/25/04

CREW: AAA, AHS (HARKS) MAN, 2M

SHEET 37 OF 48 122



G. NOTES

- up to 1/16 pack rust between Fix Brg. PL's over P6 @ random Locations.

AB. Cutoff & Hole covered w/Plate

AB Nuts are loose @ both sides.

✓FH x 2" w Hvy rust & efflo Beam Bd Web.

Also 1'x FW Hvy rust @ bott Flg.

Underside of Deck & Framing - Span 7

(A) Gap Between diaph top PL & deck

General Notes

- Elastomeric Brgs # 3 & 5 over P7 w/ Keeper PL's.
- Deck end over P6 w/ 1'ϕ x 3" dp Epoxy Coated spalls, & areas of Hvy Honeycombing @ random Locations
- Evidence of water Leakage from Deck Jts.

LEGEND

- HAIRLINE CRACKS WITHOUT EFFLORESCENCE
- MAP CRACKS WITHOUT EFFLORESCENCE
- HOLLOW AREA
- SHALLOW REBAR
- SCALE AREA
- SPALL AREA
- SPALL WITH EXPOSE REBAR
- HONEY COMBING

4: Bott. Flg Cover PL's Inspected Hands on

DESCRIPTION: Superstructure

FIELD NOTES

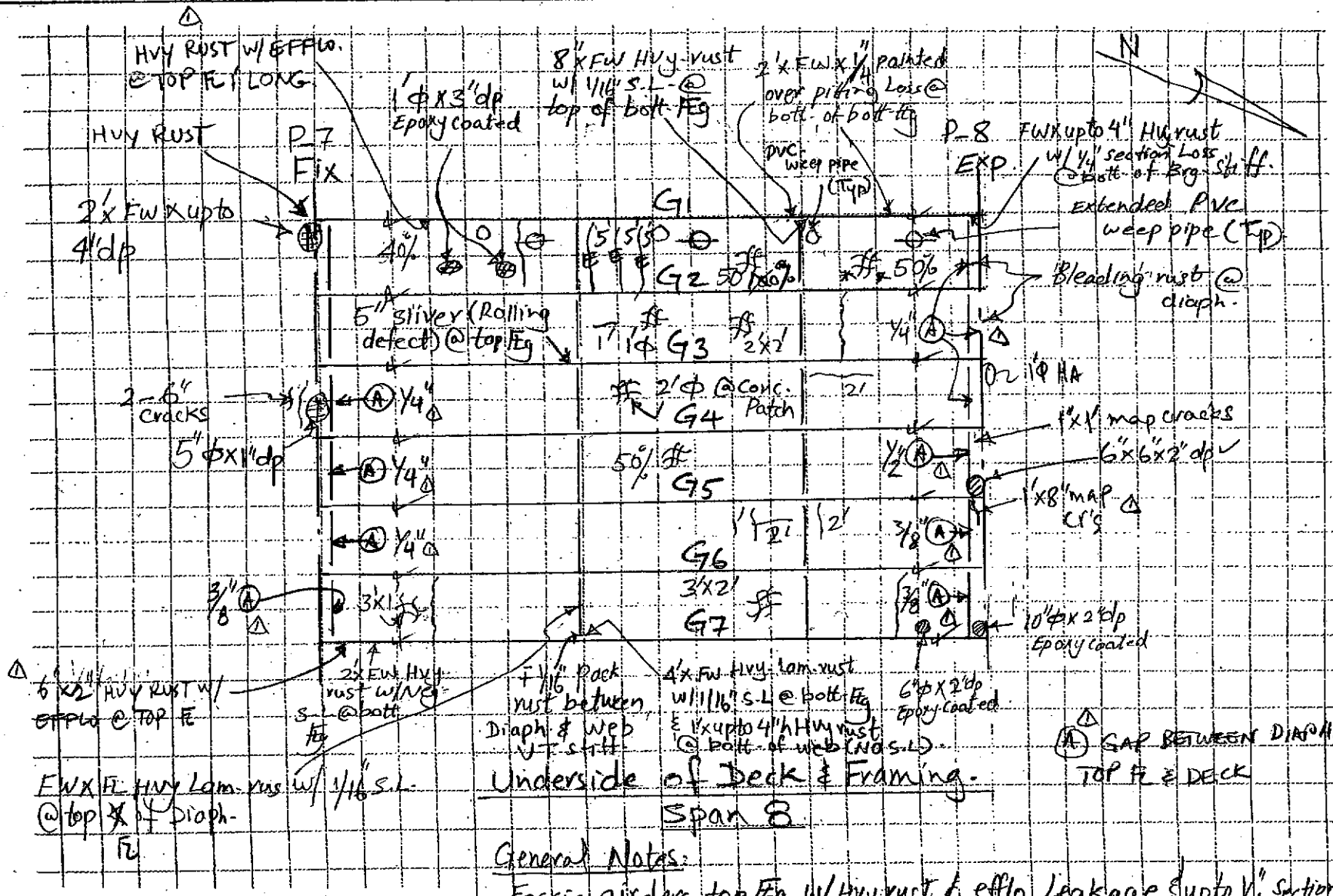
JOB NO: 170-2357 Ext.

DATE: 8/25/04

CREW: AAA, AHS - 9/25/06 MAN, ZM

SHEET 25 OF 38 122

BRIDGE NO: 03190 B.



General Notes:

- Fascia girders top FLg w/ HVY rust & efflo Leakage & up to 1/16" Section Loss, due to water leakage thru deck @ random Locations.
- Pack rust between Sole & Mos. PLs @ FIX Brg up to 1/16" @ random Locations.

LEGEND

- HAIRLINE CRACKS WITHOUT EFFLORESCENCE
- MAP CRACKS WITHOUT EFFLORESCENCE
- HOLLOW AREA
- SHALLOW REBAR
- SCALE AREA
- SPALL AREA
- SPALL WITH EXPOSE REBAR
- HONEY COMBING

*: W/ efflo

⊕: Bott. FLg Cover PL's Inspected Hands on

DESCRIPTION: Superstructure

FIELD NOTES

JOB NO: 170-2357 Ext.

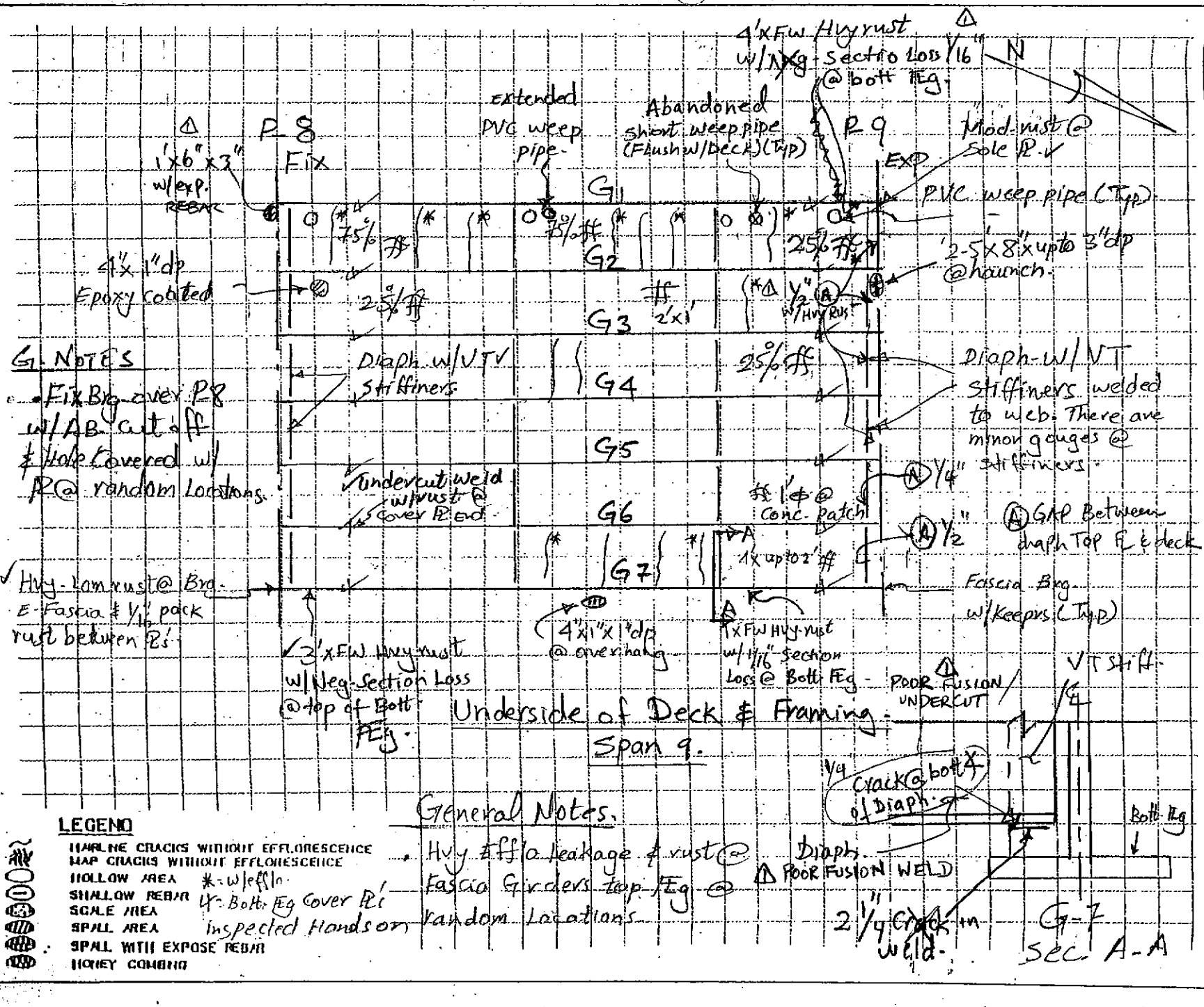
BRIDGE NO: 03190 B.

DATE: 08/25/04

CREW: AAA, AHS. (HAKES) MAN, ZM

9/25/06

SHEET 39 OF 78 122



G. NOTES

- Fix Brg. over P8 w/ AB cut off & Hole Covered w/ PL @ random Locations.

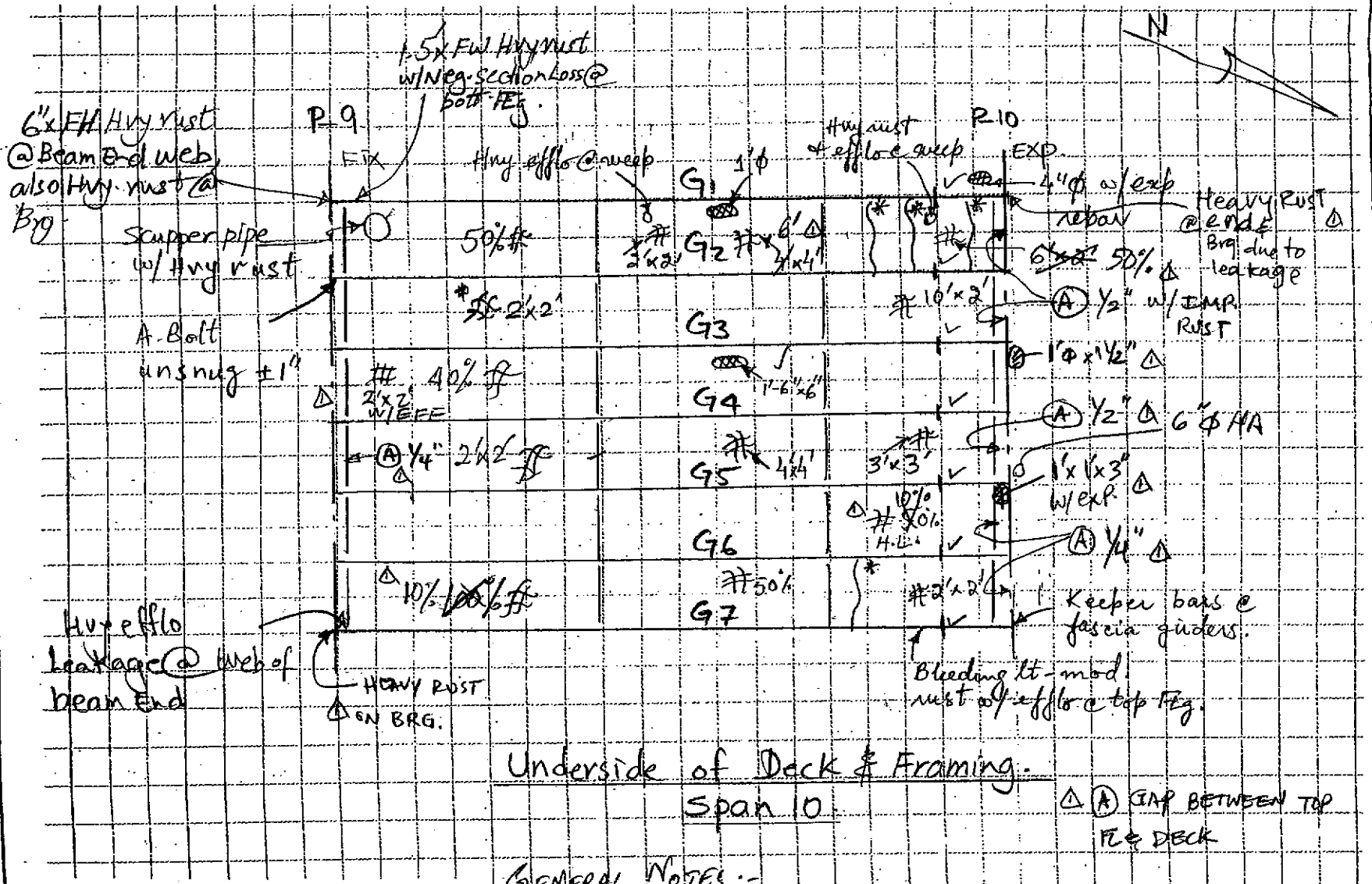
General Notes.

- Hvy Efflo leakage & rust @ Fascia Girders top Flg @ random Locations.

LEGEND

- HAIRLINE CRACKS WITHOUT EFFLORESCENCE
- MAP CRACKS WITHOUT EFFLORESCENCE
- HOLLOW AREA
- SHALLOW REBAR
- SCALE AREA
- SPALL AREA
- SPALL WITH EXPOSE REBAR
- HONEY COMBING

*-w/ efflo.
Y-Bott. Flg Cover Pl.
Inspected Hands on



Underside of Deck & Framing.

Span 10.

△ (A) GAP BETWEEN TOP FLG & DECK

LEGEND

- HAIRLINE CRACKS WITHOUT EFFLORESCENCE
- MAP CRACKS WITHOUT EFFLORESCENCE
- HOLLOW AREA
- SHALLOW REBAR
- SCALE AREA
- SPALL AREA
- SPALL WITH EXPOSE REBAR
- HONEY COMBING

* w/efflo

GENERAL NOTES :-

1 - Brgs. in neutral position @ P-10 (Elastomeric) @ 75°F

2 - Fascia girders have hvy leakage/efflo b/w top flgs & haunch w/ hvy rust & upto 1/16" loss on top + bott. flgs & webs.

3 - All weep pipes extend below bott. flgs.

DESCRIPTION: Superstructure

FIELD NOTES

ENGINEERING INC

JOB NO: 170-2357 Ext.

BRIDGE NO: 03190 B.

DATE: 08/24/04

SHEET 2 OF 78 122

CREW: MA, AHS, AAA △ 9/26/06 (HAKS) MAY, 24

DESCRIPTION: Superstructure

FIELD NOTES

JOB NO: 170-2357 Ext.

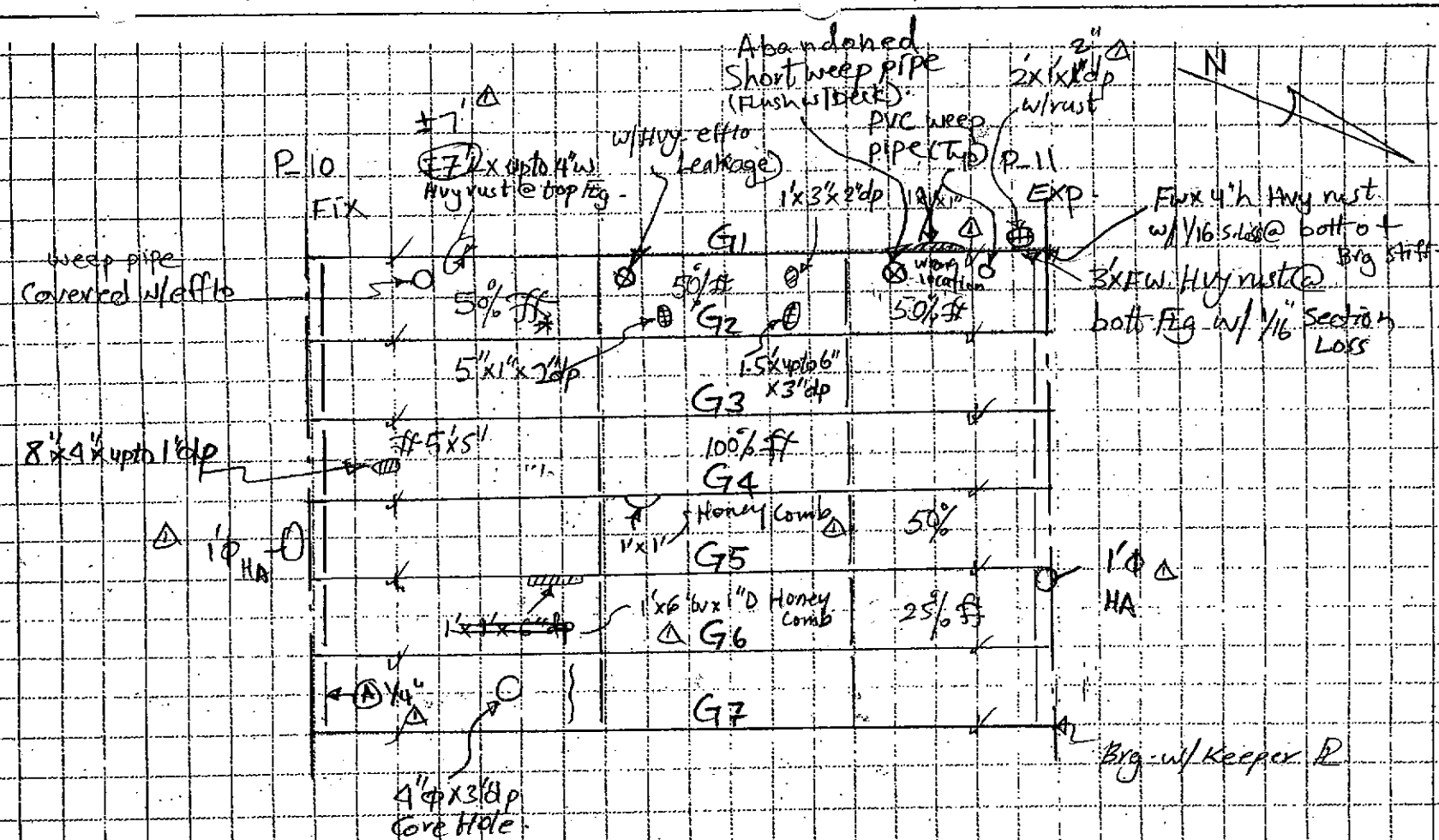
BRIDGE NO: 03190 B.

DATE: 8/24/04

CREW: AAA, AHS. MAN, ZM

(HAKS) 9/26/06

SHEET 28 OF 78 122



Underside of Deck & Framing.
span 11.

General Notes:

- Poor Weld @ bott of Diaph Conn to Web VT Stiff.
- There are areas of Lt Honey Combing @ underside of deck & Haunches @ Random Locations.

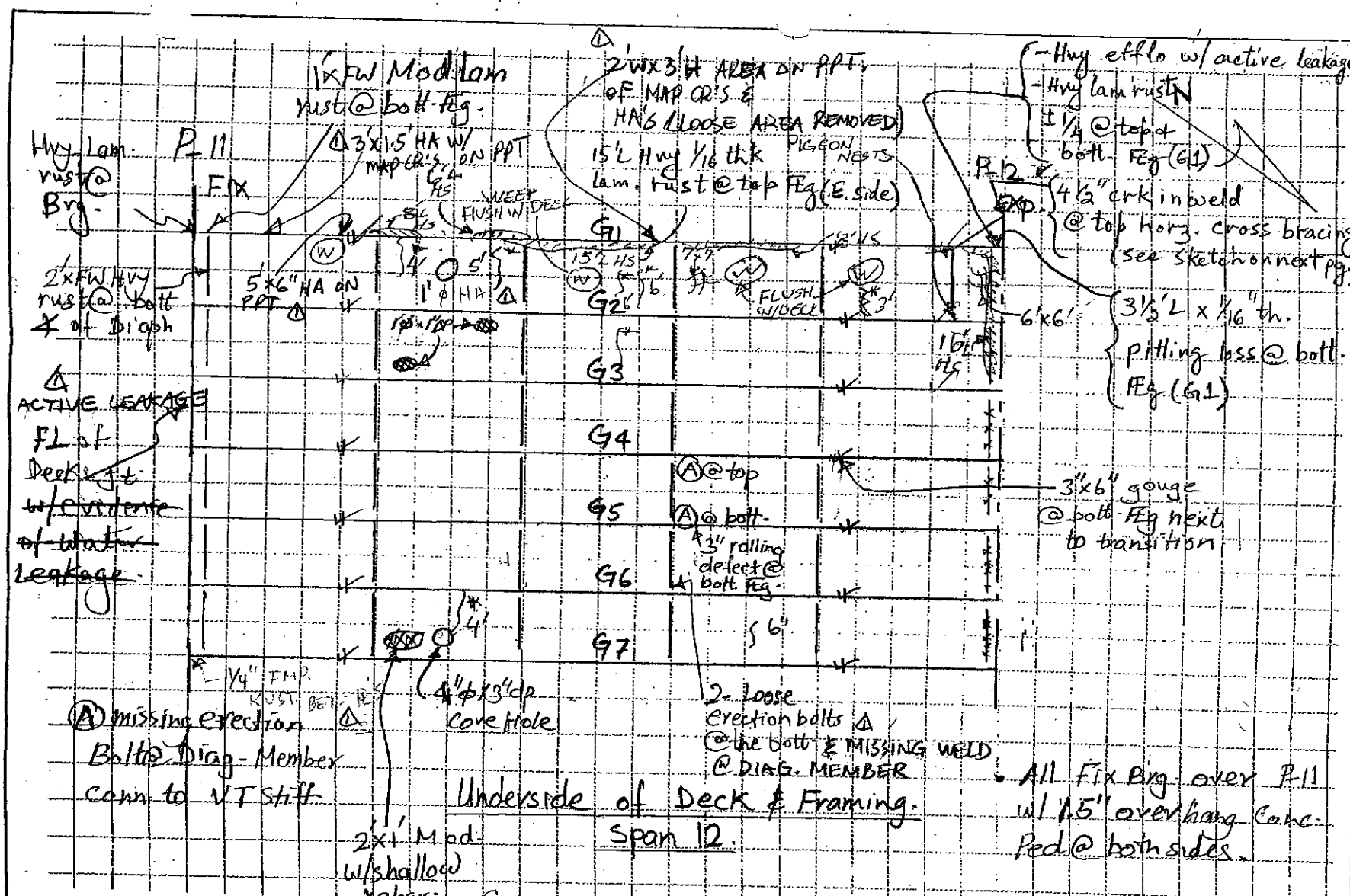
△ (A) GAP BETWEEN TOP FL & DECK

LEGEND

- HAIRLINE CRACKS WITHOUT EFFLORESCENCE
- MAP CRACKS WITHOUT EFFLORESCENCE
- HOLLOW AREA
- SHALLOW REBAR
- SCALE AREA
- SPALL AREA
- SPALL WITH EXPOSE REBAR
- HONEY COMBING

✓ Bott Flg Cove PL End.

* = w/efflo



LEGEND

- HAIRLINE CRACKS WITHOUT EFFLORESCENCE
- MAP CRACKS WITHOUT EFFLORESCENCE
- HOLLOW AREA
- SHALLOW REBAR
- SCALE AREA
- SPALL AREA
- SPALL WITH EXPOSE REBAR
- HONEY COMBING

* - w/ efflo

HS - Haunch spall

GENERAL NOTES

* - All transitions checked hands on.

- Sloppy welds @ Diaph. Conn. to vert. stiffeners
- All loose underside deck concrete removed
- Spotty rust w/ Hwy efflo @ top flg of fascia girders
- Peeling paint @ few spots @ bott. Flgs. < 5%

DESCRIPTION: Superstructure

FIELD NOTES

ENGINEERING INC

JOB NO: 170-235 TEXT

BRIDGE NO: 03190B

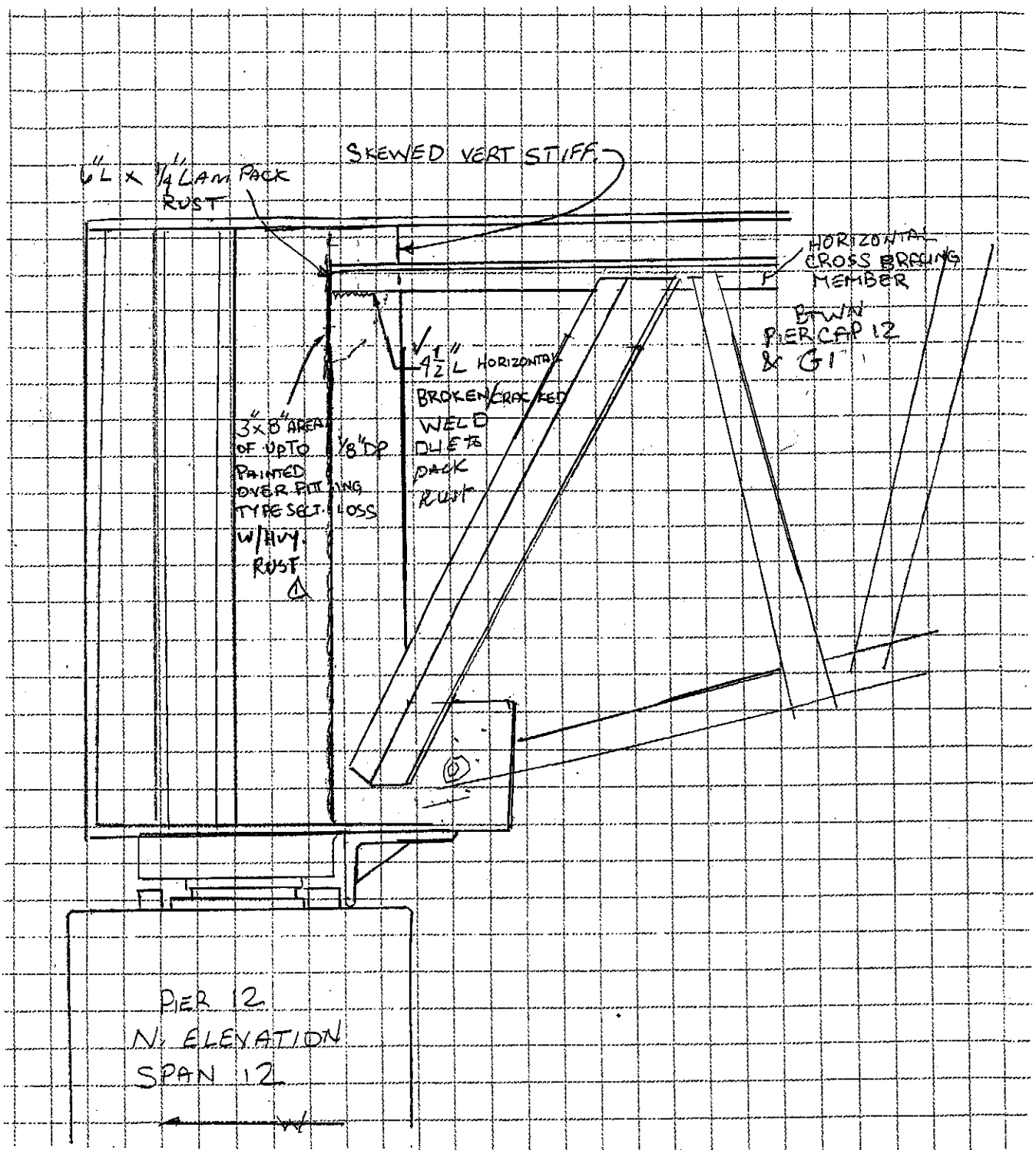
DATE: 08/20/04

SHEET 92 OF 122

CREW: FM, BNS AAA

10/18/06 (HAKS) MAN/ZM

AI Engineers, Inc.	JOB NO: 170.2357	BRIDGE NO: 03190B
	DATE: 08/20/04	SHEET ~~80~~ 43 OF ~~78~~ 122
FIELD NOTES	CREW: FM, BNS, MAA (HAKS) △ 10/18/06 MAN, ZM	
DESCRIPTION: SUPERSTRUCTURE		



LEGEND

- HAIRLINE CRACKS WITHOUT EFFLORESCENCE
- MAP CRACKS WITHOUT EFFLORESCENCE
- HOLLOW AREA
- SHALLOW REBAR
- SCALE AREA
- SPALL AREA
- SPALL WITH EXPOSE REBAR
- HONEY COMBING

DESCRIPTION: Superstructure

FIELD NOTES

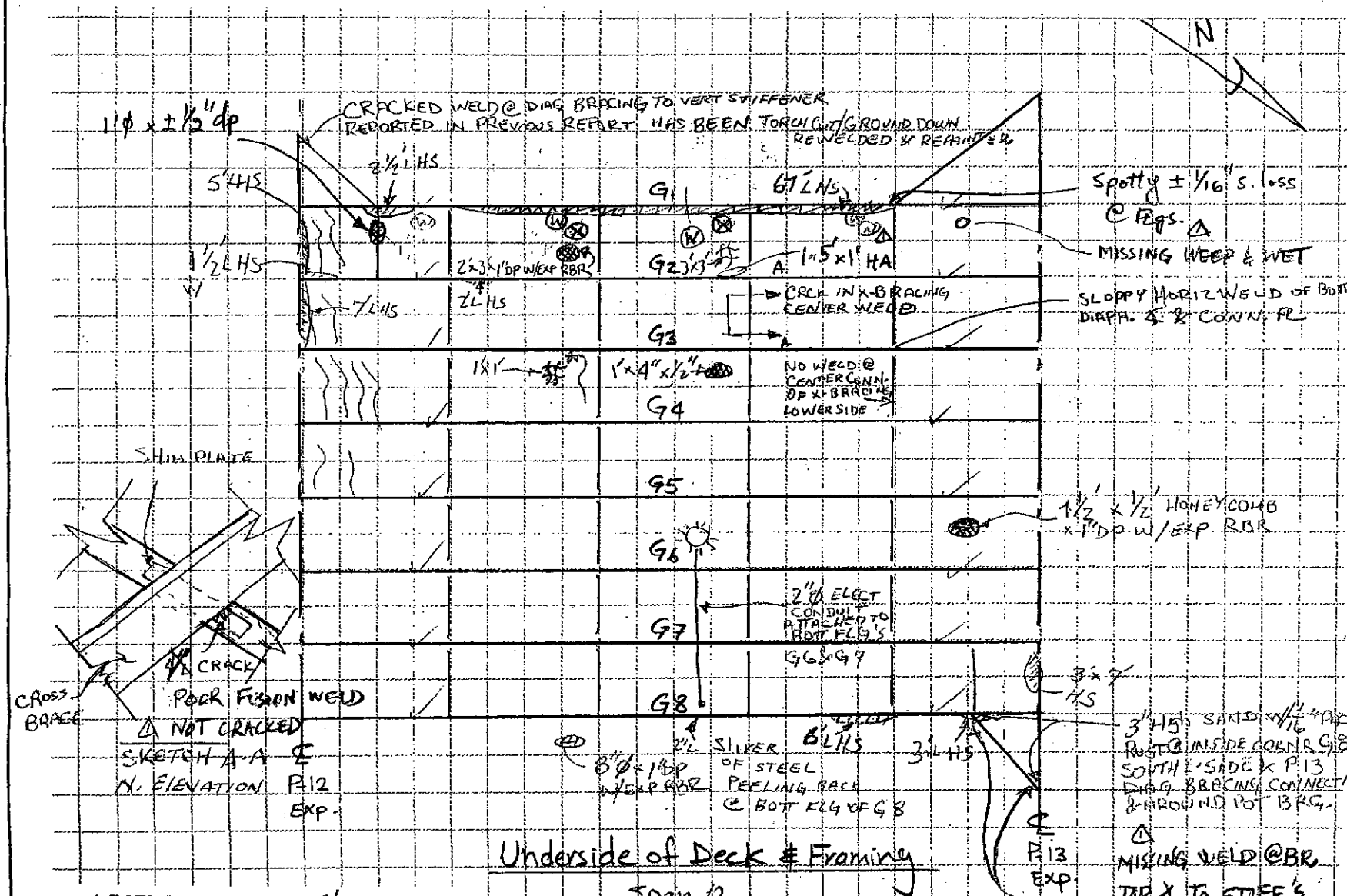
JOB NO: 170-2357 Ext.

BRIDGE NO: 03190 B.

DATE: 08/20/09

SHEET 37 OF 78

CREW: FM BNS AAA



Underside of Deck & Framing

Span 13

GENERAL NOTES

- WEEP PIPES HAVE BEEN EXTENDED BELOW BOTTOM FLANGE OF GIRDERS
- ALL LOOSE CONCRETE @ UNDERSIDE ESP. HAUNCHES HAVE BEEN REMOVED
- LIGHT SURFACE RUST STAIN ON BOTTOM FLANGES @ EDGE, TYP.

LEGEND

- HAIRLINE CRACKS WITHOUT EFFLORESCENCE
- MAP CRACKS WITHOUT EFFLORESCENCE
- HOLLOW AREA
- SHALLOW REBAR
- SCALE AREA
- SPALL AREA
- SPALL WITH EXPOSE REBAR
- HONEY COMBING

* EFFLO

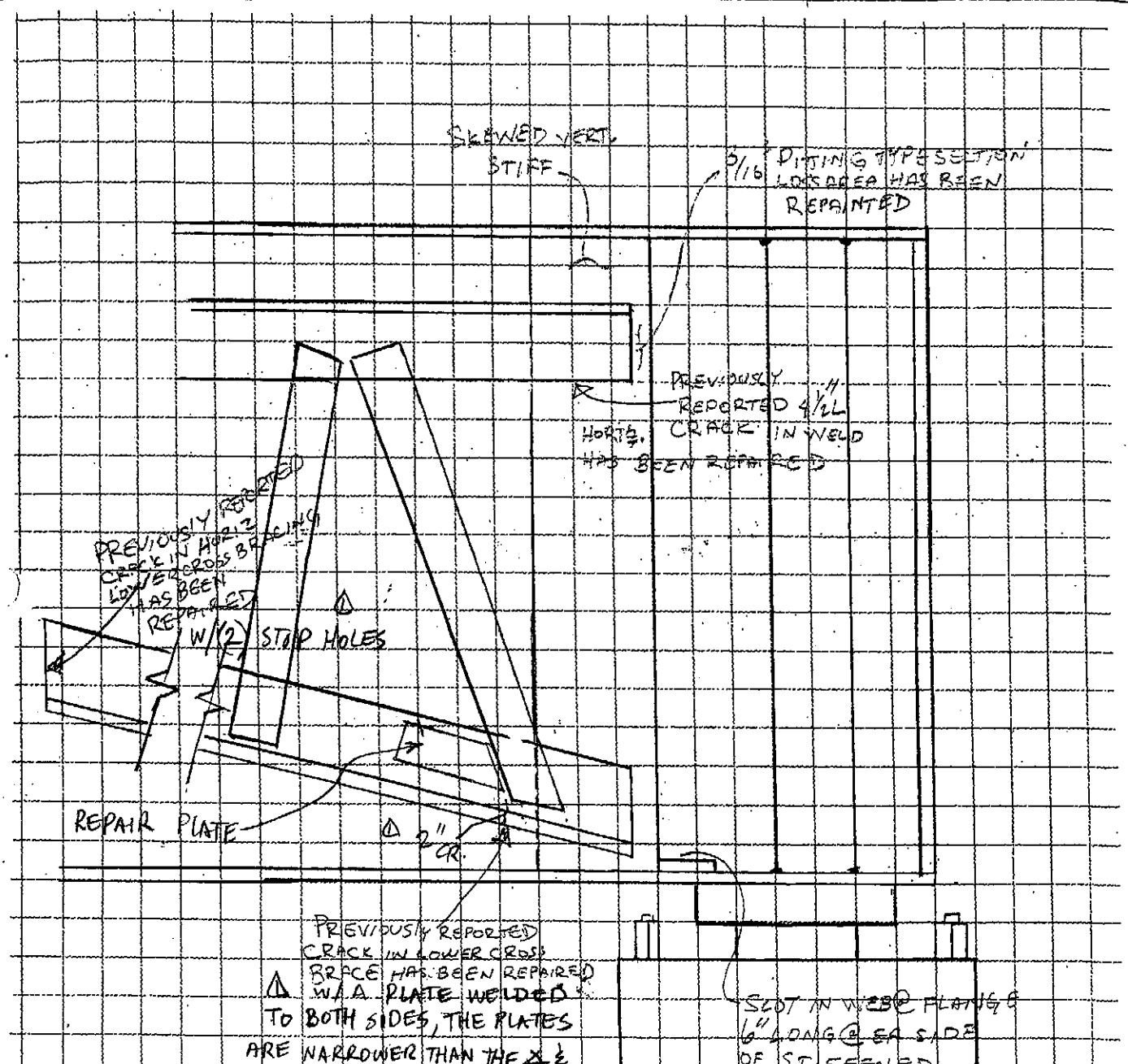
Abandoned weep pipe

✓ - BOTT FLG TRANSITION

(W) - WEEP PIPE

HS - HAUNCH SPALL @ 4"W x 4"DP

AI Engineers, Inc.	JOB NO: 170-2357 EXT	BRIDGE NO: 03190 B
	DATE: 03/20/04	SHEET ~~32~~ 45 OF ~~78~~ 122
FIELD NOTES	CREW: FM, BNS, AAA	Δ 10/17/06 (HAKS) MAN, ZM
DESCRIPTION: superstructure		

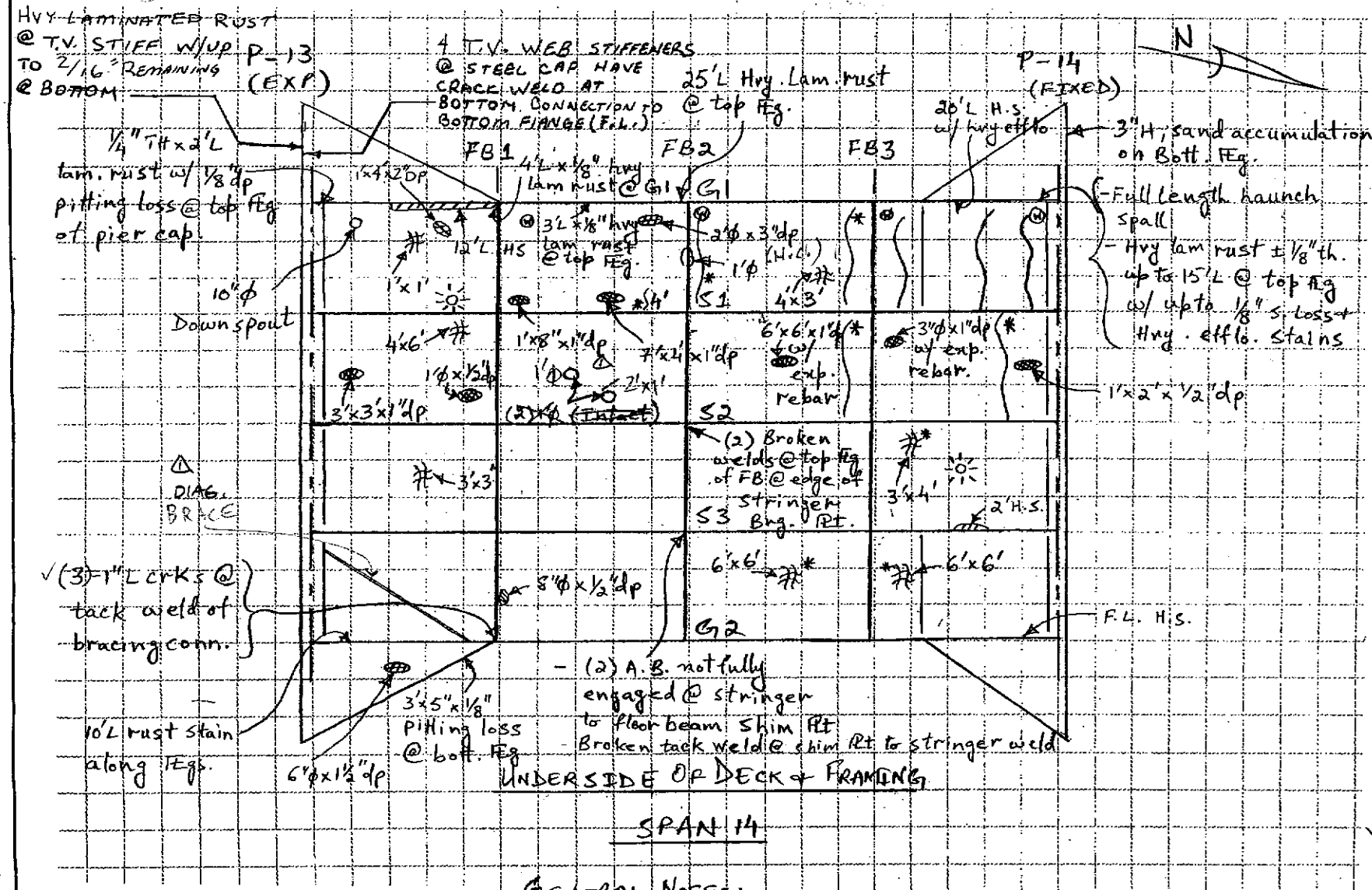


Pier 12 Cap (North Side.

IN Span 13

LEGEND

- HAIRLINE CRACKS WITHOUT EFFLORESCENCE
- MAP CRACKS WITHOUT EFFLORESCENCE
- HOLLOW AREA
- SHALLOW REBAR
- SCALE AREA
- SPALL AREA
- SPALL WITH EXPOSE REBAR
- HONEY COMBING



UNDERSIDE OF DECK + FRAMING

SPAN 14

LEGEND

- HAIRLINE CRACKS WITHOUT EFFLORESCENCE
- MAP CRACKS WITHOUT EFFLORESCENCE
- HOLLOW AREA
- SHALLOW REBAR
- SCALE AREA
- SPALL AREA
- SPALL WITH EXPOSE REBAR (4"W x 4" dp)
- HONEY COMBING
- LUMINAIRE
- * W/EFFLO
- H.S – HAUNCH SPALL
- ⊗ Weep pipe

GENERAL NOTES:-

- All weep pipes extend 3" below bott. Flg of girders + do not drain onto steel unless otherwise noted.
- Underside deck luminare were off @ time of inspection.
- Loose conc. over roadway @ haunches + prev. reported hollow areas have been removed
- Pigeon + sand debris @ top of bott. Flgs of girders.

DESCRIPTION: Superstructure

AI Engineers Inc

FIELD NOTES

JOB NO: 170-2357 Ext.

BRIDGE NO: 03190 B.

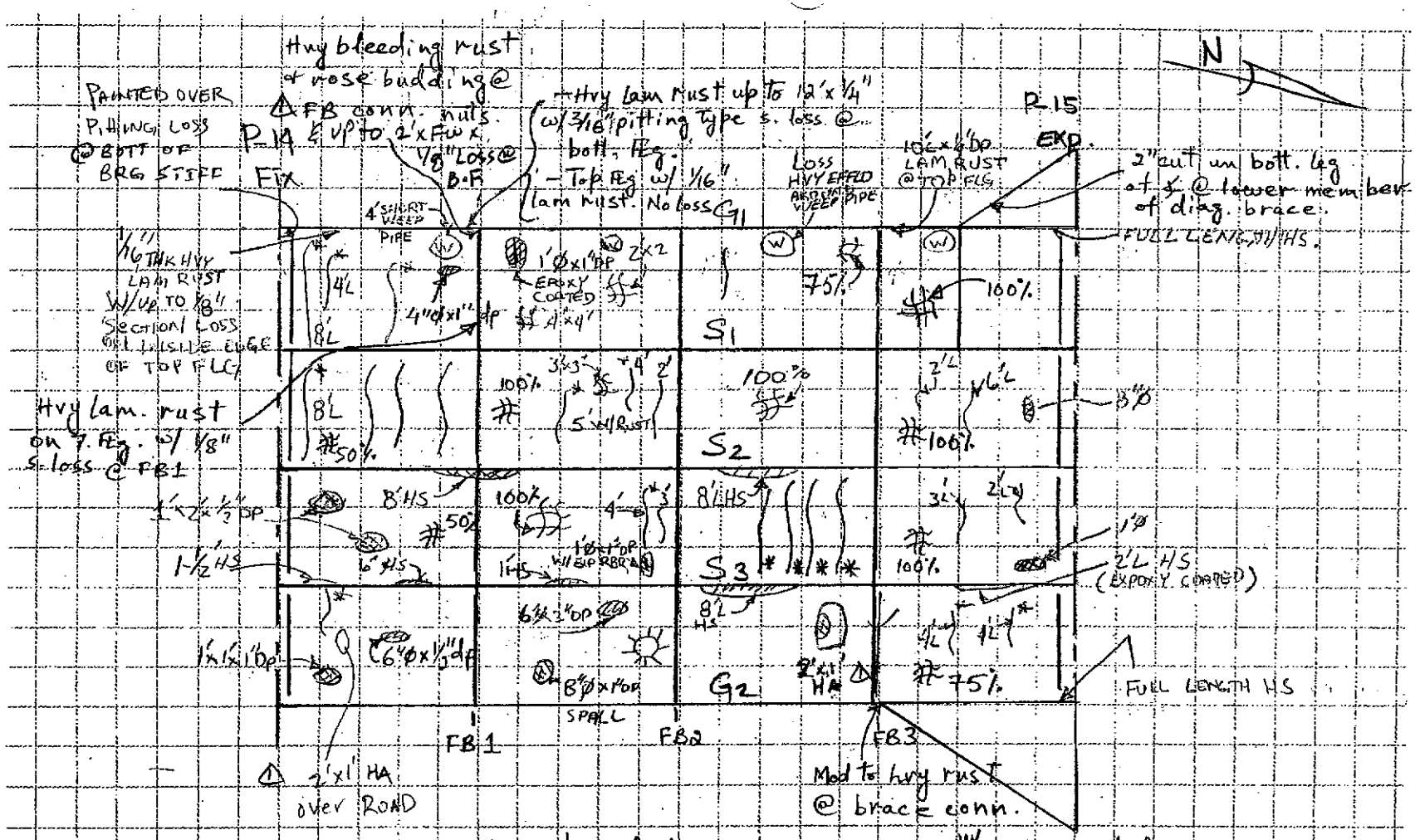
DATE: 08/19/04

SHEET 38/46 OF 38/122

CREW: F.M, BNS, MA

Δ 10/17/06 (HAKS)

MAN/ZM



Underside of Deck & Framing - w/ missing weld △
Span 15.

GENERAL NOTES:-
- No potential to spall conc. over roadway.
- Under bridge luminaire were off @ time of insp.

LEGEND

- HAIRLINE CRACKS WITHOUT EFFLORESCENCE (* EFFLD)
- MAP CRACKS WITHOUT EFFLORESCENCE
- HOLLOW AREA
- SHALLOW REBAR
- SCALE AREA
- SPALL AREA
- SPALL WITH EXPOSE REBAR
- HONEY COMBING

HS - HAUNCH SPALL

DESCRIPTION: Superstructure

FIELD NOTES

ATI Engineering Inc.

JOB NO: 170-2357 Ext.

BRIDGE NO: 03190 B.

DATE: 08/19/04

SHEET ~~34~~ 47 OF ~~78~~ 122

CREW: FM, BNS, MA △ 10/17/06 MAN/ZM (HAKS)

DESCRIPTION: Superstructure

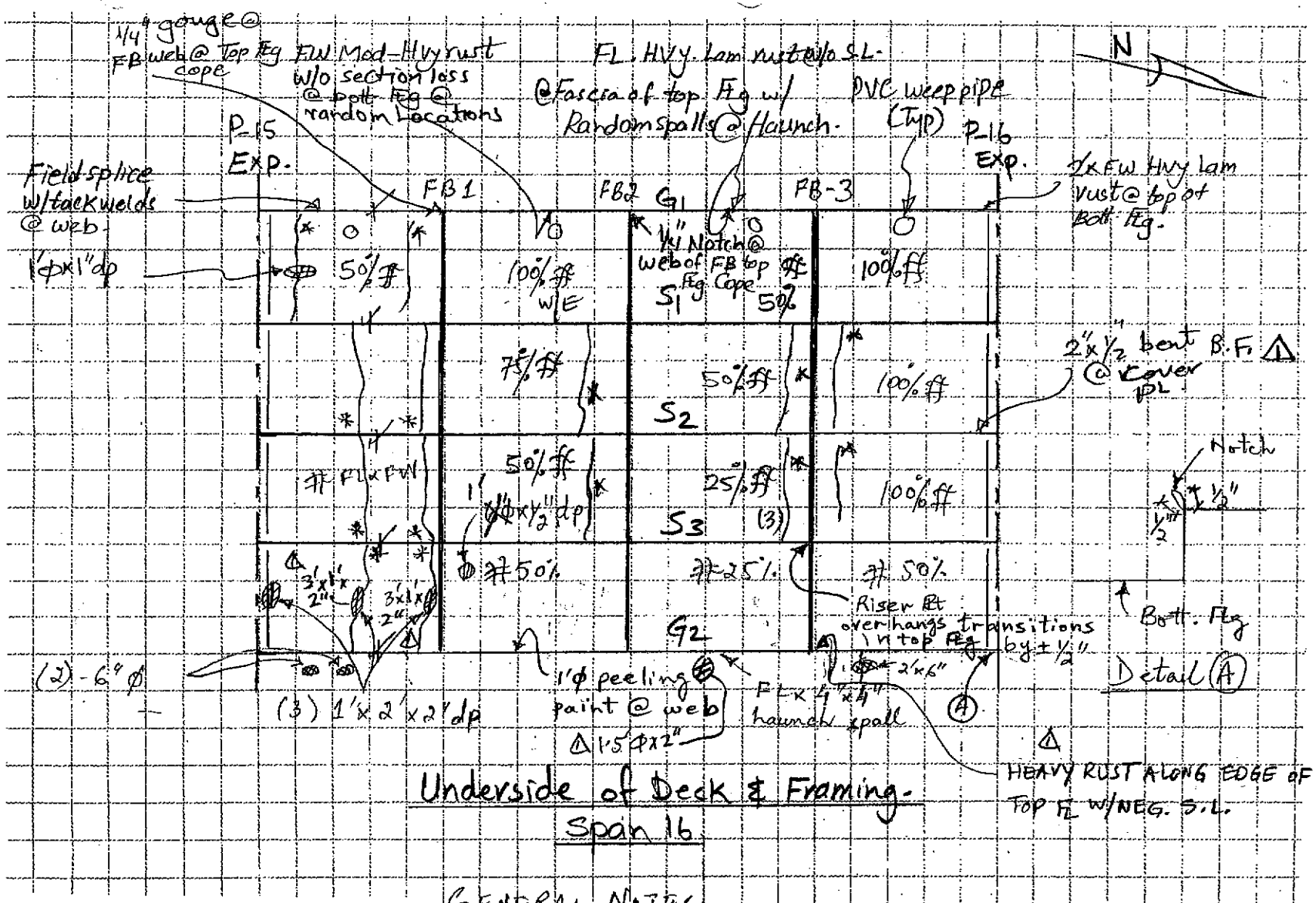
FIELD NOTES

ATI Engineers Inc

JOB NO: 170-2357 Ext. BRIDGE NO: 03190 B.

DATE: 08/19/04 SHEET 38/48 OF 78/122

CREW: MA, BNS, FM △ 10/16/06 (HAKS) MAN, ZM



Underside of Deck & Framing - Span 16

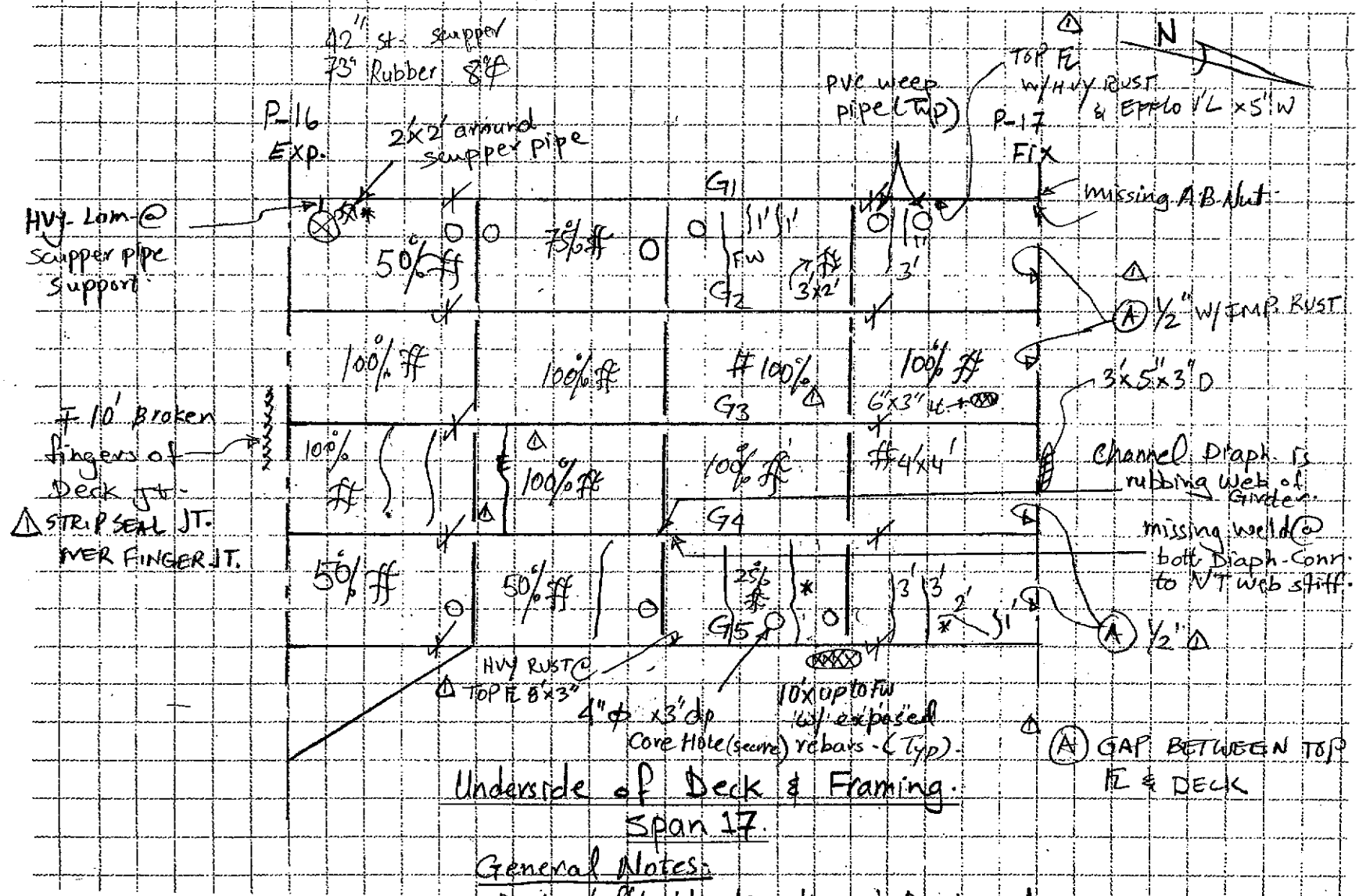
LEGEND

- HAIRLINE CRACKS WITHOUT EFFLORESCENCE
- MAP CRACKS WITHOUT EFFLORESCENCE
- HOLLOW AREA
- SHALLOW REBAR
- SCALE AREA
- SPALL AREA
- SPALL WITH EXPOSE REBAR
- HONEY COMBING

* w/efflo

GENERAL NOTES:

1) Lt-mod bleeding rust @ top flgs of stringers
2) Stringers exhibit isolated areas of lt. spotty rust.
3) Random trv. HL Crks w/ efflo @ conc. overhangs.



Underside of Deck & Framing.
Span 17.

General Notes:

. Rust w/efflo bleeding through Deck onto Top Fg & webs @ Random locations.

Δ - Mod. Rust on ALL FIXED BRG'S AT PIER 17

LEGEND

- HAIRLINE CRACKS WITHOUT EFFLORESCENCE
- MAP CRACKS WITHOUT EFFLORESCENCE
- HOLLOW AREA
- SHALLOW REBAR
- SCALE AREA
- SPALL AREA
- SPALL WITH EXPOSE REBAR
- HONEY COMBING

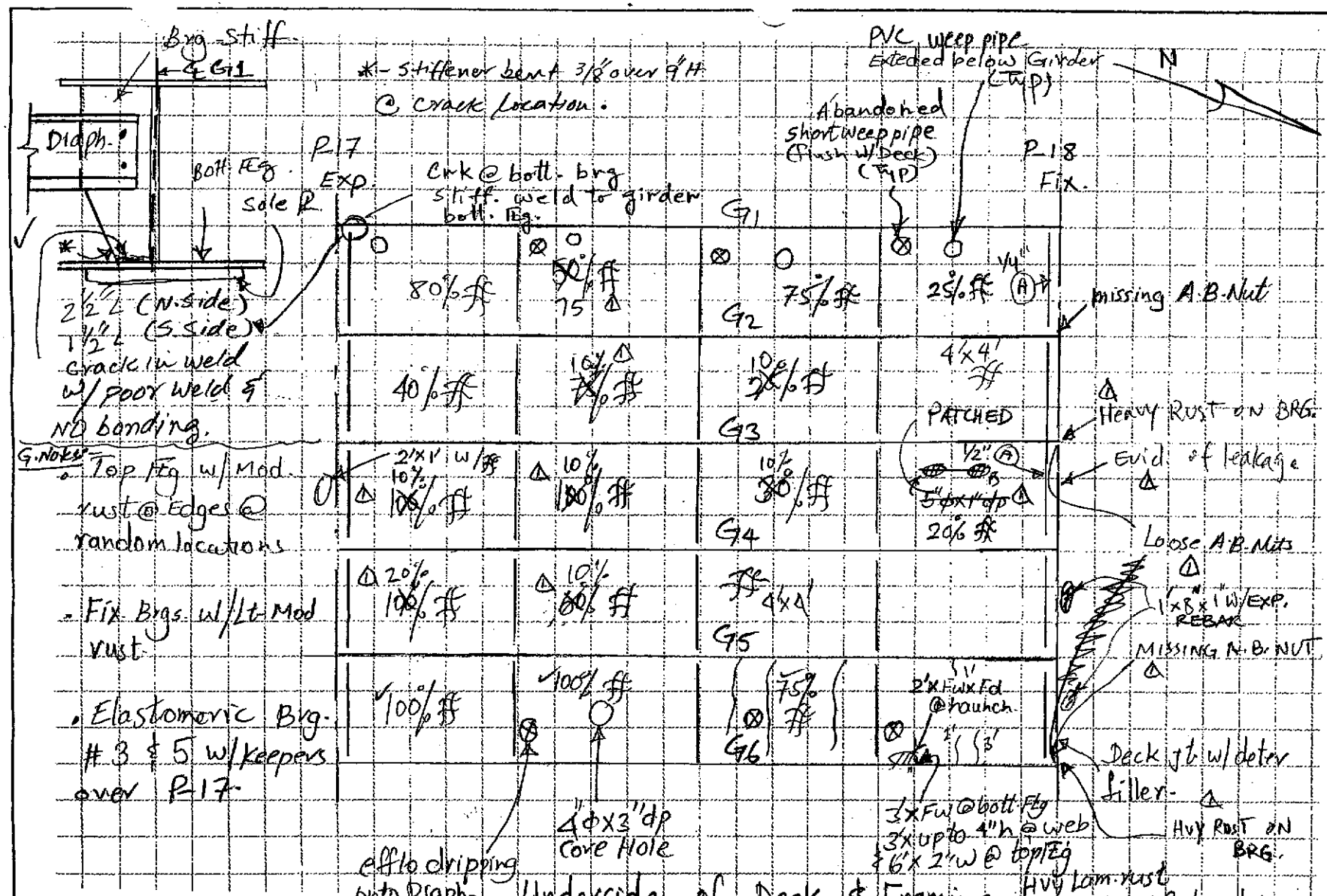
*: w/efflo
o - weep pipe

DESCRIPTION: Superstructure

FIELD NOTES

AT Engineering, Inc.

JOB NO: 170-2357 Ext.
BRIDGE NO: 03190 B.
DATE: 8/23/04
SHEET 36 OF 78
CREW: AAA/AHS
Δ 9/29/06 (HAKS) MM/ZM
49
122



G. Notes:

- Top Flg w/ Mod. rust @ Edges @ random locations
- Fix Brgs. w/ Lt. Mod rust
- Elastomeric Brg. #3 & 5 w/ keepers over P-17

Underside of Deck & Framing - Span 18.

LEGEND

- HAIRLINE CRACKS WITHOUT EFFLORESCENCE
- MAP CRACKS WITHOUT EFFLORESCENCE
- HOLLOW AREA
- SHALLOW REBAR
- SCALE AREA
- SPALL AREA
- SPALL WITH EXPOSE REBAR
- HONEY COMBING

General Notes:

- Structural Steel w/ peeling paint < 5%
- Overhangs w/ Mod. Honey Combing areas @ random locations.

DESCRIPTION: Superstructure

FIELD NOTES

AI Engineers, Inc.

JOB NO: 170-2357 Ext.

BRIDGE NO: 03190 B.

DATE: 08/23/04

SHEET 37 OF 50

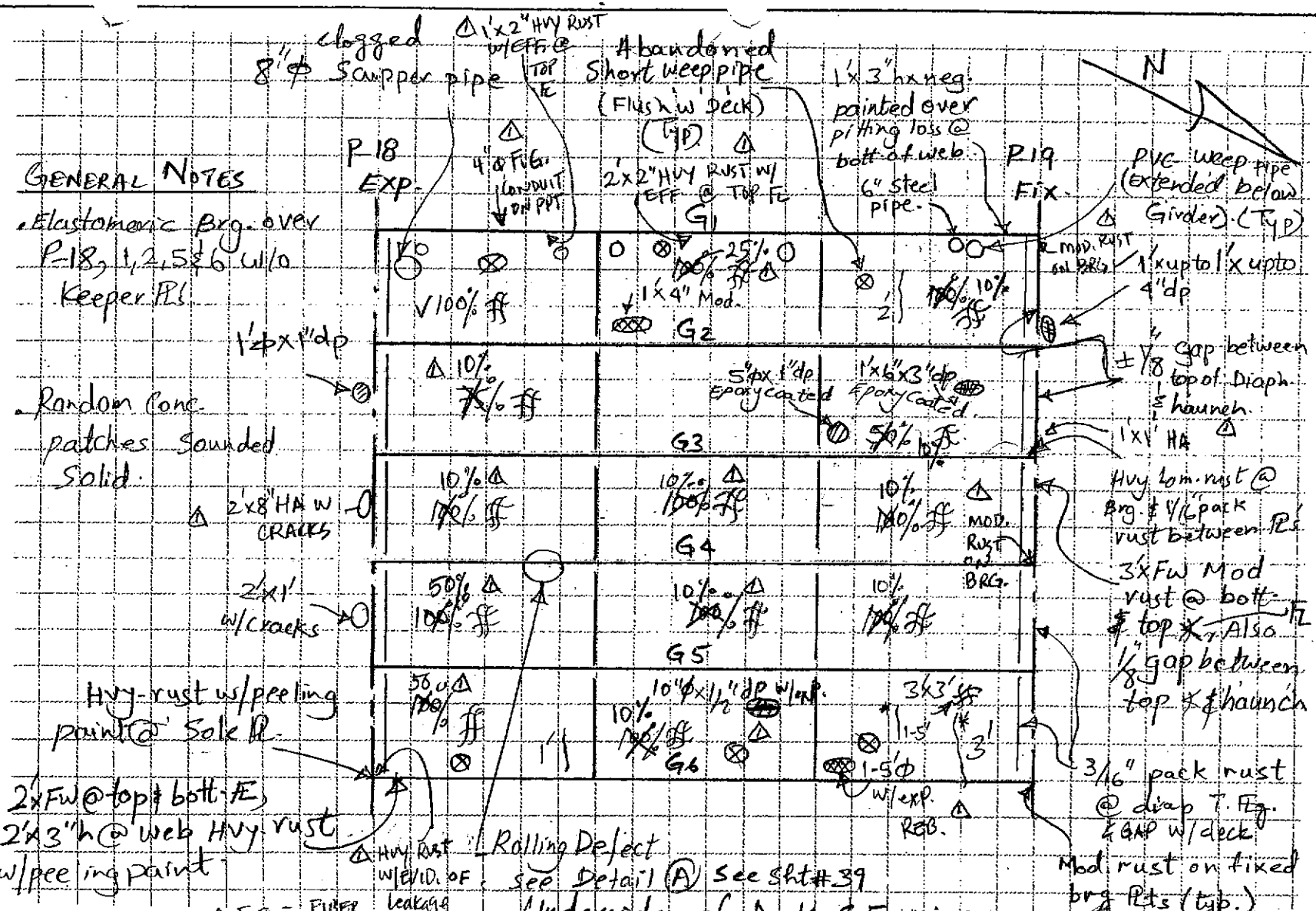
CREW: AAA/AHS (HAKS) 7/26/06 MAN/2M

122

FIELD NOTES

DESCRIPTION: Superstructure

JOB NO: 170-2357 Ext
DATE: 08/23/04
CREW: AAA, DHS - Δ (9/25/06 HAKS) MAN, ZM
BRIDGE NO: 03190 B
SHEET 38 OF 38 (51) 122



GENERAL NOTES

- Elastomeric Brg. over P-18, 1, 2, 5 & 6 w/o Keeper PL.
- Random Conc. patches Sounded Solid.

LEGEND

- HAIRLINE CRACKS WITHOUT EFFLORESCENCE
- MAP CRACKS WITHOUT EFFLORESCENCE
- HOLLOW AREA
- SHALLOW REBAR
- SCALE AREA
- SPALL AREA
- SPALL WITH EXPOSE REBAR
- HONEY COMBING

Δ F.G. = FIBER GLASS

* = w/eff/o

Underside of Deck & Framing - Span 19.

Δ ⊗ ABANDONED WEEPS

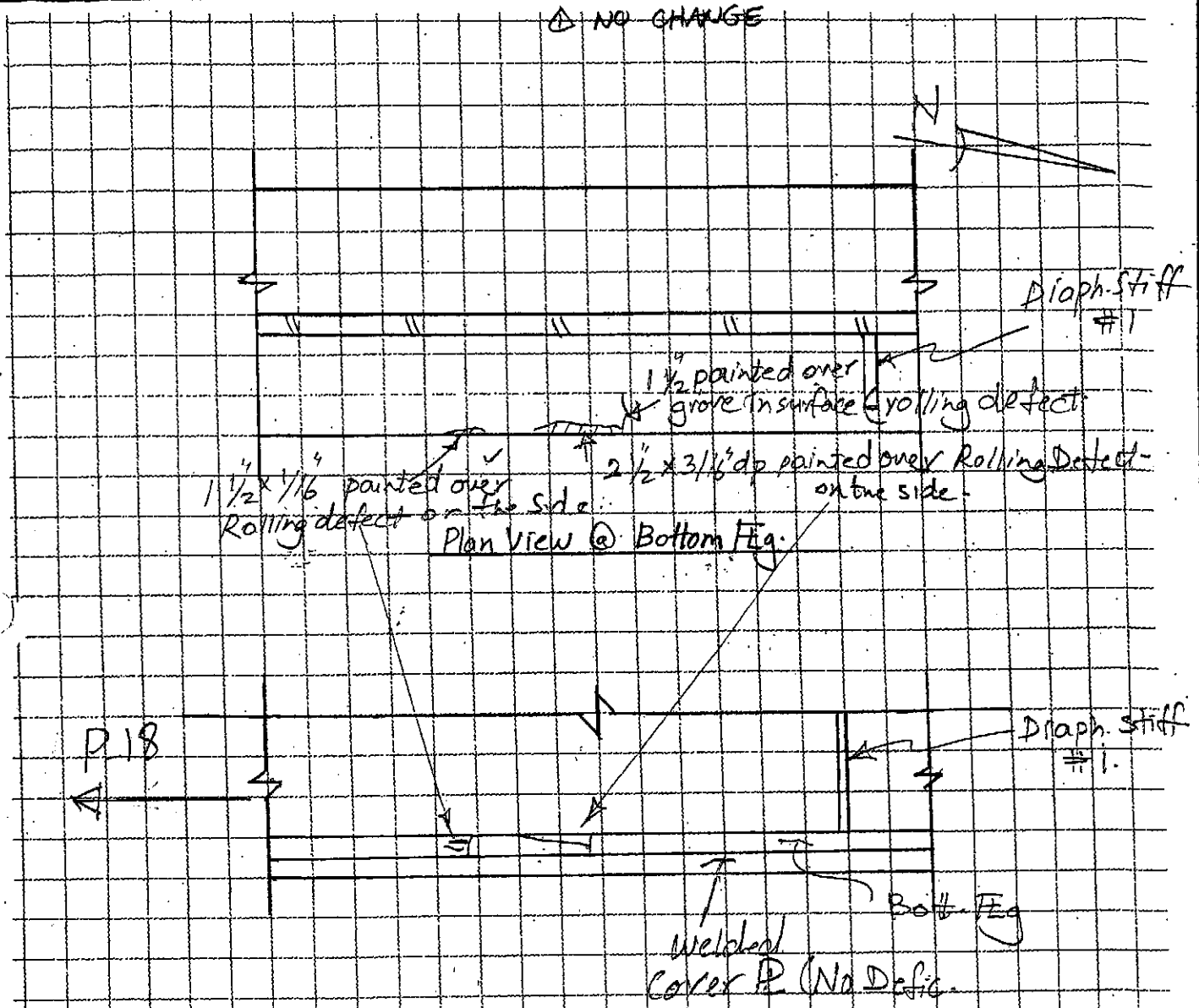
General Notes:

Δ THERE ARE SOME SHRINKAGE CRACKS AT DECK UNDERSIDE WHICH WERE NOTED AS MAP CRACKING, BUT SOUNDED SOLID.

- Neg. Painted over pitting @ bott. FL @ random locations.
- There are short/bent A.B. of Fix Brg. @ random Locations.

AI Engineers, Inc	JOB NO: 170-2357 Ext	BRIDGE NO: 03190 B
	DATE: 08/23/04	SHEET ~~39~~ 52 OF ~~78~~ 122
FIELD NOTES	CREW: AAA, AHS	△ 9/25/06 (HAKS) MAN, ZM
DESCRIPTION: Superstructure		

△ NO CHANGE



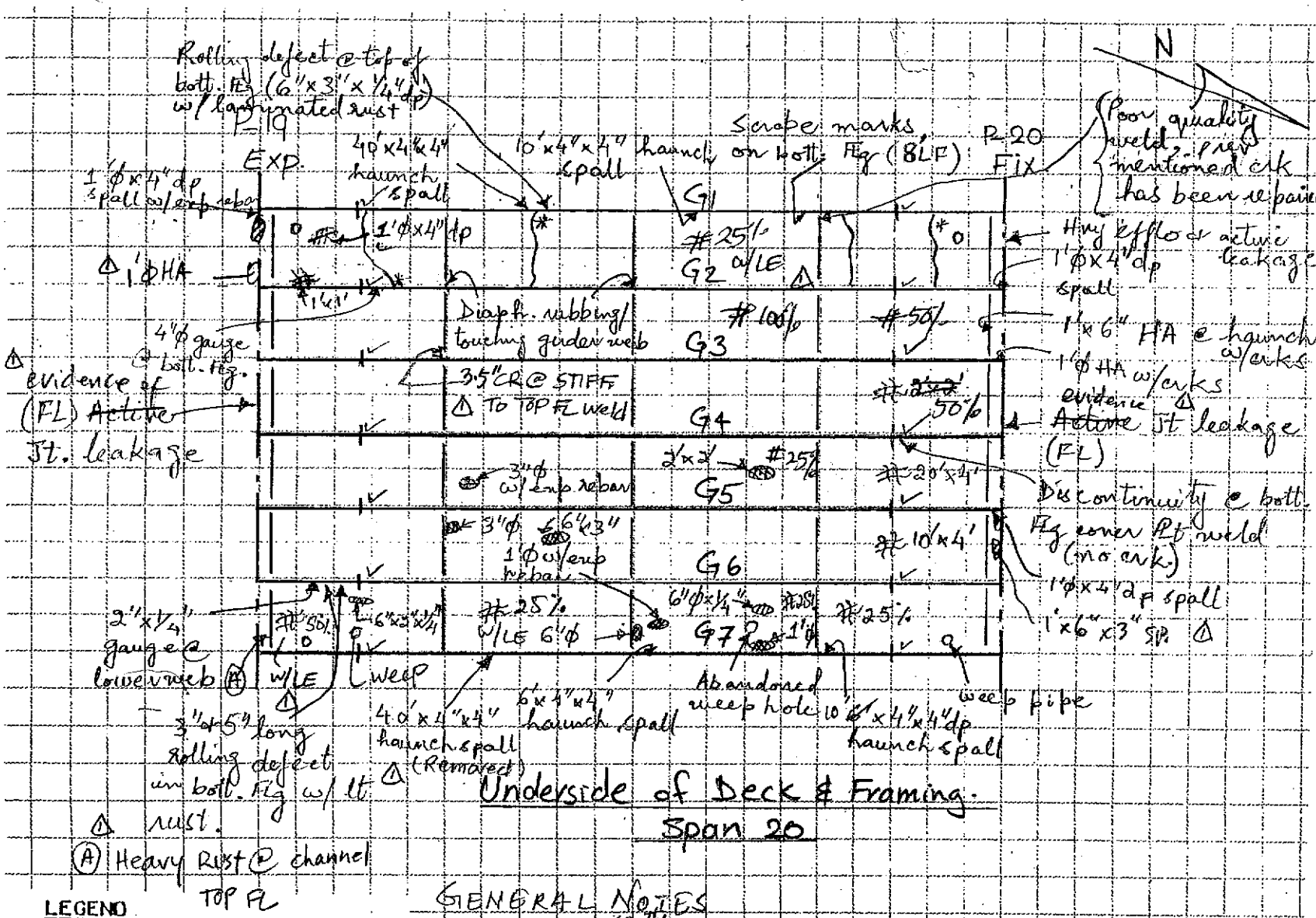
East Elevation @ Bottom Flg.

Detail (A)

Defect in Bottom Flg @ 94 in Span 19.

LEGEND

- HAIRLINE CRACKS WITHOUT EFFLORESCENCE
- MAP CRACKS WITHOUT EFFLORESCENCE
- HOLLOW AREA
- SHALLOW REBAR
- SCALE AREA
- SPALL AREA
- SPALL WITH EXPOSE REBAR
- HONEY COMBING



Underside of Deck & Framing.
Span 20

LEGEND

- HAIRLINE CRACKS WITHOUT EFFLORESCENCE
- HAIR CRACKS WITHOUT EFFLORESCENCE
- HOLLOW AREA
- SHALLOW REBAR
- SCALE AREA
- SPALL AREA
- SPALL WITH EXPOSE REBAR
- HONEY COMBING

GENERAL NOTES

1) lt-mod spotty rust @ fixed brg over P-20. (No section loss)
2) Lt spotty rust @ random locations of struct. steel.
3) All weep pipes extend below bott. Flg.
4) lt-mod bleeding rust @ top Flgs @ random locations.
5) A.B. holes of elastomeric brgs over P-19 are plated over @ rad. locs.

DESCRIPTION: Superstructure

FIELD NOTES

Engineering Inc.

JOB NO: 170-2357 Ext

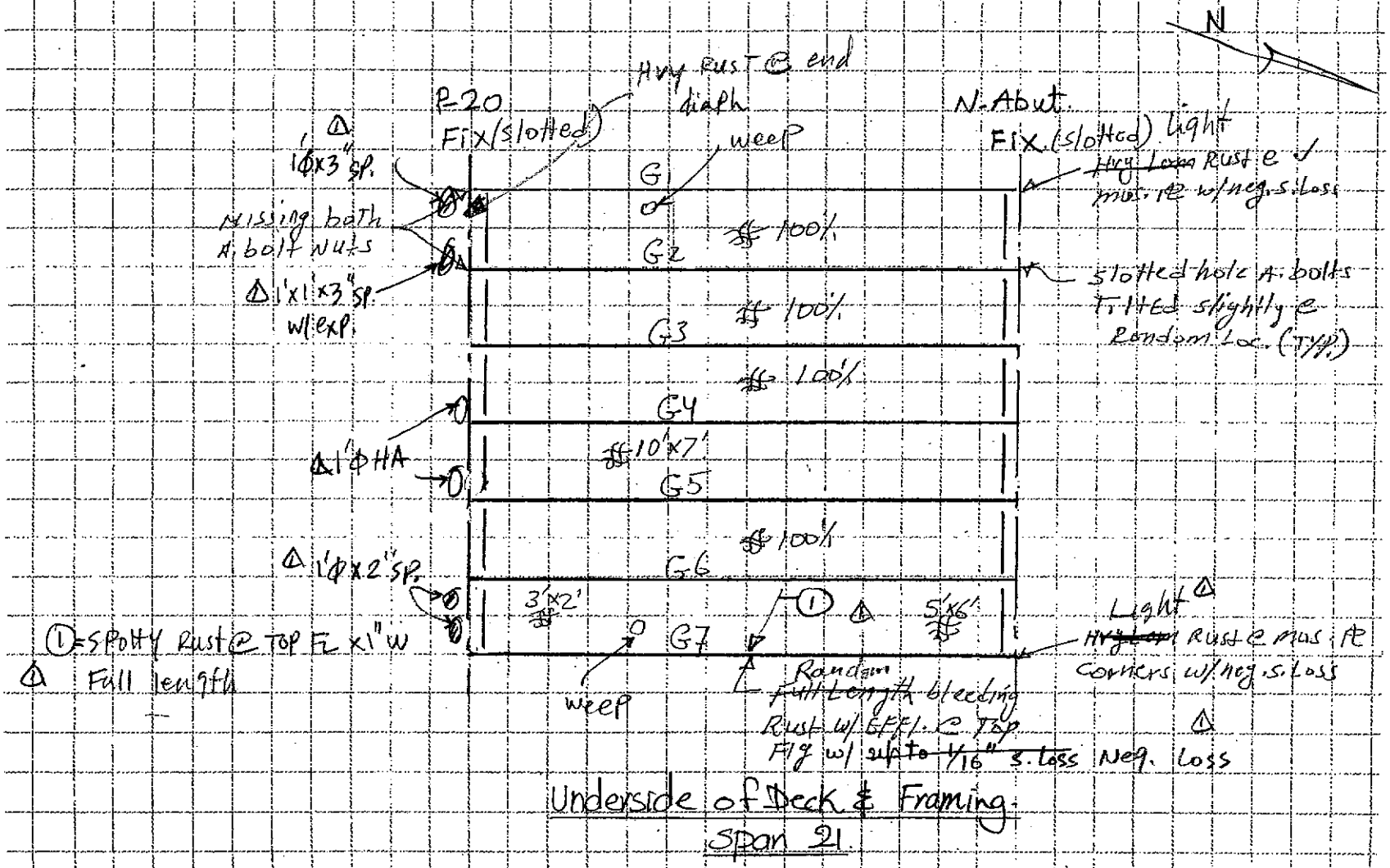
BRIDGE NO: 03190B.

DATE: 08/19/04

SHEET 122 OF 122

CREW: MA, BNS

(HARS) 10/26/06 MAN, ZM



Underside of Deck & Framing
Span 21

G. Notes:
- Rust bleeding @ PIER ~~diaph~~ TYP.
- Hvy spotty Rust @ pier slotted brgs w/ 1/16" pitting loss @ ⅛s.

LEGEND
- HAIRLINE CRACKS WITHOUT EFFLORESCENCE
- MAP CRACKS WITHOUT EFFLORESCENCE
- HOLLOW AREA
- SHALLOW REBAR
- SCALE AREA
- SPALL AREA
- SPALL WITH EXPOSE REBAR
- HONEY COMBING

DESCRIPTION: Superstructure

FIELD NOTES

AT Engineers Inc

JOB NO: 170-2357 Ext.
BRIDGE NO: 03190 B.
DATE: 08-19-04
SHEET 44 OF 122
CREW: BNS, MA
△ Hars 10/24/06 MM, 24

Bridge No.: 03190B Date: 3/21/2007 Prepared By: MJW Checked By: MAN

HAKS CONCRETE DETERIORATION WORKSHEET

Form BRI - 10, 9/01

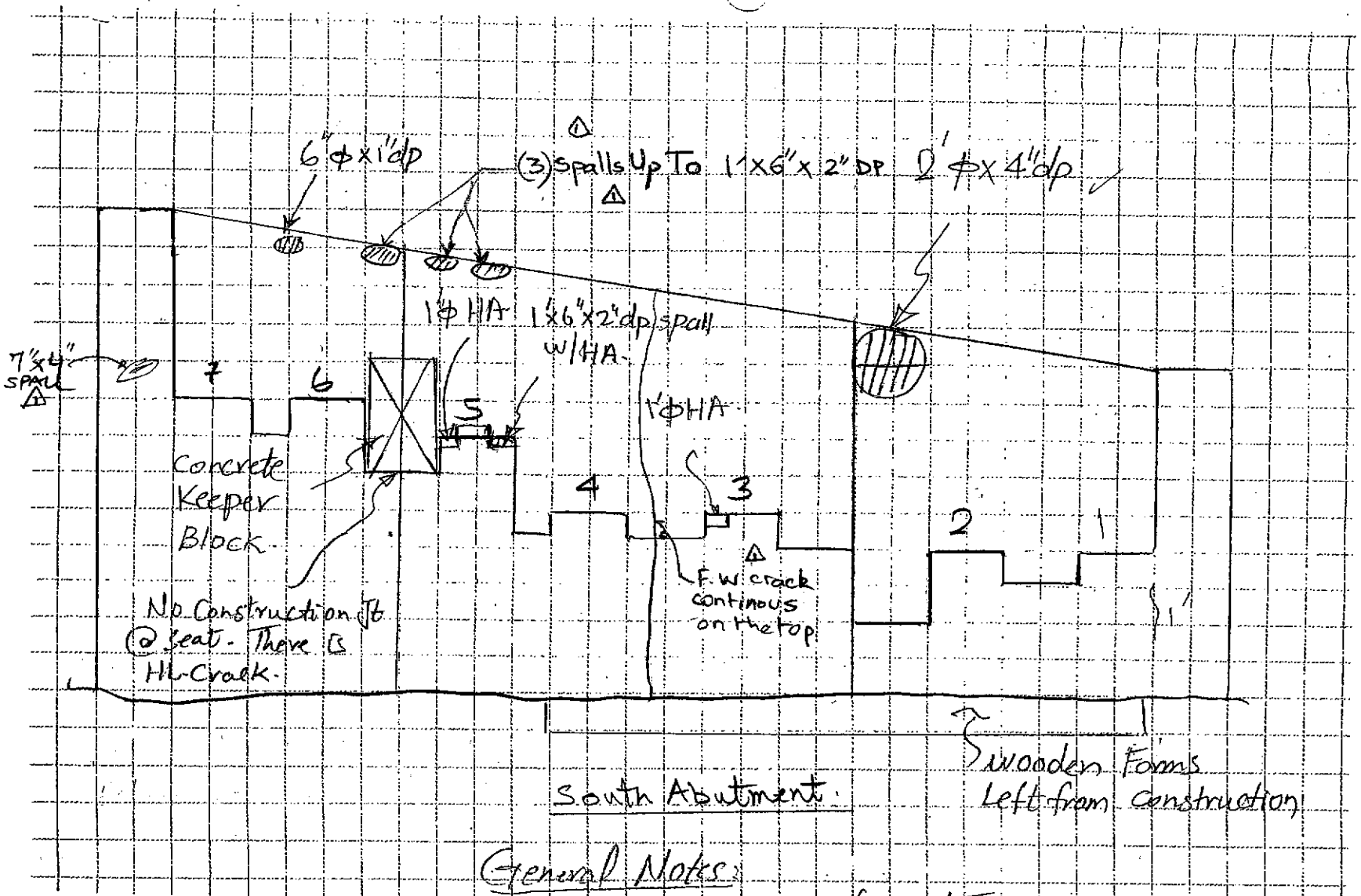
	Deterioration By Span - In Square Feet										
	Span Number										
Deterioration Type	1	2	3	4	5	6	7	8	9	10	11
Spalled and Delaminated Areas	Top:	Top:	Top:	Top:	Top:	Top:	Top:	Top:	Top:	Top:	Top:
	Bot: 10.5	Bot: 18.5	Bot: 8	Bot: 1.5	Bot: 2.5	Bot:	Bot: 6	Bot: 4	Bot: 0.5	Bot: 2	Bot: 3
Scale (Moderated to Severe Only)	Top:	Top:	Top:	Top:	Top:	Top:	Top:	Top:	Top:	Top:	Top:
	Bot:	Bot:	Bot:	Bot:	Bot:	Bot:	Bot:	Bot:	Bot:	Bot:	Bot:
Cracks: w/Efflorescence (use 6 in. width x length)	Bot:	Bot: 10	Bot: 7	Bot: 17	Bot: 4	Bot: 4	Bot:	Bot: 8	Bot: 34	Bot: 14.5	Bot:
w/o Efflo. (use 3 in. width x length)	Bot: 21	Bot: 4	Bot: 4	Bot:	Bot: 11	Bot: 8	Bot: 3	Bot: 7.5	Bot: 10	Bot:	Bot: 2
Map Cracking: w/Efflorescence (use full area)	Bot: 4	Bot: 4	Bot: 192	Bot: 401	Bot:	Bot: 70	Bot:	Bot: 80	Bot: 40	Bot: 8	Bot: 72
w/o Efflo. (use 50% of area)	Bot: 6	Bot: 75	Bot: 10	Bot: 214	Bot: 141.5	Bot: 50.5	Bot: 140	Bot: 50	Bot: 165	Bot: 209	Bot: 209
Honeycombed Areas (only areas more than 1 1/2 in deep)	Bot:	Bot:	Bot:	Bot:	Bot:	Bot:	Bot:	Bot:	Bot:	Bot:	Bot:
Total	41.5	111.5	221	633.5	159	132.5	149	149.5	249.5	233.5	286
Total Span Area (Square Feet)	3413	3450	3450	3450	3450	3450	3450	3450	3450	2918	3026
% Spalled and Delaminated on Top	0	0	0	0	0	0	0	0	0	0	0
% Deterioration on Bottom	1.2%	3.2%	6.4%	18.4%	4.6%	3.8%	4.3%	4.3%	7.2%	8.0%	9.5%

Bridge No.: 03190B Date: 3/21/2007 Prepared By: MJW Checked By: MAN

HAKS CONCRETE DETERIORATION WORKSHEET

Form BRI - 10, 9/01

	Deterioration By Span - In Square Feet										
	Span Number										
Deterioration Type	12	13	14	15	16	17	18	19	20	21	Total
Spalled and Delaminated Areas	Top:	Top:	Top:	Top:	Top:	Top:	Top:	Top:	Top:	Top:	Top: 0
	Bot: 1	Bot: 2	Bot: 11	Bot: 4.5	Bot: 11.5	Bot: 1.5	Bot: 1.5	Bot: 2.5	Bot: 1	Bot: 5	Bot: 98
Scale (Moderated to Severe Only)	Top:	Top:	Top:	Top:	Top:	Top:	Top:	Top:	Top:	Top:	Top: 0
	Bot:	Bot:	Bot:	Bot:	Bot:	Bot:	Bot:	Bot:	Bot:	Bot:	Bot: 0
Cracks: w/Efflorescence (use 6 in. width x length)	Bot: 12	Bot: 4.5	Bot: 14	Bot: 47	Bot: 50	Bot: 5.5	Bot:	Bot: 2.5	Bot: 13	Bot:	Bot: 247
w/o Efflo. (use 3 in. width x length)	Bot: 2.5	Bot: 22	Bot: 6	Bot: 12.5	Bot:	Bot: 3.5	Bot: 8	Bot: 1	Bot: 2	Bot:	Bot: 128
Map Cracking: w/Efflorescence (use full area)	Bot:	Bot:	Bot: 84	Bot:	Bot: 86	Bot: 4	Bot:	Bot: 9	Bot: 40.5	Bot:	Bot: 1094.5
w/o Efflo. (use 50% of area)	Bot: 43	Bot: 4.5	Bot: 17	Bot: 513	Bot: 671	Bot: 770	Bot: 509	Bot: 210	Bot: 343	Bot:	Bot: 4350.5
Honeycombed Areas (only areas more than 1 1/2 in deep)	Bot:	Bot:	Bot:	Bot:	Bot:	Bot:	Bot:	Bot:	Bot:	Bot:	Bot: 0
Total	58.5	33	132	577	818.5	784.5	518.5	225	399.5	566	6479
Total Span Area (Square Feet)	6728	7427	3298	3114	3565	3781	3144	3217	4135	1609	76975
% Spalled and Delaminated on Top	0	0	0	0	0	0	0	0	0		0
% Deterioration on Bottom	0.9%	0.4%	4.0%	18.5%	23.0%	20.7%	16.5%	7.0%	9.7%	35.2%	8.4%



General Notes:

- There is evidence of water leakage @ backwall.
- Personal belongings found between G5 & G7.

LEGEND

- HAIRLINE CRACKS WITHOUT EFFLORESCENCE
- MAP CRACKS WITHOUT EFFLORESCENCE
- HOLLOW AREA
- SHALLOW REBAR
- SCALE AREA
- SPALL AREA
- SPALL WITH EXPOSE REBAR
- HONEY COMBING

ATL ENGINEERS, INC.

FIELD NOTES

DESCRIPTION: Substructure

JOB NO: 70-23574

DATE: 8/30/04

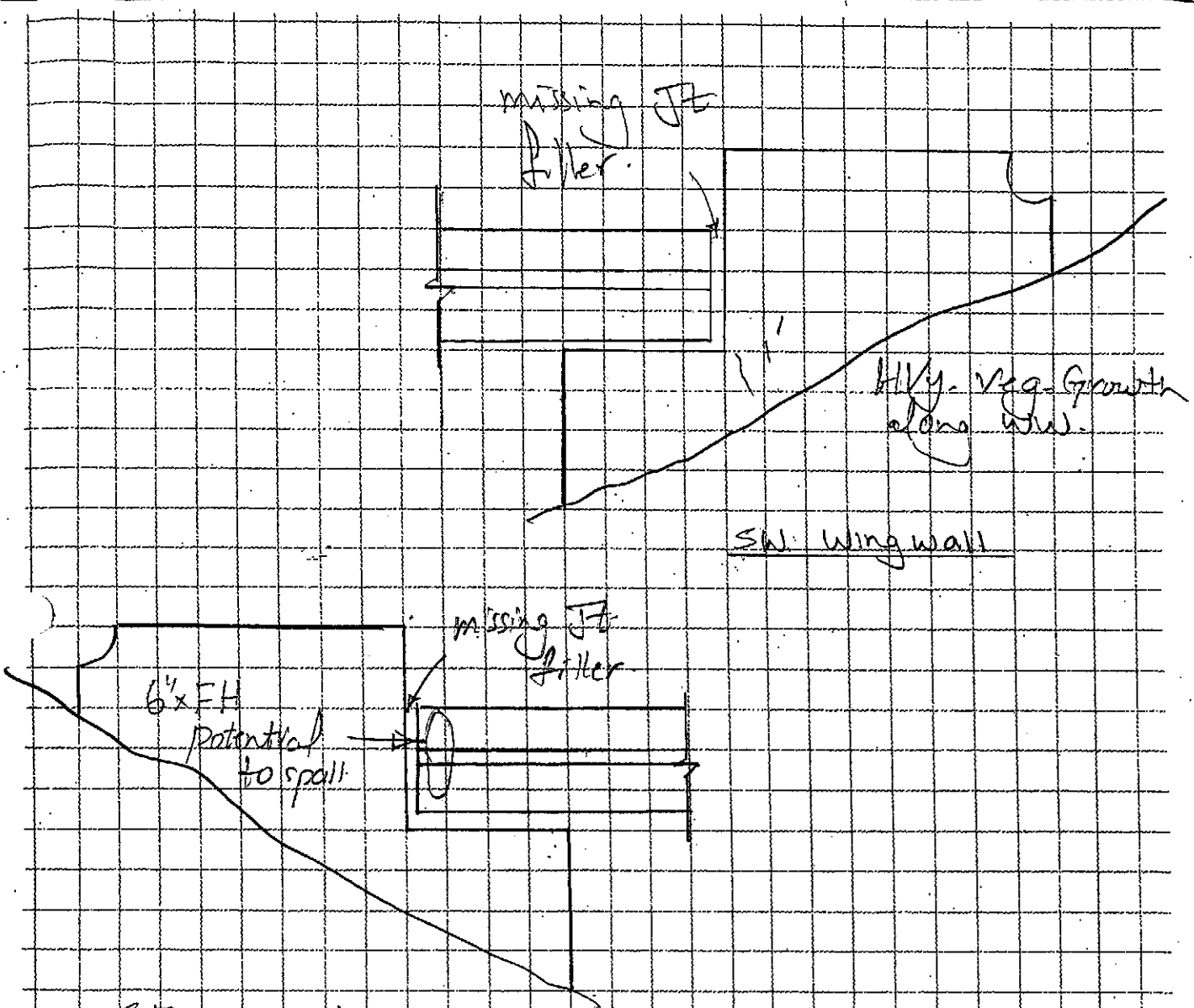
CREW: AAA, AHJ

9/28/06 HAKS MAN, ZM

BRIDGE NO: 03190B.

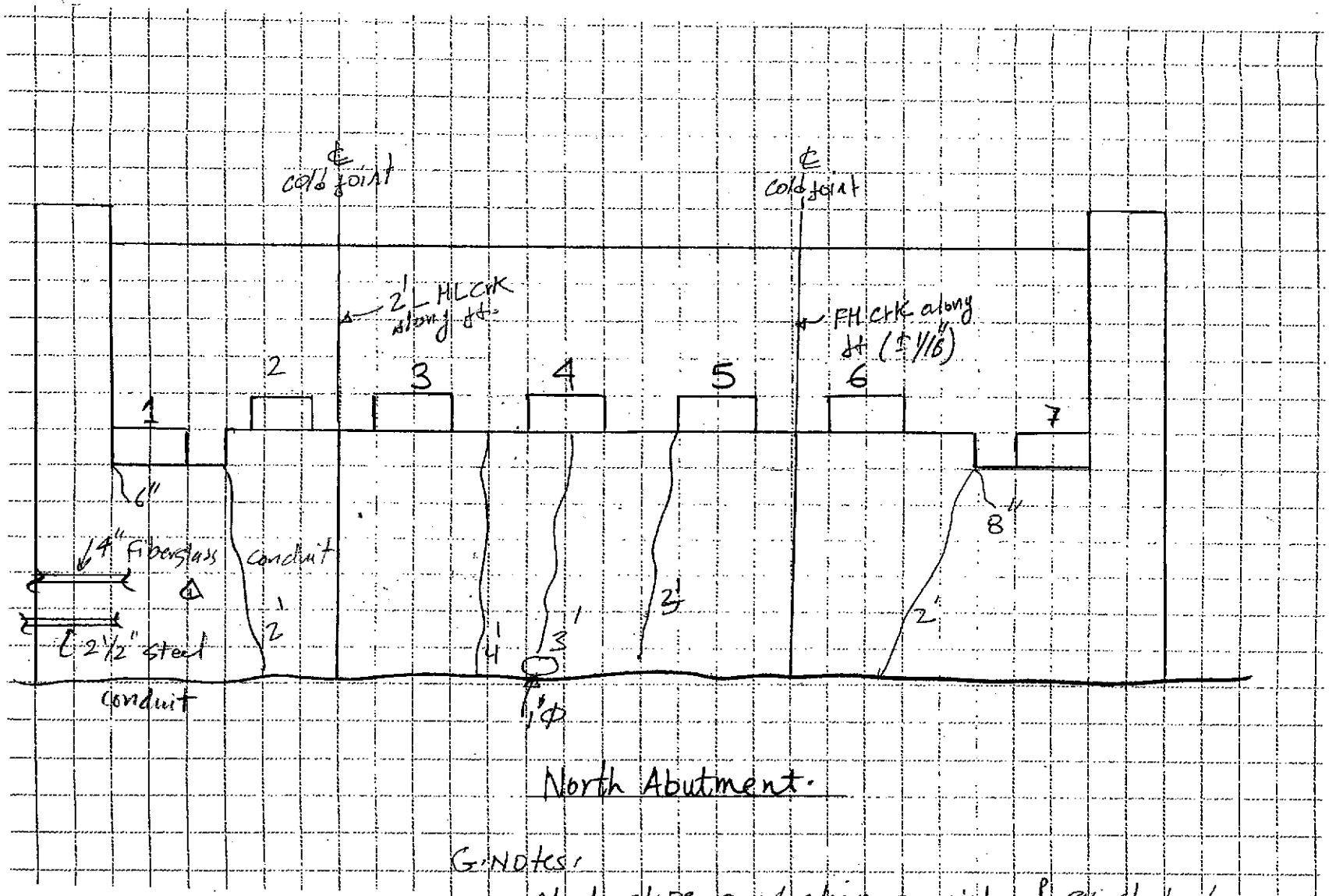
SHEET 57 OF 122

AI Engineers, Inc.	JOB NO: 170-2357ext	BRIDGE NO: 03190 B.
	DATE: 8/30/04	SHEET ~~43~~ 58 OF ~~78~~ 122
FIELD NOTES	CREW: AAA, AHS	Δ 9/28/06 (HAKS) MAN, ZM
DESCRIPTION: Substructure		



LEGEND

- HAIRLINE CRACKS WITHOUT EFFLORESCENCE
- MAP CRACKS WITHOUT EFFLORESCENCE
- HOLLOW AREA
- SHALLOW REBAR
- SCALE AREA
- SPALL AREA
- SPALL WITH EXPOSE REBAR
- HONEY COMBING



North Abutment.

G. Notes:

- Abut. slope protection consists of crushed stones.
- silt stain & discoloration @ stem & B-wall Typ.

LEGEND

- HAIRLINE CRACKS WITHOUT EFFLORESCENCE
- MAP CRACKS WITHOUT EFFLORESCENCE
- HOLLOW AREA
- SHALLOW REBAR
- SCALE AREA
- SPALL AREA
- SPALL WITH EXPOSE REBAR
- HONEY COMBING

DESCRIPTION: Substructure

FIELD NOTES

AT Engineering Inc.

JOB NO: 170-2357 Ext.

BRIDGE NO: 03190 B.

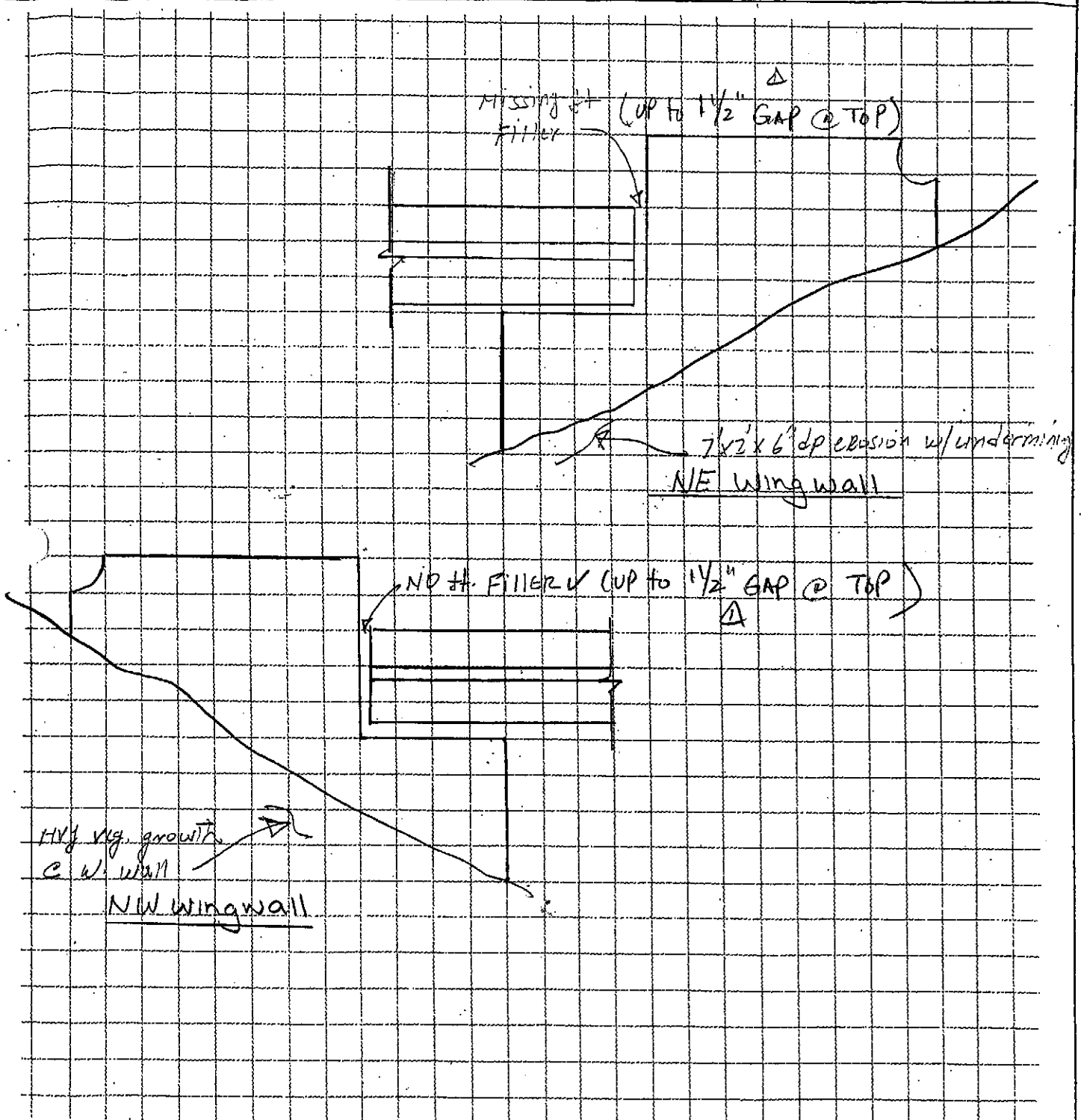
DATE: 08/19/04

SHEET ~~44~~ 59 OF ~~78~~ 122

CREW: BNS, MA

Δ (HAKS) MMN, ZM 10/26/06

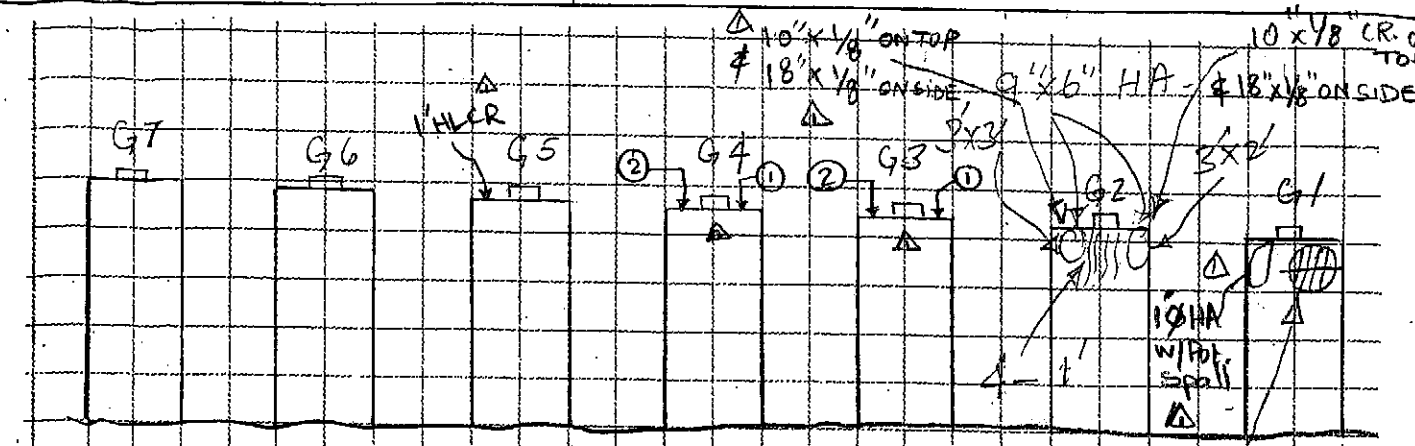
AI Engineers, Inc.	JOB NO: 170-2357ext	BRIDGE NO: 03190 B.
	DATE: 08/19/04	SHEET ~~45~~ 60 OF ~~78~~ 122
FIELD NOTES	CREW: ① (HAKS) MAN, ZM BNS, MA 10/26/06	
DESCRIPTION: Substructure		



LEGEND

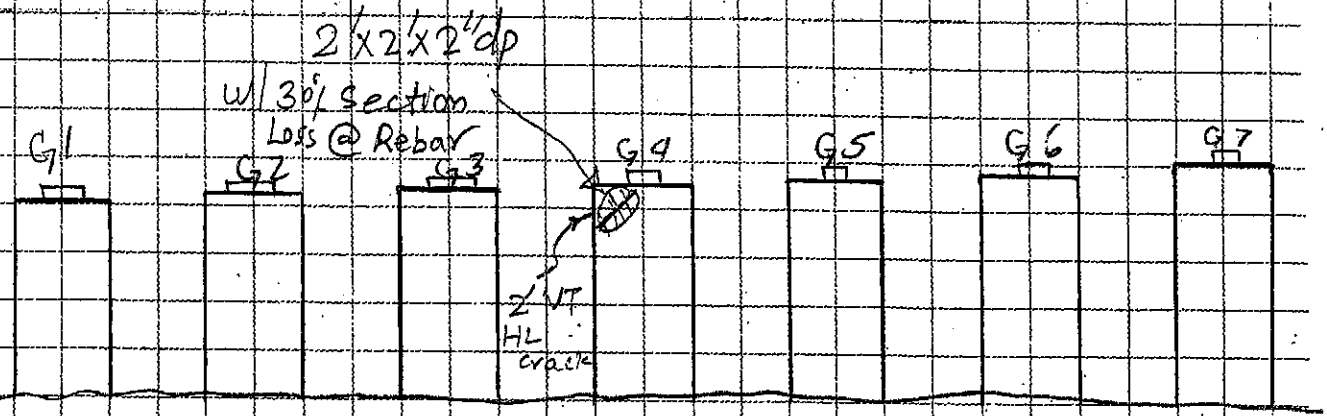
- HAIRLINE CRACKS WITHOUT EFFLORESCENCE
- MAP CRACKS WITHOUT EFFLORESCENCE
- HOLLOW AREA
- SHALLOW REBAR
- SCALE AREA
- SPALL AREA
- SPALL WITH EXPOSE REBAR
- HONEY COMBING

AI Engineers, Inc.	JOB NO: 170-2357 Ext	BRIDGE NO: 03190B
	DATE: 8/30/04	SHEET ~~46~~ 61 OF ~~78~~ 122
FIELD NOTES	CREW: AAA, AHS △ (HAKS) MAN, ZM 9/29/06	
DESCRIPTION: Substructure		



North Elevation

2'x2'x4" dp w/ 6"x1½ undermining of Mass D.



South Elevation

△ HAKS 9/28/06 MAN, ZM

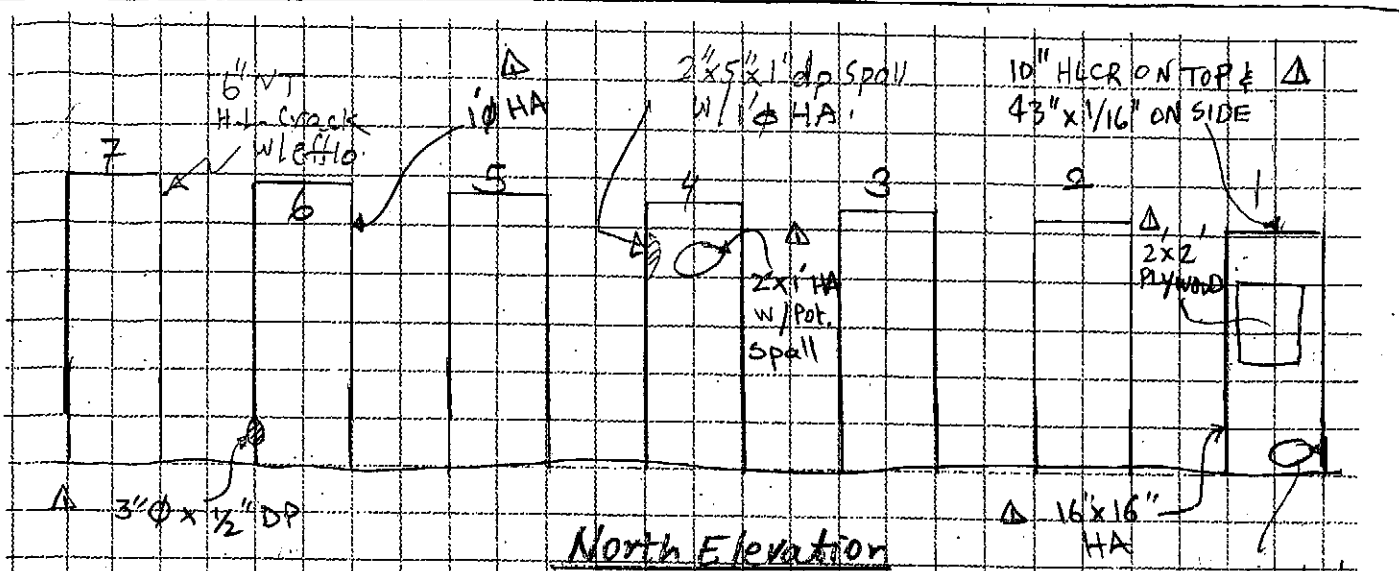
Bent-1

△ ① 10"x1/32" on top & 14"x1/32" on side w/ EFF.
② 10"x1/16" " " 14"x1/16" " " "

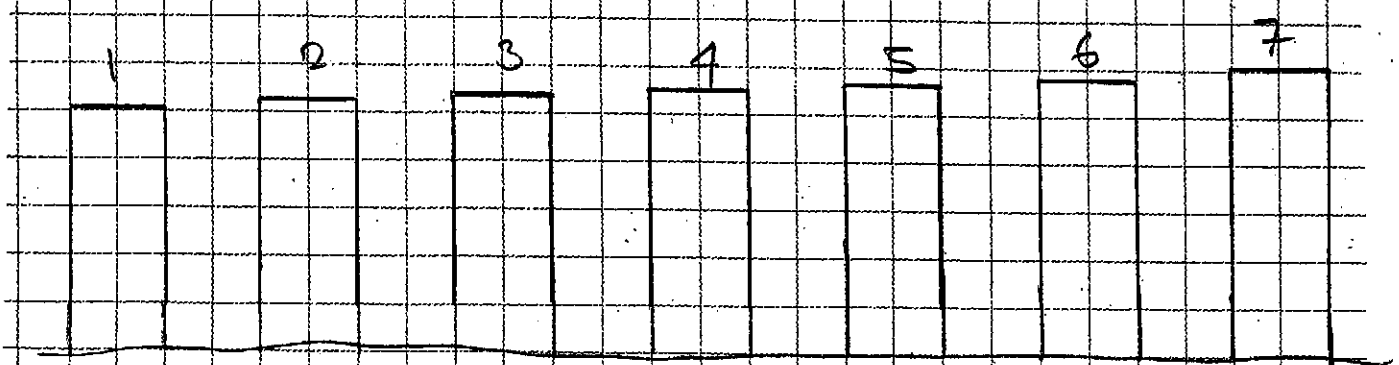
LEGEND

- HAIRLINE CRACKS WITHOUT EFFLORESCENCE
- MAP CRACKS WITHOUT EFFLORESCENCE
- HOLLOW AREA
- SHALLOW REBAR
- SCALE AREA
- SPALL AREA
- SPALL WITH EXPOSE REBAR
- HONEY COMBING

AI Engineers, Inc	JOB NO: 170-2357 Ext	BRIDGE NO: 03190B
	DATE: 8/30/04	SHEET ~~47~~ 62 OF ~~78~~ 122
FIELD NOTES	CREW: AAA, AHS Δ(HAKS) 9/28/06 MAN, ZM	
DESCRIPTION: Substructure		



North Elevation



South Elevation

Bent-2

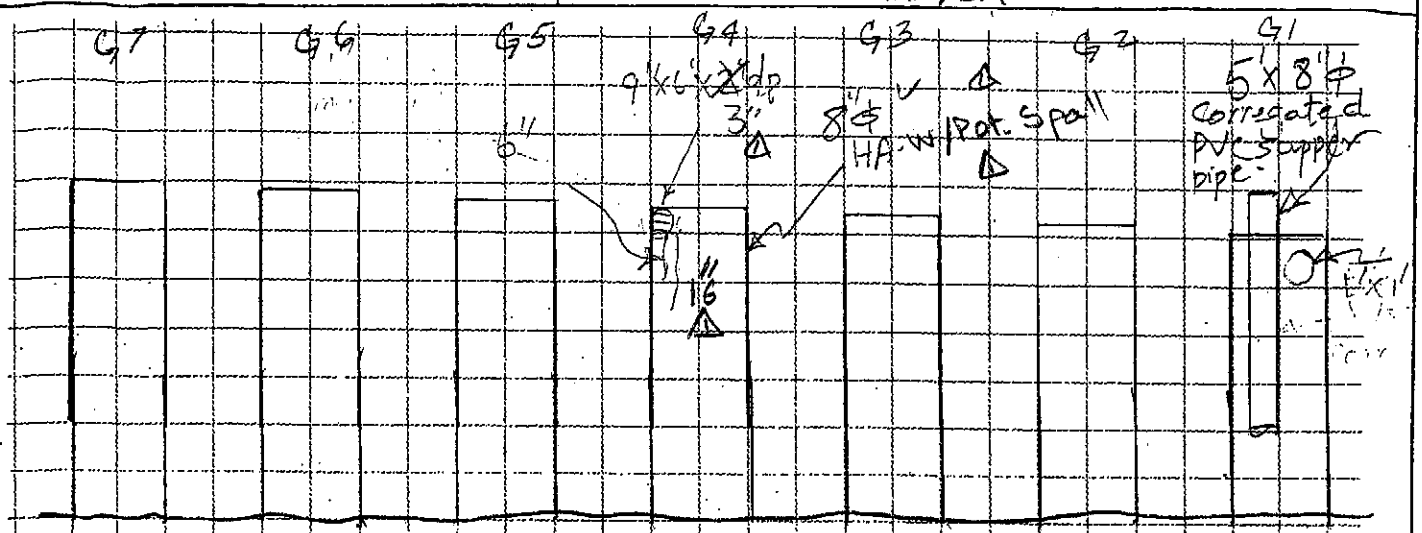
General Notes:

- There is Lt. efflo. @ top of Columns @ random Locations.

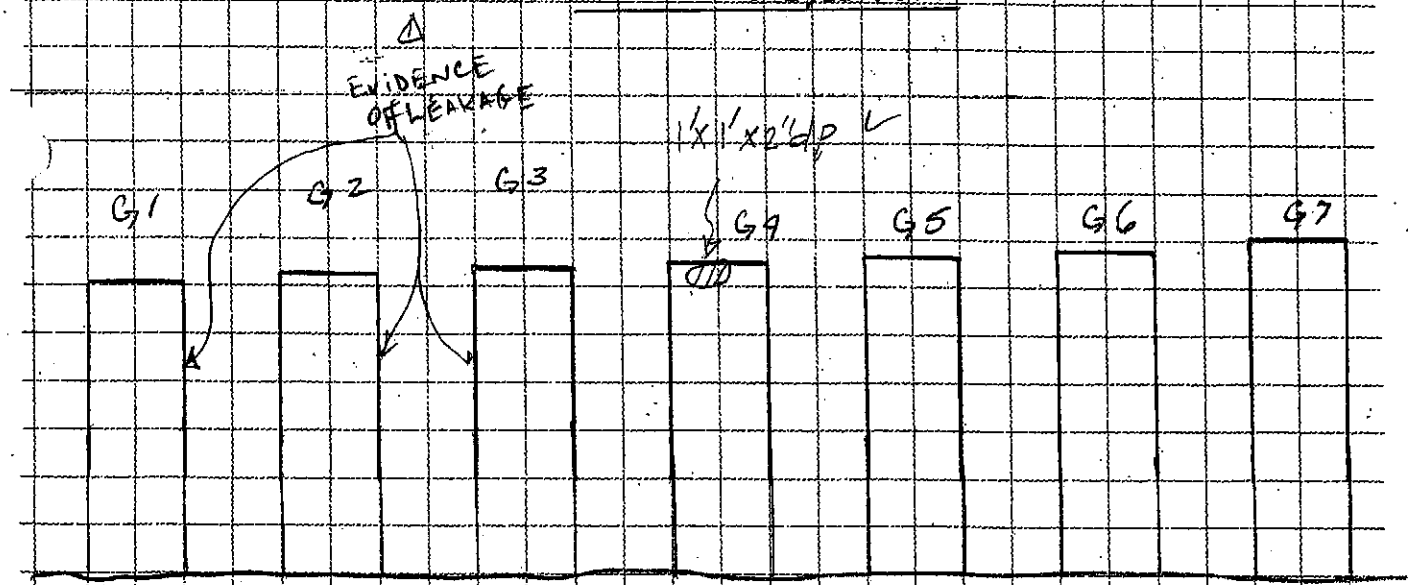
LEGEND

- HAIRLINE CRACKS WITHOUT EFFLORESCENCE
- MAP CRACKS WITHOUT EFFLORESCENCE
- HOLLOW AREA
- SHALLOW REBAR
- SCALE AREA
- SPALL AREA
- SPALL WITH EXPOSE REBAR
- HONEY COMBING

AI Engineers, Inc.	JOB NO: 170-2357 Ext	BRIDGE NO: 03190B
	DATE: 8/30/04	SHEET ~~48~~ 63 OF ~~78~~ 122
FIELD NOTES	CREW: △(HAKS) AAA, AHS - 9/28/06 MAN, ZM	100%
DESCRIPTION: Substructure		



North Elevation



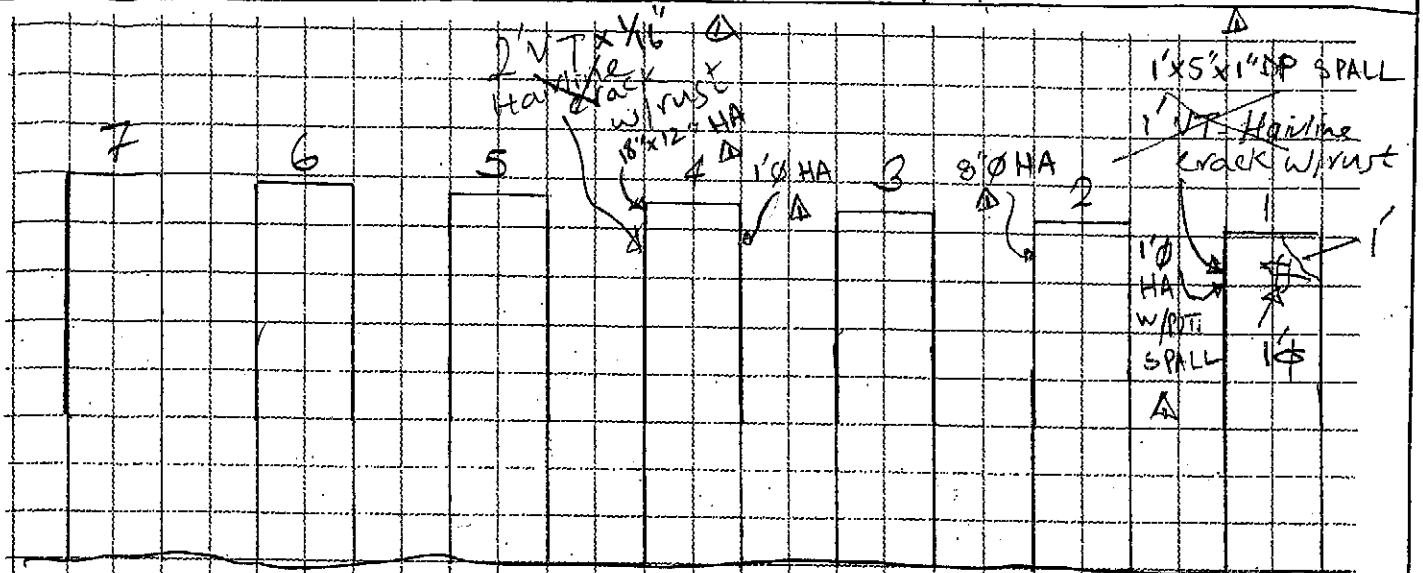
South Elevation

Bent-3

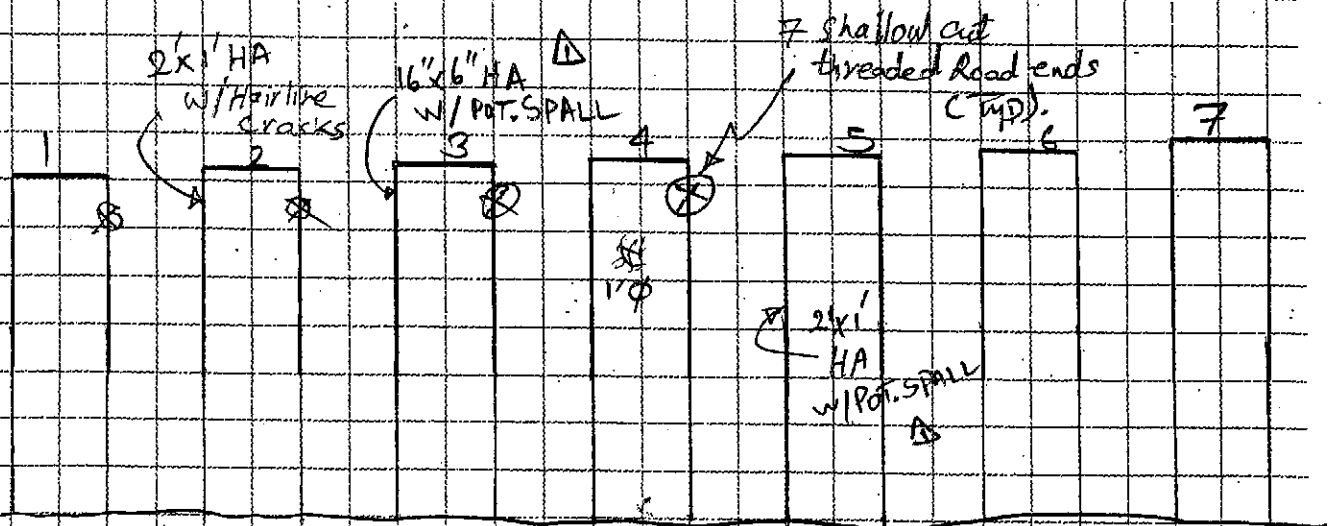
LEGEND

- HAIRLINE CRACKS WITHOUT EFFLORESCENCE
- MAP CRACKS WITHOUT EFFLORESCENCE
- HOLLOW AREA
- SHALLOW REBAR
- SCALE AREA
- SPALL AREA
- SPALL WITH EXPOSE REBAR
- HONEY COMBING

AI Engineers Inc	JOB NO: 170-2357 Ext	BRIDGE NO: 03190B
	DATE: 8/27/04	SHEET ~~49~~ 64 OF ~~78~~ 122
FIELD NOTES	CREW: AAA, BINS. △ 9/28/06 (HAKS) MAN, ZM	100%
DESCRIPTION: Substructure		



North Elevation



South Elevation

GENERAL NOTES:

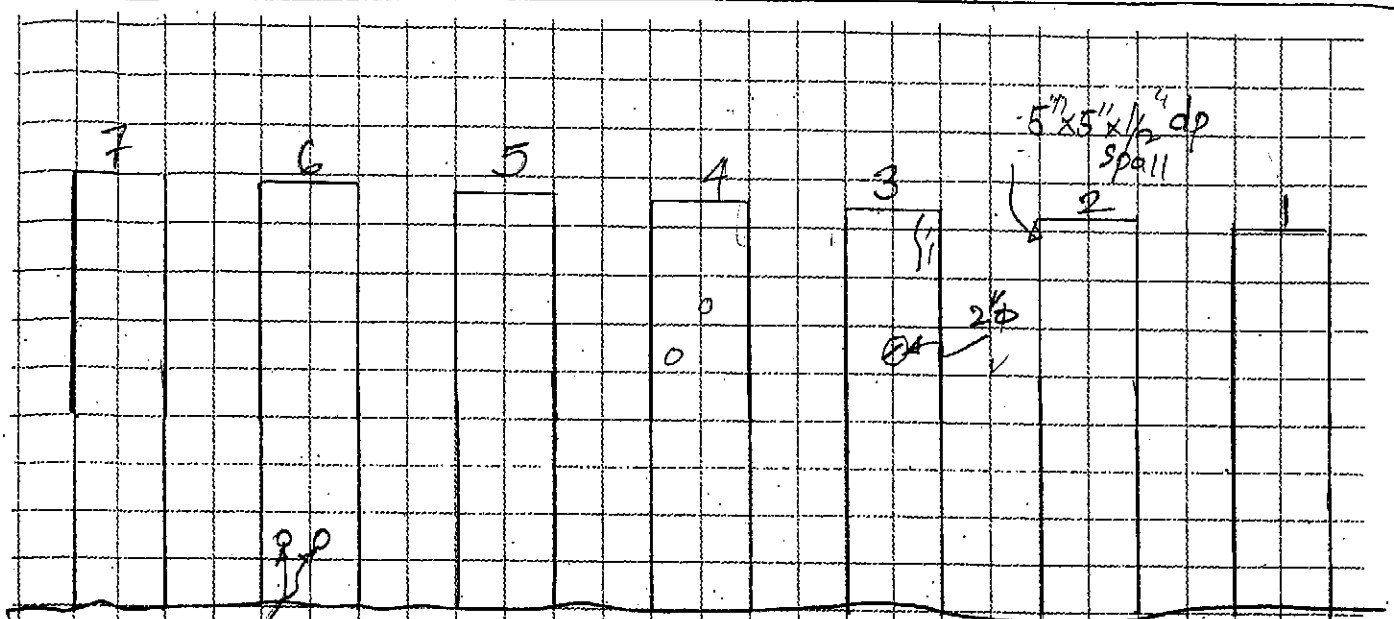
△ – WATER STAIN at G1, G2, G3

LEGEND

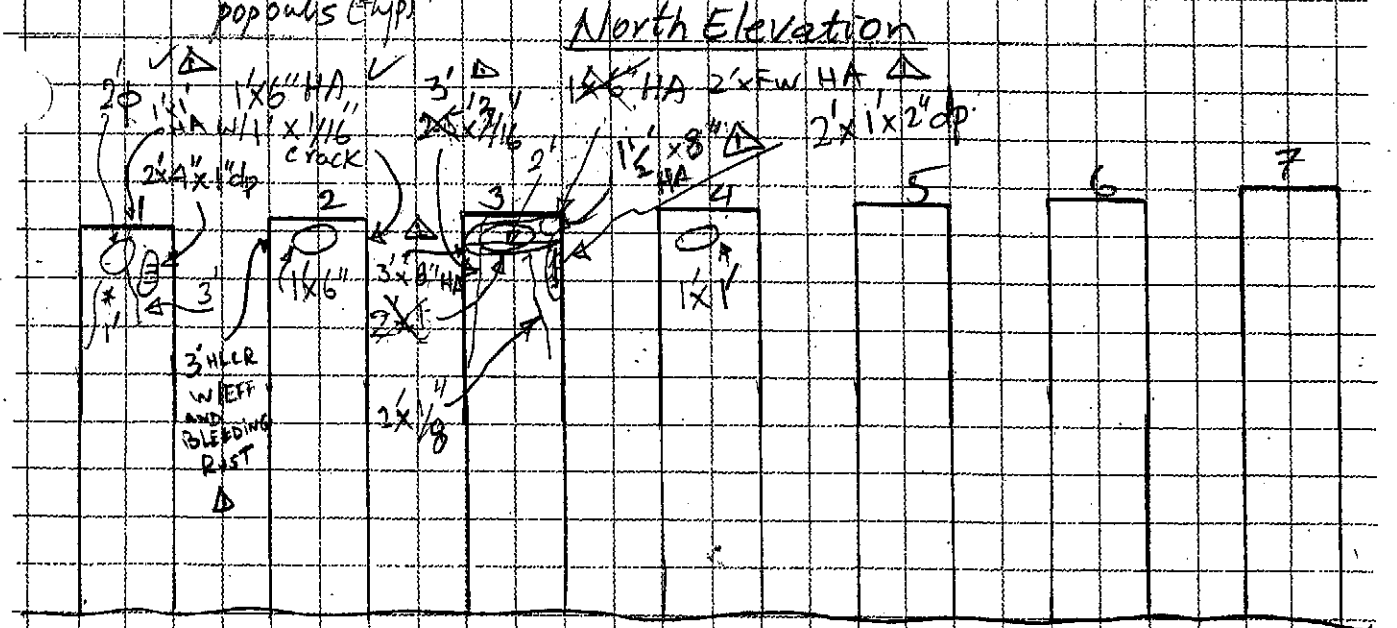
- HAIRLINE CRACKS WITHOUT EFFLORESCENCE
- HAP CRACKS WITHOUT EFFLORESCENCE
- HOLLOW AREA
- SHALLOW REBAR
- SCALE AREA
- SPALL AREA
- SPALL WITH EXPOSE REBAR
- HONEY COMBING

Bent-4

AI Engineers, Inc.	JOB NO: 170-2357 Ext	BRIDGE NO: 03190B
	DATE: 8/25/04	SHEET ~~50~~ 65 OF ~~78~~ 122
FIELD NOTES	CREW: AAA, AHS (HAKS) 9/26/06 & 10/31/06 MAN, ZM	
DESCRIPTION: Substructure		



North Elevation



South Elevation.

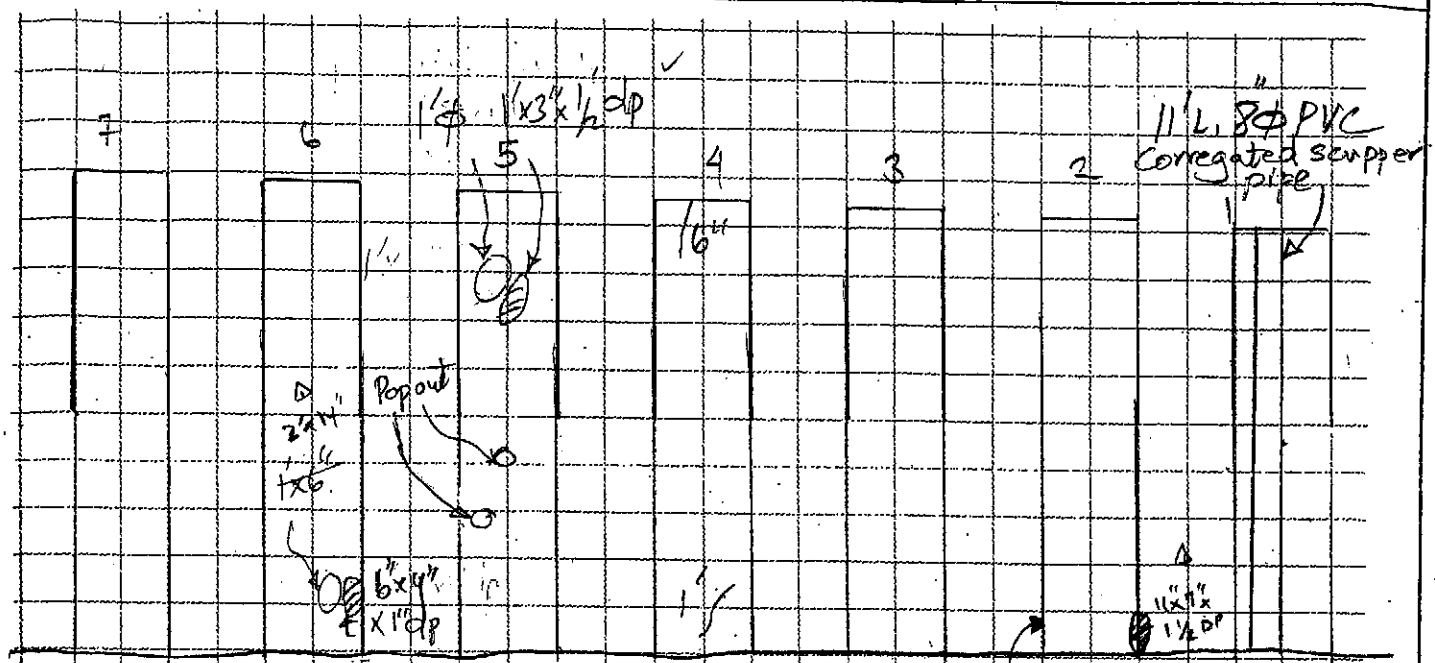
LEGEND

- HAIRLINE CRACKS WITHOUT EFFLORESCENCE
- MAP CRACKS WITHOUT EFFLORESCENCE
- HOLLOW AREA
- SHALLOW REBAR
- SCALE AREA
- SPALL AREA
- SPALL WITH EXPOSE REBAR
- HONEY COMBING

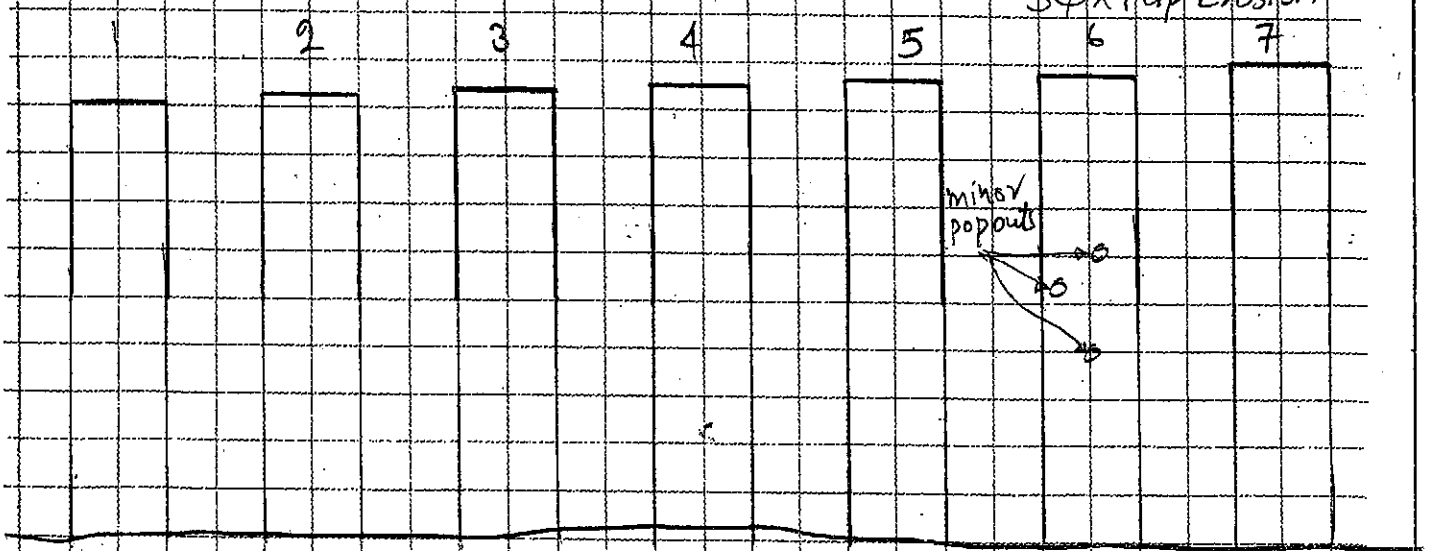
* w/ efflo.

Bent -5

AI Engineers, Inc.	JOB NO: 170-2357 Ext	BRIDGE NO: 03190B
	DATE: 8/25/04	SHEET ~~51~~ 66 OF ~~78~~ 122
FIELD NOTES	CREW: AAA, AHS Δ (HAKS) 9/26/06 MAN, ZM	
DESCRIPTION: Substructure		



North Elevation



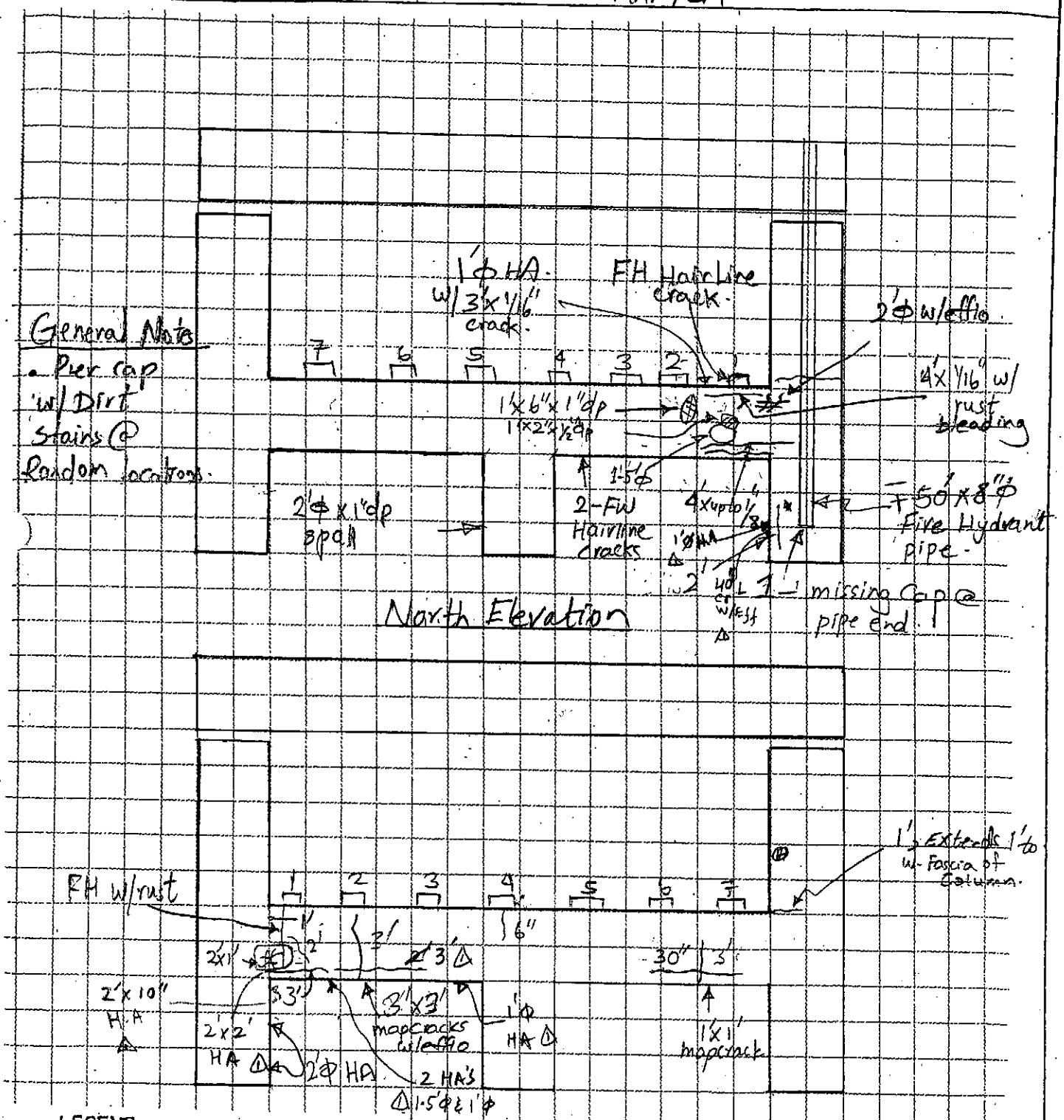
South Elevation

LEGEND

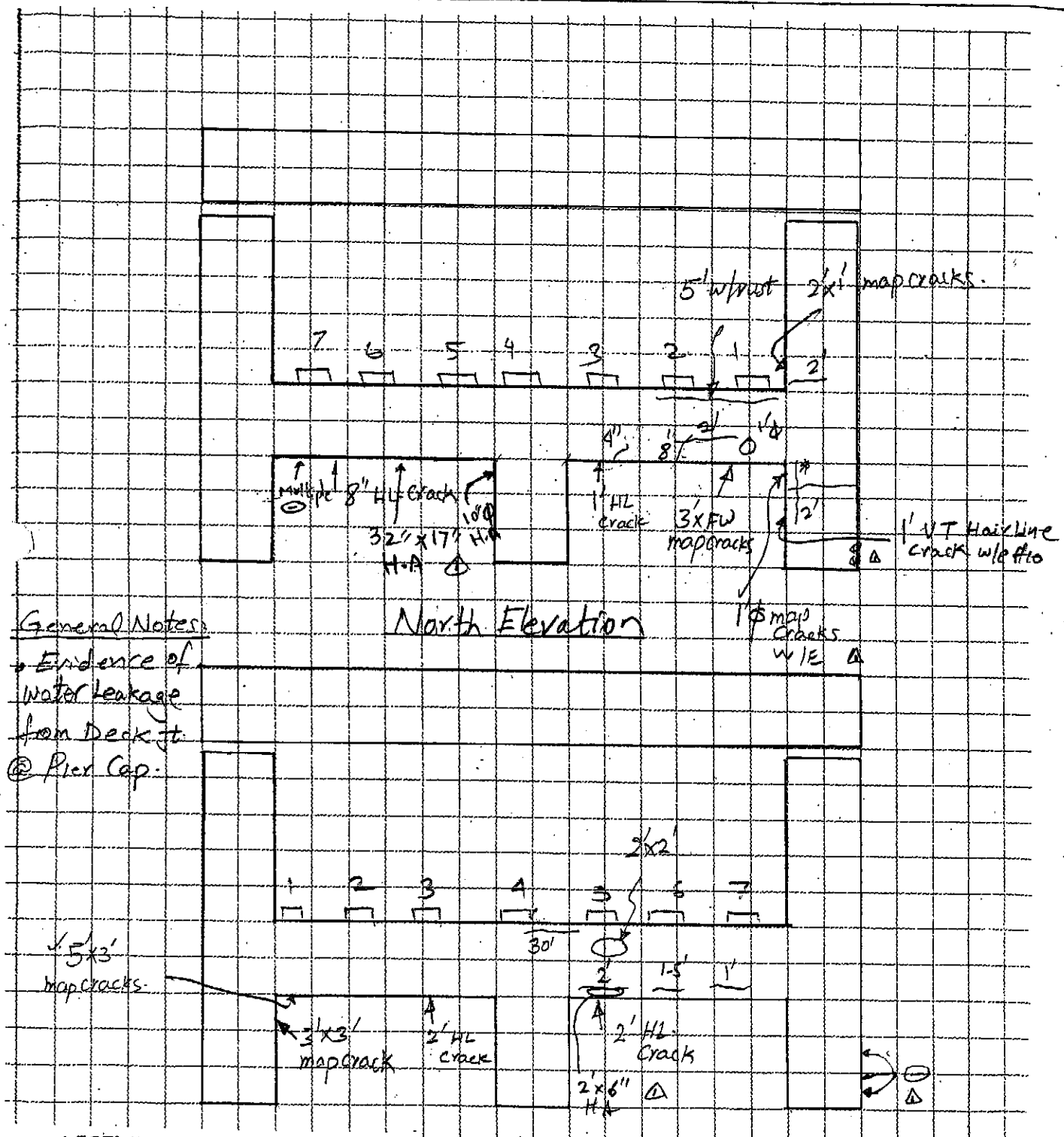
- HAIRLINE CRACKS WITHOUT EFFLORESCENCE
- MAP CRACKS WITHOUT EFFLORESCENCE
- HOLLOW AREA
- SHALLOW REBAR
- SCALE AREA
- SPALL AREA
- SPALL WITH EXPOSE REBAR
- HONEY COMBING

Bent - 6

AI Engineers, Inc.	JOB NO: 170-235764	BRIDGE NO: 03190B.
	DATE: 8/25/04	SHEET ~~52~~ 67 OF ~~78~~ 122
FIELD NOTES	CREW: ~~AAA~~, AHS. △ 9/25/06 (HAKS) MAN, ZM	
DESCRIPTION: Substructure		



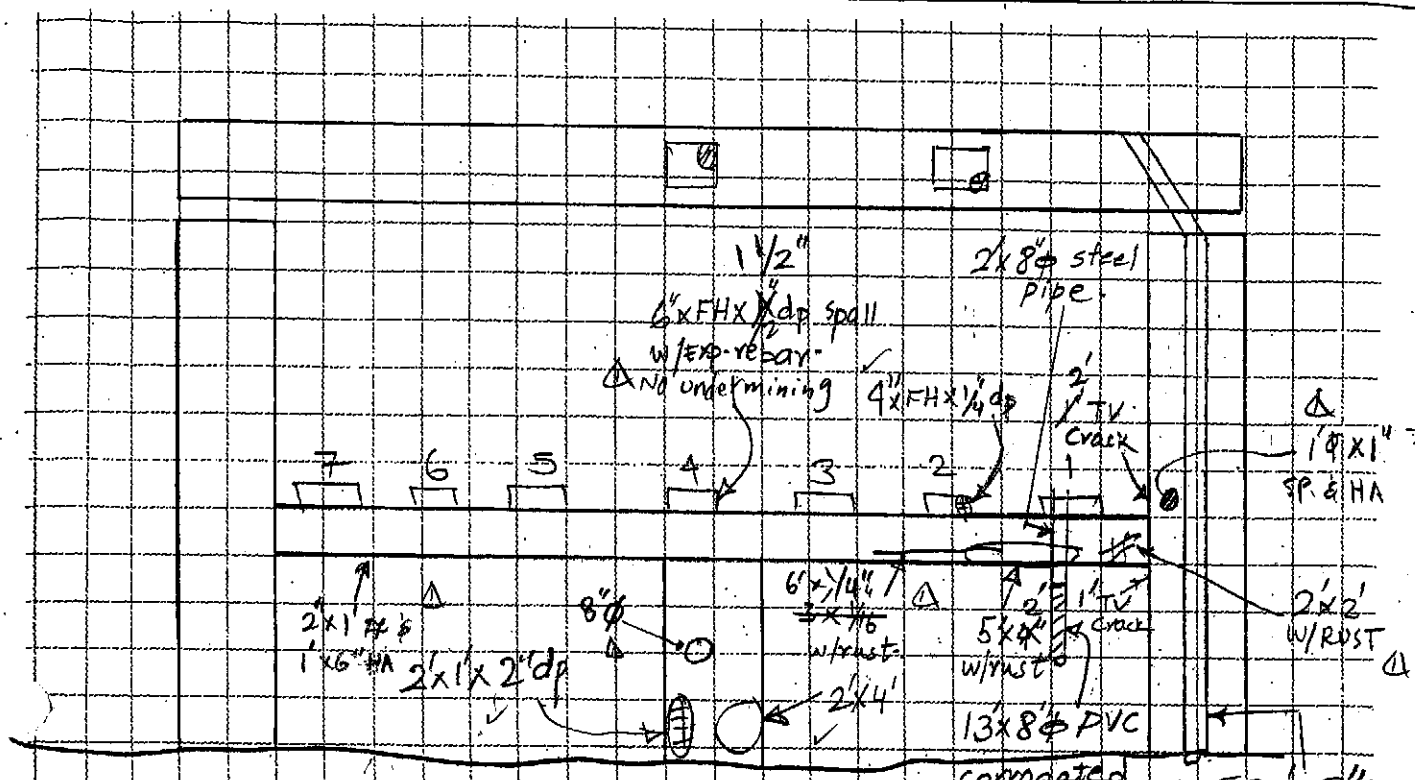
AJ Engineers, Inc.	JOB NO: 170-235754	BRIDGE NO: 03190B.
	DATE: 8/25/04	SHEET ~~58~~ 68 OF ~~78~~ 122
FIELD NOTES	CREW: 1/25/06 (HAKS) AAA, AHS - MAN, ZM	
DESCRIPTION: Substructure		

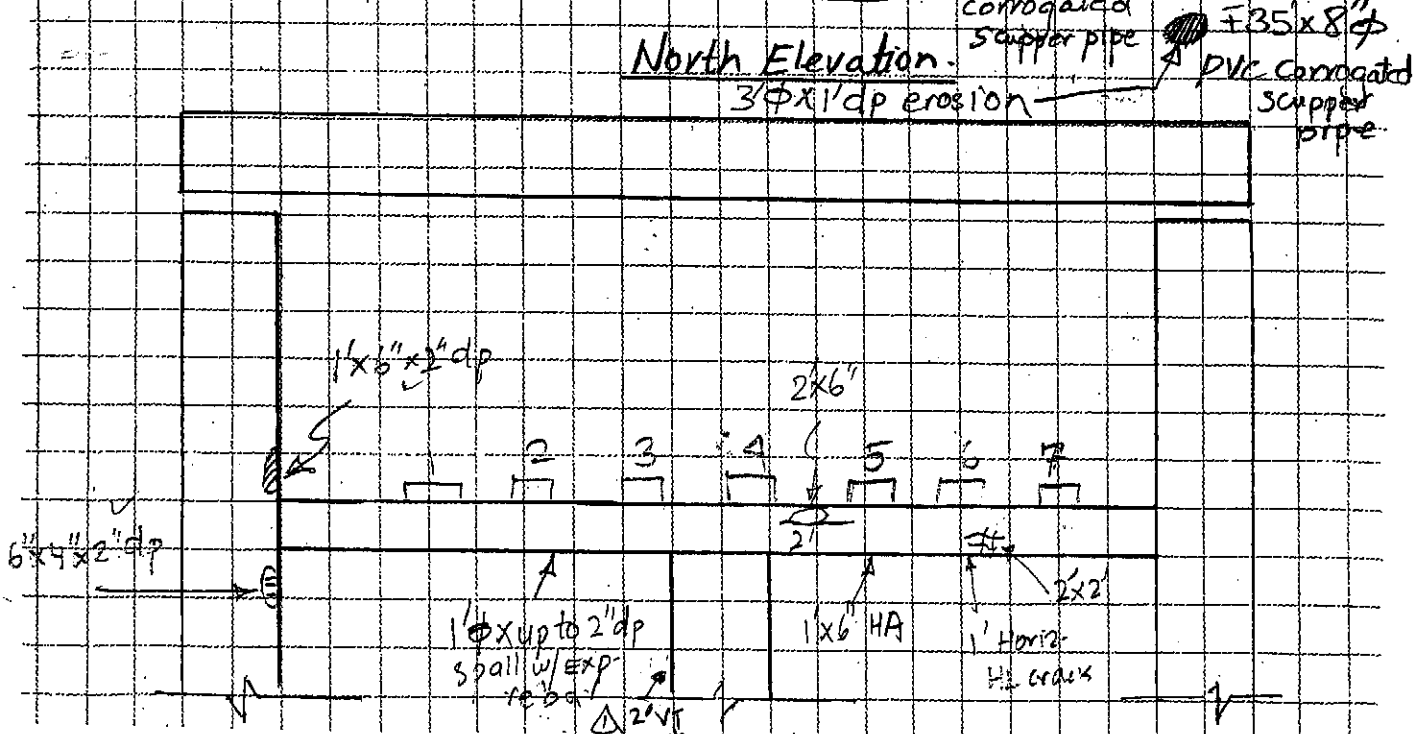


LEGEND

- HAIRLINE CRACKS WITHOUT EFFLORESCENCE
- MAP CRACKS WITHOUT EFFLORESCENCE
- HOLLOW AREA
- SHALLOW REBAR
- SCALE AREA
- SPALL AREA
- SPALL WITH EXPOSE REBAR
- HONEY COMBING

AI Engineers, Inc.	JOB NO: 170-2357Ext.	BRIDGE NO: 03190 B.
	DATE: 8/24/04	SHEET ~~54~~ 69 OF ~~78~~ 122
FIELD NOTES	CREW: AAA, AHS. Δ 9/26/06 (HAKS) MAN, ZM	
DESCRIPTION: Substructure		





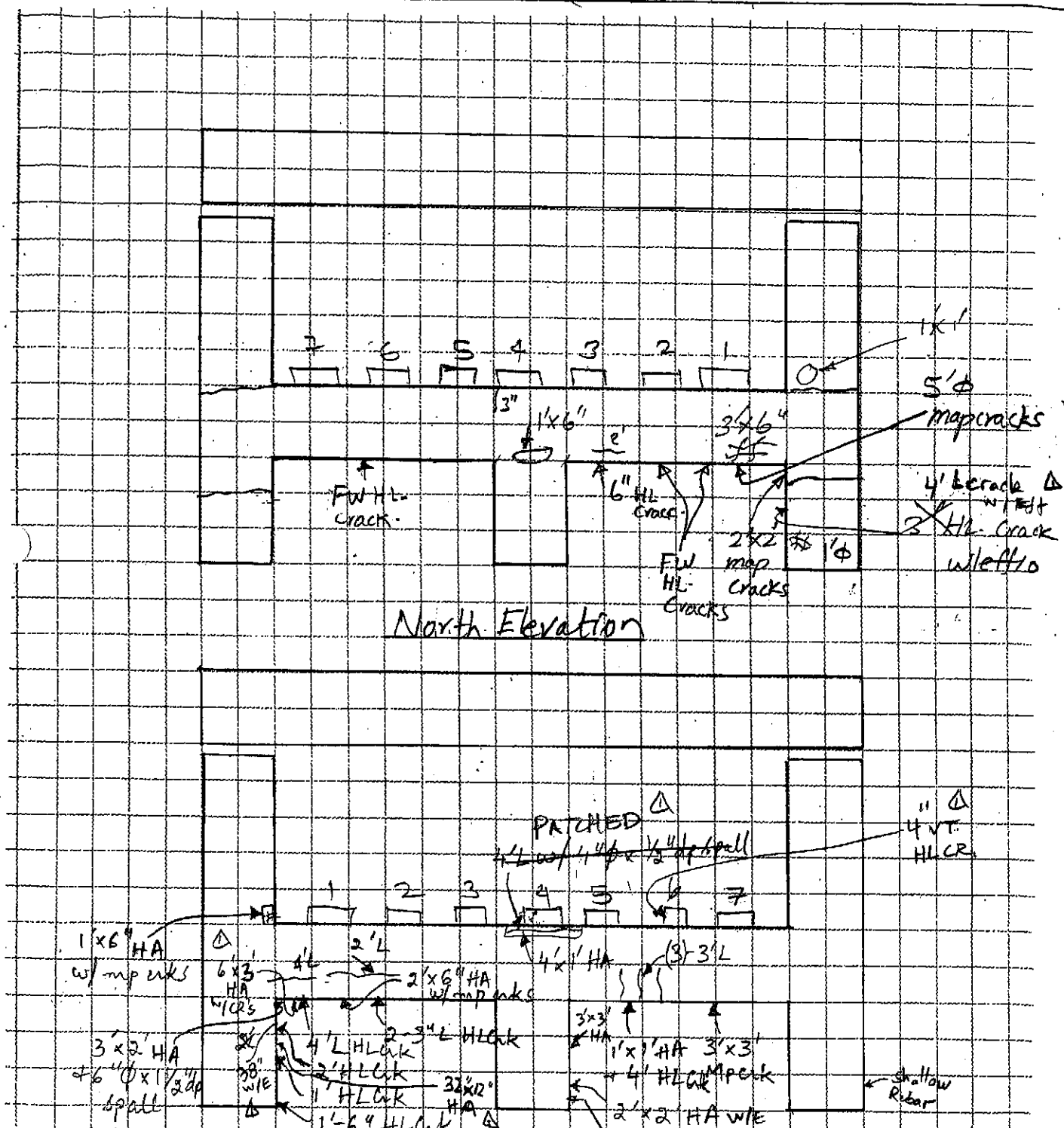
LEGEND

- HAIRLINE CRACKS WITHOUT EFFLORESCENCE
- MAP CRACKS WITHOUT EFFLORESCENCE
- HOLLOW AREA
- SHALLOW REBAR
- SCALE AREA
- SPALL AREA
- SPALL WITH EXPOSE REBAR
- HONEY COMBING

Pier 9 (03190B) — Lower

Pier 15 (03190A) — Upper

AI Engineers, Inc.	JOB NO: 170-2357ex	BRIDGE NO: 03190B.
	DATE: 8/24/04	SHEET ~~55~~ 70 OF ~~78~~ 122
FIELD NOTES	CREW: AAA, AHS	
DESCRIPTION: Substructure	Δ 9/26/06 (HAKS) MAN, ZM	



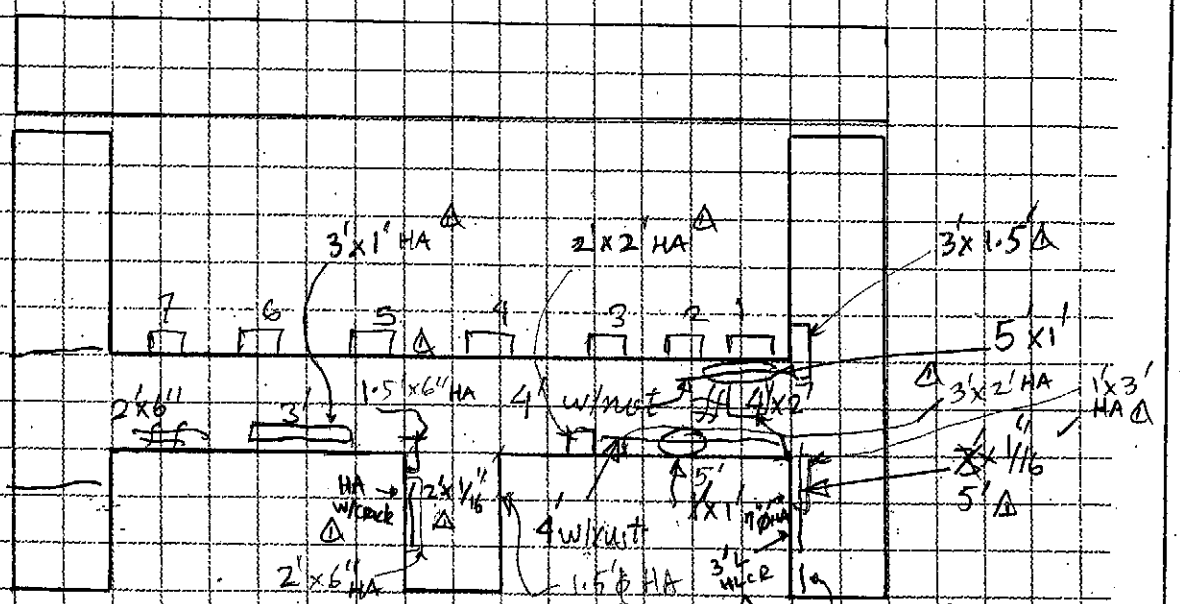
LEGEND

- HAIRLINE CRACKS WITHOUT EFFLORESCENCE
- MAP CRACKS WITHOUT EFFLORESCENCE
- HOLLOW AREA
- SHALLOW REBAR
- SCALE AREA
- SPALL AREA
- SPALL WITH EXPOSE REBAR
- HONEY COMBING

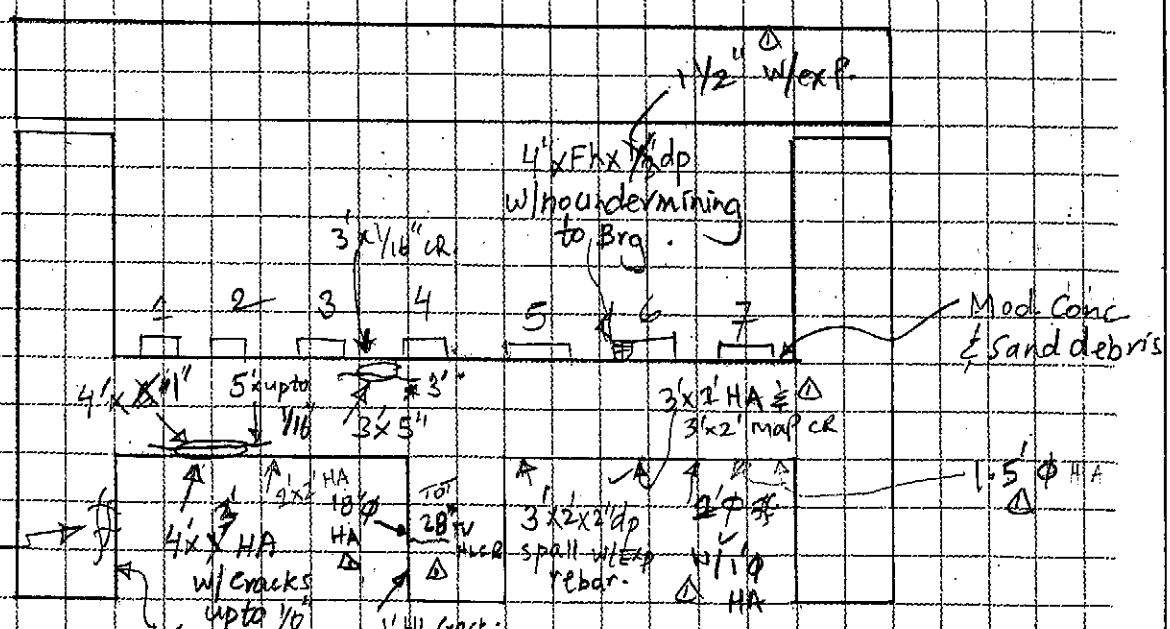
Pier 10 (03190B) Lower

Pier 16 (03190A) Upper

AI Engineers, Inc.	JOB NO: 170-2357EL	BRIDGE NO: 03190B.
	DATE: 8/24/04	SHEET ~~58~~ 71 OF ~~78~~ 122
FIELD NOTES	CREW: AAA, AHS Δ(HAKS) 9/26/06 MAN, ZM	
DESCRIPTION: Substructure		



North Elevation



South Elevation

LEGEND

- HAIRLINE CRACKS WITHOUT EFFLORESCENCE
- MAP CRACKS WITHOUT EFFLORESCENCE
- HOLLOW AREA
- SHALLOW REBAR
- SCALE AREA
- SPALL AREA
- SPALL WITH EXPOSE REBAR
- HONEY COMBING

*: w/efflo

Pier 11 (03190B) Lower

Pier 17 (03190A) Upper

AI Engineers, Inc.	JOB NO: 170-2357 Ext.	BRIDGE NO: 03190B.
	DATE: 8/20/04	SHEET ~~57~~ 72 OF ~~78~~ 122
FIELD NOTES	CREW: AAA, AHS, BNS △ 10/18/06 (HAKS) MAN, ZM	
DESCRIPTION: substructure		

△ 6"⌀ HA

△ 3'x 8"w Heavy RUST @ TOP FL W/ Neg. S.L.

5' Mod. rust @ top Flg. (Deck haunch removed)

General Notes:
Inside VT stiff w/up to 90% Section loss T 6" @ the bott.

G1 2 3 4 5 6 7 G8

3'x1'

Hvy Debris & Mod rust @ Mass. ⌀ of A.B.

△ FL HLCR W/E

7'x1' △ 1"⌀ pref Hole @ bott of VT stiff.

5'

FL HLCR △ @ CTR

△ 2'x2' HA

1'x up to 3' h x 6" dp up to 25% S.L @ Rebar.

South Elevation

△ S. CROSS GIRDER HAS ∡'s BOLTED TO 5 VT. STIFFENERS DUE TO PERFORATIONS AT THE BOTTOM

8/16"

F15'x 4"x up to 8/16" pitting Loss @ bott. Flg. See Sketch next page

G8 7 6 5 4 3 2 G1

FW x 6"h hvy rust w/ 1/16 S-Loss @ bott of stiff.

4'x6"x4" dp Spall No undermining to pier cap Brg.

3'x FW Lam rust w/ neg S. loss @ to of bott. Flg. & Hvy sand accum.

△ 3'x3' HA △ 3x2 HA

FL HLCR △

North Elevation

2'L CR W/E

FL HLCR W/E △ @ CTR

Pier 12 (03190B) Lower

Pier 18 (03190A) Upper

LEGEND

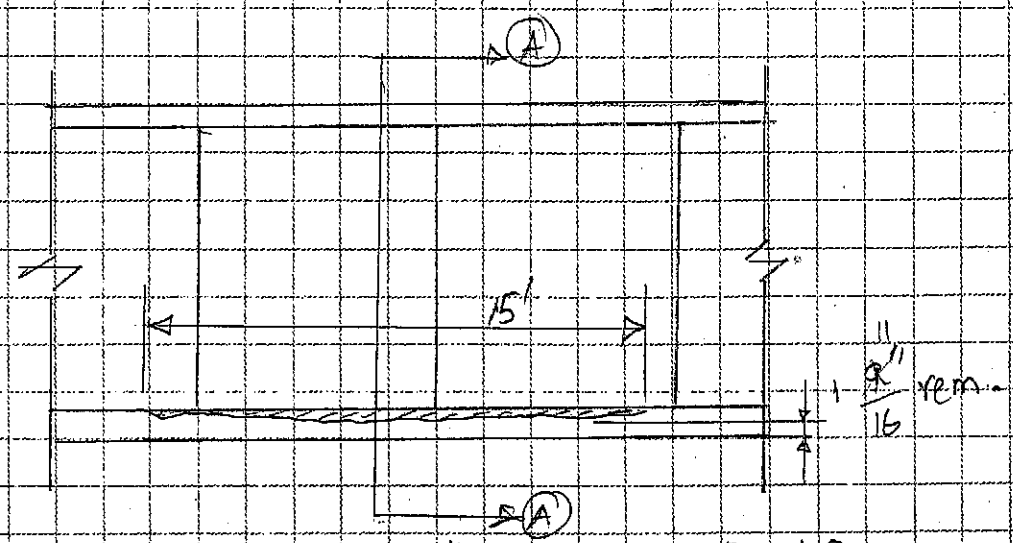
- HAIRLINE CRACKS WITHOUT EFFLORESCENCE
- MAP CRACKS WITHOUT EFFLORESCENCE
- HOLLOW AREA
- SHALLOW REBAR
- SCALE AREA
- SPALL AREA
- SPALL WITH EXPOSE REBAR
- HONEY COMBING

NOTES:

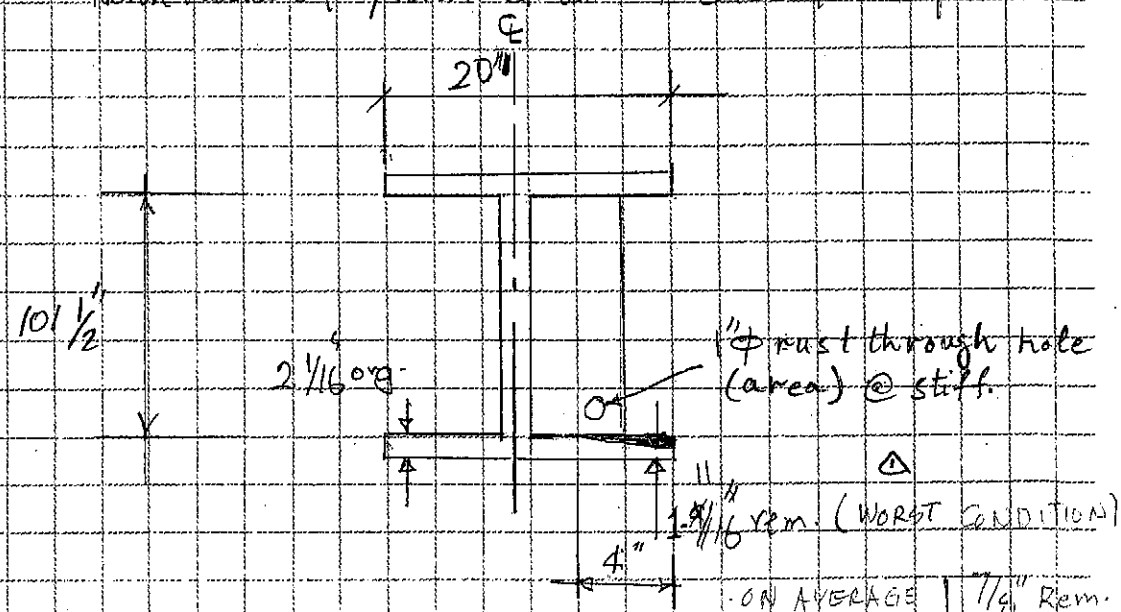
△ No CROSS GIRDER HAS ∡'s BOLTED TO 8 STIFF'S DUE TO HOLES @ BOTTOM

* HVY SAND ON W. BRG'S W/ MOD. RUST ON TOP OF BOTT. F

AI Engineers, Inc.	JOB NO: 170-2357 Ext.	BRIDGE NO: 03190B
	DATE: 8/20/04	SHEET ~~58~~ 73 OF ~~78~~ 122
FIELD NOTES	CREW: AAA, AHS, FM, BNJ	△ 10/18/06 (HAKS) MAN, ZM
DESCRIPTION: Substructure		



North Fascia of North Girder of Steel Rev Cap 12



Sec. A-A

Note: See prev. sht. for detail location.

△ - S. CROSS GIRDER IS SIMILAR ON N. SIDE.

LEGEND

- HAIRLINE CRACKS WITHOUT EFFLORESCENCE
- MAP CRACKS WITHOUT EFFLORESCENCE
- HOLLOW AREA
- SHALLOW REBAR
- SCALE AREA
- SPALL AREA
- SPALL WITH EXPOSE REBAR
- HONEY COMBING

AI Engineers, Inc.	JOB NO: 170-2357 Ext.	BRIDGE NO: 03190B.
	DATE: 8/20/04	SHEET ~~59~~ 74 OF ~~78~~ 122
FIELD NOTES	CREW: Δ(HAKS) MAN, ZM 10/18/06 AAA, FM, AHS, BNS	
D. RIPTION: substructure		

Δ

① Hvy Rust @ Bott. of VT Stiffs (3) & one knife edged

Conc. around Pot Brgs Hollow w/pot. to spall

1'x FW Peeling paint @ top of bott. Flg.

1 2 3 4 5 6 7 8

Hvy. debris & Mod. rust @ Mbrs. 12.

General Notes

Minor painted over pitting @ random locations

2' 2'

6"

Δ 1' Lt. rust @ top of

6" VT. HL Crack

7" @ top

1'

7"x FW Lt. rust @ bott. Flg.

6"x4"x2" bot. Flg

South Elevation

∓ 7' paint chipping @ random locations.

Hvy. Pigeon debris @ top of bott. Flg of Pier Cap Girders @ random locations

1'x2"x 1/8" painted over pitting Loss

03190D

03190B

#2

G1

1 5 OL 9' Repaired scupper

Δ Seismic Retrofit (SEE PIER 14)

5"x FW Lt. rust @ bott. Flg

1' ϕ HA.

(3) - 6"x2" W/E

North Elevation

Δ 1' ϕ E 2'x2' HA

∓ 20'-9" ϕ flex scupper pipe (Rep.)

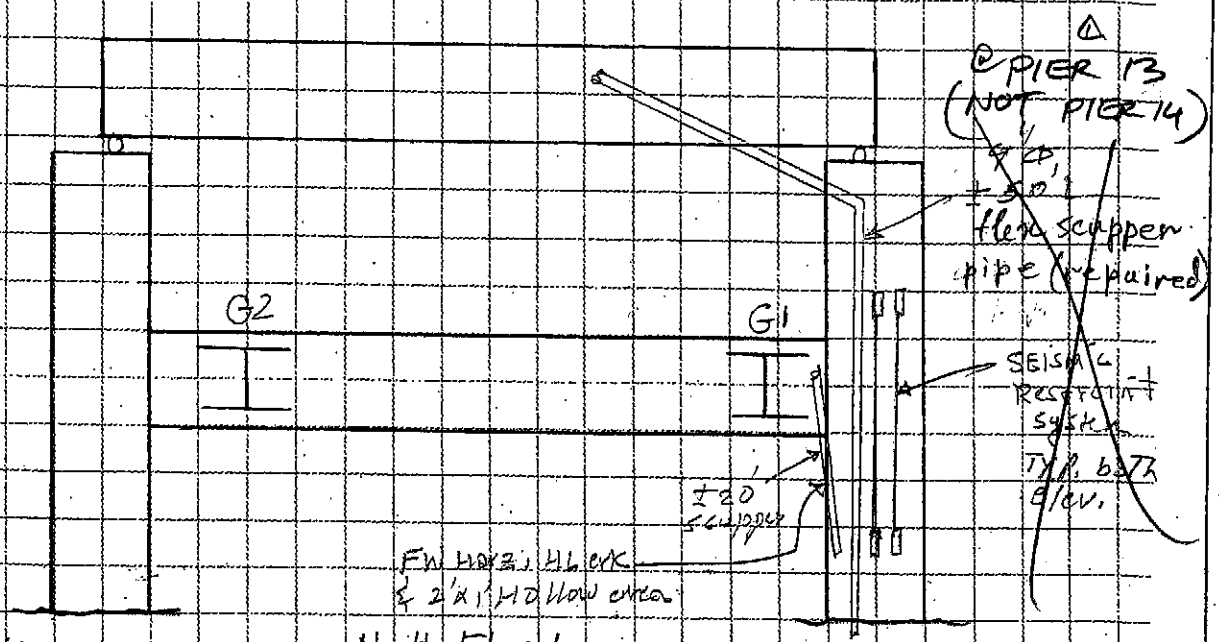
Pier 13 (03190B) Lower

Pier 19 (03190A) Upper

LEGEND

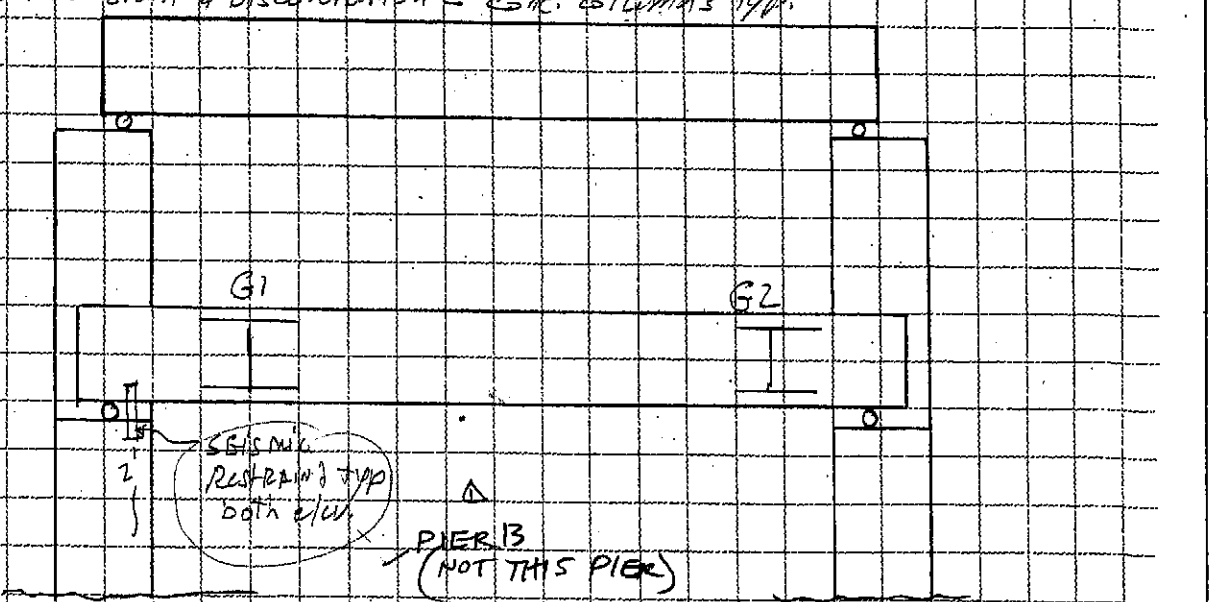
- HAIRLINE CRACKS WITHOUT EFFLORESCENCE
- MAP CRACKS WITHOUT EFFLORESCENCE
- HOLLOW AREA
- SHALLOW REBAR
- SCALE AREA
- SPALL AREA
- SPALL WITH EXPOSE REBAR
- HONEY COMBING

AI Engineers, Inc.	JOB NO: 170-2357 Ext.	BRIDGE NO: 03190 B.
	DATE: 08/19/04	SHEET ~~60~~ 75 OF ~~78~~ 122
FIELD NOTES	CREW: BNS, FM (HAKS) MAN, ZM 10/17/06	
DESCRIPTION: Substructure		



North Elevation

GENERAL NOTES:
- Random graffiti, VT HL CRKS w/EFFL. @ conc. base TYP
- WATER stain & Discoloration @ conc. columns TYP.



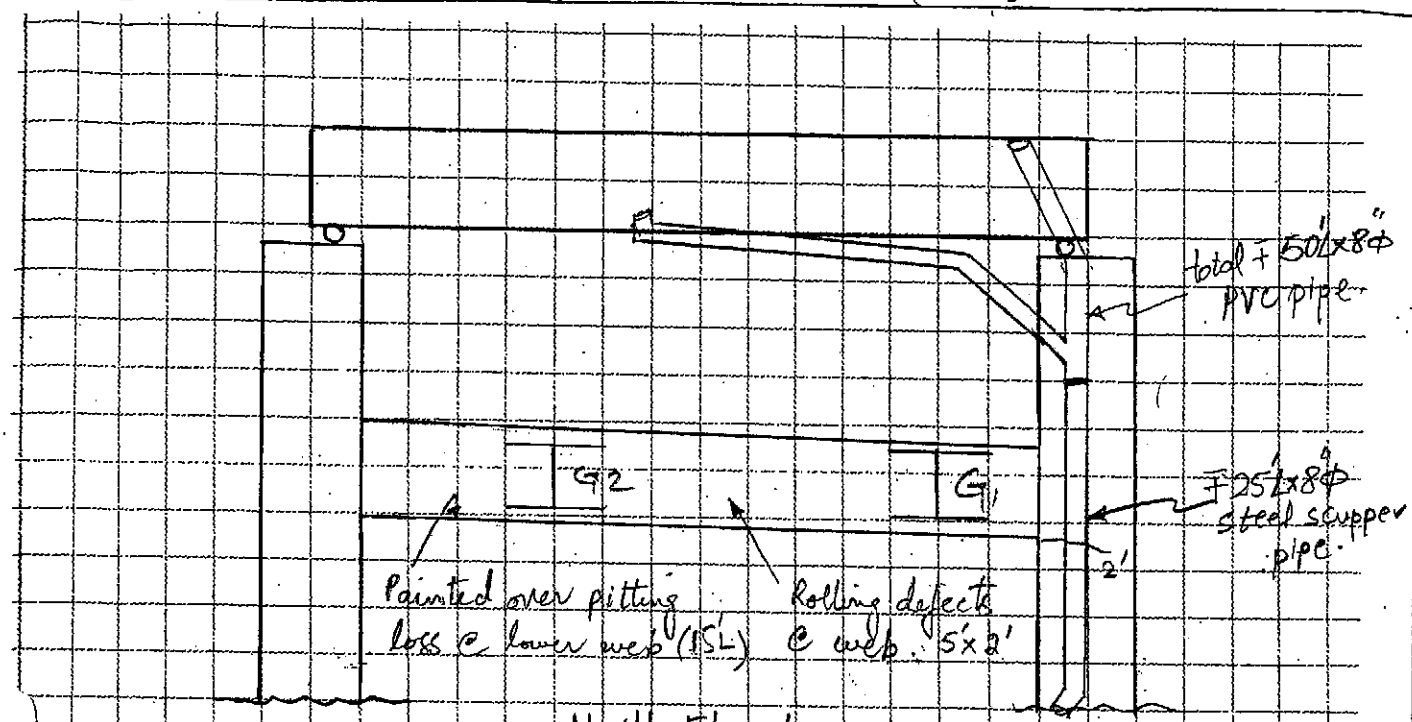
South Elevation

LEGEND

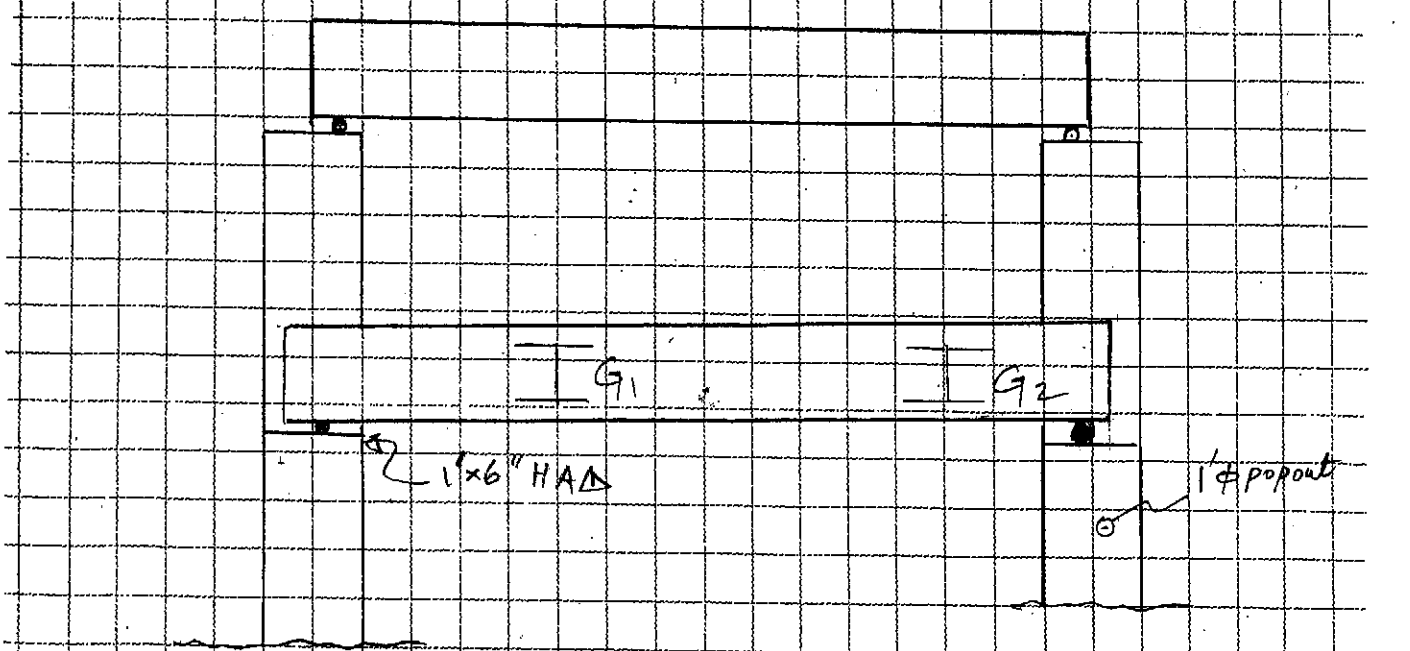
- HAIRLINE CRACKS WITHOUT EFFLORESCENCE
- MAP CRACKS WITHOUT EFFLORESCENCE
- HOLLOW AREA
- SHALLOW REBAR
- SCALE AREA
- SPALL AREA
- SPALL WITH EXPOSE REBAR
- HONEY COMBING

Pier 14 (03190 B) Pier 20 (03190A)

AI Engineers, Inc.	JOB NO: 170-2337 Ext	BRIDGE NO: 03190B.
	DATE: 8/19/04	SHEET ~~61~~ 76 OF ~~78~~ 122
FIELD NOTES	CREW: MA, BNS, FM Δ 10/17/06 (HAKS) MAN, ZM	
DESCRIPTION: Substructure		



North Elevation.



South Elevation.

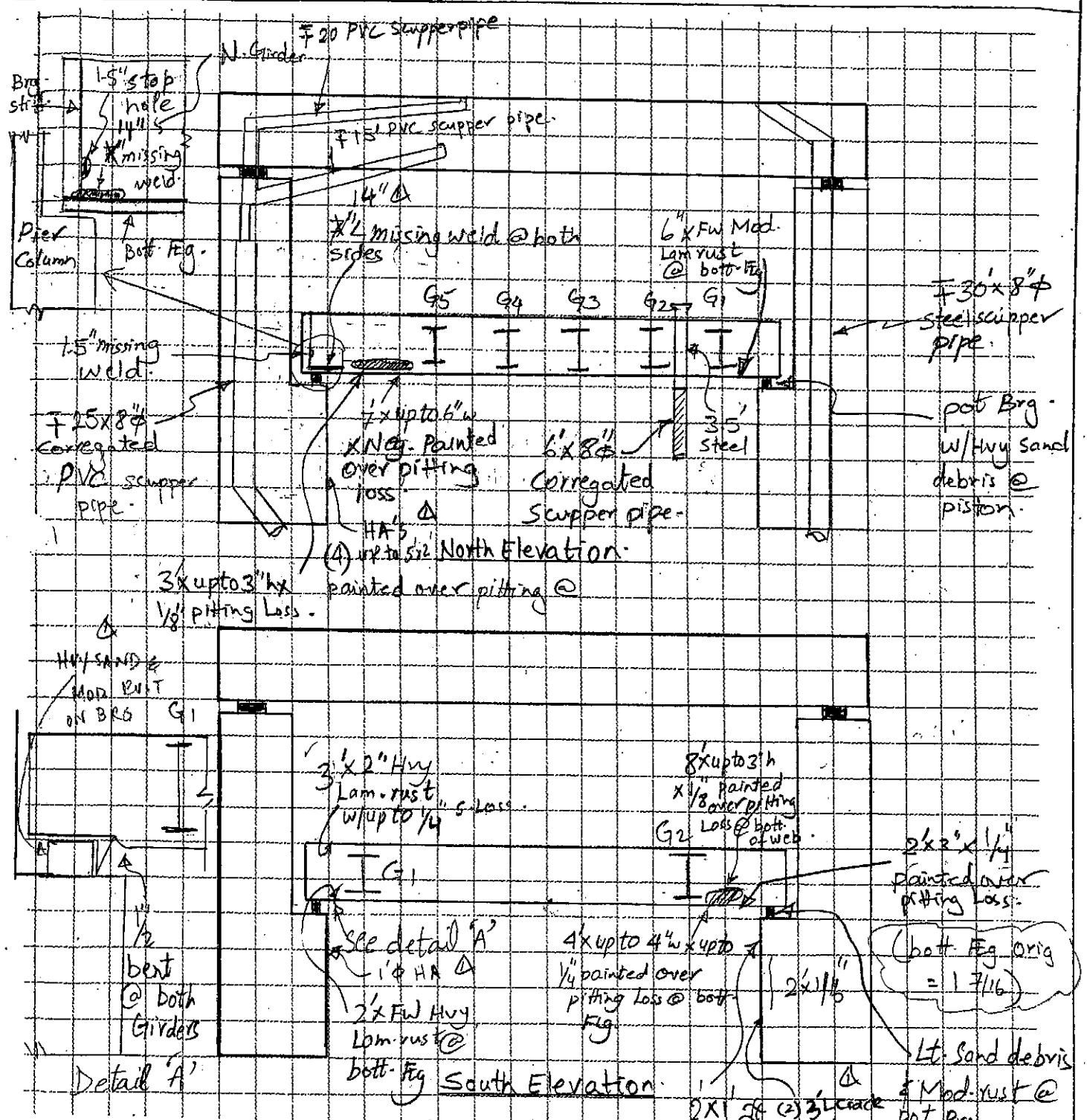
LEGEND

- HAIRLINE CRACKS WITHOUT EFFLORESCENCE
- MAP CRACKS WITHOUT EFFLORESCENCE
- HOLLOW AREA
- SHALLOW REBAR
- SCALE AREA
- SPALL AREA
- SPALL WITH EXPOSE REBAR
- HONEY COMBING

Pier 15 (03190B) Lower

Pier 21 (03190A) Upper.

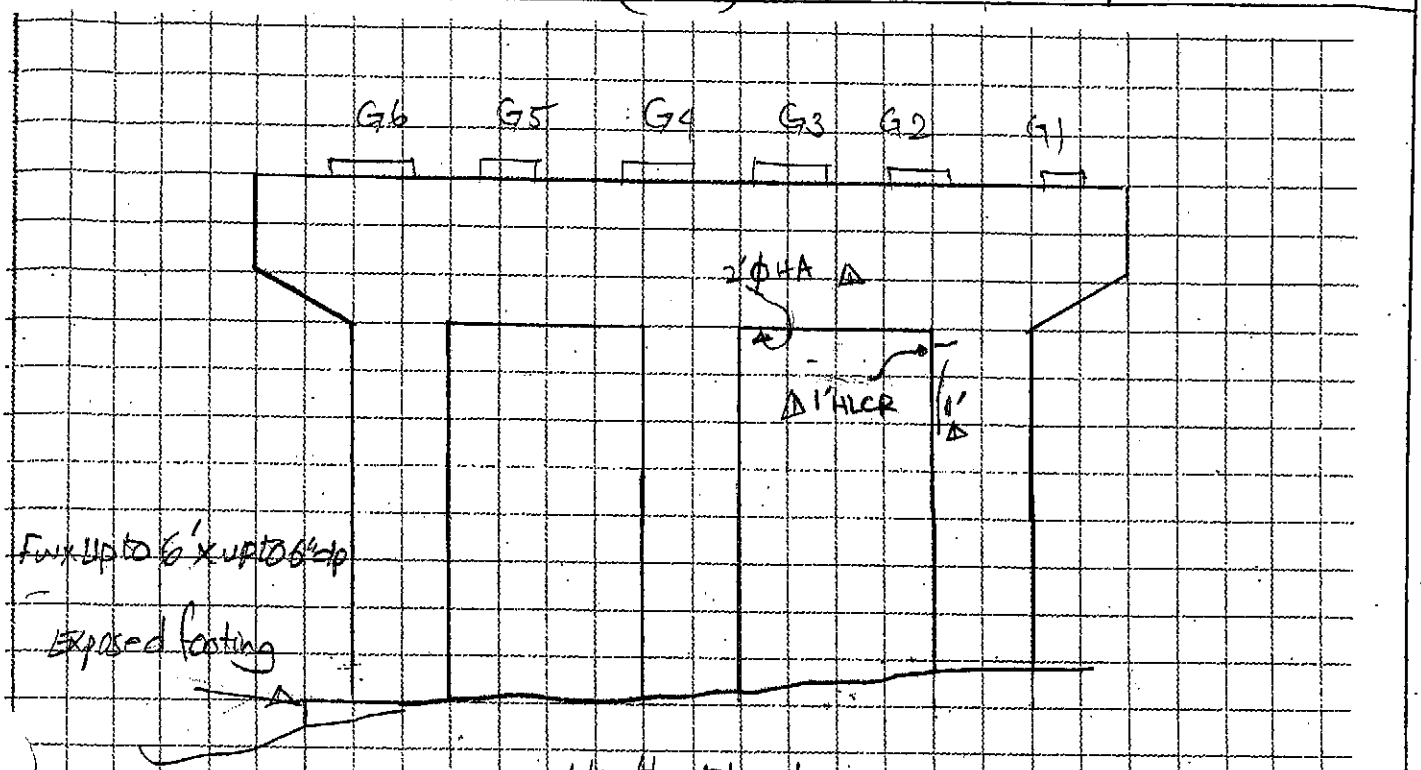
AI Engineers, Inc.	JOB NO: 170-2357 Ext.	BRIDGE NO: 03190 B.
	DATE: 08/24/04	SHEET ~~68~~ 77 OF ~~78~~ 122
FIELD NOTES	CREW: △(HAKS) 9/28/06 & 10/16/06 AAA, AHS. MAN, ZM	
DESCRIPTION: Substructure		



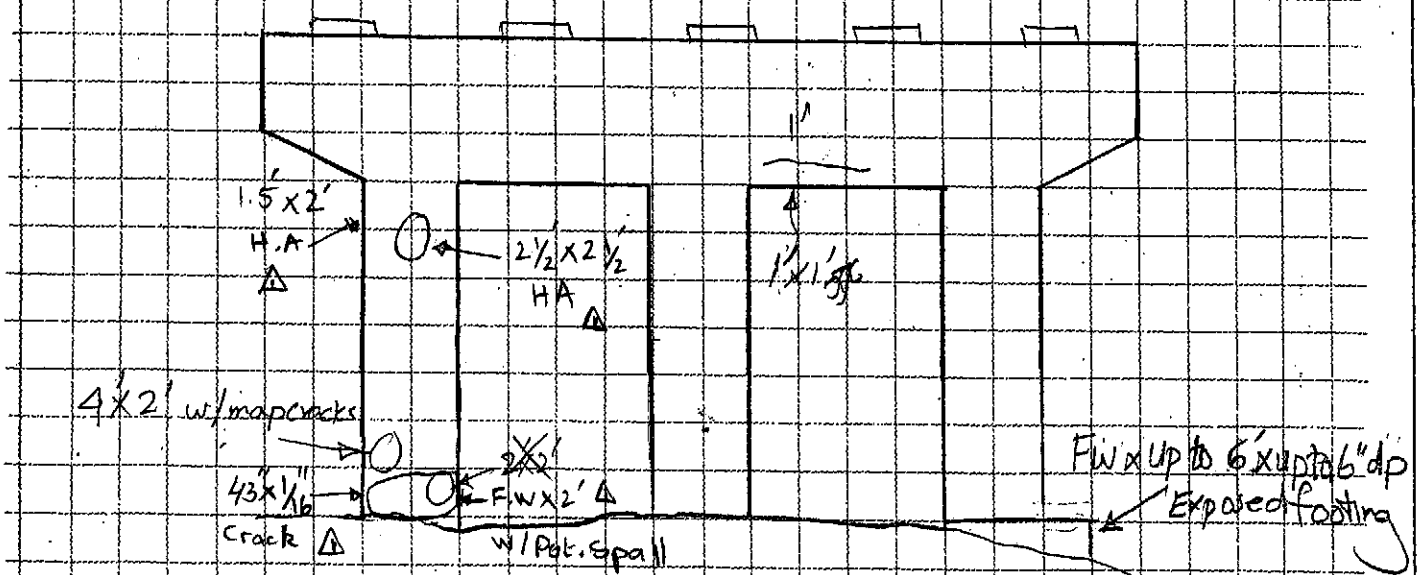
LEGEND

- HAIRLINE CRACKS WITHOUT EFFLORESCENCE
- MAP CRACKS WITHOUT EFFLORESCENCE
- HOLLOW AREA
- SHALLOW REBAR
- SCALE AREA
- SPALL AREA
- SPALL WITH EXPOSE REBAR
- HONEY COMBING

AI Engineers, Inc.	JOB NO: 170-2357 Ext	BRIDGE NO: 03190B.
	DATE: 08/28/04	SHEET ~~63~~ 78 OF ~~78~~ 122
FIELD NOTES	CREW: AAA, AHS	
DESCRIPTION: Substructure	Δ(HAKS) 9/26/06 & 9/28/06 MAN, ZM	



North Elevation



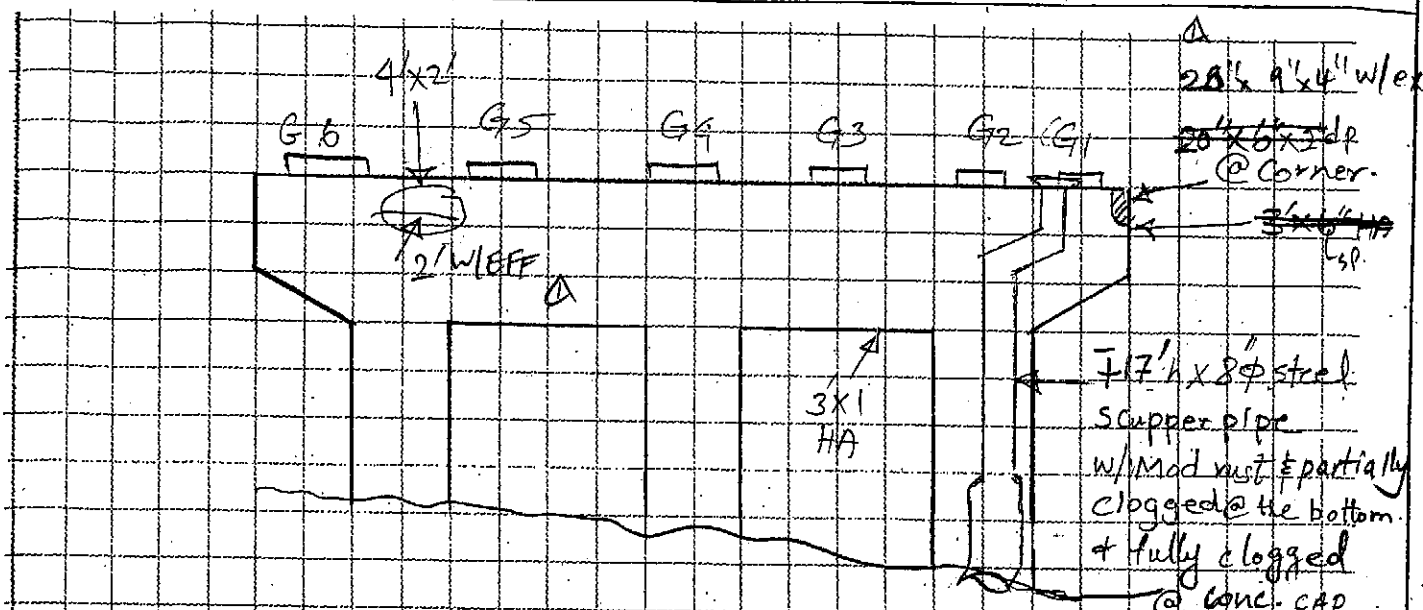
South Elevation

LEGEND

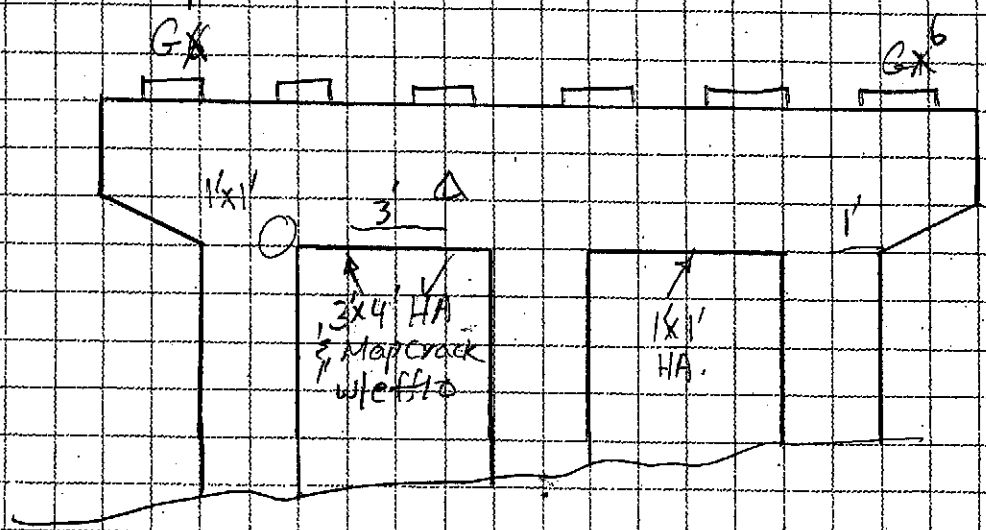
- HAIRLINE CRACKS WITHOUT EFFLORESCENCE
- MAP CRACKS WITHOUT EFFLORESCENCE
- HOLLOW AREA
- SHALLOW REBAR
- SCALE AREA
- SPALL AREA
- SPALL WITH EXPOSE REBAR
- HONEY COMBING

Pier 17

AI Engineers Inc	JOB NO: 170-2357 Ext	BRIDGE NO: 03190B.
	DATE: 08/23/04	SHEET ~~64~~ OF ~~78~~ 122
FIELD NOTES	CREW: Δ 9/26/06 (HAKS) 79 AAA, AHS. MAN, ZM	
DESCRIPTION: Substructure		



North Elevation.



South Elevation.

Pier - 18

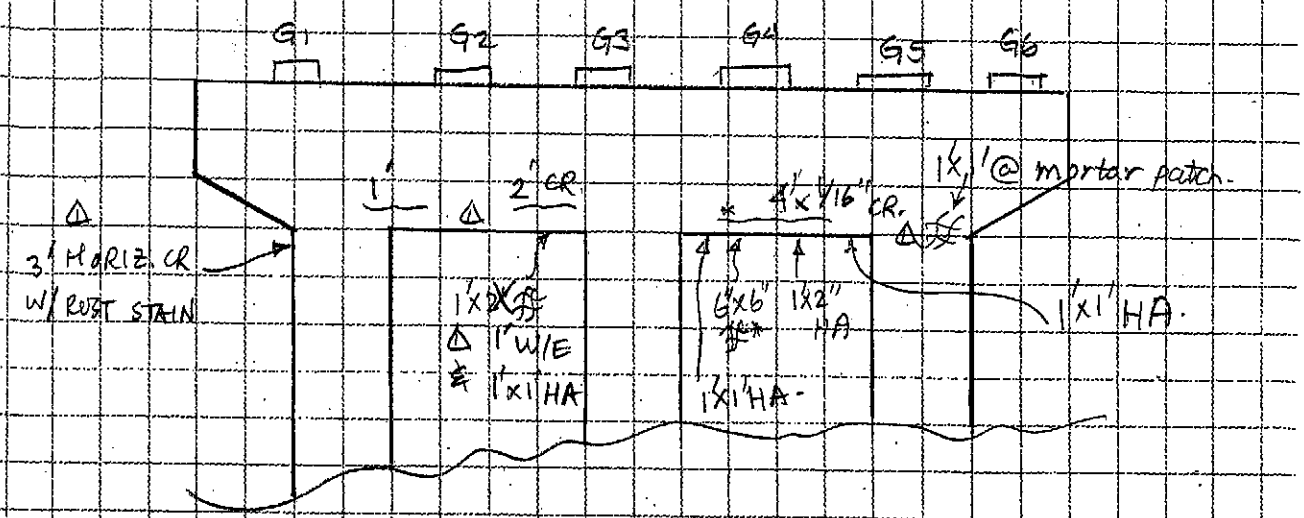
General Notes:

- Dirt stains cover pier cap
- Evidence of water leakage from Deck

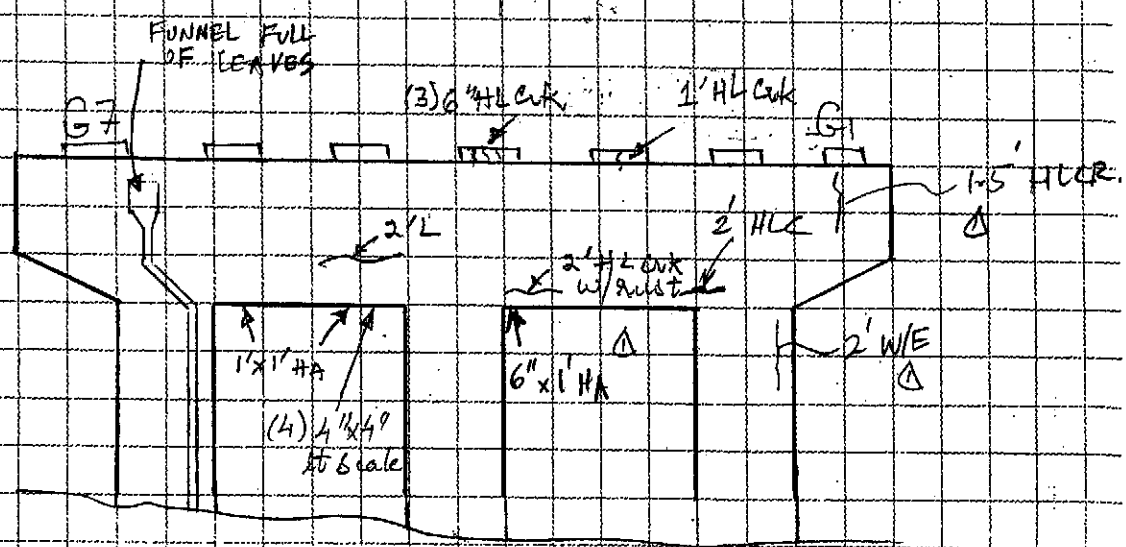
LEGEND

- HAIRLINE CRACKS WITHOUT EFFLORESCENCE
- MAP CRACKS WITHOUT EFFLORESCENCE
- HOLLOW AREA
- SHALLOW REBAR
- SCALE AREA
- SPALL AREA
- SPALL WITH EXPOSE REBAR
- HONEY COMBING

AI Engineers, Inc.	JOB NO: 170-2357 Ext	BRIDGE NO: 03190B
	DATE: 08/19/04	SHEET ~~65~~ 80 OF ~~78~~ 122
FIELD NOTES	CREW: Δ 10/26/06 & 9/25/06 (HAKS) MA, BNS MAN, ZM	
DESCRIPTION: Substructure		



South Elevation.



North Elevation.
Pier 19.

General Notes:

- Dirt stains cover Pier Cap
- Evidence of water leakage from Deck Jt.

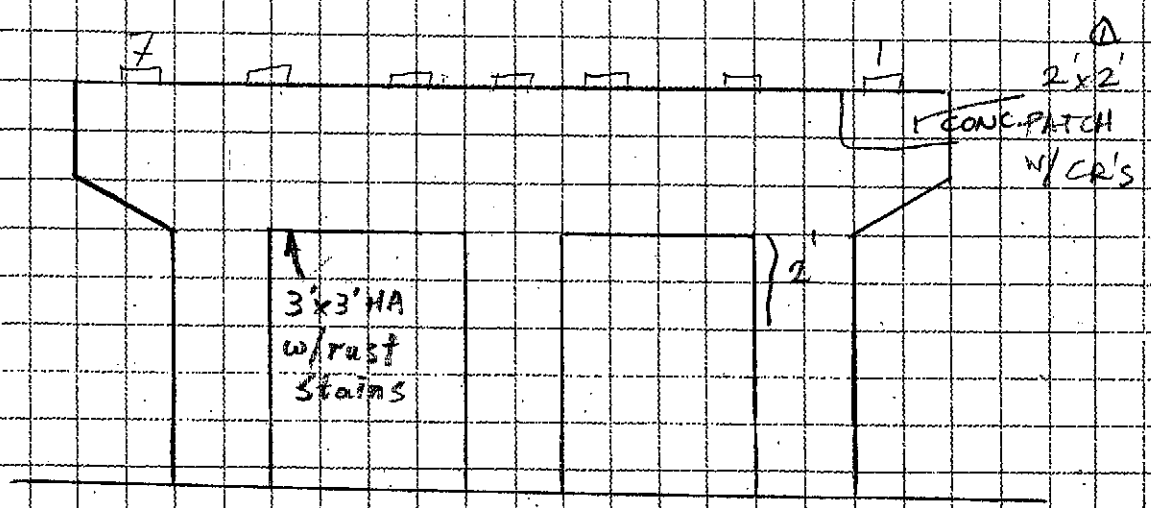
LEGEND

- HAIRLINE CRACKS WITHOUT EFFLORESCENCE
- MAP CRACKS WITHOUT EFFLORESCENCE
- HOLLOW AREA
- SHALLOW REBAR
- SCALE AREA
- SPALL AREA
- SPALL WITH EXPOSE REBAR
- HONEY COMBING

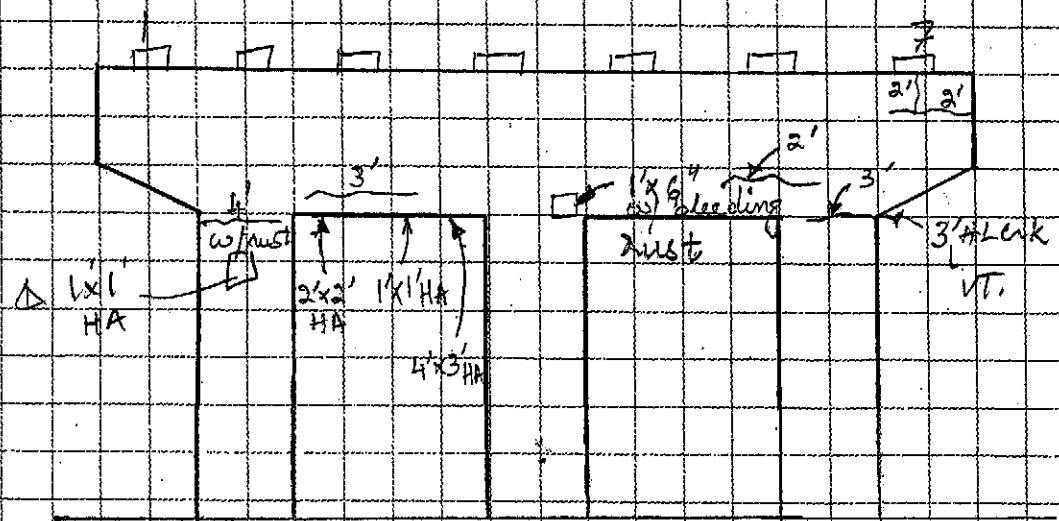
* : W/ ~~E~~/O

HA = Hollow Area

AI Engineers, Inc.	JOB NO: 170-2357 EXT	BRIDGE NO: 03190B.
	DATE: 08/19/04	SHEET ~~66~~ OF ~~78~~ 122 81.
FIELD NOTES	CREW:	
DESCRIPTION: Substructure	Δ (HAKS), MA, BNS 10/26/06 MAN, ZM	



North Elevation



GENERAL NOTES:- Δ
~~Active leakage~~ evid. of prev. leakage on piercap.

South Elevation

LEGEND
- HAIRLINE CRACKS WITHOUT EFFLORESCENCE
- MAP CRACKS WITHOUT EFFLORESCENCE
- HOLLOW AREA
- SHALLOW REBAR
- SCALE AREA
- SPALL AREA
- SPALL WITH EXPOSE REBAR
- HONEY COMBING

Pier 20

PHOTO LOG

FORM BRI-13, REV 9/97

Bridge Information System

Image Inventory

Bridge No. 03190B

Town: WATERBURY

Carried / Crossed: 8SB/RIVERSIDE & SUNNYSIDE

Date: 9/25/06

Photographer: MAN

Film Frame #	Image Description
1	Pier 19 SP. 19 G6 Brg. w/Mod. Rust
2	SP. 19 Bay 4 Near Pier 19 w/ almost no map cracking
3-4	Bott. Fl Girder G4 SP. 19 w/ Rolling defect.
5	Rusty Scupper Drain Pipe on Pier 18 N. Side
6	Pier 18 W. side of cap w/ large spall
7	Pier 18 N. Side w/ Water stains
8	SP. 7 G1 at Pier 6 Heavy Rust @ Bott. Fl & end diaph. due to leakage
9	SP. 7 Bay 6 over P7 - TOP Fl of diaph w/ 1/2" Gap bet. deck
10	SP. 8 Bay 1 w/ up to 50% map cr's
11	SP. 8 Bay 6 w/ Heavy Rust @ diaph top Fl & G7 Top & Bott. Fl
12	SP. 9 G7 diaph weld w/ undercut at channel Bott. Fl
13	SP. 18 G6 w/ leakage thru haunch causing Rust on T. & B. Fl's
14	SP. 18 Bay 2 w/ 10% map cr's Between 1st & 2nd diaph. From Pier 17
15-16	G1 Bearing Stiff @ P-17 w/ 2 1/2" cr. in weld
17	SP. 10 Bay 6 w/ 10% map cr's
18	SP. 10 G4 Pedestal at Pier 10 w/ Corner Spall
19	SP. 11 G1 Overhang at Pier 11 w/ spall
20	Pier 11 Underside w/ Large Spall
21	G1 Span 1 Brg's at Bent 1
22	G1 Span 2 Bent 1 w/ Spall & Exp. Brg.
23	G2 Pad SP. 2 w/ cr. on top & SIDE
24	S. abut behind G2 w/ Spall
25	Personal belongings near S. abut.

PHOTO LOG

Form BRI-13, Rev. 9/97

Bridge Information System

Image Inventory

Bridge No. 3190 B

Date 9/25/06

Town: WATERBURY

Photographer: MAN

Carried / Crossed: RTE 8 SB/RIVERSIDE & SUNNYSIDE

Film Frame #	Image Description
26	SP. 17 Bay 4 missing weld @ Bott. of diaph. channel
27	SP. 17 Bay 3 diaph touches G4 web
28	Pier 17 w/exposed Footing
29	Deck underside SP. 18 (Typical 17-21)
30	Deck underside span 16
31	west elev. spans 15-17
32	west elev. spans 18-21
33	" " " 13-14
34	spans 12-8 west elev.
35	S. Abut Jt.
36	S. Abut. Jt. depressed in by up to 1½"
37	Relief Jt. @ S. APP. w/ minor pot holes & CR's
38 & 41	S. APP. overlay
39-40	Minor settlement @ S. APP. W. side 5'x8"x1" dep
42	Pier 1 Parapet Jt. (W) w/missing sealant (TYP. all Joints)
43	Pier 1 Jt w/ Exposed aggregates (light)
44	Top Rail @ Pier 1 Jt. W. side w/ Hole
45	SP. 2 W. PPt. w/ Hollow Area & map cr's (TYP. @ Rand. Cont. Jt's
46	TYP. Top of deck - SP. 2
47	Pot. SP. & HA @ W. safetywalk SP. 4
48	Granite Curb seperated from safetywalk w/sand in Jt.
49	SP. 11 w/ HA & SP. on W. PPt.
50	Pier 13 Jt. w/steel R. lt sand in Jt. &
51	Clogged catch Basin in SP. 14

PHOTO LOG

FORM BRI-13, REV 9/97

Bridge Information System

Image Inventory

Bridge No. 3190B

Town: WATERBURY

Carried / Crossed: RTE 8 SB/RIVERSIDE & SUNNYSIDE

Date: 9/25/06

Photographer: MAN

Film Frame #	Image Description
52	Sp. 15 W. PPt w/ CR 1/8"wx 3'L on top
53	Sp. 16 Bott. Rail w/ PPt Bent by Impact
54	Pier 16 - 4" ϕ Holes @ Bott. of W. PPt. Rails
55	Sp. 19 W. PPt w/ missing Jct. Box Cover screws
56	Pier 19 Jt. depressed by 2" x 20'e
57	N. App fr. Br
58	N. abut. Jt. w/ lightly exp. aggregates
59	NW Corner missing I.D., steel Block outs, Bott. Rail not attached
60	N. App. Pano.
61	Br. from N. App.
62	Br. fr. S. App.
63	S. App. fr. Br.
64	NE App. one twisted Post + Weak Posts disconnected ~~at the~~ by Impact
65	damage To NBR @ NE app.
66	NE app. pano. w/ cr's up to 1" wide
67	Sp. 20 East Ppt w/ 18'x2' Area of map cr's, #A's & Spall w/exp. Rebar.
68	" Sp. 19 E. PPt w/ Spall on Top
69	Pier 18 E. PPt. Railing Rusted thru @ pier jt.
70	Sp. 18 E. PPt. Railing disconnected fr. post - Note map cr's on PPt.
71	Cap Girder at P16 N. elev. E. end w/ missing 7" of weld
72	" " " " " " " another 7" of weld Past stiffener
73	Pot bearing at cap girder P16 East side fr. Sp. 16 w/ med. Rust & debris
74	P16 w/ Broken fingers at Joint

PHOTO LOG

FORM BRI-13, REV 9/97

Bridge Information System

Image Inventory

Bridge No. 3190B

Town: WATERBURY

Carried / Crossed: RTE 8 SB/ RIVERSIDE & SUNNYSIDE

Date: 9/25/06

Photographer: MAN

Film Frame #	Image Description
75-76	cap girder P16 Gr 1 Span 17 Bott. FL Bent ~~down~~ up to ½" over 6" @ W. end Brg
77	G1 TOP FL SP 16 w/ heavy Rust & Efflo leakage
78	G2 TOP FL SP. 16 w/ Rust along TOP FL inside
79	G2 TOP FL " " " " fascia side
80	SP. 15 G1 TOP & Bott. FL & end of FL Beam FB1 w/ heavy Rust & S.L.
81	SP. 15 diag. Brace to Cap girder P15 missing a vertical weld @ stiff. Conn.
82	SP. 16 Bay 4 - Hollow areas over sidewalk Removed by DOT
83	SP. 16 E. Fascia - " " " " " " "
84	SP. 15 Bay 4 - " " " " " " "
85	SP. 14 G1 Fascia w/ heavy Rust on TOP FL
86-87	Pier 13 Cap girder N. side stiff. near W. Col. w/ no weld or cracked weld
88	SP. 14 Lateral Br. to G2 w/ tack welds cracked
89	SP. 13 Bay 1 missing weep near cap girder P13
90	SP. 12 Bay 5 @ G6 diag. diaph member missing weld
91	Pier 12 N. Cap girder w/ Hole at Vt. stiff. & added
92-93	Cap girder 12 w/ loss @ Bott. FL
94	SP. [illegible] missing weld & TOP flange. mark to stiff.
95	SP. 13 [illegible] diaph [illegible] cracked [illegible] weld
96	G7 SP. 21 w/ spotty lt. Rust on TOP FL
97-98	SP. 20 Bay 2 @ G3 CR @ TOP of stiff
99	Pier 19 N. side Funnel filled w/ leaves & Downspout is Rusted @ Funnel
100	SP. 20 G1 Bott. FL w/ Scrape marks
101	Pier 20 bearings
102	SP. 21 Bay 1 end diaph @ P20 w/ hvy Rust + brg

PHOTO LOG

FORM BRI-13, REV 9/97

Bridge Information System

Image Inventory

Bridge No. 3190 B Date: 10/26/06

Town: WATERBURY Photographer: MAN

Carried / Crossed: RTE 8 SB / RIVERSIDE & SUNNYSIDE

Film Frame #	Image Description
103	SP. 12 Fascia Parapet w/ map CR's & HA's over left lane Riverside N.B.
104	" " " " - HA's Removed
105	clearance sign @ SP 12 Riverside N.B.
106	SP. 12 @ Pier 12 - cracked weld in Brace @ cap Girder
107	3'x1.5' HA @ W. Apt. SP. 12 Near P12 over left lane N.B. Riverside
108	5'x6" HA " " " 30'± S. of P12 " " " "
109-111	SP. 13 @ cap girder 12 W. side Brace cracked on Both sides, one side is under Repair
112	Clearance Sign on Sunnyside Ave.
113	Clearance sign at intersection of Sunnyside & Riverside + span 20 elev.
114	SP. 21 E. elev.
115	SP. 17-20 E. Elev.

Bridge No.	03190B	**Inspected by:**	Morteza Najafabadi
Town:	Waterbury, CT	**Inspected by:**	Zouhir Mahiaoui
Feature Carried:	Route 8 SB	**Date Inspected:**	9/25/06
Feature Crossed:	Riverside St. & Sunnyside Ave.	**Project No.:**	170-2357

Photo # 1: Bridge Identification Number is missing at northwest corner.

Photo # 2: Bridge from South Approach.

Bridge No.	03190B	**Inspected by:**	Morteza Najafabadi
Town:	Waterbury, CT	**Inspected by:**	Zouhir Mahiaoui
Feature Carried:	Route 8 SB	**Date Inspected:**	9/25/06
Feature Crossed:	Riverside St. & Sunnyside Ave.	**Project No.:**	170-2357

Photo # 3: South Approach from bridge.

Photo # 4: Bridge from North Approach.

Bridge No.	03190B	**Inspected by:**	Morteza Najafabadi
Town:	Waterbury, CT	**Inspected by:**	Zouhir Mahiaoui
Feature Carried:	Route 8 SB	**Date Inspected:**	9/25/06
Feature Crossed:	Riverside St. & Sunnyside Ave.	**Project No.:**	170-2357

Photo # 5: North Approach from bridge

Photo # 6: West Elevation spans 8-12.

Bridge No.	03190B	**Inspected by:**	Morteza Najafabadi
Town:	Waterbury, CT	**Inspected by:**	Zouhir Mahiaoui
Feature Carried:	Route 8 SB	**Date Inspected:**	9/25/06
Feature Crossed:	Riverside St. & Sunnyside Ave.	**Project No.:**	170-2357

Photo # 7: West Elevation spans 13-14.

Photo # 8: Typical Top of Deck.

Bridge No.	03190B	**Inspected by:**	Morteza Najafabadi
Town:	Waterbury, CT	**Inspected by:**	Zouhir Mahiaoui
Feature Carried:	Route 8 SB	**Date Inspected:**	9/25/06
Feature Crossed:	Riverside St. & Sunnyside Ave.	**Project No.:**	170-2357

Photo # 9: Typical Underside span 18 (typical 17-21)

Photo # 10: Typical Underside span 16

Bridge No.	03190B	**Inspected by:**	Morteza Najafabadi
Town:	Waterbury, CT	**Inspected by:**	Zouhir Mahiaoui
Feature Carried:	Route 8 SB	**Date Inspected:**	9/25/06
Feature Crossed:	Riverside St. & Sunnyside Ave.	**Project No.:**	170-2357

Photo # 11: Span 8 bay 1 deck underside with map cracking.	**Photo # 12: Large spall with exposed rebar at span 11 west overhang near pier 11.**

Bridge No.	03190B	**Inspected by:**	Morteza Najafabadi
Town:	Waterbury, CT	**Inspected by:**	Zouhir Mahiaoui
Feature Carried:	Route 8 SB	**Date Inspected:**	9/25/06
Feature Crossed:	Riverside St. & Sunnyside Ave.	**Project No.:**	170-2357

Photo # 13: Span 15 bay 4 hollow area over sidewalk removed by DOT maintenance crew.

Photo # 14: Span 7 bay 6 over pier 7 – Gap between end diaphragm top flange and deck end due to pack rust.

Bridge No.	03190B	**Inspected by:**	Morteza Najafabadi
Town:	Waterbury, CT	**Inspected by:**	Zouhir Mahiaoui
Feature Carried:	Route 8 SB	**Date Inspected:**	9/25/06
Feature Crossed:	Riverside St. & Sunnyside Ave.	**Project No.:**	170-2357

Photo # 15: Hollow area and spall in span 4 west safety walk.

Photo # 16: Span 20 east parapet with hollow areas, spalls, and large areas with map cracking.

Bridge No.	03190B	**Inspected by:**	Morteza Najafabadi
Town:	Waterbury, CT	**Inspected by:**	Zouhir Mahiaoui
Feature Carried:	Route 8 SB	**Date Inspected:**	9/25/06
Feature Crossed:	Riverside St. & Sunnyside Ave.	**Project No.:**	170-2357

Photo # 17: Outside face of west parapet in span 12 over Riverside street NB lanes (Concrete is not loose).

Photo # 18: Pier 1 parapet joint with missing sealant (Typ. All joints)

Bridge No.	03190B	**Inspected by:**	Morteza Najafabadi
Town:	Waterbury, CT	**Inspected by:**	Zouhir Mahiaoui
Feature Carried:	Route 8 SB	**Date Inspected:**	9/25/06
Feature Crossed:	Riverside St. & Sunnyside Ave.	**Project No.:**	170-2357

Photo # 19: East parapet railing rusted through at pier 18.

Photo # 20: West parapet railing damaged by impact in span 16.

Bridge No.	03190B	**Inspected by:**	Morteza Najafabadi
Town:	Waterbury, CT	**Inspected by:**	Zouhir Mahiaoui
Feature Carried:	Route 8 SB	**Date Inspected:**	9/25/06
Feature Crossed:	Riverside St. & Sunnyside Ave.	**Project No.:**	170-2357

Photo # 21: Span 13 bay 1 missing weep pipe near pier 13 cross girder.	**Photo # 22: Span 14 scupper clogged at west gutterline.**

Bridge No.	03190B	**Inspected by:**	Morteza Najafabadi
Town:	Waterbury, CT	**Inspected by:**	Zouhir Mahiaoui
Feature Carried:	Route 8 SB	**Date Inspected:**	9/25/06
Feature Crossed:	Riverside St. & Sunnyside Ave.	**Project No.:**	170-2357

Photo # 23: Span 14 north side funnel filled with leaves and downspout is rusted through at funnel.

Photo # 24: Span 7 girder G1 at pier 6 with heavy rust at bottom flange due to past leakage.

Bridge No.	03190B	**Inspected by:**	Morteza Najafabadi
Town:	Waterbury, CT	**Inspected by:**	Zouhir Mahiaoui
Feature Carried:	Route 8 SB	**Date Inspected:**	9/25/06
Feature Crossed:	Riverside St. & Sunnyside Ave.	**Project No.:**	170-2357

Photo # 25: Missing screws in junction box cover at span 19 west parapet.

Photo # 26: Compression seal joint at south abutment with seal depressed into the joint.

Bridge No.	03190B	**Inspected by:**	Morteza Najafabadi
Town:	Waterbury, CT	**Inspected by:**	Zouhir Mahiaoui
Feature Carried:	Route 8 SB	**Date Inspected:**	9/25/06
Feature Crossed:	Riverside St. & Sunnyside Ave.	**Project No.:**	170-2357

Photo # 27: Joint at south abutment with seal depressed in the joint.

Photo # 28: Asphaltic plug joint at north abutment with lightly exposed aggregates.

Bridge No.	03190B	**Inspected by:**	Morteza Najafabadi
Town:	Waterbury, CT	**Inspected by:**	Zouhir Mahiaoui
Feature Carried:	Route 8 SB	**Date Inspected:**	9/25/06
Feature Crossed:	Riverside St. & Sunnyside Ave.	**Project No.:**	170-2357

Photo # 29: Strip seal joint at pier 13 with light sand in the joint.

Photo # 30: Joint at pier 16 underside with broken fingers. Note: Strip seal joint over the finger joint.

Bridge No.	03190B	**Inspected by:**	Morteza Najafabadi
Town:	Waterbury, CT	**Inspected by:**	Zouhir Mahiaoui
Feature Carried:	Route 8 SB	**Date Inspected:**	9/25/06
Feature Crossed:	Riverside St. & Sunnyside Ave.	**Project No.:**	170-2357

Photo # 31: Pot bearing at pier 16 cap girder east side with moderate rust.

Photo # 32: G1 bearings at bent 1 with laminated rust.

Bridge No.	03190B	**Inspected by:**	Morteza Najafabadi
Town:	Waterbury, CT	**Inspected by:**	Zouhir Mahiaoui
Feature Carried:	Route 8 SB	**Date Inspected:**	9/25/06
Feature Crossed:	Riverside St. & Sunnyside Ave.	**Project No.:**	170-2357

Photo # 33: Span 18 girder G6 with rust at top and bottom flange due to leakage through deck with negligible section loss.

Photo # 34: Span 8 bay 6 diaphragm with heavy rust at top flange and girder G7 bottom flange due to leakage through deck.

Bridge No.	03190B	**Inspected by:**	Morteza Najafabadi
Town:	Waterbury, CT	**Inspected by:**	Zouhir Mahiaoui
Feature Carried:	Route 8 SB	**Date Inspected:**	9/25/06
Feature Crossed:	Riverside St. & Sunnyside Ave.	**Project No.:**	170-2357

Photo # 35: Span 16 girder G1 top flange with heavy rust.

Photo # 36: Span 14 girder G1 with heavy rust on top flange.

Bridge No.	03190B	**Inspected by:**	Morteza Najafabadi
Town:	Waterbury, CT	**Inspected by:**	Zouhir Mahiaoui
Feature Carried:	Route 8 SB	**Date Inspected:**	9/25/06
Feature Crossed:	Riverside St. & Sunnyside Ave.	**Project No.:**	170-2357

Photo # 37: Span 15 girder G1 top and bottom flange with heavy rust at floor beam connection due to leakage thru deck.

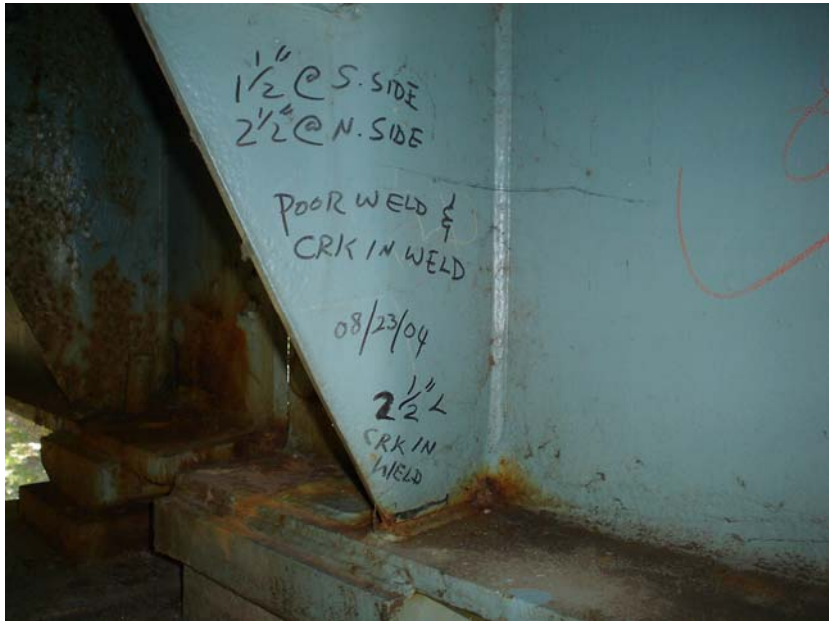


Photo # 38: Girder G1 bearing stiffener at pier 17 with 2 1/2" crack in the weld.

Bridge No.	03190B	**Inspected by:**	Morteza Najafabadi
Town:	Waterbury, CT	**Inspected by:**	Zouhir Mahiaoui
Feature Carried:	Route 8 SB	**Date Inspected:**	9/25/06
Feature Crossed:	Riverside St. & Sunnyside Ave.	**Project No.:**	170-2357

Photo # 39: Span 17 bay 4 with missing weld at bottom of diaphragm channel.

Photo # 40: Pier 16 cap girder north elevation with missing weld at bottom flange to web connection.

Bridge No.	03190B	**Inspected by:**	Morteza Najafabadi
Town:	Waterbury, CT	**Inspected by:**	Zouhir Mahiaoui
Feature Carried:	Route 8 SB	**Date Inspected:**	9/25/06
Feature Crossed:	Riverside St. & Sunnyside Ave.	**Project No.:**	170-2357

Photo # 41: Span 14 lateral bracing at girder G2 with cracked tack welds.

Photo # 42: Span 13 girder G8 bracing to cap girder at pier 13 with missing weld at top horizontal member.

Bridge No.	03190B	**Inspected by:**	Morteza Najafabadi
Town:	Waterbury, CT	**Inspected by:**	Zouhir Mahiaoui
Feature Carried:	Route 8 SB	**Date Inspected:**	9/25/06
Feature Crossed:	Riverside St. & Sunnyside Ave.	**Project No.:**	170-2357

Photo # 43: Span 20 bay 2 vertical stiffener with cracked weld at girder G3.

Photo # 44: South abutment backwall behind girder G2 with a spall

Bridge No.	03190B	**Inspected by:**	Morteza Najafabadi
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Feature Carried:	Route 8 SB	**Date Inspected:**	9/25/06
Feature Crossed:	Riverside St. & Sunnyside Ave.	**Project No.:**	170-2357

Photo # 45: Pier 12 north cross girder with perforations at the bottom of vertical stiffener with a clip angle added as repair.

Photo # 46: Cross girder at pier 12 with losses at the bottom of vertical stiffener and the bottom flange.

Bridge No.	03190B	**Inspected by:**	Morteza Najafabadi
Town:	Waterbury, CT	**Inspected by:**	Zouhir Mahiaoui
Feature Carried:	Route 8 SB	**Date Inspected:**	9/25/06
Feature Crossed:	Riverside St. & Sunnyside Ave.	**Project No.:**	170-2357

Photo # 47: Pier 11 cap underside with a large spall and exposed rebar.

Photo # 48: Span 10 Girder G4 pedestal at pier 10 with a corner spall.

Bridge No.	03190B	**Inspected by:**	Morteza Najafabadi
Town:	Waterbury, CT	**Inspected by:**	Zouhir Mahiaoui
Feature Carried:	Route 8 SB	**Date Inspected:**	9/25/06
Feature Crossed:	Riverside St. & Sunnyside Ave.	**Project No.:**	170-2357

Photo # 49: Bent 1 column at span 2 girder G1 with cracks and spall with exposed rebar.

Photo # 50: Crack on the top and the side of bent 1 column for girder G2. Note: Crack runs through anchor bolt.

Bridge No.	03190B	**Inspected by:**	Morteza Najafabadi
Town:	Waterbury, CT	**Inspected by:**	Zouhir Mahiaoui
Feature Carried:	Route 8 SB	**Date Inspected:**	9/25/06
Feature Crossed:	Riverside St. & Sunnyside Ave.	**Project No.:**	170-2357

Photo # 51: Exposed footing at pier 17 east column.

Photo # 52: South approach relief joint with potholes and cracks.

Bridge No.	03190B	**Inspected by:**	Morteza Najafabadi
Town:	Waterbury, CT	**Inspected by:**	Zouhir Mahiaoui
Feature Carried:	Route 8 SB	**Date Inspected:**	9/25/06
Feature Crossed:	Riverside St. & Sunnyside Ave.	**Project No.:**	170-2357

Photo # 53: Northeast approach railing with one twisted post and one disconnected post due to impact damage. Note: Steel block-out and weak post design.

Photo # 54: Northeast approach railing with impact damage.

Bridge No.	03190B	**Inspected by:**	Morteza Najafabadi
Town:	Waterbury, CT	**Inspected by:**	Zouhir Mahiaoui
Feature Carried:	Route 8 SB	**Date Inspected:**	9/25/06
Feature Crossed:	Riverside St. & Sunnyside Ave.	**Project No.:**	170-2357

Photo # 55: South approach pavement with cracks.

Photo # 56: Approach pavement settlement at southwest corner.

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03190B- 003.jpg

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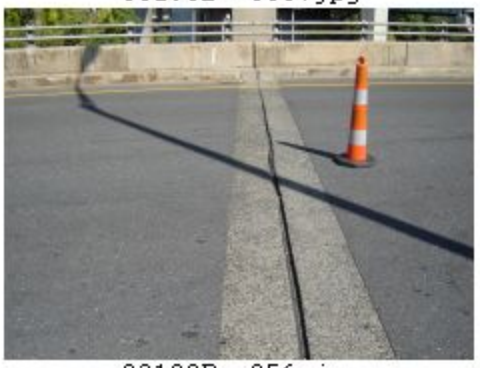
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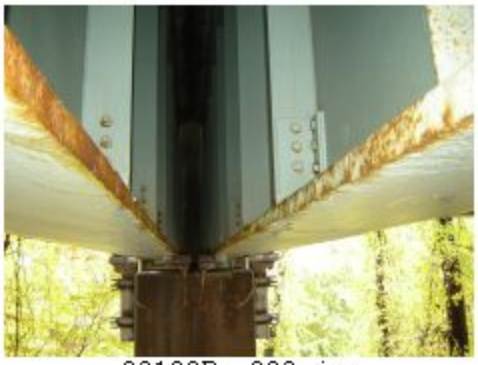
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03190B- 116.jpg

APPENDIX A
GPR REPORT

Ground Penetrating Radar (GPR) Bridge Deck Inspection

Bridge No. 03190B
Route 8 SB over Riverside Street & Sunnyside Avenue
Waterbury, Connecticut

Inspection Report

submitted to

HAKS Engineers, P.C.
Centerpoint Executive Park
306 Industrial Park Road, Suite 201
Middletown, CT 06457

by

INFRASENSE, Inc.
14 Kensington Road
Arlington, MA 02476

March 19, 2007

1. BRIDGE DATA

Bridge No. 03190B:

Route 8 SB over Riverside Street & Sunnyside Avenue, Waterbury, Connecticut

Deck Area: 75,312 S.F.

Structure Type: Steel Multi-Girder approach spans, Girder/Floorbeam/Stringer main spans

Structure Length: 1,589 feet

Number of Spans: 21

Curb to Curb (Bridge Roadway) width: 42.0 feet in spans 1-8, Start width 42.5 feet and end width 59.8 feet in spans 9-13, 30.0 feet in spans 14-17, start width 33.0 feet and end width 50 feet in spans 18-21

Out to Out Deck width: 47.5 feet in spans 1-8, Start width 48 feet and end width 65 feet in spans 9-13, 35.7 feet in spans 14-17, start width 38.7 feet and end width 55.5 feet in spans 18- 21

Deck Thickness: 7.25 inches except in spans 10 & 11 thickness of deck is 7.5 inches

Overlay: Approximately 2 to 3 inches bituminous overlay with waterproofing membrane

Number of travel lanes carried by bridge: 2 lanes in spans 14-21 and 3 lanes in spans 1-13

2. DESCRIPTION OF GROUND PENETRATING RADAR (GPR) SURVEY

2.1 Background

Ground penetrating radar operates by transmitting short pulses of electromagnetic energy into the pavement using an antenna attached to a survey vehicle. These pulses are reflected back to the antenna with an arrival time and amplitude that is related to the location and nature of dielectric discontinuities in the material (air/asphalt or asphalt/concrete, reinforcing steel, etc). The reflected energy is captured and may be displayed on an oscilloscope to form a series of pulses that are referred to as the radar signal. The signal contains a record of the properties and thicknesses of the layers within the deck, as shown schematically in Figure 1.

Bridge deck deterioration can be inferred from changes in the dielectric properties and attenuation of the GPR signal in concrete (see Maser and Roddis, 1990; SHRP C-101, ASTM D 6087-05). GPR was originally developed for overlaid decks, since access to the structural concrete surface via other traditional methods is limited. The concepts have been shown to work equally well on non-overlaid decks. The variation of the dielectric constant of the deck concrete is used as one measure of deterioration (Maser, 1990). The attenuation (loss of signal strength) of the radar signal, as measured from the top rebar reflection and/or the bottom of the deck, is used as a measure of concrete delamination. This is because contaminated and delaminated concrete will cause the GPR signal to dissipate and lose strength as it travels through the deck and reflects back from the rebar and the bottom.

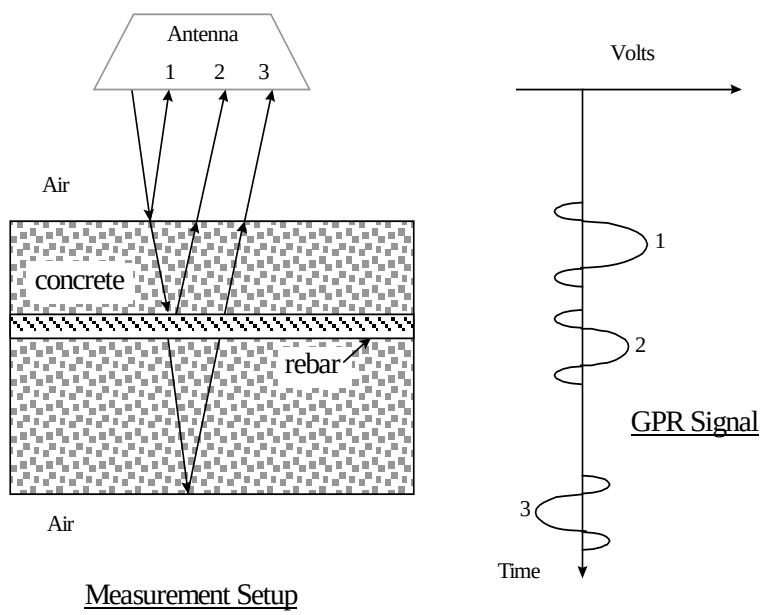


Figure 1 – Structure of the GPR Signal for Concrete Bridge Decks

2.2 Data Collection

The data on this project was collected on January 11 and 12, 2007. The weather conditions were clear, with temperatures in the low 30's ºF. The GPR equipment used for this inspection project is a dual 1 GHz horn antenna system manufactured by GSSI, Inc. of Salem, NH, and is shown in Figure 2. The survey vehicle is equipped with an electronic distance-measuring instrument (DMI) mounted to the rear wheel of the survey van, providing continuous distance data as the GPR data is collected. The data collection and recording is controlled by the SIR-20 GPR system operated from within the survey vehicle. The antennas are mounted to the vehicle via a rectangular mounting bar, so that the lateral position of each antenna can be varied. This arrangement enables the GPR survey to cover the full width of the deck without straddling lanes.

Using this system, the GPR data is collected with a series of longitudinal passes, each at fixed offset from the curb, at a collection rate of 4 scans per linear foot. The overall objective of the survey layout is to generate passes at 3-foot transverse spacing from curb to curb. The actual location of each pass is determined approximately by visual reference using lane markers and other visual reference points. Data collection for each pass is initiated about 200 feet before the vehicle reached the actual start of the deck.

The GPR survey is carried at speeds up to 45 mph. Data is digitized and stored to hard disk as the survey progressed. The DMI distance data is continuously recorded into each GPR record, so that each GPR data scan has an associated distance.

Horn Antennas

Figure 2 – GPR Survey Vehicle

2.3 GPR Data Analysis

The bridge deck analysis is carried out with Infrasense's proprietary software *win*DECAR® using the following steps:

(1) Identification of the deck limits and major joints in each radar file, and check of the radar distance measurement against the known length and other features within the deck;

(2) Identification of features (top rebar, bottom of deck) that appear as dielectric discontinuities in the GPR data (see example data, Figure 3);

(3) Setup of the analysis for all of the passes for a given deck, computation of concrete dielectric constant, (rebar depth, and AC thickness, if applicable), and concrete attenuation; and

(4) Map the results and calculate quantities

The analyzed GPR data is presented in the form of contour plots. The attenuation is used as the measure of deterioration, and the potential areas of deteriorated concrete are identified by a threshold, which is calculated from the data.

Figure 3 below shows a sample of raw GPR data from an asphalt-overlaid bridge deck. The data has been compressed and preprocessed for removal of the concrete surface reflection. The significant boundaries appearing in the data are labeled in the figure. The figure represents a cross section through the deck, where the time axis is equivalent to depth.

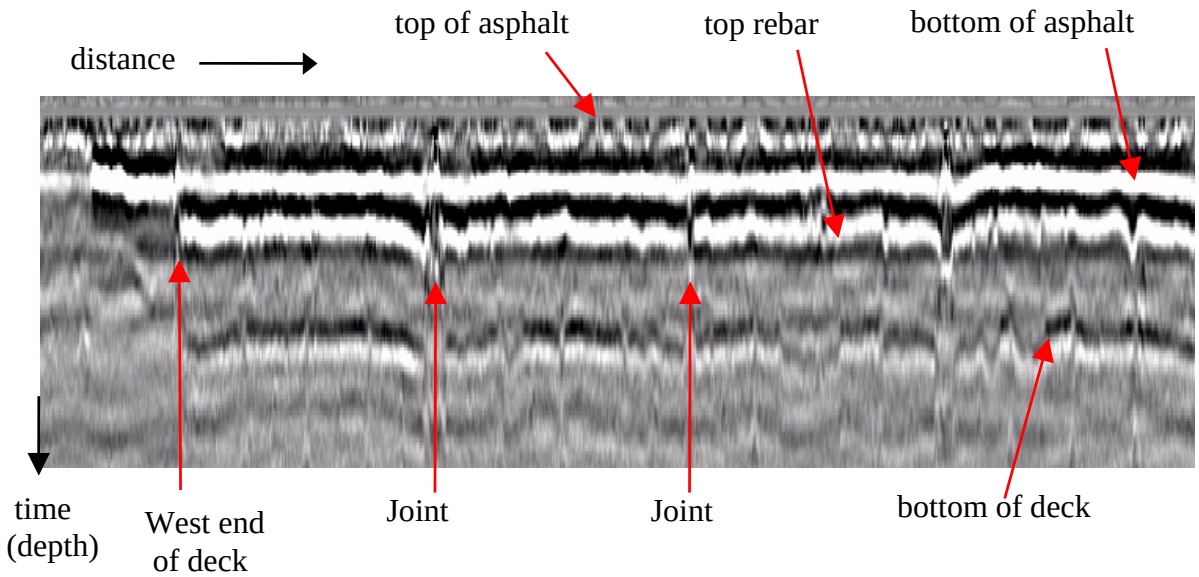


Figure 3 – GPR Data Sample

The calculated deterioration quantities per span are presented in tabular form in Attachment A. The plan view deck deterioration maps are presented in Attachment B.

For decks where cores were extracted, the core information was used to calibrate the final GPR results.

2.4 DECK CORING

Coring was carried out on Tuesday, February 13, 2007. The coring was carried out by MT Materials Testing of Wallingford, CT under Infrasense supervision, with lane closures provided by E-L Engineering Support Services of Rocky Hill, CT. Ten cores were taken, at locations determined from both the preliminary GPR output and underside condition maps. The location of the cores is shown in Table 1.

All cores were 3 inches in diameter and drilled to a depth of 8 inches from the surface. Since the AC overlay was approximately 3 inches thick, this coring depth provided 5 inches of penetration into the concrete (just above the lower mat of reinforcement). The concrete specimens were removed, labeled and saved for subsequent inspection. As time allowed, observations of the interior of the core hole were made. After coring, each hole was filled with rapid set grout up to the level of the concrete and then cold patch was added to be flush with the deck surface.

Table 1 summarizes the core information and conditions, and Figure 4 shows a photograph of the coring process. Photographs of the cores are shown in Attachment C.

Table 1 – Summary of Core Data for Bridge 03190B

CORE NO.	STATION	SPAN NO.	OFFSET FROM WEST CURB (FT)	SELECTION CRITERIA	OBSERVED CORE CONDITION
B2	285+61	2	5	Shows on GPR, effl. cracks underneath	Delaminated (below temp steel)
B3	286+01	3	3	Shows on GPR, 50% effl. cracks underneath	delaminated (same depth as B2)
B4	287+08	4	10	Nothing on GPR, 100% effl. cracking underside	intact
B5	287+18	5	10	Shows in GPR, nothing on underside	broke at temp steel; no evidence of corrosion; AC overlay separated
B6	288+05	6	4	Shows on GPR, 25% effl. cracking underside	intact; AC overlay disintegrated
B7	289+51	8	5	Nothing on GPR, 50% effl. cracking underside	broke 2" below top rebar; no evidence of corrosion; AC overlay disintegrated
B8	290+04	9	2	Shows on GPR, 75% effl. cracking underside	patched to 2" depth
B9	290+31	9	5	Shows on GPR, 75% effl. cracking underside	delaminated
B10	291+10	10	4	Nothing on GPR, 50% effl. cracking underside	intact
B11	291+46	11	3	Shows on GPR, 50% effl. cracks underneath	delaminated

Figure 4 – Coring on Bridge 03190B

3. REFERENCES

ASTM "Standard Test Method for Evaluating Asphalt-Covered Concrete Bridge Decks Using Ground Penetrating Radar" Designation D 6087-05, ASTM International, West Conshohocken, PA. 2005.

AASHTO "Standard Test Method for Evaluating Asphalt-Covered Concrete Bridge Decks using Pulsed Radar", AASHTO Provisional Standard, Designation TP36, 1993.

Maser, K.R. and Rawson, A. "Network Bridge Deck Surveys Using High Speed Radar: Case Studies of 44 Decks." Transportation Research Record No. 1347. Transportation Research Board. National Research Council, 1992.

Maser, K.R. "Bridge Deck Condition Surveys Using Radar: Case Studies Of 28 New England Decks. Transportation Research Record No. 1304", Transportation Research Board. National Research Council, 1991.

Maser, K.R. "New Technology for Bridge Deck Assessment", Phase I and II Final Report prepared for the New England Transportation Consortium, Center for Transportation Studies, Massachusetts Institute of Technology, Cambridge, Massachusetts, 1990.

Maser, K.R., and Roddis, W.M.K "Principles of Radar and Thermography for Bridge Deck Assessment", ASCE Journal of Transportation Engineering, Vol. 116, No. 5, Sept/Oct, 1990.

SHRP C-101. "Condition Evaluation of Concrete Bridges Relative to Reinforcement Corrosion – Volume 3: Method of Evaluating the Condition of Asphalt-Covered Decks" Strategic Highway Research Program Report SHRP-S-325, Washington, D.C., 1993.

ATTACHMENT A

Bridge 03190B

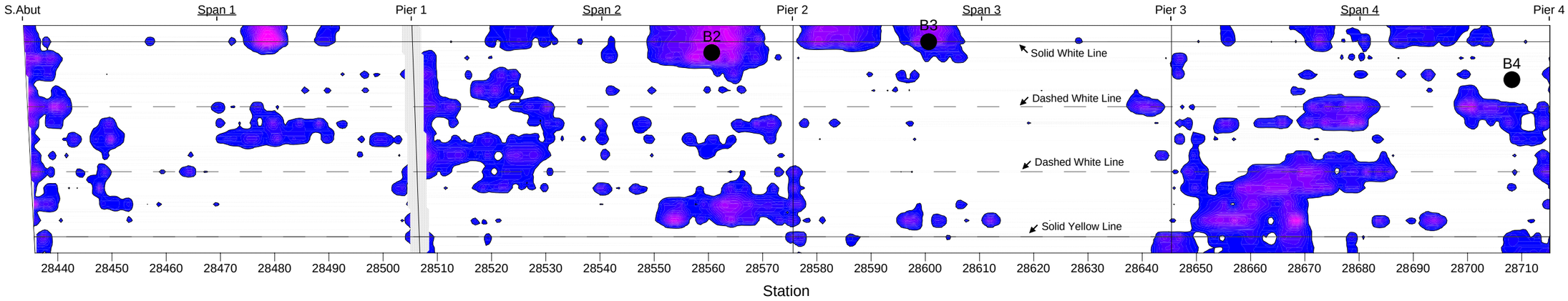
Table of Deterioration Percentages by Span

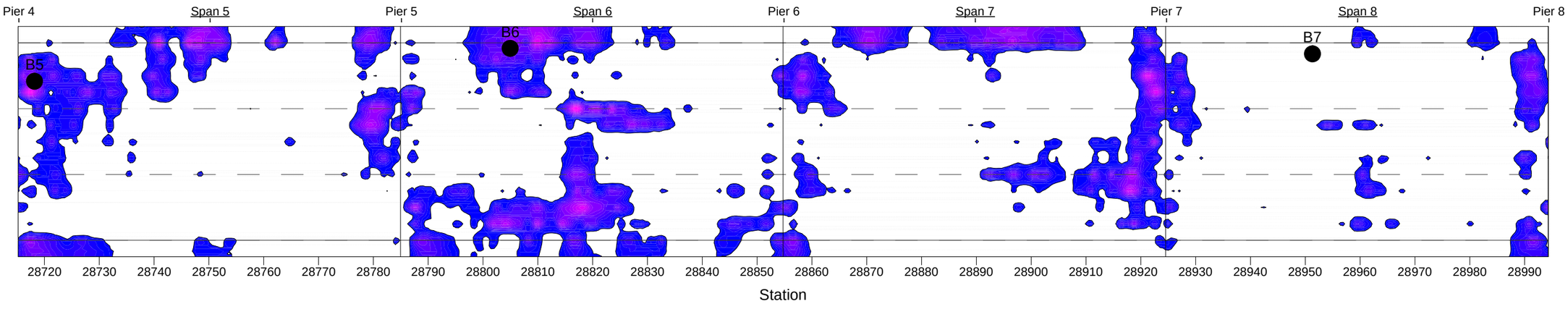
SPAN NO.	FROM	TO	% DETERIORATED
1	S. Abut	Pier 1	15%
2	Pier 1	Pier 2	29%
3	Pier 2	Pier 3	9%
4	**Pier 3**	**Pier 4**	**31%**
5	Pier 4	Pier 5	23%
6	**Pier 5**	**Pier 6**	**31%**
7	Pier 6	Pier 7	24%
8	Pier 7	Pier 8	11%
9	Pier 8	Pier 9	41%
10	Pier 9	Pier 10	16%
11	Pier 10	Pier 11	26%
12	Pier 11	Pier 12	8%
13	Pier 12	Pier 13	7%
14	Pier 13	Pier 14	11%
15	Pier 14	Pier 15	9%
16	Pier 15	Pier 16	12%
17	Pier 16	Pier 17	9%
18	Pier 17	Pier 18	28%
19	Pier 18	Pier 19	29%
20	Pier 19	Pier 20	28%
21	Pier 20	N. Abut	29%
Overall Deterioration			**20%**

ATTACHMENT B

Bridge 03190B

Deck Deterioration Maps





● = core

= conditions not detectable

Indication of Deck Deterioration

Severity --->

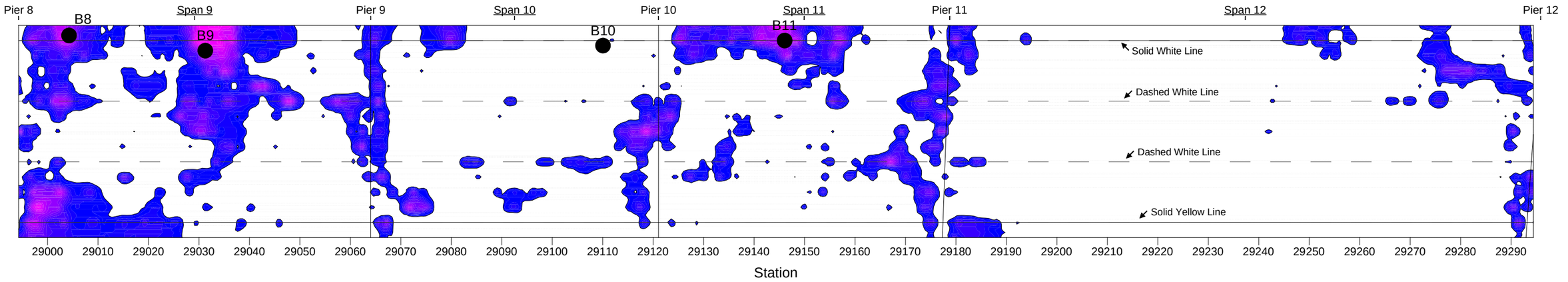
Ground Pentrating Radar
Deck Condition Evaluation

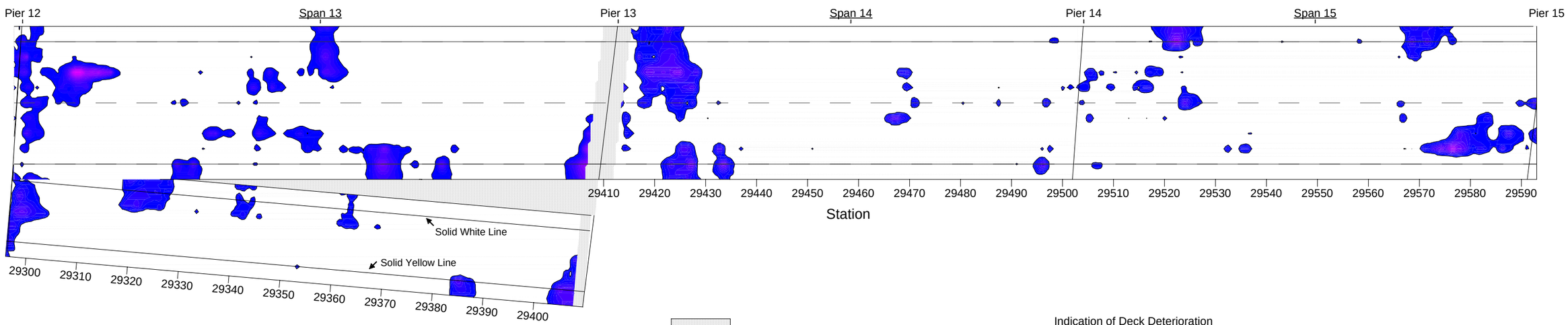
Bridge 03190B: Rt. 8 SB

Analyzed by: BCM Date: 02/26/07
Checked by: KRM Date: 02/27/07

INFRASENSE, Inc.

Sheet: 1 of 3





= conditions not detectable

Indication of Deck Deterioration

Severity --->

● = core

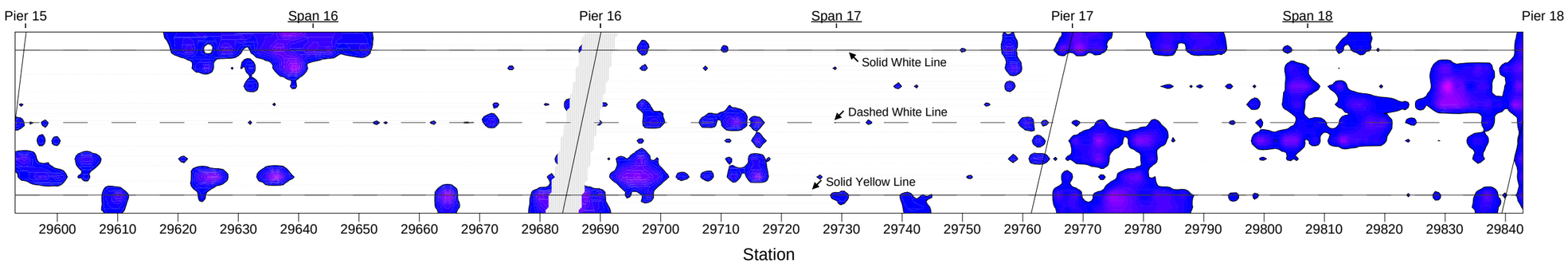
Ground Pentrating Radar
Deck Condition Evaluation

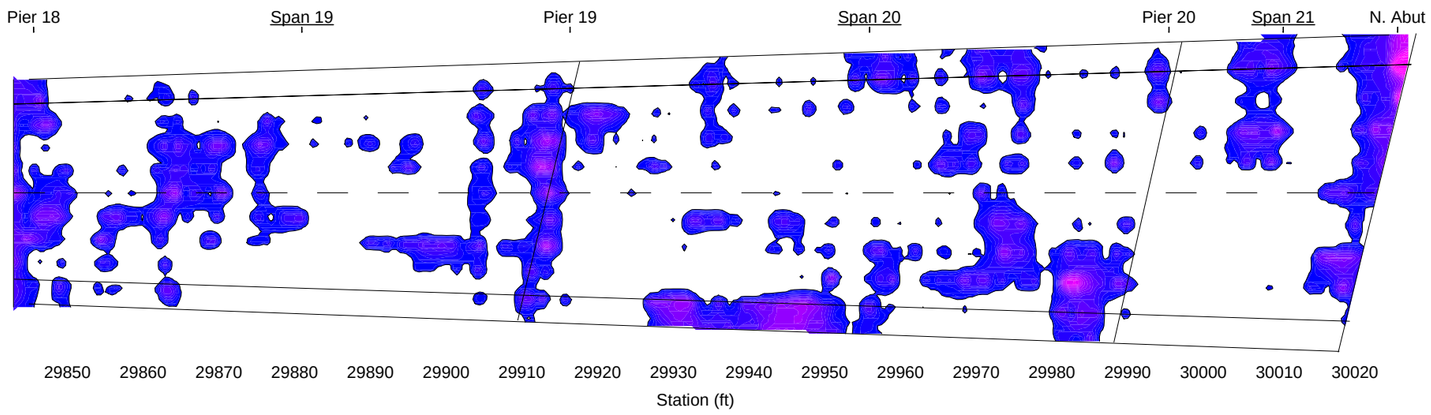
Bridge 03190B: Rt. 8 SB

Analyzed by: BCM Date: 02/26/07
Checked by: KRM Date: 02/27/07

INFRASENSE, Inc.

Sheet: 2 of 3





Indication of Deck Deterioration

Severity --->

Ground Pentrating Radar
Deck Condition Evaluation

Bridge 03190B: Rt. 8 SB

Analyzed by: BCM Date: 02/26/07
Checked by: KRM Date: 02/27/07

INFRASENSE, Inc.

Sheet: 3 of 3

ATTACHMENT C

Bridge 03190B — Core Photos

OVERLAY

CONCRETE DECK

DELAM OR FRACTURE

REBAR

In-Hole Photo at Core B-9

APPENDIX B

JGI EASTERN, Inc.

114 Woodlawn Road
Berlin, CT 06037
(860) 829-1725
Fax (860) 829-1745

77 Sundial Avenue, Suite 401
Manchester, NH 03109
(603) 647-9700
Fax (603) 647-4432

www.jgieastern.com

NDT ULTRASONIC TESTING REPORT

Project	Connecticut DOT Overhead Sign & Bridge Inspections	Contractor:	
		Sub-Contractor:	
Client	Haks Engineering	Date:	10/18/2006
Project No.:	06453C	Weather:	Clear

Testing Parameters:

1. Connection Type: Moment: Splice: X Other:
2. Transducer Angle: 70
3. Unit Type: USN 60
4. From Face A/B
5. Reference Level: 47 6. Leg: 1 and 2

JC

3190B Location	Floor	Resulting Condition
Bridge ~~03191B~~, Pier 13, Span 13, Cap girder G-4 to G-5	Top	Class C
Bridge 03191B, Pier 18, Span 12, FB-8	Bottom	Class C
Pier 18, Span 11, Girder 1	Top	Class A
Pier 18, Span 12, Girder 1 (Inside) MJD JC	Top	None (inside only)
Pier 19, FB-13	Bottom	Class A (3), Class C (1)
Pier 19, FB-17	Bottom	Class C
Pier 19, Span 13, Girder 2	Top	Class A
Pier 20, Span 14, FB-19	Bottom	Class C
Pier 18, Span 12, Girder 1 (West)	Top	Class A

Material Parameters:

Welding Process: N/A Thickness: Varies
Weld Joint: N/A Backing: N/A

Manufacturer or Contractor: N/A

Remarks: No changes in size or length of the previously reported discontinuities.

Technician: Jim Carrano, Level II

Reviewed by: KDB Date: 10/28/06

The information contained in this report may not be reproduced except in its entirety without the express written consent of JGI EASTERN, Inc. Reports are relevant only to the items tested and may not be attributed to other work. Testing was perfored in general accordance with the stated ASTM test method.

MQS

NDE EXAMINATION REPORT/ AWS ULTRASONIC

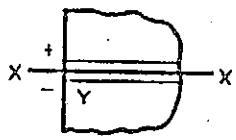
FORM 22-2 (REV. 1)

Client LICHTENSTEIN A.G Project CT BRIDGE # 03190B

Facility QC Control No. 46F 7710 Technique No. 46F7710

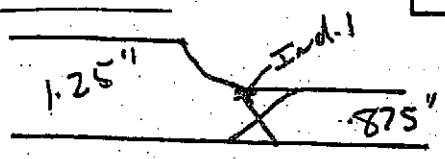
Item Description TENSION WELDS

Project CT. BRIDGE # 03190B PROJECT # 1919 Report no.

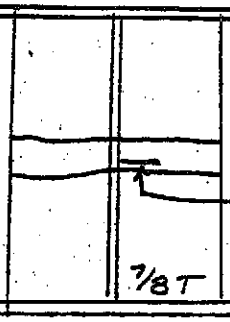


Weld identification PIER 13 SPAN 13 CAP GIRDER TF EAST WELD
Material thickness SEE BELOW
Weld joint AWS BUTT
Welding process MA
Quality requirements — section no. TENSION
Remarks

WELD GEOMETRY



PLAN VIEW



WELD LOCATION

Indication number	Transducer angle	From Face	Leg°	Decibels: Indication level a	Decibels: Reference level b	Decibels: Attenuation factor c	Decibels: Indication rating d	Discontinuity: Length	Discontinuity: Angular distance (sound path)	Discontinuity: Depth from "A" surface	Distance: From X	Distance: From Y	Discontinuity elevation	Remarks
1	70	A	1	59	46	3	+10	3"	2.6"	0	+.25"	5¼"	CLASS C	REJECT
	2002			NO	CHANGE	SINCE	(1999)	INSPECTIONS						
10/18/06				NO	Significant	Change	Since	the	last	inspection	flaw			

U.T. Operator & Lab Location: Alan SMITH LTU

U.T. Interpretation By & Lab Location: Alan Smith LTU

Date: 3-18-99

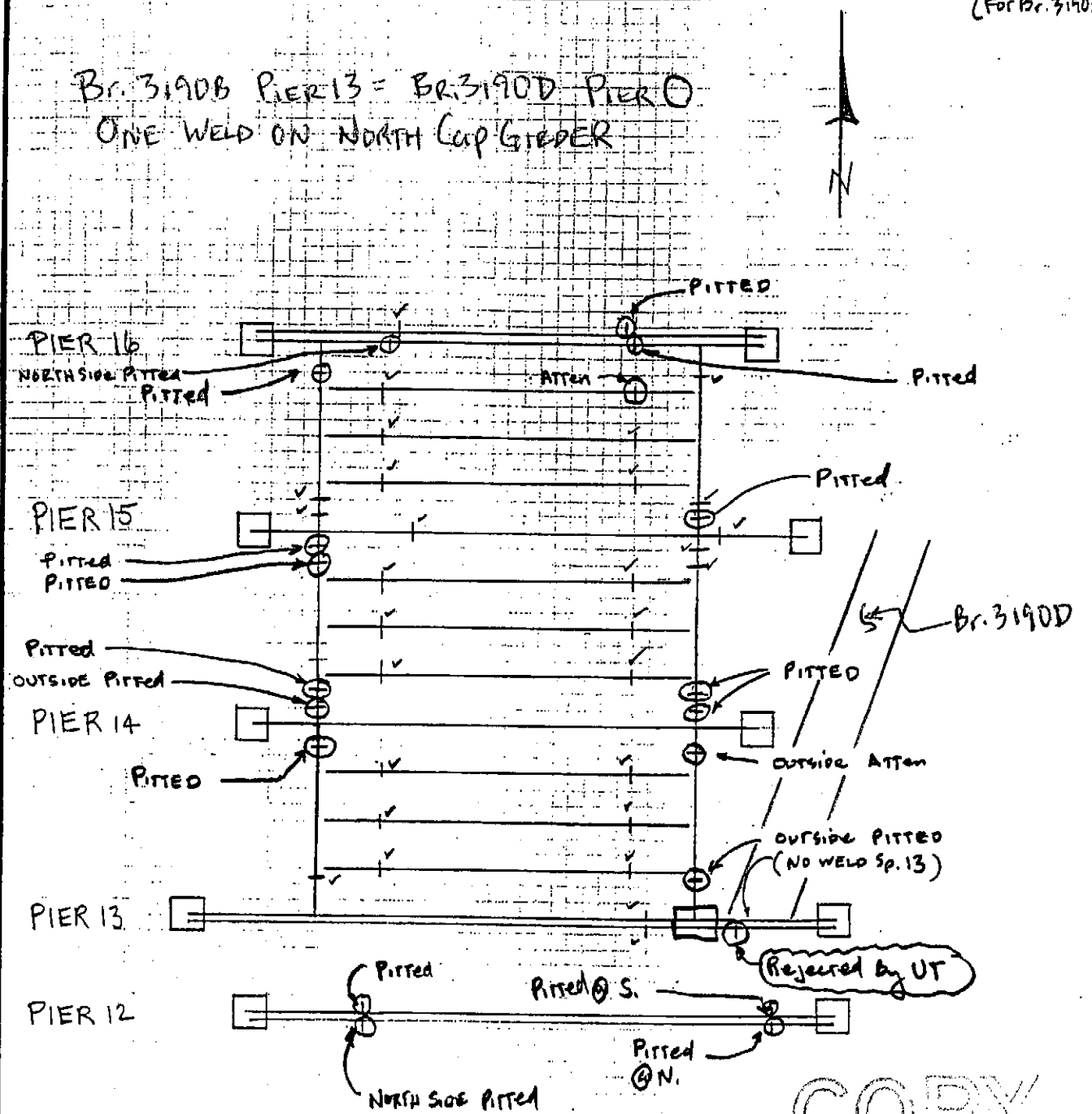
FIELD NOTES

	JOB NO. 1688	BRIDGE NO. 3190B
	DATE 12/1/94	SHEET 17
PREPARED BY: A.G. LICHTENSTEIN	CREW TWH	

49 WELDS THIS SHEET
{TOTAL
{FOR Br. 3190B

ULTRASONIC TESTING OF WELDS - LOCATIONS

Br. 3190B PIER 13 = Br. 3190D PIER 0
ONE WELD ON NORTH CAP GIRDER



COPY

NOTES:

1. 30 WELDS COMPLETELY TESTED, 1 WELD REJECTED
2. PITTED - WELD OR PORTION OF WELD NOT TESTED DUE TO PITTED SURFACE.
   11 WELDS NOT TESTED 6 WELDS PARTIALLY TESTED

   ATTEN. - WELD OR PORTION OF WELD NOT TESTED DUE TO PAINT ATTENUATION.
   1 WELD NOT TESTED 1 WELD PARTIALLY TESTED

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

MEMORANDUM

subject: **BMM No.**
Bridge No. 03190B
Route 8 SB over Riverside St. &
Sunnyside Ave.
Waterbury

date:

to: Mr. Charles A. Drda
Acting Trans. Maintenance Administrator
Bureau of Engineering
and Highway Operations

from: Sandra A. Dumas
Transportation Supervising Engineer
Bridge Safety and Evaluation
Bureau of Engineering
and Highway Operations

Attached are two copies of our most recent inspection report for the subject structure. The following deficiencies were found:

1. The scupper grate at the west curb of span 14 and at the east curb of span 20 are clogged. The scupper downspouts and funnels at piers 14, 18 and 19 are filled with debris and drain water onto pier caps.
2. There are short/broken weeps in bay 1 of spans 12, 13 and 15 (5 total), causing deterioration to girder bottom flanges.
3. Compression seal joints at south abutment, piers 2-12 and 17-20 have areas of depressed seals up to 3 inches deep x up to 20 feet long, and sand in the joints. There is active or evidence of leakage at most joints.
4. The seal between the curb and sidewalk is deteriorated/missing at random locations allowing leakage and causing deterioration to the deck and top flange of the girders.
5. Pier columns at piers 1-6 have random hollow areas, spalls with and without rebar and cracks up to 1/8 inch wide that run across the top and down the other side, some run under the masonry plate and into the anchor bolts. Columns 1 & 2 at bent 1 and columns 1, 2 & 3 at bent 5 are in worst condition.
6. Pier columns and caps, abutment backwalls and pedestals exhibit random spalls with and without rebar and hollow areas
7. There are cracks in structural steel welds at the following locations:
   - Span 12: 4 1/2 inches long crack in the weld of top horizontal cross bracing angle to cross girder vertical stiffener at pier 12.
   - Span 18: 2 1/2 inches long crack on the north side and 1 1/2 inch long crack on the south side of girder G1 bearing stiffener weld to bottom flange at pier 17.
   - Span 20 bay 2 vertical stiffener for girder G3 has a 3 1/2 inches long cracked weld at connection to top flange.
8. Pier 17 east footing is exposed and pier 9 has a 3 feet diameter x 1 foot deep area of erosion at the west column from downspout outflow.

Please direct persons under your jurisdiction to:

1. Open clogged scuppers and downspouts (4 Locations).
2. Replace the missing/short weeps (30 LF +/-).
3. Repair the depressed compression seals and remove the sand from the joints (200 LF).
4. Reseal the joint between the curb and the sidewalks (300 LF).
5. Repair the columns (0.5 CY +/-)
6. Repair the substructure (1 1/2 CY).
7. Repair cracked welds (10 ½ inches).
8. Place approved fill material at pier 17 footing and (1 CY) and place rip rap at pier 9 west column (<1/2 CY).

Items 1 and 2 should be considered Priority C. Item 3-5 should be considered Priority D. The remaining items should be considered Priority E. There may be other deficiencies which are considered routine maintenance and should be corrected.

All repairs shall be performed utilizing appropriate, approved materials and tried and proven methods unless otherwise specified.

If you have any questions concerning this matter, please contact me at (860) 594-2072. Please notify this office when the work has been completed.

Attachments – 4 Photos

Morteza A. Najafabadi/man

cc: Joseph J. Obara
Robert P. Zaffetti – Sandra A. Dumas – Karen M. Riemer
HAKS Engineers, P.C.
Team
File

Bridge No.	03190B	**Inspected by:**	Morteza Najafabadi
Town:	Waterbury, CT	**Inspected by:**	Zouhir Mahiaoui
Feature Carried:	Route 8 SB	**Date Inspected:**	9/25/06
Feature Crossed:	Riverside St. & Sunnyside Ave.	**Project No.:**	170-2357

Photo # 1: Bent 1 column at span 2 girder G1 exhibits hollow area (potential spall), cracks and spall with exposed rebar.

Photo # 2: Crack on the top and the side of bent 1 column for girder G2 (north elevation – span 2). Note: Crack runs through anchor bolt.

Bridge No.	03190B	**Inspected by:**	Morteza Najafabadi
Town:	Waterbury, CT	**Inspected by:**	Zouhir Mahiaoui
Feature Carried:	Route 8 SB	**Date Inspected:**	9/25/06
Feature Crossed:	Riverside St. & Sunnyside Ave.	**Project No.:**	170-2357

Photo # 3: Span 20 bay 2 vertical stiffener with cracked weld at girder G3.

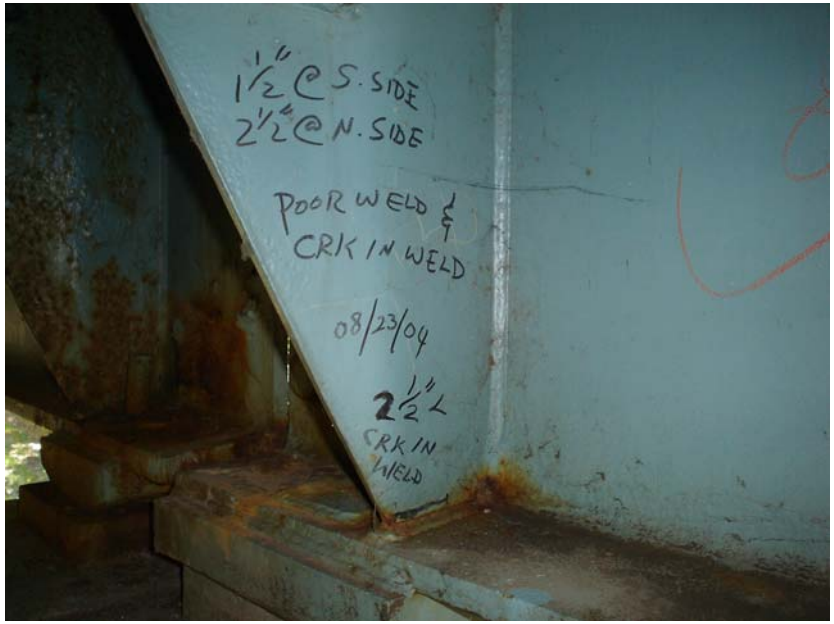


Photo # 4: Girder G1 bearing stiffener at pier 17 with 2 1/2" crack in the weld.

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

MEMORANDUM

subject: **BMM No. 06-410**
Bridge No. 03190B
Route 8 SB over Riverside Street &
Sunnyside Street
Waterbury

date: October 30, 2006

to: Mr. Michael W. Lonergan
Acting Trans. Maintenance Administrator
Bureau of Engineering
and Highway Operations

from: Robert P. Zaffetti
Manager of Bridge Safety and Evaluation
Bureau of Engineering
and Highway Operations

This memorandum is a follow-up to a telephone conversation on October 16, 2006 between Mary Mears of your staff and Sandra A. Dumas of Bridge Safety and Evaluation, concerning the following deficiency and recommendation for the subject structure:

1. Span 16, the underside of the deck has 3 hollow areas (up to 2 feet in diameter) in bay 4 and at the east fascia overhang, over the right lane of Riverside Street Southbound. Note: These areas are marked in black and some are adjacent to the spalled areas.

Please direct persons under your jurisdiction to:

1. Remove the hollow area on the deck underside (LS).

The above item was considered **Priority B.**

This inspection is currently in progress. **Maintenance forces responded and removed the hollow areas from the above noted location.** Additional items may be forwarded with copies of the approved inspection report.

All repairs shall be performed utilizing appropriate, approved materials and tried and proven methods unless otherwise specified.

If you have any questions concerning this matter, please contact me at (860) 594-2072. Please notify this office when the work has been completed.

Morteza A. Najafabadi/man

cc: Arthur W. Gruhn – Richard T. Jankovich
James H. Norman
Joseph J. Obara
Robert P. Zaffetti – Sandra A. Dumas – Karen M. Riemer
Joseph E. Chilstrom, FHWA
HAKS Engineers

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

MEMORANDUM

subject: **BMM No. 06-411**
Bridge No. 03190B
Route 8 SB over Riverside Street &
Sunnyside Street
Waterbury

date: October 30, 2006

to: Mr. Michael W. Lonergan
Acting Trans. Maintenance Administrator
Bureau of Engineering
and Highway Operations

from: Robert P. Zaffetti
Manager of Bridge Safety and Evaluation
Bureau of Engineering
and Highway Operations

This memorandum is a follow-up to a telephone conversation on October 17, 2006 between David Hiscox of your staff and Karen M. Riemer of Bridge Safety and Evaluation, concerning the following deficiency and recommendation for the subject structure:

1. Spans 14 & 15, the underside of the deck has a total of 2 hollow areas up to 2'x1' in bay 2 of span 14 and Bay 4 of span 15, over the right lane of Riverside Street Southbound. Note: These areas are marked in black and are adjacent to the spalled areas.

Please direct persons under your jurisdiction to:

1. Remove the hollow areas on the deck underside (LS).

The above item is considered **Priority B.**

This inspection is currently in progress. **Maintenance forces responded and removed the hollow areas from the above noted location.** Additional items may be forwarded with the final inspection report.

All repairs shall be performed utilizing appropriate, approved materials and tried and proven methods unless otherwise specified.

If you have any questions concerning this matter, please contact me at (860) 594-2072. Please notify this office when the work has been completed.

Attachment – 1 Photo

Morteza A. Najafabadi/man

cc: Arthur W. Gruhn – Richard T. Jankovich
James H. Norman
Joseph J. Obara
Robert P. Zaffetti – Sandra A. Dumas – Karen M. Riemer
Joseph E. Chilstrom, FHWA
HAKS Engineers

Bridge No.	03190B	**Inspected by:**	Morteza Najafabadi
Town:	Waterbury	**Inspected by:**	Zohair Mahiaoui
Feature Carried:	Route 8 SB	**Date Inspected:**	10/17/06
Feature Crossed:	Riverside Street	**Project No.:**	170-2357

Photo # 1: Span 15, Bay 4, underside of the deck has a hollow area, adjacent to existing spall, over the right lane of Riverside Street SB. **Typical – Span 14, Bay 2**	**Photo # :.**

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

MEMORANDUM

subject: **BMM No. 06-461**
Bridge No. 03190B
Route 8 SB over Riverside Street &
Sunnyside Street
Waterbury

date: November 2, 2006

to: Michael W. Lonergan
Acting Trans. Maintenance Administrator
Bureau of Engineering
and Highway Operations

from: Sandra A. Dumas
Transportation Supervising Engineer
Bridge Safety and Evaluation
Bureau of Engineering
and Highway Operations

During our current inspection of the subject structure, the following deficiency was found:

1. Span 12, the west parapet has 3 hollow areas (up to 3 feet x 1.5 feet) on the outside face over the left lane of Riverside Street Northbound.
   Note: These areas are marked in black and some are adjacent to the spalled areas (see attached photos).

Please direct persons under your jurisdiction to:

1. Remove the hollow areas (LS).

The above item is considered **Priority C.**

The inspection is still ongoing. Additional items may be forwarded with copies of the approved inspection report.

All repairs shall be performed utilizing appropriate, approved materials and tried and proven methods unless otherwise specified.

If you have any questions concerning this matter, please contact me at (860) 594-2072. Please notify this office when the work has been completed.

Attachment – photos

Morteza A. Najafabadi/man

cc: Joseph J. Obara
Robert P. Zaffetti – Sandra A. Dumas – Karen M. Riemer
HAKS Engineers

Bridge No.	03190B	**Inspected by:**	Morteza Najafabadi
Town:	Waterbury	**Inspected by:**	Zohair Mahiaoui
Feature Carried:	Route 8 SB	**Date Inspected:**	10/26/06
Feature Crossed:	Riverside Street	**Project No.:**	170-2357

Photo # 1: Span 12, West Parapet, over the left lane of Riverside Street NB. 1'x1' hollow area next to spall.

Photo #2: Span 12, West Parapet, over the left lane of Riverside Street NB. 3'x1.5' hollow area.

Bridge No.	03190B	**Inspected by:**	Morteza Najafabadi
Town:	Waterbury	**Inspected by:**	Zohair Mahiaoui
Feature Carried:	Route 8 SB	**Date Inspected:**	10/26/06
Feature Crossed:	Riverside Street	**Project No.:**	170-2357

Photo # 3: Span 12, West Parapet, over the left lane of Riverside Street NB. 5'x6" hollow area.	**Photo #:**

Bridge Number 03190B

Inspected By: [signature] & Z. MAHIAOULI

Sufficiency Rating 72.78

Previous Inspection Date 8/19/2004

BS&E Received ☐ Data Entry By: _____

Copies Made ☐ Data Entry Date: _____

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION
BRIDGE SAFETY & EVALUATION
STRUCTURE EVALUATION

SHEET 1 OF 2 FORM BRI-19 REV 10/00

SHEET_____ OF_____ (INSP. REPORT)

90) Inspection Date 09/25/06 Inspection Team 25 2 5 91) Freque. 24

Indepth Insp 8/19/2004 Deck Survey 1/11/07 Access 0 2 4 Flagman 0

CRITICAL FEATURE INSPECTIONS

	Type	Frequency	Team	Date	
Fracture:	J J	24 2 4	20 2 5	8/19/2004	9/25/06
Uwater:					
Special:					

RED FL

IDENTIFICATION

Bridge Name

Town Name WATERBURY Town Code 60070

5) Inventory Route:

A) Record Type 1

B) Signing Prefix 3 State Highway

C) Level of Service 1 Mainline

D) Route Number 00008

E) Directional Suffix 1 South

6) Feature Intersected RIVERSIDE ST-SUNNYSIDE

7) Facility Carried ROUTE 8 SOUTHBOUND

9) Location ROUTE 8 SOUTH OF I-84

11) Milepoint 29.77 Miles

16) Latitude 41 deg 32 min 48.00 sec deg min sec

17) Longitude 73 deg 2 min 48.00 sec deg min sec

98) Border Bridge:

A) State Code

B) Percent Responsibility %

C) Border Town Name

99) Border Bridge Structure No

STRUCTURE TYPE AND MATERIAL

43) Structure Type, Main:

A) Material 3 Steel

B) Design Type 4 Girder and Floorbea

44) Structure Type, Approach:

A) Material 3 Steel

B) Design Type 2 Stringer/Multi-beam

45) Number of Spans, Main Unit 3

46) Number of Approach Spans 18

107) Deck Structure Type 1 Concrete Cast-in-Place

108) Wearing Surface/Protective System:

A) Type of Wearing Surface 6 Bituminous

B) Type of Membrane 2 Preformed Fabric

C) Type of Deck Protection 0 None

AGE AND SERVICE

27) Year Built 1966

106) Year Reconstructed 1991

42) Type of Service:

A) On 6 Overpass structure

B) Under 1 HIGHWAY

28) Number of Lanes:

A) On 2

B) Under 6

29) Average Daily Traffic 28950 02 83 50 Half ADT?: Yes

109) Percent Truck 8 %

30) Year of ADT 2003 2005

19) Bypass, Detour Length 1 miles

GEOMETRIC DATA

48) Length of Max Span 116 ft

49) Structure Length 1589 ft

50) Curb or Sidewalk Widths:

A) Left 1.5 ft

B) Right 1.5 ft

51) Brg Rdwy width,curb-curb 30.0 ft

52) Deck Width, Out-Out 35.7 ft

32) Approach Roadway Width 42 ft

33) Bridge Median 0 No Median

Deck Area 75312 sqft

34) Skew Angle 7 deg

35) Structure Flared

10)Inv. Rte. Min. Vert Clearance 16 ft 4 in

47) Log Inv. Rte. Total Horiz Clr.: 30.0 ft

47) RLog Inv. Rte. Total Horiz. Clr.: ft

53) Min Vert Clearance Over Bridge 16 ft 2 in

54) Min Vert Under Clearance H Ref 14 ft 4 in Ref

55) Min Lat Under Clearance on Right H Ref 3.0 ft Ref

56) Min Lat Under Clearance on Left 1.3 ft

BRIDGE COMMENTS

ITEM #54 IS MEASURED TO BOTTOM OF SEISMIC RETROFIT ON BOT. FLG. 14'-11" TO BOTT. OF BOTT.FLG. ITEM #10 FROM UNDER CLEARANCES FOR BRI3190A (FILED NOTES SHT #5). ITEM #53 FROM UNDER CLEARANCES FOR BRI# 3190A TO BOT. OF BOT.FLG-- 15'16" TO BOT. OF SEISMIC RETROFIT(FIELD NOTES SHT# 6).

STRUCTURE EVALUATION

SHEET 2 OF 2 FORM BRI-19 REV 10/00

SHEET_____ OF_____ (INSP. REPORT

Bridge Number	03190B	NBI
Town Name	WATERBURY	Yes 158
Facility Carried	ROUTE 8 SOUTHBOUND	
Feature Crossed	RIVERSIDE ST SUNNYSIDE	

Inspected By: _____ & _____

CLASSIFICATION

112) NBIS Bridge Length	Yes	
104) Highway System	1	On System
26) Functional Class	12	Urban Principal Arterial - Other
100) Defense Highway	1	Defense Highway
101) Parallel Structure	N	No parallel structure exists
102) Direction of Traffic	1	1-way traffic
103) Temporary Structure		
110) Designated National Network	1	On national network
20) Toll	3	On Free Road
21) Maintain	1	State Highway Agency
22) Owner	1	State Highway Agency
Report Class	S	STATE
37) Historical Significance	5	Bridge is not eligible for National Register

WATERWAY

DrainageBasinCode		
38) Navigation Control		No navigation control on waterway
39) Navigation Vert Clr.		40) Navigation Horiz Clr.
116) Vert-Lift Brg Nav Min		
111) Pier Abutment Protection		

PROPOSED IMPROVEMENTS

75A) Type of Work Proposed		Replacement - incidental widening
75B) Work Done By		Work done by contract
76) Length of Struct. Improvement		ft
94) Bridge Improvement Cost	$	
95) Roadway Improvement Cost	$	
96) Total Project Cost	$	
97) Year of Improvement Cost Est.		
114) Future ADT		115) Year Future ADT
List No. 06	Project No.	Advertised

POSTED SIGNS & UTILITIES

Other Posted Signs 1	5	Merge			
Other Posted Signs 2					
Actual P.L. Single Unit Truck	tons	Actual P.L. 4Axle Truck	tons		
Rec. P.L. Single Unit Truck	tons	Rec. P.L. 4Axle Truck	tons		
Actual P.L. Semi-TrailerTruck	tons	Actual P.L. 3S2 Truck	tons		
Rec. P.L. Semi-TrailerTruck	tons	Rec. P.L. 3S2 Truck	tons		
Rec. P.L. All Vehicles	tons	Actual P.L. All Vehicles	tons		
Posted Vert Clearance On Bridge	ft	in	ft		In
Posted Vert UnderClearance	ft	in	13 ft	09	In
Posted Speed Limit	45 mph				mph
Utility					

LOAD RATING AND POSTING

31) Design Load	5	Evaluation Code	L	
63) Operating Rating Type	1	Year of Evaluation	1998	
64) Operating Rating	59.0	70) Bridge Posting	5	
65) Inventory Rating Type	1	41) Structure Status	A	A
66) Inventory Rating	35.0	Open, no restriction		

CONDITION

	Rating	By
58) Deck	5	MAN
59) Superstructure	6	MAN
60) Substructure	5	MAN
61) Channel & Chan. Protection	N	MAN
62) Culverts	N	MAN

Items 58 Thru 72 Checked By: _____

36) Traffic Safety Features:

A) Bridge Railings	0	0
B) Transitions	1	0
C) Approach Guardrail	1	0
D) Approach Guardrail End	1	1

APPRAISALS

	Rating	By
67) Structure Evaluation	6	5 MAN
68) Deck Geometry	4	MAN
69) Under Clear Vert & Horiz	3	MAN
71) Waterway Adequacy	N	MAN
72) Approach Rdwy Alignment	6	MAN
113) Scour Critical		

OTHER FEATURES

Fence Required	No			Barrel Ladder	No
Fence Present	No		N	Stand Pipes	No
Fence Height	0.0 ft		ft	Cat Walks	No
Fence Type		Solid Panel		Movable Inspection System	No
Fence Material		Aluminum		Loose Concrete Checked?	Yes Y
Fence Top Type		Vertical			

INSPECTION COMMENTS

Proposed Next Indepth Insp Year 2014 2014

Senior Supervisor _____

REVIEWED BY _____ Date 05/09/07

Structure Inventory and Appraisal Sheet (English Units)

Bridge Key: 03190B | Agency ID: 03190B | Sufficiency Rating: 0

IDENTIFICATION

State 1: 09 Connecticut | Struc Num 8: 03190B

Facility Carried 7: ROUTE 8 SOUTHBOUND | Location 9: ROUTE 8 SOUTH OF I-84

Rte.(On/Under)5A: Route On Structure | Rte. Signing Prefix 5B: 3 State Hwy

Level of Service 5C: 1 Mainline | Rte. Number 5D: 00008

Directional Suffix 5E: 3 South | % Responsibility: 0

SHD District 2: 04 | County Code 3: New Haven

Place Code 4: WATERBURY | Mile Post 11: 29.764 mi

Feature Intersected 6: RIVERSIDE ST-SUNNYSIDE

Latitude 16: 41d 32' 48" | Longitude 17: 073d 02' 48"

Border Bridge Code 98: Unknown (P)

Border Bridge Number 99: NA

INSPECTION

Frequency 91:	24 months	Inspection Date 90:	9/25/2006	Next Inspection:	09/25/2008
FC Frequency 92A:	24 months	FC Inspection Date 93A:	9/25/2006	Next FC Inspection:	9/25/2008
UW Frequency 92B:	NA	UW Inspection Date 93B:	NA	Next UW Inspection:	NA
SI Frequency 92C:	NA	SI Date 93C:	NA	Next SI:	NA
Element Frequency:	24 months	Element Inspection Date:	09/25/2006	Next Elem. Insp. Due:	09/25/2008

CLASSIFICATION

Defense Highway 100:	1 STRAHNET hwy	Parallel Structure 101:	No || bridge exists
Direction of Traffic 102:	1 1-way traffic	Temporary Structure 103:	Unknown (NBI)
Highway System 104:	1 On the NHS	NBIS Length 112:	Long Enough
Toll Facility 20:	3 On free road	Functional Class 26:	12 Urban Fwy/Expwy

Historical Significance 37: 5 Not eligible for NRHP

Owner 22: 1 State Highway Agency

Custodian 21: 1 State Highway Agency

STRUCTURE TYPE AND MATERIALS

Number of Approach Spans 46: 18 | Number of Spans Main Unit 45: 3

Main Span Material/Design 43A/B:

3 Steel | 03 Girder-Floorbeam

Approach Span Material/Design 44A/B:

3 Steel | 02 Stringer/Girder

Deck Type 107: 1 Concrete-Cast-in-Place

Wearing Surface 108A: 6 Bituminous

Membrane 108B: 2 Preformed Fabric

Deck Protection 108C: None

CONDITION

Deck 58: 5 Fair | Super 59: 6 Satisfactory | Sub 60: 5 Fair

Culvert 62: N N/A (NBI) | Channel/Channel Protection 61: N N/A (NBI)

AGE AND SERVICE

Year Built 27: 1966 | Year Reconstructed 106: 1991

Type of Service on 42A: 6 2d level Interchg

Type of Service under 42B: 1 Highway

Lanes on 28A: 2 | Lanes Under 28B: 0 | Detour Length 19: 1.2 mi

ADT 29: 28,350 | Truck ADT 109: 5 % | Year of ADT 30: 2005

LOAD RATING AND POSTING

Inventory Rating Method 65:	1 LF Load Factor	Operating Rating Method 63:	1 LF Load Factor
Inventory Rating 66:	HS19.3	Operating Rating 64:	HS32.5
Design Load 31:	5 MS 18 (HS 20)	Posting 70:	5 At/Above Legal Loads
Posting status 41:	A Open, no restriction		

GEOMETRIC DATA

Length Max Span 48: 116.1 ft | Structure Length 49: 1,588.9 ft

Curb/Sdwlk Wdth L 50A: 1.6 ft | Curb/Sidewalk Width R 50B: 1.6 ft

Width Curb to Curb 51: 29.9 ft | Width Out to Out 52: 35.8 ft

Approach Roadway Width 32: (w/ shoulders) 42.0 ft | Median 33: 0 No median

Deck Area: 47,673.4 sq. ft

Skew 34: 7.00 ° | Structure Flared 35: 1 Yes, flared

Minimum Vertical Clearance Over Bridge 53: 16.2 ft

Minimum Vertical Underclearance Reference 54A: H Hwy beneath struct

Minimum Vertical Underclearance 54B: 14.3 ft

Minimum Lateral Underclearance Reference R 55A: H Hwy beneath struct

Minimum Lateral Undrclearance R 55: 3.0 ft

Minimum Lateral Undrclearance L 56: 1.3 ft

APPRAISAL

Bridge Rail 36A:	0 Substandard	Approach Rail 36C:	0 Substandard
Transition 36B:	0 Substandard	Approach Rail Ends 36D:	1 Meets Standards
Str. Evaluation 67:	6	Deck Geometry 68:	4 Tolerable

Underclearance, Vertical and Horizontal 69: 3 Intolerable - Correct

Waterway Adequacy 71:	N Not applicable	Approach Alignment 72:	6 Equal Min Criteria
Scour Critical 113:	N Not Over Waterway		

PROPOSED IMPROVEMENTS

Bridge Cost 94:	$ 1,000	Type of Work 75:	38 Other Structural
Roadway Cost 95:	$ 1,000	Length of Improvment 76:	0.3 ft
Total Cost 96:	$ 2,000	Future ADT 114:	13,775
Year of Cost Estimate 97:	2000	Year of Future ADT 115:	2019

NAVIGATION DATA

Navigation Control 38: N NA-no waterway

Vertical Clearance 39:	0.0 ft	Horizontal Clearance 40:	0.0 ft
Pier Protection 111:	Unknown (NBI)	Lift Bridge Vertical Clearance 116:	

ELEMENT CONDITION STATE DATA

Str Unit	Elm/Env	Description	Units	Total Qty	% in 1	Qty. St. 1	% in 2	Qty. St. 2	% in 3	Qty. St. 3	% in 4	Qty. St. 4	% in 5	Qty. St. 5
0	14/3	P Conc Deck/AC Ovly	(SF)	75,315	100 %	75,315	0 %	0	0 %	0	0 %	0	0 %	0
0	107/3	Paint Stl Opn Girder	(LF)	9,514	94 %	8,914	2 %	151	5 %	449	0 %	0	0 %	0
0	113/3	Paint Stl Stringer	(LF)	827	100 %	827	0 %	0	0 %	0	0 %	0	0 %	0
0	152/3	Paint Stl Floor Beam	(LF)	279	100 %	279	0 %	0	0 %	0	0 %	0	0 %	0
0	205/3	R/Conc Column	(EA)	81	86 %	70	14 %	11	0 %	0	0 %	0	0 %	0
0	215/3	R/Conc Abutment	(LF)	102	88 %	89	12 %	13	0 %	0	0 %	0	0 %	0

Structure Inventory and Appraisal Sheet (English Units)

Str Unit	Elm/Env	- Description	Units	Total Qty	% in 1	Qty. St. 1	% in 2	Qty. St. 2	% in 3	Qty. St. 3	% in 4	Qty. St. 4	% in 5	Qty. St. 5
0	231/3	Paint Stl Cap	(LF)	512	100 %	512	0 %	0	0 %	0	0 %	0	0 %	0
0	234/3	R/Conc Cap	(LF)	466	86 %	400	14 %	66	0 %	0	0 %	0	0 %	0
0	302/3	Compressn Joint Seal	(LF)	728	88 %	640	12 %	89	0 %	0	0 %	0	0 %	0
0	303/3	Assembly Joint/Seal	(LF)	125	100 %	125	0 %	0	0 %	0	0 %	0	0 %	0
0	305/3	Asphaltic Plug Joint	(LF)	92	100 %	92	0 %	0	0 %	0	0 %	0	0 %	0
0	310/3	Elastomeric Bearing	(EA)	96	100 %	96	0 %	0	0 %	0	0 %	0	0 %	0
0	313/3	Fixed Bearing	(EA)	126	92 %	116	8 %	10	0 %	0	0 %	0	0 %	0
0	314/3	Pot Bearing	(EA)	14	100 %	14	0 %	0	0 %	0	0 %	0	0 %	0
0	321/3	R/Conc Approach Slab	(EA)	2	100 %	2	0 %	0	0 %	0	0 %	0	0 %	0
0	331/3	Conc Bridge Railing	(LF)	3,179	100 %	3,179	0 %	0	0 %	0	0 %	0	0 %	0
0	359/3	Soffit Smart Flag	(EA)	1	0 %	0	0 %	0	0 %	0	100 %	1	0 %	0
0	363/3	Section Loss SmFlag	(EA)	1	100 %	1	0 %	0	0 %	0	0 %	0	0 %	0
0	370/3	deck drainage system	(LF)	151	74 %	112	0 %	0	26 %	39	0 %	0	0 %	0