



PSN BORNUM FHB-13  
 DIVISION Syracuse  
 COUNTY Onondaga  
 PIN S52886  
 ROUTE Thruway Mainline  
 MILEPOST 278.93  
 PROJECT Syracuse Division 2017 Design-Build Bridge Replacements

NEW YORK STATE THRUWAY AUTHORITY  
 NEW YORK STATE CANAL CORPORATION  
**SUBSURFACE EXPLORATION LOG**

HOLE LINE FH-B  
 STA \_\_\_\_\_  
 OFFSET ft  
 SURF. ELEV. 421.4323, NAD 88  
 DEPTH TO WATER 9.6

COORDINATES (Lat) 43.092974°N (Long) 76.089867°W  
 DATE START 12/21/2016 DATE FINISH 12/22/2016

AUGER 4 1/4" I.D. HOLLOW STEM FLIGHT AUGER WT OF HAMMER-CASING lb HAMMER FALL-CASING in  
 CASING O. D. in I. D. in WT OF HAMMER-SAMPLER 140 lb HAMMER FALL-SAMPLER 30 in  
 SAMPLER O. D. 2 in I. D. 1-3/8 in HAMMER TYPE Safety

| CASING BLOWS/ft | DEPTH (ft.) BELOW SURFACE | SAMPLE NO. | BLOWS ON SAMPLER (in.) |      |       |       | MOIST. CONT. (%) | Soil Recovery (in.) | Rock Recovery (ft.)  | DESCRIPTION OF SOIL AND ROCK |
|-----------------|---------------------------|------------|------------------------|------|-------|-------|------------------|---------------------|--|------------------------------|
|                 |                           |            | 0-6                    | 6-12 | 12-18 | 18-24 |                  |                     |  |                              |
|                 | 0.0                       |            |                        |      |       |       |                  |                     |  |                              |
|                 | 5.0                       | SS1        | 9                      | 6    | 4     | 8     | 12.7%            | 12                  | 3.0-3.4' Dark gray (SAND-SILT-CLAY) fill with 0 to 3% gravel, little sand and clay, very stiff, massive soil structure, (ML-CL).<br>3.4-5.0' Brown gravelly (SILTY-SAND) fill with 20 to 40% gravel, little silt, compact, massive soil structure, (SM). |                              |
|                 | 10.0                      | SS2        | 3                      | 1/12 |       | WH    | 14.4%            | 6                   | Brown (SAND-SILT-CLAY) fill with 3 to 7% gravel, little to some sand, trace clay, very soft, massive soil structure, (ML-CL).  |                              |
|                 | 15.0                      | SS3        | 10                     | 13   | 21    | 25    | 9.9%             | 24                  | Brown (SANDY-SILT) fill with 3 to 7% gravel, little mostly very fine to fine size sand, trace clay, dense, massive soil structure, (ML).<br>Note: Driller noted change much harder below 16.0 feet.  |                              |
|                 | 20.0                      | SS4        | 64                     | 50/5 |       |       | 11.7%            | 11                  | Gray to reddish brown very weathered shale stone fragments, very soft to soft.   |                              |
|                 | 25.0                      | SS5        | 39                     | 50/4 |       |       | 13.7%            | 10                  | Reddish brown gravelly (SANDY-SILT) with 10 to 20% gravel and flat sided stone fragments, little sand, trace clay, very dense, massive soil structure, (ML) tending toward (ML-CL).  |                              |

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DRILL RIG OPERATOR Andrew Kempisty  
 SOIL & ROCK DESCRIPTION Kyle Shearing  
 INSPECTOR Joe Dorety (Fisher)  
 BIN 5510090  
 STRUCTURE NAME Int. 35 Ramp/Thruway

CONTRACT \_\_\_\_\_ CONTRACTOR Earth Dimensions, Inc.

SHEET 1 OF 3 HOLE FH-B



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**SUBSURFACE EXPLORATION LOG**

HOLE LINE STA FH-B  
 OFFSET ft  
 SURF. ELEV. 421.4323, NAD 88  
 DEPTH TO WATER 9.6

COORDINATES (Lat) 43.092974°N (Long) 76.089867°W  
 DATE START 12/21/2016 DATE FINISH 12/22/2016

AUGER 4 1/4" I.D. HOLLOW STEM FLIGHT AUGER WT OF HAMMER-CASING lb HAMMER FALL-CASING in  
 CASING O. D. in I. D. in WT OF HAMMER-SAMPLER 140 lb HAMMER FALL-SAMPLER 30 in  
 SAMPLER O. D. 2 in I. D. 1-3/8 in HAMMER TYPE Safety

| CASING BLOWS/ft | DEPTH (ft.) BELOW SURFACE | SAMPLE NO.  | BLOWS ON SAMPLER (in.) |      |       |       | MOIST. CONT. (%) | Soil Recovery (in.) | Rock Recovery (ft.)   | DESCRIPTION OF SOIL AND ROCK |
|-----------------|---------------------------|-------------|------------------------|------|-------|-------|------------------|---------------------|---|------------------------------|
|                 |                           |             | 0-6                    | 6-12 | 12-18 | 18-24 |                  |                     |   |                              |
|                 | 25.0                      |             |                        |      |       |       |                  |                     |   |                              |
|                 |                           | SS6         | 100/5                  |      |       |       | 14.3%            | 5                   | Gray weathered shale stone fragments, very soft to soft. W - NPL  |                              |
|                 | 30.0                      |             |                        |      |       |       |                  |                     |   |                              |
|                 |                           | SS7<br>RUN1 | 100/4                  |      |       |       | 19.4%            | 4                   | 33.0-33.4' Gray weathered shale and siltstone stone fragments, very soft to soft.   |                              |
|                 | 35.0                      |             |                        |      |       |       |                  | 2.9                 | Note: Switched boring method to coring with a NQ-2 size double tubed wireline core barrel with diamond bit.<br>Run #1: NQ-2 size diamond core barrel 33.4-38.3' Reddish brown to gray shale with occasional thin gypsum interbeds/seams, very soft to soft, clay, very fine, smooth, thinly to thickly laminated, very intensely fractured horizontally along bedding planes with some gravel like zones, core pieces range from (0.01-0.43') slightly weathered, driller noted about a 6" drop ~3.0-ft into the run, possible void, slightly pitted. |                              |
|                 | 40.0                      | RUN2        |                        |      |       |       |                  | 5                   | Recovery: 2.9'/4.9' = 59%<br>RQD: 0.4'/4.9' = 8%<br>Number of Pieces >4": 1<br>Number of Pieces total: >50  |                              |
|                 |                           |             |                        |      |       |       |                  |                     | Run #2: NQ-2 size diamond core barrel 38.3-43.3' Reddish brown to gray shale with occasional thin gypsum interbeds/seams, soft, clay, very fine, smooth, thinly to thickly laminated, moderately fractured horizontally along bedding planes, core pieces range from (0.03-1.2') fresh core breaks.   |                              |

Recovery: 5.0'/5.0' = 100%  
 RQD: 3.5'/5.0' = 70%  
 Number of Pieces >4": 4  
 Number of Pieces total: 11  
 BOTTOM OF HOLE AT 43.30 ft

Note:  
 Advanced bore hole with 4 1/4" ID x 8" OD hollow stem auger casing with 5.0-foot interval sampling to 33.0 feet. Continued below with a NQ-2 size double tubed wireline core barrel with diamond bit to end of coring at 43.3 feet. Bore hole was backfilled with cuttings to ground surface upon completion.

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DRILL RIG OPERATOR Andrew Kempisty  
 SOIL & ROCK DESCRIPTION Kyle Shearing  
 INSPECTOR Joe Dorety (Fisher)  
 BIN 5510090  
 STRUCTURE NAME Int. 35 Ramp/Thruway

CONTRACT \_\_\_\_\_ CONTRACTOR Earth Dimensions, Inc.

SHEET 2 OF 3

HOLE FH-B

SM 282 E 12/02



PSN                      BORNUM FHB-13  
 DIVISION Syracuse  
 COUNTY Onondaga  
 PIN S52886  
 ROUTE Thruway Mainline  
 MILEPOST 278.93  
 PROJECT Syracuse Division 2017 Design-Build Bridge Replacements

NEW YORK STATE THRUWAY AUTHORITY  
 NEW YORK STATE CANAL CORPORATION  
**SUBSURFACE EXPLORATION LOG**

HOLE LINE FH-B  
 STA                       
 OFFSET ft  
 SURF. ELEV. 421.4323, NAD 88  
 DEPTH TO WATER 9.6

COORDINATES (Lat) 43.092974°N (Long) 76.089867°W  
 DATE START 12/21/2016 DATE FINISH 12/22/2016

AUGER 4 1/4" I.D. HOLLOW STEM FLIGHT AUGER WT OF HAMMER-CASING                      lb HAMMER FALL-CASING                      in  
 CASING O. D.                      in I. D.                      in WT OF HAMMER-SAMPLER 140 lb HAMMER FALL-SAMPLER 30 in  
 SAMPLER O. D. 2 in I. D. 1-3/8 in HAMMER TYPE Safety

| CASING BLOWS/ft | DEPTH (ft.) BELOW SURFACE | SAMPLE NO. | BLOWS ON SAMPLER (in.) |      |       |       |       | MOIST. CONT. (%) | Soil Recovery (in.) | Rock Recovery (ft.) | DESCRIPTION OF SOIL AND ROCK |
|-----------------|---------------------------|------------|------------------------|------|-------|-------|-------|------------------|---------------------|---------------------|------------------------------|
|                 |                           |            | 0-6                    | 6-12 | 12-18 | 18-24 | 24-30 |                  |                     |                     |                              |

| DATE      | TIME  | DEPTH (ft.) |        |       | ARTESIAN HEAD HEIGHT ABOVE GROUND | FILLED WITH WATER AT END OF DAY |
|-----------|-------|-------------|--------|-------|-----------------------------------|---------------------------------|
|           |       | HOLE        | CASING | WATER |                                   |                                 |
| 21-Dec-16 | 16:00 | 30.00       | 30.00  | NONE  | NO                                | No                              |
| 22-Dec-16 | 09:00 | 30.00       | 30.00  | 9.60  | NO                                | No                              |
| 22-Dec-16 | 11:45 | 43.30       | 33.00  | 8.00  | NO                                | No                              |

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DRILL RIG OPERATOR Andrew Kempisty  
 SOIL & ROCK DESCRIPTION Kyle Shearing  
 INSPECTOR Joe Dorety (Fisher)  
 BIN 5510090  
 STRUCTURE NAME Int. 35 Ramp/Thruway

CONTRACT                      CONTRACTOR Earth Dimensions, Inc.

SHEET 3 OF 3

HOLE FH-B

TWY-CAN SUBSURF EXPLORATION 7K16\_BIN-5510090-DRAFTS.GPJ TWYSE1TMPL\_V05.GDT 3/31/17



APPENDIX A  
ROCK CORE EVALUATION SHEET

PSN \_\_\_\_\_  
PIN 552886  
BIN 5510090  
Project Int. 35 Ramp/Thruway

Boring ID FHB-13  
Surface Elevation \_\_\_\_\_  
Depth From 33.4' to 43.3'  
Number of Runs 2  
Core Size NQ-2

Date Evaluated 12-22-16

Evaluator (s) Kyle Shearing

Top of Rock 28.0' (Depth) \_\_\_\_\_ (Elevation)

Top of Sound Rock 33.4' (Depth) \_\_\_\_\_ (Elevation)

Comments \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

RUN #1 Run Length 4.9

Depth Range: From 33.4' To 38.3'

RQD 0.4' (as measured) 8 %

Photo(s) \_\_\_\_\_

Rock Type Shale, with occasional thin gypsum interbeds/seams

Color Reddish brown to gray

Mineralogy, Grain Size, & Texture clay, very fine, smooth

Bedding Thinly to thickly laminated

Fractures Very intensely fractured horizontally along bedding planes; with some gravel like zones

Size Range of Pieces 0.01 - 0.43'

Hardness Very soft to soft

Weathering Slightly weathered

Additional Comments Recovery: 2.9' or 59%

Driller noted about a 6" drop approximately 3.0 feet into the run  
(possible void) slightly pitted

Number of Pieces >4" : 1

Number of Pieces total : >50

APPENDIX A  
ROCK CORE EVALUATION SHEET (CONTINUED)

PSN \_\_\_\_\_ PIN 552886 Boring ID FHB-13

RUN # 2 Run Length 5.0' Depth Range: From 38.3' to 43.3'

RQD 3.5 (as measured) 70 % Photo(s) \_\_\_\_\_

Rock Type Shale, with occasional thin gypsum interbeds/seams

Color Reddish brown to gray

Mineralogy, Grain Size, & Texture Clay, very fine, smooth

Bedding Thinly to thickly laminated

Fractures Moderately fractured horizontally along bedding planes

Size Range of Pieces 0.03-1.2'

Hardness Soft

Weathering Fresh core breaks

Additional Comments Recovery: 5.0' or 100%

Number of Pieces >4" : 4

Number of Pieces total : 11

RUN # \_\_\_\_\_ Run Length \_\_\_\_\_ Depth Range: From \_\_\_\_\_ to \_\_\_\_\_

RQD \_\_\_\_\_ (as measured) \_\_\_\_\_ % Photo(s) \_\_\_\_\_

Rock Type \_\_\_\_\_

Color \_\_\_\_\_

Mineralogy, Grain Size, & Texture \_\_\_\_\_

Bedding \_\_\_\_\_

Fractures \_\_\_\_\_

Size Range of Pieces \_\_\_\_\_

Hardness \_\_\_\_\_

Weathering \_\_\_\_\_

Additional Comments \_\_\_\_\_

EDI # K16  
 NYSTA  
 Stanter/Fisher  
 MP-282.62  
 Truway/Bear Tril creek  
 FH-K16  
 MF-278.93  
 Truway/Im. 35 RAMP  
 DN-B-13

| Date     | Bottom  | MF     | Rtn | Depth     | Length | Rcc | Rec% | RGD | RA D% | # of core pieces greater than 40 |
|----------|---------|--------|-----|-----------|--------|-----|------|-----|-------|----------------------------------|
| 12-1-16  | FH-K-16 | 282.62 | 1   | 68.8-73.8 | 5.0    | 1.8 | 36%  | 0   | 0     | 0                                |
| 12-1-16  | FH-K-16 | 282.62 | 2   | 73.8-78.8 | 5.0    | 2.4 | 48%  | 0   | 0     | 0                                |
| 12-1-16  | FH-K-16 | 282.62 | 3   | 78.8-83.8 | 5.0    | 2.8 | 56%  | 0   | 0     | 0                                |
| 12-1-16  | FH-K-16 | 282.62 | 4   | 83.8-88.8 | 5.0    | 3.3 | 66%  | 0.8 | 16%   | 2                                |
| 12-22-16 | DN-B-13 | 278.93 | 1   | 33.4-38.3 | 4.9    | 2.9 | 59%  | 0.4 | 8%    | 1                                |
| 12-22-16 | DN-B-13 | 278.93 | 2   | 38.3-43.3 | 5.0    | 5.0 | 100% | 3.5 | 70%   | 4                                |





PSN BORNUM FHB-14  
 DIVISION Syracuse  
 COUNTY Onondaga  
 PIN S52886  
 ROUTE Thruway Mainline  
 MILEPOST 278.93  
 PROJECT Syracuse Division 2017 Design-Build Bridge Replacements

NEW YORK STATE THRUWAY AUTHORITY  
 NEW YORK STATE CANAL CORPORATION  
**SUBSURFACE EXPLORATION LOG**

HOLE LINE FH-B  
 STA \_\_\_\_\_  
 OFFSET ft  
 SURF. ELEV. 421.204, NAD 88  
 DEPTH TO WATER 7.7

COORDINATES (Lat) 43.092804°N (Long) 76.089615°W  
 DATE START 1/3/2017 DATE FINISH 1/3/2017

AUGER 4 1/4" I.D. HOLLOW STEM FLIGHT AUGER WT OF HAMMER-CASING \_\_\_\_\_ lb HAMMER FALL-CASING \_\_\_\_\_ in  
 CASING O. D. \_\_\_\_\_ in I. D. \_\_\_\_\_ in WT OF HAMMER-SAMPLER 140 lb HAMMER FALL-SAMPLER 30 in  
 SAMPLER O. D. 2 in I. D. 1-3/8 in HAMMER TYPE Safety

| CASING BLOWS/ft | DEPTH (ft.) BELOW SURFACE | SAMPLE NO. | BLOWS ON SAMPLER (in.) |      |       |       | MOIST. CONT. (%) | Soil Recovery (in.) | Rock Recovery (ft.)  | DESCRIPTION OF SOIL AND ROCK |
|-----------------|---------------------------|------------|------------------------|------|-------|-------|------------------|---------------------|--|------------------------------|
|                 |                           |            | 0-6                    | 6-12 | 12-18 | 18-24 |                  |                     |  |                              |
|                 | 0.0                       |            |                        |      |       |       |                  |                     |  |                              |
|                 | 5.0                       | SS1        | 6                      | 6    | 7     | 7     | 10.5%            | 18                  | Brown (SANDY-SILT) fill with 3 to 7% gravel, little mostly M - NPL very fine to fine size sand, trace clay, compact, massive soil structure, (ML) tending toward (ML-CL).  |                              |
|                 | 10.0                      | SS2        | 1                      | 11   | 39    | 28    | 12.6%            | 12                  | 8.0-8.5' Brown (SILTY-SAND) fill with mostly very W to M - NPL fine to fine size sand, trace to little silt, very loose, massive soil structure, (SM).<br>8.5-9.0' Reddish brown (SANDY-SILT) with 5 to 10% gravel, little mostly very fine to fine size sand, compact, massive soil structure, (ML).<br>9.0-10.0' Bluish gray gravelly (SAND-SILT-CLAY) with 10 to 20% gravel, little sand and clay, very dense, massive soil structure, (ML-CL).         |                              |
|                 | 15.0                      | SS3        | 42                     | 41   | 50/5  |       | 12.6%            | 17                  | 13.0-14.0' Gray very gravelly (CLAYEY-SILT) with 60 to 80% mostly shale stone fragments, little clay, very dense, massive soil structure, (ML-CL).<br>14.0-15.0' Reddish brown very gravelly (SAND-SILT-CLAY) with 40 to 60% mostly shale stone fragments, little clay, trace to little sand, very dense, massive soil structure, (ML-CL).<br>Note: Auger refusal at 18.0 feet. Continued below with 10.0-ft NQ2 core barrel with impregnated diamond bit. |                              |
|                 | 20.0                      | RUN1       |                        |      |       |       |                  | 1.6                 | Run #1: NQ-2 size diamond core barrel 18.0-23.2' Gray to reddish brown shale, very soft to soft, sedimentary, very fine, smooth, thinly to thickly laminated, very intensely fractured, core pieces range from (0.01-0.25') moderately weathered with some areas completely weathered (saprolite).<br><br>Recovery: 1.6'/5.2' = 31%<br>RQD: 0' = 0%<br>Number of Pieces >4": 0<br>Number of Pieces total: >50  |                              |
|                 | 25.0                      | RUN2       |                        |      |       |       |                  | 2.8                 | Run #2: NQ-2 size diamond core barrel 23.2-28.2' Reddish brown to gray shale, very soft to soft, sedimentary, very fine, smooth, thinly to thickly laminated, intensely fractured horizontally along bedding planes with some  |                              |

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DRILL RIG OPERATOR Andrew Kempisty  
 SOIL & ROCK DESCRIPTION Kyle Shearing  
 INSPECTOR Joe Dorety (Fisher)  
 BIN 5510090  
 STRUCTURE NAME Int. 35 Ramp/Thruway

CONTRACT \_\_\_\_\_ CONTRACTOR Earth Dimensions, Inc.

SHEET 1 OF 2 HOLE FH-B



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 COUNTY Onondaga  
 PIN S52886  
 ROUTE Thruway Mainline  
 MILEPOST 278.93  
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 NEW YORK STATE CANAL CORPORATION  
**SUBSURFACE EXPLORATION LOG**

HOLE LINE STA FH-B  
 OFFSET ft  
 SURF. ELEV. 421.204, NAD 88  
 DEPTH TO WATER 7.7

COORDINATES (Lat) 43.092804°N (Long) 76.089615°W  
 DATE START 1/3/2017 DATE FINISH 1/3/2017

AUGER 4 1/4" I.D. HOLLOW STEM FLIGHT AUGER WT OF HAMMER-CASING lb HAMMER FALL-CASING in  
 CASING O. D. in I. D. in WT OF HAMMER-SAMPLER 140 lb HAMMER FALL-SAMPLER 30 in  
 SAMPLER O. D. 2 in I. D. 1-3/8 in HAMMER TYPE Safety

| CASING BLOWS/ft | DEPTH (ft.) BELOW SURFACE | SAMPLE NO. | BLOWS ON SAMPLER (in.) |      |       |       |       | MOIST. CONT. (%) | Soil Recovery (in.) | Rock Recovery (ft.)   | DESCRIPTION OF SOIL AND ROCK |
|-----------------|---------------------------|------------|------------------------|------|-------|-------|-------|------------------|---------------------|---|------------------------------|
|                 |                           |            | 0-6                    | 6-12 | 12-18 | 18-24 | 24-30 |                  |                     |   |                              |
|                 | 25.0                      |            |                        |      |       |       |       |                  |                     | vertical fractures, core pieces range from (0.01-0.35'), slightly weathered.<br><br>Recovery: 2.8'/5' = 56%<br>RQD: 0.35'/5' = 7%<br>Number of Pieces >4": 1<br>Number of Pieces total: >100  |                              |
|                 |                           | RUN3       |                        |      |       |       |       |                  | 4.5                 | Run #3: NQ-2 size diamond core barrel 28.2-33.2<br>Gray shale, moderately soft, sedimentary, very fine, smooth, thinly to thickly laminated, moderately fractured horizontally along bedding planes with an occasional high angle fracture, fresh weathering.<br><br>Recovery: 4.5'/5' = 90%<br>RQD: 2.5'/5' = 50%<br>Number of Pieces >4": 6<br>Number of Pieces total: 23 |                              |
|                 | 30.0                      |            |                        |      |       |       |       |                  |                     |   |                              |

BOTTOM OF HOLE AT 33.20 ft

**Note:**

Advanced bore hole with 4 1/4" ID x 8" OD hollow stem auger casing with 5.0-foot interval sampling to 18.0 feet. Continued below with a NQ-2 size double tubed wireline core barrel with impregnated diamond bit to end of coring at 33.2 feet. Bore hole was backfilled with cuttings to ground surface upon completion.

| DATE      | TIME  | DEPTH (ft.) |        |       | ARTESIAN HEAD HEIGHT ABOVE GROUND | FILLED WITH WATER AT END OF DAY |
|-----------|-------|-------------|--------|-------|-----------------------------------|---------------------------------|
|           |       | HOLE        | CASING | WATER |                                   |                                 |
| 03-Jan-17 | 13:00 | 33.20       | 18.00  | 7.70  | NO                                | No                              |

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 SOIL & ROCK DESCRIPTION Kyle Shearing  
 INSPECTOR Joe Dorety (Fisher)  
 BIN 5510090  
 STRUCTURE NAME Int. 35 Ramp/Thruway

CONTRACT \_\_\_\_\_ CONTRACTOR Earth Dimensions, Inc.

SHEET 2 OF 2

HOLE FH-B

APPENDIX A  
ROCK CORE EVALUATION SHEET

PSN \_\_\_\_\_  
PIN 552886  
BIN 5510090  
Project Int. 35 Ramp/Thruway

Boring ID FHB-14  
Surface Elevation \_\_\_\_\_  
Depth From 18.0' to 33.2'  
Number of Runs 3  
Core Size NQ-2

Date Evaluated 01-03-17

Evaluator (s) Kyle Shearing

Top of Rock 18.0' (Depth) \_\_\_\_\_ (Elevation)

Top of Sound Rock 28.2' (Depth) \_\_\_\_\_ (Elevation)

Comments \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

RUN #1 Run Length 5.2

Depth Range: From 18.0' To 23.2'

RQD 0 (as measured) 0 %

Photo(s) \_\_\_\_\_

Rock Type Shale

Color Gray to reddish brown

Mineralogy, Grain Size, & Texture Sedimentary, very fine, smooth

Bedding Thinly to thickly laminated

Fractures Very intensely fractured

Size Range of Pieces 0.01-0.25'

Hardness Very soft to soft

Weathering Moderately weathered with some areas completely weathered (saprolite)

Additional Comments Recovery: 1.6' or 31%

Number of Pieces > 4": 0

Number of Pieces total: > 50

APPENDIX A

ROCK CORE EVALUATION SHEET (CONTINUED)

PSN \_\_\_\_\_ PIN 552886 Boring ID FHB-14

RUN # 2 Run Length \_\_\_\_\_ Depth Range: From 23.2' to 28.2'

RQD 0.35' (as measured) 7 % Photo(s) \_\_\_\_\_

Rock Type Shale

Color Reddish brown to gray

Mineralogy, Grain Size, & Texture Sedimentary, very fine, smooth

Bedding Thinly to thickly laminated

Fractures Intensely fractured horizontally along bedding planes with some vertical fractures

Size Range of Pieces 0.01' - 0.35'

Hardness Very soft to soft

Weathering Slightly weathered

Additional Comments Recovery 2.8' or 56%

Number of Pieces >4": 1

Number of Pieces total: >100

RUN # 3 Run Length 5.0' Depth Range: From 28.2' to 33.2'

RQD 2.5 (as measured) 50 % Photo(s) \_\_\_\_\_

Rock Type Shale

Color Gray

Mineralogy, Grain Size, & Texture Sedimentary very fine, smooth

Bedding Thinly to thickly laminated

Fractures Moderately fractured horizontally along bedding planes, with an occasional high angle fractured

Size Range of Pieces 0.03 - 0.55'

Hardness Moderately soft

Weathering Fresh

Additional Comments Recovery: 4.5' or 90%

Number of Pieces >4": 6 Number of Pieces total: 23

7K16  
 NYSTA, *Statrec/Fisher*

| Date   | Boring  | MP     | Run | Depth       | Length | RCC | %   | RQD  |    | # of Core Pieces > 4" |
|--------|---------|--------|-----|-------------|--------|-----|-----|------|----|-----------------------|
| 1-3-17 | DN-B-14 | 278.93 | 1   | 18.0'-23.2' | 5.2'   | 1.6 | 31% | 0    | 0  | 0                     |
| 1-3-17 | DN-B-14 | 278.93 | 2   | 23.2'-28.2' | 5.0'   | 2.8 | 56% | 0.35 | 7  | 1                     |
| 1-3-17 | DN-B-14 | 278.93 | 3   | 28.2'-33.2' | 5.0'   | 4.5 | 90% | 2.55 | 50 | 6                     |





**PSN** BORNUM FHB-15  
**DIVISION** Syracuse  
**COUNTY** Onondaga  
**PIN** S52886  
**ROUTE** Thruway Mainline  
**MILEPOST** 278.93  
**PROJECT** Syracuse Division 2017 Design-Build Bridge Replacements

NEW YORK STATE THRUWAY AUTHORITY  
 NEW YORK STATE CANAL CORPORATION  
**SUBSURFACE EXPLORATION LOG**

**HOLE LINE** FH-B  
**STA**  
**OFFSET** ft  
**SURF. ELEV.** 421.5492, NAD 88  
**DEPTH TO WATER** 3.0

**COORDINATES** (Lat) 43.092626°N (Long) 76.089574°W  
**DATE START** 12/22/2016 **DATE FINISH** 12/23/2016

**AUGER** 4 1/4" I.D. HOLLOW STEM FLIGHT AUGER **WT OF HAMMER-CASING** lb **HAMMER FALL-CASING** in  
**CASING** O. D. in I. D. in **WT OF HAMMER-SAMPLER** 140 lb **HAMMER FALL-SAMPLER** 30 in  
**SAMPLER** O. D. 2 in I. D. 1-3/8 in **HAMMER TYPE** Safety

| CASING BLOWS/ft | DEPTH (ft.) BELOW SURFACE | SAMPLE NO.  | BLOWS ON SAMPLER (in.) |      |       |       | MOIST. CONT. (%) | Soil Recovery (in.) | Rock Recovery (ft.)  | DESCRIPTION OF SOIL AND ROCK |
|-----------------|---------------------------|-------------|------------------------|------|-------|-------|------------------|---------------------|--|------------------------------|
|                 |                           |             | 0-6                    | 6-12 | 12-18 | 18-24 |                  |                     |  |                              |
|                 | 0.0                       |             |                        |      |       |       |                  |                     |  |                              |
|                 | 5.0                       | SS1         | 5                      | 5    | 5     | 4     | 12.7%            | 6                   | Brown gravelly (SILTY-SAND) fill with 20 to 40% gravel, little silt, loose, massive soil structure, (SM).<br><br>Note: Driller noticed change at 6.0 feet, drilling became harder.   |                              |
|                 | 10.0                      | SS2         | 9                      | 18   | 23    | 24    | 8.8%             | 18                  | Reddish brown (SANDY-SILT) with 5 to 10% gravel, little sand, trace clay, dense, massive soil structure, (ML) tending toward (ML-CL).<br><br>Note: Driller noted change at 12.0 feet, drilling became very hard.   |                              |
|                 | 15.0                      | SS3         | 48                     | 50/4 |       |       | 13.8%            | 8                   | Reddish brown gravelly (SANDY-SILT) with 15 to 30% mostly flat sided stone fragments, little sand, trace to little clay, very dense, massive soil structure, (ML) tending toward (ML-CL).  |                              |
|                 | 20.0                      | SS4<br>RUN1 | 100/5                  |      |       |       | 12.7%            | 5                   | Reddish brown to gray very weathered shale stone fragments, very soft to soft.<br>Run #1: NQ-2 size diamond core barrel 18.5-23.0'<br>Gray to reddish brown shale, very soft to soft, clay, very fine, smooth, thinly to thickly laminated, very intensely to intensely fractured from 18.5-19.5', intensely fractured from 19.5-23.0', core pieces range from (0.02-0.33') slightly weathered to fresh, driller noticed drop from 20.5 to 21.0 feet, slightly pitted. |                              |
|                 | 25.0                      | RUN2        |                        |      |       |       |                  | 2.9                 | Recovery: 2.6'/4.5' = 58%<br>RQD: 0' = 0%<br>Number of Pieces >4": 0<br>Number of Pieces total: >30<br>Run #2: NQ-2 size diamond core barrel 23.0-28.0'  |                              |

The subsurface information shown here was obtained for design and estimate purposes. It is made available so that users may have access to the same information available to the State. It is presented in good faith. By the nature of the exploration process, the information represents only a small fraction of the total volume of the material at the site. Interpolation between data samples may not be indicative of the actual material encountered.

**DRILL RIG OPERATOR** Andrew Kempisty  
**SOIL & ROCK DESCRIPTION** Kyle Shearing  
**INSPECTOR** Joe Dorety (Fisher)  
**BIN** 5510090  
**STRUCTURE NAME**  
 Int. 35 Ramp/Thruway

**CONTRACT** **CONTRACTOR** Earth Dimensions, Inc.

**SHEET 1 OF 2** **HOLE** FH-B



**PSN** \_\_\_\_\_ **BORNUM FHB-15**  
**DIVISION** Syracuse  
**COUNTY** Onondaga  
**PIN** S52886  
**ROUTE** Thruway Mainline  
**MILEPOST** 278.93  
**PROJECT** Syracuse Division 2017 Design-Build Bridge Replacements

NEW YORK STATE THRUWAY AUTHORITY  
 NEW YORK STATE CANAL CORPORATION  
**SUBSURFACE EXPLORATION LOG**

**HOLE LINE STA** FH-B  
**OFFSET** ft  
**SURF. ELEV.** 421.5492, NAD 88  
**DEPTH TO WATER** 3.0

**COORDINATES** (Lat) 43.092626°N (Long) 76.089574°W  
**DATE START** 12/22/2016 **DATE FINISH** 12/23/2016

**AUGER** 4 1/4" I.D. HOLLOW STEM FLIGHT AUGER **WT OF HAMMER-CASING** lb **HAMMER FALL-CASING** in  
**CASING** O. D. in I. D. in **WT OF HAMMER-SAMPLER** 140 lb **HAMMER FALL-SAMPLER** 30 in  
**SAMPLER** O. D. 2 in I. D. 1-3/8 in **HAMMER TYPE** Safety

| CASING BLOWS/ft | DEPTH (ft.) BELOW SURFACE | SAMPLE NO. | BLOWS ON SAMPLER (in.) |      |       |       | MOIST. CONT. (%) | Soil Recovery (in.) | Rock Recovery (ft.)  | DESCRIPTION OF SOIL AND ROCK |
|-----------------|---------------------------|------------|------------------------|------|-------|-------|------------------|---------------------|--|------------------------------|
|                 |                           |            | 0-6                    | 6-12 | 12-18 | 18-24 |                  |                     |  |                              |
| 25.0            |                           |            |                        |      |       |       |                  |                     | Reddish brown to gray shale, very soft to soft, clay, very fine, smooth, thinly to thickly laminated, intensely fractured horizontally along bedding planes with a few near vertical fractures, core pieces range from (0.01-0.02') slightly weathered.  |                              |
|                 |                           | RUN3       |                        |      |       |       |                  | 4.2                 | Recovery: 2.9'/5.0' = 58%<br>RQD: 0' = 0%<br>Number of Pieces >4": 0<br>Number of Pieces total: >50<br>Run #3: NQ-2 size diamond core barrel 28.0-33.0'<br>Gray shale, soft, clay, very fine, smooth, thinly to thickly laminated, moderately fractured horizontally along bedding planes, core pieces range from (0.04-1.0') core breaks appear fresh, core is slightly pitted with occasional vug. |                              |
| 30.0            |                           |            |                        |      |       |       |                  |                     | Recovery: 4.2'/5.0' = 84%<br>RQD: 3.2'/50.' = 64<br>Number of Pieces >4": 6<br>Number of Pieces total: 21<br>BOTTOM OF HOLE AT 33.00 ft  |                              |

**Note:**  
 Advanced bore hole with 4 1/4" ID x 8" OD hollow stem auger casing with 5.0-foot interval sampling to 18.5 feet. Continued below with a NQ-2 size double tubed wireline core barrel with diamond bit to end of coring at 33.0 feet. Bore hole was backfilled with cuttings to ground surface upon completion.

| DATE      | TIME  | DEPTH (ft.) |        |       | ARTESIAN HEAD HEIGHT ABOVE GROUND | FILLED WITH WATER AT END OF DAY |
|-----------|-------|-------------|--------|-------|-----------------------------------|---------------------------------|
|           |       | HOLE        | CASING | WATER |                                   |                                 |
| 22-Dec-16 | 14:00 | 3.00        | 3.00   | 3.00  | NO                                | No                              |
| 22-Dec-16 | 16:00 | 18.50       | 18.50  | 9.50  | NO                                | No                              |
| 23-Dec-16 | 07:30 | 18.50       | 18.50  | 8.60  | NO                                | No                              |
| 23-Dec-16 | 10:15 | 33.00       | 18.50  | 8.60  | NO                                | No                              |

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**DRILL RIG OPERATOR** Andrew Kempisty  
**SOIL & ROCK DESCRIPTION** Kyle Shearing  
**INSPECTOR** Joe Dorety (Fisher)  
**BIN** 5510090  
**STRUCTURE NAME**  
 Int. 35 Ramp/Thruway

**CONTRACT** \_\_\_\_\_ **CONTRACTOR** Earth Dimensions, Inc.

**SHEET 2 OF 2** **HOLE** FH-B

APPENDIX A  
ROCK CORE EVALUATION SHEET

PSN \_\_\_\_\_  
PIN 5528866  
BIN 5510090  
Project Int. 35 Ramp/Thruway

Boring ID FHB-15  
Surface Elevation \_\_\_\_\_  
Depth From 18.5' to 33.0'  
Number of Runs 3  
Core Size NQ-2

Date Evaluated 12-23-16

Evaluator (s) Kyle Shearing

Top of Rock 18.0' (Depth) \_\_\_\_\_ (Elevation)

Top of Sound Rock 18.5' (Depth) \_\_\_\_\_ (Elevation)

Comments \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

RUN #1 Run Length 4.5

Depth Range: From 18.5' To 23.0'

RQD 0 (as measured) 0 %

Photo(s) \_\_\_\_\_

Rock Type Shale

Color Gray to reddish brown

Mineralogy, Grain Size, & Texture clay, very fine, smooth

Bedding Thinly to thickly laminated

Fractures Very intensely to intensely fractured from 18.5-19.5', intensely fractured from 19.5'-23.0'

Size Range of Pieces 0.02' - 0.33'

Hardness Very soft to soft

Weathering Slightly weathered to fresh

Additional Comments Recovery: 2.6' or 58%

Driller noted drop from 20.5' - 21.0'

Slightly pitted

Number of Pieces > 4": 0

Number of Pieces total: > 30

APPENDIX A

ROCK CORE EVALUATION SHEET (CONTINUED)

PSN \_\_\_\_\_ PIN S52886 Boring ID FHB-15

RUN # 2 Run Length 5.0 Depth Range: From 23.0' to 28.0'

RQD 0 (as measured) 0 % Photo(s) \_\_\_\_\_

Rock Type Shale

Color Reddish brown to gray

Mineralogy, Grain Size, & Texture clay, very fine, smooth

Bedding Thinly to thickly laminated

Fractures Intensely fractured horizontally along bedding planes with a few near vertical fractures

Size Range of Pieces 0.01-0.2'

Hardness Very soft to soft

Weathering Slightly weathered

Additional Comments Recovery: 2.9' or 58%

Number of Pieces >4": 0

Number of Pieces total: >50

RUN # 3 Run Length 5.0 Depth Range: From 28.0 to 33.0'

RQD 3.2 (as measured) 64 % Photo(s) \_\_\_\_\_

Rock Type Shale

Color Gray

Mineralogy, Grain Size, & Texture Clay, very fine, smooth

Bedding Thinly to thickly laminated

Fractures Moderately fractured horizontally along bedding planes

Size Range of Pieces 0.04' - 1.0'

Hardness Soft

Weathering Core breaks appear fresh

Additional Comments Recovery: 4.2' or 84% Number of Pieces >4": 6

Core is slightly pitted with occasional vug. Number of Pieces total: 21

# EDI#7K16

7K16 NYSTA

Stantec/Fisher  
Thruway, Mainline Rt 90

Thruway/Int 35 Ramp  
MP-278.93

Thruway/Culvert  
MP-282.62

| Date     | MP     | Boring  | Run | Depth       | Length | Rec  | %   | RQD | %   | # of Cores | Pieces |
|----------|--------|---------|-----|-------------|--------|------|-----|-----|-----|------------|--------|
| 12-23-16 | 278.93 | DN-B-15 | 1   | 18.5'-23.0' | 4.5    | 2.6  | 58% | 0   | 0   | 0          | 0      |
| 12-23-16 | 278.93 | DN-B-15 | 2   | 23.0'-28.0' | 5.0    | 2.9  | 58% | 0   | 0   | 0          | 0      |
| 12-23-16 | 278.93 | DN-B-15 | 3   | 28.0'-33.0' | 5.0    | 4.2  | 84% | 3.2 | 64% | 6          | 6      |
| 12-1-16  | 282.62 | DN-K-17 | 1   | 75.0'-78.0' | 3.0    | 0.9  | 30% | 0   | 0   | 0          | 0      |
| 12-1-16  | 282.62 | DN-K-17 | 2   | 78.0'-83.0' | 5.0    | 3.65 | 73% | 0.4 | 8%  | 1          | 1      |



DN-B-15  
DN-K-17



**Compressive Properties Report  
ASTM D7012**

**Project:** NYSTA Syr. Div.; EDI  
**Project No.:** 17-002  
**Analyst:** JMA  
**Date:** 3/3/2017  
**Specimen Type:** Rock Core, 2" Diameter, ~4" height

| <b>Borehole<br/>Number</b> | <b>Laboratory<br/>ID No.</b> | <b>Average<br/>Diameter<br/>in.</b> | <b>Average<br/>Length<br/>in.</b> | <b>Maximum<br/>Load<br/>lbf</b> | <b>Maximum<br/>Compressive<br/>Strength<br/>psi</b> |
|----------------------------|------------------------------|-------------------------------------|-----------------------------------|---------------------------------|---|
| FHB-13, 42.9'              | 17-072                       | 1.967                               | 4.037                             | 19508                           | 6420  |
| DNB-14, 30.9'              | 17-073                       | 1.966                               | 3.989                             | 8770.7                          | 2889  |
| DNB-15, 31.5'              | 17-074                       | 1.970                               | 4.004                             | 11223                           | 3682  |
| FHK-16, 88.3'              | 17-075                       | 1.968                               | 4.327                             | 3800.1                          | 1249  |
| FHK-17, 78.5'              | 17-076                       | 1.801                               | 3.717                             | 5634.8                          | 2212  |

*Jeanne M. Ciofalo*

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Respectfully Submitted,  
3<sup>rd</sup> Rock, LLC



## Water Content Test Results by ASTM D2216

**Project:** New York State Thruway  
**EDI Project No.:** 7K16  
**Client:** Earth Dimensions, Inc.

**Project No:** 16-008  
**Date:** 01/04/17

| Borehole No. | Sample Nos. | Depth, fbg | Lab ID No. | Natural Water Content, % |
|--------------|-------------|------------|------------|--------------------------|
| FH-B-13      | S-1         | 3-5        | 16-550     | 12.7                     |
|              | S-2         | 8-10       | 16-550     | 14.4                     |
|              | S-3         | 13-15      | 16-550     | 9.9                      |
|              | S-4         | 18-20      | 16-550     | 11.7                     |
|              | S-5         | 23-25      | 16-550     | 13.7                     |
|              | S-6         | 28-30      | 16-550     | 14.3                     |
|              | S-7         | 33-33.3    | 16-550     | 19.4                     |
| FH-B-15      | S-1         | 3-5        | 16-551     | 12.7                     |
|              | S-2         | 8-10       | 16-551     | 8.8                      |
|              | S-3         | 13-15      | 16-551     | 13.8                     |
|              | S-4         | 18-18.4    | 16-551     | 12.7                     |
| FH-B-14      | S-1         | 3-5        | 16-553     | 10.5                     |
|              | S-2         | 8-10       | 16-553     | 12.6                     |
|              | S-3         | 13-14.4    | 16-553     | 12.6                     |

3rd Rock, LLC  
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(716)655-8638 fax

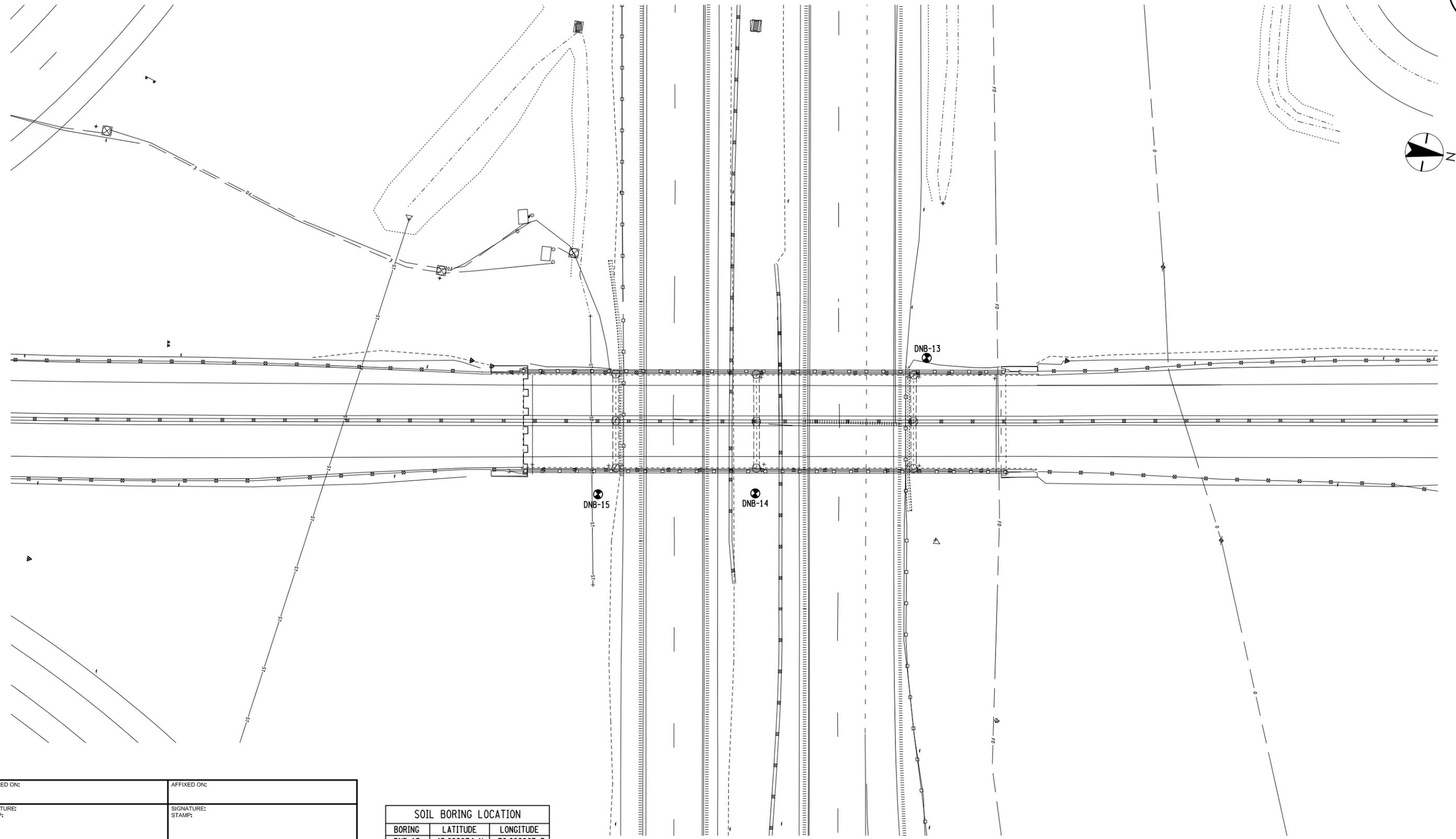
CHECKED BY: B. WALKER

DRAFTED BY: S. ROMEISER

CHECKED BY: R. CODY

DESIGNED BY: B. WALKER

DESIGN SUPERVISOR: J. HOFMANN



| SOIL BORING LOCATION |             |              |
|----------------------|-------------|--------------|
| BORING               | LATITUDE    | LONGITUDE    |
| DNB-13               | 43.092974 N | -76.089867 E |
| DNB-14               | 43.092804 N | -76.089615 E |
| DNB-15               | 43.092626 N | -76.089574 E |

**SOIL BORING LOCATION PLAN**



|                      |                      |
|----------------------|----------------------|
| ALTERED ON:          | AFFIXED ON:          |
| SIGNATURE:<br>STAMP: | SIGNATURE:<br>STAMP: |

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

| REVISIONS |             |    |      |
|-----------|-------------|----|------|
| DATE      | DESCRIPTION | BY | SYM. |
|           |             |    |      |
|           |             |    |      |

|   |                               |
|---|-------------------------------|
| TITLE OF PROJECT<br>INTERCHANGE 35 RAMP OVER INTERSTATE I-90<br>MP 278.93 / BIN 5510090 | CONTRACT NUMBER:<br>TAB 17-XX |
| LOCATION OF PROJECT<br>TOWN OF DEWITT<br>ONONDAGA COUNTY                                | DATE:<br>FEB. 2017            |
| TITLE OF DRAWING<br>BORING LOCATION PLAN  | DRAWING NUMBER:<br>BP-06      |