

| STATE | STATE PROJECT REFERENCE NO. | SHEET NO. | TOTAL SHEETS |
|-------|-----------------------------|-----------|--------------|
| N.C. | 42323.1.1 (B-5155) | 1 | 10 |

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
GEOTECHNICAL ENGINEERING UNIT

STRUCTURE
SUBSURFACE INVESTIGATION

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PROJ. REFERENCE NO. 42323.1.1 (B-5155) F.A. PROJ. _____
COUNTY LINCOLN
PROJECT DESCRIPTION REPLACE BRIDGE 037 OVER HOYLE CREEK
ON SR 1314 (WILL SCHRONCE RD.)

SITE DESCRIPTION 42'x12' BOTTOMLESS CULVERT ON FOOTINGS
CL STA. 14+34 -L-

CAUTION NOTICE

THE SUBSURFACE INFORMATION AND THE SUBSURFACE INVESTIGATION ON WHICH IT IS BASED WERE MADE FOR THE PURPOSE OF STUDY, PLANNING, AND DESIGN AND NOT FOR CONSTRUCTION OR PAY PURPOSES. THE VARIOUS FIELD BORING LOGS, ROCK CORES, AND SOIL TEST DATA AVAILABLE MAY BE REVIEWED OR INSPECTED IN RALEIGH BY CONTACTING THE N. C. DEPARTMENT OF TRANSPORTATION, GEOTECHNICAL ENGINEERING UNIT AT (919) 250-4088. NEITHER THE SUBSURFACE PLANS AND REPORTS, NOR THE FIELD BORING LOGS, ROCK CORES, OR SOIL TEST DATA ARE PART OF THE CONTRACT.

GENERAL SOIL AND ROCK STRATA DESCRIPTIONS AND INDICATED BOUNDARIES ARE BASED ON A GEOTECHNICAL INTERPRETATION OF ALL AVAILABLE SUBSURFACE DATA AND MAY NOT NECESSARILY REFLECT THE ACTUAL SUBSURFACE CONDITIONS BETWEEN BORINGS OR BETWEEN SAMPLED STRATA WITHIN THE BOREHOLE, THE LABORATORY SAMPLE DATA AND THE IN SITU (IN-PLACE) TEST DATA CAN BE RELIED ON ONLY TO THE DEGREE OF RELIABILITY INHERENT IN THE STANDARD TEST METHOD. THE OBSERVED WATER LEVELS OR SOIL MOISTURE CONDITIONS INDICATED IN THE SUBSURFACE INVESTIGATIONS ARE AS RECORDED AT THE TIME OF THE INVESTIGATION. THESE WATER LEVELS OR SOIL MOISTURE CONDITIONS MAY VARY CONSIDERABLY WITH TIME ACCORDING TO CLIMATIC CONDITIONS INCLUDING TEMPERATURES, PRECIPITATION, AND WIND, AS WELL AS OTHER NON-CLIMATIC FACTORS.

THE BIDDER OR CONTRACTOR IS CAUTIONED THAT DETAILS SHOWN ON THE SUBSURFACE PLANS ARE PRELIMINARY ONLY AND IN MANY CASES THE FINAL DESIGN DETAILS ARE DIFFERENT. FOR BIDDING AND CONSTRUCTION PURPOSES, REFER TO THE CONSTRUCTION PLANS AND DOCUMENTS FOR FINAL DESIGN INFORMATION ON THIS PROJECT. THE DEPARTMENT DOES NOT WARRANT OR GUARANTEE THE SUFFICIENCY OR ACCURACY OF THE INVESTIGATION MADE, NOR THE INTERPRETATIONS MADE, OR OPINION OF THE DEPARTMENT AS TO THE TYPE OF MATERIALS AND CONDITIONS TO BE ENCOUNTERED. THE BIDDER OR CONTRACTOR IS CAUTIONED TO MAKE SUCH INDEPENDENT SUBSURFACE INVESTIGATIONS AS HE DEEMS NECESSARY TO SATISFY HIMSELF AS TO CONDITIONS TO BE ENCOUNTERED ON THIS PROJECT. THE CONTRACTOR SHALL HAVE NO CLAIM FOR ADDITIONAL COMPENSATION OR FOR AN EXTENSION OF TIME FOR ANY REASON RESULTING FROM THE ACTUAL CONDITIONS ENCOUNTERED AT THE SITE DIFFERING FROM THOSE INDICATED IN THE SUBSURFACE INFORMATION.

PROJECT: 42323.1.1 ID: B-5155

PERSONNEL
C.C. MURRAY

J.E. ESTEP

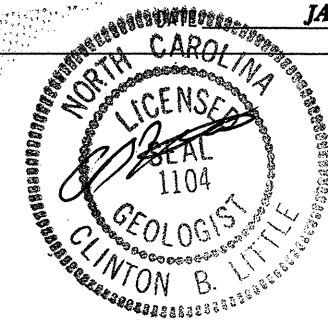
M.R. MOORE

INVESTIGATED BY **C.B. LITTLE**

CHECKED BY **C.B. LITTLE**

SUBMITTED BY **C.B. LITTLE**

JANUARY 2013



2-6-13

DRAWN BY: **J.K. McCLURE**

NOTE - THE INFORMATION CONTAINED HEREIN IS NOT IMPLIED OR GUARANTEED BY THE N. C. DEPARTMENT OF TRANSPORTATION AS BEING ACCURATE NOR IS IT CONSIDERED TO BE PART OF THE PLANS, SPECIFICATIONS, OR CONTRACT FOR THE PROJECT.

NOTE - BY HAVING REQUESTED THIS INFORMATION THE CONTRACTOR SPECIFICALLY WAIVES ANY CLAIMS FOR INCREASED COMPENSATION OR EXTENSION OF TIME BASED ON DIFFERENCES BETWEEN THE CONDITIONS INDICATED HEREIN AND THE ACTUAL CONDITIONS AT THE PROJECT SITE.

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
GEOTECHNICAL ENGINEERING UNIT

PROJECT REFERENCE NO. 42323.1.I (B-5155) SHEET NO. 2

SUBSURFACE INVESTIGATION

SOIL AND ROCK LEGEND, TERMS, SYMBOLS, AND ABBREVIATIONS

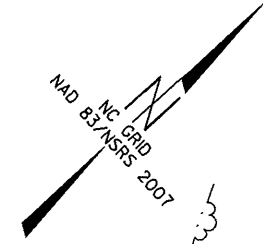
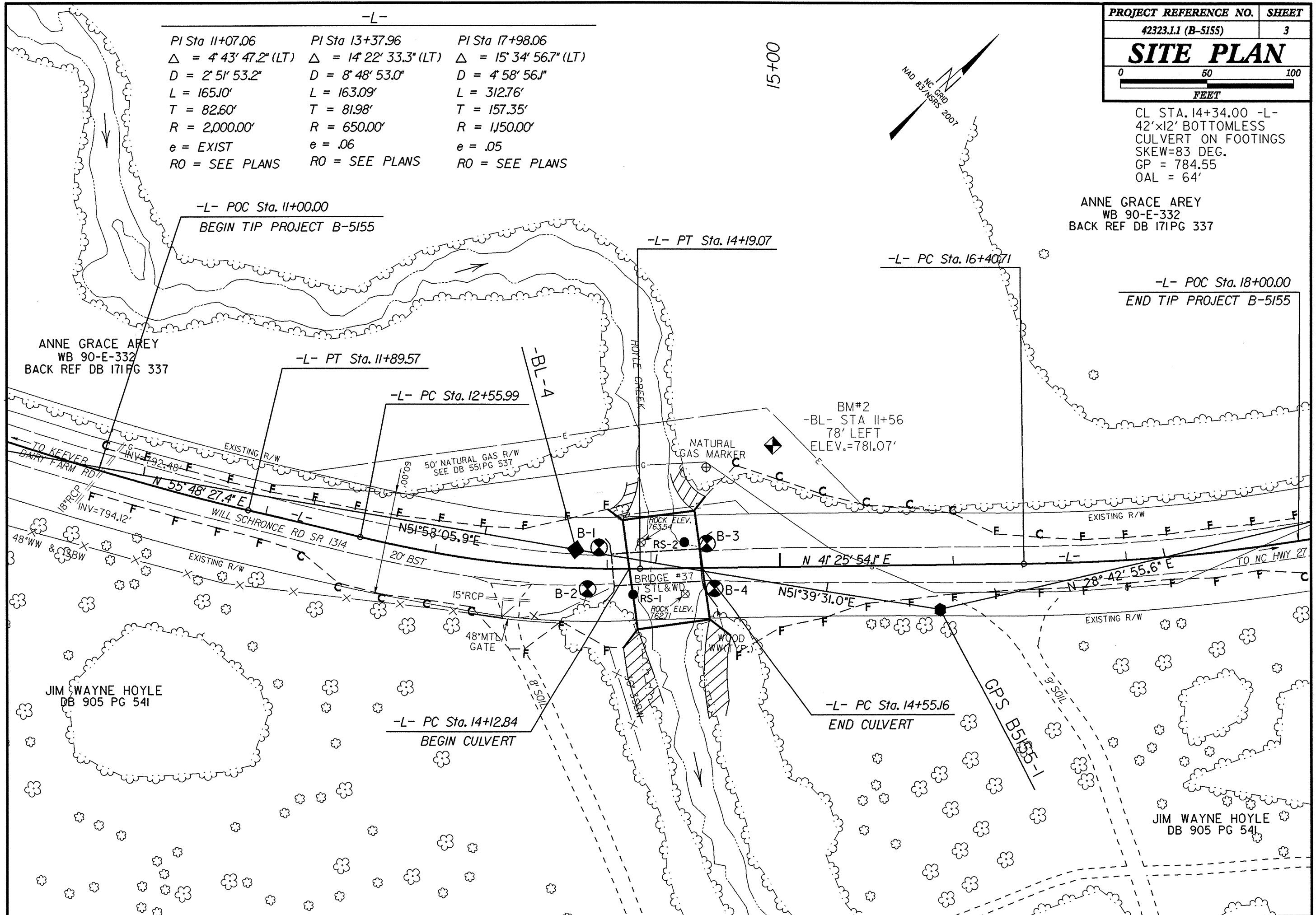
| SOIL DESCRIPTION | | | | | GRADATION | | | | | ROCK DESCRIPTION | | | | | TERMS AND DEFINITIONS | | | | | | | | | | | | | | | | | | | |
|---|--|--|--|--|--|--|--|--|--|---|--|--|--|--|-----------------------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|---|--|--|--|--|
| SOIL IS CONSIDERED TO BE THE UNCONSOLIDATED, SEMI-CONSOLIDATED, OR WEATHERED EARTH MATERIALS THAT CAN BE PENETRATED WITH A CONTINUOUS FLIGHT POWER AUGER, AND YIELD LESS THAN 100 BLOWS PER FOOT ACCORDING TO STANDARD PENETRATION TEST (AASHTO T206, ASTM D-1586). SOIL CLASSIFICATION IS BASED ON THE AASHTO SYSTEM. BASIC DESCRIPTIONS GENERALLY INCLUDE: CONSISTENCY, COLOR, TEXTURE, MOISTURE, AASHTO CLASSIFICATION, AND OTHER PERTINENT FACTORS SUCH AS MINERALOGICAL COMPOSITION, ANGULARITY, STRUCTURE, PLASTICITY, ETC. EXAMPLE: <i>VERY STIFF, GRAY-SILTY CLAY, MOST WITH INTERBEDDED FINE SAND LAYERS, HIGHLY PLASTIC, A-7-6</i> | | | | | | | | | | | | | | | | | | | | WELL GRADED - INDICATES A GOOD REPRESENTATION OF PARTICLE SIZES FROM FINE TO COARSE. UNIFORM - INDICATES THAT SOIL PARTICLES ARE ALL APPROXIMATELY THE SAME SIZE. (ALSO POORLY GRADED). POORLY GRADED - INDICATES A MIXTURE OF UNIFORM PARTICLES OF TWO OR MORE SIZES. THE ANGULARITY OR ROUNDNESS OF SOIL GRAINS IS DESIGNATED BY THE TERMS: ANGULAR, SUBANGULAR, SUBROUNDED, OR ROUNDED. | | | | | HARD ROCK IS NON-COASTAL PLAIN MATERIAL THAT IF TESTED, WOULD YIELD SPT REFUSAL. AN INFERRED ROCK LINE INDICATES THE LEVEL AT WHICH NON-COASTAL PLAIN MATERIAL WOULD YIELD SPT REFUSAL. SPT REFUSAL IS PENETRATION BY A SPLIT SPOON SAMPLER EQUAL TO OR LESS THAN 60 BLOWS. IN NON-COASTAL PLAIN MATERIAL, THE TRANSITION BETWEEN SOIL AND ROCK IS OFTEN REPRESENTED BY A ZONE OF WEATHERED ROCK. ROCK MATERIALS ARE TYPICALLY DIVIDED AS FOLLOWS: WEATHERED ROCK (WR) CRYSTALLINE ROCK (CR) NON-CRYSTALLINE ROCK (NCR) COASTAL PLAIN SEDIMENTARY ROCK (CP) | | | | | ALLUVIUM (ALLUV.) - SOILS THAT HAVE BEEN TRANSPORTED BY WATER. ADUJFER - A WATER BEARING FORMATION OR STRATA. ARENACEOUS - APPLIED TO ROCKS THAT HAVE BEEN DERIVED FROM SAND OR THAT CONTAIN SAND. ARGILLACEOUS - APPLIED TO ALL ROCKS OR SUBSTANCES COMPOSED OF CLAY MINERALS, OR HAVING A NOTABLE PROPORTION OF CLAY IN THEIR COMPOSITION, AS SHALE, SLATE, ETC. ARTESIAN - GROUND WATER THAT IS UNDER SUFFICIENT PRESSURE TO RISE ABOVE THE LEVEL AT WHICH IT IS ENCOUNTERED, BUT WHICH DOES NOT NECESSARILY RISE TO OR ABOVE THE GROUND SURFACE. CALCAREOUS (CALC.) - SOILS THAT CONTAIN APPRECIABLE AMOUNTS OF CALCIUM CARBONATE. COLLUVIUM - ROCK FRAGMENTS MIXED WITH SOIL DEPOSITED BY GRAVITY ON SLOPE OR AT BOTTOM OF SLOPE. CORE RECOVERY (REC.) - TOTAL LENGTH OF ALL MATERIAL RECOVERED IN THE CORE BARREL DIVIDED BY TOTAL LENGTH OF CORE RUN AND EXPRESSED AS A PERCENTAGE. DIKE - A TABULAR BODY OF IGNEOUS ROCK THAT CUTS ACROSS THE STRUCTURE OF ADJACENT ROCKS OR CUTS MASSIVE ROCK. DIP - THE ANGLE AT WHICH A STRATUM OR ANY PLANAR FEATURE IS INCLINED FROM THE HORIZONTAL. DIP DIRECTION (DIP AZIMUTH) - THE DIRECTION OR BEARING OF THE HORIZONTAL TRACE OF THE LINE OF DIP, MEASURED CLOCKWISE FROM NORTH. FAULT - A FRACTURE OR FRACTURE ZONE ALONG WHICH THERE HAS BEEN DISPLACEMENT OF THE SIDES RELATIVE TO ONE ANOTHER PARALLEL TO THE FRACTURE. FISSILE - A PROPERTY OF SPLITTING ALONG CLOSELY SPACED PARALLEL PLANES. FLOAT - ROCK FRAGMENTS ON SURFACE NEAR THEIR ORIGINAL POSITION AND DISLOGGED FROM PARENT MATERIAL. FLOOD PLAIN (FP) - LAND BORDERING A STREAM, BUILT OF SEDIMENTS DEPOSITED BY THE STREAM. FORMATION (FM) - A MAPPABLE GEOLOGIC UNIT THAT CAN BE RECOGNIZED AND TRACED IN THE FIELD. JOINT - FRACTURE IN ROCK ALONG WHICH NO APPRECIABLE MOVEMENT HAS OCCURRED. LEDGE - A SHELF-LIKE RIDGE OR PROJECTION OF ROCK WHOSE THICKNESS IS SMALL COMPARED TO ITS LATERAL EXTENT. LENS - A BODY OF SOIL OR ROCK THAT THINS OUT IN ONE OR MORE DIRECTIONS. MOTTLED (MOT.) - IRREGULARLY MARKED WITH SPOTS OF DIFFERENT COLORS. MOTTLING IN SOILS USUALLY INDICATES POOR AERATION AND LACK OF GOOD DRAINAGE. PERCHED WATER - WATER MAINTAINED ABOVE THE NORMAL GROUND WATER LEVEL BY THE PRESENCE OF AN INTERVENING IMPERVIORUS STRATUM. RESIDUAL (RES.) SOIL - SOIL FORMED IN PLACE BY THE WEATHERING OF ROCK. ROCK QUALITY DESIGNATION (RQD) - A MEASURE OF ROCK QUALITY DESCRIBED BY TOTAL LENGTH OF ROCK SEGMENTS EQUAL TO OR GREATER THAN 4 INCHES DIVIDED BY THE TOTAL LENGTH OF CORE RUN AND EXPRESSED AS A PERCENTAGE. SAPROLITE (SAP.) - RESIDUAL SOIL THAT RETAINS THE RELIC STRUCTURE OR FABRIC OF THE PARENT ROCK. SILL - AN INTRUSIVE BODY OF IGNEOUS ROCK OF APPROXIMATELY UNIFORM THICKNESS AND RELATIVELY THIN COMPARED WITH ITS LATERAL EXTENT, THAT HAS BEEN EMPLACED PARALLEL TO THE BEDDING OR SCHISTOSITY OF THE INTRUDED ROCKS. SLICKENSIDE - POLISHED AND STRIATED SURFACE THAT RESULTS FROM FRICTION ALONG A FAULT OR SLIP PLANE. STANDARD PENETRATION TEST (PENETRATION RESISTANCE) (SPT) - NUMBER OF BLOWS IN OR BPF OF A 140 LB. HAMMER FALLING 30 INCHES REQUIRED TO PRODUCE A PENETRATION OF 1 FOOT INTO SOIL WITH A 2 INCH OUTSIDE DIAMETER SPLIT SPOON SAMPLER. SPT REFUSAL IS PENETRATION EQUAL TO OR LESS THAN 60 BLOWS PER FOOT. STRATA CORE RECOVERY (SREC) - TOTAL LENGTH OF STRATA MATERIAL RECOVERED DIVIDED BY TOTAL LENGTH OF STRATUM AND EXPRESSED AS A PERCENTAGE. STRATA ROCK QUALITY DESIGNATION (SROD) - A MEASURE OF ROCK QUALITY DESCRIBED BY TOTAL LENGTH OF ROCK SEGMENTS WITHIN A STRATUM EQUAL TO OR GREATER THAN 4 INCHES DIVIDED BY THE TOTAL LENGTH OF STRATA AND EXPRESSED AS A PERCENTAGE. TOPSOIL (TS) - SURFACE SOILS USUALLY CONTAINING ORGANIC MATTER. | | | | |
| SOIL LEGEND AND AASHTO CLASSIFICATION | | | | | MINERALOGICAL COMPOSITION | | | | | WEATHERING | | | | | | | | | | | | | | | | | | | | | | | | |
| GENERAL CLASS. | | | | | MINERAL NAMES SUCH AS QUARTZ, FELDSPAR, MICA, TALC, KAOLIN, ETC. ARE USED IN DESCRIPTIONS WHENEVER THEY ARE CONSIDERED OF SIGNIFICANCE. | | | | | ROCK FRESH ROCK FRESH, CRYSTALS BRIGHT, FEW JOINTS MAY SHOW SLIGHT STAINING, ROCK RINGS UNDER HAMMER IF CRYSTALLINE. | | | | | | | | | | | | | | | | | | | | | | | | |
| GROUP CLASS. | | | | | COMPRESSIBILITY | | | | | VERY SLIGHT (V SL.) | | | | | | | | | | | | | | | | | | | | | | | | |
| SYMBOL | | | | | PERCENTAGE OF MATERIAL | | | | | SLIGHT (SL.) | | | | | | | | | | | | | | | | | | | | | | | | |
| % PASSING | | | | | ORGANIC MATERIAL | | | | | MODERATE (MOD.) | | | | | | | | | | | | | | | | | | | | | | | | |
| LIQUID LIMIT | | | | | TRACE OF ORGANIC MATTER | | | | | MODERATELY SEVERE (MOD. SEV.) | | | | | | | | | | | | | | | | | | | | | | | | |
| PLASTIC INDEX | | | | | LITTLE ORGANIC MATTER | | | | | SEVERE (SEV.) | | | | | | | | | | | | | | | | | | | | | | | | |
| GROUP INDEX | | | | | MODERATELY ORGANIC | | | | | VERY SEVERE (V SEV.) | | | | | | | | | | | | | | | | | | | | | | | | |
| USUAL TYPES OF MAJOR MATERIALS | | | | | HIGHLY ORGANIC | | | | | COMPLETE | | | | | | | | | | | | | | | | | | | | | | | | |
| GEN. RATING AS A SUBGRADE | | | | | GROUND WATER | | | | | ROCK HARDNESS | | | | | | | | | | | | | | | | | | | | | | | | |
| PI OF A-7-5 SUBGROUP IS ≤ LL - 30 ; PI OF A-7-6 SUBGROUP IS > LL - 30 | | | | | MISCELLANEOUS SYMBOLS | | | | | VERY HARD | | | | | | | | | | | | | | | | | | | | | | | | |
| CONSISTENCY OR DENSENESS | | | | | ROADWAY EMBANKMENT (RE) WITH SOIL DESCRIPTION | | | | | HARD | | | | | | | | | | | | | | | | | | | | | | | | |
| PRIMARY SOIL TYPE | | | | | SOIL SYMBOL | | | | | MODERATELY HARD | | | | | | | | | | | | | | | | | | | | | | | | |
| COMPACTNESS OR CONSISTENCY | | | | | ARTIFICIAL FILL (AF) OTHER THAN ROADWAY EMBANKMENT | | | | | MEDIUM HARD | | | | | | | | | | | | | | | | | | | | | | | | |
| RANGE OF STANDARD PENETRATION RESISTANCE (N-VALUE) | | | | | INFERRED SOIL BOUNDARY | | | | | SOFT | | | | | | | | | | | | | | | | | | | | | | | | |
| RANGE OF UNCONFINED COMPRESSIVE STRENGTH (TONS/SQ. FT.) | | | | | INFERRED ROCK LINE | | | | | VERY SOFT | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | ALLUVIAL SOIL BOUNDARY | | | | | SOFT | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | DIP & DIP DIRECTION OF ROCK STRUCTURES | | | | | STIFF | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | MEDIUM STIFF | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | VERY STIFF | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | HARD | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | VERY HARD | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | VERY VERY HARD | | | | | | | | | | | | | | | | | | | | | | | | |
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| | | | | | | | | | | VERY VERY HARD | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | EXTREMELY HARD | | | | | | | | | | | | | | | | | | | | | | | | |

| -L- | | |
|--------------------------------------|---------------------------------------|---------------------------------------|
| PI Sta 11+07.06 | PI Sta 13+37.96 | PI Sta 17+98.06 |
| $\Delta = 4^{\circ} 43' 47.2''$ (LT) | $\Delta = 14^{\circ} 22' 33.3''$ (LT) | $\Delta = 15^{\circ} 34' 56.7''$ (LT) |
| $D = 2^{\circ} 51' 53.2''$ | $D = 8^{\circ} 48' 53.0''$ | $D = 4^{\circ} 58' 56.1''$ |
| $L = 165.10'$ | $L = 163.09'$ | $L = 312.76'$ |
| $T = 82.60'$ | $T = 81.98'$ | $T = 157.35'$ |
| $R = 2,000.00'$ | $R = 650.00'$ | $R = 1,150.00'$ |
| $e = \text{EXIST}$ | $e = .06$ | $e = .05$ |
| $RO = \text{SEE PLANS}$ | $RO = \text{SEE PLANS}$ | $RO = \text{SEE PLANS}$ |

CL STA. 14+34.00 -L-
 42'x12' BOTTOMLESS
 CULVERT ON FOOTINGS
 SKEW=83 DEG.
 GP = 784.55
 OAL = 64'

ANNE GRACE AREY
 WB 90-E-332
 BACK REF DB 171PG 337

-L- POC Sta. 18+00.00
 END TIP PROJECT B-5155



15+00

-L- POC Sta. 11+00.00
 BEGIN TIP PROJECT B-5155

-L- PT Sta. 14+19.07

-L- PC Sta. 16+40.71

-L- PT Sta. 11+89.57

-L- PC Sta. 12+55.99

BM#2
 -BL- STA 11+56
 78' LEFT
 ELEV.=781.07'

N51°58'05.9"E

N 41° 25' 54.1" E

N51°39'31.0"E

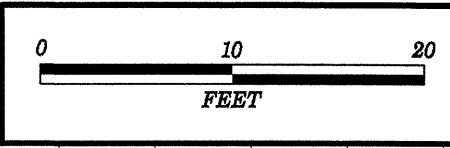
EXISTING R/W

JIM WAYNE HOYLE
 DB 905 PG 541

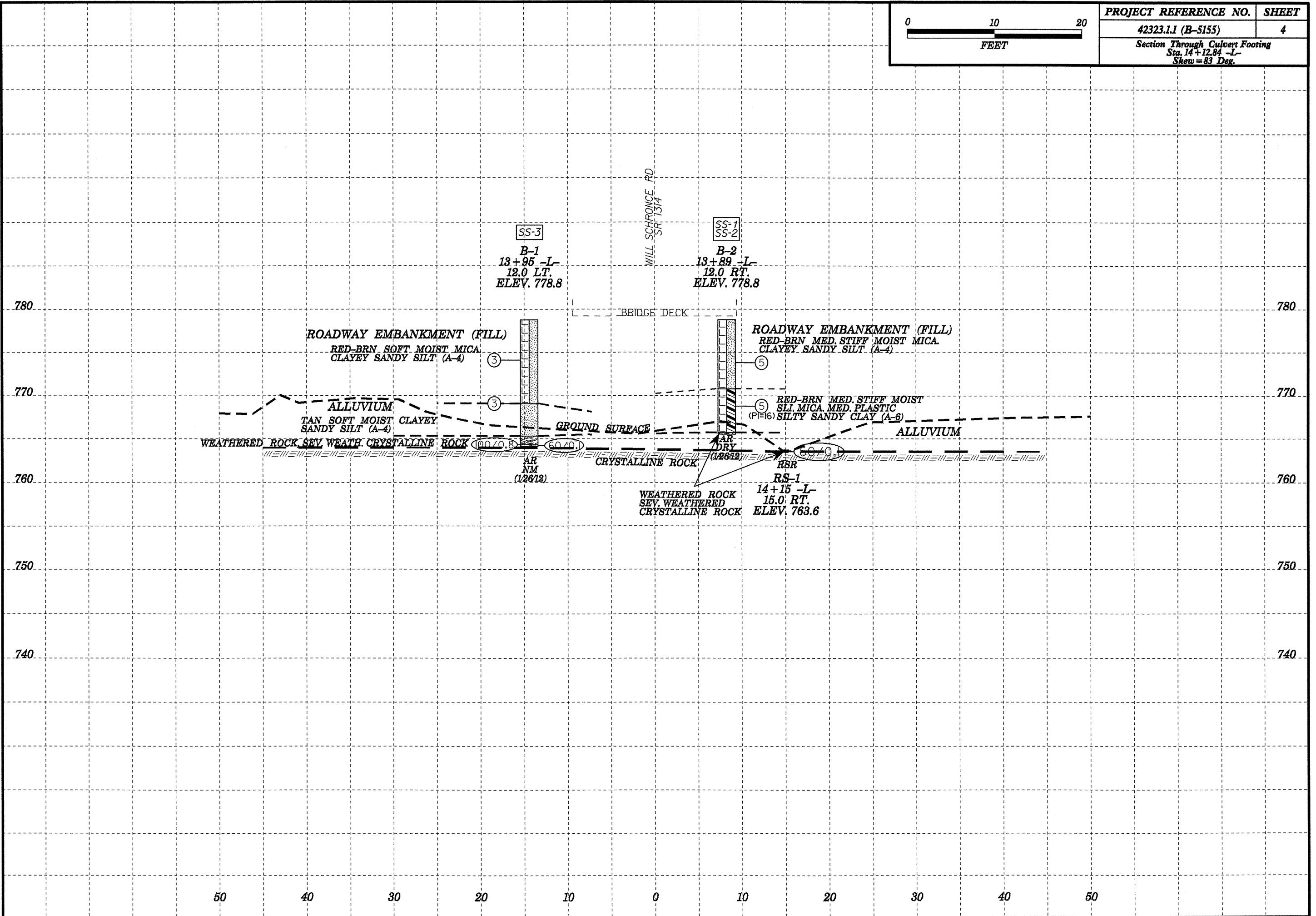
-L- PC Sta. 14+12.84
 BEGIN CULVERT

-L- PC Sta. 14+55.16
 END CULVERT

JIM WAYNE HOYLE
 DB 905 PG 541



| PROJECT REFERENCE NO. | SHEET |
|--|-------|
| 42323.1.1 (B-5155) | 4 |
| Section Through Culvert Footing Sta. 14+12.84 -L- Skew = 83 Deg. | |



SS-3
B-1
13+95 -L-
12.0 LT.
ELEV. 778.8

SS-1
SS-2
B-2
13+89 -L-
12.0 RT.
ELEV. 778.8

WILL SCHRONCE RD
SR 1314

BRIDGE DECK

ROADWAY EMBANKMENT (FILL)
RED-BRN SOFT MOIST MICA
CLAYEY SANDY SILT (A-4)

ROADWAY EMBANKMENT (FILL)
RED-BRN MED. STIFF MOIST MICA
CLAYEY SANDY SILT (A-4)

ALLUVIUM
TAN SOFT MOIST CLAYEY
SANDY SILT (A-4)

RED-BRN MED. STIFF MOIST
SLI MICA MED. PLASTIC
(PI=16)
SILTY SANDY CLAY (A-6)

WEATHERED ROCK SEV WEATH. CRYSTALLINE ROCK

GROUND SURFACE
CRYSTALLINE ROCK

ALLUVIUM

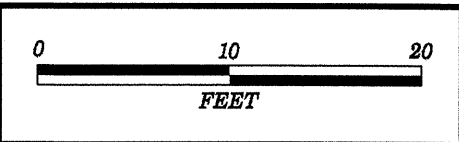
AR
NM
(12612)

AR
DRY
(12612)

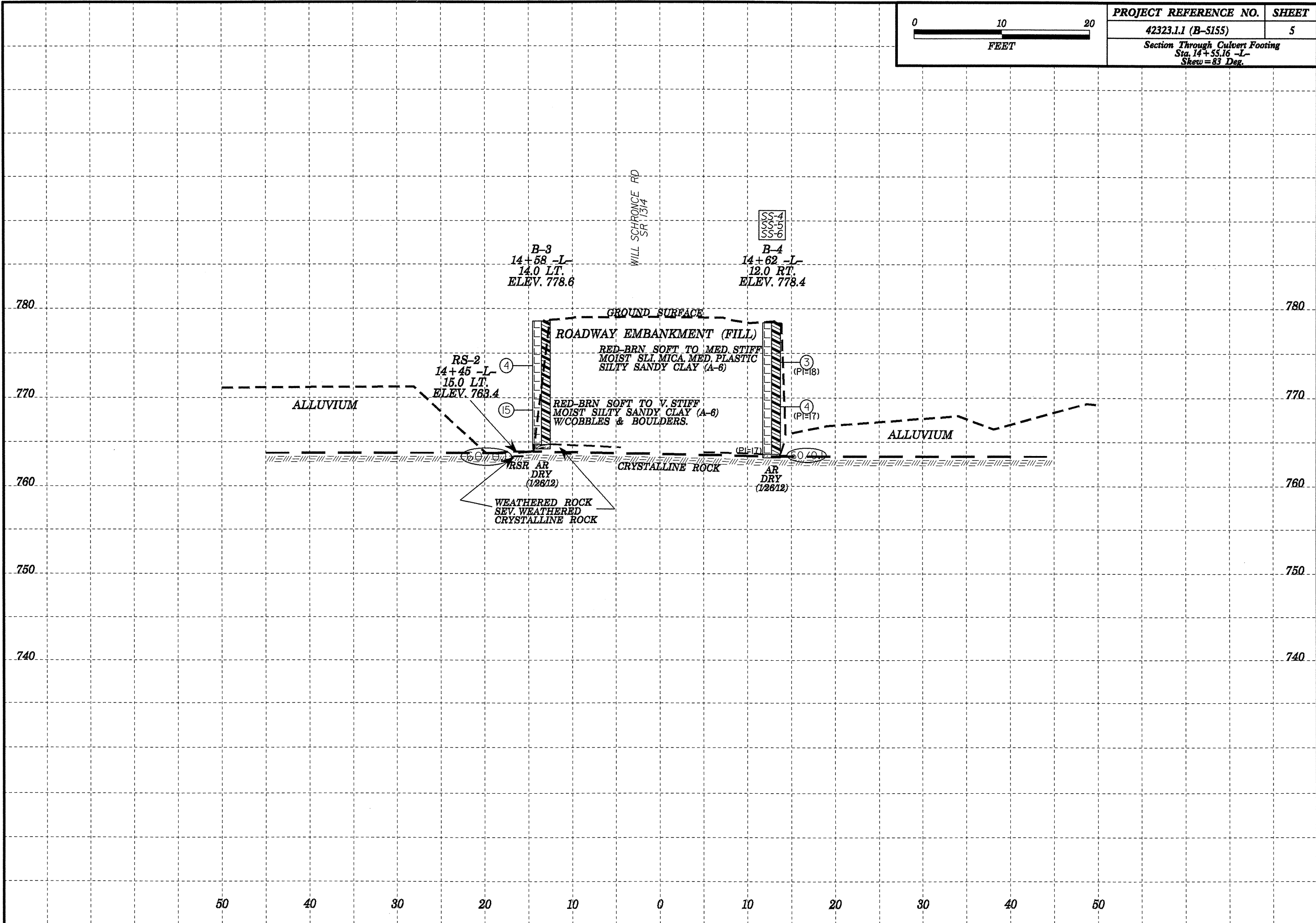
WEATHERED ROCK
SEV. WEATHERED
CRYSTALLINE ROCK

RSR
RS-1
14+15 -L-
15.0 RT.
ELEV. 763.6

50 40 30 20 10 0 10 20 30 40 50



| | |
|--|--------------|
| PROJECT REFERENCE NO. | SHEET |
| 42323.1.1 (B-5155) | 5 |
| Section Through Culvert Footing Sta. 14+55.16 -L- Skew = 83 Deg. | |



NCDOT GEOTECHNICAL ENGINEERING UNIT
BORELOG REPORT

| WBS 42323.1.1 | | TIP B-5155 | | COUNTY LINCOLN | | GEOLOGIST Murray, C. C. | | | | | | | | | | | |
|--|---------------------|---------------------|--------------------------|-------------------------|-------|-------------------------|-----------------|----|-----|-----|-----------|---------|-------|---------------------------|---|----------------|------|
| SITE DESCRIPTION REPLACE BRIDGE NO. 37 OVER HOYLE CREEK ON SR 1314 (WILL SCHRONCE RD.) | | | | | | | GROUND WTR (ft) | | | | | | | | | | |
| BORING NO. B-1 | STATION 13+95 | OFFSET 12 ft LT | ALIGNMENT -L- | | | 0 HR. Dry | | | | | | | | | | | |
| COLLAR ELEV. 778.8 ft | TOTAL DEPTH 14.7 ft | NORTHING 619,468 | EASTING 1,352,970 | | | 24 HR. NM | | | | | | | | | | | |
| DRILL RIG/HAMMER EFF./DATE HFO0066 CME-550 81% 09/02/2009 | | | DRILL METHOD H.S. Augers | HAMMER TYPE Automatic | | | | | | | | | | | | | |
| DRILLER Estep, J. E. | | START DATE 01/25/12 | COMP. DATE 01/25/12 | SURFACE WATER DEPTH N/A | | | | | | | | | | | | | |
| ELEV (ft) | DRIVE ELEV (ft) | DEPTH (ft) | BLOW COUNT | | | BLOWS PER FOOT | | | | | SAMP. NO. | LOG MOI | LOG G | SOIL AND ROCK DESCRIPTION | DEPTH (ft) | | |
| | | | 0.5ft | 0.5ft | 0.5ft | 0 | 25 | 50 | 75 | 100 | | | | | | | |
| 780 | | | | | | | | | | | | | | | 778.8 | GROUND SURFACE | 0.0 |
| 775 | 775.1 | 3.7 | 3 | 1 | 2 | 3 | 3 | 3 | 3 | 3 | 3 | | M | | ROADWAY EMBANKMENT RED-BRN SOFT MOIST MICA. CLAYEY SANDY SILT (A-4) | | |
| 770 | 770.1 | 8.7 | 2 | 1 | 2 | 3 | 3 | 3 | 3 | 3 | 3 | | M | | ROADWAY EMBANKMENT RED-BRN MED. STIFF MOIST MICA. CLAYEY SANDY SILT (A-4) | | |
| 765 | 765.1 | 13.7 | 43 | 57 | 0.3 | 100 | 0.8 | 60 | 0.1 | | | SS-3 | M | | ALLUVIAL TAN SOFT MOIST CLAYEY SANDY SILT (A-4) | 9.7 | |
| | 764.3 | 14.5 | | | | | | | | | | | | | WEATHERED ROCK SEV. WEATH. CRYSTALLINE ROCK CRYSTALLINE ROCK | 13.5 | |
| | | | | | | | | | | | | | | | Boring Terminated BY AUGER REFUSAL at Elevation 764.1 ft IN CRYSTALLINE ROCK | 14.5 | |
| | | | | | | | | | | | | | | | | | 14.7 |

| WBS 42323.1.1 | | TIP B-5155 | | COUNTY LINCOLN | | GEOLOGIST Murray, C. C. | | | | | | | | | | | |
|--|---------------------|---------------------|--------------------------|-------------------------|-------|-------------------------|-----------------|----|----|-----|-----------|---------|-------|---------------------------|---|----------------|-----|
| SITE DESCRIPTION REPLACE BRIDGE NO. 37 OVER HOYLE CREEK ON SR 1314 (WILL SCHRONCE RD.) | | | | | | | GROUND WTR (ft) | | | | | | | | | | |
| BORING NO. B-2 | STATION 13+89 | OFFSET 12 ft RT | ALIGNMENT -L- | | | 0 HR. Dry | | | | | | | | | | | |
| COLLAR ELEV. 778.8 ft | TOTAL DEPTH 13.3 ft | NORTHING 619,447 | EASTING 1,352,983 | | | 24 HR. Dry | | | | | | | | | | | |
| DRILL RIG/HAMMER EFF./DATE HFO0066 CME-550 81% 09/02/2009 | | | DRILL METHOD H.S. Augers | HAMMER TYPE Automatic | | | | | | | | | | | | | |
| DRILLER Estep, J. E. | | START DATE 01/25/12 | COMP. DATE 01/25/12 | SURFACE WATER DEPTH N/A | | | | | | | | | | | | | |
| ELEV (ft) | DRIVE ELEV (ft) | DEPTH (ft) | BLOW COUNT | | | BLOWS PER FOOT | | | | | SAMP. NO. | LOG MOI | LOG G | SOIL AND ROCK DESCRIPTION | DEPTH (ft) | | |
| | | | 0.5ft | 0.5ft | 0.5ft | 0 | 25 | 50 | 75 | 100 | | | | | | | |
| 780 | | | | | | | | | | | | | | | 778.8 | GROUND SURFACE | 0.0 |
| 775 | 774.8 | 4.0 | 3 | 1 | 4 | 3 | 3 | 3 | 3 | 3 | 3 | SS-1 | M | | ROADWAY EMBANKMENT RED-BRN MED. STIFF MOIST MICA. CLAYEY SANDY SILT (A-4) | | |
| 770 | 769.8 | 9.0 | 2 | 2 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | SS-2 | M | | ROADWAY EMBANKMENT RED-BRN MED. STIFF MOIST SLI. MICA. MED. (PI=16) PLASTIC SILTY SANDY CLAY (A-6) | 8.0 | |
| | | | | | | | | | | | | | | | WEATHERED ROCK SEV. WEATH. CRYSTALLINE ROCK | 13.1 | |
| | | | | | | | | | | | | | | | Boring Terminated BY AUGER REFUSAL at Elevation 765.5 ft ON CRYSTALLINE ROCK | 13.3 | |

NCDOT BORE DOUBLE B5155_GEO_BH_CULV0037_LINCOLN.GPJ_NC_DOT.GDT_1/11/13

NCDOT GEOTECHNICAL ENGINEERING UNIT
BORELOG REPORT

| WBS 42323.1.1 | | TIP B-5155 | | COUNTY LINCOLN | | GEOLOGIST Murray, C. C. | | | | | | | | | | |
|--|-----------------|--------------------------|------------|-----------------------|-------|-------------------------|-----------------|----|----|-----|-----------|---------|-------|---------------------------|------------|------|
| SITE DESCRIPTION REPLACE BRIDGE NO. 37 OVER HOYLE CREEK ON SR 1314 (WILL SCHRONCE RD.) | | | | | | | GROUND WTR (ft) | | | | | | | | | |
| BORING NO. B-3 | | STATION 14+58 | | OFFSET 14 ft LT | | ALIGNMENT -L- | | | | | | | | | | |
| COLLAR ELEV. 778.6 ft | | TOTAL DEPTH 14.4 ft | | NORTHING 619,516 | | EASTING 1,353,010 | | | | | | | | | | |
| DRILL RIG/HAMMER EFF./DATE HFO0066 CME-550 81% 09/02/2009 | | DRILL METHOD H.S. Augers | | HAMMER TYPE Automatic | | | | | | | | | | | | |
| DRILLER Estep, J. E. | | START DATE 01/25/12 | | COMP. DATE 01/25/12 | | SURFACE WATER DEPTH N/A | | | | | | | | | | |
| ELEV (ft) | DRIVE ELEV (ft) | DEPTH (ft) | BLOW COUNT | | | BLOWS PER FOOT | | | | | SAMP. NO. | LOG MOI | LOG G | SOIL AND ROCK DESCRIPTION | DEPTH (ft) | |
| | | | 0.5ft | 0.5ft | 0.5ft | 0 | 25 | 50 | 75 | 100 | | | | | | |
| 780 | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | 778.6 | 0.0 |
| | | | | | | | | | | | | | | | | |
| 775 | 774.6 | 4.0 | 1 | 2 | 2 | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | |
| 770 | 769.6 | 9.0 | 1 | 4 | 11 | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | |
| 765 | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | 764.7 | 13.9 |
| | | | | | | | | | | | | | | | 764.2 | 14.4 |
| | | | | | | | | | | | | | | | | |

| WBS 42323.1.1 | | TIP B-5155 | | COUNTY LINCOLN | | GEOLOGIST Murray, C. C. | | | | | | | | | | |
|--|-----------------|--------------------------|------------|-----------------------|-------|-------------------------|-----------------|----|----|-----|-----------|---------|-------|---------------------------|------------|------|
| SITE DESCRIPTION REPLACE BRIDGE NO. 37 OVER HOYLE CREEK ON SR 1314 (WILL SCHRONCE RD.) | | | | | | | GROUND WTR (ft) | | | | | | | | | |
| BORING NO. B-4 | | STATION 14+62 | | OFFSET 12 ft RT | | ALIGNMENT -L- | | | | | | | | | | |
| COLLAR ELEV. 778.4 ft | | TOTAL DEPTH 15.2 ft | | NORTHING 619,502 | | EASTING 1,353,033 | | | | | | | | | | |
| DRILL RIG/HAMMER EFF./DATE HFO0066 CME-550 81% 09/02/2009 | | DRILL METHOD H.S. Augers | | HAMMER TYPE Automatic | | | | | | | | | | | | |
| DRILLER Estep, J. E. | | START DATE 01/25/12 | | COMP. DATE 01/25/12 | | SURFACE WATER DEPTH N/A | | | | | | | | | | |
| ELEV (ft) | DRIVE ELEV (ft) | DEPTH (ft) | BLOW COUNT | | | BLOWS PER FOOT | | | | | SAMP. NO. | LOG MOI | LOG G | SOIL AND ROCK DESCRIPTION | DEPTH (ft) | |
| | | | 0.5ft | 0.5ft | 0.5ft | 0 | 25 | 50 | 75 | 100 | | | | | | |
| 780 | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | 778.4 | 0.0 |
| | | | | | | | | | | | | | | | | |
| 775 | 775.0 | 3.4 | 2 | 1 | 2 | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | |
| 770 | 770.0 | 8.4 | 1 | 2 | 2 | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | |
| 765 | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | 763.6 | 14.8 |
| | | | | | | | | | | | | | | | 763.2 | 15.2 |
| | | | | | | | | | | | | | | | | |

NCDOT BORE DOUBLE B5155_GEO_BH_CULV0037_LINCOLN.GPJ_NC_DOT.GDT_1/11/13

Aerial Photo



ANNE GRACE AREY
WB 90-E-332
BACK REF DB 171 PG 337

ANNE GRACE AREY
WB 90-E-332
BACK REF DB 171 PG 337

JIM WAYNE HOYLE
DB 905 PG 541

JIM WAYNE HOYLE
DB 905 PG 541

