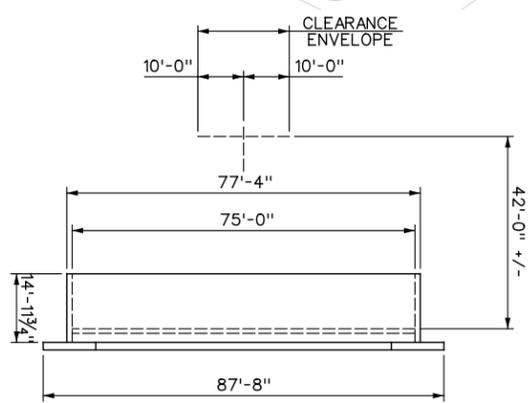
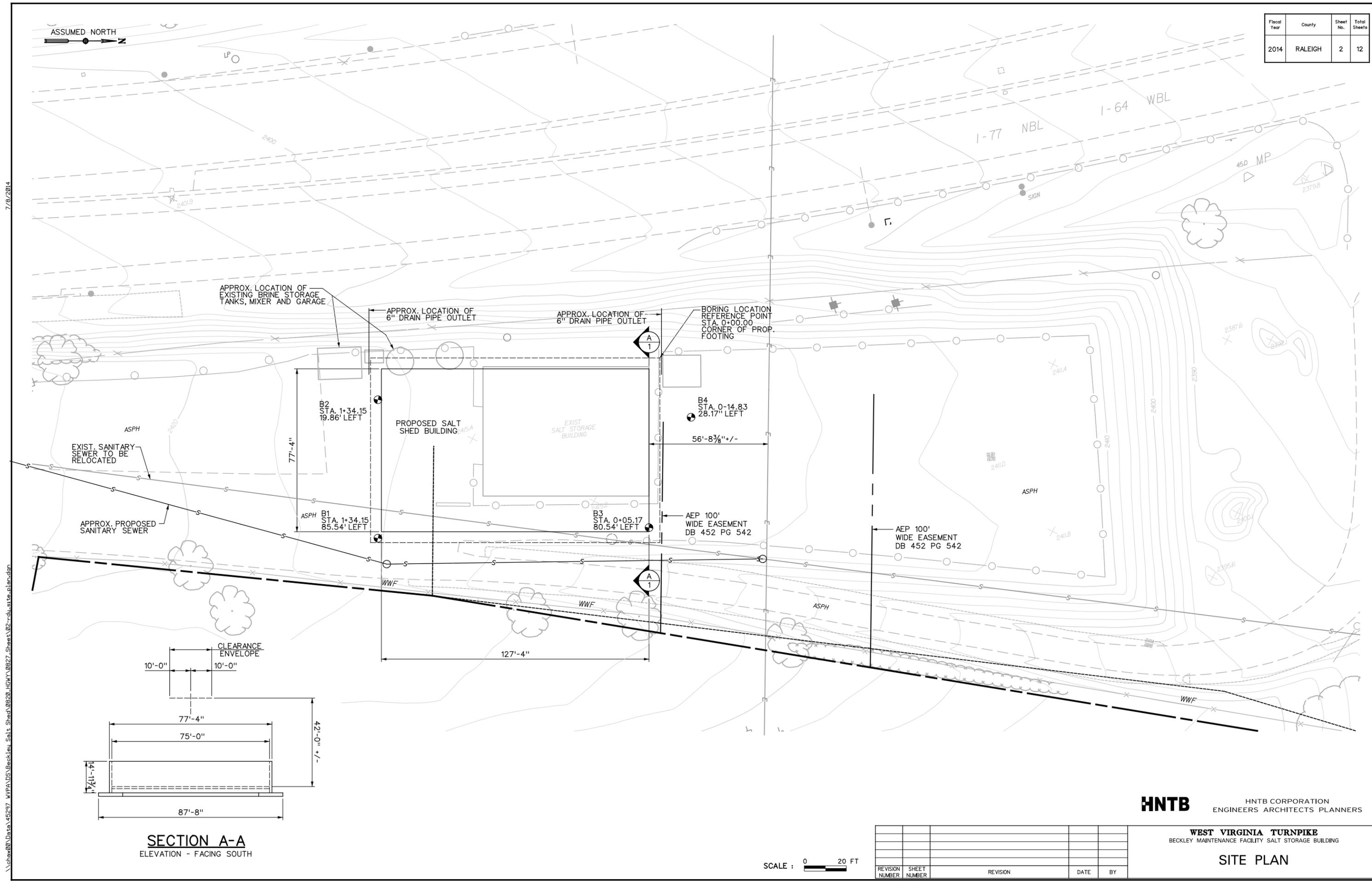




Fiscal Year	County	Sheet No.	Total Sheets
2014	RALEIGH	2	12



SCALE : 0 20 FT

REVISION NUMBER	SHEET NUMBER	REVISION	DATE	BY

**HNTB** HNTB CORPORATION  
ENGINEERS ARCHITECTS PLANNERS

**WEST VIRGINIA TURNPIKE**  
BECKLEY MAINTENANCE FACILITY SALT STORAGE BUILDING

**SITE PLAN**

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7/8/2014

Fiscal Year	County	Sheet No.	Total Sheets
2014	RALEIGH	3	12

GOVERNING SPECIFICATIONS

THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION, DIVISION OF HIGHWAYS STANDARD SPECIFICATIONS FOR ROADS AND BRIDGES, ADOPTED 2010, AS AMENDED BY THE CONTRACT SUPPLEMENTAL SPECIFICATIONS. THE CONTRACT PLANS AND DOCUMENTS ARE THE GOVERNING PROVISIONS APPLICABLE TO THIS PROJECT.

THE FOUNDATION, FLOOR SLAB AND WALLS WERE DESIGNED IN ACCORDANCE WITH THE FOLLOWING SPECIFICATIONS:

ASCE 7-02 MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHER STRUCTURES  
AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, 17TH EDITION  
ACI 318-02 BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE

DESIGN LOADS AND UNIT STRESSES

THE FOUNDATION AND WALLS WERE DESIGNED IN ACCORDANCE WITH THE FOLLOWING LOADS AND STRESSES USING ACICODE.

MAX. WIND VELOCITY = 90 MPH LIVE LOAD EQUALS OR EXCEEDS 30 PSF (SNOW LOAD)  
SALT LOAD = 72 PCF  
MAXIMUM WALL SALT STACK HEIGHT = 10 FT  
WALL IMPACT LOAD = 1.05 KIPS @ 5.92 FT  
ALLOWABLE SOIL BEARING PRESSURE = 2500 PSF

STRUCTURE EXCAVATION

ALL STRUCTURE EXCAVATION SHALL BE IN ACCORDANCE WITH SECTION 212 OF THE STANDARD SPECIFICATIONS AND THE LIMITS OF EXCAVATION SHALL BE IN ACCORDANCE WITH THESE PLANS.

MATERIAL FOR BACKFILLING

BACKFILL MATERIAL SHALL BE SUITABLE RANDOM MATERIAL, CONTROLLED LOW STRENGTH MATERIAL OR SELECT BACKFILL MATERIAL. ALL BACKFILL SHALL MEET THE REQUIREMENTS OF SUB-SECTION 212.10 OF THE STANDARD SPECIFICATIONS. ALL BACKFILL SHALL BE PLACED TO THE SURFACE LEVEL OF EXISTING GROUND AND SHALL BE COMPACTED IN ACCORDANCE WITH SUB-SECTION 212.10.

SUBGRADE

ALL MATERIALS WILL BE APPROVED BY THE ENGINEER PRIOR TO USE. THE MATERIAL SHALL BE OF SUCH QUALITY THAT IT WILL BIND READILY TO FORM A FIRM, STABLE SUBBASE.

GRADE 1 SUBBASE AGGREGATE SHALL BE COMPOSED OF CRUSHED STONE, CRUSHED GRAVEL, CRUSHED SLAG, CRUSHED CHERT, CRUSHED ROAD DOG, OR A COMBINATION THEREOF. MATERIAL SHALL CONFORM TO THE REQUIREMENTS OF SECTION 704.6, CLASS 5, EXCEPT THAT THE PERCENT PASSING THE NO. 200 SIEVE SHALL NOT EXCEED 15. THE LIQUID LIMIT AND PLASTICITY INDEX REQUIREMENTS WILL BE WAIVED, AND THE AMOUNT OF DELETERIOUS MATERIAL SHALL BE A MAXIMUM OF 10 PERCENT.

PRIOR TO THE PLACEMENT OF ANY SUBBASE COURSE MATERIAL ON THE SUBGRADE, THE SUBGRADE SHALL MEET THE APPLICABLE REQUIREMENTS OF SECTIONS 207.9 OR 228. THE PROFILE GRADE OF THE SUBGRADE SHALL BE SUCH THAT THE SPECIFIED THICKNESS OF THE SUBBASE WILL BE OBTAINED. NO SUBBASE SHALL BE PLACED WHEN THE SUBGRADE IS FROZEN OR WHEN IT IS SUFFICIENTLY WET THAT ITS SURFACE CAN BE MARRED BY CONSTRUCTION EQUIPMENT. THE SUBBASE SHALL BE PLACED AND SHAPED ON THE PREPARED SUBGRADE, OR ANY OTHER SURFACE, IN LAYERS TO ACHIEVE THE COMPACTED THICKNESS SHOWN ON THE PLANS. WHEN MORE THAN ONE LAYER IS REQUIRED, EACH LAYER SHALL BE SHAPED AND COMPACTED TO THE SPECIFIED DENSITY BEFORE THE SUCCEEDING LAYER IS PLACED.

QUALITY CONTROL AND ACCEPTANCE FOR COMPACTION OF AGGREGATE SUBBASE SHALL BE IN ACCORDANCE WITH SECTIONS 307.2.1 THROUGH 307.2.4.1 AND 717. EACH LAYER OF AGGREGATE SUBBASE SHALL BE COMPACTED TO THE REQUIREMENTS IN 717. WATER SHALL BE UNIFORMLY APPLIED OVER THE SUBBASE MATERIALS DURING COMPACTION IN THE AMOUNT NECESSARY FOR PROPER CONSOLIDATION. THE SURFACE OF EACH LAYER SHALL BE MAINTAINED DURING THE COMPACTION OPERATIONS IN SUCH A MANNER THAT A UNIFORM TEXTURE IS PRODUCED AND THE AGGREGATE FIRMLY KEYED. THE SURFACE OF THE TOP LAYER OF THE SUBBASE COURSE SHALL BE CAREFULLY TRUED BY BLADING IF NECESSARY.

THE COMPLETED SURFACE SHALL NOT VARY MORE THAN 1/2 IN. ABOVE OR BELOW PLAN GRADE. DEVIATIONS SHALL BE CORRECTED BY SCARIFYING, ADDING ADDITIONAL APPROVED AGGREGATE IF NECESSARY, RESHAPING, AND RECOMPACTING. THE SUBBASE COURSE SHALL BE CHECKED FOR PROPER THICKNESS AFTER FINAL COMPACTION. THE CONTRACTOR SHALL REFILL ALL TEST HOLES WITH APPROVED MATERIAL AND ADEQUATELY RECOMPACT THE MATERIAL. ANY DEFICIENCY IN TOTAL THICKNESS OF THE SUBBASE IN EXCESS OF 1 IN. SHALL BE CORRECTED.

STRUCTURAL CONCRETE

ALL CONCRETE IN THE FOUNDATION, WALLS AND FLOOR SLAB SHALL BE CLASS K IN ACCORDANCE WITH SECTION 601 OF THE STANDARD SPECIFICATIONS. MINIMUM DESIGN COMPRESSIVE STRENGTH SHALL BE 4000 PSI @ 28 DAYS.

REINFORCING STEEL

ALL REINFORCING STEEL SHALL BE INTERMEDIATE GRADE BILLET STEEL IN ACCORDANCE WITH AASHTO M31 OR ASCE A615 AND SECTION 602 OF THE STANDARD SPECIFICATIONS. ALL REINFORCING STEEL SHALL BE PLAIN BLACK STEEL. LAP SPLICES SHALL BE A MINIMUM 1 FT. 6 IN. UNLESS OTHERWISE NOTED IN THE PLAN SHEETS.

JOINT MATERIAL

ALL TRANSVERSE CONTRACTION AND CONSTRUCTION JOINTS SHALL BE SEALED WITH A SILICONE SEALANT. THE SILICONE SEALANT SHALL BE A VERY LOW MODULUS, SELF-LEVELING SEALANT MEETING THE REQUIREMENTS OF SUB-SECTION 708.4.

ALL EXPANSION JOINTS SHALL BE FILLED WITH A PRE-FORMED NON-BITUMENOUS JOINT FILLER MATERIAL THAT IS HIGHLY RESILIENT AND NON-EXTRUDING. THE MATERIAL SHALL BE TYPE 1 SPONGE RUBBER, GRAY IN COLOR AND MEET THE REQUIREMENTS OF SUB-SECTION 708.1.1.

CONCRETE SEALER

ALL EXPOSED INTERIOR CONCRETE SURFACES SHALL BE TREATED WITH A ONE COMPONENT PENETRATING WATER REPELLANT SEALER MEETING THE REQUIREMENTS OF SUB-SECTION 707.12.

PAINTING

A 3 INCH YELLOW LINE SHALL BE PAINTED ALONG THE NEAR WALL FACE PERIMETER SUCH THAT THE TOP OF THE LINE IS LOCATED AT 10 FT. ABOVE SLAB.

ROOFING MATERIAL SPECIFICATIONS

STRUCTURAL STEEL

ALL STRUCTURAL STEEL SHALL CONFORM TO THE MINIMUM SPECIFICATIONS  
ROLLED SECTIONS AND PLATES ASTM A36  
HSS SECTIONS ASTM A500

MEMBRANE FABRIC

THE ROOF COVERING SUPPLIED SHALL BE A HEAVYWEIGHT ENGINEERED FABRIC WITH FLAME RETARDANTS AND UV STABILITY. THE FABRIC SHALL CONSIST OF TWO PARTS: THE SCRIM AND THE 4 MIL COATINGS ON EACH SIDE OF THE SCRIM. THE FABRIC ROOF COVERING SHALL MEET OR EXCEED THE FOLLOWING SPECIFICATIONS:

REQUIREMENT DESCRIPTION	REQUIREMENT	SPECIFICATION
WEAVE	WOVEN FLAME RETARDANT, HDPE SCRIM USINF FR/UV TAPES	
COATING THICKNESS	4.0 MILS MIN., EACH SIDE OF SCRIM	
COATING COMPOSITION	MODIFIED LDPE COATING WITH UV PROTECTION	
COLOR	WHITE	
WEIGHT	12.0 OZ/SQ YD MINIMUM	
THICKNESS	23 MILS MINIMUM	ASTM D5199
GRAB TENSILE	WARP: 340 LB. WEFT 340 LB.	ASTM D5034
STRIP TENSILE	WARP: 250 LB. WEFT 250 LB.	ASTM D5035
TRAPEZOIDAL TEAR	WARP: 95 LB. WEFT 95 LB.	ASTM D4533
TONGUE TEAR	WARP: 115 LB. WEFT 115 LB.	ASTM D2261
MULLEN BURST	675 PSI	ASTM D3786
ACCELERATED UV WEATHERING	>90% STRENGTH AFTER 2000 HOURS	ASTM G90
LOW TEMPERATURE BEND	MINUS 60 DEGREES CENTIGRADE	ASTM D2136

FABRIC FIRE RETARDANT RATINGS

THE FABRIC COVERING SHALL MEET OR EXCEED ALL APPLICABLE REQUIREMENTS OF THE NFPA 701-04 AND ASTM E84. MANUFACTURER SHALL PROVIDE COPIES OF ALL CERTIFICATES AND TEST RESULTS, IF REQUIRED. THE FOLLOWING MINIMUM RATINGS FOR FLAME SPREAD (FS), SMOKE DEVELOPED (SD) AND CHAR LENGTH (CHAR) SHALL BE MET.

FS/SD/CHAR 10/58/6.5 ASTM E-84

FRAMEWORK AND FASTENERS

STRUCTURAL STEEL TUBING - ASTM A500

PLATES, BAR STOCK AND ROLLED SHAPES - ASTM A36

STEEL DIAGONAL BRACING CABLES SHALL BE GALVANIZED AIRCRAFT CABLE MEETING THE REQUIREMENTS OF FEDERAL SPECIFICATION RR-W-410E. ROOF MANUFACTURE SHALL PROVIDE TABLE OF LISTED BREAKING STRENGTHS.

ALL TURNBUCKLES SHALL BE HOT DIP GALVANIZED AND MEET THE REQUIREMENTS OF FEDERAL SPECIFICATION FF-T-791b, TYPE 1, FORM 1-CLASS 4. TURNBUCKLES SHALL HAVE A PROOF LOAD 2.5 TIMES THE WORKING LOAD LIMIT. ULTIMATE LOAD SHALL BE 5.0 TIMES THE WORKING LOAD LIMIT.

BOLTS, NUTS AND WASHERS SHALL BE HIGH STRENGTH STRUCTURAL FASTENERS MEETING THE REQUIREMENTS OF ASTM A325. BOLTS SHALL BE TIGHTENED EITHER BY "TURN-OF-NUT" OR BY "CALIBRATED WRENCH" METHODS.

ANCHOR BOLTS ATTACHING STEEL ROOF FRAMEWORK TO THE CONCRETE WALL SHALL BE IN ACCORDANCE WITH ASTM F1554 GRADE 36 WITH A MINIMUM YIELD STRENGTH OF 36 KSI. ALL ANCHOR BOLTS SHALL BE PROVIDED BY MANUFACTURER. ROOF MANUFACTURER SHALL BE RESPONSIBLE FOR SIZING IN ACCORDANCE WITH DESIGN LOADS. ALL NUTS SHALL BE HEX OR HEAVY HEX IN ACCORDANCE WITH ASTM A563A, GRADE 36. ALL WASHERS SHALL BE IN ACCORDANCE WITH ASTM F436, GRADE 36.

FRAMEWORK PROTECTIVE COATING

ALL STRUCTURAL STEEL TUBING, PLATES, BAR STOCK, AND ROLLED SHAPES SHALL BE HOT-DIPPED GALVANIZED IN ACCORDANCE WITH ASTM A123.

ALL STRUCTURAL BOLTS, NUTS, WASHERS, AND ANCHOR BOLT ASSEMBLIES SHALL BE HOT-DIPPED GALVANIZED IN ACCORDANCE WITH ASTM A153.

WIRE ROPE USED FOR BRACING SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A1023 AND FEDERAL SPECIFICATION RR-W-410E. ALL TURNBUCKLES AND ANCILLARY HARDWARE SHALL BE HOT-DIPPED GALVANIZED IN ACCORDANCE WITH ASTM A153.

ALL STRUCTURAL STEEL FRAMEWORK AND CONNECTION HARDWARE SHALL HAVE A CHROMATE CONVERSION APPLIED OVER THE GALVANIZED SURFACES WITH AN ADDITIONAL COAT OF CLEAR ORGANIC TOP COAT DEMONSTRATING THE ABILITY TO WITHSTAND A MINIMUM OF 1000 HOURS OF ACCELERATED SALT FOG TESTING TO THE 5 PER CENT RED RUST CONDITION IN ACCORDANCE WITH ASTM B117. THE REPAIR TO THE TRUSS AT WELD LOCATIONS IS COMPLETED USING SPRAYED METALIZED ZINC IN ACCORDANCE WITH ASTM A780-01. SURFACES TO BE RECONDITIONED SHALL BE ABRASIVE BLAST CLEANED, DRY, AND FREE OF OIL, GREASE, CORROSION, FLUX RESIDUE, AND WELD SPATTER IN ACCORDANCE WITH SSPC-SP5/NACE NO. 1 TO ENSURE A SMOOTH RECONDITIONED COATING CAN BE APPLIED. SURFACE PREPARATION SHALL BE EXTENDED INTO THE UNDAMAGED COATING. THE SEM-MOLTEN ZINC REPAIR COATING SHALL BE APPLIED BY MEANS OF METAL SPRAYING PISTOLS FED WITH EITHER ZINC WIRE OR ZINC POWDER. THE NOMINAL THICKNESS OF SPRAYED ZINC COATING BE ONE 3 MIL APPLICATION. FIELD TOUCH UP TO DAMAGED GALVANIZING PROTECTIVE COATING SHALL BE COMPLETED WITH 99.9 PER CENT ZINC RICH SPRAY PAINT.

WARRANTY

FABRICS: ROOFING FABRIC COVERINGS SHALL A MINIMUM TEN (10) YEAR PRO-RATED WARRANTY ON ALL COMPONENTS AND MATERIALS.

STRUCTURAL FRAMEWORK: ALL STRUCTURAL FRAMEWORK AND CONNECTION HARDWARE SHALL HAVE MINIMUM FIFTEEN (15) YEAR PRO-RATED WARRANTY THAT INCLUDES STRUCTURAL INTEGRITY AND GALVANIZED PROTECTIVE COATING.

MAINTENANCE

ROOF MANUFACTURER SHALL PROVIDE THE WEST VIRGINIA PARKWAYS AUTHORITY WITH A WRITTEN COPY OF ALL MAINTENANCE PROCEDURES AND A RECOMMENDED SCHEDULE TO MAINTAIN FRAMEWORK AND FABRIC IN GOOD CONDITION.

MATERIAL REQUIRED

THE ROOFING MANUFACTURER SHALL PROVIDE ALL MATERIAL REQUIRED TO FULLY ERECT THE ROOF STRUCTURE TO THE SALT BUILDING WALLS. THIS IS TO INCLUDE, BUT NOT LIMITED TO, ROOF FABRIC AND ATTACHMENT HARDWARE, STRUCTURAL FRAMEWORK, BRACING, FASTENERS, AND ANCHOR BOLTS. ALL MATERIAL SHALL BE SHIPPED TO THE BECKLEY MAINTENANCE SITE LOCATED AT BECKLEY, WV. THE WEST VIRGINIA TURNPIKE WILL PROVIDE ALL MATERIALS REQUIRED TO COMPLETE THE CONCRETE FOUNDATION, WALLS AND FLOORING.

DESIGN CALCULATIONS AND ERECTION PLANS

THE ROOFING MANUFACTURER SHALL PROVIDE THE WEST VIRGINIA PARKWAYS AUTHORITY WITH ALL ROOF AND FRAMEWORK DESIGN CALCULATIONS, TABLE OF BASE REACTIONS, AND ERECTION PLANS THAT HAVE BEEN STAMPED AND SIGNED BY A WEST VIRGINIA REGISTERED PROFESSIONAL ENGINEER.

ROOF SYSTEM SUPPLIED

THE ROOF SYSTEM SUPPLIED IS THE "ADVANTAGE SERIES" ARCH STYLE ROOF, MANUFACTURED BY ACCU-STEEL, INC, TEMPLETON, IA. ROOF DIMENSIONS ARE 77'-4" X 126'-9" AS SPECIFIED IN DRAWINGS IP-TITLE, IP-01 THROUGH IP-03, IP-04HP, CP-01W, IP-77A THROUGH IP-77D, AND IP-PP, ALL DATED 01/02/2011.

DESIGN LOADS AND RAFTER REACTIONS ARE AS SPECIFIED ON SHEET IP-01.

**HNTB** HNTB CORPORATION  
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**WEST VIRGINIA TURNPIKE**  
BECKLEY MAINTENANCE FACILITY SALT STORAGE BUILDING

**GENERAL NOTES**

REVISION NUMBER	SHEET NUMBER	REVISION	DATE	BY

6/30/2014

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ROOFING DESIGN SPECIFICATIONS

DESIGN STANDARDS

INTERNATIONAL BUILDING CODE (IBC 2009), CHAPTER 18: STRUCTURAL DESIGN  
 ANSI/AISC 360-05, SPECIFICATIONS FOR STRUCTURAL STEEL BUILDINGS  
 AISI-TRUSS, NORTH AMERICAN SPECIFICATION FOR THE DESIGN OF COLD-FORMED STEEL STRUCTURAL MEMBERS  
 NFPA 701, STANDARD METHODS OF FIRE TESTS FOR FLAME PROPAGATION OF TEXTILES AND FILMS, 2004 ED

MANUFACTURING STANDARDS

FABRICATION SHALL BE IN ACCORDANCE WITH ANSI/AISC 360-06 AND AISI-TRUSS , AS APPLICABLE  
 ALL WELDING SHALL BE IN ACCORDANCE WITH AWS D1.3 STRUCTURAL WELDING CODE AND AISI-TRUSS, AS APPLICABLE  
 ROOF SYSTEM MANUFACTURER SHALL BE AN AWS APPROVED FABRICATOR PER 85.17 AND QC17 STANDARDS  
 ALL WELDERS SHALL BE QUALIFIED IN ACCORDANCE WITH QC7-93

DESIGN CRITERIA

OCCUPANCY CATEGORY: LOW HAZARD  
 EXPOSURE CATEGORY: EXPOSURE C - FULLY EXPOSED  
 ENCLOSURE CATEGORY: PARTIALLY ENCLOSED

DEAD LOADS

SELF WEIGHT OF BUILDING COMPONENTS  
 COLLATERAL (HANGING) LOAD NOT TO EXCEED 0.25 PSF AS AN ALLOWANCE FOR MECHANICAL,  
 ELECTRICAL, CEILING, SPRINKLERS, ETC., OR ANY COMBINATION.

LIVE LOADS

LIVE LOADS SHALL BE DETERMINED IN ACCORDANCE WITH SECTION 1607 OF IBC 2009  
 ROOF SYSTEM SHALL INCLUDE PROVISION FOR A MINIMUM LIVE LOAD CAPACITY OF 12 PSF

WIND LOADS

WIND LOADS SHALL BE DETERMINED IN ACCORDANCE WITH SECTION 1609 OF IBC 2009

WIND SPEED (3 SEC. GUST)	90 MPH
BASIC WIND PRESSURE	14.82 PSF
EXPOSURE COEFFICIENT	0.97
TOPOGRAPHIC FACTOR	1.00
DIRECTIONALITY FACTOR	0.85
IMPORTANCE FACTOR	0.87

SNOW LOADS

SNOW LOADS SHALL BE DETERMINED IN ACCORDANCE WITH SECTION 1608 OF IBC 2009

LIVE LOAD EQUALS OR EXCEEDS 30 PSF (SNOW LOAD)	
ROOF SNOW LOAD	12.1 PSF
EXPOSURE FACTOR	0.9
THERMAL FACTOR	1.2
IMPORTANCE FACTOR	0.8

LOAD COMBINATIONS

LOAD COMBINATIONS SHALL BE DETERMINED IN ACCORDANCE WITH SECTION 1605 OF IBC 2009

BECKLEY SALT STORAGE BUILDING DESIGN CRITERIA

DESIGN OF THE BECKLEY SALT STORAGE BUILDING IS BASED ON THE SALT STORAGE BUILDING LOCATED AT THE GHENT MAINTENANCE FACILITY. DESIGN SPECIFICATIONS ARE AS FOLLOWS:

ARCH STYLE ROOF SYSTEM WITH FABRIC COVERING. LIVE LOAD AND DEAD LOAD COMBINATIONS IN ACCORDANCE WITH THE MANUFACTURER'S PLANS.

MAXIMUM SALT STORAGE STACK HEIGHT OF 10'-0".

SALT UNIT WEIGHT OF 72 PCF.

WALL IMPACT LOAD OF 1.05 KIPS LOCATED 5-11" ABOVE FLOOR SLAB.

ALLOWABLE SOIL BEARING PRESSURE OF 2500 PSF.

ESTIMATE OF QUANTITIES		
ITEM DESCRIPTION	UNITS	QUANTITY
MOBILIZATION	LS	1
STRUCTURE EXCAVATION	CY	1,000
SUBBASE AGGREGATE, CRUSHER RUN	CY	143
SUBBASE AGGREGATE, COURSE GRAVEL (DRAIN PIPE)	CY	145
CLASS K CONCRETE	CY	977
REINFORCING STEEL BAR	LBS	113,255
W6 x 6 WIRE MESH FABRIC (8 GAUGE - GALVANIZED)	SF	12,783
6" PERFORATED FOUNDATION DRAIN PIPE	LF	460
FOUNDATION DRAIN FILTER FABRIC	SF	2,070
FOUNDATION DRAIN 90° ELBOW	EA	4
FOUNDATION DRAIN "T" CONNECTION	EA	1
1/2" BACKER ROD	LF	300
5/8" x 11 3/4" TYPE 1 SPONGE RUBBER - GRAY	LF	525
1/8" x 11 3/4" TYPE 1 SPONGE RUBBER - GRAY	LF	400
ULTRA LOW MODULUS SELF LEVELING SILICONE SEALANT	GAL	5
LOW MODULUS SILICONE SEALANT	GAL	2
SILANE BASED PENETRATING CONCRETE SEALER	GAL	70

ESTIMATE OF QUANTITIES - ROOF SYSTEM		
ITEM DESCRIPTION	UNITS	QUANTITY
ROOF SYSTEM	LS	1

TABLE OF RECOMMENDED PRODUCTS		
ITEM DESCRIPTION	PRODUCT NUMBER	MANUFACTURER
ULTRA LOW MODULUS SELF LEVELING SILICONE SEALANT	890-SL	DOW CORNING
LOW MODULUS NON-SAGGING SILICONE SEALANT	790	DOW CORNING
SILANE BASED PENETRATING CONCRETE SEALER	HYDROZO 100	BASF

REVISION NUMBER	SHEET NUMBER	REVISION	DATE	BY

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 ENGINEERS ARCHITECTS PLANNERS

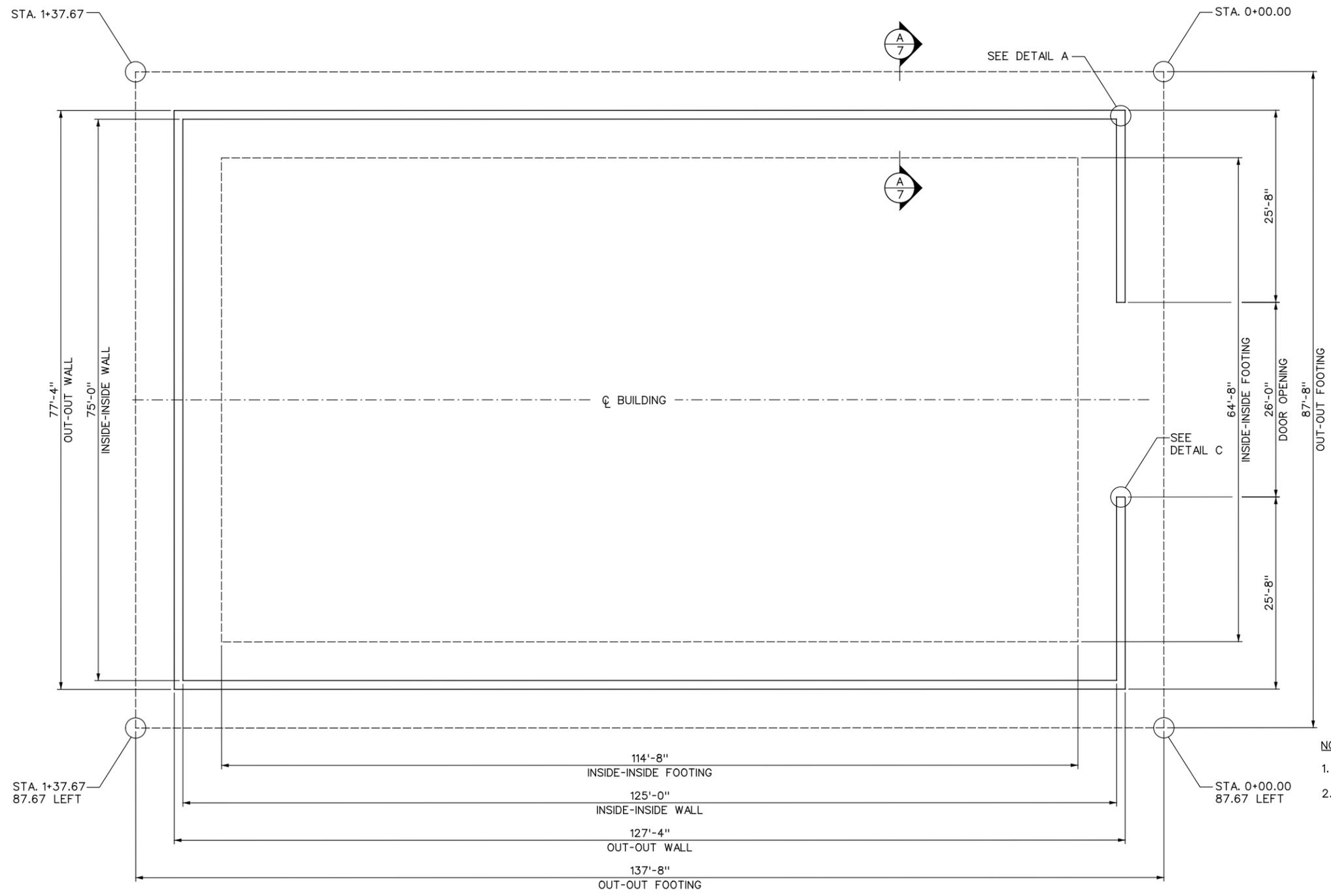
**WEST VIRGINIA TURNPIKE**  
 BECKLEY MAINTENANCE FACILITY SALT STORAGE BUILDING  
**GENERAL NOTES AND QUANTITIES**

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7/7/2014  
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Fiscal Year	County	Sheet No.	Total Sheets
2014	RALEIGH	5	12

ASSUMED NORTH



- NOTES:
1. DETAIL A IS LOCATED ON SHEET 7.
  2. DETAIL C IS LOCATED ON SHEET 7.

**FLOOR PLAN**

SCALE : 8 ft.

REVISION NUMBER	SHEET NUMBER	REVISION	DATE	BY

**HNTB** HNTB CORPORATION  
 ENGINEERS ARCHITECTS PLANNERS

**WEST VIRGINIA TURNPIKE**  
 BECKLEY MAINTENANCE FACILITY SALT STORAGE BUILDING

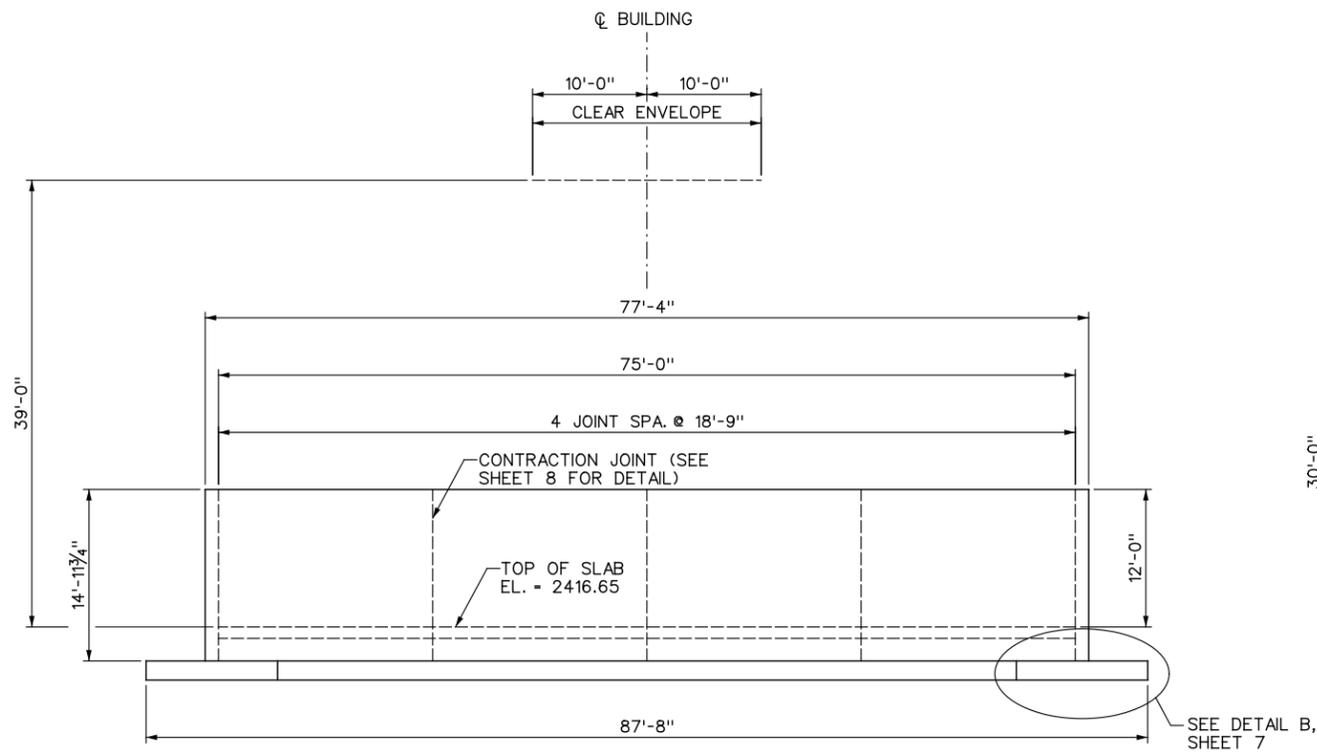
**FLOOR PLAN**

6/30/2014

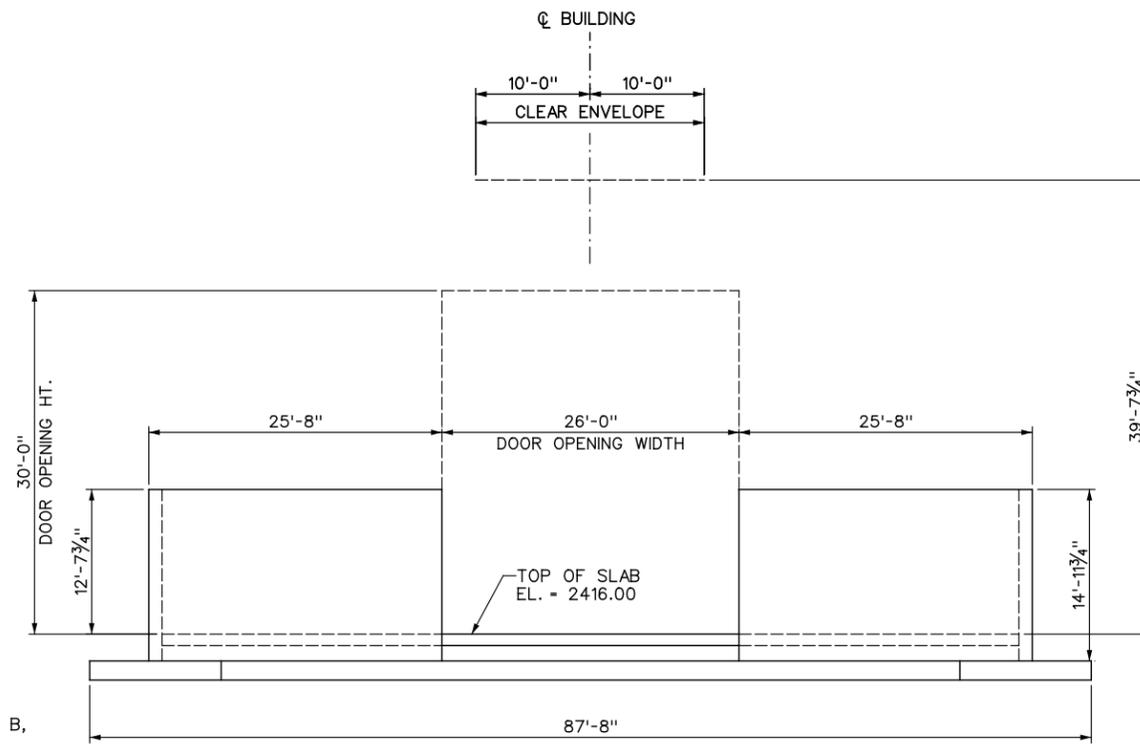
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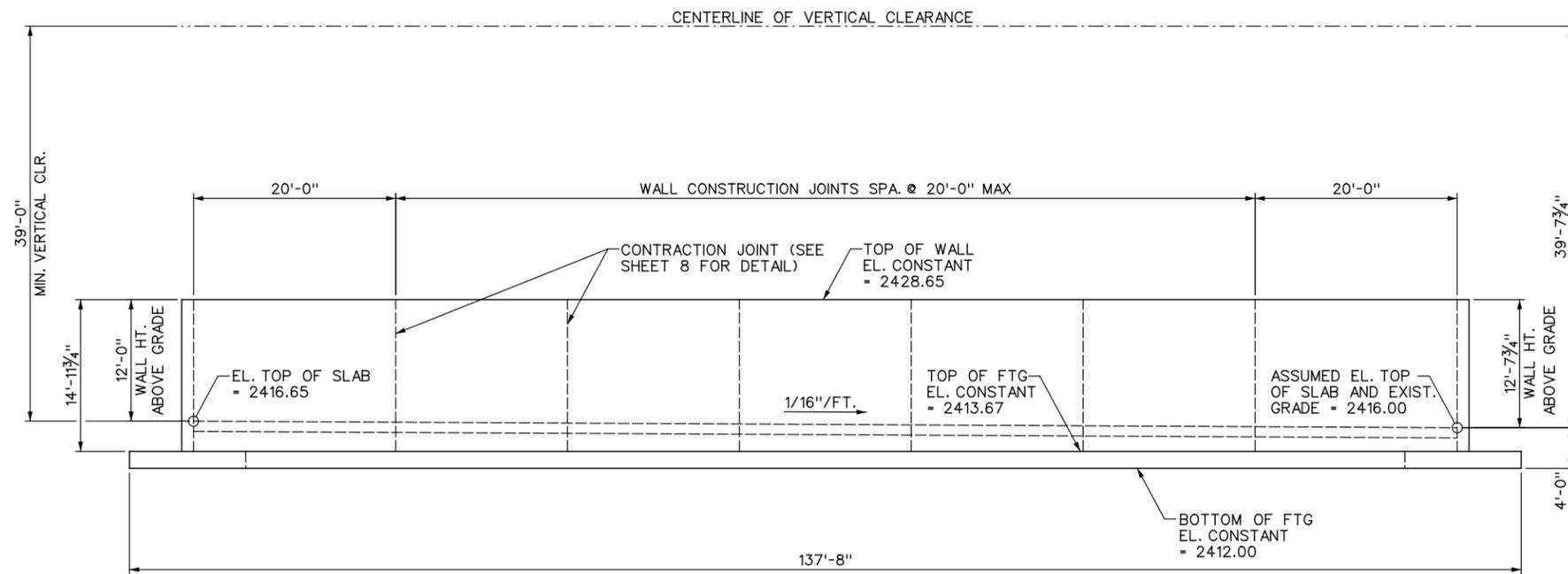
Fiscal Year	County	Sheet No.	Total Sheets
2014	RALEIGH	6	12



**NORTH WALL FACE ELEVATION**  
FACING SOUTH



**SOUTH WALL FACE ELEVATION**  
FACING NORTH



**WEST WALL FACE ELEVATION**  
(WEST WALL SHOWN, OPPOSITE AT EAST WALL)

- NOTES:
1. DETAIL B IS LOCATED ON SHEET 7.
  2. THE EXISTING GRADE AT THE ENTRANCE IS ASSUMED TO BE 2416.00.

**HNTB** HNTB CORPORATION  
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**WEST VIRGINIA TURNPIKE**  
BECKLEY MAINTENANCE FACILITY SALT STORAGE BUILDING  
**WALL ELEVATIONS**

REVISION NUMBER	SHEET NUMBER	REVISION	DATE	BY

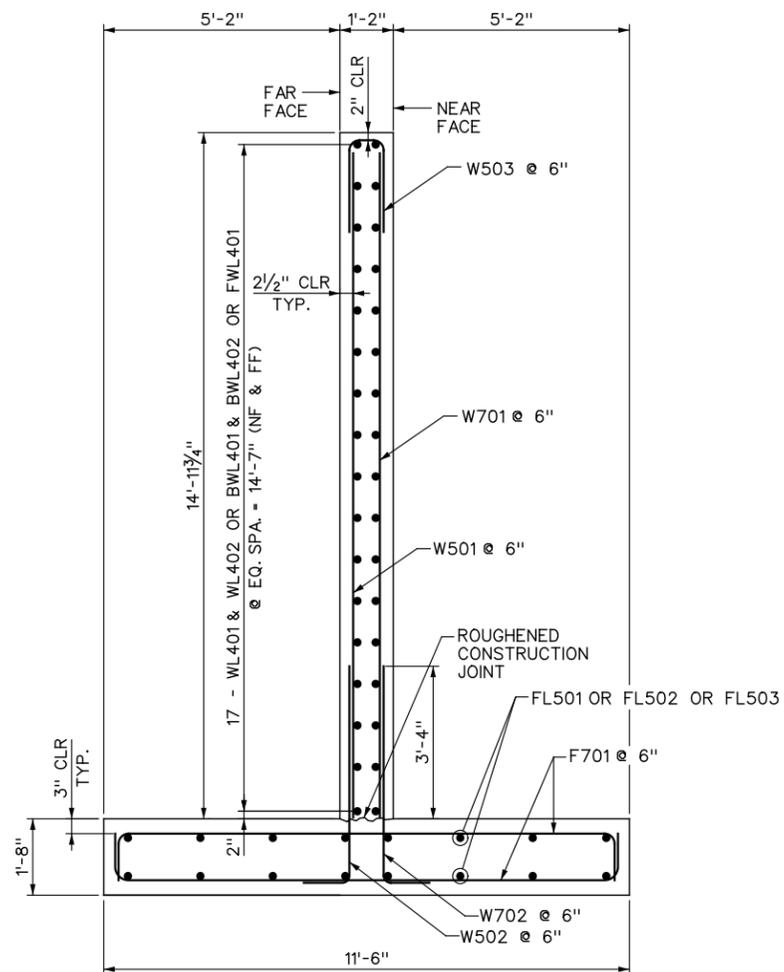
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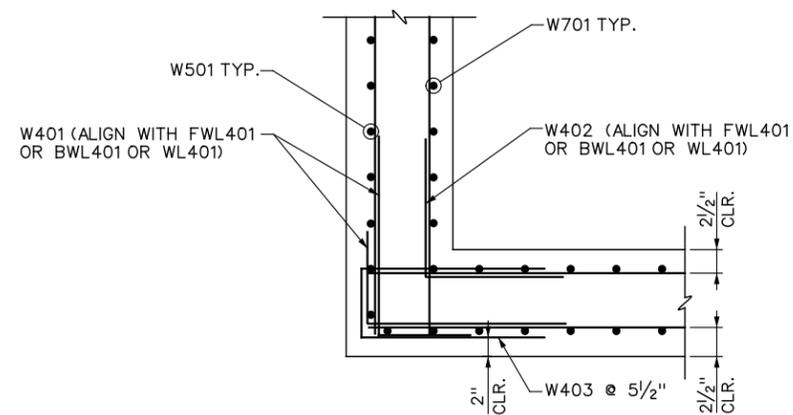
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Fiscal Year	County	Sheet No.	Total Sheets
2014	RALEIGH	7	12



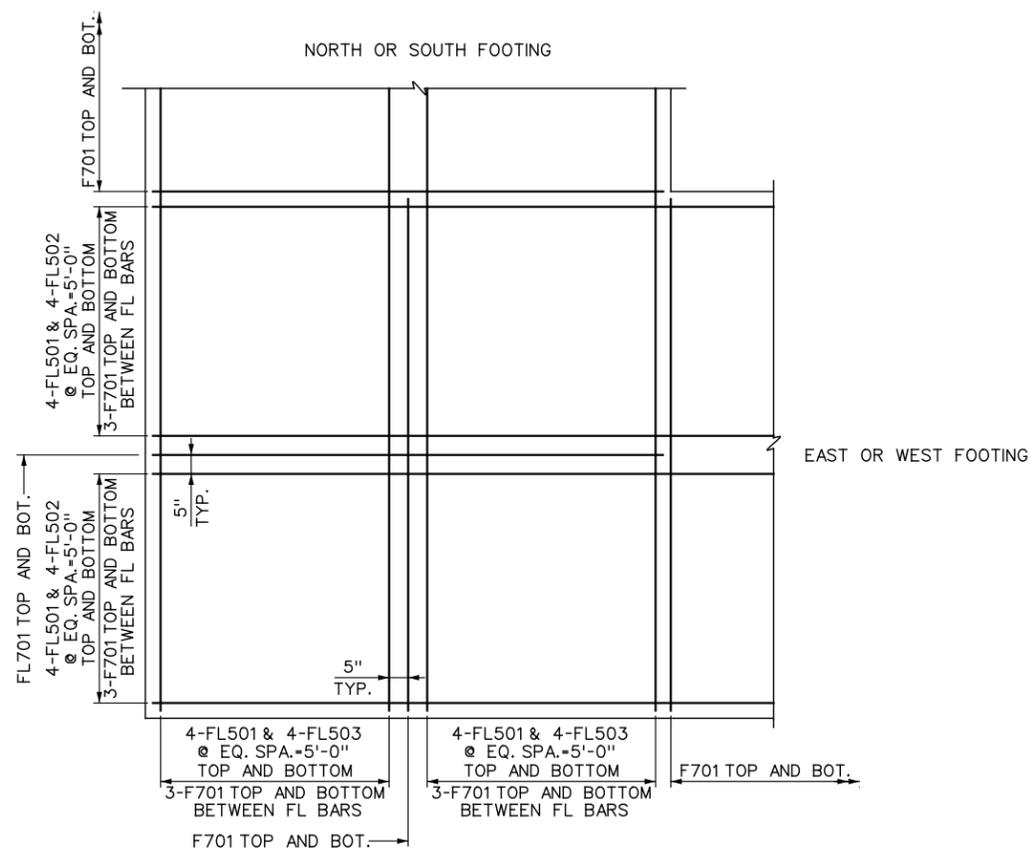
**SECTION A-A**  
TYPICAL REINFORCING

SCALE : 1 0 1 2 FEET



**DETAIL A**  
TYPICAL REINFORCING AT WALL CORNER

SCALE : 6 0 6 12 INCHES

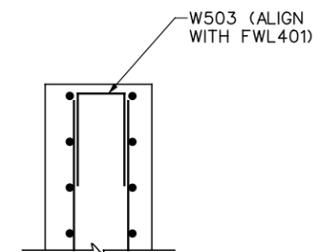


**DETAIL B**  
TYPICAL REINFORCING AT FOOTING CORNER

SCALE : 1 0 1 2 FEET

**NOTES:**

1. WL401 BARS ARE LOCATED IN THE EAST AND WEST WALLS.
2. FWL401 BARS ARE LOCATED IN THE SOUTH WALL.
3. BWL401 BARS ARE LOCATED IN THE NORTH WALL.
4. 1'-6" MINIMUM LAP LENGTH FOR THE WL401, BWL401 AND FWL401 BARS.
5. NF DENOTES NEAR FACE.  
FF DENOTES FAR FACE.



**DETAIL C**  
REINFORCING AT DOORWAY

SCALE : 6 0 6 12 INCHES

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**WEST VIRGINIA TURNPIKE**  
BECKLEY MAINTENANCE FACILITY SALT STORAGE BUILDING

**REINFORCING DETAILS**

REVISION NUMBER	SHEET NUMBER	REVISION	DATE	BY

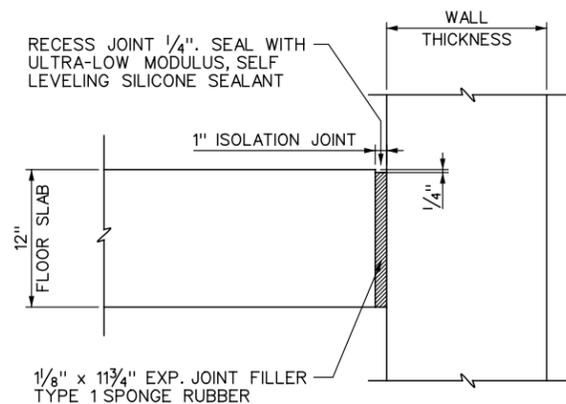
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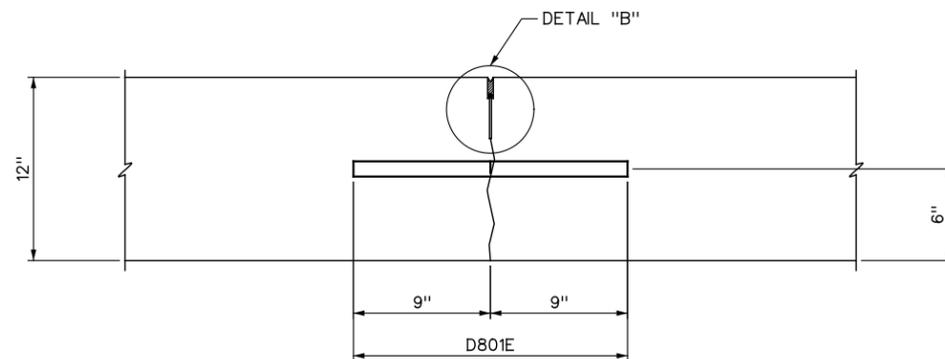
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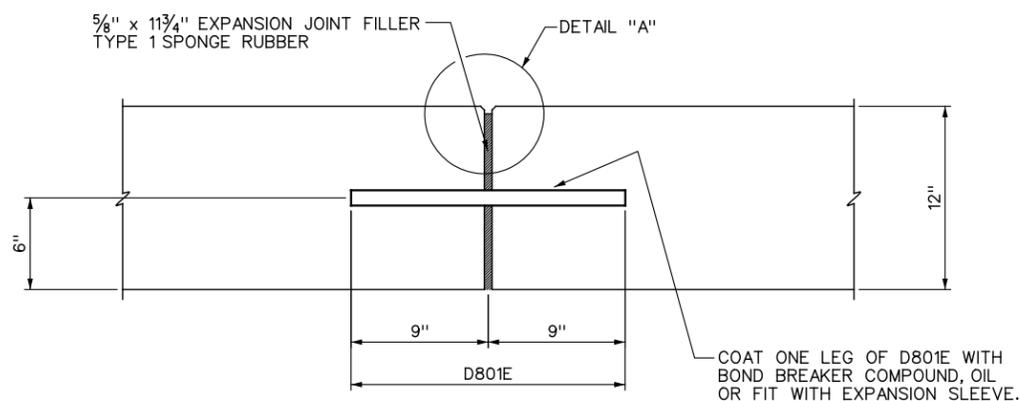
Fiscal Year	County	Sheet No.	Total Sheets
2014	RALEIGH	8	12



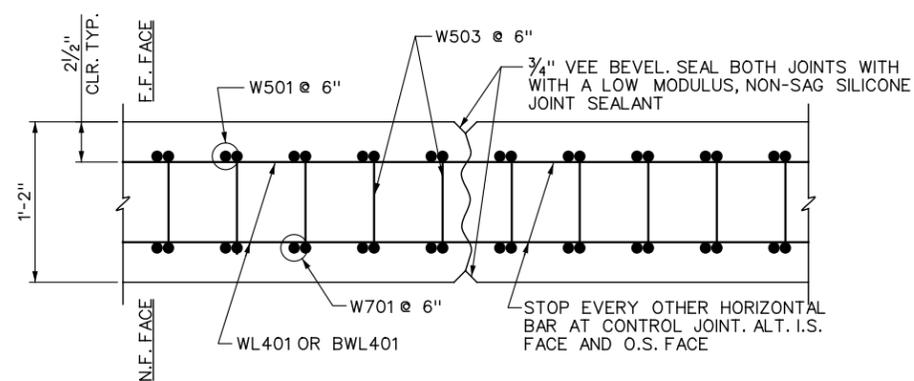
**SLAB / WALL ISOLATION JOINT DETAIL**  
ELEVATION VIEW - NTS



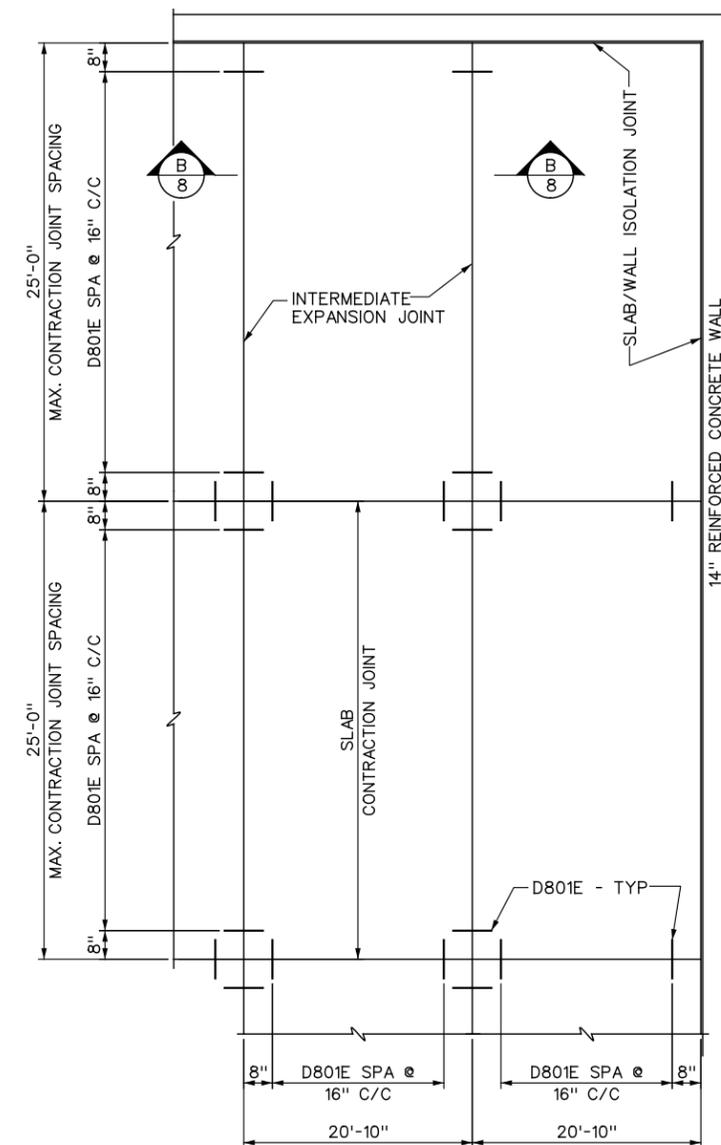
**SLAB CONTRACTION JOINT DETAIL**  
ELEVATION VIEW - NTS



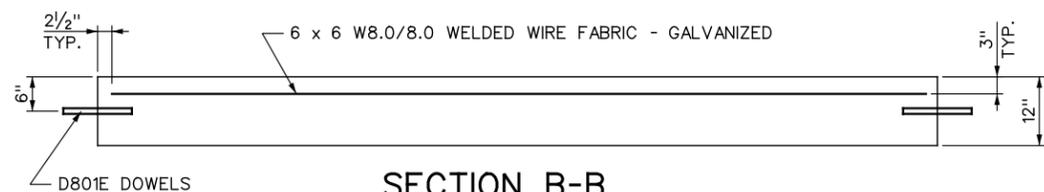
**INTERMEDIATE EXPANSION JOINT DETAIL**  
ELEVATION VIEW - NTS



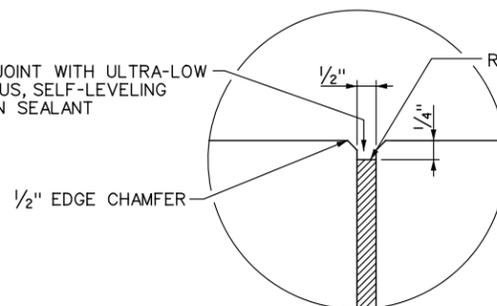
**WALL CONTRACTION JOINT DETAIL**  
PLAN VIEW - NTS



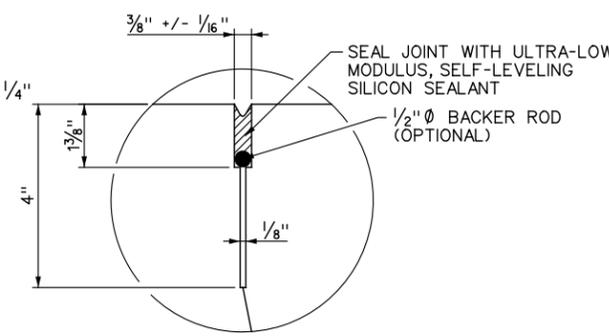
**SLAB LAYOUT DETAIL**  
PLAN VIEW - NTS



**SECTION B-B**  
(TYPICAL SLAB ELEV. - INTERIOR PANEL)



**DETAIL "A"**



**DETAIL "B"**

REVISION NUMBER	SHEET NUMBER	REVISION	DATE	BY

**HNTB** HNTB CORPORATION  
ENGINEERS ARCHITECTS PLANNERS

**WEST VIRGINIA TURNPIKE**  
BECKLEY MAINTENANCE FACILITY SALT STORAGE BUILDING  
**SLAB AND JOINT**  
**DETAILS**

6/30/2014

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6/30/2014

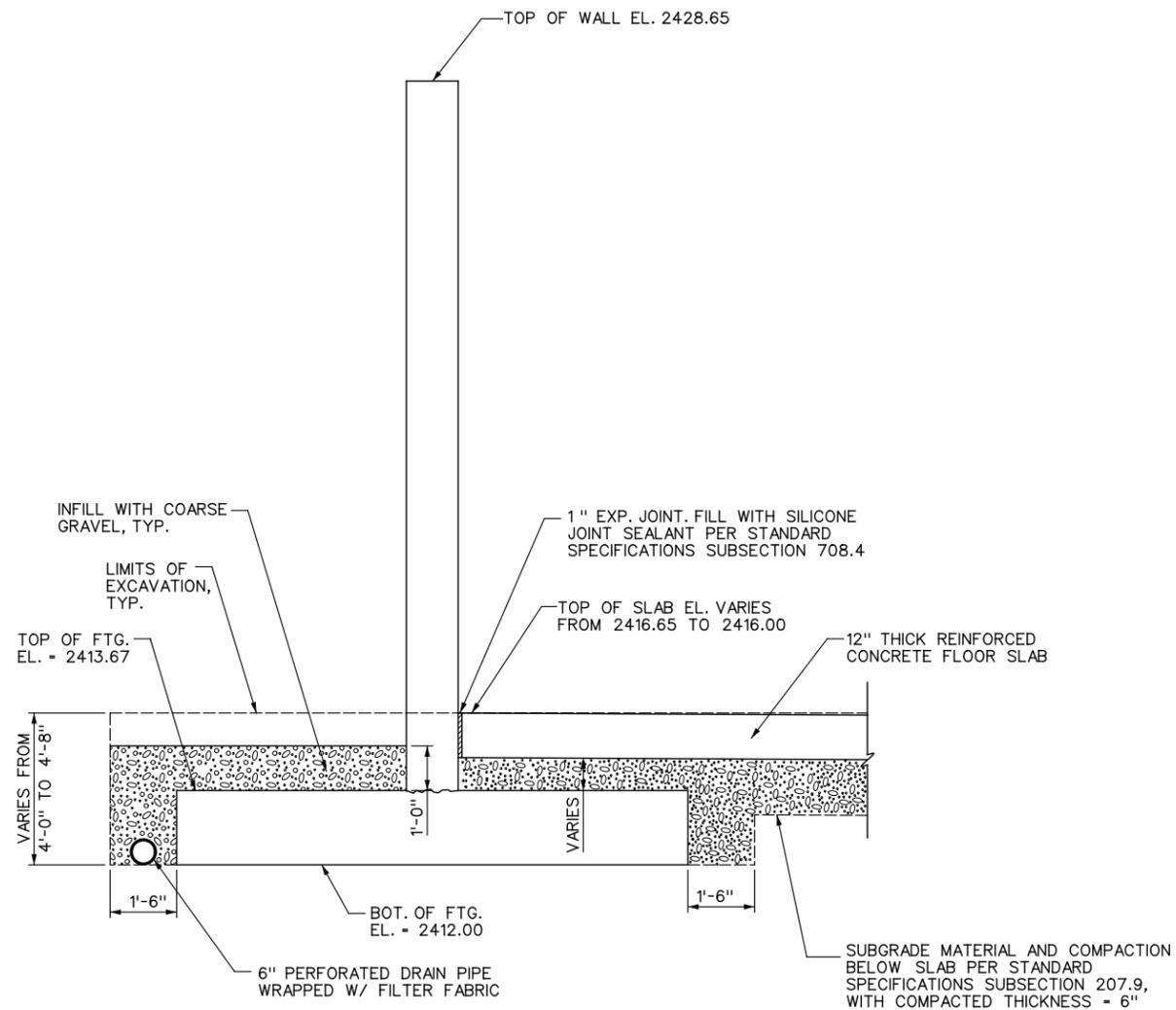
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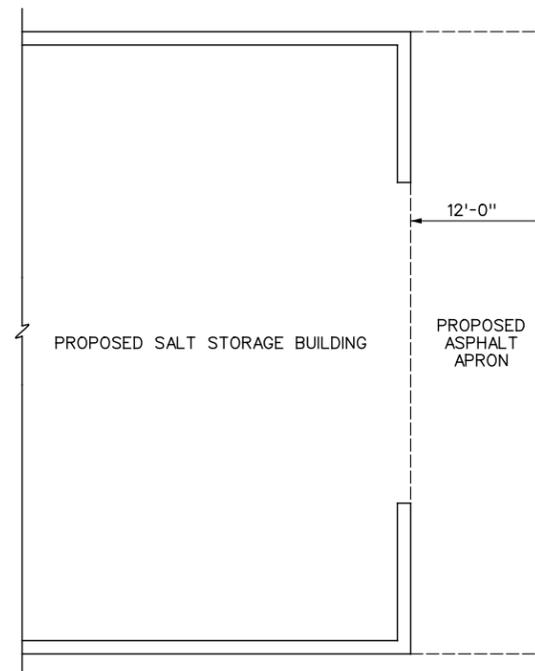
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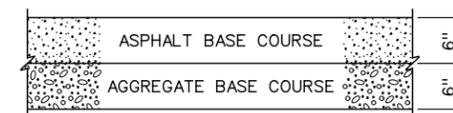
**EXCAVATION LIMITS AND MISCELLANEOUS DETAILS**

SCALE : 2 ft.



**ASPHALT APRON DETAIL**

SCALE : 2 ft.



**ASPHALT APRON SECTION**

N.T.S.

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**WEST VIRGINIA TURNPIKE**  
BECKLEY MAINTENANCE FACILITY SALT STORAGE BUILDING  
**EXCAVATION LIMITS  
AND DETAILS**

REVISION NUMBER	SHEET NUMBER	REVISION	DATE	BY

Fiscal Year	County	Sheet No.	Total Sheets
2014	RALEIGH	10	12

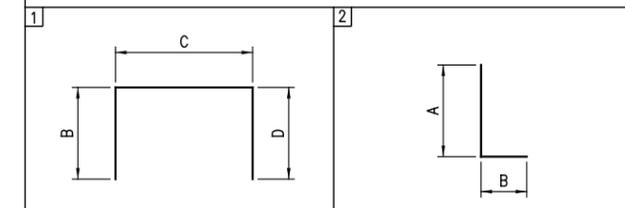
SALT STORAGE BUILDING REINFORCING BAR LIST

MARK	QTY	SIZE	TYPE	LENGTH	A	B	C	D	WEIGHT	
									COATED	UNCOATED
W401	136	4	2	3'-2"	2'-2"	1'-0"	-	-	-	288
W402	68	4	2	3'-0"	1'-6"	1'-6"	-	-	-	136
W403	132	4	1	4'-9"	-	2'-0"	0'-9"	2'-0"	-	419
WL401	204	4	STR	40'-0"	-	-	-	-	-	5 451
WL402	68	4	STR	11'-5"	-	-	-	-	-	519
BWL401	34	4	STR	40'-0"	-	-	-	-	-	909
BWL402	34	4	STR	38'-5"	-	-	-	-	-	873
FWL401	68	4	STR	25'-3"	-	-	-	-	-	1147
W501	761	5	STR	14'-7 <sup>3</sup> / <sub>4</sub> "	-	-	-	-	-	11 625
W502	761	5	2	6'-0"	5'-0"	1'-0"	-	-	-	4 763
W503	791	5	1	4'-9"	-	2'-0"	0'-9"	2'-0"	-	3 919
W701	757	7	STR	14'-7 <sup>3</sup> / <sub>4</sub> "	-	-	-	-	-	22 662
W702	757	7	2	6'-0"	5'-0"	1'-0"	-	-	-	9 284
F701	1560	7	1	13'-0"	-	1'-0"	11'-0"	1'-0"	-	41 452
FL501	160	5	STR	40'-0"	-	-	-	-	-	6 675
FL502	32	5	STR	10'-4"	-	-	-	-	-	345
FL503	32	5	STR	21'-10"	-	-	-	-	-	729
(OPTIONAL) D801E	514	8	STR	1'-6"	-	-	-	-	-	2 059
TOTAL									2 059	111 196

LAP SPLICE TABLE

BAR SIZE	*4	*5	*6	*7	*8
LAP LENGTH	18"	20"	24"	30"	39"

BENDING DIAGRAMS



6/30/2014

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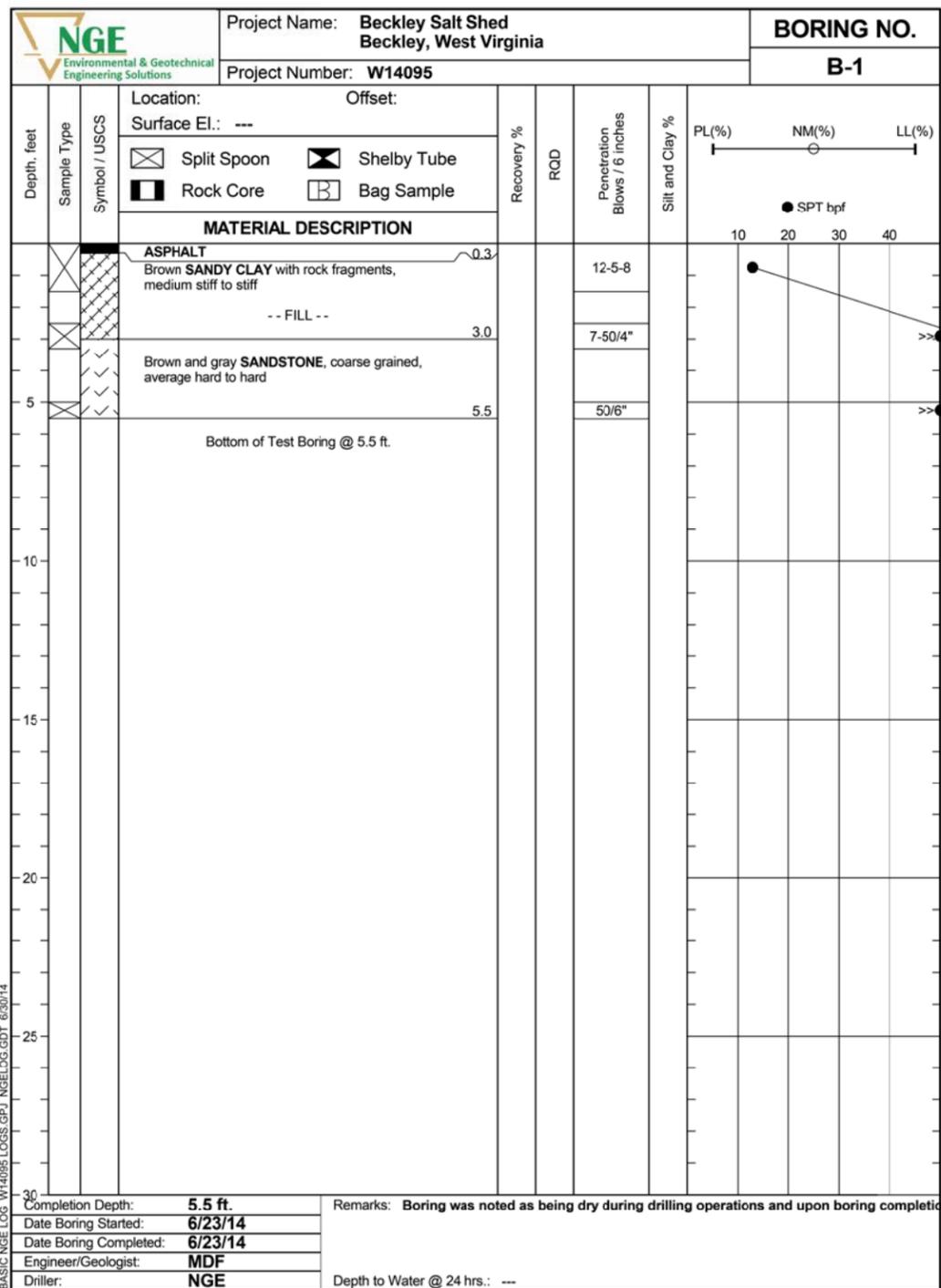
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**HNTB** HNTB CORPORATION  
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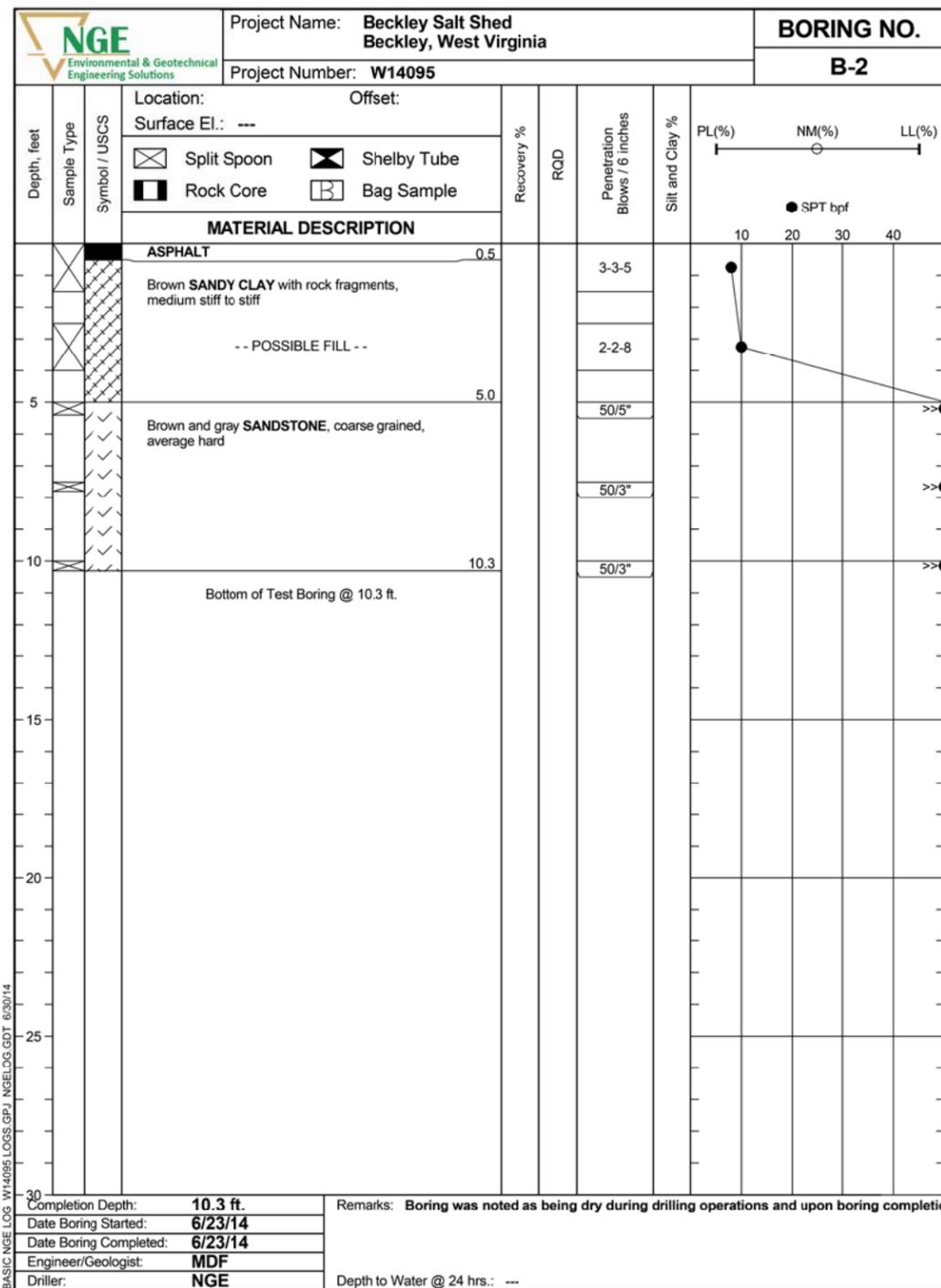
WEST VIRGINIA TURNPIKE  
BECKLEY MAINTENANCE FACILITY SALT STORAGE BUILDING

REINFORCING BAR LIST

REVISION NUMBER	SHEET NUMBER	REVISION	DATE	BY



Novel Geo-Environmental      The stratification lines represent approximate strata boundaries. In situations, the transition may be gradual.



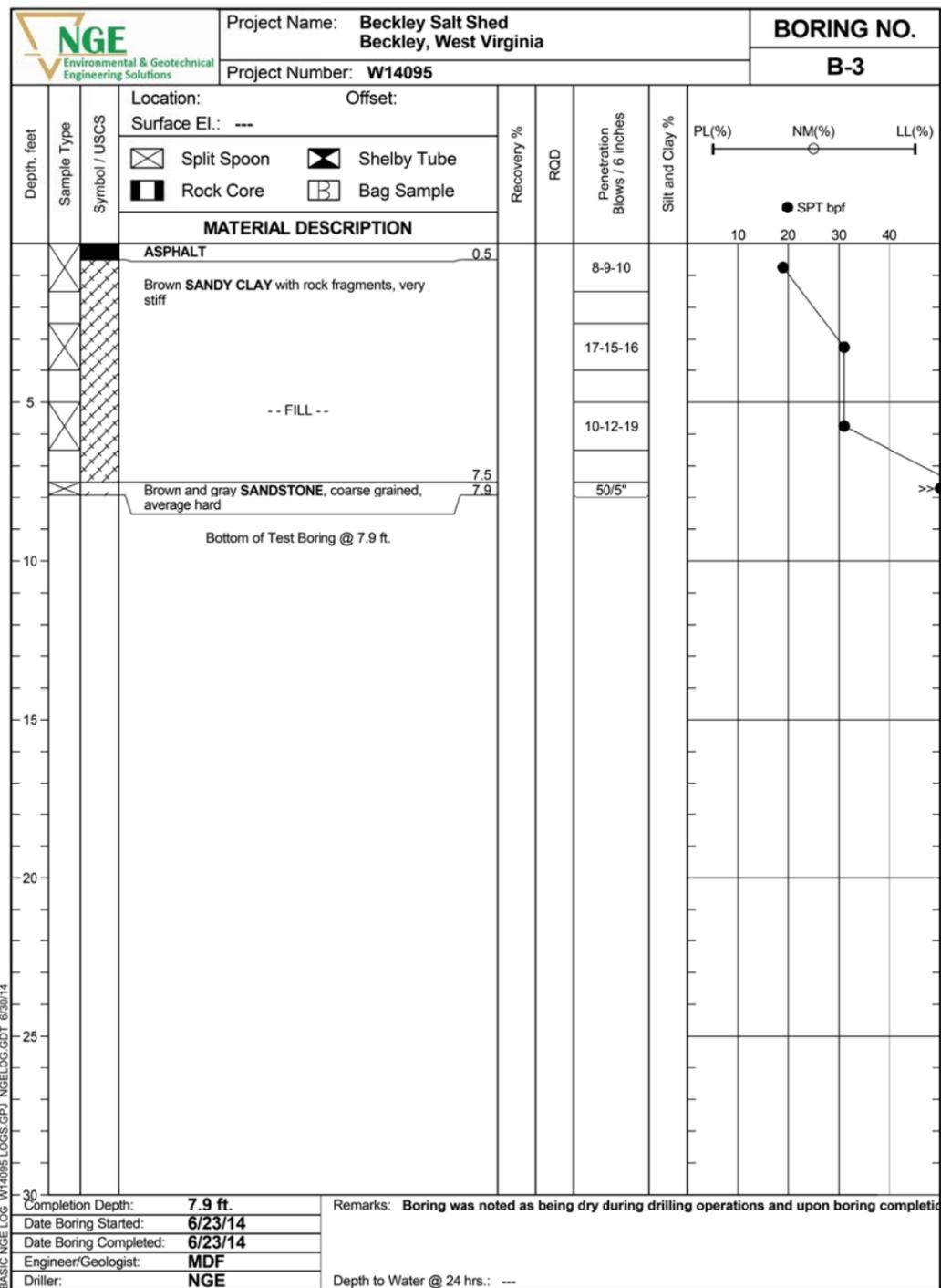
Novel Geo-Environmental      The stratification lines represent approximate strata boundaries. In situations, the transition may be gradual.

REVISION NUMBER	SHEET NUMBER	REVISION	DATE	BY

6/30/2014

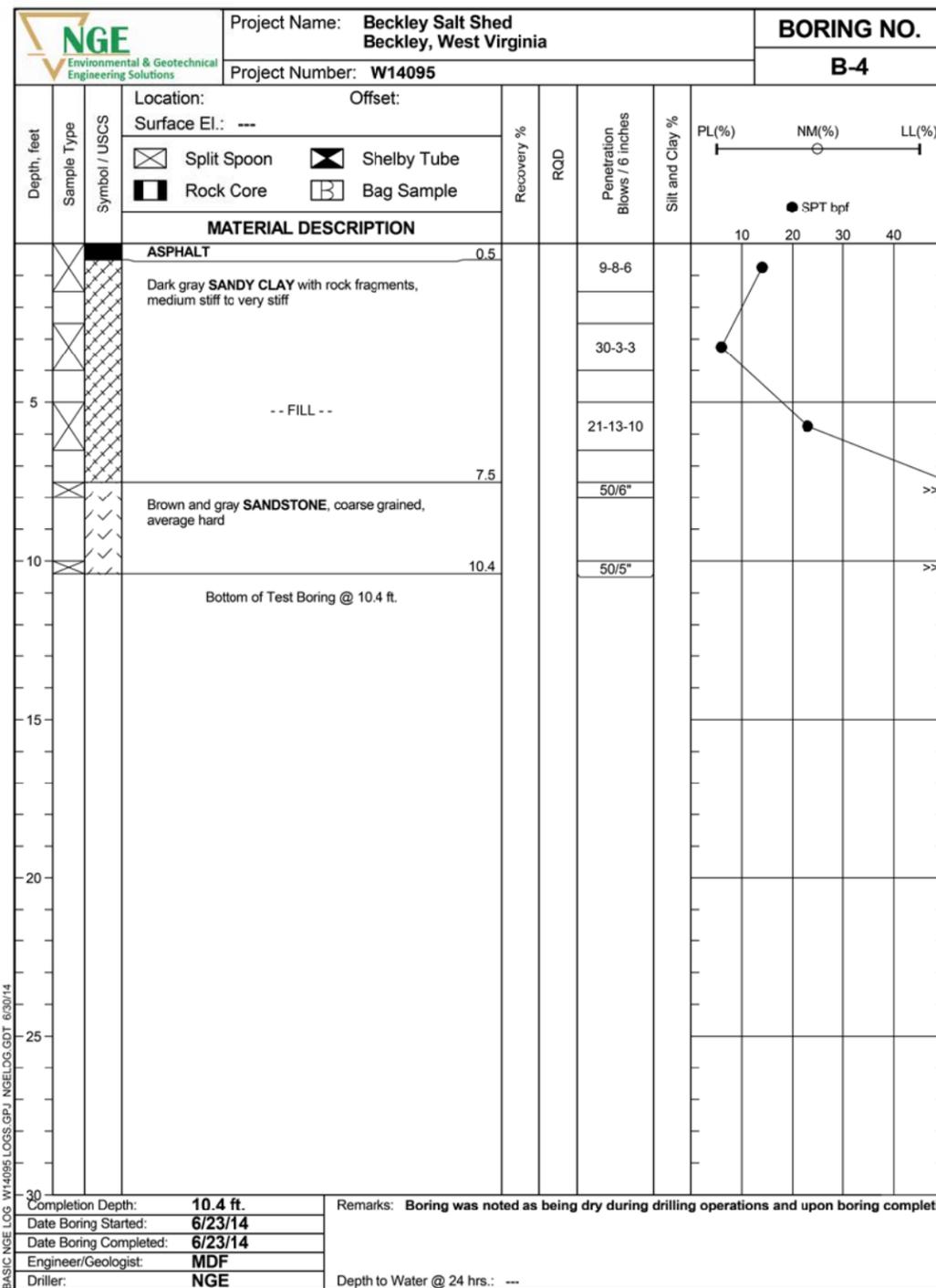
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Novel Geo-Environmental

The stratification lines represent approximate strata boundaries. In situations, the transition may be gradual.



Novel Geo-Environmental

The stratification lines represent approximate strata boundaries. In situations, the transition may be gradual.

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**WEST VIRGINIA TURNPIKE**  
BECKLEY MAINTENANCE FACILITY SALT STORAGE BUILDING

**BORING LOGS 2 OF 2**

REVISION NUMBER	SHEET NUMBER	REVISION	DATE	BY

6/30/2014

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