REFERENCE

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DESCRIPTION

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TITLE SHEET

SITE PLAN

SHEET NO.

5834 4

STATE OF NORTH CAROLINA

DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS GEOTECHNICAL ENGINEERING UNIT

STRUCTURE SUBSURFACE INVESTIGATION

COUNTY _		TION SR	1598 (D	OICKINSON	I
AVENUL					
SITE DES	CRIPTION .	WALLS	1–7		

STATE PROJECT REFERENCE NO. U-5606

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 (1919) 707-6850. THE SUBSURFACE PLANS AND REPORTS, FIELD BORING LOGS, ROCK CORES AND SOIL TEST DATA ARE NOT 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 (IM-PLACE) TEST DATA CAN BE RELIED ON ONLY TO THE DEGREE OF RELIABILITY INHERENT IN THE STANDARD TEST METHOD. THE DESTREAD FOR THE DESCRIPTION THE SUBSURFACE INVESTIGATIONS ARE AS RECORDED AT THE TIME OF THE INVESTIGATION, THESE WATER LEVELS OR SOIL MOISTURE CONDITIONS INDICATED IN THE SUBSURFACE INVESTIGATIONS ANE AS RECORDED AT THE TIME OF THE INVESTIGATION, THESE WATER LEVELS OR SOIL MOISTURE CONDITIONS MAY YARY CONSIDERABLY WITH TIME ACCORDING TO CLIMATIC CONDITIONS INCLUDING TEMPERATURES, PRECIPITATION AND WIND, AS WELL AS OTHER NON-CLIMATIC FACTORS,

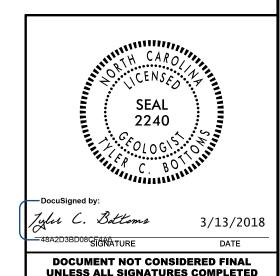
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- IES;
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 OF TRANSPORTATION AS ACCURATE NOR IS IT CONSIDERED PART OF THE PLANS, SPECIFICATIONS
 OR CONTRACT FOR THE PROJECT.
 BY HAVING REQUESTED THIS INFORMATION, THE CONTRACTOR SPECIFICALLY WAIVES 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.

PERSONNEL ZIMARINO, S. N. SMITH, R. E. EDMONDSON, I. M. INVESTIGATED BY <u>BOT</u>TOMS, T. C. DRAWN BY _CORNETTE, C. J. CHECKED BY ARGENBRIGHT, D. N.

SUBMITTED BY ARGENBRIGHT, D. N.

DATE JANUARY 2018



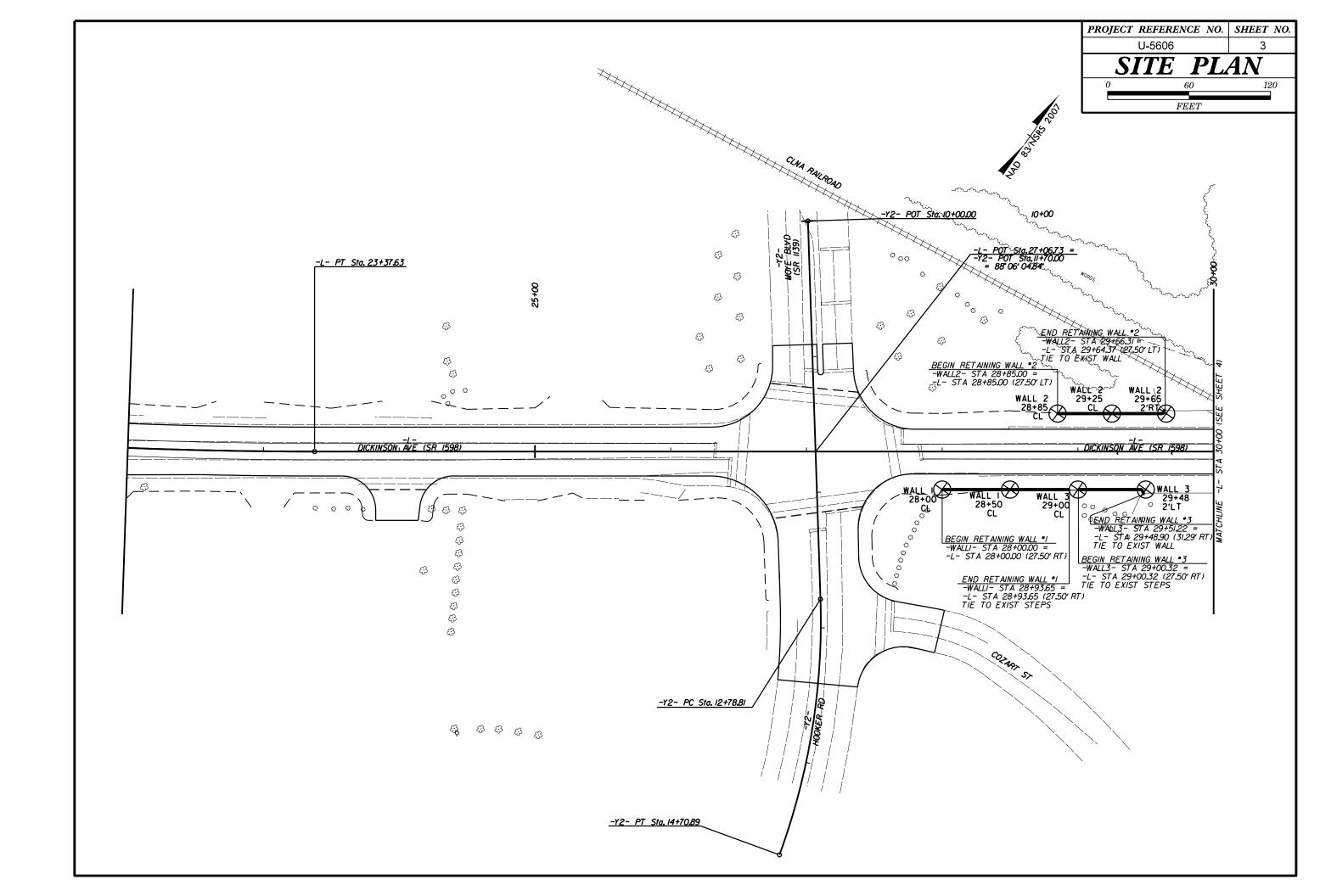
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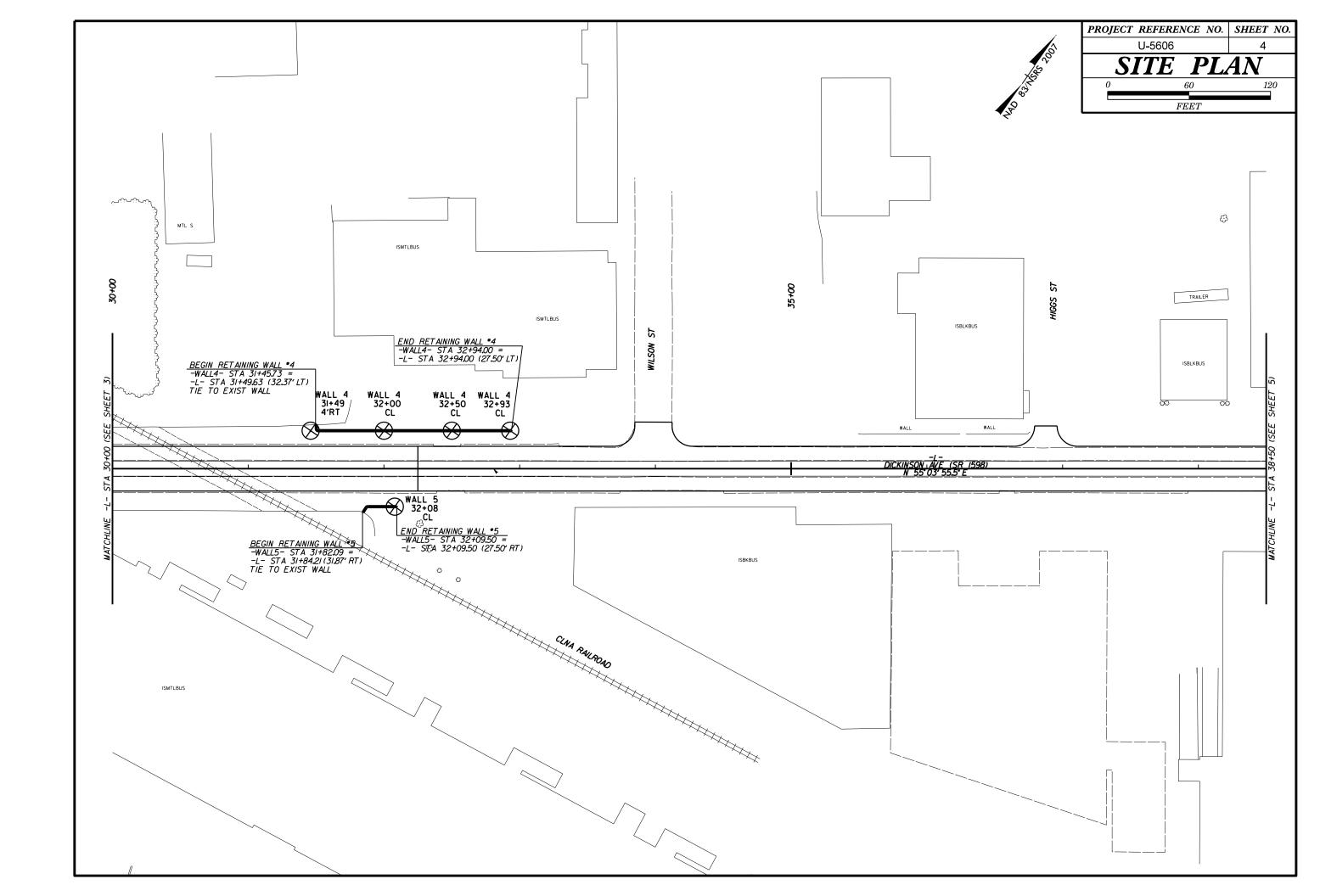
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS GEOTECHNICAL ENGINEERING UNIT

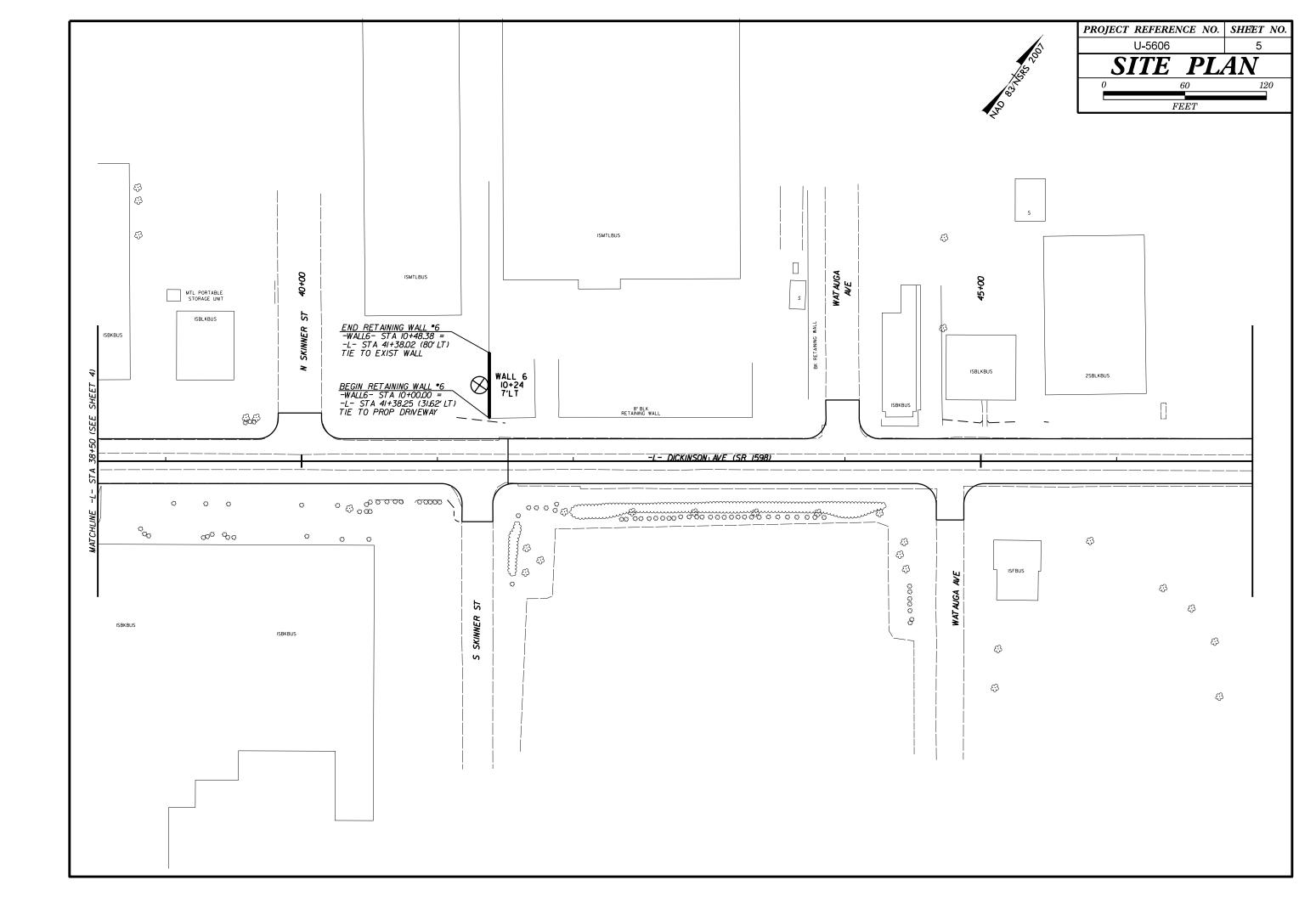
SUBSURFACE INVESTIGATION

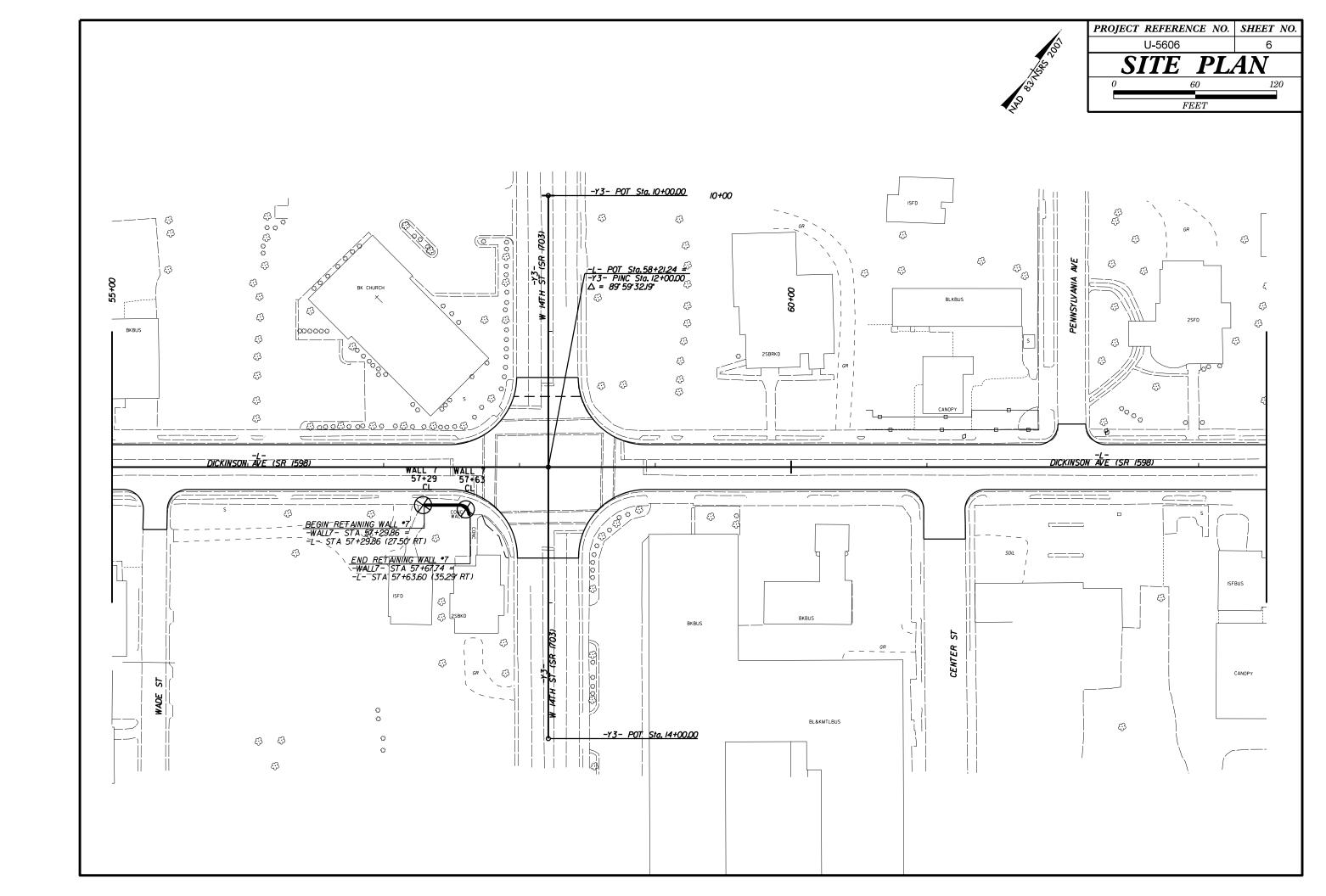
SOIL AND ROCK LEGEND, TERMS, SYMBOLS, AND ABBREVIATIONS

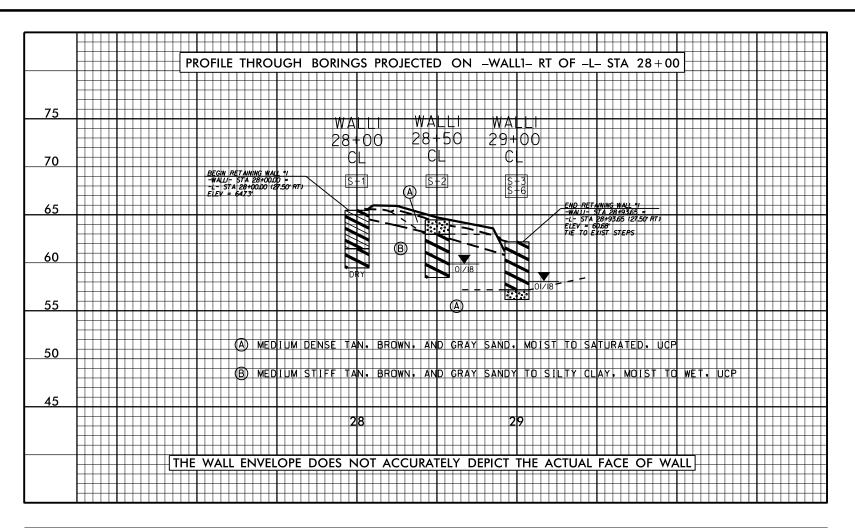
SOIL DESCRIPTION	GRADATION	ROCK DESCRIPTION	TERMS AND DEFINITIONS
SOIL IS CONSIDERED UNCONSOLIDATED, SEMI-CONSOLIDATED, OR WEATHERED EARTH MATERIALS THAT CAN BE PENETRATED WITH A CONTINUOUS FLIGHT POWER AUGER AND YIELD LESS THAN 100 BLOWS PER FOOT	WELL GRADED - INDICATES A GOOD REPRESENTATION OF PARTICLE SIZES FROM FINE TO COARSE. UNIFORMLY GRADED - INDICATES THAT SOIL PARTICLES ARE ALL APPROXIMATELY THE SAME SIZE.	HARD ROCK IS NON-COASTAL PLAIN MATERIAL THAT WOULD YIELD SPT REFUSAL IF TESTED. AN INFERRED ROCK LINE INDICATES THE LEVEL AT WHICH NON-COASTAL PLAIN MATERIAL WOULD YIELD SPT REFUSAL.	ALLUYIUM (ALLUY.) - SOILS THAT HAVE BEEN TRANSPORTED BY WATER.
ACCORDING TO THE STANDARD PENETRATION TEST (AASHTO T 206, ASTM D1586). SOIL CLASSIFICATION	GAP-GRADED - INDICATES A MIXTURE OF UNIFORM PARTICLE SIZES OF TWO OR MORE SIZES.	SPT REFUSAL IS PENETRATION BY A SPLIT SPOON SAMPLER EQUAL TO OR LESS THAN 0.1 FOOT PER 60 BLOWS IN NON-COASTAL PLAIN MATERIAL, THE TRANSITION BETWEEN SOIL AND ROCK IS OFTEN	ADUIFER - A WATER BEARING FORMATION OR STRATA.
IS BASED ON THE AASHTO SYSTEM. BASIC DESCRIPTIONS GENERALLY INCLUDE THE FOLLOWING: CONSISTENCY, COLOR, TEXTURE, MOISTURE, AASHTO CLASSIFICATION, AND OTHER PERTINENT FACTORS SUCH	ANGULARITY OF GRAINS	REPRESENTED BY A ZONE OF WEATHERED ROCK.	ARENACEOUS - APPLIED TO ROCKS THAT HAVE BEEN DERIVED FROM SAND OR THAT CONTAIN SAND.
AS MINERALOGICAL COMPOSITION, ANGULARITY, STRUCTURE, PLASTICITY, ETC. FOR EXAMPLE, VERY STIFF, GRAY, SILTY CLAY, MOIST WITH INTERBEDDED FINE SAND LAYERS, HIGHLY PLASTIC, A-7-6	THE ANGULARITY OR ROUNDNESS OF SOIL GRAINS IS DESIGNATED BY THE TERMS:	ROCK MATERIALS ARE TYPICALLY DIVIDED AS FOLLOWS:	ARGILLACEOUS - APPLIED TO ALL ROCKS OR SUBSTANCES COMPOSED OF CLAY MINERALS, OR HAVING A NOTABLE PROPORTION OF CLAY IN THEIR COMPOSITION, SUCH AS SHALE, SLATE, ETC.
SOIL LEGEND AND AASHTO CLASSIFICATION	ANGULAR, <u>SUBANGULAR</u> , <u>SUBROUNDED</u> , OR <u>ROUNDED</u> .	WEATHERED // NON-COASTAL PLAIN MATERIAL THAT WOULD YIELD SPT N VALUES > ROCK (WR) 100 BLOWS PER FOOT IF TESTED.	ARTESIAN - GROUND WATER THAT IS UNDER SUFFICIENT PRESSURE TO RISE ABOVE THE LEVEL AT
GENERAL GRANULAR MATERIALS SILT-CLAY MATERIALS ORGANIC MATERIALS	MINERALOGICAL COMPOSITION	CRYSTALLINE CRYSTALLINE CRYSTALLINE	WHICH IT IS ENCOUNTERED, BUT WHICH DOES NOT NECESSARILY RISE TO OR ABOVE THE GROUND
LLASS. (≤ 35% PASSING "2000) (> 35% PASSING "2000)	MINERAL NAMES SUCH AS QUARTZ, FELDSPAR, MICA, TALC, KAQLIN, ETC. ARE USED IN DESCRIPTIONS WHEN THEY ARE CONSIDERED OF SIGNIFICANCE.	ROCK (CR) WOULD YIELD SPT REFUSAL IF TESTED. ROCK TYPE INCLUDES GRANITE, GNEISS, GABBRO, SCHIST, ETC.	SURFACE. <u>CALCAREOUS (CALC.)</u> - SOILS THAT CONTAIN APPRECIABLE AMOUNTS OF CALCIUM CARBONATE.
GROUP A-1 A-3 A-2 A-4 A-5 A-6 A-7 A-1, A-2 A-4, A-5 CLASS. A-1-a A-1-b A-2-4 A-2-5 A-2-6 A-2-7 B-2-6 A-2-7 A-4-8-5 A-3 A-6, A-7	COMPRESSIBILITY	NON-CRYSTALLINE FINE TO COARSE GRAIN METAMORPHIC AND NON-COASTAL PLAIN	COLLUVIUM - ROCK FRAGMENTS MIXED WITH SOIL DEPOSITED BY GRAVITY ON SLOPE OR AT BOTTOM
SYMBOL COCCOCCOCCOCCOCCOCCOCCOCCOCCOCCOCCOCCOC	SLIGHTLY COMPRESSIBLE LL < 31	ROCK TYPE INCLUDES PHYLLITE, SLATE, SANDSTONE, ETC.	OF SLOPE.
2. PASSING	MODERATELY COMPRESSIBLE LL = 31 - 50 HIGHLY COMPRESSIBLE LL > 50	COASTAL PLAIN COASTAL PLAIN SEDIMENTS CEMENTED INTO ROCK, BUT MAY NOT YIELD SEDIMENTARY ROCK SPT REFUSAL. ROCK TYPE INCLUDES LIMESTONE, SANDSTONE, CEMENTED	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.
"10 50 MX GRANULAR SIL1" MUCK,	PERCENTAGE OF MATERIAL	CP) SHELL BEDS, ETC. WEATHERING	DIKE - A TABULAR BODY OF IGNEOUS ROCK THAT CUTS ACROSS THE STRUCTURE OF ADJACENT
*40 30 MX 50 MX 51 MN PEAT SOILS SOI	GRANULAR SILT - CLAY ORGANIC MATERIAL SOILS SOILS OTHER MATERIAL	FRESH ROCK FRESH, CRYSTALS BRIGHT, FEW JOINTS MAY SHOW SLIGHT STAINING, ROCK RINGS UNDER	ROCKS OR CUTS MASSIVE ROCK.
MATERIAL	TRACE OF ORGANIC MATTER 2 - 3% 3 - 5% TRACE 1 - 10%	HAMMER IF CRYSTALLINE.	DIP - THE ANGLE AT WHICH A STRATUM OR ANY PLANAR FEATURE IS INCLINED FROM THE HORIZONTAL.
PASSING *40	LITTLE ORGANIC MATTER 3 - 5% 5 - 12% LITTLE 10 - 20% MODERATELY ORGANIC 5 - 10% 12 - 20% SOME 20 - 35%	VERY SLIGHT ROCK GENERALLY FRESH, JOINTS STAINED, SOME JOINTS MAY SHOW THIN CLAY COATINGS IF OPEN,	DIP DIRECTION (DIP AZIMUTH) - THE DIRECTION OR BEARING OF THE HORIZONTAL TRACE OF THE
PI 6 MX NP 10 MX 10 MX 11 MN 11 MN 10 MX 10 MX 11 MN 11 MN LITILE UR HIGHLY	HIGHLY ORGANIC > 10% > 20% HIGHLY 35% AND ABOVE	(V SLI.) CRYSTALS ON A BROKEN SPECIMEN FACE SHINE BRIGHTLY. ROCK RINGS UNDER HAMMER BLOWS IF OF A CRYSTALLINE NATURE.	LINE OF DIP, MEASURED CLOCKWISE FROM NORTH.
GROUP INDEX 0 0 0 4 MX 8 MX 12 MX 16 MX NO MX AMOUNTS OF SOILS	GROUND WATER	SLIGHT ROCK GENERALLY FRESH, JOINTS STAINED AND DISCOLORATION EXTENDS INTO ROCK UP TO	FAULT - A FRACTURE OR FRACTURE ZONE ALONG WHICH THERE HAS BEEN DISPLACEMENT OF THE SIDES RELATIVE TO ONE ANOTHER PARALLEL TO THE FRACTURE.
USUAL TYPES STONE FRAGS. FINE SILTY OR CLAYEY SILTY CLAYEY MATTER		(SLI.) 1 INCH. OPEN JOINTS MAY CONTAIN CLAY. IN GRANITOID ROCKS SOME OCCASIONAL FELDSPAR CRYSTALS ARE DULL AND DISCOLORED. CRYSTALLINE ROCKS RING UNDER HAMMER BLOWS.	FISSILE - A PROPERTY OF SPLITTING ALONG CLOSELY SPACED PARALLEL PLANES.
OF MAJOR GRAVEL, AND SAND GRAVEL AND SAND SOILS SOILS	lacktright static water level after 24 hours	MODERATE SIGNIFICANT PORTIONS OF ROCK SHOW DISCOLORATION AND WEATHERING EFFECTS. IN	FLOAT - ROCK FRAGMENTS ON SURFACE NEAR THEIR ORIGINAL POSITION AND DISLODGED FROM
GEN. RATING EXCELLENT TO GOOD FAIR TO POOR POOR UNSUITABLE	∇PW PERCHED WATER, SATURATED ZONE, OR WATER BEARING STRATA	(MOD.) GRANITOID ROCKS, MOST FELDSPARS ARE DULL AND DISCOLORED, SOME SHOW CLAY. ROCK HAS	PARENT MATERIAL.
AS SUBGRADE POOR POOR ONSUTHBEE	SPRING OR SEEP	DULL SOUND UNDER HAMMER BLOWS AND SHOWS SIGNIFICANT LOSS OF STRENGTH AS COMPARED WITH FRESH ROCK.	FLOOD PLAIN (FP) - LAND BORDERING A STREAM, BUILT OF SEDIMENTS DEPOSITED BY THE STREAM.
PI OF A-7-5 SUBGROUP IS ≤ LL - 30 ;PI OF A-7-6 SUBGROUP IS > LL - 30	-	MODERATELY ALL ROCK EXCEPT QUARTZ DISCOLORED OR STAINED. IN GRANITOID ROCKS, ALL FELDSPARS DULL	FORMATION (FM.) - A MAPPABLE GEOLOGIC UNIT THAT CAN BE RECOGNIZED AND TRACED IN THE FIELD.
CONSISTENCY OR DENSENESS RANGE OF STANDARD RANGE OF UNCONFINED	MISCELLANEOUS SYMBOLS	SEVERE AND DISCOLORED AND A MAJORITY SHOW KAOLINIZATION, ROCK SHOWS SEVERE LOSS OF STRENGTH (MOD. SEV.) AND CAN BE EXCAVATED WITH A GEOLOGIST'S PICK, ROCK GIVES 'CLUNK' SOUND WHEN STRUCK.	JOINT - FRACTURE IN ROCK ALONG WHICH NO APPRECIABLE MOVEMENT HAS OCCURRED.
PRIMARY SOIL TYPE COMPACTNESS OR PENETRATION RESISTENCE COMPRESSIVE STRENGTH	ROADWAY EMBANKMENT (RE) ROADWAY EMBANKMENT (RE) ROADWAY EMBANKMENT (RE) STORES OF ROCK STRUCTURES	<u>IF TESTED, WOULD YIELD SPT REFUSAL</u>	LEDGE - A SHELF-LIKE RIDGE OR PROJECTION OF ROCK WHOSE THICKNESS IS SMALL COMPARED TO
VERY LOOSE (4	SPT C SLOPE INDICATOR	SEVERE ALL ROCK EXCEPT QUARTZ DISCOLORED OR STAINED, ROCK FABRIC CLEAR AND EVIDENT BUT REDUCED IN STRENGTH TO STRONG SOIL. IN GRANITOID ROCKS ALL FELDSPARS ARE KAOLINIZED	ITS LATERAL EXTENT.
GRANII AR LOOSE 4 TO 10	SOIL SYMBOL OPT ONT TEST BORING INSTALLATION SECTION INSTALLATION	TO SOME EXTENT. SOME FRAGMENTS OF STRONG ROCK USUALLY REMAIN.	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
MATERIAL DENSE 10 10 30 N/A	ARTIFICIAL FILL (AF) OTHER AUGER BORING CONE PENETROMETER THAN ROADWAY EMBANKMENT AUGER BORING TEST	IF TESTED, WOULD YIELD SPT N VALUES > 100 BPF VERY ALL ROCK EXCEPT QUARTZ DISCOLORED OR STAINED, ROCK FABRIC ELEMENTS ARE DISCERNIBLE	USUALLY INDICATES POOR AERATION AND LACK OF GOOD DRAINAGE.
(NON-COHESIVE) VERY DENSE > 50	THE THE TOTAL PROPERTY OF THE STATE OF THE S	SEVERE BUT MASS IS EFFECTIVELY REDUCED TO SOIL STATUS, WITH ONLY FRAGMENTS OF STRONG ROCK	PERCHED WATER - WATER MAINTAINED ABOVE THE NORMAL GROUND WATER LEVEL BY THE PRESENCE
VERY SOFT < 2 < 0.25 GENERALLY SOFT 2 TO 4 0.25 TO 0.5	— INFERRED SOIL BOUNDARY — CORE BORING SOUNDING ROD	(V SEV.) REMAINING. SAPROLITE IS AN EXAMPLE OF ROCK WEATHERED TO A DEGREE THAT ONLY MINOR VESTIGES OF ORIGINAL ROCK FABRIC REMAIN. <u>IF TESTED, WOULD YIELD SPT N VALUES < 100 BPF</u>	OF AN INTERVENING IMPERVIOUS STRATUM. RESIDUAL (RES.) SOIL - SOIL FORMED IN PLACE BY THE WEATHERING OF ROCK.
SILT-CLAY MEDIUM STIFF 4 TO 8 0.5 TO 1.0	INFERRED ROCK LINE MONITORING WELL TEST BORING WITH CORE	COMPLETE ROCK REDUCED TO SOIL. ROCK FABRIC NOT DISCERNIBLE, OR DISCERNIBLE ONLY IN SMALL AND	ROCK QUALITY DESIGNATION (ROD) - A MEASURE OF ROCK QUALITY DESCRIBED BY TOTAL LENGTH OF
MATERIAL STIFF 8 TO 15 1 TO 2	A ALLINYAL CON POUNDARY A PIEZOMETER	SCATTERED CONCENTRATIONS. QUARTZ MAY BE PRESENT AS DIKES OR STRINGERS. SAPROLITE IS ALSO AN EXAMPLE.	ROCK SEGMENTS EQUAL TO OR GREATER THAN 4 INCHES DIVIDED BY THE TOTAL LENGTH OF CORE
HARD > 30 > 4	INSTREERITOR	ROCK HARDNESS	RUN AND EXPRESSED AS A PERCENTAGE. SAPROLITE (SAP.) - RESIDUAL SOIL THAT RETAINS THE RELIC STRUCTURE OR FABRIC OF THE PARENT
TEXTURE OR GRAIN SIZE	RECOMMENDATION SYMBOLS	VERY HARD CANNOT BE SCRATCHED BY KNIFE OR SHARP PICK. BREAKING OF HAND SPECIMENS REQUIRES	ROCK.
U.S. STD. SIEVE SIZE 4 10 40 60 200 270 OPENING (MM) 4.76 2.00 0.42 0.25 0.075 0.053	UNDERCUT UNCLASSIFIED EXCAVATION - UNCLASSIF	SEVERAL HARD BLOWS OF THE GEOLOGIST'S PICK.	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
COARSE FINE	SHALLOW UNCLASSIFIED EXCAVATION - USED IN THE TOP 3 FEET OF EMBANKMENT OR BACKFILL	HARD CAN BE SCRATCHED BY KNIFE OR PICK ONLY WITH DIFFICULTY. HARD HAMMER BLOWS REQUIRED TO DETACH HAND SPECIMEN.	THE BEDDING OR SCHISTOSITY OF THE INTRUDED ROCKS.
BOULDER COBBLE GRAVEL SAND SAND SILT CLAY		MODERATELY CAN BE SCRATCHED BY KNIFE OR PICK. GOUGES OR GROOVES TO 0.25 INCHES DEEP CAN BE	SLICKENSIDE - POLISHED AND STRIATED SURFACE THAT RESULTS FROM FRICTION ALONG A FAULT
GRAIN MM 305 75 2.0 0.25 0.05 0.005	ABBRE VIATIONS AR - AUGER REFUSAL MED MEDIUM VST - VANE SHEAR TEST	HARD EXCAVATED BY HARD BLOW OF A GEOLOGIST'S PICK. HAND SPECIMENS CAN BE DETACHED BY MODERATE BLOWS.	OR SLIP PLANE. STANDARD PENETRATION TEST (PENETRATION RESISTANCE) (SPT) - NUMBER OF BLOWS (N OR BPF) OF
SIZE IN. 12 3	BT - BORING TERMINATED MICA MICACEOUS WEA WEATHERED	MEDIUM CAN BE GROOVED OR GOUGED 0.05 INCHES DEEP BY FIRM PRESSURE OF KNIFE OR PICK POINT.	A 140 LB. HAMMER FALLING 30 INCHES REQUIRED TO PRODUCE A PENETRATION OF 1 FOOT INTO SOIL
SOIL MOISTURE - CORRELATION OF TERMS	CL CLAY MOD MODERATELY 7 - UNIT WEIGHT CPT - CONE PENETRATION TEST NP - NON PLASTIC 7 - DRY UNIT WEIGHT	HARD CAN BE EXCAVATED IN SMALL CHIPS TO PEICES 1 INCH MAXIMUM SIZE BY HARD BLOWS OF THE POINT OF A GEOLOGIST'S PICK.	WITH A 2 INCH OUTSIDE DIAMETER SPLIT SPOON SAMPLER. SPT REFUSAL IS PENETRATION EQUAL TO OR LESS THAN 0.1 FOOT PER 60 BLOWS.
SOIL MOISTURE SCALE FIELD MOISTURE CHIDE FOR FIELD MOISTURE DESCRIPTION	CSE COARSE ORG ORGANIC	SOFT CAN BE GROVED OR GOUGED READILY BY KNIFE OR PICK. CAN BE EXCAVATED IN FRAGMENTS	STRATA CORE RECOVERY (SREC.) - TOTAL LENGTH OF STRATA MATERIAL RECOVERED DIVIDED BY
(ATTERBERG LIMITS) DESCRIPTION GOIDE FOR FILES HOLDTONE BESCRIPTION	DMT - DILATOMETER TEST PMT - PRESSUREMETER TEST <u>SAMPLE ABBREVIATIONS</u> DPT - DYNAMIC PENETRATION TEST SAP SAPROLITIC S - BULK	FROM CHIPS TO SEVERAL INCHES IN SIZE BY MODERATE BLOWS OF A PICK POINT. SMALL, THIN PIECES CAN BE BROKEN BY FINGER PRESSURE.	TOTAL LENGTH OF STRATUM AND EXPRESSED AS A PERCENTAGE.
- SATURATED - USUALLY LIQUID; VERY WET, USUALLY (SAT.) FROM BELOW THE GROUND WATER TABLE	e - VOID RATIO SD SAND, SANDY SS - SPLIT SPOON	VERY CAN BE CARVED WITH KNIFE. CAN BE EXCAVATED READILY WITH POINT OF PICK, PIECES 1 INCH	STRATA ROCK QUALITY DESIGNATION (SRQD) - A MEASURE OF ROCK QUALITY DESCRIBED BY TOTAL LENGTH OF ROCK SEGMENTS WITHIN A STRATUM EQUAL TO OR GREATER THAN 4 INCHES DIVIDED BY
LL _ LIOUID LIMIT	FOSS FOSSILIFEROUS SLI SLIGHTLY RS - ROCK	SOFT OR MORE IN THICKNESS CAN BE BROKEN BY FINGER PRESSURE. CAN BE SCRATCHED READILY BY FINGERNAIL.	THE TOTAL LENGTH OF STRATA AND EXPRESSED AS A PERCENTAGE. TOPSOIL (TS.) - SURFACE SOILS USUALLY CONTAINING ORGANIC MATTER.
PLASTIC SEMISOLID; REQUIRES DRYING TO ATTACH CONTINUE MODELING	FRAC FRACTURED, FRACTURES TCR - TRICONE REFUSAL RT - RECOMPACTED TRIAXIAL FRAGS FRAGMENTS W - MOISTURE CONTENT CBR - CALIFORNIA BEARING	FRACTURE SPACING BEDDING	
(PI) PLASTIC LIMITATTAIN OPTIMUM MOISTURE	HI HIGHLY V - VERY RATIO	TERM SPACING TERM THICKNESS	BENCH MARK: ELEVATIONS OBTAINED FROM THE TIN FILE u5606_LS_tin.tin DATED I2-I9-20I7
- MOIST - (M) SOLID. AT OR NEAR OPTIMUM MOISTURE	EQUIPMENT USED ON SUBJECT PROJECT	VERY WIDE MORE THAN 10 FEET VERY THICKLY BEDDED 4 FEET WIDE 3 TO 10 FEET THICKLY BEDDED 1.5 - 4 FEET	ELEVATION: FEET
OM _ OPTIMUM MOISTURE SL _ SHRINKAGE LIMIT	DRILL UNITS: ADVANCING TOOLS: HAMMER TYPE:	MODERATELY CLOSE 1 TO 3 FEET THINLY BEDDED 0.16 - 1.5 FEET	NOTES:
- DRY - (D) REQUIRES ADDITIONAL WATER TO	CME-45C CLAY BITS AUTOMATIC MANUAL	CLOSE 0.16 TO 1 FOOT VERY THINLY BEDDED 0.03 - 0.16 FEET VERY CLOSE LESS THAN 0.16 FEET THICKLY LAMINATED 0.008 - 0.03 FEET	
ATTAIN OPTIMUM MOISTURE	CME-55 X 6° CONTINUOUS FLIGHT AUGER CORE SIZE:	THINLY LAMINATED < 0.008 FEET	FIAD = FILLED IMMEDIATELY AFTER DRILLING UCP = UNDIVIDED COASTAL PLAIN
PLASTICITY	8' HOLLOW AUGERS	INDURATION	
PLASTICITY INDEX (PI) DRY STRENGTH	X CME-550 HARD FACED FINGER BITS -N -N	FOR SEDIMENTARY ROCKS, INDURATION IS THE HARDENING OF MATERIAL BY CEMENTING, HEAT, PRESSURE, ETC. RUBBING WITH FINGER FREES NUMEROUS GRAINS:	
NON PLASTIC 0-5 VERY LOW SLIGHTLY PLASTIC 6-15 SLIGHT	VANE SHEAR TEST TUNG,-CARBIDE INSERTS HAND TOOLS:	FRIABLE GENTLE BLOW BY HAMMER DISINTEGRATES SAMPLE.	
MODERATELY PLASTIC 16-25 MEDIUM HIGHLY PLASTIC 26 OR MORE HIGH	CASING W/ ADVANCER POST HOLE DIGGER	MODERATELY INDURATED GRAINS CAN BE SEPARATED FROM SAMPLE WITH STEEL PROBE;	
COLOR	PORTABLE HOIST TRICONE STEEL TEETH X HAND AUGER	BREAKS EASILY WHEN HIT WITH HAMMER. GRAINS ARE DIFFICULT TO SEPARATE WITH STEEL PROBE:	
	TRICONE TUNG,-CARB, SOUNDING ROD	INDURATED OFFICULT TO BREAK WITH HAMMER.	
DESCRIPTIONS MAY INCLUDE COLOR OR COLOR COMBINATIONS (TAN, RED, YELLOW-BROWN, BLUE-GRAY). MODIFIERS SUCH AS LIGHT, DARK, STREAKED, ETC. ARE USED TO DESCRIBE APPEARANCE.	CORE BIT VANE SHEAR TEST	SHARP HAMMER BLOWS REQUIRED TO BREAK SAMPLE:	
		SAMPLE BREAKS ACROSS GRAINS.	DATE: 8-15-1









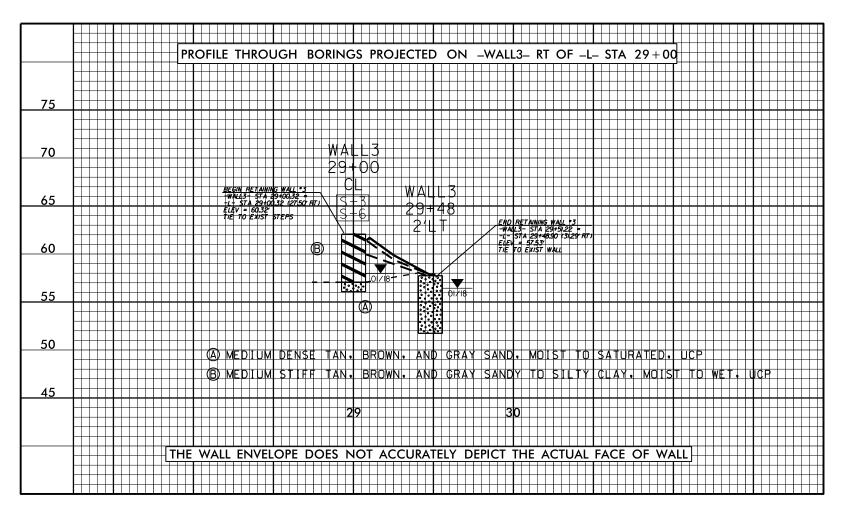


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60				. (Q)			77					WAL	2- 57	A 29+6	6.31 =	, , ,				Ш				Ш	Ш	\pm	
					1/18		 / 8 A) :		lacksquare		\mathcal{M}	FIEV	= 56.	VING WA TA 29+6 7464.37 73' ST WALL	, ,			Н		-			++	+	++	+	+++!
					ם 🎚		/ 8 <u> </u>		` `		\Box							Ш		ш					ш	\pm	##
55					- 100		4 		\		▾				+	+		+		Н			+	+	+++	+	+++/
								4.4			01/18	3	Ш		Ш	П				П			П	П	\Box	\blacksquare	
									11	11 -	(B)					+		+		+			++	+	++	++	+++
50								1	Ш		М		Ш			\bot								\blacksquare	Ш	#	\square
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			(A) MED	MUIK	DENS	E TAN	• BRO	DWN .	AND	GRA'	Y SA	7 VID •	SA	TURA	TED	· U	CP	+			+		++	+	$+\!+\!-$	$+\!\!+$	+++
45			(B) MED	MUIK	STIF	FTAN	. BRC	WN.	AND	GRA'	Y 54	ANDY	7 TO	SIL	TY.	CLA	۲, ۱	VE T	• UC	P				Ш	Ш	茸	##
45			(C) MED	MUIK	DENS	F TAN	. GR		AND	DRANG	GF ¢	SAND) M	n ist	+		TURA	ATF I), R	ΠΔΙ	WAY	FA	IR A N	JK M	1ENT	+	┼┼┼┦
					G T T									Ţ 	ШĬ	Ĭ		Ш				T)	T	II.		#	${\sharp\sharp}$
			(D) MED	MUIK	3111	FITAN	AND	GRA	1 31	 	NE I •	uC		++	+++	+	++	H		++	+++	+	+	+	++	+	+++
				Ш	Щ	29	Ш	Ш	Щ	ШШ	Ш	3	O	Щ	Ш	Щ	Щ	Щ		Щ	4		\blacksquare	П	Ш	#	\Box
	┼╂┼┼┼┼┼┼	E WAL	L ENVEL	OPE	DO	ES NO	OT A	ÇÇŲ	RATI	ELY [DEPI	CT	THE	AC	TU⊅	<u>L F</u>	ACE	0	F W	/ALI	++ إ		+	+	+	+	+++
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				+++	+			+++			+					+		+		++	+++	+		+	++	++	+++

PROJECT REFERENCE NO) .	SHEET NO.
U−5606		7
GEOTECHNICAL ENGINEER	R	OADWAY DESIGN ENGINEER
DOCUMENT NOT C	ONSI	DERED FINAL
UNLESS ALL SIGNA	TURES	S COMPLETED

NOTE: GROUNDLINE PROFILE ALONG -L-TAKEN FROM u5606_rdy_wpf1.dgn DATED 12/19/17

NOTE: INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORINGS WITH BOTH PROJECTED ONTO THE PROFILE

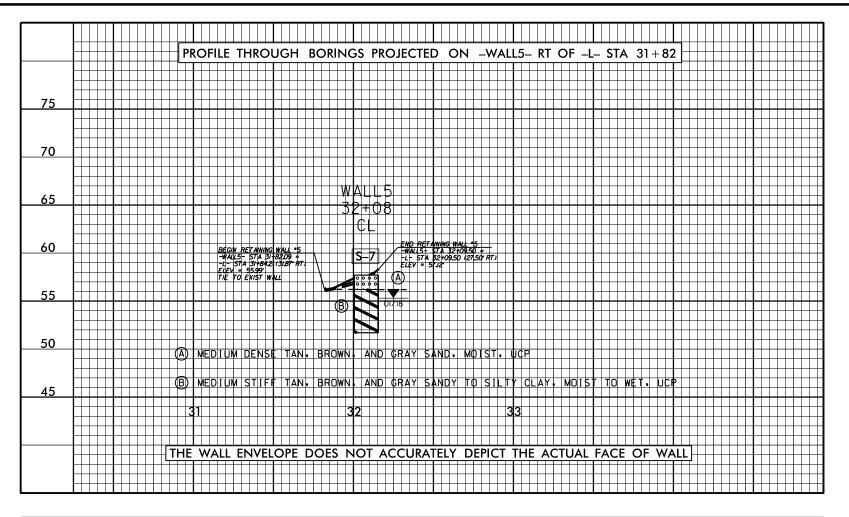


	PROFILE	THROUGH ROPINGS PR	OJECTED ON	-WALL4- LT OF -L- STA 3	1+50
	I KOTILL	TIIKOOOTI BOKII103 IK	OJECIED OIN	-WALL4- LI OI -L- SIA S	
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\vdash					
\longrightarrow	 				
++					
70 HH	 				
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		 		₩₩₩₩₩₩	
			WALL4	WALL4 32+93	
			32+50	76, 19	
65		WALL4			
\vdash				END RETAINING WALL *4 -WALL4- STA 32+94,00 =	
++	 	32+00		\$\frac{-\text{WLLW}-\text{STA}\\ 32\\ \gamma\\ 22\\ \gamma\\ \text{STA}\\ 32\\ \gamma\\ \gamma\\ \ext{STA}\\ \ext{STA}	
-	 	WALLA	\$+8	ELEV = 6082	
60	 	31+49			
**	Drout per tumolimus et		3 0/8		
	BEGIN RETAINING WALL *4	4'RT		01/18	
	-L- STA 31+4963 (32.37 LT		0/18		
H	TIE TO EXIST WALL				
55			- 		
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-			, 		
50					
\perp		DIUM DENSE TAN, BROW	N. AND GRAY S	SAND, MOIST TO SATURAT	ED+ UCP
\vdash					
45	(B) ME	DIUM STIFF TAN, BROW	N. AND GRAY S	SANDY TO SILTY CLAY, W	ET, UCP
~ >	 	+++++++++++++++++++++++++++++++++++++			
 	 	 		 	
	 				
Щ	THE WALL	. ENVELOPE DOES NOT A	CCURATELY DE	PICT THE ACTUAL FACE O	F WALL
\vdash					
\longrightarrow	+++++++++++++++	+++++++++++++++++++++++++++++++++++++++		+++++++++++++++++++++++++++++++++++++++	
1					

PROJECT REFERENCE NO).	SHEET NO.
U−5606		8
GEOTECHNICAL ENGINEER	R	OADWAY DESIGN ENGINEER
DOCUMENT NOT C UNLESS ALL SIGNA		

NOTE: GROUNDLINE PROFILE ALONG -L-TAKEN FROM u5606_rdy_wpfl.dgn DATED 12/19/17

NOTE: INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORINGS WITH BOTH PROJECTED ONTO THE PROFILE

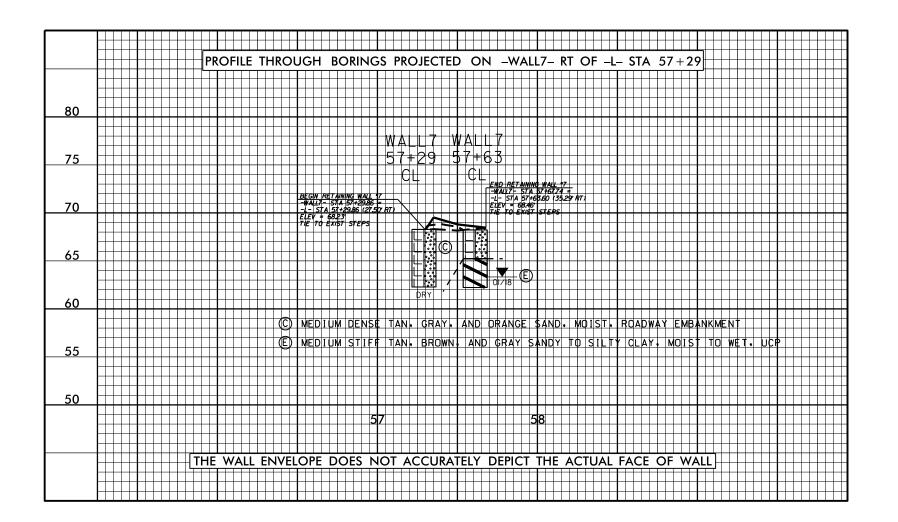


PROFILE THROUGH BORINGS PROJECTED ON -WALL6- LT OF -L- STA 41+38 WALL6 O+24 CONSTRUMENT WALL TO O+24 CONSTRUMENT WALL TO OFFICE THROUGH BORINGS PROJECTED ON -WALL6- LT OF -L- STA 41+38 OFFICE THROUGH BORINGS PROJECTED ON -WALL6- LT OF -L- STA 41+38 WALL6 OFFICE THROUGH BORINGS PROJECTED ON -WALL6- LT OF -L- STA 41+38 WALL6 OFFICE THROUGH BORINGS PROJECTED ON -WALL6- LT OF -L- STA 41+38 WALL6 OFFICE THROUGH BORINGS PROJECTED ON -WALL6- LT OF -L- STA 41+38 WALL6 OFFICE THROUGH BORINGS PROJECTED ON -WALL6- LT OF -L- STA 41+38 WALL6 OFFICE THROUGH BORINGS PROJECTED ON -WALL6- LT OF -L- STA 41+38 WALL6 OFFICE THROUGH BORINGS PROJECTED ON -WALL6- LT OFFICE THROUGH ALT OF -L- STA 41+38 WALL6 OFFICE THROUGH BORINGS PROJECTED ON -WALL6- LT OFFICE THROUGH ALT OFFICE THROUG		
WALL 6		PROFILE THROUGH BORINGS PROJECTED ON -WALL6- LT OF -L- STA 41+38
WALL6		
WALL 6		
10 + 24 END RETINUE MALES TANDERS OF THE TOTAL SATURATED. UCP	80	
10 + 24 END RETINUE MALES TANDERS OF THE TOTAL SATURATED. UCP		
70 S-10 F TO 10 F EXIST NAL		<u> </u>
55 A) MEDIUM DENSE TAN. BROWN. AND GRAY SANDY TO SILTY CLAY. MCIST TO WET. UCP 10 10 10 10 11 11	75	D+24 END RETAINING WALL 16
55 A) MEDIUM DENSE TAN. BROWN. AND GRAY SANDY TO SILTY CLAY. MCIST TO WET. UCP 10 10 10 10 11 11		7
65 BEGIN RIAMING MALE 5 ALONGOODS: WALE STADOGOODS: WALE STADOG		S+10
65 Constitution and 6	70	
60 55 (B) (B) (C) (B) (C) (D) (D) (D) (D) (D) (E) (D) (E) (D) (E) (D) (E) (D) (E) (E		
60 55 (B) (B) (C) (B) (C) (D) (D) (D) (D) (D) (E) (D) (E) (D) (E) (D) (E) (D) (E) (E	,,	BEGIN RATAINING WALL 16WALE-ISTA 100400.00 =
60 55 (B) (B) (C) (B) (C) (D) (D) (D) (D) (D) (E) (D) (E) (D) (E) (D) (E) (D) (E) (E	65	-L- STA 41+38.25 (3162* UT) ELEV + 545-4 (B)
6) MEDIUM DENSE TAN, BROWN, AND GRAY CLAYEY SAND, MOIST TO SATURATED, UCP B) MEDIUM STIFF TAN, BROWN, AND GRAY SANDY TO SILTY CLAY, MOIST TO WET, UCP		TIE TO TRUE DRIVERAL
6) MEDIUM DENSE TAN, BROWN, AND GRAY CLAYEY SAND, MOIST TO SATURATED, UCP B) MEDIUM STIFF TAN, BROWN, AND GRAY SANDY TO SILTY CLAY, MOIST TO WET, UCP	60	
6) MEDIUM DENSE TAN. BROWN, AND GRAY CLAYEY SAND, MOIST TO SATURATED, UCP 10 (B) MEDIUM STIFF TAN. BROWN, AND GRAY SANDY TO SILTY CLAY, MOIST TO WET, UCP 10 11	00	
6) MEDIUM DENSE TAN. BROWN, AND GRAY CLAYEY SAND, MOIST TO SATURATED, UCP 10 (B) MEDIUM STIFF TAN. BROWN, AND GRAY SANDY TO SILTY CLAY, MOIST TO WET, UCP 10 11		
6) MEDIUM DENSE TAN. BROWN, AND GRAY CLAYEY SAND, MOIST TO SATURATED, UCP 10 (B) MEDIUM STIFF TAN. BROWN, AND GRAY SANDY TO SILTY CLAY, MOIST TO WET, UCP 10 11	55	
50 (B) MEDIUM STIFF TAN, BROWN, AND GRAY SANDY TO SILTY CLAY, MOIST TO WET, UCP		FIAD
		(A) MEDIUM DENSE TAN, BROWN, AND GRAY CLAYEY SAND, MOIST TO SATURATED, UCP
	50	(B) MEDIUM STIFF TAN, BROWN, AND GRAY SANDY TO SILTY CLAY, MOIST TO WET, UCP
THE WALL ENVELOPE DOES NOT ACCUPATELY DEDICT THE ACTUAL EACE OF WALL		
THE WALL ENVELOPE DOES NOT ACCUPATELY DEPICT THE ACTUAL EACE OF WALL		
		THE WALL SANGE OF DOES NOT ACCUPATELY DEPICT THE ACTUAL FACE OF WALL
THE WALL ENVELOPE DOES NOT ACCURATELY DEPICT THE ACTUAL FACE OF WALL		THE WALL ENVELOPE DOES NOT ACCURATELY DEPICT THE ACTUAL FACE OF WALL

PROJECT REFERENCE NO).	SHEET NO.
U−5606		9
GEOTECHNICAL ENGINEER	Ro	DADWAY DESIGN Engineer
DOCUMENT NOT C		

NOTE: GROUNDLINE PROFILE ALONG -L-TAKEN FROM u5606_rdy_wpfl.dgn DATED 12/19/17

NOTE: INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORINGS WITH BOTH PROJECTED ONTO THE PROFILE



PROJECT REFERENCE NO).	SHEET NO.							
U−5606		10							
GEOTECHNICAL ENGINEER	R	DADWAY DESIGN ENGINEER							
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED									
UNLESS ALL SIGNA	IUKE	COMPLETED							

NOTE: GRONDLINE PROFILE ALONG -L-TAKEN FROM BRIDGE SURVEY AND HYDRAULIC DESIGN REPORT DATED XX/XX/XX

NOTE: INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORINGS WITH BOTH PROJECTED ONTO THE PROFILE

PROJECT REFERENCE NO.	SHEET NO.
U-5606	11

	SOIL TEST RESULTS														
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	C.SAND	% BY V	WEIGHT SILT	CLAY	% PAS 10	SING (S.	IEVES)	% MOISTURE	% ORGANIC
S- 1	CL	28 +00	0.0-4.0	A-6(4)	30	16	7.5	47.5	16.8	28. 3	100	97	48	-	-
S- 2	CL	28 +50	1. 5- 6. 0	A-7-6(64)	80	58	0.6	4.8	27.9	66.7	100	100	97	40.4	-
S- 3	CL	29+00	0.0-2.5	A-7-6(52)	69	47	0.2	5. 7	<i>2</i> 9. 5	64.6	100	100	98	-	-
S- 4	CL	28+85	<i>3.</i> 0- 6. 0	A- 4(0)	-	NP	2.6	60. 2	25. 1	12. 1	100	99	48	-	-
S- 5	CL	29 +25	3. 0-6. 0	A- 2- 4(0)	-	NP	18.0	<i>62.0</i>	16.0	4.0	100	93	27	-	-
S- 6	CL	29 +00	<i>2</i> . 5- 5. 0	A-7-6(48)	65	45	1. 0	6.9	<i>2</i> 9. 5	<i>62.6</i>	100	99	96	-	-
S- 7	CL	32+08	1. 5- 6. 0	A-7-5(23)	53	21	<i>3. 2</i>	8.9	5 <i>3</i> . 5	34. 3	100	99	91	-	-
S- 8	CL	32+50	4.0-6.0	A-7-6(17)	45	19	4. 4	17.0	<i>36. 2</i>	42.4	100	99	82	59. <i>4</i>	-
S- 9	CL	32+93	<i>3</i> . 5- 6. 0	A-7-6(41)	64	39	0.4	9. 3	21.6	68.7	100	100	93	-	-
S- 10	7' LT	10+24	3. 5- 10. 0	A-7-6(26)	47	29	2.0	20. 2	27.3	50.5	100	99	87	40.3	-