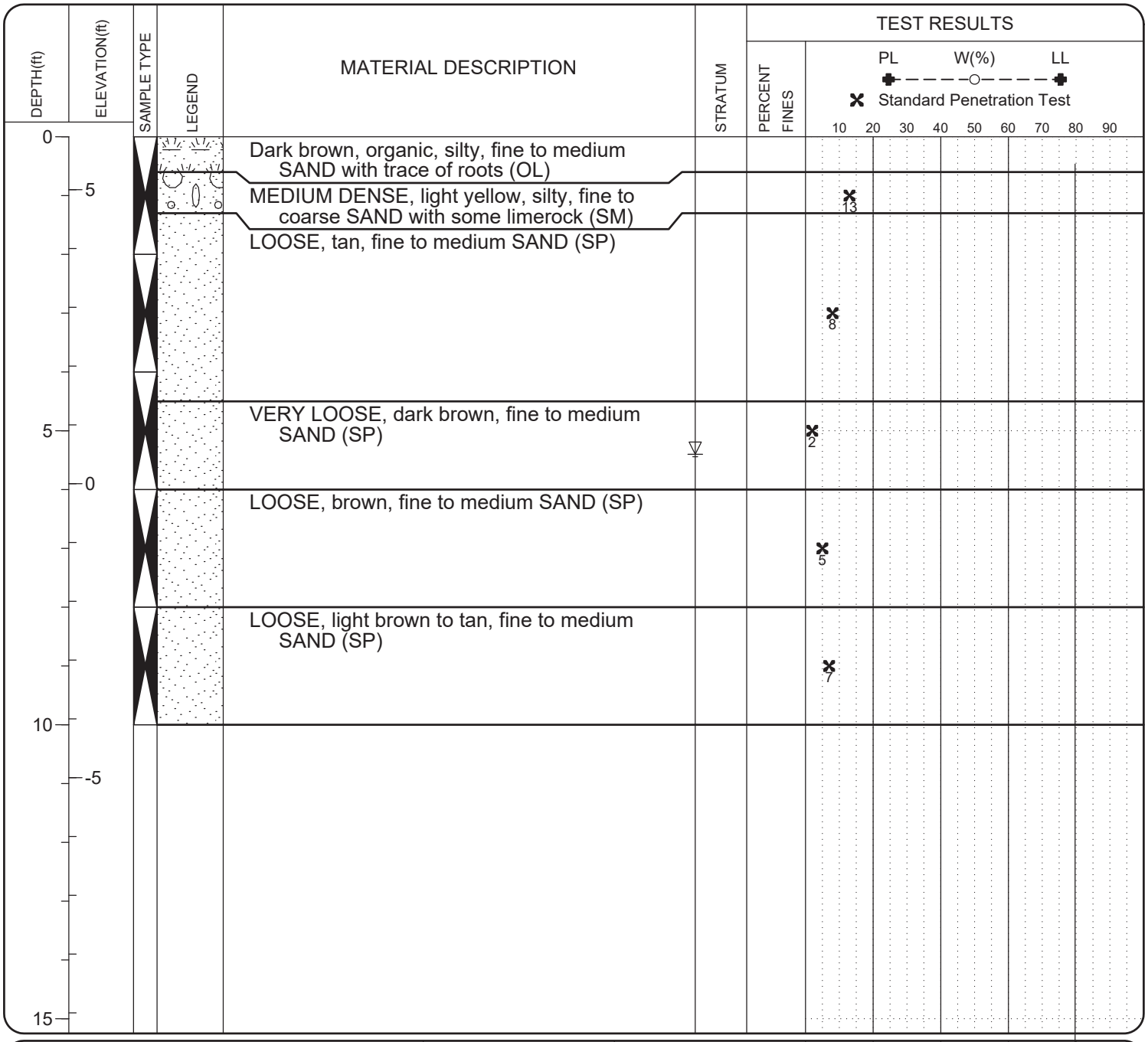
TEST BORING RECORD

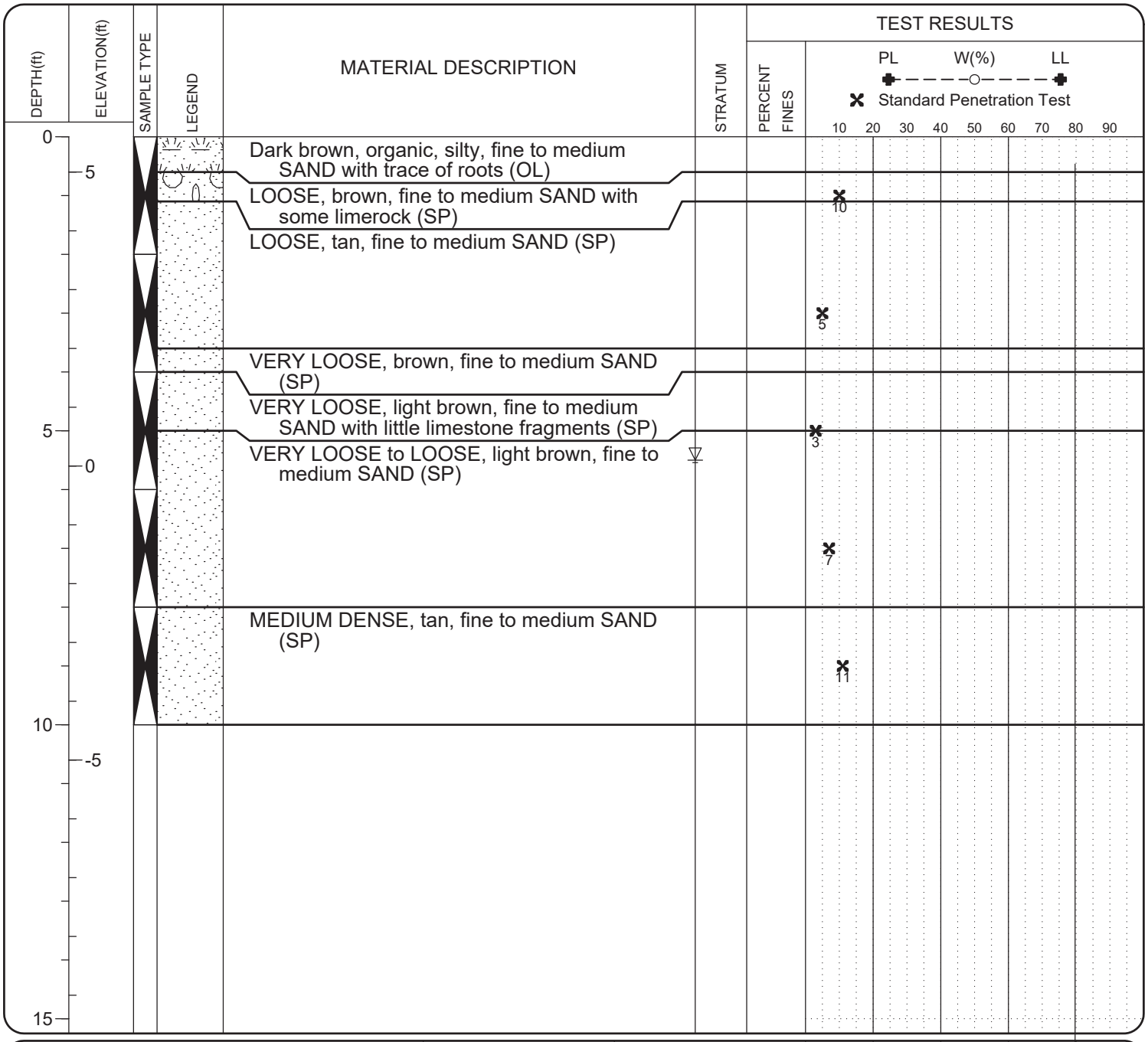
ACES, Inc.	7800 W. Oakland Pk. Blvd. #109 Sunrise, FL 33351 (954) 746-6868	PROJECT NUMBER: *21405*	BOREHOLE NUMBER: *TB-47*
EQUIPMENT & METHODS: *Diedrich D-90 / Automatic Hammer* *Rotary /Mud*		PROJECT/LOCATION: *WMRP - Johnson St. to Taft St. from N. 66th Ave to NW. 76th Terr* *Hollywood, Florida*	
CLIENT/OWNER: *EAC Consulting, Inc.*	GROUND LEVEL(ft): *5.9*	COORDINATES: *See Field Exp. Plan*	DATE: *January 2015*



REMARKS:	DRILLED BY: *S. Correa*	STARTED: *12/15/14*	
	LOGGED BY: *J. Soto*	COMPLETED: *12/15/14*	
	CHECKED BY: AZS	APPROVED BY: JGS	SHEET 1 OF 1

TEST BORING RECORD

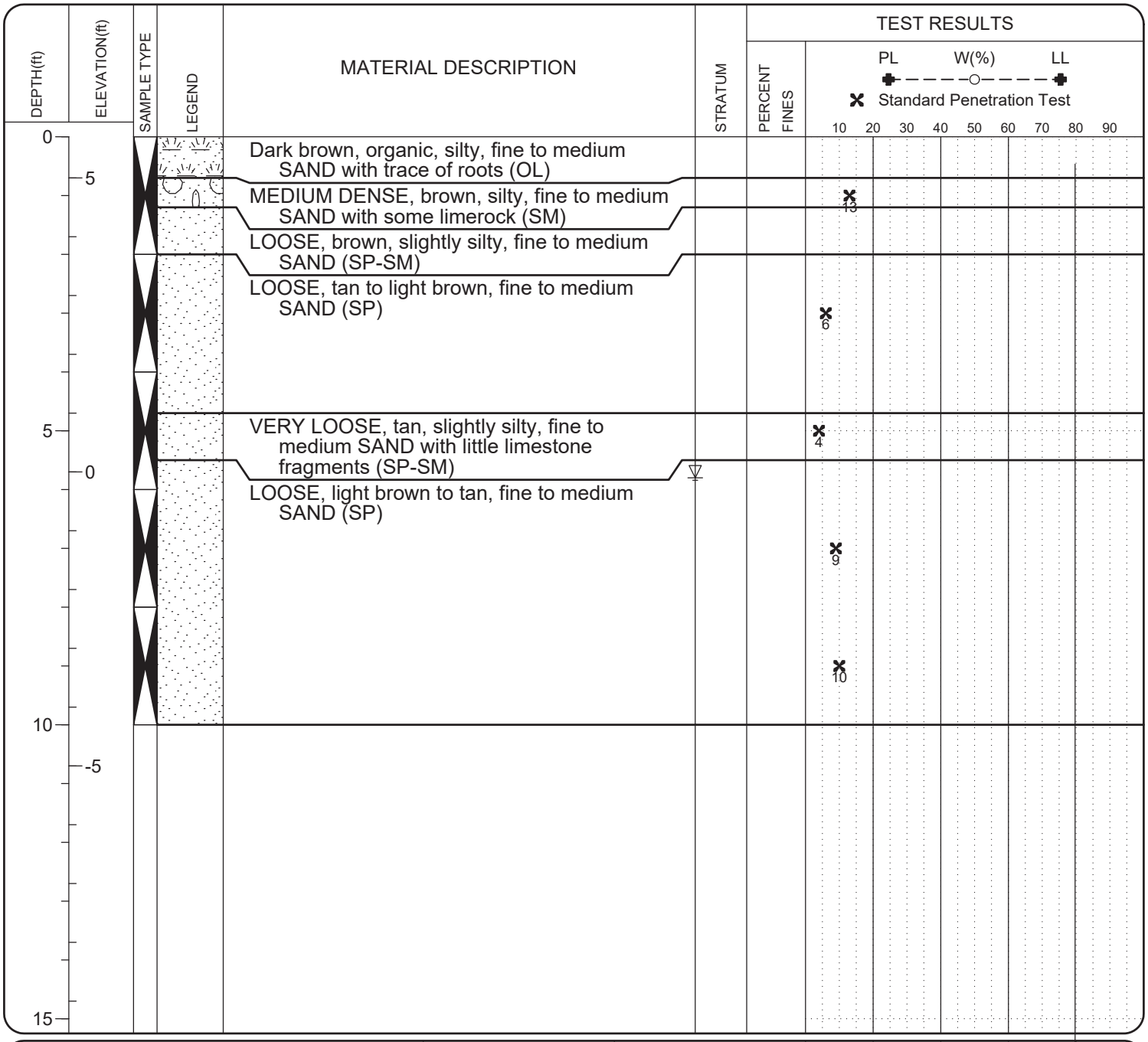
ACES, Inc.	7800 W. Oakland Pk. Blvd. #109 Sunrise, FL 33351 (954) 746-6868	PROJECT NUMBER: *21405*	BOREHOLE NUMBER: *TB-48*
EQUIPMENT & METHODS: *Diedrich D-90 / Automatic Hammer* *Rotary /Mud*		PROJECT/LOCATION: *WMRP - Johnson St. to Taft St. from N. 66th Ave to NW. 76th Terr* *Hollywood, Florida*	
CLIENT/OWNER: *EAC Consulting, Inc.*	GROUND LEVEL(ft): *5.6*	COORDINATES: *See Field Exp. Plan*	DATE: *January 2015*



REMARKS:	DRILLED BY: *S. Correa*	STARTED: *12/15/14*	
	LOGGED BY: *J. Soto*	COMPLETED: *12/15/14*	
	CHECKED BY: AZS	APPROVED BY: JGS	SHEET 1 OF 1

TEST BORING RECORD

ACES, Inc.	7800 W. Oakland Pk. Blvd. #109 Sunrise, FL 33351 (954) 746-6868	PROJECT NUMBER: *21405*	BOREHOLE NUMBER: *TB-49*
EQUIPMENT & METHODS: *Diedrich D-90 / Automatic Hammer* *Rotary /Mud*		PROJECT/LOCATION: *WMRP - Johnson St. to Taft St. from N. 66th Ave to NW. 76th Terr* *Hollywood, Florida*	
CLIENT/OWNER: *EAC Consulting, Inc.*	GROUND LEVEL(ft): *5.7*	COORDINATES: *See Field Exp. Plan*	DATE: *January 2015*



REMARKS:	DRILLED BY: *S. Correa*	STARTED: *12/15/14*	
	LOGGED BY: *J. Soto*	COMPLETED: *12/15/14*	
	CHECKED BY: AZS	APPROVED BY: JGS	SHEET 1 OF 1

TEST BORING RECORD

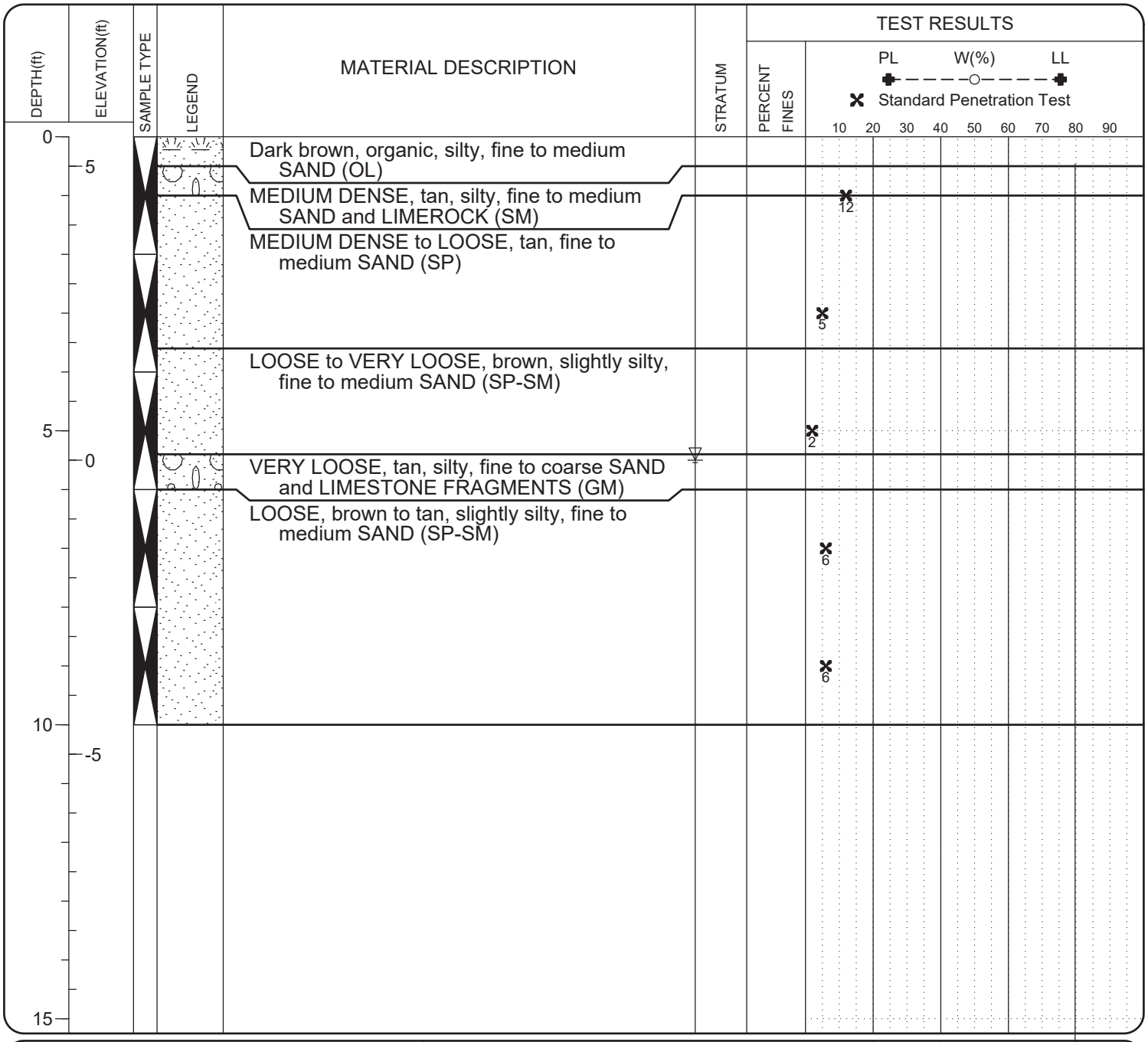
ACES, Inc. 7800 W. Oakland Pk. Blvd. #109 Sunrise, FL 33351 (954) 746-6868		PROJECT NUMBER: *21405*	BOREHOLE NUMBER: *TB-50*
EQUIPMENT & METHODS: *Diedrich D-90 / Automatic Hammer Rotary /Mud*		PROJECT/LOCATION: *WMRP - Johnson St. to Taft St. from N. 66th Ave to NW. 76th Terr Hollywood, Florida*	
CLIENT/OWNER: *EAC Consulting, Inc.*	GROUND LEVEL(ft): *6.0*	COORDINATES: *See Field Exp. Plan*	DATE: *January 2015*

DEPTH(ft)	ELEVATION(ft)	SAMPLE TYPE	LEGEND	MATERIAL DESCRIPTION	STRATUM	TEST RESULTS: PERCENT FINES	TEST RESULTS: PL W(%) LL, Standard Penetration Test (10 20 30 40 50 60 70 80 90)
0				Dark brown, organic, silty, fine to medium SAND with trace of roots (OL)			
	5			LOOSE, tan, fine to medium SAND with some limerock (SP)			6
				LOOSE, tan, fine to medium SAND (SP)			
				VERY LOOSE, brown, slightly silty, fine to medium SAND (SP-SM)			4
				VERY LOOSE, tan to brown, silty, fine to medium SAND with little limestone fragments (SM)			
5				LOOSE, tan, slightly silty, fine to medium SAND with some limestone fragments (SP-SM)			4
	0						6
				LOOSE, tan to light brown, fine to medium SAND (SP)			9
10							
	-5						
15							

REMARKS: *Groundwater was not encountered in the upper 6 feet at the time of drilling before the drilling mud was used.*	DRILLED BY: *S. Correa*	STARTED: *12/15/14*	
	LOGGED BY: *J. Soto*	COMPLETED: *12/15/14*	
	CHECKED BY: AZS	APPROVED BY: JGS	SHEET 1 OF 1

TEST BORING RECORD

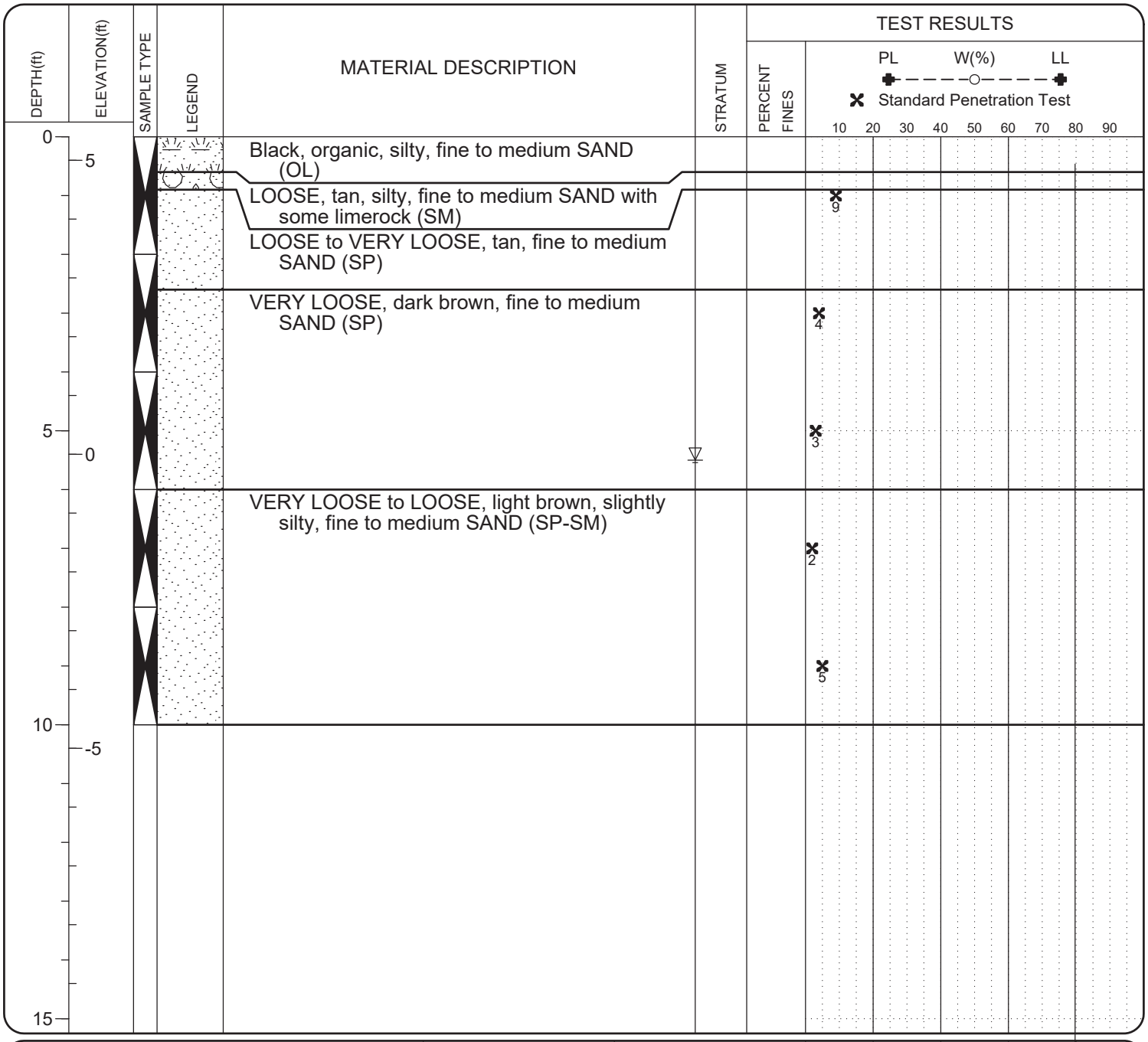
ACES, Inc.	7800 W. Oakland Pk. Blvd. #109 Sunrise, FL 33351 (954) 746-6868	PROJECT NUMBER: *21405*	BOREHOLE NUMBER: *TB-51*
EQUIPMENT & METHODS: *Diedrich D-90 / Automatic Hammer* *Rotary /Mud*		PROJECT/LOCATION: *WMRP - Johnson St. to Taft St. from N. 66th Ave to NW. 76th Terr* *Hollywood, Florida*	
CLIENT/OWNER: *EAC Consulting, Inc.*	GROUND LEVEL(ft): *5.5*	COORDINATES: *See Field Exp. Plan*	DATE: *January 2015*



REMARKS:	DRILLED BY:	STARTED:	
About 20% loss of circulation at a depth of 7 feet	*S. Correa*	*12/18/14*	
	LOGGED BY: *J. Soto*	COMPLETED: *12/18/14*	
	CHECKED BY: AZS	APPROVED BY: JGS	SHEET 1 OF 1

TEST BORING RECORD

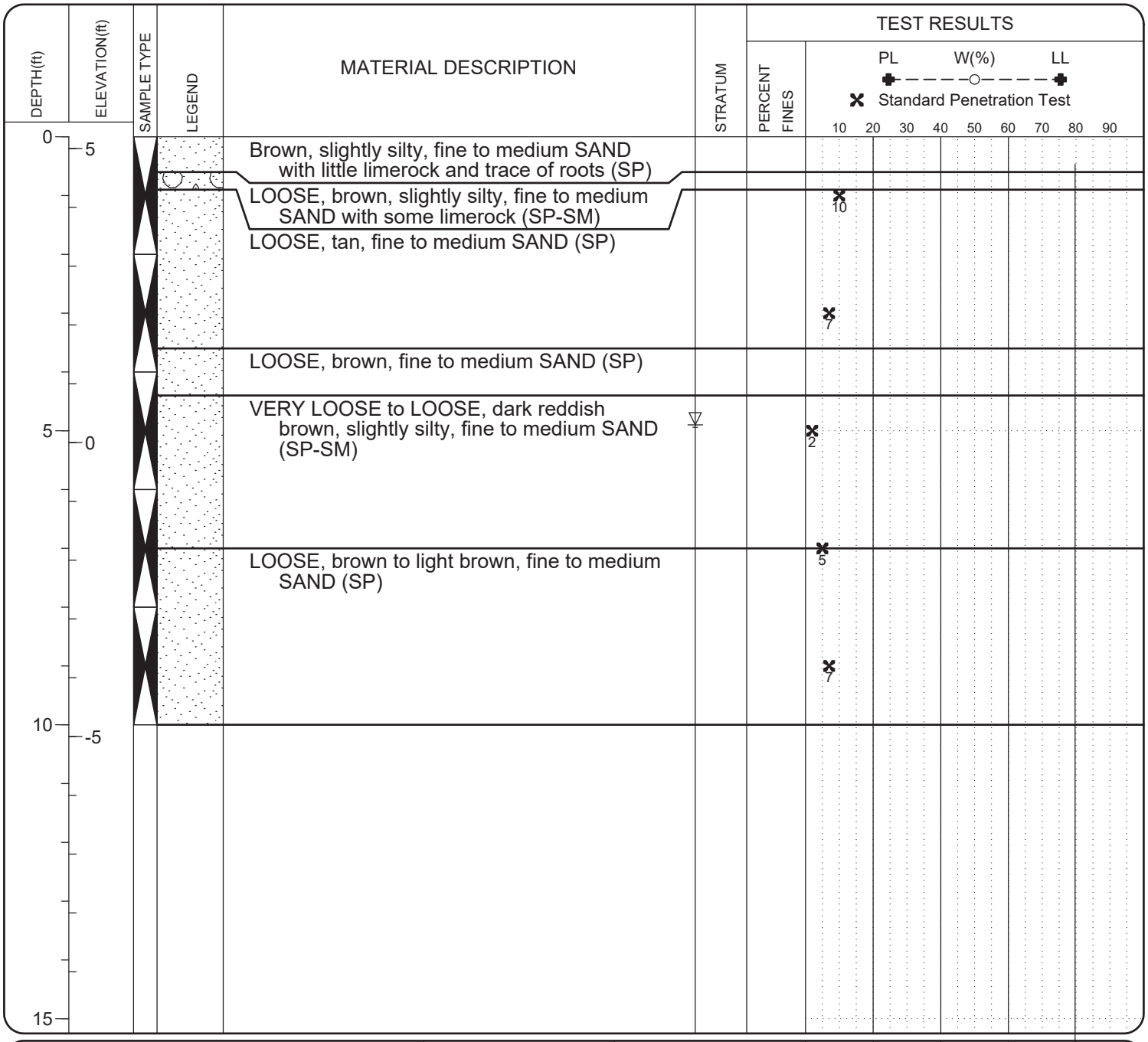
ACES, Inc.	7800 W. Oakland Pk. Blvd. #109 Sunrise, FL 33351 (954) 746-6868	PROJECT NUMBER: *21405*	BOREHOLE NUMBER: *TB-52*
EQUIPMENT & METHODS: *Diedrich D-90 / Automatic Hammer* *Rotary /Mud*		PROJECT/LOCATION: *WMRP - Johnson St. to Taft St. from N. 66th Ave to NW. 76th Terr* *Hollywood, Florida*	
CLIENT/OWNER: *EAC Consulting, Inc.*	GROUND LEVEL(ft): *5.4*	COORDINATES: *See Field Exp. Plan*	DATE: *January 2015*



REMARKS:	DRILLED BY: *S. Correa*	STARTED: *1/5/15*	
	LOGGED BY: *J. Soto*	COMPLETED: *1/5/15*	
	CHECKED BY: AZS	APPROVED BY: JGS	SHEET 1 OF 1

TEST BORING RECORD

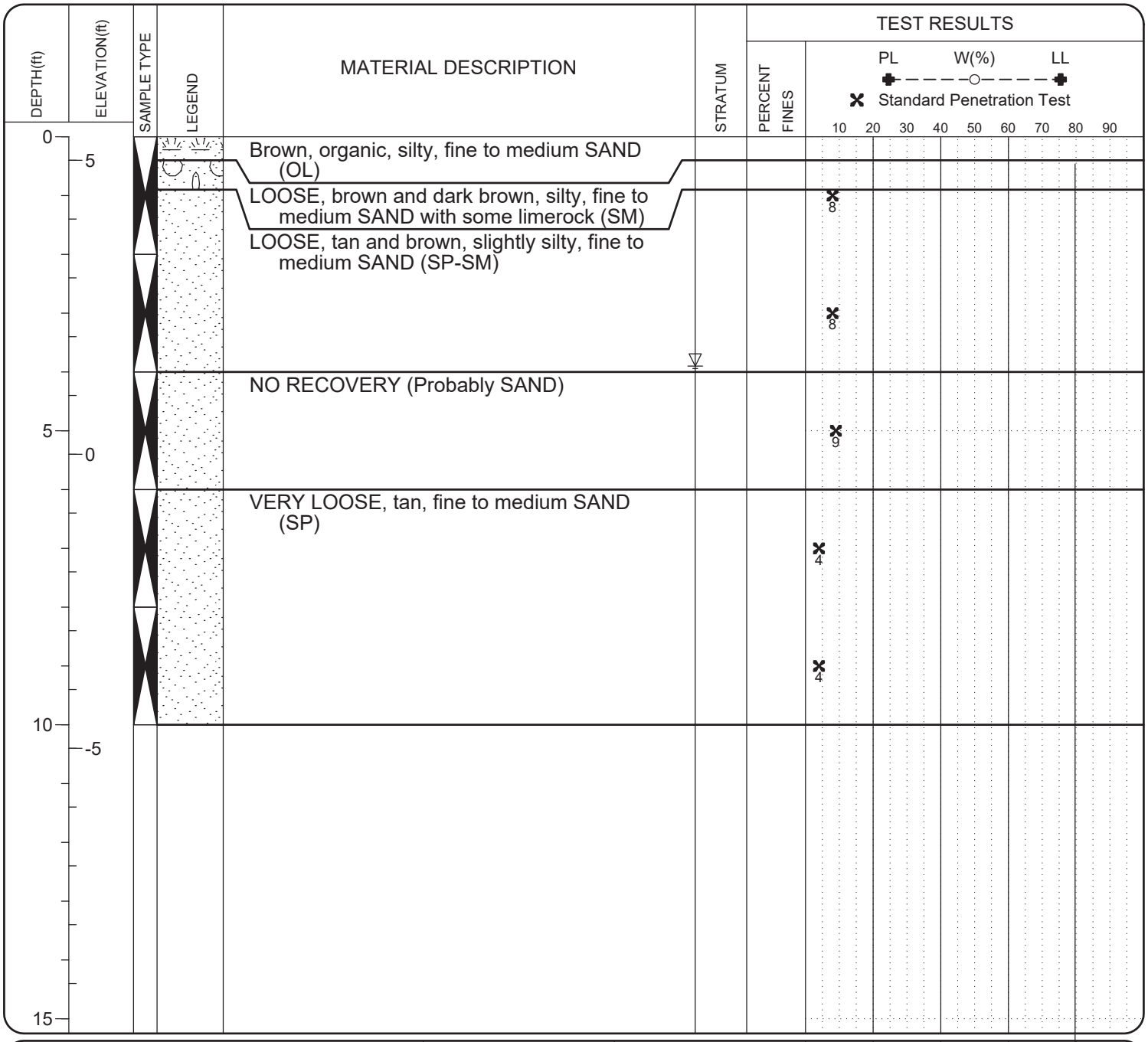
ACES, Inc. 7800 W. Oakland Pk. Blvd. #109 Sunrise, FL 33351 (954) 746-6868		PROJECT NUMBER: *21405*	BOREHOLE NUMBER: *TB-53*
EQUIPMENT & METHODS: *Diedrich D-90 / Automatic Hammer Rotary /Mud*		PROJECT/LOCATION: *WMRP - Johnson St. to Taft St. from N. 66th Ave to NW. 76th Terr Hollywood, Florida*	
CLIENT/OWNER: *EAC Consulting, Inc.*	GROUND LEVEL(ft): *5.2*	COORDINATES: *See Field Exp. Plan*	DATE: *January 2015*



REMARKS:	DRILLED BY: *S. Correa*	STARTED: *1/5/15*	
	LOGGED BY: *J. Soto*	COMPLETED: *1/5/15*	
	CHECKED BY: AZS	APPROVED BY: JGS	SHEET 1 OF 1

TEST BORING RECORD

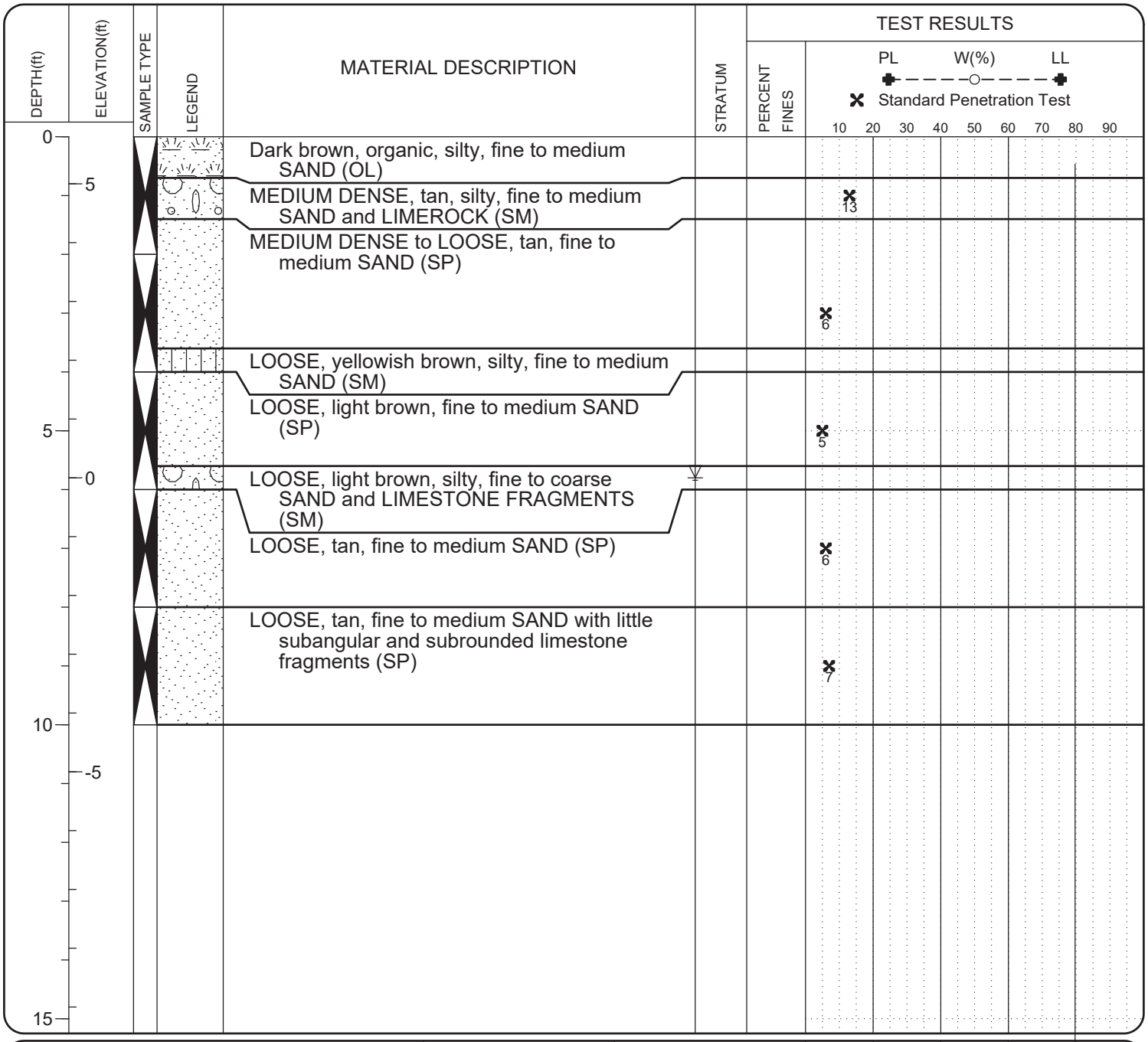
ACES, Inc. 7800 W. Oakland Pk. Blvd. #109, Sunrise, FL 33351, (954) 746-6868	PROJECT NUMBER: *21405*		BOREHOLE NUMBER: *TB-54*
EQUIPMENT & METHODS: *Diedrich D-90 / Automatic Hammer, Rotary /Mud*	PROJECT/LOCATION: *WMRP - Johnson St. to Taft St. from N. 66th Ave to NW. 76th Terr, Hollywood, Florida*		
CLIENT/OWNER: *EAC Consulting, Inc.*	GROUND LEVEL(ft): *5.4*	COORDINATES: *See Field Exp. Plan*	DATE: *January 2015*



REMARKS:	DRILLED BY: *S. Correa*	STARTED: *12/18/14*	
	LOGGED BY: *J. Soto*	COMPLETED: *12/18/14*	
	CHECKED BY: AZS	APPROVED BY: JGS	SHEET 1 OF 1

TEST BORING RECORD

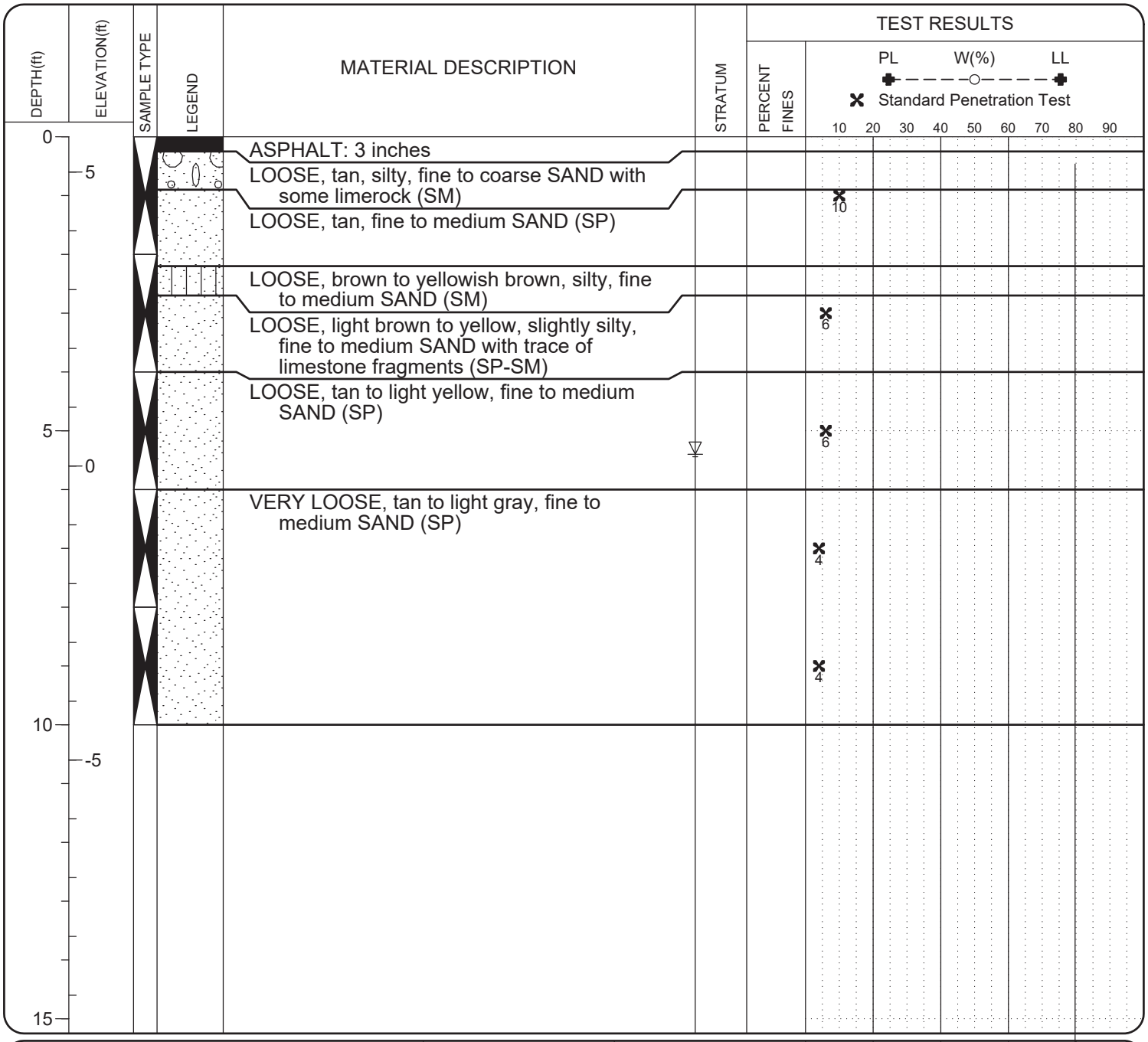
ACES, Inc.	7800 W. Oakland Pk. Blvd. #109 Sunrise, FL 33351 (954) 746-6868	PROJECT NUMBER: *21405*	BOREHOLE NUMBER: *TB-55*
EQUIPMENT & METHODS: *Diedrich D-90 / Automatic Hammer* *Rotary /Mud*		PROJECT/LOCATION: *WMRP - Johnson St. to Taft St. from N. 66th Ave to NW. 76th Terr* *Hollywood, Florida*	
CLIENT/OWNER: *EAC Consulting, Inc.*	GROUND LEVEL(ft): *5.8*	COORDINATES: *See Field Exp. Plan*	DATE: *January 2015*



REMARKS:	DRILLED BY: *S. Correa*	STARTED: *12/18/14*	
	LOGGED BY: *J. Soto*	COMPLETED: *12/18/14*	
	CHECKED BY: AZS	APPROVED BY: JGS	SHEET 1 OF 1

TEST BORING RECORD

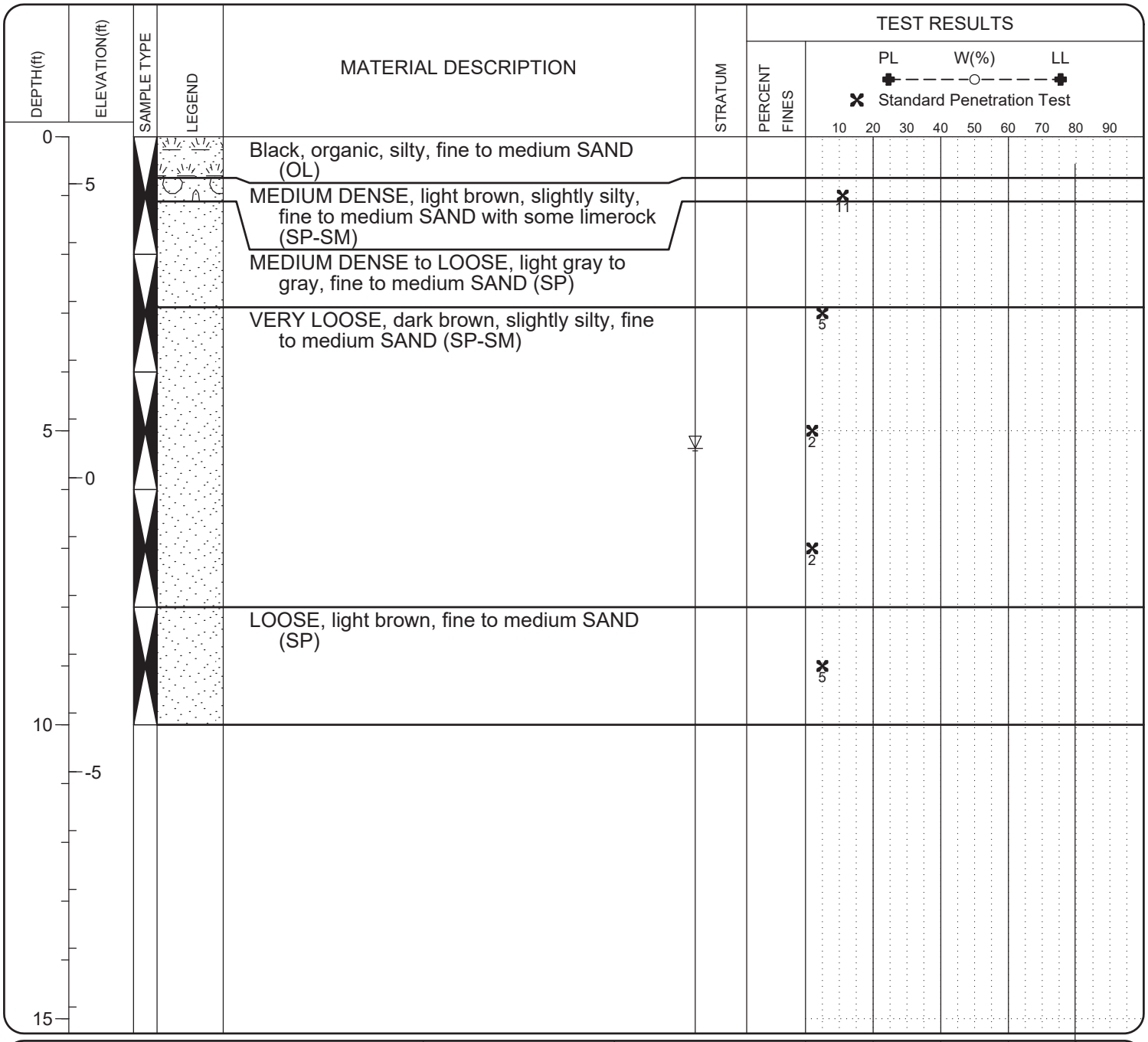
ACES, Inc. 7800 W. Oakland Pk. Blvd. #109 Sunrise, FL 33351 (954) 746-6868		PROJECT NUMBER: *21405*	BOREHOLE NUMBER: *TB-56*
EQUIPMENT & METHODS: *Diedrich D-90 / Automatic Hammer Rotary /Mud*		PROJECT/LOCATION: *WMRP - Johnson St. to Taft St. from N. 66th Ave to NW. 76th Terr Hollywood, Florida*	
CLIENT/OWNER: *EAC Consulting, Inc.*	GROUND LEVEL(ft): *5.6*	COORDINATES: *See Field Exp. Plan*	DATE: *January 2015*



REMARKS:	DRILLED BY: *S. Correa*	STARTED: *1/6/15*	
	LOGGED BY: *J. Soto*	COMPLETED: *1/6/15*	
	CHECKED BY: AZS	APPROVED BY: JGS	SHEET 1 OF 1

TEST BORING RECORD

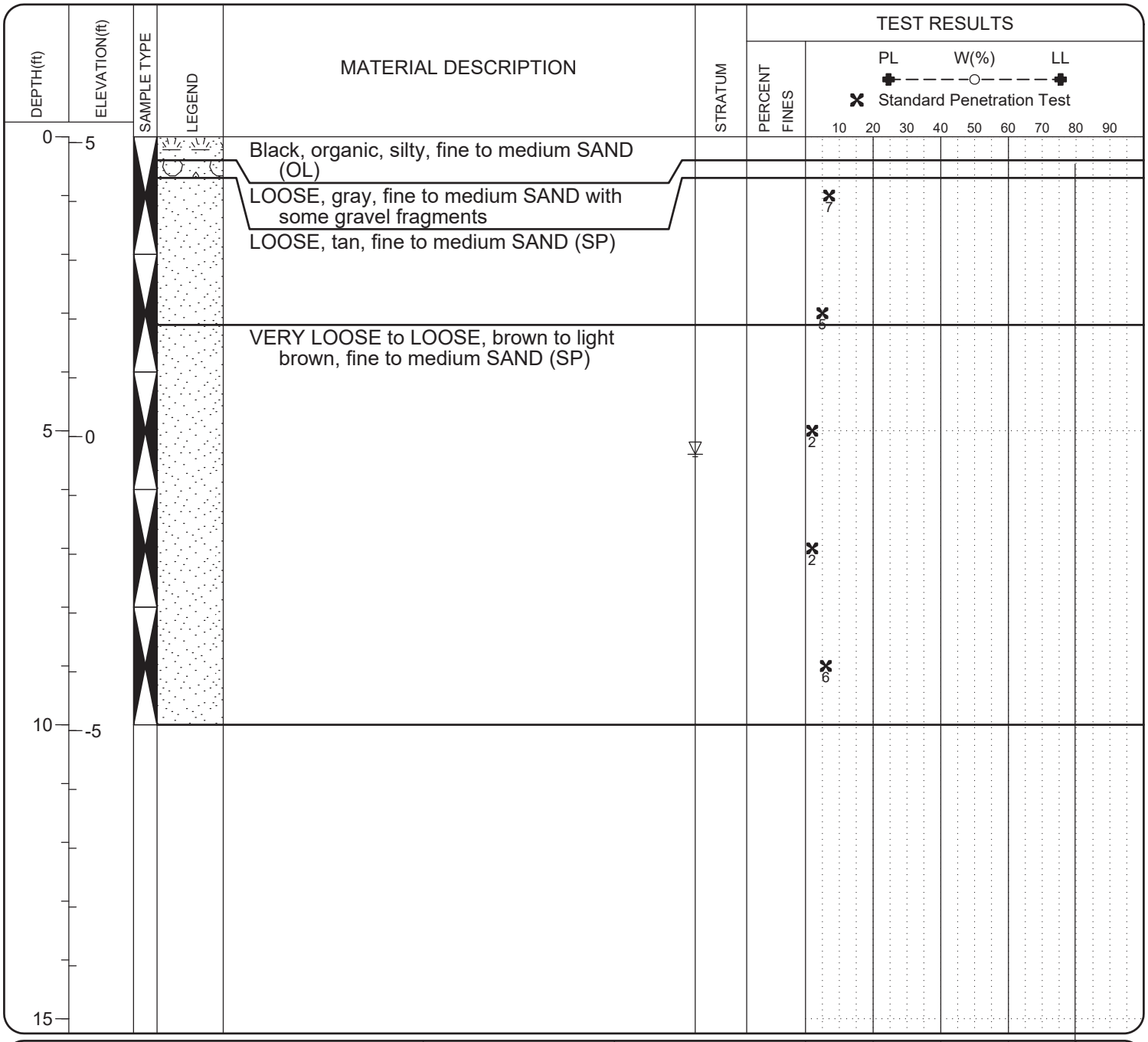
ACES, Inc. 7800 W. Oakland Pk. Blvd. #109 Sunrise, FL 33351 (954) 746-6868		PROJECT NUMBER: *21405*	BOREHOLE NUMBER: *TB-57*
EQUIPMENT & METHODS: *Diedrich D-90 / Automatic Hammer Rotary /Mud*		PROJECT/LOCATION: *WMRP - Johnson St. to Taft St. from N. 66th Ave to NW. 76th Terr Hollywood, Florida*	
CLIENT/OWNER: *EAC Consulting, Inc.*	GROUND LEVEL(ft): *5.8*	COORDINATES: *See Field Exp. Plan*	DATE: *January 2015*



REMARKS:	DRILLED BY: *S. Correa*	STARTED: *1/5/15*	
	LOGGED BY: *J. Soto*	COMPLETED: *1/5/15*	
	CHECKED BY: AZS	APPROVED BY: JGS	SHEET 1 OF 1

TEST BORING RECORD

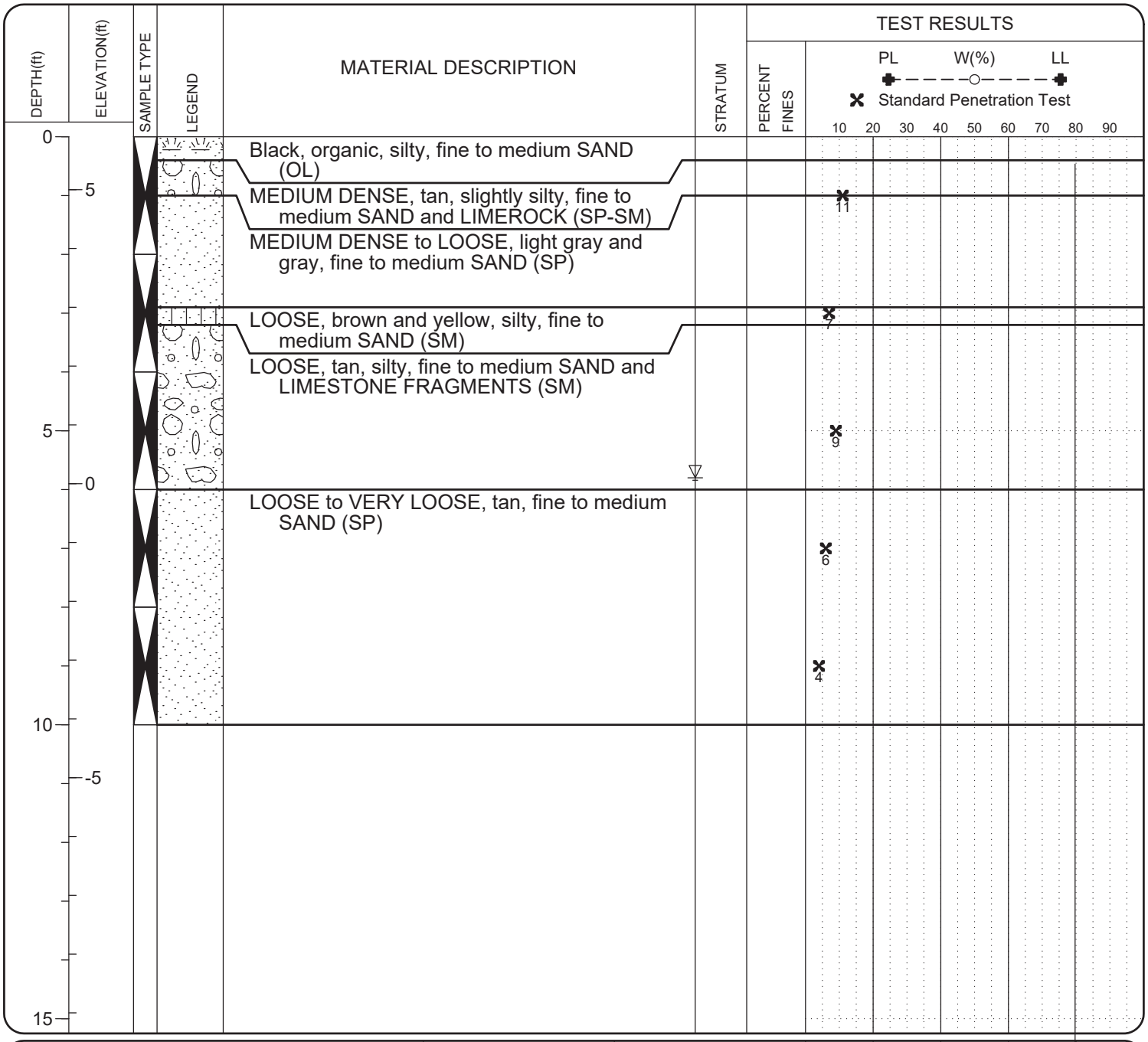
ACES, Inc. 7800 W. Oakland Pk. Blvd. #109, Sunrise, FL 33351, (954) 746-6868	PROJECT NUMBER: *21405*	BOREHOLE NUMBER: *TB-58*	
EQUIPMENT & METHODS: *Diedrich D-90 / Automatic Hammer, Rotary /Mud*	PROJECT/LOCATION: *WMRP - Johnson St. to Taft St. from N. 66th Ave to NW. 76th Terr, Hollywood, Florida*		
CLIENT/OWNER: *EAC Consulting, Inc.*	GROUND LEVEL(ft): *5.1*	COORDINATES: *See Field Exp. Plan*	DATE: *January 2015*



REMARKS:	DRILLED BY: *S. Correa*	STARTED: *1/5/15*	
	LOGGED BY: *J. Soto*	COMPLETED: *1/5/15*	
	CHECKED BY: AZS	APPROVED BY: JGS	SHEET 1 OF 1

TEST BORING RECORD

ACES, Inc. 7800 W. Oakland Pk. Blvd. #109, Sunrise, FL 33351, (954) 746-6868		PROJECT NUMBER: *21405*	BOREHOLE NUMBER: *TB-59*
EQUIPMENT & METHODS: *Diedrich D-90 / Automatic Hammer, Rotary /Mud*		PROJECT/LOCATION: *WMRP - Johnson St. to Taft St. from N. 66th Ave to NW. 76th Terr, Hollywood, Florida*	
CLIENT/OWNER: *EAC Consulting, Inc.*	GROUND LEVEL(ft): *5.9*	COORDINATES: *See Field Exp. Plan*	DATE: *January 2015*



REMARKS:	DRILLED BY: *S. Correa*	STARTED: *1/5/15*	
	LOGGED BY: *J. Soto*	COMPLETED: *1/5/15*	
	CHECKED BY: AZS	APPROVED BY: JGS	SHEET 1 OF 1

TEST BORING RECORD

ACES, Inc.	7800 W. Oakland Pk. Blvd. #109 Sunrise, FL 33351 (954) 746-6868	PROJECT NUMBER: *21405*	BOREHOLE NUMBER: *TB-60*
EQUIPMENT & METHODS: *Diedrich D-90 / Automatic Hammer* *Rotary /Mud*		PROJECT/LOCATION: *WMRP - Johnson St. to Taft St. from N. 66th Ave to NW. 76th Terr* *Hollywood, Florida*	
CLIENT/OWNER: *EAC Consulting, Inc.*	GROUND LEVEL(ft): *5.7*	COORDINATES: *See Field Exp. Plan*	DATE: *January 2015*

DEPTH(ft)	ELEVATION(ft)	SAMPLE TYPE	LEGEND	MATERIAL DESCRIPTION	STRATUM	TEST RESULTS: PERCENT FINES	TEST RESULTS: PL W(%) LL; Standard Penetration Test (10 20 30 40 50 60 70 80 90)
0	5			Dark brown, organic, silty, fine to medium SAND (OL)			
				LOOSE, tan, slightly silty, fine to medium SAND with some limerock (SP-SM)			10
				LOOSE to VERY LOOSE, tan, fine to medium SAND (SP)			
				VERY LOOSE, dark brown, fine to medium SAND (SP)		4.6	2
5	0			VERY LOOSE, brown, slightly silty, fine to medium SAND (SP-SM)			1
				VERY LOOSE, tan, fine to medium SAND (SP)			4
				LOOSE, brown, slightly silty, fine to medium SAND (SP-SM)			7
10	-5						
15							

REMARKS:	DRILLED BY: *S. Correa*	STARTED: *12/18/14*	
	LOGGED BY: *J. Soto*	COMPLETED: *12/18/14*	
	CHECKED BY: AZS	APPROVED BY: JGS	SHEET 1 OF 1

TEST BORING RECORD

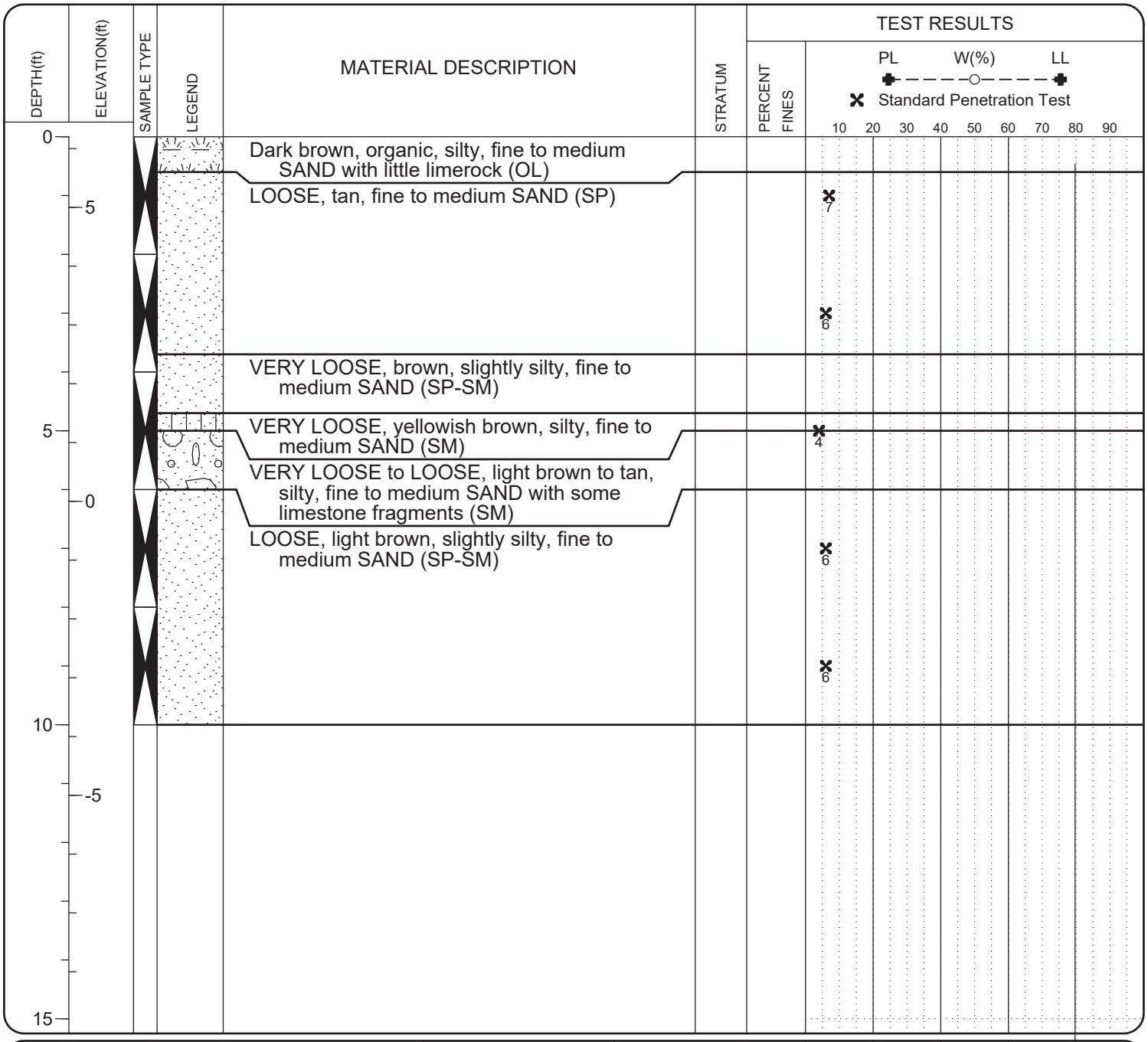
ACES, Inc.	7800 W. Oakland Pk. Blvd. #109 Sunrise, FL 33351 (954) 746-6868	PROJECT NUMBER: *21405*	BOREHOLE NUMBER: *TB-61*
EQUIPMENT & METHODS: *Diedrich D-90 / Automatic Hammer* *Rotary /Mud*		PROJECT/LOCATION: *WMRP - Johnson St. to Taft St. from N. 66th Ave to NW. 76th Terr* *Hollywood, Florida*	
CLIENT/OWNER: *EAC Consulting, Inc.*	GROUND LEVEL(ft): *5.7*	COORDINATES: *See Field Exp. Plan*	DATE: *January 2015*

DEPTH(ft)	ELEVATION(ft)	SAMPLE TYPE	LEGEND	MATERIAL DESCRIPTION	STRATUM	TEST RESULTS: PERCENT FINES	TEST RESULTS: PL W(%) LL; Standard Penetration Test (10 20 30 40 50 60 70 80 90)
0	5			Dark brown, organic, silty, fine to medium SAND with trace of roots (OL)			
				LOOSE, brown, slightly silty, fine to medium SAND with some limerock (SP-SM)			7
				LOOSE, tan, fine to medium SAND (SP)			8
5	0			VERY LOOSE, light brown, slightly silty, fine to medium SAND (SP-SM)			2
				VERY LOOSE, light brown, silty, fine to medium SAND with some limestone fragments (SM)			
				VERY LOOSE, tan, fine to medium SAND with some limestone fragments (SP)			2
							2
10	-5			VERY LOOSE, tan, fine to medium SAND (SP)			
15							

REMARKS:	DRILLED BY: *S. Correa*	STARTED: *12/18/14*	
	LOGGED BY: *J. Soto*	COMPLETED: *12/18/14*	
	CHECKED BY: AZS	APPROVED BY: JGS	SHEET 1 OF 1

TEST BORING RECORD

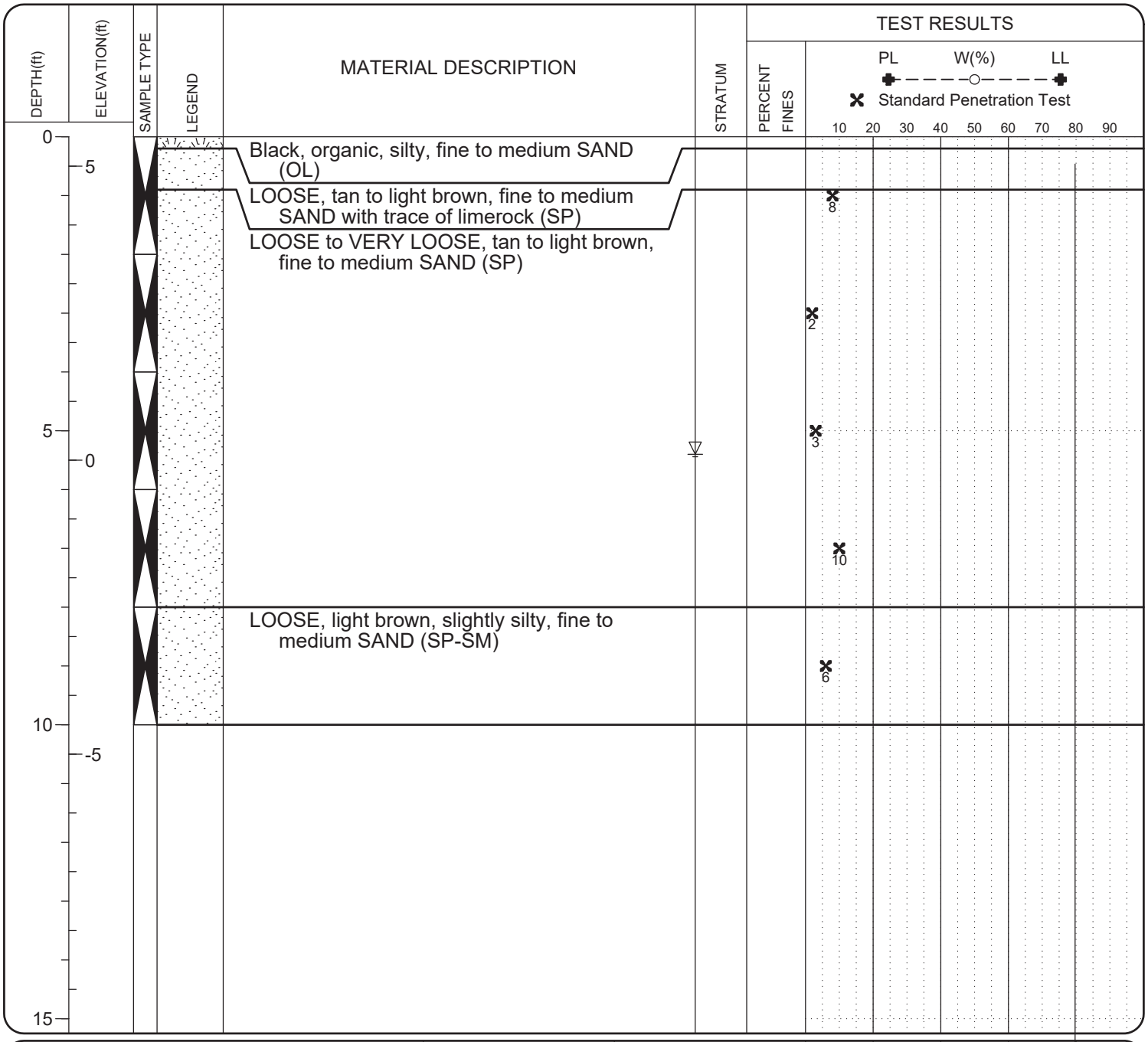
ACES, Inc. 7800 W. Oakland Pk. Blvd. #109, Sunrise, FL 33351, (954) 746-6868	PROJECT NUMBER: *21405*	BOREHOLE NUMBER: *TB-62*	
EQUIPMENT & METHODS: *Diedrich D-90 / Automatic Hammer, Rotary /Mud*	PROJECT/LOCATION: *WMRP - Johnson St. to Taft St. from N. 66th Ave to NW. 76th Terr, Hollywood, Florida*		
CLIENT/OWNER: *EAC Consulting, Inc.*	GROUND LEVEL(ft): *6.2*	COORDINATES: *See Field Exp. Plan*	DATE: *January 2015*



REMARKS: *Groundwater was not encountered in the upper 6 feet at the time of drilling before the drilling mud was used.*	DRILLED BY: *S. Correa*	STARTED: *12/18/14*	
	LOGGED BY: *J. Soto*	COMPLETED: *12/18/14*	
	CHECKED BY: AZS	APPROVED BY: JGS	SHEET 1 OF 1

TEST BORING RECORD

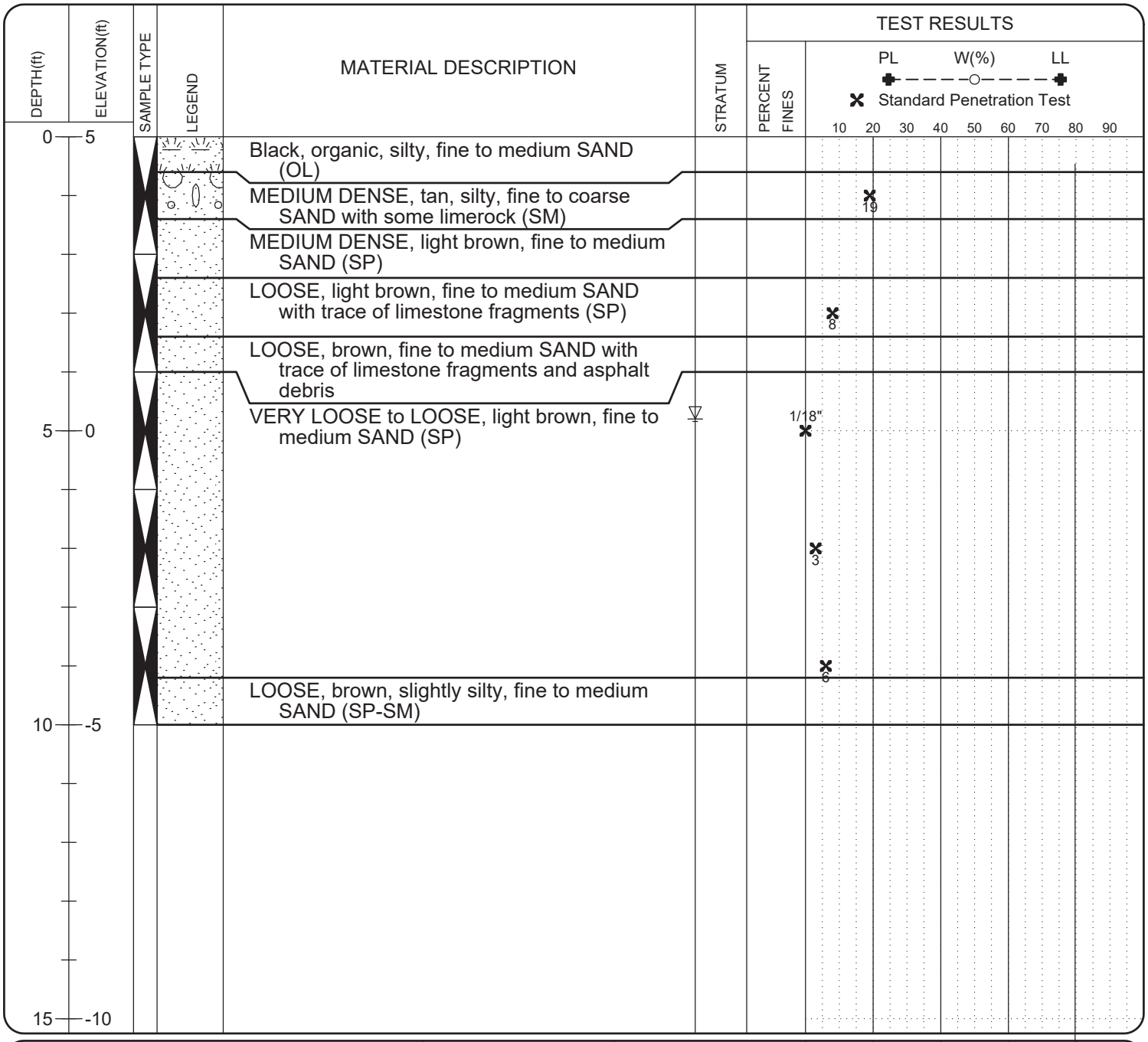
ACES, Inc.	7800 W. Oakland Pk. Blvd. #109 Sunrise, FL 33351 (954) 746-6868	PROJECT NUMBER: *21405*	BOREHOLE NUMBER: *TB-63*
EQUIPMENT & METHODS: *Diedrich D-90 / Automatic Hammer* *Rotary /Mud*		PROJECT/LOCATION: *WMRP - Johnson St. to Taft St. from N. 66th Ave to NW. 76th Terr* *Hollywood, Florida*	
CLIENT/OWNER: *EAC Consulting, Inc.*	GROUND LEVEL(ft): *5.5*	COORDINATES: *See Field Exp. Plan*	DATE: *January 2015*



REMARKS:	DRILLED BY: *S. Correa*	STARTED: *1/5/15*	
	LOGGED BY: *J. Soto*	COMPLETED: *1/5/15*	
	CHECKED BY: AZS	APPROVED BY: JGS	SHEET 1 OF 1

TEST BORING RECORD

ACES, Inc.	7800 W. Oakland Pk. Blvd. #109 Sunrise, FL 33351 (954) 746-6868	PROJECT NUMBER: *21405*	BOREHOLE NUMBER: *TB-64*
EQUIPMENT & METHODS: *Diedrich D-90 / Automatic Hammer* *Rotary /Mud*		PROJECT/LOCATION: *WMRP - Johnson St. to Taft St. from N. 66th Ave to NW. 76th Terr* *Hollywood, Florida*	
CLIENT/OWNER: *EAC Consulting, Inc.*	GROUND LEVEL(ft): *5.0*	COORDINATES: *See Field Exp. Plan*	DATE: *January 2015*



REMARKS:	DRILLED BY: *S. Correa*	STARTED: *1/5/15*	
	LOGGED BY: *J. Soto*	COMPLETED: *1/5/15*	
	CHECKED BY: AZS	APPROVED BY: JGS	SHEET 1 OF 1

TEST BORING RECORD

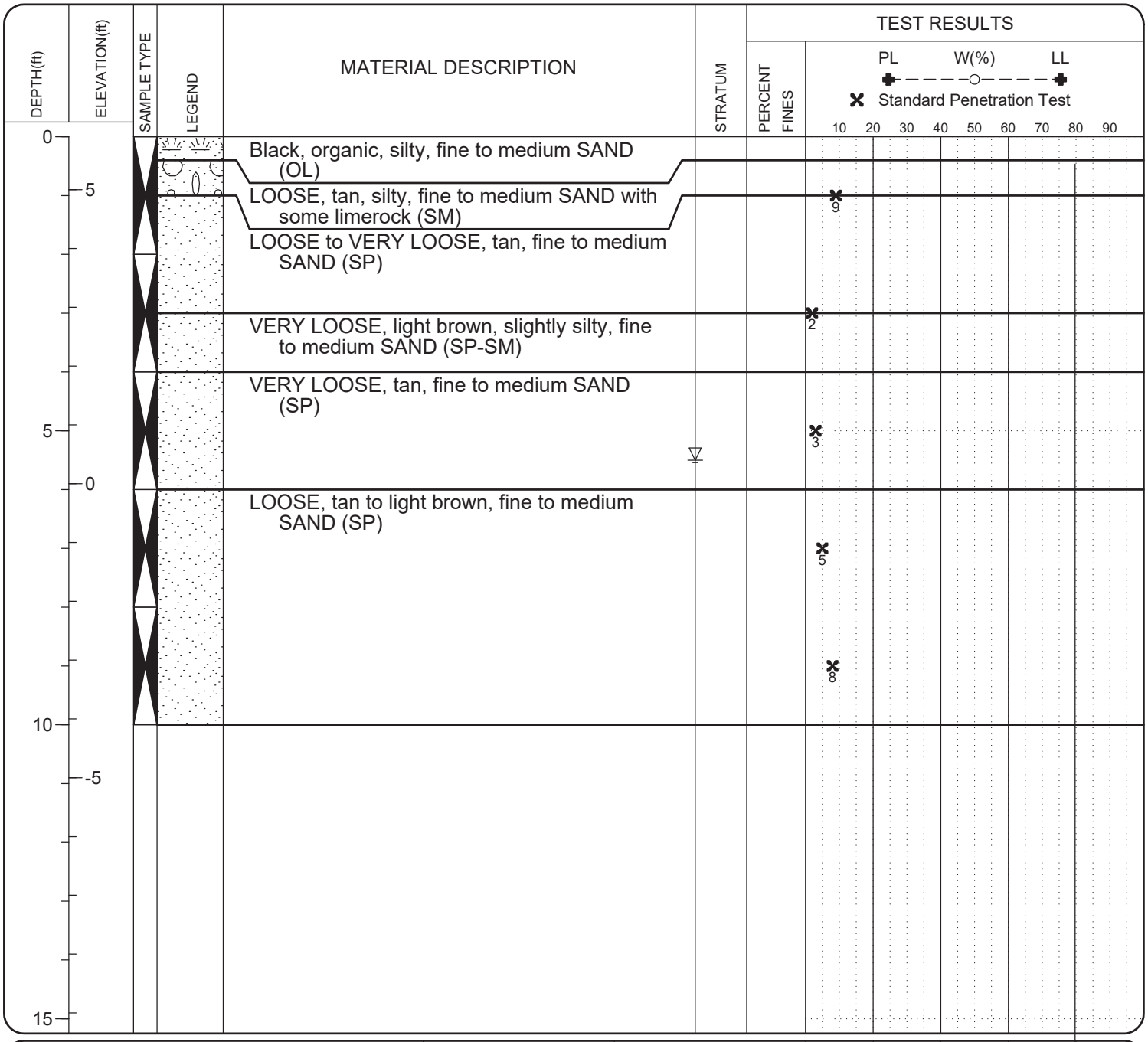
ACES, Inc.	7800 W. Oakland Pk. Blvd. #109 Sunrise, FL 33351 (954) 746-6868	PROJECT NUMBER: *21405*	BOREHOLE NUMBER: *TB-65*
EQUIPMENT & METHODS: *Diedrich D-90 / Automatic Hammer* *Rotary /Mud*		PROJECT/LOCATION: *WMRP - Johnson St. to Taft St. from N. 66th Ave to NW. 76th Terr* *Hollywood, Florida*	
CLIENT/OWNER: *EAC Consulting, Inc.*	GROUND LEVEL(ft): *4.9*	COORDINATES: *See Field Exp. Plan*	DATE: *January 2015*

DEPTH(ft)	ELEVATION(ft)	SAMPLE TYPE	LEGEND	MATERIAL DESCRIPTION	STRATUM	TEST RESULTS: PERCENT FINES	TEST RESULTS: PL W(%) LL; Standard Penetration Test (10 20 30 40 50 60 70 80 90)
0				Black, organic, silty, fine to medium SAND with trace of roots (OL)			
				LOOSE, brown, fine to medium SAND (SP)			6
				LOOSE, yellowish brown, silty, fine to medium SAND (SM)			
				LOOSE, light brown, slightly silty, fine to medium SAND (SP-SM)			
				VERY LOOSE, brown, slightly silty, fine to medium SAND (SP-SM)		10.2	3
5	0			VERY LOOSE to LOOSE, light brown, slightly silty, fine to medium SAND (SP-SM) ▽			2
							6
							5
10	-5						
15	-10						

REMARKS:	DRILLED BY: *S. Correa*	STARTED: *1/6/15*	
	LOGGED BY: *J. Soto*	COMPLETED: *1/6/15*	
	CHECKED BY: AZS	APPROVED BY: JGS	SHEET 1 OF 1

TEST BORING RECORD

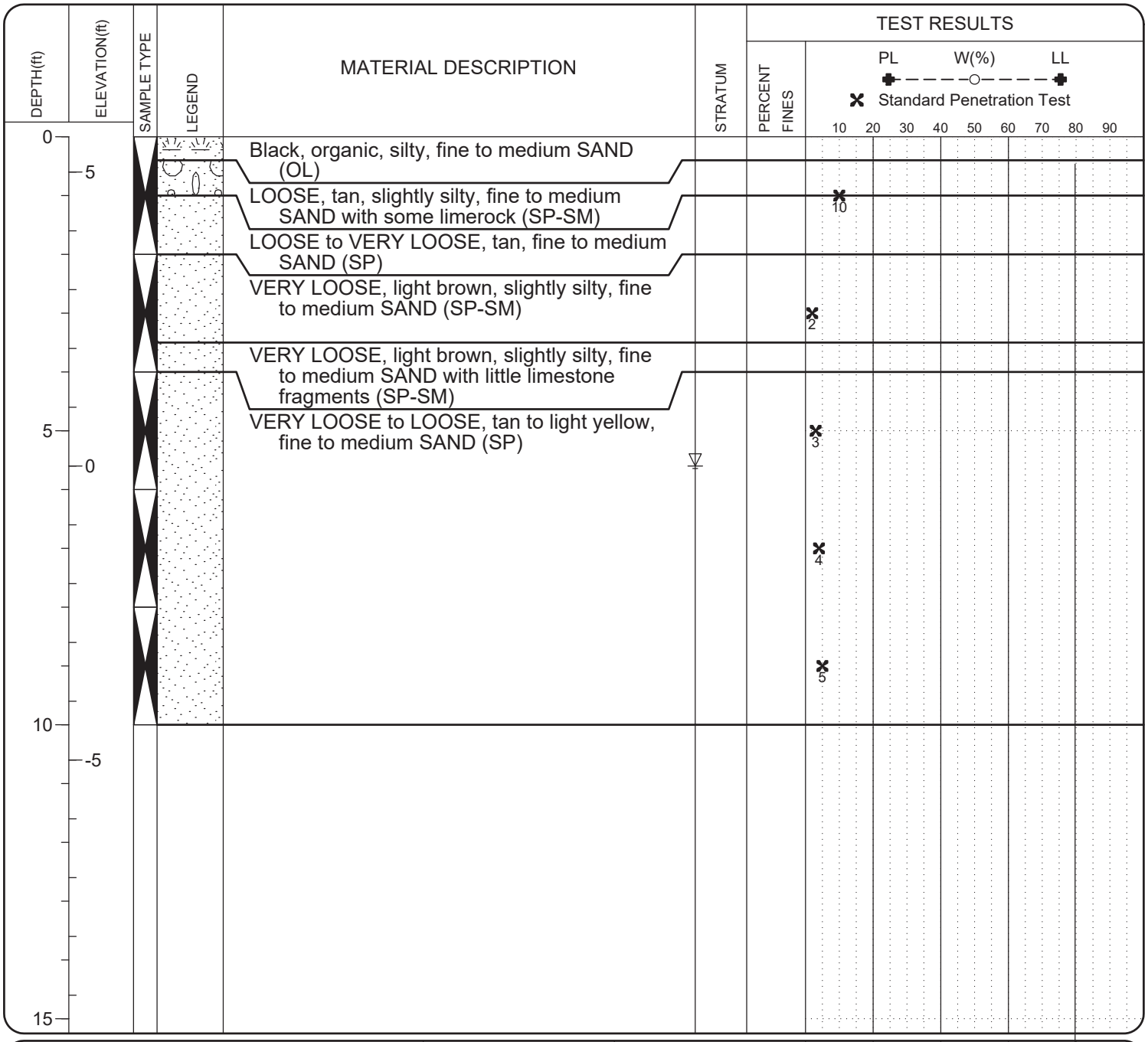
ACES, Inc.	7800 W. Oakland Pk. Blvd. #109 Sunrise, FL 33351 (954) 746-6868	PROJECT NUMBER: *21405*	BOREHOLE NUMBER: *TB-66*
EQUIPMENT & METHODS: *Diedrich D-90 / Automatic Hammer* *Rotary /Mud*		PROJECT/LOCATION: *WMRP - Johnson St. to Taft St. from N. 66th Ave to NW. 76th Terr* *Hollywood, Florida*	
CLIENT/OWNER: *EAC Consulting, Inc.*	GROUND LEVEL(ft): *5.9*	COORDINATES: *See Field Exp. Plan*	DATE: *January 2015*



REMARKS:	DRILLED BY: *S. Correa*	STARTED: *1/5/15*	
	LOGGED BY: *J. Soto*	COMPLETED: *1/5/15*	
	CHECKED BY: AZS	APPROVED BY: JGS	SHEET 1 OF 1

TEST BORING RECORD

ACES, Inc.	7800 W. Oakland Pk. Blvd. #109 Sunrise, FL 33351 (954) 746-6868	PROJECT NUMBER: *21405*	BOREHOLE NUMBER: *TB-67*
EQUIPMENT & METHODS: *Diedrich D-90 / Automatic Hammer* *Rotary /Mud*		PROJECT/LOCATION: *WMRP - Johnson St. to Taft St. from N. 66th Ave to NW. 76th Terr* *Hollywood, Florida*	
CLIENT/OWNER: *EAC Consulting, Inc.*	GROUND LEVEL(ft): *5.6*	COORDINATES: *See Field Exp. Plan*	DATE: *January 2015*



REMARKS:	DRILLED BY: *S. Correa*	STARTED: *1/5/15*	
	LOGGED BY: *J. Soto*	COMPLETED: *1/5/15*	
	CHECKED BY: AZS	APPROVED BY: JGS	SHEET 1 OF 1

TEST BORING RECORD

ACES, Inc.	7800 W. Oakland Pk. Blvd. #109 Sunrise, FL 33351 (954) 746-6868	PROJECT NUMBER: *21405*	BOREHOLE NUMBER: *TB-68*
EQUIPMENT & METHODS: *Diedrich D-90 / Automatic Hammer* *Rotary /Mud*		PROJECT/LOCATION: *WMRP - Johnson St. to Taft St. from N. 66th Ave to NW. 76th Terr* *Hollywood, Florida*	
CLIENT/OWNER: *EAC Consulting, Inc.*	GROUND LEVEL(ft): *5.8*	COORDINATES: *See Field Exp. Plan*	DATE: *January 2015*

DEPTH(ft)	ELEVATION(ft)	SAMPLE TYPE	LEGEND	MATERIAL DESCRIPTION	STRATUM	TEST RESULTS: PERCENT FINES	TEST RESULTS: PL W(%) LL; Standard Penetration Test (10 20 30 40 50 60 70 80 90)
0	5			Black, organic, silty, fine to medium SAND (SM)			
				LOOSE, light brown, slightly silty, fine to medium SAND and LIMEROCK (SP-SM)			9
				LOOSE to VERY LOOSE, tan, fine to medium SAND (SP)			
				VERY LOOSE, light brown, fine to medium SAND (SP)			3
5	0				▽		2
							4
				LOOSE, light brown, slightly silty, fine to medium SAND (SP-SM)			6
10	-5						
15							

REMARKS:	DRILLED BY: *S. Correa*	STARTED: *1/5/15*	
	LOGGED BY: *J. Soto*	COMPLETED: *1/5/15*	
	CHECKED BY: AZS	APPROVED BY: JGS	SHEET 1 OF 1

TEST BORING RECORD

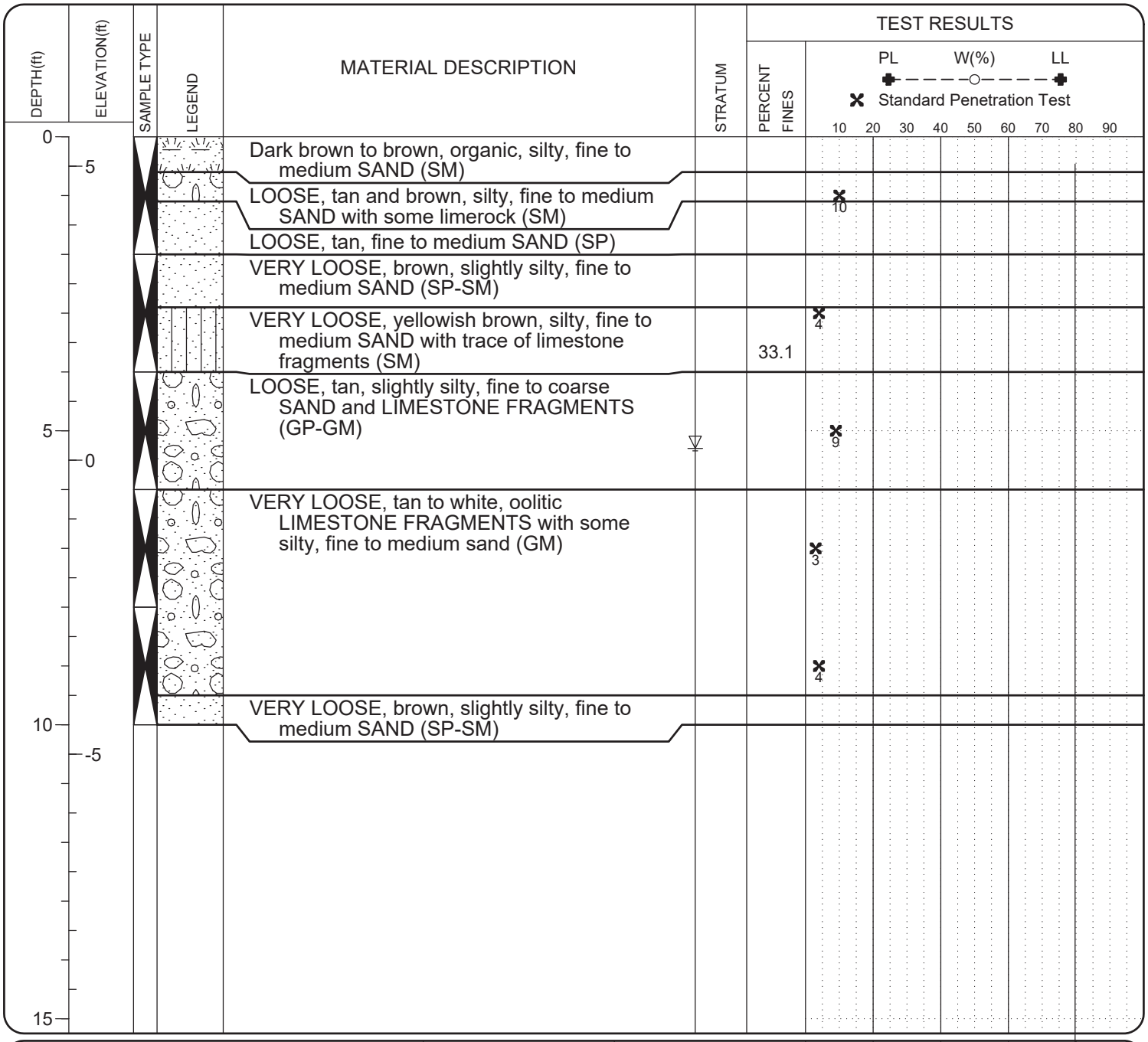
ACES, Inc.	7800 W. Oakland Pk. Blvd. #109 Sunrise, FL 33351 (954) 746-6868	PROJECT NUMBER: *21405*	BOREHOLE NUMBER: *TB-69*
EQUIPMENT & METHODS: *Diedrich D-90 / Automatic Hammer* *Rotary /Mud*		PROJECT/LOCATION: *WMRP - Johnson St. to Taft St. from N. 66th Ave to NW. 76th Terr* *Hollywood, Florida*	
CLIENT/OWNER: *EAC Consulting, Inc.*	GROUND LEVEL(ft): *5.7*	COORDINATES: *See Field Exp. Plan*	DATE: *January 2015*

DEPTH(ft)	ELEVATION(ft)	SAMPLE TYPE	LEGEND	MATERIAL DESCRIPTION	STRATUM	TEST RESULTS: PERCENT FINES	TEST RESULTS: PL W(%) LL; Standard Penetration Test (10 20 30 40 50 60 70 80 90)
0	5			Black, organic, silty, fine to medium SAND with trace of roots (OL)			
				LOOSE, tan, slightly silty, fine to medium SAND with some limerock (SP-SM)			5
				VERY LOOSE, tan, fine to medium SAND (SP)			
				VERY LOOSE, brown, fine to medium SAND (SP)			2
5	0			VERY LOOSE, tan, fine to medium SAND (SP)	▽		2
				VERY LOOSE to LOOSE, tan, fine to medium SAND with trace of subangular and subrounded limestone fragments (SP)			4
							6
10	-5						
15							

REMARKS:	DRILLED BY: *S. Correa*	STARTED: *1/6/15*	
	LOGGED BY: *J. Soto*	COMPLETED: *1/6/15*	
	CHECKED BY: AZS	APPROVED BY: JGS	SHEET 1 OF 1

TEST BORING RECORD

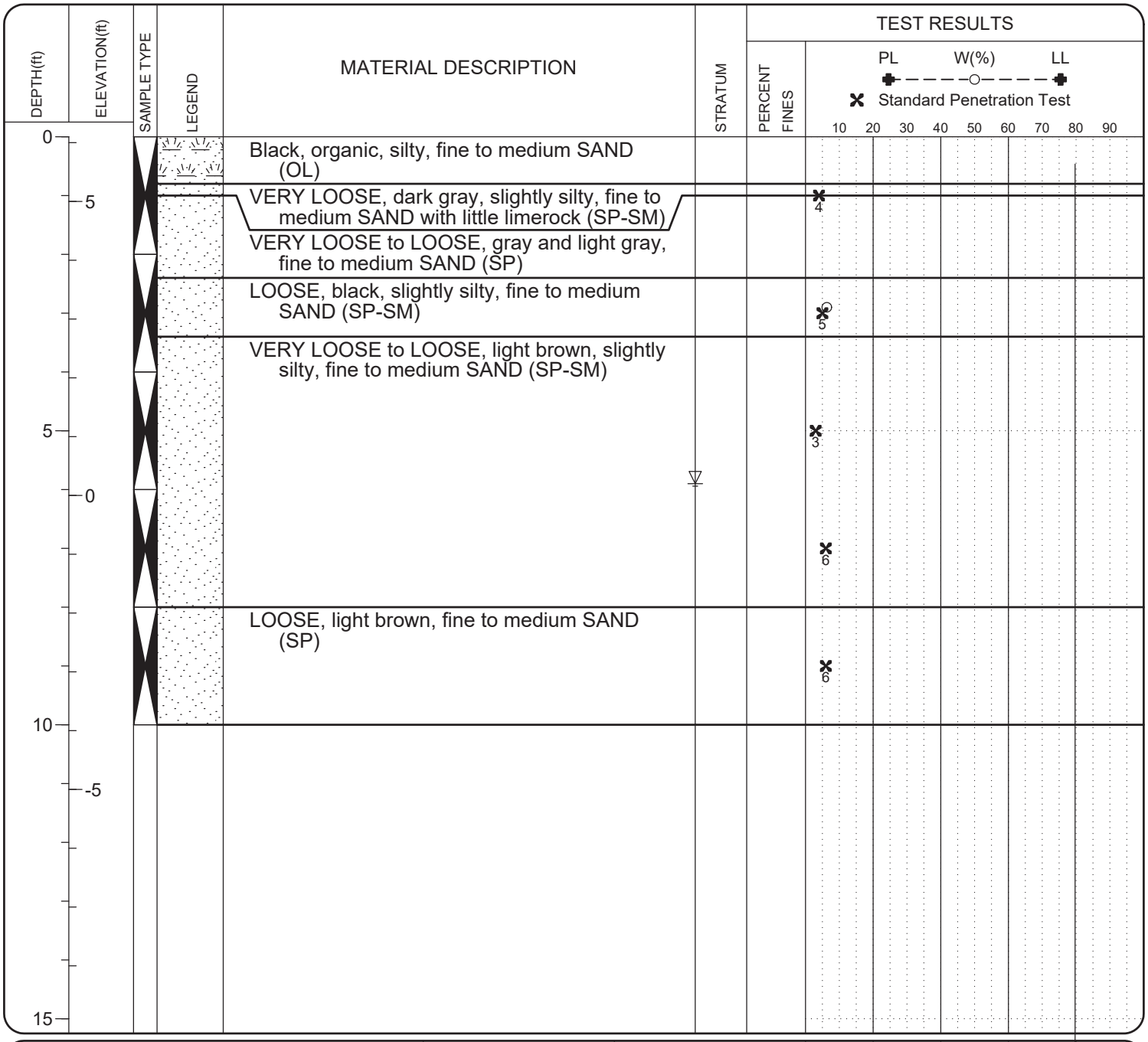
ACES, Inc. 7800 W. Oakland Pk. Blvd. #109 Sunrise, FL 33351 (954) 746-6868		PROJECT NUMBER: *21405*	BOREHOLE NUMBER: *TB-70*
EQUIPMENT & METHODS: *Diedrich D-90 / Automatic Hammer Rotary /Mud*		PROJECT/LOCATION: *WMRP - Johnson St. to Taft St. from N. 66th Ave to NW. 76th Terr Hollywood, Florida*	
CLIENT/OWNER: *EAC Consulting, Inc.*	GROUND LEVEL(ft): *5.5*	COORDINATES: *See Field Exp. Plan*	DATE: *January 2015*



REMARKS:	DRILLED BY: *S. Correa*	STARTED: *12/18/14*	
	LOGGED BY: *J. Soto*	COMPLETED: *12/18/14*	
	CHECKED BY: AZS	APPROVED BY: JGS	SHEET 1 OF 1

TEST BORING RECORD

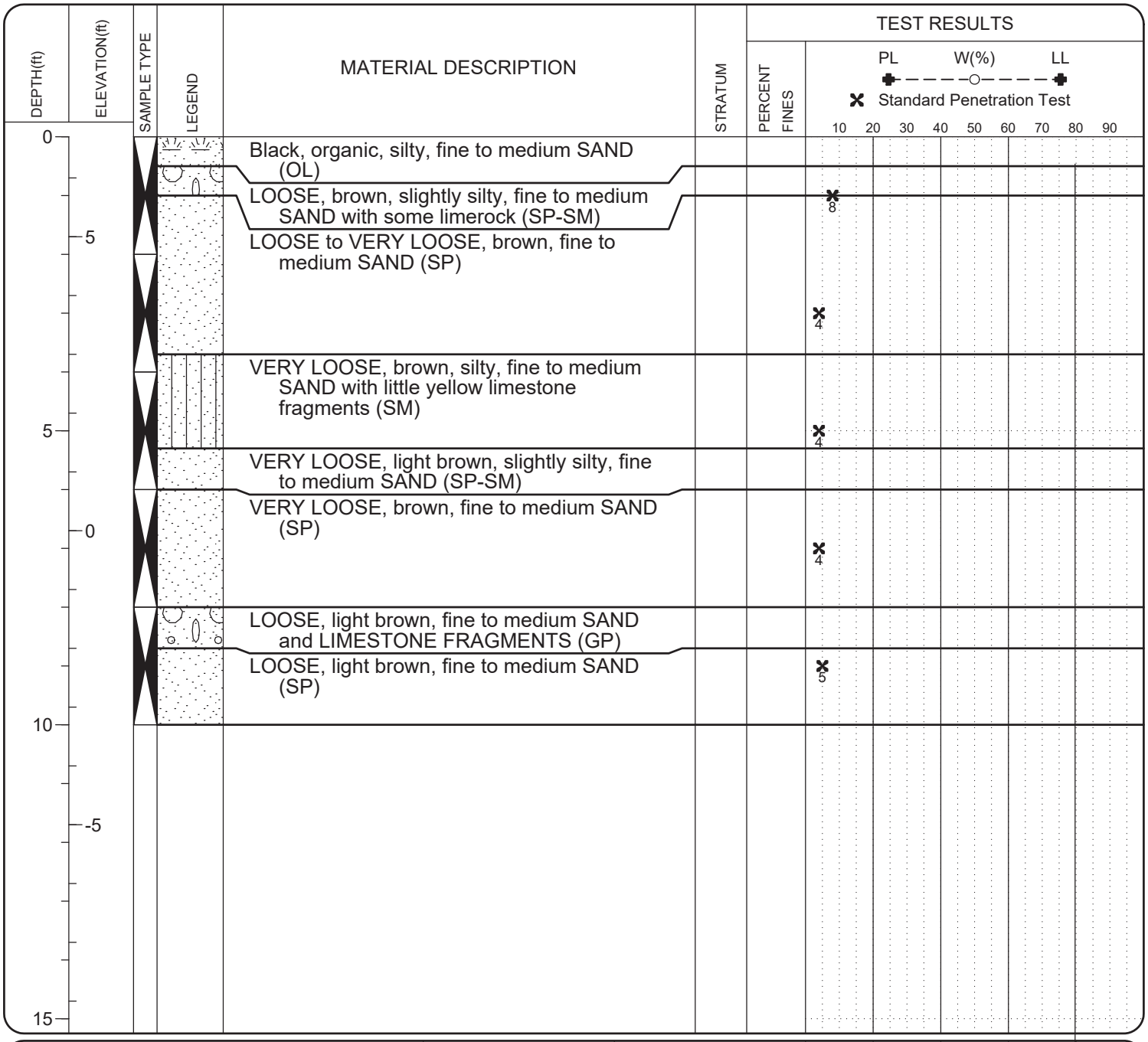
ACES, Inc.	7800 W. Oakland Pk. Blvd. #109 Sunrise, FL 33351 (954) 746-6868	PROJECT NUMBER: *21405*	BOREHOLE NUMBER: *TB-71*
EQUIPMENT & METHODS: *Diedrich D-90 / Automatic Hammer* *Rotary /Mud*		PROJECT/LOCATION: *WMRP - Johnson St. to Taft St. from N. 66th Ave to NW. 76th Terr* *Hollywood, Florida*	
CLIENT/OWNER: *EAC Consulting, Inc.*	GROUND LEVEL(ft): *6.1*	COORDINATES: *See Field Exp. Plan*	DATE: *January 2015*



REMARKS:	DRILLED BY: *S. Correa*	STARTED: *1/5/15*	
	LOGGED BY: *J. Soto*	COMPLETED: *1/5/15*	
	CHECKED BY: AZS	APPROVED BY: JGS	SHEET 1 OF 1

TEST BORING RECORD

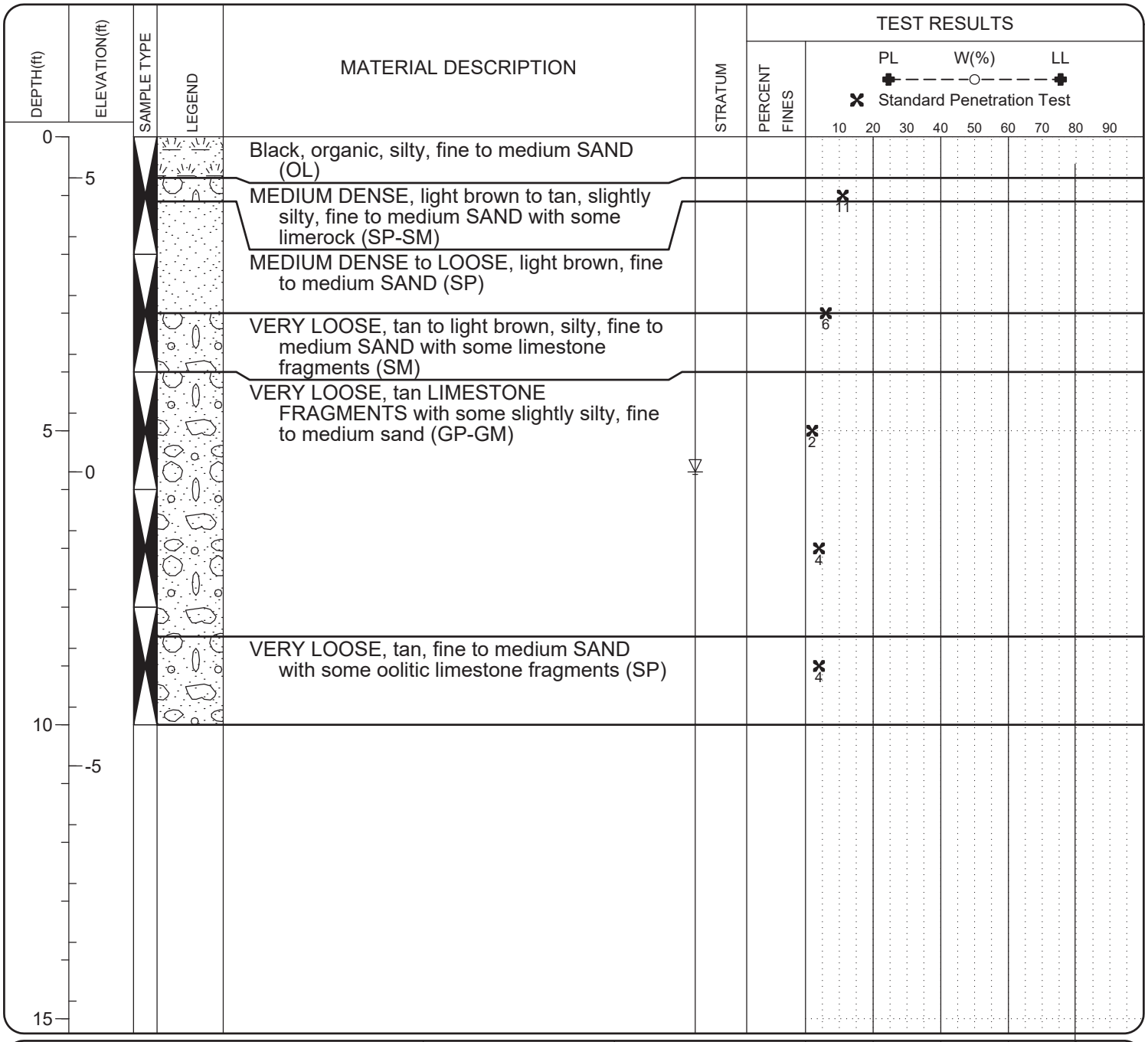
ACES, Inc. 7800 W. Oakland Pk. Blvd. #109, Sunrise, FL 33351, (954) 746-6868		PROJECT NUMBER: *21405*	BOREHOLE NUMBER: *TB-72*
EQUIPMENT & METHODS: *Diedrich D-90 / Automatic Hammer, Rotary /Mud*		PROJECT/LOCATION: *WMRP - Johnson St. to Taft St. from N. 66th Ave to NW. 76th Terr, Hollywood, Florida*	
CLIENT/OWNER: *EAC Consulting, Inc.*	GROUND LEVEL(ft): *6.7*	COORDINATES: *See Field Exp. Plan*	DATE: *January 2015*



REMARKS: *Groundwater was not encountered in the upper 6 feet at the time of drilling before the drilling mud was used.*	DRILLED BY: *S. Correa*	STARTED: *1/6/15*	
	LOGGED BY: *J. Soto*	COMPLETED: *1/6/15*	
	CHECKED BY: AZS	APPROVED BY: JGS	SHEET 1 OF 1

TEST BORING RECORD

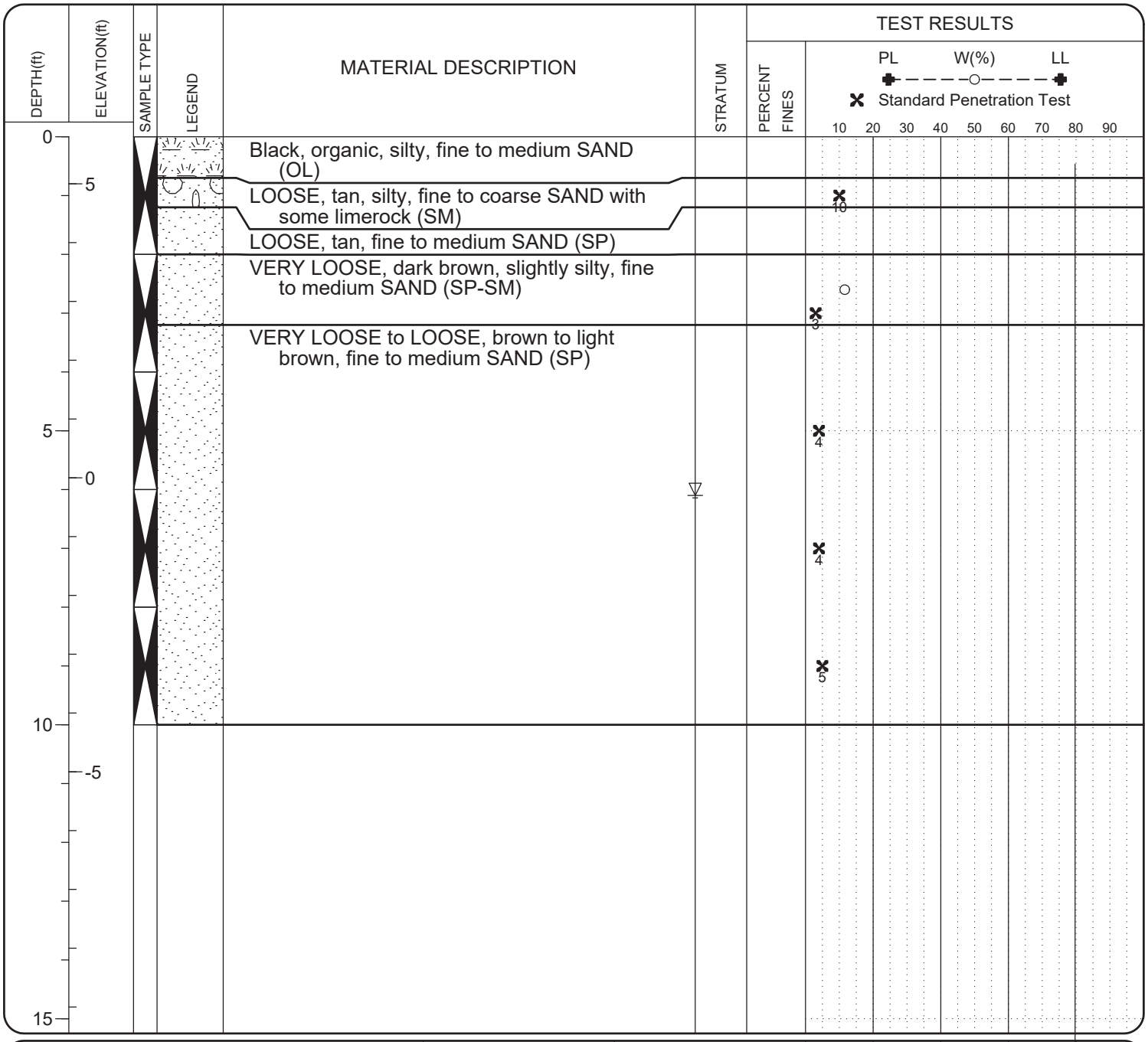
ACES, Inc. 7800 W. Oakland Pk. Blvd. #109 Sunrise, FL 33351 (954) 746-6868		PROJECT NUMBER: *21405*	BOREHOLE NUMBER: *TB-73*
EQUIPMENT & METHODS: *Diedrich D-90 / Automatic Hammer Rotary /Mud*		PROJECT/LOCATION: *WMRP - Johnson St. to Taft St. from N. 66th Ave to NW. 76th Terr Hollywood, Florida*	
CLIENT/OWNER: *EAC Consulting, Inc.*	GROUND LEVEL(ft): *5.7*	COORDINATES: *See Field Exp. Plan*	DATE: *January 2015*



REMARKS: *100% mud loss observed at an approximate depth of 5 feet.*	DRILLED BY: *S. Correa*	STARTED: *1/6/15*	
	LOGGED BY: *J. Soto*	COMPLETED: *1/6/15*	
	CHECKED BY: AZS	APPROVED BY: JGS	SHEET 1 OF 1

TEST BORING RECORD

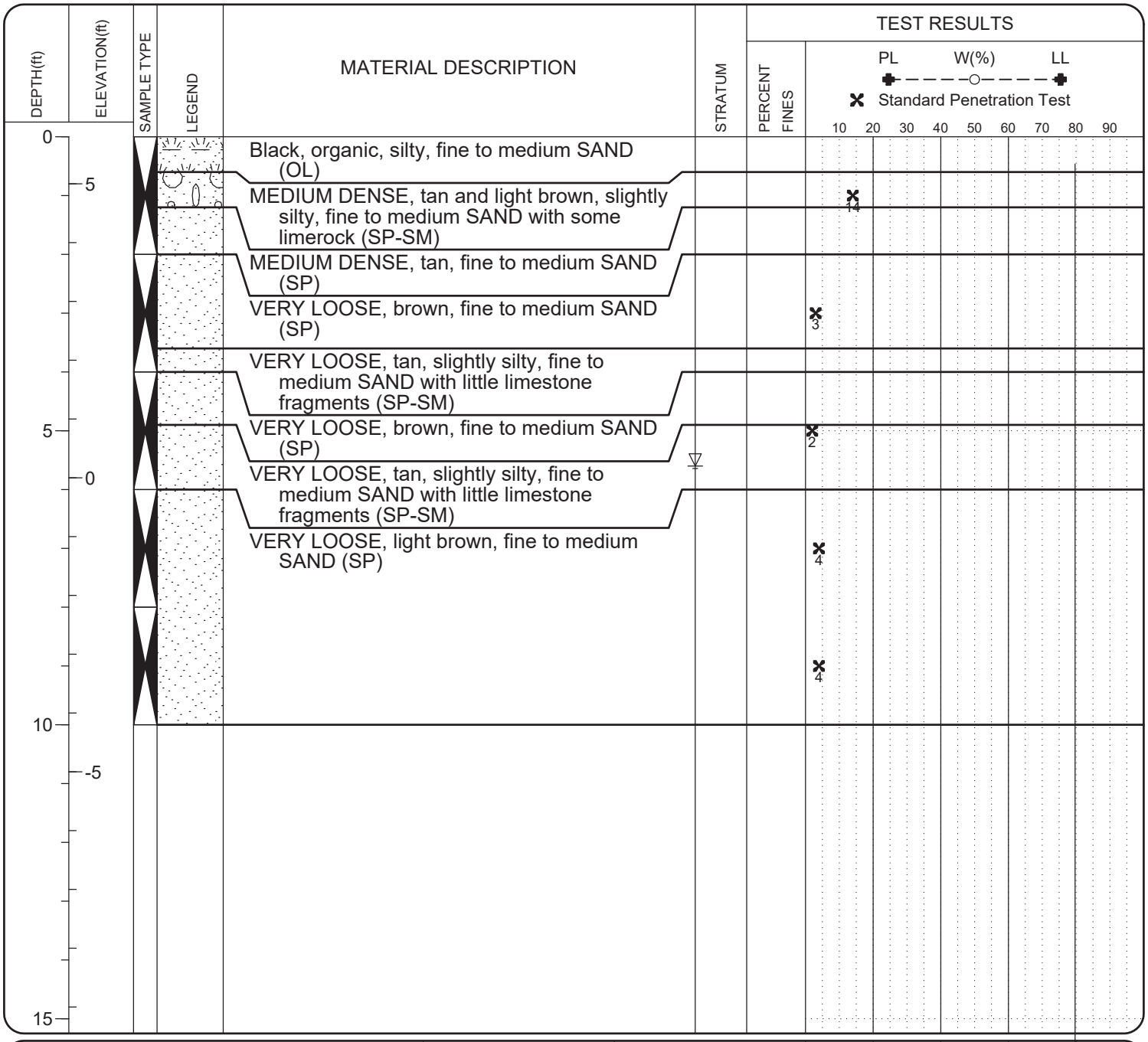
ACES, Inc. 7800 W. Oakland Pk. Blvd. #109, Sunrise, FL 33351, (954) 746-6868	PROJECT NUMBER: *21405*	BOREHOLE NUMBER: *TB-74*	
EQUIPMENT & METHODS: *Diedrich D-90 / Automatic Hammer, Rotary /Mud*	PROJECT/LOCATION: *WMRP - Johnson St. to Taft St. from N. 66th Ave to NW. 76th Terr, Hollywood, Florida*		
CLIENT/OWNER: *EAC Consulting, Inc.*	GROUND LEVEL(ft): *5.8*	COORDINATES: *See Field Exp. Plan*	DATE: *January 2015*



REMARKS:	DRILLED BY: *S. Correa*	STARTED: *1/6/15*	
	LOGGED BY: *J. Soto*	COMPLETED: *1/6/15*	
	CHECKED BY: AZS	APPROVED BY: JGS	SHEET 1 OF 1

TEST BORING RECORD

ACES, Inc.	7800 W. Oakland Pk. Blvd. #109 Sunrise, FL 33351 (954) 746-6868	PROJECT NUMBER: *21405*	BOREHOLE NUMBER: *TB-75*
EQUIPMENT & METHODS: *Diedrich D-90 / Automatic Hammer* *Rotary /Mud*		PROJECT/LOCATION: *WMRP - Johnson St. to Taft St. from N. 66th Ave to NW. 76th Terr* *Hollywood, Florida*	
CLIENT/OWNER: *EAC Consulting, Inc.*	GROUND LEVEL(ft): *5.8*	COORDINATES: *See Field Exp. Plan*	DATE: *January 2015*



REMARKS:	DRILLED BY: *S. Correa*	STARTED: *1/5/15*	
	LOGGED BY: *J. Soto*	COMPLETED: *1/5/15*	
	CHECKED BY: AZS	APPROVED BY: JGS	SHEET 1 OF 1

STANDARD PENETRATION TEST BORINGS

GENERAL NOTES

TEST BORING RECORDS - GENERAL NOTES

The subsurface conditions encountered during drilling are reported on a field test boring record by the Driller. The record contains information concerning the boring method, samples attempted and recovered, indications of the presence of coarse gravel, cobbles, etc., and observations of the groundwater. It also contains the driller's interpretation of the soil conditions between samples. Therefore, these boring records contain both factual and interpretive information. The field boring records are kept on file in our office.

After the drilling is completed, the field and project engineers classify the soil and prepare the final Test Boring Records which are the basis for all evaluations and recommendation. The following terms are taken from ASTM D2467-90[1], Hunt's Geotechnical Engineering Investigation Manual, 1984[2], or Deere's Technical Description of Rock Cores for Engineering Purposes, Rock Mechanical Engineering Geology, pp. 18-22[3].

RELATIVE DENSITY OF COHESIONLESS SOILS FROM STANDARD PENETRATION TESTS [2]

Very Loose	< 4 bpf
Loose	5 - 10 bpf
Medium Dense	11 - 30 bpf
Dense	31 - 50 bpf
Very Dense	> 50 bpf

(bpf = blows per foot, ASTM D 1586)

CONSISTENCY OF COHESIVE SOILS UNDRAINED SHEAR STRENGTH (tsf)[2]

Very Soft	< 0.25	< 2 bpf
Soft	0.25 - 0.50	2 - 4 bpf
Firm	0.51 - 1.00	5 - 8 bpf
Stiff	1.01 - 2.00	9 - 15 bpf
Very Stiff	2.01 - 4.00	16 - 30 bpf
Hard	> 4.00	> 30 bpf

ESTIMATED RELATIVE MOISTURE CONDITION[1]

Dry	- Absence of moisture, dry to the touch
Moist	- Damp but no visible water
Wet	- Visible free water

PARTICLE SIZE IDENTIFICATION

Boulders	Larger than 6 inches
Cobbles	3 inches to 6 inches
Gravel	
Coarse	3 inches to 3/4 of an inch
Fine	3/4 of an inch to 4.75 mm.
Sand	
Coarse	4.75 mm. to 2.00 mm.
Medium	2.00 mm. to 0.425 mm.
Fine	0.425 mm. to 0.075 mm.
Fines	
(Silt or Clay)	Smaller than 0.075 mm.

DEFINITION OF COMPONENT PROPORTIONS[2] (Used for materials other than soils)

Trace	1 - 10%
Little	10 - 20%
Some	20 - 35%
And	35 - 50%

DEFINITION OF SECONDARY SOIL MODIFIERS (Used for soil mixtures)

None	0 - 5%
Slightly -y	6 - 12%
-y	13 - 50%

RELATIVE HARDNESS OF ROCK[2]

Extremely Soft	Pieces 1 inch or more in thickness can be broken by finger pressure; can be scratched readily by a fingernail.
Very Soft	May be broken with fingers; can be cut with a knife.
Soft	May be scratched with a nail; corners and edges may be broken with fingers.
Moderately Hard	One moderate blow of hammer required to break sample.
Hard	More than one blow of hammer required to break sample.
Extremely Hard	Several hard blows of hammer required to break sample.

RELATIVE QUALITY OF ROCKS[3]

Quality	RQD
Very Poor	0 - 25%
Poor	25 - 50%
Fair	50 - 75%
Good	75 - 90%
Excellent	90 - 100%

(RQD = Rock Quality Designation)

$$\%\ \text{RECOVERY} = \frac{\text{Total length of core}}{\text{Length of core run}} \times 100\%$$

$$\%\text{RQD} = \frac{\text{Total length of pieces} > 4\text{" long}}{\text{Length of core run}} \times 100\%$$

ADVANCE CONSULTING ENGINEERING SERVICES, INC. (ACES)

IMPORTANT INFORMATION ABOUT THIS GEOTECHNICAL ENGINEERING REPORT

More construction problems are caused by site subsurface conditions than any other factor. As troublesome as subsurface problems can be, their frequency and extent have been lessened considerably in recent years, due in large measure to programs and publications of ASFE/ The Association of Engineering Firms Practicing in the Geosciences.

The following suggestions and observations are offered to help you reduce the geotechnical-related delays, cost-overruns and other costly headaches that can occur during a construction project.

A GEOTECHNICAL ENGINEERING REPORT IS BASED ON A UNIQUE SET OF PROJECT-SPECIFIC FACTORS

A geotechnical engineering report is based on a subsurface exploration plan designed to incorporate a unique set of project-specific factors. These typically include: the general nature of the structure involved, its size and configuration; the location of the structure on the site and its orientation; physical concomitants such as access roads, parking lots, and underground utilities; and the level of additional risk which the client assumed by virtue of limitations imposed upon the exploratory program. To help avoid costly problems, consult the geotechnical engineer to determine how any factors which change subsequent to the date of the report may affect its recommendations.

Unless your consulting geotechnical engineer indicates otherwise, *your geotechnical engineering report should not be used:*

- When the nature of the proposed structure is changed, for example, if an office building will be erected instead of a parking garage, or if a refrigerated warehouse will be built instead of an unrefrigerated one;
- when the size or configuration of the proposed structure is altered;
- when the location or orientation of the proposed structure is modified;
- when there is a change of ownership, or
- for application to an adjacent site.

Geotechnical engineers cannot accept responsibility for problems which may develop if they are not consulted after factors considered in their report's development have changed.

MOST GEOTECHNICAL "FINDINGS" ARE PROFESSIONAL ESTIMATES

Site exploration identifies actual subsurface conditions only at those points where samples are taken, when they are taken. Data derived through sampling and subsequent laboratory testing are extrapolated by geotechnical engineers who then render an opinion about overall subsurface conditions, their likely reaction to proposed construction activity, and appropriate foundation design. Even under optimal circumstances actual conditions may differ from those inferred to exist, because no geotechnical engineer, no matter how qualified, and no subsurface exploration program, no matter how comprehensive, can reveal what is hidden by earth, rock and time. The actual interface between materials may be far more gradual or abrupt than a report indicates. Actual conditions in areas not sampled may differ from predictions. *Nothing can be done to prevent the unanticipated, but steps can be taken to help minimize their impact.* For this reason, *most experienced owners retain their geotechnical consultants through the construction stage,* to identify variances, conduct additional tests which may be needed, and to recommend solutions to problems encountered on site.

SUBSURFACE CONDITIONS CAN CHANGE

Subsurface conditions may be modified by constantly-changing natural forces. Because a geotechnical engineering report is based on conditions which existed at the time of subsurface exploration, *construction decisions should not be based on a geotechnical engineering report whose adequacy may have been affected by time.* Speak with the geotechnical consultant to learn if additional tests are advisable before construction starts.

Construction operations at or adjacent to the site and natural events such as floods, earthquakes or groundwater fluctuations may also affect subsurface conditions and, thus, the continuing adequacy of a geotechnical report. The geotechnical engineer should be kept apprised of any such events, and should be consulted to determine if additional tests are necessary.

GEOTECHNICAL SERVICES ARE PERFORMED FOR SPECIFIC PURPOSES AND PERSONS

Geotechnical engineers' reports are prepared to meet the specific needs of specific individuals. A report prepared for a consulting civil engineer may not be adequate for a construction contractor, or even some other consulting civil engineer. Unless indicated otherwise, this report was prepared expressly for the client involved and expressly for purposes indicated by the client. Use by any other persons for any purpose, or by the client for a different purpose, may result in problems. *No individual other than the client should apply this report for its intended purpose without first conferring with the geotechnical engineer. No person should apply this report for any purpose other than that originally contemplated without first conferring with the geotechnical engineer.*

A GEOTECHNICAL ENGINEERING REPORT IS SUBJECT TO MISINTERPRETATION

Costly problems can occur when other design professionals develop their plans based on misinterpretations of a geotechnical engineering report. To help avoid these problems, the geotechnical engineer should be retained to work with other appropriate design professionals to explain relevant geotechnical findings and to review the adequacy of their plans and specifications relative to geotechnical issues.

BORING LOGS SHOULD NOT BE SEPARATED FROM THE ENGINEERING REPORT

Final boring logs are developed by geotechnical engineers based upon their interpretation of field logs (assembled by site personnel) and laboratory evaluation of field samples. Only final boring logs customarily are included in geotechnical engineering reports. *These logs should not under any circumstances be redrawn* for inclusion in architectural or other design drawings, because drafters may commit errors or omissions in the transfer process. Although photographic reproduction eliminates this problem, it does nothing to minimize the possibility of contractors misinterpreting the logs during bid preparation. When this occurs, delays, disputes and unanticipated costs are the all-too-frequent result.

To minimize the likelihood of boring log misinterpretation, *give contractors ready access to the complete geotechnical engineering report* prepared or authorized for their use. Those who do not provide such access may proceed under the *mistaken* impression that simply disclaiming responsibility for the accuracy of subsurface information always insulates them from attendant liability. Providing the best available information to contractors helps prevent costly construction problems and the adversarial attitudes which aggravate them to disproportionate scale.

READ RESPONSIBILITY CLAUSES CLOSELY

Because geotechnical engineering is based extensively on judgment and opinion, it is far less exact than other design disciplines. This situation has resulted in wholly unwarranted claims being lodged against geotechnical consultants. To help prevent this problem, geotechnical engineers have developed model clauses for use in written transmittals. These are *not* exculpatory clauses designed to foist geotechnical engineers' liabilities onto someone else. Rather, they are definitive clauses which identify where geotechnical engineers' responsibilities begin and end. Their use helps all parties involved recognize their individual responsibilities and take appropriate action. Some of these definitive clauses are likely to appear in your geotechnical engineering report, and you are encouraged to read them closely. Your geotechnical engineer will be pleased to give full and frank answers to your questions.

OTHER STEPS YOU CAN TAKE TO REDUCE RISK

Your consulting geotechnical engineer will be pleased to discuss other techniques which can be employed to mitigate risk. In addition, ASFE has developed a variety of materials which may be beneficial. Contact ASFE for a complimentary copy of its publications directory.

FIELD PROCEDURES

FIELD PROCEDURES

Soil Test Borings - The soil test borings were made in general accordance with ASTM D-1586, "Penetration Test and Split Barrel Sampling of Soils." The borings were initially advanced by augering. A rotary drilling process was subs equently used and bentonite drilling fluid was circulated in the boreholes to stabilize the sides and flush the cuttings. At regular intervals, the drilling tools were removed and soil samples were obtained with a standard 1.4 inch I.D., 2.0 inch O.D,., split-tube sampler. The sam pler was first seated six inches and then driven an additional foot with blo ws of a 140 pound ha mmer falling 30 inches. The num ber of hammer blows required to drive ' the sampler the final foot is designated the "P enetration Resistance." The penetration resistance, when properly interpreted, is an index to the soil strength and density.

Representative portions of the soil samples, obtained from the sampler, were placed in glass jars and transported to our laboratory. T he samples were then examined by an engineer in order to confirm the field classifications.

APPENDIX C

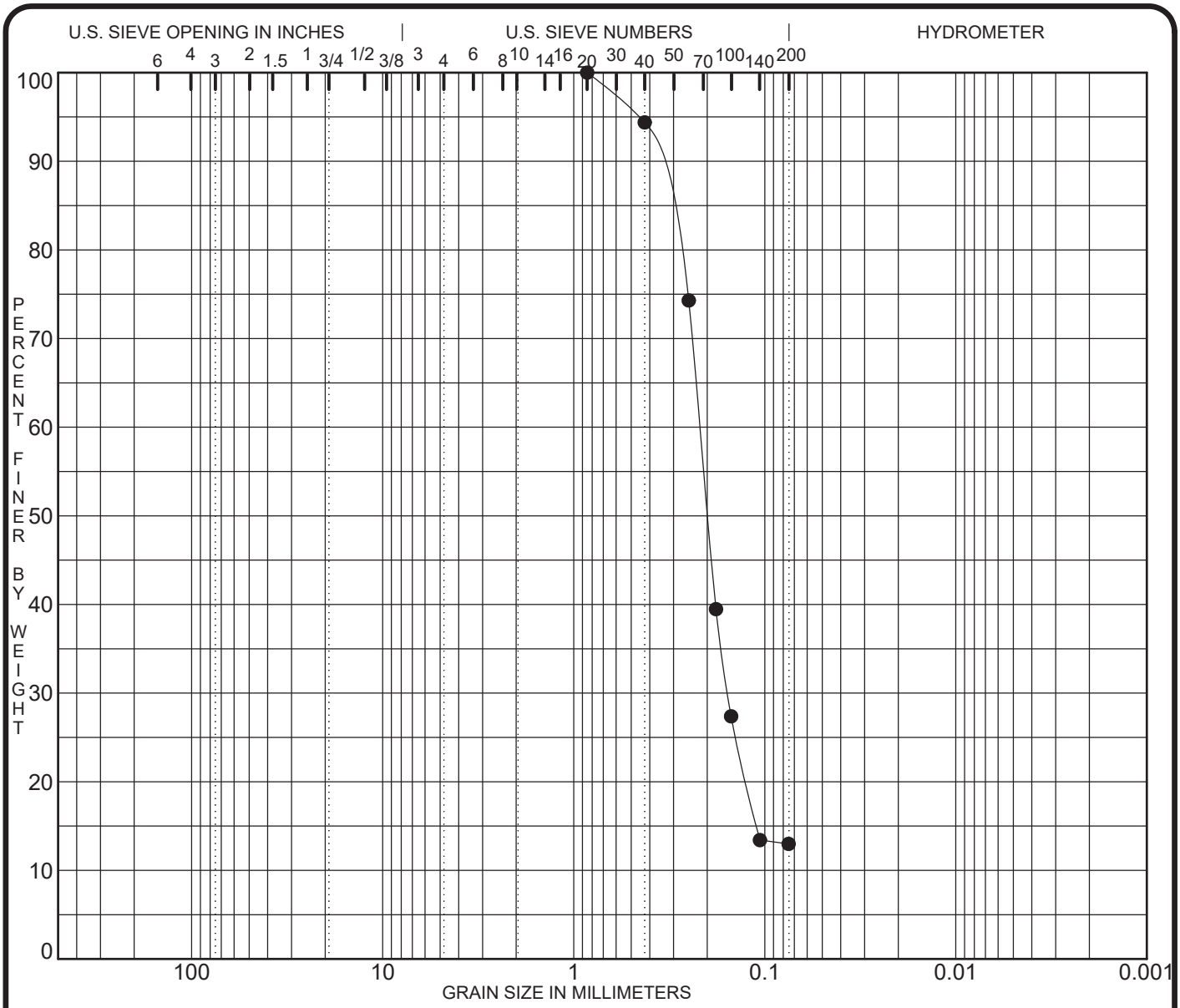
SUMMARY OF LABORATORY TEST RESULTS

WMRP - Johnson St. to Taft St. from N. 66th Ave to NW. 76th Terr
Hollywood, Florida
ACES Job No. 21405

SUMMARY OF LABORATORY TEST RESULTS

Test No.	Depth (feet)	Elevation of Middle (feet)	Percent Passing No. 4	Percent Passing No. 10	Percent Passing No. 40	Percent Passing No. 50	Percent Passing No. 60	Percent Passing No. 100	Percent Passing No. 200	Percent Organic Content	Moisture Content	Description of Soil
TB-01	7.0	-1.4		100.0	94.4	81.2	74.3	27.4	13.0			Brown, silty, fine to medium SAND (SM)
TB-07	7.0	-1.8		100.0	83.5	69.2	61.7	20.5	5.9			
TB-08	5.4	-0.4								1.8	27.6	Dark brown to reddish brown, slightly silty, fine to medium SAND (SP-SM)
TB-09	5.0	0.2								1.8	29.4	Dark brown, silty, fine to medium SAND (SM)
TB-44	3.5	1.7		100.0	90.7	69.6	58.5	21.8	11.1			Yellowish brown, slightly silty, fine to medium SAND (SP-SM)
TB-60	3.3	2.5		100.0	91.9	71.3	60.5	19.4	4.6	2.3	13.6	Dark brown, fine to medium SAND (SP)
TB-65	3.1	1.8		100.0	73.2	45.5	31.0	11.0	10.2			Brown, slightly silty, fine to medium SAND (SP-SM)
TB-70	3.5	2.1	96.9	94.7	88.3	81.4	77.8	53.3	33.1			Yellowish brown, silty, fine to medium SAND with trace of limestone fragments (SM)
TB-71	2.9	3.2								1.4	6.3	Black, slightly silty, fine to medium SAND (SP-SM)
TB-74	2.6	3.2								1.7	11.6	Dark brown, slightly silty, fine to medium SAND (SP-SM)
Total:	10	10	1	6	6	6	6	6	6	5	5	
Maximum:	7.0	3.2	96.9	100.0	94.4	81.4	77.8	53.3	33.1	2.3	29.4	
Minimum:	2.6	-1.8	96.9	94.7	73.2	45.5	31.0	11.0	4.6	1.4	6.3	

GRAIN SIEVE ANALYSIS



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Boring No. / Elevation	Classification	MC%	LL	PL	PI	Cc	Cu
● **TB-01 -1.4ft**	**Brown, silty, fine to medium SAND (SM)**						

Boring No. / Elevation	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● **TB-01 -1.4ft**	**0.85**	**0.22**	**0.156**		**0.0**	**87.0**	**13.0**	

PROJECT **WMRP - Johnson St. to Taft St. from N. 66th Ave to NW. 76th Terr - Hollywood, Florida**

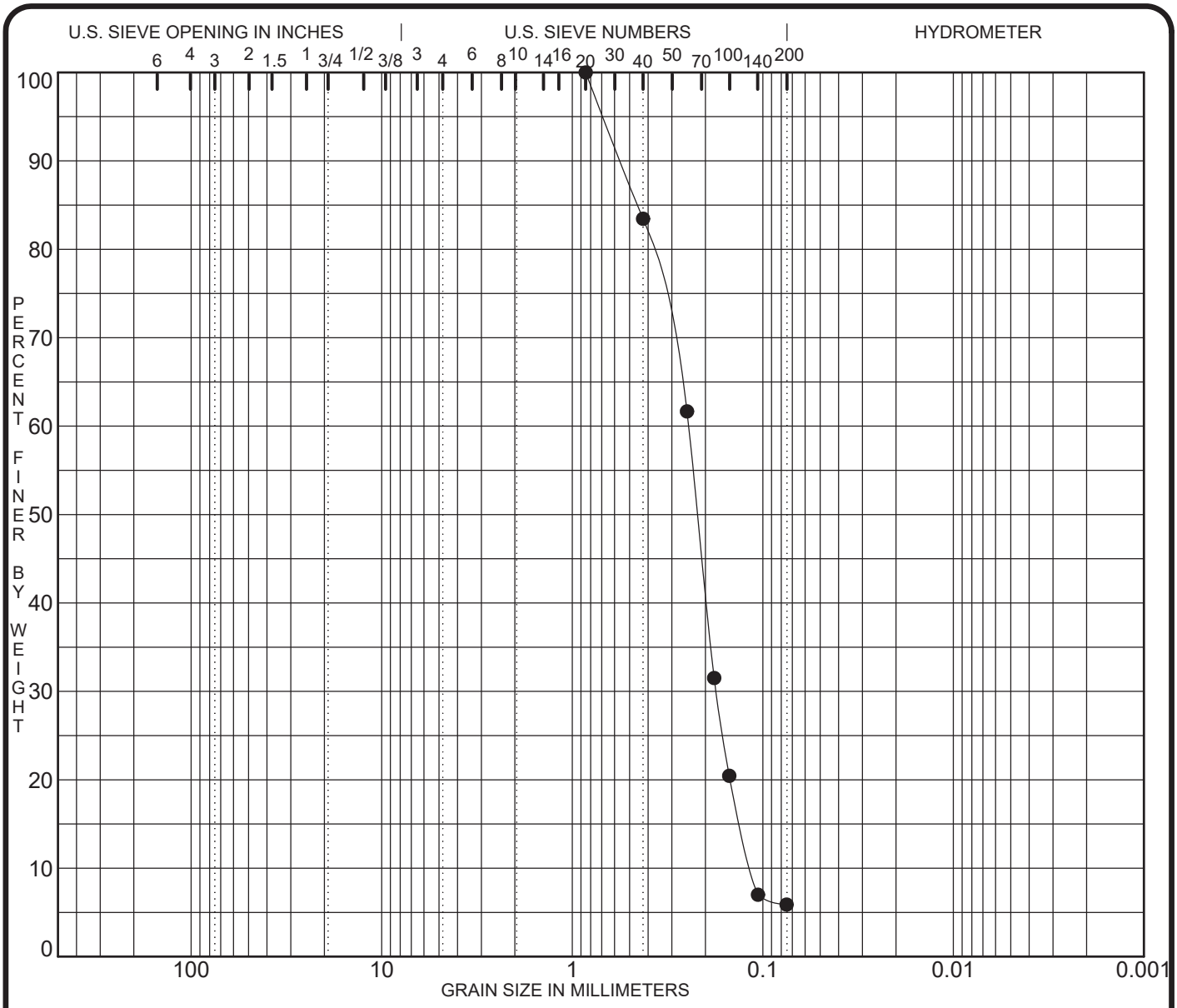
JOB NO. **21405**

DATE **2/12/15**

GRAIN SIEVE ANALYSIS

Advance Consulting Engineering Services Inc

Sunrise, Florida 33351



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

	Boring No. / Elevation	Classification	MC%	LL	PL	PI	Cc	Cu
●	**TB-07 -1.8ft**						**1.10**	**2.1**

	Boring No. / Elevation	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
●	**TB-07 -1.8ft**	**0.85**	**0.25**	**0.176**	**0.1145**	**0.0**	**94.1**	**5.9**	

PROJECT **WMRP - Johnson St. to Taft St. from N. 66th Ave to NW. 76th Terr - Hollywood, Florida**

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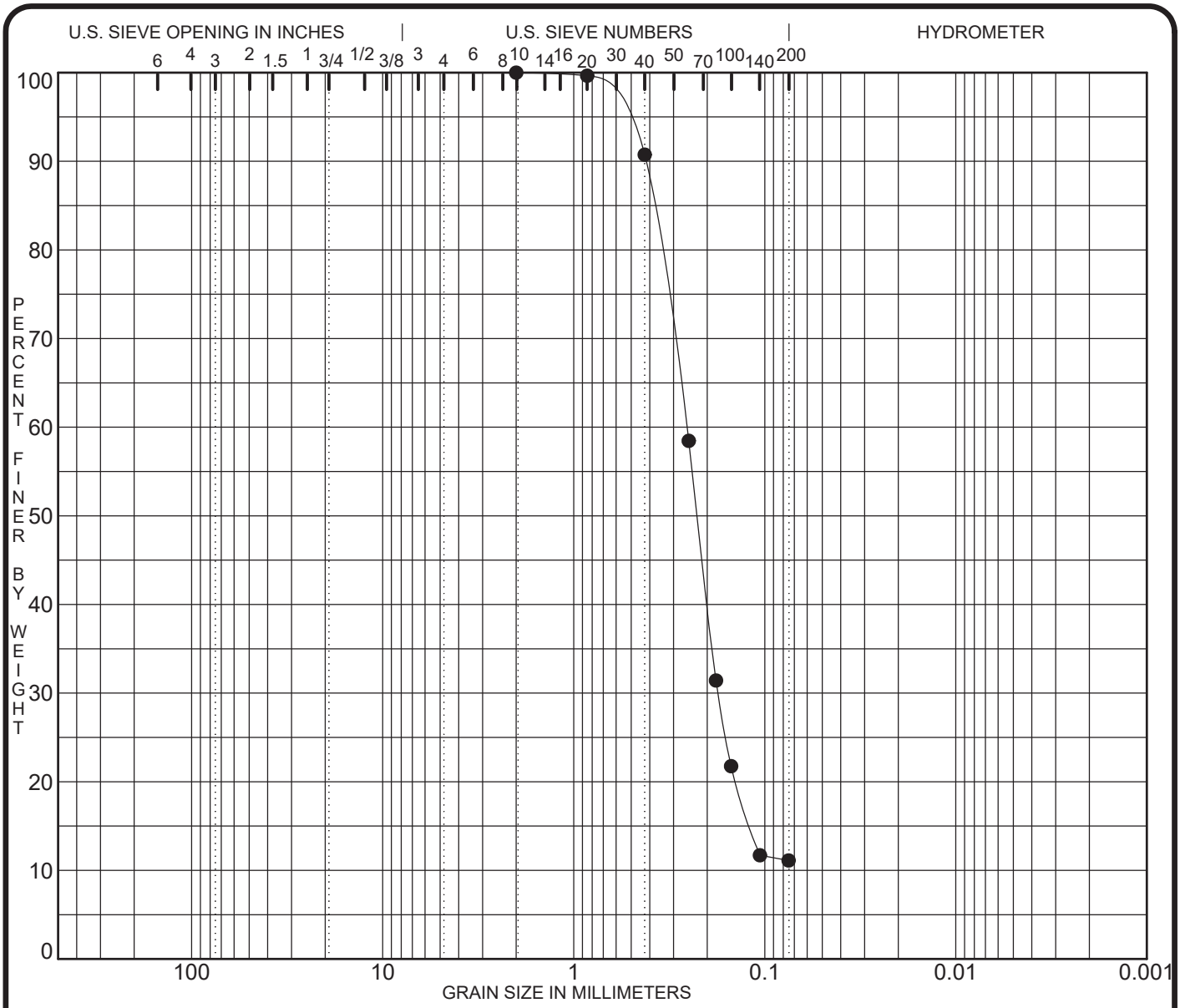

COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Boring No. / Elevation	Classification	MC%	LL	PL	PI	Cc	Cu
● **TB-44 1.7 ft**	**Yellowish brown, slightly silty, fine to medium SAND (SP-SM)**					**3.09**	**6.6**

Boring No. / Elevation	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● **TB-44 1.7 ft**	**2.00**	**0.26**	**0.175**		**0.0**	**88.9**	**11.1**	

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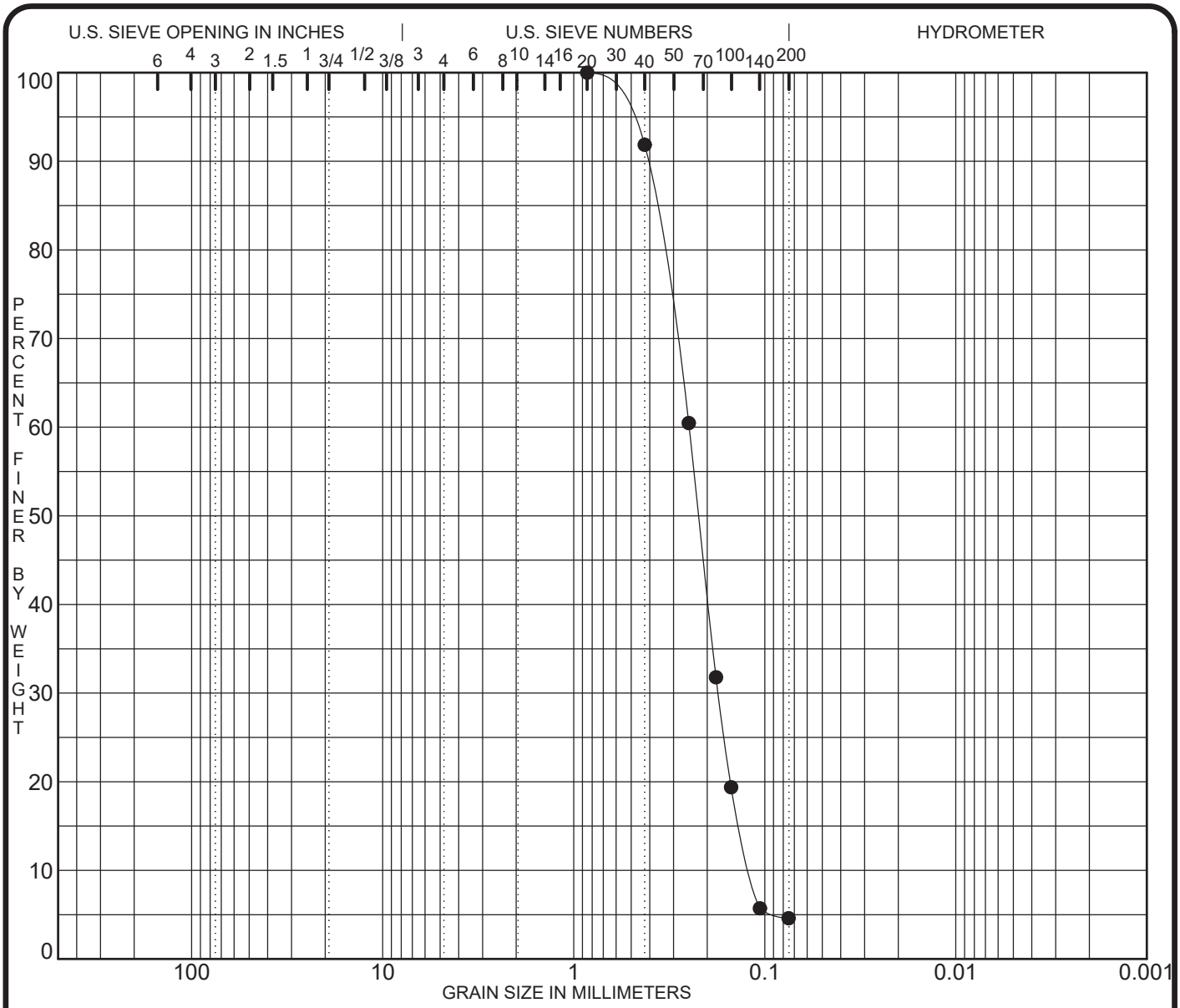

COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Boring No. / Elevation	Classification	MC%	LL	PL	PI	Cc	Cu
● **TB-60 2.5ft**	**Dark brown, fine to medium SAND (SP)**					**1.05**	**2.1**

Boring No. / Elevation	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● **TB-60 2.5ft**	**0.85**	**0.25**	**0.175**	**0.1182**	**0.0**	**95.4**	**4.6**	

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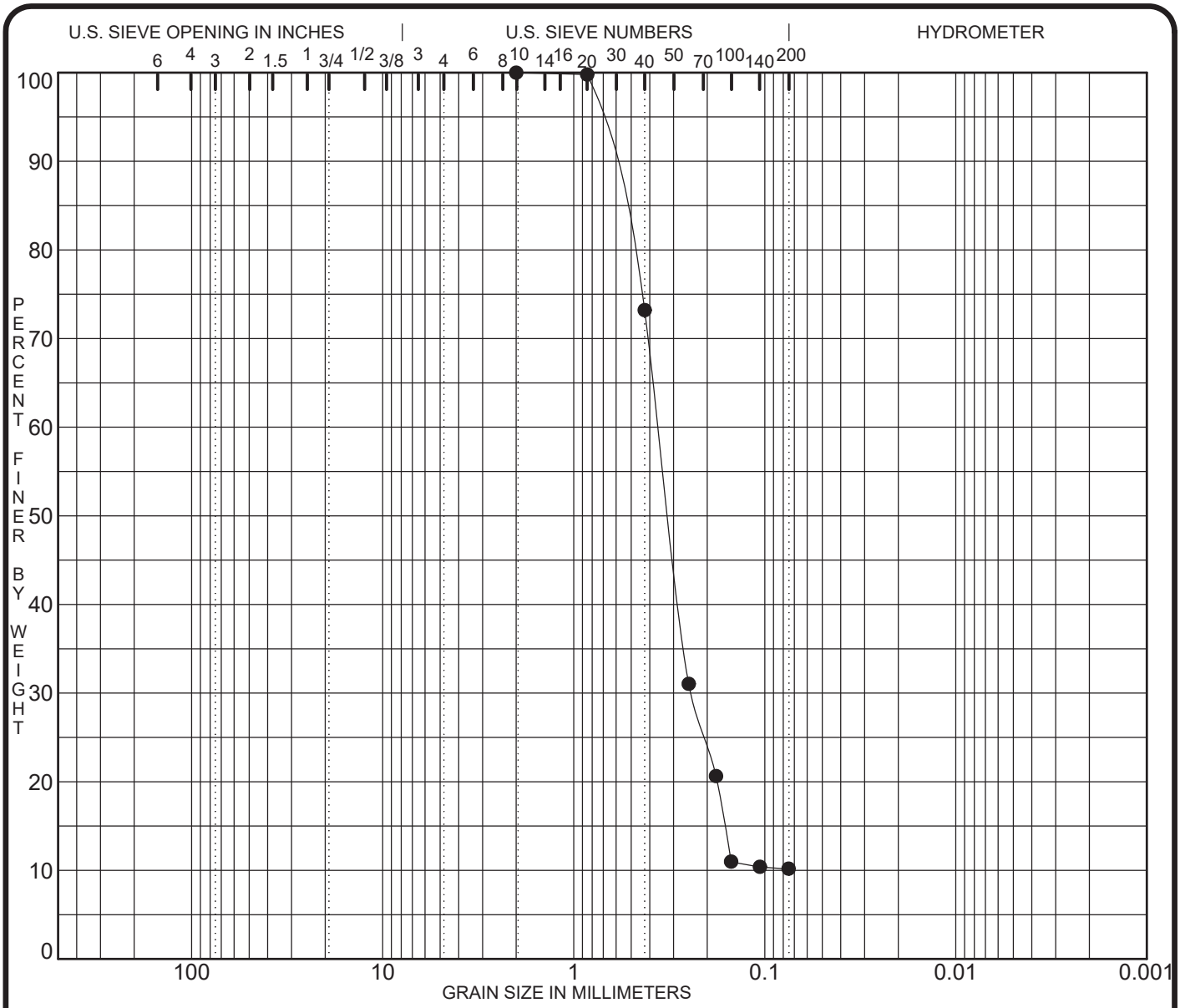

COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Boring No. / Elevation	Classification	MC%	LL	PL	PI	Cc	Cu
● **TB-65 1.8ft**	**Brown, slightly silty, fine to medium SAND (SP-SM)**					**2.98**	**6.6**

Boring No. / Elevation	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● **TB-65 1.8ft**	**2.00**	**0.36**	**0.242**		**0.0**	**89.8**	**10.2**	

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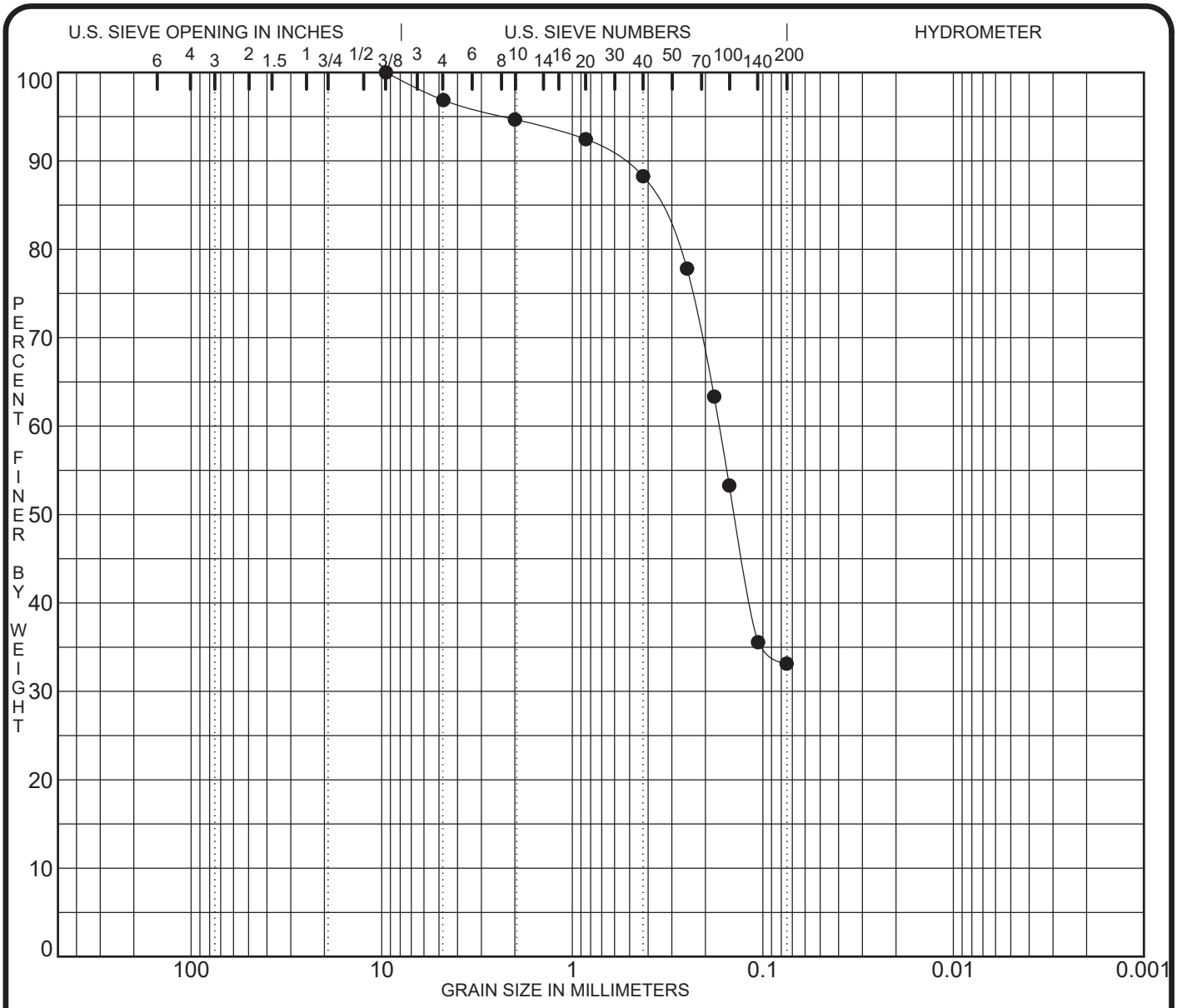

COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Boring No. / Elevation	Classification	MC%	LL	PL	PI	Cc	Cu
● **TB-70 2.1 ft**	**Yellowish brown, silty, fine to medium SAND with trace of limestone fragments (SM)**						

Boring No. / Elevation	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● **TB-70 2.1 ft**	**9.50**	**0.17**			**3.1**	**63.7**	**33.1**	

PROJECT **WMRP - Johnson St. to Taft St. from N. 66th Ave to NW. 76th Terr - Hollywood, Florida**

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GRAIN SIEVE ANALYSIS

Advance Consulting Engineering Services Inc

Sunrise, Florida 33351

LABORATORY TESTING PROCEDURES FOR SOIL CLASSIFICATION TESTS

LABORATORY TESTING PROCEDURES

Percent organics (organic Loss on Ignition) - The amount of organic material in a sample is determined in this test. The sample is first dried and weighed, then ignited and reweighed. The amount of organic material is expressed-as a percentage.

Grain size Distribution - The grain size tests were performed to determine the particle size and distribution of the sample tested. -The sample was dried, weighed, and washed over a No. 200 mesh sieve. The dried sample was then passed through a standard set of nested sieves to determine the grain size -distribution of the soil particles coarser than the No. 200 sieve. This test is similar to that described by ASTM D-422.

APPENDIX D

SUMMARY OF ESTIMATED GEOTECHNICAL PARAMETERS

WMRP - Johnson St. to Taft St. from N. 66th Ave to NW. 76th Terr
Hollywood, Florida
ACES Job No. 21405

SUMMARY OF GEOTECHNICAL PARAMETERS

Test No.	Ground Surface Elevation (ft)	Water Level Depth (ft)	Top Depth (feet)	Lower Depth (feet)	Top Layer Elevation (ft)	Bottom Layer Elevation (ft)	Brief Description of Material	General Description of Material	OSHA 1926 Subpart P Appendix A - Soil Classification	Top of Sample (ft)	Bottom of Sample (ft)	Maximum Allowable Slope (H:V) for Excavations less than 20 feet deep	Middle of Sample (ft)	N-value (blows per foot)	Moist Unit Weight (pcf)	Friction Angle (degrees)
TB-01	5.6	5.17	0	1	5.6	4.6	2SANSPEA	Dark brown, organic, silty, fine to medium SAND with trace of roots (OL)	Type C	0	2		1	6	108	31
TB-01	5.6	5.17	1	1.5	4.6	4.1	2SAND	LOOSE, light brown, fine to medium SAND with trace of limerock (SP)	Type C							
TB-01	5.6	5.17	1.5	5	4.1	0.6	2SAND	VERY LOOSE, tan, fine to medium SAND (SP)	Type C							
TB-01	5.6	5.17								2	4		3	4	103	30
TB-01	5.6	5.17								4	6		5	4	103	30
TB-01	5.6	5.17	5	6	0.6	-0.4	2SAND	VERY LOOSE, brown, fine to medium SAND (SP)	Type C							
TB-01	5.6	5.17	6	8	-0.4	-2.4	2SANSSIL	LOOSE, brown, silty, fine to medium SAND (SM)	Type C	6	8		7	6	108	31
TB-01	5.6	5.17	8	10	-2.4	-4.4	2SAND	LOOSE, tan to light gray, fine to medium SAND (SP)	Type C	8	10		9	6	108	31
TB-02	4.1	3.9	0	0.5	4.1	3.6	2SANSPEA	Dark brown, organic, silty, fine to medium SAND with trace of roots (OL)	Type C	0	2		1	5	105	30
TB-02	4.1	3.9	0.5	1.2	3.6	2.9	2SAND	LOOSE, brown, slightly silty, fine to medium SAND (SP-SM)	Type C							
TB-02	4.1	3.9	1.2	2	2.9	2.1	2SAND	LOOSE, tan to light brown, fine to medium SAND (SP)	Type C							
TB-02	4.1	3.9	2	4	2.1	0.1	2SAND	VERY LOOSE, light brown, fine to medium SAND with trace of tar debris	Type C	2	4		3	3	98	29
TB-02	4.1	3.9	4	6	0.1	-1.9	2SAND	VERY LOOSE, light brown, fine to medium SAND (SP)	Type C	4	6		5	3	98	29
TB-02	4.1	3.9	6	10	-1.9	-5.9	2SAND	VERY LOOSE, tan, fine to medium SAND (SP)	Type C	6	8		7	4	103	30
TB-02	4.1	3.9								8	10		9	4	103	30
TB-03	4.1	3.9	0	0.8	4.1	3.3	2SANSPEA	Dark gray, organic, silty, fine to medium SAND with trace of roots (OL)	Type C	0	2		1	3	98	29
TB-03	4.1	3.9	0.8	3.4	3.3	0.7	2SAND	VERY LOOSE to LOOSE, brown, fine to medium SAND (SP)	Type C							
TB-03	4.1	3.9								2	4		3	5	105	30

WMRP - Johnson St. to Taft St. from N. 66th Ave to NW. 76th Terr
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SUMMARY OF GEOTECHNICAL PARAMETERS

Test No.	Ground Surface Elevation (ft)	Water Level Depth (ft)	Top Depth (feet)	Lower Depth (feet)	Top Layer Elevation (ft)	Bottom Layer Elevation (ft)	Brief Description of Material	General Description of Material	OSHA 1926 Subpart P Appendix A - Soil Classification	Top of Sample (ft)	Bottom of Sample (ft)	Maximum Allowable Slope (H:V) for Excavations less than 20 feet deep	Middle of Sample (ft)	N-value (blows per foot)	Moist Unit Weight (pcf)	Friction Angle (degrees)
TB-03	4.1	3.9	3.4	4	0.7	0.1	2SANSPEA	VERY LOOSE, brown, fine to medium SAND with some coarse roots (OL)	Type C							
TB-03	4.1	3.9	4	6	0.1	-1.9	2SAND	VERY LOOSE, light gray to light brown, fine to medium SAND (SP)	Type C	4	6		5	3	98	29
TB-03	4.1	3.9	6	8	-1.9	-3.9	2SAND	VERY LOOSE, tan, fine to medium SAND (SP)	Type C	6	8		7	1	89	28
TB-03	4.1	3.9	8	10	-3.9	-5.9	2SAND	VERY LOOSE, tan and dark brown, slightly silty, fine to medium SAND (SP-SM)	Type C	8	10		9	4	103	30
TB-04	4.5	3.8	0	0.5	4.5	4	2SANSPEA	Dark brown, organic, silty, fine to medium SAND with trace of roots (OL)	Type C	0	2		1	10	120	33
TB-04	4.5	3.8	0.5	1.6	4	2.9	2SANSGRA	LOOSE, light brown, silty, fine to coarse SAND with some limerock (SM)	Type C							
TB-04	4.5	3.8	1.6	3.4	2.9	1.1	2SAND	VERY LOOSE, light gray and brown, fine to medium SAND (SP)	Type C							
TB-04	4.5	3.8								2	4		3	3	98	29
TB-04	4.5	3.8	3.4	4	1.1	0.5	2SAND	VERY LOOSE, reddish brown, slightly silty, fine to medium SAND (SP-SM)	Type C							
TB-04	4.5	3.8	4	10	0.5	-5.5	2SAND	VERY LOOSE to LOOSE, tan, fine to medium SAND (SP)	Type C	4	6		5	2	94	29
TB-04	4.5	3.8								6	8		7	4	103	30
TB-04	4.5	3.8								8	10		9	6	108	31
TB-05	5	4.3	0	1.2	5	3.8	2SANSPEA	LOOSE, black, organic, silty, fine to medium SAND with little limerock (OL)	Type C	0	2		1	10	120	33
TB-05	5	4.3	1.2	4.5	3.8	0.5	2SAND	LOOSE to MEDIUM DENSE, tan, fine to medium SAND (SP)	Type C							
TB-05	5	4.3								2	4		3	11	120	33
TB-05	5	4.3								4	6		5	1	89	28
TB-05	5	4.3	4.5	6	0.5	-1	2SAND	VERY LOOSE, brown, slightly silty, fine to medium SAND (SP-SM)	Type C							
TB-05	5	4.3	6	10	-1	-5	2SAND	LOOSE, tan, fine to medium SAND (SP)	Type C	6	8		7	5	105	30

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SUMMARY OF GEOTECHNICAL PARAMETERS

Test No.	Ground Surface Elevation (ft)	Water Level Depth (ft)	Top Depth (feet)	Lower Depth (feet)	Top Layer Elevation (ft)	Bottom Layer Elevation (ft)	Brief Description of Material	General Description of Material	OSHA 1926 Subpart P Appendix A - Soil Classification	Top of Sample (ft)	Bottom of Sample (ft)	Maximum Allowable Slope (H:V) for Excavations less than 20 feet deep	Middle of Sample (ft)	N-value (blows per foot)	Moist Unit Weight (pcf)	Friction Angle (degrees)
TB-05	5	4.3								8	10		9	5	105	30
TB-06	4.6	4.3	0	0.6	4.6	4	2SANSPEA	Dark brown to black, organic, silty, fine to medium SAND (OL)	Type C	0	2		1	9	117	32
TB-06	4.6	4.3	0.6	1.2	4	3.4	2SAN&GRA	LOOSE, tan, silty, fine to coarse SAND and LIMEROCK (SM)	Type C							
TB-06	4.6	4.3	1.2	3.4	3.4	1.2	2SAND	LOOSE, tan, fine to medium SAND (SP)	Type C							
TB-06	4.6	4.3								2	4		3	5	105	30
TB-06	4.6	4.3	3.4	4	1.2	0.6	2SAND	VERY LOOSE, brown, fine to medium SAND (SP)	Type C							
TB-06	4.6	4.3	4	6	0.6	-1.4	2SAND	VERY LOOSE, brown, slightly silty, fine to medium SAND (SP-SM)	Type C	4	6		5	3	98	29
TB-06	4.6	4.3	6	10	-1.4	-5.4	2SAND	VERY LOOSE to LOOSE, light brown, fine to medium SAND (SP)	Type C	6	8		7	4	103	30
TB-06	4.6	4.3								8	10		9	5	105	30
TB-07	5.2	4.5	0	0.7	5.2	4.5	2SANSPEA	Black, organic, silty, fine to medium SAND with trace of roots (OL)	Type C	0	2		1	6	108	31
TB-07	5.2	4.5	0.7	1	4.5	4.2	2SAN&GRA	Tan, fine to medium SAND and LIMEROCK (SW)	Type C							
TB-07	5.2	4.5	1	3.6	4.2	1.6	2SAND	LOOSE, tan, fine to medium SAND (SP)	Type C							
TB-07	5.2	4.5								2	4		3	6	108	31
TB-07	5.2	4.5	3.6	6	1.6	-0.8	2SANSSIL	VERY LOOSE, dark reddish brown, silty, fine to medium SAND (SM)	Type C							
TB-07	5.2	4.5								4	6		5	1	89	28
TB-07	5.2	4.5	6	8	-0.8	-2.8	2SAND	VERY LOOSE, brown, slightly silty, fine to medium SAND (SP-SM)	Type C	6	8		7	4	103	30
TB-07	5.2	4.5	8	10	-2.8	-4.8	2SAND	LOOSE, tan, slightly silty, fine to medium SAND (SP-SM)	Type C	8	10		9	3	98	29
TB-08	5	4.5	0	0.6	5	4.4	2SANSPEA	Dark brown, organic, silty, fine to medium SAND with trace of roots (OL)	Type C	0	2		1	10	120	33

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Test No.	Ground Surface Elevation (ft)	Water Level Depth (ft)	Top Depth (feet)	Lower Depth (feet)	Top Layer Elevation (ft)	Bottom Layer Elevation (ft)	Brief Description of Material	General Description of Material	OSHA 1926 Subpart P Appendix A - Soil Classification	Top of Sample (ft)	Bottom of Sample (ft)	Maximum Allowable Slope (H:V) for Excavations less than 20 feet deep	Middle of Sample (ft)	N-value (blows per foot)	Moist Unit Weight (pcf)	Friction Angle (degrees)
TB-08	5	4.5	0.6	1.2	4.4	3.8	2SAN&GRA	LOOSE, tan, silty, fine to coarse SAND and LIMEROCK (SM)	Type C							
TB-08	5	4.5	1.2	4.7	3.8	0.3	2SAND	LOOSE to VERY LOOSE, tan, fine to medium SAND (SP)	Type C							
TB-08	5	4.5								2	4		3	9	117	32
TB-08	5	4.5								4	6		5	2	94	29
TB-08	5	4.5	4.7	6	0.3	-1	2SAND	VERY LOOSE, dark brown to reddish brown, slightly silty, fine to medium SAND (SP-SM)	Type C							
TB-08	5	4.5	6	10	-1	-5	2SAND	LOOSE to VERY LOOSE, tan, fine to medium SAND (SP)	Type C	6	8		7	6	108	31
TB-08	5	4.5								8	10		9	4	103	30
TB-09	5.2	5	0	0.9	5.2	4.3	2SANSPEA	Dark gray, organic, silty, fine to medium SAND with trace of roots (OL)	Type C	0	2		1	5	105	30
TB-09	5.2	5	0.9	4	4.3	1.2	2SAND	LOOSE, tan, fine to medium SAND (SP)	Type C							
TB-09	5.2	5								2	4		3	6	108	31
TB-09	5.2	5	4	6	1.2	-0.8	2SANSSIL	VERY LOOSE, dark brown, silty, fine to medium SAND (SM)	Type C	4	6		5	1	89	28
TB-09	5.2	5	6	9.1	-0.8	-3.9	2SAND	VERY LOOSE to LOOSE, brown, slighlty silty, fine to medium SAND (SP-SM)	Type C	6	8		7	2	94	29
TB-09	5.2	5								8	10		9	6	108	31
TB-09	5.2	5	9.1	10	-3.9	-4.8	2SAND	LOOSE, tan, fine to medium SAND (SP)	Type C							
TB-10	4.6	4.1	0	0.6	4.6	4	2SANSPEA	Dark brown, organic, silty, fine to medium SAND with trace of roots (OL)	Type C	0	2		1	13	121	33
TB-10	4.6	4.1	0.6	1.2	4	3.4	2SAN&GRA	MEDIUM DENSE, tan, silty, fine to coarse SAND and LIMEROCK (SM)	Type C							
TB-10	4.6	4.1	1.2	3.2	3.4	1.4	2SAND	LOOSE, tan, fine to medium SAND (SP)	Type C							
TB-10	4.6	4.1								2	4		3	5	105	30

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Test No.	Ground Surface Elevation (ft)	Water Level Depth (ft)	Top Depth (feet)	Lower Depth (feet)	Top Layer Elevation (ft)	Bottom Layer Elevation (ft)	Brief Description of Material	General Description of Material	OSHA 1926 Subpart P Appendix A - Soil Classification	Top of Sample (ft)	Bottom of Sample (ft)	Maximum Allowable Slope (H:V) for Excavations less than 20 feet deep	Middle of Sample (ft)	N-value (blows per foot)	Moist Unit Weight (pcf)	Friction Angle (degrees)
TB-10	4.6	4.1	3.2	4	1.4	0.6	2SAND	VERY LOOSE, dark brown, slightly silty, fine to medium SAND (SP-SM)	Type C							
TB-10	4.6	4.1	4	6	0.6	-1.4	2SAND	VERY LOOSE, brown, fine to medium SAND (SP)	Type C	4	6		5	4	103	30
TB-10	4.6	4.1	6	10	-1.4	-5.4	2SAND	VERY LOOSE to LOOSE, tan, fine to medium SAND (SP)	Type C	6	8		7	4	103	30
TB-10	4.6	4.1								8	10		9	5	105	30
TB-11	6.5	5.9	0	0.5	6.5	6	2SANSPEA	Black, organic, silty, fine to medium SAND with trace of roots (OL)	Type C	0	2		1	4	103	30
TB-11	6.5	5.9	0.5	1.1	6	5.4	2SAND	VERY LOOSE, brown, slightly organic, slightly silty, fine to medium SAND (SP-SM)	Type C							
TB-11	6.5	5.9	1.1	1.6	5.4	4.9	2SANSGRA	VERY LOOSE, tan to light brown, slightly silty, fine to medium SAND with some limerock (SP-SM)	Type C							
TB-11	6.5	5.9	1.6	2.7	4.9	3.8	2SAND	LOOSE, light brown, fine to medium SAND (SP)	Type C							
TB-11	6.5	5.9								2	4		3	7	111	31
TB-11	6.5	5.9	2.7	10	3.8	-3.5	2SAND	LOOSE, tan to light brown, fine to medium SAND (SP)	Type C							
TB-11	6.5	5.9								4	6		5	5	105	30
TB-11	6.5	5.9								6	8		7	5	105	30
TB-11	6.5	5.9								8	10		9	6	108	31
TB-12	4.2	4.1	0	0.8	4.2	3.4	2SANSPEA	Black, organic, silty, fine to medium SAND (OL)	Type C	0	2		1	7	111	31
TB-12	4.2	4.1	0.8	1.1	3.4	3.1	2SANSGRA	LOOSE, brown, slightly silty, fine to medium SAND with some limerock (SP-SM)	Type C							
TB-12	4.2	4.1	1.1	3.3	3.1	0.9	2SAND	LOOSE, tan, fine to medium SAND (SP)	Type C							
TB-12	4.2	4.1								2	4		3	9	117	32
TB-12	4.2	4.1	3.3	4.5	0.9	-0.3	2SAND	LOOSE to VERY LOOSE, dark reddish brown, slightly silty, fine to medium SAND (SP-SM)	Type C							

WMRP - Johnson St. to Taft St. from N. 66th Ave to NW. 76th Terr
Hollywood, Florida
ACES Job No. 21405

SUMMARY OF GEOTECHNICAL PARAMETERS

Test No.	Ground Surface Elevation (ft)	Water Level Depth (ft)	Top Depth (feet)	Lower Depth (feet)	Top Layer Elevation (ft)	Bottom Layer Elevation (ft)	Brief Description of Material	General Description of Material	OSHA 1926 Subpart P Appendix A - Soil Classification	Top of Sample (ft)	Bottom of Sample (ft)	Maximum Allowable Slope (H:V) for Excavations less than 20 feet deep	Middle of Sample (ft)	N-value (blows per foot)	Moist Unit Weight (pcf)	Friction Angle (degrees)
TB-12	4.2	4.1								4	6		5	4	103	30
TB-12	4.2	4.1	4.5	9.5	-0.3	-5.3	2SAND	VERY LOOSE to LOOSE, brown, fine to medium SAND (SP)	Type C							
TB-12	4.2	4.1								6	8		7	5	105	30
TB-12	4.2	4.1								8	10		9	6	108	31
TB-12	4.2	4.1	9.5	10	-5.3	-5.8	2SAND	LOOSE, tan to light brown, fine to medium SAND (SP)	Type C							
TB-13	4.9	4.5	0	0.9	4.9	4	2SANSPEA	Dark brown, organic, silty, fine to medium SAND with trace of roots (OL)	Type C	0	2		1	1	89	28
TB-13	4.9	4.5	0.9	2	4	2.9	2SAND	VERY LOOSE, light brown, fine to medium SAND (SP)	Type C							
TB-13	4.9	4.5	2	4	2.9	0.9	2SAND	VERY LOOSE, tan, fine to medium SAND (SP)	Type C	2	4		3	3	98	29
TB-13	4.9	4.5	4	6	0.9	-1.1	2SAND	VERY LOOSE, brown, slightly silty, fine to medium SAND (SP-SM)	Type C	4	6		5	1	89	28
TB-13	4.9	4.5	6	10	-1.1	-5.1	2SAND	LOOSE, light brown to tan, fine to medium SAND (SP)	Type C	6	8		7	5	105	30
TB-13	4.9	4.5								8	10		9	7	111	31
TB-14	5.4	4.9	0	0.7	5.4	4.7	2SANSPEA	Black, organic, silty, fine to medium SAND with trace of roots (OL)	Type C	0	2		1	10	120	33
TB-14	5.4	4.9	0.7	1.2	4.7	4.2	2SANSGRA	LOOSE, tan, silty, fine to coarse SAND with some limerock (SM)	Type C							
TB-14	5.4	4.9	1.2	4	4.2	1.4	2SAND	LOOSE, tan, fine to medium SAND (SP)	Type C							
TB-14	5.4	4.9								2	4		3	9	117	32
TB-14	5.4	4.9	4	6	1.4	-0.6	2SAND	VERY LOOSE, dark reddish brown, slightly silty, fine to medium SAND (SP-SM)	Type C	4	6		5	3	98	29
TB-14	5.4	4.9	6	10	-0.6	-4.6	2SAND	LOOSE, tan, fine to medium SAND (SP)	Type C	6	8		7	7	111	31
TB-14	5.4	4.9								8	10		9	6	108	31

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SUMMARY OF GEOTECHNICAL PARAMETERS

Test No.	Ground Surface Elevation (ft)	Water Level Depth (ft)	Top Depth (feet)	Lower Depth (feet)	Top Layer Elevation (ft)	Bottom Layer Elevation (ft)	Brief Description of Material	General Description of Material	OSHA 1926 Subpart P Appendix A - Soil Classification	Top of Sample (ft)	Bottom of Sample (ft)	Maximum Allowable Slope (H:V) for Excavations less than 20 feet deep	Middle of Sample (ft)	N-value (blows per foot)	Moist Unit Weight (pcf)	Friction Angle (degrees)
TB-15	5.5	4.9	0	0.7	5.5	4.8	2SANSPEA	Black, organic, silty, fine to medium SAND with trace of roots (OL)	Type C	0	2		1	10	120	33
TB-15	5.5	4.9	0.7	1	4.8	4.5	2SANSGRA	LOOSE, tan and brown, silty, fine to coarse SAND with some limerock (SM)	Type C							
TB-15	5.5	4.9	1	4	4.5	1.5	2SAND	LOOSE, tan, fine to medium SAND (SP)	Type C							
TB-15	5.5	4.9								2	4		3	5	105	30
TB-15	5.5	4.9	4	6	1.5	-0.5	2SAND	VERY LOOSE, dark reddish brown, slightly silty, fine to medium SAND (SP-SM)	Type C	4	6		5	2	94	29
TB-15	5.5	4.9	6	10	-0.5	-4.5	2SAND	LOOOSE, tan, fine to medium SAND (SP)	Type C	6	8		7	5	105	30
TB-15	5.5	4.9								8	10		9	7	111	31
TB-16	5.6	4.7	0	0.7	5.6	4.9	2SANSPEA	Black, organic, silty, fine to medium SAND with trace of roots (OL)	Type C	0	2		1	12	121	33
TB-16	5.6	4.7	0.7	1.2	4.9	4.4	2SANSGRA	MEDIUM DENSE, tan, silty, fine to coarse SAND with some limerock (SM)	Type C							
TB-16	5.6	4.7	1.2	4.7	4.4	0.9	2SAND	MEDIUM DENSE to LOOSE, tan, fine to medium SAND (SP)	Type C							
TB-16	5.6	4.7								2	4		3	9	117	32
TB-16	5.6	4.7								4	6		5	1	89	28
TB-16	5.6	4.7	4.7	6	0.9	-0.4	2SAND	VERY LOOSE, dark reddish brown, slightly silty, fine to medium SAND (SP-SM)	Type C							
TB-16	5.6	4.7	6	10	-0.4	-4.4	2SAND	LOOSE, tan, fine to medium SAND (SP)	Type C	6	8		7	6	108	31
TB-16	5.6	4.7								8	10		9	5	105	30
TB-17	6.3	5.8	0	0.7	6.3	5.6	2SANSPEA	Black, organic, silty, fine to medium SAND with trace of roots (OL)	Type C	0	2		1	5	105	30
TB-17	6.3	5.8	0.7	4.9	5.6	1.4	2SAND	LOOSE to VERY LOOSE, tan, fine to medium SAND (SP)	Type C							
TB-17	6.3	5.8								2	4		3	9	117	32

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SUMMARY OF GEOTECHNICAL PARAMETERS

Test No.	Ground Surface Elevation (ft)	Water Level Depth (ft)	Top Depth (feet)	Lower Depth (feet)	Top Layer Elevation (ft)	Bottom Layer Elevation (ft)	Brief Description of Material	General Description of Material	OSHA 1926 Subpart P Appendix A - Soil Classification	Top of Sample (ft)	Bottom of Sample (ft)	Maximum Allowable Slope (H:V) for Excavations less than 20 feet deep	Middle of Sample (ft)	N-value (blows per foot)	Moist Unit Weight (pcf)	Friction Angle (degrees)
TB-17	6.3	5.8								4	6		5	4	103	30
TB-17	6.3	5.8	4.9	6	1.4	0.3	2SAND	VERY LOOSE, brown, fine to medium SAND (SP)	Type C							
TB-17	6.3	5.8	6	10	0.3	-3.7	2SAND	LOOSE, tan, fine to medium SAND (SP)	Type C	6	8		7	5	105	30
TB-17	6.3	5.8								8	10		9	5	105	30
TB-18	4.5		0	0.9	4.5	3.6	2SANSPEA	Dark brown, organic, slightly silty, fine to medium SAND with trace of roots (OL)	Type C	0	2		1	4	103	30
TB-18	4.5		0.9	2.5	3.6	2	2SAND	VERY LOOSE, light brown to brown, slightly silty, fine to medium SAND (SP-SM)	Type C							
TB-18	4.5									2	4		3	4	103	30
TB-18	4.5		2.5	4.5	2	0	2SAND	VERY LOOSE, tan, fine to medium SAND (SP)	Type C							
TB-18	4.5									4	6		5	1	89	28
TB-18	4.5		4.5	6	0	-1.5	2SAND	VERY LOOSE, dark reddish brown, slightly silty, fine to medium SAND (SP-SM)	Type C							
TB-18	4.5		6	10	-1.5	-5.5	2SAND	VERY LOOSE to LOOSE, tan, fine to medium SAND (SP)	Type C	6	8		7	4	103	30
TB-18	4.5									8	10		9	5	105	30
TB-19	5.1	4.7	0	0.8	5.1	4.3	2SILSPEA	Black, organic, sandy SILT with trace of roots (OL)	Type C	0	2		1	16	122	34
TB-19	5.1	4.7	0.8	1.6	4.3	3.5	2SAN&GRA	MEDIUM DENSE, tan, silty, fine to coarse SAND and LIMEROCK (SM)	Type C							
TB-19	5.1	4.7	1.6	2.7	3.5	2.4	2SANSGRA	LOOSE, tan, slightly silty, fine to medium SAND with some limerock (SP-SM)	Type C							
TB-19	5.1	4.7								2	4		3	6	108	31
TB-19	5.1	4.7	2.7	3.2	2.4	1.9	2SAND	LOOSE, brown, fine to medium SAND (SP)	Type C							
TB-19	5.1	4.7	3.2	4.8	1.9	0.3	2SAND	VERY LOOSE, tan, fine to medium SAND (SP)	Type C							

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SUMMARY OF GEOTECHNICAL PARAMETERS

Test No.	Ground Surface Elevation (ft)	Water Level Depth (ft)	Top Depth (feet)	Lower Depth (feet)	Top Layer Elevation (ft)	Bottom Layer Elevation (ft)	Brief Description of Material	General Description of Material	OSHA 1926 Subpart P Appendix A - Soil Classification	Top of Sample (ft)	Bottom of Sample (ft)	Maximum Allowable Slope (H:V) for Excavations less than 20 feet deep	Middle of Sample (ft)	N-value (blows per foot)	Moist Unit Weight (pcf)	Friction Angle (degrees)
TB-19	5.1	4.7								4	6		5	0		
TB-19	5.1	4.7	4.8	6	0.3	-0.9	2SAND	VERY LOOSE, dark reddish brown, slightly silty, fine to medium SAND (SP-SM)	Type C							
TB-19	5.1	4.7	6	8	-0.9	-2.9	2SAND	VERY LOOSE, tan, fine to medium SAND (SP)	Type C	6	8		7	1	89	28
TB-19	5.1	4.7	8	8.7	-2.9	-3.6	2SAND	VERY LOOSE, dark brown, slightly silty, fine to medium SAND (SP-SM)	Type C	8	10		9	4	103	30
TB-19	5.1	4.7	8.7	10	-3.6	-4.9	2SAND	VERY LOOSE, tan, fine to medium SAND (SP)	Type C							
TB-20	6.3	5.2	0	0.7	6.3	5.6	2SANSPEA	Black, organic, silty, fine to medium SAND with trace of roots (OL)	Type C	0	2		1	9	117	32
TB-20	6.3	5.2	0.7	1.2	5.6	5.1	2SANSGRA	LOOSE, tan and brown, silty, fine to coarse SAND with some limerock (SM)	Type C							
TB-20	6.3	5.2	1.2	4	5.1	2.3	2SAND	LOOSE, tan, fine to medium SAND (SP)	Type C							
TB-20	6.3	5.2								2	4		3	5	105	30
TB-20	6.3	5.2	4	10	2.3	-3.7	2SAND	VERY LOOSE, dark reddish brown to brown, slightly silty, fine to medium SAND (SP)	Type C	4	6		5	3	98	29
TB-20	6.3	5.2								6	8		7	5	105	30
TB-20	6.3	5.2								8	10		9	5	105	30
TB-21	6.3	5.3	0	0.5	6.3	5.8	2SANSPEA	Black, organic, silty, fine to medium SAND with trace of roots (OL)	Type C	0	2		1	9	117	32
TB-21	6.3	5.3	0.5	1.1	5.8	5.2	2SANSGRA	LOOSE, light brown, silty, fine to medium SAND with some limerock (SM)	Type C							
TB-21	6.3	5.3	1.1	5.5	5.2	0.8	2SAND	LOOSE to VERY LOOSE, tan, fine to medium SAND (SP)	Type C							
TB-21	6.3	5.3								2	4		3	8	114	32
TB-21	6.3	5.3								4	6		5	4	103	30
TB-21	6.3	5.3	5.5	8	0.8	-1.7	2SAND	VERY LOOSE to LOOSE, dark brown to brown, slightly silty, fine to medium SAND (SP-SM)	Type C							

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Test No.	Ground Surface Elevation (ft)	Water Level Depth (ft)	Top Depth (feet)	Lower Depth (feet)	Top Layer Elevation (ft)	Bottom Layer Elevation (ft)	Brief Description of Material	General Description of Material	OSHA 1926 Subpart P Appendix A - Soil Classification	Top of Sample (ft)	Bottom of Sample (ft)	Maximum Allowable Slope (H:V) for Excavations less than 20 feet deep	Middle of Sample (ft)	N-value (blows per foot)	Moist Unit Weight (pcf)	Friction Angle (degrees)
TB-21	6.3	5.3								6	8		7	5	105	30
TB-21	6.3	5.3	8	10	-1.7	-3.7	2SAND	LOOSE, brown, slightly silty, fine to medium SAND with trace of subangular and subrounded limestone fragments	Type C	8	10		9	5	105	30
TB-22	6.2	5.7	0	0.7	6.2	5.5	2SANSPEA	Black, organic, silty, fine to medium SAND with trace of roots (OL)	Type C	0	2		1	9	117	32
TB-22	6.2	5.7	0.7	1.3	5.5	4.9	2SANSGRA	LOOSE, brown and tan, slightly silty, fine to medium SAND with some limerock (SP-SM)	Type C							
TB-22	6.2	5.7	1.3	4.2	4.9	2	2SAND	LOOSE to VERY LOOSE, tan, fine to medium SAND (SP)	Type C							
TB-22	6.2	5.7								2	4		3	8	114	32
TB-22	6.2	5.7								4	6		5	2	94	29
TB-22	6.2	5.7	4.2	6	2	0.2	2SAND	VERY LOOSE, dark reddish brown, slightly silty, fine to medium SAND (SP-SM)	Type C							
TB-22	6.2	5.7	6	10	0.2	-3.8	2SAND	LOOSE, light brown, fine to medium SAND (SP)	Type C	6	8		7	5	105	30
TB-22	6.2	5.7								8	10		9	5	105	30
TB-23	4.4	4.3	0	0.9	4.4	3.5	2SANSPEA	Black, organic, silty, fine to medium SAND (OL)	Type C	0	2		1	10	120	33
TB-23	4.4	4.3	0.9	1.2	3.5	3.2	2SAN&GRA	LOOSE, brown, slightly silty, fine to medium SAND and LIMEROCK (SP-SM)	Type C							
TB-23	4.4	4.3	1.2	3.4	3.2	1	2SAND	LOOSE, tan, fine to medium SAND (SP)	Type C							
TB-23	4.4	4.3								2	4		3	9	117	32
TB-23	4.4	4.3	3.4	6	1	-1.6	2SAND	LOOSE to VERY LOOSE, brown to dark reddish brown, slightly silty, fine to medium SAND (SP-SM)	Type C							
TB-23	4.4	4.3								4	6		5	3	98	29
TB-23	4.4	4.3	6	10	-1.6	-5.6	2SAND	LOOSE, tan, fine to medium SAND (SP)	Type C	6	8		7	6	108	31
TB-23	4.4	4.3								8	10		9	8	114	32

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Test No.	Ground Surface Elevation (ft)	Water Level Depth (ft)	Top Depth (feet)	Lower Depth (feet)	Top Layer Elevation (ft)	Bottom Layer Elevation (ft)	Brief Description of Material	General Description of Material	OSHA 1926 Subpart P Appendix A - Soil Classification	Top of Sample (ft)	Bottom of Sample (ft)	Maximum Allowable Slope (H:V) for Excavations less than 20 feet deep	Middle of Sample (ft)	N-value (blows per foot)	Moist Unit Weight (pcf)	Friction Angle (degrees)
TB-24	5.6	5.7	0	0.7	5.6	4.9	2SANSPEA	Dark brown, organic, silty, fine to medium SAND (OL)	Type C	0	2		1	11	120	33
TB-24	5.6	5.7	0.7	1.2	4.9	4.4	2SANSGRA	MEDIUM DENSE, tan and brown, silty, fine to medium SAND with some limerock (SM)	Type C							
TB-24	5.6	5.7	1.2	5.6	4.4	0	2SAND	LOOSE to VERY LOOSE, tan, fine to medium SAND (SP)	Type C							
TB-24	5.6	5.7								2	4		3	8	114	32
TB-24	5.6	5.7								4	6		5	3	98	29
TB-24	5.6	5.7	5.6	6	0	-0.4	2SAND	VERY LOOSE, brown, fine to medium SAND (SP)	Type C							
TB-24	5.6	5.7	6	10	-0.4	-4.4	2SAND	LOOSE, tan, fine to medium SAND (SP)	Type C	6	8		7	6	108	31
TB-24	5.6	5.7								8	10		9	7	111	31
TB-25	5.8	5.6	0	0.6	5.8	5.2	2SANSPEA	Dark brown, organic, silty, fine to medium SAND (OL)	Type C	0	2		1	21	123	35
TB-25	5.8	5.6	0.6	1.3	5.2	4.5	2SAN&GRA	MEDIUM DENSE, tan, silty, fine to coarse SAND and LIMEROCK (SM)	Type C							
TB-25	5.8	5.6	1.3	2	4.5	3.8	2SAND	MEDIUM DENSE, tan, fine to medium SAND (SP)	Type C							
TB-25	5.8	5.6	2	6	3.8	-0.2	2SAND	VERY LOOSE to LOOSE, light brown to brown, fine to medium SAND (SP)	Type C	2	4		3	6	108	31
TB-25	5.8	5.6								4	6		5	2	94	29
TB-25	5.8	5.6	6	10	-0.2	-4.2	2SAND	VERY LOOSE to LOOSE, tan and gray, fine to medium SAND (SP)	Type C	6	8		7	4	103	30
TB-25	5.8	5.6								8	10		9	7	111	31
TB-26	5.6	5.3	0	0.9	5.6	4.7	2SANSPEA	Black, organic, silty, fine to medium SAND with trace of roots (OL)	Type C	0	2		1	5	105	30
TB-26	5.6	5.3	0.9	1.1	4.7	4.5	2SAN&GRA	LOOSE, tan LIMEROCK and silty, fine to coarse SAND (SM)	Type C							
TB-26	5.6	5.3	1.1	4.8	4.5	0.8	2SAND	VERY LOOSE, light brown, fine to medium SAND (SP)	Type C							

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TB-26	5.6	5.3								2	4		3	3	98	29
TB-26	5.6	5.3								4	6		5	3	98	29
TB-26	5.6	5.3	4.8	6	0.8	-0.4	2SAND	VERY LOOSE, dark brown, slightly silty, fine to medium SAND (SP-SM)	Type C							
TB-26	5.6	5.3	6	10	-0.4	-4.4	2SAND	LOOSE, light brown to tan, fine to medium SAND (SP)	Type C	6	8		7	5	105	30
TB-26	5.6	5.3								8	10		9	8	114	32
TB-27	5.6	5.3	0	0.6	5.6	5	2SANSPEA	Black, organic, silty, fine to medium SAND (OL)	Type C	0	2		1	12	121	33
TB-27	5.6	5.3	0.6	1.1	5	4.5	2SANSGRA	MEDIUM DENSE, tan to light yellow, silty, fine to coarse SAND with some limerock (SM)	Type C							
TB-27	5.6	5.3	1.1	3.7	4.5	1.9	2SAND	MEDIUM DENSE to LOOSE, tan, fine to medium SAND (SP)	Type C							
TB-27	5.6	5.3								2	4		3	7	111	31
TB-27	5.6	5.3	3.7	6	1.9	-0.4	2SAND	VERY LOOSE, brown to dark reddish brown, slightly silty, fine to medium SAND (SP-SM)	Type C							
TB-27	5.6	5.3								4	6		5	2	94	29
TB-27	5.6	5.3	6	8	-0.4	-2.4	2SAND	LOOSE, tan, fine to medium SAND (SP)	Type C	6	8		7	8	114	32
TB-27	5.6	5.3	8	10	-2.4	-4.4	2SAND	LOOSE, tan and gray, fine to medium SAND (SP)	Type C	8	10		9	8	114	32
TB-28	6.3	5.8	0	0.7	6.3	5.6	2SANSPEA	Dark brown to black, organic, silty, fine to medium SAND with trace of roots (OL)	Type C	0	2		1	5	105	30
TB-28	6.3	5.8	0.7	1.2	5.6	5.1	2SAND	LOOSE, brown, fine to medium SAND with trace of limerock (SP)	Type C							
TB-28	6.3	5.8	1.2	5	5.1	1.3	2SAND	LOOSE, tan, fine to medium SAND (SP)	Type C							
TB-28	6.3	5.8								2	4		3	7	111	31
TB-28	6.3	5.8								4	6		5	5	105	30

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Test No.	Ground Surface Elevation (ft)	Water Level Depth (ft)	Top Depth (feet)	Lower Depth (feet)	Top Layer Elevation (ft)	Bottom Layer Elevation (ft)	Brief Description of Material	General Description of Material	OSHA 1926 Subpart P Appendix A - Soil Classification	Top of Sample (ft)	Bottom of Sample (ft)	Maximum Allowable Slope (H:V) for Excavations less than 20 feet deep	Middle of Sample (ft)	N-value (blows per foot)	Moist Unit Weight (pcf)	Friction Angle (degrees)
TB-28	6.3	5.8	5	6	1.3	0.3	2SAND	LOOSE, brown, slightly silty, fine to medium SAND (SP-SM)	Type C							
TB-28	6.3	5.8	6	10	0.3	-3.7	2SAND	LOOSE, light brown to tan, fine to medium SAND (SP)	Type C	6	8		7	5	105	30
TB-28	6.3	5.8								8	10		9	6	108	31
TB-29	5.1	4.7	0	0.7	5.1	4.4	2SANSPEA	Black, organic, silty, fine to medium SAND (OL)	Type C	0	2		1	8	114	32
TB-29	5.1	4.7	0.7	1	4.4	4.1	2SANSGRA	LOOSE, brown and tan, silty, fine to coarse SAND with some limerock (SM)	Type C							
TB-29	5.1	4.7	1	4	4.1	1.1	2SAND	LOOSE, tan, fine to medium SAND (SP)	Type C							
TB-29	5.1	4.7								2	4		3	6	108	31
TB-29	5.1	4.7	4	6	1.1	-0.9	2SAND	VERY LOOSE, reddish brown, slightly silty, fine to medium SAND (SP-SM)	Type C	4	6		5	2	94	29
TB-29	5.1	4.7	6	10	-0.9	-4.9	2SAND	LOOSE, tan, fine to medium SAND (SP)	Type C	6	8		7	5	105	30
TB-29	5.1	4.7								8	10		9	7	111	31
TB-30	5.7	5.8	0	0.6	5.7	5.1	2SANSPEA	Dark brown, organic, silty, fine to medium SAND (OL)	Type C	0	2		1	11	120	33
TB-30	5.7	5.8	0.6	1.2	5.1	4.5	2SANSGRA	MEDIUM DENSE, tan, silty, fine to medium SAND with some limerock (SM)	Type C							
TB-30	5.7	5.8	1.2	5.2	4.5	0.5	2SAND	MEDIUM DENSE to VERY LOOSE, tan, fine to medium SAND (SP)	Type C							
TB-30	5.7	5.8								2	4		3	10	120	33
TB-30	5.7	5.8								4	6		5	2	94	29
TB-30	5.7	5.8	5.2	6	0.5	-0.3	2SAND	VERY LOOSE, dark reddish brown, slightly silty, fine to medium SAND (SP-SM)	Type C							
TB-30	5.7	5.8	6	10	-0.3	-4.3	2SAND	VERY LOOSE to LOOSE, light brown to tan, fine to medium SAND (SP)	Type C	6	8		7	4	103	30
TB-30	5.7	5.8								8	10		9	6	108	31

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SUMMARY OF GEOTECHNICAL PARAMETERS

Test No.	Ground Surface Elevation (ft)	Water Level Depth (ft)	Top Depth (feet)	Lower Depth (feet)	Top Layer Elevation (ft)	Bottom Layer Elevation (ft)	Brief Description of Material	General Description of Material	OSHA 1926 Subpart P Appendix A - Soil Classification	Top of Sample (ft)	Bottom of Sample (ft)	Maximum Allowable Slope (H:V) for Excavations less than 20 feet deep	Middle of Sample (ft)	N-value (blows per foot)	Moist Unit Weight (pcf)	Friction Angle (degrees)
TB-31	5.6	5.3	0	0.7	5.6	4.9	2SANSPEA	Dark brown, organic, silty, fine to medium SAND (OL)	Type C	0	2		1	7	111	31
TB-31	5.6	5.3	0.7	1.1	4.9	4.5	2SANSGRA	LOOSE, light brown, silty, fine to medium SAND with some limerock (SM)	Type C							
TB-31	5.6	5.3	1.1	4	4.5	1.6	2SAND	LOOSE, tan to light brown, fine to medium SAND (SP)	Type C							
TB-31	5.6	5.3								2	4		3	6	108	31
TB-31	5.6	5.3	4	6	1.6	-0.4	2SAND	VERY LOOSE, dark reddish brown, slightly silty, fine to medium SAND (SP-SM)	Type C	4	6		5	3	98	29
TB-31	5.6	5.3	6	10	-0.4	-4.4	2SAND	LOOSE, tan and gray, fine to medium SAND (SP)	Type C	6	8		7	5	105	30
TB-31	5.6	5.3								8	10		9	7	111	31
TB-32	6	5.6	0	1.1	6	4.9	2SANSPEA	LOOSE, brown, organic, slightly silty, fine to medium SAND with trace of roots (OL)	Type C	0	2		1	6	108	31
TB-32	6	5.6	1.1	4	4.9	2	2SAND	LOOSE, tan, fine to medium SAND (SP)	Type C							
TB-32	6	5.6								2	4		3	7	111	31
TB-32	6	5.6	4	6	2	0	2SAND	VERY LOOSE, reddish brown, fine to medium SAND (SP)	Type C	4	6		5	2	94	29
TB-32	6	5.6	6	10	0	-4	2SAND	VERY LOOSE to LOOSE, tan, fine to medium SAND (SP)	Type C	6	8		7	2	94	29
TB-32	6	5.6								8	10		9	5	105	30
TB-33	5.6	5.5	0	0.6	5.6	5	2SANSPEA	Dark brown, organic, silty, fine to medium SAND (OL)	Type C	0	2		1	8	114	32
TB-33	5.6	5.5	0.6	1	5	4.6	2SAND	LOOSE, brown, slightly silty, fine to medium SAND with little limerock (SP-SM)	Type C							
TB-33	5.6	5.5	1	1.5	4.6	4.1	2SAND	LOOSE, brown, fine to medium SAND (SP)	Type C							
TB-33	5.6	5.5	1.5	5.1	4.1	0.5	2SAND	MEDIUM DENSE to VERY LOOSE, tan, fine to medium SAND (SP)	Type C							
TB-33	5.6	5.5								2	4		3	12	121	33

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Test No.	Ground Surface Elevation (ft)	Water Level Depth (ft)	Top Depth (feet)	Lower Depth (feet)	Top Layer Elevation (ft)	Bottom Layer Elevation (ft)	Brief Description of Material	General Description of Material	OSHA 1926 Subpart P Appendix A - Soil Classification	Top of Sample (ft)	Bottom of Sample (ft)	Maximum Allowable Slope (H:V) for Excavations less than 20 feet deep	Middle of Sample (ft)	N-value (blows per foot)	Moist Unit Weight (pcf)	Friction Angle (degrees)
TB-33	5.6	5.5								4	6		5	3	98	29
TB-33	5.6	5.5	5.1	6	0.5	-0.4	2SAND	VERY LOOSE, dark reddish brown, slightly silty, fine to medium SAND (SP-SM)	Type C							
TB-33	5.6	5.5	6	10	-0.4	-4.4	2SAND	LOOSE, tan, fine to medium SAND (SP)	Type C	6	8		7	5	105	30
TB-33	5.6	5.5								8	10		9	7	111	31
TB-34	5.5		0	0.9	5.5	4.6	2SANSPEA	Dark brown, organic, silty, fine to medium SAND with trace of limerock (OL)	Type C	0	2		1	7	111	31
TB-34	5.5		0.9	4	4.6	1.5	2SAND	LOOSE, tan to light brown, fine to medium SAND (SP)	Type C							
TB-34	5.5									2	4		3	6	108	31
TB-34	5.5		4	6	1.5	-0.5	2SAND	VERY LOOSE, dark reddish brown, slightly silty, fine to medium SAND (SP-SM)	Type C	4	6		5	2	94	29
TB-34	5.5		6	9	-0.5	-3.5	2SAND	LOOSE, brown, slightly silty, fine to medium SAND (SP-SM)	Type C	6	8		7	7	111	31
TB-34	5.5									8	10		9	9	117	32
TB-34	5.5		9	10	-3.5	-4.5	2SAND	LOOSE, tan, fine to medium SAND (SP)	Type C							
TB-35	5.8	5.4	0	0.8	5.8	5	2SANSPEA	Dark brown, organic, silty, fine to medium SAND (OL)	Type C	0	2		1	9	117	32
TB-35	5.8	5.4	0.8	1.4	5	4.4	2SANSGRA	LOOSE, tan, silty, fine to coarse SAND with some limerock (SM)	Type C							
TB-35	5.8	5.4	1.4	4.5	4.4	1.3	2SAND	LOOSE to VERY LOOSE, tan, fine to medium SAND (SP)	Type C							
TB-35	5.8	5.4								2	4		3	6	108	31
TB-35	5.8	5.4								4	6		5	2	94	29
TB-35	5.8	5.4	4.5	6	1.3	-0.2	2SAND	VERY LOOSE, dark reddish brown, slightly silty, fine to medium SAND (SP-SM)	Type C							
TB-35	5.8	5.4	6	10	-0.2	-4.2	2SAND	VERY LOOSE to LOOSE, tan, fine to medium SAND (SP)	Type C	6	8		7	3	98	29

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SUMMARY OF GEOTECHNICAL PARAMETERS

Test No.	Ground Surface Elevation (ft)	Water Level Depth (ft)	Top Depth (feet)	Lower Depth (feet)	Top Layer Elevation (ft)	Bottom Layer Elevation (ft)	Brief Description of Material	General Description of Material	OSHA 1926 Subpart P Appendix A - Soil Classification	Top of Sample (ft)	Bottom of Sample (ft)	Maximum Allowable Slope (H:V) for Excavations less than 20 feet deep	Middle of Sample (ft)	N-value (blows per foot)	Moist Unit Weight (pcf)	Friction Angle (degrees)
TB-35	5.8	5.4								8	10		9	5	105	30
TB-36	5.6		0	0.6	5.6	5	2SANSPEA	Dark brown, organic, silty, fine to medium SAND (OL)	Type C	0	2		1	8	114	32
TB-36	5.6		0.6	0.8	5	4.8	2SAND	LOOSE, brown, slightly silty, fine to medium SAND with little limerock (SP-SM)	Type C							
TB-36	5.6		0.8	3.5	4.8	2.1	2SAND	LOOSE, tan, fine to medium SAND (SP)	Type C							
TB-36	5.6									2	4		3	6	108	31
TB-36	5.6		3.5	6	2.1	-0.4	2SAND	VERY LOOSE, reddish brown to brown, slightly silty, fine to medium SAND (SP-SM)	Type C							
TB-36	5.6									4	6		5	2	94	29
TB-36	5.6		6	10	-0.4	-4.4	2SAND	LOOSE, tan and gray, fine to medium SAND (SP)	Type C	6	8		7	7	111	31
TB-36	5.6									8	10		9	8	114	32
TB-37	5.4		0	0.5	5.4	4.9	2SANSPEA	Dark brown, organic, silty, fine to medium SAND (OL)	Type C	0	2		1	8	114	32
TB-37	5.4		0.5	0.8	4.9	4.6	2SAND	LOOSE, light brown, slightly silty, fine to medium SAND with little limerock (SP-SM)	Type C							
TB-37	5.4		0.8	4	4.6	1.4	2SAND	LOOSE, tan to light brown, fine to medium SAND (SP)	Type C							
TB-37	5.4									2	4		3	5	105	30
TB-37	5.4		4	6	1.4	-0.6	2SAND	VERY LOOSE, brown, slightly silty, fine to medium SAND (SP-SM)	Type C	4	6		5	3	98	29
TB-37	5.4		6	10	-0.6	-4.6	2SAND	LOOSE, tan, fine to medium SAND (SP)	Type C	6	8		7	5	105	30
TB-37	5.4									8	10		9	7	111	31
TB-38	5.4	5.3	0	0.6	5.4	4.8	2SANSPEA	Dark brown, organic, silty, fine to medium SAND with trace of roots (OL)	Type C	0	2		1	5	105	30
TB-38	5.4	5.3	0.6	2	4.8	3.4	2SAND	LOOSE, light brown, fine to medium SAND (SP)	Type C							

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SUMMARY OF GEOTECHNICAL PARAMETERS

Test No.	Ground Surface Elevation (ft)	Water Level Depth (ft)	Top Depth (feet)	Lower Depth (feet)	Top Layer Elevation (ft)	Bottom Layer Elevation (ft)	Brief Description of Material	General Description of Material	OSHA 1926 Subpart P Appendix A - Soil Classification	Top of Sample (ft)	Bottom of Sample (ft)	Maximum Allowable Slope (H:V) for Excavations less than 20 feet deep	Middle of Sample (ft)	N-value (blows per foot)	Moist Unit Weight (pcf)	Friction Angle (degrees)
TB-38	5.4	5.3	2	4	3.4	1.4	2SAND	VERY LOOSE, brown, slightly silty, fine to medium SAND with trace of limestone fragments (SP-SM)	Type C	2	4		3	4	103	30
TB-38	5.4	5.3	4	6	1.4	-0.6	2SAND	VERY LOOSE, brown, slightly silty, fine to medium SAND (SP-SM)	Type C	4	6		5	3	98	29
TB-38	5.4	5.3	6	10	-0.6	-4.6	2SAND	VERY LOOSE to LOOSE, light brown, fine to medium SAND (SP)	Type C	6	8		7	5	105	30
TB-38	5.4	5.3								8	10		9	2	94	29
TB-39	6.1	5.7	0	0.6	6.1	5.5	2SANSPEA	Dark brown, organic, silty, fine to medium SAND (OL)	Type C	0	2		1	10	120	33
TB-39	6.1	5.7	0.6	1	5.5	5.1	2SANSGRA	LOOSE, light brown, silty, fine to medium SAND with some limerock (SM)	Type C							
TB-39	6.1	5.7	1	3.5	5.1	2.6	2SAND	LOOSE, tan, fine to medium SAND (SP)	Type C							
TB-39	6.1	5.7								2	4		3	9	117	32
TB-39	6.1	5.7	3.5	6	2.6	0.1	2SAND	VERY LOOSE, reddish brown, slightly silty, fine to medium SAND (SP-SM)	Type C							
TB-39	6.1	5.7								4	6		5	1	89	28
TB-39	6.1	5.7	6	8	0.1	-1.9	2SAND	LOOSE, brown, slightly silty, fine to medium SAND (SP-SM)	Type C	6	8		7	5	105	30
TB-39	6.1	5.7	8	10	-1.9	-3.9	2SAND	LOOSE, tan, fine to medium SAND (SP)	Type C	8	10		9	7	111	31
TB-40	6.1		0	0.5	6.1	5.6	2SANSPEA	Dark brown, organic, silty, fine to medium SAND (OL)	Type C	0	2		1	9	117	32
TB-40	6.1		0.5	1	5.6	5.1	2SAND	LOOSE, brown, slightly silty, fine to medium SAND with little limerock (SP-SM)	Type C							
TB-40	6.1		1	3.5	5.1	2.6	2SAND	LOOSE, tan, fine to medium SAND (SP)	Type C							
TB-40	6.1									2	4		3	9	117	32
TB-40	6.1		3.5	4	2.6	2.1	2SAND	LOOSE, brown, slightly silty, fine to medium SAND with trace of limestone fragments (SP-SM)	Type C							
TB-40	6.1		4	5	2.1	1.1	2SAND	LOOSE, gray, fine to medium SAND (SP)	Type C	4	6		5	6	108	31

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Test No.	Ground Surface Elevation (ft)	Water Level Depth (ft)	Top Depth (feet)	Lower Depth (feet)	Top Layer Elevation (ft)	Bottom Layer Elevation (ft)	Brief Description of Material	General Description of Material	OSHA 1926 Subpart P Appendix A - Soil Classification	Top of Sample (ft)	Bottom of Sample (ft)	Maximum Allowable Slope (H:V) for Excavations less than 20 feet deep	Middle of Sample (ft)	N-value (blows per foot)	Moist Unit Weight (pcf)	Friction Angle (degrees)
TB-40	6.1		5	6	1.1	0.1	2SAN&GRA	LOOSE, tan and yellow, silty, fine to medium SAND and LIMESTONE FRAGMENTS (SM)	Type C							
TB-40	6.1		6	10	0.1	-3.9	2SAND	LOOSE, tan and gray, fine to medium SAND (SP)	Type C	6	8		7	7	111	31
TB-40	6.1									8	10		9	7	111	31
TB-41	5.9	5.9	0	0.7	5.9	5.2	2SANSPEA	Dark brown, organic, silty, fine to medium SAND (OL)	Type C	0	2		1	11	120	33
TB-41	5.9	5.9	0.7	1.1	5.2	4.8	2SAN&GRA	MEDIUM DENSE, brown, silty, fine to coarse SAND and LIMEROCK (SM)	Type C							
TB-41	5.9	5.9	1.1	5.1	4.8	0.8	2SAND	MEDIUM DENSE to LOOSE, tan, fine to medium SAND (SP)	Type C							
TB-41	5.9	5.9								2	4		3	9	117	32
TB-41	5.9	5.9								4	6		5	2	94	29
TB-41	5.9	5.9	5.1	6	0.8	-0.1	2SAND	VERY LOOSE, dark reddish brown, slightly silty, fine to medium SAND (SP-SM)	Type C							
TB-41	5.9	5.9	6	10	-0.1	-4.1	2SAND	LOOSE, tan and gray, fine to medium SAND (SP)	Type C	6	8		7	7	111	31
TB-41	5.9	5.9								8	10		9	7	111	31
TB-42	5.9	5.9	0	0.8	5.9	5.1	2SANSPEA	Dark brown, organic, silty, fine to medium SAND (OL)	Type C	0	2		1	9	117	32
TB-42	5.9	5.9	0.8	1.2	5.1	4.7	2SANSGRA	LOOSE, light brown to tan, silty, fine to coarse SAND with some limerock (SM)	Type C							
TB-42	5.9	5.9	1.2	3.6	4.7	2.3	2SAND	LOOSE, tan, fine to medium SAND (SP)	Type C							
TB-42	5.9	5.9								2	4		3	6	108	31
TB-42	5.9	5.9	3.6	6	2.3	-0.1	2SAND	VERY LOOSE, light brown to brown, fine to medium SAND (SP)	Type C							
TB-42	5.9	5.9								4	6		5	2	94	29
TB-42	5.9	5.9	6	10	-0.1	-4.1	2SAND	LOOSE, tan, fine to medium SAND (SP)	Type C	6	8		7	6	108	31

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SUMMARY OF GEOTECHNICAL PARAMETERS

Test No.	Ground Surface Elevation (ft)	Water Level Depth (ft)	Top Depth (feet)	Lower Depth (feet)	Top Layer Elevation (ft)	Bottom Layer Elevation (ft)	Brief Description of Material	General Description of Material	OSHA 1926 Subpart P Appendix A - Soil Classification	Top of Sample (ft)	Bottom of Sample (ft)	Maximum Allowable Slope (H:V) for Excavations less than 20 feet deep	Middle of Sample (ft)	N-value (blows per foot)	Moist Unit Weight (pcf)	Friction Angle (degrees)
TB-42	5.9	5.9								8	10		9	9	117	32
TB-43	5.8		0	0.7	5.8	5.1	2SANSPEA	Dark brown, organic, silty, fine to medium SAND (OL)	Type C	0	2		1	13	121	33
TB-43	5.8		0.7	1.3	5.1	4.5	2SANSGRA	MEDIUM DENSE, tan, silty, fine to coarse SAND with some limerock (SM)	Type C							
TB-43	5.8		1.3	5.5	4.5	0.3	2SAND	LOOSE, light brown, fine to medium SAND (SP)	Type C							
TB-43	5.8									2	4		3	8	114	32
TB-43	5.8									4	6		5	4	103	30
TB-43	5.8		5.5	6	0.3	-0.2	2SANSSIL	VERY LOOSE, brown, silty, fine to medium SAND (SM)	Type C							
TB-43	5.8		6	8	-0.2	-2.2	2SAND	LOOSE, tan, fine to medium SAND (SP)	Type C	6	8		7	5	105	30
TB-43	5.8		8	10	-2.2	-4.2	2SANSGRA	LOOSE, tan, fine to medium SAND with some subangular and subrounded limestone fragments (SP)	Type C	8	10		9	7	111	31
TB-44	5.2		0	0.8	5.2	4.4	2SANSPEA	Dark brown to brown, organic, slightly silty, fine to medium SAND (OL)	Type C	0	2		1	6	108	31
TB-44	5.2		0.8	1.2	4.4	4	2SANSGRA	LOOSE, brown, fine to medium SAND with some limerock (SP)	Type C							
TB-44	5.2		1.2	1.6	4	3.6	2SAND	LOOSE, tan, fine to medium SAND (SP)	Type C							
TB-44	5.2		1.6	2	3.6	3.2	2SAND	LOOSE, brown, fine to medium SAND (SP)	Type C							
TB-44	5.2		2	3	3.2	2.2	2SAND	LOOSE, brown, slightly silty, fine to medium SAND (SP-SM)	Type C	2	4		3	5	105	30
TB-44	5.2		3	4.9	2.2	0.3	2SAND	LOOSE, yellowish brown, slightly silty, fine to medium SAND (SP-SM)	Type C							
TB-44	5.2									4	6		5	5	105	30
TB-44	5.2		4.9	6	0.3	-0.8	2SAND	LOOSE, light brown, fine to medium SAND (SP)	Type C							
TB-44	5.2		6	10	-0.8	-4.8	2SAND	LOOSE, tan, fine to medium SAND (SP)	Type C	6	8		7	7	111	31

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Test No.	Ground Surface Elevation (ft)	Water Level Depth (ft)	Top Depth (feet)	Lower Depth (feet)	Top Layer Elevation (ft)	Bottom Layer Elevation (ft)	Brief Description of Material	General Description of Material	OSHA 1926 Subpart P Appendix A - Soil Classification	Top of Sample (ft)	Bottom of Sample (ft)	Maximum Allowable Slope (H:V) for Excavations less than 20 feet deep	Middle of Sample (ft)	N-value (blows per foot)	Moist Unit Weight (pcf)	Friction Angle (degrees)
TB-44	5.2									8	10		9	5	105	30
TB-45	6	5.3	0	0.6	6	5.4	2SANSPEA	Dark brown, organic, silty, fine to medium SAND with trace of roots (OL)	Type C	0	2		1	8	114	32
TB-45	6	5.3	0.6	1.2	5.4	4.8	2SANSGRA	LOOSE, tan, silty, fine to coarse SAND with some limerock (SM)	Type C							
TB-45	6	5.3	1.2	1.6	4.8	4.4	2SAND	LOOSE, brown, slightly silty, fine to medium SAND (SP-SM)	Type C							
TB-45	6	5.3	1.6	5.3	4.4	0.7	2SAND	LOOSE to VERY LOOSE, tan to light brown, fine to medium SAND (SP)	Type C							
TB-45	6	5.3								2	4		3	10	120	33
TB-45	6	5.3								4	6		5	3	98	29
TB-45	6	5.3	5.3	6	0.7	0	2SAND	VERY LOOSE, brown, fine to medium SAND (SP)	Type C							
TB-45	6	5.3	6	8	0	-2	2SAND	VERY LOOSE, tan, fine to medium SAND (SP)	Type C	6	8		7	4	103	30
TB-45	6	5.3	8	10	-2	-4	2SAND	LOOSE, tan, fine to medium SAND with trace of limestone fragments (SP)	Type C	8	10		9	7	111	31
TB-46	5.9	5.8	0	1	5.9	4.9	2SANSPEA	Dark brown, organic, silty, fine to medium SAND with trace of roots (OL)	Type C	0	2		1	5	105	30
TB-46	5.9	5.8	1	4	4.9	1.9	2SAND	LOOSE, tan, fine to medium SAND (SP)	Type C							
TB-46	5.9	5.8								2	4		3	7	111	31
TB-46	5.9	5.8	4	10	1.9	-4.1	2SAND	VERY LOOSE to LOOSE, light brown to tan, fine to medium SAND (SP)	Type C	4	6		5	4	103	30
TB-46	5.9	5.8								6	8		7	8	114	32
TB-46	5.9	5.8								8	10		9	8	114	32
TB-47	5.9	5.4	0	0.6	5.9	5.3	2SANSPEA	Dark brown, organic, silty, fine to medium SAND with trace of roots (OL)	Type C	0	2		1	13	121	33
TB-47	5.9	5.4	0.6	1.3	5.3	4.6	2SANSGRA	MEDIUM DENSE, light yellow, silty, fine to coarse SAND with some limerock (SM)	Type C							

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Test No.	Ground Surface Elevation (ft)	Water Level Depth (ft)	Top Depth (feet)	Lower Depth (feet)	Top Layer Elevation (ft)	Bottom Layer Elevation (ft)	Brief Description of Material	General Description of Material	OSHA 1926 Subpart P Appendix A - Soil Classification	Top of Sample (ft)	Bottom of Sample (ft)	Maximum Allowable Slope (H:V) for Excavations less than 20 feet deep	Middle of Sample (ft)	N-value (blows per foot)	Moist Unit Weight (pcf)	Friction Angle (degrees)
TB-47	5.9	5.4	1.3	4.5	4.6	1.4	2SAND	LOOSE, tan, fine to medium SAND (SP)	Type C							
TB-47	5.9	5.4								2	4		3	8	114	32
TB-47	5.9	5.4								4	6		5	2	94	29
TB-47	5.9	5.4	4.5	6	1.4	-0.1	2SAND	VERY LOOSE, dark brown, fine to medium SAND (SP)	Type C							
TB-47	5.9	5.4	6	8	-0.1	-2.1	2SAND	LOOSE, brown, fine to medium SAND (SP)	Type C	6	8		7	5	105	30
TB-47	5.9	5.4	8	10	-2.1	-4.1	2SAND	LOOSE, light brown to tan, fine to medium SAND (SP)	Type C	8	10		9	7	111	31
TB-48	5.6	5.5	0	0.6	5.6	5	2SANSPEA	Dark brown, organic, silty, fine to medium SAND with trace of roots (OL)	Type C	0	2		1	10	120	33
TB-48	5.6	5.5	0.6	1.1	5	4.5	2SANSGRA	LOOSE, brown, fine to medium SAND with some limerock (SP)	Type C							
TB-48	5.6	5.5	1.1	3.6	4.5	2	2SAND	LOOSE, tan, fine to medium SAND (SP)	Type C							
TB-48	5.6	5.5								2	4		3	5	105	30
TB-48	5.6	5.5	3.6	4	2	1.6	2SAND	VERY LOOSE, brown, fine to medium SAND (SP)	Type C							
TB-48	5.6	5.5	4	5	1.6	0.6	2SAND	VERY LOOSE, light brown, fine to medium SAND with little limestone fragments (SP)	Type C	4	6		5	3	98	29
TB-48	5.6	5.5	5	8	0.6	-2.4	2SAND	VERY LOOSE to LOOSE, light brown, fine to medium SAND (SP)	Type C							
TB-48	5.6	5.5								6	8		7	7	111	31
TB-48	5.6	5.5	8	10	-2.4	-4.4	2SAND	MEDIUM DENSE, tan, fine to medium SAND (SP)	Type C	8	10		9	11	120	33
TB-49	5.7	5.8	0	0.7	5.7	5	2SANSPEA	Dark brown, organic, silty, fine to medium SAND with trace of roots (OL)	Type C	0	2		1	13	121	33
TB-49	5.7	5.8	0.7	1.2	5	4.5	2SANSGRA	MEDIUM DENSE, brown, silty, fine to medium SAND with some limerock (SM)	Type C							
TB-49	5.7	5.8	1.2	2	4.5	3.7	2SAND	LOOSE, brown, slightly silty, fine to medium SAND (SP-SM)	Type C							

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Test No.	Ground Surface Elevation (ft)	Water Level Depth (ft)	Top Depth (feet)	Lower Depth (feet)	Top Layer Elevation (ft)	Bottom Layer Elevation (ft)	Brief Description of Material	General Description of Material	OSHA 1926 Subpart P Appendix A - Soil Classification	Top of Sample (ft)	Bottom of Sample (ft)	Maximum Allowable Slope (H:V) for Excavations less than 20 feet deep	Middle of Sample (ft)	N-value (blows per foot)	Moist Unit Weight (pcf)	Friction Angle (degrees)
TB-49	5.7	5.8	2	4.7	3.7	1	2SAND	LOOSE, tan to light brown, fine to medium SAND (SP)	Type C	2	4		3	6	108	31
TB-49	5.7	5.8								4	6		5	4	103	30
TB-49	5.7	5.8	4.7	5.5	1	0.2	2SAND	VERY LOOSE, tan, slightly silty, fine to medium SAND with little limestone fragments (SP-SM)	Type C							
TB-49	5.7	5.8	5.5	10	0.2	-4.3	2SAND	LOOSE, light brown to tan, fine to medium SAND (SP)	Type C							
TB-49	5.7	5.8								6	8		7	9	117	32
TB-49	5.7	5.8								8	10		9	10	120	33
TB-50	6		0	0.8	6	5.2	2SANSPEA	Dark brown, organic, silty, fine to medium SAND with trace of roots (OL)	Type C	0	2		1	6	108	31
TB-50	6		0.8	1.2	5.2	4.8	2SAND	LOOSE, tan, fine to medium SAND with some limerock (SP)	Type C							
TB-50	6		1.2	2	4.8	4	2SAND	LOOSE, tan, fine to medium SAND (SP)	Type C							
TB-50	6		2	3.5	4	2.5	2SAND	VERY LOOSE, brown, slightly silty, fine to medium SAND (SP-SM)	Type C	2	4		3	4	103	30
TB-50	6		3.5	4.9	2.5	1.1	2SANSSIL	VERY LOOSE, tan to brown, silty, fine to medium SAND with little limestone fragments (SM)	Type C							
TB-50	6									4	6		5	4	103	30
TB-50	6		4.9	7.1	1.1	-1.1	2SANSGRA	LOOSE, tan, slightly silty, fine to medium SAND with some limestone fragments (SP-SM)	Type C							
TB-50	6									6	8		7	6	108	31
TB-50	6		7.1	10	-1.1	-4	2SAND	LOOSE, tan to light brown, fine to medium SAND (SP)	Type C							
TB-50	6									8	10		9	9	117	32
TB-51	5.5	5.5	0	0.5	5.5	5	2SANSPEA	Dark brown, organic, silty, fine to medium SAND (OL)	Type C	0	2		1	12	121	33
TB-51	5.5	5.5	0.5	1	5	4.5	2SAN&GRA	MEDIUM DENSE, tan, silty, fine to medium SAND and LIMEROCK (SM)	Type C							

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Test No.	Ground Surface Elevation (ft)	Water Level Depth (ft)	Top Depth (feet)	Lower Depth (feet)	Top Layer Elevation (ft)	Bottom Layer Elevation (ft)	Brief Description of Material	General Description of Material	OSHA 1926 Subpart P Appendix A - Soil Classification	Top of Sample (ft)	Bottom of Sample (ft)	Maximum Allowable Slope (H:V) for Excavations less than 20 feet deep	Middle of Sample (ft)	N-value (blows per foot)	Moist Unit Weight (pcf)	Friction Angle (degrees)
TB-51	5.5	5.5	1	3.6	4.5	1.9	2SAND	MEDIUM DENSE to LOOSE, tan, fine to medium SAND (SP)	Type C							
TB-51	5.5	5.5								2	4		3	5	105	30
TB-51	5.5	5.5	3.6	5.4	1.9	0.1	2SAND	LOOSE to VERY LOOSE, brown, slightly silty, fine to medium SAND (SP-SM)	Type C							
TB-51	5.5	5.5								4	6		5	2	94	29
TB-51	5.5	5.5	5.4	6	0.1	-0.5	2SAN&GRA	VERY LOOSE, tan, silty, fine to coarse SAND and LIMESTONE FRAGMENTS (GM)	Type C							
TB-51	5.5	5.5	6	10	-0.5	-4.5	2SAND	LOOSE, brown to tan, slightly silty, fine to medium SAND (SP-SM)	Type C	6	8		7	6	108	31
TB-51	5.5	5.5								8	10		9	6	108	31
TB-52	5.4	5.5	0	0.6	5.4	4.8	2SANSPEA	Black, organic, silty, fine to medium SAND (OL)	Type C	0	2		1	9	117	32
TB-52	5.4	5.5	0.6	0.9	4.8	4.5	2SANSGRA	LOOSE, tan, silty, fine to medium SAND with some limerock (SM)	Type C							
TB-52	5.4	5.5	0.9	2.6	4.5	2.8	2SAND	LOOSE to VERY LOOSE, tan, fine to medium SAND (SP)	Type C							
TB-52	5.4	5.5								2	4		3	4	103	30
TB-52	5.4	5.5	2.6	6	2.8	-0.6	2SAND	VERY LOOSE, dark brown, fine to medium SAND (SP)	Type C							
TB-52	5.4	5.5								4	6		5	3	98	29
TB-52	5.4	5.5	6	10	-0.6	-4.6	2SAND	VERY LOOSE to LOOSE, light brown, slightly silty, fine to medium SAND (SP-SM)	Type C	6	8		7	2	94	29
TB-52	5.4	5.5								8	10		9	5	105	30
TB-53	5.2	4.9	0	0.6	5.2	4.6	2SAND	Brown, slightly silty, fine to medium SAND with little limerock and trace of roots (SP)	Type C	0	2		1	10	120	33
TB-53	5.2	4.9	0.6	0.9	4.6	4.3	2SANSGRA	LOOSE, brown, slightly silty, fine to medium SAND with some limerock (SP-SM)	Type C							
TB-53	5.2	4.9	0.9	3.6	4.3	1.6	2SAND	LOOSE, tan, fine to medium SAND (SP)	Type C							

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Test No.	Ground Surface Elevation (ft)	Water Level Depth (ft)	Top Depth (feet)	Lower Depth (feet)	Top Layer Elevation (ft)	Bottom Layer Elevation (ft)	Brief Description of Material	General Description of Material	OSHA 1926 Subpart P Appendix A - Soil Classification	Top of Sample (ft)	Bottom of Sample (ft)	Maximum Allowable Slope (H:V) for Excavations less than 20 feet deep	Middle of Sample (ft)	N-value (blows per foot)	Moist Unit Weight (pcf)	Friction Angle (degrees)
TB-53	5.2	4.9								2	4		3	7	111	31
TB-53	5.2	4.9	3.6	4.4	1.6	0.8	2SAND	LOOSE, brown, fine to medium SAND (SP)	Type C							
TB-53	5.2	4.9								4	6		5	2	94	29
TB-53	5.2	4.9	4.4	7	0.8	-1.8	2SAND	VERY LOOSE to LOOSE, dark reddish brown, slightly silty, fine to medium SAND (SP-SM)	Type C							
TB-53	5.2	4.9								6	8		7	5	105	30
TB-53	5.2	4.9	7	10	-1.8	-4.8	2SAND	LOOSE, brown to light brown, fine to medium SAND (SP)	Type C							
TB-53	5.2	4.9								8	10		9	7	111	31
TB-54	5.4	3.9	0	0.4	5.4	5	2SANSPEA	Brown, organic, silty, fine to medium SAND (OL)	Type C	0	2		1	8	114	32
TB-54	5.4	3.9	0.4	0.9	5	4.5	2SANSGRA	LOOSE, brown and dark brown, silty, fine to medium SAND with some limerock (SM)	Type C							
TB-54	5.4	3.9	0.9	4	4.5	1.4	2SAND	LOOSE, tan and brown, slightly silty, fine to medium SAND (SP-SM)	Type C							
TB-54	5.4	3.9								2	4		3	8	114	32
TB-54	5.4	3.9	4	6	1.4	-0.6	2SAND	NO RECOVERY (Probably SAND)	Type C	4	6		5	9	117	32
TB-54	5.4	3.9	6	10	-0.6	-4.6	2SAND	VERY LOOSE, tan, fine to medium SAND (SP)	Type C	6	8		7	4	103	30
TB-54	5.4	3.9								8	10		9	4	103	30
TB-55	5.8	5.8	0	0.7	5.8	5.1	2SANSPEA	Dark brown, organic, silty, fine to medium SAND (OL)	Type C	0	2		1	13	121	33
TB-55	5.8	5.8	0.7	1.4	5.1	4.4	2SAN&GRA	MEDIUM DENSE, tan, silty, fine to medium SAND and LIMEROCK (SM)	Type C							
TB-55	5.8	5.8	1.4	3.6	4.4	2.2	2SAND	MEDIUM DENSE to LOOSE, tan, fine to medium SAND (SP)	Type C							
TB-55	5.8	5.8								2	4		3	6	108	31

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Test No.	Ground Surface Elevation (ft)	Water Level Depth (ft)	Top Depth (feet)	Lower Depth (feet)	Top Layer Elevation (ft)	Bottom Layer Elevation (ft)	Brief Description of Material	General Description of Material	OSHA 1926 Subpart P Appendix A - Soil Classification	Top of Sample (ft)	Bottom of Sample (ft)	Maximum Allowable Slope (H:V) for Excavations less than 20 feet deep	Middle of Sample (ft)	N-value (blows per foot)	Moist Unit Weight (pcf)	Friction Angle (degrees)
TB-55	5.8	5.8	3.6	4	2.2	1.8	2SANSSIL	LOOSE, yellowish brown, silty, fine to medium SAND (SM)	Type C							
TB-55	5.8	5.8	4	5.6	1.8	0.2	2SAND	LOOSE, light brown, fine to medium SAND (SP)	Type C	4	6		5	5	105	30
TB-55	5.8	5.8	5.6	6	0.2	-0.2	2SAN&GRA	LOOSE, light brown, silty, fine to coarse SAND and LIMESTONE FRAGMENTS (SM)	Type C							
TB-55	5.8	5.8	6	8	-0.2	-2.2	2SAND	LOOSE, tan, fine to medium SAND (SP)	Type C	6	8		7	6	108	31
TB-55	5.8	5.8	8	10	-2.2	-4.2	2SAND	LOOSE, tan, fine to medium SAND with little subangular and subrounded limestone fragments (SP)	Type C	8	10		9	7	111	31
TB-56	5.6	5.4	0	0.25	5.6	5.35	2ASPHALT	ASPHALT: 3 inches	Type C	0	2		1	10	120	33
TB-56	5.6	5.4	0.25	0.9	5.35	4.7	2SANSGRA	LOOSE, tan, silty, fine to coarse SAND with some limerock (SM)	Type C							
TB-56	5.6	5.4	0.9	2.2	4.7	3.4	2SAND	LOOSE, tan, fine to medium SAND (SP)	Type C							
TB-56	5.6	5.4								2	4		3	6	108	31
TB-56	5.6	5.4	2.2	2.7	3.4	2.9	2SANSSIL	LOOSE, brown to yellowish brown, silty, fine to medium SAND (SM)	Type C							
TB-56	5.6	5.4	2.7	4	2.9	1.6	2SAND	LOOSE, light brown to yellow, slightly silty, fine to medium SAND with trace of limestone fragments (SP-SM)	Type C							
TB-56	5.6	5.4	4	6	1.6	-0.4	2SAND	LOOSE, tan to light yellow, fine to medium SAND (SP)	Type C	4	6		5	6	108	31
TB-56	5.6	5.4	6	10	-0.4	-4.4	2SAND	VERY LOOSE, tan to light gray, fine to medium SAND (SP)	Type C	6	8		7	4	103	30
TB-56	5.6	5.4								8	10		9	4	103	30
TB-57	5.8	5.3	0	0.7	5.8	5.1	2SANSPEA	Black, organic, silty, fine to medium SAND (OL)	Type C	0	2		1	11	120	33
TB-57	5.8	5.3	0.7	1.1	5.1	4.7	2SANSGRA	MEDIUM DENSE, light brown, slightly silty, fine to medium SAND with some limerock (SP-SM)	Type C							
TB-57	5.8	5.3	1.1	2.9	4.7	2.9	2SAND	MEDIUM DENSE to LOOSE, light gray to gray, fine to medium SAND (SP)	Type C							
TB-57	5.8	5.3								2	4		3	5	105	30

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TB-57	5.8	5.3	2.9	8	2.9	-2.2	2SAND	VERY LOOSE, dark brown, slightly silty, fine to medium SAND (SP-SM)	Type C							
TB-57	5.8	5.3								4	6		5	2	94	29
TB-57	5.8	5.3								6	8		7	2	94	29
TB-57	5.8	5.3	8	10	-2.2	-4.2	2SAND	LOOSE, light brown, fine to medium SAND (SP)	Type C	8	10		9	5	105	30
TB-58	5.1	5.4	0	0.4	5.1	4.7	2SANSPEA	Black, organic, silty, fine to medium SAND (OL)	Type C	0	2		1	7	111	31
TB-58	5.1	5.4	0.4	0.7	4.7	4.4	2SANSGRA	LOOSE, gray, fine to medium SAND with some gravel fragments	Type C							
TB-58	5.1	5.4	0.7	3.2	4.4	1.9	2SAND	LOOSE, tan, fine to medium SAND (SP)	Type C							
TB-58	5.1	5.4								2	4		3	5	105	30
TB-58	5.1	5.4	3.2	10	1.9	-4.9	2SAND	VERY LOOSE to LOOSE, brown to light brown, fine to medium SAND (SP)	Type C							
TB-58	5.1	5.4								4	6		5	2	94	29
TB-58	5.1	5.4								6	8		7	2	94	29
TB-58	5.1	5.4								8	10		9	6	108	31
TB-59	5.9	5.8	0	0.4	5.9	5.5	2SANSPEA	Black, organic, silty, fine to medium SAND (OL)	Type C	0	2		1	11	120	33
TB-59	5.9	5.8	0.4	1	5.5	4.9	2SAN&GRA	MEDIUM DENSE, tan, slightly silty, fine to medium SAND and LIMEROCK (SP-SM)	Type C							
TB-59	5.9	5.8	1	2.9	4.9	3	2SAND	MEDIUM DENSE to LOOSE, light gray and gray, fine to medium SAND (SP)	Type C							
TB-59	5.9	5.8								2	4		3	7	111	31
TB-59	5.9	5.8	2.9	3.2	3	2.7	2SANSSIL	LOOSE, brown and yellow, silty, fine to medium SAND (SM)	Type C							
TB-59	5.9	5.8	3.2	6	2.7	-0.1	2SAN&GRA	LOOSE, tan, silty, fine to medium SAND and LIMESTONE FRAGMENTS (SM)	Type C							

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Test No.	Ground Surface Elevation (ft)	Water Level Depth (ft)	Top Depth (feet)	Lower Depth (feet)	Top Layer Elevation (ft)	Bottom Layer Elevation (ft)	Brief Description of Material	General Description of Material	OSHA 1926 Subpart P Appendix A - Soil Classification	Top of Sample (ft)	Bottom of Sample (ft)	Maximum Allowable Slope (H:V) for Excavations less than 20 feet deep	Middle of Sample (ft)	N-value (blows per foot)	Moist Unit Weight (pcf)	Friction Angle (degrees)
TB-59	5.9	5.8								4	6		5	9	117	32
TB-59	5.9	5.8	6	10	-0.1	-4.1	2SAND	LOOSE to VERY LOOSE, tan, fine to medium SAND (SP)	Type C	6	8		7	6	108	31
TB-59	5.9	5.8								8	10		9	4	103	30
TB-60	5.7	5.5	0	0.6	5.7	5.1	2SANSPEA	Dark brown, organic, silty, fine to medium SAND (OL)	Type C	0	2		1	10	120	33
TB-60	5.7	5.5	0.6	1	5.1	4.7	2SANSGRA	LOOSE, tan, slightly silty, fine to medium SAND with some limerock (SP-SM)	Type C							
TB-60	5.7	5.5	1	2.5	4.7	3.2	2SAND	LOOSE to VERY LOOSE, tan, fine to medium SAND (SP)	Type C							
TB-60	5.7	5.5								2	4		3	2	94	29
TB-60	5.7	5.5	2.5	4	3.2	1.7	2SAND	VERY LOOSE, dark brown, fine to medium SAND (SP)	Type C							
TB-60	5.7	5.5	4	6	1.7	-0.3	2SAND	VERY LOOSE, brown, slightly silty, fine to medium SAND (SP-SM)	Type C	4	6		5	1	89	28
TB-60	5.7	5.5	6	8	-0.3	-2.3	2SAND	VERY LOOSE, tan, fine to medium SAND (SP)	Type C	6	8		7	4	103	30
TB-60	5.7	5.5	8	10	-2.3	-4.3	2SAND	LOOSE, brown, slightly silty, fine to medium SAND (SP-SM)	Type C	8	10		9	7	111	31
TB-61	5.7	5.4	0	0.8	5.7	4.9	2SANSPEA	Dark brown, organic, silty, fine to medium SAND with trace of roots (OL)	Type C	0	2		1	7	111	31
TB-61	5.7	5.4	0.8	1.1	4.9	4.6	2SANSGRA	LOOSE, brown, slightly silty, fine to medium SAND with some limerock (SP-SM)	Type C							
TB-61	5.7	5.4	1.1	4	4.6	1.7	2SAND	LOOSE, tan, fine to medium SAND (SP)	Type C							
TB-61	5.7	5.4								2	4		3	8	114	32
TB-61	5.7	5.4	4	5.6	1.7	0.1	2SAND	VERY LOOSE, light brown, slightly silty, fine to medium SAND (SP-SM)	Type C	4	6		5	2	94	29
TB-61	5.7	5.4	5.6	6	0.1	-0.3	2SANSGRA	VERY LOOSE, light brown, silty, fine to medium SAND with some limestone fragments (SM)	Type C							
TB-61	5.7	5.4	6	9.2	-0.3	-3.5	2SANSGRA	VERY LOOSE, tan, fine to medium SAND with some limestone fragments (SP)	Type C	6	8		7	2	94	29

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SUMMARY OF GEOTECHNICAL PARAMETERS

Test No.	Ground Surface Elevation (ft)	Water Level Depth (ft)	Top Depth (feet)	Lower Depth (feet)	Top Layer Elevation (ft)	Bottom Layer Elevation (ft)	Brief Description of Material	General Description of Material	OSHA 1926 Subpart P Appendix A - Soil Classification	Top of Sample (ft)	Bottom of Sample (ft)	Maximum Allowable Slope (H:V) for Excavations less than 20 feet deep	Middle of Sample (ft)	N-value (blows per foot)	Moist Unit Weight (pcf)	Friction Angle (degrees)
TB-61	5.7	5.4								8	10		9	2	94	29
TB-61	5.7	5.4	9.2	10	-3.5	-4.3	2SAND	VERY LOOSE, tan, fine to medium SAND (SP)	Type C							
TB-62	6.2		0	0.6	6.2	5.6	2SANSPEA	Dark brown, organic, silty, fine to medium SAND with little limerock (OL)	Type C	0	2		1	7	111	31
TB-62	6.2		0.6	3.7	5.6	2.5	2SAND	LOOSE, tan, fine to medium SAND (SP)	Type C							
TB-62	6.2									2	4		3	6	108	31
TB-62	6.2		3.7	4.7	2.5	1.5	2SAND	VERY LOOSE, brown, slightly silty, fine to medium SAND (SP-SM)	Type C							
TB-62	6.2									4	6		5	4	103	30
TB-62	6.2		4.7	5	1.5	1.2	2SANSSIL	VERY LOOSE, yellowish brown, silty, fine to medium SAND (SM)	Type C							
TB-62	6.2		5	6	1.2	0.2	2SANSGRA	VERY LOOSE to LOOSE, light brown to tan, silty, fine to medium SAND with some limestone fragments (SM)	Type C							
TB-62	6.2		6	10	0.2	-3.8	2SAND	LOOSE, light brown, slightly silty, fine to medium SAND (SP-SM)	Type C	6	8		7	6	108	31
TB-62	6.2									8	10		9	6	108	31
TB-63	5.5	5.4	0	0.2	5.5	5.3	2SANSPEA	Black, organic, silty, fine to medium SAND (OL)	Type C	0	2		1	8	114	32
TB-63	5.5	5.4	0.2	0.9	5.3	4.6	2SAND	LOOSE, tan to light brown, fine to medium SAND with trace of limerock (SP)	Type C							
TB-63	5.5	5.4	0.9	8	4.6	-2.5	2SAND	LOOSE to VERY LOOSE, tan to light brown, fine to medium SAND (SP)	Type C							
TB-63	5.5	5.4								2	4		3	2	94	29
TB-63	5.5	5.4								4	6		5	3	98	29
TB-63	5.5	5.4								6	8		7	10	120	33
TB-63	5.5	5.4	8	10	-2.5	-4.5	2SAND	LOOSE, light brown, slightly silty, fine to medium SAND (SP-SM)	Type C	8	10		9	6	108	31

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SUMMARY OF GEOTECHNICAL PARAMETERS

Test No.	Ground Surface Elevation (ft)	Water Level Depth (ft)	Top Depth (feet)	Lower Depth (feet)	Top Layer Elevation (ft)	Bottom Layer Elevation (ft)	Brief Description of Material	General Description of Material	OSHA 1926 Subpart P Appendix A - Soil Classification	Top of Sample (ft)	Bottom of Sample (ft)	Maximum Allowable Slope (H:V) for Excavations less than 20 feet deep	Middle of Sample (ft)	N-value (blows per foot)	Moist Unit Weight (pcf)	Friction Angle (degrees)
TB-64	5	4.8	0	0.6	5	4.4	2SANSPEA	Black, organic, silty, fine to medium SAND (OL)	Type C	0	2		1	19	122	35
TB-64	5	4.8	0.6	1.4	4.4	3.6	2SANSGRA	MEDIUM DENSE, tan, silty, fine to coarse SAND with some limerock (SM)	Type C							
TB-64	5	4.8	1.4	2.4	3.6	2.6	2SAND	MEDIUM DENSE, light brown, fine to medium SAND (SP)	Type C							
TB-64	5	4.8								2	4		3	8	114	32
TB-64	5	4.8	2.4	3.4	2.6	1.6	2SAND	LOOSE, light brown, fine to medium SAND with trace of limestone fragments (SP)	Type C							
TB-64	5	4.8	3.4	4	1.6	1	2SAND	LOOSE, brown, fine to medium SAND with trace of limestone fragments and asphalt debris	Type C							
TB-64	5	4.8	4	9.2	1	-4.2	2SAND	VERY LOOSE to LOOSE, light brown, fine to medium SAND (SP)	Type C	4	6		5	0		
TB-64	5	4.8								6	8		7	3	98	29
TB-64	5	4.8								8	10		9	6	108	31
TB-64	5	4.8	9.2	10	-4.2	-5	2SAND	LOOSE, brown, slightly silty, fine to medium SAND (SP-SM)	Type C							
TB-65	4.9	4.8	0	0.7	4.9	4.2	2SANSPEA	Black, organic, silty, fine to medium SAND with trace of roots (OL)	Type C	0	2		1	6	108	31
TB-65	4.9	4.8	0.7	1	4.2	3.9	2SAND	LOOSE, brown, fine to medium SAND (SP)	Type C							
TB-65	4.9	4.8	1	1.5	3.9	3.4	2SANSSIL	LOOSE, yellowish brown, silty, fine to medium SAND (SM)	Type C							
TB-65	4.9	4.8	1.5	2.2	3.4	2.7	2SAND	LOOSE, light brown, slightly silty, fine to medium SAND (SP-SM)	Type C							
TB-65	4.9	4.8								2	4		3	3	98	29
TB-65	4.9	4.8	2.2	4	2.7	0.9	2SAND	VERY LOOSE, brown, slightly silty, fine to medium SAND (SP-SM)	Type C							
TB-65	4.9	4.8	4	10	0.9	-5.1	2SAND	VERY LOOSE to LOOSE, light brown, slightly silty, fine to medium SAND (SP-SM)	Type C	4	6		5	2	94	29
TB-65	4.9	4.8								6	8		7	6	108	31
TB-65	4.9	4.8								8	10		9	5	105	30

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SUMMARY OF GEOTECHNICAL PARAMETERS

Test No.	Ground Surface Elevation (ft)	Water Level Depth (ft)	Top Depth (feet)	Lower Depth (feet)	Top Layer Elevation (ft)	Bottom Layer Elevation (ft)	Brief Description of Material	General Description of Material	OSHA 1926 Subpart P Appendix A - Soil Classification	Top of Sample (ft)	Bottom of Sample (ft)	Maximum Allowable Slope (H:V) for Excavations less than 20 feet deep	Middle of Sample (ft)	N-value (blows per foot)	Moist Unit Weight (pcf)	Friction Angle (degrees)
TB-66	5.9	5.5	0	0.4	5.9	5.5	2SANSPEA	Black, organic, silty, fine to medium SAND (OL)	Type C	0	2		1	9	117	32
TB-66	5.9	5.5	0.4	1	5.5	4.9	2SANSGRA	LOOSE, tan, silty, fine to medium SAND with some limerock (SM)	Type C							
TB-66	5.9	5.5	1	3	4.9	2.9	2SAND	LOOSE to VERY LOOSE, tan, fine to medium SAND (SP)	Type C							
TB-66	5.9	5.5								2	4		3	2	94	29
TB-66	5.9	5.5	3	4	2.9	1.9	2SAND	VERY LOOSE, light brown, slightly silty, fine to medium SAND (SP-SM)	Type C							
TB-66	5.9	5.5	4	6	1.9	-0.1	2SAND	VERY LOOSE, tan, fine to medium SAND (SP)	Type C	4	6		5	3	98	29
TB-66	5.9	5.5	6	10	-0.1	-4.1	2SAND	LOOSE, tan to light brown, fine to medium SAND (SP)	Type C	6	8		7	5	105	30
TB-66	5.9	5.5								8	10		9	8	114	32
TB-67	5.6	5.6	0	0.4	5.6	5.2	2SANSPEA	Black, organic, silty, fine to medium SAND (OL)	Type C	0	2		1	10	120	33
TB-67	5.6	5.6	0.4	1	5.2	4.6	2SANSGRA	LOOSE, tan, slightly silty, fine to medium SAND with some limerock (SP-SM)	Type C							
TB-67	5.6	5.6	1	2	4.6	3.6	2SAND	LOOSE to VERY LOOSE, tan, fine to medium SAND (SP)	Type C							
TB-67	5.6	5.6	2	3.5	3.6	2.1	2SAND	VERY LOOSE, light brown, slightly silty, fine to medium SAND (SP-SM)	Type C	2	4		3	2	94	29
TB-67	5.6	5.6	3.5	4	2.1	1.6	2SAND	VERY LOOSE, light brown, slightly silty, fine to medium SAND with little limestone fragments (SP-SM)	Type C							
TB-67	5.6	5.6	4	10	1.6	-4.4	2SAND	VERY LOOSE to LOOSE, tan to light yellow, fine to medium SAND (SP)	Type C	4	6		5	3	98	29
TB-67	5.6	5.6								6	8		7	4	103	30
TB-67	5.6	5.6								8	10		9	5	105	30
TB-68	5.8	5.8	0	0.7	5.8	5.1	2SANSPEA	Black, organic, silty, fine to medium SAND (SM)	Type C	0	2		1	9	117	32
TB-68	5.8	5.8	0.7	1.1	5.1	4.7	2SAN&GRA	LOOSE, light brown, slightly silty, fine to medium SAND and LIMEROCK (SP-SM)	Type C							

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Test No.	Ground Surface Elevation (ft)	Water Level Depth (ft)	Top Depth (feet)	Lower Depth (feet)	Top Layer Elevation (ft)	Bottom Layer Elevation (ft)	Brief Description of Material	General Description of Material	OSHA 1926 Subpart P Appendix A - Soil Classification	Top of Sample (ft)	Bottom of Sample (ft)	Maximum Allowable Slope (H:V) for Excavations less than 20 feet deep	Middle of Sample (ft)	N-value (blows per foot)	Moist Unit Weight (pcf)	Friction Angle (degrees)
TB-68	5.8	5.8	1.1	2.4	4.7	3.4	2SAND	LOOSE to VERY LOOSE, tan, fine to medium SAND (SP)	Type C							
TB-68	5.8	5.8								2	4		3	3	98	29
TB-68	5.8	5.8	2.4	8	3.4	-2.2	2SAND	VERY LOOSE, light brown, fine to medium SAND (SP)	Type C							
TB-68	5.8	5.8								4	6		5	2	94	29
TB-68	5.8	5.8								6	8		7	4	103	30
TB-68	5.8	5.8	8	10	-2.2	-4.2	2SAND	LOOSE, light brown, slightly silty, fine to medium SAND (SP-SM)	Type C	8	10		9	6	108	31
TB-69	5.7	5.6	0	0.4	5.7	5.3	2SANSPEA	Black, organic, silty, fine to medium SAND with trace of roots (OL)	Type C	0	2		1	5	105	30
TB-69	5.7	5.6	0.4	1	5.3	4.7	2SANSGRA	LOOSE, tan, slightly silty, fine to medium SAND with some limerock (SP-SM)	Type C							
TB-69	5.7	5.6	1	2	4.7	3.7	2SAND	VERY LOOSE, tan, fine to medium SAND (SP)	Type C							
TB-69	5.7	5.6	2	4.5	3.7	1.2	2SAND	VERY LOOSE, brown, fine to medium SAND (SP)	Type C	2	4		3	2	94	29
TB-69	5.7	5.6								4	6		5	2	94	29
TB-69	5.7	5.6	4.5	6	1.2	-0.3	2SAND	VERY LOOSE, tan, fine to medium SAND (SP)	Type C							
TB-69	5.7	5.6	6	10	-0.3	-4.3	2SAND	VERY LOOSE to LOOSE, tan, fine to medium SAND with trace of subangular and subrounded limestone fragments	Type C	6	8		7	4	103	30
TB-69	5.7	5.6								8	10		9	6	108	31
TB-70	5.5	5.3	0	0.6	5.5	4.9	2SANSPEA	Dark brown to brown, organic, silty, fine to medium SAND (SM)	Type C	0	2		1	10	120	33
TB-70	5.5	5.3	0.6	1.1	4.9	4.4	2SANSGRA	LOOSE, tan and brown, silty, fine to medium SAND with some limerock (SM)	Type C							
TB-70	5.5	5.3	1.1	2	4.4	3.5	2SAND	LOOSE, tan, fine to medium SAND (SP)	Type C							
TB-70	5.5	5.3	2	2.9	3.5	2.6	2SAND	VERY LOOSE, brown, slightly silty, fine to medium SAND (SP-SM)	Type C	2	4		3	4	103	30

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Test No.	Ground Surface Elevation (ft)	Water Level Depth (ft)	Top Depth (feet)	Lower Depth (feet)	Top Layer Elevation (ft)	Bottom Layer Elevation (ft)	Brief Description of Material	General Description of Material	OSHA 1926 Subpart P Appendix A - Soil Classification	Top of Sample (ft)	Bottom of Sample (ft)	Maximum Allowable Slope (H:V) for Excavations less than 20 feet deep	Middle of Sample (ft)	N-value (blows per foot)	Moist Unit Weight (pcf)	Friction Angle (degrees)
TB-70	5.5	5.3	2.9	4	2.6	1.5	2SANSSIL	VERY LOOSE, yellowish brown, silty, fine to medium SAND with trace of limestone fragments (SM)	Type C							
TB-70	5.5	5.3	4	6	1.5	-0.5	2SAN&GRA	LOOSE, tan, slightly silty, fine to coarse SAND and LIMESTONE FRAGMENTS (GP-GM)	Type C	4	6		5	9	117	32
TB-70	5.5	5.3	6	9.5	-0.5	-4	2GRASSAN	VERY LOOSE, tan to white, oolitic LIMESTONE FRAGMENTS with some silty, fine to medium sand (GM)	Type C	6	8		7	3	98	29
TB-70	5.5	5.3								8	10		9	4	103	30
TB-70	5.5	5.3	9.5	10	-4	-4.5	2SAND	VERY LOOSE, brown, slightly silty, fine to medium SAND (SP-SM)	Type C							
TB-71	6.1	5.9	0	0.8	6.1	5.3	2SANSPEA	Black, organic, silty, fine to medium SAND (OL)	Type C	0	2		1	4	103	30
TB-71	6.1	5.9	0.8	1	5.3	5.1	2SAND	VERY LOOSE, dark gray, slightly silty, fine to medium SAND with little limerock (SP-SM)	Type C							
TB-71	6.1	5.9	1	2.4	5.1	3.7	2SAND	VERY LOOSE to LOOSE, gray and light gray, fine to medium SAND (SP)	Type C							
TB-71	6.1	5.9								2	4		3	5	105	30
TB-71	6.1	5.9	2.4	3.4	3.7	2.7	2SAND	LOOSE, black, slightly silty, fine to medium SAND (SP-SM)	Type C							
TB-71	6.1	5.9	3.4	8	2.7	-1.9	2SAND	VERY LOOSE to LOOSE, light brown, slightly silty, fine to medium SAND (SP-SM)	Type C							
TB-71	6.1	5.9								4	6		5	3	98	29
TB-71	6.1	5.9								6	8		7	6	108	31
TB-71	6.1	5.9	8	10	-1.9	-3.9	2SAND	LOOSE, light brown, fine to medium SAND (SP)	Type C	8	10		9	6	108	31
TB-72	6.7		0	0.5	6.7	6.2	2SANSPEA	Black, organic, silty, fine to medium SAND (OL)	Type C	0	2		1	8	114	32
TB-72	6.7		0.5	1	6.2	5.7	2SANSGRA	LOOSE, brown, slightly silty, fine to medium SAND with some limerock (SP-SM)	Type C							
TB-72	6.7		1	3.7	5.7	3	2SAND	LOOSE to VERY LOOSE, brown, fine to medium SAND (SP)	Type C							
TB-72	6.7									2	4		3	4	103	30

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Test No.	Ground Surface Elevation (ft)	Water Level Depth (ft)	Top Depth (feet)	Lower Depth (feet)	Top Layer Elevation (ft)	Bottom Layer Elevation (ft)	Brief Description of Material	General Description of Material	OSHA 1926 Subpart P Appendix A - Soil Classification	Top of Sample (ft)	Bottom of Sample (ft)	Maximum Allowable Slope (H:V) for Excavations less than 20 feet deep	Middle of Sample (ft)	N-value (blows per foot)	Moist Unit Weight (pcf)	Friction Angle (degrees)
TB-72	6.7		3.7	5.3	3	1.4	2SANSSIL	VERY LOOSE, brown, silty, fine to medium SAND with little yellow limestone fragments (SM)	Type C							
TB-72	6.7									4	6		5	4	103	30
TB-72	6.7		5.3	6	1.4	0.7	2SAND	VERY LOOSE, light brown, slightly silty, fine to medium SAND (SP-SM)	Type C							
TB-72	6.7		6	8	0.7	-1.3	2SAND	VERY LOOSE, brown, fine to medium SAND (SP)	Type C	6	8		7	4	103	30
TB-72	6.7		8	8.7	-1.3	-2	2SAN&GRA	LOOSE, light brown, fine to medium SAND and LIMESTONE FRAGMENTS (GP)	Type C	8	10		9	5	105	30
TB-72	6.7		8.7	10	-2	-3.3	2SAND	LOOSE, light brown, fine to medium SAND (SP)	Type C							
TB-73	5.7	5.7	0	0.7	5.7	5	2SANSPEA	Black, organic, silty, fine to medium SAND (OL)	Type C	0	2		1	11	120	33
TB-73	5.7	5.7	0.7	1.1	5	4.6	2SANSGRA	MEDIUM DENSE, light brown to tan, slightly silty, fine to medium SAND with some limerock (SP-SM)	Type C							
TB-73	5.7	5.7	1.1	3	4.6	2.7	2SAND	MEDIUM DENSE to LOOSE, light brown, fine to medium SAND (SP)	Type C							
TB-73	5.7	5.7								2	4		3	6	108	31
TB-73	5.7	5.7	3	4	2.7	1.7	2SANSGRA	VERY LOOSE, tan to light brown, silty, fine to medium SAND with some limestone fragments (SM)	Type C							
TB-73	5.7	5.7	4	8.5	1.7	-2.8	2GRASSAN	VERY LOOSE, tan LIMESTONE FRAGMENTS with some slightly silty, fine to medium sand (GP-GM)	Type C	4	6		5	2	94	29
TB-73	5.7	5.7								6	8		7	4	103	30
TB-73	5.7	5.7								8	10		9	4	103	30
TB-73	5.7	5.7	8.5	10	-2.8	-4.3	2SANSGRA	VERY LOOSE, tan, fine to medium SAND with some oolitic limestone fragments (SP)	Type C							
TB-74	5.8	6.1	0	0.7	5.8	5.1	2SANSPEA	Black, organic, silty, fine to medium SAND (OL)	Type C	0	2		1	10	120	33
TB-74	5.8	6.1	0.7	1.2	5.1	4.6	2SANSGRA	LOOSE, tan, silty, fine to coarse SAND with some limerock (SM)	Type C							
TB-74	5.8	6.1	1.2	2	4.6	3.8	2SAND	LOOSE, tan, fine to medium SAND (SP)	Type C							

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Test No.	Ground Surface Elevation (ft)	Water Level Depth (ft)	Top Depth (feet)	Lower Depth (feet)	Top Layer Elevation (ft)	Bottom Layer Elevation (ft)	Brief Description of Material	General Description of Material	OSHA 1926 Subpart P Appendix A - Soil Classification	Top of Sample (ft)	Bottom of Sample (ft)	Maximum Allowable Slope (H:V) for Excavations less than 20 feet deep	Middle of Sample (ft)	N-value (blows per foot)	Moist Unit Weight (pcf)	Friction Angle (degrees)
TB-74	5.8	6.1	2	3.2	3.8	2.6	2SAND	VERY LOOSE, dark brown, slightly silty, fine to medium SAND (SP-SM)	Type C	2	4		3	3	98	29
TB-74	5.8	6.1	3.2	10	2.6	-4.2	2SAND	VERY LOOSE to LOOSE, brown to light brown, fine to medium SAND (SP)	Type C							
TB-74	5.8	6.1								4	6		5	4	103	30
TB-74	5.8	6.1								6	8		7	4	103	30
TB-74	5.8	6.1								8	10		9	5	105	30
TB-75	5.8	5.6	0	0.6	5.8	5.2	2SANSPEA	Black, organic, silty, fine to medium SAND (OL)	Type C	0	2		1	14	121	34
TB-75	5.8	5.6	0.6	1.2	5.2	4.6	2SANSGRA	MEDIUM DENSE, tan and light brown, slightly silty, fine to medium SAND with some limerock (SP-SM)	Type C							
TB-75	5.8	5.6	1.2	2	4.6	3.8	2SAND	MEDIUM DENSE, tan, fine to medium SAND (SP)	Type C							
TB-75	5.8	5.6	2	3.6	3.8	2.2	2SAND	VERY LOOSE, brown, fine to medium SAND (SP)	Type C	2	4		3	3	98	29
TB-75	5.8	5.6	3.6	4	2.2	1.8	2SAND	VERY LOOSE, tan, slightly silty, fine to medium SAND with little limestone fragments (SP-SM)	Type C							
TB-75	5.8	5.6	4	4.9	1.8	0.9	2SAND	VERY LOOSE, brown, fine to medium SAND (SP)	Type C	4	6		5	2	94	29
TB-75	5.8	5.6	4.9	6	0.9	-0.2	2SAND	VERY LOOSE, tan, slightly silty, fine to medium SAND with little limestone fragments (SP-SM)	Type C							
TB-75	5.8	5.6	6	10	-0.2	-4.2	2SAND	VERY LOOSE, light brown, fine to medium SAND (SP)	Type C	6	8		7	4	103	30
TB-75	5.8	5.6								8	10		9	4	103	30

NOTES:

1) The unit weight was estimated based on the standard penetration test N-values after the correlation established by Bowles (1977) for cohesionless soils.
2) The friction angle was estimated based on the standard penetration test N-values after the correlation established by Bowles (1977) for cohesionless soils.
3) The recommended maximum allowable slope were based on the recommendations provided in the OSHA 1926 Subpart P for excavations less than 20 feet deep.

APPENDIX 2

Environmental Protection and Growth Management Department
ENVIRONMENTAL ENGINEERING AND PERMITTING DIVISION
1 North University Drive, Mailbox 201, Plantation, Florida 33324 * 954-519-1483 * FAX 954-519-1412

LICENSE FOR INSTALLATION OF WASTEWATER COLLECTION/TRANSMISSION SYSTEM

APPLICANT:
City of Hollywood
Attention: Vivek Galav, P.E.,
Director of Public Utilities
1621 N 14th Avenue
Hollywood, FL 33020

EPGMD LICENSE NO.: WW-62895
EXPIRATION DATE: 06/22/2026
DEP ID NO.: HOL #054633-714
SEC-TWP-RNG: 11-51-41
PROJECT: City Project No. 20-8533 - Lift Station A-09 Force Main Replacement

This license is issued under the provisions of Chapter 27 of the Broward County Code of Ordinances, hereinafter called the Code. The above named-applicant, hereinafter called licensee, is hereby authorized to perform the work shown on the approved drawing(s), plans, documents, and specifications submitted by applicant and made a part hereof and described specifically below. Commencement of construction under this license shall be deemed acceptance of all conditions specified in the license. License conditions shall also be deemed to be accepted if they are not objected to in writing and received by EPGMD within fourteen days of receipt of the license by the applicant.

The issuance of this license is a final agency determination. A person with a substantial interest may file a petition to request review of, or to intervene in a review of, a final administrative determination within 10 days of issuance of the license, subject to the provisions of Section 27-14 of the Code.

Your Notification/Application for Constructing a Domestic Wastewater Collection/Transmission System has been evaluated. This General or Individual Permit is hereby issued pursuant to the provisions of Chapter 403, Florida Statutes (F.S.), and Chapters 62-4 and 62-604, Florida Administrative Code (F.A.C.).

FORCE MAIN: 36 LF of 18" DIP
1,400 LF of 12" PVC
120 LF of 8" PVC
12 LF of 6" PVC

SUBJECT TO GENERAL CONDITIONS #1- #11 and SPECIFIC CONDITIONS # 1 - # 3.

In accordance with: Plans, Sheets G-1.0 thru G-7.0, V-1.0 thru V-3.0 , FM-1.0 thru FM-4.0, PD-1.0 thru PD-3.0, PR-1.0, and PR-2.0 (Received 04/01/2021; Revised 06/04/2021 and 06/08/2021). EAC Consulting, Inc. Project #: 20-8533. None Attached.

Located at: NW 70th Avenue (Aurthur Street to Johnson Street), Hollywood, FL 33024

Serving: Relocation of Existing Force Main.

Issued this 23rd day of June, 2021.

Environmental Protection and Growth Management Department
Prepared by Ryan Flaherty

_____
Yvel Rocher, P.E., Environmental Program Manager
Domestic Wastewater Program

ec: FDEP/WPB
Asif Ali, PDMD Front Desk
Huntley G. Higgins, P.E., EAC Consulting, Inc.

GENERAL CONDITIONS:

1. The terms, conditions, requirements, limitations and restrictions set forth herein are accepted by the licensee and must be completed by the licensee and are enforceable by EPGMD pursuant to the Code. EPGMD will review this license periodically and may revoke or suspend the license, and initiate administrative and/or judicial action for any violation of the conditions by the licensee, its agents, employees, servants or representatives.

2. This license is valid only for the specific uses set forth in the license application and any deviation from the approved uses may constitute grounds for revocation, suspension, and/or enforcement action by EPGMD.

3. In the event the licensee is temporarily unable to comply with any of the conditions of the license or with the Code, the licensee shall notify EPGMD within eight (8) hours or as stated in the specific section of the Code. Within three (3) working days of the event, the licensee shall submit a written report to EPGMD that describes the incident, its cause, the measures being taken to correct the problem and prevent its reoccurrence, the owner's intention regarding the repair, replacement and reconstruction of destroyed facilities and a schedule of events leading toward operation with the license condition.

4. The issuance of this license does not convey any vested rights or exclusive privileges, nor does it authorize any injury to public or private property or any invasion of personal rights, or any violation of federal, state or local laws or regulations.

5. This license must be available for inspection on the licensee's premises during the entire life of the license.

6. By accepting this license, the licensee understands and agrees that all records, notes, monitoring data and other information relating to the construction or operation of this licensed facility or activity, that are submitted to the County, may be used by the County as evidence in any enforcement proceeding arising under the Code, except where such use is prohibited by Section 403.111, F.S.

7. The licensee agrees to comply and shall comply with all provisions of the most current version of the Code.

8. Any new owner or operator of a licensed facility shall apply by letter for a transfer of license within thirty (30) days after sale or legal transfer. The transferor shall remain liable for performance in accordance with the license until the transferee applies for and is granted a transfer of license. The transferee shall be liable for any violation of the Code that results from the transferee's activities. The transferee shall comply with the transferor's original license conditions when the transferee has failed to obtain its own license.

9. The licensee, by acceptance of this license, specifically agrees to allow access and shall allow access to the licensed source, activity or facility at times to EPGMD personnel for the purposes of inspection and testing to determine compliance with this license and the Code.

10. This license does not constitute a waiver or approval of any other license, approval, or regulatory requirement by this or any other governmental agency that may be required.

11. Enforcement of the terms and provisions of this license shall be at the reasonable discretion of EPGMD, and any forbearance on behalf of EPGMD to exercise its rights hereunder in the event of any breach by the licensee, shall not be deemed or construed to be a waiver of EPGMD's rights hereunder.

SPECIFIC CONDITIONS:

1. This license is valid for construction of a sewage collection/transmission system and/or a reuse distribution system, or a WWTP modification only. All connections to the system must be approved by EPGMD prior to the issuance of a building permit.

2. Any deviation from approved plans and/or specifications affecting capacity, flow, or operation of components shall be submitted to and approved by the EPGMD before such changes are made.

3. The applicant shall be responsible for supplying as-built or record drawing(s) to EPGMD upon completion of the project. Such drawing(s) shall be signed and sealed by an Engineer registered in the State of Florida and be based on accurate records maintained by the Engineer or by a Land Surveyor currently registered in the State of Florida. Drawing(s) shall indicate locations and elevations of all pipe lines, manholes, pump stations and appurtenances installed under this project's license. Connection to the new system shall not be approved until the as-built (or record) drawing(s), certification documentation, and fees have been provided to and approved by EPGMD.

Florida Department of Environmental Protection

Southeast District Office
3301 Gun Club Road, MSC 7210-1
West Palm Beach, Florida 33406

Ron DeSantis
Governor

Jeanette Nuñez
Lt. Governor

Noah Valenstein
Secretary

CERTIFIED MAIL

In the Matter of an
Application for Permit by:

City of Hollywood
Attention: Vivek Galav, P.E.,
Director of Public Utilities
1621 N 14th Avenue
Hollywood, FL 33020

NOTICE OF PERMIT ISSUANCE

PERMIT NUMBER:	HOL #054633-714
EPGMD LICENSE:	WW-62895
ISSUANCE DATE:	06/23/2021
EXPIRATION DATE:	06/22/2026
COUNTY:	BROWARD
PROJECT:	City Project No. 20-8533 - Lift Station A-09 Force Main Replacement
CONNECTED TO:	Hollywood

The Department's proposed agency action shall become final unless a timely petition for an administrative hearing is filed under Sections 120.569 and 120.57, Florida Statutes, within fourteen days of receipt of notice. The procedures for petitioning for a hearing are set forth below.

A person whose substantial interests are affected by the Department's proposed permitting decision may petition for an administrative proceeding (hearing) under Sections 120.569 and 120.57, Florida Statutes. The petition must contain the information set forth below and must be filed (received by the clerk) in the Office of General Counsel of the Department at 3900 Commonwealth Boulevard, Mail Station 35, Tallahassee, Florida 32399-3000.

Petitions by the applicant or any of the persons listed below must be filed within fourteen days of receipt of this written notice. Petitions filed by any persons other than those entitled to written notice under Section 120.60(3), Florida Statutes, must be filed within fourteen days of publication of the notice or within fourteen days of receipt of the written notice, whichever occurs first. Under Section 120.60(3), Florida Statutes, however, any person who has asked the Department for notice of agency action may file a petition within fourteen days of receipt of such notice, regardless of the date of publication.

The petitioner shall mail a copy of the petition to the applicant at the address indicated above at the time of filing. The failure of any person to file a petition within fourteen days of receipt of notice shall constitute a waiver of that person's right to request an administrative determination (hearing) under Sections 120.569 and 120.57, Florida Statutes. Any subsequent intervention (in a proceeding initiated by another party) will be only at the discretion of the presiding officer upon the filing of a motion in compliance with Rule 28-106.205, Florida Administrative Code.

A petition that disputes the material facts on which the Department's action is based must contain the following information:

(a) The name, address, and telephone number of each petitioner; the name, address, and telephone number of the petitioner's representative, if any; the Department permit identification number and the county in which the subject matter or activity is located;

(b) A statement of how and when each petitioner received notice of the Department action;

(c) A statement of how each petitioner's substantial interests are affected by the Department action;

(d) A statement of all disputed issues of material fact. If there are none, the petition must so indicate;

(e) A statement of facts that the petitioner contends warrant reversal or modification of the Department action;

(f) A concise statement of the ultimate facts alleged, as well as the rules and statutes which entitle the petitioner to relief; and

(g) A statement of the relief sought by the petitioner, stating precisely the action that the petitioner wants the Department to take.

Because the administrative hearing process is designed to formulate final agency action, the filing of a petition means that the Department's final action may be different from the position taken by it in this notice. Persons whose substantial interests will be affected by any such final decision of the Department have the right to petition to become a party to the proceeding, in accordance with the requirements set forth above.

Mediation under Section 120.573, Florida Statutes, is not available for this proceeding.

This permit action is final and effective on the date filed with the clerk of the Department unless a petition is filed in accordance with the above. Upon the timely filing of a petition this permit will not be effective until further order of the Department.

Any party to the permit has the right to seek judicial review of the permit action under Section 120.68, Florida Statutes, by the filing of a notice of appeal under Rules 9.110 and 9.190, Florida Rules of Appellate Procedure, with the clerk of the Department in the Office of General Counsel, 3900 Commonwealth Boulevard, Mail Station 35, Tallahassee, Florida, 32399-3000; and by filing a copy of the notice of appeal accompanied by the applicable filing fees with the appropriate district court of appeal. The notice of appeal must be filed within 30 days from the date when this permit action is filed with the clerk of the Department.

Executed in Plantation, Florida

BROWARD COUNTY
Environmental Protection and Growth Management Department

as delegated agent for:
STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL PROTECTION

_____

Yvel Rocher, P.E., Environmental Program Manager
Environmental Engineering and Permitting Division

Florida Department of Environmental Protection

Southeast District Office
3301 Gun Club Road, MSC 7210-1
West Palm Beach, Florida 33406

Ron DeSantis
Governor

Jeanette Nuñez
Lt. Governor

Noah Valenstein
Secretary

State of Florida
Domestic Wastewater Collection/Transmission Individual Permit

PERMITTEE:

City of Hollywood
Attention: Vivek Galav, P.E.,
Director of Public Utilities
1621 N 14th Avenue
Hollywood, FL 33020

PERMIT NUMBER:	HOL #054633-714
EPGMD LICENSE:	WW-62895
ISSUANCE DATE:	06/23/2021
EXPIRATION DATE:	06/22/2026
COUNTY:	BROWARD
PROJECT:	City Project No. 20-8533 - Lift Station A-09 Force Main Replacement
CONNECTED TO:	Hollywood

This permit is issued under the provisions of Chapter 403, Florida Statutes (F.S.), and Chapters 62-4 and 62-604, Florida Administrative Code (F.A.C.). The Broward County Environmental Protection & Growth Management Department (EPGMD) issues this permit as a delegated local program of the Florida Department of Environmental Protection (Department).

The above named permittee is hereby authorized to construct the facilities shown on the application and other documents on file with the Department and/or EPGMD and made a part hereof and specifically described as follows:

DESCRIPTION OF PROJECT:

FORCE MAIN:	36 LF of 18" DIP 1,400 LF of 12" PVC 120 LF of 8" PVC 12 LF of 6" PVC
TO SERVE:	Relocation of Existing Force Main.
LOCATION OF PROJECT:	NW 70th Avenue (Aurthur Street to Johnson Street), Hollywood, FL 33024
IN ACCORDANCE WITH:	The limitations, requirements and other conditions set forth in this permit.

EPGMD License No. WW-62895 has also been issued for this project.

PERMITTEE:

City of Hollywood
Attention: Vivek Galav, P.E.,
Director of Public Utilities
1621 N 14th Avenue
Hollywood, FL 33020

PERMIT NUMBER:	HOL #054633-714
EPGMD LICENSE:	WW-62895
ISSUANCE DATE:	06/23/2021
EXPIRATION DATE:	06/22/2026
COUNTY:	BROWARD
PROJECT:	City Project No. 20-8533 - Lift Station A-09 Force Main Replacement
CONNECTED TO:	Hollywood

PERMIT CONDITIONS:

1. This permit is subject to the general conditions of Rule 62-4.160, F.A.C., as applicable. This rule is available at the Department's Internet site at: http://www.dep.state.fl.us/legal/Rules/shared/62-4/62-4.pdf [62-4.160]

2. Upon completion of construction of the collection/transmission system project, and before placing the facilities into operation for any purpose other than testing for leaks or testing equipment operation, the permittee shall submit to EPGMD Form 65-604.300(8)(b), Request for Approval to Place a Domestic Wastewater Collection/Transmission System into Operation. This form is available at the Department's Internet site at: http://www.dep.state.fl.us/water/wastewater/dom/dw-forms.htm [62-604.700(2)]

3. The new or modified collection/transmission facilities shall not be placed into service until EPGMD clears the project for use. [62.604.700(3)]

4. Permit revisions shall only be made in accordance with Rule 62-4.050(4)(s), F.A.C. Request for revisions shall be made to EPGMD in writing and shall include the appropriate fee. Revisions not covered under Rule 62-4.050(4)(s), F.A.C., shall require a new permit. [62-604.600(8)]

5. Abnormal events shall be reported to the Department's West Palm Beach District Office in accordance with Rule 62-604.550, F.A.C. For unauthorized spills of wastewater in excess of 1000 gallons per incident, or where information indicates that public health or the environment may be endangered, oral reports shall be provided to the STATE WATCH OFFICE TOLL FREE NUMBER (800) 320-0519 as soon as practical, but no later than 24 hours from the time the permittee or other designee becomes aware of the circumstances. Unauthorized releases or spills less than 1000 gallons per incident are to be reported orally to the Department's West Palm Beach District Office within 24 hours from the time the permittee, or other designee becomes aware of the circumstances. [62-604.550]

PERMITTEE:

City of Hollywood
Attention: Vivek Galav, P.E.,
Director of Public Utilities
1621 N 14th Avenue
Hollywood, FL 33020

PERMIT NUMBER:	HOL #054633-714
EPGMD LICENSE:	WW-62895
ISSUANCE DATE:	06/23/2021
EXPIRATION DATE:	06/22/2026
COUNTY:	BROWARD
PROJECT:	City Project No. 20-8533 - Lift Station A-09 Force Main Replacement
CONNECTED TO:	Hollywood

Executed in Plantation, Florida

BROWARD COUNTY
Environmental Protection and Growth Management Department

_____

Yvel Rocher, P.E., Environmental Program Manager

As delegated agent for:
State of Florida,
Department of Environmental Protection

DATE: 06/23/2021

PUBLIC WORKS DEPARTMENT
TRAFFIC ENGINEERING DIVISION
2300 W. Commercial Boulevard • Fort Lauderdale, Florida 33309 • 954-847-2600

June 21, 2021

Mr. Elias Guevara
EAC Consulting, Inc.
5100 NW 33 avenue, suite 243
Fort Lauderdale, Fl 33309

Re: Lift Station A-09 Force main Replacement
NW 70 Ave from Johnson St to Arthur St
City Project No. 20-8533
Hollywood, Florida
BCTED Reference No 210303060

Dear Mr. Guevara,

Broward County Traffic Engineering Division has reviewed the above referenced plan and finds the school/pedestrian and pavement marking and signing portion of the plan to be acceptable. There are no fiber optic communication/interconnect, cooper communication/interconnect or signal design comments.

A copy of the Pavement Marking and Signing Inspection Procedure and a copy of the Specifications for Retro-Reflective Sign Materials are attached for your use.

Reviewed by:

Signal Design: Rebecca Martinez @ 954-847-2619 or remartinez@broward.org
Systems Communications: Robert Blount @ 954-847-2745 or rblount@broward.org
School/Pedestrians: Stephon Ramoutar @ 954-847-2671 or sramoutar@broward.org
Traffic Calming: Lei Cai @ 954-847-2653 or lcai@broward.org

Please submit two signed and sealed plan sets to me, Liana Borrego, at the Broward County Traffic Engineering Division, for sign-off.

You may call me at 954-847-2721, or contact me by E-mail at licarmona@broward.org, if you have any questions.

Sincerely,

Liana Borrego

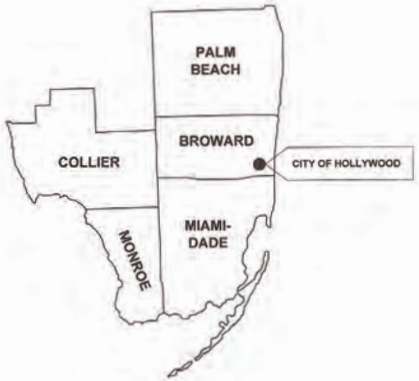
CITY OF HOLLYWOOD
DEPARTMENT OF PUBLIC UTILITIES

1621 N 14 AVE, HOLLYWOOD, FL 33019

⚠ 100% DESIGN SUBMITTAL
⚠ REV 02
JUNE 2021
FOR PERMIT APPROVAL ONLY

LIFT STATION A-09 FORCE MAIN REPLACEMENT
(NW 70TH AVENUE FROM JOHNSON STREET TO ARTHUR STREET)

CITY PROJECT NO. 20-8533



Vicinity Map
NTS

PROJECT LOCATION MAP
N.T.S.

PLANS PREPARED BY:

EAC Consulting, Inc.
CA # 7011
5100 NW 33 AVE, SUITE 243
FORT LAUDERDALE, FL 33309
(954) 714-0200
EAC PROJECT No. 17029.WW01-04

REVISIONS:			
NO.	DESCRIPTION	DATE	BY
1	BC-TED COMMENTS	04/21	EG
2	BC-TED COMMENTS	06/21	EG

HUNTLEY GLENMORE HIGGINS
LICENSE NO. 60726
STATE OF FLORIDA
PROFESSIONAL ENGINEER
6/22/2021

HUNTLEY HIGGINS, P.E.
FL LICENSE No. 60726

BROWARD COUNTY TRAFFIC ENGINEERING DIVISION COMMUNICATION NOTES ⚠1

1. THE AGENCY RESPONSIBLE FOR MAINTENANCE OF THE TRAFFIC SIGNALS AND RELATED EQUIPMENT IS BROWARD COUNTY TRAFFIC ENGINEERING DIVISION (BCTED). ALL SYSTEM COMMUNICATIONS EQUIPMENT, CABLING AND RELATED MATERIAL SHALL COMPLY WITH BROWARD COUNTY'S LATEST EDITION OF THE MINIMUM STANDARDS AS EXPRESSED IN THE "STANDARDS AND SPECIFICATIONS - COMMUNICATION INFRASTRUCTURE" DOCUMENT. PLEASE REFER TO (BCTED'S) COMMUNICATIONS POLICIES AND PROCEDURES FOR ADDITIONAL INFORMATION. BROWARD COUNTY TRAFFIC ENGINEERING DIVISION WILL NOT ACCEPT ANY PROJECTS THAT DO NOT MEET THESE STANDARDS AND SPECIFICATIONS. IF FIBER OPTIC PULL BOXES ALREADY EXIST AT AN INTERSECTION, NO ADDITIONAL FIBER OPTIC PULL BOXES WILL NEED TO BE INSTALLED. FOR A COPY OF THESE STANDARDS REFER TO THE BROWARD COUNTY WEB SITE AT WWW.BROWARD.ORG/TRAFFIC UNDER PUBLICATIONS.
2. IF COPPER INTERCONNECT CABLES ARE FOUND WITHIN THE PROJECT LIMITS OR WITHIN 1500 FEET OF THE PROJECT LIMITS, CONTACT THE COMMUNICATIONS MANAGER AT TECOMMUNICATIONS@BROWARD. ORG IMMEDIATELY.
3. IF FIBER OPTIC CABLES ARE FOUND WITHIN THE PROJECT LIMITS OR WITHIN 1500 FEET OF THE PROJECT LIMITS, CONTACT THE COMMUNICATIONS MANAGER AT TECOMMUNICATIONS@BROWARD.ORG OR 954-847-2745 IMMEDIATELY.
4. IF CELLULAR COMMUNICATION CABLES ARE FOUND WITHIN THE PROJECT LIMITS OF WITHIN 1500 FEET IF THE PROJECT LIMITS, CONTACT THE COMMUNICATIONS MANAGER AT TECOMMUNICATIONS@BROWARD. ORG IMMEDIATELY.
5. ALL BCTED COMMUNICATIONS CABLES/CONDUIT SHALL BE LOCATED A MINIMUM OF 48 HOURS IN ADVANCE.

BROWARD COUNTY TRAFFIC ENGINEERING DIVISION PROCEDURE FOR NOTIFICATION OF COMMUNICATION DISRUPTION

1. COPPER INTERCONNECT CABLE NOTIFICATION CONTACT PERSON

   WHEN COMMUNICATIONS TO AN INTERSECTION MUST BE DISRUPTED BY A CONTRACTOR TO PERFORM WORK, THE CONTRACTOR SHALL PROVIDE TWO DAY ADVANCE NOTICE IN WRITING TO THE BROWARD COUNTY TRAFFIC ENGINEERING DIVISION. THIS NOTIFICATION SHALL BE CONVEYED VIA ELECTRONIC MAIL (EMAIL) TO THE TRAFFIC SIGNAL TECHNICIAN III AT TECOMMUNICATIONS@BROWARD.ORG. NOTIFICATION SHALL INCLUDE CONTACT PERSON, TELEPHONE NUMBER, PURPOSE, LOCATION AND DURATION. THE DISRUPTION SHALL LAST FOR NO MORE THAN 3 CONSECUTIVE BUSINESS DAYS. WHERE POSSIBLE, THE DISRUPTION SHALL BE DURING OFF PEAK HOURS BEGINNING AT 9:00AM AND ENDING AT 3:00PM.

2. FIBER OPTIC CABLE & CELLULAR NOTIFICATION CONTACT PERSON

   WHEN COMMUNICATIONS TO AN INTERSECTION MUST BE DISRUPTED BY A CONTRACTOR TO PERFORM WORK, THE CONTRACTOR SHALL PROVIDE TWO DAY ADVANCE NOTICE IN WRITING TO THE BROWARD COUNTY TRAFFIC ENGINEERING DIVISION. THIS NOTIFICATION SHALL BE CONVEYED VIA ELECTRONIC MAIL (EMAIL) TO THE COMMUNICATIONS MANAGER AT TECOMMUNICATIONS@BROWARD.ORG. NOTIFICATION SHALL INCLUDE CONTACT PERSON, TELEPHONE NUMBER, PURPOSE, LOCATION AND DURATION. THE DISRUPTION SHALL LAST FOR NO MORE THAN 3 CONSECUTIVE BUSINESS DAYS. WHERE POSSIBLE, THE DISRUPTION SHALL BE DURING OFF PEAK HOURS BEGINNING AT 9:00AM AND ENDING AT 3:00PM.

CONTACTS			
UTILITY	NAME	DEPARTMENT	PHONE NUMBER
INTERCONNECT COMMUNICATIONS CABLES	ROBERT BLOUNT	BROWARD COUNTY TRAFFIC ENGINEERING DIVISION (BCTED)	(954) 847-2745

BROWARD RIGHT OF WAY RESTORATION NOTES:

1. THE MAINTENANCE OF TRAFFIC (MOT) PLANS OF THE PROJECT WILL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR MUST PRODUCE HIS/HER OWN MOT PLANS AND MUST HAVE SAID PLANS APPROVED BY THE CITY OF HOLLYWOOD AND BROWARD COUNTY'S TRAFFIC ENGINEERING DIVISION PRIOR TO CONSTRUCTION. THE COST ASSOCIATED WITH THIS EFFORT MUST BE REFLECTED IN THE BID. MOT PLANS SHALL INCLUDE BUT NOT LIMITED TO MESSAGE BOARDS TO INFORM DRIVERS OF CONSTRUCTION ON ROADWAY, ADDRESSING SCHOOL ZONES AND MAINTAINING CROSSING ACCESS, ETC. CONTRACTOR IS ALSO RESPONSIBLE FOR NOTIFYING ALL SCHOOLS WITHIN THE VICINITY OF THE PROJECT LIMITS ABOUT THE CONSTRUCTION SCHEDULE.
2. CONTRACTOR IS FULLY RESPONSIBLE TO RESTORE ALL EXISTING TRAFFIC LOOPS AND ALL OTHER EXISTING TRAFFIC RELATED INFRASTRUCTURE DAMAGED DURING THE INSTALLATION OF THE PROPOSED UTILITIES. THE CONTRACTOR MUST COORDINATE WITH BROWARD COUNTY'S TRAFFIC ENGINEERING DIVISION PRIOR TO CONSTRUCTION. THE LATEST COMMUNICATIONS INFRASTRUCTURE CAN BE FOUND AT HTTP://WWW.BROWARD.ORG/TRAFFIC
3. THE CONTRACTOR SHALL RESTORE A FULL LANE OR LANES OF ROADWAY THAT ARE AFFECTED BY CONSTRUCTION. THIS SHOULD INCLUDE ALL TRENCH RESTORATION, RESURFACING AS WELL AS STRIPING TO ENSURE THAT THE ROADWAY IS FULLY RESTORED TO EQUAL OR BETTER CONDITION.
4. THE CONTRACTOR IS FULLY RESPONSIBLE FOR RESTORING ALL PAVEMENT MARKINGS WITH NEW STRIPING IN THEIR PRE-CONSTRUCTION LOCATIONS UNLESS OTHERWISE SHOWN ON PLANS. THE CONTRACTOR MUST THEREFORE SURVEY THE LOCATIONS, DIMENSIONS, COLOR, AND OTHER RELEVANT CHARACTERISTICS OF THE EXISTING PAVEMENT STRIPING PRIOR TO EXCAVATION. FINAL PAVEMENT STRIPING MUST BE THERMOPLASTIC IN ACCORDANCE WITH FDOT STANDARDS AND BROWARD COUNTY TRAFFIC ENGINEERING DIVISION.
5. IN THE EVENT THAT THERE IS ANY EXISTING STRIPING THAT DOES NOT CONFORM TO THE CURRENT CODES OR STANDARDS, THE CONTRACTOR MUST NOTIFY THE EOR, AND THE CITY IN THIS REGARD PRIOR TO RE-STRIPING.
6. ROADWAY RESTORATION WITHIN THE CITY'S RIGHT OF WAY MUST CONFORM WITH THE CITY OF HOLLYWOOD DEPARTMENT OF PUBLIC UTILITIES - (CURRENT EDITION) "STANDARD DETAILS, FOR WATER DISTRIBUTION AND SEWAGE COLLECTION" DOCUMENT AND BROWARD COUNTY TRAFFIC ENGINEERING
7. SPECIAL PAVEMENT DRIVEWAYS SHALL BE PROTECTED FROM DAMAGE. IF DAMAGE BY CONTRACTOR MEANS AND METHOD, THEY SHALL BE RESTORED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE CITY OF HOLLYWOOD
8. PAVEMENT MARKING REFLECTIVITY SHALL BE UNIFORM ACROSS THE ENTIRE STRIPE AND SHALL HAVE A MINIMUM REFLECTIVITY READING OF 250 MLLICANDELAS FOR WHITE.

⚠1 THE FOLLOWING ITEMS ARE NOT REVIEWED OR ACCEPTED BY BROWARD COUNTY:

1. BROWARD COUNTY TRAFFIC ENGINEERING DIVISION'S REVIEW DOES NOT INCLUDE A REVIEW AND ACCEPTANCE OF THE PROJECT'S DESIGN OR OPERATION. THESE ITEMS ARE TO BE REVIEWED AND APPROVED BY THE CITY ENGINEER.
2. BROWARD COUNTY TRAFFIC ENGINEERING DIVISION DOES NOT REVIEW AND APPROVE, OR INSPECT AND ACCEPT THE FOLLOWING ITEMS FOR MAINTENANCE: PAVEMENT MARKINGS ON OR ADJACENT TO PAVER BRICKS, PAINTED ASPHALT, STAMPED ASPHALT OR PAVEMENT MARKINGS MADE OF PAVER BRICKS, RAISED INTERSECTIONS AND RELATED MARKINGS AND SIGNING, UN-WARRANTED MID-BLOCK CROSSWALKS AND RELATED MARKINGS AND SIGNING, UN-WARRANTED CROSSWALKS AND RELATED MARKINGS AND SIGNING, PAINTED/DECORATIVE CROSSWALKS, RAISED CROSSWALKS AND RELATED MARKINGS AND SIGNING, ADVANCED WARNING PAVEMENT MARKINGS FOR SPEED TABLES, BLINKER SIGNS, RECTANGULAR RAPID FLASHER BEACONS AND RELATED MARKINGS AND SIGNING, ON-STREET PARKING AND RELATED MARKINGS AND SIGNING, IN-ROAD LIGHTING AND RELATED MARKINGS AND SIGNING, GREEN BIKE LANES, FLEXIBLE DELINEATORS, DECORATIVE SIGNS AND DECORATIVE SIGN POSTS, PLANTERS, ON-SITE PAVEMENT MARKINGS AND SIGNING, OFF-SITE PAVEMENT MARKINGS AND SIGNING IN RIGHT-OF-WAY THAT IS NOT DEDICATED FOR PUBLIC USE, SIDEWALK WORK OR ASPHALT WORK.
3. THE CITY ENGINEER IS RESPONSIBLE FOR THE REVIEW AND APPROVAL OF THE DESIGN AND OPERATION OF THE PROJECT, AND FOR THE INSPECTION AND ACCEPTANCE OF THE FOLLOWING ITEMS THAT WILL BE MAINTAINED BY THE CITY: PAVEMENT MARKINGS ON OR ADJACENT TO PAVER BRICKS, PAINTED ASPHALT, STAMPED ASPHALT OR PAVEMENT MARKINGS MADE OF PAVER BRICKS, PAVEMENT MARKINGS ON OR ADJACENT TO PAINTED ASPHALT, RAISED INTERSECTIONS AND RELATED MARKINGS AND SIGNING, UN-WARRANTED MID-BLOCK CROSSWALKS AND RELATED MARKINGS AND SIGNING, UN-WARRANTED CROSSWALKS AND RELATED MARKINGS AND SIGNING, PAINTED/DECORATIVE CROSSWALKS, RAISED CROSSWALKS AND RELATED MARKINGS AND SIGNING, ADVANCED WARNING PAVEMENT MARKINGS FOR SPEED TABLES, BLINKER SIGNS, RECTANGULAR RAPID FLASHER BEACONS AND RELATED MARKINGS AND SIGNING, ON-STREET PARKING AND RELATED MARKINGS AND SIGNING, IN-ROAD LIGHTING AND RELATED MARKINGS AND SIGNING, GREEN BIKE LANES, FLEXIBLE DELINEATORS, DECORATIVE SIGNS AND DECORATIVE SIGN POSTS, PLANTERS, ON-SITE PAVEMENT MARKINGS AND SIGNING, OFF-SITE PAVEMENT MARKINGS AND SIGNING IN RIGHT-OF-WAY THAT IS NOT DEDICATED FOR PUBLIC USE. SIDEWALK WORK AND ASPHALT WORK.

ALL TRAFFIC CONTROL DEVICES MAINTAINED BY BROWARD COUNTY, THAT ARE REMOVED OR DAMAGED BY CONSTRUCTION, SHALL BE REPLACED BY CONTRACTOR USING CURRENT BROWARD COUNTY TRAFFIC ENGINEERING DIVISION STANDARDS.

PROCEDURE FOR RESTORATION OF FLEXIBLE PAVEMENT

THE PROCEDURE FOR BACKFILL AND PAVEMENT RESTORATION SHALL BE AS FOLLOW:

DENSITY TEST OF COMPACTED FILL, BACKFILL AND/OR BASE SHALL BE TAKEN AT EACH LIFT. PRIOR TO PLACEMENT OF THE SUCCEEDING LIFT OF MATERIAL, DENSITY TESTS SHALL BE TAKEN AT EACH 6" LIFT FOR BASE ROCK AND EACH 8" LIFT FOR COMPACTED FILL OR BACKFILL, ACCORDING TO THE FOLLOWING SCHEDULE:

1.1 FOR ANY ROAD CROSSING IN WHICH THE ROAD IS CUT AND RESTORED ONE LANE AT A TIME, ONE DENSITY TEST SHALL BE TAKEN IN EACH LANE AT EACH LIFT.

1.2 FOR ANY ROAD CROSSING IN WHICH THE ROAD IS CUT AND RESTORED TWO LANES AT A TIME, DENSITIES SHALL BE TESTED IN ONE LANE PER LIFT, ALTERING LANES WITH EACH LIFT.

1.3 FOR ANY ROAD CROSSING IN WHICH THE ROAD IS CUT AND RESTORED THREE LANES AT A TIME, DENSITIES SHALL BE TESTED IN TWO LOCATIONS PER LIFT, STAGGERING LOCATIONS WITH EACH SUCCESSIVE LIFT.

1.4 TRENCHES OR HOLES NEAR WALKWAYS, IN ROADWAYS OR THEIR SHOULDERS SHALL NOT BE LEFT OPEN OVERNIGHT WITHOUT EXPRESS PERMISSION OF THE CITY OF HOLLYWOOD. TRENCHES SHALL BE BACKFILLED AND A TEMPORARY ASPHALT APPLIED TO MAKE A SMOOTH LEVEL PATCH. THE TRENCHES SHALL THEN BE EXCAVATED THE NEXT DAY AND PERMANENT BACKFILL AND PAVEMENT INSTALLED IN ACCORDANCE WITH THESE STANDARDS. THE ONLY EXCEPTIONS WILL BE IN CASES WHERE THE FACILITY INSTALLED MUST BE TESTED BEFORE THE ROADS ARE RESTORED. IN THESE CASES, THE PERMANENT RESTORATION MUST BE PERFORMED ON THE DAY OF TESTING OR THE NEXT DAY.

1.5 IN CASES WHERE THE INSTALLATION PARALLELS THE ROADWAY AND DAMAGES THE PAVEMENT, THE DENSITY TEST SHALL BE MADE EVERY 100 LF AT EACH LIFT, WITH TEST LOCATIONS STAGGERED 25 FT EACH LIFT.

1.6 ROADWAY BASE MATERIAL SHALL BE COMPACTED TO A MINIMUM OF (LBR 100) 98% OF MAXIMUM DRY DENSITY, AS DETERMINED BY AASHTO T-180 (MODIFIED PROCTOR TEST). SUBGRADE SHALL BE COMPACTED TO A MINIMUM OF (LBR 40) 198% OF MAXIMUM DRY DENSITY, AS DETERMINED BY AASHTO T-99-C (STANDARD PROCTOR TEST), AND SODDED WITH ARGENTINE BAHIA.

1.7 RESTORATION OF STRIPING, SIGNING AND SIGNALIZATION DEVICES SHALL BE ACCOMPLISHED IMMEDIATELY AFTER PAVEMENT RESTORATION IS COMPLETED. PAVEMENT MARKINGS AND SIGNAGE SHALL BE IN ACCORDANCE WITH BROWARD COUNTY MINIMUM STANDARDS.

1.8 THE ABOVE LISTED REPRESENTS THE MINIMUM PROCEDURE. THE INSPECTOR HAS THE AUTHORITY TO REQUIRE ADDITIONAL TESTING IF, IN HIS OPINION, CONDITIONS TESTING WARRANT THEM.

MAINTENANCE OF PEDESTRIAN AND SCHOOL TRAFFIC

1. THE MAINTENANCE OF TRAFFIC PLAN, PROVIDED BY THE CONTRACTOR, SHALL INCLUDE PROVISIONS FOR PEDESTRIAN AND/OR SCHOOL STUDENT TRAFFIC AS WELL AS VEHICULAR TRAFFIC. THE FOLLOWING ARE MINIMUM REQUIREMENTS:
2. THE SAFE WALK ROUTE FOR ALL SCHOOL STUDENTS WITHIN THE VICINITY OF THE CONSTRUCTION ZONE SHALL BE MAINTAINED DURING STUDENT ARRIVAL AND DISMISSAL TIMES. IF THE CURRENT WALKING SURFACE CANNOT BE MAINTAINED, THEN A TEMPORARY WALKABLE SURFACE SHALL BE CREATED. THE SAFE WALK ROUTE SHALL BE SEPARATED FROM THE CONSTRUCTION ACTIVITY DURING THE ENTIRE LENGTH OF THE PROJECT ENCOMPASSING THE ENTIRE WALK ROUTE WITH PROPER PEDESTRIAN OPENINGS AT DESIGNATED CROSSINGS IN COMPLIANCE WITH FDOT STANDARD PLANS INDEX 102 AS WELL AS MEETING ALL ADA REQUIREMENTS.
3. ALL CONSTRUCTION EQUIPMENT ACTIVITY AROUND ANY DESIGNATED CROSSWALK SHALL CEASE TO OPERATE DURING THE STUDENT ARRIVAL AND DISMISSAL TIMES. ALL CONSTRUCTION EQUIPMENT ACTIVITY ADJACENT TO A DESIGNATED WALK ROUTE SHALL CEASE OPERATING UNLESS SATISFACTORILY BARRICADED FROM THE WALK ROUTE AS APPROVED BY BROWARD COUNTY AND CITY OF HOLLYWOOD
4. IN THE CASE THAT A DESIGNATED CROSSING OR ANY PORTION OF THE DESIGNATED WALK ROUTE CANNOT BE MAINTAINED, THE CONTRACTOR SHALL NOTIFY THE SPECIAL PROJECTS COORDINATOR AT BROWARD COUNTY TRAFFIC ENGINEERING DIVISION, (954) 847-2600. A MINIMUM OF TEN (10) WORKING DAYS PRIOR TO CLOSING THAT ROUTE IN ORDER TO ESTABLISH AN ALTERNATE CROSSING/ROUTE.
5. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO INSTALL ANY NECESSARY PAVEMENT, ROAD ROCK, PAVEMENT MARKINGS AND SIGNAGE AND/OR ANY PEDESTRIAN SIGNALIZATION AND/OR SIGNAL MODIFICATION TO ACCOMMODATE AN EXISTING OR ALTERNATE WALK ROUTE THROUGHOUT THE ENTIRE LENGTH OF THE PROJECT.
6. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE STATE CERTIFIED SCHOOL CROSSING GUARDS OR OFF DUTY POLICE OFFICERS TO CROSS STUDENTS AT ALL LOCATIONS OTHER THAN THOSE PREVIOUSLY DESIGNATED. THE CONTRACTOR MAY USE FLAGMEN, BUT ONLY IF THEY ARE STATE CERTIFIED AS A SCHOOL CROSSING GUARD.
7. THIRTY (30) DAYS PRIOR TO THE BEGINNING OF CONSTRUCTION THE CONTRACTOR SHALL NOTIFY THE SPECIAL PROJECTS COORDINATOR AT BROWARD COUNTY TRAFFIC ENGINEERING DIVISION, (954) 847-2600 OR AT BROWARD@TRAFFIC.ORG TO DISCUSS ALL NECESSARY SAFETY MEASURES.
8. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO NOTIFY THE FOLLOWING BROWARD COUNTY SCHOOL BOARD PUPIL TRANSPORTATION DEPARTMENT PERSONNEL IF CONSTRUCTION WILL IMPACT ANY BUS ROUTES:

NAME	DEPARTMENT	PHONE NUMBER	EMAIL
RUTH MASTERS	ROUTING	(754) 321-4400 EXT #2309	RUTH.MASTERS@ BROWARDSCHOOLS.COM
VINCENT HARRELL	STUDENT TRANSPORTATION & FLEET SERVICE	(754) 321-4472	VINCENT.HARRELL@ BROWARDSCHOOLS.COM
MARY TOCHTERM ANN	STUDENT TRANSPORTATION & FLEET SERVICE	(754) 321-4400 EXT. #2006	MARY.TOCHTERMANN@ BROWARDSCHOOLS.COM

   UPON COORDINATION WITH THE AFOREMENTIONED PERSONNEL, AND IF DEEMED NECESSARY, A PRE-CONSTRUCTION MEETING WILL BE HELD TO DETERMINE ALL BUS ROUTES AND TO MAKE ANY NECESSARY ARRANGEMENTS FOR REROUTING. THE SPECIAL PROJECTS COORDINATOR FROM THE BROWARD COUNTY TRAFFIC ENGINEERING DIVISION, (954) 847-2600, WILL BE NOTIFIED AND MAY ATTEND THE PRE-CONSTRUCTION MEETING.

9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING AN APPROVED MAINTENANCE OF TRAFFIC PLAN (MOT), SPECIFYING THE ABOVE SCHOOL/PEDESTRIAN CONDITIONS, THROUGH THE BROWARD COUNTY TRAFFIC ENGINEERING DIVISION OR THE LOCAL MUNICIPALITY, DEPENDING ON THE ROADWAY JURISDICTION. THE CONDITIONS OUTLINED IN THE MOT ARE FULLY EFFECTIVE AS PART OF THE PROPOSED IMPROVEMENTS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ENSURING THAT ALL WORK ASSOCIATED WITH THE PROJECT IS IN COMPLIANCE WITH ALL THE REQUIREMENTS OF THE APPROVED MOT.
10. THE CONTRACTOR SHALL ENSURE THAT THERE ARE NO SPEED LIMIT SIGNS INSTALLED WITHIN THE DESIGNATED REDUCED SPEED SCHOOL ZONE AT ANY TIME THROUGHOUT THE PROJECT.

PAVEMENT MARKING NOTES

1. ALL PAVEMENT MARKING AND SIGNING WORK IS TO BE PERFORMED BY A CONTRACTOR AND/OR SUB-CONTRACTOR WHICH HOLDS A BROWARD COUNTY CERTIFICATE OF COMPETENCY.
2. ALL EXISTING SIGNS TO REMAIN UNLESS OTHERWISE NOTED.
3. PROPOSED PEDESTRIAN CROSSINGS TO ALIGN WITH EXISTING ADA RAMPS.
4. REFLECTIVE PAVEMENT MARKINGS SHALL BE INSTALLED PER FDOT STANDARD PLANS INDEX 706-001 ON STATE ROADS AND PER BCTED STANDARDS ON NON-STATE ROAD
5. CONTRACTOR TO ADJUST ALL MANHOLE COVERS, UTILITY ACCESS BOXES, CATCH BASINS, VALVE BOXES TO BE FLUSH WITH FINISHED GRADES.
6. PARTIALLY DEMOLISHED PAVEMENT MARKINGS, CROSS WALKS, STOP BARS, ETC SHALL BE REPLACED IN THEIR ENTIRETY.
7. PLACE BLUE RPM CENTERED ON THE LANE DIRECTLY IN FRONT OF EACH FIRE HYDRANT.
8. STOP BARS SHALL BE LOCATED A MINIMUM OF 4' BEHIND CROSSWALK OR CURB RAMP, AND ADJACENT TO EXISTING STOP SIGNS, WHERE POSSIBLE.
9. PRIOR TO CONSTRUCTION THE CONTRACTOR SHALL RECORD THE EXISTING CORRIDOR INFORMATION. THESE RECORDS SHALL SHOW THE EXISTING CONDITIONS OF ALL PAVEMENT MARKINGS, TRAFFIC SIGNS, DRIVEWAYS, LANDSCAPING, ETC. IN ORDER TO VALIDATE THE REQUIRED RESTORATION TO EQUAL OR BETTER THAN PRE-CONSTRUCTION CONDITIONS. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL SUBMIT THESE RECORDS TO THE CITY OF HOLLYWOOD FOR REVIEW AND APPROVAL.
10. REFER TO FORCE MAIN SHEETS FOR DETAIL INFORMATION ON PROPOSED FORCE MAIN.

⚠ BCTED Ref. No. 210303060

CITY OF HOLLYWOOD FLORIDA

CITY OF HOLLYWOOD
DEPARTMENT OF PUBLIC UTILITIES
1621 N 14 AVE HOLLYWOOD, FL 33019

CONSULTANT:
EAC Consulting, Inc.
5100 NW 33rd AVE, SUITE 243
FORT LAUDERDALE, FL 33309
CA # 7011
EAC PROJECT No. 17029.WW01-04

Sunshine 811 — Call 811 or visit sunshine811.com two full business days before digging to have buried facilities located and marked. Check positive response codes before you dig!

PROJECT: LIFT STATION A-09 FORCEMAIN REPLACEMENT (NW 70TH AVE FROM JOHNSON ST TO ARTHUR ST)
CITY PROJECT NO. 20-8533

SHEET TITLE: PAVEMENT RESTORATION AND MARKING NOTES

REVISIONS			
NO.	DESCRIPTION	DATE	BY
1	BC-TED COMMENTS	4/21	EG
2	BC-TED COMMENTS	6/21	EG

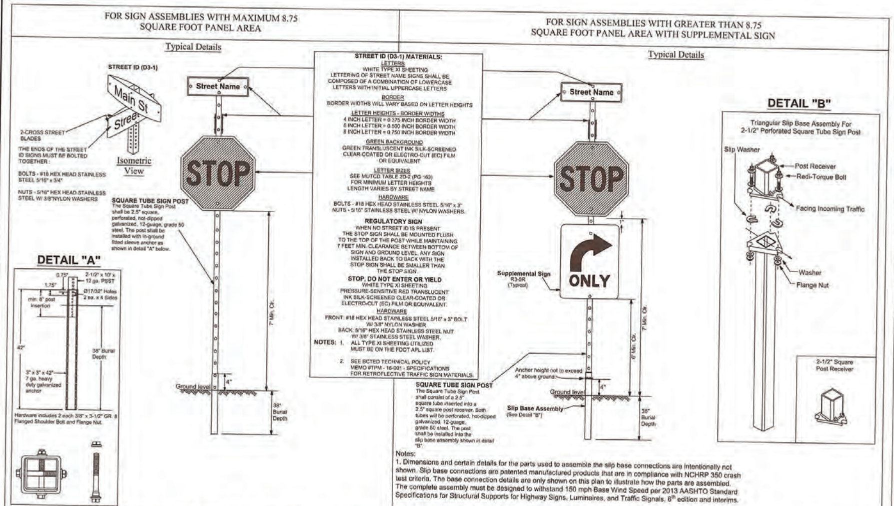
DESIGNED BY: EG
DRAWN BY: EG/MD
REVIEWED BY: SM

SEAL: HUNTLEY GLENMORE HIGGINS, LICENSE NO. 60726, STATE OF FLORIDA, PROFESSIONAL ENGINEER — 6/22/2021

HUNTLEY HIGGINS
FL License No. : 60726

FILE NAME: PD-1.0 PVMT DTLS.dwg
DATE: JUNE 2021
SHEET NO. PD-1.0

100% DESIGN PLANS



STREET ID (D3-1) MATERIALS:

LETTERING: WHITE TYPE XI SHEETING. LETTERING OF STREET NAME SIGNS SHALL BE COMPOSED OF A COMBINATION OF LOWERCASE LETTERS WITH INITIAL UPPERCASE LETTERS

BORDER: BORDER WIDTHS WILL VARY BASED ON LETTER HEIGHTS

LETTER HEIGHTS - BORDER WIDTHS: 4 INCH LETTER = 0.375 INCH BORDER WIDTH; 6 INCH LETTER = 0.500 INCH BORDER WIDTH; 8 INCH LETTER = 0.750 INCH BORDER WIDTH

GREEN BACKGROUND: GREEN TRANSLUCENT INK SILK-SCREENED CLEAR-COATED OR ELECTRO-CUT (EC) FILM OR EQUIVALENT

LETTER SIZES: SEE MUTCD TABLE 2D-2 (PG 162) FOR MINIMUM LETTER HEIGHTS. LENGTH VARIES BY STREET NAME

HARDWARE: BOLTS - #18 HEX HEAD STAINLESS STEEL 5/16" x 3"; NUTS - 5/16" STAINLESS STEEL W/ NYLON WASHERS.

REGULATORY SIGN: WHEN NO STREET ID IS PRESENT THE STOP SIGN SHALL BE MOUNTED FLUSH TO THE TOP OF THE POST WHILE MAINTAINING 7 FEET MIN. CLEARANCE BETWEEN BOTTOM OF SIGN AND GROUND LEVEL. ANY SIGN INSTALLED BACK TO BACK WITH THE STOP SIGN SHALL BE SMALLER THAN THE STOP SIGN.

STOP, DO NOT ENTER OR YIELD: WHITE TYPE XI SHEETING. PRESSURE-SENSITIVE RED TRANSLUCENT INK SILK-SCREENED CLEAR-COATED OR ELECTRO-CUT (EC) FILM OR EQUIVALENT.

HARDWARE: FRONT: #18 HEX HEAD STAINLESS STEEL 5/16" x 3" BOLT W/ 3/8" NYLON WASHER. BACK: 5/16" HEX HEAD STAINLESS STEEL NUT W/ 3/8" STAINLESS STEEL WASHER.

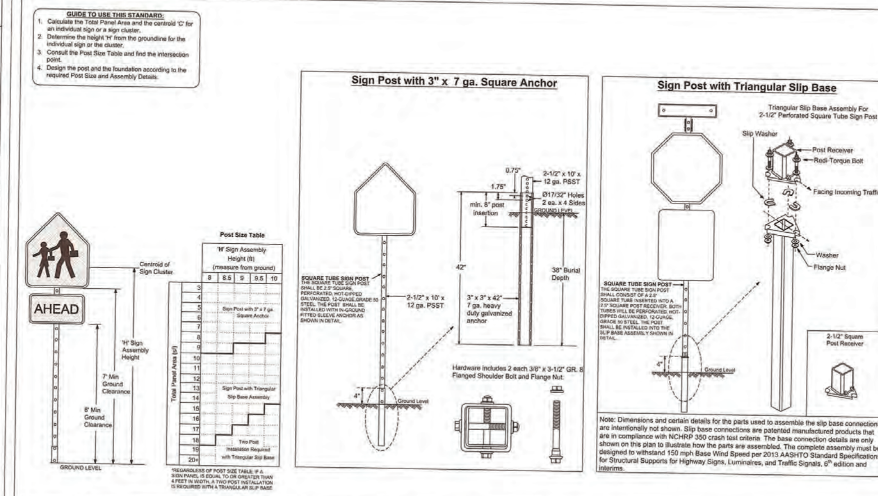
NOTES:
1. ALL TYPE XI SHEETING UTILIZED MUST BE ON THE FDOT APL LIST.
2. SEE BCTED TECHNICAL POLICY MEMO #TPM - 16-001 - SPECIFICATIONS FOR RETROFLECTIVE TRAFFIC SIGN MATERIALS.

Notes:
1. Dimensions and certain details for the parts used to assemble the slip base connections are intentionally not shown. Slip base connections are patented manufactured products that are in compliance with NCHRP 350 crash test criteria. The base connection details are only shown on this plan to illustrate how the parts are assembled. The complete assembly must be designed to withstand 150 mph Base Wind Speed per 2013 AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals, 6th edition and interims.
2. For standard ground sign installation, see detail entitled " Ground Sign Assembly Details".

REVISIONS	
DATE	DESCRIPTION
04-09-2018	UPDATED MATERIAL NOTES
02-28-2020	ADDED ISOMETRIC VIEW
02-05-2021	UPDATED POST BASE HEIGHT

BROWARD COUNTY FLORIDA — PUBLIC WORKS DEPARTMENT, TRAFFIC ENGINEERING DIVISION
DESIGN BY: CARMELO CARATOZZOLO, P.E. — SCALE: NTS
DRAWN BY: STEPHON RAMOUTAR
CHECKED BY: ANDREW SEBO, P.E., PTOE

STOP SIGN AND STREET IDENTIFICATION ASSEMBLY TYPICAL DETAILS — SHEET NO. 1 OF 1

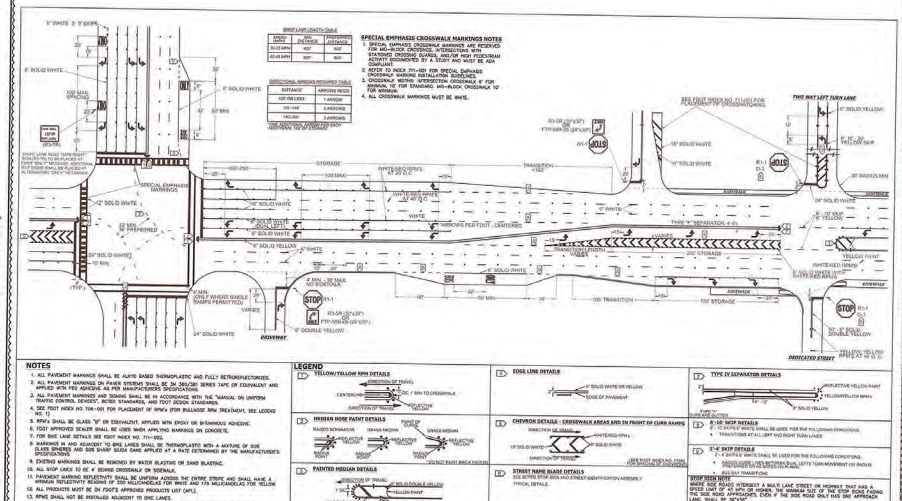


Note: Dimensions and certain details for the parts used to assemble the slip base connections are intentionally not shown. Slip base connections are patented manufactured products that are in compliance with NCHRP 350 crash test criteria. The base connection details are only shown on this plan to illustrate how the parts are assembled. The complete assembly must be designed to withstand 150 mph Base Wind Speed per 2013 AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals, 6th edition and interims.

REVISIONS	
DATE	DESCRIPTION
03-21-2017	UPDATED POST SIZE
11-24-2020	ADDED POST SIZE NOTE
02-05-2021	UPDATED POST BASE HEIGHT

BROWARD COUNTY FLORIDA — PUBLIC WORKS DEPARTMENT, TRAFFIC ENGINEERING DIVISION
DESIGN BY: YVES D'ANJOU, P.E. — SCALE: NTS
DRAWN BY: STEPHON RAMOUTAR
CHECKED BY: ANDREW SEBO, P.E., PTOE

GROUND SIGN ASSEMBLY DETAILS — SHEET NO. 1 OF 1



NOTES

REVISIONS	
DATE	DESCRIPTION
08-23-2016	UPDATED NOTES
11-24-2020	UPDATED NOTES
04-14-2021	UPDATED NOTES

BROWARD COUNTY FLORIDA — PUBLIC WORKS DEPARTMENT, TRAFFIC ENGINEERING DIVISION
DESIGN BY: CARMELO CARATOZZOLO, P.E. — SCALE: NTS
DRAWN BY: STEPHON RAMOUTAR
CHECKED BY: ANDREW SEBO, P.E., PTOE

PAVEMENT MARKINGS AND SIGNS DETAILS — SHEET NO. 1 OF 1

BCTED Ref. No. 210303060

CITY OF Hollywood FLORIDA
CITY OF HOLLYWOOD
DEPARTMENT OF PUBLIC UTILITIES
1621 N 14 AVE HOLLYWOOD, FL 33019

CONSULTANT:
EAC Consulting, Inc.
5100 NW 33rd AVE, SUITE 243
FORT LAUDERDALE, FL 33309
CA # 7011
EAC PROJECT No. 17029.WW01-04

Sunshine 811 — Call 811 or visit sunshine811.com two full business days before digging to have buried facilities located and marked. Check positive response codes before you dig!

PROJECT: LIFT STATION A-09 FORCEMAIN REPLACEMENT (NW 70TH AVE FROM JOHNSON ST TO ARTHUR ST)
CITY PROJECT NO. 20-8533

SHEET TITLE: PAVEMENT RESTORATION AND MARKING DETAILS (1 OF 2)

REVISIONS			
NO.	DESCRIPTION	DATE	BY
1	BC-TED COMMENTS	4/21	EG
2	BC-TED COMMENTS	6/21	EG

DESIGNED BY: EG
DRAWN BY: EG/MD
REVIEWED BY: SM

SEAL
HUNTLEY GLENMORE HIGGINS — LICENSE NO. 60726 — STATE OF FLORIDA — PROFESSIONAL ENGINEER
6/22/2021
HUNTLEY HIGGINS
FL License No.: 60726

FILE NAME: PD-1.0 PVMT DTLS.dwg
DATE: JUNE 2021
SHEET NO.

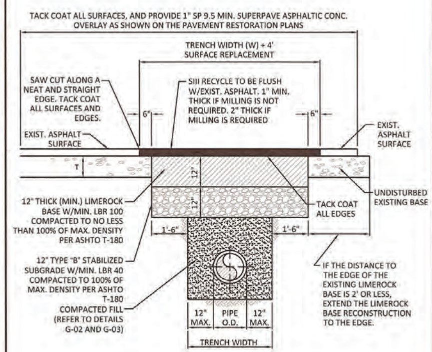
PD-2.0

100% DESIGN PLANS

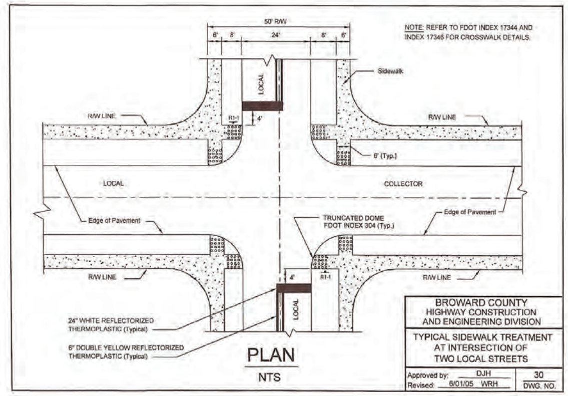
FLEXIBLE PAVEMENT RESTORATION NOTES:

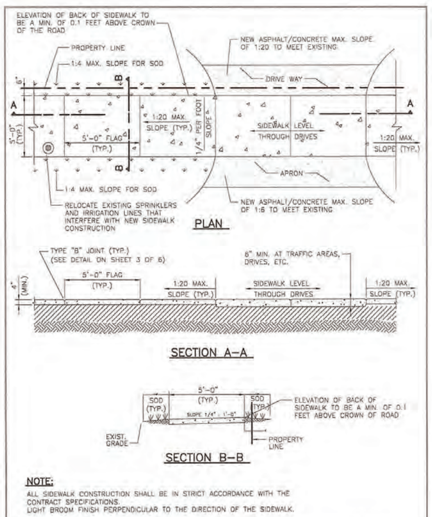
1. THE ABOVE DETAILS APPLY ONLY TO ASPHALT PAVEMENT RESTORATION OVER UTILITY TRENCHES CUT WITHIN CITY OF HOLLYWOOD RIGHTS-OF-WAY. FOR PAVEMENT RESTORATION WITHIN BROWARD COUNTY OR FDOT RIGHTS-OF-WAY REFER TO THE CORRESPONDING DETAILS FOR THOSE AGENCIES.
2. LIMEROCK BASE MATERIAL SHALL HAVE A MINIMUM L.B.R. OF 100 AND A MINIMUM CARBONATE CONTENT OF 70%. REPLACED BASE MATERIAL OVER TRENCH SHALL BE A MINIMUM OF 12" THICK".
3. LIMEROCK BASE MATERIAL SHALL BE PLACED IN 12" MAXIMUM (LOOSE MEASUREMENT) THICKNESS LAYERS WITH EACH LAYER THOROUGHLY ROLLED OR TAMPED AND COMPACTED TO 100% OF MAXIMUM DENSITY, PER AASHTO T-180, PRIOR TO THE PLACEMENT OF THE SUCCEEDING LAYERS.
4. STABILIZED SUBGRADE MATERIAL SHALL BE GRANULAR AND SHALL HAVE A MINIMUM L.B.R. OF 40.
5. BACKFILL SHALL BE PLACED AND COMPACTED IN ACCORDANCE WITH THE PIPE LAYING CONDITION TYPICAL SECTIONS IN DETAILS G-02 AND G-03, AND THE SPECIFICATIONS, BUT TESTING WILL BEGIN 12" ABOVE THE INSTALLED FACILITY.
6. ALL EDGES AND JOINTS OF EXISTING ASPHALT PAVEMENT SHALL BE SAW CUT TO STRAIGHT LINES, PARALLEL TO OR PERPENDICULAR TO THE ROADWAY, PRIOR TO THE RESURFACING.
7. RESURFACING MATERIAL SHALL BE FDOT SUPERPAVE, AND SHALL BE APPLIED A MINIMUM OF TWO INCH IN THICKNESS.
8. MILL AND BUTT JOINT TO EXISTING PAVEMENT.
9. IF THE TRENCH IS FILLED TEMPORARILY, IT SHALL BE COVERED WITH A 2" ASPHALTIC CONCRETE PATCH TO KEEP THE FILL MATERIAL FROM RAVELING UNTIL REPLACED WITH A PERMANENT PATCH.
10. REFER TO SPECIFICATIONS FOR DETAILED PROCEDURES.
11. WHERE THE UTILITY TRENCH CROSSES EXISTING ASPHALT DRIVEWAYS, THE LIMEROCK BASE THICKNESS MAY BE A MINIMUM OF 6 INCHES THICK. REGARDLESS OF THE EXTENT OF IMPACT, THE ENTIRE DRIVEWAY SURFACE BETWEEN THE EDGE OF THE ROADWAY PAVEMENT AND PROPERTY LINE OR FRONT OF SIDEWALK SHALL BE OVERLAID USING 2-INCH THICK MINIMUM ASPHALTIC CONCRETE SURFACE COURSE WHERE INDICATED ON THE PLANS OR AS DIRECTED BY THE CITY/ENGINEER.

ISSUED: 03/01/1994	DEPARTMENT OF PUBLIC UTILITIES STANDARD DETAIL	REVISED: 11/06/2017
DRAWN: EAM	FLEXIBLE PAVEMENT RESTORATION NOTES	DRAWING NO. G-12
APPROVED: XXX		



ISSUED: 03/01/1994	DEPARTMENT OF PUBLIC UTILITIES STANDARD DETAIL	REVISED: 11/06/2017
DRAWN: EAM	FLEXIBLE PAVEMENT RESTORATION FOR TRENCHES CUT PERPENDICULAR AND PARALLEL TO THE ROADWAY	DRAWING NO. G-12.1
APPROVED: XXX		





NOTE:
ALL SIDEWALK CONSTRUCTION SHALL BE IN STRICT ACCORDANCE WITH THE CONTRACT SPECIFICATIONS.
LIGHT BROOM FINISH PERPENDICULAR TO THE DIRECTION OF THE SIDEWALK.

CITY OF HOLLYWOOD, FLORIDA
DEPARTMENT OF PUBLIC UTILITIES
ENGINEERING AND CONSTRUCTION SERVICES
STANDARD DETAIL
SIDEWALK CONSTRUCTION DETAIL

DESIGNED BY V.N.C. | DRAWN BY R.A.Q. | DATE 07/24/2013 | SCALE N.T.S. | SHEET NO. 1 OF 6 SHEETS

CITY OF Hollywood FLORIDA
CITY OF HOLLYWOOD
DEPARTMENT OF PUBLIC UTILITIES
1621 N 14 AVE HOLLYWOOD, FL 33019

CONSULTANT:
EAC Consulting, Inc.
5100 NW 33rd AVE, SUITE 243
FORT LAUDERDALE, FL 33309
CA # 7011
EAC PROJECT No. 17029.WW01-04

Sunshine 811

PROJECT:
LIFT STATION A-09 FORCEMAIN REPLACEMENT
(NW 70TH AVE FROM JOHNSON ST TO ARTHUR ST)
CITY PROJECT NO. 20-8533

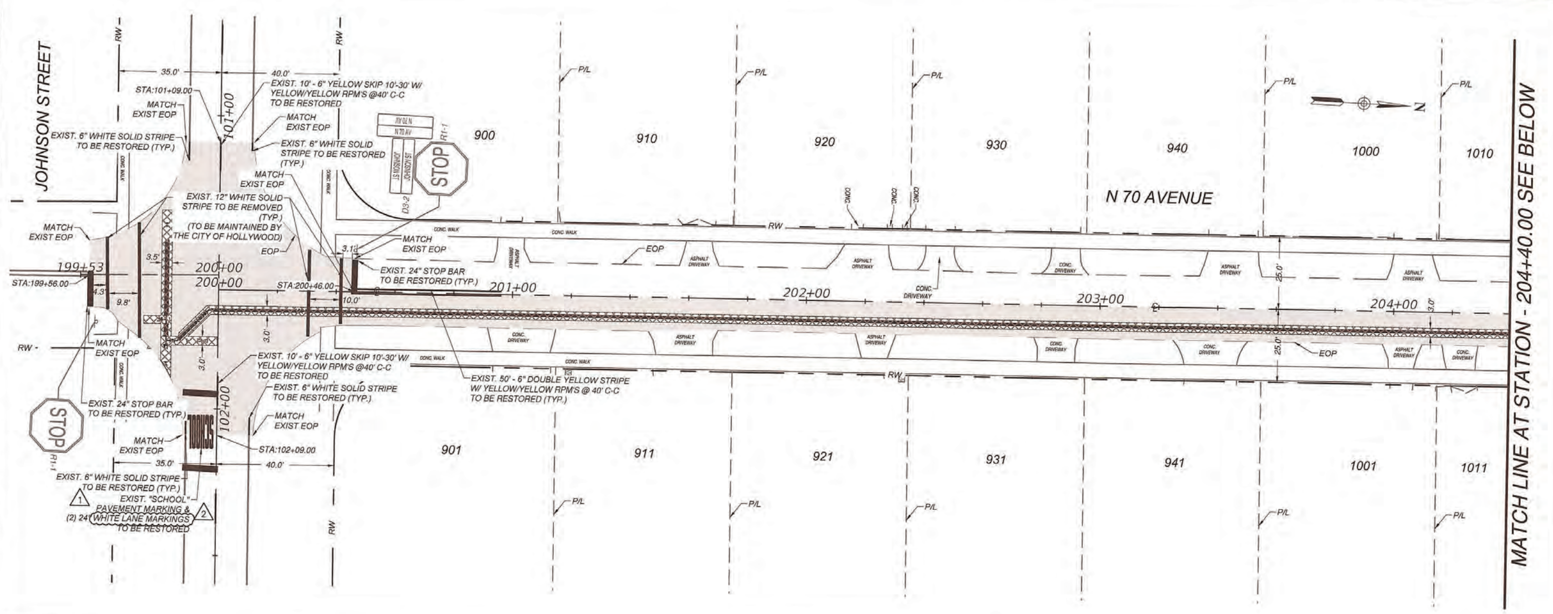
SHEET TITLE:
PAVEMENT RESTORATION AND MARKING DETAILS (2 OF 2)

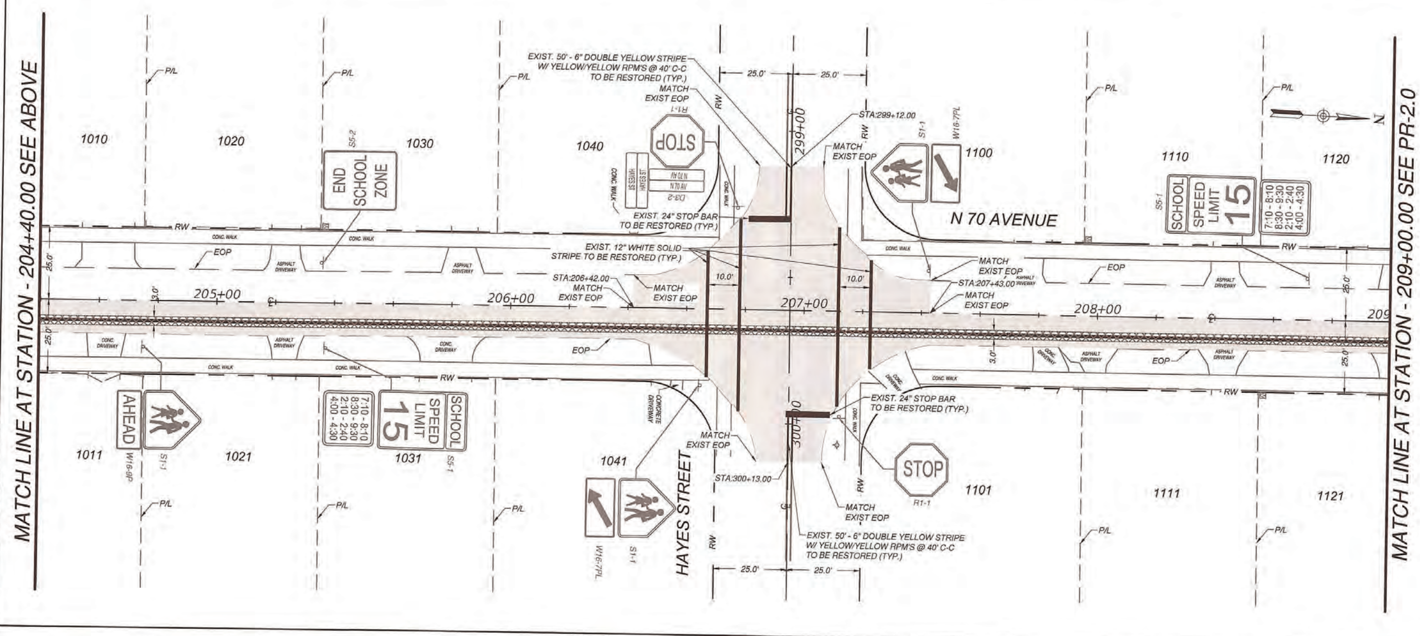
REVISIONS

NO.	DESCRIPTION	DATE	BY
1	BC-TED COMMENTS	4/21	EG
2	BC-TED COMMENTS	6/21	EG

DESIGNED BY: EG
DRAWN BY: EG/MD
REVIEWED BY: SM
SEAL
HUNTLEY GLENMORE HIGGINS LICENSE NO. 60726 STATE OF FLORIDA PROFESSIONAL ENGINEER
6/22/2021
HUNTLEY HIGGINS
FL License No. : 60726
FILE NAME: PD-1.0 PVMT DTLS.dwg
DATE: JUNE 2021
SHEET NO.
PD-3.0
100% DESIGN PLANS

BCTED Ref. No. 210303060





0 20' 40'
Feet

LEGEND

FULL DEPTH PAVEMENT RESTORATION

LIMITS OF PAVT REST 1" MILL & 1" RESURFACE

NOTE:

1. ALL EXISTING SIGNS TO REMAIN UNLESS OTHERWISE NOTED.
2. PROPOSED PEDESTRIAN CROSSINGS TO ALIGN WITH EXISTING ADA RAMPS.
3. REFLECTIVE PAVEMENT MARKINGS SHALL BE INSTALLED PER FDOT INDEX 17352.
4. CONTRACTOR IS TO ADJUST ALL MANHOLE COVERS, UTILITY ACCESS BOXES, CATCH BASINS, VALVE BOXES TO BE FLUSH WITH FINISH GRADES.
5. PARTIALLY DEMOLISHED PAVEMENT MARKING, CROSS WALKS, STOP BARS, ETC SHALL BE REPLACED IN ITS ENTIRETY.
6. PLACE BLUE RPM IN FRONT OF EACH FIRE HYDRANT ON THE SAME SIDE OF THE ROAD THE HYDRANT IS LOCATED AT THE CENTER OF THE LANE.
7. STOP BARS SHALL BE LOCATED A MINIMUM OF 4' BEHIND CROSSWALK OR CURVE RAMP, AND ADJACENT TO EXISTING STOP SIGNS, WHERE POSSIBLE.
8. CONTRACTOR SHALL FIRST RESTORE TRENCH FULL DEPTH INCLUDING 1" LAYER OF ASPHALT. AFTER COMPLETION OF TRENCH RESTORATION THROUGHOUT, THEN CONTRACTOR SHALL INSTALL THE REMAINING 1" ASPHALT WITH THE PAVEMENT RESTORATION PROCEDURE.

BROWARD COUNTY
Traffic Engineering Division
APPROVED
Date 06/24/21
Remarks Approval only for signing & pavement markings/items maintained by the Broward County Traffic Engineering Division (BCTED)

BCTED Ref. No. 210303060

CITY OF HOLLYWOOD FLORIDA

CITY OF HOLLYWOOD
DEPARTMENT OF PUBLIC UTILITIES
1621 N 14 AVE HOLLYWOOD, FL 33019

CONSULTANT:
EAC Consulting, Inc.
5100 NW 33rd AVE, SUITE 243
FORT LAUDERDALE, FL 33309
CA # 7011
EAC PROJECT No. 17029.WW01-04

Sunshine 811

PROJECT:
LIFT STATION A-09 FORCEMAIN REPLACEMENT
(NW 70TH AVE FROM JOHNSON ST TO ARTHUR ST)
CITY PROJECT NO. 20-8533

SHEET TITLE:
PAVEMENT RESTORATION AND MARKING PLAN
(1 OF 2)

REVISIONS

NO.	DESCRIPTION	DATE	BY
1	BC-TED COMMENTS	4/21	EG
2	BC-TED COMMENTS	6/21	EG

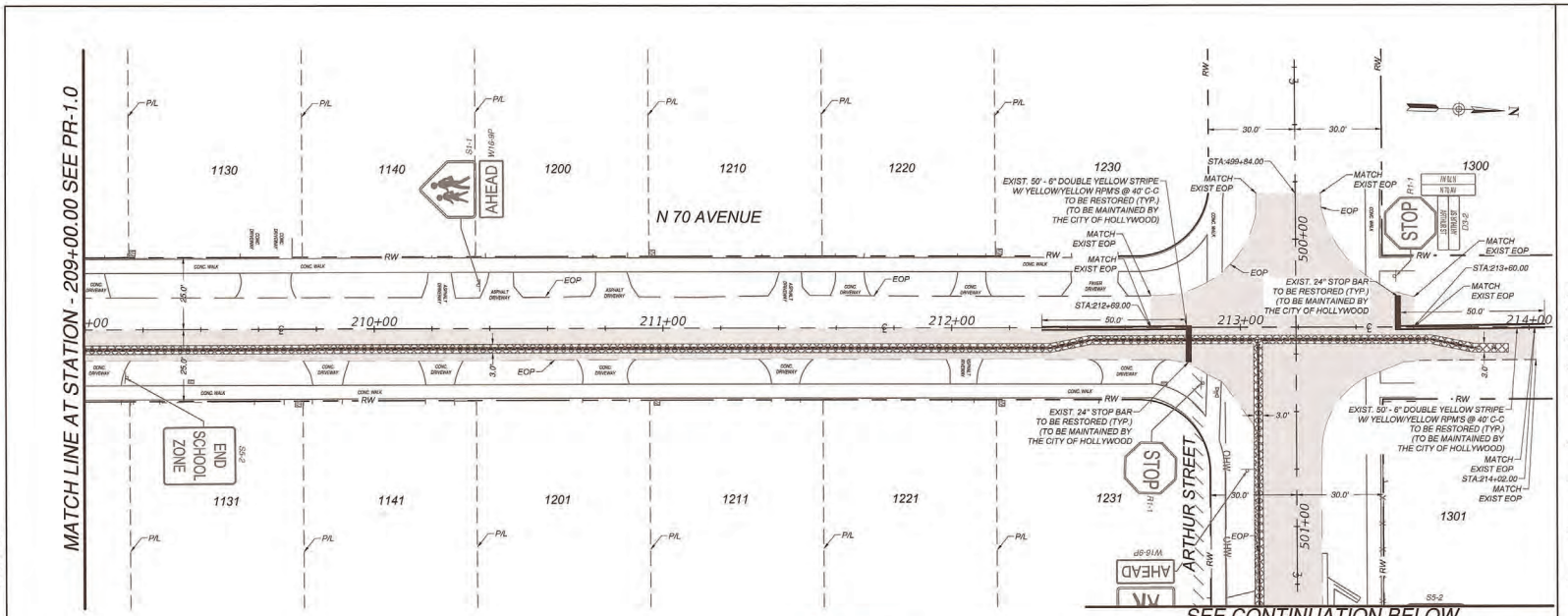
DESIGNED BY: EG
DRAWN BY: EG/MD
REVIEWED BY: SM

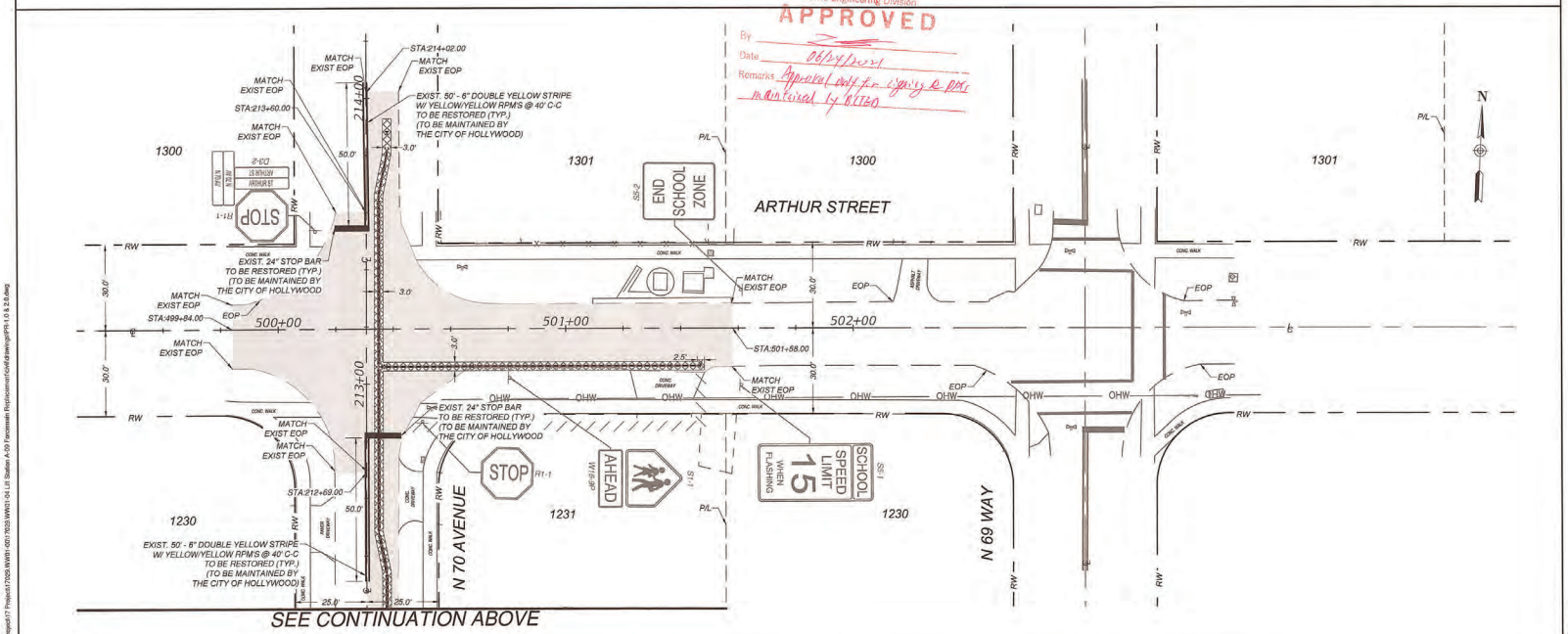
SEAL
HUNTLEY GLEMORE HIGGINS LICENSE NO. 60726 STATE OF FLORIDA PROFESSIONAL ENGINEER
6/22/2021

HUNTLEY HIGGINS
FL License No.: 60726

FILE NAME: PR-1.0 & 2.0.dwg
DATE: JUNE 2021
SHEET NO.
PR-1.0

100% DESIGN PLANS





0 20' 40'
Feet

LEGEND
- FULL DEPTH PAVEMENT RESTORATION
- LIMITS OF PAVT REST 1" MILL & 1" RESURFACE
- FULL DEPTH & SOD RESTORATION

NOTE:
1. ALL EXISTING SIGNS TO REMAIN UNLESS OTHERWISE NOTED.
2. PROPOSED PEDESTRIAN CROSSINGS TO ALIGN WITH EXISTING ADA RAMPS.
3. REFLECTIVE PAVEMENT MARKINGS SHALL BE INSTALLED PER FDOT INDEX 17352.
4. CONTRACTOR IS TO ADJUST ALL MANHOLE COVERS, UTILITY ACCESS BOXES, CATCH BASINS, VALVE BOXES TO BE FLUSH WITH FINISH GRADES.
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BCTED Ref. No. 210303060

CITY OF HOLLYWOOD
DEPARTMENT OF PUBLIC UTILITIES
1621 N 14 AVE HOLLYWOOD, FL 33019

CONSULTANT:
EAC Consulting, Inc.
5100 NW 33rd AVE, SUITE 243
FORT LAUDERDALE, FL 33309
CA # 7011
EAC PROJECT No. 17029.WW01-04

Sunshine 811
Call 811 or visit sunshine811.com two full business days before digging to have buried facilities located and marked.
Check positive response codes before you dig!

PROJECT:
LIFT STATION A-09 FORCEMAIN REPLACEMENT
(NW 70TH AVE FROM JOHNSON ST TO ARTHUR ST)
CITY PROJECT NO. 20-8533

SHEET TITLE:
PAVEMENT RESTORATION AND MARKING PLAN
(2 OF 2)

REVISIONS

NO.	DESCRIPTION	DATE	BY
1	BC-TED COMMENTS	4/21	EG
2	BC-TED COMMENTS	6/21	EG

DESIGNED BY: EG
DRAWN BY: EG/MD
REVIEWED BY: SM

SEAL
HUNTLEY GLENMORE HIGGINS
LICENSE NO. 60726
STATE OF FLORIDA
PROFESSIONAL ENGINEER
6/22/2021

HUNTLEY HIGGINS
FL License No. - 60726

FILE NAME: PR-1.0 & 2.0.dwg
DATE: JUNE 2021
SHEET NO.
PR-2.0

100% DESIGN PLANS

BCTED Ref. No. 210303060

DRAWING SCALE IS SHOWN CORRESPONDS TO PLOT SIZE OF 24"X36" IMPERIAL UNITS. WHEN ANY OF THESE DRAWINGS IS PLOTTED ON OTHER SIZE SHEET ENGINEER OF RECORD DOES NOT WARRANT ACCURACY OF DRAWING SCALE

ELIAS OLIEVARA
June 4, 2021 12:50 PM
L:\Projects\7 Projects\17029.WW01-001\7029.WW01-04 Lift Station A-09 Forcemain Replacement\Civil\Drawings\PR-1.0 & 2.0.dwg

APPENDIX 3

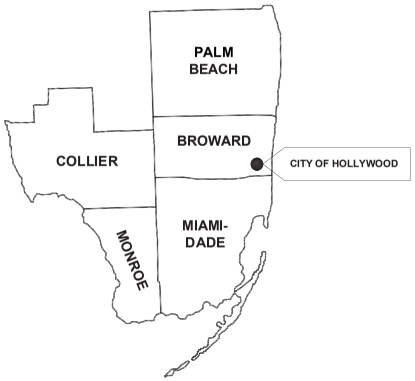
30% DESIGN SUBMITTAL
NOT FOR CONSTRUCTION

CITY OF HOLLYWOOD
DEPARTMENT OF PUBLIC UTILITIES

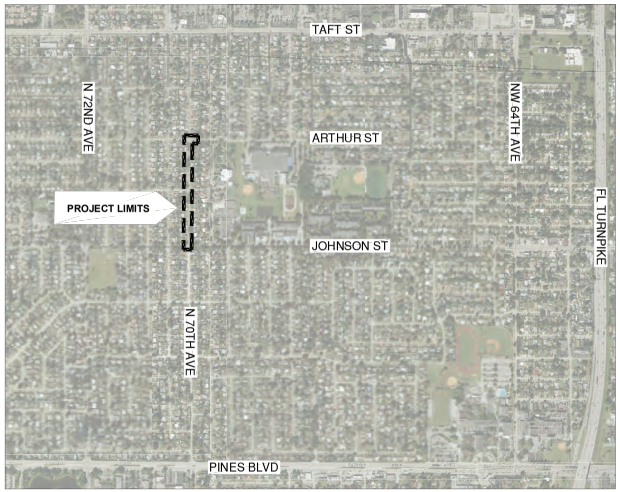
1621 N 14 AVE, HOLLYWOOD, FL 33019

LIFT STATION A-09 FORCE MAIN REPLACEMENT
(NW 70TH AVENUE FROM JOHNSON STREET TO ARTHUR STREET)

CITY PROJECT NO. 20-8533



Vicinity Map
NTS



PROJECT LOCATION MAP
N.T.S.

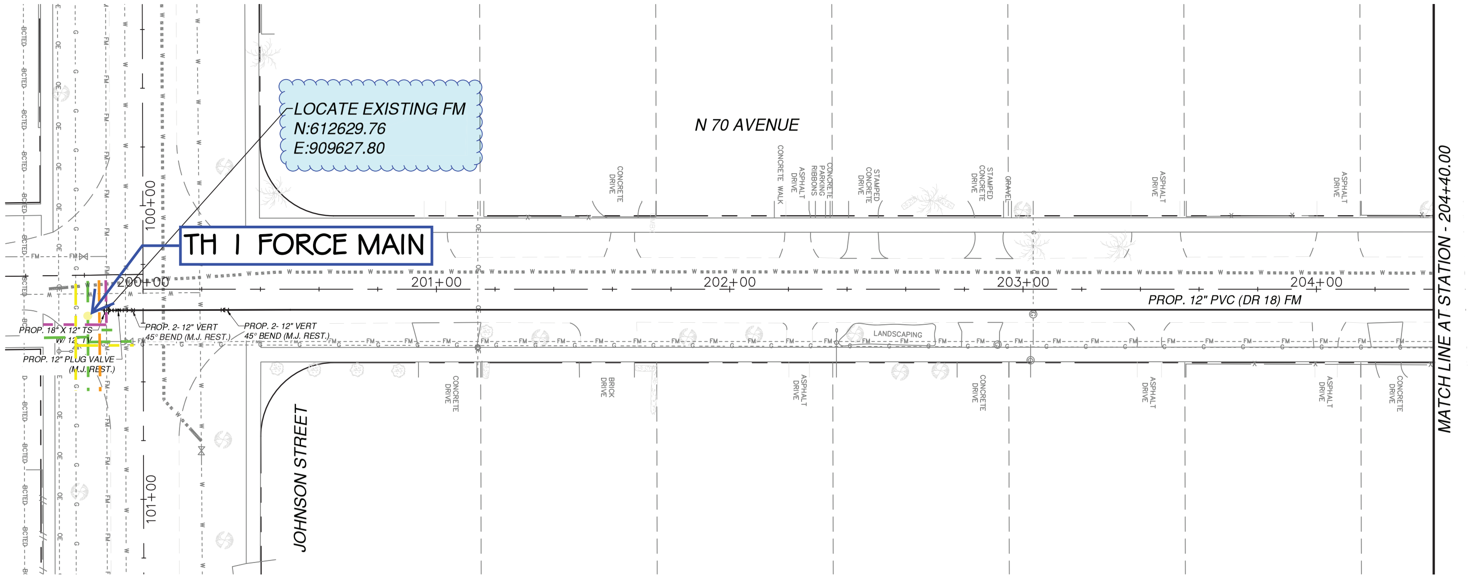
PLANS PREPARED BY:

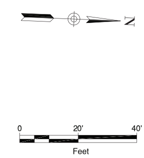
EAC Consulting, Inc.
CA # 7011
5100 NW 33 AVE, SUITE 243
FORT LAUDERDALE, FL 33309
(954) 714-2000
EAC PROJECT No. 17029.WW01-04

REVISIONS:

NO.	DESCRIPTION	DATE	BY

HUNTLEY HIGGINS, P.E.
FL LICENSE No. 84186





CITY OF HOLLYWOOD
DEPARTMENT OF PUBLIC UTILITIES
1621 N 14 AVE HOLLYWOOD, FL 33019

CONSULTANT:
EAC Consulting, Inc.
5100 NW 33rd AVE, SUITE 243
FORT LAUDERDALE, FL 33309
CA # 7011
EAC PROJECT No. 17029.WW01-04

SUB-CONSULTANT:

Call 811 or visit sunshine811.com two full business days before digging to have buried facilities located and marked. Check positive response codes before you dig!

PROJECT:
LIFT STATION A-09 FORCEMAIN REPLACEMENT
(NW 70TH AVE FROM JOHNSON ST TO ARTHUR ST)
CITY PROJECT NO. 20-8533

SHEET TITLE:
N 70 AVE FROM STA 200+00 TO STA 204+50

REVISIONS

NO.	DESCRIPTION	DATE	BY

DESIGNED BY: EG
DRAWN BY: EG
REVIEWED BY: HH
SEAL

HUNTLEY HIGGINS
FL License No. : 60726

FILE NAME: FM-1.0 N 70th Ave.dwg
DATE: NOVEMBER 2020
SHEET NO.
TH-1.0

30% DESIGN PLANS

DRAWING SCALE SHOWN CORRESPONDS TO PLOT SIZE OF 24"X36" OR PROJECT 0803 LWU01-08 IF THIS DRAWING IS PLOTTED ON OTHER SIZE SHEET ENGINEER OF RECORD DOES NOT WARRANT ACCURACY OF DRAWING SCALE.

ELIAS GUEVARA
October 5, 2020 5:38 PM
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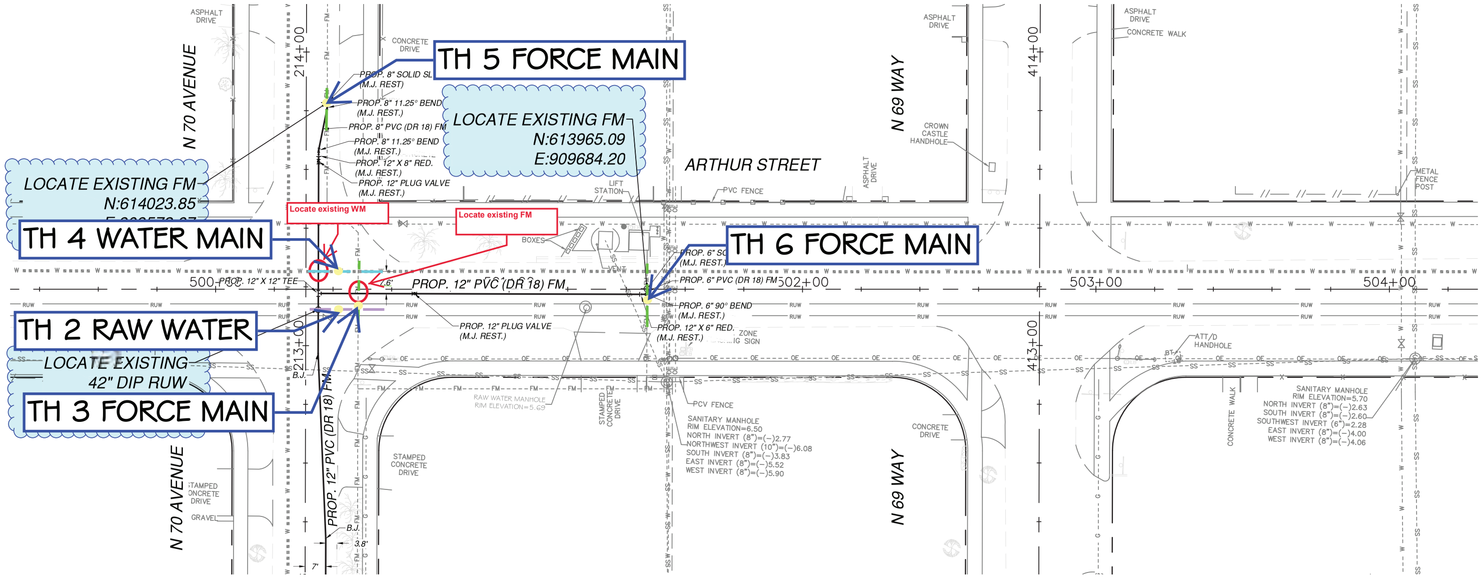

N

0 20' 40'
Feet

CITY OF HOLLYWOOD
DEPARTMENT OF PUBLIC UTILITIES
1621 N 14 AVE HOLLYWOOD, FL 33019

CONSULTANT:
EAC Consulting, Inc.
5100 NW 33rd AVE, SUITE 243
FORT LAUDERDALE, FL 33309
CA # 7011
EAC PROJECT No. 17029.WW01-04

SUB-CONSULTANT:

Sunshine811 — Call 811 or visit sunshine811.com two full business days before digging to have buried facilities located and marked. Check positive response codes before you dig!

PROJECT:
LIFT STATION A-09 FORCEMAIN REPLACEMENT
(NW 70TH AVE FROM JOHNSON ST TO ARTHUR ST)
CITY PROJECT NO. 20-8533

SHEET TITLE:
ARTHUR ST FROM STA 500+00 TO STA 502+00

REVISIONS

NO.	DESCRIPTION	DATE	BY

DESIGNED BY: EG
DRAWN BY: EG
REVIEWED BY: HH
SEAL

HUNTLEY HIGGINS
FL License No. : 60726

FILE NAME: FM-4.0 ARTHUR ST.dwg
DATE: NOVEMBER 2020
SHEET NO.
TH-4.0

30% DESIGN PLANS

DRAWING SCALE SHOWN CORRESPONDS TO PLOT SIZE OF 24"X36" IF THIS DRAWING IS PLOTTED ON OTHER SIZE SHEET ENGINEER OF RECORD DOES NOT WARRANT ACCURACY OF DRAWING SCALE.

ELIAS GUEVARA
October 5, 2020 5:43 PM
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KEITH

Subsurface Utility Engineering Consultants - Utility Locating - Utility Coordination

301 East Atlantic Boulevard, Pompano Beach, FL 33060 | *5805 Blue Lagoon Drive, Suite 218*

eonline | *Tel.: 305-667-5474 Fax: 305-667-5475*

TEST HOLE INVENTORY

Date:	10/20/2020	Client:	EAC Consulting, Inc
Project:	City of Hollywood Lift Station - A09 Force Main Replacement	Client Contact:	Huntley Higgins
Description:	NW 70th Ave from Johnson Street to Arthur Street	Client No.:	305.265.5444
City:	Hollywood	Surveyor:	KEITH
County:	Broward	K & A No.:	09869.04
State Road:	N/A	K & A Crew:	AJ, CJ, JS, WF

Type of Utility

BT	- Buried Telephone
CATV	- Cable Television
BE	- Electrical
FM	- Force Main
FOC	- Fiber Optic Cable
GM	- Gas
PP	- Petroleum Products
RW	- Reclaimed Water
SAN	- Sanitary Sewer
EXP	- Exploratory
STM	- Storm Sewer
TS	- Traffic Signal
UNK	- Unknown
WM	- Water Main

Material

AC	- Asbestos Cement
CONC	- Concrete
CIP	- Cast Iron Pipe
CMP	- Corrugated Metal Pipe
DB	- Duct Bank
DBC	- Direct Buried Cable
DIP	- Ductile Iron Pipe
HDPE	- High Density Polyethylene
PE	- Polyethylene Pipe
PVC	- Polyvinyl Chloride
RCP	- Reinforced Concrete Pipe
STL	- Steel
UNK	- Unknown
TRC	- Terracotta
VCP	- Vitrified Clay Pipe
CP	- Concrete Pipe
Conduits	- (amount x size)

Marked By

HL	- Hub & Lath
IRC	- 5/8" IR & Cap *
N/D	- Nail & Disk *
X	- "x" in Concrete

* Disk and Cap Stamped "KEITH & ASSOC. LB 6860"

Units:	US Survey Feet

Test Hole No.	Marked By	Northing	Easting	Utility	Size (Inches)	Material	Direction	Cross Section View	Grade Elevation	Depth(feet)	Utility Elevation
1	N/D	612621.94	909628.49	FM	SEE NOTES	DIP	⟷	◯	5.32	4.26	1.06
2	N/D	613954.17	909577.60	RW	SEE NOTES	SEE NOTES	⟷		5.91	SEE NOTES	N/A
3	N/D	613955.31	909585.33	FM	8"	PVC	↕	◯	5.93	3.20	2.73
4	N/D	613966.32	909577.20	WM	8"	CI	⟷	◯	5.99	3.85	2.14
5	N/D	614008.03	909573.47	FM	8"	PVC	↕	◯	5.80	3.05	2.75
6	N/D	613959.52	909683.36	FM	6"	DIP	↕	◯	5.75	2.90	2.85

Comments

1	UNABLE TO VERIFY UTILITY SIZE DUE TO WATER TABLE. 18" PER UTILITY DRAWINGS
2	UNABLE TO VERIFY UTILITY SIZE AND MATERIAL DUE TO WATER TABLE. PROBED CYLINDRYCAL OBJECT WITH AIR LANCE AT 5.30'. 42" DUCTILE IRON PIPE PER UTILITY DRAWINGS
3	UTILITY VERIFIED
4	UTILITY VERIFIED
5	UTILITY VERIFIED

KEITH

Subsurface Utility Engineering Consultants - Utility Locating - Utility Coordination

301 East Atlantic Boulevard, Pompano Beach, FL 33060
Tel.: 954-788-3400 Fax: 954-788-3500

2160 NW 82 Avenue, Doral, FL 33122
Tel.: 305-667-5474 Fax: 305-667-5475

TEST HOLE SUMMARY

Technical Limitations -

Services will be provided with due diligence and in a manner consistent with standards of the subsurface utility locating industry. Every reasonable effort will be made to locate all utility systems of interest whether indicated on record plans available to us or not. However, no guarantee can be made that all existing utility systems can be detected, located or exposed. It may not be possible to detect utilities without prior knowledge, such as systems that are not depicted on record prints available to us. Typically the horizontal location effort will include electromagnetic induction, power source detection, and ground penetrating radar (GPR). Electromagnetic induction is a method in which a transmitted signal is applied to a metallic target. As long as the target is metallic and unbroken, the target can be traced and a receiver at the surface is used to detect the transmitted signal. If the signal cannot be applied directly to the target, induction may be produced from the surface. In this scenario bleed-off of the transmitted signal to an adjacent facility is possible, sometimes resulting in erroneous information. PVC, HDPE, concrete pipe and other non-metallic facilities cannot be located by electromagnetic methods. Power source detection is a technique used to locate naturally occurring magnetic fields that exist around cables while generating a signal (electric, telephone, CATV for example). Ground penetrating radar (GPR) is available to assist in locating non-metallic utilities and other facilities that are unidentifiable using traditional electromagnetic techniques. The accuracy of these techniques is subject to the limitation of the available technology and certain factors and field conditions beyond our control, such as the size, depth and conductivity of the target, the site conditions and access, soil conditions, depth to water table and the existence of adjacent buried materials and debris. The targeting of subsurface utilities, although highly reliable, is expressly understood to represent an approximate location of the facility marked on the ground surface. Facilities located from the surface are usually found within two feet of the surface mark. Once a possible facility has been located from the surface, vacuum excavation services should be used to visually verify and to provide the accurate horizontal location and vertical measurements (a test hole). Vacuum excavation techniques are used to provide a cost-effective service that causes minimal disturbance to the site, the utility, vehicle traffic, and is acceptable to the permitting agencies. The size of the test hole excavation is kept to a minimum, in most cases the nominal size of a test hole is 8” x 8”. This service represents the best available data on subsurface utilities given a cost-effective investigation using air/vacuum excavation. Visual verification in the test hole below the water table is not possible. An air lance probe can be used in these instances to a reasonable depth of approximately 6 feet, although results to greater depths may be possible. The bottom of the utility pipe and conduit is sometimes not directly available and in most cases can be derived from the crown of the pipe and the pipe diameter. Pipes with a diameter of 16”or less can usually be determined by exposing a potion or the entire pipe as needed. If pipe diameter is critical on pipe facilities greater than 16”, additional test holes may be required to obtain both edges. The bottom depth of multiple conduit and encased duct banks is determined by excavating down one edge of the utility. Additional test holes are needed to accurately document edges, configuration and top and bottom depths. Conditions under multiple or encased duct bank facilities cannot be excavated and therefore the existence of another facility cannot be confirmed. It is important to remember that the bottom edge of the facility may not represent its lowest point, and the shape or configuration of the facility may not be the same on both sides. Locating underground utilities is not an exact science. The reporting of a negative result (no facility found) should not be used as a positive determination that the subject area is clear of all facilities or that the facility does not exist. CLIENT shall hold harmless and indemnify Keith and Associates, Inc. (K&A) against any losses as a result of limitations within the equipment, but not against negligence on the part of K&A. Use of this service does not relieve interested parties from their responsibility to make required notification prior to excavation, nor does it relieve utility owners of their responsibility to mark the location of their facilities. K&A will not be responsible for damage caused by others. K&A will not be responsible for utilities that cannot be located with the equipment and techniques provided, or those located underneath other utilities. If records research is not part of the scope of services, the utility owner’s marks will be used to identify the utility. K&A will not be responsible for correcting mistakes made by other locators. Where vacuum excavation services are used and no utility is found at the mark provided by the utility at a depth of 5 feet, the excavation will be backfilled, referenced and invoiced as one test hole.

APPENDIX 4

SECTION 711
THERMOPLASTIC PAVEMENT MARKINGS

711-1 Description.

Apply new thermoplastic pavement markings, or refurbish existing thermoplastic pavement markings, in accordance with the Contract Documents.

711-2 Materials.

Use only materials listed on the Department's Approved Product List (APL) meeting the following requirements.

Standard and Refurbishment Thermoplastic.....	971-1 and 971-5
Preformed Thermoplastic.....	971-1 and 971-6
High Friction Thermoplastic.....	971-1 and 971-10
Glass Spheres	971-1 and 971-2

Use sand materials meeting the requirements of 971-5.4.

The Engineer will take random samples of all material in accordance with the Department's Sampling, Testing and Reporting Guide schedule.

711-3 Equipment.

Use equipment capable of providing continuous, uniform heating of the pavement marking material to temperatures exceeding 390ºF, mixing and agitation of the material in the reservoir to provide a homogeneous mixture without segregation. Use equipment that will maintain the pavement marking material in a plastic state, in all mixing and conveying parts, including the line dispensing device until applied. Use equipment which can produce varying width lines and which meets the following requirements:

1. Capable of traveling at a uniform, predetermined rate of speed, both uphill and downhill, to produce a uniform application of pavement marking material and capable of following straight lines and making normal curves in a true arc.

2. Capable of applying glass spheres to the surface of the completed pavement marking by a double drop application for standard thermoplastic pavement markings and a single drop application for recapping and refurbishment thermoplastic pavement markings. The bead dispenser for the first bead drop shall be attached to the pavement marking machine in such a manner that the beads are dispensed closely behind the installed line. The second bead dispenser bead shall be attached to the pavement marking machine in such a manner that the beads are dispensed immediately after the first bead drop application. Use glass spheres dispensers equipped with an automatic cut-off control that is synchronized with the cut-off of the thermoplastic material and applies the glass spheres uniformly on the entire pavement markings surface with 50 to 60% embedment.

3. Equipped with a special kettle for uniformly heating and melting the pavement marking material. The kettle must be equipped with an automatic temperature control device and material thermometer for positive temperature control and to prevent overheating or scorching of the thermoplastic material.

4. Meet the requirements of the National Fire Protection Association, state, and local authorities.

711-4 Application.

711-4.1 General: Remove existing pavement markings such that scars or traces of removed markings will not conflict with new pavement markings by a method approved by the Engineer. Cost for removing conflicting pavement markings during maintenance of traffic operations to be included in Maintenance of Traffic, Lump Sum.

Before applying pavement markings, remove any material that would adversely affect the bond of the pavement markings by a method approved by the Engineer.

Before applying pavement markings to any portland cement concrete surface, apply a primer, sealer, or surface preparation adhesive of the type recommended by the manufacturer. Offset longitudinal lines at least 2 inches from any longitudinal joints of portland cement concrete pavement.

Apply pavement markings to dry surfaces only, and when the ambient air and surface temperature is at least 50ºF and rising for asphalt surfaces and 60°F and rising for concrete surfaces.

Apply pavement markings to the same tolerances in dimensions and in alignment specified in 710-5. When applying pavement markings over existing markings, ensure that no more than 2 inches on either end and not more than 1 inch on either side of the existing line is visible.

Apply thermoplastic material to the pavement by extrusion or other means approved by the Engineer.

Conduct field tests in accordance with FM 5-541.Take test readings representative of the pavement marking performance. Remove and replace pavement markings not meeting the requirements of this Section at no additional cost to the Department.

With the exception of short-term raised rumble strips, wait at least 14 days after constructing the final asphalt surface course to place thermoplastic pavement markings. Installation of thermoplastic on concrete requires a clean, dry surface. Follow the manufacturer's recommendations for surface preparation for thermoplastic on concrete. Provide temporary pavement markings during the interim period prior to opening the road to traffic.

711-4.1.1 Preformed Thermoplastic: Apply markings to dry surfaces only and when ambient air temperature is at least 32°F. Prior to installation, follow the manufacturer's recommendations for pre-heating.

711-4.1.2 High Friction Thermoplastic: High friction thermoplastic may be used as an alternative to preformed thermoplastic for special emphasis crosswalk markings. Apply markings only by gravity or air pressure thermoplastic hand liners set-up with double drop bead attachments. Install markings in accordance with the manufacturer's recommendations.

711-4.2 Thickness:

711-4.2.1 Standard Thermoplastic Markings: Apply or recap standard thermoplastic pavement markings for longitudinal lines to attain a minimum thickness of 0.10 inch or 100 mils and a maximum thickness 0.15 inch or 150 mils when measured above the pavement surface.

All chevrons, diagonal and transverse lines, messages, symbols, and arrows, wherever located, will have a thickness of 0.09 inch or 90 mils to 0.12 inch or 120 mils when measured above the pavement surface.

Measure, record and certify on Department approved form and submit to the Engineer, the thickness of white and yellow pavement markings in accordance with FM 5-541.

The Engineer will verify the thickness of the pavement markings in accordance with FM 5-541 within 30 days of receipt of the Contractor's certification.

711-4.2.2 Refurbishment Thermoplastic Markings: Apply a minimum of 0.06 inch or 60 mils of thermoplastic material. Ensure that the combination of the existing marking and the overlay after application of glass spheres does not exceed the maximum thickness of 0.150 inch or 150 mils for all lines.

Measure, record and certify on Department approved form and submit to the Engineer, the thickness of white and yellow pavement markings in accordance with FM 5-541.

The Engineer will verify the thickness of the pavement markings in accordance with FM 5-541 within 30 days of receipt of the Contractor's certification.

711-4.2.3 Preformed Thermoplastic: Apply 0.125 inch or 125 mils of preformed thermoplastic material.

Measure, record and certify on Department approved form and submit to the Engineer, the thickness of the pavement markings in accordance with FM 5-541.

711-4.2.4 High Friction Thermoplastic: Apply lines to attain a minimum thickness of 0.09 inch or 90 mils and a maximum thickness of 0.12 inch or 120 mils, when measured above the pavement surface.

Measure, record and certify on Department approved form and submit to the Engineer, the thickness of the pavement markings in accordance with FM 5-541.

711-4.3 Retroreflectivity: Apply white and yellow pavement markings that will attain an initial retroreflectivity of not less than 450 mcd/lx·m^2 and not less than 350 mcd/lx·m^2, respectively for all longitudinal lines. All chevrons, diagonal lines, stop lines, messages, symbols, and arrows will attain an initial retroreflectivity of not less than 300 mcd/lx·m^2 and 250 mcd/lx·m^2 for white and yellow respectively. All crosswalks and bicycle markings shall attain an initial retroreflectivity of not less than 275 mcd/lx·m^2. Black pavement markings must have a retroreflectance of less than 5 mcd/lx m^2.

Measure, record and certify on Department approved form and submit to the Engineer, the retroreflectivity of white and yellow pavement markings in accordance with FM 5-541.

711-4.4 Glass Spheres:

711-4.4.1 Longitudinal Lines: For standard thermoplastic markings, apply the first drop of Type 4 or larger glass spheres immediately followed by the second drop of Type 1 glass spheres. For refurbishment thermoplastic markings, apply a single drop of Type 3 glass spheres. Apply reflective glass spheres to all markings at the rates determined by the manufacturer's recommendations.

711-4.4.2 Chevrons, Diagonal and Transverse Lines, Messages, Symbols, and Arrows: For standard or refurbishment thermoplastic markings, apply a single drop of Type 1 glass spheres. Apply retroreflective glass spheres to all markings at the rates determined by the manufacturer's recommendations.

Apply a mixture consisting of 50% glass spheres and 50% sharp silica sand to all standard thermoplastic crosswalk lines at the rates determined by the manufacturer's recommendations.

711-4.4.3 Preformed Markings: These markings are factory supplied with glass spheres and skid resistant material. No additional glass spheres or skid resistant material should be applied during installation.

711-5 Contractor's Responsibility for Notification.

Notify the Engineer prior to the placement of the materials. At the time of notification, submit a certification to the Engineer with the APL number and the batch or Lot numbers of the thermoplastic and glass spheres to be used. Packaging labels that contain the information required by 971-1.1 will be accepted in lieu of a certification.

711-6 Protection of Newly Applied Thermoplastic Pavement Markings.

Do not allow traffic onto or permit vehicles to cross newly applied pavement markings until they are sufficiently dry. Remove and replace any portion of the pavement markings damaged by passing traffic or from any other cause, at no additional cost to the Department.

711-7 Observation Period.

Longitudinal pavement markings are subject to a 180 day observation period under normal traffic. The observation period shall begin with the satisfactory completion and acceptance of the work.

The longitudinal pavement markings shall show no signs of failure due to blistering, excessive cracking, chipping, discoloration, poor adhesion to the pavement, loss of retroreflectivity or vehicular damage. The retroreflectivity shall meet the initial requirements of 711-4.3. The Department reserves the right to check the retroreflectivity any time prior to the end of the observation period.

Replace, at no additional expense to the Department, any longitudinal pavement markings that do not perform satisfactorily under traffic during the 180 day observation period.

711-8 Corrections for Deficiencies.

Recapping applies to conditions where additional pavement marking material is applied to new or refurbished pavement markings to correct a thickness deficiency. Correct deficiencies by recapping or removal and reapplication of a 1 mile section centered around the deficiency, as determined by the Engineer, at no additional cost to the Department.

711-9 Submittals.

711-9.1 Submittal Instructions: Prepare a certification of quantities, using the Department's current approved form, for each project in the Contract. Submit the certification of quantities and daily worksheets to the Engineer. The Department will not pay for any disputed items until the Engineer approves the certification of quantities.

711-9.2 Contractor's Certification of Quantities: Request payment by submitting a certification of quantities no later than Twelve O clock noon Monday after the estimate cut-off date or as directed by the Engineer, based on the amount of work done or completed. Ensure the certification of quantities consists of the following:

1. Contract Number, FPID Number, Certification Number, Certification Date and the period that the certification represents.

2. The basis for arriving at the amount of the progress certification, less payments previously made and less any amount previously retained or withheld. The basis will include a detailed breakdown provided on the certification of items of payment.

711-10 Method of Measurement.

The quantities, authorized and acceptably applied, under this Section will be paid as follows:

1. The length, in gross miles, of solid, 10'-30' skip, 3'-9' dotted, 6'-10' dotted, 2'-2' dotted, and 2'-4' dotted lines.

2. The length, in linear feet, of transverse lines, diagonal lines, chevrons, and parking spaces.

3. The number of pavement messages, symbols, and arrows. Each arrow is paid as a complete marking, regardless of the number of "points" or directions.

4. The area, in square feet, for removal of existing markings acceptably removed. Payment for removal of conflicting markings will be in accordance with 102-5.8. Payment for removal of non-conflicting markings will be paid separately.

The gross mile measurement will be taken as the distance from the beginning of the thermoplastic line to the end of the thermoplastic line and will include the unmarked gaps for skip and dotted lines. The gross mile measurement will not include designated unmarked lengths at intersections, turn lanes, etc. Final measurement will be determined by plan dimensions or stations, subject to 9-1.3.1.

711-11 Basis of Payment.

Prices and payments will be full compensation for all work specified in this Section, including, all cleaning and preparing of surfaces, furnishing of all materials, application, curing and protection of all items, protection of traffic, furnishing of all tools, machines and equipment, and all incidentals necessary to complete the work. Final payment will be withheld until all deficiencies are corrected.

Payment will be made under:

Item No. 711	Thermoplastic Pavement Markings	
		Solid - per gross mile.
		Solid - per linear foot.
		Skip - per gross mile.
		Dotted - per gross mile.
		Message or Symbol - each.
		Arrows - each.
		Yield Line - per linear foot.
		Remove - per square foot.

APPENDIX 5

SURVEY/AS-BUILT
CAD DRAWING STANDARDS

This document serves as City of Hollywood Department of Public Utilities - Computer Aided Design and Drafting (CADD) data standard for any Public Utilities related project

Contents

City of Hollywood - Department of Public Utilities

Public Utilities – GIS: As-Built CAD Standards

Engineering firms have their own standards for creating CAD drawings. These standards are inconsistent between the firms. A lot of time is spent due to the persisting inconsistencies and complexity when transferring the drawings from "Native digitizing Software" to that of "Final deliverable format".

This document is developed to provide Computer Aided Drafting (CAD) standards and guidelines for use by Contractors, Engineers, and Contractors who are involved in digitizing of Potable, Sanitary, Drainage, Raw, Reclaimed, and Brine water features with reference to hard copy As-Built drawings for the City of Hollywood - Department of Public Utilities.

As of October 1, 2016, all As-Built plans submitted to the City of Hollywood - Department of Public Utilities must be provided in electronic computer aided design (CAD) format. The following standards must be followed for all plans. Construction Drawings will not be approved until these standards are met. OR Applications for payment will not be approved without updated redline As-Built accepted by the project manager. Final Payment will not be approved without acceptance of the As-Built in the CAD format prescribed in this document.

As-Built Drawing Procedures

During the construction of the project, the Contractor shall be responsible for maintaining a set of As-Built drawings. The basis of the As-Built drawings shall be the Construction Drawings as reviewed and approved by the Project Manager - City of Hollywood - Department of Public Utilities.

1. The Contractor shall maintain one set of As-Built drawings at the Project Site. On these, all project conditions, locations, configurations, and any other changes or deviations that may vary from the information represented on the original Construction Design Drawings shall be noted; including buried or concealed construction and utility features that are revealed during the course of construction. *Special attention shall be given to recording the horizontal and vertical location of all buried utilities that differ from the locations indicated, or which were not indicated on the Construction Design Drawings.* Drawings shall also note the location of any other buried infrastructure such as landscape irrigation, onsite drainage, etc., as well as any surface building obstacles such as ponds, fences, walls, rocks,

etc. As-Built drawings shall be supplemented by any detailed sketches as necessary or directed to fully indicate the facilities as actually constructed.

2. The master As-Built drawings shall be maintained up-to-date during the progress of the Project. Red ink shall be used for alterations and notes. Notes shall identify relevant changes by number and date.

3. As-Built drawings shall be accessible to the Department of Public Utilities personnel at all times during the construction period.

4. The As-Built drawings shall be submitted to the Department of Public Utilities upon completion of the project.

    a. The Department of Public Utilities staff will review for completeness, accuracy, and format of submitted As-Built drawings. If the As-Built drawings are considered unacceptable, they will be returned to the Contractor for correction and resubmitted.

Drafting Software

AutoCAD MAP/AutoCAD Civil 3D and higher version software should be used for drafting/attributing the potable, sanitary, drainage, raw, reclaimed, and brine water features. The main reason is that they support object data required for Department of Public Utilities - GIS project. All drawings shall be DWG format.

Drawing File Naming Convention, Setup and Structure

- All drafting shall be done at 1:1 (1 AutoCAD unit = 1 foot), in engineering units, in the AutoCAD model space environment
- It is important to create the drawings using a standard schema that will allow smoother transition to the GIS platform. Drawings must be created in NAD 1983 HARN State Plane Florida East FIPS 0901 Feet coordinate system.

Layerization

- **Table 1: Feature Class Names and Geometry Types** illustrates the Layer name naming convention that should be used for each asset. It also identifies how Blocks should be named when applicable.

- All layers must conform to the proper geometry type (Line, Arc, LWPolyline, PolyLine, 3DPolyline, MPolygon, Insert, Point/Block) as indicated in **Table 1**.
- All layers must contain only the features that are described for that layer. For example, the Manhole Drainage layer must only contain the Storm Water manhole points and not such features as control valve, clean out, or water fittings.
- All layers must be clearly differentiated from each other.
- All layers must be differentiated among Abandoned, New, and Existing utility related features. For example, 20-WATER LINE-ABANDONED, 20-WATER LINE-NEW, 20-WATER LINE-EXISTING.
- All layers must be differentiated according to the size of the pipe. For example, 20-WATER LINE.
- Point / Block features should not be exploded. If exploded, they will need to be joined again prior to submitting the deliverable(s).
- All annotations should be in model space properly created when a layer requires it. The layer name must match the layer name for the particular feature.

Table 1
Feature Class Names and Geometry Types

FEATURE CLASS NAMES AND GEOMETRY TYPES			
Asset	**Entity**	**Layer**	**RefName**
Anchor Guy Wire	Insert, Point, Block	XUTILS	046C
Asphalt Pavement	Line, Arc, LWPolyline, PolyLine, 3DPolyline	AP	
Back Flow Preventor	Insert, Point, Block	WATERLINE	BFP
Back of Sidewalk	Line, Arc, LWPolyline, PolyLine, 3DPolyline	SWKB	
Bollard	Insert, Point, Block	XMISC	042C
Brine Water Line	Line, Arc, LWPolyline, PolyLine, 3DPolyline	BRINE WATER	
Brine Water Valve	Insert, Point, Block	BRINE WATER	025C
Buried Electric	Line, Arc, LWPolyline, PolyLine, 3DPolyline	ELECTRIC	
Buried Fiber Optic FPL	Line, Arc, LWPolyline, PolyLine, 3DPolyline	FPLFO	
Buried Telephone	Line, Arc, LWPolyline, PolyLine, 3DPolyline	BELLSOUTH	
Cable TV	Insert, Point, Block	CABLE TV	CATV
Catch Basin	Insert, Point, Block	CB	
Cleanout	Insert, Point, Block	CLNO	
Concrete Light Pole	Insert, Point, Block	XUTILS	055C
Concrete Pavement	Line, Arc, LWPolyline, PolyLine, 3DPolyline	CPVT	
Concrete Power Pole	Insert, Point, Block	XUTILS	051C
Concrete Sidewalk	Line, Arc, LWPolyline, PolyLine, 3DPolyline	CONC SWLK	
Curb Inlet	Insert, Point, Block	CI	039C
Easement	Line, Arc, LWPolyline, PolyLine, 3DPolyline	ESMT	
Edge of Asphalt	Line, Arc, LWPolyline, PolyLine, 3DPolyline	ASPH EDGE	
Edge of Asphalt Pavement	Line, Arc, LWPolyline, PolyLine, 3DPolyline	ASPH EOP	
Edge of Concrete	Line, Arc, LWPolyline, PolyLine, 3DPolyline	CONC EDGE	
Edge of Concrete Curb	Line, Arc, LWPolyline, PolyLine, 3DPolyline	CONC CURB	

FEATURE CLASS NAMES AND GEOMETRY TYPES			
Asset	**Entity**	**Layer**	**RefName**
Edge of Curb	Line, Arc, LWPolyline, PolyLine, 3DPolyline	EOCURB	
Edge of Pavement	Line, Arc, LWPolyline, PolyLine, 3DPolyline	EOP	
Electric Box	Insert, Point, Block	ELECTRIC BOX	EB
Fire Hydrant	Insert, Point, Block	FIRE HYDT	033C
Flag Pole	Insert, Point, Block	XMISC	FP
Force Main Sanitary Sewer Line	Line, Arc, LWPolyline, PolyLine, 3DPolyline	FM SANITARY SEWER	
Force Main Storm Water Line	Line, Arc, LWPolyline, PolyLine, 3DPolyline	FM STORM DRAINAGE	
Front of Sidewalk	Line, Arc, LWPolyline, PolyLine, 3DPolyline	SWKF	
Gas Line	Line, Arc, LWPolyline, PolyLine, 3DPolyline	GAS LINE	
Gas Meter	Insert, Point, Block	GAS	027C
Gas Riser	Insert, Point, Block	GAS	GAS
Gas Valve	Insert, Point, Block	GAS	025C
Gravity Sanitary Sewer Line	Line, Arc, LWPolyline, PolyLine, 3DPolyline	G SANITARY SEWER	
Gravity Storm Water Line	Line, Arc, LWPolyline, PolyLine, 3DPolyline	G STORM DRAINAGE	
Handhole	Insert, Point, Block	XUTILS	HH
Irrigation Control Valve	Insert, Point, Block	XUTILS	IRRCV
Irrigation Meter	Insert, Point, Block	XUTILS	IRRM
Mail Box	Insert, Point, Block	XMISC	MBX
Manhole Drainage	Insert, Point, Block	MHD	041C-DRAINAGE
Manhole Electric	Insert, Point, Block	MHE	ELECMH
Manhole FPL	Insert, Point, Block	MHFPL	041C
Manhole Sanitary	Insert, Point, Block	MHS	041C-SANITARY
Manhole Telephone	Insert, Point, Block	MHT	BSMH
Mast Arm	Insert, Point, Block	XUTILS	059C
Metal Light Pole	Insert, Point, Block	XUTILS	MLP
Metal Pipe Iron Rod	Insert, Point, Block	PIP	004C
Monitoring Well	Insert, Point, Block	XUTILS	MW
Paver Walk	Line, Arc, LWPolyline, PolyLine, 3DPolyline	PAVER WALK	
Railroad Crossing Gates	Insert, Point, Block	XUTILS	079C

FEATURE CLASS NAMES AND GEOMETRY TYPES			
Asset	**Entity**	**Layer**	**RefName**
Raw Water	Insert, Point, Block	RWATR STRC	RW
Raw Water Line	Line, Arc, LWPolyline, PolyLine, 3DPolyline	RWATR	
Reclaimed Water Valve	Insert, Point, Block	RCWATR	025C
Reclaimed Water Line	Line, Arc, LWPolyline, PolyLine, 3DPolyline	RCWATR	
Sanitary Sewer Line	Line, Arc, LWPolyline, PolyLine, 3DPolyline	SANITARY SEWER	
Sanitary Sewer Valve	Insert, Point, Block	SANITARY SEWER	025C
Sign	Insert, Point, Block	XMISC	001T
Signal Pole	Insert, Point, Block	XUTILS	057C
Sprinkler	Insert, Point, Block	XUTILS	SPKR
Storm Water Line	Line, Arc, LWPolyline, PolyLine, 3DPolyline	STORM DRAINAGE	
Storm Water Valve	Insert, Point, Block	STORM DRAINAGE	025C
Street Light Pole	Insert, Point, Block	XUTILS	053C
Traffic Signal Box	Insert, Point, Block	XUTILS	073C
Valve	Insert, Point, Block	XUTILS	025C
Water Line	Line, Arc, LWPolyline, PolyLine, 3DPolyline	WATER LINE	
Water Meter	Insert, Point, Block	WATERLINE	027C
Water Valve	Insert, Point, Block	WATERLINE	025C
Wood Light Pole	Insert, Point, Block	XUTILS	WLP
Wood Power Pole	Insert, Point, Block	XUTILS	WPP

Note

- It is not mandatory for all Layers listed above to exist in a drawing. Layers / Tables should be created / populated only when a feature occurs in a particular drawing.
- The Drawing can contain other layers for plan, profile, streets, text, information pertinent to engineering, etc.
- Any feature not included in the above list should be informed to the City of Hollywood - Department of Public Utilities and shared in table format (CSV, TXT, or Excel). This will allow us to refine our list of possible survey features for data processing and GIS integration purposes.
- **Table 2: Enterprise GIS Database Model - Feature Class Names and Geometry Types** in the Appendix section illustrates all utility related features supported in the City of Hollywood - Department of Public Utilities GIS Enterprise database model.

- The information presented here is subject to change in order to support the Department of Public Utilities' mission. Any updates will be shared with Contractors, Engineers, and Contractors

PolyLines

Break Mains at:

- All Pressurized Mains intersections
    - Fittings
        - Cross
        - Reducer
        - Tee
    - System valves
        - Ball, butterfly, gate, plug valves
        - pressure reducer valves
        - pressure (zone) separation valves
        - reservoir valves
        - system separation (normally closed)
        - altitude valves
    - Pump stations
    - Treatment plant
    - Reservoir

Do NOT break Mains at:

- Fittings
    - Bend
    - Tap
    - Wye
    - Clamp
- Laterals or lateral services
- Check valves
- Connection points

-

Polygons

- All Polygon type features must be completely closed.
- All edges on polygon features must be snapped together at the vertices. Gaps in polygon boundaries will not be accepted.

Deliverables

- The Contractor shall submit three hardcopy of the As-Built drawings.
- The Contractor shall also submit electronic CAD files containing the information depicted on the As-Built drawings.
- Files shall be submitted on portable media such as CD-ROM, or DVD in AutoCAD format. Files may be compressed in a format that is compatible with the WinZip decompression software. Email is also acceptable but the City of Hollywood may request the file(s) in digital format at any moment.

Datum Policy

Datum policy is for electronic submittals only. As-Built drawings shall be referenced to at least three points on the drawing that have noted horizontal and vertical datum information. These three points may be existing control, new control, or parcel corners. As long as the drawing has a 1:1 relationship with these three points, the remainder of the drawing can be in a project coordinate system. The Department of Public Utilities will use these three points for location and rotation of the project coordinates at a later date.

Horizontal Datum

The coordinate system for all As-Built drawings shall be Florida East State Plane Coordinates, NAD 1983 HARN in US Survey feet. (NAD 1983 HARN State Plane Florida East FIPS 0901 Feet)

Vertical Datum

All elevations shall be referenced to the NAVD 88 datum with elevations given in US Survey feet. Any elevation using NGVD 29 vertical datum must be converted to NAVD 88.

Accuracy

Control discovery information is to be survey accurate.

The Department of Public Utilities is looking for accurate enough information to:

- Geolocate buried facilities, and
- Incorporate the As-Built information into the Department of Public Utilities' geographic information system.

Metadata Policy

All new land survey information (parcel meets & bounds, control, topographic information) within the submitted As-Built shall be accompanied with metadata, describing the following:

- Surveyor Name
- Survey Company
- Date Surveyed
- Control Reference Used (Control ID, Type, Coordinate Datum)
- Control Type (PK nail, Brass Marker, etc.)

Other Information

All files associated with the post-processing of GPS data including raw and post-processed GPS data shall be included in the submitted deliverable to the City of Hollywood - Department of Public Utilities. These files can include but not be limited to: .ssf GPS data, import files, export files, and correction files.

Elevation files must be delivered as well in text file format. At a minimum, these files must include unique ID, X-Coordinate, Y-Coordinate, Elevation, collected feature code, and collected feature description.

Appendix

Table 2: Enterprise GIS Database Model - Feature Class Names and Geometry Types

FEATURE CLASS NAMES AND GEOMETRY TYPES			
Feature Class Name	**Dataset Name**	**Type**	**Example: Layer Contents**
Sewer Features			
sCleanOut	Sewer	Point/Block	Clean Out, Flushing Structure
sControlValve	Sewer	Point/Block	Air Release
sDischargePoint	Sewer	Point/Block	Discharge Point
sElevationPt	Sewer	Point/Block	Elevation Points
sFitting	Sewer	Point/Block	Tee, Bends, Pipe Change, Reducer, Wye, Dead End, Transition, Reducing Tee, Plug, Cross, Coupling, Cap, 90 Bend, 45 Bend, 22 1/2 Bend, 11 1/4 Bend
sLiftStation	Sewer	Point/Block	Lift Station
sLUMConnection	Sewer	Point/Block	LUM Connection
sManhole	Sewer	Point/Block	Standard, Drop, Monitoring, Diversion, Dog House, Metering
sNetworkStructure	Sewer	Point/Block	Grease Trap, Metering Facility, Sampling Station, Septic Tank, Wet Well, Dry Well
sPump	Sewer	Point/Block	Booster, Chopper, Grinder, Non-Clog, Submersible
sServiceConnection	Sewer	Point/Block	Service Connection
sSystemValve	Sewer	Point/Block	Gate, Plug
sTestStation	Sewer	Point/Block	test Station
sValveOperator	Sewer	Point/Block	Valve Operator
sVault	Sewer	Point/Block	Vault

sGravityMain	Sewer	PolyLine	Collector, Inverted Siphon, Trunk
sLateralLine	Sewer	PolyLine	Lateral
sPressurizedMain	Sewer	PolyLine	Vitrified Main, Pre-Stressed Concrete Cylinder, Polyvinyl Chloride, Polyethylene, High Density Polyethylene, Ductile Iron, Cured in Place, Cast Iron, Asbestos Cement
sCasing	Sewer	MPolygon	Pipe Casing (Steel Casing, Concrete Encasement, High Density Polyethylene, Polyvinyl Chloride, Reinforced Concrete)
Feature Class Name	**Dataset Name**	**Type**	**Example: Layer Contents**
Water Features			
wControlValve	Water	Point/Block	Air Release, Altitude, Anti-Back Flow, Back Flow Control, Blow Off, Detector Check, Double Check, Pressure Relief, Pressure Vacuum, Reduce Pressure Zone, Simple Check, Surge Relief
wCurbStopValve	Water	Point/Block	Curb Stop Valve
wElevationPt	Water	Point/Block	Elevation Points
wFitting	Water	Point/Block	11 1/4 Bend, 22 1/2 Bend, 45 Bend, 90 Bend, Bend, Cap, Coupling, Cross, Other, Plug, Reducer, Reducing Tee, Sleeve, Tap, Tee, Transition, Wye
wHydrant	Water	Point/Block	Fire Hydrant
wLUMConnection	Water	Point/Block	LUM Connection
wManhole	Water	Point/Block	Manhole
wNetworkStructure	Water	Point/Block	Access Manhole, Pneumatic Tank, Treatment Plant
wPump	Water	Point/Block	Pump
wSamplingStation	Water	Point/Block	Sampling Point / Station
wServiceConnection	Water	Point/Block	Service Connection, Water Meter
wSiameseConnection	Water	Point/Block	Siamese Connection

wStorageTank	Water	Point/Block	Storage Tank
wSystemValve	Water	Point/Block	Gate, Butterfly, Tapping, Hydrant, Zone, Meter, Air Release, Blow Off, Main Line, Plug, Gate
wTestStation	Water	Point/Block	Test Station
wAbandonedLine	Water	PolyLine	Abandoned Lines
wCasing	Water	PolyLine	Pipe Casing (Steel Casing, Concrete Encasement, Ductile Iron)
wConstructionLine	Water	PolyLine	Construction Line
wLateralLine	Water	PolyLine	Residential, Fire, Commercial, Irrigation, Sampling
wMainLine	Water	PolyLine	Distribution, Transmission
wPressureZone	Water	MPolygon	Pressure Zone
Feature Class Name	**Dataset Name**	**Type**	**Example: Layer Contents**
Storm Water Features			
swCleanOut	Storm Water	Point/Block	Clean Out, Flushing Structure
swControlValve	Storm Water	Point/Block	Flap Gate
swDischargePoint	Storm Water	Point/Block	Discharge Point
swElevationPt	Storm Water	Point/Block	Elevation Points
swFitting	Storm Water	Point/Block	Tee, reducer Plug, Cross, Cap, 90 Bend, 45 Bend, 22 1/2 Bend
swInlet	Storm Water	Point/Block	Inlet
swManhole	Storm Water	Point/Block	Conflict, Pollution Control, Sedimentation, Split, Standard
swNetworkStructure	Storm Water	Point/Block	Diversion Chamber, Diversion Point, Junction Chamber, Pump Station, Split Manhole, Storage Basin, Tide Chamber, Lift Station, Discharge Structure, Virtual Junction
swPump	Storm Water	Point/Block	Pump
swPumpStation	Storm Water	Point/Block	Pump Station

swSystemValve	Storm Water	Point/Block	Ball, Butterfly, Cone, Gate, Plug, Round way
swTestStation	Storm Water	Point/Block	Test Station
swWeirStructure	Storm Water	Point/Block	Broad-Crested, Combination, Labyrinth, Minimum Energy Loss, Sharp-Crested, V-Notch
swWell	Storm Water	Point/Block	Well
swCasing	Storm Water	PolyLine	Access Tunnel, Casement, Conduit Bridge, Protective Tunnel
swCulvert	Storm Water	PolyLine	Culvert
swDrainfield	Storm Water	PolyLine	DF, INF
swGravityMain	Storm Water	PolyLine	Gravity Main
swOpenDrain	Storm Water	PolyLine	Open Drain
swPressurePipe	Storm Water	PolyLine	Pressure Pipe
swVirtualDrainline	Storm Water	PolyLine	Virtual Drain line
swDetention	Storm Water	MPolygon	Detention
Feature Class Name	**Dataset Name**	**Type**	**Example: Layer Contents**
Brine Disposal			
bdControlValve	Brine Disposal	Point/Block	Casement
bdElevationPt	Brine Disposal	Point/Block	Elevation Points
bdFitting	Brine Disposal	Point/Block	Wye, Transition, Tee, reducer Plug, Cap, 90 Bend, 45 Bend, 22 1/2 Bend
bdManhole	Brine Disposal	Point/Block	Manhole
bdNetworkStructure	Brine Disposal	Point/Block	Network Structure
bdPump	Brine Disposal	Point/Block	Pump
bdSystemValve	Brine Disposal	Point/Block	Gate, Butterfly
bdCasing	Brine Disposal	PolyLine	Casement
bdPressurizedMain	Brine Disposal	PolyLine	Transite, Polyvinyl Chloride, Polyethylene, High Density Polyethylene, Chlorinated Polyvinyl

			Chloride
Feature Class Name	**Dataset Name**	**Type**	**Example: Layer Contents**
Raw Water			
rwAbandonedPoint	Raw Water	Point/Block	Abandoned Point
rwControlValve	Raw Water	Point/Block	Air Release, Altitude, Atmospheric Vacuum, Blow Off, Simple Check
rwElevationPt	Raw Water	Point/Block	Elevation Points
rwFitting	Raw Water	Point/Block	Wye, Transition, Tap, Sleeve, Reducer, Plug, Cross, Coupling, Cap, 90 Bend, 45 Bend, 22 1/2 Bend, 11 1/4 Bend
rwNetworkStructure	Raw Water	Point/Block	Meter Station
rwPump	Raw Water	Point/Block	Pump
rwSamplingStation	Raw Water	Point/Block	Sampling Station
rwSystemValve	Raw Water	Point/Block	Butterfly, Gate, tapping
rwTestStation	Raw Water	Point/Block	Test Station
rwAbandonedLine	Raw Water	PolyLine	Abandoned Line
rwCasing	Raw Water	PolyLine	Casing
rwConstructionLine	Raw Water	PolyLine	Construction Line
rwMain	Raw Water	PolyLine	CIP, DIP, HDPE, PVC, RCP, SP, SSP
Feature Class Name	**Dataset Name**	**Type**	**Example: Layer Contents**
Reclaimed Water			
rcControlValve	Reclaimed Water	Point/Block	Air Release, Back Flow Control, Double Check, Simple Check
rcDischargePoint	Reclaimed Water	Point/Block	Meter
rcElevationPt	Reclaimed Water	Point/Block	Elevation Points
rcFitting	Reclaimed Water	Point/Block	Tee, Reducer, Plug, Coupling, Cap, 90 Bend, 45 Bend, 22 1/2 Bend, 11 1/4

			Bend
rcManhole	Reclaimed Water	Point/Block	Manhole
rcNetworkStructure	Reclaimed Water	Point/Block	Flow Meter, Monitoring Well, Pump Station, Storage Basin, Treatment Plant
rcPump	Reclaimed Water	Point/Block	Pump
rcSystemValve	Reclaimed Water	Point/Block	Ball, Butterfly, Gate, Tapping
rcTestStation	Reclaimed Water	Point/Block	Test Station
rcCasing	Reclaimed Water	PolyLine	Casement
rcPressurizedMain	Reclaimed Water	PolyLine	CIP, DIP, HDPE, PVC
rcDetention	Reclaimed Water	MPolygon	Detention
Feature Class Name	**Dataset Name**	**Type**	**Example: Layer Contents**
Annotation Features			
sPipe_Annos	Sewer	Text	Text associated with sewer mainlines such as Diameter, Material, Offset, Slope, As-Built # etc.
sPoint_Annos	Sewer	Text	Text associated with sewer point features such as Manholes, Lift Stations etc.
wPipe_Annos	Water	Text	Text associated with water mainlines such as Diameter, Material, Offset, As-Built # etc.
wPoint_Annos	Water	Text	Text associated with water point features such as Hydrants, Valves, etc.
swPipe_Annos	Storm Water	Text	Text associated with storm water mainlines such as Diameter, Material, Offset, Slope, As-Built #

			etc.
swPoint_Annos	Storm Water	Text	Text associated with storm water point features such as clean outs, valves, fittings, inlets, manholes, etc.
Miscellaneous_Annos	W/S	Text	Miscellaneous annotations such as Schools, Parks, etc.
Address_Annos	W/S	Text	Street postal address number
StreetNames	W/S	Text	Street Names