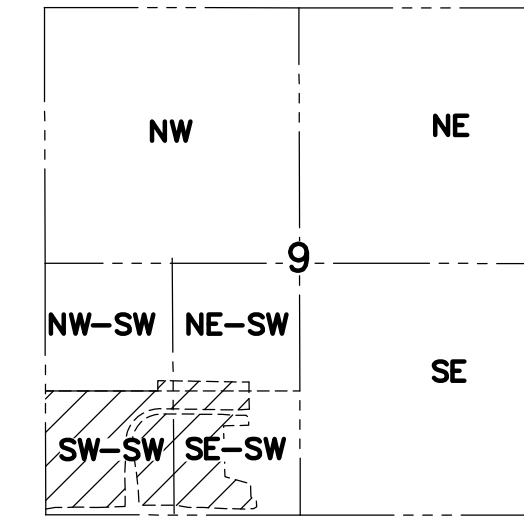


JAMESTOWN QUARRY SUBDIVISION

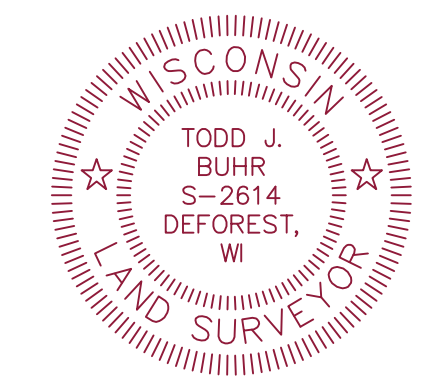
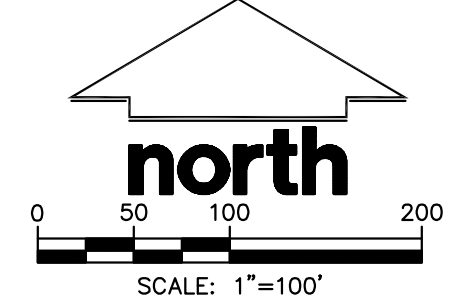
PART OF THE SOUTHWEST QUARTER OF SECTION 06, TOWNSHIP 06 NORTH, RANGE 09 EAST, CITY OF FITCHBURG, DANE COUNTY, WISCONSIN.



LOCATION MAP
NOT TO SCALE

LOT SUMMARY TABLE				
LOT	TYPE	ACREAGE	EXISTING ZONING	PROPOSED ZONING
LOT 1	COMMERCIAL	1.118	R-D	PDD-GP
LOT 2	COMMERCIAL	1.362	R-D	PDD-GP
LOT 3	COMMERCIAL	1.700	R-D	PDD-GP
LOT 4	COMMERCIAL	0.991	R-D	PDD-GP
LOT 5	MULTI FAMILY	6.524	R-D	PDD-GP
LOT 6	COMMERCIAL	6.288	R-D	R-D
OUTLOT 1	STORMWATER	0.836	R-D	PDD-GP
OUTLOT 2	PRIVATE DRIVE	1.308	R-D	PDD-GP
OUTLOT 3	FUTURE DEVELOPMENT	18.757	R-D	PDD-GP
OUTLOT 4	COMMERCIAL	19.017	R-D	R-D

- LEGEND**
- ⊕ GOVERNMENT CORNER
 - 1" IRON PIPE FOUND
 - 3/4" REBAR FOUND
 - 3/4" x 24" REBAR SET (1.50 LBS/LF)
 - PARCEL BOUNDARY
 - - - SECTION LINE
 - - - RIGHT-OF-WAY LINE
 - - - CENTERLINE
 - - - CHORD LINE
 - - - PLATTED LOT LINE
 - - - CORPORATE LIMITS
 - - - EASEMENT LINE
 - - - FENCE LINE
 - - - EDGE OF WATER
 - - - CONCRETE CURB & GUTTER
 - - - EDGE OF GRAVEL
 - () DENOTES RECORD DATA DEPICTING THE SAME LINE ON THE GROUND AS RETRACED BY THIS SURVEY



LINE TABLE			LINE TABLE		
LINE	BEARING	DISTANCE	LINE	BEARING	DISTANCE
L-1	S13°52'48"W	18.09'	L-13	S00°17'26"W	60.56'
L-2	S81°10'07"W	100.03'	L-14	S59°24'24"W	37.72'
L-3	N00°59'08"E	108.79'	L-15	S88°22'50"W	102.87'
L-4	S00°15'07"W	155.82'	L-16	N82°12'26"W	68.85'
L-5	S05°14'28"W	138.07'	L-17	N90°00'00"W	10.50'
L-6	N33°18'12"W	40.42'	L-18	N29°34'11"W	55.65'
L-7	S83°04'49"E	128.45'	L-19	S29°34'11"E	36.00'
L-8	S87°57'57"E	129.82'	L-20	S00°00'00"E	49.03'
L-9	S43°12'06"E	35.35'	L-21	S13°27'54"W	64.53'
L-10	S00°35'46"W	140.83'	L-22	N01°14'15"W	117.13'
L-11	S00°19'00"W	138.94'	L-23	N00°15'07"E	27.46'
L-12	S52°17'46"W	74.26'			

- NOTES**
- FIELD WORK PERFORMED ON JUNE 21-24, AND JULY 06, 2022 AND SEPTEMBER 15, 2023 AND MAY 16-17 AND JUNE 5-7, 2024.
 - BEARINGS FOR THIS SURVEY AND MAP ARE REFERENCED TO THE WISCONSIN COUNTY COORDINATE SYSTEM, DANE COUNTY, THE SOUTH LINE OF THE SOUTHWEST QUARTER OF SECTION 06-06-09, RECORDED AS S88°12'32"E.
 - ELEVATIONS ARE BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88). BENCHMARK IS A BRASS CAP IN CONCRETE MONUMENT MARKING THE SOUTHWEST CORNER OF SECTION 06, T06N, R09E, ELEVATION = 1058.3'. SUBSURFACE UTILITIES AND FEATURES SHOWN ON THIS MAP HAVE BEEN APPROXIMATED BY LOCATING SURFICIAL FEATURES AND APPURTENANCES, LOCATING DIGGERS HOTLINE FIELD MARKINGS AND BY REFERENCE TO UTILITY RECORDS AND MAPS. DIGGER'S HOTLINE TICKET No. 20222426576, WITH A CLEAR DATE OF JUNE 15, 2022.
 - UTILITY COMPANIES CONTACTED THRU DIGGERS HOTLINE: CITY OF FITCHBURG, AT&T DISTRIBUTION, MGE (ELECTRIC AND GAS), CHARTER COMMUNICATIONS, WISCONSIN DOT-ITS EQUIPMENT ALLIANT ENERGY (ELECTRIC AND GAS), CITY OF MADISON ENGINEERING, MCI.
 - "COUNTY TRUNK HIGHWAY "PD" IS A CONTROLLED ACCESS HIGHWAY PURSUANT TO CHAPTER 79, DANE COUNTY CODE OF ORDINANCES".
 - THE FINAL GRADE OF UTILITY EASEMENTS SHALL NOT BE ALTERED BY MORE THAN SIX INCHES (6") WITHOUT WRITTEN CONSENT OF THE UTILITIES INVOLVED.
 - SEE SHEET 3 FOR CURVE TABLE.
 - UPON FUTURE REDEVELOPMENT, NEW STRUCTURES SHALL COMPLY WITH SETBACK REQUIREMENTS IN EFFECT AT THE TIME OF THE PROPOSED DEVELOPMENT, IN REFERENCE TO THE STRUCTURE CROSSING THE PROPERTY LINE OF LOT 1, CERTIFIED SURVEY MAP No. 4733, RECORDED IN VOLUME 21, PAGES 42-44, AS DOCUMENT No. 1894905.
 - EXISTING STRUCTURES LOCATED WITHIN O.L. 4 ARE EXISTING NON-CONFORMING AND SHALL BE ALLOWED TO REMAIN UNTIL SUCH TIME AS RE-DEVELOPMENT OF SAID O.L. 4 OCCURS.

SURVEYED FOR:
COLBURN HUNDLEY, INC.
80 OTTAWA AVENUE, NW STE 410
GRAND RAPIDS, MI 49503
(616) 742-5200

SURVEYED BY:
JSD PROFESSIONAL SERVICES, INC.
507 WEST VERONA AVENUE, SUITE 500
VERONA, WISCONSIN 53593
(608) 848-5060

PROJECT LOCATION:
SECTION 06, TOWNSHIP 06 NORTH, RANGE 09 EAST, CITY OF FITCHBURG, DANE COUNTY, WISCONSIN.

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JAMESTOWN QUARRY SUBDIVISION

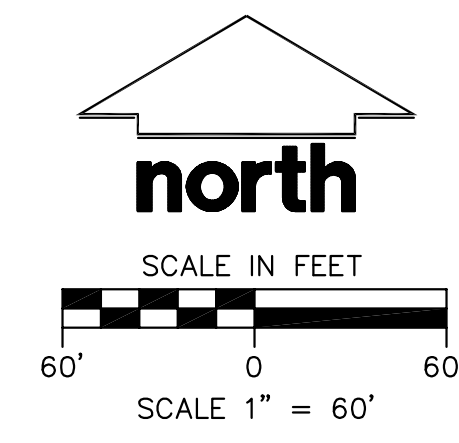
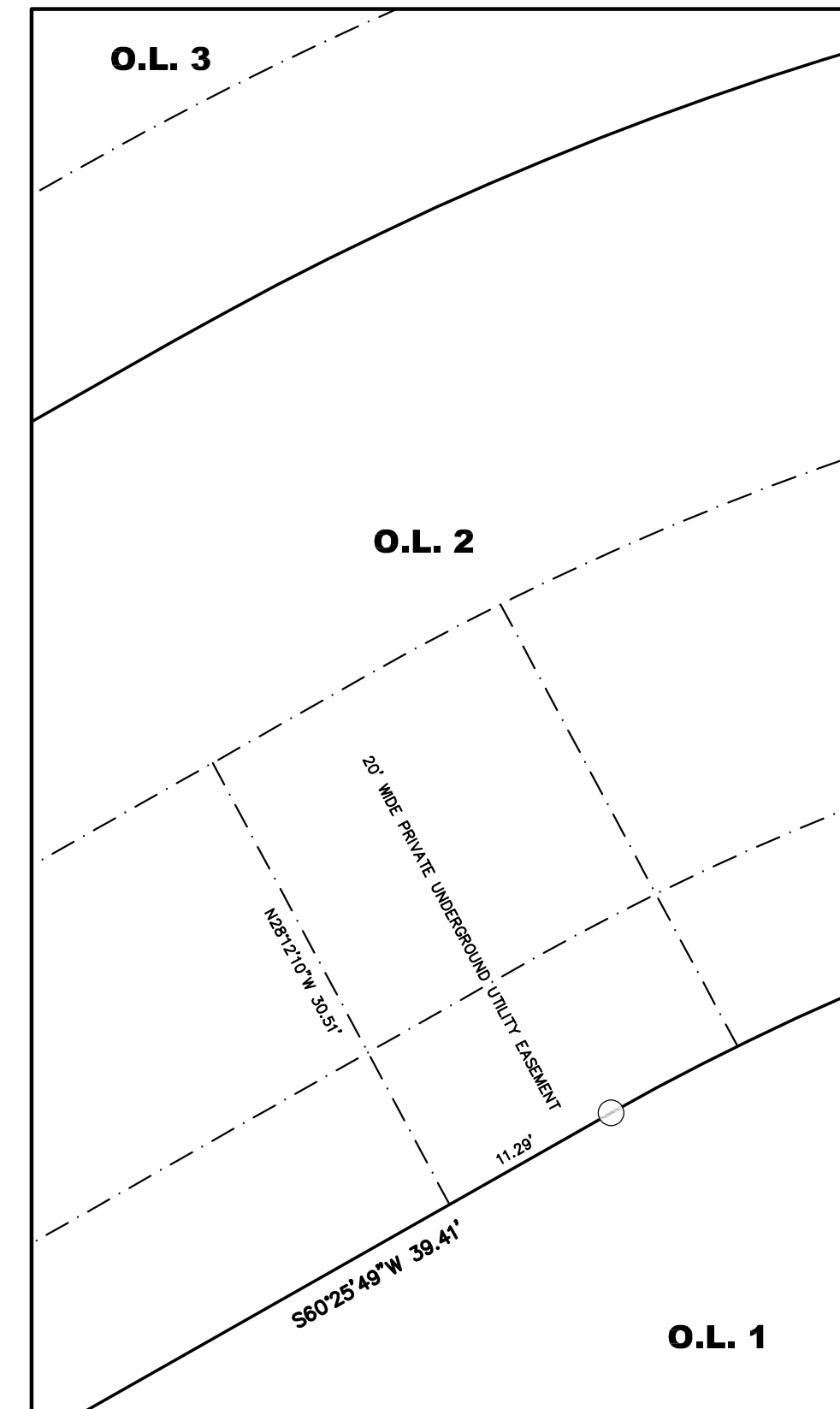
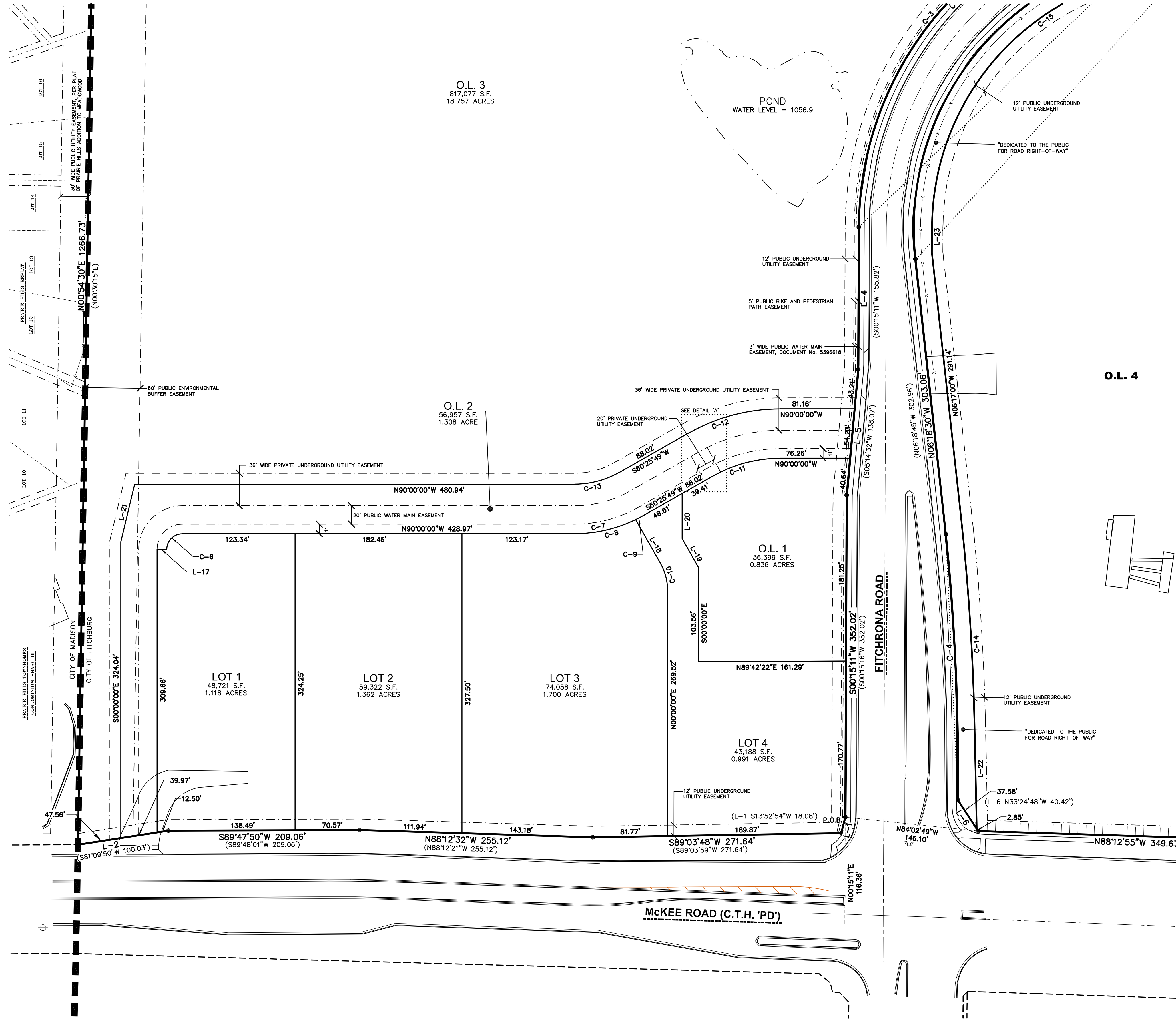
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		REVISION RESUBMITTAL DATE: 08-20-24
		REVISION RESUBMITTAL DATE: -

SHEET 1 OF 5

File: \\SDMC\proj\2023\2211836\JMS\SURV\SURV_SHEETS\2211836_F-Plan.dwg Layout: Sheet 1 User: mmarty Plotfile: Aug 19, 2024 - 8:48am
 PRAIRIE HILLS TOWNHOMES CONDOMINIUM PHASE III
 FOUND REBAR 0.47' SOUTH 0.24' EAST OF LOT CORNER
 FOUND SPIKE WITH DANE COUNTY MARKER N=461,322.28 E=794,463.58
 SOUTH QUARTER CORNER SECTION 06-06-09 FOUND REBAR CAP IN CONCRETE MONUMENT

JAMESTOWN QUARRY SUBDIVISION

PART OF THE SOUTHWEST QUARTER OF SECTION 06, TOWNSHIP 06 NORTH, RANGE 09 EAST, CITY OF FITCHBURG, DANE COUNTY, WISCONSIN.

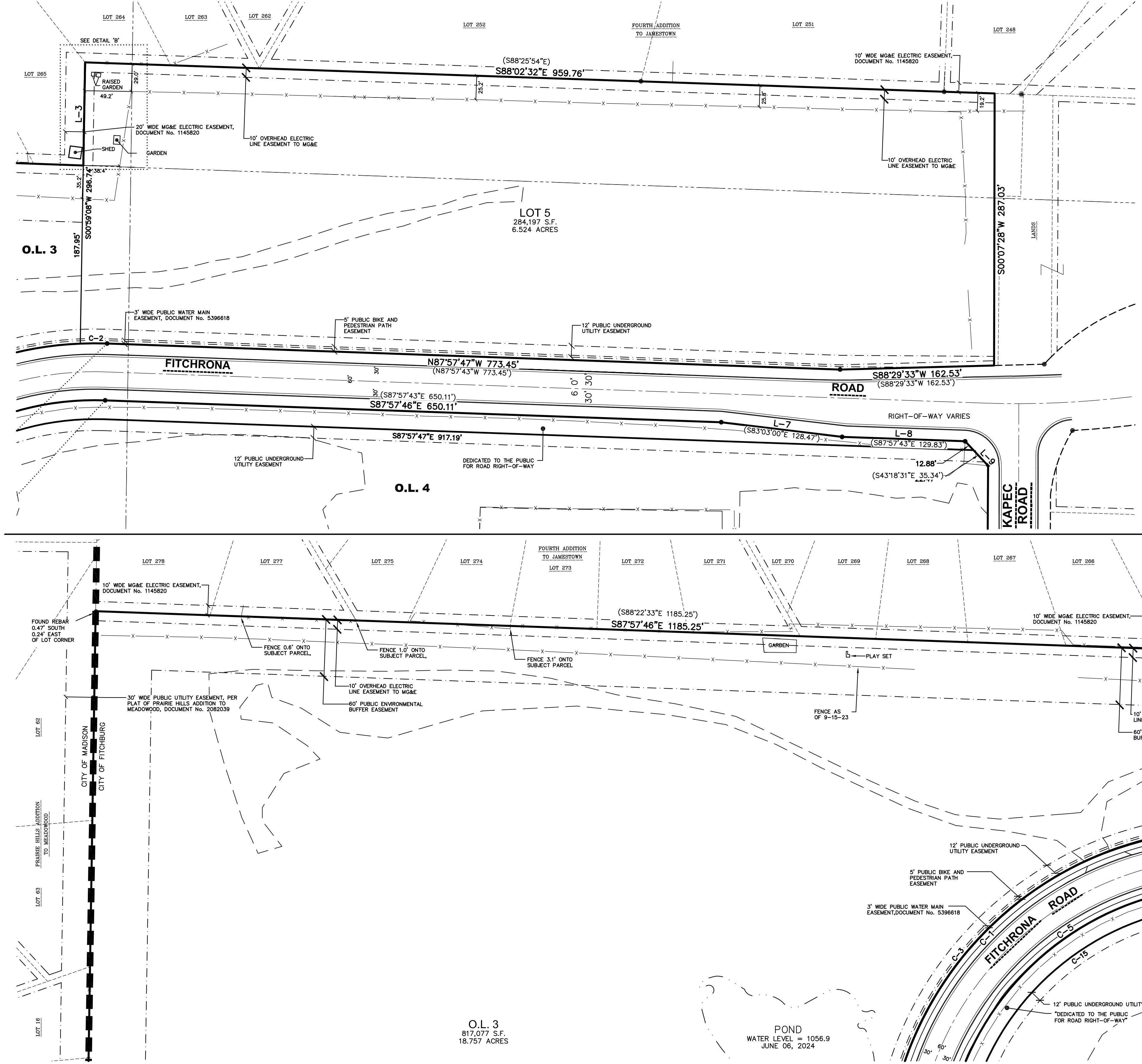


PROJECT LOCATION: SECTION 06, TOWNSHIP 06 NORTH, RANGE 09 EAST, CITY OF FITCHBURG, DANE COUNTY, WISCONSIN.		JSD jsdinc.com	CREATE THE VISION	TELL THE STORY
JAMESTOWN QUARRY SUBDIVISION				
PROJECT NO: 22-11636	DRAWN BY: CMD	INITIAL SUBMITTAL DATE: 04-23-2024 (CDP SUBMITTAL)		
FIELDBOOK/PG: -	SURVEYED BY: CMD	REVISION RESUBMITTAL DATE: 05-09-24 (CDP)		
		REVISION RESUBMITTAL DATE: 08-20-24		
		REVISION RESUBMITTAL DATE: -		
SHEET 2 OF 5				

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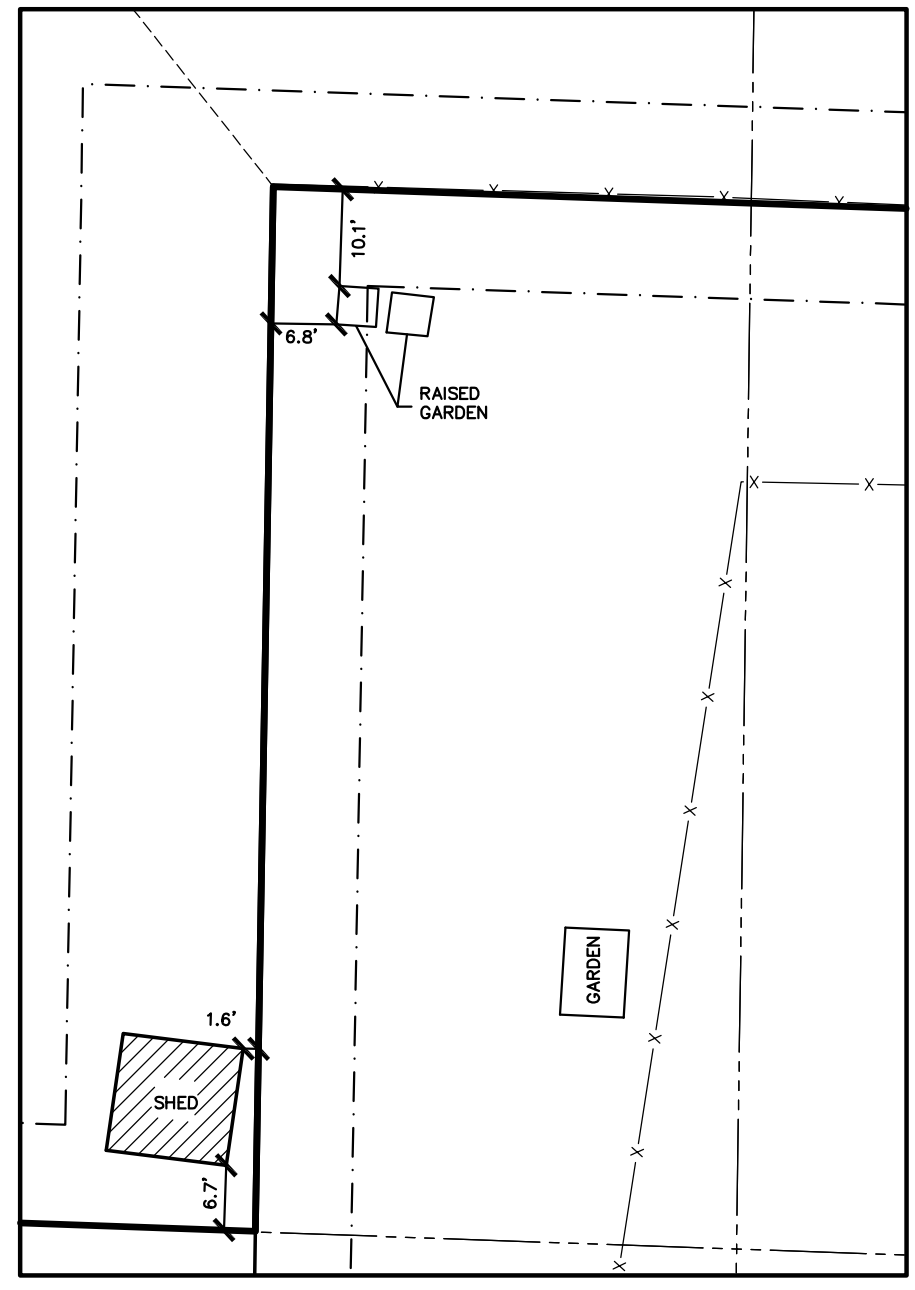
JAMESTOWN QUARRY SUBDIVISION

PART OF THE SOUTHWEST QUARTER OF SECTION 06, TOWNSHIP 06 NORTH, RANGE 09 EAST, CITY OF FITCHBURG, DANE COUNTY, WISCONSIN.

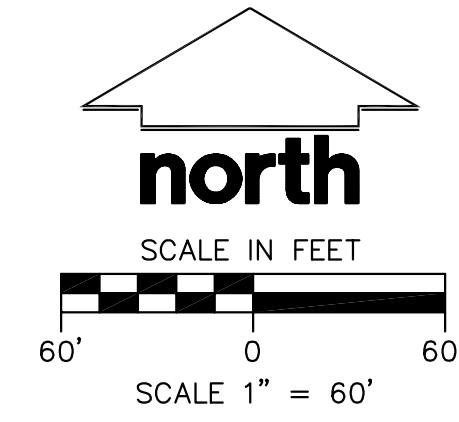


CURVE TABLE							
CURVE	ARC LENGTH	RADIUS	DELTA	CHORD BEARING	CHORD	TANGENT IN	TANGENT OUT
C-1	581.50'	363.00'	91°47'03"	S46°08'43"W	521.29'	N87°57'45"W	S00°15'11"W
C-2	28.25'	363.00'	4°27'34"	S89°48'28"W	28.25'	N87°57'45"W	S87°34'41"W
C-3	553.25'	363.00'	87°19'29"	S43°54'56"W	501.24'	S87°34'41"W	S00°15'11"W
C-4	291.15'	2530.00'	6°35'37"	N02°35'14"W	290.99'	N00°42'35"E	N05°53'02"W
C-5	520.04'	303.00'	98°20'14"	N42°52'32"E	458.52'	N06°17'35"W	S87°57'20"E
C-6	26.70'	17.00'	90°00'00"	S45°00'00"W	24.04'	N90°00'00"W	S00°00'00"E
C-7	78.76'	152.60'	29°34'11"	S75°12'54"W	77.88'	S60°25'49"W	N90°00'00"W
C-8	69.16'	152.60'	25°58'04"	S77°00'58"W	68.57'	S64°01'56"W	N90°00'00"W
C-9	9.59'	152.60'	3°36'08"	S62°13'52"W	9.59'	S60°25'49"W	S64°01'56"W
C-10	29.42'	57.00'	29°34'11"	N14°47'06"W	29.09'	N00°00'00"E	N29°34'11"W
C-11	76.37'	147.40'	29°41'06"	S75°16'22"W	75.52'	N89°53'05"W	S60°25'49"W
C-12	104.29'	201.40'	29°40'06"	S75°15'52"W	103.13'	N89°54'05"W	S60°25'49"W
C-13	50.89'	98.60'	29°34'11"	S75°12'54"W	50.32'	S60°25'49"W	N90°00'00"W
C-14	224.40'	2548.15'	5°02'45"	N03°45'38"W	224.33'	N01°14'15"W	N06°17'00"W
C-15	453.35'	283.00'	91°47'02"	N46°08'44"E	406.40'	N00°15'13"E	S87°57'45"E

CURVE TABLE (RECORD)							
CURVE	ARC LENGTH	RADIUS	DELTA	CHORD BEARING	CHORD	TANGENT IN	TANGENT OUT
C-1	581.50'	363.00'	-	S46°08'47"W	521.29'	-	-
C-4	291.15'	2530.00'	-	N02°33'25"W	290.98'	-	-
C-5	520.11'	303.00'	-	N42°51'46"E	458.57'	-	-



DETAIL 'B'
SCALE 1" = 20'



PROJECT LOCATION:
SECTION 06, TOWNSHIP 06 NORTH, RANGE 09 EAST, CITY OF FITCHBURG, DANE COUNTY, WISCONSIN.

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JAMESTOWN QUARRY SUBDIVISION

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		REVISION RESUBMITTAL DATE: 08-20-24

SHEET 3 OF 5

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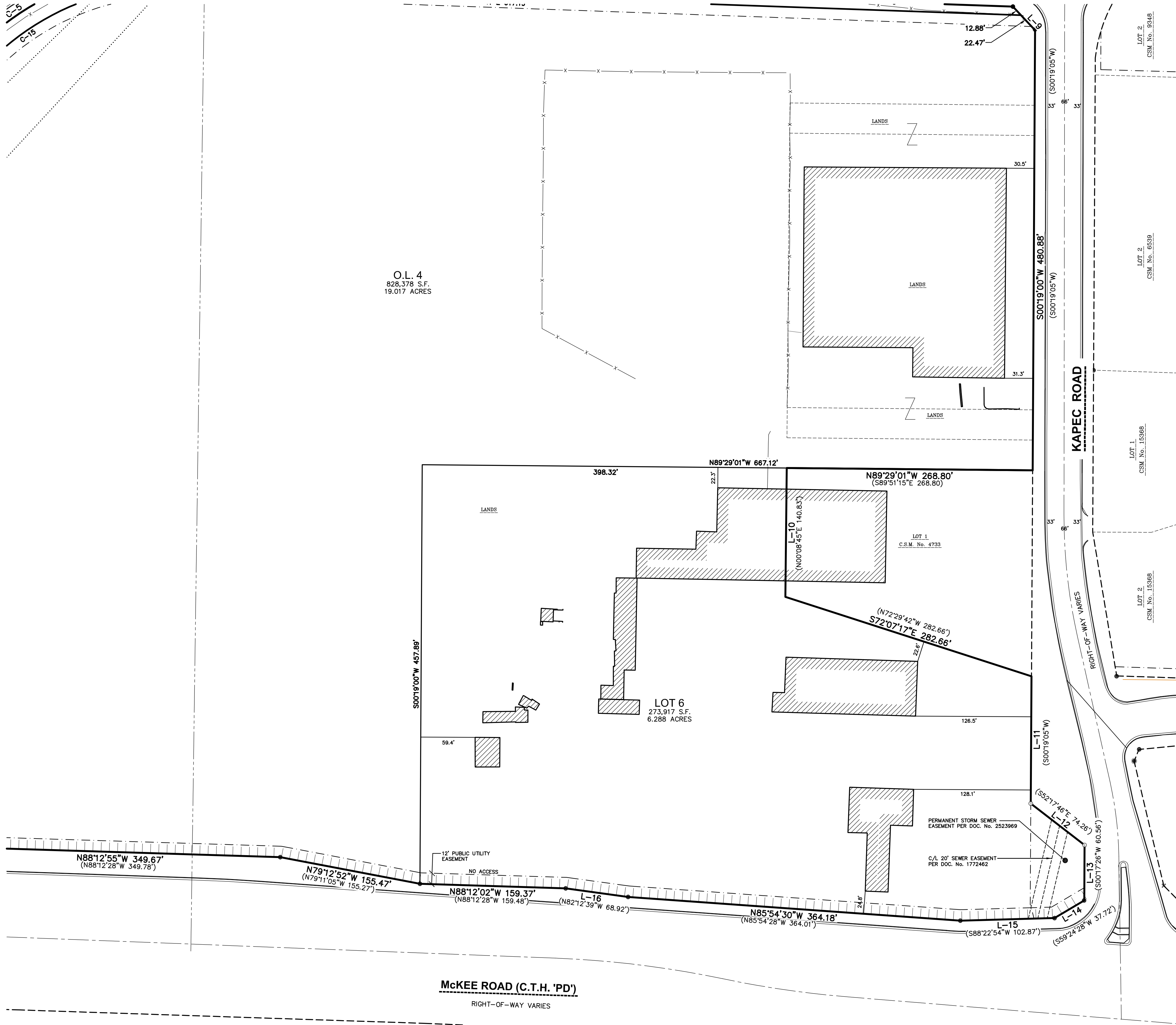
O.L. 3
817,077 S.F.
18.757 ACRES

POND
WATER LEVEL = 1056.9
JUNE 06, 2024

O.L. 4

JAMESTOWN QUARRY SUBDIVISION

PART OF THE SOUTHWEST QUARTER OF SECTION 06, TOWNSHIP 06 NORTH, RANGE 09 EAST, CITY OF FITCHBURG, DANE COUNTY, WISCONSIN.



O.L. 4
828,378 S.F.
19.017 ACRES

LOT 6
273,917 S.F.
6.288 ACRES

LOT 1
C.S.M. No. 4753

LOT 2
C.S.M. No. 9348

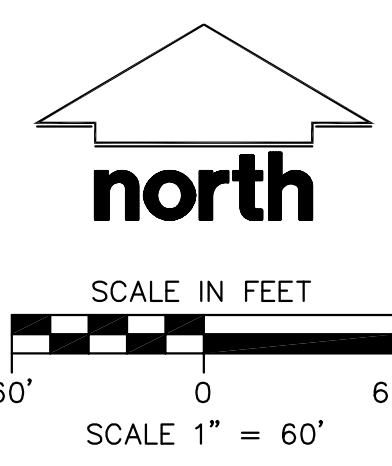
LOT 2
C.S.M. No. 6639

LOT 1
C.S.M. No. 15368

LOT 2
C.S.M. No. 15368

LEGEND

EXISTING STRUCTURE TO REMAIN.



PROJECT LOCATION: SECTION 06, TOWNSHIP 06 NORTH, RANGE 09 EAST, CITY OF FITCHBURG, DANE COUNTY, WISCONSIN.			CREATE THE VISION	TELL THE STORY
			jsdinc.com	
JAMESTOWN QUARRY SUBDIVISION				
PROJECT NO: 22-11636	DRAWN BY: CMD	INITIAL SUBMITTAL DATE: 04-23-2024 (CDP SUBMITTAL)		
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		REVISION RESUBMITTAL DATE: 08-20-24		
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SHEET 4 OF 5				

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JAMESTOWN QUARRY SUBDIVISION

PART OF THE SOUTHWEST QUARTER OF SECTION 06, TOWNSHIP 06 NORTH, RANGE 09 EAST, CITY OF FITCHBURG, DANE COUNTY, WISCONSIN.

SURVEYOR'S CERTIFICATE

I, TODD J. BUHR, WISCONSIN PROFESSIONAL LAND SURVEYOR, HEREBY CERTIFY THAT IN FULL COMPLIANCE WITH THE PROVISIONS OF CHAPTER 236 OF THE WISCONSIN STATE STATUTES AND THE LAND DIVISION AND SUBDIVISION REGULATION OF THE CITY OF FITCHBURG, AND BY THE DIRECTION OF COLBURN HUNDLEY, INC. I HAVE SURVEYED, DIVIDED AND MAPPED THE PLAT OF "JAMESTOWN QUARRY" IN THE CITY OF FITCHBURG, DANE COUNTY, WISCONSIN, AND THAT SUCH PLAT IS A CORRECT REPRESENTATION OF THE EXTERIOR BOUNDARIES OF THE LANDS SURVEYED AND THE DIVISION THEREOF, DESCRIBED AS FOLLOWS:

PART OF THE SOUTHWEST QUARTER OF SECTION 06, TOWNSHIP 06 NORTH, RANGE 09 EAST, IN THE CITY OF FITCHBURG, DANE COUNTY, WISCONSIN, WHICH IS BOUNDED AND DESCRIBED AS FOLLOWS:

COMMENCING AT THE SOUTHWEST CORNER OF SAID SOUTHWEST QUARTER; THENCE S88°12'32"E ALONG THE SOUTH LINE OF SAID SOUTHWEST QUARTER A DISTANCE OF 839.59 FEET TO THE SOUTHERLY EXTENSION OF THE WEST RIGHT-OF-WAY LINE OF FITCHRONA ROAD; THENCE N00°15'11"E ALONG SAID LINE, 116.36 FEET TO THE WEST RIGHT-OF-WAY LINE OF FITCHRONA ROAD AND THE POINT OF BEGINNING OF LANDS DESCRIBED HEREINAFTER; THENCE S13°52'48"W ALONG THE WEST LINE OF FITCHRONA ROAD, 18.09 FEET TO THE NORTH LINE OF MCKEE ROAD (C.T.H. "PD"); THENCE S89°03'48"W ALONG SAID NORTH LINE, 271.64 FEET; THENCE N88°12'32"W ALONG SAID NORTH LINE, 255.12 FEET; THENCE S89°47'50"W ALONG SAID NORTH LINE, 209.06 FEET; THENCE S81°10'07"W ALONG SAID NORTH LINE, 100.03 FEET TO THE WEST LINE OF THE SOUTHWEST QUARTER OF SECTION 06, AFORESAID; THENCE N00°54'30"E ALONG SAID WEST LINE, 1266.73 FEET TO A POINT IN THE SOUTH LINE OF FOURTH ADDITION TO JAMESTOWN, RECORDED IN VOLUME 47 OF PLATS, PAGE 20-22, AS DOCUMENT No. 1537665; THENCE S87°57'46"E ALONG SAID SOUTH LINE, 1185.25 FEET; THENCE N00°59'08"E ALONG SAID SOUTH LINE, 108.79 FEET; THENCE S88°02'32"E ALONG SAID SOUTH LINE, 959.78 FEET; THENCE S00°07'28"W, 287.03 FEET TO A POINT ON THE NORTH LINE OF FITCHRONA ROAD; THENCE S88°29'33"W ALONG SAID NORTH LINE, 162.53 FEET; THENCE N87°57'47"W ALONG SAID NORTH LINE, 773.45 FEET TO A POINT OF CURVE; THENCE SOUTHWESTERLY, 581.50 FEET ALONG SAID NORTH LINE AND ARC OF A CURVE TO THE LEFT, HAVING A RADIUS OF 363.00 FEET, THE CHORD BEARS S46°08'43"W, 521.29 FEET; THENCE S00°15'07"W ALONG SAID NORTH LINE, 155.82 FEET; THENCE S05°14'28"W ALONG SAID NORTH LINE, 138.07 FEET; THENCE S00°15'11"W ALONG SAID NORTH LINE, 352.01 FEET; THENCE S84°02'49"E, 146.10 FEET TO A POINT ON THE NORTH LINE OF MCKEE ROAD (C.T.H. "PD") AND THE EAST LINE OF FITCHRONA ROAD; THENCE N33°18'12"W ALONG SAID EAST LINE, 40.42 FEET TO A POINT ON A CURVE; THENCE NORTHWESTERLY ALONG SAID EAST LINE 291.15 FEET ALONG AN ARC OF A CURVE TO THE LEFT, HAVING A RADIUS OF 2530.00 FEET, THE CHORD BEARS N02°35'14"W, 290.99 FEET; THENCE N06°18'30"W ALONG SAID LINE, 303.06 FEET TO A POINT OF CURVE; THENCE NORTHEASTERLY 520.04 FEET ALONG SAID LINE AND ARC OF A CURVE TO THE RIGHT, HAVING A RADIUS OF 303.00 FEET, THE CHORD BEARS N42°52'32"E, 458.52 FEET; THENCE S87°57'46"E ALONG SAID LINE, 650.11 FEET; THENCE S83°04'49"E ALONG SAID LINE, 128.45 FEET; THENCE S87°57'57"E ALONG SAID LINE, 129.82 FEET TO THE WEST RIGHT-OF-WAY LINE OF KAPEC ROAD; THENCE S43°12'06"E ALONG SAID LINE, 35.35 FEET; THENCE S00°19'00"W ALONG SAID LINE, 480.88 FEET TO THE NORTHEAST CORNER OF LOT 1, CSM No. 4733, RECORDED IN VOLUME 21, PAGES 42-44, AS DOCUMENT No. 1894905; THENCE N89°29'01"W ALONG THE NORTH LINE OF SAID LOT 1 A DISTANCE OF 268.80 FEET TO THE NORTHWEST CORNER OF SAID LOT; THENCE S00°35'46"W ALONG THE WEST LINE OF SAID LOT, 140.83 FEET TO THE SOUTHWEST CORNER OF SAID LOT; THENCE S72°07'17"E ALONG THE SOUTH LINE OF SAID LOT, 282.66 FEET TO THE WEST RIGHT-OF-WAY LINE OF KAPEC ROAD; THENCE S00°19'00"W ALONG SAID LINE, 138.94 FEET; THENCE S52°17'46"E ALONG SAID LINE, 74.26 FEET; THENCE S00°17'26"W ALONG SAID LINE, 60.56 FEET; THENCE S59°24'24"W ALONG SAID LINE, 37.72 FEET TO THE NORTH RIGHT-OF-WAY LINE OF MCKEE ROAD (C.T.H. "PD"); THENCE S88°22'50"W ALONG SAID LINE, 102.87 FEET; THENCE N85°54'30"W ALONG SAID LINE, 364.18 FEET; THENCE N82°12'26"W ALONG SAID LINE, 68.85 FEET; THENCE N88°12'02"W ALONG SAID LINE, 159.37 FEET; THENCE N79°12'52"W ALONG SAID LINE, 155.47 FEET; THENCE N88°12'55"W ALONG SAID LINE, 349.67 FEET; THENCE N84°02'49"W, 146.10 FEET TO THE POINT OF BEGINNING.

SAID DESCRIBED PARCEL OF LAND CONTAINS 2,559,672 SQUARE FEET OR 58.762 ACRES.

TODD J. BUHR, S-2614 DATE
PROFESSIONAL LAND SURVEYOR



CORPORATE OWNER'S CERTIFICATE

COLBURN HUNDLEY, INC., A LIMITED LIABILITY COMPANY DULY ORGANIZED AND EXISTING UNDER AND BY VIRTUE OF THE LAWS OF THE STATE OF WISCONSIN, AS AN OWNER, DOES HEREBY CERTIFY THAT SAID LIMITED LIABILITY COMPANY HAS CAUSED THE LANDS DESCRIBED ON THIS PLAT TO BE SURVEYED, DIVIDED, MAPPED AND DEDICATED AS REPRESENTED HEREON, AND DOES FURTHER CERTIFY THAT THIS PLAT IS REQUIRED BY S.236.10 OR S. 236.12 TO BE SUBMITTED TO THE FOLLOWING FOR APPROVAL OR OBJECTION:

TOWN BOARD, TOWN OF MADISON
COMMON COUNCIL, CITY OF FITCHBURG
DANE COUNTY ZONING AND LAND REGULATION COMMITTEE
STATE OF WISCONSIN-DEPARTMENT OF ADMINISTRATION

IN WITNESS WHEREOF, THE SAID COLBURN HUNDLEY, INC. HAS CAUSED THESE PRESENTS TO BE SIGNED BY JEFF HUNDLEY, IT'S MANAGER, AND ITS CORPORATE SEAL TO BE HEREUNTO AFFIXED ON THIS ____DAY OF _____, 2024.

COLBURN HUNDLEY, INC.

JEFF HUNDLEY
MANAGER

STATE OF MICHIGAN)ss
COUNTY OF)ss

PERSONALLY CAME BEFORE ME THIS ____DAY OF _____, 2024,
THE ABOVE NAMED [OWNER NAME], MANAGER OF THE ABOVE NAMED JEFF HUNDLEY, TO ME KNOWN TO BE THE PERSON WHO EXECUTED THE FOREGOING INSTRUMENT, AND ACKNOWLEDGED THE SAME.

NOTARY PUBLIC, STATE OF MICHIGAN MY COMMISSION EXPIRES

CONSENT OF MORTGAGEE

[NAME], MORTGAGEE OF PART OF THE ABOVE DESCRIBED LAND, HEREBY CONSENTS TO THE SURVEYING, DIVIDING, MAPPING AND DEDICATION OF THE LAND DESCRIBED ON THIS PLAT, AND DOES HEREBY CONSENT TO THE ABOVE CERTIFICATE OF [NAME], AS AN OWNER.

WITNESS THE HAND AND SEAL OF [NAME], MORTGAGEE, THIS ____DAY OF _____, 2024.

IN THE PRESENCE OF:

(SIGN NAME HERE) (PRINT NAME AND TITLE HERE)

STATE OF WISCONSIN)ss
COUNTY OF DANE)ss

PERSONALLY CAME BEFORE ME THIS ____DAY OF _____, 2023,
THE ABOVE NAMED OFFICER OF THE ABOVE NAMED [NAME], TO ME KNOWN TO BE THE PERSON WHO EXECUTED THE FOREGOING INSTRUMENT, AND ACKNOWLEDGED THE SAME.

NOTARY PUBLIC, STATE OF WISCONSIN MY COMMISSION EXPIRES

CORPORATE OWNER'S CERTIFICATE

[entity name], A LIMITED LIABILITY COMPANY DULY ORGANIZED AND EXISTING UNDER AND BY VIRTUE OF THE LAWS OF THE STATE OF WISCONSIN, AS AN OWNER, DOES HEREBY CERTIFY THAT SAID LIMITED LIABILITY COMPANY HAS CAUSED THE LANDS DESCRIBED ON THIS PLAT TO BE SURVEYED, DIVIDED, MAPPED AND DEDICATED AS REPRESENTED HEREON, AND DOES FURTHER CERTIFY THAT THIS PLAT IS REQUIRED BY S.236.10 OR S. 236.12 TO BE SUBMITTED TO THE FOLLOWING FOR APPROVAL OR OBJECTION:

TOWN BOARD, TOWN OF MADISON
COMMON COUNCIL, CITY OF FITCHBURG
DANE COUNTY ZONING AND LAND REGULATION COMMITTEE
STATE OF WISCONSIN-DEPARTMENT OF ADMINISTRATION

IN WITNESS WHEREOF, THE SAID [entity name] HAS CAUSED THESE PRESENTS TO BE SIGNED BY IT'S MANAGER, WHO IS THE MANAGER OF [entity name], AND ITS CORPORATE SEAL TO BE HEREUNTO AFFIXED ON THIS ____DAY OF _____, 2023.

[entity name]

(SIGN HERE) (PRINT NAME HERE)
MANAGER, [entity name]

STATE OF WISCONSIN)ss
COUNTY OF DANE)ss

PERSONALLY CAME BEFORE ME THIS ____DAY OF _____, 2023,
THE ABOVE NAMED MANAGER OF THE ABOVE NAMED [entity name], TO ME KNOWN TO BE THE PERSON WHO EXECUTED THE FOREGOING INSTRUMENT, AND ACKNOWLEDGED THE SAME.

NOTARY PUBLIC, STATE OF WISCONSIN MY COMMISSION EXPIRES

CONSENT OF MORTGAGEE

[bank name], MORTGAGEE OF PART OF THE ABOVE DESCRIBED LAND, HEREBY CONSENTS TO THE SURVEYING, DIVIDING, MAPPING AND DEDICATION OF THE LAND DESCRIBED ON THIS PLAT, AND DOES HEREBY CONSENT TO THE ABOVE CERTIFICATE OF [owner name], AS AN OWNER.

WITNESS THE HAND AND SEAL OF [bank name], MORTGAGEE, THIS ____DAY OF _____, 2023.
IN THE PRESENCE OF:

(SIGN NAME HERE) (PRINT NAME AND TITLE HERE)

STATE OF WISCONSIN)ss
COUNTY OF [name])ss

PERSONALLY CAME BEFORE ME THIS ____DAY OF _____, 2023,
THE ABOVE NAMED OFFICER OF THE ABOVE NAMED [bank name], TO ME KNOWN TO BE THE PERSON WHO EXECUTED THE FOREGOING INSTRUMENT, AND ACKNOWLEDGED THE SAME.

NOTARY PUBLIC, STATE OF WISCONSIN MY COMMISSION EXPIRES

CERTIFICATE OF CITY OF FITCHBURG CLERK

"RESOLVED THAT THIS PLAT KNOWN AS "JAMESTOWN QUARRY", BEING A SUBDIVISION IN PART OF THE NORTHEAST 1/4 OF THE SOUTHWEST 1/4 AND THE SOUTHWEST 1/4 OF THE SOUTHWEST 1/4, AND THE SOUTHWEST 1/4 OF THE SOUTHWEST 1/4 AND THE NORTHWEST 1/4 OF THE SOUTHWEST 1/4 OF SECTION 09, TOWNSHIP 06 NORTH, RANGE 09 EAST, CITY OF FITCHBURG, DANE COUNTY, WISCONSIN, WAS HEREBY APPROVED BY RESOLUTION No. _____ FILE No. _____ ADOPTED ON THE ____DAY OF _____, 2024, AND FURTHER RESOLVED THAT THE CONDITIONS OF SAID APPROVAL WERE FULFILLED ON THE ____DAY OF _____, 2024, AND THAT SAID RESOLUTION FURTHER PROVIDED FOR THE ACCEPTANCE OF THOSE LANDS AND RIGHTS DEDICATED BY SAID "JAMESTOWN QUARRY" FOR PUBLIC USE".

I, [name], CLERK OF THE CITY OF [name], [name COUNTY], WISCONSIN HEREBY CERTIFY THAT THE CITY COUNCIL HAS RESOLVED THAT PUBLIC SEWER WILL BE MADE AVAILABLE TO THE LOTS IN THE PLAT OF "[plat name]", BEFORE BUILDINGS ARE OCCUPIED AND THAT PRIVATE SEWER FACILITIES ARE PROHIBITED.

TRACY OLDENBURG, CITY CLERK

DATE

CERTIFICATE OF COUNTY TREASURER

I, ADAM GALLAGHER, BEING THE DULY APPOINTED, QUALIFIED, AND ACTING TREASURER OF THE COUNTY OF DANE, DO HEREBY CERTIFY THAT THE RECORDS IN MY OFFICE SHOW NO UNREDEEMED TAX SALES AND UNPAID TAXES OR SPECIAL ASSESSMENTS AS OF THE ____DAY OF _____, 2024, AFFECTING THE LANDS INCLUDED IN THE PLAT OF "JAMESTOWN QUARRY".

ADAM GALLAGHER
DANE COUNTY TREASURER

DATE

CERTIFICATE OF REGISTER OF DEEDS

RECEIVED FOR RECORDING THIS ____DAY OF _____, 2024, AT ____O'CLOCK ____M. AND RECORDED IN VOLUME ____ OF PLATS ON PAGES ____ THROUGH ____ AS DOCUMENT NUMBER ____.

KRISTI CHLEBOWSKI
REGISTER OF DEEDS, DANE COUNTY

SURVEYED FOR:

COLBURN HUNDLEY, INC.
80 OTTAWA AVENUE, NW STE 410
GRAND RAPIDS, MI 49503
(616) 742-5200

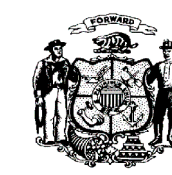
SURVEYED BY:

JSD PROFESSIONAL SERVICES, INC.
161 HORIZON DRIVE, SUITE 101
VERONA, WISCONSIN 53593
(608) 848-5060

There are no objections to this plat with respect to Secs. 236.15, 236.16, 236.20 and 236.21(1) and (2), Wis Stats. as provided by s. 236.12, Wis. Stats.

Certified _____, 20____

Department of Administration



PROJECT LOCATION: SECTION 06, TOWNSHIP 06 NORTH, RANGE 09 EAST, CITY OF FITCHBURG, DANE COUNTY, WISCONSIN.		CREATE THE VISION TELL THE STORY jsdinc.com
JAMESTOWN QUARRY SUBDIVISION		
PROJECT NO: 22-11836	DRAWN BY: -	INITIAL SUBMITTAL DATE: 04-23-2024 (CDP SUBMITTAL)
FIELDBOOK/PG: -	SURVEYED BY: -	REVISION RESUBMITTAL DATE: 05-09-24 (CDP)
		REVISION RESUBMITTAL DATE: 08-20-24
		REVISION RESUBMITTAL DATE: -
SHEET 5 OF 5		

JAMESTOWN QUARRY

CITY OF FITCHBURG, DANE COUNTY, WISCONSIN

SE 1/4, SW 1/4, SECTION 06, TOWNSHIP 6 NORTH, RANGE 9 EAST

DRAWING INDEX

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PROJECT AREA
NOT TO SCALE



CREATE THE VISION TELL THE STORY

jsdinc.com

MADISON REGIONAL OFFICE
507 WEST VERONA AVENUE, SUITE 500
VERONA, WISCONSIN 53593
P. 608.848.5060

CLIENT:
**FITCHBURG PARTNERS,
LLC.**

CLIENT ADDRESS:
80 OTTAWA AVE. NW, SUITE 410
GRAND RAPIDS, MI 49503

PROJECT:
JAMESTOWN QUARRY

PROJECT LOCATION:
2975 KAPEC ROAD
DANE COUNTY
FITCHBURG, WI 53719

PLAN MODIFICATIONS:

#	Date:	Description:
1	05.21.24	PRELIMINARY PLAT
2	08.20.24	FINAL PLAT
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		

Designed By: _____ MSS
Reviewed By: _____
Approved By: _____ CD

SHEET TITLE:
TITLE SHEET

SHEET NUMBER:
C0.0

JSD PROJECT NO: 22-11636

GENERAL NOTES

- REFER TO THE EXISTING CONDITIONS SURVEY FOR EXISTING CONDITIONS NOTES AND LEGENDS.
- ALL WORK IN THE RIGHT-OF-WAY AND/OR PUBLIC EASEMENTS SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS, JURISDICTIONAL SPECIFICATIONS, AND APPROVED BY THE JURISDICTION HAVING AUTHORITY.
- EXISTING GRADE SPOT ELEVATIONS SHOWN FOR INFORMATIONAL PURPOSES. DURING CONSTRUCTION MATCH EXISTING GRADES AT CONSTRUCTION LIMITS.
- NO SITE GRADING OUTSIDE OR DOWNSLOPE OF PROPOSED SILT FENCE LOCATION. NO LAND DISTURBANCE BEYOND PROPERTY LINES.
- JSD SHALL BE HELD HARMLESS AND DOES NOT WARRANT ANY DEVIATIONS BY THE OWNER/CONTRACTOR FROM THE APPROVED CONSTRUCTION PLANS THAT MAY RESULT IN DISCIPLINARY ACTIONS BY ANY OR ALL REGULATORY AGENCIES.
- CONTRACTOR SHALL RESTORE ALL BUILDINGS, PAVEMENT, PIPES, SLOPES, AND STRUCTURES DAMAGED BY THE CONTRACTOR TO PRE-EXISTING OR BETTER CONDITIONS.
- THE RIGHT-OF-WAY IS THE SOLE JURISDICTION OF THE JURISDICTIONAL AUTHORITY AND IS SUBJECT TO CHANGE AT ANY TIME.
- CONTRACTOR SHALL BE RESPONSIBLE FOR SITE SAFETY DURING THE CONSTRUCTION OF THESE IMPROVEMENTS.
- ANY REFERENCES TO THE TERMS OR ENTITY ABBREVIATIONS IN THE FOLLOWING NOTES AND SPECIFICATIONS SHALL BE UNDERSTOOD AS FOLLOWS:
 - "JURISDICTION" - THE LOCAL GOVERNMENTAL AGENCY (I.E., CITY, VILLAGE, TOWN, COUNTY, STATE, OR UTILITY SERVICE PROVIDER) HAVING AUTHORITY.
 - "STATE HIGHWAY SPECIFICATIONS" - STATE OF WISCONSIN STANDARD SPECIFICATIONS FOR HIGHWAY AND STRUCTURE CONSTRUCTION, CURRENT EDITION AND SUPPLEMENTS.
 - "STANDARD SPECIFICATIONS" - STANDARD SPECIFICATIONS FOR SEWER AND WATER CONSTRUCTION IN WISCONSIN, CURRENT EDITION AND SUPPLEMENTS.
 - WISCONSIN DEPARTMENT OF TRANSPORTATION - "WISDOT"
 - WISCONSIN DEPARTMENT OF NATURAL RESOURCES - "WDNR"
 - DEPARTMENT OF SAFETY AND PROFESSIONAL SERVICES - "DPS" OR "SPS"

DEMOLITION NOTES

- THIS PLAN INDICATES ITEMS ON THE PROPERTY INTENDED FOR DEMOLITION BASED ON THE CURRENT SITE DESIGN THAT HAVE BEEN IDENTIFIED BY A REASONABLE OBSERVATION OF THE EXISTING CONDITIONS THROUGH FIELD SURVEY RECONNAISSANCE, "DIGGERS HOTLINE" LOCATION, AND GENERAL "STANDARD OF CARE". THERE MAY BE ADDITIONAL ITEMS THAT CAN NOT BE IDENTIFIED BY A REASONABLE ABOVEGROUND OBSERVATION, OF WHICH THE ENGINEER WOULD HAVE NO KNOWLEDGE OR MAY BE A PART OF ANOTHER DESIGN DISCIPLINE. IT IS THE CONTRACTOR/BIDDER'S RESPONSIBILITY TO REVIEW THE PLANS, INSPECT THE SITE, AND PROVIDE THEIR OWN DUE DILIGENCE TO INCLUDE IN THEIR BID WHAT ADDITIONAL ITEMS, IN THEIR OPINION, MAY BE NECESSARY FOR DEMOLITION. ANY ADDITIONAL ITEMS IDENTIFIED BY THE CONTRACTOR/BIDDER SHALL BE IDENTIFIED IN THE BID AND REPORTED TO THE ENGINEER OF RECORD. JSD TAKES NO RESPONSIBILITY FOR ITEMS ON THE PROPERTY THAT COULD NOT BE LOCATED BY A REASONABLE OBSERVATION OF THE PROPERTY OR OF WHICH THEY WOULD HAVE NO KNOWLEDGE.
- CONTRACTOR SHALL KEEP ALL STREETS AND PRIVATE DRIVES FREE AND CLEAR OF ALL CONSTRUCTION-RELATED DIRT, DUST, AND DEBRIS.
- ALL TREES WITHIN THE CONSTRUCTION LIMITS SHALL BE REMOVED UNLESS SPECIFICALLY CALLED OUT FOR PROTECTION. ALL TREES TO BE REMOVED SHALL BE REMOVED IN THEIR ENTIRETY. STUMPS MAY BE GROUND TO PROPOSED SUBGRADE IN GRASSED AREAS ONLY UNLESS DIRECTED BY ENGINEER.
- ALL LIGHT POLES TO BE REMOVED SHALL BE REMOVED IN THEIR ENTIRETY, INCLUDING BASE AND ALL APPURTENANCES. SALVAGE FOR RELOCATION. COORDINATE RELOCATION AND/OR ABANDONMENT OF ALL ELECTRIC LINES WITH ELECTRICAL ENGINEER AND OWNER PRIOR TO DEMOLITION.
- ABANDONED/REMOVED ITEMS SHALL BE LEGALLY DISPOSED OF OFFSITE UNLESS OTHERWISE NOTED.
- CONTRACTOR TO REPLACE ALL SIDEWALK AND CURB AND GUTTER ABUTTING THE PROPERTIES THAT WERE DAMAGED BY THE CONSTRUCTION.
- PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL BE RESPONSIBLE TO:
 - EXAMINE ALL SITE CONDITIONS RELATIVE TO THE CONDITIONS INDICATED ON THE ENGINEERING DRAWINGS. ANY DISCREPANCIES ARE TO BE REPORTED IMMEDIATELY TO THE ENGINEER AND RESOLVED PRIOR TO THE START OF CONSTRUCTION.
 - VERIFY UTILITY ELEVATIONS AND NOTIFY ENGINEER OF ANY DISCREPANCIES. NO WORK SHALL BE PERFORMED UNTIL THE DISCREPANCIES ARE RESOLVED.
 - NOTIFY ALL UTILITIES OWNERS PRIOR TO THE REMOVAL OF ANY UNDERGROUND UTILITIES.
 - NOTIFY THE DESIGN ENGINEER AND LOCAL CONTROLLING MUNICIPALITY 48 HOURS PRIOR TO THE START OF CONSTRUCTION TO ARRANGE FOR APPROPRIATE CONSTRUCTION INSPECTION.
- ANY UTILITIES THAT ARE DAMAGED BY THE CONTRACTORS SHALL BE REPAIRED TO THE OWNER'S SATISFACTION AT THE CONTRACTORS' EXPENSE.
- CONTRACTOR SHALL COORDINATE PRIVATE UTILITY REMOVAL/ABANDONMENT AND NECESSARY RELOCATION WITH RESPECTIVE UTILITY COMPANY. CONTRACTOR SHALL COORDINATE WITH PRIVATE UTILITY COMPANIES PRIOR TO CONSTRUCTION.
- ALL DEMOLITION SHALL BE IN ACCORDANCE WITH THE APPROVED JURISDICTION'S RECYCLING PLAN.
- ANY CONTAMINATED SOILS ENCOUNTERED SHALL BE REMOVED IN ACCORDANCE WITH FEDERAL AND STATE REGULATIONS TO AN APPROPRIATE AND APPROVED LANDFILL.
- ALL EXISTING UTILITIES SHALL BE FIELD LOCATED AND CLEARLY MARKED BY CONTRACTOR PRIOR TO ANY EXCAVATION. CONTRACTOR SHALL NOTIFY ENGINEER IMMEDIATELY IF ANY DISCREPANCIES OCCUR IN THE LOCATION SHOWN OR PROPOSED IMPROVEMENTS IMPACTING EXISTING UTILITY LINE LOCATIONS). CONTRACTOR SHALL BE RESPONSIBLE FOR CONDUCTING UTILITY LINE OPENINGS (ULO) TO CONFIRM LOCATIONS OR ELEVATIONS, AS REQUESTED BY THE ENGINEER.
- SEWER ABANDONMENT SHALL BE IN ACCORDANCE WITH SECTION 3.2.24 OF THE STANDARD SPECIFICATIONS AND JURISDICTIONAL SPECIFICATIONS.
- WATER ABANDONMENT SHALL BE IN ACCORDANCE WITH SECTION 4.14 OF THE STANDARD SPECIFICATIONS AND JURISDICTIONAL SPECIFICATIONS.
- ALL PERIMETER EROSION CONTROL DEVICES SHALL BE INSTALLED PRIOR TO THE START OF DEMOLITION ACTIVITIES. CONTRACTOR SHALL KEEP ALL STREETS AND PAVEMENTS FREE AND CLEAR OF ALL CONSTRUCTION RELATED DIRT, DUST, AND DEBRIS.
- BUILDING REMOVALS SHALL BE PERFORMED BY A QUALIFIED CONTRACTOR. CONTRACTOR SHALL FOLLOW ALL DEMOLITION REGULATIONS, DISCONNECT ALL UTILITIES, OBTAIN ALL APPLICABLE PERMITS, AND DISPOSE OF ALL BUILDING MATERIALS IN APPROPRIATE AND APPROVED LANDFILLS. DEMOLISHED MATERIALS SHALL NOT BE BURNED OR BURIED ONSITE.
- CONTRACTOR SHALL REMOVE EXISTING UTILITY PIPE OR PROVIDE PIPE BACKFILLING AFTER REMOVAL OF EXISTING UTILITIES WITHIN BUILDING FOOTPRINT USING "LOW DENSITY CONCRETE/FLOWABLE FILL".
- RESTORATION OF THE EXISTING ROADWAY RIGHT-OF-WAYS ARE CONSIDERED INCIDENTAL AND SHALL BE PART OF THE COST OF THE UNDERGROUND IMPROVEMENTS, DEMOLITION, AND REMOVAL. THIS INCLUDES CURB AND GUTTER, SIDEWALK, TOPSOIL, SEEDING, AND MULCHING.

- ## CONSTRUCTION SEQUENCING
- INSTALL PERIMETER SILT FENCE, WATTLES, INLET PROTECTION, AND CONSTRUCTION ENTRANCE.
 - STRIP AND STOCKPILE TOPSOIL AND INSTALL SILT FENCE AROUND PERIMETER OF STOCKPILE.
 - ROUGH GRADE RETENTION POND AND INSTALL POND OUTLET.
 - CONDUCT ROUGH GRADING EFFORTS AND INSTALL CHECK DAMS WITHIN DRAINAGE DITCHES.
 - INSTALL UTILITY PIPING AND STRUCTURES, IMMEDIATELY INSTALL INLET PROTECTION.
 - COMPLETE FINAL GRADING, INSTALLATION OF GRAVEL BASE COURSES, PLACEMENT OF CURBS, PAVEMENTS, WALKS, ETC.
 - PLACE TOPSOIL AND IMMEDIATELY STABILIZE DISTURBED AREAS WITH EROSION CONTROL MEASURES AS INDICATED ON PLANS.
 - RESTORE RETENTION POND (FINAL GRADE RETENTION POND PER PLAN REQUIREMENTS).
 - EROSION CONTROLS SHALL NOT BE REMOVED UNTIL SITE IS FULLY STABILIZED OR 70% CONTIGUOUS VEGETATIVE COVER IS ESTABLISHED.

- CONTRACTOR MAY MODIFY SEQUENCING AFTER ITEM NO. 1 AS NEEDED TO COMPLETE CONSTRUCTION IF EROSION CONTROLS ARE MAINTAINED IN ACCORDANCE WITH THE CONSTRUCTION SITE EROSION CONTROL REQUIREMENTS.

PAVING NOTES

- GENERAL:
 - PAVING SHALL CONFORM TO STATE HIGHWAY SPECIFICATIONS, APPLICABLE JURISDICTIONAL SPECIFICATIONS, AND THE GEOTECHNICAL REPORT PREPARED BY **[FIRM NAME]**, TITLED **[REPORT TITLE]**, ISSUE DATE **[DATE]**. ALL REFERENCES TO THE "GEOTECHNICAL REPORT" SHALL BE UNDERSTOOD AS THE AFOREMENTIONED REPORT.
 - ALL PAVING DIMENSIONS ARE TO FACE OF CURB UNLESS SPECIFIED OTHERWISE.
 - ALL SPOI GRADES ARE TO EDGE OF PAVEMENT UNLESS SPECIFIED OTHERWISE.
 - SURFACE PREPARATION - NOTIFY ENGINEER/OWNER OF UNSATISFACTORY CONDITIONS. DO NOT BEGIN PAVING WORK UNTIL DEFICIENT SUBBASE AREAS HAVE BEEN CORRECTED AND ARE READY TO RECEIVE PAVING.
 - ANY REQUIRED REPLACEMENT OF PUBLIC CURB AND GUTTER, PAVEMENT, OR SIDEWALK SHALL MATCH EXISTING AND MEET JURISDICTIONAL REQUIREMENTS.
 - CRUSHED AGGREGATE BASE COURSE SPECIFICATIONS:
 - THE TOP LAYER OF BASE COURSE SHALL CONFORM TO SECTIONS 301 AND 305 OF THE STATE HIGHWAY SPECIFICATIONS.
 - RECLAIMED OR RECYCLED ASPHALT MAY NOT BE USED AS CRUSHED AGGREGATE BASE COURSE UNLESS SPECIFICALLY APPROVED BY THE ENGINEER OF RECORD. USE OF ANY OTHER REPROCESSED OR BLENDED MATERIAL MUST FIRST BE APPROVED BY ENGINEER OF RECORD.
 - DO NOT PLACE BASE ON FROZEN FOUNDATIONS UNLESS THE ENGINEER APPROVES OTHERWISE.
 - DO NOT PLACE BASE ON FOUNDATIONS THAT ARE SOFT, SPONGY, OR COVERED BY ICE OR SNOW.
 - HOT MIXED ASPHALT (HMA) PAVING SPECIFICATIONS:
 - THE PLACING, CONSTRUCTION, AND COMPOSITION OF THE BASE COURSE AND HMA SURFACE COURSE SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF SECTIONS 450, 455, 460, AND 465 OF THE STATE HIGHWAY SPECIFICATIONS.
 - WEATHER LIMITATIONS:
 - DO NOT PLACE HMA WHEN BASE IS WET OR CONTAINS EXCESS MOISTURE.
 - DO NOT PLACE ASPHALTIC MIXTURE WHEN THE AIR TEMPERATURE IS APPROXIMATELY 3' ABOVE GRADE, IN SHADE, AND AWAY FROM ARTIFICIAL HEAT SOURCES IS LESS THAN 40°F UNLESS A VALID ENGINEER-AFIRMED HOT WEATHER PAVING PLAN IS IN EFFECT.
 - PLACE ASPHALTIC MIXTURE ONLY ON A PREPARED, FIRM, AND COMPACTED BASE, FOUNDATION LAYER, OR EXISTING PAVEMENT SUBSTANTIALLY SURFACE-DRY AND FREE OF LOOSE AND FOREIGN MATERIAL. DO NOT PLACE OVER FROZEN SUBGRADE OR BASE, OR WHERE THE ROADBED IS UNSTABLE.
 - APPLY TACK COAT ONLY WHEN THE AIR TEMPERATURE IS 32°F OR MORE UNLESS THE ENGINEER APPROVES OTHERWISE IN WRITING.
 - ALL ASPHALT (BOTH UPPER AND LOWER LAYERS) SHALL BE DELIVERED TO THE PROJECT SITE AT A TEMPERATURE NOT LOWER THAN 250°F.
 - CONTRACTOR SHALL ESTABLISH AND MAINTAIN REQUIRED LINES AND ELEVATIONS FOR EACH COURSE DURING CONSTRUCTION.
 - BINDER COURSE AGGREGATE:
 - THE AGGREGATE FOR THE BINDER COURSE SHALL CONFORM TO SECTION 460 OF THE STATE HIGHWAY SPECIFICATIONS.
 - SURFACE COURSE AGGREGATE:
 - THE AGGREGATE FOR THE SURFACE COURSE SHALL CONFORM TO SECTIONS 460 AND 465 OF THE STATE HIGHWAY SPECIFICATIONS.
 - ASPHALTIC MATERIALS:
 - THE ASPHALTIC MATERIALS SHALL CONFORM TO SECTIONS 455, 460, AND 465 OF THE STATE HIGHWAY SPECIFICATIONS.
- CONCRETE PAVING SPECIFICATIONS:
 - CONCRETE PAVING SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF SECTIONS 405, 415, AND 416 OF THE STATE HIGHWAY SPECIFICATIONS.
 - CURING COMPOUNDS SHALL CONFORM TO SECTION 415 OF THE STATE HIGHWAY SPECIFICATIONS.
 - CONTRACTOR SHALL PROVIDE A JOINTING PLAN TO ENGINEER IF NOT INCLUDED IN THE PLANS. CONTRACTOR SHALL PROVIDE CONTROL JOINTS AND CONSTRUCTION JOINTS OF ONE-QUARTER CONCRETE THICKNESS AT AN EQUAL RATIO OF LENGTH TO WIDTH WHEREVER POSSIBLE WITH A MAXIMUM LENGTH BETWEEN JOINTS OF 15' ON CENTER.
 - CONTRACTOR SHALL PROVIDE EXPANSION JOINTS IN SIDEWALKS AT A MAXIMUM 100' APART.
 - PLACE EXPANSION JOINTS IN CURB, GUTTER, OR CURB AND GUTTER CONSTRUCTED NEXT TO ASPHALTIC PAVEMENT OR SURFACING. LOCATE JOINTS EVERYWHERE THAT TANGENT AND RADIAL CURBS OR CURB AND GUTTER MEET. ON EACH SIDE OF EVERY INLET 3' FROM THE INLET, BUT NO CLOSER THAN 6" FROM ANOTHER JOINT; AND ON TANGENT SECTIONS PLACE BETWEEN 6' AND 300'.
 - IF CONSTRUCTING CURB, GUTTER, OR CURB AND GUTTER NEXT TO, OR ON CONCRETE PAVEMENT CONSTRUCTED WITH EXPANSION JOINTS, THEN PLACE EXPANSION JOINTS TO MATCH THE EXPANSION JOINT LOCATIONS IN THE PAVEMENTS.
 - FOR CURB AND GUTTER, FORM CONNECTION JOINTS BY SAWING OR FORMING AN INDUCED PLANE OF WEAKNESS AT LEAST 2" DEEP IN THE CURB, GUTTER, OR CURB AND GUTTER DIRECTLY OPPOSITE CONSTRUCTION OR CONNECTION JOINTS IN ADJOINING CONCRETE PAVEMENT AND AT THE REQUIRED SPACING IN CURB AND GUTTER ADJOINING ASPHALTIC PAVEMENT. SPACE JOINTS BETWEEN 6' AND APPROXIMATELY 20' APART, AS THE ENGINEER DIRECTS.
 - EXTERIOR CONCRETE SURFACES SHALL BE BROOM FINISHED.
 - CONTRACTOR SHALL INSTALL TRUNCATED DOME WARNING DETECTION FIELD SHALL BE PLACED AT ALL ADA RAMPS AS SPECIFIED ON PLANS AND IN ACCORDANCE WITH STATE AND FEDERAL REQUIREMENTS.
- PAVEMENT MARKING SPECIFICATIONS:
 - ALL PARKING STALL LINES SHALL BE 4" WIDE, HIGH VISIBILITY YELLOW LATEX PAINT.
 - ALL PAVEMENT MARKINGS INCLUDING STOP BARS, CROSSWALKS, DIRECTIONAL ARROWS, PARKING STALL LINES, ADA AND/OR PICK-UP ZONES, AND DROP-OFF/PICK-UP ZONES SHALL BE PAINTED WITH LATEX PAINT PER SPECIFICATIONS.

SEEDING AND RESTORATION NOTES

- CONTRACTOR SHALL PROVIDE NOTICE TO THE JURISDICTIONAL AUTHORITIES IN ADVANCE OF ANY SOIL DISTURBING ACTIVITIES, IN ACCORDANCE WITH MUNICIPAL REQUIREMENTS.
- ALL DISTURBED AREAS SHALL BE SODDED AND/OR SEEDED AND MULCHED IMMEDIATELY FOLLOWING GRADING ACTIVITIES.
- CONTRACTOR SHALL WATER ALL NEWLY SODDED/SEEDED AREAS DURING THE SUMMER MONTHS WHENEVER THERE IS A 7-DAY LAPSE WITH NO SIGNIFICANT RAINFALL.
- ALL SLOPES 20% OR GREATER SHALL BE TEMPORARILY SEEDED, MULCHED, OR OTHER MEANS OF COVER PLACED ON THEM WITHIN 2 WEEKS OF DISTURBANCE. REFER TO STABILIZATION PRACTICES IN THE EROSION CONTROL NOTES FOR FURTHER SPECIFICATIONS.
- CONTRACTOR SHALL CHISEL-PLOW OR DEEP TILL WITH DOUBLE TINES ALL STORMWATER MANAGEMENT FACILITIES JUST PRIOR TO SODDING AND/OR SEEDING AND MULCHING TO PROMOTE INFILTRATION.
- SEEDING SPECIFICATIONS:
 - TURF LAWN SEED MIXTURE: WISDOT SEED MIX NO. 40 AT RATES SPECIFIED IN SECTION 630 OF THE STATE HIGHWAY SPECIFICATIONS
 - LOW MAINTENANCE AREA SEED MIXTURE: WISDOT SEED MIX NO. 10 OR 20 APPLIED AT RATES AS SPECIFIED IN SECTION 630 OF THE STATE HIGHWAY SPECIFICATIONS.
 - NO-MOW AREA SEED MIXTURE: NO-MOW LAWN SEED MIX, AS PROVIDED BY PRAIRIE NURSERY, P.O. BOX 306, WESTFIELD, WISCONSIN, 53994, TEL. 608-296-3679 (OR APPROVED EQUIVALENT). SEEDING RATE SHALL BE PER MANUFACTURER'S RECOMMENDATIONS.
- SEED PREPARATION SPECIFICATIONS:
 - SCARIFY SUBSOILS TO A DEPTH OF 3" WHERE TOPSOIL SHALL BE PLACED TO REDUCE COMPACTION.
 - PLACE TOPSOIL AT A MINIMUM DEPTH OF 6" UNLESS OTHERWISE NOTED ON THE PLANS.
 - APPLY FERTILIZER IN ACCORDANCE WITH SEED MIX MANUFACTURER'S RECOMMENDATIONS.
 - SOW SEED AT RATES SPECIFIED USING METHOD "A" OR METHOD "B" AS SPECIFIED IN SECTION 630 OF THE STATE HIGHWAY SPECIFICATIONS.
- SEED MULCHING/EROSION MATTING SPECIFICATIONS:
 - ALL SEEDED AREAS WITH SLOPES FLATTER THAN 4:1, UNLESS OTHERWISE NOTED ON THE PLANS, SHALL BE STABILIZED WITH WEED-FREE WHEAT STRAW MULCH WITH METHODS AND RATES IN ACCORDANCE WITH SECTION 627 OF THE STATE HIGHWAY SPECIFICATIONS.
 - ALL SEEDED AREAS WITH SLOPES EQUAL TO OR STEEPER THAN 4:1, UNLESS OTHERWISE NOTED ON THE PLANS, SHALL BE STABILIZED WITH EROSION MATTING MATERIALS AS SPECIFIED ON THE PLANS. EROSION MATTING SHALL BE IN ACCORDANCE WITH SECTION 628 OF THE STATE HIGHWAY SPECIFICATIONS.

UTILITY NOTES

- ALL EXISTING UTILITIES ARE SHOWN FOR INFORMATIONAL PURPOSES ONLY AND ARE NOT GUARANTEED TO BE ACCURATE OR ALL INCLUSIVE. THE CONTRACTOR IS RESPONSIBLE FOR MAKING THEIR OWN DETERMINATION AS TO THE TYPE AND LOCATIONS OF UNDERGROUND UTILITIES AS MAY BE NECESSARY TO AVOID DAMAGE THERETO. CONTRACTOR/OWNER SHALL CALL "DIGGERS HOTLINE" PRIOR TO ANY CONSTRUCTION.
 - PRIOR TO CONSTRUCTION, THE PRIME CONTRACTOR IS RESPONSIBLE FOR:
 - EXAMINING ALL SITE CONDITIONS RELATIVE TO THE CONDITIONS INDICATED ON THE ENGINEERING DRAWINGS. ANY DISCREPANCIES ARE TO BE REPORTED TO THE ENGINEER AND RESOLVED PRIOR TO THE START OF CONSTRUCTION.
 - OBTAINING ALL PERMITS INCLUDING PERMIT COSTS, TAP FEES, METER DEPOSITS, BONDS, AND ALL OTHER FEES REQUIRED FOR PROPOSED WORK TO OBTAIN OCCUPANCY.
 - VERIFYING ALL ELEVATIONS, LOCATIONS, AND SIZES OF SANITARY, WATER, AND STORM LATERALS AND CHECK ALL UTILITY CROSSINGS FOR CONFLICTS. NOTIFY ENGINEER OF ANY DISCREPANCY. NO WORK SHALL BE PERFORMED UNTIL THE DISCREPANCY IS RESOLVED.
 - NOTIFYING ALL UTILITIES PRIOR TO INSTALLATION OF ANY UNDERGROUND IMPROVEMENTS.
 - NOTIFYING THE DESIGN ENGINEER AND JURISDICTIONAL AUTHORITY 48 HOURS PRIOR TO THE START OF CONSTRUCTION TO ARRANGE FOR APPROPRIATE CONSTRUCTION OBSERVATION.
 - COORDINATING ALL CONSTRUCTION WITH OTHER CONTRACTORS INVOLVED WITH CONSTRUCTION OF THE PROPOSED DEVELOPMENT AND FOR REPORTING ANY ERRORS OR DISCREPANCIES BETWEEN THESE PLANS AND PLANS PREPARED BY OTHERS.
 - ALL UTILITY WORK SHALL BE DONE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS FOR PUBLIC UTILITIES AND STATE DSPS/SPS AND LOCAL CODES AND SPECIFICATIONS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE WHICH SPECIFICATIONS AND CODES APPLY, AND TO COORDINATE ALL CONSTRUCTION ACTIVITIES WITH THE APPROPRIATE JURISDICTIONAL AUTHORITIES.
 - SPECIFICATIONS SHALL COMPLY WITH THE JURISDICTIONAL AUTHORITY'S SPECIAL PROVISIONS.
 - LENGTHS OF ALL UTILITIES ARE TO CENTER OF STRUCTURES OR FITTINGS AND MAY VARY SLIGHTLY FROM PLAN. LENGTHS SHALL BE VERIFIED IN THE FIELD DURING CONSTRUCTION.
 - CONTRACTOR SHALL BE RESPONSIBLE FOR SITE SAFETY DURING THE CONSTRUCTION OF IMPROVEMENTS.
 - CONTRACTOR SHALL INSTALL A PEDESTRIAN FENCE AROUND ALL EXCAVATIONS TO BE LEFT OPEN OVERNIGHT AS REQUIRED IN CONSTRUCTION SITES WHERE THE POTENTIAL FOR PEDESTRIAN INJURY EXISTS.
 - CONTRACTOR SHALL ADJUST AND/OR RECONSTRUCT ALL UTILITY COVERS (SUCH AS MANHOLE COVERS, VALVE BOX COVERS, ETC.) TO MATCH THE FINISHED GRADES OF THE AREAS EFFECTED BY THE CONSTRUCTION.
 - ALL NON-METALLIC UTILITY PIPES (SANITARY SEWER, STORM SEWER, AND WATER PIPING) SHALL BE INSTALLED IN CONJUNCTION WITH TRACER WIRE AS REQUIRED BY SPS 382.30(11)H, SPS 382.36(7)(C10), AND SPS 382.40(B)(K). COLOR OF TRACER WIRE SHALL BE: SANITARY SEWER - GREEN, STORM SEWER - BROWN, WATER - BLUE, NON-POTABLE WATER - PURPLE.
 - DRY UTILITIES (COMMUNICATION, TELEPHONE, GAS, ELECTRIC, ETC.) ARE SHOWN FOR GENERAL ROUTING ONLY. CONTRACTOR SHALL COORDINATE DESIGN AND FINAL LOCATION WITH APPROPRIATE UTILITY COMPANY.
 - THE PRIME CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING ALL CONSTRUCTION WITH OTHER CONTRACTORS INVOLVED WITH CONSTRUCTION OF THE PROPOSED DEVELOPMENT AND FOR REPORTING ANY ERRORS OR DISCREPANCIES BETWEEN THESE PLANS AND PLANS PREPARED BY OTHERS.
 - ANY SANITARY SEWER, SANITARY SEWER SERVICES, WATER MAIN, WATER SERVICES, STORM SEWER, OR OTHER UTILITIES, WHICH ARE DAMAGED BY THE CONTRACTORS, SHALL BE REPAIRED TO THE JURISDICTIONAL AUTHORITY'S SATISFACTION AT THE CONTRACTOR'S EXPENSE.
 - THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING THE ENGINEER WITH AS-BUILT CONDITIONS OF THE INSTALLED IMPROVEMENTS IN ORDER THAT THE APPROPRIATE DRAWINGS CAN BE PREPARED, IF REQUIRED. ANY CHANGES TO THE DRAWINGS OR ADDITIONAL ITEMS MUST BE REPORTED TO THE ENGINEER AS WORK PROGRESSES.
 - IN ANY LOCATIONS WHERE BUILDING SEWERS (STORM AND SANITARY) ARE INSTALLED WITH LESS THAN THE MINIMUM COVER AS SPECIFIED IN SPS 382.30(11)(g) OR WATER PIPING 382.40(B)(a), CONTRACTOR SHALL INSTALL INSULATION IN ACCORDANCE WITH SPS 382.30(11)(c)2, FOR PROTECTION FROM FROST.
 - STORM SEWER SPECIFICATIONS:
 - PIPE:
 - REINFORCED CONCRETE PIPE (RCP) - SHALL MEET THE REQUIREMENTS OF ASTM CLASS III (MINIMUM) C76 WITH RUBBER GASKET JOINTS CONFORMING TO ASTM C443.
 - HIGH DENSITY DUAL-WALL POLYETHYLENE CORRUGATED PIPE (HDPE) - SHALL BE AS MANUFACTURED BY ADS OR EQUAL WITH WATER-TIGHT JOINTS, AND SHALL MEET THE REQUIREMENTS OF AASHTO DESIGNATION M284 TYPE "S".
 - POLYVINYL CHLORIDE (PVC) - SHALL MEET REQUIREMENTS OF ASTM D3034, SDR 35 FOR PIPE SIZES 8"-15" WITH INTEGRAL BELL TYPE FLEXIBLE ELECTROMETRIC JOINTS, MEETING THE REQUIREMENTS OF ASTM D3212, ASTM 1785 SCHEDULE 40 FOR PIPE DIAMETERS 41" - 36" SDR 35 SHALL BE USED FOR DEPTHS 3'-15' AND SDR 26 FOR DEPTHS 16'-26" DEPENDENT ON LOCAL JURISDICTION.
 - INLETS AND CATCH BASINS:
 - INLETS SHALL BE CONSTRUCTED IN ACCORDANCE WITH CHAPTER 3.6.3 AND DETAIL DRAWINGS FILE NO. 28 OR 29 OF THE STANDARD SPECIFICATIONS, OR APPROVED EQUAL WITH A 2X3" MAXIMUM OPENING.
 - POLYVINYL CHLORIDE (PVC) INLET MANHOLES SHALL BE MANUFACTURED BY ADS OR EQUAL, CONFORMING TO ASTM D1781, ASTM D3212, ASTM F477, AND MANUFACTURER'S REQUIREMENTS. REFER TO PLANS FOR LID OR GRATE SPECIFICATION.
 - FRAME AND GRATE LIDS:
 - CURB FRAME AND GRATES SHALL BE NEEPAH R-3067 WITH TYPE "R" GRATE OR EQUAL, UNLESS AS SPECIFIED IN THE PLANS.
 - SOLID LID FRAME AND GRATES SHALL BE NEEPAH R-1550, HEAVY DUTY NON-ROCKING SOLID LID OR EQUAL, UNLESS AS SPECIFIED IN THE PLANS.
 - GRATE FRAME AND GRATES SHALL BE NEEPAH R-1550, HEAVY DUTY WITH A R-2578 GRATE OR EQUAL, UNLESS AS SPECIFIED IN THE PLANS.
 - MANHOLES:
 - MANHOLES SHALL BE CONSTRUCTED IN ACCORDANCE WITH CHAPTER 3.5.0 AND DETAIL DRAWINGS FILE NO. 11 AND/OR 12 OF THE STANDARD SPECIFICATIONS.
 - MANHOLE FRAMES AND COVERS SHALL BE NEEPAH R-1550, HEAVY DUTY NON-ROCKING SOLID LID OR EQUAL, UNLESS AS SPECIFIED IN THE PLANS.
 - BACKFILL AND BEDDING:
 - STORM SEWER SHALL BE CONSTRUCTED WITH GRAVEL BACKFILL AND CLASS "B" BEDDING IN ALL PAVED AREAS AND TO A POINT 5' BEYOND THE EDGE OF PAVEMENT, TRENCHES RUNNING PARALLEL TO AND LESS THAN 5' FROM THE EDGE OF PAVEMENT SHALL ALSO REQUIRE GRAVEL BACKFILL.
 - LANDSCAPED AREAS MAY BE BACKFILLED WITH EXCAVATED MATERIAL IN CONFORMANCE WITH SECTION 8.43.5 OF THE STANDARD SPECIFICATIONS.
 - FIELD TILE CONNECTIONS:
 - ALL FIELD TILE ENCOUNTERED DURING CONSTRUCTION SHALL BE INCLUDED IN THE UNIT PRICE(S) FOR STORM SEWER. TILE LINES CROSSED BY THE TRENCH SHALL BE REPLACED WITH THE SAME MATERIAL AS THE STORM SEWER.
- WATER MAIN & WATER LATERAL SPECIFICATIONS:
 - PIPE:
 - DUCTILE IRON PIPE SHALL BE CLASS 52 CONFORMING TO AWWA C151 AND CHAPTER 8.18.0 OF THE STANDARD SPECIFICATIONS.
 - POLYVINYL CHLORIDE (PVC) SHALL BE MANUFACTURED IN ACCORDANCE WITH AWWA C900 DR14 (CLASS 305) FOR SIZES UP TO 4" AND AWWA C900 DR18 (CLASS 235) UP TO 30". WITH INTEGRAL ELASTOMERIC BELL AND SPIGOT JOINTS.
 - COPPER TYPE K TUBING SHALL CONFORM TO ASTM DESIGNATION B88 FOR WATER SERVICES LESS THAN 2" IN DIAMETER.
 - HIGH DENSITY POLYETHYLENE (HDPE) SHALL CONFORM TO THE REQUIREMENTS OF AWWA C901, SDR 9 MINIMUM FOR SIZES UP TO 3" AND TO AWWA C906, SDR 17 MINIMUM FOR SIZES GREATER THAN 3".
 - VALVES AND VALVE BOXES:
 - GATE VALVES SHALL BE AWWA GATE VALVES MEETING THE REQUIREMENTS OF AWWA C500 AND CHAPTER 8.27.0 OF THE STANDARD SPECIFICATIONS.
 - CURB STOPS AND CORPORATION VALVES SHALL BE AWWA C800 AND ASTM B62, AND CONFORM TO ANY LOCAL JURISDICTIONAL REQUIREMENTS.
 - WATER SERVICES CONNECTIONS:
 - SERVICES 2" IN DIAMETER OR LESS SHALL USE A TAP SERVICE WITH A CORPORATION STOP AND CURB STOP VALVE WITH SERVICE BOX PER JURISDICTIONAL REQUIREMENTS.
 - SERVICES GREATER THAN 2" IN DIAMETER SHALL USE A TAPPING SLEEVE OR CUT-IN TEE CONNECTION WITH VALVE OF EQUIVALENT PIPE DIAMETER AND VALVE BOX PER JURISDICTIONAL REQUIREMENTS.
 - HYDRANTS:
 - HYDRANTS SHALL CONFORM TO THE SPECIFICATIONS OF THE JURISDICTIONAL AUTHORITIES. THE DISTANCE FROM THE GROUND LINE TO THE CENTERLINE OF THE LOWEST NOZZLE AND THE LOWEST CONNECTION OF THE FIRE DEPARTMENT SHALL BE NO LESS THAN 18" AND NO GREATER THAN 23"(SEE DETAIL).
 - JOINT RESTRAINT:
 - WHERE SPECIFIED, DUCTILE IRON PIPE SHALL INCLUDE MECHANICAL JOINTS CONFORMING TO CHAPTER 4.4.2(b) OF THE STANDARD SPECIFICATIONS. POLYETHYLENE WRAP SHALL BE USED AROUND ALL MECHANICAL CONNECTIONS.
 - BEDDING AND COVER MATERIAL:
 - PIPE BEDDING AND COVER MATERIAL SHALL BE SAND, CRUSHED STONE CHIPS OR CRUSHED STONE SCREENINGS CONFORMING TO CHAPTER 8.43.2 OF THE STANDARD SPECIFICATIONS.
 - BURY DEPTH SHALL CONFIRM TO LOCAL JURISDICTION REQUIREMENTS, OR DSPS REQUIREMENTS AT A MINIMUM, WHERE THERE IS NO LOCAL JURISDICTION REQUIREMENTS.
- BACKFILL:
 - BACKFILL MATERIAL AND INSTALLATION SHALL BE IN ACCORDANCE WITH CHAPTERS 2.6.0 AND 4.17.0 OF THE STANDARD SPECIFICATIONS. GRAVEL BACKFILL IS REQUIRED IN ALL PAVED AREAS AND TO A POINT 5' BEYOND THE EDGE OF PAVEMENT, TRENCHES RUNNING PARALLEL TO AND LESS THAN 5' FROM THE EDGE OF PAVEMENT SHALL ALSO REQUIRE GRAVEL BACKFILL.
 - LANDSCAPED AREAS MAY BE BACKFILLED WITH EXCAVATED MATERIAL IN CONFORMANCE WITH SECTION 8.43.5 OF THE STANDARD SPECIFICATIONS.
- SEPARATION DISTANCES
 - WHERE PRIVATE WATER MAIN OR WATER SERVICES CROSSES A SANITARY SEWER OR SANITARY LATERAL, THE WATER PIPE WITHIN 5 FEET OF THE CROSSING SHALL BE INSTALLED WITH THE FOLLOWING:
 - WATER PIPING SHALL BE INSTALLED AT LEAST 12 INCHES ABOVE THE TOP OF SANITARY PIPING
 - WATER PIPING SHALL BE INSTALLED AT LEAST 18 INCHES BELOW THE BOTTOM OF SANITARY PIPING.

UTILITY NOTES, CONTINUED

- SANITARY SEWER SPECIFICATIONS:
 - PIPE:
 - POLYVINYL CHLORIDE (PVC) MEETING REQUIREMENTS OF ASTM D 3034, WITH INTEGRAL BELL TYPE FLEXIBLE ELASTOMERIC JOINTS, MEETING THE REQUIREMENTS OF ASTM D3212, ASTM 1785 SCHEDULE 40 FOR PIPE DIAMETERS 4"-6". SDR 35 SHALL BE USED FOR DEPTHS 3'-15' AND SDR 26 FOR DEPTHS 16'-26" DEPENDENT ON LOCAL JURISDICTION.
 - CONNECTION TO DISSIMILAR PIPE MATERIALS SHALL CONFORM TO CHAPTER 3.4.2 OF THE STANDARD SPECIFICATIONS. FERNCO COUPLER MAY BE USED WITH APPROVAL OF ENGINEER.
 - MANHOLES:
 - MANHOLES SHALL BE CONSTRUCTED IN ACCORDANCE WITH CHAPTER 3.5.0 AND DETAIL DRAWINGS FILE NO'S 12, 13 AND 15 OF THE STANDARD SPECIFICATIONS AND ALL SPECIAL PROVISIONS OF THE JURISDICTIONAL AUTHORITIES.
 - MANHOLES SHALL HAVE INTERNAL CHIMNEY SEALS INSTALLED IN ALL SANITARY MANHOLES IN ACCORDANCE WITH CHAPTER 3.5.4(F) AND DETAIL DRAWING FILE NO. 12A OF THE STANDARD SPECIFICATIONS.
 - MANHOLES SHALL HAVE ALL EXTERNAL JOINTS WRAPPED WITH MAC WARP OR EQUAL RUBBERIZED JOINT WRAP PER ASTM 1060. THE CONTRACTOR SHALL TAKE CARE TO COMPLETELY COVER THE JOINTS WITH BEDDING MATERIAL UNDER THE HAUNCH OF THE PIPE TO PROVIDE ADEQUATE SIDE SUPPORT."
 - BACKFILL:
 - MATERIAL AND INSTALLATION SHALL BE IN ACCORDANCE CHAPTER 2.6.0 OF THE STANDARD SPECIFICATIONS. GRAVEL BACKFILL IS REQUIRED IN ALL PAVED AREAS AND TO A POINT 5' BEYOND THE EDGE OF PAVEMENT, TRENCHES RUNNING PARALLEL TO AND LESS THAN 5' FROM THE EDGE OF PAVEMENT SHALL ALSO REQUIRE GRAVEL BACKFILL.
 - LANDSCAPED AREAS MAY BE BACKFILLED WITH EXCAVATED MATERIAL IN CONFORMANCE WITH SECTION 8.43.5 OF THE STANDARD SPECIFICATIONS.

EROSION CONTROL NOTES

- CONTRACTOR IS RESPONSIBLE TO NOTIFY ENGINEER OF RECORD AND OFFICIALS OF ANY CHANGES TO THE EROSION CONTROL AND STORMWATER MANAGEMENT PLANS.
- ALL EROSION CONTROL MEASURES SHALL BE CONSTRUCTED AND MAINTAINED BY THE CONTRACTOR IN ACCORDANCE WITH WDNR TECHNICAL STANDARDS AND JURISDICTIONAL REQUIREMENTS. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN A COPY OF THESE STANDARDS. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY ADDITIONAL EROSION CONTROL MEASURES WHICH MAY BE NECESSARY TO MEET UNFORESEEN FIELD CONDITIONS.
- INSTALL PERIMETER EROSION CONTROL MEASURES (SUCH AS CONSTRUCTION ENTRANCES, SILT FENCE, AND EXISTING INLET PROTECTION) PRIOR TO ANY GRADING OR DISTURBANCE OF EXISTING SURFACE COVER. MODIFICATIONS TO ORDER TO MEET UNFORESEEN FIELD CONDITIONS IS ALLOWED IF MODIFICATIONS CONFORM TO WDNR TECHNICAL STANDARDS AND JURISDICTIONAL REQUIREMENTS. ALL DESIGN MODIFICATIONS MUST BE APPROVED BY THE JURISDICTIONAL AUTHORITIES PRIOR TO DEVIATION OF THE APPROVED PLAN.
- ADDITIONAL EROSION CONTROL MEASURES, AS REQUESTED BY JURISDICTIONS HAVING AUTHORITY AND/OR ENGINEER OF RECORD SHALL BE INSTALLED WITHIN 24 HOURS OF REQUEST.
- INSPECTIONS AND MAINTENANCE OF ALL EROSION CONTROL MEASURES SHALL BE ROUTINE (ONCE PER WEEK MINIMUM) TO ENSURE FUNCTION OF EROSION CONTROLS AT ALL TIMES. EROSION CONTROL MEASURES ARE TO BE IN WORKING ORDER AT THE END OF EACH WORK DAY.
- ALL EROSION AND SEDIMENT CONTROL ITEMS SHALL BE INSPECTED WITHIN 24 HOURS OF ALL RAIN EVENTS EXCEEDING 0.5" ANY DAMAGED EROSION CONTROL MEASURES SHALL BE REPAIRED OR REPLACED IMMEDIATELY UPON INSPECTION.
- CONSTRUCTION ENTRANCES SHALL BE INSTALLED AT ALL LOCATIONS OF VEHICLE INGRESS/EGRESS POINTS. ADDITIONAL LOCATIONS OTHER THAN AS SHOWN ON THE PLANS MUST BE PRE-APPROVED BY THE JURISDICTION. CONSTRUCTION ENTRANCES SHALL BE 30' LONG AND NO LESS THAN 12" THICK BY USE OF 3" SELECTED CRUSHED CONSTRUCTION ENTRANCES SHALL BE MAINTAINED BY THE CONTRACTOR IN A CONDITION WHICH WILL PREVENT THE TRACKING OF MUD OR DRY SEDIMENT OFF-SITE AFTER EACH WORKING DAY OR MORE FREQUENTLY AS REQUIRED.
- PAVED SURFACES ADJACENT TO CONSTRUCTION SITE VEHICLE ACCESS SHALL BE SWEEP AND/OR SCRAPED TO REMOVE ACCUMULATED SOIL, DIRT, AND/OR DUST AFTER THE END OF EACH WORK DAY AND AS REQUESTED BY THE JURISDICTIONAL AUTHORITIES.
- INLET PROTECTION SHALL BE IMMEDIATELY FITTED AT THE INLETS OF ALL INSTALLED STORM SEWER. STONE DITCH CHECKS FENCE SHALL BE IMMEDIATELY FITTED AT ALL INSTALLED CULVERT INLETS TO PREVENT SEDIMENT DEPOSITION WITHIN STORM SEWER SYSTEMS.
- INSTALL EROSION CONTROLS ON THE DOWNSLOPE SIDE OF STOCKPILES. IF STOCKPILE REMAINS UNDISTURBED FOR MORE THAN SEVEN (7) DAYS, TEMPORARY SEEDING AND STABILIZATION IN ACCORDANCE WITH BEST MANAGEMENT PRACTICES IS REQUIRED. IF DISTURBANCE OCCURS BETWEEN NOVEMBER 15TH AND MAY 15TH, THE MULCHING SHALL BE PERFORMED BY HYDRO-MULCHING WITH A "TACKIFIER."
- DITCH CHECKS AND APPLICABLE EROSION NETTING/MATTING SHALL BE INSTALLED IMMEDIATELY AFTER COMPLETION OF GRADING EFFORTS WITHIN DITCHES/SWALES TO PREVENT SOIL TRANSPORTATION.
- EROSION CONTROL FOR UTILITY CONSTRUCTION (STORM SEWER, SANITARY SEWER, WATER MAIN, ETC.):
 - PLACE EXCAVATED TRENCH MATERIAL ON THE HIGH SIDE OF THE TRENCH.
 - BACKFILL, COMPACT, AND STABILIZE THE TRENCH IMMEDIATELY AFTER PIPE CONSTRUCTION.
 - DISCHARGE TRENCH WATER INTO A SEDIMENTATION BASIN OR FILTERING TANK IN ACCORDANCE WITH THE WDNR DEWATERING TECHNICAL STANDARD NO. 1061 PRIOR TO RELEASE INTO THE STORM SEWER, RECEIVING STREAM, OR DRAINAGE DITCH.
- ALL SLOPES 4:1 OR GREATER SHALL BE STABILIZED WITH CLASS I, TYPE B EROSION MATTING PER STATE HIGHWAY SPECIFICATIONS OR APPLICATION OF A WISDOT APPROVED POLYMER SOIL STABILIZATION TREATMENT OR A COMBINATION THEREOF. MINIMUM 7) DAYS OF REACHING FINAL GRADE. DRAINAGE SWALES SHALL BE STABILIZED WITH CLASS II, TYPE B EROSION MATTING PER STATE HIGHWAY SPECIFICATIONS. EROSION MATTING AND/OR NETTING USED ONSITE SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S GUIDELINES AND WDNR TECHNICAL STANDARDS 1052 AND 1053.
- CONTRACTOR SHALL TAKE ALL NECESSARY STEPS TO CONTROL DUST ARISING FROM CONSTRUCTION OPERATIONS. REFER TO WDNR TECHNICAL STANDARD 1068.
- A CONCRETE WASHOUT AREA SHALL BE DESIGNATED ONSITE. CONTRACTOR SHALL USE PRE-MANUFACTURED ABOVE GROUND WASHOUT TOTE OR EQUIVALENT CONTAINMENT AREA FOR ALL CONCRETE WASTE. CONCRETE WASTE SHALL ONLY BE CONTAINED IN ABOVE GROUND PRE-FABRICATED CONTAINERS OR CONSTRUCTED CONTAINMENT AREA AND IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO FREQUENTLY DISPOSE OF OFF-SITE IN ACCORDANCE WITH LOCAL, STATE AND FEDERAL REQUIREMENTS TO MAINTAIN THE SYSTEMS EFFECTIVENESS.
- STABILIZATION MEASURES SHALL BE INITIATED AS SOON AS PRACTICABLE IN PORTIONS OF THE SITE WHERE CONSTRUCTION ACTIVITIES HAVE TEMPORARILY OR PERMANENTLY CEASED. NO MORE THAN SEVEN (7) DAYS SHALL PASS AFTER THE CONSTRUCTION ACTIVITY IN THAT PORTION OF THE SITE HAS CEASED UNLESS:
 - THE INITIATION STABILIZATION MEASURES BY THE SEVENTH (7) DAY AFTER CONSTRUCTION ACTIVITY HAS CEASED OR IS PRECLUDED BY SNOW COVER. IN THAT EVENT, STABILIZATION SHALL BE INITIATED AS SOON AS PRACTICABLE.
 - CONSTRUCTION ACTIVITY WILL RESUME ON A PORTION OF THE SITE WITHIN FOURTEEN (14) DAYS FROM WHEN ACTIVITY CEASED (I.E., THAT THE PORTION OF THE SITE THAT THE CONSTRUCTION ACTIVITY IS TEMPORARILY CEASED IS LESS THAN FOURTEEN (14) DAY). IN THAT EVENT, STABILIZATION MEASURES DO NOT HAVE TO BE INITIATED ON THAT PORTION OF THE SITE BY THE SEVENTH (7) DAY AFTER CONSTRUCTION ACTIVITY HAS TEMPORARILY CEASED.
- STABILIZATION MEASURES SHALL BE DETERMINED BASED ONSITE CONDITIONS WHEN CONSTRUCTION ACTIVITY HAS CEASED INCLUDING, BUT NOT LIMITED TO, WEATHER CONDITIONS AND LENGTH OF TIME THE MEASURE MUST BE EFFECTIVE. THE FOLLOWING ARE ACCEPTABLE STABILIZATION MEASURES:
 - PERMANENT SEEDING, IN ACCORDANCE WITH APPROVED CONSTRUCTION SPECIFICATION
 - TEMPORARY SEEDING, MAY CONSIST OF SPRING OATS(100LB.ACRE) IN SPRING/SUMMER OR WHEAT OR CEREAL RYE (150LB.ACRE) IN FALL.
 - HYDRO-MULCHING WITH A TACKIFIER
 - WOVEN AND NON-WOVEN GEOTEXTILES
 - EROSION MATTING
 - SODDING
 - OTHER MEASURES AS APPROVED BY THE ENGINEER
- EROSION CONTROL MEASURES SHALL NOT BE REMOVED UNTIL ALL LAND DISTURBING CONSTRUCTION ACTIVITY AT THE SITE HAS BEEN COMPLETED AND THAT A UNIFORM PERENNIAL VEGETATIVE COVER HAS BEEN ESTABLISHED WITH A CONTIGUOUS DENSITY OF AT LEAST 70% FOR UNPAVED AREAS AND AREAS NOT COVERED BY PERMANENT STRUCTURES OR THAT EMPLOY EQUIVALENT PERMANENT STABILIZATION MEASURES.
- CONTRACTOR/OWNER SHALL FILE A NOTICE OF TERMINATION UPON COMPLETION OF THE PROJECT IN ACCORDANCE WITH WDNR REQUIREMENTS AND/OR REQUEST FOR PERMIT CLOSURE IN ACCORDANCE WITH JURISDICTION PERMIT AND SPECIFICATION REQUIREMENTS.

PLAN MODIFICATIONS:		
#	Date:	Description:
1	05.21.24	PRELIMINARY PLAN
2	08.20.24	FINAL PLAT
3		
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15		

Designed By:	MSS
Reviewed By:	
Approved By:	CD
SHEET TITLE:	
NOTES AND LEGEND	

SHEET NUMBER:

C1.0
JSD PROJECT NO: 22-11636



Toll Free (800) 242-8511

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GRADING AND EARTHWORK NOTES

- ALL SITE PREP AND EARTHWORK SHALL CONFORM TO THE GEOTECHNICAL REPORT PREPARED BY [FIRM NAME], TITLED "[REPORT TITLE]", ISSUE DATE [DATE]. ALL REFERENCES TO THE "GEOTECHNICAL REPORT" SHALL BE UNDERSTOOD AS THE AFOREMENTIONED REPORT.
- ALL PROPOSED GRADES SHOWN ARE FINISHED GRADES. CONTRACTOR SHALL VERIFY ALL GRADES, MAKE SURE ALL AREAS DRAIN PROPERLY, AND REPORT ANY DISCREPANCIES TO THE ENGINEER PRIOR TO CONSTRUCTION.
- CONTRACTOR SHALL ASSUME SOLE RESPONSIBILITY FOR COMPUTATIONS OF ALL GRADING QUANTITIES, WHILE JSD PROFESSIONAL SERVICES, INC. ATTEMPTS TO PROVIDE A COST-EFFECTIVE APPROACH TO BALANCE EARTHWORK. GRADING DESIGN IS BASED ON MANY FACTORS, INCLUDING SAFETY, AESTHETICS, AND COMMON ENGINEERING STANDARDS OF CARE. THEREFORE, NO GUARANTEE CAN BE MADE FOR A BALANCED SITE.
- ALL EXCAVATIONS AND FILLS SHALL BE TO THE ELEVATIONS SHOWN ON THE DRAWINGS AND SHALL INCLUDE SUFFICIENT DEPTHS FOR PLACEMENT OF FILL MATERIALS, BASE COURSES, PAVEMENTS, TOPSOIL, AND OTHER MATERIALS TO THE SPECIFIED DEPTHS.
- CONTRACTOR SHALL NOT EXCAVATE BELOW ELEVATIONS OR DESIGN GRADES SHOWN ON THE DRAWINGS WITHOUT PRIOR AUTHORIZATION FROM ENGINEER AND OWNER.
- PRIOR TO ALL EXCAVATION OR FILLING OPERATIONS, CONTRACTOR IS RESPONSIBLE FOR REMOVING ALL TOPSOIL FROM PROPOSED LOCATIONS OF BUILDINGS, STRUCTURES, ROADS, WALKS, OTHER PAVED AREAS, STORM WATER FACILITIES OR WITHIN THE GRADING EXTENTS WHERE EXISTING GRADES ARE ALTERED BY MORE THAN 3". REMOVED OR STRIPPED TOPSOIL SHALL BE SEGREGATED AND STOCKPILED ON-SITE IN AN APPROPRIATE LOCATION TO BE RESPREAD AS SPECIFIED ON THE DRAWINGS.
- CONTRACTOR SHALL NOT PLACE ANY FILL OR OTHER MATERIALS ON AREAS THAT HAVE NOT HAD TOPSOIL REMOVED, ARE FROZEN, SATURATED, OR YIELDING. CONTRACTOR SHALL NOTIFY OWNER OR ENGINEER IF SUBGRADE CONDITIONS ARE NOT SUITABLE FOR SUPPORTING FILL AND A FURTHER DETERMINATION SHALL BE PROVIDED BY OWNER OR ENGINEER.
- CONTRACTOR SHALL PLACE THE FILLS IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE GEOTECHNICAL REPORT INCLUDING LIFT DEPTHS AND COMPACTION EFFORTS.
- PRIOR TO PLACEMENT OF BASE COURSE MATERIALS IN PAVEMENT OR HARD SURFACE AREAS OR CONDUCTING EXCAVATION BELOW SUBGRADE (EBS) ELEVATIONS, CONTRACTOR SHALL NOTIFY OWNER AND ENGINEER TO CONDUCT AN INSPECTION OF THE PREPARED SUBGRADE AND PROOF-ROLLING. PROOF-ROLLING SHALL BE CONDUCTED BY THE CONTRACTOR IN WITNESS OF THE OWNER AND ENGINEER. OWNER AND ENGINEER SHALL DETERMINE IF AREAS OF EBS ARE REQUIRED. EBS SHALL BE COMPLETED BY THE CONTRACTOR PER THE DIRECTION OF THE OWNER AND ENGINEER.
- SOIL MATERIAL SPECIFICATIONS:**
 - FILL AND BACKFILL MATERIALS
 - MATERIAL SHALL BE SATISFACTORY MATERIALS EXCAVATED FROM THE SITE. PER THE GEOTECHNICAL REPORT, IF SATISFACTORY MATERIALS ARE NOT AVAILABLE ON-SITE OR ADDITIONAL MATERIALS ARE REQUIRED, REFER TO IMPORTED FILL MATERIAL SPECIFICATIONS.
 - IMPORTED FILL MATERIAL
 - MATERIAL SHALL BE PROVIDED BY THE CONTRACTOR FROM OFFSITE BORROW AREAS WHEN SUFFICIENT, SATISFACTORY MATERIALS ARE NOT AVAILABLE ON-SITE. IMPORTED FILL MATERIAL SHALL BE IN ACCORDANCE WITH THE GEOTECHNICAL REPORT AND CONSIST OF CLEAN MATERIAL OF INORGANIC SOILS OR A MIXTURE OF INORGANIC SOIL AND ROCK, STONE, OR GRAVEL. THE MATERIAL SHALL BE FREE OF TOPSOIL, VEGETATION, PAVEMENT RUBBLE, DEBRIS, OR OTHER DELETERIOUS MATERIALS. THE MAXIMUM NOMINAL DIMENSION OF MATERIALS CONSISTING OF ROCK, STONE, OR GRAVEL SHALL BE 6".
 - GRANULAR FILL
 - MATERIAL SHALL CONSIST OF CLEAN MATERIAL MEETING THE REQUIREMENTS OF "GRADE 1" OR "GRADE 2" GRANULAR BACKFILL AS DEFINED IN SECTION 209.2.1 OF THE STATE HIGHWAY SPECIFICATIONS.
- BUILDING STRUCTURAL FILL**
 - CLEAN MATERIAL MEETING THE REQUIREMENTS OF TYPE A "STRUCTURE BACKFILL" AS DEFINED IN SECTIONS 210.2.1 AND 210.2.2 OF THE STATE HIGHWAY SPECIFICATIONS AND GEOTECHNICAL REPORT.

CONSTRUCTION SITE DEWATERING NOTES

- ALL CONSTRUCTION SITE DEWATERING PRACTICES SHALL BE IN ACCORDANCE WITH WDNr TECHNICAL STANDARD 1061 FOR PUMPING DISCHARGE RATES OF LESS THAN 70 GPM. CONTRACTOR SHALL BE RESPONSIBLE FOR APPLICABLE JURISDICTIONAL DEWATERING PERMITS. FOR DISCHARGE RATES EXCEEDING 70 GPM, CONTRACTOR SHALL BE RESPONSIBLE FOR PERMITTING OF DEWATERING SYSTEM AS A HIGH CAPACITY DEWATERING WELL WITH WDNr AND LOCAL JURISDICTIONS.
- CONTRACTOR SHALL DISCHARGE TREATED EFFLUENT FROM DEWATERING SYSTEM TO LOCATIONS IN ACCORDANCE WITH WDNr TECHNICAL STANDARD 1061. CONTRACTOR SHALL OBTAIN APPROVAL FROM LOCAL JURISDICTION OR ADJACENT PRIVATE PROPERTY OWNERS FOR ALL DISCHARGES TO JURISDICTIONS PUBLIC INFRASTRUCTURE OR PRIVATE PROPERTY.
- IN THE EVENT OF DIRTY/UNCLEAR DISCHARGE, CONTRACTOR SHALL HALT PUMPING OPERATIONS AND EVALUATE THE DEWATERING TREATMENT/FILTERING SYSTEM.
- IN THE EVENT CONTRACTOR FINDS SIGNS OF CONTAMINATION IN THE GROUNDWATER OR SITE SOILS, ALL DEWATERING PRACTICES SHALL BE HALTED AND CONTAMINATION SHALL BE EVALUATED BY A QUALIFIED PROFESSIONAL TO PREVENT TRANSPORTATION OF CONTAMINATES DOWNSTREAM OF DISCHARGES.
 - IF DEWATERING PRACTICES CONTINUE WITH CONTAMINATED GROUNDWATER OR SOIL CONDITIONS, THE CONTRACTOR SHALL BE RESPONSIBLE TO OBTAIN ALL REQUIRED PERMITS AND APPROVALS TO CONTINUE OPERATION OF DEWATERING SYSTEMS.
 - UNDER NO CIRCUMSTANCES SHALL THE CONTRACTOR DISCHARGE CONSTRUCTION SITE DEWATERING PRACTICES TO THE SANITARY SEWER WITHOUT AUTHORIZATION AND PERMIT APPROVALS FROM THE LOCAL JURISDICTION.

STORMWATER FACILITIES CONSTRUCTION NOTES

- ENGINEER SHALL BE NOTIFIED PRIOR TO INSTALLATION OF STORMWATER MANAGEMENT FACILITIES. CONTRACTOR SHALL PROVIDE ENGINEER DOCUMENTATION OF CONSTRUCTION OF STORMWATER FACILITIES INCLUDING GEOTECHNICAL NOTES ON EXISTING SOILS, PHOTOGRAPHS OF EACH STAGE OF BASIN CONSTRUCTION, LOAD TICKETS AND SPECIFICATION OF MATERIALS USED IN THE BASIN, AND ELEVATION OF CRITICAL ITEMS SUCH AS PIPES, EXCAVATIONS, DRAINAGE STONE BOTTOM, ETC.
- ERECT CONSTRUCTION FENCING OR SNOW FENCING AROUND PROPOSED STORMWATER FACILITIES INTENDED TO INFILTRATE STORMWATER TO PROTECT THESE SOILS FROM DISTURBANCE AND COMPACTION. CONSTRUCTION TRAFFIC, HEAVY EQUIPMENT, AND SOIL STOCKPILES SHALL NOT BE PLACED IN AREAS WHERE PROPOSED INFILTRATE AREAS ARE LOCATED.
- STORMWATER MANAGEMENT FACILITIES FOR INFILTRATION SHALL BE INSTALLED AFTER SUBSTANTIAL COMPLETION OF FINAL SITE GRADING AND SOILS HAVE BEEN STABILIZED.
- TEMPORARY SEDIMENT BASINS SHALL BE REMOVED IN THEIR ENTIRETY AFTER CONSTRUCTION OF STORMWATER MANAGEMENT FACILITIES. PERMANENT STORMWATER BASINS USED AS TEMPORARY SEDIMENT BASINS SHALL BE DREDGED TO DESIGN DEPTH AFTER SITE IS STABILIZED.
- REFER TO PROJECT DETAILS FOR FURTHER INFORMATION AND SPECIFICATIONS FOR THE CONSTRUCTION OF THE STORMWATER FACILITIES.

CONTAMINATED SOILS - NOTICE TO CONTRACTOR

- THE OWNER/DEVELOPER, [INSERT OWNER/DEVELOPER NAME], COMPLETED TESTING AND ANALYSIS FOR SOILS AND GROUNDWATER CONTAMINATION WITHIN THE PROJECT LIMITS WHERE EXCAVATION IS REQUIRED. TESTING AND ANALYSIS INDICATES THAT:
 - [ENTER BRIEF DESCRIPTION OF SOIL/GROUNDWATER CONTAMINANTS ENCOUNTERED]
 - [ENTER BRIEF DESCRIPTION OF SOIL/GROUNDWATER CONTAMINANTS ENCOUNTERED]
- TESTING AND ANALYSIS WAS COMPLETED BY THE OWNER/DEVELOPER CONSULTANT, [NAME OF FIRM], AND RESULTS HAVE BEEN DOCUMENTED IN A REPORT TITLED THE FOLLOWING:

[REPORT TITLE]
[REPORT SUBTITLE]
[REPORT SUBTITLE]
[PROJECT NAME/ADDRESS/LOCATION]
[REPORT ISSUANCE DATE AND/OR REVISIONS]
- PROPER HANDLING AND DISPOSAL OF ENCOUNTERED CONTAMINATED MATERIALS IS SHALL BE IN ACCORDANCE WITH THE PROJECT'S MATERIAL MANAGEMENT PLAN (MMP). IF CONTRACTOR ENCOUNTERS ANY OTHER SOIL OR GROUNDWATER CONTAMINATION NOT PREVIOUSLY FOUND IN TESTING OR ANALYSES, CONTRACTOR SHALL SUSPEND EXCAVATION ACTIVITIES IN THE AREA AND CONSULT WITH THE OWNER/DEVELOPER.
- CONTRACTOR(S) TAKING PART IN ACTIVITIES THAT WILL RESULT IN THE REASONABLE PROBABILITY OF EXPOSURE TO SAFETY AND HEALTH HAZARDS ASSOCIATED WITH HAZARDOUS MATERIALS SHALL HAVE COMPLETED HEALTH AND SAFETY TRAINING THAT MEETS O.S.H.A. REQUIREMENTS FOR HAZARDOUS WASTE AND EMERGENCY RESPONSE (H.A.Z.W.O.P.E.R.) AS PROVIDED IN 29 CFR 1910.120. GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR PREPARING SITE-SPECIFIC HEALTH AND SAFETY PLAN AND DEVELOP, DELINEATE, AND ENFORCE THE HEALTH AND SAFETY EXCLUSION ZONES FOR EACH CONTAMINATED SITE LOCATIONS AS REQUIRED BY 29 CFR 1910.120.
- FOR FURTHER INFORMATION REGARDING PREVIOUS INVESTIGATION AND REMEDIATION ACTIVITIES AT THIS SITE, CONTACT:

[OWNER/DEVELOPER NAME]
[OWNER/DEVELOPER CONTACT INFO]
[OWNER/DEVELOPER CONTACT INFO]
[OWNER/DEVELOPER CONTACT INFO]
[OWNER/DEVELOPER CONTACT INFO]

DEMOLITION NOTES CONTAMINATED SOILS

- REFER TO MATERIAL HANDLING PLAN FOR SOIL DISPOSAL. THREE CLASSES OF MATERIALS HAVE BEEN IDENTIFIED ON THE SUBJECT PROPERTY AND ARE DESCRIBED AS FOLLOWS:
 - CLASS I MATERIAL
 - [GENERAL DESCRIPTION OF MATERIAL COMPOSITION AND CONTAMINATION TYPES]. THE MATERIAL IS REGULATED BY THE STATE OF WISCONSIN AND REQUIRES DISPOSAL AT A LICENSED LANDFILL FACILITY.
 - CLASS II MATERIAL
 - [GENERAL DESCRIPTION OF MATERIAL COMPOSITION AND CONTAMINATION TYPES]. THE MATERIAL IS REGULATED BY THE STATE OF WISCONSIN AND REQUIRES DISPOSAL AT A LICENSED LANDFILL FACILITY.
 - CLASS III MATERIAL
 - SHALL CONSIST OF NATURAL SOILS CONTAINING NO EVIDENCE OF FILL, CONSTRUCTION RUBBLE, CONCRETE, FOUNDRY SAND, SLAG, ASPHALT, AND/OR CONTAMINATION BASED ON VISUAL FIELD OBSERVATIONS AND/OR PREVIOUS DATA OF SOIL COLLECTED FROM THE AREA(S) FROM WHICH THIS MATERIAL IS BEING REMOVED. ROUTINE FIELD OBSERVATIONS/SCREENING WILL ALSO BE PERFORMED TO CONFIRM THE SOIL QUALITY. THIS MATERIAL WILL LIKELY BE ABLE TO BE REUSED ONSITE.
- THE STOCKPILING OF EACH CLASS OF MATERIALS SHALL BE AS FOLLOWS:
 - CLASS III MATERIAL
 - MATERIAL SHALL BE PLACED IN A TEMPORARY WASTE DUMPSTER OR WITHIN THE BED OF A WASTE HAULING VEHICLE PERMITTED TO HAUL SPECIAL WASTES. ONCE FILLED, ALL SUCH HOLDING CONTAINERS WILL BE COVERED WITH AN IMPERVIOUS MATERIAL. ALTERNATIVELY, CLASS I AND II MATERIAL MAY BE TEMPORARILY STOCKPILED ONSITE. ALL STOCKPILED CLASS I AND II MATERIAL MUST BE PLACED ON AND ALSO COVERED WITH AN IMPERVIOUS MATERIAL.
 - CLASS III MATERIAL
 - MATERIAL TEMPORARILY STOCKPILE(S) WILL BE MANAGED USING STANDARD EROSION CONTROL MEASURES REQUIRED AT CONSTRUCTION SITES. THE CLASS III MATERIAL MAY BE TREATED AS CLEAN FILL AND MAY BE REUSED ONSITE WHERE POSSIBLE.
- WASTE MANIFESTS WILL BE REQUIRED FOR ALL SOLID WASTE MATERIALS DISPOSED AT A LICENSED LANDFILL FACILITY. THE DISPOSAL OF EACH CLASS OF MATERIALS SHALL BE AS FOLLOWS:
 - CLASS III MATERIAL
 - MATERIAL SHALL CONSIST OF CONTAMINATED FILL/SOIL SAND WILL BE TREATED AS "CONTAMINATED SOIL." THIS MATERIAL IS REGULATED BY THE STATE OF WISCONSIN AND REQUIRES DISPOSAL AT A LICENSED LANDFILL RECYCLING AND DISPOSAL FACILITY. THIS MATERIAL MAY BE DISPOSED AT [DEFINE LANDFILL LOCATION, IF KNOWN]
 - CLASS III MATERIAL
 - MATERIAL SHALL CONSIST OF NON-CONTAMINATED FILL SOILS AND/OR NATURAL SOILS, TOPSOIL, AND/OR GRAVEL SUBBASE LOCATED UNDER PAVEMENT AREAS. THIS MATERIAL MAY BE TREATED AS CLEAN FILL AND IS TO BE REUSED ONSITE WHERE POSSIBLE.
- EXISTING METHANE MONITORING WELLS SHALL BE PRESERVED. IF MONITORING WELLS ARE IN CONFLICT WITH PROPOSED CONSTRUCTION, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY [ENVIRONMENTAL CONSULTANT FIRM NAME & CONTACT INFORMATION]
- DEWATERING EFFLUENT MAY BE DISCHARGED TO [LOCATION DESCRIPTION]. REFER TO [PERMIT NUMBER/APPROVAL REFERENCE] FOR PERMIT CONDITIONS. CONTACT [JURISDICTIONAL/UTILITY CONTRACT ENTITY AND CONTACT INFORMATION]

LEGEND

	PROPERTY LINE
	EASEMENT LINE
	BUILDING SETBACK LINE
	DEMOLITION - SAWCUT EXISTING PAVEMENT
	DEMOLITION - REMOVAL OF CURB AND GUTTER
	DEMOLITION - SAWCUT HEAD OF CURB AND GUTTER
	DEMOLITION - REMOVAL OF ASPHALT AND BASE
	DEMOLITION - REMOVAL OF CONCRETE AND BASE
	DEMOLITION - REMOVAL OF GRAVEL
	DEMOLITION - REMOVAL OF UTILITIES
	DEMOLITION - CLEAR AND GRUB
	PROTECT EXISTING TREE
	EDGE OF PAVEMENT
	STANDARD CURB AND GUTTER
	REJECT CURB AND GUTTER
	ASPHALT PAVEMENT
	CONCRETE PAVEMENT
	HEAVY DUTY CONCRETE PAVEMENT
	PROPOSED 1 FOOT CONTOUR
	PROPOSED 5 FOOT CONTOUR
	EXISTING 1 FOOT CONTOUR
	EXISTING 5 FOOT CONTOUR
	DRAINAGE DIRECTION
	GRADE BREAK
	STORMWATER MANAGEMENT AREA
	RETAINING WALL
	BOULDER WALL
	FENCE
	LIGHT POLE (REFER TO PHOTOMETRIC PLAN)
	SANITARY SEWER
	WATERMAIN
	STORM SEWER
	8'x4'x4" INSULATION (PLAN VIEW)
	8'x4'x4" INSULATION (PROFILE VIEW)
	SILT FENCE
	RIP-RAP
	CONSTRUCTION ENTRANCE
	EROSION MATTING
	DITCH CHECK
	FRAMED INLET PROTECTION
	SPOT ELEVATION EP - EDGE OF PAVEMENT FG - FINISH GRADE EC - EDGE OF CONCRETE EX - MATCH EXISTING GRADE SW - SIDEWALK



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VERONA, WISCONSIN 53593
P. 608.848.5060

CLIENT:
FITCHBURG PARTNERS, LLC.

CLIENT ADDRESS:
**80 OTTAWA AVE. NW, SUITE 410
GRAND RAPIDS, MI 49503**

PROJECT:
JAMESTOWN QUARRY

PROJECT LOCATION:
**2975 KAPEC ROAD
DANE COUNTY
FITCHBURG, WI 53719**

PLAN MODIFICATIONS:

#	Date:	Description:
1	05.21.24	PRELIMINARY PLAT
2	08.20.24	FINAL PLAT
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Designed By: MSS
Reviewed By:
Approved By: CD

SHEET TITLE: NOTES AND LEGEND

SHEET NUMBER:

C1.1

JSD PROJECT NO: 22-11636

File: JSD\INC\projects\2022\211636\DWG\Civil\Sheets\22-11636-01.dwg User: chris.dawson Plotted: Aug 20, 2024, 3:20pm Xref's:



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Designed By: MSS
Reviewed By:
Approved By: CD

SHEET TITLE:
DEMOLITION PLAN

SHEET NUMBER:
C2.0

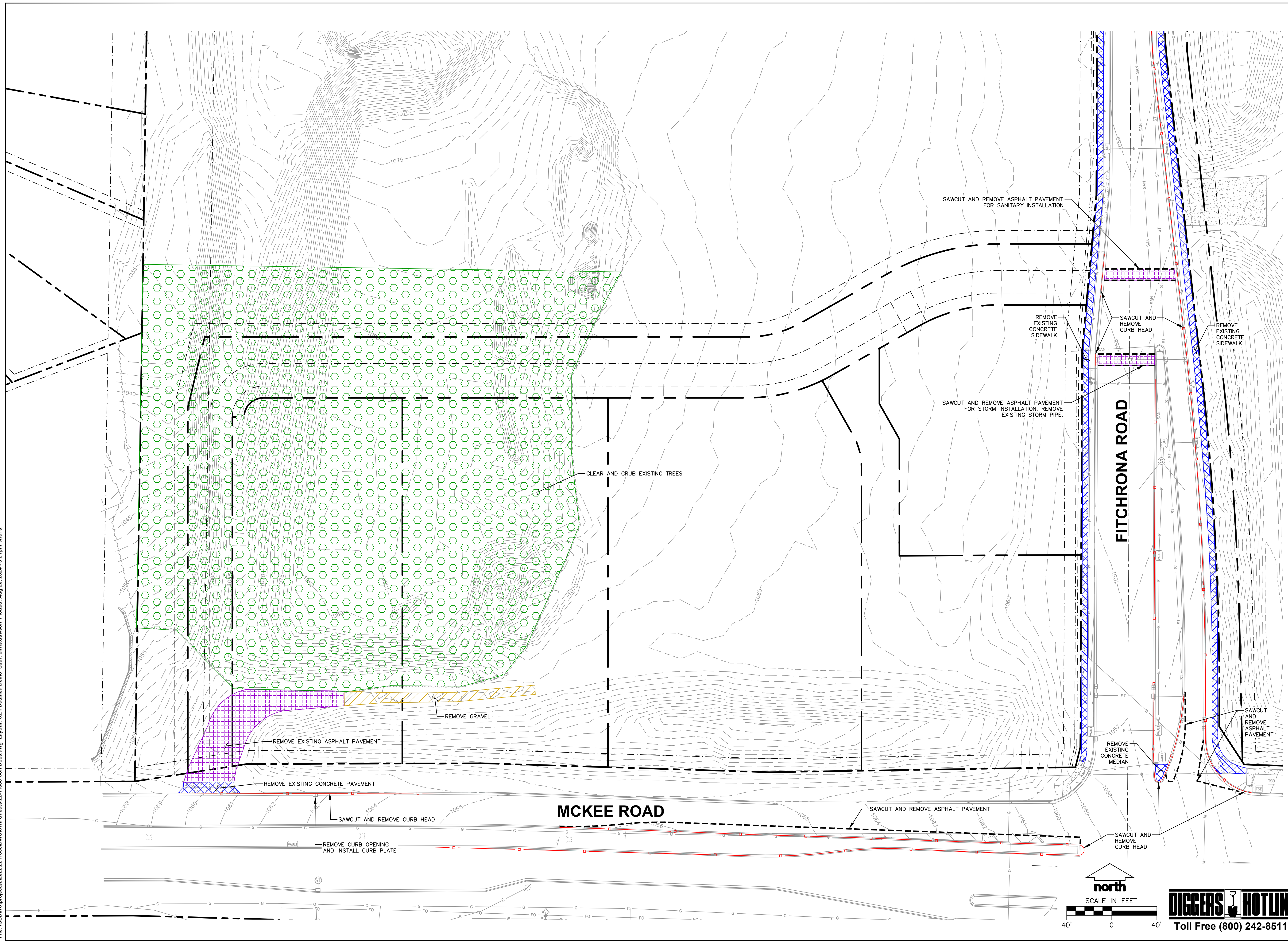
JSD PROJECT NO: 22-11636

north
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DANE COUNTY
FITCHBURG, WI 53719**

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Designed By: MSS
Reviewed By: CD
Approved By:

SHEET TITLE:
DETAILED DEMOLITION PLAN

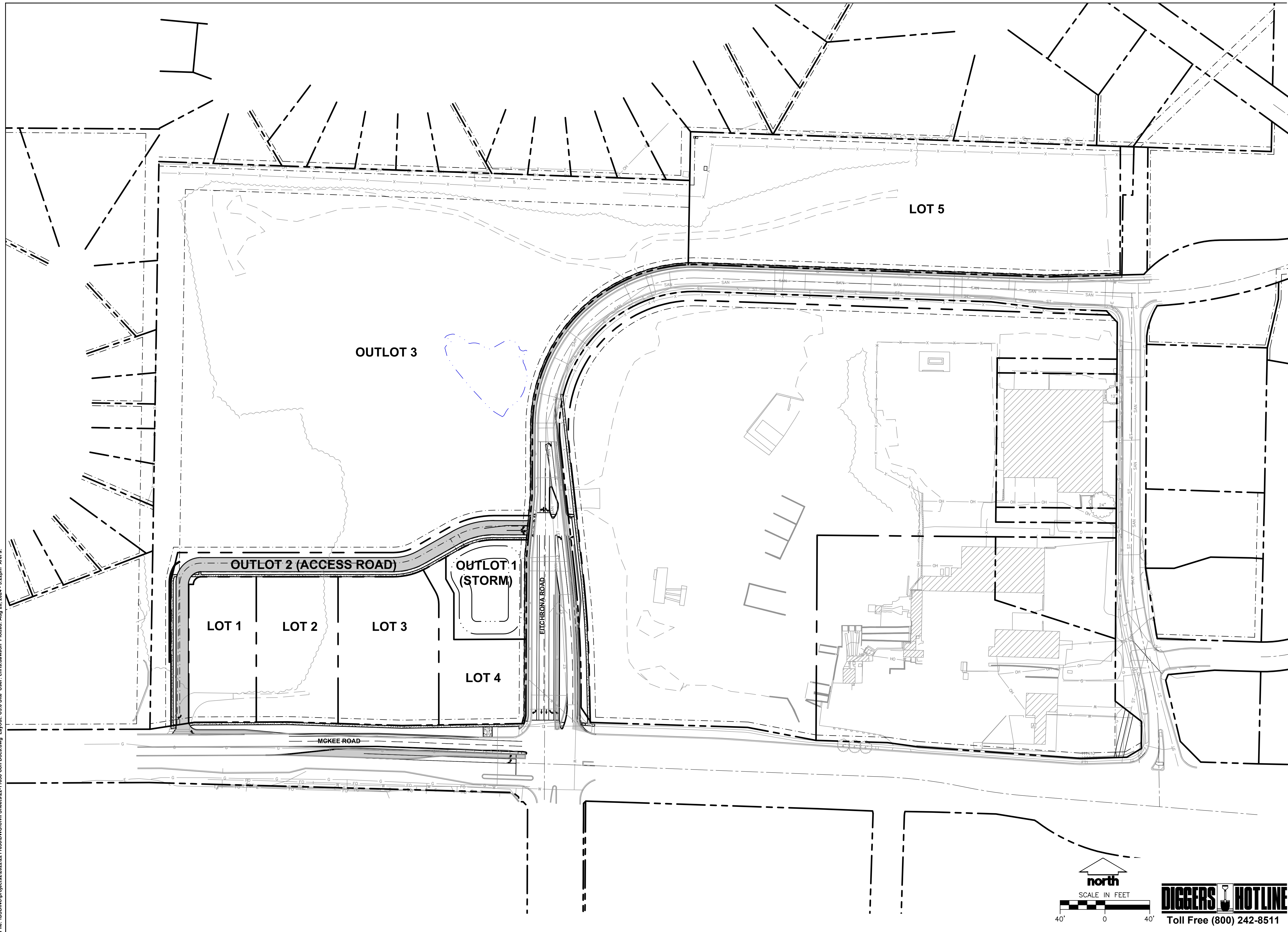
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JSD PROJECT NO: 22-11638



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Designed By: **MSS**
Reviewed By:
Approved By: **CD**

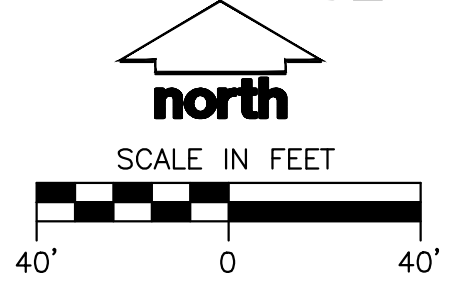
SHEET TITLE:

SITE PLAN

SHEET NUMBER:

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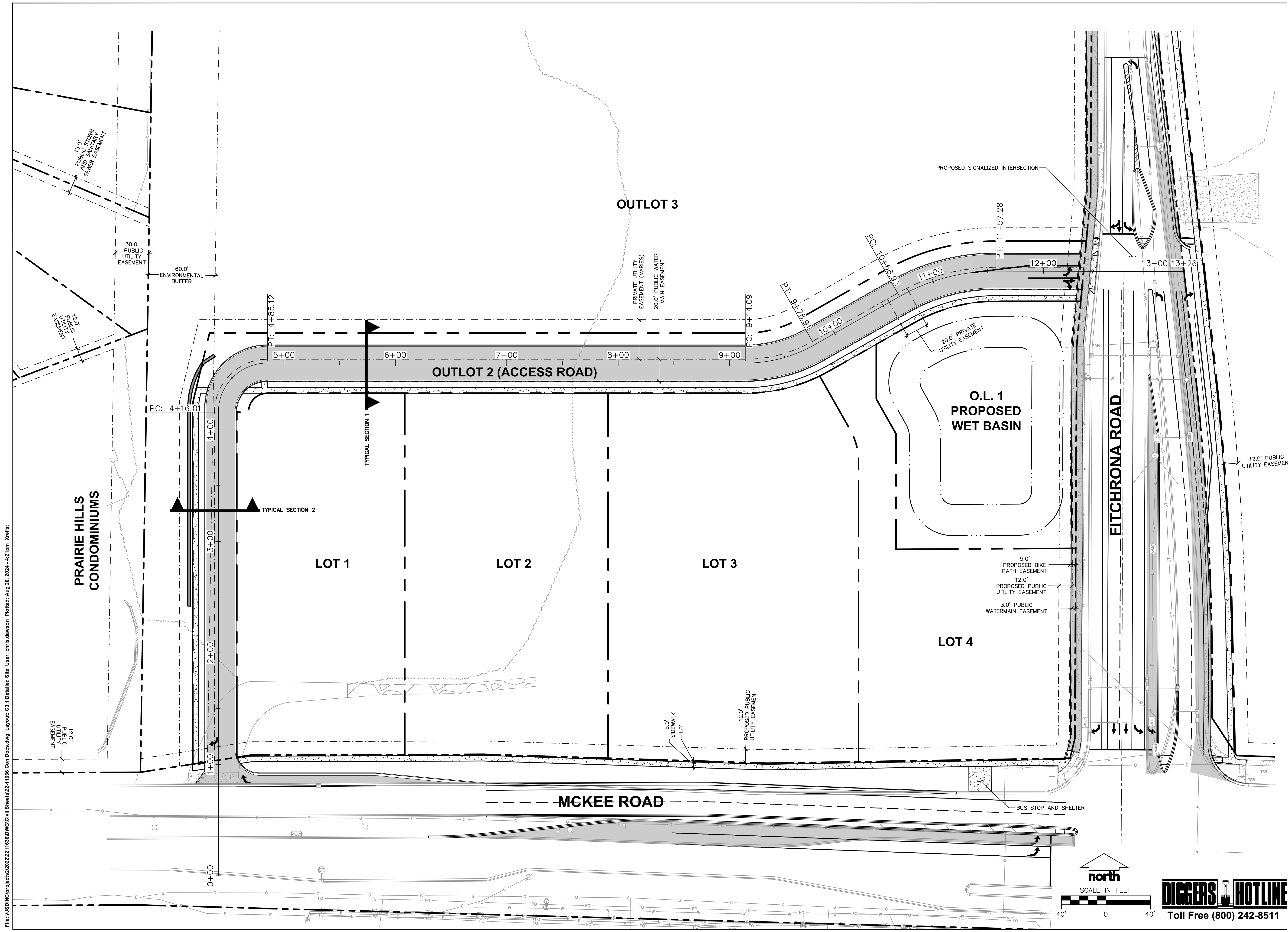
Designed By: MSS
Reviewed By: CD
Approved By:

SHEET TITLE:
DETAILED SITE PLAN

SHEET NUMBER:

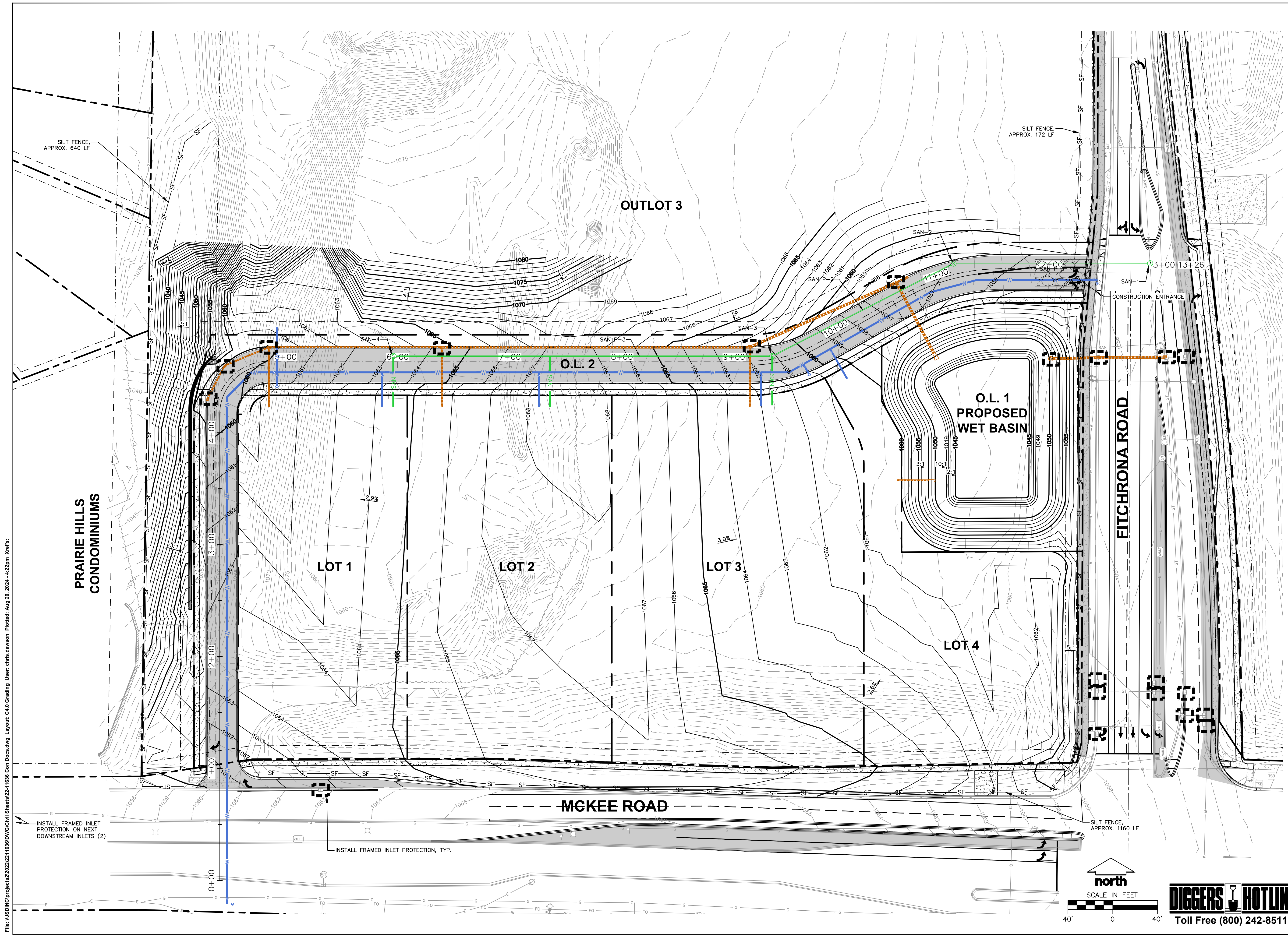
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JSD PROJECT NO: 22-11636



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Designed By: MSS
Reviewed By: CD
Approved By:

SHEET TITLE:
GRADING AND EROSION CONTROL PLAN

SHEET NUMBER:
C4.0

JSD PROJECT NO: 22-11636

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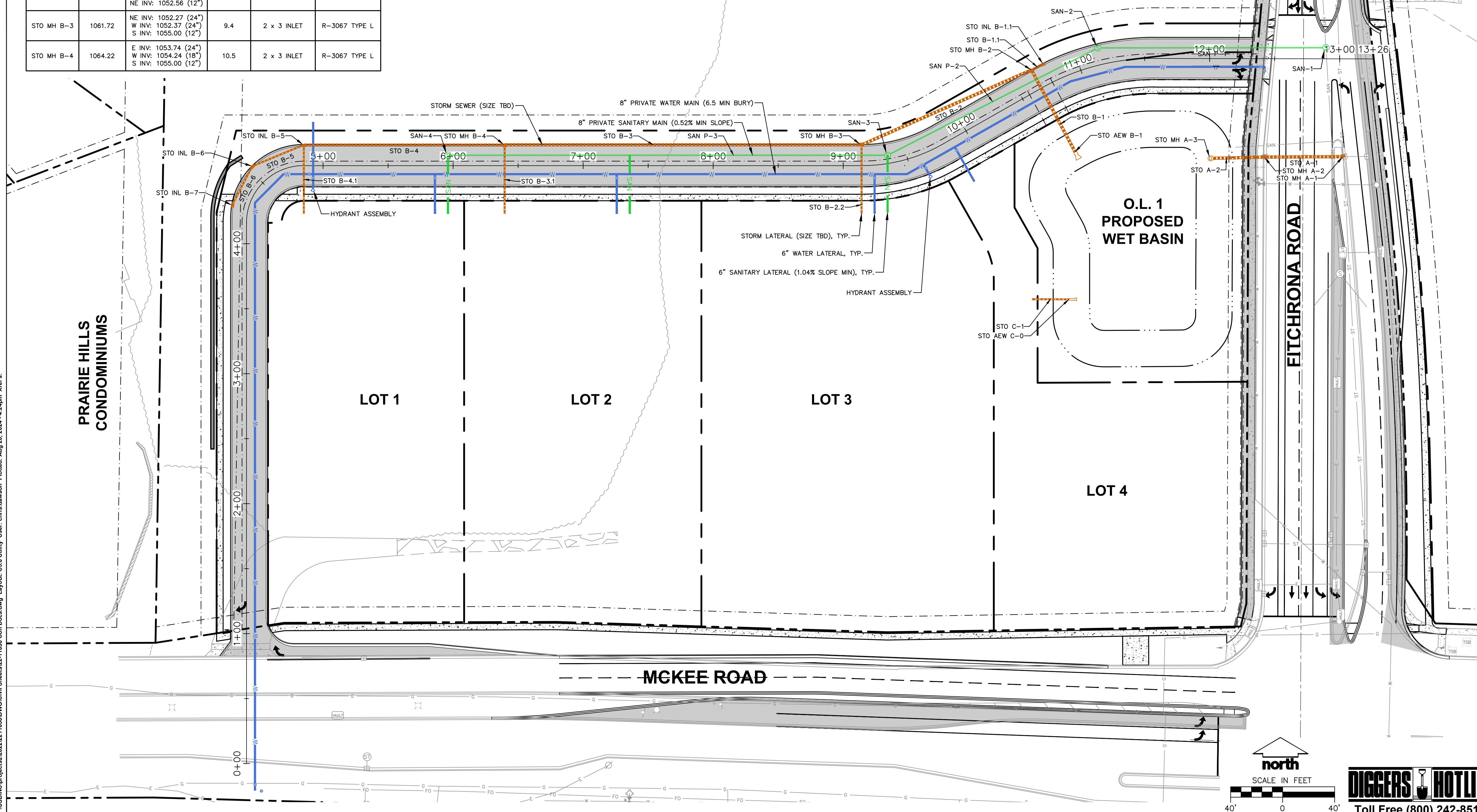
PROPOSED STORM SEWER STRUCTURE TABLE					
LABEL	RIM EL. (FT)	INVERT EL. (FT)	DEPTH (FT)	STRUCTURE DESC.	FRAME & GRATE
STO AEW B-1	1053.00	NW INV: 1050.75 (24")	-	24 IN RCP FES	-
STO AEW C-0	1053.17	W INV: 1052.00 (12")	-	12 IN RCP FES	-
STO INL B-1.1	1056.39	SW INV: 1052.66 (12")	3.7	2 x 3 INLET	R-3067 TYPE L
STO INL B-5	1059.92	E INV: 1055.01 (18") SW INV: 1055.51 (12") S INV: 1055.51 (12")	4.9	2 x 3 INLET	R-3067 TYPE L
STO INL B-6	1059.46	NE INV: 1055.72 (12") SW INV: 1055.82 (12")	3.7	2 x 3 INLET	R-3067 TYPE L
STO INL B-7	1059.28	NE INV: 1055.99 (12")	3.3	2 x 3 INLET	R-3067 TYPE L
STO MH A-1	1057.46	N INV: 1049.41 (24") W INV: 1049.60 (24") S INV: 1049.46 (24") E INV: 1052.56 (12")	8.0	48 IN MH (FLAT)	R-1550 SOLID LID
STO MH A-2	1057.58	W INV: 1049.88 (24") E INV: 1049.83 (24")	7.8	48 IN MH (FLAT)	R-1550 SOLID LID
STO MH A-3	1052.75	E INV: 1050.00 (24")	2.8	48 IN MH (FLAT)	R-1550 SOLID LID
STO MH B-2	1056.23	SE INV: 1051.46 (24") SW INV: 1051.56 (24") NE INV: 1052.56 (12")	4.8	60 IN MH (FLAT)	R-1550 SOLID LID
STO MH B-3	1061.72	NE INV: 1052.27 (24") W INV: 1052.37 (24") S INV: 1055.00 (12")	9.4	2 x 3 INLET	R-3067 TYPE L
STO MH B-4	1064.22	E INV: 1053.74 (24") W INV: 1054.24 (18") S INV: 1055.00 (12")	10.5	2 x 3 INLET	R-3067 TYPE L

PROPOSED STORM SEWER PIPE TABLE							
LABEL	FROM	TO	LENGTH	INVERT EL. (FT)	DISCHARGE EL. (FT)	SLOPE	SIZE & MATERIAL
STO A-1	STO MH A-2	STO MH A-1	61'	1049.83	1049.60	0.38%	24 IN RCP
STO A-2	STO MH A-2	STO MH A-3	41'	1049.88	1050.00	0.30%	24 IN RCP
STO B-1	STO MH B-2	STO AEW B-1	71'	1051.46	1050.75	1.00%	24 IN RCP
STO B-1.1	STO INL B-1.1	STO MH B-2	10'	1052.66	1052.56	1.00%	12 IN RCP
STO B-2	STO MH B-3	STO MH B-2	143'	1052.27	1051.56	0.50%	24 IN RCP
STO B-2.2	STO STUB B-2.2	STO MH B-3	53'	1055.53	1055.00	1.00%	12 IN RCP
STO B-3	STO MH B-4	STO MH B-3	274'	1053.74	1052.37	0.50%	24 IN RCP
STO B-3.1	STO STUB B-3.1	STO MH B-4	53'	1055.53	1055.00	1.00%	12 IN RCP
STO B-4	STO INL B-5	STO MH B-4	154'	1055.01	1054.24	0.50%	18 IN RCP
STO B-4.1	STO STUB B-4.1	STO INL B-5	53'	1056.04	1055.51	1.00%	12 IN RCP
STO B-5	STO INL B-6	STO INL B-5	43'	1055.72	1055.51	0.50%	12 IN RCP
STO B-6	STO INL B-7	STO INL B-6	34'	1055.99	1055.82	0.50%	12 IN RCP
STO C-1	STO STUB C	STO AEW C-0	28'	1053.69	1052.00	6.00%	12 IN RCP

PROPOSED SANITARY SEWER STRUCTURE TABLE						
LABEL	RIM EL. (FT)	INVERT EL. (FT)	DEPTH (FT)	STRUCTURE DESC.	FRAME & GRATE	
SAN-1	1058.23	N INV: 1040.84 (8") W INV: 1041.10 (8") S INV: 1040.84 (8")	17.4	48 IN MH	R-1550 SOLID LID	
SAN-2	1057.04	E INV: 1047.39 (8") SW INV: 1047.33 (8")	9.7	48 IN MH	R-1550 SOLID LID	
SAN-3	1061.12	NE INV: 1049.36 (8") W INV: 1049.46 (8")	11.8	48 IN MH	R-1550 SOLID LID	
SAN-4	1063.15	E INV: 1053.11 (8")	10.1	48 IN MH	R-1550 SOLID LID	

PROPOSED SANITARY SEWER PIPE TABLE							
LABEL	FROM	TO	LENGTH	INVERT EL. (FT)	DISCHARGE EL. (FT)	SLOPE	SIZE & MATERIAL
SAN P-1	SAN-2	SAN-1	175'	1047.39	1041.10	3.59%	8 IN PVC
SAN P-2	SAN-3	SAN-2	182'	1049.36	1047.33	1.12%	8 IN PVC
SAN P-3	SAN-4	SAN-3	338'	1053.11	1049.46	1.08%	8 IN PVC

OUTLOT 3



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PROJECT:
JAMESTOWN QUARRY

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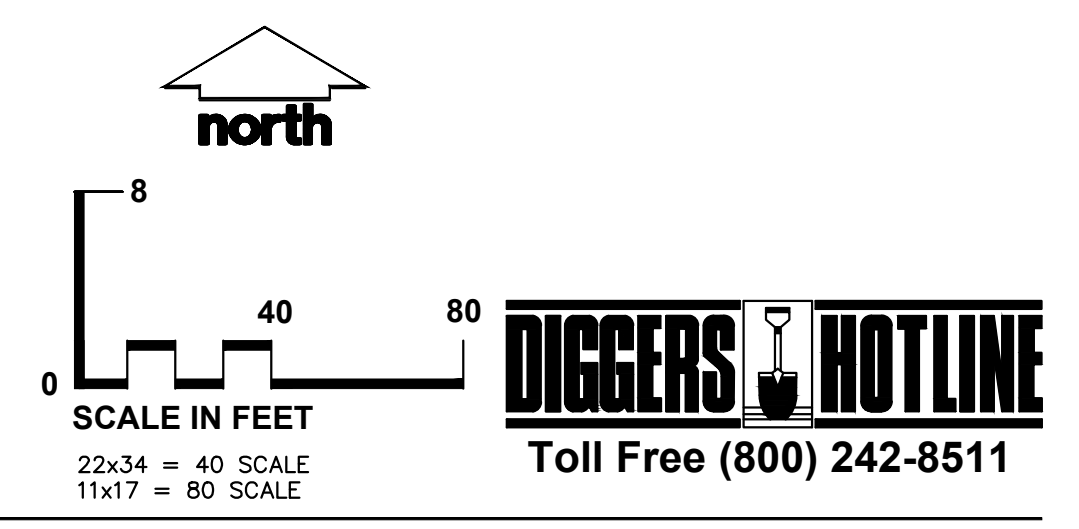
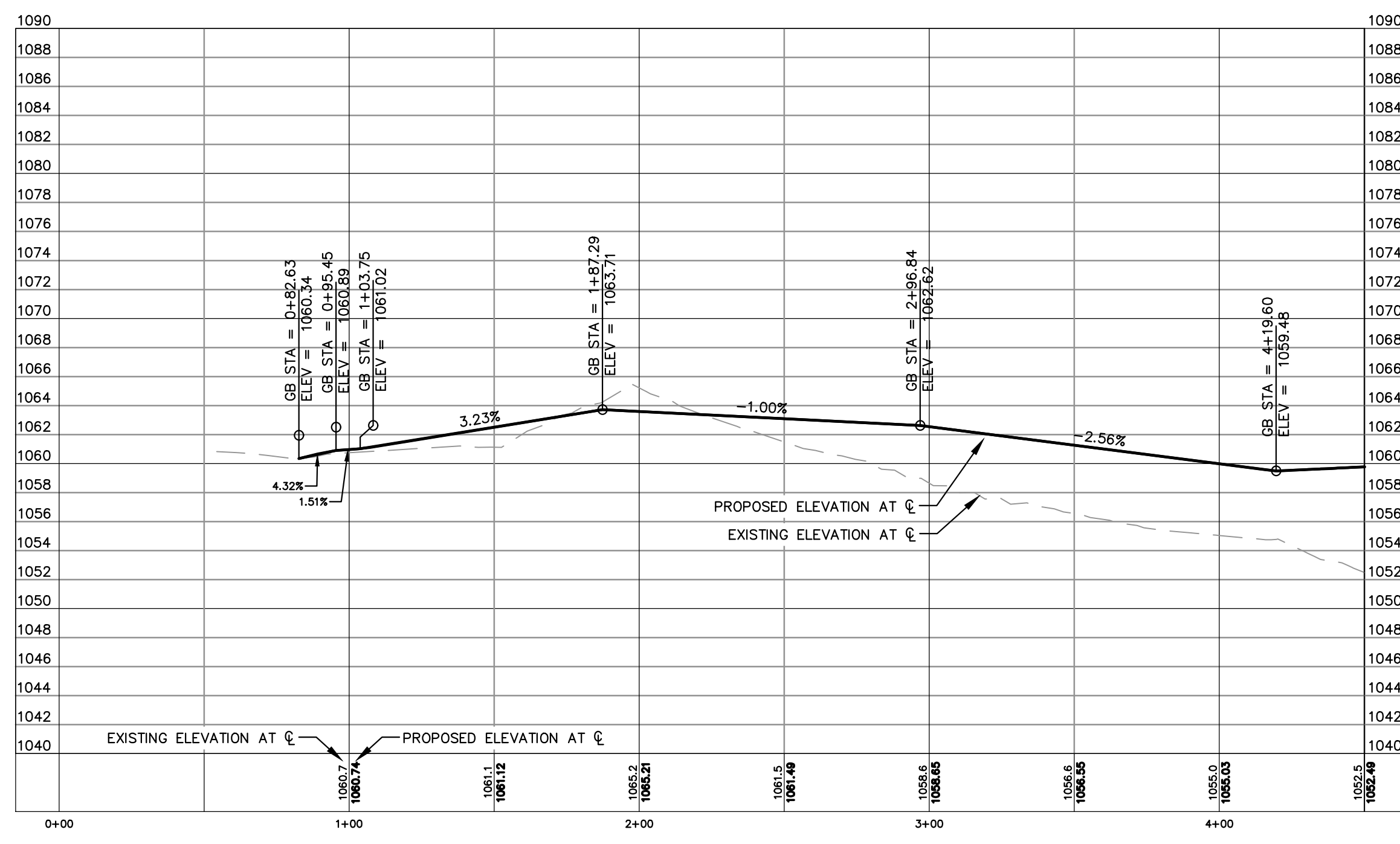
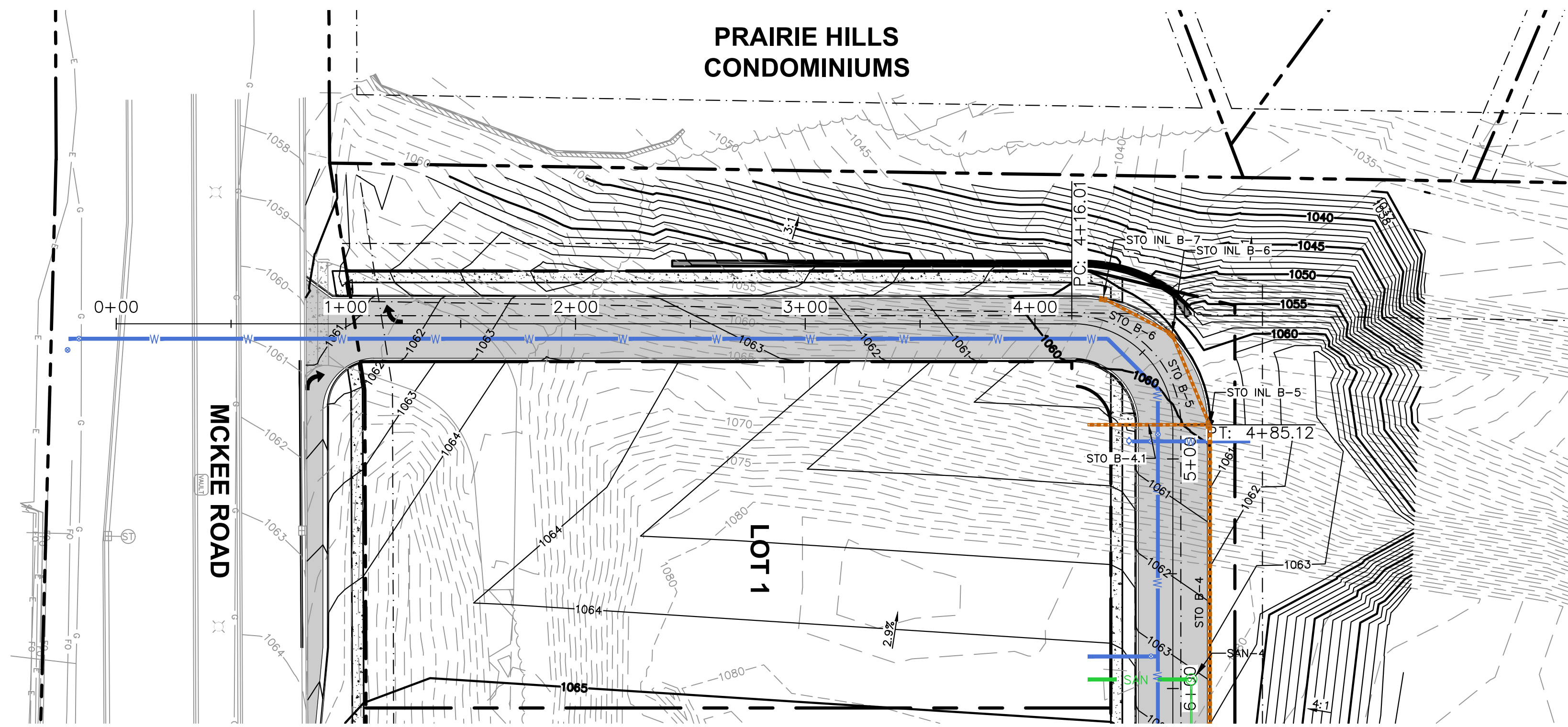
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UTILITY PLAN

SHEET NUMBER:
C5.0

JSD PROJECT NO: 22-11636

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P. 608.848.5060

CLIENT:
FITCHBURG PARTNERS, LLC.

CLIENT ADDRESS:
**80 OTTAWA AVE. NW, SUITE 410
GRAND RAPIDS, MI 49503**

PROJECT:
JAMESTOWN QUARRY

PROJECT LOCATION:
**2975 KAPEC ROAD
DANE COUNTY
FITCHBURG, WI 53719**

PLAN MODIFICATIONS:

#	Date:	Description:
1	05.21.24	PRELIMINARY PLAT
2	08.20.24	FINAL PLAT
3		
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Designed By: _____ MSS
Reviewed By: _____
Approved By: _____ CD

SHEET TITLE:
STREET PLAN AND PROFILE

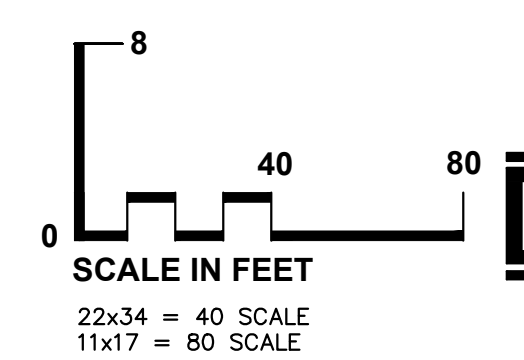
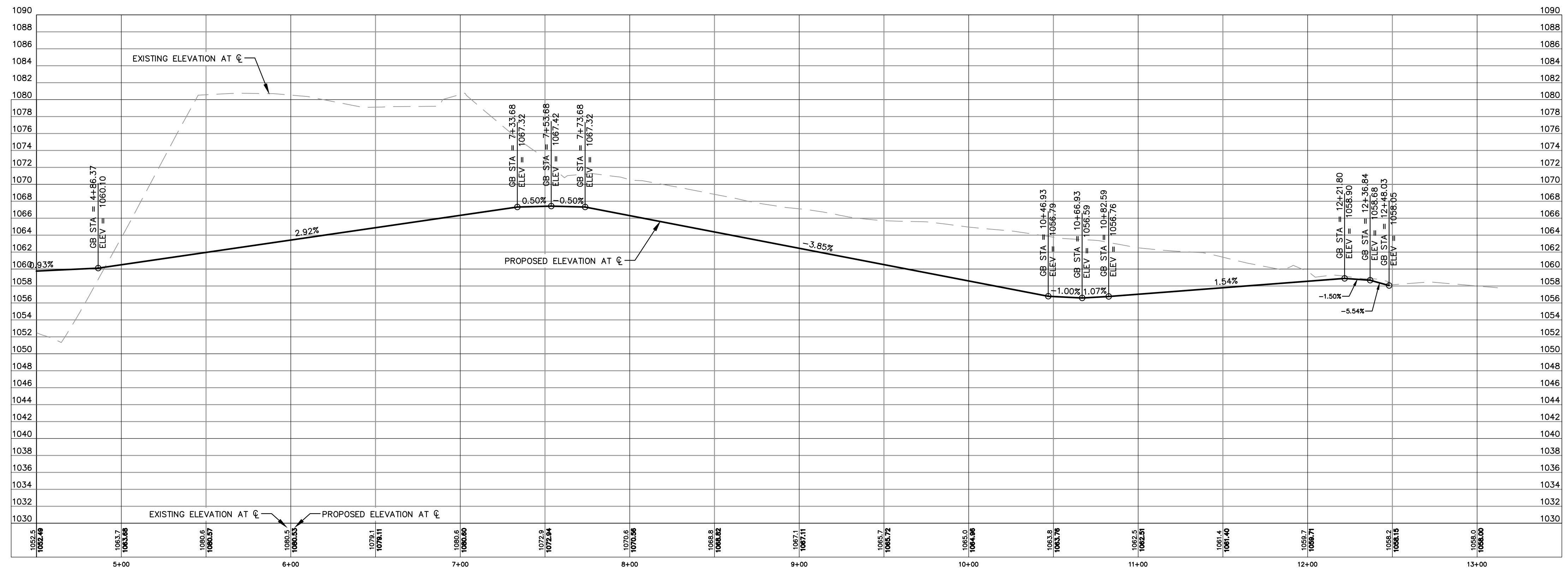
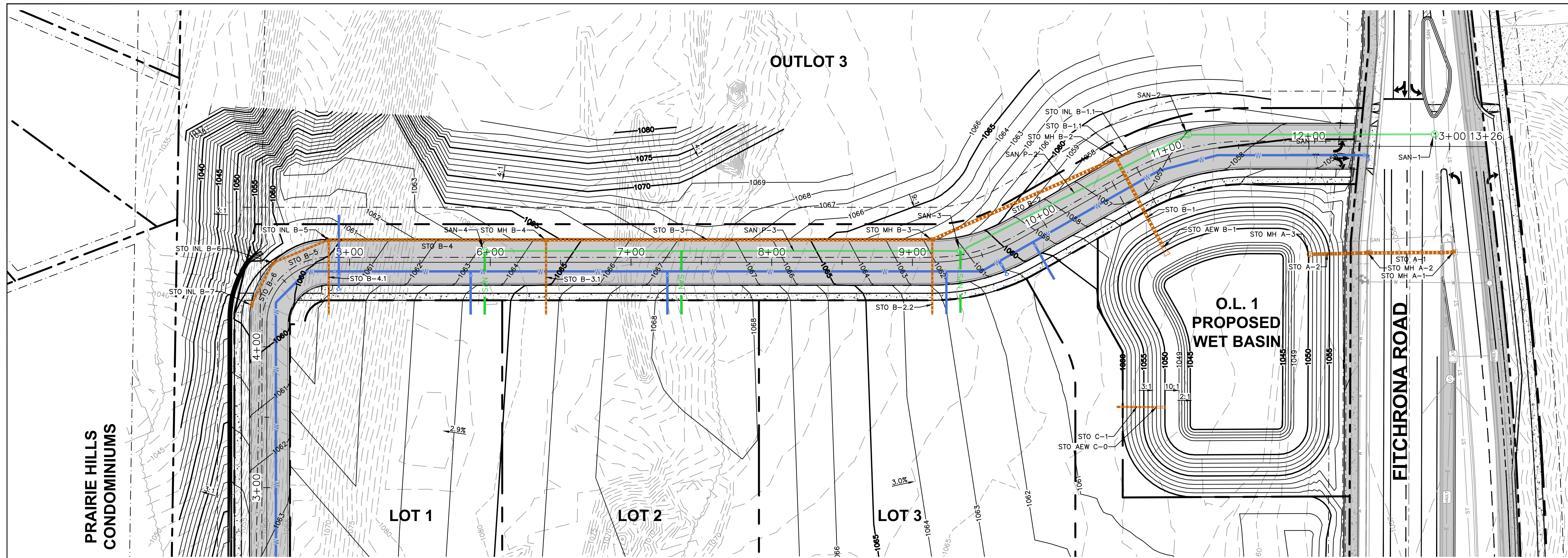
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JSD PROJECT NO: _____ 22-11636

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Reviewed By:
Approved By: CD

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STREET PLAN AND PROFILE

SHEET NUMBER:
C6.1

JSD PROJECT NO: 22-11638

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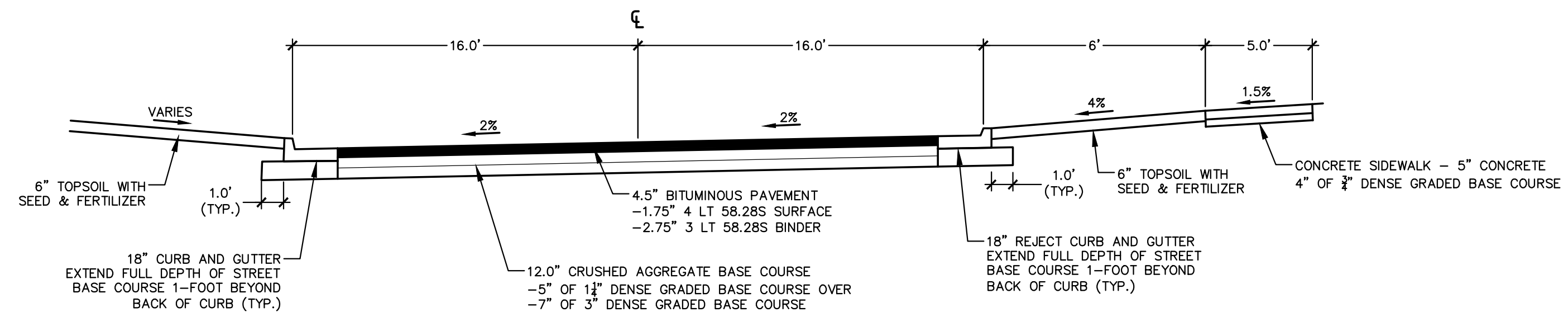
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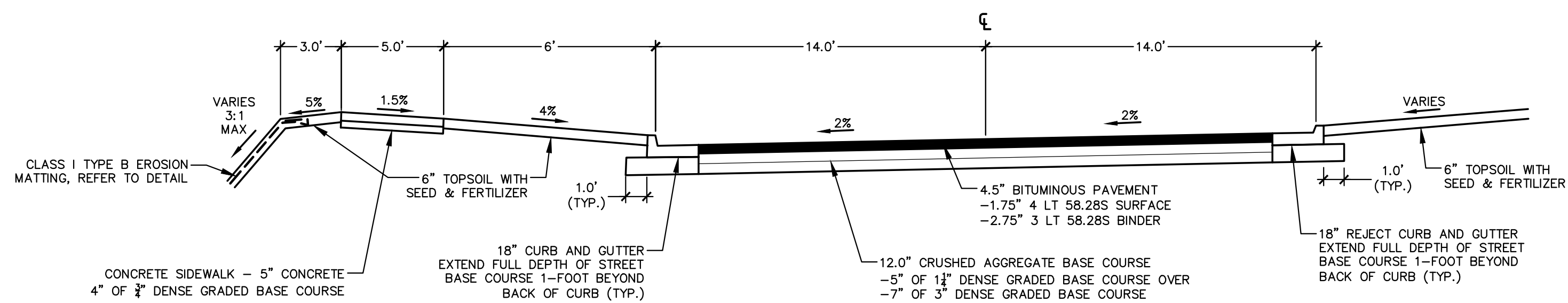
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Approved By: _____ CD

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**DETAILS -
TYPICAL SECTIONS**

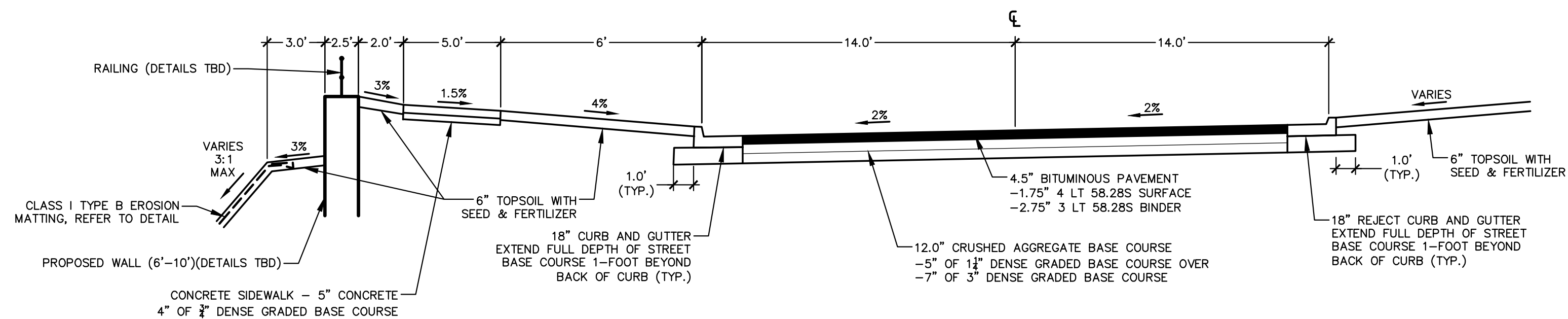
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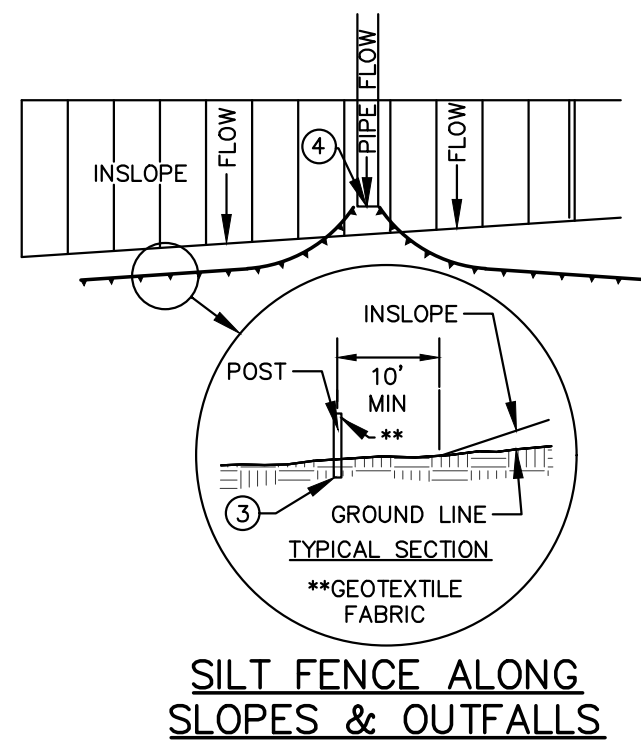
TYPICAL SECTION 1



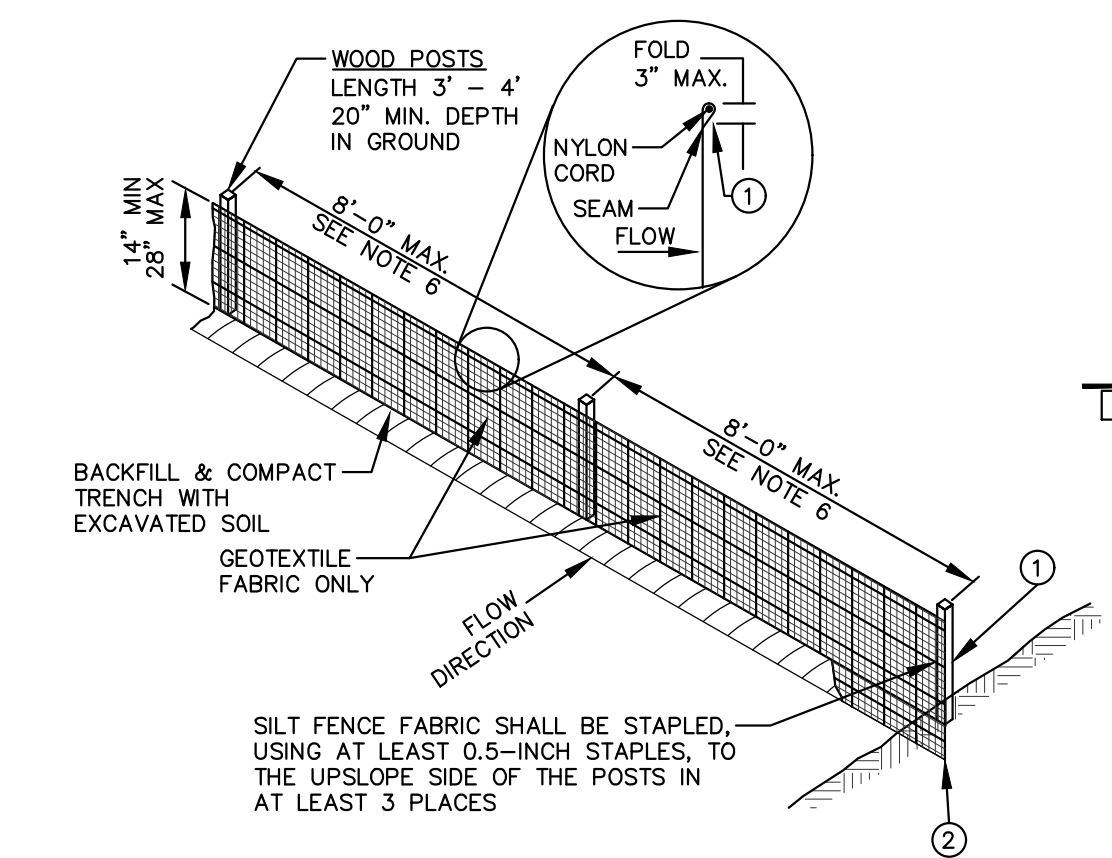
TYPICAL SECTION 2 - WITHOUT WALL



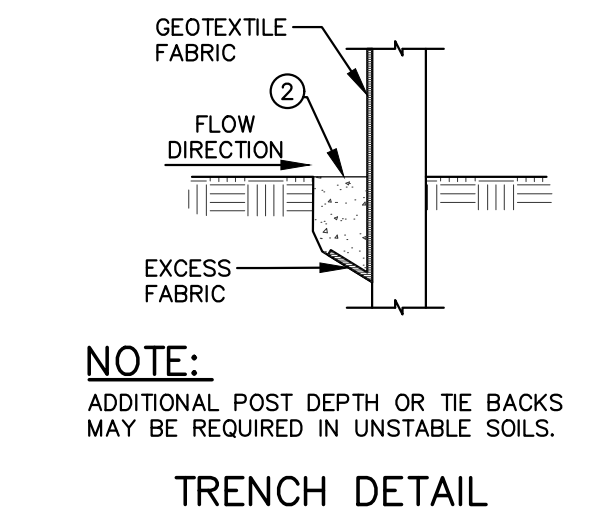
TYPICAL SECTION 2 - WITH WALL



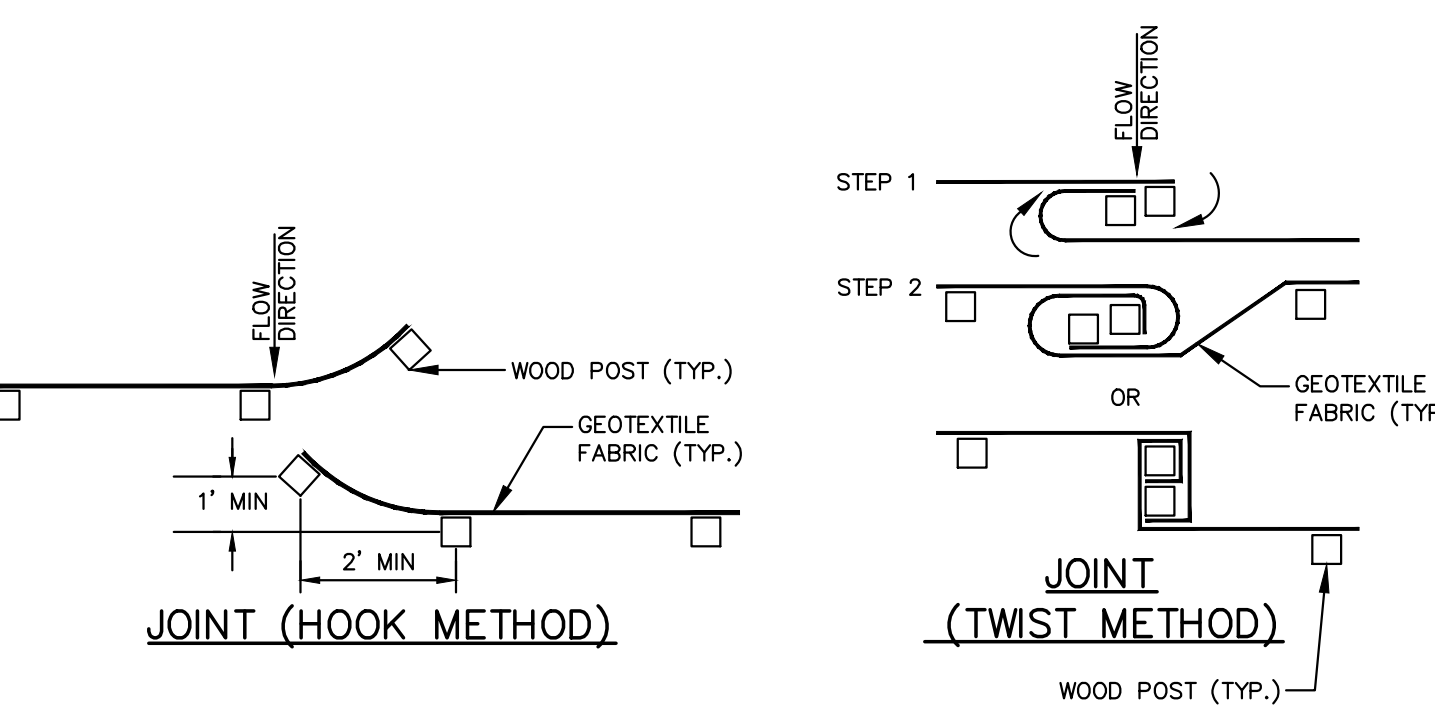
SILT FENCE ALONG SLOPES & OUTFALLS



SILT FENCE TIE BACK (WHEN ADDITIONAL SUPPORT REQUIRED)



TRENCH DETAIL



JOINT (HOOK METHOD)

JOINT (TWIST METHOD)

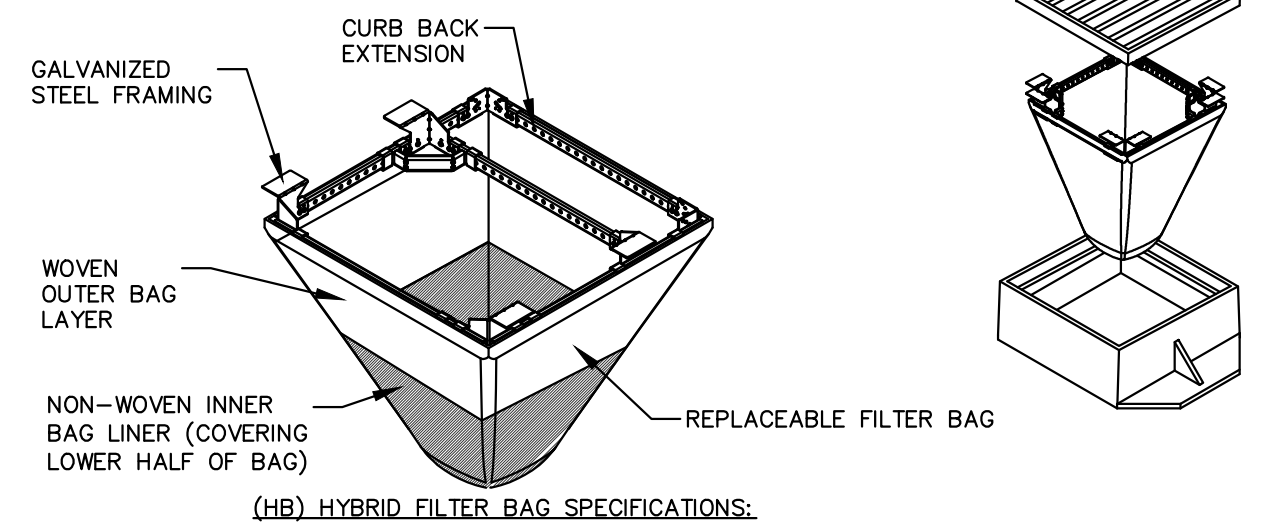
GENERAL NOTES:

- SILT FENCE SHALL BE ANCHORED BY SPREADING AT LEAST 8-INCHES OF FABRIC IN A 4-INCH WIDE AND 6-INCH DEEP TRENCH OR 6-INCH DEEP V-TRENCH ON THE UPSLOPE SIDE OF THE FENCE. TRENCHES SHALL NOT BE EXCAVATED WIDER OR DEEPER THAN NECESSARY FOR PROPER INSTALLATION.
- FOLD MATERIAL TO FIT TRENCH AND BACKFILL AND COMPACT TRENCH WITH EXCAVATED SOIL.
- WOOD POSTS SHALL BE A MINIMUM SIZE OF 1.125-INCHES x 1.125-INCHES OF DRIED OAK OR HICKORY.
- SILT FENCE TO EXTEND ABOVE THE TOP OF PIPE.
- SILT FENCE CONSTRUCTION AND GEOTEXTILE FABRIC SHALL CONFORM TO WDNR TECHNICAL STANDARD 1056.
- POST SPACING SHALL BE SELECTED BASED ON GEOTEXTILE FABRIC (8- FEET FOR WOVEN & 3- FEET FOR NON-WOVEN)

SILT FENCE

N.T.S.

FLEXSTORM INLET FILTERS TO MEET DANE COUNTY EROSION CONTROL STANDARDS



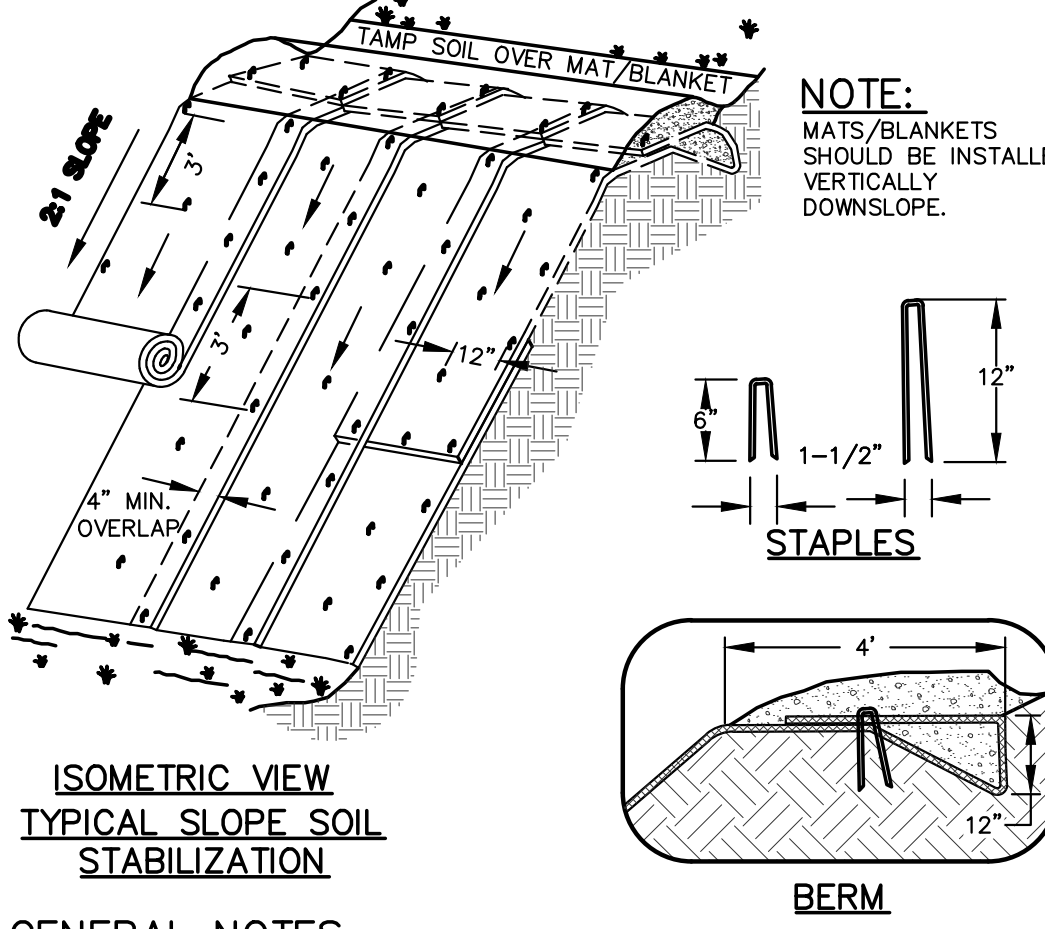
- INSTALLATION INSTRUCTIONS:**
- REMOVE GRATE FROM THE DRAINAGE STRUCTURE
 - CLEAN STONE AND DIRT FROM LEDGE (LIP) OF DRAINAGE STRUCTURE
 - DROP THE INLET FILTER THROUGH THE CLEAR OPENING SUCH THAT THE HANGERS REST FIRMLY ON THE LIP OF THE STRUCTURE
 - REPLACE THE GRATE AND CONFIRM IT IS NOT ELEVATED MORE THAN 1/8"
- MAINTENANCE GUIDELINES:**
- EMPTY THE SEDIMENT BAG IF MORE THAN HALF FILLED WITH SEDIMENT AND DEBRIS
 - REMOVE THE GRATE, ENGAGE THE LIFTING POINTS, AND LIFT FILTER FROM THE DRAINAGE STRUCTURE.
 - DISPOSE OF SEDIMENT AND DEBRIS BY THE ENGINEERING OR MAINTENANCE CONTRACT 4. ALTERNATIVELY, AN INDUSTRIAL VACUUM CAN BE USED TO COLLECT SEDIMENT FROM THE FILTER BAG

CATCH-IT INLET FILTER (Temporary Inlet Protection)							
Neenah Casting	Inlet Type	Grate Size	Opening Size	Bag Cap (ft ³)	Flow Ratings (CFS)		ADS P/N
					HB (Hybrid Bag)	Bypass	
3067	Curb Box	35.25 x 17.75	33.0 x 15.0	4.4	2.0	5.8	62LCBEXTHB
3246A	Curb Box	35.75 x 23.875	33.5 x 21.0	4.2	1.1	3.3	62LCB3624HB
3030	Square/Rect (SQ)	23 x 16	20.5 x 13.5	1.6	0.7	2.2	62MCR2316HB
3067-C	Square/Rect (SQ)	35.25 x 17.75	33 x 15	3.2	1.0	5.2	62LQ33618HB
R-2501	Round (RD)	-26	-24	2.3	0.8	5.2	62MRD26HB
R-1772/2560	Round (RD)	22.25-23.5	20.5-21	1.5	0.6	4.6	62MRD22HB

Woven and Non-Woven Geotextile Filter Bag Properties (Minimum Average Roll Values)			
PROPERTY	TEST METHOD	WOVEN (OUTER)	NON-WOVEN (LINER)
TENSILE STRENGTH	ASTM D4632	350 x 225 lbs	100 lbs
ELONGATION	ASTM D4632	20% x 15%	50%
CBR PUNCTURE	ASTM D6241	1000 lbs	65 lbs
TRAPEZOIDAL TEAR	ASTM D4538	110 x 75 lbs	45 lbs
UV RESISTANCE	ASTM D4355	90%	70%
OPENING SIZE (ADS)	ASTM D4751	20 US STD-SIEVE	40 US STD-SIEVE
PERMEABILITY	ASTM D4491	1.5 Sec ⁻¹	2.0 Sec ⁻¹
WATER FLOW RATE	ASTM D4491	200 gal/min/ft ²	145 gal/min/ft ²
MINIMUM FILTER BAG VOLUME		2 CUBIC FT	

FRAMED INLET PROTECTION

N.T.S.



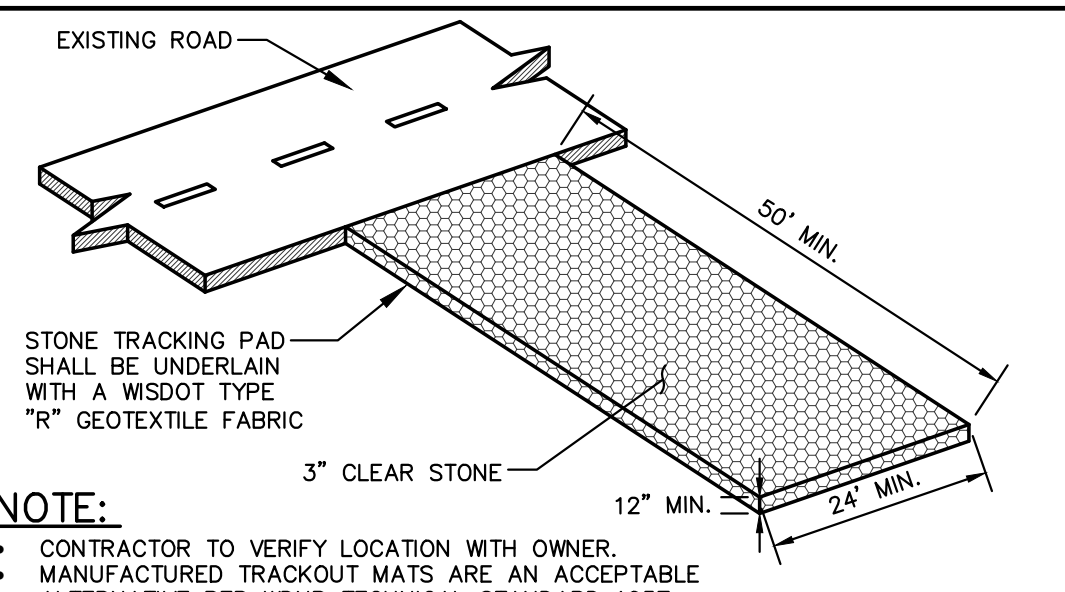
ISOMETRIC VIEW TYPICAL SLOPE SOIL STABILIZATION

GENERAL NOTES:

- EROSION MAT CONSTRUCTION SHALL BE IN ACCORDANCE WITH WISCONSIN DNR TECHNICAL STANDARD 1052 "NON-CHANNEL EROSION MAT".
- ONLY WisDOT EROSION CONTROL PRODUCT ACCEPTABILITY LIST (PAL) APPROVED MATS SHALL BE ALLOWED. REFER TO EROSION CONTROL PLAN FOR EXACT MAT CLASSIFICATION.
- APPLY PERMANENT SEEDING BEFORE PLACING BLANKETS.
- LAY BLANKETS LOOSELY AND STAKE OR STAPLE TO MAINTAIN DIRECT CONTACT WITH THE SOIL. DO NOT STRETCH.

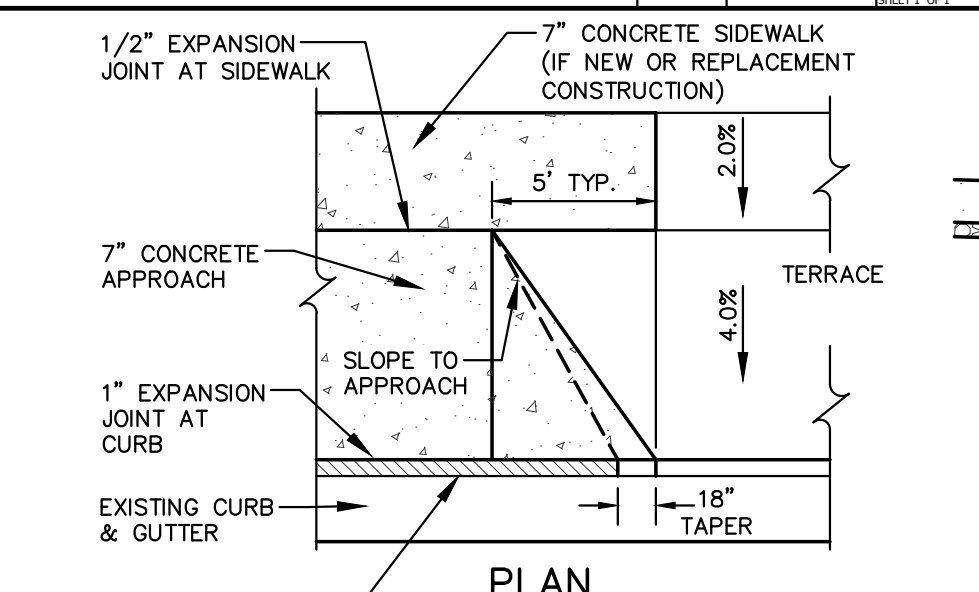
EROSION MATTING

N.T.S.



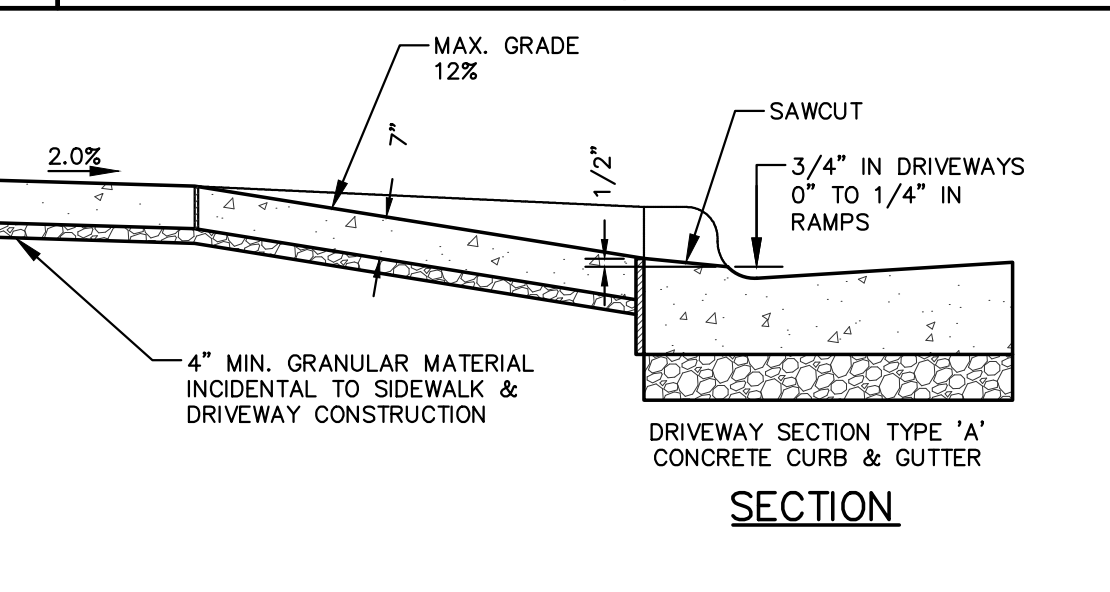
CONSTRUCTION ENTRANCE

N.T.S.



COMMERCIAL ENTRANCE

N.T.S.



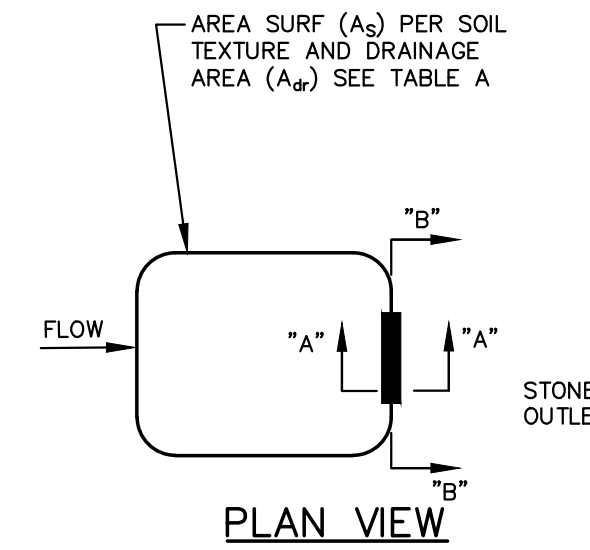
ADA ACCESSIBLE RAMP - INLINE

N.T.S.

TABLE A:

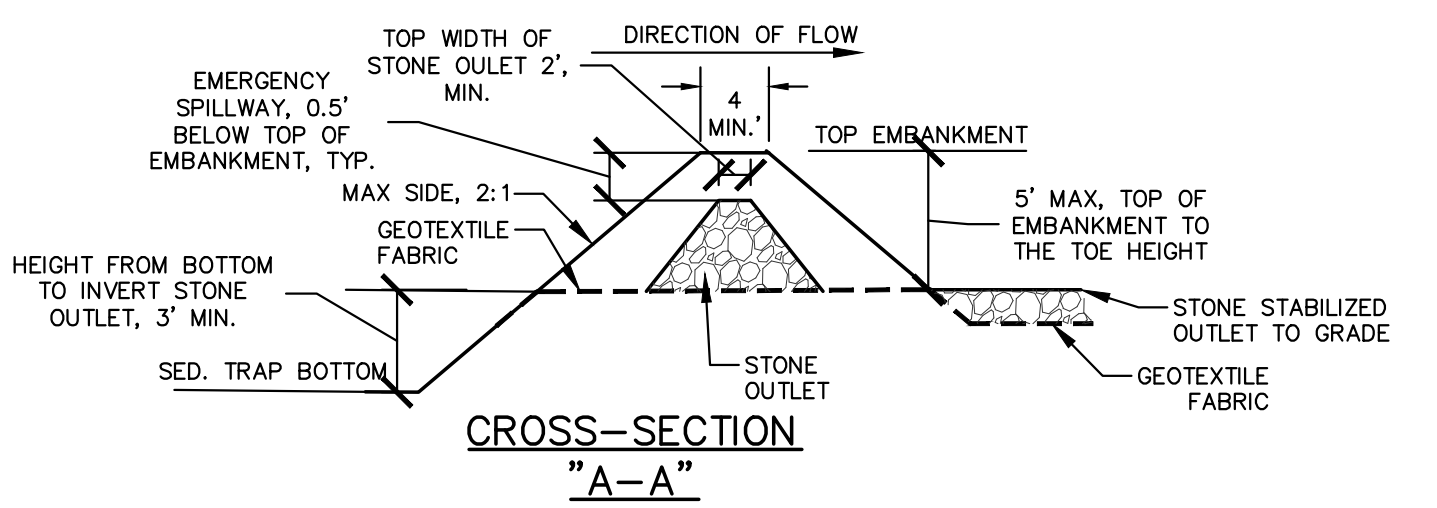
SEE TEXTURE	
COURSE (SAND, LOAMY SAND, SANDY LOAM)	$A_s = 625 \cdot A_d$
MEDIUM (LOAMS, SILT, SILTY LOAM)	$A_s = 1560 \cdot A_d$
FINE (SANDY CLAY, SILTY CLAY, SILTY CLAY LOAM, CLAY)	$A_s = 5300 \cdot A_d$

- NOTES:**
- ASSUME DRAINAGE AREA (A_d) TO NEAREST 0.1 ACRES
 - SURFACE AREA (A_s) IN SQUARE FEET

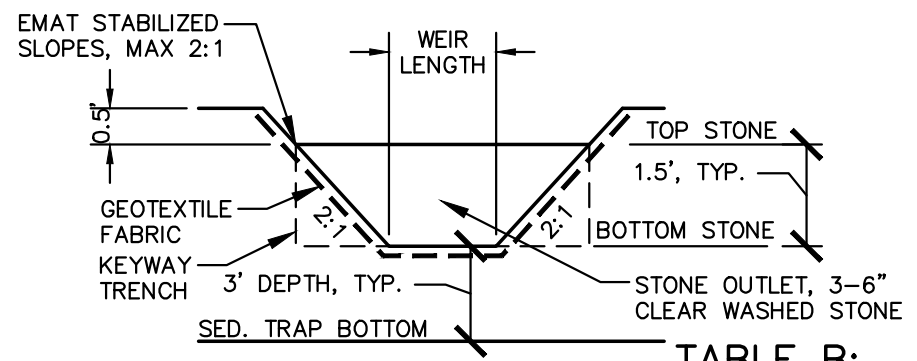


SEDIMENT TRAP

N.T.S.



CROSS-SECTION "A-A"

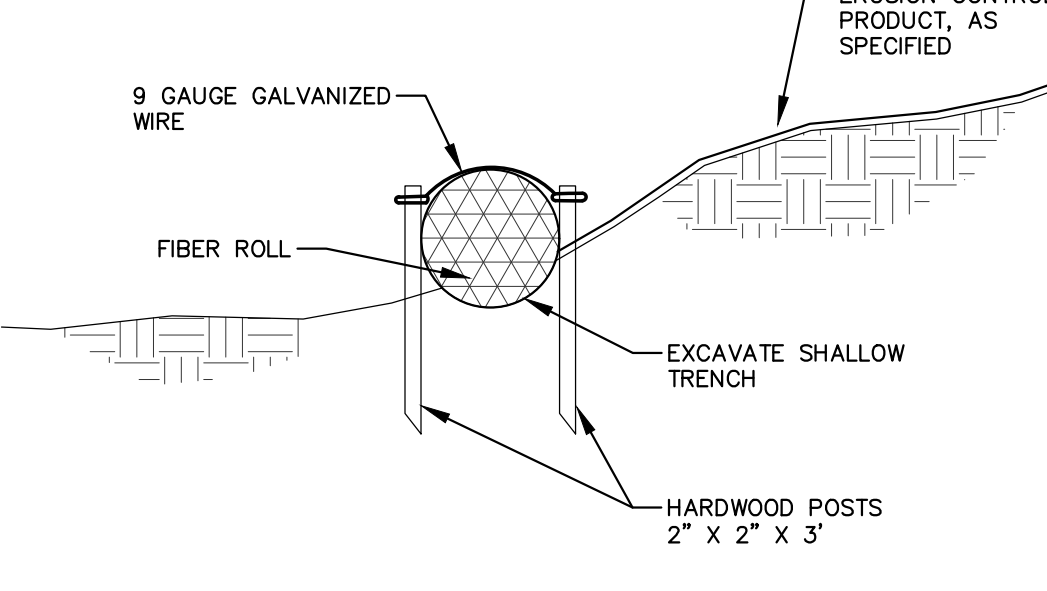


CROSS-SECTION "B-B"

TABLE B:

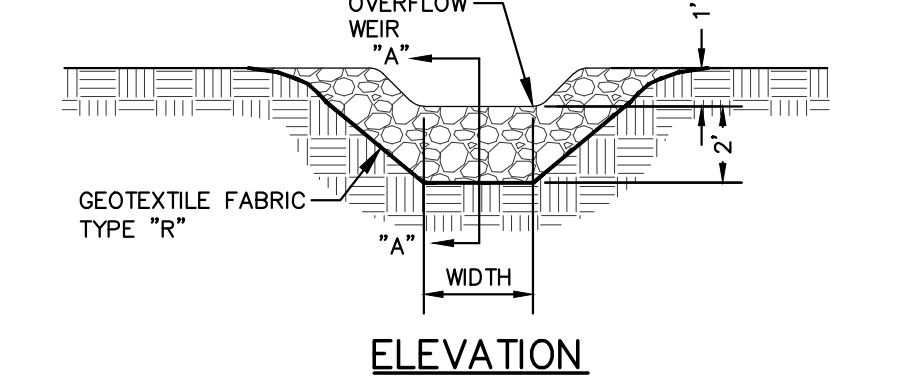
DRAINAGE AREA (A_d) (acres)	WEIR LENGTH (FT)
1	4
2	6
3	8
4	10
5	12

- NOTES:**
- REFER TO WDNR STORM WATER CONSTRUCTION TECHNICAL STANDARD NO. 1063, CURRENT EDITION FOR FURTHER DETAILS AND PROVISIONS FOR CONSTRUCTION, MAINTENANCE, AND OTHER CONSIDERATIONS

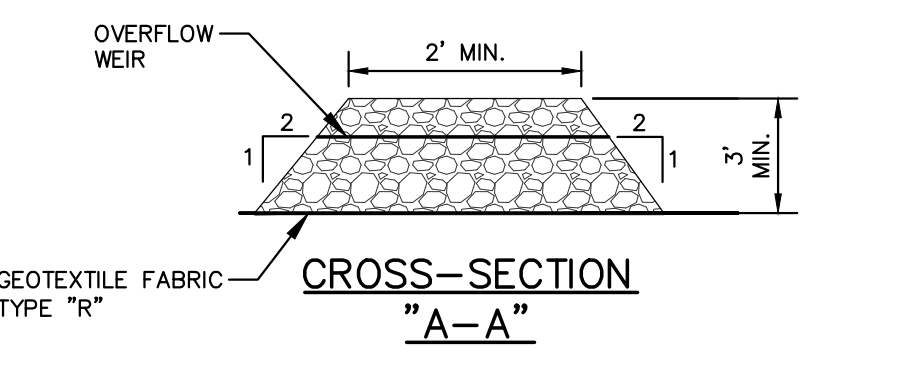


FIBER SILT SOCK

N.T.S.



ELEVATION



CROSS-SECTION "A-A"

GENERAL NOTES:

- STONE DITCH CHECKS SHALL BE CONSTRUCTED OF A WELL-GRADED ANGULAR STONE, A D50 OF 3 INCH DIAMETER OR GREATER, SOMETIMES REFERRED TO AS BREAKER RUN OR SHOT ROCK.
- EXTEND DITCH CHECK ACROSS CHANNEL OPENING TO MEET SWALE/DITCH SIDE SLOPES. WHERE CHANNEL IS LESS THAN 3 FEET DEEP, REDUCE WEIR HEIGHT TO 1 FOOT AND INCREASE THE TOP OF DITCH CHECK FROM 2 FEET TO 4 FEET.

STONE DITCH CHECK

N.T.S.



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Designed By: **MSS**
Reviewed By:
Approved By: **CD**

DETAILS

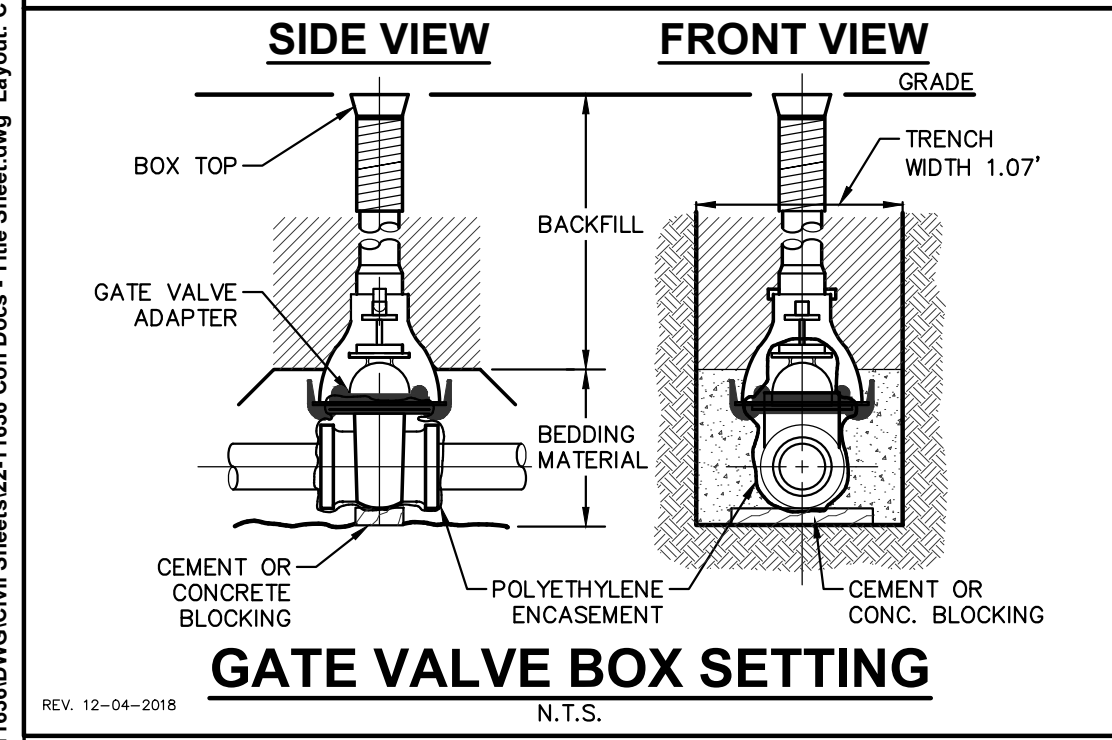
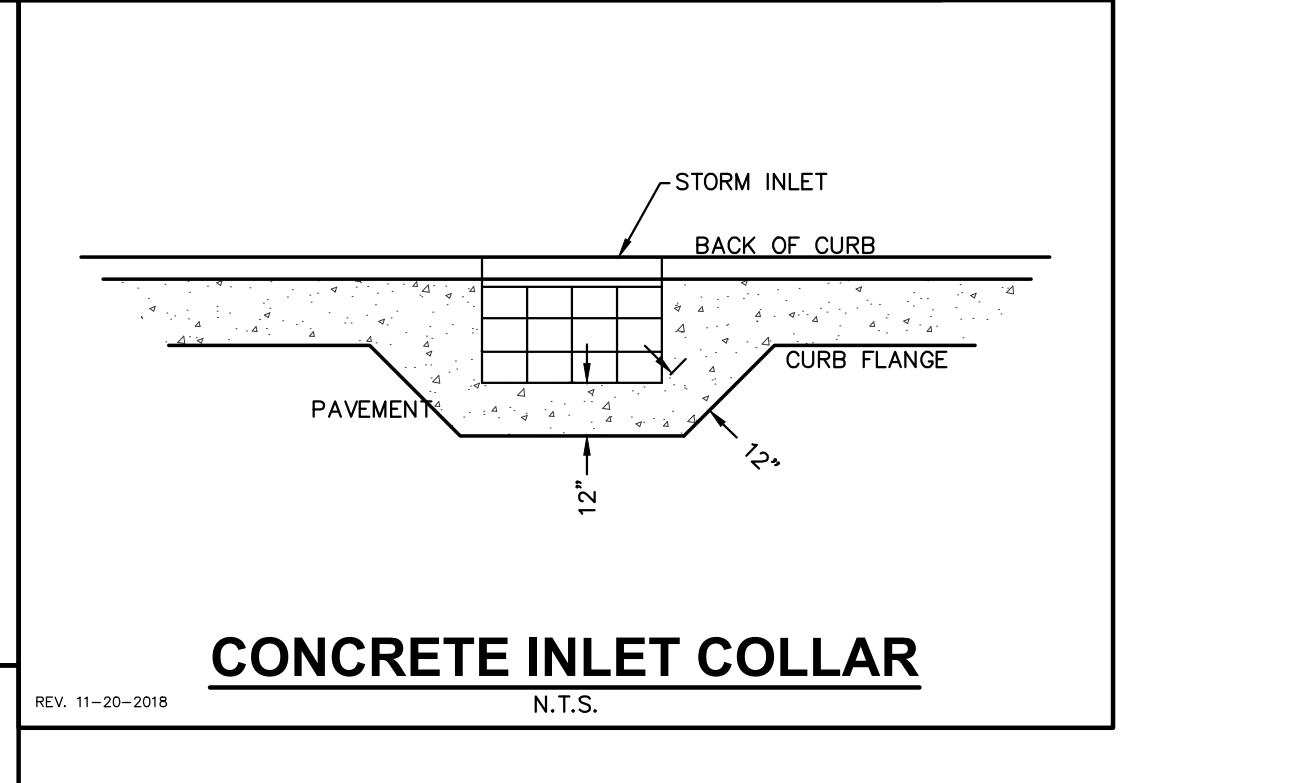
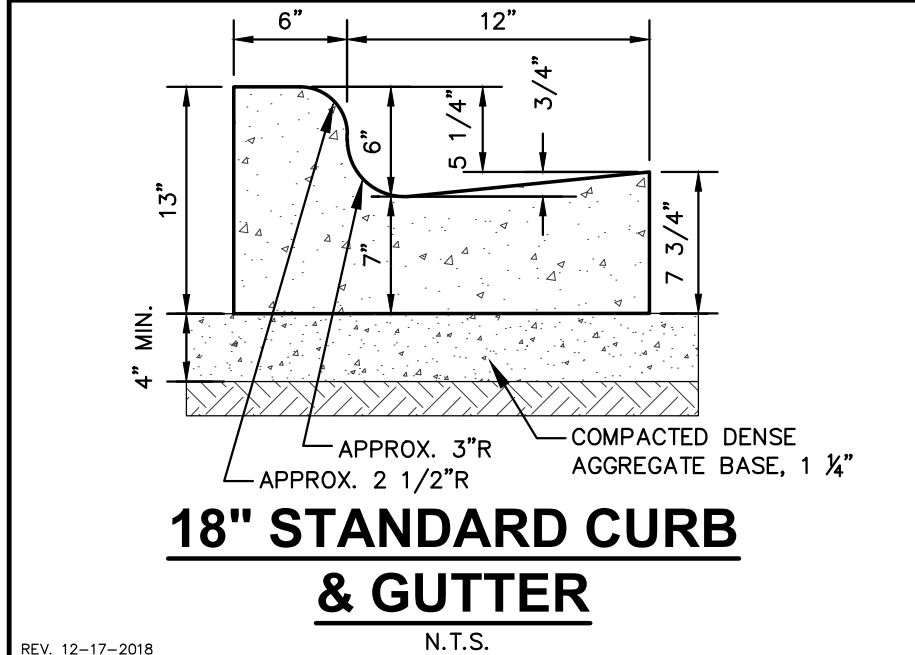
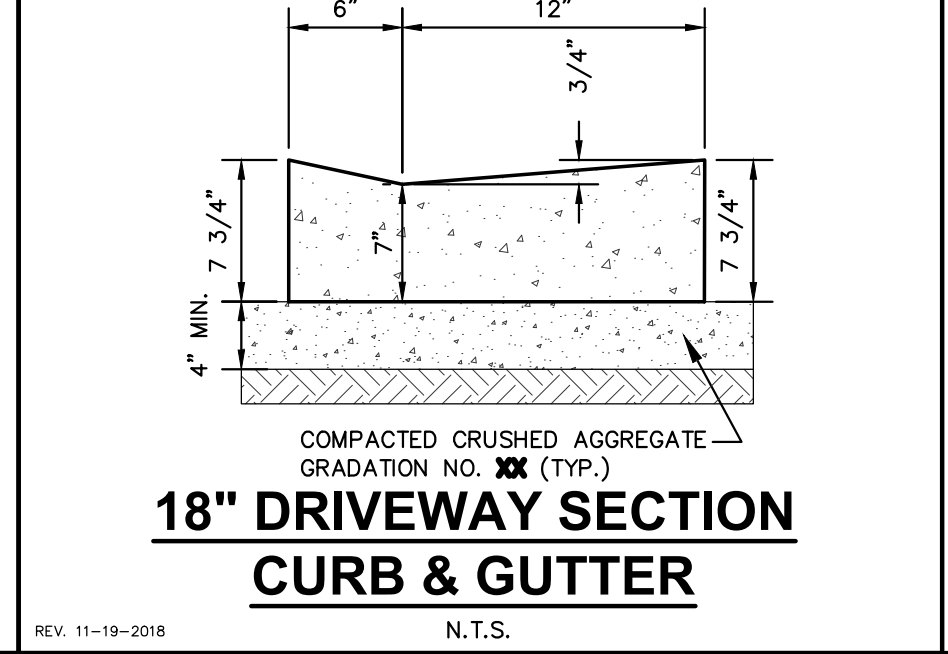
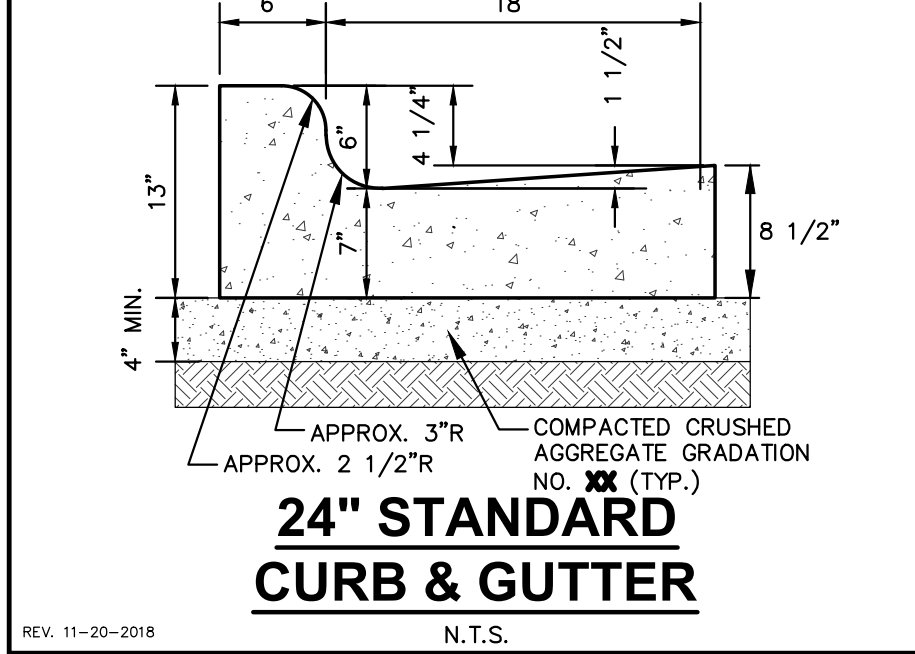
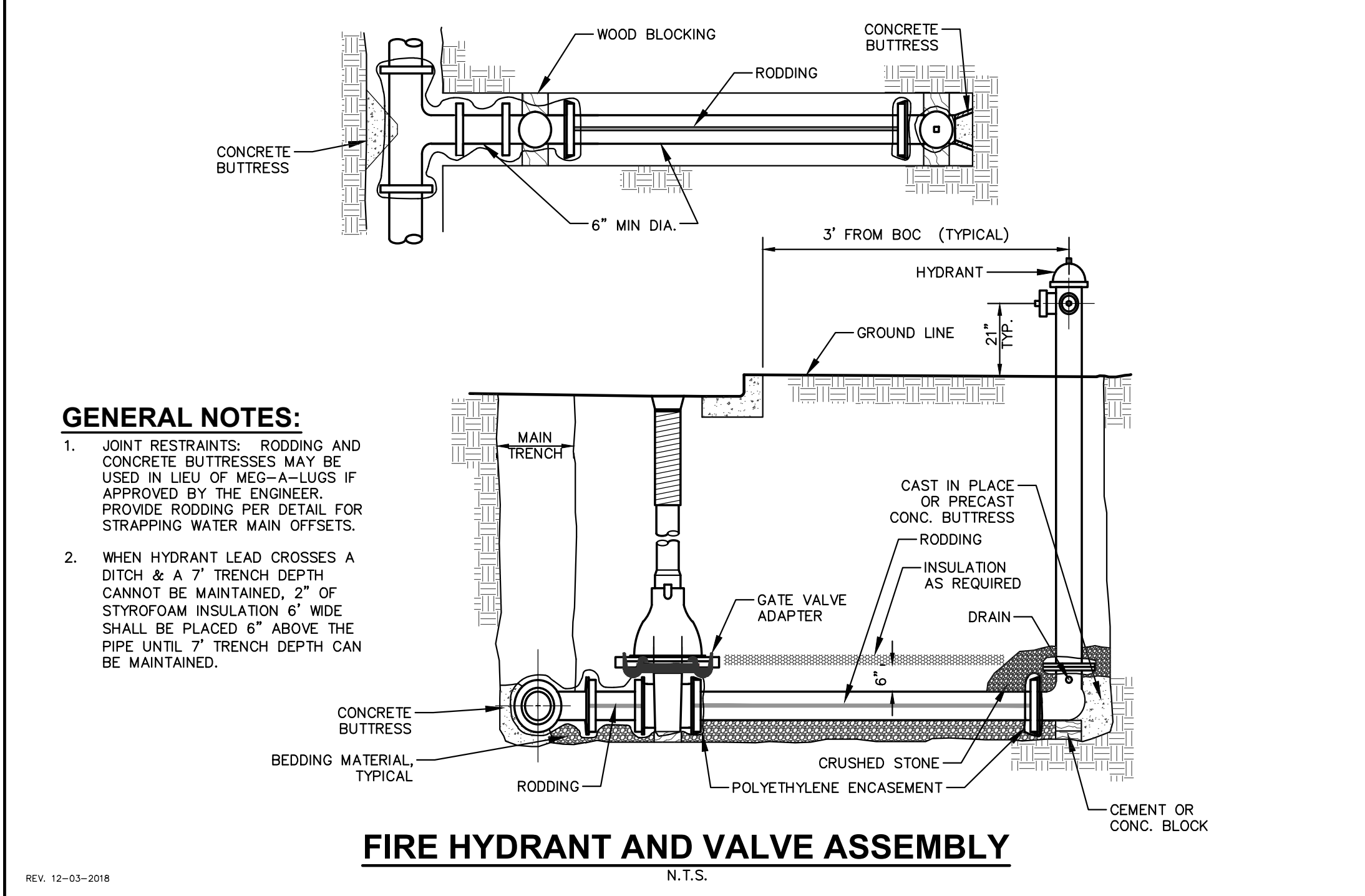
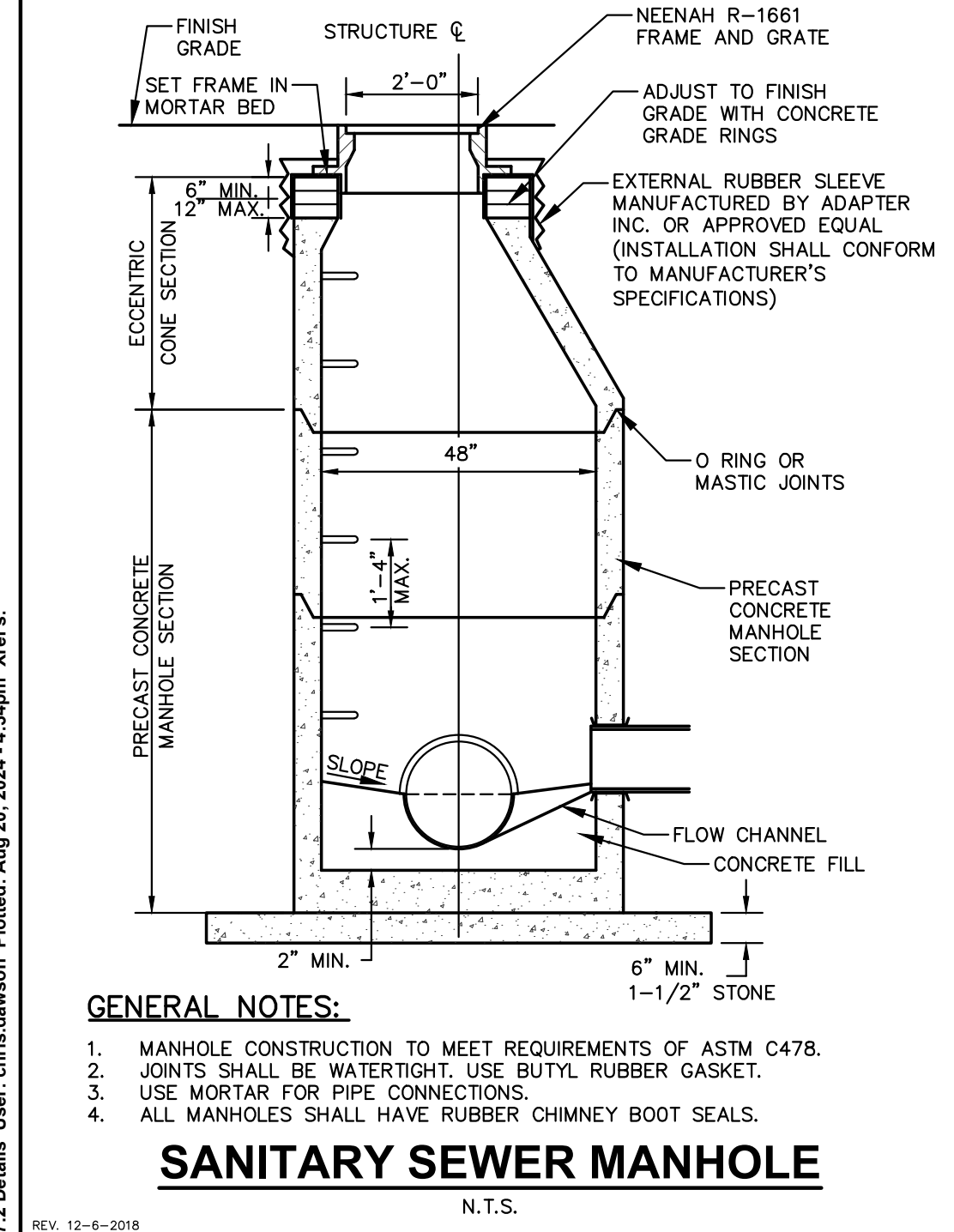
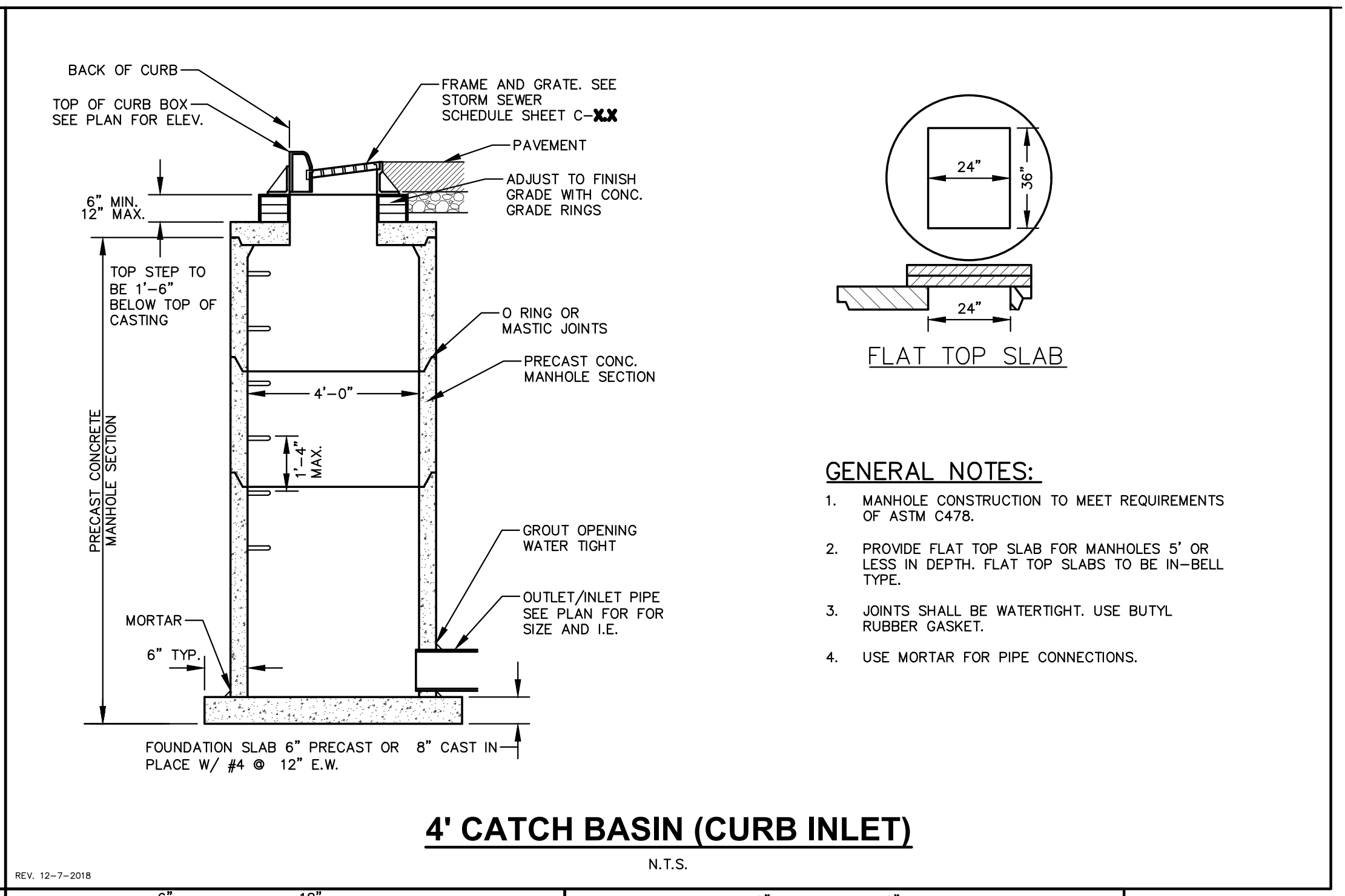
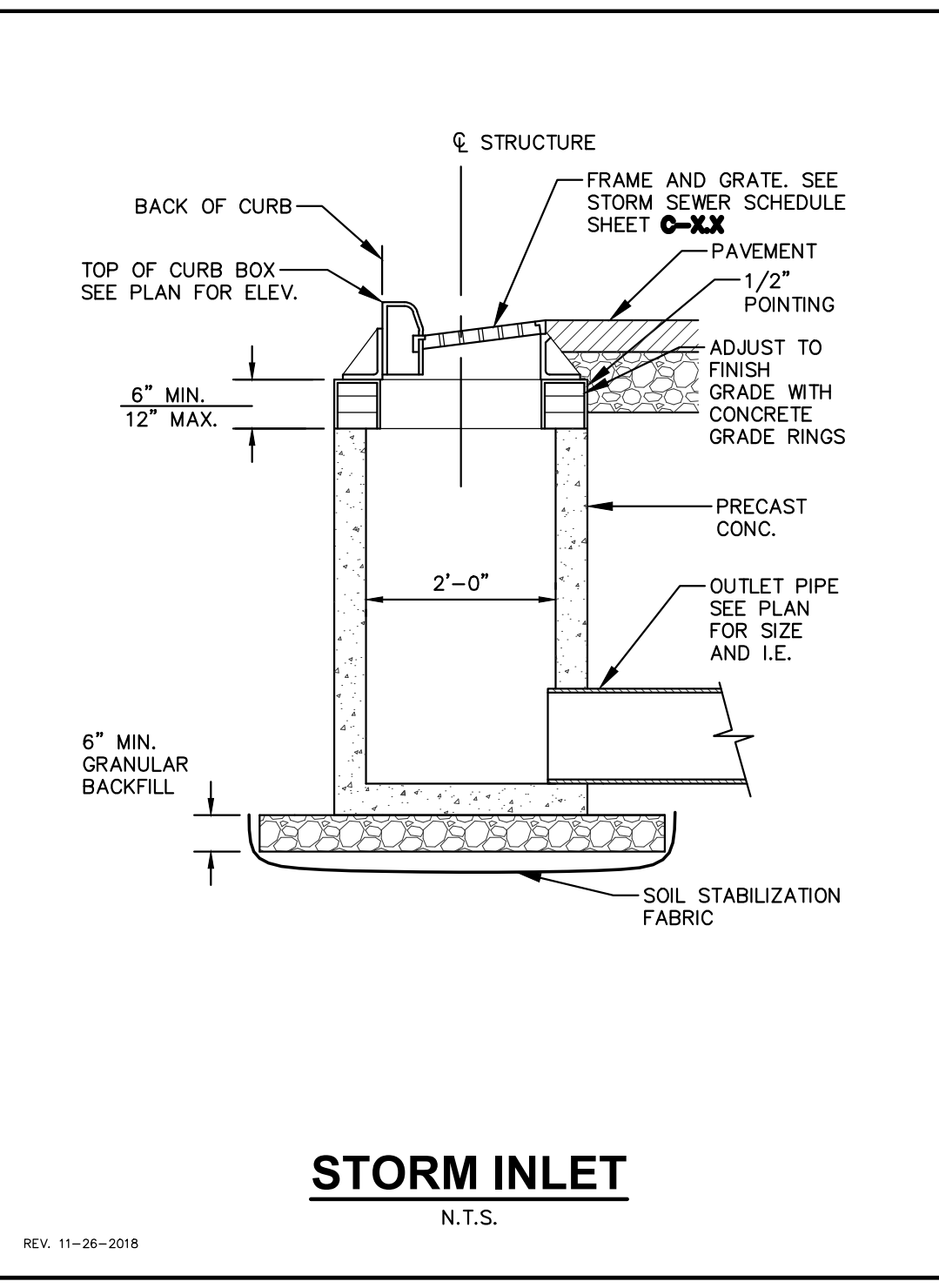
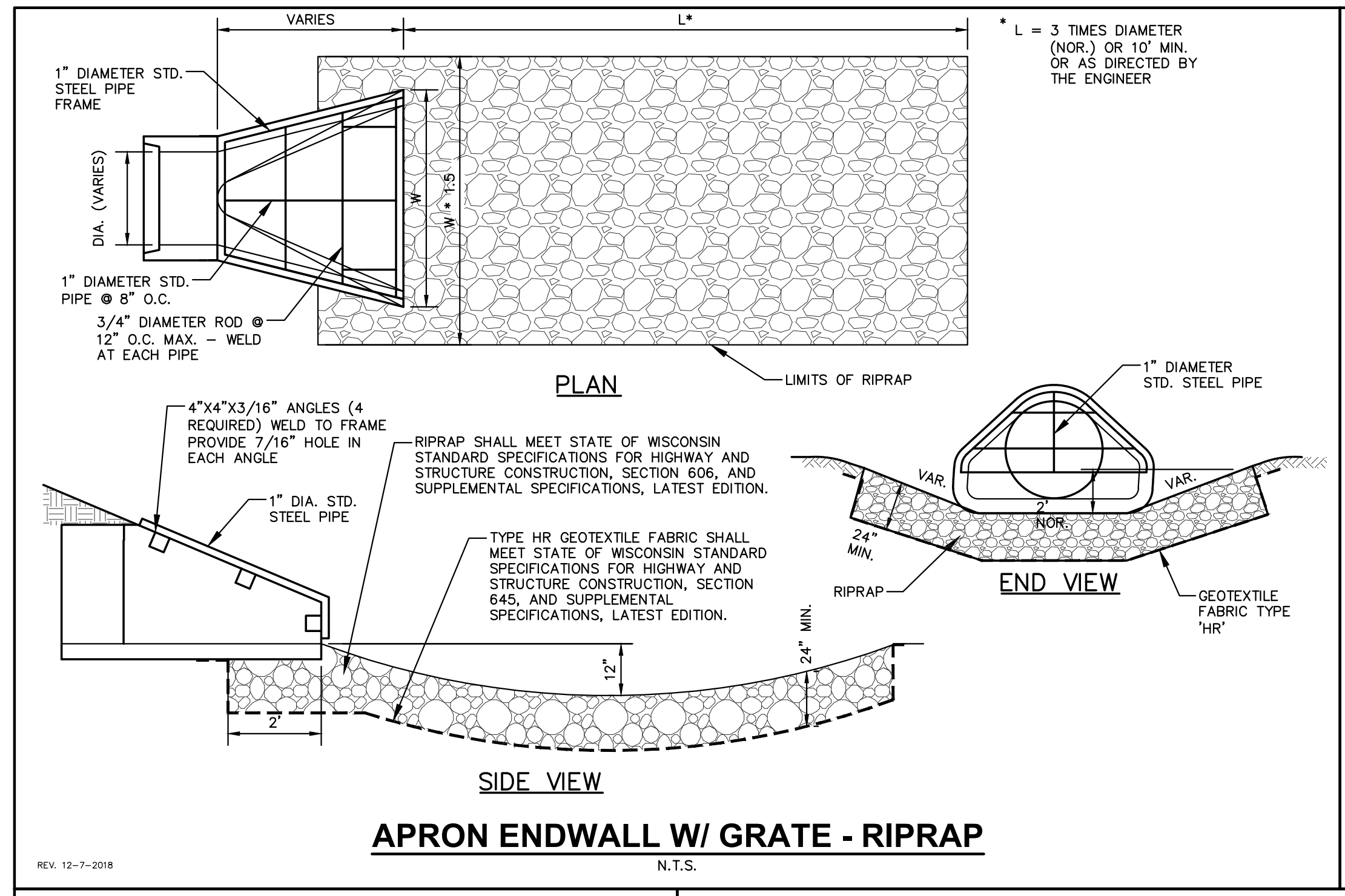
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JSD PROJECT NO: 22-11636

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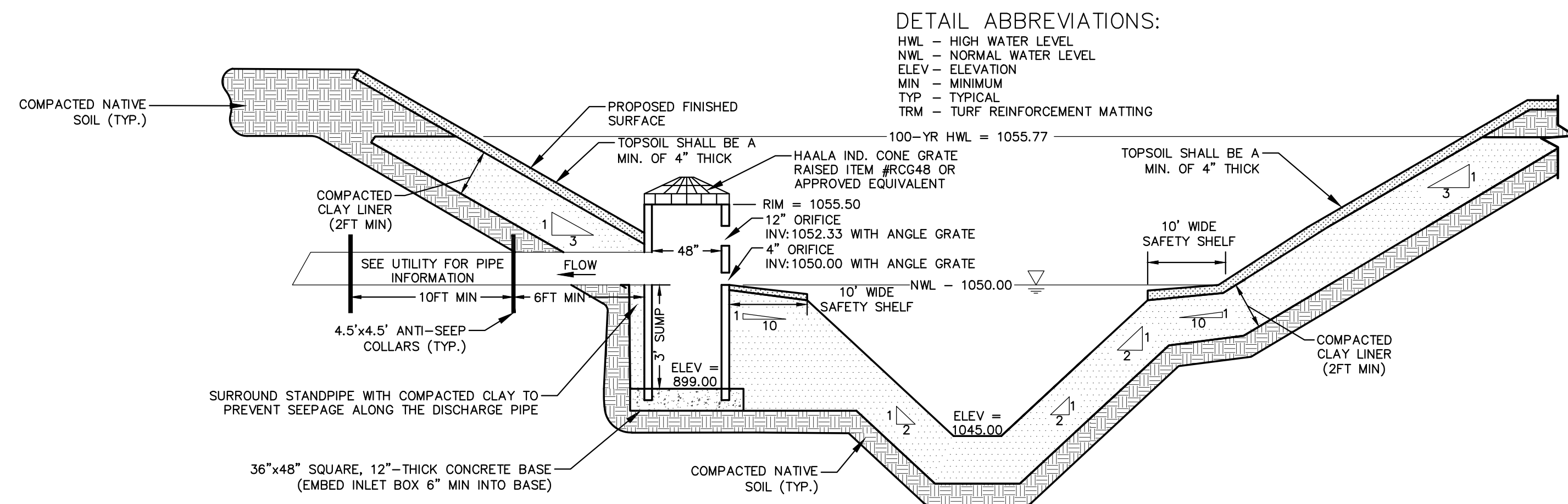
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DETAILS

SHEET NUMBER:
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JSD PROJECT NO: 22-11636

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DETAIL ABBREVIATIONS:
 HWL - HIGH WATER LEVEL
 NWL - NORMAL WATER LEVEL
 ELEV - ELEVATION
 MIN - MINIMUM
 TYP - TYPICAL
 TRM - TURF REINFORCEMENT MATTING

GENERAL NOTES:

- ALL CONSTRUCTION SHALL MEET THE SPECIFICATIONS OF "WDNR WET DETENTION BASIN TECHNICAL STANDARD 1001".
- ALL WORK TO BE CONDUCTED IN CONFORMANCE WITH THE STORM WATER MANAGEMENT PLAN FOR THE PROJECT SITE AS APPROVED BY THE REGULATORY ENGINEER OF RECORD.
- OWNER OR CONTRACTOR MUST CONSULT LANDSCAPE ARCHITECT OR ECOLOGICAL PLANNING AGENCY FOR APPROPRIATE PLANTS AND PLANTING CONFIGURATIONS.
- CLAY LINER SHALL BE A MINIMUM OF 2- FEET THICK. CLAY SHALL BE COMPACTED AT ±2.0% OPTIMAL MOISTURE CONTENT TO 90% MODIFIED PROCTOR. MEDIUM STIFF TO STIFF CLAYS PRESENT IN- PLACE AT THE POND SIDE SLOPES OR BOTTOM OR OTHER ONSITE MEDIUM STIFF TO STIFF CLAYS MAY BE USED AT THE DISCRETION OF THE GEOTECHNICAL ENGINEER OF RECORD.
- FOR CONSTRUCTED EMBANKMENTS WHERE THE PERMANENT POOL IS PONDED 3- FEET OR MORE AGAINST THE EMBANKMENT, THERE SHALL BE A CORE TRENCH OR KEYWAY ALONG THE CENTERLINE OF THE EMBANKMENT UP TO THE PERMANENT POOL ELEVATION. THE CORE TRENCH OR KEYWAY SHALL BE A MINIMUM OF 2- FEET DEEP AND 8- FEET WIDE WITH A SIDE SLOPE OF 1:1 OR FLATTER.
- CONTRACTOR SHALL POSITION ANTI-SEEP COLLAR SUCH THAT THE COLLARS ARE COMPLETELY CONTAINED WITHIN EMBANKMENT.
- CONTRACTOR SHALL FIT STANDPIPE WITH REMOVABLE CONSTRUCTION ORIFICE PLATE OVER THE PERMANENT DEWATERING ORIFICE. THE CONSTRUCTION ORIFICE SHALL REMAIN IN PLACE UNTIL 70% VEGETATION IS ESTABLISHED OVER THE CONTRIBUTING AREA OF THE POND.
- IMMEDIATELY INSTALL FILTER FABRIC OVER ALL OUTLETS TO PREVENT SEDIMENT DEPOSITION IN THE PIPING. (REMOVE FOLLOWING CONTRIBUTING AREA STABILIZATION)
- THE TRASH GRATE OVER THE PERMANENT DEWATERING ORIFICE SHALL BE ADDED FOLLOWING REMOVAL OF THE CONSTRUCTION ORIFICE.

NOTE:

THE STORMWATER MANAGEMENT FEATURES CONTAINED WITHIN THIS PLAN SET HAVE BEEN DESIGNED IN ACCORDANCE WITH APPLICABLE STANDARDS SET FORTH IN WISCONSIN DNR NR151 AND LOCAL ORDINANCES. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ENSURE PROPER CONSTRUCTION PRACTICES HAVE BEEN UTILIZED AND THAT STORMWATER MANAGEMENT FEATURES HAVE BEEN CONSTRUCTED IN ACCORDANCE WITH APPROVED DESIGN PLANS. JSD PROFESSIONAL SERVICES, INC. (JSD) SHALL NOT BE LIABLE FOR ANY CONSTRUCTION PRACTICES OR INSTALLATION WHICH DEVIATES FROM THE APPROVED PLAN SET. ONCE THE OWNER HAS PROVIDED FINAL APPROVAL TO THE WORK PERFORMED BY THE CONTRACTOR AND ENSURED COMPLIANCE WITH THE PLAN, IT IS THE OWNER'S RESPONSIBILITY TO MAINTAIN STORMWATER MANAGEMENT FEATURES IN ACCORDANCE WITH THE RECORDED MAINTENANCE AGREEMENT. PROPER OPERATION IS DEPENDENT ON A MULTITUDE OF VARIABLES INCLUDING WEATHER. THESE COMPONENTS REQUIRE ONGOING MAINTENANCE FOR WHICH THE OWNER IS RESPONSIBLE. JSD TAKES NO RESPONSIBILITY FOR PROPER OPERATION OF THE WATER QUALITY COMPONENTS.

WET BASIN CROSS SECTION

N.T.S.

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 LLC.**

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PROJECT:
JAMESTOWN QUARRY

PROJECT LOCATION:
**2975 KAPEC ROAD
 DANE COUNTY
 FITCHBURG, WI 53719**

PLAN MODIFICATIONS:

#	Date:	Description:
1	05.21.24	PRELIMINARY PLAT
2	08.20.24	FINAL PLAT
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Designed By: MSS
 Reviewed By:
 Approved By: CD

DETAILS

SHEET NUMBER:

C7.3

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**REPORT OF GEOTECHNICAL STUDY
PROPOSED PICK 'N SAVE MARKETPLACE (PS-902)
INTERSECTION OF MCKEE AND FITCHRONA ROADS
FITCHBURG, WISCONSIN**

Submitted to:

The Kroger Company



Submitted by:

**Wood Environment & Infrastructure Solutions, Inc.
Nashville, Tennessee**

wood.

October 19, 2018

Project No. 2424-18-135





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October 19, 2018

Mr. Jameson Snider
Engineering Project Manager
The Kroger Company
Roundy's Supermarket Division
875 E. Wisconsin Avenue
Milwaukee, Wisconsin 53202
Jameson.Snider@Roundys.com

Re: Report of Geotechnical Study
Proposed Pick 'n Save Marketplace (PS-902)
Intersection of McKee and Fitchrona Roads
Fitchburg, Wisconsin
Project No. 2424-18-135

Mr. Snider,

Wood Environment & Infrastructure Solutions, Inc. (Wood) has completed the authorized geotechnical study and herewith submits the data, our comments, and recommendations. Our services were performed in accordance with the terms of our September 4, 2018 proposal. The scope of services includes general subsurface exploration and the development of general recommendations to address geotechnical engineering issues across the area of proposed construction.

Wood appreciates this opportunity to be of service to you. At your convenience, we are available to discuss the details of this report and any questions that you may have.

Sincerely,

Wood

Nathan Long, PE, PG (TN)
Senior Geotechnical Engineer

Neill Belk, PhD, PE
Senior Geotechnical Engineer



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1.0 INTRODUCTION

Wood Environment & Infrastructure Solutions, Inc. (Wood) has completed a geotechnical study for this project and herewith submits the data and our recommendations. We performed the scope of services in accordance with our September 4, 2018 proposal and agreement. The objectives of the geotechnical study were to explore the general subsurface conditions within the proposed construction area and to provide comments and recommendations for site work and design criteria for foundations, slabs, and pavements.

We prepared this report with the assumption that the design will be in accordance with applicable standards and codes, regulations of authorities having jurisdiction, and prudent engineering practices. Further, our recommendations and opinions expressed in this report are only applicable to the subject project. There should also be an ongoing liaison between us and the design team during both the design and construction phases of the project to ensure that you interpret and implement the recommendations in this report correctly. In addition, you should contact us immediately if any further clarification and/or elaboration are needed concerning the geotechnical aspects of this project. We have attached important information prepared by the Geoprofessional Business Association (GBA) regarding studies of the type performed for you to review in Appendix 1.

2.0 PROJECT INFORMATION

We based our understanding of the project on the drawing titled "Concept Site Plan Option 1," dated August 24, 2018, prepared by Sevan Multi-Site Solutions, and provided to us by The Kroger Company. The drawing depicts the proposed improvement locations at the site.

The project consists of constructing a new Pick 'n Save Marketplace at the northwest quadrant of the intersection of McKee Road and Fitchrona Road in Fitchburg, Wisconsin. The planned development will also include associated pavements, a fuel center, and a detention pond. Our study did not include the outlots located to the north and south of the proposed Pick 'n Save development. The marketplace building is planned for the west end of the site and will consist of a single-story structure with a footprint of about 115,000 square feet. Based on our experience with similar structures, we have assumed that the building will be a steel-framed building with a concrete slab-on-grade and spread footings. Also, we assume that maximum structural loads for the building will be 115 kips for columns and 3.5 kips per foot for walls.

The fueling center is planned for the southeast corner of the site and situated approximately 300 feet north of the intersection of McKee Road and Fitchrona Road and will include a fuel island canopy with up to nine fuel dispensers, a kiosk, two underground storage tanks (USTs), and associated pavement areas. The detention pond is planned for the northeast corner of the site, adjacent to Fitchrona Road.

The proposed marketplace building and fuel center will be surrounded by associated driveways and parking lots. We have not been provided with detailed information relating to anticipated traffic loadings and frequencies likely associated with operation of the facility. In the absence of detailed information, we have assumed less than 110,000 ESAL's (18 kip Equivalent Single Axle



Loads) for light duty pavements and less than 210,000 ESAL's for heavy duty pavements. This loading information is based on a theoretical life of 20 years for the pavements.

We have not been provided with a grading plan for the site, but we estimate that cut and fill thicknesses up to 20 feet each will be required to reach final grades across the western half of the site. We anticipate that minimal grading (i.e., less than two feet of cut and/or fill) will be required within the east half of the site, except at the proposed detention pond and UST excavation(s). We expect cuts up to 15 feet in these areas. We note that the provided site plan did not indicate any retaining walls, therefore these type of structures were not included in our current scope of services. If retaining walls are added to this project at a later, then we can provide design and construction recommendations at that time.

3.0 SITE HISTORY

Information provided by Kroger and our review of aerial photography (see our Phase I ESA for the site, dated June 21, 2018) indicates that the site was formerly utilized as a rock quarry between at least 1968 and 2014 (See Figure 1). The primary excavation for the quarry occupied the eastern half of the site. The planned Pick 'n Save improvements for this eastern area consist of pavements, the fuel center, and the detention pond. We note that the excavation extended beyond the Pick 'n Save site boundaries to the north and east. Based on the aerial photographs, the slopes along the west and south sides of the excavation appear to have had very steep, near-vertical inclinations.



Figure 1 – Aerial View of Site (Google Earth, 2014)

Based on four field reports prepared by CGC, Inc (CGC), we understand that the primary quarry excavation was backfilled with imported soils between April 2014 and November 2017 (field

reports dated between January 2015 and April 2018). The field reports document the intermittent field density testing of the fill. The reports included the field density test results for 245 tests. The test elevations ranged from 1,026.0 feet to 1071.6 feet. CGC generally performed the tests on 6- to 12-inch lift intervals, except for the south end of the quarry above elevation 1,035.0 feet. This area was tested on approximately 1- to 4-foot intervals between elevation 1,055.0 feet and 1,066.0 feet. There were no field density tests performed between 1,035.0 feet and 1,055.0 feet. The quarry backfill materials generally consisted of silty sand with gravel, but also included some lean clay and sand with silt/gravel.

Based on CGC's field reports, the backfill specifications required a minimum compaction level of 92% below elevation 1,050.0 feet and a minimum compaction level of 95% above elevation 1,050.0 feet. The compaction levels were based on the maximum dry density of the soils as determined by the modified Proctor compaction test.

The field density test results indicate that 230 of the 245 test results either initially met the specified compaction requirement or had a retest meet the specification requirement after aeration and additional compaction. However, Test Numbers 231 through 245, which were performed above elevation 1,055.0 feet at the south end of the quarry, did not meet the compaction requirements. The compaction percentage for these tests ranged from 77% to 93%. CGC noted in their final field report that these failing tests were performed within test pits after completing the quarry backfill. Because the area had been completely backfilled, the contractor was not able to apply additional compaction to the fill. CGC indicated that the majority of this area was pre-loaded with stockpile material that extended up to about 25 feet above the existing ground surface. Once the stockpile was removed, CGC had a local surveyor install 9 monitoring points to evaluate settlement within the unsatisfactorily compacted backfill. In their field report dated April 24, 2018, CGC included monitoring point elevations surveyed seven times between December 19, 2017 and April 11, 2018. The monitoring indicated up to $\frac{3}{8}$ -inch of settlement during this time period, and settlement had generally tapered off after the first two to three months.





Figure 2 – Aerial View of Site (USGS, 1992)

In addition to the quarry excavation and backfilling previously discussed, historical aerial photography indicates that additional earthwork has taken place in the western half of the site (See Figure 2 above). The aerial photography indicates that earthwork in this area lasted from at least years 1976 to 2005. We are unaware of the purpose and extent of this earthwork, but it appears that a large excavation was made during this period then backfilled in the mid-2000s. Unlike the fill placed in the abandoned quarry excavation, we do not have records documenting fill placement in the western half of the site.

4.0 EXPLORATION AND TESTING

Our exploration included advancing 31 geotechnical soil borings at the site within the planned building footprint, fuel center, pavement areas, and detention pond (see Table 1). Appendix 2 contains a Boring Location Plan, which shows the approximate boring locations in relation to the proposed construction locations. A member of our professional staff located the requested boring locations in the field by using a handheld global positioning system (GPS) device and pacing distances from existing features. After completing the exploration, our subcontractor's survey crew surveyed the actual boring locations to determine coordinates and elevations. They also surveyed the settlement monuments discussed in Section 3.0.

Table 1 – Boring Locations

Location	Number of Borings	Boring Numbers
Fuel Center	3	B-1 through B-3
Pick 'n Save Marketplace Building	11	B-4 through B-13, B-31
Pavement Areas	14	B-14 through B-27
Detention Pond	3	B-28 through B-30



We subcontracted with Testing Service Corporation (TSC) to perform the drilling for the geotechnical soil borings. TSC power augered the borings through the overburden and obtained soil samples at various intervals in general accordance with ASTM D1586 (*Standard Test Method for Standard Penetration Test (SPT) and Split-Barrel Sampling of Soils*). Additionally, we collected relatively undisturbed samples of some of the cohesive soils in general accordance with ASTM D1587 (*Standard Practice for Thin-Walled Tube Sampling of Fine-Grained Soils for Geotechnical Purposes*). We extended the borings to their planned exploration depths, which were between 15 and 50 feet below ground surface. A member of our professional staff was on-site to document the exploration and log the soil samples in the field. We field classified soil samples with respect to material type and consistency. Upon completion of drilling, we checked each boring for the presence of groundwater and backfilled the borings with auger cuttings.

We returned the collected soil and rock samples to our Geotechnical and Construction Materials Laboratory in Nashville, Tennessee, where we tested select samples to assess the soils' classification and index properties, such as natural moisture content, grain size distribution, and Atterberg limits. Additionally, we performed unconfined compression, consolidation, soil pH, soil electrical resistivity, and California bearing ratio (CBR) tests. The laboratory testing results are presented in Appendix 3.

5.0 SITE AND SUBSURFACE CONDITIONS

The site is bordered by McKee Road to the south, by Fitchrona Road to the east, undeveloped land and residential properties to the north, and residential properties to the west. The ALTA/NSPS Land Title Survey for the site (dated July 9, 2018 and prepared by KL Engineering) indicates that underground utilities are located within the right-of-way of both roadways bounding the site.

The site is undeveloped and consists of two distinct areas. The east end of the site (former quarry excavation footprint) is relatively flat and covered with bare soil and weeds (Photo 1). A detention pond is located within this area at the northeast corner of the site. Based on the ALTA/NSPS survey, ground surface elevations within the east half of the site generally range from about 1,060 feet along Fitchrona Road to 1,070 feet near the center of the site.

The west half of the site generally consists of an elevated surface near the center of the area. The top of the elevated area is about 450 feet long and 150 feet wide. The ground surface surrounding the high spot slopes down at inclinations between about 1H:1V and 4H:1V. Based on the ALTA/NSPS survey, ground surface elevations range from about 1,034 feet along the west boundary of the site to 1,084 feet within the elevated area. The west half of the site is generally hummocky with densely vegetated with trees (up to 12-inch diameter) and underbrush, except at the north and south ends of the site. We observed occasional pieces/slabs of concrete on the ground surface within the wooded areas. An asphalt access driveway is located at the southwest corner of the site and extends about 100 feet into the site.





Photo 1 – View looking north (9/20/18)



Photo 2 –Along west boundary (9/20/18)

5.1 Area Geology

The project site is located in the Eastern Ridges and Lowland geographical province of Wisconsin (Martin, 1916). The Glacial Geology of Dane County, Wisconsin map (Wisconsin Geological & Natural History Survey, 1979) indicates the site is underlain by ground moraine soils consisting of till deposited as a relatively flat or rolling surface along the base of the glacier. As noted earlier, the site was former used as a quarry and our subsurface exploration indicates that much of the glacial till at the site was likely removed during quarry operation.

The Preliminary Bedrock Geology of Dane County, Wisconsin map (Wisconsin Geological & Natural History Survey, 2013) indicates that the site is located along the contact between the Ancell Group and the Sinnipee Group. The contact between these geologic units appears to be between about elevation 1,060 feet and 1,070 feet based on a comparison between the referenced geologic map and the USGS topographic map of the Madison West Quadrangle (USGS, 1983). The Ancell Group is the lower unit and is mapped along the eastern half of the site. The majority of this group consists of the St. Peter Formation, which consists of poorly cemented, clean, medium-grained quartz sandstone overlying shale and shaly sandstone. The geologic map identifies this area as being a quarry. The Ancell Group is overlain by the Sinnipee Group, which is mapped along the western half of the site. The lowest member of the Sinnipee Group is the Platteville Formation, which is about 80 feet thick. This formation consists of dolomite and shaly dolomite. Regionally extensive faults lie approximately 2 and 5 miles to the south of the site.

5.2 Subsurface Conditions

Below is a summary of the subsurface conditions encountered in each of the site areas. The Boring Logs in Appendix 2 contain our descriptions and interpretations of the materials encountered at each boring location.



5.2.1 Former Quarry Excavation Footprint (East Portion of the Site)

The 3 fuel center borings, 3 detention pond borings, and 10 of the pavement borings (B-17 through B26) were performed within the footprint of the former quarry excavation. Each of the borings drilled in this area initially encountered a layer of gravelly sand with cobbles to a depth of about 6 inches. Below the surficial gravelly sand, each boring encountered existing fill or possible fill materials to depths between 12 and 47 feet below ground surface. We note that 9 of the borings were terminated at a depth of 15 feet without penetrating the fill. The existing fill typically consisted of sandy clay and silty/clayey sand varying amounts of gravel. The clay was typically medium stiff to stiff, and the sands were typically loose to medium dense. However, some of the borings at the south end of the site encountered soft clays and very loose sands.

Below the fill, Borings B-1, B-2, B-3, B-18, B-20, B-24, and B-26 encountered native soils and potential bedrock to boring termination between 15 and 50 feet below ground surface. The soils typically consisted of very dense sand with varying amounts of silt and sandstone fragments. We note that this material is possibly a weakly cemented or brittle sandstone that was able to be augered through with our onsite drill rig.

Laboratory Testing

We performed Atterberg limits and grain size testing on eight test samples (seven existing fill and one native) of the materials encountered within the east half of the site. The testing indicated that one of the existing fill samples was lean clay with sand, four were silty sand, and one was clayey sand. The native soil sample was silty sand. Natural moisture contents for 16 test samples ranged from about 8 to 18 percent (average of about 11 percent).

Strength testing performed on one relatively undisturbed sample of clayey sand from Boring B-20 yielded an unconfined compressive strength of 1,540 psf.

We also collected a bulk sample of the upper 15 feet of auger cuttings at Borings B-29 and B-30 for standard Proctor testing. The bulk sample from the combined auger cuttings was composed of silty sand. The optimum moisture content of the sample was 9.5% with a maximum dry density of 127.3 pounds per cubic foot (pcf). The CBR test indicated a CBR value of about 4.8 for soils compacted to 98% of the maximum dry density. We measured the electrical resistivity of the bulk sample in the laboratory to be 1,580 ohm-centimeters and the pH to be 9.19.

5.2.2 Outside of Former Quarry Excavation Footprint (West Portion of the Site)

The 11 marketplace building borings and 4 of the pavement borings were performed in the western half of the site, outside the limits of the former quarry excavation.

Each of the borings drilled in this area typically encountered a layer of topsoil or a layer of gravelly sand with cobbles up to 6 inches below ground surface. Below the surface materials, each boring initially encountered existing fill and potential fill soils to depths between 3 and 30 feet below the existing ground surface. The existing fill typically consisted of soft to very stiff



clay with varying amounts of sand and gravel or loose to medium dense sand with varying amounts of clay, silt, and gravel. The existing fill at Boring B-13 (1 to 12 feet) contained some materials believed to be quarry dust or another quarry by-product. We note that Borings B-5 (30 feet), B-6 (30 feet), and B-16 (15 feet) were terminated without penetrating the fill. Below the existing fill and possible fill materials, the remaining 12 borings encountered native soils to the planned boring termination depth. These native materials typically consisted of medium stiff to stiff clay or dense to very dense sand with varying amounts of silt and gravel. We note that some of the sands encountered are a weakly cemented or brittle sandstone that was able to be augered through with our onsite drill rig.

Laboratory Testing

We performed Atterberg limits and grain size testing on 11 test samples of the materials encountered west half of the site. The testing indicated that six of the samples were silty sand, two samples were clayey sand, one sample was silty/clayey sand, one sample was sandy silt, and one sample was sandy clay. Natural moisture contents for 14 test samples ranged from about 9 to 19% (average of about 13%), with the exception of one sample from B-13, which had a natural moisture of 106%. The outlier moisture content was performed on the apparent quarry by-product materials.

Strength testing performed on two relatively undisturbed samples of the clay soils from Borings B-7 and B-11 yielded unconfined compressive strengths of 457 and 1,433 psf.

We also collected a bulk sample of the upper 10 feet of auger cuttings at Boring B-6 for standard Proctor testing. The bulk sample of auger cuttings was composed of silty sand. The optimum moisture content of the sample was 13.7% with a maximum dry density of 115.6 pounds per cubic foot (pcf). We measured the electrical resistivity of the bulk sample in the laboratory to be 2,800 ohm-centimeters and the pH to be 8.64.

5.3 Groundwater

Thirty (30) of the 31 borings were dry at the time of drilling. However, Boring B-28 encountered groundwater at a depth of 6 feet during drilling. This boring was performed near the existing detention pond at the northeast corner of the site. The temporary detention pond was partially filled with water during our exploration, which likely influenced surrounding groundwater levels. We note that the borings were not developed to enhance flow into the augers. In addition, groundwater levels fluctuate seasonally and after periods of drought or excess precipitation. Therefore, groundwater levels may be different at other times. It is possible that perched water could accumulate and be encountered near the ground surface during periods of wet weather.



6.0 GEOLOGIC HAZARDS

6.1 Undocumented Fill

Fill soils are those that have been placed or reworked in conjunction with past construction, grading, or farming. Fill can be composed of different soil types from various sources and can contain debris from building demolition, organics, topsoil, trash, etc. The engineering properties of the fill depend on primarily on its composition, density, and moisture content. There is an inherent risk of construction and fill placement over areas of existing undocumented fill that may impact construction scheduling and costs. Existing fill will be encountered during site preparation and new fill placement as the existing slopes will be benched to accommodate new fill

6.2 Seismic Hazard

No significant faults or other geologic anomalies are noted on available geologic mapping within close proximity to the site. The 2013, Preliminary Bedrock Geology of Dane County, Wisconsin map shows faults approximately 2 and 5 miles to the south of the project site. We believe that there are not active faults within the Dane County, Wisconsin area.

7.0 GEOTECHNICAL COMMENTS AND RECOMMENDATIONS

7.1 Geotechnical Assessment

Based upon the exploration data, our site reconnaissance, and our experience, we expect that the proposed marketplace project can be constructed at the site. However, we encountered existing fill materials in each of our 31 borings and believe that these existing fill materials will likely affect development costs at the site.

7.1.1 Fuel Center and Pavement Areas

The proposed fuel center and the majority of the pavement areas are located within the footprint of the former quarry excavation. The existing fill within the former quarry excavation was placed between 2014 and 2017 and intermittently tested by CGC. The CGC field reports indicate that the fill within the former quarry was generally placed and compacted to the specified criteria in approximate 6- to 12-inch lifts. However, the existing fill at the south end of the former quarry, above elevation 1,035 feet, was not tested during placement. CGC later performed in-place density testing on these materials by excavating test pits after completing fill placement. The density testing provided low compaction percentages. The field testing performed during our exploration are consistent with CGC's field density test results.

We understand that portions of south quarry footprint were surcharged for an unknown period of time after completing the quarry backfill. After removing the surcharge load (i.e., stockpile), CGC monitored the ground surface for settlement over a period of about six months (December 2017 through May 2018). During our exploration, we subcontracted with KL Engineering to



perform an additional round of surveying of the settlement monuments. The monitoring indicated up to $\frac{3}{8}$ -inch of settlement during the entire monitoring period, and the settlement generally tapered off after the first four months.

The pavement areas outside of the former quarry footprint are underlain by undocumented fill that was likely placed between 1976 and 2005. These materials are highly variable in consistency and include some very soft zones.

Based on our evaluation, we believe the existing fill materials within the north end of the former quarry were placed and compacted in a manner consistent with standard practices for engineered fill. Therefore, we believe these materials are acceptable for supporting the planned pavements in this area. However, there are some risks associated with using the undocumented fill at the south end of the former quarry to support the planned fuel center and pavements. These risks include foundation cracking, displacement, and settlement; cracking and poor fit of door and window frames; cracking of interior and exterior finishes; and cracking/settlement of pavements and the kiosk floor slab. Based on the settlement monitoring results and the light loads associated with the fuel center, we believe the risks associated with the undocumented fill within this area of the site are generally low. To further reduce these risks, we recommend that the geotechnical engineer or his representative have the opportunity to observe the bearing surface prior to concrete placement and document that conditions are as anticipated.

Additionally, the pavement and floor slab support materials should be thoroughly proofrolled prior to new fill placement or pavement/slab construction. Any soft or weak zones identified during the proofrolling should be repaired as recommended by the geotechnical engineer. The geotechnical engineer or his representative should observe the pavement and floor slab subgrades prior to crushed stone placement to check for evidence of excessively wet or dry soils. Undercutting of the soils or moisture re-conditioning and compaction may be required if these conditions are found. If the owner is not willing to accept the risks associated with supporting pavements and the fuel center on undocumented fill, we recommend completely undercutting the existing undocumented fill to an elevation of 1,035 feet and backfilling with new compacted fill.

We note that our comments and recommendations above assume that minimal grading (i.e., less than 2 feet of fill) occurs within the east half of the site. If fill thicknesses greater than this are planned, then we should be given the opportunity to revise our recommendations because additional settlement could occur due to the fill loading.

7.1.2 Marketplace Building

We were not provided any documentation for the existing fill within the western half of the site. We encountered undocumented fill to depths between about 3 and 30 feet within and near the planned marketplace building footprint. The undocumented fill materials typically consisted of moist, clay with rock fragments and was highly variable in consistency, with some very soft zones. We anticipate that some of the undocumented fill within the building footprint will be



removed during mass grading, but we expect that up to 25 feet of undocumented fill may still be located below the final subgrade level in the area of Boring B-8, depending on the finished floor elevation of the building.

We do not believe the undocumented fill materials within the western half of the site are satisfactory for support of the planned marketplace foundations and floor slab. Because of the random and highly variable consistencies within these materials, we believe there is a high risk of poor foundation performance resulting in excessive total and differential settlements. To address the geotechnical concerns associated with the undocumented fill, we recommend using one of the two ground improvement options below at the site to permit the use of spread foundations.

Option 1 – Completely remove the undocumented fill within the footprint of the planned marketplace building plus 5 feet beyond the building footprint. The undercut excavation may be backfilled with engineered fill as discussed later in this report. This undercut and replacement option will allow for the use of shallow, spread foundation bearing on new engineered fill.

Option 2 - Install a system of rammed, aggregate piers. Aggregate piers are columns of compacted stone that are installed in groups to increase bearing resistance and reduce settlement. The aggregate piers should be constructed beneath the planned column and wall foundations and floor slabs.

Additionally, there is a risk of poor pavement performance if the undocumented fill is used to support the planned pavements because of the potential for undetected weak zones and zones of deleterious materials. Undercutting and replacing the existing fill soils would reduce the risks associated with these materials. However, undercutting would likely significantly increase construction costs. Alternatively, the existing fill may be left in-place, provided the subgrade is prepared as recommended in this report and the owner is willing to accept some risk of localized depressions, cracking, and joint faulting. We cannot estimate the risk level based on the limited available data. To further reduce these risks, we recommend that the pavement support materials be thoroughly proofrolled prior to new fill placement or pavement construction. Any soft or weak zones identified during proofrolling activities should be repaired as recommended by the geotechnical engineer. The geotechnical engineer or his representative should observe the pavement subgrades prior to base stone placement to check for evidence of excessively wet or dry soils. Undercutting of the soils or moisture re-conditioning and compaction may be required if these conditions are found. We anticipate that significant remedial repairs may still be required based on the variable and sometimes low strength soils encountered in our borings. We note that the recommendations that are provided in this report assume that the owner is willing to accept the risks associated with the existing fill and will not elect to completely undercut these materials.



7.2 Site Preparation

Initially, all vegetation, topsoil, and frozen soil (if encountered) should be stripped from the construction footprint. Stripping operations should extend, where possible, a minimum of 10 feet beyond the limits of the proposed building and at least 5 feet beyond the limits of the proposed pavement. Removal of trees should occur as far in advance of general grading as possible in order to allow the soils' moisture content to return to normal levels. Removal of organics should include complete removal of tree root balls. Stripped material may be stockpiled onsite and reused for landscaping purposes or wasted off-site as appropriate (deleterious materials should be wasted off-site).

Based on our site observations and the ALTA survey, we do not anticipate existing utilities within the proposed building footprint. However, if detected during construction, special precautions should be made to remove all underground utilities and their associated backfill within and near the proposed building footprints. The resulting trenches should be backfilled with engineered fill as described below.

After stripping operations are complete, we recommend scarifying, moisture conditioning, and recompacting the upper 12 to 18 inches of subgrade soils in fill areas. After recompaction in fill areas and reaching the final subgrade level in cut areas, the contractor should proofroll the soil subgrade with heavy, rubber-tired equipment (such as a loaded dump truck with a minimum gross weight of 20 tons). The geotechnical engineer or his representative should observe the proofroll. The contractor should repair unstable soils revealed by the proofrolling operations to stable ground. After the subgrade has been stabilized, fill may be placed on the stable surface.

Because of the variable and sometimes soft consistency of the existing undocumented fills encountered during our exploration, we anticipate that some remedial subgrade repairs will be required. If the initial reworking of the subgrade did not improve stability enough, then undercutting of soft zones will likely be required. The undercut materials may be used as backfill, provided they meet the criteria in this report. However, moisture conditioning (i.e., wetting or drying) may be required to achieve suitable moisture conditions for proper recompaction. We note that in areas that require new fill thicknesses of three feet or greater, no undercutting may be required. In these areas, our geotechnical engineer should develop options for treatment other than additional undercutting based on actual site conditions and grading requirements. Alternative methods such as geogrid or geotextile reinforcement and bridging using engineered rock or soil fill may be used for subgrade stabilization in pavement areas where at least three feet of fill is planned.

In general, engineered soil fill should consist of cohesionless soil or low to medium plasticity clay (plasticity index less than 30) designated CL by the Unified Soil Classification System. Proposed fill should contain no debris, objectionable material, or rocks larger than 4 inches in maximum dimension. The geotechnical engineer should test and approve proposed borrow sources before use as engineered fill. Place engineered soil fill in lifts not exceeding 8 inches in loose thickness and compact to at least 98% of the standard Proctor (ASTM D 698) maximum



dry density. Control the moisture content of the engineered fill to within $\pm 2\%$ of the standard Proctor optimum moisture content.

Our laboratory testing indicates that the on-site soils meet our recommended criteria for engineered soil type. However, our laboratory testing also indicates that the natural moisture contents of the upper on-site soils are generally wet of the optimum moisture content by up to 5 percent. Therefore, scarification and drying of the existing onsite soils may be necessary to achieve proper compaction. We note the moisture contents may be higher during cold and/or wet weather, which will make drying difficult. If grading occurs during a wet or cold season of the year, then lime stabilization or rock fill placement may be necessary to expedite site grading and achieve proper compaction.

Permanent outslopes of soil fill should be inclined no steeper than 2.5H:1V. An outslope inclination of 3H:1V or flatter should be incorporated if those areas are to be accessed with mowers or other landscaping equipment. Permanent cut slopes in stable soil may be laid back at inclinations no steeper than 2H:1V.

Vertical cuts in soil are usually unstable and present a significant hazard because they can fail without warning. Therefore, temporary construction slopes in soil up to 15 feet high should be inclined no-steeper-than 1.5 horizontal to 1.0 vertical (1.5H:1V), or braced, and material stockpiles, equipment, etc., should not be placed within 15 feet of the crest of any excavated slope. If the Contractor wishes to use temporary slopes for cuts deeper than 15 feet or for inclinations steeper than indicated herein, per OSHA regulations, they must be designed by an experienced, licensed professional engineer.

Temporary slopes may experience some minor localized instability (i.e., sloughing). To mitigate sloughing, all excavated slopes should be covered with polyethylene for protection from rainfall and moisture changes. Also, runoff should be diverted away from excavated slopes to prevent erosion and sloughing. Trench excavations and slope construction shall proceed with caution and stability of trenches and slopes during construction is the responsibility of the contractor. The contractor shall comply with all aspects of 29 CFR Part 1926, *OSHA Standards - Excavations; Final Rule* to protect workers.

We strongly recommend that site development be performed during seasonably dry weather and excavation/site preparation should not be performed during or immediately following periods of heavy precipitation. The site should be maintained in a well-drained condition, both during and after construction, to prevent water from ponding on soil subgrades. Ponding of water could lead to the deterioration of the subgrade, necessitating overexcavation of the softened soil. In addition, the amount of subgrade repair that may be required will vary based on weather conditions during the construction period. Undercut requirements could be substantial if construction traffic is allowed to traverse completed soil fills or other stripped areas during wet weather. In addition, repeated heavy loads from construction traffic upon otherwise stabilized soils have been known to compromise the integrity of the stabilized subgrades, necessitating reworking of the softened soils. Therefore, to the extent possible,



construction traffic on final subgrades should be prohibited. If construction traffic will be allowed on final subgrades, then we recommend stabilizing the surface by either chemical stabilization or aggregate base placement.

7.3 Foundation Design

7.3.1 Marketplace Building (Option 1) and Fuel Center

If the Owner elects to completely remove the undocumented fill within the footprint of the marketplace building and replace with new engineered fill, then this building may be supported by shallow spread foundations bearing on new engineered fill. We also recommend that the fuel center be supported by conventional, shallow spread foundations bearing on the existing fill soils or new engineered fill.

We assess the allowable bearing capacity of the recommended stratum for these structures to be 2,500 psf for loads as applied by column and continuous footings. This value is based on a safety factor of at least three against general shear failure. To accommodate minor inconsistencies within the subgrade, minimum footing widths of 18 and 24 inches should be specified for continuous and individual footings, respectively. Footings should be founded at least 48 inches below finished grades to provide adequate confinement and frost protection.

Lateral loads exerted against the spread foundation system can be resisted by the lateral earth pressure developed against the vertical face of the footing and by the friction acting between the base of the footing and the soil subgrade. Provided that the concrete for the footing is cast neat against the sides of an excavation, the lateral earth pressure can be computed based on an at-rest earth pressure coefficient of 0.53, an active earth pressure coefficient of 0.36, and a passive earth pressure coefficient of 2.8. A moist unit weight of 125 PCF may be used for the in-situ soils. The coefficient of friction between the base of the foundation and the soil subgrade is conservatively estimated at 0.35. A minimum code-specified factor of safety should be used when calculating sliding resistance to lateral loads.

To accommodate minor uplift loads, the designers may take into account the mass of the backfill above the footing element. The unit weight of the engineered backfill above the foundation (vertical projection of the footing limits) may be taken as 125 PCF. For random backfill placed thereon, the unit weight above the footing should be taken as 90 PCF.

Whenever possible, the contractor should open and cast concrete for foundation excavations on the same day. If excavations in soil must remain open for an extended period, they must be protected from rainfall, surface water infiltration, freezing and excessive drying. The geotechnical engineer or his representative should examine all footing excavations immediately prior to being cast with concrete to observe the bearing surface and to document that conditions are as anticipated. It is important that the geotechnical engineer or his representative have the opportunity to observe, test, and document the placement of engineered fill in the building footprint and all footing excavations.



It is possible that localized soft or very loose soils may be encountered at the planned foundation bearing level during construction. If encountered, these materials should be undercut and replaced with engineered soil fill or lean concrete.

When founded in accordance with our recommendations, we expect both total and differential settlements for the additions to be within limits normally considered tolerable for the structure discussed in this section. We estimate that the total post-construction foundation settlement will not exceed one inch and that differential settlement will not exceed 50% of the total increment.

7.3.2 Marketplace Building (Option 2)

In lieu of completely undercutting the undocumented fill within the footprint of the marketplace building, the site's subsurface conditions may be improved by installing a system of aggregate piers, such as rammed aggregate piers or vibro piers to achieve or exceed the minimum allowable bearing resistance listed in the previous section. Rammed aggregate pier construction consists of drilling a shaft to a desired depth then backfilling with compacted aggregate. The compaction densifies the aggregate vertically and forces aggregate into the shaft sidewalls. Vibro pier construction consist of using a vibratory probe to penetrate the subsurface soils to the desired depth, then aggregate fill is placed in the borehole. The aggregate is compacted by repeated raising and lowering of the vibratory probe. Each of the techniques above result in aggregate piers that may be used to support the planned mat foundation.

We note the aggregate systems are patented ground improvement methods that must be designed by the contractor's in-house designers. Therefore, the design spacing for the columns as well as installation procedures will be determined by the specialty contractor. We recommend reaching out to rammed aggregate pier installers such as Geopier Foundations, GeoRAM, Subsurface Constructors, Menard Group, and TerraSystems for more information on rammed aggregate piers. Hayward Baker and Malcolm Drilling can provide additional information for vibro piers.

7.4 Slabs-on-grade

The concrete slab-on-grade for the planned marketplace and fuel center kiosk are expected to perform satisfactorily if founded on a properly prepared subgrade as described above. A free-draining, granular base of at least 4 inches thick should be incorporated into the slab design. We recommend placing a vapor barrier beneath concrete slabs-on-grade that will be covered with carpet, wood, tile, or other moisture sensitive or impervious coverings, or when the slab will support equipment sensitive to moisture. A vapor barrier is not required in areas where the floor slab will consist of stamped/colored concrete without any floor covering. However, local building codes should be consulted regarding vapor barrier and insulation requirements. Slab thickness and reinforcing requirements can be designed based on an estimated subgrade reaction modulus of 150 pci for soil subgrades. An appropriate number of control joints should



be included in the slab design to accommodate minor differential settlement that may occur due to variation in subgrade support characteristics.

7.5 Groundwater Control

We encountered groundwater in Boring B-28 during drilling at a depth of about 6 feet. The remaining 30 borings were dry upon boring completion. In general, we expect that the permanent water table should not significantly impact construction at the site, provided the work is performed during dry seasons. However, it is possible that perched groundwater may be encountered closer to the ground surface. In general, we expect that groundwater flow into shallow construction excavations from on-site soils can typically be removed by pumping from a sump placed near the point of seepage. We note that the UST should be designed to resist hydrostatic uplift forces.

7.6 Seismic Design

The subject area is located within a relatively stable seismographic area that it is remotely influenced by the seismic activity associated with the New Madrid seismic zone. The subject site is located at approximately Latitude 43.017081°N, Longitude 89.482943°W. We determined spectral acceleration map values of $S_s = 0.085g$ and $S_1 = 0.046g$ for the short (0.2 seconds) and 1-second periods (T), respectively, for this site.

In accordance with the *2015 International Building Code (IBC)*, we estimated the soil properties from our borings and published geologic information to a depth of 100 feet. Based upon the subsurface conditions observed and our experience with similar sites and conditions, we judge that the site meets the minimum requirements for **Site Class D**.

7.7 Pavement Design

If the proposed pavement areas are prepared in the manner described previously, we estimate that the soil subgrade will develop minimum support characteristics at least equal to a California Bearing Ratio (CBR) of 4.5. Based on that degree of subgrade support and the assumed traffic loadings as discussed in Section 2.0 of this report, we offer the following flexible pavement sections for your consideration. All elements of the pavement construction should conform to the latest requirements of the Wisconsin Department of Transportation's *Standard Specifications*.



Table 2 – Recommended Asphalt Pavement Sections

Material	Light Duty Pavement (cars only)	Heavy Duty Pavement
Asphalt Surface Course	1.5 inches	2.0 inches
Asphalt Binder Course	2.0 inches	2.0 inches
Mineral Aggregate Base Course compacted to at least 98% of its maximum modified Proctor (ASTM D 1557) dry density	8.0 inches	10.0 inches
Total Compacted Thickness	11.5 inches	14.0 inches

Immediately prior to the installation of the mineral aggregate base course, the pavement subgrade should be proofrolled to detect unstable areas; any unstable areas should be repaired as previously described. We recommend that subgrades be graded to provide positive drainage away from the paved areas to prevent the aggregate base course from being saturated and thereby reducing the support capabilities of the subgrade. In addition, we recommend that the base course be daylighted at the edges of the pavement, if possible.

During construction of the aggregate base, in-place density tests and thickness checks should be performed to evaluate compliance with project specifications. If a significant delay occurs between installation of the aggregate base and the bituminous elements above, the mineral aggregate should be proofrolled to confirm that no loss of stability has occurred. Ultimately, it is essential that the bituminous pavement elements are placed on a uniformly stable aggregate base. In addition, landscaped areas should be constructed with suitable underdrain systems so that surface water infiltration is not permitted to migrate laterally to the base stone or subgrade beneath the adjoining pavements.

Rigid pavement sections should consist of 5-inch thick concrete pavement for light duty sections and 7-inch thick concrete pavement for heavy duty sections. The concrete pavement for light and heavy duty should be underlain by a minimum of 6 inches of compacted mineral aggregate base. That section is based on an assumed modulus of rupture (S_c) of 600 psi for concrete that contains 4% to 6% entrained air. In addition, the rigid design is based on a modulus of subgrade reaction, k , conservatively estimated to be at least 150 pci.

7.8 Corrosion

We tested two bulk samples for electrical resistivity and pH. The bulk samples had soil resistivity values of 1,580 and 2,800 Ohm-cm with respective pH values of 9.19 and 8.64. Table 3 provides



a rating of soil corrosivity of uncoated steel based upon resistivity¹. Based on this table, we consider the soil at the site to be highly corrosive to buried metal.

Table 3 - Corrosivity Rating for Uncoated Steel

Soil Resistivity (Ohm-cm)	Corrosivity Rating
0 - 1000	Extremely Corrosive
1000 - 3000	Highly Corrosive
3000 - 5000	Corrosive
5000 - 10000	Moderately Corrosive
10000 - 20000	Mildly Corrosive
> 20000	non-Corrosive

The pH testing results indicate that the corrosion potential for concrete is “low” based on the Natural Resources Conservation Service NSSH Part 618, Subpart B, Table 618.81.

8.0 REPORT LIMITATIONS

The conclusions and preliminary recommendations given in this report are based on information that we determined at the points of exploration. Our subsurface information and conclusions herein in no way reflect on the environmental aspects of the project. Subsurface and groundwater conditions between and beyond the borings may differ from those encountered at the locations explored, and conditions that we could not detect or anticipate at the time of the exploration and study, may become apparent during construction. We should be retained during the final design stage and during construction to verify that the design is consistent with our recommendations, and that assumptions that we made in our study are valid.

The comments that we present herein relating to potential construction problems and possible methods or sequencing of construction are intended only for the guidance of the designer. The number of borings may not be sufficient to determine all the factors that may affect construction methods and costs. For example, the thickness of overburden or fill may vary markedly and unpredictably. Contractors should make their own interpretation of the factual information presented, and draw their own conclusions as to how the subsurface conditions may affect the work. We undertook this study in accordance with normally accepted geotechnical engineering practices. Wood neither expresses nor implies any other warranty.

9.0 CLOSURE

We prepared this report for the exclusive use of The Kroger Company, for the site and criteria stated herein. Your questions or interpretation regarding any portion of the report should be addressed directly by us. Reliance upon, usage, or implementation of the information or recommendations stated in this report by any member of the project team should not be

¹ NACE International; *National Association of Corrosion Engineers*



undertaken without direct consultation of the client and Wood. Wood accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions based on this report. We advise the Owner to read the GBA document included in this report.



wood.

APPENDIX 1

GBA BROCHURE

Important Information about This

Geotechnical-Engineering Report

Subsurface problems are a principal cause of construction delays, cost overruns, claims, and disputes.

While you cannot eliminate all such risks, you can manage them. The following information is provided to help.

The Geoprofessional Business Association (GBA) has prepared this advisory to help you – assumedly a client representative – interpret and apply this geotechnical-engineering report as effectively as possible. In that way, clients can benefit from a lowered exposure to the subsurface problems that, for decades, have been a principal cause of construction delays, cost overruns, claims, and disputes. If you have questions or want more information about any of the issues discussed below, contact your GBA-member geotechnical engineer. Active involvement in the Geoprofessional Business Association exposes geotechnical engineers to a wide array of risk-confrontation techniques that can be of genuine benefit for everyone involved with a construction project.

Geotechnical-Engineering Services Are Performed for Specific Purposes, Persons, and Projects

Geotechnical engineers structure their services to meet the specific needs of their clients. A geotechnical-engineering study conducted for a given civil engineer will not likely meet the needs of a civil-works constructor or even a different civil engineer. Because each geotechnical-engineering study is unique, each geotechnical-engineering report is unique, prepared solely for the client. *Those who rely on a geotechnical-engineering report prepared for a different client can be seriously misled.* No one except authorized client representatives should rely on this geotechnical-engineering report without first conferring with the geotechnical engineer who prepared it. *And no one – not even you – should apply this report for any purpose or project except the one originally contemplated.*

Read this Report in Full

Costly problems have occurred because those relying on a geotechnical-engineering report did not read it *in its entirety*. Do not rely on an executive summary. Do not read selected elements only. *Read this report in full.*

You Need to Inform Your Geotechnical Engineer about Change

Your geotechnical engineer considered unique, project-specific factors when designing the study behind this report and developing the confirmation-dependent recommendations the report conveys. A few typical factors include:

- the client's goals, objectives, budget, schedule, and risk-management preferences;
- the general nature of the structure involved, its size, configuration, and performance criteria;
- the structure's location and orientation on the site; and
- other planned or existing site improvements, such as retaining walls, access roads, parking lots, and underground utilities.

Typical changes that could erode the reliability of this report include those that affect:

- the site's size or shape;
- the function of the proposed structure, as when it's changed from a parking garage to an office building, or from a light-industrial plant to a refrigerated warehouse;
- the elevation, configuration, location, orientation, or weight of the proposed structure;
- the composition of the design team; or
- project ownership.

As a general rule, *always* inform your geotechnical engineer of project changes – even minor ones – and request an assessment of their impact. *The geotechnical engineer who prepared this report cannot accept responsibility or liability for problems that arise because the geotechnical engineer was not informed about developments the engineer otherwise would have considered.*

This Report May Not Be Reliable

Do not rely on this report if your geotechnical engineer prepared it:

- for a different client;
- for a different project;
- for a different site (that may or may not include all or a portion of the original site); or
- before important events occurred at the site or adjacent to it; e.g., man-made events like construction or environmental remediation, or natural events like floods, droughts, earthquakes, or groundwater fluctuations.

Note, too, that it could be unwise to rely on a geotechnical-engineering report whose reliability may have been affected by the passage of time, because of factors like changed subsurface conditions; new or modified codes, standards, or regulations; or new techniques or tools. *If your geotechnical engineer has not indicated an "apply-by" date on the report, ask what it should be, and, in general, if you are the least bit uncertain about the continued reliability of this report, contact your geotechnical engineer before applying it.* A minor amount of additional testing or analysis – if any is required at all – could prevent major problems.

Most of the "Findings" Related in This Report Are Professional Opinions

Before construction begins, geotechnical engineers explore a site's subsurface through various sampling and testing procedures. *Geotechnical engineers can observe actual subsurface conditions only at those specific locations where sampling and testing were performed.* The data derived from that sampling and testing were reviewed by your geotechnical engineer, who then applied professional judgment to form opinions about subsurface conditions throughout the site. Actual sitewide-subsurface conditions may differ – maybe significantly – from those indicated in this report. Confront that risk by retaining your geotechnical engineer to serve on the design team from project start to project finish, so the individual can provide informed guidance quickly, whenever needed.

This Report's Recommendations Are Confirmation-Dependent

The recommendations included in this report – including any options or alternatives – are confirmation-dependent. In other words, *they are not final*, because the geotechnical engineer who developed them relied heavily on judgment and opinion to do so. Your geotechnical engineer can finalize the recommendations *only after observing actual subsurface conditions* revealed during construction. If through observation your geotechnical engineer confirms that the conditions assumed to exist actually do exist, the recommendations can be relied upon, assuming no other changes have occurred. *The geotechnical engineer who prepared this report cannot assume responsibility or liability for confirmation-dependent recommendations if you fail to retain that engineer to perform construction observation.*

This Report Could Be Misinterpreted

Other design professionals' misinterpretation of geotechnical-engineering reports has resulted in costly problems. Confront that risk by having your geotechnical engineer serve as a full-time member of the design team, to:

- confer with other design-team members,
- help develop specifications,
- review pertinent elements of other design professionals' plans and specifications, and
- be on hand quickly whenever geotechnical-engineering guidance is needed.

You should also confront the risk of constructors misinterpreting this report. Do so by retaining your geotechnical engineer to participate in prebid and preconstruction conferences and to perform construction observation.

Give Constructors a Complete Report and Guidance

Some owners and design professionals mistakenly believe they can shift unanticipated-subsurface-conditions liability to constructors by limiting the information they provide for bid preparation. To help prevent the costly, contentious problems this practice has caused, include the complete geotechnical-engineering report, along with any attachments or appendices, with your contract documents, *but be certain to note conspicuously that you've included the material for informational purposes only.* To avoid misunderstanding, you may also want to note that "informational purposes" means constructors have no right to rely on the interpretations, opinions, conclusions, or recommendations in the report, but they may rely on the factual data relative to the specific times, locations, and depths/elevations referenced. Be certain that constructors know they may learn about specific project requirements, including options selected from the report, *only* from the design drawings and specifications. Remind constructors that they may

perform their own studies if they want to, and *be sure to allow enough time* to permit them to do so. Only then might you be in a position to give constructors the information available to you, while requiring them to at least share some of the financial responsibilities stemming from unanticipated conditions. Conducting prebid and preconstruction conferences can also be valuable in this respect.

Read Responsibility Provisions Closely

Some client representatives, design professionals, and constructors do not realize that geotechnical engineering is far less exact than other engineering disciplines. That lack of understanding has nurtured unrealistic expectations that have resulted in disappointments, delays, cost overruns, claims, and disputes. To confront that risk, geotechnical engineers commonly include explanatory provisions in their reports. Sometimes labeled "limitations," many of these provisions indicate where geotechnical engineers' responsibilities begin and end, to help others recognize their own responsibilities and risks. *Read these provisions closely.* Ask questions. Your geotechnical engineer should respond fully and frankly.

Geoenvironmental Concerns Are Not Covered

The personnel, equipment, and techniques used to perform an environmental study – e.g., a "phase-one" or "phase-two" environmental site assessment – differ significantly from those used to perform a geotechnical-engineering study. For that reason, a geotechnical-engineering report does not usually relate any environmental findings, conclusions, or recommendations; e.g., about the likelihood of encountering underground storage tanks or regulated contaminants. *Unanticipated subsurface environmental problems have led to project failures.* If you have not yet obtained your own environmental information, ask your geotechnical consultant for risk-management guidance. As a general rule, *do not rely on an environmental report prepared for a different client, site, or project, or that is more than six months old.*

Obtain Professional Assistance to Deal with Moisture Infiltration and Mold

While your geotechnical engineer may have addressed groundwater, water infiltration, or similar issues in this report, none of the engineer's services were designed, conducted, or intended to prevent uncontrolled migration of moisture – including water vapor – from the soil through building slabs and walls and into the building interior, where it can cause mold growth and material-performance deficiencies. Accordingly, *proper implementation of the geotechnical engineer's recommendations will not of itself be sufficient to prevent moisture infiltration.* Confront the risk of moisture infiltration by including building-envelope or mold specialists on the design team. *Geotechnical engineers are not building-envelope or mold specialists.*



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APPENDIX 2

BORING LOCATION PLAN

KEY TO SYMBOLS AND DESCRIPTIONS

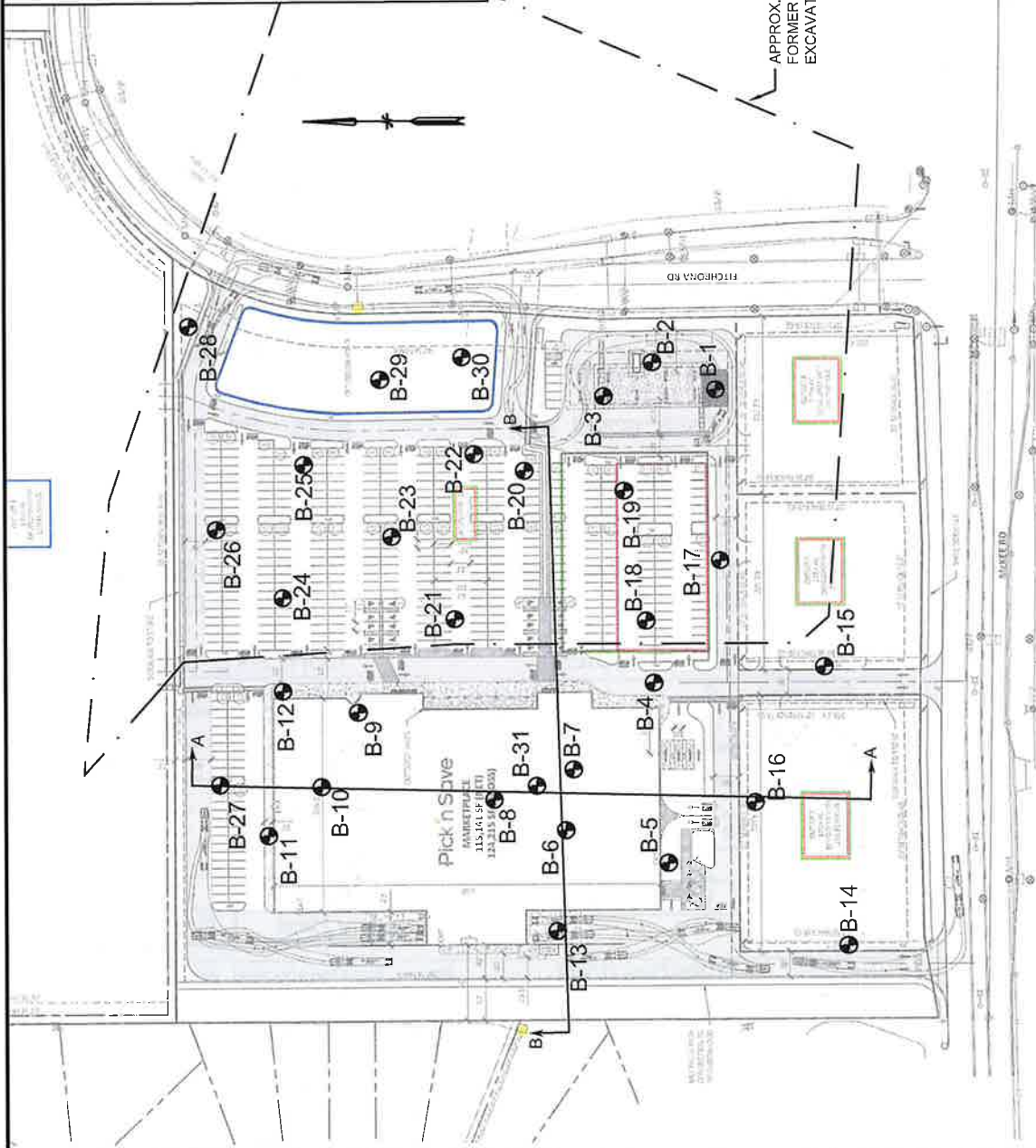
BORING LOGS

CROSS SECTIONS

NOTES

1. PLAN ADAPTED FROM "CONCEPT SITE PLAN OPTION 1" DRAWING PREPARED BY SEVAN MULTI-SITE SOLUTIONS, DATED AUGUST 24, 2018.
2. BORING LOCATIONS AND LAYOUT BY WOOD.
3. BORINGS DRILLED BETWEEN SEPTEMBER 17-21, 2018.

LEGEND



DATE:	10/19/2018
PROJECT NO.:	2424-18-135
SHEET No.:	1

PROJECT	PROPOSED PICK 'N SAVE STORE (PS-902)
TITLE	BORING LOCATION PLAN

DRAWN BY:	NCL
CHECKED BY:	NAB
SCALE:	AS SHOWN










































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	3800 Ezell Road, Suite 100 Nashville, Tennessee 37211 Phone: 615-333-0630






KEY TO SYMBOLS AND DESCRIPTIONS



LITHOLOGIC SYMBOLS

	Asphalt		Poorly-graded Sandy Gravel		Poorly-graded Sand with Clay
	Topsoil		Well-graded Gravel		Poorly-graded Sand with Silt
	Concrete		Well-graded Gravel with Clay		Well-graded Sand
	Fill (made ground)		Well-graded Gravel with Silt		Well-graded Gravelly Sand
	Boulders and cobbles		Well-graded Sandy Gravel		Well-graded Sand with Clay
	High Plasticity Clay		Elastic Silt		Well-graded Sand with Silt
	Low Plasticity Clay		Silt		Weathered Bedrock/Soil
	Low Plasticity Silty Clay		Gravelly Silt		Limestone
	Low Plasticity Sandy Clay		Sandy Silt		Sandstone
	Clayey Gravel		Clayey Sand		Shale
	Silty Gravel		Clayey, Silty Sand		Siltstone
	Poorly-graded Gravel		Silty Sand		Conglomerate
	Poorly-graded Gravel with Clay		Poorly-graded Sand		Dolomite
	Poorly-graded Gravel with Silt		Poorly-graded Gravelly Sand		

SAMPLER SYMBOLS

	Rock Core
	Split Spoon
	Shelby Tube

CORRELATION OF STANDARD PENETRATION RESISTANCE WITH RELATIVE DENSITY AND CONSISTENCY

COHESIONLESS SOILS



Relative Density	SPT N-Value
Very Loose	4 or less
Loose	5 - 10
Medium Dense	11 - 30
Dense	31 - 50
Very Dense	Greater than 50

COHESIVE SOILS

Consistency	SPT N-Value
Very Soft	2 or less
Soft	3 - 4
Firm	5 - 8
Stiff	9 - 15
Very Stiff	16 - 30
Hard	31 - 50
Very Hard	Greater than 50

ABBREVIATIONS

LL	- LIQUID LIMIT (%)
PI	- PLASTIC INDEX (%)
W	- MOISTURE CONTENT (%)
DD	- DRY DENSITY (PCF)
NP	- NON PLASTIC
-200	- PERCENT PASSING NO. 200 SIEVE
PP	- POCKET PENETROMETER (TSF)
GB	- GRAB SAMPLE

PID	- PHOTOIONIZATION DETECTOR
UC	- UNCONFINED COMPRESSION
ppm	- PARTS PER MILLION
	Water Level at End of Drilling, or as Shown
	Water Level After 24 Hours, or as Shown



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BORING B-1

PAGE 1 OF 1

PROJECT NAME Pick N Save 902 **CLIENT** Kroger Company
PROJECT NUMBER 242418135 **PROJECT LOCATION** Fitchburg, WI
DATE STARTED 9/17/18 **COMPLETED** 9/17/18 **GROUND ELEVATION** 1061 ft **HOLE SIZE** 6"
DRILLING CONTRACTOR TSC **DRILLING TERMINATION DEPTH** 35 ft / Elev 1026 ft
DRILLING METHOD HSA **REFUSAL DEPTH** N/A
DRILLING EQUIPMENT Morooka LTX800 **GROUND WATER LEVELS:**
HAMMER TYPE Automatic **AT END OF DRILLING** Dry
LOGGED BY Nathan Brown **CHECKED BY** Nathan Long **24hrs AFTER DRILLING** Not measured (backfilled at completion)

NOTES

GEOTECH BH COLUMNS - GEOTECH TEMPLATE GDT - 10/19/18 14:10 - R:\01 - INFRASTRUCTURE DESIGN\ 2018 PROJECTS\ WOOD ST LOUISISPS-902 STORE - FITCHBURG, WI\03 - DRILLINGBORING LOGS.GPJ

ELEV. (ft)	DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	▲ SPT N VALUE ▲				MOISTURE CONTENT (%)	ATT. LIMITS	
							10	20	30	40		LIQUID LIMIT	PLASTICITY INDEX
1061	0		6" GRAVELLY SAND with cobbles										
			CLAY, grayish brown, moist, medium stiff, with sand, trace gravel, (Fill)	SS 1		6-4-2 (6)					17	34	20
			SANDY CLAY, grayish brown to gray, moist, medium stiff to stiff, trace gravel, (Fill)	SS 2		4-31-6 (37)							
1056	5			SS 3		3-5-5 (10)							
				SS 4		3-2-4 (6)							
1051	10												
				SS 5		2-3-3 (6)							
1046	15		CLAYEY SAND, gray, moist, loose, trace gravel, (Fill)										
				SS 6		3-5-5 (10)							
1041	20		SANDY CLAY, grayish brown, moist, stiff, (Fill)										
				SS 7		3-5-10 (15)							
1036	25		SANDY CLAY, grayish brown, moist, very stiff, with gravel, (Fill)										
				SS 8		4-8-12 (20)							
1031	30												
				SS 9		4-32-50/2"							

Bottom of borehole at 35.0 feet.



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PROJECT NAME Pick N Save 902 CLIENT Kroger Company
 PROJECT NUMBER 242418135 PROJECT LOCATION Fitchburg, WI
 DATE STARTED 9/17/18 COMPLETED 9/17/18 GROUND ELEVATION 1061 ft HOLE SIZE 6"
 DRILLING CONTRACTOR TSC DRILLING TERMINATION DEPTH 30.1 ft / Elev 1030.9 ft
 DRILLING METHOD HSA REFUSAL DEPTH N/A
 DRILLING EQUIPMENT Morooka LTX800 GROUND WATER LEVELS:
 HAMMER TYPE Automatic AT END OF DRILLING Dry
 LOGGED BY Nathan Brown CHECKED BY Nathan Long 24hrs AFTER DRILLING Not measured (backfilled at completion)

NOTES

GEOTECH BH COLUMNS - GEOTECH TEMPLATE.GDT - 10/19/18 14:10 - R:01 - INFRASTRUCTURE DESIGN, 2018 PROJECTS, WOOD ST LOUISIPS-902 STORE - FITCHBURG, WI03 - DRILLING/BORING LOGS.GPJ

ELEV. (ft)	DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (ROD)	BLOW COUNTS (N VALUE)	▲ SPT N VALUE ▲				MOISTURE CONTENT (%)	ATT. LIMITS	
							10	20	30	40		LIQUID LIMIT	PLASTICITY INDEX
1061	0		6" GRAVELLY SAND with cobbles				10	20	30	40			
			SILTY SAND, brown, moist, medium dense, with gravel, (Fill)	SS 1		5-5-6 (11)							
			SANDY GRAVEL, brown, moist, loose, (Fill), clayey	SS 2		4-3-4 (7)							
1056	5		SANDY CLAY, grayish brown, moist, medium stiff, trace gravel, (Fill)	SS 3		2-3-3 (6)							
				SS 4		3-2-3 (5)							
1051	10		CLAYEY SAND, grayish brown, moist, loose, trace gravel, (Fill)	SS 5		3-3-4 (7)							
1046	15		SANDY CLAY, grayish brown, moist, stiff to medium stiff, trace gravel, (Fill)	SS 6		5-5-5 (10)							
1041	20			SS 7		3-3-4 (7)							
1036	25			SS 8		4-4-50/4"							
1031	30		SS 9		50/1"								
			Bottom of borehole at 30.1 feet.										



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PAGE 1 OF 2

PROJECT NAME Pick N Save 902 CLIENT Kroger Company
 PROJECT NUMBER 242418135 PROJECT LOCATION Fitchburg, WI
 DATE STARTED 9/17/18 COMPLETED 9/17/18 GROUND ELEVATION 1062 ft HOLE SIZE 6"
 DRILLING CONTRACTOR TSC DRILLING TERMINATION DEPTH 50 ft / Elev 1012 ft
 DRILLING METHOD HSA REFUSAL DEPTH N/A
 DRILLING EQUIPMENT Morooka LTX800 GROUND WATER LEVELS:
 HAMMER TYPE Automatic AT END OF DRILLING Dry
 LOGGED BY Nathan Brown CHECKED BY Nathan Long 24hrs AFTER DRILLING Not measured (backfilled at completion)

NOTES _____

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ELEV. (ft)	DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	▲ SPT N VALUE ▲				MOISTURE CONTENT (%)	ATT. LIMITS	
							10	20	30	40		LIQUID LIMIT	PLASTICITY INDEX
1062	0		6" GRAVELLY SAND with cobbles										
			SANDY CLAY, grayish brown, moist, stiff, with gravel, (Fill)	SS 1		3-4-5 (9)							
			CLAYEY SAND, gray, moist, loose, trace gravel, (Fill)	SS 2		2-2-3 (5)							
1057	5			SS 3		2-3-4 (7)							
			SANDY CLAY, gray, moist, medium stiff, trace gravel, (Fill)	SS 4		2-3-3 (6)							
1052	10			SS 5		2-2-3 (5)							
			SANDY CLAY, gray, moist, medium stiff to stiff, with gravel, (Fill)	SS 6		4-3-6 (9)							
1047	15			SS 7		3-3-6 (9)							
1042	20			SS 8		4-6-5 (11)							
1037	25			SS 9		6-3-2 (5)							
1032	30		SAND, tan, moist, loose, with clay, (Fill)										
1027	35			SS 10		26-50/1"							
1022	40		SAND, tan, damp, and sandstone fragments. Possible weak and/or weathered sandstone. (Bedrock)										

(Continued Next Page)



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PROJECT NAME Pick N Save 902 CLIENT Kroger Company
 PROJECT NUMBER 242418135 PROJECT LOCATION Fitchburg, WI

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ELEV. (ft)	DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	▲ SPT N VALUE ▲				MOISTURE CONTENT (%)	ATT. LIMITS	
							10	20	30	40		LIQUID LIMIT	PLASTICITY INDEX
1022	40												
1017	45		SAND, tan, damp, and sandstone fragments. Possible weak and/or weathered sandstone. (Bedrock) (continued)	SS 11		50/1"						>>▲	
1012	50			SS 12		50/1"						>>▲	

Bottom of borehole at 50.0 feet.



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PAGE 1 OF 1

PROJECT NAME Pick N Save 902 CLIENT Kroger Company
 PROJECT NUMBER 242418135 PROJECT LOCATION Fitchburg, WI
 DATE STARTED 9/18/18 COMPLETED 9/18/18 GROUND ELEVATION 1072 ft HOLE SIZE 4"
 DRILLING CONTRACTOR TSC DRILLING TERMINATION DEPTH 20 ft / Elev 1052 ft
 DRILLING METHOD SFA REFUSAL DEPTH N/A
 DRILLING EQUIPMENT Morooka LTX800 GROUND WATER LEVELS:
 HAMMER TYPE Automatic AT END OF DRILLING Dry
 LOGGED BY Nathan Brown CHECKED BY Nathan Long 24hrs AFTER DRILLING Not measured (backfilled at completion)

NOTES

GEOTECH BH COLUMNS - GEOTECH TEMPLATE_GDT - 10/18/18 14:10 - R:01 - INFRASTRUCTURE DESIGN - 2018 PROJECTS - WOOD ST LOUISISPS-902 STORE - FITCHBURG, WI03 - DRILLINGBORING LOGS.GPJ

ELEV. (ft)	DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	▲ SPT N VALUE ▲				MOISTURE CONTENT (%)	ATT. LIMITS	
							10	20	30	40		LIQUID LIMIT	PLASTICITY INDEX
1072	0		6" GRAVELLY SAND with cobbles										
			CLAYEY SAND, grayish brown, moist, medium stiff to stiff, trace gravel, (Fill)	SS 1		6-5-3 (8)							
				SS 2		4-8-8 (16)				11	22	9	
				SS 3		6-6-4 (10)							
				SS 4		3-5-10 (15)							
1067	5												
			CLAYEY SAND, orangeish brown, moist, medium dense to very dense, (Residuum), with sandstone fragments										
				SS 5		8-20-50/1"							
1062	10												
			SAND, tan, moist, very dense, and sandstone fragments. Possible weak and/or weathered sandstone. (Bedrock)										
				SS 6		50/1"							
1057	15												
1052	20												

Bottom of borehole at 20.0 feet.



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PROJECT NAME Pick N Save 902 CLIENT Kroger Company
 PROJECT NUMBER 242418135 PROJECT LOCATION Fitchburg, WI
 DATE STARTED 9/19/18 COMPLETED 9/19/18 GROUND ELEVATION 1082 ft HOLE SIZE 4"
 DRILLING CONTRACTOR TSC DRILLING TERMINATION DEPTH 30 ft / Elev 1052 ft
 DRILLING METHOD SFA REFUSAL DEPTH N/A
 DRILLING EQUIPMENT Morooka LTX800 GROUND WATER LEVELS:
 HAMMER TYPE Automatic AT END OF DRILLING Dry
 LOGGED BY Nathan Brown CHECKED BY Nathan Long 24hrs AFTER DRILLING Not measured (backfilled at completion)

NOTES

GEOTECH BH COLUMNS - GEOTECH TEMPLATE.GDT - 10/19/18 14:10 - R:101 - INFRASTRUCTURE DESIGN, 2018 PROJECTS, WOOD ST. LOUISIPS-902 STORE - FITCHBURG, WI03 - DRILLING/BORING LOGS.GPJ

ELEV. (ft)	DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (ROD)	BLOW COUNTS (N VALUE)	▲ SPT N VALUE ▲				MOISTURE CONTENT (%)	ATT. LIMITS	
							10	20	30	40		LIQUID LIMIT	PLASTICITY INDEX
1082	0		Surface densely vegetated				10	20	30	40			
			SANDY CLAY, brown, moist, medium stiff, with gravel, (Fill)	SS 1		4-3-4 (7)							
				SS 2		3-2-4 (6)							
1077	5			SS 3		3-3-3 (6)							
				SS 4		5-3-2 (5)							
1072	10												
			SAND, tan, dry, very dense, and sandstone fragments. Possible fill	SS 5		50/3"							
1067	15												
				SS 6		50/2"							
1062	20												
				SS 7		50/1"							
1057	25												
			SILTY SAND, tan, moist, medium dense, with sandstone fragments. Possible fill	SS 8		10-12-7 (19)							
1052	30												

Bottom of borehole at 30.0 feet.



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PAGE 1 OF 1

PROJECT NAME Pick N Save 902 CLIENT Kroger Company
 PROJECT NUMBER 242418135 PROJECT LOCATION Fitchburg, WI
 DATE STARTED 9/19/18 COMPLETED 9/19/18 GROUND ELEVATION 1078 ft HOLE SIZE 4"
 DRILLING CONTRACTOR TSC DRILLING TERMINATION DEPTH 30 ft / Elev 1048 ft
 DRILLING METHOD SFA REFUSAL DEPTH N/A
 DRILLING EQUIPMENT Morooka LTX800 GROUND WATER LEVELS:
 HAMMER TYPE Automatic AT END OF DRILLING Dry
 LOGGED BY Nathan Brown CHECKED BY Nathan Long 24hrs AFTER DRILLING Not measured (backfilled at completion)
 NOTES perched water at 18'

GEOTECH BH COLUMNS - GEOTECH TEMPLATE.GDT - 10/19/18 14:10 - R:\01 - INFRASTRUCTURE DESIGN\ 2018 PROJECTS\ WOOD ST LOUISIPS-902 STORE - FITCHBURG, WI\03 - DRILLING\BORING LOGS.GPJ

ELEV. (ft)	DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	▲ SPT N VALUE ▲				MOISTURE CONTENT (%)	ATT. LIMITS	
							10	20	30	40		LIQUID LIMIT	PLASTICITY INDEX
1078	0		Surface vegetated										
			SANDY CLAY, brown, moist, stiff to medium stiff, with gravel, (Fill), some sandstone fragments	SS 1		4-5-4 (9)							
1073	5		SANDY CLAY, brown to gray, moist to wet, soft, with gravel, (Fill)	SS 2		11-4-4 (8)							
				SS 3		0-2-1 (3)							
1068	10			SS 4		2-2-2 (4)							
				SS 5		3-2-2 (4)							
1058	20		SANDY GRAVEL, tan, wet, dense, (Fill)	SS 6		3-20-34 (54)							
			SANDY CLAY, gray, moist, medium stiff, with gravel, (Fill)	SS 7		3-4-3 (7)							
1053	25												
			SAND, white and tan, moist, and sandstone fragments. Possible fill	SS 8		16-36-12 (48)							
1048	30												

Bottom of borehole at 30.0 feet.



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PAGE 1 OF 1

PROJECT NAME Pick N Save 902 CLIENT Kroger Company
 PROJECT NUMBER 242418135 PROJECT LOCATION Fitchburg, WI
 DATE STARTED 9/19/18 COMPLETED 9/19/18 GROUND ELEVATION 1079 ft HOLE SIZE 4"
 DRILLING CONTRACTOR TSC DRILLING TERMINATION DEPTH 30 ft / Elev 1049 ft
 DRILLING METHOD SFA REFUSAL DEPTH N/A
 DRILLING EQUIPMENT Morooka LTX800 GROUND WATER LEVELS:
 HAMMER TYPE Automatic AT END OF DRILLING Dry
 LOGGED BY Nathan Brown CHECKED BY Nathan Long 24hrs AFTER DRILLING Not measured (backfilled at completion)
 NOTES

GEOTECH.BH COLUMNS - GEOTECH TEMPLATE.GDT - 10/19/18 14:11 - R:\01 - INFRASTRUCTURE DESIGN\2018 PROJECTS\WOOD ST LOUIS\PS-902 STORE - FITCHBURG, WI\03 - DRILLING\BORING LOGS.GPJ

ELEV. (ft)	DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	▲ SPT N VALUE ▲				MOISTURE CONTENT (%)	ATT. LIMITS	
							10	20	30	40		LIQUID LIMIT	PLASTICITY INDEX
1079	0		Surface vegetated				10	20	30	40			
			SANDY CLAY, brown, damp, stiff, trace gravel, (Fill)	SS 1		6-6-6 (12)					12		
			SANDY CLAY, brown, moist, medium stiff to stiff, with gravel, trace wood fragments, (Fill)	SS 2		3-3-5 (8)					14		
				SS 3		15-7-4 (11)							
			SILTY SAND, gray, moist, very loose to loose, trace gravel, (Fill)	SS 4		3-1-2 (3)					16		
				SS 5		5-4-3 (7)					15	NP	NP
			CLAYEY SAND, gray, moist, medium dense, trace gravel, (Fill)	ST 1							16	22	8
			SILTY SAND, white, moist, medium dense, (Fill), and rock fragments	SS 6		7-6-7 (13)							
			CLAY, brown, moist, stiff, with sand, (Till)	SS 7		4-4-6 (10)							

Bottom of borehole at 30.0 feet.



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PAGE 1 OF 1

PROJECT NAME Pick N Save 902 **CLIENT** Kroger Company
PROJECT NUMBER 242418135 **PROJECT LOCATION** Fitchburg, WI
DATE STARTED 9/19/18 **COMPLETED** 9/19/18 **GROUND ELEVATION** 1076 ft **HOLE SIZE** 4"
DRILLING CONTRACTOR TSC **DRILLING TERMINATION DEPTH** 30 ft / Elev 1046 ft
DRILLING METHOD SFA **REFUSAL DEPTH** N/A
DRILLING EQUIPMENT Morooka LTX800 **GROUND WATER LEVELS:**
HAMMER TYPE Automatic **AT END OF DRILLING** Dry
LOGGED BY Nathan Brown **CHECKED BY** Nathan Long **24hrs AFTER DRILLING** Not measured (backfilled at completion)

NOTES

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ELEV. (ft)	DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	▲ SPT N VALUE ▲				MOISTURE CONTENT (%)	ATT. LIMITS	
							10	20	30	40		LIQUID LIMIT	PLASTICITY INDEX
1076	0		Surface vegetated										
			SANDY CLAY, brown, moist, stiff, with gravel, trace wood fragments, (Fill)	SS 1		5-5-7 (12)							
				SS 2		2-4-3 (7)							
1071	5			ST 1									
				SS 3		1-2-2 (4)							
1066	10		CLAYEY SAND, brown, moist, very loose, with gravel, (Fill)										
				SS 4		3-1-2 (3)							
1061	15		SANDY CLAY, brown to gray, moist, medium stiff, trace gravel, (Fill)										
				SS 5		2-2-3 (5)				17	22	10	
1056	20												
				SS 6		3-3-4 (7)							
1051	25												
				SS 7		4-5-6 (11)							
1046	30		CLAY, brown, moist, stiff, trace roots, (Till)										

Bottom of borehole at 30.0 feet.



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PROJECT NAME Pick N Save 902 CLIENT Kroger Company
 PROJECT NUMBER 242418135 PROJECT LOCATION Fitchburg, WI
 DATE STARTED 9/18/18 COMPLETED 9/18/18 GROUND ELEVATION 1072 ft HOLE SIZE 4"
 DRILLING CONTRACTOR TSC DRILLING TERMINATION DEPTH 20 ft / Elev 1052 ft
 DRILLING METHOD SFA REFUSAL DEPTH N/A
 DRILLING EQUIPMENT Morooka LTX800 GROUND WATER LEVELS:
 HAMMER TYPE Automatic AT END OF DRILLING Dry
 LOGGED BY Nathan Brown CHECKED BY Nathan Long 24hrs AFTER DRILLING Not measured (backfilled at completion)
 NOTES _____

GEOTECH.BH COLUMNS - GEOTECH TEMPLATE.GDT - 10/19/18 14:11 - R:01 - INFRASTRUCTURE DESIGN, 2018 PROJECTS, WOOD ST LOUISIPS-902 STORE - FITCHBURG, WI03 - DRILLING/BORING LOGS.GPJ

ELEV. (ft.)	DEPTH (ft.)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	▲ SPT N VALUE ▲	MOISTURE CONTENT (%)			ATT. LIMITS	
								LIQUID LIMIT	PLASTICITY INDEX	LIQUID LIMIT	PLASTICITY INDEX	
1072	0		6" GRAVELLY SAND with cobbles				10 20 30 40					
			SILTY SAND, brown, moist, medium dense, with gravel, (Fill)	SS 1		8-10-10 (20)		9	NP	NP		
			SANDY CLAY, brown, moist, medium stiff, (Fill)	SS 2		3-8-10 (18)						
1067	5		SANDY GRAVEL, tannish yellow, damp, medium dense	SS 3		5-8-11 (19)						
				SS 4		8-13-11 (24)						
1062	10											
			SAND, orangeish brown to white, moist, very dense, Possible weak and/or weathered sandstone. (Bedrock)	SS 5		50/4"		>>>				
1057	15											
				SS 6		50/3"		>>>				
1052	20											

Bottom of borehole at 20.0 feet.



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PROJECT NAME Pick N Save 902 CLIENT Kroger Company
 PROJECT NUMBER 242418135 PROJECT LOCATION Fitchburg, WI
 DATE STARTED 9/20/18 COMPLETED 9/20/18 GROUND ELEVATION 1067 ft HOLE SIZE 4"
 DRILLING CONTRACTOR TSC DRILLING TERMINATION DEPTH 20 ft / Elev 1047 ft
 DRILLING METHOD SFA REFUSAL DEPTH N/A
 DRILLING EQUIPMENT Morooka LTX800 GROUND WATER LEVELS:
 HAMMER TYPE Automatic AT END OF DRILLING Dry
 LOGGED BY Nathan Brown CHECKED BY Nathan Long 24hrs AFTER DRILLING Not measured (backfilled at completion)
 NOTES _____

GEOTECH BH COLUMNS - GEOTECH TEMPLATE.GDT - 10/19/18 14:11 - R\01 - INFRASTRUCTURE DESIGN\2018 PROJECTS\WOOD ST LOUISIPS-902 STORE - FITCHBURG, WI\03 - DRILLING\BORING LOGS.GPJ

ELEV. (ft)	DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	▲ SPT N VALUE ▲				MOISTURE CONTENT (%)	ATT. LIMITS	
							10	20	30	40		LIQUID LIMIT	PLASTICITY INDEX
1067	0		Surface vegetated										
			SANDY CLAY, brown, moist, stiff, with gravel, (Fill)	SS 1		1-3-7 (10)							
			SANDY SILT, brown, moist, very stiff, trace gravel, (Fill)	SS 2		5-10-8 (18)				11	NP	NP	
1062	5		SANDY CLAY, brown, moist, stiff, trace gravel, (Fill)	SS 3		3-6-3 (9)							
			CLAYEY SAND, brown, moist, loose, trace gravel, trace wood fragments, (Fill)	SS 4		2-2-4 (6)							
1057	10		SILTY SAND, brown, moist, medium dense, trace gravel, (Residuum)	SS 5		8-8-9 (17)							
1052	15												
			SAND, yellow and white, Possible weak and/or weathered sandstone	SS 6		50/3"							
1047	20												

Bottom of borehole at 20.0 feet.



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BORING B-11

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PROJECT NAME Pick N Save 902 CLIENT Kroger Company
 PROJECT NUMBER 242418135 PROJECT LOCATION Fitchburg, WI
 DATE STARTED 9/20/18 COMPLETED 9/20/18 GROUND ELEVATION 1076 ft HOLE SIZE 4"
 DRILLING CONTRACTOR TSC DRILLING TERMINATION DEPTH 20 ft / Elev 1056 ft
 DRILLING METHOD SFA REFUSAL DEPTH N/A
 DRILLING EQUIPMENT Morooka LTX800 GROUND WATER LEVELS:
 HAMMER TYPE Automatic AT END OF DRILLING Dry
 LOGGED BY Nathan Brown CHECKED BY Nathan Long 24hrs AFTER DRILLING Not measured (backfilled at completion)
 NOTES perched water at 8'. shelby tube pushed from 8-10 feet (offset 5' east).

GEOTECH BH COLUMNS - GEOTECH TEMPLATE.GDT - 10/19/18 14:11 - R:01 - INFRASTRUCTURE DESIGN, 2018 PROJECTS, WOOD ST LOUISIPS-902 STORE - FITCHBURG, WI03 - DRILLINGBORING LOGS.GPJ

ELEV. (ft)	DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	▲ SPT N VALUE ▲				MOISTURE CONTENT (%)		
							10	20	30	40	LIQUID LIMIT	PLASTICITY INDEX	ATT. LIMITS
1076	0		Surface vegetated	SS 1		2-1-2 (3)							
			SANDY CLAY, grayish brown, moist, soft, with gravel, (Fill)	SS 2		0-1-1 (2)							
1071	5		SILTY SAND, brown, moist to wet, medium dense to very loose, with gravel, (Fill)	SS 3		3-4-7 (11)					13	NP	NP
				SS 4		1-0-1 (1)							
1066	10		CLAYEY SAND, grayish brown, moist, medium dense, trace gravel, silty, probable till	SS 5		7-7-9 (16)					11	18	5
1061	15			SS 6		5-5-7 (12)							
1056	20		Bottom of borehole at 20.0 feet.										



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BORING B-12

PAGE 1 OF 1

PROJECT NAME Pick N Save 902 CLIENT Kroger Company
 PROJECT NUMBER 242418135 PROJECT LOCATION Fitchburg, WI
 DATE STARTED 9/18/18 COMPLETED 9/18/18 GROUND ELEVATION 1072 ft HOLE SIZE 4"
 DRILLING CONTRACTOR TSC DRILLING TERMINATION DEPTH 20 ft / Elev 1052 ft
 DRILLING METHOD SFA REFUSAL DEPTH N/A
 DRILLING EQUIPMENT Morooka LTX800 GROUND WATER LEVELS:
 HAMMER TYPE Automatic AT END OF DRILLING Dry
 LOGGED BY Nathan Brown CHECKED BY Nathan Long 24hrs AFTER DRILLING Not measured (backfilled at completion)
 NOTES _____

GEOTECH BH COLUMNS - GEOTECH TEMPLATE.GDT - 10/19/18 14:11 - R:01 - INFRASTRUCTURE DESIGN - 2018 PROJECTS - WOOD ST LOUISIPS-902 STORE - FITCHBURG, WI03 - DRILLINGBORING LOGS.GPJ

ELEV. (ft)	DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	▲ SPT N VALUE ▲				MOISTURE CONTENT (%)	ATT. LIMITS	
							10	20	30	40		LIQUID LIMIT	PLASTICITY INDEX
1072	0		6" GRAVELLY SAND with cobbles										
			SILTY SAND, brown, moist, medium dense, trace gravel, (Fill)	SS 1		4-7-8 (15)							
			SILTY SAND, grayish brown, moist, medium dense, with gravel, Possible fill	SS 2		4-5-6 (11)							
1067	5			SS 3		5-6-12 (18)				10	NP	NP	
				SS 4		8-16-50/2"				>>			
1062	10		SAND, orangeish brown to white, and sandstone fragments. Possible weak and/or weathered sandstone. (Bedrock)										
				SS 5		50/1"				>>			
1057	15												
				SS 6		50/1"				>>			
1052	20												

Bottom of borehole at 20.0 feet.



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PROJECT NAME Pick N Save 902 CLIENT Kroger Company
 PROJECT NUMBER 242418135 PROJECT LOCATION Fitchburg, WI
 DATE STARTED 9/19/18 COMPLETED 9/19/18 GROUND ELEVATION 1049 ft HOLE SIZE 4"
 DRILLING CONTRACTOR TSC DRILLING TERMINATION DEPTH 20 ft / Elev 1029 ft
 DRILLING METHOD SFA REFUSAL DEPTH N/A
 DRILLING EQUIPMENT Morooka LTX800 GROUND WATER LEVELS:
 HAMMER TYPE Automatic AT END OF DRILLING Dry
 LOGGED BY Nathan Brown CHECKED BY Nathan Long 24hrs AFTER DRILLING Not measured (backfilled at completion)
 NOTES _____

GEOTECH BH COLUMNS - GEOTECH TEMPLATE.GDT - 10/19/18 14:11 - R:101 - INFRASTRUCTURE DESIGN, 2018 PROJECTS, WOOD ST LOUISIPS-902 STORE - FITCHBURG, WI03 - DRILLING/BORING LOGS.GPJ

ELEV. (ft)	DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	▲ SPT N VALUE ▲				MOISTURE CONTENT (%)	ATT. LIMITS	
							10	20	30	40		LIQUID LIMIT	PLASTICITY INDEX
1049	0		Surface densely vegetated										
			SILTY SAND, white, moist, loose, with rock fragments, (Fill), possible weathered/weak dolomite. Crumbles to powder	SS 1		2-4-3 (7)					107	NP	NP
			SILTY CLAY, white, moist, soft to very stiff, with rock fragments, (Fill), sandy, possible weathered/weak dolomite. Crumbles to powder	SS 2		1-1-5 (6)							
				SS 3		3-1-2 (3)							
				SS 4		15-6-11 (17)							
			CLAY, gray and brown, moist, stiff, (Till)										
				SS 5		4-3-6 (9)							
			SAND, white to reddish brown, dry, dense, with sandstone fragments. Possible weathered sandstone	SS 6		30-25-18 (43)							

Bottom of borehole at 20.0 feet.



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PAGE 1 OF 1

PROJECT NAME Pick N Save 902 CLIENT Kroger Company
 PROJECT NUMBER 242418135 PROJECT LOCATION Fitchburg, WI
 DATE STARTED 9/19/18 COMPLETED 9/19/18 GROUND ELEVATION 1066 ft HOLE SIZE 4"
 DRILLING CONTRACTOR TSC DRILLING TERMINATION DEPTH 15 ft / Elev 1051 ft
 DRILLING METHOD SFA REFUSAL DEPTH N/A
 DRILLING EQUIPMENT Morooka LTX800 GROUND WATER LEVELS:
 HAMMER TYPE Automatic AT END OF DRILLING Dry
 LOGGED BY Nathan Brown CHECKED BY Nathan Long 24hrs AFTER DRILLING Not measured (backfilled at completion)

NOTES _____

GEOTECH BH COLUMNS - GEOTECH TEMPLATE_GDT - 10/19/18 14:11 - R:01 - INFRASTRUCTURE DESIGN - 2018 PROJECTS - WOOD ST LOUISIS-902 STORE - FITCHBURG, WI03 - DRILLINGBORING LOGS.GPJ

ELEV. (ft)	DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	▲ SPT N VALUE ▲				MOISTURE CONTENT (%)	ATT. LIMITS	
							10	20	30	40		LIQUID LIMIT	PLASTICITY INDEX
1066	0		Surface densely vegetated										
			CLAY, brown, moist, medium stiff, with sand, (Fill)	SS 1		3-3-3 (6)							
			CLAYEY SAND, brown, moist, loose, trace gravel, (Fill)	SS 2		5-5-3 (8)							
1061	5		SAND, tannish white, moist, medium dense, (Fill), with sandstone fragments	SS 3		10-7-7 (14)							
			CLAY, dark brown, moist, medium stiff, (Topsoil)	SS 4		2-3-4 (7)							
1056	10		SILTY SAND, brown, moist, medium dense, (Residuum), trace sandstone fragments	SS 5		4-5-7 (12)							
1051	15		Bottom of borehole at 15.0 feet.										



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PROJECT NAME Pick N Save 902 CLIENT Kroger Company
 PROJECT NUMBER 242418135 PROJECT LOCATION Fitchburg, WI
 DATE STARTED 9/19/18 COMPLETED 9/19/18 GROUND ELEVATION 1066 ft HOLE SIZE 4"
 DRILLING CONTRACTOR TSC DRILLING TERMINATION DEPTH 14.2 ft / Elev 1051.8 ft
 DRILLING METHOD SFA REFUSAL DEPTH N/A
 DRILLING EQUIPMENT Morooka LTX800 GROUND WATER LEVELS:
 HAMMER TYPE Automatic AT END OF DRILLING Dry
 LOGGED BY Nathan Brown CHECKED BY Nathan Long 24hrs AFTER DRILLING Not measured (backfilled at completion)
 NOTES

GEOTECH BH COLUMNS - GEOTECH TEMPLATE.GDT - 10/19/18 14:11 - R:01 - INFRASTRUCTURE DESIGN - 2018 PROJECTS\WOOD ST LOUIS\PS-902 STORE - FITCHBURG, WI\03 - DRILLING\BORING LOGS.GPJ

ELEV. (ft)	DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	▲ SPT N VALUE ▲	MOISTURE CONTENT (%)		ATT. LIMITS	
								LIQUID LIMIT	PLASTICITY INDEX		
1066	0						10 20 30 40				
			6" GRAVELLY SAND with cobbles SILTY SAND, tannish brown, moist, medium dense, trace gravel, possible fill	SS 1		13-18-15 (33)					
				SS 2		28-16-22 (38)					
1061	5		SAND, tannish brown, moist, dense, with silt, trace gravel, (Residuum)	SS 3		5-21-50/1"					
			SAND, tannish brown, moist, very dense, with silt, possible weak and/or weathered sandstone	SS 4		50/3"					
1056	10			SS 5		50/2"					
Bottom of borehole at 14.2 feet.											



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PROJECT NAME Pick N Save 902 CLIENT Kroger Company
 PROJECT NUMBER 242418135 PROJECT LOCATION Fitchburg, WI
 DATE STARTED 9/19/18 COMPLETED 9/19/18 GROUND ELEVATION 1079 ft HOLE SIZE 4"
 DRILLING CONTRACTOR TSC DRILLING TERMINATION DEPTH 15 ft / Elev 1064 ft
 DRILLING METHOD SFA REFUSAL DEPTH N/A
 DRILLING EQUIPMENT Morooka LTX800 GROUND WATER LEVELS:
 HAMMER TYPE Automatic AT END OF DRILLING Dry
 LOGGED BY Nathan Brown CHECKED BY Nathan Long 24hrs AFTER DRILLING Not measured (backfilled at completion)

NOTES _____

GEOTECH BH COLUMNS - GEOTECH TEMPLATE.GDT - 10/19/18 14:11 - R:\01 - INFRASTRUCTURE DESIGN - 2018 PROJECTS\WOOD ST LOUISPS-902 STORE - FITCHBURG, WI\03 - DRILLING\BORING LOGS.GPJ

ELEV. (ft)	DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	▲ SPT N VALUE ▲				MOISTURE CONTENT (%)	ATT. LIMITS	
							10	20	30	40		LIQUID LIMIT	PLASTICITY INDEX
1079	0		Surface vegetated										
		[Cross-hatched pattern]	SANDY CLAY, brown, moist, medium stiff, with gravel, (Fill)	SS 1		3-3-5 (8)							
			GRAVELLY CLAY, brown, soft to stiff, (Fill), with concrete fragments at 3.5'. Low recoveries due to high gravel content.	SS 2		34-7-3 (10)							
1074	5				SS 3		2-2-3 (5)						
					SS 4		4-4-6 (10)						
1069	10												
			SAND, tan, moist, dense, (Fill)										
1064	15			SS 5		15-9-43 (52)							

Bottom of borehole at 15.0 feet.



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PROJECT NAME Pick N Save 902 CLIENT Kroger Company
 PROJECT NUMBER 242418135 PROJECT LOCATION Fitchburg, WI
 DATE STARTED 9/19/18 COMPLETED 9/19/18 GROUND ELEVATION 1066 ft HOLE SIZE 4"
 DRILLING CONTRACTOR TSC DRILLING TERMINATION DEPTH 15 ft / Elev 1051 ft
 DRILLING METHOD SFA REFUSAL DEPTH N/A
 DRILLING EQUIPMENT Morooka LTX800 GROUND WATER LEVELS:
 HAMMER TYPE Automatic AT END OF DRILLING Dry
 LOGGED BY Nathan Brown CHECKED BY Nathan Long 24hrs AFTER DRILLING Not measured (backfilled at completion)
 NOTES _____

GEOTECH BH COLUMNS - GEOTECH TEMPLATE.GDT - 10/19/18 14:11 - R:01 - INFRASTRUCTURE DESIGN - 2018 PROJECTS - WOOD ST LOUISIPS-902 STORE - FITC - BURG, WI03 - DRILLING/BORING LOGS.GPJ

ELEV. (ft)	DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	▲ SPT N VALUE ▲				MOISTURE CONTENT (%)	ATT. LIMITS	
							10	20	30	40		LIQUID LIMIT	PLASTICITY INDEX
1066	0		6" GRAVELLY SAND with cobbles	SS 1		2-2-2 (4)							
			SANDY CLAY, grayish brown, moist, soft, with gravel, (Fill)	SS 2		5-3-3 (6)							
1061	5			CLAYEY SAND, brown, moist, medium dense, trace gravel, (Fill)	SS 3		1-2-2 (4)						
1056	10			SILTY SAND, brown, moist, loose, with gravel, (Fill)	SS 4		4-6-11 (17)						
1051	15			Bottom of borehole at 15.0 feet.	SS 5		2-2-2 (4)						



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PROJECT NAME Pick N Save 902 CLIENT Kroger Company
 PROJECT NUMBER 242418135 PROJECT LOCATION Fitchburg, WI
 DATE STARTED 9/20/18 COMPLETED 9/20/18 GROUND ELEVATION 1069 ft HOLE SIZE 4"
 DRILLING CONTRACTOR TSC DRILLING TERMINATION DEPTH 15 ft / Elev 1054 ft
 DRILLING METHOD SFA REFUSAL DEPTH N/A
 DRILLING EQUIPMENT Morooka LTX800 GROUND WATER LEVELS:
 HAMMER TYPE Automatic AT END OF DRILLING Dry
 LOGGED BY Nathan Brown CHECKED BY Nathan Long 24hrs AFTER DRILLING Not measured (backfilled at completion)

NOTES

GEOTECH BH COLUMNS - GEOTECH TEMPLATE_GDT - 10/19/18 14:11 - R:01 - INFRASTRUCTURE DESIGN - 2018 PROJECTS - WOOD ST LOUISIPS-902 STORE - FITCHBURG, WI03 - DRILLINGBORING LOGS.GPJ

ELEV. (ft)	DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	▲ SPT N VALUE ▲	MOISTURE CONTENT (%)	ATT. LIMITS	
									LIQUID LIMIT	PLASTICITY INDEX
1069	0						10 20 30 40			
			6" GRAVELLY SAND with cobbles	SS 1		3-2-3 (5)				
			SANDY CLAY, grayish brown, moist, medium stiff, with gravel, (Fill)	SS 2		5-5-4 (9)				
1064	5		GRAVELLY SAND, reddish brown, damp, loose, (Fill)	SS 3		3-3-2 (5)				
			SILTY SAND, reddish brown, moist, loose, with gravel, (Fill)	SS 4		7-12-12 (24)				
1059	10		(Fill), ROCK FRAGMENTS AND SAND, yellowish tan, dry, medium dense	SS 5		9-18-50/5"		>>		
1054	15		SAND, orangeish brown, moist, dense, possible residuum or weak bedrock							

Bottom of borehole at 15.0 feet.



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PROJECT NAME Pick N Save 902 CLIENT Kroger Company
 PROJECT NUMBER 242418135 PROJECT LOCATION Fitchburg, WI
 DATE STARTED 9/19/18 COMPLETED 9/19/18 GROUND ELEVATION 1065 ft HOLE SIZE 4"
 DRILLING CONTRACTOR TSC DRILLING TERMINATION DEPTH 15 ft / Elev 1050 ft
 DRILLING METHOD SFA REFUSAL DEPTH N/A
 DRILLING EQUIPMENT Morooka LTX800 GROUND WATER LEVELS:
 HAMMER TYPE Automatic AT END OF DRILLING Dry
 LOGGED BY Nathan Brown CHECKED BY Nathan Long 24hrs AFTER DRILLING Not measured (backfilled at completion)
 NOTES _____

GEOTECH.BH.COLUMNS - GEOTECH TEMPLATE.GDT - 10/19/18 14:11 - R:01 - INFRASTRUCTURE DESIGN - 2018 PROJECTS - WOOD ST LOUISIPS-902 STORE - FITCHBURG, WI03 - DRILLING/BORING LOGS.GPJ

ELEV. (ft)	DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	▲ SPT N VALUE ▲				MOISTURE CONTENT (%)	ATT. LIMITS	
							10	20	30	40		LIQUID LIMIT	PLASTICITY INDEX
1065	0		6" GRAVELLY SAND with cobbles	SS 1		4-4-4 (8)					9	NP	NP
			SILTY SAND, brown, moist, loose, with gravel, (Fill)										
1060	5		SANDY CLAY, grayish brown to brown, moist, stiff, with gravel, (Fill), large asphalt chunk at 8.5'	SS 2		4-4-6 (10)							
				SS 3		3-4-6 (10)							
1055	10			SS 4		65-50/3"							
1050	15		SILTY SAND, grayish brown, moist, dense, with gravel, (Fill)	SS 5		6-24-8 (32)							

Bottom of borehole at 15.0 feet.



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PROJECT NAME Pick N Save 902 CLIENT Kroger Company
 PROJECT NUMBER 242418135 PROJECT LOCATION Fitchburg, WI
 DATE STARTED 9/20/18 COMPLETED 9/20/18 GROUND ELEVATION 1065 ft HOLE SIZE 6"
 DRILLING CONTRACTOR TSC DRILLING TERMINATION DEPTH 50 ft / Elev 1015 ft
 DRILLING METHOD HSA REFUSAL DEPTH N/A
 DRILLING EQUIPMENT Morooka LTX800 GROUND WATER LEVELS:
 HAMMER TYPE Automatic AT END OF DRILLING Dry
 LOGGED BY Nathan Brown CHECKED BY Nathan Long 24hrs AFTER DRILLING Not measured (backfilled at completion)

NOTES

GEO TECH BH COLUMNS - GEOTECH TEMPLATE.GDT - 10/19/18 14:11 - R:\01 - INFRASTRUCTURE DESIGN - 2018 PROJECTS - WOOD ST LOUISISIPS-902 STORE - FITCHBURG, WI03 - DRILLINGBORING LOGS.GPJ

ELEV. (ft)	DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	▲ SPT N VALUE ▲				MOISTURE CONTENT (%)	ATT. LIMITS	
							10	20	30	40		LIQUID LIMIT	PLASTICITY INDEX
1065	0		6" GRAVELLY SAND with cobbles	SS 1		5-6-6 (12)							
			SANDY CLAY, dark brown, moist, stiff, with gravel, (Fill)	SS 2		3-3-8 (11)							
1060	5		SANDY CLAY, gray, moist, medium stiff, trace gravel, (Fill)	SS 3		3-3-4 (7)							
			CLAYEY SAND, gray, moist, with gravel, (Fill)	ST 1							10	27	11
			SANDY CLAY, gray to tan, moist, stiff, trace gravel, (Fill), asphalt chunks at 18.5'	SS 4		2-5-6 (11)							
1050	15			SS 5		7-4-6 (10)							
1045	20			SS 6		2-3-4 (7)							
1040	25			SANDY CLAY, grayish brown, moist, hard, with gravel, probable fill	SS 7		6-11-18 (29)						
1035	30		SILTY SAND, light brown to yellowish white, moist, very dense, (Residuum)	SS 8		50/5"				>>			
1030	35			SS 9		6-21-50 (71)				>>	8	NP	NP
1025	40												

(Continued Next Page)



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PROJECT NAME Pick N Save 902 CLIENT Kroger Company
 PROJECT NUMBER 242418135 PROJECT LOCATION Fitchburg, WI

GEOTECH BH COLUMNS - GEOTECH TEMPLATE.GDT - 10/19/18 14:11 - R:01 - INFRASTRUCTURE DESIGN - 2018 PROJECTS - WOOD ST LOUISIS-902 STORE - FITCHBURG, WI03 - DRILLINGBORING LOGS.GPJ

ELEV. (ft)	DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	▲ SPT N VALUE ▲	MOISTURE CONTENT (%)	ALL LIMITS	
									LIQUID LIMIT	PLASTICITY INDEX
1025	40						10 20 30 40			
1020	45		SILTY SAND, light brown to yellowish white, moist, very dense, (Residuum) <i>(continued)</i>	SS 10		18-39- 50/2"				
1015	50			SS 11		50/1"				

Bottom of borehole at 50.0 feet.



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PROJECT NAME Pick N Save 902 **CLIENT** Kroger Company
PROJECT NUMBER 242418135 **PROJECT LOCATION** Fitchburg, WI
DATE STARTED 9/20/18 **COMPLETED** 9/20/18 **GROUND ELEVATION** 1068 ft **HOLE SIZE** 4"
DRILLING CONTRACTOR TSC **DRILLING TERMINATION DEPTH** 15 ft / Elev 1053 ft
DRILLING METHOD SFA **REFUSAL DEPTH** N/A
DRILLING EQUIPMENT Morooka LTX800 **GROUND WATER LEVELS:**
HAMMER TYPE Automatic **AT END OF DRILLING** Dry
LOGGED BY Nathan Brown **CHECKED BY** Nathan Long **24hrs AFTER DRILLING** Not measured (backfilled at completion)
NOTES Boring encountered refusal at 5' on first attempt and was offset 5' west

GEOTECH BH COLUMNS - GEOTECH TEMPLATE_GDT - 10/19/18 14:11 - R:01 - INFRASTRUCTURE DESIGN - 2018 PROJECTS - WOOD ST LOUISISPS-902 STORE - FITCHBURG, WI03 - DRILLINGBORING LOGS.GPJ

ELEV. (ft)	DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	▲ SPT N VALUE ▲				MOISTURE CONTENT (%)	ATT. LIMITS	
							10	20	30	40		LIQUID LIMIT	PLASTICITY INDEX
1068	0		6" GRAVELLY SAND with cobbles										
			SANDY CLAY, brown, moist, very stiff, with gravel, (Fill)	SS 1		7-10-11 (21)							
			SILTY SAND, brown, moist, medium dense, trace gravel, (Fill)	SS 2		6-11-16 (27)				9	NP	NP	
1063	5		SANDY CLAY, grayish brown, moist, very stiff, with gravel, (Fill)	SS 3		6-9-13 (22)							
				SS 4		6-7-13 (20)							
1058	10		SILTY SAND, tannish brown, moist, very dense, with gravel, (Fill)	SS 5		21-49-50 (99)							
1053	15		Bottom of borehole at 15.0 feet.										



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PROJECT NAME Pick N Save 902 CLIENT Kroger Company
 PROJECT NUMBER 242418135 PROJECT LOCATION Fitchburg, WI
 DATE STARTED 9/20/18 COMPLETED 9/20/18 GROUND ELEVATION 1004 ft HOLE SIZE 4"
 DRILLING CONTRACTOR TSC DRILLING TERMINATION DEPTH 15 ft / Elev 1049 ft
 DRILLING METHOD SFA REFUSAL DEPTH N/A
 DRILLING EQUIPMENT Morooka LTX800 GROUND WATER LEVELS:
 HAMMER TYPE Automatic AT END OF DRILLING Dry
 LOGGED BY Nathan Brown CHECKED BY Nathan Long 24hrs AFTER DRILLING Not measured (backfilled at completion)
 NOTES _____

GEOTECH BH COLUMNS - GEOTECH TEMPLATE.GDT - 10/19/18 14:11 - R:01 - INFRASTRUCTURE DESIGN, 2018 PROJECTS, WOOD ST LOUIS/PS-902 STORE - FITCHBURG, WI03 - DRILLING/BORING LOGS.GPJ

ELEV. (ft.)	DEPTH (ft.)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	▲ SPT N VALUE ▲				MOISTURE CONTENT (%)	ATT. LIMITS	
							10	20	30	40		LIQUID LIMIT	PLASTICITY INDEX
1064	0		6" GRAVELLY SAND with cobbles SANDY CLAY, grayish brown, moist, very stiff to medium stiff, with gravel, (Fill)	SS 1		5-7-10 (17)							
				SS 2		3-4-6 (10)							
1059	5			SS 3		6-8-10 (18)							
				SS 4		3-8-12 (20)							
1054	10												
1049	15			SS 5		2-2-3 (5)							

Bottom of borehole at 15.0 feet.



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BORING B-23

PAGE 1 OF 1

PROJECT NAME Pick N Save 902 CLIENT Kroger Company
 PROJECT NUMBER 242418135 PROJECT LOCATION Fitchburg, WI
 DATE STARTED 9/20/18 COMPLETED 9/20/18 GROUND ELEVATION 1067 ft HOLE SIZE 4"
 DRILLING CONTRACTOR TSC DRILLING TERMINATION DEPTH 15 ft / Elev 1052 ft
 DRILLING METHOD SFA REFUSAL DEPTH N/A
 DRILLING EQUIPMENT Morooka LTX800 GROUND WATER LEVELS:
 HAMMER TYPE Automatic AT END OF DRILLING Dry
 LOGGED BY Nathan Brown CHECKED BY Nathan Long 24hrs AFTER DRILLING Not measured (backfilled at completion)

NOTES

GEOTECH BH COLUMNS - GEOTECH TEMPLATE.GDT - 10/19/18 14:11 - R:101 - INFRASTRUCTURE DESIGN, 2018 PROJECTS, WOOD ST LOUISISPS-902 STORE - FITCHBURG, WI03 - DRILLINGBORING LOGS.GPJ

ELEV. (ft)	DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	▲ SPT N VALUE ▲	MOISTURE CONTENT (%)	ATT. LIMITS	
									LIQUID LIMIT	PLASTICITY INDEX
1067	0		6" GRAVELLY SAND with cobbles				10 20 30 40			
			SANDY CLAY, grayish brown, moist, very stiff, with gravel, (Fill)	SS 1		6-12-14 (26)				
			SILTY SAND, brown, moist, medium dense, with gravel, (Fill)	SS 2		5-17-9 (26)				
			SANDY CLAY, grayish brown, moist, medium stiff, with gravel, (Fill)	SS 3		4-3-3 (6)				
			SAND, brown, moist, dense, with gravel, (Fill)	SS 4		7-12-17 (29)				
1052	15		SILTY SAND, brown, moist, dense, with gravel, (Fill)	SS 5		9-17-20 (37)				

Bottom of borehole at 15.0 feet.



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BORING B-24

PAGE 1 OF 2

PROJECT NAME Pick N Save 902 CLIENT Kroger Company
 PROJECT NUMBER 242418135 PROJECT LOCATION Fitchburg, WI
 DATE STARTED 9/18/18 COMPLETED 9/18/18 GROUND ELEVATION 1070 ft HOLE SIZE 6"
 DRILLING CONTRACTOR TSC DRILLING TERMINATION DEPTH 50 ft / Elev 1020 ft
 DRILLING METHOD HSA REFUSAL DEPTH N/A
 DRILLING EQUIPMENT Morooka LTX800 GROUND WATER LEVELS:
 HAMMER TYPE Automatic AT END OF DRILLING Dry
 LOGGED BY Nathan Brown CHECKED BY Nathan Long 24hrs AFTER DRILLING Not measured (backfilled at completion)
 NOTES

GEOTECH BH COLUMNS - GEOTECH TEMPLATE.GDT - 10/19/18 14:11 - R:01 - INFRASTRUCTURE DESIGN\2018 PROJECTS\WOOD ST LOUIS\PS-902 STORE - FITCHBURG, WI03 - DRILLING\BORING LOGS.GPJ

ELEV. (ft.)	DEPTH (ft.)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	▲ SPT N VALUE ▲				MOISTURE CONTENT (%)	ATT. LIMITS	
							10	20	30	40		LIQUID LIMIT	PLASTICITY INDEX
1070	0		6" GRAVELLY SAND with cobbles	SS 1		5-6-12 (18)							
			SANDY CLAY, brown, moist, very stiff, trace gravel, trace organics, (Fill)	SS 2		5-15-12 (27)							
1065	5		SILTY SAND, tannish brown, moist, medium dense, with gravel, (Fill)	SS 3		7-13-14 (27)							
				SS 4		3-12-13 (25)							
1060	10		SANDY CLAY, grayish brown, moist, stiff, with gravel, (Fill)	SS 5		3-5-5 (10)							
1055	15			SS 6		8-7-7 (14)							
1050	20			SS 7		3-5-7 (12)							
1045	25		CLAYEY GRAVEL, brown, moist, medium dense, with sand, (Fill), silty	SS 8		3-6-16 (22)					13	19	5
1040	30		GRAVELLY CLAY, grayish brown, moist, stiff, trace grass, (Fill), sandy	SS 9		4-6-9 (15)							
1035	35		GRAVELLY SAND, brown, moist, medium dense, (Fill), with asphalt chunks	SS 10		6-6-6 (12)							
1030	40												

(Continued Next Page)



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BORING B-24

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PROJECT NAME Pick N Save 902

CLIENT Kroger Company

PROJECT NUMBER 242418135

PROJECT LOCATION Fitchburg, WI

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ELEV. (ft)	DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	▲ SPT N VALUE ▲	MOISTURE CONTENT (%)	ATT. LIMITS		
									LIQUID LIMIT	PLASTICITY INDEX	
1030	40		GRAVELLY SAND, brown, moist, medium dense, (Fill), with asphalt chunks (<i>continued</i>)				10 20 30 40				
			SANDY CLAY, grayish brown, moist, stiff, with gravel, (Fill)	SS 11		4-5-4 (9)					
1025	45		SAND, tan and white, moist, medium dense, with silt, (Residuum)	SS 12		5-8-8 (16)					
1020	50		Bottom of borehole at 50.0 feet.								



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BORING B-25

PAGE 1 OF 1

PROJECT NAME Pick N Save 902 CLIENT Kroger Company
 PROJECT NUMBER 242418135 PROJECT LOCATION Fitchburg, WI
 DATE STARTED 9/20/18 COMPLETED 9/20/18 GROUND ELEVATION 1064 ft HOLE SIZE 4"
 DRILLING CONTRACTOR TSC DRILLING TERMINATION DEPTH 15 ft / Elev 1049 ft
 DRILLING METHOD SFA REFUSAL DEPTH N/A
 DRILLING EQUIPMENT Morooka LTX800 GROUND WATER LEVELS:
 HAMMER TYPE Automatic AT END OF DRILLING Dry
 LOGGED BY Nathan Brown CHECKED BY Nathan Long 24hrs AFTER DRILLING Not measured (backfilled at completion)
 NOTES _____

GEOTECH BH COLUMNS - GEOTECH TEMPLATE.GDT - 10/19/18 14:11 - R:01 - INFRASTRUCTURE DESIGN - 2018 PROJECTS - WOOD ST LOUISIPS-902 STORE - FITCHBURG, WI03 - DRILLINGBORING LOGS.GPJ

ELEV. (ft)	DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (ROD)	BLOW COUNTS (N VALUE)	▲ SPT N VALUE ▲				MOISTURE CONTENT (%)	ATT. LIMITS											
							10	20	30	40		LIQUID LIMIT	PLASTICITY INDEX										
1064	0		6" GRAVELLY SAND with cobbles	SS 1		4-4-11 (15)	▲	▲	▲	▲													
			SANDY CLAY, brown, moist, stiff, trace gravel, (Fill)											SS 2	5-5-5 (10)								
			CLAYEY SAND, brown, moist, stiff, with gravel, (Fill)											SS 3	9-10-12 (22)								
			GRAVELLY CLAY, brown, damp, very stiff, (Fill), sandy											SS 4	8-15-15 (30)								
			CLAYEY SAND, tannish brown, moist, medium dense, with gravel, (Fill)											SS 5	10-15-12 (27)								
1059	5																						
1054	10																						
1049	15																						

Bottom of borehole at 15.0 feet.



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BORING B-26

PAGE 1 OF 1

PROJECT NAME Pick N Save 902 CLIENT Kroger Company
 PROJECT NUMBER 242418135 PROJECT LOCATION Fitchburg, WI
 DATE STARTED 9/18/18 COMPLETED 9/18/18 GROUND ELEVATION 1068 ft HOLE SIZE 4"
 DRILLING CONTRACTOR TSC DRILLING TERMINATION DEPTH 15 ft / Elev 1053 ft
 DRILLING METHOD SFA REFUSAL DEPTH N/A
 DRILLING EQUIPMENT Morooka LTX800 GROUND WATER LEVELS:
 HAMMER TYPE Automatic AT END OF DRILLING Dry
 LOGGED BY Nathan Brown CHECKED BY Nathan Long 24hrs AFTER DRILLING Not measured (backfilled at completion)

NOTES

GEOTECH BH COLUMNS - GEOTECH TEMPLATE_GDT - 10/19/18 14:11 - R:101 - INFRASTRUCTURE DESIGN - 2018 PROJECTS\WOOD ST LOUISISPS-902 STORE - FITCHBURG, WI\03 - DRILLINGBORING LOGS.GPJ

ELEV. (ft)	DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	▲ SPT N VALUE ▲				MOISTURE CONTENT (%)	ATT. LIMITS		
							10	20	30	40		LIQUID LIMIT	PLASTICITY INDEX	
1068	0		6" GRAVELLY SAND with cobbles	SS 1		6-9-19 (28)								
			CLAYEY SAND, grayish brown, moist, medium dense, with gravel, (Fill)	SS 2		5-6-5 (11)				9	NP	NP		
1063	5		SILTY SAND, grayish brown, damp to moist, stiff to very stiff, trace gravel, (Fill)	SS 3		7-14-14 (28)								
				SS 4		2-10-9 (19)								
1058	10			SILTY SAND, brown to tannish pink, moist to dry, dense to very dense, (Residuum)	SS 5		6-34-38 (72)							
1053	15		Bottom of borehole at 15.0 feet.											



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PROJECT NAME Pick N Save 902 CLIENT Kroger Company
 PROJECT NUMBER 242418135 PROJECT LOCATION Fitchburg, WI
 DATE STARTED 9/18/18 COMPLETED 9/18/18 GROUND ELEVATION 1074 ft HOLE SIZE 4"
 DRILLING CONTRACTOR TSC DRILLING TERMINATION DEPTH 15 ft / Elev 1059 ft
 DRILLING METHOD SFA REFUSAL DEPTH N/A
 DRILLING EQUIPMENT Morooka LTX800 GROUND WATER LEVELS:
 HAMMER TYPE Automatic AT END OF DRILLING Dry
 LOGGED BY Nathan Brown CHECKED BY Nathan Long 24hrs AFTER DRILLING Not measured (backfilled at completion)
 NOTES _____

GEOTECH.BH COLUMNS - GEOTECH TEMPLATE.GDT - 10/19/18 14:11 - R:01 - INFRASTRUCTURE DESIGN\2018 PROJECTS\WOOD ST LOUISIPS-902 STORE - FITCHBURG, WI\03 - DRILLING\BORING LOGS.GPJ

ELEV. (ft.)	DEPTH (ft.)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (ROD)	BLOW COUNTS (N VALUE)	▲ SPT N VALUE ▲	MOISTURE CONTENT (%)	ATT. LIMITS	
									LIQUID LIMIT	PLASTICITY INDEX
1074	0						10 20 30 40			
			6" GRAVELLY SAND with cobbles	SS 1		7-10-11 (21)				
			CLAYEY SAND, grayish brown, damp, medium dense, with gravel, (Fill)	SS 2		4-6-5 (11)				
1069	5		GRAVELLY SAND, tannish orange, possible fill or residuum	SS 3		5-11-15 (26)				
1064	10		SAND, orangeish brown, moist, probable weak and/or weathered sandstone. (Bedrock)	SS 4		7-10-10 (20)				
1059	15			SS 5		50/3"	>>			

Bottom of borehole at 15.0 feet.



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PAGE 1 OF 1

PROJECT NAME Pick N Save 902 CLIENT Kroger Company
 PROJECT NUMBER 242418135 PROJECT LOCATION Fitchburg, WI
 DATE STARTED 9/21/18 COMPLETED 9/21/18 GROUND ELEVATION 1062 ft HOLE SIZE 4"
 DRILLING CONTRACTOR TSC DRILLING TERMINATION DEPTH 15 ft / Elev 1047 ft
 DRILLING METHOD SFA REFUSAL DEPTH N/A
 DRILLING EQUIPMENT Morooka LTX800 GROUND WATER LEVELS:
 HAMMER TYPE Automatic ▼ AT END OF DRILLING 6.00 ft / Elev 1056.00 ft
 LOGGED BY Nathan Brown CHECKED BY Nathan Long 24hrs AFTER DRILLING Not measured (backfilled at completion)

NOTES

GEOTECH BH COLUMNS - GEOTECH TEMPLATE_GDT - 10/19/18 14:11 - R:\01 - INFRASTRUCTURE DESIGN\ 2018 PROJECTS\ WOOD ST LOUIS\IPS-902 STORE - FITCHBURG, WI\03 - DRILLING\BORING LOGS.GPJ

ELEV. (ft)	DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	▲ SPT N VALUE ▲				MOISTURE CONTENT (%)	ATT. LIMITS	
							10	20	30	40		LIQUID LIMIT	PLASTICITY INDEX
1062	0		6" GRAVELLY SAND with cobbles	SS 1		6-7-7 (14)							
			SILTY SAND, brown, moist, medium dense, with gravel, (Fill)	SS 2		3-6-5 (11)							
1057	5		SANDY GRAVEL, brown, wet, loose to very loose, (Fill)	SS 3		7-6-4 (10)							
			SAND, tannish yellow, wet, medium dense, possible fill	SS 4		3-1-1 (2)							
1047	15			SS 5		6-9-12 (21)							

Bottom of borehole at 15.0 feet.



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BORING B-29

PAGE 1 OF 1

PROJECT NAME Pick N Save 902 CLIENT Kroger Company
 PROJECT NUMBER 242418135 PROJECT LOCATION Fitchburg, WI
 DATE STARTED 9/21/18 COMPLETED 9/21/18 GROUND ELEVATION 1061 ft HOLE SIZE 4"
 DRILLING CONTRACTOR TSC DRILLING TERMINATION DEPTH 15 ft / Elev 1046 ft
 DRILLING METHOD SFA REFUSAL DEPTH N/A
 DRILLING EQUIPMENT Morooka LTX800 GROUND WATER LEVELS:
 HAMMER TYPE Automatic AT END OF DRILLING Dry
 LOGGED BY Nathan Brown CHECKED BY Nathan Long 24hrs AFTER DRILLING Not measured (backfilled at completion)

NOTES

GEOTECH BH COLUMNS - GEOTECH TEMPLATE.GDT - 10/19/18 14:11 - R:01 - INFRASTRUCTURE DESIGN 2018 PROJECTS\WOOD ST LOUIS\PS-902 STORE - FITCHBURG, WI03 - DRILLING\BORING LOGS.GPJ

ELEV. (ft)	DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (ROD)	BLOW COUNTS (N VALUE)	▲ SPT N VALUE ▲				MOISTURE CONTENT (%)	ATT. LIMITS	
							10	20	30	40		LIQUID LIMIT	PLASTICITY INDEX
1061	0		6" GRAVELLY SAND with cobbles SAND, brown, moist, medium dense, with gravel, (Fill)	SS 1		9-7-11 (18)					8		
			SANDY CLAY, grayish brown, moist, very stiff to stiff, with gravel, (Fill)	SS 2		8-7-11 (18)					9		
1056	5			SILTY SAND, brown, moist, medium dense, trace gravel, (Fill)	SS 3		4-5-8 (13)				13		
				SANDY CLAY, grayish brown, moist, stiff, with gravel, (Fill), refusal likely on boulder/cobble	SS 4		9-10-14 (24)				9		
1051	10												
1046	15			SS 5		8-50/4"				>>	11		

Bottom of borehole at 15.0 feet.



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PAGE 1 OF 1

PROJECT NAME Pick N Save 902 CLIENT Kroger Company
 PROJECT NUMBER 242418135 PROJECT LOCATION Fitchburg, WI
 DATE STARTED 9/21/18 COMPLETED 9/21/18 GROUND ELEVATION 1060 ft HOLE SIZE 4"
 DRILLING CONTRACTOR TSC DRILLING TERMINATION DEPTH 15 ft / Elev 1045 ft
 DRILLING METHOD SFA REFUSAL DEPTH N/A
 DRILLING EQUIPMENT Morooka LTX800 GROUND WATER LEVELS:
 HAMMER TYPE Automatic AT END OF DRILLING Dry
 LOGGED BY Nathan Brown CHECKED BY Nathan Long 24hrs AFTER DRILLING Not measured (backfilled at completion)

NOTES

GEOTECH BH COLUMNS - GEOTECH TEMPLATE_GDT - 10/19/18 14:11 - R:\01 - INFRASTRUCTURE DESIGN - 2018 PROJECTS - WOOD ST LOUISISPS-902 STORE - FITCHBURG, WI\03 - DRILLINGBORING LOGS.GPJ

ELEV. (ft)	DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	▲ SPT N VALUE ▲				MOISTURE CONTENT (%)	ATT. LIMITS	
							10	20	30	40		LIQUID LIMIT	PLASTICITY INDEX
1060	0		6" GRAVELLY SAND with cobbles	SS 1		11-7-9 (16)							
			SAND, brown, moist, medium dense, with silt, (Fill)										
			SANDY CLAY, grayish brown, moist, very stiff, with gravel, (Fill), asphalt chunks at 3.5	SS 2		50/5"							
1055	5			SILTY SAND, brown, moist, dense to medium dense, trace gravel, (Fill)	SS 3		14-15-17 (32)						
					SS 4		7-10-13 (23)						
1050	10												
				SS 5		8-8-20/0"							
1045	15												

Bottom of borehole at 15.0 feet.



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PROJECT NAME Pick N Save 902 CLIENT Kroger Company
 PROJECT NUMBER 242418135 PROJECT LOCATION Fitchburg, WI
 DATE STARTED 9/21/18 COMPLETED 9/21/18 GROUND ELEVATION 1077 ft HOLE SIZE 6"
 DRILLING CONTRACTOR TSC DRILLING TERMINATION DEPTH 50 ft / Elev 1027 ft
 DRILLING METHOD HSA REFUSAL DEPTH N/A
 DRILLING EQUIPMENT Morooka LTX800 GROUND WATER LEVELS:
 HAMMER TYPE Automatic AT END OF DRILLING Dry
 LOGGED BY Nathan Brown CHECKED BY Nathan Long 24hrs AFTER DRILLING Not measured (backfilled at completion)
 NOTES _____

GEOTECH.BH COLUMNS - GEOTECH TEMPLATE.GDT - 10/19/18 14:11 - R:01 - INFRASTRUCTURE DESIGN, 2018 PROJECTS, WOOD ST LOUISIPS-902 STORE - FITCHBURG, WI03 - DRILLING/BORING LOGS.GPJ

ELEV. (ft.)	DEPTH (ft.)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	▲ SPT N VALUE ▲				MOISTURE CONTENT (%)	ATT. LIMITS	
							10	20	30	40		LIQUID LIMIT	PLASTICITY INDEX
1077	0		Surface vegetated SANDY CLAY, brown to grayish brown, moist, medium stiff to soft, (Fill)										
1072	5												
1067	10												
1062	15		SANDY CLAY, dark grayish brown, moist, soft, trace roots, possible brick fragments. Possible fill	SS 1		0-1-2 (3)							
1057	20		SANDY CLAY, gray, moist, medium stiff, with gravel, possible till	SS 2		1-3-4 (7)							
1052	25			SS 3		8-6-4 (10)							
1047	30		CLAY, brown, moist, medium stiff, trace gravel	SS 4		2-4-4 (8)							
1042	35		SAND, tannish brown to yellowish pink, damp to dry, dense to very dense, with sandstone fragments. Loose seam at 40'. Probable residuum.	SS 5		14-20-17 (37)							
1037	40			SS 6		18-1-1 (2)							

(Continued Next Page)



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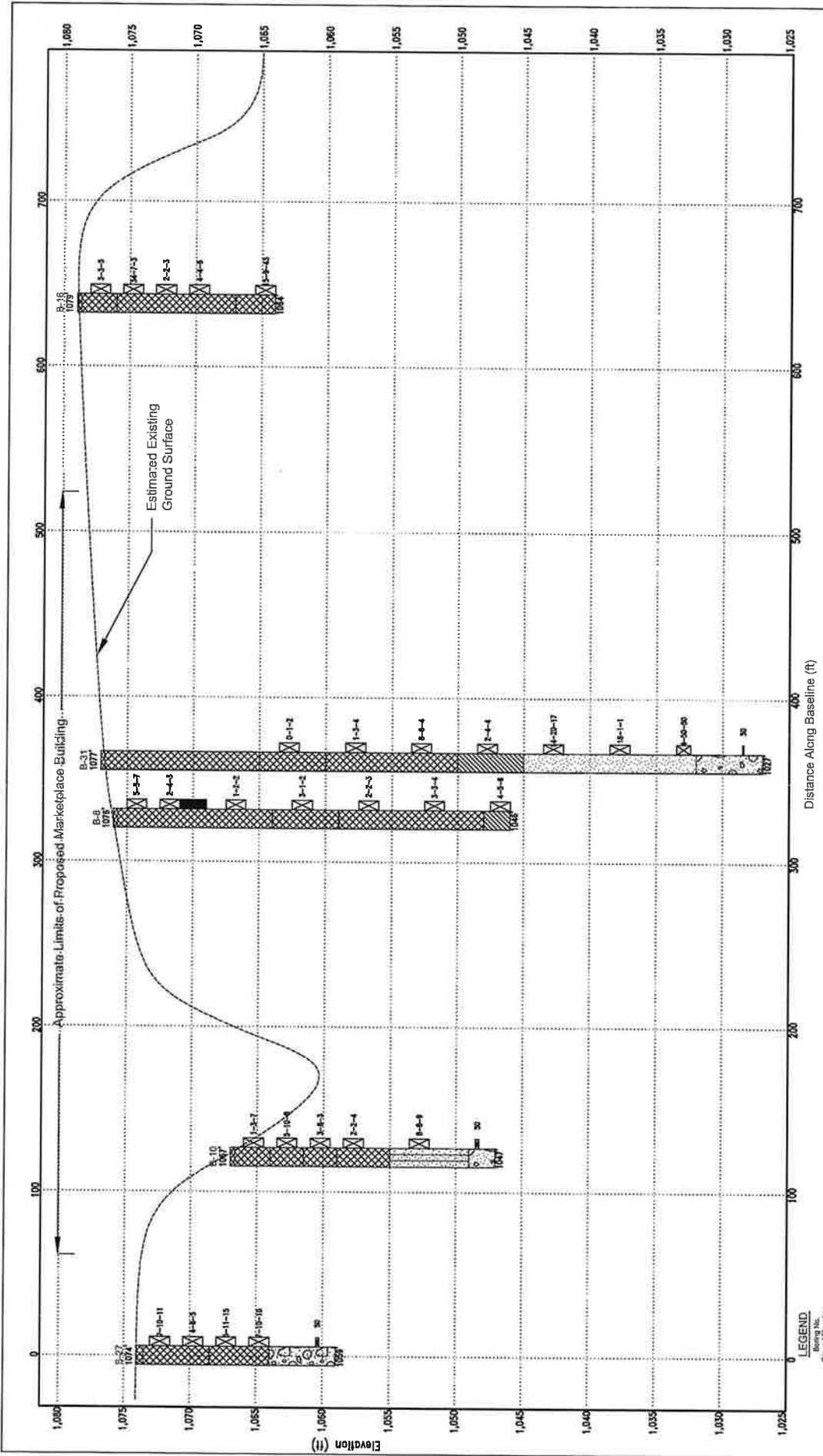
PAGE 2 OF 2

PROJECT NAME Pick N Save 902 CLIENT Kroger Company
 PROJECT NUMBER 242418135 PROJECT LOCATION Fitchburg, WI

GEO TECH BH COLUMNS - GEOTECH TEMPLATE.GDT - 10/19/18 14:11 - R:\01 - INFRASTRUCTURE DESIGN\2018 PROJECTS\WOOD ST LOUISISPS-902 STORE - FITCHBURG, WI\03 - DRILLINGBORING LOGS.GPJ

ELEV. (ft)	DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	▲ SPT N VALUE ▲	MOISTURE CONTENT (%)	ATT. LIMITS	
									LIQUID LIMIT	PLASTICITY INDEX
1037	40						10 20 30 40			
			SAND, tannish brown to yellowish pink, damp to dry, dense to very dense, with sandstone fragments. Loose seam at 40'. Probable residuum. <i>(continued)</i>							
1032	45		SAND, tannish white, and sandstone fragments. Probable weak and/or weathered sandstone	SS 7		4-50-50/1"			>>	
1027	50			SS 8		50/1"			>>	

Bottom of borehole at 50.0 feet.



SUBSURFACE DIAGRAM
Section A-A

PROJECT NAME Pick N Save 802
 PROJECT LOCATION Fitchburg, WI
 CLIENT Kroger Company
 PROJECT NUMBER 242418135

Wood

Distance Along Baseline (ft)

Elevation (ft)

Approximate Limits of Proposed Marketplace Building

Estimated Existing Ground Surface

Water Levels

Termination Elevation

Ground Elevation

2-2-SPT Values

Sample Symbols

3-3-7

Core BEG (RIG)

Termination Elevation

Ground Elevation

2-2-SPT Values

Sample Symbols

3-3-7

Core BEG (RIG)

Termination Elevation

Ground Elevation

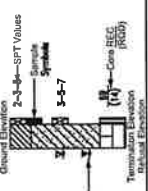
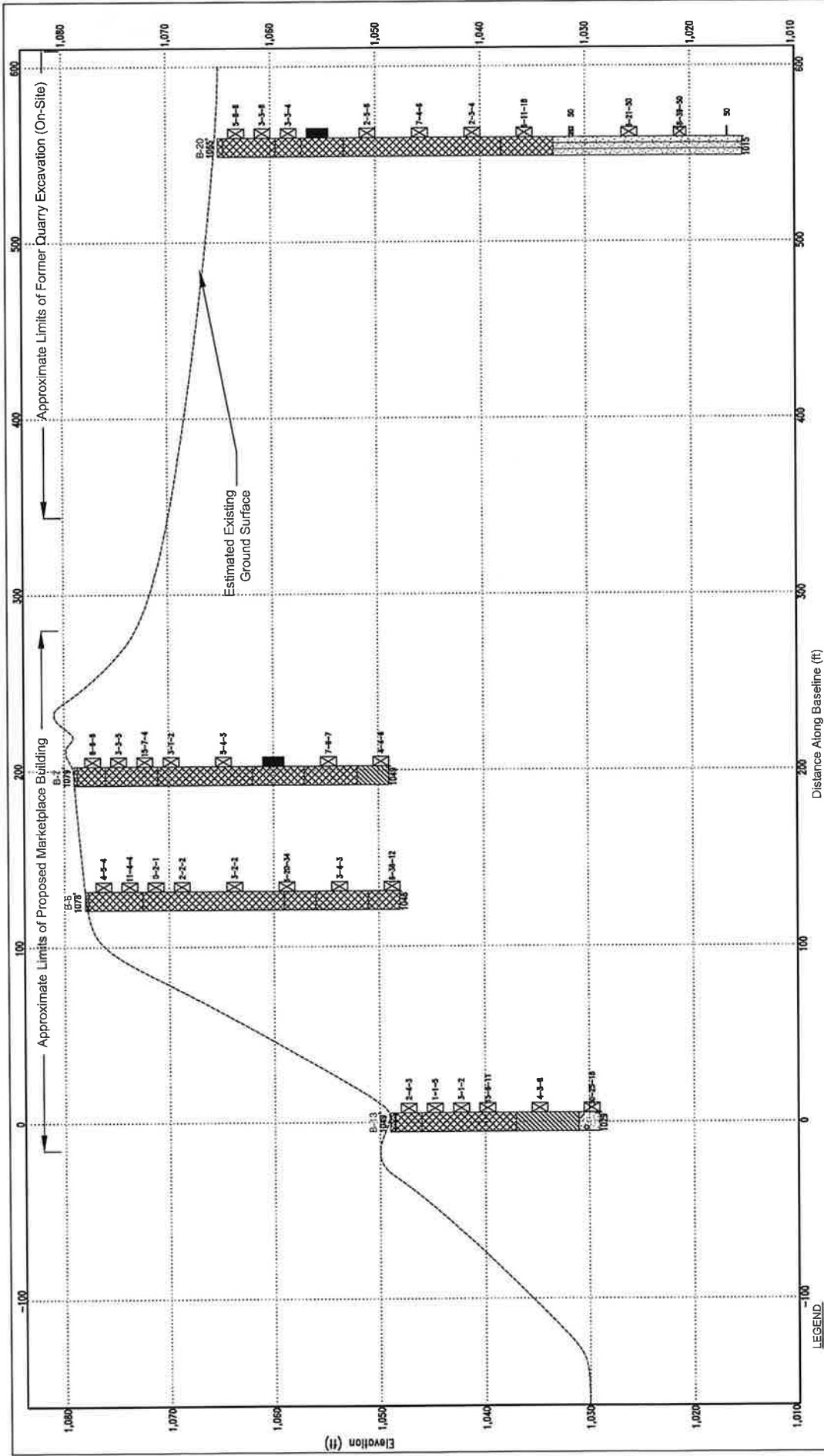
2-2-SPT Values

Sample Symbols

3-3-7

Core BEG (RIG)

Termination Elevation



SUBSURFACE DIAGRAM
Section B-B

PROJECT NAME Pick N Save 902
 PROJECT LOCATION Elkhart, WI
 CLIENT Kroder Company
 PROJECT NUMBER 242418135

Wood

APPENDIX 3

GEOTECHNICAL LABORATORY TEST RESULTS

SUMMARY OF LABORATORY TEST RESULTS

PROJECT:		Proposed Pick 'n Save Marketplace (PS-902)		PROJECT NO.:		2424-18-135		DATE:		10/19/2018				
BORING NO.	SAMPLE NUMBER	SAMPLE TYPE	DEPTH (FT.)	NATURAL MOISTURE (%)	PERCENT GRAVEL (%)	PERCENT SAND (%)	PERCENT SILT/CLAY (%)	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	UNIFIED SOIL CLASSIFICATION	AASHTO CLASSIFICATION	OTHER TESTS **	SOIL DESCRIPTION
B-1	S-1	SS	1.0-2.5	17.4	7.4	21.6	71.0	34	14	20	CL			lean clay with sand, gray brown
B-1	S-2	SS	3.5-5.0	13.8										
B-1	S-3	SS	6.0-7.5	12.2										
B-1	S-4	SS	8.5-10.0	18.1										
B-4	S-2	SS	3.5-5.0	11.0	12.7	41.3	46.0	22	13	9	SC			clayey sand, gray brown
B-6	Bulk	Bulk	1.0-10.0	18.5	4.5	52.6	42.9	NV	NP	NP	SM		P,RE,pH	silty sand, dark brown
B-7	S-1	SS	1.0-2.5	12.4										
B-7	S-2	SS	3.5-5.0	13.6										
B-7	S-4	SS	8.5-10.0	16.4										
B-7	S-5	SS	13.5-15.0	15.1	10.2	44.0	45.8	NV	NP	NP	SM			silty sand, gray brown
B-7	ST-1	ST	18.0-20.0	15.6	8.4	43.6	48.0	22	14	8	SC		U	clayey sand, gray brown
B-8	S-5	SS	18.5-20.0	16.8	4.0	35.5	60.5	22	12	10	CL			sandy lean clay, gray brown
B-9	S-1	SS	1.0-2.5	8.6	8.5	46.7	44.8	NV	NP	NP	SM			silty sand, tan brown
B-10	S-2	SS	3.5-5.0	11.2	6.8	37.4	55.8	NV	NP	NP	ML			sandy silt, gray brown
B-11	ST-1	ST	8.0-10.0	13.4	15.6	37.9	46.5	NV	NP	NP	SM		U,C	silty sand with gravel, gray brown
B-11	S-5	SS	13.5-15.0	10.6	7.3	43.8	48.9	18	13	5	SC-SM			silty, clayey sand, gray brown



BORING NO.	SAMPLE NUMBER	SAMPLE TYPE	DEPTH (FT.)	NATURAL MOISTURE (%)	PERCENT GRAVEL (%)	PERCENT SAND (%)	PERCENT SILT/CLAY (%)	ATTERBERG LIMITS			UNIFIED SOIL CLASSIFICATION	AASHTO CLASSIFICATION	OTHER TESTS **	SOIL DESCRIPTION
								LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX				
B-12	S-3	SS	6.0-7.5	9.6	24.6	40.9	34.5	NV	NP	NP	SM		silty sand with gravel, gray brown	
B-13	S-1	SS	1.0-2.5	106.5	32.0	50.9	17.1	NV	NP	NP	SM		silty sand with gravel, white	
B-19	S-1	SS	1.0-2.5	8.5	15.7	51.5	32.8	NV	NP	NP	SM		silty sand with gravel, gray brown	
B-20	ST-1	ST	8.5-10.5	9.9	14.8	44.5	40.7	27	16	11	SC	U,C	clayey sand with gravel, gray brown	
B-20	S-9	SS	38.5-40.0	7.7	13.3	71.4	15.3	NV	NP	NP	SM		silty sand, tan brown	
B-21	S-2	SS	3.5-5.0	9.3	14.2	52.3	33.5	NV	NP	NP	SM		silty sand, gray brown	
B-24	S-8	SS	28.5-30.0	13.4	37.2	32.0	30.8	19	14	5	GC-GM		silty clayey gravel with sand, brown	
B-26	S-2	SS	3.5-5.0	9.0	9.5	61.9	28.6	NV	NP	NP	SM		silty sand, gray brown	
B-29	S-1	SS	1.0-2.5	8.1										
B-29	S-2	SS	3.5-5.0	9.4										
B-29	S-3	SS	6.0-7.5	12.8										
B-29	S-4	SS	8.5-10.0	8.6										
B-29	S-5	SS	13.5-15.0	10.6										
B29/B30	Bulk	Bulk	1.0-15.0	10.1	4.2	64.6	31.2	NV	NP	NP	SM	CBR,P, RE,pH	silty sand, tan brown	

* ST-SHELBY TUBE, SS-SPLIT SPOON / SPLIT-BARREL SAMPLER, B-BAG / BULK, C-CORE

** C-Consolidation Test

S-Grain Size Analysis

G-Specific Gravity

R-Relative Density

P-Proctor

D-Direct Shear

H-Hydrometer

pH-acidity

E-Electrical Resistivity

K - Permeability

SL-Shrinkage Limits

U-Unconfined Compression Test

O-Fractional Organic Carbon

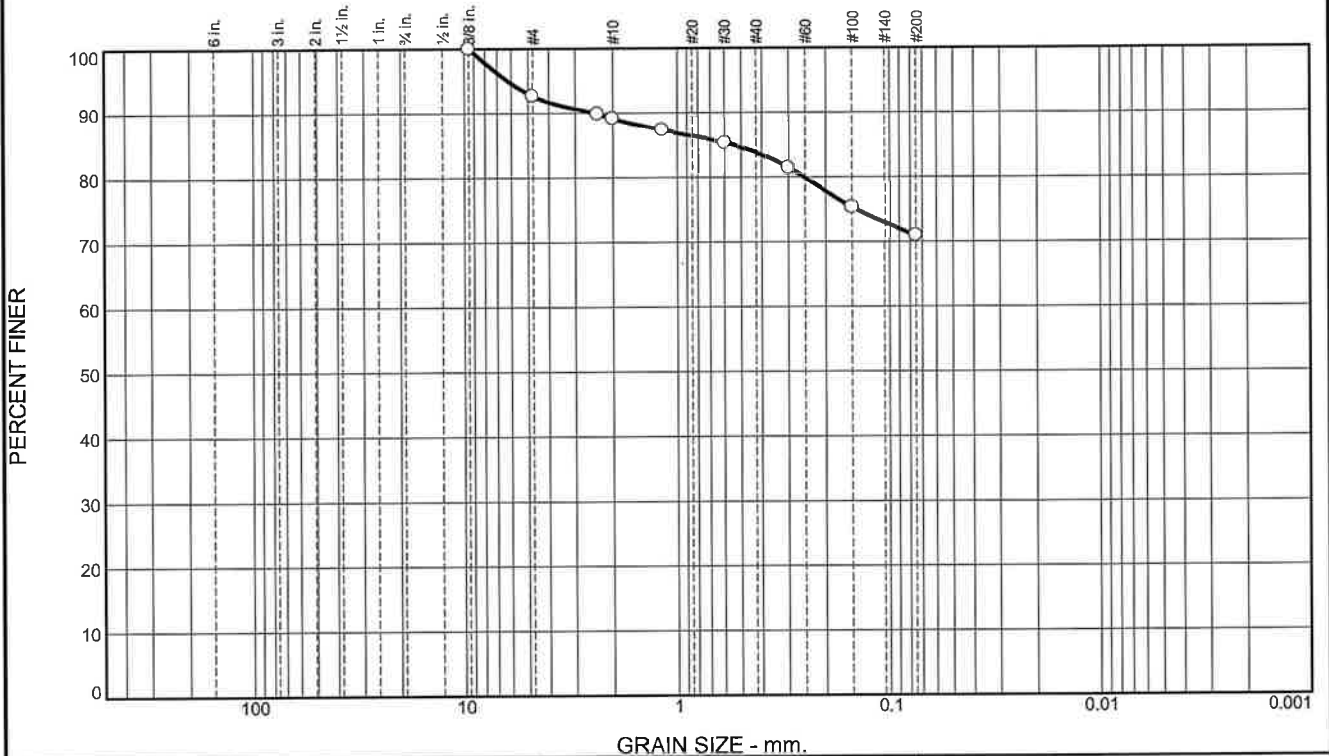
CBR-California Bearing Ratio

T-Triaxial Compression Test

Notes:

DATA CHECKED BY NCL

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	7.4	3.5	5.4	12.7	71.0	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3/8"	100.0		
#4	92.6		
#8	89.8		
#10	89.1		
#16	87.3		
#30	85.3		
#50	81.4		
#100	75.3		
#200	71.0		

Material Description

lean clay with sand, gray brown

Atterberg Limits
 PL= 14 LL= 34 PI= 20

Coefficients
 D₉₀= 2.4699 D₈₅= 0.5516 D₆₀=
 D₅₀= D₃₀= D₁₅=
 D₁₀= C_u= C_c=

Classification
 USCS= CL AASHTO= A-6(12)

Remarks

* (no specification provided)

Source of Sample: B-1 Depth: 1.0'-2.5'
 Sample Number: SS-1

Date: 10/04/18

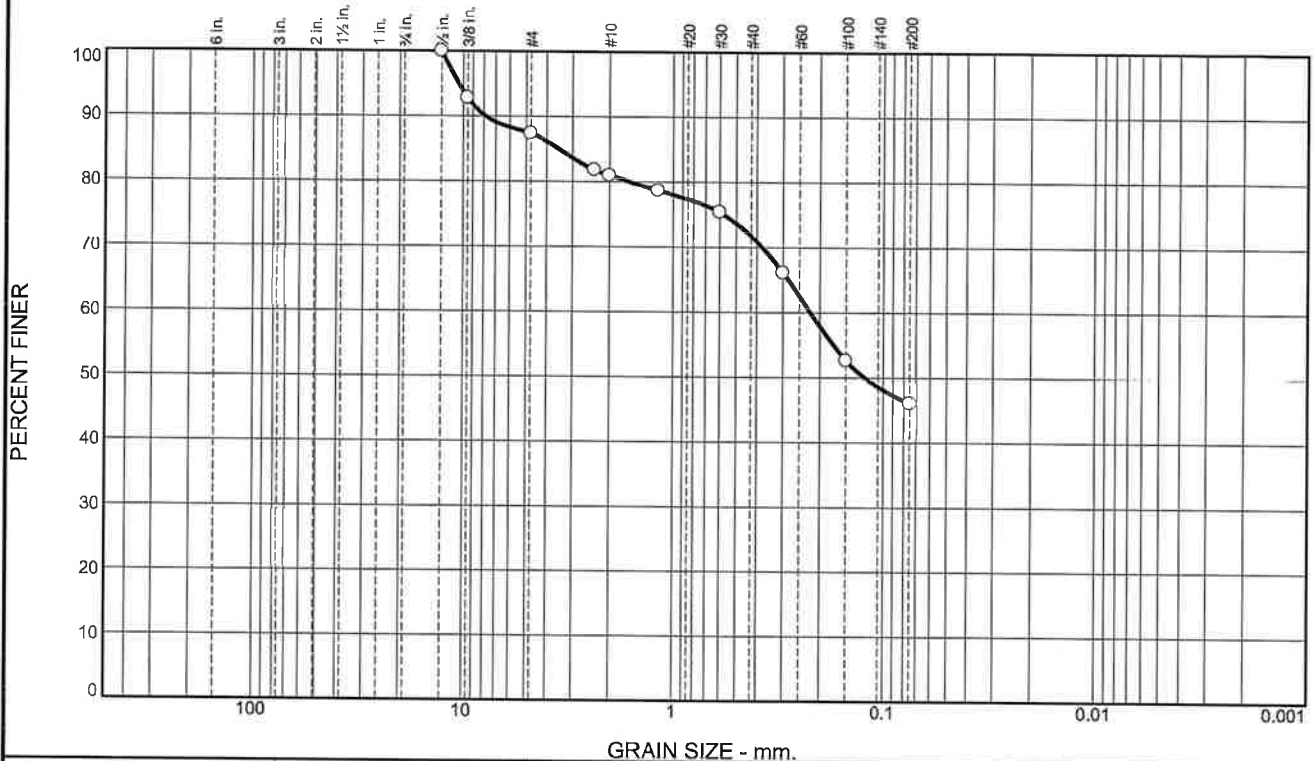
**Wood Environment and
 Infrastructure Solutions, Inc.
 Nashville, Tennessee**

Client: The Kroger Company
 Project: Pick N Save 902
 Project No: 242418135

Tested By: NB

Checked By: MH

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	12.7	6.3	9.3	25.7	46.0	0.0

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1/2"	100.0		
3/8"	92.8		
#4	87.3		
#8	81.8		
#10	81.0		
#16	78.6		
#30	75.4		
#50	66.1		
#100	52.7		
#200	46.0		

Material Description

clayey sand, gray brown

Atterberg Limits
 PL= 13 LL= 22 PI= 9

Coefficients
 D₉₀= 7.8439 D₈₅= 3.4951 D₆₀= 0.2217
 D₅₀= 0.1224 D₃₀= D₁₅=
 D₁₀= C_u= C_c=

Classification
 USCS= SC AASHTO= A-4(1)

Remarks

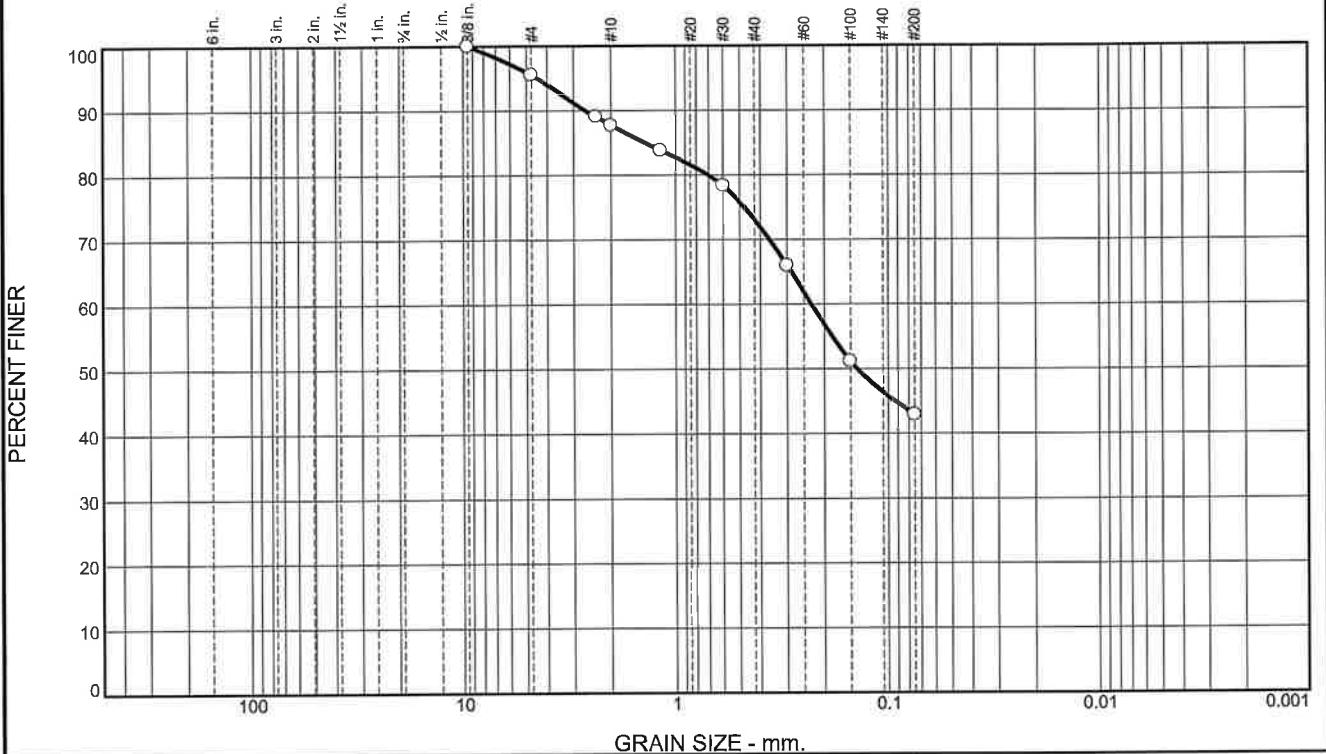
* (no specification provided)

Source of Sample: B-4 Depth: 3.5'-5.0' Date: 10/04/18
 Sample Number: SS-2

Wood Environment and Infrastructure Solutions, Inc. Nashville, Tennessee	Client: The Kroger Company Project: Pick N Save 902 Project No: 242418135
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Tested By: NB Checked By: MH

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	4.5	7.8	14.7	30.1	42.9	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3/8"	100.0		
#4	95.5		
#8	89.0		
#10	87.7		
#16	83.7		
#30	78.3		
#50	66.0		
#100	51.2		
#200	42.9		

Material Description

silty sand, dark brown

Atterberg Limits

PL= NP LL= NV PI= NP

Coefficients

D₉₀= 2.6415 D₈₅= 1.4137 D₆₀= 0.2303
D₅₀= 0.1398 D₃₀= D₁₅=
D₁₀= C_u= C_c=

Classification

USCS= SM AASHTO= A-4(0)

Remarks

* (no specification provided)

Source of Sample: B-6 Depth: 1.0'-10.0' Date: 9/28/18
Sample Number: Bulk

Wood Environment and Infrastructure Solutions, Inc. Nashville, Tennessee	Client: The Kroger Company Project: Pick N Save 902 Project No: 242418135
---	---

Tested By: KM Checked By: MH



pH & Resistivity of Soils

ASTM D4972 & ASTM G57

CLIENT:	Kroger Company	PROJECT NO.:	2424-18-135
PROJECT NAME:	Pick n Save 902	DATE:	September 26, 2018
Reviewed By:		Tested By:	KM/MH
Boring	B-6	Sample Type	Bulk
Description	silty sand		
Color	dark brown		
		Depth	1.0'-10.0'

pH of Soil

Preparation Method

Seived through #10:	YES	<u> x </u>	NO	<u> </u>
Removal of gravel or other materials from original sample:	YES	<u> </u>	NO	<u> x </u>

Test Method

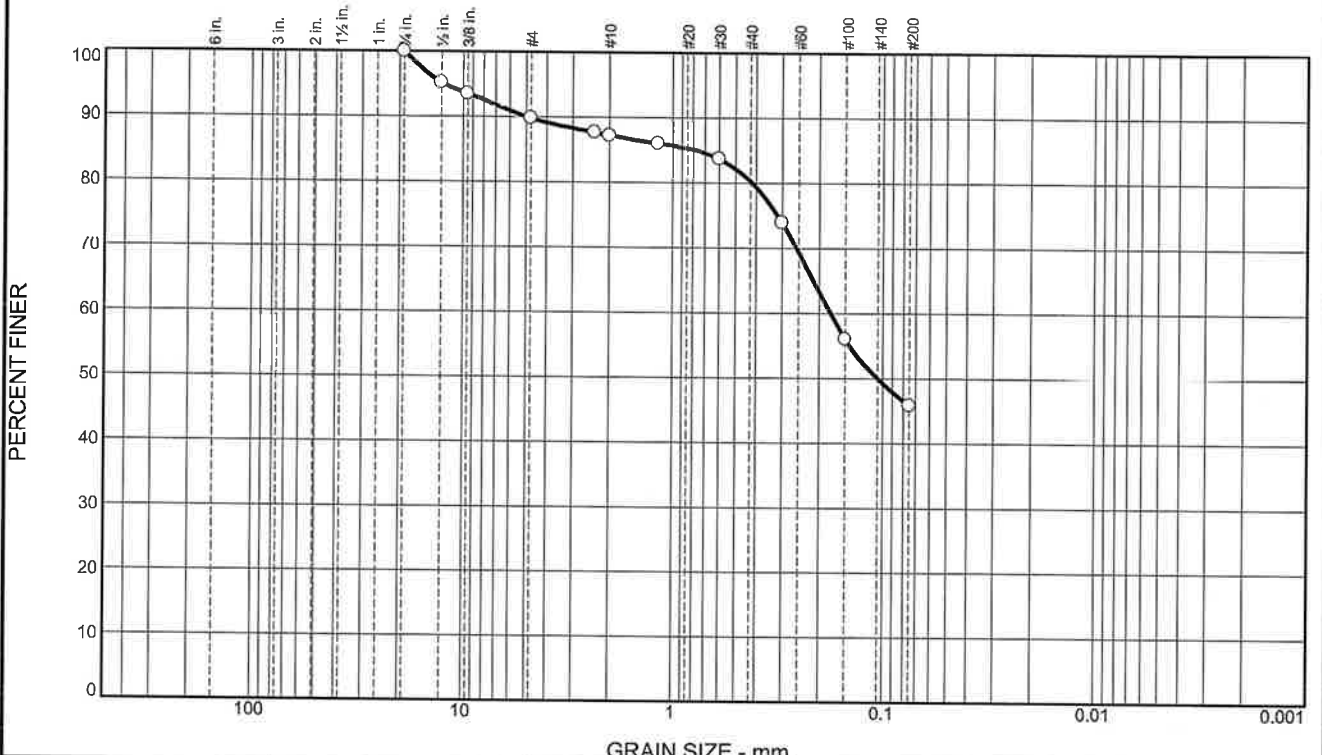
Method A (pH Meter)	<u> x </u>	Method B (pH Paper)	<u> </u>
Container ID:	11	pH Value	8.64
Sample Temperature:	21.6		

Resistivity of Soil

Resistivity Meter Make & Model	DUOYI DY4300	Soil Box Factor	1
Container ID:	SB-1	Resistivity (ohms/cm)	2800
Sample Temperature:	21.9		

Remarks _____

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	10.2	2.6	7.0	34.4	45.8	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3/4"	100.0		
1/2"	95.1		
3/8"	93.5		
#4	89.8		
#8	87.6		
#10	87.2		
#16	85.9		
#30	83.7		
#50	73.9		
#100	56.0		
#200	45.8		

Material Description

silty sand, gray brown

PL= NP	Atterberg Limits	PI= NP
	LL= NV	
	Coefficients	
D ₉₀ = 4.9914	D ₈₅ = 0.7844	D ₆₀ = 0.1767
D ₅₀ = 0.1060	D ₃₀ =	D ₁₅ =
D ₁₀ =	C _u =	C _c =
	Classification	
USCS= SM	AASHTO=	A-4(0)
	Remarks	

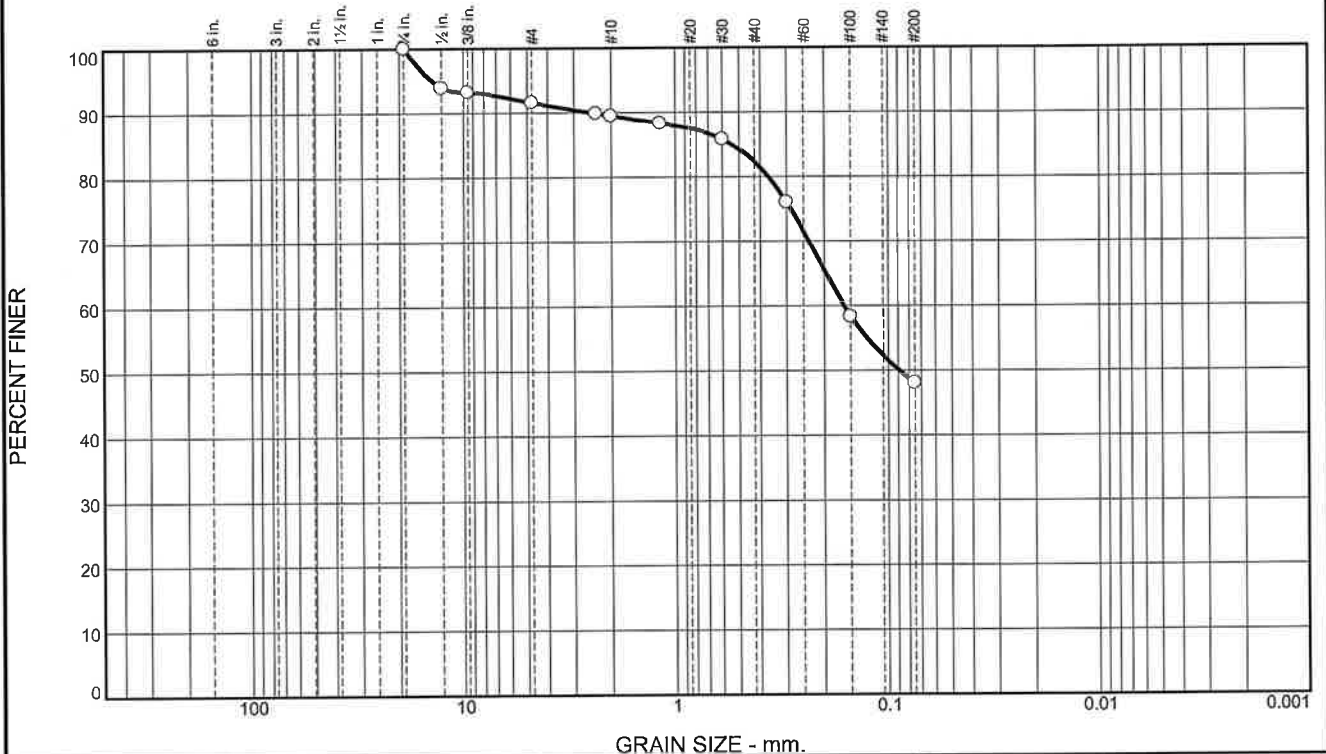
(no specification provided)

Source of Sample: B-7 Depth: 13.5'-15.0'
 Sample Number: SS-5 Date: 10/04/18

Wood Environment and Infrastructure Solutions, Inc. Nashville, Tennessee	Client: The Kroger Company Project: Pick N Save 902 Project No: 242418135
--	---

Tested By: NB Checked By: MH

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	8.4	2.1	7.3	34.2	48.0	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3/4"	100.0		
1/2"	93.9		
3/8"	93.2		
#4	91.6		
#8	89.9		
#10	89.5		
#16	88.3		
#30	85.8		
#50	76.0		
#100	58.3		
#200	48.0		

Material Description

clayey sand, gray brown

Atterberg Limits

PL= 14 LL= 22 PI= 8

Coefficients

D₉₀= 2.4896 D₈₅= 0.5438 D₆₀= 0.1615
D₅₀= 0.0888 D₃₀= D₁₅=
D₁₀= C_u= C_c=

Classification

USCS= SC AASHTO= A-4(1)

Remarks

* (no specification provided)

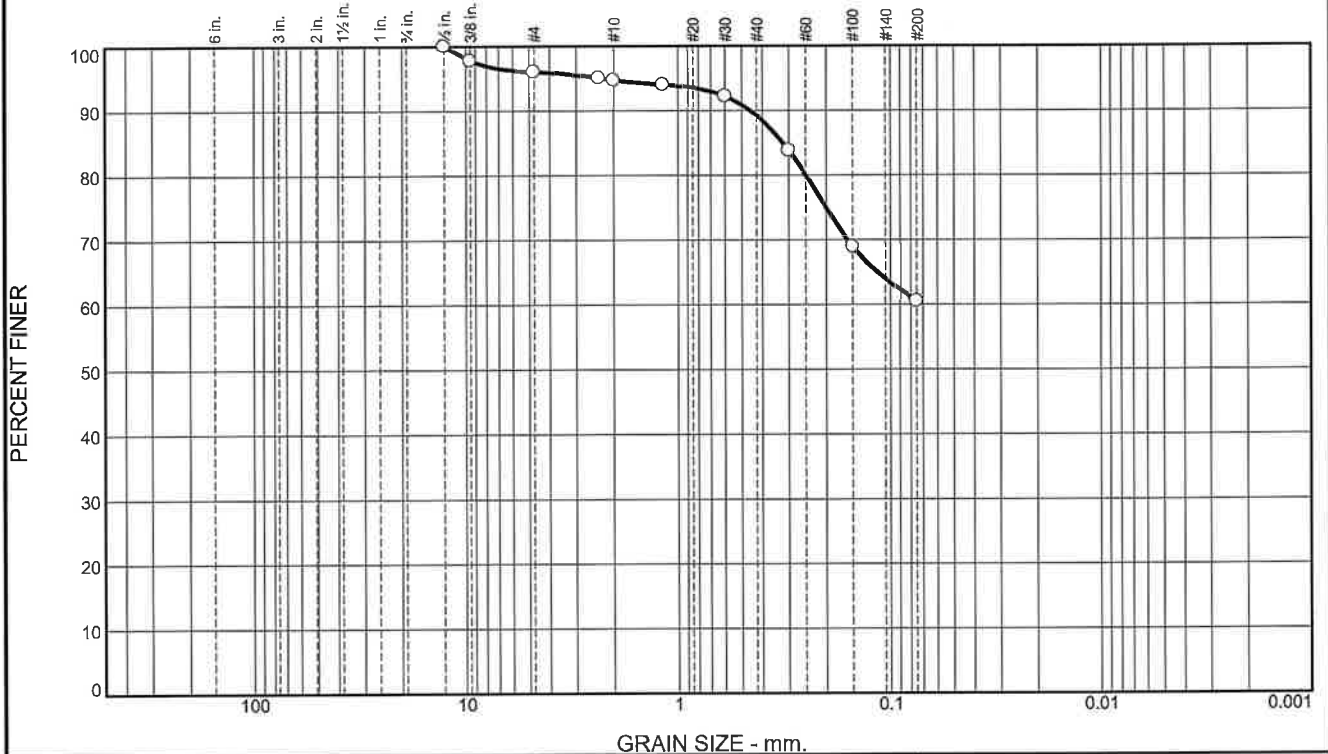
Source of Sample: B-7 Depth: 18.0'-20.0'
Sample Number: ST-1

Date: 10/11/18

Wood Environment and Infrastructure Solutions, Inc. Nashville, Tennessee	Client: The Kroger Company Project: Pick N Save 902 Project No: 242418135
---	---

Tested By: NB/MH Checked By: MH

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	4.0	1.4	5.4	28.7	60.5	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1/2"	100.0		
3/8"	97.8		
#4	96.0		
#8	95.0		
#10	94.6		
#16	93.9		
#30	92.2		
#50	83.8		
#100	68.9		
#200	60.5		

Material Description

sandy lean clay, gray brown

Atterberg Limits

PL= 12 LL= 22 PI= 10

Coefficients

D₉₀= 0.4574 D₈₅= 0.3203 D₆₀=

D₅₀= D₃₀= D₁₅=

D₁₀= C_u= C_c=

Classification

USCS= CL AASHTO= A-4(3)

Remarks

* (no specification provided)

Source of Sample: B-8 Depth: 18.5'-20.0'
 Sample Number: SS-5

Date: 10/04/18

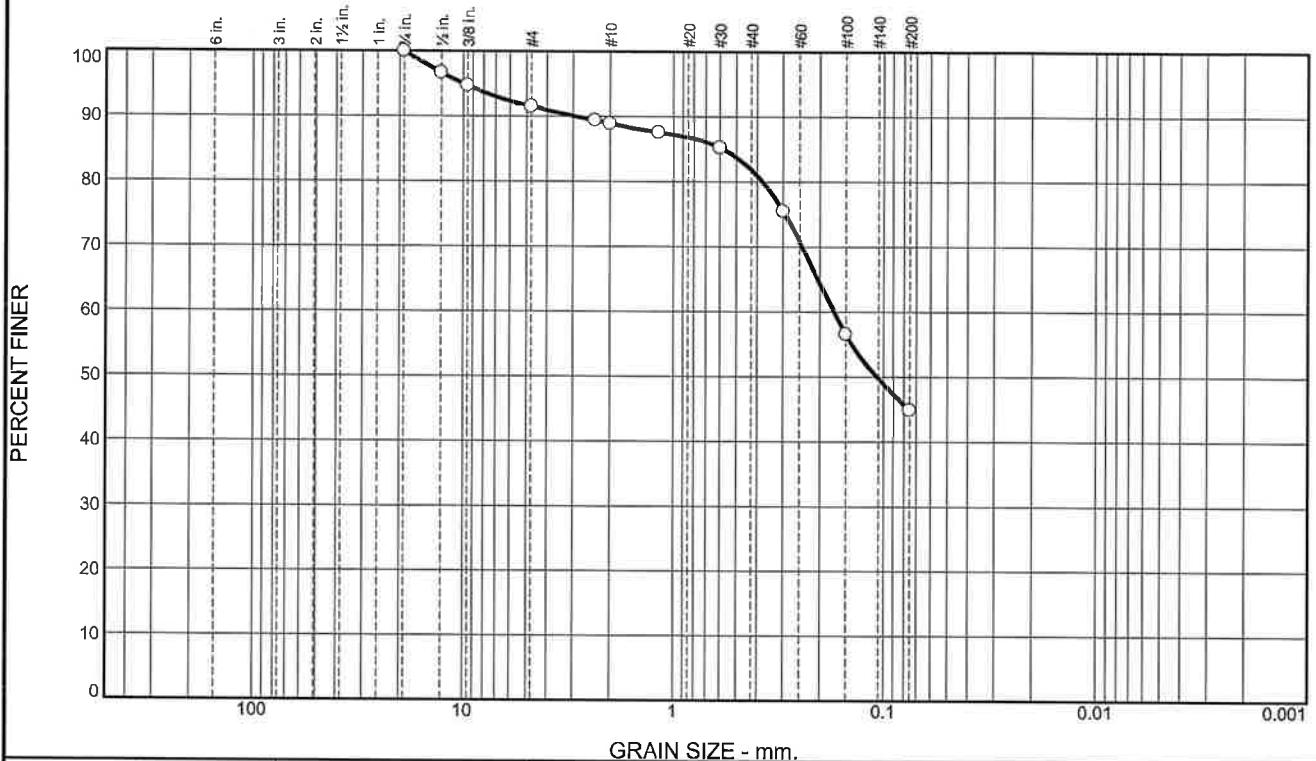
**Wood Environment and
 Infrastructure Solutions, Inc.
 Nashville, Tennessee**

Client: The Kroger Company
Project: Pick N Save 902
Project No: 242418135

Tested By: NB

Checked By: MH

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	8.5	2.6	7.1	37.0	44.8	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3/4"	100.0		
1/2"	96.7		
3/8"	94.7		
#4	91.5		
#8	89.4		
#10	88.9		
#16	87.5		
#30	85.2		
#50	75.5		
#100	56.5		
#200	44.8		

Material Description

silty sand, tan brown

PL= NP **Atterberg Limits** LL= NV PI= NP

D₉₀= 2.9235 **Coefficients** D₈₅= 0.5820 D₆₀= 0.1717

D₅₀= 0.1076 D₃₀= D₁₅=

D₁₀= C_u= C_c=

USCS= SM **Classification** AASHTO= A-4(0)

Remarks

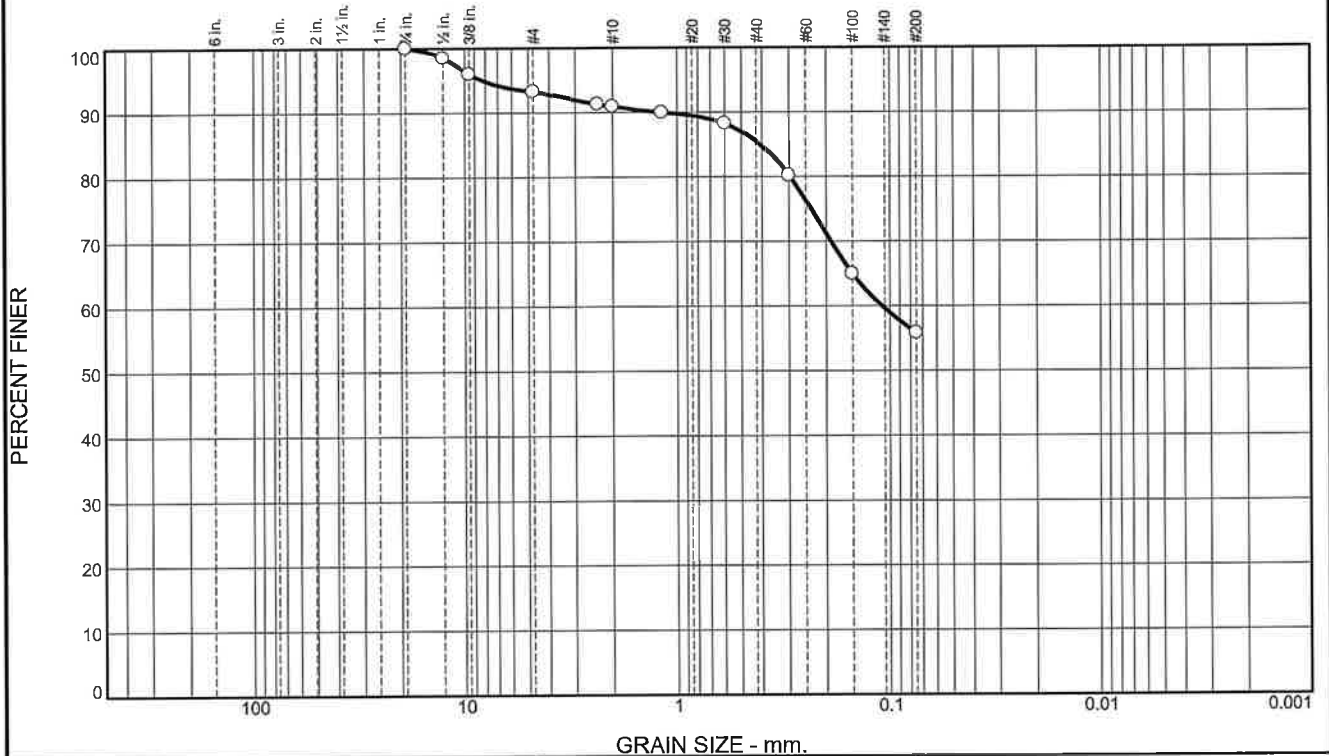
* (no specification provided)

Source of Sample: B-9 Depth: 1.0'-2.5' Date: 10-04-18
 Sample Number: SS-1

Wood Environment and Infrastructure Solutions, Inc. Nashville, Tennessee	Client: The Kroger Company Project: Pick N Save 902 Project No: 242418135
--	---

Tested By: NB Checked By: MH

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	6.8	2.3	5.5	29.6	55.8	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3/4"	100.0		
1/2"	98.5		
3/8"	96.0		
#4	93.2		
#8	91.3		
#10	90.9		
#16	89.9		
#30	88.2		
#50	80.2		
#100	65.0		
#200	55.8		

Material Description

sandy silt, gray brown

Atterberg Limits

PL= NP LL= NV PI= NP

Coefficients

D₉₀= 1.2265 D₈₅= 0.4115 D₆₀= 0.1090
 D₅₀= D₃₀= D₁₅=
 D₁₀= C_u= C_c=

Classification

USCS= ML AASHTO= A-4(0)

Remarks

(no specification provided)

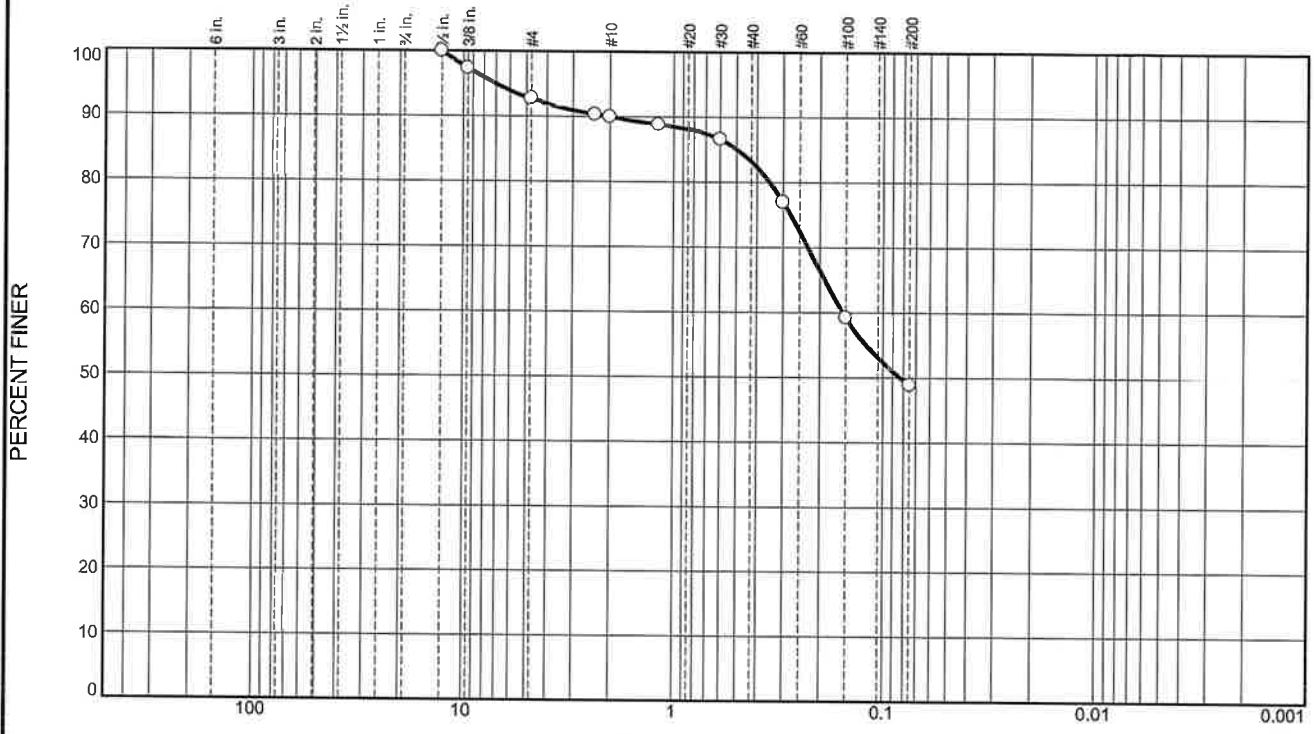
Source of Sample: B-10 Depth: 3.5'-5.0' Date: 10/04/18
 Sample Number: SS-2

**Wood Environment and
 Infrastructure Solutions, Inc.
 Nashville, Tennessee**

Client: The Kroger Company
 Project: Pick N Save 902
 Project No: 242418135

Tested By: NB Checked By: MH

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	7.3	2.8	6.7	34.3	48.9	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1/2"	100.0		
3/8"	97.3		
#4	92.7		
#8	90.3		
#10	89.9		
#16	88.8		
#30	86.6		
#50	77.0		
#100	59.2		
#200	48.9		

Material Description

silty, clayey sand, gray brown

Atterberg Limits

PL= 13 LL= 18 PI= 5

Coefficients

D₉₀= 2.0556 D₈₅= 0.4970 D₆₀= 0.1554
D₅₀= 0.0828 D₃₀= D₁₅=
D₁₀= C_u= C_c=

Classification

USCS= SC-SM AASHTO= A-4(0)

Remarks

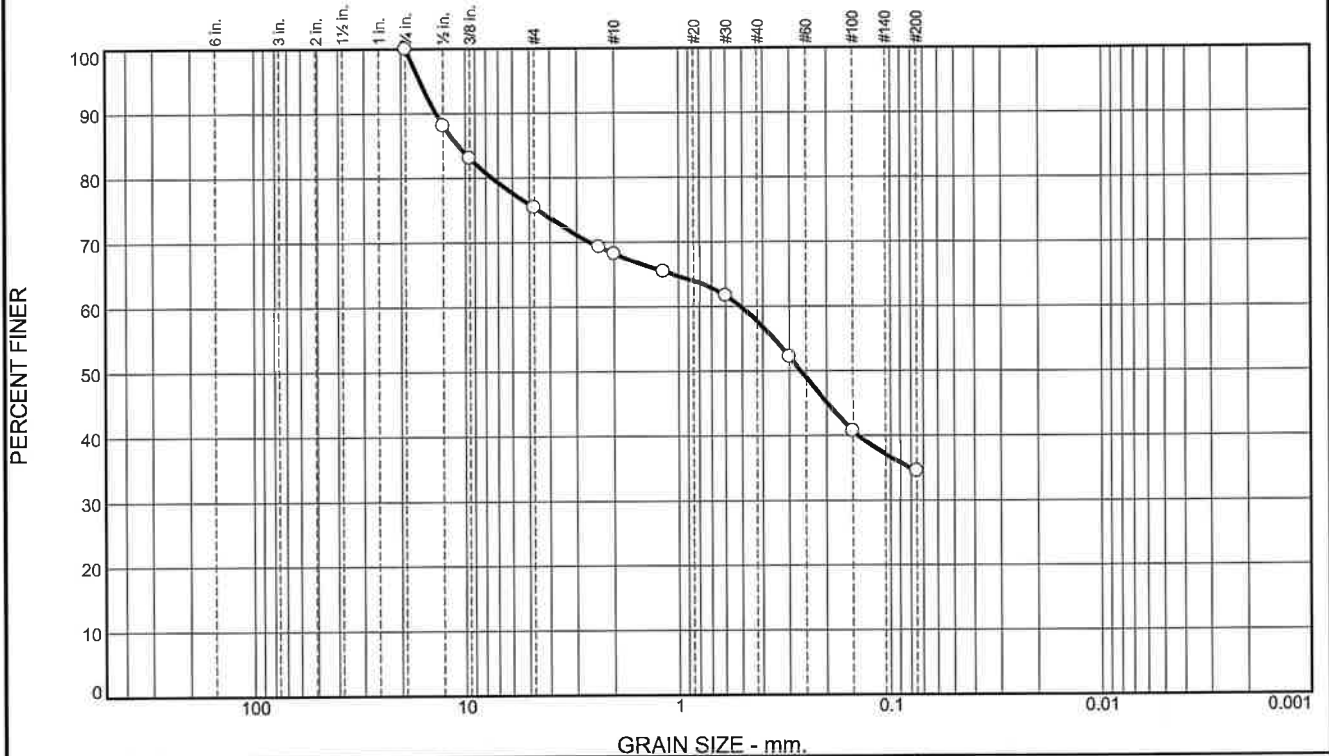
(no specification provided)

Source of Sample: B-11 Depth: 13.5'-15.0'
Sample Number: SS-5 Date: 10/04/18

Wood Environment and Infrastructure Solutions, Inc. Nashville, Tennessee	Client: The Kroger Company Project: Pick N Save 902 Project No: 242418135
--	--

Tested By: NB Checked By: MH

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	24.6	7.2	10.5	23.2	34.5	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3/4"	100.0		
1/2"	88.1		
3/8"	83.0		
#4	75.4		
#8	69.3		
#10	68.2		
#16	65.4		
#30	61.7		
#50	52.2		
#100	40.7		
#200	34.5		

Material Description

silty sand with gravel, gray brown

Atterberg Limits

PL= NP LL= NV PI= NP

Coefficients

D₉₀= 13.7271 D₈₅= 10.8438 D₆₀= 0.5095
D₅₀= 0.2649 C_u= D₁₅=
D₁₀= C_c=

Classification

USCS= SM AASHTO= A-2-4(0)

Remarks

(no specification provided)

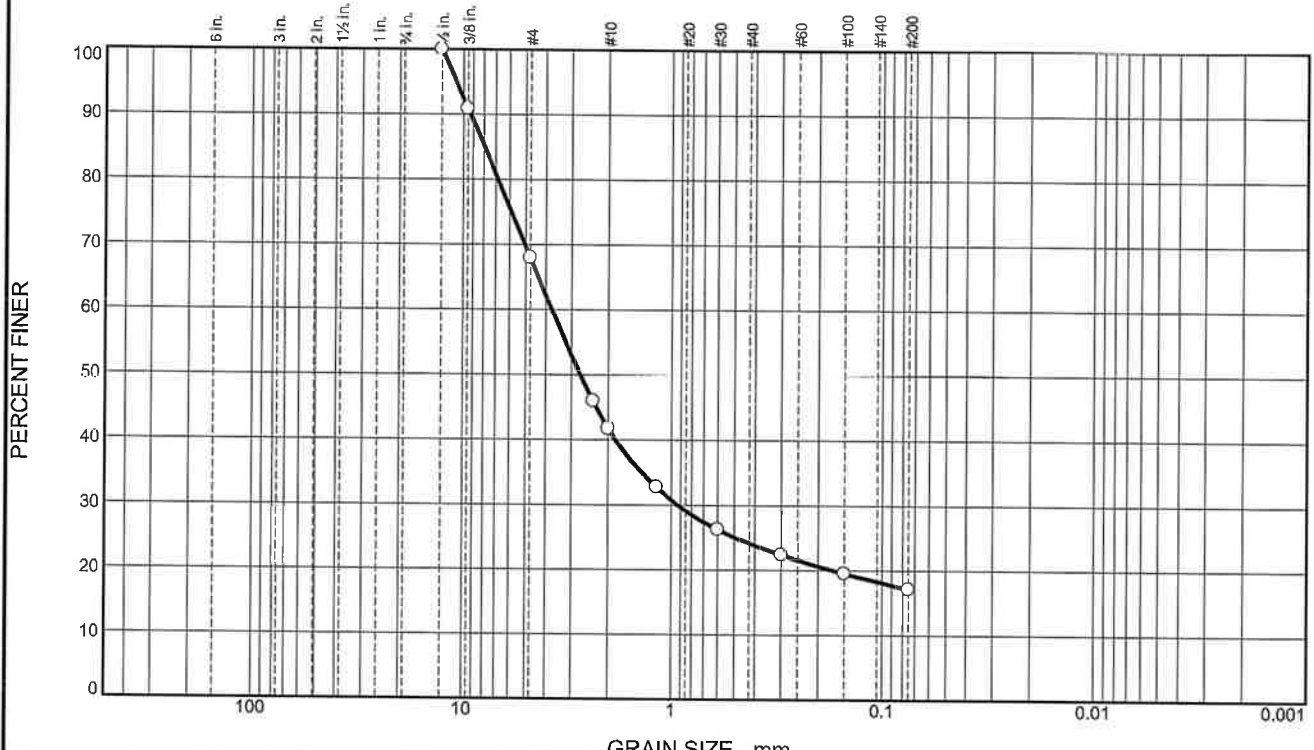
Source of Sample: B-12 Depth: 6.0'-7.5' Date: 10/04/18
Sample Number: SS-3

**Wood Environment and
Infrastructure Solutions, Inc.
Nashville, Tennessee**

Client: The Kroger Company
Project: Pick N Save 902
Project No: 242418135

Tested By: NB Checked By: MH

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	32.0	26.3	17.6	7.0	17.1	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1/2"	100.0		
3/8"	90.8		
#4	68.0		
#8	45.9		
#10	41.7		
#16	32.7		
#30	26.3		
#50	22.3		
#100	19.5		
#200	17.1		

Material Description

silty sand with gravel, white brown

PL= NP	Atterberg Limits	PI= NP
	LL= NV	
	Coefficients	
D ₉₀ = 9.2798	D ₈₅ = 7.9520	D ₆₀ = 3.7387
D ₅₀ = 2.7220	D ₃₀ = 0.9304	D ₁₅ =
D ₁₀ =	C _u =	C _c =
	Classification	
USCS= SM	AASHTO=	A-1-b
Remarks		

* (no specification provided)

Source of Sample: B-13 Depth: 1.0'-2.5'
 Sample Number: SS-1

Date: 10/04/18

<p style="text-align: center;">Wood Environment and Infrastructure Solutions, Inc. Nashville, Tennessee</p>	<p>Client: The Kroger Company Project: Pick N Save 902 Project No: 242418135</p>
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Tested By: NB Checked By: MH

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	15.7	6.6	10.9	34.0	32.8	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3/4"	100.0		
1/2"	95.4		
3/8"	91.5		
#4	84.3		
#8	78.8		
#10	77.7		
#16	75.0		
#30	71.4		
#50	59.6		
#100	41.9		
#200	32.8		

Material Description

silty sand with gravel, gray brown

Atterberg Limits

PL= NP LL= NV PI= NP

Coefficients

D₉₀= 8.4812 D₈₅= 5.1621 D₆₀= 0.3048
D₅₀= 0.2089 D₃₀= D₁₅=
D₁₀= C_u= C_c=

Classification

USCS= SM AASHTO= A-2-4(0)

Remarks

(no specification provided)

Source of Sample: B-19
Sample Number: SS-1

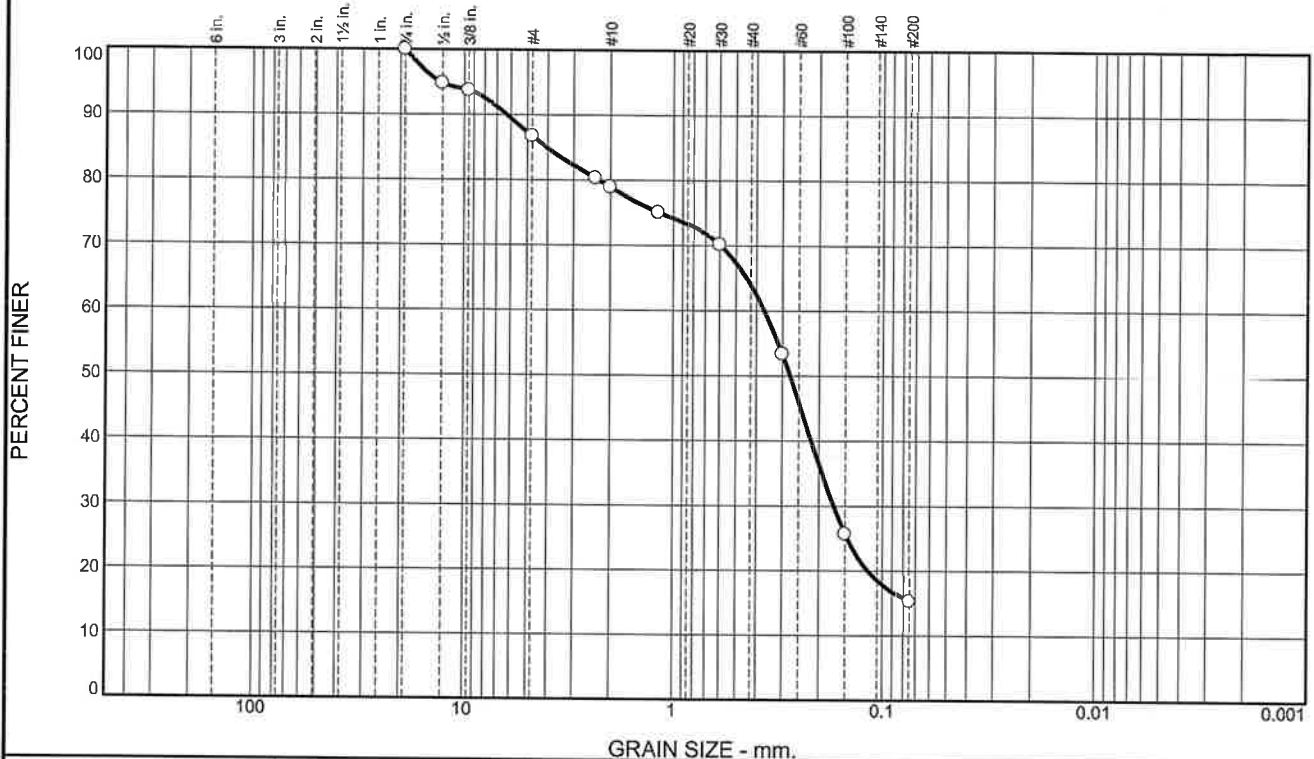
Depth: 1.0'-2.5'

Date: 10/04/18

Wood Environment and Infrastructure Solutions, Inc. Nashville, Tennessee	Client: The Kroger Company Project: Pick N Save 902 Project No: 242418135
---	---

Tested By: NB Checked By: MH

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	13.3	7.8	14.9	48.7	15.3	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3/4"	100.0		
1/2"	94.8		
3/8"	93.7		
#4	86.7		
#8	80.3		
#10	78.9		
#16	75.1		
#30	70.2		
#50	53.4		
#100	25.7		
#200	15.3		

Material Description

silty sand, tan brown

PL= NP	Atterberg Limits	PI= NP
	LL= NV	
	Coefficients	
D ₉₀ = 6.2669	D ₈₅ = 4.0496	D ₆₀ = 0.3662
D ₅₀ = 0.2754	D ₃₀ = 0.1705	D ₁₅ =
D ₁₀ =	C _u =	C _c =
USCS= SM	Classification	AASHTO= A-2-4(0)
	Remarks	

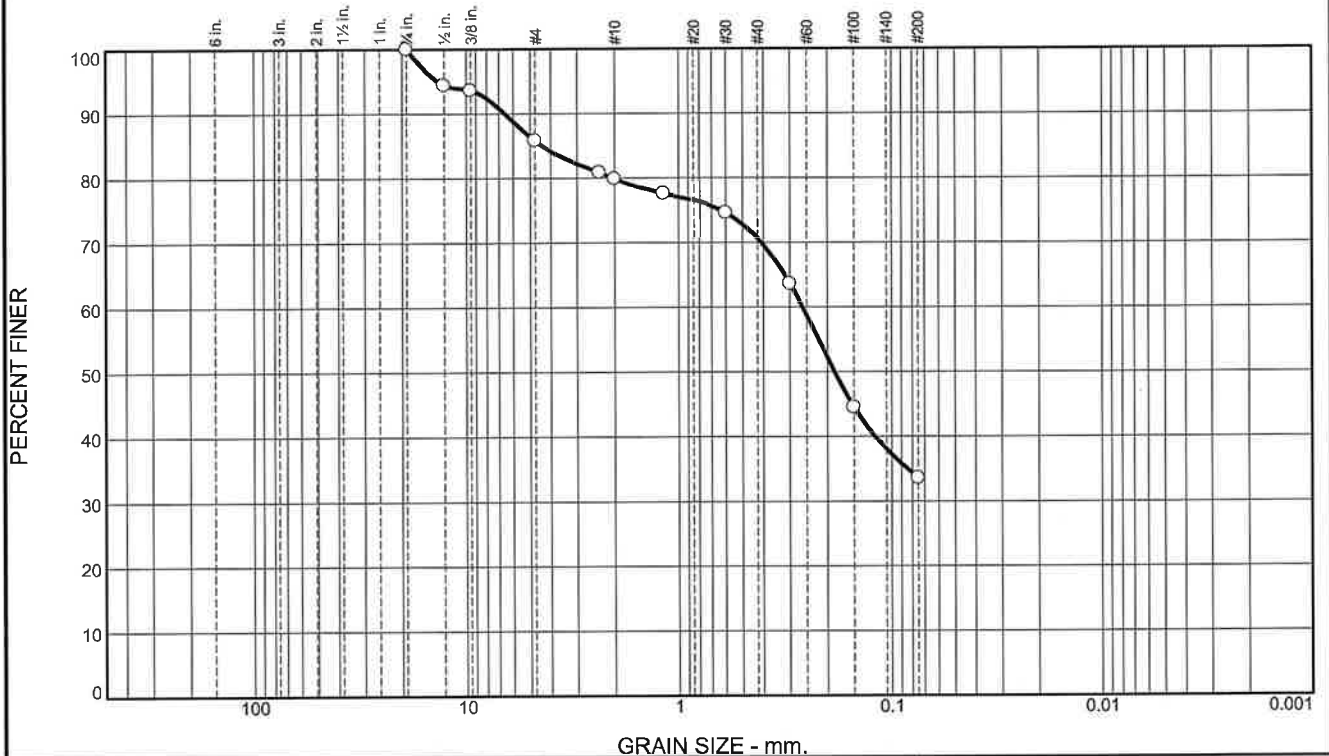
* (no specification provided)

Source of Sample: B-20 Depth: 38.5'-40.0'
 Sample Number: SS-9 Date: 10/04/18

Wood Environment and Infrastructure Solutions, Inc. Nashville, Tennessee	Client: The Kroger Company Project: Pick N Save 902 Project No: 242418135
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Tested By: NB Checked By: MH

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	14.2	6.0	9.2	37.1	33.5	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3/4"	100.0		
1 1/2"	94.4		
3/8"	93.6		
#4	85.8		
#8	80.8		
#10	79.8		
#16	77.5		
#30	74.6		
#50	63.6		
#100	44.5		
#200	33.5		

Material Description

silty sand, gray brown

Atterberg Limits

PL= NP LL= NV PI= NP

Coefficients

D₉₀= 6.5503 D₈₅= 4.4181 D₆₀= 0.2617
D₅₀= 0.1852 D₃₀= D₁₅=
D₁₀= C_u= C_c=

Classification

USCS= SM AASHTO= A-2-4(0)

Remarks

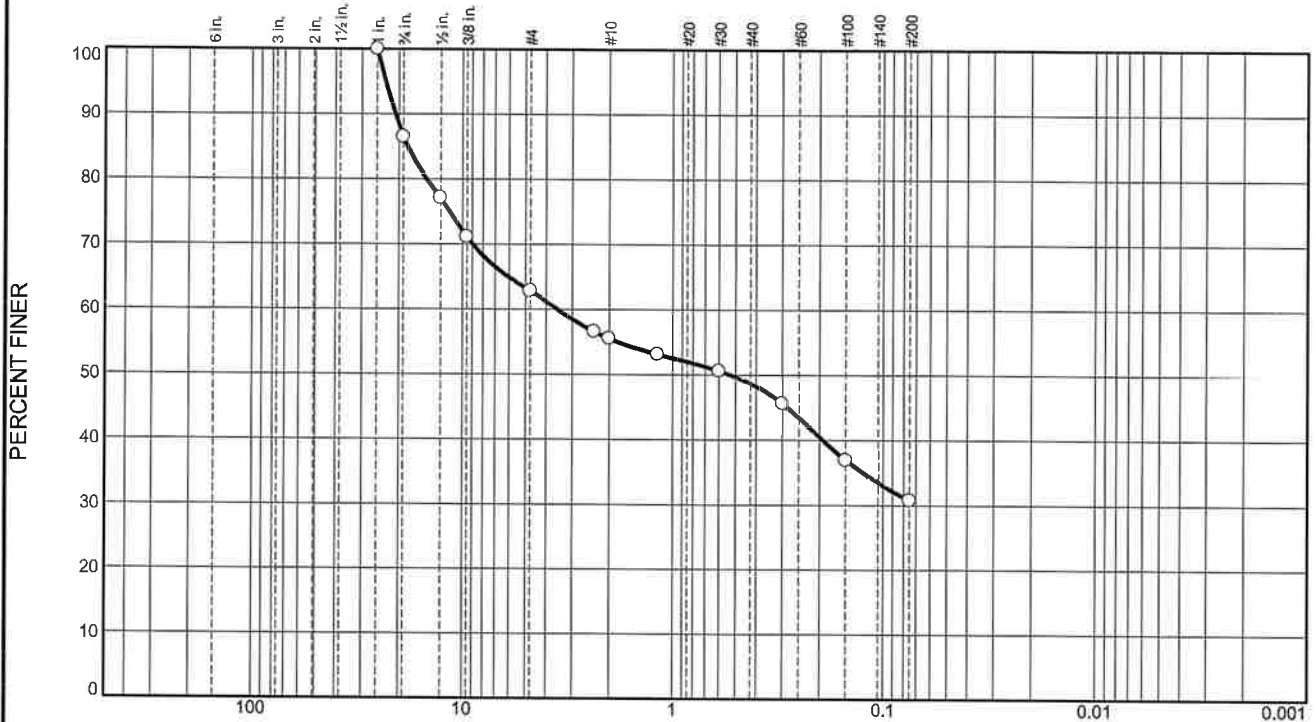
* (no specification provided)

Source of Sample: B-21 Depth: 3.5'-5.0' Date: 10/04/18
Sample Number: SS-2

Wood Environment and Infrastructure Solutions, Inc. Nashville, Tennessee	Client: The Kroger Company Project: Pick N Save 902 Project No: 242418135
---	--

Tested By: NB Checked By: MH

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	13.5	23.7	7.3	6.9	17.8	30.8	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1"	100.0		
3/4"	86.5		
1/2"	77.0		
3/8"	71.1		
#4	62.8		
#8	56.6		
#10	55.5		
#16	53.1		
#30	50.6		
#50	45.6		
#100	36.9		
#200	30.8		

Material Description

silty clayey gravel with sand, brown

Atterberg Limits
 PL= 14 LL= 19 PI= 5

Coefficients
 D₉₀= 20.7766 D₈₅= 18.2471 D₆₀= 3.5294
 D₅₀= 0.5315 D₃₀= D₁₅=
 D₁₀= C_u= C_c=

Classification
 USCS= GC-GM AASHTO= A-2-4(0)

Remarks

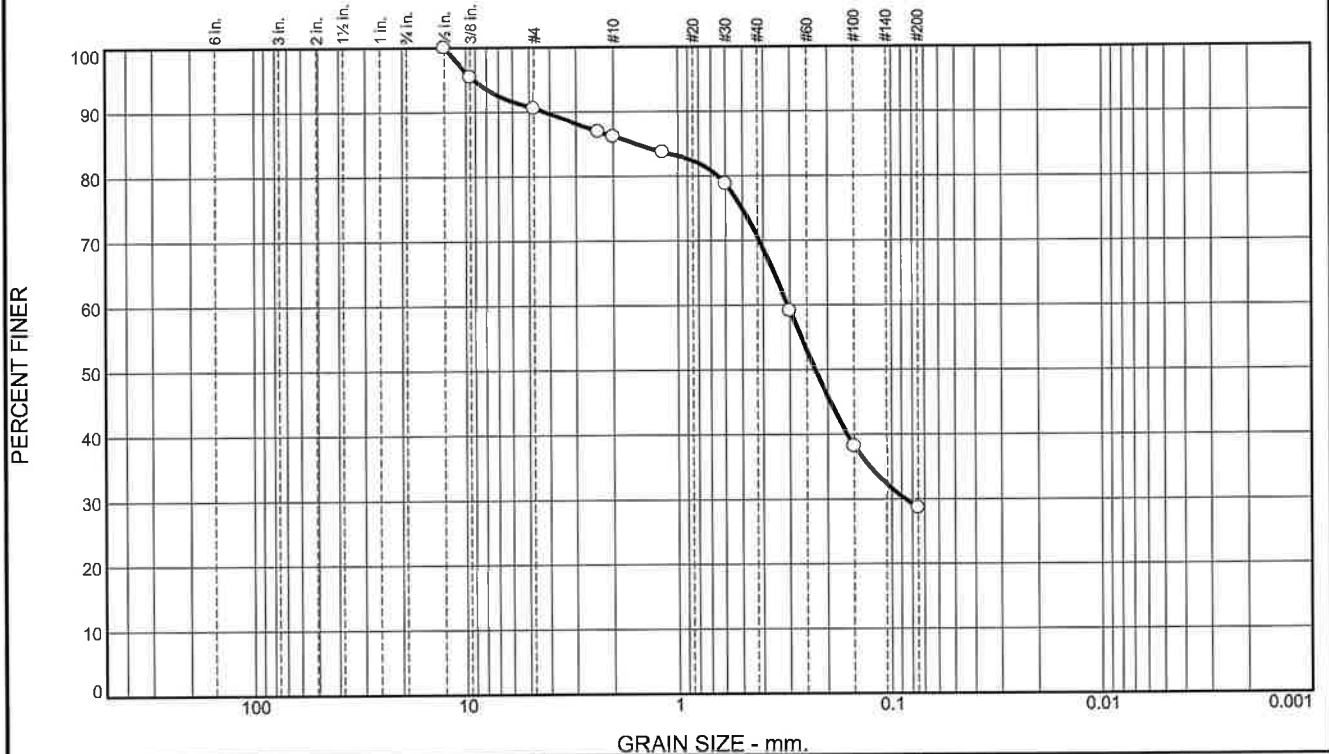
(no specification provided)

Source of Sample: B-24 Depth: 28.5'-30.0'
 Sample Number: SS-8 Date: 10/04/18

<p style="text-align: center;">Wood Environment and Infrastructure Solutions, Inc. Nashville, Tennessee</p>	<p>Client: The Kroger Company Project: Pick N Save 902 Project No: 242418135</p>
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Tested By: NB Checked By: MH

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	9.5	4.4	15.6	41.9	28.6	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1/2"	100.0		
3/8"	95.5		
#4	90.5		
#8	86.9		
#10	86.1		
#16	83.6		
#30	78.8		
#50	59.1		
#100	38.2		
#200	28.6		

Material Description

silty sand, gray brown

Atterberg Limits

PL= NP LL= NV PI= NP

Coefficients

D₉₀= 4.2474 D₆₀= 0.3078
D₅₀= 0.2287 D₃₀= 0.0863 D₁₅=
D₁₀= C_u= C_c=

Classification

USCS= SM AASHTO= A-2-4(0)

Remarks

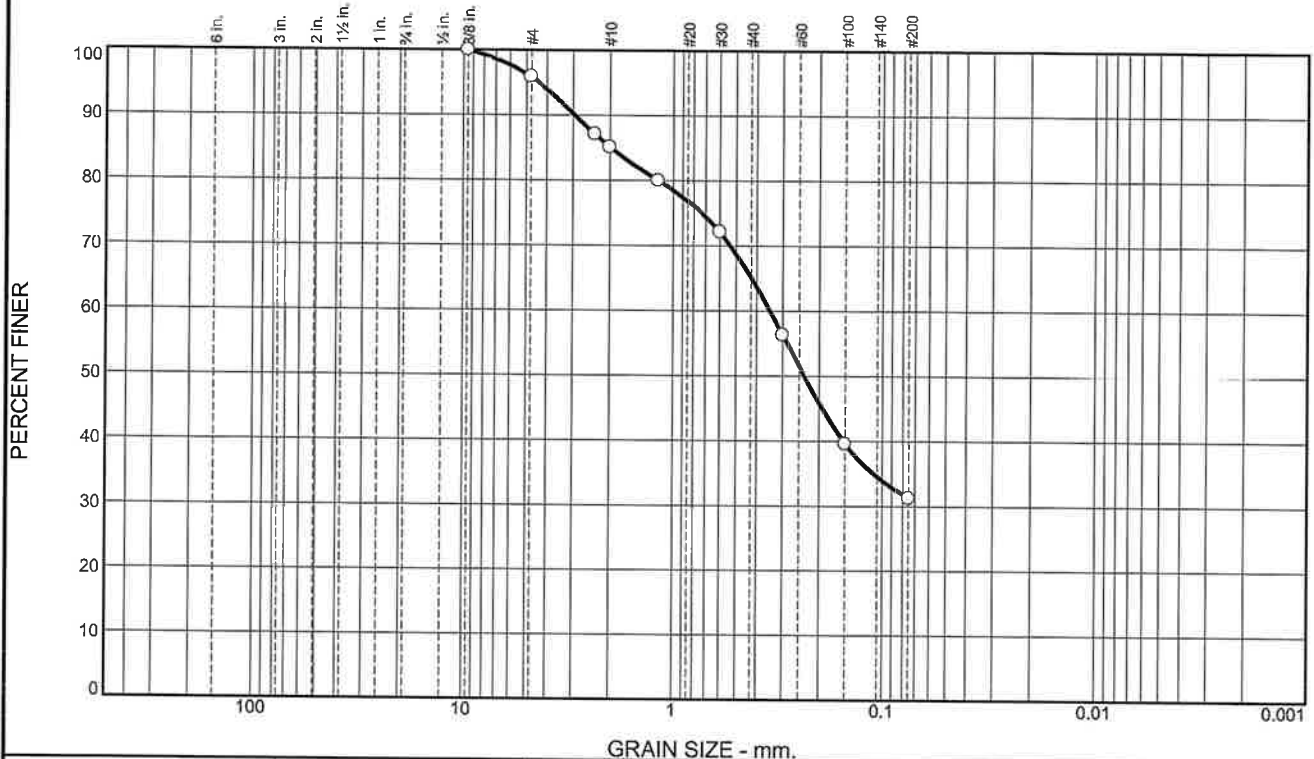
* (no specification provided)

Source of Sample: B-26 Depth: 3.5'-5.0' Date: 10/04/18
Sample Number: SS-2

Wood Environment and Infrastructure Solutions, Inc. Nashville, Tennessee	Client: The Kroger Company Project: Pick N Save 902 Project No: 242418135
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Tested By: NB Checked By: MH

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	4.2	10.7	20.0	33.9	31.2	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3/8"	100.0		
#4	95.8		
#8	87.1		
#10	85.1		
#16	80.0		
#30	72.1		
#50	56.3		
#100	39.6		
#200	31.2		

Material Description

silty sand, tan brown

PL= NP	Atterberg Limits	PI= NP
	LL= NV	
	Coefficients	
D ₉₀ = 2.9439	D ₈₅ = 1.9851	D ₆₀ = 0.3457
D ₅₀ = 0.2363	D ₃₀ =	D ₁₅ =
D ₁₀ =	C _u =	C _c =
	Classification	
USCS= SM	AASHTO=	A-2-4(0)
	Remarks	

* (no specification provided)

Source of Sample: B-29/B-30 Depth: 1.0'-15.0' Date: 9/28/18
 Sample Number: Bulk

Wood Environment and Infrastructure Solutions, Inc. Nashville, Tennessee	Client: The Kroger Company Project: Pick N Save 902 Project No: 242418135
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Tested By: KM Checked By: MH



pH & Resistivity of Soils

ASTM D4972 & ASTM G57

CLIENT:	Kroger Company	PROJECT NO.:	2424-18-135
PROJECT NAME:	Pick n Save 902	DATE:	September 26, 2018
Reviewed By:		Tested By:	KM/MH
Boring	B-29 & B-30	Sample Type	Bulk
Description	silty sand		
Color	tan brown		
Depth	1.0'-15.0'		

pH of Soil

Preparation Method

Seived through #10: YES NO
 Removal of gravel or other materials from original sample: YES NO

Test Method

Method A (pH Meter) Method B (pH Paper)

Container ID: 91
 Sample Temperature: 21.6

pH Value

9.19

Resistivity of Soil

Resistivity Meter Make & Model DUOYI DY4300 Soil Box Factor 1

Container ID: SB-1
 Sample Temperature: 22.0

**Resistivity
(ohms/cm)**

1580

Remarks _____



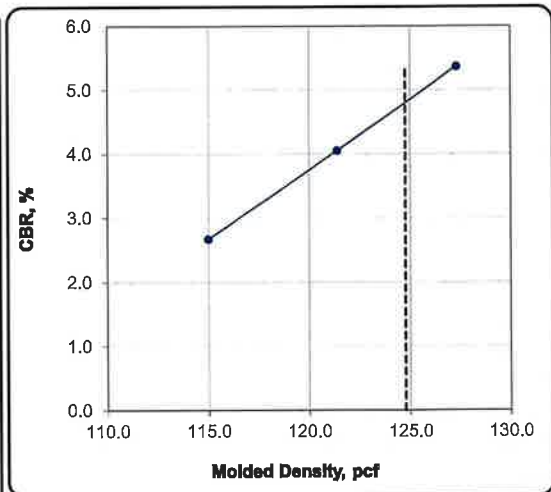
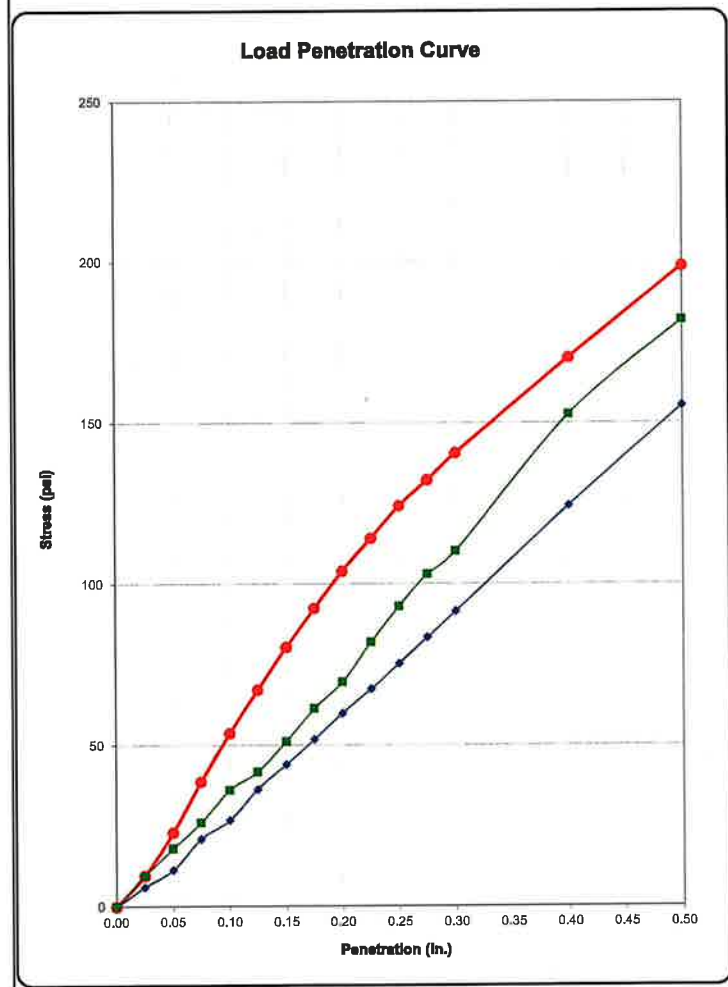
**WOOD
ENVIRONMENT AND INFRASTRUCTURE SOLUTIONS, INC.
NASHVILLE, TN**

**ASTM D1883 - STANDARD METHOD FOR CBR (CALIFORNIA
BEARING RATIO) OF LABORATORY-COMPACTED SOILS**

Project Name:	Kroger Pick N Save 902	Date of Preparation:	October 4, 2018
Project Number:	242418135	Date of Test:	10/5-10/8/18
Reviewed By:		Tested By:	M. Haley
Sample ID:	Boring B-29 & B-30	Sample:	Bulk
Remarks:	Specimens compacted to approximately 90%, 95%, and 100% of the maximum density near the optimum moisture content.		

Specimen / Mark	PRE-TEST			POST-TEST			CBR, (%)		Line	Penetration	Swell
	Density	% max	Moist. (%)	Density	% max	Moist. (%)	0.1"	0.2"	corr.	Surcharge	(%)
1 ◆	115.0	90.3	9.7	113.4	89.1	11.2%	2.7	4.0	0.000	10.0	0.00
2 ■	121.4	95.4	9.9	120.9	95.0	10.4%	4.1	5.3	0.020	10.0	-0.01
3 ●	127.3	100.0	9.5	126.9	99.7	9.9%	5.4	6.9	0.000	10.0	-0.01

MATERIAL DESCRIPTION	USCS	MAX.DENS.	OPT. M%	LL	PI
sandy silt, tan brown	SM	127.3	9.5	NV	NP



**CBR @ 98.0% = 4.8
for 0.1 in. penetration**

ATTERBERG LIMITS

ASTM D 4318-17

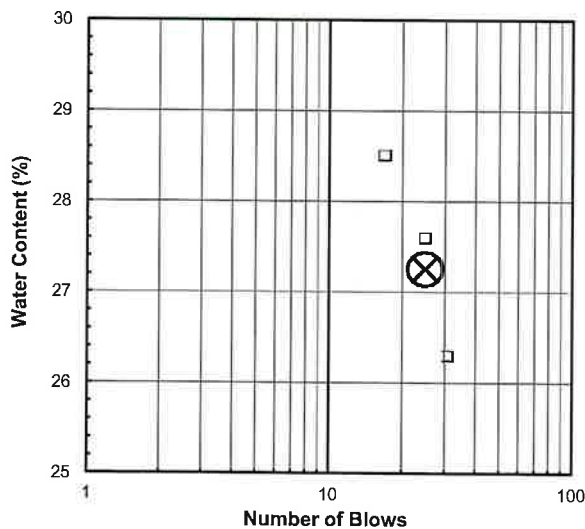
Client:	Wood PLC	Boring No.:	B-20
Client Reference:	2424-18-135 (PS-902)	Depth (ft):	8.5-10.5
Project No.:	N2018-028-001	Sample No.:	ST-1
Lab ID:	N2018-028-001-001	Soil Description:	DARK BROWN LEAN CLAY

Note: The USCS symbol used with this test refers only to the minus No. 40 (Minus No. 40 sieve material, Air dried) sieve material. See the "Sieve and Hydrometer Analysis" graph page for the complete material description.

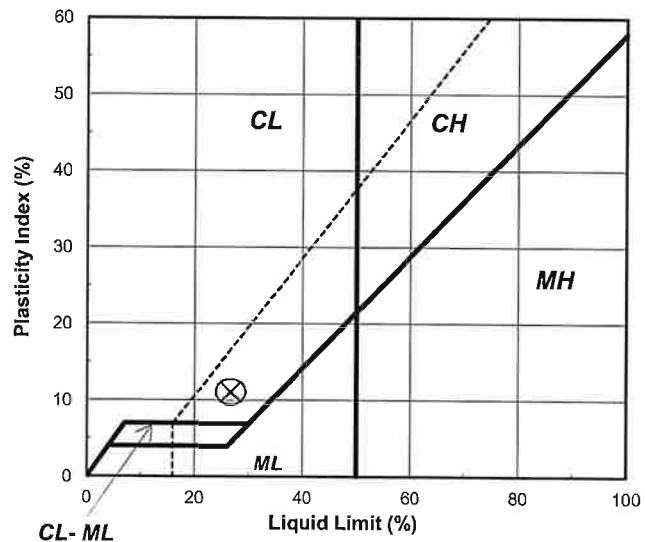
As Received Moisture Content		Liquid Limit Test			
ASTM D2216-10		1	2	3	M
Tare Number:	T19	13	36	16	U
Wt. of Tare & Wet Sample (g):	305.19	48.10	43.73	42.40	L
Wt. of Tare & Dry Sample (g):	266.50	42.11	38.32	37.11	T
Weight of Tare (g):	8.36	19.33	18.72	18.55	I
Weight of Water (g):	38.7	6.0	5.4	5.3	P
Weight of Dry Sample (g):	258.1	22.8	19.6	18.6	O
Was As Received MC Preserved:	Yes				I
Moisture Content (%):	15.0	26.3	27.6	28.5	N
Number of Blows:		31	25	17	T

Plastic Limit Test	1	2	Range	Test Results	
Tare Number:	7	48		Liquid Limit (%):	27
Wt. of Tare & Wet Sample (g):	25.11	25.15		Plastic Limit (%):	16
Wt. of Tare & Dry Sample (g):	24.25	24.30		Plasticity Index (%):	11
Weight of Tare (g):	18.94	19.03		USCS Symbol:	CL
Weight of Water (g):	0.9	0.8			
Weight of Dry Sample (g):	5.3	5.3			
Moisture Content (%):	16.2	16.1	0.1		
<i>Note: The acceptable range of the two Moisture Contents is \pm 1.12</i>					

Flow Curve



Plasticity Chart



Tested By RT Date 10/3/18 Checked By WDS Date 10/4/18

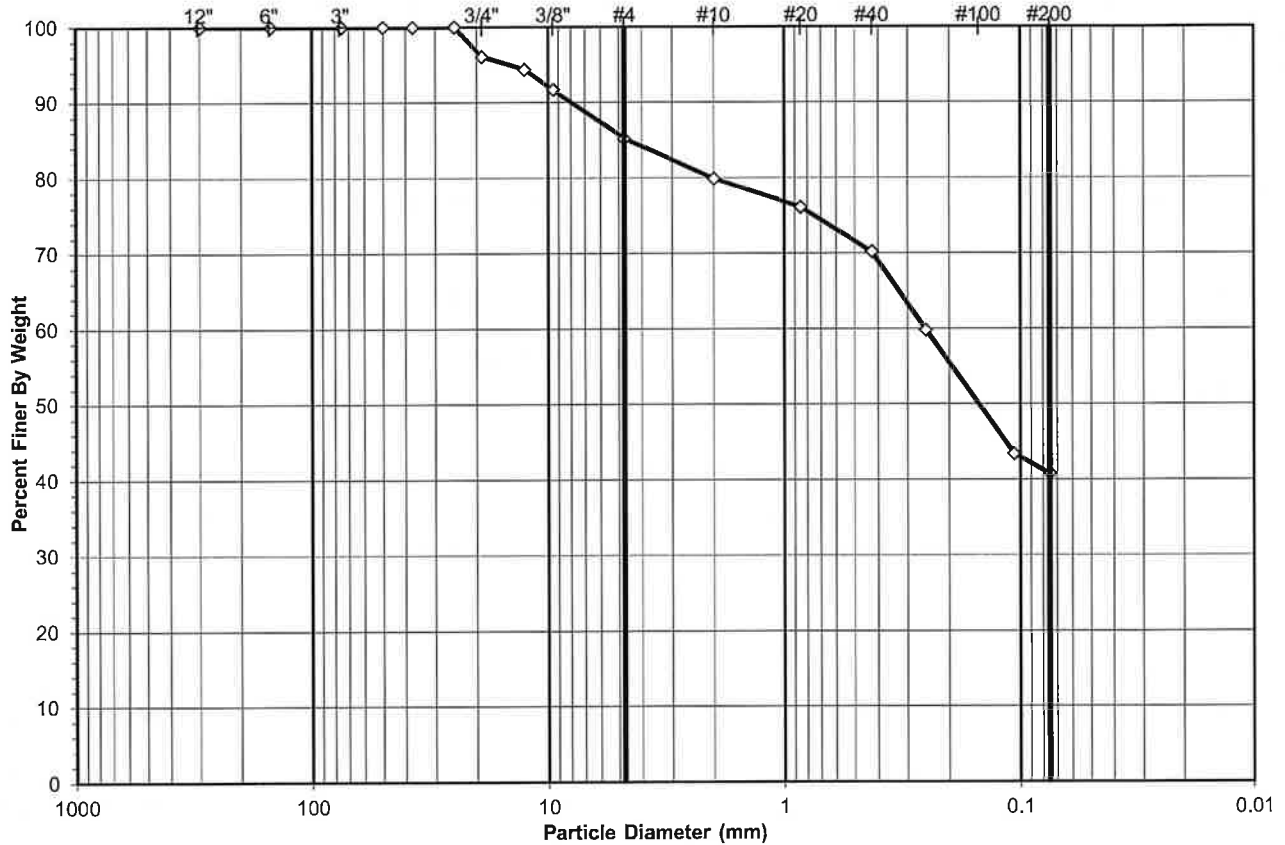
SIEVE ANALYSIS
ASTM D 422-63 (2007)



Client: Wood PLC
 Client Reference: 2424-18-135 (PS-902)
 Project No.: N2018-028-001
 Lab ID: N2018-028-001-001

Boring No.: B-20
 Depth (ft): 8.5-10.5
 Sample No.: ST-1
 Soil Color: Dark Brown

USCS USDA	SIEVE ANALYSIS				HYDROMETER	
	cobbles	gravel	sand		silt and clay fraction	
	cobbles	gravel	sand		silt	clay



USCS Summary		
Sieve Sizes (mm)		Percentage
Greater Than #4	Gravel	14.84
#4 To #200	Sand	44.46
Finer Than #200	Silt & Clay	40.70
USCS Symbol: <i>SC, TESTED</i>		
USCS Classification: <i>CLAYEY SAND</i>		

WASH SIEVE ANALYSIS

ASTM D 422-63 (2007)



Client: Wood PLC
 Client Reference: 2424-18-135 (PS-902)
 Project No.: N2018-028-001
 Lab ID: N2018-028-001-001

Boring No.: B-20
 Depth (ft): 8.5-10.5
 Sample No.: ST-1
 Soil Color: Dark Brown

Moisture Content of Passing 3/4" Material		Moisture Content of Retained 3/4" Material	
Tare No.:	55	Tare No.:	NA
Wt. of Tare & Wet Sample (g):	1588.84	Weight of Tare & Wet Sample (g):	NA
Wt. of Tare & Dry Sample (g):	1464.08	Weight of Tare & Dry Sample (g):	NA
Weight of Tare (g):	203.61	Weight of Tare (g):	NA
Weight of Water (g):	124.76	Weight of Water (g):	NA
Weight of Dry Soil (g):	1260.47	Weight of Dry Soil (g):	NA
Moisture Content (%):	9.9	Moisture Content (%):	0.0

Wet Weight of -3/4" Sample (g):	NA	Weight of the Dry Sample (g):	1260.47
Dry Weight of - 3/4" Sample (g):	1260.5	Weight of Minus #200 Material (g):	534.29
Wet Weight of +3/4" Sample (g):	52.19	Weight of Plus #200 Material (g):	726.18
Dry Weight of + 3/4" Sample (g):	52.19		
Total Dry Weight of Sample (g):	1312.7		

Sieve Size	Sieve Opening (mm)	Weight of Soil Retained (g)	Percent Retained (%)	Accumulated Percent Retained (%)	Percent Finer (%)	Accumulated Percent Finer (%)
12"	300	0.00	0.00	0.00	100.00	100.00
6"	150	0.00	0.00	0.00	100.00	100.00
3"	75	0.00	0.00	0.00	100.00	100.00
2"	50	0.00	(*)	0.00	100.00	100.00
1 1/2"	37.5	0.00		0.00	100.00	100.00
1"	25.0	0.00		0.00	100.00	100.00
3/4"	19.0	52.19		3.98	96.02	96.02
1/2"	12.5	22.80		1.81	98.19	94.29
3/8"	9.50	34.49		2.74	95.45	91.66
#4	4.75	85.34		6.77	88.68	85.16
#10	2.00	69.32		5.50	83.18	79.88
#20	0.85	49.88	(**)	3.96	79.23	76.08
#40	0.425	77.40		6.14	73.09	70.18
#60	0.250	136.52		10.83	62.26	59.78
#140	0.106	215.60		17.10	45.15	43.36
#200	0.075	34.83		2.76	42.39	40.70
Pan	-	534.29		42.39	-	-

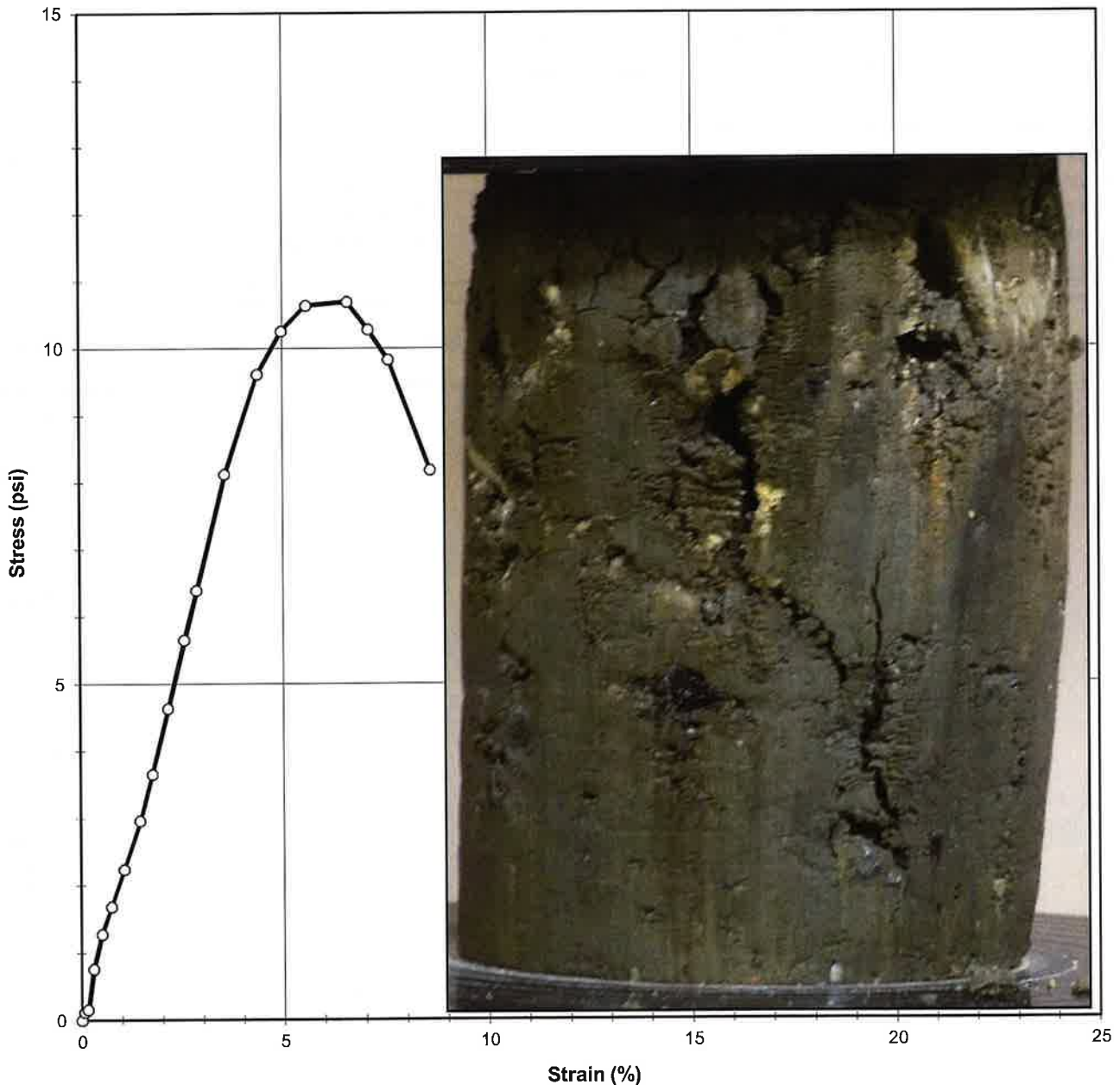
Notes : (*) The + 3/4" sieve analysis is based on the Total Dry Weight of the Sample
 (**) The - 3/4" sieve analysis is based on the Weight of the Dry Sample

Tested By NC Date 10/7/2018 Checked By WDS Date 10/8/2018

UNCONFINED COMPRESSIVE STRENGTH
 ASTM D2166-16 / AASHTO T208-15 (SOP S-30)

Client: Wood PLC
 Client Reference: 2424-18-135 (PS-902)
 Project No.: N2018-028-001
 Lab ID: N2018-028-001-001

Boring No.: B-20
 Depth (ft): 9.1-9.5
 Sample No.: ST-1
 Visual: DARK BROWN CLAYEY SAND



Tested By NC Date 10/1/2018 Approved By WDS Date 10/2/2018

UNCONFINED COMPRESSIVE STRENGTH
ASTM D2166-16 / AASHTO T208-15 (SOP S-30)



Client: Wood PLC
 Client Reference: 2424-18-135 (PS-902)
 Project No.: N2018-028-001
 Lab ID: N2018-028-001-001

Boring No.: B-20
 Depth (ft): 9.1-9.5
 Sample No.: ST-1
 Visual: DARK BROWN CLAYEY SAND

INITIAL SAMPLE DIMENSIONS				WATER CONTENT AFTER TEST	
Length 1 (in):	4.709	Top Diameter (in):	2.867	Tare No.:	26
Length 2 (in):	4.684	Middle Diameter (in):	2.861	Weight of Tare & Wet Sample (g):	105.29
Length 3 (in):	4.714	Bottom Diameter (in):	2.845	Weight of Tare & Dry Sample (g):	92.50
Avg. Length (in):	4.702	Avg. Diameter (in):	2.858	Weight of Tare (g):	6.42
		Area (in²):	6.414	Moisture Content (%):	14.86

UNIT WEIGHT			
Weight of Tube & Wet Sample (g):	1053.14	Sample Volume (cm ³):	494.2
Weight of Tube (g):	0.0	Unit Wet Weight (g/cm ³):	2.13
Weight of Wet Sample (g):	1053.14	Unit Wet Weight (pcf):	132.97
Average Diameter (in):	2.86	Moisture Content (%):	14.86
Average Length (in):	4.70	Unit Dry Weight (pcf):	115.77
Average Length (cm):	11.94		

ELECTRONIC DEVICE					
DEFORMATION	LOAD	ELAPSED TIME	STRAIN	STRESS	
(in)	(lb)	(min)	(%)	(psi)	
0.000	0.3	0.00	0.000	0.000	
0.003	1.1	0.08	0.070	0.115	
0.007	1.3	0.15	0.156	0.153	
0.014	5.2	0.28	0.290	0.758	
0.023	8.6	0.48	0.500	1.274	
0.035	11.2	0.70	0.738	1.684	
0.050	14.8	1.00	1.053	2.235	
0.068	19.6	1.38	1.453	2.961	
0.083	24.2	1.67	1.759	3.650	
0.102	30.7	2.05	2.159	4.628	
0.120	37.5	2.43	2.560	5.649	
0.135	42.5	2.72	2.866	6.389	
0.168	54.3	3.38	3.573	8.118	
0.206	64.8	4.15	4.375	9.608	
0.234	69.5	4.72	4.977	10.251	
0.262	72.6	5.28	5.578	10.631	
0.310	73.7	6.23	6.589	10.691	
0.334	71.3	6.72	7.104	10.273	
0.357	68.5	7.17	7.590	9.817	
0.404	57.7	8.12	8.591	8.179	

Notes: Sample tested less than 2:1 ratio due to large stone causing void in Shelby tube.

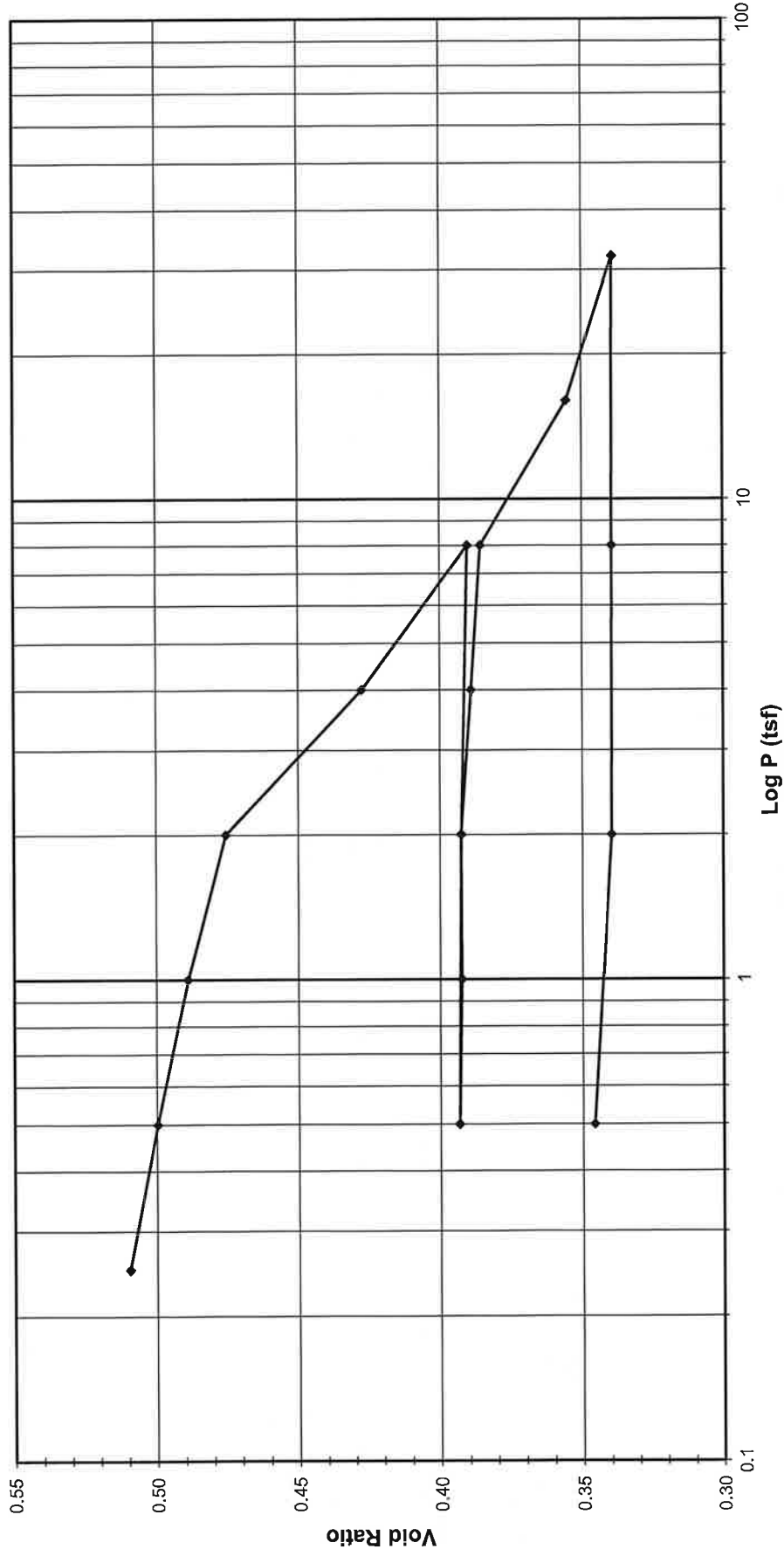
Tested By NC Date 10/1/2018 Input Checked By WDS Date 10/2/2018

ONE DIMENSIONAL CONSOLIDATION

ASTM D 2435-11

Client	Wood PLC	Boring No.	B-20
Client Reference	2424-18-135 (PS-902)	Depth (ft)	8.5-10.5
Project No.	N-2018-028-001	Sample No.	ST-1
Lab ID	N-2018-028-001-001	Visual Description	DARK BROWN CLAYEY SAND

Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED





ONE DIMENSIONAL CONSOLIDATION

ASTM D 2435-11

Client	Wood PLC	Boring No.	B-20
Client Reference	2424-18-135 (PS-902)	Depth (ft)	8.5-10.5
Project No.	N-2018-028-001	Sample No.	ST-1
Lab ID	N-2018-028-001-001	Visual Description	DARK BROWN CLAYEY SAND

Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED

Consolidometer No. N144

1 Division = 0.0001 (in.)

Sample Properties

	Initial	Final
<i>Water Content</i>		5
Tare Number	T19	
Wt. Tare & WS (g)	305.19	251.97
Wt. Tare & DS (g)	266.50	233.40
Wt. Water (g)	38.69	18.57
Wt. Tare (g)	8.36	88.40
Wt. DS (g)	258.14	145.00
Water Content (%)	14.99	12.81

Sample Parameters

Sample Diameter (in)	2.5	2.5
Sample Height (in)	1.0000	0.8866
Sample Volume (cc)	80.44	71.32
Wt. Wet Sample + Ring (g)	379.61	376.49
Wt. of Ring (g)	215.10	215.10
Wt. of Wet Sample (g)	164.51	161.39
Wet Density (pcf)	127.62	141.21
Wet Density (g/cc)	2.05	2.26
Water Content (%)	14.99	12.81
Wt. of Dry Sample (g)	143.07	143.07
Dry Density (pcf)	110.98	125.18
Dry Density (g/cc)	1.78	2.01
Void Ratio	0.5181	0.3459
Saturation (%)	78.11	99.97
Specific Gravity	2.70	Assumed

Test Data Summary

Applied Pressure (tsf)	Final Dial Reading (div)	Machine Deflection (div)	Corrected Reading (div)	Height of Sample (mm)	Volume (cc)	Dry Density (g/cc)	Void Ratio
Seating	0	0	0	25.400	80.440	1.77856	0.51808
0.25	79.1	22.8	56.3	25.257	79.987	1.78864	0.50953
0.5	152.0	31.3	120.7	25.093	79.469	1.80029	0.49976
1	246.2	53.3	192.9	24.910	78.888	1.81355	0.48880
2	361.2	79.9	281.3	24.686	78.177	1.83004	0.47538
4	708.6	112.6	596.0	23.886	75.646	1.89128	0.42760
8	993.7	152.6	841.0	23.264	73.674	1.94188	0.39040
2	933.6	107.2	826.4	23.301	73.792	1.93879	0.39262
0.5	884.8	64.1	820.7	23.315	73.838	1.93758	0.39349
1	896.8	70.0	826.8	23.300	73.789	1.93887	0.39256
2	914.1	88.4	825.7	23.303	73.798	1.93863	0.39274
4	962.0	113.2	848.8	23.244	73.612	1.94353	0.38922
8	1022.6	151.3	871.4	23.187	73.431	1.94833	0.38580
16	1272.5	201.5	1071.0	22.680	71.825	1.99189	0.35550
32	1463.7	286.0	1177.7	22.409	70.966	2.01598	0.33930
8	1371.7	195.3	1176.4	22.412	70.977	2.01569	0.33949
2	1303.6	128.7	1174.9	22.416	70.989	2.01534	0.33972
0.5	1204.6	70.4	1134.3	22.519	71.316	2.00610	0.34589

Tested By NC Date 10/1/2018 Input Checked By DS Date 10/16/2018

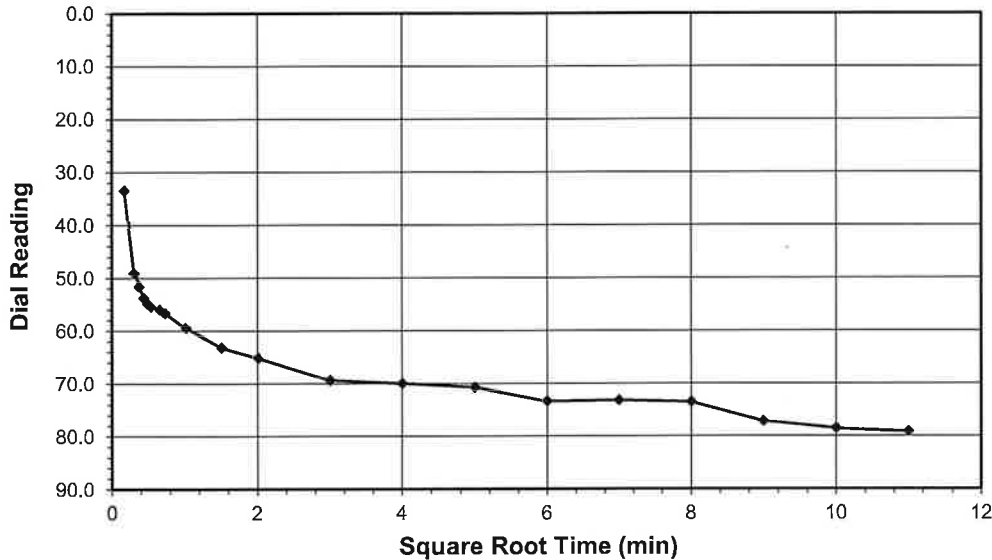


ONE DIMENSIONAL CONSOLIDATION
ASTM D 2435-11

Client Wood PLC
 Client Project 2424-18-135 (PS-902)
 Project No. N-2018-028-001
 Lab ID N-2018-028-001-001

Boring No. B-20
 Depth (ft) 8.5-10.5
 Sample No. ST-1
 Visual Description DARK BROWN CLAYEY SAND

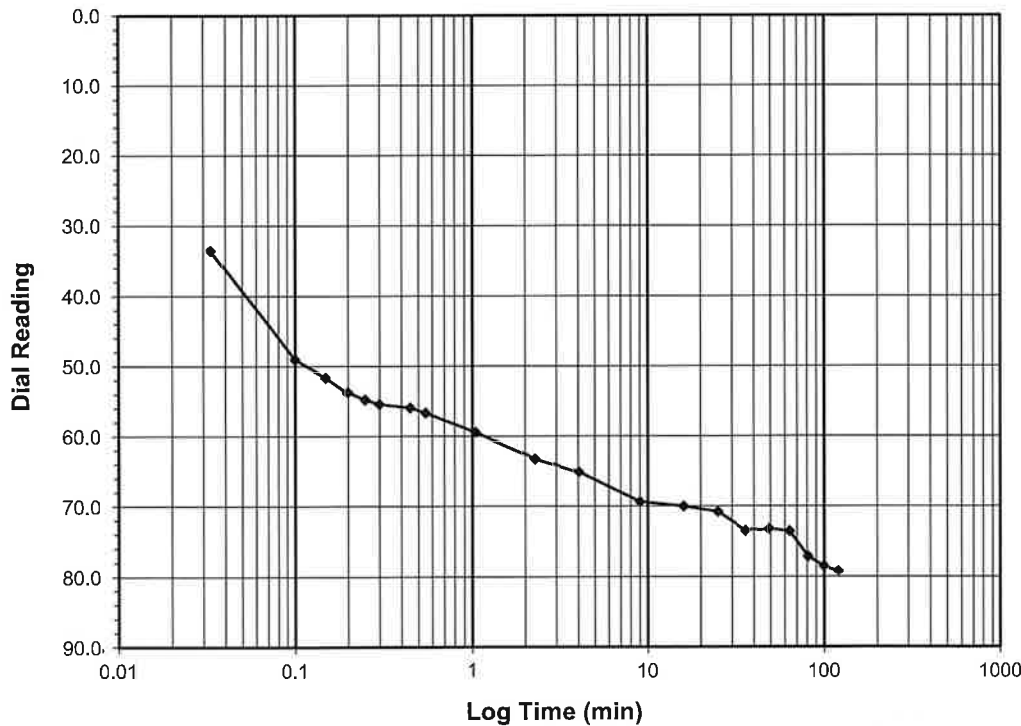
Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Test Load (tsf) 0.0-0.25
Final Reading (div) 79.1
 Consolidometer No. N144
 1 Division (in) 0.0001

Start Date 10/1/2018
 Start Time 13:11:05

Elapsed Time (min)	Dial Reading (div)
Initial	0.0
0.03	33.4
0.10	49.0
0.15	51.5
0.20	53.7
0.25	54.8
0.30	55.4
0.45	55.9
0.55	56.6
1.05	59.4
2.30	63.1
4.05	65.1
9.05	69.3
16.05	70.0
25.05	70.7
36.07	73.4
49.07	73.2
64.07	73.5
81.07	77.1
100.07	78.5
121.07	79.1



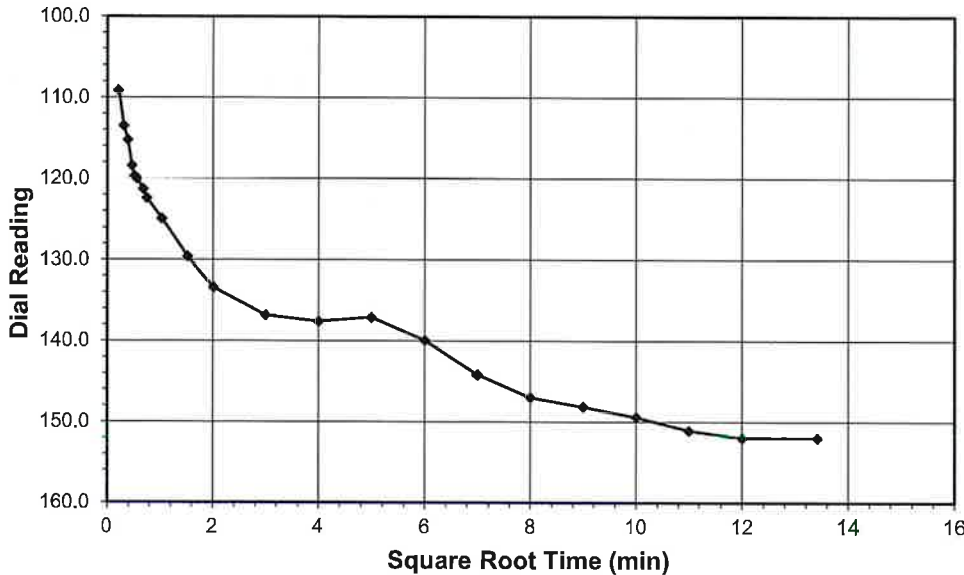
Tested By NC Date 10/1/2018 Checked By DS Date 10/16/2018

ONE DIMENSIONAL CONSOLIDATION
ASTM D 2435-11

Client Wood PLC
 Client Project 2424-18-135 (PS-902)
 Project No. N-2018-028-001
 Lab ID N-2018-028-001-001

Boring No. B-20
 Depth (ft) 8.5-10.5
 Sample No. ST-1
 Visual Description DARK BROWN CLAYEY SAND

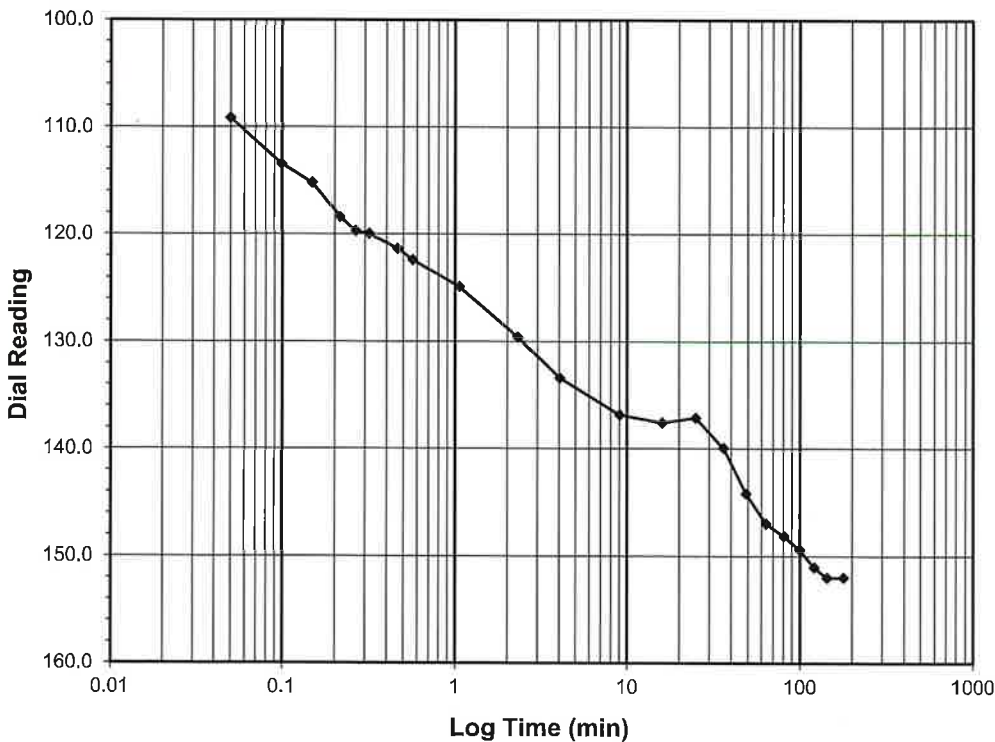
Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Test Load (tsf) 0.25-0.5
Final Reading (div) 152.0
 Consolidometer No. N144
 1 Division (in) 0.0001

Start Date 10/2/2018
 Start Time 1:11:33

Elapsed Time (min)	Dial Reading (div)
Initial	79.1
0.05	109.2
0.10	113.5
0.15	115.2
0.22	118.4
0.27	119.7
0.32	120.0
0.47	121.3
0.57	122.4
1.07	124.9
2.32	129.6
4.07	133.4
9.07	136.8
16.07	137.6
25.08	137.1
36.07	139.9
49.08	144.2
64.08	147.0
81.08	148.1
100.08	149.4
121.08	151.0
144.08	152.0
180.08	152.0



Tested By NC Date 10/2/2018 Checked By DS Date 10/16/2018



ONE DIMENSIONAL CONSOLIDATION

ASTM D 2435-11

Client Wood PLC
 Client Project 2424-18-135 (PS-902)
 Project No. N-2018-028-001
 Lab ID N-2018-028-001-001

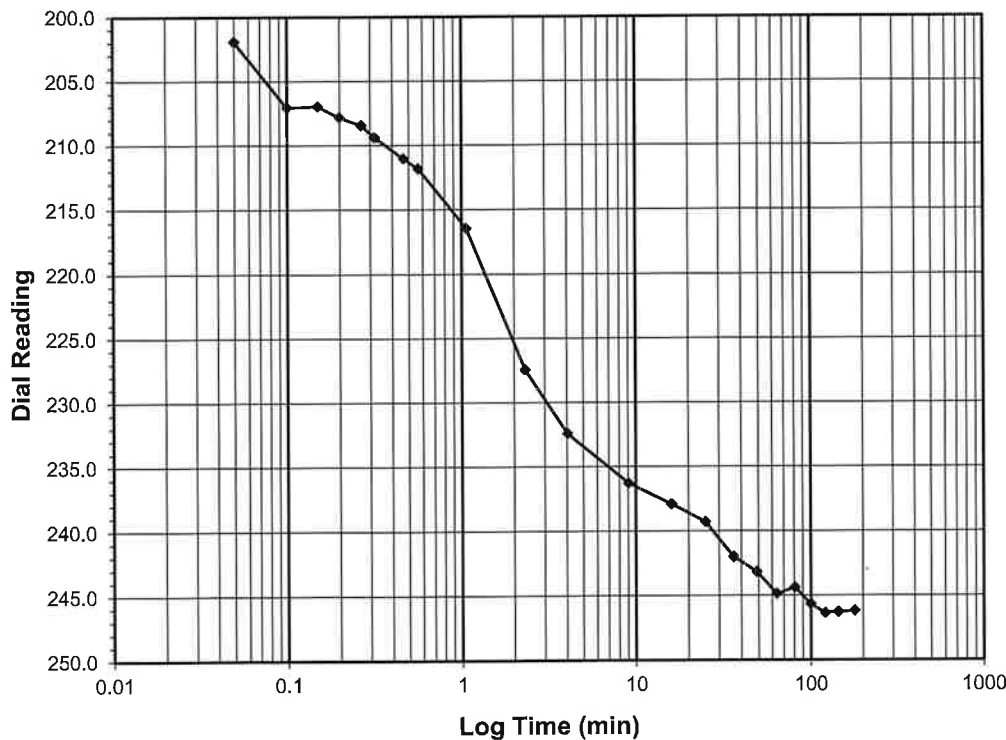
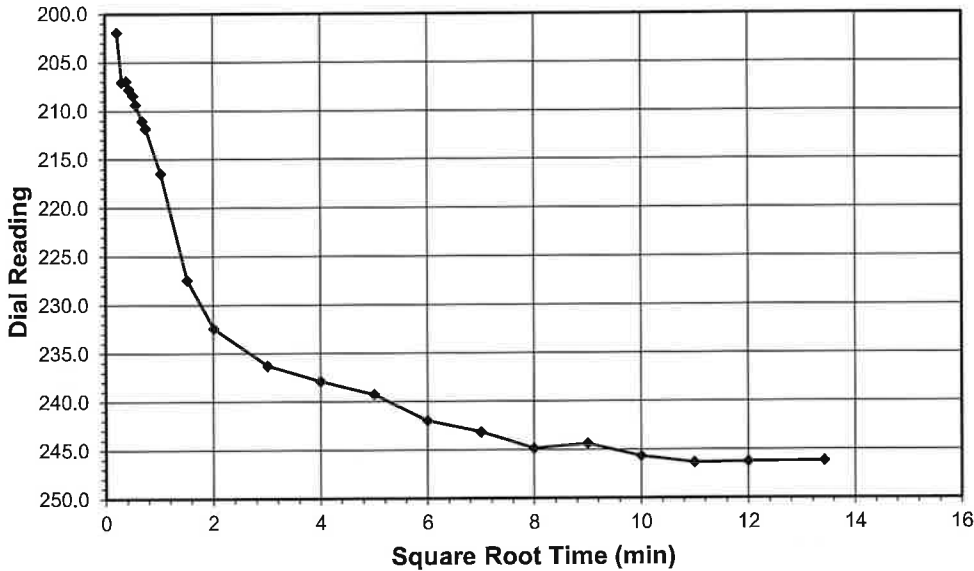
Boring No. B-20
 Depth (ft) 8.5-10.5
 Sample No. ST-1
 Visual Description DARK BROWN CLAYEY SAND

Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED

Test Load (tsf) 0.5-1.0
 Final Reading (div) 246.2
 Consolidometer No. N144
 1 Division (in) 0.0001

Start Date 10/2/2018
 Start Time 13:11:33

Elapsed Time (min)	Dial Reading (div)
Initial	152.0
0.05	201.9
0.10	207.0
0.15	206.9
0.20	207.8
0.27	208.4
0.32	209.4
0.47	211.0
0.57	211.8
1.07	216.5
2.32	227.4
4.07	232.4
9.07	236.3
16.07	237.9
25.07	239.3
36.07	242.0
49.07	243.1
64.08	244.9
81.08	244.4
100.08	245.7
121.08	246.3
144.08	246.2
180.08	246.2



Tested By NC Date 10/2/2018 Checked By DS Date 10/16/2018



ONE DIMENSIONAL CONSOLIDATION
ASTM D 2435-11

Client Wood PLC
 Client Project 2424-18-135 (PS-902)
 Project No. N-2018-028-001
 Lab ID N-2018-028-001-001

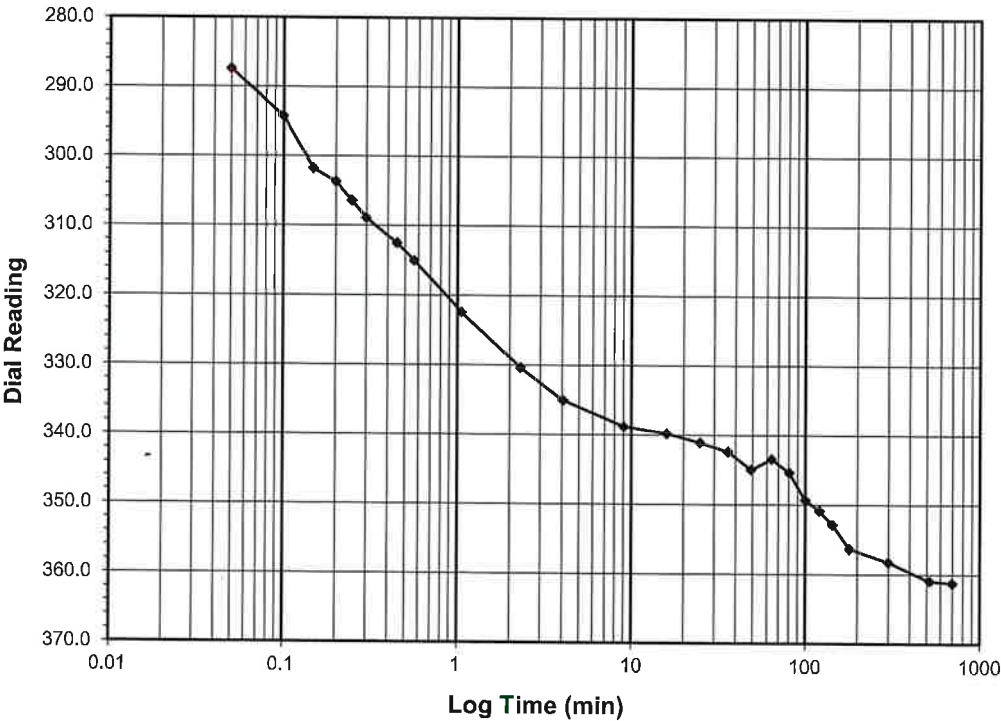
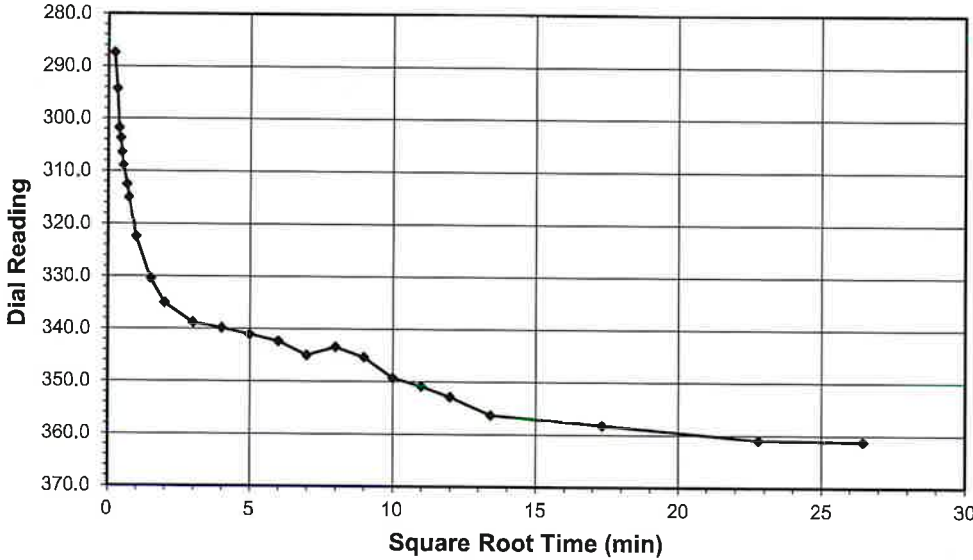
Boring No. B-20
 Depth (ft) 8.5-10.5
 Sample No. ST-1
 Visual Description DARK BROWN CLAYEY SAND

Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED

Test Load (tsf) 1.0-2.0
Final Reading (div) 361.2
 Consolidometer No. N144
 1 Division (in) 0.0001

Start Date 10/3/2018
Start Time 1:12:00

Elapsed Time (min)	Dial Reading (div)
Initial	246.2
0.05	287.4
0.10	294.2
0.15	301.8
0.20	303.7
0.25	306.4
0.30	308.9
0.45	312.5
0.57	315.0
1.07	322.4
2.32	330.4
4.07	335.1
9.07	338.8
16.07	339.8
25.05	341.0
36.07	342.3
49.07	345.0
64.07	343.4
81.07	345.3
100.08	349.3
121.08	350.8
144.08	352.8
180.08	356.3
300.08	358.2
520.08	360.9
700.08	361.2



Tested By NC Date 10/3/2018 Checked By DS Date 10/16/2018

ONE DIMENSIONAL CONSOLIDATION

ASTM D 2435-11

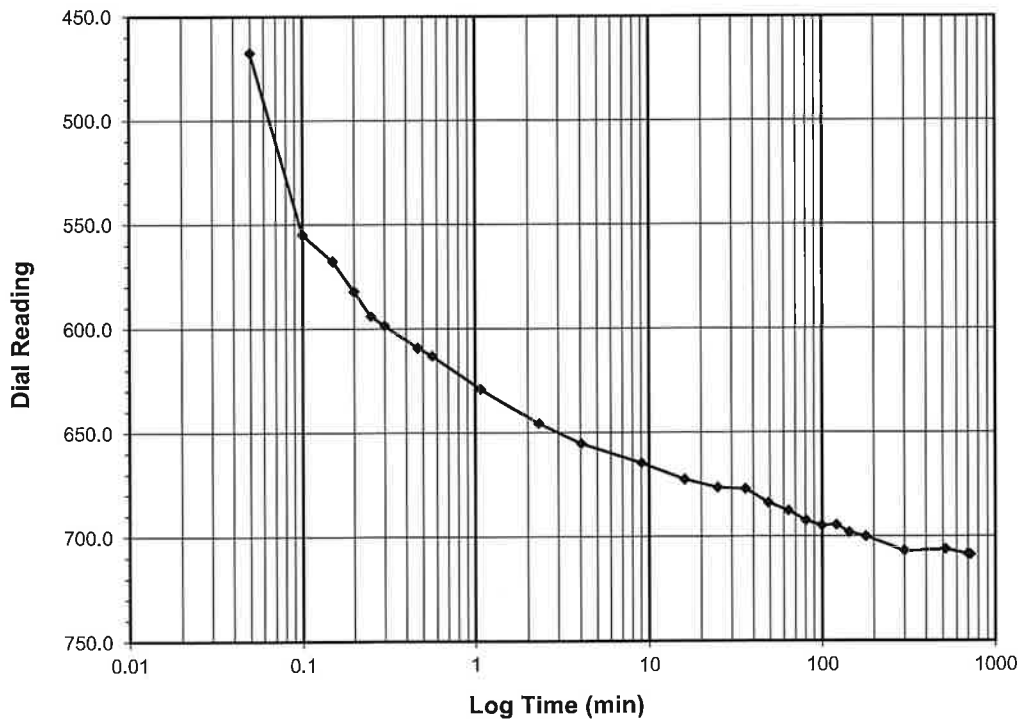
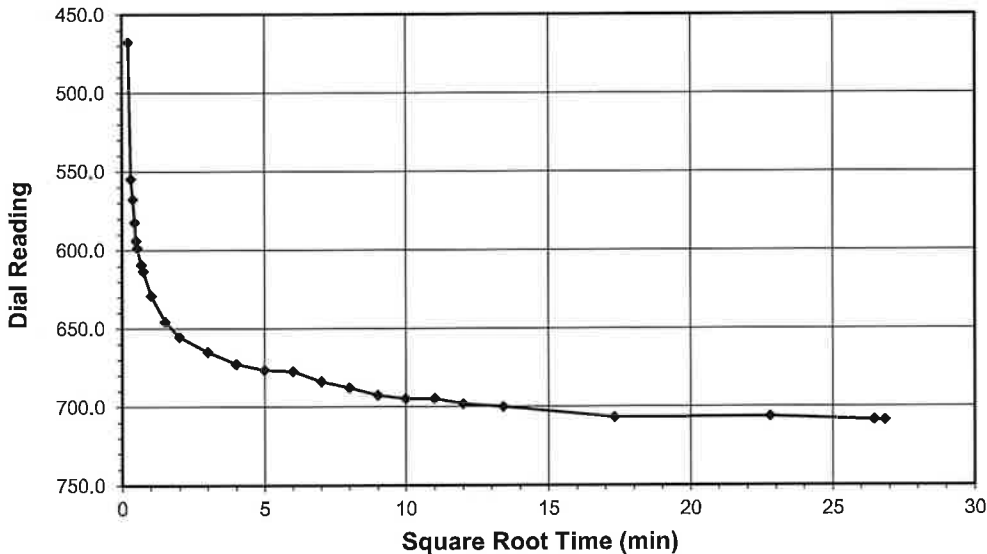
Client	Wood PLC	Boring No.	B-20
Client Project	2424-18-135 (PS-902)	Depth (ft)	8.5-10.5
Project No.	N-2018-028-001	Sample No.	ST-1
Lab ID	N-2018-028-001-001	Visual Description	DARK BROWN CLAYEY SAND

Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED

Test Load (tsf)	2.0-4.0
Final Reading (div)	708.6
Consolidometer No.	N144
1 Division (in)	0.0001

Start Date	10/3/2018
Start Time	13:12:12

Elapsed Time (min)	Dial Reading (div)
Initial	361.2
0.05	467.5
0.10	554.8
0.15	567.5
0.20	582.0
0.25	593.8
0.30	598.4
0.47	609.1
0.57	613.1
1.07	628.9
2.32	645.5
4.07	655.2
9.07	664.7
16.07	672.5
25.07	676.5
36.07	677.1
49.07	683.8
64.07	687.6
81.07	692.4
100.07	694.7
121.07	694.5
144.07	698.0
180.07	700.0
300.08	706.7
520.08	706.1
700.10	708.3
720.48	708.6



Tested By NC Date 10/3/2018 Checked By DS Date 10/16/2018

ONE DIMENSIONAL CONSOLIDATION

ASTM D 2435-11

Client Wood PLC
 Client Project 2424-18-135 (PS-902)
 Project No. N-2018-028-001
 Lab ID N-2018-028-001-001

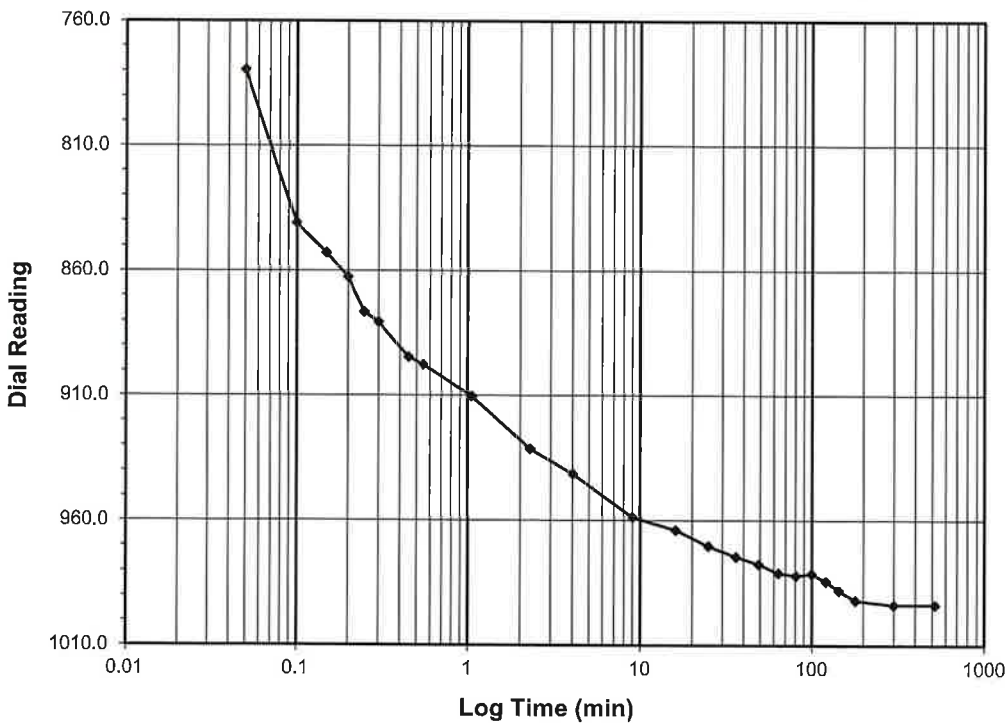
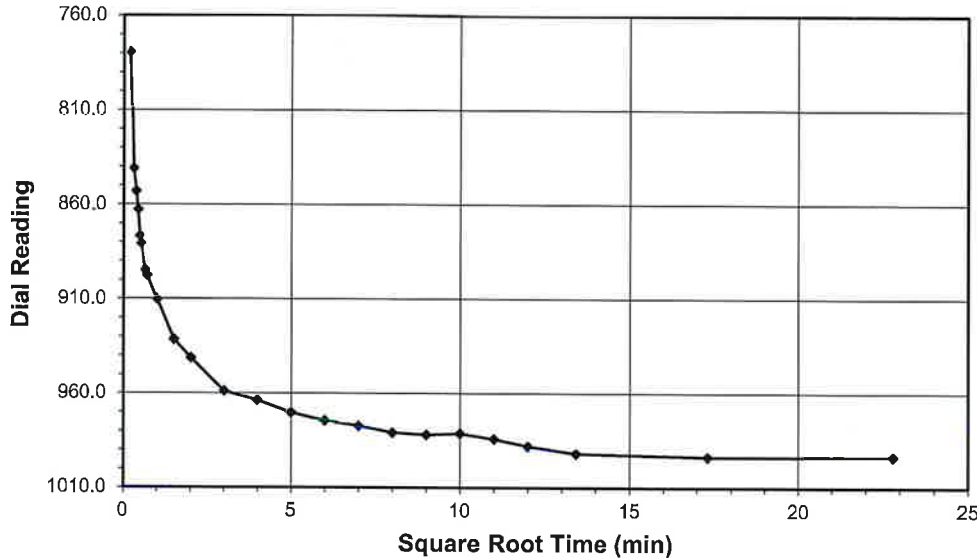
Boring No. B-20
 Depth (ft) 8.5-10.5
 Sample No. ST-1
 Visual Description DARK BROWN CLAYEY SAND

Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED

Test Load (tsf) 4.0-8.0
Final Reading (div) 993.7
 Consolidometer No. N144
 1 Division (in) 0.0001

Start Date 10/4/2018
Start Time 1:12:41

Elapsed Time (min)	Dial Reading (div)
Initial	708.6
0.05	779.6
0.10	841.0
0.15	852.9
0.20	862.5
0.25	876.5
0.30	880.6
0.45	894.6
0.55	897.7
1.05	910.2
2.30	931.4
4.05	941.3
9.05	958.7
16.05	963.9
25.05	970.2
36.05	974.4
49.05	977.3
64.05	980.9
81.05	982.0
100.05	981.3
121.05	984.2
144.07	987.9
180.07	991.9
300.03	993.6
520.05	993.7



Tested By NC Date 10/4/2018 Checked By DS Date 10/16/2018

ONE DIMENSIONAL CONSOLIDATION

ASTM D 2435-11

Client Wood PLC
 Client Project 2424-18-135 (PS-902)
 Project No. N-2018-028-001
 Lab ID N-2018-028-001-001

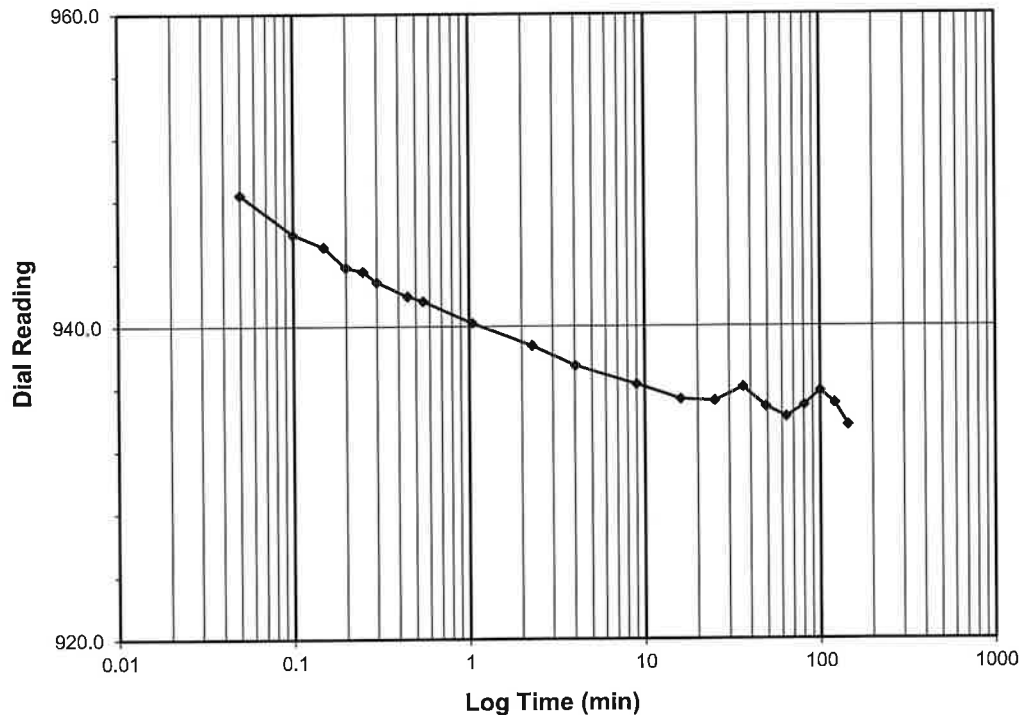
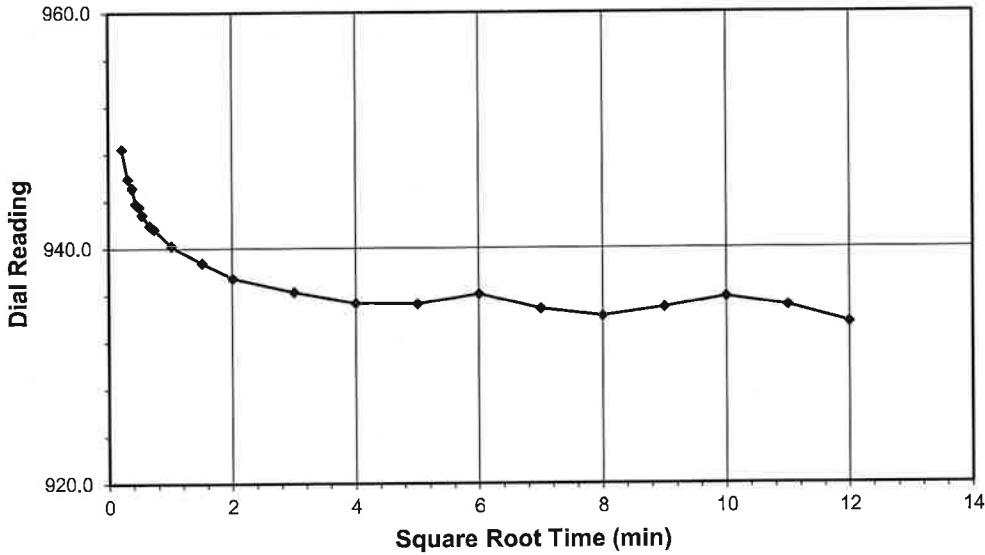
Boring No. B-20
 Depth (ft) 8.5-10.5
 Sample No. ST-1
 Visual Description DARK BROWN CLAYEY SAND

Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED

Test Load (tsf) 8.0-2.0
Final Reading (div) 933.6
 Consolidometer No. N144
 1 Division (in) 0.0001

Start Date 10/4/2018
 Start Time 13:12:55

Elapsed Time (min)	Dial Reading (div)
Initial	993.7
0.05	948.4
0.10	945.9
0.15	945.1
0.20	943.8
0.25	943.5
0.30	942.8
0.45	941.9
0.55	941.6
1.05	940.2
2.30	938.7
4.05	937.5
9.05	936.3
16.05	935.3
25.05	935.2
36.05	936.1
49.07	934.8
64.07	934.2
81.07	934.9
100.07	935.8
121.05	935.0
144.05	933.6



Tested By NC Date 10/4/2018 Checked By DS Date 10/16/2018



ONE DIMENSIONAL CONSOLIDATION
ASTM D 2435-11

Client Wood PLC
 Client Project 2424-18-135 (PS-902)
 Project No. N-2018-028-001
 Lab ID N-2018-028-001-001

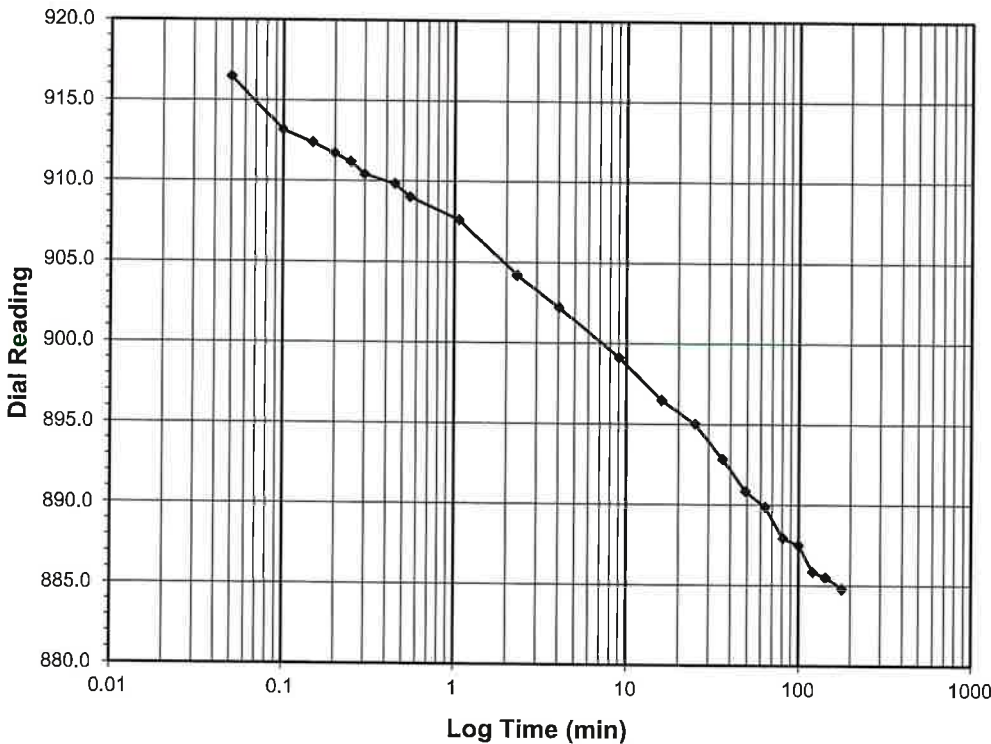
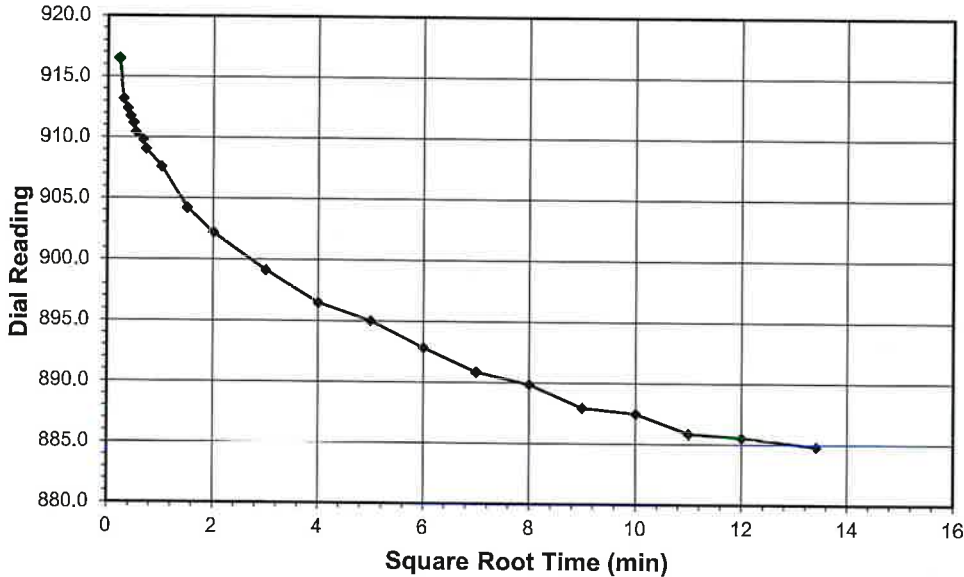
Boring No. B-20
 Depth (ft) 8.5-10.5
 Sample No. ST-1
 Visual Description DARK BROWN CLAYEY SAND

Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED

Test Load (tsf) 2.0-0.5
Final Reading (div) 884.8
 Consolidometer No. N144
 1 Division (in) 0.0001

Start Date 10/5/2018
Start Time 1:13:24

Elapsed Time (min)	Dial Reading (div)
Initial	933.6
0.05	916.5
0.10	913.2
0.15	912.4
0.20	911.7
0.25	911.2
0.30	910.4
0.45	909.8
0.55	909.0
1.07	907.6
2.32	904.2
4.07	902.2
9.07	899.1
16.07	896.5
25.07	895.0
36.07	892.8
49.07	890.8
64.07	889.9
81.08	887.9
100.08	887.5
121.08	885.9
144.08	885.5
180.08	884.8



Tested By NC Date 10/5/2018 Checked By DS Date 10/16/2018

ONE DIMENSIONAL CONSOLIDATION

ASTM D 2435-11

Client: Wood PLC
 Client Project: 2424-18-135 (PS-902)
 Project No.: N-2018-028-001
 Lab ID: N-2018-028-001-001

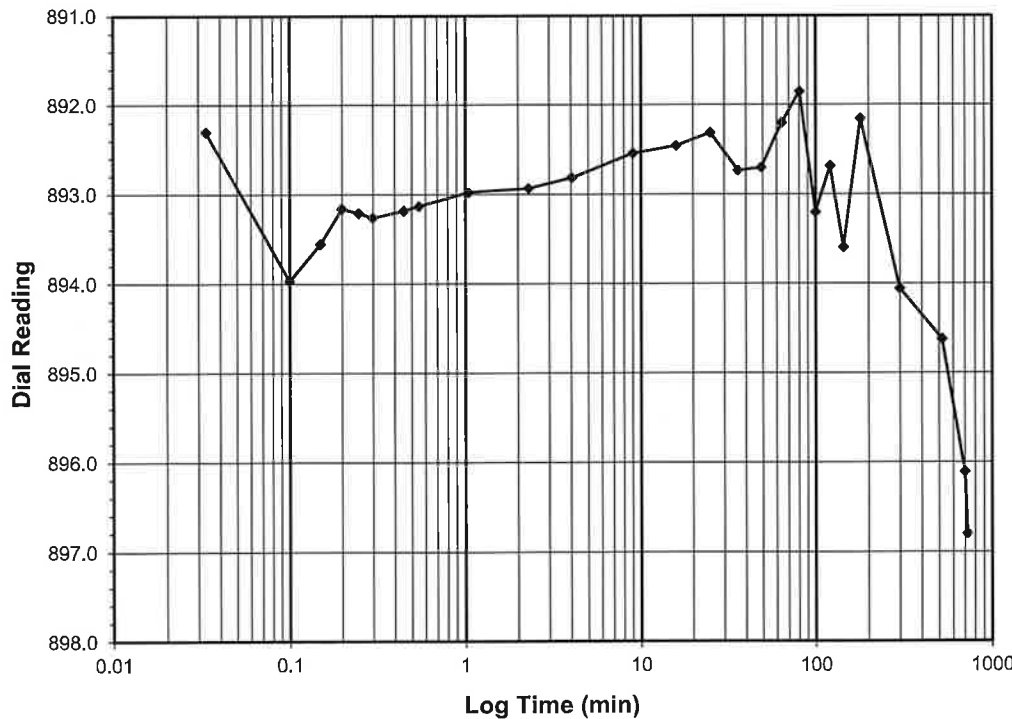
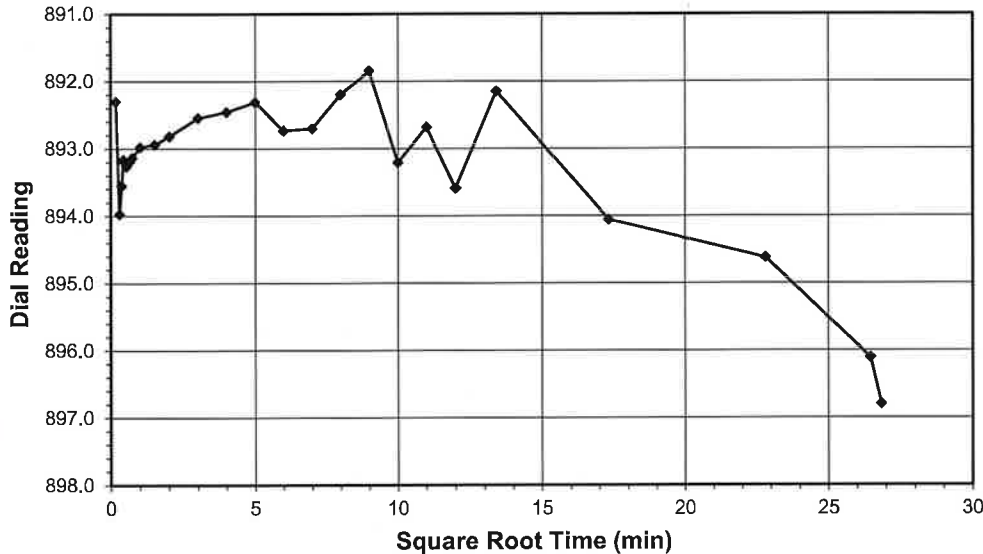
Boring No.: B-20
 Depth (ft): 8.5-10.5
 Sample No.: ST-1
 Visual Description: DARK BROWN CLAYEY SAND

Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED

Test Load (tsf): 0.5-1.0
Final Reading (div): 896.8
 Consolidometer No.: N144
 1 Division (in): 0.0001

Start Date: 10/5/2018
 Start Time: 13:13:52

Elapsed Time (min)	Dial Reading (div)
Initial	884.8
0.03	892.3
0.10	894.0
0.15	893.6
0.20	893.2
0.25	893.2
0.30	893.3
0.45	893.2
0.55	893.1
1.05	893.0
2.30	892.9
4.05	892.8
9.05	892.5
16.05	892.5
25.05	892.3
36.05	892.7
49.05	892.7
64.05	892.2
81.05	891.8
100.05	893.2
121.05	892.7
144.07	893.6
180.07	892.2
300.07	894.1
520.03	894.6
700.03	896.1
720.35	896.8



Tested By: NC Date: 10/5/2018 Checked By: DS Date: 10/16/2018



ONE DIMENSIONAL CONSOLIDATION
ASTM D 2435-11

Client Wood PLC
 Client Project 2424-18-135 (PS-902)
 Project No. N-2018-028-001
 Lab ID N-2018-028-001-001

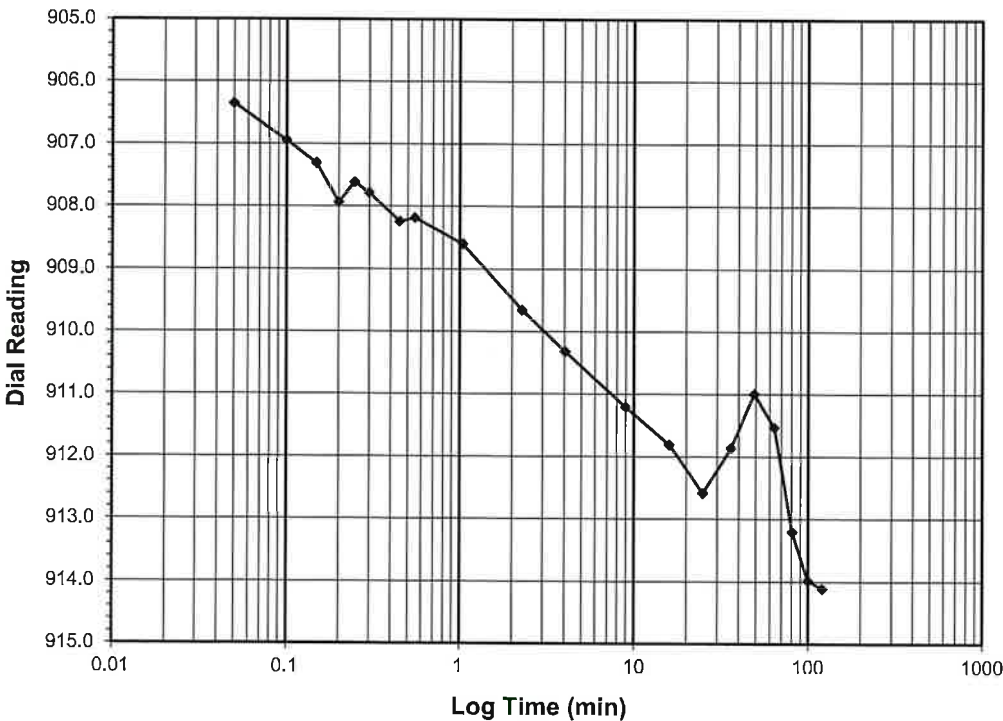
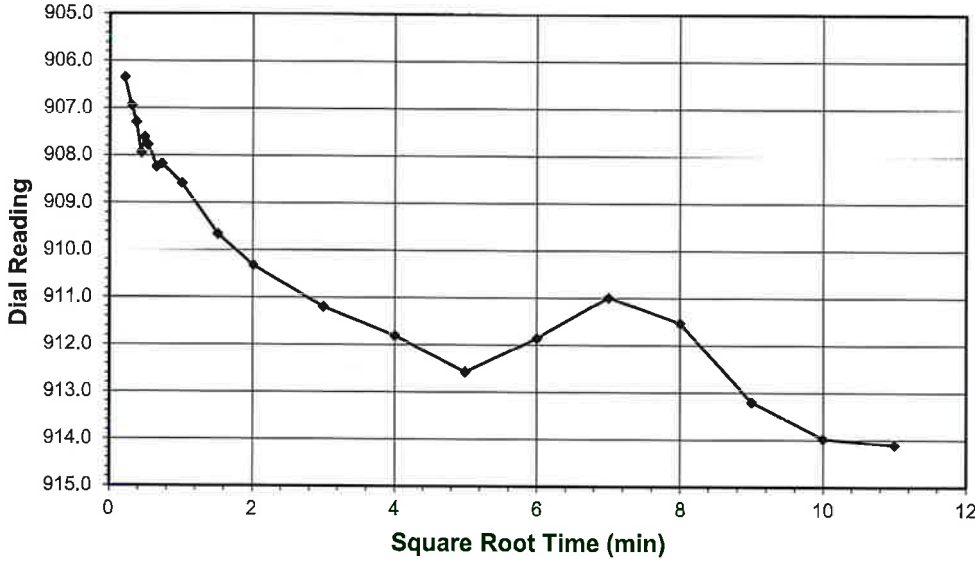
Boring No. B-20
 Depth (ft) 8.5-10.5
 Sample No. ST-1
 Visual Description DARK BROWN CLAYEY SAND

Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED

Test Load (tsf) 1.0-2.0
Final Reading (div) 914.1
 Consolidometer No. N144
 1 Division (in) 0.0001

Start Date 10/6/2018
 Start Time 1:14:14

Elapsed Time (min)	Dial Reading (div)
Initial	896.8
0.05	906.4
0.10	906.9
0.15	907.3
0.20	907.9
0.25	907.6
0.30	907.8
0.45	908.2
0.55	908.2
1.05	908.6
2.30	909.7
4.05	910.3
9.05	911.2
16.05	911.8
25.05	912.6
36.05	911.9
49.05	911.0
64.05	911.5
81.05	913.2
100.05	914.0
121.05	914.1



Tested By NC Date 10/6/2018 Checked By DS Date 10/16/2018



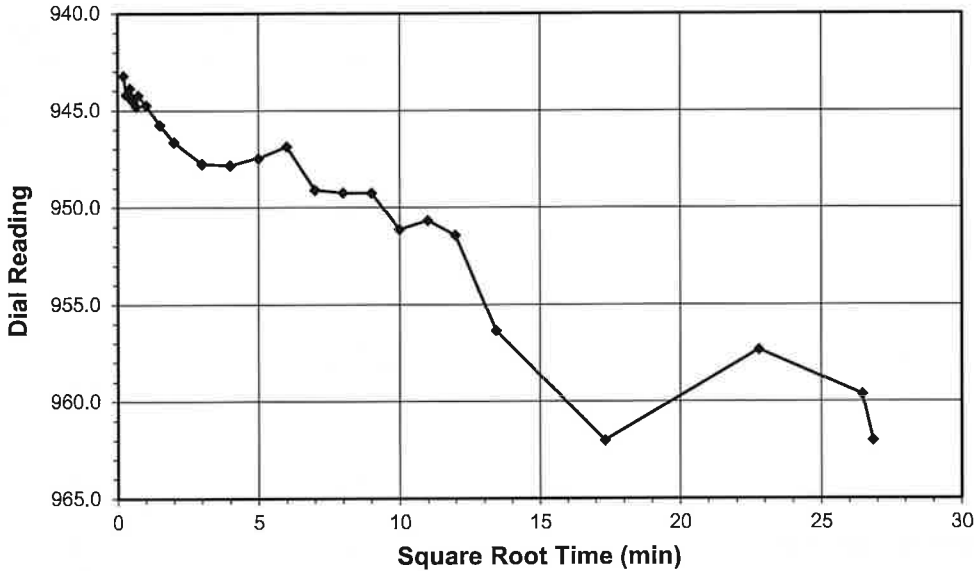
ONE DIMENSIONAL CONSOLIDATION

ASTM D 2435-11

Client Wood PLC
 Client Project 2424-18-135 (PS-902)
 Project No. N-2018-028-001
 Lab ID N-2018-028-001-001

Boring No. B-20
 Depth (ft) 8.5-10.5
 Sample No. ST-1
 Visual Description DARK BROWN CLAYEY SAND

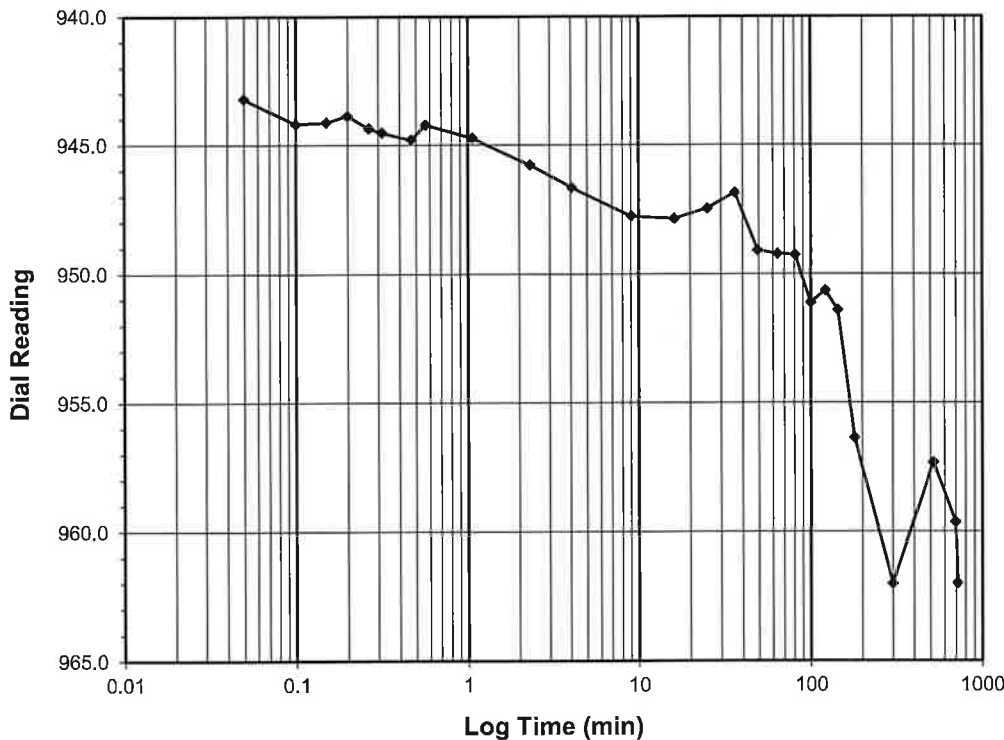
Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Test Load (tsf) 2.0-4.0
Final Reading (div) 962.0
 Consolidometer No. N144
 1 Division (in) 0.0001

Start Date 10/6/2018
Start Time 13:14:23

Elapsed Time (min)	Dial Reading (div)
Initial	914.1
0.05	943.2
0.10	944.2
0.15	944.1
0.20	943.9
0.27	944.4
0.32	944.5
0.47	944.8
0.57	944.2
1.07	944.7
2.32	945.8
4.07	946.7
9.07	947.8
16.07	947.9
25.07	947.5
36.07	946.8
49.08	949.1
64.08	949.2
81.08	949.3
100.08	951.1
121.08	950.6
144.08	951.4
180.08	956.4
300.10	962.0
520.08	957.3
700.08	959.6
720.48	962.0



Tested By NC Date 10/6/2018 Checked By DS Date 10/16/2018

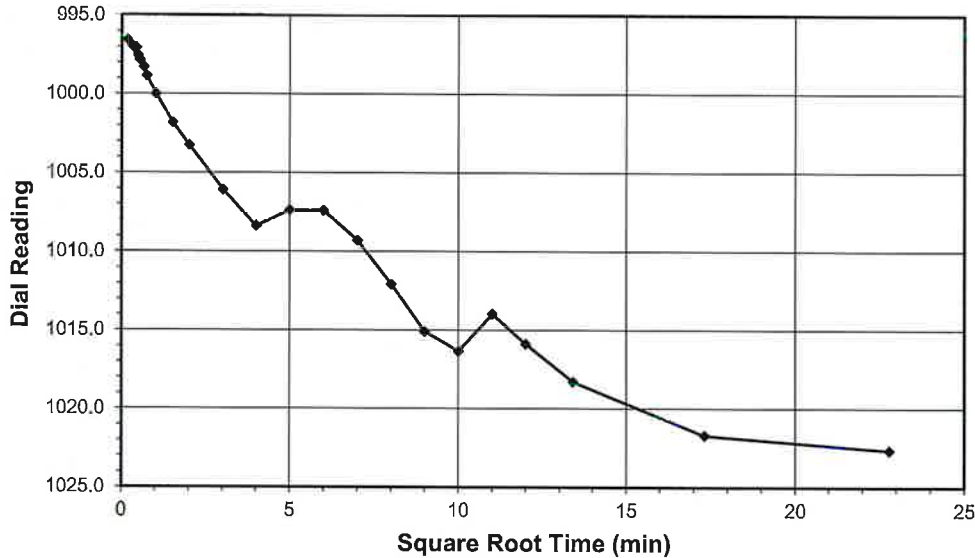
ONE DIMENSIONAL CONSOLIDATION

ASTM D 2435-11

Client: Wood PLC
 Client Project: 2424-18-135 (PS-902)
 Project No.: N-2018-028-001
 Lab ID: N-2018-028-001-001

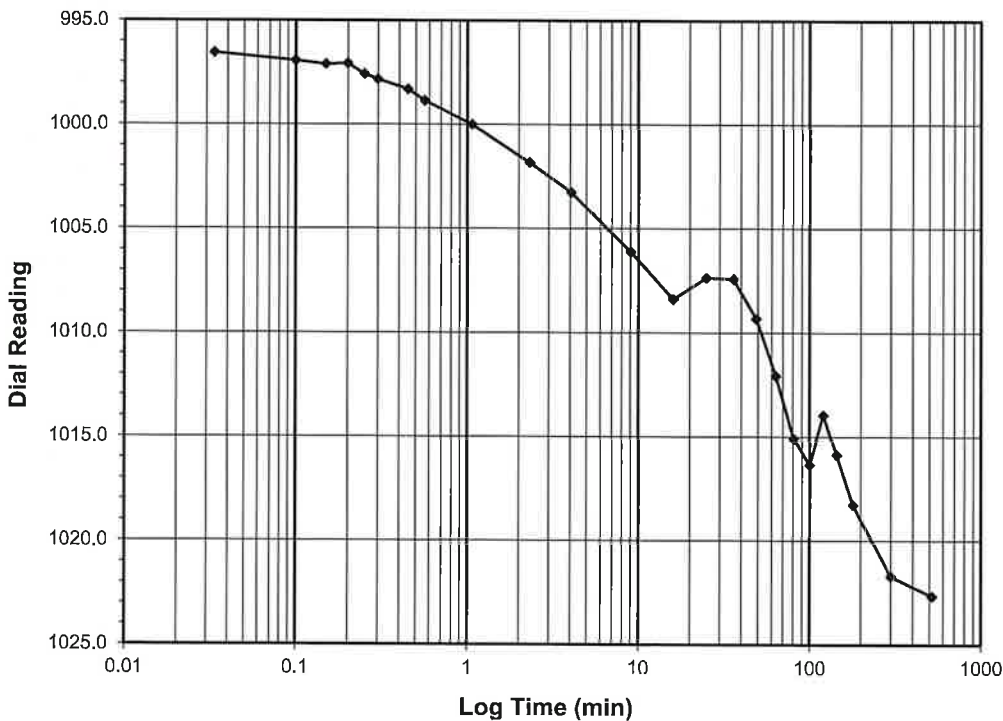
Boring No.: B-20
 Depth (ft): 8.5-10.5
 Sample No.: ST-1
 Visual Description: DARK BROWN CLAYEY SAND

Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Test Load (tsf)	4.0-8.0
Final Reading (div)	1022.6
Consolidometer No.	N144
1 Division (in)	0.0001
Start Date	10/7/2018
Start Time	1:14:52

Elapsed Time (min)	Dial Reading (div)
Initial	962.0
0.03	996.5
0.10	996.9
0.15	997.1
0.20	997.1
0.25	997.6
0.30	997.8
0.45	998.3
0.57	998.9
1.07	1000.0
2.32	1001.8
4.07	1003.3
9.07	1006.1
16.07	1008.4
25.07	1007.4
36.07	1007.4
49.07	1009.3
64.05	1012.1
81.05	1015.1
100.05	1016.3
121.05	1014.0
144.05	1015.9
180.05	1018.3
300.05	1021.7
520.08	1022.6



Tested By: NC Date: 10/7/2018 Checked By: DS Date: 10/16/2018

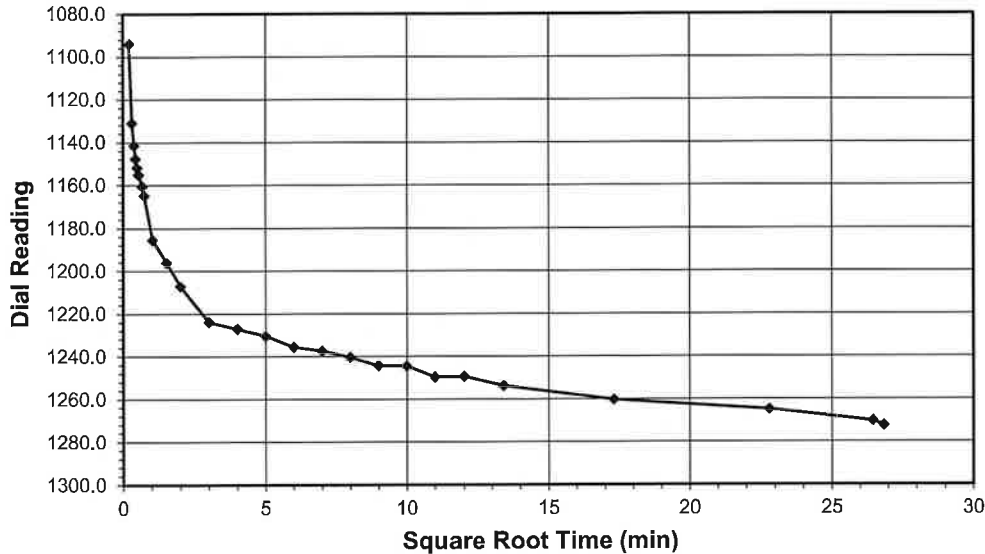
ONE DIMENSIONAL CONSOLIDATION

ASTM D 2435-11

Client Wood PLC
 Client Project 2424-18-135 (PS-902)
 Project No. N-2018-028-001
 Lab ID N-2018-028-001-001

Boring No. B-20
 Depth (ft) 8.5-10.5
 Sample No. ST-1
 Visual Description DARK BROWN CLAYEY SAND

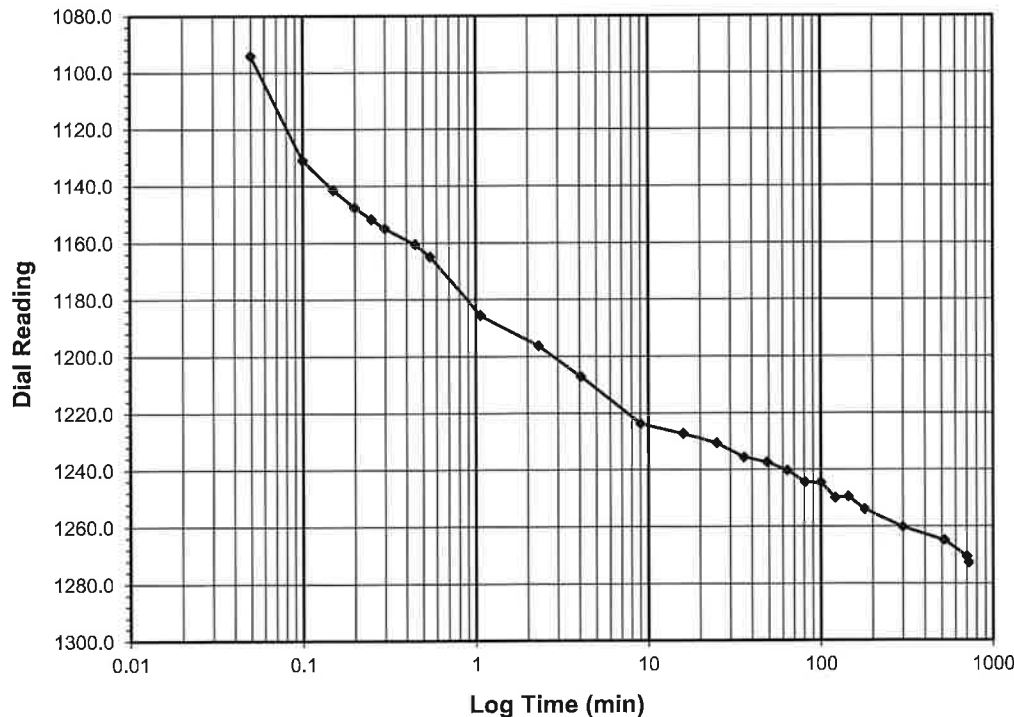
Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Test Load (tsf) 8.0-16.0
Final Reading (div) 1272.5
 Consolidometer No. N144
 1 Division (in) 0.0001

Start Date 10/7/2018
Start Time 13:15:03

Elapsed Time (min)	Dial Reading (div)
Initial	1022.6
0.05	1094.0
0.10	1130.9
0.15	1141.3
0.20	1147.5
0.25	1151.7
0.30	1155.0
0.45	1160.4
0.55	1164.8
1.07	1185.4
2.32	1196.1
4.07	1207.1
9.07	1223.8
16.07	1227.1
25.07	1230.5
36.07	1235.7
49.07	1237.4
64.07	1240.3
81.07	1244.3
100.07	1244.5
121.07	1249.8
144.08	1249.4
180.07	1253.8
300.07	1260.2
520.08	1264.8
700.08	1270.4
720.35	1272.5



Tested By NC Date 10/7/2018 Checked By DS Date 10/16/2018



ONE DIMENSIONAL CONSOLIDATION
ASTM D 2435-11

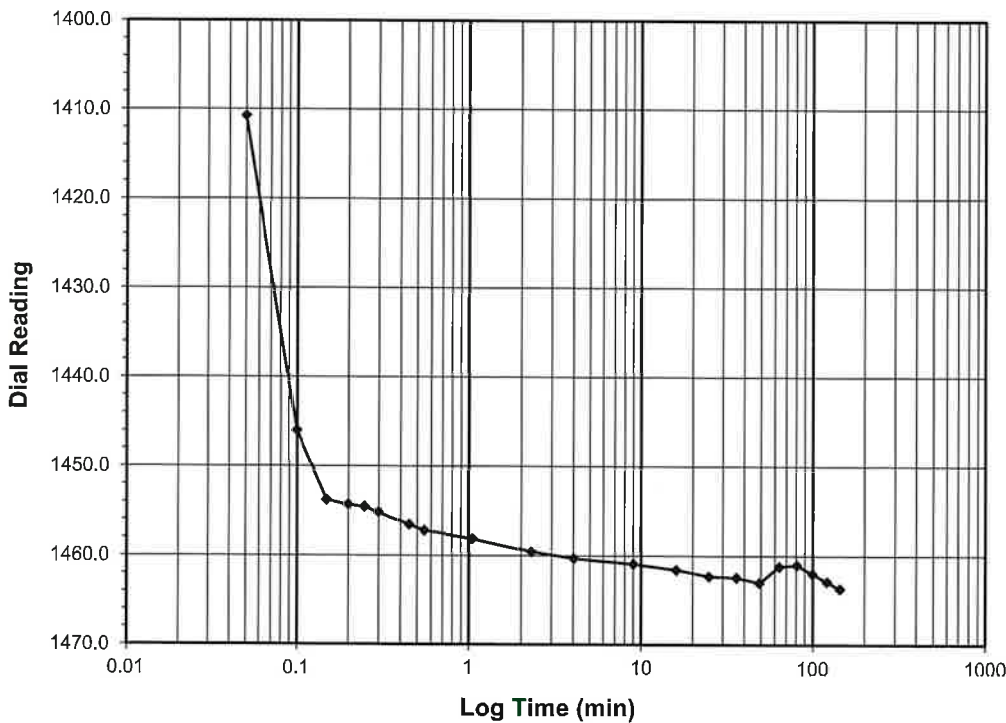
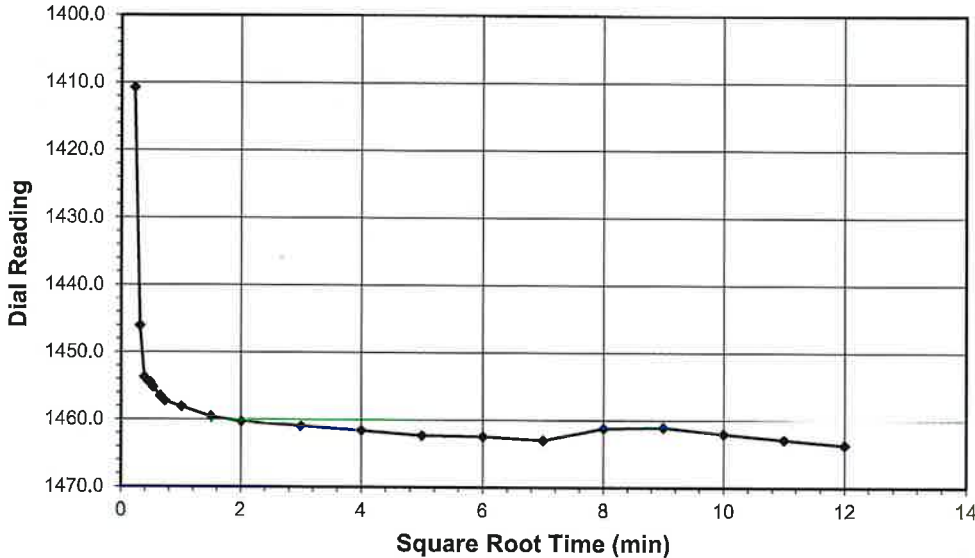
Client Wood PLC
 Client Project 2424-18-135 (PS-902)
 Project No. N-2018-028-001
 Lab ID N-2018-028-001-001

Boring No. B-20
 Depth (ft) 8.5-10.5
 Sample No. ST-1
 Visual Description DARK BROWN CLAYEY SAND

Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED

Test Load (tsf) 16.0-32.0
Final Reading (div) 1463.7
 Consolidometer No. N144
 1 Division (in) 0.0001
 Start Date 10/8/2018
 Start Time 1:15:24

Elapsed Time (min)	Dial Reading (div)
Initial	1272.5
0.05	1410.7
0.10	1446.0
0.15	1453.7
0.20	1454.3
0.25	1454.5
0.30	1455.2
0.45	1456.5
0.55	1457.2
1.05	1458.1
2.30	1459.6
4.05	1460.3
9.05	1460.9
16.05	1461.6
25.05	1462.3
36.05	1462.4
49.05	1463.0
64.05	1461.2
81.05	1461.0
100.05	1462.0
121.05	1462.9
144.05	1463.7



Tested By NC Date 10/8/2018 Checked By DS Date 10/16/2018



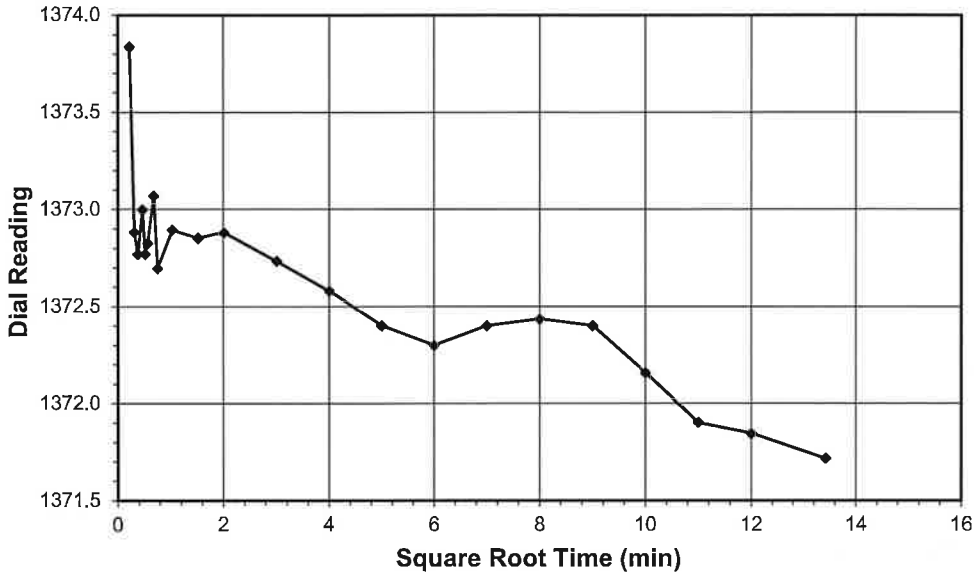
ONE DIMENSIONAL CONSOLIDATION

ASTM D 2435-11

Client Wood PLC
 Client Project 2424-18-135 (PS-902)
 Project No. N-2018-028-001
 Lab ID N-2018-028-001-001

Boring No. B-20
 Depth (ft) 8.5-10.5
 Sample No. ST-1
 Visual Description DARK BROWN CLAYEY SAND

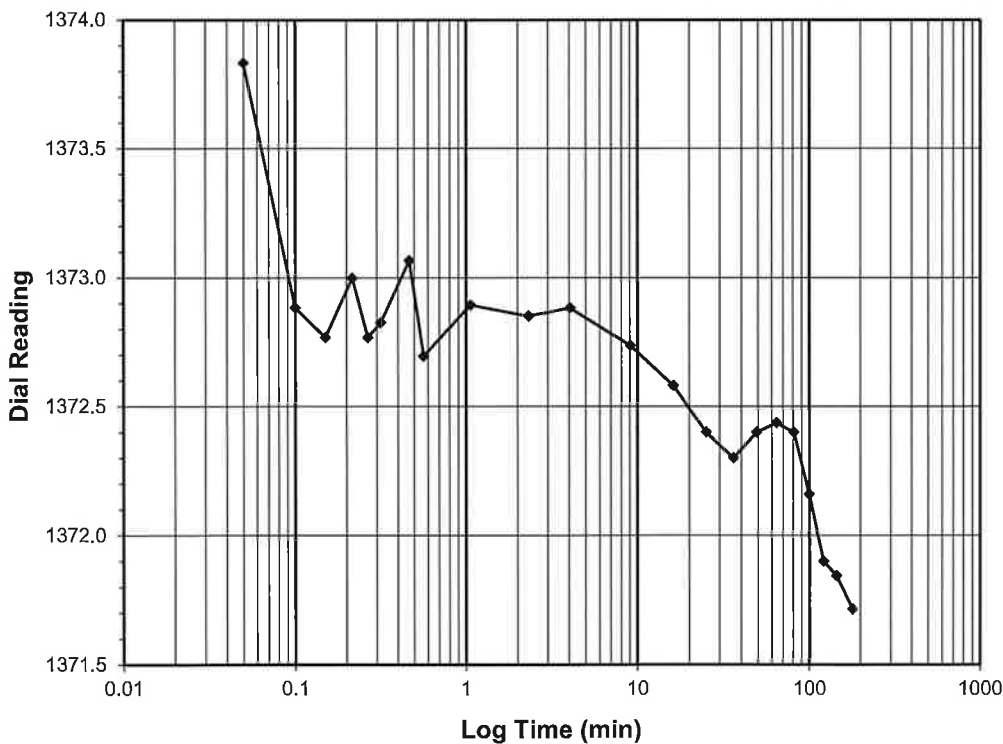
Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Test Load (tsf) 32.0-8.0
Final Reading (div) 1371.7
 Consolidometer No. N144
 1 Division (in) 0.0001

Start Date 10/8/2018
Start Time 13:15:29

Elapsed Time (min)	Dial Reading (div)
Initial	1463.7
0.05	1373.8
0.10	1372.9
0.15	1372.8
0.22	1373.0
0.27	1372.8
0.32	1372.8
0.47	1373.1
0.57	1372.7
1.07	1372.9
2.32	1372.9
4.07	1372.9
9.07	1372.7
16.07	1372.6
25.07	1372.4
36.07	1372.3
49.07	1372.4
64.07	1372.4
81.07	1372.4
100.07	1372.2
121.08	1371.9
144.08	1371.8
180.08	1371.7



Tested By NC Date 10/8/2018 Checked By DS Date 10/16/2018



ONE DIMENSIONAL CONSOLIDATION
ASTM D 2435-11

Client Wood PLC
 Client Project 2424-18-135 (PS-902)
 Project No. N-2018-028-001
 Lab ID N-2018-028-001-001

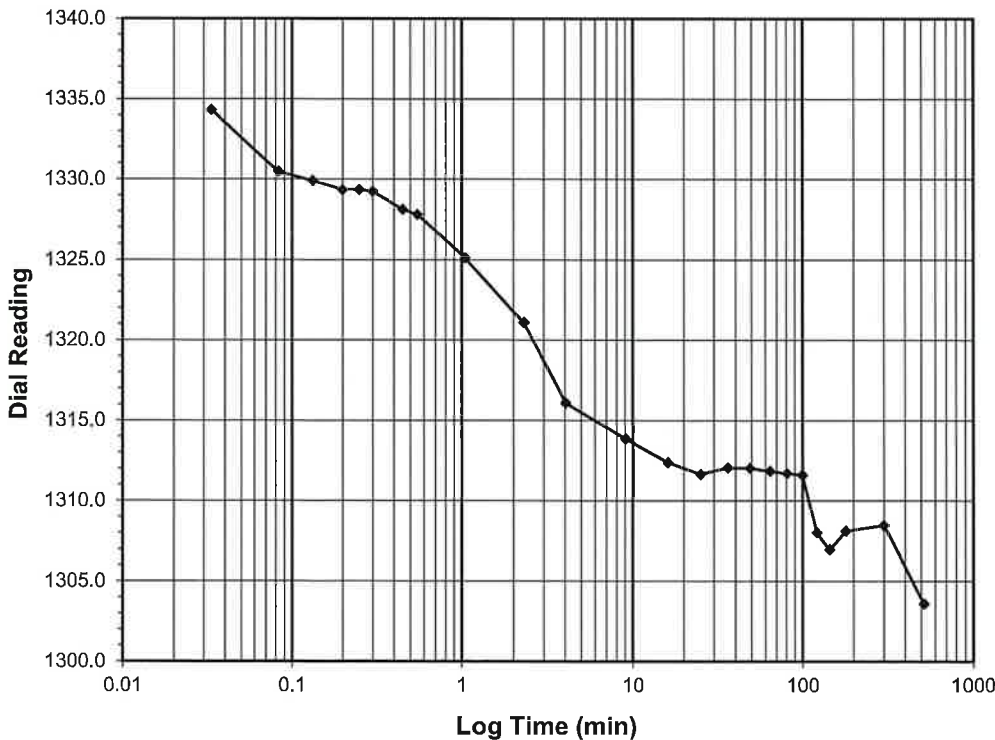
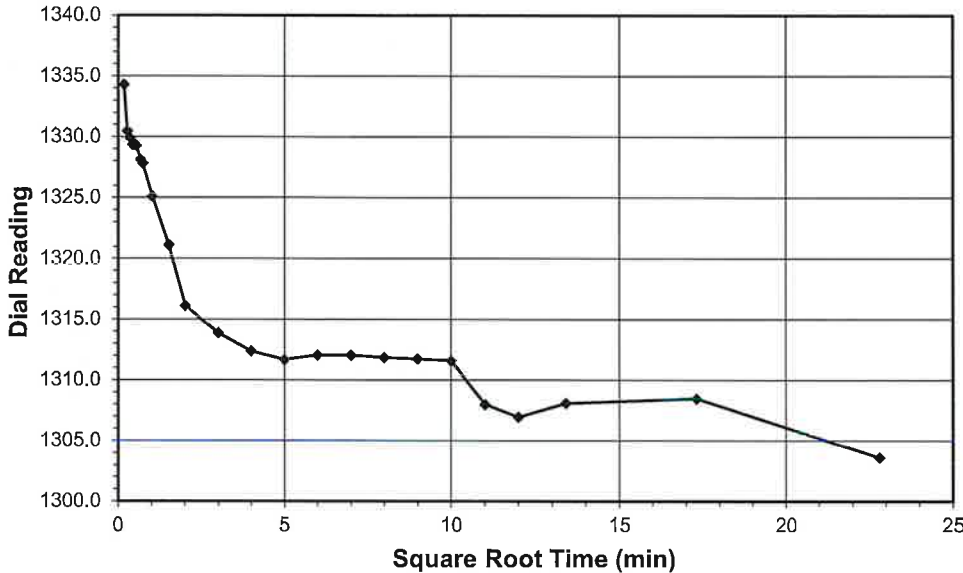
Boring No. B-20
 Depth (ft) 8.5-10.5
 Sample No. ST-1
 Visual Description DARK BROWN CLAYEY SAND

Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED

Test Load (tsf) 8.0-2.0
Final Reading (div) 1303.6
 Consolidometer No. N144
 1 Division (in) 0.0001

Start Date 10/9/2018
Start Time 1:15:57

Elapsed Time (min)	Dial Reading (div)
Initial	1371.7
0.03	1334.3
0.08	1330.5
0.13	1329.9
0.20	1329.3
0.25	1329.3
0.30	1329.2
0.45	1328.1
0.55	1327.8
1.05	1325.1
2.30	1321.1
4.05	1316.1
9.05	1313.8
16.05	1312.4
25.05	1311.7
36.05	1312.0
49.07	1312.0
64.07	1311.8
81.07	1311.7
100.07	1311.6
121.07	1308.0
144.07	1307.0
180.07	1308.1
300.08	1308.5
520.08	1303.6



Tested By NC Date 10/9/2018 Checked By DS Date 10/16/2018

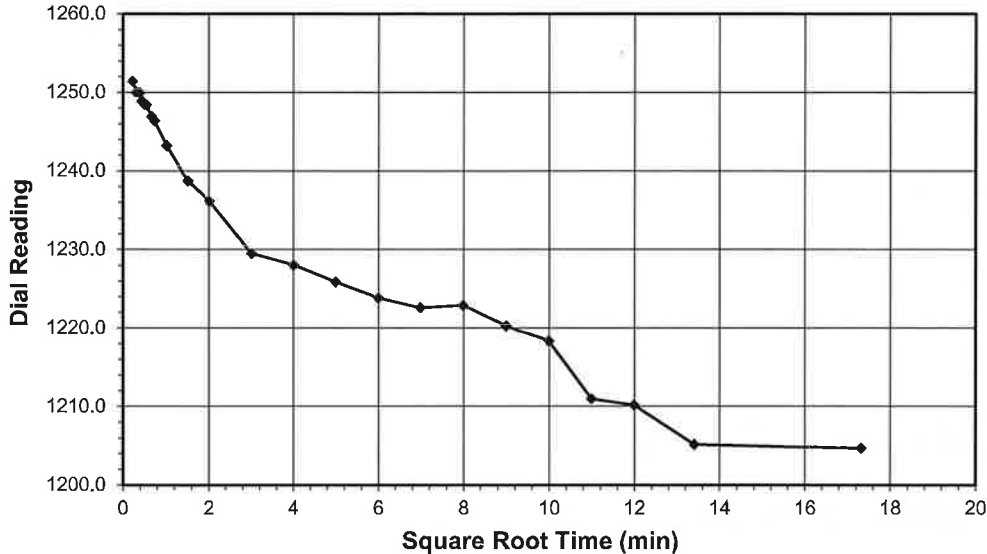
ONE DIMENSIONAL CONSOLIDATION

ASTM D 2435-11

Client Wood PLC
 Client Project 2424-18-135 (PS-902)
 Project No. N-2018-028-001
 Lab ID N-2018-028-001-001

Boring No. B-20
 Depth (ft) 8.5-10.5
 Sample No. ST-1
 Visual Description DARK BROWN CLAYEY SAND

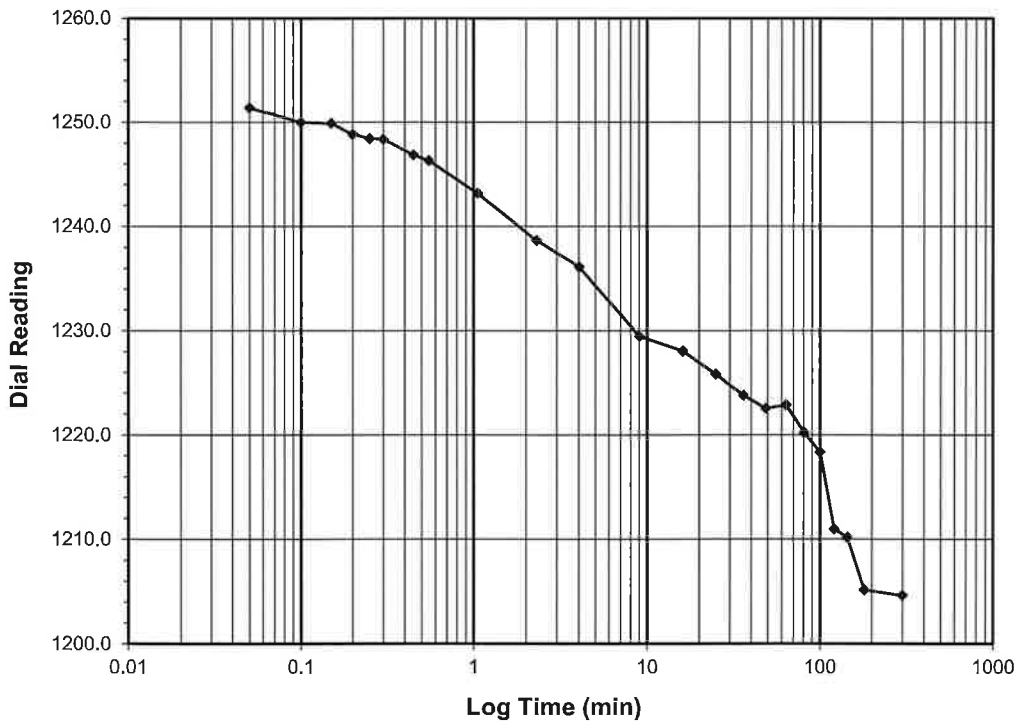
Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Test Load (tsf) 2.0-0.5
Final Reading (div) 1204.6
 Consolidometer No. **N144**
 1 Division (in) 0.0001

Start Date 10/9/2018
 Start Time 13:16:15

Elapsed Time (min)	Dial Reading (div)
Initial	1303.6
0.05	1251.4
0.10	1250.0
0.15	1249.9
0.20	1248.8
0.25	1248.4
0.30	1248.4
0.45	1246.9
0.55	1246.3
1.05	1243.2
2.30	1238.7
4.05	1236.2
9.05	1229.5
16.05	1228.1
25.05	1225.8
36.05	1223.8
48.85	1222.6
63.82	1222.9
80.82	1220.2
99.82	1218.4
120.82	1211.0
143.82	1210.2
179.82	1205.2
299.83	1204.6



Tested By **NC** Date **10/9/2018** Checked By **DS** Date **10/16/2018**



ATTERBERG LIMITS
ASTM D 4318-17

Client: Wood PLC
Client Reference: 2424-18-135 (PS-902)
Project No.: N2018-028-001
Lab ID: N2018-028-001-002

Boring No.: B-11 OS
Depth (ft): 8.0-10.0
Sample No.: ST-1
Color: Brown
(Minus No. 40 sieve material)

As Received
Water Content

Tare Number	T16
Wt. of Tare & Wet Sample (g)	365.74
Wt. of Tare & Dry Sample (g)	318.27
Weight of Tare (g)	8.36
Weight of Water (g)	47.47
Weight of Dry Sample (g)	309.91
Water Content (%)	15.3

NON - PLASTIC
MATERIAL

Tested By *RT* *Date* *10/3/18* *Checked By* *WDS* *Date* *10/4/18*

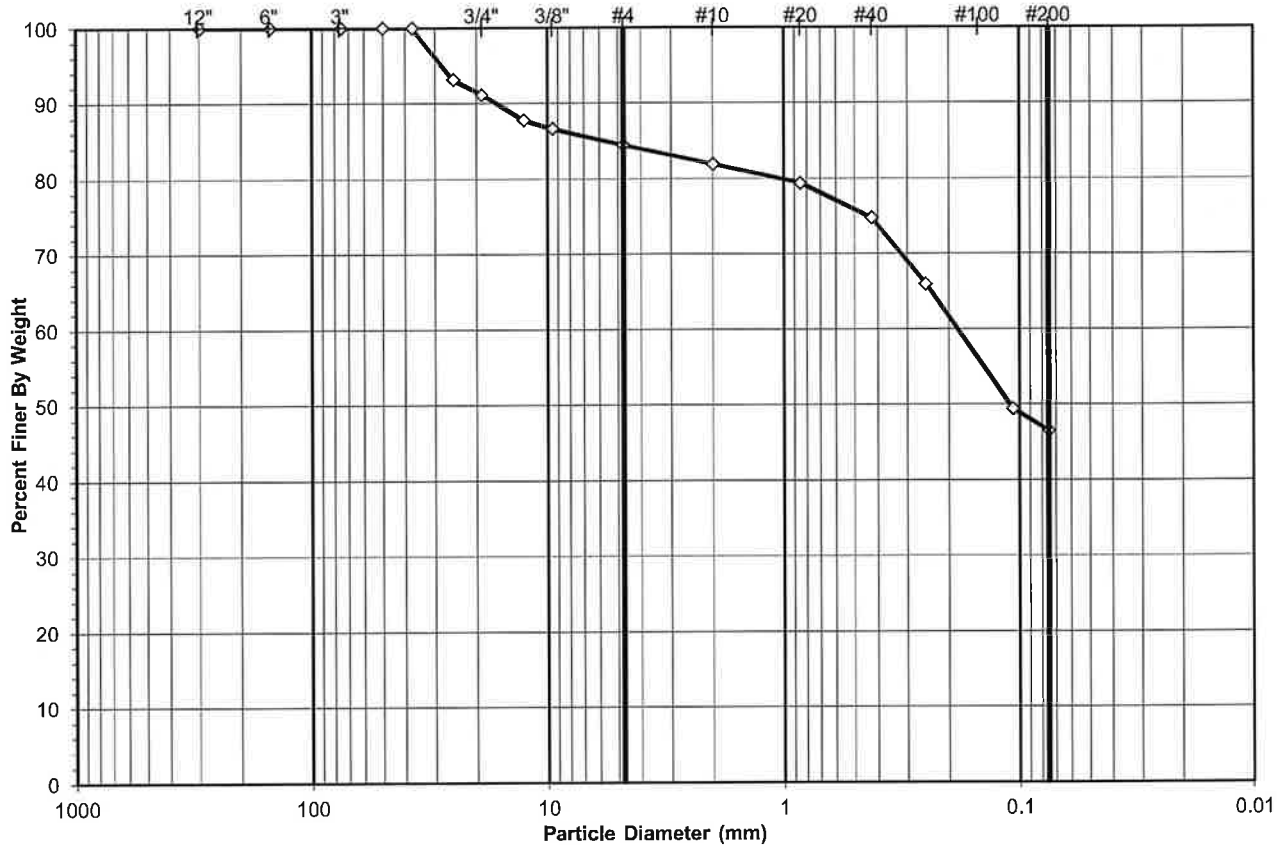
SIEVE ANALYSIS
ASTM D 422-63 (2007)



Client: Wood PLC
 Client Reference: 2424-18-135 (PS-902)
 Project No.: N2018-028-001
 Lab ID: N2018-028-001-002

Boring No.: B-11 OS
 Depth (ft): 8.0-10.0
 Sample No.: ST-1
 Soil Color: Brown

USCS USDA	SIEVE ANALYSIS				HYDROMETER	
	cobbles	gravel	sand		silt and clay fraction	
	cobbles	gravel	sand		silt	clay



USCS Summary		
Sieve Sizes (mm)		Percentage
Greater Than #4	Gravel	15.61
#4 To #200	Sand	37.92
Finer Than #200	Silt & Clay	46.47
USCS Symbol: <i>SM, TESTED</i>		
USCS Classification: <i>SILTY SAND WITH GRAVEL</i> <i>(Non-Plastic Fines)</i>		

WASH SIEVE ANALYSIS

ASTM D 422-63 (2007)



Client: Wood PLC
 Client Reference: 2424-18-135 (PS-902)
 Project No.: N2018-028-001
 Lab ID: N2018-028-001-002

Boring No.: B-11 OS
 Depth (ft): 8.0-10.0
 Sample No.: ST-1
 Soil Color: Brown

Moisture Content of Passing 3/4" Material		Moisture Content of Retained 3/4" Material	
Tare No.:	18	Tare No.:	NA
Wt. of Tare & Wet Sample (g):	1585.66	Weight of Tare & Wet Sample (g):	NA
Wt. of Tare & Dry Sample (g):	1422.70	Weight of Tare & Dry Sample (g):	NA
Weight of Tare (g):	202.31	Weight of Tare (g):	NA
Weight of Water (g):	162.96	Weight of Water (g):	NA
Weight of Dry Soil (g):	1220.39	Weight of Dry Soil (g):	NA
Moisture Content (%):	13.4	Moisture Content (%):	0.0

Wet Weight of -3/4" Sample (g):	NA	Weight of the Dry Sample (g):	1220.39
Dry Weight of - 3/4" Sample (g):	1220.4	Weight of Minus #200 Material (g):	622.20
Wet Weight of +3/4" Sample (g):	118.66	Weight of Plus #200 Material (g):	598.19
Dry Weight of + 3/4" Sample (g):	118.66		
Total Dry Weight of Sample (g):	1339.1		

Sieve Size	Sieve Opening (mm)	Weight of Soil Retained (g)	Percent Retained (%)	Accumulated Percent Retained (%)	Percent Finer (%)	Accumulated Percent Finer (%)
12"	300	0.00	0.00	0.00	100.00	100.00
6"	150	0.00	0.00	0.00	100.00	100.00
3"	75	0.00	0.00	0.00	100.00	100.00
2"	50	0.00	(*)	0.00	100.00	100.00
1 1/2"	37.5	0.00		0.00	100.00	100.00
1"	25.0	92.13	6.88	6.88	93.12	93.12
3/4"	19.0	26.53	1.98	8.86	91.14	91.14
1/2"	12.5	45.46	3.73	3.73	96.27	87.74
3/8"	9.50	15.41	1.26	4.99	95.01	86.59
#4	4.75	29.55	2.42	7.41	92.59	84.39
#10	2.00	33.52	2.75	10.16	89.84	81.88
#20	0.85	33.88	(**)	12.93	87.07	79.35
#40	0.425	61.39	5.03	17.96	82.04	74.77
#60	0.250	117.70	9.64	27.61	72.39	65.98
#140	0.106	222.37	18.22	45.83	54.17	49.37
#200	0.075	38.91	3.19	49.02	50.98	46.47
Pan	-	622.20	50.98	100.00	-	-

Notes : (*) The + 3/4" sieve analysis is based on the Total Dry Weight of the Sample
 (**) The - 3/4" sieve analysis is based on the Weight of the Dry Sample

Tested By RT Date 10/3/2018 Checked By NC Date 10/4/2018

UNCONFINED COMPRESSIVE STRENGTH
ASTM D2166-16 / AASHTO T208-15 (SOP S-30)

Client: Wood PLC
 Client Reference: 2424-18-135 (PS-902)
 Project No.: N2018-028-001
 Lab ID: N2018-028-001-002

Boring No.: B-11 OS
 Depth (ft): 9.1-9.6
 Sample No.: ST-1
 Visual: BROWN SILTY SAND
 W/ GRAVEL



Tested By NC Date 10/1/2018 Approved By WDS Date 10/2/2018

UNCONFINED COMPRESSIVE STRENGTH
ASTM D2166-16 / AASHTO T208-15 (SOP S-30)



Client: Wood PLC
 Client Reference: 2424-18-135 (PS-902)
 Project No.: N2018-028-001
 Lab ID: N2018-028-001-002

Boring No.: B-11 OS
 Depth (ft): 9.1-9.6
 Sample No.: ST-1
 Visual: BROWN SILTY SAND
 W/ GRAVEL

INITIAL SAMPLE DIMENSIONS				WATER CONTENT AFTER TEST	
Length 1 (in):	5.866	Top Diameter (in):	2.852	Tare No.:	Z18
Length 2 (in):	5.956	Middle Diameter (in):	2.866	Weight of Tare & Wet Sample (g):	1585.66
Length 3 (in):	5.739	Bottom Diameter (in):	2.932	Weight of Tare & Dry Sample (g):	1422.70
Avg. Length (in):	5.854	Avg. Diameter (in):	2.883	Weight of Tare (g):	202.31
		Area (in²):	6.529	Moisture Content (%):	13.35

UNIT WEIGHT			
Weight of Tube & Wet Sample (g):	1386.75	Sample Volume (cm ³):	626.3
Weight of Tube (g):	0.0	Unit Wet Weight (g/cm ³):	2.21
Weight of Wet Sample (g):	1386.75	Unit Wet Weight (pcf):	138.16
Average Diameter (in):	2.88	Moisture Content (%):	13.35
Average Length (in):	5.85	Unit Dry Weight (pcf):	121.88
Average Length (cm):	14.87		

ELECTRONIC DEVICE				
DEFORMATION (in)	LOAD (lb)	ELAPSED TIME (min)	STRAIN (%)	STRESS (psi)
0.000	0.0	0.00	0.000	0.000
0.004	0.6	0.10	0.076	0.093
0.009	0.8	0.20	0.161	0.114
0.017	4.9	0.35	0.291	0.745
0.030	7.5	0.60	0.505	1.135
0.044	9.3	0.88	0.751	1.406
0.063	11.1	1.27	1.073	1.687
0.087	13.2	1.75	1.486	1.994
0.105	14.6	2.12	1.792	2.202
0.129	16.6	2.60	2.206	2.487
0.153	18.2	3.08	2.620	2.719
0.172	19.4	3.45	2.935	2.880
0.214	21.2	4.30	3.655	3.121
0.262	21.7	5.28	4.482	3.175
0.299	21.9	6.00	5.103	3.179
0.335	21.4	6.73	5.723	3.089
0.380	20.4	7.63	6.489	2.917
0.425	20.0	8.55	7.262	2.834
0.455	19.1	9.15	7.776	2.693
0.509	17.8	10.23	8.703	2.482

Notes:

Tested By **NC** Date **10/1/2018** Input Checked By **WDS** Date **10/2/2018**

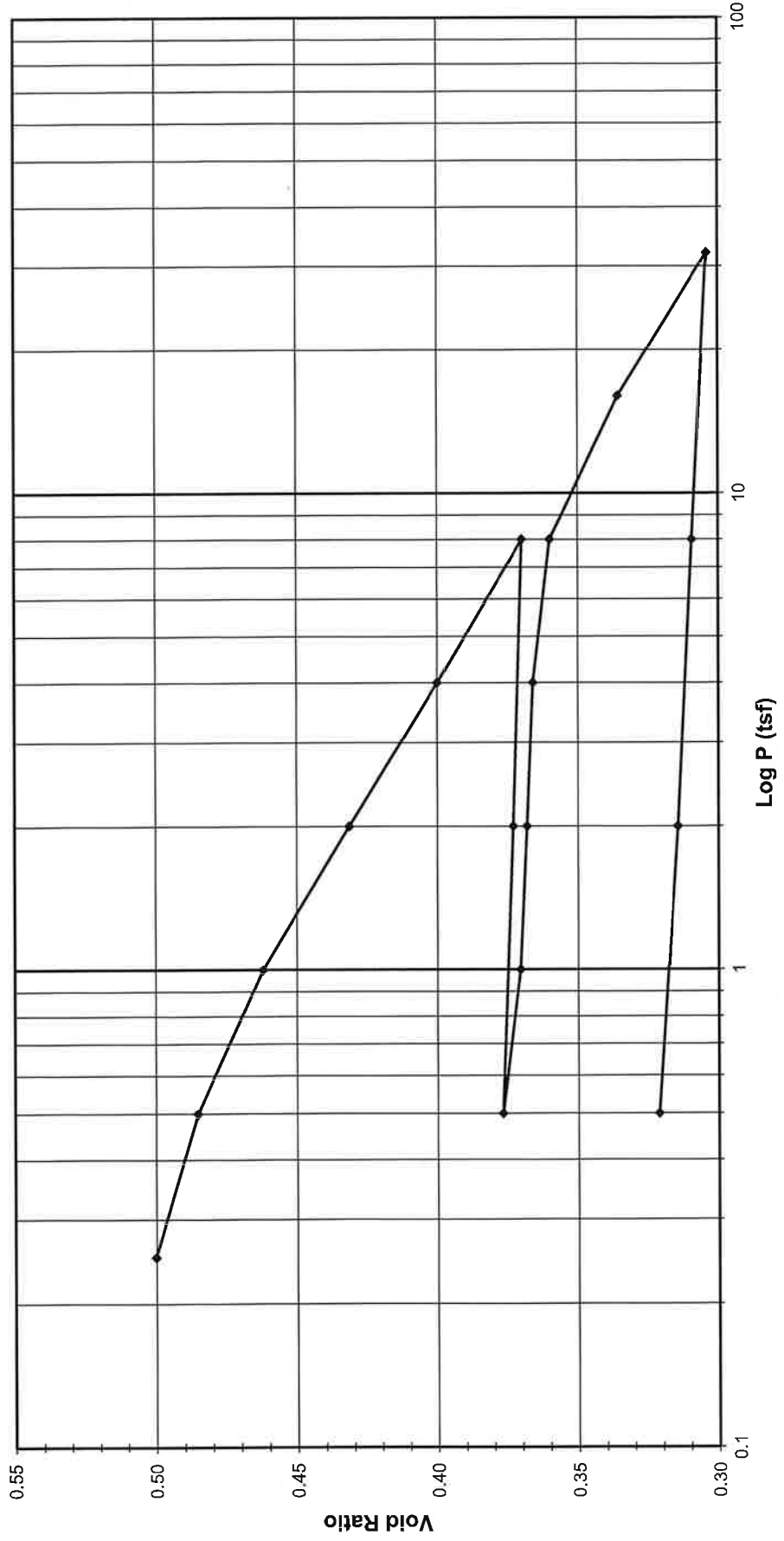


ONE DIMENSIONAL CONSOLIDATION

ASTM D 2435-11

Client	Wood PLC	Boring No.	B-11 OS
Client Reference	2424-18-135 (PS-902)	Depth (ft)	8.0-10.0
Project No.	N-2018-028-001	Sample No.	ST-1
Lab ID	N-2018-028-001-002	Visual Description	BROWN SILTY SAND WITH GRAVEL

Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Tested By NC Date 10/1/2018 Approved By DS Date 10/16/2018



ONE DIMENSIONAL CONSOLIDATION

ASTM D 2435-11

Client: Wood PLC
 Client Reference: 2424-18-135 (PS-902)
 Project No.: N-2018-028-001
 Lab ID: N-2018-028-001-002

Boring No.: B-11 OS
 Depth (ft): 8.0-10.0
 Sample No.: ST-1
 Visual Description: BROWN SILTY SAND WITH GRAVEL

Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED

Consolidometer No.: N139

1 Division = 0.0001 (in.)

Sample Properties

	Initial	Final
Water Content		
Tare Number	T16	11
Wt. Tare & WS (g)	365.74	246.00
Wt. Tare & DS (g)	318.27	229.20
Wt. Water (g)	47.47	16.80
Wt. Tare (g)	8.36	87.88
Wt. DS (g)	309.91	141.32
Water Content (%)	15.32	11.89

Sample Parameters

Sample Diameter (in)	2.5	2.5
Sample Height (in)	1.0000	0.8653
Sample Volume (cc)	80.44	69.61
Wt. Wet Sample + Ring (g)	380.91	376.03
Wt. of Ring (g)	216.87	216.87
Wt. of Wet Sample (g)	164.04	159.16
Wet Density (pcf)	127.25	142.68
Wet Density (g/cc)	2.04	2.29
Water Content (%)	15.32	11.89
Wt. of Dry Sample (g)	142.25	142.25
Dry Density (pcf)	110.35	127.52
Dry Density (g/cc)	1.77	2.04
Void Ratio	0.5268	0.3212
Saturation (%)	78.51	99.93
Specific Gravity	2.70	Assumed

Test Data Summary

Applied Pressure (tsf)	Final Dial Reading (div)	Machine Deflection (div)	Corrected Reading (div)	Height of Sample (mm)	Volume (cc)	Dry Density (g/cc)	Void Ratio
Seating	0	0	0	25.400	80.440	1.76841	0.52679
0.25	195.8	21.4	174.4	24.957	79.037	1.79981	0.50016
0.5	304.5	31.9	272.7	24.707	78.246	1.81799	0.48516
1	473.8	50.3	423.5	24.324	77.033	1.84662	0.46213
2	692.1	67.4	624.7	23.813	75.415	1.88625	0.43141
4	932.9	103.0	829.9	23.292	73.764	1.92846	0.40008
8	1173.5	145.6	1027.8	22.789	72.172	1.97100	0.36986
2	1107.7	100.4	1007.2	22.842	72.338	1.96649	0.37301
0.5	1041.7	59.3	982.4	22.905	72.537	1.96107	0.37680
1	1105.0	81.0	1024.0	22.799	72.203	1.97016	0.37045
2	1127.9	88.8	1039.1	22.761	72.081	1.97348	0.36814
4	1164.8	110.8	1053.9	22.723	71.962	1.97675	0.36588
8	1239.3	146.1	1093.2	22.623	71.646	1.98546	0.35989
16	1448.3	196.8	1251.5	22.221	70.373	2.02139	0.33571
32	1745.5	287.8	1457.7	21.697	68.714	2.07018	0.30423
8	1618.6	195.3	1423.3	21.785	68.991	2.06188	0.30949
2	1519.3	128.7	1390.6	21.868	69.254	2.05404	0.31448
0.5	1423.2	76.7	1346.5	21.980	69.609	2.04358	0.32121

Tested By: NC Date: 10/1/2018 Input Checked By: DS Date: 10/16/2018



ONE DIMENSIONAL CONSOLIDATION
ASTM D 2435-11

Client Wood PLC
 Client Project 2424-18-135 (PS-902)
 Project No. N-2018-028-001
 Lab ID N-2018-028-001-002

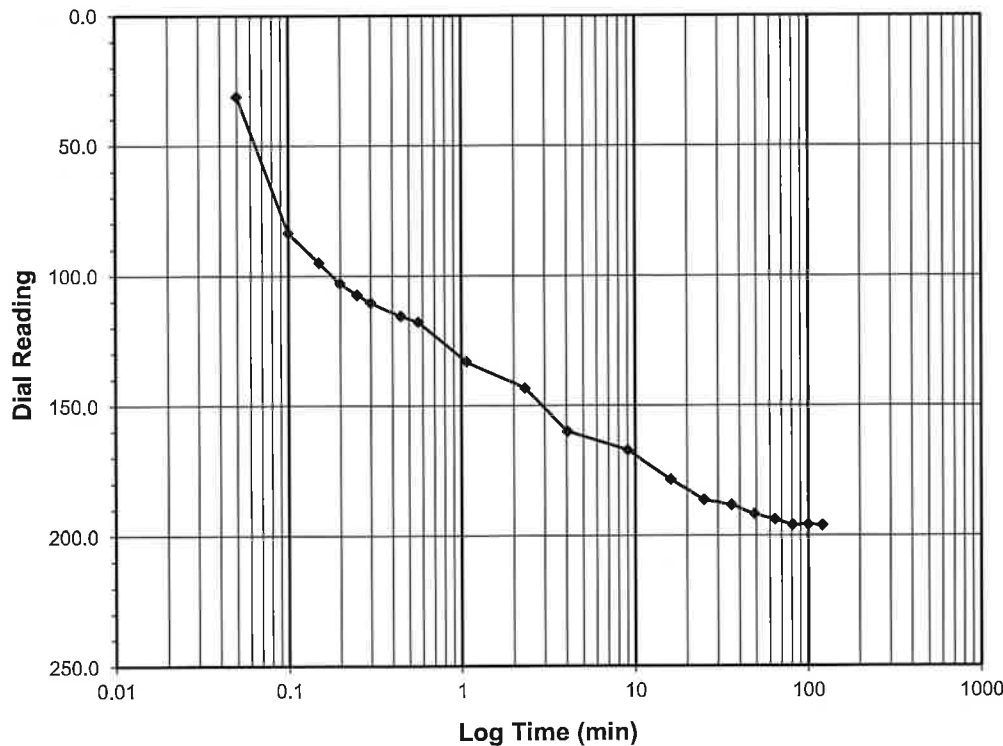
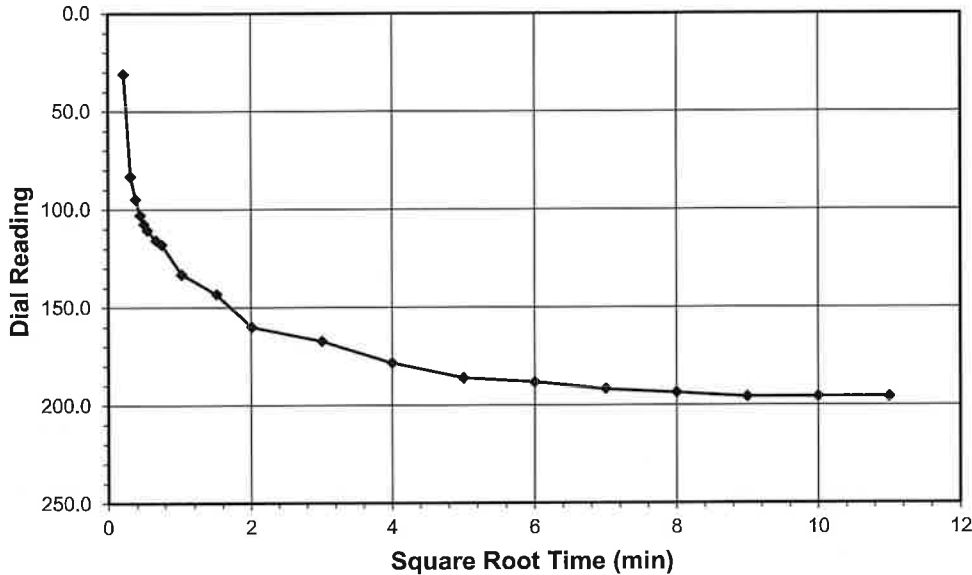
Boring No. B-11 OS
 Depth (ft) 8.0-10.0
 Sample No. ST-1
 Visual Description BROWN SILTY SAND WITH GRAVEL

Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED

Test Load (tsf) 0.0-0.25
Final Reading (div) 195.8
 Consolidometer No. **N139**
 1 Division (in) 0.0001

Start Date 10/1/2018
 Start Time 13:34:54

Elapsed Time (min)	Dial Reading (div)
Initial	0.0
0.05	31.1
0.10	83.4
0.15	94.9
0.20	102.9
0.25	107.2
0.30	110.4
0.45	115.5
0.57	117.7
1.07	133.0
2.32	143.1
4.07	159.9
9.07	167.1
16.07	178.4
25.07	186.2
36.07	188.2
49.07	191.7
64.07	193.6
81.07	195.8
100.08	195.6
121.08	195.8



Tested By NC Date 10/1/2018 Checked By DS Date 10/16/2018

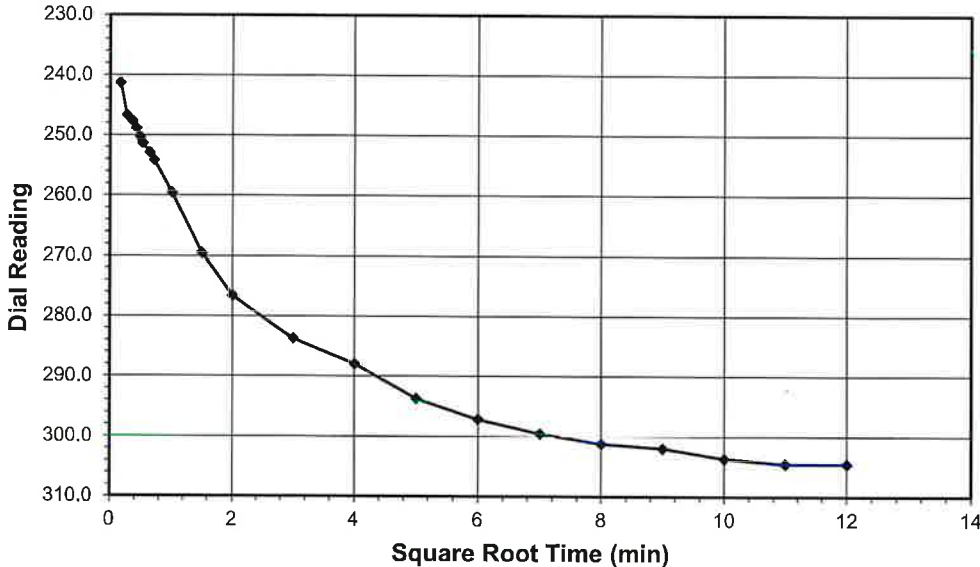


ONE DIMENSIONAL CONSOLIDATION
ASTM D 2435-11

Client Wood PLC
 Client Project 2424-18-135 (PS-902)
 Project No. N-2018-028-001
 Lab ID N-2018-028-001-002

Boring No. B-11 OS
 Depth (ft) 8.0-10.0
 Sample No. ST-1
 Visual Description BROWN SILTY SAND WITH GRAVEL

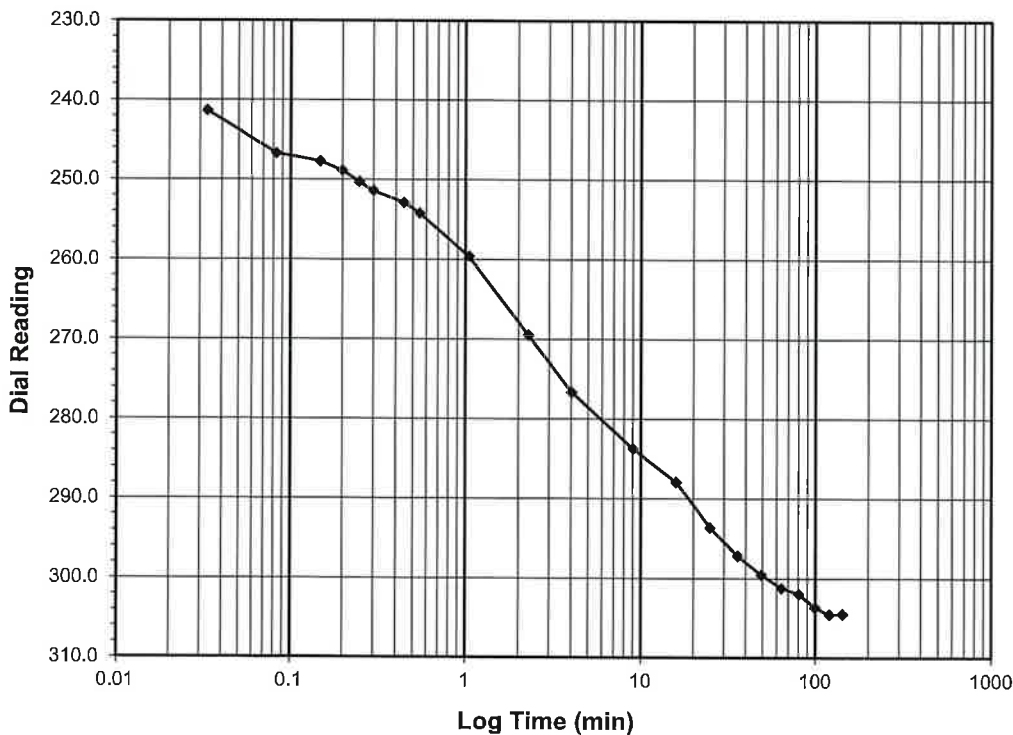
Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Test Load (tsf) 0.25-0.5
Final Reading (div) 304.5
 Consolidometer No. N139
 1 Division (in) 0.0001

Start Date 10/2/2018
Start Time 1:35:22

Elapsed Time (min)	Dial Reading (div)
Initial	195.8
0.03	241.3
0.08	246.7
0.15	247.7
0.20	248.9
0.25	250.3
0.30	251.4
0.45	252.9
0.55	254.2
1.05	259.6
2.30	269.5
4.05	276.7
9.07	283.8
16.07	287.9
25.07	289.7
36.07	293.7
49.07	297.1
64.07	299.5
81.07	301.2
100.07	302.0
121.07	303.7
144.07	304.5
144.07	304.5



Tested By NC Date 10/2/2018 Checked By DS Date 10/16/2018



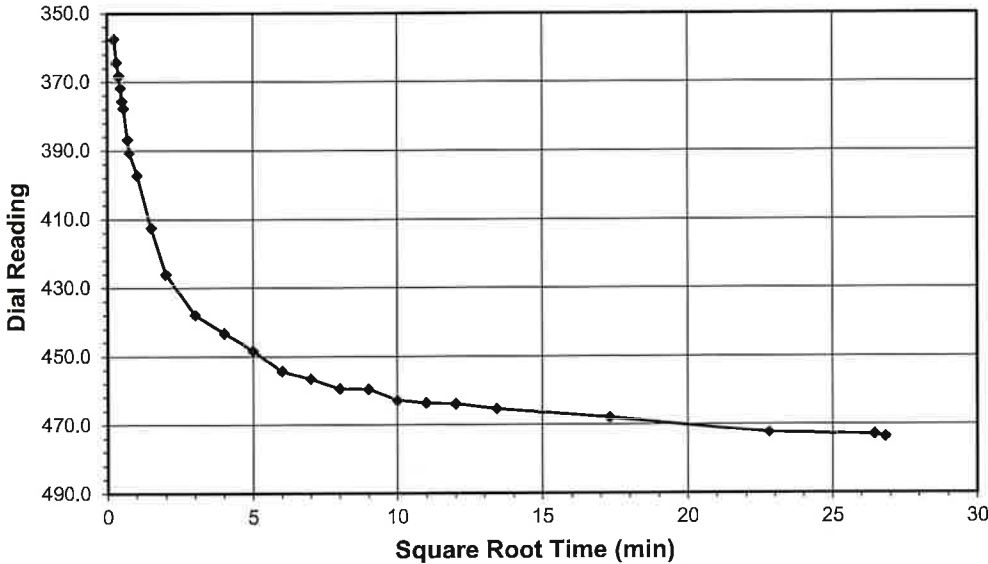
ONE DIMENSIONAL CONSOLIDATION

ASTM D 2435-11

Client Wood PLC
 Client Project 2424-18-135 (PS-902)
 Project No. N-2018-028-001
 Lab ID N-2018-028-001-002

Boring No. B-11 OS
 Depth (ft) 8.0-10.0
 Sample No. ST-1
 Visual Description BROWN SILTY SAND WITH GRAVEL

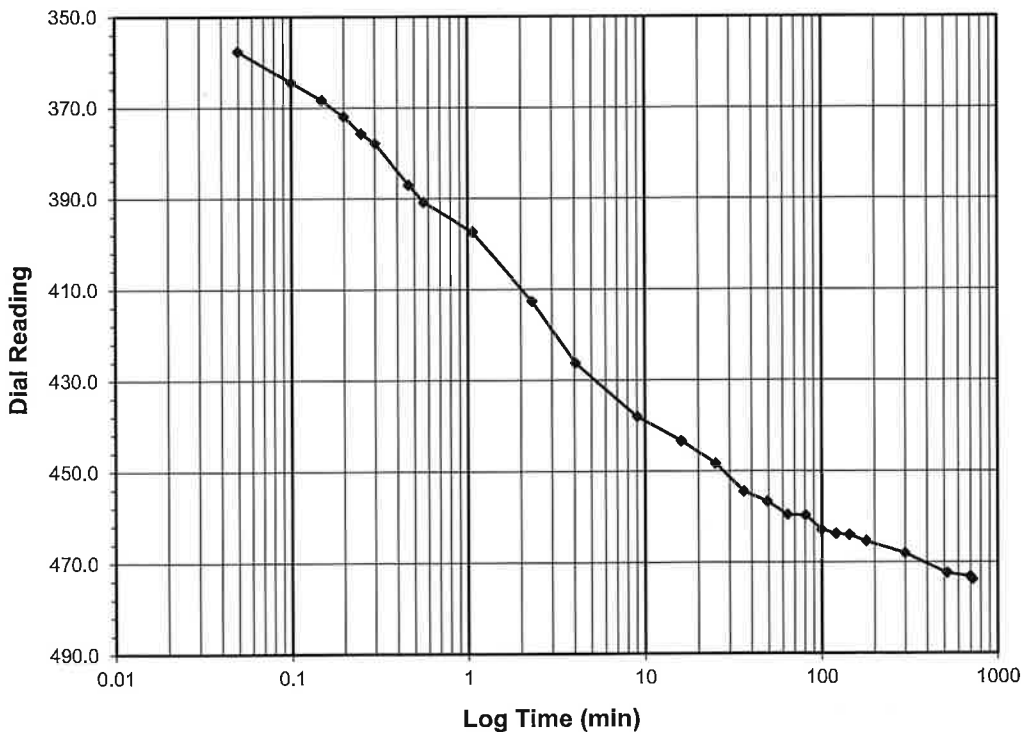
Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Test Load (tsf) 0.5-1.0
 Final Reading (div) 473.8
 Consolidometer No. N139
 1 Division (in) 0.0001

Start Date 10/2/2018
 Start Time 13:35:51

Elapsed Time (min)	Dial Reading (div)
Initial	304.5
0.05	357.6
0.10	364.5
0.15	368.4
0.20	371.9
0.25	375.7
0.30	377.9
0.47	387.0
0.57	390.8
1.07	397.4
2.32	412.6
4.07	426.1
9.07	438.0
16.07	443.4
25.07	448.3
36.07	454.5
49.07	456.7
64.07	459.6
81.07	459.7
100.07	462.9
121.07	463.8
144.07	464.0
180.07	465.5
300.07	468.0
520.07	472.4
700.07	473.1
720.12	473.8



Tested By NC Date 10/2/2018 Checked By DS Date 10/16/2018

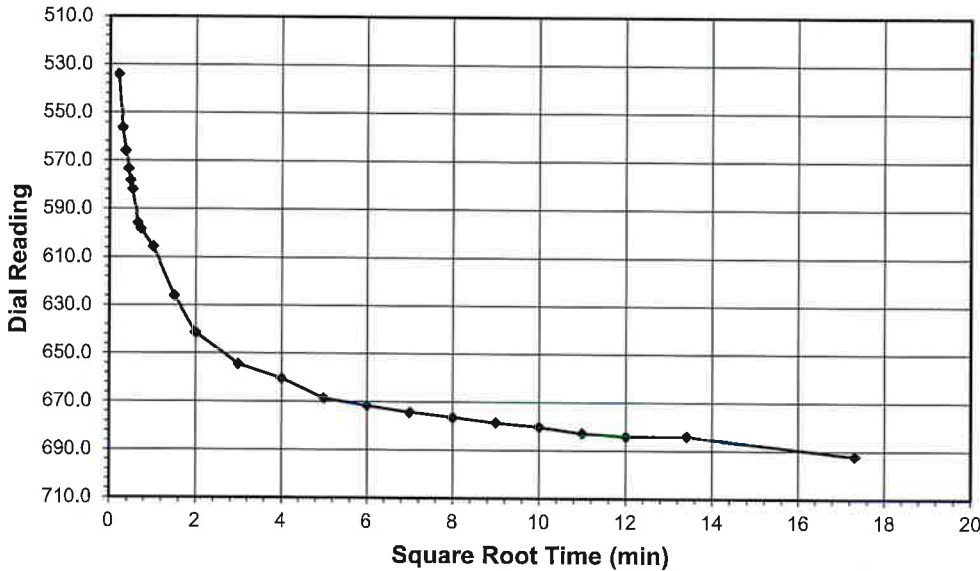


ONE DIMENSIONAL CONSOLIDATION
ASTM D 2435-11

Client Wood PLC
 Client Project 2424-18-135 (PS-902)
 Project No. N-2018-028-001
 Lab ID N-2018-028-001-002

Boring No. B-11 OS
 Depth (ft) 8.0-10.0
 Sample No. ST-1
 Visual Description BROWN SILTY SAND WITH GRAVEL

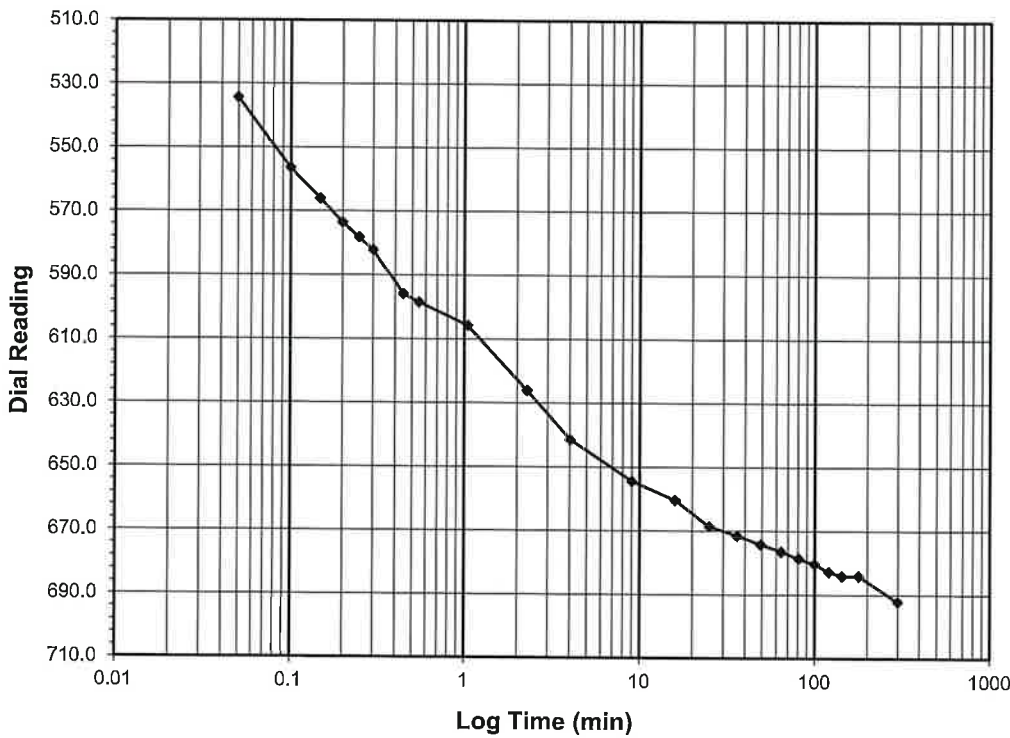
Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Test Load (tsf) 1.0-2.0
Final Reading (div) 692.1
 Consolidometer No. N139
 1 Division (in) 0.0001

Start Date 10/3/2018
Start Time 1:35:58

Elapsed Time (min)	Dial Reading (div)
Initial	473.8
0.05	534.3
0.10	556.4
0.15	566.1
0.20	573.5
0.25	578.2
0.30	582.1
0.45	595.9
0.55	598.4
1.05	605.7
2.30	626.1
4.05	641.5
9.05	654.4
16.05	660.3
25.05	668.6
36.07	671.5
49.07	674.2
64.07	676.4
81.08	678.5
100.08	680.2
121.08	682.7
144.08	684.0
180.08	684.0
300.10	692.1



Tested By NC Date 10/3/2018 Checked By DS Date 10/16/2018



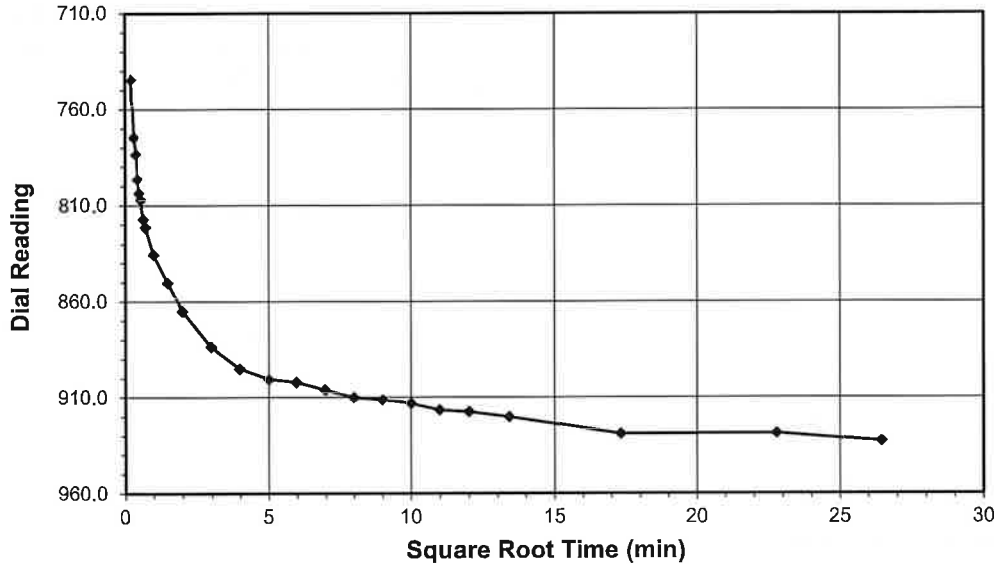
ONE DIMENSIONAL CONSOLIDATION

ASTM D 2435-11

Client Wood PLC
 Client Project 2424-18-135 (PS-902)
 Project No. N-2018-028-001
 Lab ID N-2018-028-001-002

Boring No. B-11 OS
 Depth (ft) 8.0-10.0
 Sample No. ST-1
 Visual Description BROWN SILTY SAND WITH GRAVEL

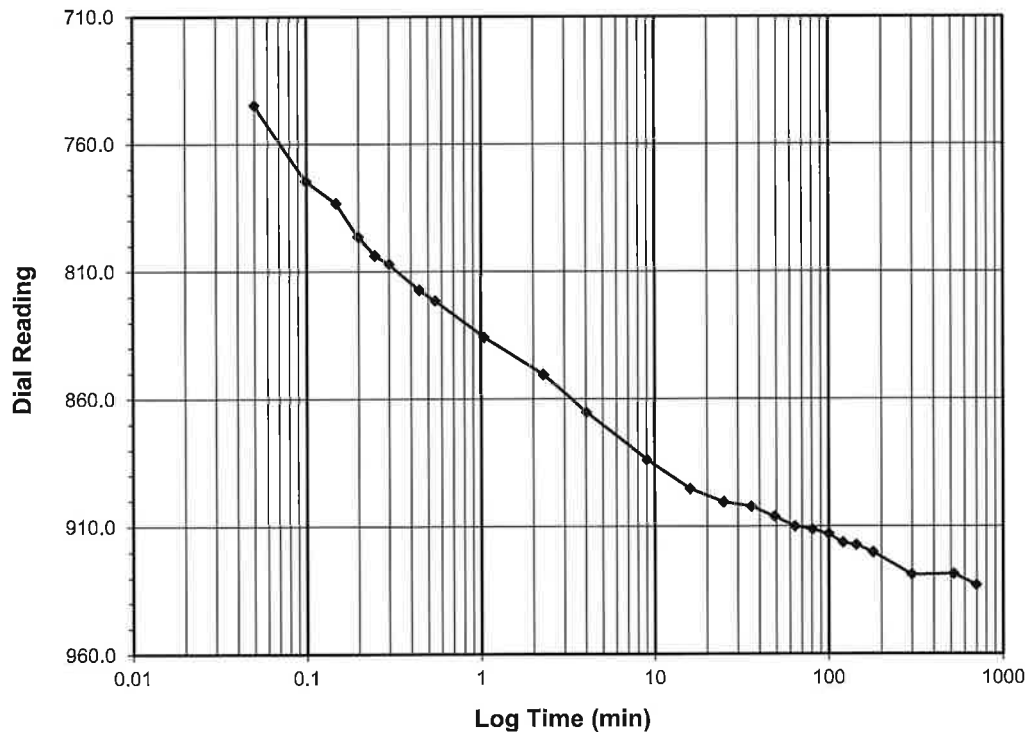
Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Test Load (tsf) 2.0-4.0
Final Reading (div) 932.9
 Consolidometer No. N139
 1 Division (in) 0.0001

Start Date 10/3/2018
Start Time 13:36:28

Elapsed Time (min)	Dial Reading (div)
Initial	692.1
0.05	744.7
0.10	774.6
0.15	783.4
0.20	796.5
0.25	803.7
0.30	807.0
0.45	817.3
0.55	821.4
1.05	835.8
2.30	850.4
4.05	865.2
9.05	883.9
16.05	895.3
25.05	900.5
36.05	902.3
49.05	906.2
64.05	910.0
81.05	911.2
100.05	913.0
121.05	916.4
144.05	917.3
180.07	920.1
300.07	928.9
520.08	928.6
700.08	932.9



Tested By NC Date 10/3/2018 Checked By DS Date 10/16/2018



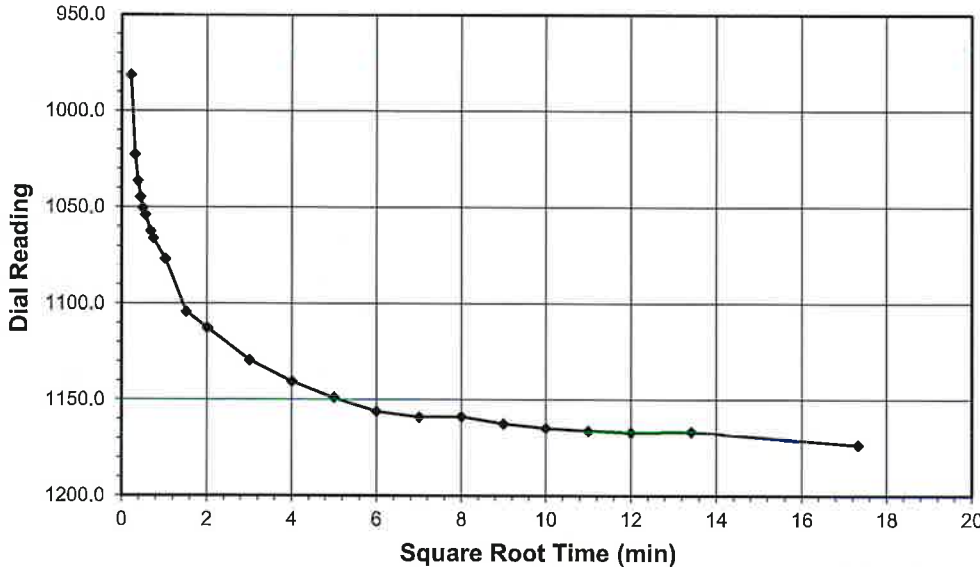
ONE DIMENSIONAL CONSOLIDATION

ASTM D 2435-11

Client Wood PLC
 Client Project 2424-18-135 (PS-902)
 Project No. N-2018-028-001
 Lab ID N-2018-028-001-002

Boring No. B-11 OS
 Depth (ft) 8.0-10.0
 Sample No. ST-1
 Visual Description BROWN SILTY SAND WITH GRAVEL

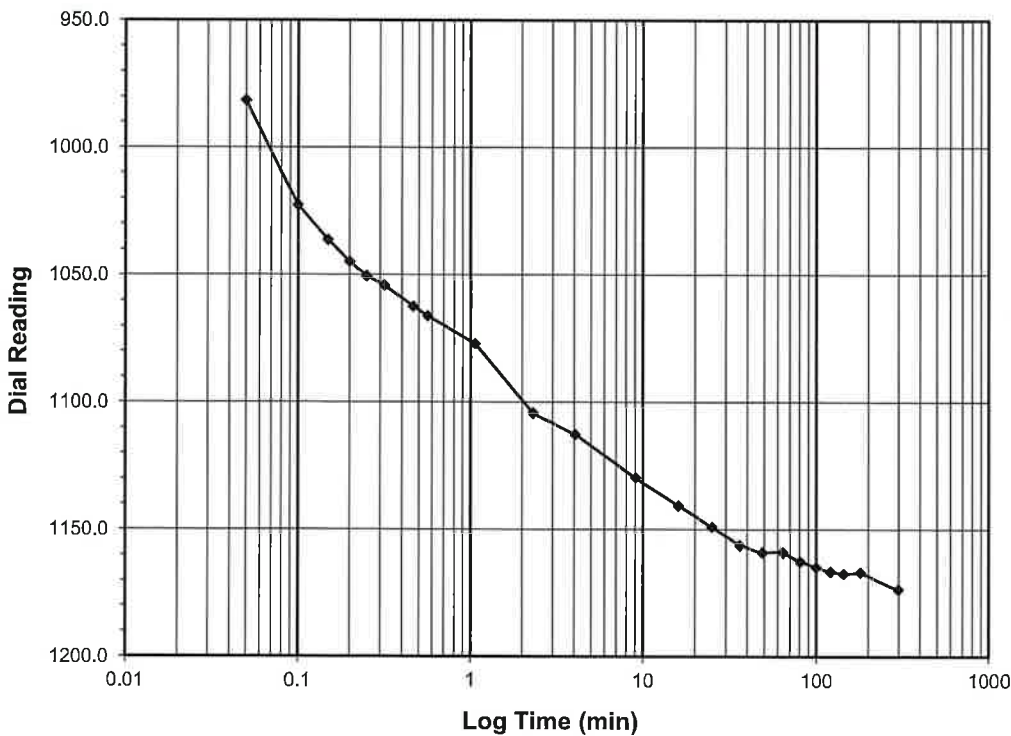
Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Test Load (tsf) 4.0-8.0
 Final Reading (div) 1173.5
 Consolidometer No. N139
 1 Division (in) 0.0001

Start Date 10/4/2018
 Start Time 1:36:44

Elapsed Time (min)	Dial Reading (div)
Initial	932.9
0.05	981.4
0.10	1022.6
0.15	1036.4
0.20	1044.8
0.25	1050.3
0.32	1054.0
0.47	1062.3
0.57	1066.1
1.07	1076.9
2.32	1104.2
4.07	1112.6
9.07	1129.5
16.07	1140.5
25.07	1148.9
36.07	1156.1
49.07	1159.0
64.08	1158.7
81.08	1162.5
100.08	1164.7
121.08	1166.1
144.08	1167.0
180.08	1166.6
300.05	1173.5



Tested By NC Date 10/4/2018 Checked By DS Date 10/16/2018

ONE DIMENSIONAL CONSOLIDATION

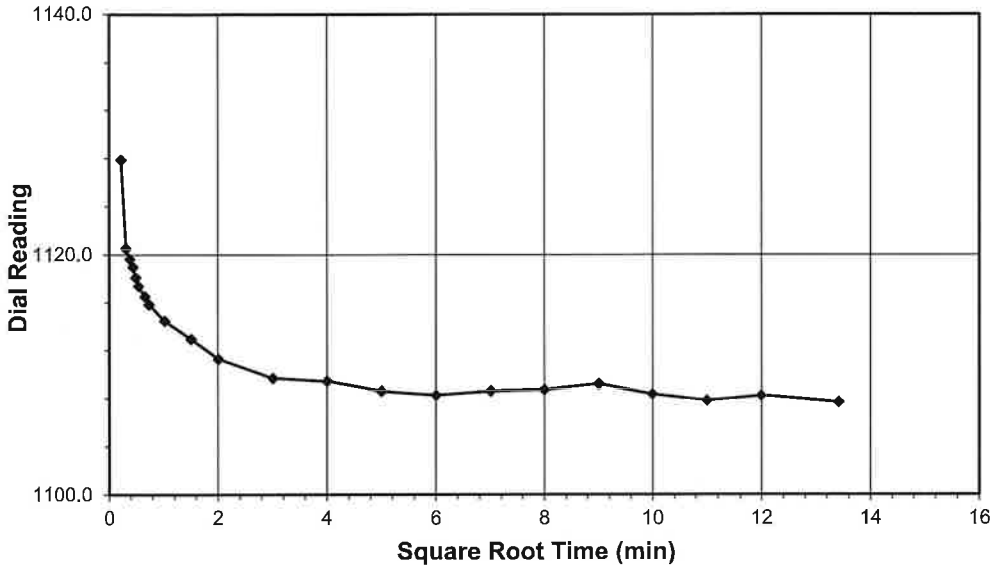
ASTM D 2435-11



Client Wood PLC
 Client Project 2424-18-135 (PS-902)
 Project No. N-2018-028-001
 Lab ID N-2018-028-001-002

Boring No. B-11 OS
 Depth (ft) 8.0-10.0
 Sample No. ST-1
 Visual Description BROWN SILTY SAND WITH GRAVEL

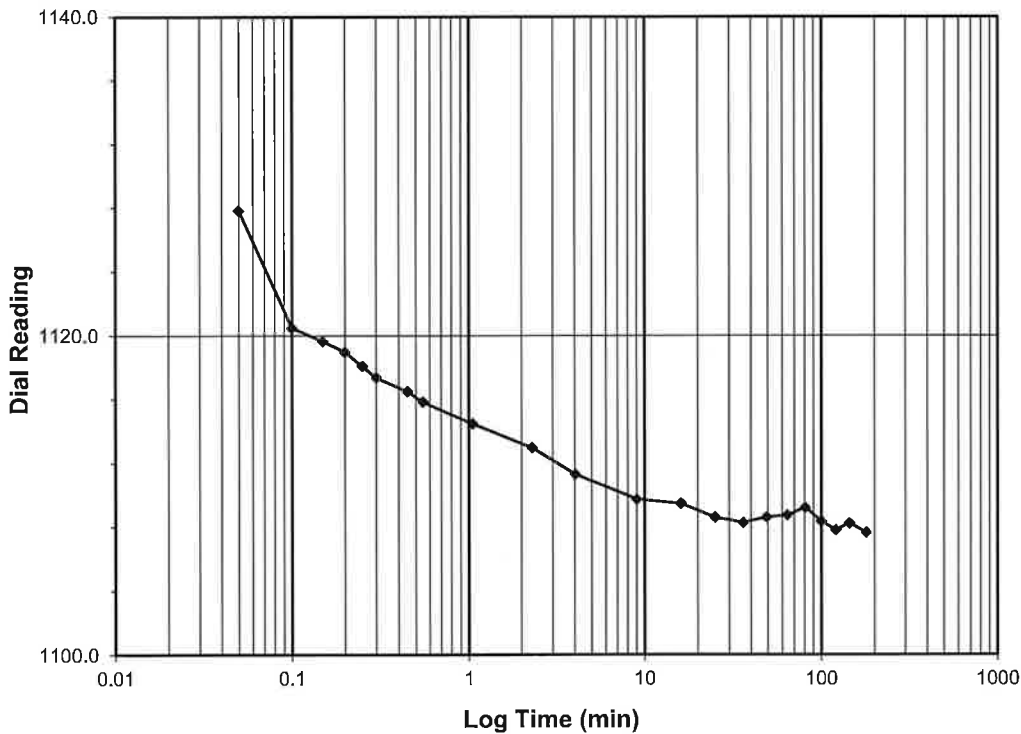
Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Test Load (tsf) 8.0-2.0
Final Reading (div) 1107.7
 Consolidometer No. N139
 1 Division (in) 0.0001

Start Date 10/4/2018
 Start Time 13:37:13

Elapsed Time (min)	Dial Reading (div)
Initial	1173.5
0.05	1127.8
0.10	1120.5
0.15	1119.7
0.20	1119.0
0.25	1118.1
0.30	1117.4
0.45	1116.5
0.55	1115.9
1.05	1114.5
2.30	1113.0
4.05	1111.3
9.05	1109.7
16.07	1109.5
25.07	1108.6
36.07	1108.3
49.07	1108.6
64.07	1108.7
81.07	1109.2
100.05	1108.4
121.05	1107.8
144.05	1108.2
180.05	1107.7



Tested By NC Date 10/4/2018 Checked By DS Date 10/16/2018



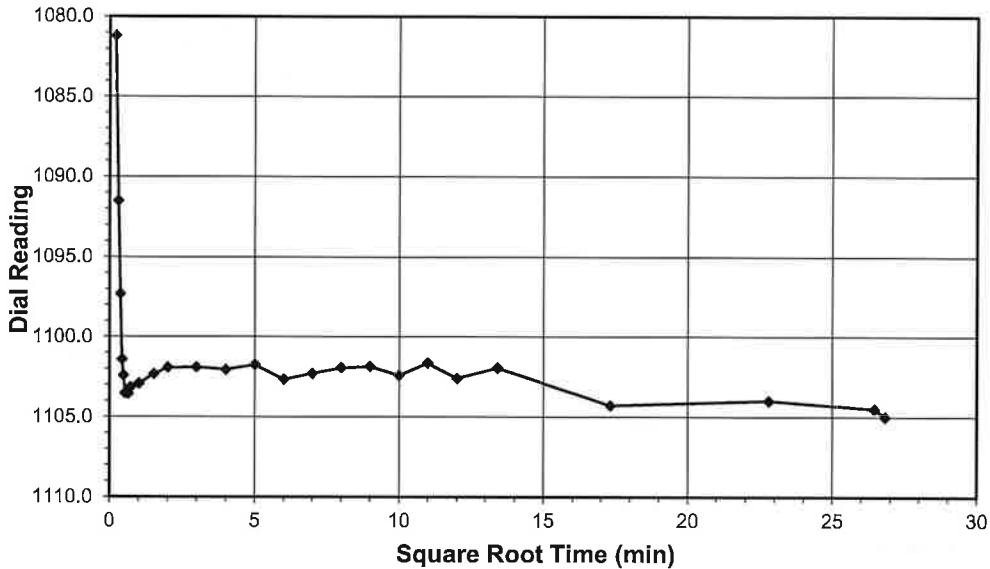
ONE DIMENSIONAL CONSOLIDATION

ASTM D 2435-11

Client Wood PLC
 Client Project 2424-18-135 (PS-902)
 Project No. N-2018-028-001
 Lab ID N-2018-028-001-002

Boring No. B-11 OS
 Depth (ft) 8.0-10.0
 Sample No. ST-1
 Visual Description BROWN SILTY SAND WITH GRAVEL

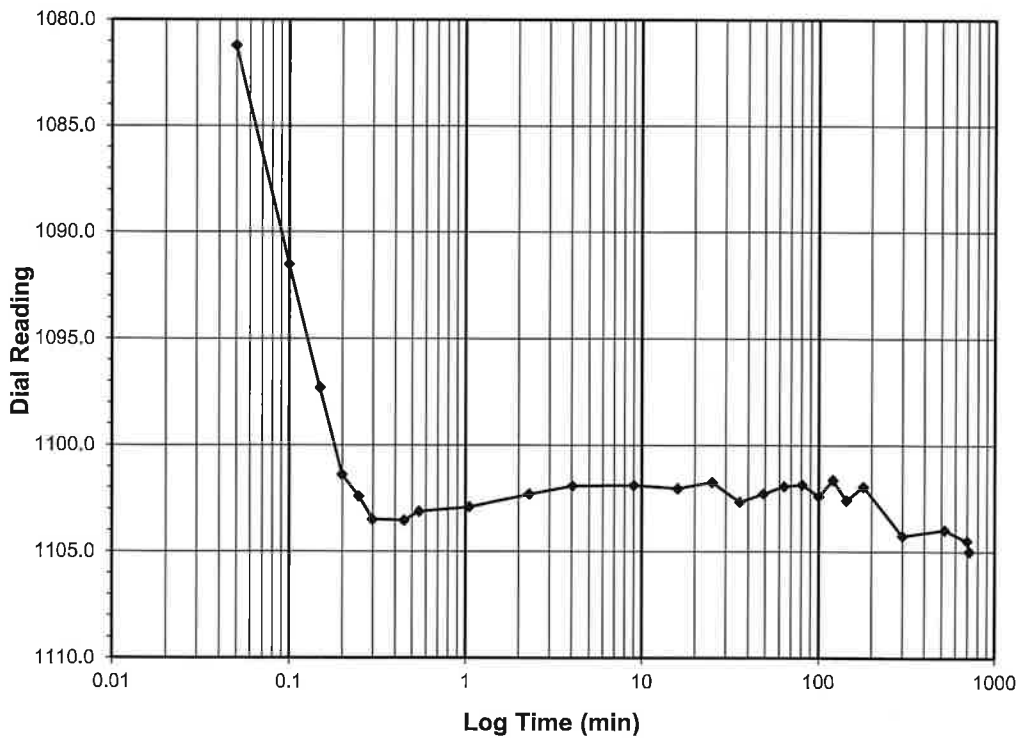
Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Test Load (tsf) 0.5-1.0
Final Reading (div) 1105.0
 Consolidometer No. N139
 1 Division (in) 0.0001

Start Date 10/5/2018
Start Time 13:23:13

Elapsed Time (min)	Dial Reading (div)
Initial	1041.7
0.05	1081.2
0.10	1091.5
0.15	1097.3
0.20	1101.4
0.25	1102.4
0.30	1103.5
0.45	1103.5
0.55	1103.1
1.05	1102.9
2.30	1102.3
4.05	1101.9
9.05	1101.9
16.07	1102.0
25.07	1101.7
36.07	1102.7
49.07	1102.3
64.07	1101.9
81.07	1101.9
100.07	1102.4
121.07	1101.6
144.07	1102.6
180.07	1101.9
300.07	1104.3
520.05	1104.0
700.03	1104.5
720.13	1105.0



Tested By NC Date 10/5/2018 Checked By DS Date 10/16/2018



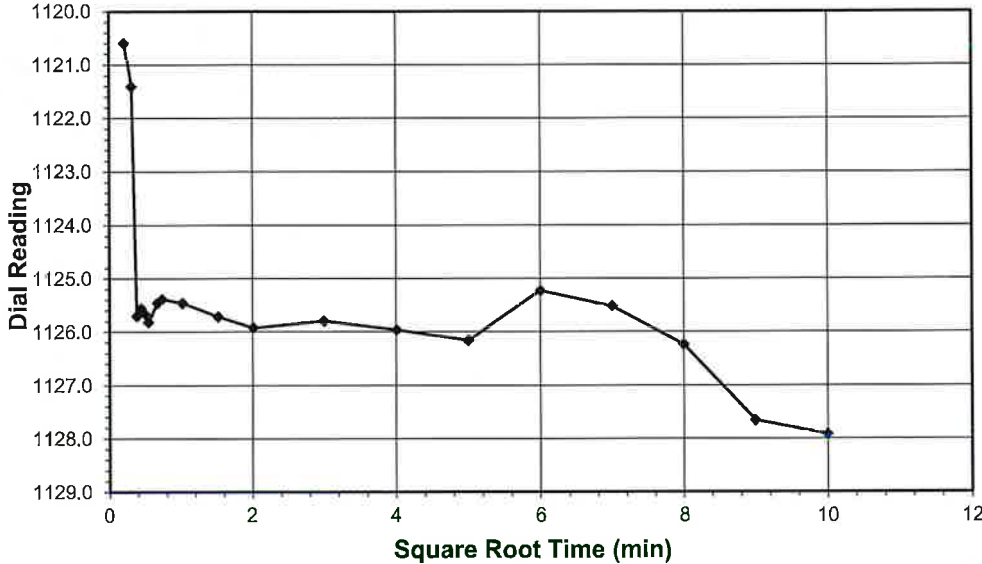
ONE DIMENSIONAL CONSOLIDATION

ASTM D 2435-11

Client Wood PLC
 Client Project 2424-18-135 (PS-902)
 Project No. N-2018-028-001
 Lab ID N-2018-028-001-002

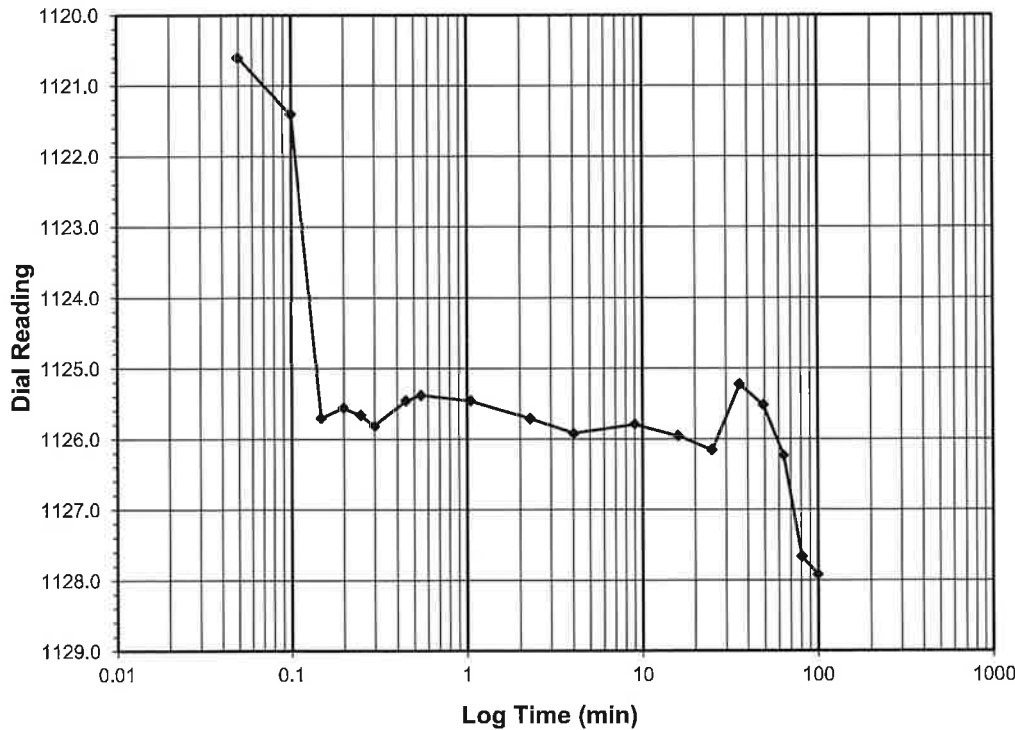
Boring No. B-11 OS
 Depth (ft) 8.0-10.0
 Sample No. ST-1
 Visual Description BROWN SILTY SAND WITH GRAVEL

Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Test Load (tsf) 1.0-2.0
Final Reading (div) 1127.9
 Consolidometer No. N139
 1 Division (in) 0.0001
 Start Date 10/6/2018
 Start Time 1:23:21

Elapsed Time (min)	Dial Reading (div)
Initial	1105.0
0.05	1120.6
0.10	1121.4
0.15	1125.7
0.20	1125.6
0.25	1125.7
0.30	1125.8
0.45	1125.5
0.55	1125.4
1.05	1125.5
2.30	1125.7
4.05	1125.9
9.05	1125.8
16.07	1126.0
25.07	1126.2
36.07	1125.2
49.07	1125.5
64.07	1126.2
81.07	1127.7
100.07	1127.9



Tested By NC Date 10/6/2018 Checked By DS Date 10/16/2018



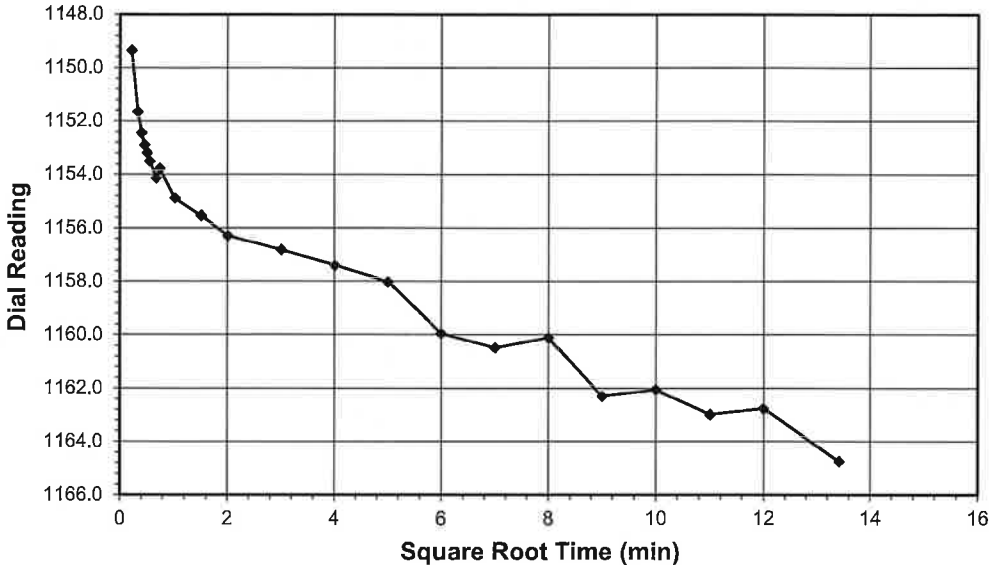
ONE DIMENSIONAL CONSOLIDATION

ASTM D 2435-11

Client Wood PLC
 Client Project 2424-18-135 (PS-902)
 Project No. N-2018-028-001
 Lab ID N-2018-028-001-002

Boring No. B-11 OS
 Depth (ft) 8.0-10.0
 Sample No. ST-1
 Visual Description BROWN SILTY SAND WITH GRAVEL

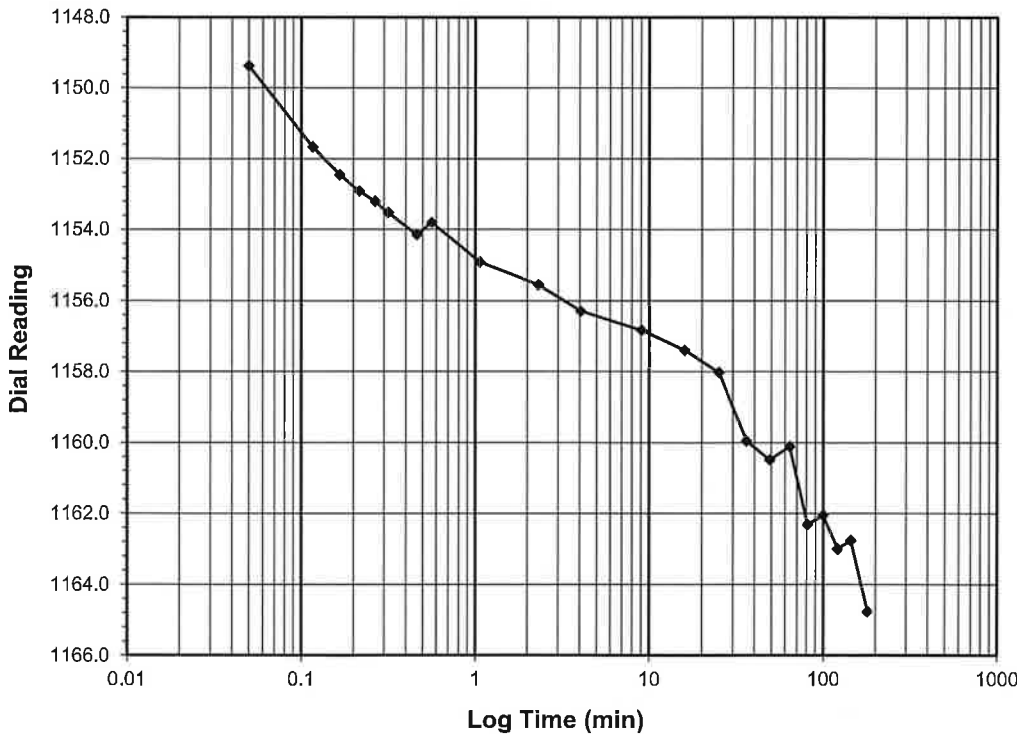
Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Test Load (tsf) 2.0-4.0
Final Reading (div) 1164.8
 Consolidometer No. **N139**
 1 Division (in) 0.0001

Start Date 10/6/2018
 Start Time 13:23:48

Elapsed Time (min)	Dial Reading (div)
Initial	1127.9
0.05	1149.4
0.12	1151.7
0.17	1152.5
0.22	1152.9
0.27	1153.2
0.32	1153.5
0.47	1154.1
0.57	1153.8
1.07	1154.9
2.32	1155.6
4.07	1156.3
9.07	1156.8
16.07	1157.4
25.07	1158.0
36.07	1160.0
49.07	1160.5
64.07	1160.1
81.07	1162.3
100.07	1162.0
121.08	1163.0
144.08	1162.8
180.08	1164.8



Tested By NC Date 10/6/2018 Checked By DS Date 10/16/2018



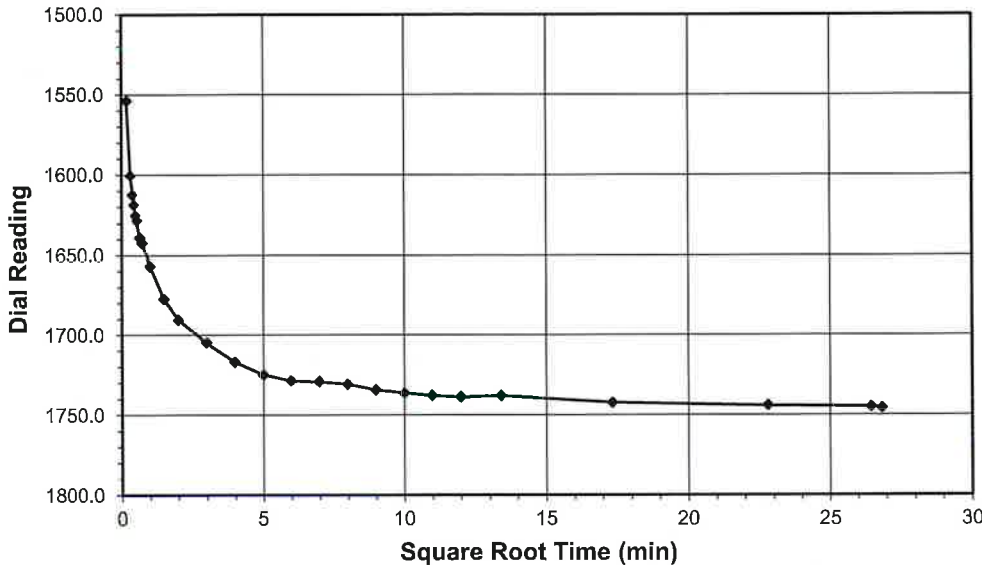
ONE DIMENSIONAL CONSOLIDATION

ASTM D 2435-11

Client Wood PLC
 Client Project 2424-18-135 (PS-902)
 Project No. N-2018-028-001
 Lab ID N-2018-028-001-002

Boring No. B-11 OS
 Depth (ft) 8.0-10.0
 Sample No. ST-1
 Visual Description BROWN SILTY SAND WITH GRAVEL

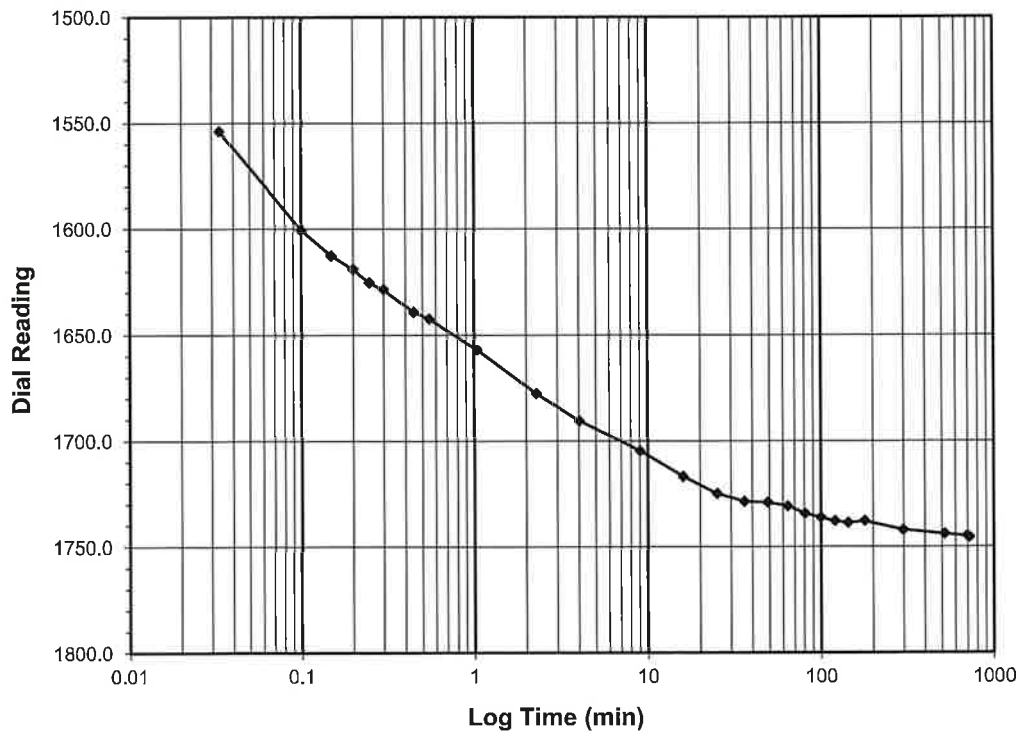
Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Test Load (tsf) 16.0-32.0
Final Reading (div) 1745.5
 Consolidometer No. N139
 1 Division (in) 0.0001

Start Date 10/8/2018
 Start Time 1:24:44

Elapsed Time (min)	Dial Reading (div)
Initial	1448.3
0.03	1553.7
0.10	1600.4
0.15	1612.4
0.20	1618.7
0.25	1625.2
0.30	1628.4
0.45	1639.1
0.55	1642.3
1.05	1657.0
2.30	1677.5
4.05	1690.5
9.05	1704.6
16.05	1716.8
25.05	1724.8
36.05	1728.5
49.05	1729.1
64.05	1730.8
81.05	1734.3
100.05	1736.2
121.05	1737.8
144.05	1738.7
180.05	1737.8
300.05	1742.1
520.05	1743.9
700.08	1744.8
720.30	1745.5



Tested By NC Date 10/8/2018 Checked By DS Date 10/16/2018

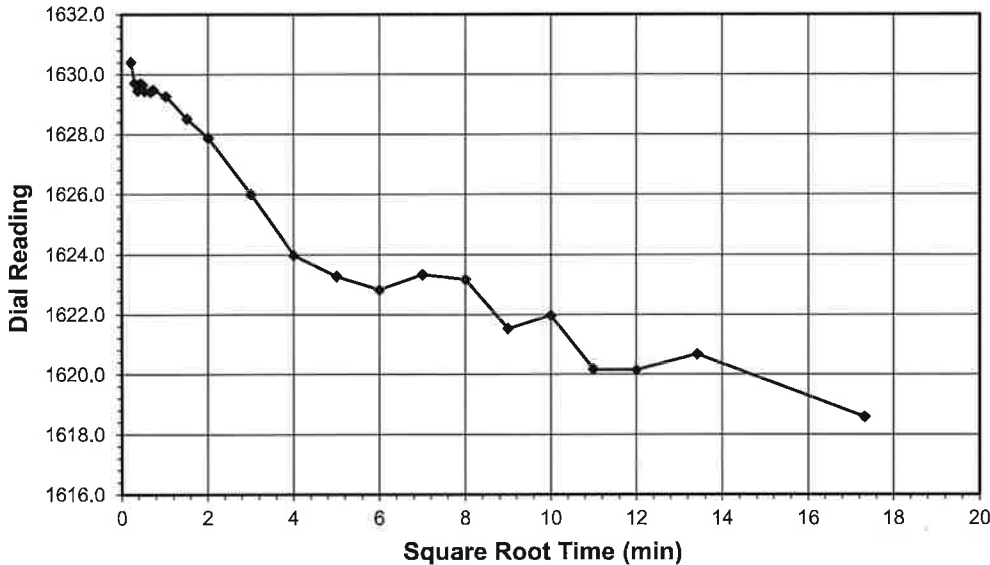


ONE DIMENSIONAL CONSOLIDATION
ASTM D 2435-11

Client: Wood PLC
 Client Project: 2424-18-135 (PS-902)
 Project No.: N-2018-028-001
 Lab ID: N-2018-028-001-002

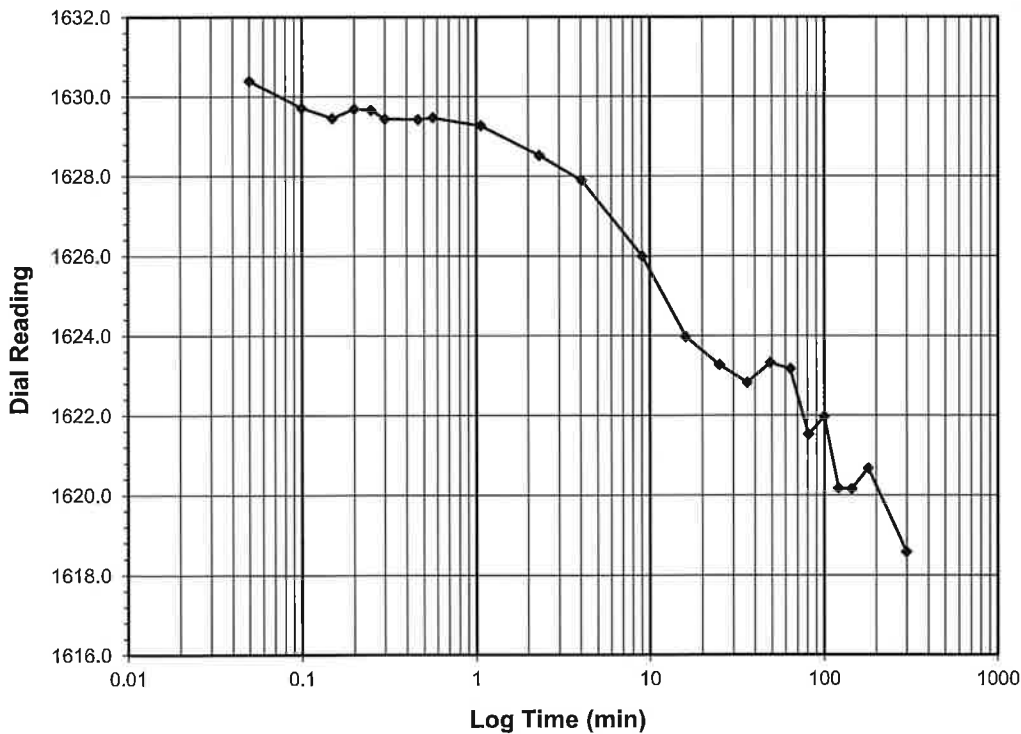
Boring No.: B-11 OS
 Depth (ft): 8.0-10.0
 Sample No.: ST-1
 Visual Description: BROWN SILTY SAND WITH GRAVEL

Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Test Load (tsf): 32.0-8.0
Final Reading (div): 1618.6
 Consolidometer No.: N139
 1 Division (in): 0.0001
 Start Date: 10/8/2018
 Start Time: 13:25:03

Elapsed Time (min)	Dial Reading (div)
Initial	1745.5
0.05	1630.4
0.10	1629.7
0.15	1629.5
0.20	1629.7
0.25	1629.7
0.30	1629.4
0.47	1629.4
0.57	1629.5
1.07	1629.3
2.32	1628.5
4.07	1627.9
9.07	1626.0
16.07	1624.0
25.07	1623.3
36.07	1622.8
49.07	1623.3
64.07	1623.2
81.08	1621.5
100.08	1622.0
121.08	1620.2
144.08	1620.2
180.08	1620.7
300.08	1618.6



Tested By: NC Date: 10/8/2018 Checked By: DS Date: 10/16/2018

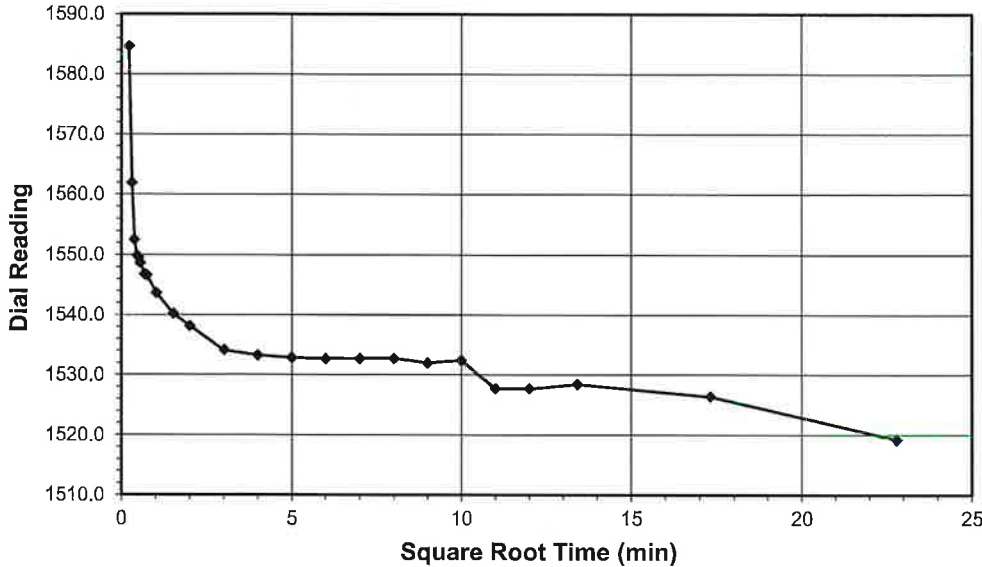


ONE DIMENSIONAL CONSOLIDATION
ASTM D 2435-11

Client Wood PLC
 Client Project 2424-18-135 (PS-902)
 Project No. N-2018-028-001
 Lab ID N-2018-028-001-002

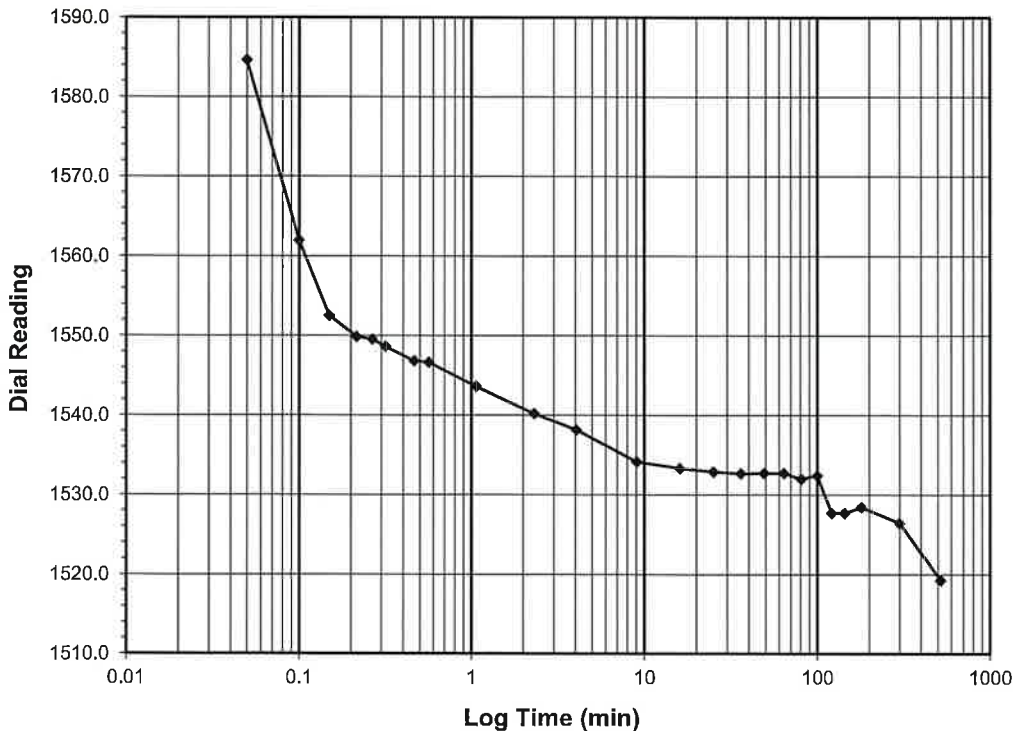
Boring No. B-11 OS
 Depth (ft) 8.0-10.0
 Sample No. ST-1
 Visual Description BROWN SILTY SAND WITH GRAVEL

Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Test Load (tsf) 8.0-2.0
Final Reading (div) 1519.3
 Consolidometer No. **N139**
 1 Division (in) 0.0001
 Start Date 10/9/2018
 Start Time 1:25:05

Elapsed Time (min)	Dial Reading (div)
Initial	1618.6
0.05	1584.6
0.10	1561.9
0.15	1552.5
0.22	1549.9
0.27	1549.6
0.32	1548.6
0.47	1546.8
0.57	1546.6
1.07	1543.6
2.32	1540.2
4.07	1538.2
9.07	1534.1
16.07	1533.3
25.07	1532.9
36.08	1532.7
49.08	1532.7
64.08	1532.7
81.08	1532.0
100.08	1532.4
121.08	1527.7
144.08	1527.7
180.08	1528.4
300.10	1526.4
520.10	1519.3



Tested By **NC** Date **10/9/2018** Checked By **DS** Date **10/16/2018**



ONE DIMENSIONAL CONSOLIDATION
ASTM D 2435-11

Client Wood PLC
 Client Project 2424-18-135 (PS-902)
 Project No. N-2018-028-001
 Lab ID N-2018-028-001-002

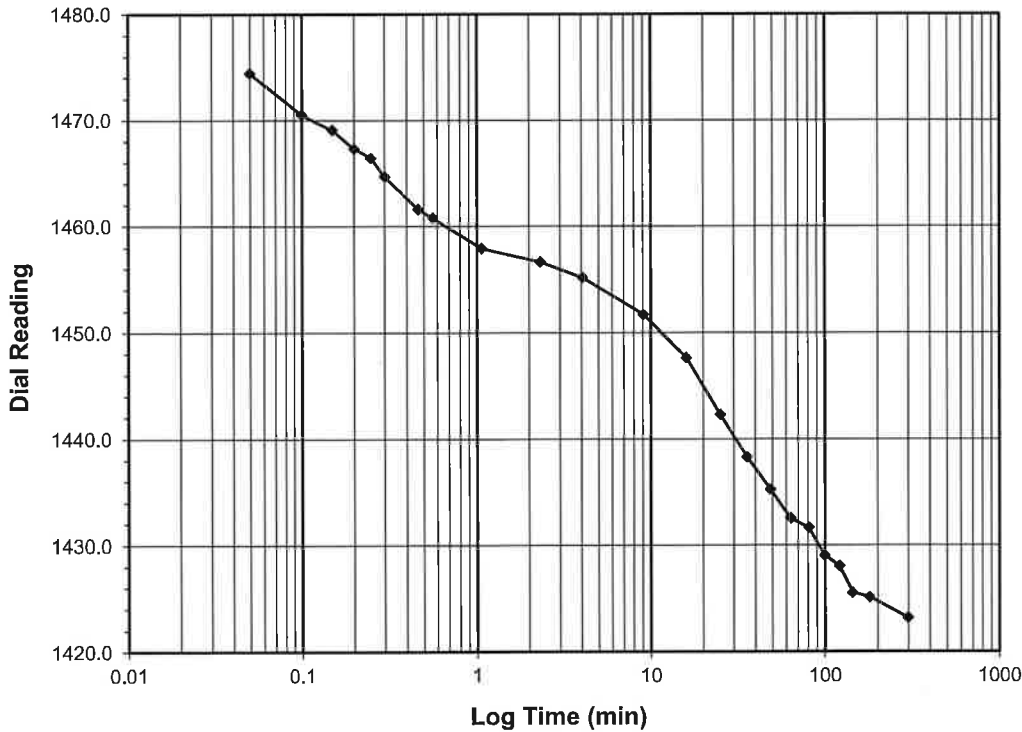
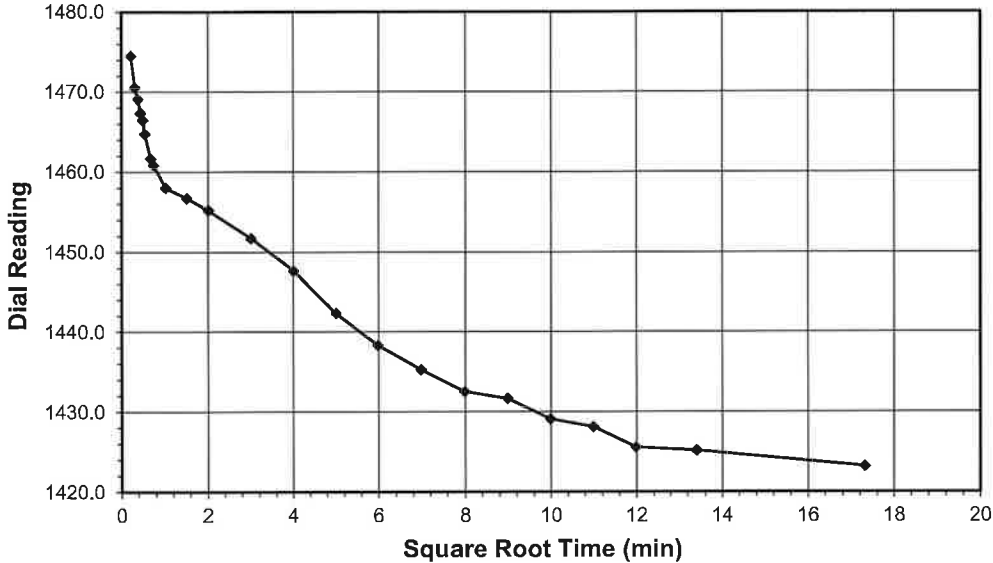
Boring No. B-11 OS
 Depth (ft) 8.0-10.0
 Sample No. ST-1
 Visual Description BROWN SILTY SAND WITH GRAVEL

Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED

Test Load (tsf) 2.0-0.5
Final Reading (div) 1423.2
 Consolidometer No. **N139**
 1 Division (in) 0.0001

Start Date 10/9/2018
 Start Time 13:25:34

Elapsed Time (min)	Dial Reading (div)
Initial	1519.3
0.05	1474.5
0.10	1470.5
0.15	1469.1
0.20	1467.3
0.25	1466.5
0.30	1464.7
0.47	1461.6
0.57	1460.8
1.07	1458.0
2.32	1456.7
4.07	1455.2
9.07	1451.7
16.07	1447.6
25.07	1442.3
35.88	1438.3
48.83	1435.3
63.83	1432.6
80.83	1431.7
99.83	1429.1
120.83	1428.1
143.83	1425.6
179.83	1425.2
299.83	1423.2



Tested By NC Date 10/9/2018 Checked By DS Date 10/16/2018



Madison Regional Office
507 W. Verona Ave, Suite 500
Verona, WI 53593
608.848.5060

May 3, 2024

City of Fitchburg
Re: Existing Tree Survey and Field Visit
JSD Project # 22-11636

To Whom It May Concern,

I completed a field visit on Thursday, April 25, 2024 to perform a general inventory of existing trees on the property located at 2975 Kapec Road (parcel 060906399202). The purpose was to collect information about the site's desirable tree population as it relates to the City of Fitchburg's Tree Preservation Plan requirement as described in Section 24.4(g) of the City's municipal code.

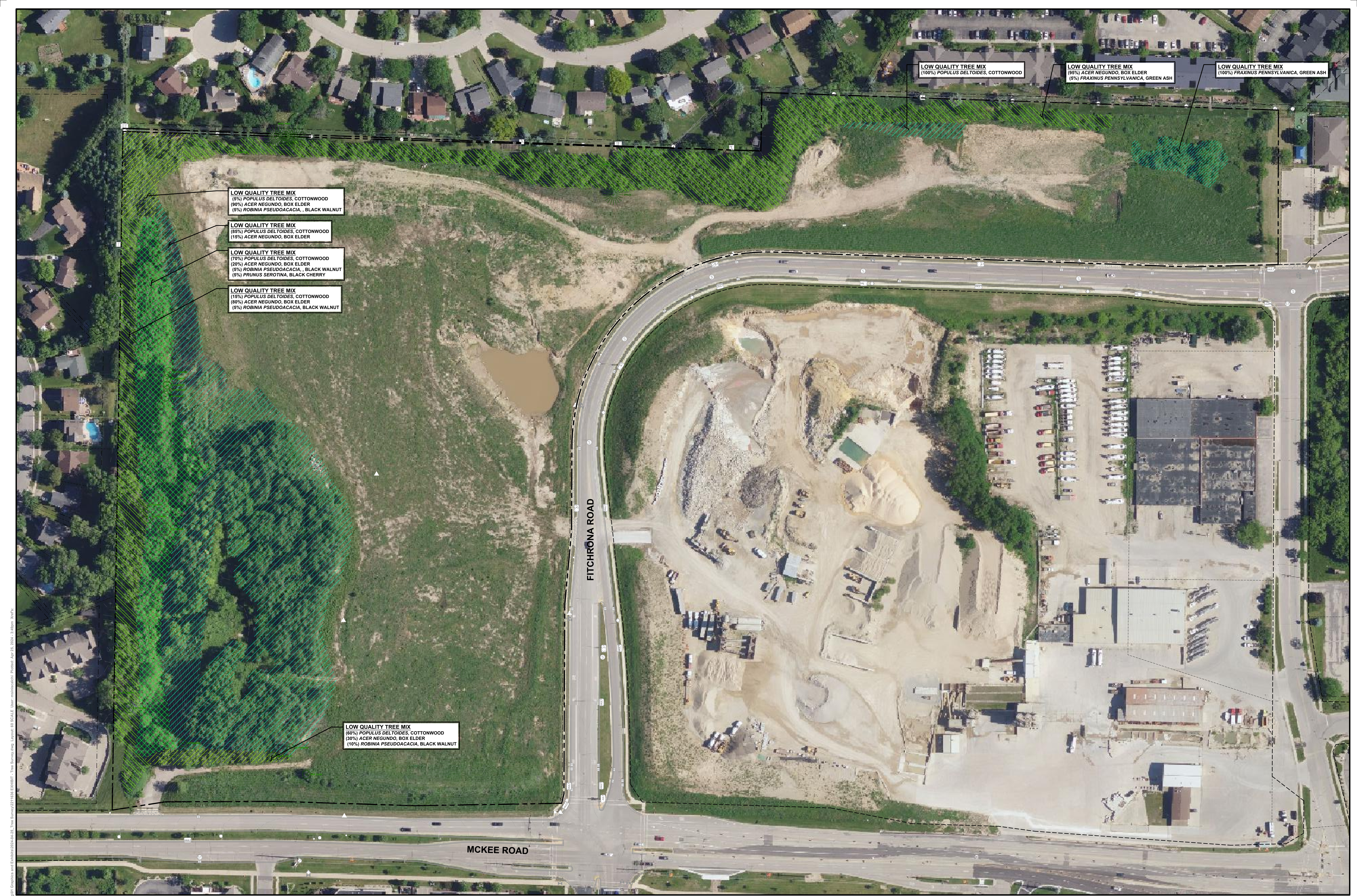
I have reviewed the City of Fitchburg's definition of "desirable trees" and I hereby attest there are zero desirable trees located on this parcel, as the majority of trees observed are invasive and typical of disturbed areas. The trees that were observed and assessed on the site do not meet the definition of "desirable trees" that require preservation within the City of Fitchburg's Municipal Code. As such, I do not believe preservation measures are warranted for the trees surveyed on this site.

Please reference the attached exhibit for an estimated percentage of tree species by generalized area.

Please contact me with any questions.

Respectfully,

Michael Siniscalchi
Senior Landscape Designer, ASLA, MLA



LOW QUALITY TREE MIX
 (100%) POPULUS DELTOIDES, COTTONWOOD

LOW QUALITY TREE MIX
 (85%) ACER NEGUNDO, BOX ELDER
 (5%) FRAXINUS PENNSYLVANICA, GREEN ASH

LOW QUALITY TREE MIX
 (100%) FRAXINUS PENNSYLVANICA, GREEN ASH

LOW QUALITY TREE MIX
 (5%) POPULUS DELTOIDES, COTTONWOOD
 (90%) ACER NEGUNDO, BOX ELDER
 (5%) ROBINIA PSEUDOACACIA, BLACK WALNUT

LOW QUALITY TREE MIX
 (85%) POPULUS DELTOIDES, COTTONWOOD
 (15%) ACER NEGUNDO, BOX ELDER

LOW QUALITY TREE MIX
 (70%) POPULUS DELTOIDES, COTTONWOOD
 (20%) ACER NEGUNDO, BOX ELDER
 (5%) ROBINIA PSEUDOACACIA, BLACK WALNUT
 (5%) PRUNUS SEROTINA, BLACK CHERRY

LOW QUALITY TREE MIX
 (15%) POPULUS DELTOIDES, COTTONWOOD
 (80%) ACER NEGUNDO, BOX ELDER
 (5%) ROBINIA PSEUDOACACIA, BLACK WALNUT

LOW QUALITY TREE MIX
 (60%) POPULUS DELTOIDES, COTTONWOOD
 (30%) ACER NEGUNDO, BOX ELDER
 (10%) ROBINIA PSEUDOACACIA, BLACK WALNUT

FITCHRONA ROAD

MCKEE ROAD



JAMESTOWN QUARRY SUBDIVISION Legal Description

Part of the Southwest Quarter of Section 06, Township 06 North, Range 09 East, in the City of Fitchburg, Dane county, Wisconsin, which is bounded and described as follows:

Commencing at the Southwest corner of said Southwest Quarter; thence S88°12'32"E along the South line of said Southwest Quarter a distance of 839.69 feet to the Southerly extension of the West Right-of-Way line of Fitchrona Road; thence N00°15'11"E along said line, 116.36 feet to the West Right-of-Way line of Fitchrona Road and the point of beginning of lands described hereinafter; thence S13°52'48"W along the West line of Fitchrona Road, 18.09 feet to the North line of Mckee Road (C.T.H. 'PD'); thence S89°03'48"W along said North line, 271.64 feet; thence N88°12'32"W along said North line, 255.12 feet; thence S89°47'50"W along said North line, 209.06 feet; thence S81°10'07"W along said North line, 100.03 feet to the West line of the Southwest Quarter of Section 06, aforesaid; thence N00°54'30"E along said West line, 1266.73 feet to a point in the South line of Fourth Addition to Jamestown, Recorded in Volume 47 of Plats, Page 20-22, as Document No. 1537665; thence S87°57'46"E along said South line, 1185.25 feet; thence N00°59'08"E along said South line, 108.79 feet; thence S88°02'32"E along said South line, 959.76 feet; thence S00°07'28"W, 287.03 feet to a point on the North line of Fitchrona Road; thence S88°29'33"W along said North line, 162.53 feet; thence N87°57'47"W along said North line, 773.45 feet to a point of curve; thence Southwesterly, 581.50 feet along said North line and arc of a curve to the left, having a radius of 363.00 feet, the chord bears S46°08'43"W, 521.29 feet; thence S00°15'07"W along said North line, 155.82 feet; thence S05°14'28"W along said North line, 138.07 feet; thence S00°15'11"W along said North line, 352.01 feet; thence S84°02'49"E, 146.10 feet to a point on the North line of Mckee Road (C.T.H. 'PD') and the East line of Fitchrona Road; thence N33°18'12"W along said East line, 40.42 feet to a point on a curve; thence Northwesterly along said East line 291.15 feet along an arc of a curve to the left, having a radius of 2530.00 feet, the chord bears N02°35'14"W, 290.99 feet; thence N06°18'30"W along said line, 303.06 feet to a point of curve; thence Northeasterly 520.04 feet along said line and arc of a curve to the right, having a radius of 303.00 feet, the chord bears N42°52'32"E, 458.52 feet; thence S87°57'46"E along said line, 650.11 feet; thence S83°04'49"E along said line, 128.45 feet; thence S87°57'57"E along said line, 129.82 feet to the west right-of-way line of Kapec Road; thence S43°12'06"E along said line, 35.35 feet; thence S00°19'00"W along said line, 480.88 feet to the Northeast corner of Lot 1, CSM No. 4733, Recorded in Volume 21, Pages 42-44, as Document No. 1894905; thence N89°29'01"W along the North line of said Lot 1 a distance of 268.80 feet to the Northwest corner of said lot; thence S00°35'46"W along the West line of said Lot, 140.83 feet to the Southwest corner of said Lot; thence S72°07'17"E along the South line of said Lot, 282.66 feet to the West Right-of-Way line of Kapec Road; thence S00°19'00"W along said line, 138.94 feet; thence S52°17'46"E along said line, 74.26 feet; thence S00°17'26"W along said line, 60.56 feet; thence S59°24'24"W along said line, 37.72 feet to the North Right-of-Way line of Mckee Road (C.T.H. 'PD'); thence S88°22'50"W along said line, 102.87 feet; thence N85°54'30"W along said line, 364.18 feet; thence N82°12'26"W along said line, 68.85 feet; thence N88°12'02"W along said line, 159.37 feet; thence N79°12'52"W along said line, 155.47 feet; thence N88°12'55"W along said line, 349.67 feet; thence N84°02'49"W, 146.10 feet to the point of beginning.

Said described parcel of land contains 2,559,672 square feet or 58.762 acres.