CITY OF MUSKEGON

MUSKEGON COUNTY, MICHIGAN

WASTEWATER SYSTEM IMPROVEMENTS

WESTWOOD SANITARY SEWER REPLACEMENT

CONTRACT No. 2

SRF PROJECT #5675-01 DWRF PROJECT #7449-01

North

SCALE : 1" = 500'

0' 500' 1000'

SOIL BORING GENERAL NOTES

WITHIN EACH SOIL BORING, SOIL SAMPLES WERE OBTAINED BY THE STANDARD PENETRATION TEST METHOD, ASTM D1586, WHEREBY A SPLIT–SPOON SAMPLER IS DRIVEN THREE SUCCESSIVE 6–INCH INCREMENTS WITH A 140 POUND WEIGHT FALLING 30 INCHES. THE NUMBER OF BLOWS REQUIRED TO DRIVE THE SAMPLER FOR EACH INCREMENT IS PRESENTED ON THE SOIL BORING LOGS.

THE SOIL BORING LOGS SHOWN ON THE CONSTRUCTION PLANS ARE BEING FURNISHED FOR YOUR CONVENIENCE AND GENERAL INFORMATION ONLY. THE DATA SHOWN ON THE BORING LOGS REPRESENTS SOIL AND GROUNDWATER CONDITIONS ENCOUNTERED AT THE RESPECTIVE BORING LOCATIONS. VARIATIONS MAY OCCUR BETWEEN THESE LOCATIONS. ADDITIONALLY, THE STRATIGRAPHIC LINES REPRESENT THE APPROXIMATE BOUNDARIES BETWEEN SOIL TYPES; HOWEVER, THE TRANSITION MAY BE MORE GRADUAL THAN WHAT IS SHOWN. FURTHERMORE, GROUNDWATER LEVELS CAN FLUCTUATE WITH SEASONAL VARIATIONS AND FOLLOWING PERIODS OF PROLONGED PRECIPITATION. THE BIDDER WILL BE RESPONSIBLE FOR MAKING HIMSELF FAMILIAR WITH SUBSURFACE CONDITIONS BY WHATEVER MEANS HE DEEMS NECESSARY AND SHALL MAKE HIS OWN DETERMINATIONS THEREFROM.

THE BIDDER BY SUBMITTING A BID, WAIVES ALL CLAIM FOR DAMAGES WHICH HE MAY SUFFER BY REASONS OF THE INADEQUACIES OR DISCREPANCIES OF THE INFORMATION SHOWN ON THESE SOIL BORING LOGS AND UNDERSTANDS THAT NO COMPENSATION WILL BE PAID TO HIM DUE TO AN INADEQUACY OR DISCREPANCY IN THIS DATA.

GENERAL NOTES

1. CONTRACTOR TO CALL MISS DIG (CALL TOLL FREE 1–800–482–7171) THREE WORKING DAYS BEFORE STARTING YOUR PROJECT. (EXCLUDING WEEKENDS AND HOLIDAYS)
2. CONTRACTOR SHALL PRESERVE ALL GOVERNMENT AND PROPERTY CORNERS.

SOIL EROSION CONTROL NOTES

EROSION CONTROL BLANKET :

SOIL EROSION CONTROL BLANKET SHALL BE REPLACED ON ALL DISTURBED SLOPES THAT ARE 1 ON 3 OR STEEPER AND IN ALL DISTURBED DITCH BOTTOMS.

TEMPORARY SEEDING :

TEMPORARY SEEDING SHALL BE CAST ON ALL DISTURBED AREAS AS DIRECTED BY THE ENGINEER WITHIN 1 WEEK OF DISTURBANCE.

UTILITIES

ELECTRIC–DISTRIBUTION
CONSUMERS ENERGY
700 E STERNBERG RD.
MUSKEGON, MI 49441
PHONE : (231) 332–2682
ATTN: JOEL BROWN
JOEL.M.BROWN@CMSENERGY.COM

GAS
DTE ENERGY
2359 OLTHOF DR.
MUSKEGON, MI, 49444
PHONE : (231) 777–4034
ATTN: VINCE DUCA
DUCAV@DTEENERGY.COM

WATER & SANITARY
CITY OF MUSKEGON
1350 E. KEATING AVE.
MUSKEGON, MI 49442
PHONE : (231) 724–4184
ATTN: DAVE BAKER
DAVE.BAKER@SHORELINECITY.COM

STORM SEWER
CITY OF MUSKEGON
1350 E. KEATING AVE.
MUSKEGON, MI 49442
PHONE : (231) 724–6992
ATTN: VERNON BERNDT
VERN.BERNDT@SHORELINECITY.COM

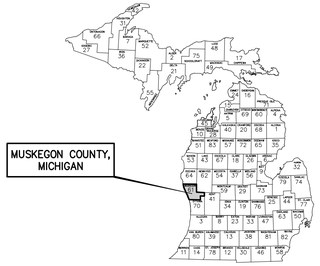
COMMUNICATION
FRONTIER COMMUNICATIONS
860 TERRACE ST.
MUSKEGON, MI 49443
PHONE : (231) 727–1319
ATTN: DAVE FLERMOEN
DAVID.B.FLERMOEN@FTR.COM

CABLE TELEVISION
COMCAST
700 W. BROADWAY
MUSKEGON, MI 49441
PHONE: (231) 375–5112
ATTN: JON CHARLAND
JONATHAN_CHARLAND@COMCAST.COM

811 Know what's below. Call before you dig.

UTILITY LOCATIONS ARE DERIVED FROM ACTUAL MEASUREMENTS OR AVAILABLE RECORDS. THEY SHOULD NOT BE INTERPRETED TO BE EXACT LOCATIONS NOR SHOULD IT BE ASSUMED THAT THEY ARE THE ONLY UTILITIES IN THIS AREA.

SITE LOCATION MAP



SHEET INDEX

SHEET No.	DESCRIPTION
1	COVER SHEET
2	TYPICAL CROSS SECTIONS & DETAILS
	WASTEWATER & WATER SYSTEM IMPROVEMENTS
3	WESTWOOD STREET (RANDOLPH AVE. TO STA. 23+00)
4	WESTWOOD STREET (STA. 23+00 TO STA. 28+00)
5	WESTWOOD STREET (STA. 28+00 TO WICKHAM DR.)
6	GLEN AVENUE R.O.W. – LEXINGTON AVENUE
	STREET IMPROVEMENTS
7	WESTWOOD STREET (RANDOLPH AVE. TO STA. 23+00)
8	WESTWOOD STREET (STA. 23+00 TO STA. 28+00)
9	WESTWOOD STREET (STA. 28+00 TO WICKHAM DR.)
10	GRADING DETAILS

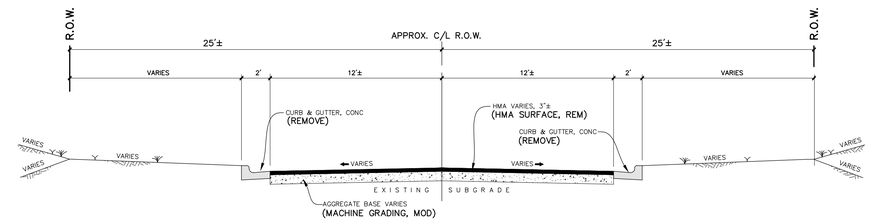
STATE OF MICHIGAN
TYLER A. DENOOYER
ENGINEER
No. 67328
LICENSED PROFESSIONAL ENGINEER

ISSUED FOR BIDS : MAY, 2019

Prein&Newhof
Engineers ▪ Surveyors ▪ Environmental ▪ Laboratory

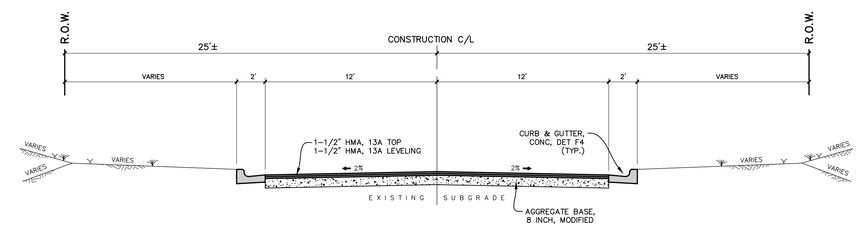
PROJECT NO. 2180552

SHEET NO. 1 OF 10



EXISTING TYPICAL CROSS SECTION

APPLIES : WESTWOOD STREET & GLEN AVENUE
SCALE : NONE



PROPOSED TYPICAL CROSS SECTION

APPLIES : WESTWOOD STREET & GLEN AVENUE
SCALE : NONE

HOT MIX ASPHALT APPLICATION TABLE

IDENT. #	PAY ITEM	MIXTURE	APPLICATION RATE	PERFORMANCE GRADE BINDER	REMARKS
13A	HMA, 13A	13A	165 LBS/SYD	PG 58-28	STREET LEVELING
13A	HMA, 13A	13A	165 LBS/SYD	PG 58-28	STREET TOP

NOTES:

1. HMA BOND COAT (MDOT SS-1h) SHALL BE APPLIED @ 0.05-0.15 GAL/SYD BETWEEN HMA LIFTS. THE COST OF THIS WORK SHALL BE INCLUDED IN THE HMA ITEMS. HMA BOND COAT SHALL ALSO BE APPLIED TO THE VERTICAL EDGE OF THE ADJACENT HMA PAVEMENT AND/OR CONCRETE CURB & GUTTER.
2. HMA PAVEMENT DEPTH TO MATCH EXISTING HMA PAVEMENT THICKNESS.

NO.	REVISIONS	BY	DATE
1	ISSUED FOR BIDS	T.A.D.	5/19

DRAWN STAFF
DATE JAN. '19
CHECKED T.A.D.
DATE MAY '19

Prein&Newhof
Engineers•Surveyors•Environmental•Laboratory

CITY OF MUSKEGON
MUSKEGON COUNTY, MICHIGAN
STREET IMPROVEMENTS
CONTRACT No. 2
TYPICAL CROSS SECTIONS & DETAILS

PROJECT NO. 2180552
SHEET NO. 2 OF 10

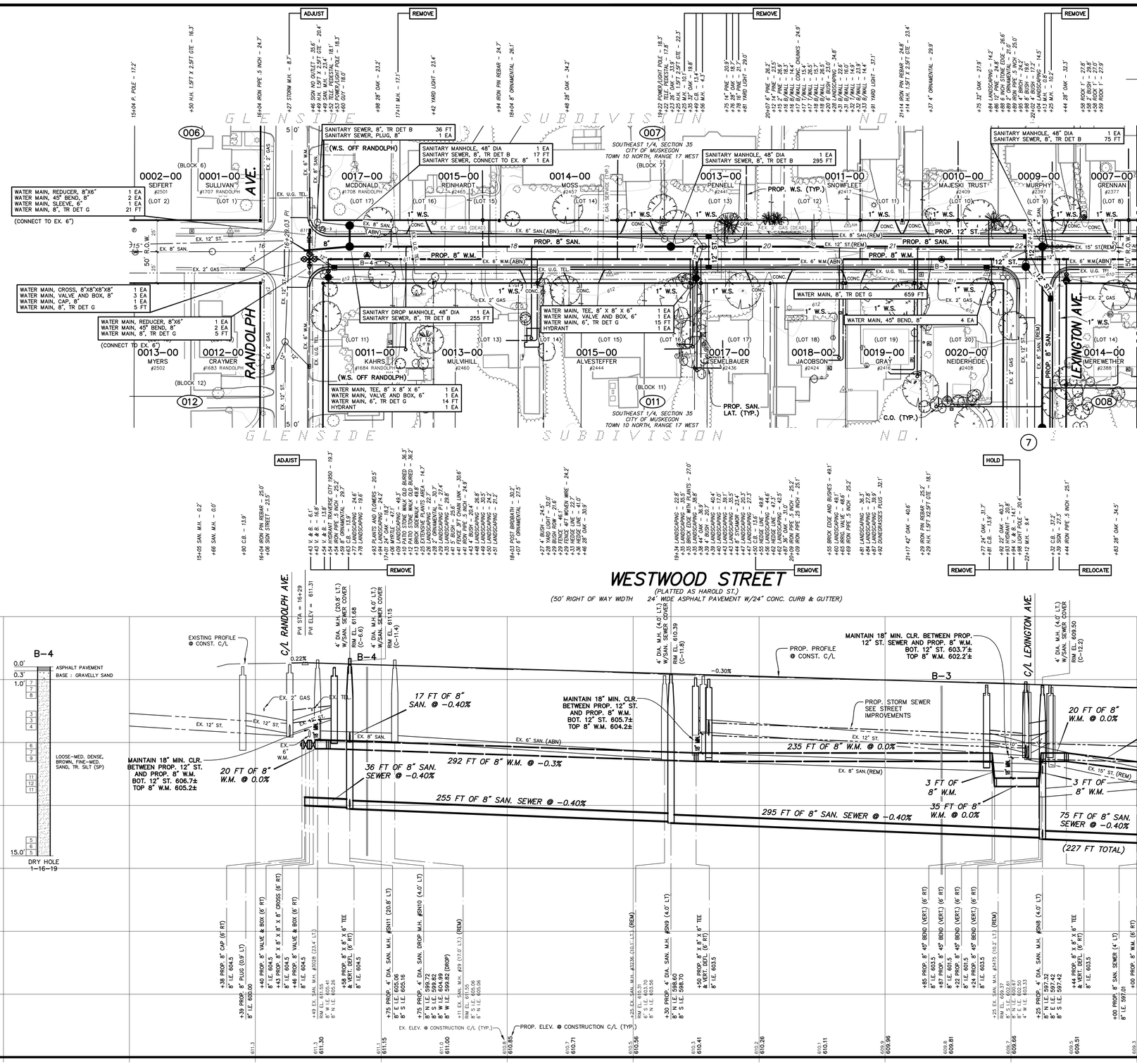
T:\CIVIL3D PROJECTS\2018\2180552_MUSKEGON_GLENSIDE SANITARY SEWER REPLACEMENT PHASE 1\4_PROD\2180552_C2 TYPS.DWG - -SMITH - May, 10 2019 - 07:54am - PreinNewhof

B.M. EL. 613.30
RANDOLPH & WESTWOOD 25'± N. & 15'± W. OF C/L "X". LARGE MAG PK E. SIDE LIGHT POLE (2.0' A/GROUND)

B.M. EL. 611.92
2388 WESTWOOD TOP OF SOUTHWEST CORNER BOTTOM BRICK STEP TO PORCH (0.6' A/WALK)

CONTROL POINT TABLE

POINT No.	NORTHING	EASTING	ELEVATION
300	628141.772	1261824.400	611.67
301	628441.247	1261871.720	611.39
302	628740.449	1261884.770	610.40
307	628287.216	1261881.190	611.99
308	628383.334	1261876.820	611.52
309	628510.660	1261904.770	612.16
310	628499.247	1261939.540	612.25
311	628753.422	1261255.210	611.24
312	628693.257	1261834.500	610.81
313	628732.277	1261983.720	612.26
327	628261.873	1261989.990	612.67
328	628631.709	1261841.190	611.78
329	628697.448	1261842.770	610.48
330	628622.558	1261972.160	612.67



SANITARY SEWER CONSTRUCTION NOTES

1. EXISTING SANITARY SEWER SHALL BE ABANDONED IN PLACE UNLESS IN DIRECT CONFLICT WITH THE PROPOSED IMPROVEMENTS. SEWERS TO BE ABANDONED SHALL BE FILLED WITH FLOWABLE FILL. MANHOLES SHALL BE REMOVED TO 8 FT BELOW FINISH GRADE AND FILLED.
2. ALIGNMENT AND LOCATION OF EXISTING SANITARY SEWER LATERALS ARE FROM AVAILABLE RECORDS. EXACT LOCATION IS UNKNOWN. CONTRACTOR TO FIELD VERIFY LOCATION OF SANITARY LATERALS PRIOR TO INSTALLATION OF WYES.
3. SANITARY SEWER LATERALS ON THE WEST SIDE OF WESTWOOD SHALL BE REPLACED TO THE PROPERTY LINE AND CONNECTED TO THE EXISTING LATERAL. SANITARY SEWER LATERALS ON THE EAST SIDE SHALL BE REPLACED TO THE LATERAL NEAR THE HOUSE. FINAL ALIGNMENT OF LATERAL TO BE VERIFIED IN THE FIELD.
4. CONTRACTOR TO COORDINATE w/RESIDENTS ON THE EAST SIDE OF WESTWOOD FOR DETERMINING LOCATION OF CONNECTION TO EXISTING LATERALS. SEWER SERVICE IS CURRENTLY FROM THE SANITARY SEWER IN THE ALLEY. PRIOR TO INSTALLATION, CONTRACTOR SHALL VERIFY CONNECTION LOCATION AND DEPTH IN THE PRESENCE OF THE PROPERTY OWNER AND ENGINEER.

WATER MAIN CONSTRUCTION NOTES

1. CONTRACTOR SHALL PROVIDE A MINIMUM OF 18" VERTICAL CLEARANCE AND 10' HORIZONTAL CLEARANCE BETWEEN PROPOSED WATER MAIN, AND STORM AND SANITARY SEWERS.
2. USE HYDRANT EXTENSIONS OR VERTICAL BENDS ON HYDRANT LEADS TO ENSURE HYDRANT BREAKAWAY FLANGE IS 3"+/- FROM FINISHED GRADE. COST SHALL BE INCLUDED IN THE HYDRANT PAY ITEM.
3. ALL HYDRANTS SHALL BE RESTRAINED TO THE TEE.

WATER SERVICE CONSTRUCTION NOTES

1. WATER SERVICES SHOWN ON THE PLANS ARE LOCATED BASED ON RECORDS, ACTUAL LOCATION MAY BE DIFFERENT THAN SHOWN. ALIGNMENT OF EXISTING WATER SERVICES FROM THE CURB STOP BOX TO THE HOUSE IS UNKNOWN AND MUST BE VERIFIED BY THE CONTRACTOR PRIOR TO REPLACEMENT.
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3. IF A METER PIT IS OUTSIDE THE RESIDENCE THEN THE METER PIT MUST BE REPLACED AT THE SAME LOCATION.
4. CONTRACTOR TO COORDINATE WITH THE CITY FOR METER REMOVAL AND REINSTALLATION.

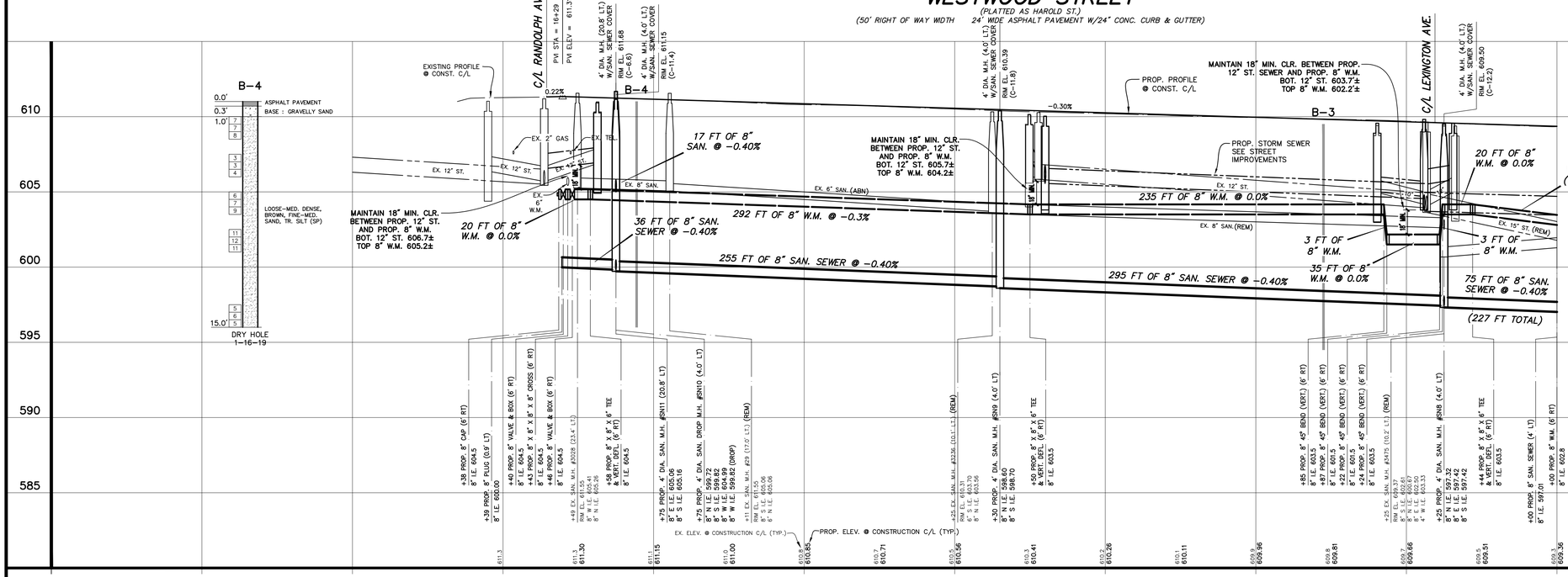
SANITARY SEWER LATERAL & WATER SERVICE QUANTITIES

WEST SIDE (SOUTH TO NORTH)

DESCRIPTION	UNIT	#1708	#2465	#2457	#2441	#2417	#2409	#2397	#2377	TOTALS
SANITARY LATERAL, 6", PUBLIC	FT	21	21	21	21	21	21	21	21	168
SANITARY LATERAL, CONNECT TO EX.	EA	1	1	1	1	1	1	1	1	8
WATER SERVICE, 1 INCH	FT	N/A	75	90	80	90	90	75	75	575
WATER SERVICE, CURB STOP AND BOX, 1 INCH	EA	N/A	1	1	1	1	1	1	1	7
WATER SERVICE, CORPORATION STOP, 1 INCH	EA	N/A	1	1	1	1	1	1	1	7

EAST SIDE (SOUTH TO NORTH)

DESCRIPTION	UNIT	#1684	#2460	#2444	#2436	#2424	#2416	#2408	#2388	TOTALS
SANITARY LATERAL, 6 INCH, PUBLIC	FT	29	29	29	29	29	29	29	29	232
SANITARY LATERAL, 6 INCH, PRIVATE	FT	70	50	60	100	65	100	55	70	570
SANITARY CLEANOUT	EA	1	1	1	2	1	2	1	1	10
SANITARY LATERAL, CONNECT TO EX.	EA	1	1	1	1	1	1	1	1	8
WATER SERVICE, 1 INCH	FT	N/A	75	85	120	90	105	155	170	800
WATER SERVICE, CURB STOP AND BOX, 1 INCH	EA	N/A	1	1	1	1	1	1	1	7
WATER SERVICE, CORPORATION STOP, 1 INCH	EA	N/A	1	1	1	1	1	1	1	7



AIR-LAND SURVEYS

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PROJECT DATUM INFORMATION

COORDINATE SYSTEM :	STATE PLANE GRID
ZONE :	MICHIGAN SOUTH 2113
ELLIPSOID :	GRS 80
HORIZONTAL DATUM :	NAD 83 (2011)
VERTICAL DATUM :	NAVD 88
GEOID :	GEOID 12
UNITS :	INTERNATIONAL FEET

PROJECT COMBINED SCALE FACTOR (PCSF) = GROUND DISTANCE / GRID DISTANCE

SCALES : 1" = 40' HORZ. (CONTOURS AT ONE FOOT INTERVALS)
1" = 4' VERT.

NO.	REVISIONS	BY	DATE
1	ISSUED FOR BIDS	T.A.D.	5/19

DRAWN STAFF
DATE JAN. '19
CHECKED T.A.D.
DATE MAY '19

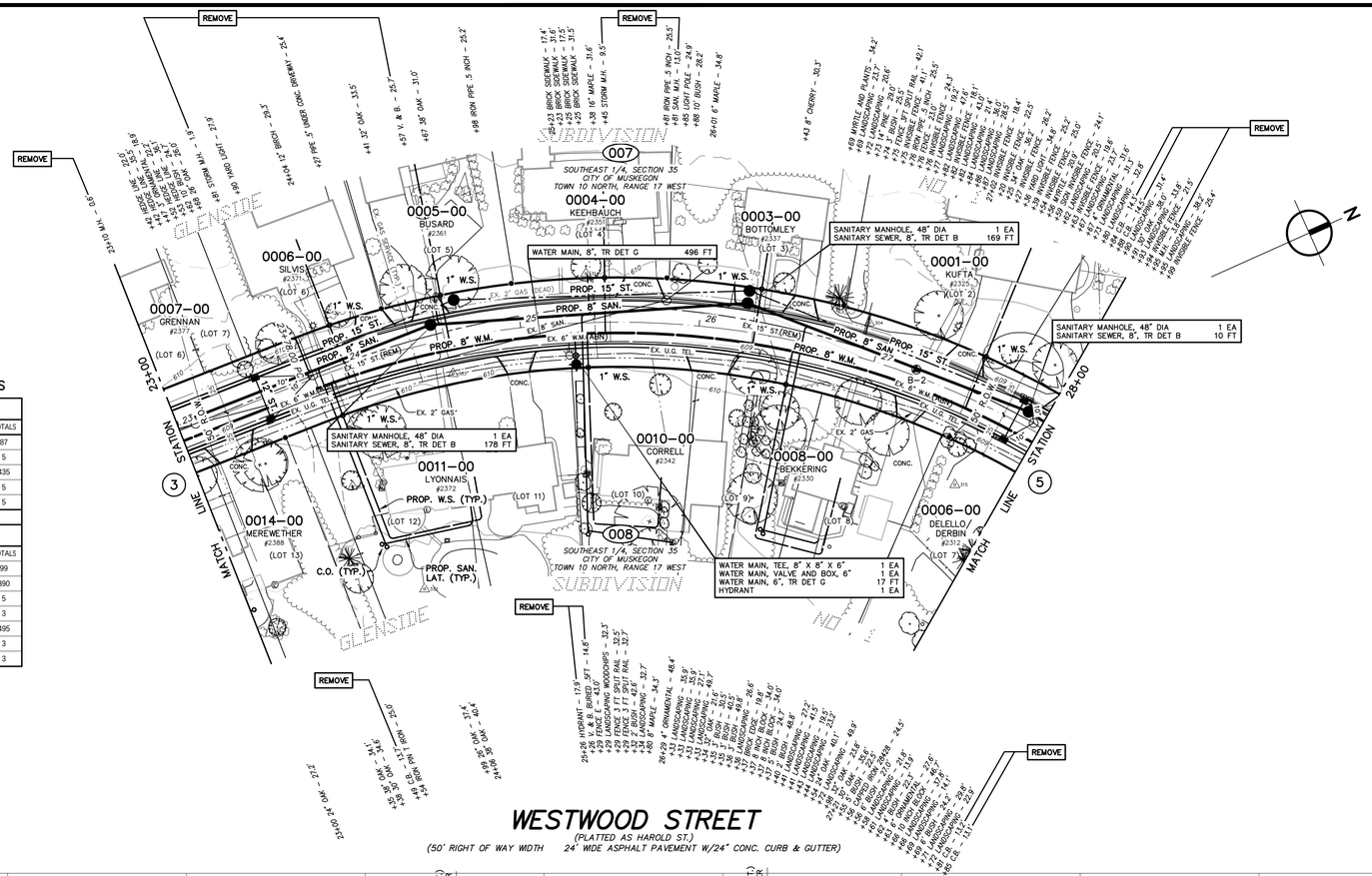
Prein&Newhof
Engineers•Surveyors•Environmental•Laboratory

CITY OF MUSKEGON
MUSKEGON COUNTY, MICHIGAN
WASTEWATER SYSTEM IMPROVEMENTS
CONTRACT No. 2
WESTWOOD STREET

PROJECT NO. 2180552
SHEET NO. 3 OF 10

T:\CIVIL3D PROJECTS\2018\2180552_MUSKEGON_GLENSIDE SANITARY SEWER REPLACEMENT PHASE 1\4_PROD\2180552_PLPR_SSMP_WESTWOOD.DWG - JSMITH - May, 10 2019 - 07:51am - PreinNewhof

CONTROL POINT TABLE			
POINT No.	NORTHING	EASTING	ELEVATION
303	629012.956	12611905.370	609.96
304	629237.343	12611973.960	609.37
314	629103.624	12611884.340	610.50
315	629244.244	12612076.130	609.12
325	629166.208	12612103.910	609.49
326	629037.006	12612052.100	609.93
331	628935.991	12611940.360	610.47
332	628949.440	12612009.060	609.40



SANITARY SEWER LATERAL & WATER SERVICE QUANTITIES

WEST SIDE (SOUTH TO NORTH)								
DESCRIPTION	UNIT	#2371	#2361	#2351	#2337	#2325	TOTALS
SANITARY LATERAL, 6 INCH, PUBLIC	FT	21	16	20	11	19	87
SANITARY LATERAL, CONNECT TO EX.	EA	1	1	1	1	1	5
WATER SERVICE, 1 INCH	FT	80	115	80	70	90	435
WATER SERVICE, CURB STOP AND BOX, 1 INCH	EA	1	1	1	1	1	5
WATER SERVICE, CORPORATION STOP, 1 INCH	EA	1	1	1	1	1	5

EAST SIDE (SOUTH TO NORTH)						
DESCRIPTION	UNIT	#2372	#2342	#2330		TOTALS
SANITARY LATERAL, 6 INCH, PUBLIC	FT	29	35	35		99
SANITARY LATERAL, 6 INCH, PRIVATE	FT	140	140	110		390
SANITARY CLEANOUT	EA	2	1	2		5
SANITARY LATERAL, CONNECT TO EX.	EA	1	1	1		3
WATER SERVICE, 1 INCH	FT	155	170	170		495
WATER SERVICE, CURB STOP AND BOX, 1 INCH	EA	1	1	1		3
WATER SERVICE, CORPORATION STOP, 1 INCH	EA	1	1	1		3

SANITARY SEWER CONSTRUCTION NOTES

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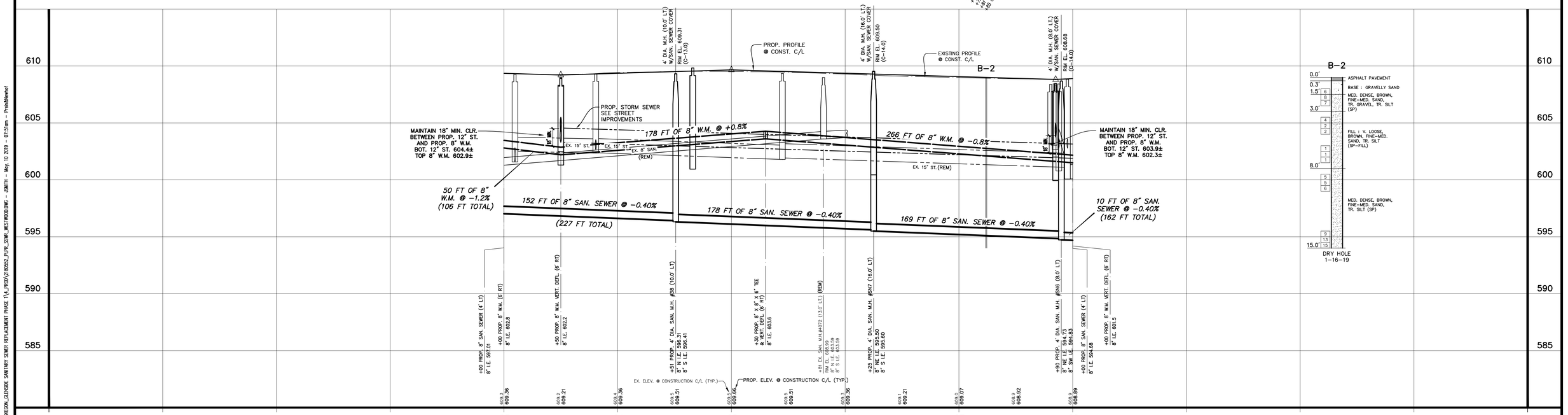
WESTWOOD STREET

(PLATTED AS HAROLD ST.)

(50' RIGHT OF WAY WIDTH 24' WIDE ASPHALT PAVEMENT W/24" CONC. CURB & GUTTER)



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ELLIPSOID :	GRS 80
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VERTICAL DATUM :	NAVD 88
GEOID :	GEOID 12
UNITS :	INTERNATIONAL FEET

PROJECT COMBINED SCALE FACTOR (PCSF) = GROUND DISTANCE = GRID DISTANCE/PCSF

0' 40' 80' 120'

SCALES : 1" = 40' HORZ. (CONTOURS AT ONE FOOT INTERVALS)
1" = 4' VERT.

NO.	REVISIONS	BY	DATE
1	ISSUED FOR BIDS	T.A.D.	5/19

DRAWN STAFF
DATE JAN. '19
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Prein&Newhof
Engineers•Surveyors•Environmental•Laboratory

CITY OF MUSKEGON
MUSKEGON COUNTY, MICHIGAN

WASTEWATER SYSTEM IMPROVEMENTS
CONTRACT No. 2

WESTWOOD STREET

PROJECT NO. 2180552
SHEET NO. 4 OF 10

I:\CIVIL3D PROJECTS\2018\2180552_MUSKEGON_GLENSIDE SANITARY SEWER REPLACEMENT PHASE 1\4_PROJ\2180552_PLPR_SSMR_WESTWOOD.DWG - JSMITH - May, 10, 2019 - 07:51am - PreinNewhof

B.M. EL. 610.61
OPPOSITE HOUSE 2308 WESTWOOD MINT GREEN VERTICAL 60D IN SOUTH ROOT OF 42 INCH OAK (0.0 A/GROUND)

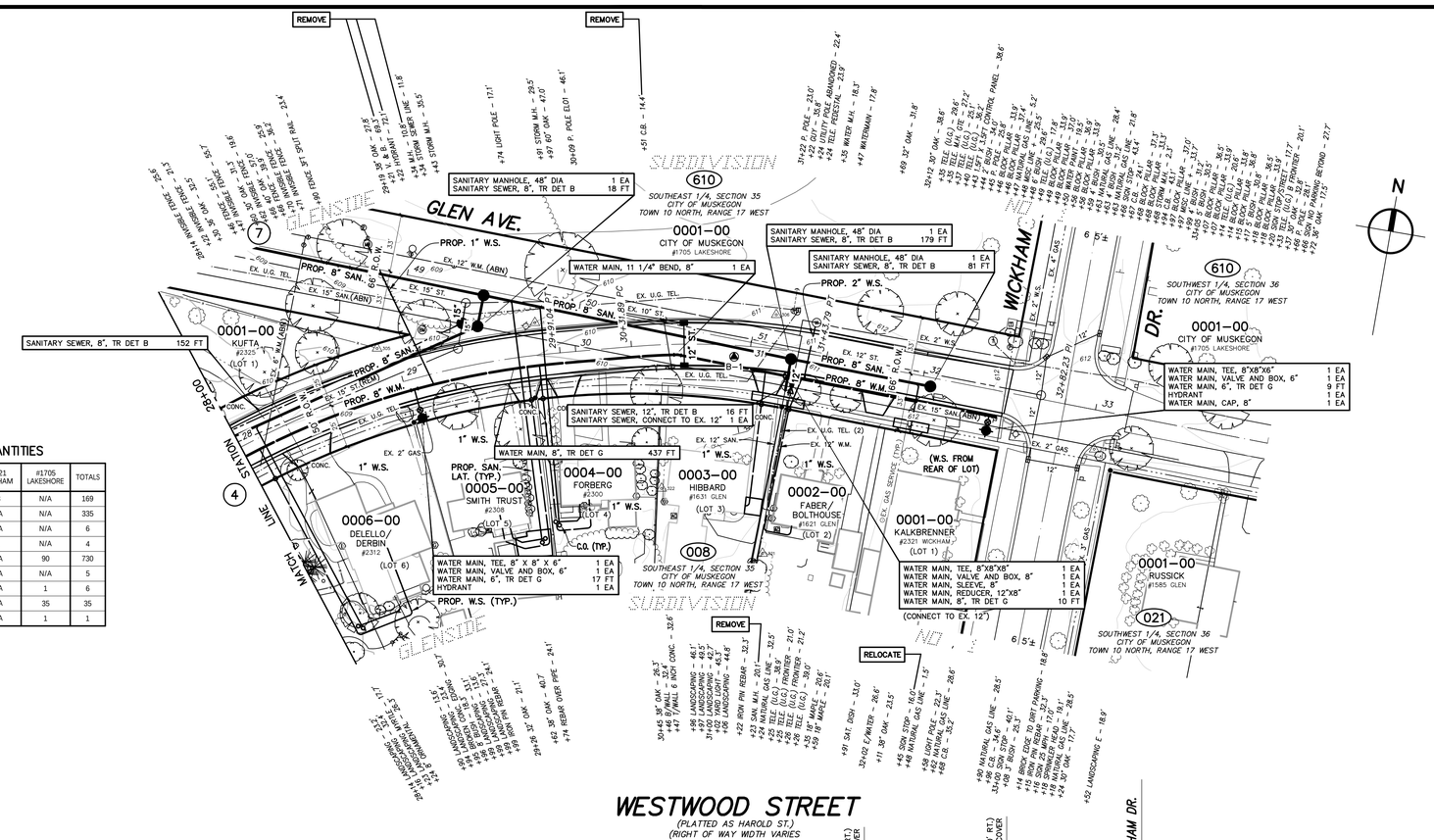
B.M. EL. 613.73
10' N. OF N. EDGE CONCRETE GLEN ROAD & 45' E. OF C/L WICKHAM LARGE MAG PK IN SW ROOT 42 INCH OAK (0.1' A/GROUND)

CONTROL POINT TABLE

POINT No.	NORTHING	EASTING	ELEVATION
303	629012.956	12611905.370	609.96
304	629237.343	12611973.960	609.37
314	629103.624	12611884.340	610.50
315	629244.244	12612076.130	609.12
325	629166.208	12612103.910	609.49
326	629037.006	12612052.100	609.93
331	628935.991	12611940.260	610.47
332	628949.440	12612009.060	609.40

SANITARY SEWER LATERAL & WATER SERVICE QUANTITIES

DESCRIPTION	UNIT	#2312	#2308	#2300	#1631	#1621	#2321 WICKHAM	#1705 LAKESHORE	TOTALS
SANITARY LATERAL, 6 INCH, PUBLIC	FT	32	57	52	N/A	N/A	28	N/A	169
SANITARY LATERAL, 6 INCH, PRIVATE	FT	130	110	95	N/A	N/A	N/A	N/A	335
SANITARY CLEANOUT	EA	2	2	2	N/A	N/A	N/A	N/A	6
SANITARY LATERAL, CONNECT TO EX.	EA	1	1	1	N/A	N/A	1	N/A	4
WATER SERVICE, 1 INCH	FT	190	135	120	85	110	N/A	90	730
WATER SERVICE, CURB STOP AND BOX, 1 INCH	EA	1	1	1	1	1	N/A	N/A	5
WATER SERVICE, CORPORATION STOP, 1 INCH	EA	1	1	1	1	1	N/A	1	6
WATER SERVICE, 2 INCH	FT	N/A	N/A	N/A	N/A	N/A	N/A	35	35
WATER SERVICE, CORPORATION STOP, 2 INCH	EA	N/A	N/A	N/A	N/A	N/A	N/A	1	1



SANITARY SEWER CONSTRUCTION NOTES

1. EXISTING SANITARY SEWER SHALL BE ABANDONED IN PLACE UNLESS IN DIRECT CONFLICT WITH THE PROPOSED IMPROVEMENTS. SEWERS TO BE ABANDONED SHALL BE FILLED WITH FLOWABLE FILL. MANHOLES SHALL BE REMOVED TO 8 FT BELOW FINISH GRADE AND FILLED.
2. ALIGNMENT AND LOCATION OF EXISTING SANITARY SEWER LATERALS ARE FROM AVAILABLE RECORDS. EXACT LOCATION IS UNKNOWN. CONTRACTOR TO FIELD VERIFY LOCATION OF SANITARY LATERALS PRIOR TO INSTALLATION OF WYES.
3. SANITARY SEWER LATERALS ON THE WEST SIDE OF WESTWOOD SHALL BE REPLACED TO THE PROPERTY LINE AND CONNECTED TO THE EXISTING LATERAL. SANITARY SEWER LATERALS ON THE EAST SIDE SHALL BE REPLACED TO THE LATERAL NEAR THE HOUSE. FINAL ALIGNMENT OF LATERAL TO BE VERIFIED IN THE FIELD.
4. CONTRACTOR TO COORDINATE w/RESIDENTS ON THE EAST SIDE OF WESTWOOD FOR DETERMINING LOCATION OF CONNECTION TO EXISTING LATERALS. SEWER SERVICE IS CURRENTLY FROM THE SANITARY SEWER IN THE ALLEY. PRIOR TO INSTALLATION, CONTRACTOR SHALL VERIFY CONNECTION LOCATION AND DEPTH IN THE PRESENCE OF THE PROPERTY OWNER AND ENGINEER.

WATER MAIN CONSTRUCTION NOTES

1. CONTRACTOR SHALL PROVIDE A MINIMUM OF 18" VERTICAL CLEARANCE AND 10' HORIZONTAL CLEARANCE BETWEEN PROPOSED WATER MAIN, AND STORM AND SANITARY SEWERS.
2. USE HYDRANT EXTENSIONS OR VERTICAL BENDS ON HYDRANT LEADS TO ENSURE HYDRANT BREAKAWAY FLANGE IS 3"+/- FROM FINISHED GRADE. COST SHALL BE INCLUDED IN THE HYDRANT PAY ITEM.
3. ALL HYDRANTS SHALL BE RESTRAINED TO THE TEE.

WATER SERVICE CONSTRUCTION NOTES

1. WATER SERVICES SHOWN ON THE PLANS ARE LOCATED BASED ON RECORDS, ACTUAL LOCATION MAY BE DIFFERENT THAN SHOWN. ALIGNMENT OF EXISTING WATER SERVICES FROM THE CURB STOP BOX TO THE HOUSE IS UNKNOWN AND MUST BE VERIFIED BY THE CONTRACTOR PRIOR TO REPLACEMENT.
2. WATER SERVICES ARE TO BE REPLACED TO THE WATER METER IF THE METER IS LOCATED INSIDE THE RESIDENCE UNLESS NOTED OTHERWISE. WATER SERVICES TO BE REPLACED TO 18 INCHES INSIDE THE RESIDENCES IF THE METER IS LOCATED OUTSIDE. LOCATION OF ENTRY INTO THE RESIDENCE, AND PLUMBING REQUIRED TO CONNECT TO THE EXISTING METER SHALL BE APPROVED BY THE HOME OWNER AND ENGINEER PRIOR TO INSTALLATION. A NEW CURB STOP SHALL BE INSTALLED AT THE PROPERTY LINE. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE AND COMMUNICATE WITH THE PROPERTY OWNER AND RESIDENT ENTRY INTO THE RESIDENCE.
3. IF A METER PIT IS OUTSIDE THE RESIDENCE THEN THE METER PIT MUST BE REPLACED AT THE SAME LOCATION.
4. CONTRACTOR TO COORDINATE WITH THE CITY FOR METER REMOVAL AND REINSTALLATION.

AIR-LAND SURVEYS

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PROJECT DATUM INFORMATION

COORDINATE SYSTEM :	STATE PLANE GRID
ZONE :	MICHIGAN SOUTH 2113
ELLIPSOID :	GRS 80
HORIZONTAL DATUM :	NAD 83 (2011)
VERTICAL DATUM :	NAVD 88
GEOID :	GEOID 12
UNITS :	INTERNATIONAL FEET

PROJECT COMBINED SCALE FACTOR (PCSF) = GROUND DISTANCE ÷ GRID DISTANCE/PCSF

0' 40' 80' 120'

SCALES : 1" = 40' HORZ. (CONTOURS AT ONE FOOT INTERVALS)
1" = 4' VERT.

NO.	REVISIONS	BY	DATE
1	ISSUED FOR BIDS	T.A.D.	5/19

DRAWN STAFF
DATE JAN. '19
CHECKED T.A.D.
DATE MAY '19

Prein&Newhof
Engineers•Surveyors•Environmental•Laboratory

CITY OF MUSKEGON
MUSKEGON COUNTY, MICHIGAN
WASTEWATER SYSTEM IMPROVEMENTS
CONTRACT No. 2
WESTWOOD STREET

PROJECT NO. 2180552
SHEET NO. 5 OF 10

T:\CIVIL3D PROJECTS\2018\2180552_MUSKEGON_GLENSIDE SANITARY SEWER REPLACEMENT PHASE 1\4_PROJ\2180552_PLPR_SSMR_WESTWOOD.DWG - JSMITH - May, 10 2019 - 07:51am - PreinNewhof

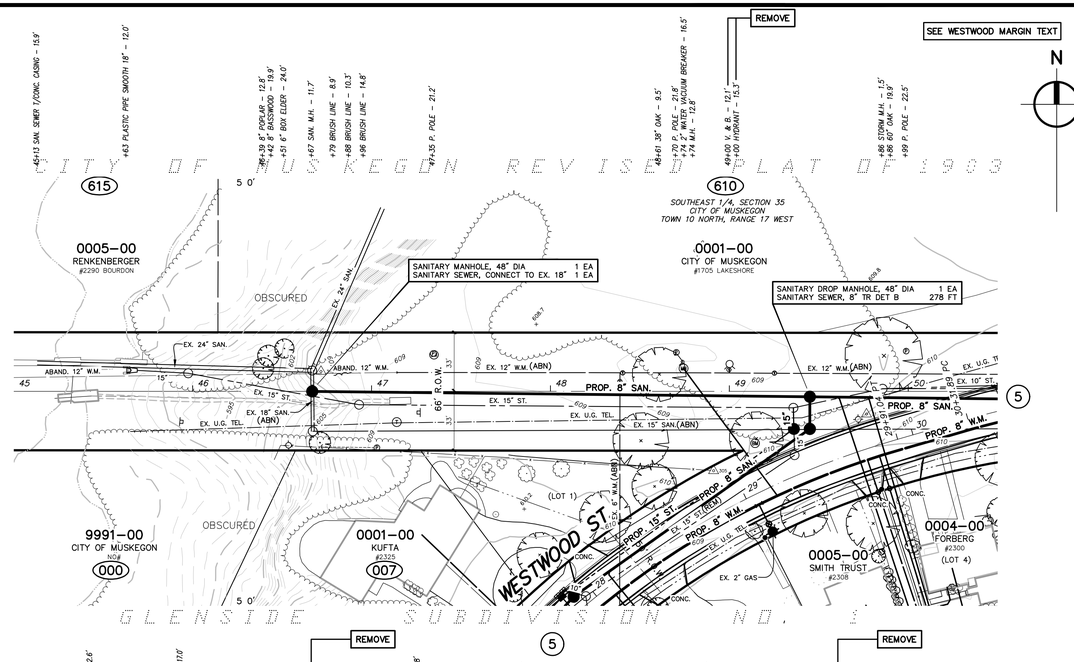
B.M. EL. 610.25
50 FT EAST OF TOP OF BANK TO RUDDIMAN CREEK NORTH RIGHT OF WAY OF GLEN RD. EXTENDED FOUND GEAR SPINDLE SOUTH SIDE POWER POLE (1.0 FT A/GROUND)

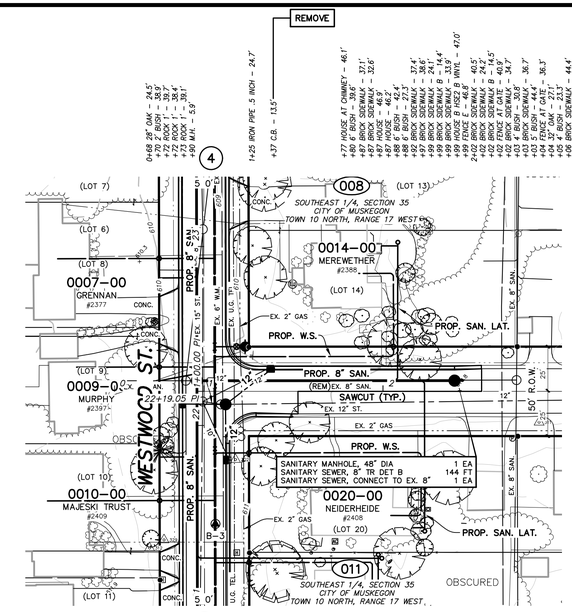
B.M. EL. 610.61
OPPOSITE HOUSE 2308 WESTWOOD MINT GREEN VERTICAL 6/20 IN SOUTH ROOT OF 42 INCH OAK (0.0 A/GROUND)

B.M. EL. 613.73
10' N. OF N. EDGE CONCRETE GLEN ROAD & 45' E. OF C/L WICKHAM LARGE MAG PK IN SW ROOT 42 INCH OAK (0.1' A/GROUND)

CONTROL POINT TABLE

POINT No.	NORTHING	EASTING	ELEVATION
305	629365.327	12612136.980	609.75
306	629417.827	12612359.330	611.05
317	629393.078	12612223.800	610.20
318	629430.769	12611920.260	606.35
319	629368.673	12612549.870	612.71
322	629310.221	12612309.190	611.51





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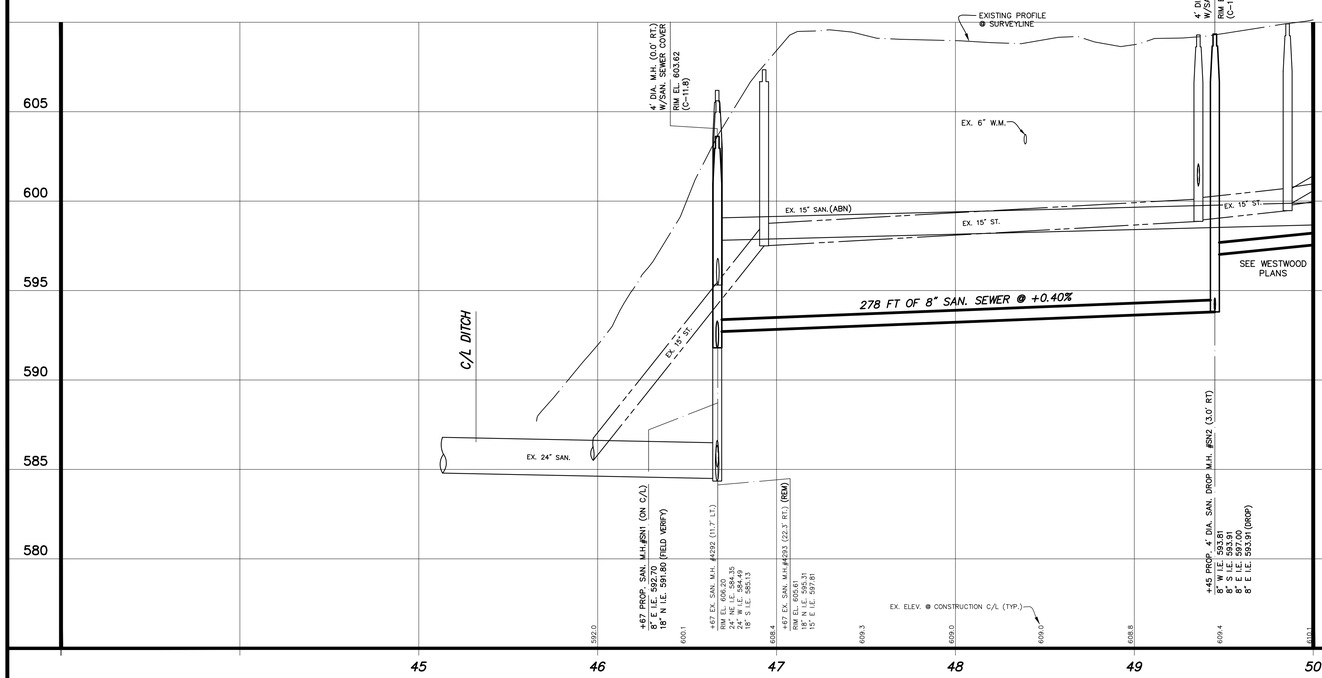
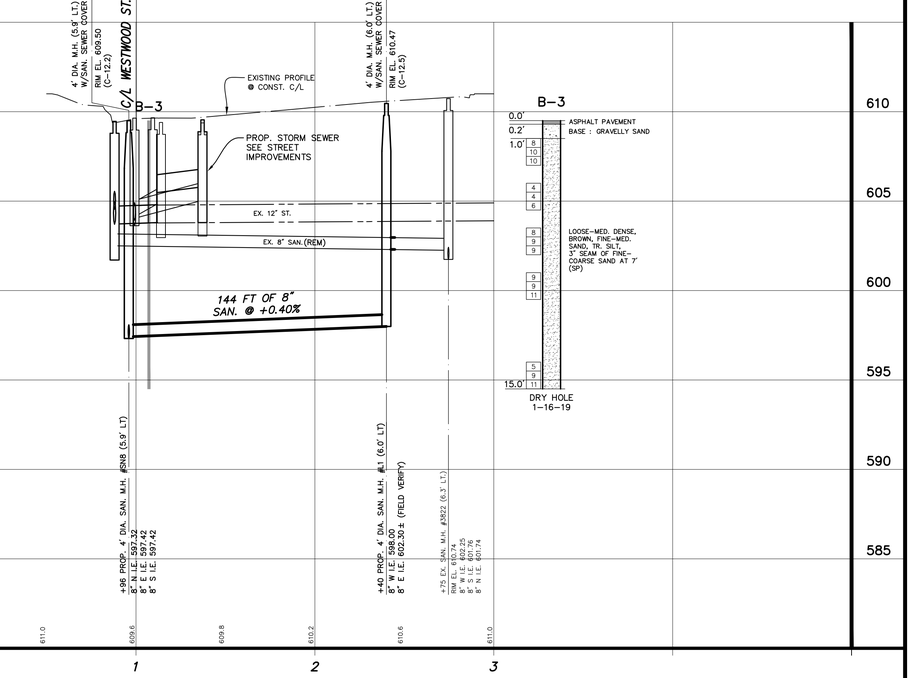
4. CONTRACTOR TO COORDINATE WITH THE CITY FOR METER REMOVAL AND REINSTALLATION.

GLEN AVENUE
(66' RIGHT OF WAY WIDTH UNIMPROVED)



LEXINGTON AVENUE
(50' RIGHT OF WAY WIDTH 24' ASPH. W/24' CONC. CURB & GUTTER)



AIR-LAND SURVEYS

Know what's below. Call before you dig. 811

UTILITY LOCATIONS ARE DERIVED FROM ACTUAL MEASUREMENTS OR AVAILABLE RECORDS. THEY SHOULD NOT BE INTERPRETED TO BE EXACT LOCATIONS NOR SHOULD IT BE ASSUMED THAT THEY ARE THE ONLY UTILITIES IN THIS AREA.

PROJECT DATUM INFORMATION

COORDINATE SYSTEM :	STATE PLANE GRID
ZONE :	MICHIGAN SOUTH 2113
ELLIPSOID :	GRS 80
HORIZONTAL DATUM :	NAD 83 (2011)
VERTICAL DATUM :	NAVD 88
GEOID :	GEOID 12
UNITS :	INTERNATIONAL FEET

PROJECT COMBINED SCALE FACTOR (PCSF) = GROUND DISTANCE ÷ GRID DISTANCE/PCSF

SCALES : 1" = 40' HORZ. (CONTOURS AT ONE FOOT INTERVALS)
1" = 4' VERT.

NO.	REVISIONS	BY	DATE
1	ISSUED FOR BIDS	T.A.D.	5/19

DRAWN STAFF
DATE JAN. '19
CHECKED T.A.D.
DATE MAY '19

Prein&Newhof
Engineers•Surveyors•Environmental•Laboratory

CITY OF MUSKEGON
MUSKEGON COUNTY, MICHIGAN
WASTEWATER SYSTEM IMPROVEMENTS
CONTRACT No. 2
GLEN AVE. – LEXINGTON AVE.

PROJECT NO. 2180552
SHEET NO. 6 OF 10

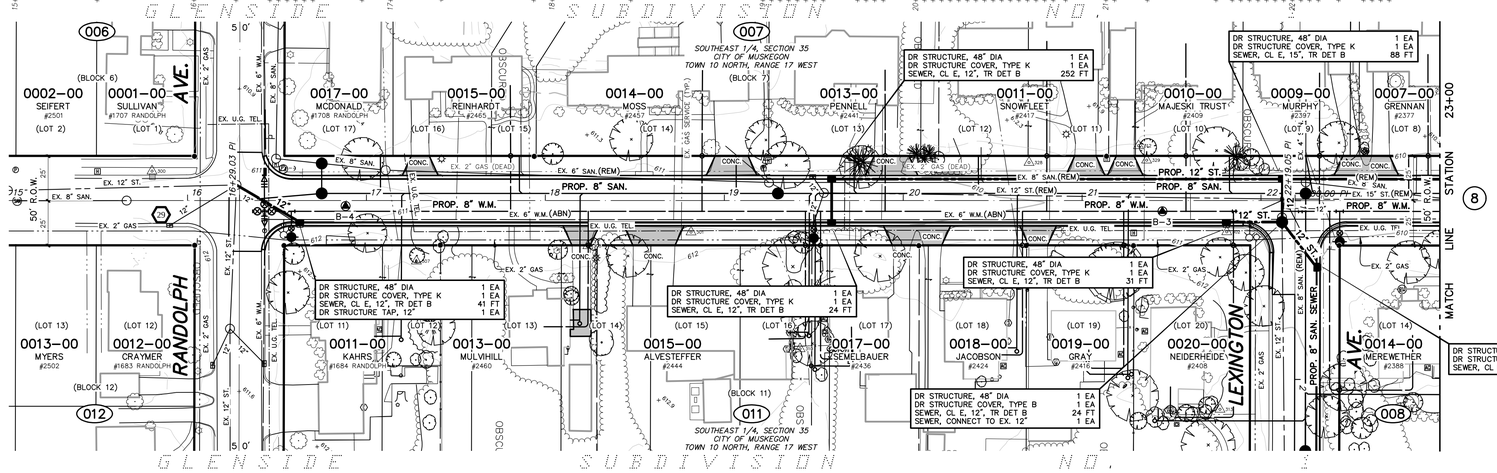
T:\CIVIL3D PROJECTS\2018\2180552_MUSKEGON_GLENSIDE SANITARY SEWER REPLACEMENT PHASE 1\E_PROD\2180552_PLPR_SSWR_GLEN-LEXINGTON.DWG – JSMITH – May, 10 2019 – 07:52am – PreinNewhof

B.M. EL. 613.30
RANDOLPH & WESTWOOD 25'± N. & 15'± W. OF C/L "X". LARGE MAG PK E. SIDE LIGHT POLE (2.0' A/GROUND)

B.M. EL. 611.92
2388 WESTWOOD TOP OF SOUTHWEST CORNER BOTTOM BRICK STEP TO PORCH (0.6' A/WALK)

CONTROL POINT TABLE

POINT No.	NORTHING	EASTING	ELEVATION
300	628141.772	1261824.400	611.67
301	628441.247	1261871.720	611.39
302	628740.449	1261884.770	610.40
307	628287.216	1261881.190	611.99
308	628383.334	1261876.820	611.52
309	628510.660	1261904.770	612.16
310	628499.247	1261939.540	612.25
311	628753.422	1261255.210	611.24
312	628693.257	1261834.500	610.81
313	628732.277	1261983.720	612.26
327	628261.873	1261989.990	612.67
328	628631.709	1261841.190	611.78
329	628697.448	1261842.770	610.48
330	628622.558	1261972.160	612.67



PROPOSED PAVEMENT LEGEND

PROPOSED DRIVEWAY, NONREINF CONC, 6 INCH OR SIDEWALK, CONC, 4 INCH

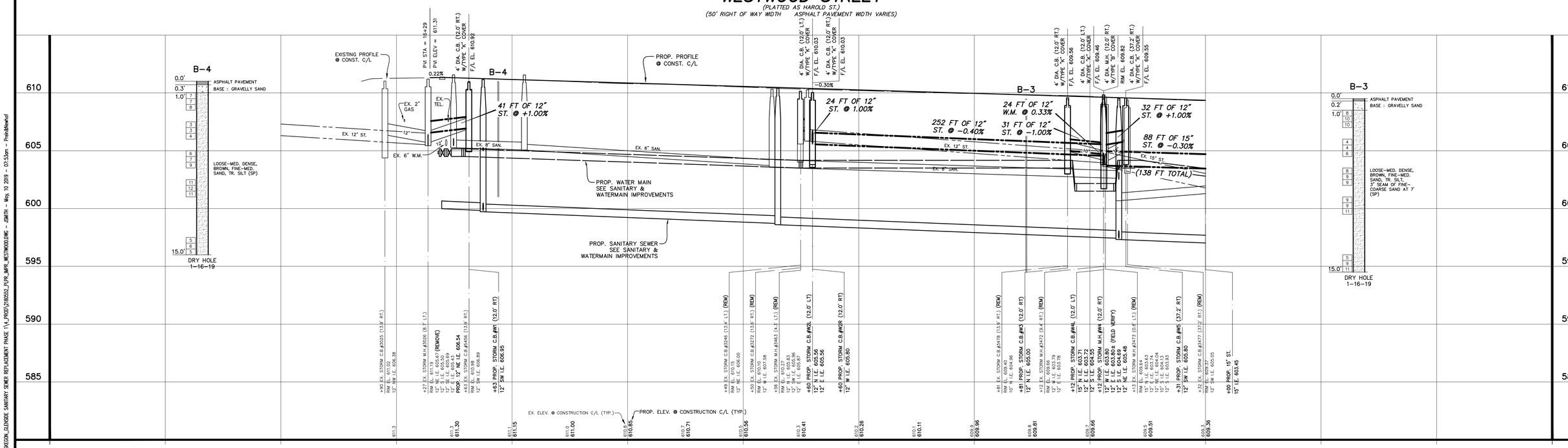
NOTES: PROPOSED PAVEMENT ON STREET & INTERSECTIONS NOT SHADED FOR CLARITY.

SOIL EROSION CONTROL LEGEND

PROPOSED EROSION CONTROL INLET PROTECTION FABRIC DROP

WESTWOOD STREET

(PLATTED AS HAROLD ST.)
(50' RIGHT OF WAY WIDTH ASPHALT PAVEMENT WIDTH VARIES)



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ZONE :	MICHIGAN SOUTH 2113
ELLIPSOID :	GRS 80
HORIZONTAL DATUM :	NAD 83
VERTICAL DATUM :	NAVD 88
DATE :	2011
UNITS :	INTERNATIONAL FEET

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0' 40' 80' 120'

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1" = 4' VERT.

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1	ISSUED FOR BIDS	T.A.D.	5/19

DRAWN STAFF
DATE JAN. '19
CHECKED T.A.D.
DATE MAY '19

Prein&Newhof
Engineers•Surveyors•Environmental•Laboratory

CITY OF MUSKEGON
MUSKEGON COUNTY, MICHIGAN

STREET IMPROVEMENTS
CONTRACT No. 2

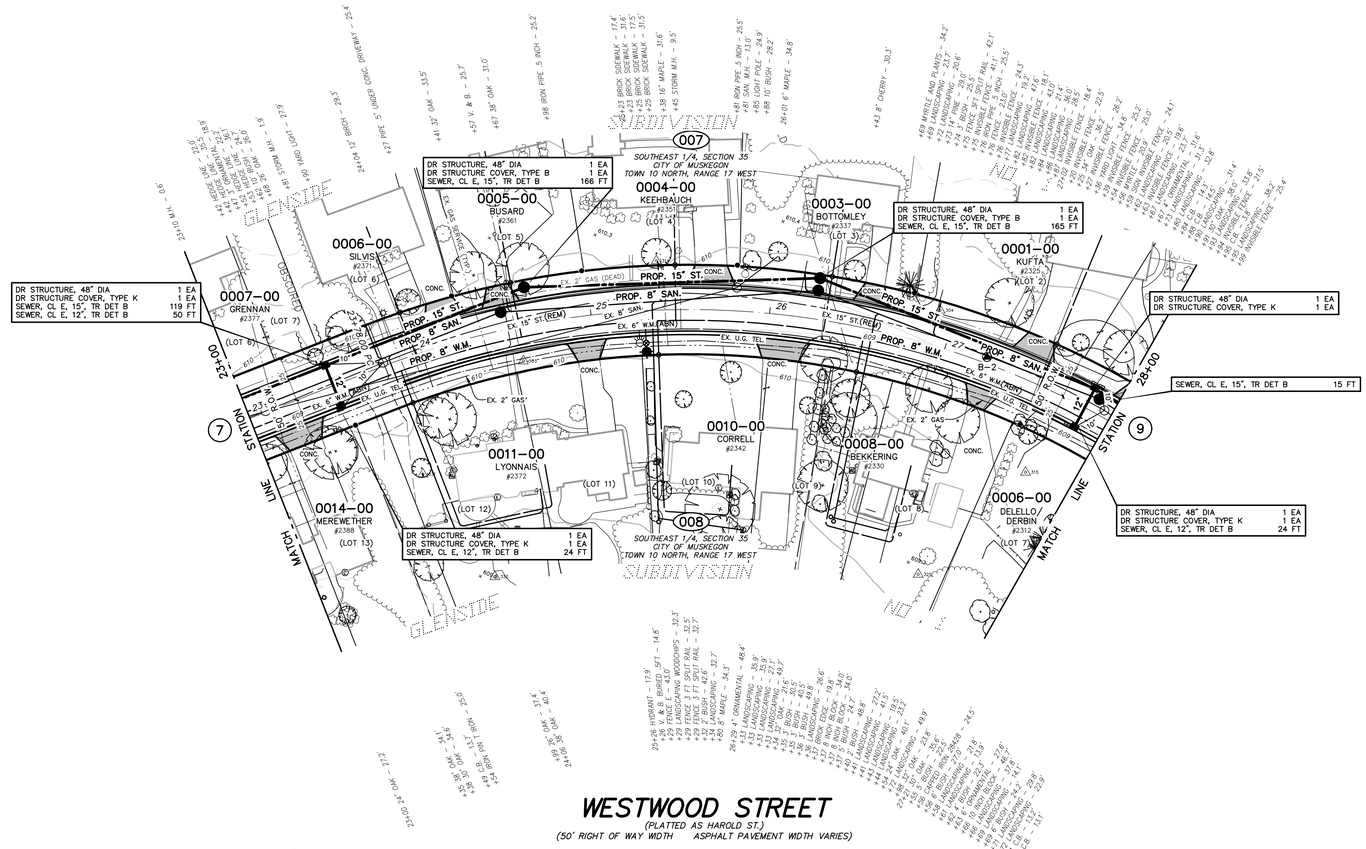
WESTWOOD STREET

PROJECT NO. 2180552

SHEET NO. 7 OF 10

I:\CIVIL3D PROJECTS\2018\2180552_MUSKEGON_GLENSIDE SANITARY SEWER REPLACEMENT PHASE 1\4_PROD\2180552_PLPR_IMPR_WESTWOOD.DWG - JSMITH - May, 10 2019 - 07:53am - PreinNewhof

CONTROL POINT TABLE			
POINT No.	NORTHING	EASTING	ELEVATION
303	629012.956	1261905.370	609.96
304	629237.343	1261973.960	609.37
314	629103.624	12618864.340	610.50
315	629244.244	12612076.130	609.12
325	629166.208	12612103.910	609.49
326	629037.006	12612052.100	609.93
331	628935.991	12619940.360	610.47
332	628949.440	12612009.060	609.40



PROPOSED PAVEMENT LEGEND

PROPOSED DRIVEWAY, NONREINF CONC, 6 INCH OR SIDEWALK, CONC, 4 INCH

NOTES: PROPOSED PAVEMENT ON STREET & INTERSECTIONS NOT SHADED FOR CLARITY.

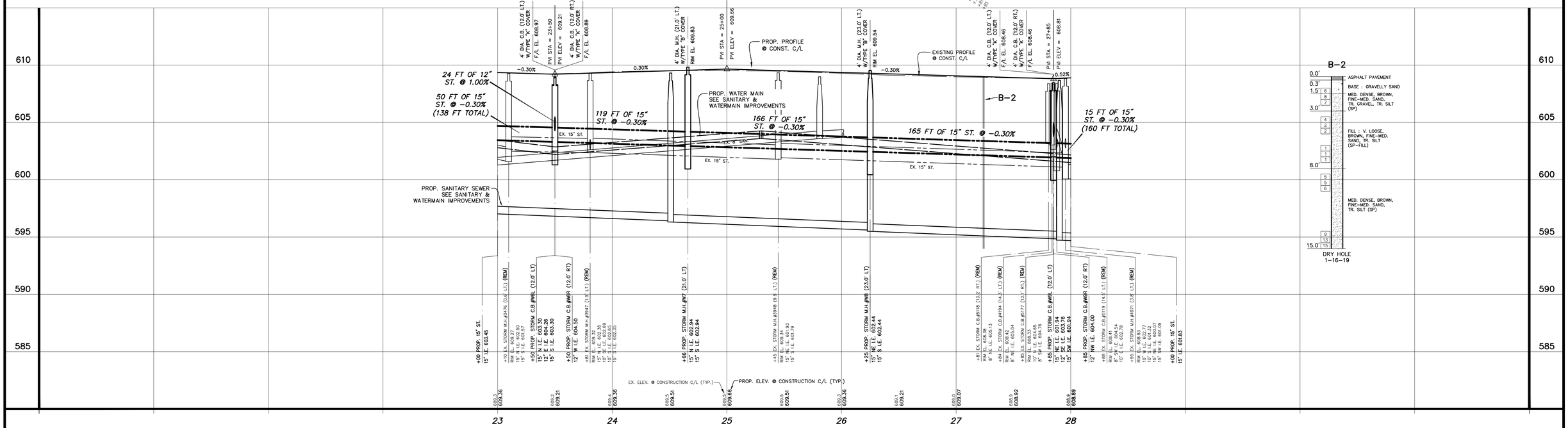
SOIL EROSION CONTROL LEGEND

20 PROPOSED EROSION CONTROL INLET PROTECTION FABRIC DROP

WESTWOOD STREET

(PLATTED AS HAROLD ST.)

(50' RIGHT OF WAY WIDTH ASPHALT PAVEMENT WIDTH VARIES)



AIR-LAND SURVEYS

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ZONE :	MICHIGAN SOUTH 2113
ELLIPSOID :	GRS 80
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GEOID :	GEOID 12A
UNITS :	INTERNATIONAL FEET

PROJECT COMBINED SCALE FACTOR (PCSF) = GROUND DISTANCE = GRID DISTANCE/PCSF

0' 40' 80' 120'

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1" = 4' VERT.

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1	ISSUED FOR BIDS	T.A.D.	5/19

DRAWN STAFF
DATE JAN. '19
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DATE MAY '19

Prein&Newhof
Engineers•Surveyors•Environmental•Laboratory

CITY OF MUSKEGON
MUSKEGON COUNTY, MICHIGAN

STREET IMPROVEMENTS
CONTRACT No. 2

WESTWOOD STREET

PROJECT NO. 2180552

SHEET NO. 8 OF 10

T:\CIVIL3D PROJECTS\2018\2180552_MUSKEGON_GLENSIDE SANITARY SEWER REPLACEMENT PHASE 1\4_PROD\2180552_PLDR_IMPR_WESTWOOD.DWG – GSMITH – May, 10 2019 – 07:53am – PreinNewhof

B.M. EL. 610.61
OPPOSITE HOUSE 2308 WESTWOOD MINT GREEN VERTICAL 60D IN SOUTH ROOT OF 42 INCH OAK (0.0 A/GROUND)

B.M. EL. 613.73
10' N. OF N. EDGE CONCRETE GLEN ROAD & 45' E. OF C/L WICKHAM LARGE MAG PK IN SW ROOT 42 INCH OAK (0.1' A/GROUND)

CONTROL POINT TABLE

POINT No.	NORTHING	EASTING	ELEVATION
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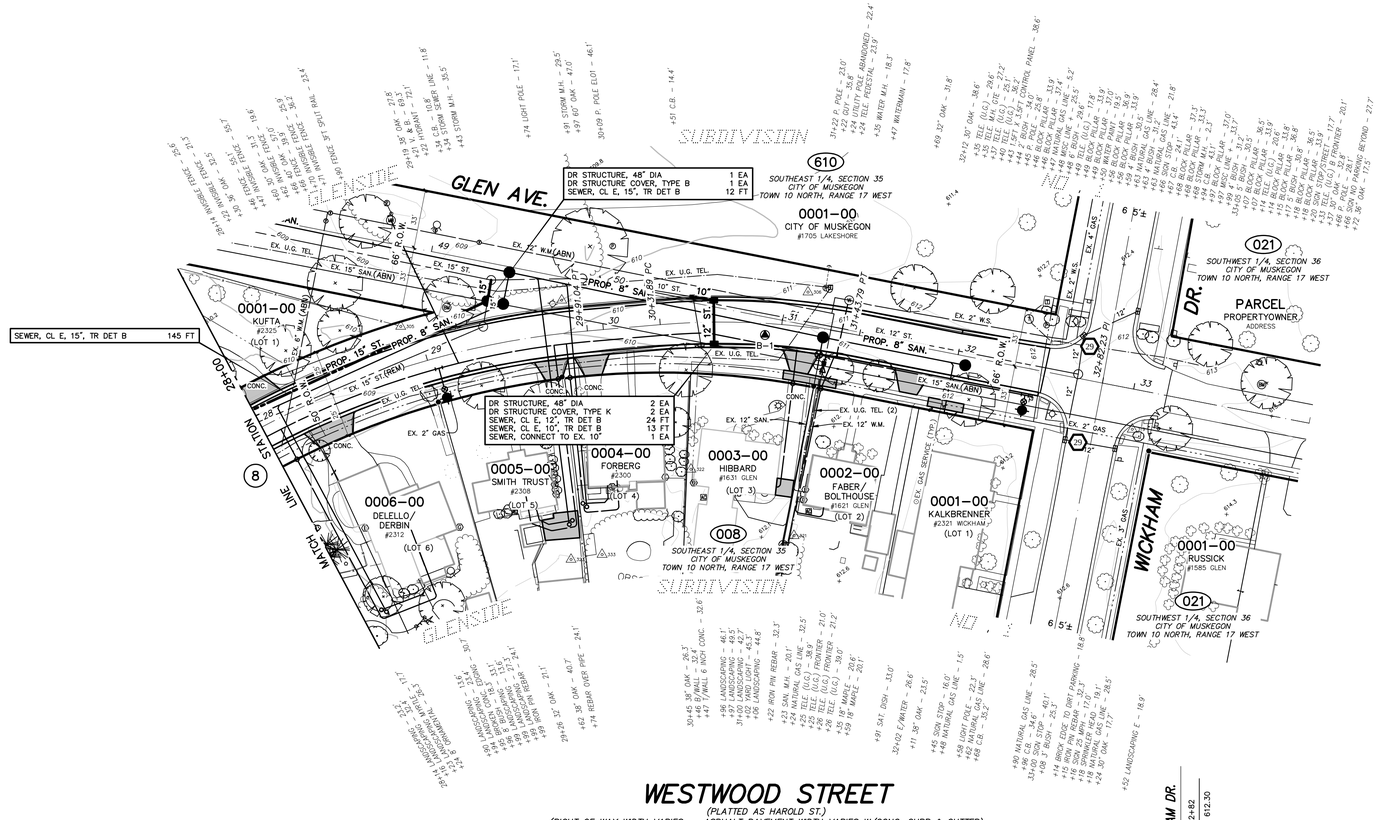
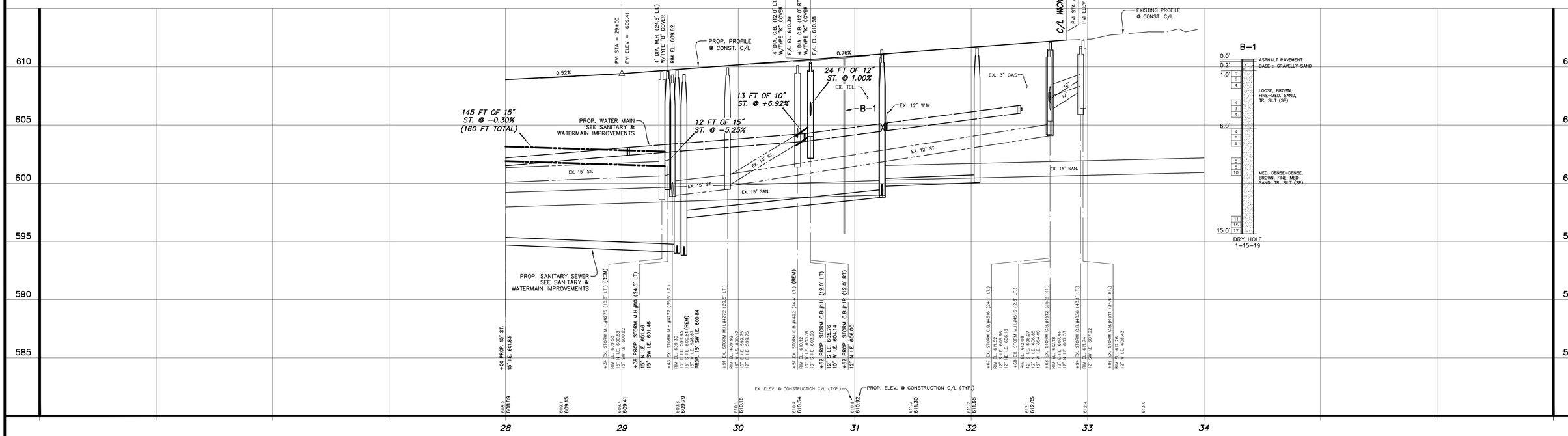
304	629237.343	12611973.960	609.37
314	629103.624	12611884.340	610.50
315	629244.244	12612076.130	609.12
325	629166.208	12612103.910	609.49
326	629037.006	12612052.100	609.93
331	628935.991	12611940.360	610.47
332	628949.440	12612009.060	609.40





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PROPOSED EROSION CONTROL INLET PROTECTION FABRIC DROP

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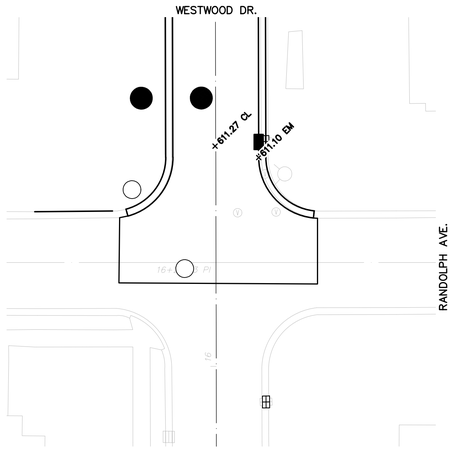
DATE MAY '19

Prein&Newhof
Engineers•Surveyors•Environmental•Laboratory

CITY OF MUSKEGON
MUSKEGON COUNTY, MICHIGAN
STREET IMPROVEMENTS
CONTRACT No. 2
WESTWOOD STREET

PROJECT NO. 2180552
SHEET NO. 9 OF 10

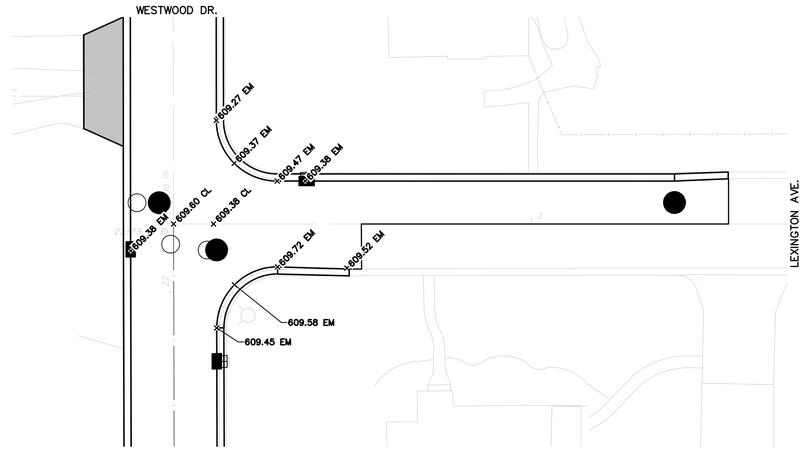
T:\CIVIL3D PROJECTS\2018\2180552_MUSKEGON_GLENSIDE SANITARY SEWER REPLACEMENT PHASE 1\4_PROD\2180552_PLPR_IMPR_WESTWOOD.DWG - JSMITH - May, 10 2019 - 07:54am - Prein&Newhof



GRADING DETAIL
WESTWOOD DR. & RANDOLPH AVE.

SCALE : 1" = 20'

N



GRADING DETAIL
WESTWOOD DR. & LEXINGTON AVE.

SCALE : 1" = 20'

N

NO.	REVISIONS	BY	DATE
1	ISSUED FOR BIDS	T.A.D.	5/19

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DATE JAN. '19
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Engineers•Surveyors•Environmental•Laboratory

CITY OF MUSKEGON
MUSKEGON COUNTY, MICHIGAN

STREET IMPROVEMENTS
CONTRACT No. 2

GRADING DETAILS

PROJECT NO. 2180552

SHEET NO. 10 OF 10

I:\CIVIL3D PROJECTS\2018\2180552_MUSKEGON_OLENSIDE SANITARY SEWER REPLACEMENT PHASE I\4_PROD\2180552_C2_DETL_GRAD.DWG - JSMITH - May, 10 2019 - 07:58am - PreinNewhof