

TUSCARORA TOWNSHIP

SEWER EXPANSION

PHASE 1

PROJECT OVERVIEW

THE PURPOSE OF THIS PROJECT IS TO PROVIDE SANITARY SEWER COLLECTION SYSTEM INFRASTRUCTURE TO A TOTAL OF 188 HOMES. SEWER SERVICE WILL BE PROVIDED PRIMARILY THROUGH GRAVITY SEWER CONNECTIONS, BUT WILL ALSO INCLUDE AREA OF LOW PRESSURE SEWER. THIS SYSTEM WILL EXPAND UPON THE EXISTING WASTEWATER SYSTEM, CONNECTING TO THE EXISTING SANITARY COLLECTION SYSTEM.

PROJECT NUMBER: 22-5797



COUNTY KEY

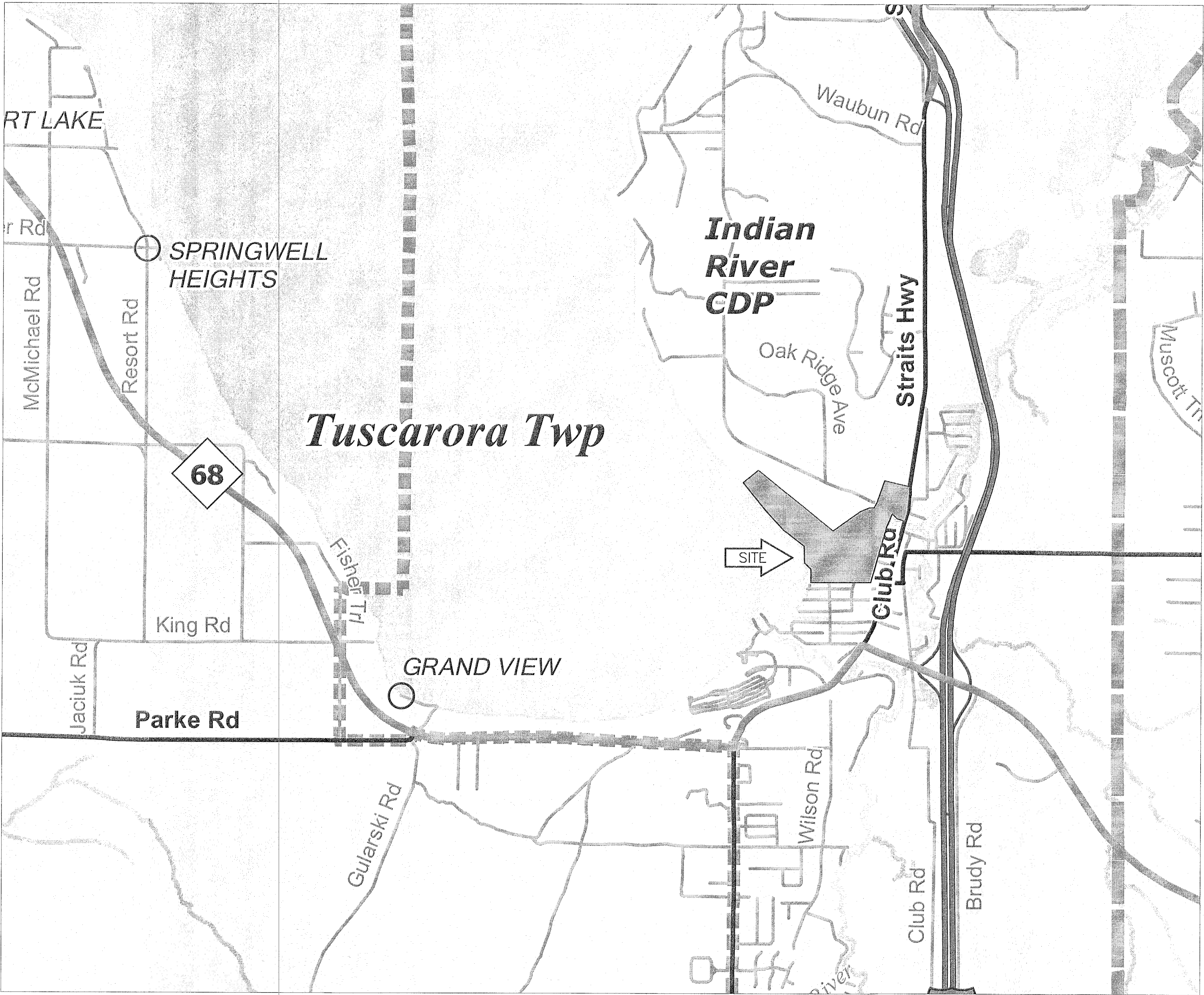
TITLE SHEET LEGEND

- PROPOSED PROJECT -----
- EXISTING ROADS
CITY STREET -----
STATE ROUTES -----
FEDERAL ROUTES -----
- CITY, VILLAGE LIMITS -----
TOWNSHIP LIMITS -----
COUNTY LINE -----



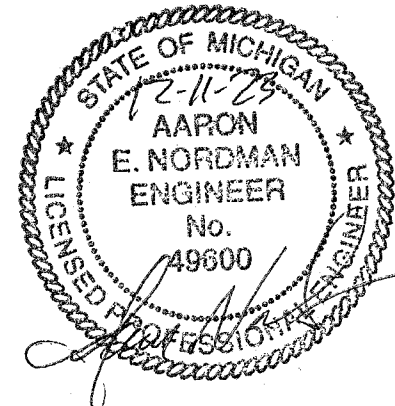
Know what's below.
Call before you dig.

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C200	LEGEND & GENERAL NOTES
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C302	PLAN & PROFILE (STA. 306+90 TO 313+90)
C303	PLAN & PROFILE (STA. 200+00 TO 207+35)
C304	PLAN & PROFILE (STA. 100+00 TO 105+95)
C305	PLAN & PROFILE (STA. 105+80 TO 114+10)
C306	PLAN & PROFILE (STA. 114+10 TO 120+45)
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C400	SANITARY DETAILS
C401	PUMP STATION DETAILS



LOCATION MAP
1"=2000'

CONTRACT FOR: TUSCARORA TOWNSHIP -
SANITARY SEWER EXPANSION PHASE 1



MARK	DATE	DESCRIPTION
0	1/3/23	OWNER REVIEW
1	5/1/23	PERMIT SUBMITTAL
2	11/15/23	REVISED PER EGLE REVIEW

SEAL

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WATER AND SEWER SYMBOLS		PLAN SHEET PATTERNS		UNDERGROUND UTILITY LIFESTYLES	
PROPOSED CATCH BASIN EXISTING CATCH BASIN PROPOSED STORM MANHOLE EXISTING STORM MANHOLE PROPOSED SANITARY MANHOLE EXISTING SANITARY MANHOLE PROPOSED SANITARY CLEANOUT EXISTING SANITARY CLEANOUT PROPOSED WATER MANHOLE EXISTING WATER MANHOLE PROPOSED FIRE HYDRANT EXISTING FIRE HYDRANT PROPOSED WATER VALVE AND BOX EXISTING WATER VALVE PROPOSED WATER SHUTOFF EXISTING WATER SHUTOFF PROPOSED WATER WELL EXISTING WATER WELL	CONCRETE PAVEMENT/DRIVE APPROACH REMOVING PAVEMENT (HMA) REMOVING (CONCRETE) PAVEMENT/DRIVEWAY/ SIDEWALK REMOVING CURB, GUTTER AND CURB & GUTTER	ST EXISTING STORM SEWER ST PROPOSED STORM SEWER SAN PROPOSED SANITARY SEWER SAN EXISTING SANITARY SEWER W PROPOSED WATER LINE W EXISTING WATER LINE G PROPOSED NATURAL GAS LINE G EXISTING NATURAL GAS LINE U/E PROPOSED ELECTRIC U/E EXISTING ELECTRIC U/T PROPOSED TELEPHONE U/T EXISTING TELEPHONE U/CATV PROPOSED CABLE TV U/CATV EXISTING CABLE TV F/O PROPOSED FIBER OPTIC F/O EXISTING FIBER OPTIC			
UTILITIES SYMBOLS		ROAD SURFACE PATTERNS		ABOVE GROUND UTILITY LIFESTYLES	
EXISTING TELEPHONE MANHOLE EXISTING CABLE TV MANHOLE EXISTING NATURAL GAS MANHOLE EXISTING GAS METER EXISTING GAS VALVE EXISTING ELECTRICAL MANHOLE PROP. PRIMARY ELECT. HAND HOLE EXST. PRIMARY ELECT. HAND HOLE PROP. SECONDARY ELECT. HAND HOLE EXST. SECONDARY ELECT. HAND HOLE EXISTING TRANSFORMER PROPOSED UTILITY POLE EXISTING UTILITY POLE PROPOSED LIGHT POST EXISTING LIGHT POST PROPOSED GUY WIRE EXISTING GUY WIRE	ASPHALT GRAVEL SEASONAL	OHE PROPOSED ELECTRIC OHE EXISTING ELECTRIC OHT PROPOSED TELEPHONE OHT EXISTING TELEPHONE CATV PROPOSED CABLE TV CATV EXISTING CABLE TV			
LANDSCAPING SYMBOLS		PROPERTY/EASEMENT LIFESTYLES		TOPO LIFESTYLES	
PROPOSED TREE EXISTING TREE PROPOSED CONIFER TREE EXISTING CONIFER TREE PROPOSED SHRUB EXISTING SHRUB		R PROPERTY LINE RW RIGHT OF WAY SETBACK LINE PROPOSED FENCE EXISTING FENCE PROPOSED UNIT LINE EXISTING UNIT LINE		600 PROPOSED MAJOR CONTOUR 599 PROPOSED MINOR CONTOUR 600 EXISTING MAJOR CONTOUR 599 EXISTING MINOR CONTOUR PROPOSED TREE LINE EXISTING TREE LINE PROPOSED SWALE EXISTING SWALE	
PROPERTY SYMBOLS		ABBREVIATIONS			
MONUMENT BOX MONUMENT NEW PROPERTY CORNER EXISTING PROPERTY CORNER BENCH MARK NAIL SET		ABS - ACRYLONITRILE BUTADIENE STYRENE ADA - AMERICANS WITH DISABILITIES ACT ALT - ALTERNATE ASPH - ASPHALT BC - BACK OF CURB BLDG - BUILDING BM - BENCHMARK CB - CATCH BASIN CIP - CAST IRON PIPE CL - CENTER LINE CMP - CORRUGATED METAL PIPE CO - CLEANOUT CONC - CONCRETE CFT - CUBIC FEET CYD - CUBIC YARD DIP - DUCTILE IRON PIPE E - EAST EL - ELEVATION FFE - FINISH FLOOR ELEVATION FH - FIRE HYDRANT FC - FACE OF CURB G - NATURAL GAS GEN - GENERATOR GIP - GALVANIZED IRON PIPE HC - HANDICAP HDPE - HIGH DENSITY POLYETHYLENE HDWL - HEADWALL HH - HAND HOLE HP - HORSEPOWER HYD - HYDRANT INV - INVERT ELEVATION IRR - IRRIGATION WATER LCY - LOOSE CUBIC YARD LP - LIGHT POLE LFT - LINEAR FOOT LS - LUMP SUM MB - MAIL BOX MH - MANHOLE N - NORTH NTS - NOT TO SCALE PC - POINT OF CURVE PED - PEDESTAL PERF - PERFORATED PL - PROPERTY LINE PP - POWER POLE PROP - PROPOSED PVC - POLYVINYL CHLORIDE (PLASTIC) R - RADIUS RCP - REINFORCED CONCRETE PIPE RD - ROAD REQD - REQUIRED ROW - RIGHT OF WAY S - SOUTH SALV - SALVAGE SAN - SANITARY SB-xx - SOIL BORING-XX (E.G., SB-01) SCHD - SCHEDULE (PIPE) SFT - SQUARE FOOT SP EL - SPOT ELEVATION SSW - SANITARY SEWER STM - STORM SEWER ST - STREET STA - STATION STD - STANDARD SW - SIDEWALK TBM - TEMPORARY BENCHMARK TD - TRENCH DRAIN TEL - TELEPHONE TOC - TOP OF CONCRETE TC - TOP OF CURB T/FTG - TOP OF CONCRETE FOOTING T/WALL - TOP OF CONCRETE WALL TP - TELEPHONE POLE TYP - TYPICAL UGND - UNDERGROUND UP - UTILITY POLE UTIL - UTILITY VAR - VARIES VC - VERTICAL CURVE VCP - VITRIFIED CLAY PIPE VEH - VEHICLE VOL - VOLUME W/O - WITH OUT W - WEST WM - WATER MAIN YD - YARD DRAIN			
MISCELLANEOUS SYMBOLS					
SOIL BORING INDICATOR ADJUST STRUCTURE ADJUST FIRE HYDRANT ADJUST BY OTHERS RELOCATE BY OTHERS DRIVEWAY TYPE SIDEWALK RAMP TYPE SALVAGE PROPOSED BUILDING EXISTING BUILDING ABANDON BULKHEAD CLEARING REMOVAL SAVE					

GENERAL NOTES

- ALL ELEVATIONS ARE BASED ON NAVD 88 DATUM.
- FOR PROTECTION OF UNDERGROUND UTILITIES AND IN CONFORMANCE WITH PUBLIC ACT 174, 2013, THE CONTRACTOR SHALL CALL 811 A MINIMUM OF THREE (3) FULL WORKING DAYS, EXCLUDING SATURDAYS, SUNDAYS, AND HOLIDAYS PRIOR TO EACH EXCAVATION IN AREAS WHERE PUBLIC UTILITIES HAVE NOT BEEN PREVIOUSLY LOCATED. MEMBERS WILL THUS HAVE BEEN ROUTINELY NOTIFIED. THIS DOES NOT RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY OF NOTIFYING UTILITY OWNERS WHO MAY NOT BE PART OF THE "MISS DIG" ALERT SYSTEM.
- SPECIAL CARE SHALL BE TAKEN IN EXCAVATING IN THE PROXIMITY OF ALL UNDERGROUND UTILITIES. THE CONTRACTOR SHALL SECURE ASSISTANCE FROM THE APPROPRIATE UTILITY COMPANY IN LOCATING ITS LINES. THE CONTRACTOR SHALL ALSO:
 - PROVIDE SUPPORT FOR ANY UTILITY WITHIN THE EXCAVATION.
 - PROVIDE PROPER COMPACTION UNDER ANY UNDERMINED UTILITY STRUCTURE IF NECESSARY, INSTALL TEMPORARY SHEETING OR USE A TRENCH BOX TO MINIMIZE THE EXCAVATION.
 - THE CONTRACTOR SHALL PROTECT AND SAVE FROM DAMAGE ALL UTILITIES, WHETHER PRIVATELY OR PUBLICLY OWNED, ABOVE OR BELOW GROUND SURFACE, WHICH MAY BE ENCOUNTERED DURING CONSTRUCTION, AT NO ADDITIONAL COST TO THE OWNER, WHEN PROPERLY IDENTIFIED.
- THE LOCATION OF EXISTING PUBLIC UTILITIES AND UNDERGROUND STRUCTURES SUCH AS PIPE LINES, ELECTRIC CONDUITS, SEWER AND WATER LINES, OF RECORD ARE SHOWN ON THE PLANS. THE INFORMATION IS BELIEVED TO BE REASONABLY CORRECT AND COMPLETE. HOWEVER, NEITHER THE CORRECTNESS NOR THE COMPLETENESS OF SUCH INFORMATION IS GUARANTEED. PRIOR TO THE START OF ANY OPERATIONS IN THE VICINITY OF ANY UTILITIES, THE CONTRACTOR SHALL CALL THE 811 MISS DIG NOTIFICATION SYSTEM IN ACCORDANCE WITH PUBLIC ACT 174, 2013.
- WHEN NECESSARY, THE CONTRACTOR SHALL COORDINATE THE RELOCATION OF ANY UTILITIES WITH THE UTILITY PROVIDER. COST OF REPAIR FOR ANY DAMAGED UTILITY LINES THAT IS PROPERLY STAKED SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
- THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE LAWS AND REGULATIONS GOVERNING THE PROTECTION AND SAFETY OF THEIR WORKERS. THE CONTRACTOR SHALL TAKE ANY NECESSARY PRECAUTIONS TO PROTECT THE LIFE AND HEALTH OF EMPLOYEES AND THE PUBLIC IN THE PERFORMANCE OF THE WORK.
- EXISTING PROPERTY OWNERS ARE IDENTIFIED ON THE PLANS. IF A PROPERTY CORNER IRON IS DISTURBED DURING CONSTRUCTION IT SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE BY A PROFESSIONAL LAND SURVEYOR.
- CONTRACTOR SHALL PROVIDE TEMPORARY SUPPORT TO ANY MAILBOXES DISTURBED DURING CONSTRUCTION AND SHALL NOT INTERFERE WITH MAIL SERVICE. ALL DISTURBED MAILBOXES SHALL BE PLACED IN THE ORIGINAL LOCATION AND AT AN ELEVATION DETERMINED BY THE POSTAL SERVICE.
- LOCAL TRAFFIC SHALL BE MAINTAINED AT ALL TIMES, UNLESS SERVICE DISRUPTION IS COORDINATED AHEAD OF TIME.
- CONTRACTOR SHALL RESTORE ALL LAWNS, LANDSCAPE PLANTINGS, SIDEWALKS, COMMERCIAL SIGNS, ETC., AS REQUIRED.

SANITARY NOTES

- ALL MATERIALS AND WORKMANSHIP SHALL CONFORM TO THE CURRENT REQUIREMENTS OF TUSCARORA TOWNSHIP. INSTALLATION OF PIPING SHALL BE PERFORMED IN ACCORDANCE WITH ASTM STANDARDS AND THE PLANS AND SUPPLEMENTAL SPECIFICATIONS PROVIDED.
- THE OWNER WILL PROVIDE THE CONTRACTOR WITH REQUIRED EGLE PERMIT FOR THE SANITARY SEWER CONSTRUCTION. CONSTRUCTION IS NOT TO BEGIN UNTIL THIS PERMIT HAS BEEN OBTAINED. CONTRACTOR SHALL BE RESPONSIBLE FOR COMPLIANCE WITH ALL EGLE PERMIT CONDITIONS.
- ALL FORCE MAIN SANITARY SEWER PIPING SHALL BE INSTALLED WITH TRACER WIRE, WHETHER PLACED IN OPEN EXCAVATION, OR INSTALLED BY DIRECTIONAL DRILLING METHODS.
- NEW SANITARY SEWER CONSTRUCTION SHALL PROGRESS SUCH THAT THE NEW FACILITIES, ARE COMPLETE, INSPECTED, TESTED AND FULLY OPERATIONAL BEFORE CONNECTION OF ANY SERVICES.
- THE CONTRACTOR SHALL BE REQUIRED TO COORDINATE FOR CONSTRUCTION INSPECTION BY THE ENGINEER. NOTICE SHALL BE GIVEN TO THE ENGINEER NOT LESS THAN 72 HOURS PRIOR TO THE START OF WORK. WORK INSTALLED WITHOUT PROPER NOTICE OR INSPECTION MAY NOT BE ACCEPTED.
- PAYMENT FOR ALL THE OPERATIONS DESCRIBED ABOVE SHALL BE INCLUDED IN THE UNIT PRICE FOR THE PIPE BEING INSTALLED.

SOIL EROSION AND STORM WATER CONTROL NOTES

- THE CONTRACTOR SHALL PROVIDE TEMPORARY SOIL EROSION CONTROL MEASURES PER P.A. 451 AS AMENDED. THE CONTRACTOR SHALL PROTECT THE ADJACENT AREA FROM ACCELERATED EROSION AND SEDIMENTATION FLOWS RESULTING FROM CONSTRUCTION. THE CONTRACTOR SHALL INSTALL TEMPORARY AND PERMANENT SOIL EROSION CONTROL MEASURES, DIRECTED BY THE SOIL EROSION CONTROL OFFICER.
- INSTALLATION AND MAINTENANCE OF TEMPORARY SOIL EROSION CONTROL MEASURES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. CONTRACTOR SHALL PROVIDE THE REQUIRED PERMIT THROUGH CHEBOYGAN COUNTY.
- SHOULD ADDITIONAL SOIL EROSION CONTROL MEASURES BE DETERMINED TO BE NECESSARY BY EITHER THE SOIL EROSION CONTROL OFFICER OR THE ENGINEER THEY SHALL BE IN PLACE NO LATER THAN 24 HOURS OR CONSTRUCTION WILL BE HALTED UNTIL SUCH MEASURES ARE INSTALLED AND APPROVED BY EITHER THE SOIL EROSION CONTROL OFFICER OR THE ENGINEER.
- ALL DISTURBED NON-HARD SURFACE AREAS ARE TO BE STABILIZED WITH TOPSOIL, SEEDED, FERTILIZED AND MULCHED. DISTURBED AREAS SHALL BE TOPSOILED TO A DEPTH NOT LESS THAN THREE (3) INCHES. SLOPES BETWEEN 1 ON 3 AND 1 ON 2 SHALL BE SODDED AND STAKED OR RECEIVE SEED WITH MULCH BLANKET.
- ALL STORM DRAINAGE PIPE SHALL BE CORRUGATED GALVANIZED STEEL PIPE, HDPE, OR APPROVED EQUAL.
- A MINIMUM OF TWO (2) FEET OF COVER FROM FINISHED ELEVATIONS SHALL BE MAINTAINED OVER ALL STORM DRAIN PIPES.
- ALL DRAINAGE PIPES THAT OUTLET AT GROUND SURFACE SHALL INCLUDE END SECTIONS.
- EXISTING STORM DRAINAGE DITCHES SHALL BE REBUILT IF FILLED IN OR REMOVED DURING CONSTRUCTION. THE CONTRACTOR IS RESPONSIBLE TO REPAIR OR REPLACE, AS REQUIRED, ALL DRAINAGE CULVERTS DAMAGED DURING CONSTRUCTION AND SHALL BE CONSIDERED INCIDENTAL TO THE PROJECT.
- THE CONTRACTOR SHALL REMOVE OR CAUSE TO BE REMOVED ALL SEDIMENT OR SOILS THAT HAVE BEEN DROPPED, WASHED ONTO, OR TRACKED OUT ONTO PUBLIC RIGHT-OF-WAY OR PRIVATE ROADS AT THE END OF EACH WORKING DAY OR AFTER EACH RAIN EVENT ON NON-WORK DAYS.
- THE CONTRACTOR SHALL REPAIR ALL WASHOUTS AND EROSION DURING THE GUARANTEE PERIOD OF ONE (1) YEAR AT NO ADDITIONAL COST TO THE OWNER.

AUTH	DATE	NO.	DESCRIPTION	AUTH	DATE	NO.	DESCRIPTION
-	-	0	NOT ISSUED				
PEI	5/1/23	1	PERMIT SUBMITTAL				
PEI	11/15/23	2	REVISED PER EGLE REVIEW				

DESIGNER

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OWNER
TUSCARORA
TOWNSHIP

SCALE

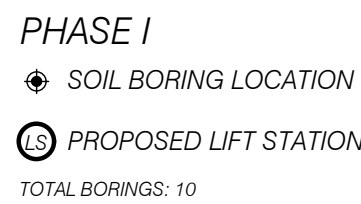
PROJECT
TUSCARORA TOWNSHIP
SANITARY SEWER EXPANSION PHASE 1

SHEET
LEGEND & GENERAL NOTES

JOB NO.
22-5797
SHEET NO.
C200

SECT. 24, T38N-R3W, INDIAN RIVER, TUSCARORA TWP., CHEBOYGAN COUNTY, MICHIGAN

DATE: _____ CHECKED BY: _____ DATE: _____ CORRECTED BY: _____



NOTES: WATER DEPTH BELOW GRADE WAS ESTIMATED AT SEVERAL LOCATIONS DUE TO CAVE IN OF THE BORE HOLES.

ALL BORE HOLES WERE DRILLED TO 10'. SOIL CLASSIFICATION DESCRIPTIONS REPRESENT SOILS THAT WERE CONFIRMED AT THE ELEVATION/ DEPTH BELOW GRADE INDICATED IN THE DESCRIPTION.

SB 1:	SOILS	H2O DEPTH	LOCATION
0 - 3		2.5'	45° 24' 34.39"
3 - 10	CLEAN MEDIUM SAND, EOB		84° 37' 15.72"
SB 2:	SOILS	H2O DEPTH	LOCATION
0 - 2	DECAYED WOOD AND SAND MIX	2.5'	45° 24' 33.56"
2 - 6	CLEAN, FINE TO MED SAND, FLOWING WATER		84° 37' 09.74"
	SOUTH SIDE OF OAK GLEN		
6 - 8'	SILTY MARL		
8'	CLAY, EOB		
SB 3:	SOILS	H2O DEPTH	LOCATION
0 - 3	TOPSOIL, CLAY MIX	2.5'	45° 24' 37.47"
3 - 6			84° 37' 03.45"
6 - 8			
8'	CLAY, EOB		
SB 6:	SOILS	H2O DEPTH	LOCATION
0 - 10'	CLEAN MEDIUM SAND, EOB	8'	45° 24' 44.24"
			84° 36' 55.16"
SB 7:	SOILS	H2O DEPTH	LOCATION
0 - 3	GRAVEL/ SAND MIXTURE	4.5'	45° 24' 47.75"
3 - 10	CLEAN, MEDIUM SAND, EOB		84° 36' 53.39"
SB 8:	SOILS	H2O DEPTH	LOCATION
0 - 10'	CLEAN, MEDIUM SAND	8'	45° 24' 46.79"
			84° 36' 47.91"
SB 10:	SOILS	H2O DEPTH	LOCATION
0 - 3	SILTY SAND, LIGHT BROWN	6'	45° 24' 37.87"
3 - 4	SILTY SAND, ORANGE		84° 36' 51.76"
4 - 9	SILTY SAND, BROWN		
9 - 11'	CLAY		
SB 12:	SOILS	H2O DEPTH	LOCATION
0 - 3	MEDIUM TO FINE SAND	2.5'	45° 24' 50.67"
3 - 6	SOFT CLAY, COLLAPSE AT 6"		84° 36' 59.57"
SB 13:	SOILS	H2O DEPTH	LOCATION
0 - 1'	ROAD GRAVEL	3.5'	45° 24' 50.67"
1 - 7'	FINE, SILTY SAND, COLLAPSE AT 7"		84° 36' 40.53"
SB 15:	SOILS	H2O DEPTH	LOCATION
0 - 3	FINE SAND	4'	45° 24' 53.04"
3 - 4	SANDY CLAY		84° 36' 51.34"
4 - 7	MARL		
7 - 9	CLAY, EOB		

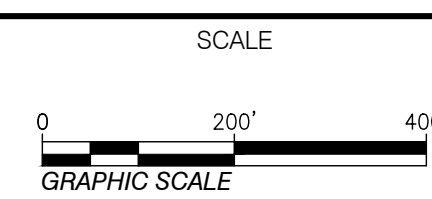
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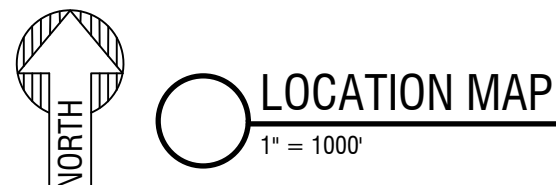
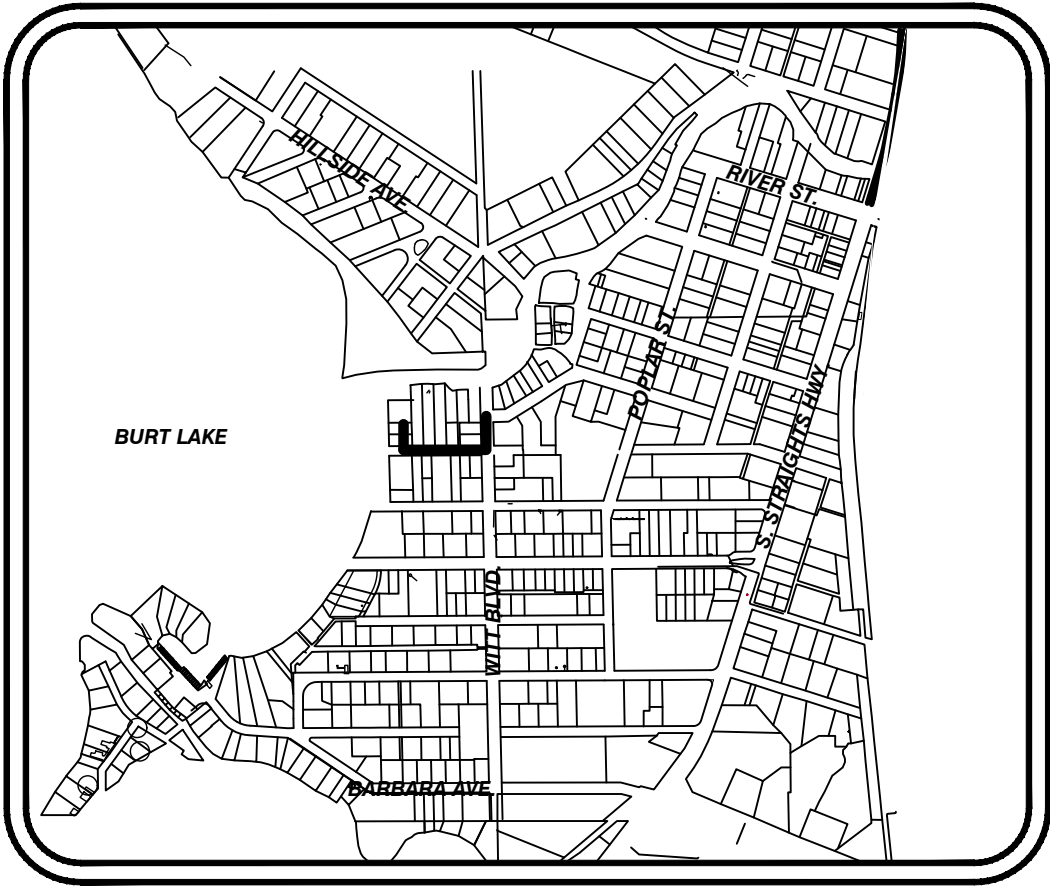
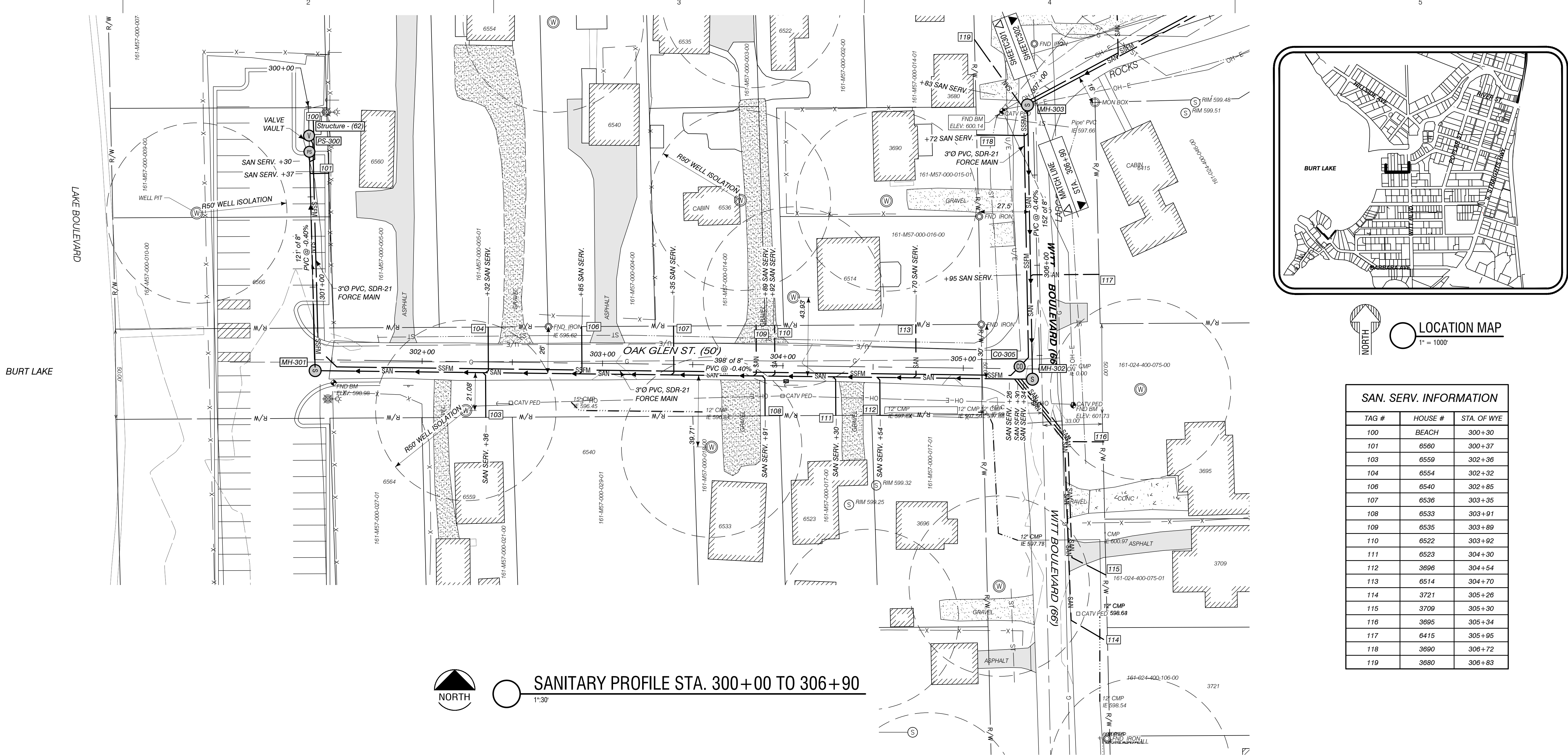
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SECT. 24, T35N-R3W, INDIAN RIVER, TUSCARORA TWP., CHEBOYGAN COUNTY, MICHIGAN

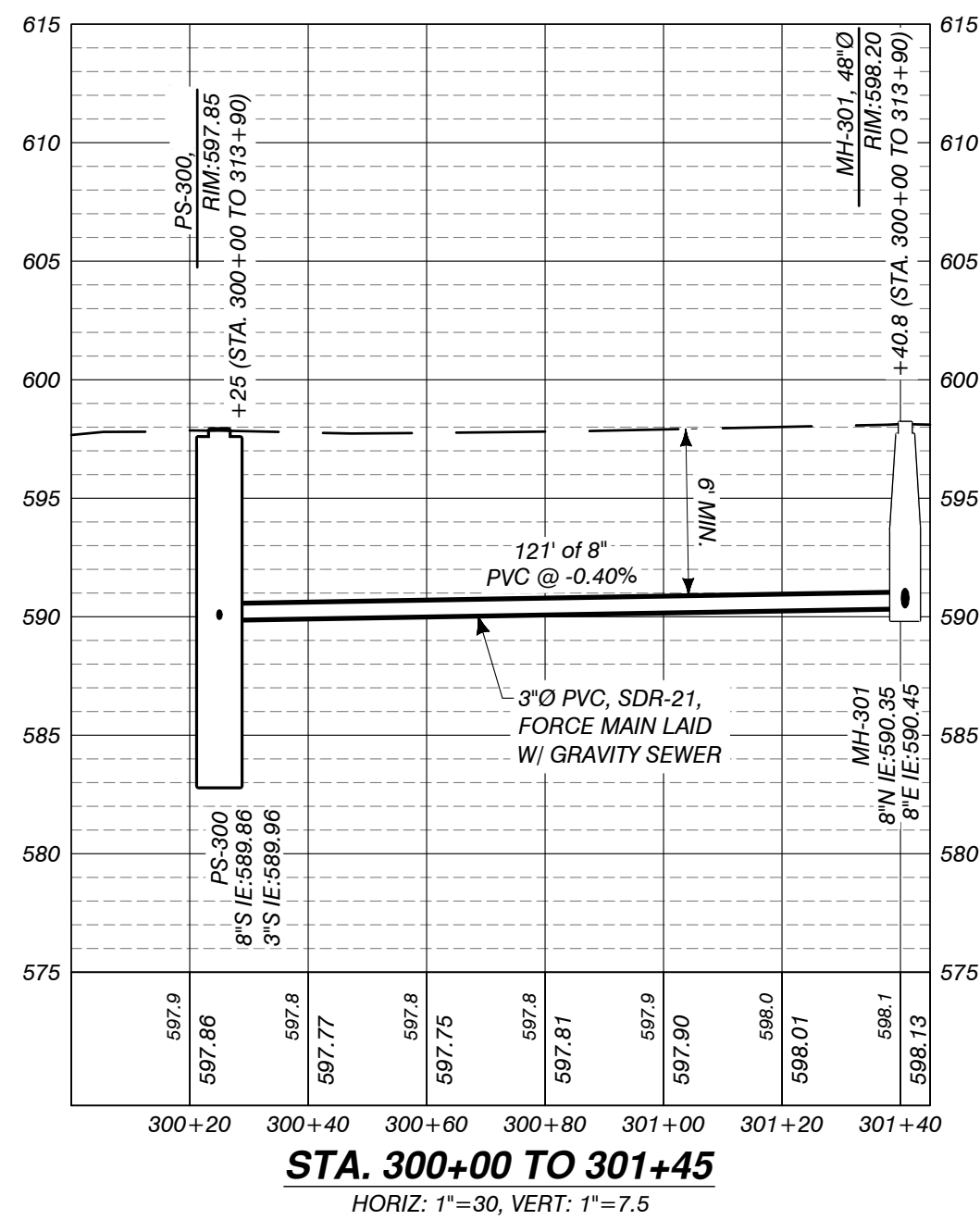
SHEET
PLAN & PROFILE SHEET INDEX
BORING LOGS

JOB NO.
22-5797

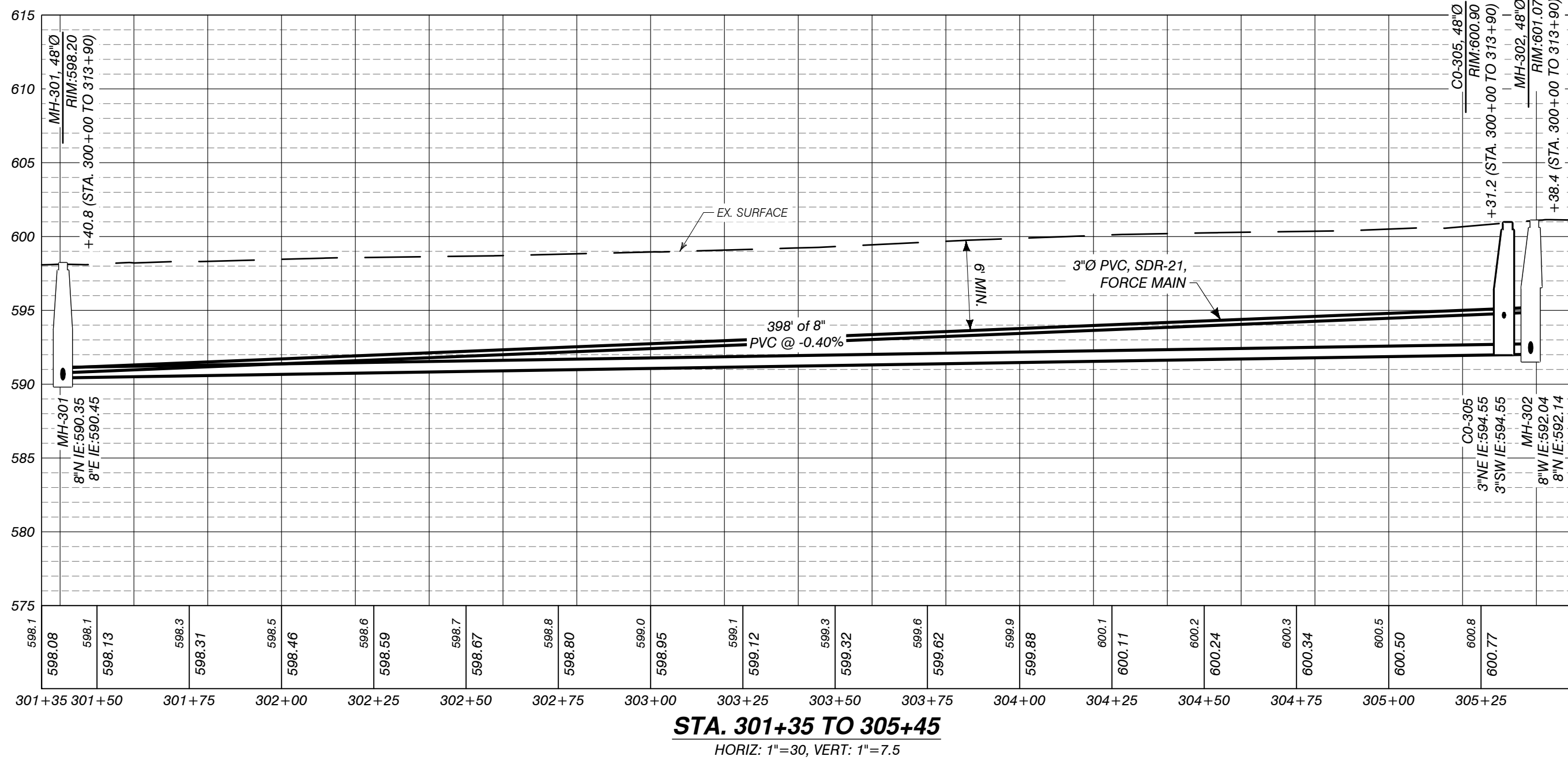
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C300



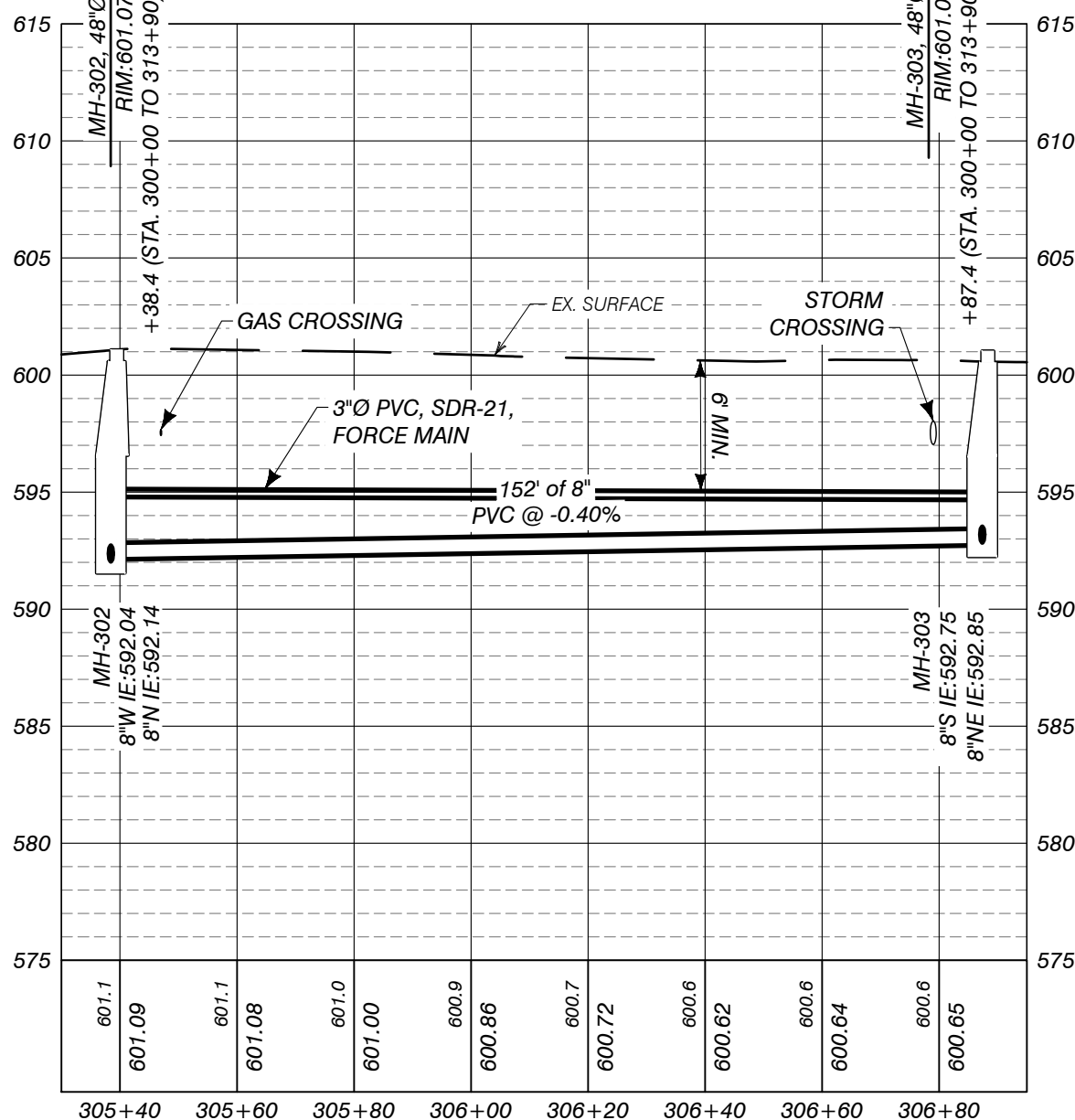
SAN. SERV. INFORMATION		
TAG #	HOUSE #	STA. OF WYE
100	BEACH	300+30
101	8560	300+37
103	8559	302+36
104	8554	302+32
106	8540	302+85
107	8536	303+35
108	8533	303+91
109	8535	303+89
110	8522	303+92
111	8523	304+30
112	3696	304+54
113	8514	304+70
114	3721	305+26
115	3709	305+30
116	3695	305+34
117	6415	305+95
118	3690	306+72
119	3680	306+83



STA. 300+00 TO 301+45
HORIZ: 1"=30, VERT: 1"=7.5



STA. 301+35 TO 305+45
HORIZ: 1"=30, VERT: 1"=7.5



STA. 305+30 TO 306+90
HORIZ: 1"=30, VERT: 1"=7.5

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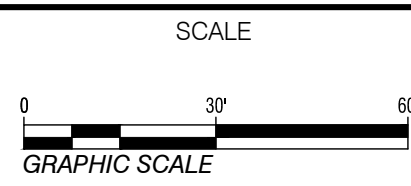
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SANITARY SEWER EXPANSION PHASE 1

SECT. 24, T35N-R3W, INDIAN RIVER, TUSCARORA TWP., CHEBOYGAN COUNTY, MICHIGAN

SHEET

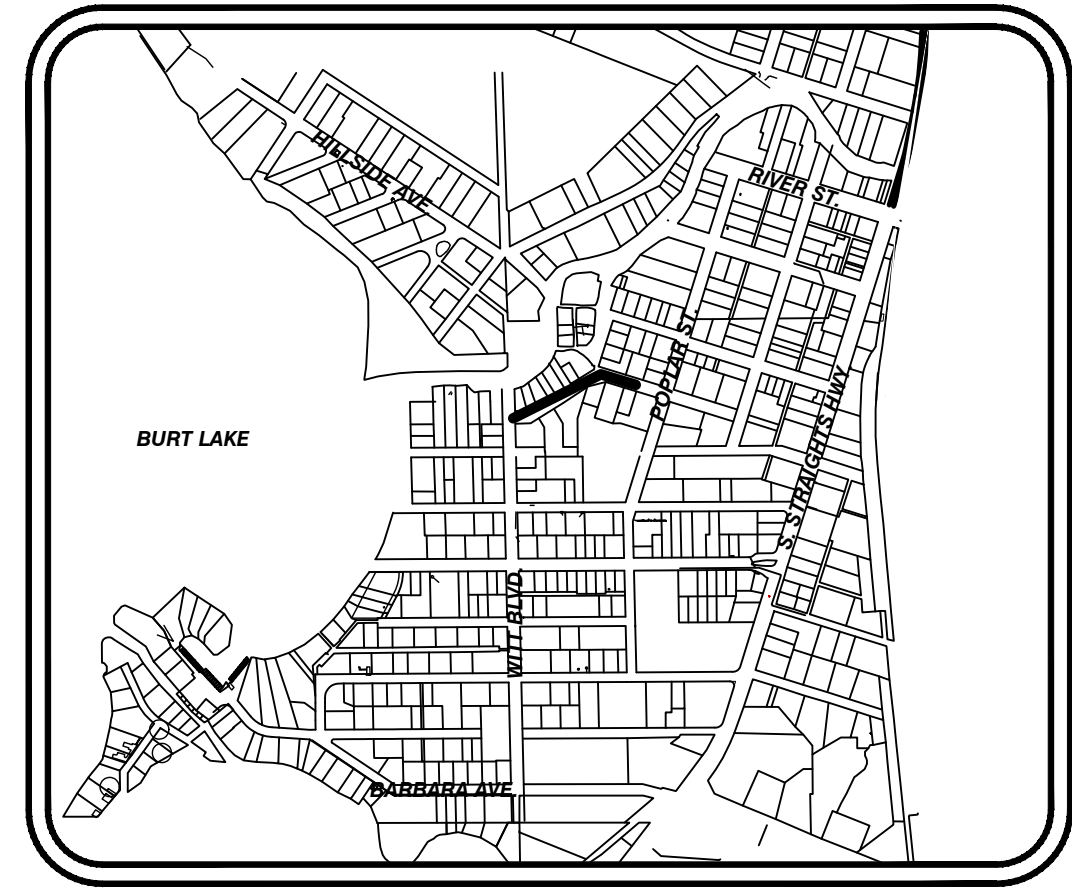
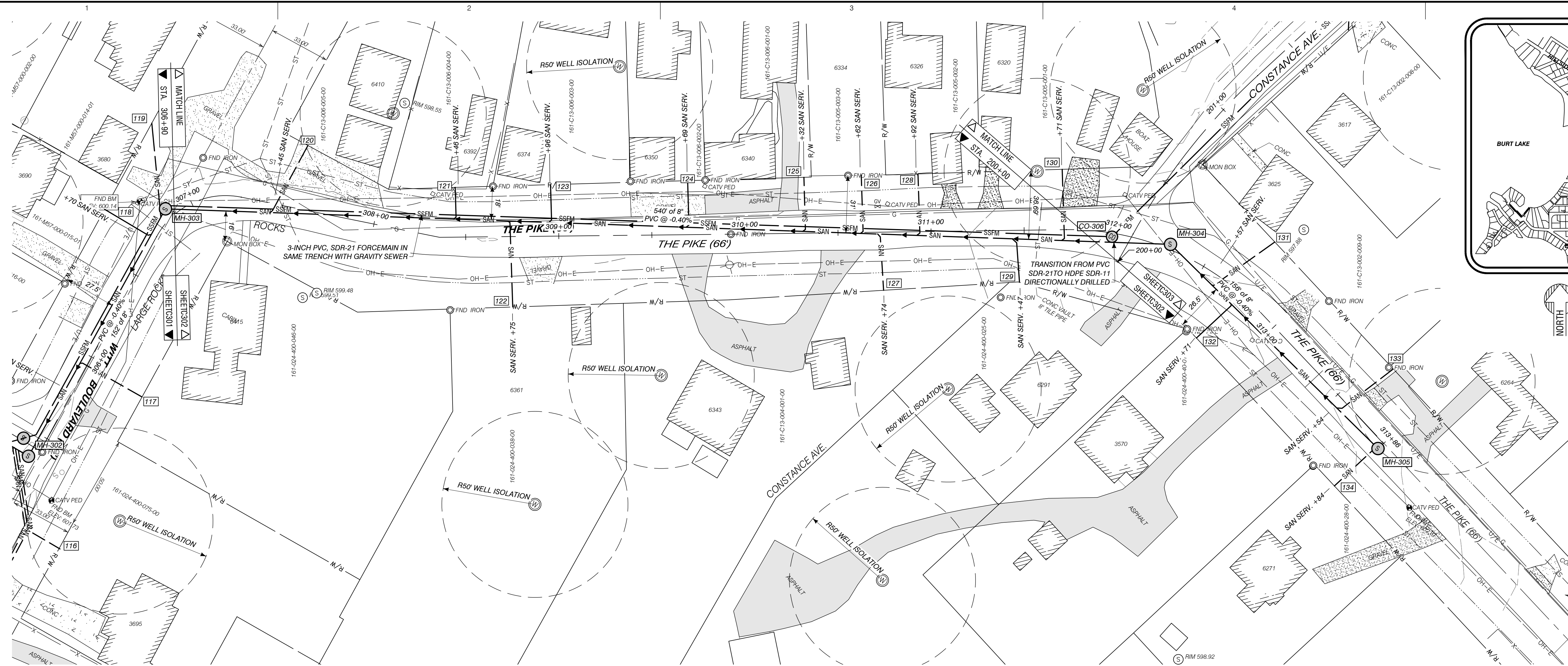
PLAN & PROFILE
STA. 300+00 TO 306+90

JOB NO.

22-5797

SHEET NO.

C301

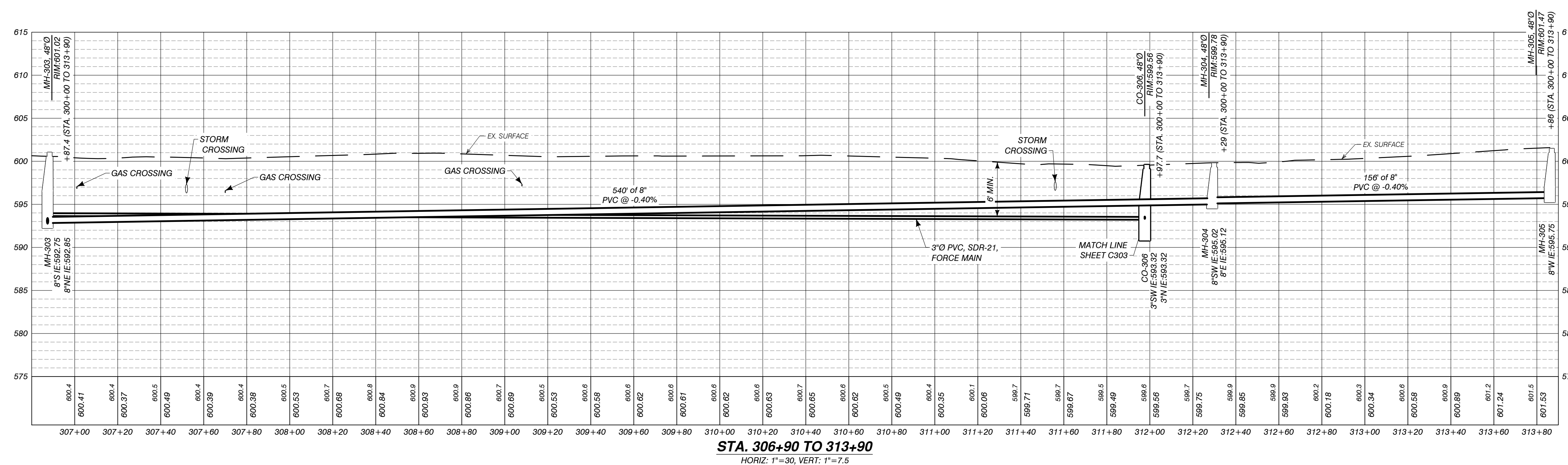


LOCATION MAP
1" = 1000'

SAN. SERV. INFORMATION		
TAG #	HOUSE #	STA. OF WYE
120	6410	307+45
121	6392	308+46
122	6361	308+75
123	6374	308+96
124	6350	309+69
125	6340	310+32
126	6334	310+62
127	6343	310+74
128	6326	310+92
129	6291	311+47
130	6320	311+71
131	3625	312+57
132	3570	312+71
133	6264	313+54
134	6271	313+84



SANITARY PROFILE STA. 306+90 TO 313+90
1"=30'

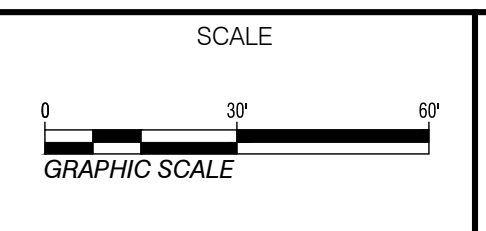


STA. 306+90 TO 313+90
HORIZ: 1"=30', VERT: 1"=7.5'

AUTH	DATE	NO.	DESCRIPTION
CJR	1/3/23	0	OWNER REVIEW
PEI	5/1/23	1	PERMIT SUBMITTAL
PEI	11/15/23	2	REVISED PER EGLE REVIEW

DESIGNER
Performance Engineers, Inc.
406 Potoskey Avenue
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Phone: (231) 547-2121
Fax: (231) 547-0084
www.performanceeng.com

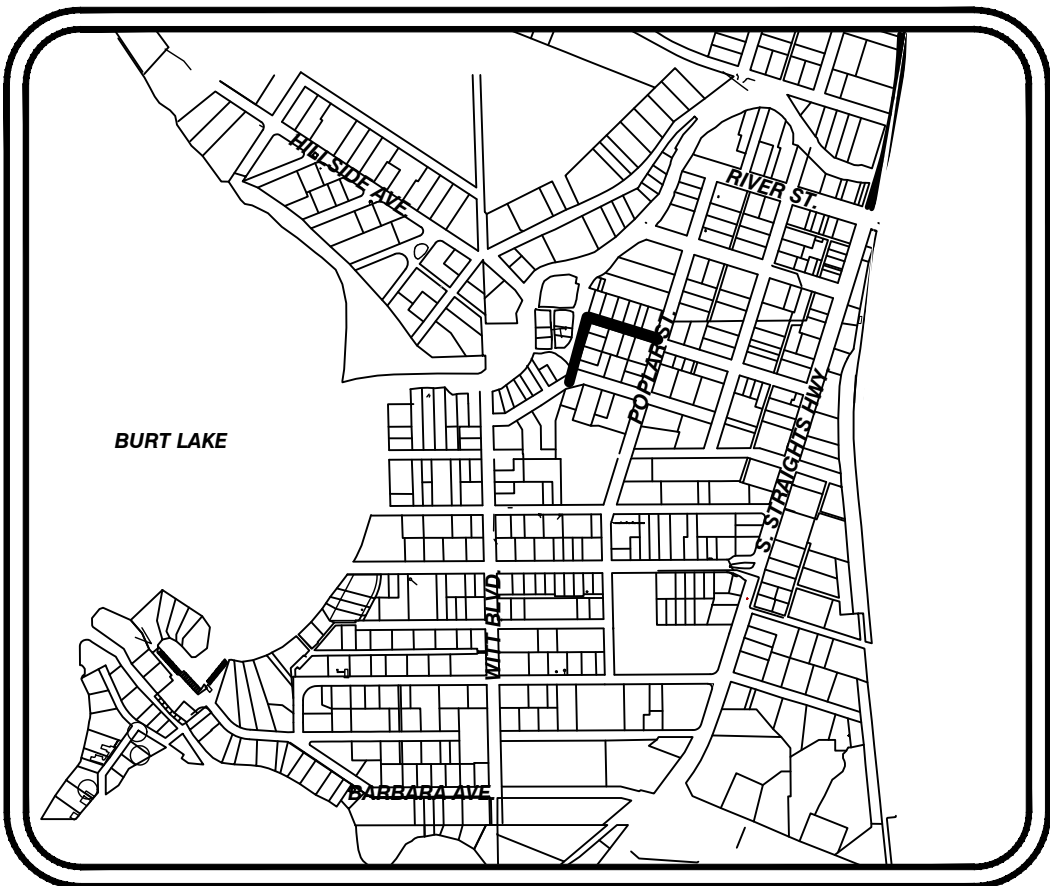
OWNER
TUSCARORA TOWNSHIP



PROJECT
**TUSCARORA TOWNSHIP
SANITARY SEWER EXPANSION PHASE 1**
SECT. 24, T35N-R3W, INDIAN RIVER, TUSCARORA TWP., CHEBOYGAN COUNTY, MICHIGAN

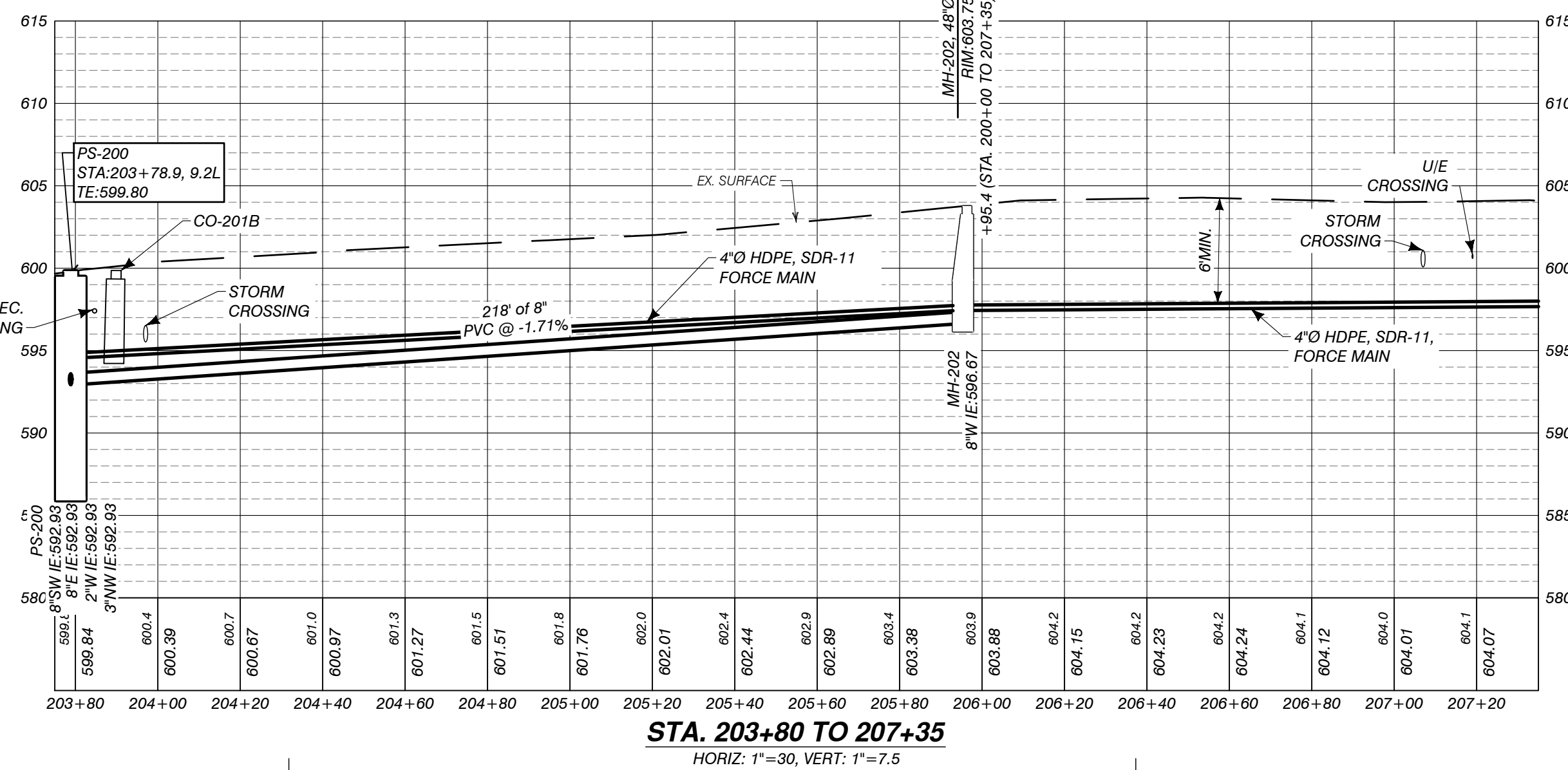
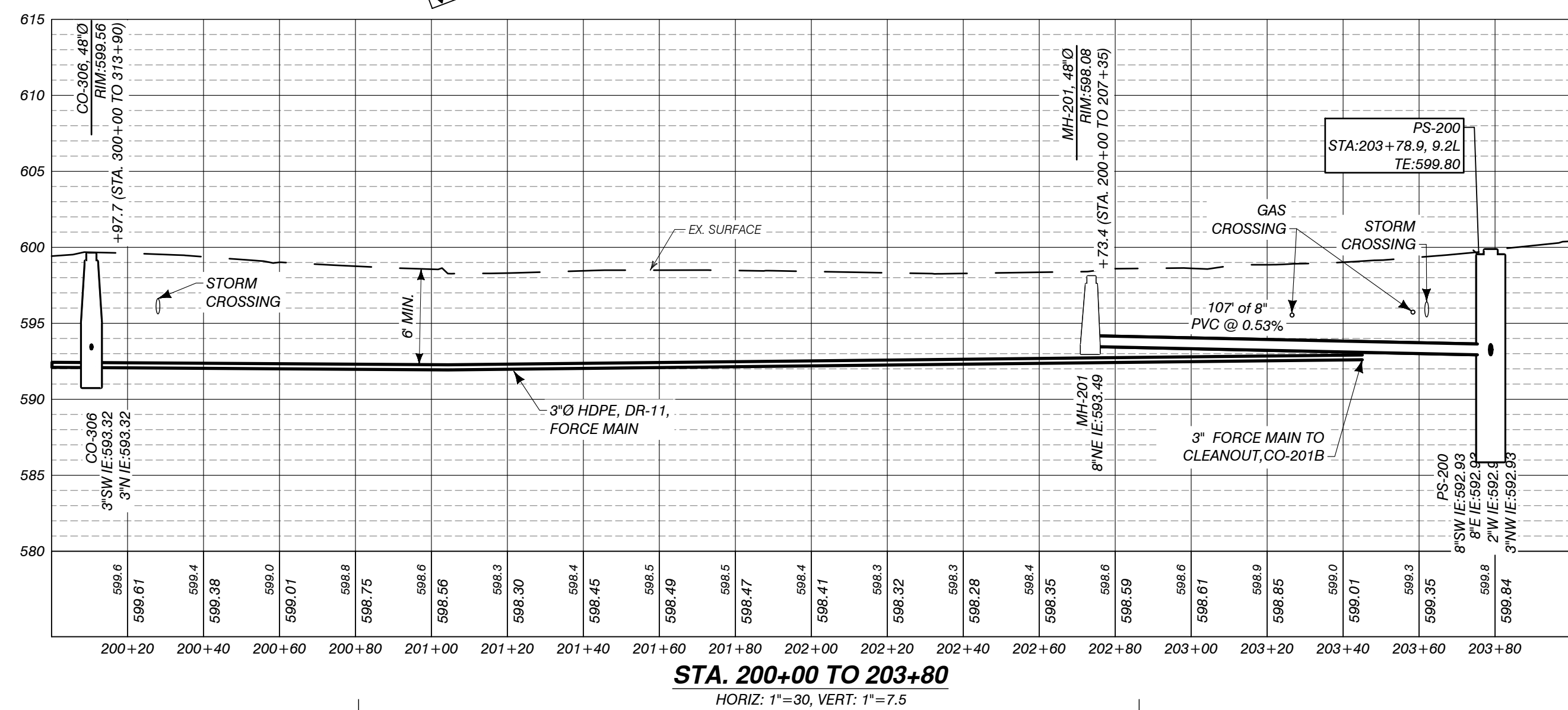
SHEET
**PLAN & PROFILE
STA. 306+90 TO 313+90**

JOB NO.
22-5797
SHEET NO.
C302



 LOCATION MAP

SAN. SERV. INFORMATION		
TAG #	HOUSE #	STA. OF WYE
135	3617	201+78
136	3597	202+31
137	6302	203+48
138	6290	203+68
139	3583	204+12
140	6280	204+10
141	6266	204+80
142	6269	205+04
143	6256	205+55
144	6249	205+78
145	6246	205+91
146	3602	205+92



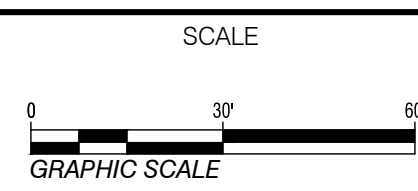
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CJR	1/3/23	0	OWNER REVIEW				
PEI	5/1/23	1	PERMIT SUBMITTAL				
PEI	11/15/23	2	REVISED PER EGLE REVIEW				

DESIGNER

**P Performance
E Engineers, Inc.**

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*TUSCARORA
TOWNSHIP*



PROJECT
TUSCARORA TOWNSHIP
SANITARY SEWER EXPANSION PHASE 1

SECT. 24, T35N-R3W, INDIAN RIVER, TUSCARORA TWP., CHEBOYGAN COUNTY, MICHIGAN

SHEET
PLAN & PROFILE
STA. 200+00 TO 207+35

JOB NO.
22-5797
SHEET NO.
C303

C:\USERS\ARONNORDMAN\PERFORMANCE ENGINEERS - PROJECTS\5797\DRAWINGS\C304_5797_PLAN.DWG - C304 - PLOTTED 11/16/2023 2:43 PM BY ARON NORDMAN

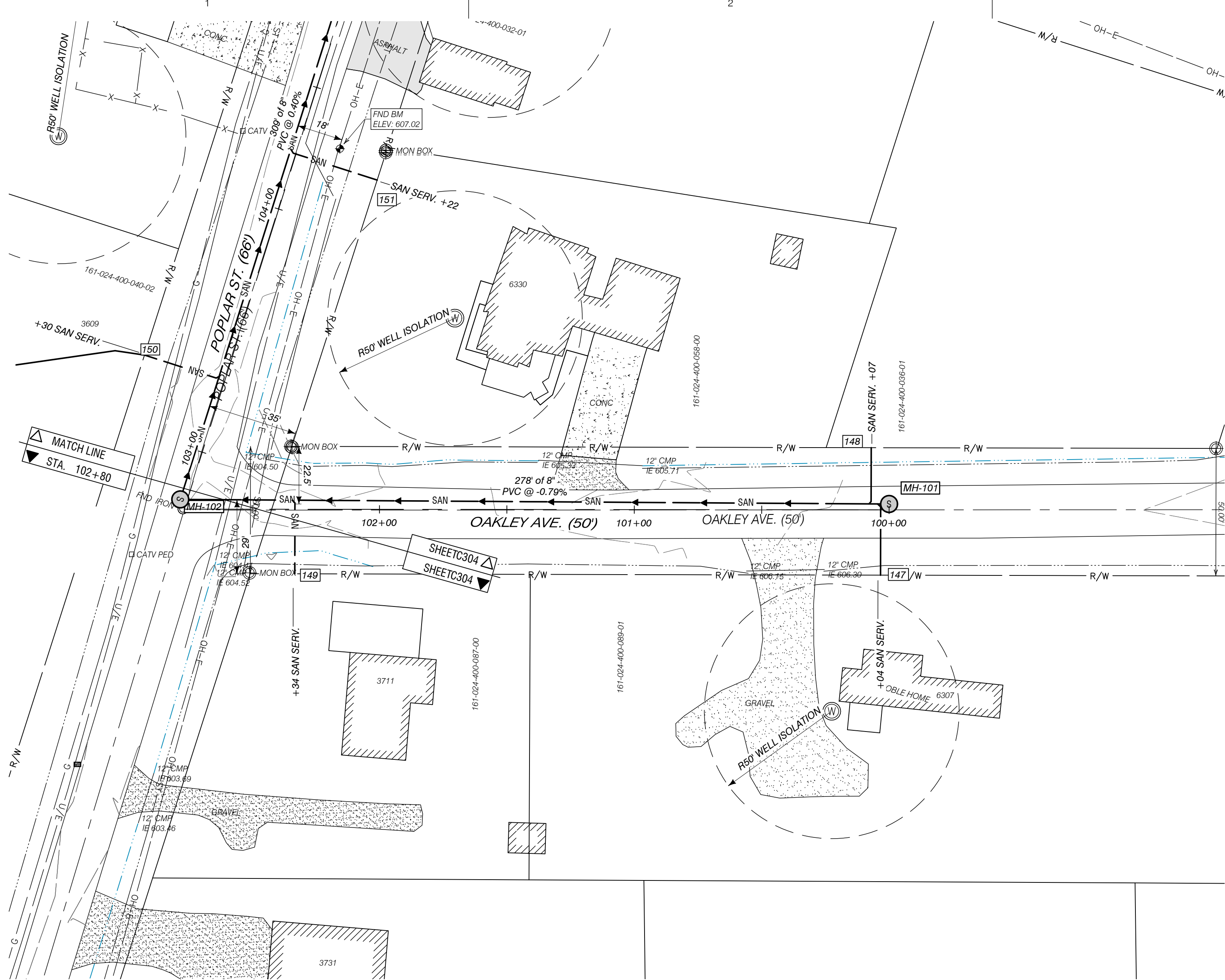
COPYRIGHT: PERFORMANCE ENGINEERS, INC 2022

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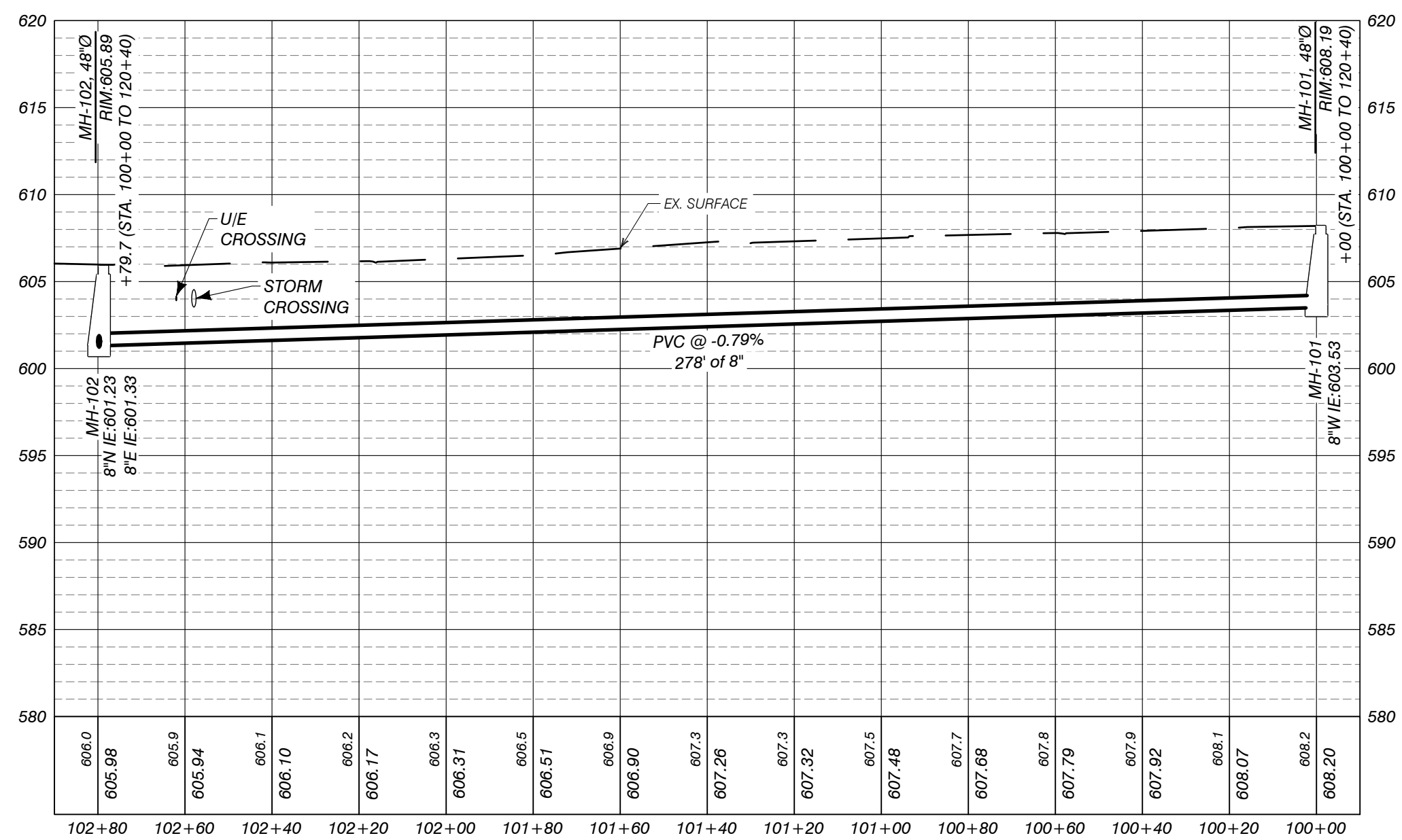
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C

D



SANITARY PROFILE STA. 100+00 TO 102+85



STA. 100+00 TO 102+85

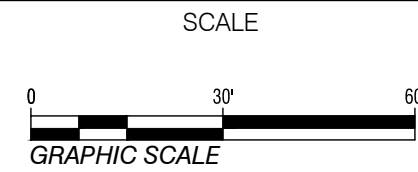
HORIZ: 1"=30', VERT: 1"=7.5'

SAN. SERV. INFORMATION		
TAG #	HOUSE #	STA. OF WYE
147	8307	100+04
148	NO ADDRESS	100+07
149	3711	102+34
150	3609	103+30
151	6330	104+22
152	3651	105+27
153	3654	105+30

AUTH	DATE	NO.	DESCRIPTION	AUTH	DATE	NO.	DESCRIPTION
CJR	1/3/23	0	OWNER REVIEW				
PEI	5/1/23	1	PERMIT SUBMITTAL				
PEI	11/15/23	2	REVISED PER EGLE REVIEW				

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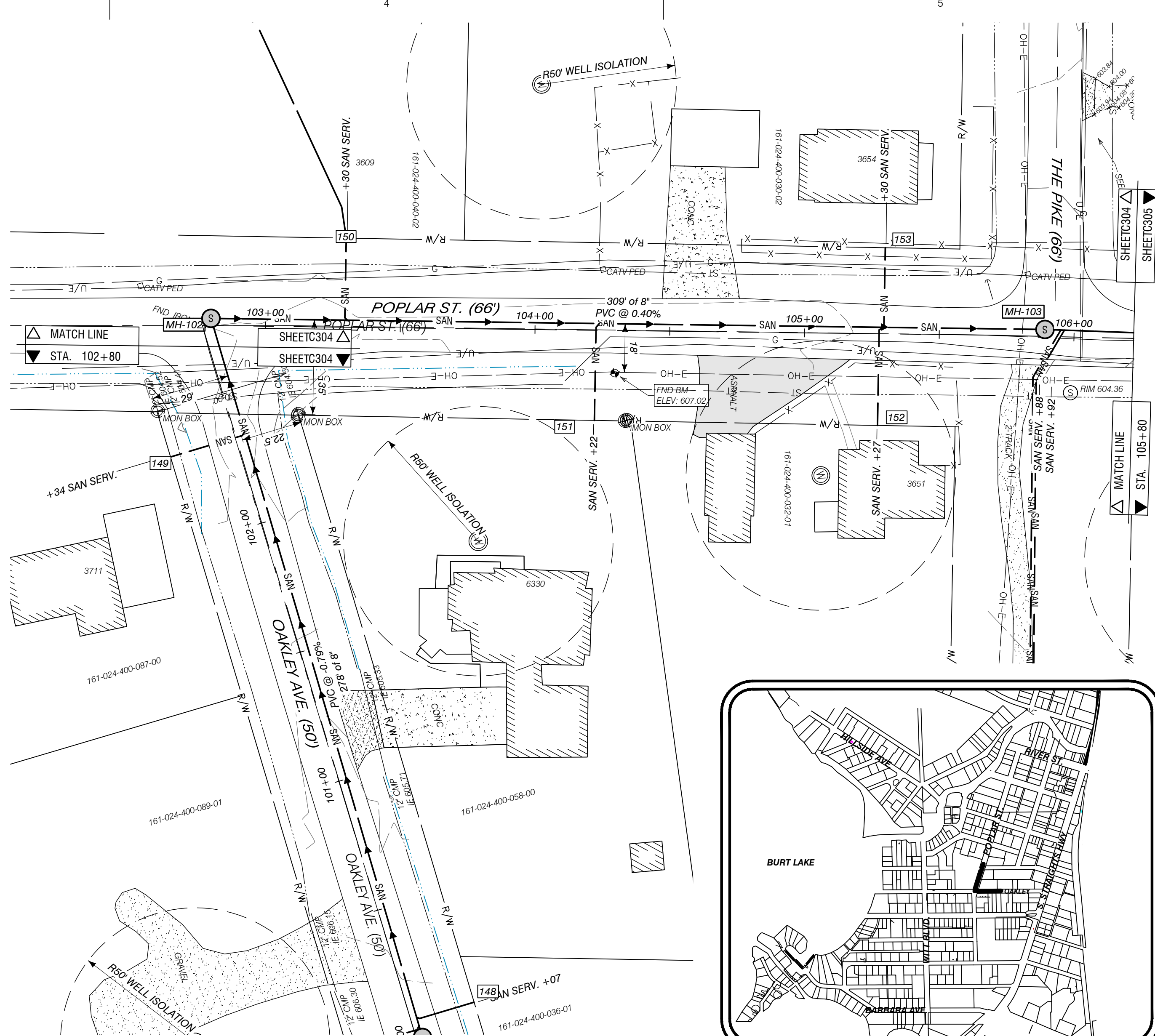
OWNER
TUSCARORA TOWNSHIP



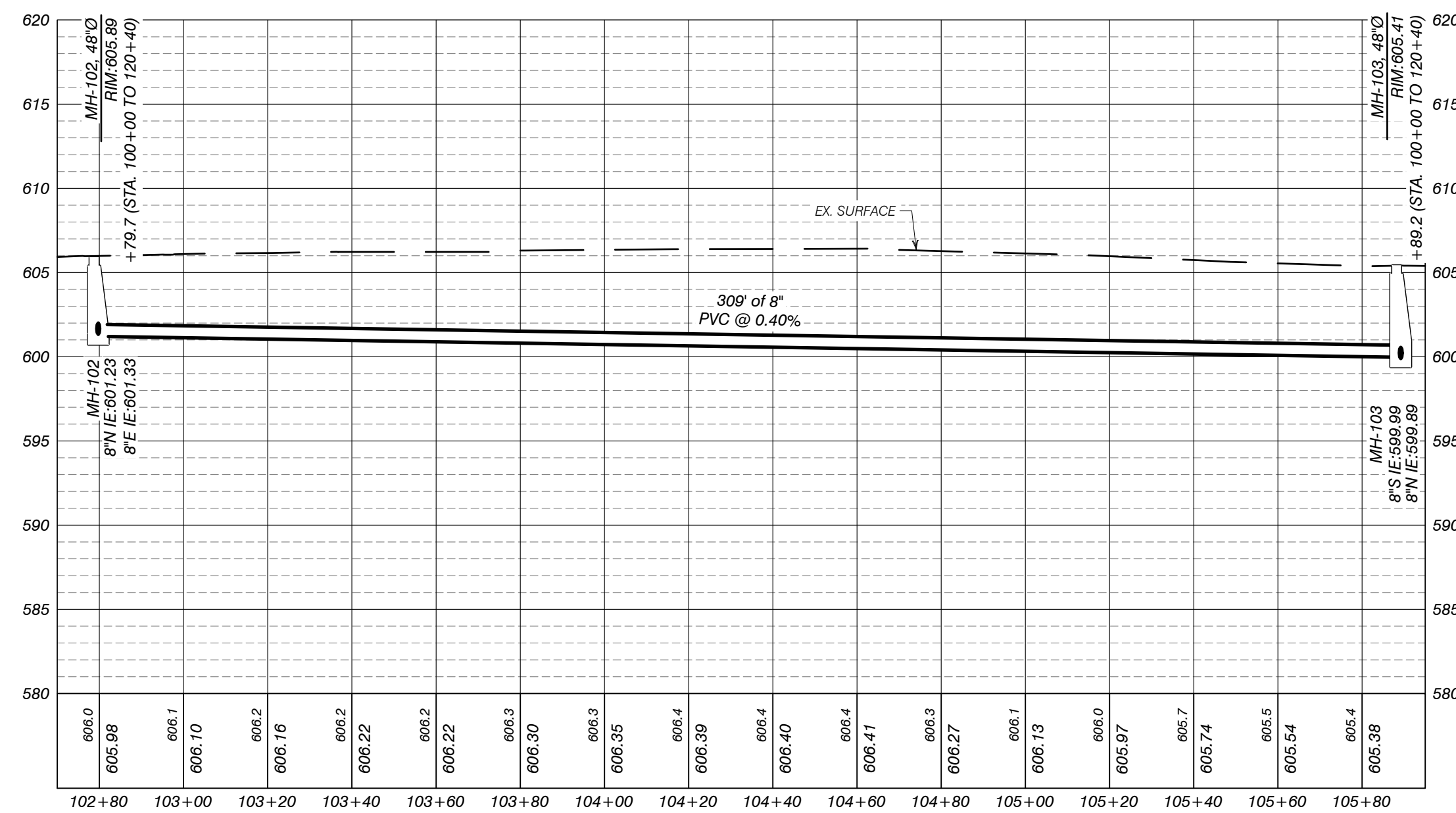
PROJECT
**TUSCARORA TOWNSHIP
SANITARY SEWER EXPANSION PHASE 1**

SHEET
**PLAN & PROFILE
STA. 100+00 TO 105+95**

JOB NO.
22-5797
SHEET NO.
C304

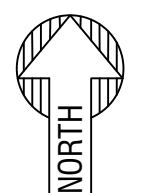


SANITARY PROFILE STA. 102+70 TO 105+95



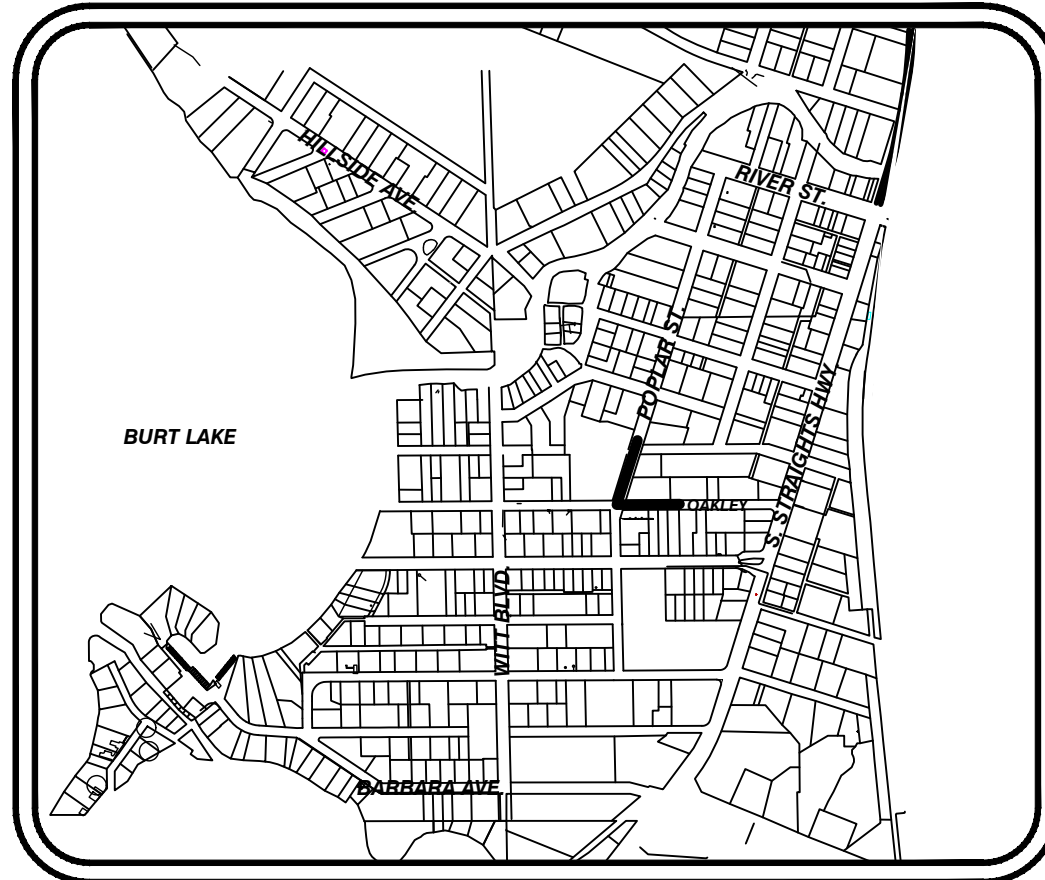
STA. 102+70 TO 105+95

HORIZ: 1"=30', VERT: 1"=7.5'



LOCATION MAP

1" = 1000'



FILE NAME: C304_5797_PLAN.DWG

DRAWN BY:

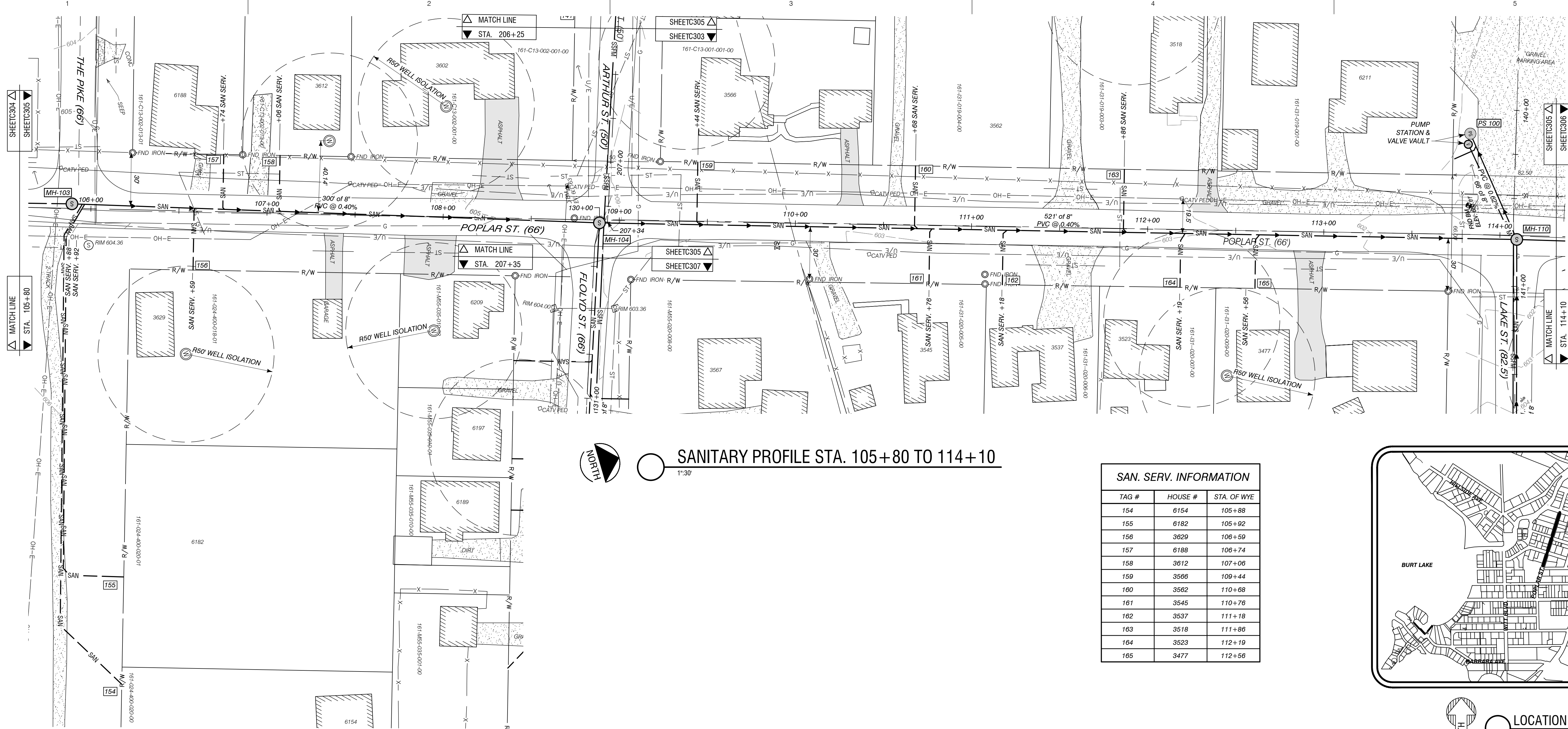
DATE:

CHECKED BY:

DATE:

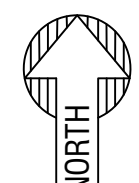
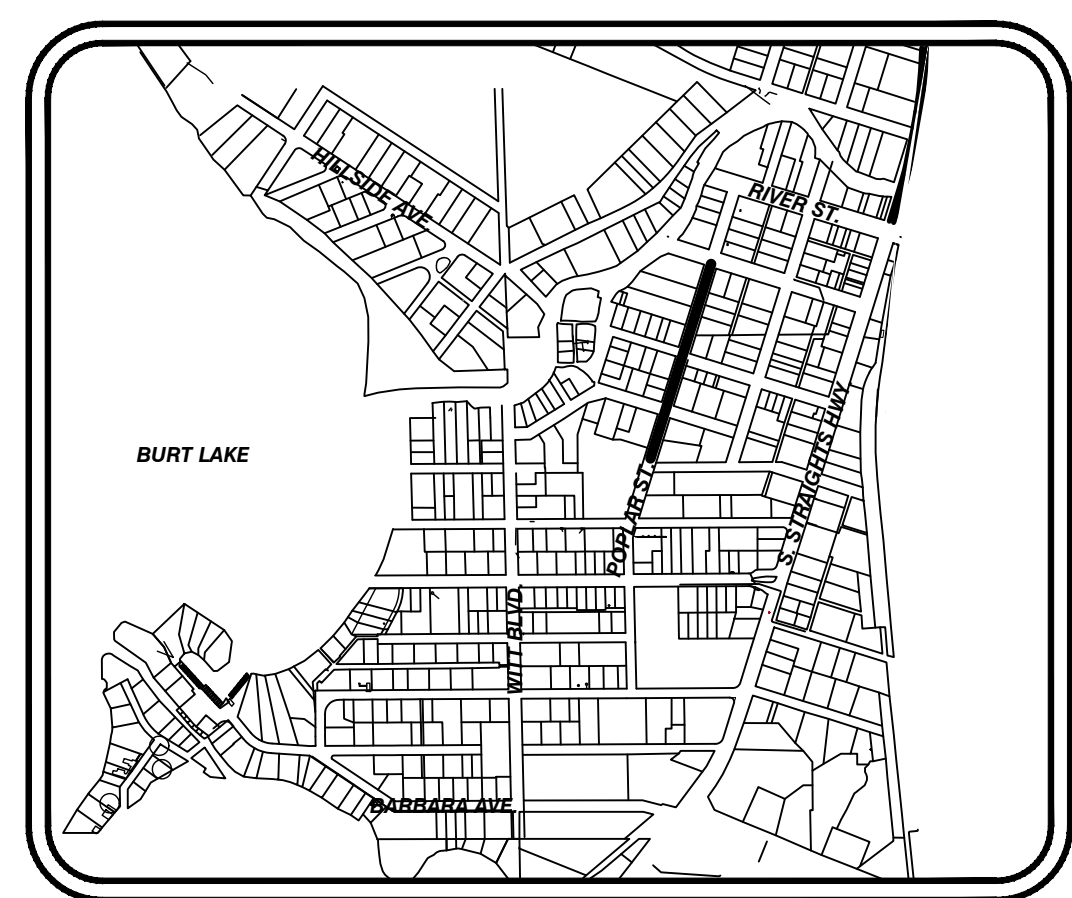
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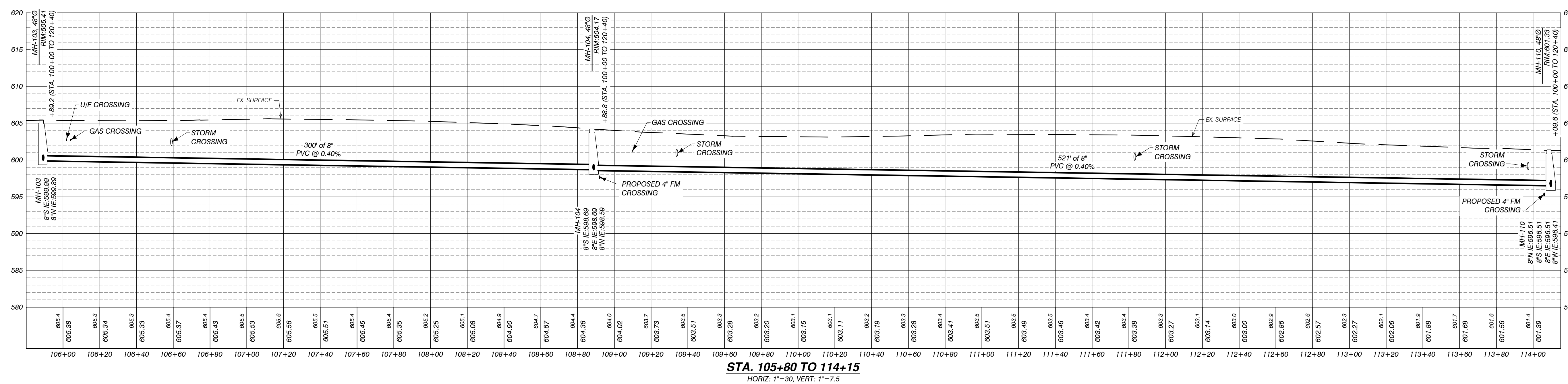


SANITARY PROFILE STA. 105+80 TO 114+10
1"=30'

SAN. SERV. INFORMATION		
TAG #	HOUSE #	STA. OF WYE
154	6154	105+88
155	6182	105+92
156	3629	106+59
157	6188	106+74
158	3612	107+06
159	3566	109+44
160	3562	110+68
161	3545	110+76
162	3537	111+18
163	3518	111+86
164	3523	112+19
165	3477	112+56



LOCATION MAP
1"=1000'

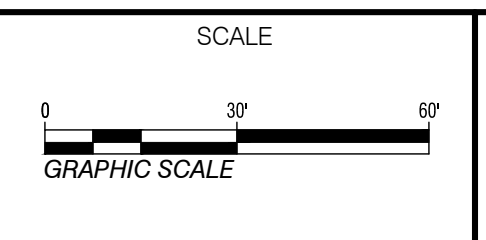


STA. 105+80 TO 114+15
HORIZ: 1"=30', VERT: 1"=7.5'

AUTH	DATE	NO.	DESCRIPTION
CJR	1/3/23	0	OWNER REVIEW
PEI	5/1/23	1	PERMIT SUBMITTAL
PEI	11/15/23	2	REVISED PER EGLLE REVIEW

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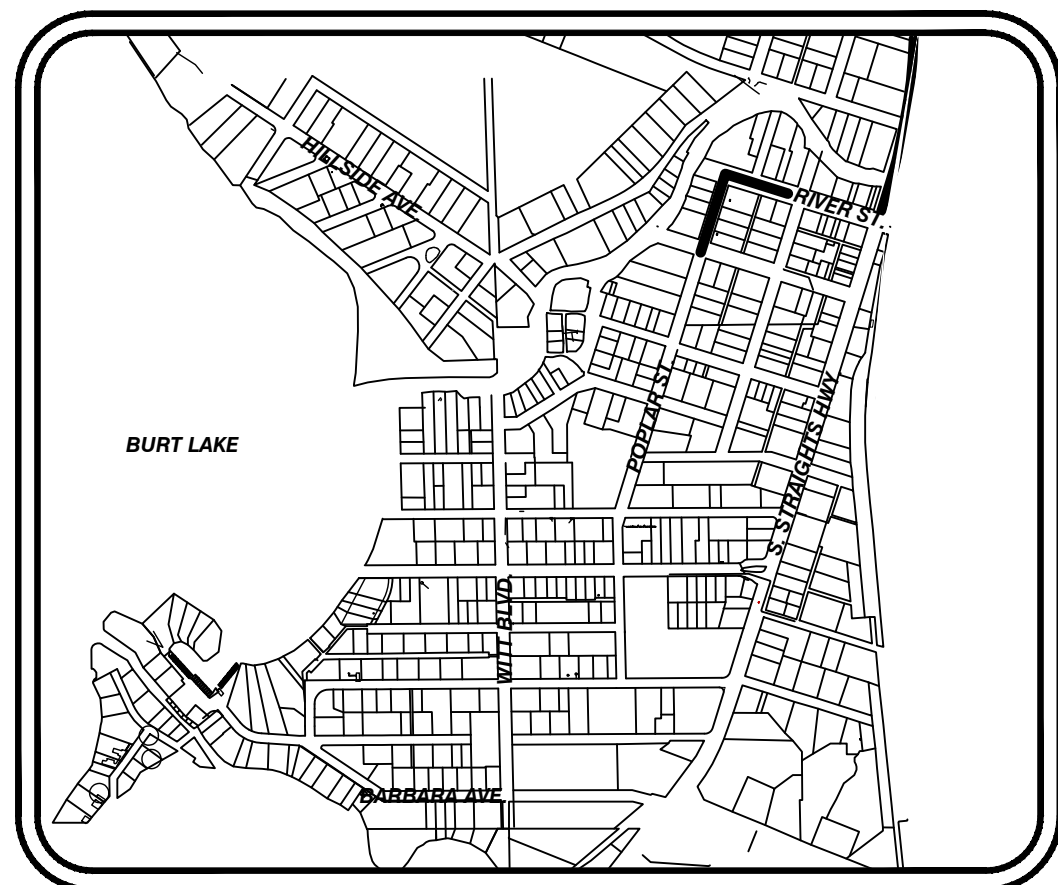
OWNER
TUSCARORA TOWNSHIP



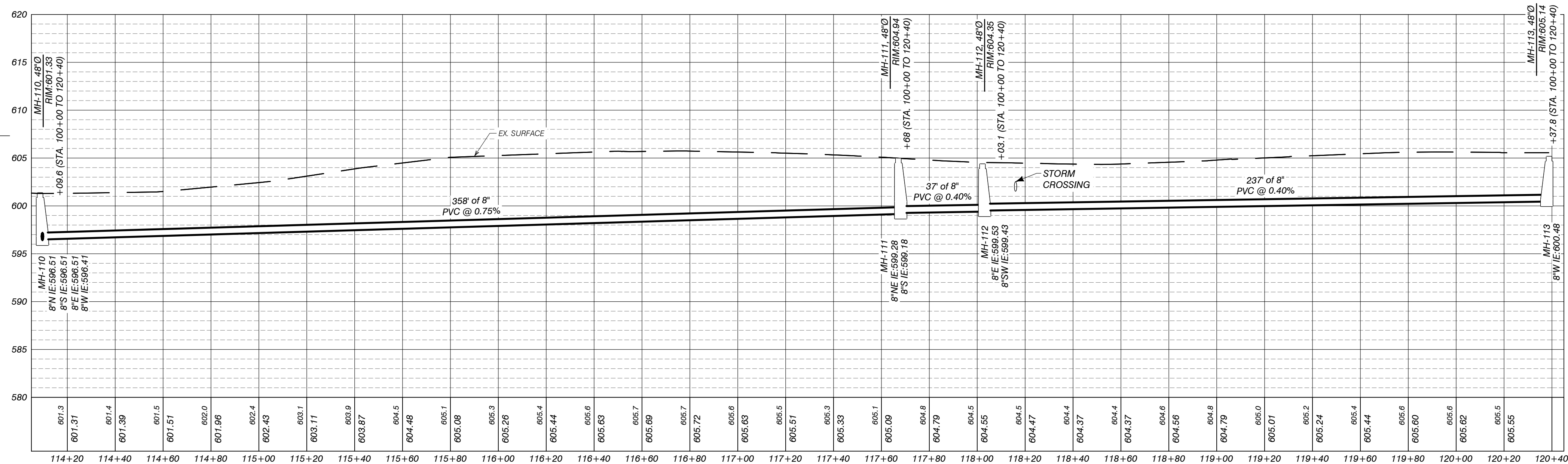
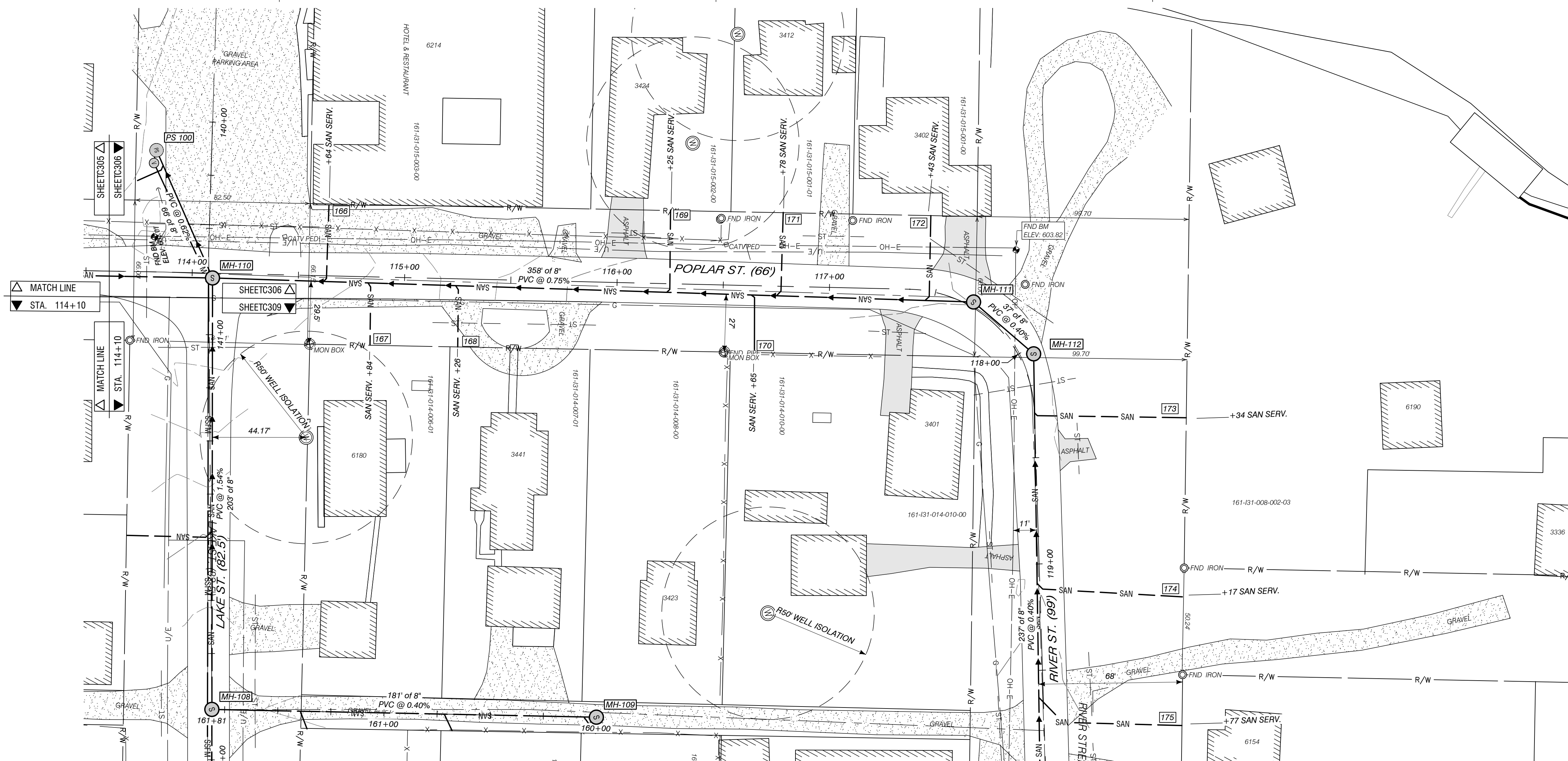
PROJECT
**TUSCARORA TOWNSHIP
SANITARY SEWER EXPANSION PHASE 1**
SECT. 24, T35N-R3W, INDIAN RIVER, TUSCARORA TWP., CHEBOYGAN COUNTY, MICHIGAN

SHEET
**PLAN & PROFILE
STA. 105+80 TO 114+10**

JOB NO.
22-5797
SHEET NO.
C305



SAN. SERV. INFORMATION		
TAG #	HOUSE #	STA. OF WYE
166	6214	114+84
167	6180	114+84
168	3441	115+26
169	3424	116+25
170	3401	116+85
171	3412	116+78
172	3402	117+43
173	6190	118+34
174	3336	119+17
175	6154	119+77
176	6159	120+32
177	3285	120+29
178	6138	120+34
179	6145	120+37



STA. 114+05 TO 120+45
HORIZ: 1"=30, VERT: 1"=7.5

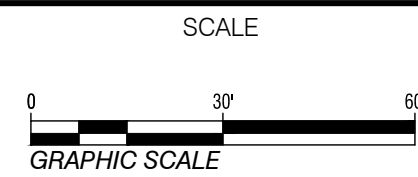
AUTH	DATE	NO.	DESCRIPTION	AUTH	DATE	NO.	DESCRIPTION
CJR	1/3/23	0	OWNER REVIEW				
PEI	5/1/23	1	PERMIT SUBMITTAL				
PEI	11/15/23	2	REVISED PER EGLLE REVIEW				

DESIGNER

P *Performance
Engineers, Inc.*

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OWNER
TUSCARORA
TOWNSHIP



PROJECT
TUSCARORA TOWNSHIP
SANITARY SEWER EXPANSION PHASE 1

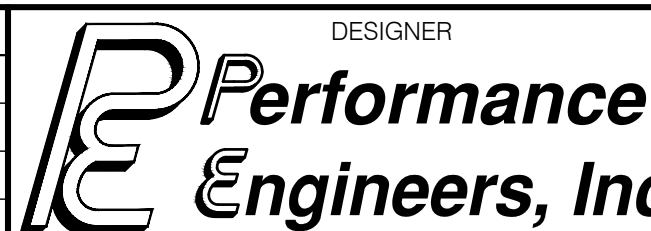
SECT. 24, T35N-R3W, INDIAN RIVER, TUSCARORA TWP., CHEBOYGAN COUNTY, MICHIGAN

SHEET
PLAN & PROFILE
STA. 114+10 TO 120+45

JOB NO.
22-5797

SHEET NO.
C306

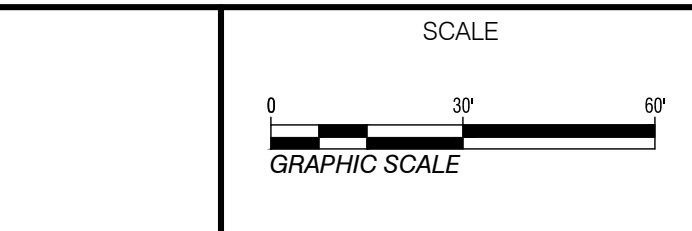
AUTH	DATE	NO.	DESCRIPTION	AUTH	DATE	NO.	DESCRIPTION
CJR	1/3/23	0	OWNER REVIEW				
PEI	5/1/23	1	PERMIT SUBMITTAL				
PEI	11/15/23	2	REVISED PER EGLE REVIEW				



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OWNER
TUSCARORA TOWNSHIP



PROJECT
**TUSCARORA TOWNSHIP
SANITARY SEWER EXPANSION PHASE 1**

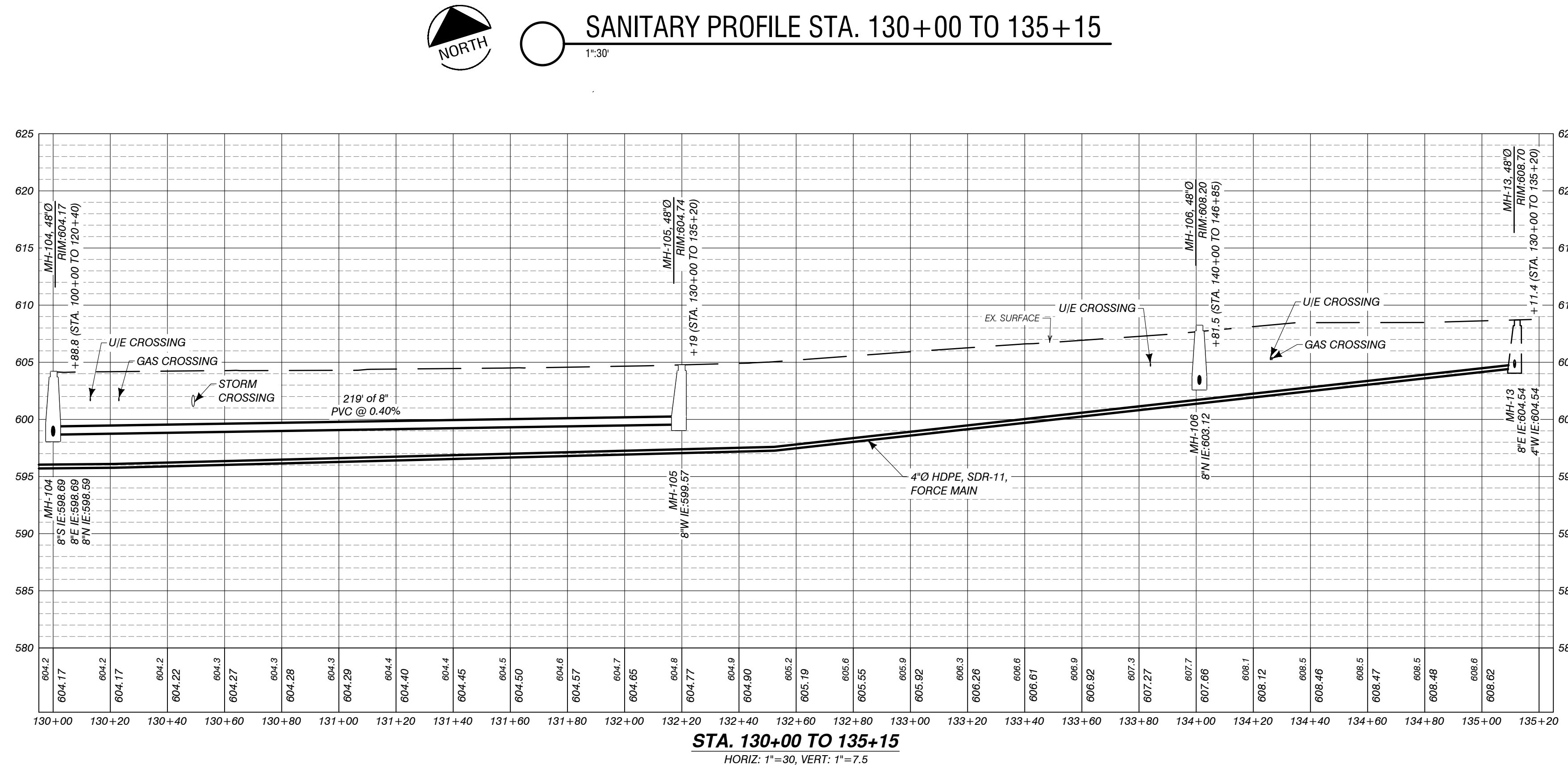
SECT. 24, T35N-R3W, INDIAN RIVER, TUSCARORA TWP., CHEBOYGAN COUNTY, MICHIGAN

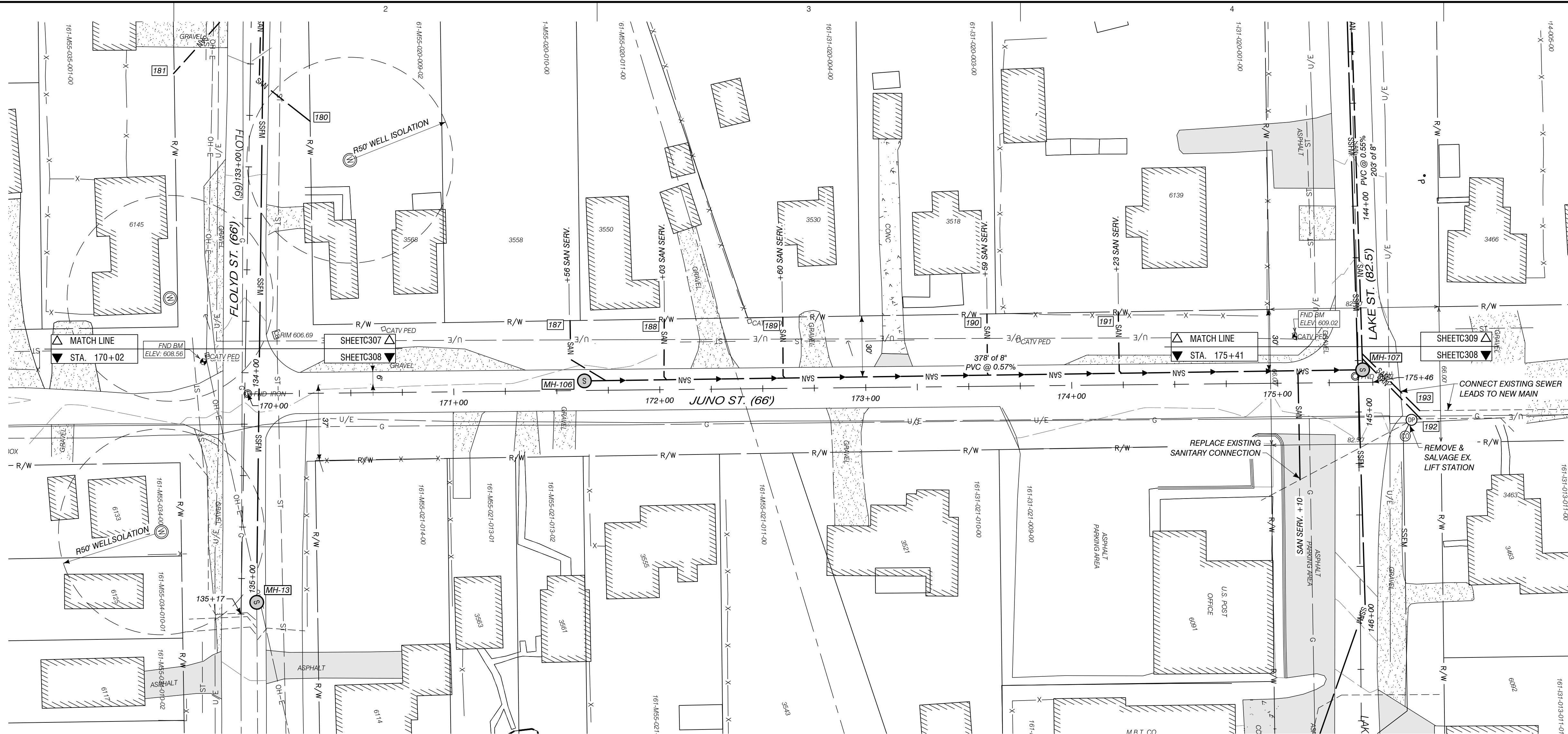
SHEET
**PLAN & PROFILE
STA. 130+00 TO 135+15**

JOB NO.
22-5797

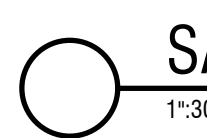
SHEET NO.
C307

SAN. SERV. INFORMATION		
TAG #	HOUSE #	STA. OF WYE
180	3568	132+15
181	6145	132+11
182	6184	131+73
183	6189	131+69
184	6197	131+37
185	3567	130+99
186	6209	130+81

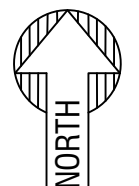
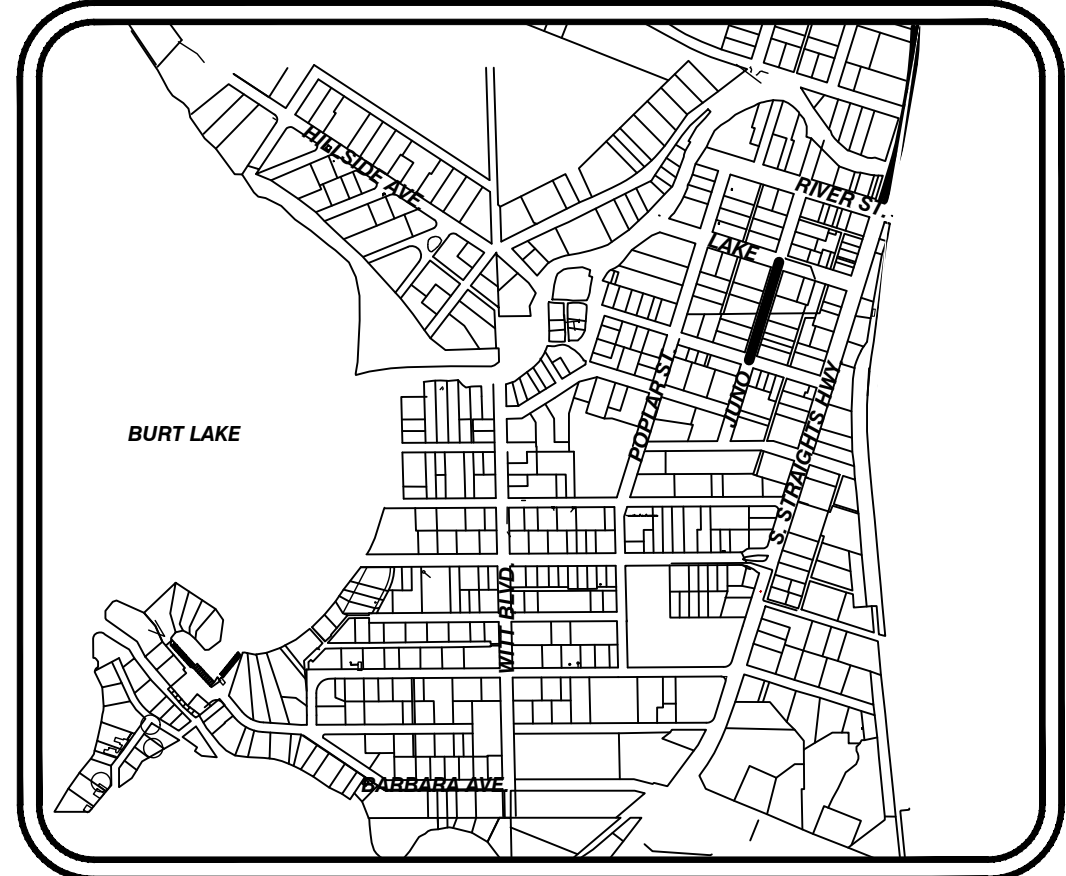
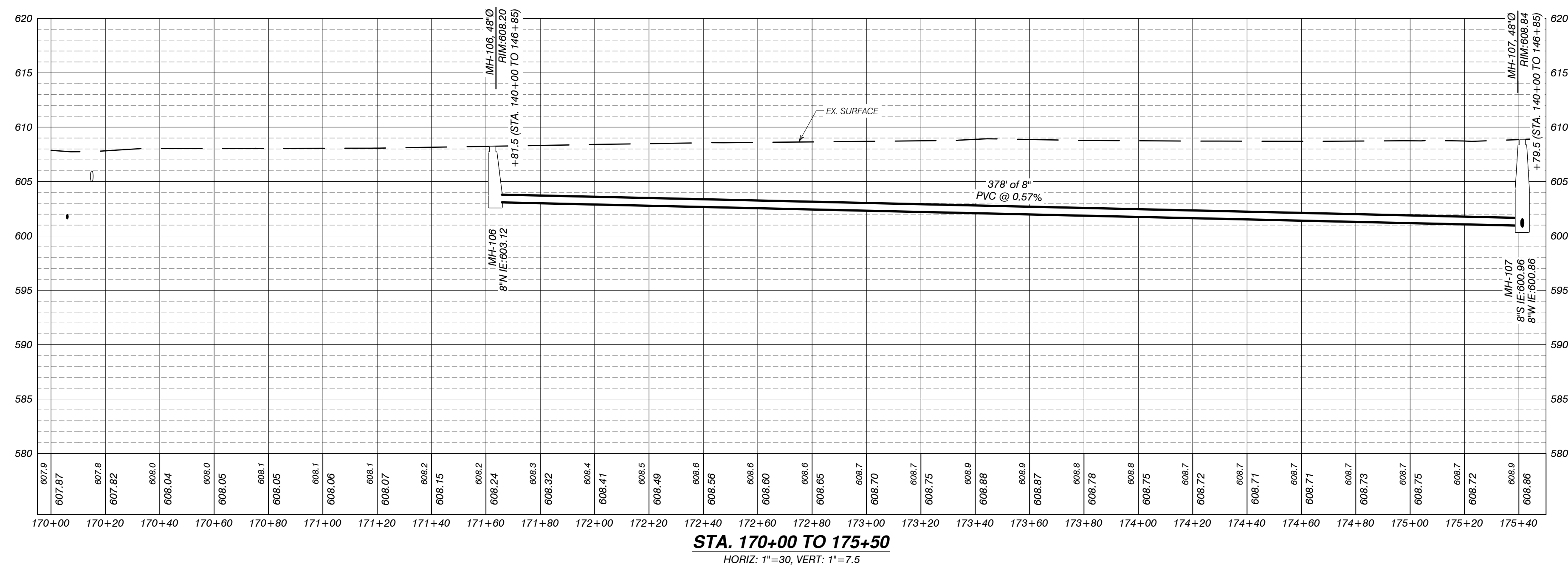




SAN. SERV. INFORMATION		
TAG #	HOUSE #	STA. OF WYE
187	3558	171+56
188	3550	172+03
189	3530	172+60
190	3518	173+59
191	6139	174+23



SANITARY PROFILE STA. 170+00 TO 175+50



LOCATION MAP
1" = 100'

AUTH	DATE	NO.	DESCRIPTION	AUTH	DATE	NO.	DESCRIPTION
CJR	1/3/23	0	OWNER REVIEW				
PEI	5/1/23	1	PERMIT SUBMITTAL				
PEI	11/15/23	2	REVISED PER EGLE REVIEW				

DESIGNER

406 Potoskey Avenue
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Phone: (231) 547-2121
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OWNER

TUSCARORA
TOWNSHIP

SCALE

PROJECT

TUSCARORA TOWNSHIP
SANITARY SEWER EXPANSION PHASE 1

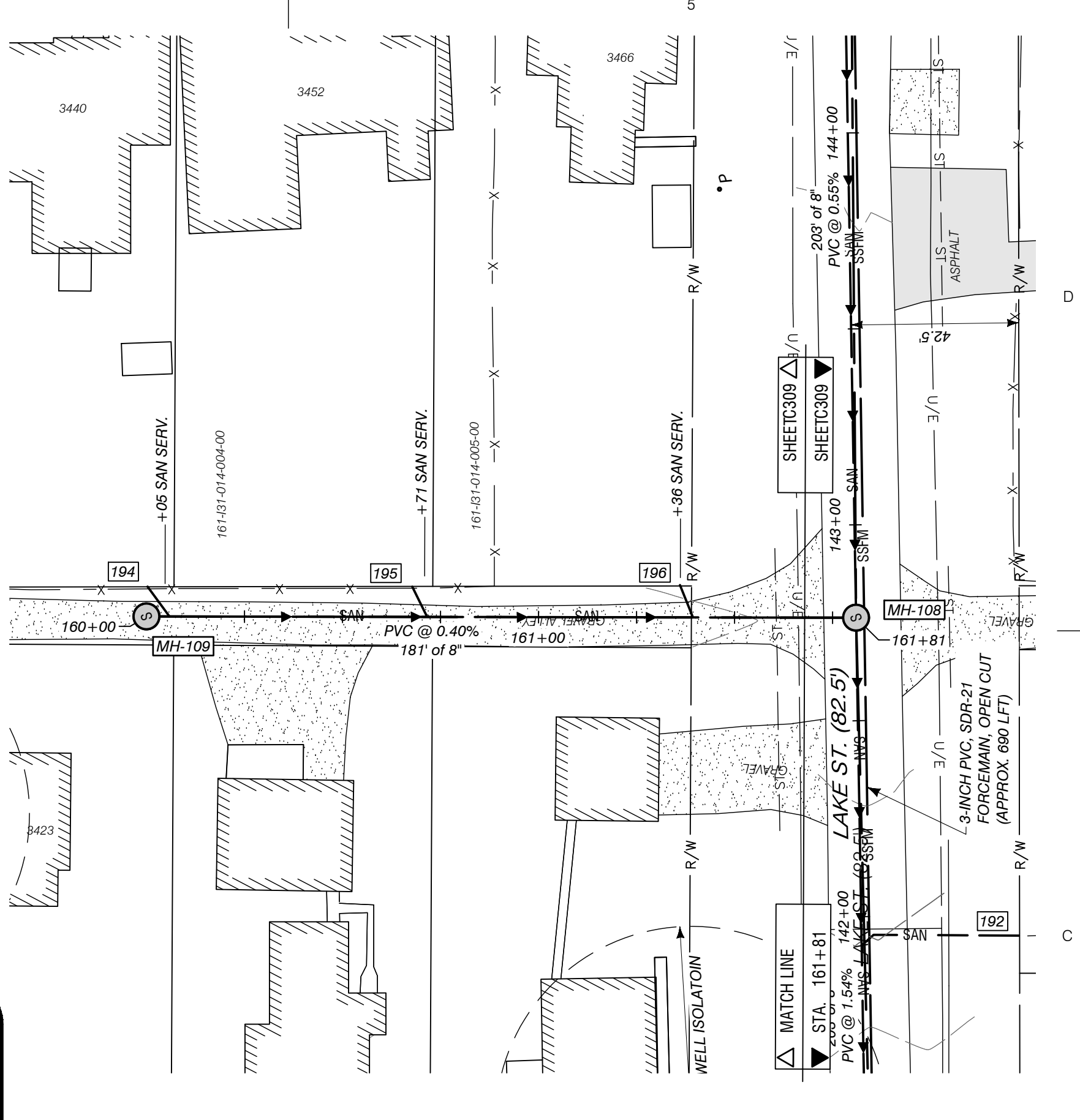
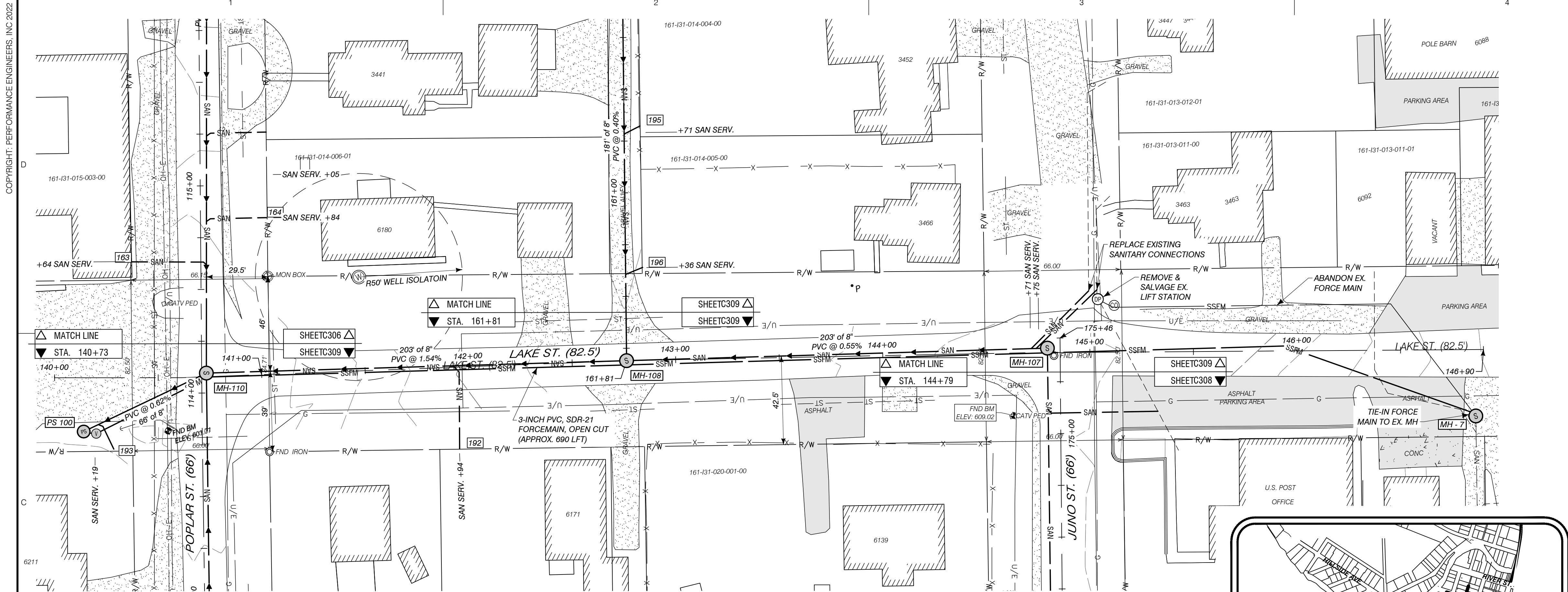
SECT. 24, T35N-R3W, INDIAN RIVER, TUSCARORA TWP., CHEBOYGAN COUNTY, MICHIGAN

SHEET

PLAN & PROFILE
STA. 170+00 TO 175+50

JOB NO.
22-5797

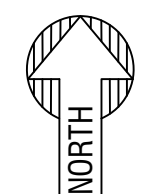
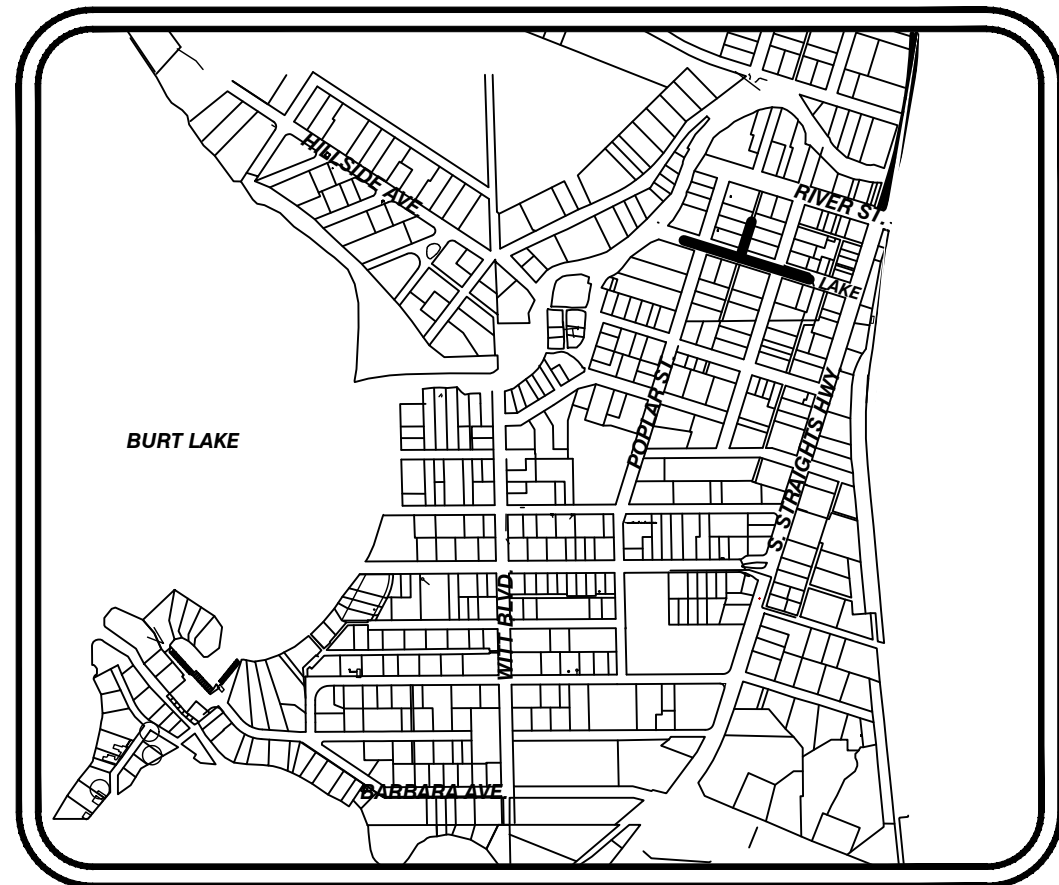
SHEET NO.
C308



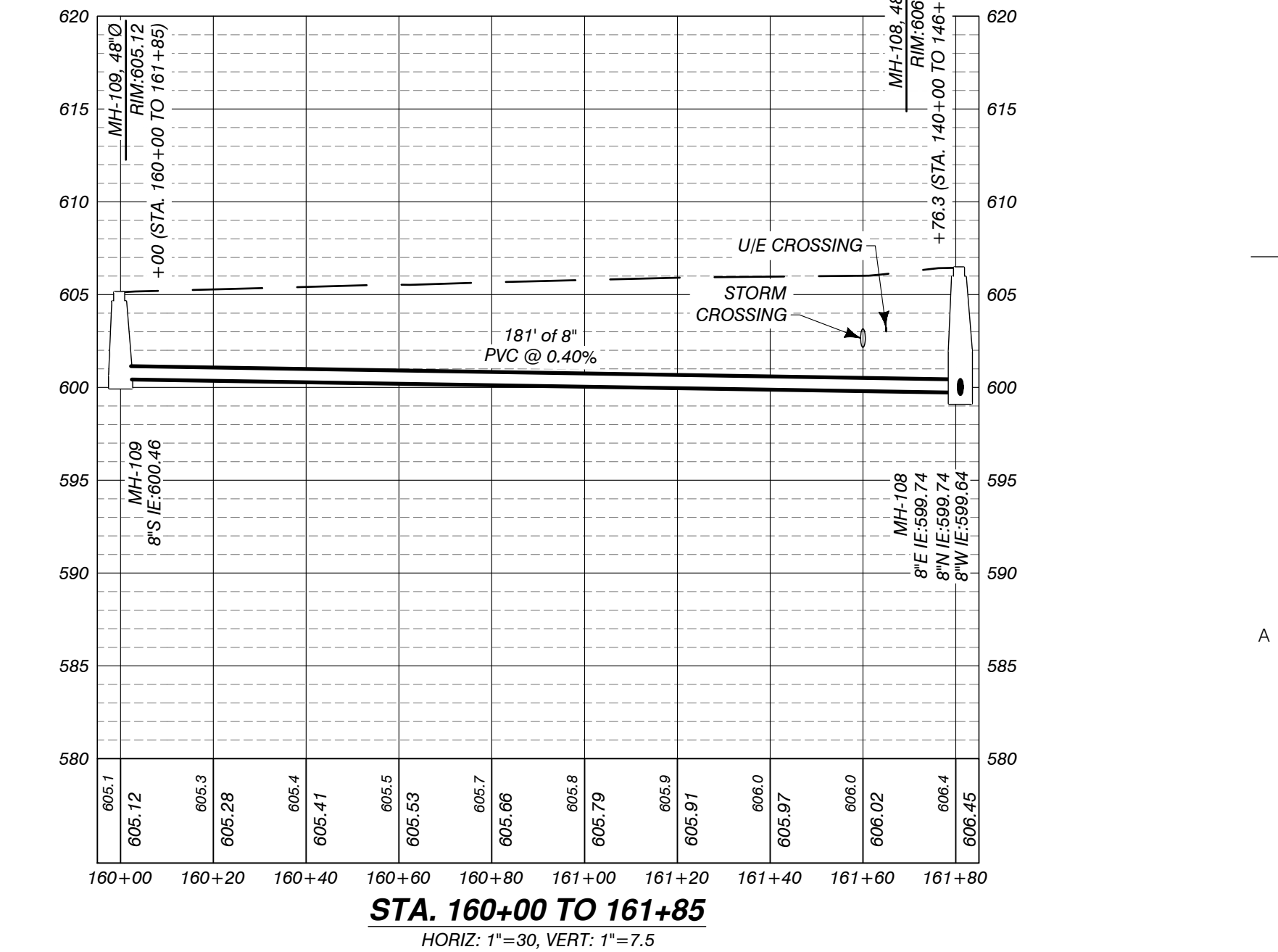
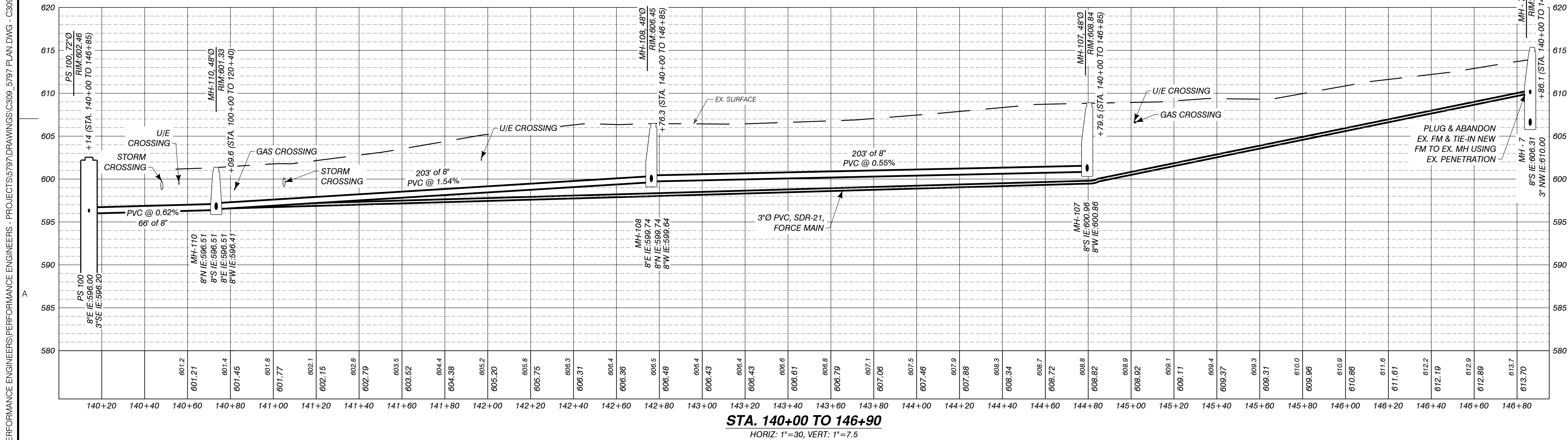
SAN. SERV. INFORMATION		
TAG #	HOUSE #	STA. OF WYE
192	6171	141+94
193	6211	140+19
194	3440	160+05
195	3452	160+71
196	3466	161+36



SANITARY PROFILE STA. 140+00 TO 146+80
1"=30'



LOCATION MAP
1"=1000'



AUTH	DATE	NO.	DESCRIPTION
CJR	1/3/23	0	OWNER REVIEW
PEI	5/1/23	1	PERMIT SUBMITTAL
PEI	11/15/23	2	REVISED PER EGLE REVIEW

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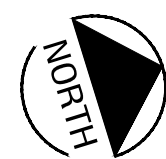
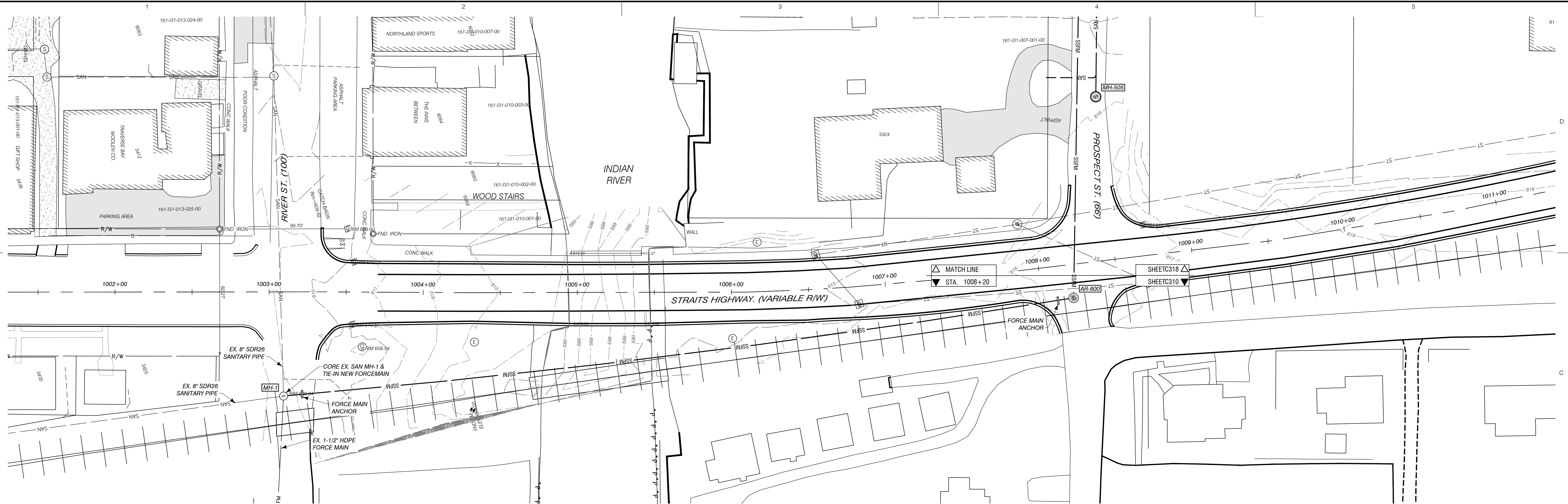
OWNER
TUSCARORA TOWNSHIP

SCALE
0 30' 60'
GRAPHIC SCALE

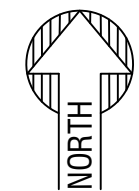
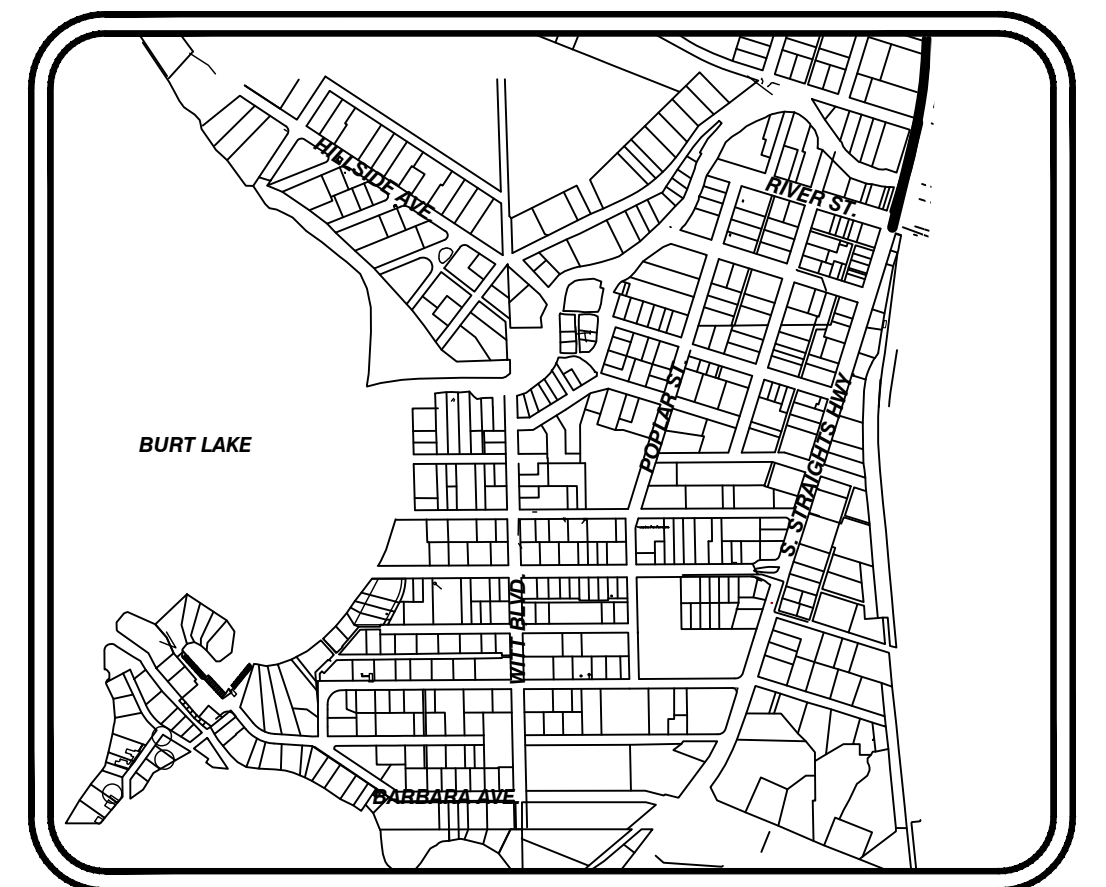
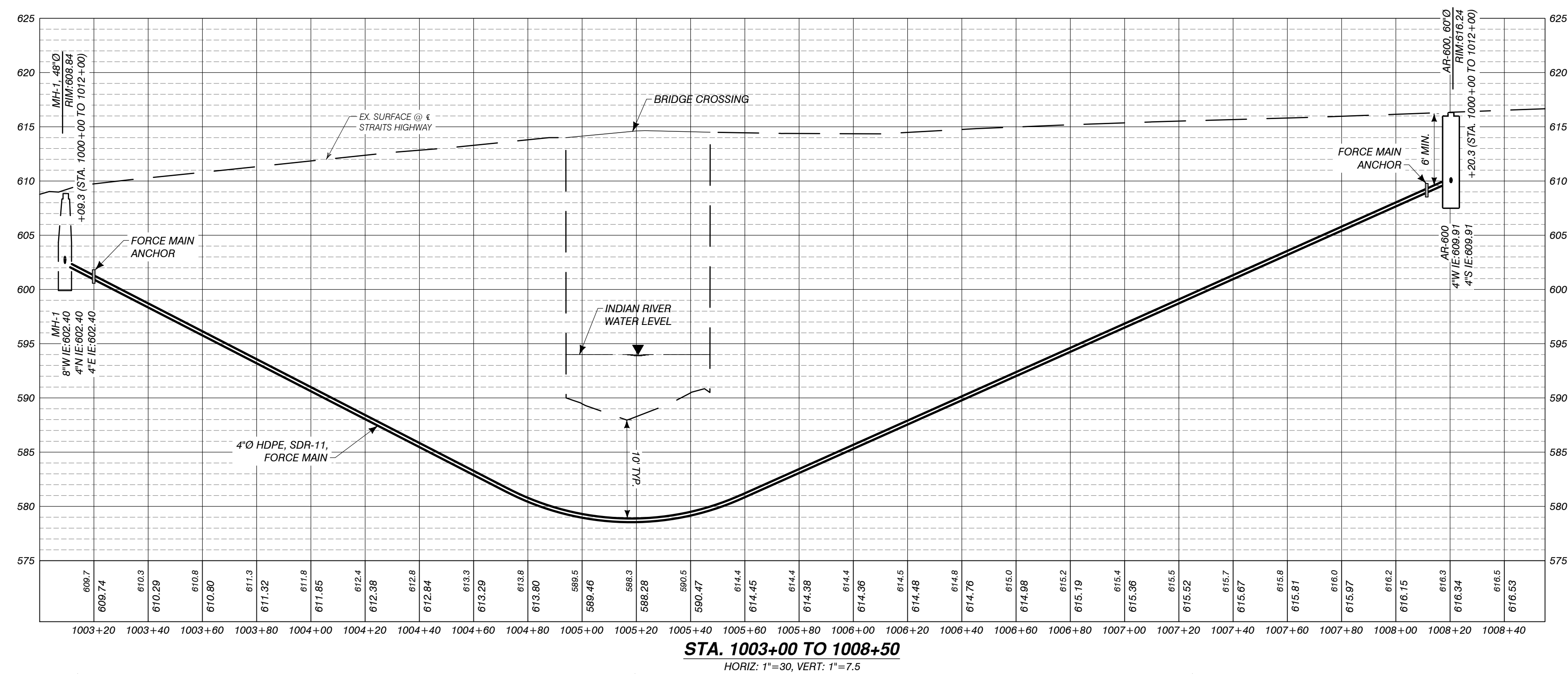
PROJECT
TUSCARORA TOWNSHIP
SANITARY SEWER EXPANSION PHASE 1
SECT. 24, T35N-R3W, INDIAN RIVER, TUSCARORA TWP., CHEBOYGAN COUNTY, MICHIGAN

SHEET
PLAN & PROFILE
STA. 140+00 TO 146+90
STA. 160+00 TO 161+85

JOB NO.
22-5797
SHEET NO.
C309



 SANITARY PROFILE STA. 1003+00 TO 1008+50
1"=30'



LOCATION MAP
1" = 1000'

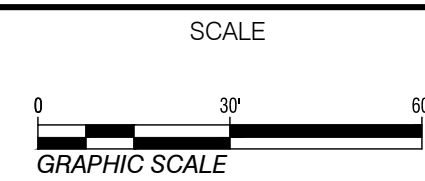
AUTH	DATE	NO.	DESCRIPTION	AUTH	DATE	NO.	DESCRIPTION
CJR	1/3/23	0	OWNER REVIEW				
PEI	5/1/23	1	PERMIT SUBMITTAL				
PEI	11/15/23	2	REVISED PER EGLE REVIEW				

DESIGNER

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OWNER
TUSCARORA
TOWNSHIP



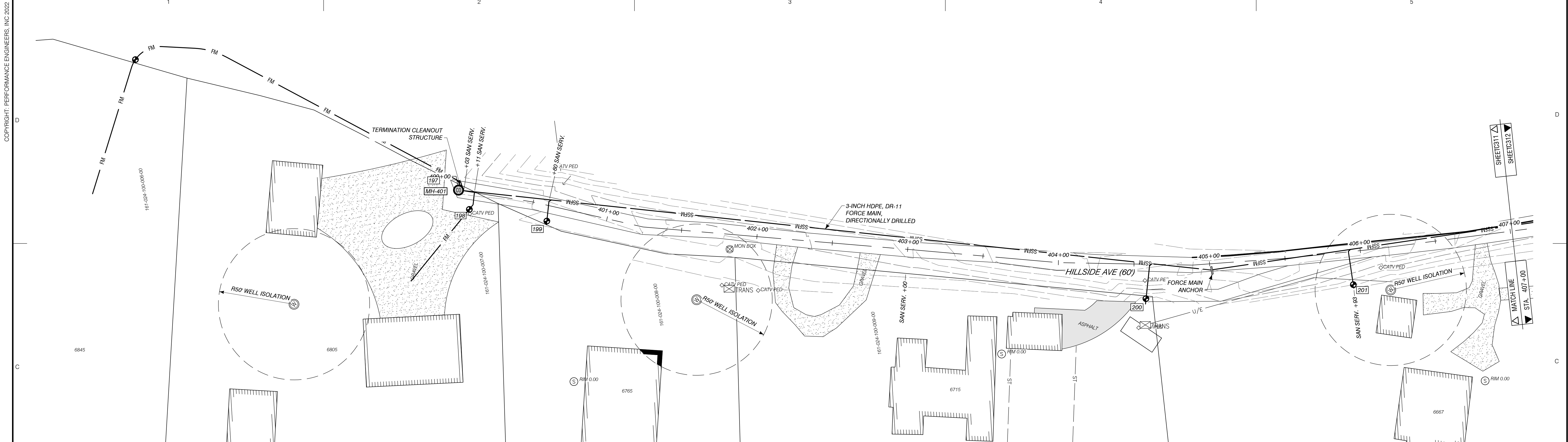
PROJECT
TUSCARORA TOWNSHIP
SANITARY SEWER EXPANSION PHASE 1

SECT. 24, T35N-R3W, INDIAN RIVER, TUSCARORA TWP., CHEBOYGAN COUNTY, MICHIGAN

SHEET
PLAN & PROFILE
STA. 1003+00 TO 1008+50

JOB NO.
22-5797

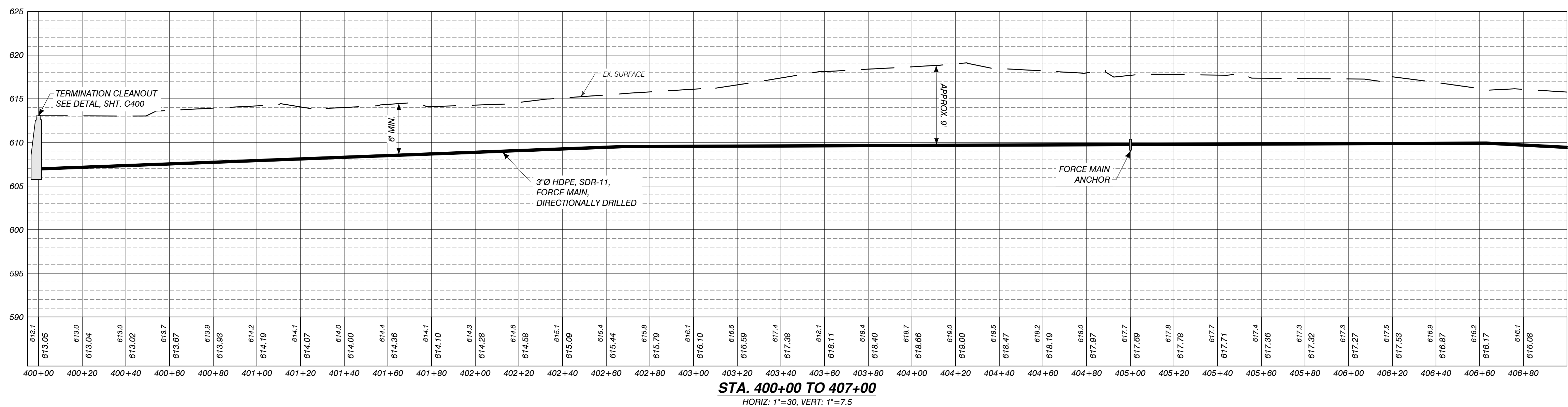
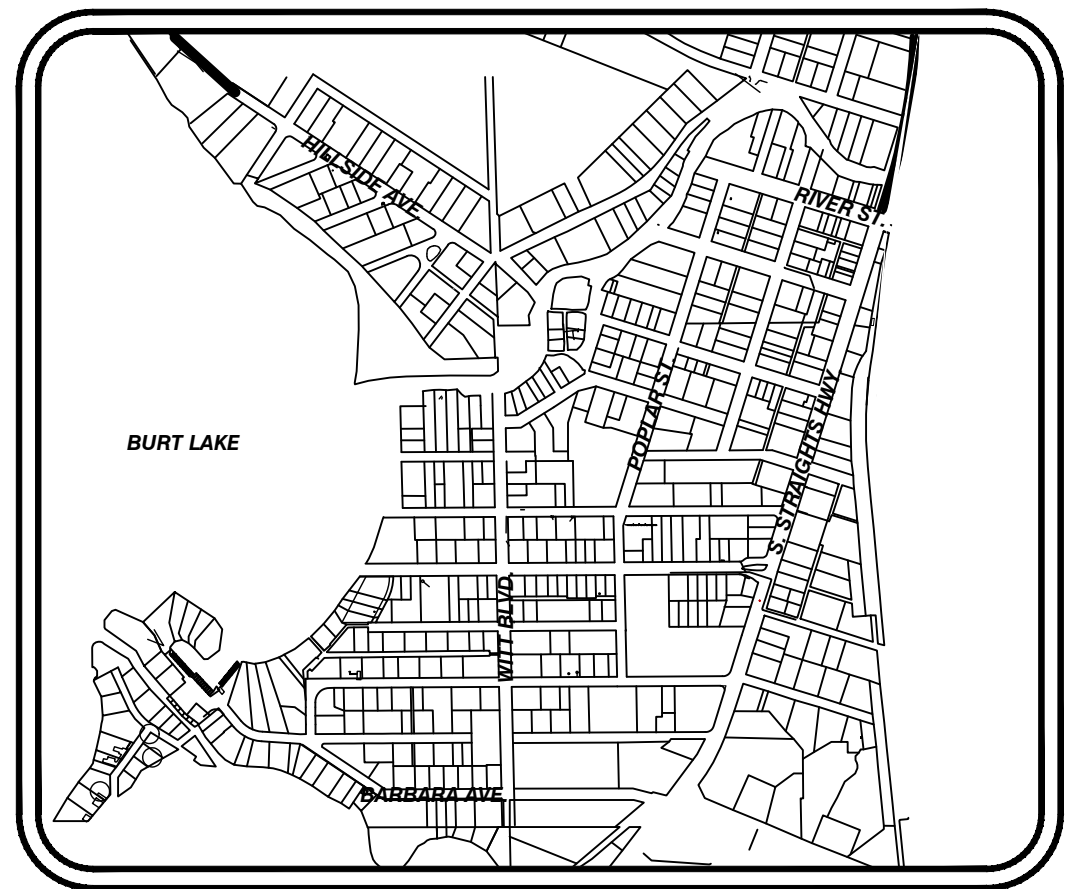
SHEET NO.
C310



SAN. SERV. INFORMATION		
TAG #	HOUSE #	STA. OF WYE
197	6845	400+03
198	6805	400+11
199	6785	400+60
200	6715	403+00
201	6667	405+93



SANITARY PROFILE STA. 400+00 TO 407+00
1"=30'



AUTH	DATE	NO.	DESCRIPTION	AUTH	DATE	NO.	DESCRIPTION
CJR	1/3/23	0	OWNER REVIEW				
PEI	5/1/23	1	PERMIT SUBMITTAL				
PEI	11/15/23	2	REVISED PER EGLE REVIEW				

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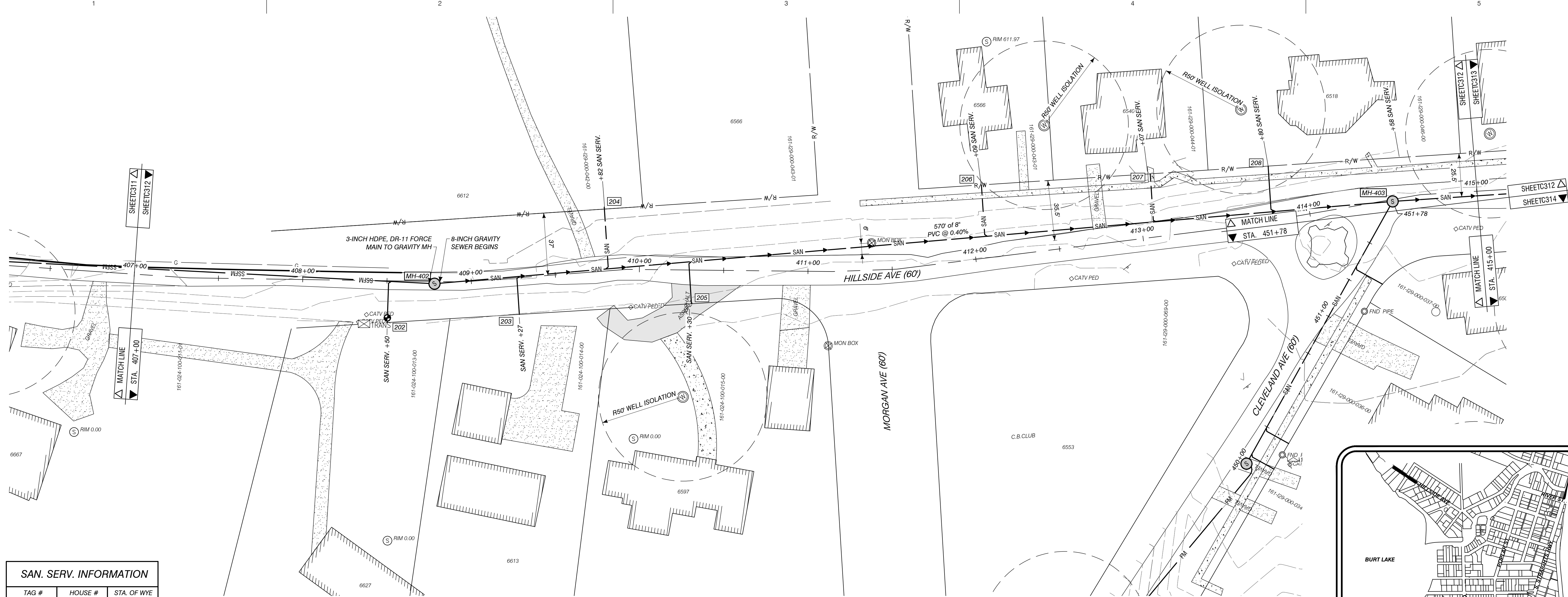
OWNER
TUSCARORA TOWNSHIP

SCALE
0 30' 60'
GRAPHIC SCALE

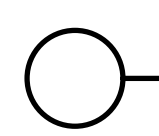
PROJECT
TUSCARORA TOWNSHIP
SANITARY SEWER EXPANSION PHASE 1
SECT. 24, T35N-R3W, INDIAN RIVER, TUSCARORA TWP., CHEBOYGAN COUNTY, MICHIGAN

SHEET
PLAN & PROFILE
STA. 400+00 TO 407+00

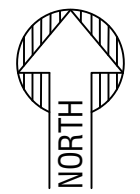
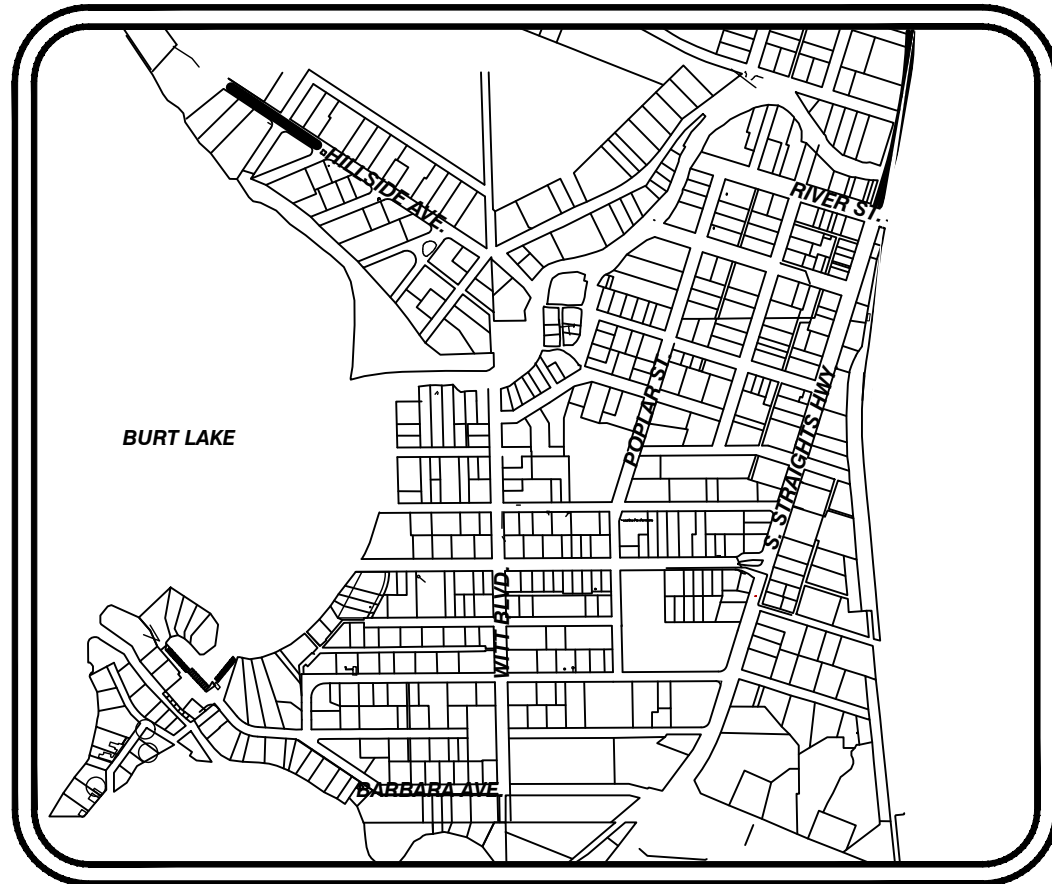
JOB NO.
22-5797
SHEET NO.
C311



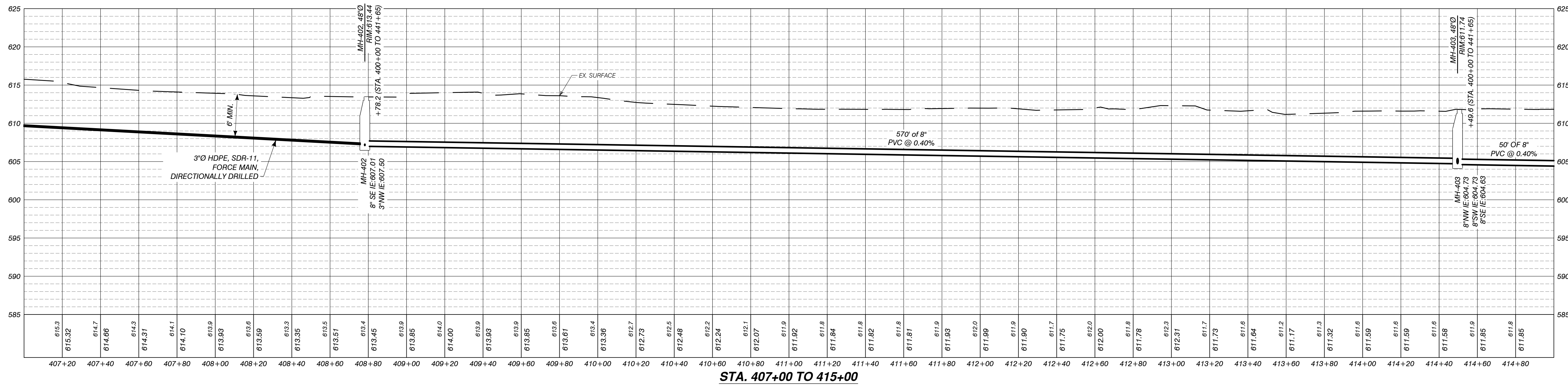
SAN. SERV. INFORMATION		
TAG #	HOUSE #	STA. OF WYE
202	6627	408+50
203	6613	409+27
204	6612	409+82
205	6597	410+30
206	6566	412+09
207	6540	413+07
208	6518	413+80



SANITARY PROFILE STA. 407+00 TO 415+00



LOCATION MAP
1" = 1000'



AUTH	DATE	NO.	DESCRIPTION	AUTH	DATE	NO.	DESCRIPTION
CJR	1/3/23	0	OWNER REVIEW				
PEI	5/1/23	1	PERMIT SUBMITTAL				
PIE	11/15/23	2	REVISED PER EGLLE REVIEW				

DESIGNER

406 Potoskey Avenue
Charlevoix, Michigan 49720
Phone: (231) 547-2121
Fax: (231) 547-0084
www.performanceeng.com

OWNER

TUSCARORA
TOWNSHIP

PROJECT

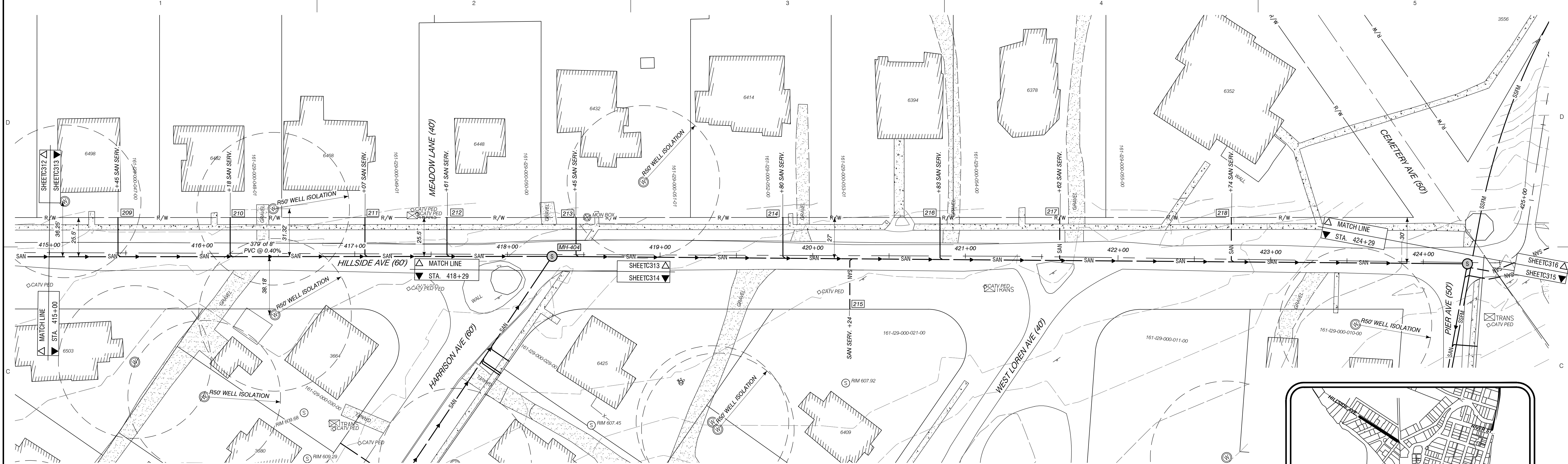
TUSCARORA TOWNSHIP
SANITARY SEWER EXPANSION PHASE 1

SECT. 24, T35N-R3W, INDIAN RIVER, TUSCARORA TWP., CHEBOYGAN COUNTY, MICHIGAN

SHEET

PLAN & PROFILE
STA. 407+00 TO 415+00

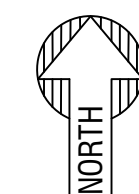
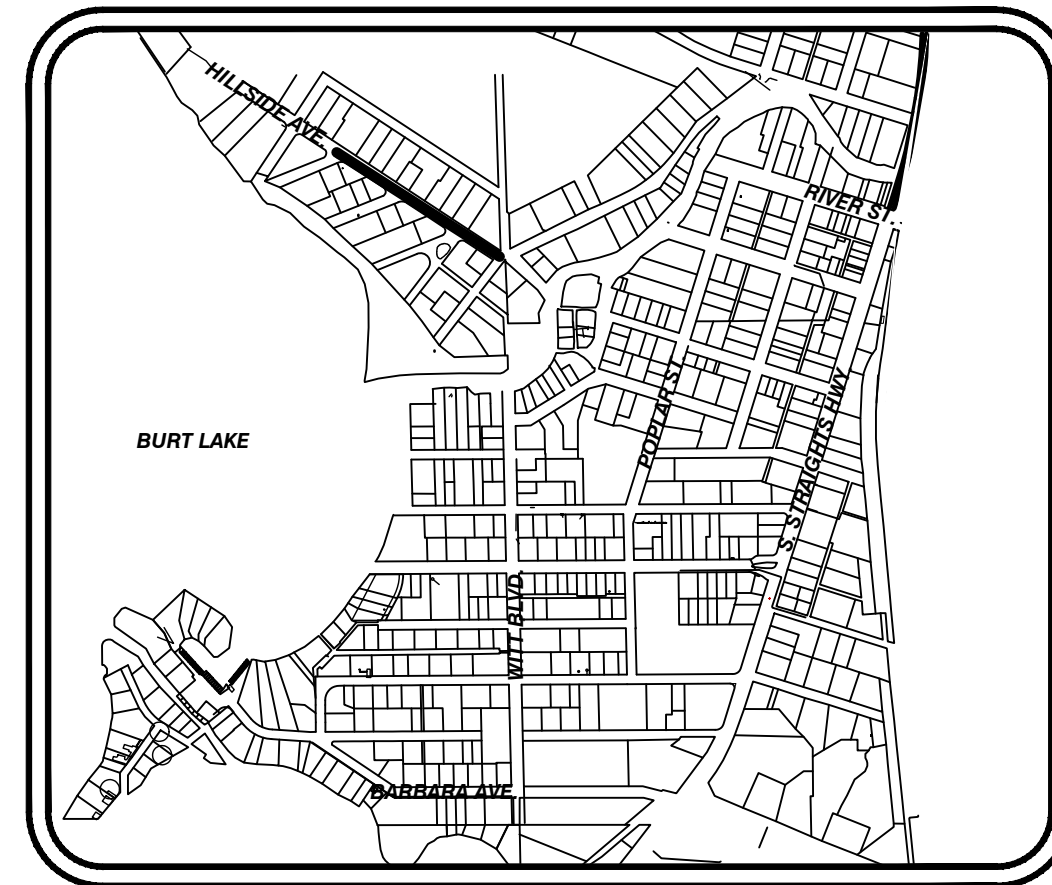
JOB NO.	22-5797
SHEET NO.	C312



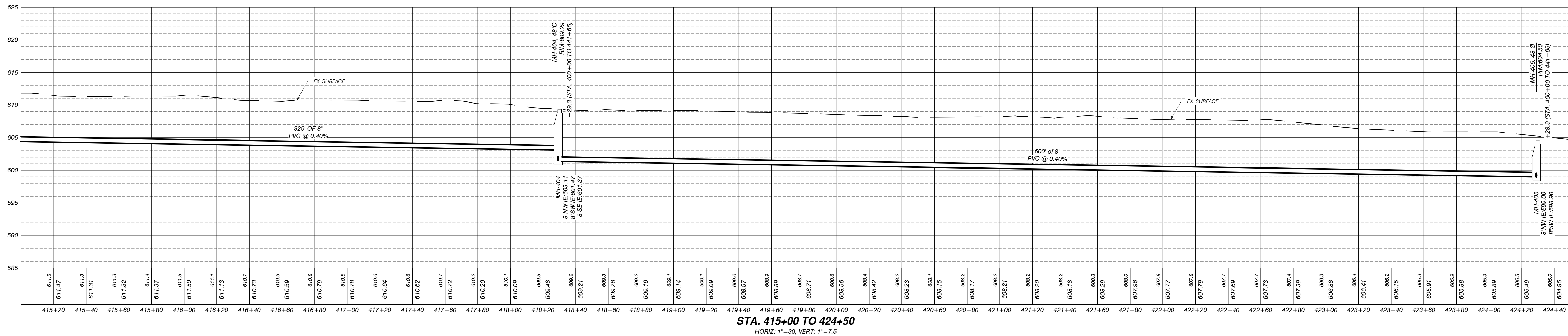
SAN. SERV. INFORMATION		
TAG #	HOUSE #	STA. OF WYE
209	6498	415+45
210	6482	416+18
211	6468	417+07
212	6448	417+61
213	6432	418+45
214	6414	419+80
215	6409	420+24
216	6394	420+83
217	6378	421+62
218	6352	422+74



SANITARY PROFILE STA. 415+00 TO 424+50
1"=30'



LOCATION MAP
1"=1000'



AUTH	DATE	NO.	DESCRIPTION	AUTH	DATE	NO.	DESCRIPTION
CJR	1/3/23	0	OWNER REVIEW				
PEI	5/1/23	1	PERMIT SUBMITTAL				
PEI	11/15/23	2	REVISED PER EGLE REVIEW				

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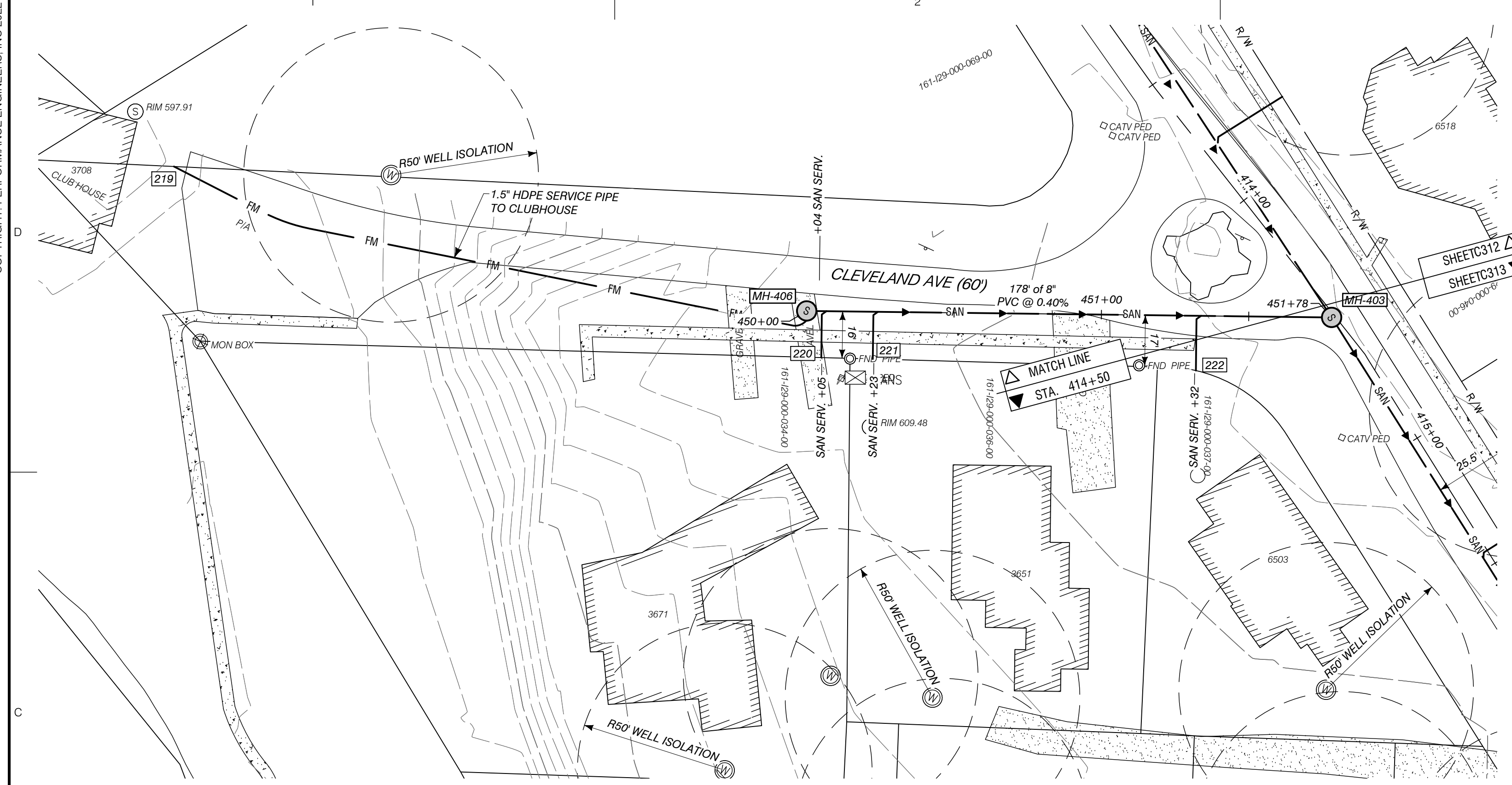
OWNER
TUSCARORA TOWNSHIP

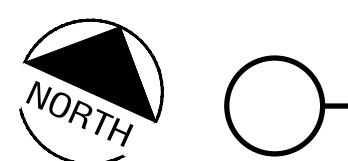
SCALE
0 30' 60'
GRAPHIC SCALE

PROJECT
TUSCARORA TOWNSHIP
SANITARY SEWER EXPANSION PHASE 1
SECT. 24, T35N-R3W, INDIAN RIVER, TUSCARORA TWP., CHEBOYGAN COUNTY, MICHIGAN

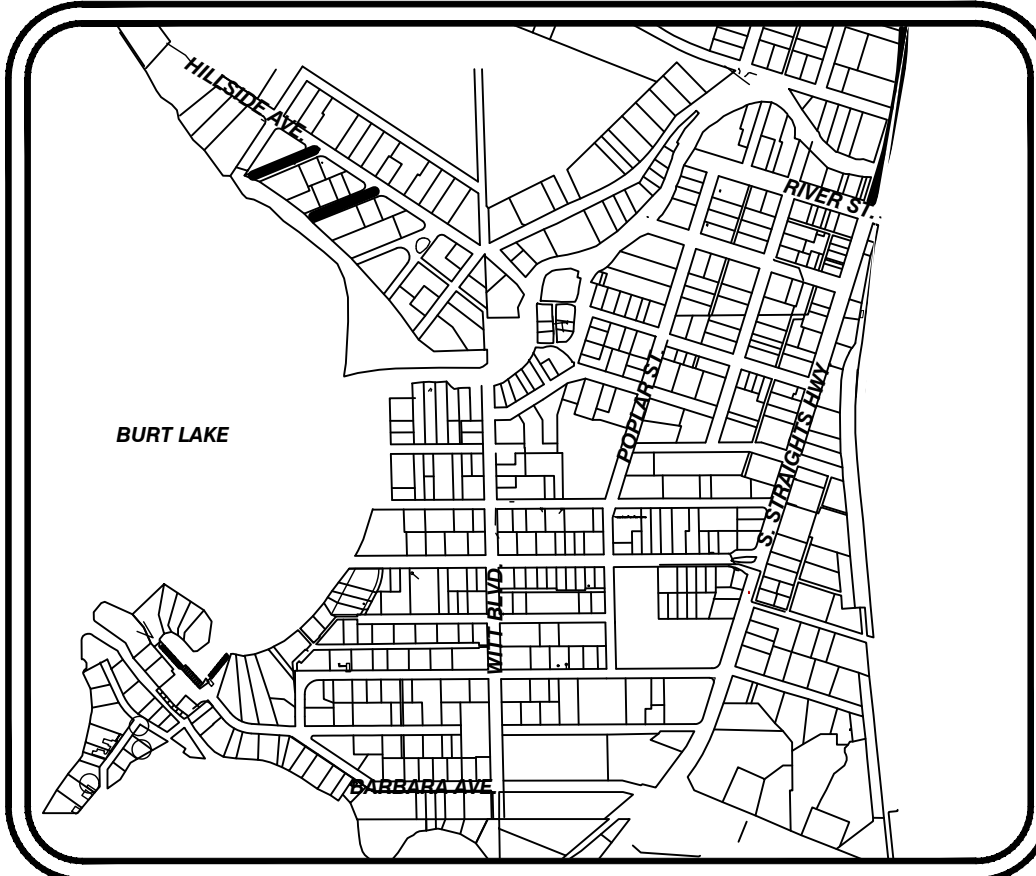
SHEET
PLAN & PROFILE
STA. 415+00 TO 424+50

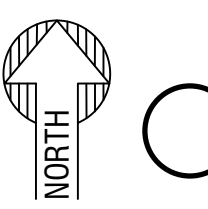
JOB NO.
22-5797
SHEET NO.
C313

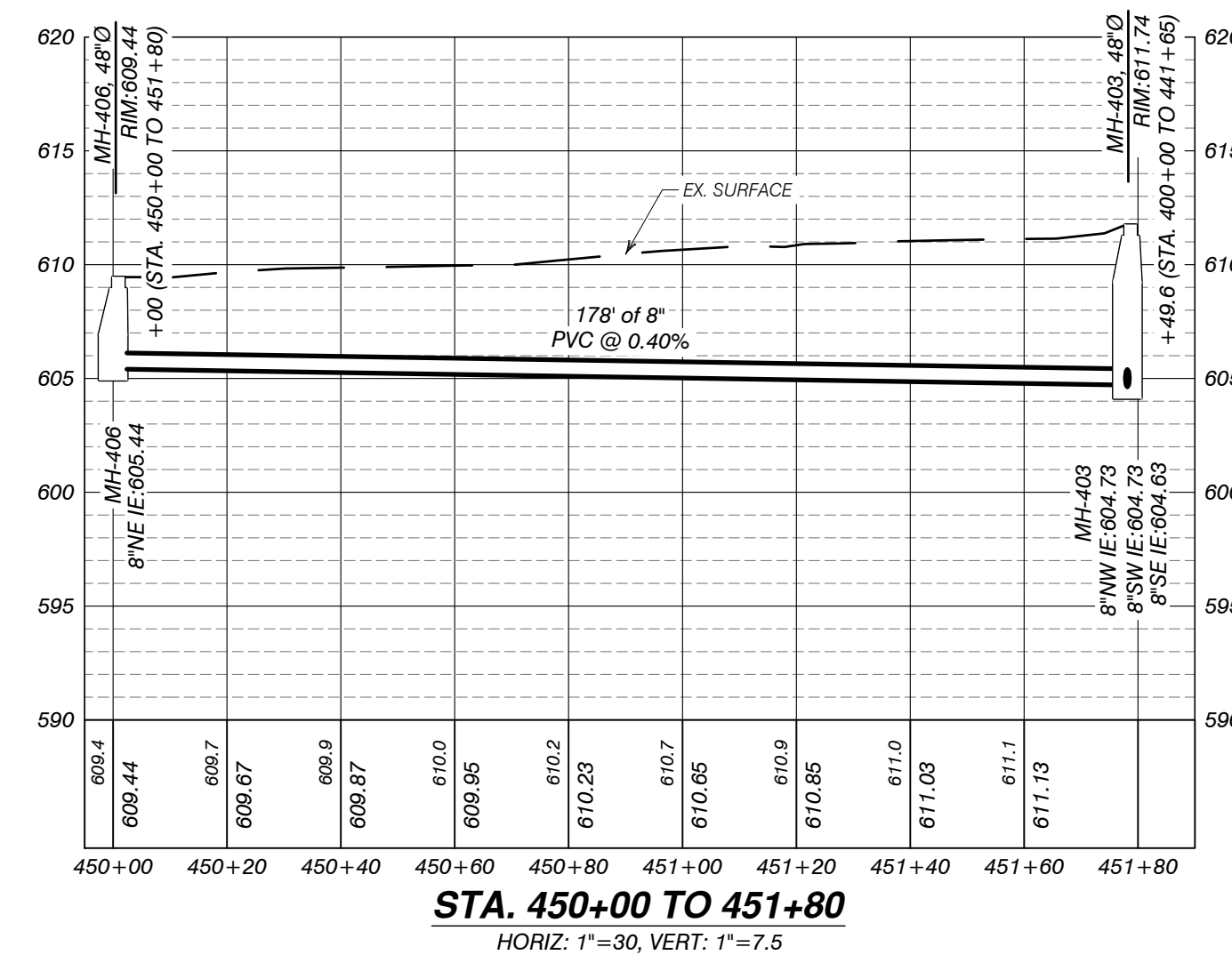


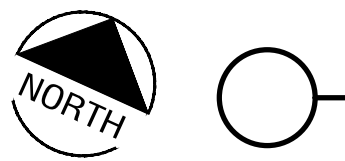
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1"=30'

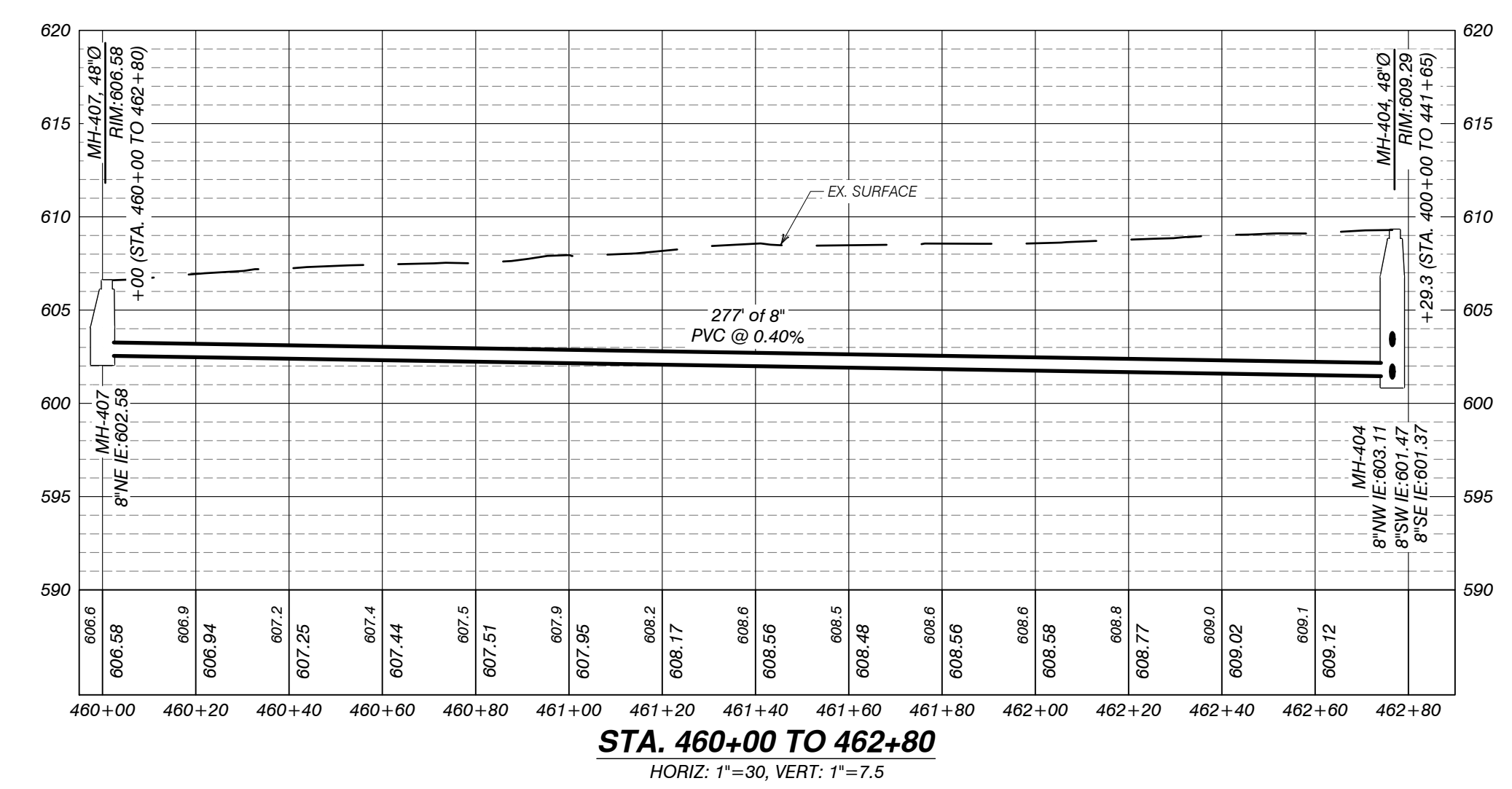
SAN. SERV. INFORMATION		
TAG #	HOUSE #	STA. OF WYE
219	3708	450+04
220	3671	450+05
221	3651	450+23
222	6503	451+32
223	3720	460+04
224	3698	460+09
225	3659	460+31
226	3680	460+77
227	3664	460+98
228	3629	461+91
229	3684	461+95
230	6425	462+04



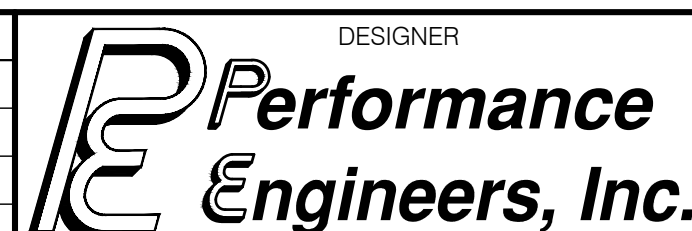
 **LOCATION MAP**
1"=1000'



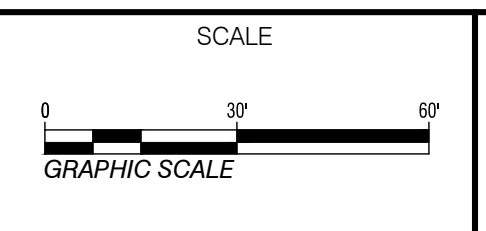
 **SANITARY PROFILE STA. 460+00 TO 462+80**
1"=30'



AUTH	DATE	NO.	DESCRIPTION	AUTH	DATE	NO.	DESCRIPTION
CJR	1/3/23	0	OWNER REVIEW				
PEI	5/1/23	1	PERMIT SUBMITTAL				
PEI	11/15/23	2	REVISED PER EGLE REVIEW				

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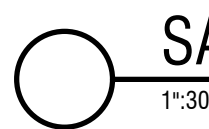
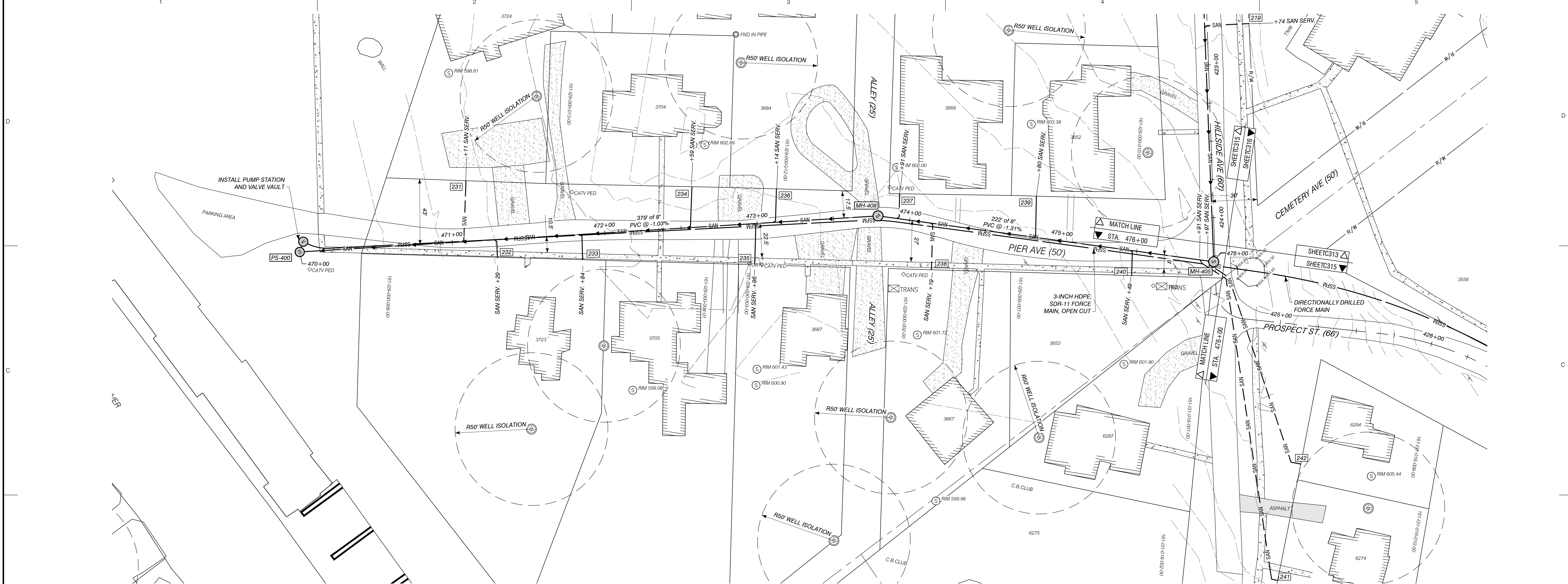
OWNER
TUSCARORA TOWNSHIP



PROJECT
TUSCARORA TOWNSHIP
SANITARY SEWER EXPANSION PHASE 1
SECT. 24, T35N-R3W, INDIAN RIVER, TUSCARORA TWP., CHEBOYGAN COUNTY, MICHIGAN

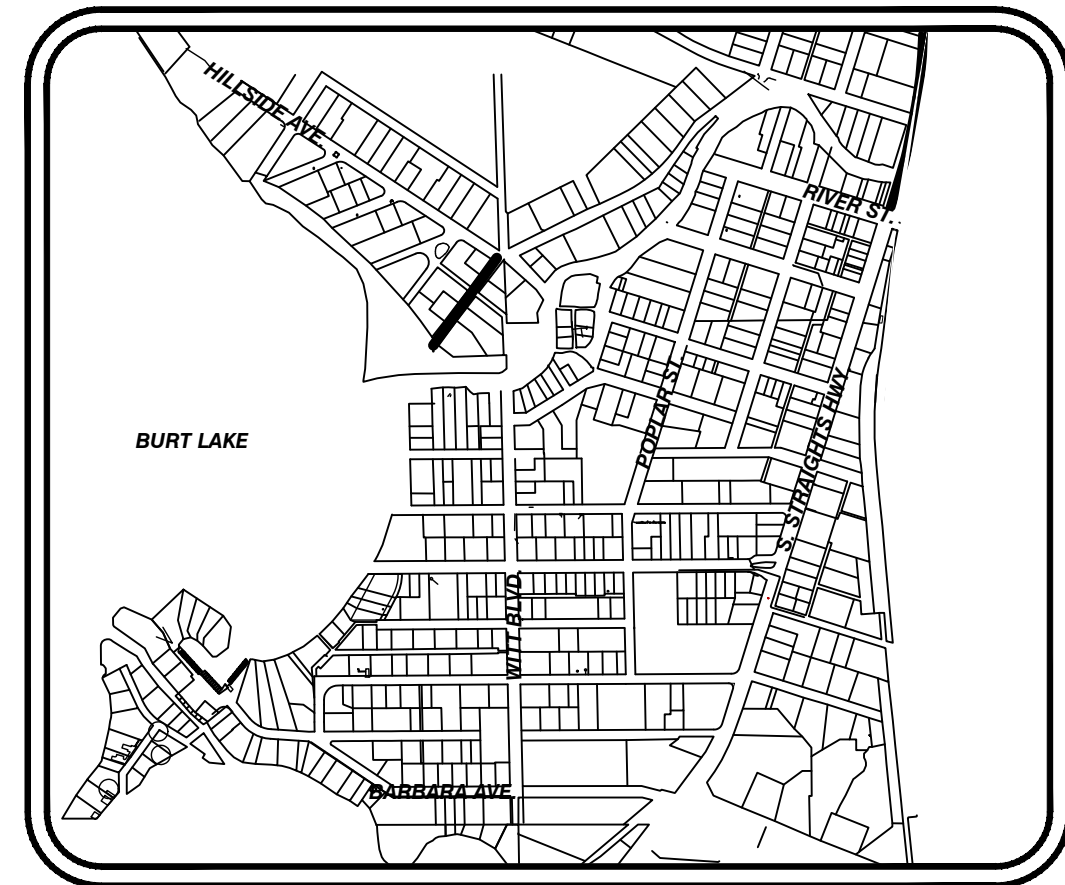
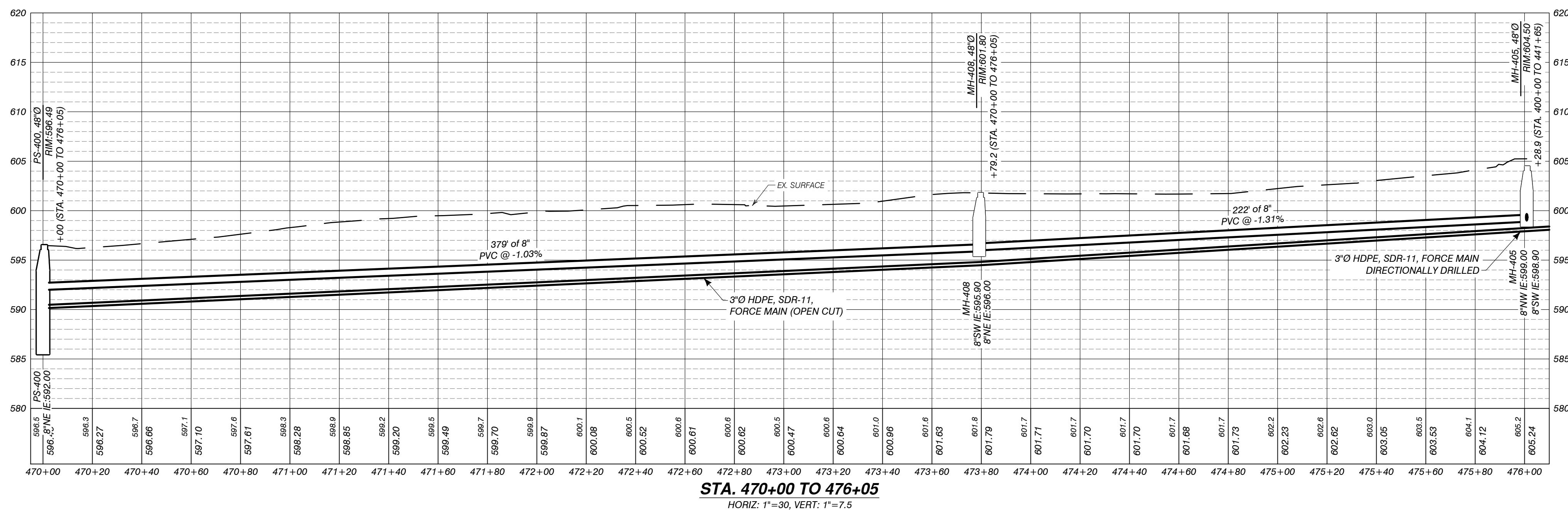
SHEET
PLAN & PROFILE
STA. 450+00 TO 451+80
STA. 460+00 TO 462+80

JOB NO.
22-5797
SHEET NO.
C314



SANITARY PROFILE STA. 470+00 TO 476+05

SAN. SERV. INFORMATION		
TAG #	HOUSE #	STA. OF WYE
231	3724	471+11
232	3723	471+29
233	3705	471+84
234	3704	472+59
235	3687	472+96
236	3684	473+14
237	3668	473+91
238	3667	474+19
239	3652	474+80
240	3653	475+49
241	6274	475+91
242	6294	475+97

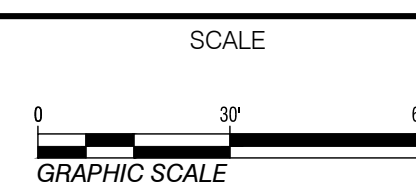


LOCATION MAP
1" = 1000'

AUTH	DATE	NO.	DESCRIPTION	AUTH	DATE	NO.	DESCRIPTION
CJR	1/3/23	0	OWNER REVIEW				
PEI	5/1/23	1	PERMIT SUBMITTAL				
PEI	11/15/23	2	REVISED PER EGLLE REVIEW				

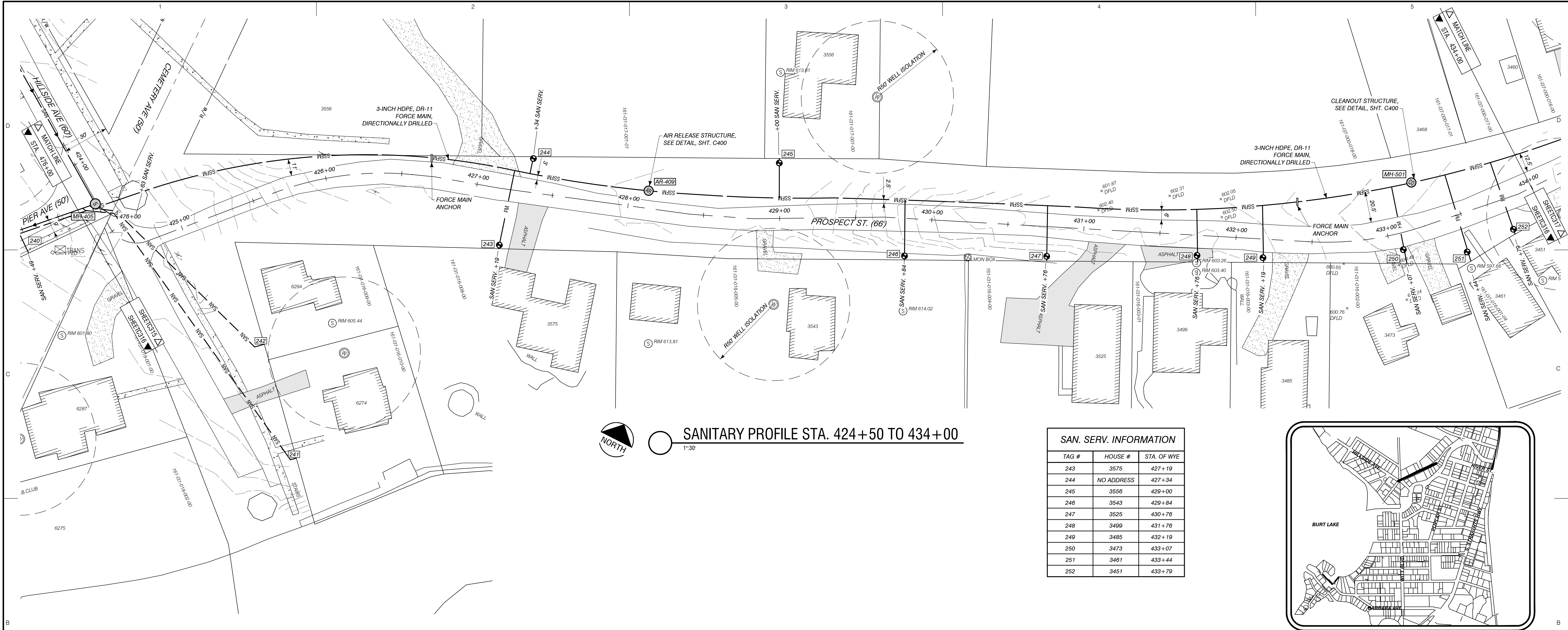
Performance Engineers, Inc.
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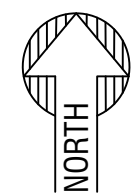
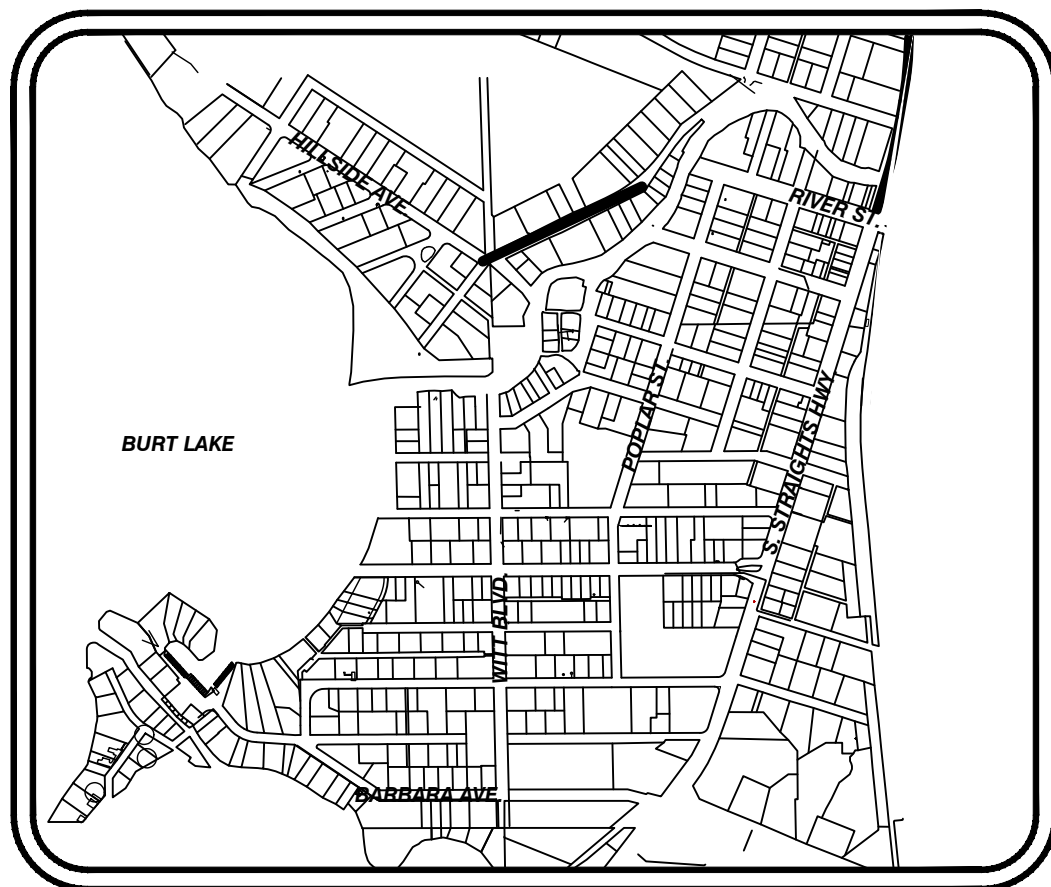
PROJECT
TUSCARORA TOWNSHIP
SANITARY SEWER EXPANSION PHASE 1
SECT. 24, T35N-R3W, INDIAN RIVER, TUSCARORA TWP., CHEBOYGAN COUNTY, MICHIGAN

SHEET		JOB NO.
PLAN & PROFILE		22-5797
STA. 470+00 TO 476+05		SHEET NO.
		C315

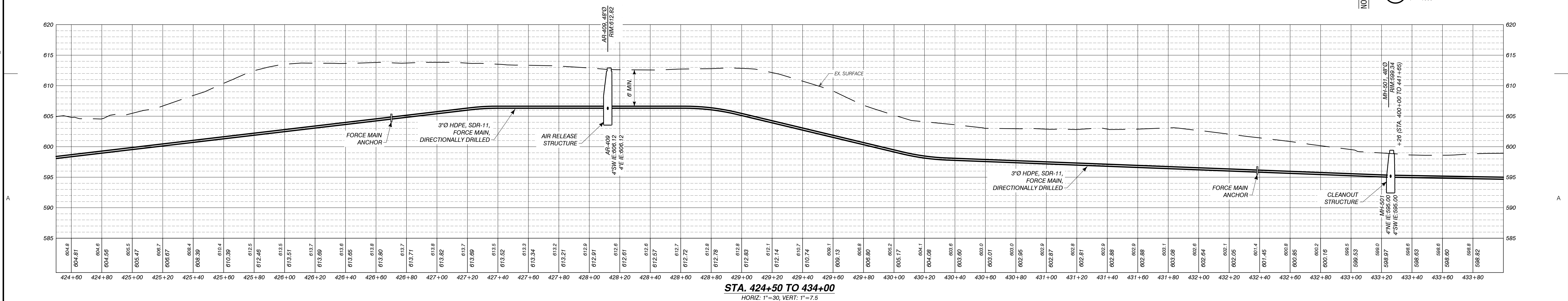


SANITARY PROFILE STA. 424+50 TO 434+00
1"=30'

SAN. SERV. INFORMATION		
TAG #	HOUSE #	STA. OF WYE
243	3575	427+19
244	NO ADDRESS	427+34
245	3556	429+00
246	3543	429+84
247	3525	430+76
248	3499	431+76
249	3485	432+19
250	3473	433+07
251	3461	433+44
252	3451	433+79



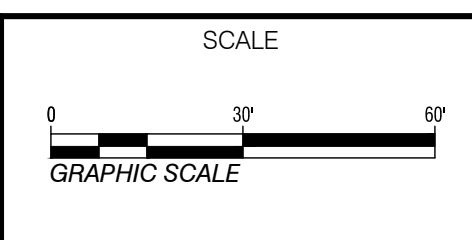
LOCATION MAP
1"=1000'



AUTH	DATE	NO.	DESCRIPTION	AUTH	DATE	NO.	DESCRIPTION
CJR	1/3/23	0	OWNER REVIEW				
PEI	5/1/23	1	PERMIT SUBMITTAL				
PEI	11/15/23	2	REVISED PER EGLE REVIEW				

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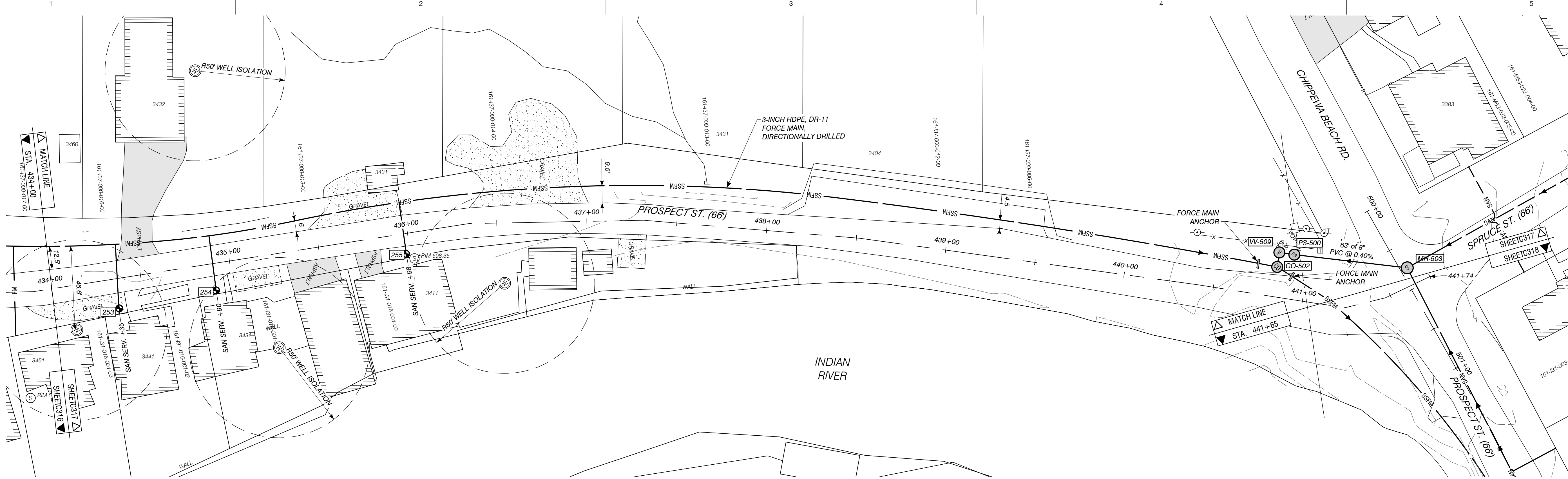
OWNER
TUSCARORA TOWNSHIP



PROJECT
TUSCARORA TOWNSHIP
SANITARY SEWER EXPANSION PHASE 1
SECT. 24, T35N-R3W, INDIAN RIVER, TUSCARORA TWP., CHEBOYGAN COUNTY, MICHIGAN

SHEET
PLAN & PROFILE
STA. 424+50 TO 434+00

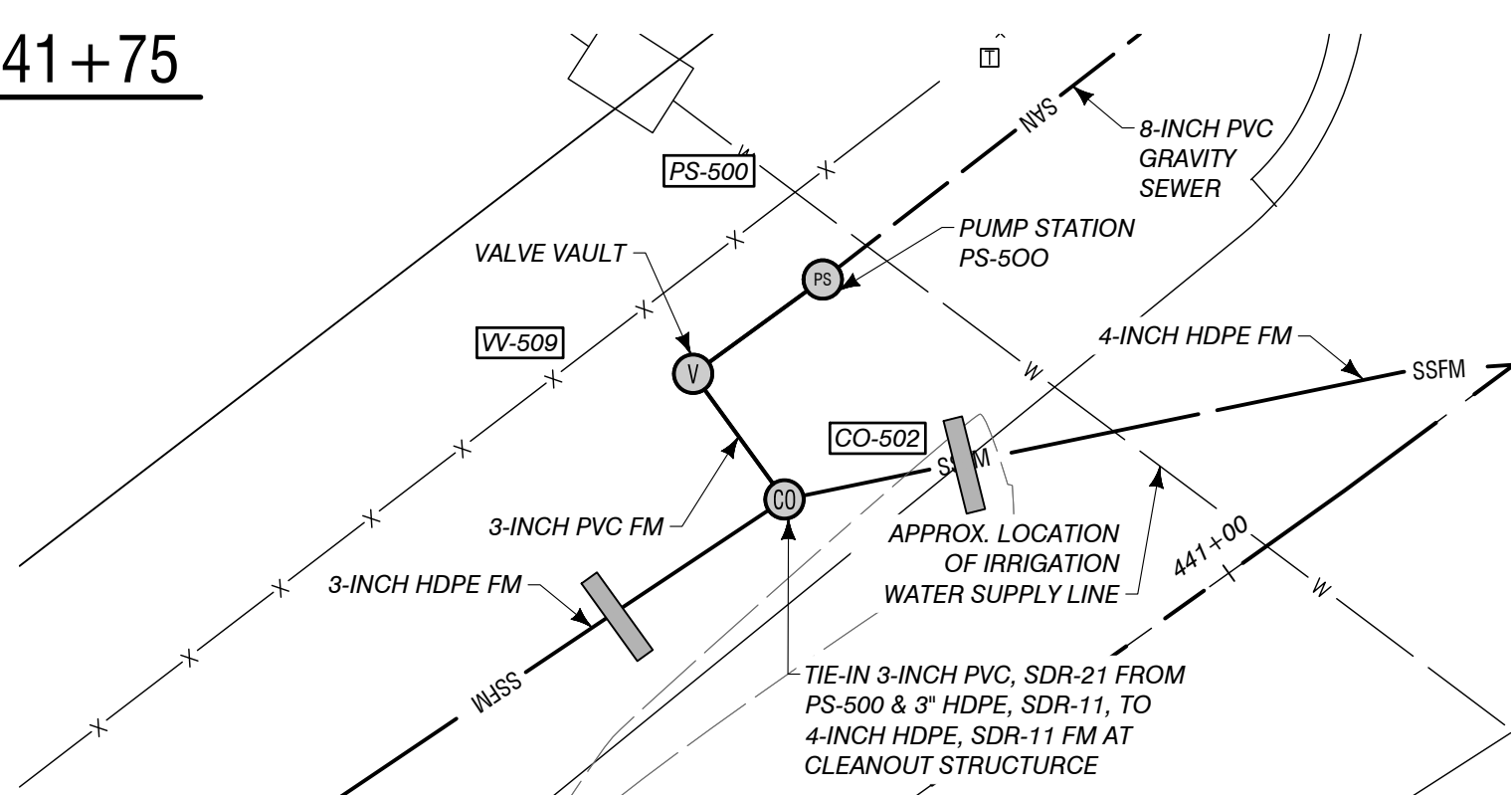
JOB NO.
22-5797
SHEET NO.
C316



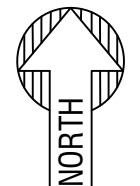
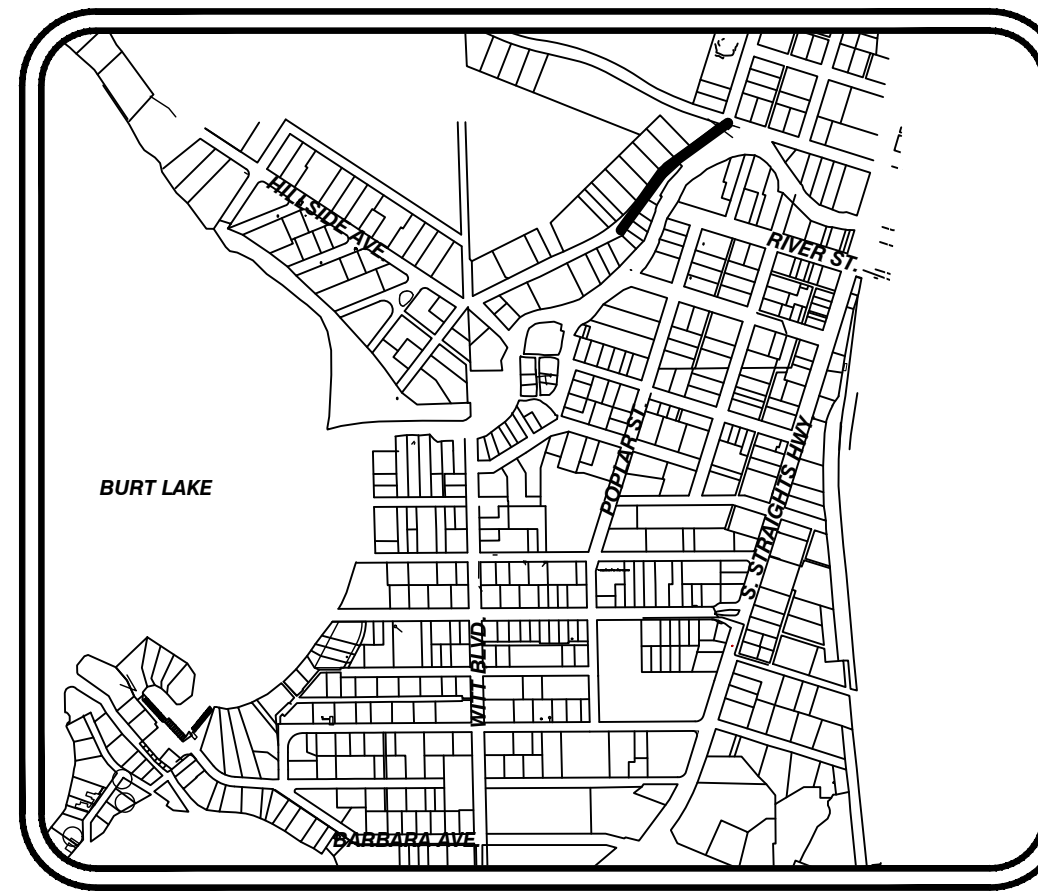
SAN. SERV. INFORMATION		
TAG #	HOUSE #	STA. OF WYE
253	3441	434+35
254	3431	434+90
255	3411	435+98



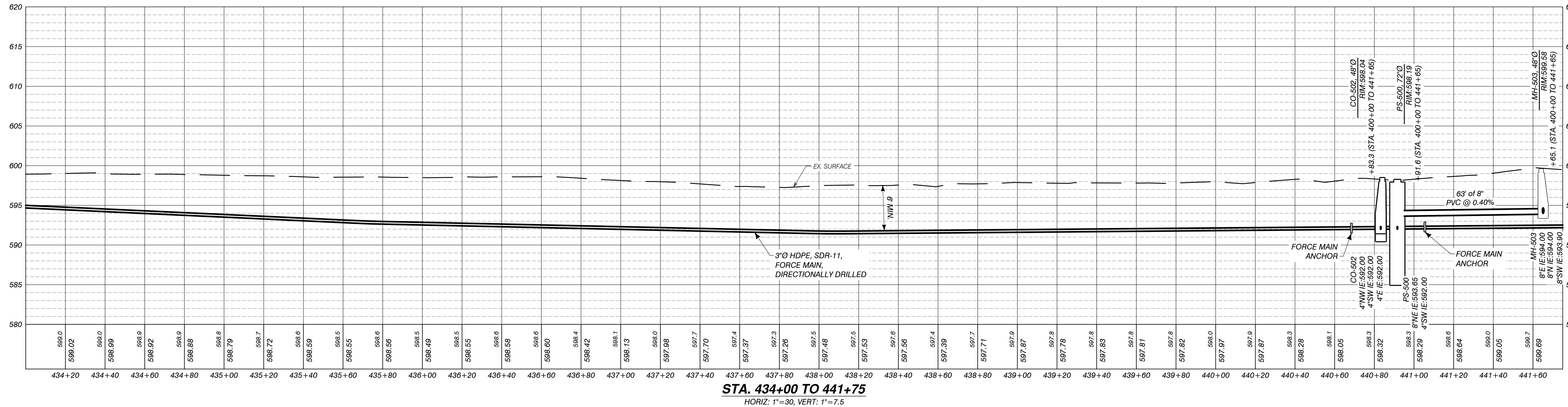
SANITARY PROFILE STA. 434+00 TO 441+75
1"=30'



PUMP STATION 500 ENLARGMENT
1"=30'



LOCATION MAP
1"=1000'

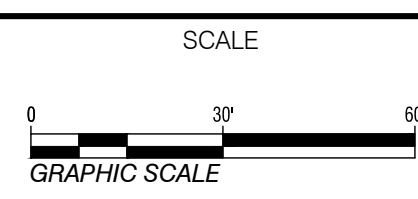


STA. 434+00 TO 441+75
HORIZ: 1"=30', VERT: 1"=7.5'

AUTH	DATE	NO.	DESCRIPTION	AUTH	DATE	NO.	DESCRIPTION
CJR	1/3/23	0	OWNER REVIEW				
PEI	5/1/23	1	PERMIT SUBMITTAL				
PEI	11/15/23	2	REVISED PER EGL E REVIEW				

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Performance Engineers, Inc.
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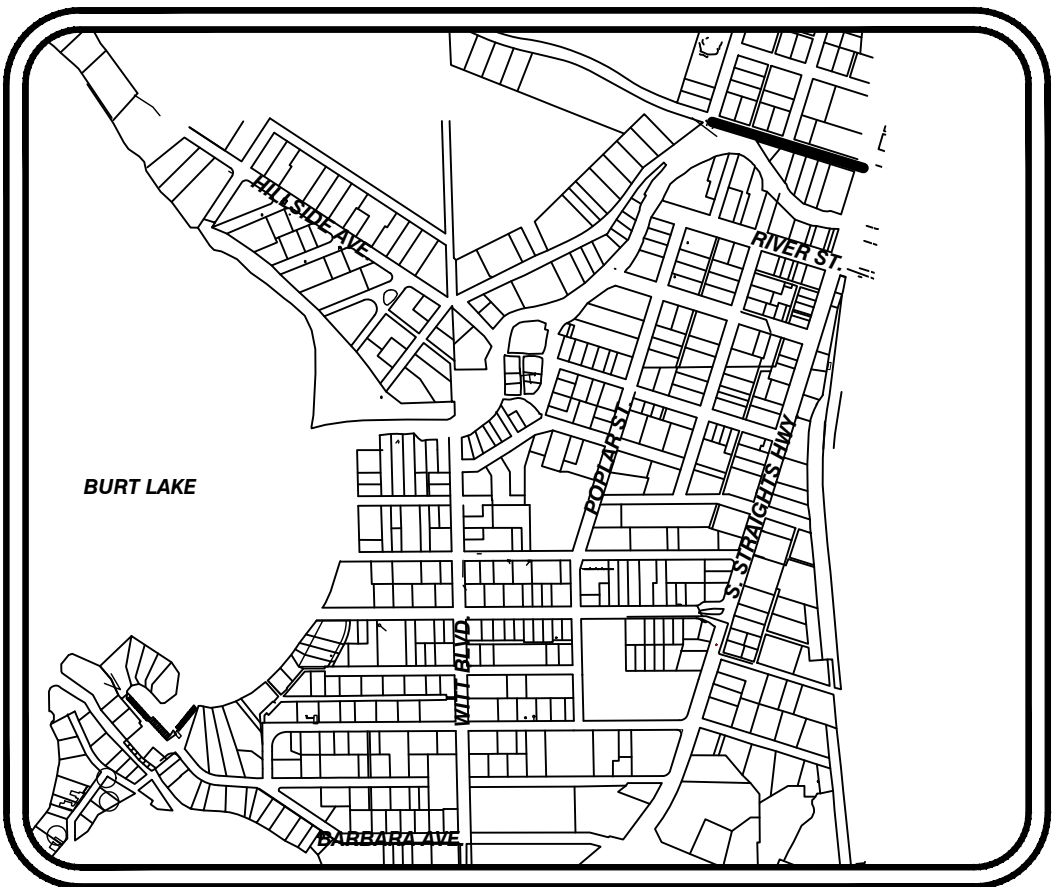
OWNER
TUSCARORA TOWNSHIP



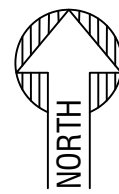
PROJECT
TUSCARORA TOWNSHIP
SANITARY SEWER EXPANSION PHASE 1

SHEET
PLAN & PROFILE
STA. 434+00 TO 441+75

JOB NO.
22-5797
SHEET NO.
C317



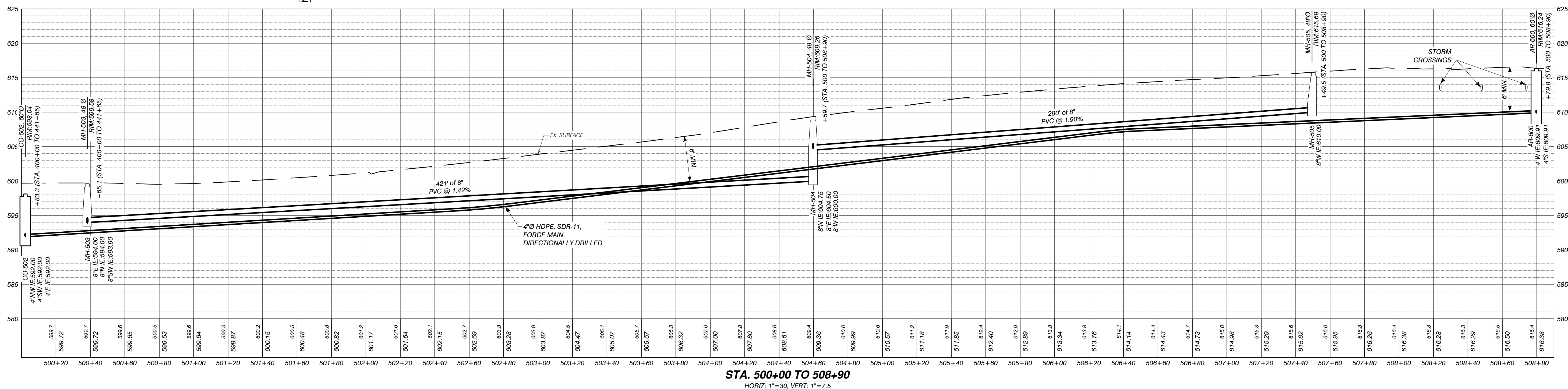
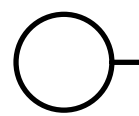
SAN. SERV. INFORMATION		
TAG #	HOUSE #	STA. OF WYE
256	6216	501+65
257	6198	502+86
258	6171	503+86
259	6176	503+87
260	6157	504+57
261	6145	505+52
262	6121	505+70
263	6111	506+64
264	3280	506+85
265	3324	507+38



LOCATION MAP



SANITARY PROFILE STA. 500+00 TO 508+90



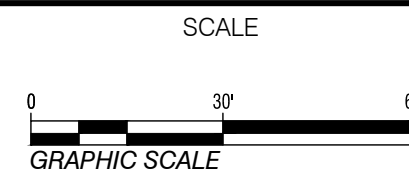
AUTH	DATE	NO.	DESCRIPTION	AUTH	DATE	NO.	DESCRIPTION
CJR	1/3/23	0	OWNER REVIEW				
PEI	5/1/23	1	PERMIT SUBMITTAL				
PEI	11/15/23	2	REVISED PER EGLLE REVIEW				

DESIGNER

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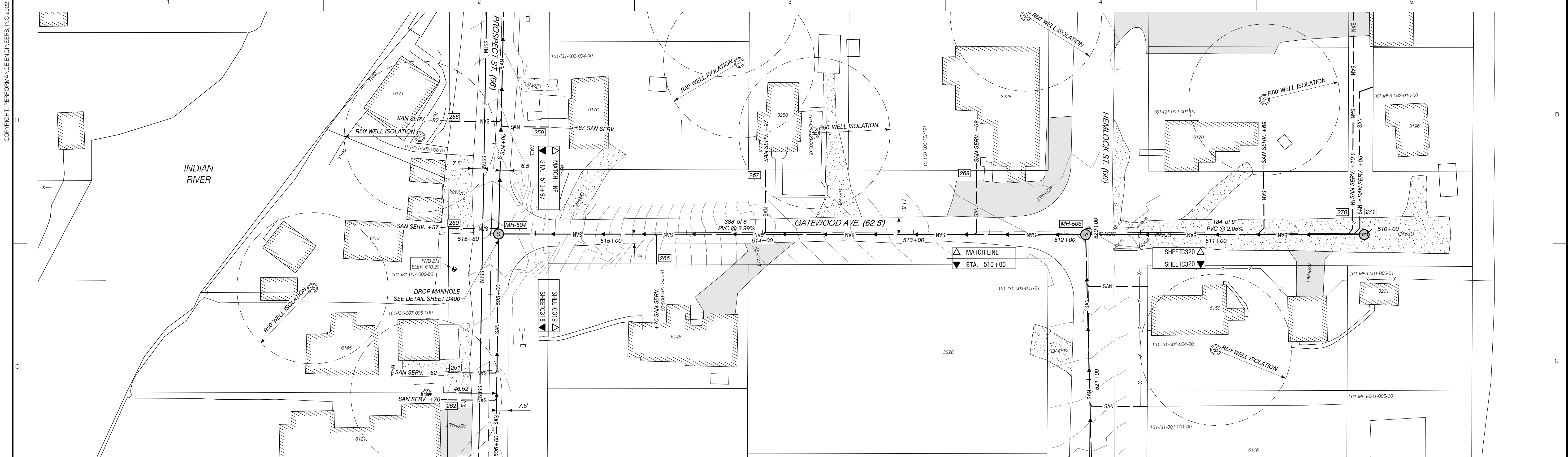
PROJECT
TUSCARORA TOWNSHIP
SANITARY SEWER EXPANSION PHASE 1

SECT. 24, T35N-R3W, INDIAN RIVER, TUSCARORA TWP., CHEBOYGAN COUNTY, MICHIGAN

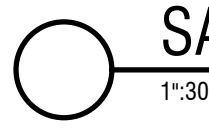
SHEET
PLAN & PROFILE
STA. 500+00 TO 508+90

JOB NO.
22-5797

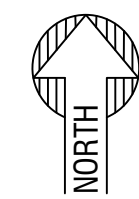
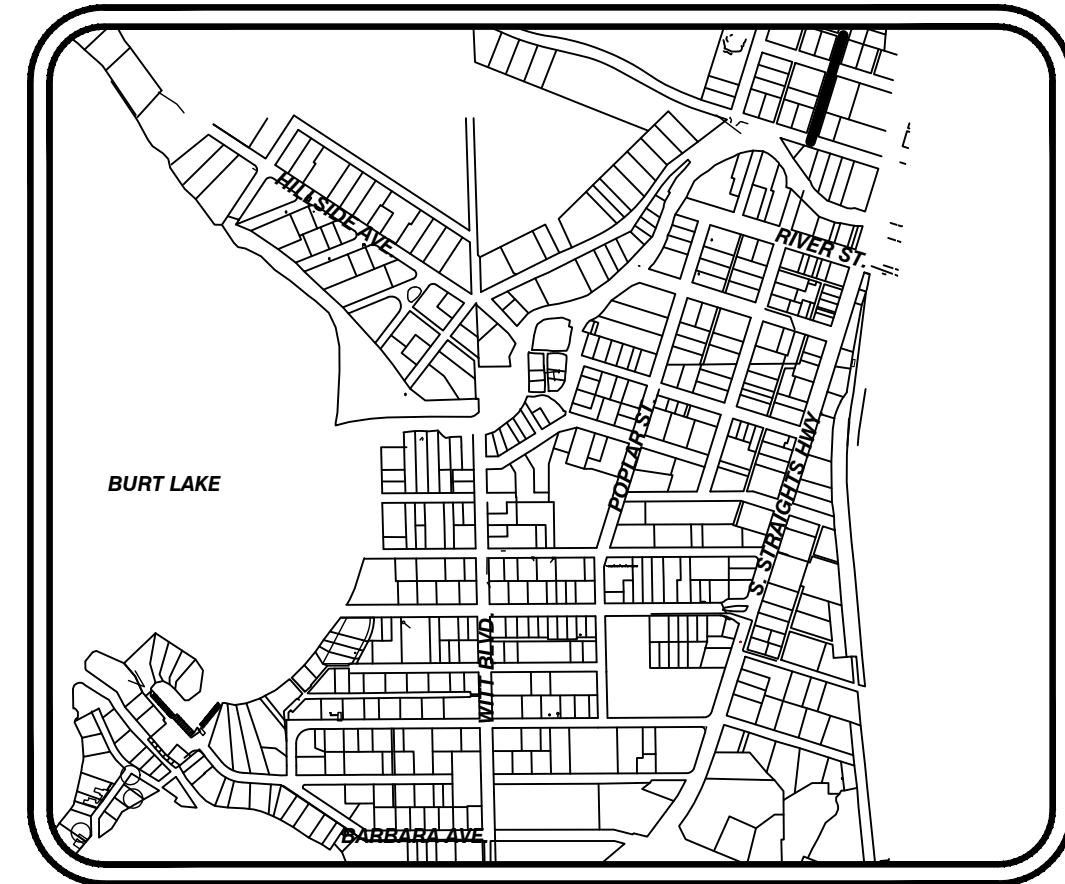
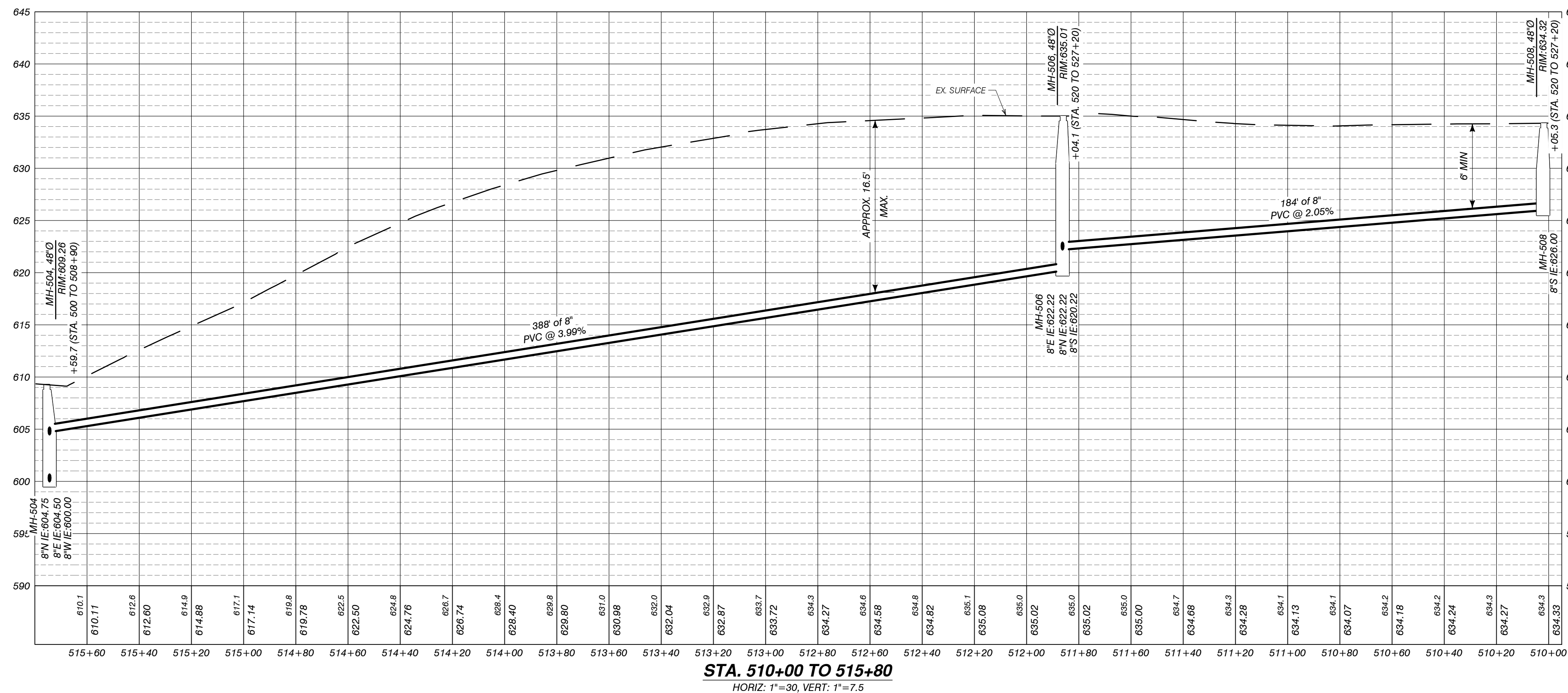
SHEET NO.
C318



SAN. SERV. INFORMATION		
TAG #	HOUSE #	STA. OF WYE
266	6146	514+70
267	3258	513+97
268	3228	512+58
269	6170	510+69
270	6194	510+10
271	3196	510+05



SANITARY PROFILE STA. 510+00 TO 515+80



LOCATION MAP

AUTH	DATE	NO.	DESCRIPTION	AUTH	DATE	NO.	DESCRIPTION
CJR	1/3/23	0	OWNER REVIEW				
PEI	5/1/23	1	PERMIT SUBMITTAL				
PEI	11/15/23	2	REVISED PER EGLE REVIEW				

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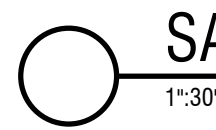
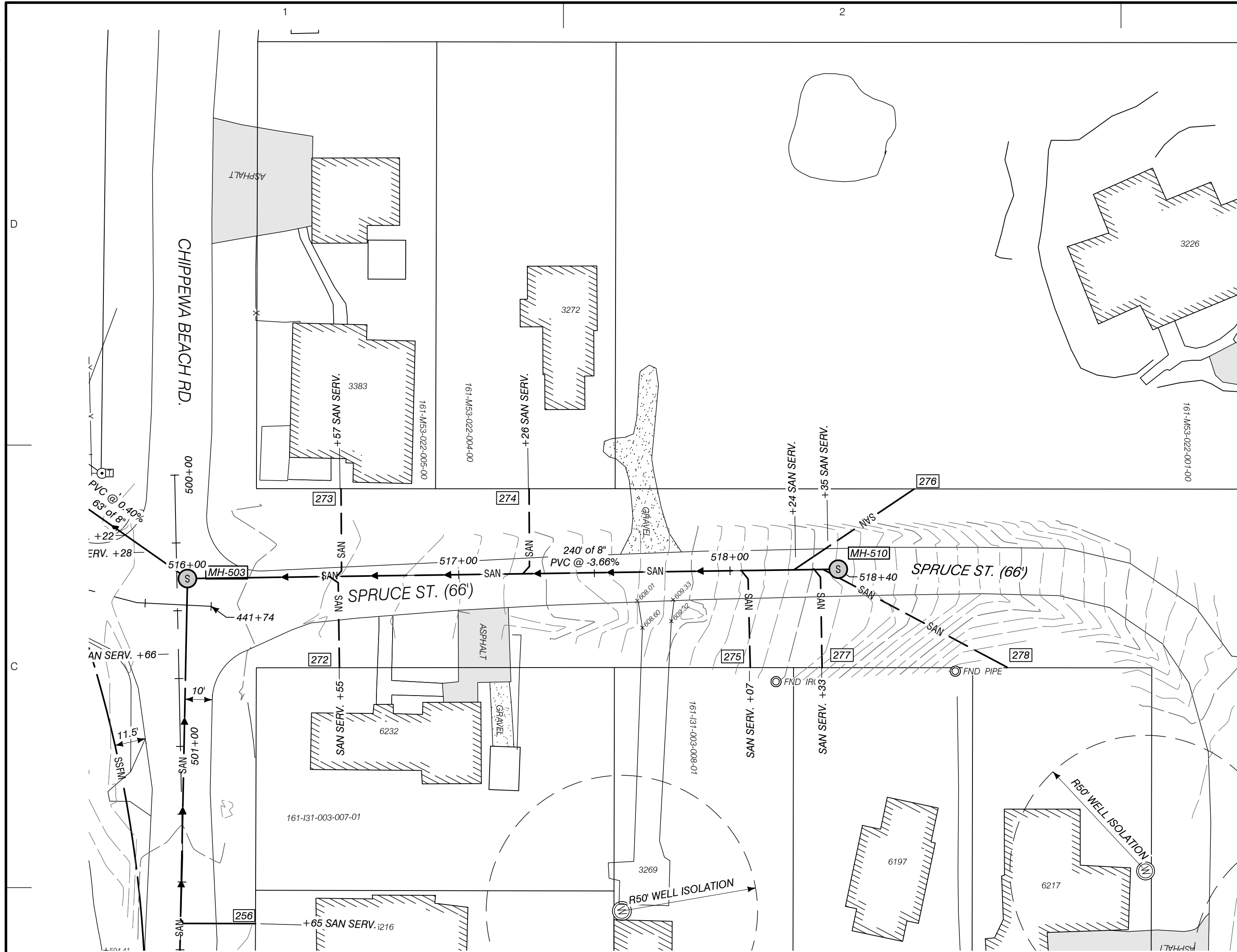
TUSCARORA TOWNSHIP

SCALE
0 30' 60'
GRAPHIC SCALE

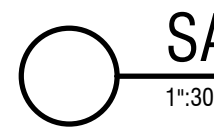
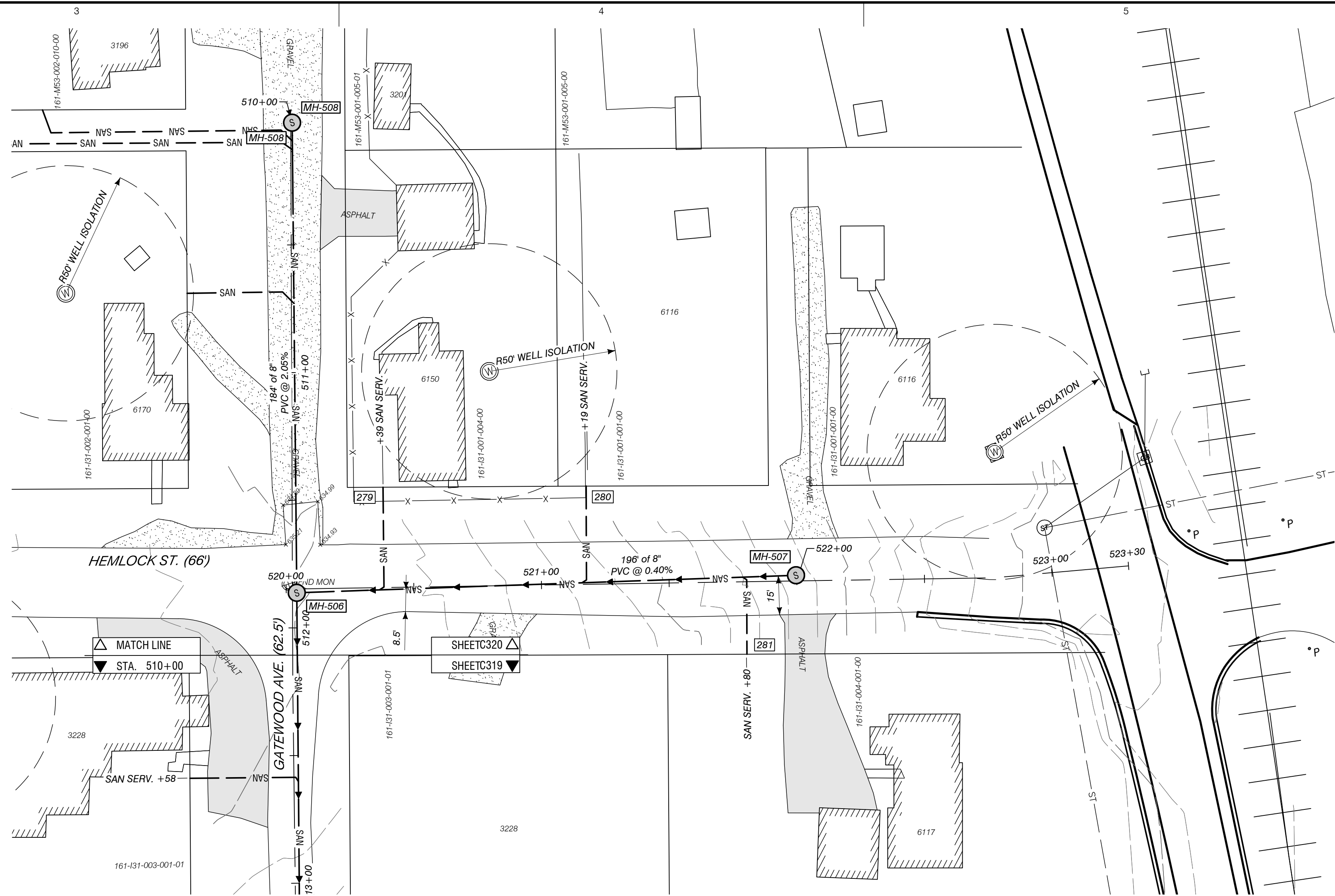
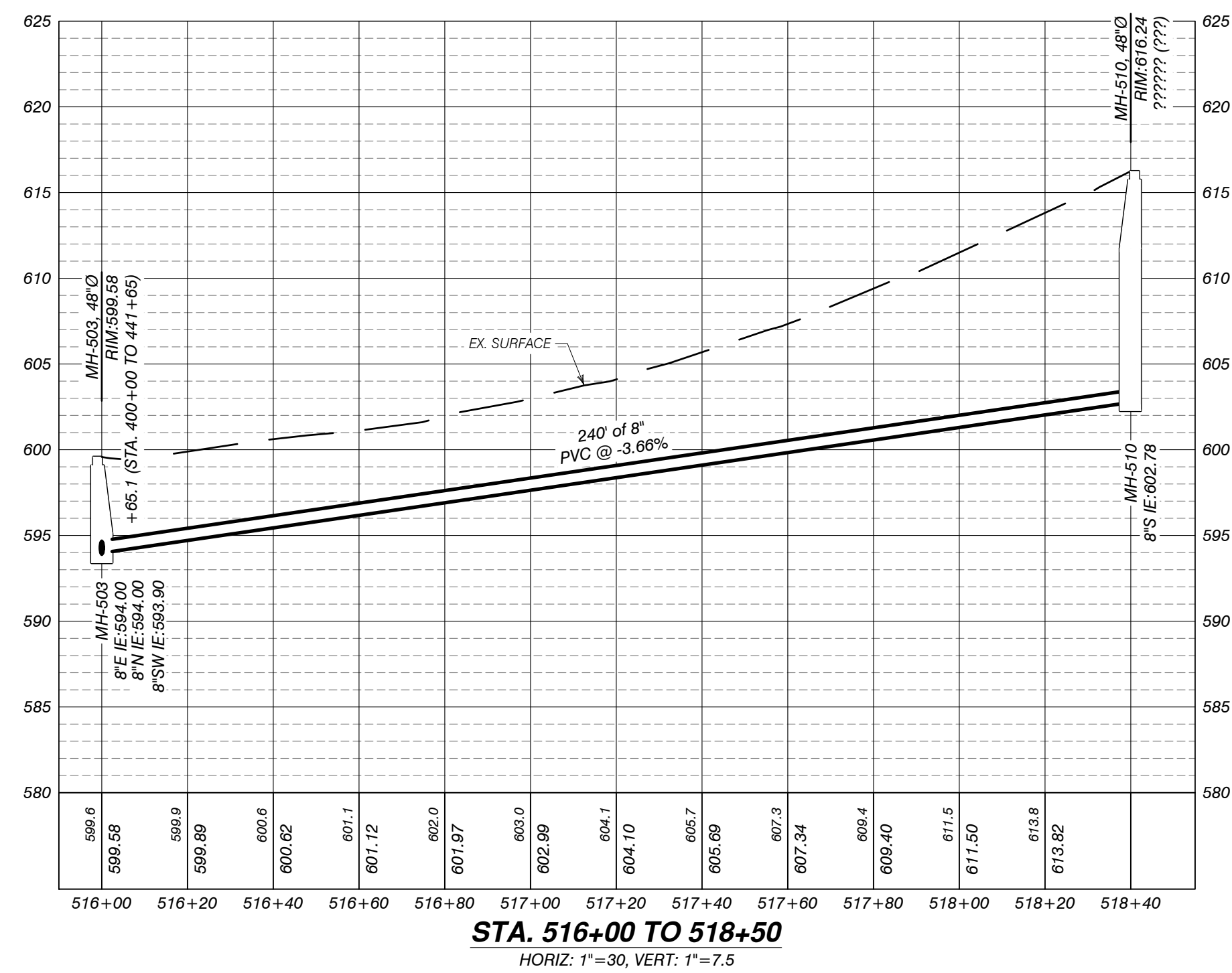
PROJECT
TUSCARORA TOWNSHIP
SANITARY SEWER EXPANSION PHASE 1
SECT. 24, T35N-R3W, INDIAN RIVER, TUSCARORA TWP., CHEBOYGAN COUNTY, MICHIGAN

SHEET
PLAN & PROFILE
STA. 510+00 TO 515+80

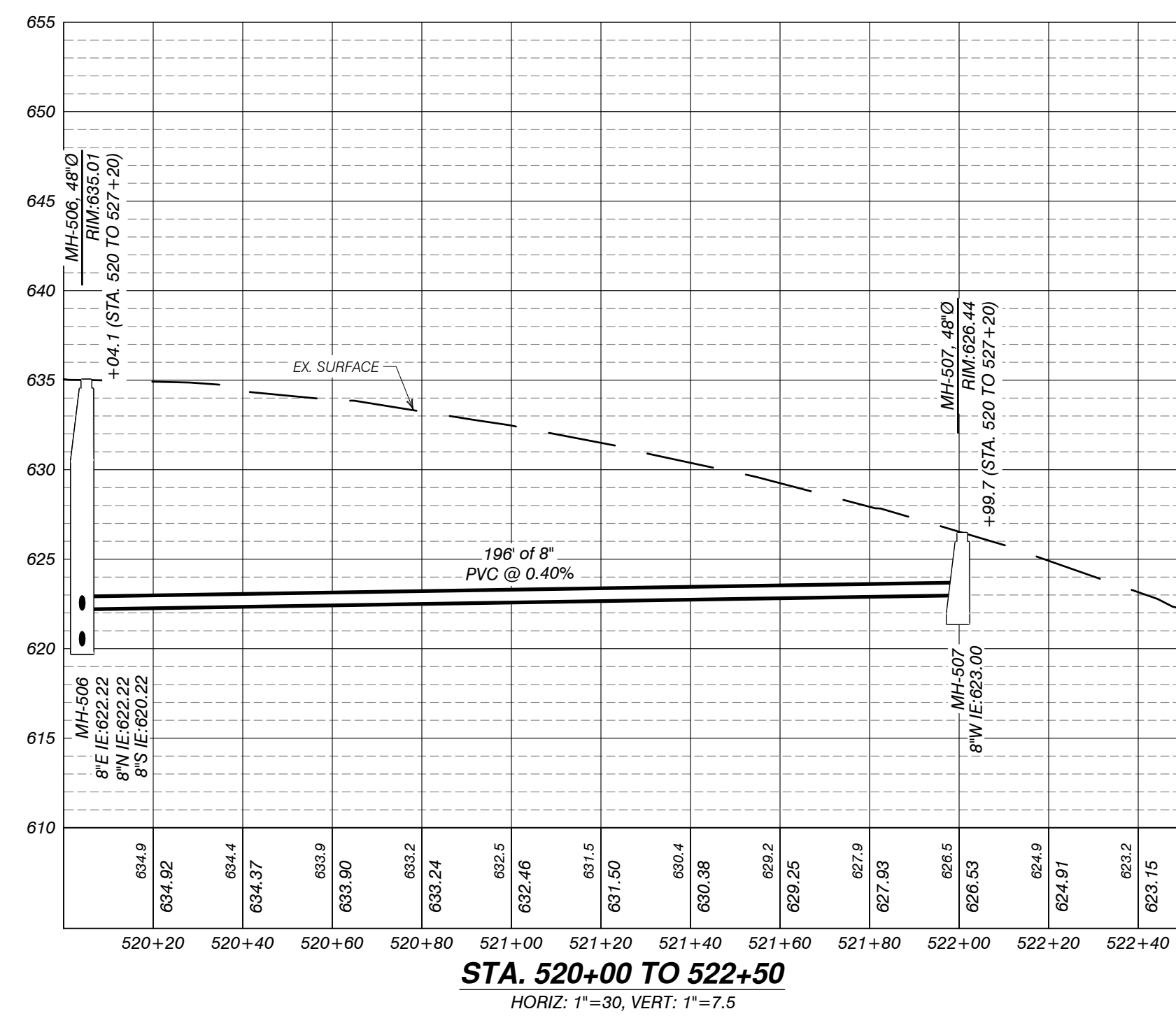
JOB NO.
22-5797
SHEET NO.
C319



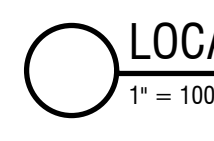
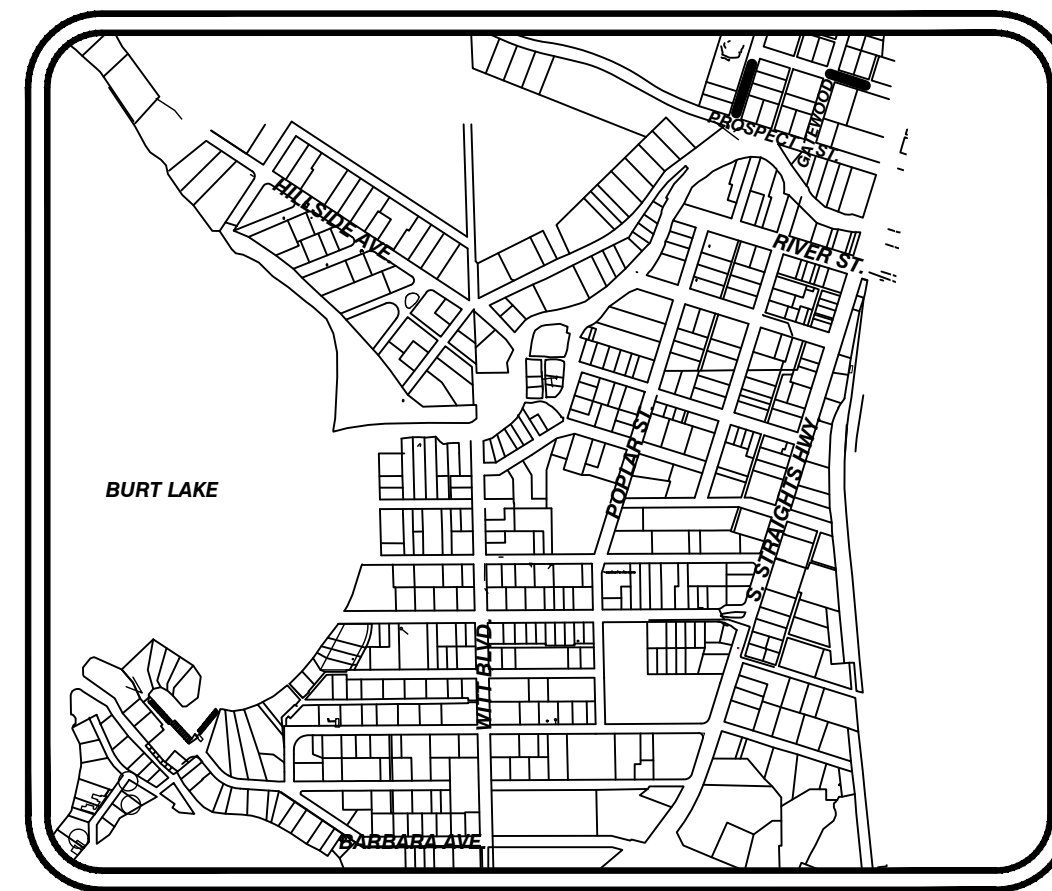
SANITARY PROFILE STA. 516+00 TO 518+50



SANITARY PROFILE STA. 520+00 TO 522+50



SAN. SERV. INFORMATION		
TAG #	HOUSE #	STA. OF WYE
272	6232	516+55
273	3383	516+57
274	3272	517+26
275	3269	518+07
276	3226	518+24
277	6197	518+33
278	6217	528+35
279	6150	5520+39
280	6116	521+19
281	6117	521+80



LOCATION MAP

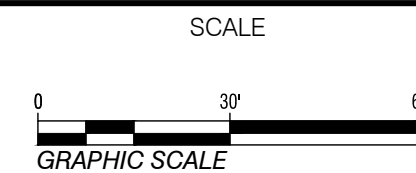
AUTH	DATE	NO.	DESCRIPTION	AUTH	DATE	NO.	DESCRIPTION
CJR	1/3/23	0	OWNER REVIEW				
PEI	5/1/23	1	PERMIT SUBMITTAL				
PEI	11/15/23	2	REVISED PER EGLLE REVIEW				

DESIGNER

P *Performance
Engineers, Inc.*

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Phone: (231) 547-2121
Fax: (231) 547-0084
■ www.performanceeng.com

OWNER
TUSCARORA
TOWNSHIP



PROJECT
TUSCARORA TOWNSHIP
SANITARY SEWER EXPANSION PHASE 1

SECT. 24, T35N-R3W, INDIAN RIVER, TUSCARORA TWP., CHEBOYGAN COUNTY, MICHIGAN

SHEET
PLAN & PROFILE
STA. 516+00 TO 518+50
STA. 520+00 TO 522+50

JOB NO.
22-5797

SHEET NO.
C320

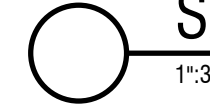
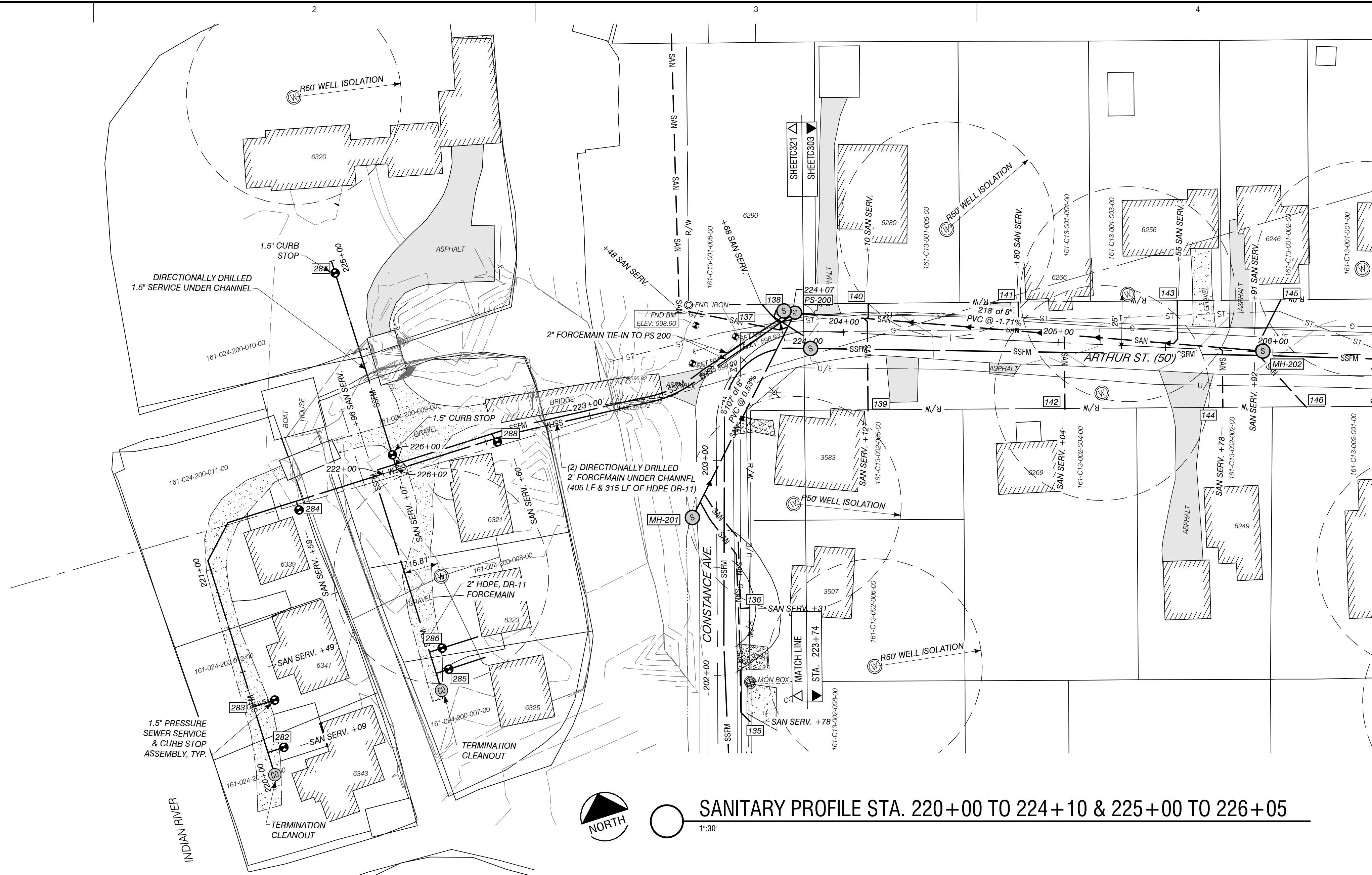
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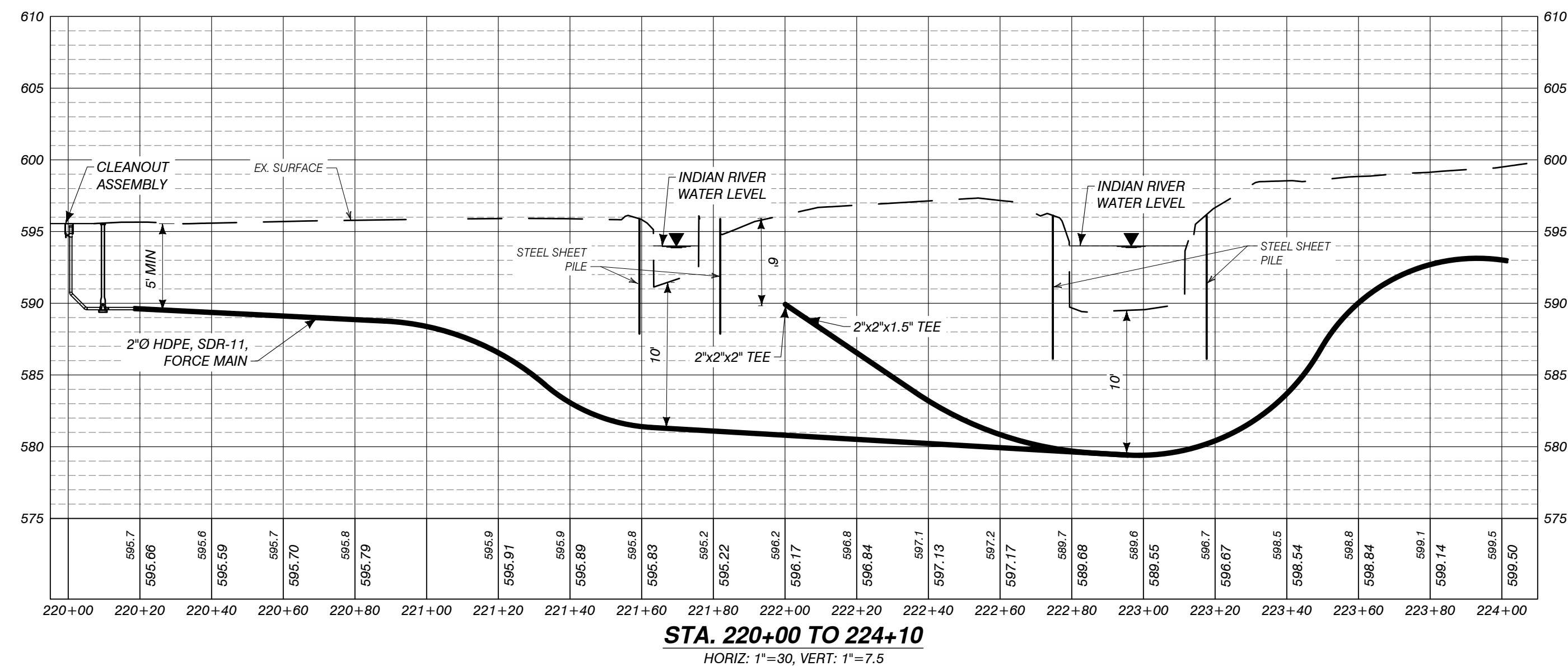
B

A

SAN. SERV. INFORMATION		
TAG #	HOUSE #	STA. OF WYE
282	6343	220+09
283	6341	220+49
284	6339	221+58
285	6325	221+96
286	6323	221+96
287	6320	220+07
288	6321	222+60

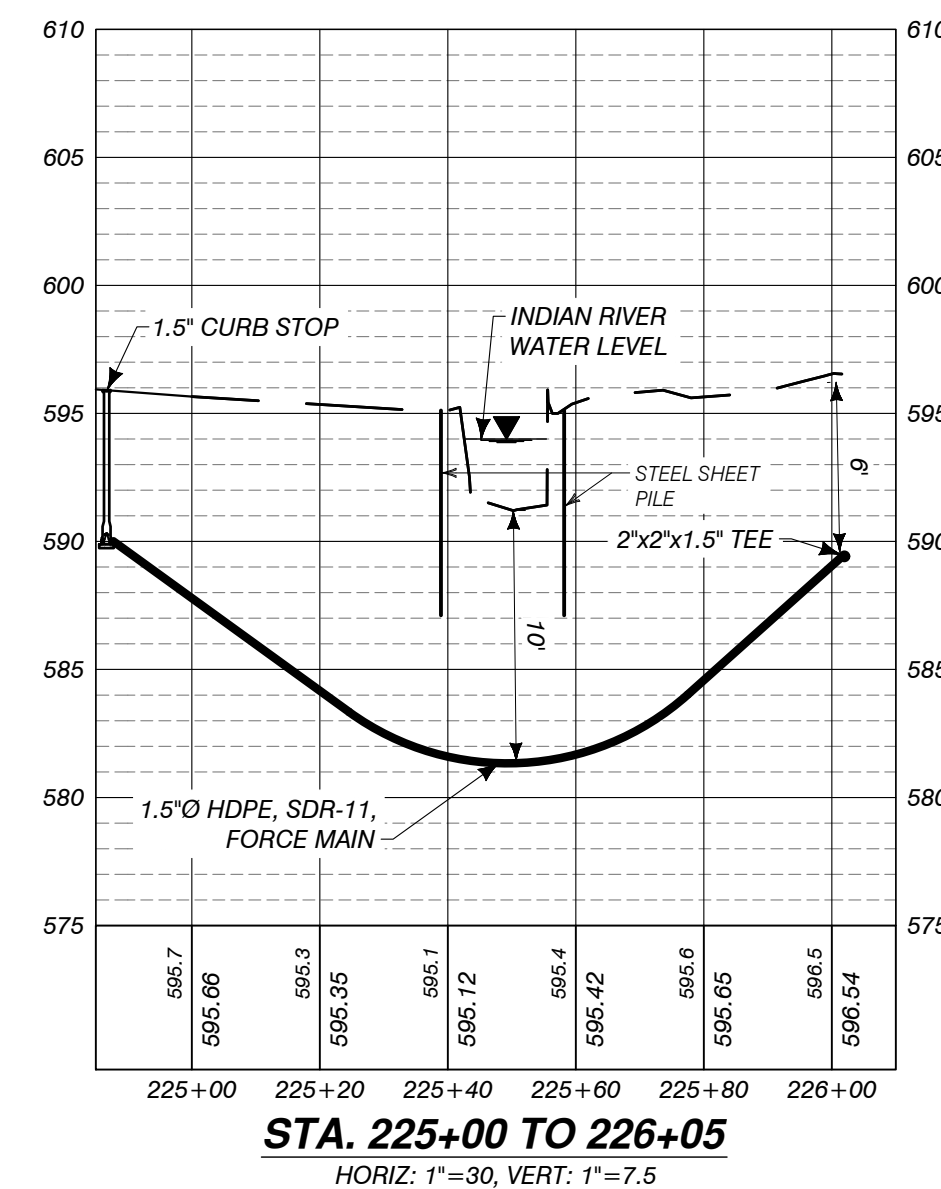


SANITARY PROFILE STA. 220+00 TO 224+10 & 225+00 TO 226+05



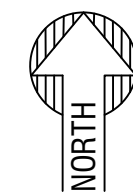
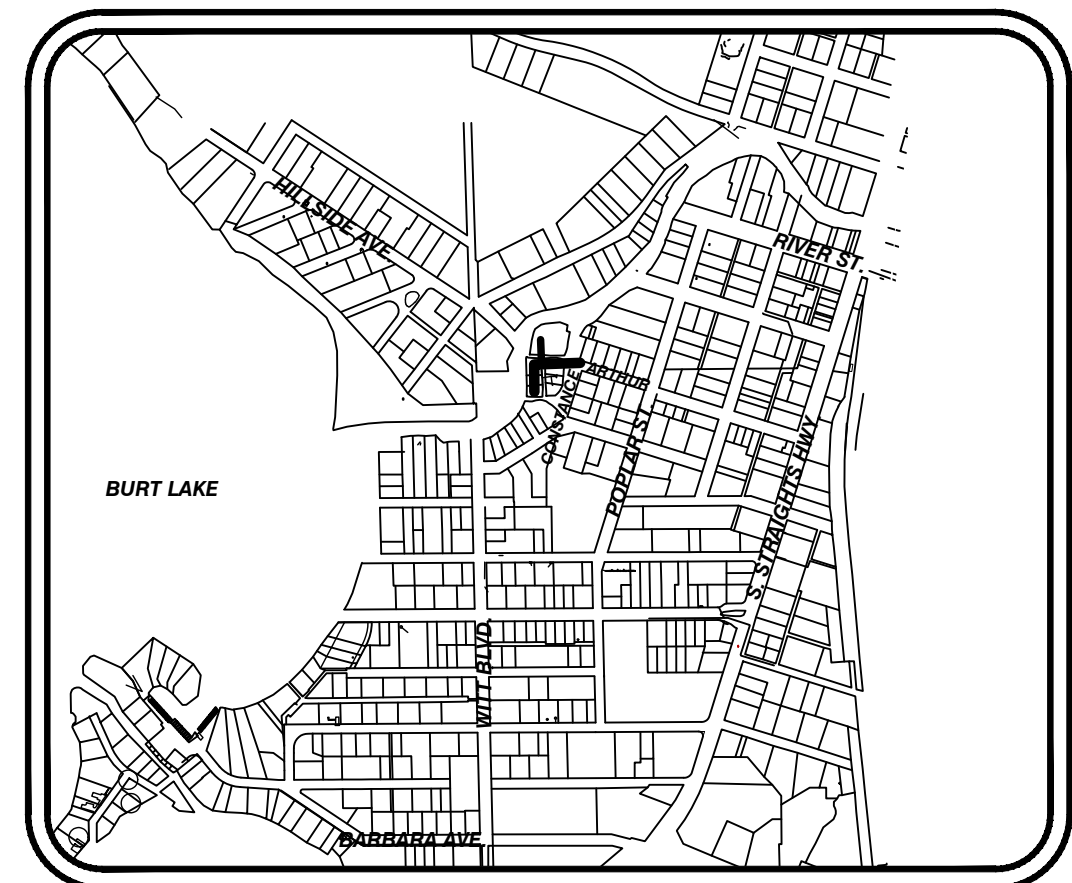
STA. 220+00 TO 224+10

HORIZ: 1"=30, VERT: 1"=7.5



STA. 225+00 TO 226+05

HORIZ: 1"=30, VERT: 1"=7.5

LOCATION MAP
1" = 1000'

AUTH	DATE	NO.	DESCRIPTION	AUTH	DATE	NO.	DESCRIPTION
CJR	1/3/23	0	OWNER REVIEW				
PEI	5/1/23	1	PERMIT SUBMITTAL				
PEI	11/15/23	2	REVISED PER EGL E REVIEW				

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OWNER
TUSCARORA TOWNSHIP

SCALE
0 30' 60'
GRAPHIC SCALE

PROJECT
**TUSCARORA TOWNSHIP
SANITARY SEWER EXPANSION PHASE 1**

SECT. 24, T35N-R3W, INDIAN RIVER, TUSCARORA TWP., CHEBOYGAN COUNTY, MICHIGAN

SHEET
PLAN & PROFILE
STA. 220+00 TO 224+10
STA. 225+00 TO 226+05

JOB NO.
22-5797
SHEET NO.
C321

C:\USERS\ARONNORDMAN\PERFORMANCE ENGINEERS - PROJECTS\5797\DRAWINGS\C401 - PLOTTED 12/9/2023 11:21 AM BY ARON NORDMAN

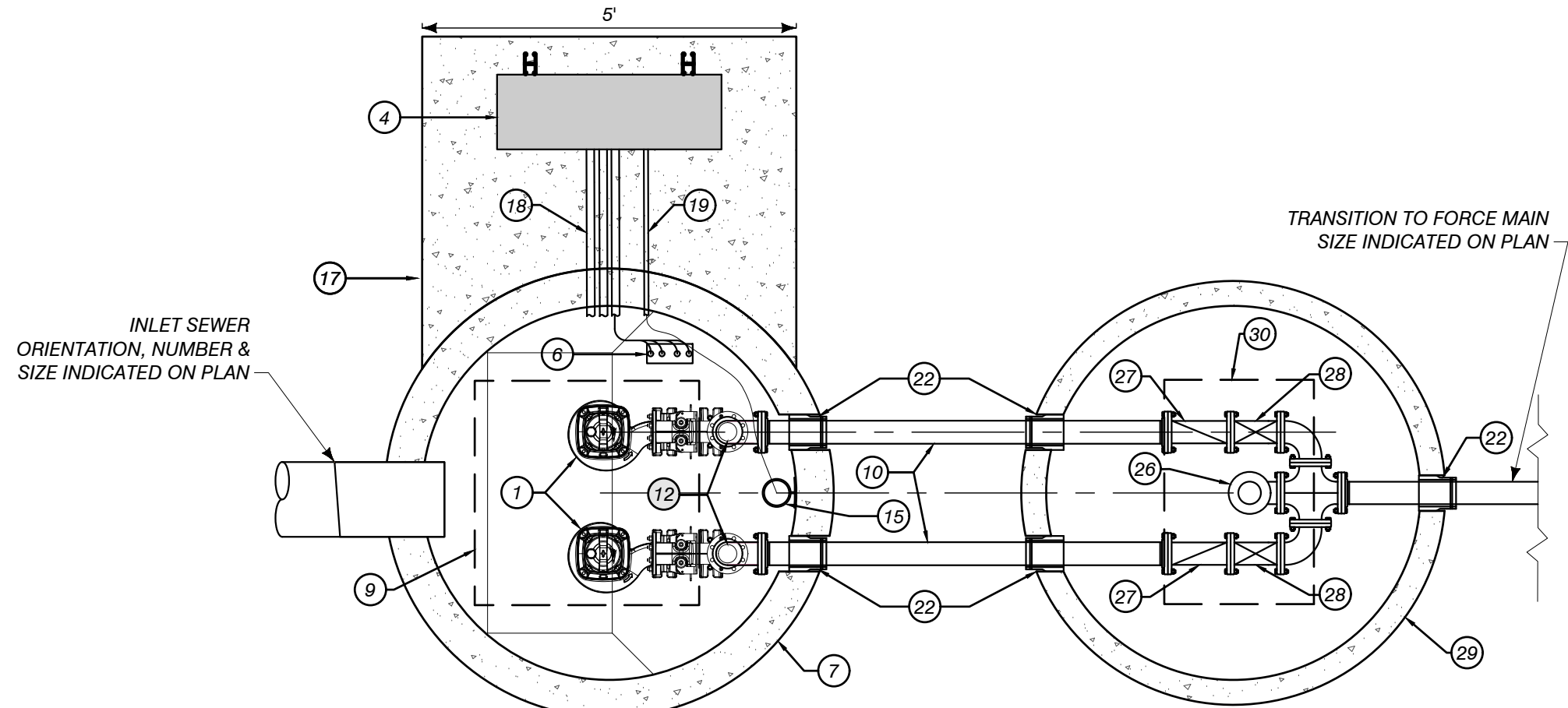
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2

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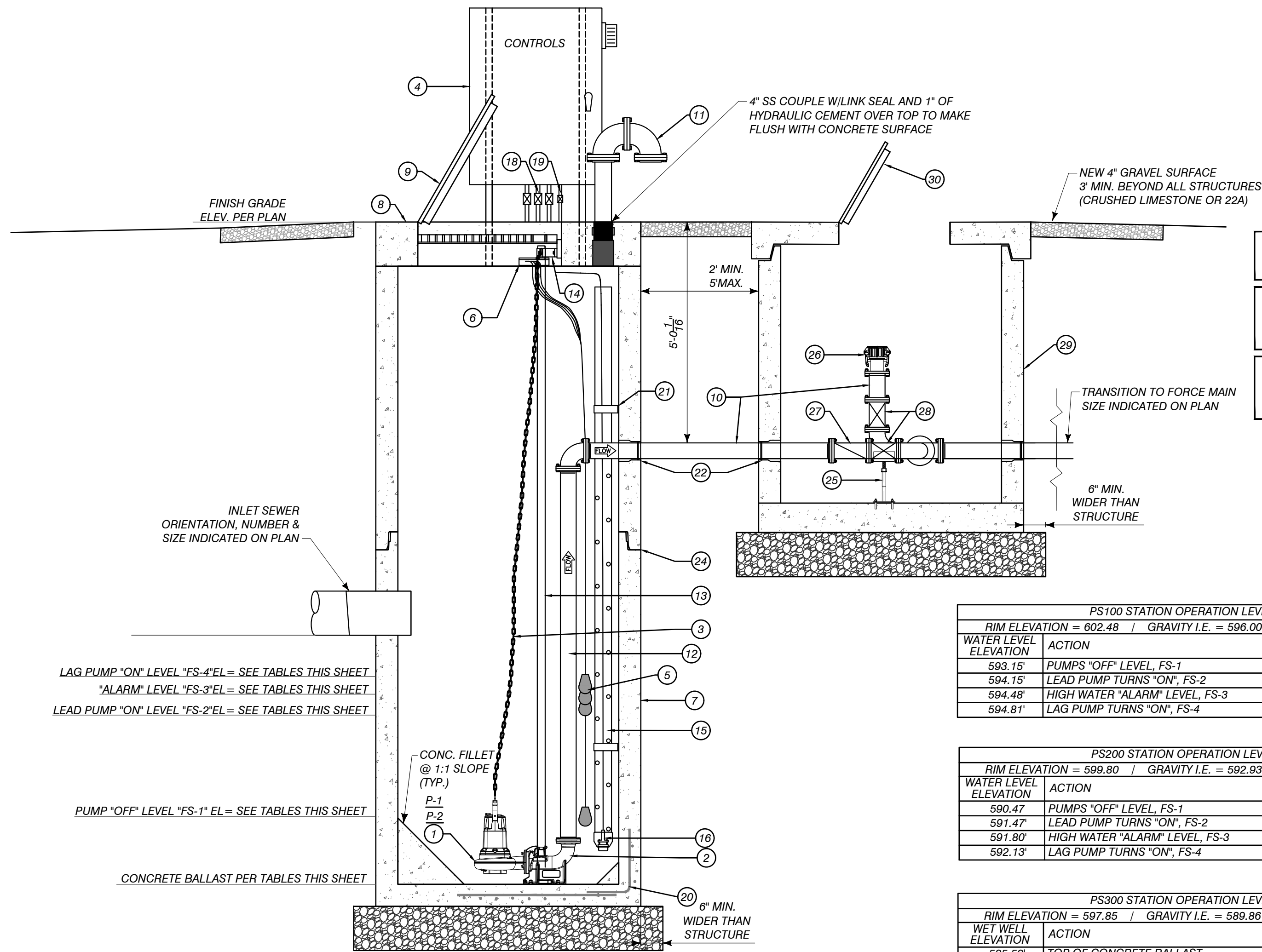
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5



LIFT STATION PLAN VIEW

NO SCALE



LIFT STATION SECTION VIEW

NO SCALE

LIFT STATION NOTES:

- ALL PUMP STATIONS WET WELL COMPONENTS SHALL BE RATED AND FULLY COMPLIANT FOR USE IN NATIONAL ELECTRIC CODE (NEC) CLASS 1, DIVISION 1, GROUP D LOCATIONS (I.E. SHALL BE EXPLOSION PROOF AND/OR INTRINSICALLY SAFE PER THE NEC).
- ALL WIRING, CABLE, AND CONDUIT IN THE STATION WET WELL SHALL FULLY COMPLY WITH THE NEC REQUIREMENTS FOR CLASS 1, DIVISION 1, GROUP D LOCATIONS.
- GAS-TIGHT CONDUIT SEALS SHALL BE PROVIDED, PER NEC REQUIREMENTS, BETWEEN THE STATION WET WELL AND CONTROL PANEL FOR ALL CONDUIT, CABLE, AND WIRING.
- IF ANY JUNCTION BOX WILL BE USED EITHER INSIDE THE SATION WET WELL OR ON THE HAZARD SIDE OF A GAS-TIGHT CONDUIT SEAL, THEN THAT JUNCTION BOX (AND ITS ASSOCIATED INTERNAL CONNECTORS, CONNECTIONS, COMPONENTS, ETC.) SHALL BE EXPLOSION PROOF AND RATED FOR NEC CLASS 1, DIVISION 1, GROUP D LOCATIONS. PLACEMENT OF JUNCTION BOXES RELATIVE TO GAS-TIGHT CONDUIT SEALS SHALL BE IN ACCORDANCE WITH NEC REQUIREMENTS.
- WHEN A JUNCTION BOX IS EITHER INSIDE OR EXPOSED TO THE NEC CLASS 1, DIVISION 1, GROUP D HAZARDOUS LOCATION, THE ELECTRIC DESIGNER WILL CERTIFY TO EGLE IN WRITING THAT THE JUNCTION BOX TYPE AND ITS LOCATION/PLACEMENT COMPLIES WITH THE NEC CLASS 1, DIVISION 1, GROUP D LOCATIONS.
- ALL PUMPING STATIONS INCLUDE WET WELL AND VALVE VAULT. SEE PLAN SHEETS FOR ORIENTATION OF PIPING IN-AND-OUT. CONTRACTOR SHALL PROVIDE CUT SHEETS PRIOR TO FABRICATION OF STRUCTURES TO ENSURE PROPER ORIENTATION AND INVERTS.
- ALL CONCRETE STRUCTURES ARE TO BE WATERPROOFED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS.
- NO STEPS ARE TO BE INSTALLED IN THE WET WELL STRUCTURES.
- CONTRACTOR SHALL COORDINATE WITH LOCAL UTILITY FOR NEW ELECTRICAL SERVICE TO PUMPING STATION. THIS WORK IS PAID UNDER THE ELECTRICAL ALLOWANCE PAY ITEM.

SERVICE LATERAL

1/2"=1'

INDIVIDUAL GRINDER PUMP DETAIL

1/2"=1'

MAINLINE CONTRACTOR NOTES:

- CONTRACTOR TO INSTALL SERVICE TAPS FOR ONLY THOSE PROPERTIES INDICATED ON THE PLAN SHEETS. FUTURE CONNECTIONS WILL HAVE TO INCLUDE THEIR OWN SERVICE TAP IN ACCORDANCE WITH THIS DETAIL (CONTACT THE SYSTEM OWNER TO COORDINATE).
- SERVICE LATERAL SHALL BE INSTALLED BY DIRECTIONAL BORE BENEATH ALL ROADS, DRIVEWAYS, TREES AND LANDSCAPING, UNLESS OTHERWISE APPROVED.
- TRACER WIRE SHALL BE #12 COPPERHEAD 1230-HS WIRE, FORMING A CONTINUOUS CONDUCTOR BETWEEN ACCESS POINTS.
- MISS DIG REQUIREMENTS: THE TRACER WIRE PIPE LOCATION SYSTEM INSTALLED WITH THE PRESSURE SEWERS SHALL BE USED FOR ALL MISS DIG IDENTIFICATION ASSIGNMENTS.

HOMEOWNER CONTRACTOR NOTES:

- CONTROL PANEL - SIMPLEX PANEL WITH ELAPSE TIMER & REMOTE ALARM TELEMTRY.
- MOUNT CONTROL PANEL WITHIN CLEAR VIEW OF PUMP STATION WITH GALV. SCREWS TO BUILDING WALL OR A 4"x8"x7' P.T. POST (WITH 3 BURY).
- GRINDER PUMP EQUIPMENT SHALL BE MANUFACTURED BY LIBERTY PUMPS INC. LSG200 (OR APPROVED EQUAL).
- FOLLOW MANUFACTURER'S INSTRUCTIONS/RECOMMENDATIONS PRIOR TO TESTING OR PLACING STATION INTO OPERATION.
- PROVIDE DR11 IPS HIGH DENSITY POLYETHYLENE TUBING IN ACCORDANCE WITH AWWA C901 FOR SERVICE LATERALS.
- ALL COMPRESSION FITTINGS SHALL HAVE INSERT STIFFENERS. IN LIEU OF COMPRESSION FITTINGS THE CONTRACTOR MAY UTILIZE PREMANUFACTURED TRANSITION FITTINGS AND BUTT FUSED CONNECTIONS.
- ALL EXISTING SEPTIC TANK AND PUMP CHAMBERS MUST BE PUMPED AND PROPERLY ABANDONED.
- INSTALLING CONTRACTOR SHALL LOCATE SURROUNDING WELLS AND MAXIMIZE ISOLATION FROM PUMP STATION TO THE GREATEST EXTENT POSSIBLE.

SPECIFICATIONS

CONCRETE:

CLASS III CONCRETE WITH DESIGN STRENGTH OF 4500 PSI AT 28 DAYS. UNIT IS OF MONOLITHIC CONSTRUCTION AT FLOOR, FIRST STAGE OF WALL AND BAFFLE WITH SECTIONAL RISER TO REQUIRED DEPTH.

REINFORCEMENT:

GRADE 60 REINFORCED WITH STEEL REBAR CONFORMING TO ASTM A615 ON REQUIRED CENTERS OR EQUAL.

ACCESS HATCH:

300 PSF RATED, LOCKABLE, SKID-RESISTANT FLOOR PLATE, STAINLESS STEEL TAMPERPROOF BOLTING & HINGES, LIFT ASSIST SHOCK & SLAMLOCK (H-20 RATING)

CONTROLS:

PUMP CONTROLS SHALL BE MOUNTED INSIDE A LOCKABLE UL LISTED NEMA-4X ENCLOSURE AND INCLUDE CIRCUIT BREAKERS, ALARM CIRCUIT FUSE, IEC RATED MOTOR STARTER, PUMP HOA, AND ALTERNATOR RELAY. PANEL SHALL HAVE AN AUDIBLE ALARM HORN AND VISUAL ALARM BEACON. PANEL IS DESIGNED FOR REMOTE MONITORING.

PUMPS:

PUMPS SHALL BE SUBMERSIBLE GRINDER PUMPS WITH 440 HARDENED STAINLESS STEEL CUTTER & PLATE. PUMPS SHALL HAVE A CAPACITY AS FOLLOWS:

ENGINEERING DATA:

PUMP No.	TYPE	GPM	TDH	RPM	HP	ELECTRICAL V	PH	Hz
PS100	GRINDER	49	46'	3450	2.0	230	1	60
PS200	GRINDER	50	27'	3450	2.0	230	1	60
PS300	GRINDER	50	39'	3450	2.0	230	1	60
PS400	GRINDER	44	56'	3450	2.0	230	1	60
PS500	GRINDER	50	38'	3450	2.0	230	1	60

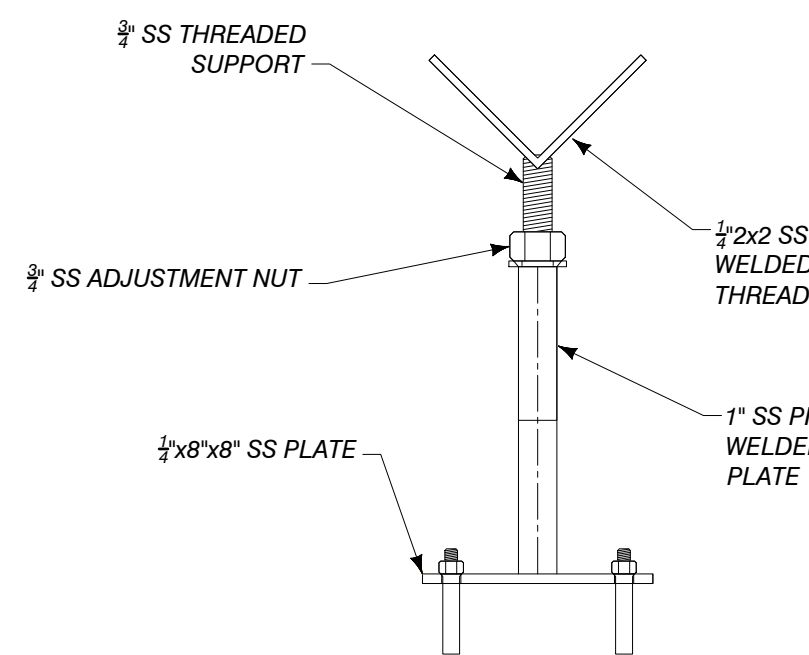
PS100 STATION OPERATION LEVELS			
RIM ELEVATION = 602.48 / GRAVITY I.E. = 596.00 / BOTTOM = 590.48			
WATER LEVEL ELEVATION	ACTION	PUMPS IN OPERATION	
593.15	PUMPS "OFF" LEVEL, FS-1	ALL PUMPS "OFF"	
594.15	LEAD PUMP TURNS "ON", FS-2	LEAD PUMP "ON"	
594.48	HIGH WATER "ALARM" LEVEL, FS-3	HIGH LEVEL ALARM "ON"	
594.81	LAG PUMP TURNS "ON", FS-4	LAG PUMP "ON"	

PS200 STATION OPERATION LEVELS			
RIM ELEVATION = 599.80 / GRAVITY I.E. = 592.93 / BOTTOM = 587.80			
WATER LEVEL ELEVATION	ACTION	PUMPS IN OPERATION	
590.47	PUMPS "OFF" LEVEL, FS-1	ALL PUMPS "OFF"	
591.47	LEAD PUMP TURNS "ON", FS-2	LEAD PUMP "ON"	
591.80	HIGH WATER "ALARM" LEVEL, FS-3	HIGH LEVEL ALARM "ON"	
592.13	LAG PUMP TURNS "ON", FS-4	LAG PUMP "ON"	

PS300 STATION OPERATION LEVELS			
RIM ELEVATION = 597.85 / GRAVITY I.E. = 589.86 / BOTTOM = 583.85			
WET WELL ELEVATION	ACTION	PUMP OPERATION	
585.52	TOP OF CONCRETE BALLAST	N/A	
587.52	PUMPS "OFF" LEVEL, FS-1	ALL PUMPS "OFF"	
588.52	LEAD PUMP TURNS "ON", FS-2	LEAD PUMP "ON"	
588.85	HIGH WATER "ALARM" LEVEL, FS-3	HIGH LEVEL ALARM "ON"	
589.18	LAG PUMP TURNS "ON", FS-4	LAG PUMP "ON"	

PS400 STATION OPERATION LEVELS			
RIM ELEVATION = 596.49 / GRAVITY I.E. = 592.00 / BOTTOM = 585.99			
WATER LEVEL ELEVATION	ACTION	PUMPS IN OPERATION	
588.66	PUMPS "OFF" LEVEL, FS-1	ALL PUMPS "OFF"	
589.66	LEAD PUMP TURNS "ON", FS-2	LEAD PUMP "ON"	
589.99	HIGH WATER "ALARM" LEVEL, FS-3	HIGH LEVEL ALARM "ON"	
590.32	LAG PUMP TURNS "ON", FS-4	LAG PUMP "ON"	

PS500 STATION OPERATION LEVELS			
RIM ELEVATION = 598.18 / GRAVITY I.E. = 593.65 / BOTTOM = 587.68			
WATER LEVEL ELEVATION	ACTION	PUMPS IN OPERATION	
590.35	PUMPS "OFF" LEVEL, FS-1	ALL PUMPS "OFF"	
591.35	LEAD PUMP TURNS "ON", FS-2	LEAD PUMP "ON"	
591.68	HIGH WATER "ALARM" LEVEL, FS-3	HIGH LEVEL ALARM "ON"	
592.01	LAG PUMP TURNS "ON", FS-4	LAG PUMP "ON"	



A5 PIPE SUPPORT

NO SCALE

AUTH	DATE	NO.	DESCRIPTION	AUTH	DATE	NO.	DESCRIPTION
-	-	0	NOT ISSUED				
PEI	5/1/23	1	PERMIT SUBMITTAL				
PEI	11/15/23	2	REVISED PER EGLE REVIEW				

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OWNER
TUSCARORA TOWNSHIP

SCALE

PROJECT
**TUSCARORA TOWNSHIP
SANITARY SEWER EXPANSION PHASE 1**

SHEET
PUMP STATION DETAILS

JOB NO.
22-5797
SHEET NO.
C401

SECT. 24, T35N-R3W, INDIAN RIVER, TUSCARORA TWP., CHEBOYGAN COUNTY, MICHIGAN