

SUNSET AVENUE SEWER RELIEF

TENTH TAX DISTRICT BERLIN WORCESTER COUNTY MARYLAND

GENERAL NOTES:

- 1) ALL WORK REQUIRED BY THESE DOCUMENTS (DRAWINGS AND SPECIFICATIONS) SHALL BE NEW. WHEREVER THE WORD "PROPOSED" IS USED IT IS CONSIDERED INTERCHANGEABLE WITH THE WORD "NEW" AND IS INCLUDED IN THE REQUIRED WORK.
- 2) ALL EXISTING CONDITIONS AND ALIGNMENTS SHOWN ARE BASED ON THE AS-BUILT CONDITIONS DRAWING PREPARED BY VISTA DESIGN, INC., AND DATED JANUARY 29, 2007. A SUPPLEMENTAL SURVEY FOR LIMITED TOPOGRAPHY AND EXISTING SUBSURFACE UTILITIES WAS PERFORMED BY CORNERSTONE SURVEYING, INC. AND DATED NOVEMBER 20, 2024. TOPOGRAPHIC AND EXISTING CONDITIONS INFORMATION IS IN THE MARYLAND STATE PLANE. ELEVATIONS SHOWN ARE IN THE NAVD88 DATUM. THE ENGINEER DOES NOT WARRANT THAT THIS INFORMATION IS ENTIRELY CORRECT. THE CONTRACTOR SHALL EXAMINE A COPY OF THE SAID SURVEY AND VISIT THE SITE IN ORDER TO DETERMINE TO HIS SATISFACTION THE QUANTITIES OF WORK REQUIRED TO BE PERFORMED.
- 3) UNLESS OTHERWISE NOTED, ALL ELEVATIONS FOR GRAVITY SANITARY SEWER AND STORM DRAIN PIPES ARE INVERTS AND ALL ELEVATIONS FOR PRESSURE WATER MAINS ARE TOP OF PIPE ELEVATIONS.
- 4) THESE DRAWINGS SHOW INFORMATION REGARDING UNDERGROUND UTILITIES WHICH EXIST ALONG THE LINES OF WORK. THE LOCATION OF UTILITIES SHOWN HAS BEEN PROVIDED FROM THE BEST AVAILABLE RECORDS AND SHALL BE VERIFIED BY THE CONTRACTOR TO HIS SATISFACTION PRIOR TO CONSTRUCTION. THE OWNER SHALL BE GIVEN NOTIFICATION BY THE CONTRACTOR PRIOR TO TEST PITTING. THE OWNER AND ENGINEER DISCLAIM ANY RESPONSIBILITY FOR THE ACCURACY OR COMPLETENESS OF SAID INFORMATION. IF THE CONTRACTOR RELIES ON SAID INFORMATION HE DOES SO AT HIS OWN RISK. THE GIVING OF THE INFORMATION ON THESE DRAWINGS DOES NOT RELIEVE THE CONTRACTOR OF HIS OBLIGATIONS TO SUPPORT AND PROTECT ALL EXISTING UTILITIES AND APPURTENANCES. SHOULD ANY EXISTING UTILITIES BE DAMAGED BY THE CONTRACTOR, THE CONTRACTOR SHALL REPAIR THE DAMAGE CAUSED, TO THE UTILITY OWNER'S SATISFACTION, AT THE CONTRACTOR'S EXPENSE.
- 5) ALL MATERIALS AND METHODS OF CONSTRUCTION SHALL CONFORM TO THESE DRAWINGS AND SPECIFICATIONS, AND TO ALL APPLICABLE REQUIREMENTS OF WORCESTER COUNTY, WORCESTER COUNTY WATER AND WASTEWATER SERVICES, WORCESTER COUNTY ROADS, MARYLAND DEPARTMENT OF TRANSPORTATION, MARYLAND DEPARTMENT OF THE ENVIRONMENT AND ARMY CORP. OF ENGINEERS.
- 6) ALL DISTURBED AREAS SHALL BE SMOOTHLY GRADED TO PROVIDE POSITIVE DRAINAGE, AWAY FROM PROPOSED STRUCTURES, AND SHALL BE STABILIZED WITH TOPSOIL, SEED AND MULCH, EXCEPT IN AREAS CALLING FOR PAVING. IF SETTLEMENT OCCURS, THE AREA OF SETTLEMENT SHALL BE RESTORED TO GRADE, RESEEDED AND REMULCHED TO THE SATISFACTION OF THE OWNER AT NO ADDITIONAL COST TO THE OWNER. THE CONTRACTOR SHALL PROVIDE SEED TYPE AS SPECIFIED.
- 7) THE CONTRACTOR SHALL ASSUME ALL RESPONSIBILITY FOR ANY DEVIATIONS FROM THESE DRAWINGS AND SPECIFICATIONS. FORTY- EIGHT HOURS NOTICE SHALL BE GIVEN TO THE ENGINEER PRIOR TO THE CONTRACTOR PERFORMING ANY TESTING.
- 8) THE CONTRACTOR SHALL PROVIDE NECESSARY STAKE OUT OF LINE AND GRADE FOR CONSTRUCTION.
- 9) THE CONTRACTOR SHALL HYDRAULICALLY TEST ALL WATER MAINS IN THE PRESENCE OF THE COUNTY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MEETING ALL REQUIREMENTS OF THIS TESTING. SHOULD ANY PORTION OF THE WORK FAIL TO MEET THE CRITERIA, THE CONTRACTOR SHALL TAKE CORRECTIVE MEASURES, AT HIS OWN EXPENSE, TO CONFORM TO THE TEST REQUIREMENTS.
- 10) THE OWNER RESERVES THE RIGHT TO AWARD OTHER CONTRACTS OR PERFORM OTHER WORK IN THE VICINITY OF WORK DESIGNATED ON THESE DRAWINGS. THE CONTRACTOR SHALL COOPERATE WITH AND COORDINATE HIS OPERATIONS WITH OTHER CONTRACTORS OR WORKMEN EMPLOYED BY THE OWNER.
- 11) NO INFORMATION REGARDING DEPTH TO ANY TEMPORARY OR PERMANENT GROUND WATER TABLE IS PROVIDED ON THESE DRAWINGS. THE CONTRACTOR SHALL INVESTIGATE TO HIS SATISFACTION THE SITE CONDITIONS REGARDING THE DEPTH TO GROUND WATER. GENERALLY, PIPING, TRENCH AND STRUCTURE CONSTRUCTION SHALL BE PROSECUTED IN A DEWATERED STATE, CONSISTENT WITH GOOD CONSTRUCTION PRACTICES. ALL EXCAVATIONS FOR MANHOLES AND OTHER CHAMBERS SHALL BE CONTINUALLY DEWATERED UNTIL THE BACKFILL OPERATION HAS BEEN COMPLETED. THE CONTRACTOR SHALL COORDINATE WITH THE OWNER FOR TEST PITTING.
- 12) IT SHALL BE DISTINCTLY UNDERSTOOD THAT FAILURE TO MENTION SPECIFICALLY ANY WORK WHICH WOULD NORMALLY BE REQUIRED TO COMPLETE THE PROJECT SHALL NOT RELIEVE THE CONTRACTOR OF HIS RESPONSIBILITY TO PERFORM SUCH WORK.
- 13) THE CONTRACTOR SHALL NOTIFY THE FOLLOWING, TWO (2) DAYS PRIOR TO BEGINNING ANY WORK SHOWN ON THESE DRAWINGS.
- A) WORCESTER COUNTY DEPARTMENT OF PUBLIC WORKS (410) 641-5251
B) MISS UTILITY (800) 441-8355
C) J. W. SALM ENGINEERING, INC. (410) 641-0126
- 14) THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE MEANS AND METHODS RESULTING FROM ANY EARTH MOVING AND/OR TEMPORARY STOCKPILING OF EARTH OR OTHER MATERIALS ON SITE.
- 15) THESE DRAWINGS, THE DESIGN AND CONSTRUCTION FEATURES DISCLOSED ARE PROPRIETARY TO J. W. SALM ENGINEERING, INC. AND SHALL NOT BE ALTERED OR REUSED WITHOUT WRITTEN PERMISSION. COPYRIGHT, LATEST DATE HEREON. ANY DRAWING, REPRODUCTION, PLOT, ETC., WITHOUT A WET INK SIGNATURE AND SEAL IS NOT CERTIFIED BY J.W. SALM ENGINEERING AS TO ACCURACY AND AUTHENTICITY.
- 16) TRENCH COMPACTION FOR ALL UTILITIES SHALL BE AS FOLLOWS:
- A. FOR AREAS WITHIN THE ROAD OR DRIVEWAY AREA: 95% OF MODIFIED PROCTOR DENSITY AT +/- 2 % OF OPTIMUM MOISTURE CONTENT.
B. FOR NON-ROAD OR PARKING AREAS: 90% OF MODIFIED PROCTOR DENSITY AT +/- 3% OF OPTIMUM MOISTURE CONTENT.
C. CONTRACTOR SHALL SEGREGATE EXCAVATION AND/OR DRY EXCAVATED MATERIAL IF COMPACTION CANNOT BE OBTAINED DUE TO MATERIAL OR MOISTURE CONTENT.
- 17) THE CONTRACTOR SHALL PRESSURE TEST AND CHLORINATE AND TEST ALL WATER MAINS IN THE PRESENCE OF THE OWNER, IN ACCORDANCE WITH WORCESTER COUNTY STANDARDS. COPIES OF ALL TEST REPORTS, INCLUDING, BACTERIOLOGICAL TESTING, SHALL BE PROVIDED TO THE OWNER.
- 18) THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL TRAFFIC CONTROL.

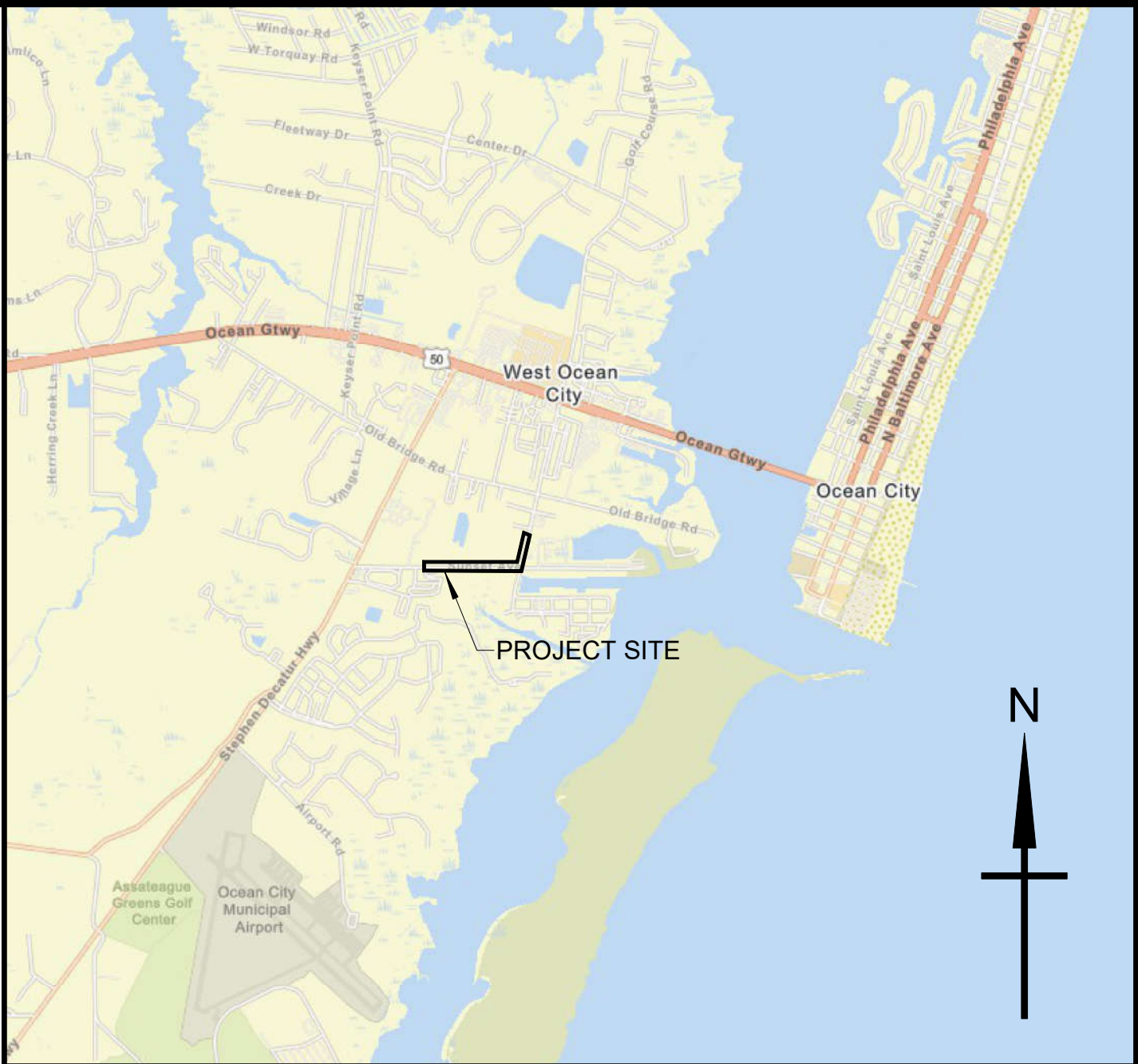
LEGEND:

EXISTING FEATURES

RIGHT OF WAY	
LOT LINE	
EDGE OF PAVEMENT	
EDGE OF GRAVEL	
POND	
CURB	
FENCE	
UNDERGROUND GAS	
UNDERGROUND ELECTRIC	
UNDERGROUND COMMUNICATIONS	
CULVERT PIPE, STORM DRAIN INLET	
WATER MAIN	
SEWER FORCE MAIN, CLEANOUT	
GRAVITY SANITARY SEWER, MANHOLE	
BUILDING	
ELECTRIC POLE	
FIRE HYDRANT	

PROPOSED FEATURES

SEWER FORCE MAIN, PLUG VALVE	
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VICINITY MAP

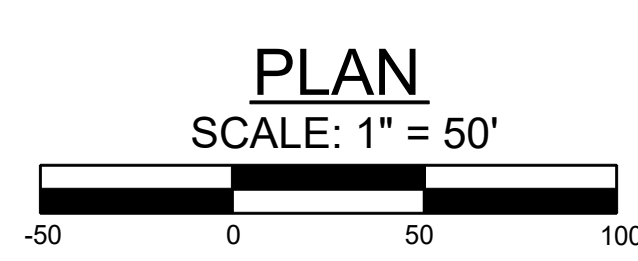
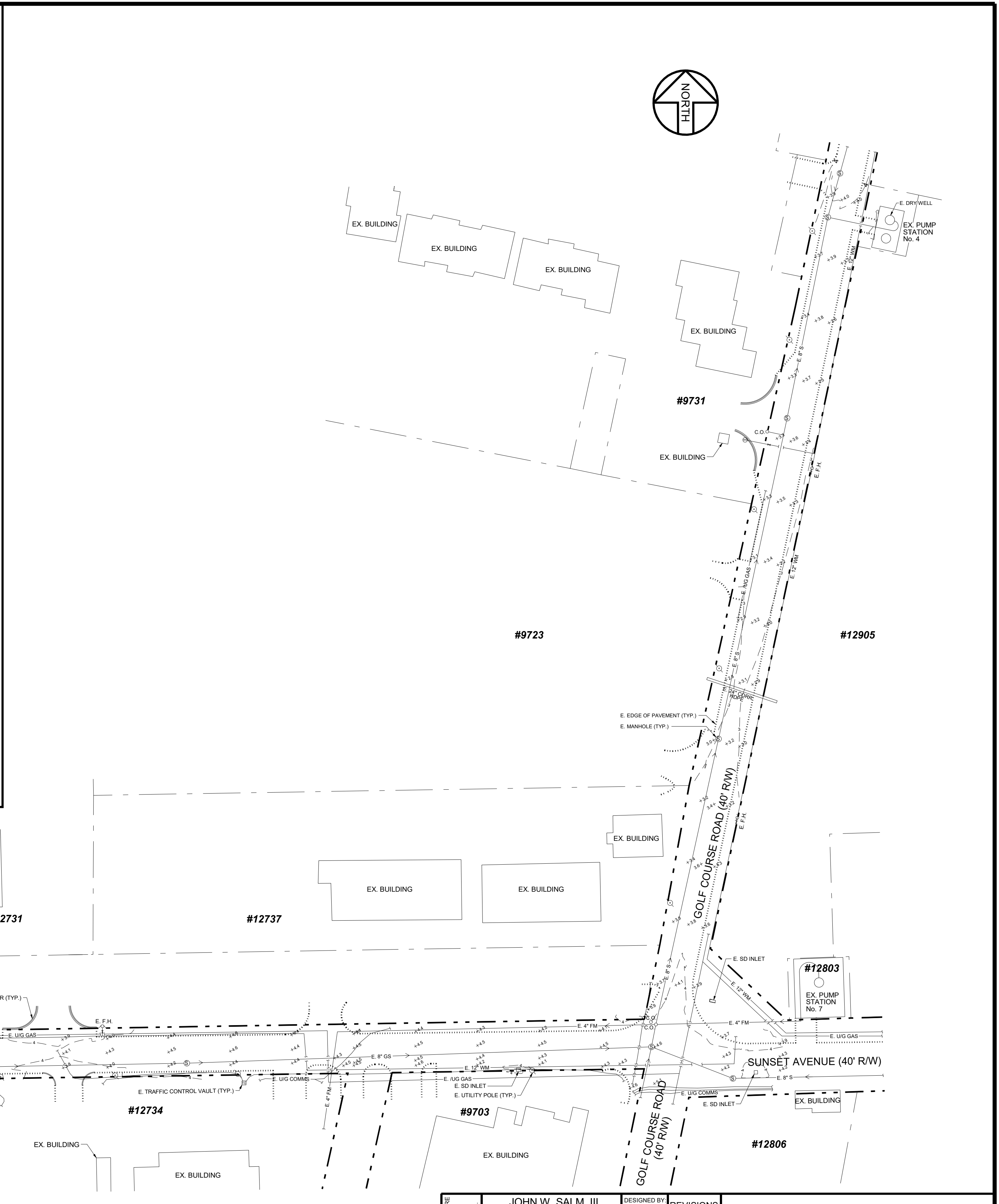
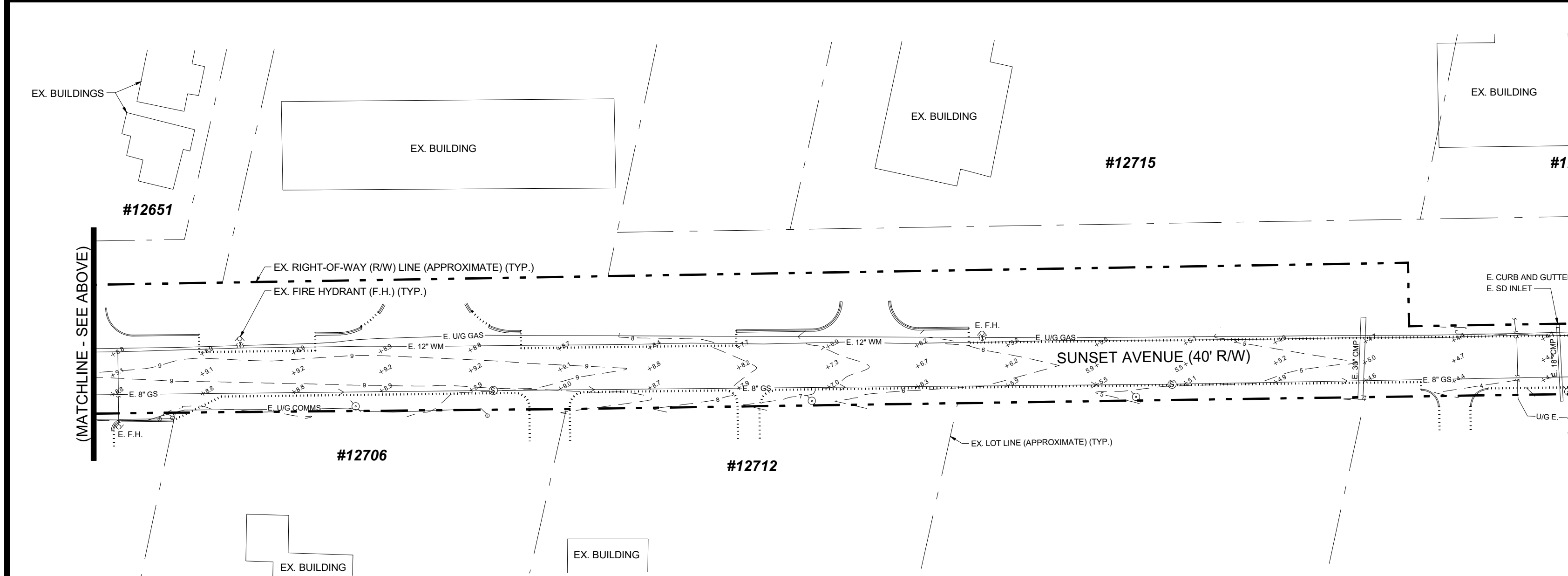
SCALE : 1 " = 2,000'

INDEX OF DRAWINGS:

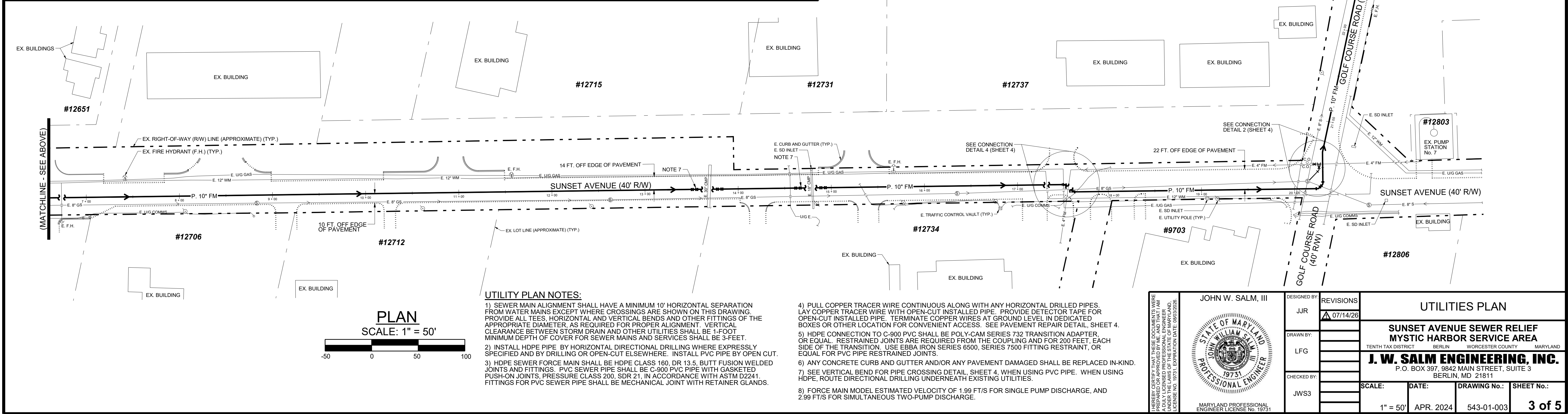
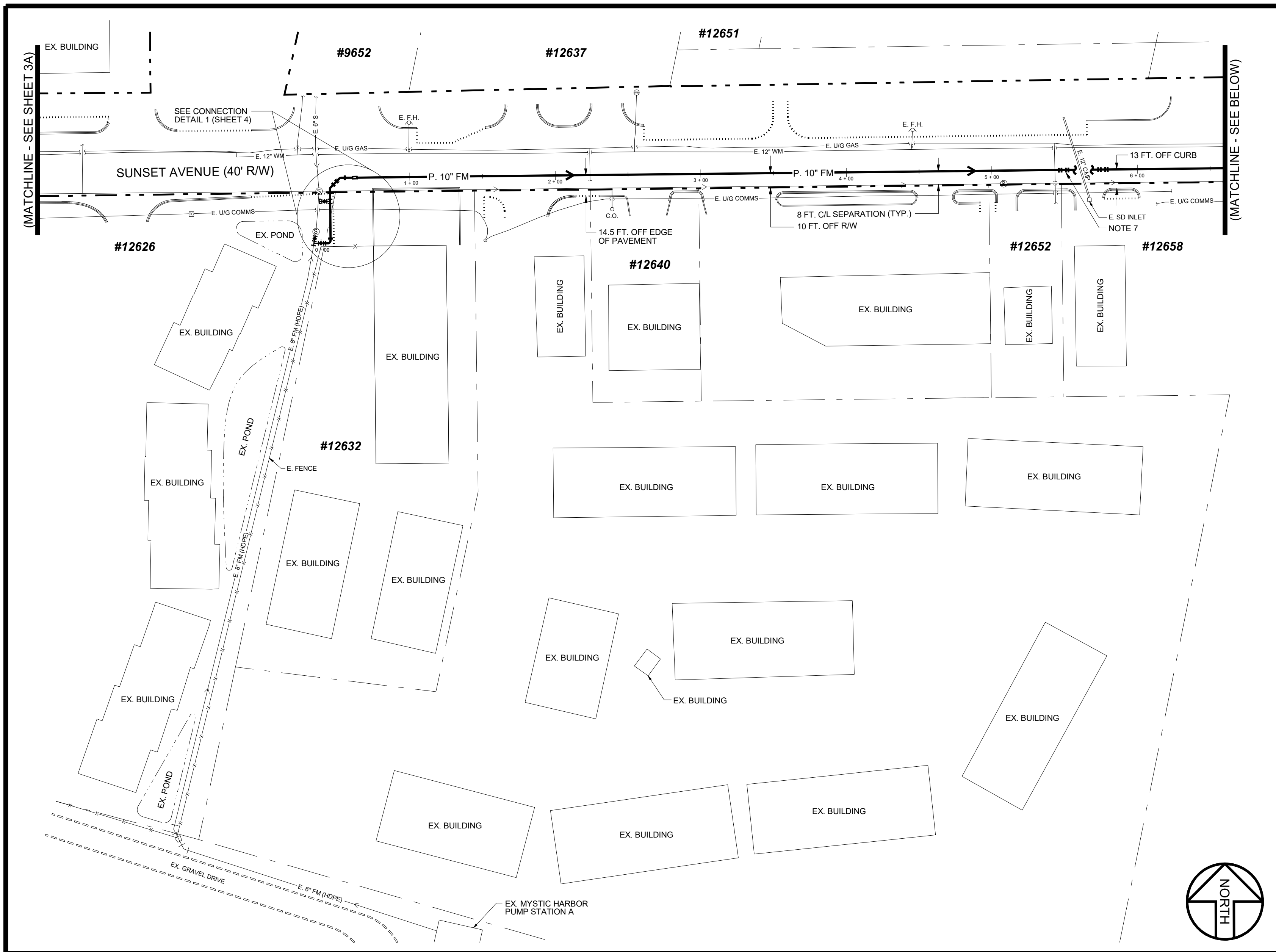
DRAWING No.:	SHEET No.:	TITLE
543-01-001	1 of 5	COVER SHEET, NOTES, LEGEND, INDEX, AND VICINITY MAP
543-01-002	2 of 5	EXISTING CONDITIONS PLAN
543-01-003	3 of 5	UTILITIES PLAN
543-01-004	4 of 5	DETAILS AND NOTES
543-01-005	5 of 5	FORCE MAIN PROFILES

OWNER/APPLICANT/DEVELOPER: WORCESTER COUNTY DEPARTMENT OF PUBLIC WORKS 6113 TIMMONS ROAD SNOW HILL, MD 21863 PHONE : 410.632.5623	ENGINEER: J. W. SALM ENGINEERING, INC. P.O. BOX 397, 9842 MAIN STREET, SUITE 3 BERLIN, MD 21813 PHONE : 410.641.0126	SURVEYOR: CORNERSTONE SURVEYING, INC. 38843 WISTERIA LANE SELBYVILLE, DE 19975 PHONE : 302.436.5810
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THE WATER AND/OR SEWER FACILITIES TO BE CONSTRUCTED IN ACCORDANCE WITH THESE PLANS ARE APPROVED BY WORCESTER COUNTY WATER AND WASTEWATER SERVICES. DIRECTOR WO. CO., WATER & WASTEWATER SERVICES	DESIGNED BY JJR	REVISIONS	COVER SHEET, NOTES, LEGEND, INDEX AND VICINITY MAP
THE WATER AND/OR SEWER FACILITIES TO BE CONSTRUCTED IN ACCORDANCE WITH THESE PLANS ARE APPROVED BY WORCESTER COUNTY DEPARTMENT OF PUBLIC WORKS. DIRECTOR WO. CO., DEPARTMENT OF PUBLIC WORKS	DRAWN BY LFG		SUNSET AVENUE SEWER RELIEF MYSTIC HARBOR SERVICE AREA TENTH TAX DISTRICT BERLIN WORCESTER COUNTY MARYLAND J. W. SALM ENGINEERING, INC. P.O. BOX 397, 9842 MAIN STREET, SUITE 3 BERLIN, MD 21811
	CHECKED BY JWS3		SCALE: NO SCALE DATE: APR. 2024 DRAWING No.: 543-01-001 SHEET No.: 1 of 5



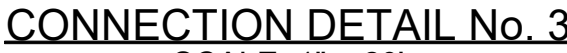
WE HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND. LICENSE NO. 19731 EXPIRATION DATE 08/03/2026	DESIGNED BY	REVISIONS	EXISTING CONDITIONS PLAN		
	JJR		SUNSET AVENUE SEWER RELIEF MYSTIC HARBOR SERVICE AREA TENTH TAX DISTRICT BERLIN WORCESTER COUNTY MARYLAND J. W. SALM ENGINEERING, INC. P.O. BOX 397, 9842 MAIN STREET, SUITE 3 BERLIN, MD 21811		
	DRAWN BY:				
	LFG				
CHECKED BY:	JWS3	DATE:	SCALE:	DRAWING No.:	SHEET No.:
		APR. 2024	1" = 50'	543-01-002	2 of 5



UTILITY PLAN NOTES:

- SEWER MAIN ALIGNMENT SHALL HAVE A MINIMUM 10' HORIZONTAL SEPARATION FROM WATER MAINS EXCEPT WHERE CROSSINGS ARE SHOWN ON THIS DRAWING. PROVIDE ALL TEES, HORIZONTAL AND VERTICAL BENDS AND OTHER FITTINGS OF THE APPROPRIATE DIAMETER, AS REQUIRED FOR PROPER ALIGNMENT. VERTICAL CLEARANCE BETWEEN STORM DRAIN AND OTHER UTILITIES SHALL BE 1-FOOT MINIMUM DEPTH OF COVER FOR SEWER MAINS AND SERVICES SHALL BE 3-FEET.
- INSTALL HDPE PIPE BY HORIZONTAL DIRECTIONAL DRILLING WHERE EXPRESSLY SPECIFIED AND BY DRILLING OR OPEN-CUT ELSEWHERE. INSTALL PVC PIPE BY OPEN CUT.
- HDPE SEWER FORCE MAIN SHALL BE HDPE CLASS 160, DR 13.5, BUTT FUSION WELDED JOINTS AND FITTINGS. PVC SEWER PIPE SHALL BE C-900 PVC PIPE WITH GASKETED PUSH-ON JOINTS, PRESSURE CLASS 200, SDR 21, IN ACCORDANCE WITH ASTM D2241. FITTINGS FOR PVC SEWER PIPE SHALL BE MECHANICAL JOINT WITH RETAINER GLANDS.
- PULL COPPER TRACER WIRE CONTINUOUS ALONG WITH ANY HORIZONTAL DRILLED PIPES. LAY COPPER TRACER WIRE WITH OPEN-CUT INSTALLED PIPE. PROVIDE DETECTOR TAPE FOR OPEN-CUT INSTALLED PIPE. TERMINATE COPPER WIRES AT GROUND LEVEL IN DEDICATED BOXES OR OTHER LOCATION FOR CONVENIENT ACCESS. SEE PAVEMENT REPAIR DETAIL, SHEET 4.
- HDPE CONNECTION TO C-900 PVC SHALL BE POLY-CAM SERIES 732 TRANSITION ADAPTER, OR EQUAL. RESTRAINED JOINTS ARE REQUIRED FROM THE COUPLING AND FOR 200 FEET. EACH SIDE OF THE TRANSITION. USE EBBA IRON SERIES 6500, SERIES 7500 FITTING RESTRAINT, OR EQUAL FOR PVC PIPE RESTRAINED JOINTS.
- ANY CONCRETE CURB AND GUTTER AND/OR ANY PAVEMENT DAMAGED SHALL BE REPLACED IN-KIND.
- SEE VERTICAL BEND FOR PIPE CROSSING DETAIL, SHEET 4, WHEN USING PVC PIPE. WHEN USING HDPE, ROUTE DIRECTIONAL DRILLING UNDERNEATH EXISTING UTILITIES.
- FORCE MAIN MODEL ESTIMATED VELOCITY OF 1.99 FT/S FOR SINGLE PUMP DISCHARGE, AND 2.99 FT/S FOR SIMULTANEOUS TWO-PUMP DISCHARGE.

WE HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND. LICENSE NO. 19731 EXPIRATION DATE 06/30/2026	DESIGNED BY	REVISIONS	UTILITIES PLAN		
	JJR	07/14/26			
	DRAWN BY	LFG	SUNSET AVENUE SEWER RELIEF MYSTIC HARBOR SERVICE AREA TENTH TAX DISTRICT BERLIN WORCESTER COUNTY MARYLAND J. W. SALM ENGINEERING, INC. P.O. BOX 397, 9842 MAIN STREET, SUITE 3 BERLIN, MD 21811		
	CHECKED BY	JWS3			
JOHN W. SALM, III MARYLAND PROFESSIONAL ENGINEER LICENSE No. 19731		SCALE:	DATE:	DRAWING No.:	SHEET No.:
		1" = 50'	APR. 2024	543-01-003	3 of 5

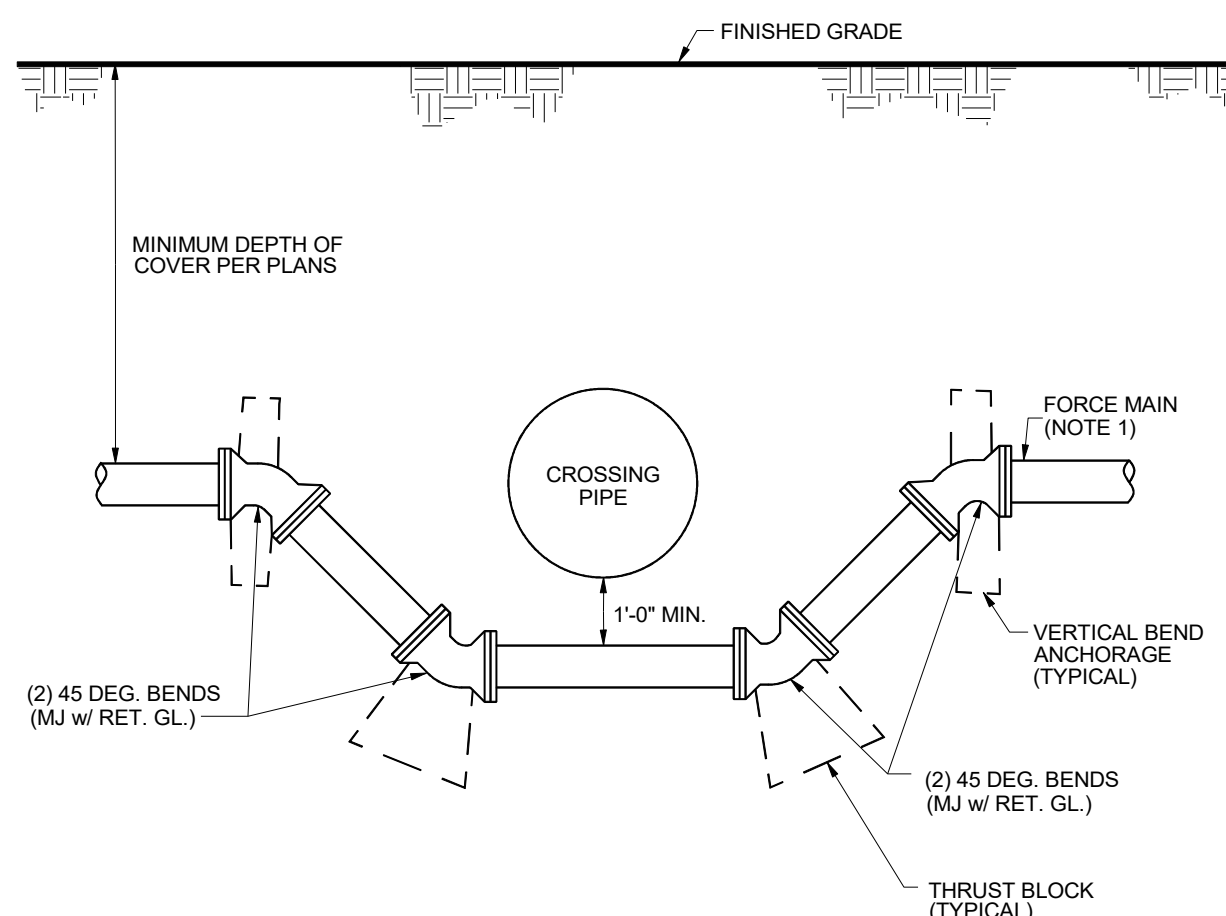


DIAMETER (d) OF PIPE		6" OR LESS	8"	12" OR GREATER
HOR. ANGLE: 	A.	0.75 FT SQUARE	1.0 FT SQUARE	1.5 FT SQUARE
HOR. ANGLE: 	A.	1.0 FT SQUARE	1.5 FT SQUARE	2.0 FT SQUARE
TEE CONNECTION: 	A.	1.5 FT SQUARE	1.75 FT SQUARE	2.5 FT SQUARE
VERTICAL BEND IN BAR: 	A.	2.0 FT	3.0 FT	4.0 FT
VERTICAL BEND IN BAR: 	B.	1.0 FT	1.5 FT	3.0 FT
PLUG: 	A.	1.25 FT SQUARE	1.5 FT SQUARE	2.5 FT SQUARE
WYES: 	A.	1.5 FT SQUARE	1.6 FT SQUARE	

NOTES:

- 1) ALL HORIZONTAL BENDS SHALL HAVE CONCRETE THRUST BLOCKS WITH A MINIMUM BEARING AREAS AGAINST UNDISTURBED SOIL. AS SHOWN IN THIS DRAWING.
- 2) BEARING AREAS ARE BASED UPON UNDISTURBED SOIL WITH A MINIMUM BEARING CAPACITY OF 0.5 TONS PER SQUARE FOOT. FOR WEAKER SOIL CAPACITY, THESE AREAS SHALL BE INCREASED ACCORDINGLY.
- 3) THRUST BLOCKS SHALL BE POURED DIRECTLY AGAINST TRENCH WALLS.
- 4) NO JOINT SHALL BE COVERED WITH CONCRETE.
- 5) CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 2,500 P.S.I.

THRUST BLOCK DETAIL (REF. AWWA C600)
NOT TO SCALE



NOTES:

- 1) DIAMETER PER PLANS.
- 2) UNLESS OTHERWISE NOTED, WATER MAINS SHALL CROSS OVER GRAVITY SEWERS AND UNDER STORM DRAIN PIPES.

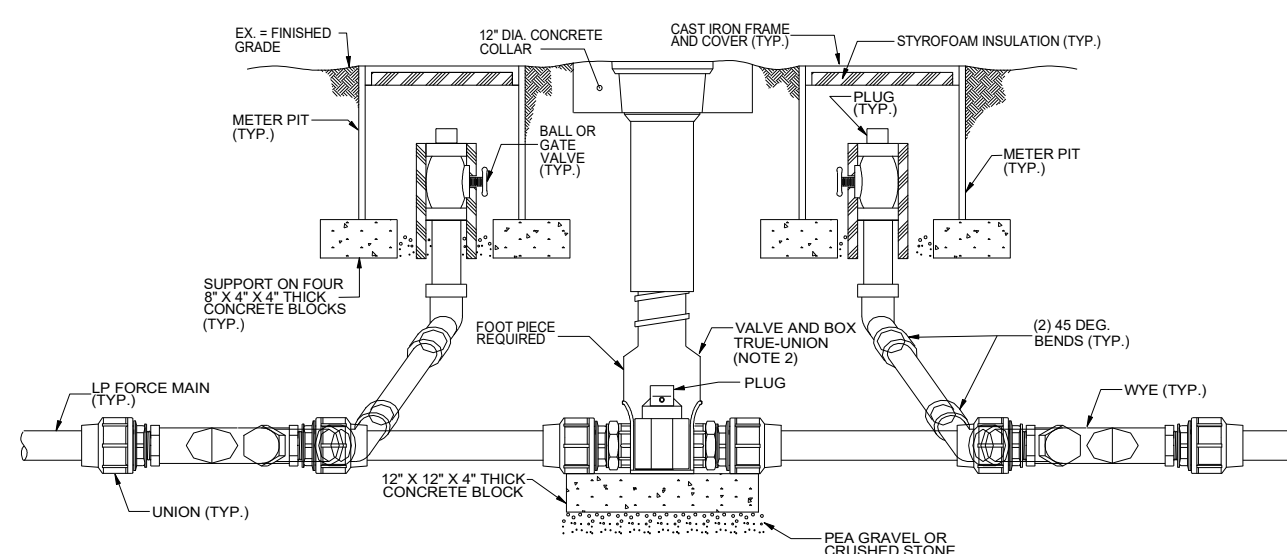
VERTICAL BEND DETAIL FOR PIPE CROSSINGS
NOT TO SCALE

TAKEN FROM COUNTY STANDARD DETAIL W-6



NOTES:

- 1) PAVEMENT REPAIR SHALL BE PERFORMED TO THE SATISFACTION OF WORCESTER COUNTY AND THE ENGINEER.
- 2) CONTRACTOR SHALL MEET ON-SITE WITH WORCESTER COUNTY DEPARTMENT OF PUBLIC WORKS, ROADS DIVISION AND THE ENGINEER PRIOR TO PERFORMING ANY WORK ON COUNTY ROADS.
- 3) ALL BACKFILL AND COMPACTION SHALL BE PERFORMED ONLY IN THE PRESENCE OF THE ENGINEER OR A REPRESENTATIVE OF THE WORCESTER COUNTY DEPARTMENT OF PUBLIC WORKS, ROADS DIVISION.
- 4) DETECTOR TAPE WILL BE PROVIDED FOR WATER, LP SEWER AND GRAVITY SEWER PIPE. TRACER WIRE WILL BE PROVIDED FOR WATER AND LP SEWER.
- 5) SELECT BORROW REQUIRED FOR ROAD LOCATIONS.



NOTES:

- 1) FORCE MAIN DIAMETER SHALL BE AS SHOWN ON PLANS.
- 2) USE CURB STOP VALVE FOR LINE SIZES, 2-INCHES AND BELOW. USE CAST-IRON GATE VALVE OR PLUG VALVE WITH MECHANICAL JOINT WITH RETAINER GLAND ENDS FOR LINE SIZES 3-INCHES AND LARGER.

TYPICAL LP SEWER IN - LINE FLUSHING CLEANOUT
NOT TO SCALE

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE
PREPARED OR APPROVED BY ME, AND THAT I AM
A DULY LICENSED PROFESSIONAL ENGINEER



DESIGNED BY: JJR	REVISIONS A 07/14/2011
DRAWN BY: LFG	
CHECKED BY: JWS3	

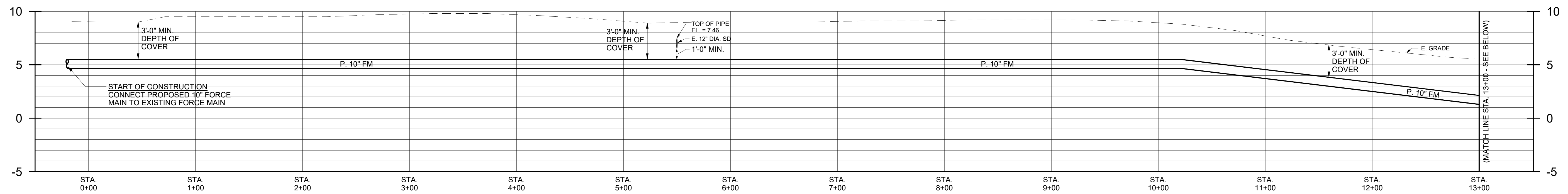
DETAILS AND NOTES

**SUNSET AVENUE SEWER RELIEF
MYSTIC HARBOR SERVICE AREA**

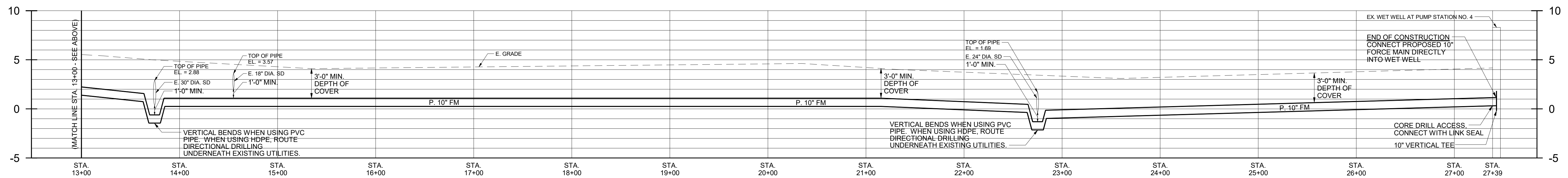
H TAX DISTRICT	BERLIN	WORCESTER COUNTY	MARYLAND
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W. SALM ENGINEERING, INC.
P.O. BOX 397, 9842 MAIN STREET, SUITE 3
BERLIN, MD 21811

SCALE:	DATE:	DRAWING No.:	SHEET No.:
AS SHOWN	APR. 2024	543-01-004	4 of 5



FORCE MAIN PROFILE STA. 0+00 TO 13+00
H: 1" = 50' & V: 1" = 5'



FORCE MAIN PROFILE STA. 13+00 TO 27+39
H: 1" = 50' & V: 1" = 5'

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED BY ME OR UNDER MY CLOSE PERSONAL SUPERVISION AND THAT I AM A FULLY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND. LICENSE NO. 19731 EXPIRATION DATE: 08/31/2028.	JOHN W. SALM, III	DESIGNED BY: JJR	REVISIONS 07/14/26	FORCE MAIN PROFILES	
		DRAWN BY: LFG			
		CHECKED BY: JWS3			J. W. SALM ENGINEERING, INC. P.O. BOX 397, 9842 MAIN STREET, SUITE 3 BERLIN, MD 21811
		SCALE: AS SHOWN	DATE: APR. 2024	DRAWING No.: 543-01-005	SHEET No.: 5 of 5