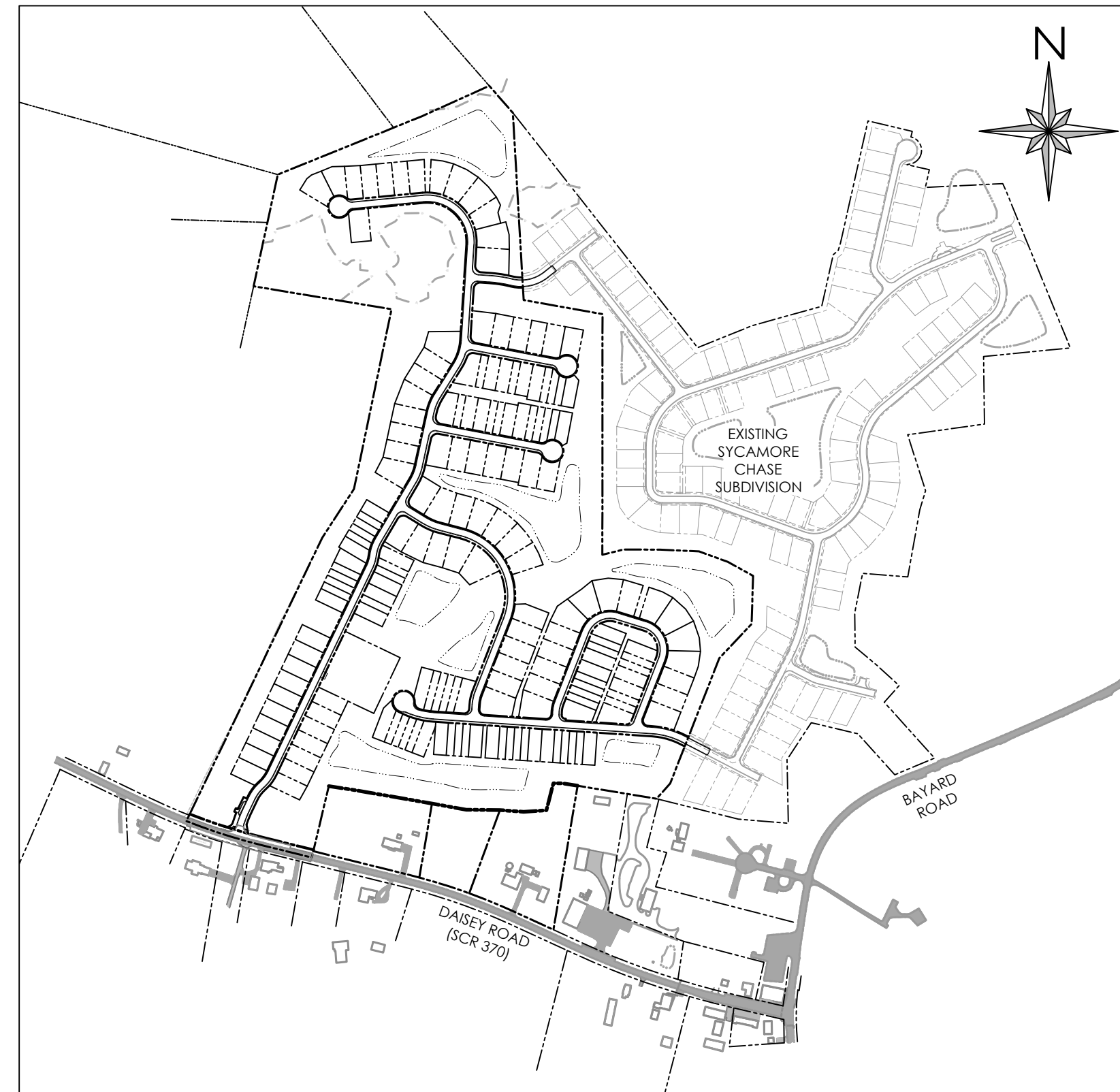


ROADWAY, STORM DRAIN, SEWER, WATER, & ESC PLANS

FOR SYCAMORE CHASE EXPANSION

BALTIMORE HUNDRED - SUSSEX COUNTY, DELAWARE
FOR
BEAZER HOMES, LLC



SITE
1" = 500'

CONSTRUCTION PLANS

1 COVER SHEET	32 SANITARY SEWER PROFILES 3	57 POST CONSTRUCTION STORMWATER MANAGEMENT PLAN
2 GENERAL NOTES	33 SANITARY SEWER DETAILS 1	58 POST CONSTRUCTION SWM PLAN - E.D. WET POND 1
3 EXISTING CONDITIONS PLAN A	34 SANITARY SEWER DETAILS 2	59 POST CONSTRUCTION SWM PLAN - E.D. WET POND 1 SECTIONS
4 EXISTING CONDITIONS PLAN B	35 PUMP STATION PLAN	60 POST CONSTRUCTION SWM PLAN - E.D. WET POND 2
5 INDEX SHEET	36 PUMP STATION DETAILS 1	61 POST CONSTRUCTION SWM PLAN - E.D. WET POND 3
6 ROAD C/L DATA SHEET	37 PUMP STATION DETAILS 2	62 POST CONSTRUCTION SWM PLAN - E.D. WET POND 3 SECTIONS
7 ROAD AND STORM DRAIN PLAN A	38 FIRE MARSHAL PLAN	63 POST CONSTRUCTION SWM PLAN - E.D. WET POND 4
8 ROAD AND STORM DRAIN PLAN B	39 WATER PHASING PLAN	64 POST CONSTRUCTION SWM PLAN - E.D. WET POND 5
9 ROAD AND STORM DRAIN PLAN C	40 WATER PLAN A	65 POST CONSTRUCTION SWM PLAN - E.D. WET POND 5 SECTIONS
10 ROAD AND STORM DRAIN PLAN D	41 WATER PLAN B	66 POST CONSTRUCTION SWM PLAN - E.D. WET POND 6
11 ROAD PROFILES 1	42 WATER PLAN C	67 POST CONSTRUCTION SWM PLAN - E.D. WET POND 6 SECTIONS
12 ROAD PROFILES 2	43 WATER PLAN D	68 POST CONSTRUCTION SWM PLAN - E.D. WET POND 7
13 STORM DRAIN PROFILES 1	44 WATER PROFILES 1	69 POST CONSTRUCTION SWM PLAN - E.D. WET POND 7 SECTIONS
14 STORM DRAIN PROFILES 2	45 WATER PROFILES 2	70 POST CONSTRUCTION SWM PLAN - E.D. WET POND 7 OUTFALL
15 STORM DRAIN PROFILES 3	46 ARTESIAN WATER NOTES AND DETAILS	71 PLANTING PLAN
16 STORM DRAIN SCHEDULES	47 ARTESIAN WATER DETAILS	72 CONCEPTUAL DETAILED GRADING PLAN A
17 BULK GRADING PLAN A	48 SEDIMENT & STORMWATER MANAGEMENT PLAN COVER SHEET	73 CONCEPTUAL DETAILED GRADING PLAN B
18 BULK GRADING PLAN B	49 OVERALL CONSTRUCTION SITE PHASING PLAN	74 CONCEPTUAL DETAILED GRADING PLAN C
19 BULK GRADING PLAN C	50 PRE-CONSTRUCTION SITE STORMWATER MANAGEMENT PLAN	75 CONCEPTUAL DETAILED GRADING PLAN D
20 BULK GRADING PLAN D	51 CONSTRUCTION SITE STORMWATER MANAGEMENT PLAN	76 CONCEPTUAL DETAILED GRADING PLAN E
21 DETAILED ROAD GRADING PLANS	52 CONSTRUCTION SITE NOTES & DETAIL 1	77 CONCEPTUAL DETAILED GRADING PLAN F
22 DETAILS 1	53 CONSTRUCTION SITE DETAILS 2	78 CONCEPTUAL DETAILED GRADING PLAN G
23 DETAILS 2	54 CONSTRUCTION SITE DETAILS 3	
24 DETAILS 3	55 CONSTRUCTION SITE DETAILS 4	
25 SANITARY SEWER INDEX PLAN	56 CONSTRUCTION SITE SCHEDULES & DETAILS 5	
26 SANITARY SEWER PLAN A		
27 SANITARY SEWER PLAN B		
28 SANITARY SEWER PLAN C		
29 SANITARY SEWER PLAN D		
30 SANITARY SEWER PROFILES 1		
31 SANITARY SEWER PROFILES 2		

WETLANDS CERTIFICATION

I, JAMES McCULLEY, PWS, STATE THAT THE BOUNDARIES OF WATERS OF THE UNITED STATES INCLUDING WETLANDS SUBJECT TO THE CORPS OF ENGINEERS REGULATORY PROGRAM DELINEATED UPON THIS PLAN HAVE BEEN DETERMINED USING MY PROFESSIONAL JUDGEMENT IN ACCORDANCE WITH THE 1987 CORPS OF ENGINEERS WETLAND DELINEATION MANUAL, REGULATIONS AND SUPPLEMENT GUIDANCE (33CFR 328.3(a)(8), Water of the U.S. Definition/CECW-OR 10-7-1991, Questions and Answers on the 1987 COE Manual/CECW-OR, 9-26-1990, RGL 90-7/CECW-OR, 3-6-1992, Clarification and Interpretations of the 1987 Manual). THIS DELINEATION HAS NOT BEEN CONDUCTED FOR USDA PROGRAM OR AGRICULTURAL PURPOSES.

JAMES McCULLEY, PWS NO. 000471 DATE

ENGINEER'S CERTIFICATION

I HEREBY CERTIFY THAT THESE DRAWINGS HAVE BEEN PREPARED UNDER MY SUPERVISION.

Jason Palkevicz, PE
DATE: 03/04/24

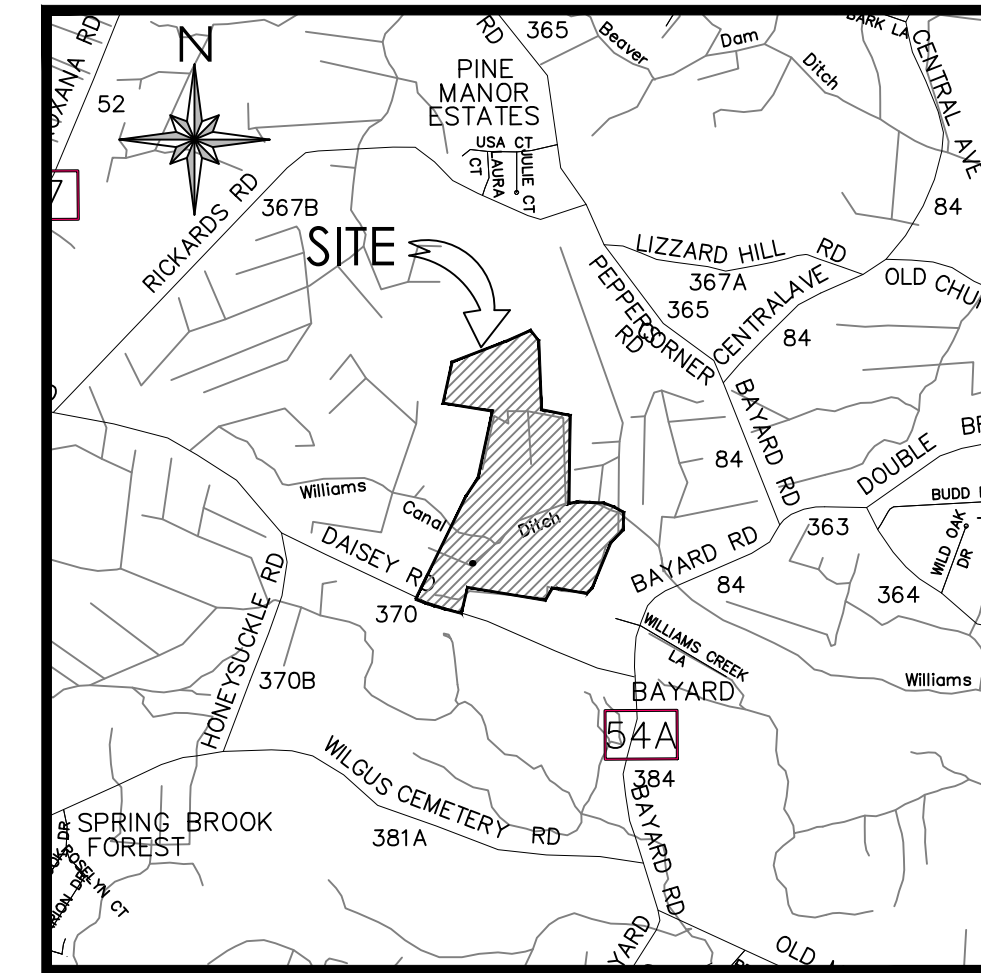
DEVELOPER'S CERTIFICATION

THE DEVELOPER, BEAZER HOMES, HEREBY CERTIFIES THAT THESE DRAWINGS HAVE BEEN APPROVED.

Jason Palkevicz, PE
DATE: 03/04/24

APPROVED AGREEMENT # 1264

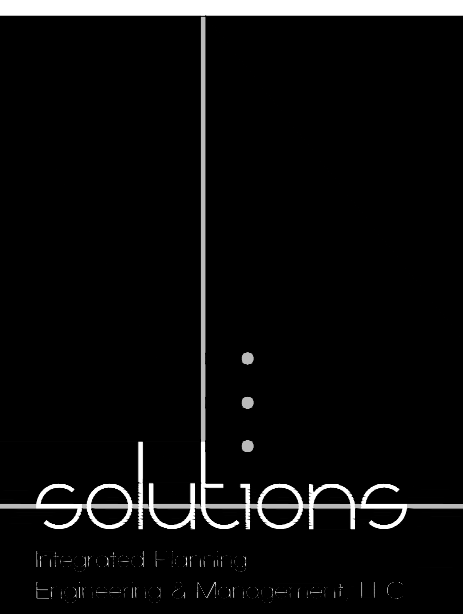
MIKE HARMER, PE SUSSEX COUNTY ENGINEER DATE



VICINITY MAP
SCALE: 1"=2000'

SITE DATA:

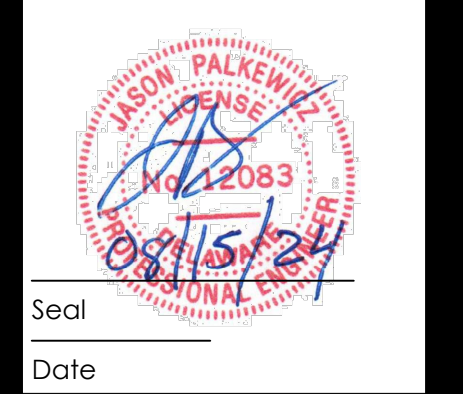
- OWNERS: TM: 134-18.00-45.00, 51.00 & 54.01
NORRIS J. SR. & KITIE FAYE ADKINS
34771 DAISEY ROAD
FRANKFORD, DE 19945
- TM: 134-18.00-53.00
ROBERT E. & TAMMY N. BUNTING
P.O. BOX 862
SELBYVILLE, DE 19975
- TM: 134-18.00-54.00
NORRIS J. JR. & LAURA L. ADKINS
34665 DAISEY ROAD
FRANKFORD, DE 19945
- DEVELOPER: BEAZER HOMES, LLC
35091 ATLANTIC AVENUE
OCEAN VIEW, DE 19967
PHONE: 703-928-4753
CONTACT: GAVIN ROBINSON
- ENGINEER/SURVEYOR: SOLUTIONS IPEM, LLC
303 NORTH BEDFORD STREET
GEORGETOWN, DE 19947
PHONE: 302-297-9215
CONTACT: JASON PALKEVICZ, P.E.
- TAX MAPS 134-18.00-45.00, 51.00, 53.00, 54.00 & 54.01
 - EXISTING ZONING: MR-RPC (MEDIUM RESIDENTIAL-RESIDENTIAL PLANNED COMMUNITY)
 - TOTAL AREA = 81.31 AC.±
AREA TO BE RETAINED BY OWNERS = 7.18 AC.±
AREA OF PROPOSED DEVELOPMENT = 74.13 AC.±
 - PROPOSED UNITS:
SINGLE FAMILY LOTS = 86
TOWNHOUSE UNITS = 90
 - SETBACKS:
SINGLE FAMILY LOTS:
FRONT = 25' (15' CORNER)
SIDE = 8'
REAR = 10'
MAXIMUM BUILDING HEIGHT = 42'
 - TOWNHOUSE LOTS:
FRONT = 20'
SIDE = 20'
REAR = 10'
MAXIMUM BUILDING HEIGHT = 42'
DISTANCE BETWEEN BUILDING = 40' MIN.
 - FLOOD ZONE:
THE PROPERTY IS LOCATED WITHIN FLOOD ZONE X (UNSHADED)- AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN, PER FIRM MAP NUMBER 10005C0495K, MAP REVISED MARCH 16, 2015.
 - WATER SUPPLY: ARTESIAN WATER COMPANY, INC.
 - SANITARY SEWER: ARTESIAN WASTEWATER MANAGEMENT, INC.
 - TOPOGRAPHY AND BOUNDARY SHOWN HEREIN ARE AS PROVIDED BY SOLUTIONS IPEM LLC.
 - EXISTING NON-TIDAL WETLANDS = 4.09 AC
 - WOODLANDS:
EXISTING = 17.663 AC.±
TO REMAIN = 8.56 AC.± (48.5%)
TO BE REMOVED = 9.10 AC.± (51.5%)
 - PROJECT DATUM:
HORIZONTAL: DELAWARE STATE PLANE NAD 83
VERTICAL: NAVD 88



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Georgetown, DE 19947
T. 302-297-9215

3033 Manitt Mill Road
Selbyville, MD 21804
T. 410.572.8833

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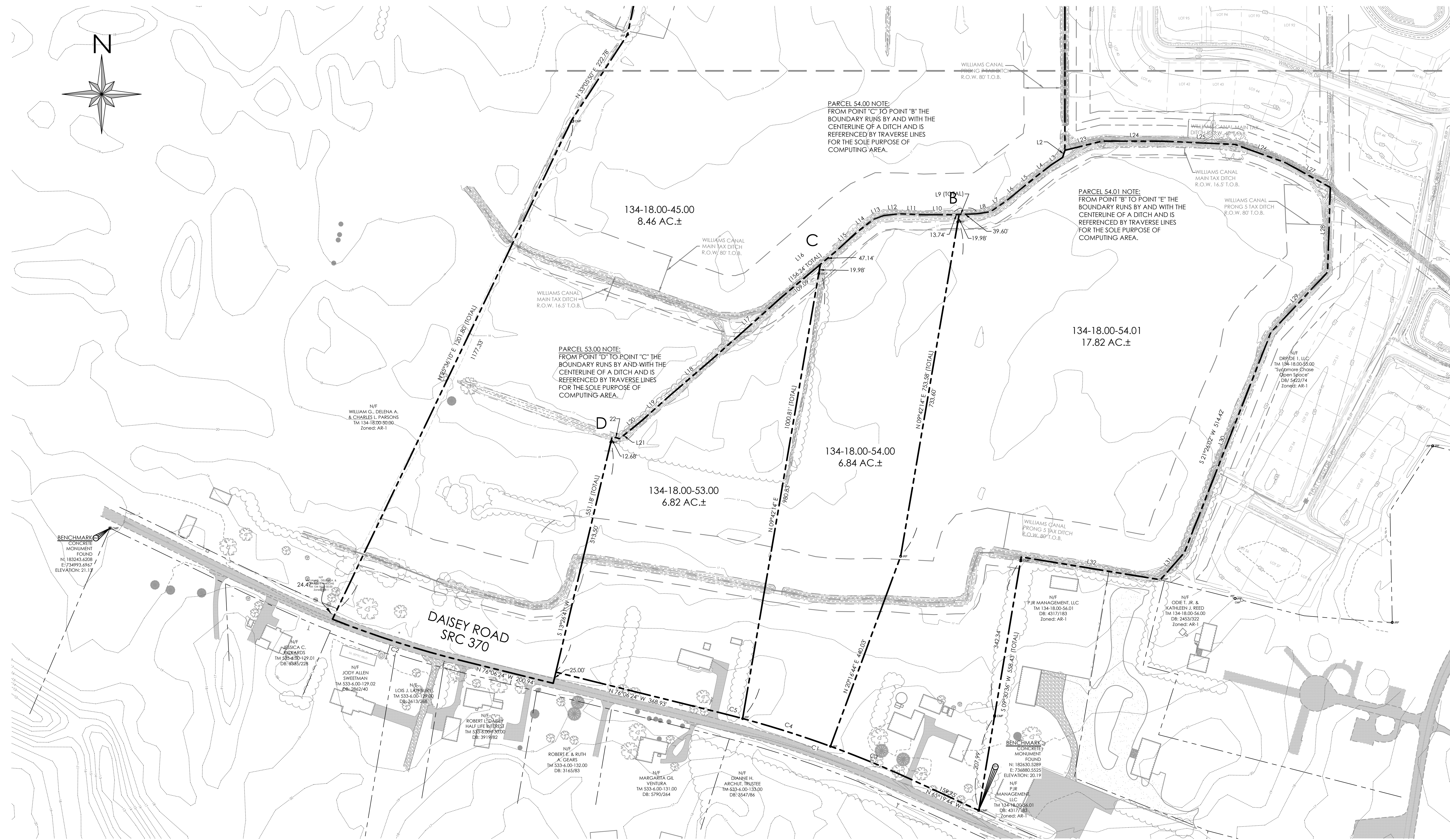
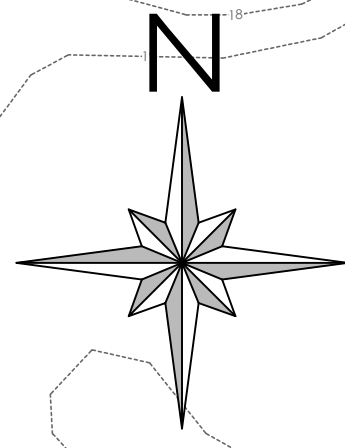
NO.	DATE	DESCRIPTION
1	4/15/24	REVISIONS PER AGENCY COMMENTS DATED MARCH 29, 2024
2	6/20/24	REVISIONS PER AGENCY COMMENTS
3	8/15/24	REVISIONS PER AGENCY COMMENTS

COVER SHEET for
SYCAMORE CHASE EXPANSION
BALTIMORE HUNDRED
SUSSEX COUNTY, DELAWARE

Date:	02-01-24
Job Number:	G21041
Scale:	AS SHOWN
Drawn By:	ML
Designed By:	JP
Approved By:	JP

Sheet No.: 1
File Name: 21041 COVER

- NOTES:
- ALL ON-SITE STREETS ARE PRIVATE AND SHALL BE MAINTAINED BY THE OWNER UNTIL DEDICATION TO THE HOMEOWNERS ASSOCIATION. THE PERPETUAL MAINTENANCE OF THE STREETS SHALL BE BY THE RESPECTIVE ORGANIZATION.
 - STORMWATER MANAGEMENT AND STORM DRAINAGE SHALL BE IN ACCORDANCE WITH THE SUSSEX COUNTY CONSERVATION DISTRICT AND SUSSEX COUNTY ENGINEERING REQUIREMENTS. THE SITE IS TO BE TREATED BY MULTIPLE WET PONDS. MAINTENANCE OF THE ON-SITE STORMWATER MANAGEMENT FACILITIES AND STORM DRAINAGE SYSTEM SHALL BE BY THE OWNER UNTIL DEDICATION TO THE HOMEOWNERS ASSOCIATION. THE PERPETUAL MAINTENANCE OF THE ABOVE PROJECTIVE SHALL BE BY THE RESPECTIVE ORGANIZATION.
 - ALL OPEN SPACE SHALL BE MAINTAINED BY THE HOMEOWNERS ASSOCIATION.
 - ARTESIAN WATER COMPANY, INC AND ARTESIAN WASTEWATER MANAGEMENT INC. ARE HEREBY GRANTED AN UNINTERRUPTED AND PERPETUAL EASEMENT WITHIN THE PRIVATE COMMUNITY STREET RIGHT-OF-WAY AND OPEN SPACE.



CURVE TABLE

CURVE	RADIUS	ARC LENGTH	CHORD LENGTH	CHORD BEARING	DELTA ANGLE
C1	2341.83	445.52	439.91	N 70°23'04" W	107°46'47"
C2	2220.16	298.89	298.58	N 75°15'04" W	7°22'40"
C3	2341.83	191.37	191.32	N 67°49'12" W	4°40'56"
C4	2341.83	200.08	200.02	N 72°22'31" W	4°53'43"
C5	2341.83	49.06	49.06	N 75°30'23" W	1°12'01"

PARCEL 54.01 LINE TABLE (POINTS B TO E)

LINE	BEARING	DISTANCE
L9 PARTIAL	N 87°53'13" E	39.60
L8	N 80°49'36" E	29.13
L7	N 55°21'42" E	45.21
L6	N 50°24'46" E	36.02
L5	N 50°58'44" E	43.01
L4	N 52°02'29" E	41.48
L3	N 56°51'29" E	29.53
L2	N 17°41'05" E	16.23
L23	N 76°02'29" E	63.62
L24	S 89°48'45" E	139.45
L25	S 87°22'19" E	149.22
L26	S 70°53'07" E	117.02
L27	S 60°59'32" E	110.43
L28	S 01°48'03" W	184.08
L29	S 1°11'21" W	179.89
L30	S 21°26'02" W	514.42
L31	S 41°54'12" W	78.41
L32	N 80°40'37" W	306.25

PARCEL 54.00 LINE TABLE (POINTS C TO B)

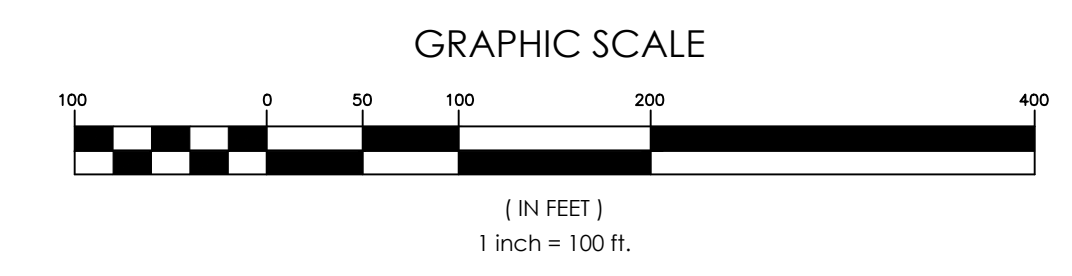
LINE	BEARING	DISTANCE
L16 PARTIAL	N 49°47'48" E	47.14
L15	N 45°30'46" E	27.51
L14	N 52°03'38" E	46.81
L13	N 89°32'58" E	24.64
L12	N 84°21'04" E	34.59
L11	S 87°48'19" E	48.33
L10	N 89°57'33" E	66.68
L9 PARTIAL	N 87°53'13" E	13.74

PARCEL 51.00 LINE TABLE (POINTS A TO D)

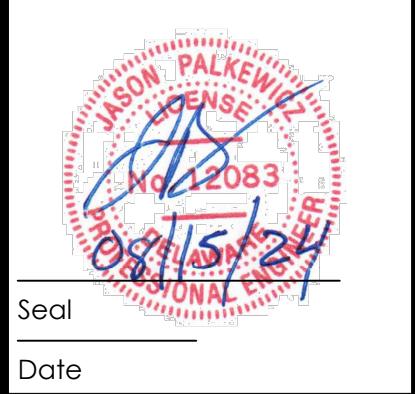
LINE	BEARING	DISTANCE
L1	S 00°01'55" W	920.35
L2	S 17°41'05" W	16.33
L3	S 56°51'29" W	22.53
L4	S 52°08'29" W	41.48
L5	S 50°58'44" W	43.01
L6	S 50°24'46" W	36.02
L7	S 55°21'42" W	45.21
L8	S 80°49'36" W	29.13
L9 TOTAL	N 87°53'13" E	53.34
L10	S 89°57'33" W	66.68
L11	N 87°48'19" W	48.33
L12	S 84°21'04" W	34.59
L13	S 69°32'58" W	24.64
L14	S 52°03'38" W	46.81
L15	S 45°30'46" W	27.51
L16 TOTAL	S 49°47'48" W	156.24
L17	S 48°11'55" W	145.55
L18	S 48°04'19" W	74.13
L19	S 50°59'10" W	41.42
L20	S 50°58'44" W	43.01
L21	S 52°06'02" W	22.81
L22	N 74°10'09" W	16.30

PARCEL 53.00 LINE TABLE (POINTS D TO C)

LINE	BEARING	DISTANCE
L22	S 74°10'09" E	16.30
L21	N 52°06'02" E	22.81
L20	N 50°59'10" E	41.42
L19	N 48°04'19" E	74.13
L18	N 48°11'55" E	145.55
L17	N 48°11'55" E	145.55
L16 PARTIAL	N 49°47'48" E	109.09



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REVISIONS

NO.	DATE	DESCRIPTION
1	4/15/24	REVISIONS PER AGENCY COMMENTS DATED MARCH 29, 2024
2	6/20/24	REVISIONS PER AGENCY COMMENTS
3	8/15/24	REVISIONS PER AGENCY COMMENTS

EXISTING CONDITIONS PLAN A
 for
SYCAMORE CHASE EXPANSION
 BALTIMORE HUNDRED
 SUSSEX COUNTY, DELAWARE

Date: 02-01-24
 Job Number: G21041
 Scale: 1"=100'
 Drawn By: ML
 Designed By: DP
 Approved By: JP

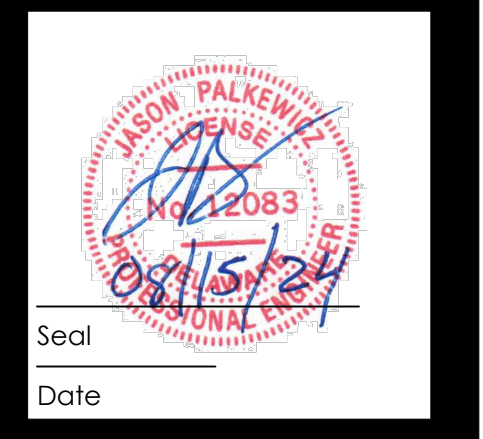


WETLAND COORDINATES

WF #	NORTHING	EASTING
WF 01	185440.49	736727.61
WF 02	185369.89	736701.19
WF 03	185120.10	736429.26
WF 04	185134.56	736475.85
WF 05	185185.92	736476.81
WF 06	185233.26	736512.06
WF 07	185242.81	736494.99
WF 08	185317.89	736479.55
WF 09	185342.30	736444.28
WF 10	185371.38	736381.03
WF 11	185371.17	736342.36
WF 12	185370.34	736294.58
WF 13	185341.25	736279.36
WF 14	185322.45	736253.61
WF 15	185295.32	736212.60
WF 16	185273.60	736229.32
WF 17	185248.60	736243.40
WF 18	185205.94	736289.58
WF 19	185186.48	736330.79
WF 20	185213.06	736403.68
WF 21	185184.63	736403.10
WF 22	185140.27	736382.00
WF 23	185144.59	736341.86
WF 24	185154.07	736290.52
WF 25	185146.09	736261.94
WF 26	185144.27	736236.53
WF 27	185101.32	736273.04
WF 28	185046.03	736281.15
WF 29	185033.03	736321.23
WF 30	185027.04	736358.53
WF 31	185047.77	736401.82
WF 32	185090.02	736399.51
WF 33	185097.94	736142.74
WF 34	185126.45	736185.55
WF 35	185150.19	736177.19
WF 36	185153.84	736141.49
WF 37	185196.34	736140.77
WF 38	185188.71	736107.69
WF 39	185173.29	736089.45
WF 40	185183.57	736067.03
WF 41	185218.60	736041.38
WF 42	185239.93	736014.72
WF 43	185314.77	736004.42
WF 44	185352.63	735992.21
WF 45	185345.60	735964.30
WF 46	185328.81	735888.61
WF 47	185309.51	735821.61
WF 48	185263.05	735805.12
WF 49	185744.35	736408.42
WF 50	185749.05	736458.13
WF 51	185778.72	736512.05
WF 52	185800.29	736556.75
WF 53	185826.59	736594.34
WF 54	185818.99	736651.85
WF 55	185837.36	736685.63
WF 56	185883.07	736702.48

PARCEL 51.00 NOTE:
 FROM POINT "A" TO POINT "D" THE BOUNDARY RUNS BY AND WITH THE CENTERLINE OF A DITCH AND IS REFERENCED BY TRAVERSE LINES FOR THE SOLE PURPOSE OF COMPUTING AREA.

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Seal: _____
 Date: _____

NO.	DATE	DESCRIPTION
1	4/5/24	REVISIONS PER AGENCY COMMENTS DATED MARCH 29, 2024
2	6/20/24	REVISIONS PER AGENCY COMMENTS
3	8/15/24	REVISIONS PER AGENCY COMMENTS

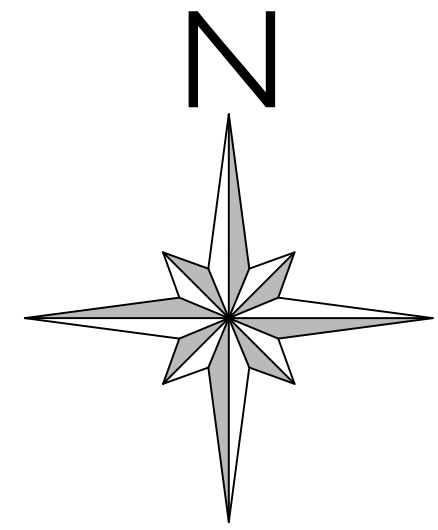
EXISTING CONDITIONS PLAN B
 for
SYCAMORE CHASE EXPANSION
 BALTIMORE HUNDRED
 SUSSEX COUNTY, DELAWARE

Date: 02-01-24
 Job Number: G21041
 Scale: 1"=100'
 Drawn By: ML
 Designed By: DP
 Approved By: JP

Sheet No.: _____

File Name: 21041-EXST-COND

4

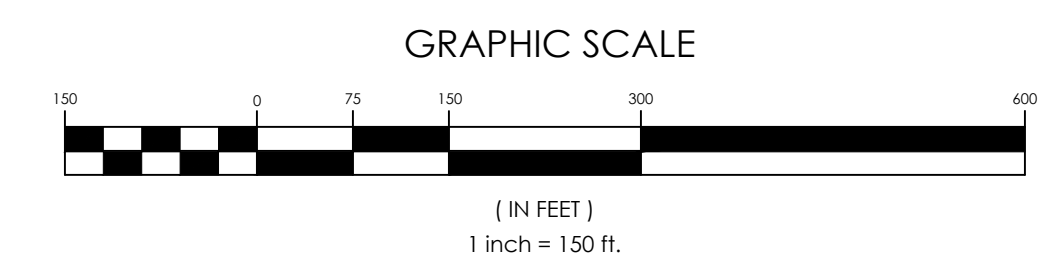
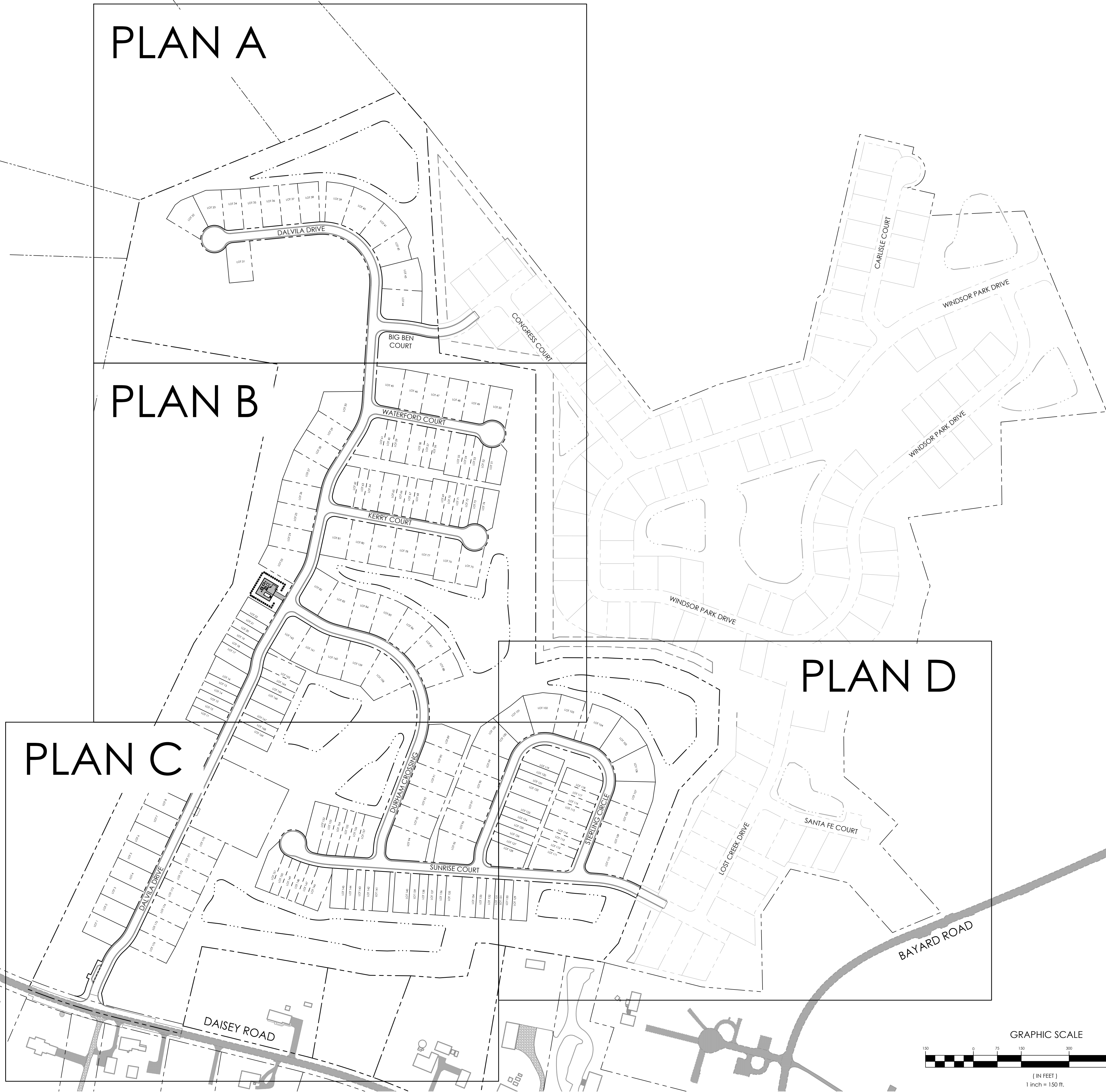


PLAN A

PLAN B

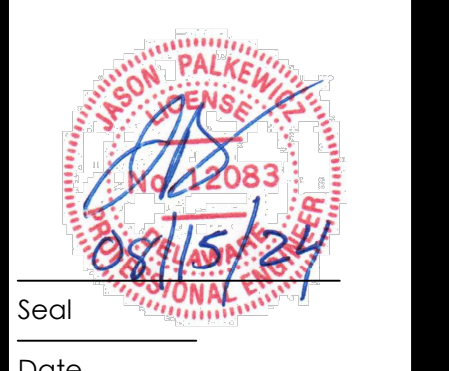
PLAN C

PLAN D



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LANDSCAPE ARCHITECTURE

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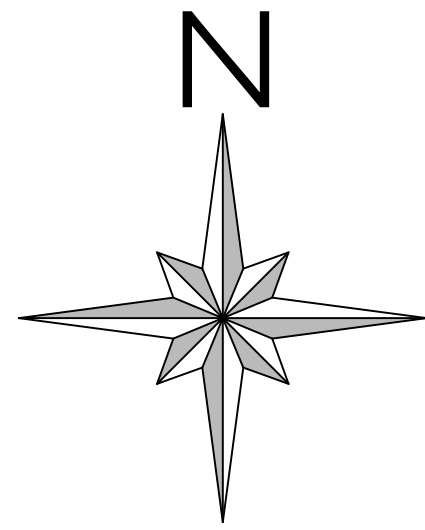


NO.	DATE	DESCRIPTION
1	4/15/24	REVISIONS PER AGENCY COMMENTS DATED MARCH 29, 2024
2	6/20/24	REVISIONS PER AGENCY COMMENTS
3	8/15/24	REVISIONS PER AGENCY COMMENTS

INDEX PLAN
for
SYCAMORE CHASE EXPANSION
BALTIMORE HUNDRED
SUSSEX COUNTY, DELAWARE

Date: 02-01-24
Job Number: G21041
Scale: 1" = 150'
Drawn By: HHB
Designed By: HHB
Approved By: JIP

Sheet No.: 5
File Name: index.dwg

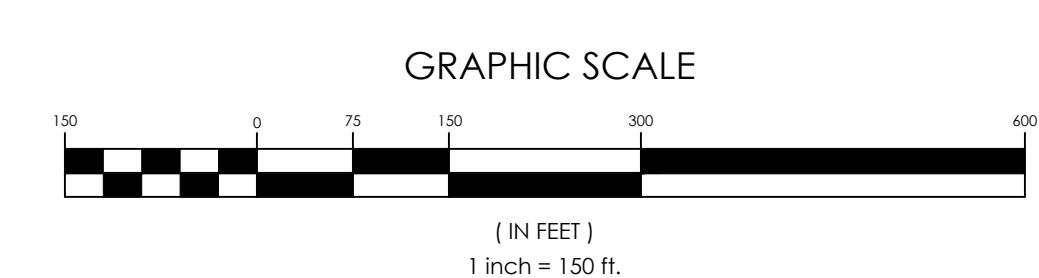
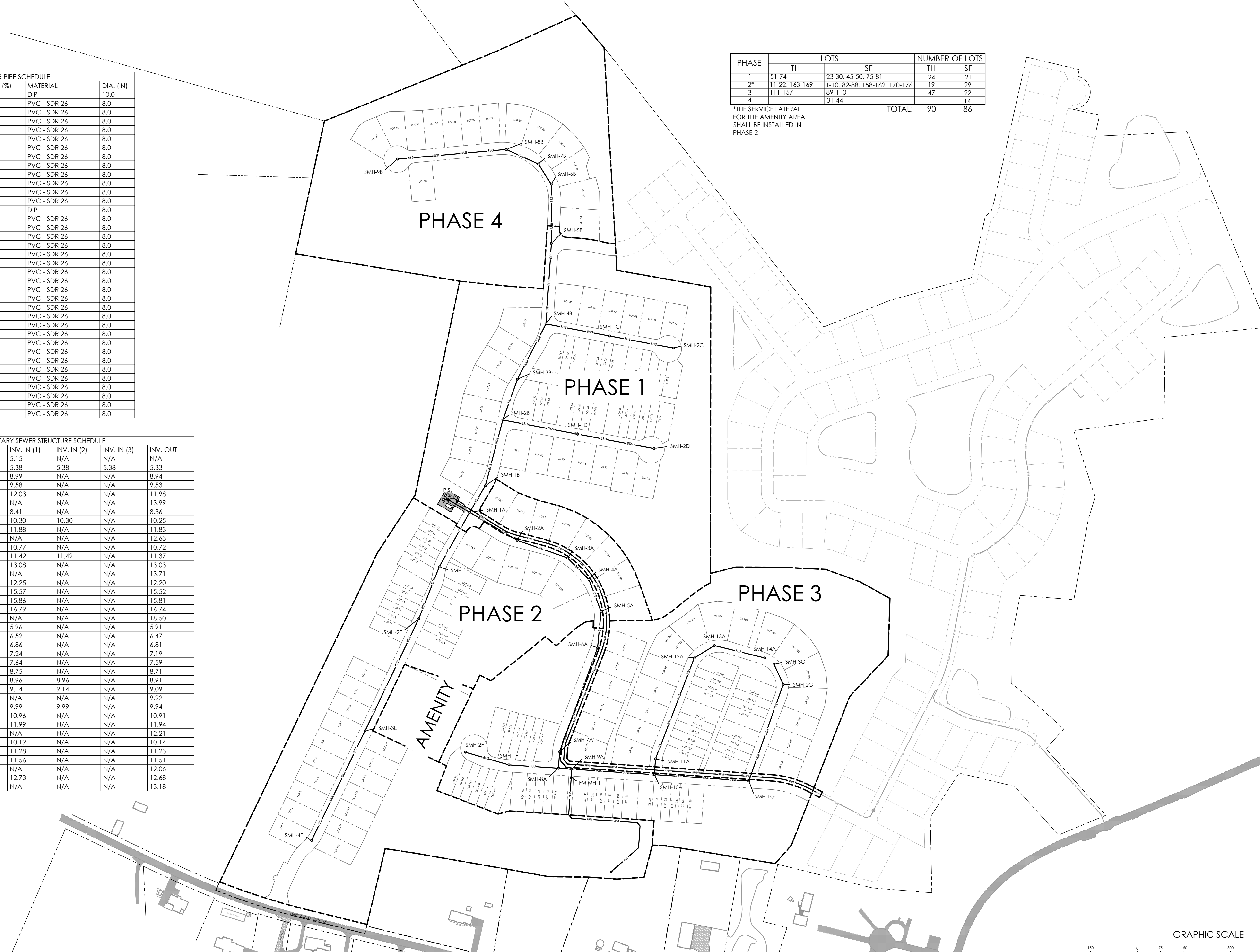


SEWER PIPE SCHEDULE				
NAME	LENGTH (FT)	SLOPE (%)	MATERIAL	DIA. (IN)
SS-1A	82.33	0.22	DIP	10.0
SS-1E	201.26	1.77	PVC - SDR 26	8.0
SS-1B	99.26	3.00	PVC - SDR 26	8.0
SS-2A	177.22	0.30	PVC - SDR 26	8.0
SS-2E	178.57	0.30	PVC - SDR 26	8.0
SS-3E	400.00	0.60	PVC - SDR 26	8.0
SS-4E	392.12	0.50	PVC - SDR 26	8.0
SS-2B	218.55	0.84	PVC - SDR 26	8.0
SS-1D	244.98	0.62	PVC - SDR 26	8.0
SS-3B	138.99	0.30	PVC - SDR 26	8.0
SS-2D	249.14	0.30	PVC - SDR 26	8.0
SS-4B	200.01	0.30	PVC - SDR 26	8.0
SS-1C	208.78	0.77	PVC - SDR 26	8.0
SS-5B	259.63	0.30	DIP	8.0
SS-2C	208.78	0.30	PVC - SDR 26	8.0
SS-6B	190.15	1.72	PVC - SDR 26	8.0
SS-7B	77.36	0.31	PVC - SDR 26	8.0
SS-8B	113.27	0.78	PVC - SDR 26	8.0
SS-9B	351.20	0.49	PVC - SDR 26	8.0
SS-3A	171.33	0.30	PVC - SDR 26	8.0
SS-4A	98.13	0.30	PVC - SDR 26	8.0
SS-5A	109.39	0.30	PVC - SDR 26	8.0
SS-6A	117.72	0.30	PVC - SDR 26	8.0
SS-7A	355.57	0.30	PVC - SDR 26	8.0
SS-8A	53.14	0.30	PVC - SDR 26	8.0
SS-9A	42.94	0.30	PVC - SDR 26	8.0
SS-1F	159.49	2.33	PVC - SDR 26	8.0
SS-15A	27.50	0.30	PVC - SDR 26	8.0
SS-10A	266.19	0.30	PVC - SDR 26	8.0
SS-1G	304.18	0.30	PVC - SDR 26	8.0
SS-11A	50.73	0.30	PVC - SDR 26	8.0
SS-2G	329.77	0.30	PVC - SDR 26	8.0
SS-3G	71.73	0.30	PVC - SDR 26	8.0
SS-12A	347.60	0.30	PVC - SDR 26	8.0
SS-13A	76.18	0.30	PVC - SDR 26	8.0
SS-14A	166.39	0.30	PVC - SDR 26	8.0
SS-2F	146.09	0.31	PVC - SDR 26	8.0

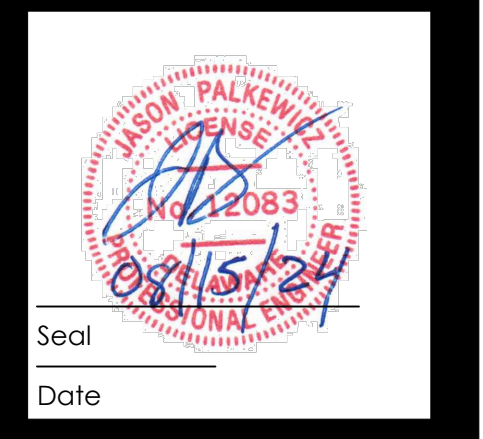
SANITARY SEWER STRUCTURE SCHEDULE					
NAME	RIM ELEV	INV. IN (1)	INV. IN (2)	INV. IN (3)	INV. OUT
P.S.	20.50	5.15	N/A	N/A	N/A
SMH-1A	18.99	5.38	5.38	5.38	5.33
SMH-1E	18.24	8.99	N/A	N/A	8.94
SMH-2E	18.05	9.58	N/A	N/A	9.53
SMH-3E	18.23	12.03	N/A	N/A	11.98
SMH-4E	18.99	N/A	N/A	N/A	13.99
SMH-1B	18.64	8.41	N/A	N/A	8.36
SMH-2B	19.25	10.30	10.30	N/A	10.25
SMH-1D	18.09	11.88	N/A	N/A	11.83
SMH-2D	18.28	N/A	N/A	N/A	12.63
SMH-3B	19.94	10.77	N/A	N/A	10.72
SMH-4B	20.92	11.42	11.42	N/A	11.37
SMH-1C	19.74	13.08	N/A	N/A	13.03
SMH-2C	19.04	N/A	N/A	N/A	13.71
SMH-5B	22.19	12.25	N/A	N/A	12.20
SMH-6B	21.56	15.57	N/A	N/A	15.52
SMH-7B	21.31	15.86	N/A	N/A	15.81
SMH-8B	21.74	16.79	N/A	N/A	16.74
SMH-9B	24.36	N/A	N/A	N/A	18.50
SMH-2A	17.95	5.96	N/A	N/A	5.91
SMH-3A	18.33	6.52	N/A	N/A	6.47
SMH-4A	18.71	6.86	N/A	N/A	6.81
SMH-5A	19.08	7.24	N/A	N/A	7.19
SMH-6A	18.29	7.64	N/A	N/A	7.59
SMH-7A	18.12	8.75	N/A	N/A	8.71
SMH-8A	18.51	8.96	8.96	N/A	8.91
SMH-9A	18.56	9.14	9.14	N/A	9.09
FM MH-1	18.85	N/A	N/A	N/A	9.22
SMH-10A	17.52	9.99	9.99	N/A	9.94
SMH-1G	17.80	10.96	N/A	N/A	10.91
SMH-2G	17.50	11.99	N/A	N/A	11.94
SMH-3G	17.21	N/A	N/A	N/A	12.21
SMH-11A	17.55	10.19	N/A	N/A	10.14
SMH-12A	17.44	11.28	N/A	N/A	11.23
SMH-13A	17.20	11.56	N/A	N/A	11.51
SMH-14A	17.06	N/A	N/A	N/A	12.06
SMH-1F	17.68	12.73	N/A	N/A	12.68
SMH-2F	18.28	N/A	N/A	N/A	13.18

PHASE	LOTS		NUMBER OF LOTS	
	TH	SF	TH	SF
1	51-74	23-30, 45-50, 75-81	24	21
2*	11-22, 163-169	1-10, 82-88, 158-162, 170-176	19	29
3	111-157	89-110	47	22
4		31-44		14
TOTAL:			90	86

*THE SERVICE LATERAL FOR THE AMENITY AREA SHALL BE INSTALLED IN PHASE 2



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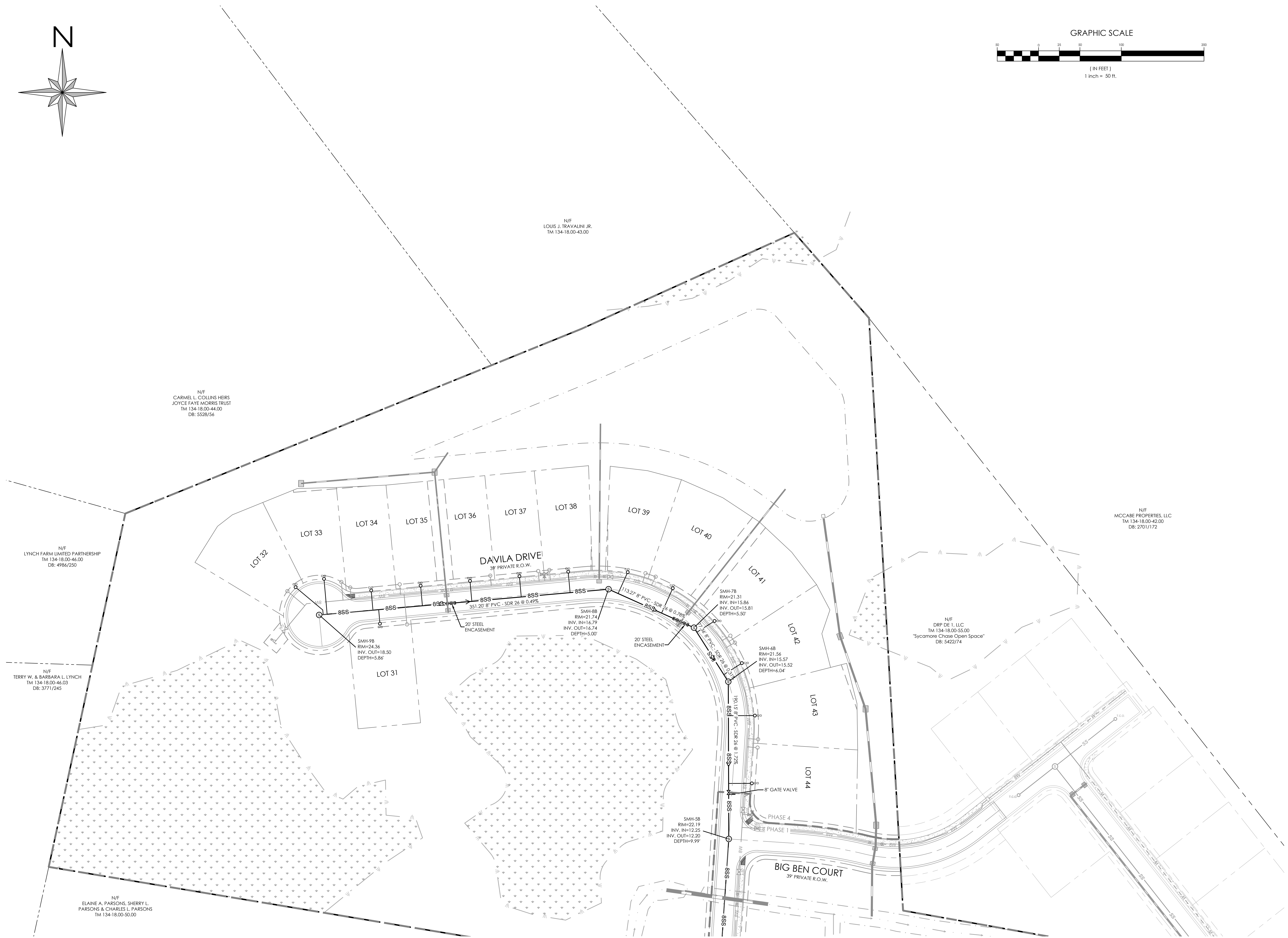
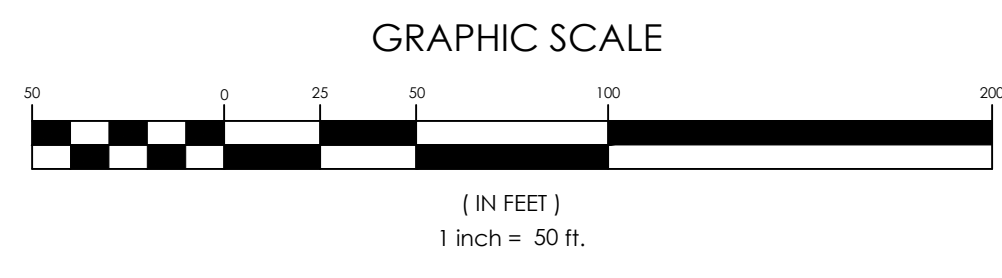
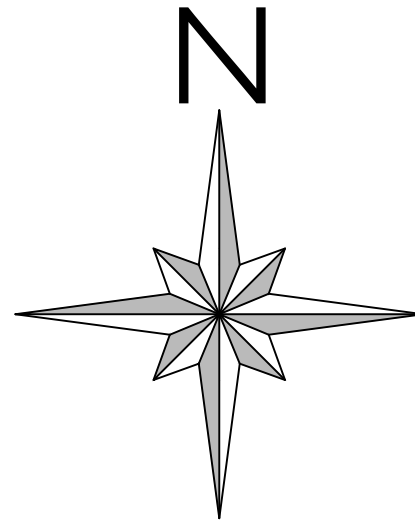


REVISIONS	
NO.	DATE
1	4/5/24
2	6/20/24
3	8/15/24

DESCRIPTION
 REVISIONS PER AGENCY COMMENTS DATED MARCH 29, 2024
 REVISIONS PER AGENCY COMMENTS
 REVISIONS PER AGENCY COMMENTS

SANITARY SEWER INDEX SHEET
 for
SYCAMORE CHASE EXPANSION
 BALTIMORE HUNDRED
 SUSSEX COUNTY, DELAWARE

Date: 02-01-24
 Job Number: G21041
 Scale: 1"=150'
 Drawn By: HIB
 Designed By: HIB
 Approved By: JP
 Sheet No.: **25**
 File Name: index.dwg



N/F
LYNCH FARM LIMITED PARTNERSHIP
TM 134-18.00-46.00
DB: 4984/250

N/F
CARMEL L. COLLINS HEIRS
JOYCE FAYE MORRIS TRUST
TM 134-18.00-44.00
DB: 5528/56

N/F
LOUIS J. TRAYALINI JR.
TM 134-18.00-43.00

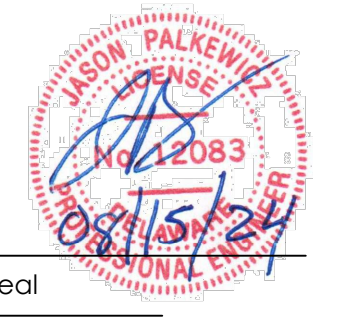
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TERRY W. & BARBARA L. LYNCH
TM 134-18.00-46.03
DB: 3771/245

N/F
ELAINE A. PARSONS, SHERRY L.
PARSONS & CHARLES L. PARSONS
TM 134-18.00-50.00

N/F
MCCABE PROPERTIES, LLC
TM 134-18.00-42.00
DB: 2701/172

N/F
DRP DE 1, LLC
TM 134-18.00-55.00
"Sycamore Chase Open Space"
DB: 5422/74

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Date

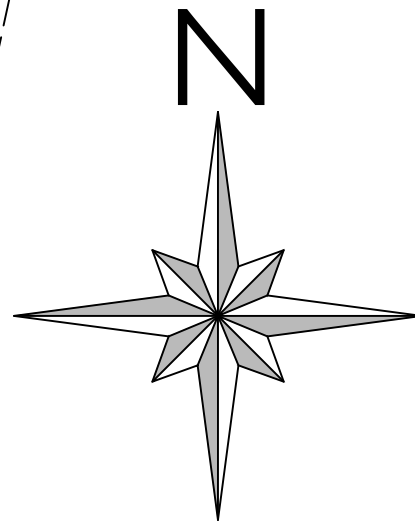
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1	4/5/24	REVISIONS PER AGENCY COMMENTS DATED MARCH 29, 2024
2	6/20/24	REVISIONS PER AGENCY COMMENTS
3	8/15/24	REVISIONS PER AGENCY COMMENTS

SANITARY SEWER PLAN A
for
SYCAMORE CHASE EXPANSION
BALTIMORE HUNDRED
SUSSEX COUNTY, DELAWARE

Date:	02-01-24	Job Number:	G21041	Scale:	1"=50'	Drawn By:	HHB	Designed By:	HHB	Approved By:	JIP
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Sheet No.: **26**
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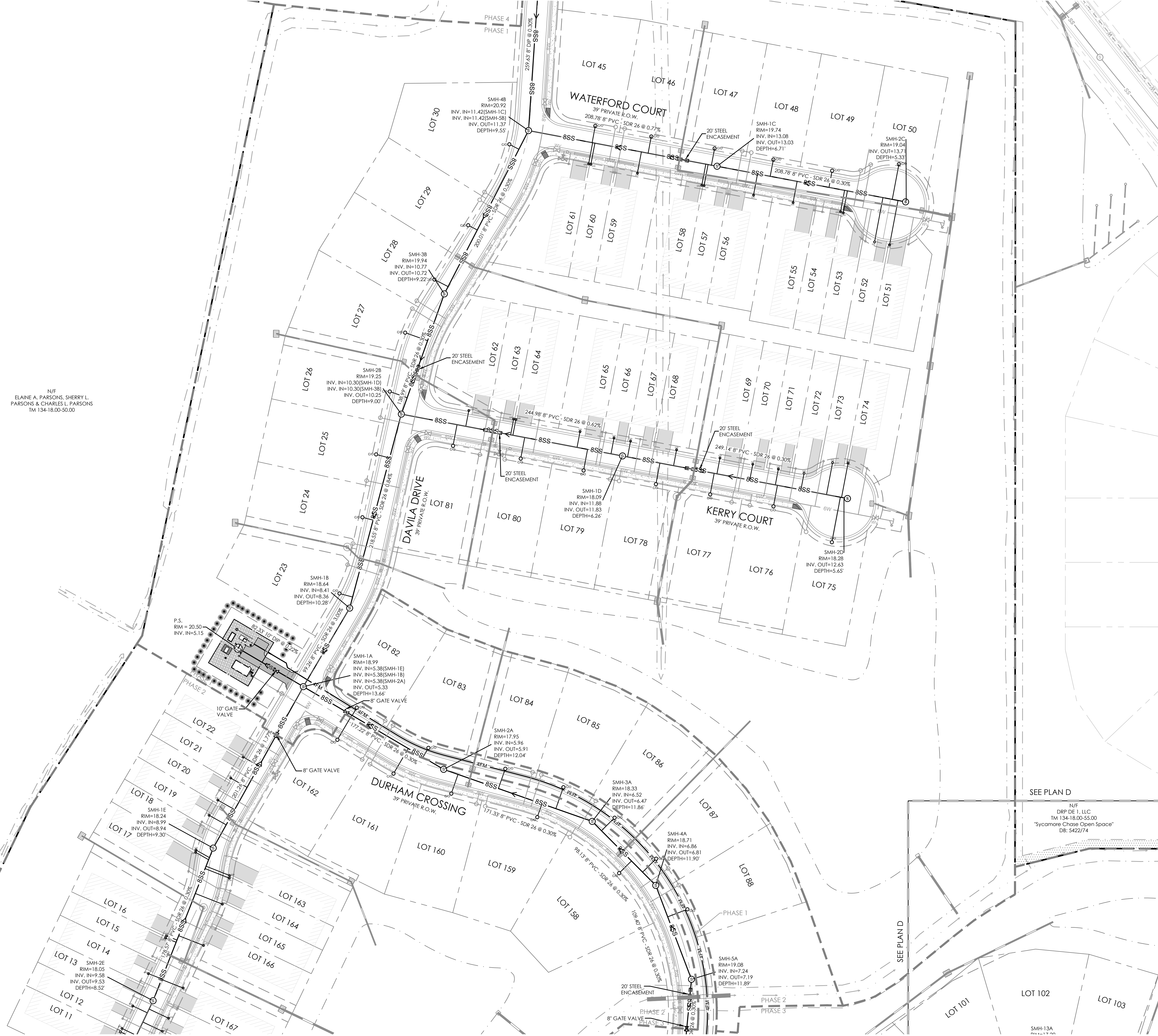
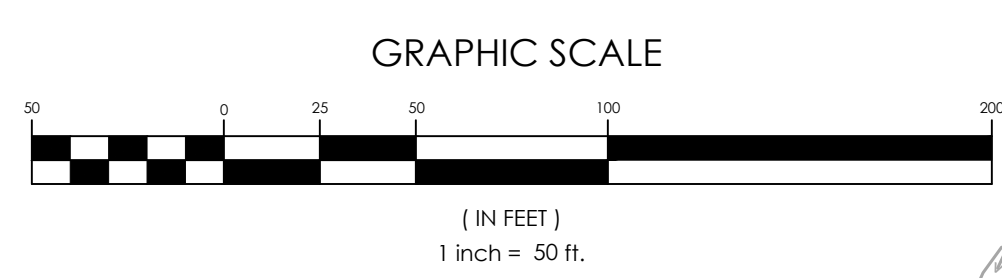
SEE PLAN B



SEE PLAN A

PHASE 4
PHASE 1

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ELAINE A. PARSONS, SHERRY L.
PARSONS & CHARLES L. PARSONS
TM 134-18.00-50.00



SEE PLAN C

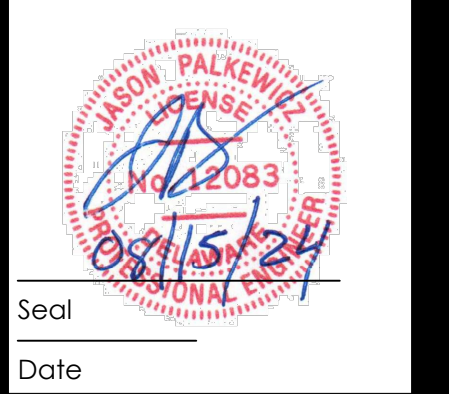
SEE PLAN D

N/F
DRP DE 1, LLC
TM 134-18.00-55.00
"Sycamore Chase Open Space"
DB: 5422/74

SEE PLAN D

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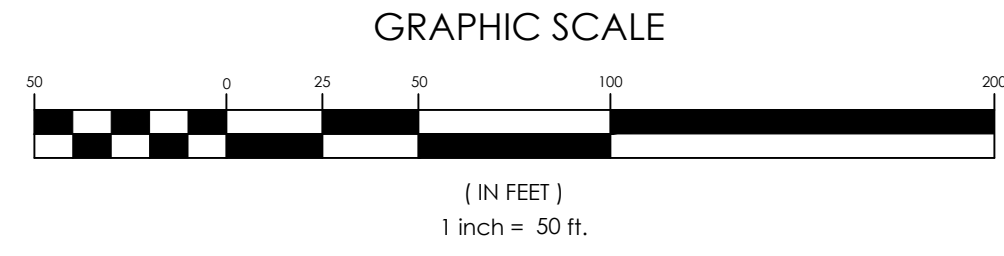
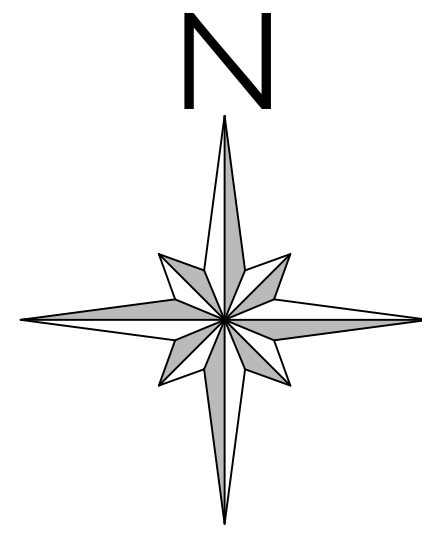


REVISIONS	
NO.	DESCRIPTION
1	REVISIONS PER AGENCY COMMENTS DATED MARCH 29, 2024
2	REVISIONS PER AGENCY COMMENTS
3	REVISIONS PER AGENCY COMMENTS

SANITARY SEWER PLAN B
for
SYCAMORE CHASE EXPANSION
BALTIMORE HUNDRED
SUSSEX COUNTY, DELAWARE

Date:	02/01/24	Drawn By:	HHB	Approved By:	J.P.
Job Number:	G21041	Scale:	1"=50'	Designed By:	HHB

Sheet No.: **27**
File Name: RD SD.dwg



NIF
 ELAINE A. PARSONS, SHERRY L.
 PARSONS & CHARLES L. PARSONS
 TM 134-18.00-50.00



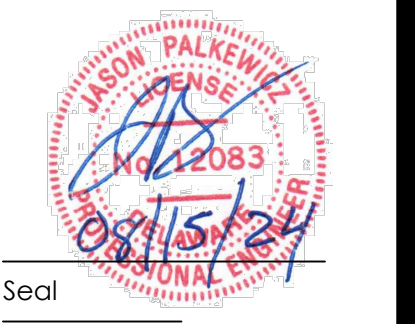
REMAINING LANDS OF
 ROBERT E. & TAMMY N. BUNTING
 TM 134-18.00-53.00
 DB: 328748
 Zoned: AR-1

REMAINING LANDS OF
 NORRIS JOSEPH JR. & LAURA LUCILA ADKINS
 TM 134-18.00-54.00
 DB: 328748
 PLAT: 103/238
 Zoned: AR-1

REMAINING LANDS OF
 NORRIS J. SR., & KITTIE FAYE ADKINS
 TM 134-18.00-54.01
 DB: 3359261

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1	REVISIONS PER AGENCY COMMENTS DATED MARCH 29, 2024
2	REVISIONS PER AGENCY COMMENTS
3	REVISIONS PER AGENCY COMMENTS

SANITARY SEWER PLAN C
 for
SYCAMORE CHASE EXPANSION
 BALTIMORE HUNDRED
 SUSSEX COUNTY, DELAWARE

Date:	02-01-24
Job Number:	G21041
Scale:	1"=50'
Drawn By:	HJB
Designed By:	HJB
Approved By:	JJP

Sheet No.: **28**
 File Name: RD SD.dwg



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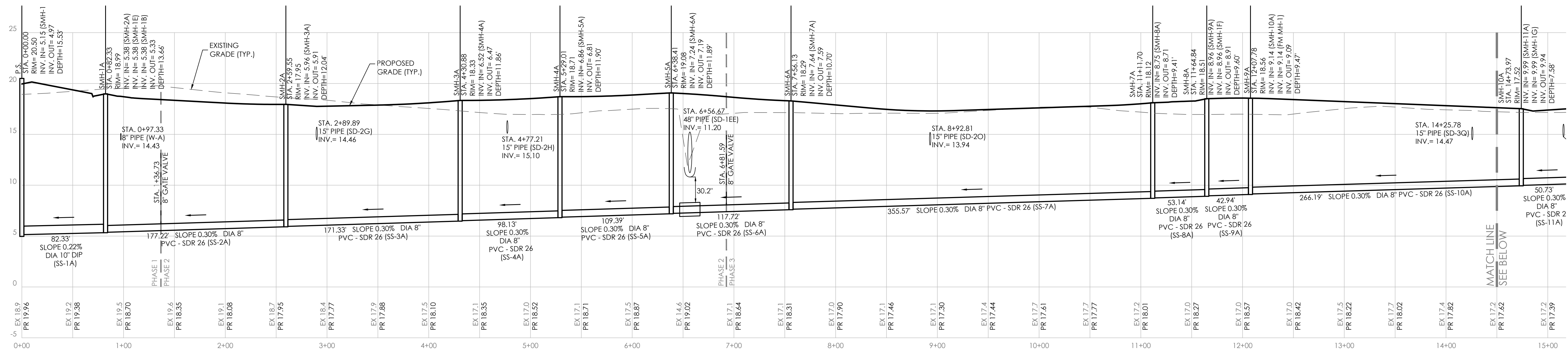
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NO.	DATE
1	4/5/24
2	6/20/24
3	8/15/24

DESCRIPTION
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 REVISIONS PER AGENCY COMMENTS
 REVISIONS PER AGENCY COMMENTS

SANITARY SEWER PLAN D
 for
SYCAMORE CHASE EXPANSION
 BALTIMORE HUNDRED
 SUSSEX COUNTY, DELAWARE

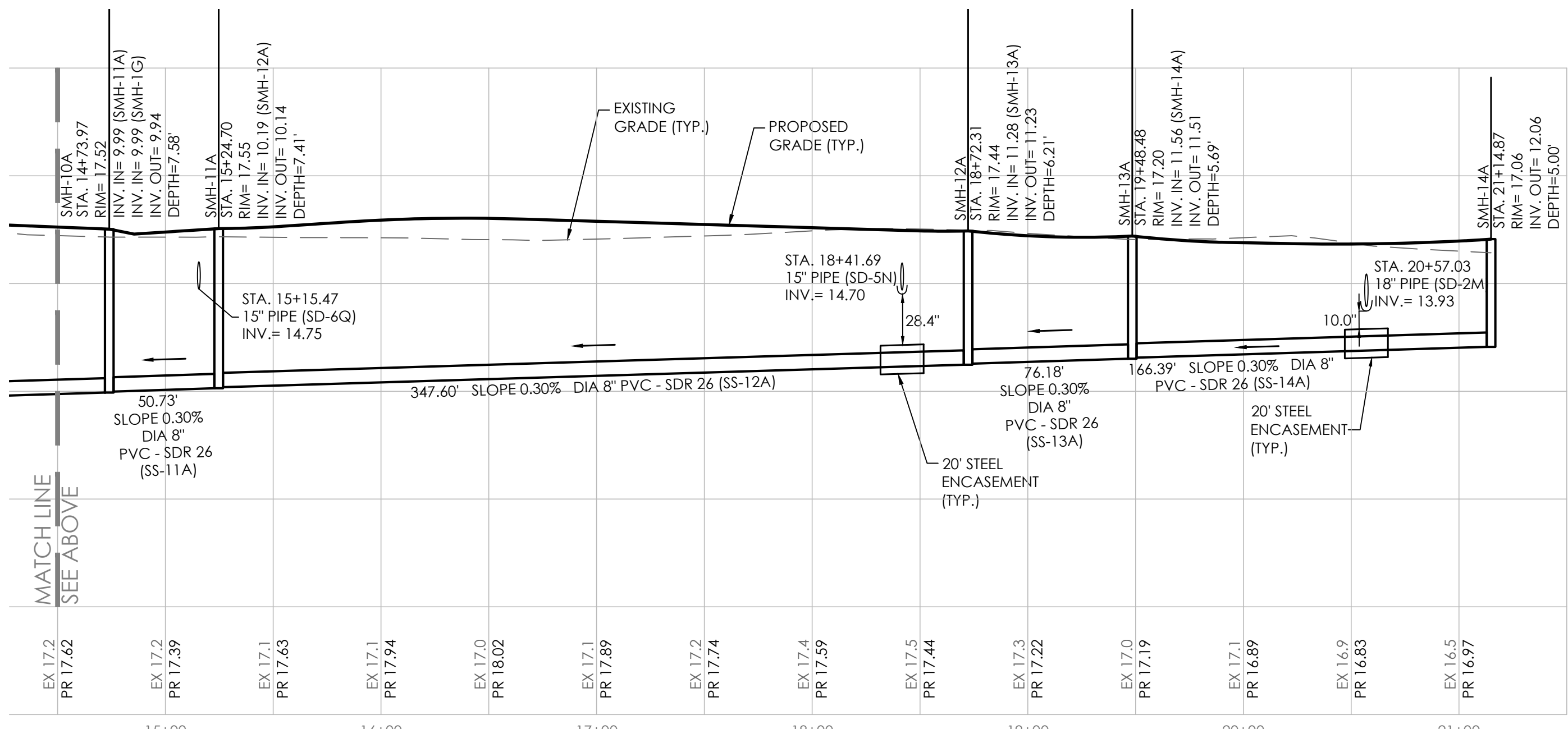
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 Drawn By: HJB
 Designed By: HJB
 Approved By: JP

Sheet No.: **29**
 File Name: RD SD.dwg



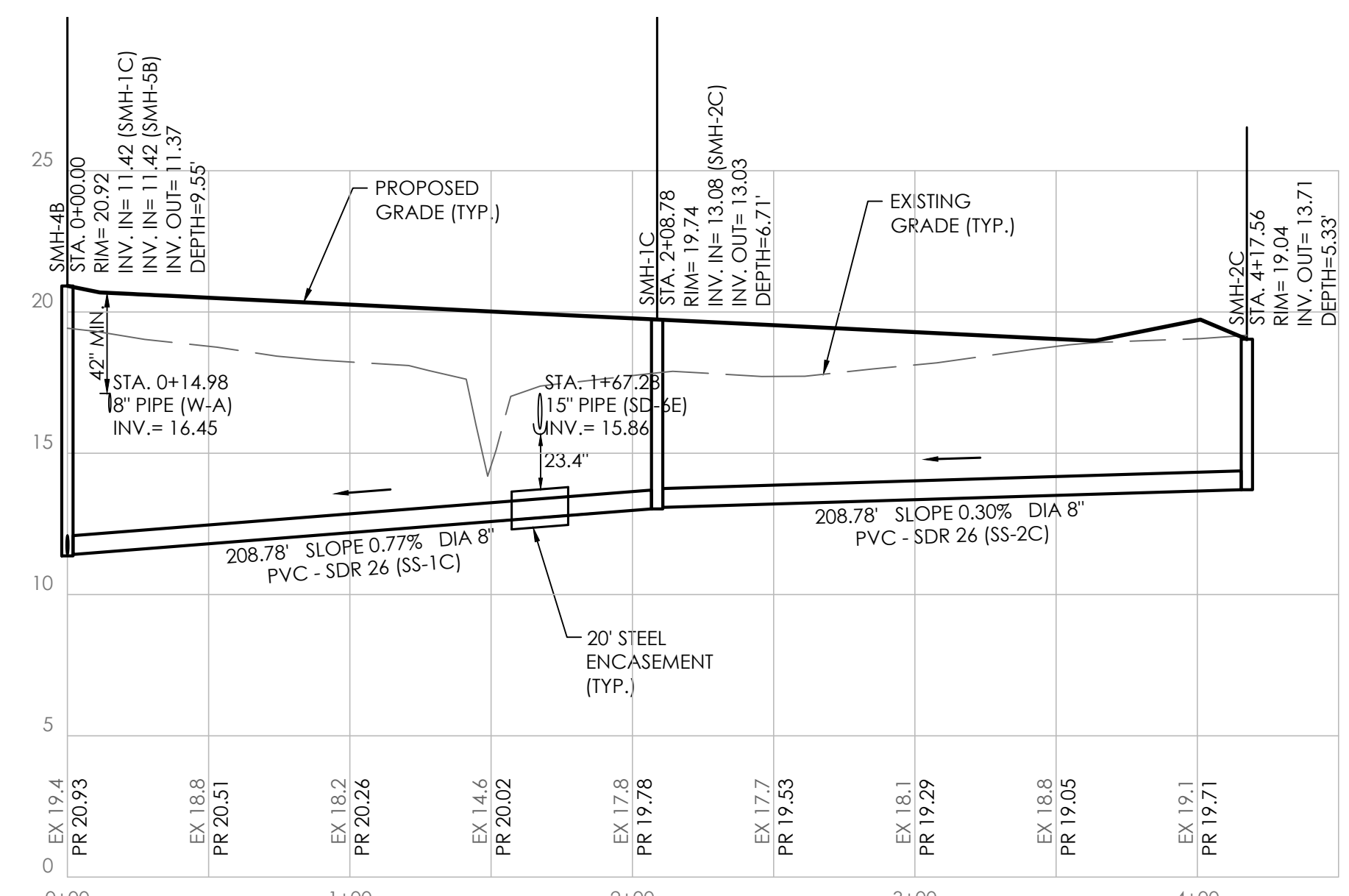
PUMP STATION TO SMH-14A

SCALE: HORIZ.: 1"=50'
VERT.: 1"=5'



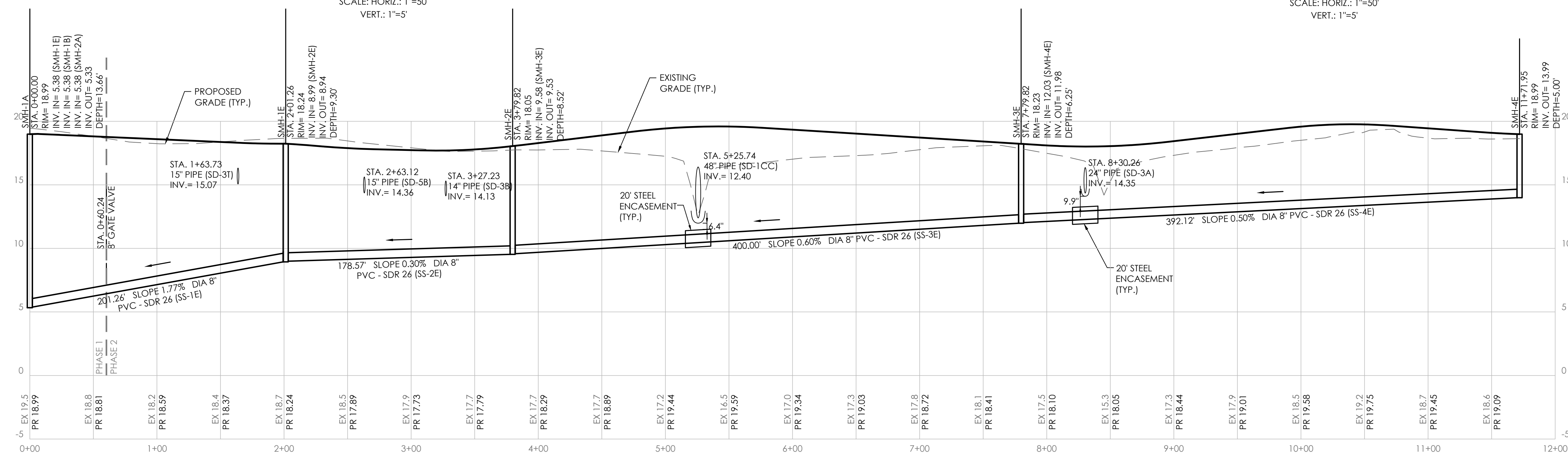
PUMP STATION TO SMH-14A (CONT.)

SCALE: HORIZ.: 1"=50'
VERT.: 1"=5'



SMH-4B TO SMH-2C

SCALE: HORIZ.: 1"=50'
VERT.: 1"=5'



SMH-1A TO SMH-3E

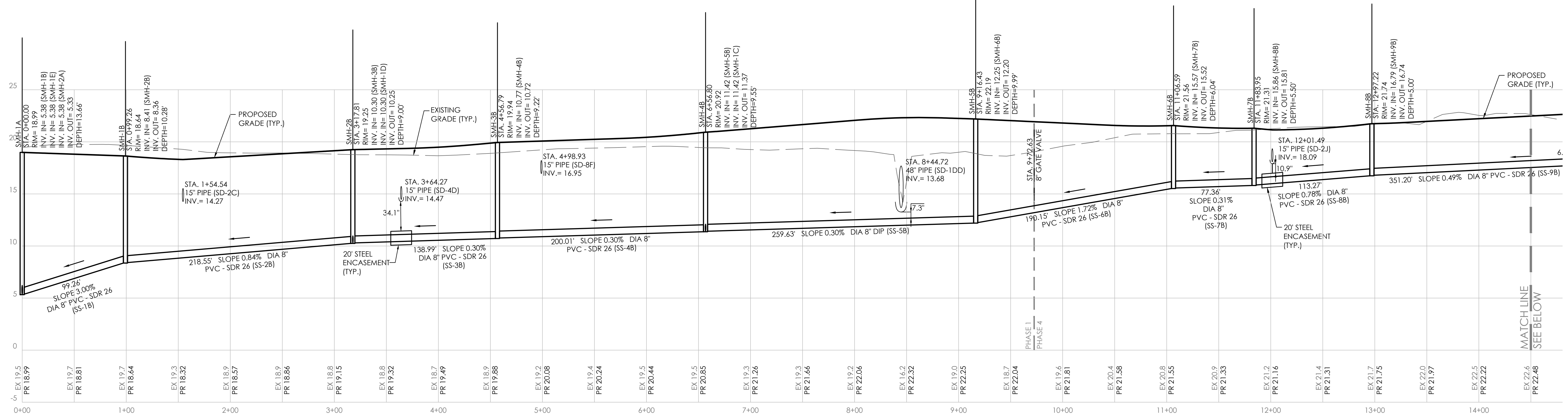
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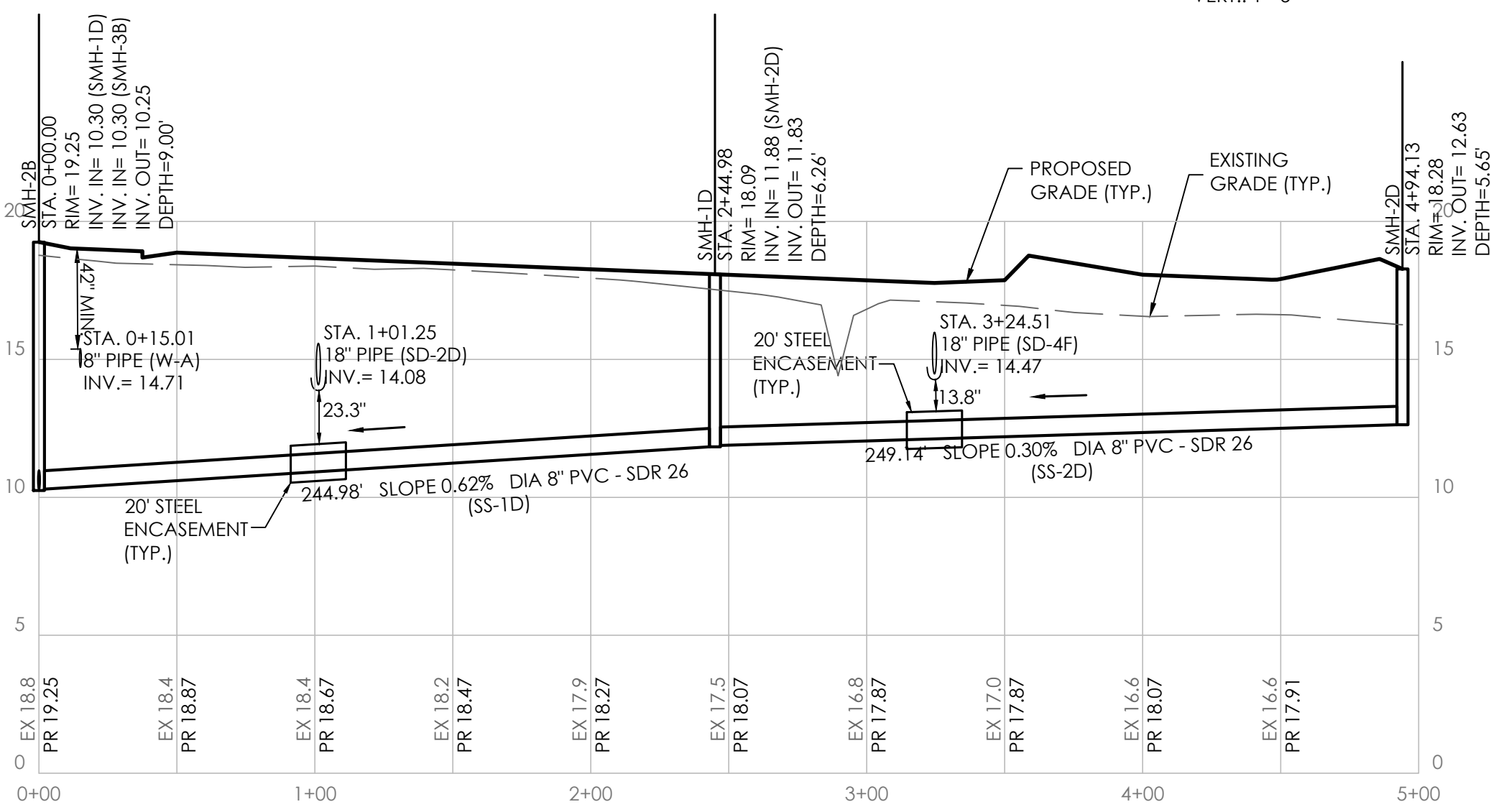
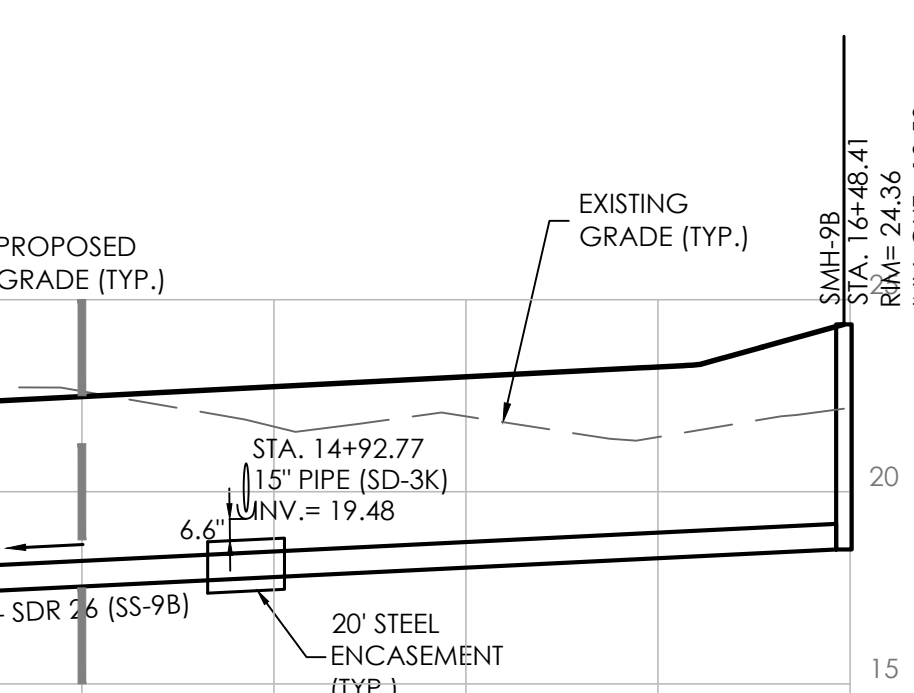
REVISIONS	
NO.	DESCRIPTION
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3	REVISIONS PER AGENCY COMMENTS

for
SYCAMORE CHASE EXPANSION
BALTIMORE HUNDRED
SUSSEX COUNTY, DELAWARE

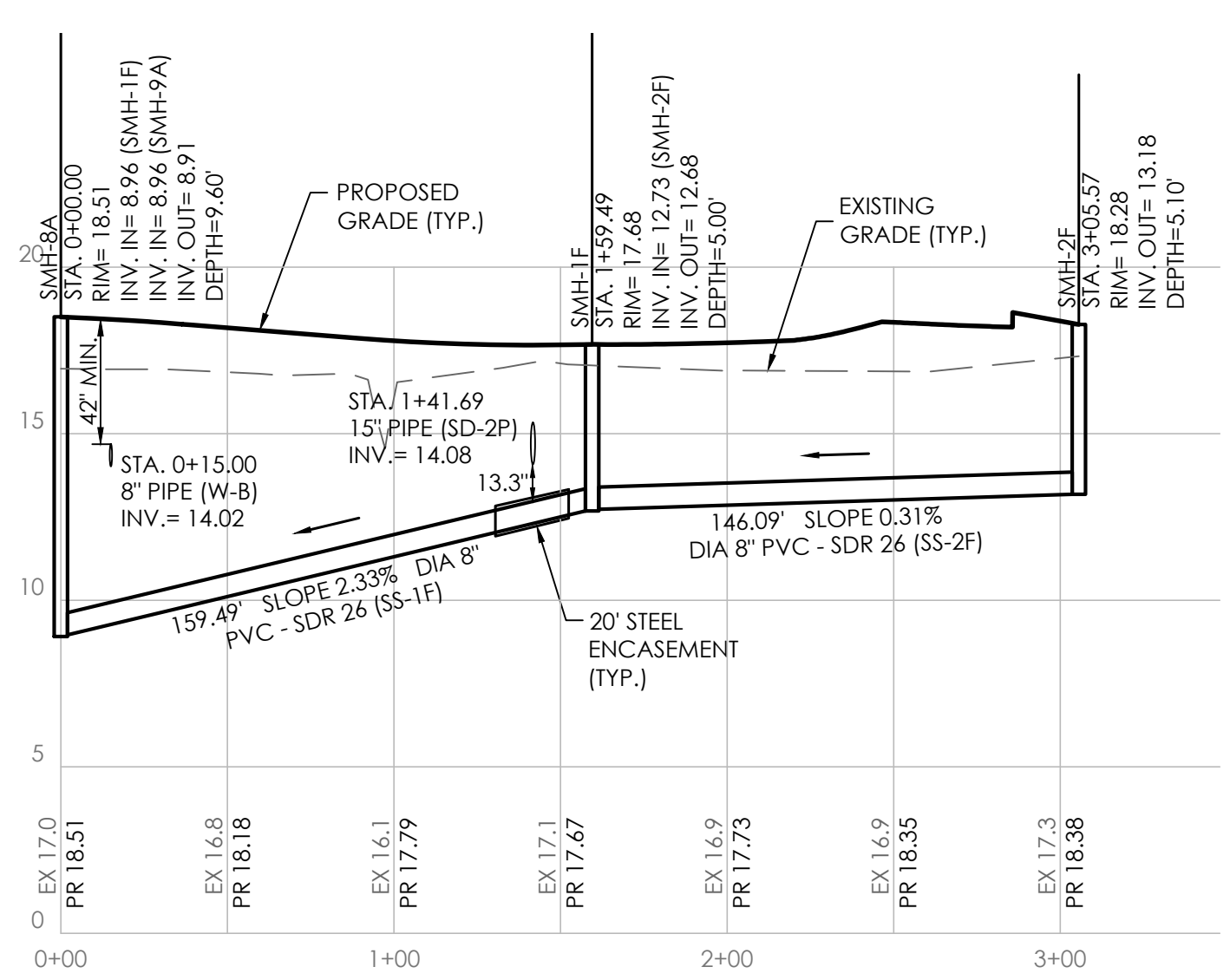
Date:	02-01-24
Job Number:	G21041
Scale:	AS SHOWN
Drawn By:	HHB
Designed By:	HHB
Approved By:	JIP



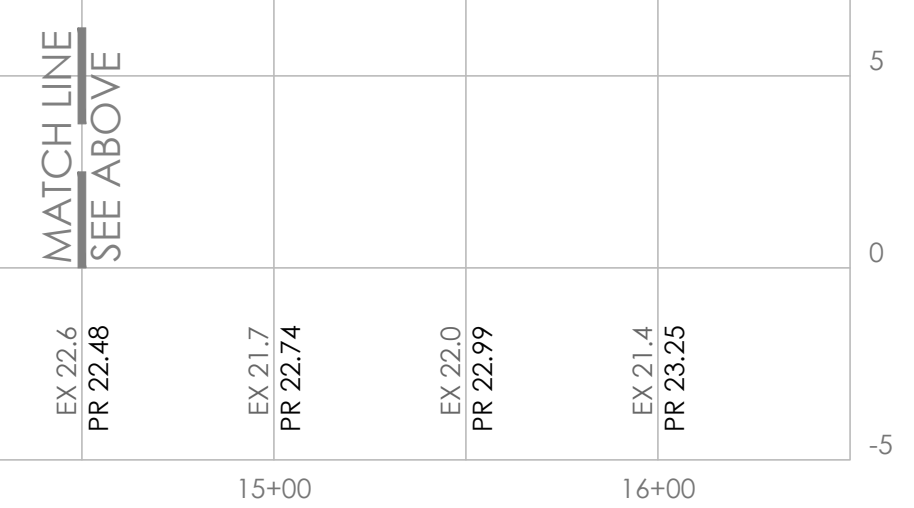
SMH-1A TO SMH-9B
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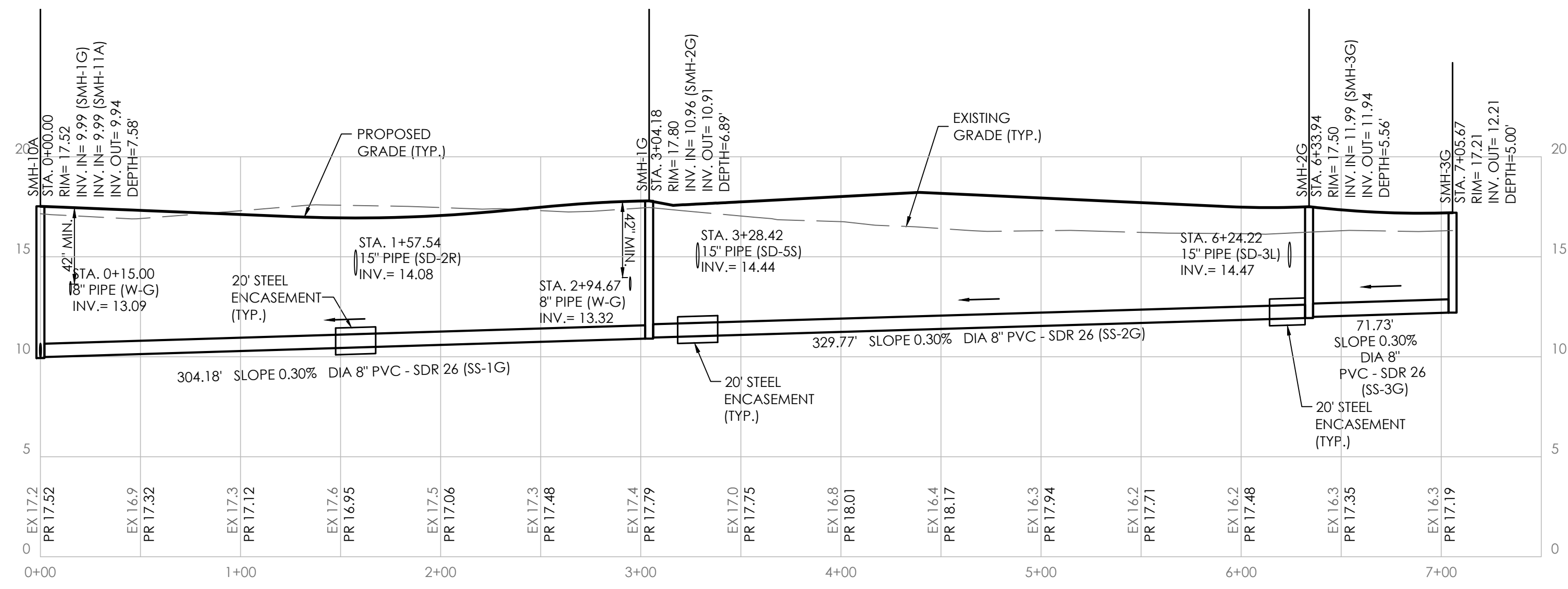
SMH-2B TO SMH-2D
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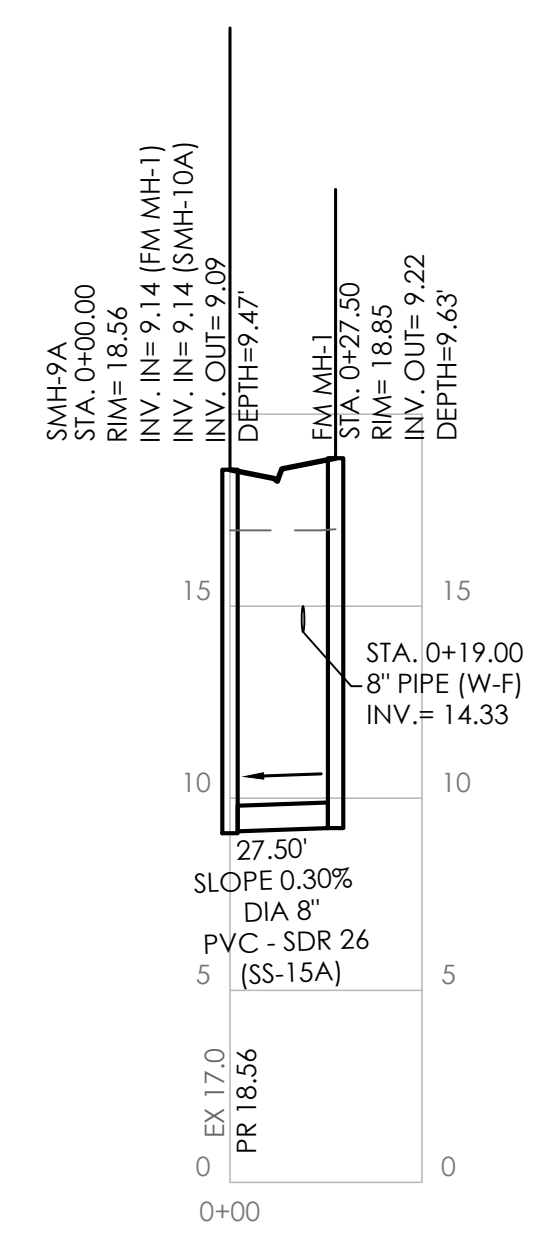
SMH-8A TO SMH-2F
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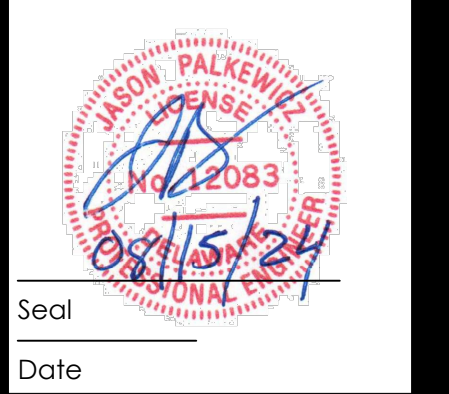
SMH-1A TO SMH-9B (CONT.)
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SMH-10A TO SMH-3G
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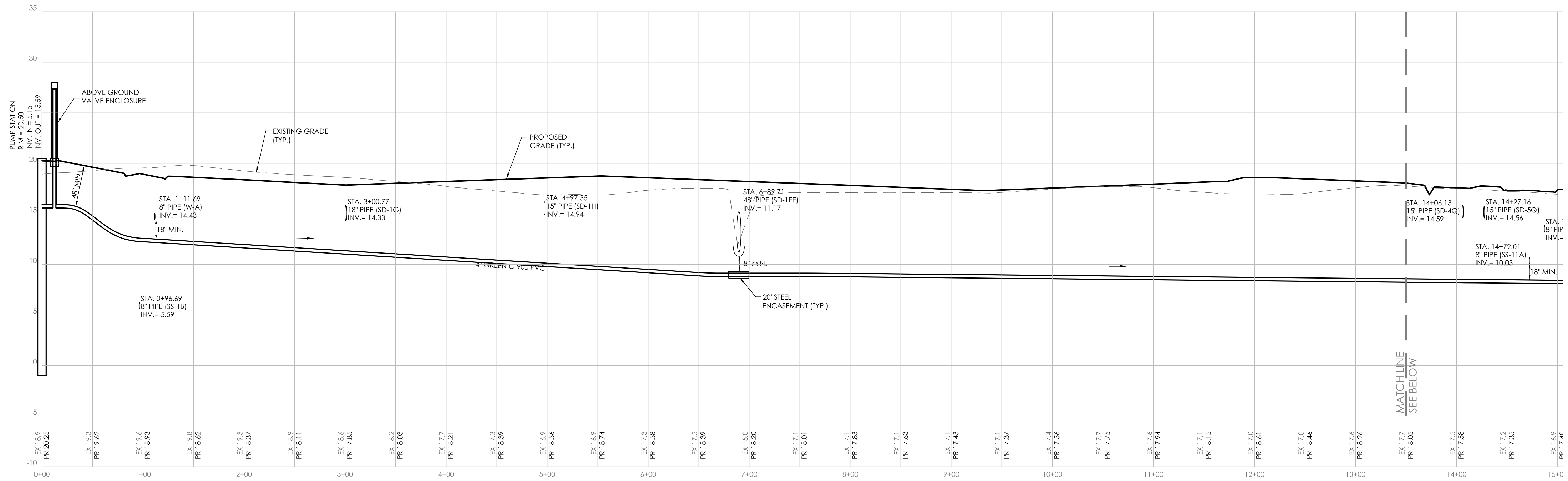
SMH-9A TO FM MH-1
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NO.	DATE	DESCRIPTION
1	4/5/24	REVISIONS PER AGENCY COMMENTS DATED MARCH 29, 2024
2	6/20/24	REVISIONS PER AGENCY COMMENTS
3	8/15/24	REVISIONS PER AGENCY COMMENTS

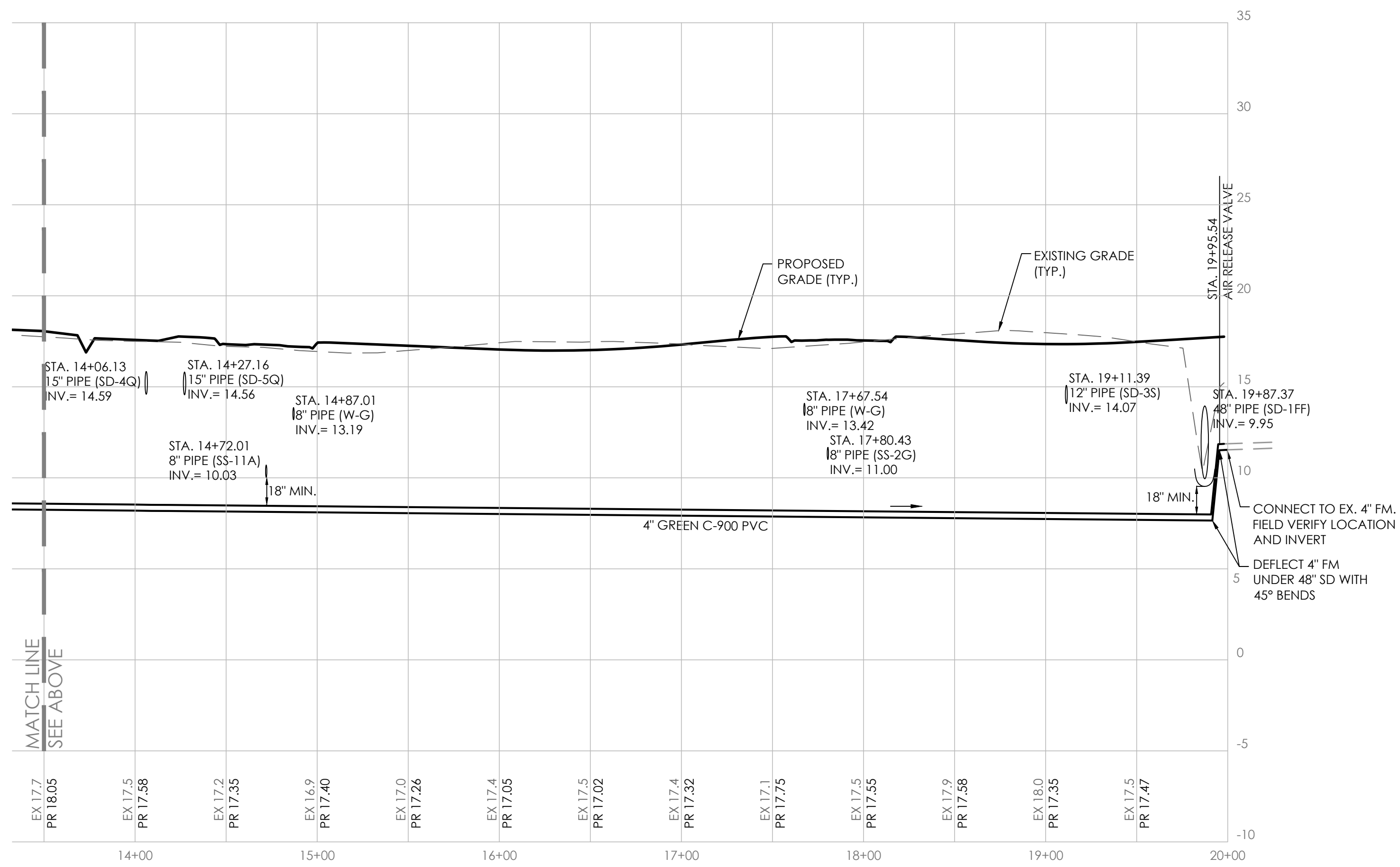
for
SYCAMORE CHASE EXPANSION
BALTIMORE HUNDRED
SUSSEX COUNTY, DELAWARE

Date:	02-01-24
Job Number:	G21041
Scale:	AS SHOWN
Drawn By:	HBB
Designed By:	HBB
Approved By:	JIP



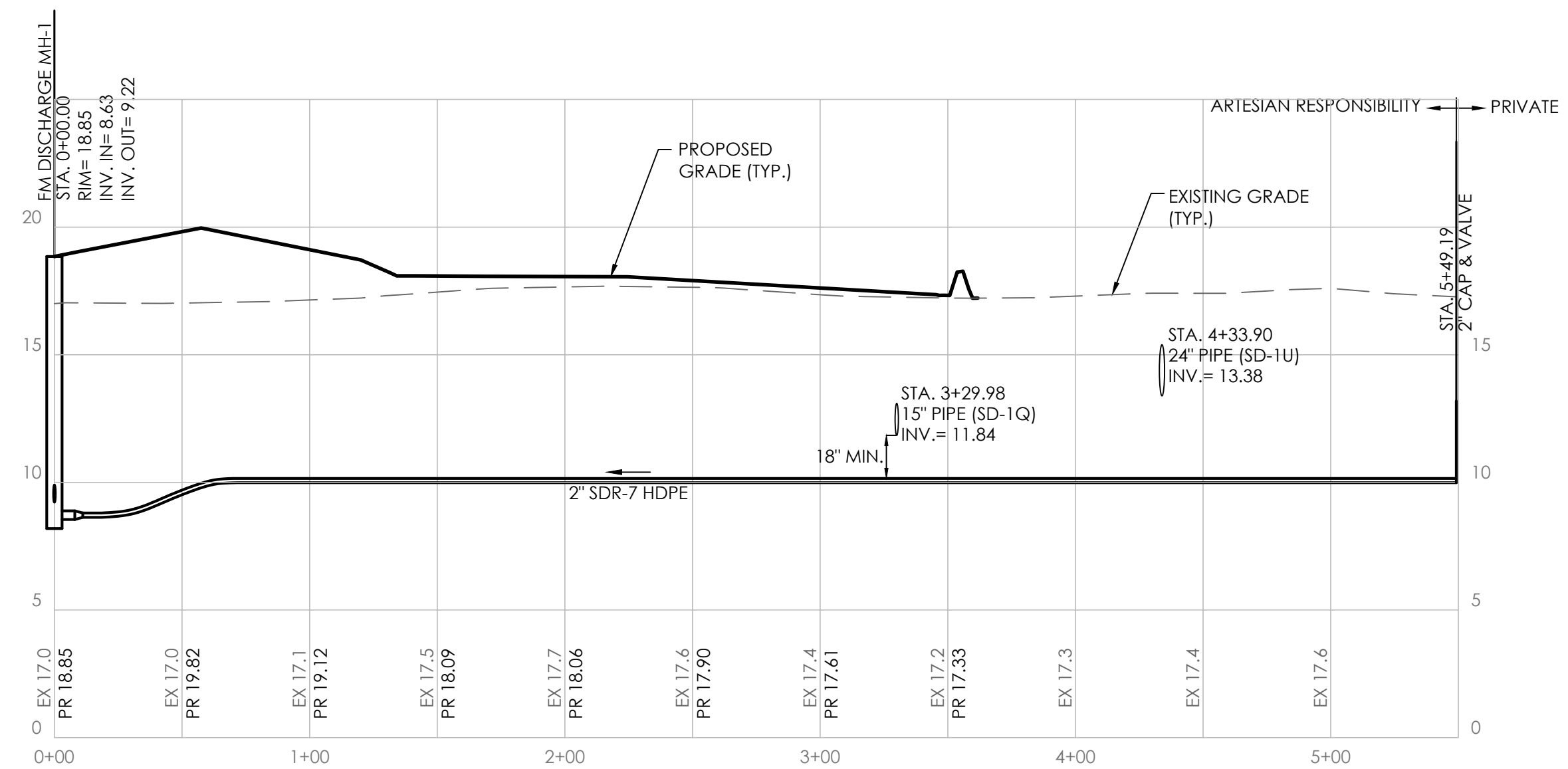
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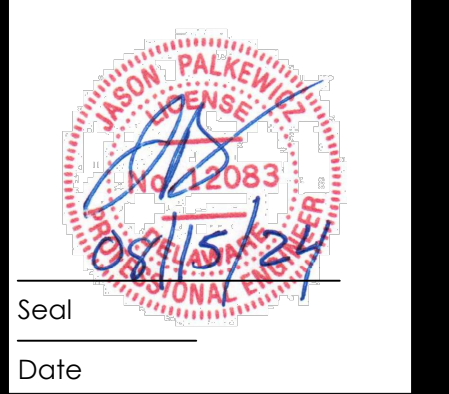
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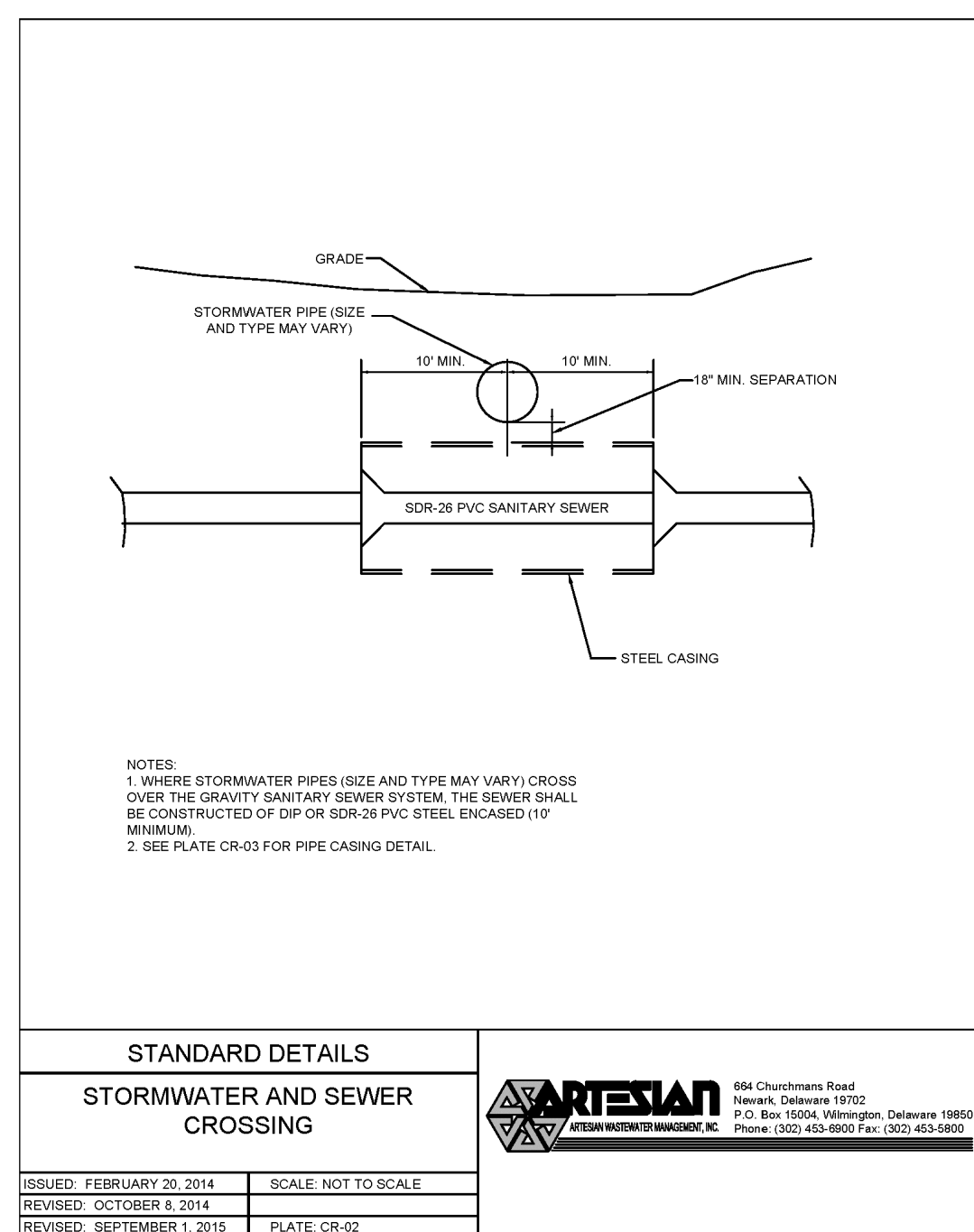
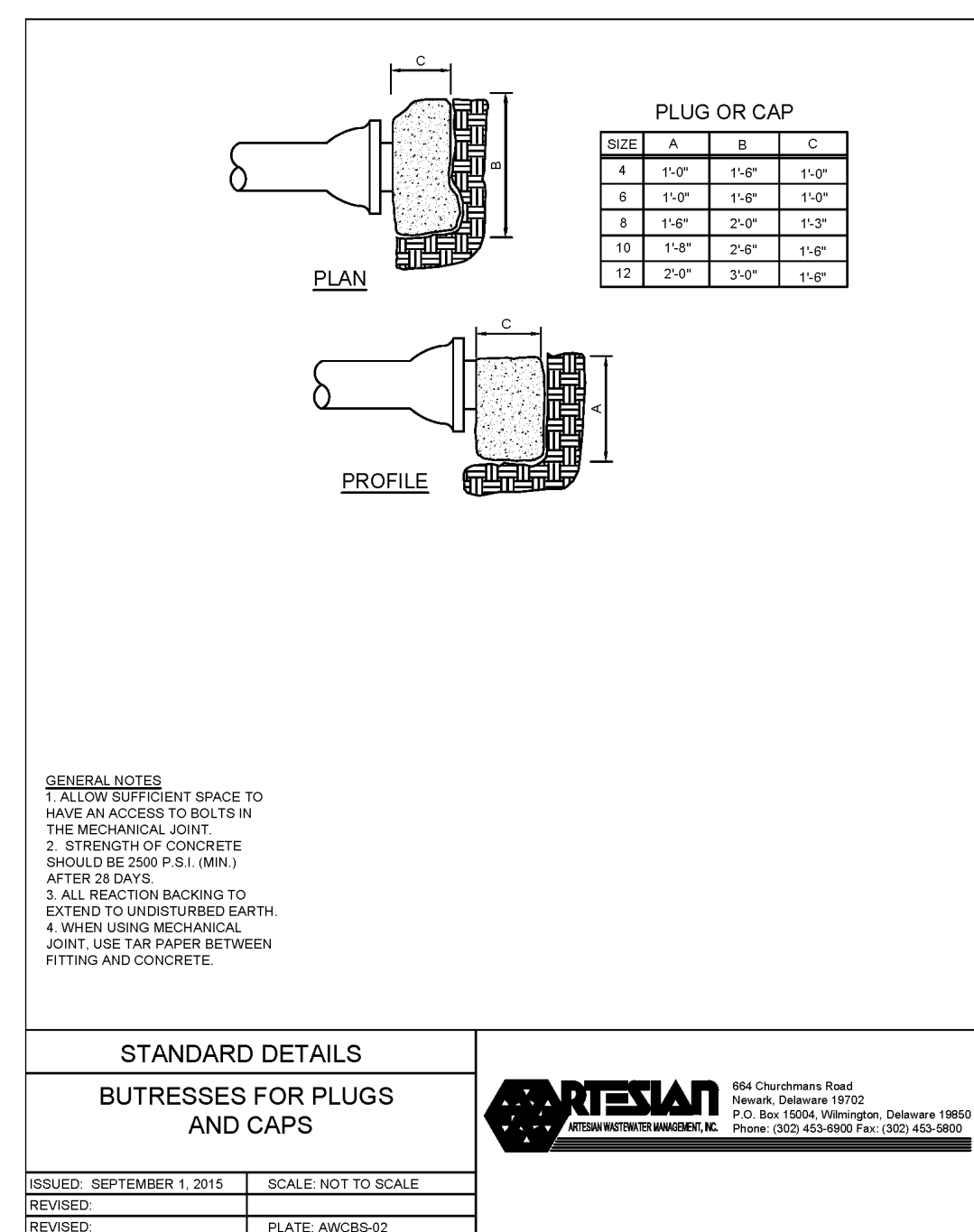
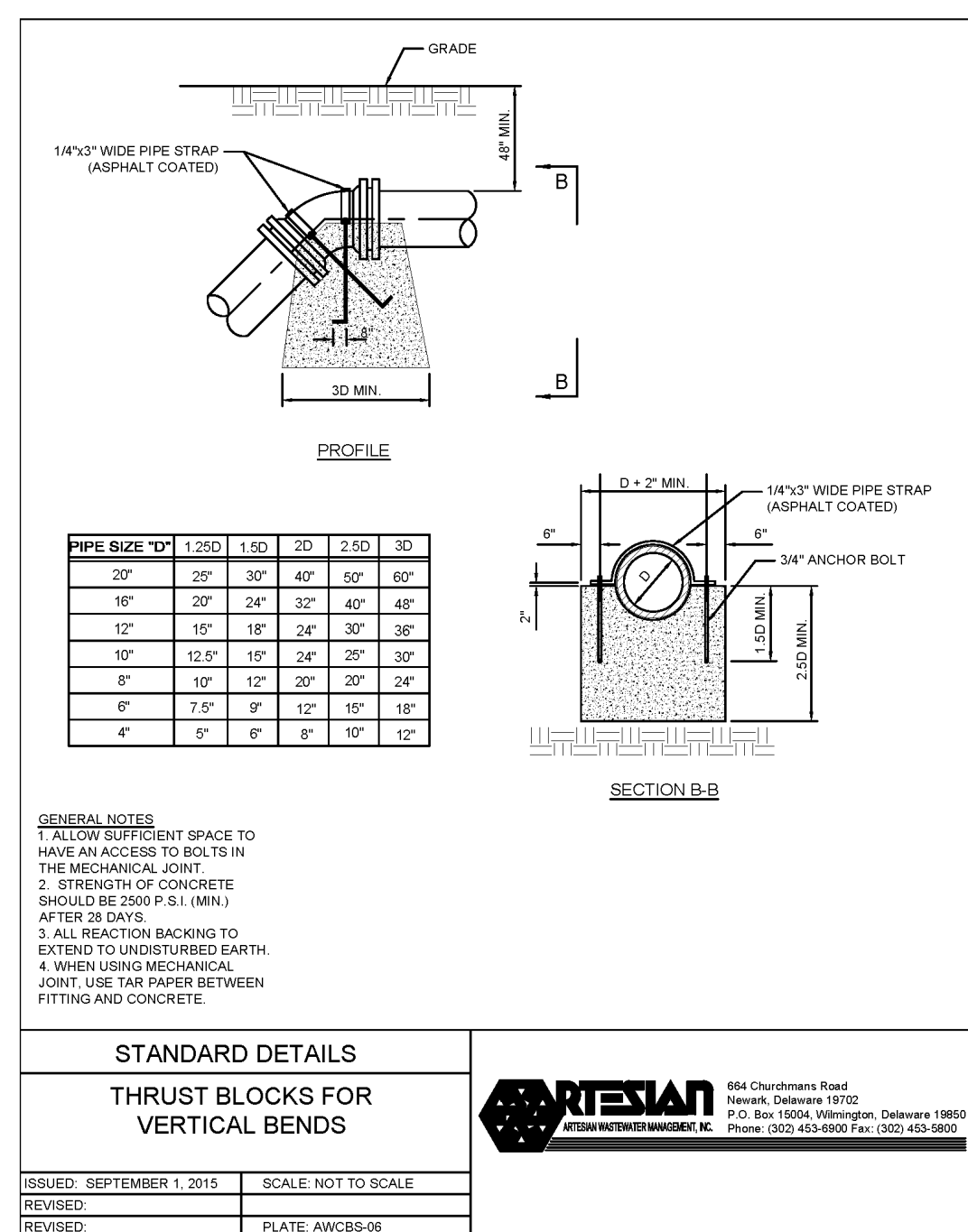
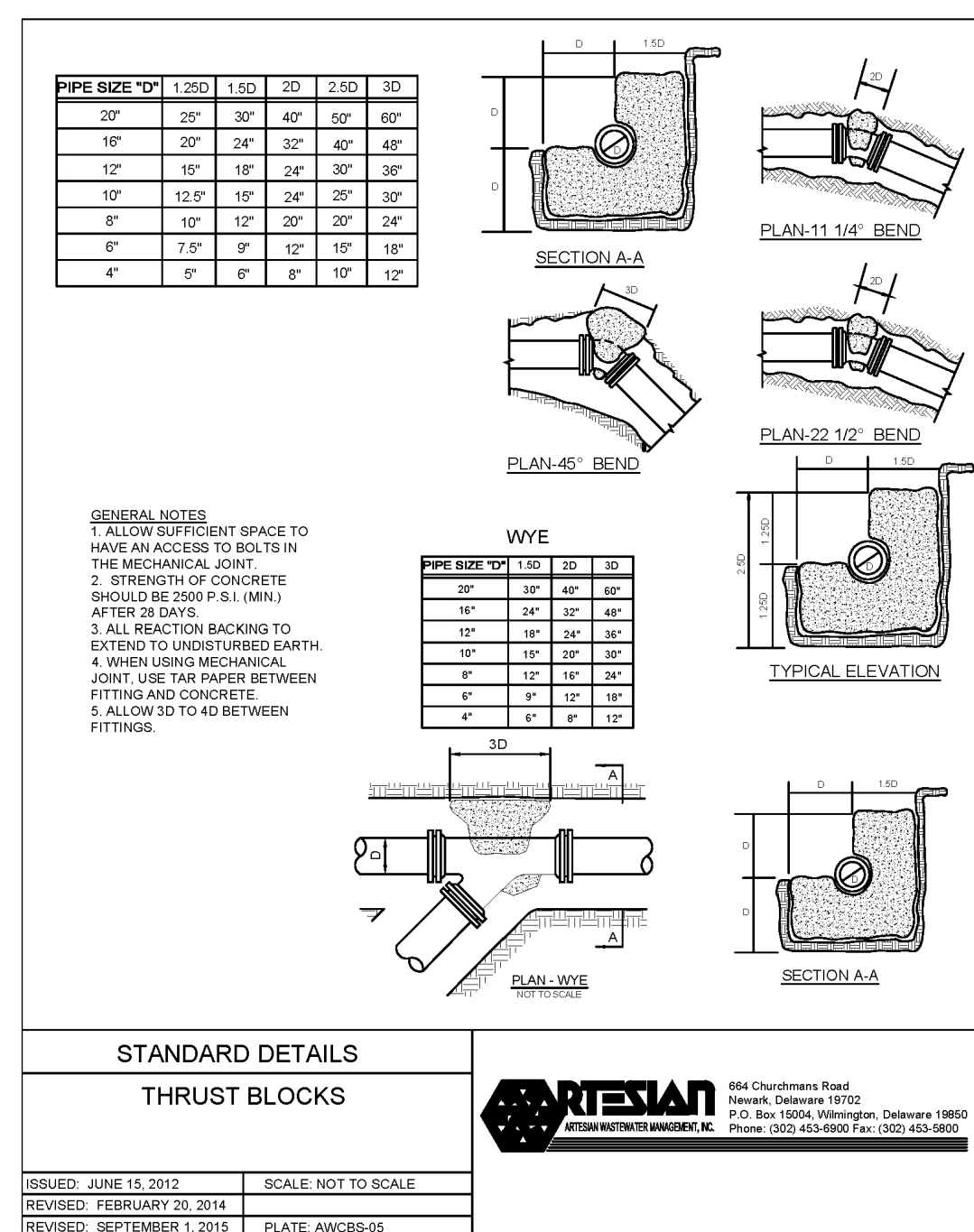
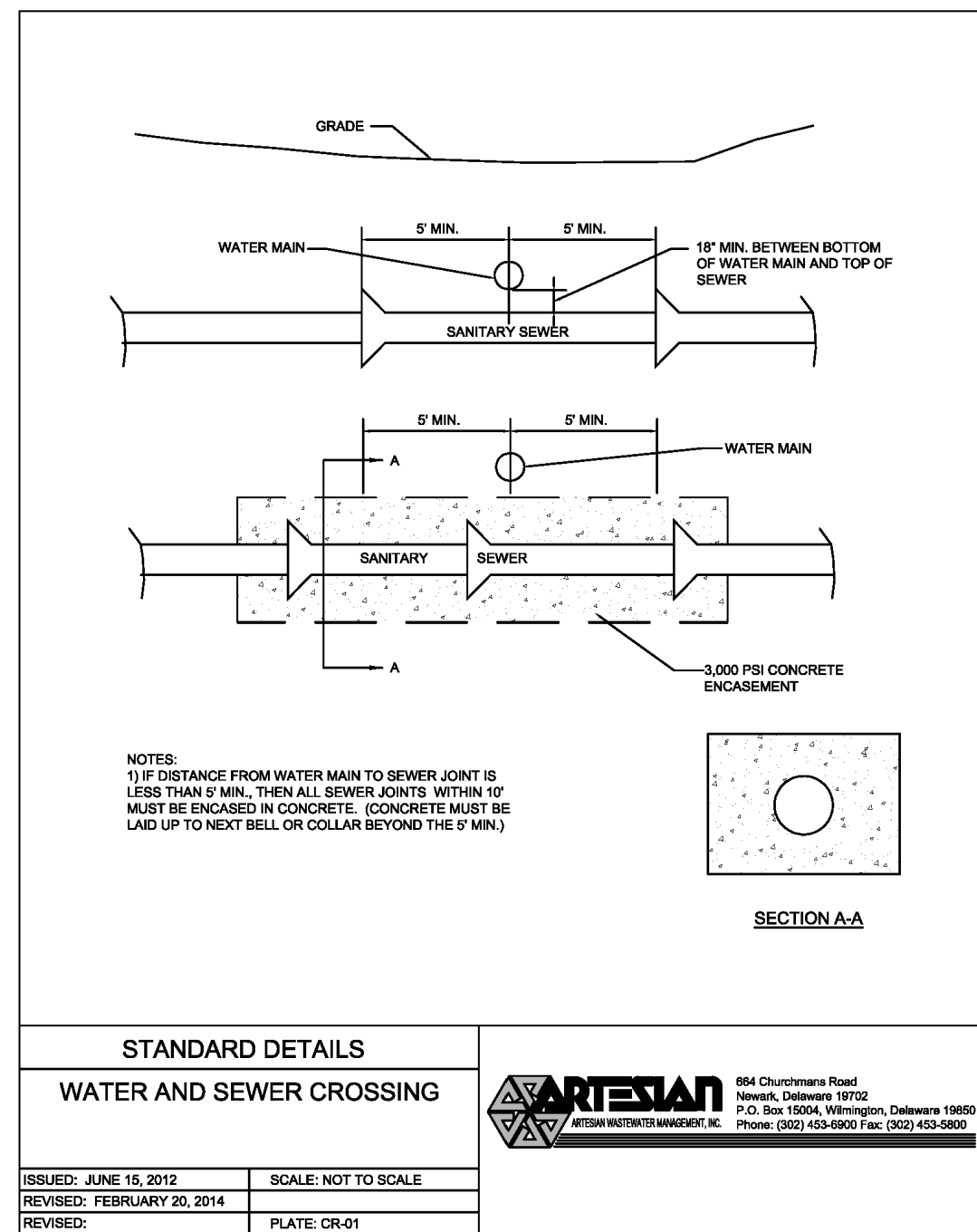
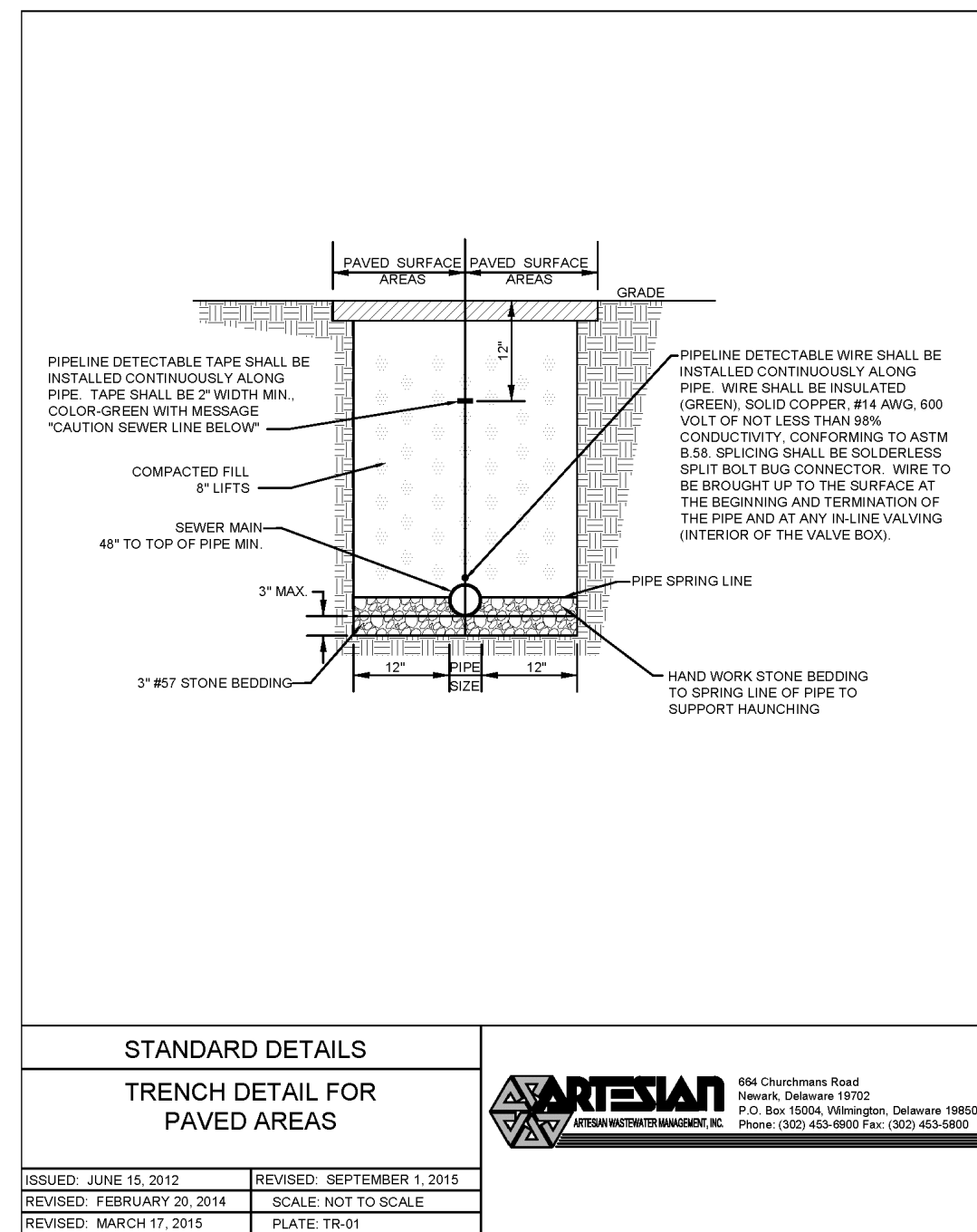
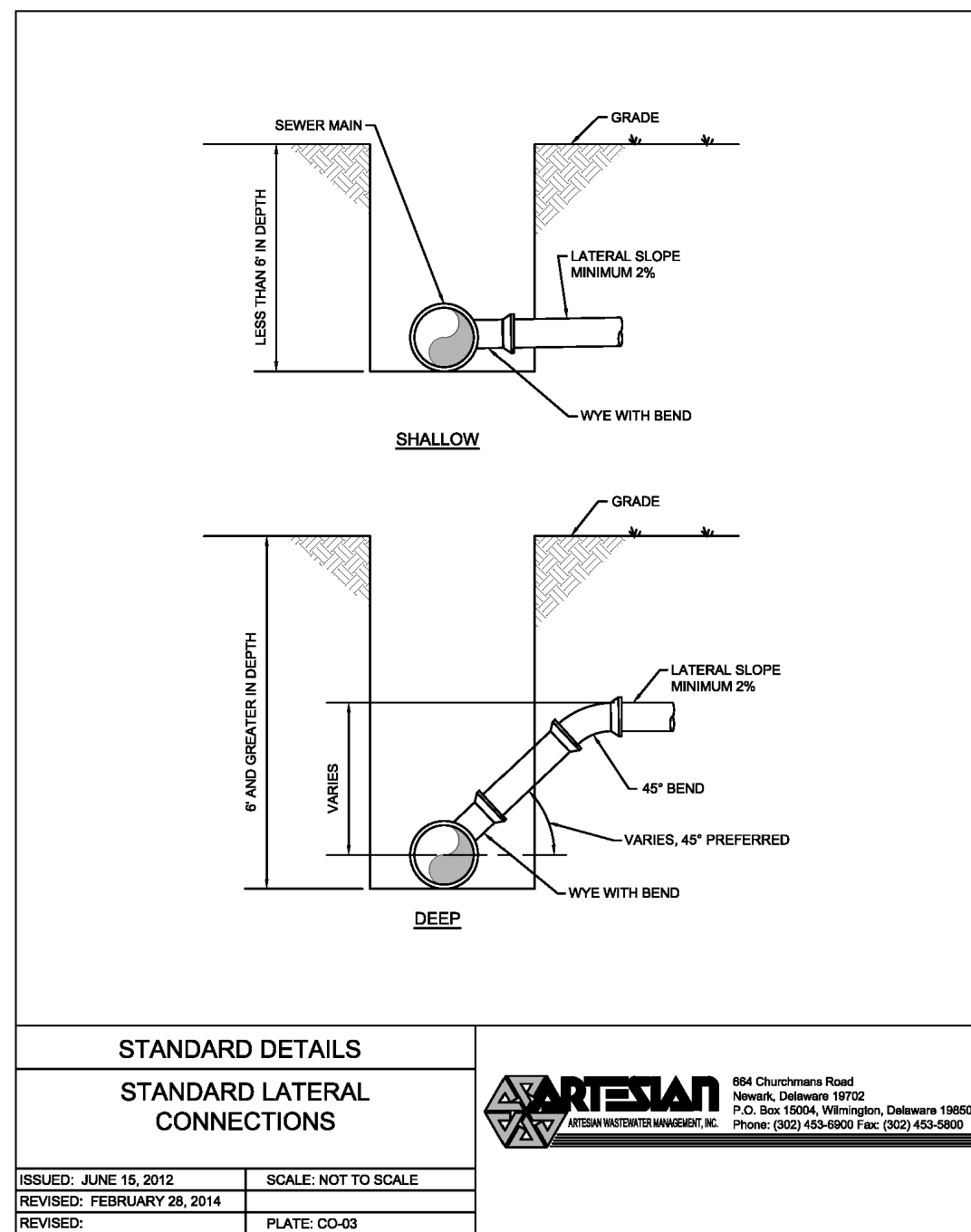
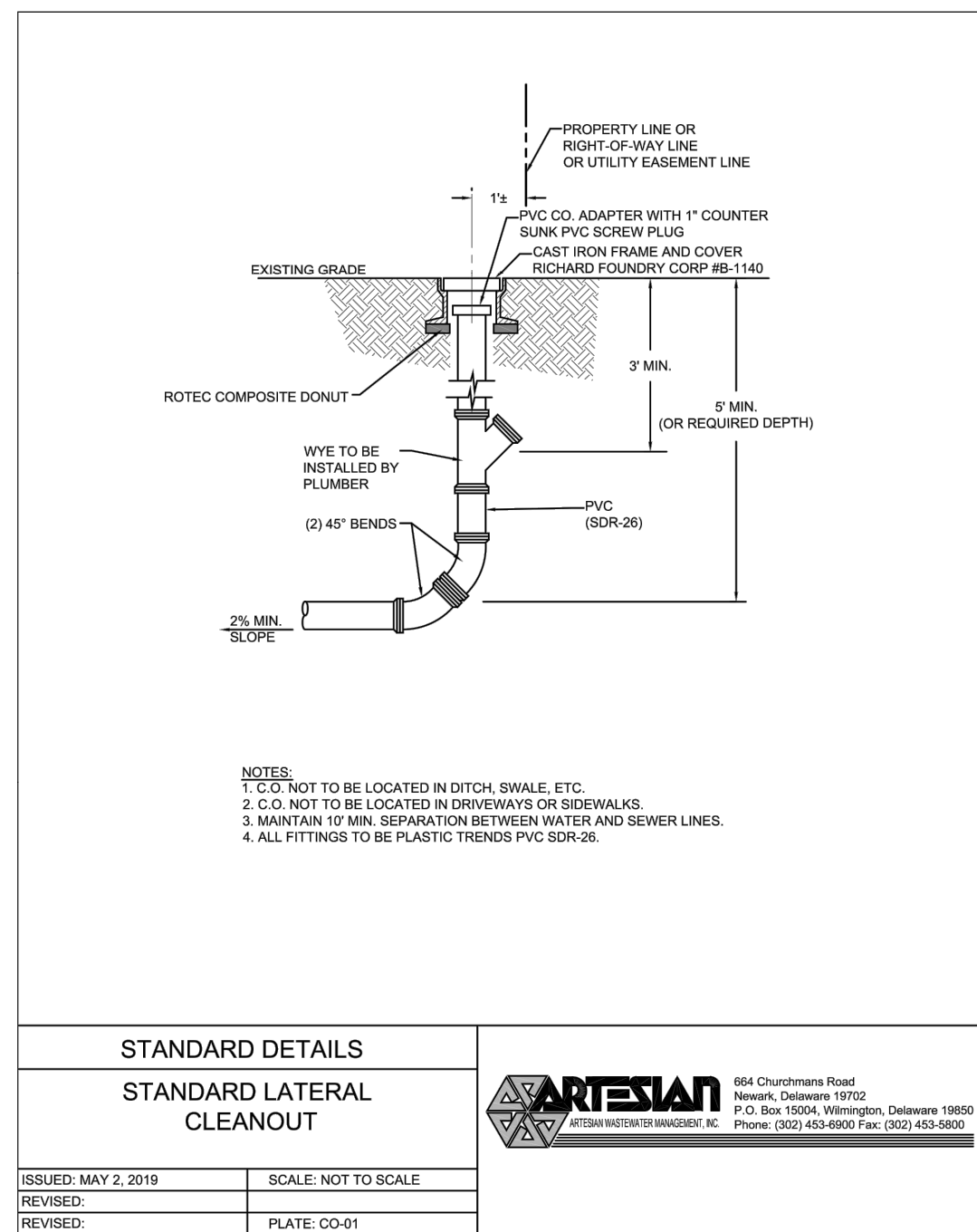
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REVISIONS	
NO.	DESCRIPTION
1	REVISIONS PER AGENCY COMMENTS DATED MARCH 29, 2024
2	REVISIONS PER AGENCY COMMENTS
3	REVISIONS PER AGENCY COMMENTS

for
SYCAMORE CHASE EXPANSION
BALTIMORE HUNDRED
SUSSEX COUNTY, DELAWARE

Date:	02-01-24
Job Number:	G21041
Scale:	AS SHOWN
Drawn By:	HHB
Designed By:	HHB
Approved By:	JP



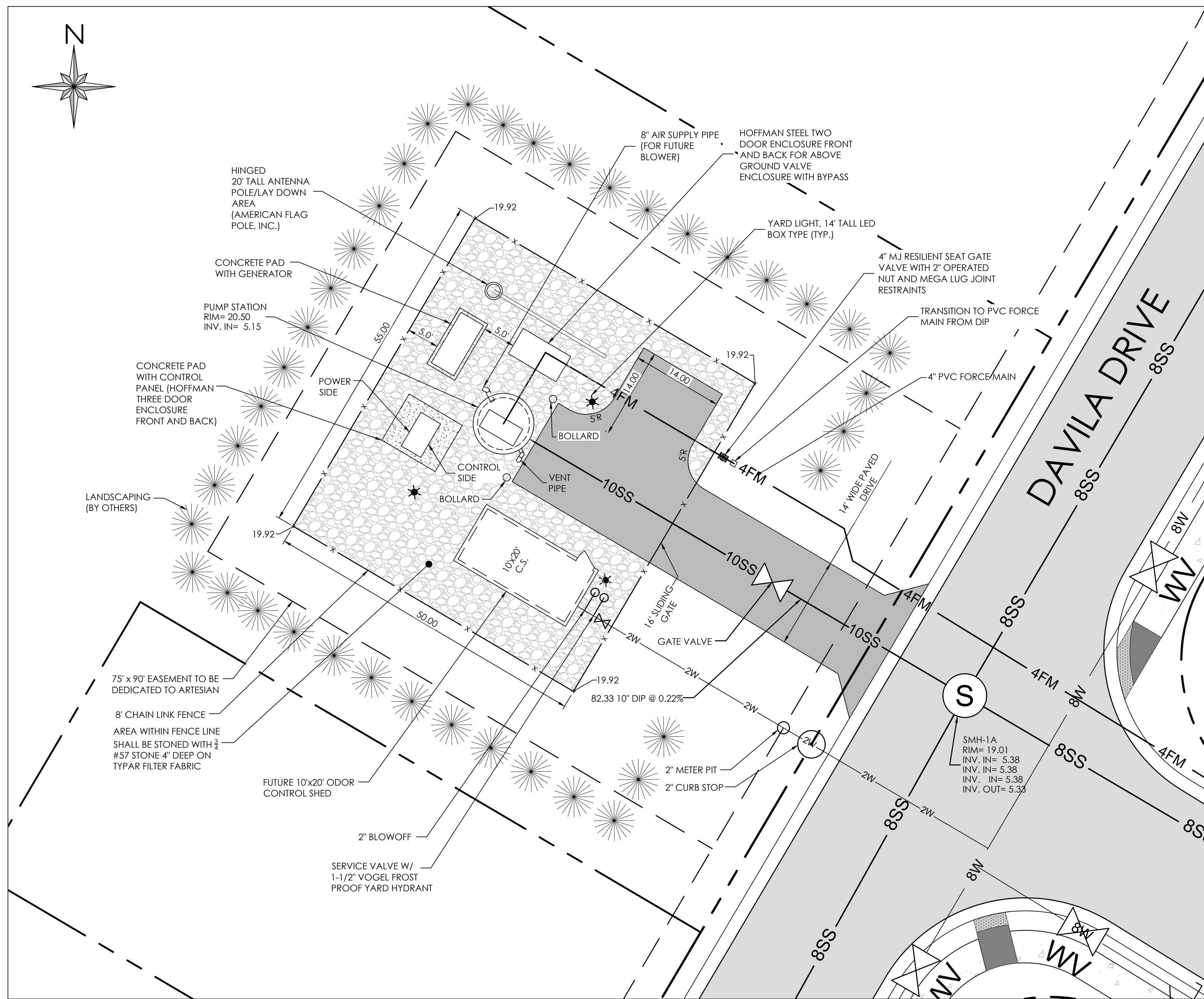
Seal
Date

REVISIONS		
NO.	DATE	DESCRIPTION
1	4/5/24	REVISIONS PER AGENCY COMMENTS DATED MARCH 29, 2024
2	6/20/24	REVISIONS PER AGENCY COMMENTS
3	8/15/24	REVISIONS PER AGENCY COMMENTS

SANITARY SEWER DETAILS 1
for
SYCAMORE CHASE EXPANSION
BALTIMORE HUNDRED
SUSSEX COUNTY, DELAWARE

Date:	02-01-24
Job Number:	G21041
Scale:	AS NOTED
Drawn By:	ML
Designed By:	DP
Approved By:	JP

Sheet No.:



SITE PLAN - PUMP STATION
SCALE: 1" = 10'

DESIGN FLOW

The pump station will serve 181 EDUs (See Pump Station Calculations, hereon)

COLLECTION SYSTEM

The collection system will consist of 8" PVC SDR-26, 8" DIP, 10" DIP and associated manholes. All sewer materials and installation shall be per Artesian Wastewater Management Standards.

TRANSMISSION

The new 4" diameter PVC force main will be installed from the proposed pump station to the existing 4" force main located at the intersection of Santa Fe Court and Lost Creek Drive in the existing Sycamore Chase subdivision.

Diameter = 4" CLASS 150 PVC

Design Flow = 120 gpm

Static Head = 38 feet

WWTF Low = 40 feet (per Sussex County)

WWTF High = 62 feet (per Sussex County)

Operational Point → 136 gpm at 81.3 feet total dynamic head

PUMP STATION CALCULATIONS

Community / Parcel	Homes	Amenities	Total EDUs
SYCAMORE CHASE EXPANSION	176	2	178
REMAINING LANDS	3	0	3
Total	179	2	181

Number of EDU's	=	181
Base Flow (240 GPD/EDU)	=	43,440 GPD 30.17 GPM
Peak Factor (Per Equation)	=	4.00
Peak Flow	=	173,760 GPD 121 GPM
Volume = 2 min. x 121 GPM	=	242 GALLONS
8" Diameter = 0.7 ft Depth (263 GALLONS)		
PIPING	=	4" @ 3.08 FPS

BUOYANCY CALCULATIONS:
WET WELL STRUCTURE (100-yr Water Surface Elevation = 17.46)
WEIGHT OF DISPLACED WATER

VOLUME OF WELL = $\pi r^2 h$
[h: 17.46 - (-1.00) = 18.46]
VOLUME = $3.14 \times (4.67 \text{ ft})^2 \times 18.46 \text{ ft} = 1,265 \text{ c.f.}$
WEIGHT = $1,265 \text{ c.f.} \times 62.43 \text{ lb/c.f.} = \mathbf{78,974 \text{ lb}}$

VOLUME OF BASE = $\pi r^2 h$
VOLUME = $3.14 \times (5.34 \text{ ft})^2 \times 1.50 \text{ ft} = 135 \text{ c.f.}$
WEIGHT = $135 \text{ c.f.} \times 62.43 \text{ lb/c.f.} = \mathbf{8,428 \text{ lb}}$

TOTAL = 78,974 + 8,428 = 87,402 lb

WEIGHT OF WET WELL STRUCTURE

TOP = $3.14 \times (4.67 \text{ ft})^2 \times 0.83 \text{ ft} - 3.0 \text{ ft} \times 6.0 \text{ ft} \times 0.83 \text{ ft} = 42 \text{ c.f.}$

WALLS = $3.14 \times (4.67 \text{ ft})^2 \times 20.91 \text{ ft} - 3.14 \times (4.00 \text{ ft})^2 \times 20.91 \text{ ft} = 382 \text{ c.f.}$

BOTTOM = $3.14 \times (5.34 \text{ ft})^2 \times 1.50 \text{ ft} = 134 \text{ c.f.}$

WEIGHT = $558 \text{ c.f.} \times 150 \text{ lb/c.f.} = \mathbf{83,700 \text{ lb}}$

WEIGHT OF CONCRETE ON 8" BOTTOM KICK OUT

CONCRETE = $3.14 \times (5.34 \text{ ft})^2 \times 1.50 \text{ ft} - 3.14 \times (4.67 \text{ ft})^2 \times 1.50 \text{ ft} = 32 \text{ c.f.}$

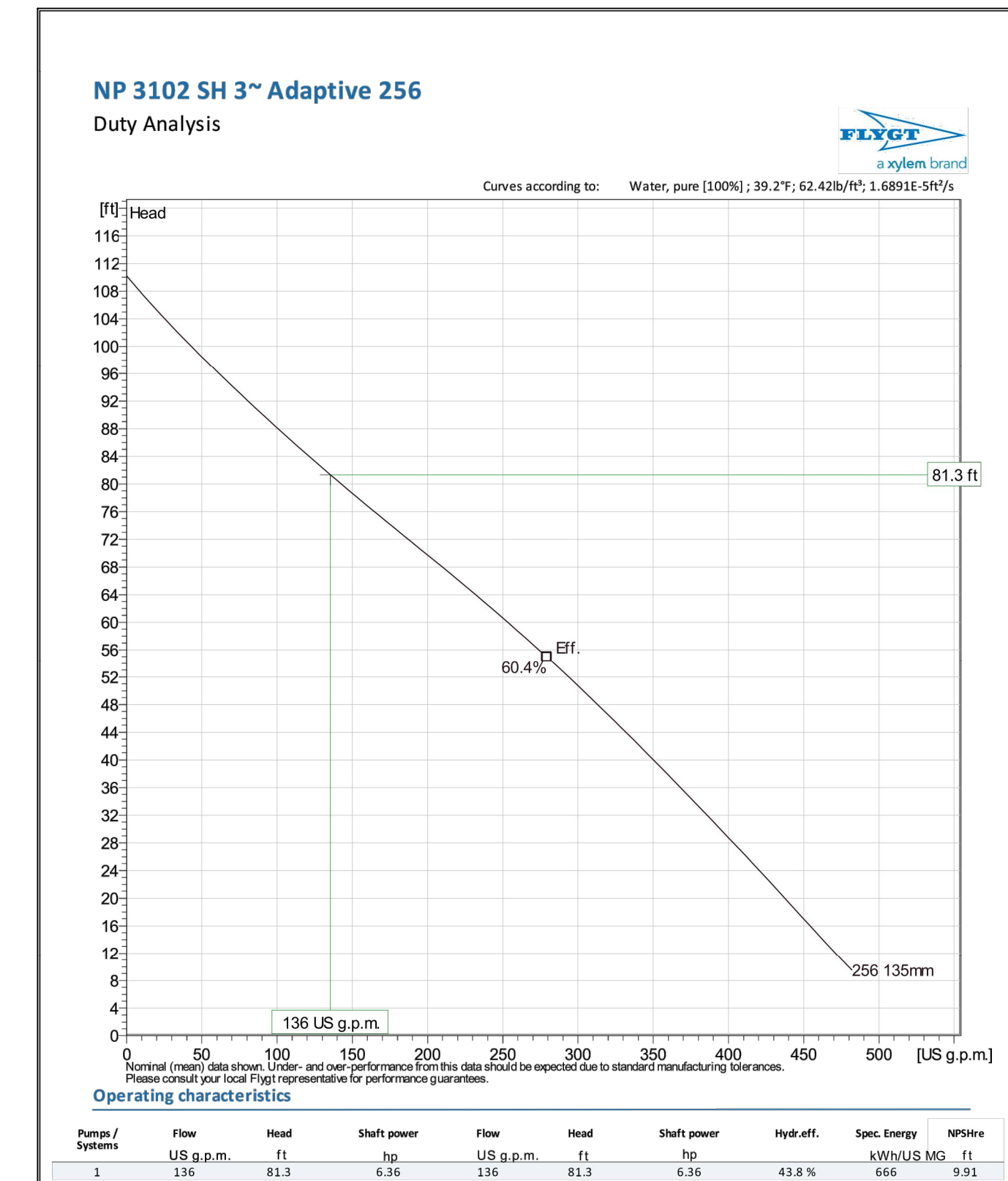
WEIGHT = $32 \text{ c.f.} \times 150 \text{ lb/c.f.} = \mathbf{4,800 \text{ lb}}$

WEIGHT OF DIRT ON 8" BOTTOM KICK OUT

DIRT = $3.14 \times (5.34 \text{ ft})^2 \times 20.58 \text{ ft} - 3.14 \times (4.67 \text{ ft})^2 \times 20.58 \text{ ft} = 434 \text{ c.f.}$

WEIGHT = $434 \text{ c.f.} \times 100 \text{ lb/c.f.} = \mathbf{43,400 \text{ lb}}$

SAFETY FACTOR:
(WEIGHT OF CONCRETE + DIRT)/WEIGHT OF WATER
 $131,900/87,402 = 1.51$



SYSTEM CURVE

Friction loss calculation

Type	Length (ft)	Friction Loss (ft)	Loss per 100 ft (ft/100ft)
Pipe length	4,016	50	1.24
Elbows	4,016	1.5	0.037
Non-return valves	4,016	0.9	0.022
T-piece	4,016	0.4	0.010
VALVE	4,016	0.3	0.007
Total friction head			1.323

Type	Length (ft)	Friction Loss (ft)	Loss per 100 ft (ft/100ft)
Pipe length	4	3400	85.0
Elbows	4	3	0.075
T-piece	4	0.4	0.010
VALVE	4	1.2	0.030
Total friction head			86.105

HEAD CALCULATIONS

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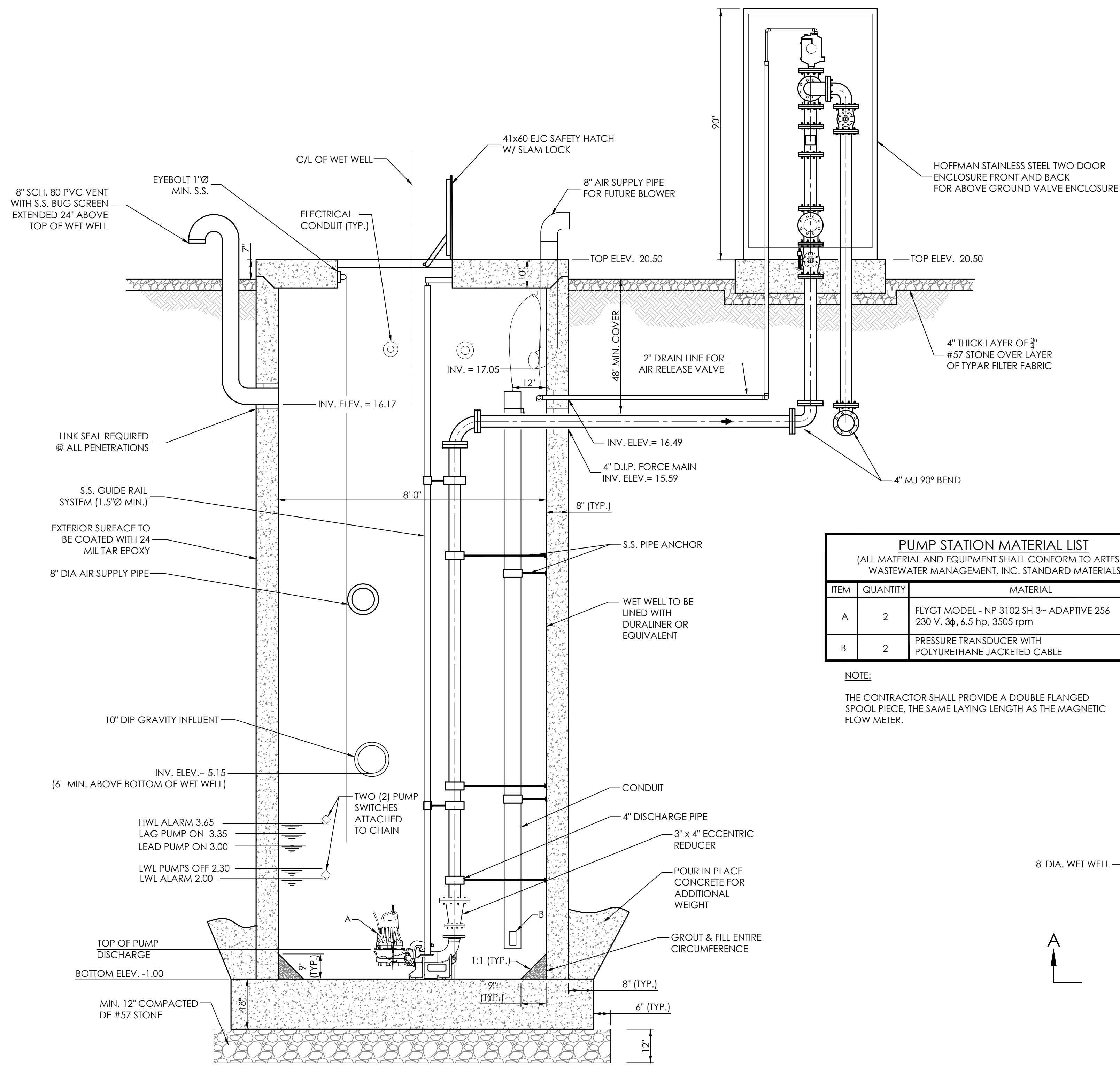
3033 Manitt Mill Road
Salisbury, MD 21804
T. 410.572.8833

NO. 1 DATE DESCRIPTION
1 4/15/24 REVISIONS PER AGENCY COMMENTS DATED MARCH 29, 2024
2 6/20/24 REVISIONS PER AGENCY COMMENTS
3 8/15/24 REVISIONS PER AGENCY COMMENTS

PUMP STATION PLAN for **SYCAMORE CHASE EXPANSION**
BALTIMORE HUNDRED
SUSSEX COUNTY, DELAWARE

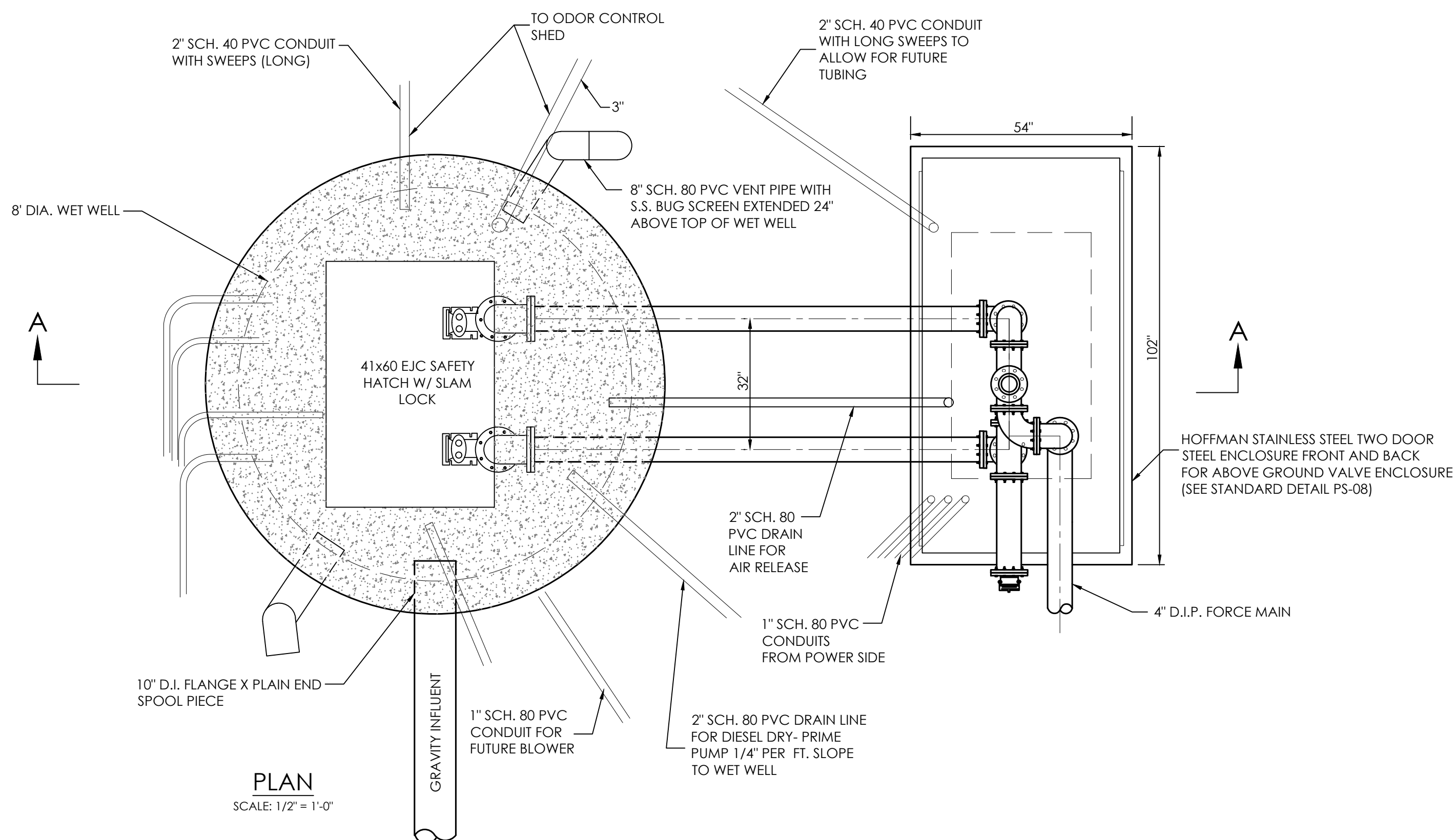
Date: 02-01-24
Job Number: G21041
Scale: AS NOTED
Drawn By: HJB
Designed By: JJP
Approved By: JJP

Sheet No.: **35**
File Name: PS



PUMP STATION MATERIAL LIST (ALL MATERIAL AND EQUIPMENT SHALL CONFORM TO ARTESIAN WASTEWATER MANAGEMENT, INC. STANDARD MATERIALS)		
ITEM	QUANTITY	MATERIAL
A	2	FLYGT MODEL - NP 3102 SH 3- ADAPTIVE 256 230 V, 3ø, 6.5 hp, 3505 rpm
B	2	PRESSURE TRANSDUCER WITH POLYURETHANE JACKETED CABLE

NOTE:
THE CONTRACTOR SHALL PROVIDE A DOUBLE FLANGED SPOOL PIECE, THE SAME LAYING LENGTH AS THE MAGNETIC FLOW METER.



CHANNEL FRAME, PEDESTRIAN RATED WITH SAFE HATCH® SAFETY ACCESS SYSTEM

- Non-traffic, pedestrian rated
- Safety orange aluminum safety grate system for fall through protection and controlled confined space entry
- Red stainless steel hold open arm
- Heavy duty stainless steel hinges
- Extruded aluminum channel frame with 1 1/2" drain coupler on underside of frame
- 1/8" cushion O-ring gasket
- Exterior of frame coated with black primer
- Stainless steel slam lock with removable T-handle and threaded stainless steel plug
- Aluminum lift handle
- 1/4" aluminum diamond plate cover

See pages 8 and 9 for additional options.

No vehicle traffic allowed.

Double Grate, Double Cover Style

Aluminum Channel Frame with SAFE HATCH® Safety Access System

Catalog Number	Description	Unobstructed Clear Opening O x O1	Inside Dimensions A x A1	Outside Dimensions B x B1	Height C	Diagonal D
H24241491	1 Cover Hatch	24 1/2 x 25 3/8	28 x 30	34 x 36	3 1/2	49 9/16
H24301491	1 Cover Hatch	24 1/2 x 31 3/8	28 x 36	34 x 42	3 1/2	54 1/16
H24361491	1 Cover Hatch	24 1/2 x 37 3/8	28 x 42	34 x 48	3 1/2	58 13/16
H30301491	1 Cover Hatch	30 1/2 x 31 3/8	34 x 36	40 x 42	3 1/2	58
H30361491	1 Cover Hatch	30 1/2 x 36 7/8	34 x 42	40 x 48	3 1/2	62 1/2
H36361491	1 Cover Hatch	36 1/2 x 36 7/8	40 x 42	46 x 48	3 1/2	66 1/2
H42421491	1 Cover Hatch	42 1/2 x 42 3/8	46 x 48	52 x 54	5 1/2	75
H30481491	1 Cover Hatch	30 1/2 x 48 3/4	34 x 54	40 x 60	3 1/2	72 1/8
H36481491	1 Cover Hatch	36 1/2 x 48 3/4	40 x 54	46 x 60	3 1/2	75 5/8
H30481591	2 Cover Hatch	30 5/8 x 48	35 x 48	41 x 54	3 1/2	67 13/16
H30541591	2 Cover Hatch	30 5/8 x 54	35 x 54	41 x 60	3 1/2	72 1/16
H36481591	2 Cover Hatch	36 5/8 x 48	41 x 48	47 x 54	3 1/2	71 5/8
H36601591	2 Cover Hatch	36 5/8 x 60	41 x 60	47 x 66	3 1/2	81 1/16
H42481591	2 Cover Hatch	42 5/8 x 48	47 x 48	53 x 54	3 1/2	75 11/16
H48481591	2 Cover Hatch	48 1/8 x 48	54 x 48	60 x 54	5 1/2	80 3/4
H48541591	2 Cover Hatch	48 1/8 x 54	54 x 54	60 x 60	5 1/2	84 7/8
H48601591	2 Cover Hatch	48 5/8 x 60	54 x 60	60 x 66	5 1/2	89 3/16
H48721591	2 Cover Hatch	48 5/8 x 72	54 x 72	60 x 78	5 1/2	98 7/16
H60601591	2 Cover Hatch	60 5/8 x 60	66 x 60	72 x 66	5 1/2	97 11/16

Note: All dimensions are in inches.

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Engineering & Construction

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Seal
Date

NO.	DATE	DESCRIPTION
1	4/15/24	REVISIONS PER AGENCY COMMENTS DATED MARCH 29, 2024
2	6/20/24	REVISIONS PER AGENCY COMMENTS
3	8/15/24	REVISIONS PER AGENCY COMMENTS

PUMP STATION DETAILS 1
for
SYCAMORE CHASE EXPANSION
BALTIMORE HUNDRED
SUSSEX COUNTY, DELAWARE

Date: 02/01/24
Job Number: G21041
Scale: AS NOTED
Drawn By: ML
Designed By: DP
Approved By: JIP

Sheet No.: 36
File Name: G18003-pump-station

