

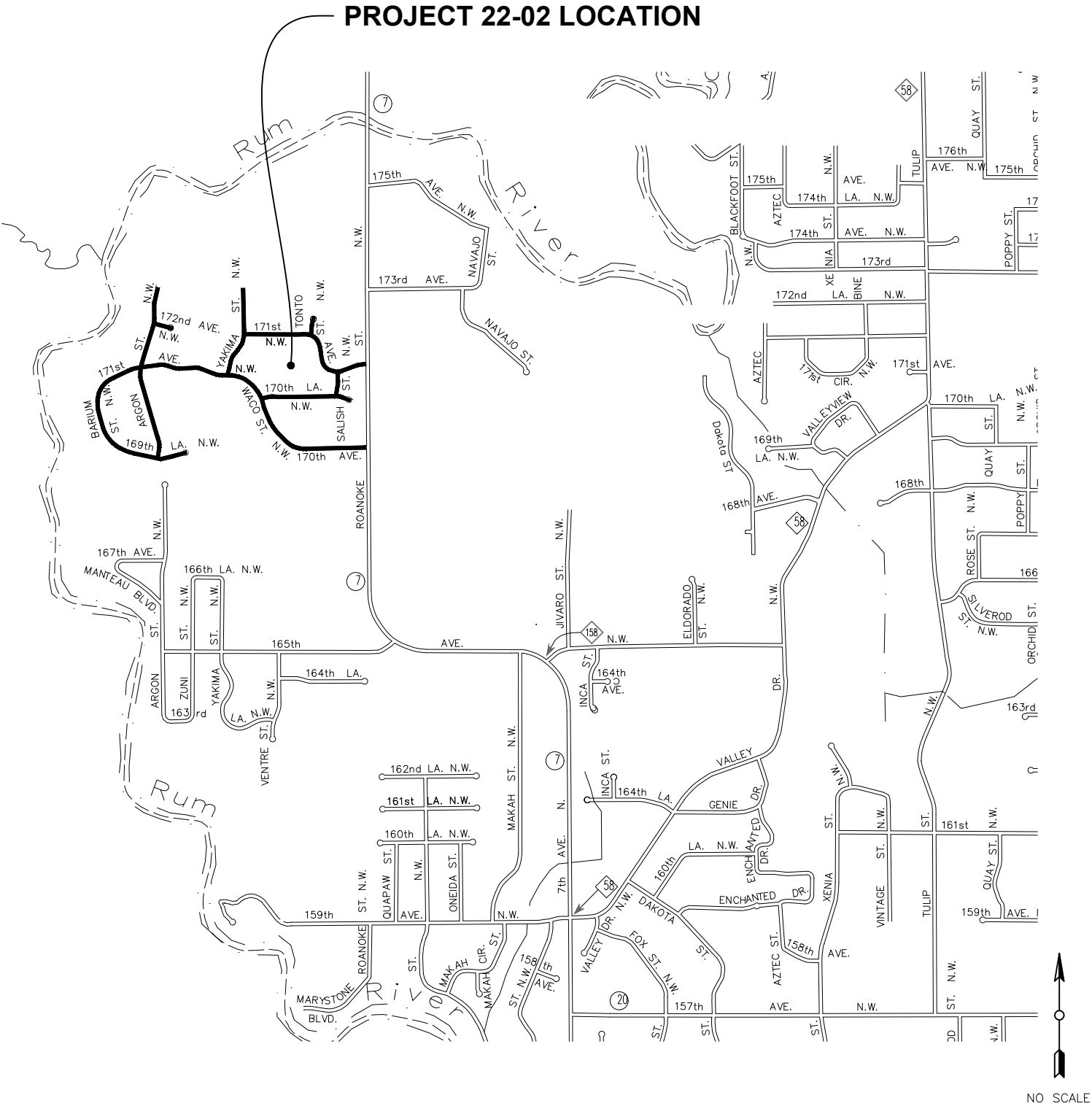


1685 Crosstown Boulevard Andover, Minnesota 55304

2022 STREET RECONSTRUCTION
CITY PROJECT NO. 22-02

DRAWING INDEX

SHEET	DESCRIPTION
1	TITLE SHEET
2	GENERAL LAYOUT
3	NOTES & LEGEND
4	STATEMENT OF ESTIMATED QUANTITIES
5	EARTH WORK SUMMARY
6 – 8	RECLAIMED AGGREGATE BASE TABLES
9	TYPICAL SECTIONS & CURB DETAILS
10 – 11	DETAILS
12 – 13	DRAINAGE AND STORM SEWER SYSTEM
14	STORM SEWER STRUCTURE TABLE
15 – 16	STORM SEWER STRUCTURE REPAIRS & PIPE LINER LOCATIONS
17 – 20	STORM SEWER PLAN & PROFILE SHEETS
21 – 50	ROADWAY PLAN & PROFILE SHEETS
51	RESTORATION PLAN



GOVERNING SPECIFICATIONS

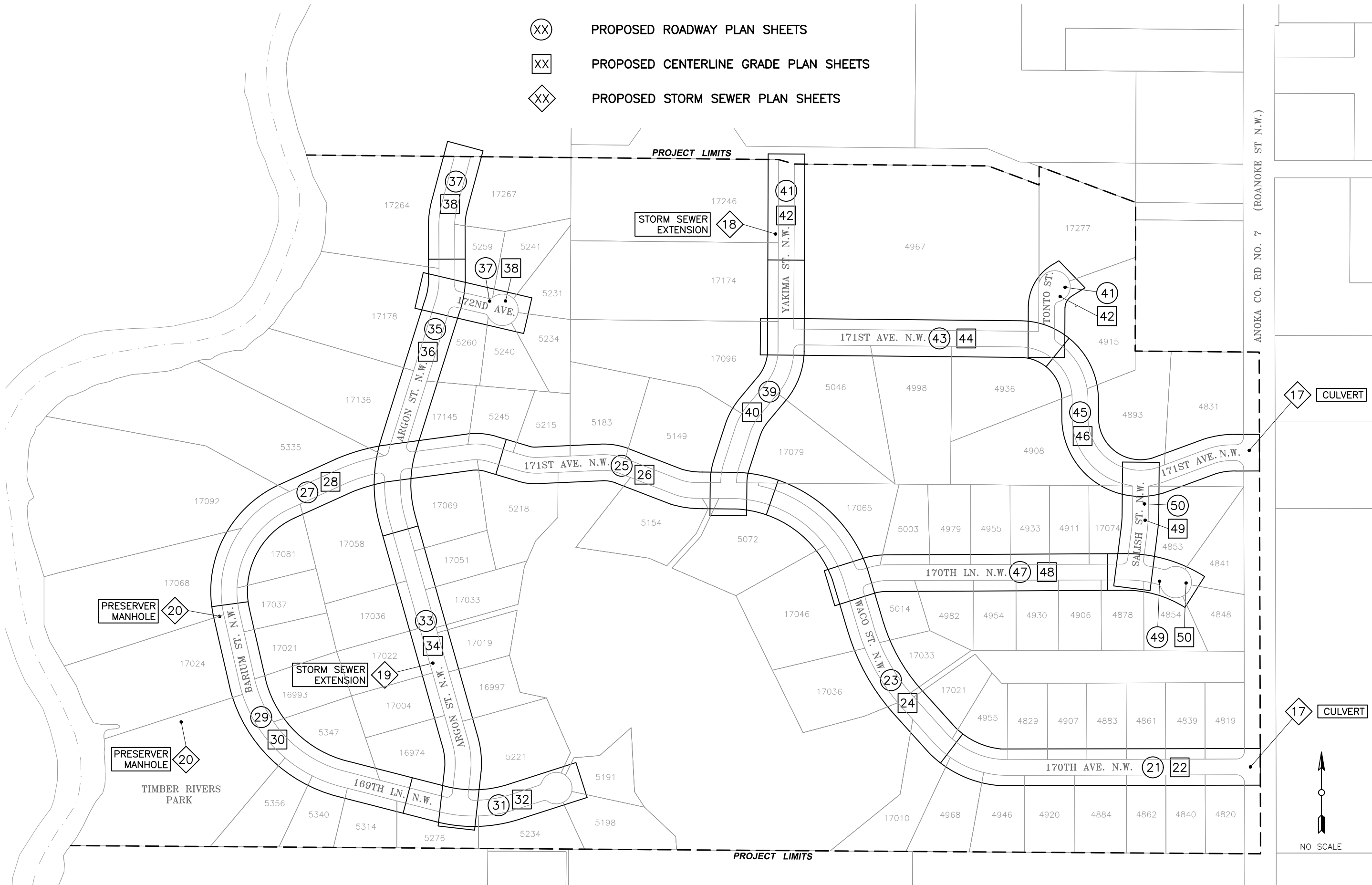
THE 2020 EDITION OF THE MINNESOTA DEPARTMENT OF TRANSPORTATION
"STANDARD SPECIFICATIONS FOR CONSTRUCTION" SHALL APPLY.

ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE MN MUTCD INCLUDING
THE FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS. NEWEST ADD.

CITY OF ANDOVER UTILITY AND STREET CONSTRUCTION SPECIFICATIONS SHALL APPLY.

THE SUBSURFACE UTILITY INFORMATION IN THIS PLAN IS UTILITY QUALITY LEVEL D. THIS UTILITY
QUALITY LEVEL WAS DETERMINED ACCORDING TO THE GUIDELINES OF CI/ASCE 38-02, ENTITLED
"STANDARD GUIDELINES FOR THE COLLECTION AND DEPICTION OF EXISTING SUBSURFACE UTILITY DATA".

- XX PROPOSED ROADWAY PLAN SHEETS
- XX PROPOSED CENTERLINE GRADE PLAN SHEETS
- XX PROPOSED STORM SEWER PLAN SHEETS



2022 STREET RECONSTRUCTION
CITY PROJECT NO. 22-02

CITY OF
ANDOVER

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
David D. Berkowitz
DAVID D. BERKOWITZ
DATE: JANUARY 4, 2022
REG. NO. 267571

DESIGNED	DRAWN	CHECKED	NO.	DATE	BY	DESCRIPTION OF REVISIONS
JUL	AAK	DOB				

GENERAL LAYOUT

SHEET NO. 2 OF 51 SHEETS

GENERAL NOTES:

THE 2020 EDITION OF THE MINNESOTA DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR CONSTRUCTION" SHALL APPLY.

ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE MN MUTCD INCLUDING THE FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS. NEWEST ADDITION.

THE SUBSURFACE UTILITY INFORMATION IN THIS PLAN IS UTILITY QUALITY LEVEL D. THIS QUALITY LEVEL WAS DETERMINED ACCORDING TO THE GUIDELINES OF CI/ASCE 38-2, ENTITLED "STANDARD GUIDELINES FOR THE COLLECTION AND DEPICTION OF EXISTING SUBSURFACE UTILITY DATA."

THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY. THE EXCAVATING CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK. HE AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY HIS FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES. THE CONTRACTOR IS REQUIRED TO CALL GOPHER ONE CALL AT LEAST 48 HOURS IN ADVANCE OF CONSTRUCTION. (651-454-0002)

CONSTRUCTION NOTES:

ROAD WORK AHEAD SIGNS SHALL BE MAINTAINED AT INTERSECTING ROADS TO THE PROJECT. TYPE 3 BARRICADES WITH LOCAL TRAFFIC ONLY SHALL BE PLACED AT ALL ENTRANCES TO THE PROJECTS. TWO TYPE 3 BARRICADES WITH ONE PARKING LOT CLOSED SIGN SHALL BE PLACED AT TIMBER RIVERS PARK. TYPE B CHANNELIZERS SHALL BE UTILIZED WHEN THERE ARE OBSTRUCTIONS WITHIN THE ROADWAY.

THE CONTRACTOR SHALL USE FLAG PERSON'S AND APPROPRIATE TRAFFIC CONTROL DEVICES TO DIRECT TRAFFIC AT INTERSECTING COUNTY ROADS. ALL TRAFFIC CONTROL MUST BE ACCEPTABLE TO THE ANOKA COUNTY HIGHWAY DEPARTMENT. CONTRACTOR SHALL APPLY FOR A PERMIT FOR WORKING WITHIN ANOKA COUNTY RIGHT OF WAY. PROVIDE A COPY OF COUNTY PERMIT TO CITY INSPECTOR.

ABSENT A ROAD CLOSURE, RECONSTRUCTION SHALL BE PERFORMED IN A MANNER TO ALLOW LOCAL TRAFFIC TO BE MAINTAINED TO A MINIMUM OF HALF THE ROADWAY WIDTH. THE CONTRACTOR SHALL USE FLAG PERSON'S TO DIRECT TRAFFIC AS NEEDED.

CONTRACTOR SHALL PROVIDE 3 DAY NOTICE PRIOR TO POTENTIAL ROAD CLOSURE FOR STORM SEWER CONSTRUCTION. TYPE 3 BARRICADES WITH "ROAD CLOSED" SHALL BE INSTALLED ON BOTH SIDES OF STORM SEWER CONSTRUCTION ACTIVITY. STAGE CONSTRUCTION TO ALLOW FOR LOCAL RESIDENT ACCESS AS NEEDED.

DURING ALL ASPECTS OF CONSTRUCTION DRIVEWAYS SHALL BE RAMPED WITH GRAVEL IN A TIMELY MANNER TO PROVIDE RESIDENTS ACCESS. UPON THREE DAYS OF CURE, CONC. CURBING AT DRIVEWAYS SHALL BE BACKFILLED & RAMPED WITH GRAVEL TO PROVIDE ACCESS.

BITUMINOUS CURBING SHALL BE KNOCKED DOWN AT ALL DRIVEWAY ENTRANCES (INCIDENTAL).

EXISTING MAILBOXES SHALL BE SALVAGED AND REINSTALLED AFTER CONSTRUCTION. DURING CONSTRUCTION TEMPORARY MAILBOXES SHALL BE PLACED NEAR THE ORIGINAL MAILBOX LOCATION. THE TEMPORARY MAILBOXES SHALL BE MOUNTED ON BARRELS TO BE PORTABLE. PROPERTY OWNER MAY SUPPLY NEW POST AND/OR BOX TO BE PLACED IN THE ORIGINAL LOCATION.

RESIDENTS WILL BE ASKED TO MARK SPRINKLER HEADS PRIOR TO CONSTRUCTION. CONTRACTOR SHALL VERIFY LOCATION OF EXISTING SYSTEMS. WHERE BOULEVARD IRRIGATION MODIFICATIONS ARE REQUIRED THE IRRIGATION LINES/HEADS SHALL BE REMOVED & DISPOSED. REMAINING LINES SHALL BE PLUGGED & MARKED. ALL REPLACED IRRIGATION LINES/HEADS SHALL BE NEW. CONTRACTOR WILL BE PAID A UNIT PER HEAD REPLACED. EXISTING LOCATIONS SHOWN ON PLANS ARE ONLY SCHEMATIC. ALL WORK SHALL BE BY AN IRRIGATION CONTRACTOR LICENSED TO WORK IN THE CITY OF ANDOVER.

THE CONTRACTOR SHALL PROTECT, SALVAGE AND REPAIR ALL EXISTING LANDSCAPING IN KIND. THIS SHALL BE CONSIDERED INCIDENTAL TO THE PROJECT.

THE FOLLOWING CONSTRUCTION ITEM'S SHALL OCCUR PRIOR TO COMMENCING THE RECLAIMING OPERATION. INSTALL TRAFFIC CONTROL, REMOVE STREET SIGN'S (CITY), INSTALL TEMP. EROSION CONTROL MEASURES, IDENTIFY & CAP IRRIGATION SYSTEMS, SALVAGE LANDSCAPING, REMOVE EX. & INSTALL TEMP. MAILBOX'S, .

EXISTING DRIVEWAYS SHALL BE SAWCUT AS DIRECTED BY ENGINEER, REMOVED AND DISPOSED OF OFF SITE IN ACCORDANCE WITH MNDOT 2104.3C3. BITUMINOUS AND CONCRETE DRIVEWAYS SHALL BE REPLACED IN KIND. GRAVEL DRIVEWAYS SHALL BE REPLACED WITH A 15' BITUMINOUS APRON. ANY DAMAGE CAUSED BY CONSTRUCTION ACTIVITY SHALL BE SAWCUT AND REPAIRED IN KIND AT THE CONTRACTORS EXPENSE.

WHERE SUBGRADE EXCAVATION & STORM SEWER UTILITY WORK OCCURS WITHIN THE ROADWAY THE RECLAIMED BASE SHALL BE SALVAGED & REPLACED PER THE TYPICAL SECTION. THIS WORK SHALL BE DONE IN A MANNER SO RECLAIMED BASE IS NOT CONTAMINATED WITH SPOIL MATERIAL. COMPACTION OF THE RECLAIMED BASE MATERIAL SHALL BE ACHIEVED BY THE PENETRATION INDEX METHOD IN ACCORDANCE WITH MNDOT 2211.3C3. THE BOTTOM OF THE SUBCUTS SHALL BE SHAPED AND COMPACTED BY THE "QUALITY COMPACTION METHOD"

SELECT EXCAVATED MATERIALS SHALL BE UTILIZED TO THE FULLEST EXTENT WITHIN THE PROJECT LIMITS TO BACKFILL PROPOSED BITUMINOUS CURB. ANY EXCESS MATERIAL, OR MATERIAL WITH DEBRIS / SOD CHUCKS SHALL BE DISPOSED OFF OF OFF-SITE.

ALL EXISTING SIGNAGE SHALL BE REMOVED AND REPLACED BY ANDOVER SIGN DEPARTMENT. COORDINATE WITH MINIMUM 48 HOUR NOTICE WITH ENGINEER IN FIELD.

RESTORATION WORK SHALL BE COMPLETED WITHIN 7 DAYS OF GRADING COMPLETION

CONTRACTOR SHALL SWEEP ALL MATERIAL OFF EXISTING STREETS AT ENTRANCES TO PROJECT DAILY IF NECESSARY (INCIDENTAL).

EXISTING LEGEND

	RIGHT OF WAY		UNDERGROUND ELECTRIC CABLE
	PROPERTY LINE		UNDERGROUND TELEPHONE CABLE
	DRAINAGE/UTILITY EASEMENT		ELECTRIC TRANSFORMER
	RD. CENTERLINE		UTILITY COMPANY PEDESTAL
	EDGE BITUMINOUS		LIGHT POLE
	EDGE CONCRETE		UTILITY POLE
	EDGE GRAVEL		GUY WIRE TO UTILITY POLE
	SANITARY SEWER MAIN		MAILBOX
	SANITARY SEWER MANHOLE		SIGN
	WATER MAIN		SOIL BORING
	GATEVALVE		PROPERTY IRON FOUND
	HYDRANT		TREE LINE
	STORM SEWER MAIN		DECIDUOUS TREE
	STORM SEWER MANHOLE		CONIFEROUS TREE LINE
	STORM SEWER CATCH BASIN		CONIFEROUS TREE LINE
	STORM SEWER APRON		RETAINING WALL
	CULVERT		LANDSCAPE MATERIAL
	UNDERGROUND SPRINKLER SYSTEM		DITCH FLOW
	GAS MAIN		WETLAND
	UNDERGROUND TV CABLE		EXISTING CONTOUR

PROPOSED LEGEND

	BITUMINOUS CURB
	CULVERT
	DRAINAGE FLOW DIRECTION
	DITCH
	STORM SEWER
	APRON
	STORM SEWER CATCH BASIN
	STORM SEWER MANHOLE
	PROPOSED MANHOLE/CATCHBASIN
	FLOATING SILT CURTAIN
	SILT FENCE
	BIO LOG
	CLEAR & GRUB TREE

DESIGNED
JUL

DRAWN
AAK

CHECKED
DOB

DATE
JANUARY 4, 2022

REG. NO.
26757

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

DAVID D. BERKOWITZ

CITY OF ANDOVER

2022 STREET RECONSTRUCTION
CITY PROJECT NO. 22-02

**2022 Street Reconstruction
(City Project 22-02)
STATEMENT OF ESTIMATED QUANTITIES**

NOTES	ITEM NO.	DESCRIPTION	UNIT	EST. QUAN.	ACT. QUAN.
	1	2021.501 Mobilization	LS	1	
	2	2101.502 Grubbing	TREE	12	
	3	2104.502 Salvage Casting	EACH	76	
	4	2104.502 Remove Drainage Structure	EACH	1	
	5	2104.503 Remove Pipe Culvert	LF	140	
	6	2104.503 Remove Sewer Pipe (Storm)	LF	30	
	7	2104.503 Sawing Concrete Pavement (Full Depth)	LF	660	
	8	2104.503 Sawing Bit Pavement (Full Depth)	LF	2,240	
1	9	2104.518 Remove Concrete Pavement	SF	8,400	
1	10	2104.518 Remove Bituminous Pavement	SF	28,560	
2	11	2104.602 Salvage and Reinstall Mailbox	EACH	105	
3	12	2105.607 Common Excavation (EV)	CY	2,520	
4	13	2105.607 Subgrade Excavation (EV)	CY	850	
5	14	2105.607 Select Granular Borrow (LV)	CY	220	
6	15	2105.607 Salvage Reclaim Material (LV)	CY	1,090	
	16	2106.601 Dewatering	LS	1	
7	17	2112.519 Subgrade Preparation	RDST	148	
8	18	2130.523 Water	MGAL	50	
9	19	2211.509 Aggregate Base Class 5	TN	450	
10	20	2211.607 Place Salvaged Reclaim Material (CV)	CY	640	
	21	2215.504 Full Depth Reclamation	SY	45,400	
	22	2232.504 Mill Bituminous Surface (1.5")	SY	30	
	23	2357.506 Bituminous Material For Tack Coat	GAL	2,110	
	24	2360.509 Type SP 9.5 Wearing Course Mix (2,C)	TN	4,170	
	25	2360.509 Type SP 9.5 Wearing Course Mix (2,B) - Driveways	TN	530	
11	26	2360.509 Type SP 12.5 Wearing Course Mixture (2,C)	TN	5,110	
12	27	2451.607 Trench Stabilization Material (CV)	CY	100	
	28	2501.502 18" CS Safety Apron & Grate Des 3128	EACH	2	
	29	2501.502 18" RC Safety Apron & Grate Des 3128	EACH	2	
	30	2501.503 18" RC Pipe Culvert Class V	LF	72	
	31	2501.602 18" Skimmer	EACH	1	
	32	2501.602 30" Skimmer	EACH	1	
	33	2501.602 18" Dissipator	EACH	1	
	34	2501.602 24" Dissipator	EACH	1	
	35	2503.503 18" Ductile Iron Pipe Sewer Class 52	LF	64	
	36	2503.503 12" RC Pipe Sewer Des 3006 Class V	LF	432	
	37	2503.503 18" RC Pipe Sewer Des 3006 Class V	LF	14	
	38	2503.503 24" RC Pipe Sewer Des 3006 Class V	LF	8	
	39	2503.503 30" RC Pipe Sewer Des 3006 Class V	LF	8	
	40	2503.503 6" PVC Pipe Sewer	LF	8	
	41	2503.602 6" PVC Pipe Plug	EACH	1	
	42	2503.602 Connect to Existing Pipe Sewer	EACH	4	
13	43	2503.602 Lining Sewer Pipe 15"	EACH	3	
13	44	2503.602 Lining Sewer Pipe 18"	EACH	7	
13	45	2503.602 Lining Sewer Pipe 24"	EACH	6	
	46	2503.603 Clean & Video Tape New Storm Sewer	LF	570	

**2022 Street Reconstruction
(City Project 22-02)
STATEMENT OF ESTIMATED QUANTITIES**

NOTES	ITEM NO.		DESCRIPTION	UNIT	EST. QUAN.	ACT. QUAN.
	47	2503.603	Clean Pipe Storm Sewer	LF	1,000	
14	48	2504.602	Irrigation System Modifications	EACH	630	
15	49	2506.502	Casting Assembly	EACH	8	
16	50	2506.502	Install Casting	EACH	76	
	51	2506.602	12" Concrete Adjusting Ring	EACH	18	
	52	2506.602	Connect Into Existing Drainage Structure	EACH	3	
	53	2506.602	Construct Drainage Structure, Type 409	EACH	1	
	54	2506.602	Construct Drainage Structure, Type 420	EACH	1	
	55	2506.602	Construct Drainage Structure, Type 421-48" Dia.	EACH	1	
	56	2506.602	Construct Drainage Structure, Type 421-60" Dia.	EACH	1	
17	57	2506.607	Grout Drainage Structure Sump	CY	58	
	58	2531.504	6" Concrete Driveway Pavement	SY	940	
	59	2531.604	Concrete Drainage Flume	SY	20	
18	60	2535.503	Bituminous Curb	LF	27,100	
	61	2563.601	Traffic Control	LS	1	
	62	2573.502	Storm Drain Inlet Protection	EACH	78	
	63	2573.503	Silt Fence, Type HI or MS	LF	200	
	64	2573.503	Sediment Control Log Type Wood Chip	LF	4,340	
12	65	2573.607	Rock Ditch Check	CY	15	
	66	2574.507	Loam Topsoil Borrow (LV)	CY	3,520	
19	67	2574.508	Fertilizer Type 1	LB	900	
	68	2575.504	Sodding Type Lawn	SY	14,200	
20	69	2575.504	Rolled Erosion Prevention Category 20	SY	7,500	
	70	2575.505	Seeding	ACRE	2	
	71	2575.505	Weed Spraying	ACRE	2	
21	72	2575.508	Seed Mixture 25-151	LB	300	
22	73	2575.508	Seed Mixture 33-261	LB	25	

C.P. 22-02 Notes:

1. Regardless of depth. Shall be used for roadway, driveway, and flumes, etc.
2. Includes salvage and reinstall of existing mailbox, and temporary placement of mailbox in barrel at each existing location during construction.
3. For all excavation except subgrade excavation where unsuitable material encountered. Includes disposing excess or unsuitable material off-site.
4. For excavation beneath reclaimed aggregate base layer where profile grade is being lowered or unsuitable material discovered. Includes disposing unsuitable material off-site.
5. Only to be used if sufficient material not generated on-site.
6. Item used for excavating / hauling / stockpiling reclaim material salvaged in areas called out in plans (utility construction and subgrade ex. locations). Item also to haul out and dispose of excess material generated and not used within project (contractor option to keep material or haul and stockpile at Andover Public Works).
7. Item shall be used for grading reclaim material from areas of excess to areas requiring material, fine grading, and compaction reclaimed aggregate base.
8. Item shall be used for dust control only as directed by the engineer. Water to achieve compaction shall be incidental.
9. For use for driveway replacements, roadway core, and under curb and gutter if sufficient reclaim material not generated.
10. Item shall include hauling, placement, grading, and compacting salvaged reclaim material for utility construction and subgrade exc. locations.
11. Includes quantity (tonnage) for construction of bituminous curb integral with base course pavement.
12. Rock shall be 1.5" nominal diameter. Use for rock checks, and under storm pipe and structures if water table is high.
13. Sewer lining lengths vary from 2' to 4'. Refer to plans for locations and lengths. Televised finished product for inspection (incidental).
14. Based upon number of irrigation heads removed / replaced. Item shall include all items necessary to temporarily cap existing systems, replace damaged lines, heads, adjust systems, and return them to pre-project condition or better. Work shall be performed by a licensed irrigation contractor.
15. For new structures and if salvaged castings are not re-usable or broken. Includes concrete adjusting rings and Gator Wrap.
16. For installation of salvaged castings, includes new concrete adjusting rings (use 4" where applicable) and wrapping rings and casting flange with Gator Wrap.
17. Fill structure sump with concrete, pour invert up to 1/3 of flow line, and re-grout doghouse.
18. Quantity for bituminous mixture included in base course quantity. For areas with grades 1.5% or less, paver shall run off string line.
19. Analysis 20-10-10 applied at 200 lbs / acre.
20. Straw or wood fiber blanket is an acceptable alternative. Netting material shall be jute netting.
21. Application rate 200 lbs / acre
22. Application rate 35 lbs/acre. Apply in areas adjacent to wetlands.

2022 STREET RECONSTRUCTION CITY PROJECT NO. 22-02



I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED
 EXCLUSIVELY FOR THE CITY OF ANDOVER
 THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER
 UNDER THE LAWS OF THE STATE OF MINNESOTA.

David D. Berkowitz

DAVID D. BERKOWITZ
 REG. NO. 26757

DESIGNED	NO.	DATE	BY	DESCRIPTION OF REVISIONS
JUL				
DRAWN				
AAK				
CHECKED				
DOB				

EARTHWORK CALCULATIONS

City Project 22-02		
Aggregate Base Class 7 (Reclaim)		
Existing 2.5" of bituminous and 4" aggregate base, 26' wide bituminous (b/b)		Roadway Length = 14,762 LF
Reclaim 6.5" deep		Existing Roadway Area (includes bit curb) = 45,337 SY
		Curb Length = 27,094 LF
Volume of generated reclaim material entire site =	8,186 CY (CV)	Roadway Area x 6.5" deep
Volume of material available for use =	7,777 CY (CV)	Assume 5% loss in grading / hauling
Volume of reclaim required in roadway core material =	7,556 CY (CV)	Roadway Area x 6" (figured extra 1/2" due to profile and crown raising)
Volume of reclaim required behind curb =	84 CY (CV)	1' behind curb x 1" x Curb Length (most areas existing gravel sufficient)
Volume of reclaim material required =	7,640 CY (CV)	
Balance of reclaim material on-site	137 CY (CV)	Use on-site or haul off excess
Salvage Reclaim		
Areas of utility construction, subgrade excavation and grade changes as called out in plans.		Haul and stockpile for re-use.
	111 CY (CV)	Assume 200' of Subgrade Correction in Areas TBD x 6" Deep
	379 CY (CV)	Profile Lowering Areas (Sta. 57+75 to 60+50, 22+75 to 24+25, 7+50 to 12+35, 2+75 to 3+50) x 6.5" Thick
	150 CY (CV)	Storm Sewer and Culvert Construction x 12' wide x 6.5" Thick
	640 CY (CV)	Salvage Reclaim Material
Common Excavation		
For all excavation except areas identified as Subgrade Excavation.		
Volume of common excavation =	2,511 CY (EV)	Curb length x 2.5' x 1' + 50 CY for ditching near entrance culverts
Suitable material for select granular borrow =	502 CY (EV)	Assume 20% of common excavation suitable for select granular borrow
Excess Common Exc. material =	2,009 CY (EV)	Dispose of off-site. Can use as curb backfill if free of debris/sod chunks/roots, etc.
Subgrade Excavation		
For profile lowering areas or unsuitable material. Dispose of off-site.		
	667 CY (EV)	Assume 200' x 30' wide x 3' deep (only if encountered during construction). Dispose of off-site.
	175 CY (EV)	Profile Lowering Areas (Sta. 57+75 to 60+50, 22+75 to 24+25, 7+50 to 12+35, 2+75 to 3+50) x 3" Deep
	842 CY (EV)	
Select Granular Borrow		
For subgrade exc backfill only if sufficient material not generated on-site.		
	667 CY (EV)	Material Required for subgrade exc. backfill
	502 CY (EV)	Suitable material available for backfill from common exc.
	165 CY (EV)	Only utilize borrow if sufficient material not generated on-site
Loam Topsoil Borrow		
Volume =	2,509 CY (CV)	Curb length x 2.5' x 1'. Utilize common ex. material if suitable. Min of 4" topsoil in all disturbed areas.

EARTHWORK SUMMARY		
Aggregate Base Class 7	137 CY (CV) 205.5 Tons	If negative, project calculated as short (requires import). If positive, project calculated as long (haul out excess).
Common Excavation	2,520 CY (EV)	
Salvage Reclaim Material	777 CY (CV) 1,090 CY (LV)	Material salvaged for utility installations, profile lowering, subgrade correction, or hauling out excess reclaim (if any). Salvage and re-use on-site in storm sewer/culvert locations and subgrade excavation areas.
Subgrade Excavation	850 CY (EV)	If unsuitable areas encountered during construction or profile lowering areas. Use suitable material as curb backfill, dispose unsuitable material off-site.
Loam Topsoil Borrow	2,509 CY (CV) 3,520 CY (LV)	
Select Granular Borrow	165 CY (EV) 220 CY (LV)	For backfill of subgrade corrections if enough suitable material not generated on-site. Use on-site material first.
Excess Material to Dispose of Off-Site	2,859 CY (EV) 3,720 CY (LV)	Excess common excavation + subgrade excavation

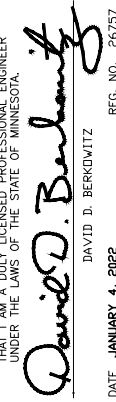
Swell Factors
EV to LV = 1.3
LV to CV = 1.4
1 CY Class 5 = 1.5 tons

DESIGNED
JUL

DRAWN
AAK

CHECKED
DDB

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA


DAVID D. BERKOWITZ
REG. NO. 267571
DATE JANUARY 4, 2022



2022 STREET RECONSTRUCTION
CITY PROJECT NO. 22-02

Note: Tables compare existing surface to top of finish gravel layer, providing approximate reclaimed aggregate base balance. Negative number in last column indicates gravel needed at that station.

170TH AVE - WACO ST - 171ST AVE - 169TH LN								
Station	Cut Area (SF)	Cut Volume (CY)	Fill Area (SF)	Fill Volume (CY)	Cum. Cut Vol. (CY)	Cum. Fill Vol. (CY)	Cum. Net Vol. (CY)	Station Cut - Fill (CY)
0+58	0.1	0.0	3.4	0.0	0.0	0.0	0.0	0.0
1+00	0.5	0.5	2.2	4.4	0.5	4.4	(3.9)	(3.9)
1+28	0.7	0.7	1.5	1.9	1.1	6.3	(5.2)	(1.3)
1+50	1.2	0.8	1.0	1.0	1.9	7.3	(5.4)	(0.2)
2+00	0.5	1.6	2.1	2.9	3.5	10.2	(6.7)	(1.3)
2+50	0.4	0.8	2.4	4.2	4.4	14.4	(10.1)	(3.4)
2+78.2	1.0	0.7	1.8	2.2	5.1	16.6	(11.6)	(1.5)
3+00	0.9	0.7	3.1	2.0	5.8	18.6	(12.8)	(1.2)
3+50	2.5	3.1	0.3	3.1	8.9	21.7	(12.8)	(0.0)
4+00	3.0	5.1	0.1	0.4	14.1	22.1	(8.1)	4.7
4+50	2.8	5.4	0.4	0.5	19.4	22.7	(3.2)	4.9
4+70	3.2	2.2	0.1	0.2	21.6	22.9	(1.2)	2.0
5+00	2.5	3.1	0.0	0.1	24.7	22.9	1.8	3.1
5+16.5	0.8	1.0	0.1	0.0	25.7	23.0	2.8	0.9
5+39	1.7	1.0	0.8	0.4	26.7	23.3	3.4	0.7
5+50	1.3	0.6	1.0	0.4	27.3	23.7	3.6	0.2
5+69	0.7	0.7	1.5	0.9	28.0	24.6	3.4	(0.2)
6+00	0.8	0.8	2.2	2.1	28.8	26.7	2.2	(1.3)
6+50	1.0	1.7	1.7	3.6	30.5	30.3	0.2	(1.9)
7+00	0.9	1.8	1.9	3.3	32.3	33.6	(1.3)	(1.5)
7+50	1.2	1.9	1.1	2.7	34.2	36.3	(2.1)	(0.8)
8+00	2.5	3.4	0.4	1.3	37.6	37.6	0.0	2.1
8+50	3.1	5.1	0.1	0.4	42.7	38.0	4.7	4.7
8+65	3.1	1.7	0.1	0.1	44.4	38.1	6.4	1.7
9+00	3.1	4.0	0.0	0.1	48.4	38.1	10.3	3.9
9+50	1.9	4.6	0.1	0.1	53.0	38.2	14.9	4.6
9+78	1.5	1.8	0.5	0.3	54.8	38.5	16.3	1.5
10+00	1.4	1.2	0.3	0.3	56.0	38.8	17.2	0.9
10+17.9	3.1	1.5	0.0	0.1	57.5	38.9	18.6	1.4
10+50	2.8	3.5	0.0	0.0	61.0	39.0	22.1	3.5
10+69	1.5	1.5	0.5	0.2	62.5	39.2	23.4	1.3
11+00	0.7	1.3	1.3	1.1	63.8	40.2	23.6	0.2
11+50	1.2	1.8	1.0	2.1	65.6	42.3	23.3	(0.3)
12+00	1.5	2.5	0.4	1.2	68.1	43.5	24.6	1.3
12+08	1.7	0.5	0.4	0.1	68.6	43.6	25.0	0.4
12+50	0.6	1.8	1.1	1.2	70.4	44.8	25.6	0.6
12+86	0.5	0.7	2.4	2.3	71.1	47.1	24.0	(1.6)
13+00	0.5	0.3	2.9	1.4	71.4	48.5	22.9	(1.1)
13+50	0.7	1.1	2.3	4.8	72.5	53.3	19.2	(3.7)
14+00	1.6	2.1	0.9	2.9	74.6	56.2	18.4	(0.8)
14+40.9	0.1	1.3	5.7	5.0	75.9	61.2	14.7	(3.7)
14+50	0.2	0.0	3.2	1.5	76.0	62.7	13.2	(1.5)
15+00	1.5	1.5	0.7	3.6	77.5	66.3	11.2	(2.1)
15+26	2.2	1.7	0.3	0.5	79.2	66.7	12.5	1.3
15+50	1.4	1.6	1.0	0.6	80.8	67.3	13.4	1.0
16+00	1.4	2.5	0.4	1.3	83.3	68.7	14.6	1.2
16+50	2.8	3.8	0.0	0.4	87.1	69.0	18.1	3.5
16+59	1.7	0.8	0.2	0.0	87.9	69.1	18.8	0.7
17+00	1.5	2.4	0.9	0.8	90.3	69.9	20.4	1.6
17+46	2.1	3.1	0.1	0.9	93.4	70.7	22.6	2.2
17+50	2.7	0.4	0.0	0.0	93.7	70.7	23.0	0.4

170TH AVE - WACO ST - 171ST AVE - 169TH LN								
Station	Cut Area (SF)	Cut Volume (CY)	Fill Area (SF)	Fill Volume (CY)	Cum. Cut Vol. (CY)	Cum. Fill Vol. (CY)	Cum. Net Vol. (CY)	Station Cut - Fill (CY)
17+62.5	3.0	1.3	0.0	0.0	95.1	70.7	24.3	1.3
18+00	3.3	4.4	0.0	0.0	99.4	70.7	28.7	4.4
18+50	1.6	4.6	0.2	0.2	104.0	70.9	33.1	4.4
18+78	1.5	1.6	0.5	0.4	105.6	71.3	34.3	1.2
19+00	1.2	1.1	1.1	0.7	106.7	72.0	34.7	0.4
19+10.4	1.1	0.4	1.5	0.5	107.2	72.5	34.7	(0.1)
19+24.8	0.3	0.4	1.4	0.8	107.6	73.3	34.3	(0.4)
19+50	1.0	0.6	2.0	1.6	108.2	74.8	33.3	(1.0)
19+60	1.5	0.5	1.4	0.6	108.6	75.5	33.2	(0.2)
19+83.7	0.5	0.9	2.5	1.7	109.5	77.2	32.3	(0.8)
20+00	0.0	0.2	5.0	2.3	109.7	79.5	30.2	(2.1)
20+06.8	0.0	0.0	5.8	1.4	109.7	80.8	28.9	(1.4)
20+50	1.3	1.0	0.9	5.3	110.7	86.1	24.6	(4.3)
20+66	0.8	0.6	1.6	0.7	111.3	86.9	24.4	(0.1)
21+00	0.4	0.8	3.1	3.0	112.1	89.8	22.2	(2.2)
21+50	1.2	1.5	0.9	3.7	113.6	93.5	20.1	(2.1)
22+00	2.8	3.8	0.0	0.8	117.4	94.3	23.1	3.0
22+50	2.7	5.2	0.2	0.2	122.5	94.5	28.1	5.0
22+73.3	1.7	1.9	0.8	0.4	124.4	94.9	29.6	1.5
23+00	1.3	1.5	1.2	1.0	125.9	95.9	30.0	0.5
23+50	0.5	1.6	3.7	4.5	127.5	100.4	27.1	(2.9)
24+00	2.2	2.4	2.9	6.1	129.9	106.5	23.4	(3.7)
24+50	0.8	2.7	2.4	4.9	132.5	111.4	21.1	(2.3)
24+56	0.9	0.2	2.1	0.5	132.7	111.9	20.8	(0.3)
25+00	1.0	1.6	2.8	4.0	134.3	115.9	18.4	(2.4)
25+40.4	0.5	1.2	3.6	4.8	135.5	120.7	14.8	(3.6)
25+50	0.1	0.1	3.7	1.3	135.6	122.0	13.6	(1.2)
25+74.6	2.3	1.1	1.3	2.3	136.7	124.2	12.5	(1.2)
26+00	3.2	2.6	0.1	0.6	139.3	124.9	14.5	2.0
26+11.5	2.4	1.2	0.0	0.0	140.5	124.9	15.6	1.2
26+49.2	0.0	1.7	2.3	1.6	142.2	126.5	15.7	0.1
26+50	0.0	0.0	1.9	0.1	142.2	126.5	15.6	(0.1)
27+00	2.8	2.6	0.0	1.8	144.8	128.3	16.5	0.8
27+50	1.6	4.0	0.4	0.4	148.8	128.7	20.1	3.6
28+00	1.0	2.3	1.2	1.6	151.1	130.3	20.8	0.8
28+32	0.7	1.0	1.5	1.6	152.1	131.9	20.2	(0.6)
28+41.9	1.1	0.3	0.9	0.4	152.5	132.3	20.1	(0.1)
28+50	0.9	0.3	0.9	0.3	152.8	132.6	20.2	0.0
28+79	0.5	0.7	2.2	1.7	153.5	134.3	19.3	(0.9)
29+00	0.5	0.4	2.6	1.8	153.9	136.1	17.8	(1.5)
29+50	0.5	0.9	1.5	3.8	154.8	139.8	15.0	(2.8)
30+00	0.1	0.6	3.2	4.3	155.3	144.2	11.2	(3.8)
30+46.3	0.0	0.1	13.3	14.0	155.4	158.2	(2.7)	(13.9)
30+50	0.0	0.0	10.5	1.6	155.4	159.8	(4.4)	(1.6)
31+00	0.4	0.4	0.8	10.3	155.8	170.1	(14.3)	(9.9)
31+50	0.2	0.6	2.2	2.8	156.4	172.9	(16.5)	(2.2)
32+00	0.2	0.4	3.2	4.9	156.9	177.8	(21.0)	(4.5)
32+16	0.2	0.1	3.5	2.0	157.0	179.8	(22.8)	(1.9)
32+50	0.1	0.2	4.1	4.8	157.2	184.6	(27.4)	(4.6)
33+00	0.7	0.7	1.7	5.3	157.9	189.9	(32.0)	(4.6)
33+16	0.6	0.4	1.4	0.9	158.3	190.8	(32.6)	(0.5)

170TH AVE - WACO ST - 171ST AVE - 169TH LN								
Station	Cut Area (SF)	Cut Volume (CY)	Fill Area (SF)	Fill Volume (CY)	Cum. Cut Vol. (CY)	Cum. Fill Vol. (CY)	Cum. Net Vol. (CY)	Station Cut - Fill (CY)
33+50	0.4	0.6	1.2	1.7	158.9	192.5	(33.7)	(1.1)
33+79	0.6	0.5	0.6	1.0	159.4	193.5	(34.1)	(0.5)
34+00	0.9	0.6	0.6	0.5	160.0	194.0	(34.0)	0.2
34+50	2.1	2.8	0.4	0.9	162.8	194.9	(32.1)	1.9
34+83	2.6	2.9	0.1	0.3	165.6	195.1	(29.5)	2.6
35+00	1.7	1.3	0.1	0.0	167.0	195.2	(28.2)	1.3
35+50	1.2	2.6	0.9	0.9	169.5	196.0	(26.5)	1.7
36+00	2.5	3.5	0.6	1.3	173.0	197.3	(24.3)	2.2
36+50	3.9	6.0	0.0	0.5	179.0	197.9	(18.9)	5.4
37+00	1.8	5.3	0.5	0.4	184.3	198.3	(14.0)	4.9
37+50	1.3	2.9	1.4	1.7	187.2	200.0	(12.9)	1.2
38+00	0.7	1.9	1.3	2.5	189.0	202.5	(13.5)	(0.6)
38+19	0.7	0.5	1.3	0.9	189.5	203.5	(13.9)	(0.4)
38+43	0.7	0.6	1.7	1.3	190.2	204.8	(14.6)	(0.7)
38+50	0.7	0.2	1.7	0.5	190.4	205.2	(14.9)	(0.3)
39+00	0.1	0.8	3.1	4.5	191.1	209.7	(18.6)	(3.8)
39+19.3	0.2	0.1	3.1	2.2	191.2	212.0	(20.8)	(2.1)
39+50	0.6	0.5	1.9	2.8	191.7	214.8	(23.1)	(2.4)
40+00	1.5	2.0	1.3	2.9	193.7	217.7	(24.0)	(0.9)
40+50	0.9	2.2	1.9	3.0	195.9	220.7	(24.8)	(0.7)
40+75	1.3	1.0	1.4	1.6	196.9	222.2	(25.3)	(0.6)
41+00	1.2	1.2	1.2	1.2	198.0	223.4	(25.4)	(0.1)
41+50	1.6	2.6	0.5	1.6	200.7	225.0	(24.4)	1.1
42+00	1.3	2.7	0.7	1.2	203.4	226.2	(22.8)	1.5
42+50	1.1	2.2	0.9	1.5	205.6	227.7	(22.1)	0.7
43+00	1.2	2.1	0.9	1.7	207.7	229.4	(21.7)	0.4
43+15	1.5	0.8	0.6	0.4	208.4	229.8	(21.4)	0.3
43+50	1.7	2.1	0.6	0.8	210.6	230.6	(20.1)	1.3
43+58	1.6	0.5	0.6	0.2	211.0	230.8	(19.8)	0.3
44+00	0.8	1.9	2.1	2.2	213.0	233.0	(20.0)	(0.3)
44+27	1.0	0.9	1.1	1.6	213.8	234.6	(20.7)	(0.7)
44+50	1.5	1.0	0.5	0.7	214.9	235.2	(20.3)	0.4
44+82	1.3	1.6	0.7	0.7	216.5	235.9	(19.4)	0.9
45+00	1.5	0.9	0.3	0.4	217.5	236.3	(18.8)	0.6
45+41	0.1	1.3	1.0	1.0	218.7	237.3	(18.6)	0.2
45+50	0.4	0.1	1.4	0.4	218.8	237.7	(18.9)	(0.3)
46+00	1.6	1.8	0.0	1.3	220.6	239.0	(18.4)	0.5
46+50	0.9	2.3	1.4	1.3	222.9	240.3	(17.4)	1.0
46+70	1.5	0.9	0.5	0.7	223.8	241.0	(17.2)	0.2
46+94	1.0	1.1	0.8	0.6	224.9	241.6	(16.7)	0

Note: Tables compare existing surface to top of finish gravel layer, providing approximate reclaimed aggregate base balance. Negative number in last column indicates gravel needed at that station.

170TH AVE - WACO ST - 171ST AVE - 169TH LN								
Station	Cut Area (SF)	Cut Volume (CY)	Fill Area (SF)	Fill Volume (CY)	Cum. Cut Vol. (CY)	Cum. Fill Vol. (CY)	Cum. Net Vol. (CY)	Station Cut - Fill (CY)
50+00	1.7	0.7	0.7	1.1	232.6	265.8	(33.2)	(0.3)
50+50	1.0	2.5	1.4	1.9	235.1	267.7	(32.6)	0.6
51+00	0.2	1.1	3.1	4.1	236.2	271.8	(35.5)	(3.0)
51+07	0.3	0.1	3.0	0.8	236.3	272.6	(36.3)	(0.7)
51+50	0.4	0.6	4.7	6.1	236.9	278.7	(41.8)	(5.6)
51+58	0.4	0.1	3.2	1.2	237.0	279.9	(42.9)	(1.0)
51+79	1.5	0.7	0.6	1.5	237.7	281.4	(43.7)	(0.8)
52+00	2.1	1.4	0.0	0.3	239.1	281.6	(42.5)	1.2
52+50	0.1	2.1	3.5	3.2	241.2	284.8	(43.6)	(1.1)
52+89	0.0	0.1	10.9	10.4	241.2	295.2	(53.9)	(10.3)
53+00	0.0	0.0	11.0	4.4	241.2	299.6	(58.4)	(4.4)
53+50	0.1	0.1	6.2	15.9	241.3	315.5	(74.2)	(15.8)
53+77	0.5	0.3	1.8	4.0	241.6	319.6	(78.0)	(3.7)
54+00	1.2	0.7	0.2	0.9	242.3	320.4	(78.1)	(0.2)
54+50	1.4	2.4	0.1	0.2	244.6	320.6	(76.0)	2.1
55+00	0.1	1.4	2.8	2.7	246.0	323.3	(77.3)	(1.3)
55+50	1.0	1.0	3.2	5.6	247.0	328.9	(81.9)	(4.6)
55+91	0.6	1.2	1.9	3.9	248.1	332.8	(84.7)	(2.7)
56+00	0.7	0.2	0.8	0.4	248.3	333.2	(84.9)	(0.2)
56+20	0.6	0.5	1.5	0.8	248.8	334.0	(85.2)	(0.3)
56+50	0.6	0.7	2.4	2.2	249.5	336.2	(86.7)	(1.5)
56+50	0.6	0.0	2.4	0.0	249.5	336.2	(86.7)	0.0
57+00	1.1	1.5	1.0	3.1	251.0	339.3	(88.4)	(1.6)
57+50	1.7	2.6	0.5	1.4	253.6	340.7	(87.1)	1.2
58+00	2.8	4.2	0.2	0.6	257.8	341.3	(83.5)	3.6
58+02.2	2.6	0.2	0.3	0.0	258.0	341.3	(83.3)	0.2
58+20	2.0	1.5	0.8	0.3	259.5	341.7	(82.1)	1.2
58+50	2.0	2.2	1.2	1.1	261.8	342.8	(81.0)	1.1
59+00	3.8	5.4	0.2	1.3	267.1	344.1	(76.9)	4.1
59+50	7.1	10.1	0.0	0.2	277.3	344.2	(67.0)	10.0
59+75	8.9	7.4	0.0	0.0	284.7	344.2	(59.6)	7.4
60+00	4.8	6.3	0.0	0.0	291.0	344.2	(53.2)	6.3
60+50	0.9	5.2	2.6	2.4	296.2	346.6	(50.4)	2.9
60+52.6	0.8	0.1	2.7	0.3	296.3	346.9	(50.5)	(0.2)
60+81	0.8	0.8	1.6	2.2	297.1	349.1	(52.0)	(1.4)
61+00	2.2	1.0	0.7	0.8	298.2	349.9	(51.7)	0.2
61+07	2.5	0.6	0.3	0.1	298.8	350.0	(51.3)	0.5
61+38.7	0.4	1.7	0.8	0.6	300.4	350.7	(50.3)	1.0
61+40	0.1	0.0	0.9	0.0	300.4	350.7	(50.3)	(0.0)
61+50	3.5	0.7	0.0	0.2	301.1	350.9	(49.8)	0.5
61+77	4.5	4.0	0.0	0.0	305.1	350.9	(45.8)	4.0
62+00	5.1	4.1	0.0	0.0	309.2	350.9	(41.6)	4.1
62+50	2.4	7.0	0.5	0.5	316.2	351.3	(35.1)	6.5
62+82	1.3	2.2	1.1	1.0	318.4	352.3	(33.9)	1.2
63+00	1.3	0.8	0.9	0.7	319.2	353.0	(33.7)	0.2
63+50	2.2	3.2	0.7	1.4	322.4	354.4	(32.0)	1.8
64+00	0.9	2.8	1.2	1.7	325.2	356.1	(30.9)	1.1
64+15.4	2.1	0.9	0.4	0.4	326.0	356.5	(30.5)	0.4
TOTAL							(30.5)	

ARGON ST. N.W.								
Station	Cut Area (SF)	Cut Volume (CY)	Fill Area (SF)	Fill Volume (CY)	Cum. Cut Vol. (CY)	Cum. Fill Vol. (CY)	Cum. Net Vol. (CY)	Station Cut - Fill (CY)
0+26	0.0	0.0	2.9	0.0	0.0	0.0	0.0	0.0
0+50	1.6	0.7	1.0	1.7	0.7	1.7	(1.0)	(1.0)
1+00	3.1	4.3	0.3	1.1	5.0	2.9	2.2	3.2
1+50	2.4	5.1	0.0	0.3	10.1	3.1	7.0	4.8
1+75	3.4	2.7	0.0	0.0	12.9	3.2	9.7	2.7
2+00	3.2	3.1	0.1	0.0	15.9	3.2	12.8	3.1
2+25	1.1	2.0	0.1	0.1	17.9	3.2	14.7	1.9
2+50	0.7	0.9	0.9	0.5	18.8	3.7	15.1	0.4
3+00	0.6	1.2	1.5	2.3	19.9	6.0	14.0	(1.1)
3+50	0.5	0.9	2.3	3.5	20.9	9.4	11.4	(2.6)
3+77	1.2	0.8	0.7	1.5	21.7	10.9	10.8	(0.7)
4+00	1.6	1.2	0.4	0.5	22.9	11.4	11.5	0.7
4+11	1.9	0.7	0.3	0.1	23.6	11.5	12.1	0.6
4+50	1.8	2.7	0.3	0.4	26.3	11.9	14.3	2.3
5+00	0.4	2.0	2.5	2.6	28.3	14.5	13.8	(0.6)
5+50	0.3	0.6	3.3	5.4	28.9	19.9	9.0	(4.8)
6+00	1.6	1.8	1.3	4.3	30.7	24.1	6.6	(2.5)
6+50	0.8	2.2	2.3	3.3	32.9	27.5	5.4	(1.1)
6+82	0.5	0.7	3.1	3.2	33.6	30.7	3.0	(2.5)
7+00	0.3	0.3	3.5	2.2	33.9	32.9	1.1	(1.9)
7+50	0.1	0.4	3.9	6.9	34.3	39.7	(5.4)	(6.5)
8+00	0.7	0.8	2.0	5.5	35.1	45.3	(10.2)	(4.7)
8+50	1.1	1.6	0.8	2.6	36.7	47.8	(11.1)	(0.9)
9+00	1.0	1.9	1.1	1.7	38.6	49.6	(11.0)	0.1
9+50	0.7	1.6	1.8	2.7	40.2	52.2	(12.1)	(1.1)
10+00	0.5	1.2	2.8	4.3	41.3	56.5	(15.1)	(3.1)
10+37	0.4	0.6	1.0	2.6	42.0	59.1	(17.1)	(2.0)
10+50	0.6	0.3	0.9	0.5	42.2	59.5	(17.3)	(0.2)
11+00	0.9	1.4	1.2	1.9	43.6	61.4	(17.8)	(0.5)
11+50	0.9	1.7	1.7	2.7	45.2	64.1	(18.9)	(1.0)
11+75	0.5	0.6	2.4	1.9	45.9	66.0	(20.1)	(1.3)
12+00	0.2	0.3	3.1	2.6	46.2	68.6	(22.4)	(2.3)
12+25	0.4	0.3	3.2	2.9	46.4	71.5	(25.0)	(2.7)
12+50	0.7	0.5	2.4	2.6	46.9	74.0	(27.1)	(2.1)
13+00	0.9	1.5	0.9	3.0	48.4	77.0	(28.6)	(1.5)
14+00	0.5	2.6	2.0	5.3	51.1	82.3	(31.3)	(2.7)
14+50	1.3	1.7	0.4	2.3	52.7	84.6	(31.9)	(0.6)
15+00	1.1	2.2	0.9	1.2	54.9	85.8	(30.8)	1.0
15+22	1.0	0.8	0.8	0.7	55.8	86.5	(30.7)	0.1
15+50	1.1	1.1	0.4	0.6	56.9	87.1	(30.2)	0.5
16+00	2.3	3.1	0.2	0.5	60.0	87.6	(27.6)	2.6
16+50	0.8	2.9	0.6	0.7	62.9	88.3	(25.5)	2.1
16+71	0.6	0.6	1.1	0.7	63.4	89.0	(25.6)	(0.1)
17+00	0.9	0.8	0.9	1.1	64.2	90.1	(25.9)	(0.3)
17+50	2.6	3.2	0.1	1.0	67.4	91.0	(23.7)	2.2
17+57	2.7	0.7	0.1	0.0	68.0	91.0	(23.0)	0.7
18+00	4.3	5.6	0.0	0.1	73.6	91.1	(17.5)	5.5
18+50	1.7	5.6	0.0	0.0	79.2	91.1	(11.9)	5.6
18+66	2.5	1.3	0.0	0.0	80.5	91.1	(10.7)	1.3
18+92	4.0	3.2	0.0	0.0	83.6	91.1	(7.5)	3.2
19+00	4.4	1.2	0.0	0.0	84.9	91.1	(6.3)	1.2

[illegible][illegible]

2022 STREET RECONSTRUCTION CITY PROJECT NO. 22-02		I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.					DESIGNED	NO.	DATE	BY	DESCRIPTION OF REVISIONS	
		<i>David D. Berkowitz</i>					JUL					
							DRAWN					
							AAK					
							CHECKED					
							DDB					
DATE <u>JANUARY 4, 2022</u>		REG. NO. <u>26757</u>										

Note: Tables compare existing surface to top of finish gravel layer, providing approximate reclaimed aggregate base balance. Negative number in last column indicates gravel needed at that station.									
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Yakima St. N.W.								
Station	Cut Area (SF)	Cut Volume (CY)	Fill Area (SF)	Fill Volume (CY)	Cum. Cut Vol. (CY)	Cum. Fill Vol. (CY)	Cum. Net Vol. (CY)	Station Cut - Fill (CY)
0+37.7	6.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0+50	6.1	2.8	0.0	0.0	2.8	0.0	2.8	2.8
0+75	5.2	5.2	0.0	0.0	8.0	0.0	8.0	5.2
1+00	2.2	3.4	0.0	0.0	11.4	0.0	11.4	3.4
1+25	1.2	1.5	0.4	0.2	12.9	0.2	12.7	1.4
1+33.7	0.4	0.3	1.3	0.3	13.2	0.4	12.7	(0.0)
1+50	0.1	0.2	2.3	1.1	13.3	1.5	11.8	(0.9)
2+00	0.9	0.9	0.5	2.5	14.3	4.1	10.2	(1.6)
2+50	3.5	4.1	0.0	0.4	18.3	4.5	13.8	3.6
2+75	4.3	3.6	0.0	0.0	21.9	4.5	17.4	3.6
3+00	2.2	3.0	0.4	0.2	24.9	4.7	20.3	2.8
3+50	0.8	2.8	2.3	2.5	27.7	7.2	20.6	0.3
3+66	1.0	0.5	1.9	1.3	28.3	8.4	19.9	(0.7)
4+00	0.9	1.2	1.2	1.9	29.5	10.4	19.1	(0.7)
4+25	0.4	0.6	1.7	1.3	30.1	11.7	18.4	(0.7)
4+28.3	0.3	0.0	2.0	0.2	30.1	11.9	18.2	(0.2)
4+50	1.1	0.6	0.9	1.2	30.7	13.1	17.7	(0.6)
4+75	2.9	1.9	0.0	0.4	32.6	13.5	19.1	1.5
5+00	4.4	3.4	0.0	0.0	36.0	13.5	22.5	3.4
5+25	4.7	4.2	0.0	0.0	40.2	13.5	26.7	4.2
5+50	2.0	3.1	1.2	0.6	43.3	14.1	29.3	2.5
5+75	1.6	1.6	1.8	1.4	44.9	15.5	29.4	0.2
6+00	0.1	0.8	3.6	2.5	45.7	18.0	27.7	(1.8)
6+26	1.4	0.7	2.2	2.8	46.4	20.8	25.7	(2.0)
6+42.4	2.1	1.1	2.9	1.6	47.5	22.3	25.2	(0.5)
6+50	1.7	0.5	2.7	0.8	48.0	23.1	24.9	(0.3)
6+55	1.6	0.3	2.5	0.5	48.3	23.6	24.7	(0.2)
6+84	1.0	1.4	1.1	1.9	49.7	25.5	24.2	(0.6)
7+00	0.8	0.5	1.3	0.7	50.2	26.2	24.0	(0.2)
7+50	1.9	2.5	1.0	2.1	52.7	28.3	24.4	0.4
8+00	7.7	8.9	0.0	0.9	61.7	29.2	32.4	8.0
8+25	12.0	9.1	0.0	0.0	70.8	29.2	41.6	9.1
8+50	7.1	8.9	0.0	0.0	79.6	29.2	50.4	8.9
8+52.7	6.5	0.7	0.0	0.0	80.3	29.2	51.1	0.7
8+67	6.8	3.5	0.0	0.0	83.8	29.2	54.6	3.5
9+00	2.3	5.5	0.4	0.2	89.4	29.5	59.9	5.3
9+25	1.7	1.9	0.6	0.5	91.2	29.9	61.3	1.4
9+50	1.1	1.3	0.9	0.7	92.5	30.7	61.9	0.6
9+75	1.2	1.1	0.9	0.9	93.6	31.5	62.1	0.2
10+00	1.5	1.3	0.8	0.8	94.9	32.3	62.6	0.5
10+25	3.0	2.1	0.2	0.5	96.9	32.7	64.2	1.6
10+50	4.6	3.5	0.0	0.1	100.5	32.9	67.6	3.4
10+78	5.3	5.1	0.0	0.0	105.6	32.9	72.7	5.1
11+00	5.9	4.6	0.0	0.0	110.1	32.9	77.3	4.6
11+25	7.4	6.2	0.0	0.0	116.3	32.9	83.4	6.2
11+50	8.5	7.4	0.0	0.0	123.7	32.9	90.8	7.4
12+00	2.2	9.9	0.3	0.3	133.6	33.1	100.5	9.7
TOTAL							100.5	

170TH Ln. N.W.								
Station	Cut Area (SF)	Cut Volume (CY)	Fill Area (SF)	Fill Volume (CY)	Cum. Cut Vol. (CY)	Cum. Fill Vol. (CY)	Cum. Net Vol. (CY)	Station Cut - Fill (CY)
0+37	6.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0+75	3.0	6.7	0.1	0.1	6.7	0.1	6.6	6.6
1+00	1.7	2.1	2.2	1.1	8.8	1.2	7.6	1.0
1+10.9	1.6	0.6	2.3	0.9	9.4	2.1	7.3	(0.3)
1+25	1.2	0.7	2.8	1.3	10.1	3.4	6.7	(0.7)
1+50	1.0	1.0	1.2	1.8	11.1	5.3	5.8	(0.8)
1+72	0.6	0.7	1.0	0.9	11.8	6.2	5.6	(0.2)
2+00	0.5	0.6	1.0	1.0	12.3	7.2	5.1	(0.5)
2+50	1.2	1.5	0.9	1.7	13.9	8.9	5.0	(0.2)
2+75	0.9	1.0	0.9	0.8	14.8	9.7	5.1	0.2
3+00	0.9	0.8	1.8	1.3	15.7	11.0	4.7	(0.4)
3+25	2.2	1.4	0.5	1.1	17.1	12.1	5.0	0.4
3+35	1.6	0.7	0.8	0.2	17.8	12.3	5.5	0.5
3+50	2.1	1.0	0.4	0.3	18.8	12.6	6.2	0.7
3+75	1.3	1.6	0.7	0.5	20.4	13.1	7.3	1.1
3+75.3	1.3	0.0	0.7	0.0	20.4	13.1	7.3	0.0
4+00	1.2	1.1	0.7	0.6	21.5	13.7	7.8	0.5
4+19	1.3	0.9	0.5	0.4	22.4	14.2	8.2	0.5
4+50	2.8	2.4	0.0	0.3	24.8	14.5	10.3	2.0
5+00	2.3	4.7	0.1	0.1	29.5	14.6	14.9	4.6
5+50	2.6	4.6	0.0	0.1	34.1	14.7	19.4	4.5
5+72	4.6	2.9	0.0	0.0	37.0	14.7	22.3	2.9
6+00	4.6	4.8	0.0	0.0	41.8	14.7	27.1	4.8
6+39	2.7	5.3	0.0	0.0	47.1	14.8	32.4	5.3
6+50	2.0	1.0	0.0	0.0	48.1	14.8	33.4	1.0
7+00	3.2	4.8	0.0	0.0	52.9	14.8	38.2	4.8
7+10	3.6	1.3	0.0	0.0	54.2	14.8	39.4	1.3
7+50	4.2	5.7	0.0	0.0	59.9	14.8	45.1	5.7
7+75	4.5	4.0	0.0	0.0	63.9	14.8	49.1	4.0
7+89.8	0.5	1.4	0.5	0.1	65.3	14.9	50.4	1.3
8+00	1.2	0.3	0.3	0.1	65.6	15.0	50.6	0.2
8+31	1.3	1.4	0.6	0.5	67.0	15.5	51.5	0.9
8+50	1.4	1.0	0.4	0.4	68.0	15.8	52.1	0.6
8+75	1.8	1.5	0.1	0.2	69.5	16.1	53.4	1.3
9+00	0.6	1.1	2.6	1.3	70.6	17.3	53.3	(0.2)
9+00.1	0.6	0.0	2.6	0.0	70.6	17.3	53.2	0.0
9+13	0.5	0.3	2.4	1.2	70.8	18.5	52.3	(0.9)
9+25	1.1	0.4	0.6	0.7	71.2	19.2	52.0	(0.3)
9+50	0.4	0.7	2.3	1.4	71.9	20.6	51.3	(0.7)
10+00	1.1	1.4	0.7	2.8	73.2	23.4	49.8	(1.5)
10+41.8	2.3	2.6	0.1	0.6	75.8	24.0	51.8	2.0
10+81	1.7	2.9	0.2	0.3	78.7	24.3	54.5	2.7
11+10.2	1.4	1.7	0.1	0.2	80.4	24.4	56.0	1.5
11+22	0.0	0.3	3.1	0.7	80.7	25.1	55.6	(0.4)
11+50	0.7	0.4	2.0	2.6	81.1	27.7	53.3	(2.3)
11+75	0.9	0.7	1.7	1.7	81.8	29.4	52.3	(1.0)
11+83.3	0.3	0.2	1.5	0.5	81.9	29.9	52.0	(0.3)
TOTAL								52.0

Tonto St. N.W.								
Station	Cut Area (SF)	Cut Volume (CY)	Fill Area (SF)	Fill Volume (CY)	Cum. Cut Vol. (CY)	Cum. Fill Vol. (CY)	Cum. Net Vol. (CY)	Station Cut - Fill (CY)
0+36.2	2.8	0.0	1.5	0.0	0.0	0.0	0.0	0.0
0+56.1	1.8	1.6	0.6	0.8	1.6	0.8	0.9	0.9
0+69.9	2.1	1.0	0.6	0.3	2.6	1.1	1.5	0.6
1+00	3.7	3.2	0.0	0.3	5.8	1.4	4.4	2.9
1+38.1	4.7	5.9	0.0	0.0	11.7	1.4	10.3	5.9
1+50	2.4	1.5	0.0	0.0	13.2	1.4	11.8	1.5
1+75	3.7	2.7	0.8	0.4	15.9	1.8	14.1	2.4
2+00	5.6	4.4	1.4	1.0	20.3	2.8	17.5	3.4
2+20	3.2	3.2	7.6	3.3	23.5	6.1	17.4	(0.1)
TOTAL							17.4	

[illegible]

2022 STREET RECONSTRUCTION CITY PROJECT NO. 22-02



I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY CLOSE PERSONAL SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

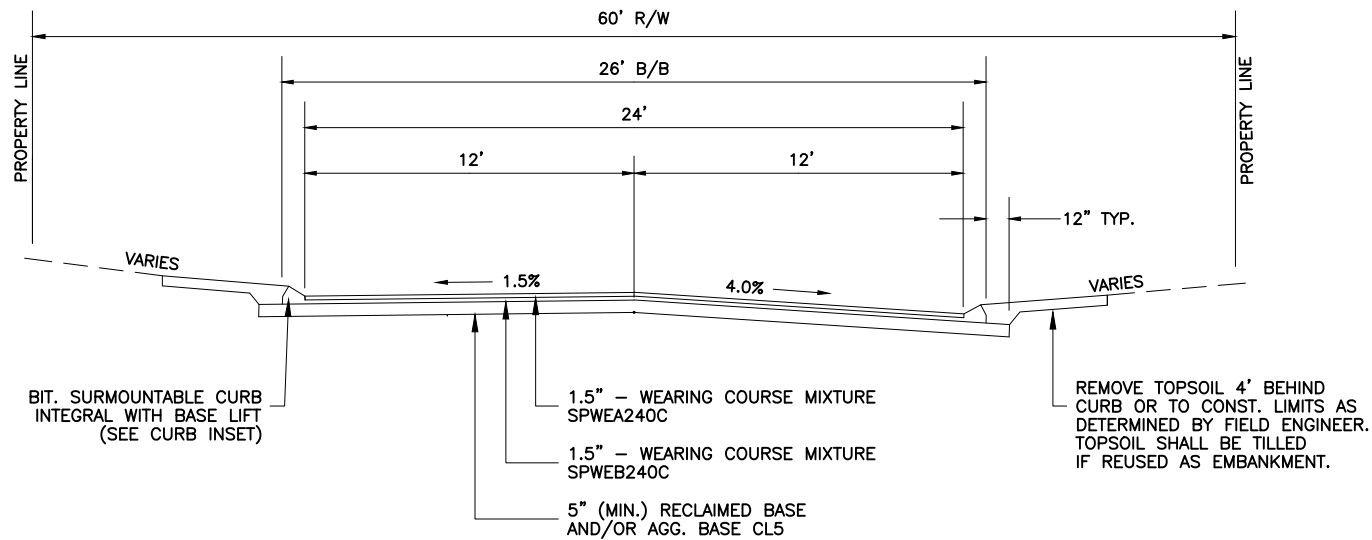
David D. Berkmowitz

DAVID D. BERKMOWITZ

DESIGNED	NO.	DATE	BY	DESCRIPTION OF REVISIONS
JUL				
DRAWN				
AAK				
CHECKED				
DDB				

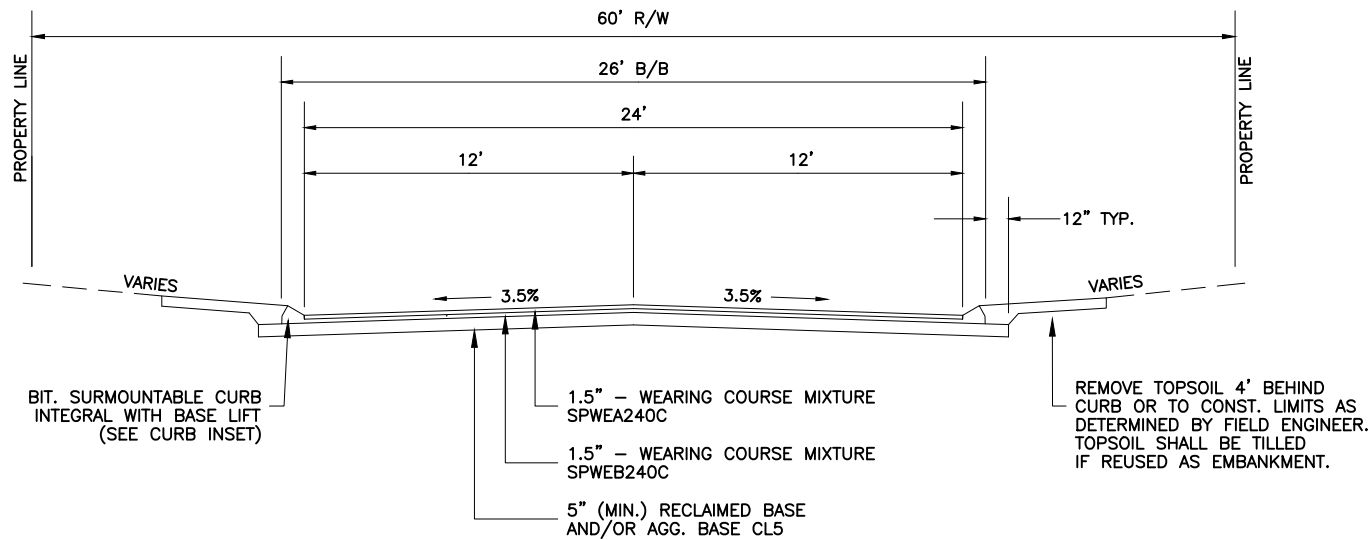
DATE: JANUARY 4, 2022

REG. NO. 26757



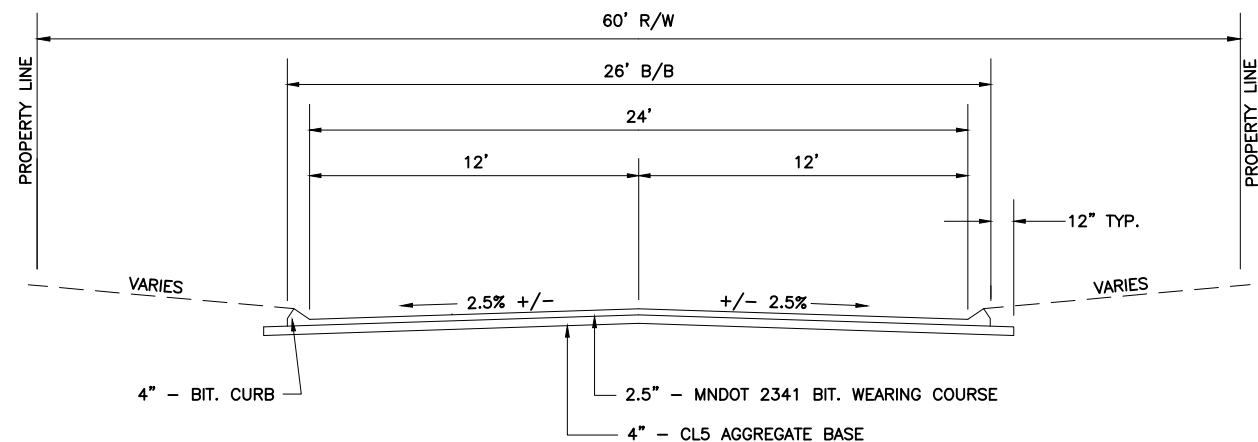
NOTE: BACKFILL DISTURBED BOULEVARDS WITH 4" MIN. TOPSOIL BORROW.
RESTORE MAINTAINED AREAS WITH SOD & FERTILIZER.
RESTORE UNMAINTAINED AREAS WITH ROLLED EROSION PREVENTION CAT. 20 WITH NATURAL NETTING, SEED & FERTILIZER.

PROPOSED TYPICAL SECTION
BARIUM STREET N.W. - STA. 44+50 TO STA. 57+00

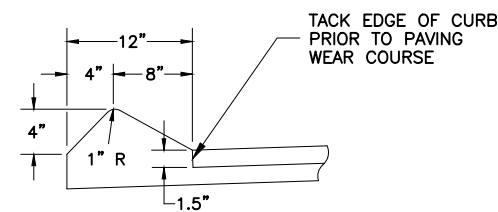


NOTE: BACKFILL DISTURBED BOULEVARDS WITH 4" MIN. TOPSOIL BORROW.
RESTORE MAINTAINED AREAS WITH SOD & FERTILIZER.
RESTORE UNMAINTAINED AREAS WITH ROLLED EROSION PREVENTION CAT. 20 WITH NATURAL NETTING, SEED & FERTILIZER.

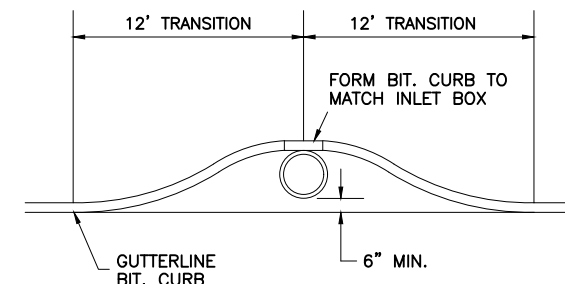
PROPOSED TYPICAL SECTION



EXISTING TYPICAL SECTION



BITUMINOUS CURB INSET



CURB DETAIL AT INLET

NO.	DATE	BY	DESCRIPTION OF REVISIONS
DESIGNED	JUL		
DRAWN	AAK		
CHECKED	DOB		

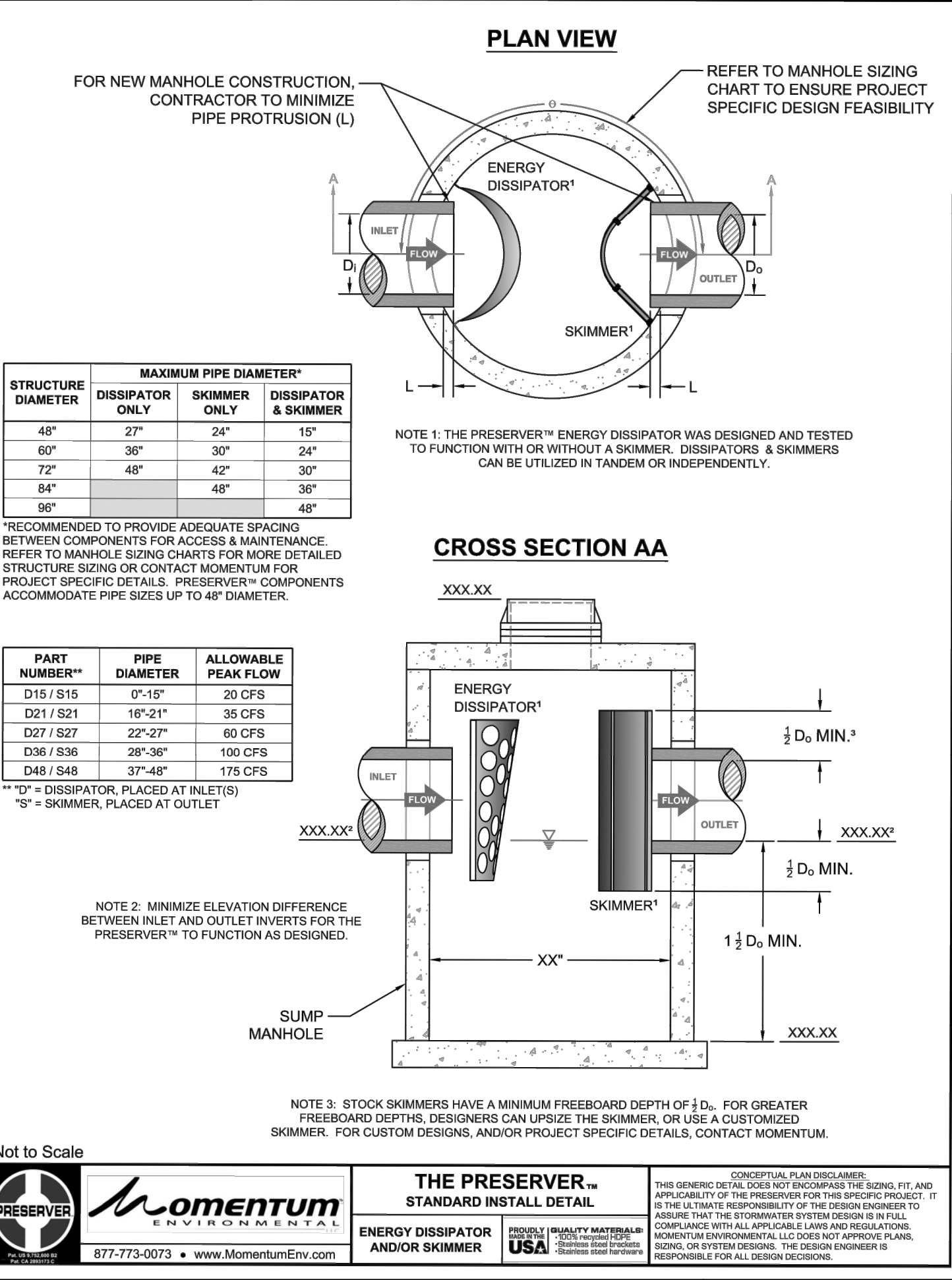
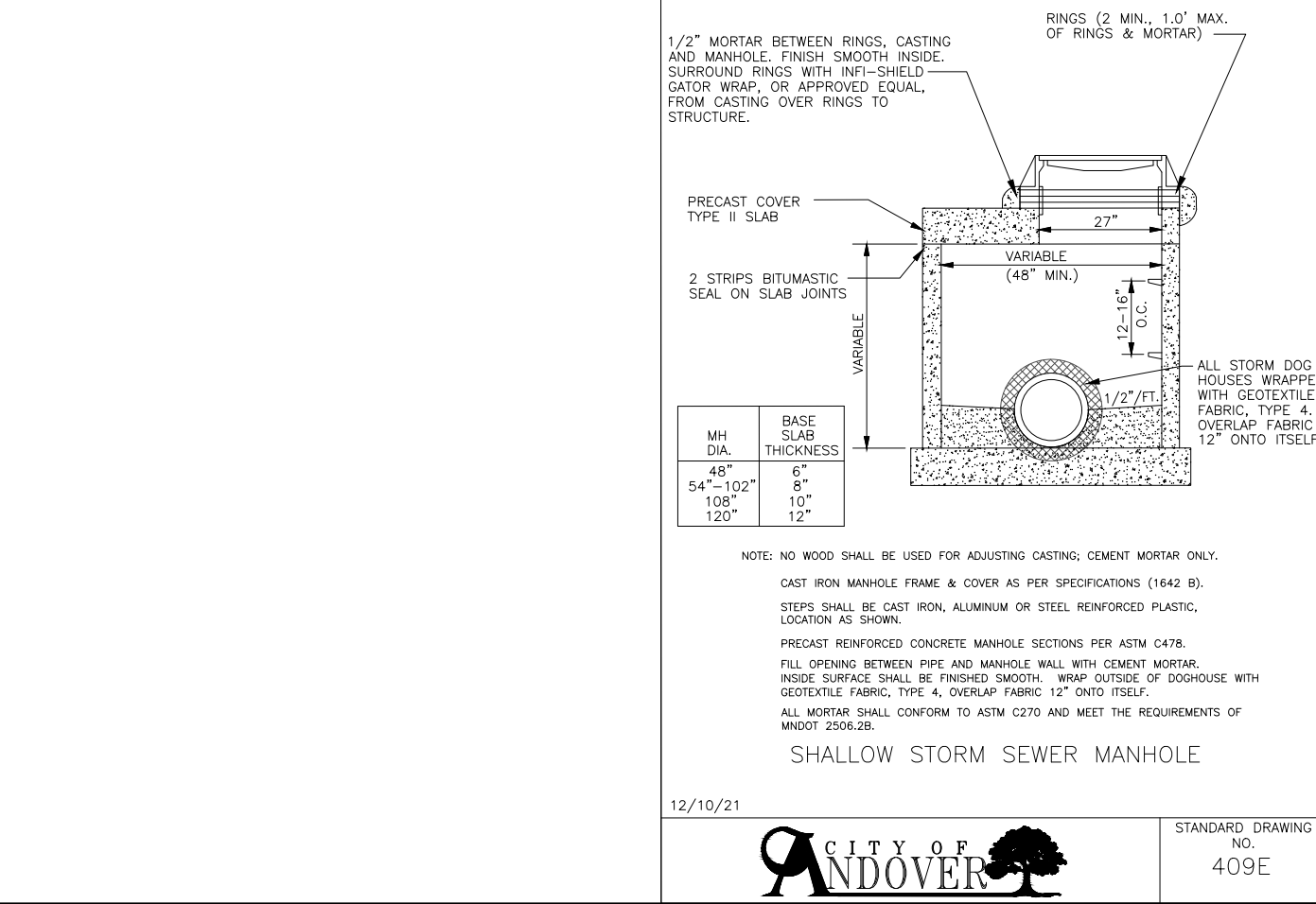
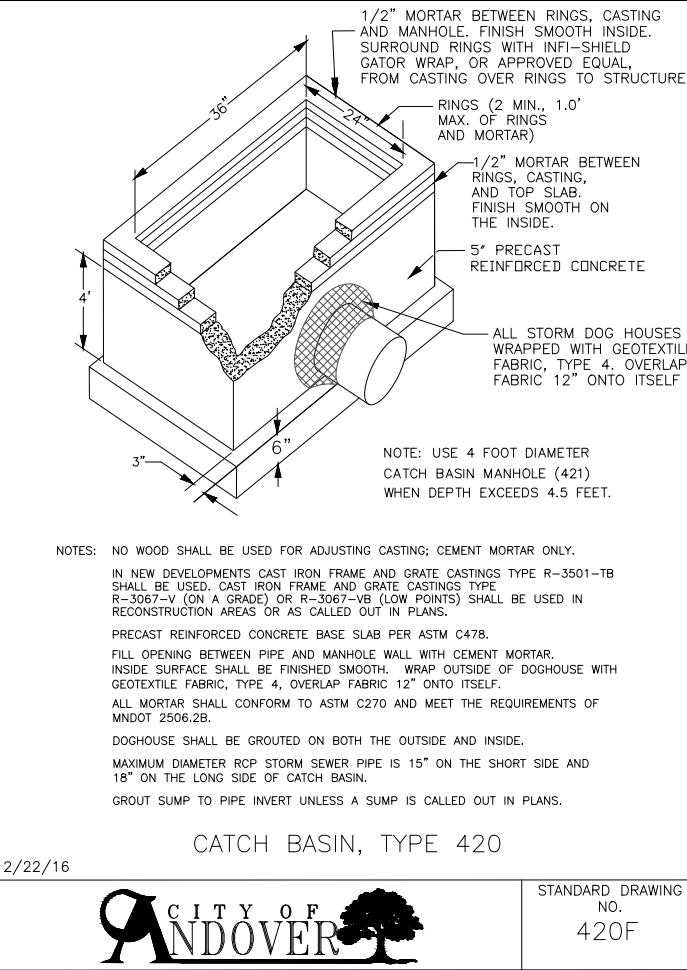
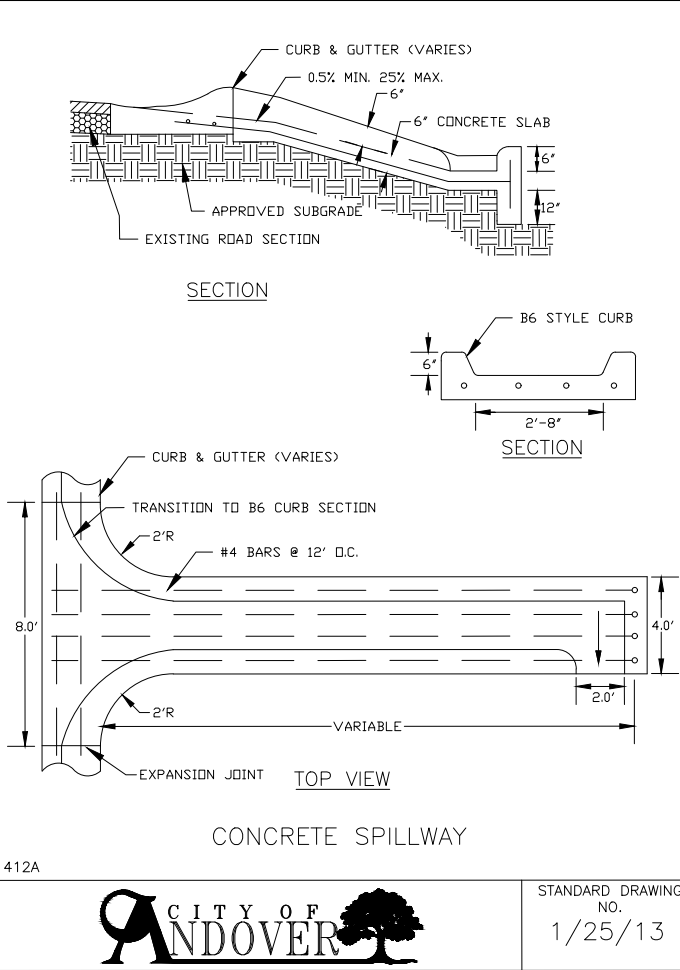
I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

David D. Berkowitz

DAVID D. BERKOWITZ
REG. NO. 267571
DATE: JANUARY 4, 2022



2022 STREET RECONSTRUCTION
CITY PROJECT NO. 22-02





The image contains two technical drawings of a storm sewer inlet, labeled 'PLAN' and 'SECTION'.

The **PLAN** view shows a rectangular storm sewer inlet. The top surface is covered with a layer of 3/4" crushed rock. This rock layer has 1/2" holes spaced 4" apart. A label 'STORM SEWER INLET' points to the rectangular opening in the center of the rock layer.

The **SECTION** view shows a cross-section of the inlet. It features a horizontal line representing the 'SUBGRADE'. Below this line is a rectangular structure representing the storm sewer. The top of this structure is covered with a layer of 6" of 3/4" crushed rock over a steel plate with 1/2" holes. The label '6" OF 3/4" CRUSHED ROCK OVER STEEL PLATE WITH 1/2" HOLES' points to this layer. The label 'SUBGRADE' points to the horizontal line above the structure.

ROCK FILTER FOR STORM SEWER INLET
NO SCALE

A CITY OF **N**DOVER 

1 IN. X 2 IN. X 24 IN. LONG WOODEN STAKES. STAKES SHALL BE DRIVEN THROUGH THE BACK HALF OF THE SEDIMENT CONTROL LOG AT AN ANGLE OF 45 DEGREES WITH THE TOP OF THE STAKE POINTING UPSTREAM. ①

SEDIMENT CONTROL LOG

45°

8 IN. - 10 IN. EMBEDMENT DEPTH

FLOW →

BACKFILL AND COMPACT SOIL FROM TRENCH ON UPGRADIENT SIDE OF SEDIMENT CONTROL LOG.

PLACE SEDIMENT CONTROL LOG IN SHALLOW TRENCH (1 TO 2 IN. DEPTH).

TYPES: STRAW, WOOD FIBER, OR COIR

1 IN. X 2 IN. X 24 IN. LONG WOODEN STAKES. AS NEEDED, STAKES SHALL BE DRIVEN OVER THE SEDIMENT CONTROL LOG AT AN ANGLE OF 45 DEGREES WITH THE TOP OF THE STAKE POINTING UPSTREAM. ②

SEDIMENT CONTROL LOG

45°

8 IN. - 10 IN. EMBEDMENT DEPTH

FLOW →

① SPACE BETWEEN STAKES SHALL BE A MAXIMUM OF 1 FOOT FOR DITCH CHECKS OR 2 FEET FOR OTHER APPLICATIONS.

② PLACE STAKES AS NEEDED TO PREVENT MOVEMENT OF SEDIMENT CONTROL LOGS PLACED ON SLOPES OR AS NEEDED DUE TO OTHER FACTORS. STAKES SHALL BE INCIDENTAL.

TYPES: WOOD CHIP, COMPOST, OR ROCK

SEDIMENT CONTROL LOGS

SEDIMENT CONTROL LOGS

CITY OF ANDOVER

8" MAXIMUM

5' METAL OR 2"x2" WOOD FENCE POST

GEOTEXTILE WITH NET BACKING

BACKFILL

DIRECTION OF FLOW

GEOTEXTILE TO OVERLAP THROUGH TRENCH

6" MIN. TRENCH

1.5' MIN.

NOTE : -SILT FENCE SHALL CONFORM TO
MNDOT 3886, TYPE B.

-FENCING SHALL BE PLACED ALONG CONTOURS
OR AS DIRECTED BY ENGINEER.

SILT FENCE

CITY OF ANDOVER 

20" MIN.

HOUSE NUMBER

48" - 50"

44" MIN.

EDGE OF ROAD
OR
BACK OF CURB

24" MIN.

"CAUTION" - LOCATE UNDERGROUND UTILITIES; GAS, TELEPHONE, ELECTRICAL, CABLE TV

HAVE BOX EXTEND AS FAR IN FRONT OF SUPPORT POST AS POSSIBLE (THIS PREVENTS POSSIBLE "SNOW FLOW DAMAGE").

ADDRESS MUST BE ON SIDE OF BOX FROM WHICH CARRIER APPROACHES, IN LETTERS ABOUT ONE INCH HIGH OR ON FRONT WHERE BOXES ARE GROUPED.

BOX MUST BE LOCATED SO CARRIER CAN SERVE WITHOUT LEAVING VEHICLE.

FACE OF MAIL BOX TO LINE UP WITH BACK OF CURB.

"CAUTION" - LOCATE UNDERGROUND UTILITIES; GAS, TELEPHONE, ELECTRICAL, CABLE TV

HAVE BOX EXTEND AS FAR IN FRONT OF SUPPORT POST AS POSSIBLE
(THIS PREVENTS POSSIBLE SNOW PLOW DAMAGE).

ADDRESS MUST BE ON SIDE OF BOX FROM WHICH CARRIER APPROACHES, IN LETTERS ABOUT ONE INCH HIGH OR ON FRONT WHERE BOXES ARE GROUPED.

BOX MUST BE LOCATED SO CARRIER CAN SERVE WITHOUT LEAVING VEHICLE.

FACE OF MAIL BOX TO LINE UP WITH BACK OF CURB.

ACITY OF**NDOVER**

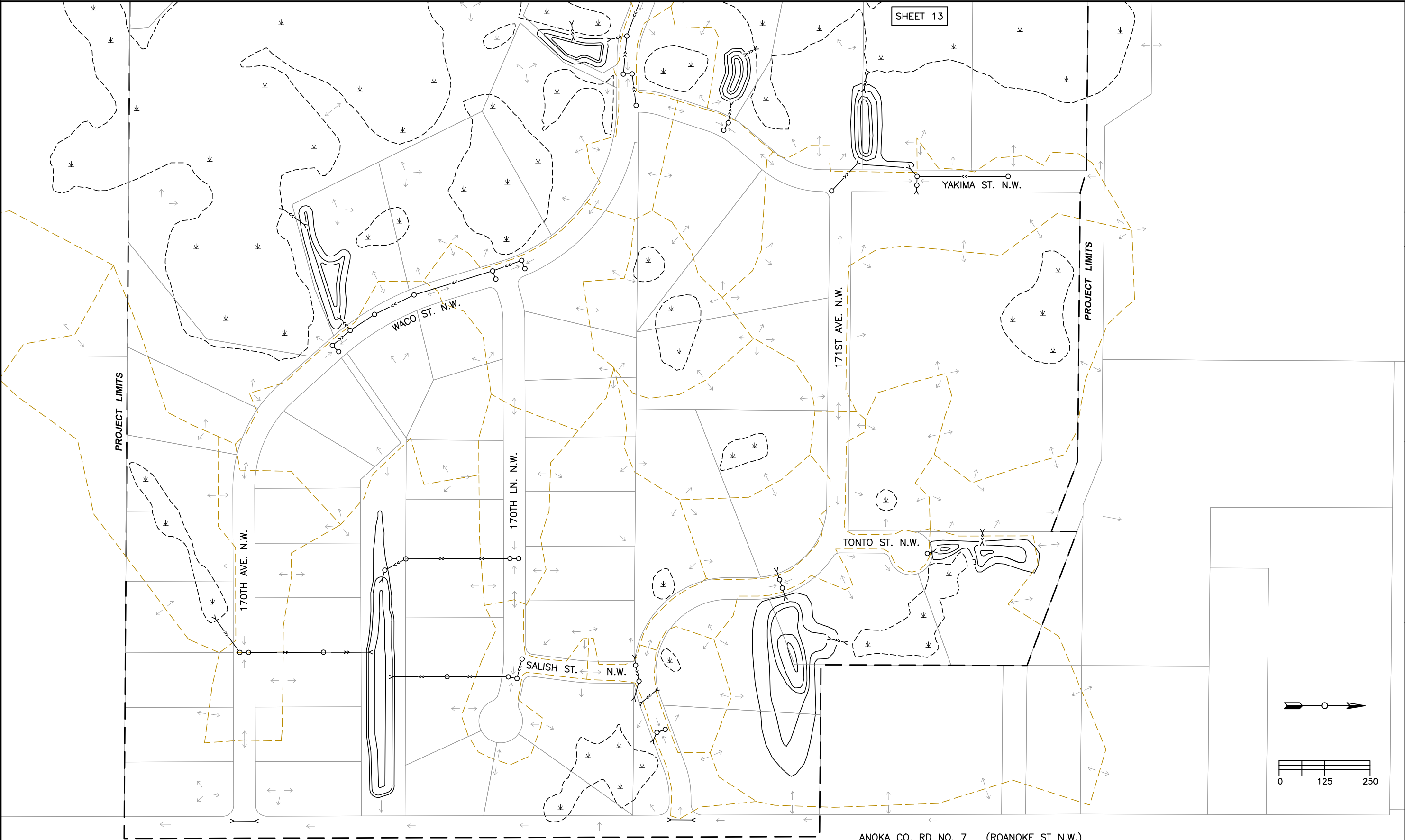
David D. Berkowitz

DAVID D. BERKOWITZ
DATE JANUARY 4, 2002 REC. NO. 26757

CHECKED DDB
DRAWN AAK
JUL



**2022 STREET RECONSTRUCTION
CITY PROJECT NO. 22-02**

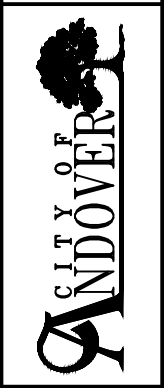


SHEET 13

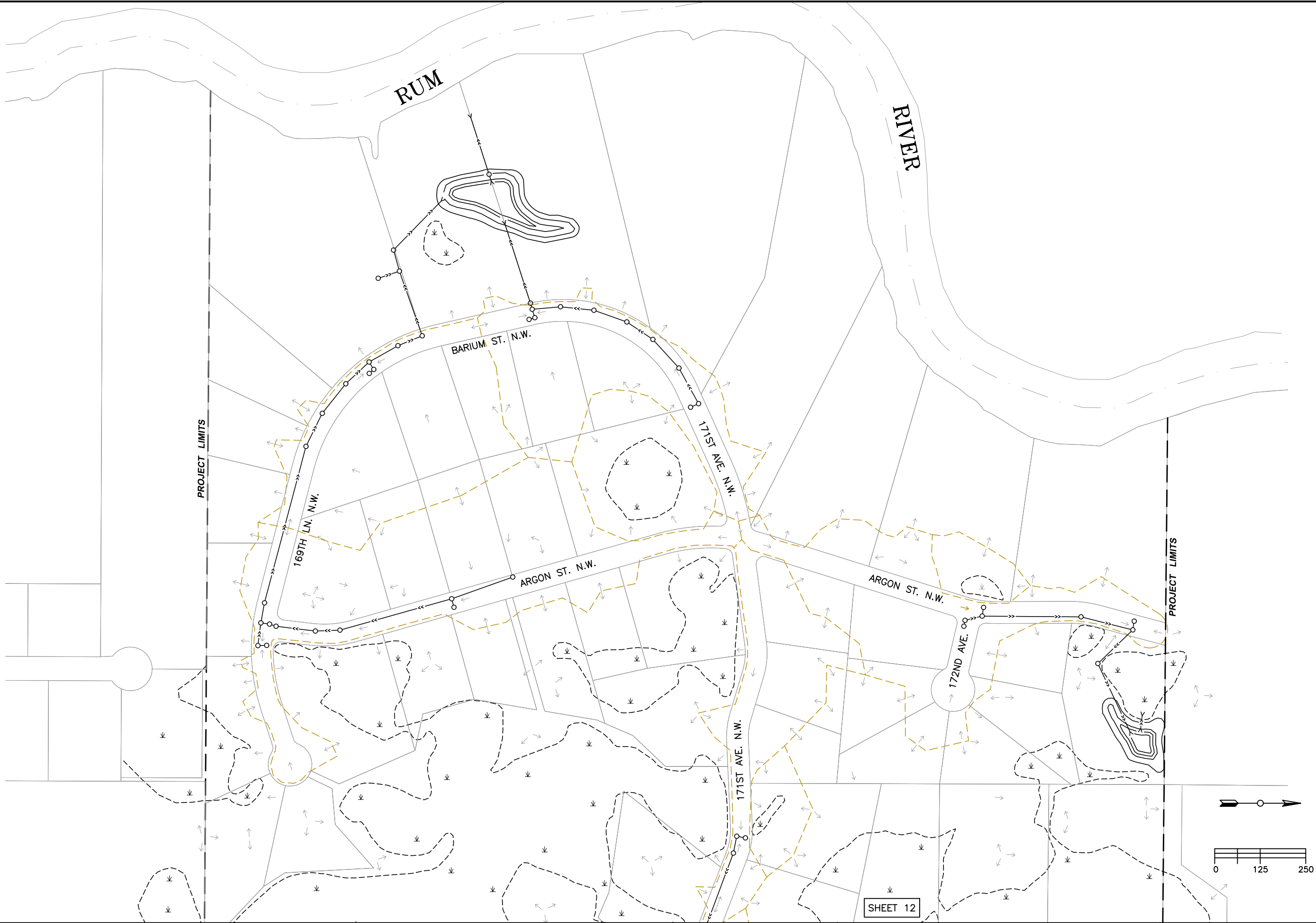
DESIGNED	NO.	DATE	BY	DESCRIPTION OF REVISIONS
JUL				
DRAWN				
AAK				
CHECKED				
DDB				

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

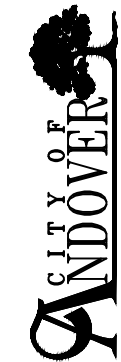
David D. Berkowitz
DAVID D. BERKOWITZ
DATE JANUARY 4, 2022 REG. NO. 26757



2022 STREET RECONSTRUCTION
CITY PROJECT NO. 22-02



SHEET 12



I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED
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UNDER THE LAWS OF THE STATE OF MINNESOTA.
David D. Berkowitz
DAVID D. BERKOWITZ
DATE JANUARY 4, 2022 REG. NO. 26757

DESIGNED	NO.	DATE	BY	DESCRIPTION OF REVISIONS
JUL				
DRAWN				
AAK				
CHECKED				
DDB				

Timber Rivers Storm Sewer Structure Table

Catch Basin	Storm Manhole	Structure Dia. (in)	Structure Depth (ft)	Existing Adjust. Ring Height (in) (2)	F&I 12" Adjust. Ring (each) (2)	Sump Depth (in)	Fill Sump - Est. Conc. Vol. (CY) (1)	Notes
	465	60	8.4	21	1	13	1.2	Invert below water, sand bagging Req'd.
	466	48	5.7	11		12	0.7	
	467	48	4.6	14	1	13	0.7	
	468	48	5.0	13		9	0.6	
	469	48	4.8	12		12	0.7	
	470	48	4.7	11		9	0.6	
	471	48	5.2	16	1	11	0.7	
472		60	12.4	4		13	1.2	
	473	48	9.2	14	1	10	0.6	
	474	48	6.7	11		12	0.7	
	475	48	8.3	10		12	0.7	
	476	48	9.9	8		13	0.7	
	478	54	7.2	14	1	11	0.8	
	479	48	8.8	14	1	8	0.5	
	480	48	5.5	24	1	10	0.6	
	482	48	4.7	8 assumed	1	12	0.7	Assumed sump depth. Adjust buried casting to grade up 18" +/-.
	486	48	5.0	14	1	13	0.7	Grout as Req'd. Invert below water, sand bagging Req'd.
	487	48	4.7	13		12	0.7	
2194		48	4.9	10		12	0.7	
2195		48	4.7	8		12	0.6	
2197		48	4.1	14	1	14	0.8	
2198		48	4.2	14	1	14	0.8	
2199		48	4.7	10		12	0.7	Assumed sump depth, invert submerged. Sand bagging Req'd.
2200		48	6.6	5		13	0.7	
2201		48	4.8	14	1	14	0.8	
2202		48	4.8	12		12	0.7	
2203		48	5.1	4		13	0.7	
2204		48	3.5	0		8	0.5	
2205		48	4.7	5		8	0.5	
2206		48	5.4	5		8	0.5	
2207		48	4.0	9		13	0.7	
2208		48	4.3	3		6	0.5	
2209		54	4.4	3		14	1.0	
2210		48	4.5	4		8	0.5	
2211		48	4.7	4		10	0.6	
2214		48	6.1	4		12	0.7	
2215		48	5.4	6		15	0.8	
2216		48	5.0	6		15	0.8	
2217		48	4.6	10		14	0.8	
2218		48	4.4	11		11	0.7	
2219		48	6.0	6		11	0.7	

Timber Rivers Storm Sewer Structure Table

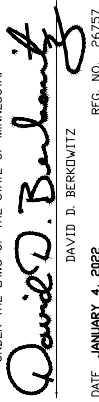
Catch Basin	Storm Manhole	Structure Dia. (in)	Structure Depth (ft)	Existing Adjust. Ring Height (in) (2)	F&I 12" Adjust. Ring (each) (2)	Sump Depth (in)	Fill Sump - Est. Conc. Vol. (CY) (1)	Notes
2220		48	5.0	4		12	0.7	Remove & Replace Doghouse
2221		48	5.0	0		14	0.8	
2222		48	3.8	4		12	0.7	
2223		48	4.9	8		11	0.7	
2224		48	4.6	16	1	13	0.7	
2225		48	5.0	12		15	0.8	
2226		48	4.7	8		13	0.7	
2228		48	4.9	5		14	0.8	
2229		48	4.9	14	1	16	0.9	
2232		48	4.9	3		12	0.7	
2233		48	3.8	8		12	0.7	
2234		48	4.0	5		10	0.6	
2235		48	3.9	5		8	0.5	
2236		48	3.8	6		12	0.7	
2237		72	5.0	3		14	1.7	Invert below water, sand bagging Req'd.
2238		48	3.5	5		11	0.7	
2239		48	3.5	7		16	0.9	
2240		48	5.7	11		13	0.7	Grout existing rings inplace
2241		48	3.8	6		11	0.7	
2559		48	6.3	0		17	0.9	Remove & Replace Doghouse (full of roots)
2560		48	3.5	0		22	1.1	
2561		48	3.1	0		32	1.5	
2562		48	3.1	6		26	1.2	
2563		48	3.6	14	1	20	1.0	Remove & Replace Doghouse
2564		48	3.6	13		26	1.2	
3030		48	7.1	13		15	0.8	Patch deteriorated structure wall under top slab.
3031		48	4.8	14	1	8	0.5	
3032		48	6.8	22	1	12	0.7	
3033		48	2.9	5		24	1.2	
3519		48	4.8	6		10	0.6	
3520		48	3.8	7		14	0.8	
3542		48	7.3	5		14	0.8	
3543		48	12.2	10		8	0.5	
3544		54	8.1	25	1	8	0.7	Invert below water, sand bagging Req'd.
3545		48	7.7	10		12	0.7	Assumed sump depth, invert submerged. Sand bagging Req'd.
Total		76			18		58.0	

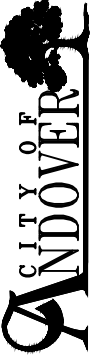
- Notes
- 1) Grout sump and pour invert. Estimated concrete volume includes extra 4" in sump depth for bench construction (up to 1/3 depth of outlet pipe diameter).
- 2) Where ring height exceeds 14", F&I 12" concrete adjusting ring (separate pay item). All others, utilize 4" rings where possible (incidental to Install Casting).
- 3) Infi-Shield Gator Wrap or approved equal shall be placed around all adjusting rings, casting bottom flange, and top of structure.
- 4) All exsting storm pipe is 24" or less

DESIGNED
JUL

DRAWN
AAK

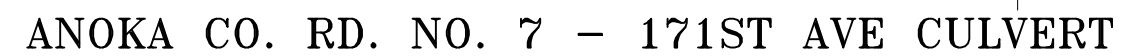
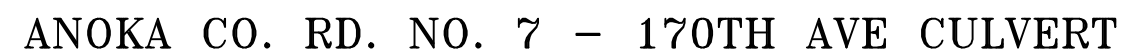
CHECKED
DDB

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

DAVID D. BERKOWITZ
REG. NO. 267371


CITY OF ANDOVER

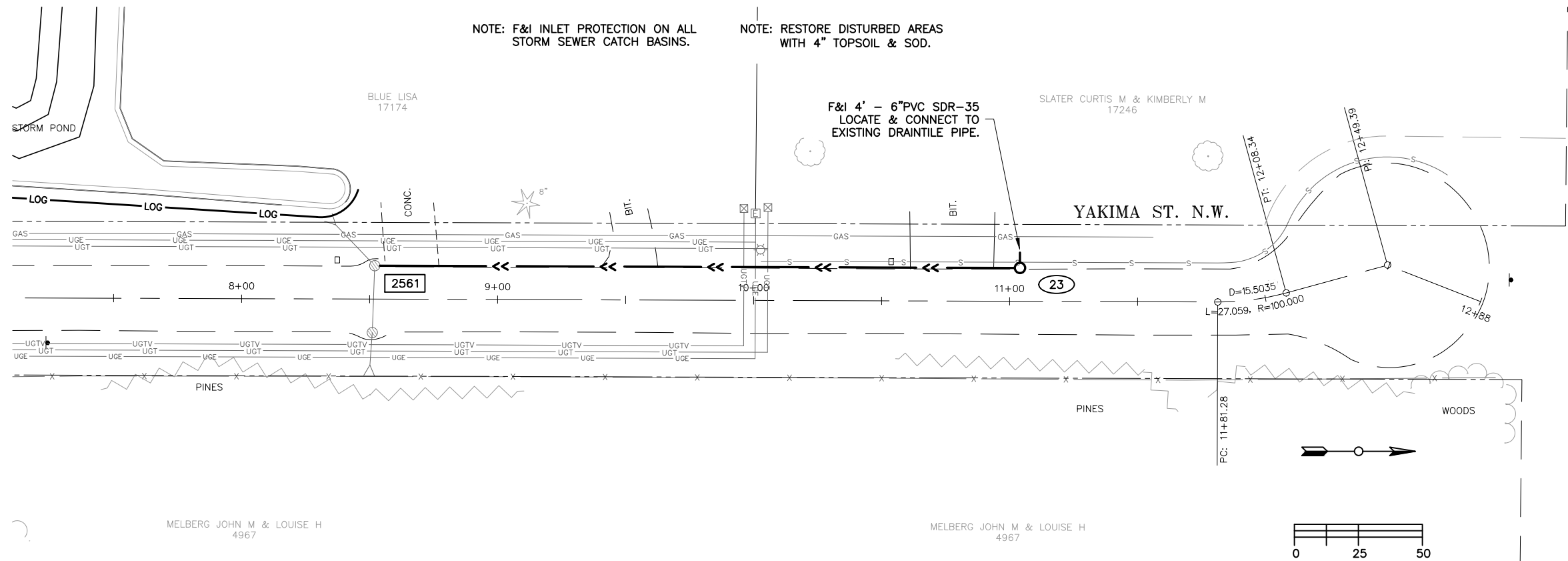
2022 STREET RECONSTRUCTION
CITY PROJECT NO. 22-02

NO.
DATE
BY
DESCRIPTION OF REVISIONS

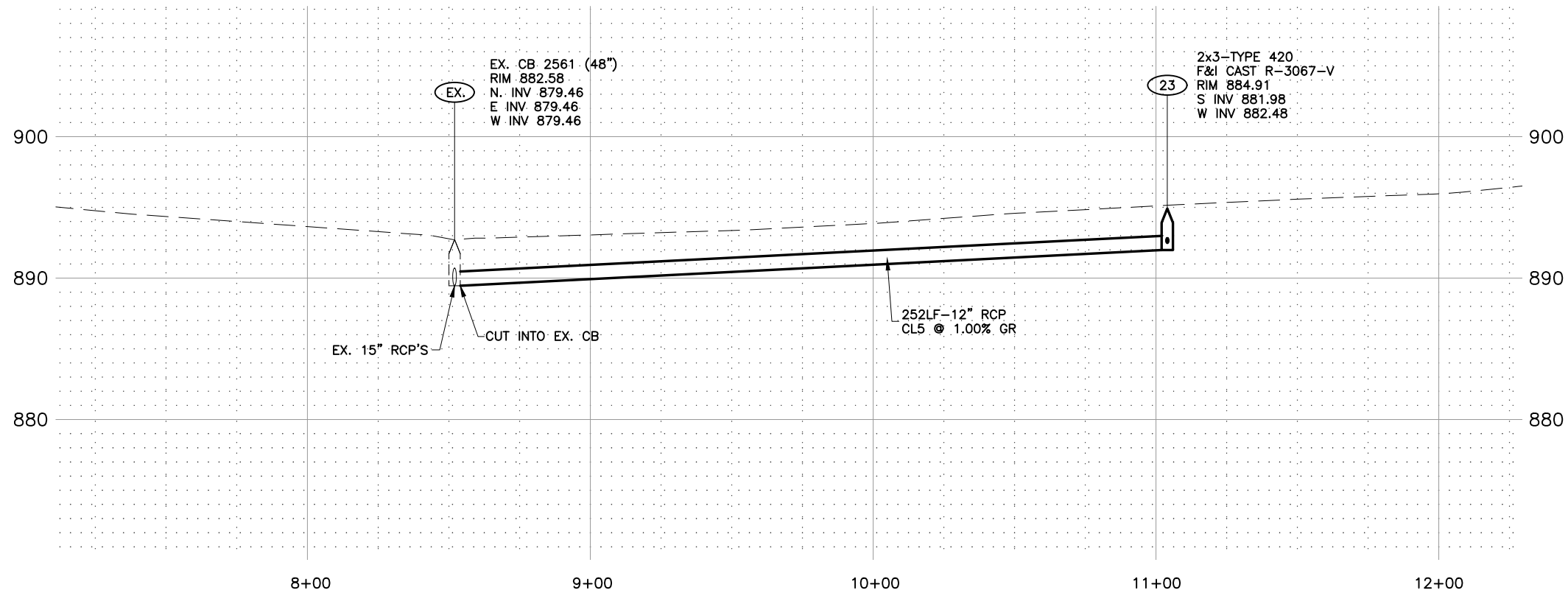


CITY OF ANDOVER

**2022 STREET RECONSTRUCTION
CITY PROJECT NO. 22-02**



YAKIMA ST. N.W. STORM SEWER



DESIGNER		BY		DATE		NO.		DESCRIPTION OF REVISIONS	
JUL	AAK								
DRAWN	AAK								
CHECKED	AAK								
DESIGNED	JUL								
DDB									

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David D. Berkowitz

DAVID D. BERKOWITZ

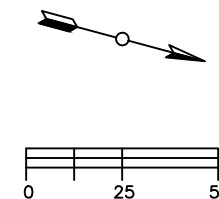
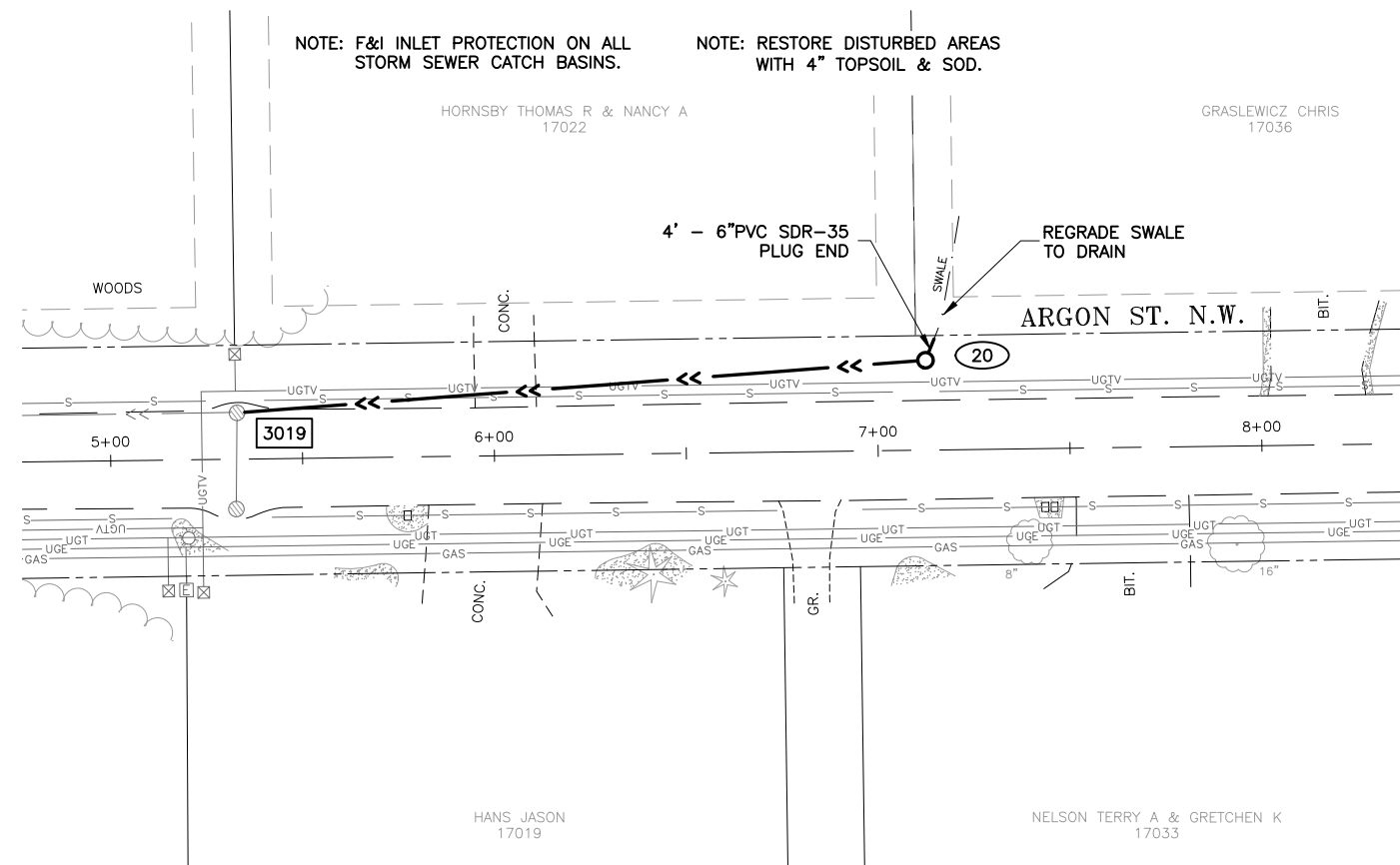
REG. NO. 26757

DATE JANUARY 4, 2022

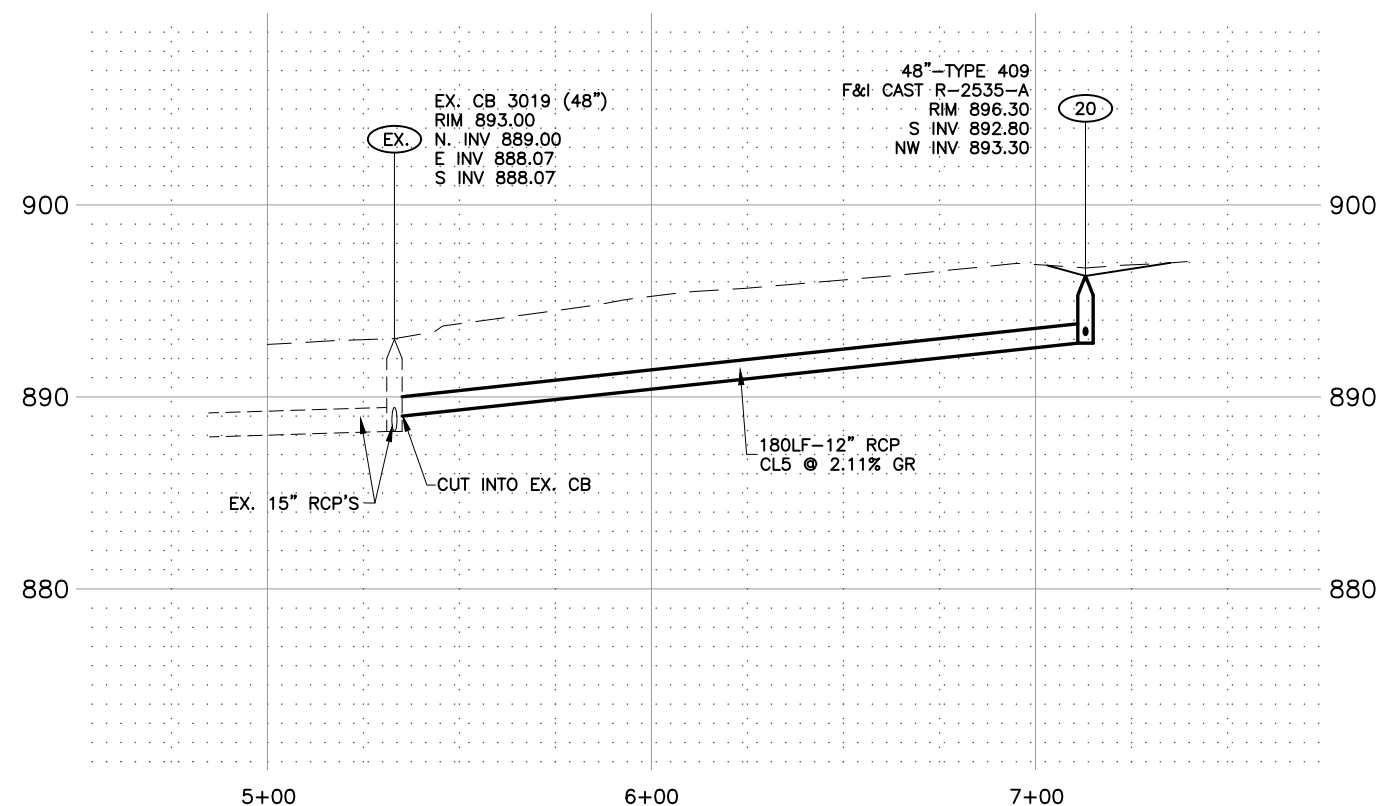
CITY OF ANDOVER

2022 STREET RECONSTRUCTION

CITY PROJECT NO. 22-02



ARGON ST. N.W. STORM SEWER



DESIGNED		DESCRIPTION OF REVISIONS	
JUL		NO.	BY
DRAWN		DATE	
AAK			
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DDB			

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David D. Berkowitz

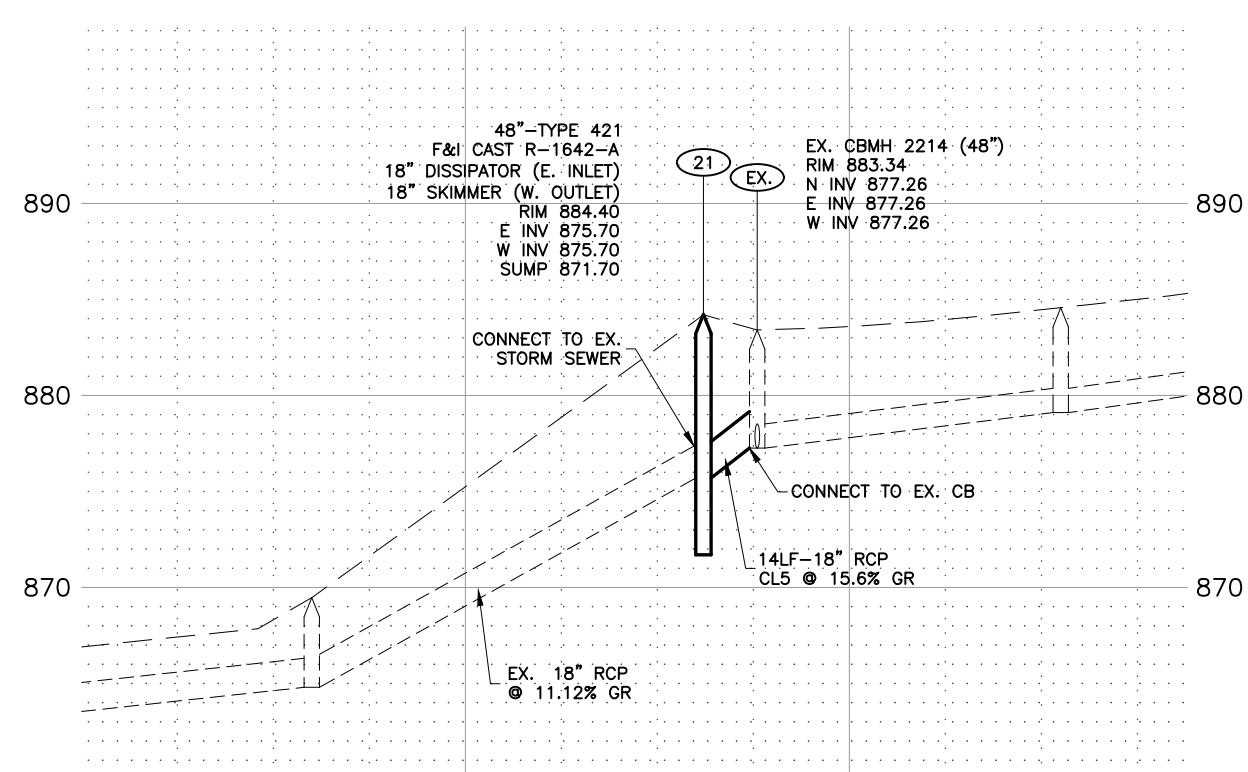
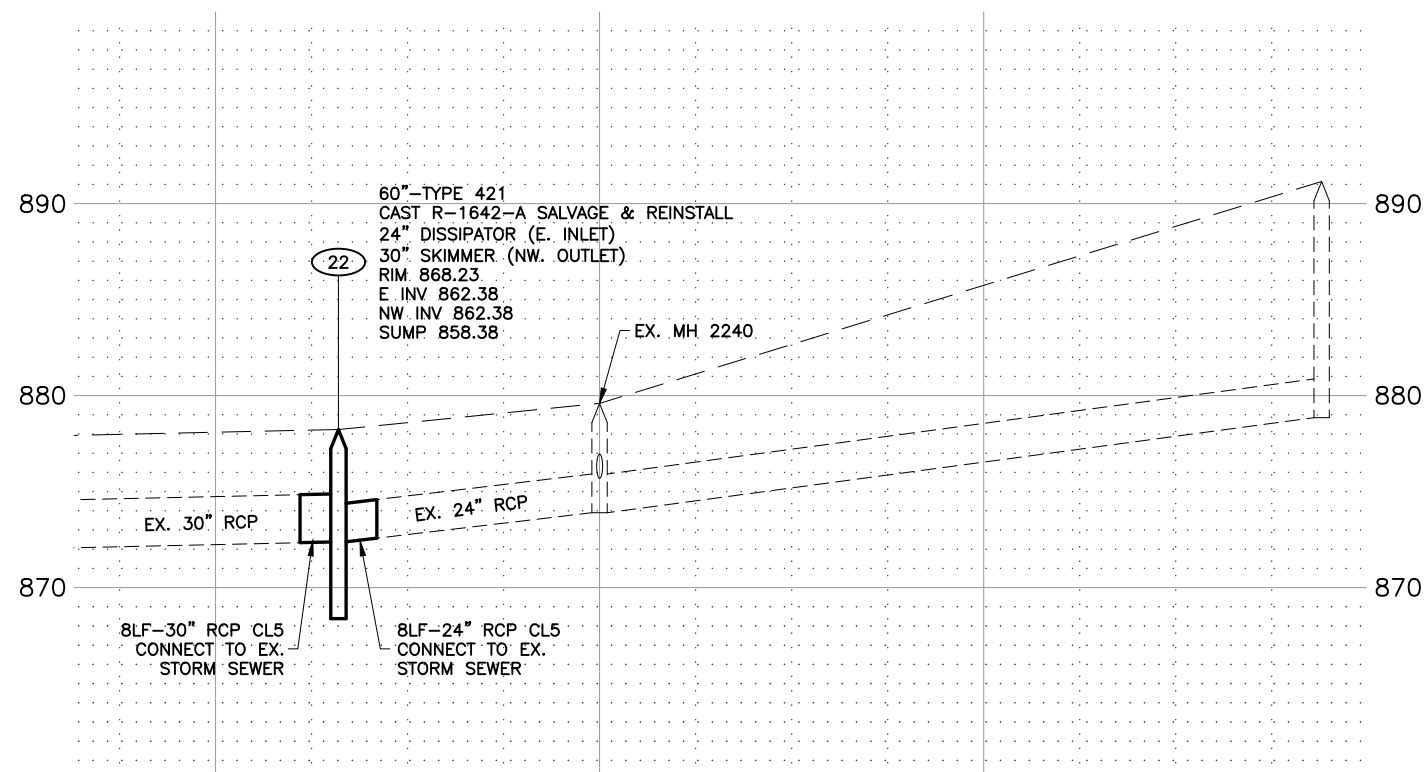
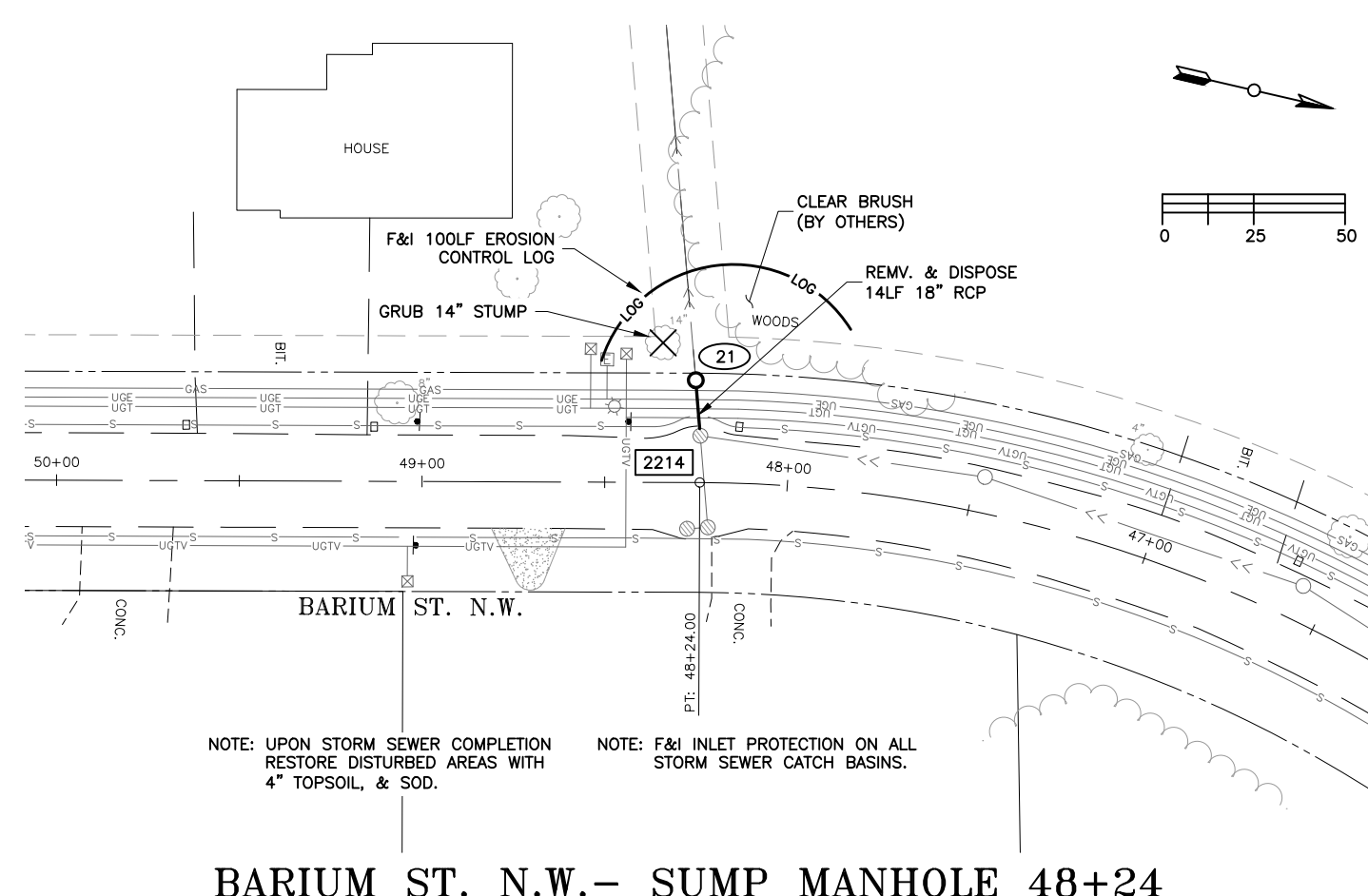
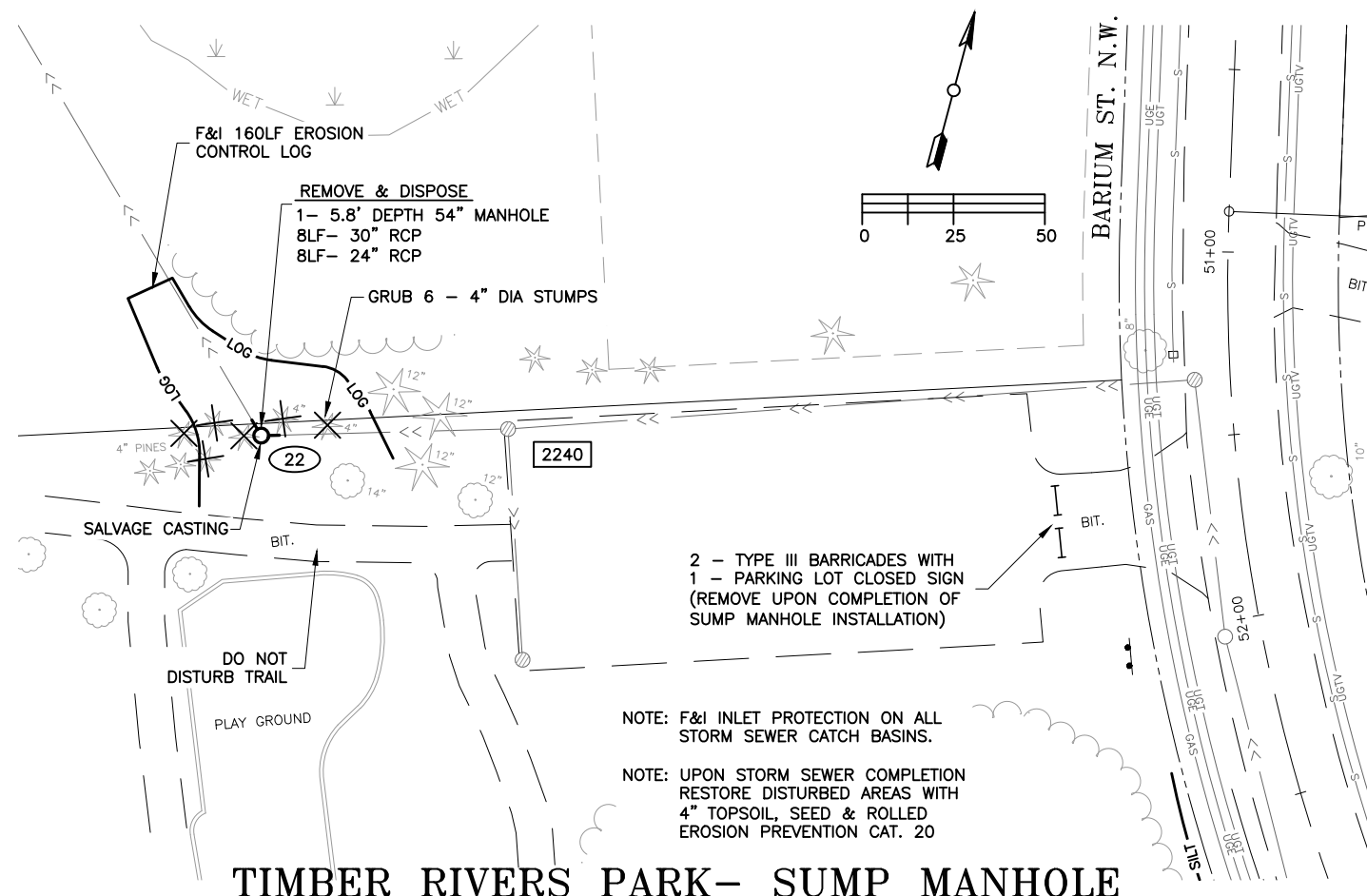
DAVID D. BERKOWITZ

DATE JANUARY 4, 2022

REG. NO. 26757



2022 STREET RECONSTRUCTION
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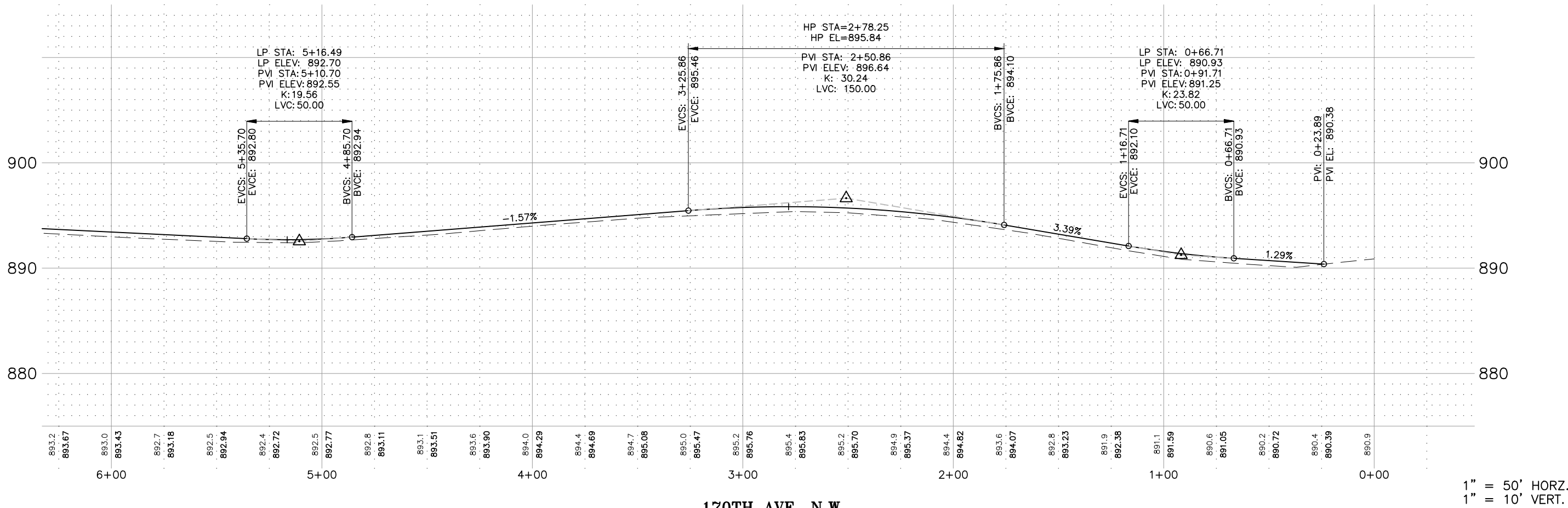
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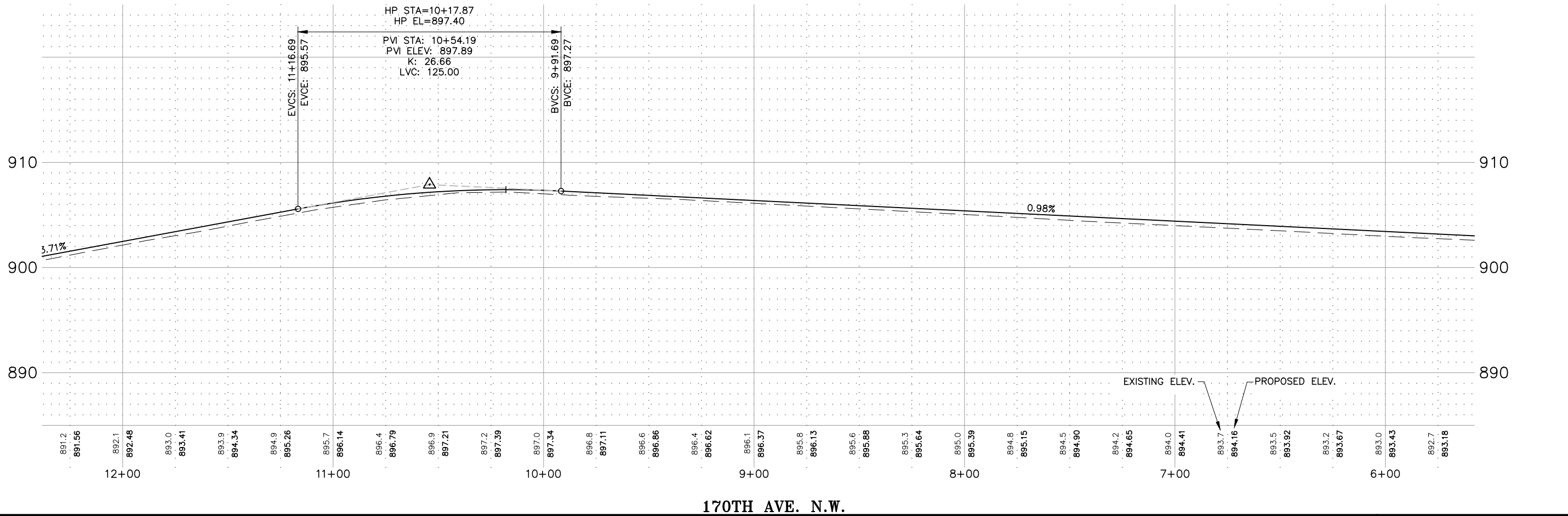
CITY OF ANDOVER

**2022 STREET RECONSTRUCTION
CITY PROJECT NO. 22-02**



170TH AVE. N.W.

1" = 50' HORZ.
1" = 10' VERT.



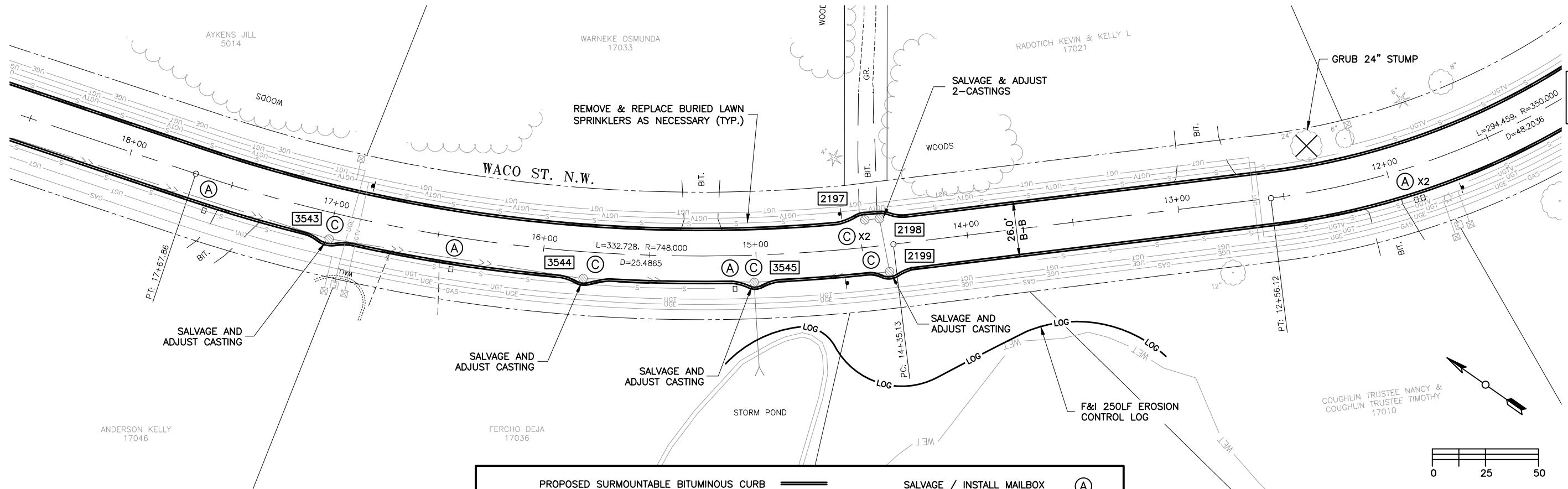
170TH AVE. N.W.

2022 STREET RECONSTRUCTION
CITY PROJECT NO. 22-02

CITY OF ANDOVER

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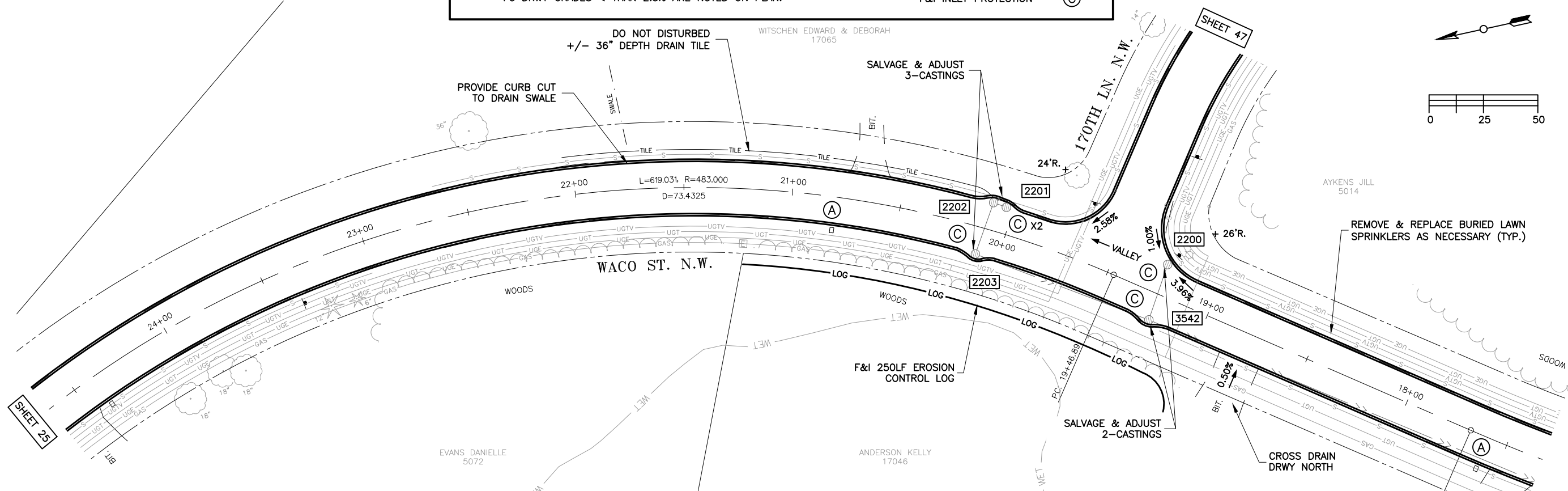
PROPOSED SURMOUNTABLE BITUMINOUS CURB

NOTE: DRWY'S SHALL BE REMOVED AS DIRECTED BY ENGINEER.
BIT. & CONC. DRWY'S SHALL BE REPLACED IN KIND.
GRAVEL DRWY'S SHALL BE REPLACED WITH A BIT. 15' APRON.
FG DRWY GRADES < THAN 2.5% ARE NOTED ON PLAN.

SALVAGE / INSTALL MAILBOX (A)

PROTECT / SALVAGE / REINSTALL LANDSCAPING (INCIDENTAL) (B)

F&I INLET PROTECTION (C)



DESCRIPTION OF REVISIONS	
NO.	DATE

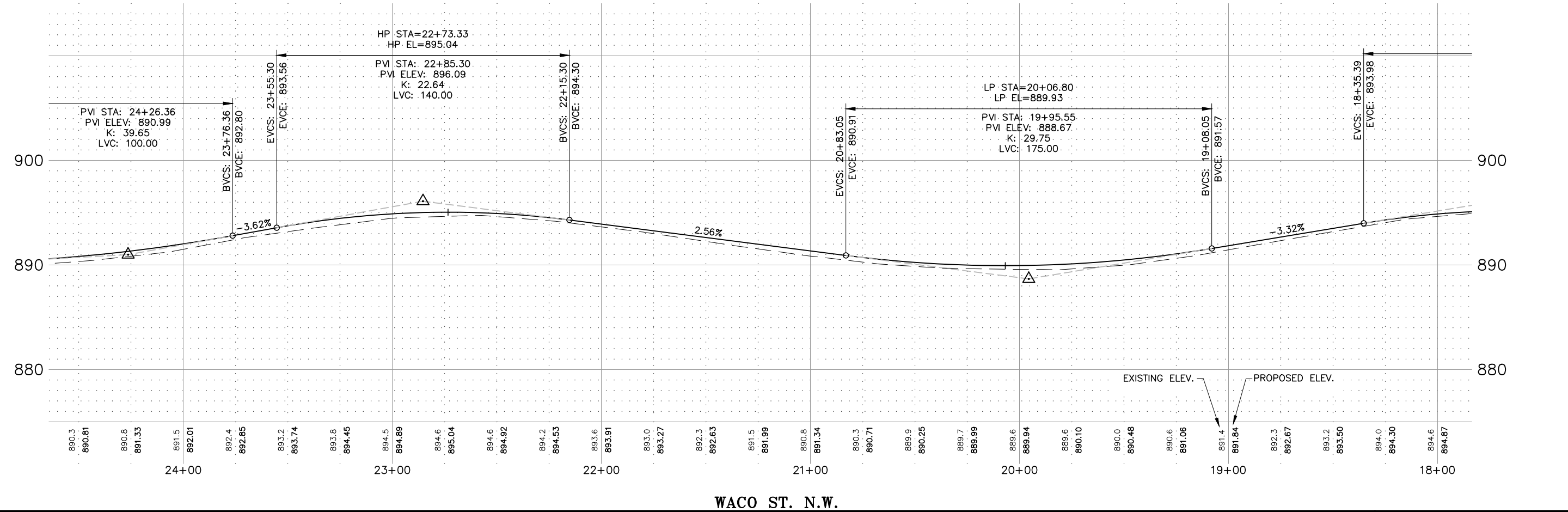
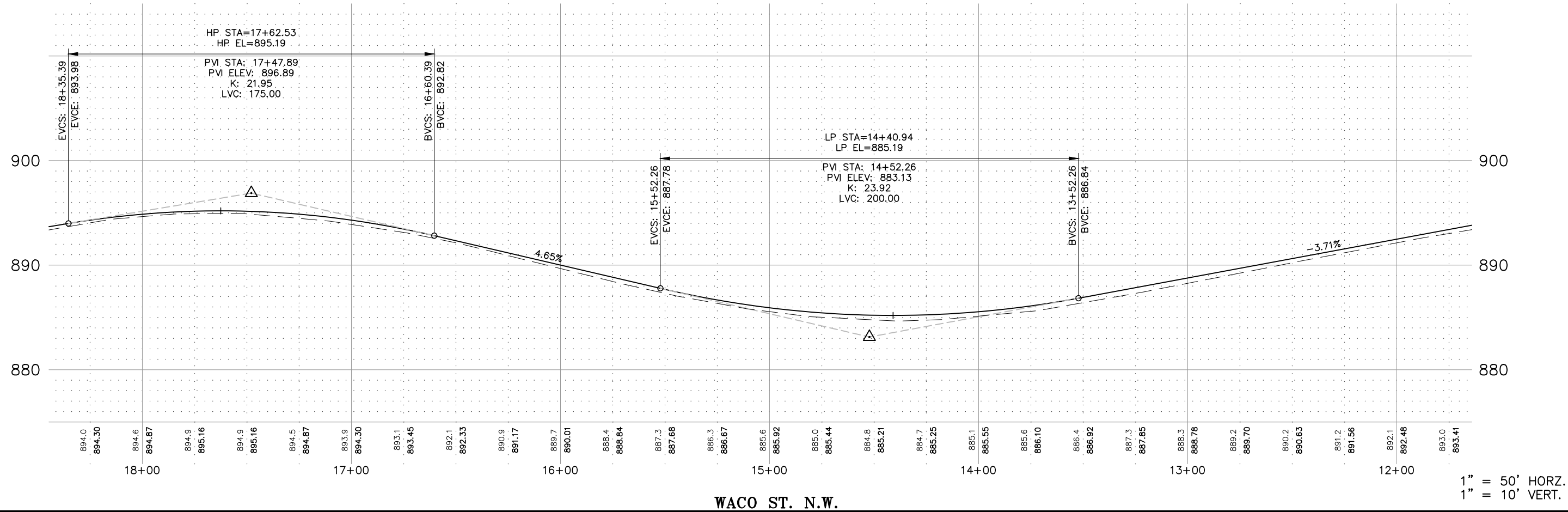
DESIGNED	DRAWN	CHECKED	DATE
JUL	AAK	DOB	

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CITY OF ANDOVER

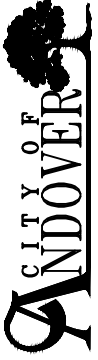
2022 STREET RECONSTRUCTION
CITY PROJECT NO. 22-02



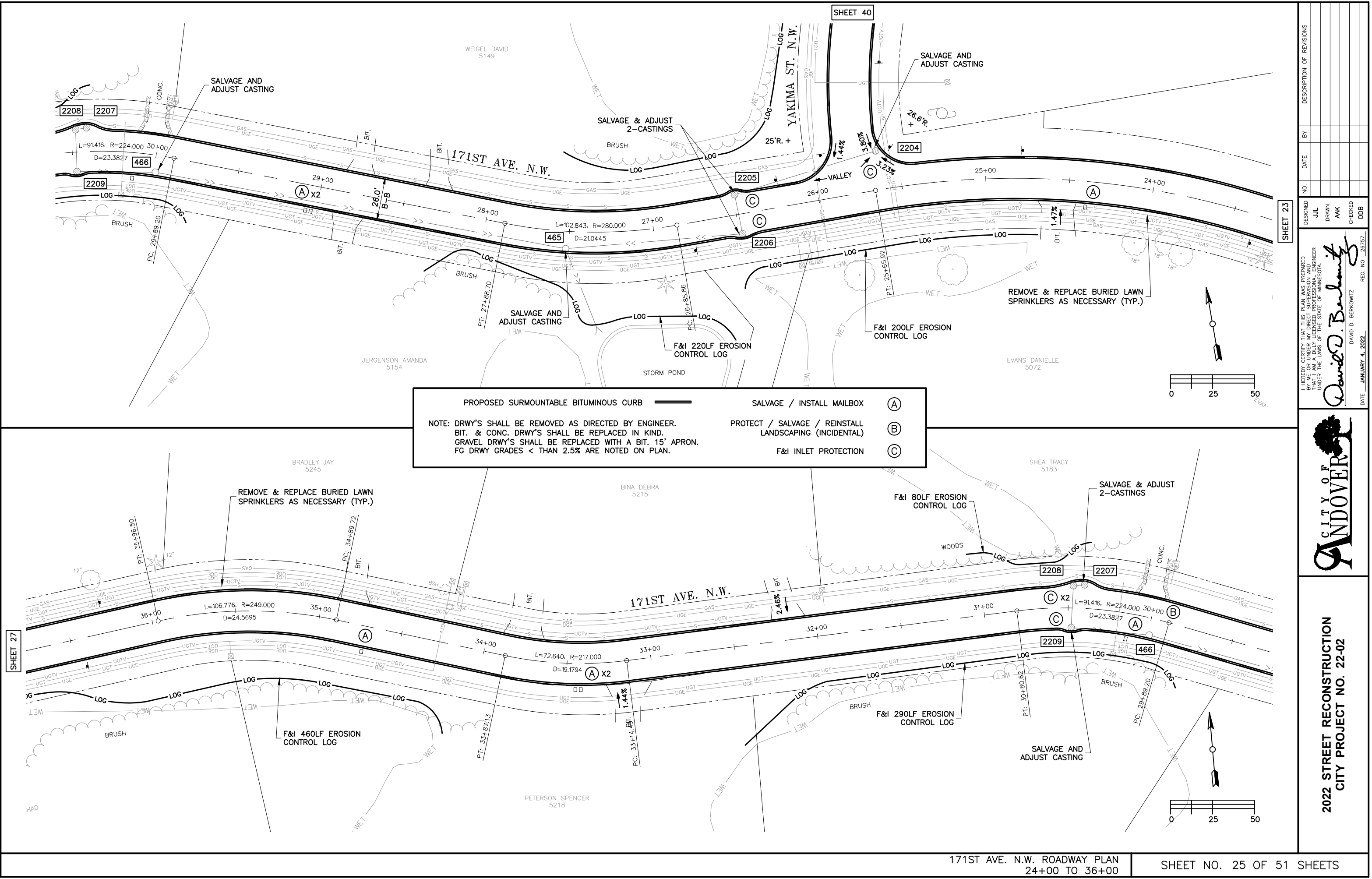
DESIGNED	NO.	DATE	BY	DESCRIPTION OF REVISIONS
JUL				
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DATE: JANUARY 4, 2022
REG. NO. 26757



2022 STREET RECONSTRUCTION
CITY PROJECT NO. 22-02



PROPOSED SURMOUNTABLE BITUMINOUS CURB

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FG DRWY GRADES < THAN 2.5% ARE NOTED ON PLAN.

SALVAGE / INSTALL MAILBOX (A)

PROTECT / SALVAGE / REINSTALL LANDSCAPING (INCIDENTAL) (B)

F&I INLET PROTECTION (C)

NO.	DATE	BY	DESCRIPTION OF REVISIONS

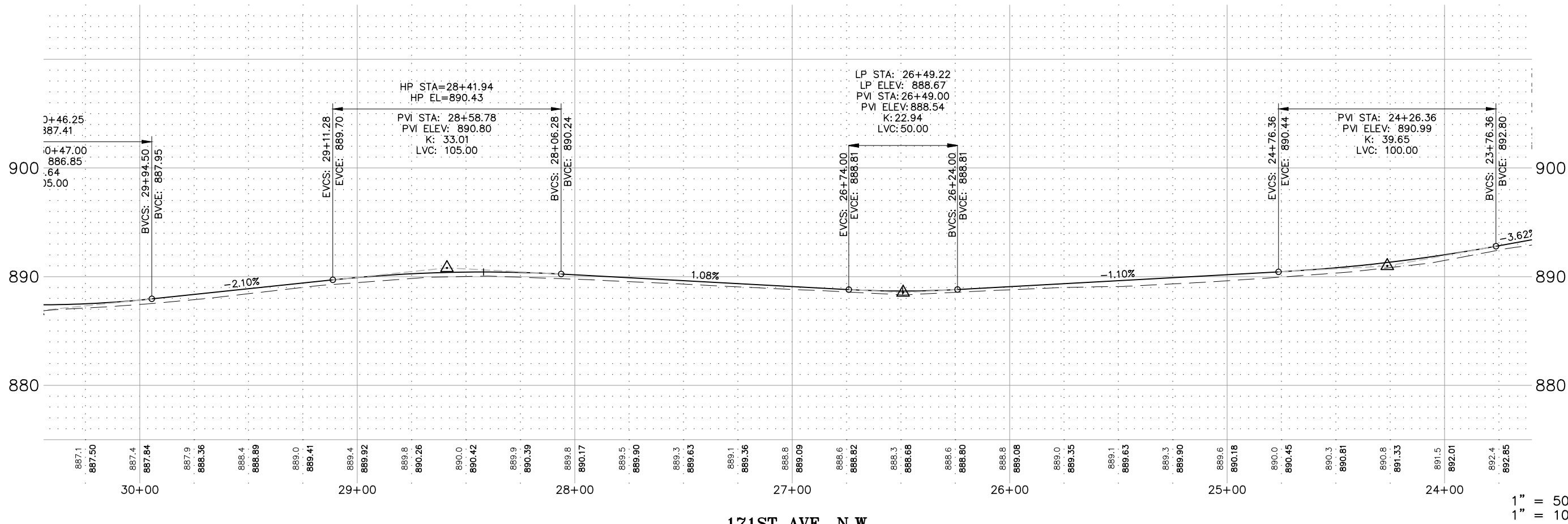
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JUL	AAK	DOB	

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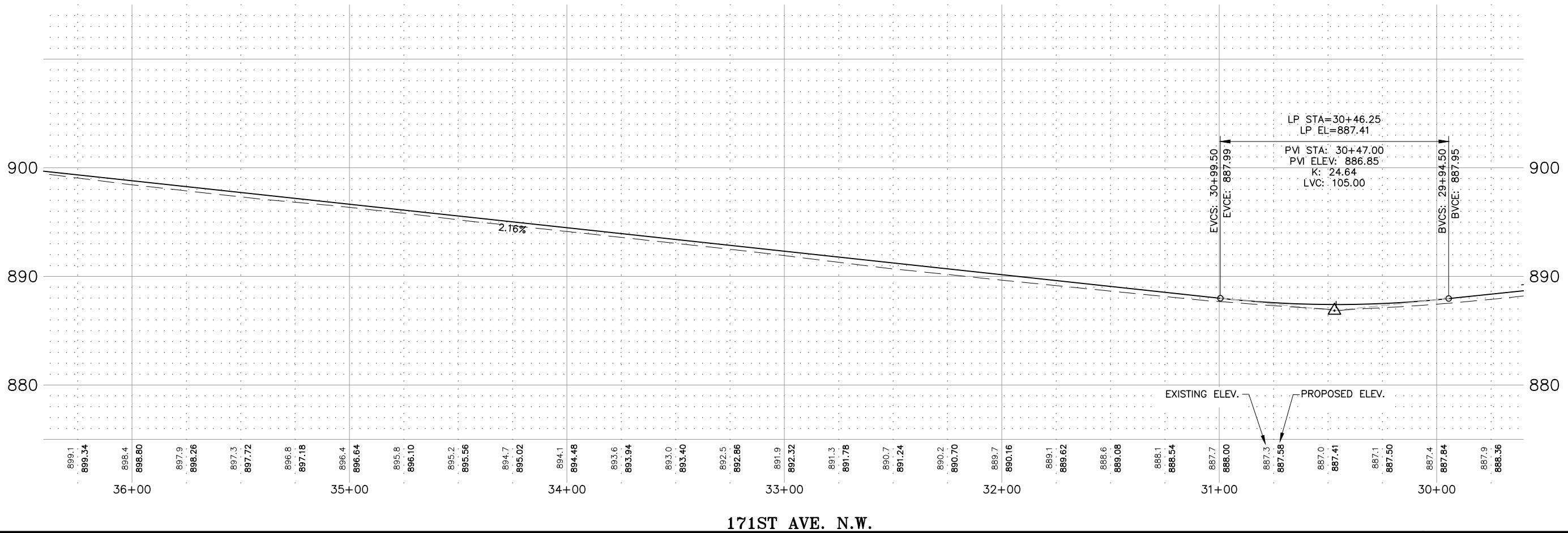
CITY OF ANDOVER

2022 STREET RECONSTRUCTION
CITY PROJECT NO. 22-02



171ST AVE. N.W.

1" = 50' HORZ.
1" = 10' VERT.



171ST AVE. N.W.

171ST AVE. N.W. ROADWAY CENTERLINE GRADE
24+00 TO 36+00

SHEET NO. 26 OF 51 SHEETS

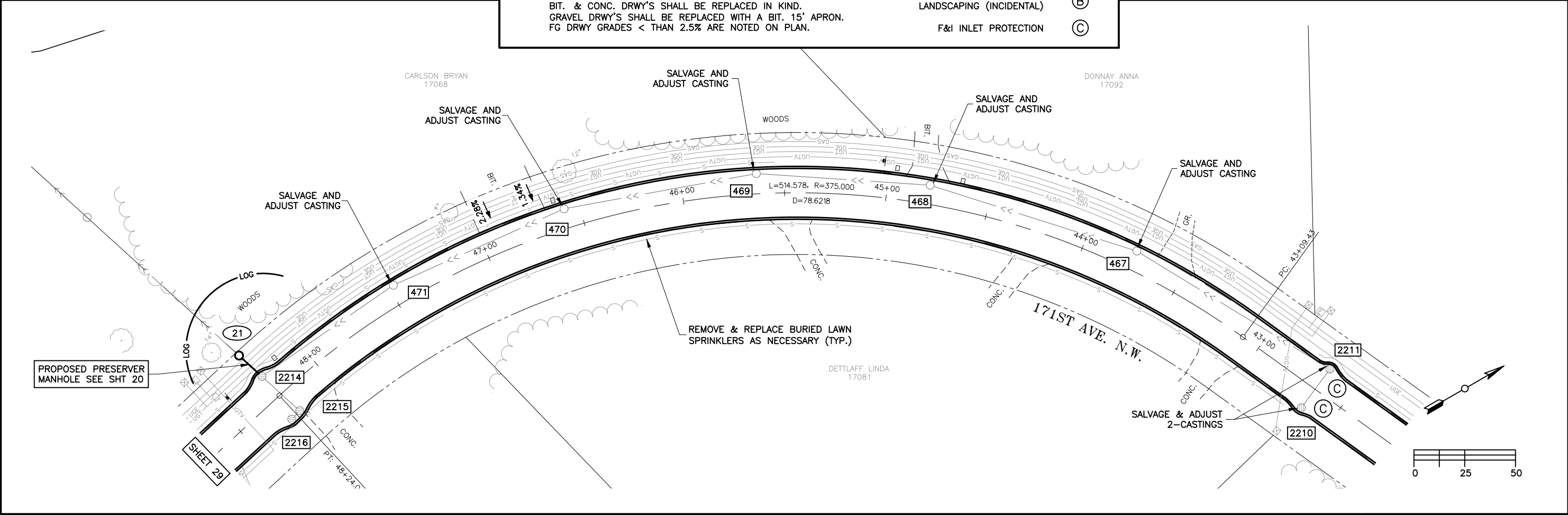
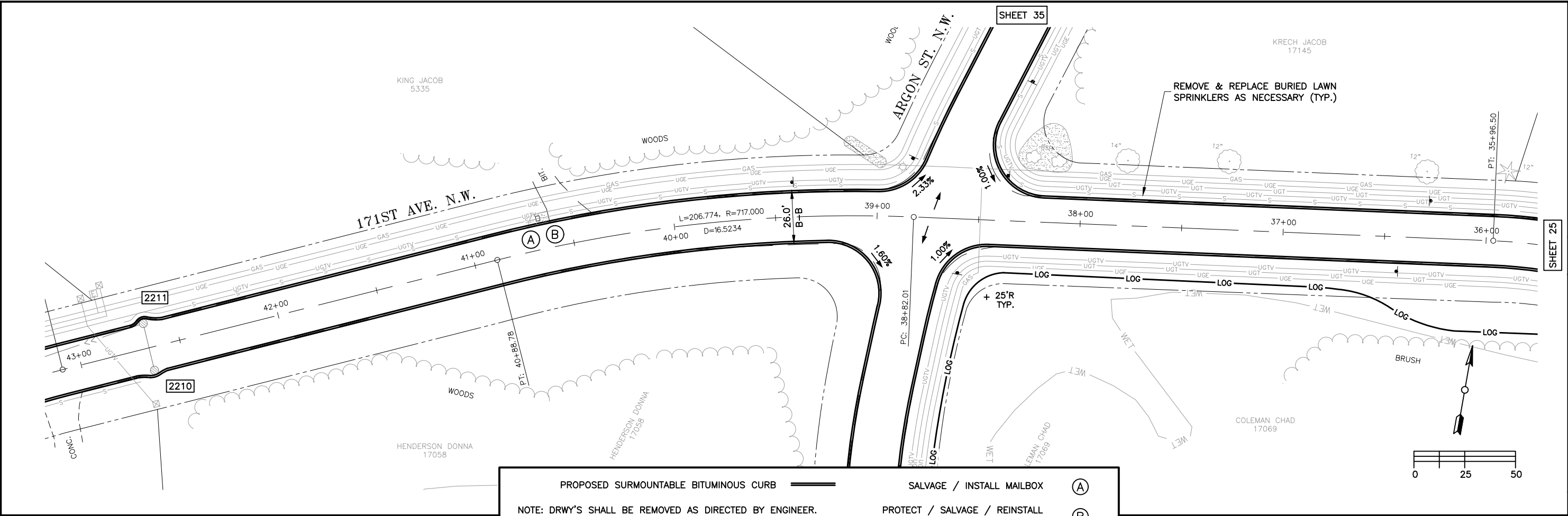
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CITY OF ANDOVER

2022 STREET RECONSTRUCTION
CITY PROJECT NO. 22-02



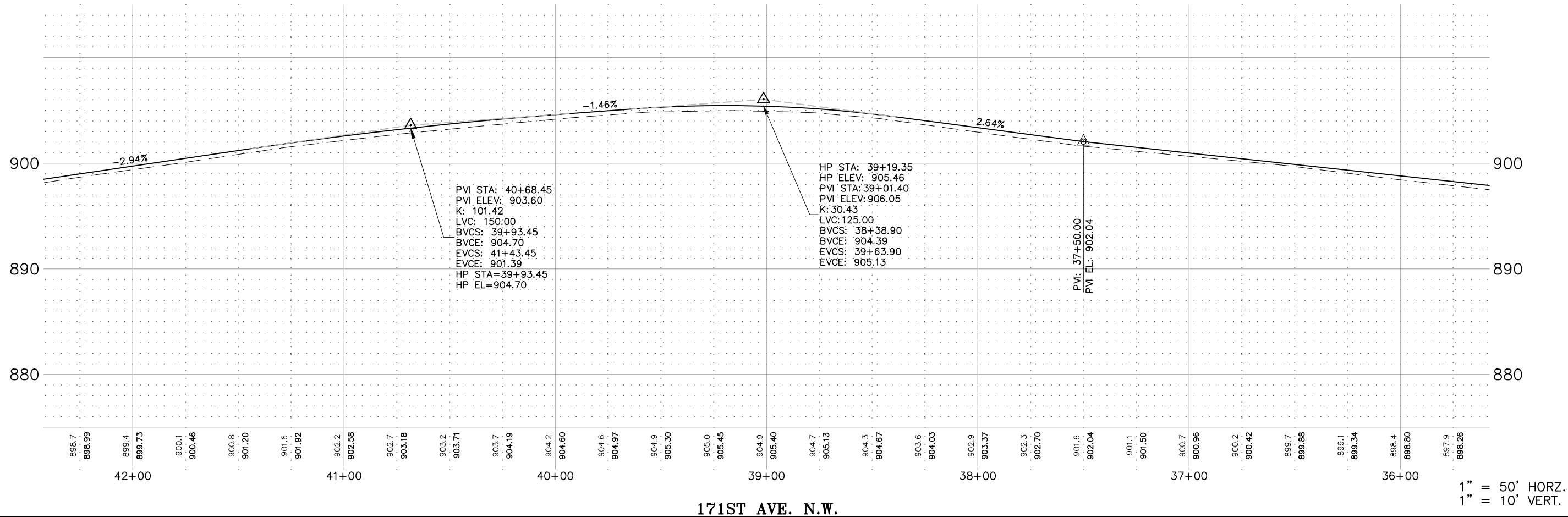
DESIGNER		BY		DATE		NO.		DESCRIPTION OF REVISIONS	
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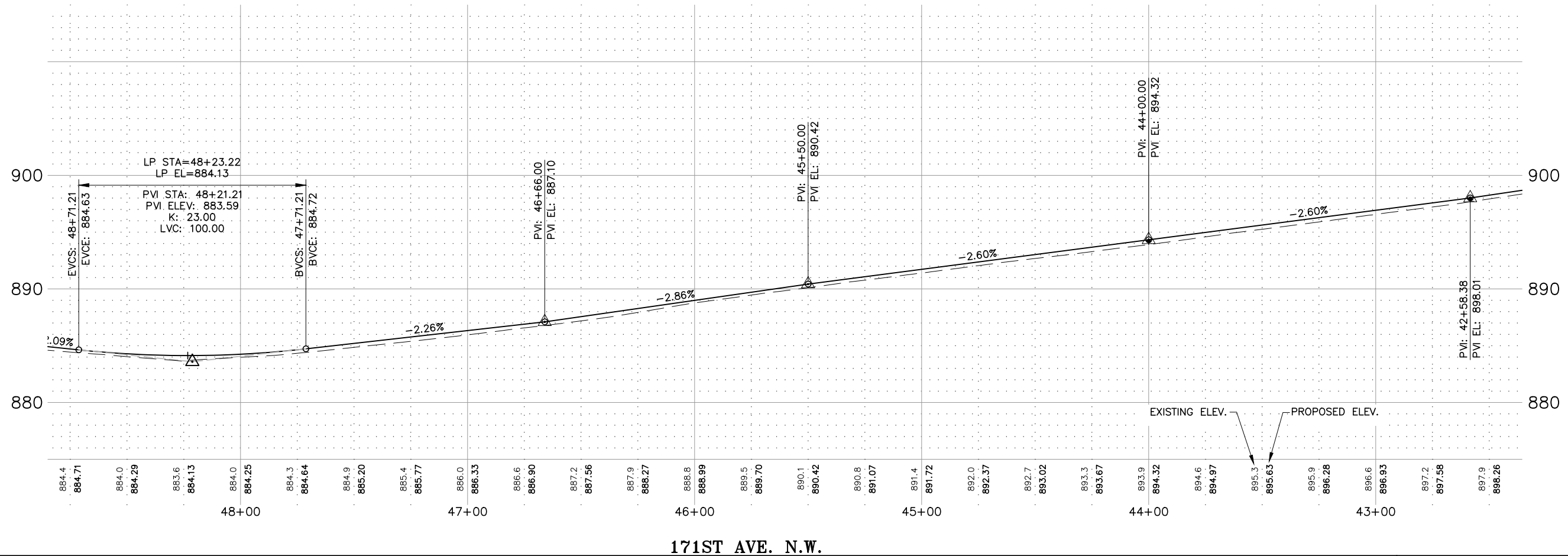
CITY OF ANDOVER

**2022 STREET RECONSTRUCTION
CITY PROJECT NO. 22-02**



171ST AVE. N.W.

1" = 50' HORIZ.
1" = 10' VERT.



171ST AVE. N.W.

171ST AVE. N.W. ROADWAY CENTERLINE GRADE
36+00 TO 48+00

SHEET NO. 28 OF 51 SHEETS

2022 STREET RECONSTRUCTION
CITY PROJECT NO. 22-02

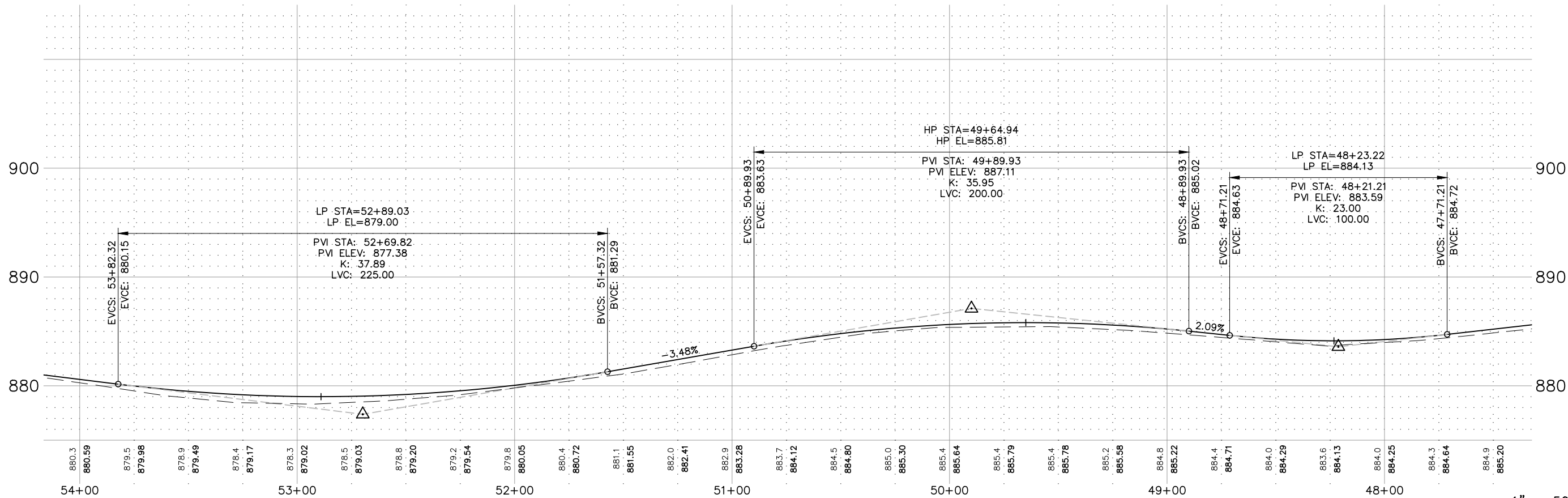


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UNDER THE LAWS OF THE STATE OF MINNESOTA.
David D. Berkowitz
DAVID D. BERKOWITZ
DATE: JANUARY 4, 2022 REG. NO. 26757

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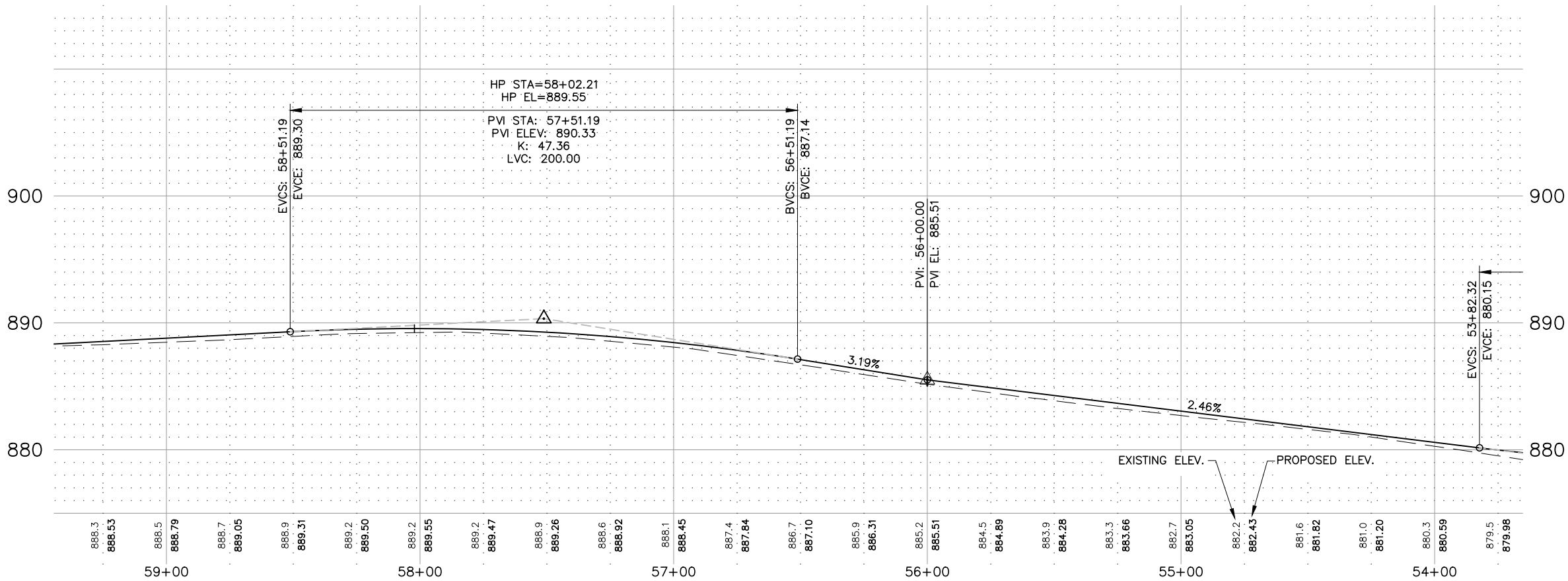
NO.
DATE
BY

DESCRIPTION OF REVISIONS



BARIUM ST. N.W.

1" = 50' HORZ.
1" = 10' VERT.



169TH LN. N.W.

BARIUM ST. N.W. & 169TH LN. N.W. ROADWAY CENTERLINE GRADE
48+00 TO 59+00

SHEET NO. 30 OF 51 SHEETS

DESIGNED	NO.	DATE	BY	DESCRIPTION OF REVISIONS
JUL				
DRAWN				
AAK				
CHECKED				
DDB				

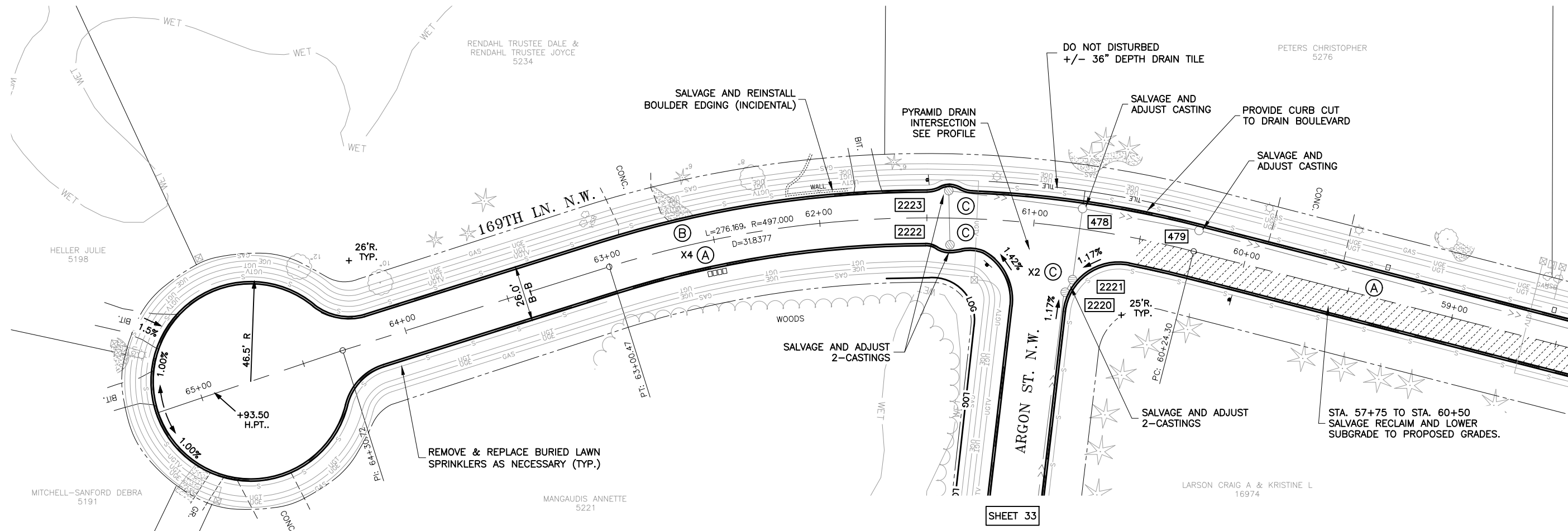
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David D. Berkowitz

DAVID D. BERKOWITZ
DATE: JANUARY 4, 2022
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2022 STREET RECONSTRUCTION
CITY PROJECT NO. 22-02



PROPOSED SURMOUNTABLE BITUMINOUS CURB

NOTE: DRWY'S SHALL BE REMOVED AS DIRECTED BY ENGINEER.
BIT. & CONC. DRWY'S SHALL BE REPLACED IN KIND.
GRAVEL DRWY'S SHALL BE REPLACED WITH A BIT. 15' APRON.
FG DRWY GRADES < THAN 2.5% ARE NOTED ON PLAN.

SALVAGE / INSTALL MAILBOX

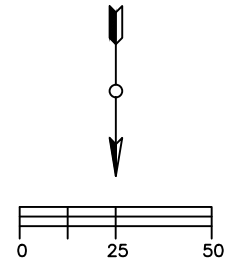
PROTECT / SALVAGE / REINSTALL LANDSCAPING (INCIDENTAL)

F&I INLET PROTECTION

(A)

(B)

(C)



SHEET 29

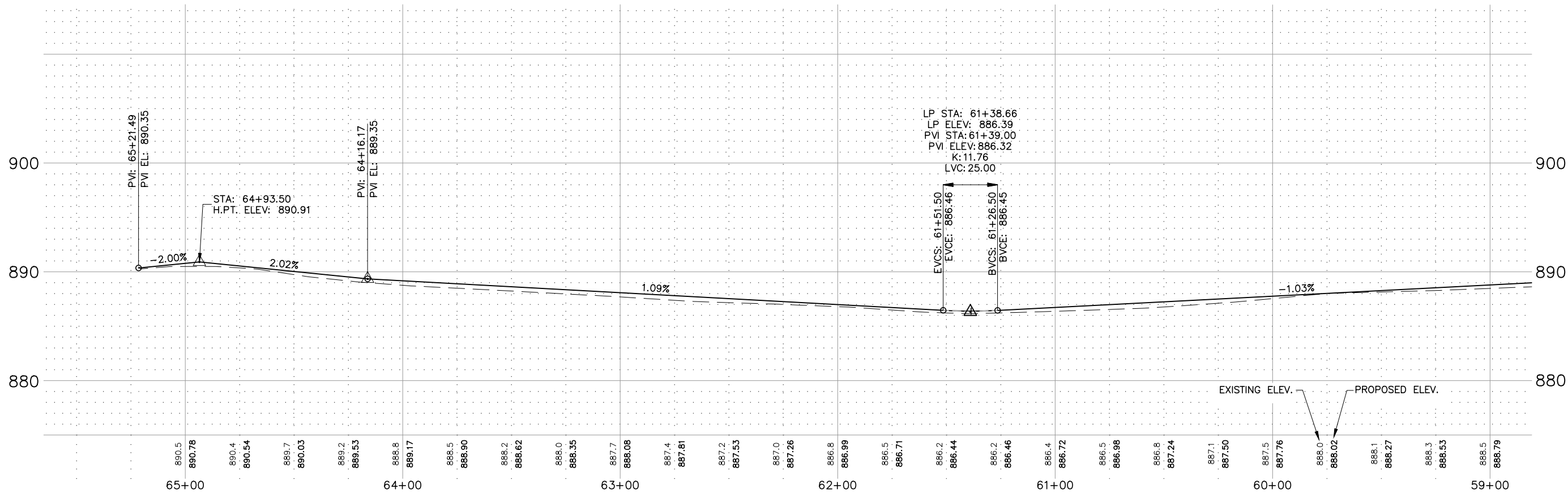
2022 STREET RECONSTRUCTION
CITY PROJECT NO. 22-02

CITY OF ANDOVER

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

David D. Berkowitz
DAVID D. BERKOWITZ
DATE: JANUARY 4, 2022 REG. NO. 26757

NO.	DATE	BY	DESCRIPTION OF REVISIONS
DESIGNED	JUL		
DRAWN	AAK		
CHECKED			
DDB			



169TH LN. N.W.

1" = 50' HORZ.
1" = 10' VERT.

2022 STREET RECONSTRUCTION
CITY PROJECT NO. 22-02

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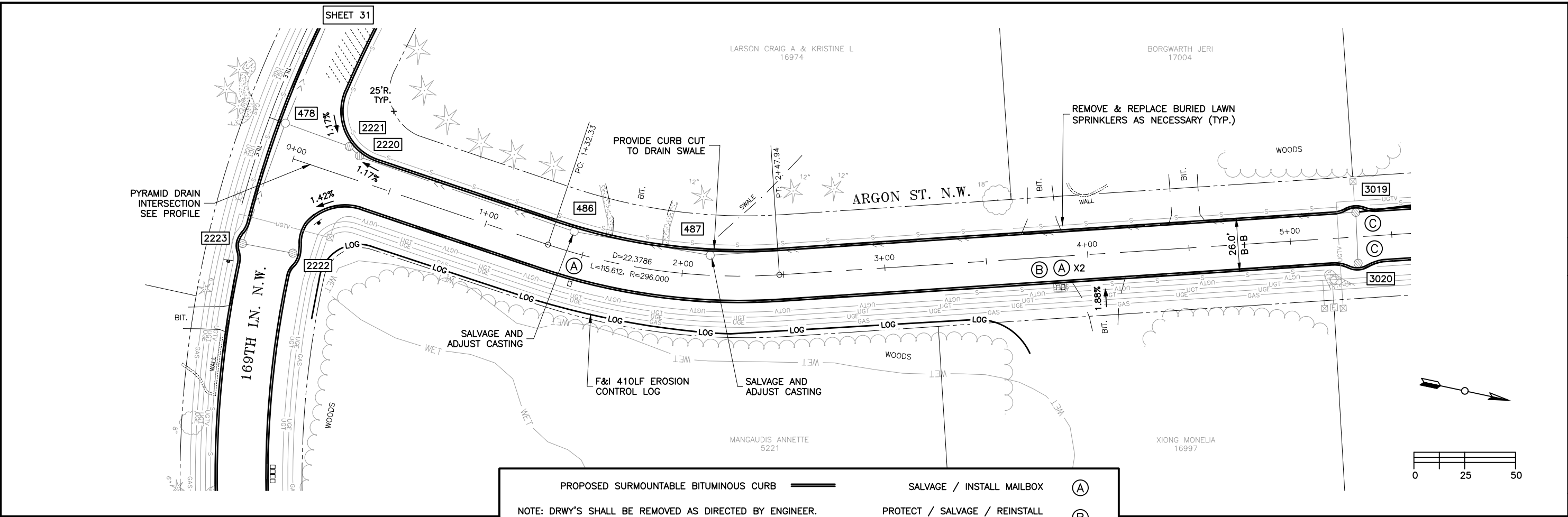
David D. Berkowitz

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DATE: JANUARY 4, 2022
REG. NO. 26757

DESIGNED	NO.	DATE	BY	DESCRIPTION OF REVISIONS
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DRAWN				
AAK				
CHECKED				
DDB				

169TH LN. N.W. ROADWAY CENTERLINE GRADE
48+00 TO 59+00

SHEET NO. 32 OF 51 SHEETS



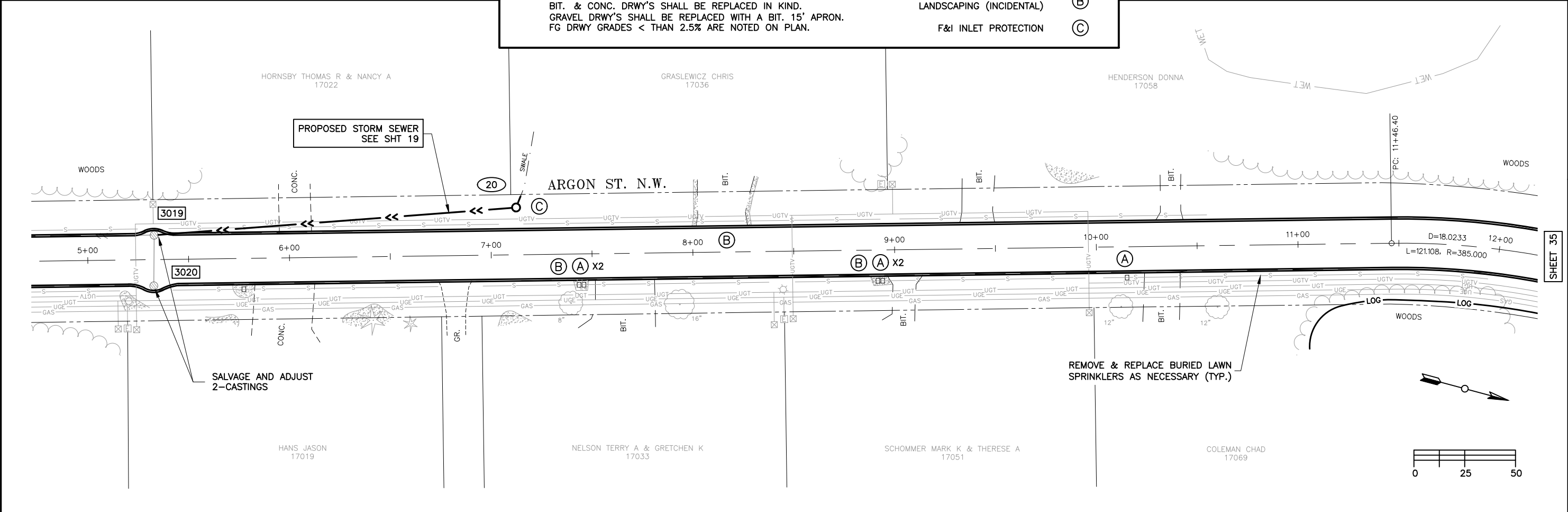
PROPOSED SURMOUNTABLE BITUMINOUS CURB

SALVAGE / INSTALL MAILBOX (A)

NOTE: DRWY'S SHALL BE REMOVED AS DIRECTED BY ENGINEER.
BIT. & CONC. DRWY'S SHALL BE REPLACED IN KIND.
GRAVEL DRWY'S SHALL BE REPLACED WITH A BIT. 15' APRON.
FG DRWY GRADES < THAN 2.5% ARE NOTED ON PLAN.

PROTECT / SALVAGE / REINSTALL
LANDSCAPING (INCIDENTAL) (B)

F&I INLET PROTECTION (C)



DESIGNED
JUL
DRAWN
AAK
CHECKED
DOB

DATE
JUL
BY
NO.

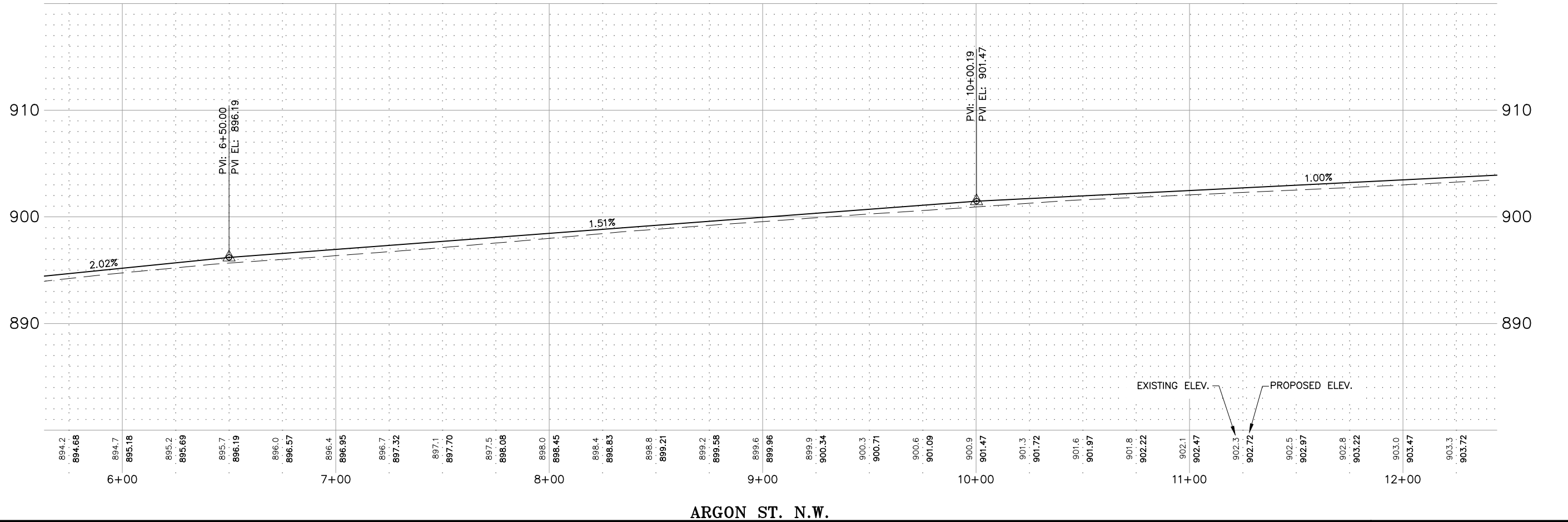
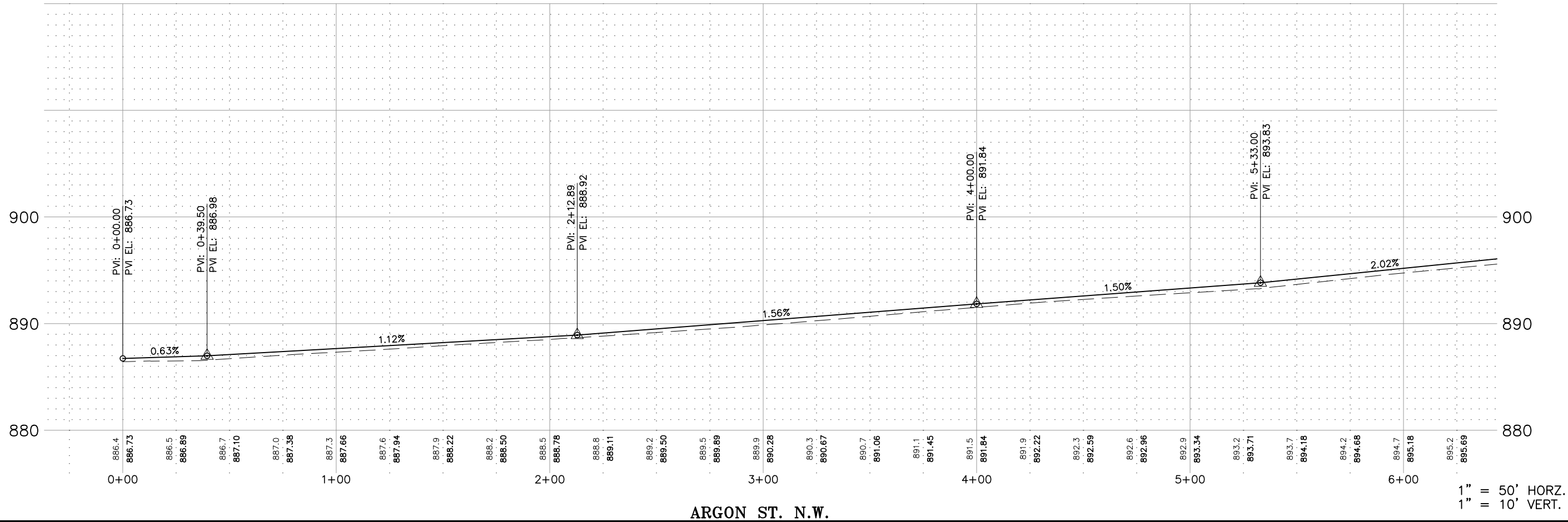
DESCRIPTION OF REVISIONS

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REG. NO. 26757
DATE JANUARY 4, 2022

CITY OF
ANDOVER

2022 STREET RECONSTRUCTION
CITY PROJECT NO. 22-02

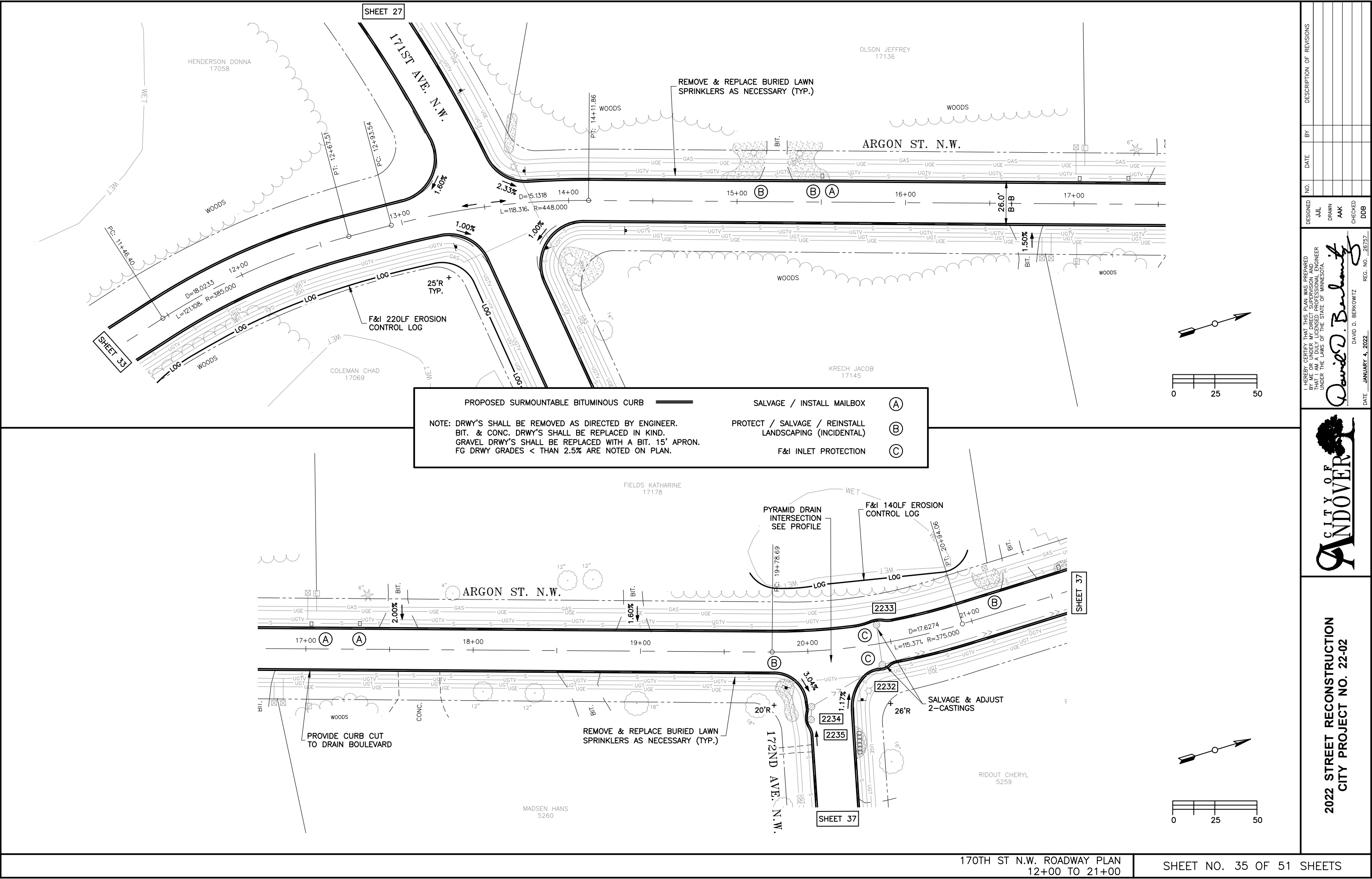


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CITY OF ANDOVER

2022 STREET RECONSTRUCTION
CITY PROJECT NO. 22-02



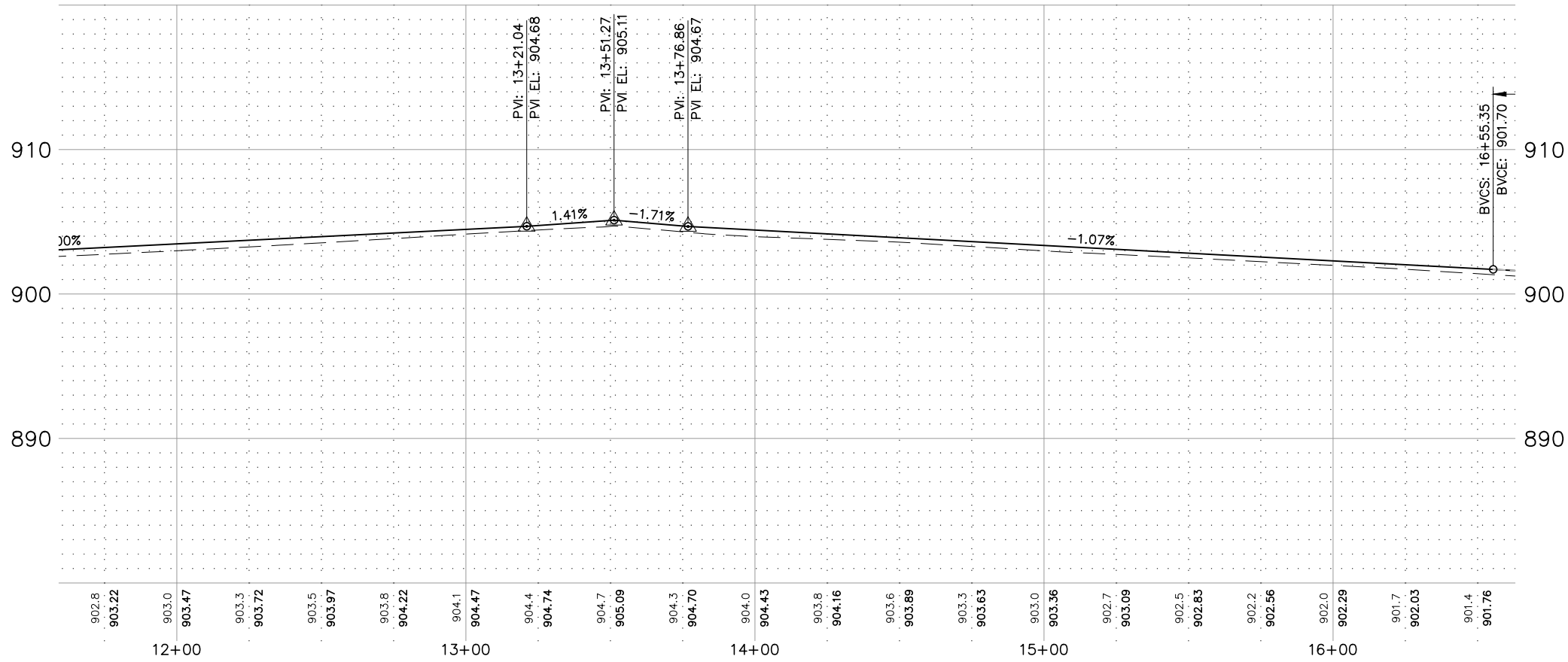
DESCRIPTION OF REVISIONS			
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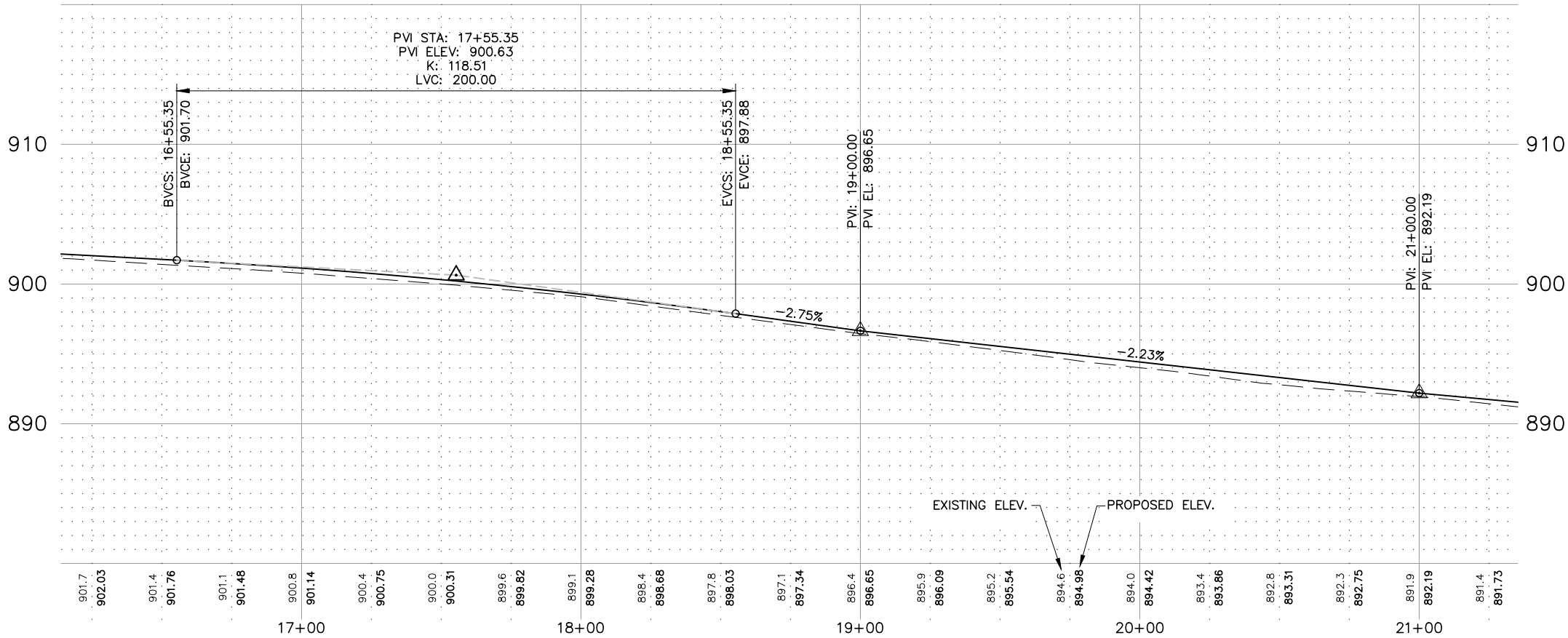
CITY OF ANDOVER

2022 STREET RECONSTRUCTION
CITY PROJECT NO. 22-02



ARGON ST. N.W.

1" = 50' HORZ.
1" = 10' VERT.

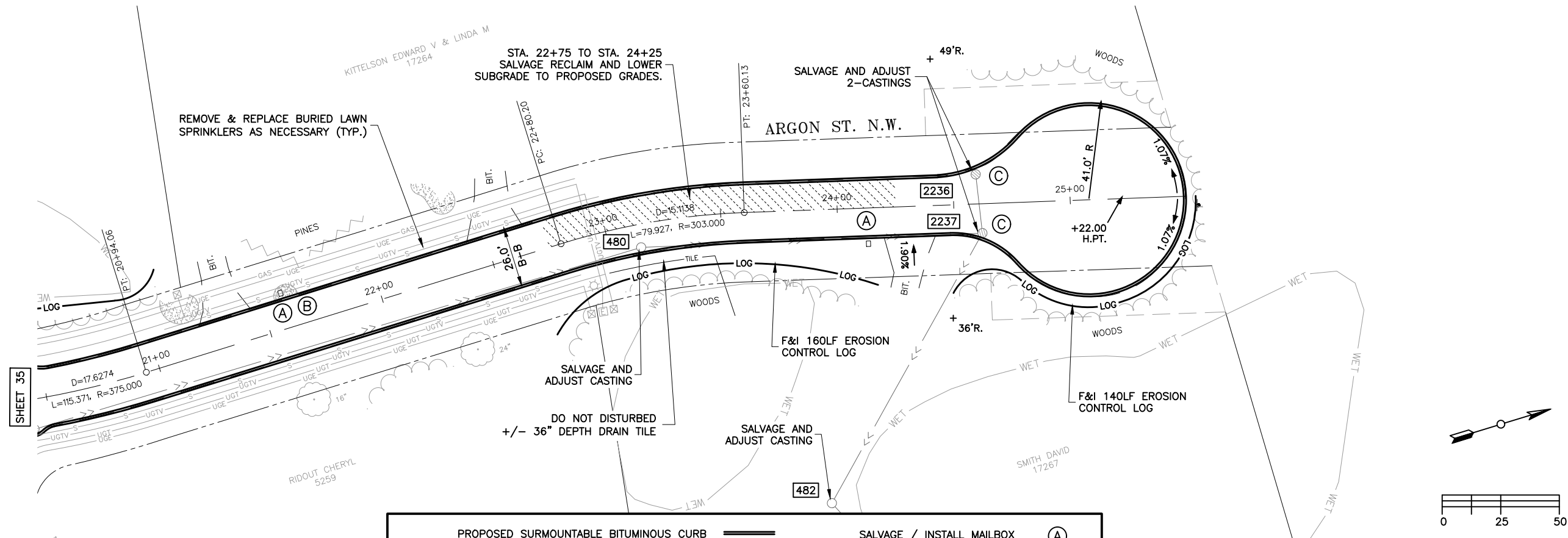


ARGON ST. N.W.



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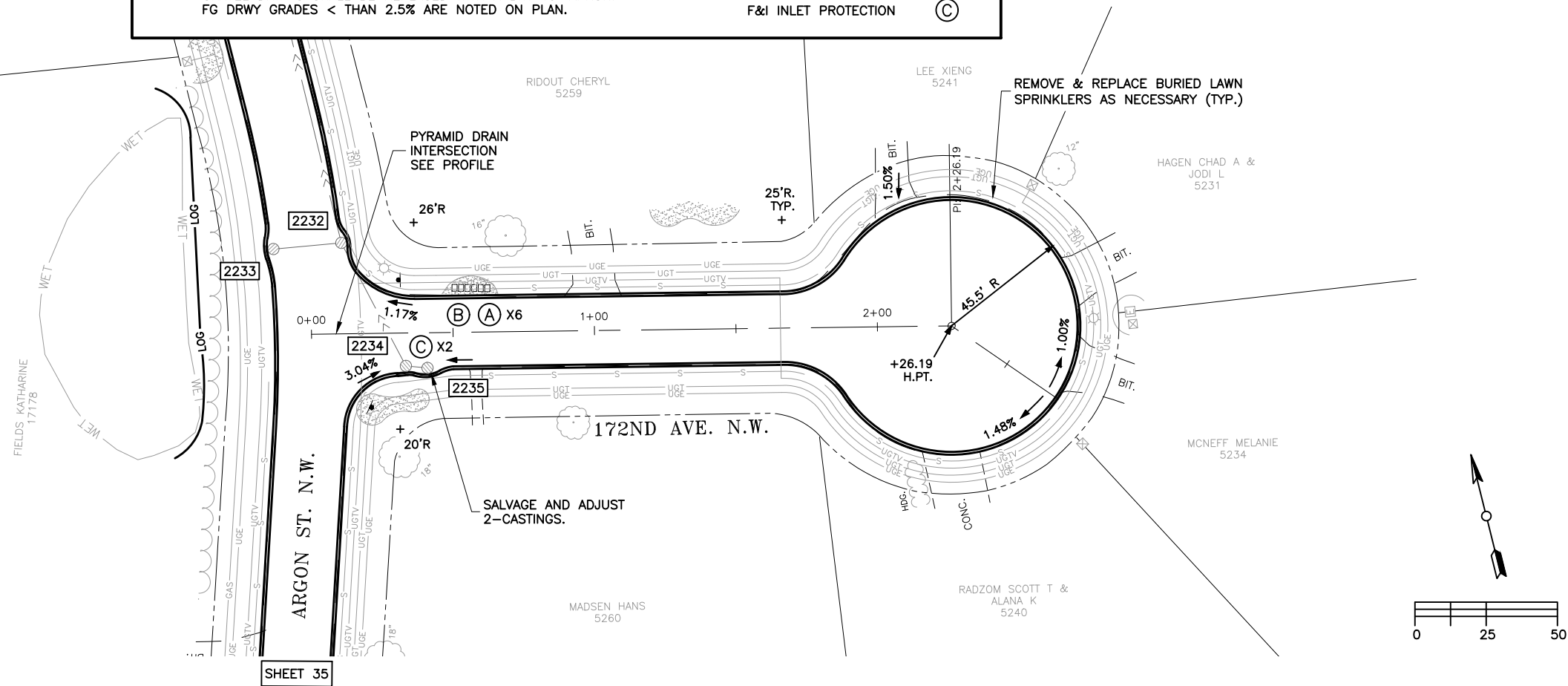
PROPOSED SURMOUNTABLE BITUMINOUS CURB

NOTE: DRWY'S SHALL BE REMOVED AS DIRECTED BY ENGINEER.
BIT. & CONC. DRWY'S SHALL BE REPLACED IN KIND.
GRAVEL DRWY'S SHALL BE REPLACED WITH A BIT. 15' APRON.
FG DRWY GRADES < THAN 2.5% ARE NOTED ON PLAN.

SALVAGE / INSTALL MAILBOX (A)

PROTECT / SALVAGE / REINSTALL LANDSCAPING (INCIDENTAL) (B)

F&I INLET PROTECTION (C)



DESIGNED
JUL

BY

DATE

NO.

DESCRIPTION OF REVISIONS

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DATE

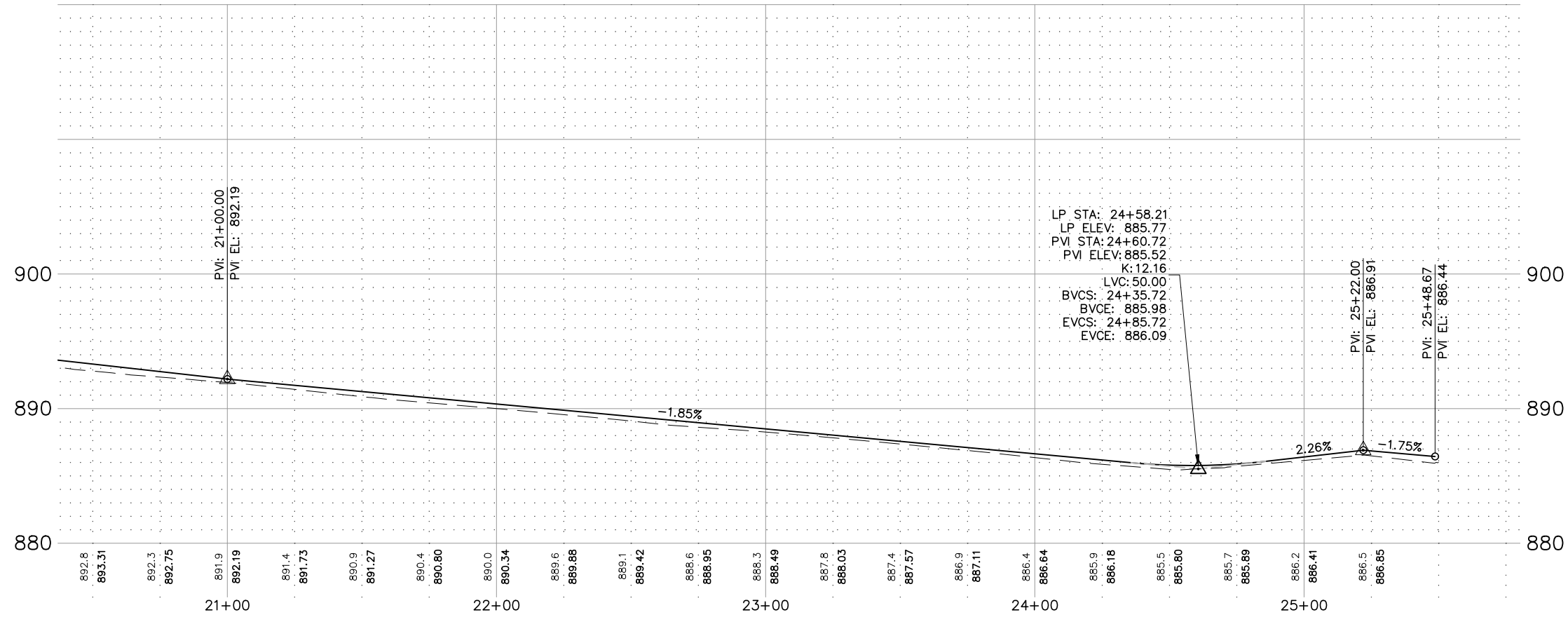
JANUARY 4, 2022

REG. NO.

26757

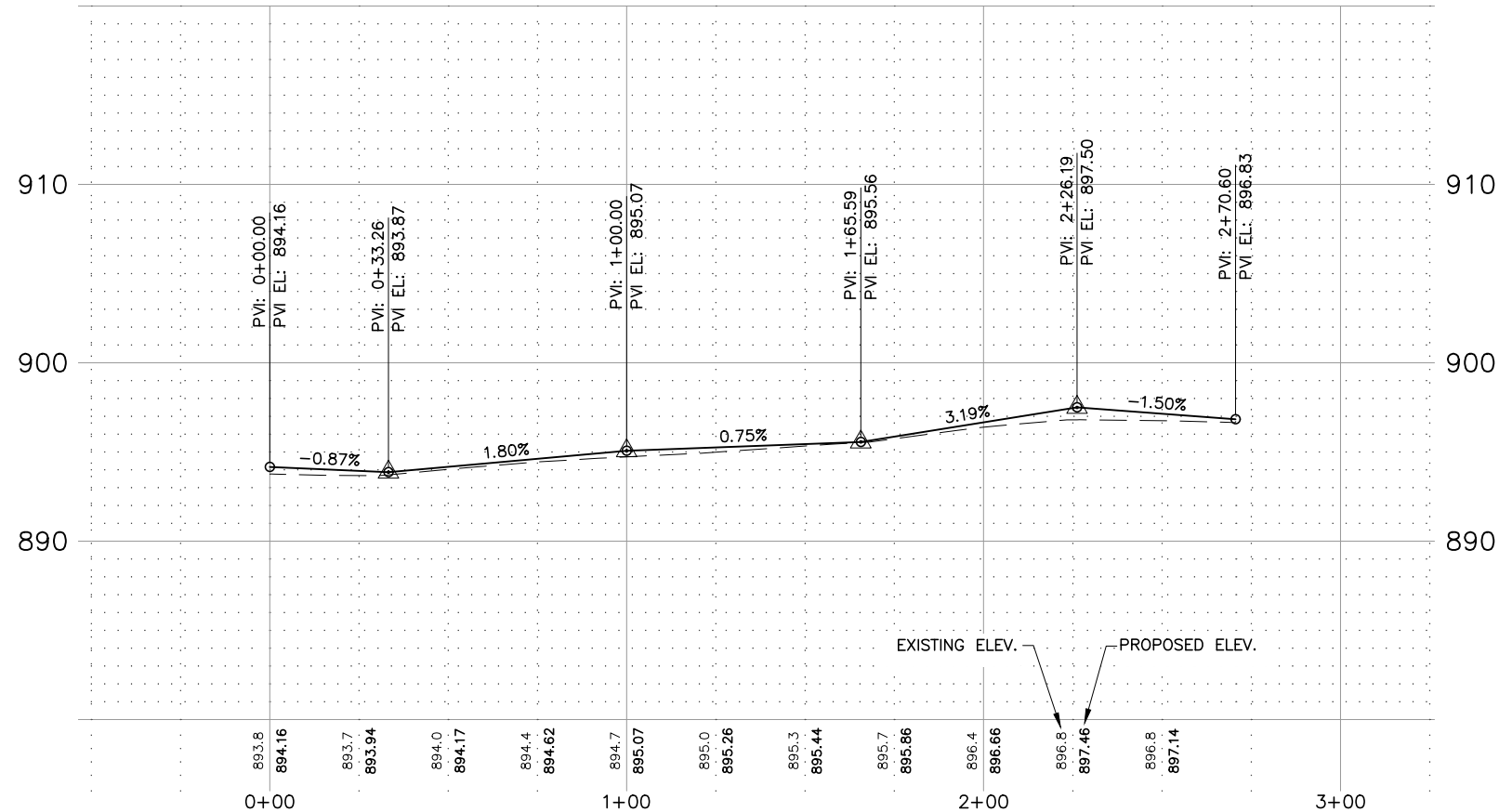
CITY OF ANDOVER

2022 STREET RECONSTRUCTION
CITY PROJECT NO. 22-02



ARGON ST. N.W.

1" = 50' HORZ.
1" = 10' VERT.



172ND AVE N.W.

ARGON ST. N.W. 21+00 TO 25+50 CENTERLINE GRADE
172ND AVE N.W. 0+00 TO 2+70 CENTERLINE GRADE

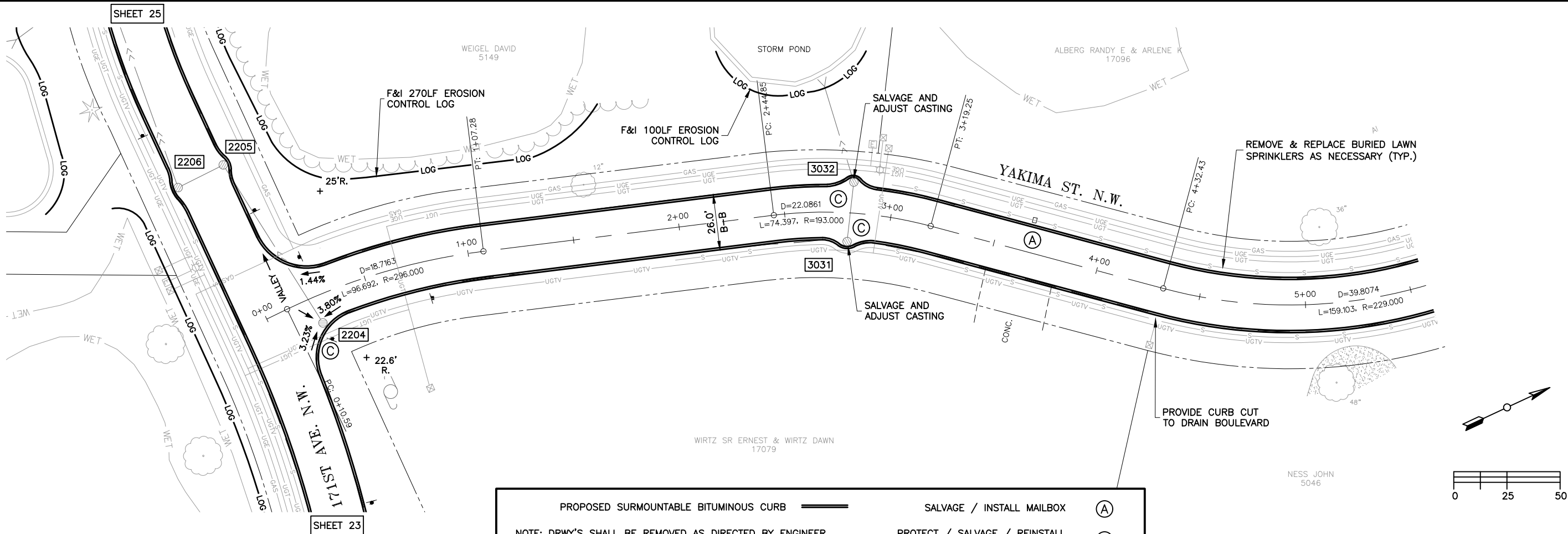
SHEET NO. 38 OF 51 SHEETS

2022 STREET RECONSTRUCTION
CITY PROJECT NO. 22-02



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PROPOSED SURMOUNTABLE BITUMINOUS CURB

SALVAGE / INSTALL MAILBOX

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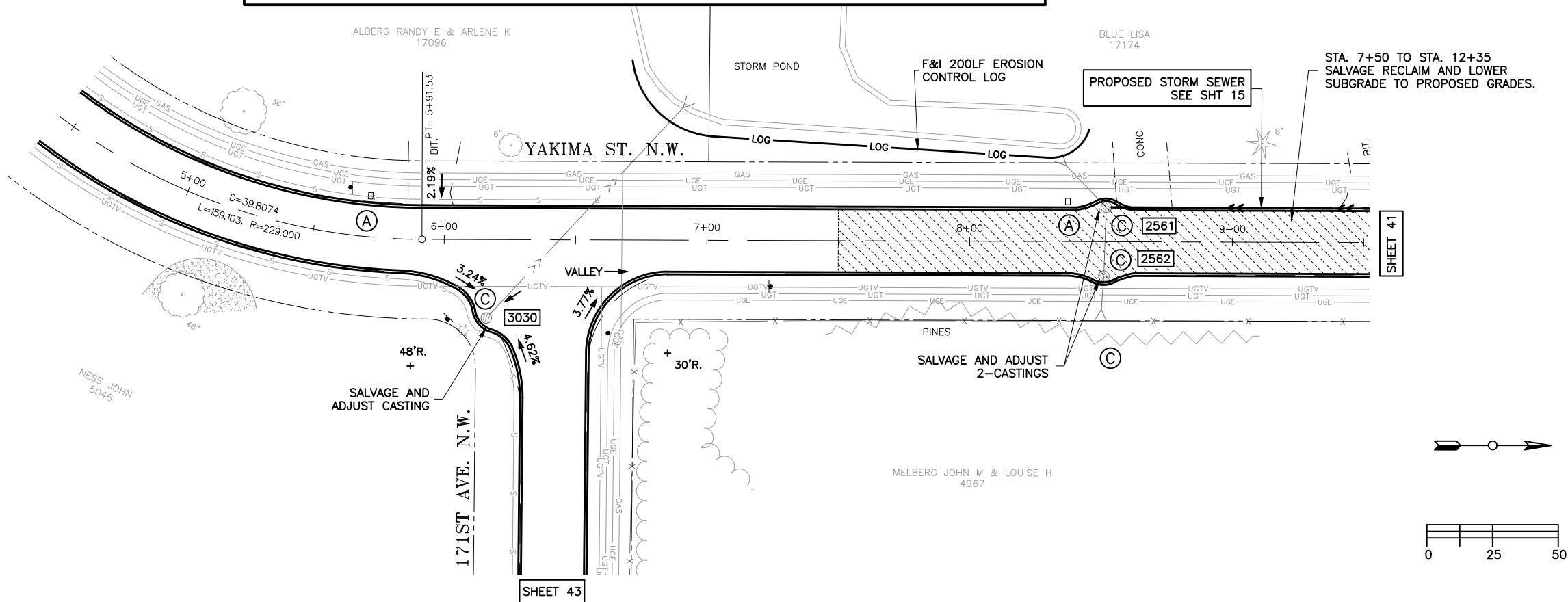
PROTECT / SALVAGE / REINSTALL
LANDSCAPING (INCIDENTAL)

F&I INLET PROTECTION

A

B

C



DESCRIPTION OF REVISIONS		BY	DATE	NO.
DESIGNED	JUL			
DRAWN	AAK			
CHECKED	DOB			

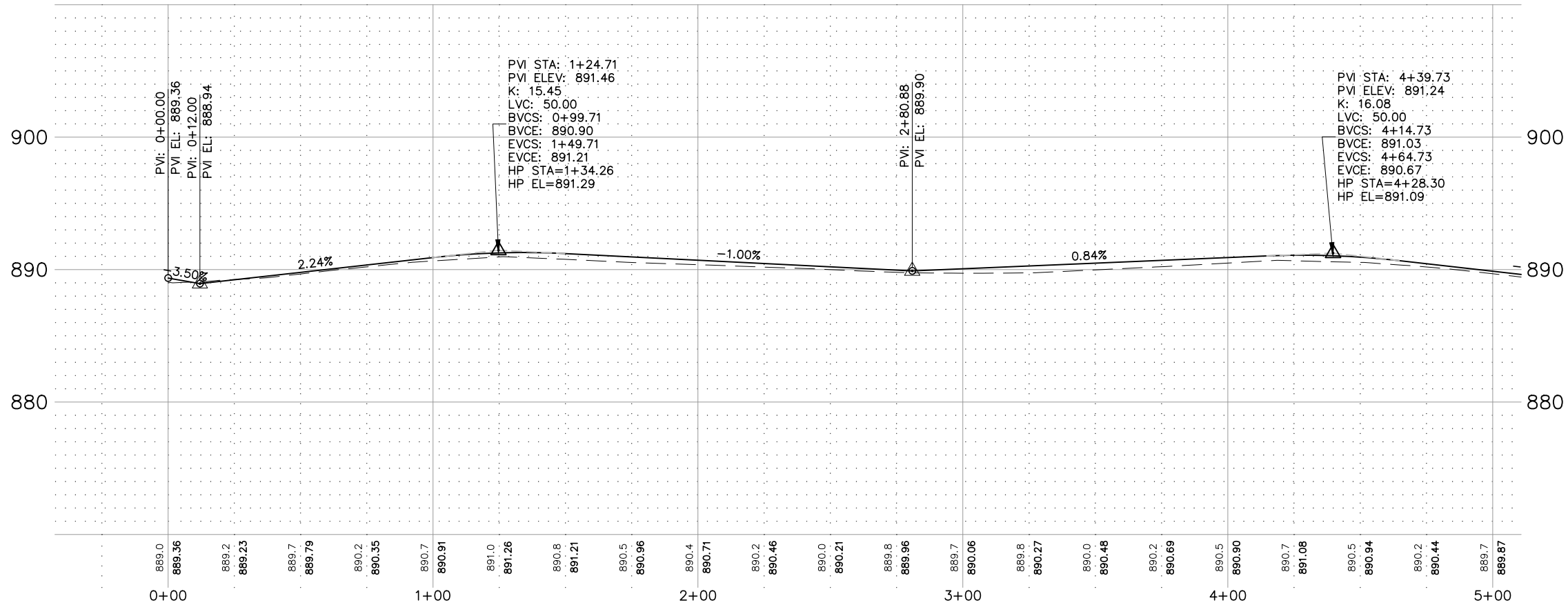
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REG. NO. 26757
DATE JANUARY 4, 2022

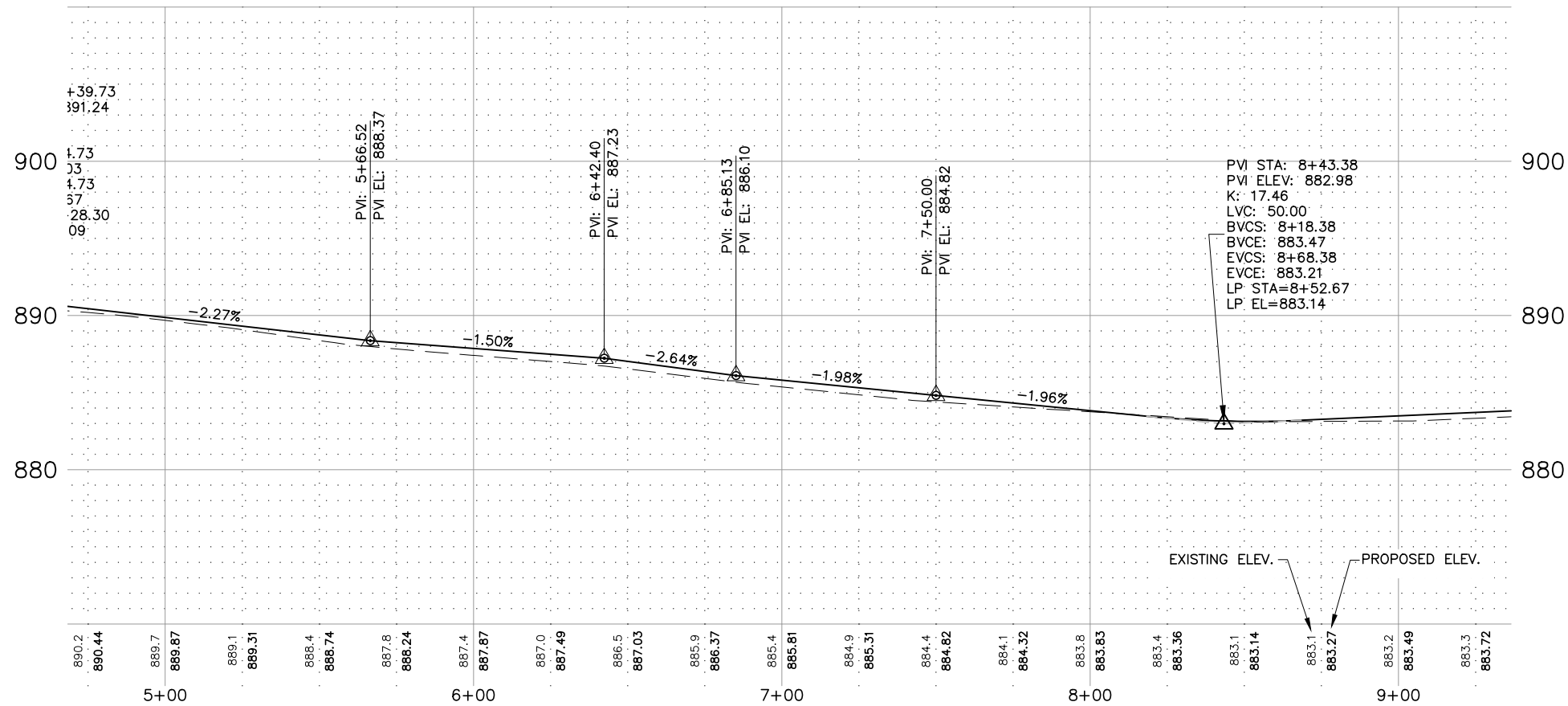
CITY OF ANDOVER

2022 STREET RECONSTRUCTION
CITY PROJECT NO. 22-02



YAKIMA ST N.W.

1" = 50' HORZ.
1" = 10' VERT.

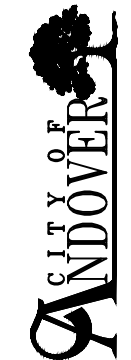


YAKIMA ST N.W.

YAKIMA ST N.W. CENTERLINE GRADE
0+00 TO 9+00

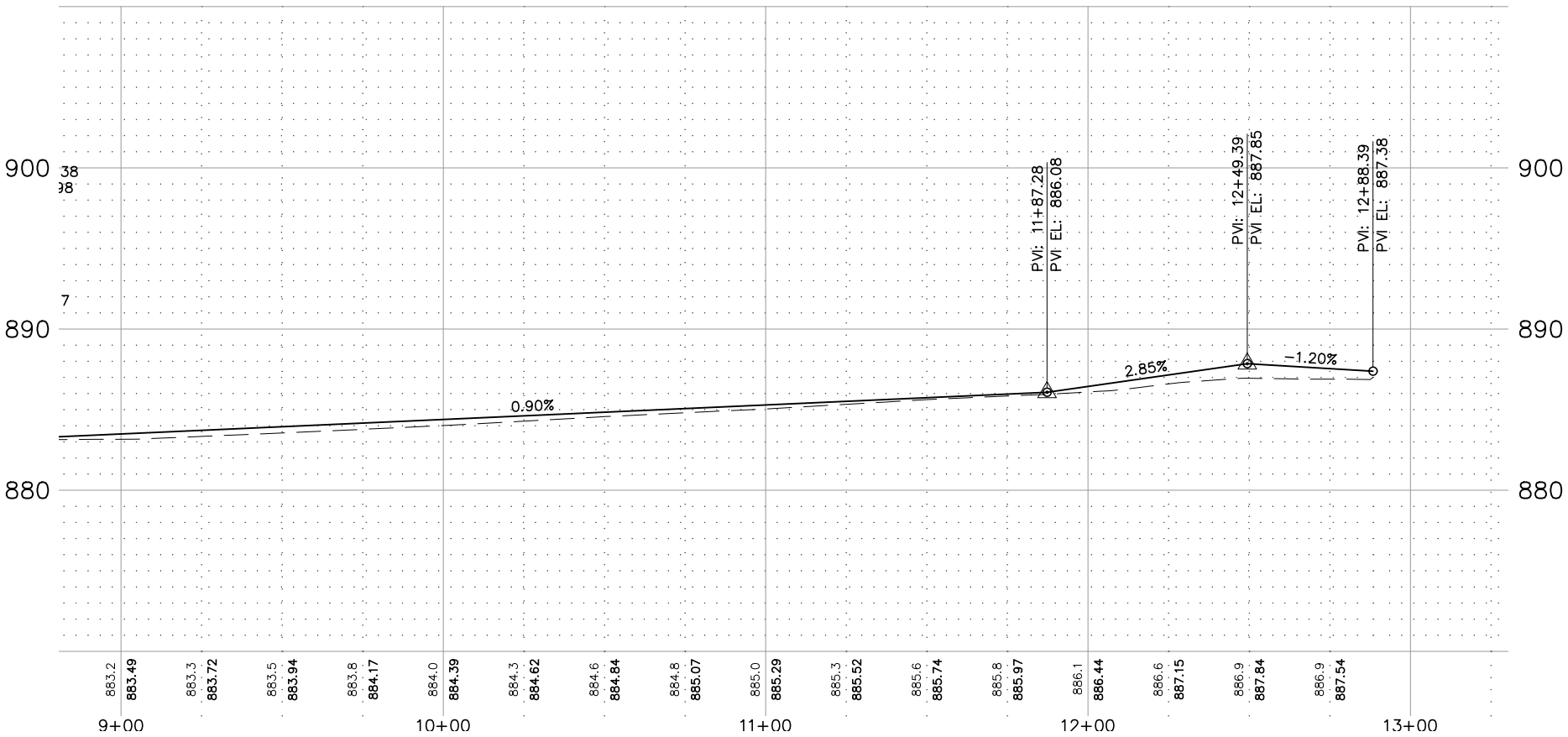
SHEET NO. 40 OF 51 SHEETS

2022 STREET RECONSTRUCTION
CITY PROJECT NO. 22-02



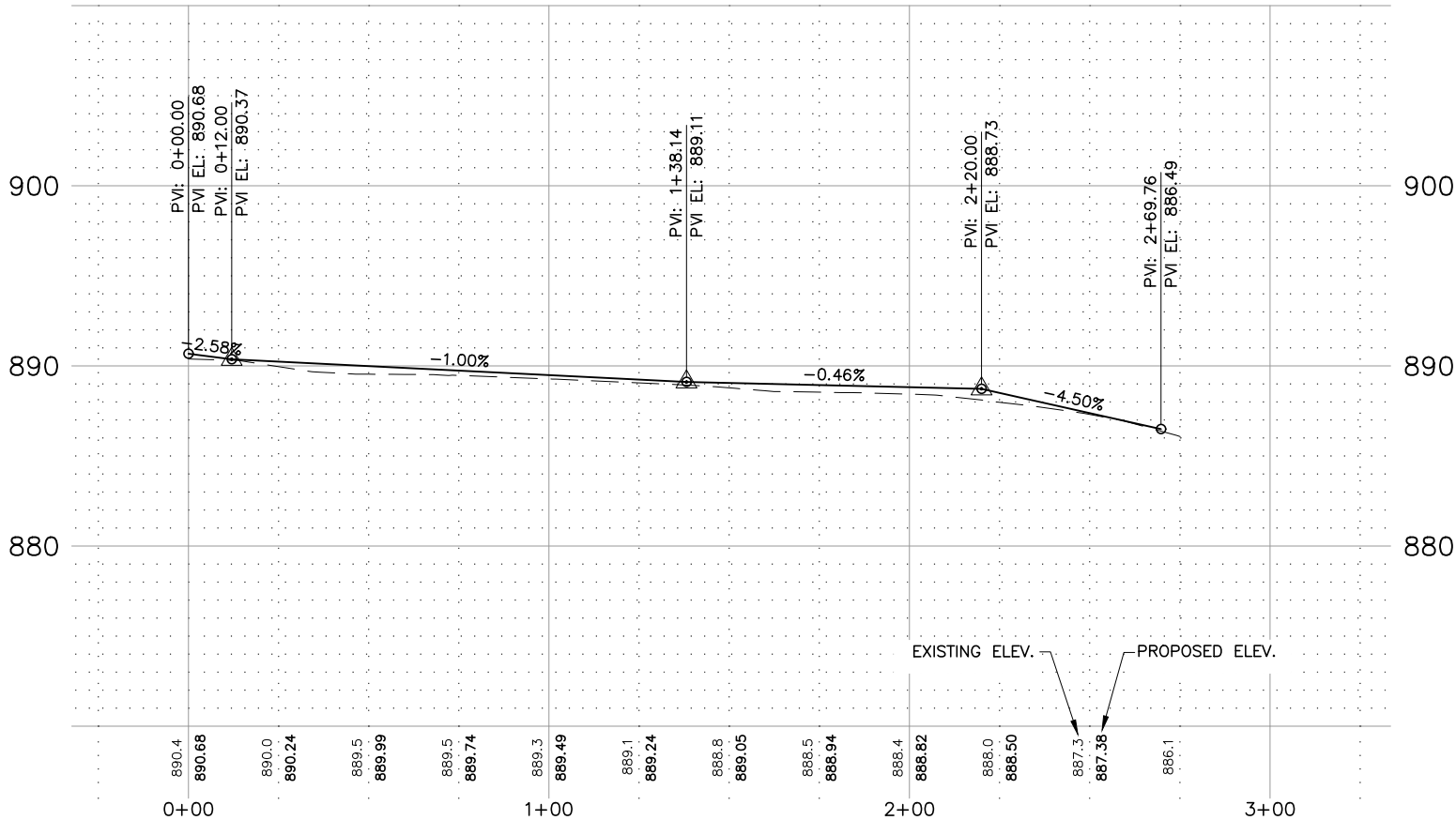
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YAKIMA ST. N.W.

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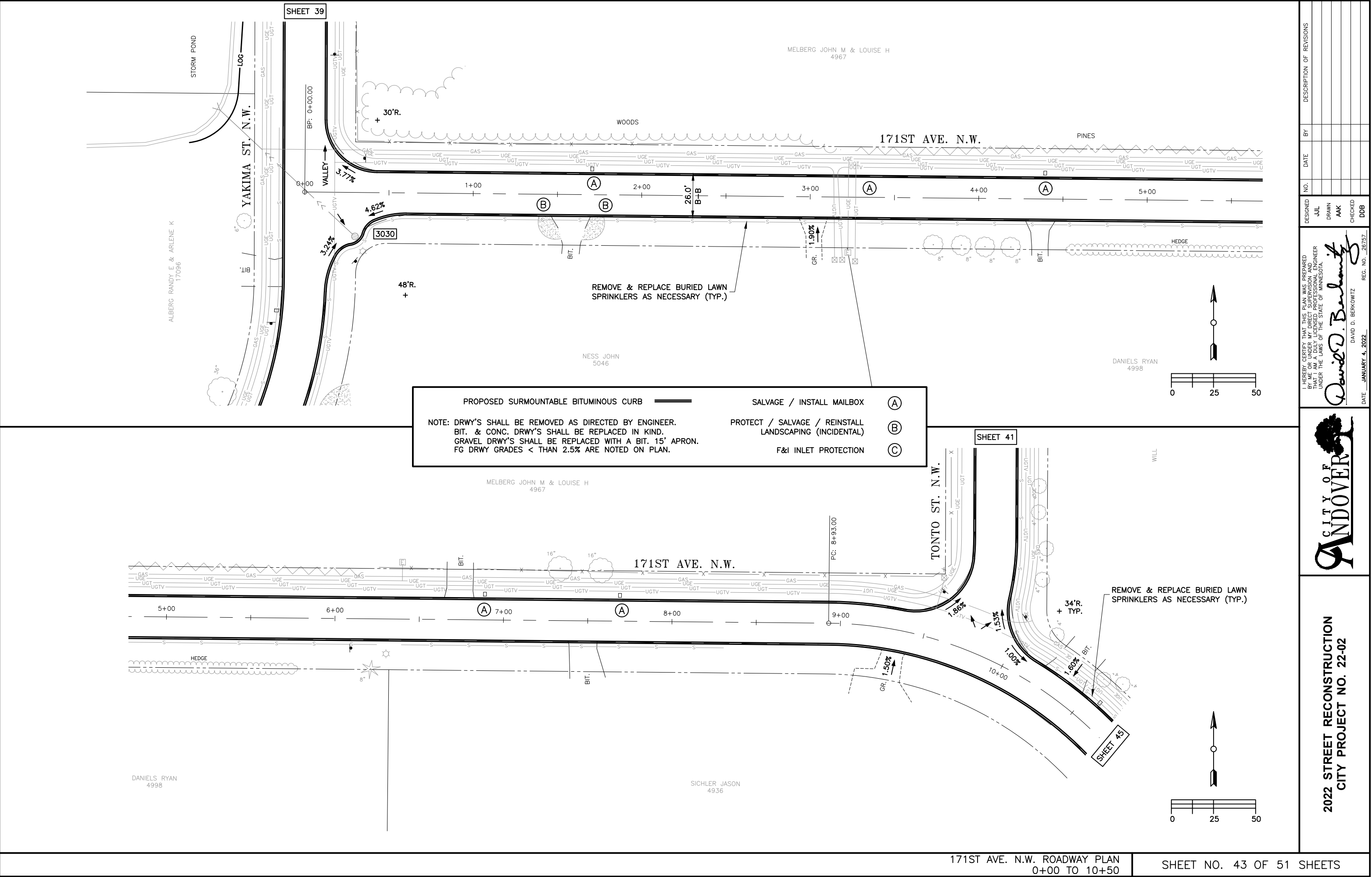


TONTO ST. N.W.



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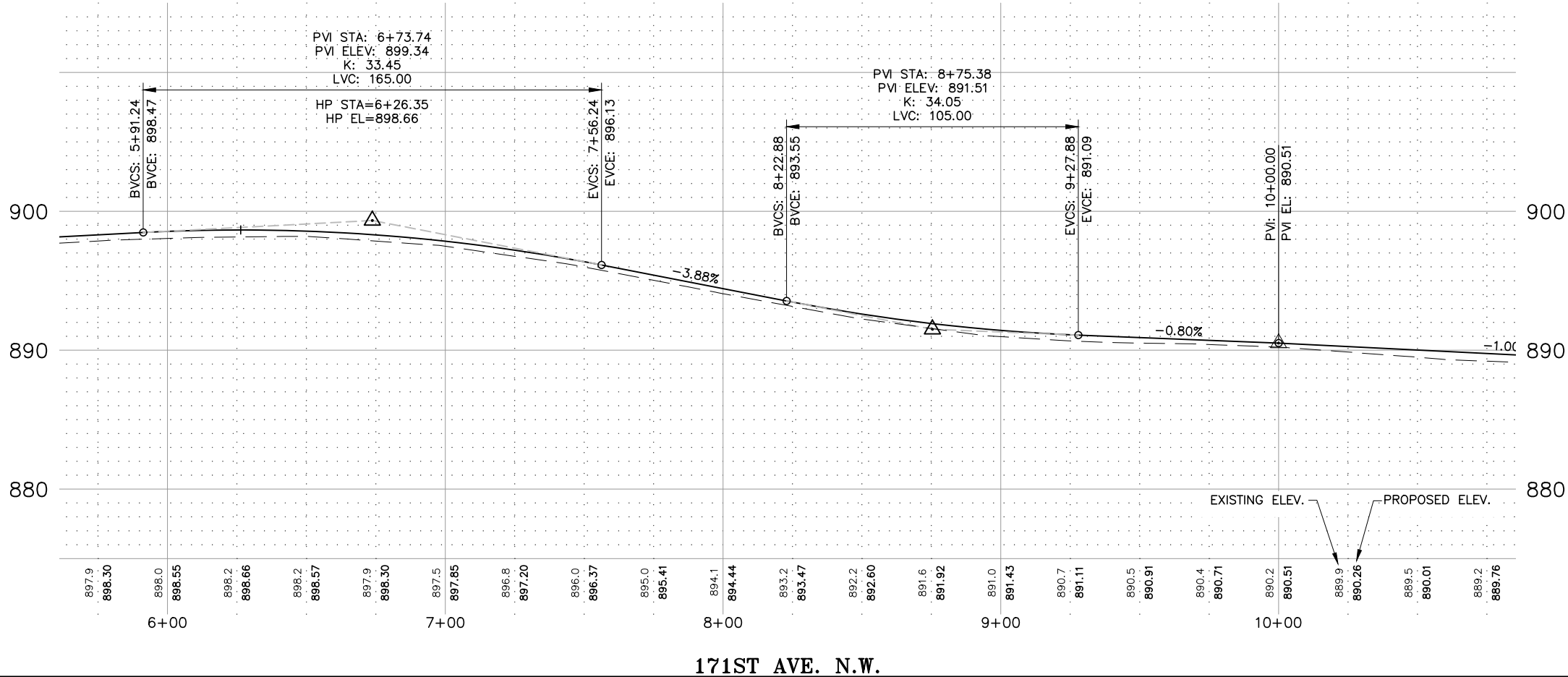
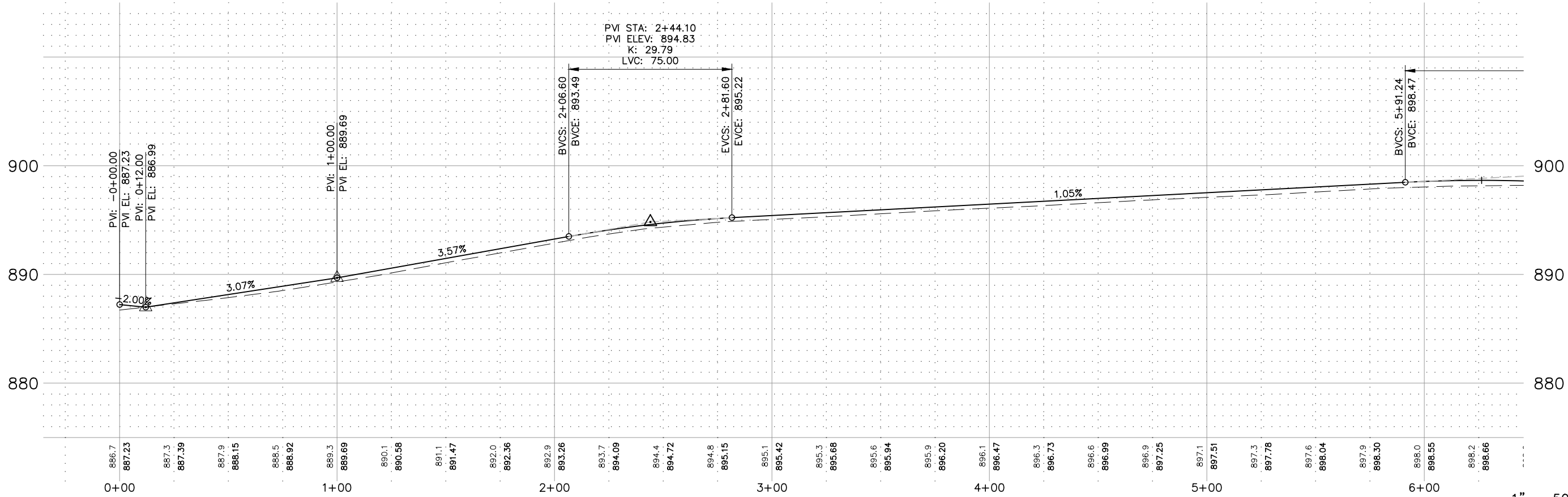
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CITY OF ANDOVER

2022 STREET RECONSTRUCTION
CITY PROJECT NO. 22-02



171ST AVE. N.W. ROADWAY CENTERLINE GRADE
0+00 TO 10+50

SHEET NO. 44 OF 51 SHEETS

2022 STREET RECONSTRUCTION
CITY PROJECT NO. 22-02

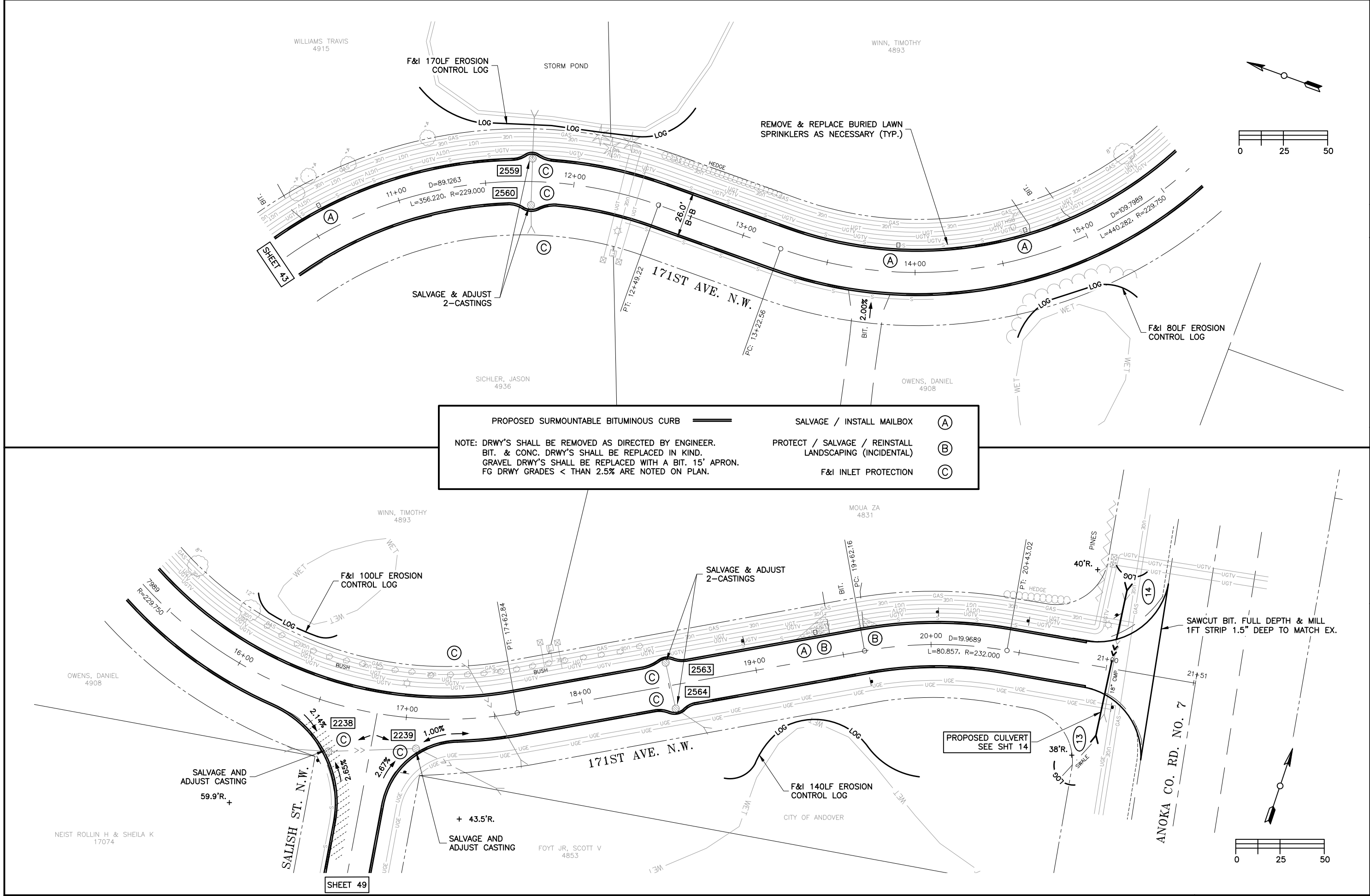


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DESCRIPTION OF REVISIONS

NO.	DATE	BY

DESIGNED

JUL

DRAWN

AAK

CHECKED

DOB

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David D. Berkowitz

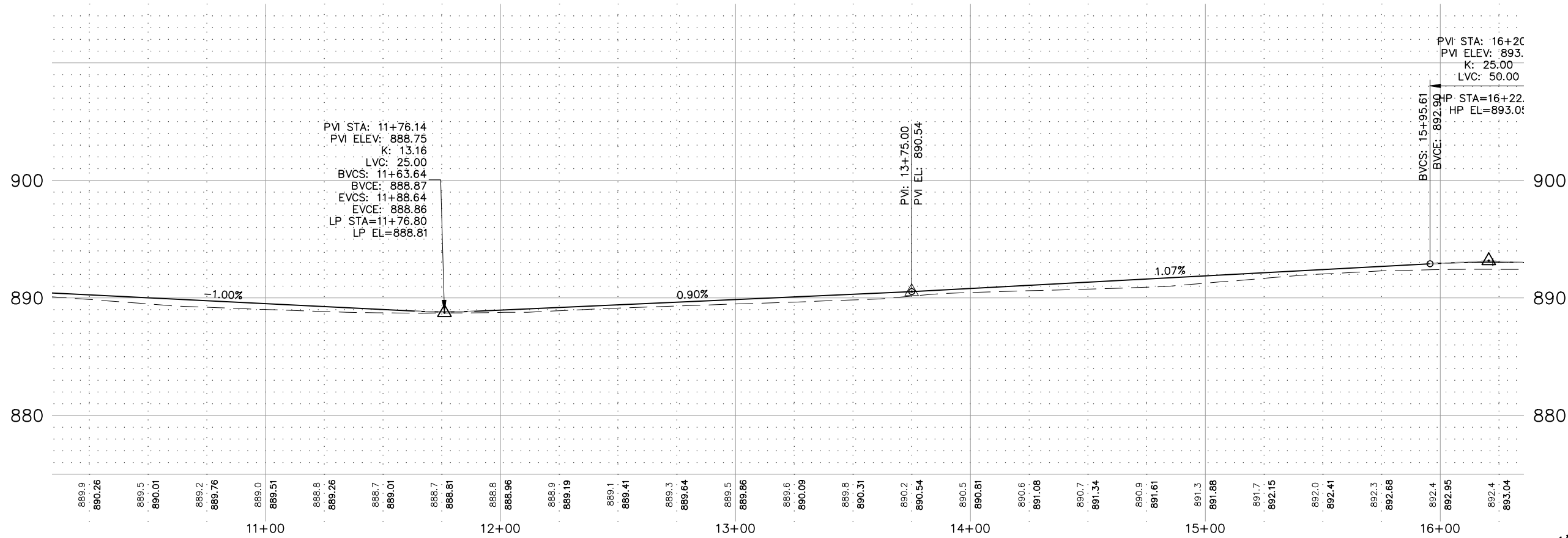
DAVID D. BERKOWITZ

REG. NO. 26757

DATE JANUARY 4, 2022

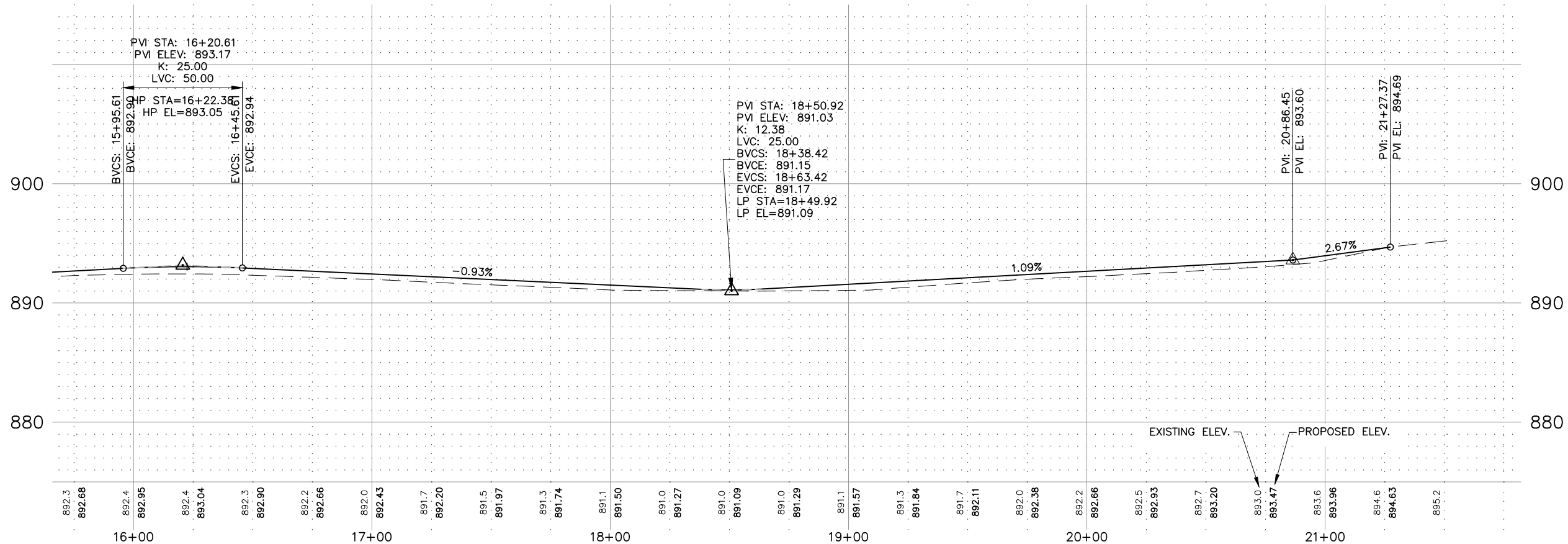
CITY OF ANDOVER

2022 STREET RECONSTRUCTION
CITY PROJECT NO. 22-02



171ST AVE. N.W.

1" = 50' HORZ.
1" = 10' VERT.



171ST AVE. N.W.

171ST AVE. N.W. ROADWAY CENTERLINE GRADE
10+50 TO 21+50

SHEET NO. 46 OF 51 SHEETS

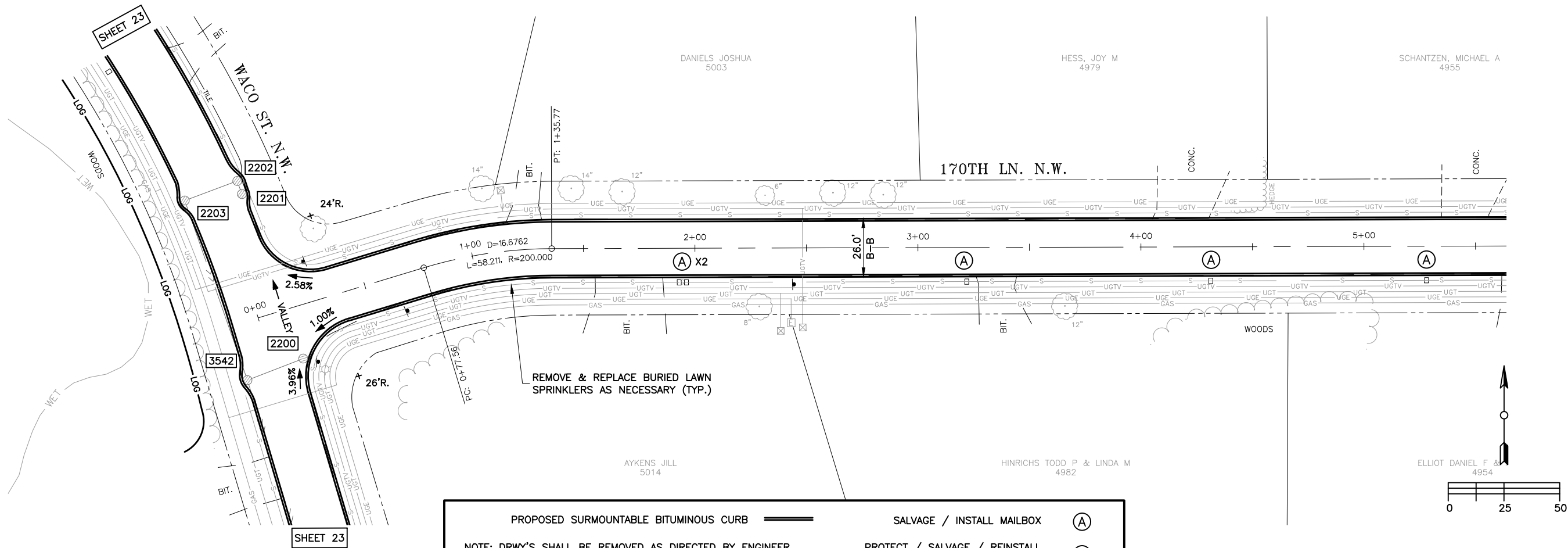
DESIGNED		BY		DATE		DESCRIPTION OF REVISIONS	
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DATE: JANUARY 4, 2022 REG. NO. 26757



2022 STREET RECONSTRUCTION
CITY PROJECT NO. 22-02



PROPOSED SURMOUNTABLE BITUMINOUS CURB

SALVAGE / INSTALL MAILBOX

NOTE: DRWY'S SHALL BE REMOVED AS DIRECTED BY ENGINEER.
BIT. & CONC. DRWY'S SHALL BE REPLACED IN KIND.
GRAVEL DRWY'S SHALL BE REPLACED WITH A BIT. 15' APRON.
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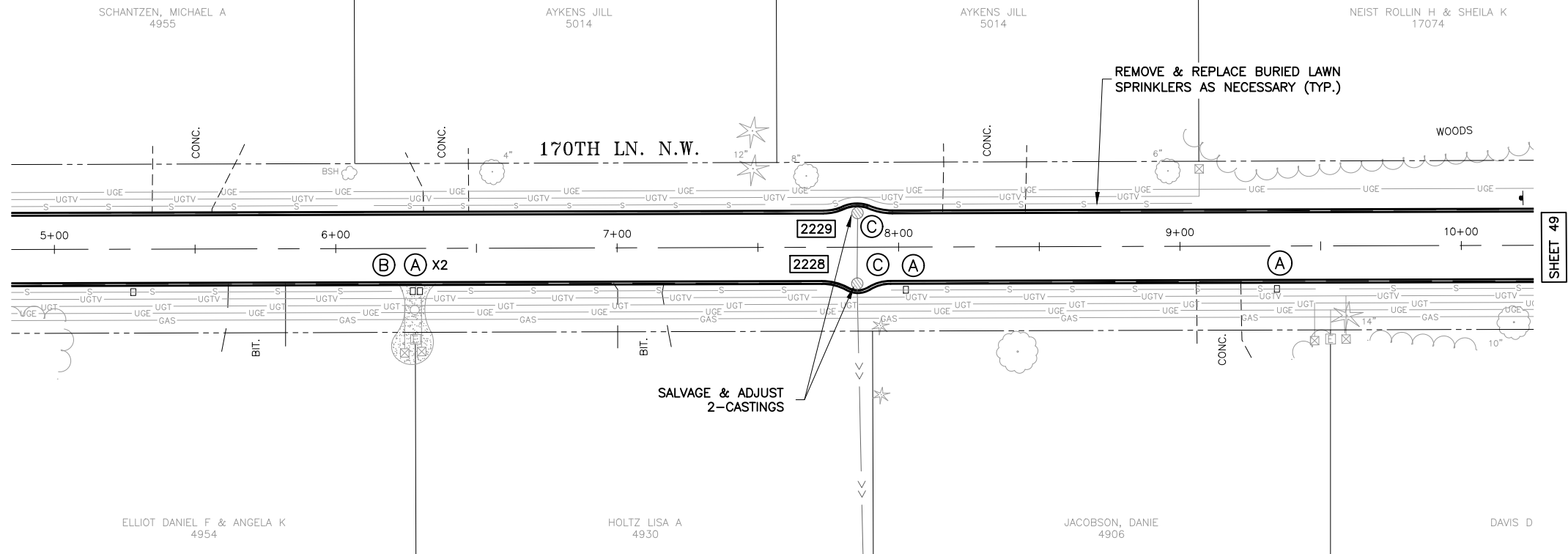
PROTECT / SALVAGE / REINSTALL
LANDSCAPING (INCIDENTAL)

F&I INLET PROTECTION

(A)

(B)

(C)



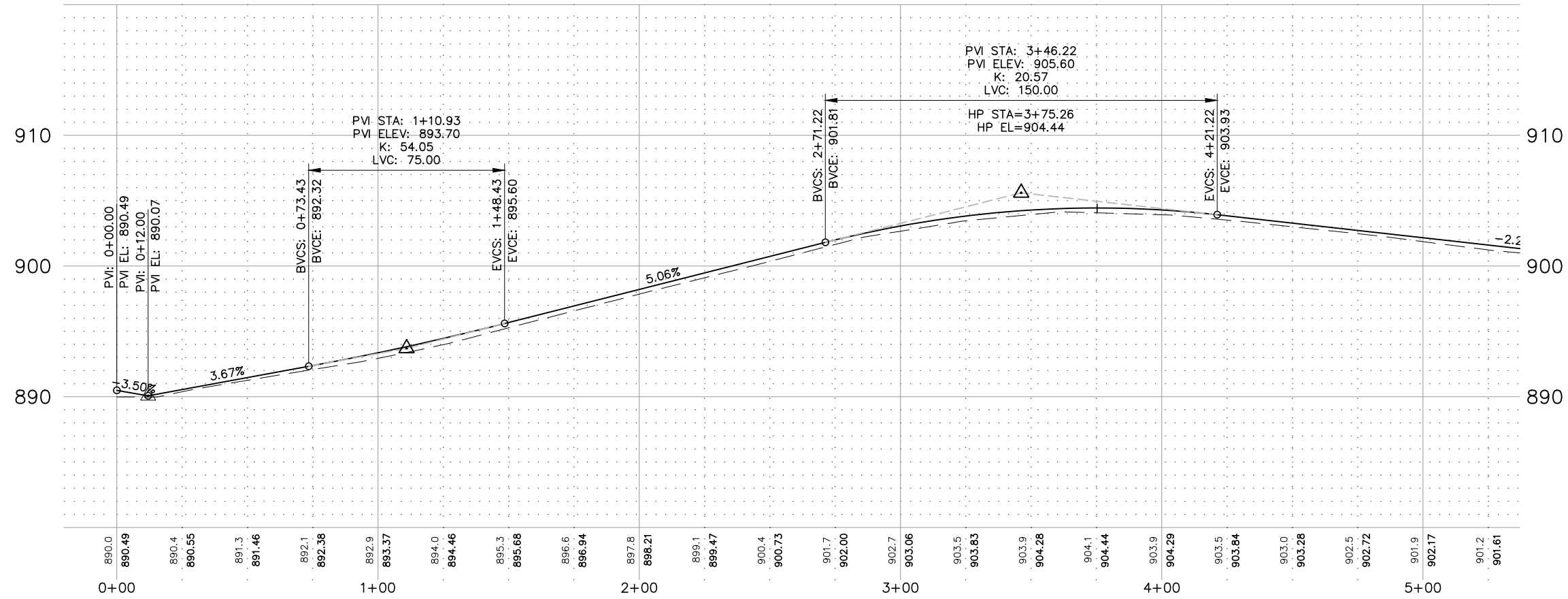
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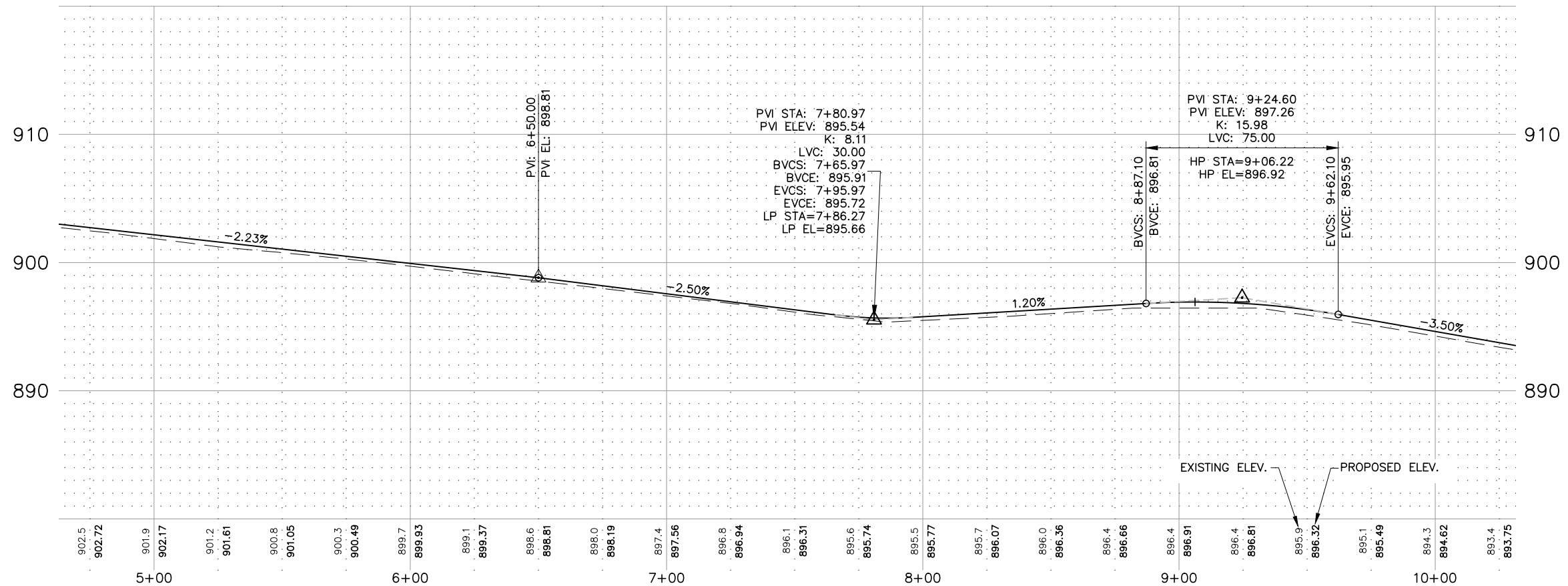


2022 STREET RECONSTRUCTION
CITY PROJECT NO. 22-02



170TH LN. N.W.

1" = 50' HORZ.
1" = 10' VERT.



170TH LN. N.W.

170TH LN. N.W. ROADWAY CENTERLINE GRADE
0+00 TO 12+00

SHEET NO. 48 OF 51 SHEETS

2022 STREET RECONSTRUCTION
CITY PROJECT NO. 22-02

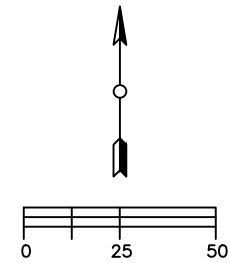
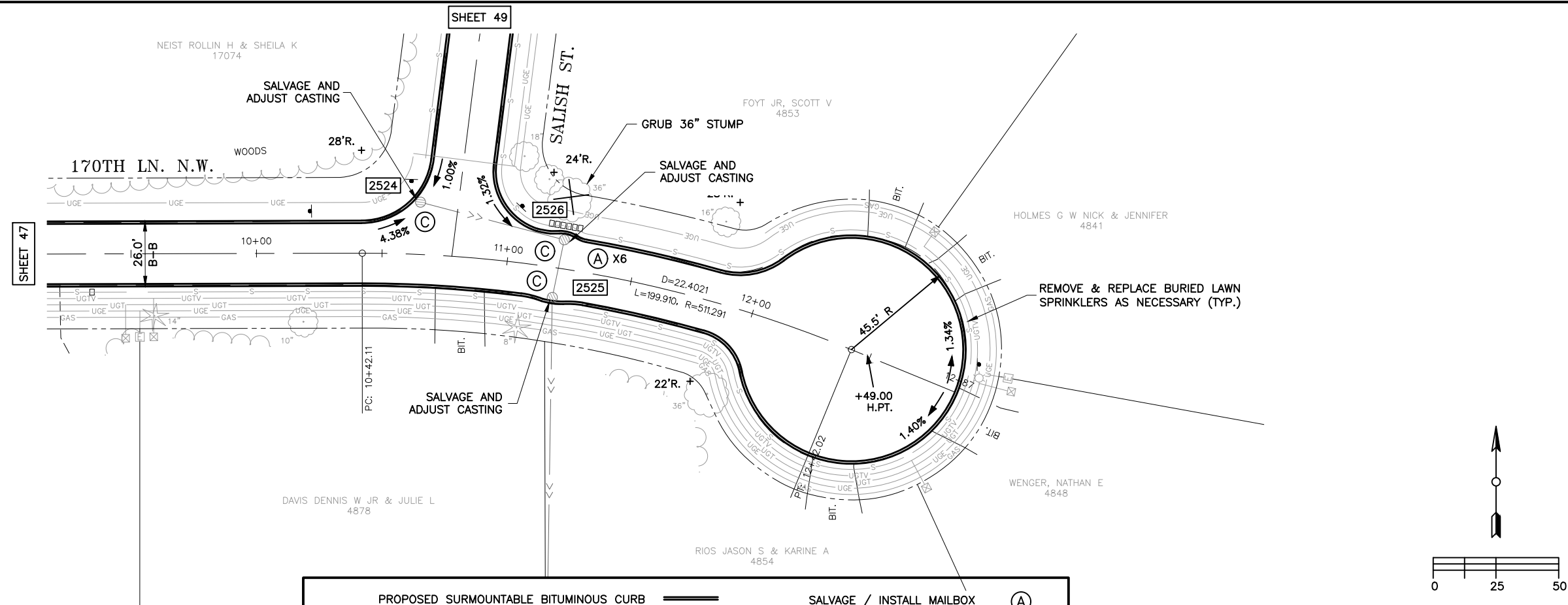


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DRAWN AAK
CHECKED DDB

NO. DATE BY

DESCRIPTION OF REVISIONS



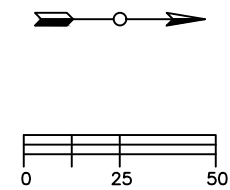
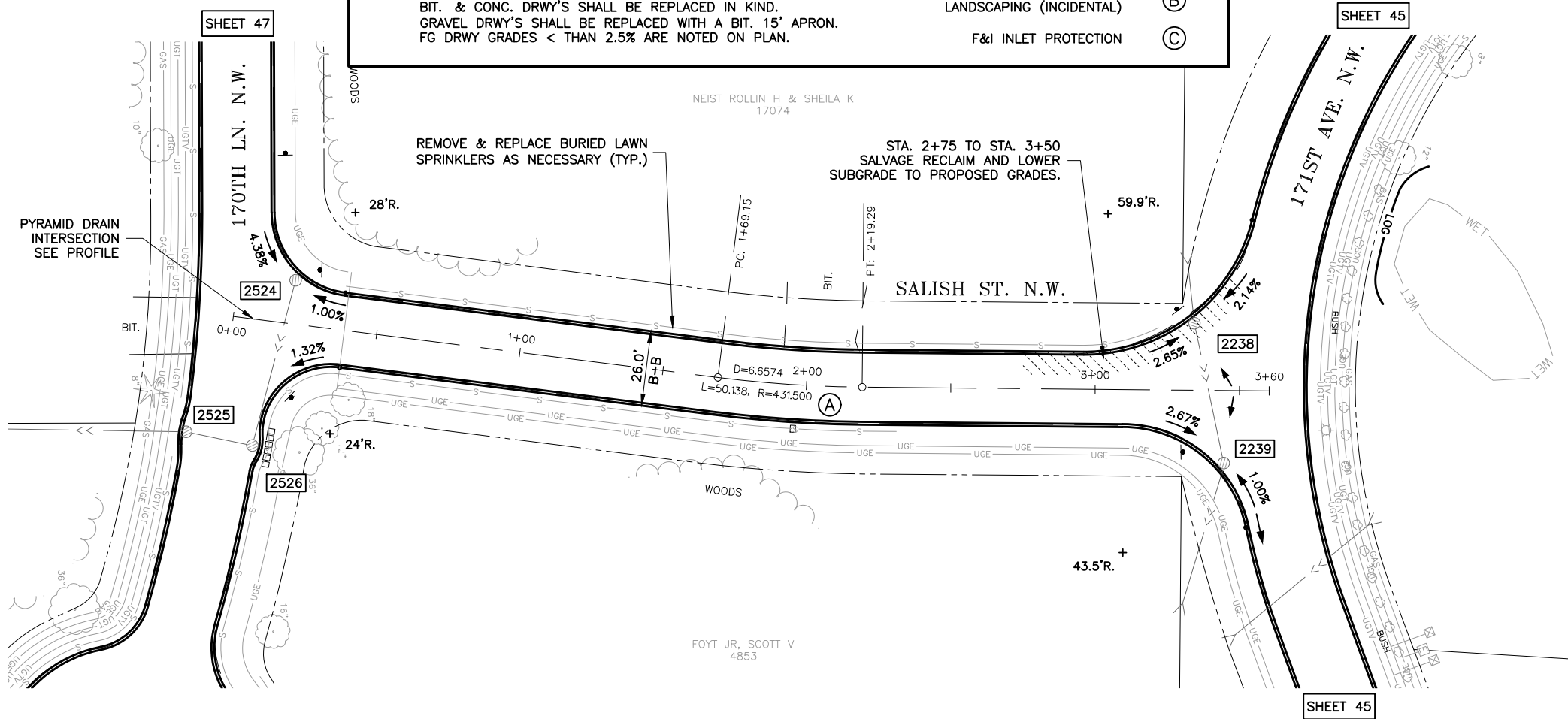
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SALVAGE / INSTALL MAILBOX (A)

PROTECT / SALVAGE / REINSTALL LANDSCAPING (INCIDENTAL) (B)

F&I INLET PROTECTION (C)

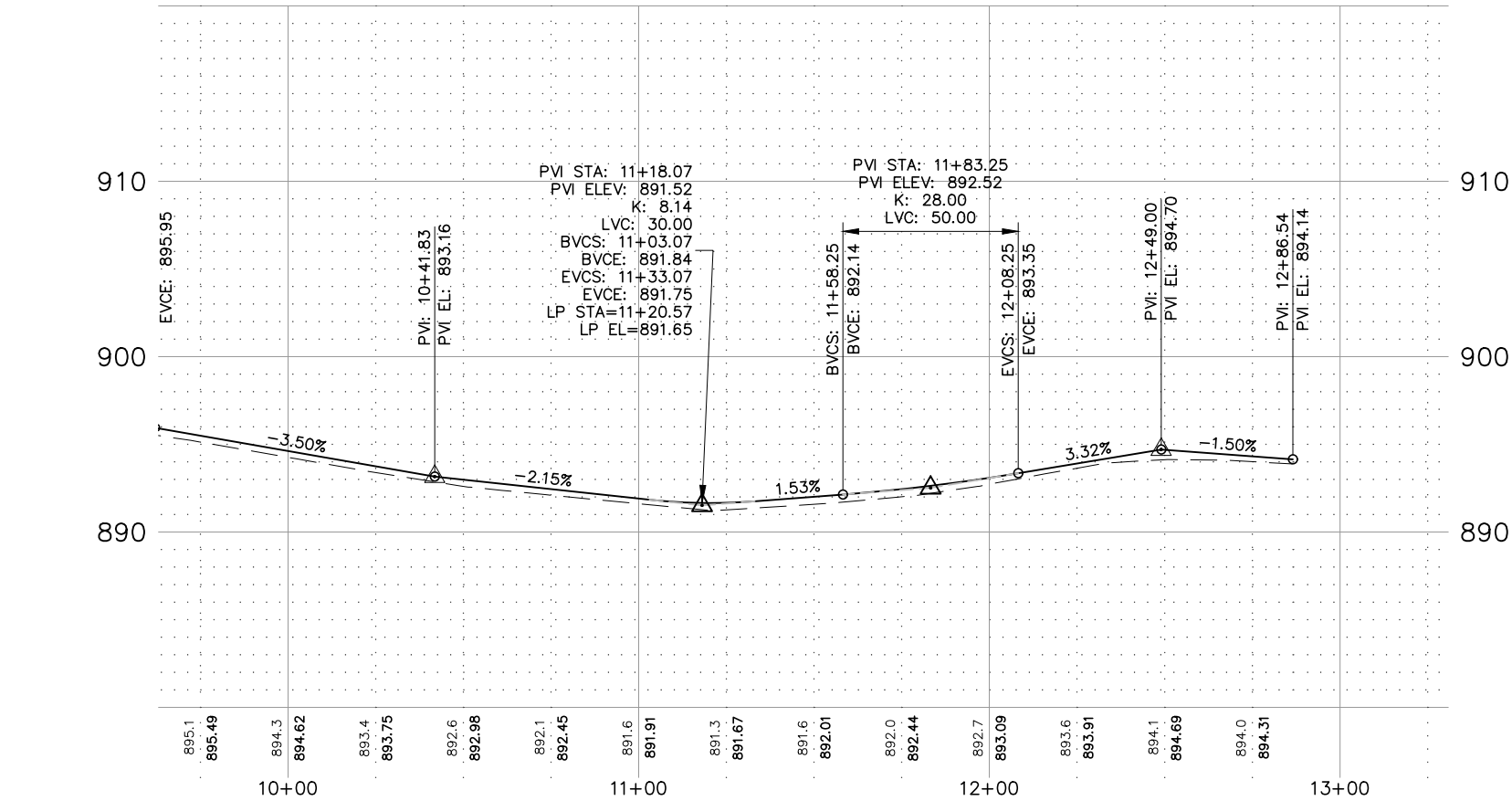


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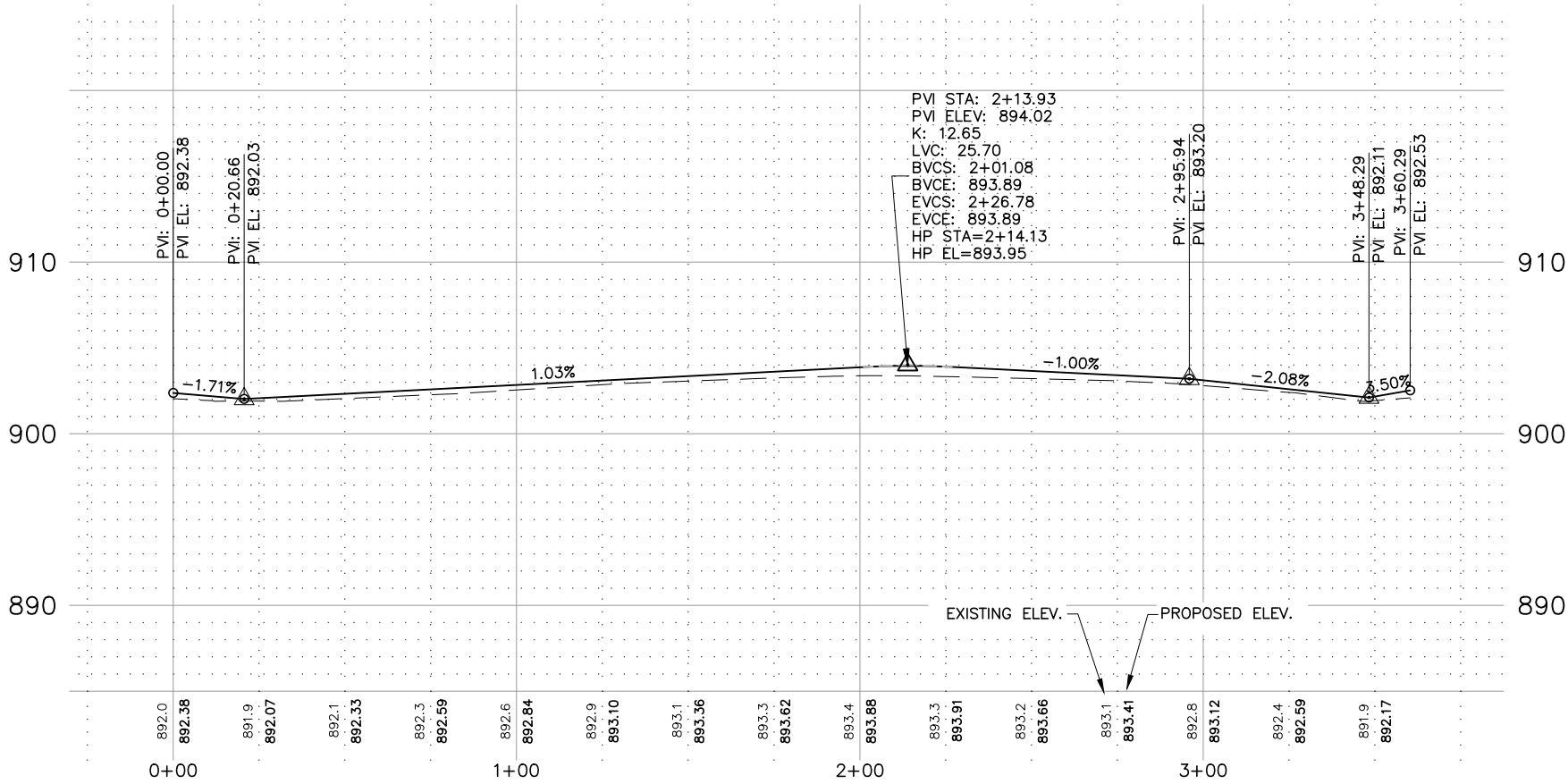
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2022 STREET RECONSTRUCTION
CITY PROJECT NO. 22-02



170TH AVE. N.W.

1" = 50' HORZ.
1" = 10' VERT.



SALISH ST. N.W.

170TH AVE. N.W. ROADWAY CENTERLINE GRADE 10+00 TO 12+87
SALISH ST. N.W. CENTERLINE GRADE 0+00 TO 3+60

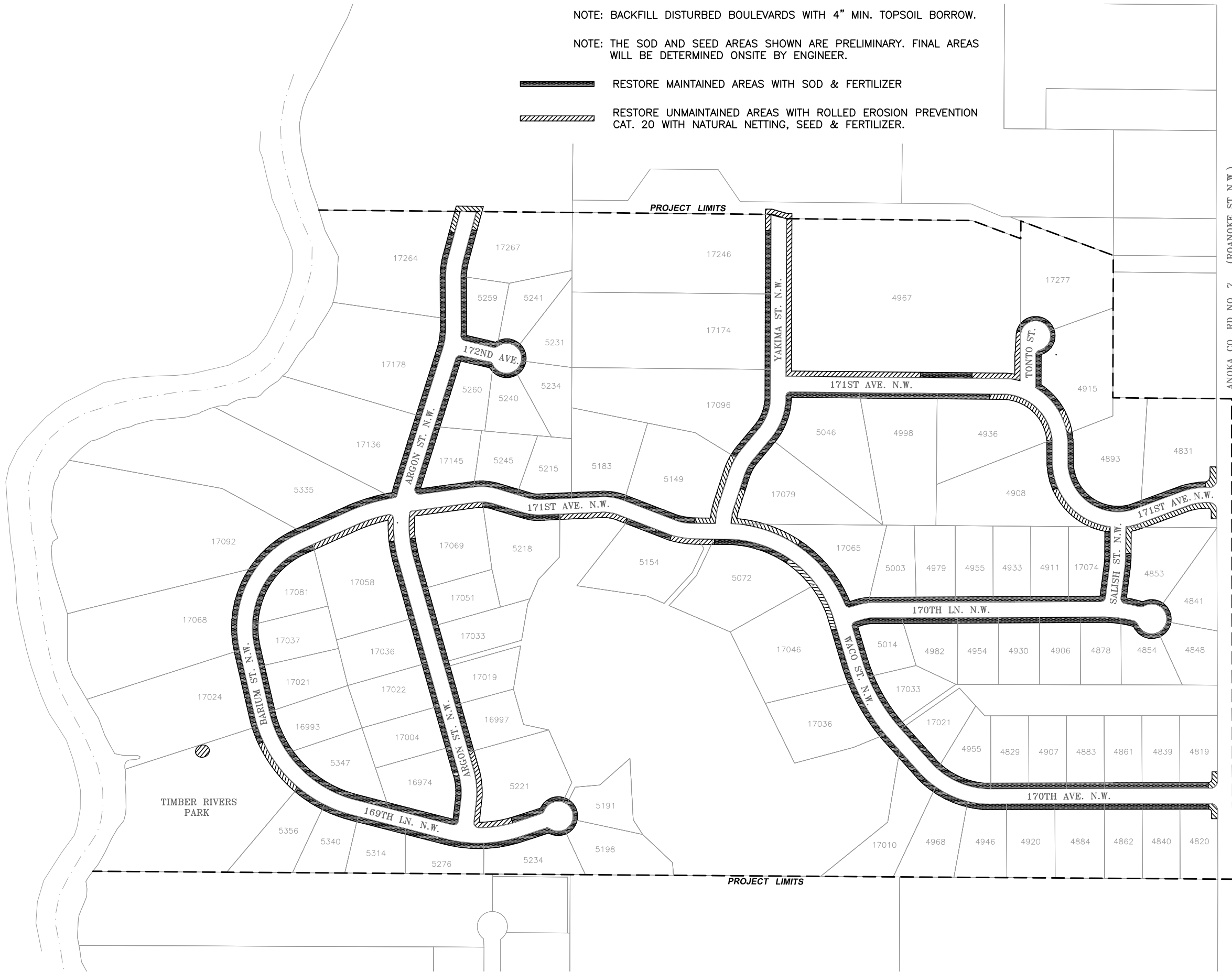
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CITY OF
ANDOVER

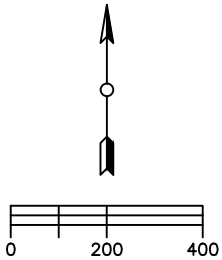


NOTE: BACKFILL DISTURBED BOULEVARDS WITH 4" MIN. TOPSOIL BORROW.

NOTE: THE SOD AND SEED AREAS SHOWN ARE PRELIMINARY. FINAL AREAS WILL BE DETERMINED ONSITE BY ENGINEER.

RESTORE MAINTAINED AREAS WITH SOD & FERTILIZER

RESTORE UNMAINTAINED AREAS WITH ROLLED EROSION PREVENTION CAT. 20 WITH NATURAL NETTING, SEED & FERTILIZER.



2022 STREET RECONSTRUCTION
CITY PROJECT NO. 22-02

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DAVID D. BERKOWITZ
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DESIGNED	DRAWN	CHECKED	NO.	DATE	BY	DESCRIPTION OF REVISIONS
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