

LEGEND

EXISTING

PROPOSED

CITY OF ANDOVER, MINNESOTA

CONSTRUCTION PLANS FOR

2025 FULL DEPTH RECLAMATION

THRUSH ST NW/135TH LN NW (CROSSTOWN BLVD NW TO BUNKER LAKE BLVD NW)

(CITY PROJECT 25-11D, SAP 198-150-001)

&

2025 MILL & OVERLAY

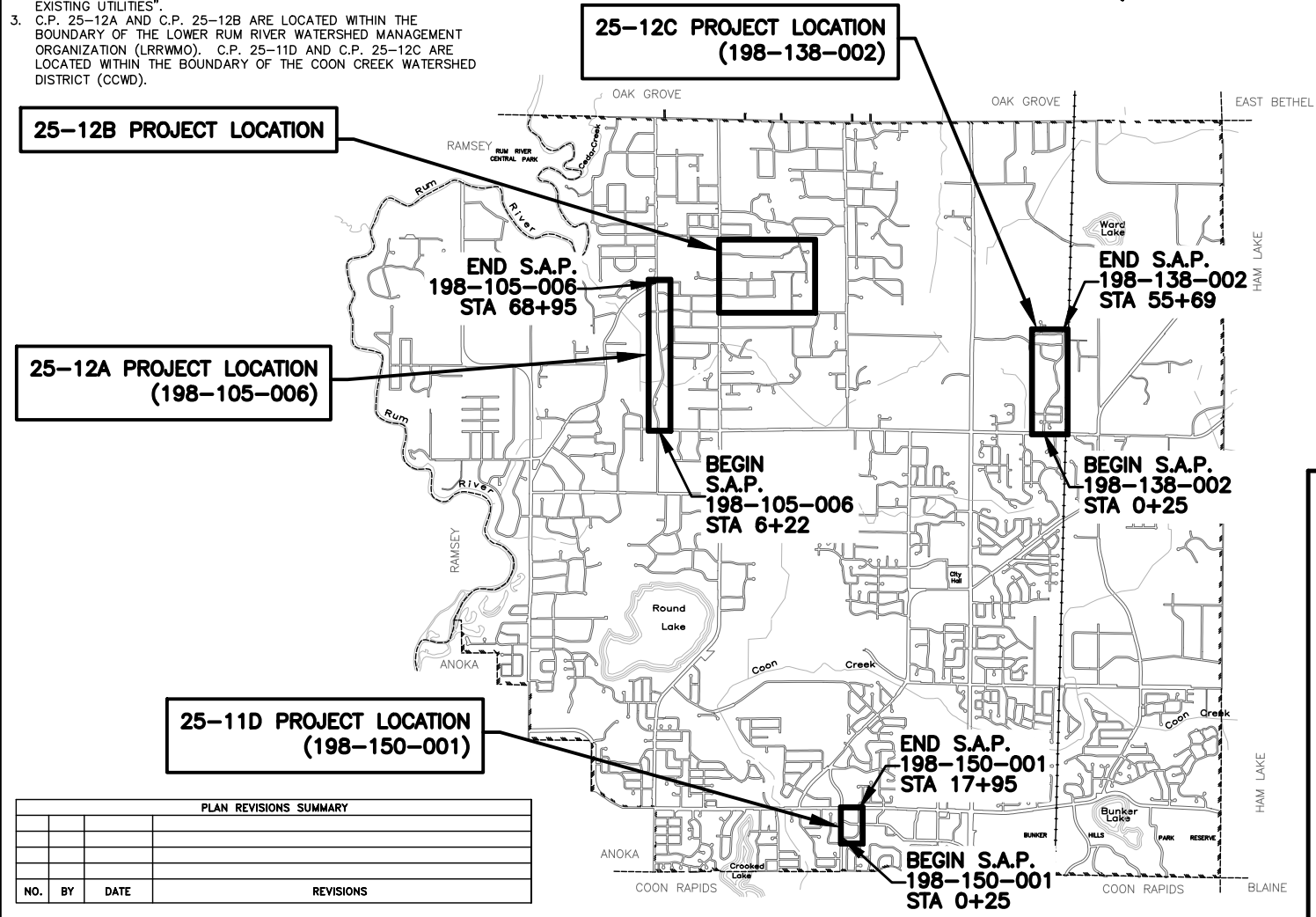
TULIP ST NW - 161ST AVE NW TO VALLEY DRIVE NW (C.P. 25-12A, SAP 198-105-006)

KADLEC ADDITION, OAKWOOD ESTATES, WHITE OAKS COUNTRY ESTATES, & 172ND AVE NW (C.P. 25-12B)

COUNTRY OAKS WEST, BIRCH PINE ESTATES, & WINTERGREEN ST NW (161ST AVE NW TO 169TH AVE NW)

(C.P. 25-12C, SAP 198-138-002)

- NOTE:
- THE EXACT LOCATION OF UNDERGROUND UTILITIES SUCH AS GAS, TELEPHONE, FIBER OPTIC, ELECTRIC, CABLE TV, AND PIPE LINES ARE UNKNOWN. THE CONTRACTOR SHALL CONTACT GOPHER STATE ONE CALL (651-454-0002) BEFORE COMMENCING EXCAVATION.
 - 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 INVESTIGATING AND DOCUMENTING EXISTING UTILITIES".
 - C.P. 25-12A AND C.P. 25-12B ARE LOCATED WITHIN THE BOUNDARY OF THE LOWER RUM RIVER WATERSHED MANAGEMENT ORGANIZATION (LRRWMO). C.P. 25-11D AND C.P. 25-12C ARE LOCATED WITHIN THE BOUNDARY OF THE COON CREEK WATERSHED DISTRICT (CCWD).



GOVERNING SPECIFICATIONS

THE 2025 EDITION OF THE MINNESOTA DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR CONSTRUCTION" SHALL GOVERN.

CITY OF ANDOVER 2025 UTILITY AND STREET CONSTRUCTION SPECIFICATIONS SHALL APPLY.

ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE LATEST MMUTCD, INCLUDING THE LATEST FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS.

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THIS PLAN CONTAINS 62 SHEETS

TULIP ST NW

DESIGN DESIGNATION (25-12A)

STOPPING SIGHT DISTANCE BASED ON:	
3.5' HEIGHT OF EYE	0.5' HEIGHT OF OBJECT
TULIP ST NW	6273 FEET
(S.A.P. 198-105-006)	(1.188 MILES)
DESIGN	10 TON
DESIGN SPEED	40 MPH
R VALUE	70
ESALS	261,000
EXISTING A.D.T. (2025)	650
20 YR. PROJECTED A.D.T. (2045)	1020
% H.C.A.D.T.	8.90%
FUNCTIONAL CLASSIFICATION	COLLECTOR
NO. OF TRAFFIC LANES	2
NO. OF PARKING LANES	0
SHOULDER	3.8'

135TH LN NW/THRUSH ST NW

DESIGN DESIGNATION (25-11D)

STOPPING SIGHT DISTANCE BASED ON:	
3.5' HEIGHT OF EYE	0.5' HEIGHT OF OBJECT
135TH LN NW/THRUSH ST NW	1770 FEET
(S.A.P. 198-150-001)	(0.335 MILES)
DESIGN	10 TON
DESIGN SPEED	30 MPH
R VALUE	60
ESALS	361,000
EXISTING A.D.T. (2025)	960
20 YR. PROJECTED A.D.T. (2045)	1330
% H.C.A.D.T.	8.90%
FUNCTIONAL CLASSIFICATION	COLLECTOR
NO. OF TRAFFIC LANES	2
NO. OF PARKING LANES	0

WINTERGREEN ST NW

DESIGN DESIGNATION (25-12C)

STOPPING SIGHT DISTANCE BASED ON:	
3.5' HEIGHT OF EYE	0.5' HEIGHT OF OBJECT
WINTERGREEN ST NW	5544 FEET
(S.A.P. 198-130-001)	(1.050 MILES)
DESIGN	10 TON
DESIGN SPEED	30 MPH
R VALUE	60
ESALS	159,000
EXISTING A.D.T. (2025)	1170
20 YR. PROJECTED A.D.T. (2045)	1720
% H.C.A.D.T.	3.86%
FUNCTIONAL CLASSIFICATION	COLLECTOR
NO. OF TRAFFIC LANES	2
NO. OF PARKING LANES	0

CITY OF ANDOVER

DISTRICT STATE AID ENGINEER: _____ DATE _____

REVIEWED FOR COMPLIANCE WITH STATE AID RULES/POLICY

APPROVED FOR STATE AID FUNDING: STATE AID ENGINEER _____ DATE _____

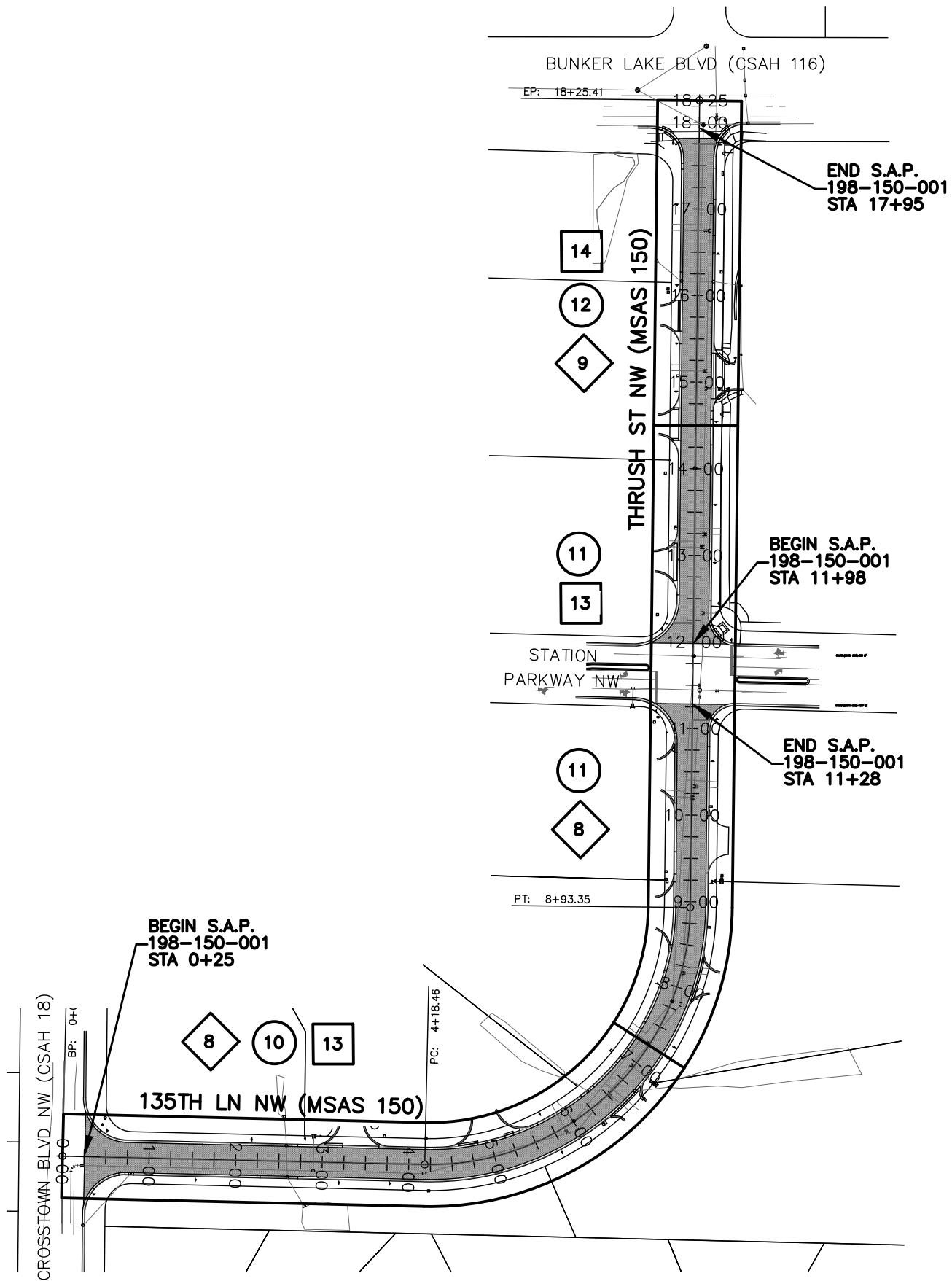
ANDOVER, MINNESOTA

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

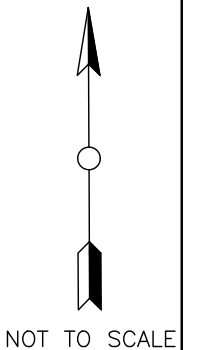
David D. Berkowitz, PE
ANDOVER DIRECTOR OF PUBLIC WORKS/CITY ENGINEER
DATE 3/18/2025 LIC. NO. 26757

TITLE SHEET & LEGEND

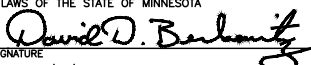
SHEET NO. 1 OF 62 SHEETS



-  = REMOVALS & UTILITIES
-  = STREET & RESTORATION
-  = STRIPING



NO.	DATE	BY	DESCRIPTION OF REVISIONS

DESIGNED JJL	DRAWN JAK	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 TYPED OR PRINTED NAME
CHECKED DDB	DATE 3/18/2025	
LIC. NO. 26757		



2025 FULL DEPTH RECLAMATION—
THRUSH ST NW/135TH LN NW (CROSSTOWN
BLVD NW TO BUNKER LAKE BLVD NW)
CITY PROJECT 25-11D, SAP 198-150-001

PROJECT LAYOUT
SHEET NO. 3 OF 62 SHEETS

STATEMENT OF ESTIMATED QUANTITIES

2025 FULL DEPTH RECLAMATION - (C.P. 25-11D, SAP 198-150-001) (Andover Commercial Park)					TOTAL QUANTITIES		SAP 198-150-001 STREETS (PARTICIPATING)		STORM SEWER (PARTICIPATING)	
NOTES	ITEM NO.		DESCRIPTION	UNIT	EST. QUAN.	ACTUAL QUAN.	EST. QUAN.	ACTUAL QUAN.	EST. QUAN.	ACTUAL QUAN.
	1	2021.501	Mobilization	LS	1.00		0.99		0.01	
1	2	2104.502	Salvage Casting	EA	5		5			
1	3	2104.502	Remove Casting	EA	2		2			
2	4	2104.503	Remove Curb & Gutter	LF	2,300		2,300			
3	5	2104.503	Sawing Concrete Pavement (Full Depth)	LF	50		50			
3	6	2104.503	Sawing Bit Pavement (Full Depth)	LF	375		375			
3	7	2104.518	Remove Concrete Pavement	SF	1,600		1,600			
3	8	2104.518	Remove Bituminous Pavement	SF	1,100		1,100			
4	9	2104.602	Salvage and Reinstall Mailbox	EA	6		6			
5	10	2105.607	Common Excavation (EV)	CY	50		50			
6	11	2105.607	Subgrade Excavation (EV)	CY	60		60			
7	12	2105.607	Salvage Reclaim Material (LV)	CY	1,060		1,060			
8	13	2105.607	Select Granular Borrow (LV)	CY	80		80			
9	14	2112.519	Subgrade Preparation	RDST	17.0		17.0			
10	15	2130.523	Water	MGAL	25		25			
11	16	2211.509	Aggregate Base Class 5	TN	40		40			
	17	2215.504	Full Depth Reclamation	SY	6,750		6,750			
	18	2232.504	Mill Bituminous Surface (1.5")	SY	50		50			
	19	2357.506	Bituminous Material For Tack Coat	Gal	350		350			
	20	2360.509	Type SP 9.5 Wearing Course Mix (3,C)	TN	690		690			
12	21	2360.509	Type SP 9.5 Bit Mixture for Patching (3,C)	TN	20		20			
	22	2360.509	Type SP 12.5 Wearing Course Mixture (3,C)	TN	1,110		1,110			
13	23	2504.602	Adjust Gate Valve Box - F&I New Valve Box Top	EA	11		11			
14	24	2504.602	Gate Valve Casting Adjustment	EA	1		1			
15	25	2504.602	Irrigation System Modifications	EA	60		60			
16,17	26	2506.502	Adjust Frame & Ring Casting	EA	3		3			
17,18	27	2506.502	Casting Assembly - Storm	EA	2				2	
17	28	2506.502	Install Casting	EA	5		3		2	
19	29	2506.602	Mud Existing Casting Rings	EA	3				3	
20	30	2506.602	Mud Doghouse	EA	3				3	
21	31	2506.607	Fill Catch Basin Sump-Pour Invert	CY	4				4	
22	32	2521.618	6" Concrete Walk - Special	SF	1,400		1,400			
	33	2531.503	Concrete Curb and Gutter B624	LF	2,100		2,100			
	34	2531.604	8" Concrete Valley Gutter	SY	75		75			
	35	2531.618	Truncated Domes	SF	120		120			
	36	2563.601	Traffic Control	LS	1.00		0.99		0.01	
	37	2573.502	Storm Drain Inlet Protection	EA	11		11			
	38	2573.503	Silt Fence, Type HI or MS	LF	375		375			
	39	2573.607	Rock Ditch Check - 1.5" Nom. Diameter	CY	5		5			
	40	2574.507	Loam Topsoil Borrow (LV)	CY	280		280			
	41	2575.504	Sodding Type Lawn	SY	1,020		1,020			
	42	2582.503	4" Solid Line Paint - White	LF	110		110			
	43	2582.503	18" Solid Line Paint - White	LF	70		70			
	44	2582.503	4" Double Solid Line Paint - Yellow	LF	1,625		1,625			

- C.P. 25-11D Notes:**
- Includes plating structure if necessary.
 - Regardless of type/dimension of curb. Includes sawcut of curb. Excavation and off-site disposal of material behind curb necessary for removal and replacement of curb and gutter incidental to this item.
 - Regardless of depth.
 - Includes salvage and reinstall of existing mailbox, and temporary placement of mailbox in barrel at each existing location during construction.
 - For all excavation not otherwise addressed. Includes disposing excess or unsuitable material off-site.
 - For exc. beneath reclaimed agg. base where unsuitable material discovered. Dispose excess and/or unsuitable material off-site.
 - For excavating / hauling / stockpiling / disposing off-site excess reclaim material. Excess material property of contractor. 1.5 expansion factor assumed CV to LV.
 - Only to be used if sufficient material not generated on-site for subgrade excavation backfill, if necessary.
 - Includes grading reclaim material from areas of excess to areas requiring material, under curb/shoulder, fine grading, and compacting reclaimed aggregate base.
 - For dust control only as directed by the engineer. Water to achieve compaction shall be incidental.
 - For material imported from outside project limits. Class 7 reclaim acceptable. Item includes furnishing, hauling, placing and compacting.
 - For patching adjacent to curb replacement in non-reclaimed areas, utility replacements, and driveway aprons.
 - Item to be used if existing valve box top is rusted shut and not adjustable. Includes sawcut, pavement removal, plating, remove existing valve box top and F&I new valve box top.
 - F&I gate valve casting adjustment(if necessary). Clean and glue to existing frame.
 - Based upon number or 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.
 - Item includes sawcut, pavement removal, plating, salvaging and reinstalling casting regardless of required adjusting rings.
 - Includes new concrete adjusting rings regardless of depth, Infi-Shield Gator Wrap (manholes), or wrap rings with geotextile fabric and concrete collar (catch basins).
 - For use if salvaged casting breaks or is unuseable or new casting required per plans.
 - Protect casting, touch up mud on existing concrete adjustment rings inside structure.
 - Item shall include regrouting all doghouses within structure. The "Each" item refers to each structure regardless of the number of doghouses in the structure.
 - Item shall include filling sump with redi-mix , pouring invert, and constructing benches up to 1/3 of pipe diameter. Item includes regrouting doghouses as necessary.
 - For pedestrian curb ramps.

The following standard plates approved by the Federal Highway Administration shall apply on this project.	
STANDARD PLATES	
Plate No.	Description
7038A	Detectable Warning Surface Truncated Domes
7100H	Concrete Curb and Gutter
8000K	Temporary Channelizers

BASIS OF ESTIMATED QUANTITIES		
Bituminous Wear Course	120	# / SY / inch
Bit. Non-Wear Course	120	# / SY / inch
Aggregate Base, Class 5	110	# / SY / inch
Tack Coat	0.05	Gal / SY

GENERAL NOTES:

THE 2025 EDITION OF THE MINNESOTA DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR CONSTRUCTION" SHALL GOVERN. CITY OF ANDOVER 2025 UTILITY AND STREET CONSTRUCTION SPECIFICATIONS SHALL APPLY.

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."

ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO AND BE INSTALLED IN ACCORDANCE WITH THE "MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MMUTCD)" AND THE "TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS FIELD MANUAL", NEWEST ADDITIONS.

CONSTRUCTION SHALL BE STAGED SUCH THAT TRAFFIC IS MAINTAINED AT ALL TIMES. CONTRACTOR SHALL USE FLAG PERSON, IF NEEDED (INCIDENTAL TO TRAFFIC CONTROL).

ROAD WORK AHEAD SIGNS SHALL BE MAINTAINED AT ALL INTERSECTING ROADS TO THE PROJECT. TYPE B CHANNELIZERS SHALL BE USED IN ALL NECESSARY LOCATIONS. TRAIL CLOSED SIGNS ON TYPE III BARRICADES SHALL BE PLACED AT ALL LOCATIONS IMPACTED BY PEDESTRIAN RAMP/SIDEWALK/TRAIL IMPROVEMENTS.

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. (651-454-2000)

CONSTRUCTION NOTES:

THE CONTRACTOR SHALL INSTALL INLET PROTECTION DEVICES ON ALL STORM SEWER STRUCTURES. PRIOR TO PLACING CASTINGS ON STORM SEWER STRUCTURES, THE CONTRACTOR SHALL FOLLOW THE STANDARD DETAIL IN THE PLANS TO ALLOW FOR INFLOW INTO THE STORM SEWERS. ONCE CASTINGS ARE INSTALLED ON STORM SEWER STRUCTURES, THE CONTRACTOR SHALL INSTALL INLET PROTECTION DEVICES IN ALL STRUCTURES SUCH THAT SEDIMENT IS CAPTURED WITH A HIGH FLOW BYPASS. CLEAN AS NECESSARY. ALL EROSION CONTROL DEVICES SHALL BE MAINTAINED ACCORDING TO THE MPCA BEST MANAGEMENT PRACTICES MANUAL, SWPPP, AND THE MINNESOTA STORM WATER MANUAL. THE CONTRACTOR SHALL REMOVE ALL EROSION CONTROL DEVICES ONCE VEGETATION HAS BEEN ESTABLISHED.

COMPACTION OF ALL BITUMINOUS MIXTURE SHALL BE BY THE "SPECIFIED DENSITY METHOD" EXCEPT FOR PATCHES AND TRAILS, WHICH SHALL BE BY THE "ORDINARY COMPACTION METHOD".

ALL DISTURBED AREAS SHALL BE BACKFILLED WITH SALVAGED TOPSOIL, IF ANY. DISTURBED AREAS SHALL BE RESTORED WITH 4" TOPSOIL (MINIMUM) AND SOD. ALL RESTORATION SHALL OCCUR WITHIN 7 DAYS OF GRADING COMPLETION. RESTORATION WORK SHALL BE COMPLETED BEFORE PAVING OF THE WEARING COURSE.

ALL EXISTING SIGNS SHALL BE REMOVED AND REPLACED BY THE ANDOVER SIGN DEPARTMENT UNLESS CALLED OUT OTHERWISE IN THE PLANS. COORDINATE WITH MINIMUM 48 HOUR NOTICE WITH ENGINEER IN FIELD.

BOULEVARD IRRIGATION SYSTEMS SHALL BE PROTECTED. SALVAGE AND/OR REPLACEMENT OF ANY EXISTING HEADS SHALL ONLY BE PAID FOR IF REMOVAL IS ABSOLUTELY NECESSARY. ANY REPAIR WORK SHALL BE COMPLETED BY AN IRRIGATION CONTRACTOR LICENSED WITH THE CITY. COORDINATE NOTIFICATION OF SYSTEM OWNERS WITH CITY INSPECTOR PRIOR TO IMPACTING SYSTEMS.

CONCRETE WASHOUT SHALL BE CONTAINED WITHIN CONCRETE TRUCKS, NOT ON-SITE.

CONTRACTOR SHALL SWEEP ALL MATERIAL OFF ADJACENT STREETS DUE TO CONSTRUCTION ACTIVITY, DAILY AS NECESSARY (INCIDENTAL).

SOIL STOCKPILES SHALL BE STABILIZED WITHIN 7 DAYS OF ROUGH GRADING OR INACTIVITY (INCIDENTAL).

CONTRACTOR IS REQUIRED TO REPAIR AND MAINTAIN ALL TEMPORARY AND PERMANENT EROSION AND SEDIMENT CONTROL PRACTICES (INCIDENTAL).

CONTRACTOR SHALL REMOVE ALL TEMPORARY SEDIMENT CONTROL PRACTICES ONCE VEGETATION IS RE-ESTABLISHED (INCIDENTAL).

REFER TO SWPPP IN PROJECT SPECIFICATION FOR ADDITIONAL CONSTRUCTION/EROSION CONTROL REQUIREMENTS.

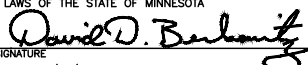
EARTHWORK NOTES:

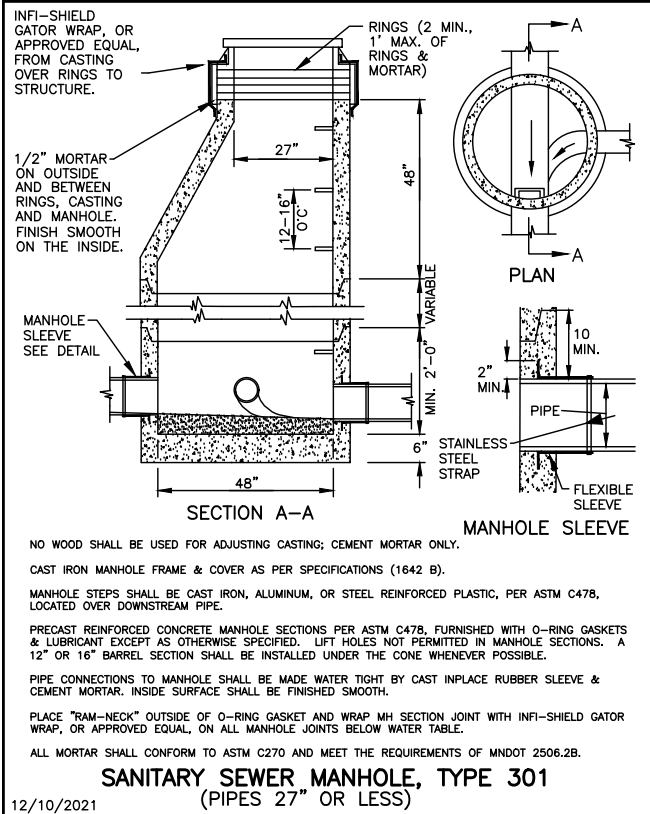
THE CONTRACTOR SHALL STRIP AND STOCKPILE EXISTING TOPSOIL MATERIAL, IF ANY, FOR RE-USE (LITTLE IS EXPECTED). RE-USED TOPSOIL SHALL BE CLEAN WITH NO SOD CHUNKS / EXISTING VEGETATION. TOPSOIL STRIPING, IF ANY, SHALL BE CONSIDERED INCIDENTAL.

SELECT EXCAVATED MATERIALS SHALL BE UTILIZED TO THE FULLEST EXTENT WITHIN THE PROJECT LIMITS. MATERIAL FOR BACKFILL BEHIND THE CURB SHALL BE FREE OF DEBRIS. EXCESS MATERIAL GENERATED, IF ANY, SHALL BE DISPOSED OF OFF-SITE BY THE CONTRACTOR IN ACCORDANCE WITH MNDOT 2104.3C3.

WHEN CONNECTING NEW PAVED SURFACING TO ANY IN-PLACE PAVEMENTS, CUT VERTICALLY TO THE BOTTOM OF THE IN-PLACE PAVEMENTS OR TO THE BOTTOM OF THE NEW SURFACING, WHICHEVER IS DEEPER, THEN AT 2(V):1(H) SLOPE TO THE TOP OF THE SUBGRADE.

EXCAVATION AND DISPOSAL OF SOIL/TURF MATERIAL SHALL BE INCIDENTAL TO REMOVAL PAY ITEMS UNLESS OTHERWISE NOTED. CONTRACTOR SHALL MINIMIZE EXCAVATION AND DISTURBANCE ALONG THE PROJECT CORRIDOR. EXCAVATED MATERIAL CAN BE USED FOR BACKFILLING PROVIDED IT IS FREE OF SOD CHUNKS AND/OR DEBRIS. EXCESS MATERIAL SHALL BE DISPOSED OF OFF-SITE.

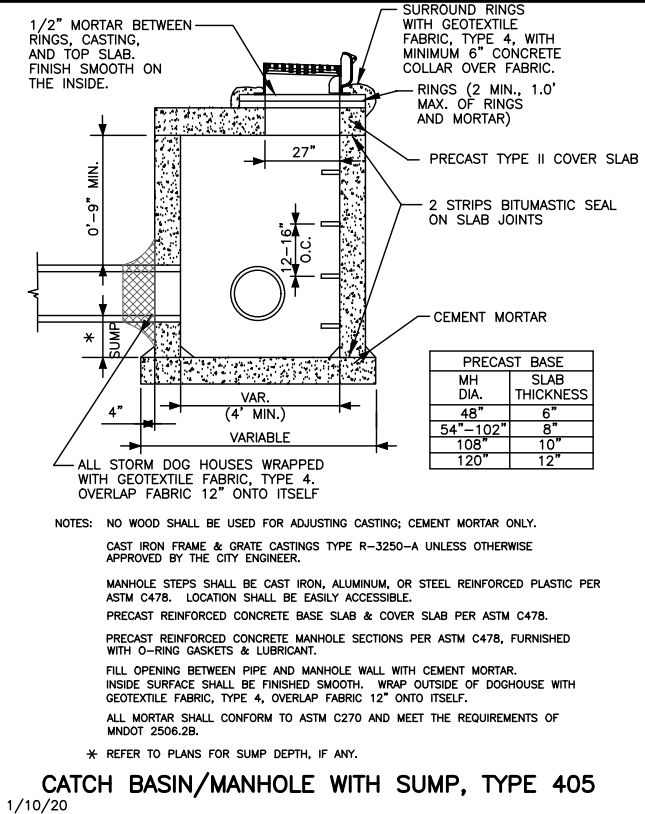
				DESIGNED JJL	DRAWN JAK	I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA  SIGNATURE DATE 3/18/2025 LIC. NO. 26757 DAVID D. BERKOWITZ TYPED OR PRINTED NAME		2025 FULL DEPTH RECLAMATION- THRUSH ST NW/135TH LN NW (CROSSTOWN BLVD NW TO BUNKER LAKE BLVD NW) CITY PROJECT 25-11D. SAP 198-150-001	CONSTRUCTION NOTES	
				CHECKED DDB						
NO.	DATE	BY	DESCRIPTION OF REVISIONS						SHEET NO. 5 OF 62 SHEETS	



12/10/2021

CITY OF ANDOVER

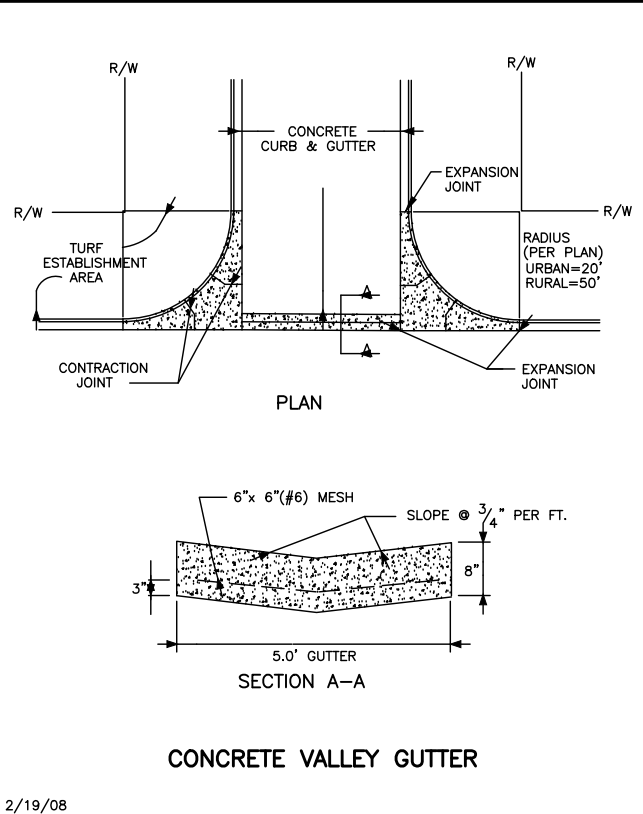
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1/10/20

CITY OF ANDOVER

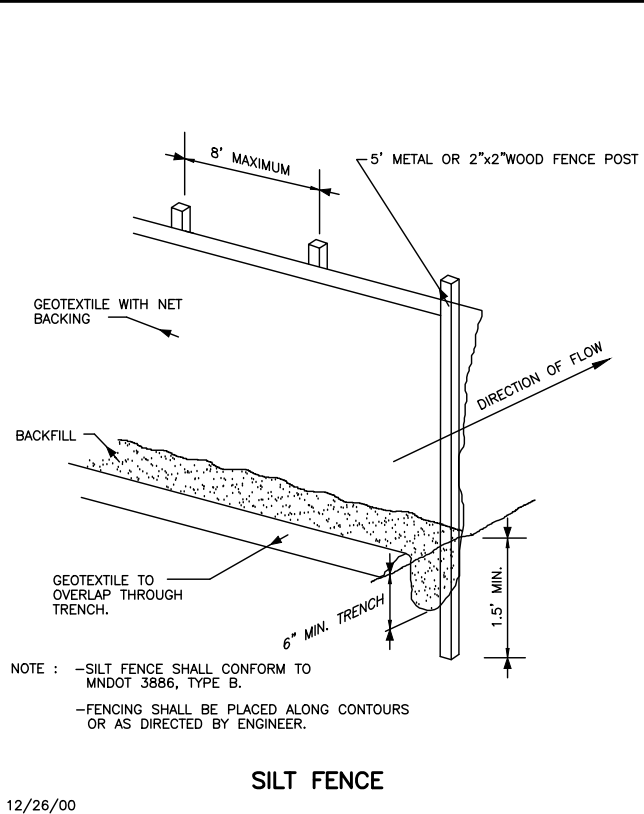
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2/19/08

CITY OF ANDOVER

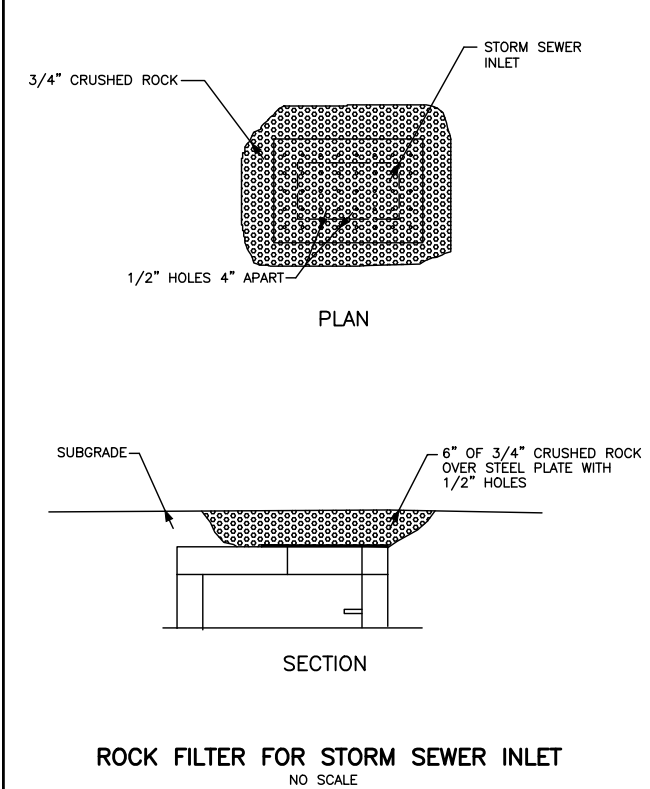
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12/26/00

CITY OF ANDOVER

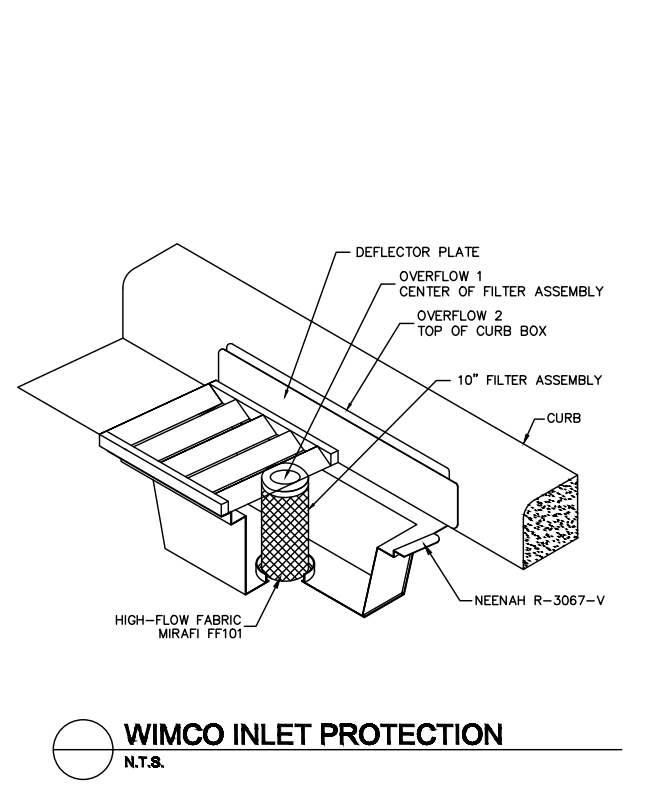
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2/19/09

CITY OF ANDOVER

STANDARD DRAWING NO. 619



DESIGNED JJL

DRAWN JAK

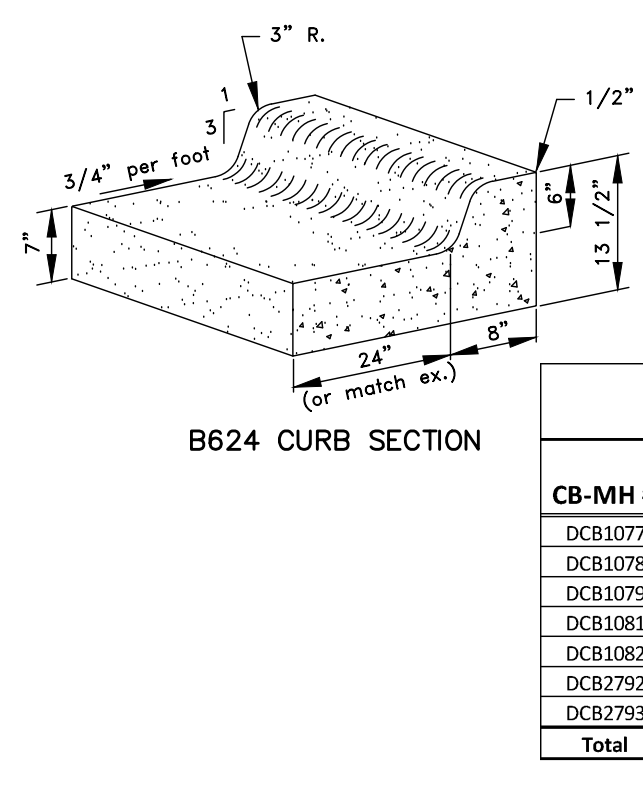
CHECKED DDB

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

DATE 3/18/2025

LIC. NO. 26757



DESIGNED JJL

DRAWN JAK

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

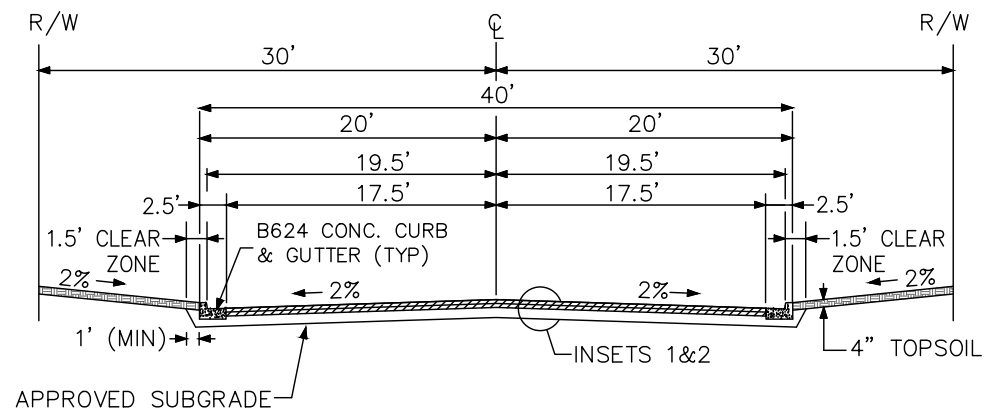
DATE 3/18/2025

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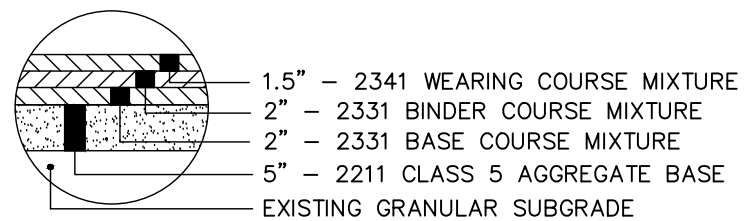
STORM SEWER STRUCTURE TABLE								
25-11D 2025 Full Depth Reclamation - Andover Commercial Park (SAP 198-150-001)								
CB-MH #	Fill Sump (2)	Diam. (ft)	Depth (ft)	Volume (CY)	Mud Doghouse	Mud Rings	Casting	# Existing 2" Rings (1)
DCB1077	Y	5	1	1.09		Y		
DCB1078	Y	5	1	1.09		Y		
DCB1079	Y	5	1	1.09		Y		
DCB1081		5			Y		Replace with R-3250-A	6
DCB1082		5			Y		Replace with R-3238-C	7
DCB2792		4	1		Y		Salvage/Reinstall	5
DCB2793	Y	4	1	0.70			Salvage/Reinstall	1
Total	4			3.97	3	3	2	

Notes 1): When installing casting, 6" and 1' rings shall be used so that there are no more than 5 rings per casting.

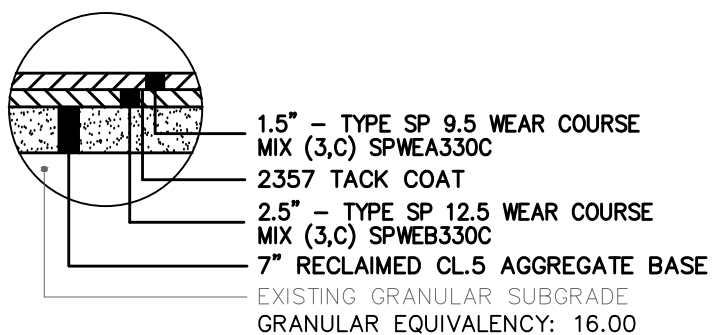
2) Mudding of doghouses incidental to filling CB sump.



135TH AVE NW & THRUSH ST NW EXISTING TYPICAL SECTION
SAP 198-150-001

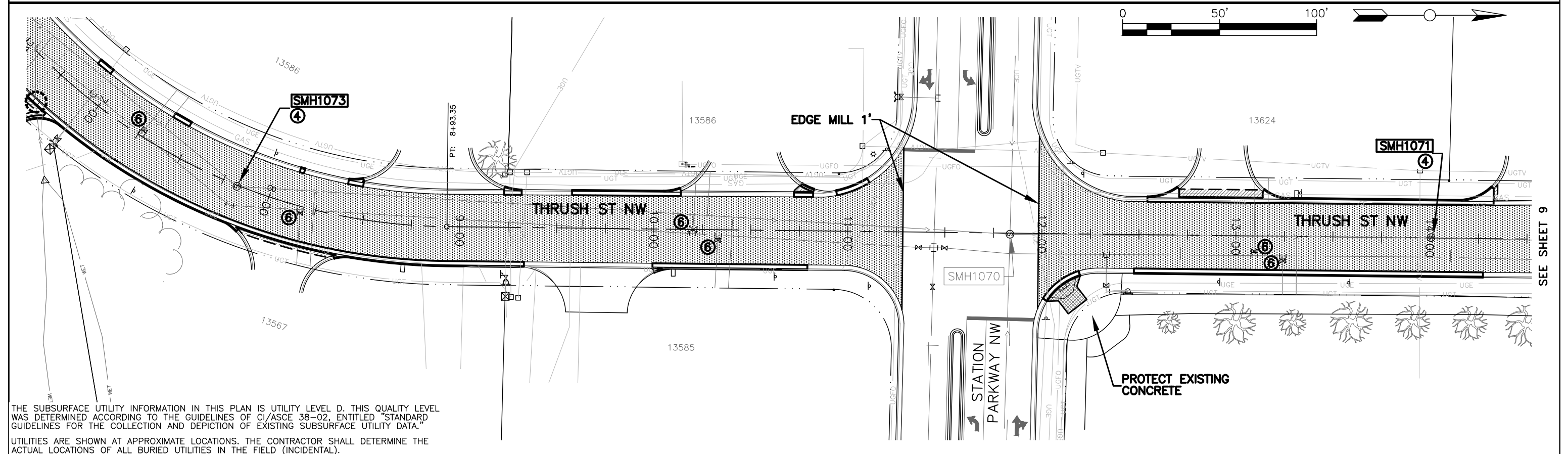
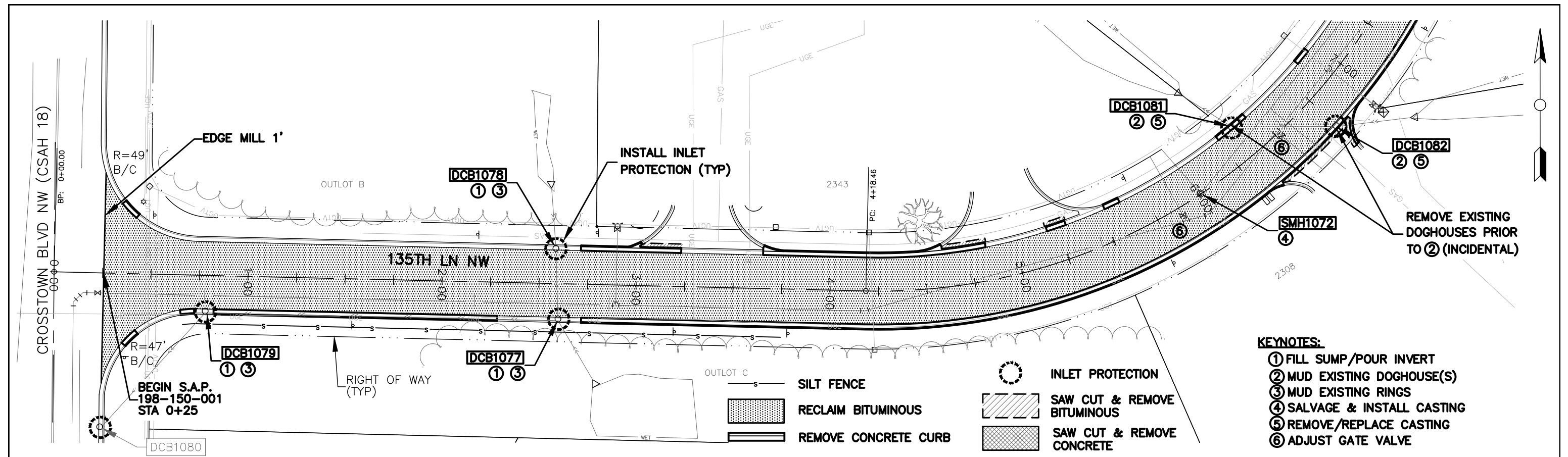


INSET 1 - EXISTING



INSET 2 - PROPOSED

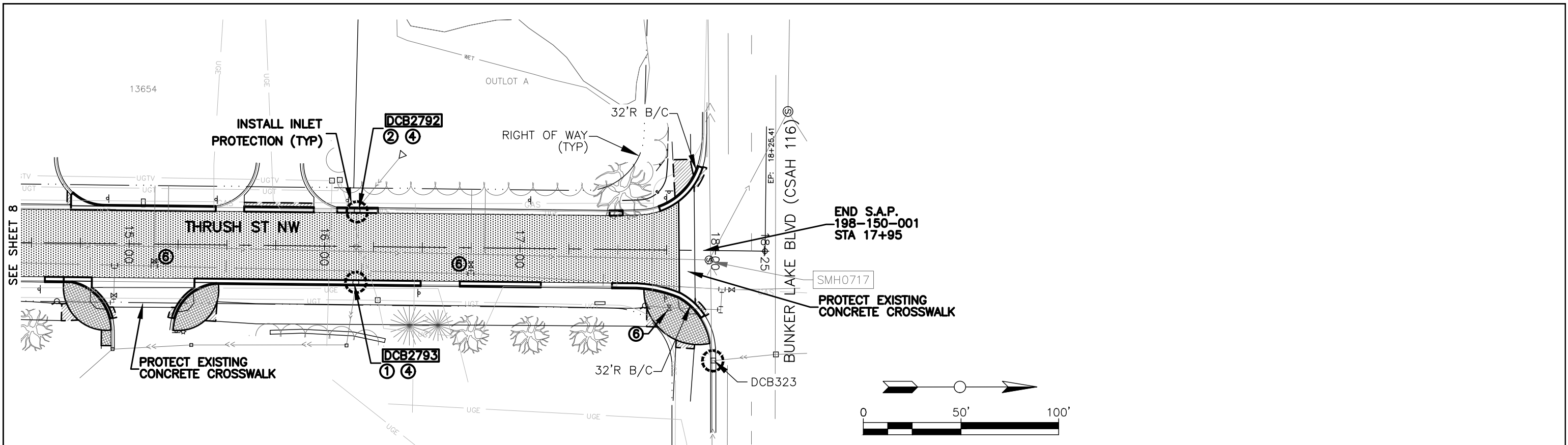
				DESIGNED DRAWN JJL JAK		I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA  DAVID D. BERKOWITZ SIGNATURE	
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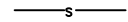
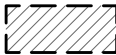


THE SUBSURFACE UTILITY INFORMATION IN THIS PLAN IS UTILITY LEVEL D. THIS QUALITY LEVEL WAS DETERMINED ACCORDING TO THE GUIDELINES OF C/ASCE 38-02, ENTITLED "STANDARD GUIDELINES FOR THE COLLECTION AND DEPICTION OF EXISTING SUBSURFACE UTILITY DATA."

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|  | SILT FENCE |  | INLET PROTECTION |
|  | RECLAIM BITUMINOUS |  | SAW CUT & REMOVE BITUMINOUS |
|  | REMOVE CONCRETE CURB |  | SAW CUT & REMOVE CONCRETE |

KEYNOTES:

- ① FILL SUMP/POUR INVERT
- ② MUD EXISTING DOGHOUSE(S)
- ④ SALVAGE & INSTALL CASTING
- ⑥ ADJUST GATE VALVE

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NO.	DATE	BY	DESCRIPTION OF REVISIONS

DESIGNED
JJL

DRAWN
JAK

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

SIGNATURE

DATE 3/18/2025 LIC. NO. 26757

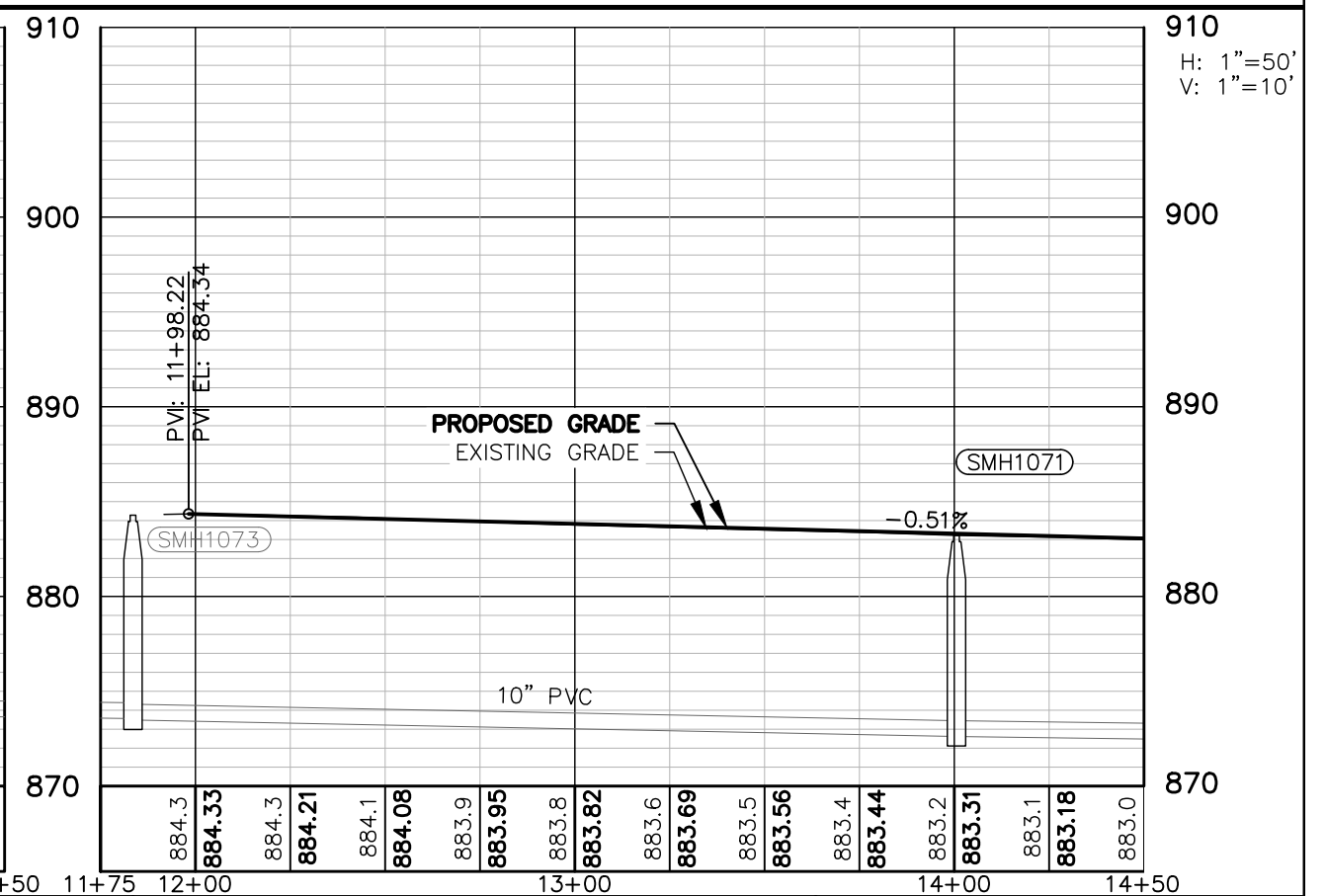
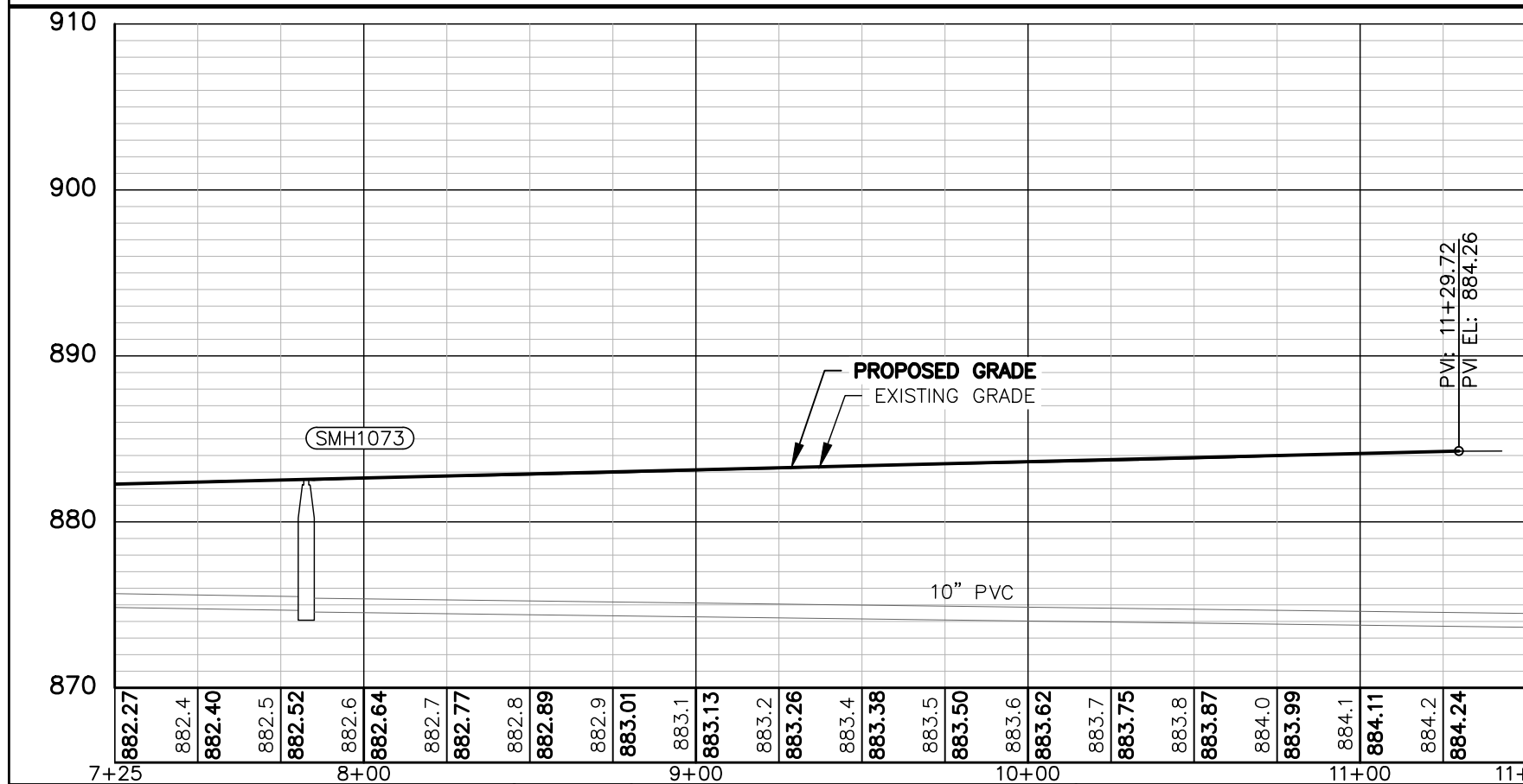
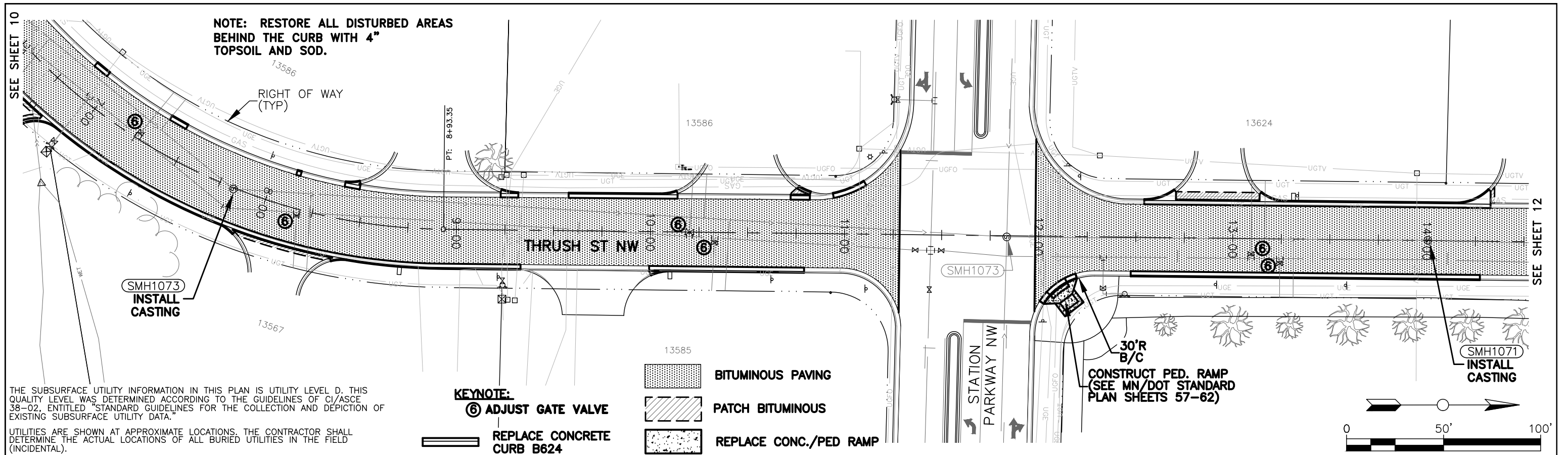
DAVID D. BERKOWITZ
TYPED OR PRINTED NAME



2025 FULL DEPTH RECLAMATION-
THRUSH ST NW/135TH LN NW (CROSSTOWN
BLVD NW TO BUNKER LAKE BLVD NW)
CITY PROJECT 25-11D, SAP 198-150-001

REMOVALS & UTILITIES
14+50 TO 17+95

SHEET NO. 9 OF 62 SHEETS



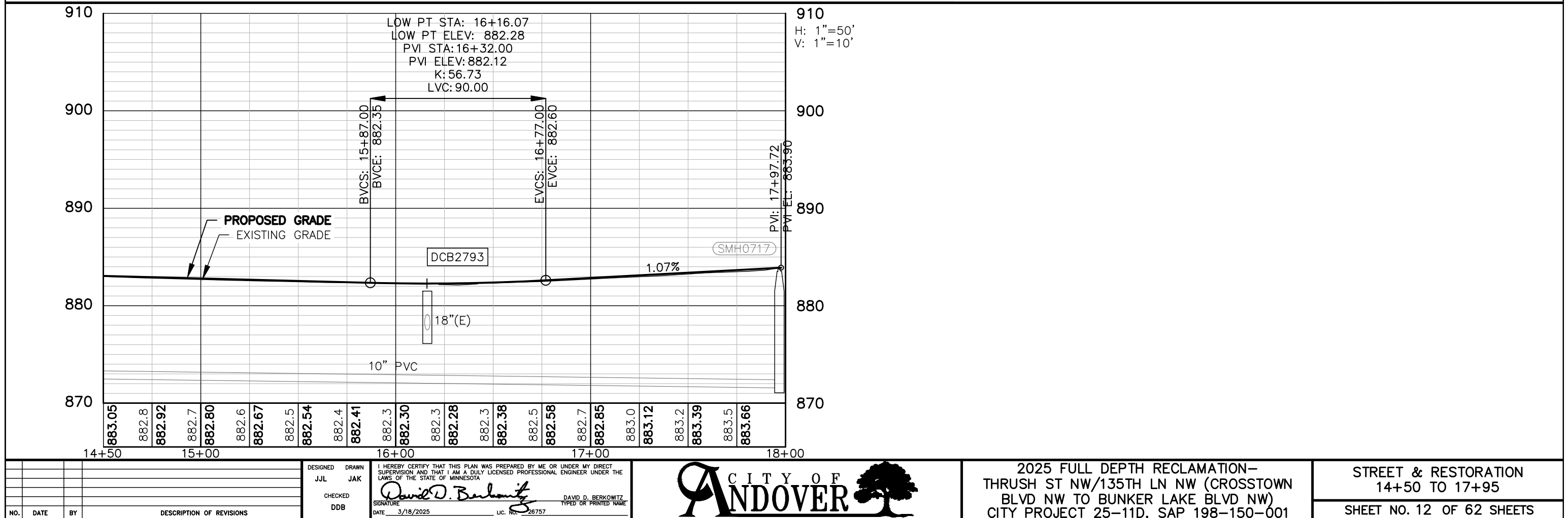
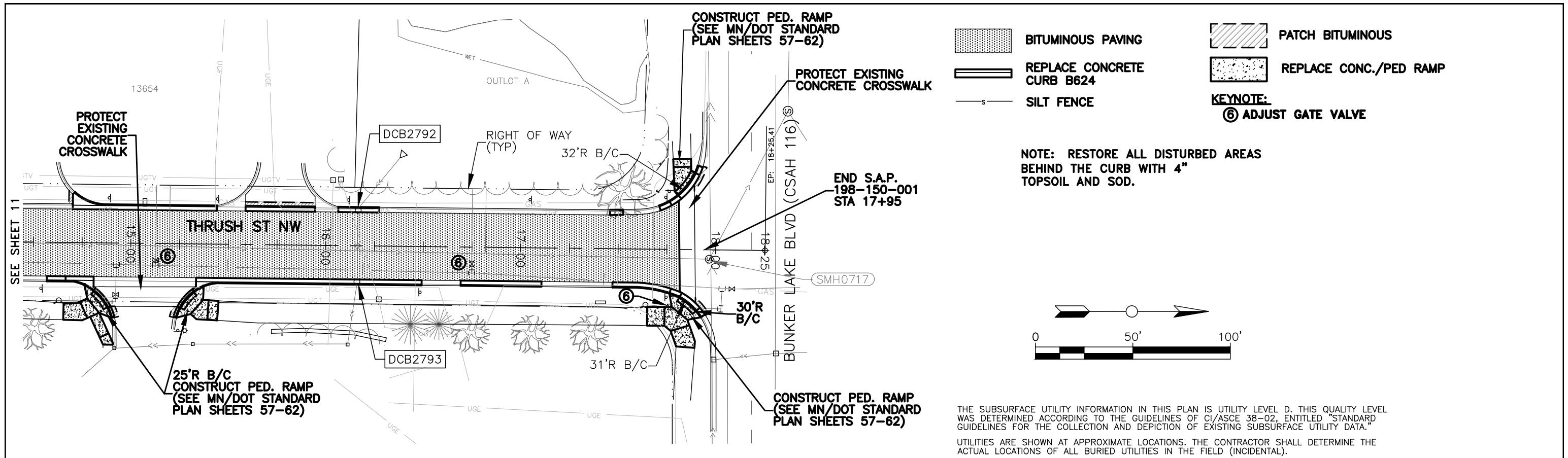
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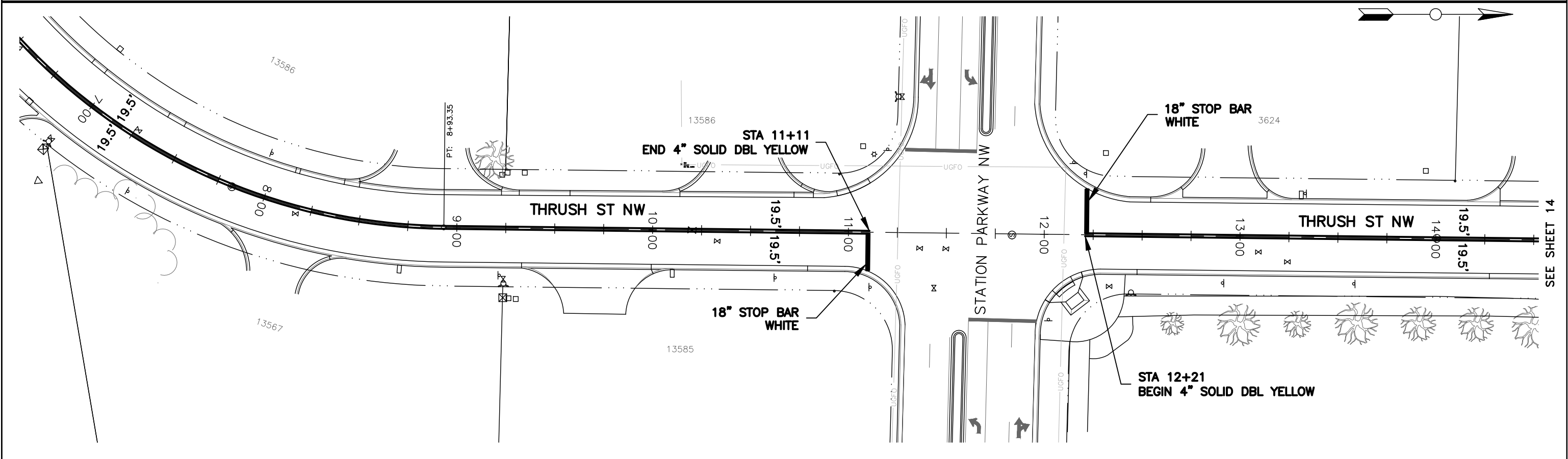
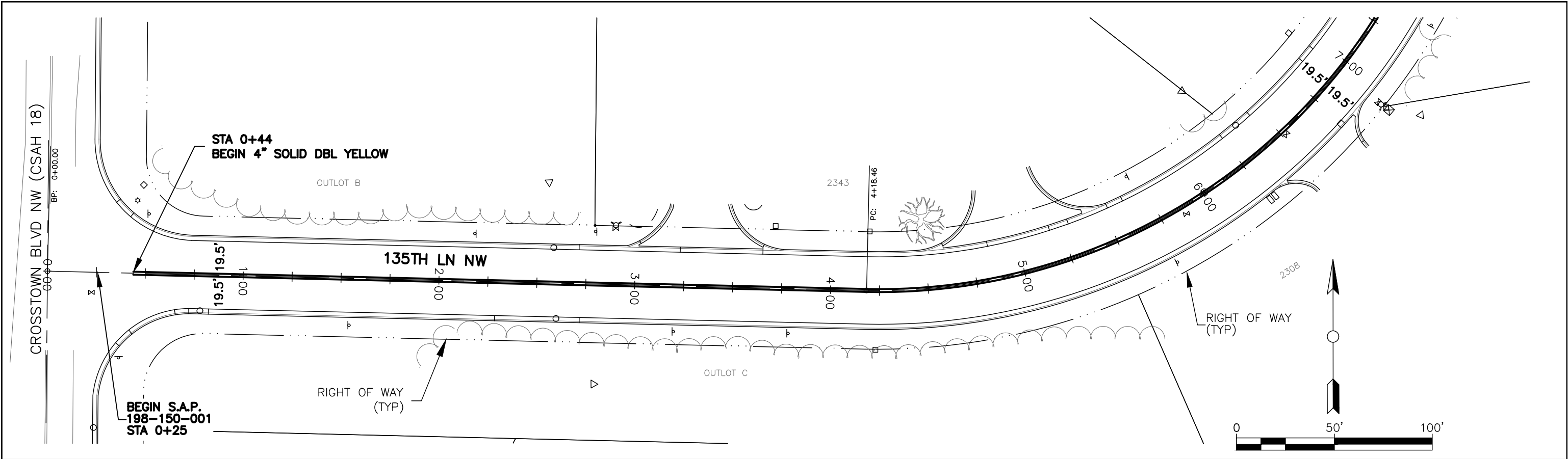
DESIGNED JJL	DRAWN JAK
CHECKED DDB	DATE 3/18/2025
I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA <i>David D. Berkowitz</i> DAVID D. BERKOWITZ TYPED OR PRINTED NAME LIC. NO. 26757	



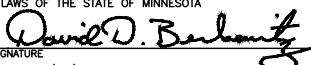
2025 FULL DEPTH RECLAMATION-
THRUSH ST NW/135TH LN NW (CROSSTOWN
BLVD NW TO BUNKER LAKE BLVD NW)
CITY PROJECT 25-11D, SAP 198-150-001

STREET & RESTORATION
7+25 TO 14+50
SHEET NO. 11 OF 62 SHEETS





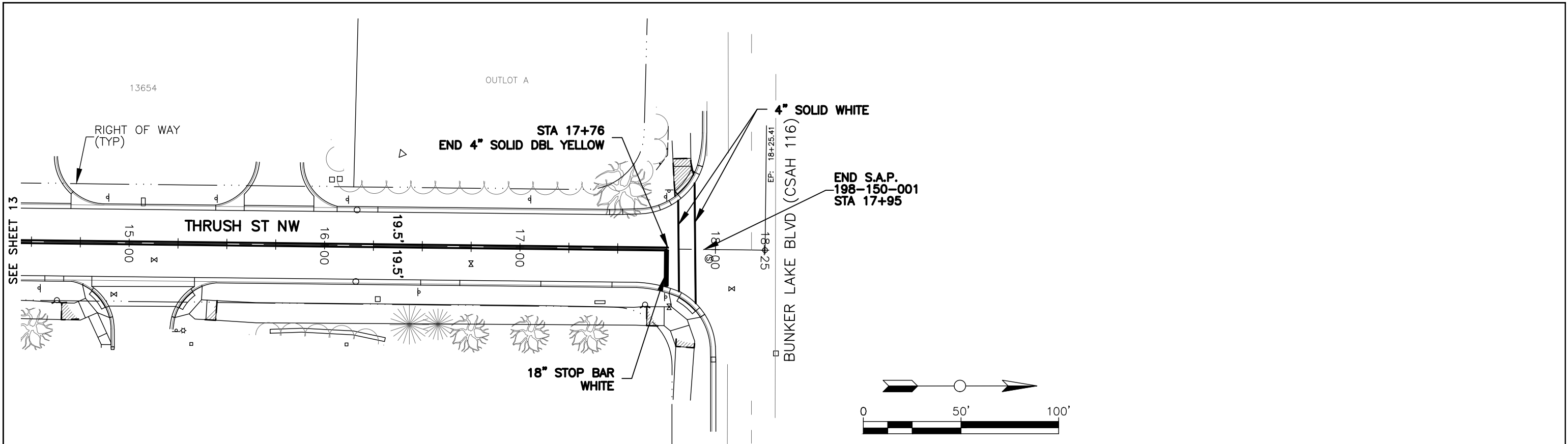
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DAVID D. BERKOWITZ TYPED OR PRINTED NAME	



2025 FULL DEPTH RECLAMATION—
THRUSH ST NW/135TH LN NW (CROSSTOWN
BLVD NW TO BUNKER LAKE BLVD NW)
CITY PROJECT 25-11D, SAP 198-150-001

STRIPING 0+25 TO 14+50
SHEET NO. 13 OF 62 SHEETS



NO.	DATE	BY	DESCRIPTION OF REVISIONS

DESIGNED
JJL

DRAWN
JAK

CHECKED
DDB

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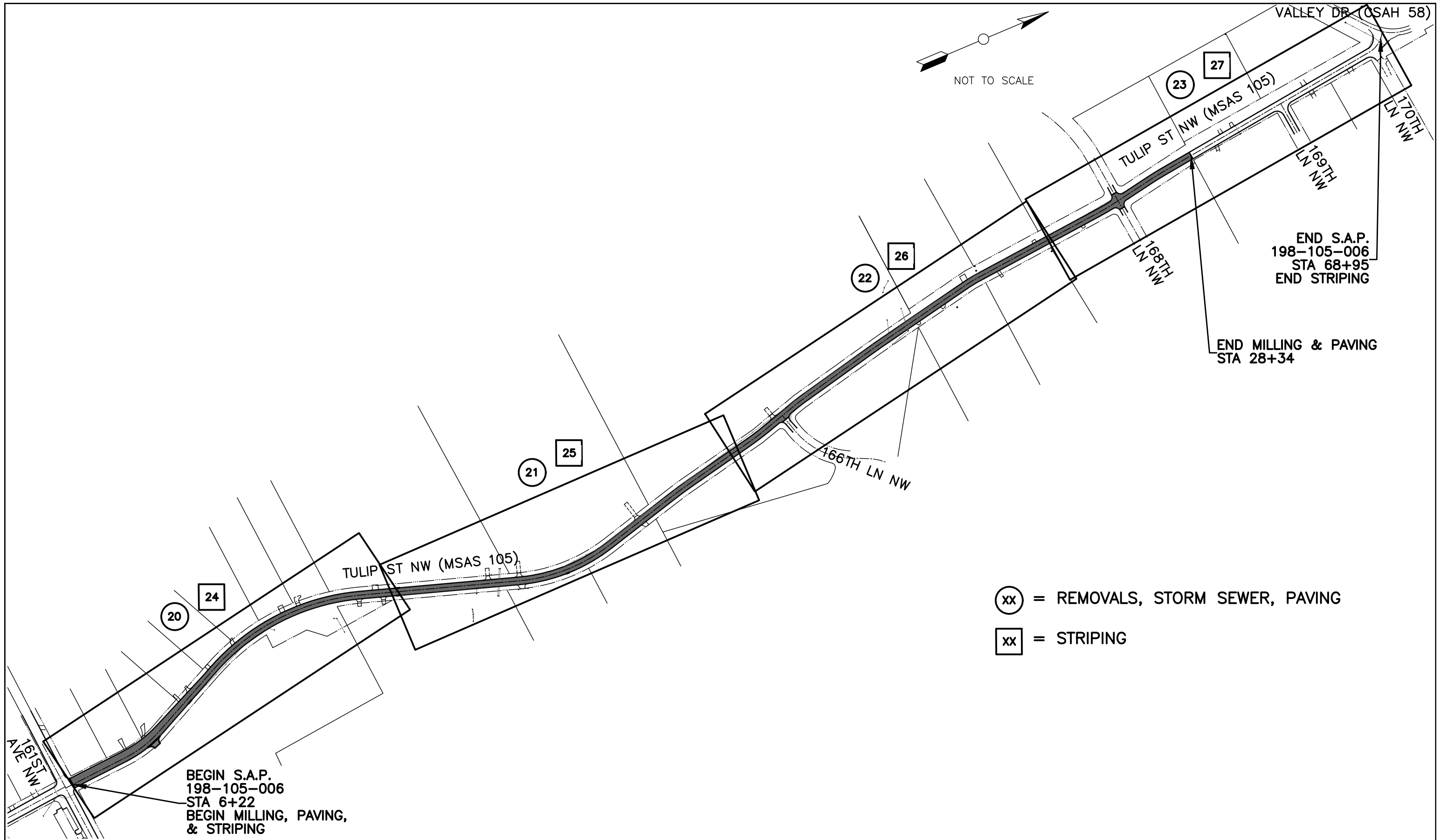
DAVID D. BERKOWITZ
TYPED OR PRINTED NAME

DATE: 3/18/2025

LIC. NO.: 26757



2025 FULL DEPTH RECLAMATION—
THRUSH ST NW/135TH LN NW (CROSSTOWN
BLVD NW TO BUNKER LAKE BLVD NW)
CITY PROJECT 25-11D, SAP 198-150-001



NO.	DATE	BY	DESCRIPTION OF REVISIONS

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David D. Berkowitz
SIGNATURE
DATE: 3/18/2025 LIC. NO. 26757

DAVID D. BERKOWITZ
TYPED OR PRINTED NAME



2025 MILL & OVERLAY-
TULIP ST NW (161ST AVE NW TO 168TH LN NW)
CITY PROJECT 25-12A
SAP 198-105-006

PROJECT LAYOUT
SHEET NO. 15 OF 62 SHEETS

STATEMENT OF ESTIMATED QUANTITIES

2025 MILL & OVERLAY - (C.P. 25-12A, SAP 198-105-006) Tulip Street: 161st Ave to Valley Drive					TOTAL QUANTITIES		SAP 198-105-006			
							STREETS (PARTICIPATING)		STORM SEWER (PARTICIPATING)	
NOTES	ITEM NO.		DESCRIPTION	UNIT	EST. QUAN.	ACTUAL QUAN.	EST. QUAN.	ACTUAL QUAN.	EST. QUAN.	ACTUAL QUAN.
	1	2021.501	Mobilization	LS	1.00		0.93		0.07	
1	2	2104.502	Salvage Casting	EA	3		3			
2	3	2104.503	Remove Curb & Gutter	LF	180		180			
3	4	2104.503	Sawing Bit Pavement (Full Depth)	LF	320		320			
3	5	2104.518	Remove Concrete Pavement	SF	800		800			
3	6	2104.518	Remove Bituminous Pavement	SF	850		850			
	7	2232.504	Mill Bituminous Surface (1.5")	SY	17,900		17,900			
	8	2357.506	Bituminous Material For Tack Coat	Gal	1,260		1,260			
	9	2360.509	Type SP 9.5 Wearing Course Mix (3,B)	TN	2,050		2,050			
4	10	2360.509	Type SP 9.5 Bit Mixture for Patching (3,B)	TN	20		20			
5	11	2504.602	Irrigation System Modifications	EA	10		10			
6,7	12	2506.502	Casting Assembly	EA	1				1	
6	13	2506.502	Install Casting	EA	3				3	
8	14	2506.602	Mud Existing Casting Rings	EA	31				31	
9	15	2506.602	Mud Doghouse	EA	1				1	
10	16	2506.607	Fill Catch Basin Sump-Pour Invert	CY	20				20	
	17	2531.503	Concrete Curb and Gutter B618	LF	260		260			
	18	2531.602	Saw and Seal Concrete Curb & Gutter	EA	60		60			
	19	2563.601	Traffic Control	LS	1.00		0.93		0.07	
	20	2573.502	Storm Drain Inlet Protection	EA	3		3			
	21	2574.507	Loam Topsoil Borrow (LV)	CY	50		50			
	22	2574.508	Fertilizer Type 1	LB	20		20			
11	23	2575.504	Rolled Erosion Prevention Category 20	SY	220		220			
12	24	2575.505	Weed Spraying	ACRE	0.10		0.10			
	25	2575.505	Seeding	ACRE	0.10		0.10			
	26	2575.508	Seed Mixture 25-151	LB	20		20			
	27	2582.503	4" Solid Line Paint - White	LF	12,300		12,300			
	28	2582.503	18" Solid Line Paint - White	LF	30		30			
	29	2582.503	4" Double Solid Line Paint - Yellow	LF	6,700		6,700			
	30	2582.518	Pavement Message Paint	SF	410		410			

C.P. 25-12A Notes:

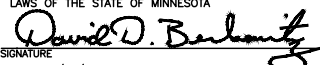
1. Includes plating structure if necessary.
2. Regardless of type/dimension of curb. Includes sawcut of curb. Excavation and off-site disposal of material behind curb necessary for removal and replacement of curb and gutter incidental to this item.
3. Regardless of depth.
4. For patching adjacent to curb replacement, utility replacements, trails and driveway aprons.
5. Based upon number or 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.
6. Includes new concrete adjusting rings regardless of depth, Infi-Shield Gator Wrap (manholes), or wrap rings with geotextile fabric and concrete collar (catch basins).
7. For use if salvaged casting breaks or is unuseable or new casting required per plans.
8. Protect casting, touch up mud on existing concrete adjustment rings inside structure.
9. Item shall include regrouting all doghouses within structure. The "Each" item refers to each structure regardless of the number of doghouses in the structure.
10. Item shall include filling sump with redi-mix , pouring invert, and constructing benches up to 1/3 of pipe diameter. Includes regrouting doghouses as necessary.
11. Straw or wood fiber blanket is an acceptable alternative. Netting material shall be jute netting.
12. Only to be used if requested by engineer prior to or during site restoration.

The following standard plates approved by the Federal Highway Administration shall apply on this project.	
STANDARD PLATES	
Plate No.	Description
7100H	Concrete Curb and Gutter
8000K	Temporary Channelizers

BASIS OF ESTIMATED QUANTITIES		
Bituminous Wear Course	120	# / SY / inch
Bit. Non-Wear Course	120	# / SY / inch
Aggregate Base, Class 5	110	# / SY / inch
Tack Coat	0.07	Gal / SY
Hydraulic Mulch Matrix	2500	# / acre
Fertilizer Type 1 (Analysis 20-10-10)	200	# / acre
Seed Mixture 25-151	200	# / acre

NO.	DATE	BY	DESCRIPTION OF REVISIONS

DESIGNED JJL	DRAWN JAK
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
SIGNATURE	TYPED OR PRINTED NAME
DATE 3/18/2025	LIC. NO. 26757



2025 MILL & OVERLAY–
TULIP ST NW (161ST AVE NW TO 168TH LN NW)
CITY PROJECT 25–12A
SAP 198–105–006

STATEMENT OF ESTIMATED QUANTITIES
SHEET NO. 16 OF 62 SHEETS

GENERAL NOTES:

THE 2025 EDITION OF THE MINNESOTA DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR CONSTRUCTION" SHALL GOVERN. CITY OF ANDOVER 2025 UTILITY AND STREET CONSTRUCTION SPECIFICATIONS SHALL APPLY.

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."

ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO AND BE INSTALLED IN ACCORDANCE WITH THE "MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MMUTCD)" AND THE "TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS FIELD MANUAL", NEWEST ADDITIONS.

CONSTRUCTION SHALL BE STAGED SUCH THAT TRAFFIC IS MAINTAINED AT ALL TIMES. CONTRACTOR SHALL USE FLAG PERSON, IF NEEDED (INCIDENTAL TO TRAFFIC CONTROL).

ROAD WORK AHEAD SIGNS SHALL BE MAINTAINED AT ALL INTERSECTING ROADS TO THE PROJECT. TYPE B CHANNELIZERS SHALL BE USED IN ALL NECESSARY LOCATIONS. TRAIL CLOSED SIGNS ON TYPE III BARRICADES SHALL BE PLACED AT ALL LOCATIONS IMPACTED BY PEDESTRIAN RAMP/SIDEWALK/TRAIL IMPROVEMENTS.

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. (651-454-2000)

CONSTRUCTION NOTES:

THE CONTRACTOR SHALL INSTALL INLET PROTECTION DEVICES ON ALL STORM SEWER STRUCTURES. PRIOR TO PLACING CASTINGS ON STORM SEWER STRUCTURES, THE CONTRACTOR SHALL FOLLOW THE STANDARD DETAIL IN THE PLANS TO ALLOW FOR INFLOW INTO THE STORM SEWERS. ONCE CASTINGS ARE INSTALLED ON STORM SEWER STRUCTURES, THE CONTRACTOR SHALL INSTALL INLET PROTECTION DEVICES IN ALL STRUCTURES SUCH THAT SEDIMENT IS CAPTURED WITH A HIGH FLOW BYPASS. CLEAN AS NECESSARY. ALL EROSION CONTROL DEVICES SHALL BE MAINTAINED ACCORDING TO THE MPCA BEST MANAGEMENT PRACTICES MANUAL, SWPPP, AND THE MINNESOTA STORM WATER MANUAL. THE CONTRACTOR SHALL REMOVE ALL EROSION CONTROL DEVICES ONCE VEGETATION HAS BEEN ESTABLISHED.

COMPACTION OF ALL BITUMINOUS MIXTURE SHALL BE BY THE "SPECIFIED DENSITY METHOD" EXCEPT FOR PATCHES AND TRAILS, WHICH SHALL BE BY THE "ORDINARY COMPACTION METHOD".

ALL DISTURBED AREAS SHALL BE BACKFILLED WITH SALVAGED TOPSOIL, IF ANY. DISTURBED AREAS SHALL BE RESTORED WITH 4" TOPSOIL (MINIMUM), SEED, FERTILIZER, AND EROSION CONTROL BLANKET CATEGORY 20. ALL RESTORATION SHALL OCCUR WITHIN 7 DAYS OF GRADING COMPLETION. RESTORATION WORK SHALL BE COMPLETED BEFORE PAVING OF THE WEARING COURSE.

ALL EXISTING SIGNS SHALL BE REMOVED AND REPLACED BY THE ANDOVER SIGN DEPARTMENT UNLESS CALLED OUT OTHERWISE IN THE PLANS. COORDINATE WITH MINIMUM 48 HOUR NOTICE WITH ENGINEER IN FIELD.

BOULEVARD IRRIGATION SYSTEMS SHALL BE PROTECTED. SALVAGE AND/OR REPLACEMENT OF ANY EXISTING HEADS SHALL ONLY BE PAID FOR IF REMOVAL IS ABSOLUTELY NECESSARY. ANY REPAIR WORK SHALL BE COMPLETED BY AN IRRIGATION CONTRACTOR LICENSED WITH THE CITY. COORDINATE NOTIFICATION OF SYSTEM OWNERS WITH CITY INSPECTOR PRIOR TO IMPACTING SYSTEMS.

CONCRETE WASHOUT SHALL BE CONTAINED WITHIN CONCRETE TRUCKS, NOT ON-SITE.

CONTRACTOR SHALL SWEEP ALL MATERIAL OFF ADJACENT STREETS DUE TO CONSTRUCTION ACTIVITY, DAILY AS NECESSARY (INCIDENTAL).

SOIL STOCKPILES SHALL BE STABILIZED WITHIN 7 DAYS OF ROUGH GRADING OR INACTIVITY (INCIDENTAL).

CONTRACTOR IS REQUIRED TO REPAIR AND MAINTAIN ALL TEMPORARY AND PERMANENT EROSION AND SEDIMENT CONTROL PRACTICES (INCIDENTAL).

CONTRACTOR SHALL REMOVE ALL TEMPORARY SEDIMENT CONTROL PRACTICES ONCE VEGETATION IS RE-ESTABLISHED (INCIDENTAL).

REFER TO SWPPP IN PROJECT SPECIFICATION FOR ADDITIONAL CONSTRUCTION/EROSION CONTROL REQUIREMENTS.

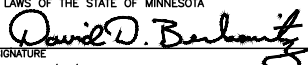
EARTHWORK NOTES:

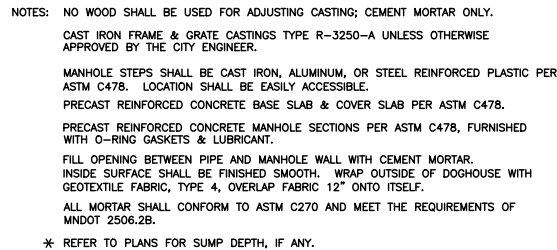
THE CONTRACTOR SHALL STRIP AND STOCKPILE EXISTING TOPSOIL MATERIAL, IF ANY, FOR RE-USE (LITTLE IS EXPECTED). RE-USED TOPSOIL SHALL BE CLEAN WITH NO SOD CHUNKS / EXISTING VEGETATION. TOPSOIL STRIPING, IF ANY, SHALL BE CONSIDERED INCIDENTAL.

SELECT EXCAVATED MATERIALS SHALL BE UTILIZED TO THE FULLEST EXTENT WITHIN THE PROJECT LIMITS. MATERIAL FOR BACKFILL BEHIND THE CURB SHALL BE FREE OF DEBRIS. EXCESS MATERIAL GENERATED, IF ANY, SHALL BE DISPOSED OF OFF-SITE BY THE CONTRACTOR IN ACCORDANCE WITH MNDOT 2104.3C3.

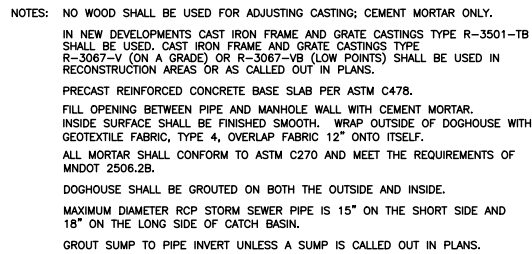
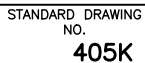
WHEN CONNECTING NEW PAVED SURFACING TO ANY IN-PLACE PAVEMENTS, CUT VERTICALLY TO THE BOTTOM OF THE IN-PLACE PAVEMENTS OR TO THE BOTTOM OF THE NEW SURFACING, WHICHEVER IS DEEPER, THEN AT 2(V):1(H) SLOPE TO THE TOP OF THE SUBGRADE.

EXCAVATION AND DISPOSAL OF SOIL/TURF MATERIAL SHALL BE INCIDENTAL TO REMOVAL PAY ITEMS UNLESS OTHERWISE NOTED. CONTRACTOR SHALL MINIMIZE EXCAVATION AND DISTURBANCE ALONG THE PROJECT CORRIDOR. EXCAVATED MATERIAL CAN BE USED FOR BACKFILLING PROVIDED IT IS FREE OF SOD CHUNKS AND/OR DEBRIS. EXCESS MATERIAL SHALL BE DISPOSED OF OFF-SITE.

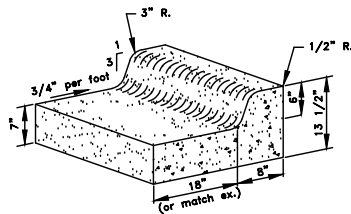
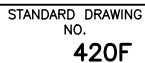
				DESIGNED JJL	DRAWN JAK	I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA  SIGNATURE DATE 3/18/2025 LIC. NO. 26757 DAVID D. BERKOWITZ TYPED OR PRINTED NAME		2025 MILL & OVERLAY- TULIP ST NW (161ST AVE NW TO 168TH LN NW) CITY PROJECT 25-12A SAP 198-105-006	CONSTRUCTION NOTES	
				CHECKED DDB						
NO.	DATE	BY	DESCRIPTION OF REVISIONS							



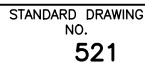
1/10/20



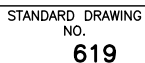
2/22/16



12/21/2020



2/19/09



* OR APPROVED EQUAL *

Notes 1). When installing casting, 6" and 1' rings shall be used so that there are no more than 5 rings per casting.
2) Mudding of doghouses incidental to filling CB sump.

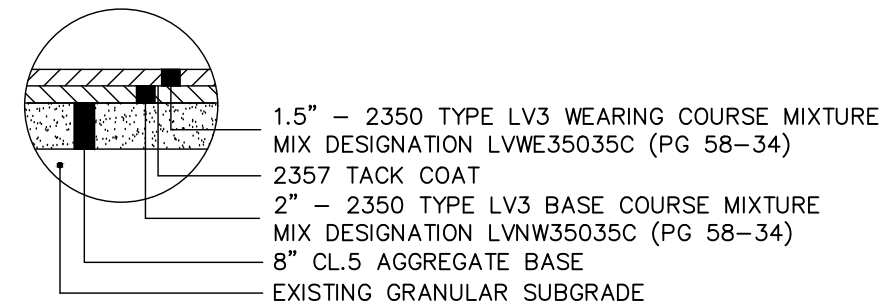
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David D. Berkowitz

SIGNATURE _____ DAVID D. BERKOWITZ
DATE 3/18/2025 LIC. NO. 26757 TYPED OR PRINTED NAME



SHEET NO. 18 OF 62 SHEETS

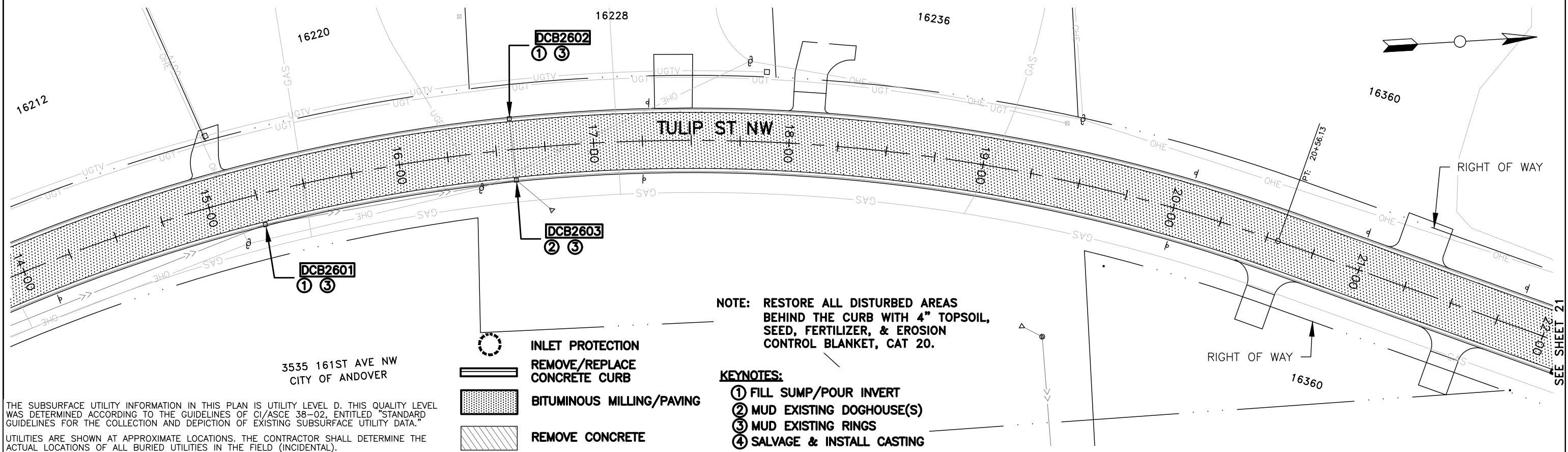
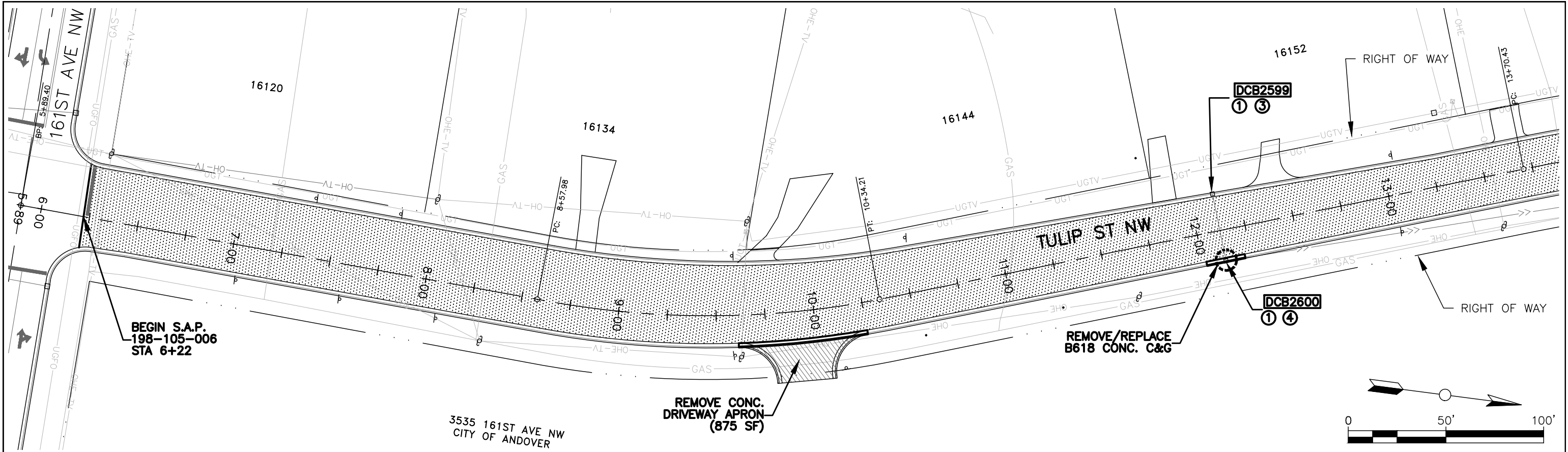


INSET 1 – EXISTING



INSET 2 – PROPOSED

TYPICAL SECTIONS
SHEET NO. 19 OF 62 SHEETS



NO.	DATE	BY	DESCRIPTION OF REVISIONS

DESIGNED
JJL

DRAWN
JAK

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
TYPED OR PRINTED NAME

SIGNATURE

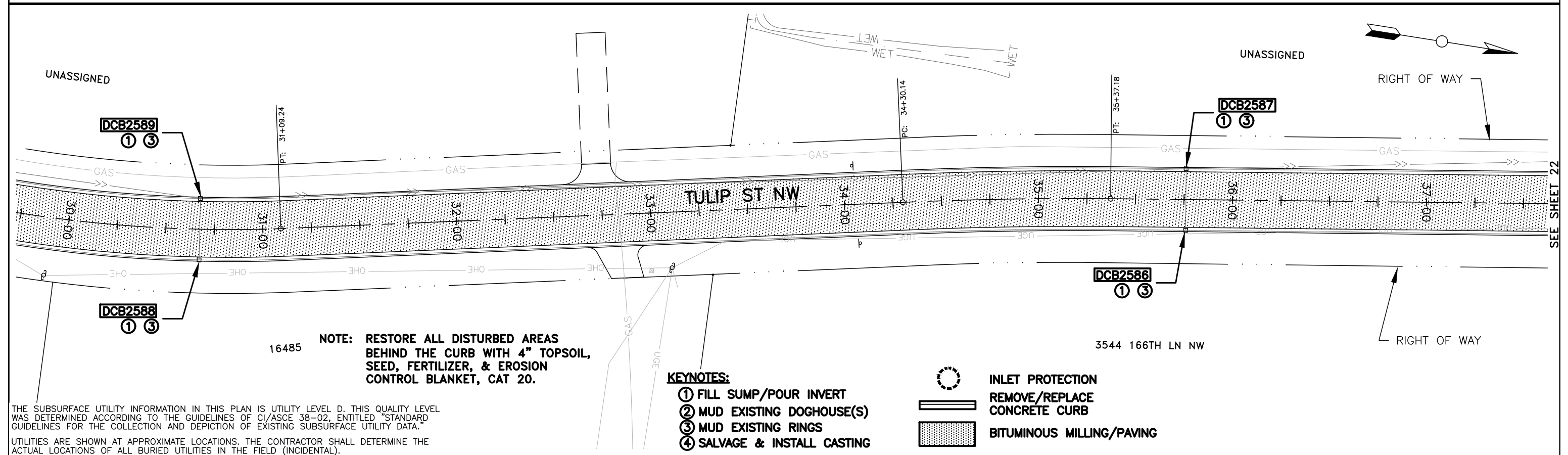
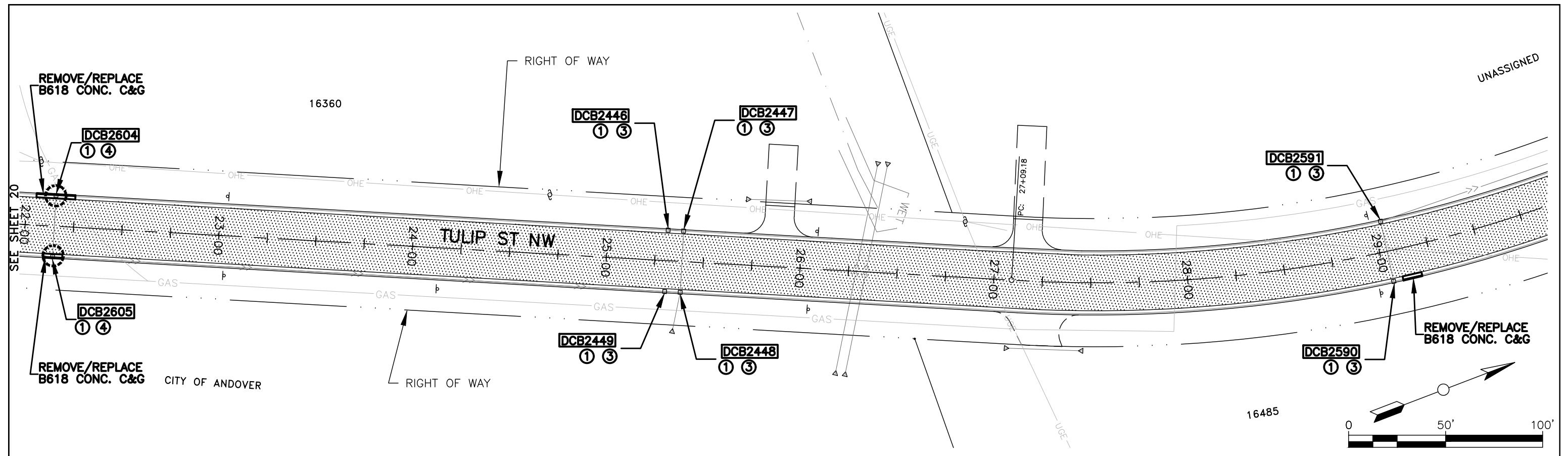
DATE 3/18/2025

LIC. NO. 26757

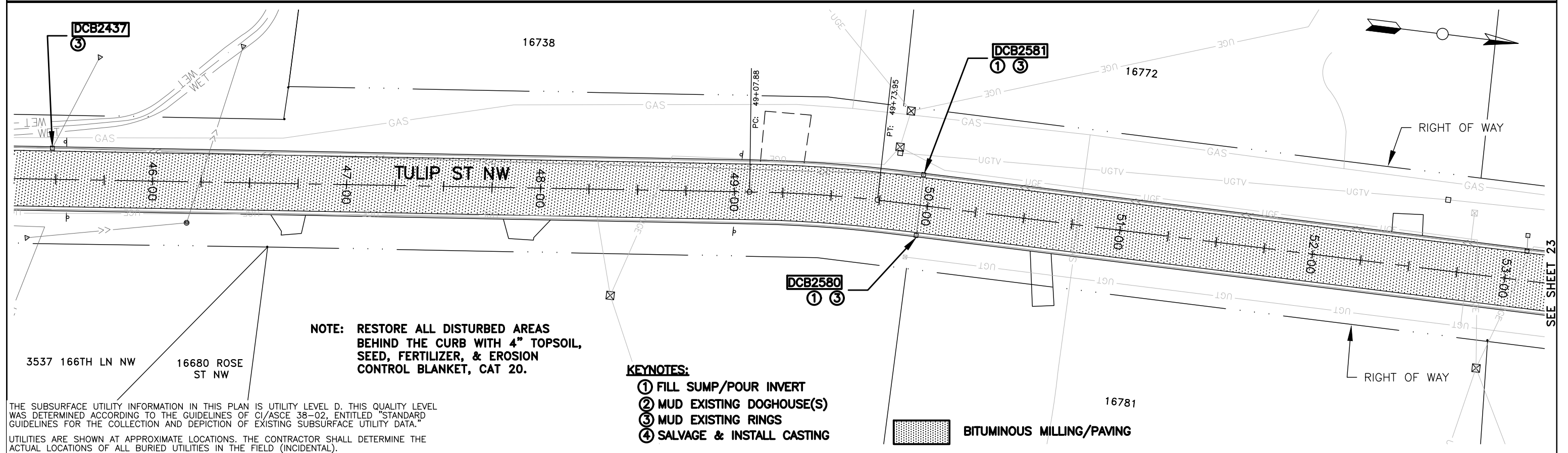
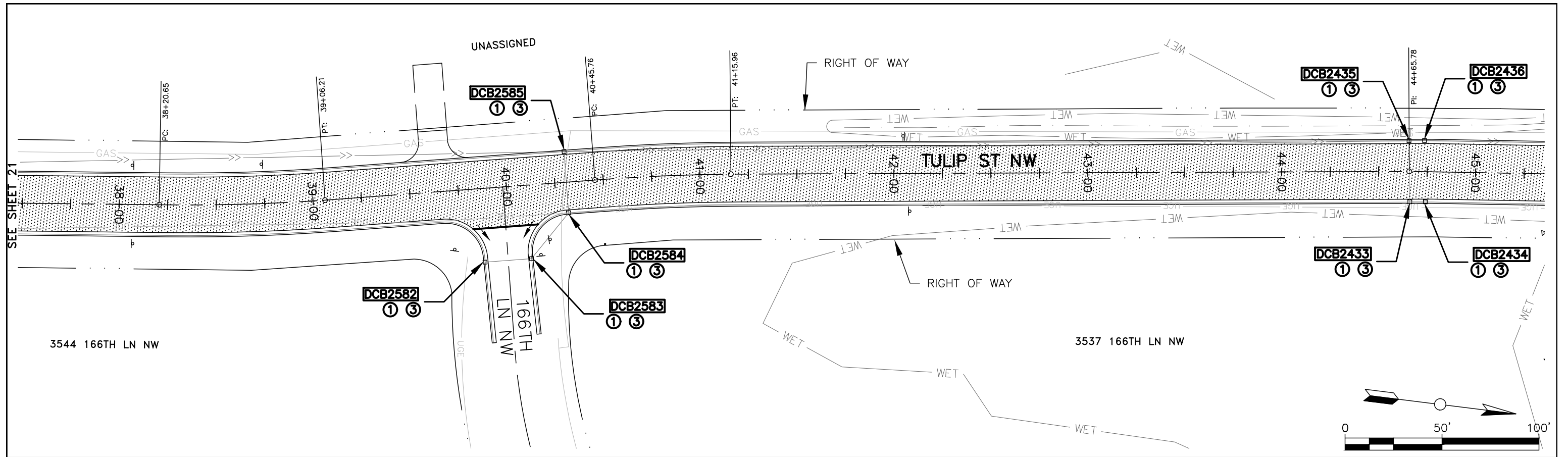


2025 MILL & OVERLAY-
TULIP ST NW (161ST AVE NW TO 168TH LN NW)
CITY PROJECT 25-12A
SAP 198-105-006

REMOVALS, STORM SEWER, & PAVING
6+22 TO 22+00
SHEET NO. 20 OF 62 SHEETS



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NO.	DATE	BY	DESCRIPTION OF REVISIONS

DESIGNED JJL	DRAWN JAK
CHECKED DDB	

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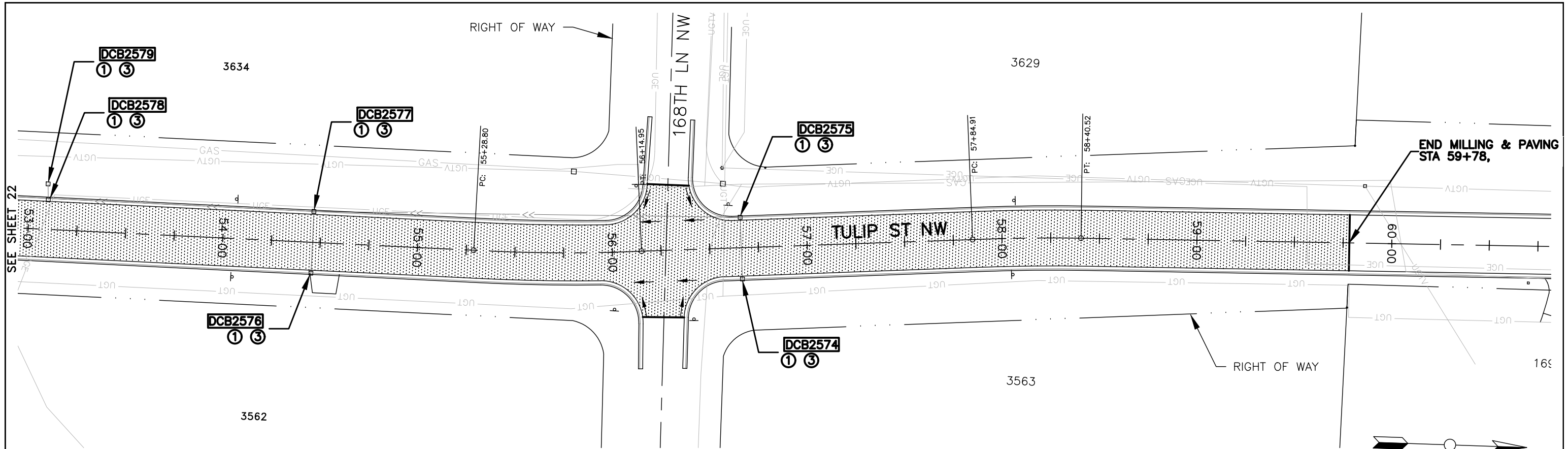
David D. Berkowitz
 DAVID D. BERKOWITZ
 TYPED OR PRINTED NAME

SIGNATURE DATE: 3/18/2025 LIC. NO.: 26757



2025 MILL & OVERLAY—
TULIP ST NW (161ST AVE NW TO 168TH LN NW)
CITY PROJECT 25-12A
SAP 198-105-006

REMOVALS, STORM SEWER, & PAVING
37+50 TO 53+00
SHEET NO. 22 OF 62 SHEETS



NOTE: RESTORE ALL DISTURBED AREAS
BEHIND THE CURB WITH 4" TOPSOIL,
SEED, FERTILIZER, & EROSION
CONTROL BLANKET, CAT 20.

KEYNOTES:

- ① FILL SUMP/POUR INVERT
- ② MUD EXISTING DOGHOUSE(S)
- ③ MUD EXISTING RINGS
- ④ SALVAGE & INSTALL CASTING



BITUMINOUS MILLING/PAVING

THE SUBSURFACE UTILITY INFORMATION IN THIS PLAN IS UTILITY LEVEL D. THIS 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."

UTILITIES ARE SHOWN AT APPROXIMATE LOCATIONS. THE CONTRACTOR SHALL DETERMINE THE
ACTUAL LOCATIONS OF ALL BURIED UTILITIES IN THE FIELD (INCIDENTAL).

NO.	DATE	BY	DESCRIPTION OF REVISIONS

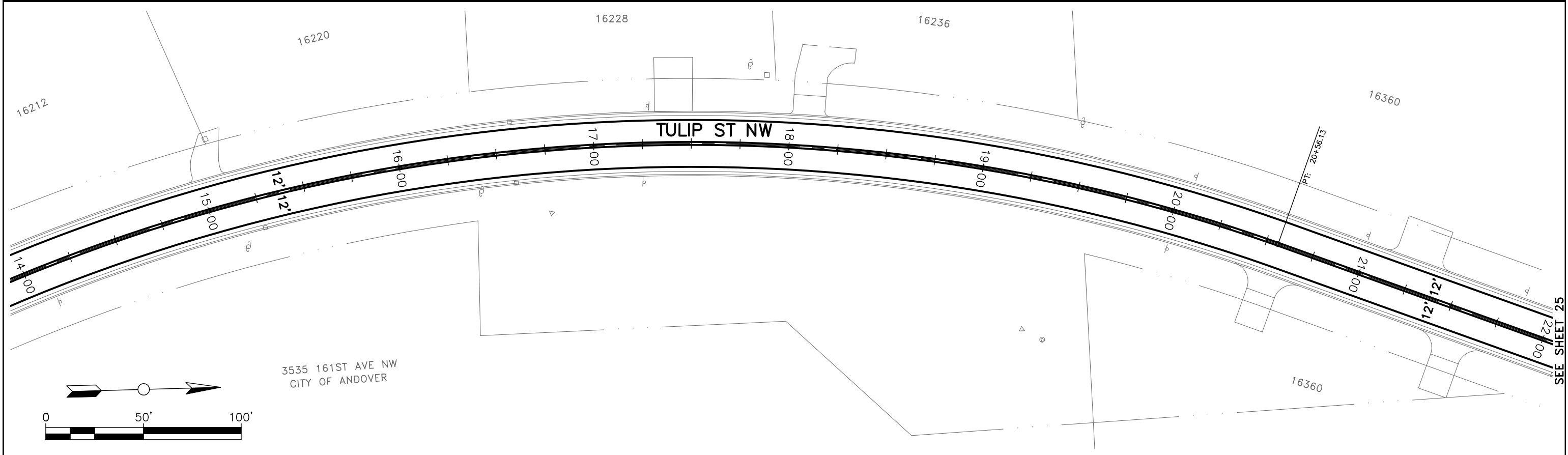
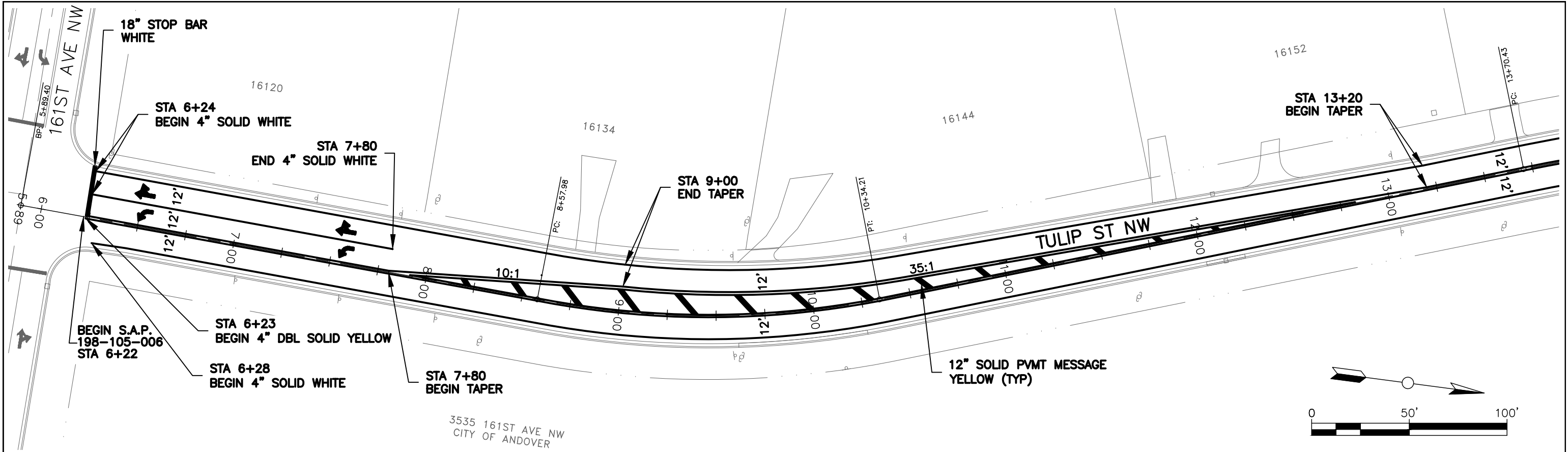
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SIGNATURE <i>David D. Berkowitz</i>	TYPED OR PRINTED NAME DAVID D. BERKOWITZ
DATE 3/18/2025	LIC. NO. 26757



2025 MILL & OVERLAY-
TULIP ST NW (161ST AVE NW TO 168TH LN NW)
CITY PROJECT 25-12A
SAP 198-105-006

REMOVALS, STORM SEWER, & PAVING 53+00 TO 59+78
SHEET NO. 23 OF 62 SHEETS



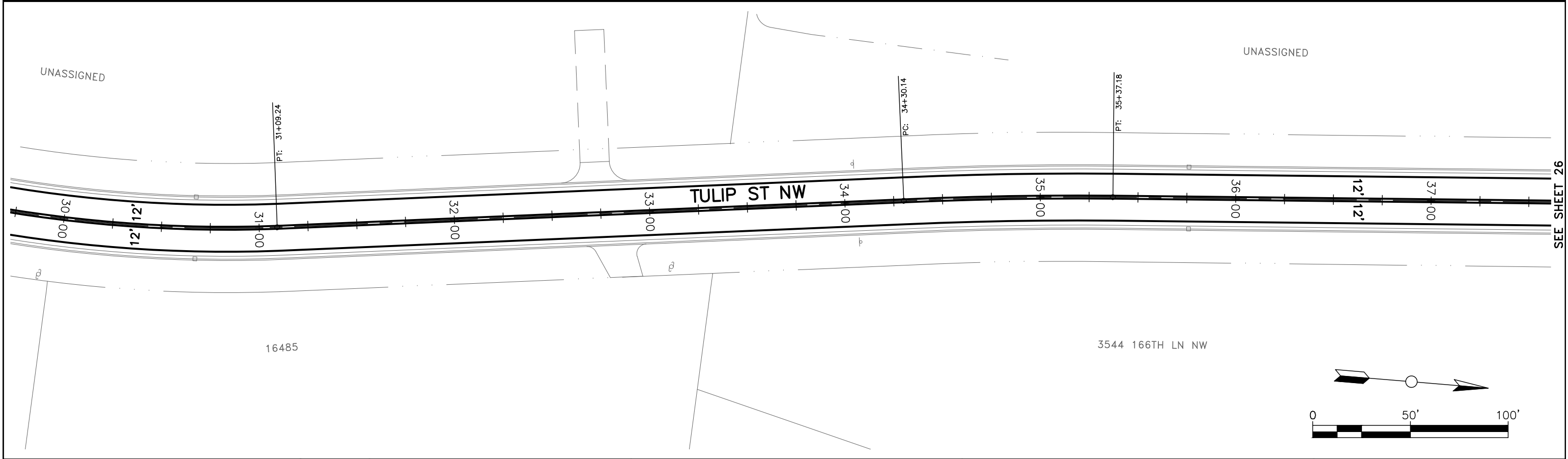
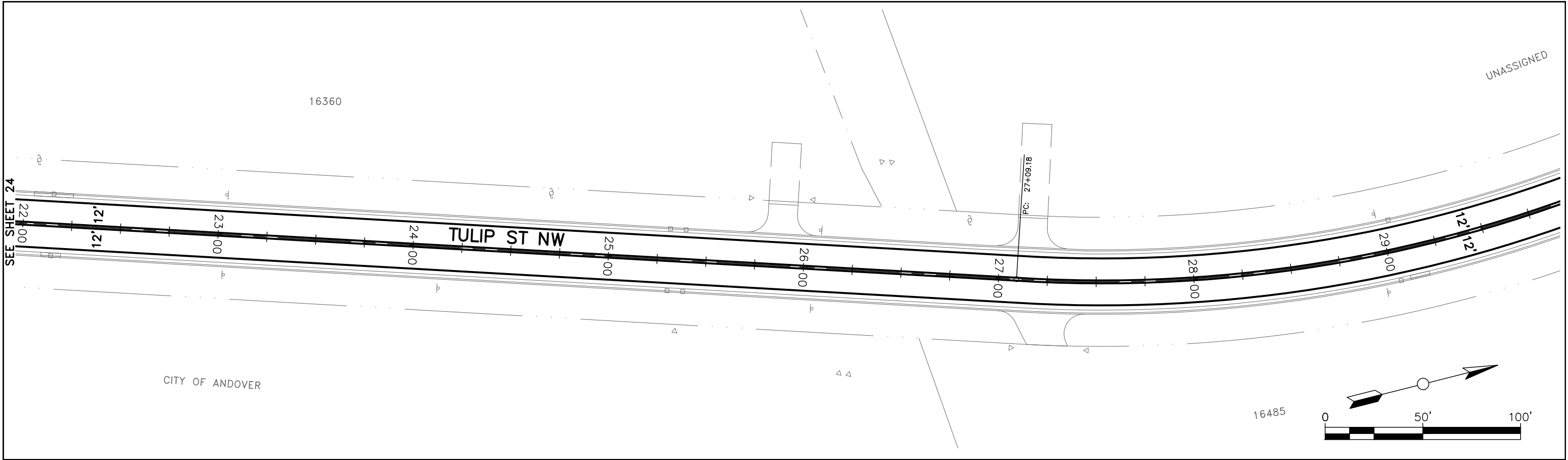
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2025 MILL & OVERLAY—
 TULIP ST NW (161ST AVE NW TO 168TH LN NW)
 CITY PROJECT 25-12A
 SAP 198-105-006

STRIPING
 6+22 TO 22+00
 SHEET NO. 24 OF 62 SHEETS



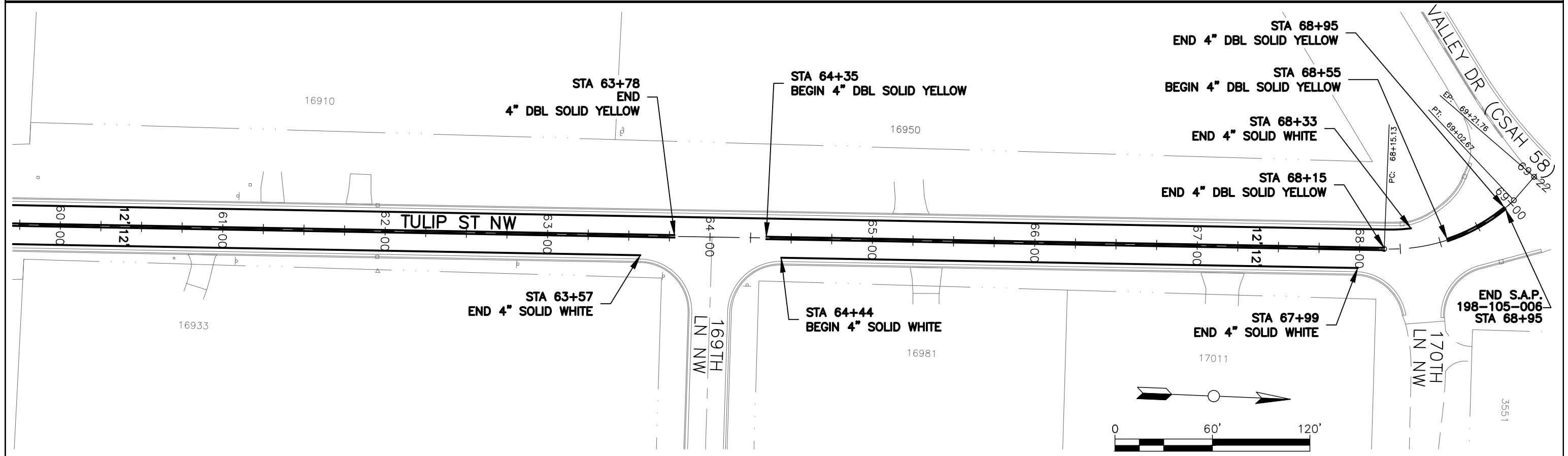
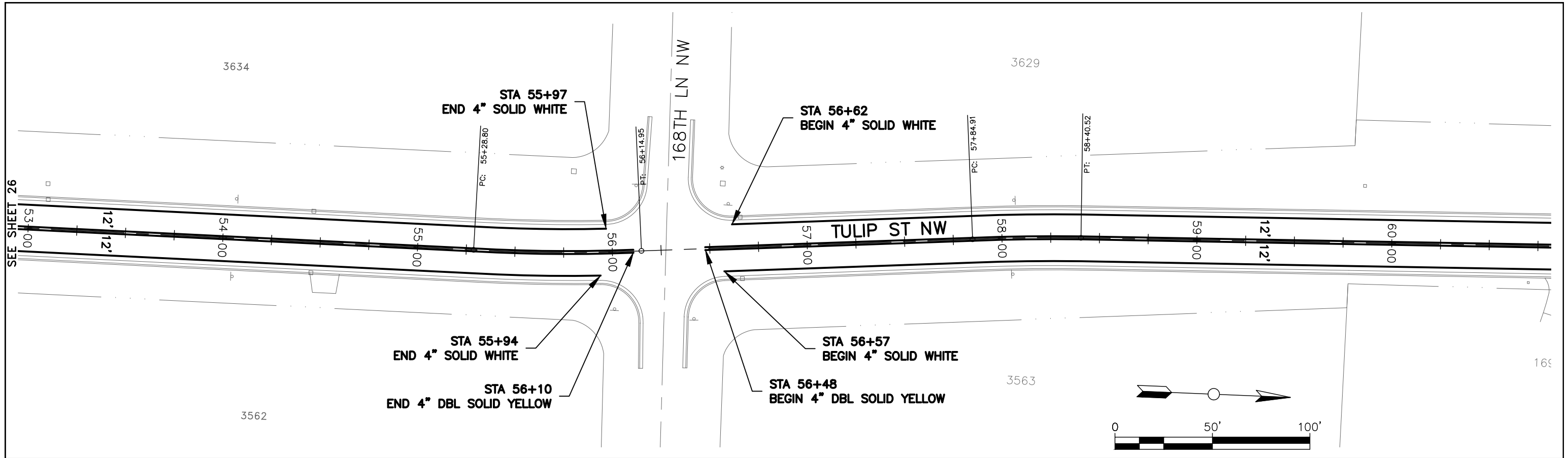
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DESIGNED JJL	DRAWN JAK
CHECKED DDB	SIGNATURE <i>David D. Berkowitz</i> DATE 3/18/2025
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LIC. NO. 26757	



2025 MILL & OVERLAY-
TULIP ST NW (161ST AVE NW TO 168TH LN NW)
CITY PROJECT 25-12A
SAP 198-105-006

STRIPING
22+00 TO 37+50
SHEET NO. 25 OF 62 SHEETS



NO.	DATE	BY	DESCRIPTION OF REVISIONS

DESIGNED
JJL

DRAWN
JAK

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

SIGNATURE

DATE: 3/18/2025 LIC. NO.: 26757

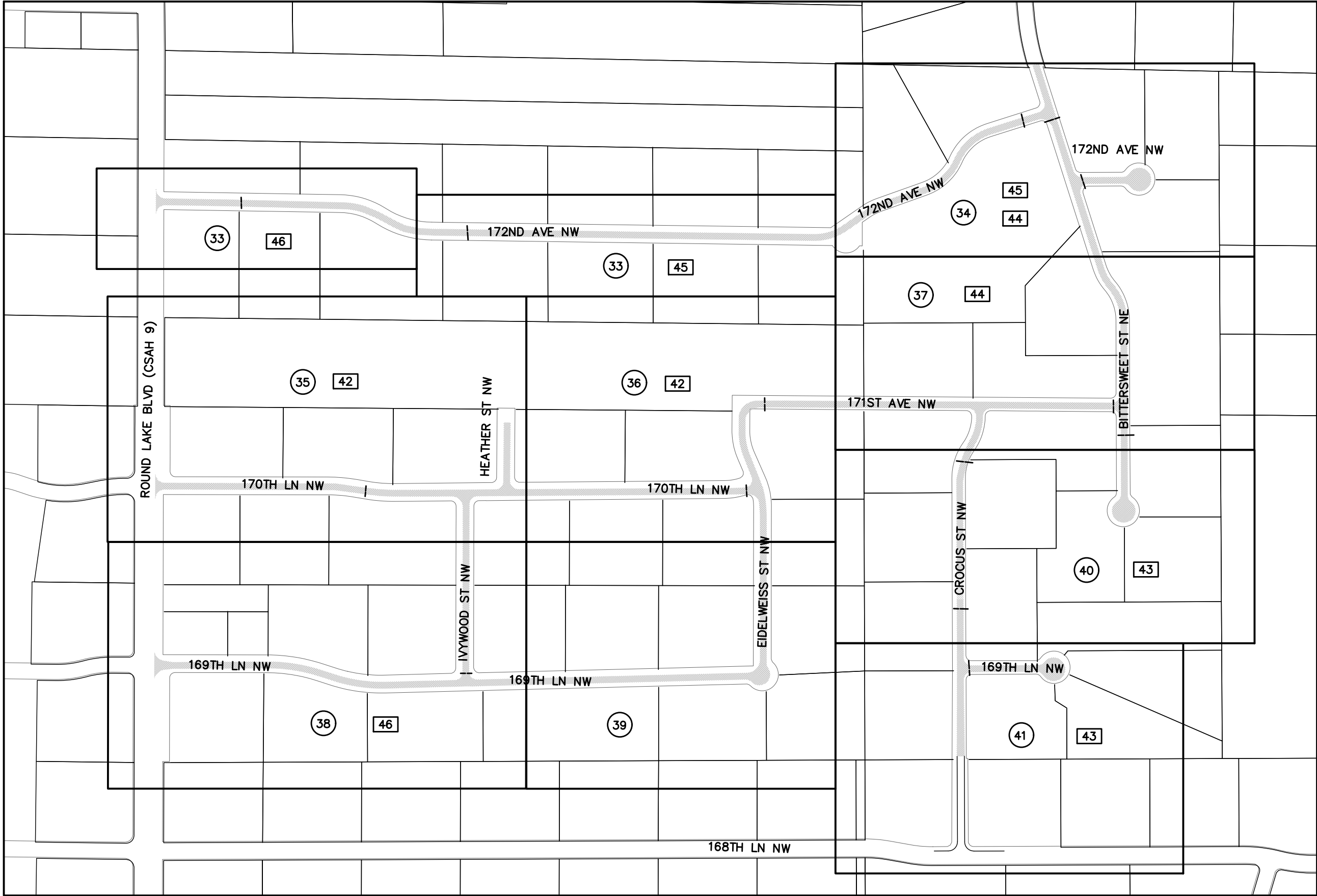
DAVID D. BERKOWITZ
TYPED OR PRINTED NAME



2025 MILL & OVERLAY—
TULIP ST NW (161ST AVE NW TO 168TH LN NW)
CITY PROJECT 25-12A
SAP 198-105-006

STRIPING
53+00 TO 59+78

SHEET NO. 27 OF 62 SHEETS



- (XX) = REMOVALS, STREET PAVING
- [XX] = CULVERT PLAN/PROFILES



NO SCALE

NO.	DATE	BY	DESCRIPTION OF REVISIONS

DESIGNED JJL	DRAWN JBK
CHECKED DDB	

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David D. Berkowitz
SIGNATURE
DATE: MARCH 18, 2025 LIC. NO. 26757

DAVID D. BERKOWITZ
TYPED OR PRINTED NAME



2025 MILL & OVERLAY (C.P. 25-12B)

PROJECT LAYOUT

SHEET NO. 28 OF 62 SHEETS

STATEMENT OF ESTIMATED QUANTITIES

2025 MILL & OVERLAY (C.P. 25-12B) (Kadlec Addition, Oakwoods Estates, White Oaks Country Estates, 172nd Ave)				TOTAL QUANTITIES	
NOTES	ITEM NO.	DESCRIPTION	UNIT	EST. QUAN.	ACT. QUAN.
	1	2021.501 Mobilization	LS	1.00	
	2	2101.502 Grubbing	EA	13	
1	3	2104.503 Sawing Bit Pavement (Full Depth)	LF	1,830	
	4	2104.503 Remove Pipe Culvert / Storm Sewer	LF	730	
1	5	2104.518 Remove Bituminous Pavement	SF	12,830	
2	6	2105.607 Common Excavation (EV)	CY	15	
3	7	2105.607 Subgrade Excavation (EV)	CY	540	
4	8	2105.607 Select Granular Borrow (LV)	CY	760	
5	9	2211.509 Aggregate Base Class 5	TN	260	
	10	2232.504 Mill Bituminous Surface (1")	SY	43,060	
	11	2357.506 Bituminous Material For Tack Coat	Gal	3,020	
	12	2360.509 Type SP 9.5 Wearing Course Mix (2,B)	TN	4,270	
6	13	2360.509 Type SP 9.5 Bit Mixture for Patching (2,B)	TN	110	
6	14	2360.509 Type SP 12.5 Bit Mixture for Patching (2,B)	TN	90	
7	15	2451.607 Trench Stabilization Material (CV)	CY	20	
	16	2501.502 15" RC Pipe Apron & Grate	EA	22	
	17	2501.502 15" CS Pipe Apron & Grate	EA	6	
	18	2501.503 15" RC Pipe Culvert Class V	LF	496	
	19	2503.503 16" Ductile Iron Pipe Sewer Class 52	LF	114	
8	20	2503.603 Clean & Televis Storm Sewer and Culverts	LF	496	
9	21	2504.602 Irrigation System Modifications	EA	10	
	22	2511.507 Random Riprap Class III	CY	15	
	23	2563.601 Traffic Control	LS	1.00	
	24	2573.503 Silt Fence, Type HI or MS	LF	250	
	25	2573.503 Sediment Control Log Type Wood Chip	LF	400	
10	26	2574.507 Loam Topsoil Borrow (LV)	CY	530	
11	27	2574.508 Fertilizer Type 3	LB	480	
12	28	2575.504 Rolled Erosion Prevention Category 30	SY	770	
13	29	2575.505 Weed Spraying	ACRE	2.40	
	30	2575.505 Seeding	ACRE	2.40	
	31	2575.508 Hydraulic Mulch Matrix	LB	6,000	
	32	2575.508 Seed Mixture 25-151	LB	480	

C.P. 25-12B Notes:

- Regardless of depth.
- For all excavation except subgrade excavation. Dispose excess and/or unsuitable material off-site.
- For excavation beneath reclaimed aggregate base layer where unsuitable material discovered. Includes disposing unsuitable or excess material off-site.
- Only to be used if sufficient material not generated on-site for subgrade excavation backfill, if necessary.
- For material imported from outside project limits. Class 7 reclaim acceptable. Item includes furnishing, hauling, placing and compacting.
- Type SP 9.5 for driveway aprons and Type SP 12.5 for street patching.
- Rock shall be 1.5" nominal diameter. Use under utility pipe and structures if water table is high.
- Only clean and televise RCP culverts. DIP culverts are not to be televised.
- Based upon number or 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.
- Topsoil placed along bituminous edge shall be installed with shouldering machine after wear course is paved
- Application rate 200 lb/acre. Analysis 22-5-10.
- Straw or wood fiber blanket is an acceptable alternative. Netting material shall be jute netting.
- Only to be used if requested by engineer prior to or during site restoration.

BASIS OF ESTIMATED QUANTITIES

Bituminous Wear Course	120	# / SY / inch
Bit. Non-Wear Course	120	# / SY / inch
Aggregate Base, Class 5	110	# / SY / inch
Tack Coat	0.07	Gal / SY
Hydraulic Mulch Matrix	2500	# / acre
Fertilizer Type 3 (Analysis 22-5-10)	200	# / acre
Seed Mixture 25-151	200	# / acre

The following standard plates approved by the Federal Highway Administration shall apply on this project.

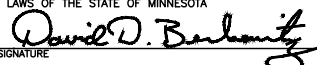
STANDARD PLATES	
Plate No.	Description
8000K	Temporary Channelizers

NO.	DATE	BY	DESCRIPTION OF REVISIONS

DESIGNED
JUL

CHECKED
DDB

DRAWN
JBK

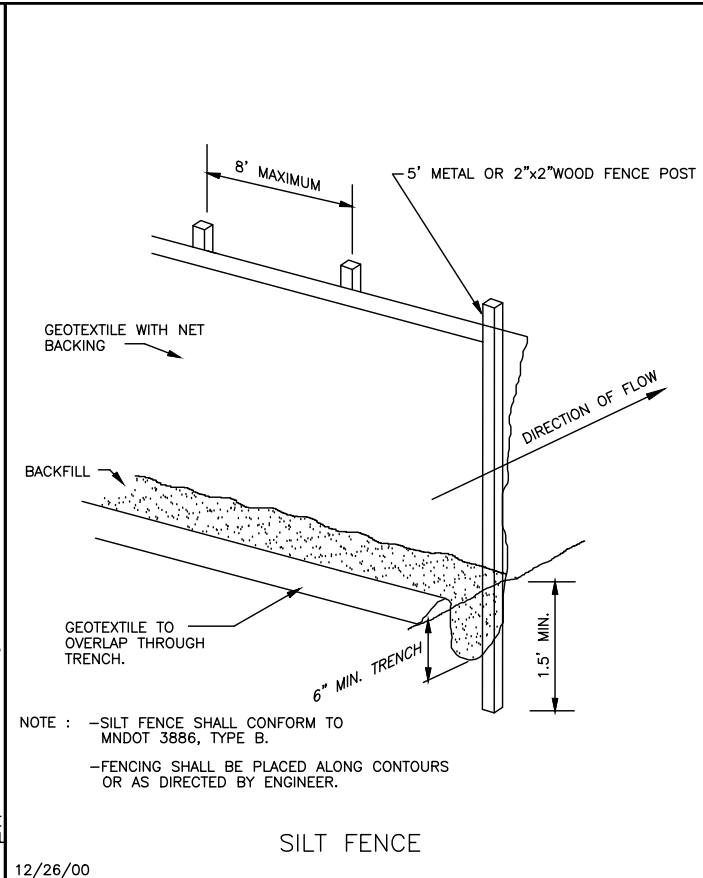
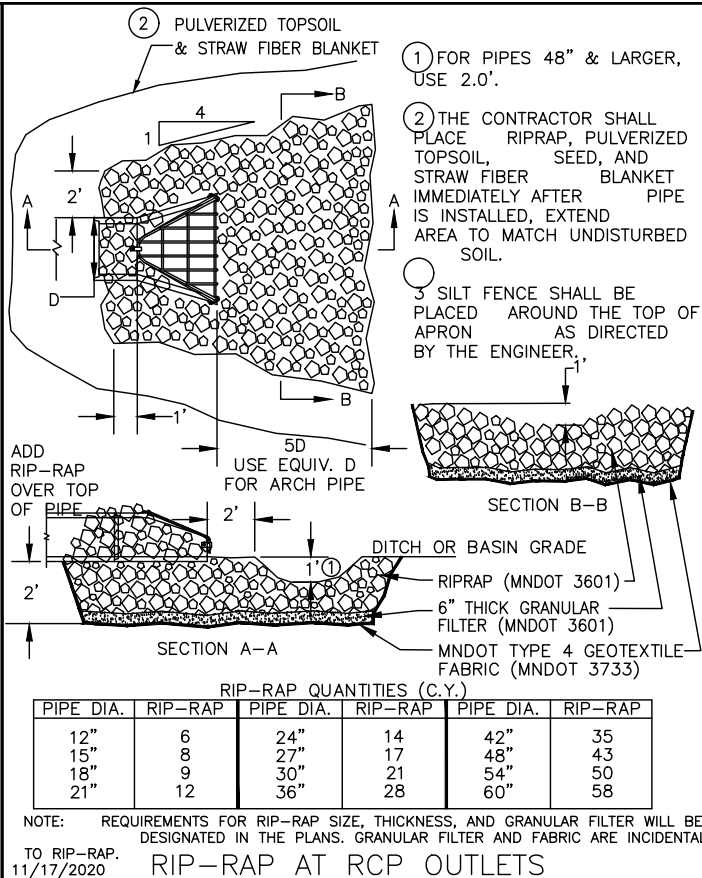
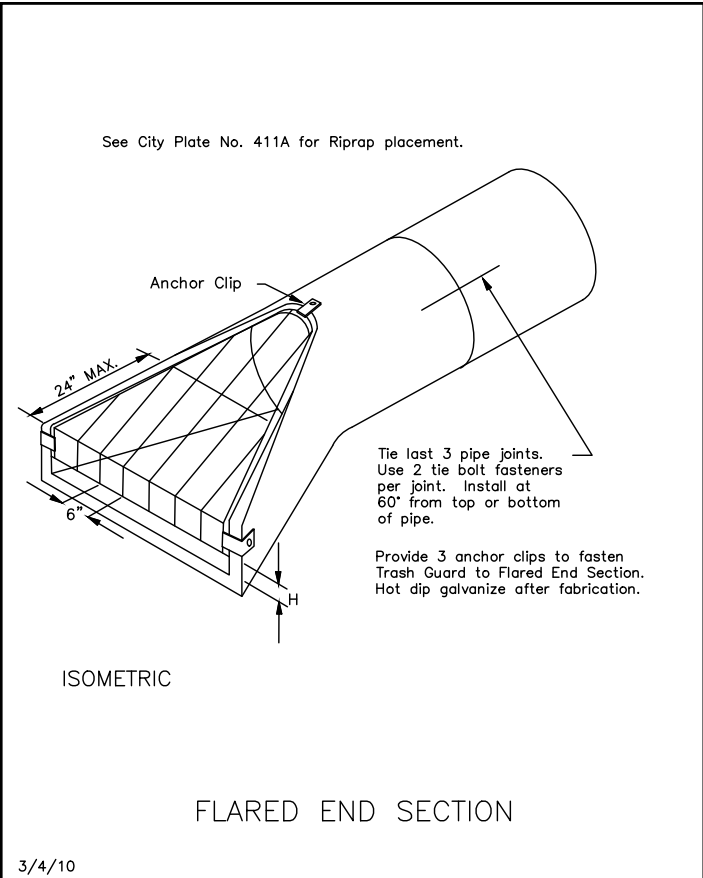
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2025 MILL & OVERLAY (C.P. 25-12B)

STATEMENT OF ESTIMATED QUANTITIES

SHEET NO. 29 OF 62 SHEETS



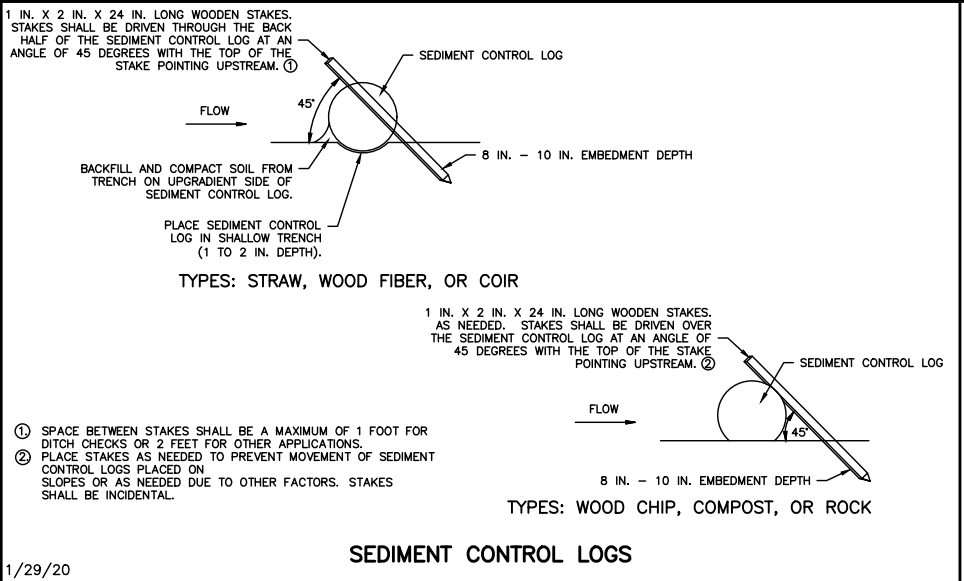
STANDARD DRAWING NO. 419A



STANDARD DRAWING NO. 411B



STANDARD DRAWING NO. 601



STANDARD DRAWING NO. 602

NO.	DATE	BY	DESCRIPTION OF REVISIONS

DESIGNED JUL DRAWN JBK

CHECKED DDB

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DAVID D. BERKOWITZ

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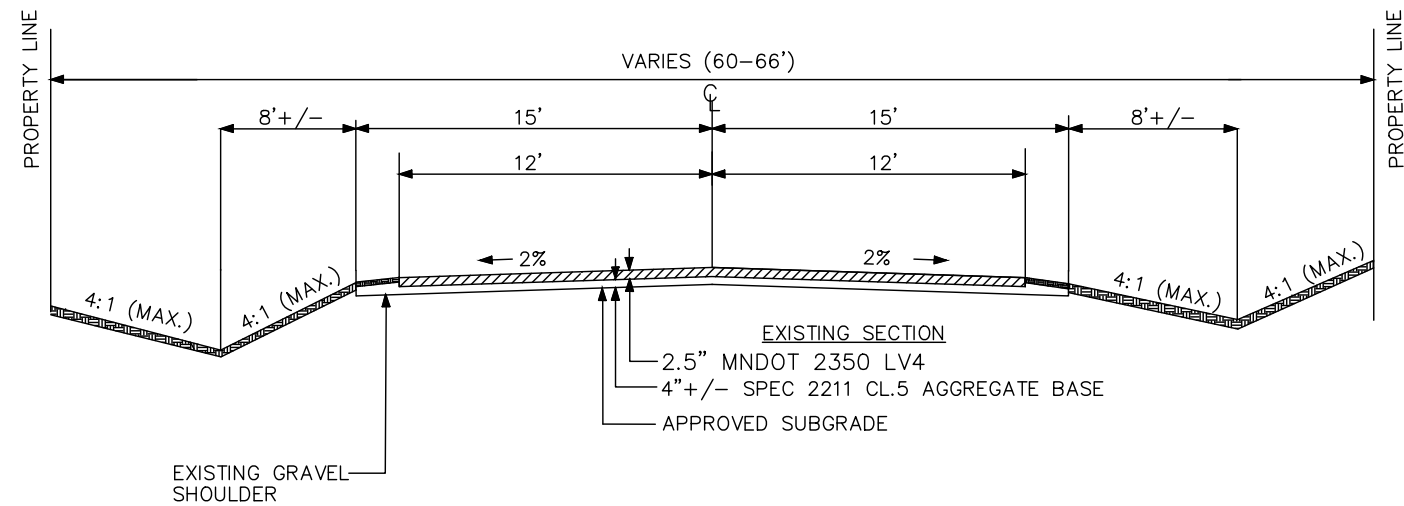
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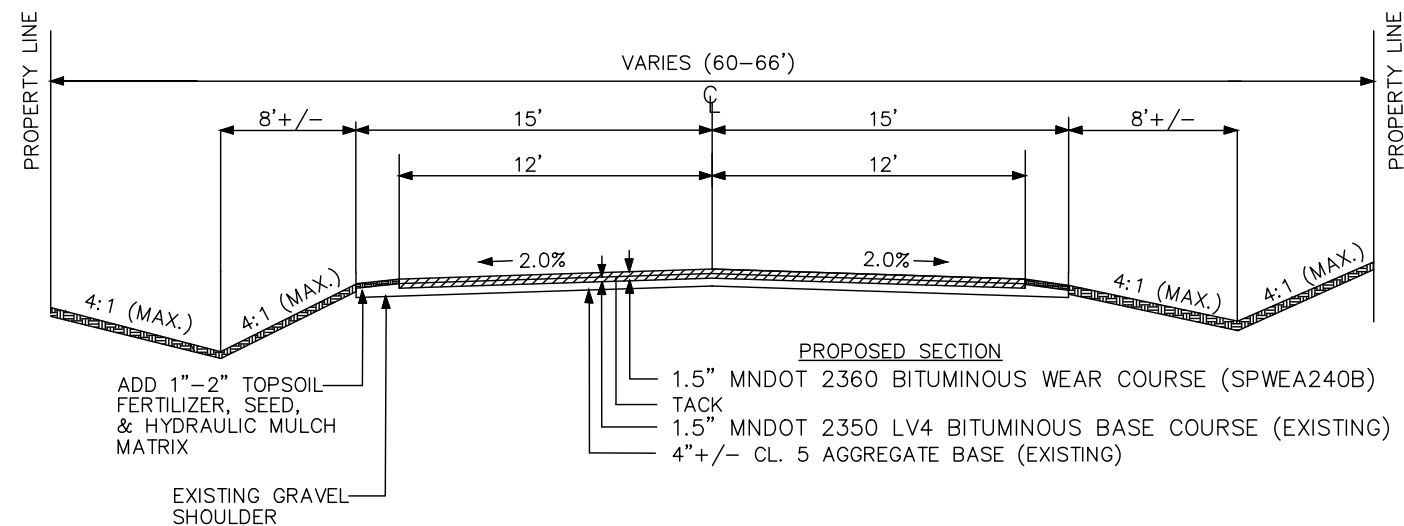
2025 MILL & OVERLAY (C.P. 25-12B)

DETAILS

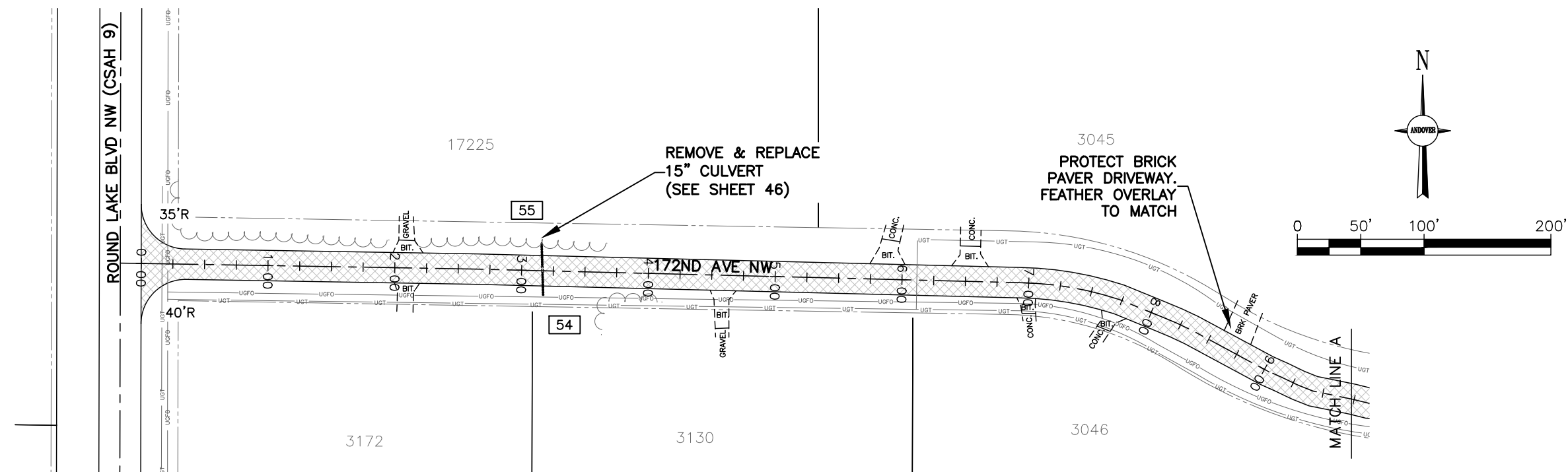
SHEET NO. 31 OF 62 SHEETS



25-12B EXISTING STREET SECTION



25-12B PROPOSED STREET SECTION

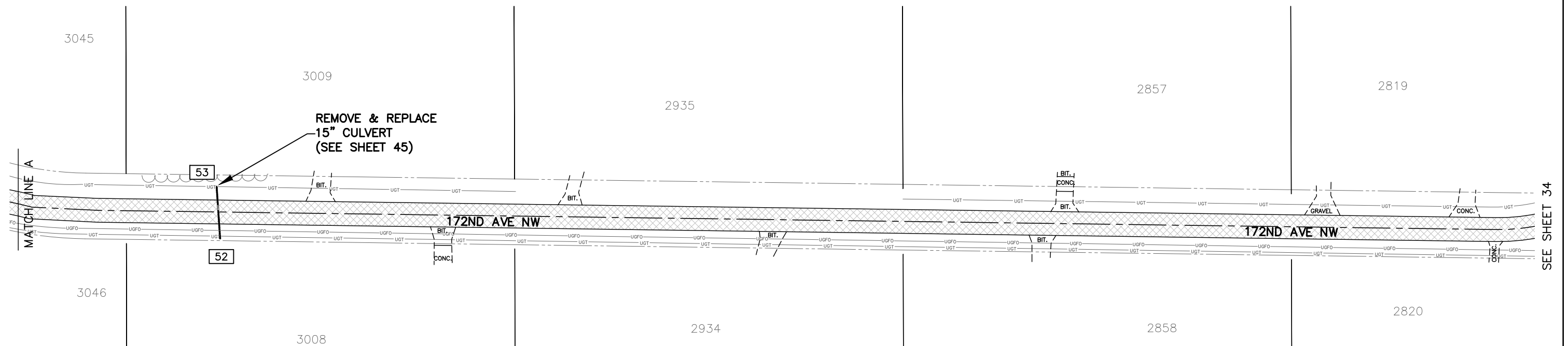


—S— SILT FENCE

 MILL 1.0"/PAVE 1.5"

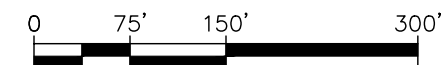
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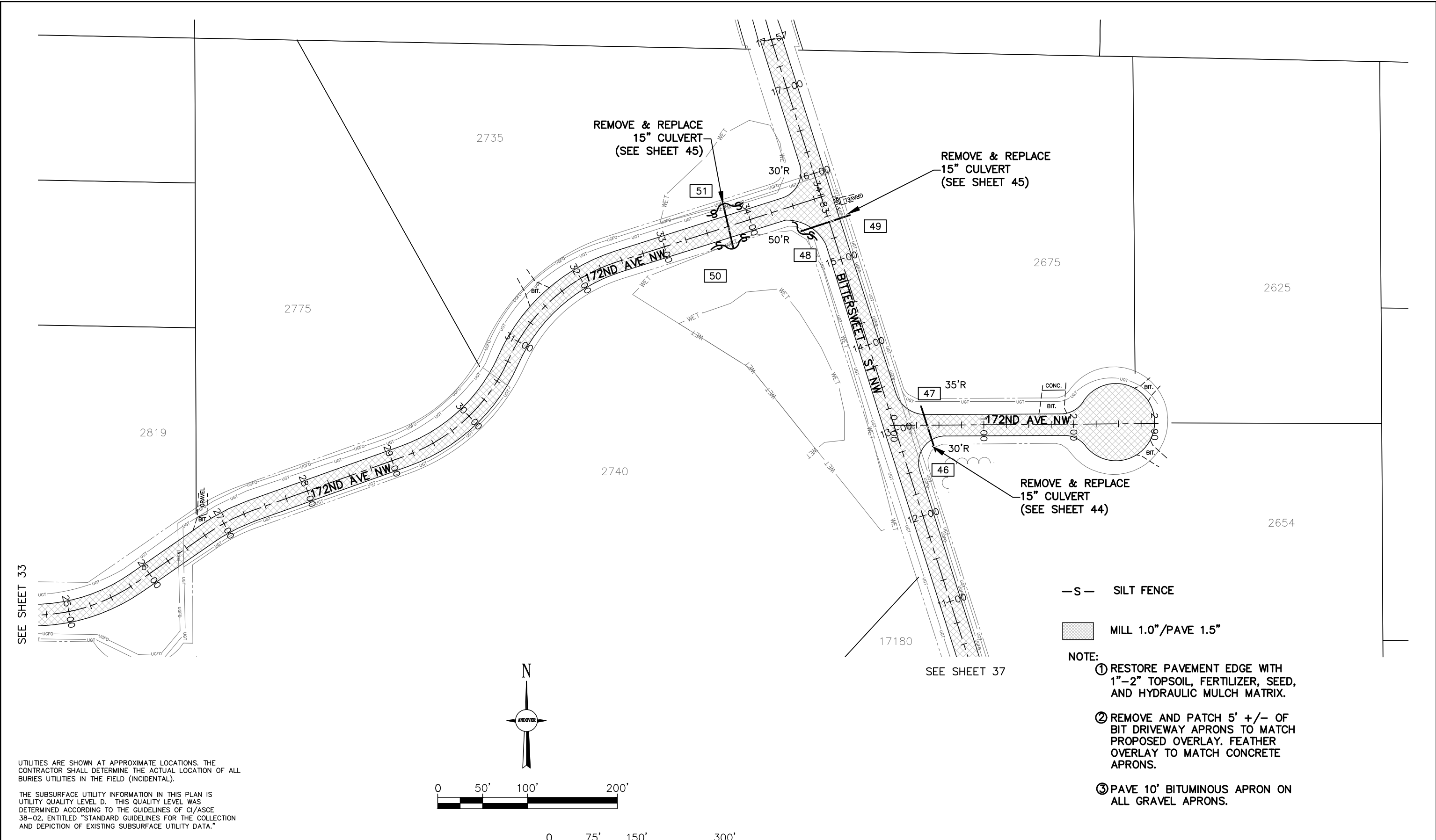
- ① RESTORE PAVEMENT EDGE WITH 1"–2" TOPSOIL, FERTILIZER, SEED, AND HYDRAULIC MULCH MATRIX.
- ② REMOVE AND PATCH 5' +/- OF BIT DRIVEWAY APRONS TO MATCH PROPOSED OVERLAY. FEATHER OVERLAY TO MATCH CONCRETE APRONS.
- ③ PAVE 10' BITUMINOUS APRON ON ALL GRAVEL APRONS.



UTILITIES ARE SHOWN AT APPROXIMATE LOCATIONS. THE CONTRACTOR SHALL DETERMINE THE ACTUAL LOCATION OF ALL BURIES UTILITIES IN THE FIELD (INCIDENTAL).

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

[illegible]



SEE SHEET 33

SEE SHEET 37

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NO.	DATE	BY	DESCRIPTION OF REVISIONS	CHECKED DDB					

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17131

3157

3095

17078

2963

REMOVE & REPLACE
15" CULVERT
(SEE SHEET 42)

30'R TYP.

170TH LN NW

170TH LN NW

HEATHER ST NW

SEE SHEET 36

SEE SHEET 38

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0 75' 150' 300'

DESIGNED
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DRAWN
JBK

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2025 MILL & OVERLAY (C.P. 25-12B)

REMOVALS,
STREET PAVING

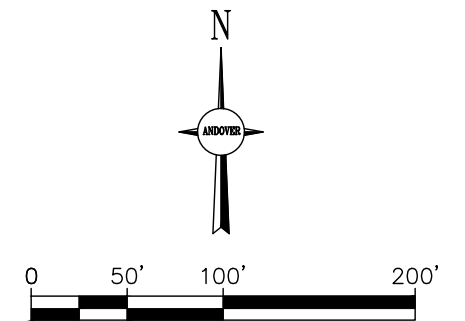
SHEET NO. 35 OF 62 SHEETS

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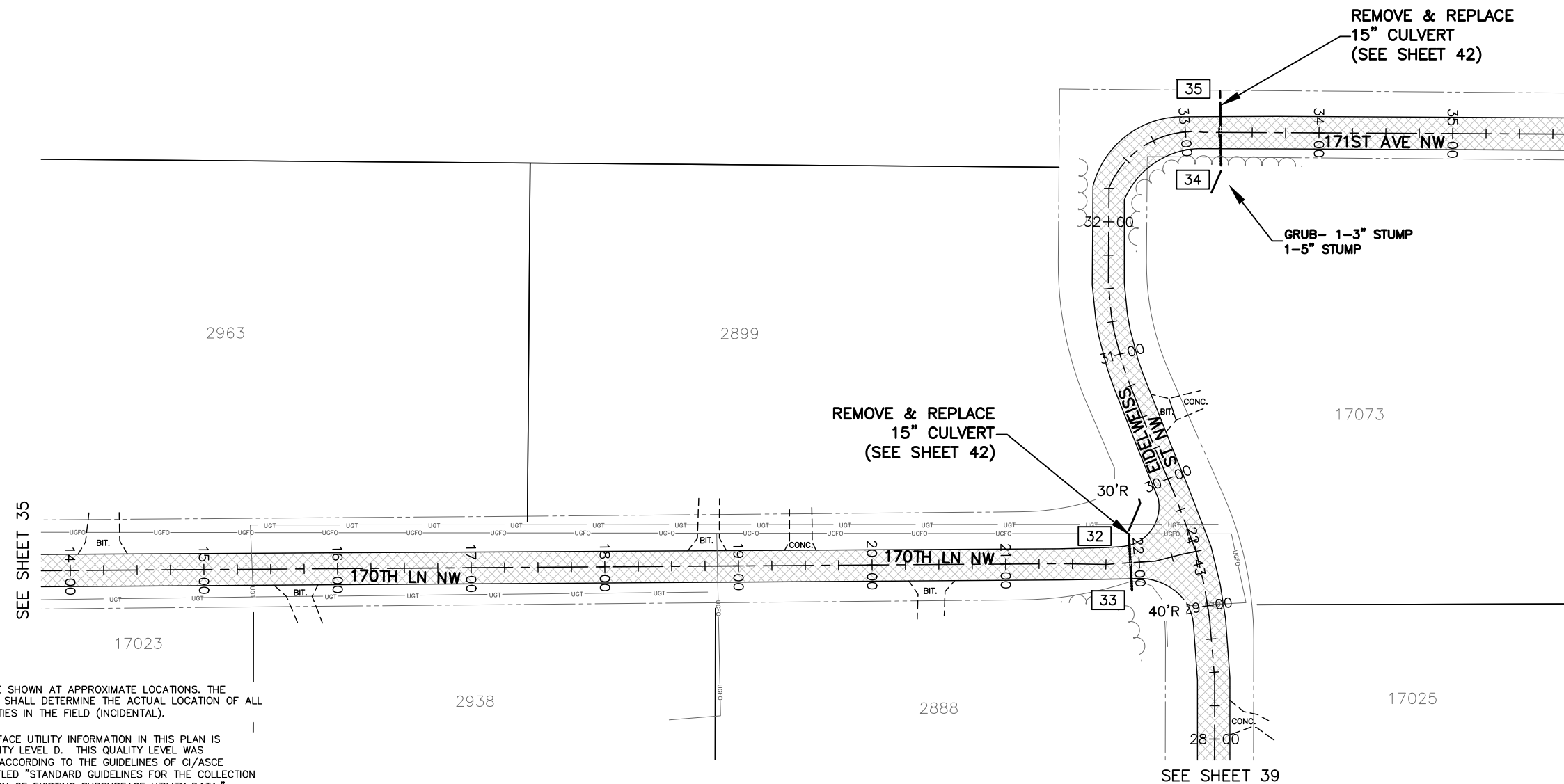
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SEE SHEET 37



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0 75' 150' 300'

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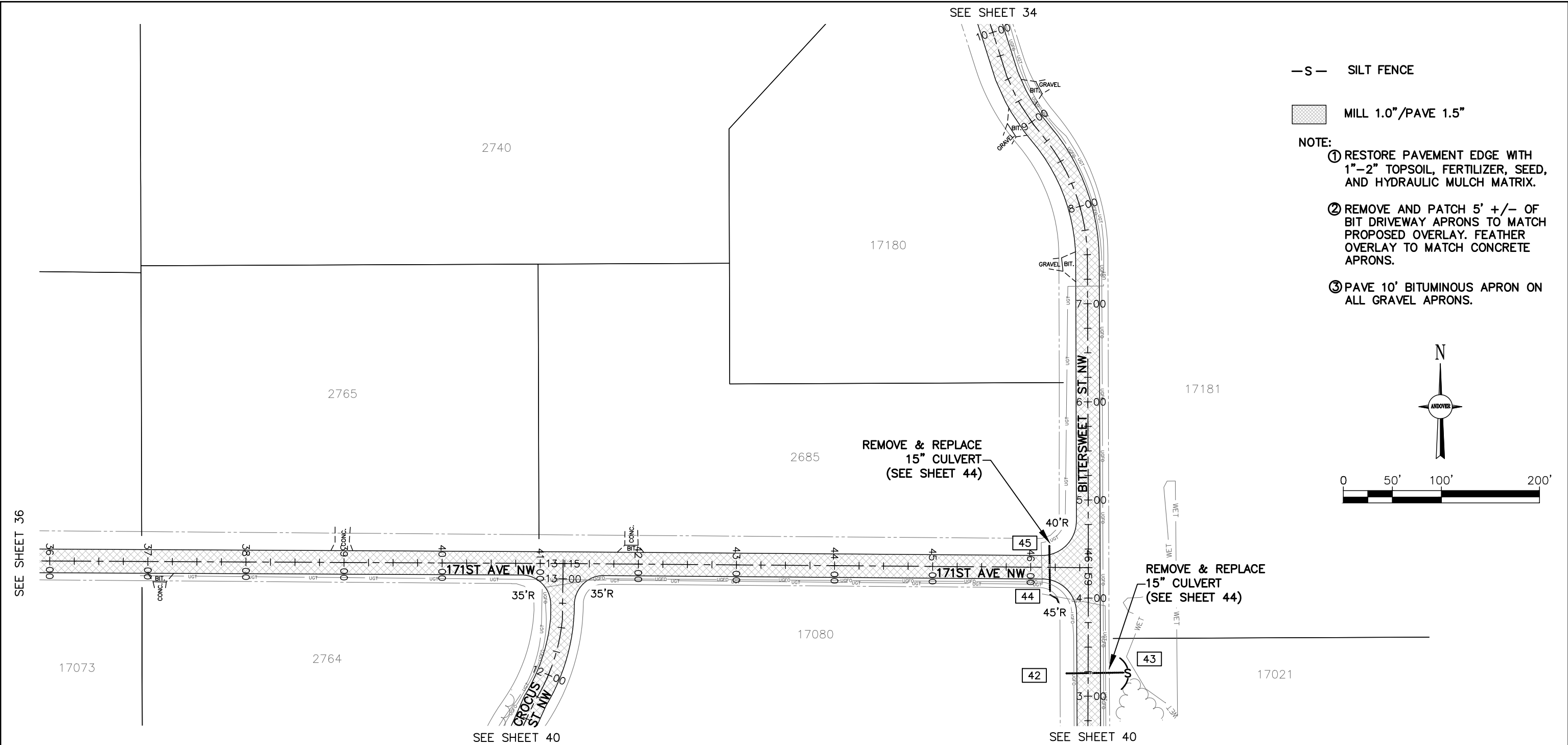


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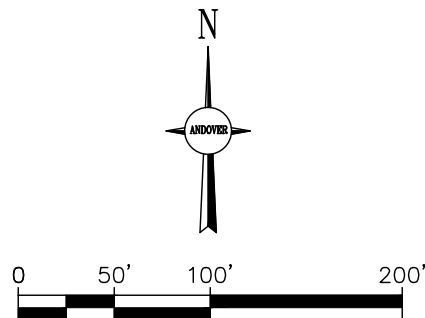
REMOVALS,
STREET PAVING

SHEET NO. 36 OF 62 SHEETS

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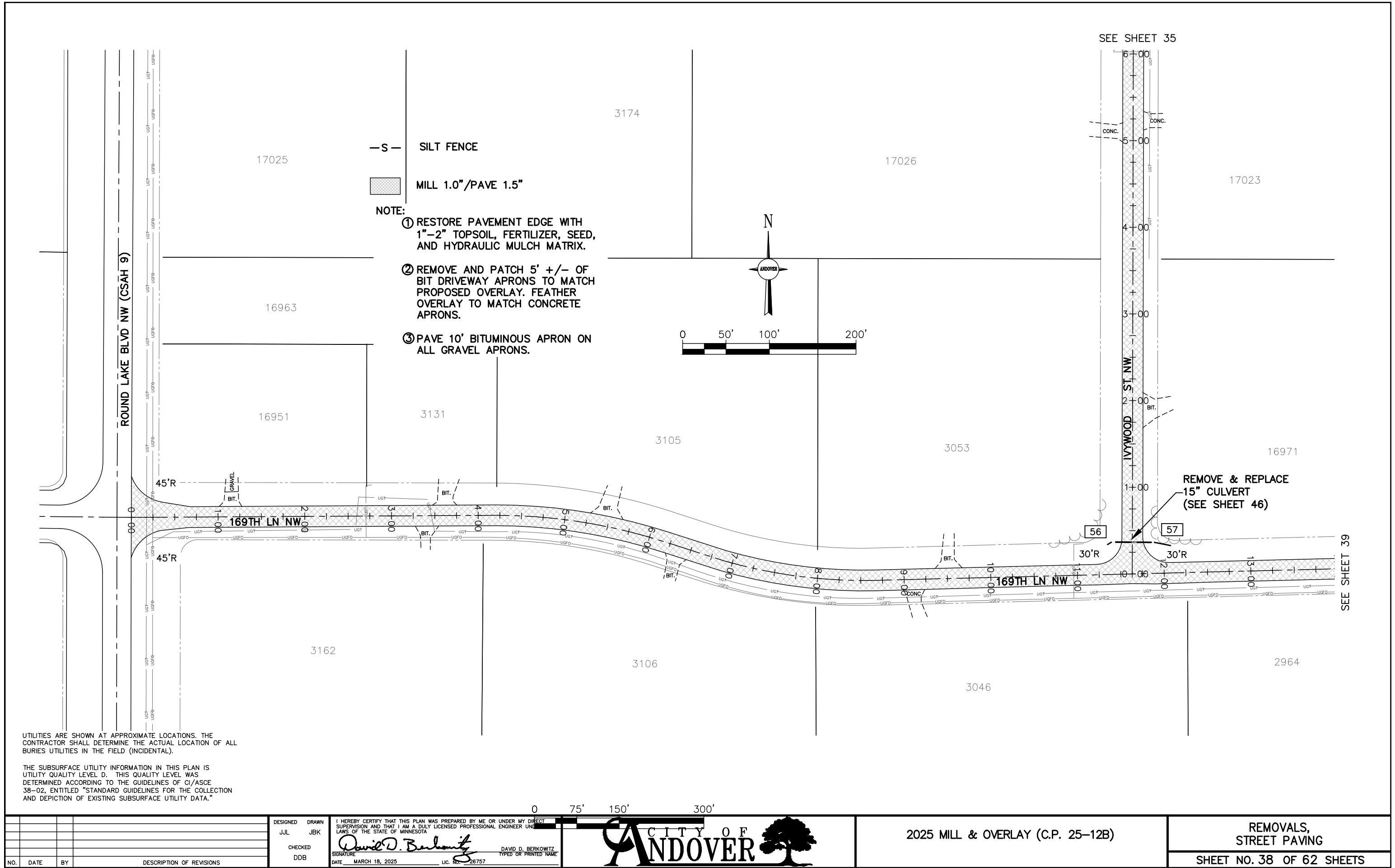
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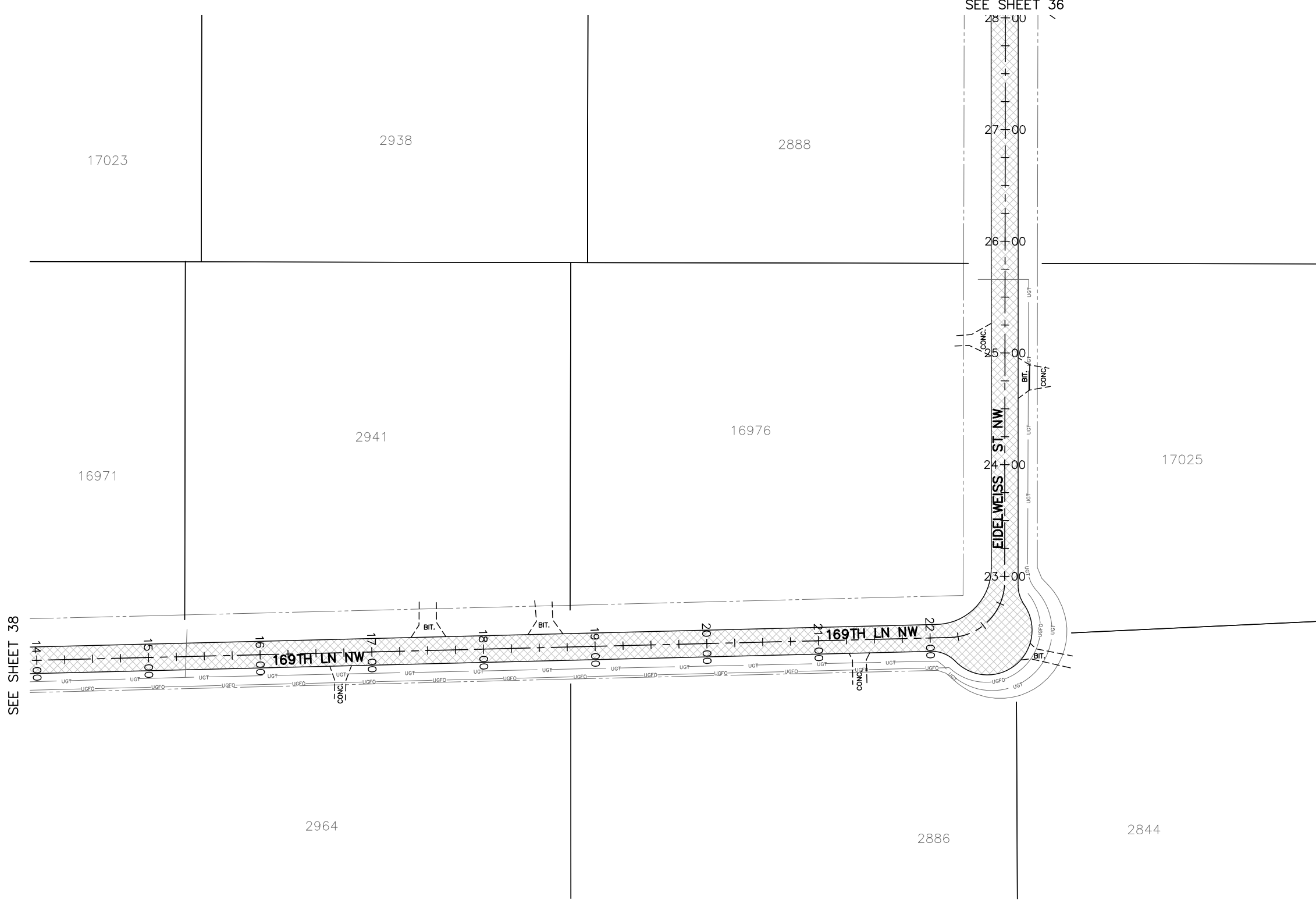


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NO. DATE BY DESCRIPTION OF REVISIONS				SHEET NO. 37 OF 62 SHEETS			

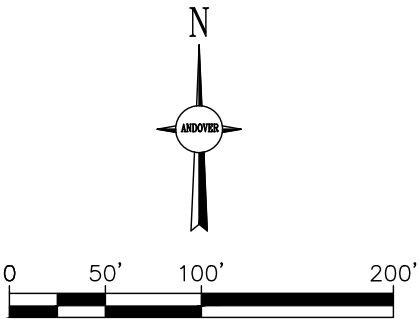




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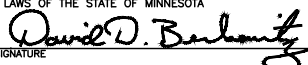
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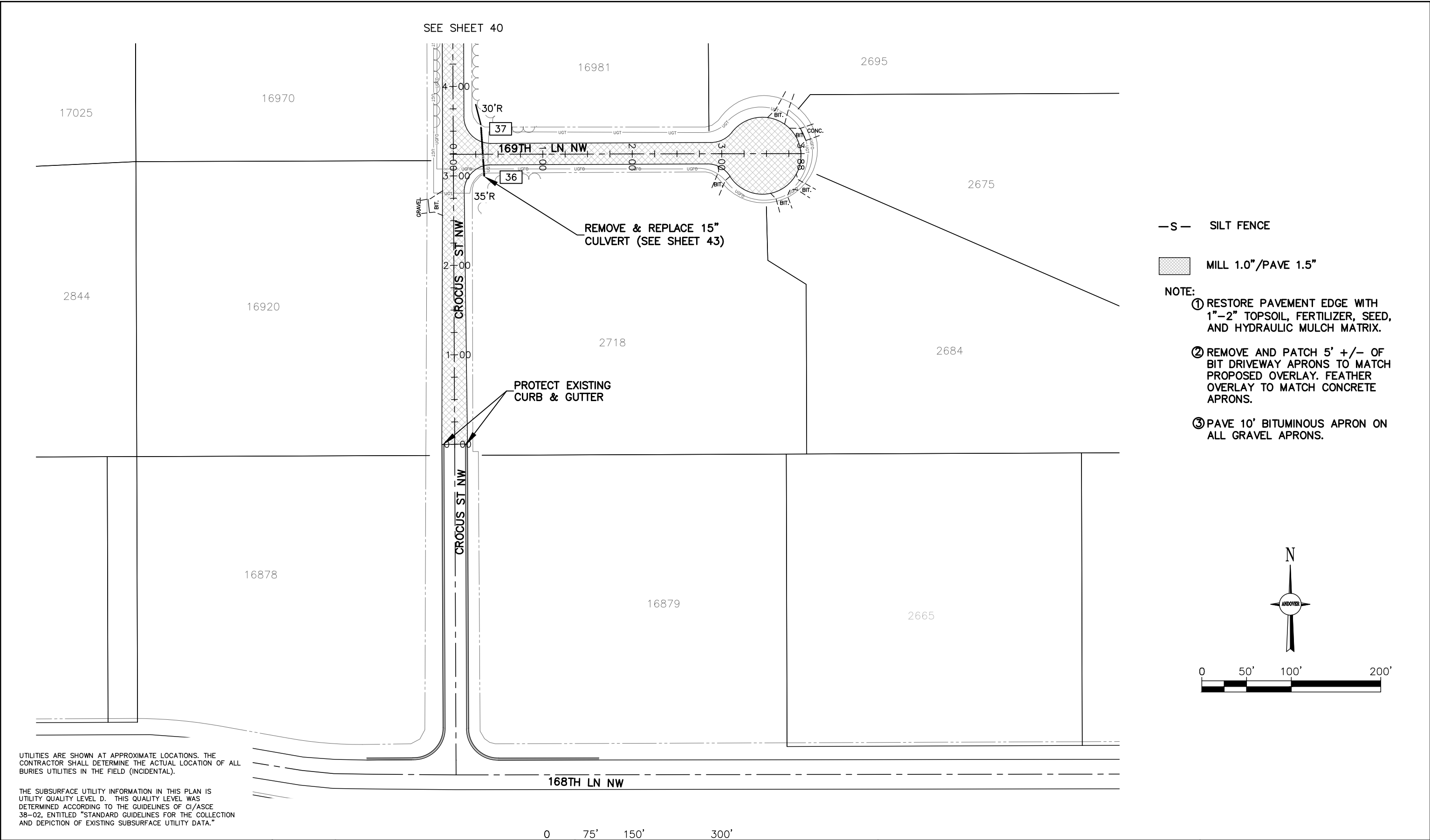
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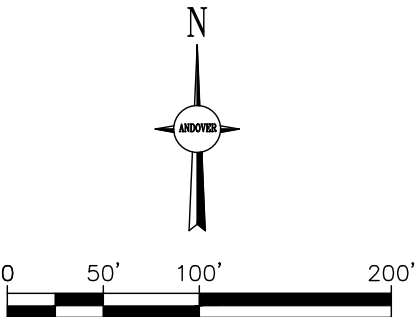
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<table border="1"><thead><tr><th>NO.</th><th>DATE</th><th>BY</th><th>DESCRIPTION OF REVISIONS</th></tr></thead><tbody><tr><td> </td><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td><td> </td></tr></tbody></table>			NO.	DATE	BY	DESCRIPTION OF REVISIONS																	SHEET NO. 39 OF 62 SHEETS			
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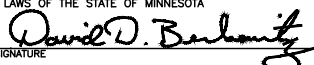


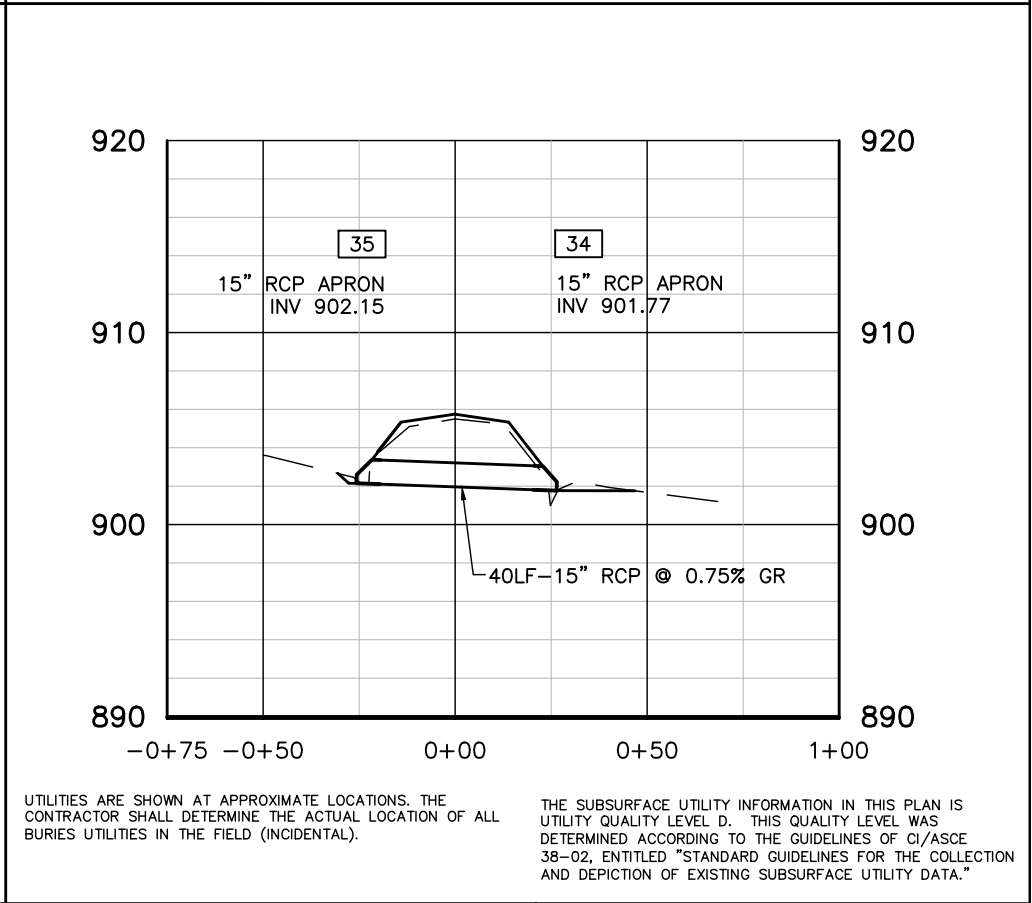
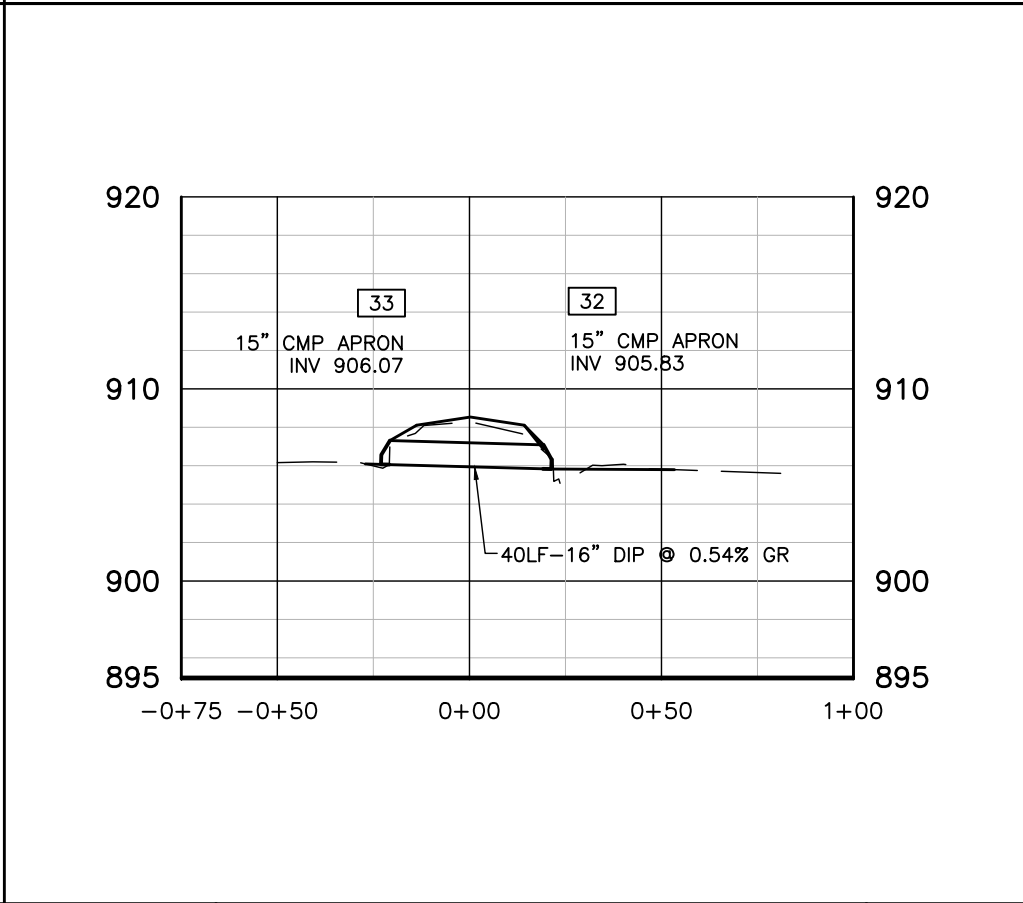
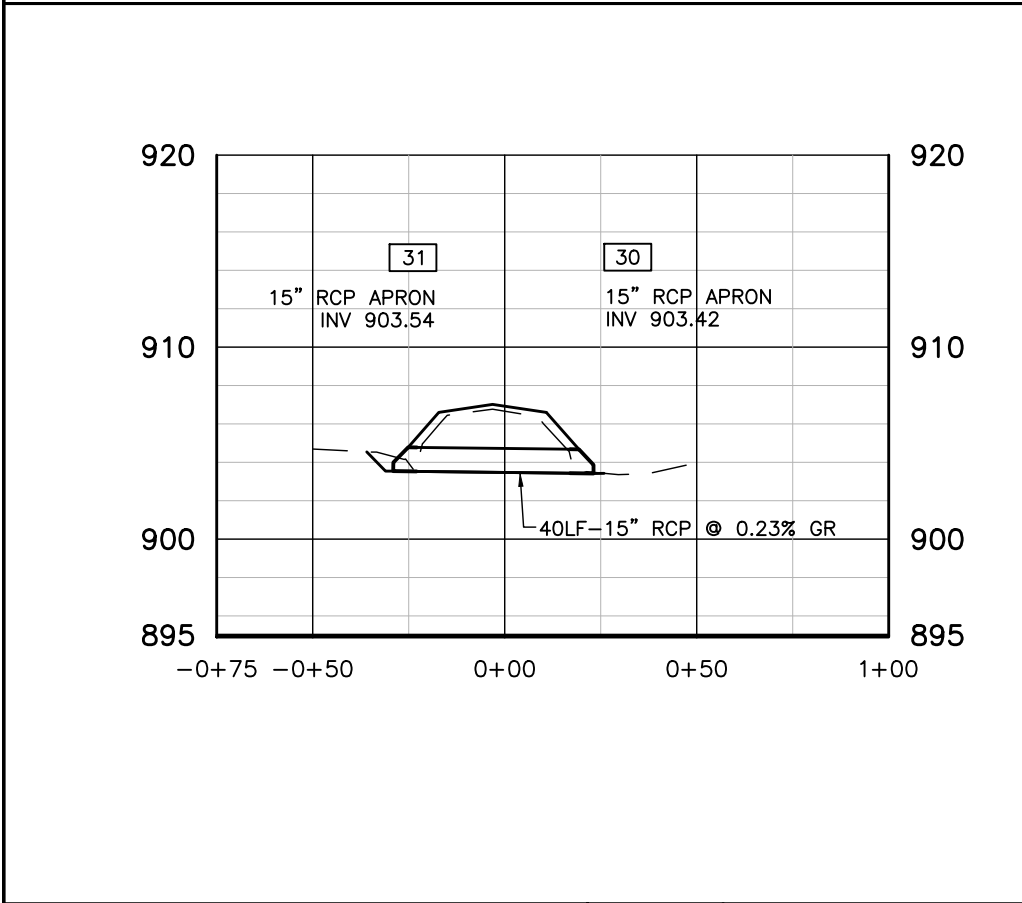
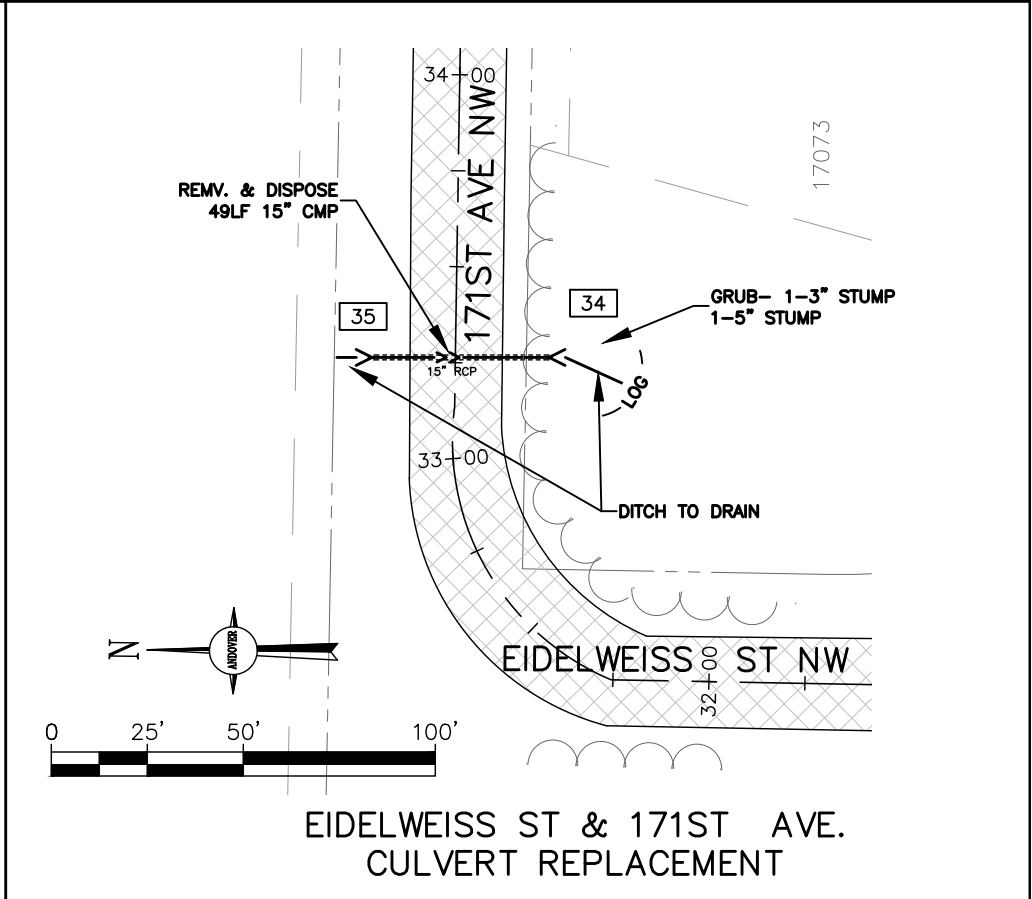
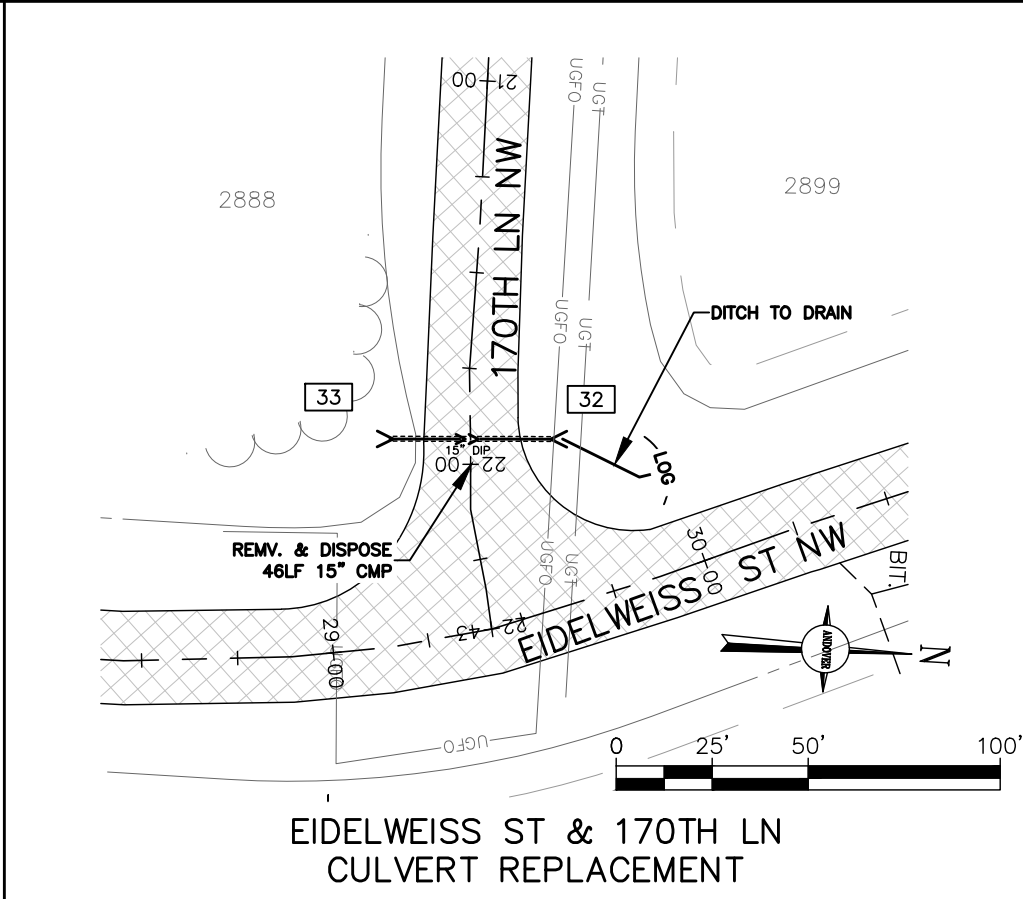
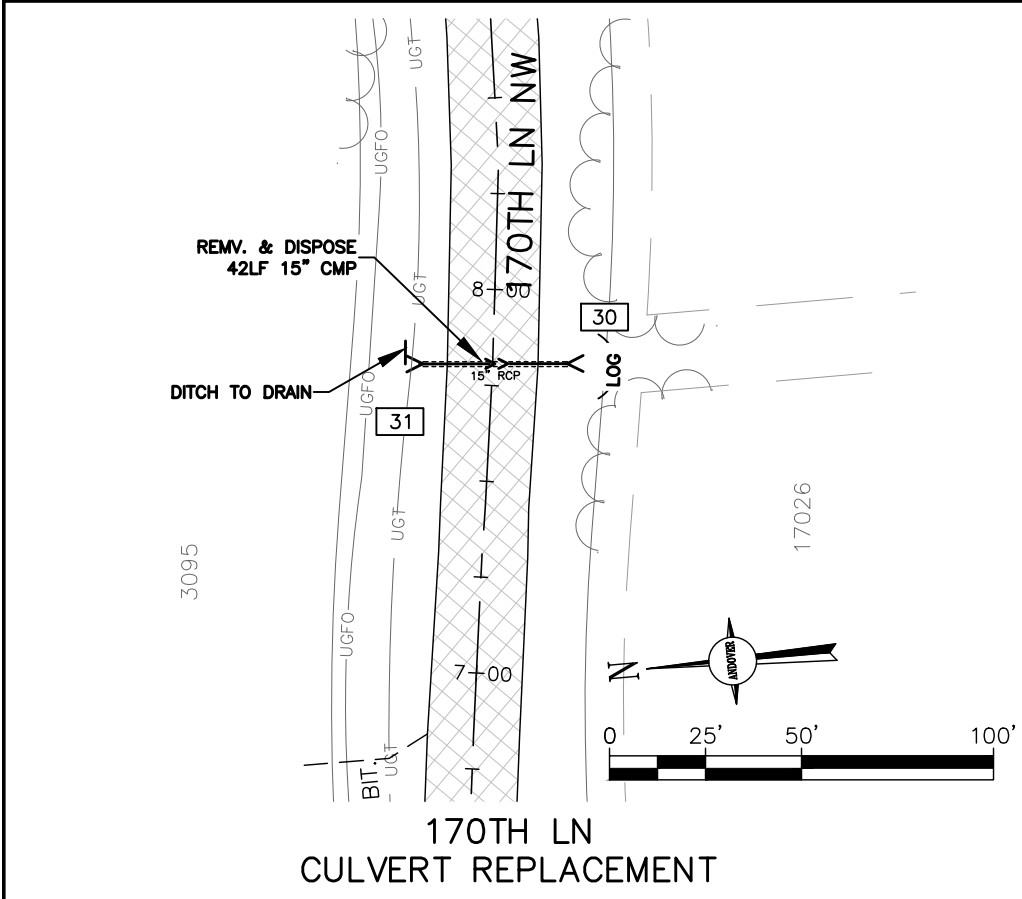
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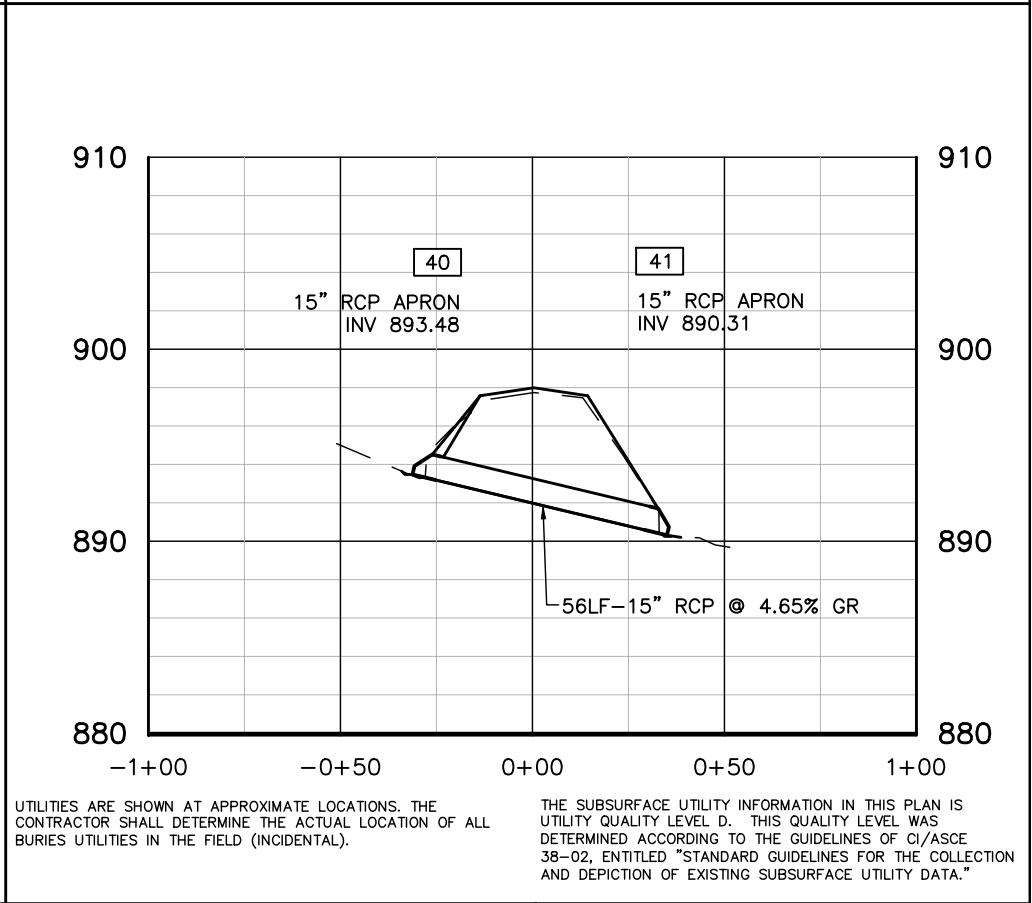
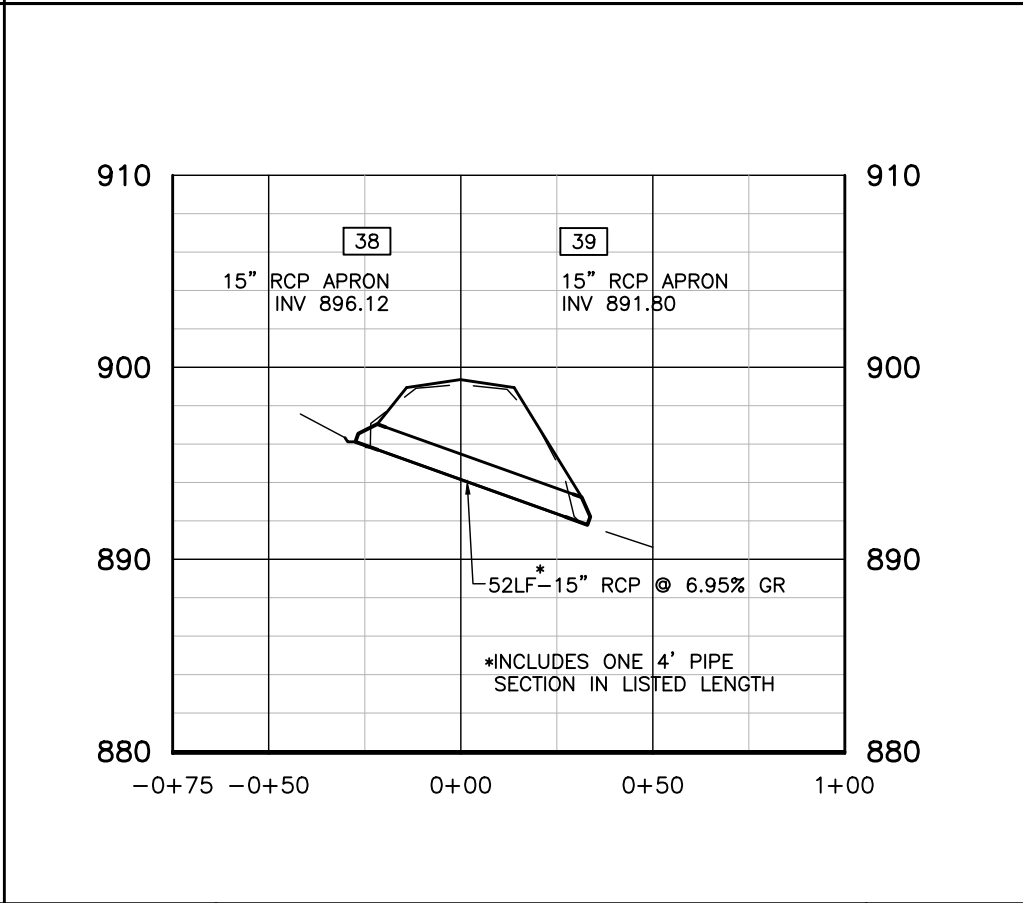
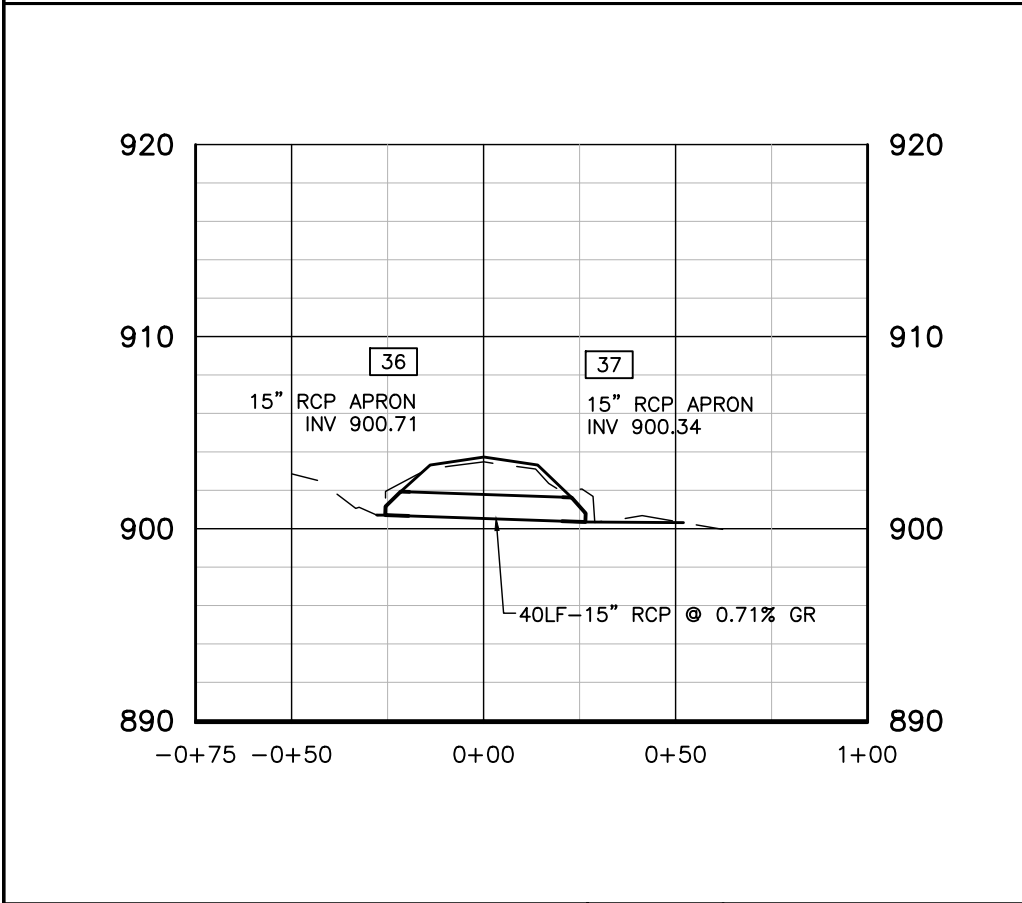
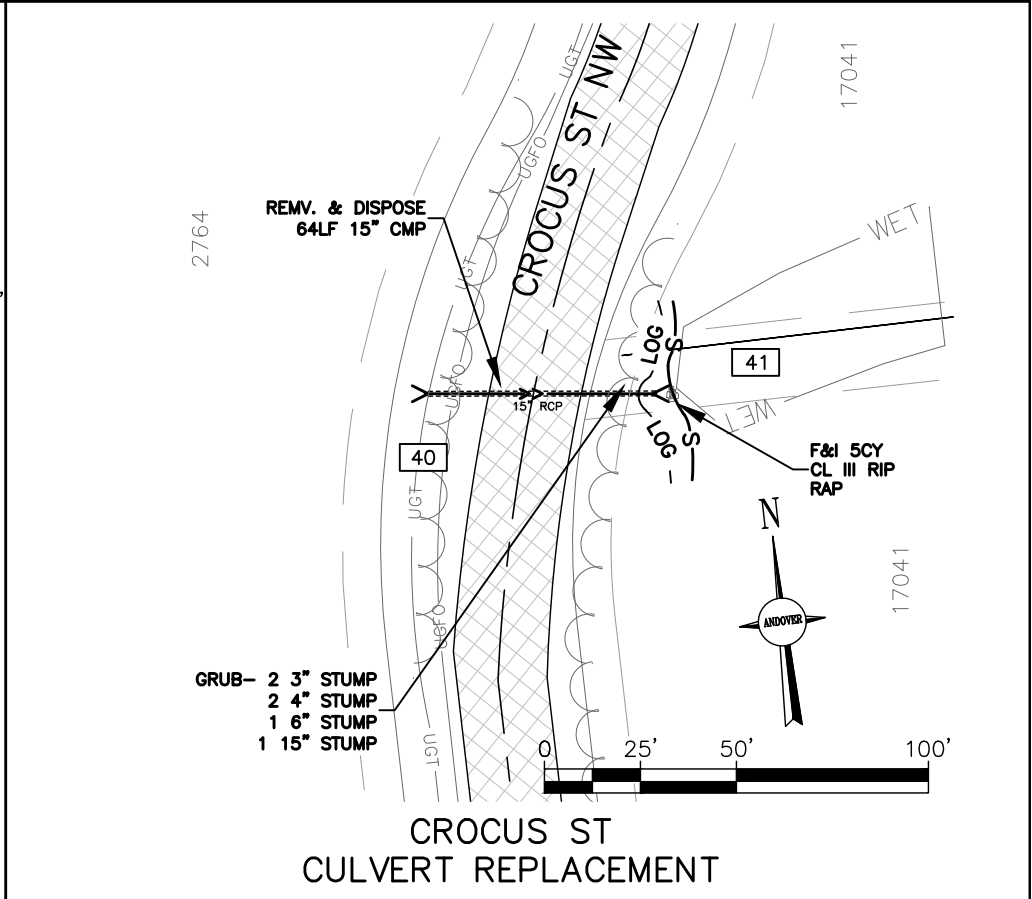
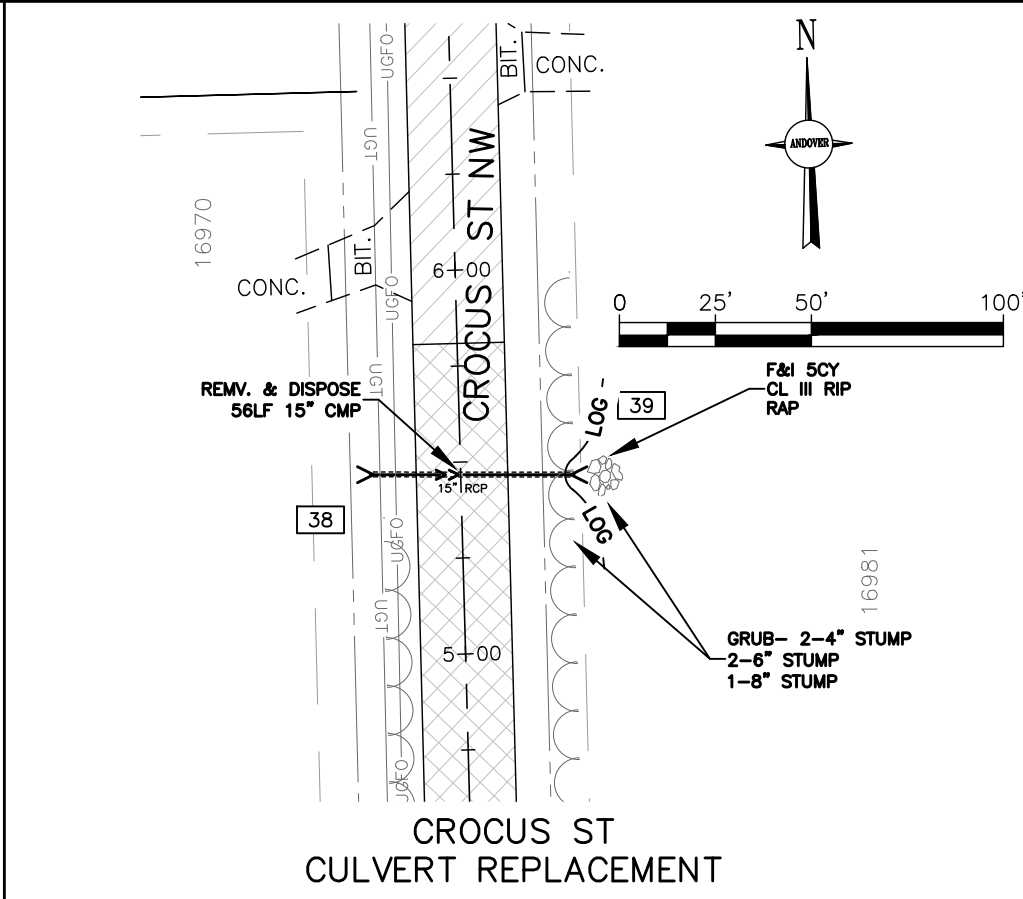
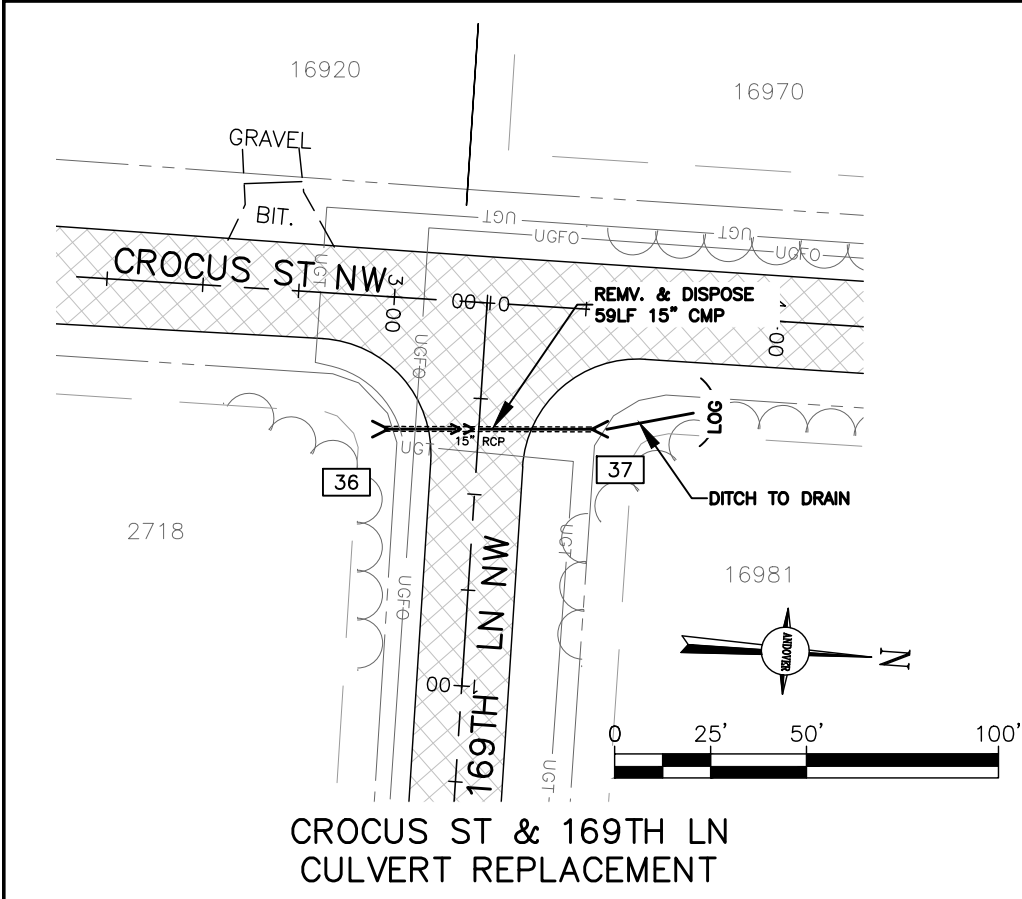
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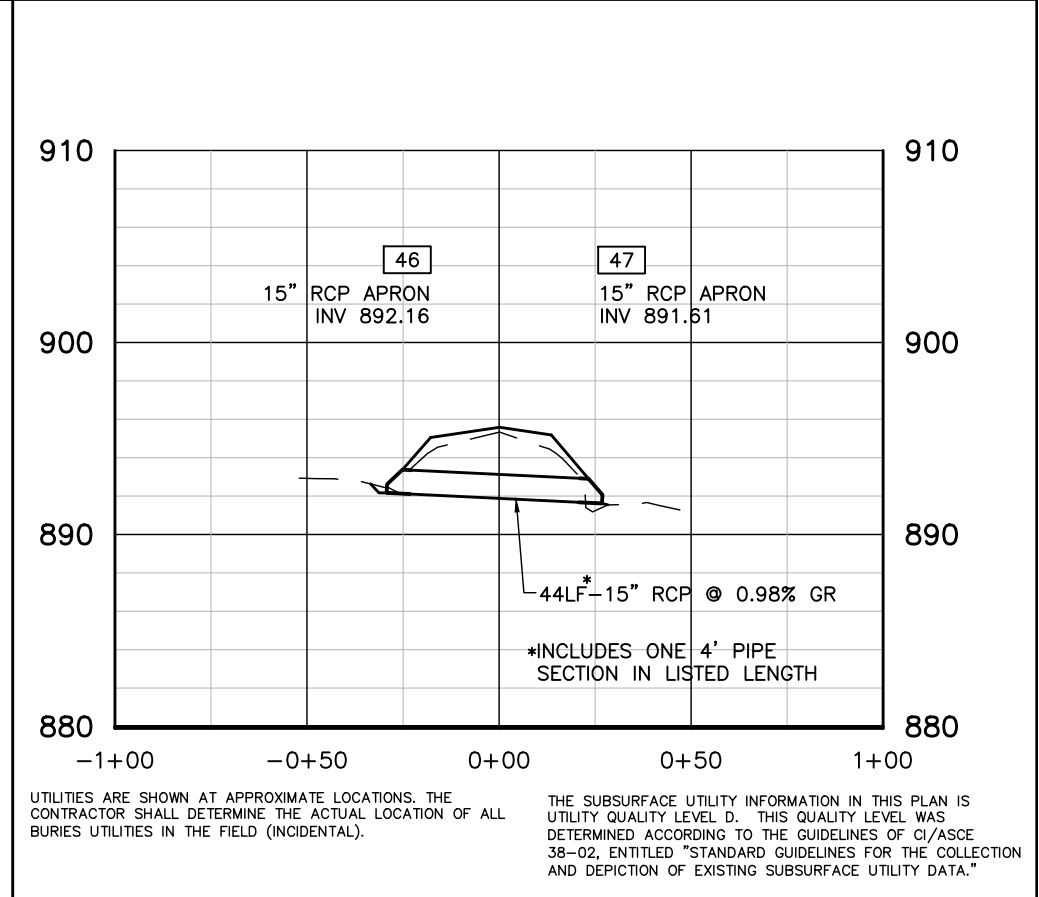
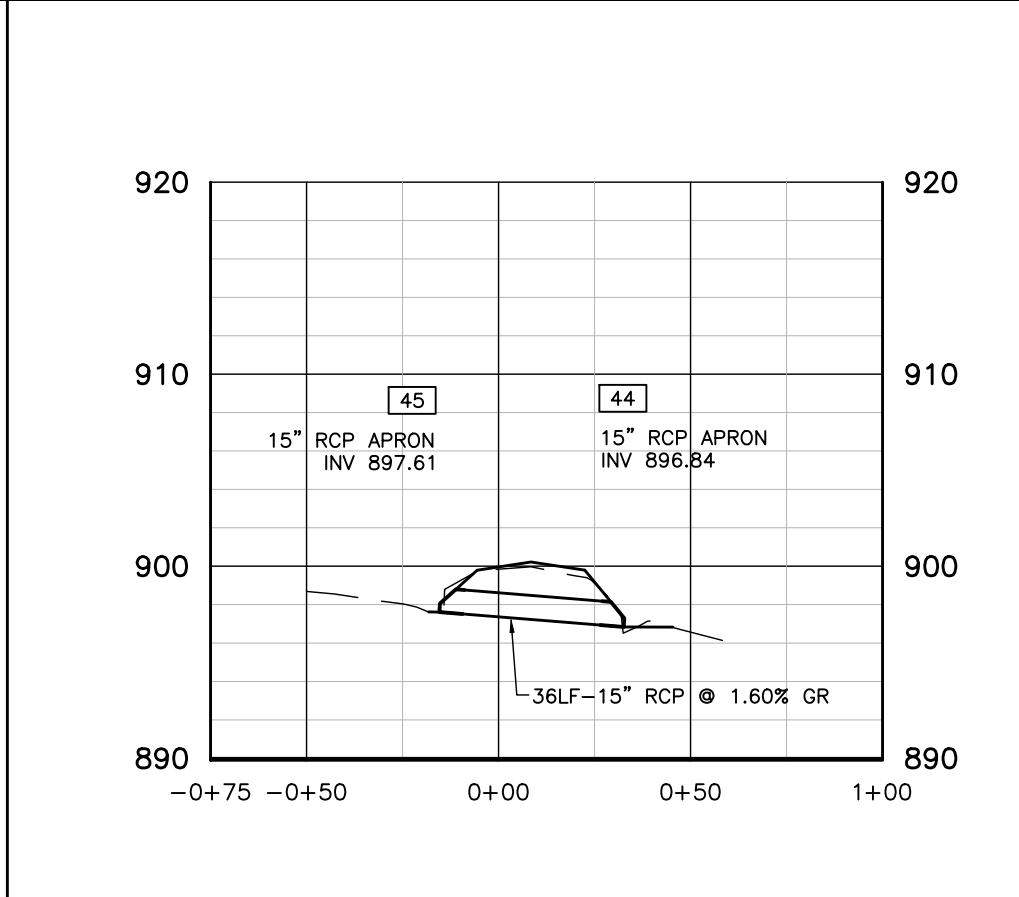
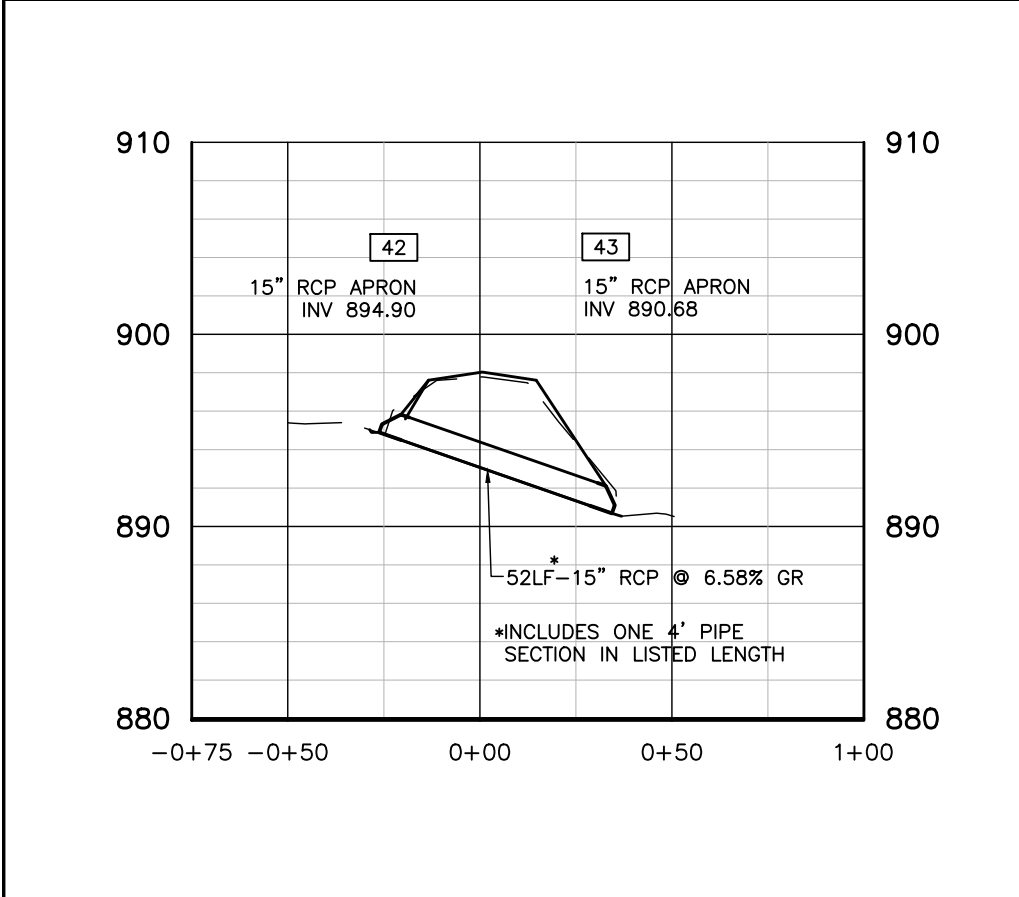
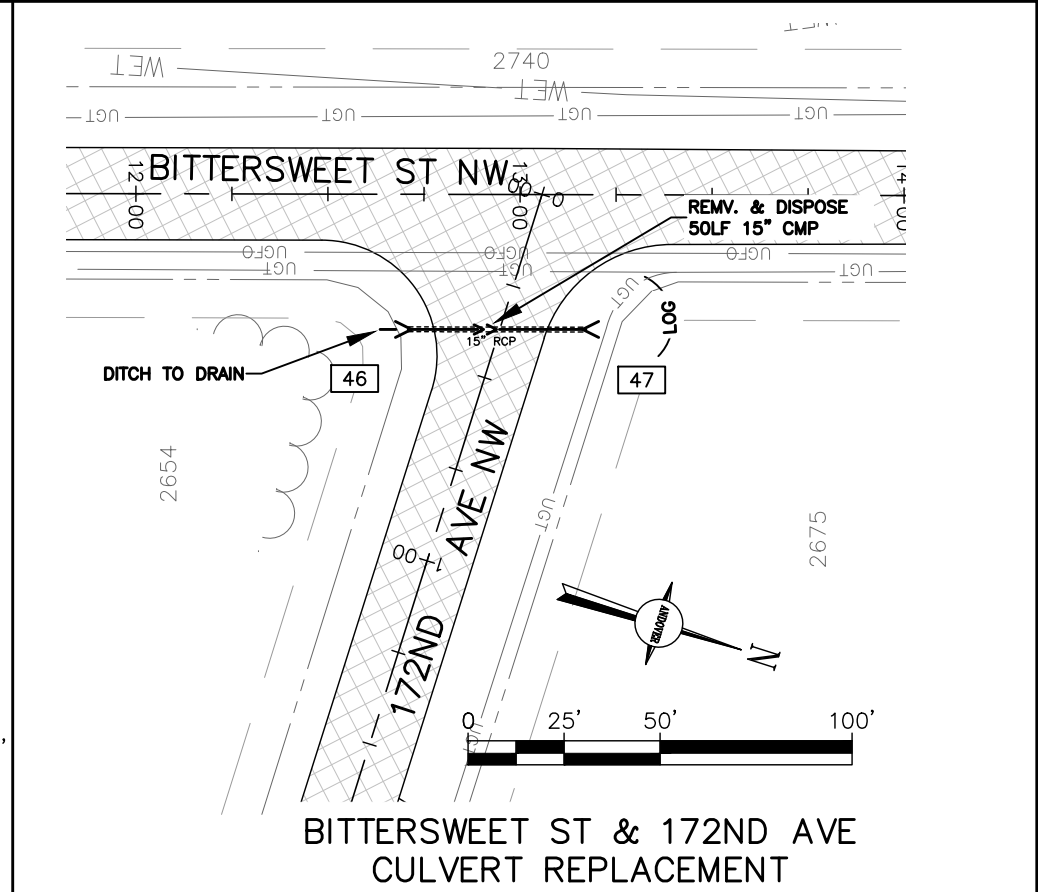
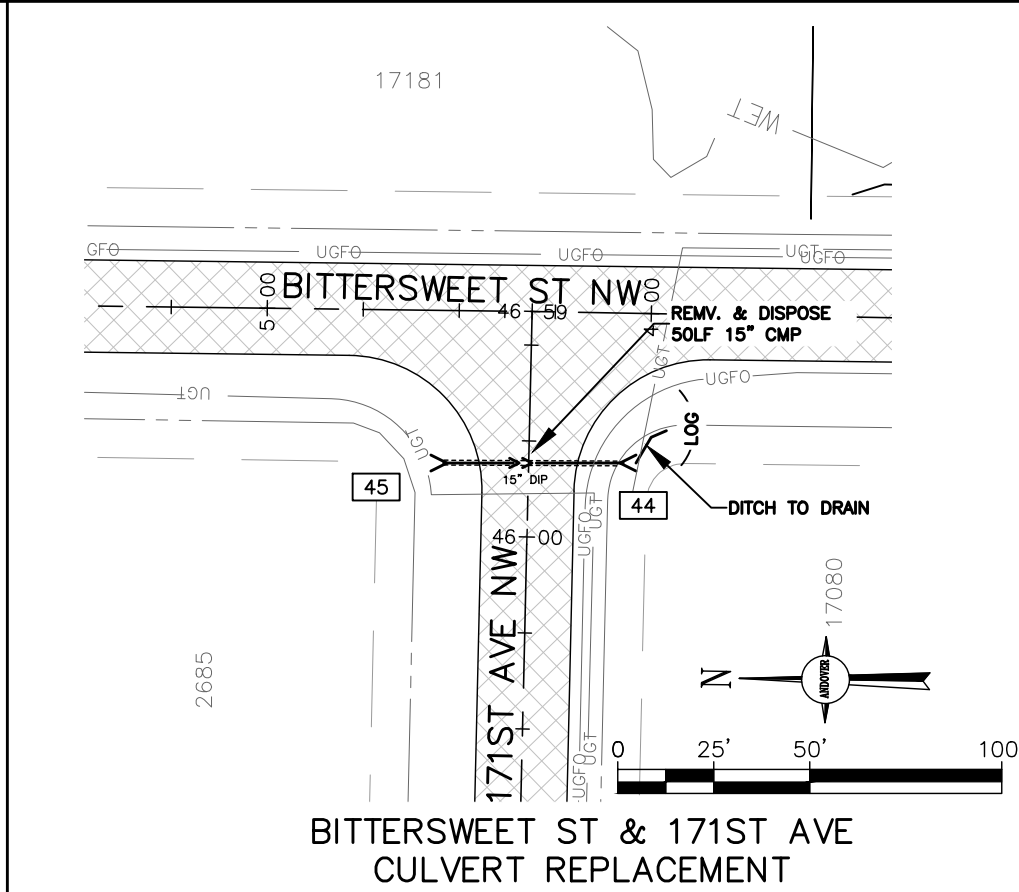
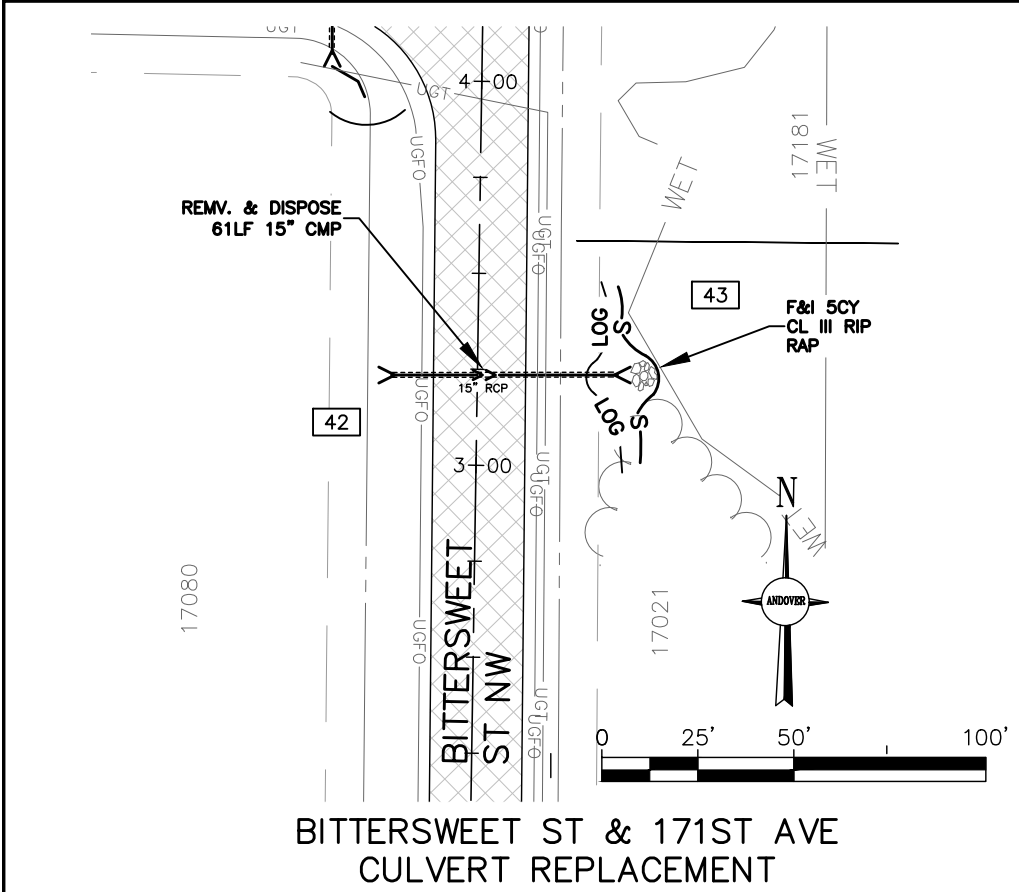
- NOTE:
- ① RESTORE PAVEMENT EDGE WITH 1"–2" TOPSOIL, FERTILIZER, SEED, AND HYDRAULIC MULCH MATRIX.
 - ② REMOVE AND PATCH 5' +/- OF BIT DRIVEWAY APRONS TO MATCH PROPOSED OVERLAY. FEATHER OVERLAY TO MATCH CONCRETE APRONS.
 - ③ PAVE 10' BITUMINOUS APRON ON ALL GRAVEL APRONS.

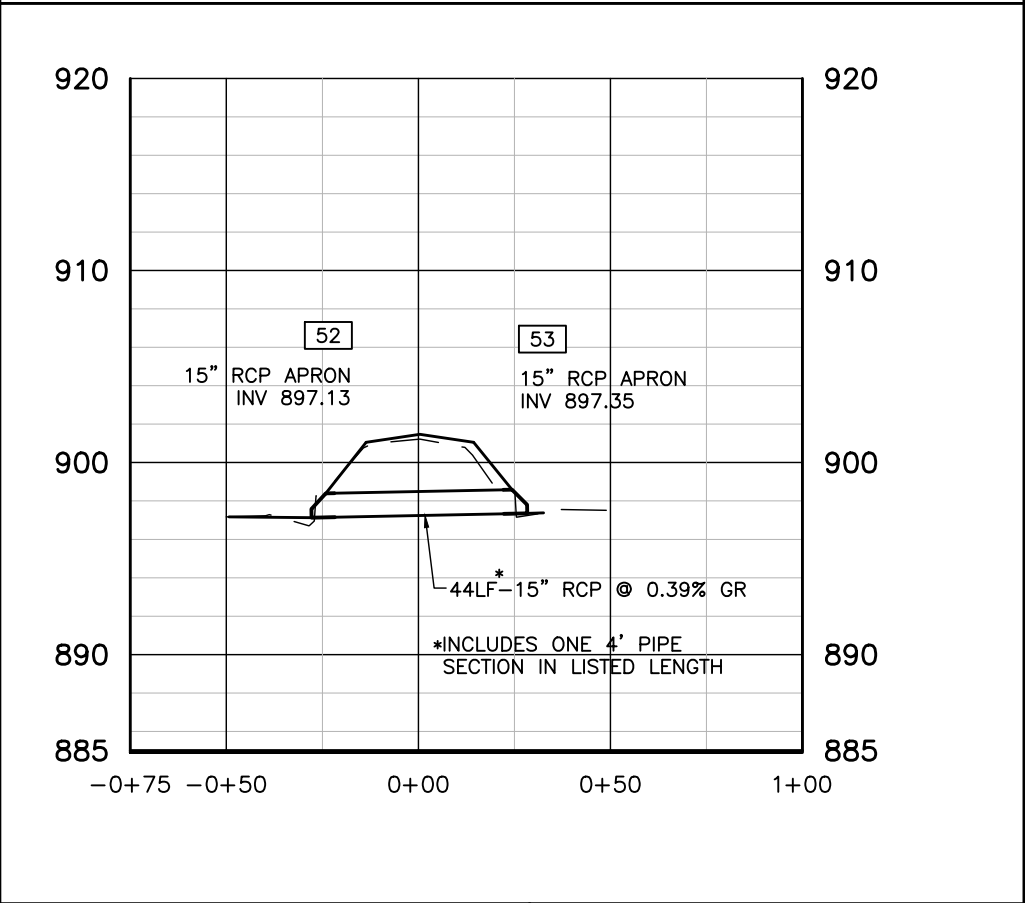
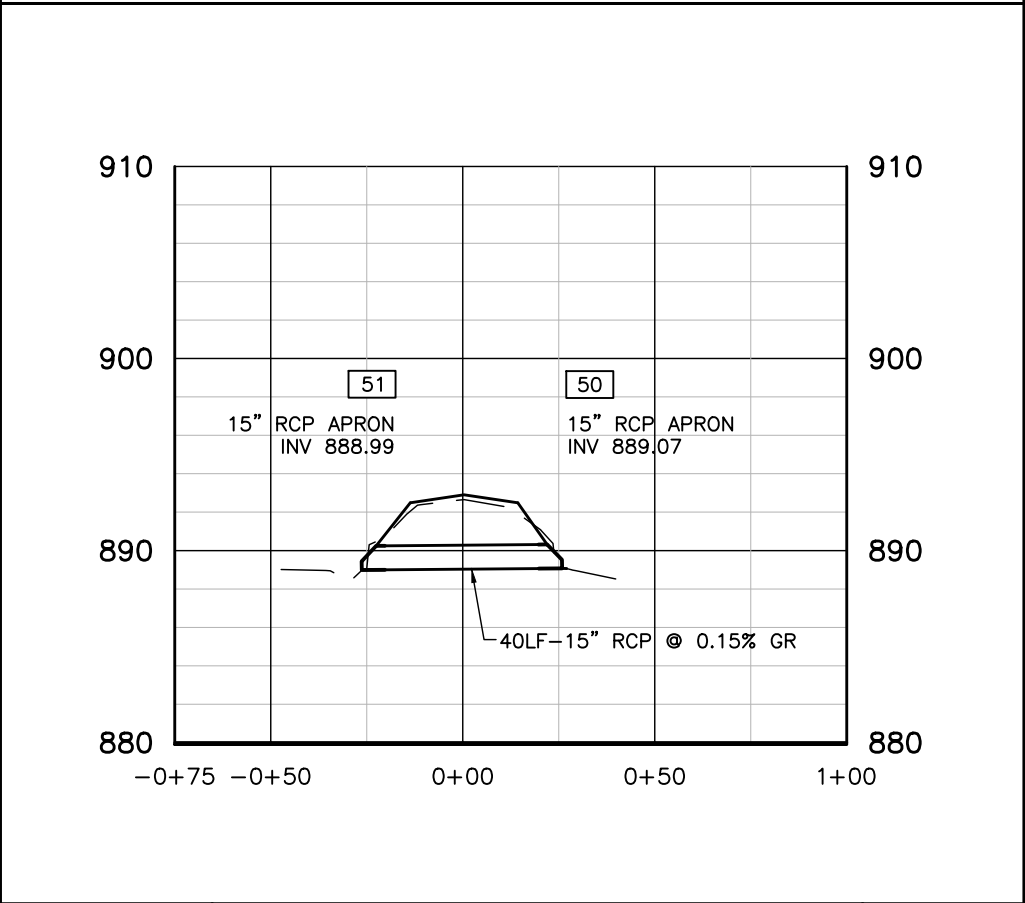
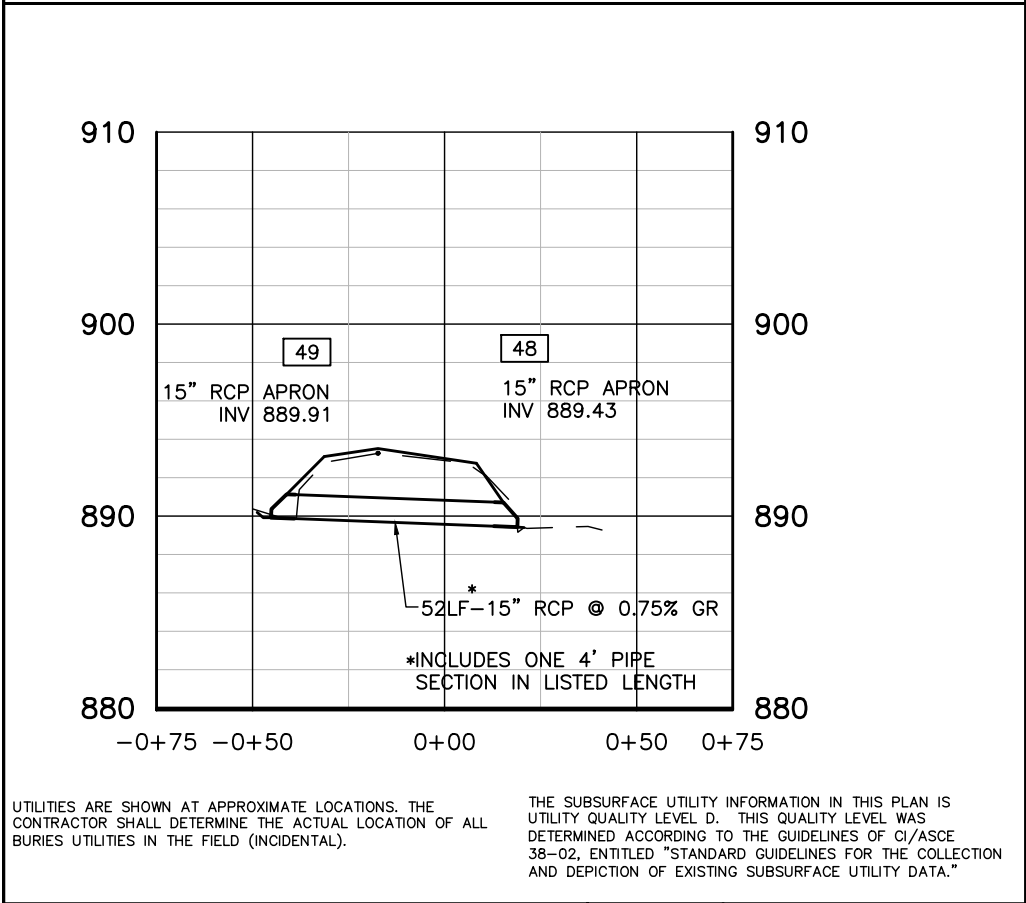
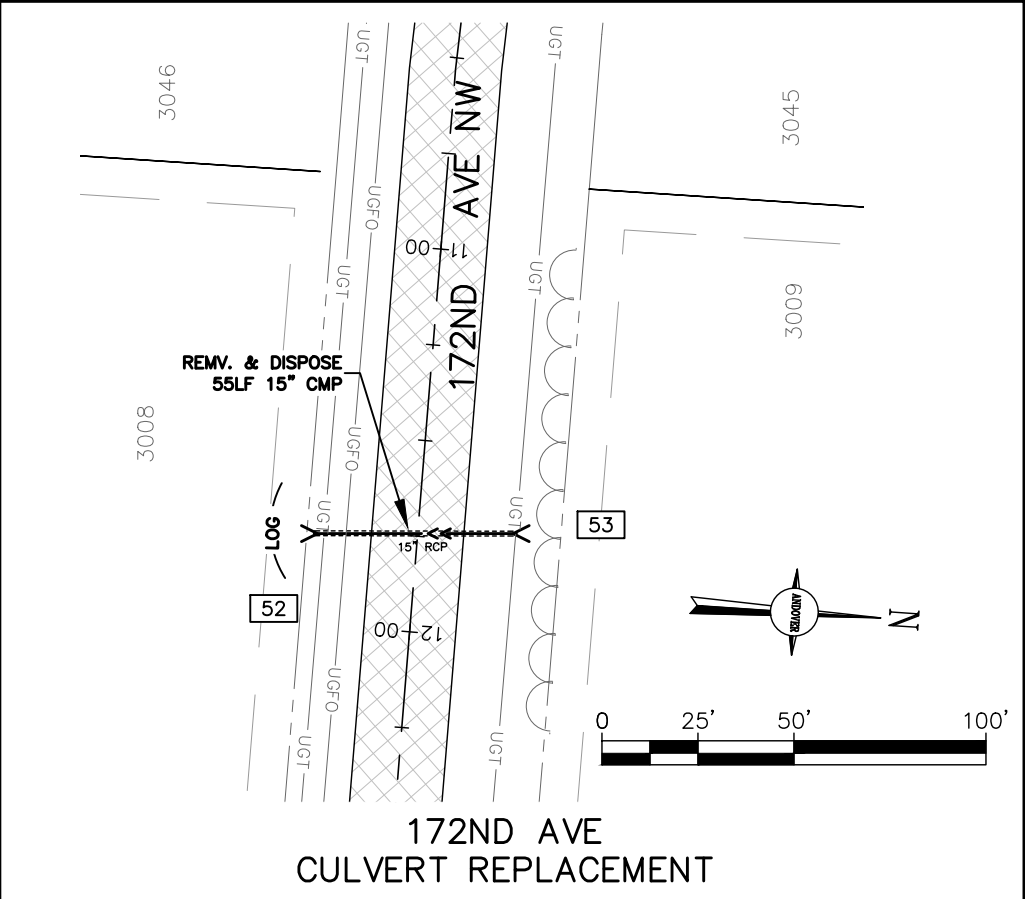
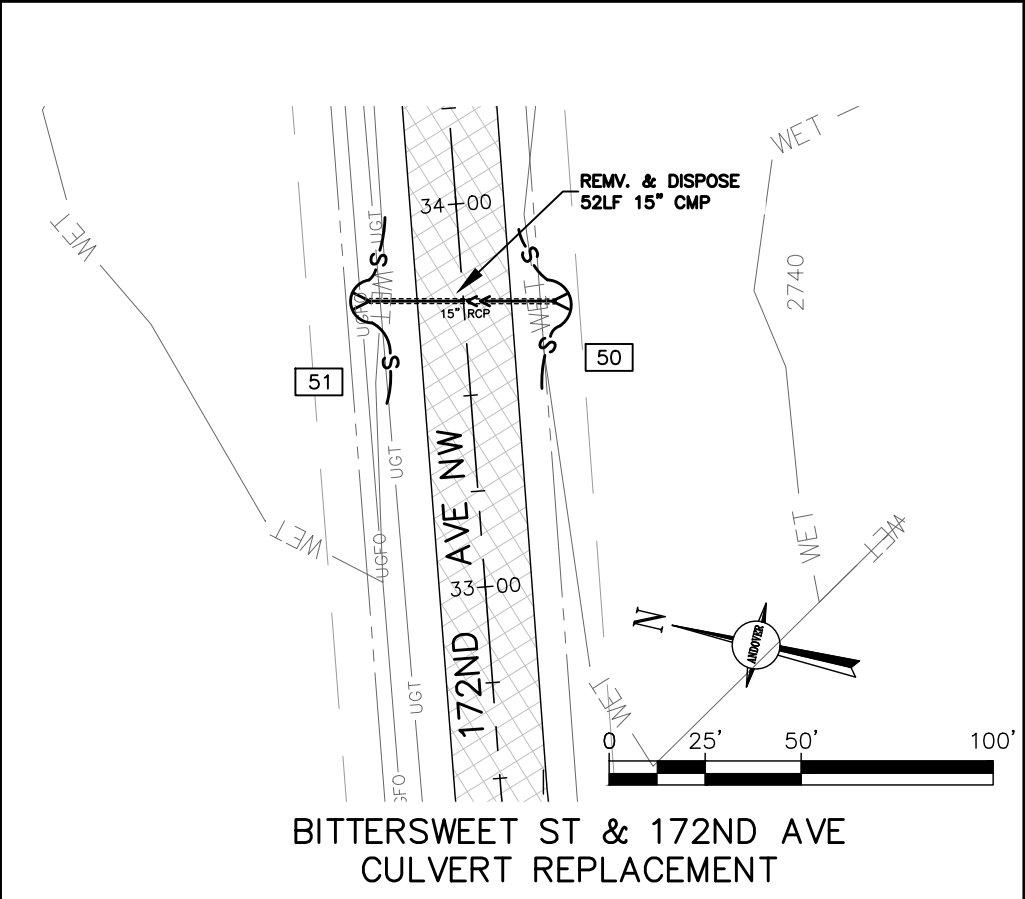
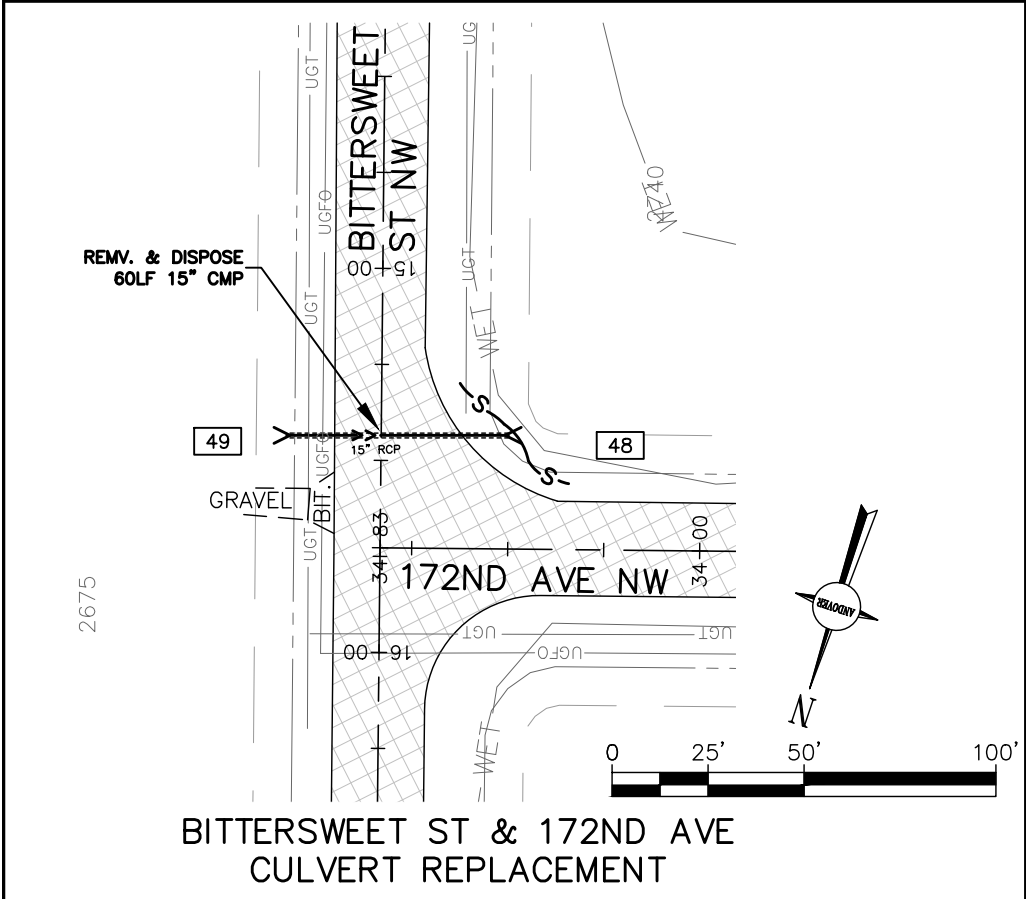


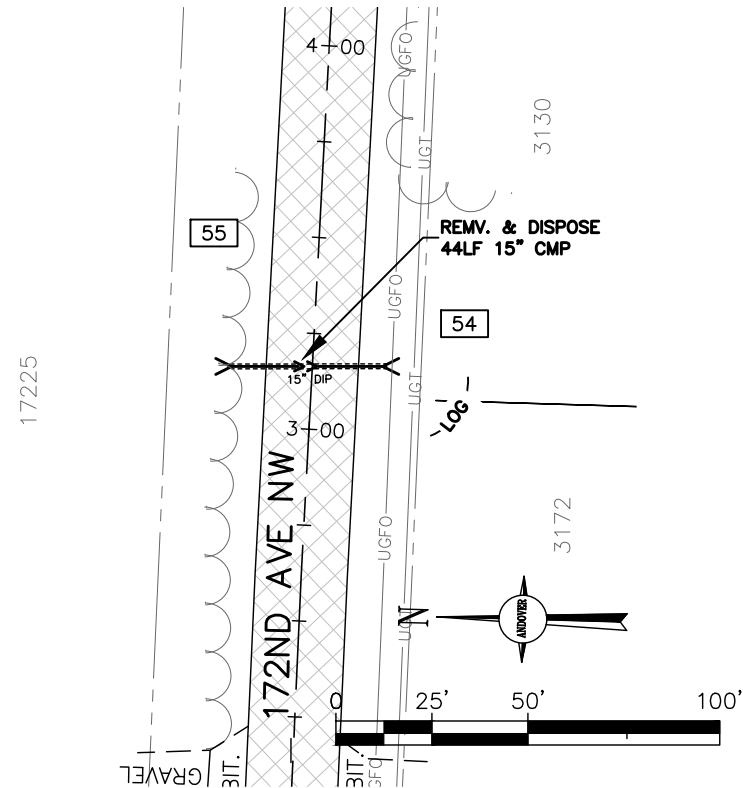
				DESIGNED JUL	DRAWN JBK	I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA  DAVID D. BERKOWITZ TYPED OR PRINTED NAME DATE: MARCH 18, 2025 LIC. No.: 26757		2025 MILL & OVERLAY (C.P. 25–12B)	REMOVALS, STREET PAVING	
NO.	DATE	BY	DESCRIPTION OF REVISIONS	CHECKED DDB					SHEET NO. 41 OF 62 SHEETS	



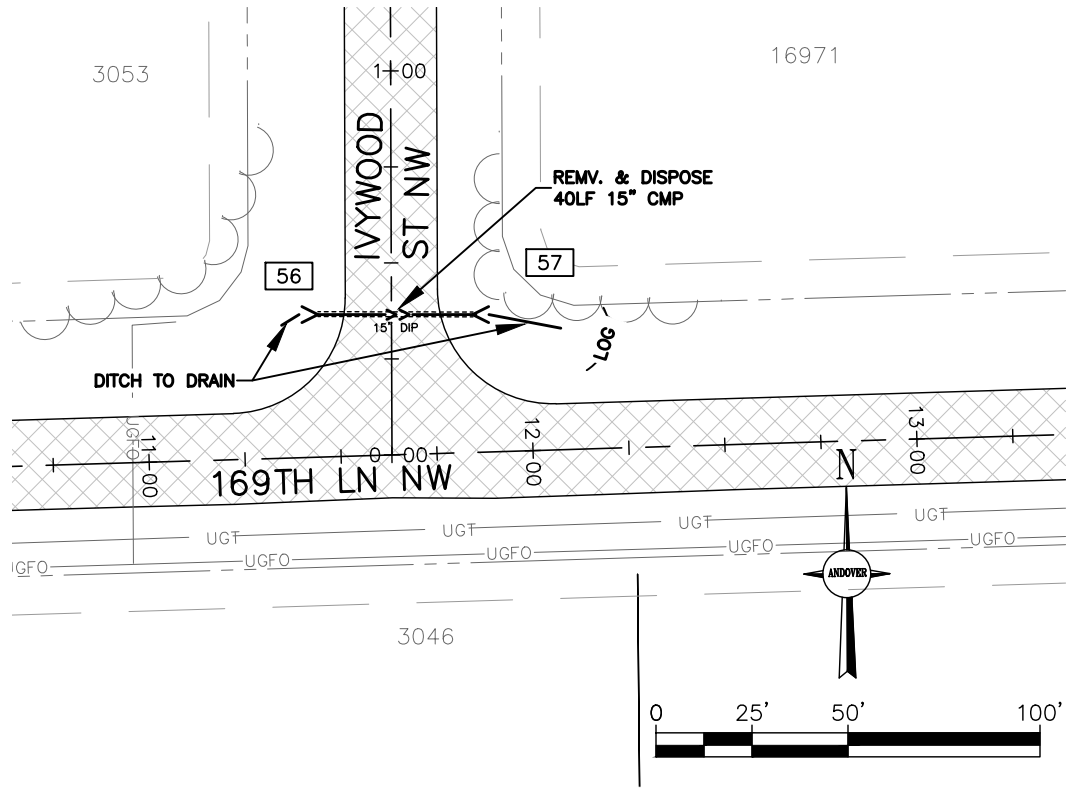




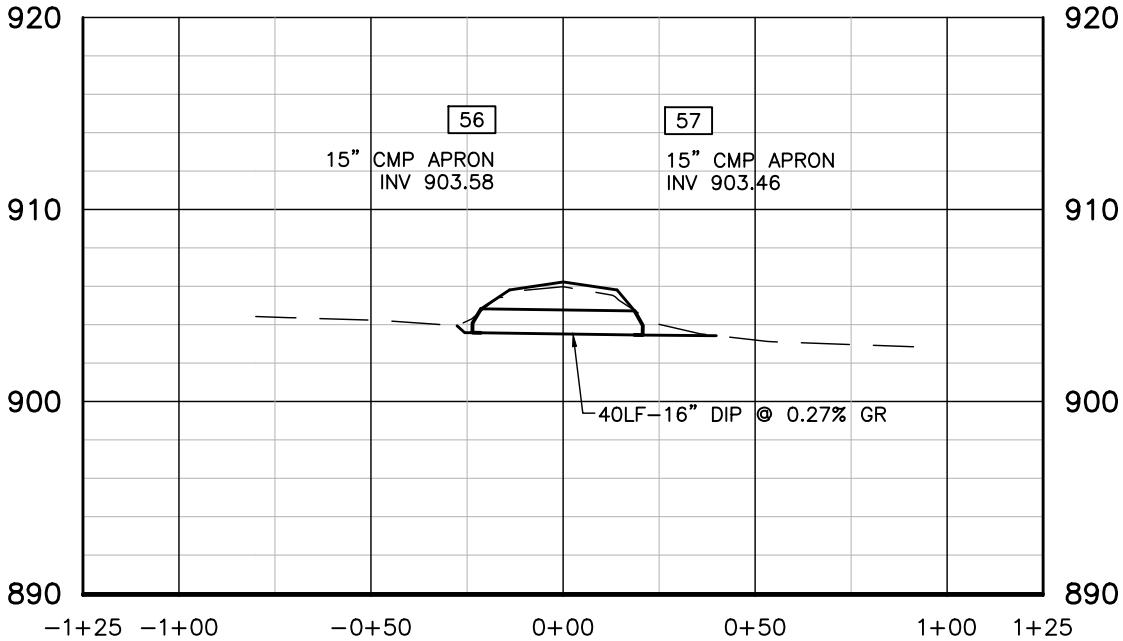
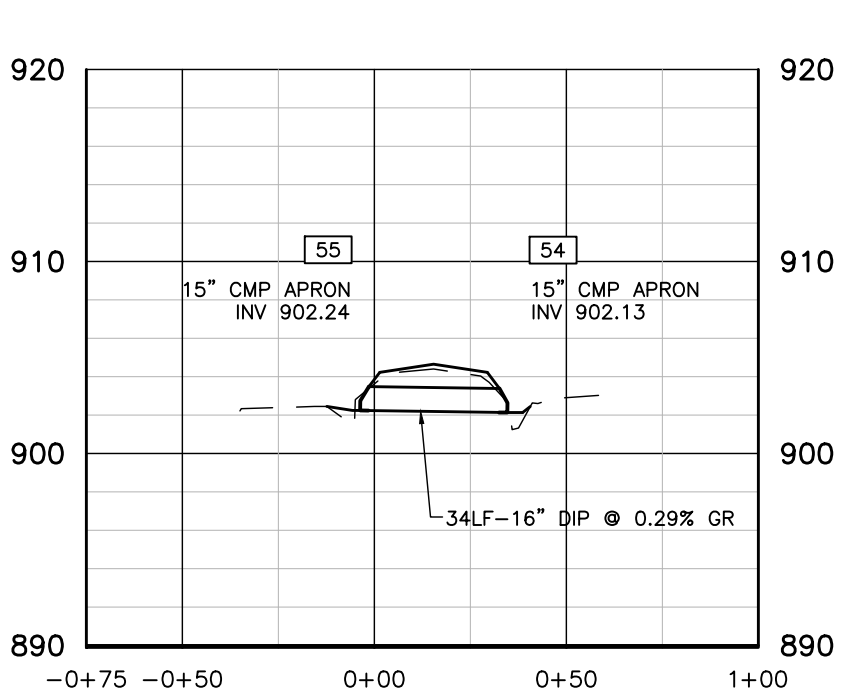




ROUND LAKE BLVD (CASH 9) & 172ND AVE
CULVERT REPLACEMENT



IVYWOOD ST & 169TH LN
CULVERT REPLACEMENT



UTILITIES ARE SHOWN AT APPROXIMATE LOCATIONS. THE CONTRACTOR SHALL DETERMINE THE ACTUAL LOCATION OF ALL BURIED UTILITIES IN THE FIELD (INCIDENTAL).

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

NO.	DATE	BY	DESCRIPTION OF REVISIONS

DESIGNED
JUL
DRAWN
JBK
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DDB

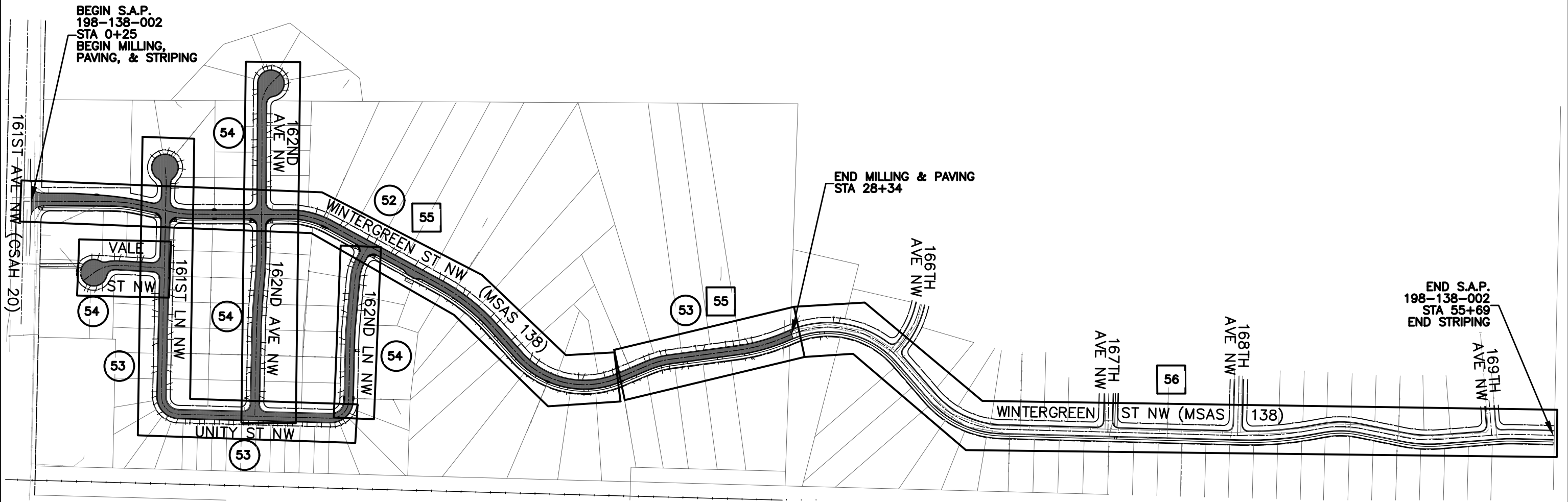
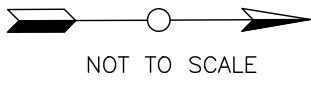
I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA
David D. Berkowitz
SIGNATURE
DATE: MARCH 18, 2025 LIC. NO. 26757
DAVID D. BERKOWITZ
TYPED OR PRINTED NAME



2025 MILL & OVERLAY (C.P. 25-12B)

CULVERT PLAN/PROFILES

SHEET NO. 46 OF 62 SHEETS



- XX = REMOVALS, STORM SEWER, PAVING
- XX = STRIPING

NO.	DATE	BY	DESCRIPTION OF REVISIONS

DESIGNED
JJL

DRAWN
JAK

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
TYPED OR PRINTED NAME
DATE 3/18/2025 LIC. NO. 26757



2025 MILL & OVERLAY-
COUNTRY OAKS WEST, BIRCH PINE ESTATES, &
WINTERGREEN ST NW (161ST AVE NW TO 169TH AVE NW)
CITY PROJECT 25-12C (SAP 198-138-002)

STATEMENT OF ESTIMATED QUANTITIES

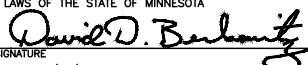
2025 MILL & OVERLAY - (C.P. 25-12C, SAP 198-1132-002) Country Oaks West, Birch Pine Estates & Wintergreen Street					TOTAL QUANTITIES		WINTERGREEN ST. SAP 198-132-002		STREETS (PARTICIPATING)		STORM SEWER (PARTICIPATING)		CO WEST & BP ESTATES (NON-PARTICIPATING)	
NOTES	ITEM NO.		DESCRIPTION	UNIT	EST. QUAN.	ACT. QUAN.	EST. QUAN.	ACT. QUAN.	EST. QUAN.	ACT. QUAN.	EST. QUAN.	ACT. QUAN.	EST. QUAN.	ACT. QUAN.
	1	2021.501	Mobilization	LS	1.00		0.56		0.03		0.41			
1	2	2104.502	Salvage Casting (Storm)	EA	10		8				2			
2	3	2104.503	Remove Curb & Gutter	LF	295		265				30			
3	4	2104.503	Sawing Bit Pavement (Full Depth)	LF	480		440				40			
3,4	5	2104.518	Remove Concrete Pavement	SF	575		575							
3	6	2104.518	Remove Bituminous Pavement	SF	1,330		1,260				70			
	7	2232.504	Mill Bituminous Surface (1.5")	SY	12,200						12,200			
	8	2232.504	Mill Bituminous Surface (2")	SY	9,550		9,550							
	9	2357.506	Bituminous Material For Tack Coat	Gal	1,540		670				870			
	10	2360.509	Type SP 9.5 Wearing Course Mix (3,B)	TN	2,800		1,380				1,420			
5	11	2360.509	Type SP 9.5 Bit Mixture for Patching (3,B)	TN	45		30				15			
6	12	2504.602	Gate Valve Casting Adjustment	EA	16		10				6			
7	13	2504.602	Irrigation System Modifications	EA	30		20				10			
8	14	2506.502	Manhole Casting Adjustment	EA	36		19				17			
9,10	15	2506.502	Casting Assembly - Storm	EA	2				1		1			
9	16	2506.502	Install Casting - Storm	EA	10		8				2			
11	17	2506.602	Mud Existing Casting Rings	EA	25				11		14			
12	18	2506.602	Mud Doghouse	EA	13				9		4			
13	19	2506.607	Fill Catch Basin Sump-Pour Invert	CY	22				10		12			
14	20	2521.618	6" Concrete Walk - Special	SF	1,050		1,050							
	21	2531.503	Concrete Curb and Gutter Surmountable	LF	295		265				30			
	22	2531.602	Saw and Seal Concrete Curb & Gutter	EA	50		20				30			
	23	2531.618	Truncated Domes	SF	190		190							
	24	2563.601	Traffic Control	LS	1.00		0.56		0.03		0.41			
	25	2573.502	Storm Drain Inlet Protection	EA	10		8				2			
	26	2574.507	Loam Topsoil Borrow (LV)	CY	74		70				4			
	27	2575.504	Sodding Type Lawn	SY	350		340				10			
	28	2582.503	4" Solid Line Paint - White	LF	130		130							
	29	2582.503	18" Solid Line Paint - White	LF	85		85							
	30	2582.503	4" Double Solid Line Paint - Yellow	LF	5,250		5,250							
	31	2582.518	Pavement Message Paint	SF	460		460							

C.P. 25-12D Notes:

- Includes plating structure if necessary.
- Regardless of type/dimension of curb. Includes sawcut of curb. Excavation and off-site disposal of material behind curb necessary for removal and replacement of curb and gutter incidental to this item.
- Regardless of depth.
- Any excavation and off-site disposal of material for pedestrian ramp removals incidental.
- For patching adjacent to curb replacement, utility replacements, trails and driveway aprons.
- F&I gate valve casting adjustment(if necessary). Clean and glue to existing frame.
- Based upon number or 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.
- F&I manhole casting adjustment (if necessary). Contractor to verify casting diameter. Clean and glue to existing frame. Neenah R-1979 series, or approved equal.
- Includes new concrete adjusting rings regardless of depth, Infi-Shield Gator Wrap (manholes), or wrap rings with geotextile fabric and concrete collar (catch basins).
- For use if salvaged casting breaks or is unuseable or new casting required per plans.
- Protect casting, touch up mud on existing concrete adjustment rings inside structure.
- Item shall include regrouting all doghouses within structure. The "Each" item refers to each structure regardless of the number of doghouses in the structure.
- Item shall include filling sump with redi-mix , pouring invert, and constructing benches up to 1/3 of pipe diameter. Item includes regrouting doghouses as necessary.
- For pedestrian curb ramps.

The following standard plates approved by the Federal Highway Administration shall apply on this project.	
STANDARD PLATES	
Plate No.	Description
7038A	Detectable Warning Surface Truncated Domes
7100H	Concrete Curb and Gutter
8000K	Temporary Channelizers

BASIS OF ESTIMATED QUANTITIES		
Bituminous Wear Course	120	# / SY / inch
Bit. Non-Wear Course	120	# / SY / inch
Aggregate Base, Class 5	110	# / SY / inch
Tack Coat	0.07	Gal / SY
Hydraulic Mulch Matrix	2500	# / acre
Fertilizer Type 3 (Analysis 20-10-10)	200	# / acre
Seed Mixture 25-151	200	# / acre

				DESIGNED JJL	DRAWN JAK	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  SIGNATURE DATE 3/18/2025 DAVID D. BERKOWITZ TYPED OR PRINTED NAME LIC. NO. 26757	CITY OF ANDOVER 	2025 MILL & OVERLAY– COUNTRY OAKS WEST, BIRCH PINE ESTATES, & WINTERGREEN ST NW (161ST AVE NW TO 169TH AVE NW) CITY PROJECT 25–12C (SAP 198–138–002)	STATEMENT OF ESTIMATED QUANTITIES SHEET NO. 48 OF 62 SHEETS
				CHECKED DDB					
NO.	DATE	BY	DESCRIPTION OF REVISIONS						

GENERAL NOTES:

THE 2025 EDITION OF THE MINNESOTA DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR CONSTRUCTION" SHALL GOVERN. CITY OF ANDOVER 2025 UTILITY AND STREET CONSTRUCTION SPECIFICATIONS SHALL APPLY.

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."

ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO AND BE INSTALLED IN ACCORDANCE WITH THE "MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MMUTCD)" AND THE "TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS FIELD MANUAL", NEWEST ADDITIONS.

CONSTRUCTION SHALL BE STAGED SUCH THAT TRAFFIC IS MAINTAINED AT ALL TIMES. CONTRACTOR SHALL USE FLAG PERSON, IF NEEDED (INCIDENTAL TO TRAFFIC CONTROL).

ROAD WORK AHEAD SIGNS SHALL BE MAINTAINED AT ALL INTERSECTING ROADS TO THE PROJECT. TYPE B CHANNELIZERS SHALL BE USED IN ALL NECESSARY LOCATIONS. TRAIL CLOSED SIGNS ON TYPE III BARRICADES SHALL BE PLACED AT ALL LOCATIONS IMPACTED BY PEDESTRIAN RAMP/SIDEWALK/TRAIL IMPROVEMENTS.

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. (651-454-2000)

CONSTRUCTION NOTES:

THE CONTRACTOR SHALL INSTALL INLET PROTECTION DEVICES ON ALL STORM SEWER STRUCTURES. PRIOR TO PLACING CASTINGS ON STORM SEWER STRUCTURES, THE CONTRACTOR SHALL FOLLOW THE STANDARD DETAIL IN THE PLANS TO ALLOW FOR INFLOW INTO THE STORM SEWERS. ONCE CASTINGS ARE INSTALLED ON STORM SEWER STRUCTURES, THE CONTRACTOR SHALL INSTALL INLET PROTECTION DEVICES IN ALL STRUCTURES SUCH THAT SEDIMENT IS CAPTURED WITH A HIGH FLOW BYPASS. CLEAN AS NECESSARY. ALL EROSION CONTROL DEVICES SHALL BE MAINTAINED ACCORDING TO THE MPCA BEST MANAGEMENT PRACTICES MANUAL, SWPPP, AND THE MINNESOTA STORM WATER MANUAL. THE CONTRACTOR SHALL REMOVE ALL EROSION CONTROL DEVICES ONCE VEGETATION HAS BEEN ESTABLISHED.

COMPACTION OF ALL BITUMINOUS MIXTURE SHALL BE BY THE "SPECIFIED DENSITY METHOD" EXCEPT FOR PATCHES AND TRAILS, WHICH SHALL BE BY THE "ORDINARY COMPACTION METHOD".

ALL DISTURBED AREAS SHALL BE BACKFILLED WITH SALVAGED TOPSOIL, IF ANY. DISTURBED AREAS SHALL BE RESTORED WITH 4" TOPSOIL (MINIMUM) AND SOD. ALL RESTORATION SHALL OCCUR WITHIN 7 DAYS OF GRADING COMPLETION. RESTORATION WORK SHALL BE COMPLETED BEFORE PAVING OF THE WEARING COURSE.

ALL EXISTING SIGNS SHALL BE REMOVED AND REPLACED BY THE ANDOVER SIGN DEPARTMENT UNLESS CALLED OUT OTHERWISE IN THE PLANS. COORDINATE WITH MINIMUM 48 HOUR NOTICE WITH ENGINEER IN FIELD.

BOULEVARD IRRIGATION SYSTEMS SHALL BE PROTECTED. SALVAGE AND/OR REPLACEMENT OF ANY EXISTING HEADS SHALL ONLY BE PAID FOR IF REMOVAL IS ABSOLUTELY NECESSARY. ANY REPAIR WORK SHALL BE COMPLETED BY AN IRRIGATION CONTRACTOR LICENSED WITH THE CITY. COORDINATE NOTIFICATION OF SYSTEM OWNERS WITH CITY INSPECTOR PRIOR TO IMPACTING SYSTEMS.

CONCRETE WASHOUT SHALL BE CONTAINED WITHIN CONCRETE TRUCKS, NOT ON-SITE.

CONTRACTOR SHALL SWEEP ALL MATERIAL OFF ADJACENT STREETS DUE TO CONSTRUCTION ACTIVITY, DAILY AS NECESSARY (INCIDENTAL).

SOIL STOCKPILES SHALL BE STABILIZED WITHIN 7 DAYS OF ROUGH GRADING OR INACTIVITY (INCIDENTAL).

CONTRACTOR IS REQUIRED TO REPAIR AND MAINTAIN ALL TEMPORARY AND PERMANENT EROSION AND SEDIMENT CONTROL PRACTICES (INCIDENTAL).

CONTRACTOR SHALL REMOVE ALL TEMPORARY SEDIMENT CONTROL PRACTICES ONCE VEGETATION IS RE-ESTABLISHED (INCIDENTAL).

REFER TO SWPPP IN PROJECT SPECIFICATION FOR ADDITIONAL CONSTRUCTION/EROSION CONTROL REQUIREMENTS.

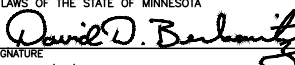
EARTHWORK NOTES:

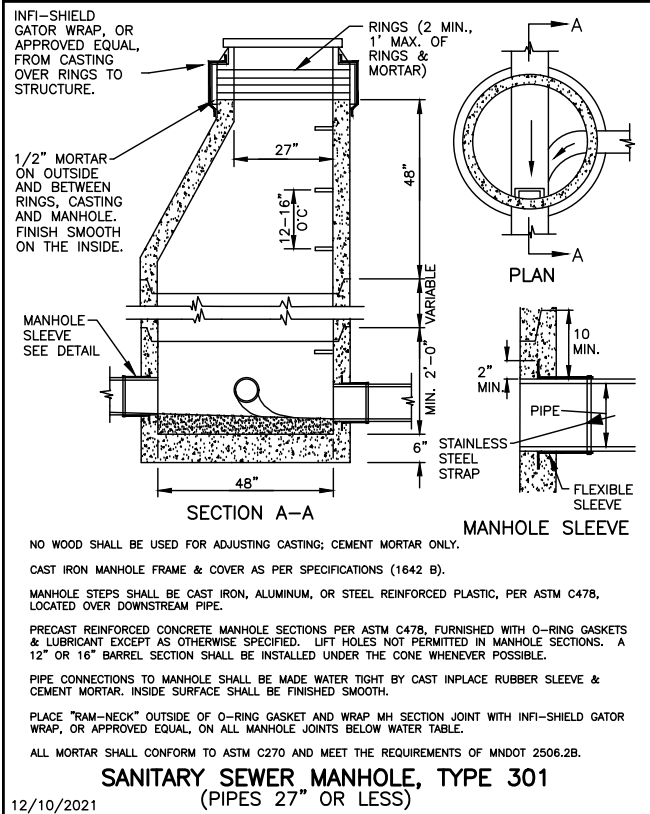
THE CONTRACTOR SHALL STRIP AND STOCKPILE EXISTING TOPSOIL MATERIAL, IF ANY, FOR RE-USE (LITTLE IS EXPECTED). RE-USED TOPSOIL SHALL BE CLEAN WITH NO SOD CHUNKS / EXISTING VEGETATION. TOPSOIL STRIPING, IF ANY, SHALL BE CONSIDERED INCIDENTAL.

SELECT EXCAVATED MATERIALS SHALL BE UTILIZED TO THE FULLEST EXTENT WITHIN THE PROJECT LIMITS. MATERIAL FOR BACKFILL BEHIND THE CURB SHALL BE FREE OF DEBRIS. EXCESS MATERIAL GENERATED, IF ANY, SHALL BE DISPOSED OF OFF-SITE BY THE CONTRACTOR IN ACCORDANCE WITH MNDOT 2104.3C3.

WHEN CONNECTING NEW PAVED SURFACING TO ANY IN-PLACE PAVEMENTS, CUT VERTICALLY TO THE BOTTOM OF THE IN-PLACE PAVEMENTS OR TO THE BOTTOM OF THE NEW SURFACING, WHICHEVER IS DEEPER, THEN AT 2(V):1(H) SLOPE TO THE TOP OF THE SUBGRADE.

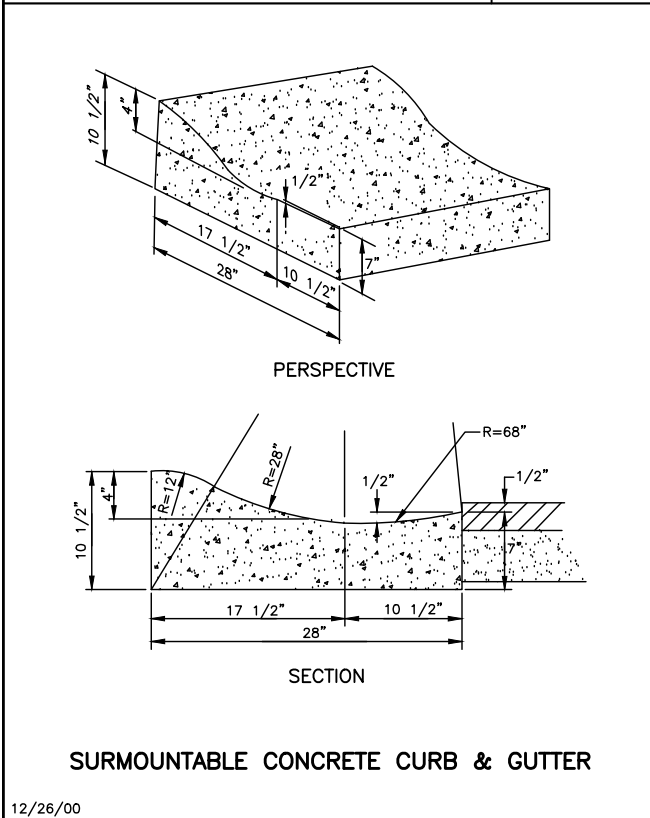
EXCAVATION AND DISPOSAL OF SOIL/TURF MATERIAL SHALL BE INCIDENTAL TO REMOVAL PAY ITEMS UNLESS OTHERWISE NOTED. CONTRACTOR SHALL MINIMIZE EXCAVATION AND DISTURBANCE ALONG THE PROJECT CORRIDOR. EXCAVATED MATERIAL CAN BE USED FOR BACKFILLING PROVIDED IT IS FREE OF SOD CHUNKS AND/OR DEBRIS. EXCESS MATERIAL SHALL BE DISPOSED OF OFF-SITE.

				DESIGNED JJL	DRAWN JAK	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		2025 MILL & OVERLAY- COUNTRY OAKS WEST, BIRCH PINE ESTATES, & WINTERGREEN ST NW (161ST AVE NW TO 169TH AVE NW) CITY PROJECT 25-12C (SAP 198-138-002)	CONSTRUCTION NOTES SHEET NO. 49 OF 62 SHEETS
NO.	DATE	BY	DESCRIPTION OF REVISIONS	CHECKED DDB		SIGNATURE  DATE 3/18/2025 LIC. NO. 26757			



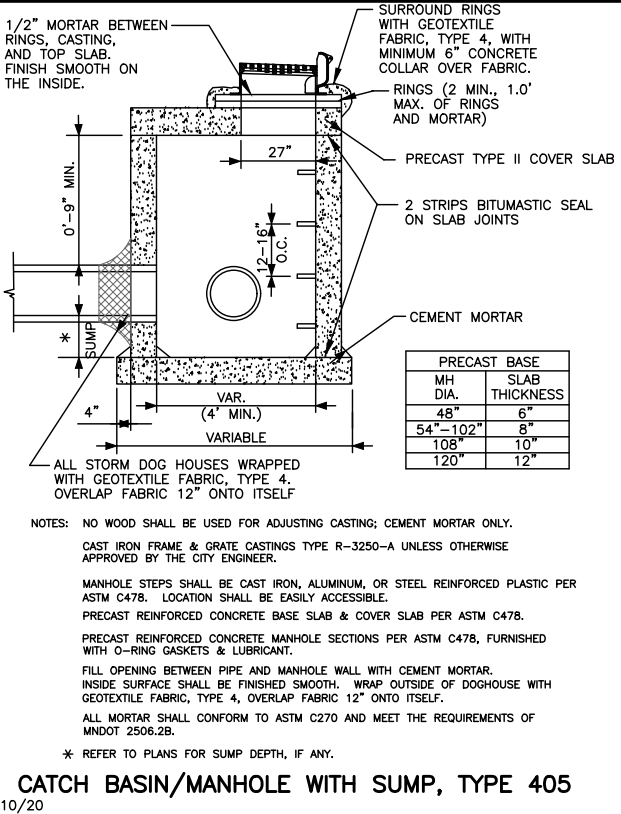
CITY OF ANDOVER

STANDARD DRAWING NO. 301E



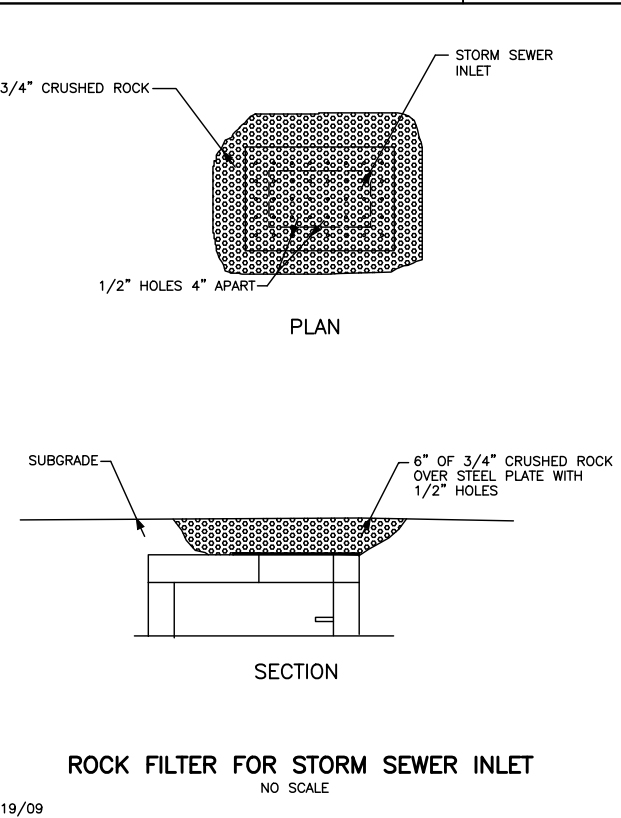
CITY OF ANDOVER

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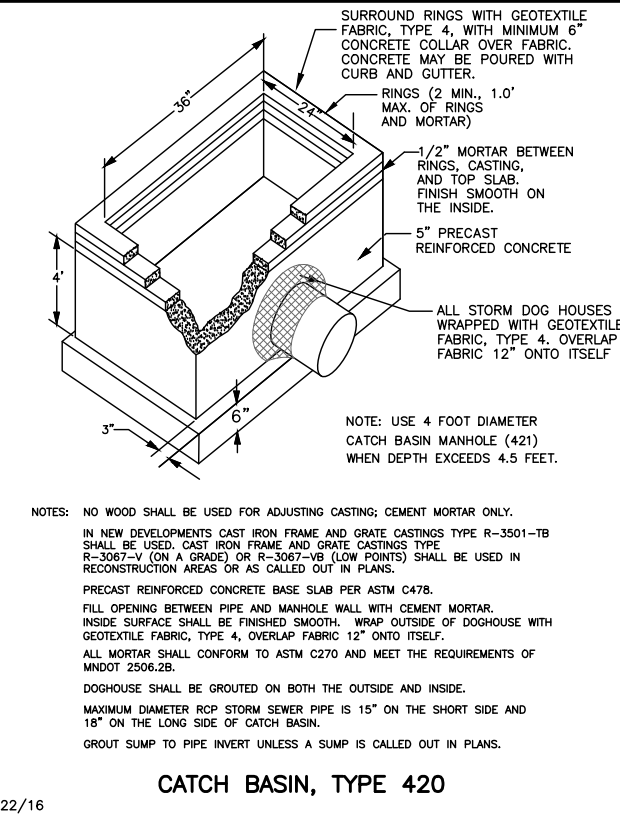
CITY OF ANDOVER

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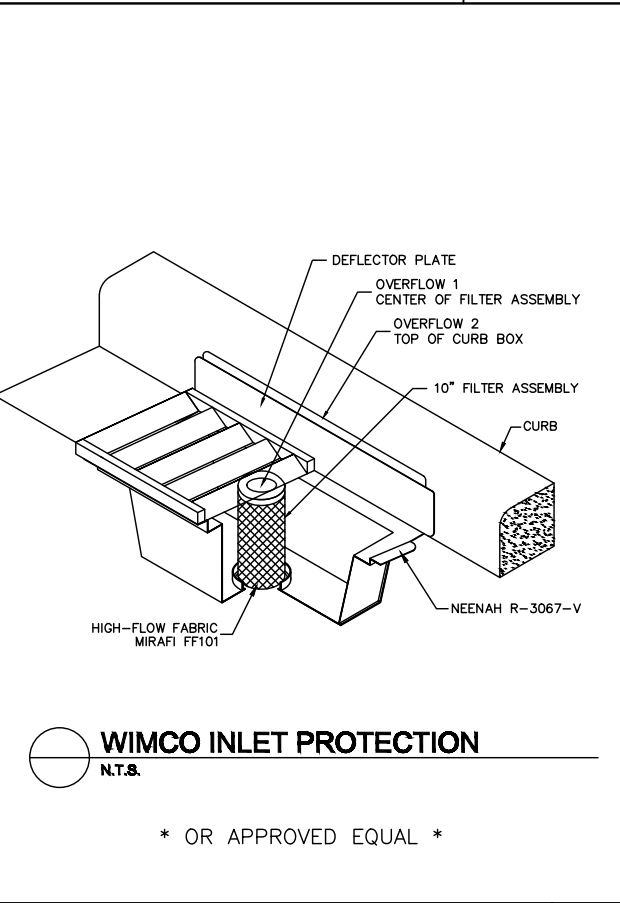
CITY OF ANDOVER

STANDARD DRAWING NO. 619



CITY OF ANDOVER

STANDARD DRAWING NO. 420F



STORM SEWER STRUCTURE TABLE								
2025 Mill & Overlay: (C.P. 25-12C) (SAP 198-138-002)								
CB-MH #	Fill Sump (2)	Diam. (ft)	Sump Depth (ft)	Volume (CY)	Mud Doghouse	Mud Rings	Casting	# Existing 2" Rings (1)
DCB2283		4	1	0.7	1	1		
DCB2284		4	1	0.7	1	1		
DCB2285		4	1	0.7	1	1		
DCB2286	0.7	4	1	0.7			Salvage/Reinstall	8
DCB2287		4	1	0.7	1	1		
DCB2288		4	1	0.7	1		Salvage/Reinstall	13
DCB2289	0.7	4	1	0.7			Salvage/Reinstall	13
DCB2290		4	1	0.7	1	1		
DCB2291	0.7	4	1	0.7			Salvage/Reinstall	14
DCB2292	0.7	4	1	0.7			Salvage/Reinstall	10
DCB2293		4	1	0.7	1	1		
DCB2294	0.7	4	1	0.7		1		
DCB2295	0.7	4	1	0.7		1		
DCB2296		4	0.5	0.5	1		Salvage/Reinstall	16
DCB2297	0.7	4	1	0.7		1		
DCB2298	0.7	4	1	0.7			Salvage/Reinstall	8
DCB2299	0.7	4	1	0.7			Salvage/Reinstall	16
DCB2300		4	1	0.7	1	1		
DCB2301		4			1	1		
DCB2302	0.7	4			1	1		
DCB2303	0.7	4	1	0.7		1		
DCB2304	0.7	4	1	0.7		1		
DCB2305	0.7	4	1	0.7		1		
DCB2306	0.7	4	1	0.7		1		
DCB2307	0.7	4	1	0.7		1		
DCB2308	0.7	4	1	0.7		1		
DCB2309		4	1	0.7	1	1		
DCB2310	0.7	4	1	0.7		1		
DCB2312	0.7	4	1	0.7		1		
DCB2313	0.7	4	1	0.7		1		
DCB2315	0.7	4	1	0.7		1		
DCB2316	0.7	4	1	0.7		1		
DCB2317	1.1	5	1	1.1			Salvage/Reinstall	12
DCB2318		5	1	1.1	1		Salvage/Reinstall	8
DCB2321		4	1	0.7	1	1		
Total	16			24	14	25	10	

Notes 1): When installing casting, 6" and 1' rings shall be used so that there are no more than 5 rings per casting.
2) Mudding of doghouses incidental to filling CB sump.

NO.	DATE	BY	DESCRIPTION OF REVISIONS

DESIGNED JJL
DRAWN JAK
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
TYPED OR PRINTED NAME

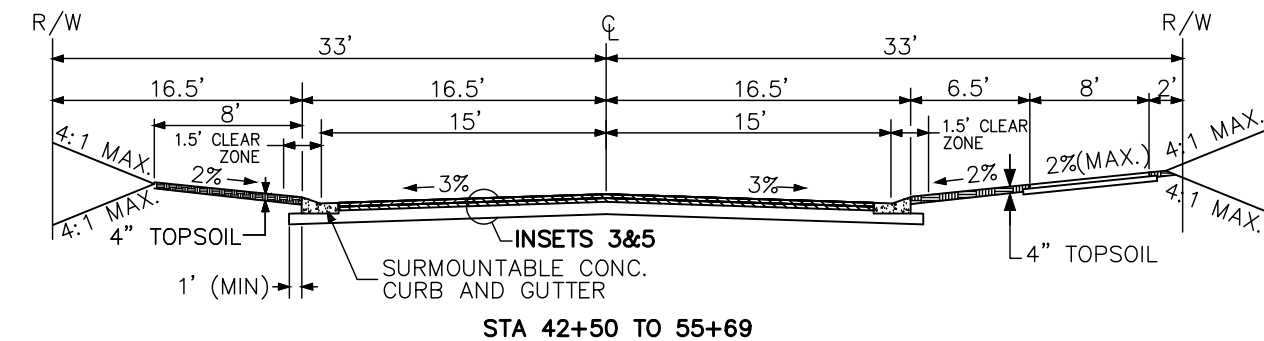
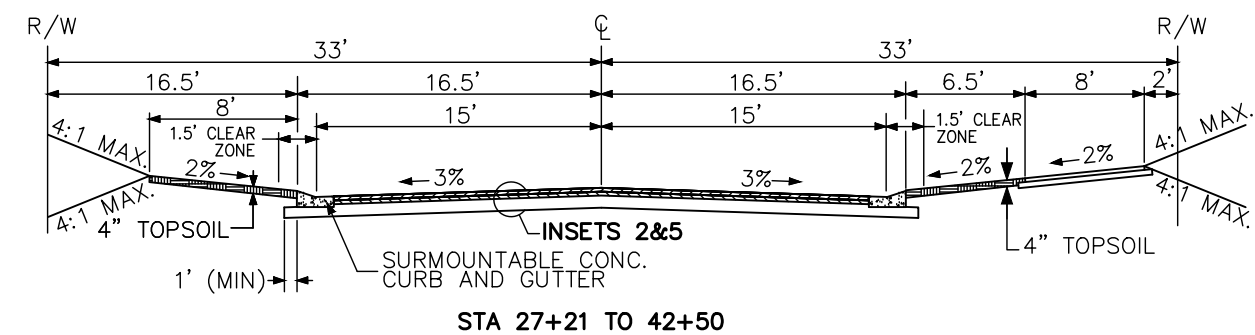
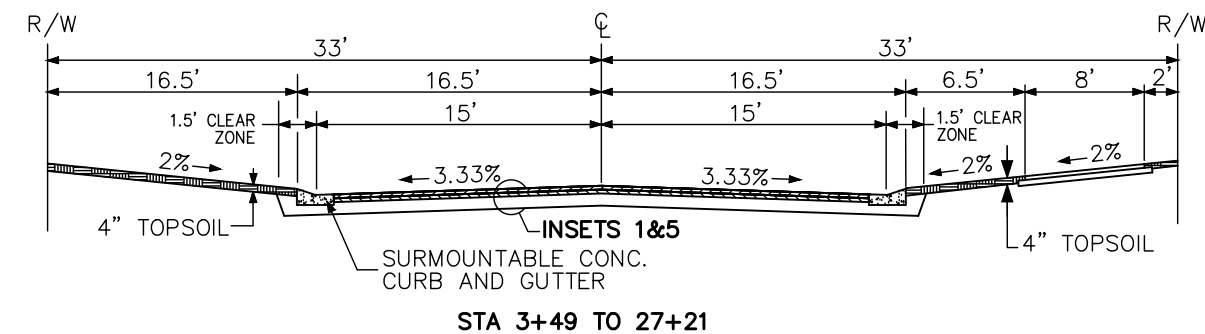
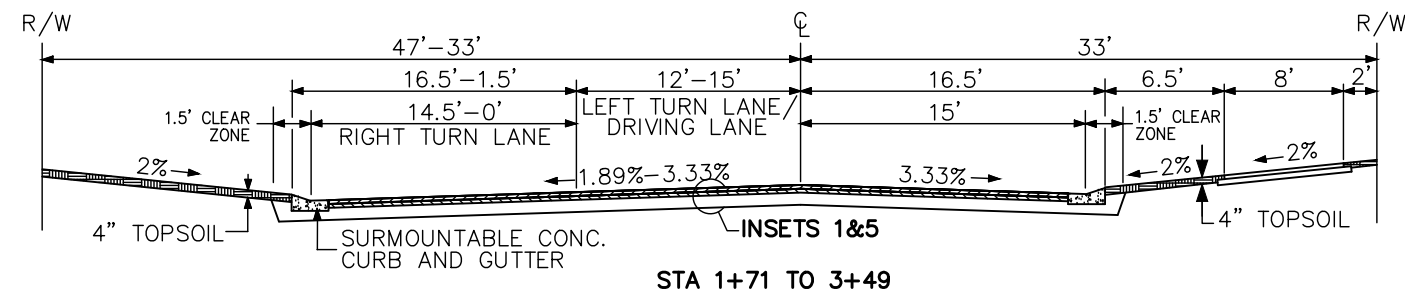
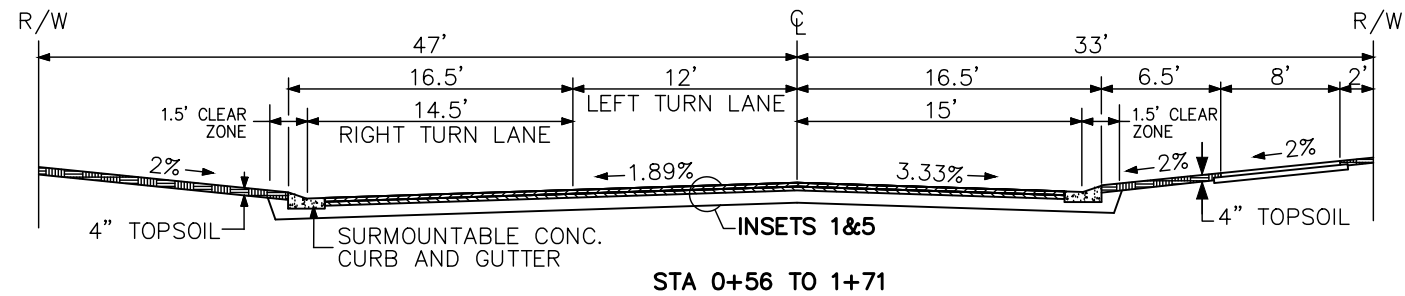
DATE 3/18/2025 LIC. NO. 26757

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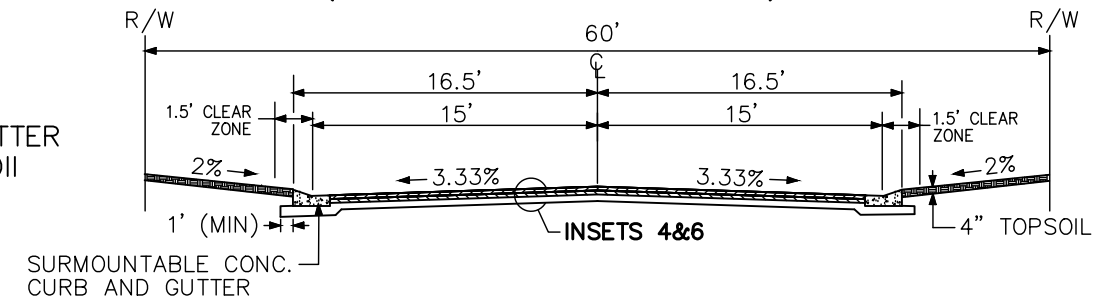
2025 MILL & OVERLAY-
COUNTRY OAKS WEST, BIRCH PINE ESTATES, &
WINTERGREEN ST NW (161ST AVE NW TO 169TH AVE NW)
CITY PROJECT 25-12C (SAP 198-138-002)

DETAILS & STORM SEWER TABLE
SHEET NO. 50 OF 62 SHEETS

WINTERGREEN ST NW EXISTING TYPICAL SECTIONS (MILL 2" AND PAVE 2.25" OVERLAY)

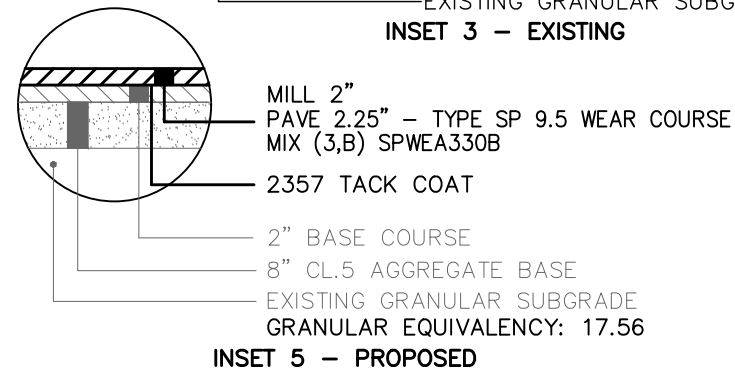
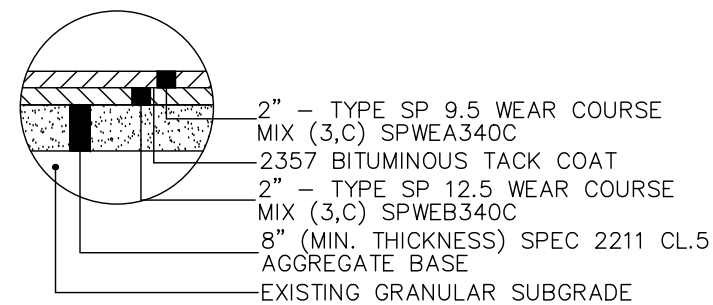
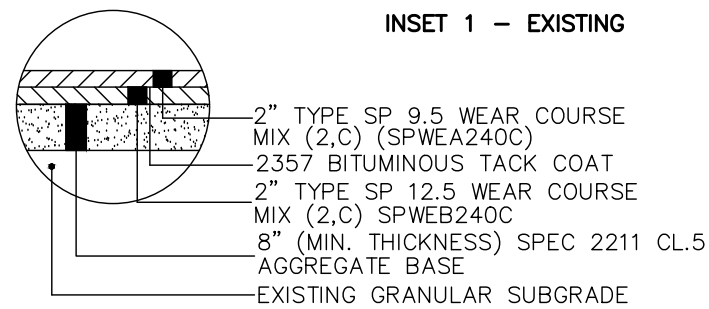
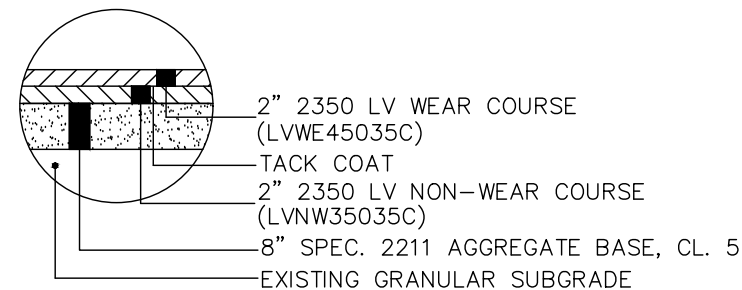


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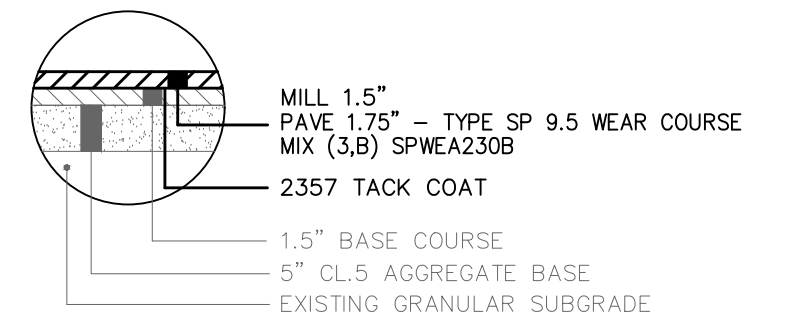
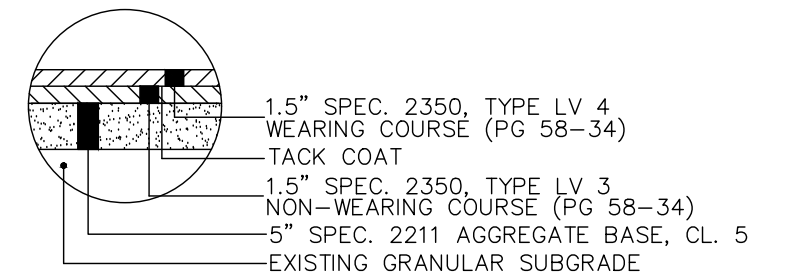


NOTE:
B618 CONC. CURB & GUTTER
TO BE USED AT ALL RADII

WINTERGREEN ST NW



ALL STREETS EXCEPT WINTERGREEN ST NW



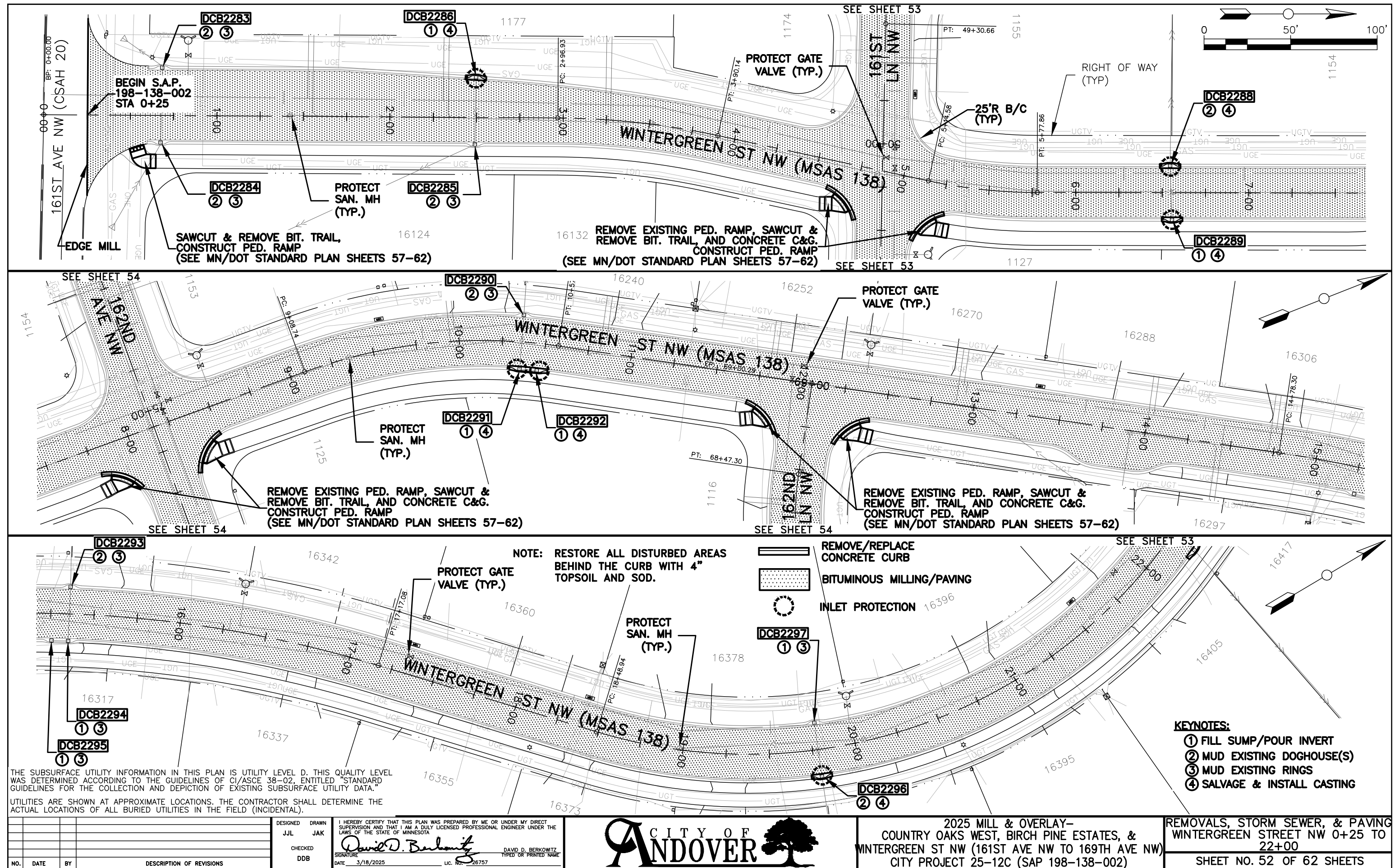
NO.	DATE	BY	DESCRIPTION OF REVISIONS

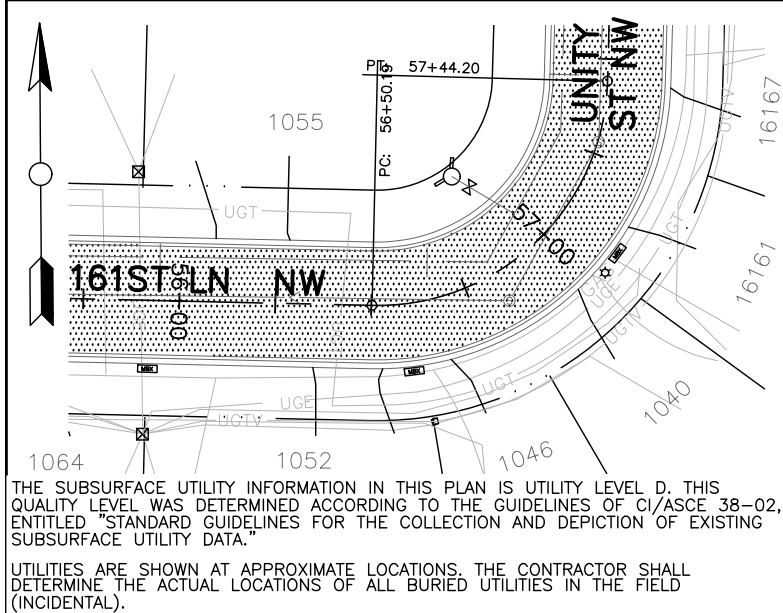
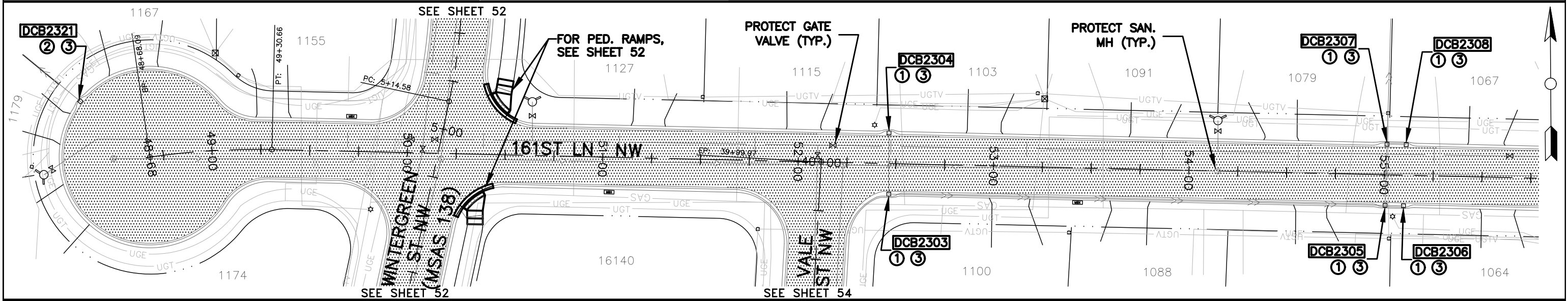
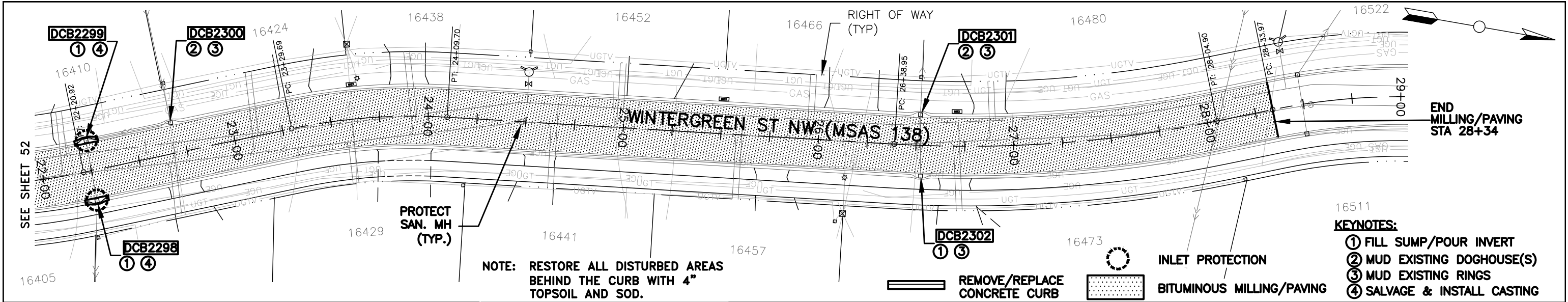
DESIGNED JJL	DRAWN JAK
CHECKED DDB	SIGNATURE <i>David D. Berkowitz</i> DAVID D. BERKOWITZ TYPED OR PRINTED NAME
	DATE 03/18/2025 LIC. NO. 26757



2025 MILL & OVERLAY-
COUNTRY OAKS WEST, BIRCH PINE ESTATES, &
WINTERGREEN ST NW (161ST AVE NW TO 169TH AVE NW)
CITY PROJECT 25-12C (SAP 198-138-002)

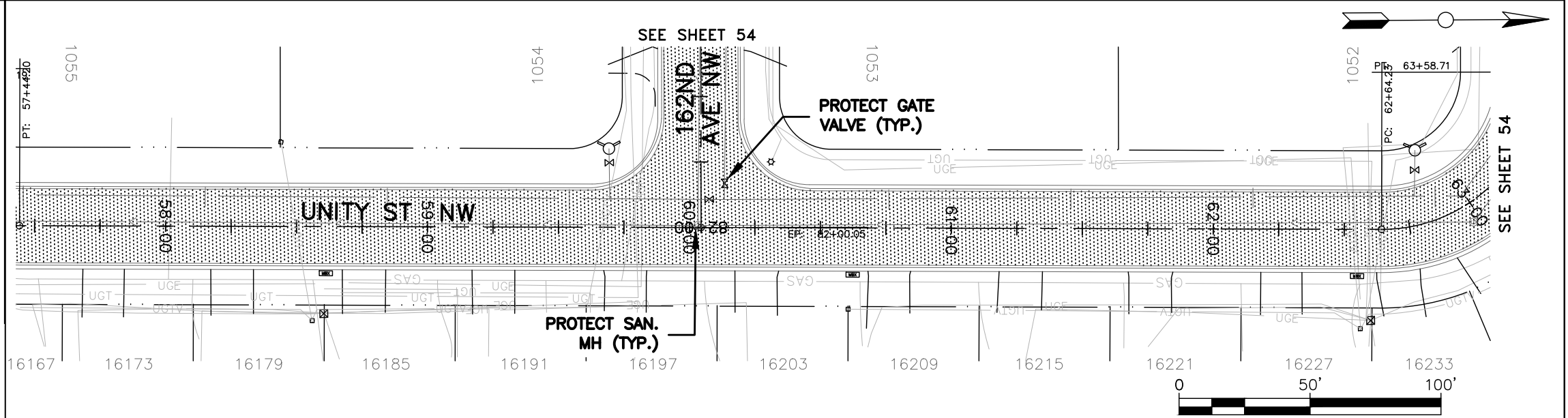
TYPICAL SECTIONS
SHEET NO. 51 OF 62 SHEETS

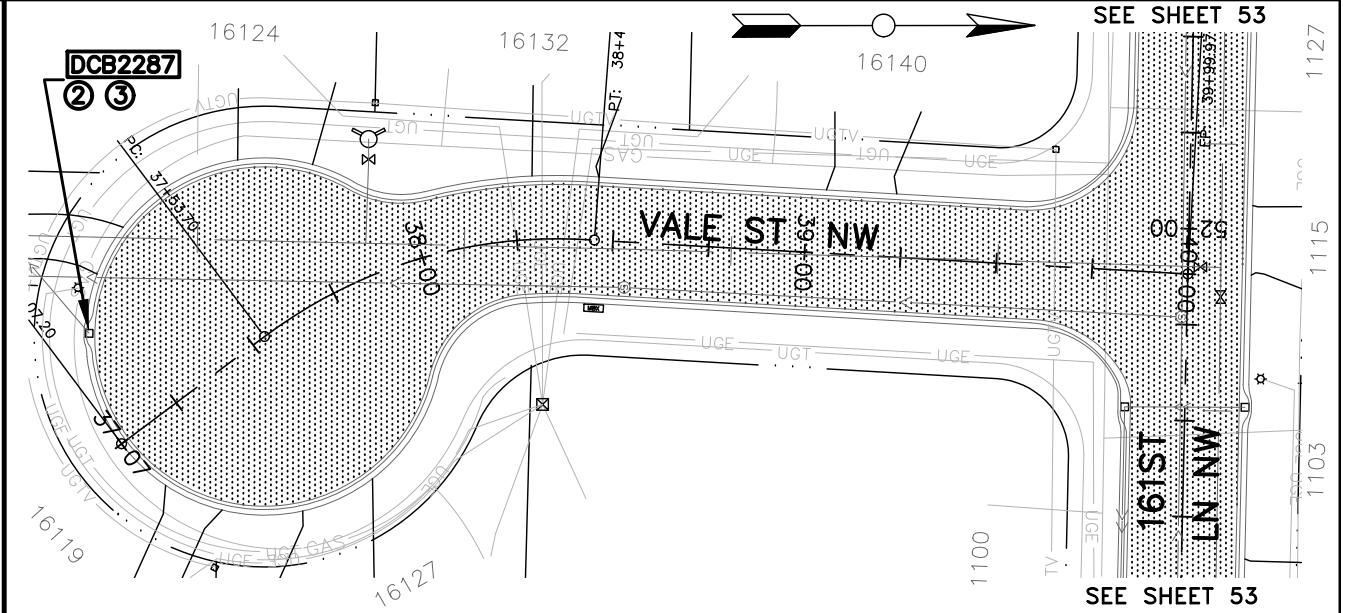
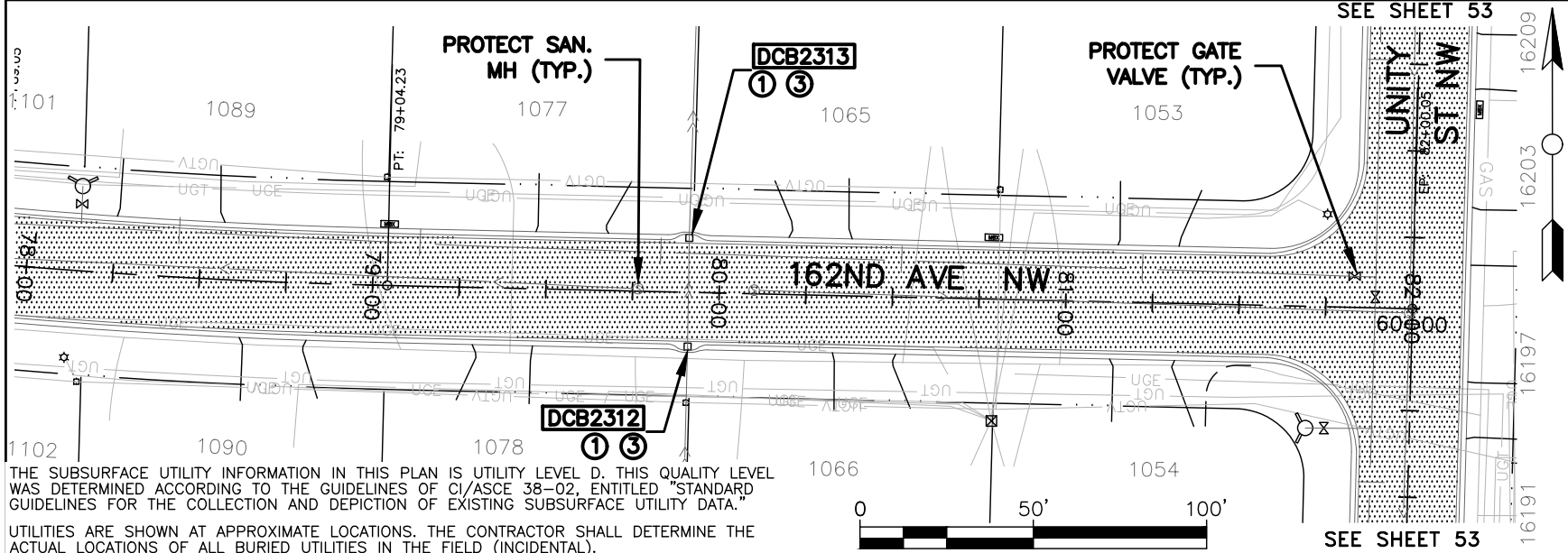
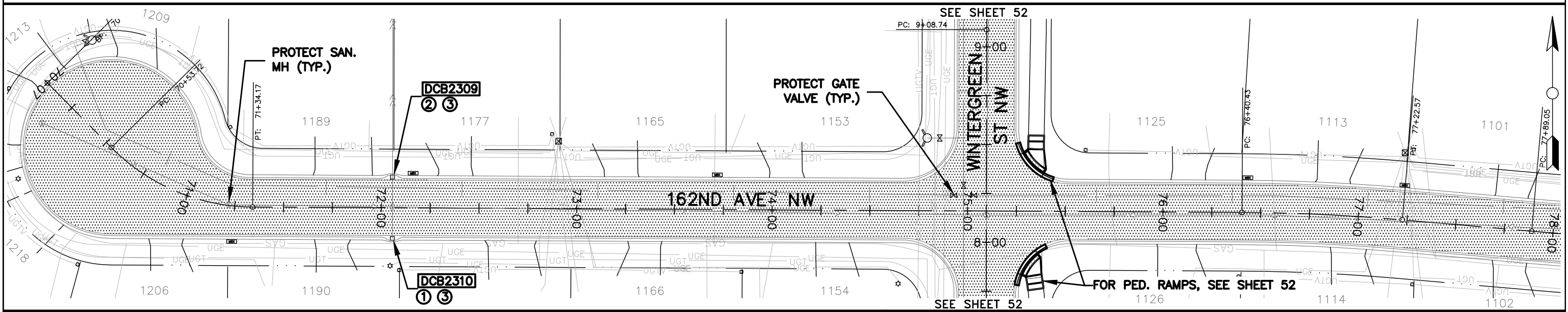
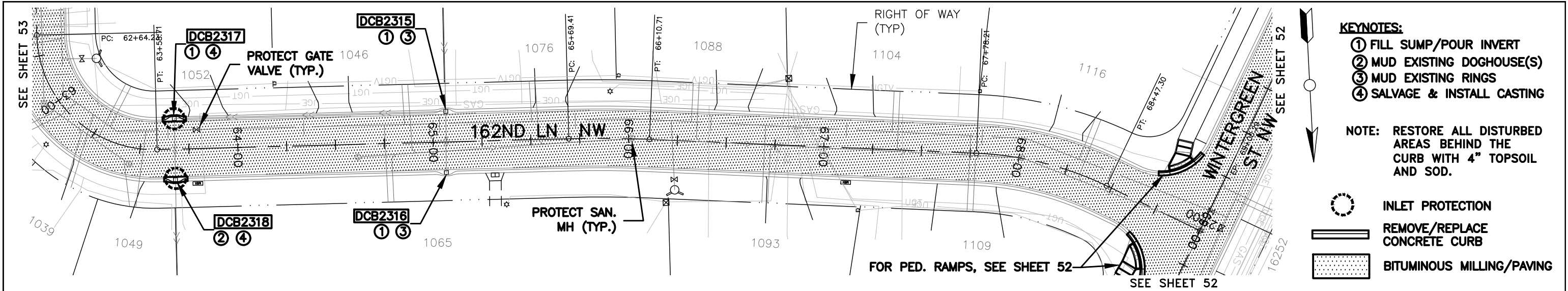




THE SUBSURFACE UTILITY INFORMATION IN THIS PLAN IS UTILITY LEVEL D. THIS QUALITY LEVEL WAS DETERMINED ACCORDING TO THE GUIDELINES OF CI/ASCE 38-02, ENTITLED "STANDARD GUIDELINES FOR THE COLLECTION AND DEPICTION OF EXISTING SUBSURFACE UTILITY DATA."

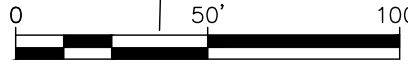
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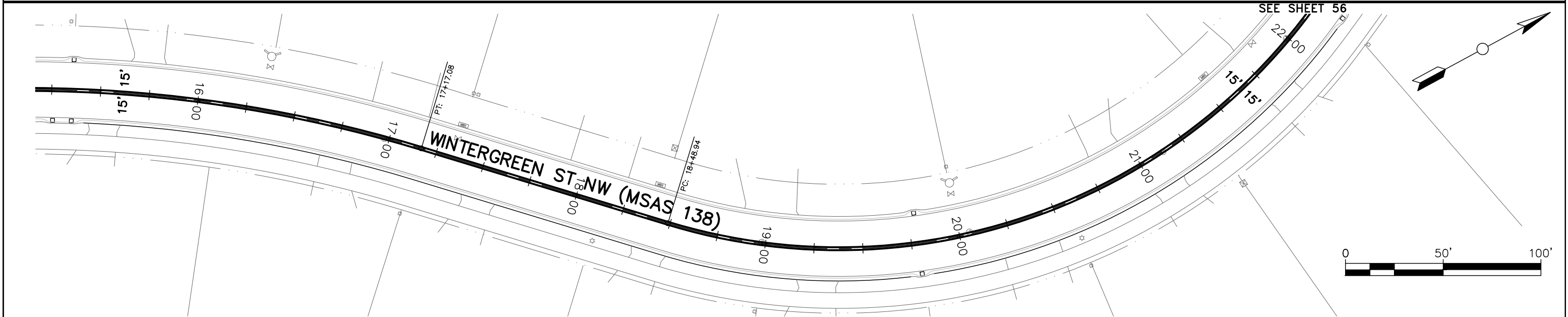
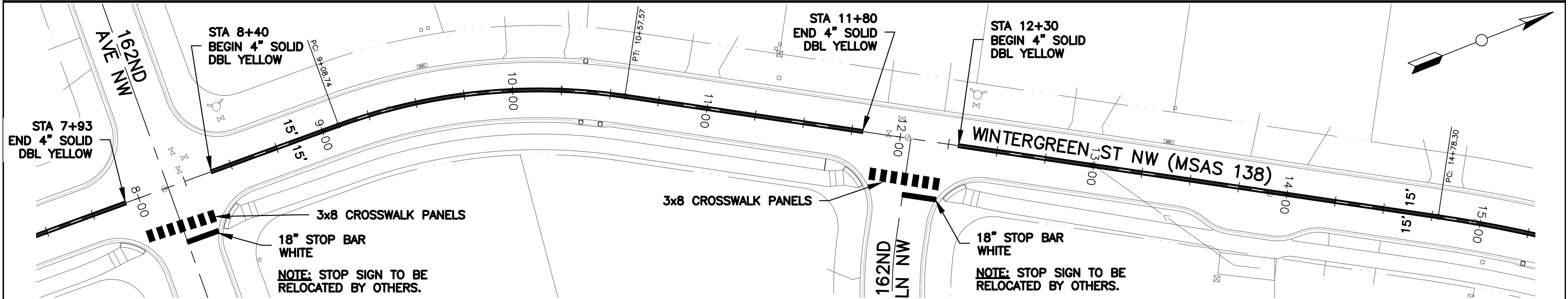
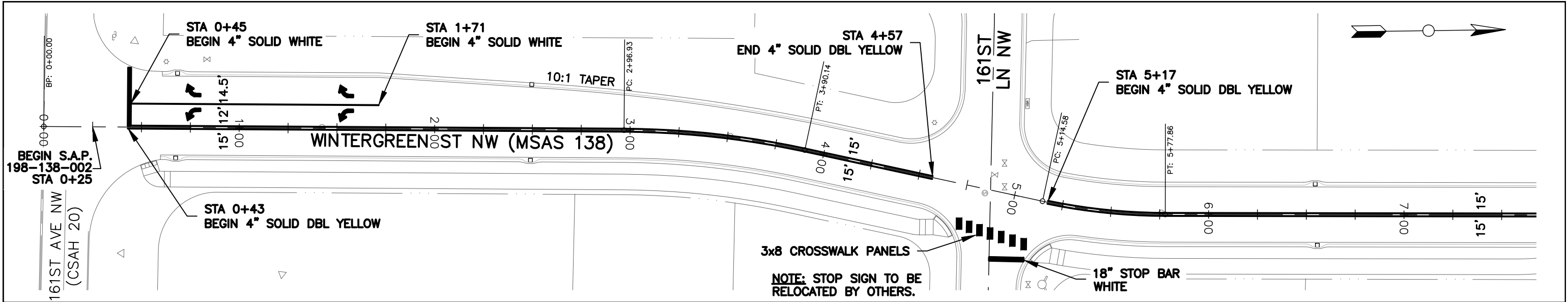


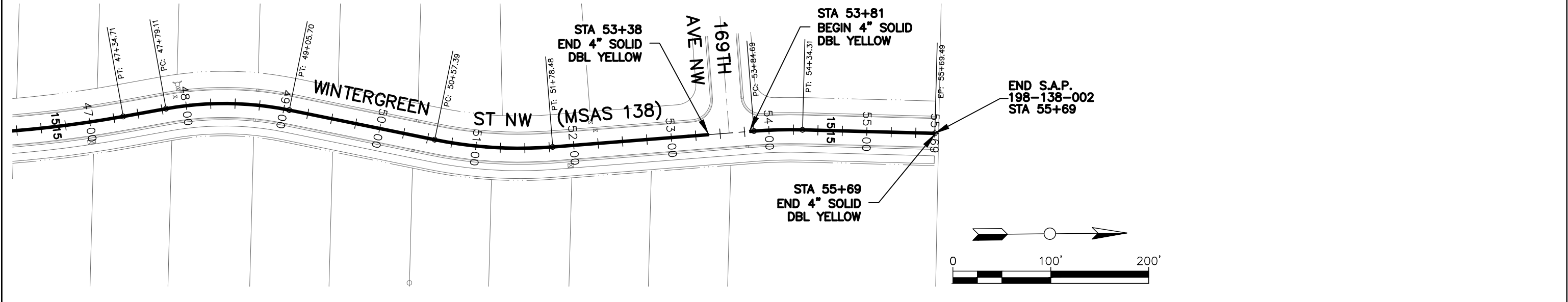
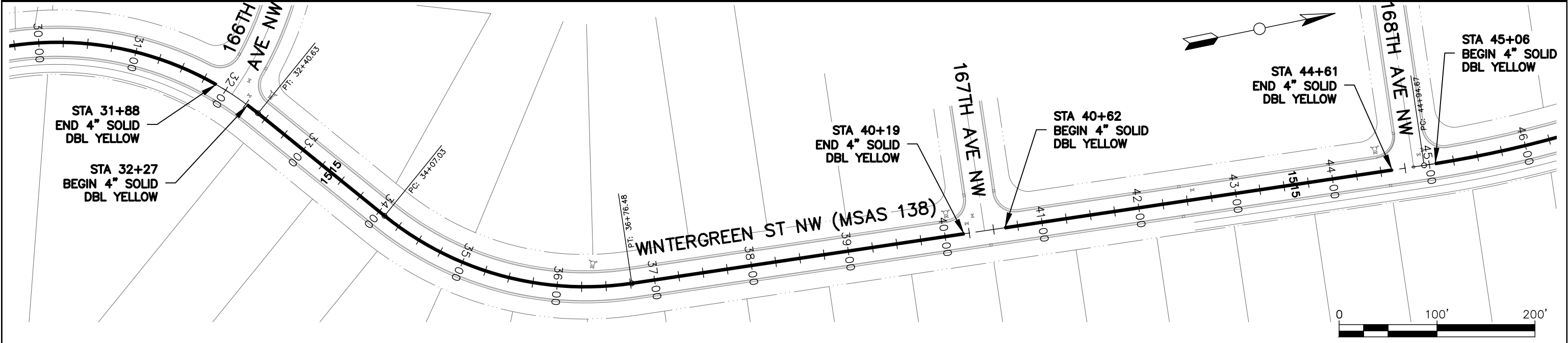
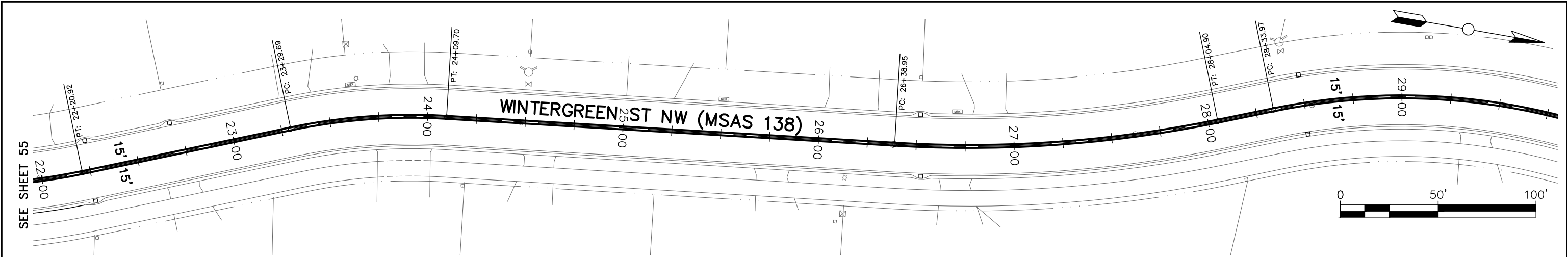


THE SUBSURFACE UTILITY INFORMATION IN THIS PLAN IS UTILITY LEVEL D. THIS QUALITY LEVEL WAS DETERMINED ACCORDING TO THE GUIDELINES OF C/ASCE 38-02, ENTITLED "STANDARD GUIDELINES FOR THE COLLECTION AND DEPICTION OF EXISTING SUBSURFACE UTILITY DATA."

UTILITIES ARE SHOWN AT APPROXIMATE LOCATIONS. THE CONTRACTOR SHALL DETERMINE THE ACTUAL LOCATIONS OF ALL BURIED UTILITIES IN THE FIELD (INCIDENTAL).







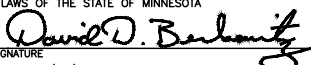
NO.	DATE	BY	DESCRIPTION OF REVISIONS

DESIGNED
JJL

DRAWN
JAK

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

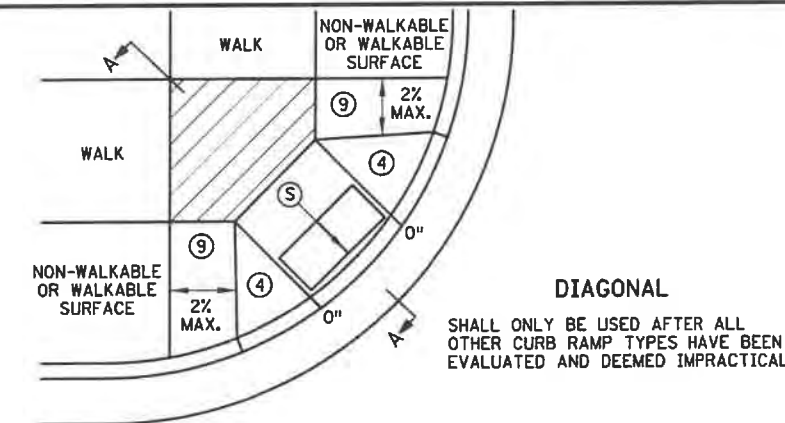
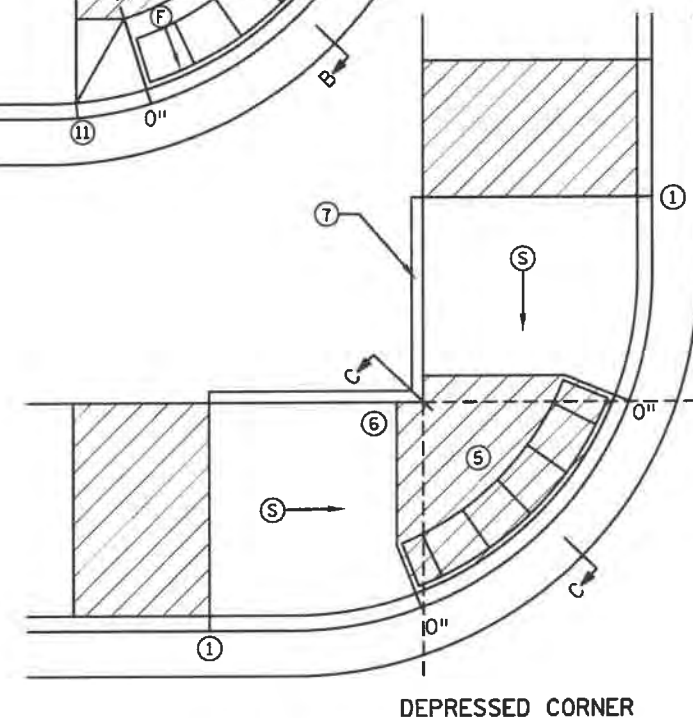
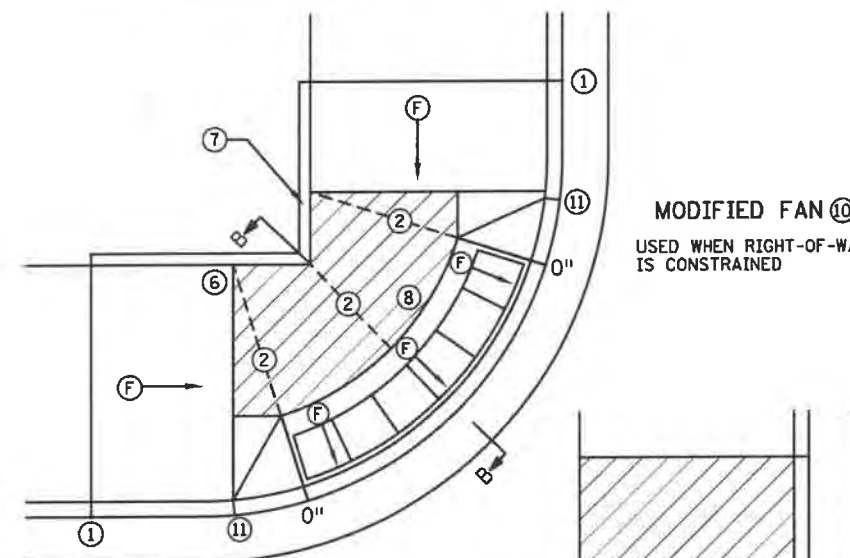
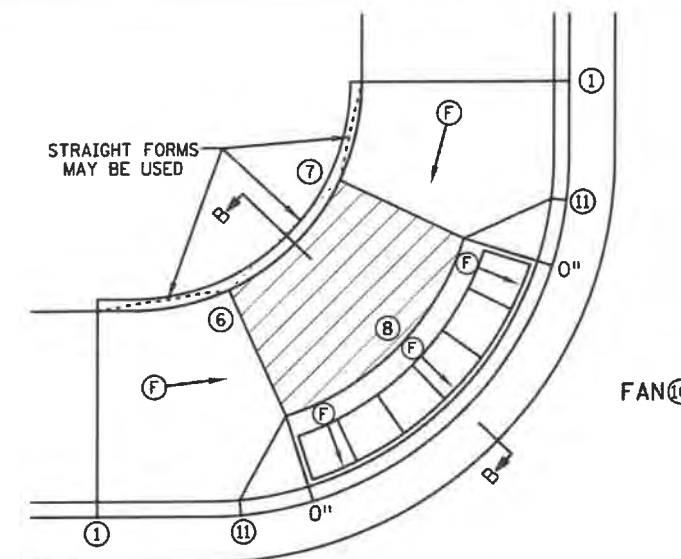
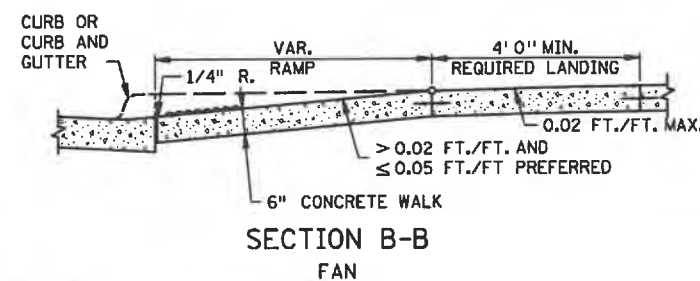
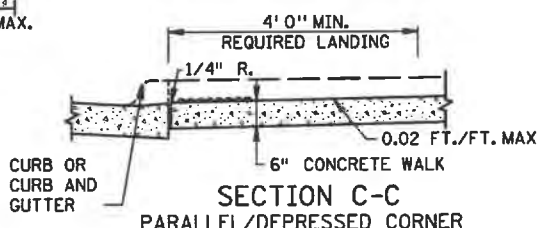
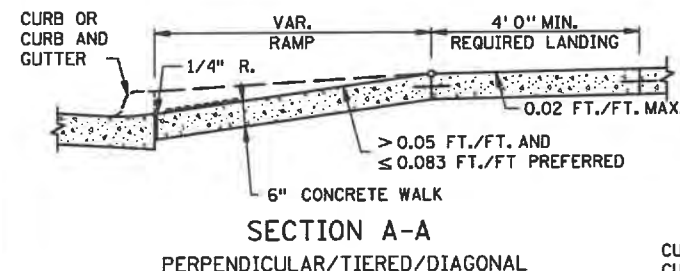
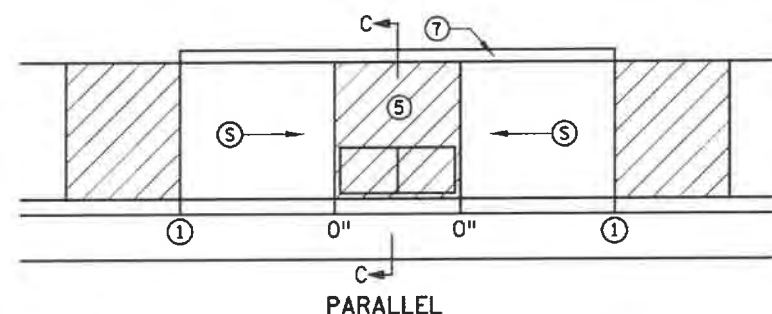
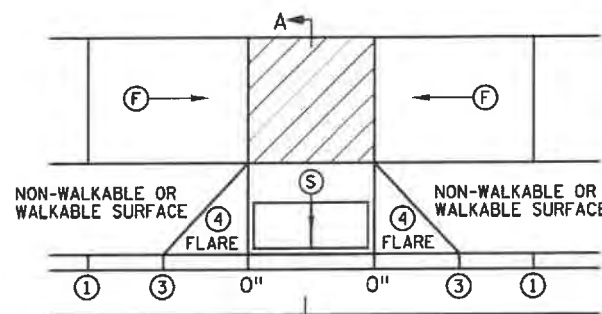
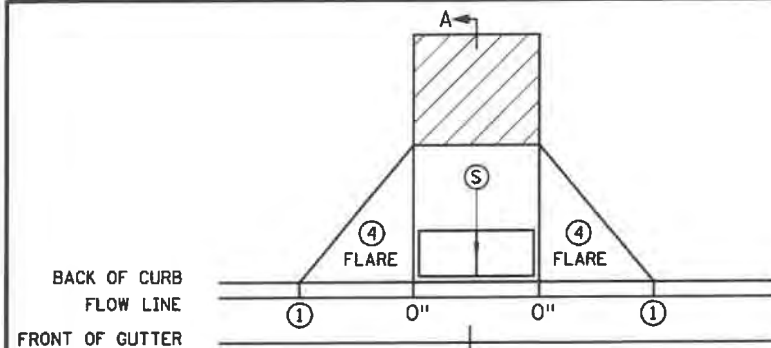

DAVID D. BERKOWITZ
TYPED OR PRINTED NAME

DATE: 3/18/2025
LIC. NO.: 26757



2025 MILL & OVERLAY-
COUNTRY OAKS WEST, BIRCH PINE ESTATES, &
WINTERGREEN ST NW (161ST AVE NW TO 169TH AVE NW)
CITY PROJECT 25-12C (SAP 198-138-002)

STRIPING
WINTERGREEN STREET NW 22+00
TO 42+54
SHEET NO. 56 OF 62 SHEETS



NOTES:

- LANDINGS SHALL BE LOCATED ANYWHERE THE PEDESTRIAN ACCESS ROUTE (PAR) CHANGES DIRECTION, AT THE TOP OF RAMPS THAT HAVE RUNNING SLOPES GREATER THAN 5.0%, AND IF THE APPROACHING WALK IS INVERSE GRADE GREATER THAN 2%.
- INITIAL CURB RAMP LANDINGS SHALL BE CONSTRUCTED WITHIN 15' FROM THE BACK OF CURB, WITH 6' FROM THE BACK OF CURB BEING THE PREFERRED DISTANCE, ONLY APPLICABLE WHEN THE INITIAL RAMP RUNNING SLOPE IS OVER 5.0%.
- SECONDARY CURB RAMP LANDINGS ARE REQUIRED FOR EVERY 30' OF VERTICAL RISE WHEN THE LONGITUDINAL RUNNING SLOPE IS GREATER THAN 5.0%.
- CONTRACTION JOINTS SHALL BE CONSTRUCTED ALONG ALL GRADE BREAKS WITHIN THE PAR, 1/4" DEEP. VISUAL JOINTS SHALL BE USED AT THE TOPS OF CONCRETE FLARES ADJACENT TO WALKABLE SURFACES.
- ALL GRADE BREAKS WITHIN THE PAR SHALL BE PERPENDICULAR TO THE PATH OF TRAVEL, THUS BOTH SIDES OF A SLOPED WALKING SURFACE MUST BE EQUAL LENGTH, EXCEPT AS STATED IN (6) BELOW.
- TO ENSURE RAMPS AND LANDINGS ARE PROPERLY CONSTRUCTED, ALL INITIAL LANDINGS AT A TOP OF A RAMPED SURFACE (RUNNING SLOPE GREATER THAN 2%) SHALL BE FORMED AND PLACED SEPARATELY IN AN INDEPENDENT CONCRETE POUR, FOLLOW SIDEWALK REINFORCEMENT DETAILS ON SHEET 6 OF 6 FOR ALL SEPARATELY POURED INITIAL LANDINGS.
- WHEN SIDEWALK IS AT BACK OF CURB, TOP OF CURB SHALL MATCH PROPOSED ADJACENT WALK GRADE. MAINTAIN POSITIVE BOULEVARD DRAINAGE TO TOP OF CURB.
- ALL RAMP TYPES SHOULD HAVE A MINIMUM 3' LONG RAMP LENGTH.
- 4' MINIMUM WIDTH OF DETECTABLE WARNING IS REQUIRED FOR ALL RAMPS. DETECTABLE WARNING SHALL CONTINUOUSLY EXTEND FOR A MIN. OF 24" IN THE PATH OF TRAVEL. DETECTABLE WARNING TO COVER THE ENTIRE PAR WIDTH OF SHARED-USE PATHS AND THE ENTIRE PAR WIDTH OF THE WALK WITH THE EXCEPTION OF 3" MAXIMUM ON EACH OUTSIDE EDGE WHICH ENSURES THE DETECTABLE WARNING ARE ENCASED IN CONCRETE WHEN ADJACENT TO TURF, WHEN ADJACENT TO CONCRETE FLARES 0" - 3" OFFSET IS ALLOWED.
- WHEN DESIGNING OR ORDERING RECTANGULAR DETECTABLE WARNING SURFACES SHOULD BE 6" LESS THAN THE INCOMING PAR. ARC LENGTH OF THE RADIAL DETECTABLE WARNING SHOULD NOT BE GREATER THAN 20 FEET.
- RECTANGULAR DETECTABLE WARNING SHALL BE SETBACK 3" FROM THE BACK OF CURB. RADIAL DETECTABLE WARNING SHALL BE SETBACK 3" MINIMUM TO 6" MAXIMUM FROM THE BACK OF CURB.
- MATCH FULL HEIGHT CURB.
- 4' MINIMUM DEPTH LANDING REQUIRED ACROSS TOP OF RAMP.
- 3" HIGH CURB WHEN USING A 3' LONG RAMP, 4" HIGH CURB WHEN USING A 4' LONG RAMP.
- SEE SHEET 4 OF 6, TYPICAL SIDE TREATMENT OPTIONS, FOR DETAILS ON FLARES AND RETURNED CURBS.
- DETECTABLE WARNING MAY BE PART OF THE 4' X 4' MIN. LANDING AREA IF IT IS NOT FEASIBLE TO CONSTRUCT THE LANDING OUTSIDE OF THE DETECTABLE WARNING AREA.
- THE GRADE BREAK SHALL BE PERPENDICULAR TO THE BACK OF WALK, THIS WILL ENSURE THAT THE GRADE BREAK IS PERPENDICULAR TO THE DIRECTION OF TRAVEL. (TYPICAL FOR ALL)
- WHEN ADJACENT TO GRASS, GRADING SHALL ALWAYS BE USED WHEN FEASIBLE. V CURB, IF USED, SHALL BE PLACED OUTSIDE THE SIDEWALK LIMITS WHEN RIGHT OF WAY ALLOWS. WHEN ADJACENT TO PARKING LOTS, CONCRETE OR BITUMINOUS TAPERS LESS THAN 5% RUNNING SLOPE SHOULD BE USED OVER V CURB TO REDUCE TRIPPING HAZARDS AND FACILITATE SNOW & ICE REMOVAL.
- A 7' MIN TOP RADIUS GRADE BREAK IS REQUIRED TO BE CONSTRUCTIBLE.
- PAVE FULL WALK WIDTH.
- "S" SLOPES ON FANS SHALL ONLY BE USED WHEN ALL OTHER FEASIBLE OPTIONS HAVE BEEN EVALUATED AND DEEMED IMPRACTICAL.
- INTERMEDIATE CURB HEIGHTS TAPER SHALL RISE AT 8-10% TO A MINIMUM 3" CURB HEIGHT. REDUCE INTERMEDIATE CURB HEIGHT TO 2+ INCHES IF NECESSARY TO MATCH ADJACENT BOULEVARD OR SIDEWALK GRADES.

LEGEND

- THESE LONGITUDINAL SLOPE RANGES SHALL BE THE STARTING POINT. IF SITE CONDITIONS WARRANT, LONGITUDINAL SLOPES UP TO 8.3% OR FLATTER ARE ALLOWED.
- (S) INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE BETWEEN 5.0% MINIMUM AND 8.3% MAXIMUM IN THE DIRECTION SHOWN AND THE CROSS SLOPE SHALL NOT EXCEED 2.0%.
 - (F) INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE GREATER THAN 2.0% AND LESS THAN 5.0% IN THE DIRECTION SHOWN AND CROSS SLOPE SHALL NOT EXCEED 2.0%.
 - LANDING AREA - 4' X 4' MIN. (5' X 5' MIN. PREFERRED) DIMENSIONS AND MAX 2.0% SLOPE IN ALL DIRECTIONS. LANDING SHALL BE FULL WIDTH OF INCOMING PAR.
 - X" CURB HEIGHT

REVISION:

APPROVED: 11-04-2021

Jeffrey J. Perkins
OPERATIONS DIVISION



STANDARD PLAN 5-297.250

1 OF 6

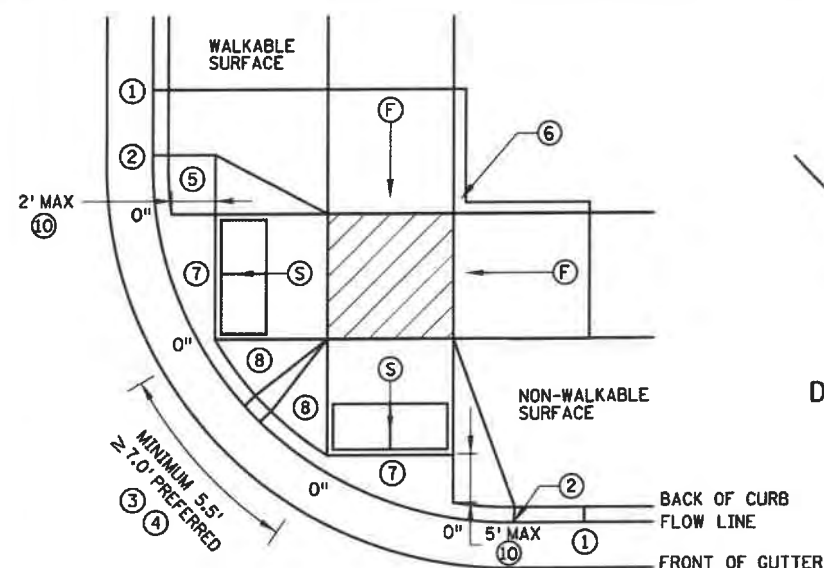
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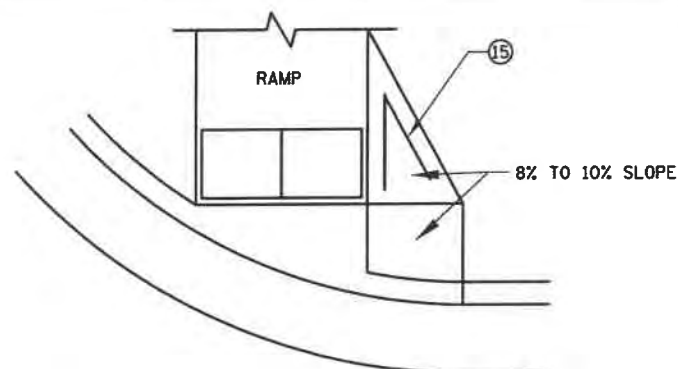
Tom Slin
THOMAS TYRBICKI
STATE DESIGN ENGINEER

PEDESTRIAN CURB RAMP DETAILS

STATE PROJ. NO. SAP 198-150-001/198-138-002 SHEET NO. 57 OF 62 SHEETS

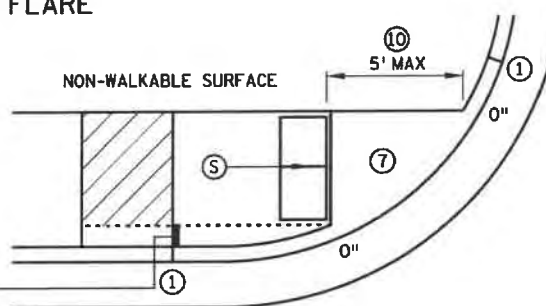


COMBINED DIRECTIONAL

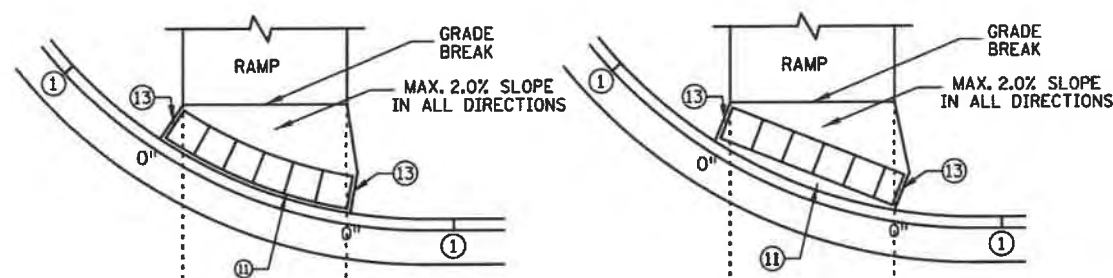


DIRECTIONAL RAMP WALKABLE FLARE

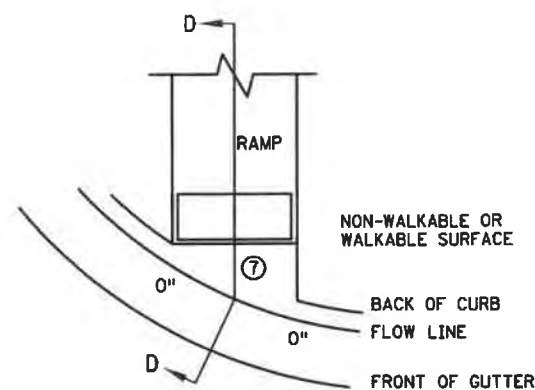
IF NON-CONCRETE BLVD. IS CONSTRUCTED AND IS LESS THAN 2' IN WIDTH AT TOP OF CURB TRANSITION, PAVE CONCRETE RAMP WIDTH TO ADJACENT BACK OF CURB.



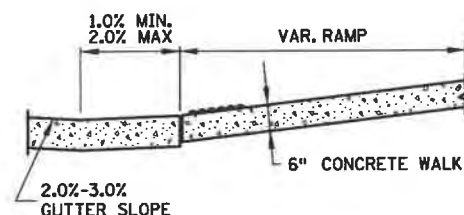
STANDARD ONE-WAY DIRECTIONAL ⑨



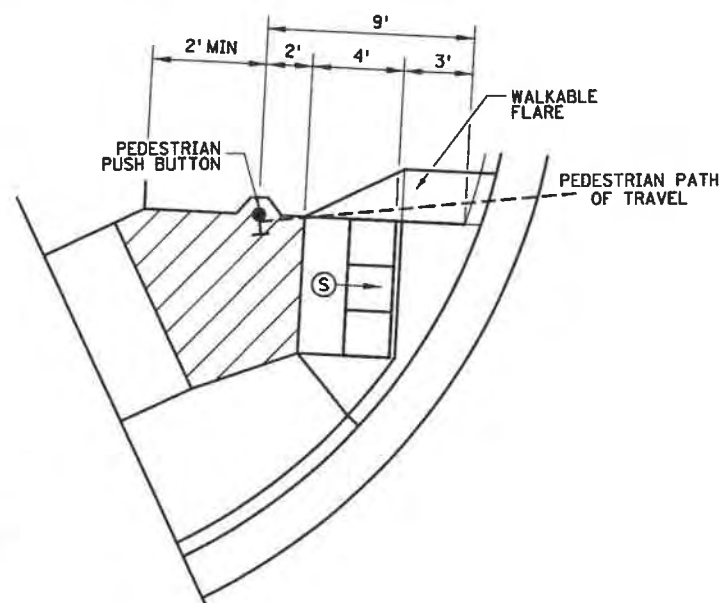
ONE-WAY DIRECTIONAL WITH DETECTABLE WARNING AT BACK OF CURB



CURB FOR DIRECTIONAL RAMPS ⑭



SECTION D-D



SEMI-DIRECTIONAL RAMP ③④⑨

3' DOME SETBACK, 4' LONG RAMP AND PUSH BUTTON 9' FROM THE BACK OF CURB
PRIMARYLY USED FOR APS APPLICATIONS WHERE THE PAR DOES NOT CONTINUE PAST THE PUSH BUTTON (DEAD-END SIDEWALK)

NOTES:

LANDINGS SHALL BE LOCATED ANYWHERE THE PEDESTRIAN ACCESS ROUTE (PAR) CHANGES DIRECTION, AT THE TOP OF RAMPS THAT HAVE RUNNING SLOPES GREATER THAN 5.0%, AND IF THE APPROACHING WALK IS INVERSE GRADE.

INITIAL CURB RAMP LANDINGS SHALL BE CONSTRUCTED WITHIN 15' FROM THE BACK OF CURB, WITH 6' FROM THE BACK OF CURB BEING THE PREFERRED DISTANCE, ONLY APPLICABLE WHEN THE INITIAL RAMP RUNNING SLOPE IS OVER 5.0%.

SECONDARY CURB RAMP LANDINGS ARE REQUIRED FOR EVERY 30" OF VERTICAL RISE WHEN THE LONGITUDINAL SLOPE IS GREATER THAN 5.0%.

CONTRACTION JOINTS SHALL BE CONSTRUCTED ALONG ALL GRADE BREAKS WITHIN THE PAR. 1/4" DEEP VISUAL JOINTS SHALL BE USED AT THE TOP GRADE BREAK OF CONCRETE FLARES ADJACENT TO WALKABLE SURFACES.

ALL GRADE BREAKS WITHIN THE PAR SHALL BE PERPENDICULAR TO THE PATH OF TRAVEL. THUS BOTH SIDES OF A SLOPED WALKING SURFACE MUST BE EQUAL LENGTH.

TO ENSURE INITIAL RAMPS AND INITIAL LANDINGS ARE PROPERLY CONSTRUCTED, LANDINGS SHALL BE CAST SEPARATELY, FOLLOW SIDEWALK REINFORCEMENT DETAILS ON SHEET 6 AND THE ADA SPECIAL PROVISION (PROSECUTION OF WORK).

TOP OF CURB SHALL MATCH PROPOSED ADJACENT WALK GRADE.

WHEN THE BOULEVARD IS 4' WIDE OR LESS, THE TOP OF CURB TAPER SHALL MATCH THE RAMP SLOPES TO REDUCE NEGATIVE BOULEVARD SLOPES FROM THE TOP BACK OF CURB TO THE PAR.

ALL RAMP TYPES SHOULD HAVE A MINIMUM 3' LONG RAMP LENGTH.

4' MINIMUM WIDTH OF DETECTABLE WARNING IS REQUIRED FOR ALL RAMPS. DETECTABLE WARNINGS SHALL CONTINUOUSLY EXTEND FOR A MIN. OF 24" IN THE PATH OF TRAVEL. DETECTABLE WARNING TO COVER THE ENTIRE PAR WIDTH OF SHARED-USE PATHS AND THE ENTIRE PAR WIDTH OF THE WALK WITH THE EXCEPTION OF 3" MAXIMUM ON EACH OUTSIDE EDGE WHICH ENSURES THE DETECTABLE WARNINGS ARE ENCASED IN CONCRETE WHEN ADJACENT TO TURF. WHEN ADJACENT TO CONCRETE FLARES 0" - 3" OFFSET IS ALLOWED.

WHEN DESIGNING OR ORDERING RECTANGULAR DETECTABLE WARNING SURFACES SHOULD BE 6" LESS THAN THE INCOMING PAR. ARC LENGTH OF THE RADIAL DETECTABLE WARNINGS SHOULD NOT BE GREATER THAN 20 FEET.

RADIAL DETECTABLE WARNINGS SHALL BE SETBACK 3" MINIMUM TO 6" MAXIMUM FROM THE BACK OF CURB. SEE NOTES ⑩ & ⑪ FOR INFORMATION REGARDING RECTANGULAR DETECTABLE WARNING PLACEMENT.

① MATCH FULL CURB HEIGHT.

② 3" HIGH CURB WHEN USING A 3' LONG RAMP
4" HIGH CURB WHEN USING A 4' LONG RAMP.

③ 3" MINIMUM CURB HEIGHT (5.5' MIN. DISTANCE REQUIRED BETWEEN DOMES)
4" PREFERRED (7' MIN. DISTANCE REQUIRED BETWEEN DOMES).

④ THE "BUMP" IN BETWEEN THE RAMPS SHOULD NOT BE IN THE PATH OF TRAVEL FOR COMBINED DIRECTIONAL RAMPS. IF THIS OCCURS MODIFY THE RAMP LOCATION OR SWITCH RAMP TO A FAN/DEPRESSED CORNER.

⑤ WHEN USING CONCRETE PAVED FLARES ON THE OUTSIDE OF DIRECTIONAL RAMPS, AND ADJACENT TO A WALKABLE SURFACE, DIRECTIONAL RAMP FLARES SHALL BE USED. SEE THE DETAIL ON THIS SHEET.

⑥ GRADING SHALL ALWAYS BE USED WHEN FEASIBLE. V CURB, IF USED, SHALL BE PLACED OUTSIDE THE SIDEWALK LIMITS WHEN RIGHT OF WAY ALLOWS. WHEN ADJACENT TO PARKING LOTS, CONCRETE OR BITUMINOUS TAPERS SHOULD BE USED OVER V CURB TO REDUCE TRIPPING HAZARDS AND FACILITATE SNOW & ICE REMOVAL.

⑦ MAX. 2.0% SLOPE IN ALL DIRECTIONS IN FRONT OF GRADE BREAK AND DRAIN TO FLOW LINE. SHALL BE CONSTRUCTED INTEGRAL WITH CURB AND GUTTER.

⑧ 8% TO 10% WALKABLE FLARE.

⑨ PLACE DOMES AT THE BACK OF CURB WHEN ALLOWABLE SETBACK CRITERIA IS EXCEEDED.

⑩ FRONT EDGE OF DETECTABLE WARNING SHALL BE SET BACK 2' MAXIMUM WHEN ADJACENT TO WALKABLE SURFACE, AND 5' MAXIMUM WHEN ADJACENT TO NON-WALKABLE SURFACE WITH ONE CORNER SET 3" FROM BACK OF CURB. A WALKABLE SURFACE IS DEFINED AS A PAVED SURFACE ADJACENT TO A CURB RAMP WITHOUT RAISED OBSTACLES THAT COULD MISTAKENLY BE TRAVERSED BY A USER WHO IS VISUALLY IMPAIRED.

⑪ RECTANGULAR DETECTABLE WARNINGS MAY BE SETBACK UP TO 9" FROM THE BACK OF CURB WITH CORNERS SET 3" FROM BACK OF CURB. IF 9" SETBACK IS EXCEEDED USE RADIAL DETECTABLE WARNINGS.

⑫ FOR DIRECTIONAL RAMPS WITH THE DETECTABLE WARNINGS PLACED AT THE BACK OF CURB, THE DETECTABLE WARNINGS SHALL COVER THE ENTIRE WIDTH OF THE WALK/PATH. THIS ENSURES A DETECTABLE EDGE AND HELPS ELIMINATE THE CURB TAPER OBSTRUCTING THE PATH OF PEDESTRIAN TRAVEL.

⑬ THE CONCRETE WALK SHALL BE FORMED AND CONSTRUCTED PERPENDICULAR TO THE BACK OF CURB. MAINTAIN 3" BETWEEN EDGE OF DOMES AND EDGE OF CONCRETE.

⑭ TO BE USED FOR ALL DIRECTIONAL RAMPS, EXCEPT WHERE DOMES ARE PLACED ALONG THE BACK OF CURB.

⑮ PLACE 2 NO. 4 BARS 4 INCHES FROM SIDE OF FORMS WITH A MINIMUM 2 INCHES OF CONCRETE COVER ALONG EACH SIDE OF FLARE (INCIDENTAL).

LEGEND

THESE LONGITUDINAL SLOPE RANGES SHALL BE THE STARTING POINT. IF SITE CONDITIONS WARRANT, LONGITUDINAL SLOPES UP TO 8.3% OR FLATTER ARE ALLOWED.

⑤ INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE BETWEEN 5.0% MINIMUM AND 8.3% MAXIMUM IN THE DIRECTION SHOWN AND THE CROSS SLOPE SHALL NOT EXCEED 2.0%.

⑥ INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE GREATER THAN 2.0% AND LESS THAN 5.0% IN THE DIRECTION SHOWN AND CROSS SLOPE SHALL NOT EXCEED 2.0%.

LANDING AREA - 4' X 4' MIN. (5' X 5' MIN. PREFERRED) DIMENSIONS AND MAX 2.0% SLOPE IN ALL DIRECTIONS. LANDING SHALL BE FULL WIDTH OF INCOMING PAR.

X" CURB HEIGHT

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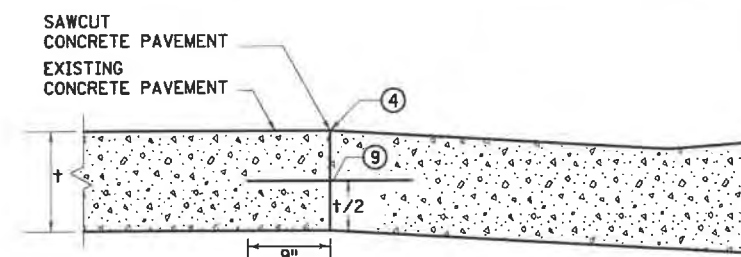
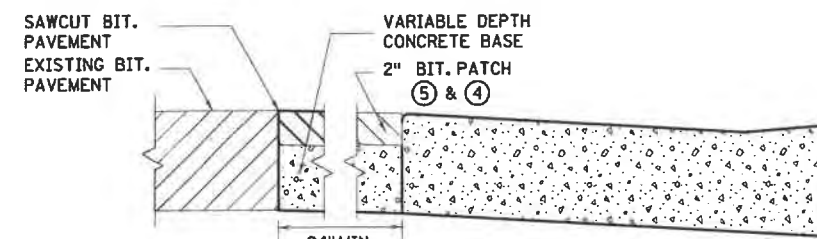
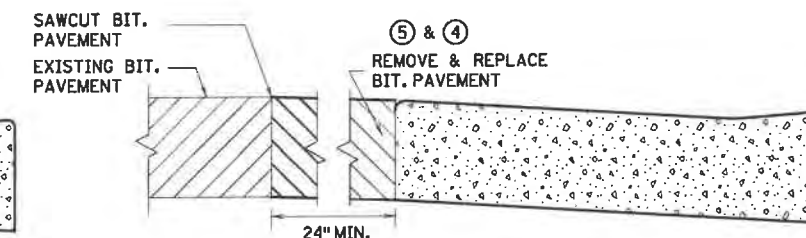
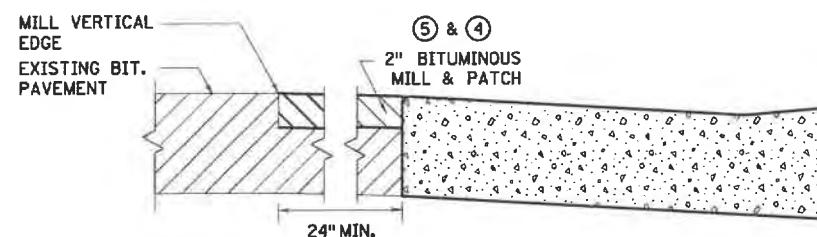
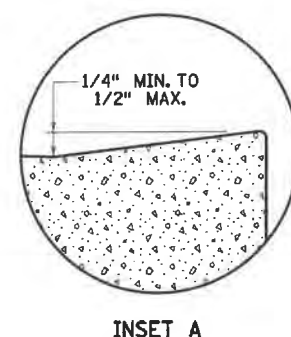
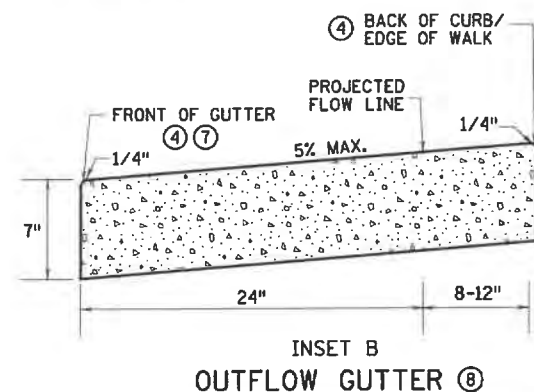
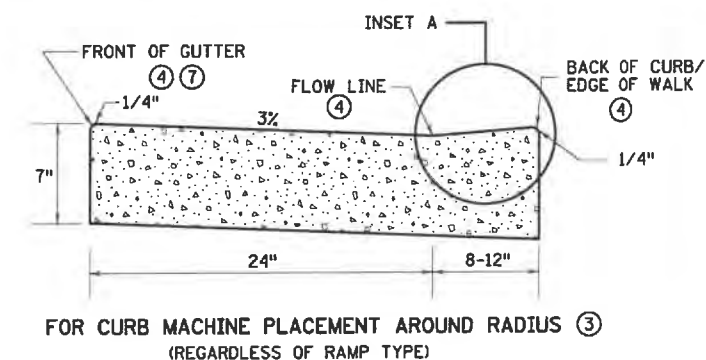
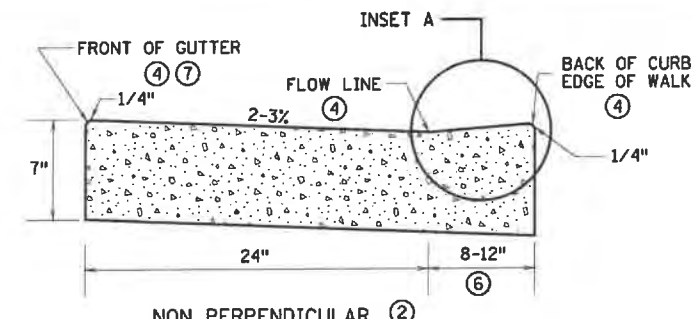
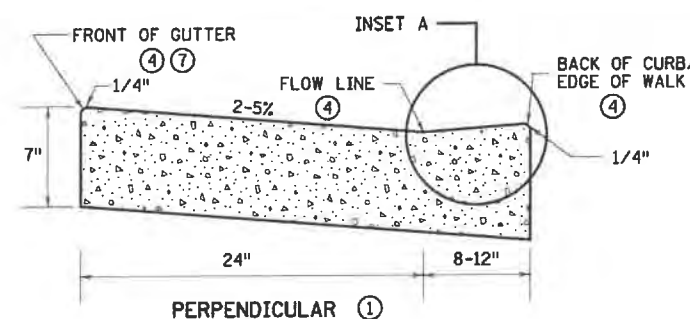
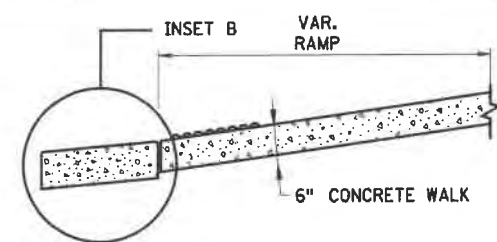
2 OF 6

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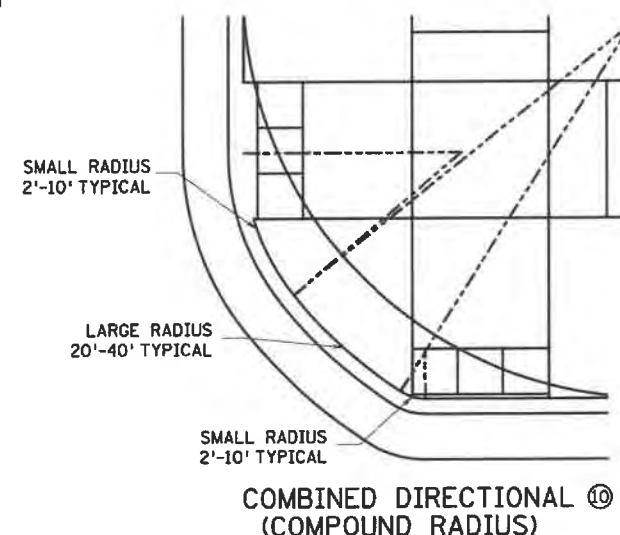
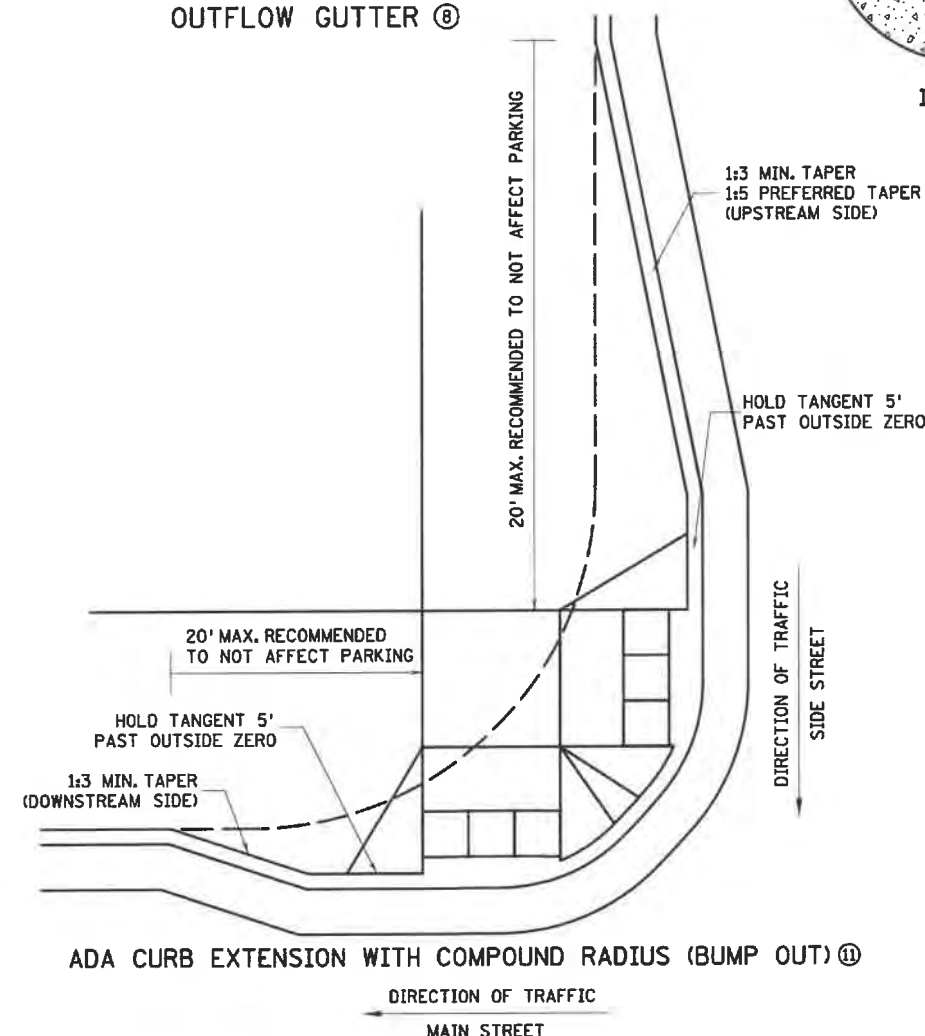
PEDESTRIAN CURB RAMP DETAILS

STATE PROJ. NO. SAP 198-150-001/198-138-002 SHEET NO. 58 OF 62 SHEETS



ONLY ALLOWED PER ENGINEER'S APPROVAL

PAVEMENT TREATMENT OPTIONS IN FRONT OF CURB & GUTTER FOR USE ON CURB RAMP RETROFITS



NOTES:

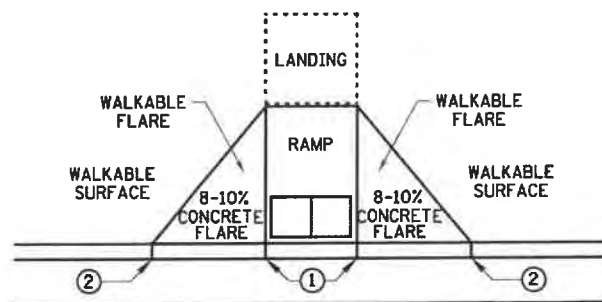
- POSITIVE FLOW LINE DRAINAGE SHALL BE MAINTAINED THROUGH THE PEDESTRIAN ACCESS ROUTE (PAR) AT A 2% MAXIMUM. NO PONDING SHALL BE PRESENT IN THE PAR.
- ANY VERTICAL LIP THAT OCCURS AT THE FLOW LINE SHALL NOT BE GREATER THAN 1/4 INCH.
- ① FOR USE AT CURB CUTS WHERE THE PEDESTRIAN'S PATH OF TRAVEL IS ASSUMED PERPENDICULAR TO THE GUTTER FLOW LINE. RAMP TYPES INCLUDE: PERPENDICULAR, TIERED PERPENDICULAR, PARALLEL, AND DIAGONAL RAMP.
- ② FOR USE AT CURB RAMP CUTS WHERE THE PEDESTRIAN'S PATH OF TRAVEL IS ASSUMED NON PERPENDICULAR TO THE GUTTER FLOW LINE. RAMP TYPES INCLUDE: FANS & DEPRESSED CORNERS.
- ③ BEGIN GUTTER SLOPE TRANSITION 10' OUTSIDE OF ALL CURB RAMP.
- ④ THERE SHALL BE NO VERTICAL DISCONTINUITIES GREATER THAN 1/4".
- ⑤ ELEVATION CHANGE TAKES PLACE FROM THE EXISTING TO NEW FRONT OF GUTTER. PATCH IS USED TO MATCH THE NEW GUTTER FACE INTO THE EXISTING ROADWAY.
- ⑥ VARIABLE WIDTH FOR DIRECTIONAL CURB APPLICATIONS. SEE SHEET 2 FOR DIRECTIONAL CURB SLOPE REQUIREMENTS.
- ⑦ TOP FRONT OF GUTTER SHALL BE CONSTRUCTED FLUSH WITH PROPOSED ADJACENT PAVEMENT ELEVATION. TOP 1.5" OF THE GUTTER FACE MUST BE A FORMED EDGE. PAR GUTTER SHALL NOT BE OVERLAID.
- ⑧ SHOULD BE USED AT VERTICALLY CONSTRAINED AREAS WHEN AT A DRAINAGE HIGH POINT OR SUPER ELEVATED ROADWAY SEGMENTS.
- ⑨ DRILL AND GROUT NO. 4 EPOXY-COATED 18" LONG TIE BARS AT 30" CENTER TO CENTER INTO EXISTING CONCRETE PAVEMENT 1' MINIMUM FROM ALL JOINTS.
- ⑩ HELPS PROVIDE TWO SEPARATE RAMPS, REDUCES THE DOME SETBACK LENGTH AND MINIMIZES DIRECTIONAL CURB. THIS RADIUS DESIGN CLOSELY FOLLOWS THE TURNING VEHICLE PATH WHILE OPTIMIZING CURB RAMP LENGTH.
- ⑪ CURB EXTENSIONS SHOULD BE USED IN VERTICALLY CONSTRAINED AREAS, USUALLY IN DOWNTOWN ROADWAY SEGMENTS WHERE ON-STREET PARKING IS AVAILABLE. CURB EXTENSIONS SHOULD BE CONSIDERED FOR APS INTERSECTIONS WHERE SPACE IS LIMITED. PUSH BUTTONS MUST MEET APS CRITERIA AS DESCRIBED IN THE PUSH BUTTON LOCATION DETAIL SHEET.

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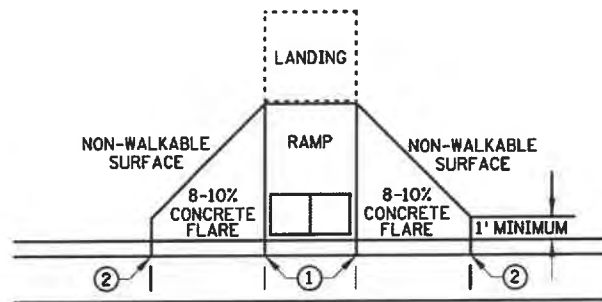
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3 OF 6
APPROVED: 11-04-2021
REVISOR:
THOMAS TYRICKI
STATE DESIGN ENGINEER

PEDESTRIAN CURB RAMP DETAILS

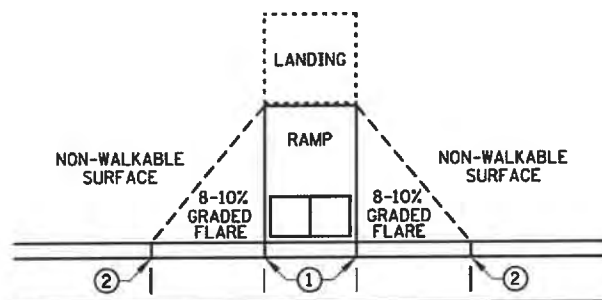
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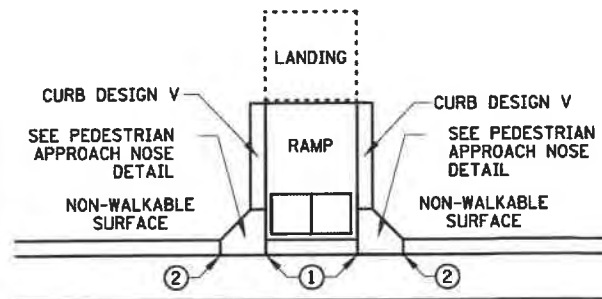
PAVED FLARES
ADJACENT TO WALKABLE SURFACE



PAVED FLARES
ADJACENT TO NON-WALKABLE SURFACE

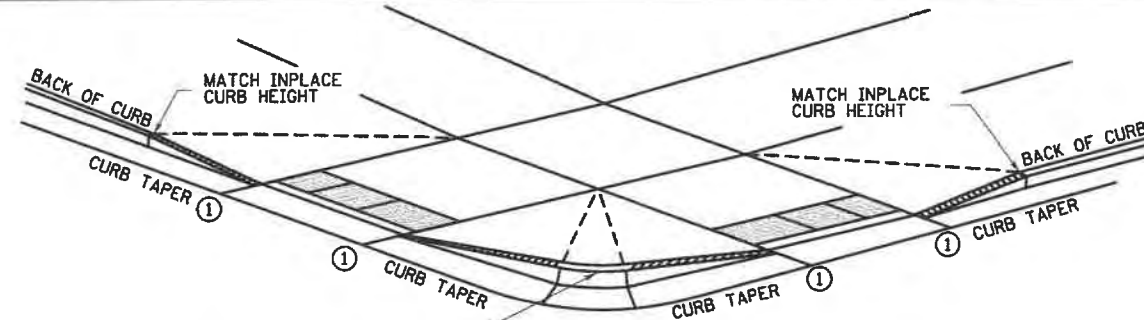


GRADED FLARES



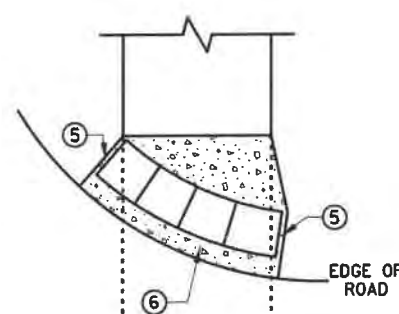
RETURNED CURB ④

TYPICAL SIDE TREATMENT OPTIONS ③ ⑩

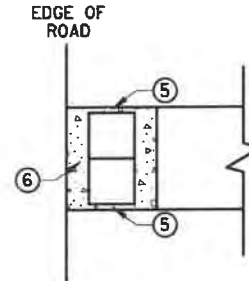


3" MINIMUM CURB HEIGHT, 4" PREFERRED
(MEASURED AT FRONT FACE OF CURB)
FOR A MIN. 6" LENGTH (MEASURED ALONG FLOW LINE)

DETECTABLE EDGE WITH ⑦
CURB AND GUTTER

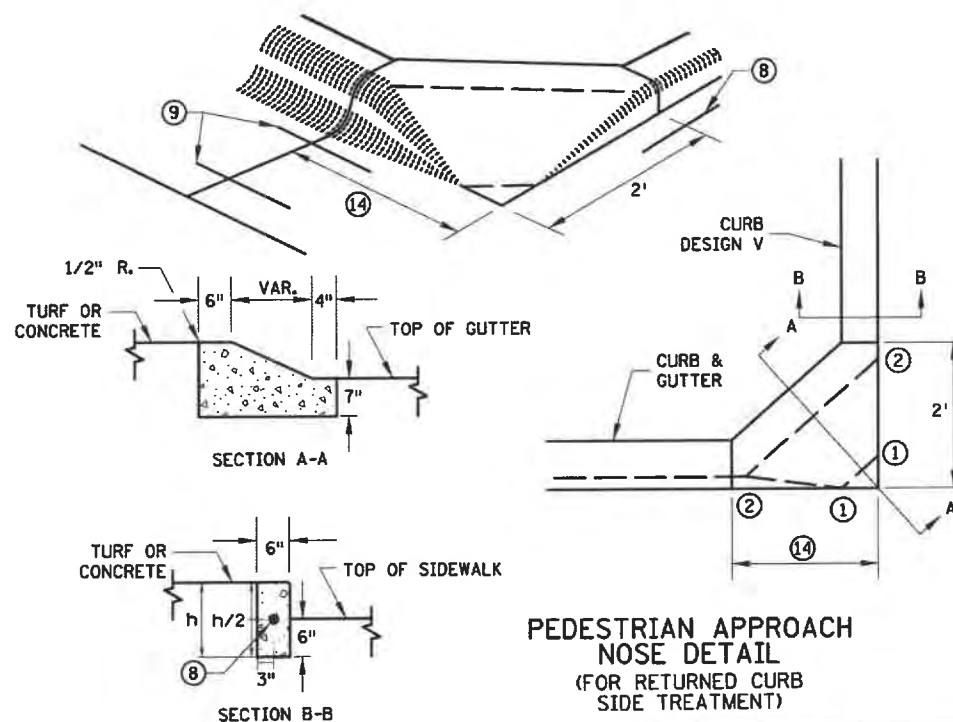


RADIAL DETECTABLE WARNING

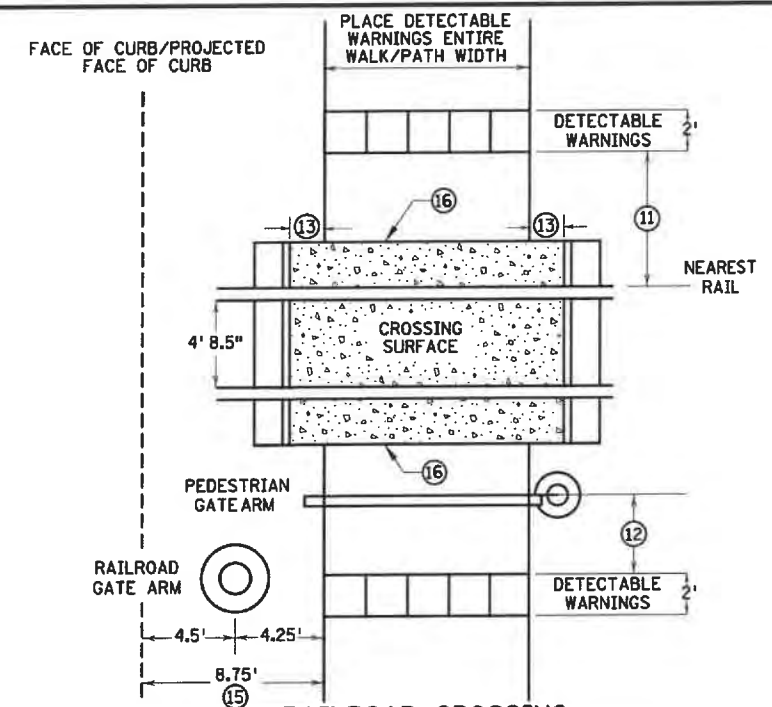


RECTANGULAR DETECTABLE WARNING

DETECTABLE EDGE WITHOUT CURB AND GUTTER



PEDESTRIAN APPROACH
NOSE DETAIL
(FOR RETURNED CURB
SIDE TREATMENT)



RAILROAD CROSSING
PLAN VIEW

NOTES:

- INTERMEDIATE CURB HEIGHTS TAPER SHALL RISE AT 8-10% TO A MINIMUM 3 INCH CURB HEIGHT. INCREASE CURB TAPER LENGTH AT LESS THAN 8% OR REDUCE INTERMEDIATE CURB HEIGHT TO 2+ INCHES IF NECESSARY TO MATCH ADJACENT BOULEVARD OR SIDEWALK GRADES.
- SEE STANDARD PLATE 7038 AND THIS SHEET FOR ADDITIONAL DETAILS ON DETECTABLE WARNING.
- A WALKABLE SURFACE IS DEFINED AS A PAVED SURFACE ADJACENT TO A CURB RAMP WITHOUT RAISED OBSTACLES THAT COULD MISTAKENLY BE TRAVERSED BY A USER WHO IS VISUALLY IMPAIRED.
- CONCRETE FLARE LENGTHS ADJACENT TO NON-WALKABLE SURFACES SHOULD BE LESS THAN 8' LONG MEASURED ALONG THE RAMP FROM THE BACK OF CURB.
- ① 0" CURB HEIGHT. SEE INSET A ON SHEET 3 OF 6.
- ② FULL CURB HEIGHT.
- ③ SIDE TREATMENTS ARE APPLICABLE TO ALL RAMP TYPES AND SHOULD BE IMPLEMENTED AS NEEDED AS FIELD CONDITIONS DICTATE. THE ENGINEER SHALL DETERMINE THE RAMP SIDE TREATMENTS BASED ON MAINTENANCE OF BOTH ROADWAY AND SIDEWALK, ADJACENT PROPERTY CONSIDERATIONS, AND MITIGATING CONSTRUCTION IMPACTS.
- ④ TYPICALLY USED FOR MEDIANS AND ISLANDS.
- ⑤ WHEN NO CONCRETE FLARES ARE PROPOSED, THE CONCRETE WALK SHALL BE FORMED AND CONSTRUCTED PERPENDICULAR TO THE EDGE OF ROADWAY. MAINTAIN 3" MAX. BETWEEN EDGE OF DOMES AND EDGE OF CONCRETE.
- ⑥ IF NO CURB AND GUTTER IS PLACED IN RURAL SECTIONS, DETECTABLE WARNINGS SHALL BE PLACED 1' FROM THE EDGE OF BITUMINOUS ROADWAY AND/OR BITUMINOUS SHARED-USE PATH TO PROVIDE VISUAL CONTRAST.
- ⑦ ALL CONSTRUCTED CURBS MUST HAVE A CONTINUOUS DETECTABLE EDGE FOR THE VISUALLY IMPAIRED. THIS DETECTABLE EDGE REQUIRES DETECTABLE WARNINGS WHEREVER THERE IS ZERO-INCH HIGH CURB. CURB TAPERS ARE CONSIDERED A DETECTABLE EDGE WHEN THE TAPER STARTS WITHIN 3" OF THE EDGE OF THE DETECTABLE WARNINGS, AND UNIFORMLY RISES TO A 3-INCH MINIMUM CURB HEIGHT. ANY CURB NOT PART OF A CURB TAPER AND LESS THAN 3 INCHES IN HEIGHT IS NOT CONSIDERED A DETECTABLE EDGE AND THEREFORE IS NOT COMPLIANT WITH ACCESSIBILITY STANDARDS.
- ⑧ DRILL AND GROUT 1 - NO. 4 12" LONG REINFORCEMENT BAR (EPOXY COATED) WITH 3" MIN. COVER. REINFORCEMENT BARS ARE NOT NEEDED IF THE APPROACH NOSE IS POURED INTEGRAL WITH THE V CURB.
- ⑨ DRILL AND GROUT 2 - NO. 4 12" LONG REINFORCEMENT BARS (EPOXY COATED) WITH 3" MIN. COVER. REINFORCEMENT BARS ARE NOT NEEDED IF THE APPROACH NOSE IS POURED INTEGRAL WITH THE CURB AND GUTTER.
- ⑩ SIDE TREATMENT EXAMPLES SHOWN ARE WHEN THE INITIAL LANDING IS APPROXIMATELY LEVEL WITH THE FULL HEIGHT CURB (I.E. 6" LONG RAMP FOR 6" HIGH CURB). WHEN THE INITIAL LANDING IS MORE THAN 1" BELOW FULL HEIGHT CURB REFER TO SHEETS 1 & 2 TO MODIFY THE CURB HEIGHT TAPERS AND MAINTAIN POSITIVE BOULEVARD DRAINAGE. CONSTRUCT THESE TAPERS AT 0"-3" AT 8-10%, THEN LESS THAN 5% FROM 3" CURB TO FULL CURB HEIGHT.
- ⑪ NEAREST EDGE OF DETECTABLE WARNING SURFACES SHALL BE PLACED 12' MINIMUM TO 15' MAXIMUM FROM THE NEAREST RAIL. FOR SKEWED RAILWAYS IN NO INSTANCE SHALL THE DETECTABLE WARNING BE CLOSER THAN 12' MEASURED PERPENDICULAR TO THE NEAREST RAIL.
- ⑫ WHEN PEDESTRIAN GATES ARE PROVIDED, DETECTABLE WARNING SURFACES SHALL BE PLACED ON THE SIDE OF THE GATES OPPOSITE THE RAIL, 2' FROM THE APPROACHING SIDE OF THE GATE ARM. THIS CRITERIA GOVERNS OVER NOTE ⑪.
- ⑬ CROSSING SURFACE SHALL EXTEND 2' MINIMUM PAST THE OUTSIDE EDGE OF WALK OR SHARED-USE PATH.
- ⑭ 3' FOR MEDIANS AND SPLITTER ISLANDS. NOSE CAN BE REDUCED TO 2' ON FREE RIGHT ISLANDS.
- ⑮ SIDEWALK TO BE PLACED 8.75' MIN. FROM THE FACE OF CURB/PROJECTED FACE OF CURB. THIS ENSURES MIN. CLEARANCE BETWEEN THE SIDEWALK AND GATE ARM COUNTERWEIGHT SUPPORTS.
- ⑯ CONSTRUCT WITH EXPANSION MATERIAL PER MNDOT SPECIFICATION 3702 TYPES A-E. EXPANSION MATERIAL SHALL MATCH FULL HEIGHT OF ADJACENT CONCRETE.

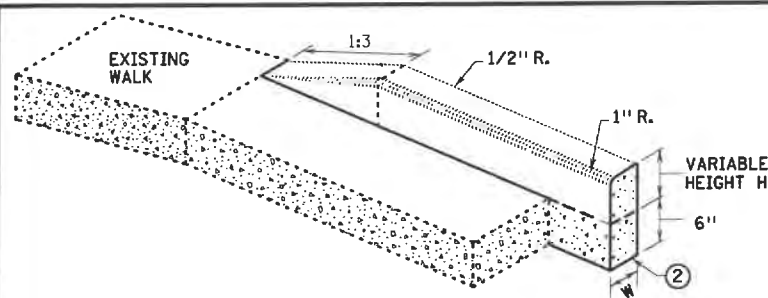
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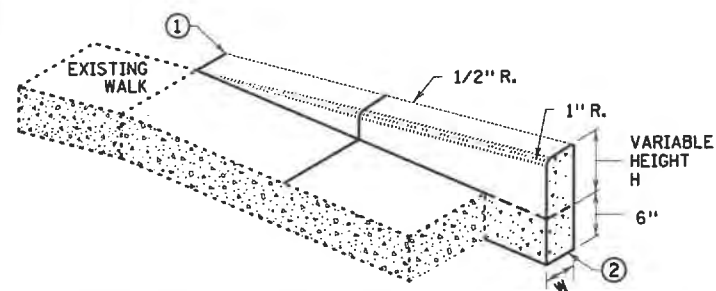
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APPROVED: 11-04-2021
REVISOR:
THOMAS STYBICKI
STATE DESIGN ENGINEER

PEDESTRIAN CURB RAMP DETAILS

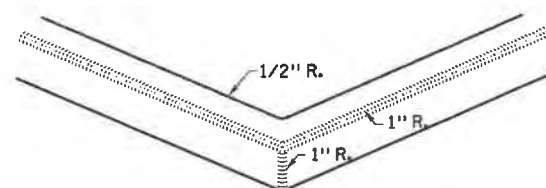
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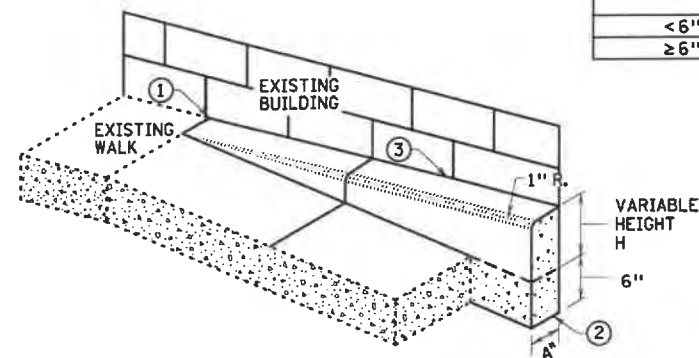
V CURB ADJACENT TO LANDSCAPE
CURB WITHIN SIDEWALK LIMITS



V CURB ADJACENT TO LANDSCAPE
CURB OUTSIDE SIDEWALK LIMITS

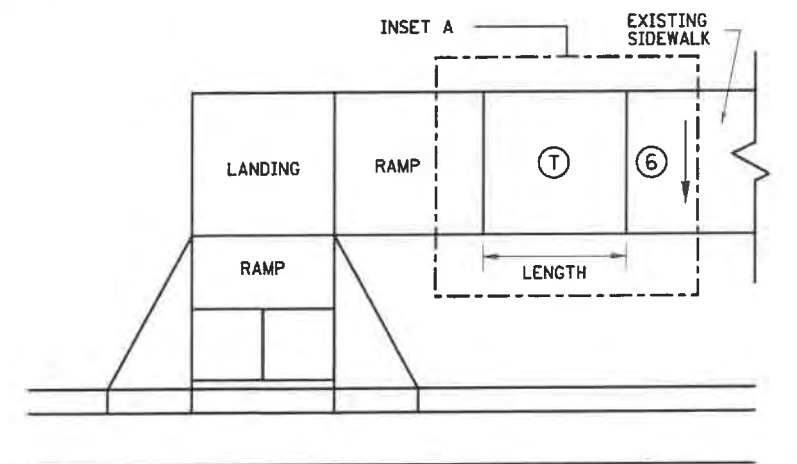


V CURB INTERSECTION

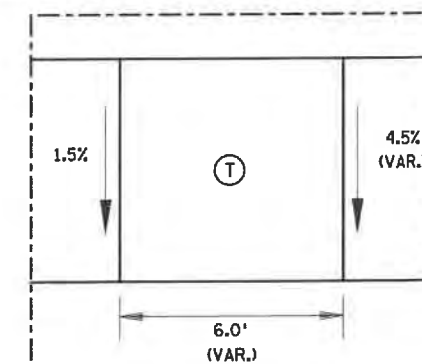


V CURB ADJACENT TO BUILDING
OR BARRIER

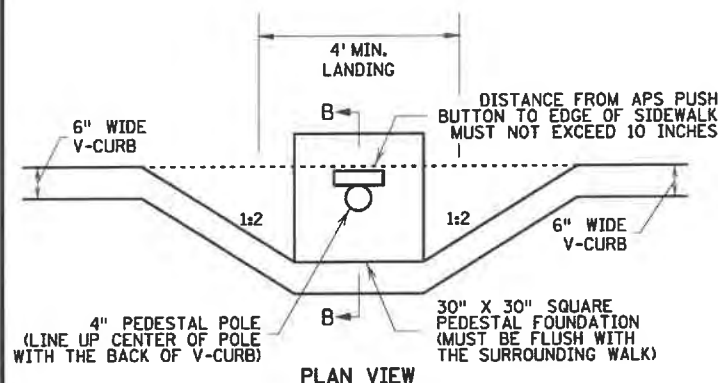
CONCRETE CURB DESIGN V	
CURB HEIGHT H	CURB WIDTH W
< 6"	4"
≥ 6"	6"



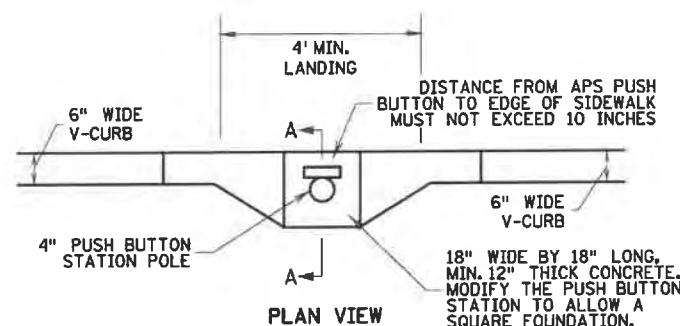
TRANSITION PANEL ④ ⑤



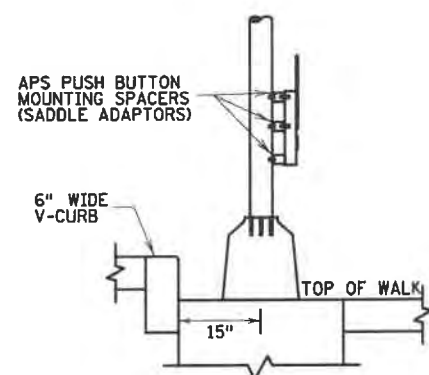
INSET A



PLAN VIEW

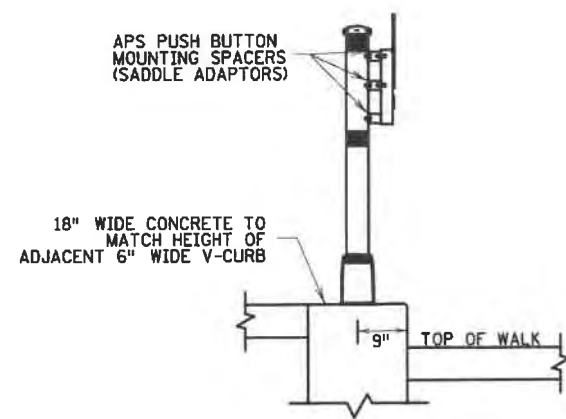


PLAN VIEW



SECTION B-B

SIGNAL PEDESTAL & PUSH BUTTON (V-CURB)



SECTION A-A

PUSH BUTTON STATION (V-CURB)

NOTES:

A WALKABLE FLARE IS AN 8-10% CONCRETE FLARE THAT IS REQUIRED WHEN THE FLARE IS ADJACENT TO A WALKABLE SURFACE, OR WHEN THE PEDESTRIAN PATH OF TRAVEL OF A PUSH BUTTON TRAVERSES THE FLARE.

ALL V CURB CONTRACTION JOINTS SHALL MATCH CONCRETE WALK JOINTS.

WHERE RIGHT-OF-WAY ALLOWS, USE OF V CURB SHOULD BE MINIMIZED. GRADING ADJACENT TURF OR SLOPING ADJACENT PAVEMENT IS PREFERRED.

V CURB SHALL BE PLACED OUTSIDE THE SIDEWALK LIMITS WHEN RIGHT OF WAY ALLOWS.

V CURB NEXT TO BUILDING SHALL BE A 4" WIDTH AND SHALL MATCH PREVIOUS TOP OF SIDEWALK ELEVATIONS.

① END TAPERS AT TRANSITION SECTION SHALL MATCH INPLACE SIDEWALK GRADES.

② ALL V CURB SHALL MATCH BOTTOM OF ADJACENT WALK.

③ CONSTRUCT USING APPROVED EXPANSION MATERIAL PER MNDOT TYPE A-E EXPANSION. LEAVE A MINIMUM 1/2" TOP GAP AND SEAL WITH MNDOT APPROVED SILICONE PER MNDOT SPEC 3722.

④ THE MAX. RATE OF CROSS SLOPE TRANSITIONING IS 1' LINEAR FOOT OF SIDEWALK PER HALF PERCENT CROSS SLOPE, WHEN PAR WIDTH IS GREATER THAN 6' OR THE RUNNING SLOPE IS GREATER THAN 5%, DOUBLE THE CALCULATED TRANSITION LENGTH.

⑤ TRANSITION PANEL(S) ARE TO ONLY BE USED AFTER THE RAMP, OR IF NEEDED, LANDING ARE AT THE FULL CURB HEIGHT (TYPICAL SECTION).

⑥ EXISTING CROSS SLOPE GREATER THAN 2.0%.

LEGEND

THESE LONGITUDINAL SLOPE RANGES SHALL BE THE STARTING POINT. IF SITE CONDITIONS WARRANT, LONGITUDINAL SLOPES UP TO 8.3% OR FLATTER ARE ALLOWED.

⑤ INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE BETWEEN 5.0% MINIMUM AND 8.3% MAXIMUM IN THE DIRECTION SHOWN AND THE CROSS SLOPE SHALL NOT EXCEED 2.0%.

④ LANDING AREA - 4' X 4' MIN. (5' X 5' MIN. PREFERRED) DIMENSIONS AND MAX 2.0% SLOPE IN ALL DIRECTIONS. LANDING SHALL BE FULL WIDTH OF INCOMING PARS.

① TRANSITION PANEL(S) - TO BE USED FOR TRANSITIONING THE CROSS-SLOPE OF A RAMP TO THE EXISTING WALK CROSS-SLOPE, RATE OF TRANSITION SHOULD BE 0.5% PER 1 LINEAR FOOT OF WALK. SEE THIS SHEET FOR ADDITIONAL INFORMATION.

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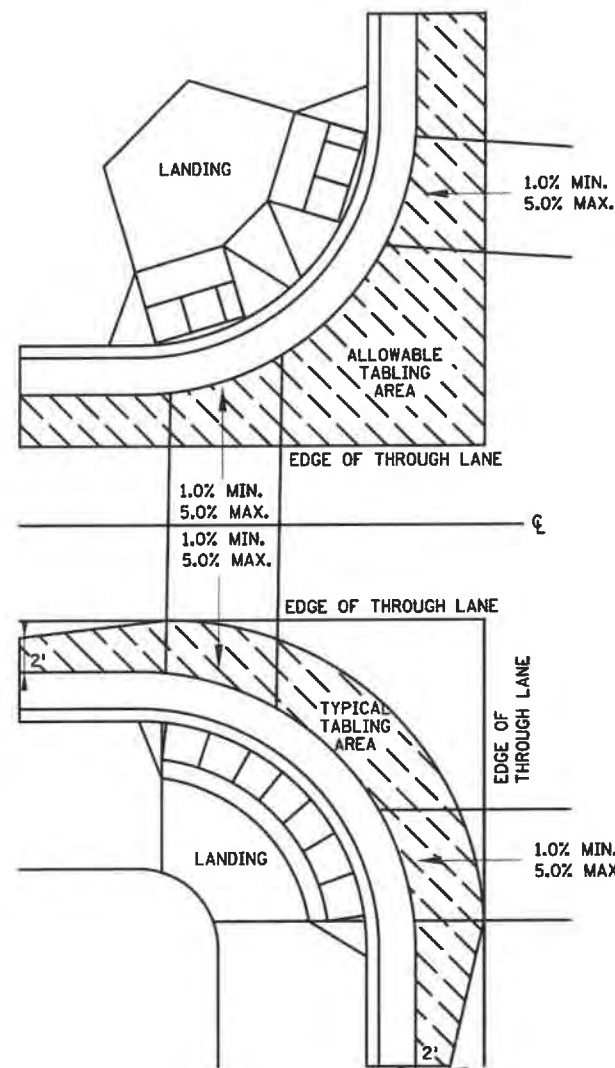
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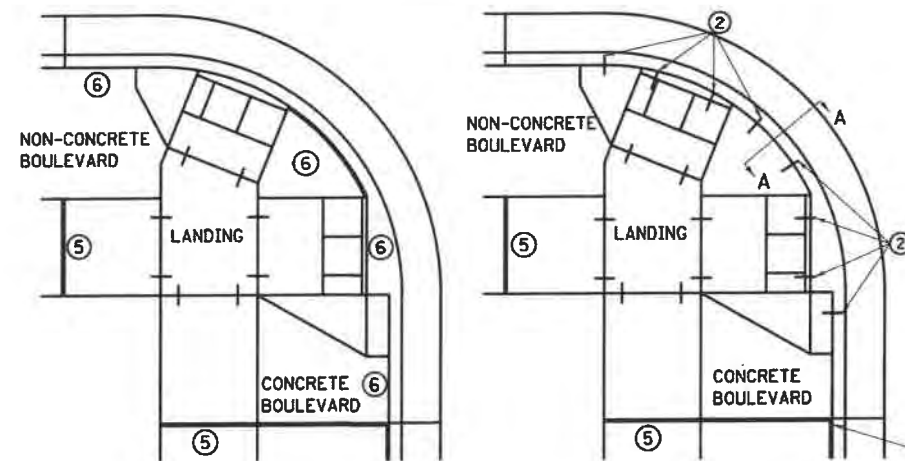
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PEDESTRIAN CURB RAMP DETAILS

STATE PROJ. NO. SAP 198-150-001/198-138-002 SHEET NO. 61 OF 62 SHEETS



CURB LINE AND ROAD CROSSING ADJUSTMENTS



EXPANSION MATERIAL PLACEMENT FOR CONCRETE ROADWAYS

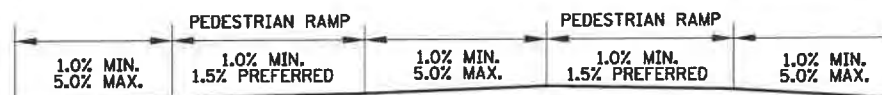
CURB LINE REINFORCEMENT ④ PLACEMENT ON BITUMINOUS ROADWAYS



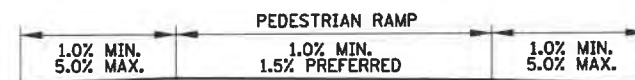
FLOW LINE PROFILE "TABLE" - TWIN PERPENDICULARS



FLOW LINE PROFILE "TABLE" - FAN



FLOW LINE PROFILE RAISE - TWIN PERPENDICULARS



FLOW LINE PROFILE RAISE - FAN

GENERAL NOTES:

"TABLING" OF CROSSWALKS MEANS MAINTAINING LESS THAN 2% CROSS SLOPE WITHIN A CROSSWALK, IS REQUIRED WHEN A ROADWAY IS IN A STOP OR YIELD CONDITION AND THE PROJECT SCOPE ALLOWS.

RECONSTRUCTION PROJECTS: ON FULL PAVEMENT REPLACEMENT PROJECTS "TABLING" OF ENTIRE CROSSWALK SHALL OCCUR WHEN FEASIBLE.

MILL & OVERLAY PROJECTS: "TABLING" OF FLOW LINES, IN FRONT OF THE PEDESTRIAN RAMP, IS REQUIRED WHEN THE EXISTING FLOW LINE IS GREATER THAN 2%. WARPING OF THE BITUMINOUS PAVEMENT CAN NOT EXTEND INTO THE THROUGH LANE. TABLE THE FLOW LINE TO 2% OR AS MUCH AS POSSIBLE WHILE ADHERING TO THE FOLLOWING CRITERIA:

- 1) 1.0% MIN. CROSS-SLOPE OF THE ROAD
- 2) 5.0% MAX. CROSS-SLOPE OF THE ROAD
- 3) "TABLE" FLOW LINE UP TO 4% CHANGE FROM EXISTING SLOPE IN FRONT OF PEDESTRIAN RAMP
- 4) UP TO 2% CHANGE IN FLOW LINE FROM EXISTING SLOPE BEYOND THE PEDESTRIAN CURB RAMP

STAND-ALONE ADA RETROFITS: FOLLOW MILL & OVERLAY CRITERIA ABOVE HOWEVER ALL PAVEMENT WARPING IS DONE WITH BITUMINOUS PATCHING ON BITUMINOUS ROADWAYS AND FULL-DEPTH APRON REPLACEMENT ON CONCRETE ROADWAYS.

RAISING OF CURB LINES SHOULD OCCUR IN VERTICALLY CONSTRAINED AREAS. RAISE THE CURB LINES ENOUGH TO ALLOW COMPLIANT RAMPS OR AS MUCH AS POSSIBLE WHILE ADHERING TO THE FOLLOWING CRITERIA:

- 1) 1.0% MIN. AND 5.0% MAXIMUM CROSS-SLOPE OF THE ROAD
- 2) 1.0% MIN. FLOW LINE (ON EITHER SIDE OF PEDESTRIAN RAMP) TO MAINTAIN POSITIVE DRAINAGE
- 3) 5.0% RECOMMENDED MAX. FLOW LINE
- 4) LONGITUDINAL THROUGH LANE ROADWAY TAPERS SHOULD BE 1" VERTICAL PER 15' HORIZONTAL

REVISION:

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OPERATIONS DIVISION



STANDARD PLAN 5-297.250

6 OF 6

Tom S. H.
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APPROVED: 11-04-2021

REVISED:

STATE PROJ. NO. SAP 198-150-001/198-138-002 SHEET NO. 62 OF 62 SHEETS

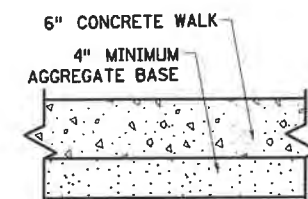
PEDESTRIAN CURB RAMP DETAILS

NOTES:

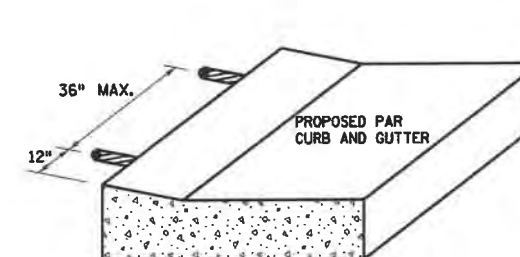
- ① TO ENSURE RAMPS AND LANDINGS ARE PROPERLY CONSTRUCTED, ALL INITIAL LANDINGS AT A TOP OF A RAMPED SURFACE (RUNNING SLOPE GREATER THAN 2%) SHALL BE FORMED AND PLACED SEPARATELY IN AN INDEPENDENT CONCRETE POUR. FOLLOW SIDEWALK REINFORCEMENT DETAILS ON THIS SHEET FOR ALL SEPARATELY POURED INITIAL LANDINGS.
- ② DRILL AND GROUT NO. 4 12" LONG REINFORCEMENT BARS (EPOXY COATED) AT 36" MAXIMUM CENTER TO CENTER MINIMUM 12" SPACING FROM CONSTRUCTION JOINTS. BARS TO BE ADJUSTED TO MATCH RAMP GRADE. BARS TO BE PAID BY EACH.
- ③ DRILL AND GROUT 2 - NO. 4 X 12" LONG (6" EMBEDDED) REINFORCEMENT BARS (EPOXY COATED). REINFORCEMENT REQUIRED FOR ALL CONSTRUCTION JOINTS. BARS TO BE PAID BY EACH.
- ④ THIS CURB LINE REINFORCEMENT DETAIL SHALL BE USED ON BITUMINOUS ROADWAYS. FOR CONCRETE ROADWAYS, SEE NOTE 6.
- ⑤ CONSTRUCT WITH EXPANSION MATERIAL PER MNDOT SPECIFICATION 3702 TYPES A-E. EXPANSION MATERIAL SHALL MATCH FULL HEIGHT OF ADJACENT CONCRETE.
- ⑥ USE AN APPROVED TYPE F (1/4 INCH THICK) SEPARATION MATERIAL. SEPARATION MATERIAL SHALL MATCH FULL HEIGHT DIMENSION OF ADJACENT CONCRETE.



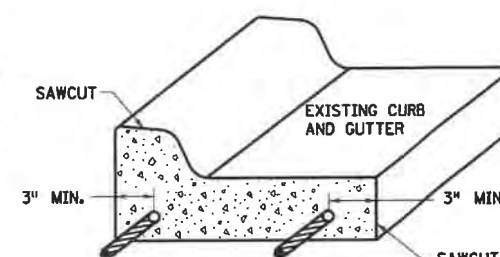
SECTION VIEW A-A
THICKENED SECTION
THROUGH CURB RAMP FLARES



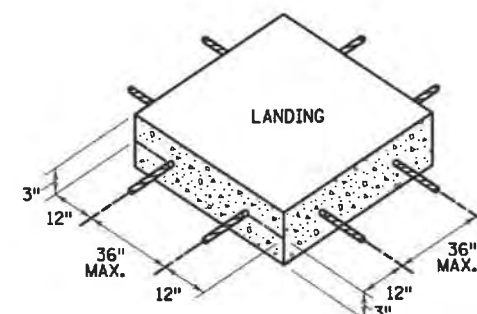
TYPICAL SIDEWALK SECTION
WITHIN INTERSECTION CORNER



CURB RAMP REINFORCEMENT DETAILS ②④



CURB AND GUTTER
REINFORCEMENT ③



SEPARATE LANDING
POUR REINFORCEMENT ①②

