

CITY OF SHOREWOOD, MN

CONSTRUCTION PLANS FOR

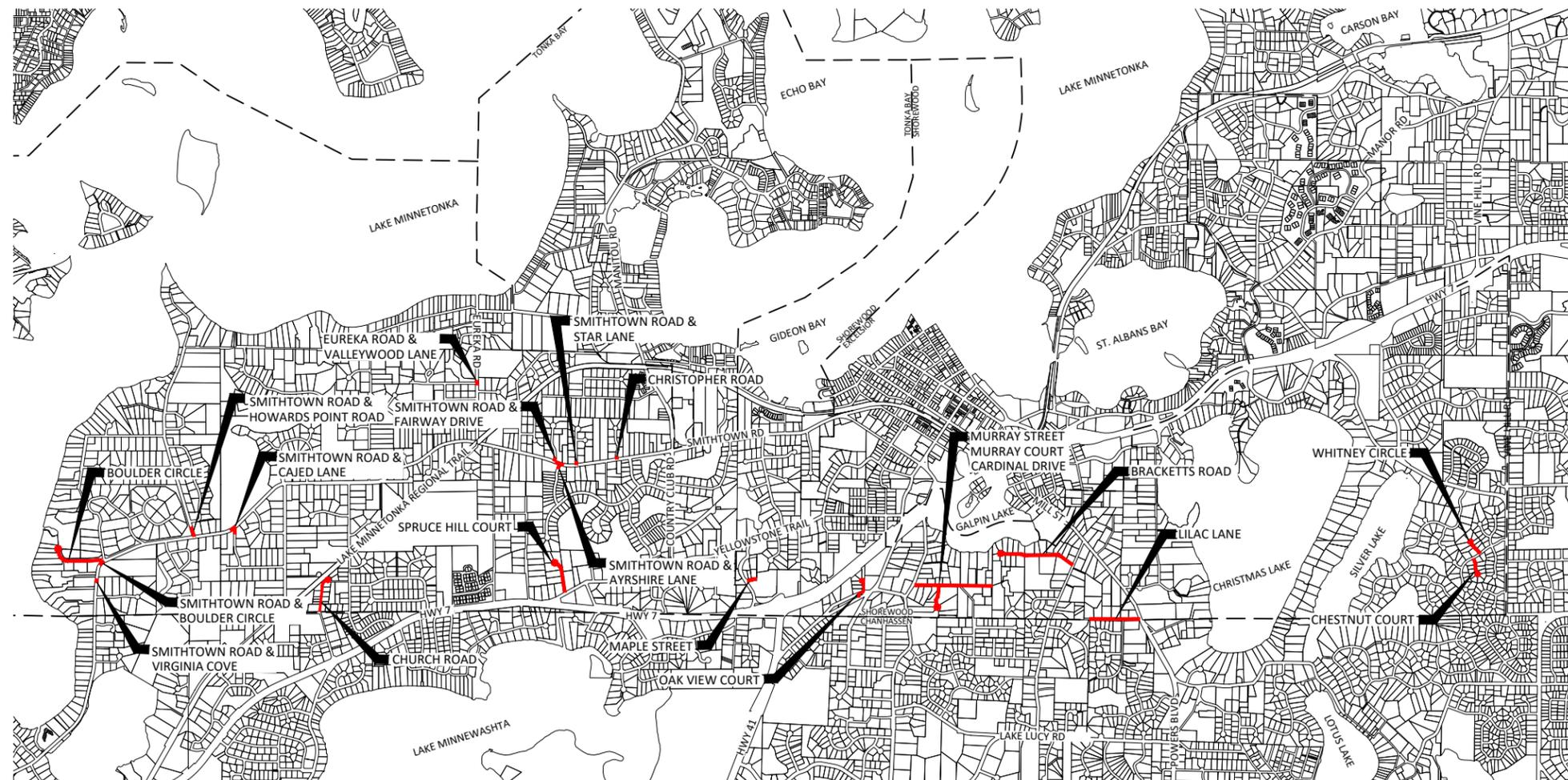
2024 MILL & OVERLAY AND SMITHTOWN ROAD DRAINAGE IMPROVEMENTS

BITUMINOUS MILLING, GRADING, AGGREGATE BASE, PLANT MIXED BITUMINOUS PAVEMENT, CURB & GUTTER, ADA IMPROVEMENTS, & STORM SEWER

MARCH 2024

NOTE: EXISTING UTILITY INFORMATION SHOWN ON THIS PLAN HAS BEEN PROVIDED BY THE UTILITY OWNER. THE CONTRACTOR SHALL FIELD VERIFY EXACT LOCATIONS PRIOR TO COMMENCING CONSTRUCTION AS REQUIRED BY STATE LAW. NOTIFY GOPHER STATE ONE CALL, 1-800-252-1166 OR 651-454-0002.

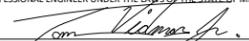
THE SUBSURFACE UTILITY INFORMATION IN THIS PLAN IS UTILITY QUALITY LEVEL D UNLESS OTHERWISE NOTED. THIS UTILITY LEVEL WAS DETERMINED ACCORDING TO THE GUIDELINES OF CI/ASCE 38-22, ENTITLED "STANDARD GUIDELINES FOR THE COLLECTION AND DEPICTION OF EXISTING SUBSURFACE UTILITY DATA."



SHEET NUMBER	SHEET TITLE
GENERAL	
G0.01	TITLE SHEET
G0.02	LEGEND
G0.03 - G0.04	CONSTRUCTION NOTES
G0.05	PROJECT OVERVIEW
CIVIL	
C0.01	TYPICAL SECTIONS
C0.02 - C0.06	CONSTRUCTION DETAILS
C0.07 - C0.12	PEDESTRIAN RAMP DETAILS
C1.01 - C1.03	STORM WATER POLLUTION PREVENTION PLAN
C2.01 - C2.12	MILL & OVERLAY CONSTRUCTION PLAN
C2.13	INTERSECTION DETAILS
C3.01 - C3.08	DRAINAGE & UTILITY CONSTRUCTION PLAN
C4.01	MCES SANITARY SEWER - EUREKA ROAD
C5.01 - C5.03	TRAFFIC CONTROL PLAN
THIS PLAN SET CONTAINS 45 SHEETS.	

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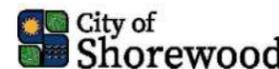
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THOMAS S. VIDMAR

 LIC. NO. 61498 DATE 03/21/2024



2638 SHADOW LANE, SUITE 200
 CHASKA, MN 55318
 Phone: (952) 448-8838
 Email: Chaska@bolton-menk.com
 www.bolton-menk.com



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CITY OF SHOREWOOD
 2024 MILL & OVERLAY & SMITHTOWN ROAD DRAINAGE IMPROVEMENTS
TITLE SHEET

SHEET
G0.01

EXISTING TOPOGRAPHIC SYMBOLS

	ACCESS GRATE		REGULATION STATION GAS
	AIR CONDITION UNIT		SATELLITE DISH
	ANTENNA		SIGN NON TRAFFIC
	AUTO SPRINKLER CONNECTION		SIGN TRAFFIC
	BARRICADE PERMANENT		SIGNAL CONTROL CABINET
	BASKETBALL POST		SOIL BORING
	BENCH		SIREN
	BIRD FEEDER		TELEPHONE BOOTH
	BOLLARD		TILE INLET
	BUSH		TILE OUTLET
	CATCH BASIN RECTANGULAR CASTING		TILE RISER
	CATCH BASIN CIRCULAR CASTING		TRANSFORMER-ELECTRIC
	CURB STOP		TREE-CONIFEROUS
	CLEAN OUT		TREE-DEAD
	CULVERT END		TREE-DECIDUOUS
	DRINKING FOUNTAIN		TREE STUMP
	DOWN SPOUT		TRAFFIC ARM BARRIER
	FILL PIPE		TRAFFIC SIGNAL
	FIRE HYDRANT		TRASH CAN
	FLAG POLE		UTILITY MARKER
	FLARED END / APRON		VALVE
	FUEL PUMP		VALVE POST INDICATOR
	GRILL		VALVE VAULT
	GUY WIRE ANCHOR		VAULT
	HANDHOLE		VENT PIPE
	HANDICAP SPACE		WATER SPIGOT
	IRRIGATION SPRINKLER HEAD		WELL
	IRRIGATION VALVE BOX		WETLAND DELINEATED MARKER
	LIFT STATION CONTROL PANEL		WETLAND
	LIFT STATION		WET WELL
	LIGHT ON POLE		YARD HYDRANT
	LIGHT-GROUND		
	MAILBOX		

PROPOSED TOPOGRAPHIC SYMBOLS

	CLEANOUT
	MANHOLE
	LIFT STATION
	STORM SEWER CIRCULAR CASTING
	STORM SEWER RECTANGULAR CASTING
	STORM SEWER FLARED END / APRON
	STORM SEWER OUTLET STRUCTURE
	STORM SEWER OVERFLOW STRUCTURE
	CURB BOX
	FIRE HYDRANT
	WATER VALVE
	WATER REDUCER
	WATER BEND
	WATER TEE
	WATER CROSS
	WATER SLEEVE
	WATER CAP / PLUG
	RIP RAP
	DRAINAGE FLOW
	TRAFFIC SIGNS

SURVEY SYMBOLS

	BENCHMARK LOCATION		CAST IRON MONUMENT
	CONTROL POINT		STONE MONUMENT
	MONUMENT FOUND		

EXISTING TOPOGRAPHIC LINES

	RETAINING WALL
	FENCE
	FENCE-DECORATIVE
	GUARD RAIL
	TREE LINE
	BUSH LINE

SURVEY LINES

	CONTROLLED ACCESS BOUNDARY
	CENTERLINE
	EXISTING EASEMENT LINE
	PROPOSED EASEMENT LINE
	EXISTING LOT LINE
	PROPOSED LOT LINE
	EXISTING RIGHT-OF-WAY
	PROPOSED RIGHT-OF-WAY
	SETBACK LINE
	SECTION LINE
	QUARTER LINE
	SIXTEENTH LINE
	TEMPORARY EASEMENT

EXISTING UTILITY LINES

	FORCEMAIN
	SANITARY SEWER
	SANITARY SERVICE
	STORM SEWER
	STORM SEWER DRAIN TILE
	WATERMAIN
	WATER SERVICE

PROPOSED UTILITY LINES

	FORCEMAIN
	SANITARY SEWER
	SANITARY SERVICE
	STORM SEWER
	STORM SEWER DRAIN TILE
	WATERMAIN
	WATER SERVICE
	PIPE CASING
	TRENCHLESS PIPE (PLAN VIEW)
	TRENCHLESS PIPE (PROFILE VIEW)

GRADING INFORMATION

	EXISTING CONTOUR MINOR
	EXISTING CONTOUR MAJOR
	PROPOSED CONTOUR MINOR
	PROPOSED CONTOUR MAJOR
	PROPOSED GRADING LIMITS / SLOPE LIMITS
	PROJECT LIMITS
	PROPOSED SPOT ELEVATION
	RISE:RUN (SLOPE)

HATCH PATTERNS

	BITUMINOUS		GRAVEL
	CONCRETE		

EXISTING PRIVATE UTILITY LINES

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	UNDERGROUND FIBER OPTIC
	UNDERGROUND ELECTRIC
	UNDERGROUND GAS
	UNDERGROUND COMMUNICATION
	OVERHEAD ELECTRIC
	OVERHEAD COMMUNICATION
	OVERHEAD UTILITY

UTILITIES IDENTIFIED WITH A QUALITY LEVEL:

LINE TYPES FOLLOW THE FORMAT: UTILITY TYPE - QUALITY LEVEL
 EXAMPLE: G-A UNDERGROUND GAS, QUALITY LEVEL A
 UTILITY QUALITY LEVEL (A,B,C,D) DEFINITIONS CAN BE FOUND IN CI/ASCE 38-02.

UTILITY QUALITY LEVELS:

QUALITY LEVEL D: PROVIDES THE MOST BASIC LEVEL OF INFORMATION. IT INVOLVES COLLECTING DATA FROM EXISTING UTILITY RECORDS. RECORDS MAY INCLUDE AS-BUILT DRAWINGS, DISTRIBUTION AND SERVICES MAPS, EXISTING GEOGRAPHIC INFORMATION SYSTEM DATABASES, CONSTRUCTION PLANS, ETC.

QUALITY LEVEL C: INVOLVES SURVEYING VISIBLE SUBSURFACE UTILITY STRUCTURES SUCH AS MANHOLES, HAND-HOLES, UTILITY VALVES AND METERS, FIRE HYDRANTS, PEDESTALS AND UTILITY MARKERS, AND THEN CORRELATING THE INFORMATION WITH EXISTING UTILITY RECORDS TO CREATE COMPOSITE DRAWINGS. INCLUDES QUALITY LEVEL D ACTIVITIES.

QUALITY LEVEL B: INVOLVES DESIGNATING THE HORIZONTAL POSITION OF SUBSURFACE UTILITIES THROUGH SURFACE DETECTION METHODS AND COLLECTING THE INFORMATION THROUGH A SURVEY METHOD. INCLUDES QUALITY LEVEL C AND D TASKS.

QUALITY LEVEL A: PROVIDES THE HIGHEST LEVEL OF ACCURACY. IT INVOLVES LOCATING OR POTHOLING UTILITIES AS WELL AS ACTIVITIES IN QUALITY LEVELS B, C, AND D. THE LOCATED FACILITY INFORMATION IS SURVEYED AND MAPPED AND THE DATA PROVIDES PRECISE PLAN AND PROFILE INFORMATION.

ABBREVIATIONS

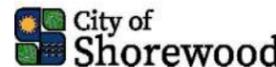
A	ALGEBRAIC DIFFERENCE	GRAV	GRAVEL	RSC	RIGID STEEL CONDUIT
ADJ	ADJUST	GU	GUTTER	RT	RIGHT
ALT	ALTERNATE	GV	GATE VALVE	SAN	SANITARY SEWER
B-B	BACK TO BACK	HDPE	HIGH DENSITY POLYETHYLENE	SCH	SCHEDULE
BIT	BITUMINOUS	HH	HANDHOLE	SERV	SERVICE
BLDG	BUILDING	HP	HIGH POINT	SHLD	SHOULDER
BMP	BEST MANAGEMENT PRACTICE	HWL	HIGH WATER LEVEL	STA	STATION
BR	BEGIN RADIUS	HYD	HYDRANT	STD	STANDARD
BV	BUTTERFLY VALVE	I	INVERT	STM	STORM SEWER
CB	CATCH BASIN	K	CURVE COEFFICIENT	TC	TOP OF CURB
C&G	CURB AND GUTTER	L	LENGTH	TE	TEMPORARY EASEMENT
CIP	CAST IRON PIPE	LO	LOWEST OPENING	TEMP	TEMPORARY
CIPP	CURED-IN-PLACE PIPE	LP	LOW POINT	TNH	TOP NUT HYDRANT
CL	CENTER LINE	LT	LEFT	TP	TOP OF PIPE
CL	CLASS	MAX	MAXIMUM	TYP	TYPICAL
CLVT	CULVERT	MH	MANHOLE	VCP	VITRIFIED CLAY PIPE
CMP	CORRUGATED METAL PIPE	MIN	MINIMUM	VERT	VERTICAL
C.O.	CHANGE ORDER	MR	MID RADIUS	VPC	VERTICAL POINT OF CURVE
COMM	COMMUNICATION	NIC	NOT IN CONTRACT	VPI	VERTICAL POINT OF INTERSECTION
CON	CONCRETE	NMC	NON-METALLIC CONDUIT	VPT	VERTICAL POINT OF TANGENT
CSP	CORRUGATED STEEL PIPE	NTS	NOT TO SCALE	WM	WATERMAIN
DIA	DIAMETER	NWL	NORMAL WATER LEVEL		
DIP	DUCTILE IRON PIPE	OHW	ORDINARY HIGH WATER LEVEL		
DWY	DRIVEWAY	PC	POINT OF CURVE	AC	ACRES
E	EXTERNAL CURVE DISTANCE	PCC	POINT OF COMPOUND CURVE	CF	CUBIC FEET
ELEC	ELECTRIC	PE	PERMANENT EASEMENT	CV	COMPACTED VOLUME
ELEV	ELEVATION	PED	PEDESTRIAN, PEDESTAL	CY	CUBIC YARD
EOF	EMERGENCY OVERFLOW	PERF	PERFORATED PIPE	EA	EACH
ER	END RADIUS	PERM	PERMANENT	EV	EXCAVATED VOLUME
ESMT	EASEMENT	PI	POINT OF INTERSECTION	LB	POUND
EX	EXISTING	PL	PROPERTY LINE	LF	LINEAR FEET
FES	FLARED END SECTION	PRC	POINT OF REVERSE CURVE	LS	LUMP SUM
F-F	FACE TO FACE	PT	POINT OF TANGENT	LV	LOOSE VOLUME
FF	FINISHED FLOOR	PVC	POLYVINYL CHLORIDE PIPE	SF	SQUARE FEET
F&I	FURNISH AND INSTALL	PVMT	PAVEMENT	SV	STOCKPILE VOLUME
FM	FORCEMAIN	R	RADIUS	SY	SQUARE YARD
FO	FIBER OPTIC	R/W	RIGHT-OF-WAY		
F.O.	FIELD ORDER	RCP	REINFORCED CONCRETE PIPE		
GRAN	GRANULAR	RET	RETAINING		

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CITY OF SHOREWOOD

2024 MILL & OVERLAY & SMITHTOWN ROAD DRAINAGE IMPROVEMENTS

LEGEND

SHEET

G0.02

CONSTRUCTION NOTES:

1. UPON COMPLETION OF ANY PROPOSED CURB AND/OR STORM SEWER INSTALLATION, THE CONTRACTOR SHALL COMPLETE THE INSTALLATION OF THE ROADWAY SECTION IN THESE LOCATIONS TO THE BITUMINOUS BASE COURSE WITHIN 10 WORKING DAYS.
2. THE CONTRACTOR SHALL COMPLETE TURF SEEDING OF ALL DITCH CLEANING, RIP RAP REPLACEMENT AND STORM SEWER INSTALLATION LOCATIONS DURING THE MNDOT GROWING SEASON. SEE PROJECT SPECIFICATION FOR DETAILS.
3. THE ENGINEER WILL MARK ALL REMOVAL LIMITS IN THE FIELD PRIOR TO CONSTRUCTION. NO WORK SHALL COMMENCE UNTIL ALL REMOVAL LIMITS ARE CLEARLY MARKED AND REVIEWED BY THE ENGINEER AND THE CONTRACTOR.
4. THE CONTRACTOR SHALL PROTECT ALL CONCRETE VALLEY GUTTERS, UNDERGROUND FENCING AND IRRIGATION/SPRINKLER SYSTEMS NOT MARKED FOR REMOVAL. REPAIR OF DAMAGED ITEMS SHALL BE AT THE CONTRACTOR'S EXPENSE.
5. ALL REMOVAL ITEMS SHALL BE DISPOSED OF OFF-SITE IN PROPER ACCORDANCE WITH ALL FEDERAL, STATE AND LOCAL REGULATIONS.
6. MANHOLES AND GATE VALVES BOXES SHALL BE LOCATED IN THE FIELD BY THE CONTRACTOR. STRUCTURES SHOWN ON THE PLAN ARE SHOWN IN AN APPROXIMATE WAY ONLY AND IT IS NOT GUARANTEED THAT ALL MANHOLES AND GATE VALVES BOXES ARE SHOWN.
7. THE CONTRACTOR SHALL SUPPLY UNEVEN PAVEMENT AND BUMP SIGNS IF REQUIRED BY THE MNMUTCD OR ENGINEER.
8. THE CONTRACTOR SHALL HAVE ONE QUALIFIED FLAG PERSON ON EACH END OF THE PAVING OPERATION AND AT OTHER LOCATIONS (SIDE STREETS, PARKING LOT ENTRANCES, ETC.) AS REQUIRED OR DIRECTED BY THE ENGINEER. (INCIDENTAL TO TRAFFIC CONTROL.)
9. PROVISIONS SHALL BE MADE AND MAINTAINED BY THE CONTRACTOR DURING CONSTRUCTION TO PROVIDE ACCESS TO ALL BUSINESSES AND RESIDENTS AT ALL TIMES. TEMPORARY ACCESS AND/OR ADDITIONAL TRAFFIC CONTROL DEVICES MAY BE NECESSARY TO ROUTE TRAFFIC. ALL DISTURBANCE OF ANY ACCESS SHALL BE APPROVED BY THE ENGINEER PRIOR TO ANY DISTURBANCE OF THE DRIVEWAY. ALL TEMPORARY ACCESS WORK SHALL BE INCIDENTAL TO CONSTRUCTION.
10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SUPPLYING, INSTALLING, ERECTING, MAINTAINING, AND THE COORDINATION OF ALL NO PARKING SIGNS TO TEMPORARILY PROHIBIT VEHICLES PARKING WITHIN THE PROJECT LIMITS DURING CONSTRUCTION IN ACCORDANCE WITH AN APPROVED PLAN. THE SIGN SIZE, COLOR, MESSAGE, ETC. SHALL BE APPROVED BY THE ENGINEER. NO SIGNS SHALL BE ERECTED WITHOUT PROPER NOTIFICATION TO THE POLICE AND ENGINEER.
11. STREETS USED AS HAUL ROUTES SHALL BE SWEEP/CLEANED DAILY IN ORDER TO PREVENT A BUILDUP FROM DROPPED MILLINGS, BITUMINOUS, AC, ETC. THIS WORK SHALL BE CONSIDERED INCIDENTAL TO THE PAVING.
12. ALL TRAFFIC CONTROL DEVICES SHALL BE IN COMPLIANCE WITH THE MN MUTCD MANUAL GUIDELINES. ALL LAYOUTS SHALL CONFORM WITH THE LATEST MN MUTCD FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS.
13. FIELD CONDITIONS MAY REQUIRE MODIFICATIONS OF LAYOUTS AS DEEMED NECESSARY BY THE ENGINEER.
14. THE CONTRACTOR IS RESPONSIBLE FOR ANY SIGNAGE NEEDED TO FACILITATE TRAFFIC SWITCHES OR FOR TRANSITIONING TRAFFIC FROM ONE STAGE TO ANOTHER.
15. CONTRACTOR SHALL REMOVE AND REPLACE CONCRETE CURB AND GUTTER AS DIRECTED BY THE ENGINEER.
16. CONTRACTOR SHALL PROTECT ALL LANDSCAPING ADJACENT TO THE ROAD.
17. WHERE CURB IS TO BE PLACED, THE CONTRACTOR SHALL SAW CUT AND PATCH THE STREET ADJACENT TO THE CURB. THE PATCH SHALL BE 24-INCHES WIDE AND SHALL CONSIST OF 3-INCHES OF SPNWB230B BITUMINOUS BASE COURSE AND 1.5-INCHES OF SPWEA240B WEAR COURSE. THE 1.5-INCHES OF SPWEA240B IS INCLUDED IN THE OVERLAY PORTION OF THE JOB. THIS WORK IS PAID AS THE BID ITEM REMOVE AND REPLACE BITUMINOUS PAVEMENT. SAW CUTTING SHALL BE CONSIDERED INCIDENTAL.
18. PRIOR TO PLACEMENT OF NEW CONCRETE CURB & GUTTER, ALL EXISTING EDGES SHALL BE STRAIGHT AND EXPANSION JOINT MATERIAL SHALL BE PLACED AGAINST THE ABUTTING EDGE, AS DIRECTED.
19. THE CONTRACTOR WILL BE REQUIRED TO STAGE CONSTRUCTION IN ORDER TO ELIMINATE ALL LONGITUDINAL COLD JOINTS.
20. PAVING OPERATIONS SHALL CONSIST OF ONLY ONE CONSTRUCTION JOINT AT THE CENTER OF THE ROADWAY. PAVING SHALL BE PERFORMED BY PLACING THE BITUMINOUS MATERIAL ON ONE HALF OF THE ROADWAY SURFACE WITH ONE LARGE PAVER OR TWO PAVERS IN TANDEM.
21. PROVIDE A SAWCUT WHERE PLACING NEW PAVEMENT ADJACENT TO INPLACE PAVEMENT TO ENSURE A UNIFORM JOINT. LOCATE ALL SAWCUTS PARALLEL TO LANE LINES OR PERPENDICULAR TO LANE LINES. ALL SAWING SHALL BE WET SAWN AND ALL DUST/SLURRY SHALL BE COLLECTED TO THE EXTENT PRACTICABLE BY SWEEPING OR VACUUM AND DISPOSED OF ACCORDING TO THE SPECIFICATIONS. THIS WORK IS INCIDENTAL. SAWCUTTING PAVEMENT IS INCIDENTAL TO THE CONTRACT.
22. CONTRACTOR SHALL PROTECT ALL MAIL BOXES. PROTECTION OF MAILBOXES, INCLUDING SALVAGING & REINSTALLING OF MAILBOXES NECESSARY TO COMPLETE THE WORK IS INCIDENTAL TO THE PROJECT.
23. THE CONTRACTOR SHALL SUBMIT A CONSTRUCTION STAGING PLAN TO THE ENGINEER FOR APPROVAL PRIOR TO CONSTRUCTION. SEE SPECIAL PROJECT PROCEDURES FOR PROJECT SEQUENCING REQUIREMENTS.
24. THE CONTRACTOR SHALL PROVIDE FOR INLET PROTECTION AT ALL CATCH BASIN LOCATIONS WHERE MILL & OVERLAY WORK IS OCCURRING.
25. AFTER MILLING THE PAVEMENT TO THE REQUIRED DEPTH AND PRIOR TO OVERLAYING, AIR BLAST ANY DETERIORATED CRACKS AND JOINTS TO REMOVE LOOSE OR DETERIORATED BITUMINOUS SURFACING. THE AIR BLASTING SHALL BE DONE WITH HIGH-PRESSURE (100+ PSI) EQUIPMENT. THIS WORK IS CONSIDERED INCIDENTAL.
26. CRACKS OR DEPRESSIONS RESULTING AFTER SURFACE REPAIR, AIR BLASTING, SWEEPING OR MILLING OPERATIONS, WHICH ARE GREATER THAN 1 1/2" IN DEPTH AND WIDTH, SHALL BE FILLED WITH BITUMINOUS MIXTURE PRIOR TO THE PLACEMENT OF THE OVERLAY USING THE SAME BITUMINOUS MIXTURE USED IN THE OVERLAY. PATCHING OF THESE AREAS SHALL BE DONE AHEAD OF THE PAVING OPERATION AND COMPACTED WITH A SMALL VIBRATORY OR PNEUMATIC ROLLER. DEPRESSIONS OF LESSER DIMENSIONS SHALL BE FILLED WITH THE BITUMINOUS COURSE MIXTURE, IN FRONT OF THE PAVER, AS DIRECTED BY THE ENGINEER. MATERIAL USED TO PATCH WILL BE PAID BY THE BID ITEM TYPE SP9.5 WEARING COURSE MIXTURE (2,B).
27. STRIPPED TOPSOIL SHALL BE USED AS NEEDED THROUGHOUT THE ENTIRE PROJECT.
28. IMPORTED TOPSOIL SHALL BE 50% COMPOST/50% TOPSOIL BLEND. STOCKPILED MATERIAL MAY NEED TO BE AMENDED OR IMPORTED TO MEET THE STANDARD.
29. WHERE THE SEDIMENT DEPOSITS IN WATERS OF THE STATE, THE MATERIAL MUST BE REMOVED IN 7 DAYS.
30. SEE SPECIFICATIONS FOR APPLICATION RATES OF SEED AND FERTILIZER.
31. REMOVAL OF BITUMINOUS CURB & BITUMINOUS BERMS IS INCLUDED IN THE AREA FOR MILLING AND NO ADDITIONAL COMPENSATION WILL BE MADE FOR MILLING BITUMINOUS CURB & BITUMINOUS BERMS.
32. CONTRACTOR SHALL WORK WITH THE ENGINEER IN THE FIELD ON DETERMINING LEVELING COURSE LOCATIONS AND LIMITS. NO ADDITIONAL COMPENSATION WILL BE MADE FOR INSTALLATION OF LEVELING COURSE WITHOUT CONSULTING IN THE FIELD WITH THE ENGINEER.
33. THE CONTRACTOR IS HEREBY REMINDED OF HIS/HER RESPONSIBILITY UNDER STATE LAW TO CONTACT ALL UTILITIES THAT MAY HAVE FACILITIES IN THE AREA. CONTACT MUST BE MADE THROUGH GOPHER STATE ONE-CALL.
34. ALL TURF AREAS STEEPER THAN 4:1 SHALL BE RESTORED WITH ROLLED EROSION CONTROL PREVENTION, UNLESS ADJACENT TO MAINTAINED LAWNS. CONTRACTOR SHALL COORDINATE WITH THE ENGINEER IN THE FIELD FOR ALL LOCATIONS THAT ARE TO BE HYDROSEEDDED.

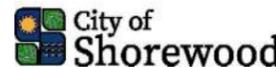
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 2024 MILL & OVERLAY & SMITHTOWN ROAD DRAINAGE IMPROVEMENTS
 CONSTRUCTION NOTES

SHEET
G0.03

PAVEMENT MARKING NOTES & GUIDELINES

GENERAL INFORMATION:

THE ENGINEER'S INVOLVEMENT IN THE APPLICATION OF THE MATERIAL SHALL BE LIMITED TO FIELD CONSULTATION AND INSPECTION. THE CONTRACTOR WILL PLACE NECESSARY "SPOTTING" AT APPROPRIATE POINTS TO PROVIDE HORIZONTAL CONTROL FOR STRIPING AND TO DETERMINE NECESSARY STARTING AND CUTOFF POINTS. LONGITUDINAL JOINTS, PAVEMENT EDGES AND EXISTING MARKINGS MAY SERVE AS HORIZONTAL CONTROL WHEN SO DIRECTED.

EDGE LINES AND LANE LINES ARE TO BE BROKEN ONLY AT INTERSECTIONS WITH PUBLIC ROADS AND AT PRIVATE ENTRANCES IF THEY ARE CONTROLLED BY A YIELD SIGN, STOP SIGN OR TRAFFIC SIGNAL. THE BREAK POINT IS TO BE AT THE START OF THE RADIUS FOR THE INTERSECTION OR AT MARKED STOP LINES OR CROSSWALKS.

A TOLERANCE OF 1/4 INCH UNDER OR 1/4 INCH OVER THE SPECIFIED WIDTH WILL BE ALLOWED FOR STRIPING, PROVIDED THE VARIATION IS GRADUAL AND DOES NOT DETRACT FROM THE GENERAL APPEARANCE. BROKEN LINE SEGMENTS MAY VARY UP TO ONE-HALF FOOT FROM THE SPECIFIED LENGTHS, PROVIDED OVER AND UNDER VARIATIONS ARE REASONABLY COMPENSATORY. ALIGNMENT DEVIATIONS FROM THE CONTROL GUIDE SHALL NOT EXCEED 1 INCH. MATERIAL SHALL NOT BE APPLIED OVER LONGITUDINAL JOINTS. ESTABLISHMENT OF APPLICATION TOLERANCES SHALL NOT RELIEVE THE CONTRACTOR OF THEIR RESPONSIBILITY TO COMPLY AS CLOSELY AS PRACTICABLE WITH THE PLANNED DIMENSIONS.

MULTI-COMPONENT:

THE ROAD SURFACE SHALL BE CLEANED AT THE DIRECTION OF THE ENGINEER JUST PRIOR TO THE APPLICATION. PAVEMENT CLEANING SHALL CONSIST OF AT LEAST BRUSHING WITH A ROTARY BROOM (NON-METALLIC) OR AS RECOMMENDED BY THE MATERIAL MANUFACTURER AND ACCEPTABLE TO THE ENGINEER. NEW PORTLAND CEMENT CONCRETE SURFACES SHALL BE SANDBLAST CLEANED TO REMOVE ANY SURFACE TREATMENTS AND/OR LAITANCE. ON LOW SPEED (SPEED LIMIT 25 OR LESS) URBAN PORTLAND CEMENT CONCRETE ROADWAYS, SANDBLAST CLEANING SHALL BE USED FOR ALL MULTI-COMPONENT PAVEMENT MARKINGS.

THE MULTI-COMPONENT MARKING APPLICATION SHALL IMMEDIATELY FOLLOW THE PAVEMENT CLEANING. GLASS BEADS SHALL BE APPLIED IMMEDIATELY AFTER APPLICATION OF THE MULTI-COMPONENT RESIN LINE TO PROVIDE AN IMMEDIATE NO-TRACK SYSTEM.

A MULTI-COMPONENT RESIN LINE 4" WIDE AND 15 MILL THICKNESS (WET) REQUIRES AN APPLICATION RATE OF ONE (1) GALLON OF COMPONENTS FOR 320 FEET OF LINE. GLASS BEADS SHALL BE APPLIED AT A POUND PER GALLON RATE SUFFICIENT TO ACHIEVE AN ACCEPTABLE NO-TRACK SYSTEM.

OPERATIONS SHALL BE CONDUCTED ONLY WHEN THE ROAD PAVEMENT SURFACE TEMPERATURES ARE 50 DEGREES F OR GREATER.

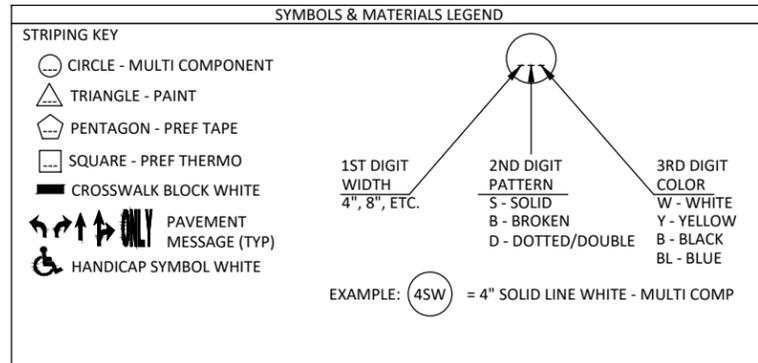
PERMANENT PAVEMENT MARKINGS SHALL NOT BE PLACED OVER TEMPORARY TAPE MARKINGS.

SIGNING NOTES:

- CONTRACTOR SHALL MAINTAIN STOP SIGNS, SPEED LIMIT SIGNS AND STREET NAME SIGNS AT ALL TIMES DURING CONSTRUCTION.
- SEE MnDOT STANDARD SIGNS MANUAL FOR PUNCHING CODE AND DETAILED DRAWINGS OF TYPE "C" SIGN PANELS

STREET NAME SIGN NOTES:

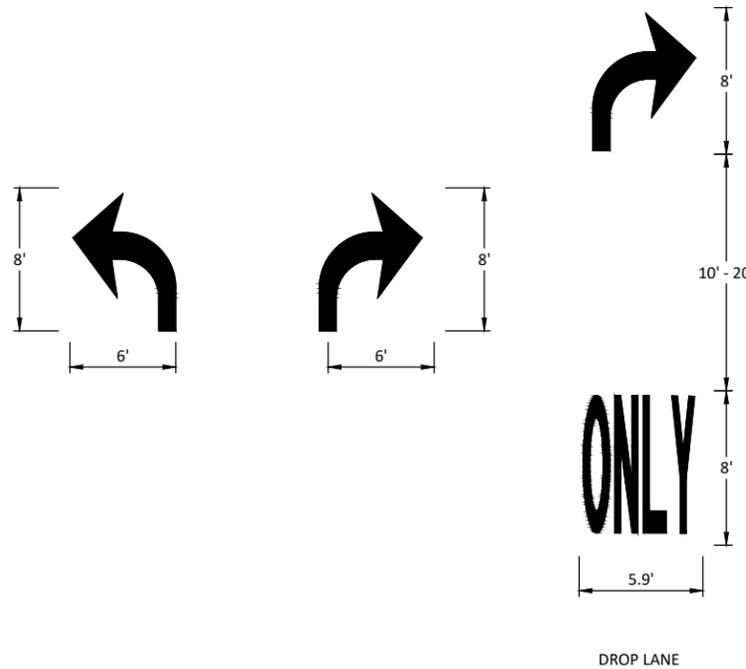
- STREET NAME SIGNS SHALL BE ON 9" BLADES. MAXIMUM LENGTH SHALL BE 48".
- SIGNS SHALL HAVE A VIP GRADE MATERIAL SHEETING.
- TEXT SHALL BE 6" UPPER CASE AND 4.5" LOWER CASE. TEXT FONT SHALL BE C SERIES LETTERING. STANDARD SPACING IS 56% OF C SERIES SPACING. DECREASE SPACING APPROPRIATELY TO ACCOMMODATE LONGER STREET NAMES TEXT.
- USE WHITE LETTERING ON GREEN BACKGROUND. NEITHER MARGINS NOR BORDER IS ESSENTIAL.
- STREET NAME SIGNS MUST REMAIN DURING THE LIFETIME OF THE PROJECT FOR EMERGENCY VEHICLE USE.



GENERAL NOTE:

- CONTRACTOR SHALL FOLLOW THE LATEST MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

TYPICAL PAVEMENT MESSAGE DIMENSIONS NOT TO SCALE



Character		Installed Area	Removal Area	Message		Installed Area	Removal Area
A	=	5.22	10.27	ONLY	=	20.63	49.07
B	=	7.25	10.27	PED	=	17.76	36.13
C	=	4.79	10.27	SCHOOL	=	32.49	74.93
D	=	6.26	10.27	SIGNAL	=	30.31	64.67
E	=	6.26	10.27	STOP	=	20.96	49.07
F	=	4.61	10.27	XING	=	20.10	38.80
G	=	5.89	10.27	YIELD	=	22.71	51.73
H	=	5.94	10.27	↩	=	15.45 ^①	48.00 ^②
I	=	2.56	2.67	↕	=	12.20	33.25
J	=	3.56	10.27	↔	=	30.09 ^①	91.83 ^③
K	=	5.96	10.27	↔	=	26.87	88.00
L	=	3.79	10.27	↔	=	37.10 ^①	139.33 ^④
M	=	7.12	10.27	↔	=	22.29	53.33
N	=	6.96	10.27	↔	=	41.88	104.50
O	=	6.04	10.27	↔	=	9.75	30.00
P	=	5.24	10.27	↔	=	0.75	1.50
Q	=	6.30	10.27	↔	=	3.00	6.00
R	=	6.11	10.27	↔	=	2.66	8.00
S	=	5.89	10.27	↔	=	5.98	18.00
T	=	3.79	10.27	↔	=	10.63	32.00
U	=	5.75	10.27	↔	=	8.51	31.11
V	=	4.69	10.27	↔	=	4.43	10.45
W	=	6.96	10.27	↔	=	61.88	148.00
X	=	4.69	10.27	↔	=		
Y	=	3.84	10.27	↔	=		
Z	=	5.02	10.27	↔	=		
1	=	2.56	2.67	↔	=		
2	=	5.68	10.27	↔	=		
3	=	5.59	10.27	↔	=		
4	=	5.10	10.27	↔	=		
5	=	6.18	10.27	↔	=		
6	=	6.35	10.27	↔	=		
7	=	3.79	10.27	↔	=		
8	=	6.76	10.27	↔	=		
9	=	6.35	10.27	↔	=		
0	=	6.04	10.27	↔	=		
Message		Installed Area	Removal Area	Message		Installed Area	Removal Area
AHEAD		= 28.90	62.00	X		= 61.88	148.00
BIKE		= 22.03	38.80				
LANE		= 22.23	49.07				

- NOTES:
- IF THE ROUNDABOUT DOT IS INSTALLED, ADD 1.47 SQ FT TO THE INSTALLED AREA.
 - IF THE ROUNDABOUT DOT IS PRESENT, ADD 3 SQ FT TO THE TOTAL REMOVAL AREA.
 - IF THE ROUNDABOUT DOT IS PRESENT, ADD 6.33 SQ FT TO THE TOTAL REMOVAL AREA.
 - IF THE ROUNDABOUT DOT IS PRESENT, ADD 8.04 SQ FT TO THE TOTAL REMOVAL AREA.

REMOVAL OF BARS FOR RAILROAD CROSSING PAVEMENT MESSAGE PAID FOR AS A LONGITUDINAL LINE AS REQUIRED BY SPEC 2102.

BARS FOR RAILROAD CROSSING PAVEMENT MESSAGE PAID FOR AS 24" SOLID LINE.

PUBLISHED BY: OTE: 13 APR 2018 MODIFIED:

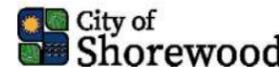
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Thomas S. Vidmar
THOMAS S. VIDMAR
LIC. NO. 61498 DATE 03/21/2024



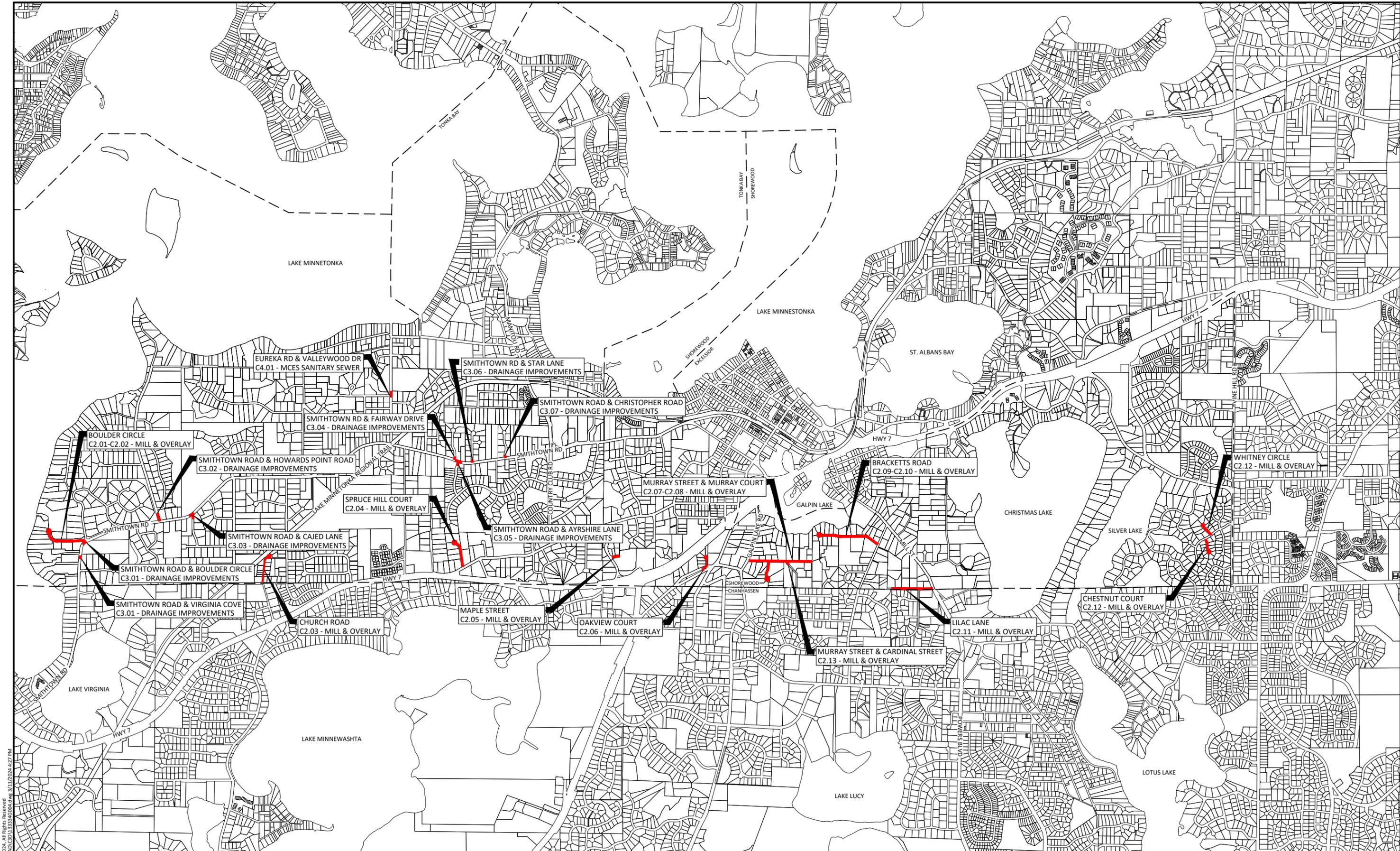
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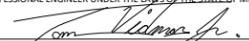
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CITY OF SHOREWOOD
2024 MILL & OVERLAY & SMITHTOWN ROAD DRAINAGE IMPROVEMENTS
CONSTRUCTION NOTES

SHEET
G0.04

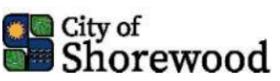


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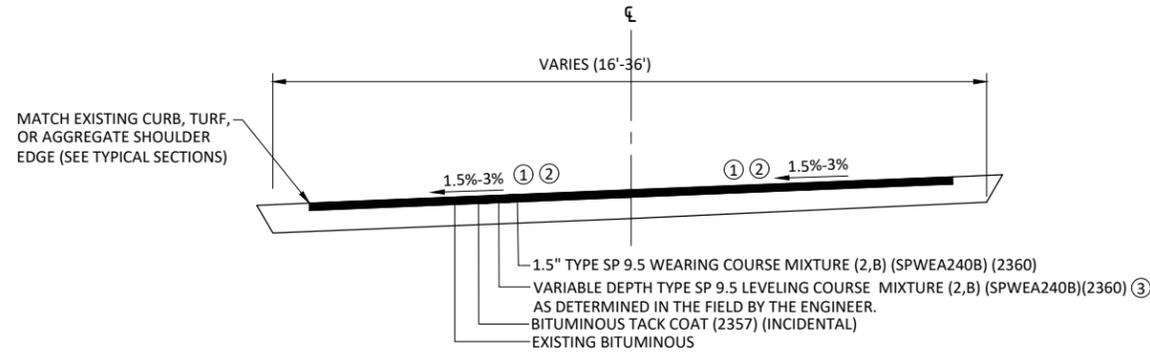
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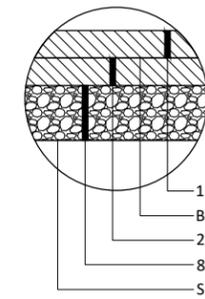
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CITY OF SHOREWOOD
 2024 MILL & OVERLAY & SMITHTOWN ROAD DRAINAGE IMPROVEMENTS
 PROJECT OVERVIEW

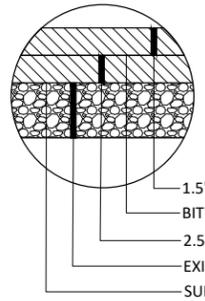
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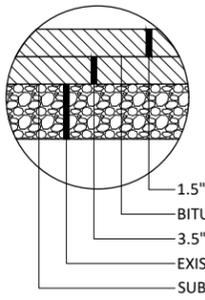
TYPICAL MILL & OVERLAY (RURAL - SHEET FLOW)
NOT TO SCALE



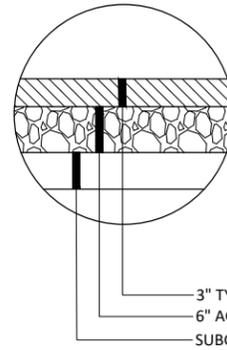
FULL DEPTH BITUMINOUS PATCH (MURRAY ST/CARDINAL DR)
NOT TO SCALE



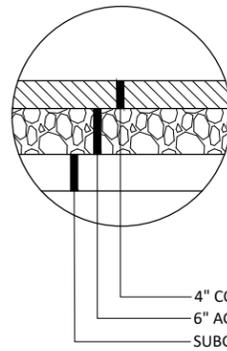
REMOVE AND REPLACE BITUMINOUS PAVEMENT
NOT TO SCALE



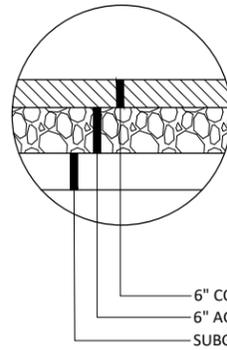
FULL DEPTH BITUMINOUS PATCH (SMITHTOWN RD/AYRSHIRE LN)
NOT TO SCALE



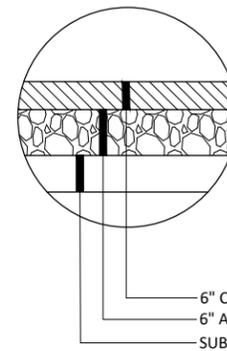
3" BITUMINOUS DRIVEWAY (W/ 6" AGG. BASE CL 5)
NOT TO SCALE



4" CONCRETE WALK (W/ 6" AGG. BASE CL 5)
NOT TO SCALE



6" CONCRETE WALK (W/ 6" AGG. BASE CL 5)
NOT TO SCALE

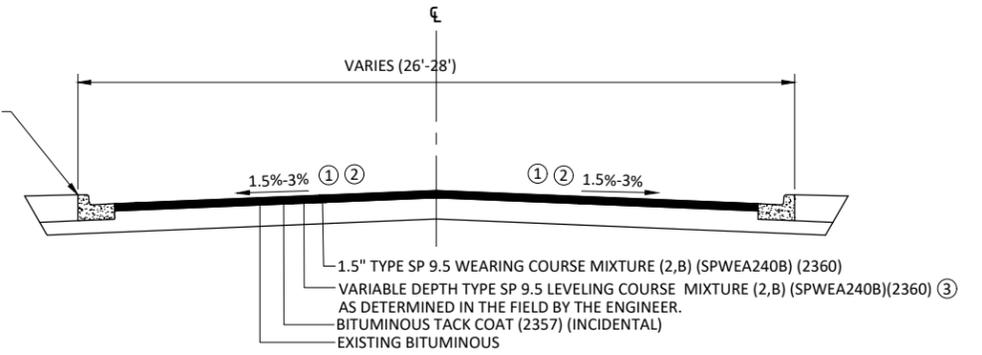


6" CONCRETE PAVEMENT (W/ 6" AGG. BASE CL 5)
NOT TO SCALE

NOTES:

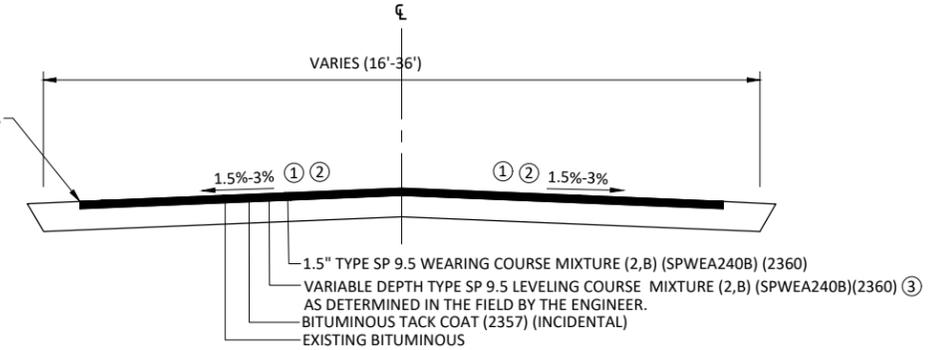
- ①. 2.5% CROSS SLOPE IS DESIRED AS THE TYPICAL SECTION FOR ALL AREAS OTHERWISE NOT DELINEATED IN THE TYPICAL SECTIONS. CROSS SLOPES WILL VARY AT INTERSECTIONS. THE CONTRACTOR SHALL MAINTAIN CROSS DRAINAGE AT INTERSECTIONS.
- ②. NOT ALL STREETS ARE CROWNED FOR THE ENTIRE LENGTH OF THE ROADWAY. IN AREAS WITH EXISTING CROSS SLOPE, THE CONTRACTOR SHALL MAINTAIN CROSS SLOPE TO MAINTAIN POSITIVE DRAINAGE. THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING POSITIVE DRAINAGE ON ALL STREETS.
- ③. NO LIFT THICKNESS GREATER THAN 3" SHALL BE PAVED. IF LIFT THICKNESS GREATER THAN 3" IS REQUIRED, THE CONTRACTOR SHALL PAVE TWO LIFTS.

MATCH EXISTING CURB, TURF, OR AGGREGATE SHOULDER EDGE (SEE TYPICAL SECTIONS)



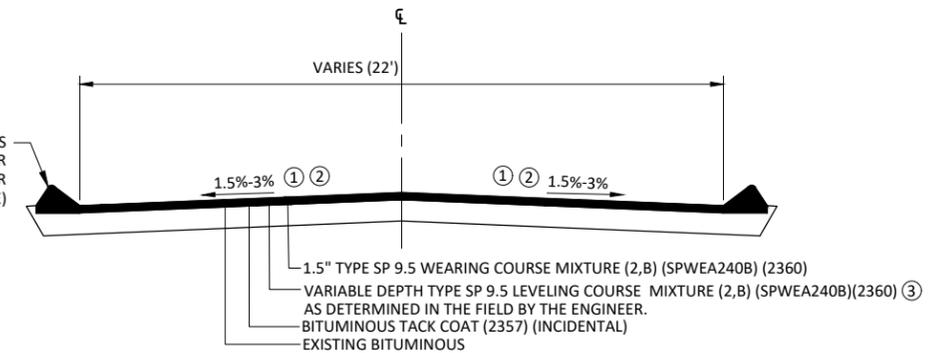
TYPICAL MILL & OVERLAY (URBAN - NORMAL CROWN)
NOT TO SCALE

MATCH EXISTING CURB, TURF, OR AGGREGATE SHOULDER EDGE (SEE TYPICAL SECTIONS)

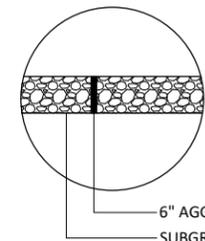


TYPICAL MILL & OVERLAY (RURAL - NORMAL CROWN)
NOT TO SCALE

6" SHOE FORMED BITUMINOUS CURB INTEGRAL WITH WEAR COURSE (INCLUDED WITH WEAR COURSE)



TYPICAL MILL & OVERLAY (RURAL - NORMAL CROWN) - (MURRAY COURT)
NOT TO SCALE



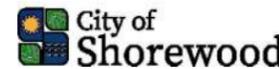
AGGREGATE SURFACING
NOT TO SCALE

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Thomas S. Vidmar Jr.
THOMAS S. VIDMAR
LIC. NO. 61498 DATE 03/21/2024



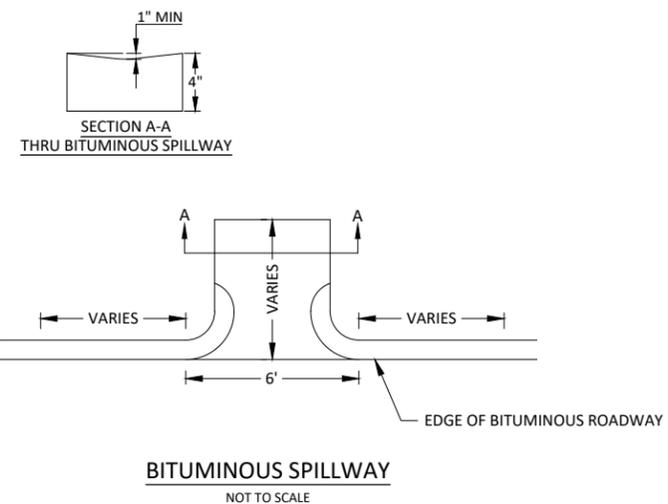
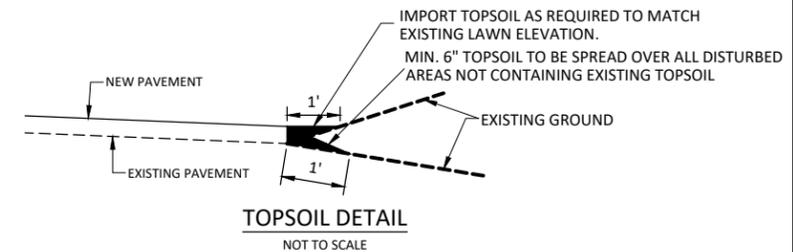
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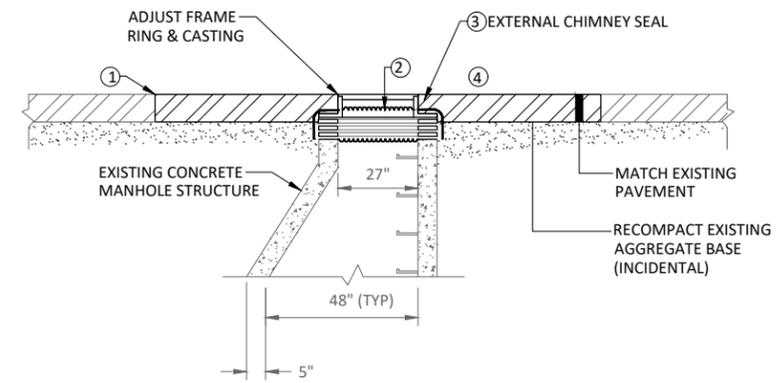
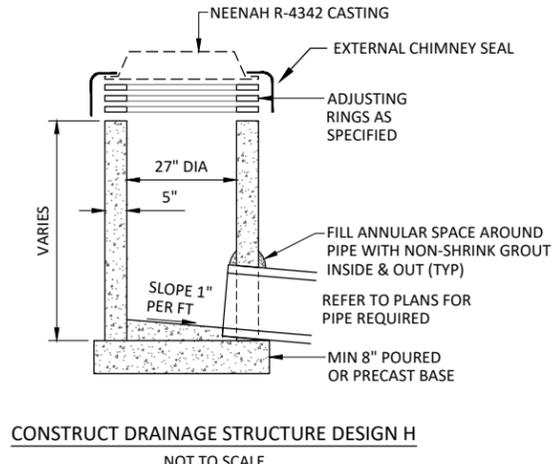
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2024 MILL & OVERLAY & SMITHTOWN ROAD DRAINAGE IMPROVEMENTS
TYPICAL SECTIONS

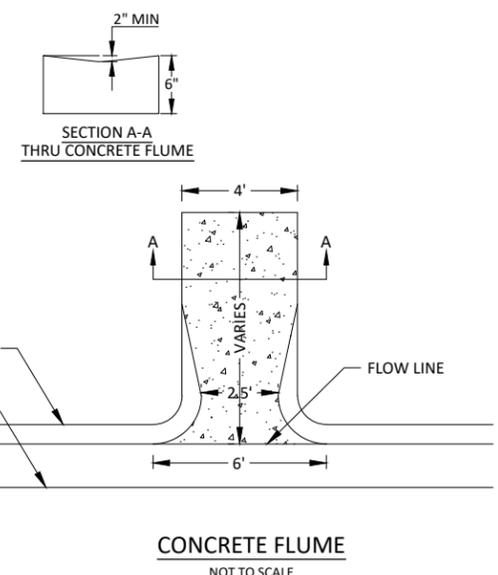
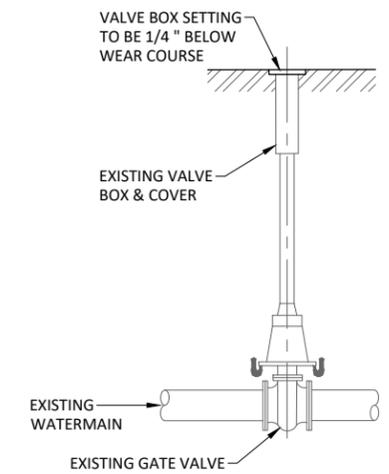
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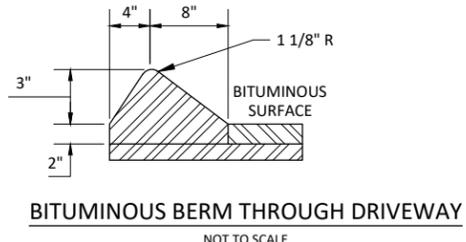
NOTE 1: ENGINEER & CONTRACTOR SHALL DETERMINE FINAL SPILLWAY LENGTH IN THE FIELD.
NOTE 2: IN AREAS WHERE BITUMINOUS SPILLWAYS ARE SHOWN, CONTRACTOR SHALL VERIFY BITUMINOUS CURB TAPER LENGTHS WITH ENGINEER IN THE FIELD.



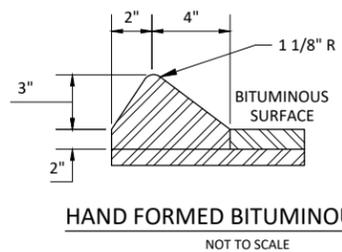
- NOTES:
- SAWCUT EXISTING BITUMINOUS PAVEMENT
 - REMOVE AND REPLACE ALL EXISTING ADJUSTING RINGS WITH CONCRETE ADJUSTING RINGS. MAXIMUM OF 5 RINGS WITH FULL BED OF MORTAR BETWEEN EACH RING. WHEN ADJUSTMENT IS GREATER THAN 1.2-FOOT, A 1-FOOT CONCRETE ADJUSTING RING WITH A STEP IS REQUIRED.
 - FURNISH & INSTALL EXTERNAL CHIMNEY SEAL ON ALL SANITARY SEWER CASTING ADJUSTMENTS.
 - BITUMINOUS PATCH IS INCIDENTAL TO ADJUST FRAME & RING CASTING.



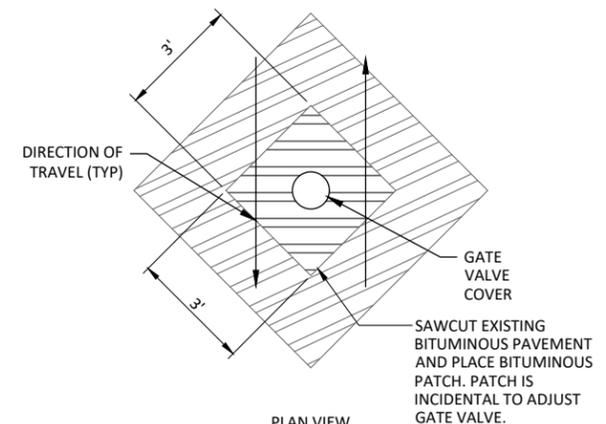
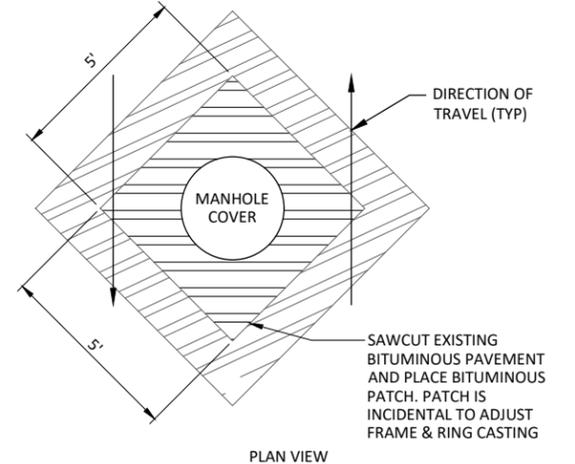
NOTE: ENGINEER & CONTRACTOR SHALL DETERMINE FINAL FLUME LENGTH IN THE FIELD.



NOTE: HAND FORMED BITUMINOUS BERM TO BE INTEGRALLY PAVED WEARING COURSE



NOTE: HAND FORMED BITUMINOUS CURB TO BE INTEGRALLY PAVED WEARING COURSE



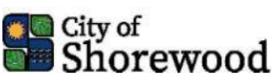
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LIC. NO. 61498 DATE 03/21/2024



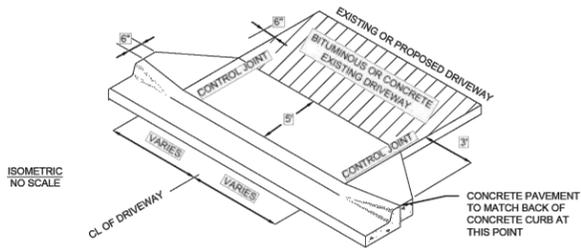
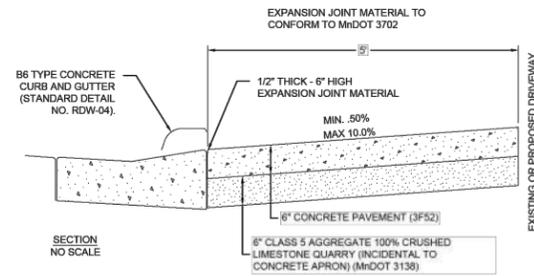
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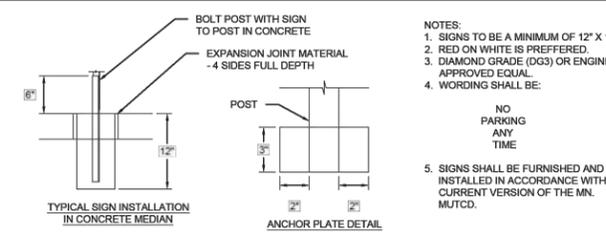
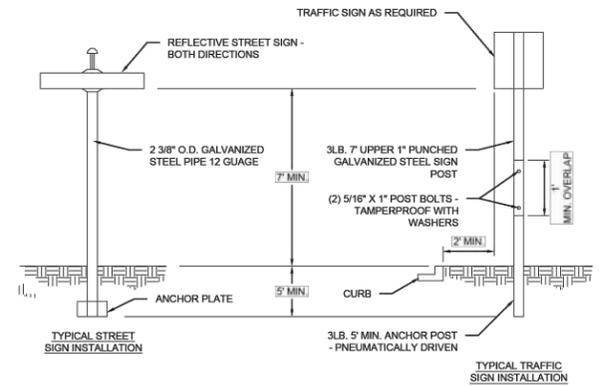
CITY OF SHOREWOOD
2024 MILL & OVERLAY & SMITHTOWN ROAD DRAINAGE IMPROVEMENTS
CONSTRUCTION DETAILS

SHEET
C0.02



- NOTE:
1. CONCRETE JOINTS IN CONCRETE CURB NOT TO EXCEED 10' SPACING THROUGH DRIVEWAY SECTION.
 2. DRIVEWAY WINGS ARE REQUIRED WITH THE B6 STYLE CURBING. THE MAXIMUM DRIVEWAY WIDTH AT THE CURB AND AT THE PROPERTY LINE IS 24', PLUS THE 3' WINGS. THE MINIMUM WIDTH OF THE DRIVEWAY AT THE CURB AND PROPERTY LINE IS 12'.

	RESIDENTIAL CONCRETE DRIVEWAY APRON (B6 TYPE CURB)	Special Details	
		Date: JAN. 2016	RDW-10
		Revised: DEC. 2017	



- NOTES:
1. FOR MATERIAL SPECIFICATIONS SEE SECTION 4.11 OF STANDARD STREET SPECS.
 2. TRAFFIC SIGNS WITH 9 SQ. FT. OR MORE OF SURFACE AREA AND 36\"/>

	TYPICAL STREET & TRAFFIC SIGN INSTALLATION	Special Details	
		Date: JAN. 2016	RDW-20
		Revised: JAN. 2017	

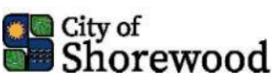
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Thomas S. Vidmar
 THOMAS S. VIDMAR
 LIC. NO. 61498 DATE 03/21/2024



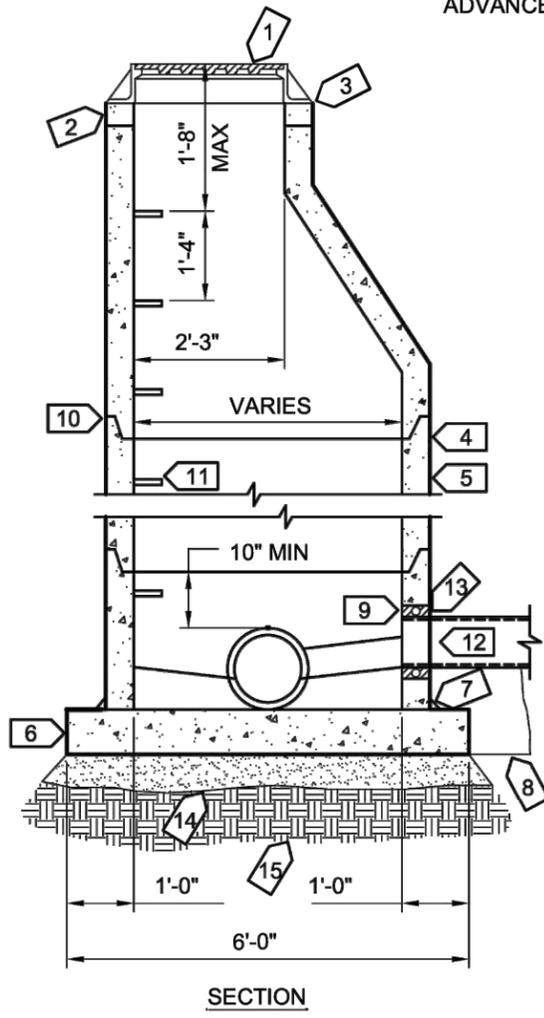
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 CONSTRUCTION DETAILS

SHEET
C0.04



NOTES:

1. LIFTING HOLES WHICH PENETRATE THROUGH SECTION WALLS ARE NOT PERMITTED
2. MCES WILL PROVIDE CASTING, COVER AND ADJUSTMENT RINGS CONTACT MCES REPRESENTATIVE AT LEAST TWO WEEKS IN ADVANCE TO SCHEDULE DELIVERY OF MATERIALS TO SITE.

KEY NOTES:

1. SEE MCES STANDARD DETAIL 02D132 - GRADE RINGS AND CASTING DETAIL
2. SEE MCES STANDARD DETAIL 02D132 - GRADE RINGS AND CASTING DETAIL
3. SEE MCES STANDARD DETAIL 02D132 - GRADE RINGS AND CASTING DETAIL
4. PRECAST REINFORCED ECCENTRIC CONE AND RISER SECTIONS AS REQUIRED
5. USE ONLY PRECAST SECTIONS. NO BRICK OR BLOCK
6. NOT USED
7. NOT USED
8. NOT USED
9. NOT
10. O-RING GASKET AND 12" WIDE GATORWRAP ALL AROUND
11. 12" WIDE POLYPROPYLENE ENCASED STEPS
12. NOT USED
13. NOT USED
14. NOT USED
15. NOT USED

SCALE: NONE

REVISIONS		PROJECT NO.	
NO.	BY	DATE	CONTRACT NO.
DRAWN BY:		DRAWING SUBJECT:	
		GRAVITY SEWER MH	
CHECKED BY:			
		Metropolitan Council Environmental Services	
APPROVED BY:			
		SIGNATURE: Dan Chouinard	
		TYPED OR PRINTED NAME: Dan Chouinard	
		DATE: 1/24/2024	
		REG. NO. 56026	

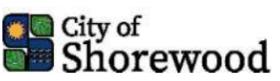
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Thomas S. Vidmar
 THOMAS S. VIDMAR
 LIC. NO. 61498 DATE 03/21/2024



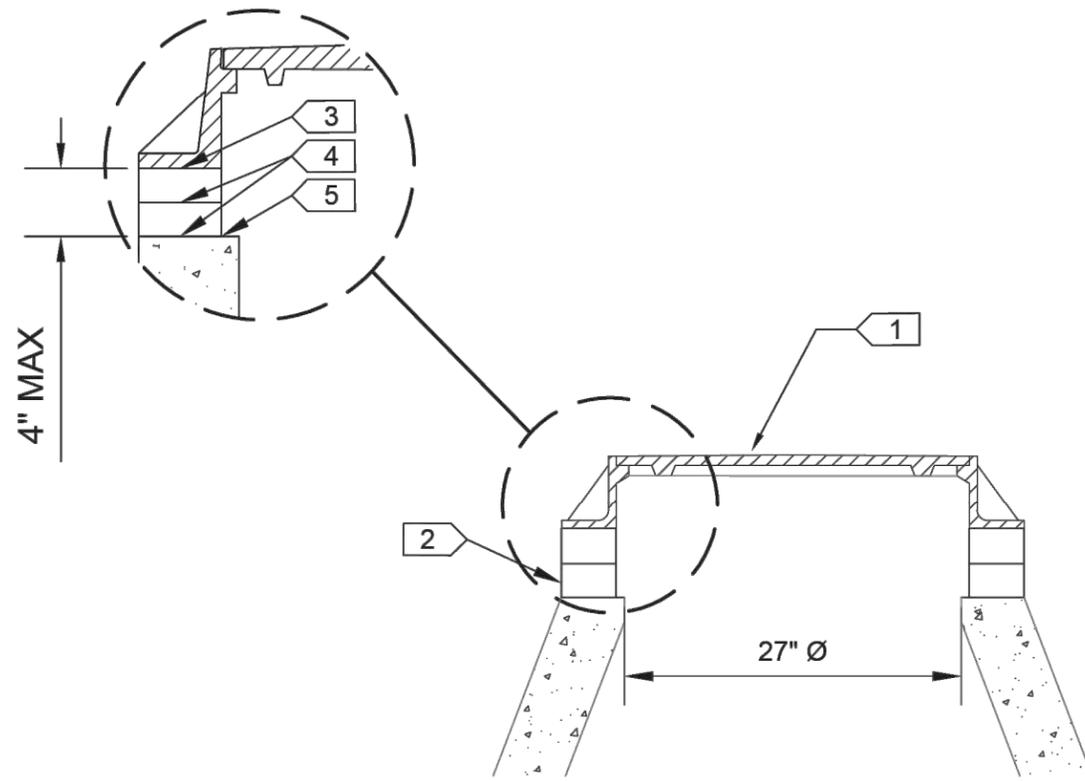
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CITY OF SHOREWOOD
 2024 MILL & OVERLAY & SMITHTOWN ROAD DRAINAGE IMPROVEMENTS
 CONSTRUCTION DETAILS - MCES

SHEET
 C0.05



GENERAL NOTES:

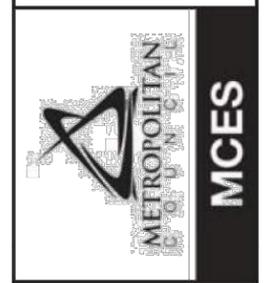
1. USE SLOPED AND OR 1/4-INCH ADJUSTMENT RINGS TO MATCH GRADE AND CROWN OF ROAD.
2. PAVEMENT AND MANICURED AREAS: ADJUST TO 1/4-INCH BELOW FINISHED SURFACE ELEVATION.
3. NON-SURFACED AREAS: ADJUST TO WITHIN 6-INCHES TO 18-INCHES ABOVE FINISHED GRADE, AND INSTALL MCES SUPPLIED FIBERGLASS STAKE.

KEY NOTES:

1. MH FRAME AND COVER. NEENAH R-1733 OR EAST JORDAN1205Z FRAME AND 1205AGS COVER. PROVIDE GASKETED SOLID LID WITH TWO CONCEALED PICK HOLES AND 3/4" RAISED LETTERS READING "INTERCEPTOR SANITARY SEWER".
2. ADJUSTING RINGS. PRO-RING BY CRETEX, HDPE LIFESAVER MANHOLE ADJUSTMENT UNIT BY IPEX, OR HDPE MANHOLE RING BY LADTECH. MAXIMUM ADJUSTING HEIGHT 4-INCHES. RINGS TO EXTEND TO EDGE OF MH SHOULDER TO PROVIDE LOAD TRANSFER AS REQUIRED TO MAINTAIN MH LOAD RATING, BUT SHALL NOT EXTEND MORE THAN 6-INCHES BEYOND SHOULDER.
3. PROVIDE TWO ROWS OF PRO-STIK BUTYL SEALANT OR APPROVED EQUAL BETWEEN TOP ADJUSTMENT RING AND FRAME.
4. PROVIDE TWO ROWS OF ADJUSTMENT RING MANUFACTURER APPROVED SEALANT BETWEEN ALL RINGS AND CONE.
5. BOTTOM HDPE ADJUSTMENT RING REQUIRES 1/4-INCH SOLID RING BELOW BOTTOM RING.
*OMIT KEYNOTE #5 WHEN USING PRO-RING BY CRETEX

PROJECT	
CONTRACT	

GRADE RINGS AND CASTING



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SIGNATURE _____
 TYPED OR PRINTED NAME _____
 DATE _____ REG NO _____

REVISIONS		DATE
NO	BY	DATE

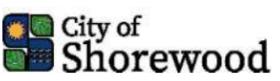
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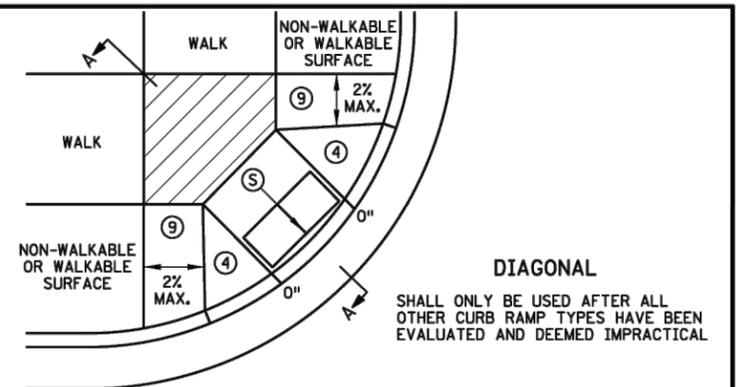
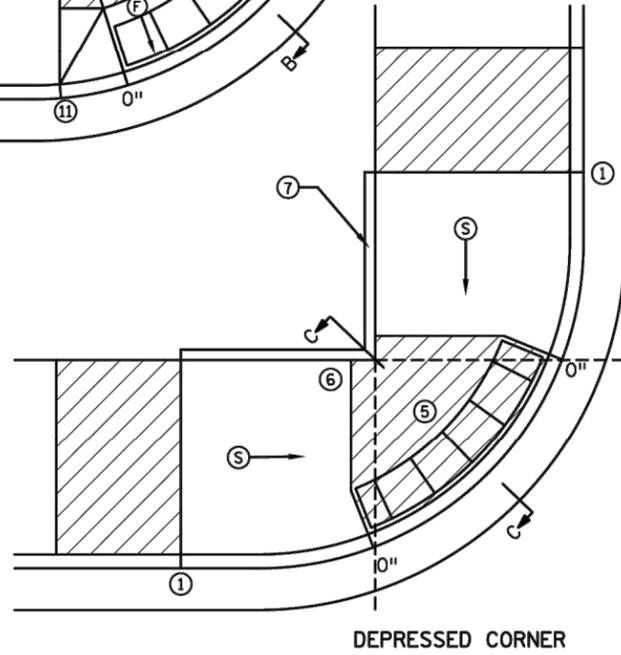
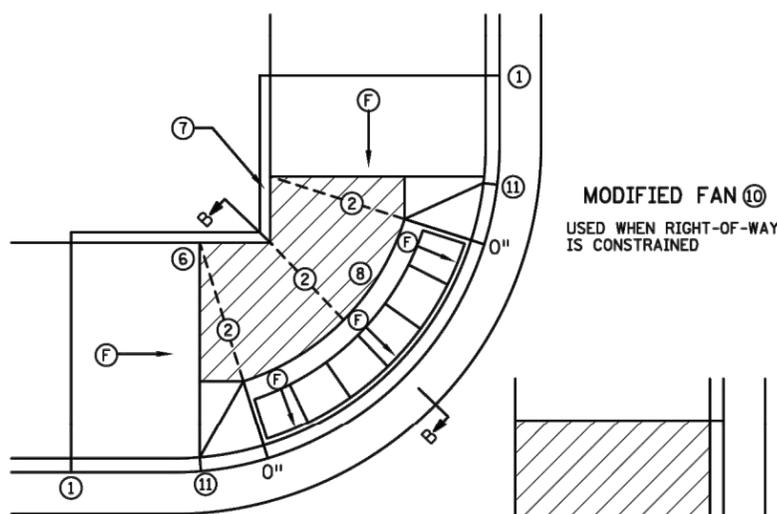
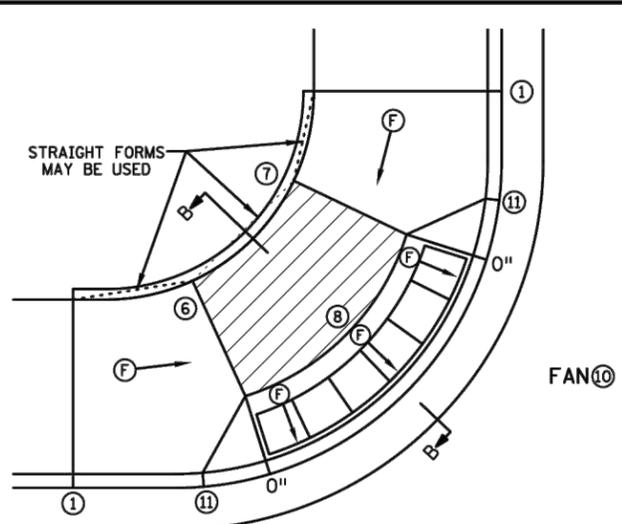
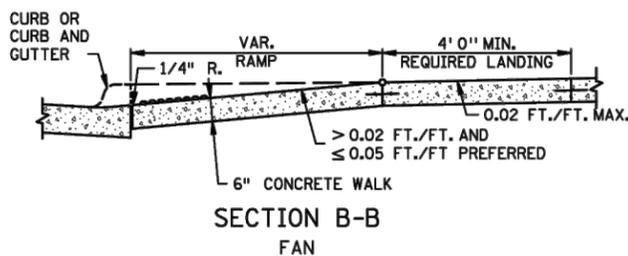
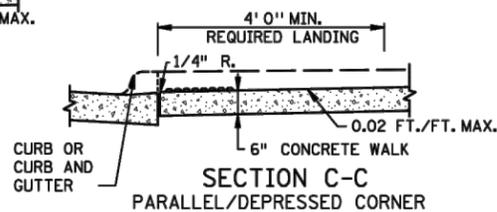
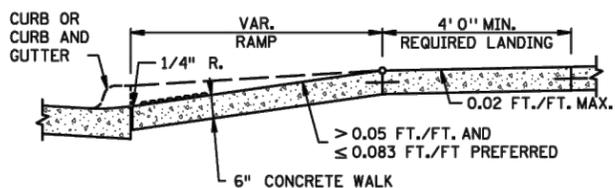
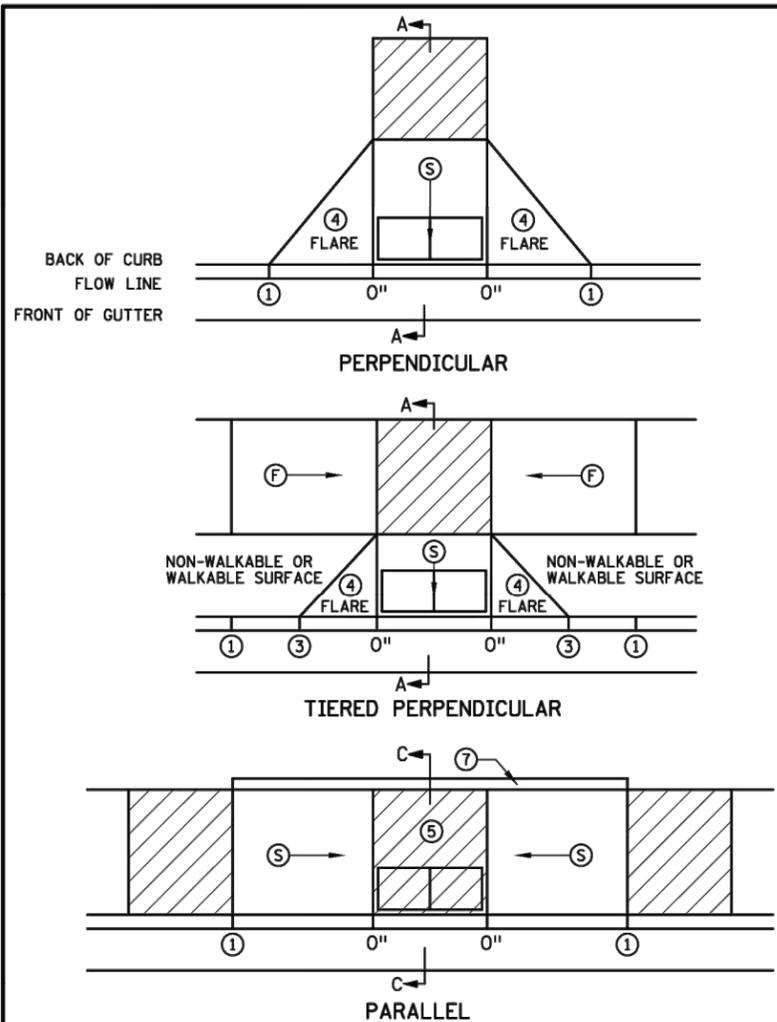
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CITY OF SHOREWOOD
 2024 MILL & OVERLAY & SMITHTOWN ROAD DRAINAGE IMPROVEMENTS
 CONSTRUCTION DETAILS - MCES

SHEET
C0.06



- 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 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.
 - RECTANGULAR DETECTABLE WARNINGS SHALL BE SETBACK 3" FROM THE BACK OF CURB. RADIAL DETECTABLE WARNINGS 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 WARNINGS 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%.
(X)	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.
X"	CURB HEIGHT

REVISIONS:

APPROVED: 11-04-2021

Jeff J. Perkins
JEFFREY PERKINS
OPERATIONS DIVISION

m MINNESOTA
DEPARTMENT OF TRANSPORTATION

STANDARD PLAN 5-297.250 1 OF 6

APPROVED: 11-04-2021
REVISOR:

Tom Stroh
THOMAS STYROBLOSKI
STATE DESIGN ENGINEER

STATE PROJ. NO. (TH) SHEET NO. OF SHEETS

PEDESTRIAN CURB RAMP DETAILS

CITY OF SHOREWOOD

2024 MILL & OVERLAY & SMITHTOWN ROAD DRAINAGE IMPROVEMENTS

PEDESTRIAN RAMP DETAILS

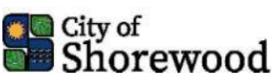
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Thomas S. Vidmar
THOMAS S. VIDMAR
LIC. NO. 61498 DATE 03/21/2024

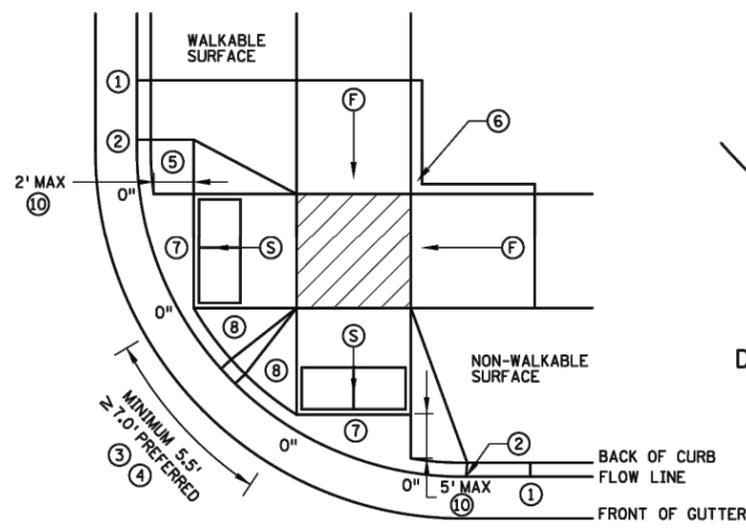


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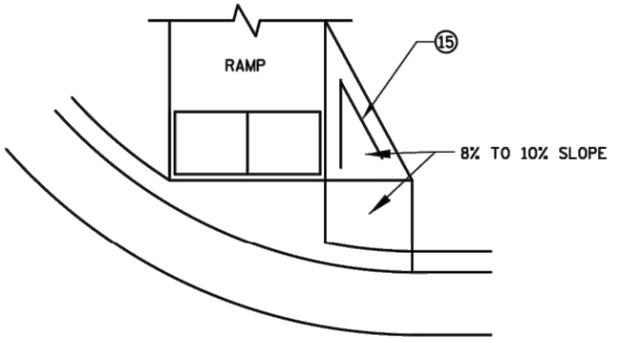


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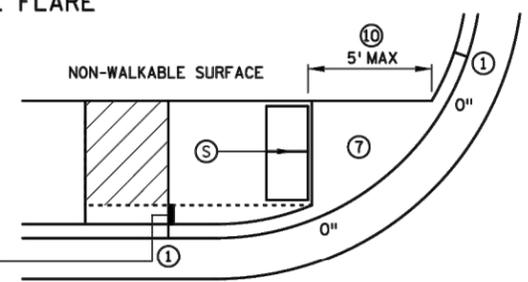


COMBINED DIRECTIONAL

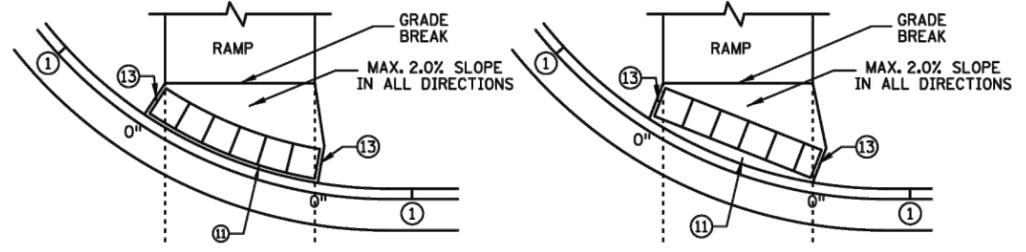


DIRECTIONAL RAMP WALKABLE FLARE

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.

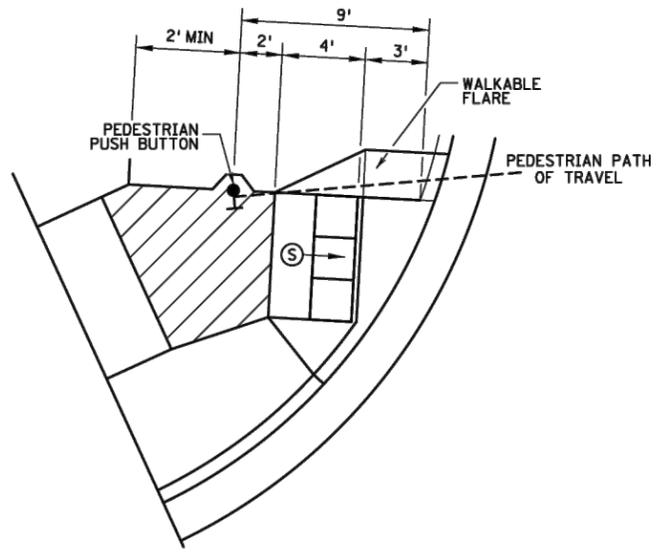


STANDARD ONE-WAY DIRECTIONAL ⑨



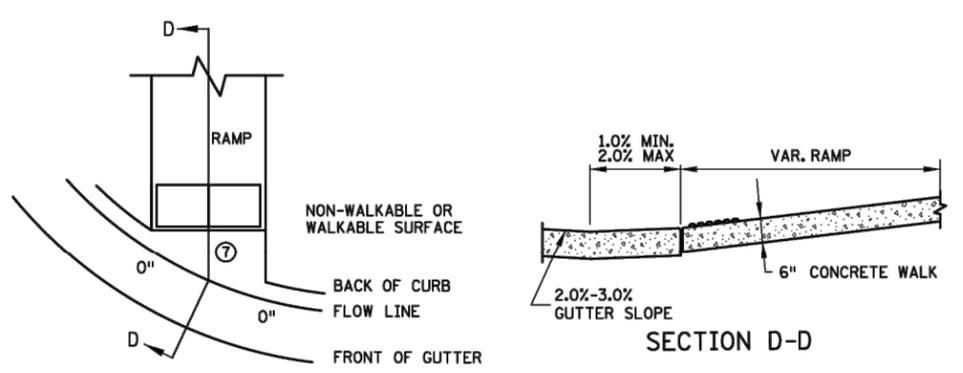
DETECTABLE WARNING PLACEMENT WHEN SETBACK CRITERIA IS EXCEEDED ⑫

ONE-WAY DIRECTIONAL WITH DETECTABLE WARNING AT BACK OF CURB



SEMI-DIRECTIONAL RAMP ③④⑥

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



SECTION D-D

CURB FOR DIRECTIONAL RAMPS ⑭

- 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 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 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

REVISIONS:
 APPROVED: 11-04-2021
 Jeff J. Perkins
 OPERATIONS DIVISION

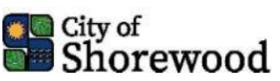
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 STANDARD PLAN 5-297.250 2 OF 6
 APPROVED: 11-04-2021
 THOMAS S. VIDMAR
 STATE DESIGN ENGINEER

PEDESTRIAN CURB RAMP DETAILS
 (T.H.) SHEET NO. OF SHEETS

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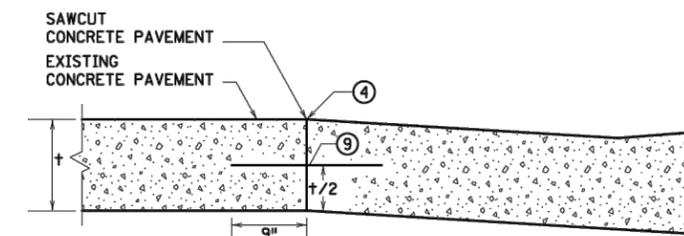
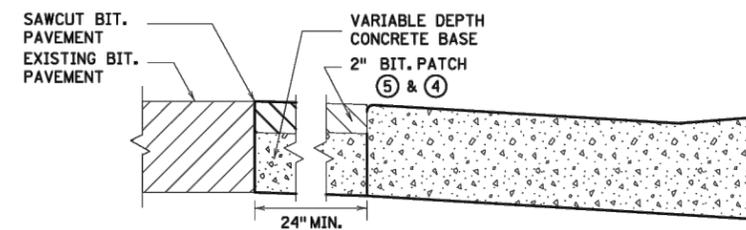
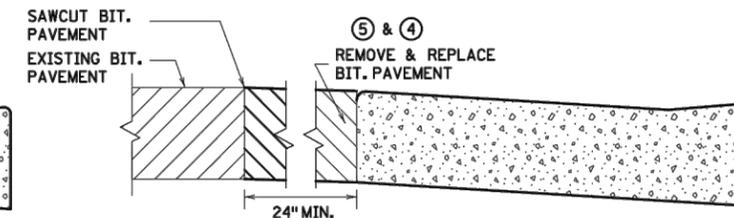
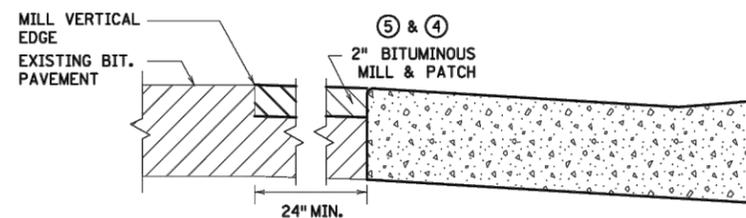
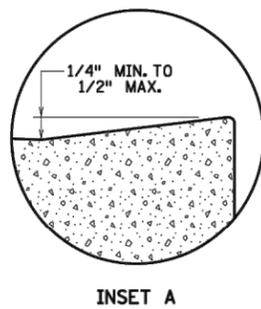
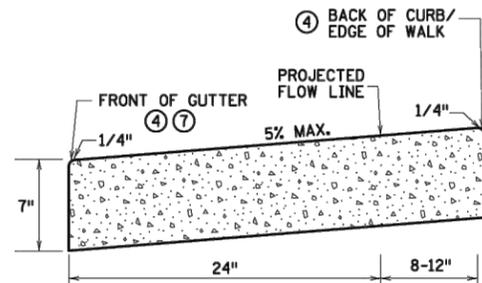
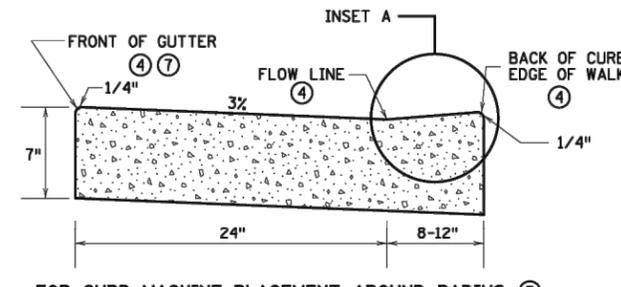
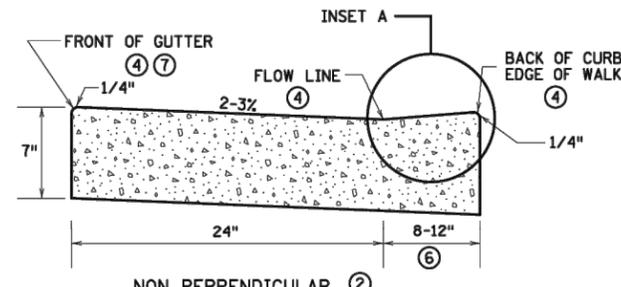
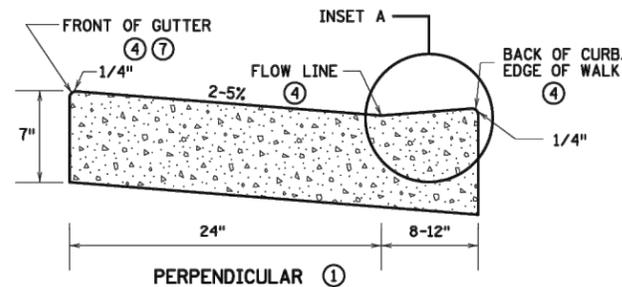
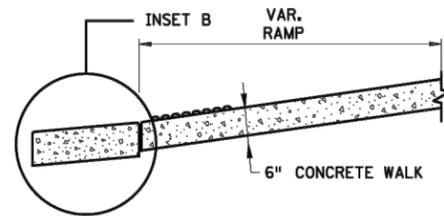


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CITY OF SHOREWOOD
 2024 MILL & OVERLAY & SMITHTOWN ROAD DRAINAGE IMPROVEMENTS
 PEDESTRIAN RAMP DETAILS

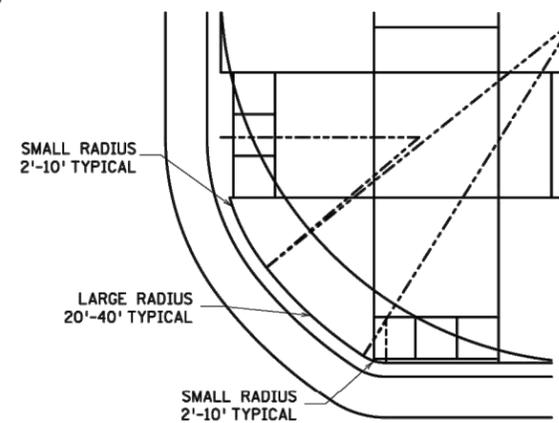
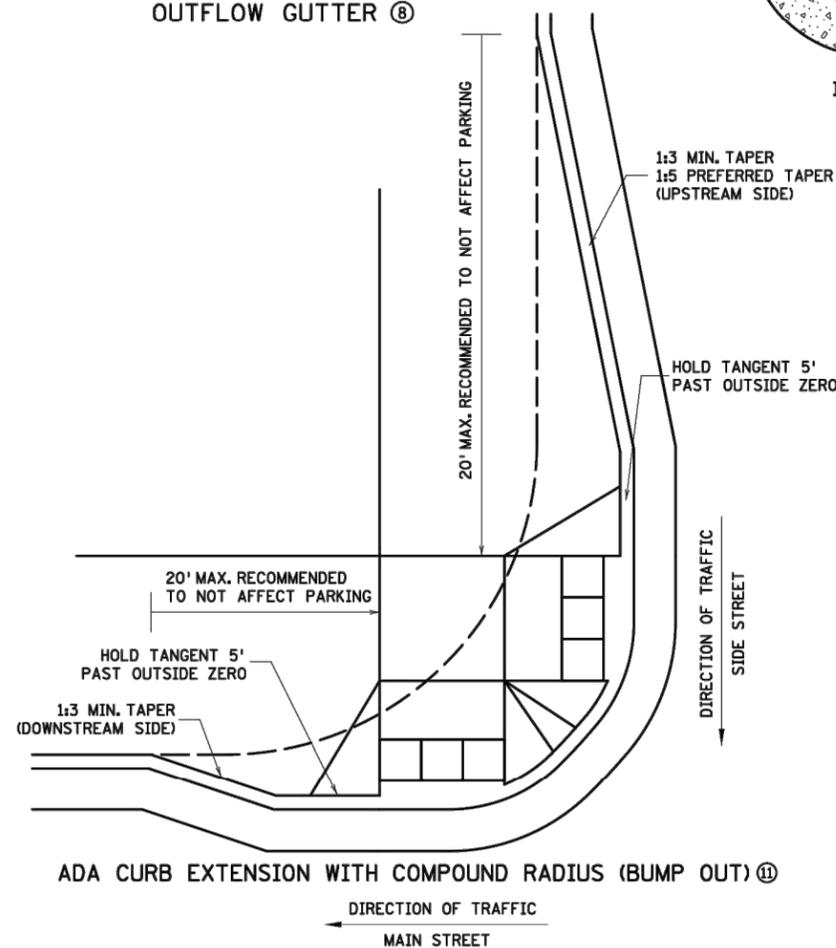
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ONLY ALLOWED PER ENGINEER'S APPROVAL

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.
- 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 RAMPS.
- FOR USE AT CURB RAMPS WHERE THE PEDESTRIAN'S PATH OF TRAVEL IS ASSUMED NON PERPENDICULAR TO THE GUTTER FLOW LINE. RAMP TYPES INCLUDE: FANS & DEPRESSED CORNERS.
- BEGIN GUTTER SLOPE TRANSITION 10' OUTSIDE OF ALL CURB RAMPS.
- THERE SHALL BE NO VERTICAL DISCONTINUITIES GREATER THAN 1/4".
- 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.
- VARIABLE WIDTH FOR DIRECTIONAL CURB APPLICATIONS. SEE SHEET 2 FOR DIRECTIONAL CURB SLOPE REQUIREMENTS.
- 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.
- SHOULD BE USED AT VERTICALLY CONSTRAINED AREAS WHEN AT A DRAINAGE HIGH POINT OR SUPER ELEVATED ROADWAY SEGMENTS.
- 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.
- 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.
- 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.

REVISION:
APPROVED: 11-04-2021
Jeffrey Perkins
JEFFREY PERKINS
OPERATIONS DIVISION

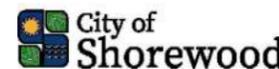
MINNESOTA DEPARTMENT OF TRANSPORTATION
STANDARD PLAN 5-297.250 3 OF 6
APPROVED: 11-04-2021
REVISOR:
Thomas S. Vidmar
THOMAS S. VIDMAR
STATE DESIGN ENGINEER
STATE PROJ. NO. (TH) SHEET NO. OF SHEETS

PEDESTRIAN CURB RAMP DETAILS

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT 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.
Thomas S. Vidmar
THOMAS S. VIDMAR
LIC. NO. 61498 DATE 03/21/2024



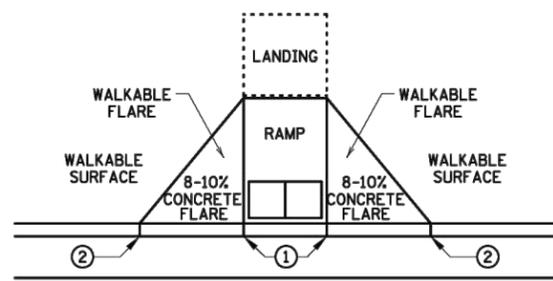
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CHASKA, MN 55318
Phone: (952) 448-8838
Email: Chaska@bolton-menk.com
www.bolton-menk.com



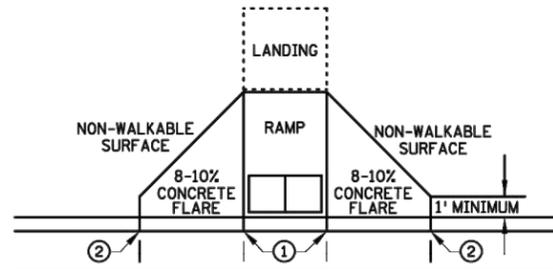
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PEDESTRIAN RAMP DETAILS

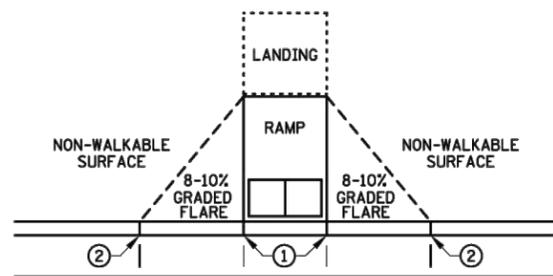
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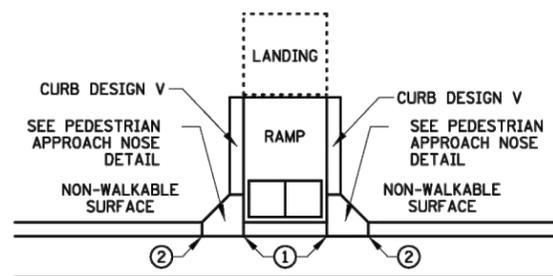
PAVED FLARES
ADJACENT TO WALKABLE SURFACE



PAVED FLARES
ADJACENT TO NON-WALKABLE SURFACE

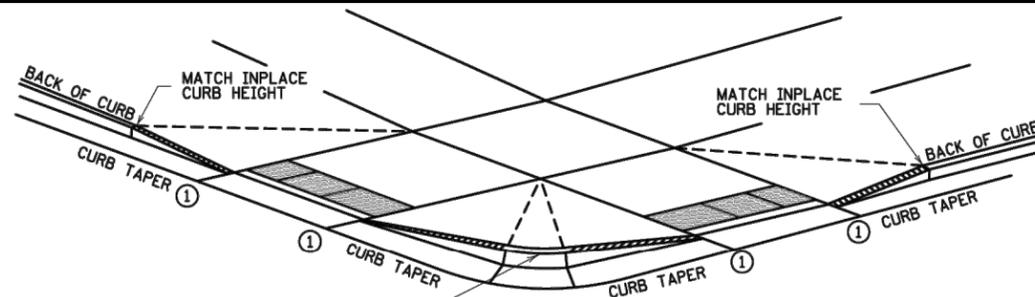


GRADED FLARES



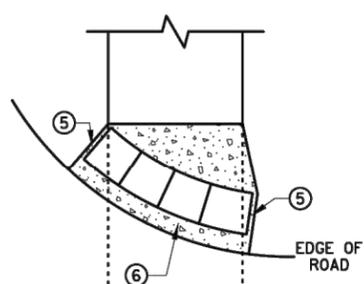
RETURNED CURB ④

TYPICAL SIDE TREATMENT OPTIONS ③ ⑩

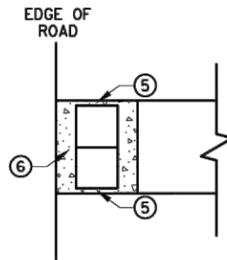


3" MINIMUM CURB HEIGHT, 4" PREFERRED
(MEASURED AT FRONT FACE OF CURB)
FOR A MIN. 6" LENGTH (MEASURED ALONG FLOW LINE)

DETECTABLE EDGE WITH ⑦
CURB AND GUTTER

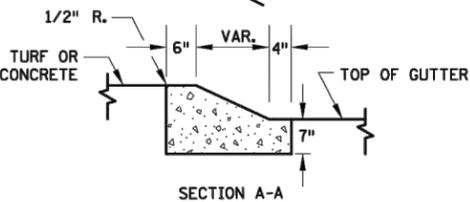
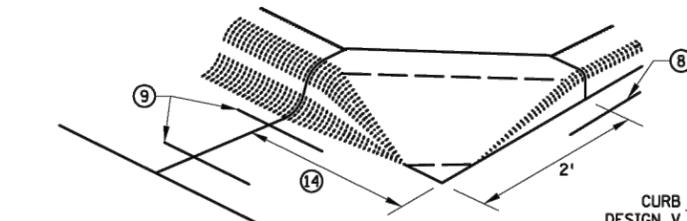


RADIAL DETECTABLE WARNING

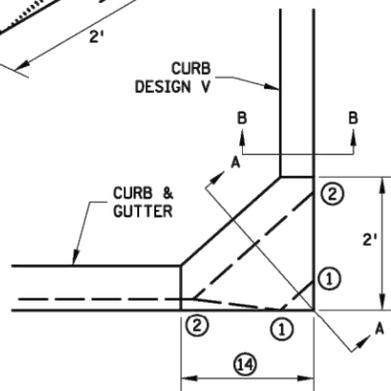


RECTANGULAR DETECTABLE WARNING

DETECTABLE EDGE WITHOUT CURB AND GUTTER

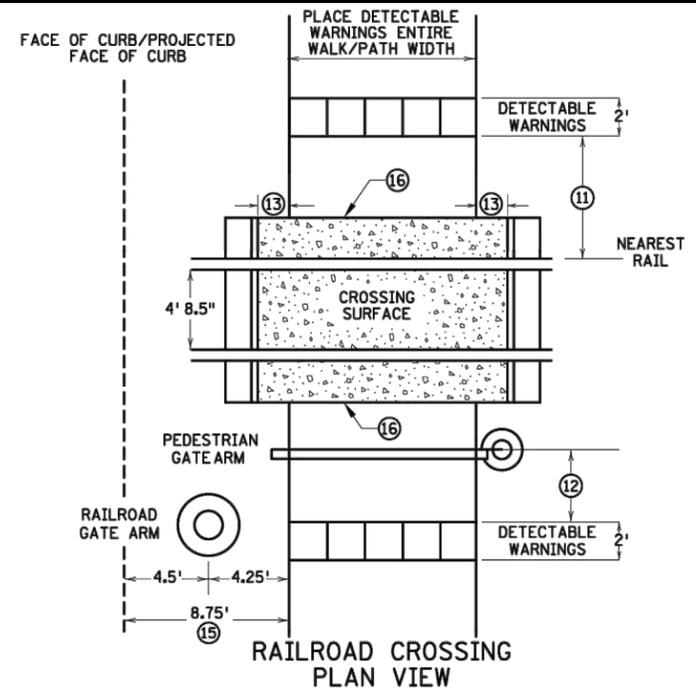


SECTION A-A



SECTION B-B

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.

REVISION:
APPROVED: 11-04-2021
<i>Jeff J. Perkins</i> JEFFREY PERKINS OPERATIONS DIVISION

	STANDARD PLAN 5-297.250	4 OF 6
	APPROVED: 11-04-2021 REVISED:	
THOMAS STYRBYCKI STATE DESIGN ENGINEER	STATE PROJ. NO.	(TH) SHEET NO. OF SHEETS

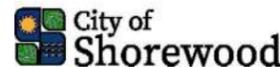
PEDESTRIAN CURB RAMP DETAILS

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THOMAS S. VIDMAR
LIC. NO. 61498 DATE 03/21/2024



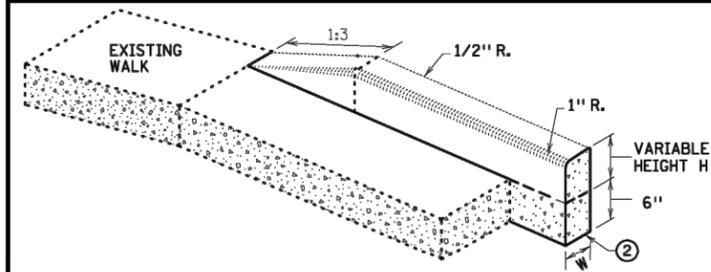
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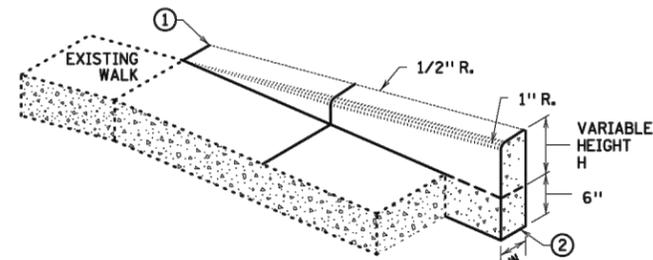
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CITY OF SHOREWOOD
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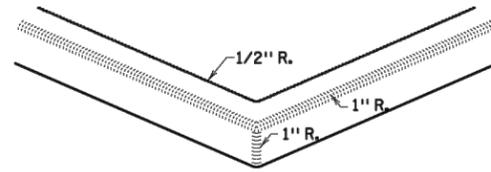
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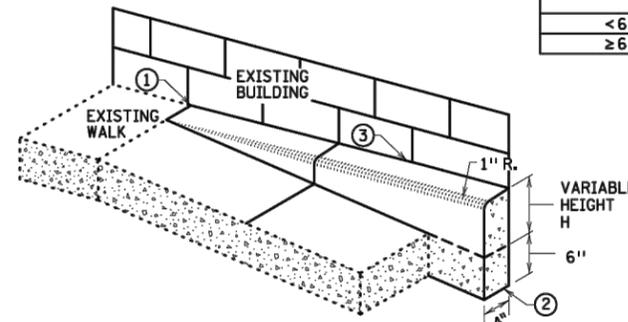
V CURB ADJACENT TO LANDSCAPE
CURB WITHIN SIDEWALK LIMITS



V CURB ADJACENT TO LANDSCAPE
CURB OUTSIDE SIDEWALK LIMITS

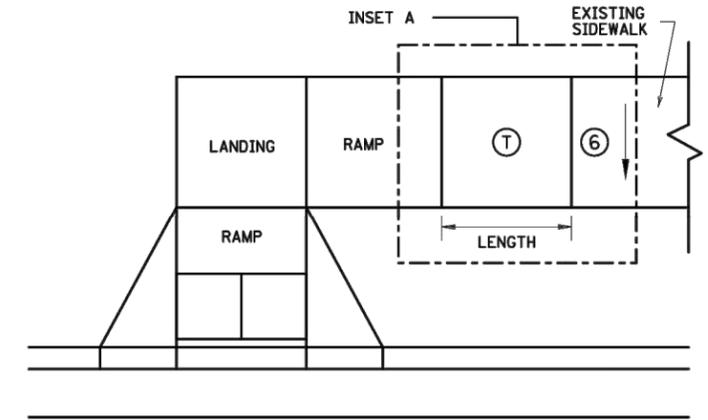


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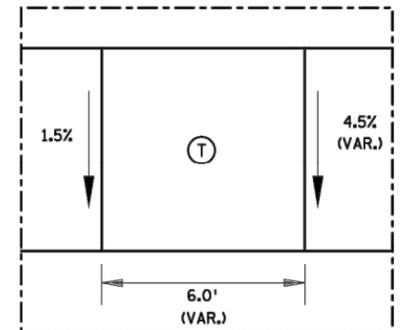


V CURB ADJACENT TO BUILDING
OR BARRIER

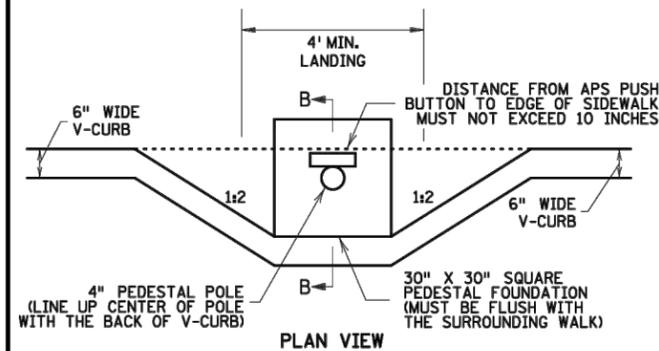
CONCRETE CURB DESIGN V	
CURB HEIGHT H	CURB WIDTH W
< 6"	4"
≥ 6"	6"



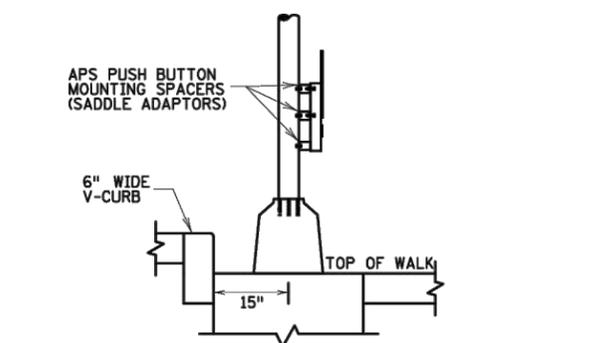
TRANSITION PANEL ④ ⑤



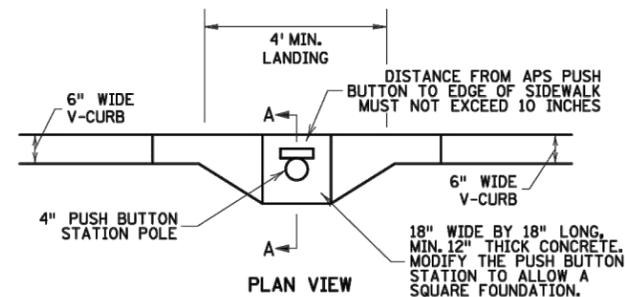
INSET A



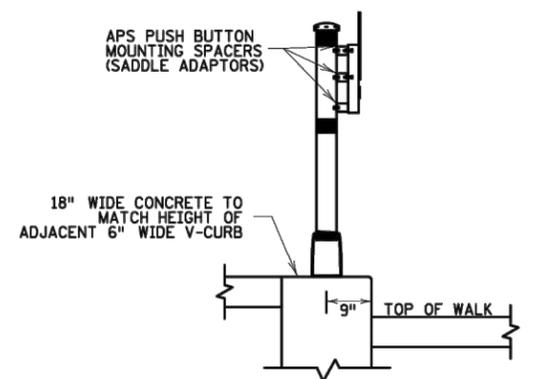
PLAN VIEW



SECTION B-B
SIGNAL PEDESTAL & PUSH BUTTON (V-CURB)



PLAN VIEW



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 PANELS 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%.
- 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.

REVISION:
APPROVED: 11-04-2021
Jeff J. Perkins
JEFFREY PERKINS
OPERATIONS DIVISION

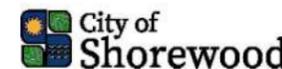
	STANDARD PLAN 5-297.250	5 OF 6	PEDESTRIAN CURB RAMP DETAILS	
	APPROVED: 11-04-2021 <i>Thomas S. Vidmar</i> THOMAS S. VIDMAR STATE DESIGN ENGINEER			

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Thomas S. Vidmar
THOMAS S. VIDMAR
LIC. NO. 61498 DATE 03/21/2024



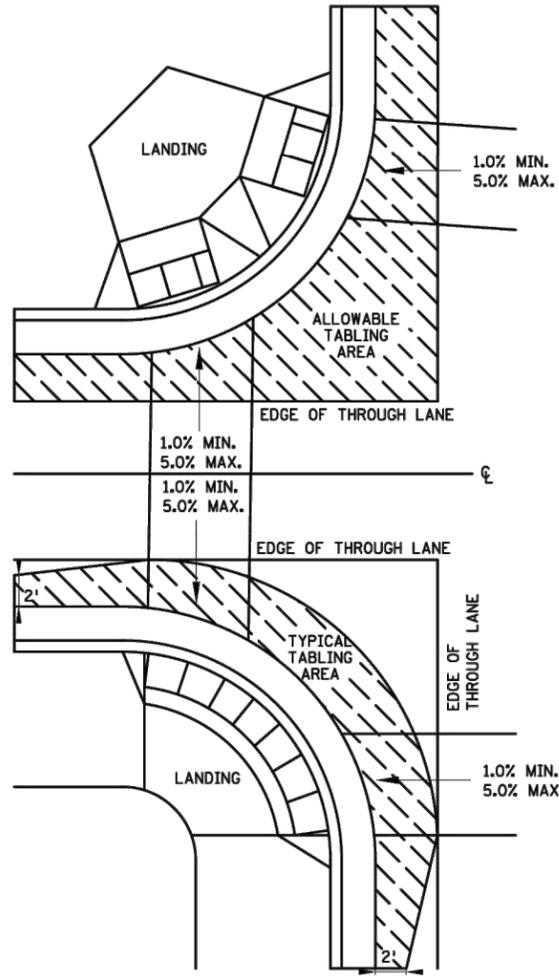
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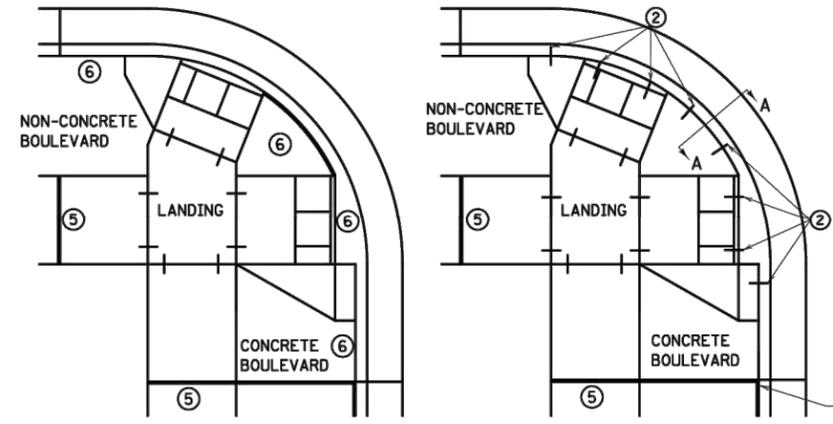
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CITY OF SHOREWOOD
2024 MILL & OVERLAY & SMITHTOWN ROAD DRAINAGE IMPROVEMENTS
PEDESTRIAN RAMP DETAILS

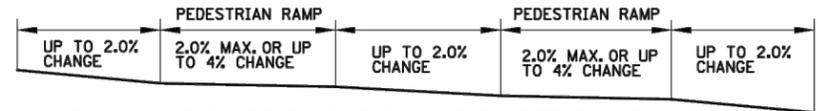
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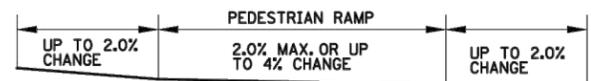
CURB LINE AND ROAD CROSSING ADJUSTMENTS



EXPANSION MATERIAL PLACEMENT FOR CONCRETE ROADWAYS
CURB LINE REINFORCEMENT ④ PLACEMENT ON BITUMINOUS ROADWAYS



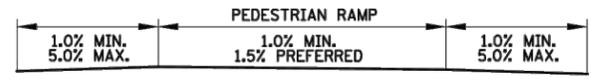
FLOW LINE PROFILE "TABLE" - TWIN PERPENDICULARS



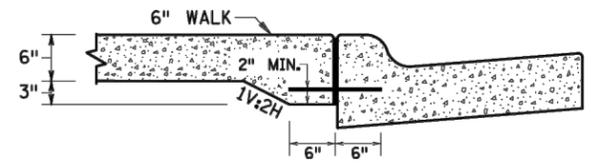
FLOW LINE PROFILE "TABLE" - FAN



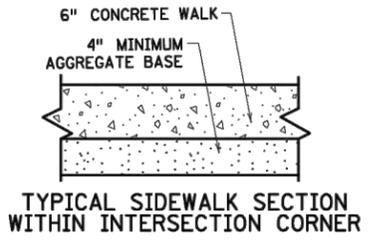
FLOW LINE PROFILE RAISE - TWIN PERPENDICULARS



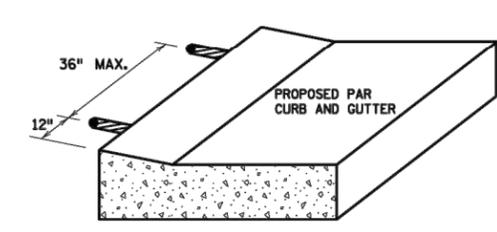
FLOW LINE PROFILE RAISE - FAN



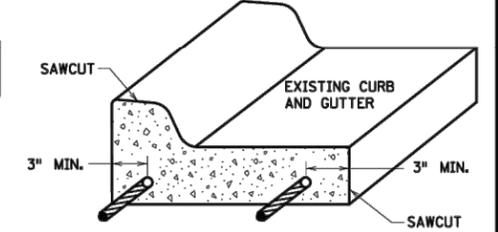
SECTION VIEW A-A THICKENED SECTION THROUGH CURB RAMP FLARES



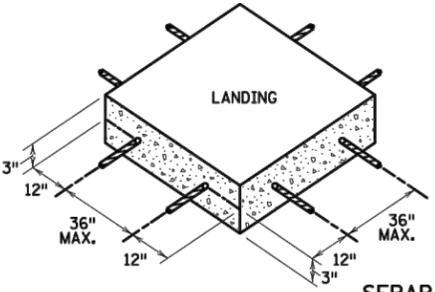
TYPICAL SIDEWALK SECTION WITHIN INTERSECTION CORNER



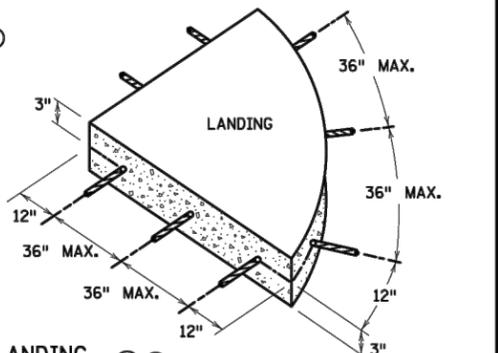
CURB RAMP REINFORCEMENT DETAILS ② ④



CURB AND GUTTER REINFORCEMENT ③



SEPARATE LANDING POUR REINFORCEMENT ① ②



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

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.

REVISIONS:

APPROVED: 11-04-2021

Jeffrey Perkins
JEFFREY PERKINS
OPERATIONS DIVISION

m MINNESOTA DEPARTMENT OF TRANSPORTATION

STANDARD PLAN 5-297.250 6 OF 6

APPROVED: 11-04-2021
REVISED:

Tom Szymanski
THOMAS SZYMANSKI
STATE DESIGN ENGINEER

STATE PROJ. NO. (TH) SHEET NO. OF SHEETS

PEDESTRIAN CURB RAMP DETAILS

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT 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.

Thomas S. Vidmar
THOMAS S. VIDMAR
LIC. NO. 61498 DATE 03/21/2024

BOLTON & MENK

2638 SHADOW LANE, SUITE 200
CHASKA, MN 55318
Phone: (952) 448-8838
Email: Chaska@bolton-menk.com
www.bolton-menk.com

City of Shorewood

DESIGNED	NO.	ISSUED FOR	DATE
SRH/TSV			
DRAWN	SCD/SRH		
CHECKED	PJS		
CLIENT PROJ. NO.	0C1.133334		

CITY OF SHOREWOOD
2024 MILL & OVERLAY & SMITHTOWN ROAD DRAINAGE IMPROVEMENTS
PEDESTRIAN RAMP DETAILS

SHEET
C0.12

Information contained in this SWPPP narrative sheet summarizes requirements of the GENERAL PERMIT AUTHORIZATION TO DISCHARGE STORMWATER ASSOCIATED WITH CONSTRUCTION ACTIVITY UNDER THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM/STATE DISPOSAL SYSTEM PROGRAM - Permit No: MN R100001 (Permit) as they apply to this project. All provisions of the Permit including those not specifically cited herein shall apply to this project. The Contractor is responsible to be familiar with and comply with all conditions of the permit. The full text of the Permit is available at: <https://www.pca.state.mn.us/sites/default/files/wq-strm2-80a.pdf>

SWPPP AMENDMENTS AND SUBMITTALS

Contractor must prepare and submit to the Engineer a SWPPP amendment as necessary to include additional Best Management Practices (BMPs) to correct problems identified or address the following situations.

- Contact information and training documentation for Construction SWPPP Manager and BMP Installer,
- There is a change in construction method of phasing, operation, maintenance, weather or seasonal conditions not anticipated during the design of the SWPPP including but not limited to:
 - Types and/or Locations of BMPs
 - Material Storage and Spill Response
 - Fueling Plans
 - Locations for Stockpiles, Concrete Washout, and Sanitation Facilities and
 - Project Phasing
- It is determined that the SWPPP is not achieving objectives of minimizing pollutants in stormwater discharges associated with construction activity, or
- The SWPPP is not consistent with the terms and conditions of the permit.

The Contractor may implement SWPPP amendments immediately and is not required to wait for Engineer review of the submittal. The responsibility for completeness of SWPPP amendments and compliance with the Permit lies with the Contractor. Review, comment, or lack of comment by the Engineer on a SWPPP amendment shall not absolve the responsibilities of the Contractor in any way.

If a change order is issued for a design change the SWPPP amendment will be prepared by the Engineer and included in the change order.

In addition to SWPPP amendments, the Contractor shall submit to the Engineer Weekly Erosion and Sediment Control Schedule meeting the requirements of MnDOT 1717.

The Contractor shall keep copies of all SWPPP amendments, Weekly Erosion and Sediment Control Schedules, inspection logs, and maintenance logs with the field copy of the SWPPP. A PDF copy of these documents will be provided along with a copy of the final Field Copy of the SWPPP to the Engineer along with the signed Notice of Termination when final stabilization is complete.

EROSION PREVENTION PRACTICES

Stormwater conveyance channels shall be routed around unstabilized areas. Erosion controls and velocity dissipation devices shall be used at outlets within and along the length of any constructed conveyance channel.

The normal wetted perimeter of all ditches or swales, including storm water management pond slopes, that drain waters from the site must be stabilized within 200' of any property edge or discharge point, including storm sewer inlets, within 24 hours of connection.

Temporary or permanent ditches or swales used as sediment containment during construction do not need to be stabilized during temporary period of use and shall be stabilized within 24 hours after no longer used as sediment containment.

Mulch, hydromulch, tackifier, or similar practice shall not be used in any portion of the wetted perimeter of a temporary or permanent drainage ditch or swale section with a continuous slope of greater than 2 percent.

Energy dissipation shall be installed at all temporary or permanent pipe outlets within 24 hours of connection to a surface water or permanent stormwater treatment system.

The Contractor shall phase construction and use construction methods to the extent practical to minimize exposed soils. The project phasing shall be documented in the Weekly Erosion and Sediment Control Schedule.

SEDIMENT CONTROL PRACTICES

Down gradient BMPs including perimeter BMPs must be in place before up gradient land- disturbing activities begin and shall remain in place until final stabilization.

All BMPs that have been adjusted or removed to accommodate short-term activities shall be re-installed or replaced the earlier of the end of the work day or before the next precipitation event even if the activity is not complete.

Inlet BMPs may be removed for specific safety concerns. The BMPs shall be replaced as soon as the safety concern is resolved. The removal shall be documented in the SWPPP as a SWPPP amendment.

Temporary stockpiles must have sediment control BMPs. The Contractor shall prepare and submit to the Engineer a SWPPP amendment showing the location of temporary stockpiles and the BMPs for each stockpile. The SWPPP amendment must meet the minimum requirements of Section 9 of the Permit.

Soil compaction shall be minimized and topsoil shall be preserved, unless infeasible or if construction activities dictate soil compaction or topsoil stripping.

The use of polymers, flocculants, or other sedimentation treatment chemicals are not proposed as part of this SWPPP as designed by the Engineer. If methods or phasing of construction require the use of any of these chemicals, the Contractor shall prepare and submit to the Engineer a SWPPP amendment that meets the minimum requirements of Section 9 of the Permit.

TEMPORARY SEDIMENTATION BASINS

A temporary sedimentation basin has not been included in this SWPPP as designed by the Engineer. If a basin is later determined to be desirable or necessary the Contractor shall prepare and submit to the Engineer a SWPPP amendment. Temporary sedimentation basins shall meet or exceed the minimum requirements of Section 14 of the Permit and shall include a basin draining plan meeting or exceeding the minimum requirements of Section 10 of the Permit. Where the site discharges to Special and/or Impaired Waters the SWPPP amendment shall also meet or exceed the minimum requirements of Section 23 of the permit.

DEWATERING

A dewatering plan has not been included in this SWPPP as designed by the Engineer. If dewatering is required for this project, the Contractor shall prepare and submit to the Engineer a SWPPP amendment. All dewatering shall meet or exceed the minimum requirements of Section 10 of the Permit.

POLLUTION PREVENTION

Products and materials that have the potential to leach pollutants that are stored on the site must be stored in a manner designed to minimize contact with stormwater. Materials that are not a source of potential contamination to stormwater or that are designed for exposure to stormwater are not required to be covered.

Hazardous materials including but not limited to pesticides, fertilizer, petroleum products, curing compounds and toxic waste must be properly stored and protected from stormwater exposure as recommended by the manufacturer in an access restricted area.

Solid waste must be stored, collected and disposed of in compliance with Minnesota Administrative Rules Chapter 7035.

Portable toilets must be positioned so that they are secure and will not be tipped or knocked over. Sanitary waste must be disposed of properly in accordance with Minn. R. CH 7041.

Exterior vehicle or equipment washing on the project site shall be limited to a defined area of the site. No engine degreasing is allowed on site. A sign must be installed adjacent to each washout facility that requires site personnel to utilize the proper facilities for disposal of concrete and other washout wastes.

The Contractor shall prepare and submit a SWPPP amendment detailing the location and BMPs proposed for storage of materials, solid waste, portable toilets, and exterior vehicle or equipment washing on the site. The SWPPP amendment shall include a spill prevention and response plan that is appropriate for the materials proposed to be on the site. The SWPPP amendment shall meet or exceed the minimum requirements of Section 12 of the Permit.

INSPECTION & MAINTENANCE

A trained person shall routinely inspect the entire construction site at the time interval indicated on this sheet of the SWPPP during active construction and within 24-hours after a rainfall event greater than 0.5 inches in 24 hours. Following an inspection that occurs within 24-hours after a rainfall event, the next inspection must be conducted at the time interval indicated in the Receiving Waters Table found on the SITE PLAN AND INFORMATION SHEET of the SWPPP.

All inspections and maintenance conducted during construction must be recorded on the day it is completed and must be retained with the SWPPP. Inspection report forms are available in the Project Specifications. Inspection report forms other than those provided shall be approved by the engineer.

The Contractor may request a change in inspection schedule for the following conditions:

- Inspections of areas with permanent cover to be reduced to once per month,
- Inspections of areas that have permanent cover and have had no construction activity for 12 months to be suspended until construction resumes,
- Inspections of areas where construction is suspended due to frozen ground conditions, inspections to be suspended until the earlier of within 24 hours of runoff occurring, or upon resuming construction.

No change in inspection schedule shall occur until authorized by the Engineer.

Inspections must include:

- All erosion prevention and sediment control BMPs and Pollution Prevention Management Measures to ensure integrity and effectiveness.
- Surface waters, including drainage ditches and conveyance systems for evidence of erosion and sediment deposition.
- Construction site vehicle exit locations, streets and curb and gutter systems within and adjacent to the project for sedimentation from erosion or tracked sediment from vehicles.
- Infiltration areas to ensure that no sediment from ongoing construction activity is reaching the infiltration area and that equipment is not being driven across the infiltration area.

All non-functioning BMPs and those BMPs where sediment reaches one-half (1/2) of the depth of the BMP, or in the case of sediment basins one-half (1/2) of the storage volume, must be repaired, replaced, or supplemented by the end of the next business day after discovery, or as soon as field conditions allow.

Permittees must repair, replace or supplement all nonfunctional BMPs with functional BMPs by the end of the next business day after discovery, or as soon as field conditions allow.

Any sediment that escapes the site must be removed and the area stabilized within 7 calendar days of discovery unless precluded by legal, regulatory, or physical access in which case the work shall be completed within 7 calendar days of authorization. Paved surfaces such as streets shall have any escaped or tracked sediment removed by the end of the day that it is discovered. Sediment release, other than paved surfaces that can be cleaned up with street sweeping shall be reported immediately upon discovery to the Engineer.

PUBLIC WATER RESTRICTIONS:

For public waters that have been promulgated "work in water restrictions" during fish spawning time frames, all exposed soil areas that are within 200 feet of the water's edge, and drain to these waters must complete stabilization within 24-hours during the time period. MN DNR permits are not valid for work in waters that are designated as infested waters unless accompanied by an Infested Waters Permit or written notification has been obtained from MN DNR stating that such permit is not required. There is no exception for pre-existing permits. If a MN DNR Permit has been issued for the project and the water is later designated as infested, the Contractor shall halt all work covered by the MN DNR Permit until an Infested Waters Permit is obtained or that written notification is obtained stating that such permit is not required.

FINAL STABILIZATION

Final Stabilization is not complete until all the following requirements have been met:

- Substantial Completion has been reached and no ground disturbing activities are anticipated.
- Permanent cover has been installed with an established minimum uniform perennial vegetation density of 70 percent of its expected final growth. Vegetation is not required in areas where no vegetation is proposed by this project such as impervious surfaces or the base of a sand filter.

- Accumulated sediment has been removed from all permanent stormwater treatment systems as necessary to ensure the system is operating as designed.
- All sediment has been removed from conveyance systems
- All temporary synthetic erosion prevention and sediment control BMPs have been removed. BMPs designated on the SWPPP to remain to decompose on-site may remain.
- For residential construction only, permit coverage terminates on individual lots if the structures are finished and temporary erosion prevention and downgradient perimeter control is complete, the residence sells to the homeowner, and the permittee distributes the MPCA's "Homeowner Control Sheet" to the homeowner.
- For agricultural land only (e.g., pipelines across cropland), the disturbed land must be returned to its preconstruction agricultural use prior to submitting the NOT.

SITE STABILIZATION COMPLETION:

Stabilization of exposed soils shall begin immediately and shall be completed after the construction activity has temporarily or permanently ceased no later than:

7 calendar days

SITE INSPECTION INTERVAL:

A trained person shall routinely inspect the entire construction site during active construction at an interval of no less than:

7 calendar days

SPECIAL ENVIRONMENTAL CONSIDERATIONS AND PERMITS:

1)	Was an environmental review required for this project or any part of a common plan of development or sale that includes all or any portion of this project?	NO
2)	Does any portion of the site have the potential to affect threatened or endangered species or their critical habitat?	NO
3)	Does any portion of this site discharge to a Calcareous fen.	NO
4)	Will any portion of the site potentially affect properties listed on the National Register of Historic Places or a known or discovered archeological site?	NO
5)	Have any Karst features been identified in the project vicinity?	NO
6)	Is compliance with temporary or permanent stormwater management design requirements infeasible for this project?	NO
7)	Has the MN DNR promulgated "work in water restrictions" for any Public Water this site discharges to during fish spawning?	NO

TYPE OF PERMIT	PERMITTING AGENCY	PERMIT STATUS AND CONDITIONS
Construction Stormwater NPDES	MPCA	

SWPPP DESIGNER TRAINING DOCUMENTATION:

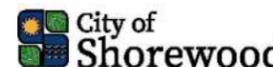


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Thomas S. Vidmar
 THOMAS S. VIDMAR
 LIC. NO. 61498 DATE 03/21/2024



2638 SHADOW LANE, SUITE 200
 CHASKA, MN 55318
 Phone: (952) 448-8838
 Email: Chaska@bolton-menk.com
 www.bolton-menk.com



DESIGNED	NO.	ISSUED FOR	DATE
SRH/TSV			
DRAWN			
SCD/SRH			
CHECKED			
PJS			
CLIENT PROJ. NO.	0C1.133334		

CITY OF SHOREWOOD
 2024 MILL & OVERLAY & SMITHTOWN ROAD DRAINAGE IMPROVEMENTS
 NARRATIVE

WILLIAM & KRISTIE LESTER
28265 BOULDER CIR
PID: 3111723310023

THOMAS P & LAURIE F BURNS
28245 BOULDER CIR
PID: 3111723310009

MARK LESLIE & KARLEEN LESLIE
28241 BOULDER CIR
PID: 3111723340010

DEAN SPATZ & CAROL SPATZ
28235 BOULDER CIR
PID: 3111723340018

JOHN D HUSTON & DIANE HUSTON
28225 BOULDER CIR
PID: 3111723340019

STEPHEN M & JEAN M POLSTON
28215 BOULDER CIR
PID: 3111723340030

LEVEL 1 WETLAND BOUNDARY

BOULDER CIRCLE CURB RETURN ALIGNMENT

KYLE BAREIS & JESSICA SCHYNOLL
28200 BOULDER CIR
PID: 3111723340023

RIGHT OF WAY

CONSTRUCT CONCRETE FLUME.
SEE SHEET C0.02 FOR DETAILS.

END SURMOUNTABLE
CONCRETE CURB & TIE
INTO BITUMINOUS CURB

FRANK A GERTZ
28125 BOULDER CIR
PID: 3111723340015

DAVID L SUGGS & CAROL C SUGGS
27995 BOULDER CIR
PID: 3111723340024



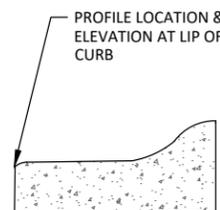
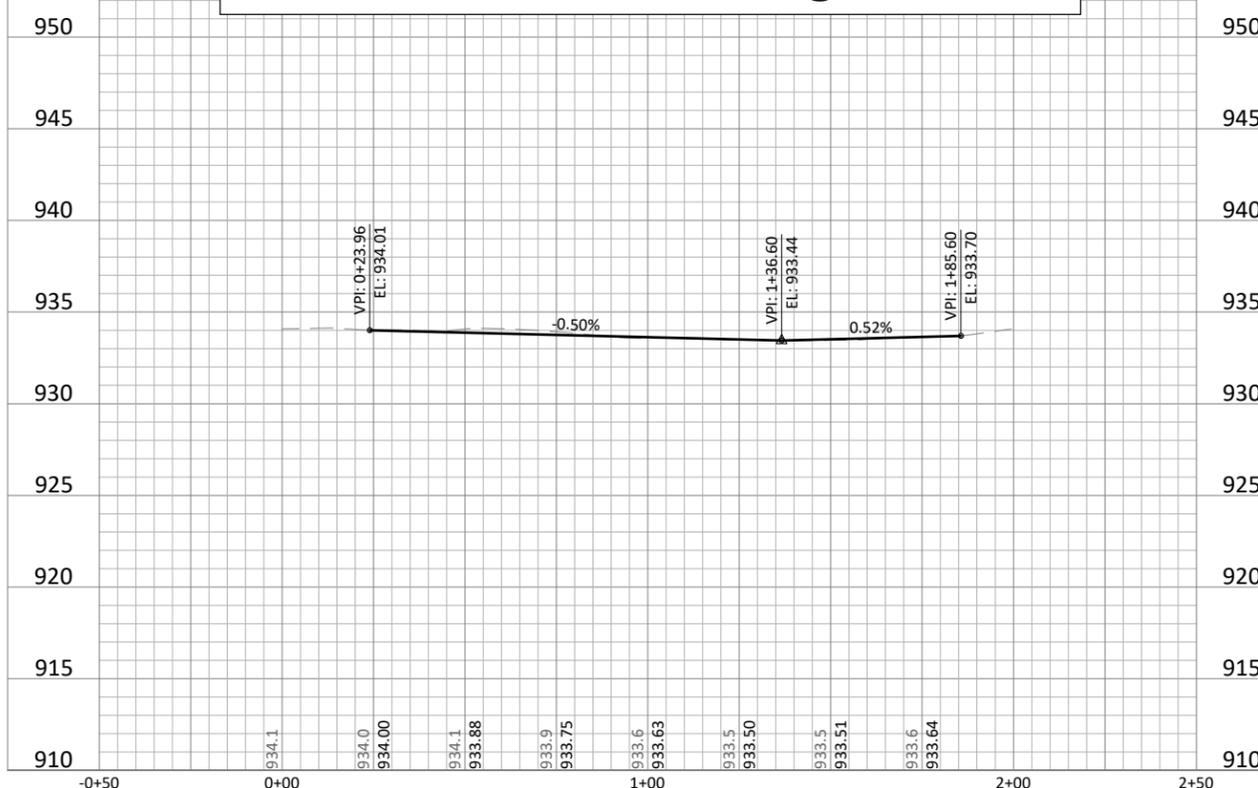
REPLACEMENT/ADJUSTMENT TABLE				
STREET NAME	R&R SANITARY CASTING	R&R STORM CASTING	ADJUST STORM CASTING	ADJUST GATE VALVE
BOULDER CIRCLE	2	0	0	1

LEGEND

	SAWCUT PAVEMENT (FULL DEPTH)(INCIDENTAL)		MILL & OVERLAY
	CONCRETE CURB & GUTTER		BITUMINOUS LEVEL COURSE
	BITUMINOUS CURB & GUTTER		REMOVE & REPLACE BITUMINOUS PAVEMENT
	REMOVE SEWER PIPE (STORM)		REMOVE & REPLACE BITUMINOUS DRIVEWAY PAVEMENT
	CONSTRUCTION LIMITS		REMOVE & REPLACE PAVER DRIVEWAY
	ADJUST FRAME & RING CASTING		REMOVE & REPLACE CONCRETE DRIVEWAY PAVEMENT
	ADJUST GATE VALVE BOX		FULL DEPTH BITUMINOUS PATCH
	REMOVE & REPLACE CASTING (STORM)		HYDROSEED W/ SEED MIX 25-151
	REMOVE & REPLACE CASTING (SANITARY)		HYDROSEED W/ SEED MIX 25-131
	INLET PROTECTION		EROSION CONTROL BLANKET CAT 20 W/ SEED MIX 34-172
	SILT FENCE (HAND INSTALLED)		
	CULVERT PROTECTION		
	BIOROLL		

- NOTES:**
- EXTERNAL CHIMNEY SEALS TO BE INSTALLED ON ALL CITY SANITARY SEWER STRUCTURES SCHEDULED FOR ADJUSTMENT AND REPLACEMENT.
 - PROTECT ALL RETAINING WALLS, LANDSCAPING, STEPS, DRIVEWAYS, AND ALL OTHER ROADSIDE FEATURES NOT DESIGNATED FOR SALVAGING OR REMOVAL.
 - CONTRACTOR SHALL REVIEW CROSS-SLOPE WITH ENGINEER IN FIELD TO VERIFY LEVELING COURSE LIMITS.
 - CONTRACTOR SHALL REVIEW LIMITS OF HAND FORMED BITUMINOUS CURB WITH ENGINEER IN FIELD.
 - NOT ALL LEVEL COURSE LOCATIONS HAVE BEEN MARKED ON THE PLANS. ENGINEER SHALL FIELD VERIFY ALL LEVEL COURSE LOCATIONS WITH CONTRACTOR.

BOULDER CIRCLE CURB RETURN @ LIP OF CURB



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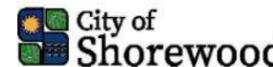


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CITY OF SHOREWOOD
2024 MILL & OVERLAY & SMITHTOWN ROAD DRAINAGE IMPROVEMENTS
MILL & OVERLAY-BOULDER CIRCLE

SHEET
C2.01

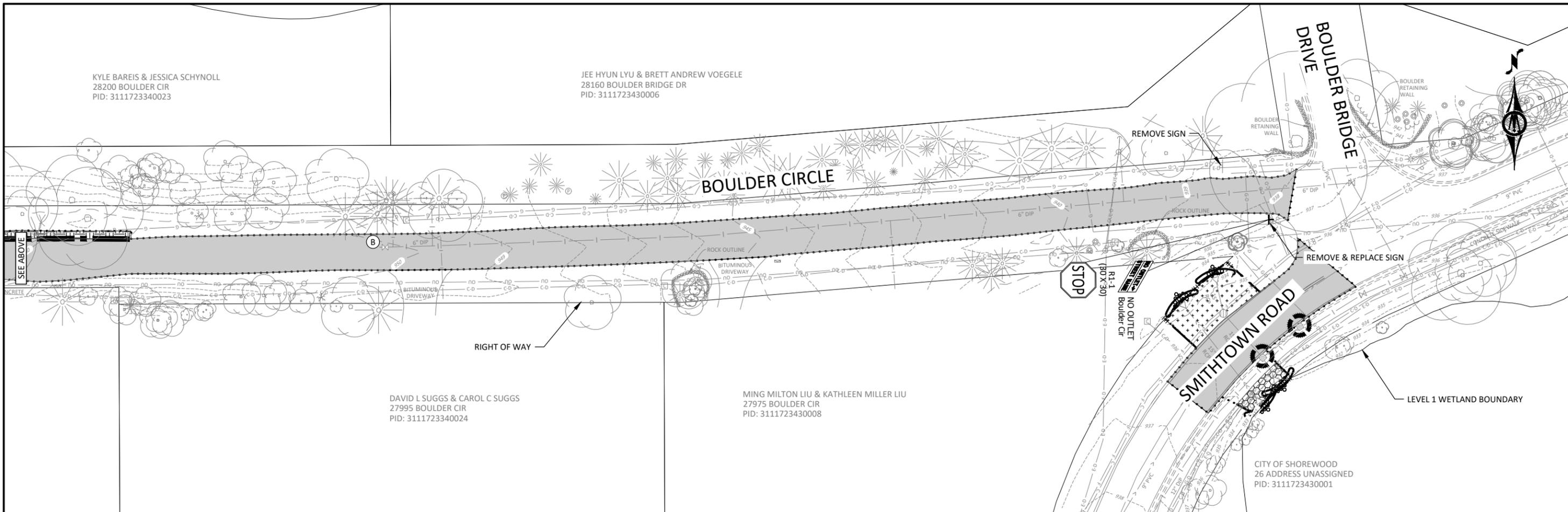
KYLE BAREIS & JESSICA SCHYNOLL
28200 BOULDER CIR
PID: 3111723340023

JEE HYUN LYU & BRETT ANDREW VOEGELE
28160 BOULDER BRIDGE DR
PID: 3111723430006

DAVID L SUGGS & CAROL C SUGGS
27995 BOULDER CIR
PID: 3111723340024

MING MILTON LIU & KATHLEEN MILLER LIU
27975 BOULDER CIR
PID: 3111723430008

CITY OF SHOREWOOD
26 ADDRESS UNASSIGNED
PID: 3111723430001



LEGEND

	SAWCUT PAVEMENT (FULL DEPTH)(INCIDENTAL)		MILL & OVERLAY
	CONCRETE CURB & GUTTER		BITUMINOUS LEVEL COURSE
	BITUMINOUS CURB & GUTTER		REMOVE & REPLACE BITUMINOUS PAVEMENT
	REMOVE SEWER PIPE (STORM)		REMOVE & REPLACE BITUMINOUS DRIVEWAY PAVEMENT
	CONSTRUCTION LIMITS		REMOVE & REPLACE PAVER DRIVEWAY
	ADJUST FRAME & RING CASTING		REMOVE & REPLACE CONCRETE DRIVEWAY PAVEMENT
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	REMOVE & REPLACE CASTING (SANITARY)		HYDROSEED W/ SEED MIX 25-131
	INLET PROTECTION		EROSION CONTROL BLANKET CAT 20 W/ SEED MIX 34-172
	SILT FENCE (HAND INSTALLED)		
	CULVERT PROTECTION		
	BIOROLL		

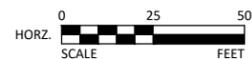
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- CONTRACTOR SHALL REVIEW LIMITS OF HAND FORMED BITUMINOUS CURB WITH ENGINEER IN FIELD.
- NOT ALL LEVEL COURSE LOCATIONS HAVE BEEN MARKED ON THE PLANS. ENGINEER SHALL FIELD VERIFY ALL LEVEL COURSE LOCATIONS WITH CONTRACTOR.

REPLACEMENT/ADJUSTMENT TABLE

STREET NAME	R&R SANITARY CASTING	R&R STORM CASTING	ADJUST STORM CASTING	ADJUST GATE VALVE
BOULDER CIRCLE	2	0	0	1

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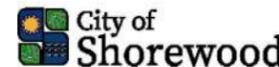


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Thomas S. Vidmar
THOMAS S. VIDMAR
LIC. NO. 61498 DATE 03/21/2024



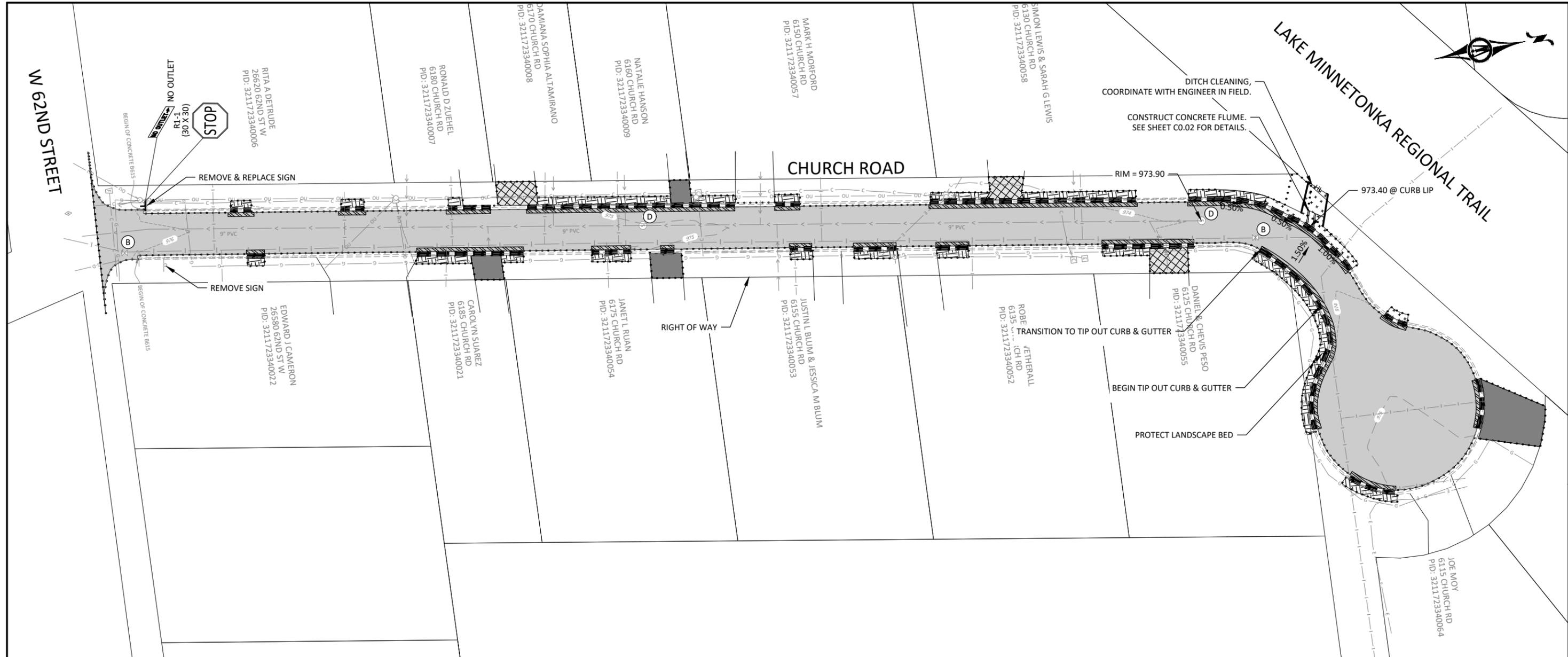
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CHASKA, MN 55318
Phone: (952) 448-8838
Email: Chaska@bolton-menk.com
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CITY OF SHOREWOOD
2024 MILL & OVERLAY & SMITHTOWN ROAD DRAINAGE IMPROVEMENTS
MILL & OVERLAY - BOULDER CIRCLE

SHEET
C2.02



LEGEND

	SAWCUT PAVEMENT (FULL DEPTH)(INCIDENTAL)		MILL & OVERLAY
	CONCRETE CURB & GUTTER		BITUMINOUS LEVEL COURSE
	BITUMINOUS CURB & GUTTER		REMOVE & REPLACE BITUMINOUS PAVEMENT
	REMOVE SEWER PIPE (STORM)		REMOVE & REPLACE BITUMINOUS DRIVEWAY PAVEMENT
	CONSTRUCTION LIMITS		REMOVE & REPLACE PAVER DRIVEWAY
(A)	ADJUST FRAME & RING CASTING		REMOVE & REPLACE CONCRETE DRIVEWAY PAVEMENT
(B)	ADJUST GATE VALVE BOX		FULL DEPTH BITUMINOUS PATCH
(C)	REMOVE & REPLACE CASTING (STORM)		HYDROSEED W/ SEED MIX 25-151
(D)	REMOVE & REPLACE CASTING (SANITARY)		HYDROSEED W/ SEED MIX 25-131
	INLET PROTECTION		EROSION CONTROL BLANKET CAT 20 W/ SEED MIX 34-172
HI	SILT FENCE (HAND INSTALLED)		
	CULVERT PROTECTION		
	BIOROLL		

- NOTES:**
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REPLACEMENT/ADJUSTMENT TABLE

STREET NAME	R&R SANITARY CASTING	R&R STORM CASTING	ADJUST STORM CASTING	ADJUST GATE VALVE
CHURCH ROAD	2	0	0	2

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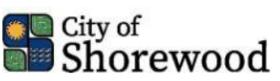


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Thomas S. Vidmar
 THOMAS S. VIDMAR
 LIC. NO. 61498 DATE 03/21/2024



2638 SHADOW LANE, SUITE 200
 CHASKA, MN 55318
 Phone: (952) 448-8838
 Email: Chaska@bolton-menk.com
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CITY OF SHOREWOOD
 2024 MILL & OVERLAY & SMITHTOWN ROAD DRAINAGE IMPROVEMENTS
 MILL & OVERLAY-CHURCH ROAD

SHEET
C2.03

JEFFREY & JORDAN PLANNING
6030 SPRUCE HILL CT
PID: 3211723340024

JAMES K S CHUNG & YIMING A JAN
25070 YELLOWSTONE TR
PID: 3211723340036

MICHAEL DUNN & CHARITY DUNN
6100 SPURIE HILL CT
PID: 3311723340021

CURTIS J & LUANN M AHART
6090 SPRUE HILL CT
PID: 3311723340022

CLINTON TALMO & MELISSA TALMO
6060 SPRUE HILL CT
PID: 3211723340023

CONSTRUCT CONCRETE FLUME.
SEE SHEET CO.03 FOR DETAILS.

GRADE TO DRAIN

DRAINAGE AND
UTILITY EASEMENT

TIMOTHY S BUTLER
6035 SPRUCE HILL CT
PID: 311723340025

SPRUCE HILL COURT

DAWN M & MICHAEL ZIEGLER
25040 YELLOWSTONE TR
PID: 3311723340031

PAUL CORNELISON & FUMIE CORNELISON
6065 SPRUCE HILL CT
PID: 3311723340032



LEGEND

	SAWCUT PAVEMENT (FULL DEPTH)(INCIDENTAL)		MILL & OVERLAY
	CONCRETE CURB & GUTTER		BITUMINOUS LEVEL COURSE
	BITUMINOUS CURB & GUTTER		REMOVE & REPLACE BITUMINOUS PAVEMENT
	REMOVE SEWER PIPE (STORM)		REMOVE & REPLACE BITUMINOUS DRIVEWAY PAVEMENT
	CONSTRUCTION LIMITS		REMOVE & REPLACE PAVER DRIVEWAY
	ADJUST FRAME & RING CASTING		REMOVE & REPLACE CONCRETE DRIVEWAY PAVEMENT
	ADJUST GATE VALVE BOX		FULL DEPTH BITUMINOUS PATCH
	REMOVE & REPLACE CASTING (STORM)		HYDROSEED W/ SEED MIX 25-151
	REMOVE & REPLACE CASTING (SANITARY)		HYDROSEED W/ SEED MIX 25-131
	INLET PROTECTION		EROSION CONTROL BLANKET CAT 20 W/ SEED MIX 34-172
	SILT FENCE (HAND INSTALLED)		
	CULVERT PROTECTION		
	BIOROLL		

NOTES:

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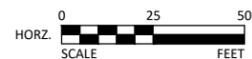
REPLACEMENT/ADJUSTMENT TABLE

STREET NAME	R&R SANITARY CASTING	R&R STORM CASTING	ADJUST STORM CASTING	ADJUST GATE VALVE
SPRUCE HILL COURT	3	0	0	0

YELLOWSTONE TRAIL

RIGHT OF WAY

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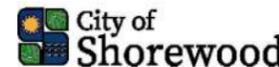


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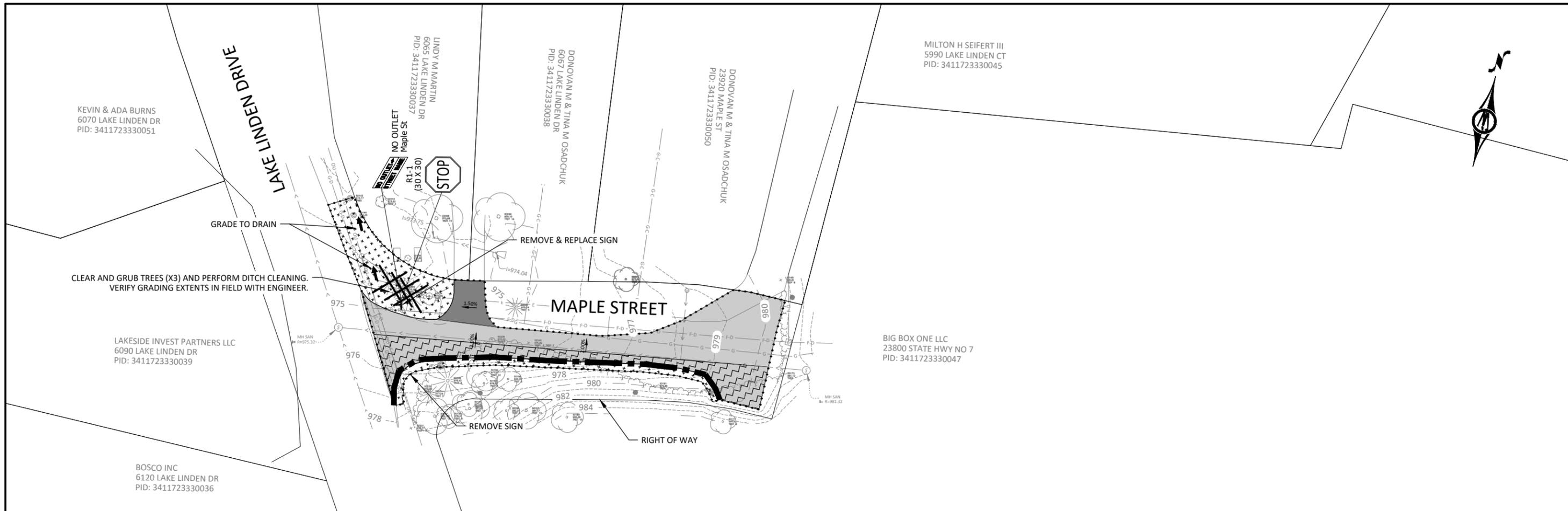


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CITY OF SHOREWOOD
2024 MILL & OVERLAY & SMITHTOWN ROAD DRAINAGE IMPROVEMENTS
MILL & OVERLAY-SPRUCE HILL COURT

SHEET

C2.04



LEGEND	
	SAWCUT PAVEMENT (FULL DEPTH)(INCIDENTAL)
	CONCRETE CURB & GUTTER
	BITUMINOUS CURB & GUTTER
	REMOVE SEWER PIPE (STORM)
	CONSTRUCTION LIMITS
	ADJUST FRAME & RING CASTING
	ADJUST GATE VALVE BOX
	REMOVE & REPLACE CASTING (STORM)
	REMOVE & REPLACE CASTING (SANITARY)
	INLET PROTECTION
	SILT FENCE (HAND INSTALLED)
	CULVERT PROTECTION
	BIOROLL
	MILL & OVERLAY
	BITUMINOUS LEVEL COURSE
	REMOVE & REPLACE BITUMINOUS PAVEMENT
	REMOVE & REPLACE BITUMINOUS DRIVEWAY PAVEMENT
	REMOVE & REPLACE PAVER DRIVEWAY
	REMOVE & REPLACE CONCRETE DRIVEWAY PAVEMENT
	FULL DEPTH BITUMINOUS PATCH
	HYDROSEED W/ SEED MIX 25-151
	HYDROSEED W/ SEED MIX 25-131
	EROSION CONTROL BLANKET CAT 20 W/ SEED MIX 34-172

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REPLACEMENT/ADJUSTMENT TABLE				
STREET NAME	R&R SANITARY CASTING	R&R STORM CASTING	ADJUST STORM CASTING	ADJUST GATE VALVE
MAPLE STREET	0	0	0	0

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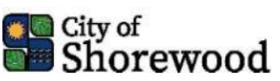


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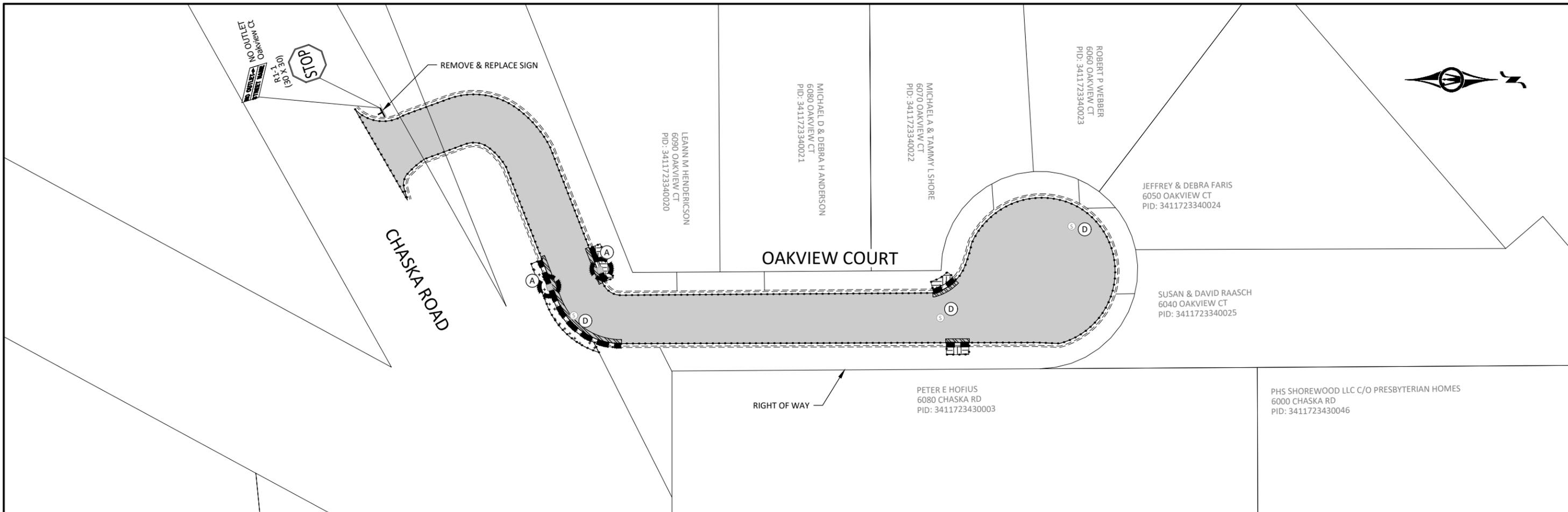
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CITY OF SHOREWOOD
 2024 MILL & OVERLAY & SMITHTOWN ROAD DRAINAGE IMPROVEMENTS
 MILL & OVERLAY-MAPLE STREET

SHEET
 C2.05



LEGEND

	SAWCUT PAVEMENT (FULL DEPTH)(INCIDENTAL)		MILL & OVERLAY
	CONCRETE CURB & GUTTER		BITUMINOUS LEVEL COURSE
	BITUMINOUS CURB & GUTTER		REMOVE & REPLACE BITUMINOUS PAVEMENT
	REMOVE SEWER PIPE (STORM)		REMOVE & REPLACE BITUMINOUS DRIVEWAY PAVEMENT
	CONSTRUCTION LIMITS		REMOVE & REPLACE PAVER DRIVEWAY
	ADJUST FRAME & RING CASTING		REMOVE & REPLACE CONCRETE DRIVEWAY PAVEMENT
	ADJUST GATE VALVE BOX		FULL DEPTH BITUMINOUS PATCH
	REMOVE & REPLACE CASTING (STORM)		HYDROSEED W/ SEED MIX 25-151
	REMOVE & REPLACE CASTING (SANITARY)		HYDROSEED W/ SEED MIX 25-131
	INLET PROTECTION		EROSION CONTROL BLANKET CAT 20 W/ SEED MIX 34-172
	SILT FENCE (HAND INSTALLED)		
	CULVERT PROTECTION		
	BIOROLL		

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REPLACEMENT/ADJUSTMENT TABLE

STREET NAME	R&R SANITARY CASTING	R&R STORM CASTING	ADJUST STORM CASTING	ADJUST GATE VALVE
OAKVIEW CIRCLE	3	0	2	0

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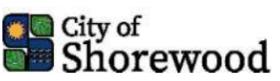


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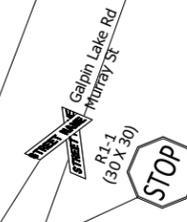
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CITY OF SHOREWOOD
2024 MILL & OVERLAY & SMITHTOWN ROAD DRAINAGE IMPROVEMENTS
MILL & OVERLAY-OAKVIEW COURT

SHEET
C2.06



SARAH FERRALL & ZACHARY DAVID FERRALL
22830 MURRAY ST
PID: 3411723430008

PAUL FRANTZICH & ALISON FREIK
22780 MURRAY ST
PID: 3411723440016

DANIELLE D PITTEL
22740 MURRAY ST
PID: 3411723440061

SASS INVESTMENTS I LLC
22690 MURRAY ST
PID: 3411723440062

REMOVE SIGN

RIGHT OF WAY

MURRAY STREET

REMOVE & REPLACE SIGN



JOSEPH C & ANN M SCHLEIF
22885 MURRAY ST
PID: 3411723430010

JOHN S & LYNDA M G HARTMANN
22845 MURRY ST
PID: 3411723430009

LEGEND

	SAWCUT PAVEMENT (FULL DEPTH)(INCIDENTAL)		MILL & OVERLAY
	CONCRETE CURB & GUTTER		BITUMINOUS LEVEL COURSE
	BITUMINOUS CURB & GUTTER		REMOVE & REPLACE BITUMINOUS PAVEMENT
	REMOVE SEWER PIPE (STORM)		REMOVE & REPLACE BITUMINOUS DRIVEWAY PAVEMENT
	CONSTRUCTION LIMITS		REMOVE & REPLACE PAVER DRIVEWAY
	ADJUST FRAME & RING CASTING		REMOVE & REPLACE CONCRETE DRIVEWAY PAVEMENT
	ADJUST GATE VALVE BOX		FULL DEPTH BITUMINOUS PATCH
	REMOVE & REPLACE CASTING (STORM)		HYDROSEED W/ SEED MIX 25-151
	REMOVE & REPLACE CASTING (SANITARY)		HYDROSEED W/ SEED MIX 25-131
	INLET PROTECTION		EROSION CONTROL BLANKET CAT 20 W/ SEED MIX 34-172
	SILT FENCE (HAND INSTALLED)		
	CULVERT PROTECTION		
	BIOROLL		

SEE SHEET C2.08

MURRAY COURT

JOHN FLOOD
22695 MURRAY ST
PID: 3411723440056

LEVEL 1 WETLAND BOUNDARY

THOMAS J & KELLY R COOPER
22630 MURRAY ST
PID: 3411723440011



REMOVE & REPLACE SIGN

JOHN C STREED
C/O STEPHEN STREE
PID: 3411723440039

MURRAY STREET

SEE ABOVE

SEE SHEET C3.18



REMOVE & REPLACE SIGN

RIGHT OF WAY

STEPHEN D & NANCY W FELLER
22535 MURRAY ST
PID: 3411723440024

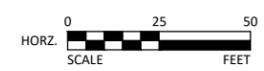
AUDIUS ASAKENAS
6180 CARDINAL
PID: 3411723440022

CARDINAL DRIVE

EDWARD NEAR
22435 MURRAY ST
PID: 3411723440025

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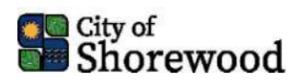
STREET NAME	R&R SANITARY CASTING	R&R STORM CASTING	ADJUST STORM CASTING	ADJUST GATE VALVE
MURRAY STREET	6	0	0	0



THOMAS S. VIDMAR
LIC. NO. 61498 DATE 03/21/2024



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CITY OF SHOREWOOD
2024 MILL & OVERLAY & SMITHTOWN ROAD DRAINAGE IMPROVEMENTS
MILL & OVERLAY-MURRAY STREET

SHEET
C2.07

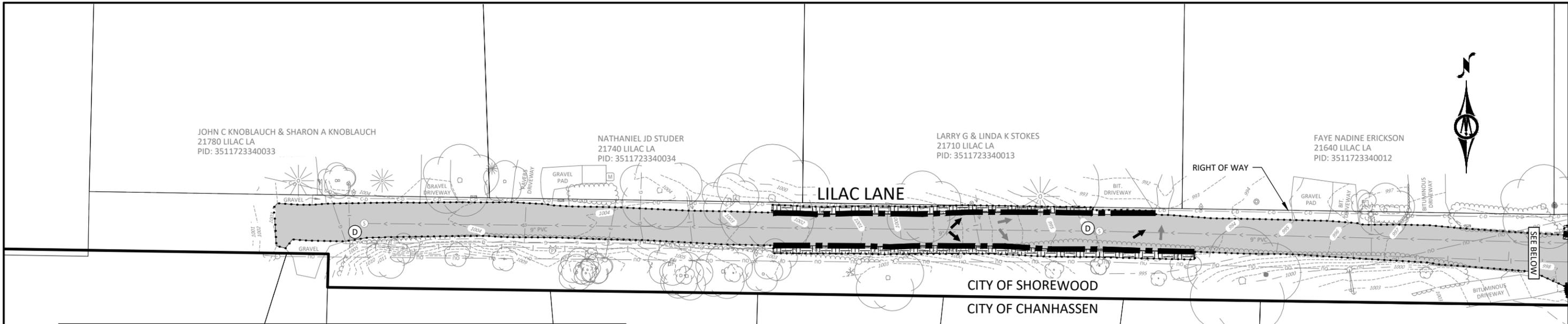
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JOHN C KNOBLAUCH & SHARON A KNOBLAUCH
21780 LILAC LA
PID: 3511723340033

NATHANIEL JD STUDER
21740 LILAC LA
PID: 3511723340034

LARRY G & LINDA K STOKES
21710 LILAC LA
PID: 3511723340013

FAYE NADINE ERICKSON
21640 LILAC LA
PID: 3511723340012



LEGEND

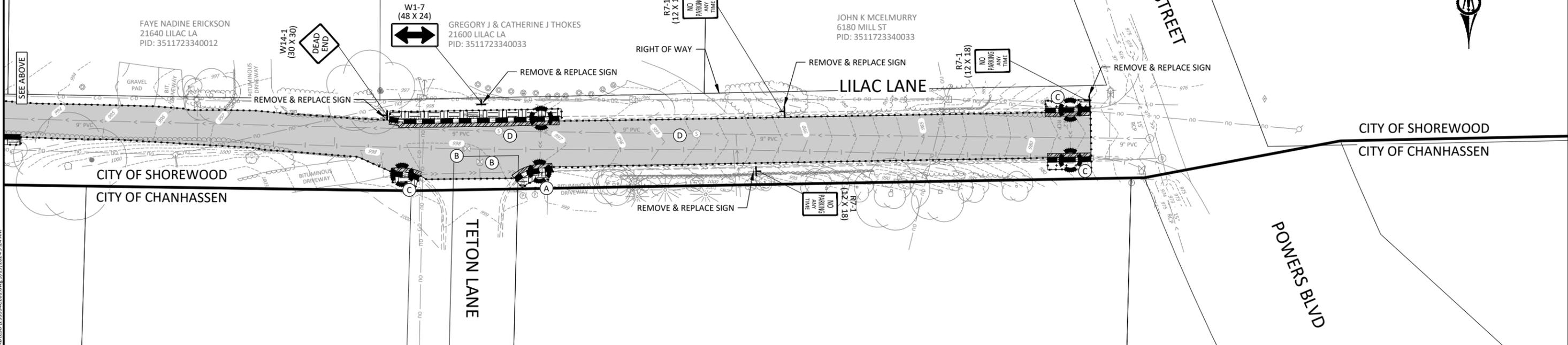
-----	SAWCUT PAVEMENT (FULL DEPTH)(INCIDENTAL)	[Pattern]	MILL & OVERLAY
=====	CONCRETE CURB & GUTTER	[Pattern]	BITUMINOUS LEVEL COURSE
-----	BITUMINOUS CURB & GUTTER	[Pattern]	REMOVE & REPLACE BITUMINOUS PAVEMENT
	REMOVE SEWER PIPE (STORM)	[Pattern]	REMOVE & REPLACE BITUMINOUS DRIVEWAY PAVEMENT
.....	CONSTRUCTION LIMITS	[Pattern]	REMOVE & REPLACE PAVER DRIVEWAY
(A)	ADJUST FRAME & RING CASTING	[Pattern]	REMOVE & REPLACE CONCRETE DRIVEWAY PAVEMENT
(B)	ADJUST GATE VALVE BOX	[Pattern]	FULL DEPTH BITUMINOUS PATCH
(C)	REMOVE & REPLACE CASTING (STORM)	[Pattern]	HYDROSEED W/ SEED MIX 25-151
(D)	REMOVE & REPLACE CASTING (SANITARY)	[Pattern]	HYDROSEED W/ SEED MIX 25-131
[Symbol]	INLET PROTECTION	[Pattern]	EROSION CONTROL BLANKET CAT 20 W/ SEED MIX 34-172
[Symbol]	HI SILT FENCE (HAND INSTALLED)		
[Symbol]	CULVERT PROTECTION		
[Symbol]	BIOROLL		

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REPLACEMENT/ADJUSTMENT TABLE

STREET NAME	R&R SANITARY CASTING	R&R STORM CASTING	ADJUST STORM CASTING	ADJUST GATE VALVE
LILAC LANE	4	3	1	2

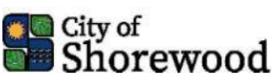


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Email: Chaska@bolton-menk.com
www.bolton-menk.com

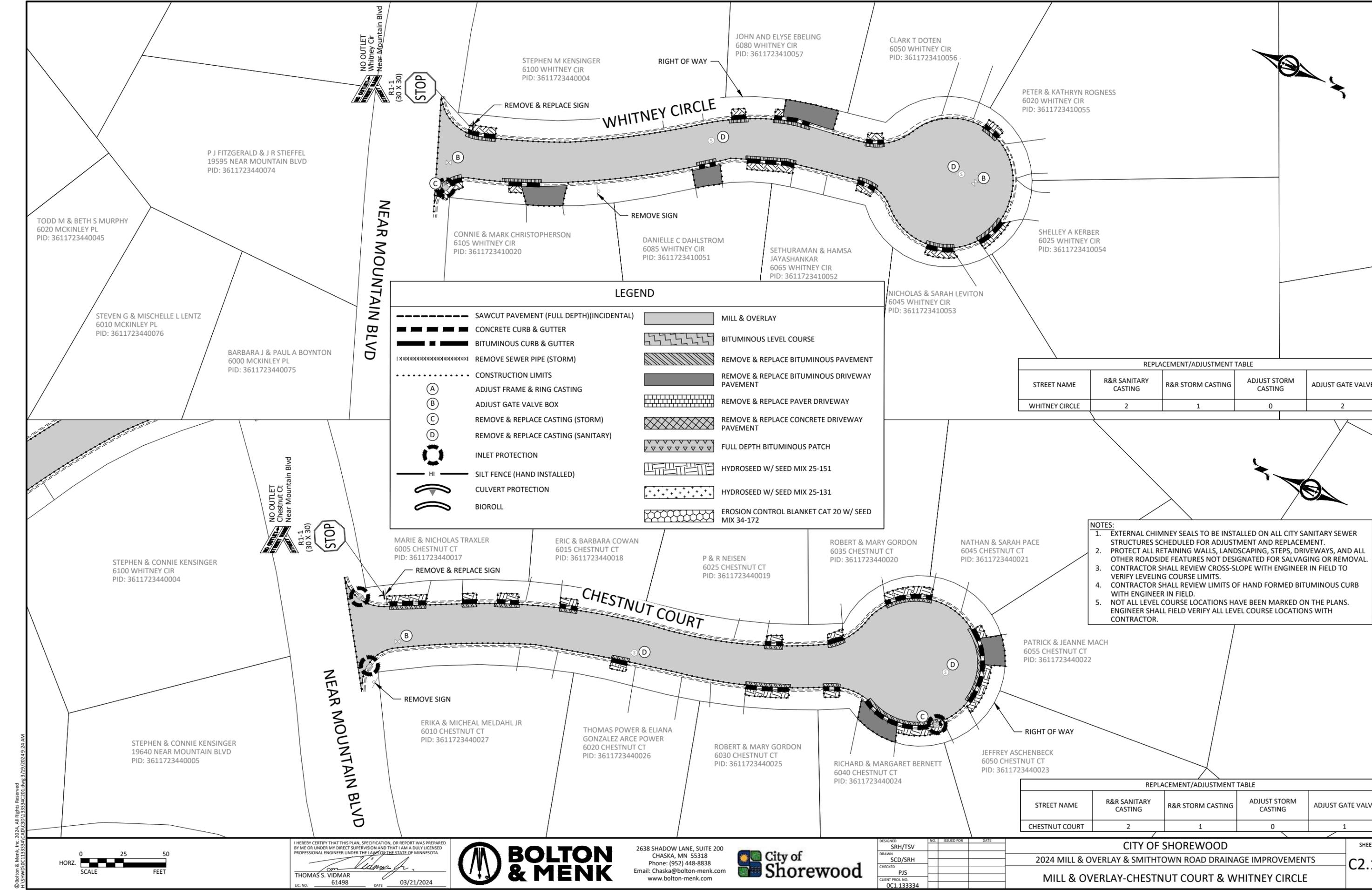


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CITY OF SHOREWOOD
2024 MILL & OVERLAY & SMITHTOWN ROAD DRAINAGE IMPROVEMENTS
MILL & OVERLAY-LILAC LANE

SHEET
C2.11

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LEGEND

	SAWCUT PAVEMENT (FULL DEPTH)(INCIDENTAL)		MILL & OVERLAY
	CONCRETE CURB & GUTTER		BITUMINOUS LEVEL COURSE
	BITUMINOUS CURB & GUTTER		REMOVE & REPLACE BITUMINOUS PAVEMENT
	REMOVE SEWER PIPE (STORM)		REMOVE & REPLACE BITUMINOUS DRIVEWAY PAVEMENT
	CONSTRUCTION LIMITS		REMOVE & REPLACE PAVER DRIVEWAY
	ADJUST FRAME & RING CASTING		REMOVE & REPLACE CONCRETE DRIVEWAY PAVEMENT
	ADJUST GATE VALVE BOX		FULL DEPTH BITUMINOUS PATCH
	REMOVE & REPLACE CASTING (STORM)		HYDROSEED W/ SEED MIX 25-151
	REMOVE & REPLACE CASTING (SANITARY)		HYDROSEED W/ SEED MIX 25-131
	INLET PROTECTION		EROSION CONTROL BLANKET CAT 20 W/ SEED MIX 34-172
	SILT FENCE (HAND INSTALLED)		
	CULVERT PROTECTION		
	BIOROLL		

REPLACEMENT/ADJUSTMENT TABLE

STREET NAME	R&R SANITARY CASTING	R&R STORM CASTING	ADJUST STORM CASTING	ADJUST GATE VALVE
WHITNEY CIRCLE	2	1	0	2

- NOTES:**
- EXTERNAL CHIMNEY SEALS TO BE INSTALLED ON ALL CITY SANITARY SEWER STRUCTURES SCHEDULED FOR ADJUSTMENT AND REPLACEMENT.
 - PROTECT ALL RETAINING WALLS, LANDSCAPING, STEPS, DRIVEWAYS, AND ALL OTHER ROADSIDE FEATURES NOT DESIGNATED FOR SALVAGING OR REMOVAL.
 - CONTRACTOR SHALL REVIEW CROSS-SLOPE WITH ENGINEER IN FIELD TO VERIFY LEVELING COURSE LIMITS.
 - CONTRACTOR SHALL REVIEW LIMITS OF HAND FORMED BITUMINOUS CURB WITH ENGINEER IN FIELD.
 - NOT ALL LEVEL COURSE LOCATIONS HAVE BEEN MARKED ON THE PLANS. ENGINEER SHALL FIELD VERIFY ALL LEVEL COURSE LOCATIONS WITH CONTRACTOR.

REPLACEMENT/ADJUSTMENT TABLE

STREET NAME	R&R SANITARY CASTING	R&R STORM CASTING	ADJUST STORM CASTING	ADJUST GATE VALVE
CHESTNUT COURT	2	1	0	1

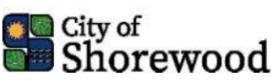


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THOMAS S. VIDMAR
 LIC. NO. 61498 DATE 03/21/2024



2638 SHADOW LANE, SUITE 200
 CHASKA, MN 55318
 Phone: (952) 448-8838
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WILLIAM J & KRIS M PATTON
27910 SMITHTOWN RD
PID: 3111723340017

ROBERT & MARGARET KING
27920 SMITHTOWN RD
PID: 3111723340031

JACK & GRETCHEN NORQUAL
27950 SMITHTOWN RD
PID: 3111723340004

JEFFREY A & LISA J SCZUBLEWSKI
27780 VIRGINIA COVE
PID: 3111723430022

MING M & KATHLEEN M LIU
27975 BOULDER CIR
PID: 3111723430008

CITY OF SHOREWOOD
26 ADDRESS UNASSIGNED
PID: 3111723430001

RIGHT OF WAY

RIGHT OF WAY

LEVEL 1 WETLAND BOUNDARY

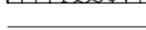
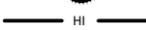
LEVEL 1 WETLAND BOUNDARY

BITUMINOUS SPILLWAY.
SEE SHEET CO.02 FOR DETAILS.

RIP RAP REMOVAL AND REPLACEMENT AROUND APRON,
COORDINATE WITH ENGINEER IN FIELD.

RIP RAP REMOVAL AND REPLACEMENT AROUND APRON,
COORDINATE WITH ENGINEER IN FIELD.

LEGEND

-  MILL & OVERLAY
-  BITUMINOUS LEVEL COURSE
-  REMOVE & REPLACE BITUMINOUS PAVEMENT
-  FULL DEPTH BITUMINOUS PATCH
-  REMOVE & REPLACE CONCRETE
-  HYDROSEED W/ SEED MIX 25-151
-  HYDROSEED W/ SEED MIX 25-131
-  EROSION CONTROL BLANKET CAT 20 W/ SEED MIX 34-172
-  CONSTRUCT CONCRETE CURB & GUTTER
-  SAWCUT BITUMINOUS PAVEMENT (FULL DEPTH) (INCIDENTAL)
-  CONSTRUCTION LIMITS
-  ADJUST FRAME & RING CASTING
-  ADJUST GATE VALVE BOX
-  INLET PROTECTION
-  SILT FENCE (HAND INSTALLED)
-  CULVERT PROTECTION
-  BIOROLL

NOTES:

1. REMOVALS SHALL NOT OCCUR WITHOUT AUTHORIZATION FROM THE ENGINEER. REMOVAL LIMITS & REMOVAL ITEMS SHALL BE VERIFIED BY THE ENGINEER PRIOR TO REMOVAL.
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4. EXISTING PRIVATE UTILITIES SHALL BE RELOCATED BY OTHERS AS DIRECTED BY THE ENGINEER.
5. SEE SHEET G0.02 FOR LEGEND.
6. EXTERNAL CHIMNEY SEALS TO BE INSTALLED ON ALL CITY SANITARY SEWER STRUCTURES SCHEDULED FOR ADJUSTMENT.
7. CONTRACTOR SHALL REVIEW CROSS-SLOPE WITH ENGINEER IN FIELD TO VERIFY LEVELING COURSE LIMITS.
8. CONTRACTOR SHALL REVIEW LIMITS OF HAND FORMED BITUMINOUS CURB WITH ENGINEER IN FIELD.
9. CONTRACTOR AND ENGINEER SHALL FIELD VERIFY PAVEMENT AREAS IN WHICH PROFILE MILLING IS NECESSARY TO OBTAIN DRAINAGE FOR CROSS SLOPES IN ROADWAY.
10. DITCH CLEANING AROUND CULVERT ENDS SHALL BE QUANTIFIED TO THE EXTENT IN LINEAL FEET FROM THE RC CULVERT OUTLET INVERT, TO THE FURTHEST EXTENT OF THE RIP RAP IN EACH LOCATION.

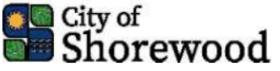


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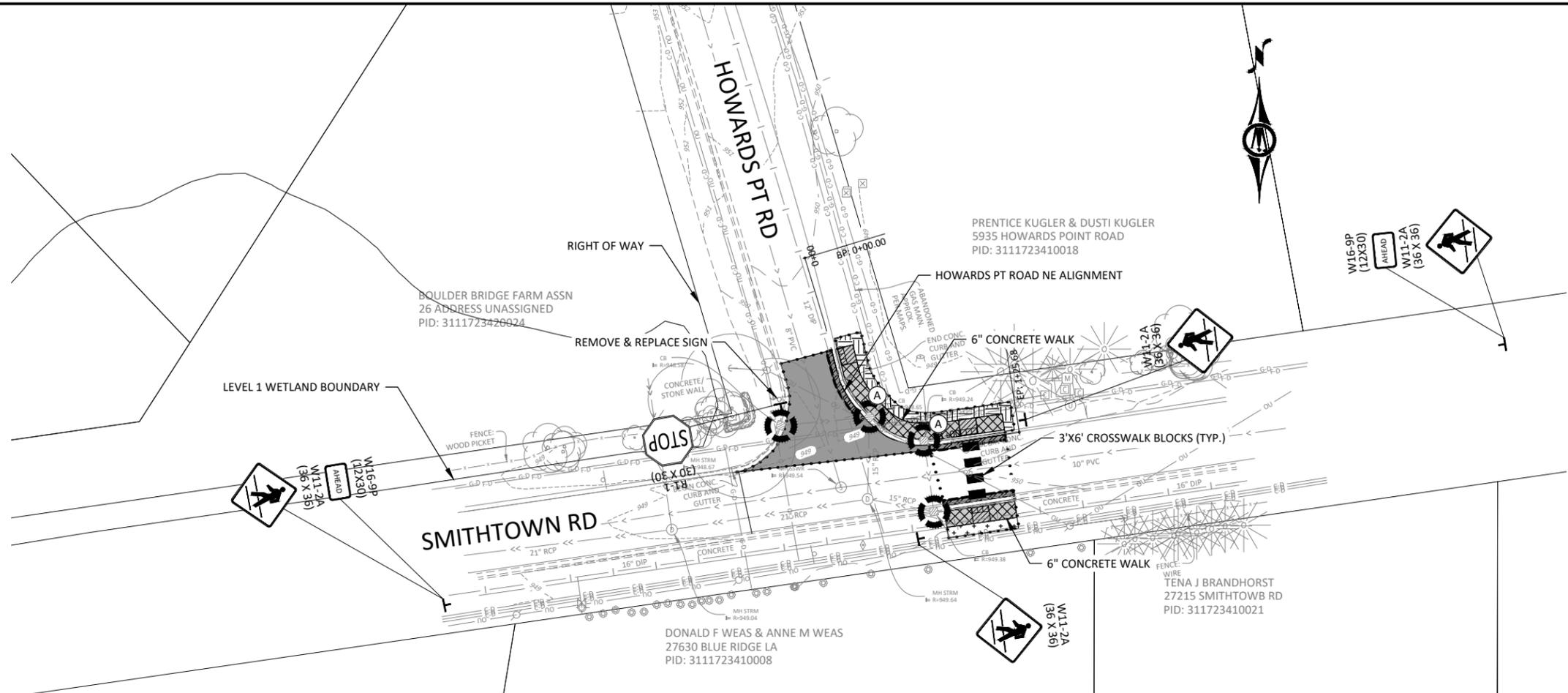


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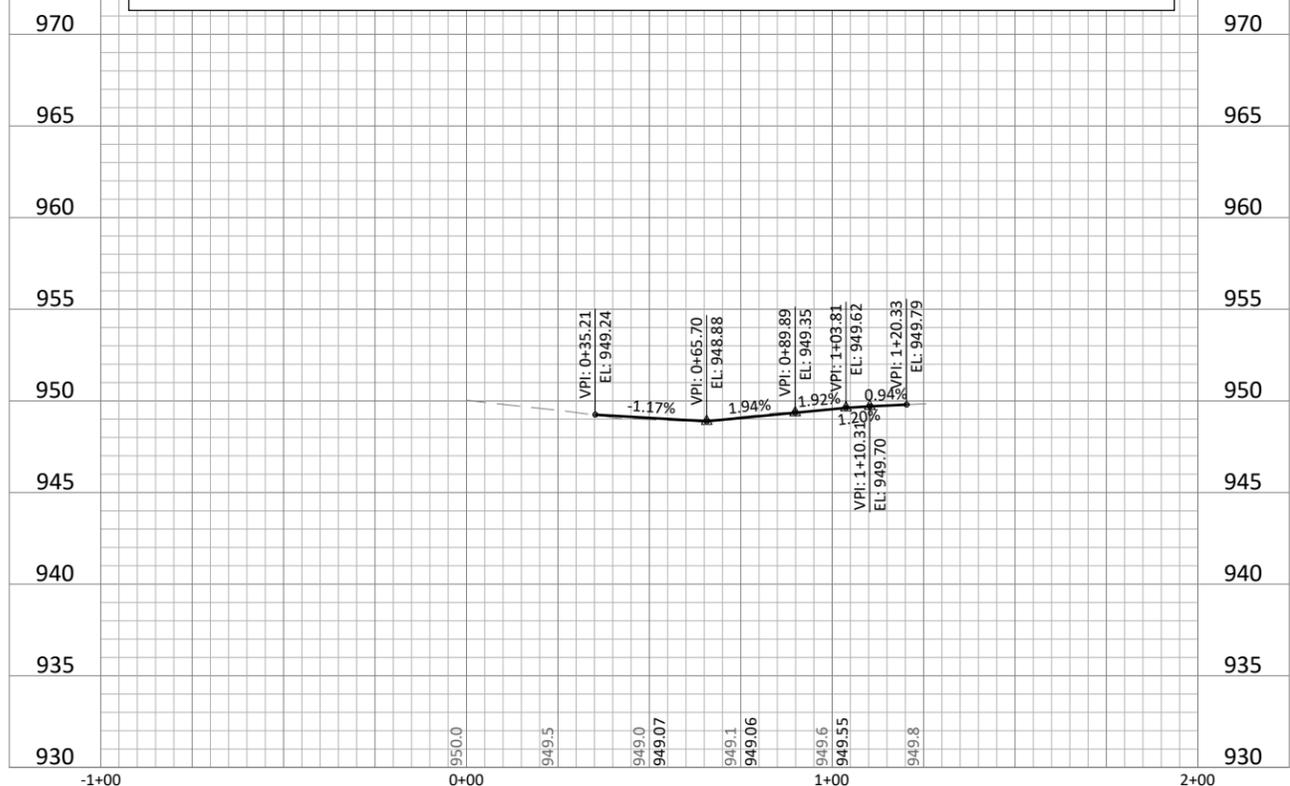
CITY OF SHOREWOOD
2024 MILL & OVERLAY & SMITHTOWN ROAD DRAINAGE IMPROVEMENTS
DRAINAGE IMPROVEMENTS-VIRGINIA COVE & BOULDER CIRCLE

SHEET
C3.01

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HOWARDS POINT ROAD NE CURB RETURN @ LIP OF CURB

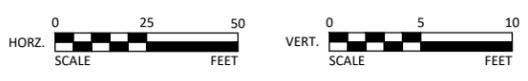


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LEGEND

- MILL & OVERLAY
- BITUMINOUS LEVEL COURSE
- REMOVE & REPLACE BITUMINOUS PAVEMENT
- FULL DEPTH BITUMINOUS PATCH
- REMOVE & REPLACE CONCRETE
- HYDROSEED W/ SEED MIX 25-151
- HYDROSEED W/ SEED MIX 25-131
- EROSION CONTROL BLANKET CAT 20 W/ SEED MIX 34-172
- CONSTRUCT CONCRETE CURB & GUTTER
- SAWCUT BITUMINOUS PAVEMENT (FULL DEPTH) (INCIDENTAL)
- CONSTRUCTION LIMITS
- ADJUST FRAME & RING CASTING
- ADJUST GATE VALVE BOX
- INLET PROTECTION
- SILT FENCE (HAND INSTALLED)
- CULVERT PROTECTION
- BIOROLL

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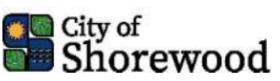


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THOMAS S. VIDMAR
 LIC. NO. 61498 DATE 03/21/2024



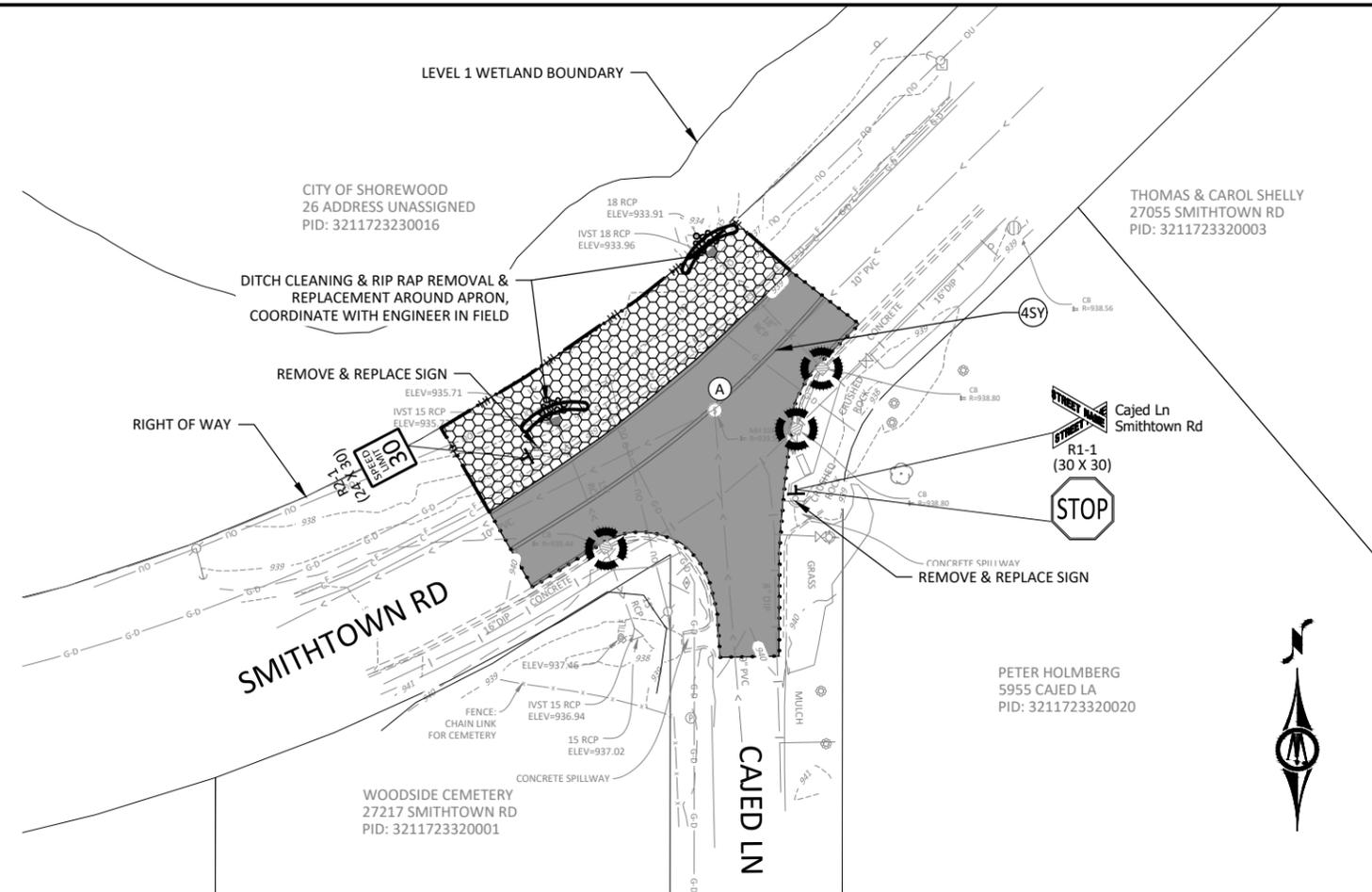
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CITY OF SHOREWOOD
 2024 MILL & OVERLAY & SMITHTOWN ROAD DRAINAGE IMPROVEMENTS
 DRAINAGE IMPROVEMENTS-HOWARDS POINT ROAD

SHEET
C3.02



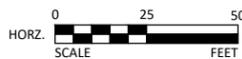
LEGEND

-  MILL & OVERLAY
-  BITUMINOUS LEVEL COURSE
-  REMOVE & REPLACE BITUMINOUS PAVEMENT
-  FULL DEPTH BITUMINOUS PATCH
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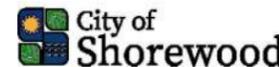


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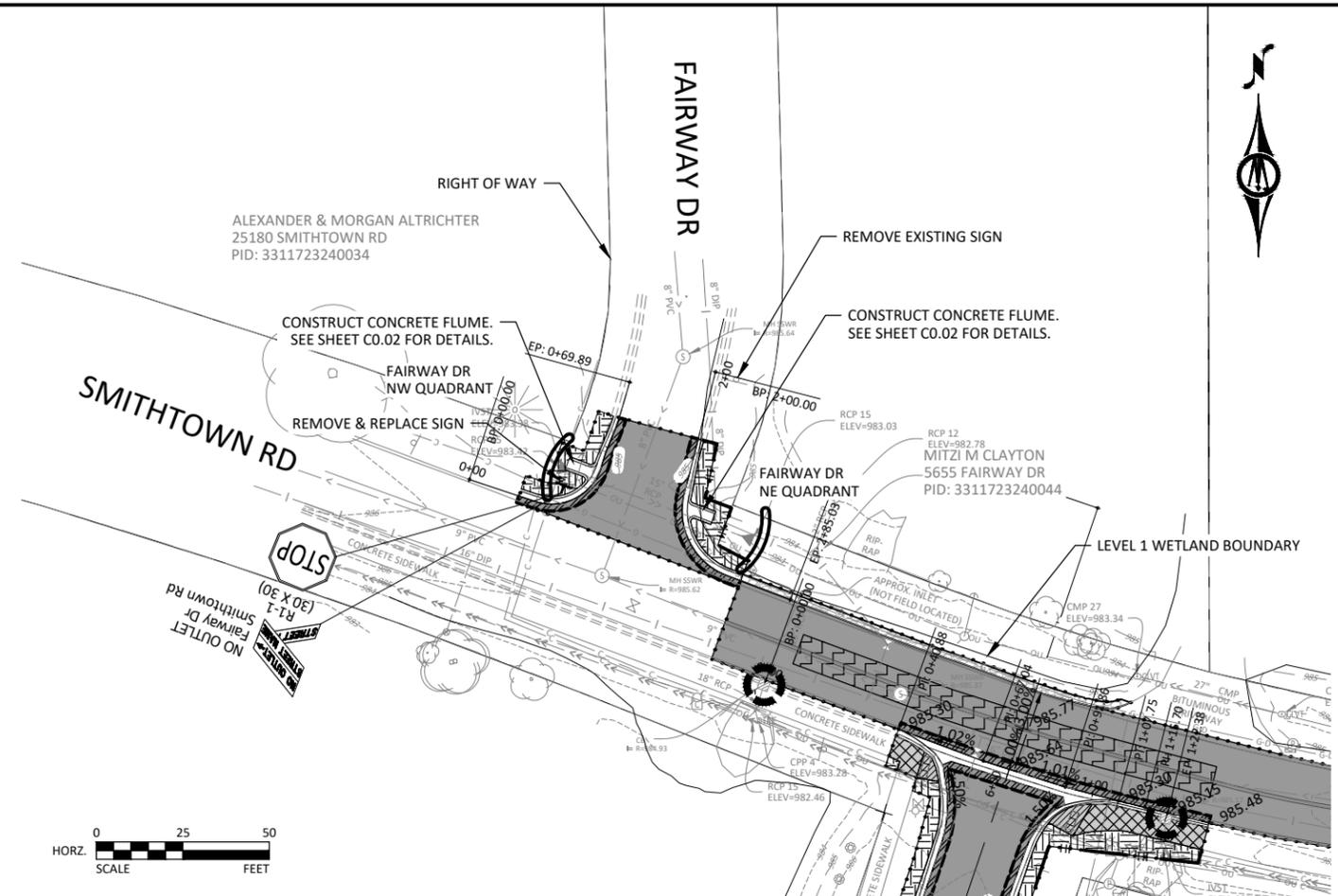


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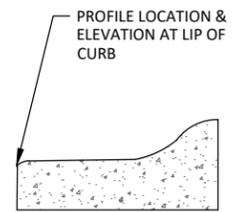
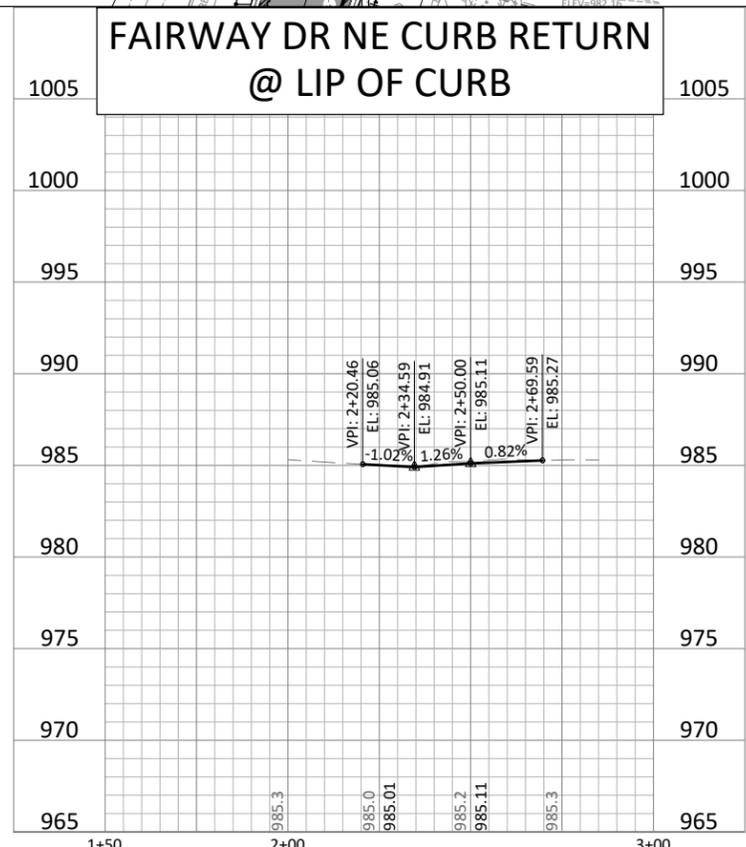
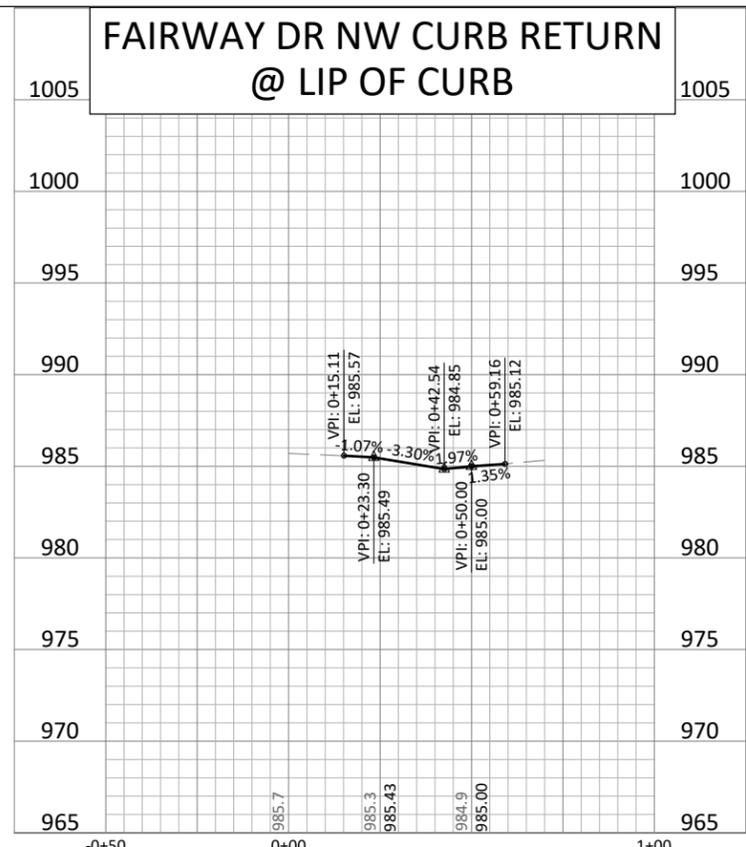
CITY OF SHOREWOOD
 2024 MILL & OVERLAY & SMITHTOWN ROAD DRAINAGE IMPROVEMENTS
 DRAINAGE IMPROVEMENTS-CAJED LANE

SHEET
C3.03

LEGEND	
	MILL & OVERLAY
	BITUMINOUS LEVEL COURSE
	REMOVE & REPLACE BITUMINOUS PAVEMENT
	FULL DEPTH BITUMINOUS PATCH
	REMOVE & REPLACE CONCRETE
	HYDROSEED W/ SEED MIX 25-151
	HYDROSEED W/ SEED MIX 25-131
	EROSION CONTROL BLANKET CAT 20 W/ SEED MIX 34-172
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	SAWCUT BITUMINOUS PAVEMENT (FULL DEPTH) (INCIDENTAL)
	CONSTRUCTION LIMITS
	ADJUST FRAME & RING CASTING
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	INLET PROTECTION
	SILT FENCE (HAND INSTALLED)
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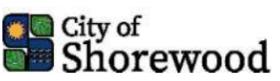


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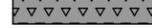
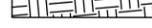
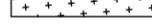
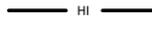


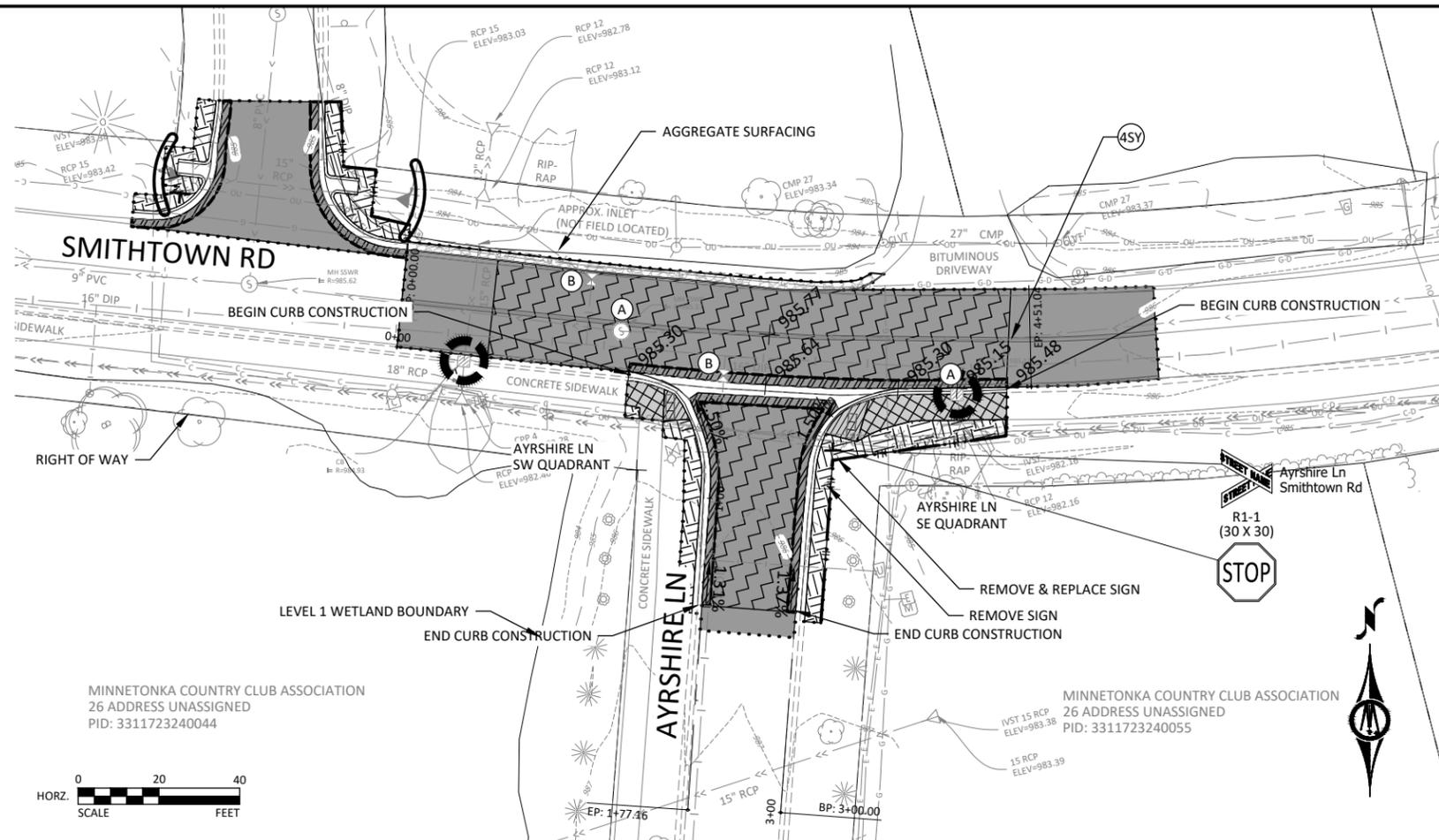
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 DRAINAGE IMPROVEMENTS-FAIRWAY DRIVE

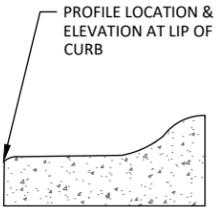
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LEGEND

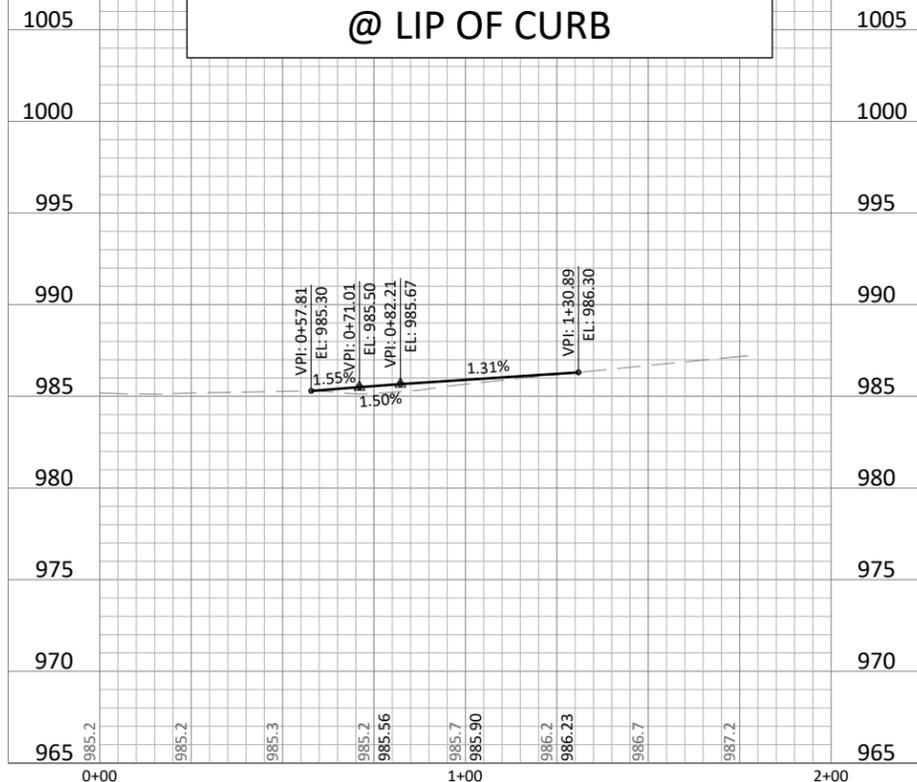
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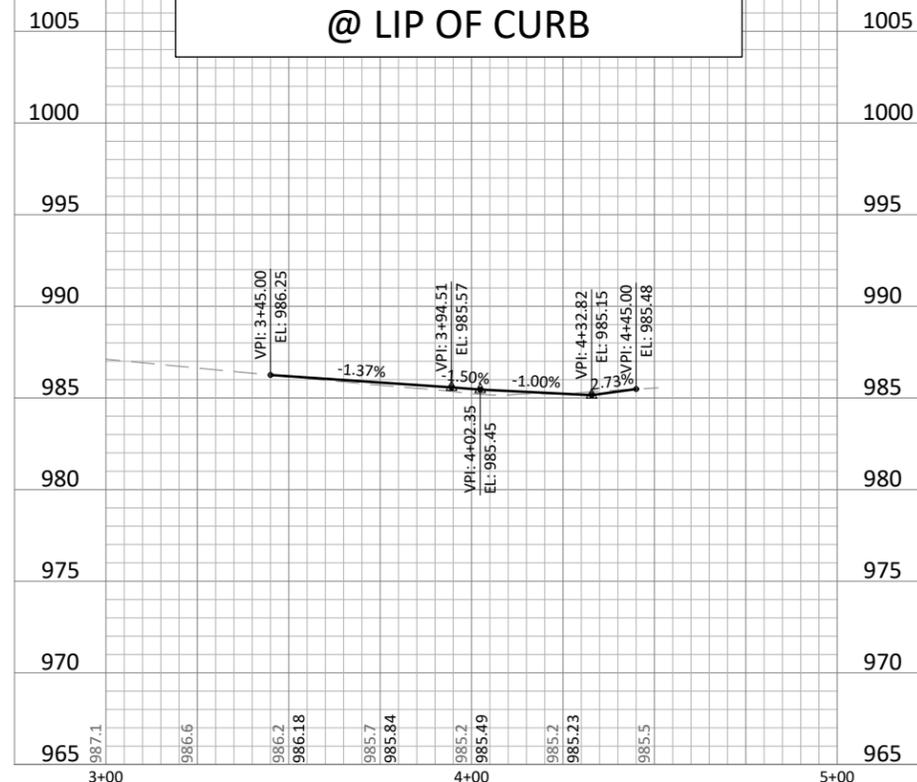
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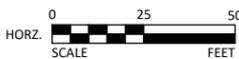
AYRSHIRE LN SW CURB RETURN @ LIP OF CURB



AYRSHIRE LN SE CURB RETURN @ LIP OF CURB



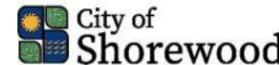
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THOMAS S. VIDMAR
 LIC. NO. 61498 DATE 03/21/2024



2638 SHADOW LANE, SUITE 200
 CHASKA, MN 55318
 Phone: (952) 448-8838
 Email: Chaska@bolton-menk.com
 www.bolton-menk.com

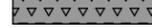
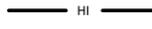


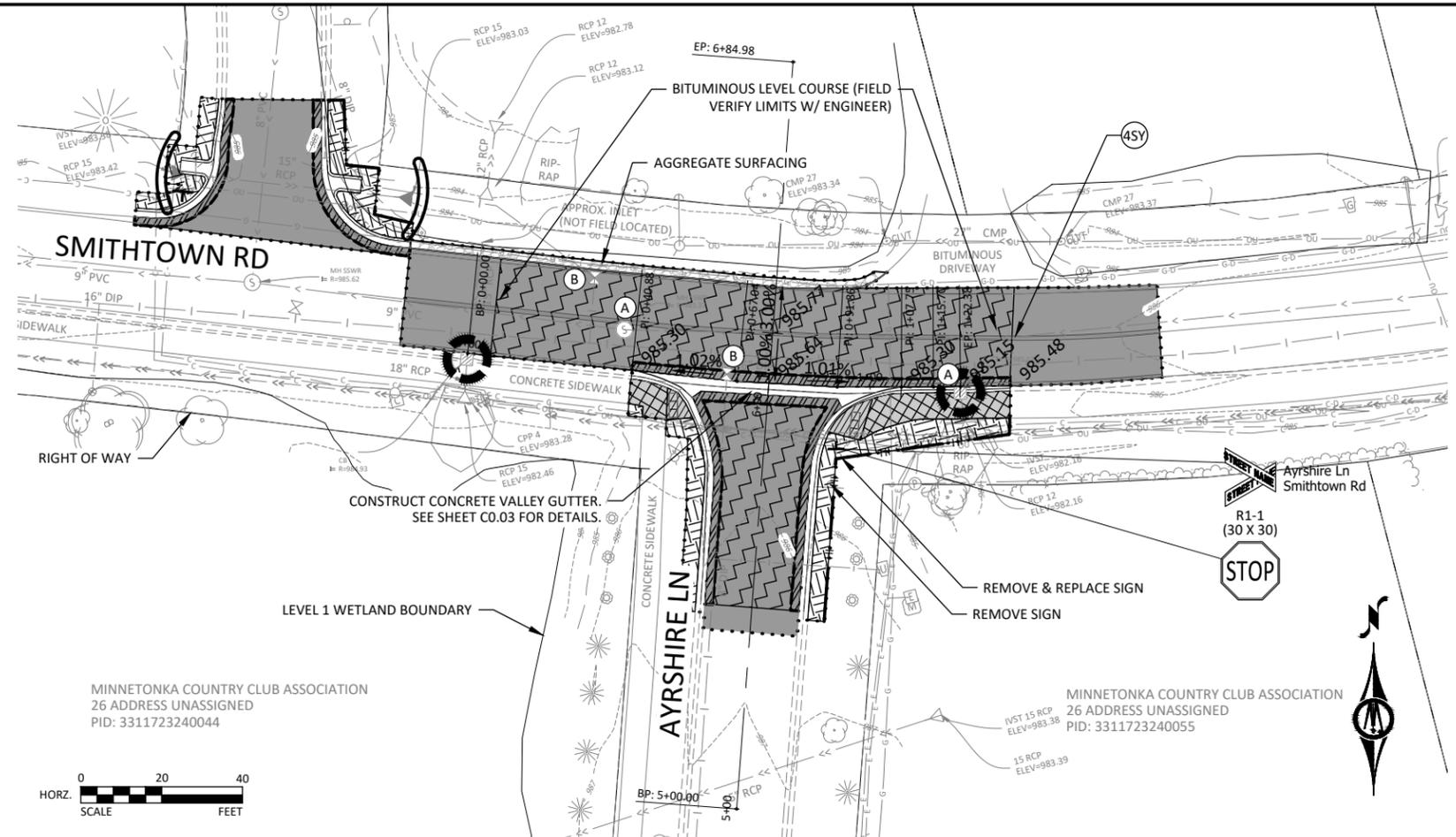
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CITY OF SHOREWOOD
 2024 MILL & OVERLAY & SMITHTOWN ROAD DRAINAGE IMPROVEMENTS
 DRAINAGE IMPROVEMENTS-AYRSHIRE LANE

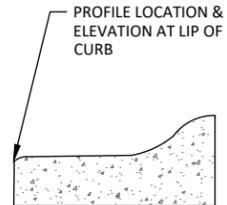
SHEET
C3.05

LEGEND

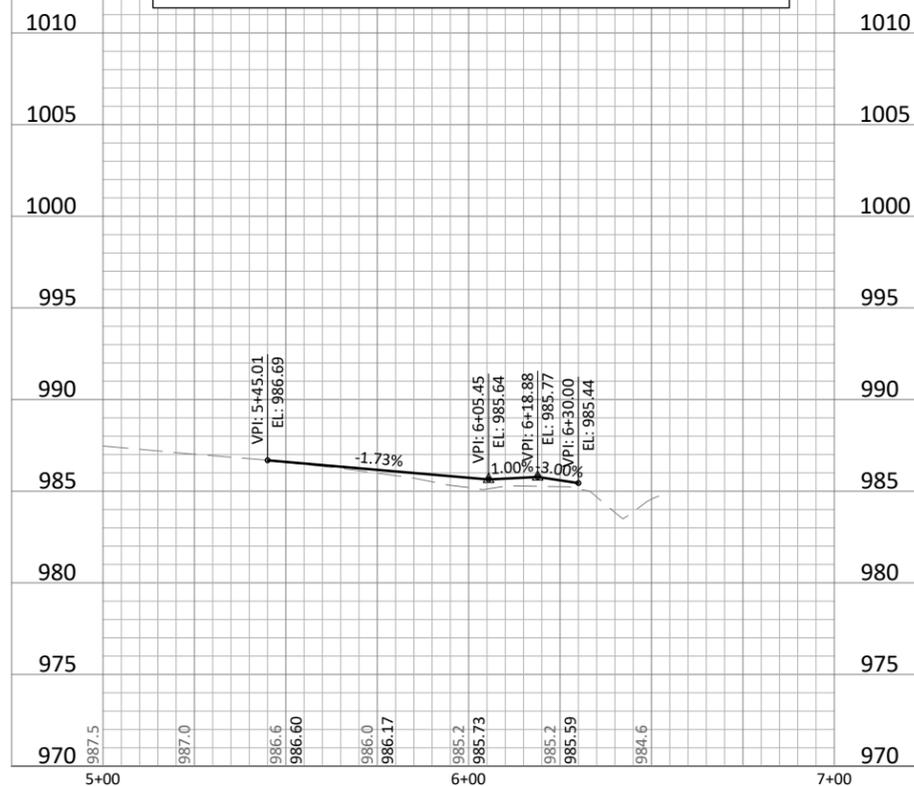
-  MILL & OVERLAY
-  BITUMINOUS LEVEL COURSE
-  REMOVE & REPLACE BITUMINOUS PAVEMENT
-  FULL DEPTH BITUMINOUS PATCH
-  REMOVE & REPLACE CONCRETE
-  HYDROSEED W/ SEED MIX 25-151
-  HYDROSEED W/ SEED MIX 25-131
-  EROSION CONTROL BLANKET CAT 20 W/ SEED MIX 34-172
-  CONSTRUCT CONCRETE CURB & GUTTER
-  SAWCUT BITUMINOUS PAVEMENT (FULL DEPTH) (INCIDENTAL)
-  CONSTRUCTION LIMITS
-  ADJUST FRAME & RING CASTING
-  ADJUST GATE VALVE BOX
-  INLET PROTECTION
-  SILT FENCE (HAND INSTALLED)
-  CULVERT PROTECTION
-  BIOROLL



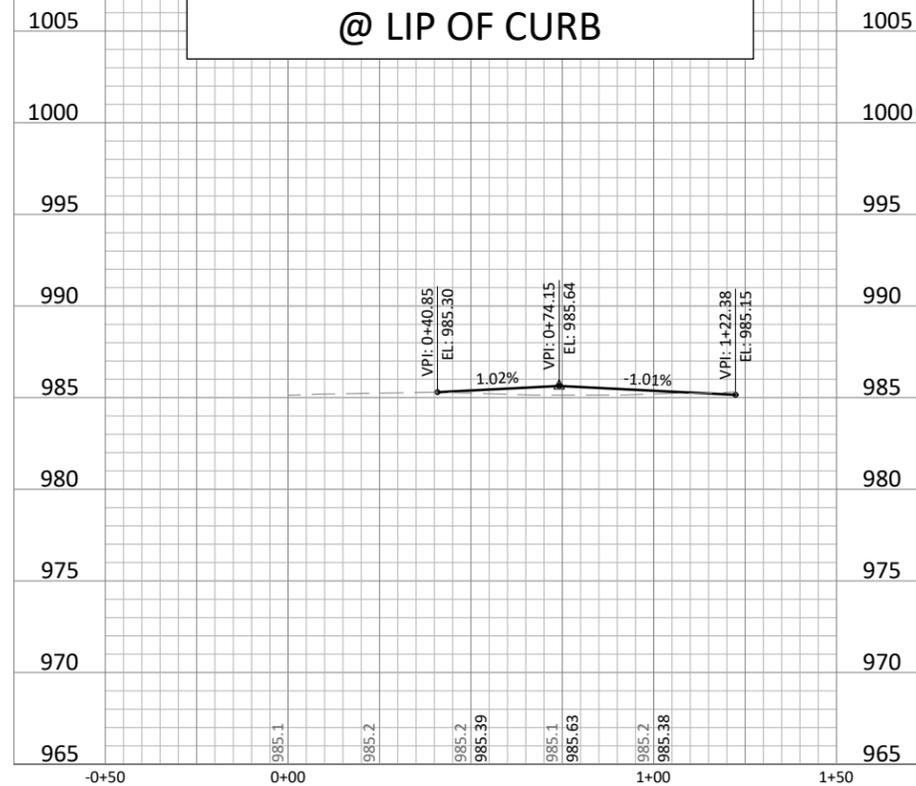
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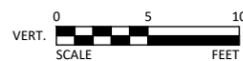
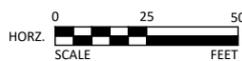
AYRSHIRE LN CENTERLINE PROFILE



AYRSHIRE LN VALLEY GUTTER @ LIP OF CURB



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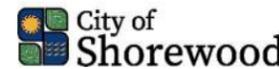


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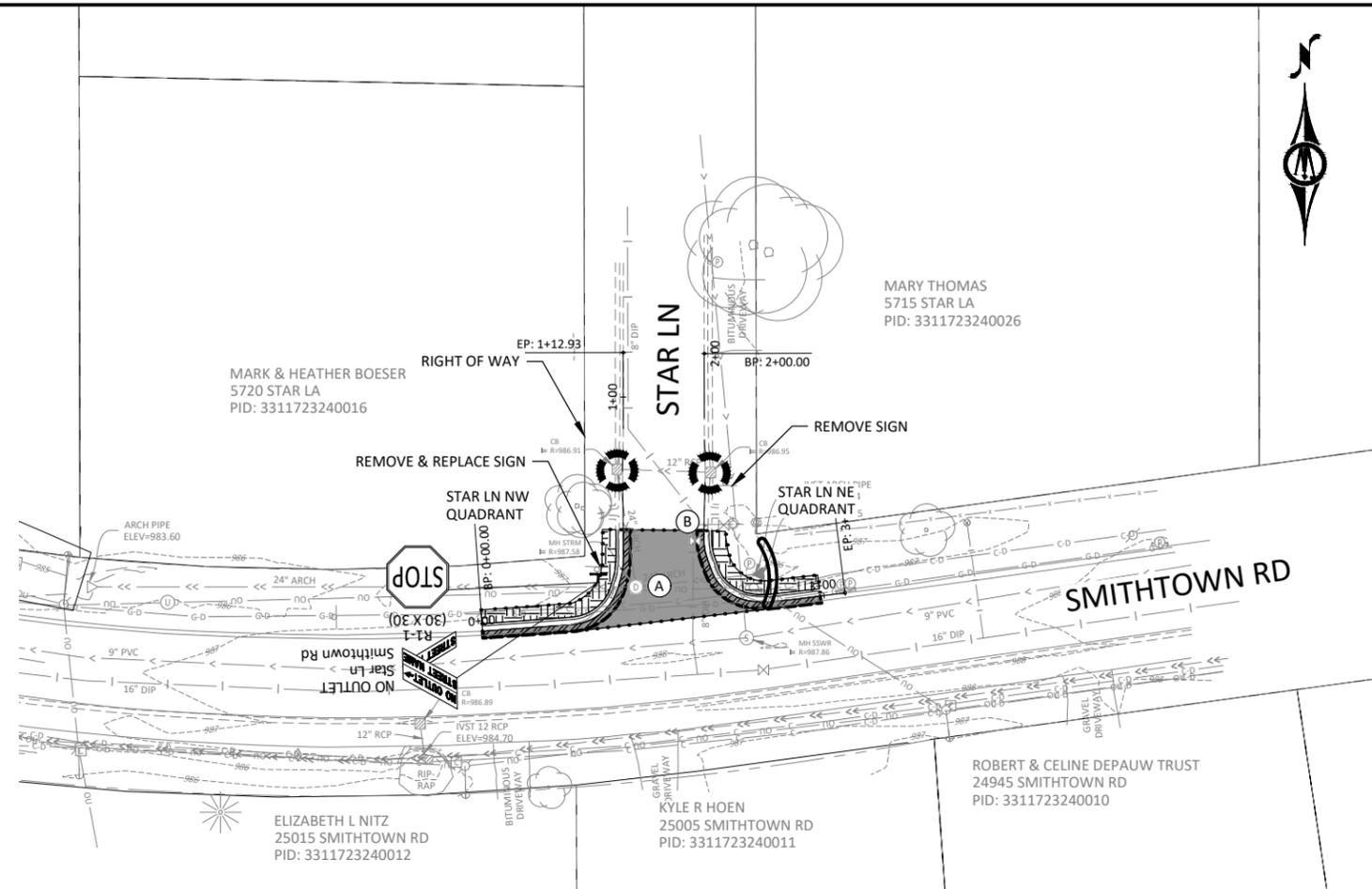


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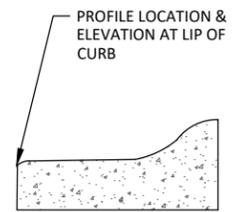
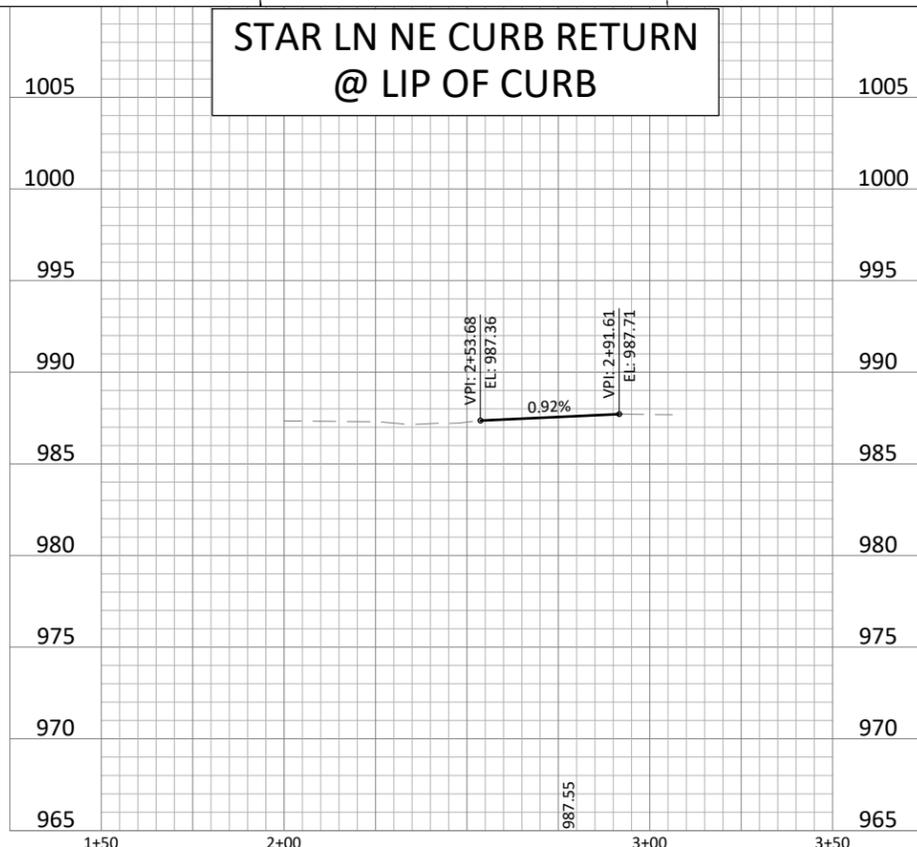
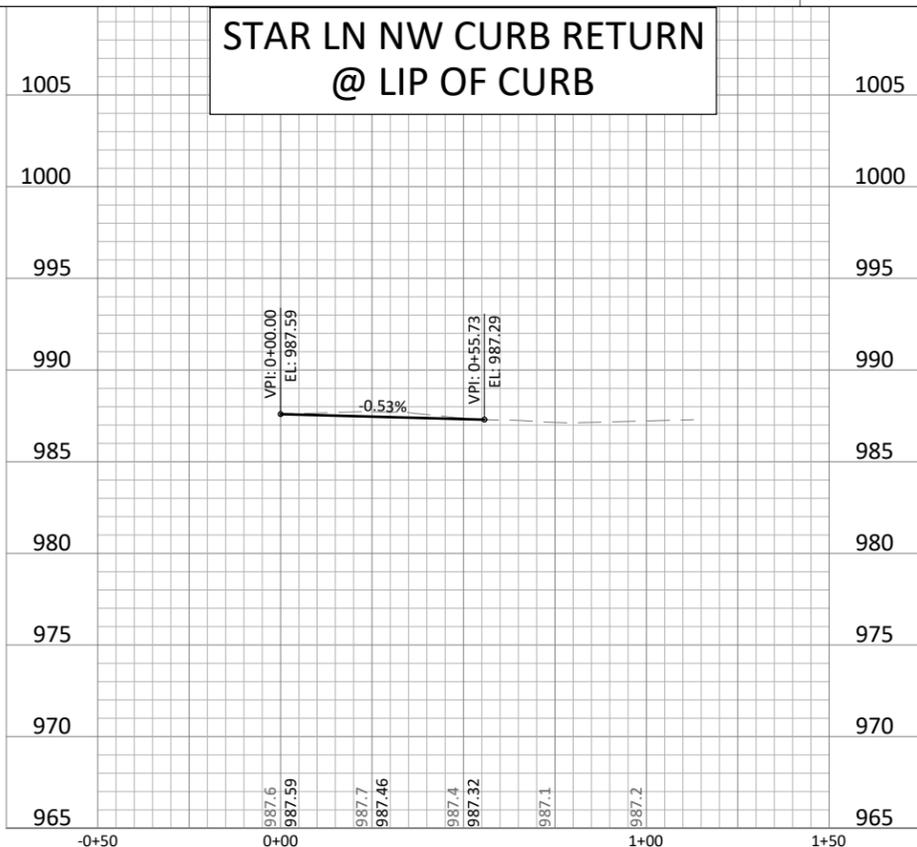
CITY OF SHOREWOOD
 2024 MILL & OVERLAY & SMITHTOWN ROAD DRAINAGE IMPROVEMENTS
 DRAINAGE IMPROVEMENTS-AYRSHIRE LANE

SHEET
C3.06

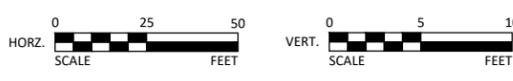
LEGEND	
	MILL & OVERLAY
	BITUMINOUS LEVEL COURSE
	REMOVE & REPLACE BITUMINOUS PAVEMENT
	FULL DEPTH BITUMINOUS PATCH
	REMOVE & REPLACE CONCRETE
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	SILT FENCE (HAND INSTALLED)
	CULVERT PROTECTION
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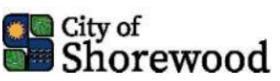
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THOMAS S. VIDMAR
 LIC. NO. 61498 DATE 03/21/2024



2638 SHADOW LANE, SUITE 200
 CHASKA, MN 55318
 Phone: (952) 448-8838
 Email: Chaska@bolton-menk.com
 www.bolton-menk.com

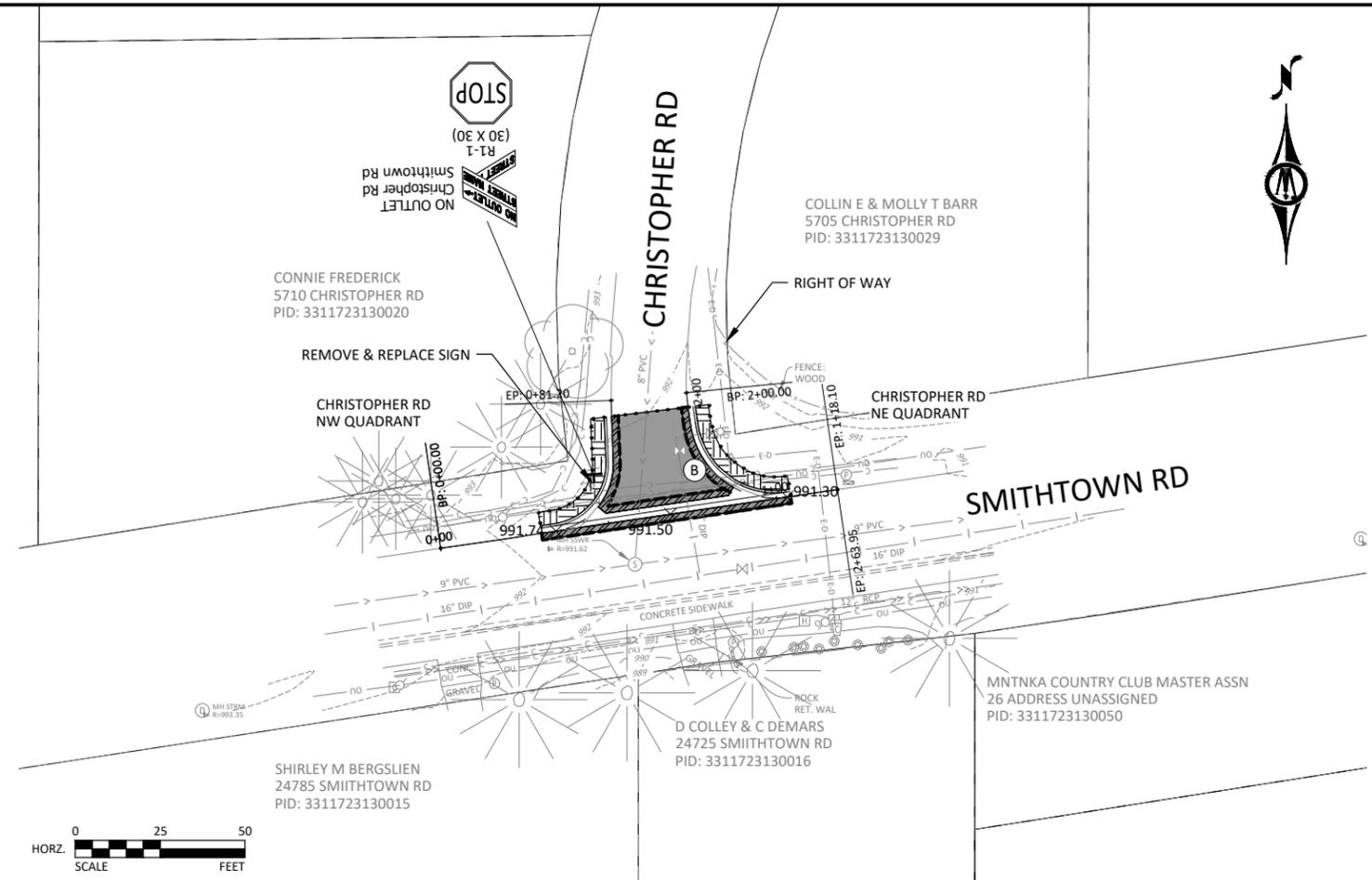


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CITY OF SHOREWOOD
 2024 MILL & OVERLAY & SMITHTOWN ROAD DRAINAGE IMPROVEMENTS
 DRAINAGE IMPROVEMENTS-STAR LANE

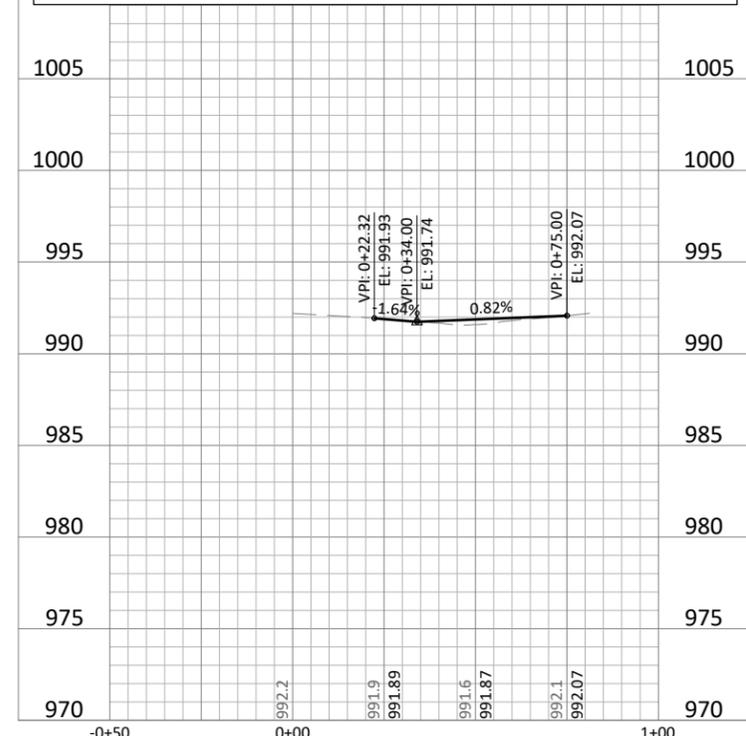
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LEGEND	
	MILL & OVERLAY
	BITUMINOUS LEVEL COURSE
	REMOVE & REPLACE BITUMINOUS PAVEMENT
	FULL DEPTH BITUMINOUS PATCH
	REMOVE & REPLACE CONCRETE
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	CULVERT PROTECTION
	BIOROLL

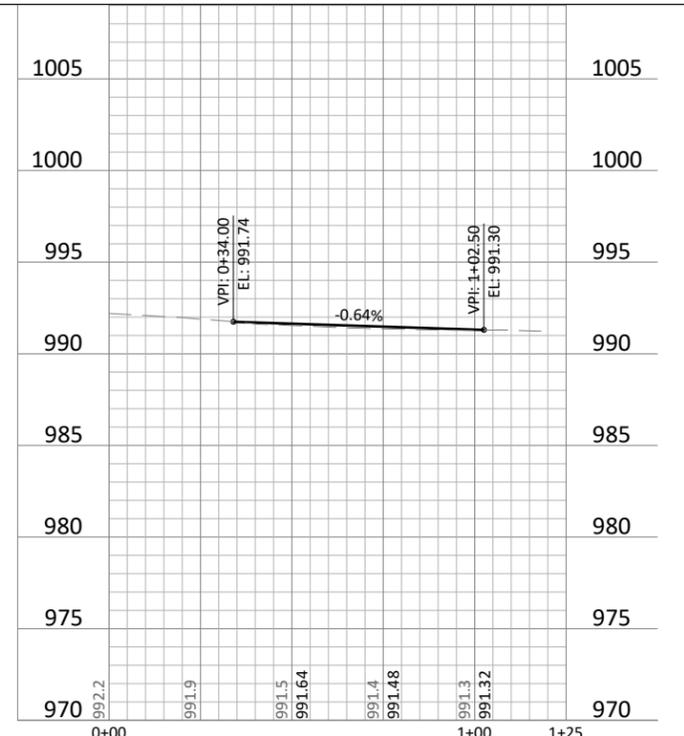


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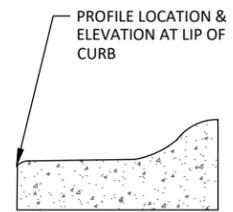
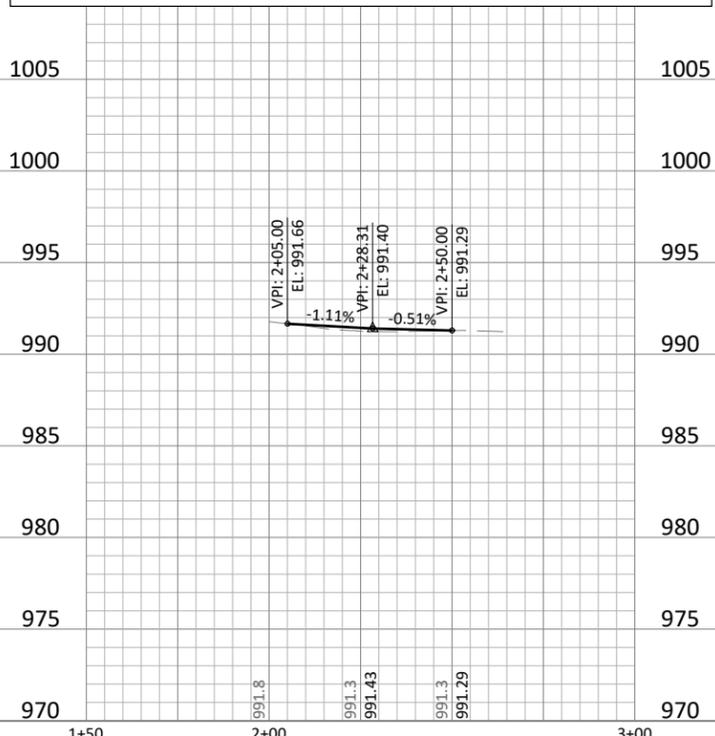
CHRISTOPHER RD NW CURB RETURN @ LIP OF CURB



CHRISTOPHER RD VALLEY GUTTER CURB RETURN @ LIP OF CURB



CHRISTOPHER RD NE CURB RETURN @ LIP OF CURB



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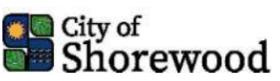


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THOMAS S. VIDMAR
 LIC. NO. 61498 DATE 03/21/2024



2638 SHADOW LANE, SUITE 200
 CHASKA, MN 55318
 Phone: (952) 448-8838
 Email: Chaska@bolton-menk.com
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CITY OF SHOREWOOD
 2024 MILL & OVERLAY & SMITHTOWN ROAD DRAINAGE IMPROVEMENTS
 DRAINAGE IMPROVEMENTS-CHRISTOPHER ROAD

SHEET
C3.08



VALLEYWOOD LN

EUREKA RD

EUREKA RD

NELSINE DR

RECONSTRUCT SANITARY MANHOLE

SEE SHEET C0.02 FOR BITUMINOUS PATCH DETAIL

SEE SHEET C0.02 FOR BITUMINOUS PATCH DETAIL

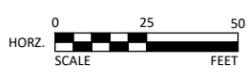
SEE NOTE 1

SEE NOTE 2

NOTES:

1. DEMOLISH COVER, FRAME, ADJUSTMENT RINGS AND CONE (24" OPENING). INSTALL NEW 2' TALL 60" DIAMETER BARREL, CONCRETE CONE WITH 27" OPENING, GATORWRAP, HDPE ADJUSTMENT RINGS, CASTING AND COVER.
2. DEMOLISH COVER, FRAME, ADJUSTMENT RING AND CONE (24" OPENING). INSTALL NEW CONCRETE CONE WITH 27" OPENING, GATORWRAP, NEW HDPE ADJUSTMENT RINGS, CASTING AND COVER.
3. FOR CONSTRUCTION DETAILS, SEE MCES DETAILS ON SHEETS C0.05 - C0.06.

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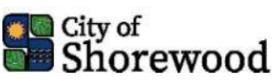


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CITY OF SHOREWOOD
 2024 MILL & OVERLAY & SMITHTOWN ROAD DRAINAGE IMPROVEMENTS
 MCES SANITARY SEWER - EUREKA ROAD

SHEET
 C4.01

CONSTRUCTION SIGNAGE LEGEND

1



2



- NOTES:**
1. ALL TRAFFIC CONTROL DEVICES SHALL BE IN PLACE PRIOR TO ANY CONSTRUCTION ACTIVITY BEING UNDERTAKEN.
 2. PRE-CONSTRUCTION WARNING DEVICES SHALL BE IN PLACE TWO WEEKS PRIOR TO CONSTRUCTION WORK ACTIVITIES BEGINNING.
 3. THE CONTRACTOR SHALL PROVIDE FLAGGING AND ADDITIONAL TEMPORARY TRAFFIC CONTROL DEVICES DEEMED NECESSARY BY THE ENGINEER (DEVICES AND/OR FLAGGING REQUIRED DURING DAYLIGHT OPERATIONS ONLY).
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 5. CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING & INSTALLING ADVANCED WARNING SIGNS W20-1 A MINIMUM OF 7 DAYS PRIOR TO CONSTRUCTION ACTIVITIES TAKING PLACE.

CITY OF TONKA BAY
CITY OF SHOREWOOD



G20-X1
(66 X 60)

UTILITY WORK AHEAD
SMITHTOWN ROAD
VIRGINIA COVE
TO
CHRISTOPHER ROAD
WORK BEGINS JUNE 3

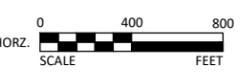
G20-X1
(66 X 60)

UTILITY WORK AHEAD
SMITHTOWN ROAD
VIRGINIA COVE
TO
CHRISTOPHER ROAD
WORK BEGINS JUNE 3

SEE SHEET C5.02

LAKE MINNETONKA

LAKE MINNEWASHTA

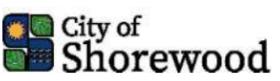


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CITY OF SHOREWOOD
2024 MILL & OVERLAY & SMITHTOWN ROAD DRAINAGE IMPROVEMENTS
TRAFFIC CONTROL PLAN

SHEET
C5.01

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CONSTRUCTION SIGNAGE LEGEND

1

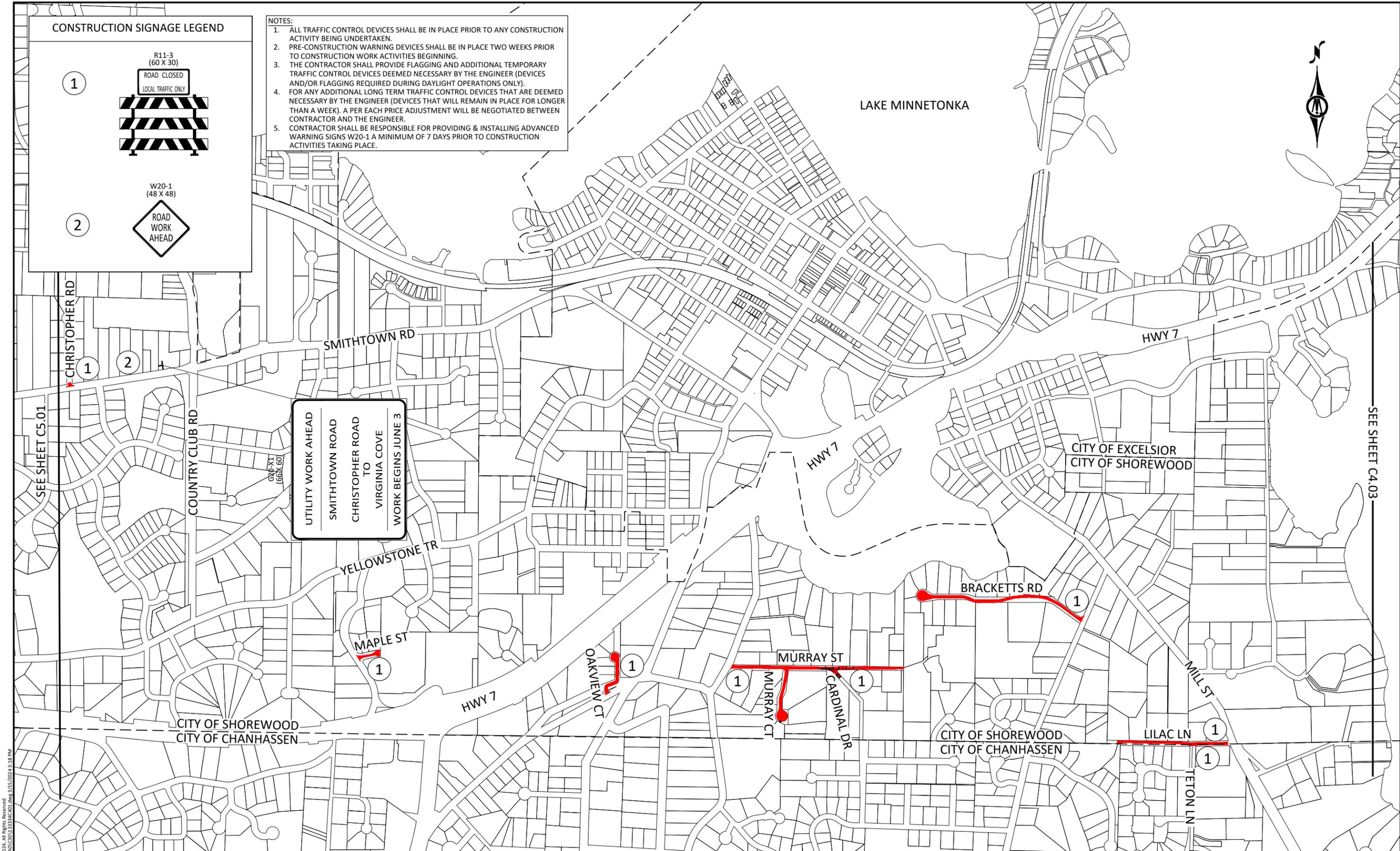


2



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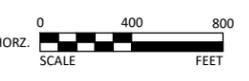
UTILITY WORK AHEAD
SMITHTOWN ROAD
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TO
VIRGINIA COVE
WORK BEGINS JUNE 3



SEE SHEET C5.01

SEE SHEET C4.03

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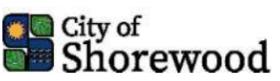


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CITY OF SHOREWOOD
2024 MILL & OVERLAY & SMITHTOWN ROAD DRAINAGE IMPROVEMENTS
TRAFFIC CONTROL PLAN

SHEET
C5.02

CONSTRUCTION SIGNAGE LEGEND

1



2



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2. PRE-CONSTRUCTION WARNING DEVICES SHALL BE IN PLACE TWO WEEKS PRIOR TO CONSTRUCTION WORK ACTIVITIES BEGINNING.
3. THE CONTRACTOR SHALL PROVIDE FLAGGING AND ADDITIONAL TEMPORARY TRAFFIC CONTROL DEVICES DEEMED NECESSARY BY THE ENGINEER (DEVICES AND/OR FLAGGING REQUIRED DURING DAYLIGHT OPERATIONS ONLY).
4. FOR ANY ADDITIONAL LONG TERM TRAFFIC CONTROL DEVICES THAT ARE DEEMED NECESSARY BY THE ENGINEER (DEVICES THAT WILL REMAIN IN PLACE FOR LONGER THAN A WEEK), A PER EACH PRICE ADJUSTMENT WILL BE NEGOTIATED BETWEEN CONTRACTOR AND THE ENGINEER.
5. CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING & INSTALLING ADVANCED WARNING SIGNS W20-1 A MINIMUM OF 7 DAYS PRIOR TO CONSTRUCTION ACTIVITIES TAKING PLACE.

SEE SHEET C5.02

CHRISTMAS LAKE

SILVER LAKE

CITY OF SHOREWOOD
CITY OF CHANHASSEN

VINE HILL RD
CITY OF SHOREWOOD
CITY OF MINNETONKA

COVINGTON RD

WHITNEY CR

NEAR MTN BLVD

CHESTNUT CT

CR 101

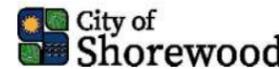
CR 101

HWY 7

TOWNLINER RD



2638 SHADOW LANE, SUITE 200
CHASKA, MN 55318
Phone: (952) 448-8838
Email: Chaska@bolton-menk.com
www.bolton-menk.com



I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT 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.
Thomas S. Vidmar
THOMAS S. VIDMAR
LIC. NO. 61498 DATE 03/21/2024

DESIGNED	NO.	ISSUED FOR	DATE
SRH/TSV			
DRAWN			
SCD/SRH			
CHECKED			
PJS			
CLIENT PROJ. NO.	OC1.133334		

CITY OF SHOREWOOD
2024 MILL & OVERLAY & SMITHTOWN ROAD DRAINAGE IMPROVEMENTS
TRAFFIC CONTROL PLAN

SHEET
C5.03

