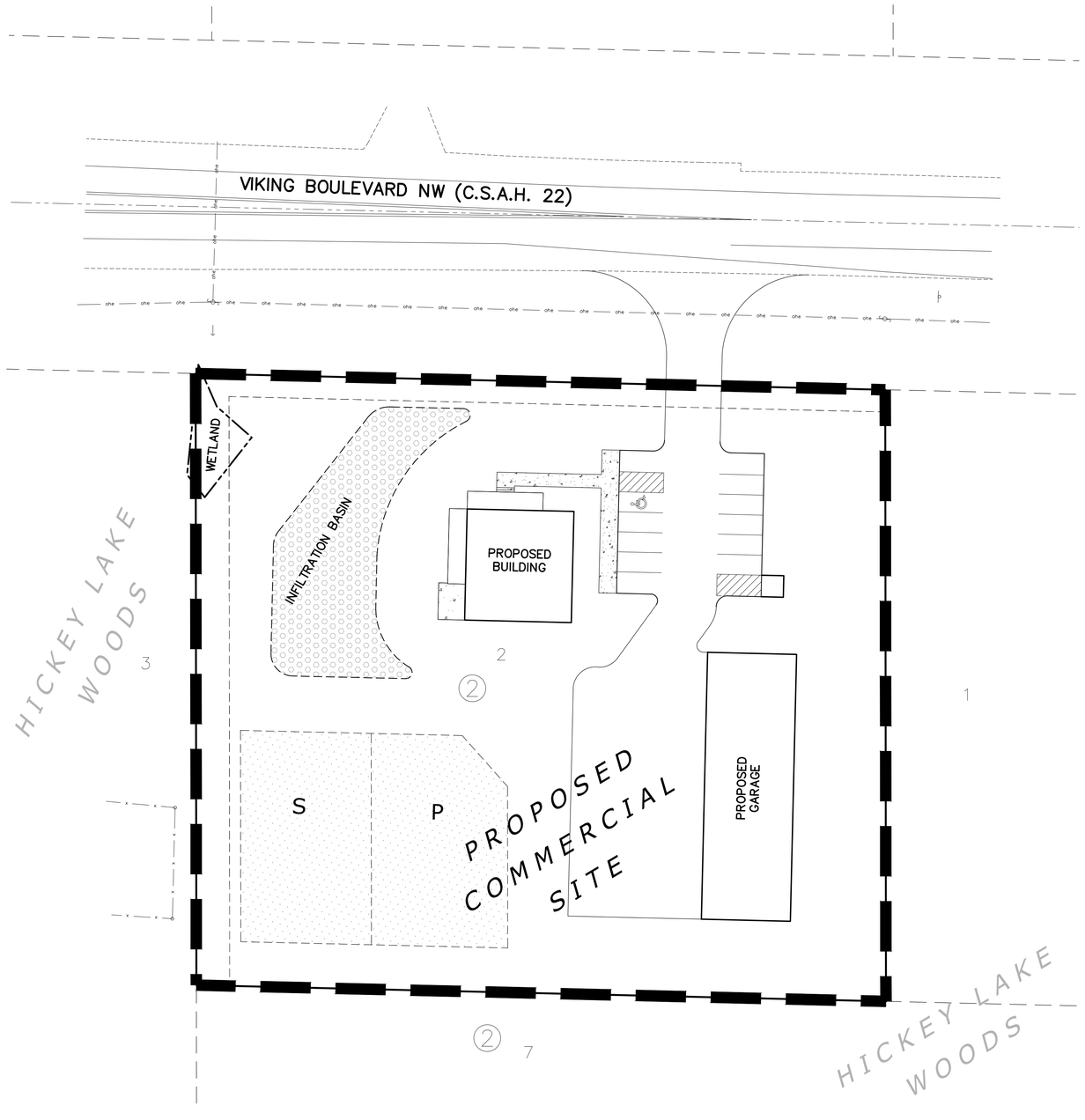
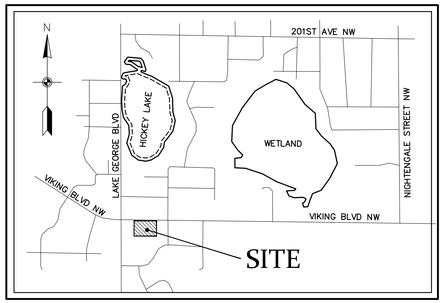
HICKEY LAKE WOODS
LOT 2 BLOCK 2
OAK GROVE, MINNESOTA



VICINITY MAP



NOT TO SCALE

SHEET INDEX

1. COVER
2. EXISTING CONDITIONS
3. SITE PLAN
4. UTILITY PLAN
5. GRADING & EROSION CONTROL PLAN

6–10. DETAILS

L1–L2. LANDSCAPE PLAN

S1. SWPPP

T1. TRAFFIC CONTROL PLAN

N

0 15 30 60

(IN FEET)

BENCHMARK

1. Anoka County Benchmark No. 3031 – Elevation = 905.81 ft. (NAVD88)
2. Anoka County Benchmark No. 3030 – Elevation = 895.28 ft. (NAVD88)

CALL BEFORE YOU DIG

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CARLSON ENGINEERING ENGINEERING SURVEYING PLANNING

3890 PHEASANT RIDGE DR NE
SUITE 100
BLAINE, MN 55449
TEL 763.489.7900
FAX 763.489.7959
CARLSON-ENGINEERING.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

Print Name: Aaron D. Briski, P.E.
Signature: Aaron Briski
Date: 6/26/26 License #: 57811

Drawn: GJS
Designed: ADB
Date: 6/26/26

Revisions:
1. 8/26/26 Add Septic Design (by others) and City & ACHD Comments
2. 9/15/26 per ACHD Comments
3. 10/01/26 per City & ACHD Comments, Landscape Plan Added
4. 10/07/26 ACHD Comment (Sheet T1)

HAVEN HOMES, LLC
18732 Poppy Street NW
Oak Grove, MN 55303

HICKEY LAKE WOODS
LOT 2 BLOCK 2
Oak Grove, Minnesota

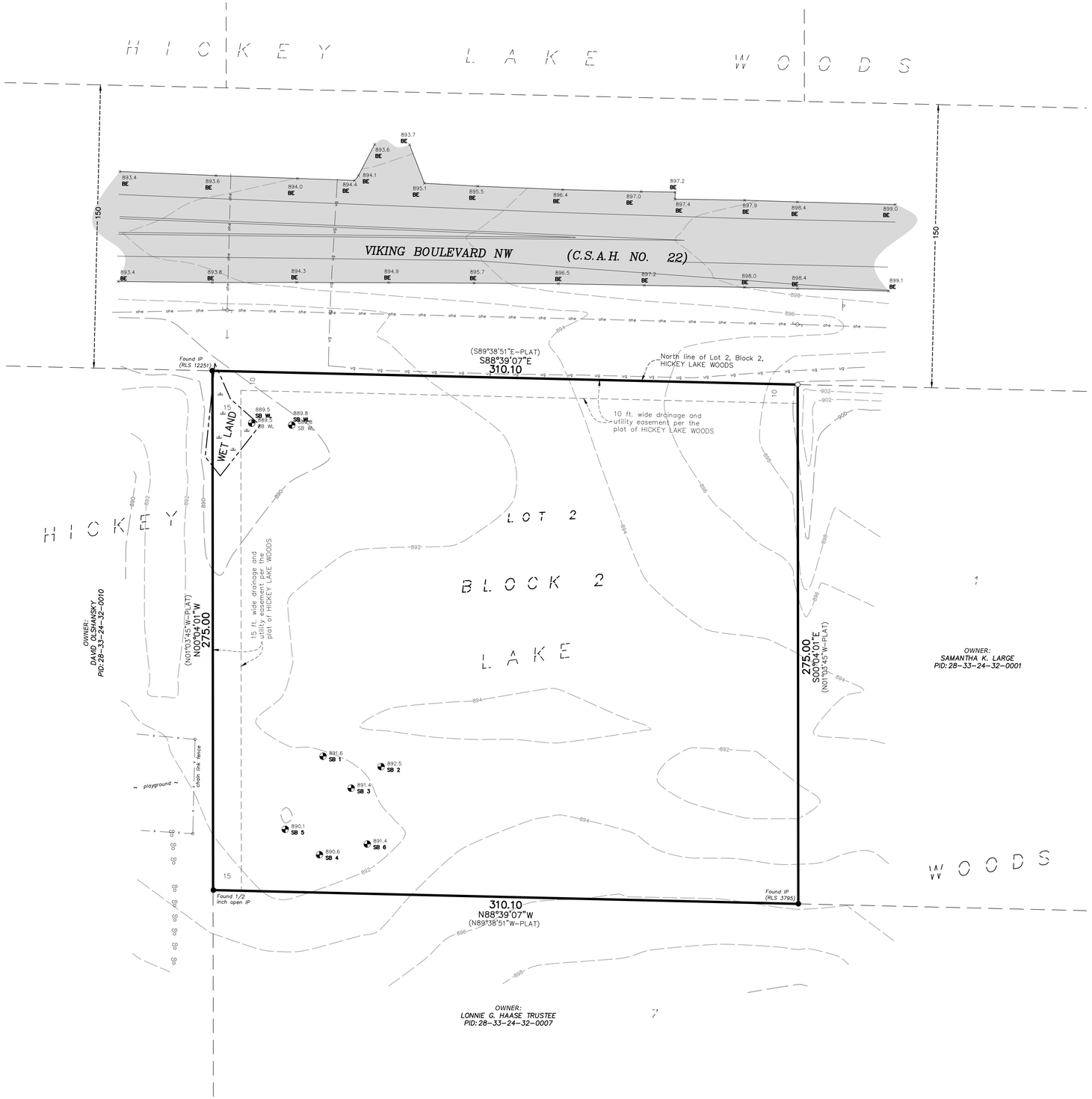
COVER

1 of 10

Save Date: 10/01/26 | F:\Jobs\11501 - 11520\11505 - hickey lake woods\cad c3d\engineering\plan set\11505_cover.dwg

#11505

REVIEW DRAFT



PARCEL DESCRIPTION: (Per Schedule A of Title Commitment File No. 260450252–1, Revision No. 3, with a commitment date of April 21, 2026 at 8:00 A.M., prepared by The Title Group, Inc. as issuing agent for Chicago Title Insurance Company)

Lot 2, Block 2, HICKEY LAKE WOODS, Anoka County, Minnesota

(abstract property)

GENERAL NOTES:

1) *Bearings shown hereon are based on the Anoka County Coordinate System, NAD 83, 96 Adjustment.*

2) *Surveyed property address: 3052 Viking Boulevard NW, Oak Grove, MN 55011.*

3) *Per FEMA Flood Insurance Rate Map Number 27003C0178E with an effective date of December 16, 2015, surveyed property is located in Zone X, areas of minimal flooding. Areas determined to be outside 500–year floodplain determined to be outside the 1% and 0.2% annual chance floodplains.*

4) *Surveyed property contains ±85,252 sq. ft. (±1.96 acres).*

5) *Above ground utilities have been field located as shown. Underground utilities shown hereon are those which were field marked by utility companies responding to Gopher State One Call, Ticket No. 261264072, dated 5/06/26 or were taken from utility plans provided by the City of Oak Grove. All underground locations shown hereon are APPROXIMATE. Prior to any excavations or digging, contact Gopher State One Call for an on–site location (651–454–0002). However, lacking excavation, the exact location of underground features cannot be accurately, completely, and reliably depicted. In addition, Gopher State One Call locate and other similar utility locate requests from surveyors may be ignored or result in an incomplete response. Where additional or more detailed information is required, the client is advised that excavation may be necessary.*

BENCHMARK

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LEGEND

- ● – Denotes Found Iron Monument, as noted
- ○ – Denotes 5/8 inch by 14 inch rebar marked with RLS 40361
- s – Denotes Miscellaneous Sign
- CO – Denotes Cleanout
- → – Denotes Guy Wire
- UP – Denotes Utility Pole
- TH – Denotes Soil Boring/Test Hole by others
- ug – Denotes Underground Gas
- ohe – Denotes Overhead Utility Line(s)
- x – Denotes Existing Fence as noted
- Denotes Bituminous Surface
- WL – Denotes Wetlands delineated by Widseth in 2026
- 900 – Denotes Existing 2 Ft. Contour

N

0 15 30 60

(SCALE IN FEET)

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BLAINE, MN 55449
TEL 763.489.7900
FAX 763.489.7959
CARLSON-ENGINEERING.COM

I hereby certify that this survey, plan or report was prepared by me or under my direct supervision and that I am a duly Licensed Land Surveyor under the laws of the State of Minnesota

Print Name: Thomas R. Balluff, L.S.
Signature: Thomas R. Balluff
Date: 6/26/26 License #: 40361

DRAWN BY: NJS
ISSUE DATE: 6/26/26
FILE NO: 3007

Revisions:

HAVEN HOMES, LLC
18732 Poppy Street NW
Oak Grove, MN 55303

Lot 2, Block 2, HICKEY LAKE WOODS
Oak Grove, Minnesota

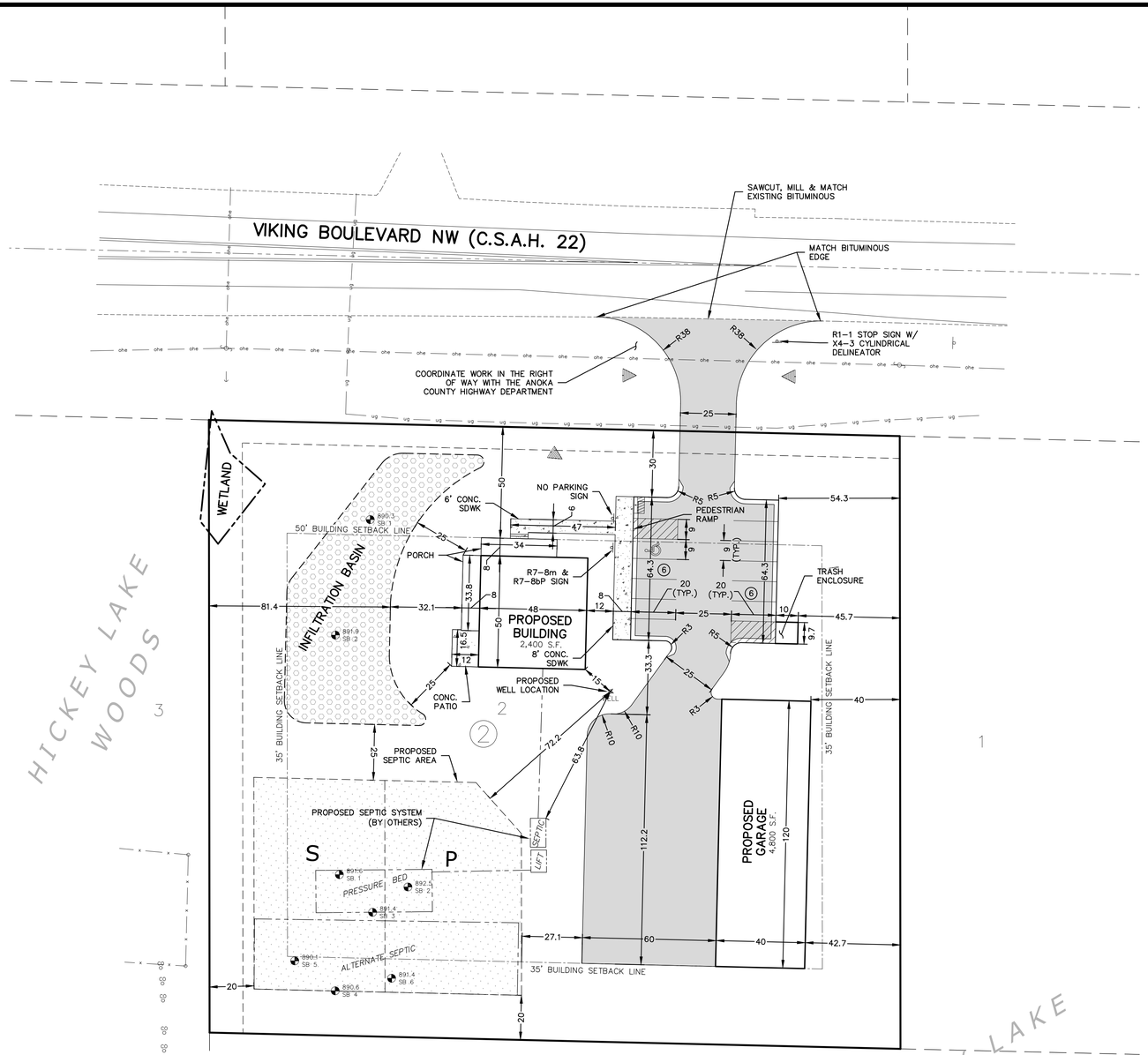
EXISTING CONDITIONS SURVEY

Save Date: 06/26/26 F:\jobs\11501 - 11520\11505 - hickey lake woods\cad c3d\survey\11505_excon.dwg

SIGN SCHEDULE			
SIGN	SIGN NO.	SIZE	QUANTITY
STOP	R1–1 (WHITE ON RED)	30" x 30"	1
PARKING VIOLATORS SUBJECT TO $200 FINE FOR VIOLATION	R7–8m (WHITE ON BLUE)	12" x 18"	1
VAN ACCESSIBLE	R7–8bP (WHITE ON BLUE)	12" x 6"	1
NO PARKING ACCESS AISLE	NO PARKING SIGN (WHITE ON BLUE)	12" x 18"	1
	X4–3 (BLACK ON WHITE)	9" HIGH 6" DIA. CYLINDER	1

SIGNING & STRIPING NOTES

1. PARKING LOT STRIPING SHALL BE 4" SOLID WHITE
2. ALL SIGNS SHALL BE PLACED 18" BEHIND CURB UNLESS OTHERWISE NOTED
3. ALL SIGNS SHALL MEET THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MMUTCD) FOR RETRO REFLECTIVITY AND INSTALLATION



PARKING ANALYSIS

REQUIRED

STANDARD STALLS	=	8 STALLS
TOTAL	=	8 STALLS

* 1 STALL PER 300 S.F. OF OFFICE BUILDING REQUIRED *

PROPOSED

STANDARD STALLS	=	11 STALLS
HANDICAP STALLS	=	1 STALLS
TOTAL	=	12 STALLS

SITE DATA

EXISTING ZONING:	PUBLIC/ INSTITUTIONAL
PROPOSED ZONING:	GENERAL BUSINESS
TOTAL AREA:	1.96 AC.
EXISTING IMPERVIOUS:	0.00 AC.
NEW IMPERVIOUS:	
BUILDING:	(2,400 S.F.) 0.06 AC.
GARAGE:	(4,800 S.F.) 0.11 AC.
PAVEMENT:	0.37 AC.
TOTAL IMPERVIOUS:	0.54 AC. (28%)

SETBACK REQUIREMENTS

	BUILDING SETBACK
FRONT	50' (ARTERIAL STREET)
REAR YARD	35' (RESIDENTIAL LOT LINE)
SIDE YARD	35' (RESIDENTIAL LOT LINE)
WETLAND	25'
SEPTIC	20'

* SETBACKS LISTED FOR PROPOSED GENERAL BUSINESS ZONING *

LEGEND

	EXISTING	PROPOSED
LIGHT POLE		
MISCELLANEOUS SIGN		
EXISTING SPOT ELEVATION	x0000.0	
EXISTING TREE		
TELEVISION BOX	TV	
ELECTRIC BOX	EB	
GAS METER	GAS	
ELECTRIC METER	E	
TELEPHONE BOX	TB	
UTILITY POLE	UTIL	
SOIL BORING/TEST HOLE	SB	
SANITARY MANHOLE	SAN	
SANITARY CLEANOUT		
FIRE HYDRANT	HYD	
GATE VALVE	GV	
SERVICE	SERV	
STORM CLEANOUT		
CATCH BASIN	or	or
STORM MANHOLE	STMH	
FLARED END SECTION	FES	
WATERMAIN		
SANITARY SEWER		
STORM SEWER		
PROPERTY LINE		
SETBACK LINE		
CURB		B612
WETLAND		
UNDERGROUND TELEPHONE	ut	ut
UNDERGROUND ELECTRIC	ue	ue
UNDERGROUND GAS	ug	ug
UNDERGROUND FIBEROPTIC	ufo	ufo
OVERHEAD ELECTRIC	ohe	ohe
FENCE	x	x
RETAINING WALL		
CONCRETE SURFACE		
BITUMINOUS SURFACE		
INFILTRATION BASIN		

SITE PLAN NOTES

1. ALL DIMENSIONS ARE TO BACK OF CURB UNLESS OTHERWISE NOTED.
2. ALL BUILDING DIMENSIONS ARE TO THE OUTSIDE FACE OF THE BUILDING UNLESS OTHERWISE NOTED.
3. ALL CURB AND GUTTER SHALL BE B612 UNLESS OTHERWISE NOTED.
4. TYPICAL PARKING STALLS ARE 9'x20' UNLESS OTHERWISE NOTED.
5. TYPICAL DRIVE LANES AS NOTED.
6. ALL PEDESTRIAN RAMPS SHALL MEET CURRENT ADA STANDARDS AND BE INSTALLED WITH CAST IRON TRUNCATED DOMES.
7. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO FIELD VERIFY THE LOCATIONS AND ELEVATIONS OF EXISTING UTILITIES PRIOR TO THE START OF SITE WORK. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY OF DISCREPANCIES AND/OR VARIATIONS FROM THE PLAN.
8. UNLESS OTHERWISE SHOWN ON THIS DRAWING, CONTRACTOR SHALL PROVIDE CONTROL JOINTS, CONSTRUCTION JOINTS AND EXPANSION JOINTS IN SLAB ON GRADE, SIDEWALKS AND DRIVES PER THE FOLLOWING REQUIREMENTS:

   CONTROL JOINT MAX. SPACING: WALKS–8' O.C.
   ALL OTHERS–10' O.C.

   SAW CUT CONTROL JOINTS MINIMUM ¼ CONCRETE THICKNESS.

   EXPANSION JOINTS MAX. SPACING: WALKS–24. O.C.
   *ALL OTHERS–40' O.C.

   *AT ALL POINTS WHERE A CHANGE IN PAVEMENT THICKNESS OCCURS AND/OR WHERE NEW PAVEMENT WILL MATCH EXISTING PAVEMENT, AN EXPANSION JOINT SHALL BE PROVIDED.

   DOWEL ALL EXPANSION JOINTS: 24" O.C. MAX.

9. ALL WORK WITHIN THE COUNTY R/W SHALL BE CONSTRUCTED USING THE 2025 MnDOT SPECIFICATIONS

0 15 30 60
(IN FEET)

BENCHMARK
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2. Anoka County Benchmark No. 3030 – Elevation = 895.28 ft. (NAVD88)

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Print Name: Aaron D. Briski, P.E.
Signature: Aaron Briski
Date: 6/26/26 License #: 57811

Drawn: GJS
Designed: ADB
Date: 6/26/26

Revisions:
1. 8/26/26 Add Septic Design (by others) and City & ACHD Comments
2. 9/15/26 per ACHD Comments
3. 10/01/26 per City & ACHD Comments, Landscape Plan Added

HAVEN HOMES, LLC
18732 Poppy Street NW
Oak Grove, MN 55303

HICKEY LAKE WOODS
LOT 2 BLOCK 2
Oak Grove, Minnesota

SITE PLAN

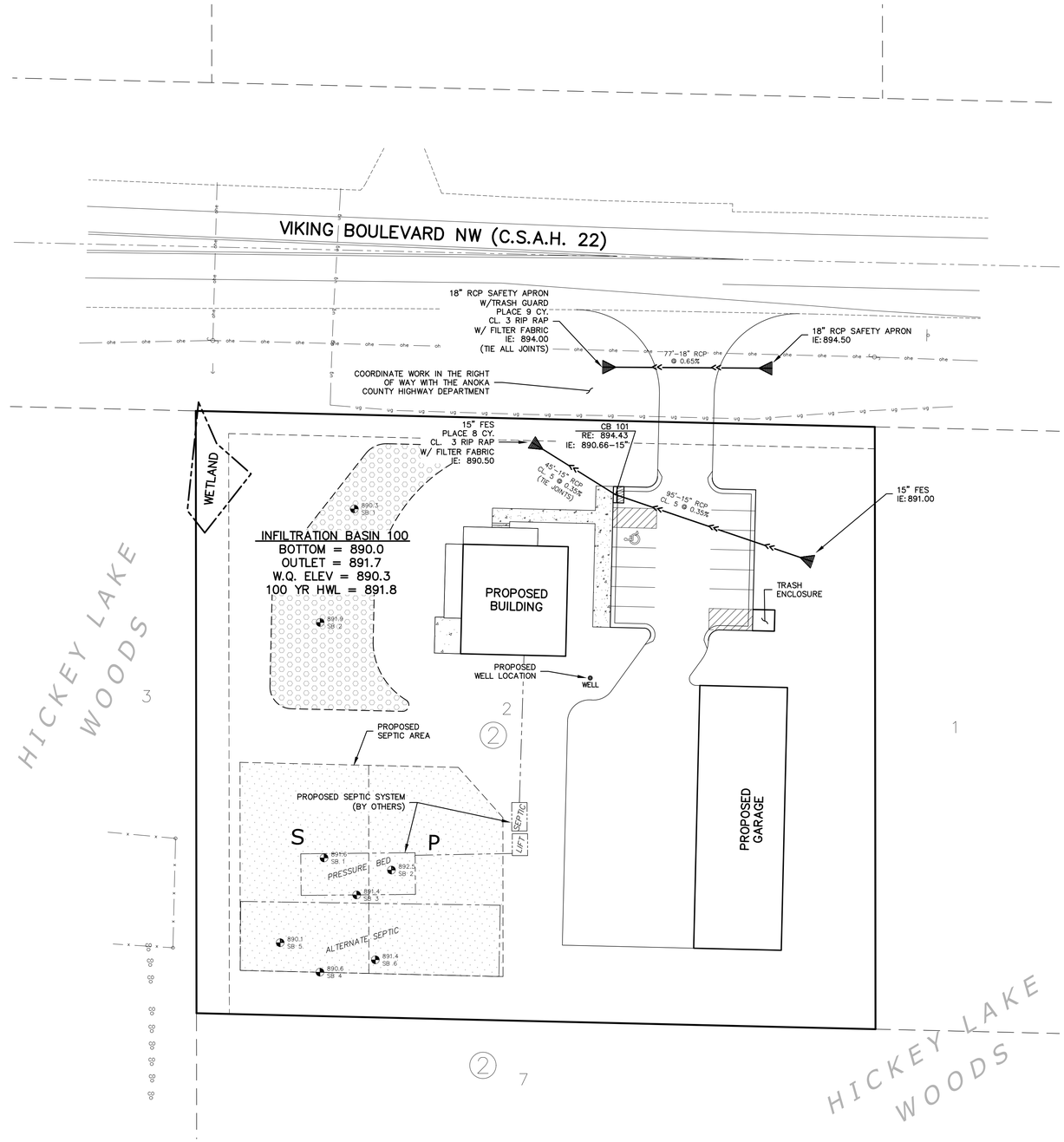
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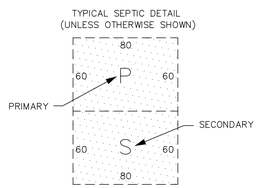
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STORM SEWER SCHEDULE		
STRUCTURE		NEENAH CASTING or EQUAL
TYPE & No.	SIZE	
CB–101	24"X36"	R–3067–VB

GENERAL NOTES:
1. INSTALL SEDIMENT CONTROL BARRIER INSERTS ON ALL CATCH BASINS (SEE DETAIL).



SEPTIC DETAIL



NOTE: PROPOSED SEPTIC SITE CORNERS TO BE MARKED WITH STEEL FENCE POSTS & RIBBONED OFF PRIOR TO CONSTRUCTION

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LEGEND

	EXISTING	PROPOSED
LIGHT POLE	☼	
MISCELLANEOUS SIGN	—o—	
EXISTING SPOT ELEVATION	x0000.0	
EXISTING TREE		
TELEVISION BOX	TV	
ELECTRIC BOX	EB	
GAS METER	GM	
ELECTRIC METER	EM	
TELEPHONE BOX	TB	
UTILITY POLE	UP	
SOIL BORING/TEST HOLE	SB	
SANITARY MANHOLE	SAN	●
SANITARY CLEANOUT	◎	◉
FIRE HYDRANT	HYD	
GATE VALVE	GV	⋈
SERVICE	SERV	
STORM CLEANOUT	◎	●
CATCH BASIN	or	or
STORM MANHOLE	STMH	●
FLARED END SECTION	FES	▲
WATERMAIN	—|—	—|—
SANITARY SEWER	—→—	—→—
STORM SEWER	—»—	—»—
PROPERTY LINE		
SETBACK LINE		
CURB		B612
WETLAND		
UNDERGROUND TELEPHONE	ut	
UNDERGROUND ELECTRIC	ue	
UNDERGROUND GAS	ug	
UNDERGROUND FIBEROPTIC	ufo	
OVERHEAD ELECTRIC	ohe	
FENCE	x	o
RETAINING WALL		
CONCRETE SURFACE		
BITUMINOUS SURFACE		

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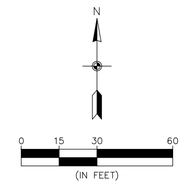
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2. 9/15/26 per ACHD Comments
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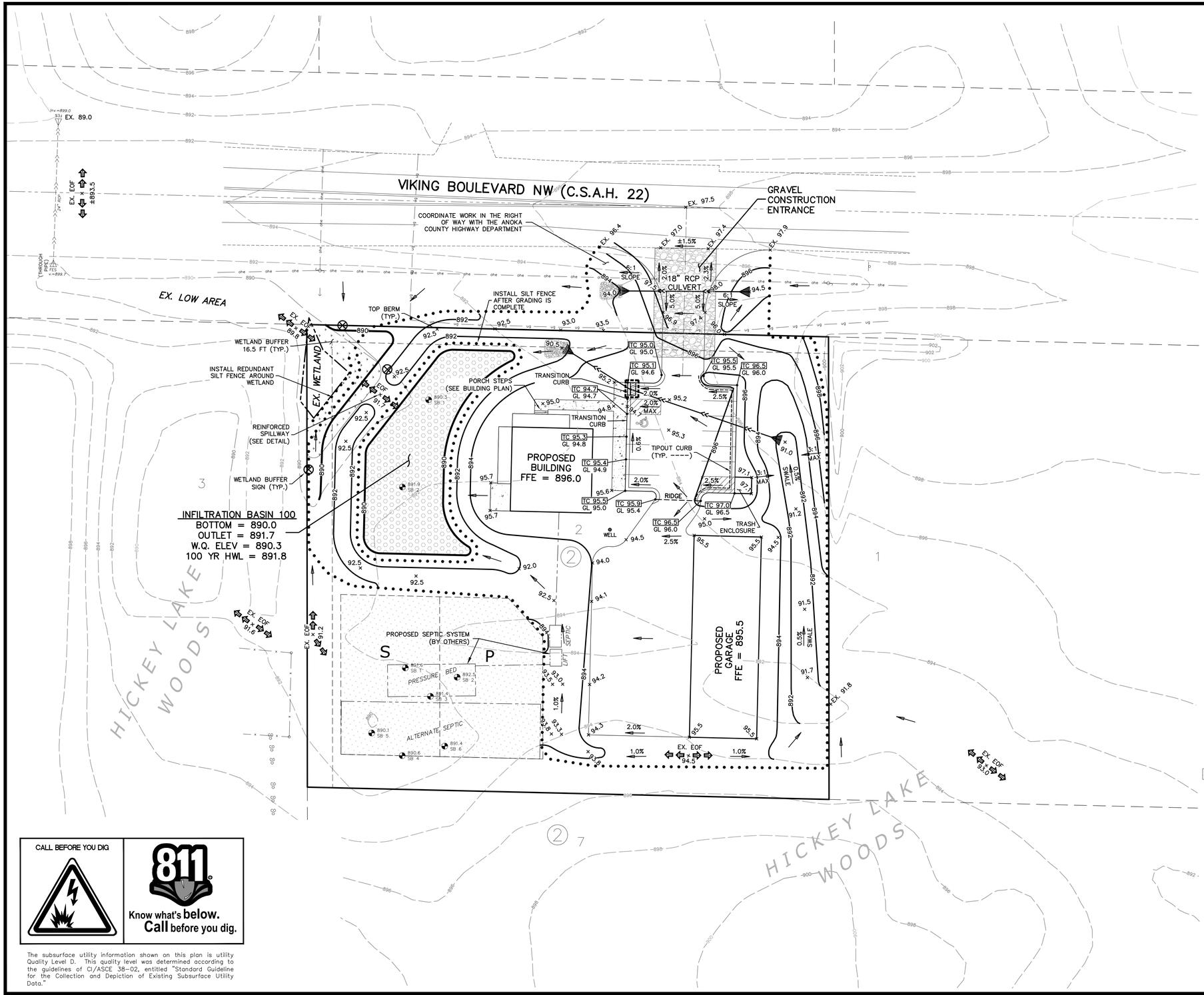
HICKEY LAKE WOODS
LOT 2 BLOCK 2
Oak Grove, Minnesota

UTILITY PLAN

4 of 10

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#11505



LEGEND

	EXISTING	PROPOSED
PROPERTY LINE		
EASEMENT LINE		
CURB LINE		B612 TIPOUT
BITUMINOUS		
CONCRETE		
SANITARY SEWER		
STORM SEWER		
DRAINTILE		DT
WATER MAIN		DENOTES INLET PROTECTION
OVERHEAD UTILITY		
STORM CATCH BASIN		
STORM MANHOLE		
FLARED END SECTION		
RIP RAP		
MANHOLE		
HYDRANT		
GATE VALVE		
TELEVISION BOX		
TELEPHONE BOX		
UTILITY POLE		
RETAINING WALL		
FENCE		
10' CONTOUR	890	890
2' CONTOUR	892	892
FEMA FLOODPLAIN	FP	
CCWD FLOODPLAIN		
WETLAND LINE		
SPOT ELEVATION	00.0	00.0
EMERGENCY OVERFLOW		E.O.F. 000.0
SILT FENCE		
TREE FENCE		
GRADING LIMITS		
TREELINE		
MAINTENANCE ACCESS		
WETLAND SIGN		
WELL		
LIGHT POLE		
FLAG POLE		
ELECTRIC BOX		
TELEPHONE BOX		
TELEVISION BOX		
SIGN		
GEOTECH SOIL BORING		SB6-1 SB-6
INFILTRATION BASIN		

NOTES

1. SITE IS LOCATED WITHIN THE BOUNDARIES OF THE UPPER RUM RIVER WATERSHED MANAGEMENT ORGANIZATION.
2. SOIL STOCKPILES SHALL BE FITTED BY SEDIMENT-TRAPPING MEASURES AND STABILIZED WITHIN 7 DAYS OF ROUGH GRADING OR INACTIVITY.
3. TO THE EXTENT POSSIBLE, THE RUNOFF OR VEHICLE TRACKING OF SEDIMENT (MUD) ONTO PAVED SURFACES SHALL BE MINIMIZED.
4. ANY REQUIRED STREET SWEEPING SHALL TAKE PLACE BY THE END OF DAY.
5. ALL TEMPORARY AND PERMANENT EROSION CONTROL AND SEDIMENT CONTROL DEVICES SHALL BE MAINTAINED AND/OR REPAIRED THROUGHOUT CONSTRUCTION.
6. WETLAND DELIATION WAS COMPLETED BY WIDSETH AND APPLICATION WAS SUBMITTED 5/15/26. NOA WAS SENT OUT 6/3/26.

WETLAND BUFFER SUMMARY

WETLAND BUFFER (16.5' MIN. WIDTH)	1,563 S.F.	
WETLAND BUFFER SIGN	(1,563 S.F. REQUIRED)	

WETLAND SUMMARY

THERE ARE NO WETLAND IMPACTS.

N

0 15 30 60
(IN FEET)

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Signature: Aaron Briski
Date: 6/26/26 License #: 57811

Drawn: GJS
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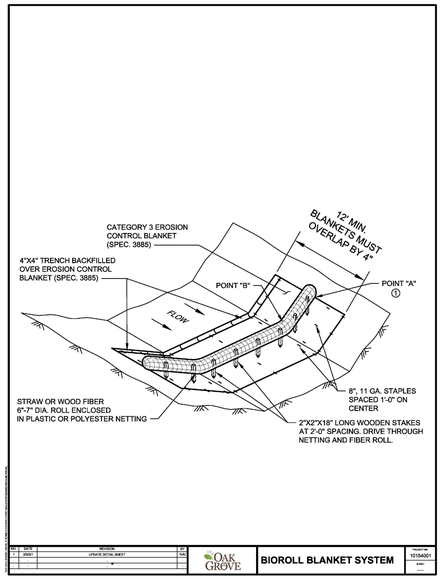
HICKEY LAKE WOODS
LOT 2 BLOCK 2
Oak Grove, Minnesota

GRADING & EROSION CONTROL PLAN

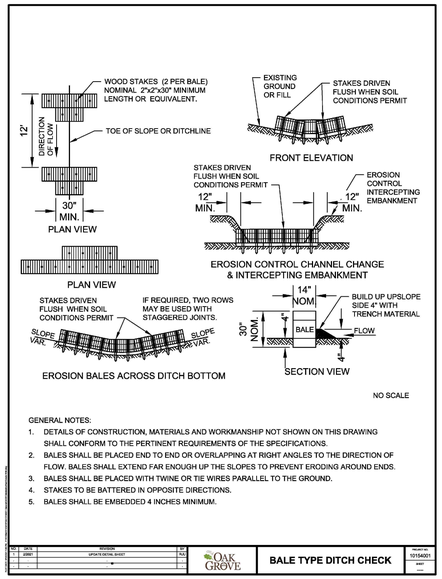
5 of 10

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Save Date: 10/01/26 | F:\Jobs\11501 - 11520\11505 - hickey lake woods\cad c3d\engineering\plan set\11505_grade.dwg



BIOROLL BLANKET SYSTEM

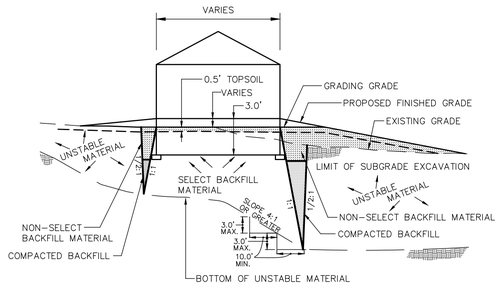


GENERAL NOTES:

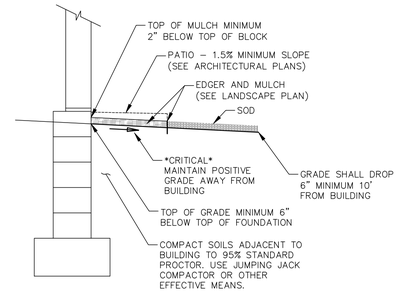
1. DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE SPECIFICATIONS.
2. BALES SHALL BE PLACED END TO END OR OVERLAPPING AT RIGHT ANGLES TO THE DIRECTION OF FLOW. BALES SHALL EXTEND FAR ENOUGH UP THE SLOPES TO PREVENT ERODING AROUND ENDS.
3. BALES SHALL BE PLACED WITH TWINE OR TIE WIRES PARALLEL TO THE GROUND.
4. STAKES TO BE BATTERED IN OPPOSITE DIRECTIONS.
5. BALES SHALL BE EMBEDDED 4 INCHES MINIMUM.

BALE TYPE DITCH CHECK

SUBGRADE CORRECTION



TYPICAL GRADING AT BUILDING



Boring Number	Boring Elevation	Boring Depth	Bottom Boring Elevation	Groundwater Depth	Groundwater Elevation
B1	891.6	5.0	886.6	N/A	N/A
B2	892.5	5.0	887.5	N/A	N/A
B3	891.4	5.0	886.4	N/A	N/A
B4	890.6	4.0	886.6	N/A	N/A
B5	890.1	4.0	886.1	N/A	N/A
B6	891.4	4.0	887.4	N/A	N/A
TP1	890.0	10.0	880.0	9.0	881.0
TP2	892.0	10.0	882.0	8.0	884.0

TURF ESTABLISHMENT

TURF ESTABLISHMENT SHALL APPLY TO ALL DISTURBED AREAS AND SHALL BE ACCORDING TO MnDOT STANDARD SPECIFICATIONS FOR CONSTRUCTION (LATEST EDITION) EXCEPT AS MODIFIED BELOW.

TURF ESTABLISHMENT SHALL OCCUR AS SOON AS POSSIBLE BUT IN NO CASE MORE THAN 7 DAYS.

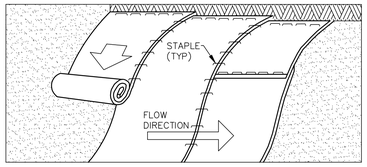
SEED: MnDOT MIXTURE 35–221 AT 75 POUNDS PER ACR & RYE GRASS AT 20 POUNDS PER ACR.

DORMANT SEED: SHALL BE APPLIED AT TWICE THE NORMAL RATE AFTER NOVEMBER 1ST.

MULCH: TYPE 1 AT 2 TONS PER ACRE (DISK ANCHORED).

FERTILIZER: TYPE 24–12–24 AT 300 POUNDS PER ACRE.

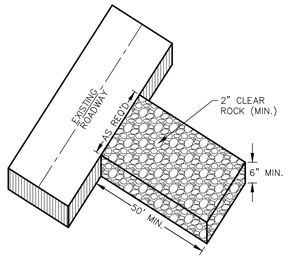
EROSION CONTROL BLANKET



NOTES:

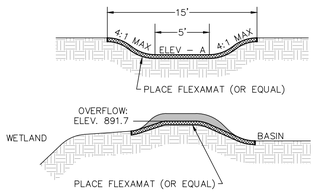
1. PREPARE SOIL BEFORE INSTALLING BLANKETS, INCLUDING APPLICATION OF LIME, FERTILIZER AND/OR SEED.
2. BEGIN AT THE TOP OF THE SLOPE (OR CHANNEL) BY ANCHORING THE BLANKET IN A 6" DEEP X 6" WIDE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING.
3. ROLL THE BLANKETS DOWN (STARTING DOWNSTREAM PROCEEDING UPSTREAM) HORIZONTALLY ACROSS THE SLOPE.
4. THE EDGES OF PARALLEL BLANKETS MUST BE STAPLED WITH A MINIMUM 4" OVERLAP.
5. WHEN BLANKETS MUST BE SPLICED DOWN THE SLOPE, PLACE BLANKETS END OVER END (SHINGLE STYLE) WITH MINIMUM 6" OVERLAP. USE A DOUBLE ROW OF STAGGERED STAPLES 4" APART TO SECURE BLANKETS.
6. IN HIGH FLOW CHANNEL APPLICATIONS, A STAPLE CHECK SLOT IS RECOMMENDED AT 30 TO 40 FOOT INTERVALS. USE A ROW OF STAPLES 4" APART OVER ENTIRE WIDTH OF THE CHANNEL. PLACE A SECOND ROW 4" BELOW THE FIRST ROW IN A STAGGERED PATTERN.
7. THE TERMINAL ENDS OF THE BLANKETS MUST BE ANCHORED IN A 6" DEEP X 6" WIDE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING.

ROCK CONSTRUCTION ENTRANCE

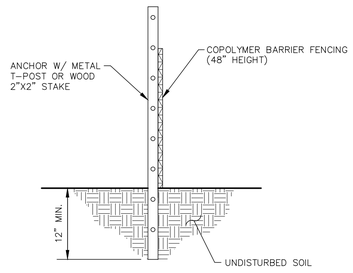


BASIN OVERFLOW

(NOT TO SCALE)



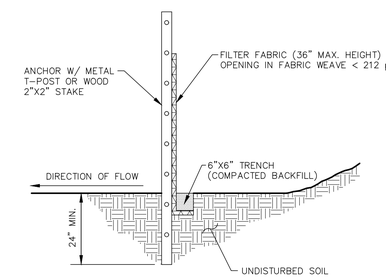
TREE FENCE



NOTES:

1. TREE FENCING SHALL BE PLACED A MINIMUM OF 1 FOOT PER CALIPER INCH OF TREE DIAMETER FROM TREE(S) THAT IS/ARE TO BE SAVED.
2. ANCHOR POST MAY BE SPACED UP TO 10 FEET APART.
3. SECURELY ATTACH TREE FENCE TO ANCHOR POSTS W/ MINIMUM OF TWO ATTACHMENTS PER POST.
4. SEE MNDOT SPECIFICATION 2572.

SILT FENCE



NOTES:

1. DIG A 6"X6" TRENCH ALONG THE INTENDED SILT FENCE LINE.
2. DRIVE ALL ANCHOR POSTS INTO THE GROUND AT THE DOWNHILL SIDE OF THE TRENCH.
3. POSTS SHALL BE SPACED A MAXIMUM OF 6 FEET APART.
4. LAY OUT SILT FENCE ALONG THE UPHILL SIDE OF THE ANCHOR POSTS AND BACK FILL 6"X6" TRENCH.
5. SECURELY ATTACH SILT FENCE TO ANCHOR POSTS W/ MINIMUM OF THREE ATTACHMENTS PER POST.
6. SEE MNDOT SPECIFICATIONS 2573 & 3886.

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CARLSON-ENGINEERING.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

Print Name: Aaron D. Briski, P.E.
Signature: Aaron Briski
Date: 6/26/26 License #: 57811

Drawn: GJS
Designed: ADB
Date: 6/26/26

Revisions:
1. 8/26/26 Add Septic Design (by others) and City & ACHD Comments
2. 9/15/26 per ACHD Comments
3. 10/01/26 per City & ACHD Comments, Landscape Plan Added

HAVEN HOMES, LLC
18732 Poppy Street NW
Oak Grove, MN 55303

HICKEY LAKE WOODS
LOT 2 BLOCK 2
Oak Grove, Minnesota

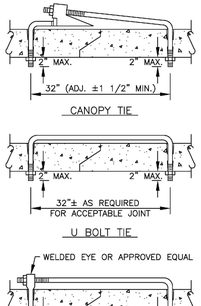
DETAILS

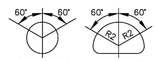
6 of 10

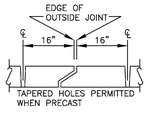
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#11505

PIPE SIZE	THREAD DIAMETER
12 15 18 21 24 27	5/8" ROLLED THREADS (SEE NOTE 4)
30 33 36 42 48 54 60 66	3/4" CUT OR ROLLED
72 78 84 90 96 102 108 120 132	1" CUT OR ROLLED







PLACEMENT OF HOLES

NOTE:
1. HOLES SHALL BE CAST–IN OR DRILLED 16" FROM OUTSIDE EDGE OF JOINT.
2. NUTS AND WASHERS ARE NOT REQUIRED ON INSIDE OF PIPE WITH 27" DIAMETER OR LESS.
3. TIES ARE NOT REQUIRED FOR BELL PIPE 24" AND SMALLER. ON OTHER SIZES, TIE MAY BE INSERTED FROM INSIDE.
4. CUT THREADS MAY BE USED IF WASHER AND NUT ARE USED.
5. PIPE SIZES LISTED ARE INSIDE DIAMETER OF ROUND PIPE OR EQUIVALENT DIAMETER OF PIPE ARCH.

NO.	DATE	REVISION	BY
1	2/2021	UPDATE DETAIL SHEET	NJG
2			
3			

OAK GROVE

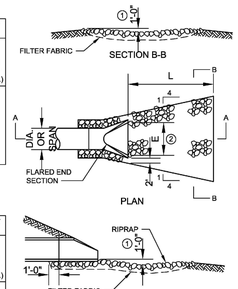
CONCRETE PIPE JOINT TIES — PROJECT NO. 10154001 — SHEET —

TABLE OF QUANTITIES
RIPRAP AT RCP OUTLETS

DIA. OF ROUND PIPE (IN.)	L (FT.)	CLASS II d50=6" 12" DEPTH RIPRAP (CU.YDS.)	CLASS III d50=9" 18" DEPTH RIPRAP (CU.YDS.)	CLASS IV d50=12" 24" DEPTH RIPRAP (CU.YDS.)
18	10	3.9	5.9	7.8
21	10	4.2	6.3	8.4
24	12	5.5	8.3	11.0
27	12	5.8	8.7	11.6
30	14	7.3	10.9	14.5
36	16	9.2	13.8	18.3
42	18	10.9	16.3	21.7
48	20	12.9	19.4	25.8

TABLE OF QUANTITIES
RIPRAP AT RCP-A OUTLETS
OR BOXES OF EQUIVALENT SPAN WIDTH

SPAN OF PIPE ARCH (IN.)	L (FT.)	CLASS II d50=6" 12" DEPTH RIPRAP (CU.YDS.)	CLASS III d50=9" 18" DEPTH RIPRAP (CU.YDS.)	CLASS IV d50=12" 24" DEPTH RIPRAP (CU.YDS.)
22	10	3.9	5.9	7.8
28	12	5.5	8.2	10.9
36	14	7.2	10.8	14.3
43	16	9.2	13.7	18.3
51	18	10.9	16.3	21.7
58	20	12.7	19.0	25.4



NOTES:

PLACE RIPRAP AT CULVERT OUTLETS GREATER THAN 18-INCHES

PIPE SIZES LARGER THAN THOSE SHOWN REQUIRE A SPECIAL DESIGN.

REQUIREMENTS FOR RIPRAP SIZE AND THICKNESS AND FILTER BLANKET WILL BE DESIGNATED IN THE PLANS.

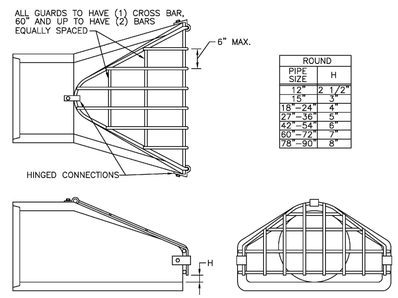
① FOR PIPES GREATER THAN OR EQUAL TO 30" USE 1.5'.

② DIMENSION E IS GIVEN ON STANDARD PLATES 3100 AND 3110.

NO.	DATE	REVISION	BY
1	2/2021	UPDATE DETAIL SHEET	NJG
2			
3			

OAK GROVE

RIPRAP INSTALLATION — PROJECT NO. 10154001 — SHEET —



ROUND PIPE SIZE	H
12"	2 1/2"
15"	3"
18"–24"	4"
27"–36"	5"
42"–54"	6"
60"–72"	7"
78"–90"	8"

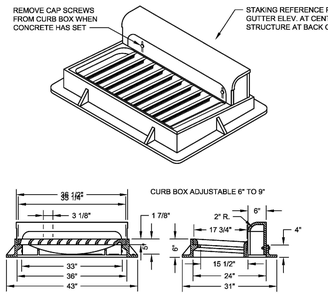
BAR SIZES							
STANDARD DESIGN				HEAVY DESIGN			
PIPE SIZE	HOLE DIA. REQ'D	BOLT DIA.	BAR SIZE	PIPE SIZE	HOLE DIA. REQ'D	BOLT DIA.	BAR SIZE
12"–24"	3/4"	5/8"	3/8"	12"–18"	3/4"	5/8"	3/4"
27"–48"	7/8"	3/4"	3/4"	21"–42"	7/8"	3/4"	1"
54"–90"	1 1/8"	1"	1"	48"–90"	1 1/8"	1"	1 1/4"
BOLT LENGTH = PIPE WALL THICKNESS + 2 1/2"							

Note:
Hot dip galvanized per ASTM A153.
Install trash guards on pipe 36–inches and larger.

NO.	DATE	REVISION	BY
1	2/2021	UPDATE DETAIL SHEET	NJG
2			
3			

OAK GROVE

TRASH GUARD — PROJECT NO. 10154001 — SHEET —

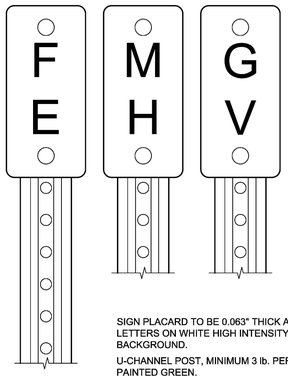


CASTINGS SHALL BE NEENAH R-3067-V OR EQUAL

NO.	DATE	REVISION	BY
1	2/2021	UPDATE DETAIL SHEET	NJG
2			
3			

OAK GROVE

CATCH BASIN CASTING - R-3067-V — PROJECT NO. 10154001 — SHEET —



SIGN PLACARD TO BE 0.063" THICK ALUMINUM WITH BLACK LETTERS ON WHITE HIGH INTENSITY REFLECTORIZED BACKGROUND.

U-CHANNEL POST, MINIMUM 3 lb. PER FOOT. 6'-6" LONG, PAINTED GREEN.

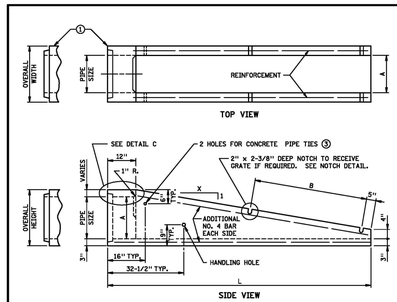
INSTALL TWO PLACARDS.

STRUCTURE MARKERS ARE REQUIRED FOR ALL STRUCTURES LOCATED IN DIFFICULT TO FIND AREAS. PLACE AS DIRECTED BY ENGINEER.

NO.	DATE	REVISION	BY
1	2/2021	UPDATE DETAIL SHEET	NJG
2			
3			

OAK GROVE

STRUCTURE MARKERS — PROJECT NO. 10154001 — SHEET —

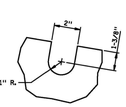


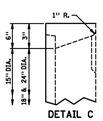
1:6 SLOPES

PIPE SIZE	A INSIDE	B ℄ - ℄	L	OVERALL HEIGHT	OVERALL WIDTH	WEIGHT (LBS.)
15"	15"	4'-0"	9'-4-1/2"	24"	24"	1800
18"	18"	4'-0"	9'-4-1/2"	24"	24"	1700
24"	24"	6'-0"	12'-4" ②	30"	30"	2800

1:4 SLOPES

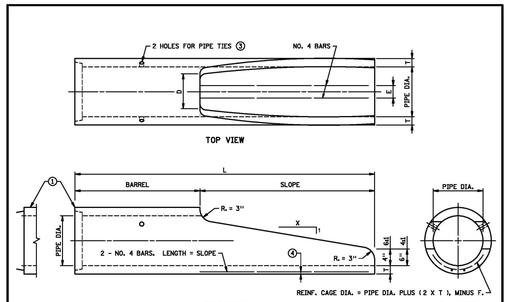
PIPE SIZE	A INSIDE	B ℄ - ℄	L	OVERALL HEIGHT	OVERALL WIDTH	WEIGHT (LBS.)
24"	24"	4'-0"	8'-5"	30"	30"	1900





NOTES:
THE DESIGN USED IS THE CONTRACTOR'S OPTION.
REINFORCING STEEL AND CONCRETE PER AASHTO M170.
REINFORCEMENT SHALL CONFORM TO STANDARD REINFORCED CONCRETE PIPE CLASS II, LOCATED AT CENTER OF WALL PLUS ONE (1) NO. 4 BAR, TOP, BOTTOM AND EACH SIDE.
JOINT IN END SECTION PER STANDARD PLATE 3000.
TOP EXPOSED CONCRETE CORNERS SHALL HAVE 3/4" CHAMFER.
TIE BOLTS AS REQUIRED.
① SEE PLANS FOR TYPE OF END REQUIRED.
② TWO PIECE CONSTRUCTION PERMISSIBLE.
③ SEE STANDARD PLATE 3145 FOR DETAILS.

APPROVED SEPT. 19, 2000	STATE OF MINNESOTA DEPARTMENT OF TRANSPORTATION	SPECIFICATION REFERENCE	STANDARD PLATE NO.
Gilbert W. Tinglestad	PRECAST CONCRETE SAFETY APRON (DESIGN OPTION NO. 1)	2501	3022C
STATE DESIGN ENGINEER		REVISED 3-22-2013 M.J.E.	1 OF 3



1:6 SLOPES

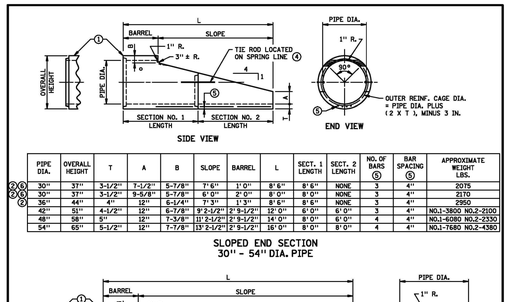
DIAMETER (IN.)	T (IN.)	L (IN.)	SLOPE (IN.)	BARREL (IN.)	D (IN.)	E (IN.)	F (IN.)	WEIGHT (LBS.)
12	2	72	42	30	6	3	2-1/4	415
15	2-1/4	84	60	24	8	4	2-1/4	595
18	2-1/2	96	81	15	10	5	2-1/2	650
24	3	144 ②	120	24	11	6	2-1/2	NO. 1 1280 NO. 2 720

1:4 SLOPES

DIAMETER (IN.)	T (IN.)	L (IN.)	SLOPE (IN.)	BARREL (IN.)	D (IN.)	E (IN.)	F (IN.)	WEIGHT (LBS.)
18	2-1/2	72	46	26	10	5	2-1/2	750
24	3	96	72	24	11	6	2-1/2	1450

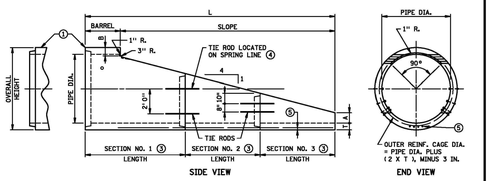
NOTES:
THE DESIGN USED IS THE CONTRACTOR'S OPTION.
REINFORCEMENT AND CONCRETE SHALL CONFORM TO STANDARD REINFORCED CONCRETE PIPE CLASS II, EXCEPT AS NOTED.
JOINT IN END SECTION PER STANDARD PLATE 3000, OR APPROVED EQUAL.
① GROOVE END ON OUTLET END SECTION. TONGUE END ON INLET END SECTION.
② TWO 6 FOOT SECTIONS.
③ SEE STANDARD PLATE 3145 FOR DETAILS.
④ 5/8" CLEAR TO 15" DIA., 3/4" CLEAR OVER 15" DIA.

APPROVED SEPT. 19, 2000	STATE OF MINNESOTA DEPARTMENT OF TRANSPORTATION	SPECIFICATION REFERENCE	STANDARD PLATE NO.
Gilbert W. Tinglestad	PRECAST CONCRETE SAFETY APRON (DESIGN OPTION NO. 2)	2501	3022C
STATE DESIGN ENGINEER		REVISED 3-22-2013 M.J.E.	2 OF 3



PIPE DIA.	OVERALL HEIGHT	T	A	B	SLOPE	BARREL	L	SECT. 1 LENGTH	SECT. 2 LENGTH	NO. OF BARS ⑤	BAR SPACING ⑤	APPROXIMATE WEIGHT LBS.
30"	37"	3-1/2"	9-1/2"	5-7/8"	7'-6"	1'-0"	8'-6"	8'-6"	NONE	3	4"	2075
30"	37"	3-1/2"	9-5/8"	5-7/8"	6'-0"	2'-0"	8'-0"	8'-0"	NONE	3	4"	2170
36"	44"	4"	12"	6-1/4"	7'-3"	1'-3"	8'-6"	8'-6"	NONE	3	4"	2950
42"	51"	4-1/2"	12"	6-7/8"	9'-2-1/2"	2'-9-1/2"	12'-0"	6'-0"	6'-0"	3	4"	NO.1-3800 NO.2-2100
48"	58"	5"	12"	7-3/8"	11'-2-1/2"	2'-9-1/2"	14'-0"	8'-0"	6'-0"	4	4"	NO.1-4080 NO.2-2330
54"	65"	5-1/2"	12"	7-7/8"	13'-2-1/2"	2'-9-1/2"	16'-0"	8'-0"	8'-0"	4	4"	NO.1-7680 NO.2-4380

SLOPED END SECTION
30" - 54" DIA. PIPE



PIPE DIA.	OVERALL HEIGHT	T	A	B	SLOPE	BARREL	L	SECT. 1 LENGTH	SECT. 2 LENGTH	SECT. 3 LENGTH	NO. OF BARS ⑥	BAR SPACING ⑥	APPROXIMATE WEIGHT LBS.
60"	72"	6"	12"	8-3/8"	15'-2-1/2"	2'-9-1/2"	18'-0"	6'-0"	6'-0"	6'-0"	4	4"	NO.1-7400 NO.2-5170 NO.3-2800
72"	86"	7"	12"	9-3/8"	19'-2-1/2"	2'-9-1/2"	22'-0"	8'-0"	8'-0"	6'-0"	4	4"	NO.1-12130 NO.2-8000 NO.3-4050

THREE PIECE SLOPED END SECTION
60" & 72" DIA. PIPE

NOTES:
REINFORCING STEEL AND CONCRETE PER AASHTO M170.
REINFORCEMENT SHALL CONFORM TO STANDARD REINFORCED CONCRETE PIPE CLASS II.
JOINTS IN END SECTION PER STANDARD PLATE 3000, OR APPROVED EQUAL.
JOINTS SHALL BE SEALED PER SPEC. 2503.3C.
INNER CAGE NOT REQUIRED IN SLOPE AREA.
① SEE PLANS FOR TYPE OF END REQUIRED.
② NO TIE RODS OR ADDITIONAL JOINTS REQUIRED.
③ SECTION LENGTHS MAY VARY, TOTAL LENGTH TO EQUAL L.
④ SEE STANDARD PLATE 3145 FOR DETAILS.
⑤ NO. 4 BARS, MIN. LENGTH = SLOPE. 1" CLEAR ALL SIZES.
⑥ DESIGN USED IS CONTRACTOR'S OPTION.

APPROVED SEPT. 19, 2000	STATE OF MINNESOTA DEPARTMENT OF TRANSPORTATION	SPECIFICATION REFERENCE	STANDARD PLATE NO.
Gilbert W. Tinglestad	PRECAST CONCRETE SAFETY APRON (1:4 SLOPE)	2501	3022C
STATE DESIGN ENGINEER		REVISED 3-22-2013 M.J.E.	3 OF 3



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CARLSON-ENGINEERING.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

Print Name: Aaron D. Briski, P.E.
Signature: Aaron Briski
Date: 6/26/26 License #: 57811

Drawn: GJS
Designed: ADB
Date: 6/26/26

Revisions:
1. 8/26/26 Add Septic Design (by others) and City & ACHD Comments
2. 9/15/26 per ACHD Comments
3. 10/01/26 per City & ACHD Comments, Landscape Plan Added

HAVEN HOMES, LLC
18732 Poppy Street NW
Oak Grove, MN 55303

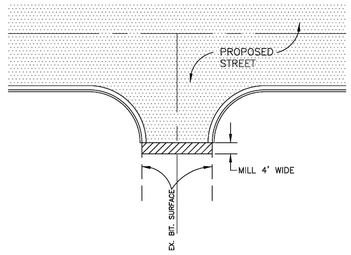
HICKEY LAKE WOODS
LOT 2 BLOCK 2
Oak Grove, Minnesota

DETAILS

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Save Date: 09/14/26 F:\jobs\11501 - 11520\11505 - hickey lake woods\cad c3d\engineering\plan set\11505_detail.dwg

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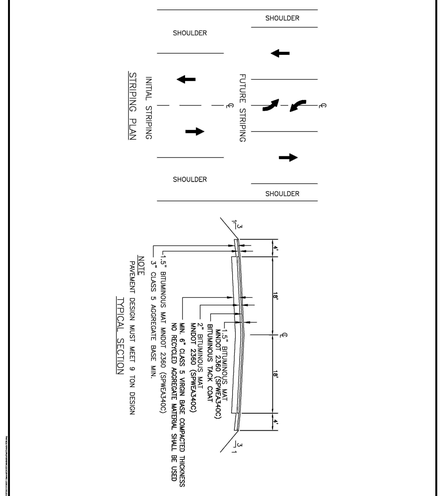
NO.	DATE	REVISION	BY
1	2/2021	UPDATE DETAIL SHEET	CJL
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OAK GROVE

MATCH EXISTING BITUMINOUS SURFACING

PROJECT NO: 10154001

SHEET: 10 of 10



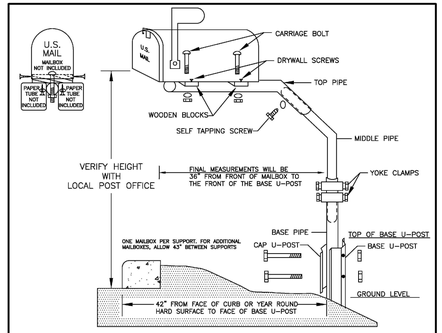
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1	2/2021	UPDATE DETAIL SHEET	CJL
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OAK GROVE

COMMERCIAL TYPICAL SECTION

PROJECT NO: 10154001

SHEET: 10 of 10



WARNING

1. BURIED ELECTRICAL LINES, GAS, STEAM, T.V., TELEPHONE, ETC. MAY BE HAZARDOUS OR FATAL TO YOUR HEALTH
   * CHECK WITH YOUR LOCAL UTILITIES BEFORE INSTALLING THE * BASE U-POST. (IN MINNESOTA CALL 1-800-252-1166)
2. WEAR EAR PROTECTION, SAFETY GLASSES, PROPER CLOTHING, AND KEEP OTHERS AWAY IN CASE METAL FRAGMENTS COME FLYING ABOUT FROM HAMMERING ON THE DRIVER U-POST.

PARTS LIST

QTY.	DESCRIPTION	QTY.	DESCRIPTION
1	1-1/2"O.D.x36" (MIDDLE PIPE)	2	5/16"x3" BOLT W/NUT
1	1-3/4"O.D.x36" (TOP PIPE)	2	3/8"x1-1/4" BOLT W/NUT
1	1-3/4"O.D.x24" (BASE PIPE)	6	3/8" FLAT WASHER
1	4" CAP U-POST (1.12 LBS./FT.)	8	DRYWALL SCREW
1	5" DRIVING U-POST (2 LBS./FT.)	4	#10 WASHER
1	31-1/2" BASE U-POST (2 LBS./FT.)	2	1/4"x4" CARRIAGE BOLT W/NUT AND WASHER
1	15-1/2" EXTENSION U-POST (2 LBS./FT.)	4	YOKE CLAMPS
4	3/8"x3/4" CAP SCREW W/NUT	2	WOODEN BLOCK
1	1/4"x3/4" SELF-TAPPING SCREW AND WASHER		

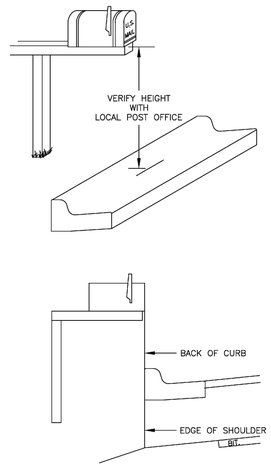
NO.	DATE	REVISION	BY
1	2/2021	UPDATE DETAIL SHEET	CJL
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OAK GROVE

MAILBOX SUPPORT DETAIL

PROJECT NO: 10154001

SHEET: 10 of 10



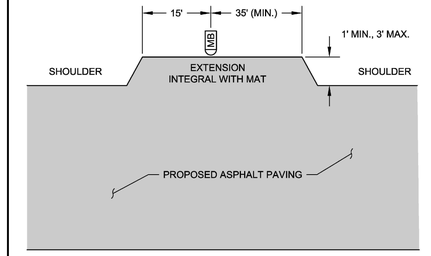
NO.	DATE	REVISION	BY
1	2/2021	UPDATE DETAIL SHEET	CJL
-	-	-	-

OAK GROVE

MAILBOX INSTALLATION HEIGHT

PROJECT NO: 10154001

SHEET: 10 of 10



NOTE:

EXISTING OAK GROVE DEVELOPMENTS ONLY

NO.	DATE	REVISION	BY
1	2/2021	UPDATE DETAIL SHEET	CJL
-	-	-	-

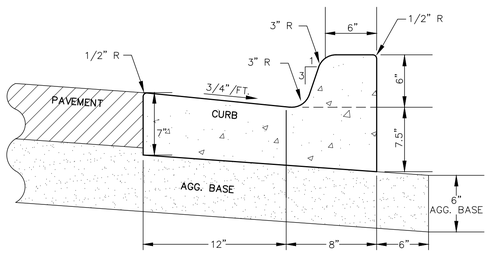
OAK GROVE

PAVEMENT EXTENSION AT MAILBOX

PROJECT NO: 10154001

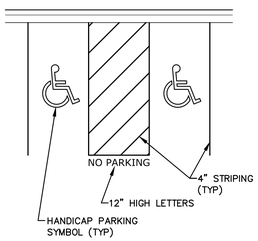
SHEET: 10 of 10

B612 CONCRETE CURB & GUTTER



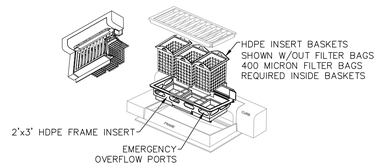
* TIPOUT CURB SHALL SLOPE OUT AT 3/4" PER FOOT.

HANDICAP PARKING SPACE STRIPING



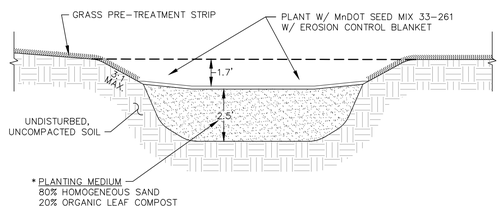
INFRASAFE – 2'x3' DEBRIS COLLECTION DEVICE

AS MANUFACTURED BY ROYAL ENVIRONMENTAL SYSTEMS



– MEETS MN/DOT SPECIFICATION 3891.F "STORM DRAIN INLET PROTECTION – FILTER BAG INSERT"
– DESIGNED FOR NEENAH R-3067 OR R-3290 SERIES

INFILTRATION BASIN



* CONTRACTOR SHALL UTILIZE ONSITE SAND & TOPSOIL TO THE EXTENT POSSIBLE (VERIFY W/ GEOTECHNICAL ENGINEER PRIOR TO PLACEMENT.)

PAVEMENT SECTIONS



PARKING LOT PAVEMENT SECTION*

1.5" BITUMINOUS WEAR COURSE, SPWEA340C
BITUMINOUS TACK COAT
2" BITUMINOUS BASE COURSE, SPNWB340C
6" CLASS 5 AGGREGATE BASE
APPROVED SUBGRADE

* TO BE VERIFIED BY GEOTECHNICAL ENGINEER



CONCRETE SIDEWALK SECTION*

4" PORTLAND CEMENT CONCRETE, MNDOT 2301
4" CLASS 5 AGGREGATE BASE
APPROVED SUBGRADE

* TO BE VERIFIED BY GEOTECHNICAL ENGINEER

CARLSON ENGINEERING
ENGINEERING SURVEYING PLANNING
3890 PHEASANT RIDGE DR NE
SUITE 100
BLAINE, MN 55449
TEL 763.489.7900
FAX 763.489.7959
CARLSON-ENGINEERING.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

Print Name: Aaron D. Briski, P.E.
Signature: Aaron Briski
Date: 6/26/26 License #: 57811

Drawn: GJS
Designed: ADB
Date: 6/26/26

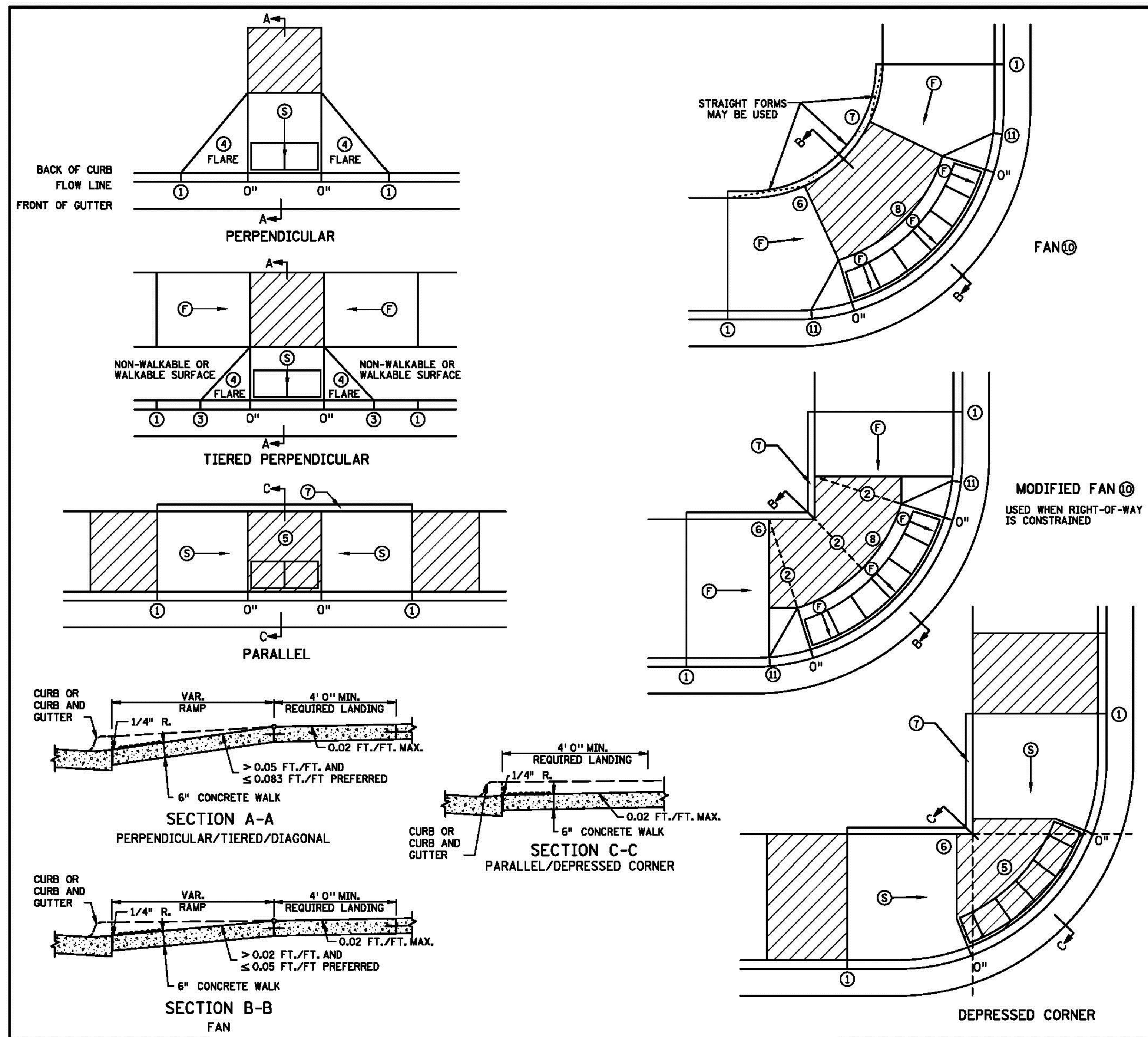
Revisions:
1. 8/26/26 Add Septic Design (by others) and City & ACHD Comments
2. 9/15/26 per ACHD Comments
3. 10/01/26 per City & ACHD Comments, Landscape Plan Added

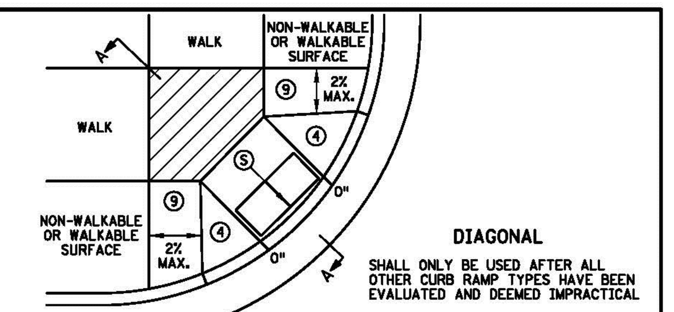
HAVEN HOMES, LLC
18732 Poppy Street NW
Oak Grove, MN 55303

HICKEY LAKE WOODS
LOT 2 BLOCK 2
Oak Grove, Minnesota

DETAILS

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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.

① MATCH FULL HEIGHT CURB.
② 4' MINIMUM DEPTH LANDING REQUIRED ACROSS TOP OF RAMP.
③ 3" HIGH CURB WHEN USING A 3' LONG RAMP, 4" HIGH CURB WHEN USING A 4' LONG RAMP.
④ SEE SHEET 4 OF 6, TYPICAL SIDE TREATMENT OPTIONS, FOR DETAILS ON FLARES AND RETURNED CURBS.
⑤ 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.
⑥ 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)
⑦ 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.
⑧ A 7' MIN TOP RADIUS GRADE BREAK IS REQUIRED TO BE CONSTRUCTIBLE.
⑨ PAVE FULL WALK WIDTH.
⑩ "S" SLOPES ON FANS SHALL ONLY BE USED WHEN ALL OTHER FEASIBLE OPTIONS HAVE BEEN EVALUATED AND DEEMED IMPRACTICAL.
⑪ 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.

Ⓢ 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%.

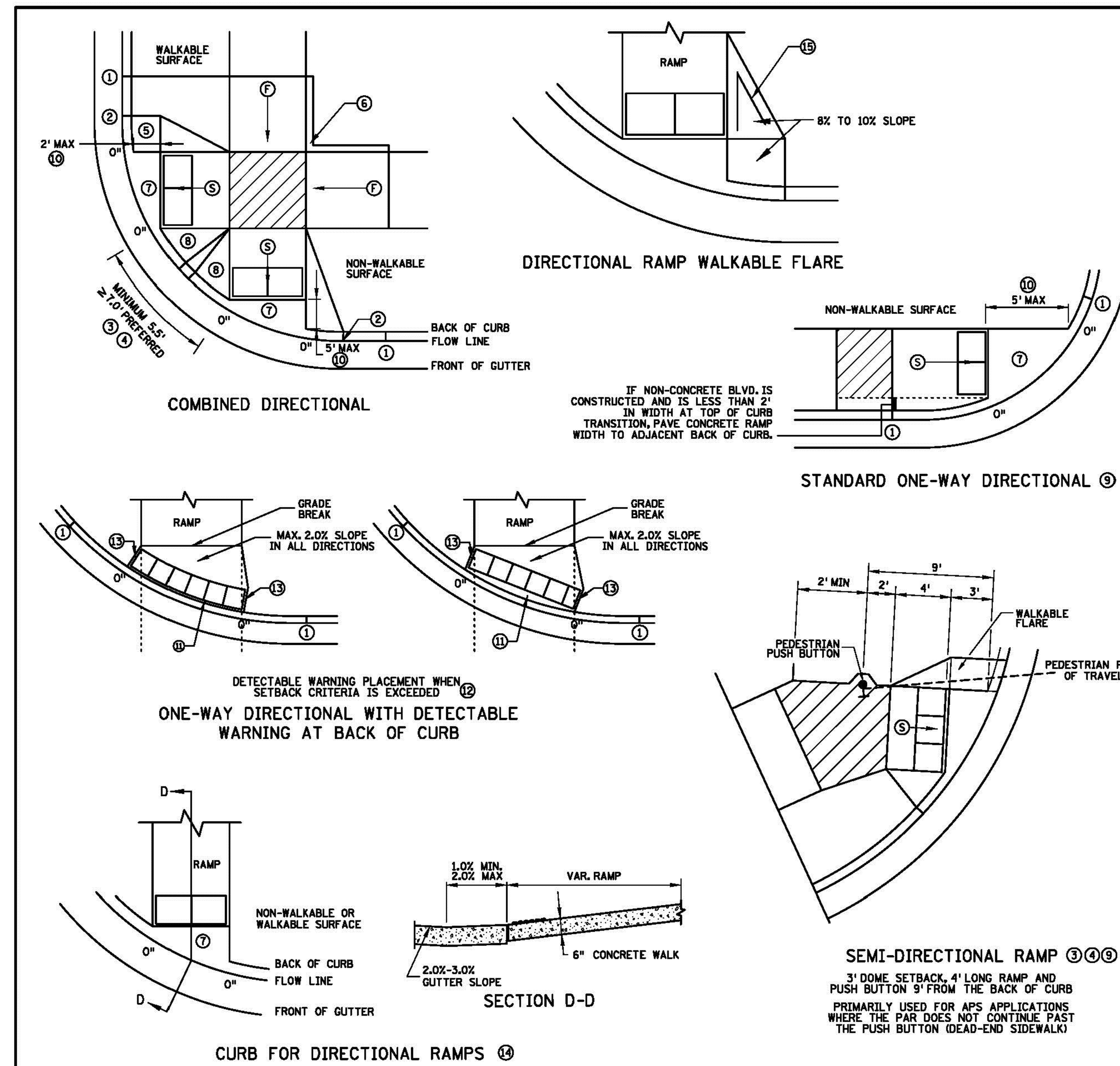
Ⓕ INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE GREATER THAN 2.0% AND LESS THAN 5.0% IN THE DIRECTION SHOWN AND CROSS SLOPE SHALL NOT EXCEED 2.0%.

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 PARS.

X" CURB HEIGHT

REVISION:
APPROVED: 11-04-2021
JEFFREY PERKINS, OPERATIONS DIVISION

MINNESOTA DEPARTMENT OF TRANSPORTATION
STANDARD PLAN 5-297.250 | 1 OF 6
THOMAS STYRBICKI, STATE DESIGN ENGINEER
APPROVED: 11-04-2021 REVISED:
PEDESTRIAN CURB RAMP DETAILS
STATE PROJ. NO. (TH) SHEET NO. OF SHEETS



NOTES:

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

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

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

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

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

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

TOP OF CURB SHALL MATCH PROPOSED ADJACENT WALK GRADE.

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

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

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

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

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

① MATCH FULL CURB HEIGHT.
② 3" HIGH CURB WHEN USING A 3' LONG RAMP
4" HIGH CURB WHEN USING A 4' LONG RAMP.
③ 3" MINIMUM CURB HEIGHT (5.5' MIN. DISTANCE REQUIRED BETWEEN DOMES)
4" PREFERRED (7' MIN. DISTANCE REQUIRED BETWEEN DOMES).
④ THE "BUMP" IN BETWEEN THE RAMPS SHOULD NOT BE IN THE PATH OF TRAVEL FOR COMBINED DIRECTIONAL RAMPS. IF THIS OCCURS MODIFY THE RAMP LOCATION OR SWITCH RAMP TO A FAN/DEPRESSED CORNER.
⑤ WHEN USING CONCRETE PAVED FLARES ON THE OUTSIDE OF DIRECTIONAL RAMPS, AND ADJACENT TO A WALKABLE SURFACE, DIRECTIONAL RAMP FLARES SHALL BE USED. SEE THE DETAIL ON THIS SHEET.
⑥ GRADING SHALL ALWAYS BE USED WHEN FEASIBLE. V CURB, IF USED, SHALL BE PLACED OUTSIDE THE SIDEWALK LIMITS WHEN RIGHT OF WAY ALLOWS. WHEN ADJACENT TO PARKING LOTS, CONCRETE OR BITUMINOUS TAPERS SHOULD BE USED OVER V CURB TO REDUCE TRIPPING HAZARDS AND FACILITATE SNOW & ICE REMOVAL.
⑦ MAX. 2.0% SLOPE IN ALL DIRECTIONS IN FRONT OF GRADE BREAK AND DRAIN TO FLOW LINE. SHALL BE CONSTRUCTED INTEGRAL WITH CURB AND GUTTER.
⑧ 8% TO 10% WALKABLE FLARE.
⑨ PLACE DOMES AT THE BACK OF CURB WHEN ALLOWABLE SETBACK CRITERIA IS EXCEEDED.
⑩ FRONT EDGE OF DETECTABLE WARNING SHALL BE SET BACK 2' MAXIMUM WHEN ADJACENT TO WALKABLE SURFACE, AND 5' MAXIMUM WHEN ADJACENT TO NON-WALKABLE SURFACE WITH ONE CORNER SET 3" FROM BACK OF CURB. A WALKABLE SURFACE IS DEFINED AS A PAVED SURFACE ADJACENT TO A CURB RAMP WITHOUT RAISED OBSTACLES THAT COULD MISTAKENLY BE TRAVERSED BY A USER WHO IS VISUALLY IMPAIRED.
⑪ RECTANGULAR DETECTABLE WARNINGS MAY BE SETBACK UP TO 9" FROM THE BACK OF CURB WITH CORNERS SET 3" FROM BACK OF CURB. IF 9" SETBACK IS EXCEEDED USE RADIAL DETECTABLE WARNINGS.
⑫ FOR DIRECTIONAL RAMPS WITH THE DETECTABLE WARNINGS PLACED AT THE BACK OF CURB, THE DETECTABLE WARNINGS SHALL COVER THE ENTIRE WIDTH OF THE WALK/PATH. THIS ENSURES A DETECTABLE EDGE AND HELPS ELIMINATE THE CURB TAPER OBSTRUCTING THE PATH OF PEDESTRIAN TRAVEL.
⑬ THE CONCRETE WALK SHALL BE FORMED AND CONSTRUCTED PERPENDICULAR TO THE BACK OF CURB. MAINTAIN 3" BETWEEN EDGE OF DOMES AND EDGE OF CONCRETE.
⑭ TO BE USED FOR ALL DIRECTIONAL RAMPS, EXCEPT WHERE DOMES ARE PLACED ALONG THE BACK OF CURB.
⑮ PLACE 2 NO. 4 BARS 4 INCHES FROM SIDE OF FORMS WITH A MINIMUM 2 INCHES OF CONCRETE COVER ALONG EACH SIDE OF FLARE (INCIDENTAL).

LEGEND

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

Ⓢ 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%.

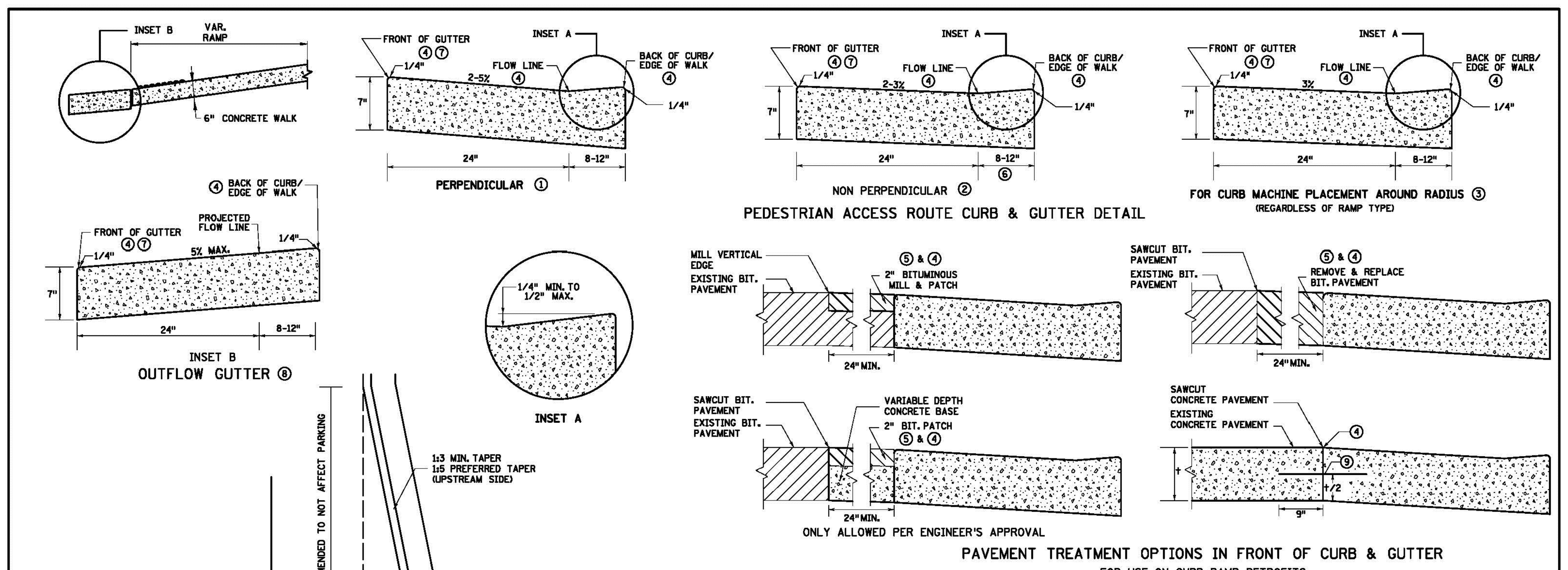
Ⓕ INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE GREATER THAN 2.0% AND LESS THAN 5.0% IN THE DIRECTION SHOWN AND CROSS SLOPE SHALL NOT EXCEED 2.0%.

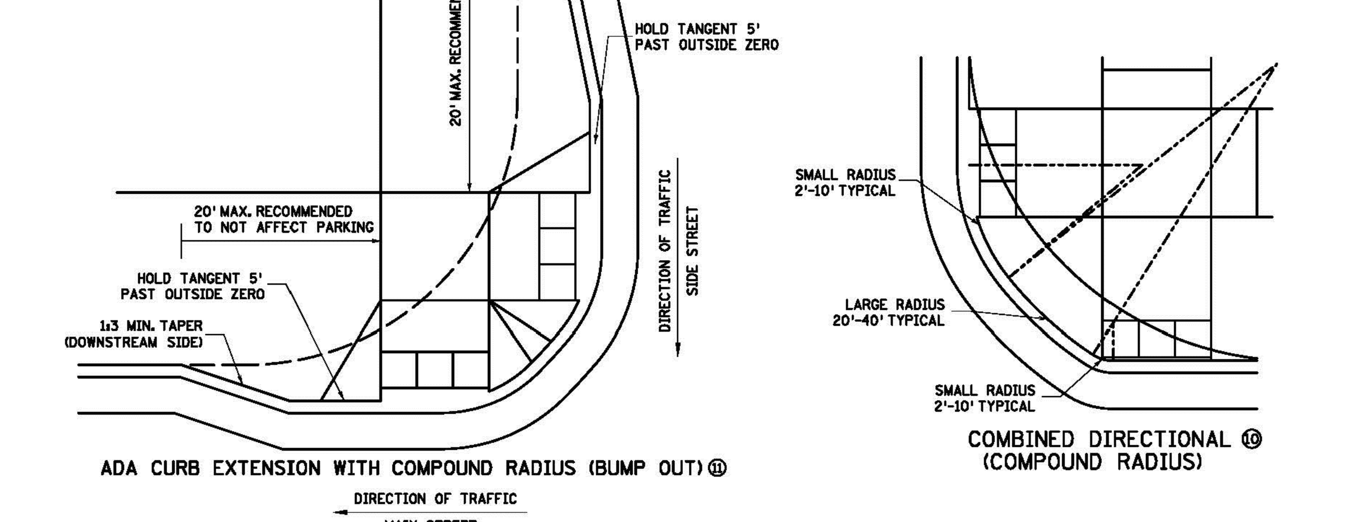
LANDING AREA - 4' X 4' MIN. (5' X 5' MIN. PREFERRED) DIMENSIONS AND MAX 2.0% SLOPE IN ALL DIRECTIONS. LANDING SHALL BE FULL WIDTH OF INCOMING PARS.

X" CURB HEIGHT

REVISION:
APPROVED: 11-04-2021
JEFFREY PERKINS, OPERATIONS DIVISION

MINNESOTA DEPARTMENT OF TRANSPORTATION
STANDARD PLAN 5-297.250 | 2 OF 6
THOMAS STYRBICKI, STATE DESIGN ENGINEER
APPROVED: 11-04-2021 REVISED:
PEDESTRIAN CURB RAMP DETAILS
STATE PROJ. NO. (T.H.) SHEET NO. OF SHEETS





NOTES:

POSITIVE FLOW LINE DRAINAGE SHALL BE MAINTAINED THROUGH THE PEDESTRIAN ACCESS ROUTE (PAR) AT A 2% MAXIMUM.

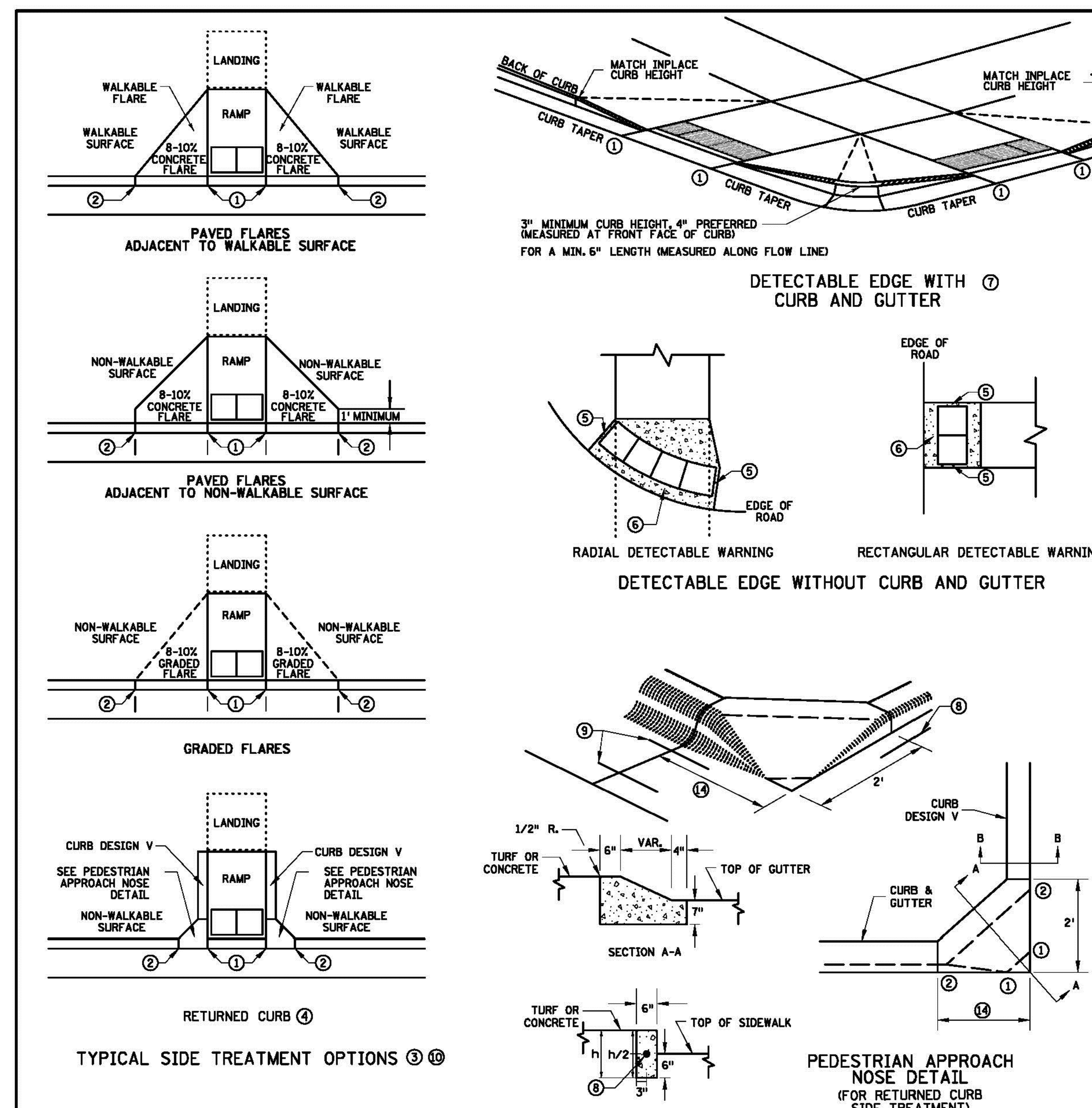
NO PONDING SHALL BE PRESENT IN THE PAR.

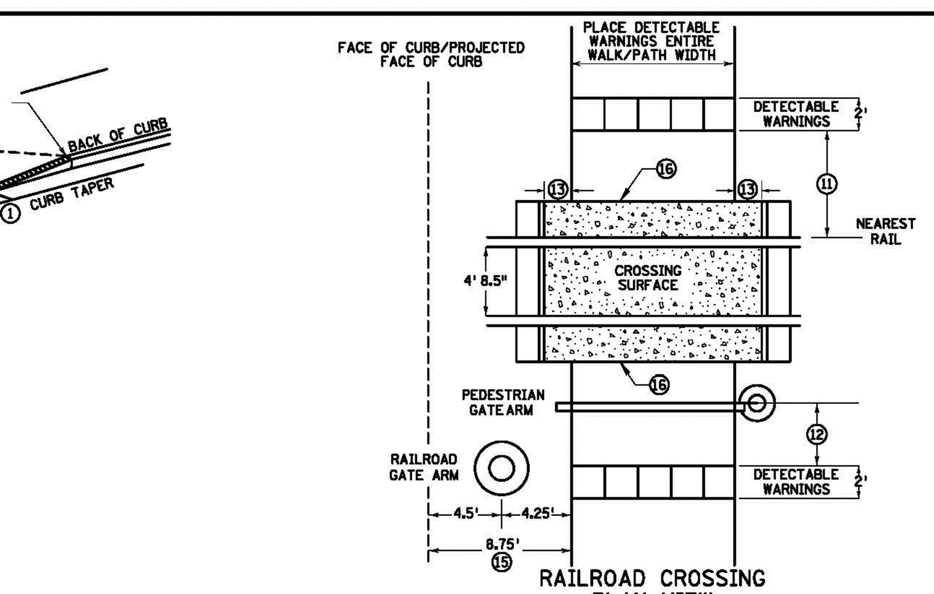
ANY VERTICAL LIP THAT OCCURS AT THE FLOW LINE SHALL NOT BE GREATER THAN 1/4 INCH.

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

REVISION:
APPROVED: 11-04-2021
JEFFREY PERKINS, OPERATIONS DIVISION

MINNESOTA DEPARTMENT OF TRANSPORTATION
STANDARD PLAN 5-297.250 | 3 OF 6
THOMAS STYRBICKI, STATE DESIGN ENGINEER
APPROVED: 11-04-2021 REVISED:
PEDESTRIAN CURB RAMP DETAILS
STATE PROJ. NO. (TH) SHEET NO. OF SHEETS





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 RAMPS 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
JEFFREY PERKINS, OPERATIONS DIVISION

MINNESOTA DEPARTMENT OF TRANSPORTATION
STANDARD PLAN 5-297.250 | 4 OF 6
THOMAS STYRBICKI, STATE DESIGN ENGINEER
APPROVED: 11-04-2021 REVISED:
PEDESTRIAN CURB RAMP DETAILS
STATE PROJ. NO. (TH) SHEET NO. OF SHEETS

CARLSON ENGINEERING — ENGINEERING SURVEYING PLANNING
3890 PHEASANT RIDGE DR NE, SUITE 100, BLAINE, MN 55449
TEL 763.489.7900, FAX 763.489.7959, CARLSON-ENGINEERING.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

Print Name: Aaron D. Briski, P.E.
Signature: Aaron Briski
Date: 6/26/26 License #: 57811

Drawn: GJS
Designed: ADB
Date: 6/26/26

Revisions:
1. 8/26/26 Add Septic Design (by others) and City & ACHD Comments
2. 9/15/26 per ACHD Comments
3. 10/01/26 per City & ACHD Comments, Landscape Plan Added

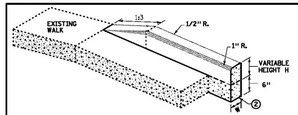
HAVEN HOMES, LLC
18732 Poppy Street NW
Oak Grove, MN 55303

HICKEY LAKE WOODS
LOT 2 BLOCK 2
Oak Grove, Minnesota

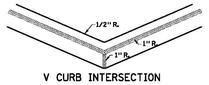
DETAILS

#11505

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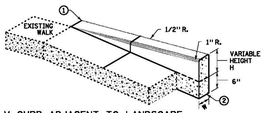


V CURB ADJACENT TO LANDSCAPE
CURB WITHIN SIDEWALK LIMITS

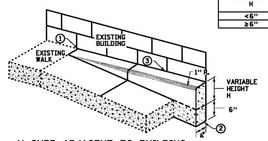


V CURB INTERSECTION

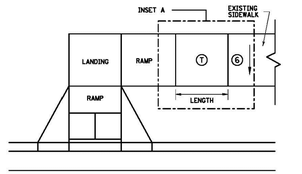
CONCRETE CURB DESIGN V	
CURB HEIGHT H	CURB WIDTH W
<6"	4"
≥6"	6"



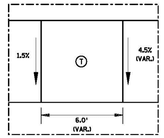
V CURB ADJACENT TO LANDSCAPE
CURB OUTSIDE SIDEWALK LIMITS



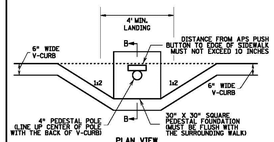
V CURB ADJACENT TO BUILDING OR BARRIER



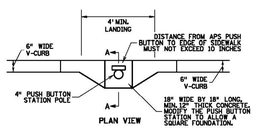
TRANSITION PANEL 4 5



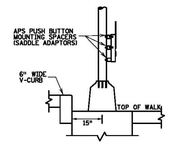
INSET A



PLAN VIEW

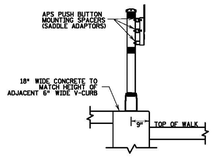


PLAN VIEW



SECTION B-B

SIGNAL PEDESTAL & PUSH BUTTON (V-CURB)



SECTION A-A

PUSH BUTTON STATION (V-CURB)

LEGEND	
	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.
T	TRANSITION PANELS - 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.

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.

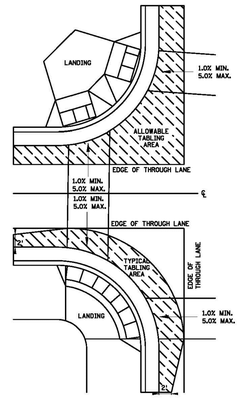
V CURB SHALL BE PLACED OUTSIDE THE SIDEWALK LIMITS WHEN RIGHT OF WAY ALLOWS.

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

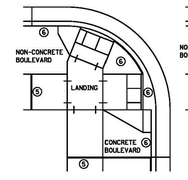
1. END TAPERS AT TRANSITION SECTION SHALL MATCH INPLACE SIDEWALK GRADES.
2. ALL V CURB SHALL MATCH BOTTOM OF ADJACENT WALK.
3. CONSTRUCT USING APPROVED EXPANSION MATERIAL PER MNDOT TYPE A-E EXPANSION. LEAVE A MINIMUM ½" TOP GAP AND SEAL WITH MNDOT APPROVED SILICONE PER MNDOT SPEC 3726.
4. THE MAX. RATE 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 ITYPICAL SECTIONS.
6. EXISTING CROSS SLOPE GREATER THAN 2.0%.

REVISIONS	
APPROVED: 11-04-2021	
OPERATING DIVISION	

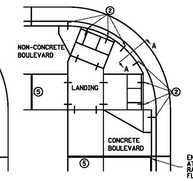
MINNESOTA DEPARTMENT OF TRANSPORTATION	STANDARD PLAN 5-297.250	5 OF 6	PEDESTRIAN CURB RAMP DETAILS
	APPROVED: 11-04-2021		
	REVISED:		
	STATE DESIGN ENGINEER	STATE PROJ. NO. (TH)	SHEET NO. OF SHEETS



CURB LINE AND ROAD CROSSING ADJUSTMENTS

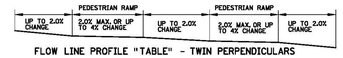


EXPANSION MATERIAL PLACEMENT FOR CONCRETE ROADWAYS



CURB LINE REINFORCEMENT 4 PLACEMENT ON BITUMINOUS ROADWAYS

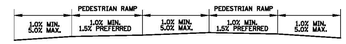
END SILL CURB AT TOP OF CURB RAMP AND DRIVEWAY FLARES.



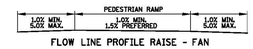
FLOW LINE PROFILE "TABLE" - TWIN PERPENDICULARS



FLOW LINE PROFILE "TABLE" - FAN



FLOW LINE PROFILE RAISE - TWIN PERPENDICULARS



FLOW LINE PROFILE RAISE - FAN

GENERAL NOTES:

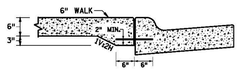
"TABLING" OF CROSSWALKS MEANS MAINTAINING LESS THAN 2% CROSS SLOPE WITHIN A CROSSWALK, IS REQUIRED WHEN A ROADWAY IS IN A STOP OR YIELD CONDITION AND THE PROJECT SCOPE ALLOWS.

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

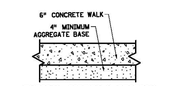
MILL & OVERLAY PROJECTS: "TABLING" OF FLOW LINES IN FRONT OF THE PEDESTRIAN RAMP IS REQUIRED WHEN THE EXISTING FLOW LINE IS GREATER THAN 2%. WARPING OF THE BITUMINOUS PAVEMENT CAN NOT EXTEND INTO THE THROUGH LANE. TABLE THE FLOW LINE TO 2% OR AS MUCH AS POSSIBLE WHILE ADHERING TO THE FOLLOWING CRITERIA:
1) 1.0% MIN. CROSS-SLOPE OF THE ROAD
2) 5.0% MAX. CROSS-SLOPE OF THE ROAD
3) "TABLE" FLOW LINE UP TO 4% CHANGE FROM EXISTING SLOPE IN FRONT OF PEDESTRIAN RAMP
4) UP TO 2% CHANGE IN FLOW LINE FROM EXISTING SLOPE BEYOND THE PEDESTRIAN CURB RAMP

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

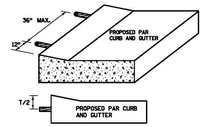
RAISING OF CURB LINES SHOULD OCCUR IN VERTICALLY CONSTRAINED AREAS. RAISE THE CURB LINES ENOUGH TO ALLOW COMPLIANT RAMPS OR AS MUCH AS POSSIBLE WHILE ADHERING TO THE FOLLOWING CRITERIA:
1) 1.0% MIN. AND 5.0% MAXIMUM CROSS-SLOPE OF THE ROAD
2) 1.0% MIN. FLOW LINE (ON EITHER SIDE OF PEDESTRIAN RAMP) TO MAINTAIN POSITIVE DRAINAGE
3) 5.0% RECOMMENDED MAX. FLOW LINE
4) LONGITUDINAL THROUGH LANE ROADWAY TAPERS SHOULD BE 1" VERTICAL PER 15' HORIZONTAL



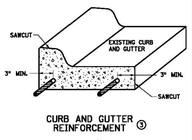
SECTION VIEW A-A
THICKENED SECTION
THROUGH CURB RAMP FLARES



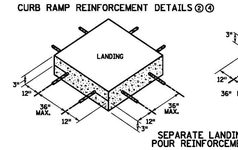
TYPICAL SIDEWALK SECTION
WITHIN INTERSECTION CORNER

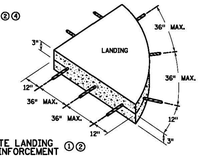


CURB RAMP REINFORCEMENT DETAILS 2 4



CURB AND GUTTER 5 REINFORCEMENT





SEPARATE LANDING POUR REINFORCEMENT 1 2

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	
OPERATING DIVISION	

MINNESOTA DEPARTMENT OF TRANSPORTATION	STANDARD PLAN 5-297.250	6 OF 6	PEDESTRIAN CURB RAMP DETAILS
	APPROVED: 11-04-2021		
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	STATE DESIGN ENGINEER	STATE PROJ. NO. (TH)	SHEET NO. OF SHEETS

CARLSON ENGINEERING
ENGINEERING SURVEYING PLANNING
3890 PHEASANT RIDGE DR NE
SUITE 100
BLAINE, MN 55449
TEL 763.489.7900
FAX 763.489.7959
CARLSON-ENGINEERING.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

Print Name: Aaron D. Briski, P.E.
Signature: Aaron Briski
Date: 6/26/26 License #: 57811

Drawn: GJS
Designed: ADB
Date: 6/26/26

Revisions:
1. 8/26/26 Add Septic Design (by others) and City & ACHD Comments
2. 9/15/26 per ACHD Comments
3. 10/01/26 per City & ACHD Comments, Landscape Plan Added

HAVEN HOMES, LLC
18732 Poppy Street NW
Oak Grove, MN 55303

HICKEY LAKE WOODS
LOT 2 BLOCK 2
Oak Grove, Minnesota

DETAILS

10 of 10

LANDSCAPE PLAN NOTES

1. EXISTING CONDITIONS. CONTRACTOR SHALL VERIFY EXISTING CONDITIONS PRIOR TO BIDDING AND CONSTRUCTION START. ANY DISCREPANCIES FOUND THAT AFFECT THE WORK SHALL BE REPORTED TO THE OWNER/LANDSCAPE ARCHITECT FOR CLARIFICATION PRIOR TO BIDDING OR APPROVING ANY ADDITIONAL WORK REQUIRED.

2. UTILITY LOCATES. CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING AND VERIFYING ALL PUBLIC AND PRIVATE UTILITIES, INCLUDING IRRIGATION LINES, AT LEAST 48 HOURS BEFORE EXCAVATING OR IN ACCORDANCE WITH STATE LAW. IN MINNESOTA, CALL GOPHER STATE ONE–CALL AT 651–454–0002 FOR FIELD LOCATION OF PUBLIC UNDERGROUND UTILITY LINES. ALL LOCATES AND ITEMS NOTED AS 'FIELD VERIFY' ON THE PLANS SHALL BE VERIFIED BY THE CONTRACTOR AT THEIR EXPENSE.

3. PERMITS. CONTRACTOR SHALL VERIFY WITH THE OWNER/LANDSCAPE ARCHITECT THAT THE REQUIRED PERMITS HAVE BEEN OBTAINED PRIOR TO CONSTRUCTION START. CONTRACTOR SHALL BE RESPONSIBLE FOR COMPLYING WITH ALL APPLICABLE CODES, REGULATIONS, AND PERMITS GOVERNING THE WORK.

4. EXISTING ITEMS TO REMAIN. CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING ALL EXISTING PAVEMENT, STRUCTURES, UTILITIES, TREES, SITE AMENITIES, ETC. THAT ARE TO REMAIN FROM DAMAGE DURING CONSTRUCTION. CONTRACTOR SHALL BE RESPONSIBLE FOR CORRECTING ANY DAMAGE (AT CONTRACTOR'S EXPENSE) TO EXISTING ITEMS TO REMAIN.

5. CONSTRUCTION STAGING AND ACCESS. CONTRACTOR SHALL VERIFY THE LOCATION FOR CONSTRUCTION STAGING AND SITE ACCESS WITH THE OWNER/LANDSCAPE ARCHITECT PRIOR TO CONSTRUCTION START. CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING PEDESTRIAN AND VEHICLE ACCESS WITHIN AND ADJACENT TO THE SITE THROUGHOUT THE CONSTRUCTION PERIOD UNLESS OTHERWISE NOTED. LONG–TERM STORAGE OF MATERIALS OR SUPPLIES ON–SITE WILL NOT BE PERMITTED. ALL WASTE AND/OR UNUSED MATERIAL SHALL BE PROMPTLY REMOVED FROM THE SITE.

6. SITE REMOVALS. REFER TO CIVIL PLANS FOR GENERAL SITE REMOVALS. ALL ITEMS NOTED TO BE REMOVED SHALL BE COMPLETED BY THE CONTRACTOR AND IMMEDIATELY DISPOSED OF OFF–SITE, IN ACCORDANCE WITH LOCAL REGULATIONS, UNLESS OTHERWISE NOTED. COORDINATE WITH OWNER/LANDSCAPE ARCHITECT FOR ANY ITEMS NOTED AS 'REMOVED BY OTHERS' OR 'REMOVE AND SALVAGE.'

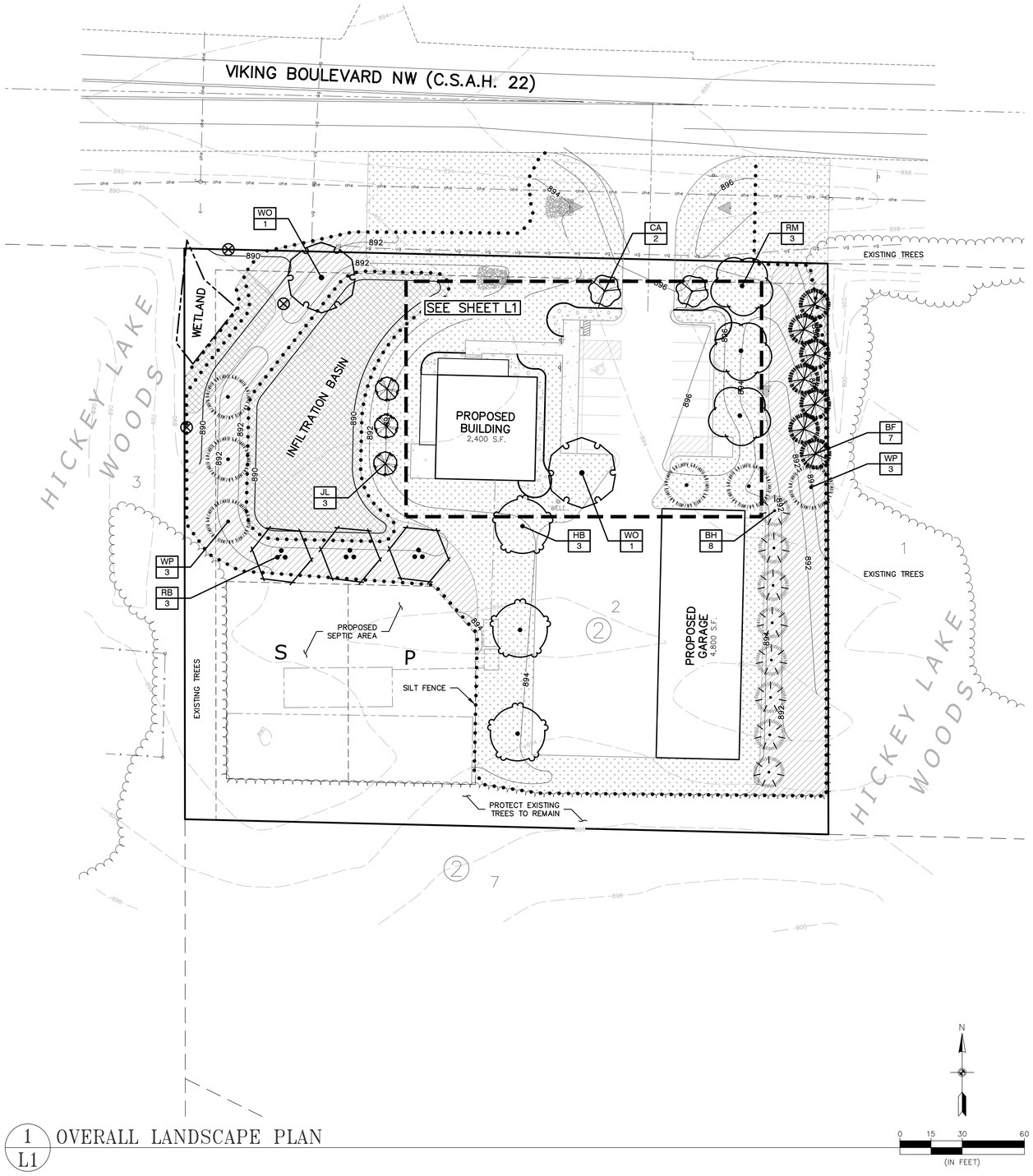
7. UTILITY COORDINATION. REFER TO CIVIL PLAN SHEETS FOR INFORMATION RELATED TO PROPOSED UTILITIES. COORDINATE WITH ELECTRICAL CONTRACTORS FOR SITE ELECTRICAL WORK AND SITE LIGHTING.

8. CONSTRUCTION STAKING. UNLESS OTHERWISE NOTED, CONTRACTOR SHALL BE RESPONSIBLE FOR ESTABLISHING CONTROL POINTS AND ALL CONSTRUCTION FIELD STAKING DURING THE COURSE OF THE PROJECT.

9. DIMENSIONS. DIMENSIONS TAKE PRECEDENCE OVER SCALE. DIMENSIONS ARE TO FACE OF CURB, EDGE OF PAVEMENT/WALKWAY, OR OUTSIDE FACE OF BUILDING UNLESS OTHERWISE NOTED.

10. PLAN QUANTITIES. CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING ALL MATERIAL QUANTITIES PER PLAN. MATERIAL SCHEDULES ARE PROVIDED SOLELY FOR CONTRACTOR'S CONVENIENCE.

11. REFERENCE SPECIFICATIONS. THE FOLLOWING SPECIFICATIONS SHALL GOVERN THIS PROJECT ACCORDING TO THE FOLLOWING ORDER:
    1. ADDENDA WITH THOSE OF A LATER DATE HAVING PRECEDENCE OVER THOSE OF AN EARLIER DATE.
    2. LANDSCAPE SPECIFICATIONS.
    3. PLAN DRAWINGS.
    4. PLANT / MATERIAL SCHEDULES.
    5. CITY STANDARD SPECIFICATIONS AND DETAILS.
    6. MnDOT STANDARD SPECIFICATIONS FOR CONSTRUCTION, LATEST EDITION.



1 L1 OVERALL LANDSCAPE PLAN

N

0 15 30 60
(IN FEET)

LANDSCAPE SPECIFICATIONS

1. TREE PROTECTION. ALL TREES NOT SPECIFICALLY NOTED OR MARKED ON SITE FOR REMOVAL SHALL REMAIN PROTECTED AND UNDISTURBED DURING CONSTRUCTION. TREE PROTECTION SHALL EXTEND TO THE DRIP LINE, WITHIN WHICH NO CONSTRUCTION ACTIVITY, MATERIAL STORAGE, OR VEHICLE PARKING SHALL BE PERMITTED. TREE PROTECTION FENCING SHALL BE ERECTED PRIOR TO CONSTRUCTION START PER PLANS OR AS DIRECTED BY OWNER/LANDSCAPE ARCHITECT AND SHALL CONSIST OF 4' TALL HEAVY DUTY ORANGE CONSTRUCTION FENCING WITH 6' STEEL FENCE POSTS SPACED 6' O.C. MAX.

2. EROSION CONTROL. REFER TO CIVIL PLAN SHEETS FOR STORMWATER POLLUTION PREVENTION PLAN (SWPPP), AND TEMPORARY AND PERMANENT STORMWATER BMPS, INCLUDING SILT FENCE, BIO–ROLLS, INLET PROTECTION, EROSION CONTROL BLANKETING, DUST CONTROL, SWEEPING AND ROCK CONSTRUCTION ENTRANCE. ALL DISTURBED AREAS SHALL RECEIVE PERMANENT STABILIZATION IN ACCORDANCE WITH THE LANDSCAPE PLAN WITHIN 7 DAYS AFTER CONSTRUCTION ACTIVITY IN THE DISTURBED AREA HAS CEASED. IN THE EVENT PERMANENT STABILIZATION CANNOT BE IMPLEMENTED WITHIN 7 DAYS, TEMPORARY STABILIZATION BMPS MUST BE IMPLEMENTED WITHIN 7 DAYS USING RAPID STABILIZATION METHOD 3.

3. CLEARING AND GRUBBING. CONTRACTOR SHALL BE RESPONSIBLE FOR CLEARING AND GRUBBING ALL AREAS INDICATED AS BEING DISTURBED OR OTHERWISE SHOWN ON PLANS. CLEARING AND GRUBBING SHALL INCLUDE REMOVAL AND DISPOSAL OF ALL TREES, STUMPS, BRUSH, GRASS, ROOTS AND OTHER ORGANIC MATERIAL AT AN APPROVED OFF–SITE DISPOSAL LOCATION.

4. SOIL PREPARATION. REFER TO GEOTECHNICAL REPORT FOR ANY REQUIRED SOIL CORRECTIONS, AMENDMENTS OR ADDITIONAL INFORMATION (IF APPLICABLE). EXISTING TOPSOIL SHALL BE STRIPPED FROM ALL DISTURBED AREAS AND STOCKPILED IN AN APPROVED LOCATION FOR RE–SPREAD. ALL AREAS WHERE SOIL HAS BEEN COMPACTED BY CONSTRUCTION ACTIVITY AND THAT ARE INDICATED TO BE SODDED, SEEDED OR PLANTING BED SHALL BE DE–COMPACTED TO A MINIMUM DEPTH OF 12 INCHES BY SOIL RIPPING, TILLING OR OTHER APPROVED SOIL LOOSENING METHOD PRIOR TO INSTALLATION OF ANY IRRIGATION, SEEDING, PLANTING, SODDING, ETC.

5. TOPSOIL MATERIAL. ALL EXISTING, AMENDED OR IMPORTED TOPSOIL SHALL MEET THE REQUIREMENTS OF MNDOT TOPSOIL TYPE A. A MINIMUM 4 INCH DEPTH OF TOPSOIL SHALL BE PLACED ON ALL AREAS TO BE SODDED OR SEEDED. A MINIMUM 12 INCH DEPTH OF TOPSOIL SHALL BE PLACED WITHIN ALL PLANTING BED AREAS. ALL TOPSOIL SHALL BE FINE GRADED, RAKED AND DRAGGED TO PROVIDE A SMOOTH, UNIFORM SURFACE. TOPSOIL GRADES SHALL BE WITHIN .1 FEET OF INDICATED FINISHED GRADE AND SHALL BE TRUE TO GRADIENTS SHOWN ON PLANS. REFER TO CIVIL PLAN SHEETS FOR FILTRATION BASIN SOIL REQUIREMENTS.

6. SEEDING AND TURF ESTABLISHMENT. CONTRACTOR SHALL OBTAIN OWNER/LANDSCAPE ARCHITECT'S APPROVAL OF FINAL GRADES AND TOPSOIL PREP PRIOR TO SEEDING. APPLY 10–10–10 TYPE I STARTER FERTILIZER AT A RATE OF 200 LBS PER ACRE PRIOR TO SEEDING. SEEDS SHALL BE SOWED AT THE INDICATED RATE, VIA BROADCAST SPREADER, DROP SEEDER OR DRILL SEEDER. FOLLOWING SEED APPLICATION, INSTALL CATEGORY 20 – STRAW EROSION CONTROL BLANKET WITH NATURAL NETTING ON ALL SLOPES GREATER THAN 4:1. IN ALL OTHER AREAS, APPLY DISC–ANCHORED TYPE 3 MULCH (MCIA CERTIFIED WEED FREE GRAIN STRAW) AT A RATE OF 2 TONS PER ACRE. SOIL SHALL BE KEPT MOIST DURING ESTABLISHMENT WITH ADDITIONAL RE–SEEDING AS NECESSARY TO ACHIEVE A HEALTHY, UNIFORM STAND OF GRASS, FREE OF WEEDS AND WITH COVERAGE EXCEEDING 75% IN ANY 10'x10' AREA PRIOR TO FINAL ACCEPTANCE.

7. SODDING. CONTRACTOR SHALL OBTAIN OWNER/LANDSCAPE ARCHITECT'S APPROVAL OF FINAL GRADES AND TOPSOIL PREP PRIOR TO SODDING. APPLY 10–10–10 TYPE I STARTER FERTILIZER AT A RATE OF 200 LBS PER ACRE PRIOR TO SODDING AND ROLL TOPSOIL TO CREATE A UNIFORM SURFACE FOR LAYING SOD. SOD SHALL NOT BE CUT MORE THAN 24–HOURS IN ADVANCE OF INSTALLATION. CONTRACTOR SHALL KEEP SOD MOIST FOR A MINIMUM OF 30 DAYS AND SHALL BE RESPONSIBLE FOR MAINTAINING THE SOD UNTIL FINAL ACCEPTANCE.

8. PLANT MATERIAL. ALL PLANTING STOCK SHALL CONFORM TO THE "AMERICAN STANDARD FOR NURSERY STOCK," ANSI–Z60, LATEST EDITION, OF THE AMERICAN ASSOCIATION OF NURSERYMEN, INC. AND SHALL CONSTITUTE MINIMUM REQUIREMENTS FOR PLANT MATERIALS. OWNER/LANDSCAPE ARCHITECT RESERVES THE RIGHT TO REJECT ANY PLANTS WHICH ARE DEEMED UNSATISFACTORY BEFORE, DURING, OR AFTER INSTALLATION. NO SUBSTITUTION OF PLANT MATERIAL SHALL BE ACCEPTED UNLESS APPROVED IN WRITING BY THE OWNER/LANDSCAPE ARCHITECT PRIOR TO INSTALLATION.

9. PLANT INSTALLATION AND ESTABLISHMENT. REFER TO STANDARD PLANTING DETAILS. CONTRACTOR SHALL STAKE TREE LOCATIONS FOR APPROVAL BY OWNER/LANDSCAPE ARCHITECT PRIOR TO PLANTING. ANY PLANT MATERIAL WHICH DIES, TURNS BROWN, OR DEFOLIATES (PRIOR TO TOTAL ACCEPTANCE OF THE WORK) SHALL BE PROMPTLY REMOVED FROM THE SITE AND REPLACED WITH MATERIAL OF THE SAME SPECIES, QUANTITY, AND SIZE.

10. MULCH MATERIAL. DOUBLE SHREDDED HARDWOOD MULCH OR ROCK MULCH AS INDICATED ON PLANS. ALL MULCH SHALL BE CLEAN AND FREE OF NOXIOUS WEEDS, SOIL, OR OTHER DELETERIOUS MATERIAL, AND SHALL BE INSTALLED OVER A NON–WOVEN GEOTEXTILE FABRIC (INCIDENTAL) OR OTHER APPROVED WEED BARRIER TO A MINIMUM SETTLED DEPTH OF 4". MULCH SHALL BE HELD BACK FROM PLANT STEMS/TRUNKS A MINIMUM OF 3". WOOD MULCH SHALL BE PLACED AROUND INDIVIDUAL TREES TO A 4' MINIMUM DIAMETER. MULCH SHALL BE INSTALLED WITHIN 48–HOURS OF PLANT INSTALLATION.

11. LANDSCAPE EDGING. INSTALL LANDSCAPE EDGING BETWEEN ALL MULCH AREAS AND TURF. EDGING SHALL BE COMMERCIAL GRADE BLACK POLYETHYLENE OR VINYL EDGING, 0.1 INCH THICK BY 5 INCHES DEEP, V–LIPPED BOTTOM, HORIZONTALLY GROOVED, 1–INCH ROUND TOP, EXTRUDED IN STANDARD LENGTHS, WITH 9–INCH STEEL ANGLE STAKES.

12. IRRIGATION. DESIGN, FURNISH AND INSTALL A COMPLETE UNDERGROUND IRRIGATION SYSTEM FROM APPROVED POINT(S)–OF–CONNECTION WITHIN THE SITE COVERING ALL TURF AND PLANTING AREAS AS SHOWN ON THE LANDSCAPE PLAN. INCLUDES FLOW/PRESSURE TESTING, PLANS WITH DESIGN CALCULATIONS, AS–BUILT DRAWINGS, LABOR, MATERIALS, EQUIPMENT, AND SERVICES FOR THE TESTING, ADJUSTING, RETESTING AND READJUSTING AS REQUIRED TO PLACE THE SYSTEM IN AN APPROVED OPERATING CONDITION. THE IRRIGATION SYSTEM SHALL INCLUDE THE DESIGN AND INSTALLATION OF THE FOLLOWING: PIPING, METER AND BACKFLOW ASSEMBLIES, SPRINKLER HEADS, CABINETS, VALVES AND VALVE BOXES, CONTROLLERS, CONTROL WIRING, FITTINGS, ELECTRICAL CONNECTIONS, QUICK–COUPLERS, ALL OTHER NECESSARY ACCESSORIES, SYSTEM MANUALS, 1–YEAR MAINTENANCE PERIOD INCLUDING 1 FALL WINTERIZATION AND 1 SPRING START–UP. SYSTEM MUST INCLUDE A RAIN SENSOR AND SOME FORM OF WATER EFFICIENT TECHNOLOGY, SUCH AS A SMART CONTROLLER AND/OR SOIL MOISTURE SENSORS. IRRIGATION PLANS TO BE PREPARED BY A QUALIFIED IRRIGATION DESIGNER AND SUBMITTED TO OWNER/LANDSCAPE ARCHITECT FOR APPROVAL.

13. MAINTENANCE. MAINTENANCE SHALL BEGIN IMMEDIATELY AFTER EACH PORTION OF THE WORK IS IN PLACE. PLANT MATERIAL SHALL BE PROTECTED AND MAINTAINED UNTIL THE INSTALLATION OF THE PLANTS IS COMPLETE, INSPECTION HAS BEEN MADE, AND PLANTINGS ARE ACCEPTED EXCLUSIVE OF THE GUARANTEE. MAINTENANCE SHALL INCLUDE MOWING, TRIMMING, WATERING, FERTILIZING, WEED AND PESTICIDE CONTROL, MULCHING, REMOVAL OF DEAD MATERIALS, RE–SETTING PLANTS TO PROPER GRADE AND KEEPING PLANTS IN A PLUMB POSITION. AFTER ACCEPTANCE, THE OWNER SHALL ASSUME MAINTENANCE RESPONSIBILITIES, HOWEVER, THE CONTRACTOR SHALL RETAIN RESPONSIBILITY FOR ALL PLANT MATERIAL THROUGH THE COMPLETION OF THE WARRANTY PERIOD.

14. WATERING. UPON ESTABLISHMENT OF SEED AND INSTALLATION OF PLANTS, CONTRACTOR SHALL MAINTAIN A WATERING SCHEDULE WHICH WILL THOROUGHLY WATER ALL PLANTS AND TURF AREAS A MINIMUM OF ONCE A WEEK. MORE FREQUENT WATERING MAY BE REQUIRED DURING PERIODS OF HOT, DRY WEATHER. CONTRACTOR SHALL MAKE THE NECESSARY ARRANGEMENTS FOR WATER. IN THE ABSENCE OF PERMANENT IRRIGATION, TEMPORARY IRRIGATION, TREE WATERING BAGS, OR HAND–WATERING ARE ACCEPTABLE.

15. NATIVE PLANT ESTABLISHMENT. THIS PROJECT INCLUDES ONE OR MORE NATIVE PLANT SEED MIXES CONSISTING OF A VARIETY OF GRASSES, SEDGES AND FLOWERING FORBS. BECAUSE THESE PLANTS TYPICALLY HAVE A LONGER GERMINATION PERIOD, A COVER CROP SPECIES IS REQUIRED TO PROVIDE TEMPORARY COVER AND STABILIZATION. MAINTENANCE OF THESE SEEDED AREAS IS CRITICAL DURING THE FIRST SEVERAL YEARS TO ESTABLISH A SUCCESSFUL NATIVE PLANT COMMUNITY. SEEDED AREAS SHALL BE MOWED / WEED–WHIPPED TO A HEIGHT OF 6–10 INCHES IN MID–JULY AND EARLY SEPTEMBER DURING THE FIRST 2–3 YEARS OF ESTABLISHMENT. IN ADDITION, ALL NON–NATIVE SPECIES / WEEDS SHALL BE SPOT SPRAYED NO LESS THAN 3 TIMES A YEAR WITH HERBICIDE BY A LICENSED APPLICATOR. RE–SEEDING AS NECESSARY SHALL OCCUR IN MAY. A NATIVE PLANT COMMUNITY SHALL BE CONSIDERED SUCCESSFULLY ESTABLISHED NO SOONER THAT 3 YEARS AFTER INITIAL SEEDING – ONCE THE COVER CROP HAS BEEN SUFFICIENTLY REPLACED BY NATIVE PLANTS AND THE AREA IS FREE OF ALL NON–NATIVE AND INVASIVE SPECIES. AT THIS TIME, MAINTENANCE CAN BE REDUCED TO MOWING / WEED–WHIPPING TO A HEIGHT OF 6–10 INCHES ONCE A YEAR IN EARLY SEPTEMBER AND SPOT SPRAYING OF HERBACIDE ONLY AS NEEDED.

16. FINAL ACCEPTANCE. UPON SUBSTANTIAL COMPLETION OF THE WORK, CONTRACTOR SHALL REQUEST FINAL ACCEPTANCE OF THE WORK IN WRITING BY THE OWNER/LANDSCAPE ARCHITECT. IF ANY WORK IS FOUND TO BE INCOMPLETE OR UNSATISFACTORY IN THE OPINION OF THE OWNER/LANDSCAPE ARCHITECT, A WRITTEN PUNCH LIST WILL BE PREPARED LISTING ALL ITEMS THAT REQUIRE COMPLETING OR CORRECTING BEFORE FINAL ACCEPTANCE.

17. WARRANTY. ALL PLANTS, MATERIALS AND WORKMANSHIP SHALL BE GUARANTEED FOR ONE YEAR FROM THE DATE OF FINAL ACCEPTANCE, UNLESS OTHERWISE SPECIFIED. THE GUARANTEE SHALL COVER THE FULL COST OF REPLACEMENT INCLUDING LABOR AND MATERIAL.

CALL BEFORE YOU DIG

811 Know what's below. Call before you dig.

The subsurface utility information shown on this plan is utility Quality Level D. This quality level was determined according to the guidelines of CI/ASCE 38–02, entitled "Standard Guideline for the Collection and Depiction of Existing Subsurface Utility Data."

CARLSON ENGINEERING
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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 Landscape Architect under the laws of the State of Minnesota

Print Name: Ryan J. Ruttger, RLA
Signature:
Date: 10/01/26 License #: 56346

Drawn: RJR
Designed: RJR
Date: 10/01/26

Revisions:
1. 8/26/26 Add Septic Design (by others) and City & ACHD Comments
2. 9/15/26 per ACHD Comments
3. 10/01/26 per City & ACHD Comments, Landscape Plan Added

HAVEN HOMES, LLC
18732 Poppy Street NW
Oak Grove, MN 55303

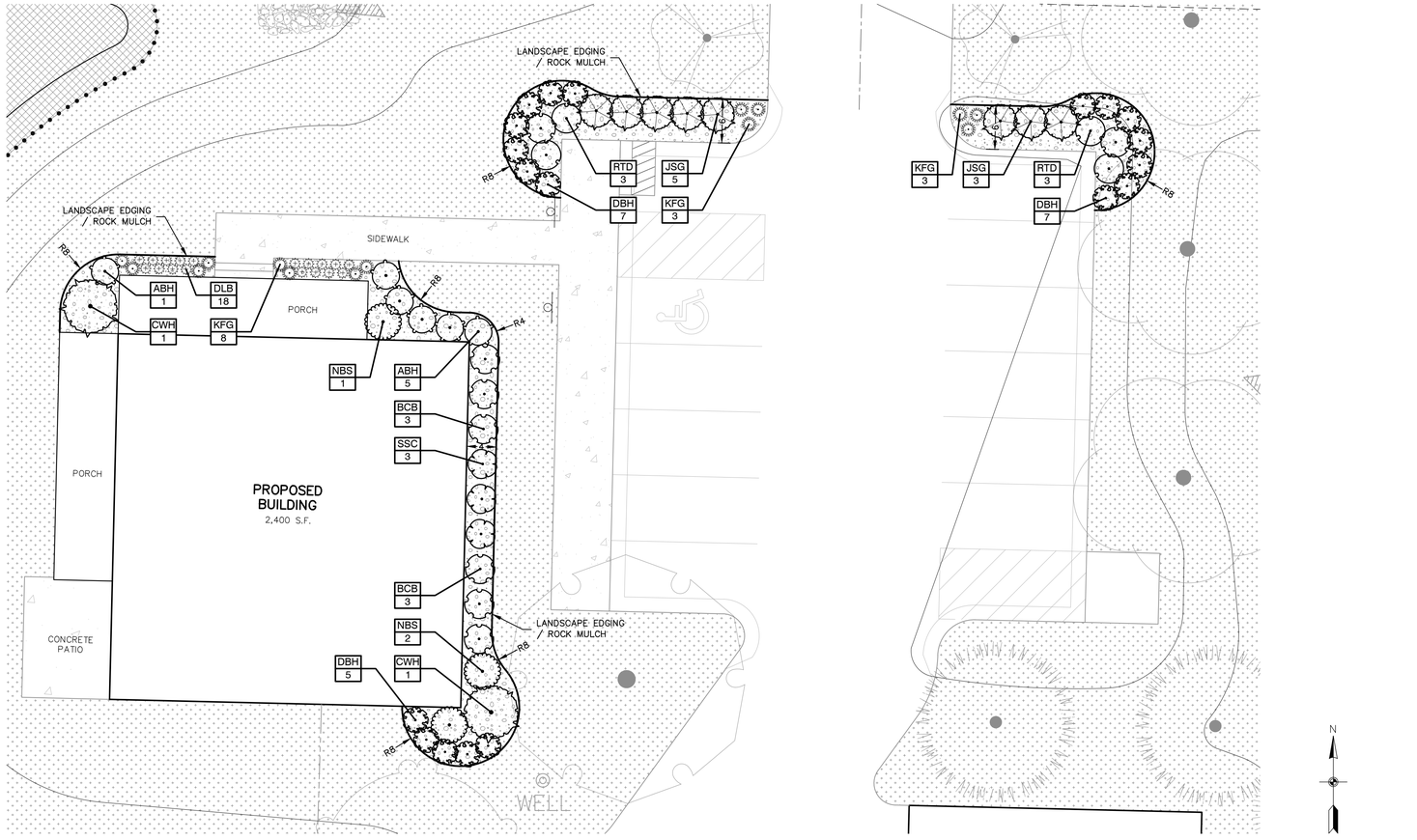
HICKEY LAKE WOODS
LOT 2 BLOCK 2
Oak Grove, Minnesota

LANDSCAPE PLAN

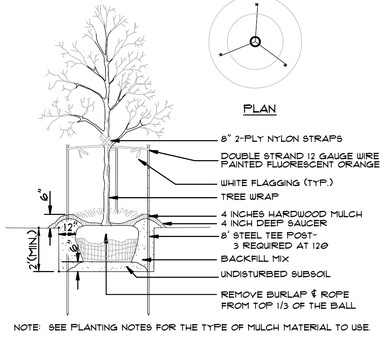
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1 / L2 LANDSCAPE PLAN ENLARGEMENT



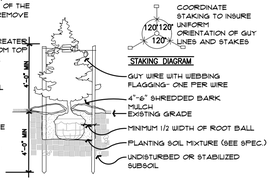
NOTE: SEE PLANTING NOTES FOR THE TYPE OF MULCH MATERIAL TO USE.

A DECIDUOUS TREE PLANTING DETAIL
NOT TO SCALE

1. SCARIFY BOTTOM AND SIDES OF HOLE PRIOR TO PLANTING
2. TRIM OUT DEAD WOOD AND WEAK AND/OR DEFORMED TWIGS. DO NOT CUT A LEADER. DO NOT PAINT CUTS.
3. SET PLANT ON UNDISTURBED NATIVE SOIL OR THOROUGHLY COMPACTED BACKFILL SOIL. INSTALL PLANT SO THE ROOT FLARE IS AT OR UP TO 2" ABOVE THE FINISHED GRADE.
4. PLACE PLANT IN PLANTING HOLE WITH BURLAP AND WIRE BASKET, (IF USED), INTACT. BACKFILL WITHIN APPROXIMATELY 12" OF THE TOP OF ROOTBALL WATER PLANT. REMOVE TOP 1/3 OF THE BASKET OR THE TOP TWO HORIZONTAL RINGS, WHICHEVER IS GREATER. REMOVE ALL BURLAP AND NAILS FROM TOP 1/3 OF THE BALL. REMOVE ALL TWINE.
5. PLUMB AND BACKFILL WITH BACKFILL SOIL.
6. WATER TO SETTLE PLANTS AND FILL VOIDS.
7. WATER WITHIN TWO HOURS OF INSTALLATION. WATERING MUST BE SUFFICIENT TO THOROUGHLY SATURATE ROOT BALL AND PLANTING HOLE.
8. PLACE MULCH WITHIN 48 HOURS OF THE SECOND WATERING UNLESS SOIL MOISTURE IS EXCESSIVE.

NOTE: GUY ASSEMBLY OPTIONAL BUT CONTRACTOR ASSUMES FULL RESPONSIBILITY FOR MAINTAINING TREE IN A PLUMB POSITION FOR THE DURATION OF THE GUARANTEE PERIOD

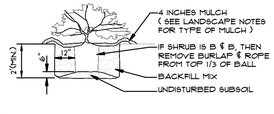
GUY ASSEMBLY- 16" POLYPROPYLENE OR POLYETHYLENE (40 MIL) 1-1/2" WIDE STRAP (TYP) DOUBLE STRAND 10 GA. WIRE, 2-1" ROLLED STEEL POSTS (MNDOT 3401) @ 180° O.C. (SEE STAKING DIAGRAM)



COORDINATE STAKING TO INSURE UNIFORM ORIENTATION OF GUY LINES AND STAKES

STAKING DIAGRAM

B CONIFEROUS TREE PLANTING DETAIL
NOT TO SCALE



C SHRUB & CONTAINER PLANTING DETAIL
NOT TO SCALE

PLANT SCHEDULE

SYMBOL	CODE	QTY	BOTANICAL NAME	COMMON NAME	SIZE	CONTAINER
TREES						
	RM	3	Acer rubrum `Northwood`	Northwood Red Maple	2" Cal.	B&B
	RB	3	Betula nigra Clump Form, 2" Cal Equivalent	River Birch Multi-Trunk	8` Ht.	B&B
	HB	3	Celtis occidentalis	Common Hackberry	2" Cal.	B&B
	WO	2	Quercus bicolor	Swamp White Oak	2" Cal.	B&B
		11	SUBTOTAL:			
CONIFEROUS TREES						
	BF	7	Abies balsamea	Balsam Fir	6` Ht.	B&B
	BH	8	Picea glauca densata	Black Hills Spruce	6` Ht.	B&B
	WP	6	Pinus strobus	White Pine	6` Ht.	B&B
		21	SUBTOTAL:			
ORNAMENTAL TREES						
	CA	2	Malus x `Prairifire`	Prairifire Crabapple	1.5" Cal.	B&B
	JL	3	Syringa reticulata `Ivory Silk` White Flowers	Ivory Silk Japanese Tree Lilac	1.5" Cal.	B&B
		5	SUBTOTAL:			
SHRUBS						
	BCB	6	Aronia melanocarpa `Autumn Magic`	Autumn Magic Black Chokeberry	#5 Cont.	
	SSC	3	Clethra alnifolia `Hummingbird`	Summersweet	#5 Cont.	
	RTD	6	Cornus sericea `Alleman`s Compact`	Dwarf Red Twig Dogwood	#5 Cont.	
	DBH	19	Diervilla lonicera	Dwarf Bush Honeysuckle	#5 Cont.	
	CWH	2	Hamamelis virginiana	Common Witch Hazel	#5 Cont.	
	ABH	6	Hydrangea arborescens `Annabelle`	Annabelle Hydrangea	#5 Cont.	
	NBS	3	Physocarpus opulifolius `Seward` TM	Summer Wine Seward Ninebark	#5 Cont.	
		45	SUBTOTAL:			
EVERGREEN SHRUBS						
	JSG	8	Juniperus chinensis `Sea Green`	Sea Green Juniper	#5 Cont.	
		8	SUBTOTAL:			
GRASSES						
	KFG	14	Calamagrostis x acutiflora `Karl Foerster`	Feather Reed Grass	#3 Cont.	
		14	SUBTOTAL:			
PERENNIALS						
	DLB	18	Hemerocallis x `Baja` Red Flowers	Baja Daylily	#1 Cont.	
		18	SUBTOTAL:			
GROUND COVERS						
	ROCK	1,072 sf	Rock Mulch Non-Woven Geotextile Incidental	1.5" Trap Rock Mulch	4" Depth	
	TI	28,541 sf	Type I - Turf Seed Mix Refer to notes for acceptable seeding methods Seeding Rate 160 lb/ac	MnDOT Southern Boulevard (SB)	seed	
	TII	14,606 sf	Type II - Native Seed Mix (Buffer) Refer to notes for acceptable seeding methods Seeding Rate 39 lb/ac	MnDOT Southern Tallgrass Roadside (STR)	seed	
	TIII	8,140 sf	Type III - Stormwater Seed Mix Refer to notes for acceptable seeding methods Seeding Rate 30 lb/ac	MnDOT Wet Ditch (WD)	seed	
		52,359 sf	SUBTOTAL:			

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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 Landscape Architect under the laws of the State of Minnesota

Print Name: Ryan J. Ruttger, RLA
Signature:
Date: 10/01/26 License #: 56346

Drawn: RJR
Designed: RJR
Date: 10/01/26

Revisions:
1. 8/26/26 Add Septic Design (by others) and City & ACHD Comments
2. 9/15/26 per ACHD Comments
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HAVEN HOMES, LLC
18732 Poppy Street NW
Oak Grove, MN 55303

HICKEY LAKE WOODS
LOT 2 BLOCK 2
Oak Grove, Minnesota

LANDSCAPE PLAN

L2 of 2

Save Date: 10/01/26 | f:\jobs\11501 - 11520\11505 - hickey lake woods\cad c3d\landscape\11505_landscape.dwg

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GENERAL INFORMATION
MINNESOTA'S CONSTRUCTION STORMWATER PERMIT IS AN EXTENSION OF THE NATIONAL POLLUTION DISCHARGE ELIMINATION SYSTEM STORMWATER PROGRAM, WHICH IS PART OF THE FEDERAL CLEAN WATER ACT. REGULATED PARTIES MUST DEVELOP A STORMWATER POLLUTION PREVENTION PLAN (SWPPP). THE SWPPP PROVIDES INFORMATION ON THE EXISTING AND PROPOSED SITE CONDITIONS, CONTROL MEASURES FOR STORMWATER POLLUTION PREVENTION BEFORE, DURING AND AFTER CONSTRUCTION, INSPECTION, MAINTENANCE AND INFORMATION RELATED TO THE PERMANENT STORMWATER MANAGEMENT SYSTEM. THE SWPPP SHALL BE KEPT ON SITE AT ALL TIMES DURING ACTIVE CONSTRUCTION.

PROJECT INFORMATION
PROJECT NAME: HICKEY LAKE WOODS LOT 2 BLOCK 2
PROJECT LOCATION: OAK GROVE, ANOKA COUNTY, MINNESOTA
PROJECT OWNER: HAVEN HOMES, LLC

RESPONSIBLE PARTIES
THE OWNER MUST IDENTIFY A PERSON KNOWLEDGEABLE AND EXPERIENCED IN THE APPLICATION OF EROSION PREVENTION AND SEDIMENT CONTROL BMP'S WHO WILL OVERSEE THE IMPLEMENTATION OF THE SWPPP, AND THE INSTALLATION, INSPECTION AND MAINTENANCE OF THE EROSION PREVENTION AND SEDIMENT CONTROL BMP'S.

SITE MANAGER: _____

TRAINING DOCUMENTATION: _____

_____

EXISTING SITE CONDITIONS
THE SITE IS LOCATED ON VIKING BOULEVARD NW AND SLIGHTLY EAST OF LAKE GEORGE BOULEVARD NW. IT IS BOUNDED TO THE EAST AND SOUTH BY ACREAGE RESIDENTIAL SITES, AND TO THE WEST BY A MULTI-TENANT COMMERCIAL BUILDING. THE PROPERTY IS CURRENTLY MADE UP OF A MIXTURE OF GRASSLAND AND WOODLAND. THERE IS ONE DELINEATED WETLAND IN THE NORTHWEST CORNER OF THE SITE. THE ENTIRE SITE BOUNDARY IS 1.96 ACRES AND THERE ARE NO EXISTING IMPERVIOUS SURFACES ON THE PROPERTY.

THE SITE HAS A HILLY TOPOGRAPHY WITH ELEVATIONS RANGING FROM APPROXIMATELY 902 TO 889. THE MAJORITY OF THE RUNOFF GENERATED ON THE PROPERTY DRAINS TO THE WETLAND IN THE NORTHWEST CORNER OF THE SITE. SMALLER PORTIONS OF THE SITE DRAIN TO LOCAL LOW AREAS WHICH COMPLETELY CONTAIN THE RUNOFF FROM A 100-YEAR STORM. THERE IS SOME AMOUNT OF RUN-ON TO THE PROPERTY THROUGH THE DITCH SYSTEM ALONG VIKING BLVD WHICH FLOWS TO THE AFOREMENTIONED WETLAND.

PROPOSED SITE CONDITIONS
HAVEN HOMES, LLC PLANS ON DEVELOPING THE PROPERTY INTO A COMMERCIAL OFFICE BUILDING AND FUTURE LARGE, DETACHED GARAGE. CORRESPONDING DRIVEWAYS, PARKING LOTS, STORM SEWER, AND WELL & SEPTIC SYSTEM WILL BE CONSTRUCTED. THERE WILL BE APPROXIMATELY 0.53 ACRES OF IMPERVIOUS SURFACES CREATED DURING CONSTRUCTION. AN INFILTRATION BASIN WILL BE CONSTRUCTED TO PROVIDE WATER QUALITY VOLUME FOR THE NEW IMPERVIOUS SURFACES, AND A LOW AREA WILL BE CREATED TO REDUCE THE RUNOFF LEAVING THE SITE. THE SITE WILL BE GRADED TO PROMOTE SURFACE WATER DRAINAGE AND TO MAXIMIZE THE AMOUNT OF RUNOFF THAT IS TREATED BEFORE LEAVING THE SITE. DURING CONSTRUCTION APROXIMATELY 1.6 ACRES WILL BE DISTURBED DURING CONSTRUCTION. ALL DISTURBED AREAS WILL BE TILLED, SEEDED AND MULCHED OR SODDED AFTER CONSTRUCTION IS COMPLETE.

SOIL INFORMATION
ASHLEY KRAUSE COMPLETED 6 SOIL BOINGS THROUGHOUT THE PROPERTY. THE SOIL BORINGS INDICATE A 1.0' LAYER OF SANDY TOPSOIL OVERLAYING FINE SANDS. THESE SOILS ARE CONSISTENT WITH SOILS THAT WOULD FALL INTO THE 'HYDRAULIC SOIL GROUP A'. NONE OF THE SIX SOIL BORINGS ENCOUNTERED GROUNDWATER OR MOTTLING AND THE BORINGS HAD A DEPTH BETWEEN 4 AND 5 FEET. THIS WOULD EQUATE TO AN ELEVATION OF APPROXIMATELY 886.6 WHERE NO GROUNDWATER OR MOTTLING WAS ENCOUNTERED. USING 886.6 AS A MAXIMUM GROUNDWATER LEVEL ADEQUATE SEPARATION BETWEEN THE BOTTOM OF THE PROPOSED INFILTRATION BASIN AND GROUNDWATER LEVELS WILL BE PROVIDED.

WETLAND CONSIDERATIONS
THERE IS ONE WETLAND ON SITE IN THE NORTHWEST CORNER OF THE PROPERTY. THE WETLAND WILL REMAIN UNDISTURBED THROUGHOUT THE CONSTRUCTION PROCESS.

STORMWATER RECEIVING WATERS
STORMWATER FROM THE SITE WILL ULTIMATELY DISCHARGE NORTH INTO THE LOCAL WETLAND/LOW POINT OF THE DITCH ALONG VIKING BLVD NW. WATER WILL BE CONTAINED IN THE WETLAND OR DISCHARGE TO THE WEST INTO THE NEIGHBORING COMMERCIAL SITE.

SPECIAL/IMPAIRED WATER CONSIDERATIONS
THERE ARE NO SPECIAL OR IMPAIRED WATERS LOCATED WITHIN 1 MILE OF THE SITE.

STORMWATER MANAGEMENT PLAN
THE TOTAL DRAINAGE BOUNDARY CONSIDERED IN THE MODEL IS 2.69 ACRES WHICH INCLUDES ALL AREAS DISTURBED BY CONSTRUCTION AND OFFSITE AREAS THAT FLOW TO THE STORMWATER FEATURES ON SITE. THERE WILL BE 0.53 ACRES OF NEWLY CONSTRUCTED IMPERVIOUS SURFACES. THE RUNOFF WITHIN THE DRAINAGE BOUNDARY DISCHARGES IN ONE OF THREE LOCATIONS. THE WETLAND IN THE NORTHWEST CORNER OF THE SITE, A LOW AREA LOCATED IN THE UNDISTURBED SOUTHWEST CORNER, OR TO THE SOUTHEAST INTO THE ACREAGE RESIDENTIAL DEVELOPMENT.

RATE CONTROL:

NW (CFS)	2YR	10YR	100YR	SE (CFS)	2YR	10YR	100YR	SUM (CFS)	2YR	10YR	100YR
EXISTING	0.71	1.54	4.62	EXISTING	0.00	0.00	0.04	EXISTING	1.23	2.01	5.84
PROPOSED	0.90	1.66	4.02	PROPOSED	0.00	0.00	0.00	PROPOSED	1.25	1.99	4.61

IN AGGREGATE, THE PEAK RUNOFF RATE DECREASES FOR THE CRITICAL 100-YEAR EVENT. THE SLIGHT INCREASE FOR THE 2- AND 10-YEAR EVENTS CAN BE CONSIDERED NEGLIGIBLE AND ARE DUE TO THE CREATION OF THE DRIVEWAY ENTRANCE THAT CANNOT BE DIRECTED TO THE ONSITE PONDING (THE COUNTY HIGHWAY DEPARTMENT DOESN'T ALLOW PONDING IN THE RIGHT-OF-WAY). THE COUNTY HIGHWAY DEPARTMENT ALSO REQUIRES A MINIMUM 18" CULVERT UNDER THE DRIVEWAY ENTRANCE WHICH INCREASES RATES COMPARED TO USING SMALLER PIPE SIZES.

VOLUME CONTROL:

NW (ACRE-FT)	2YR	10YR	100YR
EXISTING	0.057	0.147	0.451
PROPOSED	0.066	0.137	0.425

VOLUME CONTROL IS PROVIDED FOR THE 10-YEAR AND CRITICAL 100-YEAR EVENT. THE SLIGHT INCREASE FOR THE 2-YEAR EVENT CAN BE CONSIDERED NEGLIGIBLE AND IS DUE TO THE CREATION OF THE DRIVEWAY THAT CANNOT BE DIRECTED TO THE ONSITE PONDING (THE COUNTY HIGHWAY DEPARTMENT DOESN'T ALLOW PONDING IN THE RIGHT-OF-WAY).

STORMWATER RETENTIONL:

THE TOTAL NEW IMPERVIOUS FOR THE SITE IS 0.54 ACRES. THIS REQUIRES A TOTAL RETENTION VOLUME FOR THE BASIN OF 0.05 ACRE-FEET BASED ON 1.1" OF RUNOFF OVER THE NEW IMPERVIOUS SURFACES. THE TOTAL INFILTRATION VOLUME PROVIDED BY INFILTRATION BASIN 100 IS 0.28 ACRE-FEET. ADDITIONALLY THE INFILTRATION BASIN ALSO HAS ENOUGH STORAGE VOLUME TO TREAT 2.5" OF RUNOFF OVER THE DRAINAGE AREA. THE BSIN HAS A DESIGNED DEPTH OF 1.7' AND THE INFILTRATION RATE OF 0.5 IN/HR IS ANTICIPATED WITH THE SANDY SOILS ENCOUNTERED ONSITE. BASED ON THE DESIGN DEPTH AND ANTICIPATED INFILTRETAION RATE THE DRAWDOWN WILL OCCUR IN ROUGHLY 41 HOURS MEETING THE 48 HOUR REQUIREMENT.

PRIOR TO START OF CONSTRUCTION
THE FOLLOWING STORMWATER POLLUTION PREVENTION MEASURES SHALL BE IMPLEMENTED PRIOR TO CONSTRUCTION. REFER TO GRADING AND EROSION CONTROL PLANS FOR LOCATIONS.

1. SILT FENCE
   SILT FENCE SHALL BE INSTALLED AT THE LIMIT OF GRADING ON ANY FILL SLOPE. ADDITIONAL SILT FENCE MAY BE REQUIRED IN CUT SLOPE AREAS. SILT FENCE SHALL ALSO BE INSTALLED AROUND ANY INFILTRATION/FILTRATION PRACTICE.
2. ROCK CONSTRUCTION ENTRANCE
   ROCK CONSTRUCTION ENTRANCES SHALL BE INSTALLED AT THE FIELD ENTRANCES TO THE SITE.
3. CATCH BASINS
   ALL CATCH BASINS SHALL BE PROTECTED WITH INLET PROTECTION DEVICES APPROVED BY THE LOCAL GOVERNING UNIT. THESE SHALL INCLUDE, BUT ARE NOT LIMITED TO, WIMCO PROTECTION DEVICES, INFRASAFE PROTECTION DEVICES, FILTER FABRIC, BIO ROLLS AND STRAW BALES.

DURING CONSTRUCTION
THE FOLLOWING STORMWATER POLLUTION PREVENTION MEASURES SHALL BE IMPLEMENTED DURING CONSTRUCTION. REFER TO GRADING AND EROSION CONTROL PLANS FOR LOCATIONS.

1. PHASED GRADING
   TO THE EXTENT POSSIBLE, GRADING SHALL BE PHASED TO MINIMIZE THE AMOUNT OF DISTURBED AREAS DURING SITE CONSTRUCTION. THE DISTURBED AREA SHALL NOT BE MORE THAN CAN BE EFFECTIVLY MAINTAINED.
2. TRACKED SEDIMENT
   ANY SEDIMENT TRACKED FROM THE SITE ONTO THE STREET SHALL BE REMOVED IMMEDIATELY UPON DETECTION. THE ROCK CONSTRUCTION ENTRANCE SHALL BE INSPECTED AND REPAIRED IF INUNDATED WITH SEDIMENT. SWEEPER MUST BE AVAILABLE ON-SITE WITHIN 3 HOURS NOTICE FROM THE CITY.
3. STOCKPILES
   STOCKPILES SHALL BE PLACED IN AN AREA THAT WILL MINIMIZE THE NEED FOR RELOCATION. IF A STOCKPILE WILL REMAIN IN PLACE FOR AN EXTENDED PERIOD OF TIME, STABILIZATION MEASURES SHALL BE IMPLEMENTED, INCLUDING BUT NOT LIMITED TO, SEEDING AND SILT FENCING. TEMPORARY STOCKPILES MUST HAVE SILT FENCE OR OTHER EFFECTIVE SEDIMENT CONTROLS AND CANNOT BE PLACED IN SURFACE WATERS, INCLUDING STORMWATER CONVEYANCES SUCH AS CURB AND GUTTER SYSTEMS, CONDUITS OR DITCHES. PERIMETER PROTECTION MUST BE IN PLACE AT THE DOWNGRADIENT SIDE AT THE BASE OF THE STOCKPILE PRIOR TO INITIATING STOCKPILING.
4. TOPSOIL
   UPON GRADING COMPLETION, A MINIMUM OF 4 INCHES OF TOPSOIL SHALL BE PLACED OVER ALL DISTURBED AREAS, EXCLUDING PROPOSED STREETS AND PARKING AREAS.
5. EROSION CONTROL & RESTORATION
   ALL DISTURBED AREAS NOT ACTIVELY WORKED SHALL BE RESTORED WITH SEED AND MULCH, EROSION CONTROL BLANKET AND/OR SOD WITHIN 14 DAYS. CONSIDER USING NATURAL-NETTED PRODUCTS INSTEAD OF PLASTIC NETTED. STABILIZATION SHALL COMMENCE AS SOON AS PRACTICABLE, BUT NO LATER THAN THE END OF THE WORK DAY, FOLLOWING THE DAY WHEN THE EARTH-DISTURBING ACTIVITIES HAVE TEMPORARILY OR PERMANENTLY CEASED, IF THE PERMITTEE(S) KNOW THAT CONSTRUCTION WORK ON THAT PORTION OF THE SITE WILL BE TEMPORARILY CEASED FOR 14 DAYS.
6. SLOPES
   IN ORDER TO MAINTAIN SHEET FLOW AND MINIMIZE RILLS AND/OR GULLIES, THERE SHALL BE NO UNBROKEN SLOPE LENGTH OF GREATER THAN 75 FEET FOR SLOPES WITH A GRADE OF 3:1 OR STEEPER.
7. DRAINAGE DITCHES
   THE NORMAL WETTED PERIMETER OF ANY TEMPORARY OR PERMANENT DRAINAGE DITCH THAT DRAINS WATER FROM THE SITE, OR DIVERTS WATER AROUND THE SITE, MUST BE STABILIZED WITHIN 200 LINEAL FEET FROM THE PROPERTY EDGE, OR FROM THE POINT OF DISCHARGE TO ANY SURFACE WATER. STABILIZATION MUST BE COMPLETED WITHIN 24 HOURS OF CONNECTING TO A SURFACE WATER.
8. PIPE OUTLETS
   PIPE OUTLETS MUST BE PROVIDED WITH TEMPORARY OR PERMANENT ENERGY DISSIPATION WITHIN 24 HOURS OF CONNECTION TO A SURFACE WATER.
9. CATCH BASINS
   ALL CATCH BASINS SHALL BE PROTECTED WITH INLET PROTECTION DEVICES APPROVED BY THE LOCAL GOVERNING UNIT. THESE SHALL INCLUDE, BUT ARE NOT LIMITED TO, WIMCO PROTECTION DEVICES, INFRASAFE PROTECTION DEVICES, FILTER FABRIC, BIO ROLLS AND STRAW BALES.
10. DUST
    CONSTRUCTION DUST SHALL BE CONTAINED TO THE EXTENT POSSIBLE. IF THE SITE BECOMES EXCESSIVELY DUSTY, APPROPRIATE MEASURES SHALL BE TAKEN TO REDUCE DUST BEING TRANSPORTED FROM THE SITE. DUST CONTROL MEASURES INCLUDE, BUT ARE NOT LIMITED TO, WATERING AND CALCIUM CHLORIDE APPLICATION.
11. DEWATERING
    DEWATERING ACTIVITIES SHALL BE CONDUCTED WITH AND APPROVED BY THE LOCAL GOVERNING UNIT. IF THERE WILL BE ANY DEWATERING OR BASIN DRAINING THAT MAY HAVE TURBID OR SEDIMENT LADEN DISCHARGE, THE WATER MUST BE DISCHARGED TO A TEMPORARY OR PERMANENT SEDIMENTATION BASIN ON THE PROJECT SITE WHENEVER POSSIBLE. APPROPRIATE BMPS SHALL BE USED FOR EROSION AND SEDIMENT CONTROL AND ENERGY DISSIPATION. IF NUISANCE CONDITIONS RESULT, CEASE DEWATERING IMMEDIATELY AND PERFORM CORRECTIVE ACTIONS. THE OUTLET SHALL BE PHOTOGRAPHED BEFORE THE START OF DEWATERING AND ONCE EVERY 24 HOURS WHILE THE DEWATERING IS OCCURRING.
12. CONSTRUCTION MATERIALS AND DEBRIS
    CONSTRUCTION MATERIALS SHALL BE STORED IN AN ORDERLY MANNER AND IN AN AREA THAT WILL MINIMIZE CONFLICTS WITH OTHER CONSTRUCTION ACTIVITIES. CONSTRUCTION DEBRIS SHALL BE CONTAINED IN DUMPSTERS AND REMOVED FROM THE SITE AS NECESSARY.
13. CHEMICALS
    CHEMICALS SHALL BE STORED IN A SAFE AREA IN SEALED CONTAINERS WITH THE ORIGINAL LABELING AND MATERIAL SAFETY DATA SHEETS AVAILABLE.
14. SPILLS AND CONTAMINATION
    IF FUEL, OIL OR A HAZARDOUS CHEMICAL IS SPILLED OR DETECTED DURING CONSTRUCTION ACTIVITIES, ALL APPROPRIATE AGENCIES SHALL BE IMMEDIATELY NOTIFIED, INCLUDING, BUT NOT LIMITED TO, THE MINNESOTA DUTY OFFICER AT 800-422-0798.
15. CONCRETE WASHOUT AREA
    PERMITTEES MUST PROVIDE EFFECTIVE CONTAINMENT FOR ALL LIQUID AND SOLID WASTES GENERATED BY WASHOUT OPERATIONS (E.G., CONCRETE, STUCCO, PAINT, FORM RELEASE OILS, CURING COMPOUNDS AND OTHER CONSTRUCTION MATERIALS) RELATED TO THE CONSTRUCTION ACTIVITY. PERMITTEES MUST PREVENT LIQUID AND SOLID WASHOUT WASTES FROM CONTACTING THE GROUND AND MUST DESIGN THE CONTAINMENT SO IT DOES NOT RESULT IN RUNOFF FROM THE WASHOUT OPERATIONS OR AREAS. PERMITTEES MUST PROPERLY DISPOSE LIQUID AND SOLID WASTES IN COMPLIANCE WITH MPCA RULES. PERMITTEES MUST INSTALL A SIGN INDICATING THE LOCATION OF THE WASHOUT FACILITY.

POST CONSTRUCTION
WHEN THE SITE HAS BEEN COMPLETELY CONSTRUCTED, THE SITE MUST UNDERGO FINAL STABILIZATION. FINAL STABILIZATION OCCURS WHEN ALL OF THE GRADING, INFRASTRUCTURE AND BUILDING ACTIVITIES HAVE BEEN COMPLETED. TO ACHIEVE FINAL STABILIZATION, THE FOLLOWING MEASURES SHALL BE COMPLETED.

1. ALL DISTURBED AREAS WITHOUT PERMANENT IMPERVIOUS SURFACES SHALL BE STABILIZED BY A UNIFORM PERENNIAL VEGETATIVE COVER. AREAS NOT REQUIRING SOD OR EROSION CONTROL BLANKET SHALL BE SEEDED AND MULCHED.
2. SEDIMENT FROM CONVEYANCES AND TEMPORARY SEDIMENTATION BASINS THAT ARE TO BE USED AS PERMANENT WATER QUALITY MANAGEMENT BASINS SHALL BE CLEANED OUT. SEDIMENTATION BASINS SHALL BE SUFFICIENTLY CLEANED OUT TO RETURN THE BASIN TO DESIGN CAPACITY. SEDIMENT MUST BE STABILIZED TO PREVENT IT FROM BEING WASHED BACK INTO THE BASIN OR CONVEYANCES DISCHARGING OFF-SITE OR TO SURFACE WATERS.
3. WHEN STABILIZED VEGETATION HAS BEEN ESTABLISHED OVER 70 PERCENT OF THE PERVIOUS SURFACE AREA, ALL SYNTHETIC TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHALL BE REMOVED. THIS INCLUDES, BUT IS NOT LIMITED TO, SILT FENCE, TREE FENCE AND CATCH BASIN INLET PROTECTION DEVICES.

SWPPP DRAWING UPDATES
UPDATE SWPPP DRAWING FOR LOCATIONS OF CONSTRUCTION DUMPSTER, PORTABLE TOILET, EQUIPMENT STAGING AREA(S), FUELING AREA(S), ETC. WHEN THEIR RESPECTIVE LOCATIONS ARE KNOWN.

INSPECTIONS & RECORD KEEPING
STORMWATER POLLUTION PREVENTION INSPECTIONS SHALL OCCUR ONCE EVERY SEVEN (7) DAYS DURING ACTIVE CONSTRUCTION AND WITHIN 24 HOURS AFTER A RAINFALL EVENT GREATER THAN 0.5 INCHES IN 24 HOURS. INSPECTION REPORTS SHALL BE SENT TO THE CITY INSPECTOR FOLLOWING EVERY INSPECTION EVENT. INSPECTIONS MAY BE CEASED DURING FROZEN GROUND CONDITIONS. WHERE WORK HAS BEEN SUSPENDED DUE TO FROZEN GROUND CONDITIONS, THE REQUIRED INSPECTIONS AND MAINTENANCE MUST TAKE PLACE WITHIN 24 HOURS AFTER RUNOFF OCCURS AT THE SITE OR PRIOR TO RESUMING CONSTRUCTION, WHICHEVER COMES FIRST. DURING THE COURSE OF CONSTRUCTION, IT MAY BE DETERMINED THAT ADDITIONAL STORMWATER POLLUTION PREVENTION MEASURES MAY BE NEEDED, OR CERTAIN MEASURES ARE NOT PRACTICAL TO INSTALL. IN THESE CASES, AN AMENDMENT TO THE SWPPP SHALL BE MADE, AND SUPPORTING REASONS SHALL BE DOCUMENTED IN THE SWPPP.

1. THE EXCAVATOR IS RESPONSIBLE FOR ALL EROSION CONTROL INSPECTIONS.
2. RECORD NAME OF INSPECTOR AND DATE AND TIME OF INSPECTION.
3. RECORD RAINFALL AMOUNT SINCE MOST RECENT INPSECTION.
4. INSPECT ROCK CONSTRUCTION ENTRANCES FOR SEDIMENTATION. INSPECT ADJACENT STREETS FOR SEDIMENT TRACKING.
5. INSPECT SITE FOR EXCESSIVE EROSION AND SEDIMENT ACCUMULATION.
   A. INSPECT SILT FENCE AND OTHER TEMPORARY EROSION AND SEDIMENT CONTROL DEVICES FOR EROSION, SEDIMENTATION AND MALFUNCTIONING.
   B. INSPECT FLARED END SECTIONS FOR EROSION AND SEDIMENTATION.
   C. INSPECT PONDS, INFILTRATION BASINS, TEMPORARY SEDIMENTATION BASINS AND ALL OTHER BMP'S FOR EROSION AND SEDIMENTATION.
   D. INSPECT SURFACE WATERS, INCLUDING DRAINAGE DITCHES AND CONVEYANCE SYSTEMS FOR EVIDENCE OF SEDIMENT BEING DEPOSITED BY EROSION.
6. INSPECT SITE AND ADJACENT PROPERTIES FOR CONSTRUCTION DEBRIS, TRASH AND SPILLS.
7. INSPECT STABILIZED AREAS FOR EROSION.
8. RECORD RECOMMENDED REPAIRS, MAINTENANCE AND/OR REPLACEMENTS REQUIRED TO ENSURE EROSION AND SEDIMENTATION CONTROL MEASURES ARE SUFFICIENT.
9. RECORD RECOMMENDED AMENDMENTS TO THE SWPPP.
10. RECORD REPAIRS, MAINTENANCE AND/OR REPLACEMENTS THAT WERE COMPLETED SINCE THE LAST INSPECTION.

NOTE: FOR AREAS THAT HAVE UNDERGONE FINAL STABILIZATION, INSPECTIONS CAN BE REDUCED TO ONCE PER MONTH.

MAINTENANCE
THE OWNER/CONTRACTOR IS RESPONSIBLE FOR THE OPERATION, INSPECTION AND MAINTENANCE OF ALL STORMWATER POLLUTION PREVENTION MEASURES FOR THE DURATION OF THE PROJECT. THE FOLLOWING GUIDELINES SHALL BE USED TO DETERMINE NECESSARY REPAIRS, MAINTENANCE AND/OR REPLACEMENT OF THE EROSION AND SEDIMENTATION CONTROL MEASURES.

1. ROCK CONSTRUCTION ENTRANCES SHALL BE REPAIRED OR REPLACED IF THE ROCK BECOMES INUNDATED WITH SEDIMENT AND/OR EXCESSIVE SEDIMENT IS BEING TRACKED FROM THE SITE. SEDIMENT TRACKED ONTO ADJACENT STREETS SHALL BE REMOVED. MEASURES SHALL BE TAKEN IMMEDIATELY UPON DISCOVERY.
2. SILT FENCE SHALL BE REPAIRED OR REPLACED WHEN SEDIMENT REACHES 1/3 THE HEIGHT OF THE SILT FENCE, THE SILT FENCE IS DAMAGED AND/OR THE SILT FENCE BECOMES NONFUNCTIONAL. MEASURES SHALL BE TAKEN WITHIN 24 HOURS OF DISCOVERY.
3. CATCH BASIN INLET PROTECTION DEVICES SHALL BE CLEANED WHEN SEDIMENT REACHES ½ THE HEIGHT OF THE SEDIMENT TRAP AND/OR REPAIRED OR REPLACED IF THE DEVICE BECOMES NONFUNCTIONAL. MEASURES SHALL BE TAKEN WITHIN 72 HOURS OF DISCOVERY.
4. FLARED END SECTIONS SHALL BE CLEANED IF DEBRIS IS RESTRICTING FLOW OR IF SEDIMENT HAS ACCUMULATED AT THE OUTLET. IF A FLARED END SECTION BECOMES NONFUNCTIONAL OR DAMAGED, IT SHALL BE REPAIRED OR REPLACED. MEASURES SHALL BE TAKEN WITHIN 72 HOURS OF DISCOVERY.

IF SEDIMENT IS OBSERVED OFF-SITE OR NEAR SURFACE WATERS, THE SOURCE OF SEDIMENT SHALL BE DETECTED AND ADDITIONAL MEASURES SHALL BE IMPLEMENTED. THE PERMITEE(S) SHALL COORDINATE SEDIMENT RETRIEVAL FROM SURFACE WATERS WITH ALL APPROPRIATE AGENCIES. MEASURES SHALL BE TAKEN WITHIN 7 DAYS OF DISCOVERY.

5. PONDS, INFILTRATION BASINS, TEMPORARY SEDIMENTATION BASINS AND ALL OTHER BMP'S SHALL BE CLEANED IF DEBRIS IS PRESENT AND/OR EXCESSIVE SEDIMENTATION HAS OCCURRED. TEMPORARY AND PERMANENT SEDIMENTATION BASINS MUST BE DRAINED AND THE SEDIMENT REMOVED WHEN SEDIMENT HAS FILLED THE BASIN TO 1/2 THE STORAGE VOLUME. NO SEDIMENT SHALL BE ALLOWED TO ACCUMULATE IN INFILTRATION BASINS. MEASURES SHALL BE TAKEN WITHIN 72 HOURS OF DISCOVERY.

NOTICE OF TERMINATION
THE PERMITEE(S) MUST SUBMIT A NOTICE OF TERMINATION (NOT) TO THE MPCA WITHIN 30 DAYS AFTER FINAL STABILIZATION IS COMPLETE, OR ANOTHER OWNER/OPERATOR (PERMITEE) HAS ASSUMED CONTROL OVER ALL AREAS OF THE SITE THAT HAVE NOT UNDERGONE FINAL STABILIZATION. WHEN SUBMITTING THE NOT, THE PERMITTEE(S) MUST SUBMIT GROUND OR AERIAL PHOTOGRAPHS SHOWING PERMIT TERMINATION REQUIREMENTS HAVE BEEN MET. PHOTOGRAPHS MUST INCLUDE THE DATE THE PHOTOGRAPH WAS TAKEN.

QUANTITIES
THE FOLLOWING TABLE PROVIDES ESTIMATED QUANTITIES FOR STORMWATER POLLUTION PREVENTION THROUGHOUT THE PROJECT:

ITEM	UNIT	ESTIMATED QUANTITY
SILT FENCE	L.F.	1,500
EROSION CONTROL BLANKET	S.Y.	AS REQ.
TURF ESTABLISHMENT	AC.	1.5
CONSTRUCTION ENTRANCE	EA.	1
INLET PROTECTION	EA.	1
RIP RAP CL. 3	C.Y.	16

SWPPP DESIGN CERTIFICATION

UNIVERSITY OF MINNESOTA

Aaron D. Briski

Construction Site Management (May 31 2028)
Design of Construction SWPPP (May 31 2027)

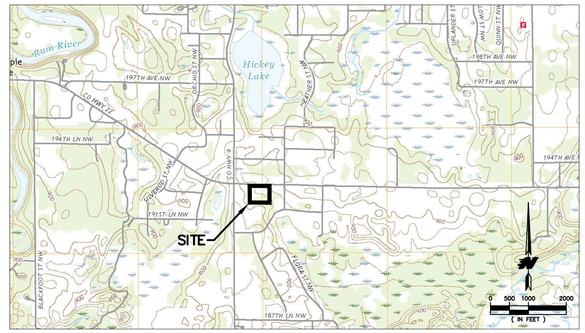
Erosion and Stormwater Management

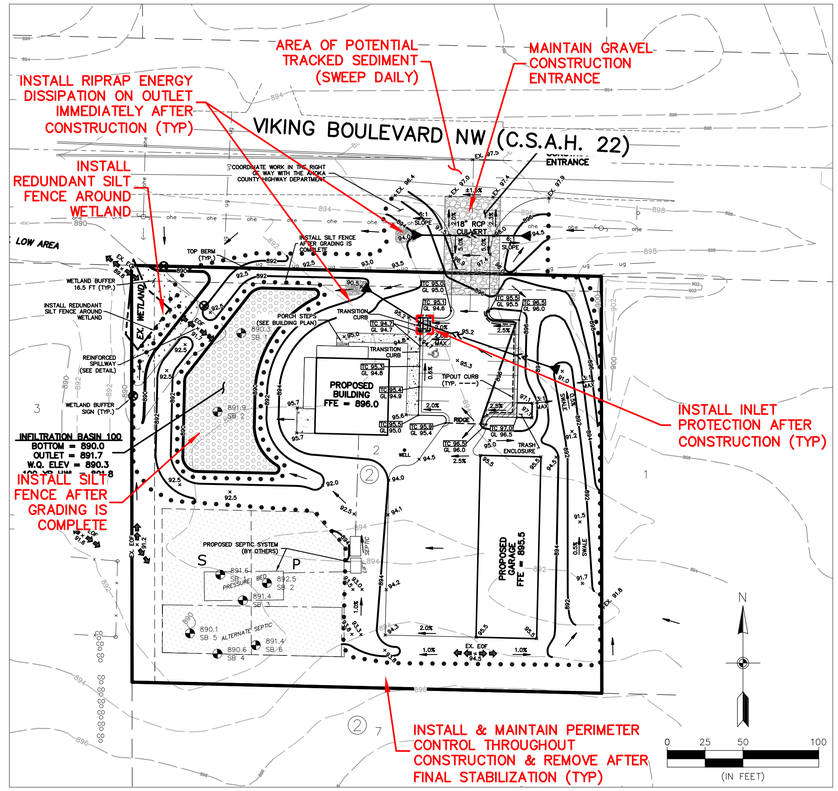
The bearer of this card has been tested and is certified in the area(s) shown on the reverse of this card. Certification expiration dates appear after each certification area.

Ilsa Olsa, Head
Department of Bioproducts and Biosystems Engineering
University of Minnesota
http://www.erosion.umn.edu

Card Issued: 6/1/2025

SITE LOCATION MAP





CARLSON ENGINEERING
ENGINEERING SURVEYING PLANNING
3890 PHEASANT RIDGE DR NE
SUITE 100
BLAINE, MN 55449
TEL 763.489.7900
FAX 763.489.7959
CARLSON-ENGINEERING.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

Print Name: Aaron D. Briski, P.E.
Signature: Aaron Briski
Date: 6/26/26 License #: 57811

Drawn: GJS
Designed: ADB
Date: 6/26/26

Revisions:
1. 8/26/26 Add Septic Design (by others) and City & ACHD Comments
2. 9/15/26 per ACHD Comments
3. 10/01/26 per City & ACHD Comments, Landscape Plan Added

HAVEN HOMES, LLC
18732 Poppy Street NW
Oak Grove, MN 55303

HICKEY LAKE WOODS LOT 2 BLOCK 2
Oak Grove, Minnesota

STORMWATER POLLUTION PREVENTION PLAN

S1 of S1

Save Date: 10/02/26 | F:\jobs\11501 - 11520\11505 - hickey lake woods\cad c3d\engineering\plan set\11505_swppp.dwg

#11505

NOTES:

- INTERMITTENT SIGNS SHALL BE USED FOR LOOSE GRAVEL, UNEVEN LANES, BUMP, ETC.
- LANE WIDTHS MINIMUM OF 10'. IF MINIMUM LANE WIDTH CANNOT BE MAINTAINED A TWO PERSON FLAGGING OPERATION SHALL BE USED.
- CONTRACTOR TO COMPLY WITH MnDOT LONGITUDINAL DROP OFF GUIDELINES (J-BARRIER MIGHT BE NEEDED)
- THE ACCESS IS TO REMAIN CLOSED TO THE PUBLIC UNTIL CONSTRUCTION IS COMPLETED FOR RIGHT TURN LANE.
- REFER TO THE LATEST EDITION OF THE MUTCD FOR TEMPORARY TRAFFIC CONTROL STANDARDS.

LEGEND

	EXISTING	PROPOSED
PROPERTY LINE		
EASEMENT LINE		
CURB LINE		
BITUMINOUS		
CONCRETE		
CONSTRUCTION AREA		
TRAFFIC CONES		
SIGN		

SIGN SCHEDULE

SIGN	SIGN NO.	SIZE	QUANTITY
ROAD WORK AHEAD	W20-1	36" X 36" (BLACK ON ORANGE)	6

LAKE GEORGE BOULEVARD NW (C.S.A.H. 9)

VIKING BOULEVARD NW (C.S.A.H. 22)

HEATHER STREET NW

ROAD WORK AHEAD

750'

750'

750'

750'

50' TYP

100'

250'

70009
895.28
BM ANOKA 3030

889.5 SB WL

889.8 SB WL

N

0 50 100 200
(IN FEET)

BENCHMARK

1. Anoka County Benchmark No. 3031 – Elevation = 905.81 ft. (NAVD88)
2. Anoka County Benchmark No. 3030 – Elevation = 895.28 ft. (NAVD88)

CARLSON ENGINEERING ENGINEERING SURVEYING PLANNING

3890 PHEASANT RIDGE DR NE
SUITE 100
BLAINE, MN 55449
TEL 763.489.7900
FAX 763.489.7959
CARLSON-ENGINEERING.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

Print Name: Aaron D. Briski, P.E.
Signature: Aaron Briski
Date: 6/26/26 License #: 57811

Drawn: GJS
Designed: ADB
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Revisions:
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3. 10/01/26 per City & ACHD Comments, Landscape Plan Added
4. 10/07/26 ACHD Comment

HAVEN HOMES, LLC
18732 Poppy Street NW
Oak Grove, MN 55303

HICKEY LAKE WOODS
LOT 2 BLOCK 2
Oak Grove, Minnesota

TRAFFIC CONTROL PLAN

T1 of T1

#11505

Save Date: 10/07/26 | F:\jobs\11501 - 11520\11505 - hickey lake woods\cad c3d\engineering\plan set\11505_traffic control plan.dwg