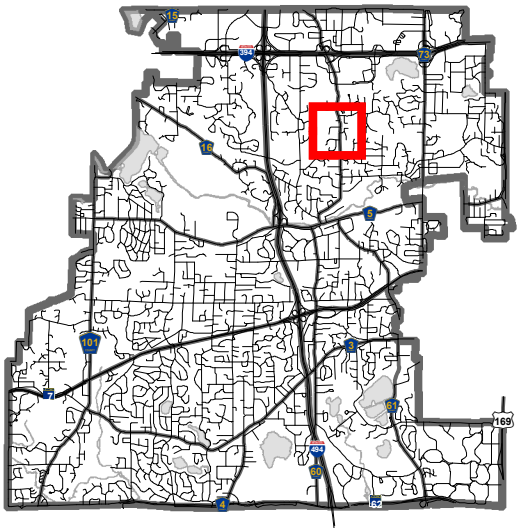
CITY OF MINNETONKA

Location Map

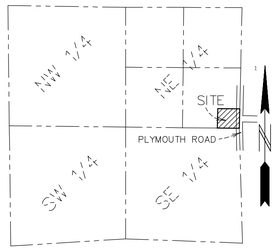
Project: Woodhaven at Minnetonka
Address: 2424 & 2440 Plymouth Rd



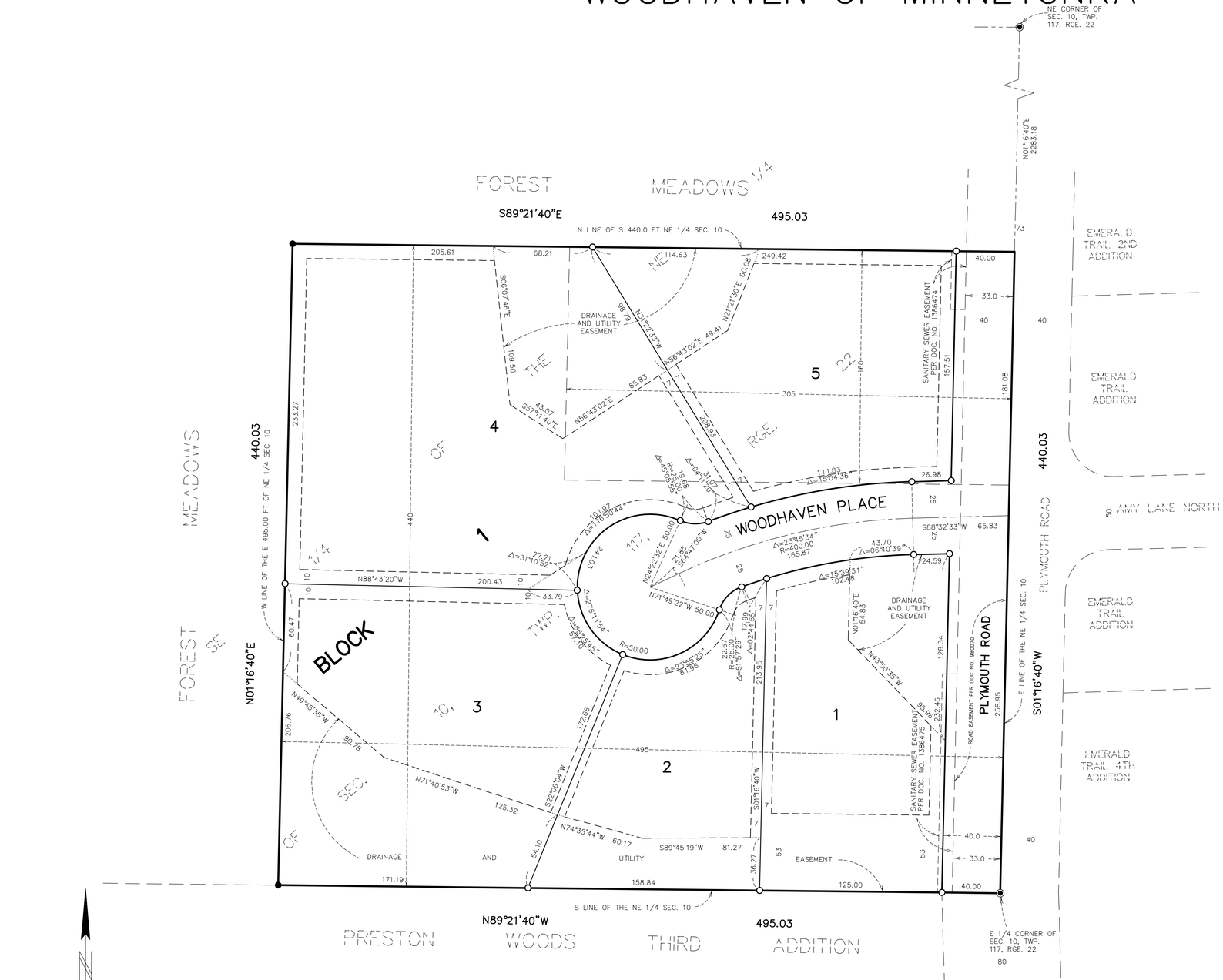
WOODHAVEN OF MINNETONKA

R.T. DOC. NO. _____

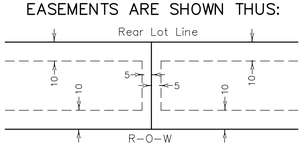
C.R. DOC. NO. _____



SECTION 10, TWP. 117, RGE. 22
HENNEPIN COUNTY, MINNESOTA
LOCATION MAP
NOT TO SCALE



DRAINAGE AND UTILITY EASEMENTS ARE SHOWN THUS:



Being 5 feet in width, and adjoining lot lines unless otherwise indicated, and 10 feet in width and adjoining right of way and rear lot lines unless otherwise indicated on the plat.

THE ORIENTATION OF THIS BEARING SYSTEM IS BASED ON THE SOUTH LINE OF THE NORTHEAST QUARTER OF SEC. 10 TWP. 117 RGE. 22, WHICH IS ASSUMED TO HAVE A BEARING OF NORTH 89°21'40" WEST.

- ◉ DENOTES FOUND CAST IRON MONUMENT
- ○ DENOTES 1/2 INCH BY 14 INCH IRON PIPE MONUMENT SET AND MARKED BY LICENSE NUMBER 42299.
- ● DENOTES FOUND 1/2 INCH IRON MONUMENT MARKED BY LICENSE NUMBER 42299 UNLESS OTHERWISE NOTED.

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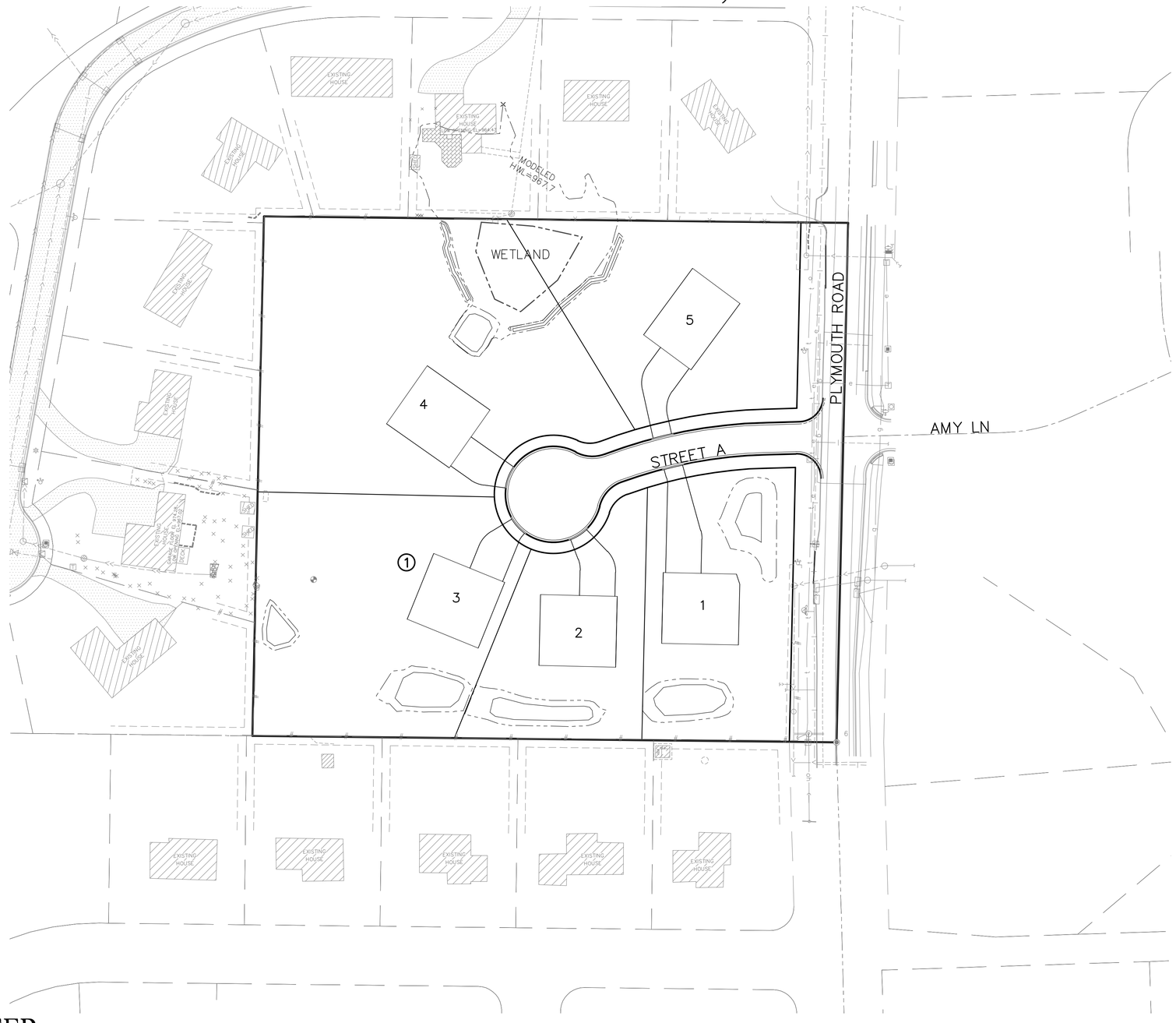

WOODHAVEN
GRADING, UTILITY & STREET CONSTRUCTION PLAN
MINNETONKA, MINNESOTA

LOCATION MAP

SHEET INDEX

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

01-ENG-123127-SHEET-COVR

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I hereby certify that this plan was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota

Name John M. Molinaro
Reg. No. 45831 Date 3-15-2024

Revisions

Date 3-15-24
Designed JMM
Drawn MSN/PDS

COVER

NORTON HOMES
18215 45TH AVENUE NORTH
PLYMOUTH, MINNESOTA 55446

WOODHAVEN
MINNETONKA, MINNESOTA

LEGEND

UTILITY LINES

EXISTING	PROPOSED	FUTURE	DESCRIPTION
			SANITARY MANHOLE
FM	FM	FM	SANITARY SEWER (SANITARY & WATERMAIN PLANS)
			SANITARY SEWER (STORM SEWER PLANS)
			FORCE MAIN
			HYDRANT
			GATE VALVE
			REDUCER
			CURB STOP
			WATERMAIN (SANITARY & WATERMAIN PLANS)
			WATERMAIN (STORM SEWER PLANS)
			CATCH BASIN
			BEEHIVE
			STORM MANHOLE
			FLARED END SECTION
			CONTROL STRUCTURE
			STORM SEWER (SANITARY & WATERMAIN PLANS)
			STORM SEWER (STORM SEWER PLANS)
			CULVERT
PERF	PERF	PERF	PERFORATED DRAINTILE
DT	DT	DT	SOLID DRAINTILE SERVICE
			CASING
e	e	e	UNDERGROUND ELECTRIC LINE
fo	fo	fo	UNDERGROUND FIBER OPTIC LINE
g	g	g	UNDERGROUND GAS PIPELINE
petro	petro	petro	UNDERGROUND PETROLEUM PIPELINE
t	t	t	UNDERGROUND TELEPHONE LINES
tv	tv	tv	UNDERGROUND TELEVISION LINE
oh	oh	oh	OVERHEAD UTILITY LINES

SITE LINES

EXISTING	PROPOSED	FUTURE	DESCRIPTION
			SURMOUNTABLE CURB & GUTTER
			B-STYLE CURB & GUTTER
			RIBBON CURB & GUTTER
			EDGE OF BITUMINOUS
			YELLOW PAVEMENT STRIPING (SINGLE/DOUBLE)
			WHITE PAVEMENT STRIPING (SINGLE/DOUBLE)
			PHASE LINE
			CENTERLINE
902	902	902	2' CONTOUR LINE
900	900	900	10' CONTOUR LINE
	OUTLET=987.0	OUTLET=987.0	BASIN OUTLET LINE
	HWL=900.2	HWL=900.2	BASIN HIGH WATER LINE
	84.3		PROPOSED SPOT ELEVATION
			EMERGENCY OVERFLOW
			DRAINAGE FLOW ARROW
BUFFER	BUFFER	BUFFER	DELINEATED / PROPOSED WETLAND LINE
			WETLAND BUFFER
			TREE LINE
FEMA	FEMA	FEMA	FEMA FLOODPLAIN BOUNDARY
			RETAINING WALL
X	X	X	FENCE (BARBED WIRE)
#	#	#	FENCE (CHAIN LINK)
[]	[]	[]	FENCE (WOOD)
	C		CONSERVATION AREA SIGN
	W		WETLAND BUFFER SIGN
			TYPE III BARRICADE
			LIGHT POLE
			STREET SIGNS
			PEDESTRIAN RAMP

SURVEY LINES

EXISTING	PROPOSED	FUTURE	DESCRIPTION
			BOUNDARY
			RIGHT OF WAY
			LOT LINE
			EASEMENT
			SET BACK LINE
			SECTION LINE
			RESTRICTED ACCESS

HATCH PATTERNS

- GRAVEL SURFACE
- BITUMINOUS SURFACE
- CONCRETE SURFACE
- RIP RAP
- SELECT BACKFILL MATERIAL
- EROSION CONTROL BLANKET MNDOT CATEGORY PER PLAN
- WETLAND
- WETLAND UPLAND BUFFER
- WETLAND MITIGATION
- PERMANENT TURF RESTORATION
- PERMANENT WET BASIN SEEDING
- UPLAND/NATURAL AREA SEEDING

TOPOGRAPHIC SYMBOLS

- CATCH BASIN
- CATCH BASIN BEEHIVE
- FLARED END SECTION
- GATE VALVE
- HYDRANT
- WATER SERVICE
- WATER WELL
- MONITORING WELL
- CLEANOUT
- HAND HOLE
- MANHOLE OTHER THAN SANITARY OR STORM
- SANITARY OR STORM MANHOLE
- LAWN SPRINKLER VALVE
- LAWN SPRINKLER HEAD
- UTILITY POLE
- TRANSFORMER BOX
- FIBER OPTIC BOX
- ELECTRIC BOX
- NATURAL GAS METER
- LIGHT POLE
- SEMAPHORE
- TELEPHONE BOX
- CABLE BOX
- CAST IRON MONUMENT
- FOUND IRON PIPE
- JUDICIAL LAND MARK
- PK NAIL
- CONTROL POINT
- SPIKE
- FLAG POLE
- TEST HOLE
- MAILBOX
- SIGN
- BOLLARD
- CONSERVATION POST
- DECIDUOUS TREE
- CONIFEROUS TREE
- SHRUB / BUSH

EROSION & SEDIMENT CONTROL

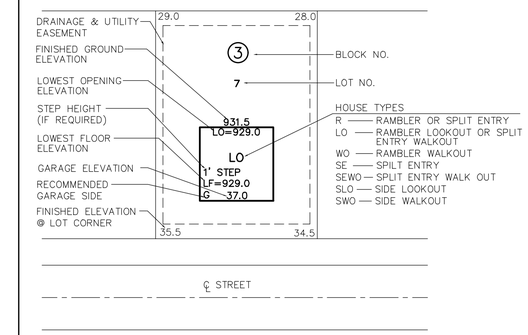
- STANDARD EROSION CONTROL
- HEAVY-DUTY EROSION CONTROL
- SECONDARY EROSION CONTROL FENCE
- EROSION CONTROL AT BACK OF CURB
- TREE FENCE
- TEMPORARY DIVERSION DITCH
- CATCH BASIN INLET PROTECTION
- STRAW BIO ROLLS
- ROCK BERM
- SUMPED RIP RAP PERMANENT ENERGY DISSIPATER
- DISCHARGE LOCATION
- GRAVEL CONSTRUCTION ENTRANCE
- TEMPORARY OUTLET FLOATING SKIMMER
- BASIN ACCESS 8% SLOPE MAX.
- STABILIZED EMERGENCY OVERFLOW
- STEEP SLOPE 3:1 (H:V) (33.3%) OR STEEPER GRADE

ABBREVIATIONS

A	ALGEBRAIC DIFFERENCE
B-B	BACK TO BACK
BV	BUTTERFLY VALVE
BOC	BACK OF CURB
BFE	BASE FLOOD ELEVATION
BMP	BEST MANAGEMENT PRACTICE
℄	CENTER LINE
CB	CATCHBASIN
CBMH	CATCHBASIN MANHOLE
CMP	CORRUGATED METAL PIPE
CO	CLEAN OUT
CS	CURB STOP
DIP	DUCTILE IRON PIPE
DT	DRAINTILE
EL/ELEV	ELEVATION
EX	EXISTING
FES	FLARED END SECTION
F-F	FACE TO FACE
FM	FORCEMAIN
GB	GRADE BREAK
GND	GROUND
GV	GATE VALVE
HP	HIGH POINT
HYD	HYDRANT
HWL	HIGH WATER LEVEL
INV	INVERT
K	CURVE COEFFICIENT
L	LENGTH
LF	LOWEST FLOOR
LO	LOOKOUT
LO	LOWEST OPENING
LP	LIQUID PETROLEUM
LP	LOW POINT
MH	MANHOLE
PC	POINT OF CURVATURE
PCC	POINT OF COMPOUND CURVATURE
PI	POINT OF INTERSECTION
P℄	PROPERTY LINE
PRC	POINT OF REVERSE CURVATURE
PVT	POINT OF TANGENCY
PVC	POINT OF VERTICAL CURVATURE
PVC	POLYVINYL CHLORIDE PIPE
PVI	POINT OF VERTICAL INTERSECTION
R	RADIUS
R	RAMBLER
RCP	REINFORCED CONCRETE PIPE
ROW	RIGHT OF WAY
SSWR	SANITARY SEWER
STA	STATION
STRM	STORM SEWER
SWPPP	STORM WATER POLLUTION PROTECTION PLAN
TNH	TOP NUT HYDRANT
TYP	TYPICAL
WM	WATER MAIN
WO	WALKOUT

LOT INFORMATION

(TYPICAL SECTION NOT TO SCALE)



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Name John M. Molinaro
Reg. No. 45831 Date 3-15-2024

Revisions

Date	3-15-24
Designed	JMM
Drawn	MSN/PDS

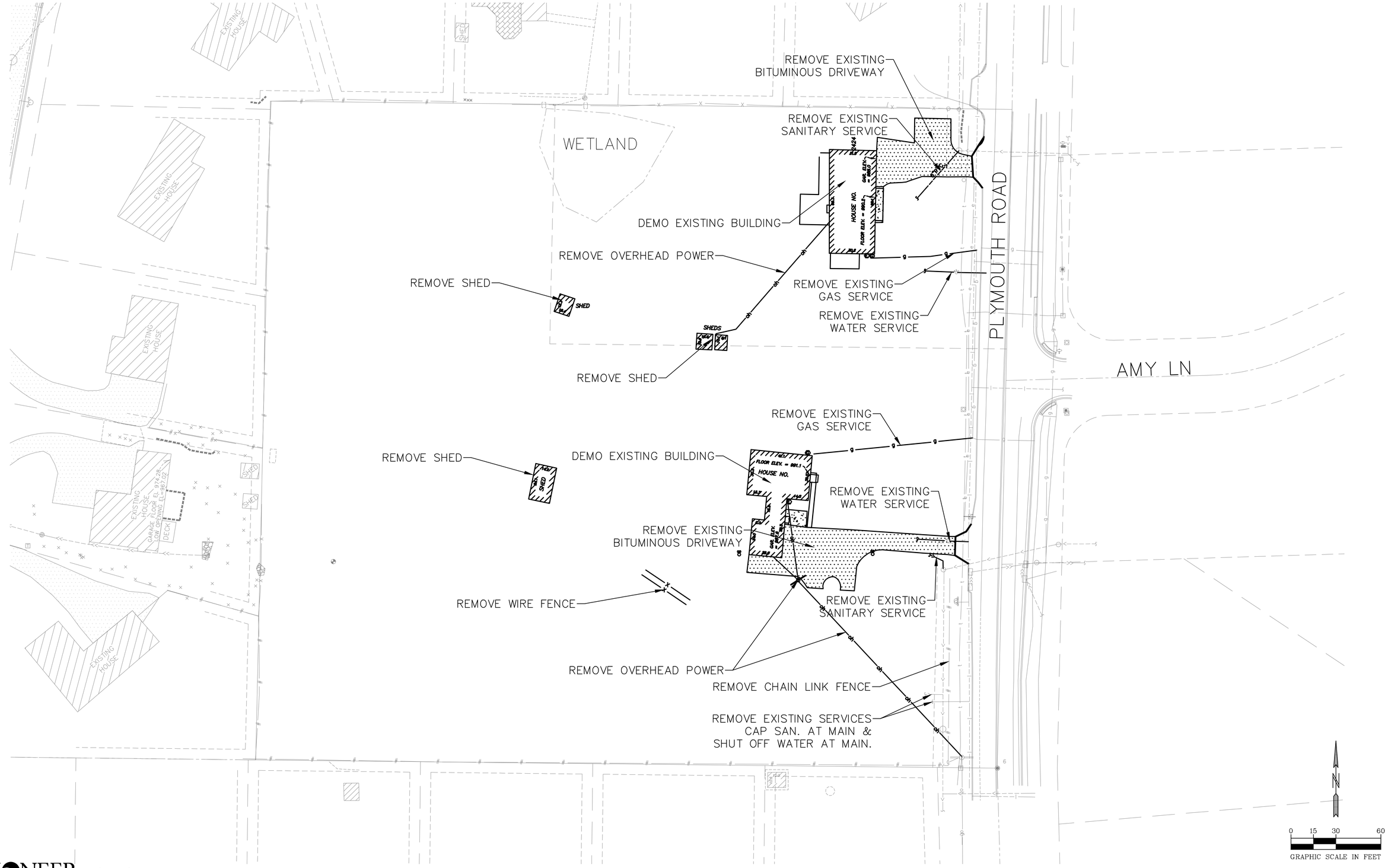
01-ENG-123127-SHEET-LGND

LEGEND

NORTON HOMES
18215 45TH AVENUE NORTH
PLYMOUTH, MINNESOTA 55446

WOODHAVEN
MINNETONKA, MINNESOTA

1.20 OF 22



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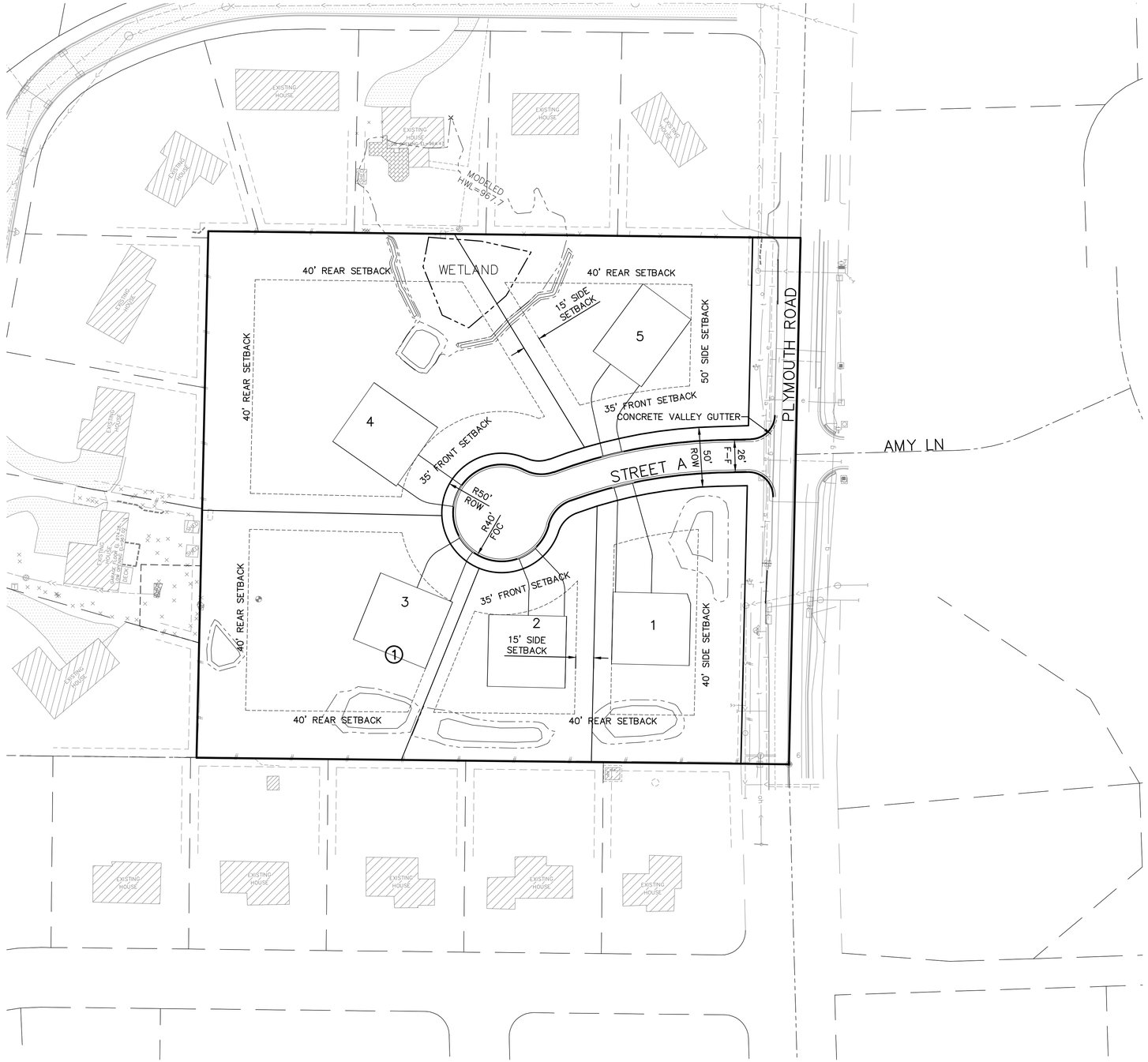
REMOVAL PLAN

NORTON HOMES
18215 45TH AVENUE NORTH
PLYMOUTH, MINNESOTA 55446

WOODHAVEN
MINNETONKA, MINNESOTA

01-ENG-123127-SHEET-DEMO

2.10 OF 22



2040 COMP PLAN: LOW DENSITY RESIDENTIAL (1–4 UNITS/ACRE)
CURRENT ZONING: R–1
PROPOSED ZONING: R–1

R–1 MINIMUM BULK STANDARDS:
AREA: 22,000 SF
WIDTH: 110'
DEPTH: 125'
FRONT SETBACK: 35'
SIDE SETBACK: 10' MINIMUM, 30' COMBINED
REAR YARD: LESSER OF 40' OR 20% OF LOT DEPTH
DRIVEWAY EASEMENT: 7' FROM DRIVEWAY

STORMWATER REQUIREMENTS

LOW OPENING	2'+HWL
LOW FLOOR	2'+HWL

N

0 25 50 100
GRAPHIC SCALE IN FEET

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SITE PLAN

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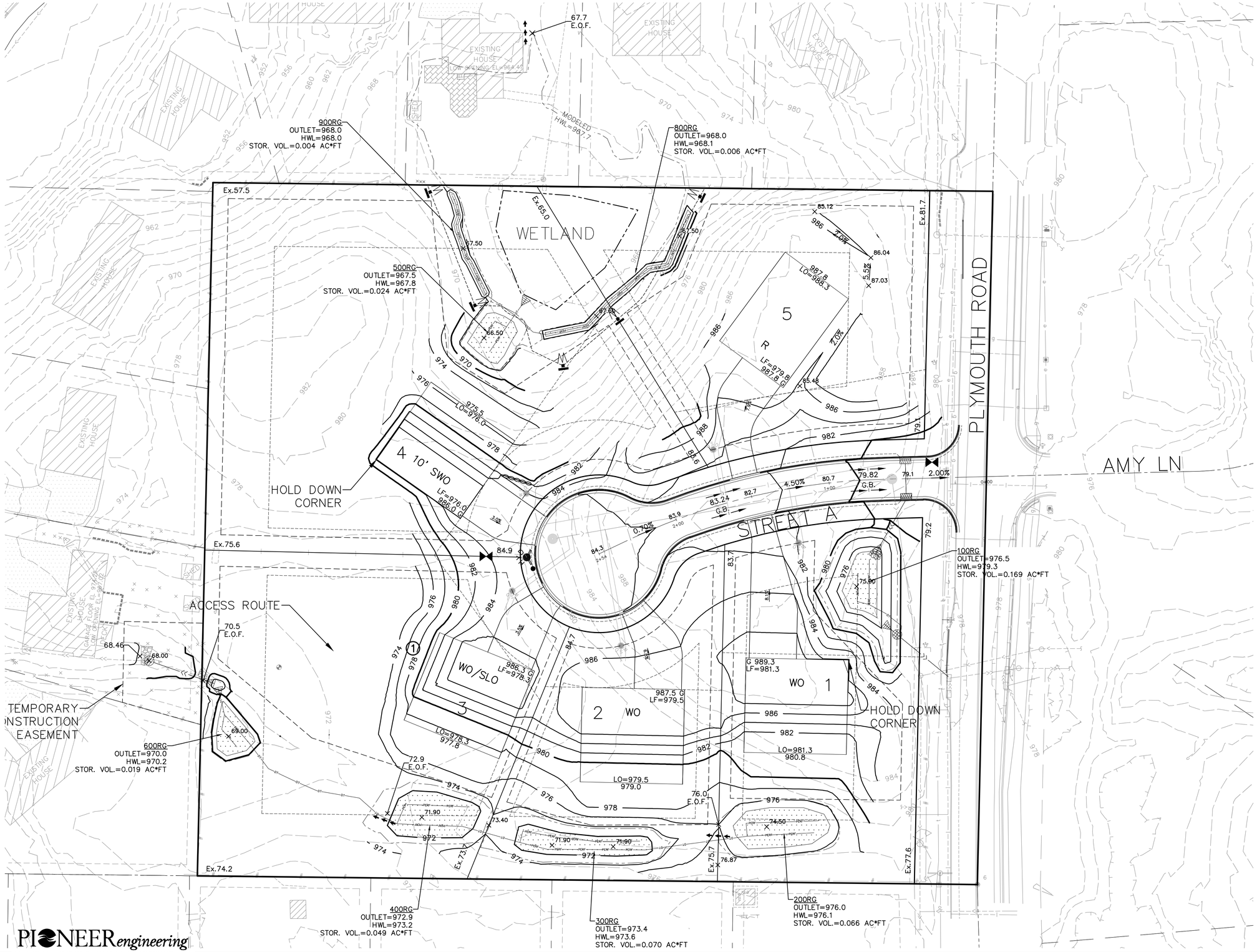
WOODHAVEN
MINNETONKA, MINNESOTA

3.10 OF 22

01-ENG-123127-SHEET-SITE



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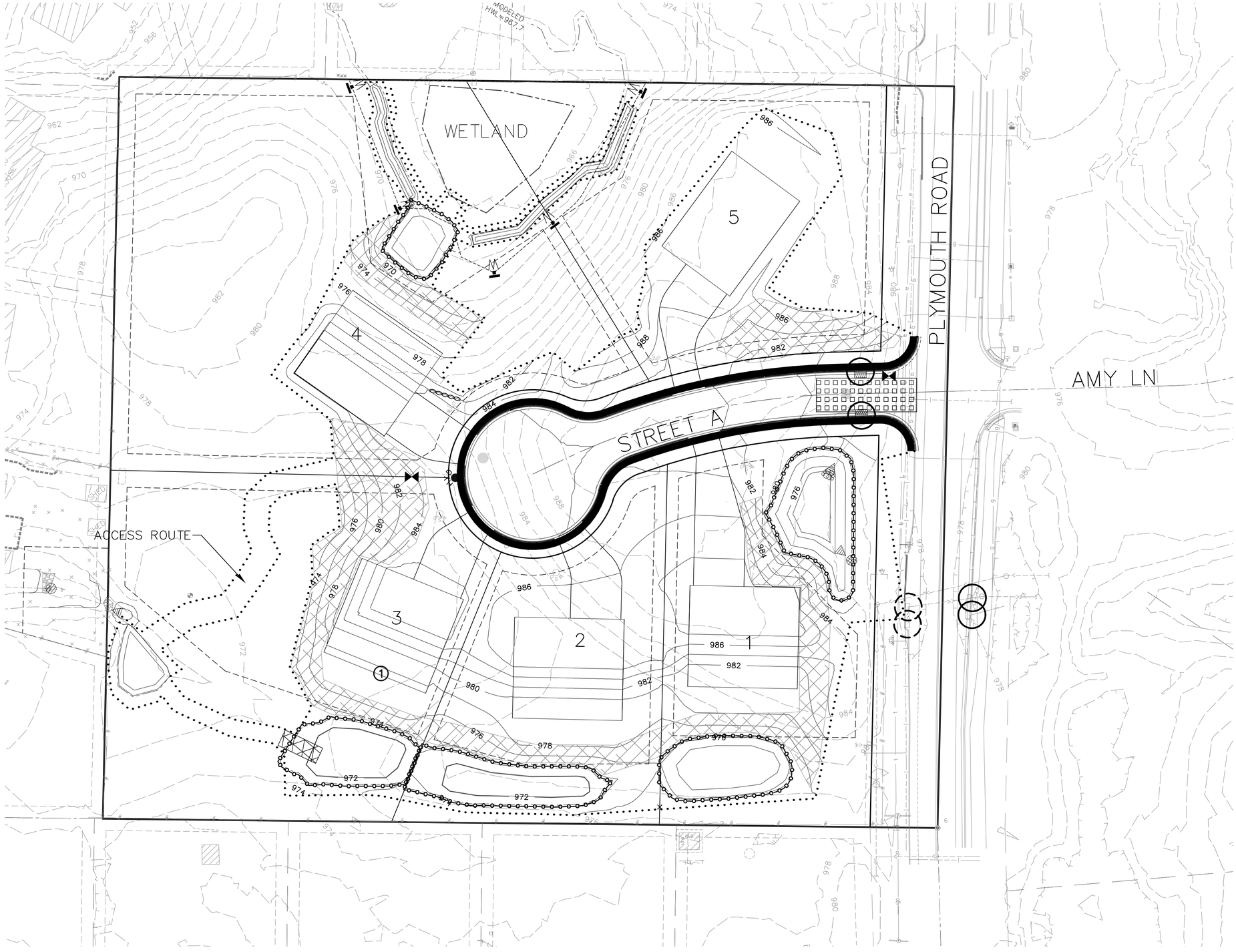
GRADING PLAN

NORTON HOMES
18215 45TH AVENUE NORTH
PLYMOUTH, MINNESOTA 55446

WOODHAVEN
MINNETONKA, MINNESOTA

4.10 OF 22

01-ENG-123127-SHEET-GRAD



LEGEND

- ROCK CONSTRUCTION ENTRANCE INSTALL BEFORE START OF GRADING
- PERIMETER EROSION CONTROL FENCE. INSTALL BEFORE START OF GRADING
- SECONDARY EROSION CONTROL FENCE. TO BE INSTALLED 48 HOURS AFTER COMPLETION OF GRADING.
- 2' SOD OR EROSION CONTROL FENCE AT BACK OF CURB. TO BE INSTALLED AFTER COMPLETION OF SIDEWALK CONSTRUCTION.
- SUMPED RIP RAP PERMANENT ENERGY DISSIPATER, INSTALL WITHIN 24 HOURS AFTER CONNECTION TO A SURFACE WATER.
- STABILIZED EMERGENCY OVERFLOW
- MNDOT CAT 3 EROSION CONTROL BLANKET. INSTALL WITHIN 7 DAYS OF GRADING COMPLETION
- CATCH BASIN INLET PROTECTION TO BE INSTALLED AFTER 1ST LIFT OF BITUMINOUS.
- CATCH BASIN INLET PROTECTION TO BE INSTALLED WITH CATCH BASIN GRATE.
- W WETLAND CONSERVATION SIGN
- FILTRATION AREA

N

0 15 30 60

GRAPHIC SCALE IN FEET

01-ENG-123127-SHEET-EROS

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EROSION CONTROL PLAN

NORTON HOMES
18215 45TH AVENUE NORTH
PLYMOUTH, MINNESOTA 55446

WOODHAVEN
MINNETONKA, MINNESOTA

4.20 OF 22

TEMPORARY SEED SHALL BE DONE IN ACCORDANCE TO MNDOT 2575 & 3876; CONSISTING OF:

- MAY 1 – AUGUST 1: MINNESOTA STATE SEED MIXTURE 22–111 (OATS COVER CROP) @ 100.0 LBS. PER ACRE OR APPROVED EQUAL.
- AUGUST 1 – OCTOBER 1: MINNESOTA STATE SEED MIXTURE 22–111 (WINTER WHEAT COVER CROP) @ 100.0 LBS. PER ACRE OR APPROVED EQUAL.
- MULCH SHALL BE MNDOT 3882, TYPE 1 @ 2 TONS PER ACRE OR APPROVED EQUAL AND DISK ANCHORED IN PLACE OR APPROVED EQUAL, INSTALLED TO MINIMUM 90% COVERAGE OF THE SURFACE AREA DISTURBED.
- MNDOT 3881, TYPE 1 COMMERCIAL FERTILIZER, 10–10–20 @ 200 LBS. PER ACRE

PERMANENT TURF RESTORATION SHALL BE DONE IN ACCORDANCE WITH MNDOT 2575 & 3876 CONSISTING OF:

- MINNESOTA STATE SEED MIXTURE 25–141 (MESIC GENERAL ROADSIDE) AT 59 POUNDS PER ACRE.
- MULCH SHALL BE MNDOT 3882, TYPE 1 @ 2 TONS PER ACRE OR APPROVED EQUAL AND DISK ANCHORED IN PLACE OR APPROVED EQUAL, INSTALLED TO MINIMUM 90% COVERAGE OF THE SURFACE AREA DISTURBED.
- MNDOT 3881, TYPE 3 SLOW–RELEASE FERTILIZER, 22–5–10, MINIMUM 70% WATER–INSOLUBLE NITROGEN @ 350 LBS PER ACRE.

PERMANENT BASIN SEEDING SHALL BE DONE IN ACCORDANCE WITH MNDOT 2575 & 3876 CONSISTING OF:

- WET BASIN BENCH/(IN)FILTRATION BASIN: MINNESOTA STATE SEED MIXTURE 33–261 (STORMWATER SOUTH AND WEST) AT 35 POUNDS PER ACRE.
- ABOVE BASIN BENCH TO HIGH WATER LEVEL: MINNESOTA STATE SEED MIXTURE 35–241 (MESIC PRAIRIE GENERAL) AT 36.5 POUNDS PER ACRE.
- MULCH SHALL BE MNDOT 3882, TYPE 3 @ 2 TONS PER ACRE OR APPROVED EQUAL AND DISK ANCHORED IN PLACE OR APPROVED EQUAL,
- MNDOT 3881, TYPE 4 NATURAL–BASED FERTILIZER, 18–1–8 @ 120 LBS PER ACRE OR 17–10–7 @ 150 LBS PER ACRE

PERMANENT TURF RESTORATION SHALL BE DONE IN ACCORDANCE WITH MNDOT 2575 & 3876 CONSISTING OF:

- MINNESOTA STATE SEED MIXTURE 36–211 (WOODLAND EDGE SOUTH & WEST) AT 34.5 POUNDS PER ACRE.
- MULCH SHALL BE MNDOT 3882, TYPE 1 @ 2 TONS PER ACRE OR APPROVED EQUAL AND DISK ANCHORED IN PLACE OR APPROVED EQUAL, INSTALLED TO MINIMUM 90% COVERAGE OF THE SURFACE AREA DISTURBED.
- MNDOT 3881, TYPE 3 SLOW–RELEASE FERTILIZER, 10–20–20, MINIMUM 70% WATER–INSOLUBLE NITROGEN @ 300 LBS PER ACRE.

0 15 30 60

GRAPHIC SCALE IN FEET

01-ENG-123127-SHEET-SEED

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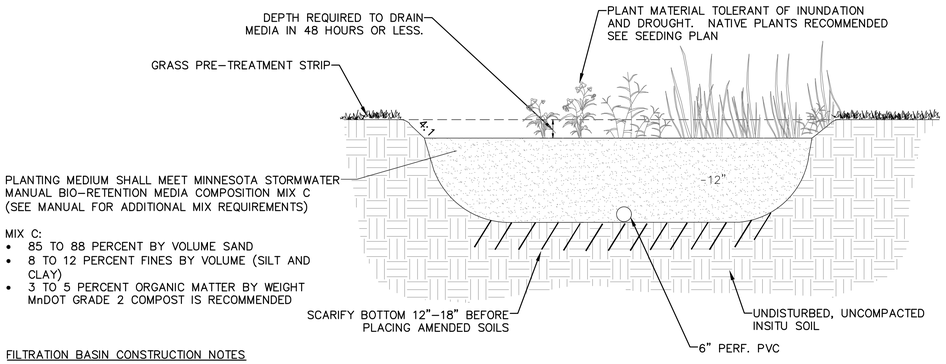
Drawn MSN/PDS

SEEDING PLAN

NORTON HOMES
18215 45TH AVENUE NORTH
PLYMOUTH, MINNESOTA 55446

WOODHAVEN
MINNETONKA, MINNESOTA

4.30 OF 22



FILTRATION BASIN CONSTRUCTION NOTES

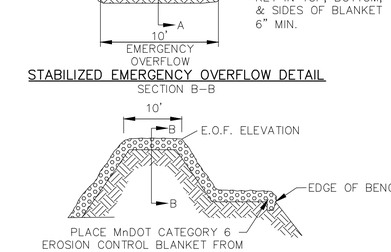
CONSTRUCTION SEQUENCING

1. INSTALL SILT FENCE AND/OR OTHER APPROPRIATE EROSION CONTROL DEVICES TO PREVENT SEDIMENT FROM LEAVING OR ENTERING THE PRACTICE DURING CONSTRUCTION.
2. ALL DOWN-GRADIENT PERIMETER SEDIMENT CONTROL BMPS MUST BE IN PLACE BEFORE ANY UP GRADIENT LAND DISTURBING ACTIVITY BEGINS.
3. PERFORM CONTINUOUS INSPECTIONS OF EROSION CONTROL PRACTICES.
4. INSTALL UTILITIES (WATER, SANITARY SEWER, ELECTRIC, PHONE, FIBER OPTIC, ETC) PRIOR TO SETTING FINAL GRADE OF RETENTION DEVICE.
5. ROUGH GRADE THE SITE. DO NOT USE RETENTION AREA AS TEMPORARY SEDIMENT BASINS.
6. PERFORM ALL OTHER SITE IMPROVEMENTS.
7. SEED AND MULCH ALL AREAS AFTER DISTURBANCE.
8. CONSTRUCT RETENTION DEVICE UPON STABILIZATION OF CONTRIBUTING DRAINAGE AREA.
9. IMPLEMENT TEMPORARY AND PERMANENT EROSION CONTROL PRACTICES.
10. PLANT AND MULCH RETENTION DEVICE.
11. REMOVE TEMPORARY EROSION CONTROL DEVICES AFTER THE CONTRIBUTING DRAINAGE AREA IS ADEQUATELY VEGETATED.

GENERAL NOTES

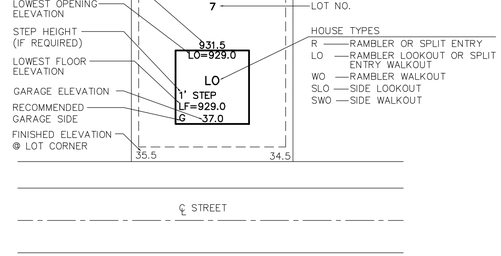
1. IN THE EVENT THAT SEDIMENT IS INTRODUCED INTO THE BMP DURING OR IMMEDIATELY FOLLOWING EXCAVATION, THIS MATERIAL SHALL BE REMOVED FROM THE PRACTICE PRIOR TO CONTINUING CONSTRUCTION.
2. GRADING OF RETENTION DEVICES SHALL BE ACCOMPLISHED USING LOW-COMPACTION EARTH-MOVING EQUIPMENT TO PREVENT COMPACTION OF UNDERLYING SOILS.
3. ALL SUB MATERIALS BELOW THE SPECIFIED BIORETENTION DEPTH (ELEVATION) SHALL BE UNDISTURBED, UNLESS OTHERWISE NOTED.

FILTRATION BASIN CROSS SECTION
(TYPICAL SECTION NOT TO SCALE)

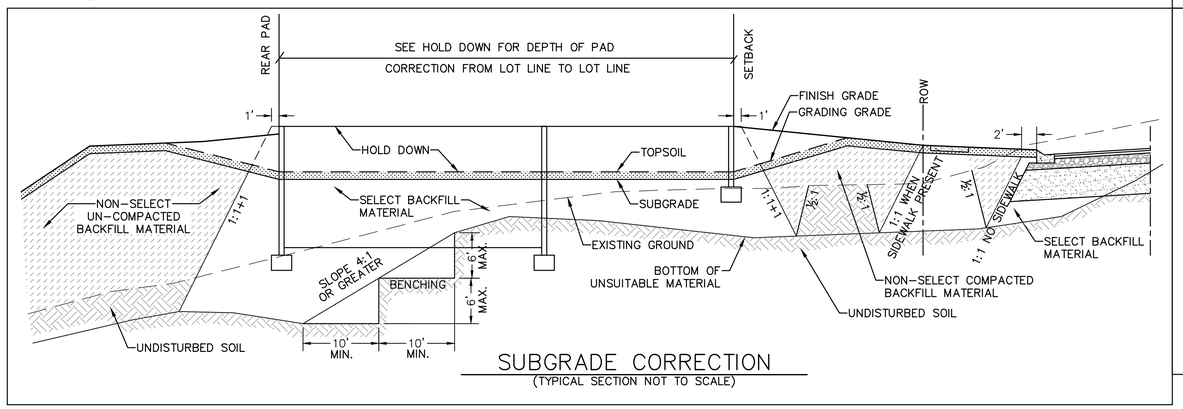


STABILIZED EMERGENCY OVERFLOW DETAIL
SECTION B-B

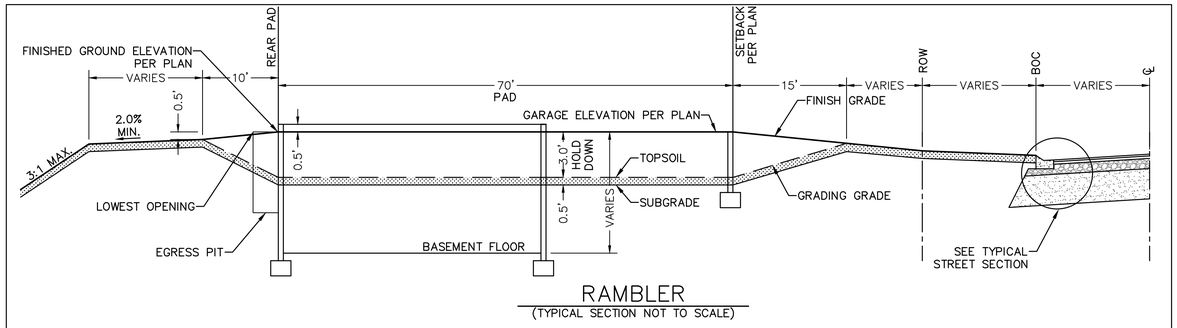
STABILIZED EMERGENCY OVERFLOW DETAIL
SECTION A-A



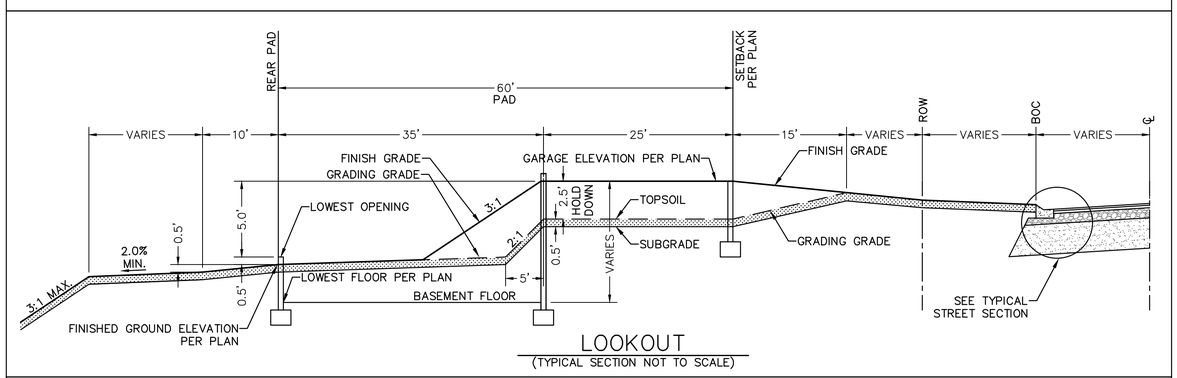
LOT INFORMATION
(TYPICAL SECTION NOT TO SCALE)



SUBGRADE CORRECTION
(TYPICAL SECTION NOT TO SCALE)



RAMBLER
(TYPICAL SECTION NOT TO SCALE)



LOOKOUT
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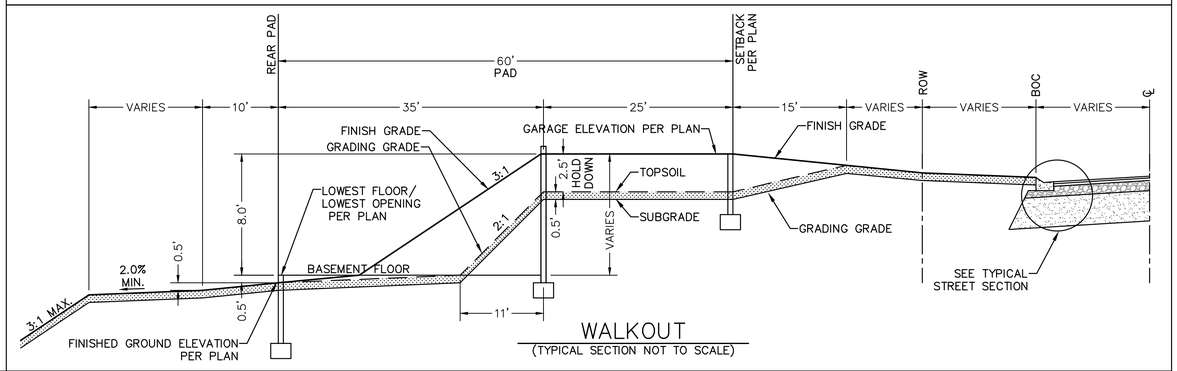

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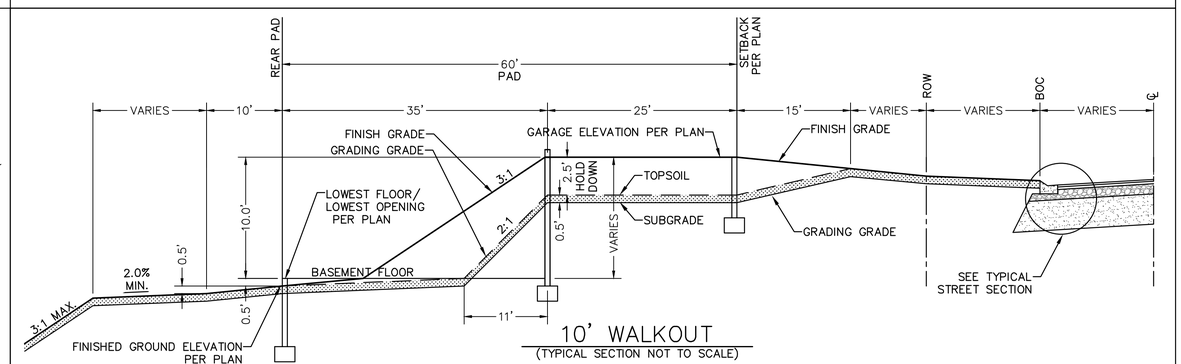


10' WALKOUT
(TYPICAL SECTION NOT TO SCALE)

PIONEER engineering
CIVIL ENGINEERS LAND PLANNERS LAND SURVEYORS LANDSCAPE ARCHITECTS
2422 Enterprise Drive
Mendota Heights, MN 55120
(651) 681-1914
Fax: 681-9488
www.pioneereng.com

I hereby certify that this plan was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota
Name John M. Molinaro
Reg. No. 45831 Date 3-15-2024

Revisions

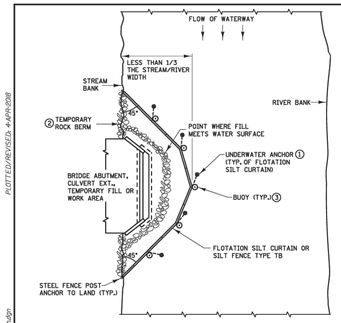
Date 3-15-24
Designed JMM
Drawn MSN/PDS

GRADING DETAILS

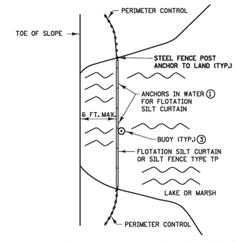
NORTON HOMES
18215 45TH AVENUE NORTH
PLYMOUTH, MINNESOTA 55446

WOODHAVEN
MINNETONKA, MINNESOTA

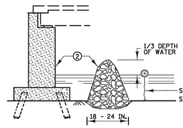
01-ENG-123127-SHEET-GRAD-DTLS



PLAN VIEW FOR STREAM ⑤



PLAN VIEW FOR LAKE OR MARSH ⑤

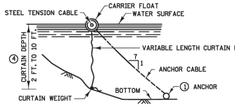


TEMPORARY ROCK BERM
FOR SEDIMENT CONTROL

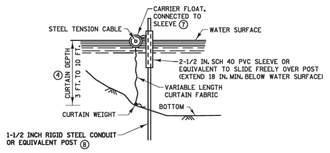
INSTALLATION GUIDELINES
SILT FENCE TYPE TB
MINIMUM WATER DEPTH: 1 FT.
MAXIMUM WATER DEPTH: 3 FT.
MAXIMUM WATER VELOCITY: 5 FT./SEC.

INSTALLATION GUIDELINES ④
FLOTATION SILT CURTAIN TYPE: STILL WATER
MINIMUM WATER DEPTH: 3 FT.
MAXIMUM WATER DEPTH: 10 FT.
MAXIMUM WATER VELOCITY: 2 FT./SEC.
MAXIMUM WAVE HEIGHT: 1 FT

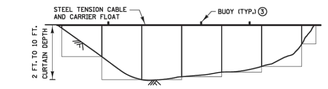
INSTALLATION GUIDELINES ④
FLOTATION SILT CURTAIN TYPE: MOVING WATER
MINIMUM WATER DEPTH: 3 FT.
MAXIMUM WATER DEPTH: 10 FT.
MAXIMUM WATER VELOCITY: 5 FT./SEC.
MAXIMUM WAVE HEIGHT: 2 FT.



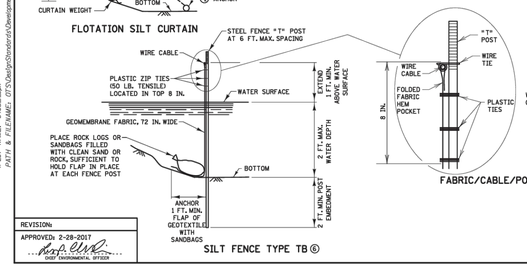
FLOTATION SILT CURTAIN



ALTERNATE FLOTATION SILT CURTAIN

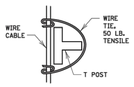


FRONT VIEW FOR FLOTATION SILT CURTAIN



SILT FENCE TYPE TB ⑥

FABRIC/CABLE/POST CONNECTION



NOTES:
SEE SPECS. 2573, 3886, 3887 & 3893.

① FOR ANCHOR SPACING AND WEIGHT REQUIREMENTS, SEE SPEC. 2573.

② IN AREAS WHERE THE PLAN CALLS FOR RIPRAP AT A BRIDGE, CULVERT, OR SLOPE, A TEMPORARY ROCK BERM CONSTRUCTED FROM THE RIPRAP CAN BE USED TO PROVIDE ADDITIONAL PROTECTION. WHEN THE WORK IS COMPLETE THE RIPRAP CAN THEN BE MOVED TO THE PERMANENT LOCATION INDICATED IN THE PLANS. THE TEMPORARY ROCK BERM IS INCIDENTAL.

③ ON U.S. COAST GUARD OR OTHER MOTORIZED WATERWAYS, BUOYS ARE REQUIRED TO MARK THE ENDS AND SPECIAL AREAS FOR VISIBILITY. PLACE BUOYS AS REQUIRED FOR NAVIGATIONAL PURPOSES.

④ MINIMUM WATER DEPTH APPLIES TO THE DEEPEST POINT ALONG THE FLOTATION SILT CURTAIN OR SILT FENCE TYPE TB FOR DETERMINING APPLICABILITY OF FLOTATION SILT CURTAIN OR SILT FENCE TYPE TB.

⑤ SILT CURTAIN SHOULD BE REMOVED WHEN THE AREA CONTRIBUTING DIRECT RUNOFF HAS BEEN TEMPORARILY OR PERMANENTLY STABILIZED. SILT CURTAIN SHOULD ALSO BE REMOVED BEFORE WINTER IF ICE UP OR ICE FLOW IS ANTICIPATED.

⑥ EMBED POST INTO BOTTOM A MINIMUM OF 40% OF THE WATER DEPTH (INCLUDING WAVE HEIGHT), BUT IN NO CASE SHALL EMBEDMENT BE LESS THAN 2 FEET.

⑦ ANCHOR FLOAT MUST BE CONNECTED SECURELY TO SLEEVE WITH A MINIMUM TENSILE STRENGTH OF 100 LBS. CONNECTION METHOD MUST ALLOW FOR SLEEVE TO MOVE FREELY ON POST.

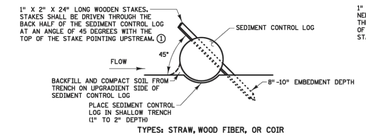
⑧ PROVIDE SUFFICIENT NUMBER OF POST ANCHORS TO MAINTAIN SILT CURTAIN POSITION.

REVISION:
APPROVED: 2-28-2017
CHIEF ENVIRONMENTAL OFFICER

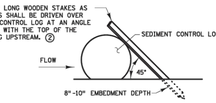
STANDARD PLAN 5-297.405	1 OF 8
APPROVED: 2-28-2017	
REVISED:	

TEMPORARY SEDIMENT CONTROL
SILT CURTAIN OR SILT FENCE TYPE TB

STATE PROJ. NO. (T.H.) SHEET NO. OF SHEETS

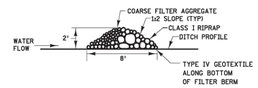


TYPES: STRAW, WOOD FIBER, OR COIR

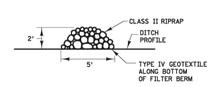


TYPES: WOOD CHIP, COMPOST, OR ROCK

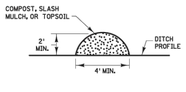
SEDIMENT CONTROL LOGS



TYPE 3 (ROCK WEEPER)

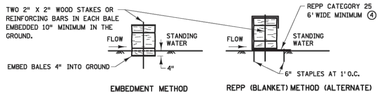


TYPE 5 (ROCK)



TYPE 1 (COMPOST), TYPE 2 (SLASH MULCH), OR TYPE 4 (TOPSOIL)

FILTER BERMS



EMBEDMENT METHOD REPP (BLANKET) METHOD (ALTERNATE)

BALE BARRIERS③

NOTES:
REPP = ROLLED EROSION PREVENTION PRODUCT.

SEE SPECS. 2573, 3149, 3874, 3882, 3885, 3886, AND 3897.

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

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

③ TO BE USED FOR CRITICAL PERIMETER CONTROL AREAS WHERE STANDING WATER OCCURS (6" MAXIMUM DEPTH). BALES SHALL CONSIST OF TYPE 1 MULCH OF APPROXIMATELY 14" X 18" X 36" LONG. BALES SHALL BE PLACED ON EDGE AND BUTTED TIGHT TO ADJACENT BALES.

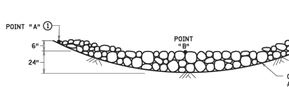
④ INSTEAD OF TRENCHING, PLACE BALE ON THE REPP (BLANKET) AND WRAP BLANKET AROUND THE BALE. PLACE STAKE THROUGH BALE AND BLANKET.

REVISION:
APPROVED: JANUARY 8, 2020
CHIEF ENVIRONMENTAL OFFICER

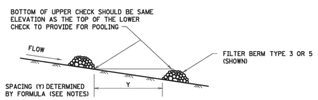
STANDARD PLAN 5-297.405	2 OF 8
APPROVED: 1-8-2020	
REVISED:	

TEMPORARY SEDIMENT CONTROL
FILTER BERMS, SEDIMENT CONTROL LOGS, AND BALE BARRIERS

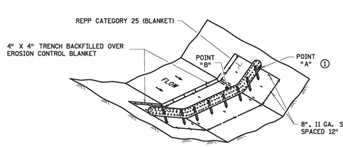
STATE PROJ. NO. (T.H.) SHEET NO. OF SHEETS

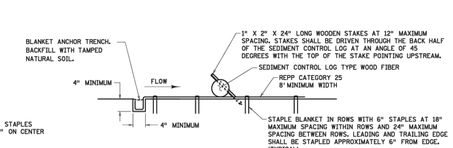


ROCK DITCH CHECKS
FILTER BERMS TYPE 3 (ROCK WEEPER) OR FILTER TYPE 5 (ROCK) ③
FOR USE ON ROUGH-GRADED AREAS
ONLY FOR USE OUTSIDE CLEAR ZONE ②

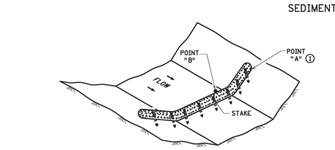


DITCH CHECK SPACING
FOR ALL FILTER BERM TYPES





SEDIMENT CONTROL LOG TYPE REPP (BLANKET) SYSTEM ④



SEDIMENT CONTROL LOG TYPE WOOD FIBER, OR TYPE COMPOST ⑤
FOR USE ON ROUGH GRADED AREAS

NOTES:
REPP = ROLLED EROSION PREVENTION PRODUCT.

SEE SPECS. 2573, 3601, 3733, 3885, 3886 & 3889.

FOR DITCH CHECKS, PLACE SEDIMENT CONTROL LOG PERPENDICULAR TO FLOW AND IN A CRESCENT SHAPE WITH THE ENDS FACING UPSTREAM.

APPROXIMATE SPACING BETWEEN EACH DITCH CHECK SHOULD BE DETERMINED FROM THE FOLLOWING SPACING FORMULA:

APPROXIMATE SPACING OF DITCH CHECKS (FT.) = Y = $\frac{\text{DITCH CHECK HEIGHT (FT.)}}{\text{\% CHANNEL SLOPE}} \times 100$

① POINT "A" MUST BE A MINIMUM OF 6" HIGHER THAN POINT "B" TO ENSURE THAT WATER FLOWS OVER THE DIKE AND NOT AROUND THE ENDS.

② ROCK DITCH CHECKS PLACED WITHIN THE CLEAR ZONE ARE TO BE 18" OR LESS IN HEIGHT. A 1:6 APPROACH AND DEPARTURE SLOPE SHALL BE PROVIDED.

③ DITCH GRADE 3% - 5%, MAX. FLOW VELOCITY 12 FT./SEC.

④ DITCH GRADE 1.5% - 3%, MAX. FLOW VELOCITY 4.5 FT./SEC.

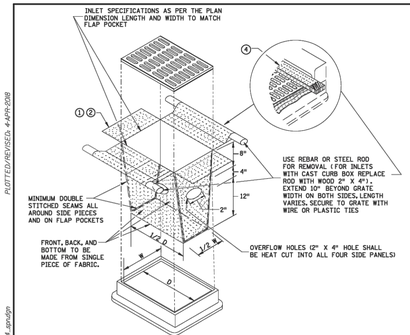
⑤ DITCH GRADE 1.5% - 3%, MAX. FLOW VELOCITY 1.5 FT./SEC.

REVISION:
APPROVED: JANUARY 8, 2020
CHIEF ENVIRONMENTAL OFFICER

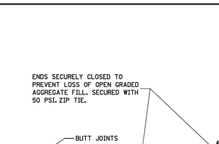
STANDARD PLAN 5-297.405	3 OF 8
APPROVED: 1-8-2020	
REVISED:	

TEMPORARY SEDIMENT CONTROL
DITCH CHECK

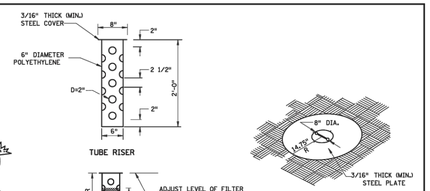
STATE PROJ. NO. (T.H.) SHEET NO. OF SHEETS



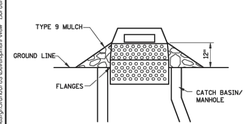
FILTER BAG INSERT ③
(CAN BE INSTALLED IN ANY INLET TYPE WITH OR WITHOUT A CURB BOX)



ROCK LOG/COMPOST LOG

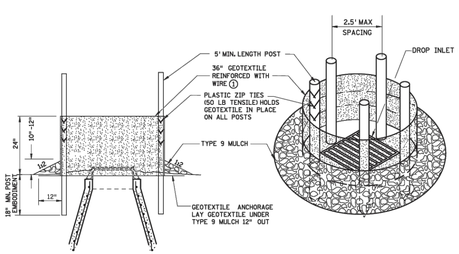


POP-UP HEAD



SEDIMENT CONTROL INLET HAT

NOTE:
THE SEDIMENT CONTROL BARRIER SHALL BE A METAL OR PLASTIC/POLYETHYLENE RISER SIZED TO FIT INSIDE THE CATCH BASIN/MANHOLE, HAVE PERFORATIONS TO ALLOW FOR WATER INFILTRATION, HAVE AN OVERFLOW OPENING, FLANGES AND A LID/COVER.



SILT FENCE RING AND ROCK FILTER BERM
USE WHERE INLET DRAINS IN AN AREA WITH SLOPES AT 1:3 OR LESS

NOTES:
SEE SPECS. 2573, 3137, & 3886.

DEVICES MUST BE ADJUSTED ACCORDINGLY AS TO NOT CAUSE FLOODING ON ROADWAY THAT WOULD IMPEDE TRAFFIC FLOW.

① ALL GEOTEXTILE USED FOR INLET PROTECTION SHALL BE MONOFILAMENT IN BOTH DIRECTIONS, MEETING SPEC. 3886.

② FINISHED SIZE, INCLUDING POCKETS WHERE REQUIRED SHALL EXTEND A MINIMUM OF 10 INCHES AROUND THE PERIMETER TO FACILITATE MAINTENANCE OR REMOVAL.

③ INSTALLATION NOTES:
DO NOT PLACE FILTER BAG INSERT IN INLETS SHALLOWER THAN 30 INCHES, MEASURED FROM THE BOTTOM OF THE INLET TO THE TOP OF THE GRATE. THE PLACED BAG SHALL HAVE A MINIMUM SIDE CLEARANCE OF 3 INCHES BETWEEN THE INLET WALLS AND THE BAG, MEASURED AT THE BOTTOM OF THE OVERFLOW HOLES. WHERE NECESSARY THE CONTRACTOR SHALL CLINCH THE BAG, USING PLASTIC ZIP TIES, TO ACHIEVE THE 3 INCH SIDE CLEARANCE.

④ FLAP POCKETS SHALL BE LARGE ENOUGH TO ACCEPT WOOD 2 INCH X 4 INCH OR USE A ROCK SOCK OR SAND BAGS IN PLACE OF THE FLAP POCKETS.

⑤ SOCK HEIGHT MUST NOT BE SO HIGH AS TO SLOW DOWN WATER FILTRATION TO CAUSE FLOODING OF THE ROADWAY.

⑥ GEOTEXTILE SOCK BETWEEN 4-10 FEET LONG AND 4-6 INCH DIAMETER, SEAM TO BE JOINED BY TWO ROWS OF STITCHING WITH A PLASTIC MESH BACKING OR PROVIDE A HEAT BONDED SEAM (OR APPROVED EQUIVALENT). FILL ROCK LOG WITH OPEN GRADED AGGREGATE CONSISTING OF SOUND DURABLE PARTICLES OF COARSE AGGREGATE CONFORMING TO SPEC. 3137 TABLE 3137-1, CA-3 GRADATION.

REVISION:
APPROVED: 2-28-2017
CHIEF ENVIRONMENTAL OFFICER

STANDARD PLAN 5-297.405	4 OF 8
APPROVED: 2-28-2017	
REVISED:	

TEMPORARY SEDIMENT CONTROL
STORM DRAIN INLET PROTECTION

STATE PROJ. NO. (T.H.) SHEET NO. OF SHEETS

PIONEER engineering
CIVIL ENGINEERS LAND PLANNERS LAND SURVEYORS LANDSCAPE ARCHITECTS
2422 Enterprise Drive
Mendota Heights, MN 55120
(651) 681-1914
Fax: 681-9488
www.pioneereng.com

I hereby certify that this plan was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota

Name: John M. Molinaro
Reg. No. 45831 Date 3-15-2024

Revisions

Date	3-15-24
Designed	JMM
Drawn	MSN/PDS

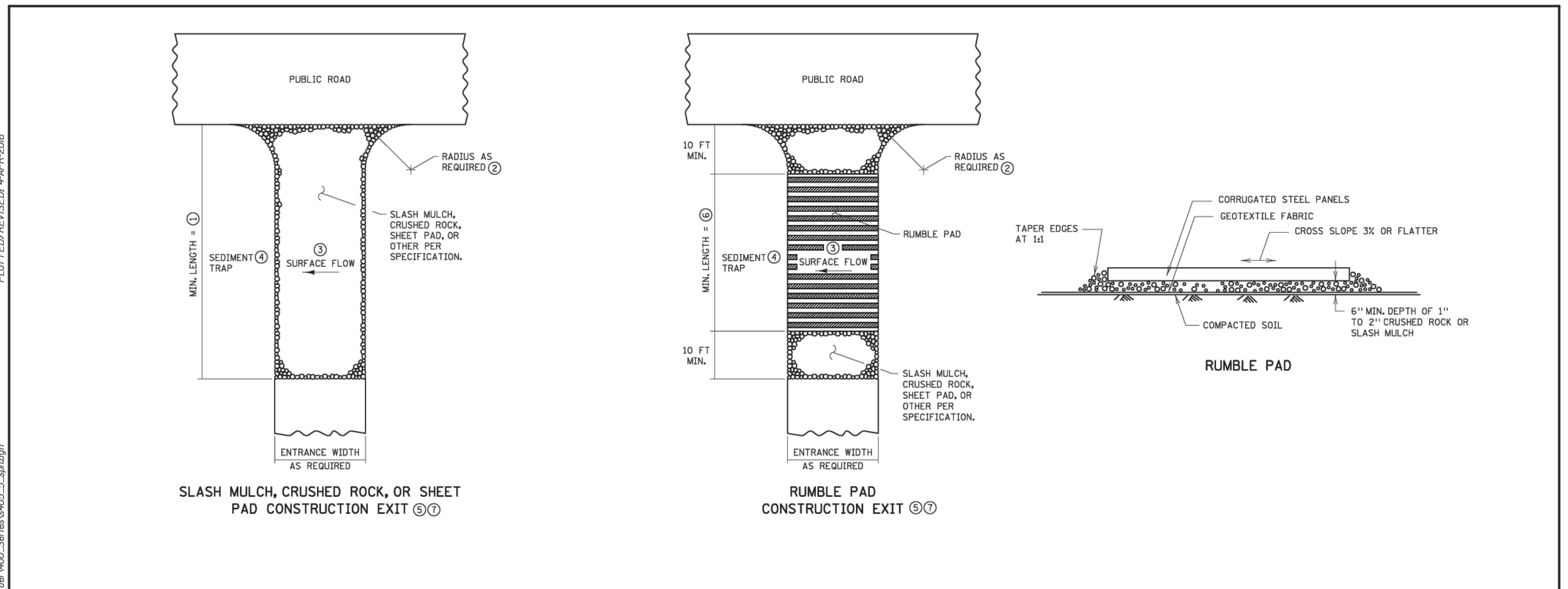
GRADING DETAILS

NORTON HOMES
18215 45TH AVENUE NORTH
PLYMOUTH, MINNESOTA 55446

WOODHAVEN
MINNETONKA, MINNESOTA

01-ENG-123127-SHEET-GRAD-DTLS

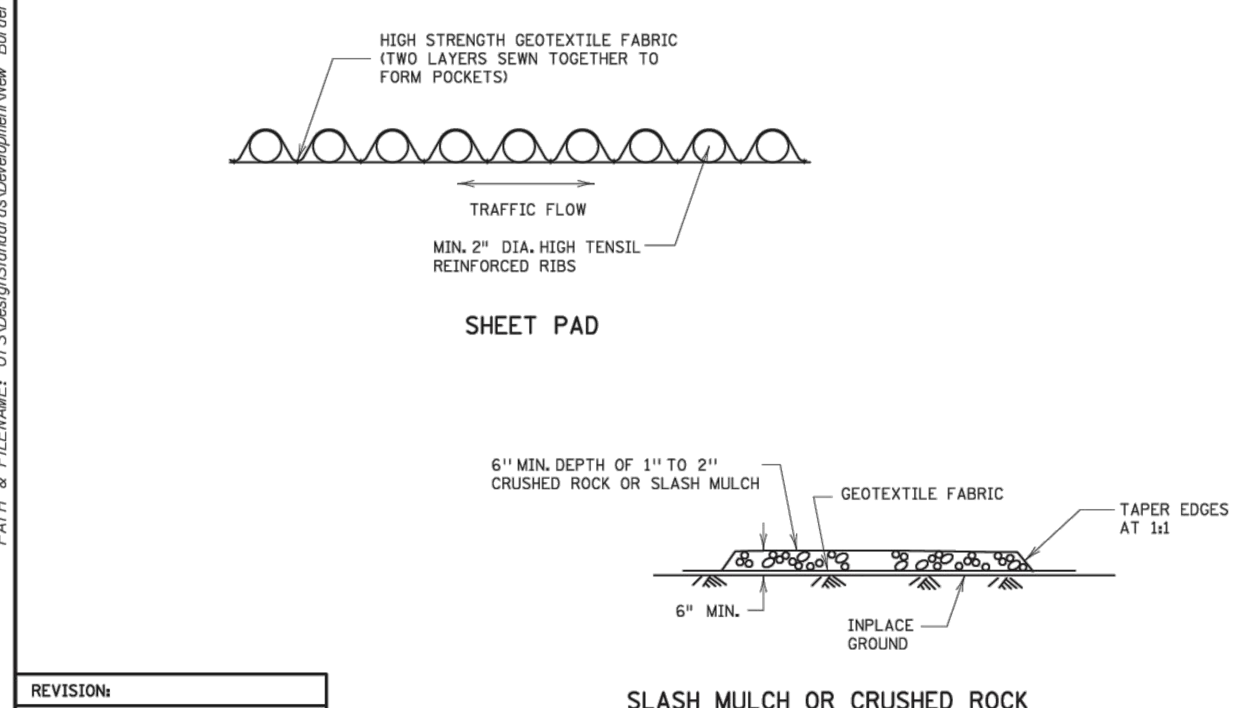
4.41 OF 22



SLASH MULCH, CRUSHED ROCK, OR SHEET PAD CONSTRUCTION EXIT ⑤⑦

RUMBLE PAD CONSTRUCTION EXIT ⑤⑦

RUMBLE PAD



SHEET PAD

SLASH MULCH OR CRUSHED ROCK

NOTES:

SEE SPECS. 2573 & 3882.

① MINIMUM LENGTH SHALL BE THE GREATER OF 50 FEET OR A LENGTH SUFFICIENT TO ALLOW A MINIMUM OF 5 TIRE ROTATIONS ON THE PROVIDED PAD. MINIMUM LENGTH SHALL BE CALCULATED USING THE LARGEST TIRE WHICH WILL BE USED IN TYPICAL OPERATIONS.

② PROVIDE RADIUS OR WIDEN PAD SUFFICIENTLY TO PREVENT VEHICLE TIRES FROM TRACKING OFF OF PAD WHEN LEAVING SITE.

③ IF RUNOFF FROM DISTURBED AREAS FLOWS TOWARD CONSTRUCTION EXITS, PREVENT RUNOFF FROM DRAINING DIRECTLY TO PUBLIC ROAD OVER CONSTRUCTION EXIT BY CROWNING THE EXIT OR SLOPING TO ONE SIDE. IF SURFACE GRADING IS INSUFFICIENT, PROVIDE OTHER MEANS OF INTERCEPTING RUNOFF.

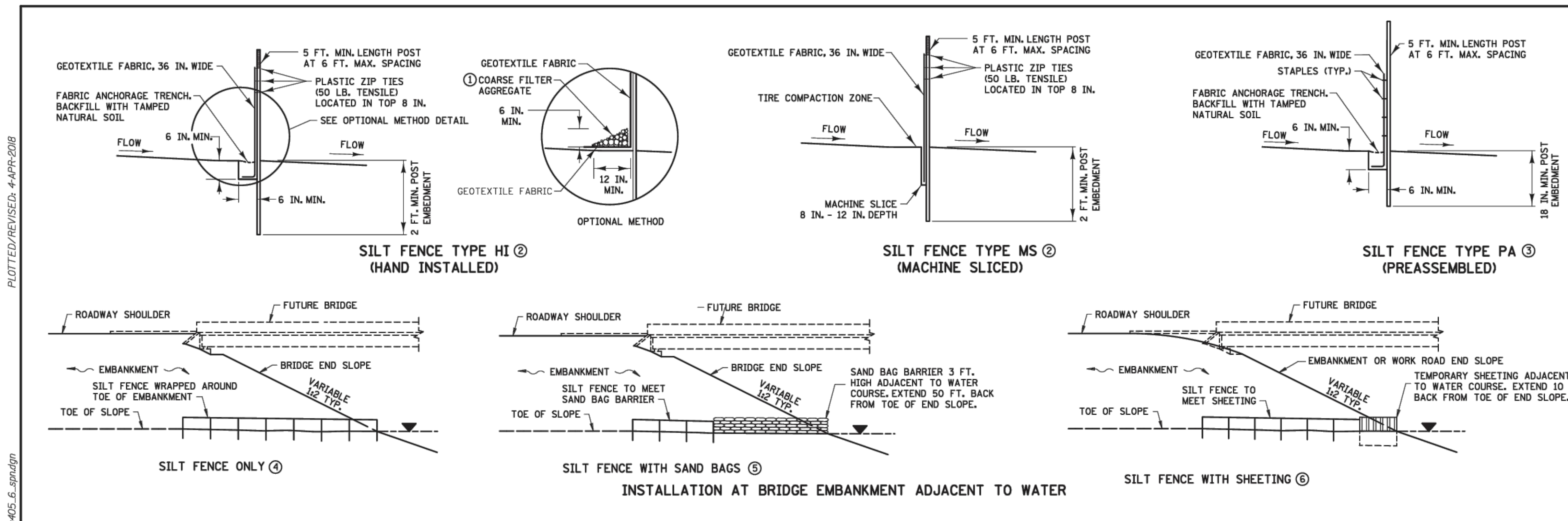
④ IF RUNOFF FROM CONSTRUCTION EXITS WILL DRAIN OFF OF PROJECT SITE, PROVIDE SEDIMENT TRAP WITH STABILIZED OVERFLOW.

⑤ IF A TIRE WASH OFF IS REQUIRED THE CONSTRUCTION EXITS SHALL BE GRADED TO DRAIN THE WASH WATER TO A SEDIMENT TRAP.

⑥ MINIMUM LENGTH OF RUMBLE PAD SHALL BE 20 FEET, OR AS REQUIRED TO REMOVE SEDIMENT FROM TIRES. IF SIGNIFICANT SEDIMENT IS TRACKED FROM THE SITE, THE RUMBLE PAD SHALL BE LENGTHENED OR THE DESIGN MODIFIED TO PROVIDE ADDITIONAL VIBRATION. WASH-OFF LENGTH SHALL BE AS REQUIRED TO EFFECTIVELY REMOVE CONSTRUCTION SEDIMENT FROM VEHICLE TIRES.

⑦ MAINTENANCE OF CONSTRUCTION EXITS SHALL OCCUR WHEN THE EFFECTIVENESS OF SEDIMENT REMOVAL HAS BEEN REDUCED. MAINTENANCE SHALL CONSIST OF REMOVING SEDIMENT AND CLEANING THE MATERIALS OR PLACING ADDITIONAL MATERIAL (SLASH MULCH OR CRUSHED ROCK) OVER SEDIMENT FILLED MATERIAL TO RESTORE EFFECTIVENESS.

REVISION:	MINNESOTA DEPARTMENT OF TRANSPORTATION	STANDARD PLAN 5-297.405	5 OF 8	TEMPORARY SEDIMENT CONTROL
APPROVED: 2-28-2017 CHIEF ENVIRONMENTAL OFFICER	STATE DESIGN ENGINEER	APPROVED: 2-28-2017 REVISED:		STABILIZED CONSTRUCTION EXIT
		STATE PROJ. NO.	(T.H.)	SHEET NO. OF SHEETS



SILT FENCE TYPE HI ② (HAND INSTALLED)

SILT FENCE TYPE MS ② (MACHINE SLICED)

SILT FENCE TYPE PA ③ (PREASSEMBLED)

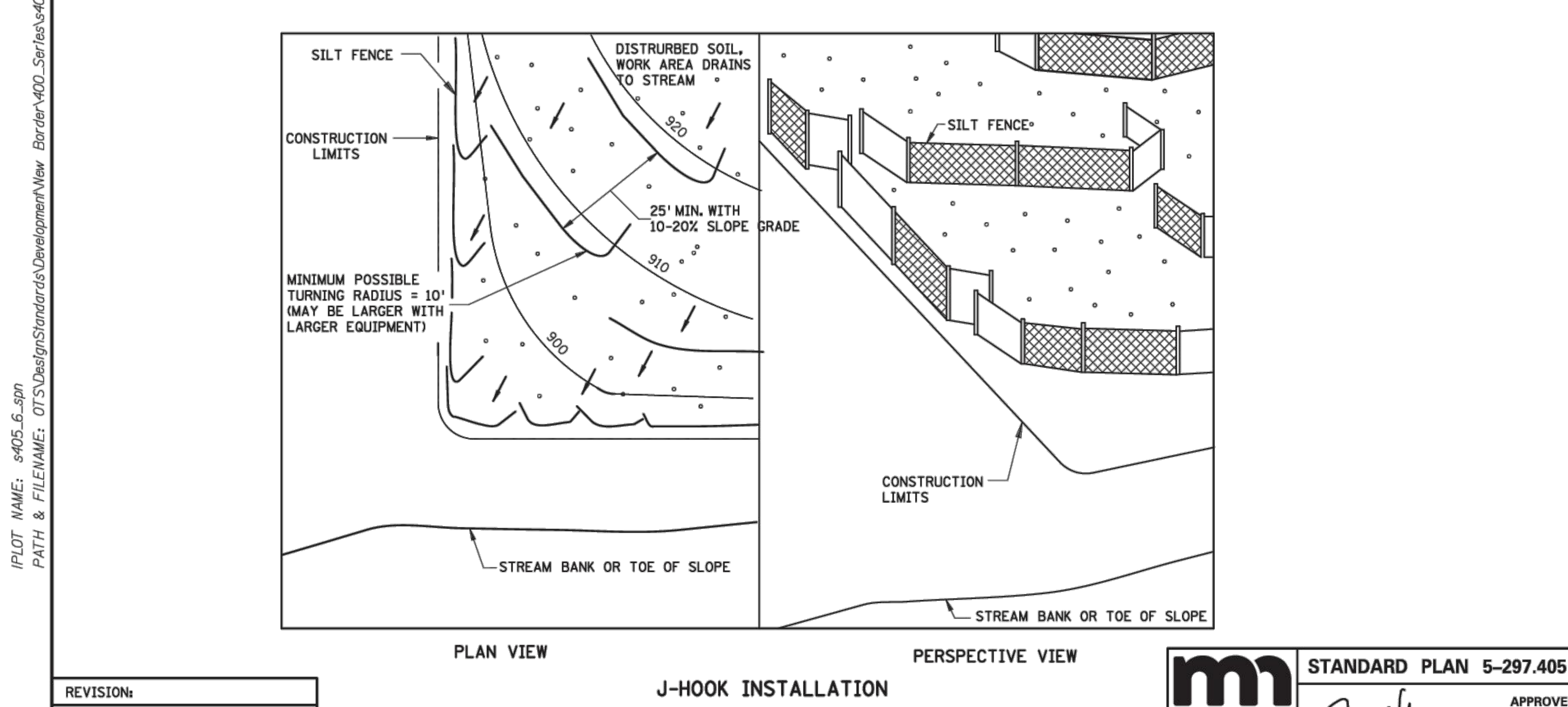
SILT FENCE ONLY ④

SILT FENCE WITH SAND BAGS ⑤

SILT FENCE WITH SHEETING ⑥

INSTALLATION AT BRIDGE EMBANKMENT ADJACENT TO WATER

LOCATION AT TOE OF ROADWAY EMBANKMENT



J-HOOK INSTALLATION

NOTES:

SEE SPECS. 2573, 3149 & 3886.

① COARSE FILTER AGGREGATE (SPEC. 3149) SHALL BE INCIDENTAL.

② TO PROTECT AREAS FROM SHEET FLOW. MAXIMUM CONTRIBUTING AREA: 1 ACRE.

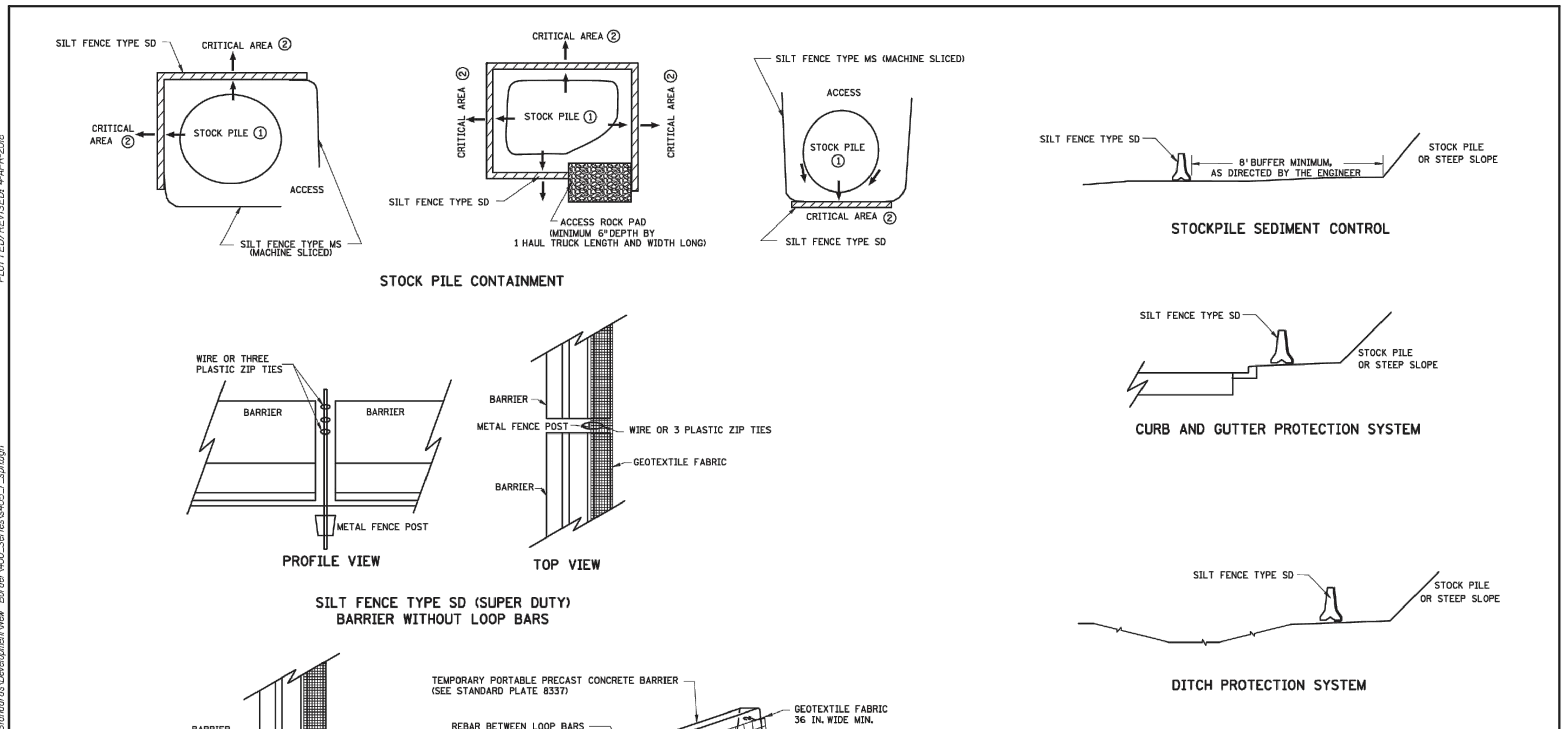
③ TO PROTECT AREAS FROM SHEET FLOW. MAXIMUM CONTRIBUTING AREA: 0.25 ACRE.

④ WATER COURSE FLOW VELOCITY: STANDING. CONTRIBUTING SLOPE AREA: 1./2 ACRE.

⑤ WATER COURSE FLOW VELOCITY: 1 TO 7 FT./SEC. CONTRIBUTING SLOPE AREA: 1. ACRE.

⑥ WATER COURSE FLOW VELOCITY: 8 TO 15 FT./SEC. CONTRIBUTING SLOPE AREA: 3 ACRES.

REVISION:	MINNESOTA DEPARTMENT OF TRANSPORTATION	STANDARD PLAN 5-297.405	6 OF 8	TEMPORARY SEDIMENT CONTROL
APPROVED: 2-28-2017 CHIEF ENVIRONMENTAL OFFICER	STATE DESIGN ENGINEER	APPROVED: 2-28-2017 REVISED:		SILT FENCE
		STATE PROJ. NO.	(T.H.)	SHEET NO. OF SHEETS



STOCK PILE CONTAINMENT

STOCKPILE SEDIMENT CONTROL

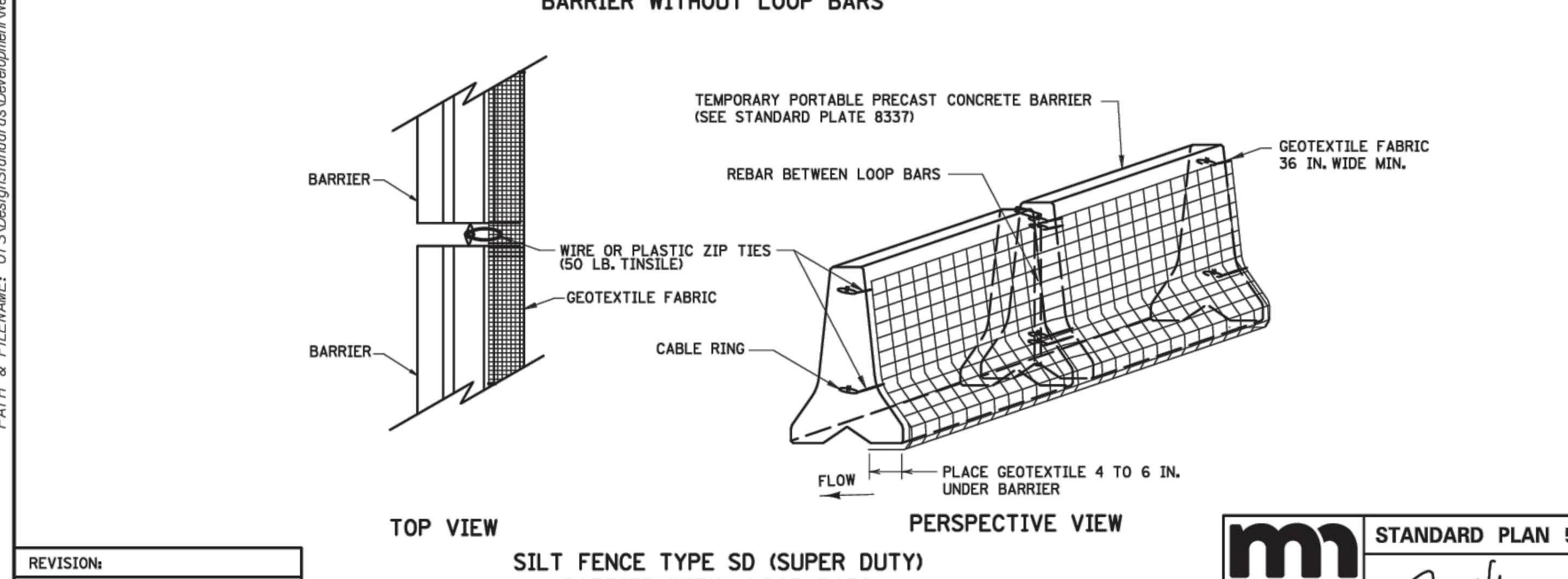
CURB AND GUTTER PROTECTION SYSTEM

PROFILE VIEW

TOP VIEW

SILT FENCE TYPE SD (SUPER DUTY) BARRIER WITHOUT LOOP BARS

DITCH PROTECTION SYSTEM



TOP VIEW

PERSPECTIVE VIEW

SILT FENCE TYPE SD (SUPER DUTY) BARRIER WITH LOOP BARS

NOTES:

SEE SPECS. 2533, 2573 & 3886.

SILT FENCE TYPE SD USED TO PROTECT CRITICAL AREAS FROM SHEET FLOW, AND AREAS WHERE OTHER SILT FENCES CANNOT BE PLACED. MAXIMUM CONTRIBUTING AREA: 1 ACRE.

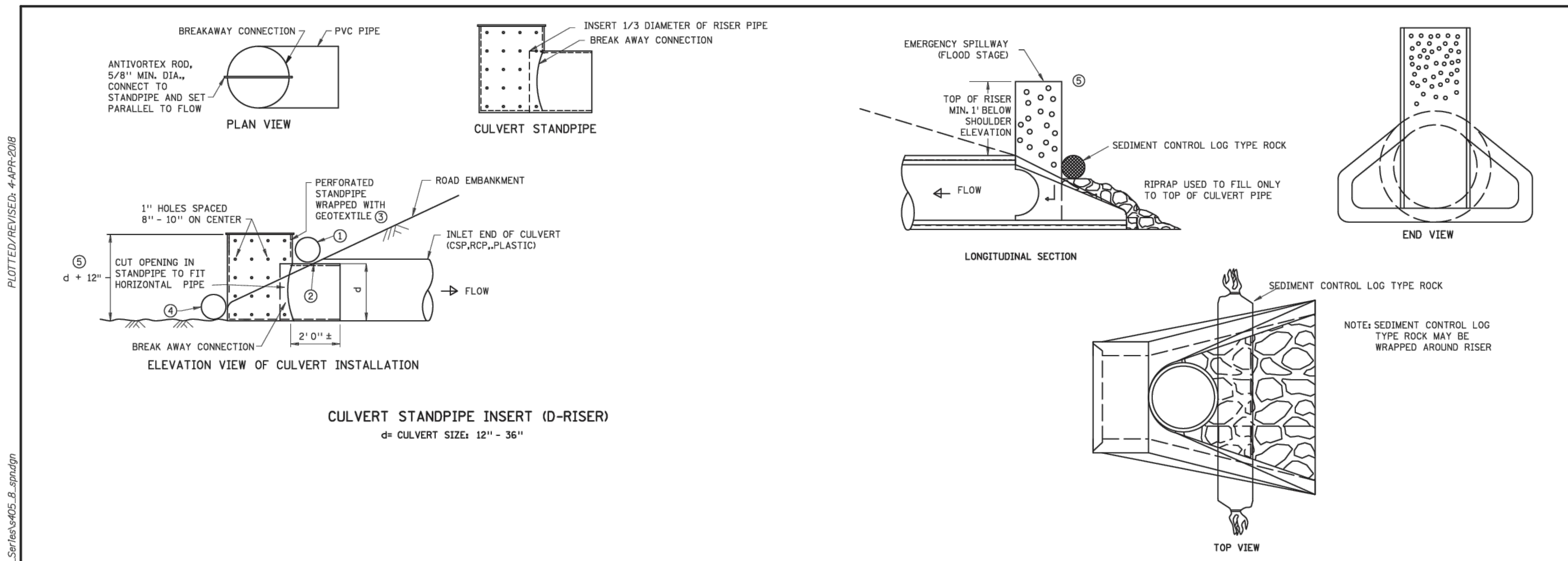
PLACE SILT FENCE TYPE SD ALONG A CONSTANT ELEVATION.

SILT FENCE TYPE SD CAN UTILIZE EITHER A CONCRETE, OR WATER FILLED, TEMPORARY MEDIAN BARRIER.

① PLACING STOCK PILES NEXT TO AN ENVIRONMENTALLY SENSITIVE AREA IS NOT RECOMMENDED. WHEN THERE ARE NO FEASIBLE ALTERNATIVES, PLACE SILT FENCE SD AS SHOWN OR AS DIRECTED BY THE ENGINEER.

② CRITICAL AREAS INCLUDE WETLANDS, JUDICIAL DITCHES, STREAMS, WATER BODIES, AND OTHER AREAS REQUIRING PROTECTION.

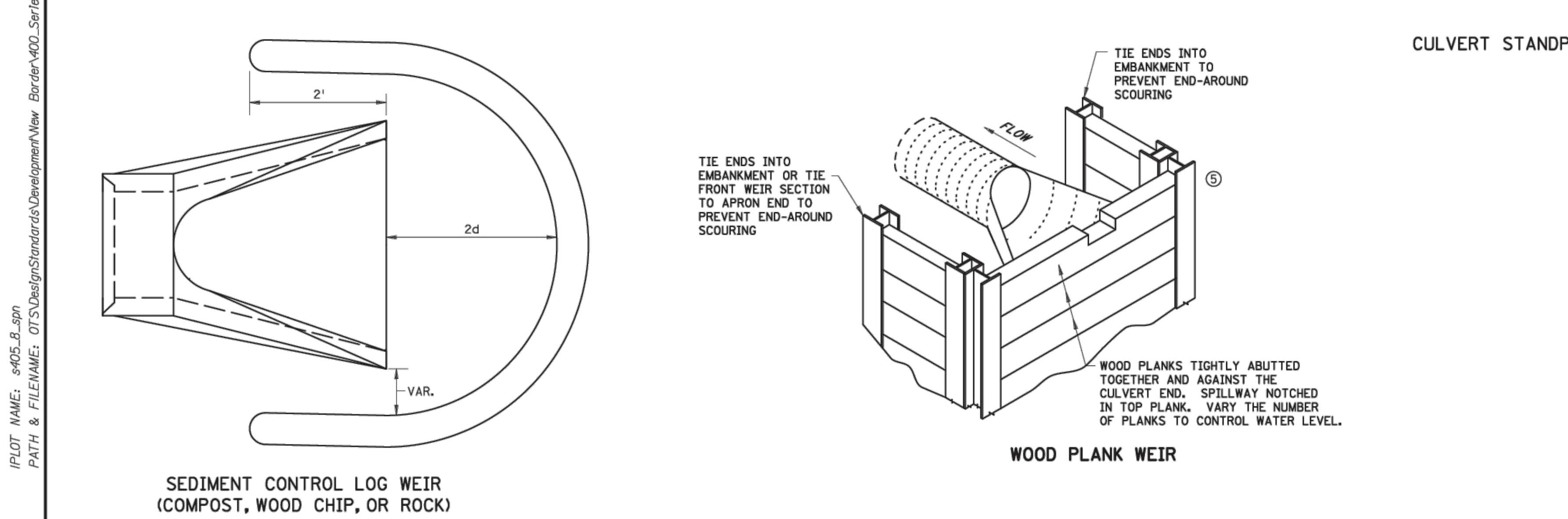
REVISION:	MINNESOTA DEPARTMENT OF TRANSPORTATION	STANDARD PLAN 5-297.405	7 OF 8	TEMPORARY SEDIMENT CONTROL
APPROVED: 2-28-2017 CHIEF ENVIRONMENTAL OFFICER	STATE DESIGN ENGINEER	APPROVED: 2-28-2017 REVISED:		SUPER DUTY SILT FENCE
		STATE PROJ. NO.	(T.H.)	SHEET NO. OF SHEETS



CULVERT STANDPIPE INSERT (D-RISER)

d= CULVERT SIZE: 12" - 36"

CULVERT STANDPIPE INSERT (D-RISER)



SEDIMENT CONTROL LOG WEIR (COMPOST, WOOD CHIP, OR ROCK)

d = CULVERT SIZE: 12"-36"

WOOD PLANK WEIR

NOTES:

SEE SPECS. 2573, 3891 & 3893.

FOR USE WHEN TEMPORARY PONDING IS NEEDED IN DITCH SECTIONS FOR SEDIMENT CONTROL.

MANUFACTURED ALTERNATIVES LISTED ON MnDOT'S APPROVED PRODUCTS LIST MAY BE SUBSTITUTED AT NO ADDITIONAL COST.

① ROCK LOG OR SANDBAG TO HOLD STANDPIPE AND ACT AS A SEAL BETWEEN RISER PIPE AND CULVERT.

② PLACE CULVERT APRON AND SLIDE TEMPORARY STANDPIPE INTO CSP OR RCP CULVERT.

③ ALL GEOTEXTILE USED FOR CULVERT PROTECTION SHALL BE MONOFILAMENT IN BOTH DIRECTIONS, MEETING SPEC. 3886 FOR MACHINE SLICED.

④ ROCK LOG OR RIP RAP TO HOLD STANDPIPE AND ACT AS A FILTER BETWEEN RISER PIPE AND CULVERT.

⑤ HEIGHT OVERFLOW NOT TO CAUSE FLOODING OF ROAD OR ADJACENT PROPERTIES.

REVISION:	MINNESOTA DEPARTMENT OF TRANSPORTATION	STANDARD PLAN 5-297.405	8 OF 8	TEMPORARY SEDIMENT CONTROL
APPROVED: 2-28-2017 CHIEF ENVIRONMENTAL OFFICER	STATE DESIGN ENGINEER	APPROVED: 2-28-2017 REVISED:		CULVERT END CONTROLS
		STATE PROJ. NO.	(T.H.)	SHEET NO. OF SHEETS

01-ENG-123127-SHEET-GRAD-DTLS

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Name John M. Molinaro
Reg. No. 45831 Date 3-15-2024

Revisions

Date	3-15-24
Designed	JMM
Drawn	MSN/PDS

GRADING DETAILS

NORTON HOMES
18215 45TH AVENUE NORTH
PLYMOUTH, MINNESOTA 55446

WOODHAVEN
MINNETONKA, MINNESOTA

4.42 OF 22

PRELIMINARY WETLAND SUMMARY:
TOTAL WETLAND IMPACTED AREA: 0.00 SF (0.00 AC)

WETLAND BUFFER AREA PROPOSED

W WETLAND BUFFER SIGN: CITY TO FURNISH, DEVELOPER TO INSTALL

7,817 SQFT –REQUIRED 30' WETLAND BUFFER AREA
7,831 SQFT –PROPOSED AVG. WETLAND BUFFER AREA

WETLAND	Approximate Size (ac)	Wetland Type Classification			MnRAM Classification
		Circular 39	Cowardin	Eggers & Reed	
1	0.10	Type 1	PEM1A	Seasonally Flooded Basin	Manage 2

Buffer MnRAM Class	Base Buffer Width (ft)
Manage 3	20
Manage 2	30
Manage 1	40
Preserve	75

N

0 15 30 60
GRAPHIC SCALE IN FEET

01-ENG-123127-SHEET-WETL

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WETLAND BUFFER PLAN

NORTON HOMES
18215 45TH AVENUE NORTH
PLYMOUTH, MINNESOTA 55446

WOODHAVEN
MINNETONKA, MINNESOTA

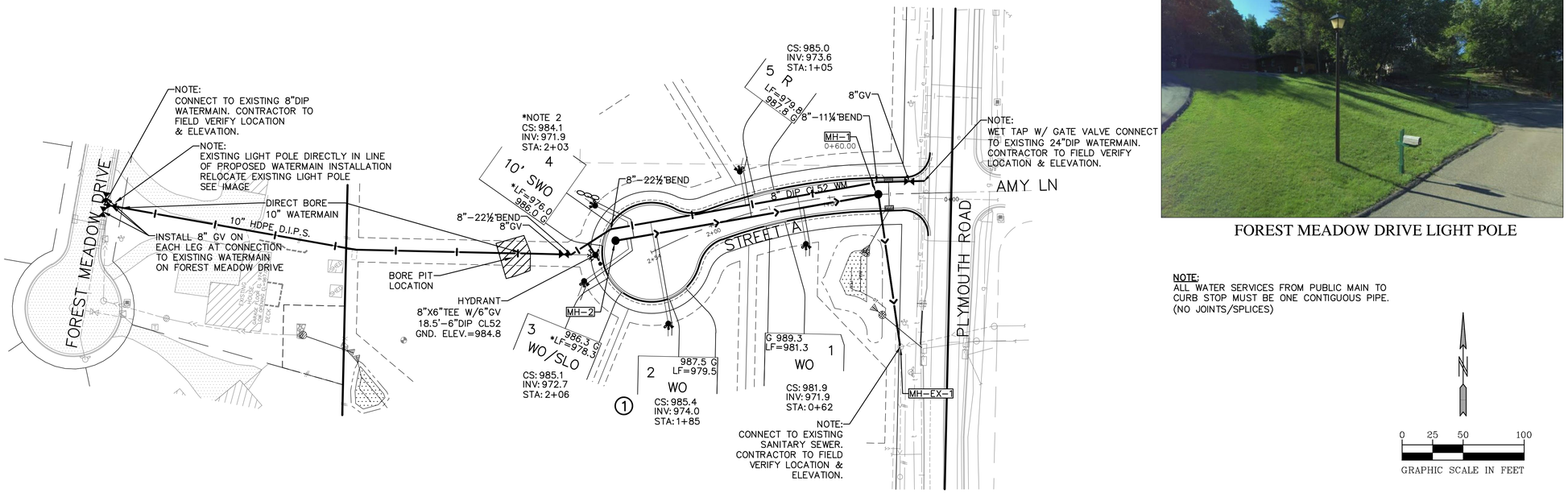
5.10 OF 22

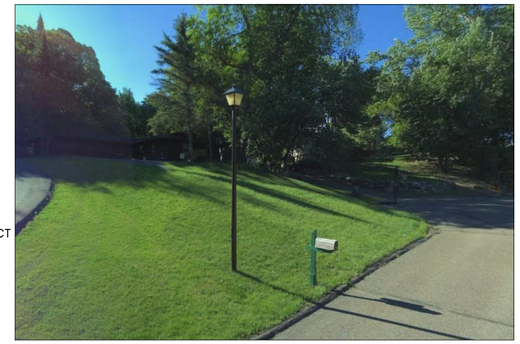
SANITARY SEWER & WATERMAIN CONSTRUCTION NOTES

1. SANITARY MANHOLE ADJUSTMENT RINGS AND CASTING SHALL BE SEALED WITH INFI-SHIELD UNI-BAND OR APPROVED EQUAL AND THE MANHOLE BARREL JOINTS SHALL BE SEALED WITH INFI-SHIELD GATOR WRAP OR APPROVED EQUAL.
2. SANITARY SERVICE ELEVATIONS ARE AT THE END OF THE SERVICES AS SHOWN, I.E. (INV.=947.6) 15' PAST R/W, NOT INCLUDING RISER PIPE.
3. SERVICE & RISER STATIONING IS FROM DOWNSTREAM MANHOLE.
4. SANITARY SEWER SERVICES, WYES, RISERS, & CLEANOUT SHALL BE 6" PVC SDR 26, UNLESS OTHERWISE NOTED.
5. CURB STOPS ARE LOCATED AT THE EASEMENT LINE..
6. 6" DIP WATERMAIN SHALL BE CL 52. 8" DIP WATERMAIN SHALL BE CL 52..
7. ALL D.I.P. AND D.I.P. FITTINGS TO BE WRAPPED IN POLYETHYLENE.
8. WATER SERVICES SHALL BE 1 1/2" COPPER TYPE "K" NO JOINT/COUPLING IS ALLOWED WITHIN THE CITY ROADWAY.
9. ALL FITTINGS SHALL HAVE MEGA LUGS. (SEE JOINT CHART)
10. ALL SERVICE INVERTS 10' BELOW CURB STOP UNLESS NOTED (*).
11. CONTRACTOR IS RESPONSIBLE FOR CONFIRMING ALL EXISTING UTILITIES HAVE BEEN REMOVED DURING SITE DEMOLITION.
12. CONTRACTOR IS RESPONSIBLE FOR TRENCH DESIGN & O.S.H.A. REQUIREMENTS.
13. ALL CASTINGS & VALVE BOXES TO BE SET 0.05' BELOW FG ELEVATION.
14. INVERT ELEVATION SHOWN IS LOCATED AT THE END OF SERVICE BELOW THE END OF SERVICE RISER
15. PADS MARKED *LF=XX.X, SANITARY SERVICE INVERT LESS THAN 4' BELOW PROPOSED BUILDING LOWEST FLOOR.
16. ALL PIPE TO HAVE TRACER WIRE INSTALLED PER CITY OF MINNETONKA REQUIREMENTS.

NOTE 1: SERVICE INVERT IS UNDER 10' DEEP AT CURB STOP

NOTE 2: SERVICE INVERT IS OVER 10' DEEP AT CURB STOP





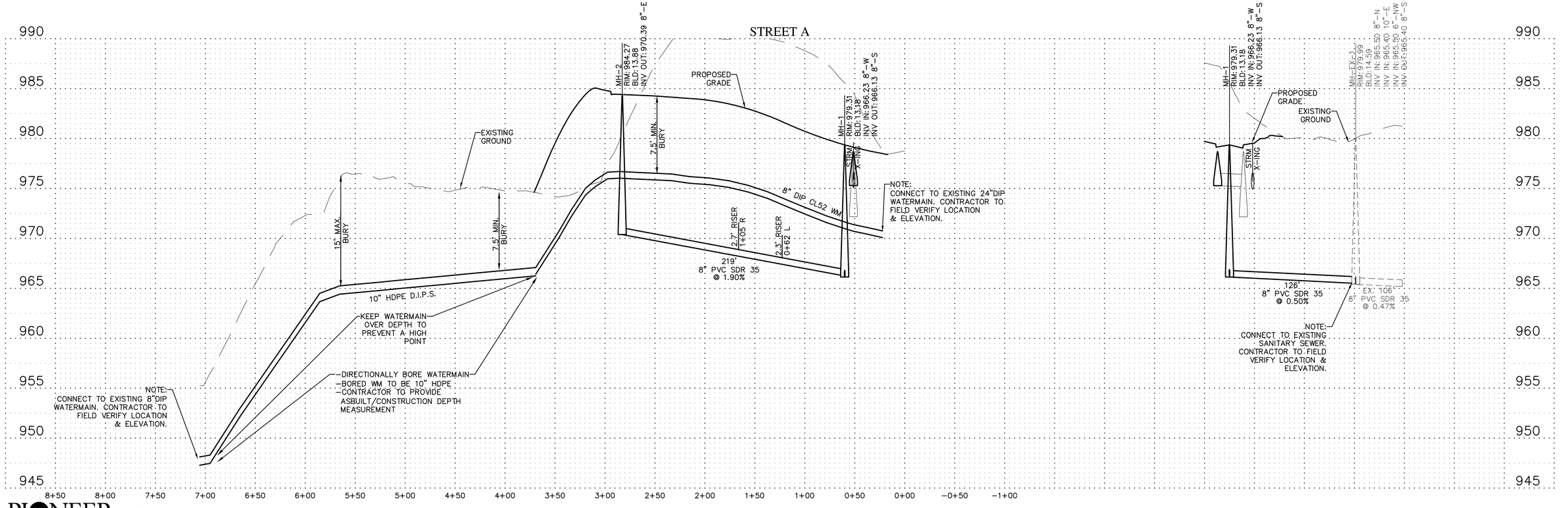
FOREST MEADOW DRIVE LIGHT POLE

NOTE:
ALL WATER SERVICES FROM PUBLIC MAIN TO CURB STOP MUST BE ONE CONTIGUOUS PIPE. (NO JOINTS/SPLICES)

N

0 25 50 100

GRAPHIC SCALE IN FEET



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Drawn	MSN/PDS

SANITARY SEWER & WATERMAIN PLAN

NORTON HOMES
18215 45TH AVENUE NORTH
PLYMOUTH, MINNESOTA 55446

WOODHAVEN
MINNETONKA, MINNESOTA

6.10 OF 22

01-ENG-123127-SHEET-SSWR

TORM SEWER CONSTRUCTION NOTES

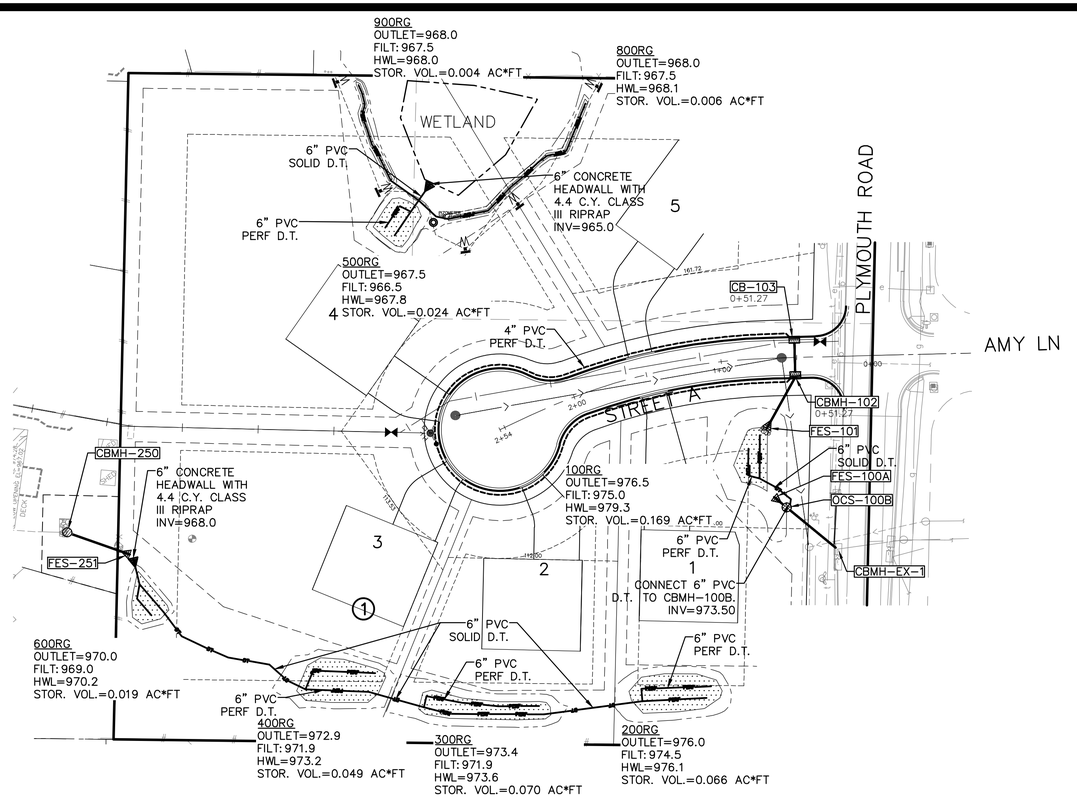
. PROVIDE R-3250-1 NEENAH CASTINGS OR APPROVED EQUAL ON ALL CATCH BASINS UNLESS OTHERWISE NOTED. SEE MINNETONKA STANDARD PLATE 110 & 120
.. PROVIDE 27" DIA. SLAB OPENING FOR R-3250-1 NEENAH CASTINGS ON ALL CATCH BASIN MANHOLES UNLESS OTHERWISE NOTED.
. DRAINTILE SERVICES & CROSSINGS SHALL BE 4" PVC SDR-26 PERFORATED PIPE. PER MINNETONKA STANDARD DETAIL 160 & 170.
. FINAL STRUCTURE OFFSET TO BE VERIFIED BY CONTRACTOR AND INSPECTOR BASED ON MATERIAL SUPPLIED TO PROJECT. FIELD STAKING SHALL BE SET ACCORDING TO BACK-OF-CURB.
. INLET CASTINGS SHALL BE SET 0.17' BELOW GUTTERLINE GRADE.
. CONCRETE PIPE MUST BE BEDDED TO A MINIMUM OF THE CLASS C BEDDING REQUIREMENTS. SEE MINNETONKA STANDARD SPECS.

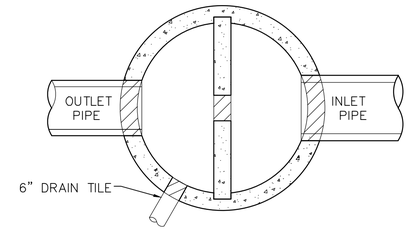
NOTE:
THE LOCATION OF ALL VERTICAL / HORIZONTAL BENDS, SEWER SERVICE INVERTS NEED TO BE VERIFIED BY CITY REPRESENTATIVE BEFORE BACKFILLING PER MN OPS REQUIREMENTS. SEE MINNETONKA SPECS.

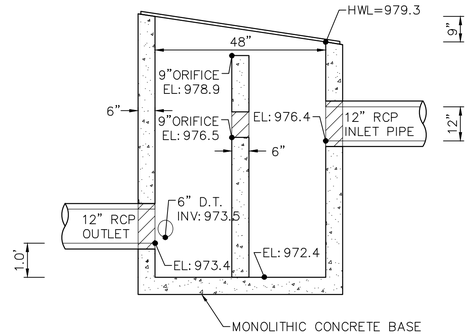
STRUCTURE TABLE				
STRUCTURE NAME	TYPE	STRUCTURE SIZE	NEENAH CASTING OR EQUAL	NOTES
100B	OCS	48" DIA.	SPECIAL	
102	CBMH	48" DIA.	R-3250-1	2
103	CB	27" DIA.	R-3250-1	1

1. WATER TIGHT SPECIAL NOTE
   A. STRUCTURE SHALL HAVE AN INTEGRAL BASE
   B. PIPE CONNECTION TO STRUCTURE WITH PRESS-SEAL WATERSTOP GROUT RING OR APPROVED EQUAL.
   C. PIPE JOINTS WITHIN 10 OF WATERMAIN WILL BE TONGUE AND GROOVE WITH A HAMILTON KENT SUPERSEAL GASKET OR APPROVED EQUAL MEETING ASTM-443.
   D. ALL MH JOINTS WILL BE TOINGUE AND GROOVE WITH A HAMILTON KENT SUPERSEAL GASKET OR APPROVED EQUAL MEETING ASTM-443.

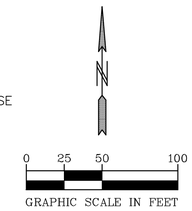
2. PRETREATMENT STRUCTURE
   A. SAFL BAFFLE WITH SUMP OR APPROVED EQUAL

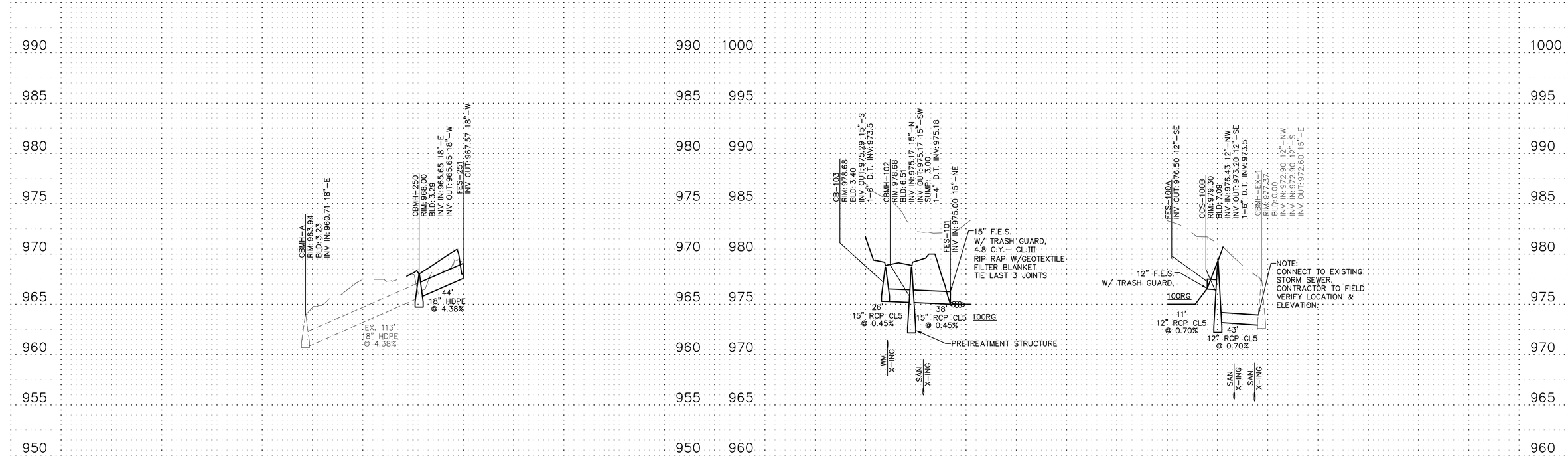






POND OUTLET CONTROL STRUCTURE OCS-100B
(NOT TO SCALE)





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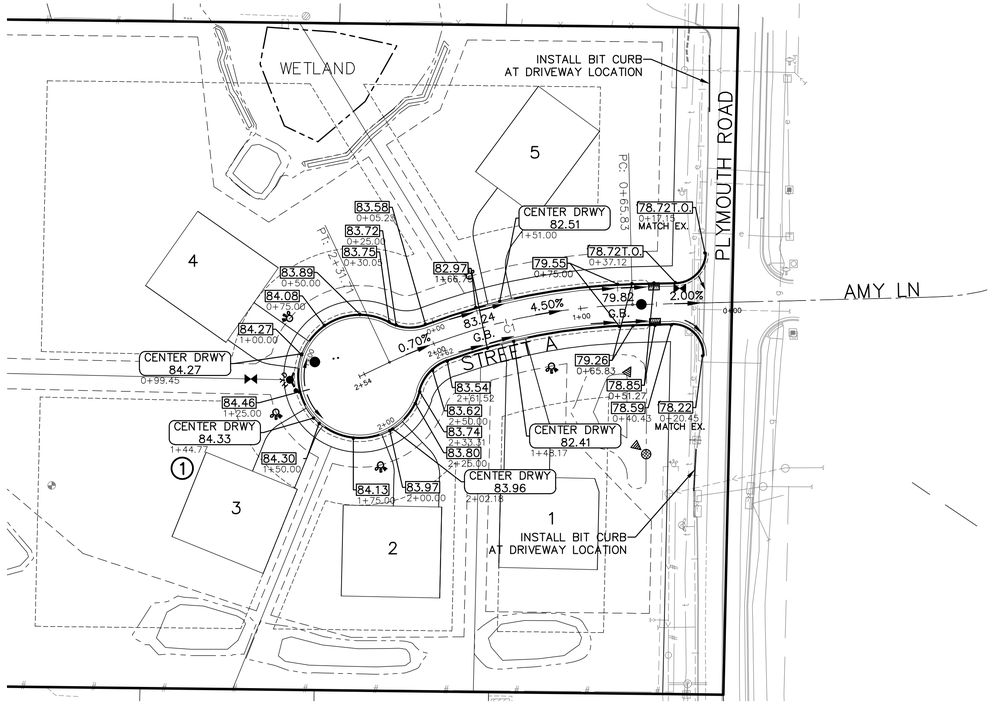
STORM SEWER PLAN

NORTON HOMES
18215 45TH AVENUE NORTH
PLYMOUTH, MINNESOTA 55446

WOODHAVEN
MINNETONKA, MINNESOTA

7.10 OF 22

01-ENG-123127-SHEET-STRM



CURVE TABLE						
CURVE	DELTA	LENGTH	RADIUS	TANGENT	PC	PT
C1	23°45'34"	165.87	400.00	84.15	0+65.83	2+31.71

CURB LEGEND

- (08.15) = GUTTER ELEVATION FOR SURMOUNTABLE CURB
- [08.32] = GUTTER ELEVATION FOR B612 CURB
- [08.32] T.O. = GUTTER ELEVATION FOR B612 CURB WITH TIP OUT GUTTER
- 07.82 = BITUMINOUS ELEVATION
- = SURMOUNTABLE CURB & GUTTER
- = B612 CURB & GUTTER
- = BITUMINOUS CURB

NOTE:
MAXIMUM DRIVEWAY WIDTH AT THE PROPERTY LINE IS 20 FEET FOR A TWO-STALL GARAGE AND 30 FEET FOR A THREE-STALL GARAGE.

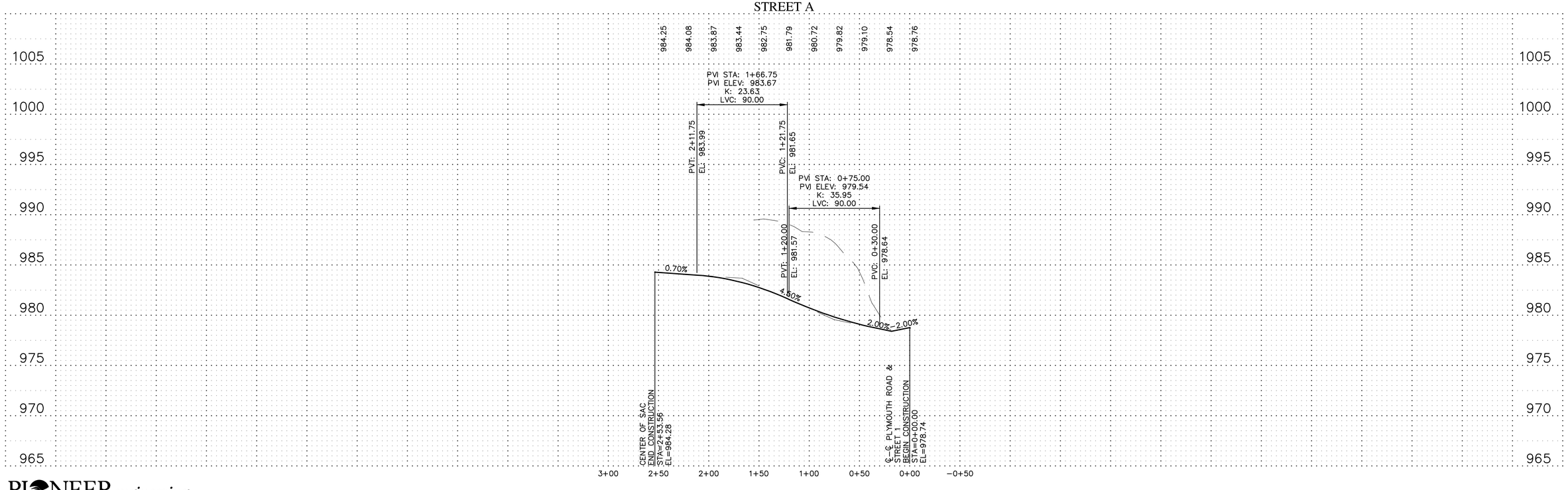
NOTE:
ALL CURB AND GUTTER TO BE B612 WITH CURB CUTS AT DRIVEWAYS.

N

0 25 50 100

GRAPHIC SCALE IN FEET

STREET A



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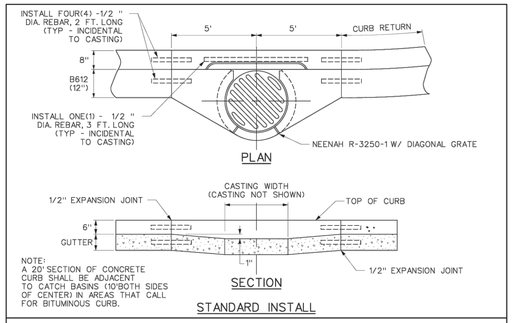
STREET CONSTRUCTION

NORTON HOMES
18215 45TH AVENUE NORTH
PLYMOUTH, MINNESOTA 55446

WOODHAVEN
MINNETONKA, MINNESOTA

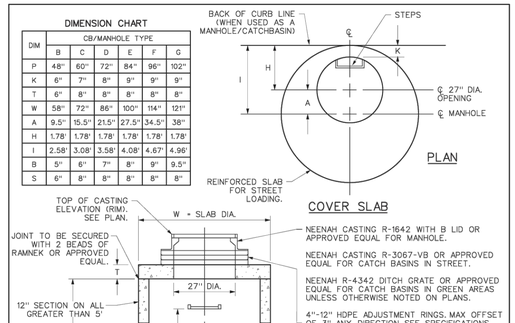
01-ENG-123127-SHEET-ROAD



CITY OF MINNETONKA

CATCH BASIN INSTALLATION

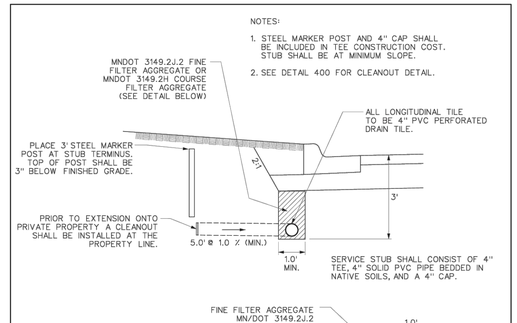
SCALE:	STD PLATE NO:
NOT TO SCALE	110
APPROVED: 9/2000	
REVISED: 8/2018	



CITY OF MINNETONKA

STANDARD CATCH BASIN / MANHOLE 4020

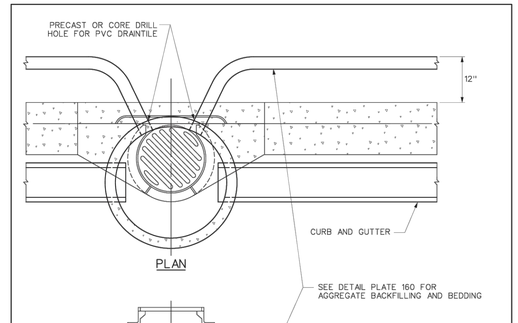
SCALE:	STD PLATE NO:
NOT TO SCALE	130
APPROVED: 4/2005	
REVISED: 1/2021	



CITY OF MINNETONKA

DRAIN TILE INSTALLATION (CONCRETE CURB)

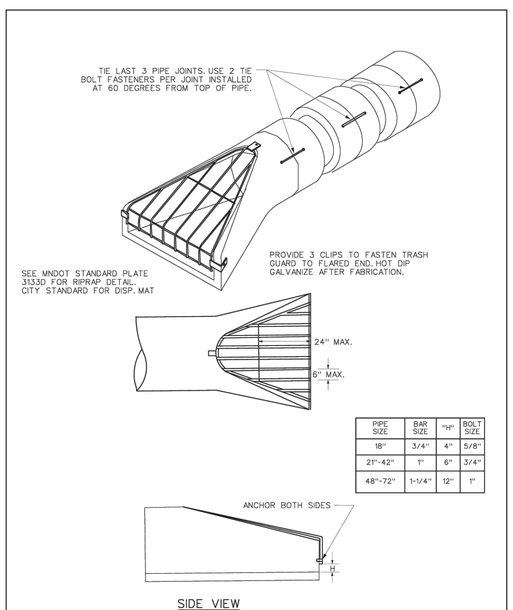
SCALE:	STD PLATE NO:
NOT TO SCALE	160
APPROVED: 2/2001	
REVISED: 8/2018	



CITY OF MINNETONKA

DRAINTILE INSTALLATION INTO CATCH BASIN MANHOLE

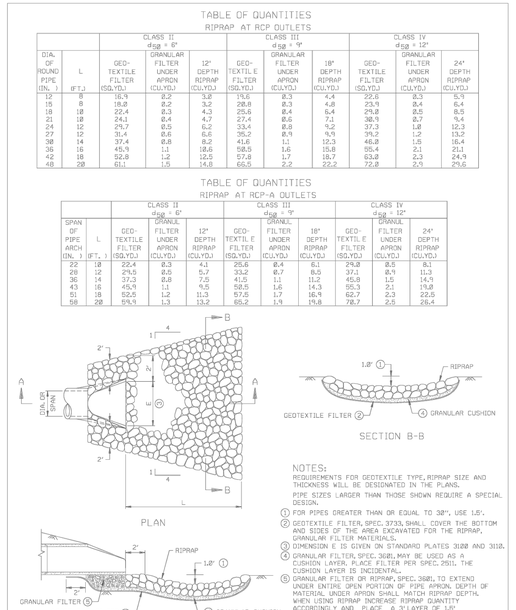
SCALE:	STD PLATE NO:
NOT TO SCALE	170
APPROVED: 3/2015	
REVISED: 8/2018	



CITY OF MINNETONKA

FLARED END SECTION

SCALE:	STD PLATE NO:
NOT TO SCALE	190
APPROVED: 1/2008	
REVISED: 5/2018	

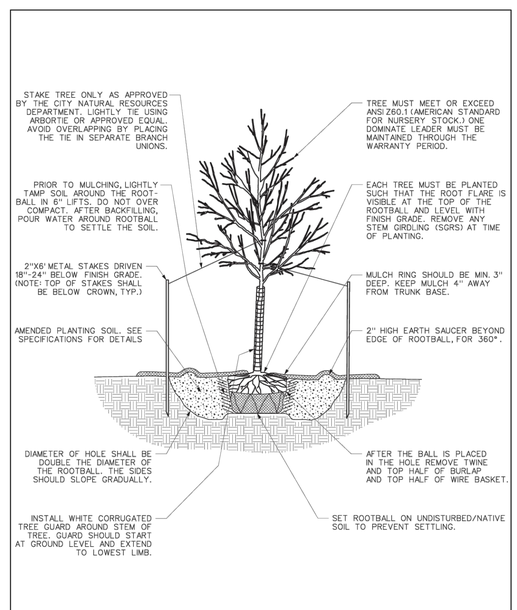


APPROVED DECEMBER 9, 2013
STATE DESIGN ENGINEER

STATE OF MINNESOTA
DEPARTMENT OF TRANSPORTATION

RIPRAP AT RCP OUTLETS

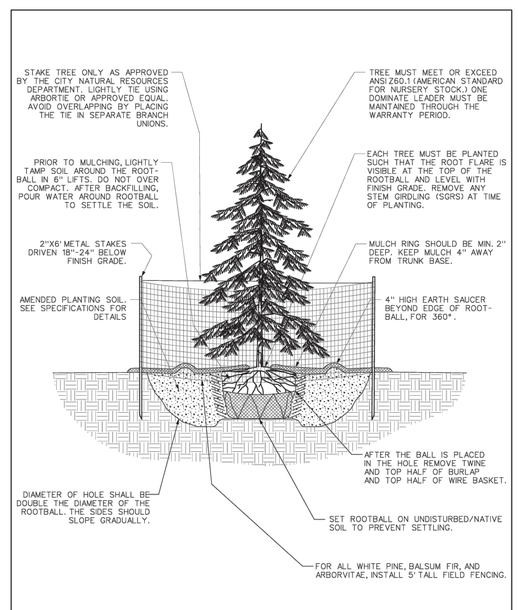
SPECIFICATION REFERENCE	STANDARD PLATE NO.
3100 3118 3601 3733 2511	3133D



CITY OF MINNETONKA

DECIDUOUS TREE PLANTING

SCALE:	STD PLATE NO:
NOT TO SCALE	270.1
APPROVED: 8/2018	
REVISED:	



CITY OF MINNETONKA

CONIFEROUS TREE PLANTING

SCALE:	STD PLATE NO:
NOT TO SCALE	270.2
APPROVED: 8/2018	
REVISED:	

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Drawn	MSN/PDS

DETAILS

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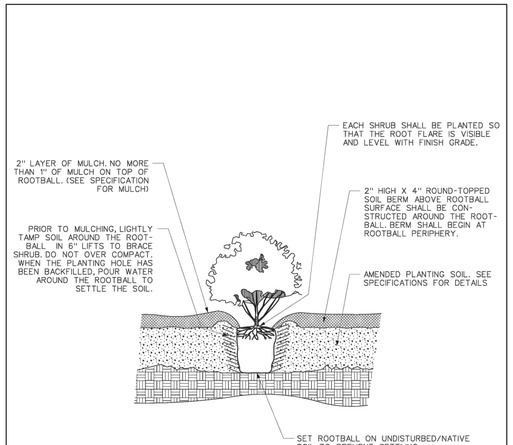
PLYMOUTH, MINNESOTA 55446

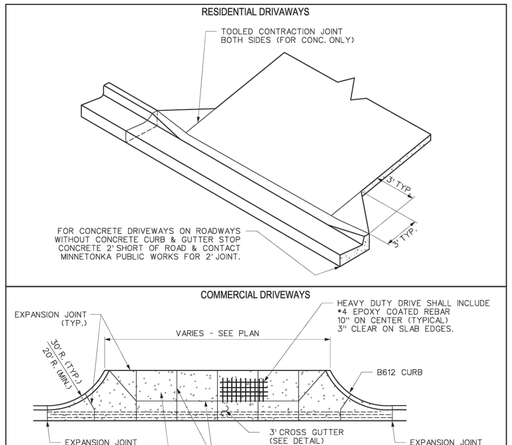
WOODHAVEN
MINNETONKA, MINNESOTA

01-ENG-123127-SHEET-DTLS



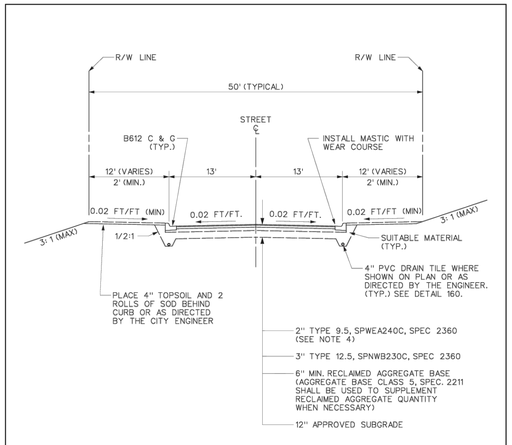
CONTAINER SHRUB PLANTING

SCALE: NOT TO SCALE | STD PLATE NO: 270.3
APPROVED: 8/2018
REVISED:



CONCRETE DRIVEWAY

SCALE: NOT TO SCALE | STD PLATE NO: 310
APPROVED: 8/2018
REVISED:

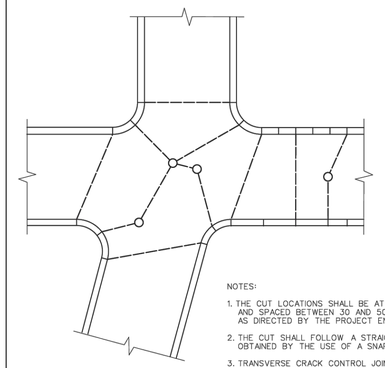


NOTES:

1. ALL IMPROVEMENTS SHALL BE CONSTRUCTED ON APPROVED, COMPACTED SUBGRADE. A TEST ROLL MUST BE PERFORMED UNDER OBSERVATION OF THE CITY ENGINEER OR HIS DESIGNATED REPRESENTATIVE PRIOR TO PLACEMENT OF THE BITUMINOUS BASE COURSE.
2. SOIL BORINGS PERFORMED BY A QUALIFIED GEOTECHNICAL ENGINEER IN ACCORDANCE WITH ASTM PROCEDURES AND/OR OTHER METHODS APPROVED BY THE MINNETONKA CITY ENGINEER MAY BE UTILIZED TO DETERMINE IF THE ACTUAL STREET SECTION SHOULD BE GREATER THAN THE REQUIRED MINIMUM SECTION.
3. CERTAIN SOIL CONDITIONS MAY REQUIRE SUBSURFACE DRAINAGE IMPROVEMENTS.
4. CONTRACTOR SHALL USE B OIL FOR ALL PAVEMENT MILL & OVERLAY PROJECTS.

MINIMUM STANDARD STREET SECTION

SCALE: 1" = 10' | STD PLATE NO: 320
APPROVED: 5/2000
REVISED: 8/2018

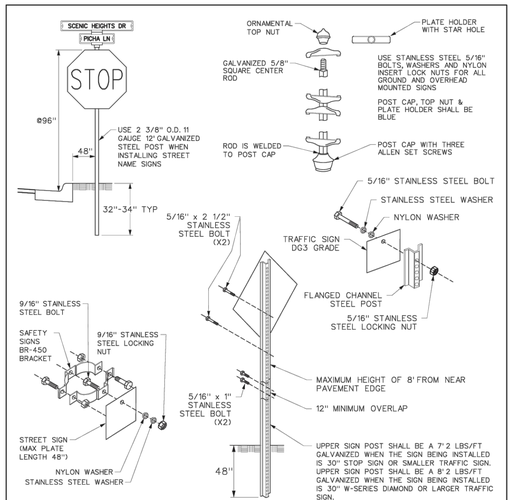


NOTES:

1. THE CUT LOCATIONS SHALL BE AT MANHOLES AND SPACED BETWEEN 30 AND 50 FEET OR AS DIRECTED BY THE PROJECT ENGINEER.
2. THE CUT SHALL FOLLOW A STRAIGHT LINE OBTAINED BY THE USE OF A SNAP LINE.
3. TRANSVERSE CRACK CONTROL JOINTS SHALL START AND STOP AT CONTROL JOINTS IN CURB & GUTTER.
4. THE CUT SHALL BE A WET CUT BY A PAVEMENT SAW AT A WIDTH OF 1/4" AND A DEPTH NOT LESS THAN 1/3 OF THE PAVEMENT THICKNESS.
5. DIRECTLY FOLLOWING THE CUTTING THE CUT SHALL BE WASHED WITH A PRESSURE HOSE UNTIL THE WATER IS CLEAR FROM THE CUT.
6. THE CUT SHALL THEN BE DRIED WITH COMPRESSED AIR.
7. THE FINAL STEP SHALL BE TO FILL WITH CRACK FILLER MEETING MN/DOT SPECIFICATION 3723.

TRANSVERSE CRACK CONTROL JOINTS FOR NEW BITUMINOUS PAVEMENT

SCALE: N/A | STD PLATE NO: 330
APPROVED: 4/2014
REVISED: 5/2018

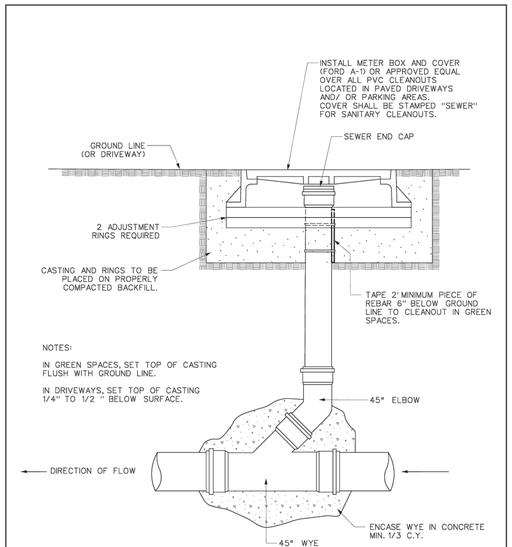


NOTES:

1. LOCATION OF ALL PROPOSED SIGNS ARE APPROXIMATE AND SHALL BE LOCATED BY THE ENGINEER IN THE FIELD PRIOR TO INSTALLATION. TYPE D SHALL BE INSTALLED AT END RADII FROM LANE OF TRAFFIC.
2. SIGN PANEL-REFLECTIVE SHEETING WILL BE DG3 MATERIAL.
3. ALL TYPE C SIGN PANELS SHALL BE SUPPLIED AND INSTALLED BY THE CONTRACTOR. THE CONSTRACTOR SHALL PROVIDE THE SIGN, SIGN POST, MOUNTING HARDWARE, SIGN AND LABOR FOR THE INSTALLATION OF ALL TYPE C SIGNS.
4. WHEN CONTRACTOR IS INSTALLING TYPE C SIGNS THEY MUST USE A BT-450 DOUBLE-SIDED SIGN BRACKET FROM SAFETY SIGNS (OR APPROVED EQUAL).
5. ALL THE TYPE D SIGN PANELS WILL BE SUPPLIED BY THE CITY AND INSTALLED BY THE CONTRACTOR. THE CONTRACTOR SHALL PROVIDE POST, MOUNTING HARDWARE, ORNAMENTAL TOP NUT, AND PLAT HOLDER FOR ALL TYPE D SIGNS.
6. ALWAYS INSTALL THE CROSS STREET NAME BLADE ON THE BOTTOM.

TYPICAL TRAFFIC & STREET NAME SIGN INSTALLATION

SCALE: NOT TO SCALE | STD PLATE NO: 390
APPROVED: 12/2018
REVISED:



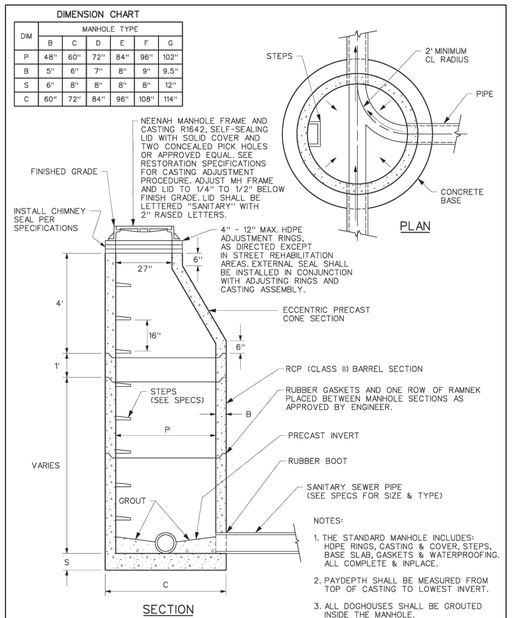
NOTE: SIZE TO BE DETERMINED BY PROJECT ENGINEER

SERVICE CLEANOUT (SANITARY SEWER & DRAIN TILE)

SCALE: NOT TO SCALE | STD PLATE NO: 400
APPROVED: 5/2000
REVISED: 8/2018

DIMENSION CHART

DIM	MANHOLE TYPE					
	B	C	D	E	F	G
P	48"	60"	72"	84"	96"	102"
B	5"	6"	7"	8"	9"	9.5"
S	6"	8"	8"	8"	8"	12"
C	60"	72"	84"	96"	108"	114"

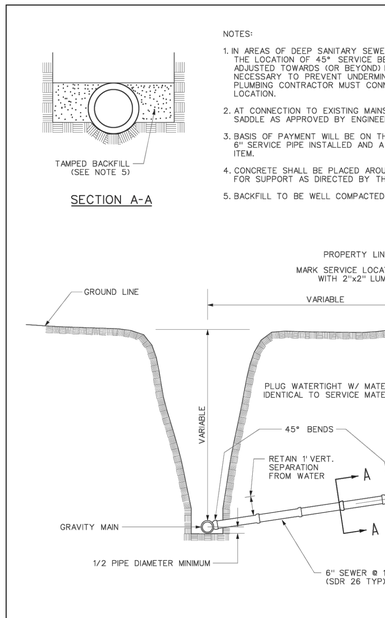


NOTES:

1. THE STANDARD MANHOLE INCLUDES: HDPE RINGS, CASTING & COVER, STEPS, BASE SLAB, GASKETS & WATERPROOFING. ALL COMPLETE & INPLACE.
2. PAYDEPTH SHALL BE MEASURED FROM TOP OF CASTING TO LOWEST INVERT.
3. ALL DOGHOUSES SHALL BE GROUTED INSIDE THE MANHOLE.

SANITARY SEWER MANHOLE

SCALE: NOT TO SCALE | STD PLATE NO: 410
APPROVED: 4/2000
REVISED: 8/2018



NOTES:

1. IN AREAS OF DEEP SANITARY SEWER INSTALLATIONS, THE LOCATION OF 45° SERVICE BEND MUST BE ADJUSTED TOWARDS (OR BEYOND) PROPERTY LINE AS NECESSARY TO PREVENT UNDERMINING OF CURB IF PLUMBING CONTRACTOR MUST CONNECT AT BEND LOCATION.
2. AT CONNECTION TO EXISTING MAINS, USE STAINLESS STEEL SADDLE AS APPROVED BY ENGINEER.
3. BASIS OF PAYMENT WILL BE ON THE LINEAR FEET OF 6" SERVICE PIPE INSTALLED AND A SERVICE CONNECTION ITEM.
4. CONCRETE SHALL BE PLACED AROUND SERVICE WYES FOR SUPPORT AS DIRECTED BY THE ENGINEER.
5. BACKFILL TO BE WELL COMPACTED GRANULAR MATERIAL.

SANITARY SEWER SERVICE CONNECTION

SCALE: NOT TO SCALE | STD PLATE NO: 440
APPROVED: 4/2000
REVISED: 8/2018

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I hereby certify that this plan was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota

Name: John M. Molinaro
Reg. No. 45831 Date 3-15-2024

Revisions

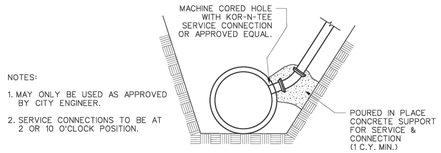
Date 3-15-24
Designed JMM
Drawn MSN/PDS

DETAILS

NORTON HOMES
18215 45TH AVENUE NORTH
PLYMOUTH, MINNESOTA 55446

WOODHAVEN
MINNETONKA, MINNESOTA

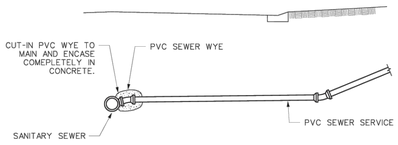
01-ENG-123127-SHEET-DTLS



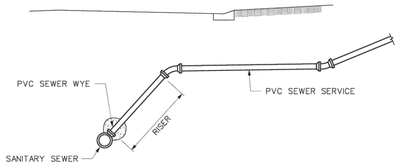
NOTES:

1. MAY ONLY BE USED AS APPROVED BY CITY ENGINEER.
2. SERVICE CONNECTIONS TO BE AT 2 OR 10 O'CLOCK POSITION.

SERVICE CONNECTION TO CONCRETE SANITARY SEWER



SERVICE CONNECTION TO EXISTING PVC SANITARY SEWER



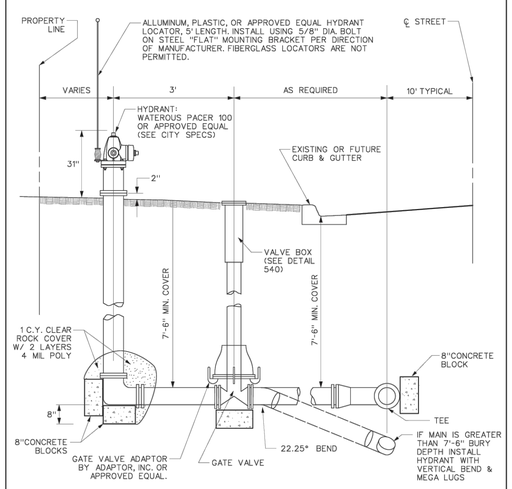
SERVICE CONNECTION TO NEW PVC SANITARY SEWER

CITY OF MINNETONKA

PRIVATE CONNECTIONS TO PUBLIC UTILITIES

SCALE: NOT TO SCALE | STD PLATE NO: 450

APPROVED: 8/2018
REVISED:



NOTES:

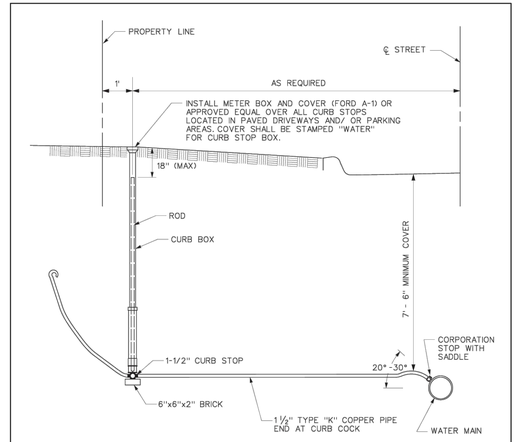
1. ALL WATERMAIN, INCLUDING VALVES, FITTINGS AND APPURTENANCES, SHALL BE FULLY ENCASED IN POLYETHYLENE FILM (4 MIL.)
2. ALL GATE VALVES AND BUTTERFLY VALVES SHALL BE FURNISHED WITH AN ADAPTOR TO PREVENT THE BOX FROM SETTLING OR SHIFTING. SEE CITY SPECIFICATIONS.
3. ALL MECHANICAL JOINTS SHALL BE RESTRAINED BY MEGALUGS.
4. POURED CONCRETE THRUST BLOCK REQUIRED IF STANDARD BLOCKS CANNOT BE PLACED ON UNDISTURBED GROUND.

CITY OF MINNETONKA

HYDRANT

SCALE: NOT TO SCALE | STD PLATE NO: 500

APPROVED: 5/2000
REVISED: 8/2018



NOTES:

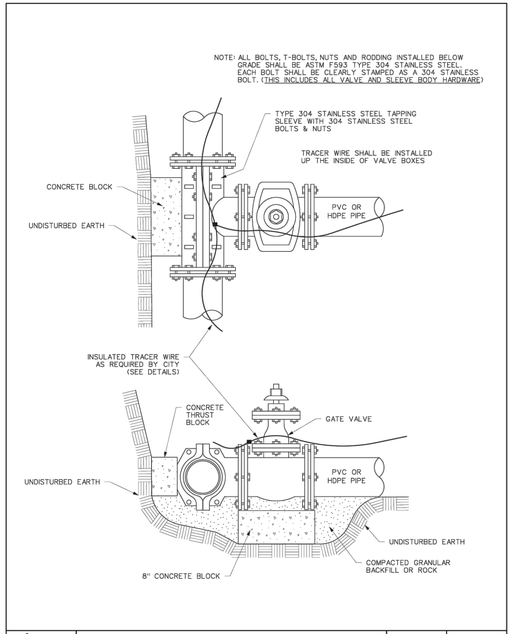
1. ANY CURB STOP LOCATED IN A PAVED AREA SHALL BE COVERED WITH METER BOX COVER (FORD A-1) OR APPROVED EQUAL.
2. ALL SERVICES SHALL BE 1 1/2" MIN. TYPE K COPPER AND SHALL UTILIZE A STAINLESS STEEL SADDLE (SMITH BLAIR 317 OR 372) OR APPROVED EQUAL.
3. ALL BRASS FITTINGS SHALL BE "NO LEAD BRASS".
4. BASIS OF PAYMENT WILL BE ON THE LINEAR FEET OF SERVICE PIPE INSTALLED AND WATER SERVICE ITEMS INCLUDED IN THE PROPOSAL, WHICH MAY INCLUDE TAP, CORPORATION STOP, CURB STOP, CURB BOX WITH ROD AND TAPPING SADDLE. ALL ITEMS NOT LISTED IN PROPOSAL FORM ARE INCIDENTAL.
5. WHEN GROUND WATER IS ENCOUNTERED, A 1 1/2" COPPER "PIGTAIL" WITH CRIMPED END SHALL BE EXTENDED TO 1' ABOVE THE WATER ELEVATION.
6. WHEN NEW SERVICE IS INSTALLED IN JOINT TRENCH WITH SANITARY SEWER SERVICE THERE SHALL BE 3' MIN HORIZONTAL & 18" VERTICAL SEPARATION.

CITY OF MINNETONKA

WATER SERVICE CONNECTION

SCALE: NOT TO SCALE | STD PLATE NO: 510

APPROVED: 5/2000
REVISED: 8/2018

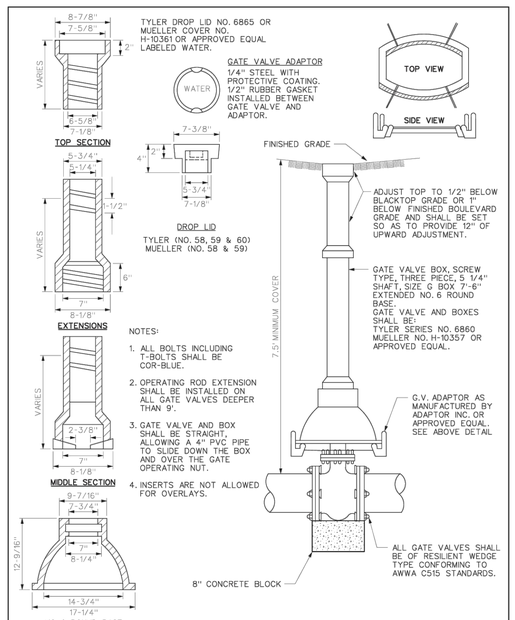


CITY OF MINNETONKA

WATERMAIN WET TAP

SCALE: NOT TO SCALE | STD PLATE NO: 530

APPROVED: 12/2018
REVISED:



NOTES:

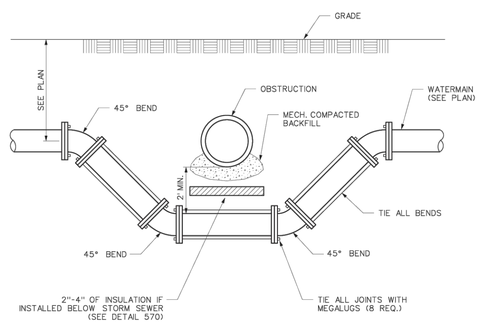
1. ALL BOLTS INCLUDING T-BOLTS SHALL BE COR-BLUE.
2. OPERATING ROD EXTENSION SHALL BE INSTALLED ON ALL GATE VALVES DEEPER THAN 9'.
3. GATE VALVE AND BOX SHALL BE STRAIGHT, ALLOWING A 4" PVC PIPE TO SLIDE DOWN THE BOX AND OVER THE GATE OPERATING NUT.
4. INSERTS ARE NOT ALLOWED FOR OVERLAYS.

CITY OF MINNETONKA

GATE VALVE

SCALE: NOT TO SCALE | STD PLATE NO: 540

APPROVED: 1/2008
REVISED: 8/2018

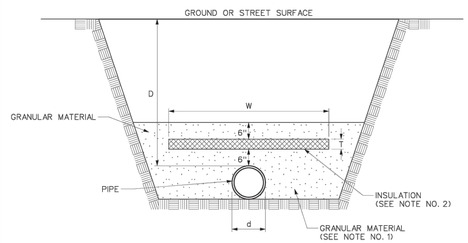


CITY OF MINNETONKA

WATERMAIN OFFSET WITH MEGALUGS

SCALE: NOT TO SCALE | STD PLATE NO: 560

APPROVED: 8/2018
REVISED:



REQUIREMENTS FOR WIDTH AND THICKNESS OF PLASTIC FOAM INSULATION, PLACED 6" ABOVE TOP OF PIPE FOR VARIOUS PIPE DEPTHS.

"D" DEPTH TO TOP OF PIPE	"W" COMPUTE WIDTH OF INSULATION REQUIRED	"T" THICKNESS OF INSULATION REQUIRED
2 FT. TO 3 FT.	d • 15 FT. • __	4 IN.
3 FT. TO 4 FT.	d • 13 FT. • __	4 IN.
4 FT. TO 5 FT.	d • 11 FT. • __	4 IN.
5 FT. TO 6 FT.	d • 6 FT. • __	2 IN.
6 FT. TO 7 FT.	d • 4 FT. • __	2 IN.
7 FT. (ASSUMED FROST LINE)		0 IN.

NOTES:

1. 6" GRANULAR MATERIAL SHALL BE WELL COMPACTED AND LEVELED TO PERMIT PROPER BEARING FOR INSULATION BOARD.
2. INSULATION SHALL BE OF 2 INCH THICK BOARDS OF EXTRUDED OR EXPANDING POLYSTYRENE PLASTIC FOAM SPECIFICALLY DESIGNED FOR USE IN UNDERGROUND CONSTRUCTION AND HAVING A MINIMUM COMPRESSIVE STRENGTH OF 35 P.S.I. SPECIAL NOTE IS TO BE TAKEN THAN THIS TYPE IS DIFFERENT THAN THE TYPE USED IN ORDINARY BUILDING CONSTRUCTION. THE INSULATION BOARD SHALL COMPLY WITH ASTM:D 1621.

CITY OF MINNETONKA

PIPE INSULATION

SCALE: NOT TO SCALE | STD PLATE NO: 570

APPROVED: 5/2000
REVISED: 5/2018

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I hereby certify that this plan was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota

Name: John M. Molinaro
Reg. No. 45831 Date 3-15-2024

Revisions

Date	3-15-24
Designed	JMM
Drawn	MSN/PDS

DETAILS

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18215 45TH AVENUE NORTH
PLYMOUTH, MINNESOTA 55446

WOODHAVEN
MINNETONKA, MINNESOTA

01-ENG-123127-SHEET-DTLS

STORMWATER POLLUTION PREVENTION PLAN (SWPPP)

TO COMPLY WITH THE GENERAL STORMWATER PERMIT FOR CONSTRUCTION ACTIVITY

THE FULL STORMWATER MANAGEMENT PLAN IS A SEPARATE DOCUMENT AVAILABLE UPON REQUEST

CONSTRUCTION ACTIVITY INFORMATION

PROJECT NAME: WOODHAVEN
PROJECT LOCATION:
PLYMOUTH ROAD & AMY LN
MINNETONKA, MINNESOTA 55305
HENNEPIN COUNTY
LATITUDE/LONGITUDE: 44.957108, -93.440969

TOTAL PROJECT AREA DISTURBED: 2.4 ACRES
TOTAL EXISTING IMPERVIOUS AREA: 0.5 ACRES
TOTAL PROPOSED IMPERVIOUS AREA: 1.0 ACRES

RECEIVING WATERS:
MINNEHAHA CREEK

DATES OF CONSTRUCTION:
CONSTRUCTION START DATE APRIL 1, 2024 EST. COMPLETION DATE: SEPTEMBER 1, 2024

CONTACT INFORMATION

PROJECT OWNER
NORTON HOMES
FIRST LASTNAME – TITLE
18215 45TH AVENUE NORTH
PLYMOUTH, MN 55446
PHONE XXX-XXX-XXXX
EMAIL: XXX@XXXXXXXXXX.COM

CONTRACTOR:
TBD
NAME – TITLE
XXX STREET
City, State Zip
PHONE XXX-XXX-XXXX
EMAIL: XXX@XXXXXXXXXX.COM

GENERAL CONSTRUCTION PROJECT INFORMATION

THE CONSTRUCTION OF NEW ROADWAYS, STREET A, AND 5 LOTS FOR RESIDENTIAL DEVELOPMENT. THIS CONSTRUCTION WILL COMPLETE GRADING, INSTALLATION OF SANITARY SEWER, WATERMAIN, STORM SEWER, CONCRETE CURB AND GUTTER, BITUMINOUS SURFACING, STREET LIGHTING, LANDSCAPING, EROSION CONTROL, AND TURF ESTABLISHMENT.

BASED ON THE SOIL BORINGS THAT WERE RETRIEVED FROM THE SITE, SOILS ENCOUNTERED ON SITE ARE SANDY LEAN CLAY, AND CLAYEY SAND.

GENERAL SITE INFORMATION (III.A)

1. THE PROJECT IS REQUIRED TO MEET THE CONSTRUCTION STORMWATER REQUIREMENTS FOR THE NPDES GENERAL STORMWATER PERMIT AND MNDOT SPEC. 1717, 2573, AND 2575.
2. THE CONTRACTOR SHALL INSTALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES IN ACCORDANCE WITH MNDOT GENERAL CONDITIONS 2573 TO BE INSPECTED BY THE CITY PRIOR TO STARTING ANY CONSTRUCTION OPERATION THAT MAY CAUSE ANY SEDIMENTATION OR SILTATION AT THE SITE.
3. LOCATIONS, TYPE AND QUANTITY OF TEMPORARY AND PERMANENT EROSION CONTROL MEASURES CAN BE FOUND WITHIN THE CONSTRUCTION PLANS.
4. THE PROJECT IS LOCATED WITHIN 1 MILE AND FLOWS TO AN IMPAIRED WATER BODY. THEREFORE, THE PROJECT WILL NEED TO STABILIZE ALL EXPOSED SOILS NO LATER THAN 7 DAYS. DITCHES OR RAVINES THROUGHOUT THE PROJECT THAT ARE DISTURBED SHALL BE STABILIZED WITHIN 24 HOURS.
5. THE PROJECT IS LOCATED WITH 1 MILE AND FLOWS TO AN IMPAIRED WATER BODY. THEREFORE, TEMPORARY SEDIMENT BASINS ARE NEEDED FOR DRAINAGE AREAS OF 5 ACRES OR MORE FLOWING TO A COMMON LOCATION.
6. THE CONTRACTOR SHALL INSTALL ADDITIONAL BMP'S AS NECESSARY TO PREVENT SEDIMENT TRANSPORT PER PERMIT REQUIREMENTS
7. INLET PROTECTION, SILT FENCE AND BIOROLLS SHALL BE INSTALLED IN THE FIELD AS SHOWN ON THE PLANS AS DIRECTED BY THE ENGINEER.
8. PERMIT COVERAGE FOR THIS PROJECT CANNOT BE ISSUED UNTIL ALL OF THE REQUIREMENTS OF SECTION 22 OF THE GENERAL STORMWATER PERMIT WITH REGARDS TO WETLAND PERMITTING, DECISIONS, AND MITIGATIVE SEQUENCING HAVE BEEN FINALIZED AND DOCUMENTED.

THE INTENDED SEQUENCING OF MAJOR CONSTRUCTION ACTIVITIES IS AS FOLLOWS:
1. INSTALL STABILIZED ROCK CONSTRUCTION ENTRANCE
2. INSTALLATION OF SILT FENCE AROUND SITE
3. INSTALL DOUBLE SILT FENCE AROUND WETLAND AREAS
4. INSTALL ORANGE CONSTRUCTION FENCING AROUND INFILTRATION AREAS.
5. CLEAR AND GRUB FOR TEMPORARY SEDIMENT BASIN/POND INSTALL.
6. CONSTRUCT TEMP PONDS – CAN USE PROPOSED BASINS AS TEMP PONDS
7. CLEAR AND GRUB REMAINDER OF SITE
8. STRIP AND STOCKPILE TOPSOIL
9. ROUGH GRADING OF SITE
10. STABILIZE DENUDED AREAS AND STOCKPILES
11. INSTALL SANITARY SEWER, WATER MAIN, STORM SEWER AND SERVICES
12. INSTALL SILT FENCE/INLET PROTECTION AROUND CB'S
13. INSTALL STREET SECTION
14. INSTALL CURB AND GUTTER
15. BITUMINOUS ON STREETS
16. INSTALL SMALL UTILITIES (GAS, ELECTRIC, PHONE, CABLE, ETC.)
17. FINAL GRADE BOULEVARD, INSTALL SEED AND MULCH
18. REMOVE ACCUMULATED SEDIMENT FROM BASIN/POND
19. FINAL GRAD POND/INFILTRATION BASINS (DO NOT COMPACT SOILS IN INFILTRATION AREAS.)
20. WHEN ALL CONSTRUCTION ACTIVITY IS COMPLETE AND THE SITE IS STABILIZED BY EITHER SEED OR SOD/LANDSCAPING, REMOVE SILT FENCE AND RESEED AREAS DISTURBED BY THE REMOVAL.

ENVIRONMENTALLY SENSITIVE AREAS:
WETLANDS – THERE ARE NO IMPACTS TO WETLANDS PER SECTION 22 OF THE PERMIT. SEE ATTACHED WETLAND PLAN.

SPECIAL AND IMPAIRED WATERS – MINNEHAHA CREEK IMPAIRMENT(S): BENTHIC MACROINVERTEBRATES BIOASSESSMENTS, CHLORIDE, DISSOLVED OXYGEN, FECAL COLIFORM, FISH BIOASSESSMENTS

TMDL – THERE ARE ESTABLISHED TMDL PLANS FOR cHLORIDE, FECAL COLIFORM.

SCIENTIFIC OR NATURAL AREAS – THERE ARE NO SNA WITHIN 1 MILE OF THE PROJECT.

KARST AREA – THE PROJECT IS NOT LOCATED WITHIN A KARST AREA.

CALCAREOUS FENS – THE PROJECT DOES NOT DISCHARGE TO A FEN.

TRAINING (21.1)

THE CONTRACTOR SHALL ENSURE THAT THE TRAINING REQUIREMENTS IN PART 21.1 OF THE GENERAL STORMWATER PERMIT FOR CONSTRUCTION ACTIVITY ARE COMPLIED WITH. THE INDIVIDUALS TRAINED WILL BE RECORDED IN THE SWPPP BEFORE THE START OF CONSTRUCTION OR AS SOON AS PERSONNEL FOR THE PROJECT HAVE BEEN DETERMINED. PROVIDE INFORMATION IN THE SPACE PROVIDED BELOW FOR ADDITIONAL PERSONNEL ON THE PROJECT AS REQUIRED BY THE PERMIT.

SWPPP DESIGNER	COMPANY	CERTIFICATION
SWPPP INSTALLER		
SWPPP INSPECTOR		

PERMANENT STORMWATER MANAGEMENT SYSTEM (15.1)

1. THE PROJECT WILL CREATE A NEW CUMULATIVE IMPERVIOUS SURFACE GREATER THAN OR EQUAL TO ONE ACRE. THE PROJECT PROPOSES TO CONSTRUCT A STORMWATER TREATMENT SYSTEM TO COLLECT RUNOFF TO BE DISCHARGED OFFSITE. TREATMENT FOR THE RUNOFF IS TO BE EXECUTED BY THE PROPOSED STORMWATER MANAGEMENT SYSTEM. CALCULATIONS DETAILING THE BASINS ARE AVAILABLE UPON REQUEST.

BMP SELECTION & STORMWATER MANAGEMENT (7.1)

1. THE CONTRACTOR SHALL INSTALL AND MAINTAIN THE BMPS IDENTIFIED IN THIS PLAN IN AN APPROPRIATE AND FUNCTIONAL MANNER AND IN ACCORDANCE WITH RELEVANT MANUFACTURER SPECIFICATIONS AND ACCEPTED ENGINEERING PRACTICES TO MINIMIZE THE DISCHARGE OF POLLUTANTS IN STORMWATER FROM CONSTRUCTION ACTIVITIES. THESE BMPS SHALL BE INSPECTED BY THE CITY OF MINNETONKA.
2. THE CONTRACTOR SHOULD CONSTRUCT TEMPORARY OR PERMANENT WET SEDIMENTATION BASINS IDENTIFIED IN THIS PLAN (WHEN REQUIRED, SEE SECTION 14 AND 15) AS A FIRST STEP IN CONSTRUCTION AND STORMWATER ROUTED TO THESE.
3. THE CONTRACTOR MUST PHASE CONSTRUCTION SO TO LIMIT DISTURBED LAND TO AREAS THAT CAN BE EFFECTIVELY INSPECTED AND MAINTAINED. PER SECTION 11 OF THE PERMIT.
4. ALL EROSION CONTROL NETTING USED ON THE SITE AS PART OF THE SOIL STABILIZATION TECHNIQUES, ARE ENCOURAGED TO USE PRODUCTS THAT HAVE BEEN SHOWN TO MINIMIZE IMPACTS ON WILDLIFE. THE U.S. FISH & WILDLIFE SERVICE RECOMMENDS USING TYPES OF NETTING PRACTICES THAT ARE CONSIDERED "WILDLIFE FRIENDLY," INCLUDING THOSE THAT USE NATURAL FIBER OR 100 PERCENT BIODEGRADABLE MATERIALS AND THAT USE A LOOSE WEAVE WITH A NON–WELDED, MOVABLE JOINTED NETTING.

EROSION PREVENTION PRACTICES (8.1)

1. THE CONTRACTOR SHALL PHASE THE WORK TO LIMIT THE OVERALL DISTURBANCE OF THE PROJECT AT ANY GIVEN TIME. NATURAL VEGETATIVE BUFFERS SHALL BE MAINTAINED BETWEEN THE WORK LIMITS AND ALL SURFACE WATERS OR WETLANDS THROUGHOUT THE COURSE OF CONSTRUCTION.
2. THE AREAS NOT TO BE DISTURBED WILL BE DELINEATED THROUGH THE USE OF SILT FENCE, BIOROLLS AND CONSTRUCTION STAKING.
3. THE CONTRACTOR SHALL MAINTAIN A NATURAL, VEGETATED BUFFER ADJACENT TO THE WETLANDS WHEREVER POSSIBLE DURING CONSTRUCTION.
4. TEMPORARY COVER SHALL BE PROVIDED USING TEMPORARY SEED WITH EROSION CONTROL BLANKET OR HYDROMULCH.
5. PERMANENT COVER SHALL BE PROVIDED AS DETAILED ON THE CONSTRUCTION PLANS USING SEED WITH EROSION CONTROL BLANKET OR HYDROMULCH. PERMITTEES MUST NOT USE MULCH, HYDROMULCH, TACKIFIER, POLYACRYLAMIDE OR SIMILAR EROSION PREVENTION PRACTICES WITHIN ANY PORTION OF THE NORMAL WETTED PERIMETER OF A TEMPORARY OR PERMANENT DRAINAGE DITCH OR SWALE SECTION WITH A CONTINUOUS SLOPE OF GREATER THAN 2 PERCENT
6. THE CONTRACTOR IS REQUIRED TO PROVIDE ANY ADDITIONAL EROSION PREVENTION MEASURES NECESSARY FOR CONFORMANCE TO THE NPDES CONSTRUCTION PERMIT THROUGHOUT CONSTRUCTION.
7. STABILIZATION TIME FRAMES – INITIATE STABILIZATION IMMEDIATELY WHEN CONSTRUCTION TEMPORARILY OR PERMANENTLY CEASES ON A PORTION OF THE SITE. COMPLETE STABILIZATION WITHIN THE TIME FRAMES LISTED.

7.1.	LAST 200 LINEAL FEET OF DITCH OR SWALE	24 HOURS OF CONNECTION TO SURFACE WATERS
7.2.	REMAINING DITCH OR SWALE	7 DAYS
7.3.	PIPE AND CULVERT OUTLETS	24 HOURS
7.4.	EXPOSED SOIL AND STOCKPILES	7 DAYS

SEDIMENT CONTROL PRACTICES (9.1)

1. SILT FENCE AND ALL OTHER DOWN GRADIENT PERIMETER CONTROL DEVICES SHALL BE INSTALLED AND INSPECTED BY THE CITY OF MINNETONKA PRIOR TO ANY LAND DISTURBANCE ACTIVITY.
2. EROSION CONTROL BLANKET AND BIOROLLS SHALL BE PLACED WITHIN THE DITCH BOTTOMS WITHIN 24 HOURS AFTER FINE GRADING.
3. PRIOR TO STOCKPILING SOIL, SEDIMENT CONTROLS AT THE BASE OF THE STOCKPILE NED TO BE INSTALLED. STOCKPILES LOCATED ON SITE SHALL BE SEEDED, MULCHED OR BLANKETED AND HAVE SILT FENCE OR A BMP APPROVED BY THE ENGINEER IN THE FIELD PLACED AROUND THE BASE OF THE STOCKPILE.
4. MAINTAIN A 50–FOOT NATURAL BUFFER DOWN GRADIENT OF THE SITE OR REDUNDANT SEDIMENT CONTROLS IF BUFFER IS NOT FEASIBLE, WHEN THE CONSTRUCTION IS WITHIN 50 FEET OF A SURFACE WATER.
5. MINIMIZE SOIL COMPACTION BY NOT DISTURBING AREAS OUTSIDE OF THE CONSTRUCTION LIMITS. DELINEATE AREAS NOT TO BE DISTURBED PRIOR TO STARTING GROUND DISTURBING ACTIVITIES. PRESERVE ALL NATURAL BUFFERS SHOWN ON THE PLANS. NO HEAVY CONSTRUCTION EQUIPMENT ALLOWED IN FILTRATION OR INFILTRATION AREAS PER PLANS.
6. CONTRACTOR SHALL USE STREET SWEEPING IN ADDITION TO VEHICLE TRACKING BMPS IF THESE BMPS ALONE ARE NOT ADEQUATE TO PREVENT SEDIMENT TRACKING ONTO THE STREET.
7. ANY SEDIMENT CONTROL PRACTICE USING SOIL IMPLEMENTED BY THE CONTRACTOR SHALL BE TEMPORARILY OR PERMANENTLY STABILIZED WITHIN 24 HOURS OF INSTALLATION.

DEWATERING AND BASIN DRAINING (10.1)

1. DEWATERING IS NOT ANTICIPATED ON THIS PROJECT. HOWEVER, IF DEWATERING IS NECESSARY, THE CONTRACTOR SHALL SUBMIT A PLAN TO THE ENGINEER FOR ACCEPTANCE.
2. IF DEWATERING IS NECESSARY, IT MUST NOT CAUSE NUISANCE CONDITIONS IN SURFACE WATERS FROM DEWATERING AND BASIN DRAINING DISCHARGE.
3. IF THE DEWATERING OR PUMPING PROCESS IS TURBID OR CONTAINS SEDIMENT LADEN WATER, IT MUST BE TREATED THROUGH THE USE OF A SEDIMENT CONTROL (TRAPS, VEGETATIVE FILTER STRIPS, FLOCCULANTS OR OTHER SEDIMENT REDUCING MEASURES) SUCH THAT DISCHARGE DOES NOT VISIBLY CONTAIN MORE TURBIDITY THAN THE RECEIVING WATER.
4. WHEN POSSIBLE, USE WELL VEGETATED (EG. GRASSY OR WOODED) UPLAND AREAS ON THE SITE TO INFILTRATE DEWATERING WATERS BEFORE DISCHARGED OFF SITE.
5. DISCHARGE DIRECTLY INTO A SURFACE WATER OR WETLAND IS NOT PERMITTED. RECEIVING WATERS CANNOT BE USED AS PART OF THE TREATMENT AREA.
6. ALL CONSTRUCTION DEWATERING SHALL BE DISCHARGED TO AN APPROVED LOCATION FOR TREATMENT PRIOR TO DISCHARGE TO THE RECEIVING WATER. THE DEWATERING PLAN SHALL BE DEVELOPED AND SUBMITTED TO THE ENGINEER FOR REVIEW IN ACCORDANCE WITH MNDOT SPEC. 1717.2E.
7. CONDITIONS OF THE SITE MAY REQUIRE A PERMIT TO BE OBTAINED FROM THE MINNESOTA DEPARTMENT OF NATURAL RESOURCES FOR WATER APPROPRIATIONS. THE CONTRACTOR WILL BE RESPONSIBLE FOR OBTAINING ANY NECESSARY PERMITS FOR DEWATERING.
8. THE DISCHARGE POINT OF DEWATERING WATERS SHOULD BE VISUALLY INSPECTED AND PHOTOGRAPHED AT THE BEGINNING OF OPERATION AND AT LEAST ONCE EVERY 24 HOURS OF OPERATION TO ENSURE EXCESS TURBIDITY IS NOT BEING RELEASED TO THE RECEIVING WATERS.'
9. IF NUISANCE CONDITIONS RESULT FROM THE DISCHARGE, PERMITTEES MUST CEASE DEWATERING IMMEDIATELY AND CORRECTIVE ACTIONS MUST OCCUR BEFORE DEWATERING IS RESUMED. NUISANCE CONDITIONS INCLUDES, BUT IS NOT LIMITED TO, A SEDIMENT PLUME IN THE DISCHARGE OR THE DISCHARGE APPEARS CLOUDY, OR OPAQUE, OR HAS A VISIBLE CONTRAST, OR HAS A VISIBLE OIL FILM, OR HAS AQUATIC HABITAT DEGRADATION THAT CAN BE IDENTIFIED BY AN OBSERVER.

INSPECTIONS AND MAINTENANCE (11.1)

1. THE CONTRACTOR SHALL IDENTIFY A CERTIFIED EROSION AND SEDIMENT CONTROL SUPERVISOR TO CONDUCT INSPECTIONS FOR THE PROJECT.
2. THE CONSTRUCTION SITE SHALL BE OBSERVED AT LEAST ONCE EVERY 7 DAYS DURING ACTIVE CONSTRUCTION AND WITHIN 24 HOURS AFTER A RAINFALL EVENT GREATER THAN 0.5 INCHES IN 24 HOURS AND 7 DAYS AFTER THAT. PER SECTION 11.11 THE INSPECTION CAN BE ADJUSTED AS FOLLOW:
   - AREAS WITH PERMANENT COVER CAN BE REDUCED TO ONCE A MONTH
   - SITES WITH PERMANENT COVER AND NO CONSTRUCTION ACTIVITY CAN BE REDUCED TO ONCE A MONTH
   - WHERE CONSTRUCTION ACTIVITY HAS BEEN SUSPENDED DUE TO FROZEN GROUND CONDITIONS, INSPECTION MAY BE SUSPENDED AND RESUME WITHIN 24 HOURS OF RUNOFF OCCURRING
3. WHEN SEDIMENT IS OBSERVED UP TO APPROXIMATELY ONE–THIRD OF THE HEIGHT OF SILT FENCE, SEDIMENT SHALL BE REMOVED. SILT FENCE WILL BE REPLACED, OR SUPPLEMENTED IF IT BECOMES NON–FUNCTIONAL.
4. THE CITY OF MINNETONKA IS RESPONSIBLE TO MAINTAIN PERMANENT BMP'S.
5. DURING EACH INSPECTION THE FOLLOWING SHALL BE OBSERVED:
   - ALL EROSION PREVENTION AND SEDIMENT CONTROL BMP'S AND POLLUTION PREVENTION MEASURES.
   - SURFACE WATERS – INCLUDING DITCHES AND CONVEYANCE SYSTEMS NEED TO BE OBSERVED FOR EROSION AND SEDIMENT.
   - CONSTRUCTION SITE VEHICLE EXIT LOCATIONS FOR EVIDENCE OF TRACKING ONTO PAVED SURFACES.
   - INSPECT SURROUNDING PROPERTIES FOR EVIDENCE OF OFF SITE SEDIMENT ACCUMULATION.
   - INFILTRATION AREAS FOR SIGNS OF SEDIMENT DEPOSITION AND COMPACTION (TO ENSURE THAT EQUIPMENT IS NOT BEING DRIVEN ACROSS THE AREA).
7. RECORD ALL INSPECTIONS AND MAINTENANCE ACTIVITIES IN WRITING WITHIN 24 HOURS. SUBMIT INSPECTION REPORTS IN A FORMAT THAT IS ACCEPTABLE TO THE PROJECT ENGINEER. INCLUDE THE FOLLOWING IN THE RECORDS OF EACH INSPECTION AND MAINTENANCE ACTIVITY:
   - DATE AND TIME OF INSPECTIONS
   - NAME OF PERSONS CONDUCTING INSPECTIONS
   - FINDINGS OF INSPECTIONS WITH PHOTOGRAPHS AND RECOMMENDATIONS FOR CORRECTIVE ACTIONS
   - CORRECTIVE ACTIONS TAKEN, INCLUDING DATES, TIMES, AND PARTY COMPLETING MAINTENANCE ACTIVITIES
   - DATE AND AMOUNT OF ALL RAINFALL EVENTS GREATER THAN 0.5 INCH IN 24 HOURS
   - DOCUMENT AND DISCHARGES, DEWATERING OPERATIONS AND NUISANCE CONDITIONS WITH PHOTOGRAPHS.
   - DOCUMENTS AND CHANGES MADE TO THE SWPPP
8. REPLACE, REPAIR OR SUPPLEMENT ALL NONFUNCTIONAL BMPS BY THE END OF THE NEXT BUSINESS DAY FOLLOWING DISCOVERY UNLESS LISTED DIFFERENTLY BELOW:
   - A. REPAIR, REPLACE, OR SUPPLEMENT PERIMETER CONTROL DEVICES WHEN IT BECOMES NONFUNCTIONAL OR SEDIMENT REACHES 1/2 THE HEIGHT OF THE DEVICE. COMPLETE REPAIRS BY THE END OF THE NEXT BUSINESS DAY FOLLOWING DISCOVERY.
   - B. REPAIR OR REPLACE INLET PROTECTION DEVICES WHEN THEY BECOME NONFUNCTIONAL OR SEDIMENT REACHES 1/2 THE HEIGHT AND/OR DEPTH OF THE DEVICE.
   - C. DRAIN AND REMOVE SEDIMENT FROM TEMPORARY AND PERMANENT SEDIMENT BASINS ONCE THE SEDIMENT HAS REACHED 1/2 THE STORAGE VOLUME. COMPLETE WORK WITHIN 72 HOURS OF DISCOVERY.
   - D. REMOVE ALL DELTAS AND SEDIMENT DEPOSITED IN SURFACE WATERS INCLUDING DRAINAGE WAYS, CATCH BASINS, AND OTHER DRAINAGE SYSTEMS. RESTABILIZE ANY AREAS THAT ARE DISTURBED BY SEDIMENT REMOVAL OPERATIONS. SEDIMENT REMOVAL AND STABILIZATION MUST BE COMPLETED WITHIN 7 DAYS OF DISCOVERY. PREPARE AND SUBMIT A SITE MANAGEMENT PLAN FOR WORKING IN SURFACE WATERS. CONTACT ALL APPROPRIATE AUTHORITIES PRIOR TO WORKING IN SURFACE WATERS.
   - E. REMOVE TRACKED SEDIMENT FROM PAVED SURFACES BOTH ON AND OFF SITE WITHIN 24 HOURS OF DISCOVERY. STREET SWEEPING MAY HAVE TO OCCUR MORE OFTEN TO MINIMIZE OFF SITE IMPACTS. LIGHTLY WET THE PAVEMENT PRIOR TO SWEEPING.
   - F. MAINTAIN ALL BMPS UNTIL WORK HAS BEEN COMPLETED, SITE HAS GONE UNDER FINAL STABILIZATION, AND THE NOTICE OF TERMINATION (NOT) HAS BEEN SUBMITTED TO THE MPCA.

POLLUTION PREVENTION MANAGEMENT MEASURES (12.1)

ALL WORK NECESSARY TO PROVIDE PROPER POLLUTION PREVENTION MEASURES SHALL BE CONSIDERED INCIDENTAL TO THE PROJECT.
1. COLLECTED SEDIMENT, ASPHALT AND CONCRETE MILLINGS, FLOATING DEBRIS, AND OTHER WASTE MUST BE DISPOSED OF PROPERLY AND MUST COMPLY WITH MPCA DISPOSAL REQUIREMENTS.
2. CONSTRUCTION MATERIALS NEED TO BE COVERED TO MINIMIZE STORMWATER INTERACTION UNLESS MATERIAL IS NOT A POTENTIAL SOURCE OF STORMWATER CONTAMINATION.
3. OIL, GASOLINE, PAINT AND ANY HAZARDOUS SUBSTANCES MUST BE PROPERLY STORED, INCLUDING SECONDARY CONTAINMENT TO PREVENT SPILLS, LEAKS OR OTHER DISCHARGES. RESTRICTED ACCESS TO STORAGE AREAS MUST BE PROVIDED TO PREVENT VANDALISM. STORAGE AND DISPOSAL OF HAZARDOUS WASTE MUST BE IN COMPLIANCE WITH MPCA REGULATIONS.
4. EXTERNAL WASHING OF TRUCKS AND OTHER CONSTRUCTION VEHICLES IS NOT ALLOWED ON SITE. RUNOFF MUST BE CONTAINED AND WASTE PROPERLY DISPOSED OF. NO ENGINE DEGREASING IS ALLOWED ON SITE.
5. ALL LIQUID AND SOLID WASTE GENERATED BY CONCRETE WASHOUT OPERATIONS MUST BE CONTAINED IN A LEAK–PROOF CONTAINMENT FACILITY OR IMPERMEABLE LINER. A COMPACTED CLAY LINER THAT DOES NOT ALLOW WASHOUT LIQUIDS TO ENTER THE GROUND WATER IS CONSIDERED AN IMPERMEABLE LINER. THE LIQUID AND SOLID WASTES MUST NOT CONTACT THE GROUND, AND THERE MUST NOT BE RUNOFF FROM THE CONCRETE WASHOUT OPERATIONS OR AREAS. LIQUID AND SOLID WASTE MUST BE DISPOSED OF PROPERLY AND IN COMPLIANCE WITH MPCA REGULATIONS. A SIGN MUST BE INSTALLED ADJACENT TO EACH WASHOUT FACILITY TO INFORM CONCRETE EQUIPMENT OPERATORS TO UTILIZE THE PROPER FACILITIES.

00-ENG-123127-SHEET-SWPPP

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STORM WATER POLLUTION PREVENTION PLAN

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WOODHAVEN
MINNETONKA, MINNESOTA

S1 OF 24

5. ANY SPILLS OF HAZARDOUS MATERIALS AND/OR A MINIMUM OF 5-GALLONS PETROLEUM SHALL BE IMMEDIATELY REPORTED TO THE MPCA (STATE DUTY OFFICER: 1.800.422.0798 OR 651.297.8610). ANY SPILLS ABOVE THE REPORTABLE QUANTITIES LIMITS IN THE CODE OF FEDERAL REGULATIONS (CFR) TITLE 40, PART 302 SHALL BE REPORTED TO THE EPA NATIONAL RESPONSE CENTER (1.800.424.8802). IN ORDER TO REDUCE THE RISK OF HAZARDOUS MATERIALS COMING INTO CONTACT WITH STORM WATER, THE FOLLOWING PRACTICES WILL BE FOLLOWED: A) AN EFFORT WILL BE MADE TO STORE ONLY ENOUGH PRODUCTS REQUIRED TO DO THE WORK, B) ALL MATERIALS STORED ON SITE WILL BE STORED IN A NEAT, ORDERLY MANNER IN THEIR APPROPRIATE CONTAINERS AND IF POSSIBLE, UNDER COVER, C) PRODUCTS WILL BE KEPT IN THEIR ORIGINAL CONTAINERS WITH THE ORIGINAL MANUFACTURER'S LABEL UNLESS THE ORIGINAL CONTAINER CANNOT BE RESEALED, IN WHICH CASE THE ORIGINAL LABEL AND MATERIALS SAFETY DATA SHALL BE RETAINED, D) SUBSTANCES WILL NOT BE MIXED WITH ONE ANOTHER UNLESS RECOMMENDED BY THE MANUFACTURER, E) WHENEVER POSSIBLE, ALL OF A PRODUCT WILL BE USED BEFORE DISPOSING OF THE CONTAINER, F) THE MANUFACTURER'S RECOMMENDATIONS FOR PROPER USE AND DISPOSAL WILL BE FOLLOWED, AND G) THE OPERATOR WILL INSPECT DAILY TO ENSURE PROPER USE AND DISPOSAL OF MATERIALS ON SITE. MANUFACTURER'S RECOMMENDED METHODS FOR SPILL CLEANUP WILL BE CLEARLY POSTED AND SITE PERSONNEL WILL BE MADE AWARE OF THE PROCEDURES AND THE LOCATION OF THE INFORMATION AND CLEANUP SUPPLIES.

6. ALL SANITARY WASTE WILL BE COLLECTED BY TEMPORARY SANITARY FACILITIES PROVIDED AT THE SITE BY THE CONTRACTOR THROUGHOUT THE CONSTRUCTION PROJECT. ALL CONSTRUCTION PERSONNEL SHALL UTILIZE TEMPORARY SANITARY FACILITIES, WHICH SHALL BE REGULARLY SERVICE BY A COMMERCIAL OPERATOR. TEMPORARY SANITARY FACILITIES SHALL BE PLACED IN A LOCATION WHERE ACCIDENTAL SPILLAGE OF THE FACILITY SHALL NOT DISCHARGE TO THE STORM SEWER SYSTEM.

TEMPORARY SEDIMENTATION BASINS (14.2)

1. TEMPORARY SEDIMENTATION BASINS ARE REQUIRED WHERE 10 OR MORE ACRES DRAIN TO A COMMON LOCATION TO PROVIDE TREATMENT OF THE RUNOFF BEFORE IT LEAVES THE CONSTRUCTION SITE OR ENTERS SURFACE WATERS. WHEN A CONSTRUCTION SITE DISCHARGES TO AN IMPAIRED WATER BODY, TEMPORARY SEDIMENTATION BASINS ARE REQUIRED WHERE 5 OR MORE ACRES DRAIN TO A COMMON LOCATION. TEMPORARY SEDIMENTATION BASINS CAN BE CONVERTED TO PERMANENT BASINS AFTER CONSTRUCTION IS COMPLETE.

2. THE TEMPORARY BASIN MUST PROVIDE LIVE STORAGE FOR A CALCULATED VOLUME OF RUNOFF FROM A TWO (2)-YEAR, 24-HOUR STORM FROM EACH ACRE DRAINED TO THE BASIN OR 1,800 CUBIC FEET OF LIVE STORAGE PER ACRE DRAINED, WHICHEVER IS GREATER. WHERE PERMITTEES HAVE NOT CALCULATED THE TWO (2)-YEAR, 24-HOUR STORM RUNOFF AMOUNT, THE TEMPORARY BASIN MUST PROVIDE 3,600 CUBIC FEET OF LIVE STORAGE PER ACRE OF THE BASINS DRAINAGE AREA.

3. PERMITTEES MUST DESIGN THE OUTLET STRUCTURE TO WITHDRAW WATER FROM THE SURFACE TO MINIMIZE THE DISCHARGE OF POLLUTANTS. PERMITTEES MAY TEMPORARILY SUSPEND THE USE OF A SURFACE WITHDRAWAL MECHANISM DURING FROZEN CONDITIONS. THE BASIN MUST INCLUDE A STABILIZED EMERGENCY OVERFLOW TO PREVENT FAILURE OF POND INTEGRITY. PROVIDE ENERGY DISSIPATION FOR THE BASIN OUTLET WITHIN 24 HOURS OF CONNECTION TO A SURFACE WATER.

4. WHERE A TEMPORARY SEDIMENT BASIN MEETING THE REQUIREMENTS OF THE ABOVE IS INFEASIBLE, PERMITTEES MUST INSTALL EFFECTIVE SEDIMENT CONTROLS SUCH AS SMALLER SEDIMENT BASINS AND/OR SEDIMENT TRAPS, SILT FENCES, VEGETATIVE BUFFER STRIPS OR ANY APPROPRIATE COMBINATION OF MEASURES AS DICTATED BY INDIVIDUAL SITE CONDITIONS. IN DETERMINING WHETHER INSTALLING A SEDIMENT BASIN IS INFEASIBLE, PERMITTEES MUST CONSIDER PUBLIC SAFETY AND MAY CONSIDER FACTORS SUCH AS SITE SOILS, SLOPE, AND AVAILABLE AREA ON-SITE. PERMITTEES MUST DOCUMENT THIS DETERMINATION OF INFEASIBILITY IN THE SWPPP.

FINAL STABILIZATION (4.1)

1. ALL DISTURBED AREAS SHALL BE PERMANENTLY STABILIZED AS SHOWN ON THE CONSTRUCTION PLANS. METHODS TO ACHIEVE FINAL STABILIZATION INCLUDE: SEED WITH MULCH OR EROSION CONTROL BLANKET AND SOD.

2. ALL AREAS SEEDED BY MEANS OF BROADCAST SEEDING SHALL BE HAND RAKED TO INCORPORATE THE SEEDS INTO THE TOPSOIL.

3. EROSION CONTROL BLANKETS SHALL BE PLACED IN THE DITCH BOTTOM WITHIN 24 HOURS AFTER FINE GRADING. BIOROLLS SHALL BE PLACED IN CONJUNCTION WITH THE BLANKET IN THE DITCH BOTTOMS. THE BIOROLLS ARE INTENDED TO SERVE AS PERMANENT DITCH CHECKS.

4. THE PERMITTEE WILL SUBMIT A NOTICE OF TERMINATION (NOT) WITHIN 30 DAYS AFTER FINAL STABILIZATION. FINAL STABILIZATION SHALL CONSIST OF A UNIFORM PERENNIAL VEGETATIVE COVER OF AT LEAST 70 PERCENT OF THE EXPECTED FINAL VEGETATIVE GROWTH DENSITY OR OTHER PERMANENT COVER HAS BEEN ESTABLISHED OVER THE ENTIRE PERVIOUS SURFACES.

5. PERMIT COVERAGE TERMINATES ON INDIVIDUAL LOTS IF THE STRUCTURES ARE FINISHED AND TEMPORARY EROSION PREVENTION AND DOWNGRADIENT PERIMETER CONTROL IS COMPLETE, THE RESIDENCE SELLS TO THE HOMEOWNER, AND THE PERMITTEE DISTRIBUTES THE MPCA'S "HOMEOWNER FACT SHEET" TO THE HOMEOWNER.

PERMIT TERMINATION CONDITIONS (13.1)

1. PERMITTEES MUST COMPLETE ALL CONSTRUCTION ACTIVITY AND MUST INSTALL PERMANENT COVER OVER ALL AREAS PRIOR TO SUBMITTING THE NOTICE OF TERMINATION (NOT). VEGETATIVE COVER MUST CONSIST OF A UNIFORM PERENNIAL VEGETATION WITH A DENSITY OF 70 PERCENT OF ITS EXPECTED FINAL GROWTH. VEGETATION IS NOT REQUIRED WHERE THE FUNCTION OF A SPECIFIC AREA DICTATES NO VEGETATION, SUCH AS IMPERVIOUS SURFACES OR THE BASE OF A SAND FILTER.

2. FOR RESIDENTIAL CONSTRUCTION ONLY, PERMIT COVERAGE TERMINATES ON INDIVIDUAL LOTS IF THE LOT IS SOLD TO THE HOMEOWNER, STRUCTURES ARE FINISHED, AND PERMANENT COVER HAS BEEN ESTABLISHED. FOR LOTS THAT ARE SOLD TO THE HOMEOWNER WHERE PERMANENT COVER HAS NOT BEEN ESTABLISHED, COVERAGE TERMINATES IF TEMPORARY EROSION PREVENTION AND DOWNGRADIENT PERIMETER CONTROL IS PROPERLY INSTALLED, AND THE PERMITTEE DISTRIBUTES THE MPCA'S "HOMEOWNER FACT SHEET" TO THE HOMEOWNER.

3. WHEN SUBMITTING THE NOT PERMITTEES MUST INCLUDE EITHER GROUND OR AERIAL PHOTOGRAPHS SHOWING THE REQUIREMENTS OF 13.2 HAVE BEEN MET. PERMITTEES ARE NOT REQUIRED TO TAKE PHOTOGRAPHS OF EVERY DISTINCT PART OF THE SITE, HOWEVER THE CONDITIONS PORTRAYED MUST BE SUBSTANTIALLY SIMILAR TO THOSE AREAS THAT ARE NOT PHOTOGRAPHED. PHOTOGRAPHS MUST BE CLEAR AND IN FOCUS AND MUST INCLUDE THE DATE THE PHOTO WAS TAKEN.

RECORDS RETENTION (5.1&6.1)

1. RECORDS MUST BE KEPT ON SITE IN A PHYSICAL OR ELECTRONIC FORMAT DURING NORMAL WORKING HOURS WITH PERSONNEL WHO HAVE OPERATIONAL CONTROL OVER THE APPLICABLE PORTION OF THE SITE. THESE RECORDS MUST INCLUDE:
   A. COPY OF THE SWPPP AND AMENDMENTS
   B. TRAINING DOCUMENTATION
   C. INPSECTION AND MAINTENANCE RECORDS

2. THIS SWPPP WILL BE AMENDED AS NEEDED AND/OR AS REQUIRED BY PROVISIONS OF THE PERMIT. ANY CHANGES TO THE SWPPP SHALL BE NOTED BELOW AND ON THE APPLICABLE PLAN SHEETS. ANY AMENDMENTS TO THE SWPPP MUST BE INCORPORATED WITHIN 7 DAYS TO INCLUDE ADDITIONAL OR MODIFIED BMPS.

3. THE CONTRACTOR WILL RECORD CHANGES TO THE SWPPP AND MAINTAIN DOCUMENTATION OF THESE CHANGES ON SITE AT ALL TIMES. A SUMMARY MAINTENANCE/CONSTRUCTION OBSERVATION REPORT WILL BE RECORDED AFTER EACH SITE INSPECTION/OBSERVATION.

4. THE CONTRACTOR WILL BE RESPONSIBLE TO MAINTAIN AND REPAIR THE EROSION AND SEDIMENT CONTROL BMP'S UNTIL FINAL STABILIZATION IS COMPLETE AND A NOTICE OF TERMINATION (NOT) IS SUBMITTED.

ITEM DESCPRIPTION	UNIT	ESTIMATED QUANTITY
CONSTRUCTION LIMIT STAKING	LF	2871
ROCK CONSTRUCTION ENTRANCE	EA	1
ROCK CONSTRUCTION ENTRANCE MAINTENANCE	EA	1
EROSION CONTROL FENCE	LF	4188
MAINTENANCE OF PERIMETER EROSION CONTROL	YR	1
BIOROLL DITCH CHECK	EA	0
STREET SWEEPING AND VACUUMING	YR	1
STORM DRAIN INLET PROTECTION	EA	6
TEMPORARY SEED AND MULCH	AC	2.6
PERMANENT SEED AND MULCH	AC	2.4
MAINTAIN SEED AND MULCH	AC	2.4
EROSION CONTROL BLANKET (MNDOT CAT. 20)	SY	210
VEHICLE AND EQUIPMENT CLEANING	LS	1
VEHICLE AND EQUIPMENT FUELING	LS	1
VEHICLE AND EQUIPMENT MAINTENANCE	LS	1
SPILL PREVENTION AND CONTROL	LS	1
ROCK BERM EROSION CONTROL	LS	1
RIP RAP ENERGY DISSIPATOR	CY	22.4
INDIVIDUAL LOT HOME CONSTRUCTION EROSION CONTROL	EA	5

AMENDMENT	BY	DATE

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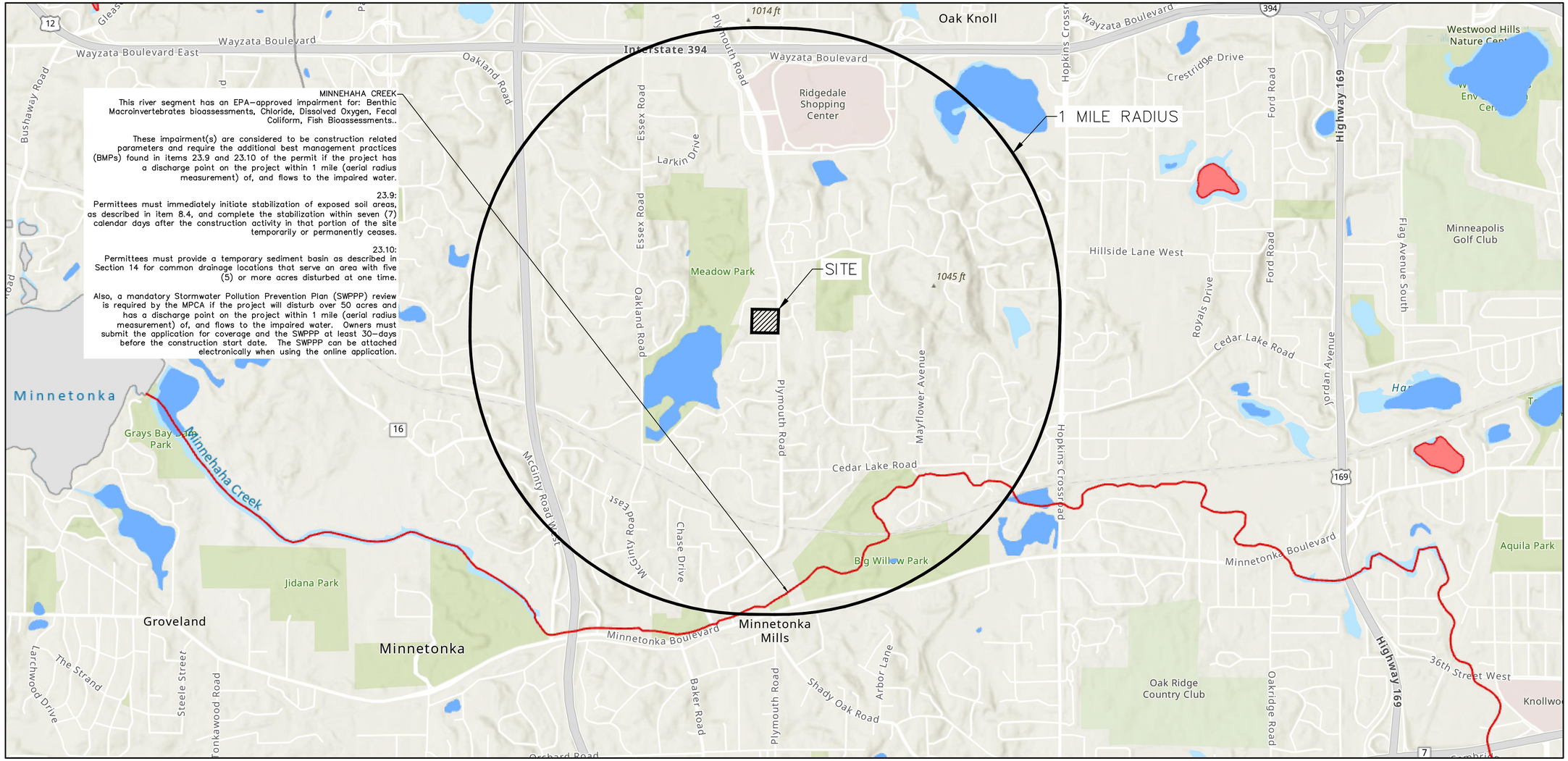
MPCA's Construction Stormwater Special Waters Search



10/16/2023, 10:09:13 AM

- Waterbody Units - Lakes (1)
- Waterbody Units - Streams (1)
- Impaired Lakes without additional construction requirements
- Impaired Lakes with additional construction requirements
- Impaired Streams without additional construction requirements
- Impaired Streams with additional construction requirements

1:31,000

0 0.25 0.5 1 mi

0 0.4 0.8 1.6 km

Metropolitan Council, MetroGIS, Three Rivers Park District, Esri, HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, US Census Bureau, USDA, Esri, NASA, NGA, USGS, FEMA

Minnesota Pollution Control Agency

Esri, NASA, NGA, USGS, FEMA | Esri Community Maps Contributors, Metropolitan Council, MetroGIS, Three Rivers Park District, Esri, HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, US Census Bureau, USDA | MPCA; US Census Bureau; MNDoT; | Minnesota Pollution Control

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MPCA MAP

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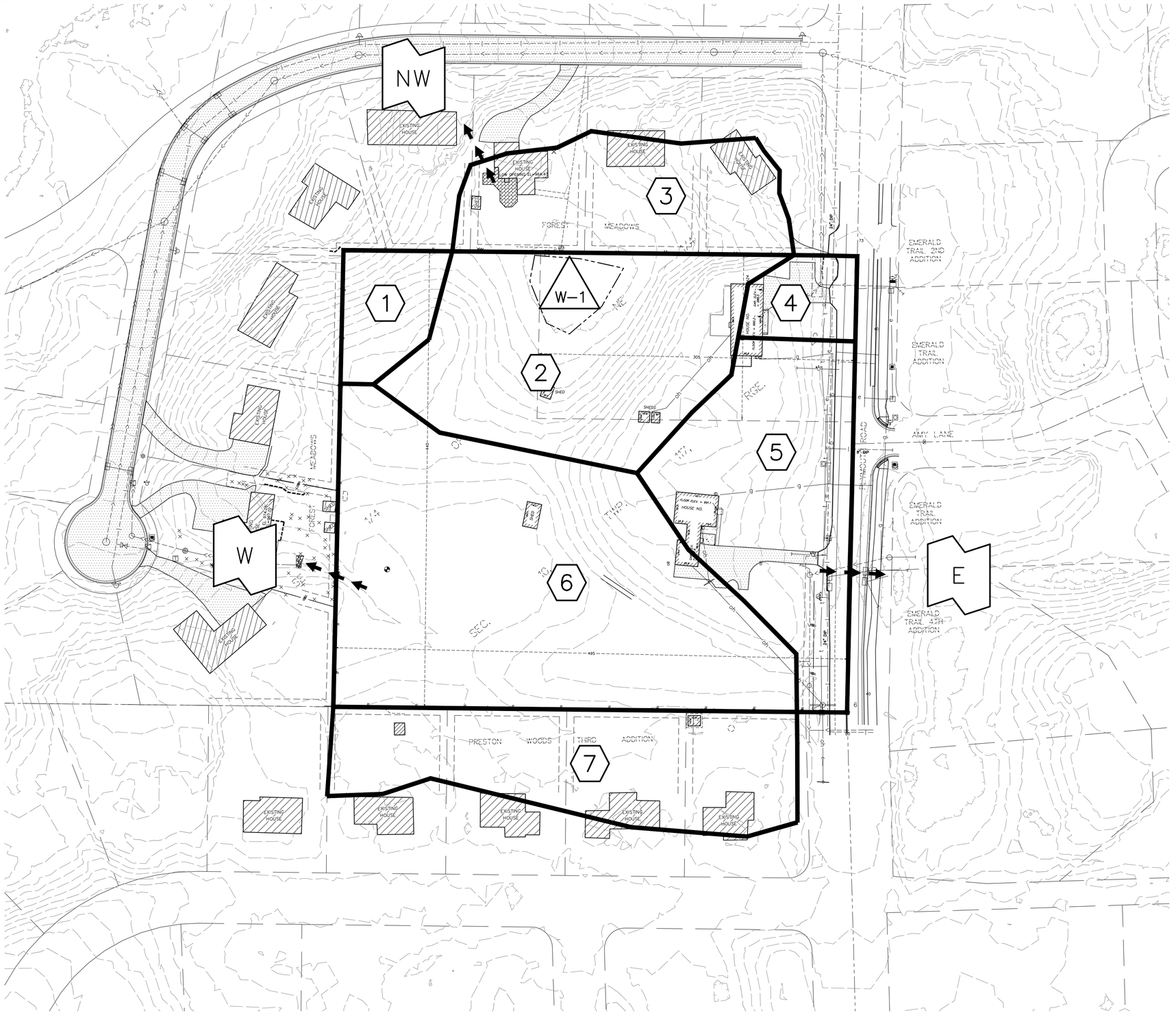
00-ENG-123127-SHEET-MPCA



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3. 1-2-2024 City Comments
4. 3-5-2024 City Comments

Date	10-27-23
Designed	JMM
Drawn	MSN/PDS

EXISTING HYDROLOGY MAP

NORTON HOMES
18215 45TH AVENUE NORTH
PLYMOUTH, MINNESOTA 55446

WOODHAVEN
MINNETONKA, MINNESOTA

S4 OF 24

00-ENG-123127-HYDR-EXIS

LEGEND

1	SUBCATCHMENT
200P	POND
EP-025a	LINK

0 25 50 100

GRAPHIC SCALE IN FEET

00-ENG-123127-HYDR-PROP-1-2-2024

PIONEER engineering
CIVIL ENGINEERS LAND PLANNERS LAND SURVEYORS LANDSCAPE ARCHITECTS
2422 Enterprise Drive
Mendota Heights, MN 55120
(651) 681-1914
Fax: 681-9488
www.pioneereng.com

I hereby certify that this plan was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota

Name John M. Molinaro
Reg. No. 45831 Date 10-27-2023

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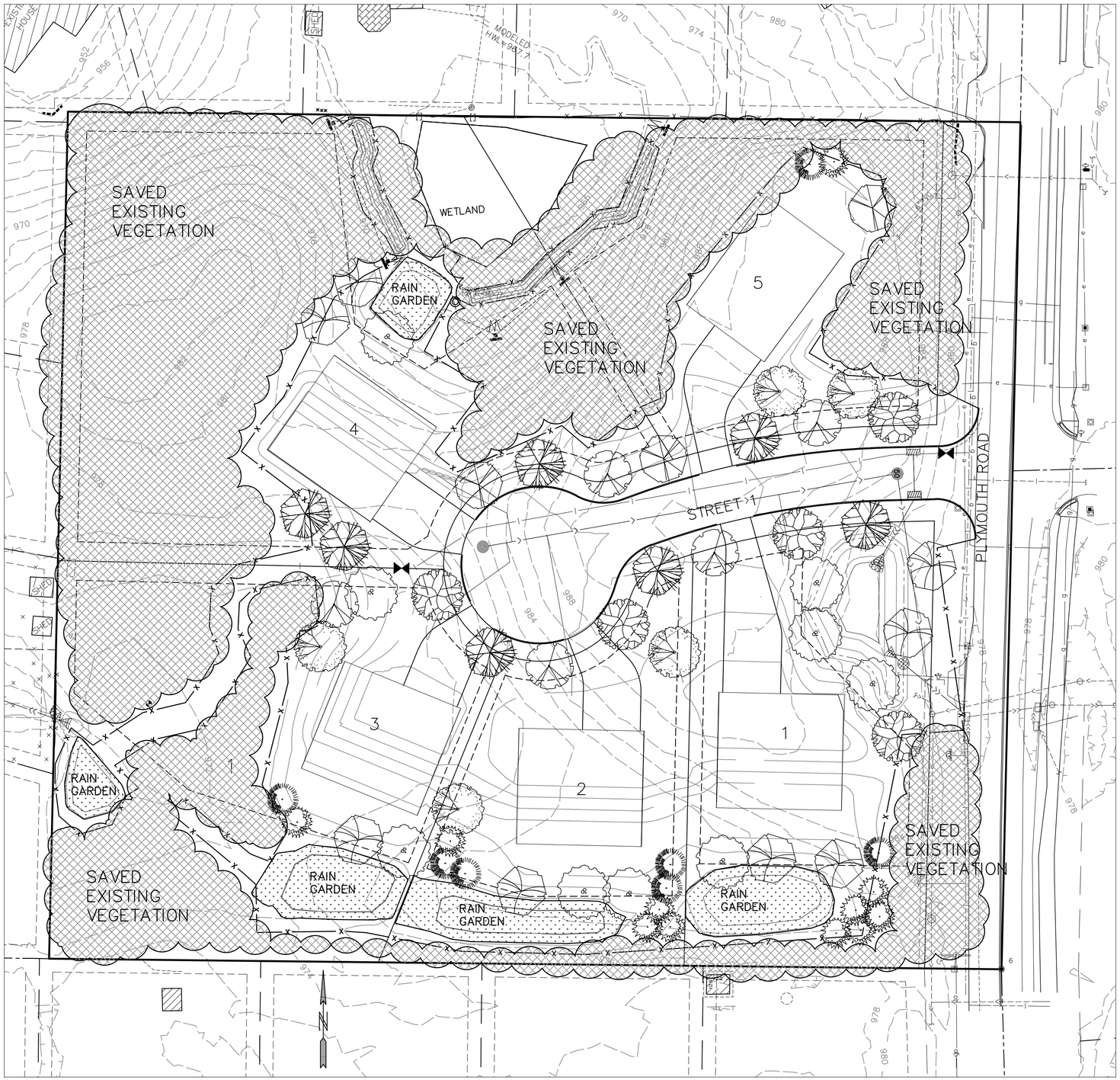
PROPOSED HYDROLOGY MAP

NORTON HOMES
18215 45TH AVENUE NORTH
PLYMOUTH, MINNESOTA 55446

WOODHAVEN
MINNETONKA, MINNESOTA

S5 OF 24



0 15 30 60

GRAPHIC SCALE IN FEET

PLANTING SCHEDULE

KEY	COMMON NAME/SCIENTIFIC NAME	ROOT	QUANTITY
	OVERSTORY TREES		
	SENTRY LINDEN/TILIA AMERICANA 'SENTRY'	3" B&B	5
	NORTHERN PIN OAK/QUERCUS ELLIPSOIDALIS	3" B&B	7
	THORNLESS HONEYLOCUST/GLEDITSIA TRIACANTHOS VAR INERMIS	3" B&B	3
	RIVER BIRCH/BETULA NIGRA 'HERITAGE' (CLUMP)	14' B&B	9
	NORTHWOOD MAPLE/ACER RUBRUM 'NORTHWOOD'	3" B&B	5
	SWAMP WHITE OAK/QUERCUS BICOLOR	3" B&B	8
	AUTUMN BLAZE MAPLE/Acer x freemanii 'Jeffersred'	3" B&B	5
	EVERGREEN TREES		
	WHITE PINE/PINUS STROBUS	8' B&B	7
	BLACK HILLS SPRUCE/PICEA GLUACA VAR DENSATA	8' B&B	11

PROPOSED TREES:
OVERSTORY: 42 TREES @3"= 126"
CONIFER: 18 TREES @8' = 144'

PROPOSED RAIN GARDEN SEED AREAS (0.25" FOR EACH 1 SF OF SEED): 9,420 SF = 2,355"

Mitigation:
High Priority: 391" overstory (19 trees removed)
High Priority: 145' conifer (6 trees removed)
Significant: 10" (5 trees removed)

SEE TREE PRESERVATION PLAN FOR TREE INVENTORY AND PRESERVATION DETAILS

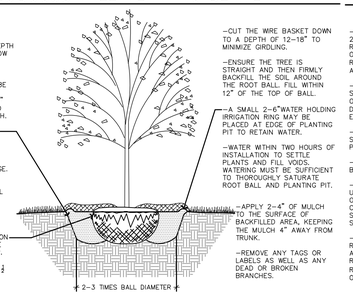
NATIVE RAIN GARDEN SEED MIX
MNDOT 34-262 OR NATIVE EQUIVALENT

LANDSCAPE NOTES

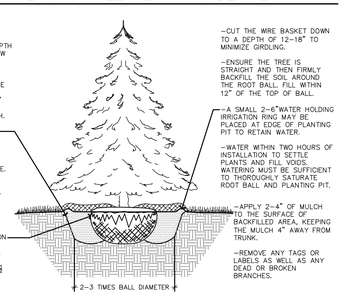
- THE LANDSCAPE CONTRACTOR SHALL VISIT THE PROJECT SITE TO BECOME FAMILIAR WITH THE EXISTING CONDITIONS PRIOR TO SUBMITTING A BID.
- THE LANDSCAPE CONTRACTOR SHALL NOTIFY THE LANDSCAPE ARCHITECT OF PROPOSED PHYSICAL START DATE AT LEAST 7 DAYS IN ADVANCE.
- THE LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR THE FIELD VERIFICATION OF ALL EXISTING UTILITY LOCATIONS ON THE PROJECT SITE WITH GOPHER STATE ONE CALL 1-800-252-1166 PRIOR TO COMMENCING WORK. THE LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION AND REPAIR OF EXISTING UTILITIES DAMAGED DURING CONSTRUCTION AT NO COST TO THE OWNER. NOTIFY THE LANDSCAPE ARCHITECT OF ANY CONFLICTS TO FACILITATE PLANT RELOCATION.
- GRADING TO BE PERFORMED BY OTHERS.
- NO PLANT MATERIAL SHALL BE INSTALLED UNTIL GRADING AND CONSTRUCTION HAS BEEN COMPLETED IN THE IMMEDIATE AREA.
- ALL PLANT MATERIAL SHALL MEET THE STANDARDS FOUND IN THE AMERICAN ASSOCIATION OF NURSERYMEN- AMERICAN STANDARD FOR NURSERY STOCK.
- ALL CONTAINER MATERIAL TO BE GROWN IN THE CONTAINER A MINIMUM OF SIX (6) MONTHS PRIOR TO PLANTING ON SITE.
- DECIDUOUS AND CONIFEROUS TREES SHALL NOT BE STAKED, BUT THE LANDSCAPE CONTRACTOR MUST GUARANTEE STANDABILITY TO A WIND SPEED OF 60 M.P.H.
- THE LANDSCAPE CONTRACTOR SHALL PROVIDE A MINIMUM GUARANTEE OF ONE YEAR ONE TIME REPLACEMENT ON NEW PLANT MATERIALS. GUARANTEE SHALL BE AGREED UPON BY DEVELOPER/BUILDER AND LANDSCAPE CONTRACTOR.
- THE LANDSCAPE ARCHITECT RESERVES THE RIGHT TO REJECT ANY PLANTS WHICH ARE DEEMED UNSATISFACTORY BEFORE, DURING OR AFTER INSTALLATION.
- IF THERE IS A DESCREPANCY BETWEEN THE NUMBER OF PLANTS SHOWN ON THE PLAN AND THE NUMBER SHOWN ON THE PLANT LIST, THE NUMBER SHOWN ON THE PLAN WILL TAKE PRECEDENCE.
- THE LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL MULCHES AND PLANTING SOIL QUANTITIES TO COMPLETE WORK SHOWN ON THE PLAN. THE LANDSCAPE CONTRACTOR SHALL VERIFY ALL QUANTITIES SHOWN ON THE PLANT SCHEDULE.
- COMMERCIAL GRADE POLY LAWN EDGING SHALL BE INSTALLED WHERE NOTED.
- THE LANDSCAPE CONTRACTOR SHALL REPAIR ALL DAMAGE TO THE SITE CAUSED BY THE PLANTING OPERATION AT NO COST TO THE OWNER.
- THE LANDSCAPE CONTRACTOR SHALL KEEP PAVEMENTS CLEAN UNSTAINED. ALL PEDESTRIAN AND VEHICLE ACCESS TO BE MAINTAINED THROUGHOUT CONSTRUCTION PERIOD. ALL WASTES SHALL BE PROMPTLY REMOVED FROM THE SITE. ANY DAMAGE TO EXISTING FACILITIES SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR COMPLYING WITH ALL APPLICABLE CODES, REGULATIONS AND PERMITS GOVERNING THE WORK.
- STORAGE OF MATERIALS OR SUPPLIES ON-SITE WILL NOT BE ALLOWED.

34-262	Wet Prairie				
Common Name	**Scientific Name**	**Rate (kg/ha)**	**Rate (lb/ac)**	**% of Mix (% by wt)**	**Seeds/ sq ft**
big bluestem	*Andropogon gerardii*	1.12	1.00	6.89%	3.87
fringed brome	*Bromus ciliatus*	1.68	1.50	10.38%	6.08
bluejoint	*Calamagrostis canadensis*	0.04	0.04	0.27%	4.00
Virginia wild rye	*Elymus virginicus*	1.96	1.75	12.07%	2.70
tall manna grass	*Glyceria grandis*	0.17	0.15	1.02%	3.80
fowl manna grass	*Glyceria striata*	0.12	0.11	0.73%	3.50
switchgrass	*Panicum virgatum*	0.84	0.75	5.16%	3.85
fowl bluegrass	*Poa palustris*	0.22	0.20	1.36%	9.60
Indian grass	*Sorghastrum nutans*	0.56	0.50	3.44%	2.20
prairie cordgrass	*Spartina pectinata*	0.56	0.50	3.41%	1.20
	Total Grasses	**7.29**	**6.50**	**44.76%**	**40.60**
wooly sedge	*Carex pellita*	0.06	0.05	0.32%	0.47
tussock sedge	*Carex stricta*	0.02	0.02	0.17%	0.48
fox sedge	*Carex vulpinoidea*	0.11	0.10	0.69%	3.50
dark green bulrush	*Scirpus atrovirens*	0.11	0.10	0.72%	17.74
woolgrass	*Scirpus cyperinus*	0.03	0.03	0.18%	16.00
	Total Sedges and Rushes	**0.34**	**0.30**	**2.08%**	**38.19**
Canada anemone	*Anemone canadensis*	0.03	0.03	0.21%	0.09
marsh milkweed	*Asclepias incarnata*	0.09	0.08	0.55%	0.14
Canada tick trefoil	*Desmodium canadense*	0.56	0.50	3.41%	1.00
flat-topped aster	*Doellingeria umbellata*	0.06	0.05	0.34%	1.20
common boneset	*Eupatorium perfoliatum*	0.03	0.03	0.23%	2.00
grass-leaved goldenrod	*Euthamia graminifolia*	0.02	0.02	0.11%	2.00
spotted Joe pye weed	*Eutrochium maculatum*	0.04	0.04	0.30%	1.50
autumn sneezeweed	*Helenium autumnale*	0.06	0.05	0.30%	2.39
sawtooth sunflower	*Helianthus grosseserratus*	0.06	0.05	0.38%	0.30
great blazing star	*Liatris pycnostachya*	0.02	0.02	0.17%	0.10
great lobelia	*Lobelia siphilitica*	0.01	0.01	0.05%	1.40
blue monkey flower	*Mimulus ringens*	0.01	0.01	0.05%	6.40
Virginia mountain mint	*Pycnanthemum virginianum*	0.09	0.08	0.55%	6.50
red-stemmed aster	*Symphyotrichum puniceum*	0.09	0.08	0.56%	2.40
blue vervain	*Verbena hastata*	0.17	0.15	1.06%	5.25
bunched ironweed	*Vernonia fasciculata*	0.03	0.03	0.23%	0.30
Culver's root	*Veronicastrum virginicum*	0.02	0.02	0.14%	6.00
golden alexanders	*Zizia aurea*	0.26	0.25	1.76%	1.00
	Total Forbs	**1.88**	**1.50**	**10.45%**	**40.00**
Oats or winter wheat (see note at beginning of list for recommended dates)		0.95	8.20	42.74%	2.78
	Total Cover Crop	**0.95**	**8.20**	**42.74%**	**2.78**
	Totals:	**10.25**	**14.50**	**100.00%**	**121.55**
Purpose:	Wet prairie reconstruction for wetland mitigation or ecological restoration.				
Planting Area:	Tallgrass Aspen Parklands, Prairie Parkland, and Eastern Broadleaf Forest Provinces. MnDOT Districts 2(west), 3B, 4, Metro, 6, 7 & 8.				

DECIDUOUS TREE PLANTING DETAIL



CONIFEROUS TREE PLANTING DETAIL



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I hereby certify that this plan 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

Name Jennifer L. Thompson
Reg. No. 44763 Date 1-12-2024

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Date	10-27-23
Designed	JLT
Drawn	JLT

LANDSCAPE PLAN

NORTON HOMES
18215 45TH AVENUE NORTH
PLYMOUTH, MINNESOTA 55446

WOODHAVEN
MINNETONKA, MINNESOTA

L1 OF 1

STORMWATER TRENCH TO BE HAND DUG WITHOUT VEHICLE ACCESS TO MAINTAIN INTEGRITY OF EXISTING WOODLAND.

EXISTING HOUSE

HOUSE LOW OPENING EL=964.47

MODELED HWL=967.7

STREET 1

PLYMOUTH ROAD

TREE NOTES:

- 641 HIGH PRIORITY TREE
- 777 SIGNIFICANT TREE
- 771 TREE TAGGED AND INVENTORIED BUT NOT PROTECTED BY ORDINANCE DUE TO SIZE, SPECIES, OR CONDITION (AS PER CITY)
- 641 HIGH PRIORITY TREE TO BE REMOVED
- 777 SIGNIFICANT TREE TO BE REMOVED
- 771 UNPROTECTED TREE TO BE REMOVED
- NON–EXEMPT REMOVAL
- TREE/SILT FENCE (TYP)
- TREE REMOVAL EXEMPT FROM MITGATION

Review Notes (as per City of Minnetonka)	
h	high priority tree
	TOTAL = 274 trees
	Allowable removals = 35% or **95 trees**
s	significant trees
	TOTAL = 117 trees
	Allowable removals = 50% or **58 trees**
n	Not protected by ord. due to size, species, or condition
	TOTAL = 105 trees

Significant Trees Saved: 100
Significant Trees Removed: 17 (14.5%)
High Priorty Trees Saved: 184
High Priority Trees Removed: 90 (32.8%)
Total Trees Removed: 107

Remove Exempt: 77 trees
Remove non-exempt (must be mitigated): 30

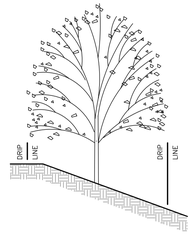
Mitigation:
High Priority: 391" overstory (19 trees removed)
High Priority: 145' conifer (6 trees removed)
Significant: 10" (5 trees removed)

□ OFF SITE TREE

TREE TO BE SAVED

TREE TO BE REMOVED

TREE PROTECTION DETAIL



NOTE: TREES TO BE SAVED SHALL BE FENCED OFF WITH BRIGHT ORANGE POLYETHYLENE SAFETY NETTING AND STEEL STAKES AT THE DRIP LINE, OR AS DIRECTED BY THE OWNER'S REP., TO INSURE AGAINST DAMAGE BY VEHICLES, COMPACTION OF SOILS AND/OR THE CHEMICAL ALTERATION OF SOILS DUE TO CONCRETE WASHOUT, PAINTS AND LEAKAGE OR SPILLAGE OF ANY TOXIC MATERIALS.

TREE PRESERVATION NOTES

BEFORE LAND CLEARING BEGINS, CONTRACTOR SHOULD MEET WITH THE CONSULTANT ON SITE TO REVIEW ALL WORK PROCEDURES, ACCESS ROUTES, STORAGE AREAS, AND TREE PROTECTION MEASURES.

NO FILL SHOULD BE PLACED AGAINST THE TRUNK, ON THE ROOT CROWN, OR WITHIN THE DRIP LINE AREA OF ANY TREES THAT ARE TO BE SAVED.

NO GRADING, TRENCHING OR PLACEMENT OF EQUIPMENT IS ALLOWED IN THE TREE PROTECTION AREA.

WORK PERFORMED WITHIN THE TREE PROTECTION AREA SHOULD BE DONE BY HAND AND UNDER THE SUPERVISION OF THE CONSULTING ARBORIST.

PRUNING OF OAK TREES MUST NOT TAKE PLACE FROM APRIL 15 TO JULY 15 TO PREVENT THE SPREAD OF OAK WILT DISEASE.

IF WOUNDING OF OAK TREES OCCUR ANYTIME BETWEEN APRIL TO AUGUST, A NON–TOXIC WOUND DRESSING MUST BE APPLIED IMMEDIATELY, (EXCAVATORS MUST HAVE A NON–TOXIC TREE WOUND DRESSING WITH THEM ON DEVELOPMENT SITES).

0 15 30 60

GRAPHIC SCALE IN FEET

SEE SHEETS T2–3 FOR TREE INVENTORY
TREE INVENTORY PROVIDED BY MIDWEST NATURAL RESOURCES, INC.
KEN ARNDT

PIONEER engineering
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TREE PRESERVATION PLAN

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WOODHAVEN
MINNETONKA, MINNESOTA

T1 OF 3

Tag No.	DSH	Common Name	Scientific Name	Notes	Condition Rating	Status	Category	Removal Exempt
1	5	Black Walnut	*Juglans nigra*	girdled by chain link fence	5	Save	n	
2	6	Siberian Elm	*Ulmus pumila*		7	Save	n	
3	9	Siberian Elm	*Ulmus pumila*		7	Save	n	
4	8	Siberian Elm	*Ulmus pumila*		7	Save	n	
5	10	Green Ash	*Fraxinus pennsylvanica*		6	Save	n	
6	6	Green Ash	*Fraxinus pennsylvanica*	in decline	4	Save	n	
7	5	Green Ash	*Fraxinus pennsylvanica*		6	Save	n	
8	9	Bur Oak	*Quercus macrocarpa*		7	Save	s	
9	9	Green Ash	*Fraxinus pennsylvanica*		6	Save	n	
10	8	Ironwood	*Ostrya virginiana*	dead	0	Remove	n	
11	4	Ironwood	*Ostrya virginiana*	dead	0	Save	n	
12	8	Basswood	*Tilia americana*	dead	0	Save	n	
13	6	Basswood	*Tilia americana*		7	Save	s	
14	5	Ironwood	*Ostrya virginiana*		7	Save	s	
15	9	Basswood	*Tilia americana*	tree leaning on it	5	Save	s	
16	4	Ironwood	*Ostrya virginiana*		7	Save	s	
17	8	Silver Maple	*Acer saccharinum*		6	Save	s	
18	5	Green Ash	*Fraxinus pennsylvanica*		6	Save	n	
19	5	Green Ash	*Fraxinus pennsylvanica*	damage along trunk	5	Save	n	
20	5	Box Elder	*Acer negundo*	decay along trunk	5	Save	n	
21	8	Hackberry	*Celtis occidentalis*		6	Save	s	
22	6	Sugar Maple	*Acer saccharum*		7	Save	s	
23	7	Green Ash	*Fraxinus pennsylvanica*		6	Save	n	
24	6	Green Ash	*Fraxinus pennsylvanica*		6	Save	n	
25	7	Ironwood	*Ostrya virginiana*		7	Save	s	
26	7	Ironwood	*Ostrya virginiana*		6	Save	s	
27	6	Ironwood	*Ostrya virginiana*		7	Save	s	
28	8	Basswood	*Tilia americana*		6	Save	s	
29	4	Basswood	*Tilia americana*		6	Save	s	
30	5	Ironwood	*Ostrya virginiana*		7	Save	s	
31	5	Basswood	*Tilia americana*		6	Save	s	
32	6	Basswood	*Tilia americana*		7	Save	s	
33	4	Sugar Maple	*Acer saccharum*		7	Save	s	
34	8	Green Ash	*Fraxinus pennsylvanica*		6	Remove	n	
35	4	Green Ash	*Fraxinus pennsylvanica*		7	Remove	n	
36	8	Green Ash	*Fraxinus pennsylvanica*	eab likely, flecking	5	Remove	n	
37	5	Silver Maple	*Acer saccharinum*		7	Remove	s	Yes
38	5	Silver Maple	*Acer saccharinum*		6	Remove	s	Yes
39	7	Basswood	*Tilia americana*		7	Save	s	
40	7	Basswood	*Tilia americana*		7	Save	s	
41	7	American Elm	*Ulmus americana*		6	Save	s	
42	4	Basswood	*Tilia americana*		6	Save	s	
43	7	Basswood	*Tilia americana*	dead	0	Save	n	
44	6	Basswood	*Tilia americana*		7	Save	s	
45	4	Ironwood	*Ostrya virginiana*		7	Save	s	
46	4	Ironwood	*Ostrya virginiana*		7	Save	s	
47	4	Silver Maple	*Acer saccharinum*		7	Remove	s	Yes
48	3	White Spruce	*Picea glauca*	12' in height, heavily shade suppressed	2	Remove	s	Yes
49	5	White Oak	*Quercus alba*		7	Remove	s	Yes
50	4	Ironwood	*Ostrya virginiana*		7	Save	s	
51	6	Basswood	*Tilia americana*		6	Save	s	
52	8	Ironwood	*Ostrya virginiana*		7	Save	s	
53	7	Basswood	*Tilia americana*	cankers along trunk	5	Save	s	
54	5,2,2	Ironwood	*Ostrya virginiana*	5" trunk is dead	3	Save	n	
55	9	Ironwood	*Ostrya virginiana*		7	Save	s	
56	8	Basswood	*Tilia americana*	cankers along trunk	4	Save	s	
57	8	Basswood	*Tilia americana*		7	Save	s	
58	9	Ironwood	*Ostrya virginiana*		6	Save	s	
59	11	Basswood	*Tilia americana*		7	Save	h	
60	13	Basswood	*Tilia americana*		7	Save	h	
61	8	Basswood	*Tilia americana*	some mechanical damage along trunk	6	Save	s	
62	5	Basswood	*Tilia americana*		7	Save	s	
63	9	Basswood	*Tilia americana*		7	Save	s	
64	5	Basswood	*Tilia americana*		6	Save	s	
65	4	Basswood	*Tilia americana*		6	Save	s	
66	5	Basswood	*Tilia americana*		6	Save	s	
67	5	Basswood	*Tilia americana*		6	Save	s	
68	6	Basswood	*Tilia americana*	cankers along trunk	5	Save	s	
69	6	Basswood	*Tilia americana*		7	Save	s	
70	4	Basswood	*Tilia americana*	damage along trunk	5	Save	s	
71	7	Basswood	*Tilia americana*		7	Remove	s	Yes
72	4	Silver Maple	*Acer saccharinum*		7	Remove	s	Yes
73	5	Silver Maple	*Acer saccharinum*		7	Remove	s	Yes
74	6	Silver Maple	*Acer saccharinum*		7	Save	s	
75	4	Ironwood	*Ostrya virginiana*		7	Save	s	
76	4	Ironwood	*Ostrya virginiana*		7	Save	s	
77	5	Ironwood	*Ostrya virginiana*		6	Save	s	
78	6	Ironwood	*Ostrya virginiana*		7	Save	s	
79	8	Ironwood	*Ostrya virginiana*		7	Save	s	
80	5	Basswood	*Tilia americana*		6	Save	s	
81	8	Basswood	*Tilia americana*		6	Remove	s	No
82	5	Basswood	*Tilia americana*	cankers along trunk	5	Remove	s	No
83	7	Basswood	*Tilia americana*		7	Save	s	
84	7	Basswood	*Tilia americana*		7	Save	s	
85	8	Basswood	*Tilia americana*		6	Save	s	
86	6	Basswood	*Tilia americana*		7	Save	s	
87	6	Basswood	*Tilia americana*		7	Save	s	
88	6	Basswood	*Tilia americana*		7	Save	s	
89	5	American Elm	*Ulmus americana*	DED wilting	2	Save	n	
90	7	Box Elder	*Acer negundo*	95% dead	1	Save	n	
91	4	Basswood	*Tilia americana*		6	Save	s	
92	6	Basswood	*Tilia americana*		7	Save	s	
93	9	Basswood	*Tilia americana*		7	Off-Site	s	
94	7	Basswood	*Tilia americana*		6	Save	s	
95	4	Basswood	*Tilia americana*		6	Save	s	
96	9	Basswood	*Tilia americana*		6	Off-Site	s	
97	4	Basswood	*Tilia americana*	cankers along trunk	5	Save	s	
98	4	Basswood	*Tilia americana*		6	Save	s	
99	5	Box Elder	*Acer negundo*		6	Save	s	
100	4	Box Elder	*Acer negundo*		6	Save	s	
101	7	Basswood	*Tilia americana*		6	Remove	s	No
102	7	Basswood	*Tilia americana*		6	Save	s	
103	5	Basswood	*Tilia americana*	cankers along trunk	5	Save	s	
104	5	Ironwood	*Ostrya virginiana*		6	Save	s	
105	4	Ironwood	*Ostrya virginiana*		7	Save	s	
106	5	Ironwood	*Ostrya virginiana*		6	Save	s	
107	7,7,4,4	Crabapple	*Malus* sp.	one of 7" is dead	4		n	
108	9	Box Elder	*Acer negundo*		6	Save	s	
109	9,6	White Mulberry	*Morus alba*		7	Remove	h	Yes
110	7	Box Elder	*Acer negundo*		6	Save	s	
111	9	Box Elder	*Acer negundo*		6	Save	s	
112				**There was never a tree 112 tagged**			n	
113	8	American Elm	*Ulmus americana*		6	Save	s	
114	5	Silver Maple	*Acer saccharinum*		6	Save	s	
115	6	Basswood	*Tilia americana*		7	Save	s	
116	7	Basswood	*Tilia americana*		7	Save	s	
117	8	Basswood	*Tilia americana*		7	Save	s	
118	7	Basswood	*Tilia americana*		7	Save	s	
119	7	Ironwood	*Ostrya virginiana*		6	Save	s	
120	6	Ironwood	*Ostrya virginiana*		6	Save	s	
121	7	Ironwood	*Ostrya virginiana*		7	Save	s	
122	5	Ironwood	*Ostrya virginiana*		7	Save	s	
123	5	Basswood	*Tilia americana*	cankers along trunk	5	Save	s	
124	5,4	Ironwood	*Ostrya virginiana*		7	Save	s	
125	6	Basswood	*Tilia americana*		7	Remove	s	No
126	5	Ironwood	*Ostrya virginiana*	dead	0	Save	n	
127	6	Ironwood	*Ostrya virginiana*		7	Save	s	
128	6	Ironwood	*Ostrya virginiana*		7	Save	s	
201	13	Box Elder	*Acer negundo*	top removed	0	Save	n	
202	10	Basswood	*Tilia americana*	top removed	2	Save	n	
203	10	Siberian Elm	*Ulmus pumila*		7	Save	n	
204	12	Crabapple	*Malus* sp.	this tree is tagged the same as 107, this tree	4		n	
401	22	White Oak	*Quercus alba*	dead	0	Remove	n	
402	21	White Oak	*Quercus alba*		6	Remove	h	Yes
403	5	White Spruce	*Picea glauca*	15' in height	5	Remove	h	Yes
404	14	Basswood	*Tilia americana*		7	Remove	h	Yes
405	14	Basswood	*Tilia americana*		7	Save	h	
406	18	White Oak	*Quercus alba*		6	Save	h	
407	12	Basswood	*Tilia americana*		7	Remove	h	Yes
408	18	Basswood	*Tilia americana*	cankers along trunk	6	Remove	h	Yes
409	11	Basswood	*Tilia americana*		7	Remove	h	Yes
410	20	White Oak	*Quercus alba*		6	Save	h	
411	16	White Oak	*Quercus alba*		6	Save	h	
412	30	Basswood	*Tilia americana*		7	Save	h	
413	11	Basswood	*Tilia americana*		7	Save	h	
414	15	Bur Oak	*Quercus macrocarpa*		7	Save	h	
415	11	Green Ash	*Fraxinus pennsylvanica*	50% top missing	4	Save	n	
416	10	Box Elder	*Acer negundo*		5	Save	h	
417	24	White Oak	*Quercus alba*		6	Remove	h	No
418	16	White Oak	*Quercus alba*		6	Remove	h	Yes
419	20	White Oak	*Quercus alba*		6	Remove	h	Yes
420	18	Basswood	*Tilia americana*	cankers along trunk	5	Remove	h	Yes
421	22	White Oak	*Quercus alba*		6	Save	h	
422	15	White Oak	*Quercus alba*		6	Save	h	
423	13	White Oak	*Quercus alba*		6	Save	h	
424	16	White Oak	*Quercus alba*		6	Save	h	
425	20	White Oak	*Quercus alba*		7	Remove	h	Yes
426	16	White Oak	*Quercus alba*		6	Save	h	
427	19	White Oak	*Quercus alba*		6	Save	h	
428	17	White Oak	*Quercus alba*		6	Save	h	
429	18	White Oak	*Quercus alba*		6	Save	h	
430	11	White Oak	*Quercus alba*		6	Save	h	
431	20	White Oak	*Quercus alba*	in major decline	2	Save	n	
432	22	White Oak	*Quercus alba*		6	Save	h	
433	12	White Oak	*Quercus alba*		6	Save	h	
434	12	White Oak	*Quercus alba*		6	Save	h	
435	15	White Oak	*Quercus alba*		6	Save	h	
436	19	White Oak	*Quercus alba*		7	Save	h	
437	10	White Oak	*Quercus alba*		6	Save	h	
438	18	White Oak	*Quercus alba*	dead	0	Save	n	
439	12	White Oak	*Quercus alba*		6	Save	h	
440	14	White Oak	*Quercus alba*		6	Save	h	
441	17	White Oak	*Quercus alba*	some crown dieback	5	Save	h	
442	21	White Oak	*Quercus alba*		7	Save	h	
443	11	White Oak	*Quercus alba*		7	Save	h	
444	9	White Oak	*Quercus alba*		6	Save	s	
445	21	White Oak	*Quercus alba*		7	Save	h	
446	16	White Oak	*Quercus alba*	dead	0	Save	n	
447	23	Red Oak	*Quercus rubra*		6	Save	h	
448	13	White Oak	*Quercus alba*		6	Save	h	
449	20	Red Oak	*Quercus rubra*		7	Save	h	
450	12	White Oak	*Quercus alba*		6	Save	h	
451	11	White Oak	*Quercus alba*		7	Save	h	
452	12	White Oak	*Quercus alba*		7	Save	h	
453	11	Silver Maple	*Acer saccharinum*		6	Save	h	
454	17	Bur Oak	*Quercus macrocarpa*		6	Remove	h	Yes
455	11	Basswood	*Tilia americana*	some cankers along trunk	6	Remove	h	No
456	9	American Elm	*Ulmus americana*	dead	0	Save	n	
457	16	Bur Oak	*Quercus macrocarpa*		6	Save	h	
458	14	Black Cherry	*Prunus serotina*		7	Remove	h	Yes
459	10	Siberian Elm	*Ulmus pumila*		7	Save	n	
460	10	Silver Maple	*Acer saccharinum*	some crown dieback	5	Save	h	
461	10	White Oak	*Quercus alba*		7	Remove	h	Yes
462	3	White Spruce	*Picea glauca*	12' in height, heavily shade suppressed	3	Remove	s	Yes
463	8	Basswood	*Tilia americana*		7	Save	s	
464	9	Green Ash	*Fraxinus pennsylvanica*		6	Save	n	
465	9	Red Oak	*Quercus rubra*		6	Save	s	
466	10	Basswood	*Tilia americana*		6	Save	h	
467	37	Bur Oak	*Quercus macrocarpa*		7	Save	h	
468	15	Green Ash	*Fraxinus pennsylvanica*		6	Save	n	
469	10	Green Ash	*Fraxinus pennsylvanica*		6	Save	n	
470	18	White Oak	*Quercus alba*		6	Save	h	
471	8	Silver Maple	*Acer saccharinum*		7	Save	s	
472	9	Basswood	*Tilia americana*		6	Save	s	
473	9	Basswood	*Tilia americana*		6	Save	s	
474				**There was never a tree 474 tagged**			n	
475	18	Basswood	*Tilia americana*	***Unable to locate this tree***	na		n	
476	9	Basswood	*Tilia americana*		7	Save	s	
477	10	Basswood	*Tilia americana*		7	Save	h	
478	11	Silver Maple	*Acer saccharinum*		7	Remove	h	Yes
533	9	Basswood	*Tilia americana*	cankers along trunk	5	Save	s	
534	13	Basswood	*Tilia americana*		7	Save	h	
535	15	White Oak	*Quercus alba*		6	Save	h	
536	21	White Oak	*Quercus alba*		6	Save	h	
537	17	Basswood	*Tilia americana*		7	Save	h	
538	29	Red Maple	*Acer rubrum*		7	Save	h	
539	20	Red Elm	*Ulmus rubra*		7	Save	h	
540	15	Basswood	*Tilia americana*		6	Save	h	
541	20	Basswood	*Tilia americana*		7	Save	h	
542	11	Red Elm	*Ulmus rubra*	dead	0	Save	n	
543	15	Green Ash	*Fraxinus pennsylvanica*	95% dead	1	Save	n	
544	14	Basswood	*Tilia americana*		6	Save	h	
545	30	Silver Maple	*Acer saccharinum*	25% crown damage	5	Save	h	
546	15	Silver Maple	*Acer saccharinum*	some crown dieback	5	Save	h	
547	10	Silver Maple	*Acer saccharinum*		6	Save	h	
548	22	Cottonwood	*Populus deltoides*	major crown dieback	4	Save	n	
549	18	White Oak	*Quercus alba*		7	Save	h	
550	19	Cottonwood	*Populus deltoides*	some crown dieback	5	Save	h	
551	11	Silver Maple	*Acer saccharinum*		6	Save	h	
552	28	Cottonwood	*Populus deltoides*	some crown dieback	5	Save	h	
553	15	Silver Maple	*Acer saccharinum*	some crown damage	5	Save	h	
554	13	Silver Maple	*Acer saccharinum*		6	Save	h	
555	24	Cottonwood	*Populus deltoides*		7	Save	h	
556	11	Basswood	*Tilia americana*		6	Save	h	
557	11	Basswood	*Tilia americana*		6	Save	h	
558	12	American Elm	*Ulmus americana*		6	Save	h	
559	9	Basswood	*Tilia americana*		6	Remove	s	No
560	15	Basswood	*Tilia americana*		6	Save	h	
561	19	Basswood	*Tilia americana*		7	Save	h	
562	10	Basswood	*Tilia americana*		6	Save	h	
563	16	Basswood	*Tilia americana*		6	Save	h	
564	22	White Oak	*Quercus alba*		7	Save	h	
565	17	White Oak	*Quercus alba*		7	Save	h	
566	25	White Oak	*Quercus alba*		7	Save	h	
567	15	White Oak	*Quercus alba*		7	Save	h	
568	24	Red Oak	*Quercus rubra*		7	Save	h	
569	21	White Oak	*Quercus alba*		6	Save	h	
570	18	Red Oak	*Quercus rubra*		6	Save	h	
571	22	Red Oak	*Quercus rubra*		6	Save	h	
572	17	Basswood	*Tilia americana*		7	Save	h	
573	14	Red Oak	*Quercus rubra*		7	Save	h	
574	18	Red Oak	*Quercus rubra*		7	Save	h	
575	12	Red Oak	*Quercus rubra*		6	Save	h	
576	10	White Oak	*Quercus alba*		6	Save	h	
577	12	White Oak	*Quercus alba*		6	Save	h	
578	16	Red Oak	*Quercus rubra*		7	Save	h	
579	13	White Oak	*Quercus alba*		6	Save	h	
580	13	White Oak	*Quercus alba*		6	Save	h	
581	16	White Oak	*Quercus alba*		7	Save	h	
582	10	White Oak	*Quercus alba*	dead	0	Save	n	
583	12	Red Oak	*Quercus rubra*		6	Save	h	
584	19	White Oak	*Quercus alba*		7	Save	h	
585	19	White Oak	*Quercus alba*		7	Save	h	
586	20	Red Oak	*Quercus rubra*		7	Save	h	
587	16	Red Oak	*Quercus rubra*		6	Save	h	
588	26	Red Oak	*Quercus rubra*		7	Save	h	
589	16	White Oak	*Quercus alba*		6	Save	h	
590	19	White Oak	*Quercus alba*		7	Save	h	
591	21	White Oak	*Quercus alba*		7	Save	h	
592	17	White Oak	*Quercus alba*		6	Save	h	
593	17	White Oak	*Quercus alba*		6	Save	h	
594	19	White Oak	*Quercus alba*		6	Save	h	
595	17	White Oak	*Quercus alba*		7	Save	h	
596	12	Basswood	*Tilia americana*		6	Save	h	
597	20	White Oak	*Quercus alba*		6	Save	h	
598	19	Bur Oak	*Quercus macrocarpa*		6	Save	h	
599	14	Basswood	*Tilia americana*		7	Remove	h	No
600	14	Apple	*Malus* sp.	in major decline	3	Remove	n	
601	17	Red Oak	*Quercus rubra*	dead	0	Remove	n	

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I hereby certify that this plan 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

Name Jennifer L. Thompson
Reg. No. 44763 Date 1-12-2024

Revisions
1. 12-07-2023 City/County/Watershed Comments
2. 12-14-2023 City Comments
3. 1-2-2024 City Comments
4. 3-5-2024 City Comments

Date 10-27-23
Designed JLT
Drawn JLT

TREE PRESERVATION PLAN

NORTON HOMES
18215 45TH AVENUE NORTH
PLYMOUTH, MINNESOTA 55446

WOODHAVEN
MINNETONKA, MINNESOTA

Tag No.	DSH	Common Name	Scientific Name	Notes	Condition Rating	Status	Category	Removal Exempt
602	25	Red Oak	*Quercus rubra*	dying back, possible 2-lined chesnut borer	3	Remove	n	
603	26	Red Oak	*Quercus rubra*	dead, possible 2-lined chestnut borer	0	Remove	n	
604	12	White Spruce	*Picea glauca*	30' in height	6	Remove	h	
605	16	White Spruce	*Picea glauca*	35' in height	7	Save	h	
606	16	White Spruce	*Picea glauca*	35' in height	6	Save	h	
607	11	White Spruce	*Picea glauca*	30' in height, lower branches shade suppress	5	Save	h	
608	11	White Spruce	*Picea glauca*	30' in height	6	Save	h	
609	13	White Spruce	*Picea glauca*	30' in height	6	Save	h	
610	14	Apple	*Malus* sp.		6	Remove	h	
611	29	White Oak	*Quercus alba*		8	Save	h	
612	16	Green Ash	*Fraxinus pennsylvanica*		6	Save	n	
613	14	Green Ash	*Fraxinus pennsylvanica*	possible eab, woodpecker damage	5	Save	n	
614	24	Red Oak	*Quercus rubra*		7	Remove	h	yes
615	18	Red Oak	*Quercus rubra*		7	Remove	h	yes
616	18	Red Oak	*Quercus rubra*		7	Remove	h	yes
617	22	Silver Maple	*Acer saccharinum*		7	Remove	h	yes
618	24	Silver Maple	*Acer saccharinum*		7	Remove	h	No
619	24	Red Oak	*Quercus rubra*		7	Remove	h	No
620	23	Red Oak	*Quercus rubra*		7	Remove	h	No
621	26	Red Oak	*Quercus rubra*		6	Remove	h	No
622	22	Red Oak	*Quercus rubra*	30% crown dieback	5	Remove	h	No
623	17	Red Oak	*Quercus rubra*		7	Remove	h	No
624	16	Red Oak	*Quercus rubra*		6	Remove	h	No
625	18	Red Oak	*Quercus rubra*		6	Remove	h	No
626	16	Silver Maple	*Acer saccharinum*		7	Remove	h	No
627	23	Red Oak	*Quercus rubra*		7	Remove	h	No
628	19	Red Oak	*Quercus rubra*		7	Remove	h	No
629	25	Red Oak	*Quercus rubra*		7	Remove	h	No
630	20	White Oak	*Quercus alba*	minor decay at base	6	Remove	h	No
631	15	Norway Maple	*Acer platanoides*		7	Remove	h	No
632	38	Silver Maple	*Acer saccharinum*		7	Remove	h	yes
633	22	Silver Maple	*Acer saccharinum*		6	Remove	h	yes
634	44	Silver Maple	*Acer saccharinum*		6	Remove	h	yes
635	19	Silver Maple	*Acer saccharinum*		6	Remove	h	yes
636	21	White Oak	*Quercus alba*		7	Remove	h	yes
637	23	White Oak	*Quercus alba*		7	Remove	h	yes
638	24	White Oak	*Quercus alba*		7	Remove	h	yes
639	22	White Oak	*Quercus alba*		6	Remove	h	yes
640	20	White Oak	*Quercus alba*		7	Remove	h	yes
641	15	White Oak	*Quercus alba*		6	Remove	h	yes
642	12	Red Maple	*Acer rubrum*	minor mechanical damage along trunk	6	Remove	h	yes
643	11	Red Maple	*Acer rubrum*		7	Remove	h	Yes
644	19	White Oak	*Quercus alba*		6	Remove	h	Yes
645	16	White Oak	*Quercus alba*		6	Remove	h	Yes
646	28	White Oak	*Quercus alba*		6	Remove	h	Yes
647	24	Red Oak	*Quercus rubra*		6	Remove	h	yes
648	10	White Spruce	*Picea glauca*	30' in height, heavily shade suppressed	4	Remove	h	yes
649	12	White Spruce	*Picea glauca*	30' in height, back side shade suppressed	5	Remove	h	yes
650	27	White Oak	*Quercus alba*	decay at base	5	Save	n	
651	18	White Oak	*Quercus alba*		6	Save	h	yes
652	20	Red Oak	*Quercus rubra*		5	Save	h	yes
653	22	Red Oak	*Quercus rubra*	in major decline	1	Save	n	
654	29	White Oak	*Quercus alba*		7	Remove	h	yes
655	28	White Oak	*Quercus alba*	decay at base	5	Remove	n	
656	19	White Oak	*Quercus alba*		6	Remove	h	yes
657	6	White Spruce	*Picea glauca*	25' in height, heavily shade suppressed	3	Remove	h	yes
658	12	White Spruce	*Picea glauca*	25' in height, some dieback at top	6	Remove	h	No
659	13	White Spruce	*Picea glauca*	30' in height	6	Remove	h	No
660	30	Cottonwood	*Populus deltoides*		6	Remove	h	yes
661	9	Red Cedar	*Juniperus virginiana*		6	Remove	h	No
662	8	Red Cedar	*Juniperus virginiana*		6	Remove	h	No
663	9	Balsam Fir	*Abies balsamea*	half of crown shade suppressed	4	Save	h	
664	15	White Oak	*Quercus alba*		6	Save	h	
665	13	White Oak	*Quercus alba*		7	Save	h	
666	14	Basswood	*Tilia americana*		7	Save	h	
667	17	Red Oak	*Quercus rubra*		7	Save	h	
668	12	White Oak	*Quercus alba*		6	Save	h	
669	15	Red Oak	*Quercus rubra*		6	Save	h	
670	16	Red Oak	*Quercus rubra*		6	Save	h	
671	12	Red Oak	*Quercus rubra*		6	Save	h	
672	14	Red Oak	*Quercus rubra*		6	Save	h	
673	16	Red Oak	*Quercus rubra*		7	Save	h	
674	16	Red Oak	*Quercus rubra*		6	Save	h	
675	13,11,7	Honey Locust	*Gleditsia triacanthos 'inermis'*		7	Save	h	
676	9	Mountain Ash	*Sorbus* sp.	canker along trunk	5	Remove	s	yes
677	19	Green Ash	*Fraxinus pennsylvanica*	eab likely, flecking	5	Remove	n	
678	15	White Oak	*Quercus alba*	some girdling from deck	5	Remove	n	
679	19	Silver Maple	*Acer saccharinum*		6	Save	h	
680	17	Green Ash	*Fraxinus pennsylvanica*	dieback, eab likely	3	Save	n	
681	15	Basswood	*Tilia americana*		7	Save	h	
682	26	Cottonwood	*Populus deltoides*		6	Save	h	
683	12	Box Elder	*Acer negundo*		6	Save	h	
684	11	Red Cedar	*Juniperus virginiana*	shade suppressed	5	Save	h	
685	13	Box Elder	*Acer negundo*		6	Save	h	
686	33	Cottonwood	*Populus deltoides*		6	Save	h	
687	22	Silver Maple	*Acer saccharinum*	leaning over house	6	Off-Site	n	
688	12	Silver Maple	*Acer saccharinum*	top cut off	2	Save	n	
689	15	White Oak	*Quercus alba*		6	Save	h	
690	13	Basswood	*Tilia americana*		6	Save	h	
691	13	Basswood	*Tilia americana*		6	Save	h	
692	11	American Elm	*Ulmus americana*	epicormic branching along trunk	5	Save	h	
693	15	Bur Oak	*Quercus macrocarpa*		6	Save	h	
694	13	Bur Oak	*Quercus macrocarpa*		6	Save	h	
695	15	Basswood	*Tilia americana*		7	Save	h	
696	12	Basswood	*Tilia americana*		7	Save	h	
697	18	Basswood	*Tilia americana*		7	Save	h	
698	12	Basswood	*Tilia americana*		7	Save	h	
699	25	Red Oak	*Quercus rubra*		7	Save	h	
700	22	Basswood	*Tilia americana*		7	Save	h	
701	18	Green Ash	*Fraxinus pennsylvanica*		6	Save	n	
702	18	Red Oak	*Quercus rubra*		6	Save	h	
703	17	Basswood	*Tilia americana*		6	Save	h	
704	13	Basswood	*Tilia americana*		6	Save	h	
705	20	Green Ash	*Fraxinus pennsylvanica*		6	Save	n	
706	15	Green Ash	*Fraxinus pennsylvanica*		6	Save	n	
707	13	Green Ash	*Fraxinus pennsylvanica*		6	Save	n	
708	14	Green Ash	*Fraxinus pennsylvanica*		6	Save	n	
709	11	Green Ash	*Fraxinus pennsylvanica*		6	Save	n	
710	15	Green Ash	*Fraxinus pennsylvanica*		6	Save	n	
711	15	Green Ash	*Fraxinus pennsylvanica*		6	Save	n	
712	5	Red Cedar	*Juniperus virginiana*	12' in height, top broken	5	Save	n	
713	19	Green Ash	*Fraxinus pennsylvanica*	major decay at base	5	Remove	n	
714	15	Box Elder	*Acer negundo*		6	Save	h	
715	24,16	Box Elder	*Acer negundo*	16" trunk is dead	6	Save	n	
716	24	Basswood	*Tilia americana*	co-dom lead split from main trunk	4	Save	n	
717	18	Red Oak	*Quercus rubra*		6	Save	h	
718	22	Basswood	*Tilia americana*		7	Save	h	
719	16	Green Ash	*Fraxinus pennsylvanica*		6	Save	n	
720	10	Black Cherry	*Prunus serotina*		6	Save	h	
721	18	Basswood	*Tilia americana*		7	Save	h	
722	22	Basswood	*Tilia americana*		7	Save	h	
723	13	Basswood	*Tilia americana*		7	Save	h	
724	17	Basswood	*Tilia americana*		7	Save	h	
725	14	Basswood	*Tilia americana*	dead	0	Remove	n	
726	14	Basswood	*Tilia americana*		6	Save	h	
727	20	Basswood	*Tilia americana*		6	Save	h	
728	23	Basswood	*Tilia americana*		7	Save	h	
729	21	Bur Oak	*Quercus macrocarpa*		6	Save	h	
730	13	Green Ash	*Fraxinus pennsylvanica*	nearly dead	1	Save	n	
731	21	Green Ash	*Fraxinus pennsylvanica*	in major decline, likely eab	2	Save	n	
732	19	Green Ash	*Fraxinus pennsylvanica*	in major decline, likely eab	3	Save	n	
733	18	Green Ash	*Fraxinus pennsylvanica*	in major decline, likely eab	2	Save	n	
734	10	Ironwood	*Ostrya virginiana*		7	Save	h	
735	15	Green Ash	*Fraxinus pennsylvanica*		6	Save	n	
736	15	Green Ash	*Fraxinus pennsylvanica*	heavy epicormic branching	4	Save	n	
737	11	Green Ash	*Fraxinus pennsylvanica*		6	Remove	n	
738	18	Green Ash	*Fraxinus pennsylvanica*		6	Save	n	
739	14	Red Oak	*Quercus rubra*	minor damage along trunk	6	Save	h	
740	9	White Spruce	*Picea glauca*	dead	0	Remove	n	
741	22	Green Ash	*Fraxinus pennsylvanica*		6	Remove	n	
742	7	White Spruce	*Picea glauca*	dead	0	Remove	n	
743	9	White Spruce	*Picea glauca*	90% dead	1	Remove	n	
744	21	Green Ash	*Fraxinus pennsylvanica*		6	Remove	n	
745	10	American Elm	*Ulmus americana*		6	Save	h	
746	31	Bur Oak	*Quercus macrocarpa*		6	Save	h	
747	22	Bur Oak	*Quercus macrocarpa*	dead	0	Save	n	
748	15	Green Ash	*Fraxinus pennsylvanica*	in major decline, likely eab	3	Save	n	
749	13	Green Ash	*Fraxinus pennsylvanica*	dieback, likely eab	3	Save	n	
750	11	Basswood	*Tilia americana*		6	Save	h	
751	12	Basswood	*Tilia americana*		6	Save	h	
752	9	Basswood	*Tilia americana*		6	Save	s	
753	9	Basswood	*Tilia americana*		6	Save	s	
754	11	Basswood	*Tilia americana*		7	Save	h	
755	12	Basswood	*Tilia americana*		7	Save	h	
756	14	Basswood	*Tilia americana*		6	Save	h	
757	18	Basswood	*Tilia americana*		7	Save	h	
758	11	Basswood	*Tilia americana*		7	Save	h	
759	19	White Oak	*Quercus alba*		7	Save	h	
760	17	White Oak	*Quercus alba*	in major decline	3	Save	n	
761	16	Basswood	*Tilia americana*		6	Save	h	
762	14	Basswood	*Tilia americana*	dead	0	Save	n	
763	17	White Oak	*Quercus alba*	dead	0	Save	n	
764	21	White Oak	*Quercus alba*		6	Save	h	
765	22	White Oak	*Quercus alba*		6	Save	h	
766	24	White Oak	*Quercus alba*		6	Save	h	
767	20	White Oak	*Quercus alba*		6	Save	h	
768	23	White Oak	*Quercus alba*		6	Save	h	
769	27	Basswood	*Tilia americana*		6	Save	h	
770	19	Green Ash	*Fraxinus pennsylvanica*		6	Remove	n	
771	21	Green Ash	*Fraxinus pennsylvanica*	possible eab, some flecking	5	Remove	n	
772	28	Bur Oak	*Quercus macrocarpa*		7	Remove	h	yes
773	28	Bur Oak	*Quercus macrocarpa*	minor decay at base	6	Remove	h	yes
774	18	Bur Oak	*Quercus macrocarpa*		6	Remove	h	yes
775	28	Bur Oak	*Quercus macrocarpa*		7	Remove	h	yes
776	23	White Oak	*Quercus alba*		6	Remove	h	yes
777	6	White Spruce	*Picea glauca*	15' in height	5	Remove	h	yes
778	15	White Oak	*Quercus alba*		6	Remove	h	Yes
779	15	White Oak	*Quercus alba*		6	Remove	h	Yes
780	16	White Oak	*Quercus alba*		6	Remove	h	No
781	17	Bur Oak	*Quercus macrocarpa*		6	Remove	h	Yes
782	21	White Oak	*Quercus alba*		6	Remove	h	Yes
783	17	White Oak	*Quercus alba*		6	Remove	h	Yes
784	15	White Oak	*Quercus alba*		6	Remove	h	Yes
785	18	White Oak	*Quercus alba*		6	Remove	h	Yes
786	19	White Oak	*Quercus alba*		6	Remove	h	Yes
787	11	White Oak	*Quercus alba*		6	Remove	h	Yes
788	23	White Oak	*Quercus alba*		7	Remove	h	yes
789	19	White Oak	*Quercus alba*		6	Remove	h	yes
790	17	White Oak	*Quercus alba*		6	Remove	h	yes
791	16	White Oak	*Quercus alba*		6	Remove	h	yes
792	16	White Oak	*Quercus alba*		6	Remove	h	
793	18	White Oak	*Quercus alba*		6	Remove	h	yes
794	19	White Oak	*Quercus alba*		7	Remove	h	yes
795	16	White Oak	*Quercus alba*		6	Remove	h	Yes
796	22	White Oak	*Quercus alba*		6	Save	h	
797	18	White Oak	*Quercus alba*		7	Remove	h	Yes
798	9	White Oak	*Quercus alba*		6	Remove	s	yes
799	15	Basswood	*Tilia americana*		6	Remove	h	yes
800	12	Basswood	*Tilia americana*		7	Remove	h	yes
9425	6	Black Cherry	*Prunus serotina*		6	Save	s	
9426	4	American Elm	*Ulmus americana*		7	Save	s	
9427	9,6	Box Elder	*Acer negundo*		6	Off-Site	h	
9428	4	Green Ash	*Fraxinus pennsylvanica*		8	Remove	n	
9429	10	Pear	*Pyrus* sp.	in major decline, hollow	2	Remove	n	
9430	14	Green Ash	*Fraxinus pennsylvanica*	on other side of property line fence	6	Save	n	
9431	30	Cottonwood	*Populus deltoides*	on other side of property line fence	7	Save	n	
9432	8	Green Ash	*Fraxinus pennsylvanica*		6	Save	n	
9433	9	Cottonwood	*Populus deltoides*		6	Save	s	
9434	19	Cottonwood	*Populus deltoides*		7	Save	h	
9435	14	Cottonwood	*Populus deltoides*		7	Save	h	
9436	20,16,9	Cottonwood	*Populus deltoides*		7	Save	h	
9437	22	Green Ash	*Fraxinus pennsylvanica*	toppled	3	Remove	n	
9438	24,18	Basswood	*Tilia americana*	24" trunk has major decay at base	5	Remove	n	
9439	4	Ironwood	*Ostrya virginiana*		7	Save	s	
9440	5	Green Ash	*Fraxinus pennsylvanica*		6	Save	n	
na	25	Red Oak	*Quercus rubra*	possibly off-site, located west of property li	6		n	
na	14	Red Oak	*Quercus rubra*	possibly off-site, located north of property li	6		n	

PIONEER *engineering*
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I hereby certify that this plan 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

Name Jennifer L. Thompson
Reg. No. 44763 Date 1-12-2024

Revisions
1. 12-07-2023 City/County/Watershed Comments
2. 12-14-2023 City Comments
3. 1-2-2024 City Comments
4. 3-5-2024 City Comments

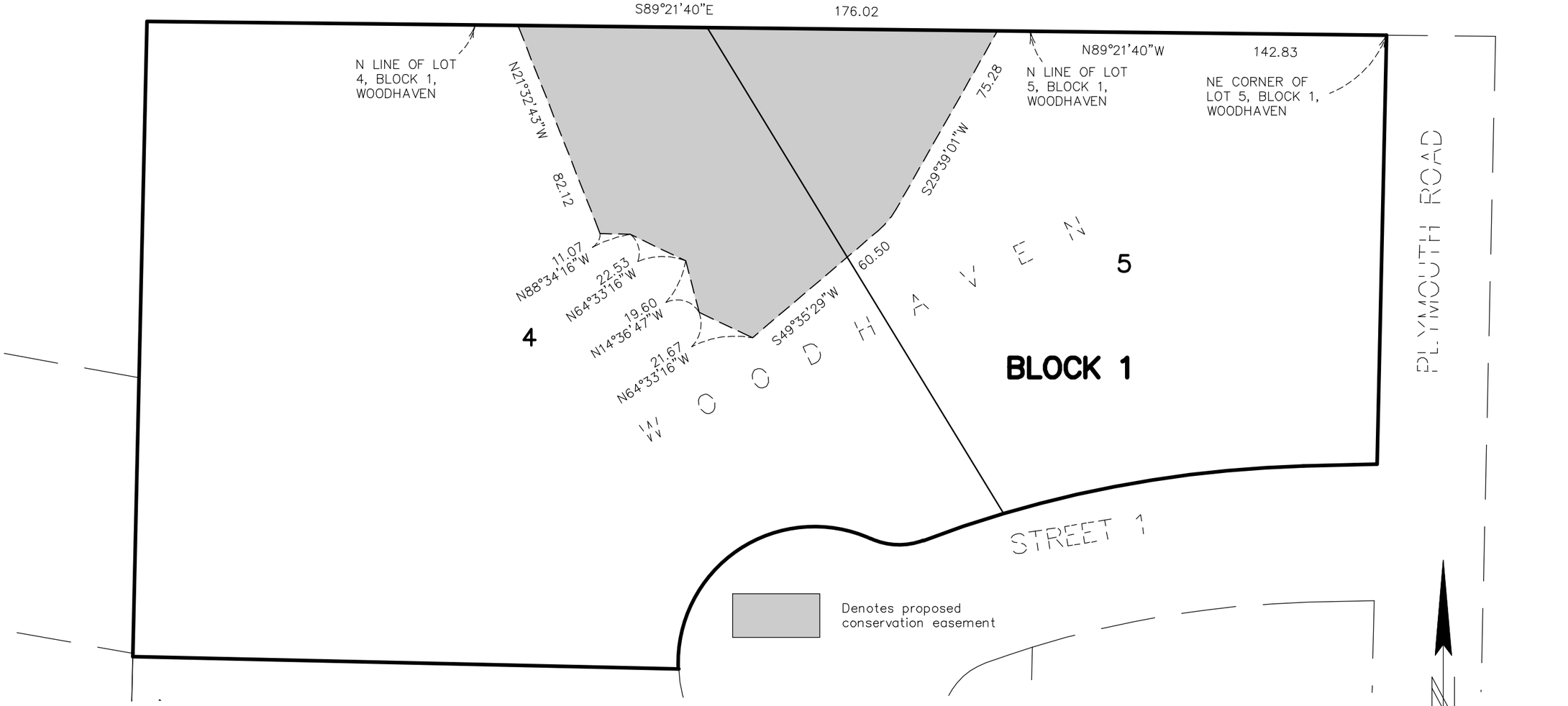
Date	10-27-23
Designed	JLT
Drawn	JLT

TREE PRESERVATION PLAN

NORTON HOMES
18215 45TH AVENUE NORTH
PLYMOUTH, MINNESOTA 55446

WOODHAVEN
MINNETONKA, MINNESOTA

T3 OF 3



PROPOSED CONSERVATION EASEMENT DESCRIPTION:

An easement for conservation purposes lying over, under and across all that part of Lots 4 and 5, Block 1, WOODHAVEN, according to the recorded plat thereof, Hennepin County, Minnesota. Said easement lies within the following line to be described:

Commencing at the northeast corner of said Lot 5, thence North 89 degrees 21 minutes 40 seconds West assumed bearing along the north line of said Lot 5, 142.83 feet to the point of beginning; thence South 29 degrees 39 minutes 01 seconds West, 75.28 feet; thence South 49 degrees 35 minutes 29 seconds West, 60.50 feet; thence North 64 degrees 33 minutes 16 seconds West, 21.67 feet, thence North 14 degrees 36 minutes 47 seconds West, 19.60 feet; thence North 64 degrees 33 minutes 16 degrees West, 22.53 feet; thence North 88 degrees 34 minutes 16 seconds West, 11.07 feet; thence North 21 degrees 32 minutes 43 seconds West, 82.12 feet to the north line of said Lot 4, thence South 89 degrees 21 minutes 40 seconds East along the north lines of said Lots 4 and 5, 176.02 feet to the point of beginning.

* This sketch does not purport to show the existence or nonexistence of any encroachments from or onto the hereon described land, easements of record or unrecorded easements which affect said land or any improvements to said land.

Description Sketch for:
NORTON HOMES INC

Cad File: 123127- CONSERV EASEMENT.dwg
Date: 3-18-24
Folder #: 8892
Drawn by: KSO

PIONEER engineering
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Sheet 1 of 1