MINNESOTA DEPARTMENT OF TRANSPORTATION

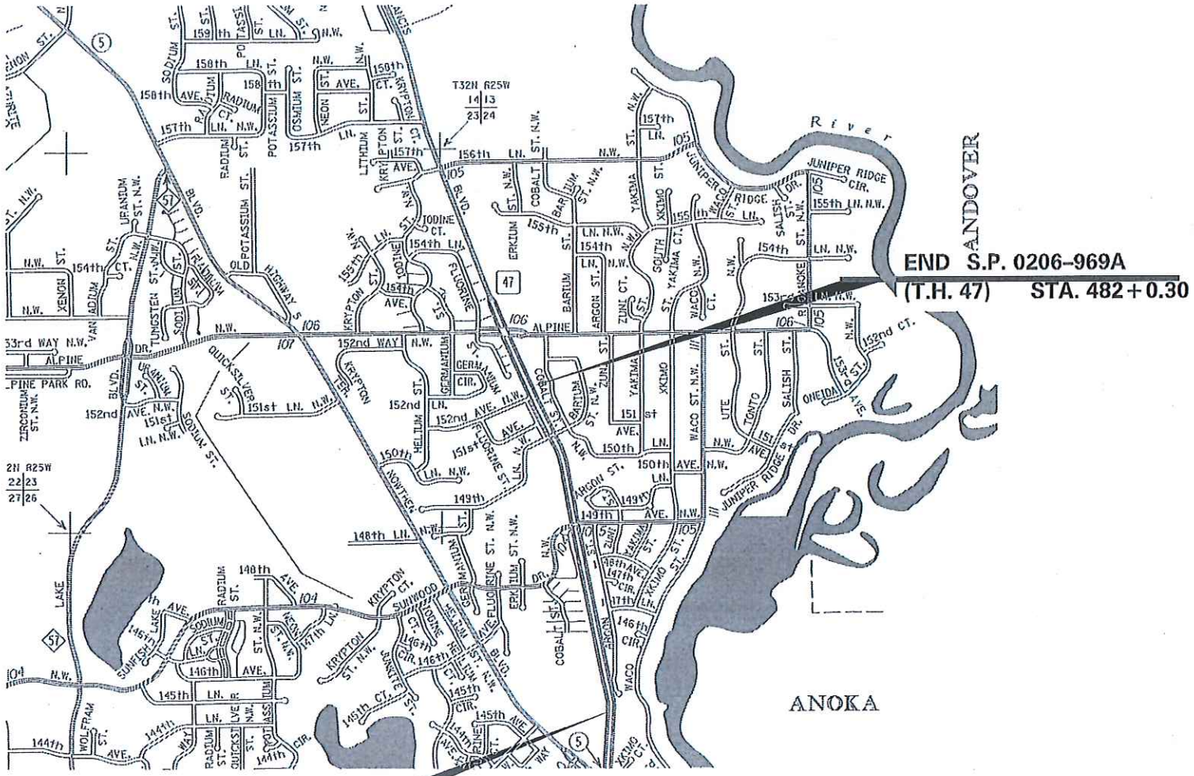
CONSTRUCTION PLAN FOR LANDSCAPING

LOCATED ON T.H.47 FROM APPROX. 900 FT NORTH OF NOWTHEN BLVD NW TO APPROX. 180 FT NORTH OF BARIUM STREET NW IN RAMSEY

STATE PROJ. NO. 0206-969A
MINN. PROJ. NO. _____

GROSS LENGTH	FEET	MILES
BRIDGES-LENGTH	FEET	MILES
EXCEPTIONS-LENGTH	FEET	MILES
NET LENGTH	FEET	MILES

REF. POINT 22+0.863 TO REF. POINT 23+0.675



N

PLAN REVISIONS		
DATE	SHEET NO.	APPROVED BY

DESIGN DESIGNATION - TIER NO. _____

PROJECT LOCATION
COUNTY: ANOKA
DISTRICT: METRO

FOR PLANS & UTILITIES SYMBOLS SEE TECHNICAL MANUAL

PROJ. NO	CHARGE IDENTIFIER
0206-969A	

FED. PROJ. NO.
STATE FUNDS

GOVERNING SPECIFICATIONS
THE 2018 EDITION OF THE MINNESOTA DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR CONSTRUCTION" SHALL GOVERN.

INDEX

THIS PLAN CONTAINS 15 SHEETS

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

DATE 10/31/13 LIC. NO. 26551 LA _____
PROJECT L.A. Todd Carroll, LANDSCAPE ARCHITECT
PROJECT DESIGNERS PHILIP ZENGE

RECOMMENDED FOR APPROVAL BY: _____ 10/31 20 13
LANDSCAPE PARTNERSHIP COORDINATOR
RECOMMENDED FOR APPROVAL BY: _____ 11/27 20 18
DISTRICT LANDSCAPE PARTNERSHIP COORDINATOR
APPROVED _____ 20 _____ 11/27/18
DISTRICT ENGINEER

I HEREBY CERTIFY THAT THE FINAL FIELD REVISIONS, IF ANY, OF THIS PLAN WERE MADE BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

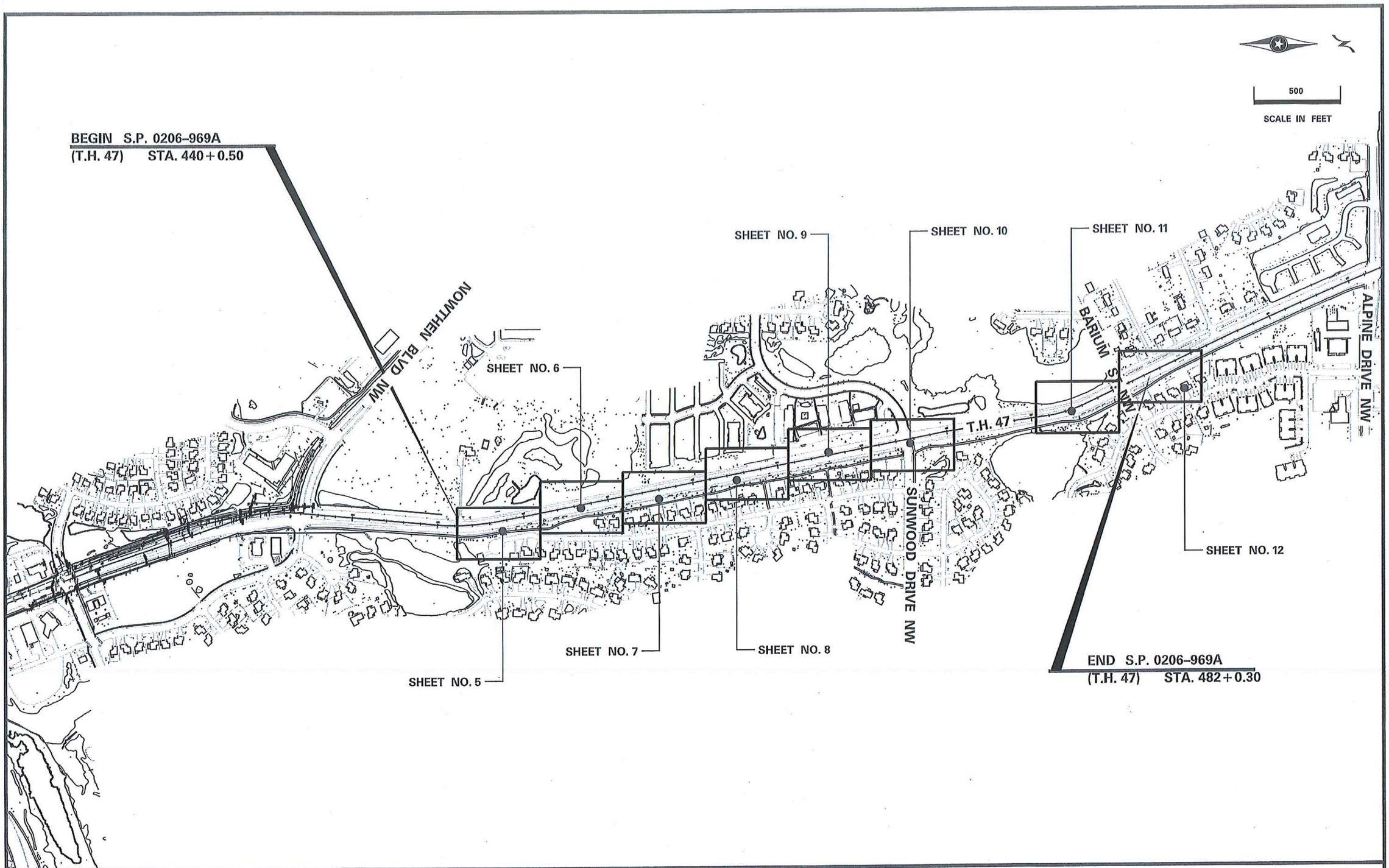
PRINT NAME: _____ LIC. NO.: _____
DATE: _____ SIGNATURE: _____

DATE PRINTED: 10/31/2018	TIME PRINTED: 8:08:53 AM	INDEX MAP	NO SCALE	SCALES IN FEET	ADT (Current Year) 23,000 = 2017
		GENERAL LAYOUT	0 500		Design Speed 55 MPH
		PLAN	0 50		

DEPARTMENT OF TRANSPORTATION
OFFICE OF ENVIRONMENTAL STEWARDSHIP
ENV. PLANNING AND DESIGN UNIT
TRANSPORTATION BUILDING
ST. PAUL, MINNESOTA 55155-1899

TITLE SHEET

STATE PROJECT 0206-969A (T.H. 47=110) SHEET NO. 1 OF 15 SHEETS



DATE PRINTED: 10/31/2018	TIME PRINTED: 8:08:55 AM	PROJECT MANAGER PHILIP ZENGE	DRAWN BY PHILIP ZENGE	DATE 10/31/18 LIC. NO. 26551	DEPARTMENT OF TRANSPORTATION	GENERAL LAYOUT
			CHECKED BY DENNIS MOLINE	SIGNATURE LICENSED PROFESSIONAL LANDSCAPE ARCHITECT	OFFICE OF ENVIRONMENTAL STEWARDSHIP ENV. PLANNING AND DESIGN UNIT TRANSPORTATION BUILDING ST. PAUL, MINNESOTA 55155-1899	STATE PROJECT 0206-969A (T.H. 47) SHEET NO. 2 OF 15 SHEETS

STATEMENT OF ESTIMATED QUANTITIES

ITEM No.	DESCRIPTION	UNITS	ESTIMATED S.P.0206-969A
2571.524	ORNAMENTAL TREE 5' HT CONT	TREE	15
2571.525	DECIDUOUS SHRUB 12" HT CONT	SHRUB	357
2574.507	COMPOST GRADE 2	CU YD	125
2575.507	MULCH MATERIAL TYPE 6	CU YD	126

UTILITY NOTES:

1. NO UTILITIES WILL BE AFFECTED BY THIS PROJECT.

GENERAL NOTES:

A. LOCATE SHRUBS, A MINIMUM OF 5' FROM NOISE WALLS.
B. COMPLETE ALL TILLING USING A SPADE TYPE TILLER.
C. SEE THE PLANT STOCK TABULATION TABLE FOR INDIVIDUAL PLANT QUANTITIES.
D. RESTORE ALL DAMAGED TURF TO PRE-LANDSCAPE INSTALLATION CONDITIONS.

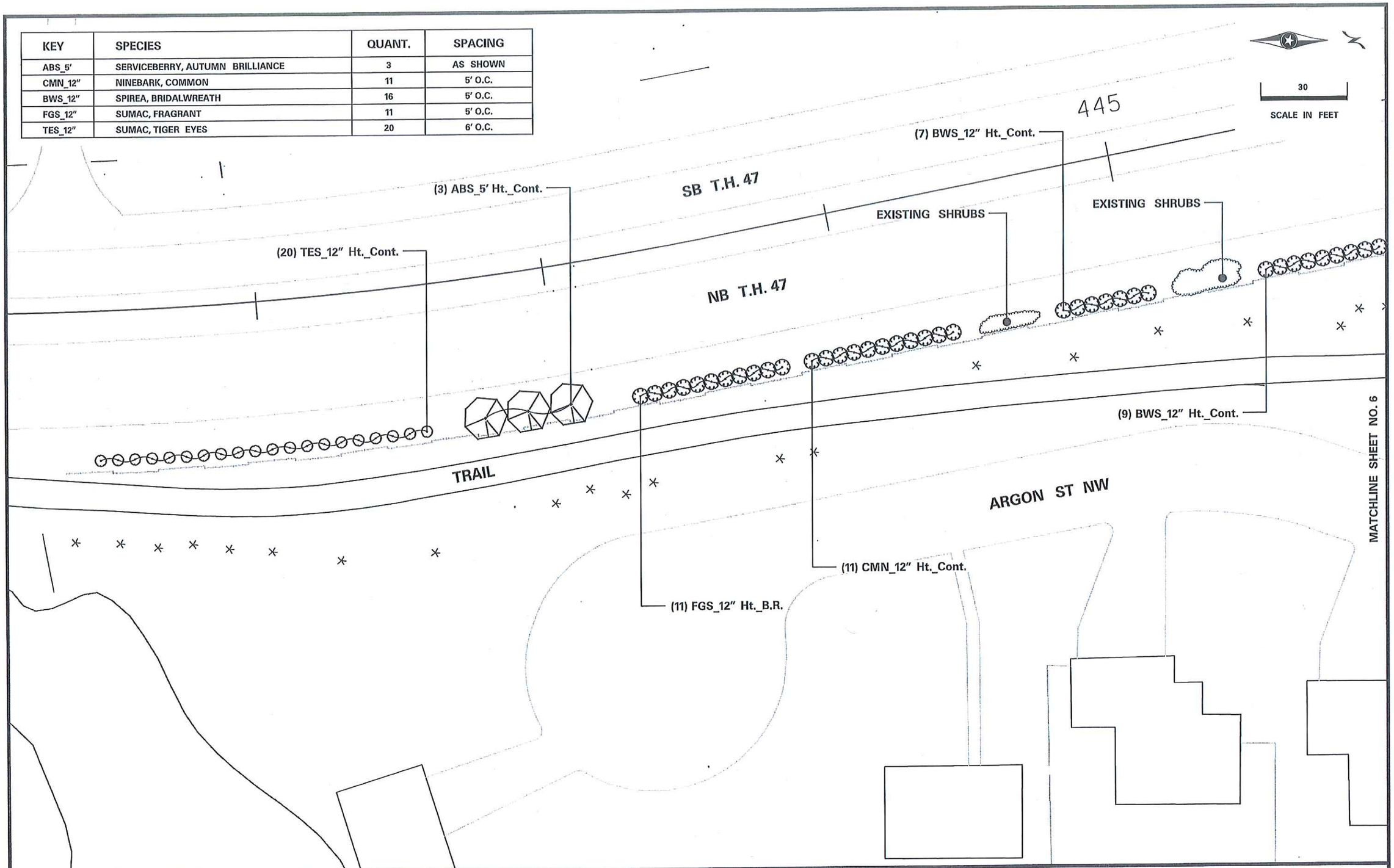
DATE PRINTED:	TIME PRINTED:	PROJECT MANAGER	DRAWN BY	DATE 10/31/13 LIC. NO. 26551	OFFICE OF ENVIRONMENTAL STEWARDSHIP	ESTIMATED QUANTITIES
10/31/2018	10:17:32 AM	PHILIP ZENGE	PHILIP ZENGE	SIGNATURE LICENSED PROFESSIONAL LANDSCAPE ARCHITECT	ENV. PLANNING AND DESIGN UNIT	
			CHECKED BY DENNIS MOLINE		DEPARTMENT OF TRANSPORTATION ST. PAUL, MINNESOTA 55155-1899	STATE PROJECT 0206-969A (T.H. 47) SHEET NO. 3 OF 15 SHEETS

PLANT STOCK TABULATION S.P. 0206–969A

KEY	SPECIES	Minimum Acceptable Dimensions	Units	TOTAL QUANTITY
	ORNAMENTAL TREE 5' HT CONT	5.5' Ht., No. 10 Cont.	TOTAL	15
ABS_5'	SERVICEBERRY, AUTUMN BRILLIANCE		TREE	15
	Amelanchier x grandiflora (Autumn Brilliance)			
	DECIDUOUS SHRUB 12" HT CONT	10.5" Ht., No. 2 Cont.	TOTAL	357
GBC_12"	CHOKEBERRY, GLOSSY BLACK		SHRUB	57
	Aronia melonocarpa			
CMN_12"	NINEBARK, COMMON		SHRUB	60
	Physocarpus opulifolius			
BWS_12"	SPIREA, BRIDALWREATH		SHRUB	56
	Spiraea prunifolia			
FGS_12"	SUMAC, FRAGRANT		SHRUB	60
	Rhus aromatica			
TES_12"	SUMAC, TIGER EYES		SHRUB	78
	Rhus typhina (Bailtiger)			
AWV_12"	VIBURNUMN, ARROWWOOD		SHRUB	46
	Viburnum dentatum			
			TOTAL (Planting Material)	372

DATE PRINTED: 10/31/2018	TIME PRINTED: 10:19:23 AM	PROJECT MANAGER PHILIP ZENGE	DRAWN BY PHILIP ZENGE	DATE 10/31/18 LIC. NO. 26551	OFFICE OF ENVIRONMENTAL STEWARDSHIP ENV. PLANNING AND DESIGN UNIT TRANSPORTATION BUILDING ST. PAUL, MINNESOTA 55155-1899	PLANT STOCK TABULATIONS
			CHECKED BY DENNIS MOLINE	SIGNATURE LICENSED PROFESSIONAL LANDSCAPE ARCHITECT	DEPARTMENT OF TRANSPORTATION	STATE PROJECT 0206–969A (T.H. 47) SHEET NO. 4 OF 15 SHEETS

KEY	SPECIES	QUANT.	SPACING
ABS_5'	SERVICEBERRY, AUTUMN BRILLIANCE	3	AS SHOWN
CMN_12"	NINEBARK, COMMON	11	5' O.C.
BWS_12"	SPIREA, BRIDALWREATH	16	5' O.C.
FGS_12"	SUMAC, FRAGRANT	11	5' O.C.
TES_12"	SUMAC, TIGER EYES	20	6' O.C.



DATE PRINTED: 10/31/2018	TIME PRINTED: 8:09:00 AM	PROJECT MANAGER PHILIP ZENGE	DRAWN BY PHILIP ZENGE CHECKED BY DENNIS MOLINE	DATE 10/31/18 LIC. NO. 26551 SIGNATURE LICENSED PROFESSIONAL LANDSCAPE ARCHITECT	DEPARTMENT OF TRANSPORTATION OFFICE OF ENVIRONMENTAL STEWARDSHIP ENV. PLANNING AND DESIGN UNIT TRANSPORTATION BUILDING ST. PAUL, MINNESOTA 55155-1899	LANDSCAPE PLAN STATE PROJECT 0206-969A (T.H. 47) SHEET NO. 5 OF 15 SHEETS

KEY	SPECIES	QUANT.	SPACING
ABS_5'	SERVICEBERRY, AUTUMN BRILLIANCE	3	AS SHOWN
GBC_12"	CHOKEBERRY, GLOSSY BLACK	11	5' O.C.
BWS_12"	SPIREA, BRIDALWREATH	11	5' O.C.
FGS_12"	SUMAC, FRAGRANT	8	5' O.C.
AWV_12"	VIBURNUMN, ARROWWOOD	20	5' O.C.

30

SCALE IN FEET

(6) FGS_12" Ht._B.R.

(9) BWS_12" Ht._Cont.

(2) FGS_12" Ht._B.R.

(3) ABS_5' Ht._Cont.

450

SB T.H. 47

EXISTING SHRUBS

MATCHLINE SHEET NO. 7

(2) GBC_12" Ht._Cont.

(9) GBC_12" Ht._Cont.

NB T.H. 47

EXISTING SHRUBS

EXISTING SHRUBS

EXISTING SHRUBS

MATCHLINE SHEET NO. 5

TRAIL

EXISTING SHRUBS

(2) BWS_12" Ht._Cont.

(11) AWV_12" Ht._Cont.

(9) AWV_12" Ht._Cont.

DATE PRINTED: 10/31/2018	TIME PRINTED: 8:09:03 AM	PROJECT MANAGER PHILIP ZENGE	DRAWN BY PHILIP ZENGE	DATE 10/31/13 LIC. NO. 26551	OFFICE OF ENVIRONMENTAL STEWARDSHIP ENV. PLANNING AND DESIGN UNIT TRANSPORTATION BUILDING ST. PAUL, MINNESOTA 55155-1899	LANDSCAPE PLAN
			CHECKED BY DENNIS MOLINE	SIGNATURE LICENSED PROFESSIONAL LANDSCAPE ARCHITECT	DEPARTMENT OF TRANSPORTATION	STATE PROJECT 0206-969A (T.H. 47) SHEET NO. 6 OF 15 SHEETS

KEY	SPECIES	QUANT.	SPACING
ABS_5'	SERVICEBERRY, AUTUMN BRILLIANCE	3	AS SHOWN
CMN_12"	NINEBARK, COMMON	28	5' O.C.
FGS_12"	SUMAC, FRAGRANT	3	5' O.C.
TES_12"	SUMAC, TIGER EYES	15	6' O.C.
AWV_12"	VIBURNUMN, ARROWWOOD	11	5' O.C.

30
SCALE IN FEET

455

(3) TES_12" Ht._Cont.

(3) FGS_12" Ht._B.R.

(11) AWV_12" Ht._Cont.

SB T.H. 47

NB T.H. 47

EXISTING SHRUBS

EXISTING SHRUBS

EXISTING SHRUBS

EXISTING SHRUBS

MATCHLINE SHEET NO. 6

MATCHLINE SHEET NO. 8

TRAIL

(17) CMN_12" Ht._Cont.

(5) TES_12" Ht._Cont.

(7) TES_12" Ht._Cont.

(3) ABS_5' Ht._Cont.

(11) CMN_12" Ht._Cont.

DATE PRINTED:	TIME PRINTED:	PROJECT MANAGER	DRAWN BY
10/31/2018	8:09:05 AM	PHILIP ZENGE	PHILIP ZENGE
			CHECKED BY DENNIS MOLINE

DATE 10/31/18 LIC. NO. 26551
SIGNATURE
LICENSED PROFESSIONAL LANDSCAPE ARCHITECT

DEPARTMENT OF TRANSPORTATION
OFFICE OF ENVIRONMENTAL STEWARDSHIP
ENV. PLANNING AND DESIGN UNIT
TRANSPORTATION BUILDING
ST. PAUL, MINNESOTA 55155-1899

LANDSCAPE PLAN

STATE PROJECT 0206-969A (T.H. 47) SHEET NO. 7 OF 15 SHEETS

KEY	SPECIES	QUANT.	SPACING
ABS_5'	SERVICEBERRY, AUTUMN BRILLIANCE	3	AS SHOWN
GBC_12"	CHOKEBERRY, GLOSSY BLACK	17	5' O.C.
CMN_12"	NINEBARK, COMMON	4	5' O.C.
BWS_12"	SPIREA, BRIDALWREATH	17	5' O.C.
FGS_12"	SUMAC, FRAGRANT	19	5' O.C.
AWV_12"	VIBURNUMN, ARROWWOOD	13	5' O.C.

30
SCALE IN FEET

460

(4) CMN_12" Ht._Cont.

(3) ABS_5' Ht._Cont.

(19) FGS_12" Ht._B.R.

SB T.H. 47

NB T.H. 47

EXISTING SHRUBS

MATCHLINE SHEET NO. 9

MATCHLINE SHEET NO. 7

TRAIL

EXISTING SHRUBS

(13) AWV_12" Ht._Cont.

(17) BWS_12" Ht._Cont.

(17) GBC_12" Ht._Cont.

DATE PRINTED: 10/31/2018	TIME PRINTED: 8:09:07 AM	PROJECT MANAGER PHILIP ZENGE	DRAWN BY PHILIP ZENGE	DATE 12/11/13	LIC. NO. 26551	LANDSCAPE PLAN
			CHECKED BY DENNIS MOLINE	SIGNATURE	LICENSED PROFESSIONAL LANDSCAPE ARCHITECT	STATE PROJECT 0206-969A (T.H. 47) SHEET NO. 8 OF 15 SHEETS

DEPARTMENT OF TRANSPORTATION
OFFICE OF ENVIRONMENTAL STEWARDSHIP
ENV. PLANNING AND DESIGN UNIT
TRANSPORTATION BUILDING
ST. PAUL, MINNESOTA 55155-1899

KEY	SPECIES	QUANT.	SPACING
ABS_5'	SERVICEBERRY, AUTUMN BRILLIANCE	3	AS SHOWN
CMN_12"	NINEBARK, COMMON	17	5' O.C.
BWS_12"	SPIREA, BRIDALWREATH	12	5' O.C.
FGS_12"	SUMAC, FRAGRANT	19	5' O.C.
AWV_12"	VIBURNUMN, ARROWWOOD	13	5' O.C.

30
SCALE IN FEET

(19) FGS_12" Ht._B.R.

465

(3) ABS_5' Ht._Cont.

SB T.H. 47

(17) CMN_12" Ht._Cont.

(9) BWS_12" Ht._Cont.

SB T.H. 47

MATCHLINE SHEET NO. 10

MATCHLINE SHEET NO. 8

EXISTING SHRUBS

EXISTING SHRUBS

EXISTING SHRUBS

TRAIL

(13) AWV_12" Ht._Cont.

(3) BWS_12" Ht._Cont.

DATE PRINTED: 10/31/2018	TIME PRINTED: 8:09:09 AM	PROJECT MANAGER PHILIP ZENGE	DRAWN BY PHILIP ZENGE	DATE 10/31/18 LIC. NO. 26551	DEPARTMENT OF TRANSPORTATION	LANDSCAPE PLAN
			CHECKED BY DENNIS MOLINE	SIGNATURE LICENSED PROFESSIONAL LANDSCAPE ARCHITECT	OFFICE OF ENVIRONMENTAL STEWARDSHIP ENV. PLANNING AND DESIGN UNIT TRANSPORTATION BUILDING ST. PAUL, MINNESOTA 55155-1899	STATE PROJECT 0206-969A (T.H. 47) SHEET NO. 9 OF 15 SHEETS

KEY	SPECIES	QUANT.	SPACING
TES_12"	SUMAC, TIGER EYES	21	6' O.C.

30
SCALE IN FEET

470

SB T.H. 47

NB T.H. 47

(21) TES_12" Ht._Cont.

MATCHLINE SHEET NO. 9

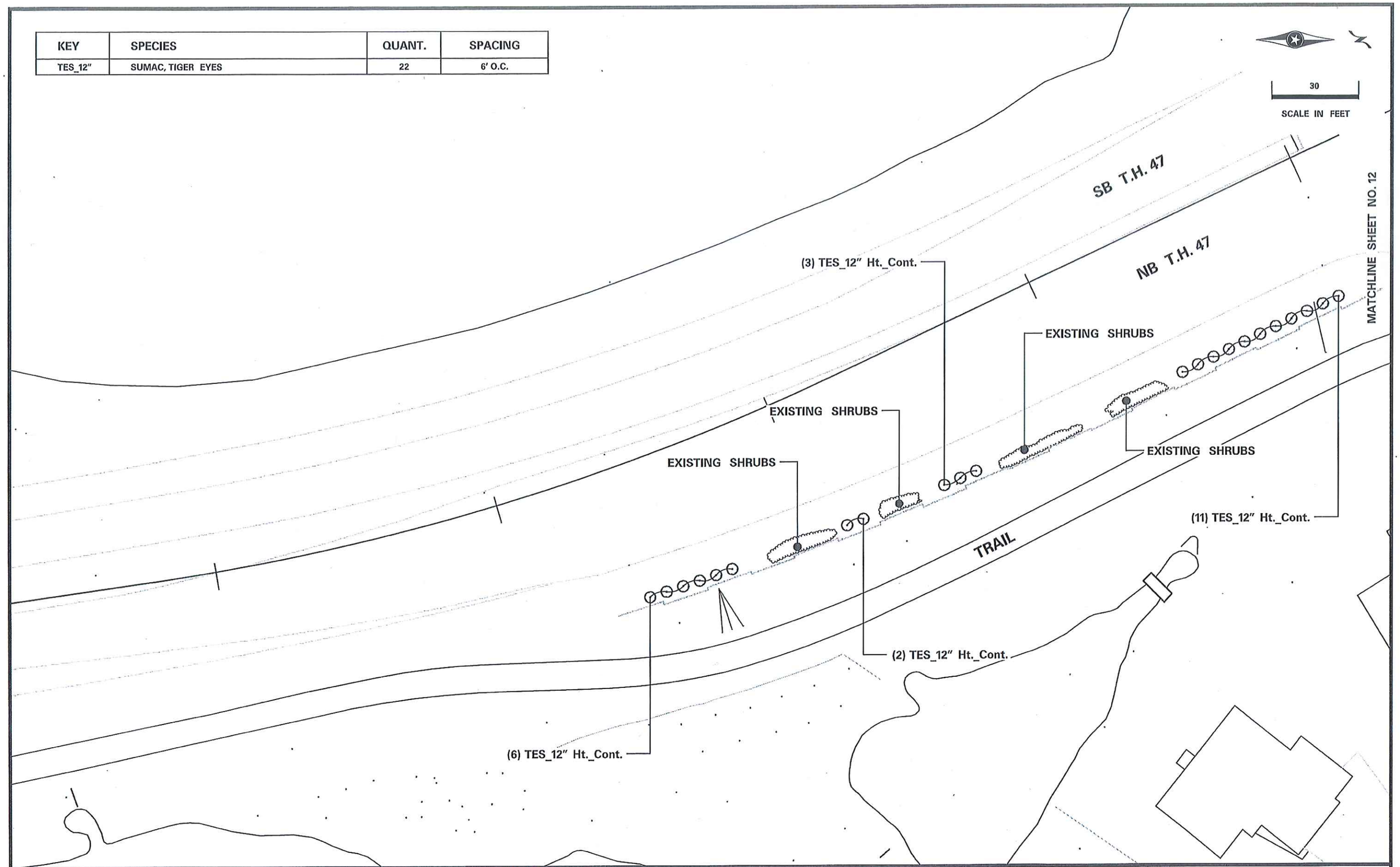
TRAIL

SUNWOOD DRIVE NW

TRAIL

DATE PRINTED:	TIME PRINTED:	PROJECT MANAGER	DRAWN BY	DATE 10/31/18 LIC. NO. 26551	OFFICE OF ENVIRONMENTAL STEWARDSHIP ENV. PLANNING AND DESIGN UNIT TRANSPORTATION BUILDING ST. PAUL, MINNESOTA 55155-1899	LANDSCAPE PLAN
10/31/2018	8:09:11 AM	PHILIP ZENGE	PHILIP ZENGE			
			CHECKED BY DENNIS MOLINE	SIGNATURE LICENSED PROFESSIONAL LANDSCAPE ARCHITECT	DEPARTMENT OF TRANSPORTATION	STATE PROJECT 0206-969A (T.H. 47) SHEET NO. 10 OF 15 SHEETS

KEY	SPECIES	QUANT.	SPACING
TES_12"	SUMAC, TIGER EYES	22	6' O.C.



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			CHECKED BY DENNIS MOLINE	SIGNATURE LICENSED PROFESSIONAL LANDSCAPE ARCHITECT	OFFICE OF ENVIRONMENTAL STEWARDSHIP ENV. PLANNING AND DESIGN UNIT TRANSPORTATION BUILDING ST. PAUL, MINNESOTA 55155-1899	STATE PROJECT 0206-969A (T.H. 47) SHEET NO. 11 OF 15 SHEETS

KEY	SPECIES	QUANT.	SPACING
GBC_12"	CHOKEBERRY, GLOSSY BLACK	29	5' O.C.

30

SCALE IN FEET

SB T.H. 47

NB T.H. 47

TRAIL

(29) GBC_12" Ht._Cont.

MATCHLINE SHEET NO. 11

BARIUM STREET NW

DATE PRINTED:	TIME PRINTED:	PROJECT MANAGER	DRAWN BY	DATE 10/31/13	LIC. NO. 26951
10/31/2018	8:09:16 AM	PHILIP ZENGE	PHILIP ZENGE	SIGNATURE	LICENSED PROFESSIONAL LANDSCAPE ARCHITECT
			CHECKED BY DENNIS MOLINE		

DEPARTMENT OF TRANSPORTATION

OFFICE OF ENVIRONMENTAL STEWARDSHIP
ENV. PLANNING AND DESIGN UNIT
TRANSPORTATION BUILDING
ST. PAUL, MINNESOTA 55155-1899

LANDSCAPE PLAN

STATE PROJECT 0206-969A (T.H. 47) SHEET NO. 12 OF 15 SHEETS

PLOTTED/REVISED: $$$$@DATE@$$$$

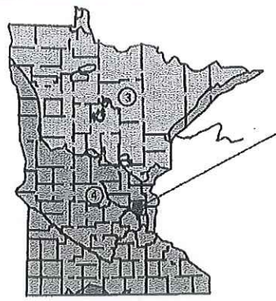
GENERAL NOTES

SEE SPECIAL PROVISIONS FOR SPECIFIC PROJECT REQUIREMENTS.	
REFER TO MnDOT SPECIFICATIONS 2571, 2572, 3861, FOR GENERAL REQUIREMENTS.	
COMPLETE PREPARATORY WORK BEFORE STARTING INITIAL PLANTING OPERATIONS.	
ACCEPT ALL PLANT STOCK IN ACCORDANCE WITH (MnDOT 3861) PRIOR TO PLANTING.	
THE CONTRACTOR WILL DEMONSTRATE COMPETENCY FOR SOIL CULTIVATION OPERATIONS IN ACCORDANCE WITH (MnDOT 2571.3D.2)	
THE CONTRACTOR WILL DEMONSTRATE COMPETENCY FOR ALL PLANT INSTALLATION OPERATIONS IN ACCORDANCE WITH (MnDOT 2571.3F1)	
RODENT PROTECTION	SEE SPECIAL PROVISIONS AND STANDARD PLANTING DETAILS (3 OF 3)
FERTILIZER	SEE SPECIAL PROVISIONS
COMPOST	MnDOT 3890 COMPOST GRADE 2 UNLESS OTHERWISE SPECIFIED.
MULCH MATERIAL	MnDOT 3882 MULCH MATERIAL TYPE 6 UNLESS OTHERWISE SPECIFIED.
MASS PLANTING BEDS	PREPARE MASS PLANTING BEDS FOR PLANTS PLACED AT 15' OR LESS, UNLESS OTHERWISE SPECIFIED ON SHEETS. PLANT BEDS IN STAGGERED ROWS ON THE PERIMETER FIRST, THEN UNIFORMLY FILL IN WITH REMAINING PLANTS. USE TRIANGULAR SPACING, UNLESS SPECIFIED OTHERWISE. PROVIDE 5' RADIUS CLEAR OF SHRUBS AROUND EACH DECIDUOUS TREE AND 8' CLEAR RADIUS AROUND EACH CONIFER TREE. RADIUS WILL BE MEASURED FROM THE CENTER OF THE TREE TO THE CENTER OF THE SHRUB. NOTIFY ENGINEER OF GROSS PLANT QUANTITY SURPLUS OR DEFICIENCY IMMEDIATELY. MULCH ENTIRE MASS PLANTING BED. SEE STANDARD PLANTING DETAILS (3 OF 3)
TREE PAINTING (FROST CRACK PREVENTION)	PAINT OAK, LINDEN, LOCUST, MAPLE, CRABAPPLE AND MOUNTAIN ASH. ONLY UNDILUTED EXTERIOR WHITE LATEX PAINT IS ACCEPTABLE. PAINT TREE CIRCUMFERENCE FROM GROUND LINE TO FIRST MAJOR BRANCH.
PLANTING PLAN DIMENSIONS	STATED DIMENSIONS SUPERCEDE SCALING FROM PLAN.

WATERING GUIDELINES (MnDOT 2571.3G)

PLANT TYPE	AVERAGE GALLONS OF WATER PER APPLICATION
MACHINE TRANSPLANTED TREES	50-100
BALLED AND BURLAPPED TREES	20
BARE ROOT AND CONTAINER TREES	15
BALLED AND BURLAPPED SHRUBS	10
BARE ROOT AND CONTAINER SHRUBS	7
WOODY SEEDLINGS	4
PERENNIALS AND VINES	3

IT IS THE CONTRACTOR'S RESPONSIBILITY TO MONITOR AND MAINTAIN SOIL MOISTURE AT ADEQUATE BUT NOT EXCESSIVE LEVELS. THE AMOUNTS LISTED ABOVE ARE GUIDELINES, NOT REQUIREMENTS.

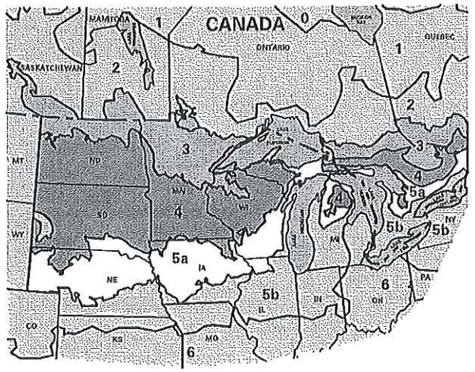


1. BARE ROOT PERENNIALS MUST BE PLACED IN THE SPRING NO LATER THAN JUNE 1ST OR FOLLOW THE FALL DECIDUOUS PLANTING DATES.
2. ACTUAL DATES MAY CHANGE DEPENDING UPON SEASONAL CONDITIONS, AS DETERMINED BY THE ENGINEER.
3. FALL PLANTING IS NOT ALLOWED FOR BARE ROOT FORM OF THE FOLLOWING SPECIES: HAWTHORN, DOGWOOD, POPLAR, HACKBERRY, LINDEN, IRONWOOD, HONEYLOCUST, BIRCH, MOUNTAIN ASH, MAPLE, WILLOW, CRABAPPLE, PLUM/CHERRY, OAKS, AND SUMAC.
4. ALL REPLACEMENT PLANTS MUST BE PLACED DURING THE MONTH OF MAY (SPRING PLANTING) AND SEPTEMBER (FALL PLANTING) DURING THE FIRST YEAR OF THE PLANT ESTABLISHMENT PERIOD.
5. MACHINE MOVED PLANTING DATES WILL BE SPECIFIED IN THE SPECIAL PROVISIONS.

PLANTING DATES BY ZONE

			③	④
SPRING	DECIDUOUS	BARE ROOT	APRIL 21 TO JUNE 1	APRIL 7 TO JUNE 1
		CONTAINER B&B	APRIL 21 TO JUNE 30	APRIL 7 TO JUNE 30
	CONIFEROUS		APRIL 21 TO JUNE 1	APRIL 7 TO MAY 17
	PERENNIALS		MAY 1 TO JUNE 30	MAY 1 TO JUNE 30
	SEEDLINGS		APRIL 21 TO JUNE 1	APRIL 7 TO JUNE 1
FALL	DECIDUOUS	BARE ROOT	OCT. 1 TO NOV. 1	OCT. 10 TO NOV. 15
		CONTAINER B&B	AUG. 25 TO OCT. 15	AUG. 25 TO NOV. 1
	CONIFEROUS		AUG. 25 TO SEPT. 15	AUG. 25 TO SEPT. 15
	PERENNIALS		AUG. 25 TO SEPT. 15	AUG. 25 TO SEPT. 15

PLANT INSTALLATION PERIOD



ACCEPTABLE ZONES		
ZONES	LEGEND	MIN. TEMP.
3		-34.4° TO -40 F
4		-28.9° TO -34.4 F
5a		-26.1° TO -28.9 F

UNACCEPTABLE ZONES	
ZONES	LEGEND
0, 1, 2, 5b and 6	

FOR ALL PLANT STOCK, DOCUMENT ACCEPTABILITY FOR HARDINESS IN THE MINNESOTA ZONE WHERE THE PROJECT SITE IS LOCATED, AS FOLLOWS:

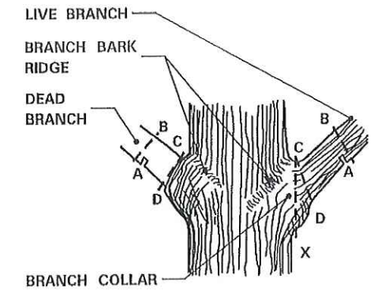
A. PLANT STOCK CONTINUOUSLY GROWN FOR AT LEAST THE LAST TWO YEARS WITHIN THE ACCEPTABLE LIMITS SHOWN.

OR

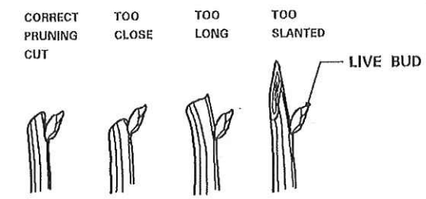
B. PLANT STOCK, GROWN OUTSIDE THE ACCEPTABLE GROWING RANGE LIMITS, HAVING SEED SOURCE OR ROOT AND GRAFT STOCK ORIGINATING FROM THE ACCEPTABLE LIMITS SHOWN.

ACCEPTABLE PLANT STOCK GROWING RANGE LIMITS

SOURCE: USDA PLANT HARDINESS ZONE MAP (MnDOT 3861.2C)



BRANCHES PRUNED AT TRUNK (SHIGO METHOD)



BRANCHES PRUNED TO LIVE BUD

STEPS TO PRUNING WITH PRUNING SAW:

1. CUT PART WAY THROUGH THE BRANCH AT POINT A.
2. CUT COMPLETELY THROUGH BRANCH FROM POINT B TO A.
3. AT BRANCH COLLAR CUT FROM POINT C TO D.

INCORRECT CUT FROM POINT C TO X (TOO CLOSE) WILL RESULT IN DISCONTINUOUS CALLUS FORMATION AFTER ONE SEASON OF GROWTH.

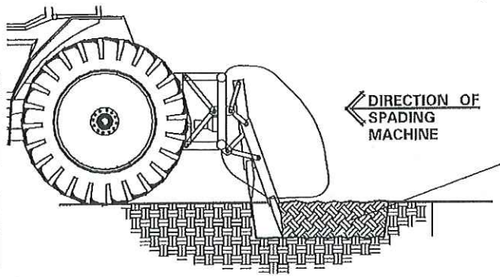
CORRECT CUT FROM POINT C TO D (LEAVING BRANCH COLLAR BUT NOT THE STUB FROM POINT B TO A) WILL RESULT IN CONTINUOUS DOUGHNUT SHAPED CALLUS FORMATION AFTER ONE SEASON OF GROWTH.

PRUNING NOTES:

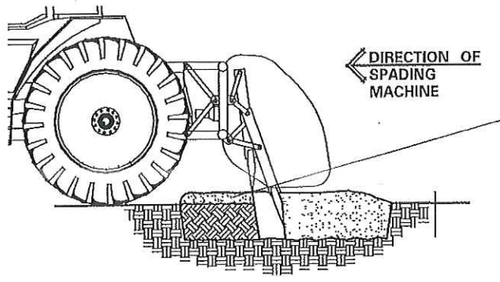
1. PRUNE USING CLEAN AND SHARP SCISSOR-TYPE PRUNER OR PRUNING SAW.
2. THE BEST TIME TO PRUNE IS LATE DORMANT SEASON OR EARLY SPRING.
3. AVOID PRUNING OAKS IN APRIL, MAY, JUNE OR JULY.
4. IF PRUNING IS NECESSARY OR IF WOUNDS OCCUR TO OAK TREES IN APRIL, MAY, JUNE OR JULY, IMMEDIATELY PAINT CUT SURFACE OR WOUND WITH LATEX PAINT OR SHELLAC.

PRUNING

(MnDOT 2571.3E.1 and 2571.3K.2.a(9))



PRIMARY TILLAGE – PASS 1



INCORPORATION TILLAGE – PASS 2

PLANTING SOIL

(MnDOT 2571.3D)

DISTRICT #: $$DISTRICT$$
IPLOT NAME: $$$IPLOT$NAME$$$
PATH & FILENAME: $$$PATHFILENAME$$$$

REVISION:
APPROVED: DECEMBER 11, 2015
CHIEF ENVIRONMENTAL OFFICER

MINNESOTA DEPARTMENT OF TRANSPORTATION

STANDARD PLAN 5-297.301 | 1 OF 3

APPROVED: 12-11-2015
REVISED:

STATE DESIGN ENGINEER

STANDARD PLANTING DETAILS

STATE PROJ. NO. 0206-969A (T.H. 47)

SHEET NO. 13 OF 15 SHEETS

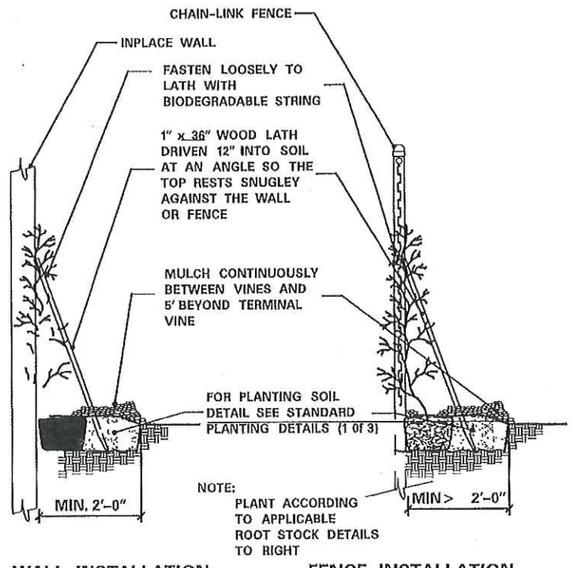
PLOTTED/REVISED: $$$$

DISTRICT *: $$DISTRICT$$
PLOT NAME: $$PLOT$NAME$$
PATH & FILENAME: $$$$PATHFILENAME$$$$

PLANTING HOLE DIMENSIONS

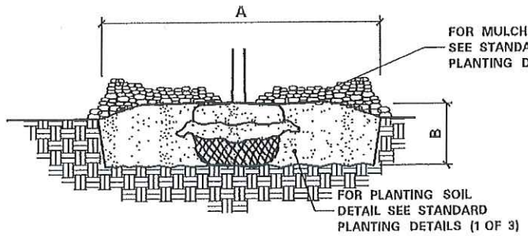
HOLE DEPTH FOR B&B AND CONTAINER PLANTS SHALL NOT EXCEED MEASUREMENT FROM ROOT FLARE TO BOTTOM OF SOIL BALL.

PLANT TYPE	PLANT SIZE UP TO AND INCLUDING	(A) MINIMUM HOLE WIDTH	(B) APPROXIMATE HOLE DEPTH
DECIDUOUS & ORNAMENTAL TREES	3' B.R.	46"	13"
	4' B.R.	46"	14"
	5' B.R.	48"	14"
	6' B.R.	54"	15"
	7' B.R.	60"	16"
	8' B.R.	66"	19"
	0.75" B.R.	48"	12"
	1" B.R.	54"	14"
	1.25" B.R.	60"	14"
	1.5 B.R.	66"	15"
	1.75" B.R	72"	16"
	2" B.R.	84"	19"
	4' B.B.	42"	11"
	5' B.B.	48"	12"
	6' B.B.	52"	14"
	8' B.B.	66"	16"
	10' B.B.	66"	16"
	12' B.B.	48"	16"
	1" B.B.	54"	14"
	1.25" B.B.	56"	15"
	1.5" B.B.	61"	15"
	1.75" B.B.	66"	16"
	2" B.B.	72"	16"
	2.5" B.B.	84"	19"
	3" B.B.	96"	20"
	3.5" B.B.	114"	23"
	4" B.B.	126"	25"
DECIDUOUS SHRUBS, ROSES AND PERENNIALS	12" B.R.	24"	7"
	15" B.R.	28"	8"
	18" B.R.	30"	8"
	2' B.R.	33"	9"
	3' B.R.	42"	11"
	4' B.B.	48"	12"
	5' B.R.	54"	14"
	6' B.R.	60"	14"
PERENNIAL HOLE DEPTH AND WIDTH SHALL BE BASED UPON ON-CENTER SPACING IN A CONTINUOUS TRENCH.	18" B.B.	27"	7"
	2' B.B.	30"	8"
	3' B.B.	36"	9"
	4' B.B.	42"	11"
	5' B.B.	48"	12"
	6' B.B.	54"	14"



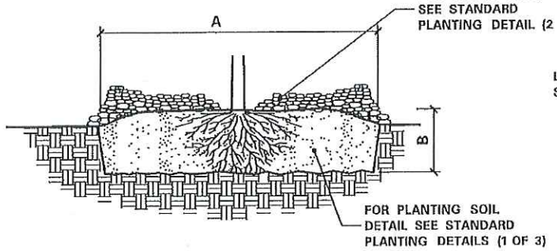
WALL INSTALLATION FENCE INSTALLATION

INSTALLATION OF VINES



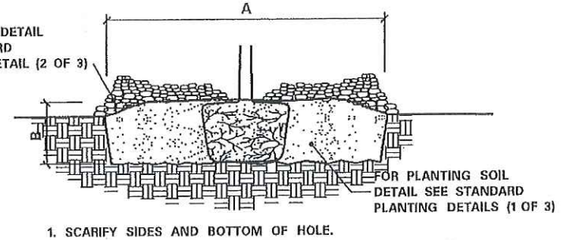
1. SCARIFY SIDES AND BOTTOM OF HOLE.
2. PROCEED WITH CORRECTIVE PRUNING.
3. SET PLANT ON UNDISTURBED NATIVE SOIL OR THOROUGHLY COMPACTED PLANTING SOIL. PLACE PLANT SO THE ROOT FLARE IS AT OR UP TO 2" ABOVE THE FINISHED GRADE WITH BURLAP AND WIRE BASKET, (IF USED), INTACT.
4. SLIT REMAINING TREATED BURLAP AT 6" INTERVALS.
5. BACKFILL TO WITHIN APPROXIMATELY 12" OF THE TOP OF THE ROOTBALL, THEN WATER PLANT.
6. REMOVE THE TOP 1/3 OF THE BASKET OR THE TOP TWO HORIZONTAL RINGS WHICHEVER IS GREATER. REMOVE ALL BURLAP AND NAILS FROM THE TOP 1/3 OF THE BALL. REMOVE ALL TWINE. REMOVE OR CORRECT STEM GIRDLING ROOTS.
7. PLUMB AND BACKFILL WITH PLANTING SOIL.
8. WATER THOROUGHLY WITHIN 2 HOURS TO SETTLE PLANTS AND FILL VOIDS.
9. BACK FILL VOIDS AND WATER A SECOND TIME.
10. PLACE MULCH WITHIN 48 HOURS OF THE SECOND WATERING UNLESS SOIL MOISTURE IS EXCESSIVE.

BALLED & BURLAPPED STOCK



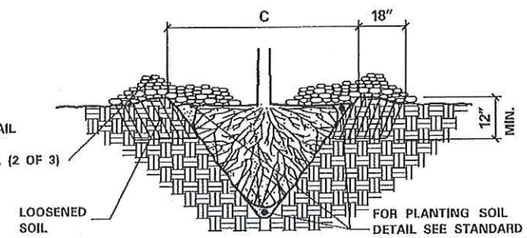
1. SOAK ROOTS IN WATER FOR AT LEAST ONE HOUR BUT NOT MORE THAN 24 HOURS PRIOR TO PLANTING.
2. SCARIFY SIDES AND BOTTOM OF HOLE.
3. PROCEED WITH CORRECTIVE PRUNING OF THE TOP AND ROOTS.
4. TRANSFER PLANT DIRECTLY FROM WATER TO HOLE. SET PLANT SO THE ROOT FLARE IS AT THE FINISHED SOIL ELEVATION. SPREAD ROOTS OUT EVENLY. PLUMB AND IMMEDIATELY BACKFILL WITH PLANTING SOIL.
5. WATER THOROUGHLY WITHIN 2 HOURS TO SETTLE PLANTS AND FILL VOIDS.
6. BACK FILL VOIDS AND WATER A SECOND TIME.
7. PLACE MULCH WITHIN 48 HOURS OF THE SECOND WATERING UNLESS SOIL MOISTURE IS EXCESSIVE.

BARE ROOT STOCK



1. SCARIFY SIDES AND BOTTOM OF HOLE.
2. PROCEED WITH CORRECTIVE PRUNING OF TOP AND ROOT.
3. REMOVE CONTAINER AND SCORE OUTSIDE OF SOIL MASS TO REDIRECT AND PREVENT CIRCLING FIBROUS ROOTS. REMOVE OR CORRECT STEM GIRDLING ROOTS.
4. SET PLANT ON UNDISTURBED NATIVE SOIL OR THOROUGHLY COMPACTED PLANTING SOIL. INSTALL PLANT SO THE TOP OF THE ROOT FLARE IS AT OR UP TO 2" ABOVE THE FINISHED GRADE.
5. PLUMB AND BACKFILL WITH PLANTING SOIL.
6. WATER THOROUGHLY WITHIN 2 HOURS TO SETTLE PLANT AND FILL VOIDS.
7. BACK FILL VOIDS AND WATER A SECOND TIME.
8. PLACE MULCH WITHIN 48 HOURS OF THE SECOND WATERING UNLESS SOIL MOISTURE IS EXCESSIVE.

CONTAINER STOCK



1. SCARIFY SIDES AND BOTTOM OF HOLE.
2. PROCEED WITH CORRECTIVE PRUNING.
3. SET PLANT ON NATIVE SOIL AT SAME DEPTH AS IT WAS PREVIOUSLY GROWN.
4. PLUMB AND BACKFILL WITH PLANTING SOIL.
5. AFTER PLANTING, LOOSEN THE SOIL IMMEDIATELY ADJACENT TO THE ROOT BALL TO A MINIMUM DISTANCE OF 18" AND A MINIMUM DEPTH OF 12".
6. WATER THOROUGHLY WITHIN 2 HOURS TO SETTLE PLANT AND FILL VOIDS.
7. BACK FILL VOIDS AND WATER A SECOND TIME.
8. PLACE MULCH WITHIN 48 HOURS OF THE SECOND WATERING UNLESS SOIL MOISTURE IS EXCESSIVE.

MINIMUM TREE SPADE SIZE REQUIREMENTS

(C) SPADE DIAMETER SIZE	OAK TREE, CALIPER	DECIDUOUS / ORNAMENTAL TREE, CALIPER	CONIFEROUS TREE, HEIGHT
42"	1" to 1.5"	2" to 3"	5' to 7'
60"	1.5" to 2.5"	3" to 4"	7' to 9'
78"	2.5" to 3.5"	4" to 6"	9' to 14'
85"	3.5" to 5"	6" to 8"	14' to 18'

MACHINE MOVED STOCK

INSTALLATION OF PLANTS

(MnDOT 2571.3F)

PLANTING HOLE DIMENSIONS

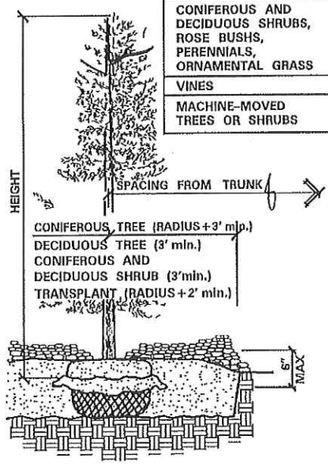
HOLE DEPTH FOR B&B AND CONTAINER PLANTS SHALL NOT EXCEED MEASUREMENT FROM ROOT FLARE TO BOTTOM OF SOIL BALL.

PLANT TYPE	PLANT SIZE UP TO AND INCLUDING	(A) MINIMUM HOLE WIDTH	(B) APPROXIMATE HOLE DEPTH
CONIFEROUS TREES AT LEAST 2/3 OF ALL CONIFER BRANCHES WILL CONTAIN TERMINAL BUDS	2' B.B	36"	10"
	3' B.B	42"	11"
	4' B.B	51"	13"
	5' B.B	60"	13"
	6' B.B	66"	15"
	7' B.B	72"	16"
	8' B.B	81"	18"
	9' B.B	90"	20"
	10' B.B	102"	21"
	12' B.B	114"	24"
CONIFEROUS SHRUBS (UPRIGHT)	18" B.B.	24"	7"
	3' B.B.	48"	12"
CONIFEROUS SHRUBS (SPREADING)	18" SPR B.B.	30"	8"
	2' SPR B.B.	36"	9"
CONTAINER GROWN PLANTS	CELLPACKS / PLUGS	6"	2.5"
	2.25" CONT.	7"	3"
	3.5" CONT.	10"	3"
	4" CONT.	11"	4"
	4.5" CONT.	13"	4"
	6"/1 QT CONT.	15"	5.5"
	1# CONT.	18"	6"
	2# CONT.	23"	7.5"
	3# CONT.	25"	8.5"
	5# CONT.	30"	11"
	7# CONT.	37"	11"
	15# CONT.	44"	14"
	10# CONT.	45"	15"
	20# CONT.	60"	16"
	25# CONT.	72"	17"
SEEDLINGS	6" SEEDLING	15"	14"
	9" SEEDLING	18"	14"
	12" SEEDLING	23"	16"
	18" SEEDLING	30"	16"
	2' SEEDLING	36"	18"
VINES	1 YR. MED B.R.	15"	11"
	1 YR. NO. 1 B.R.	17"	14"
	2 YR. MED. B.R.	33"	12"
	2 YR. NO. 1 B.R.	42"	15"

MULCH AREA CALCULATOR

TYPE OF PLANT	SQ. FT. PER PLANT
CONIFEROUS TREES	$\left[\left(\frac{3/5 \times \text{HEIGHT}}{2}\right)+3\right]^2 \times \pi$
DECIDUOUS AND ORNAMENTAL TREES	$3^2 \times \pi$
CONIFEROUS AND DECIDUOUS SHRUBS, ROSE BUSHS, PERENNIALS, ORNAMENTAL GRASS	SPACING x SPACING
VINES	SPACING x 2
MACHINE-MOVED TREES OR SHRUBS	$\left[\left(\frac{\text{SPADE DIAMETER}}{2}\right)+1\right]^2 \times \pi$

π = 3.1416



1. PULL MULCH BACK NO LESS THAN 3" AND NO MORE THAN 6" FROM TREES AND SHRUBS AT THE TRUNK OR MAIN STEM.
2. SUBSIDING OR DETERIORATING MULCH IS ACCEPTABLE THROUGHOUT THE ESTABLISHED PERIOD IF THE MULCH DEPTH IS MAINTAINED AT A MINIMUM 3" DEPTH.
3. ADD MULCH WHEN BELOW THE 3" MINIMUM DEPTH; DO NOT EXCEED THE 6" MAXIMUM DEPTH.
4. MULCH CONTAMINATED WITH SOIL MUST BE REMOVED AND REPLACED.

MULCH

(MnDOT 2571.3H)

REVISION:

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CHIEF ENVIRONMENTAL OFFICER

MINNESOTA DEPARTMENT OF TRANSPORTATION

STANDARD PLAN 5-297.301 | 2 OF 3

APPROVED: 12-11-2015

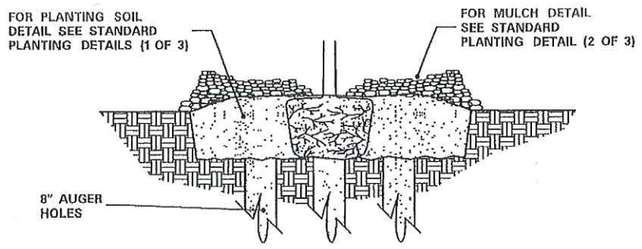
REVISED:

STATE DESIGN ENGINEER

STANDARD PLANTING DETAILS

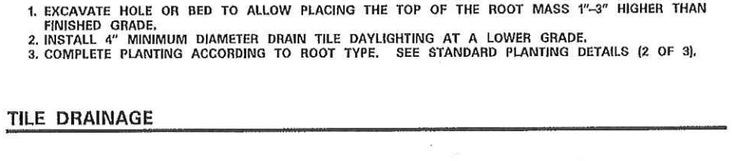
STATE PROJ. NO. 0206-969A (T.H. 47)

SHEET NO. 14 OF 15 SHEETS



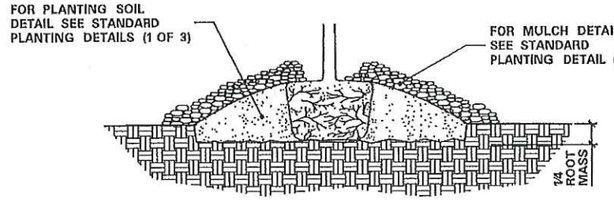
1. EXCAVATE HOLE OR BED TO ALLOW PLACING THE TOP OF ROOT MASS 1"-3" HIGHER THAN FINISHED GRADE.
2. AUGER 8" DIAMETER HOLES ENTIRELY THROUGH IMPERVIOUS OR POORLY DRAINED HARD PAN SOIL LAYER TO ADEQUATELY DRAIN SUBSOIL.
3. TEST FOR POSITIVE DRAINAGE. RE-AUGER AN ADDITIONAL 8" IF NECESSARY FOR POSITIVE DRAINAGE.
4. THOROUGHLY BACKFILL AUGER HOLES WITH A UNIFORM INCORPORATED MIXTURE OF 50% SAND AND 50% INPLACE SOIL.
5. COMPLETE PLANTING ACCORDING TO ROOT TYPE. SEE STANDARD PLANTING DETAILS (2 OF 3).

GRANULAR FILTER



1. EXCAVATE HOLE OR BED TO ALLOW PLACING THE TOP OF THE ROOT MASS 1"-3" HIGHER THAN FINISHED GRADE.
2. INSTALL 4" MINIMUM DIAMETER DRAIN TILE DAYLIGHTING AT A LOWER GRADE.
3. COMPLETE PLANTING ACCORDING TO ROOT TYPE. SEE STANDARD PLANTING DETAILS (2 OF 3).

TILE DRAINAGE



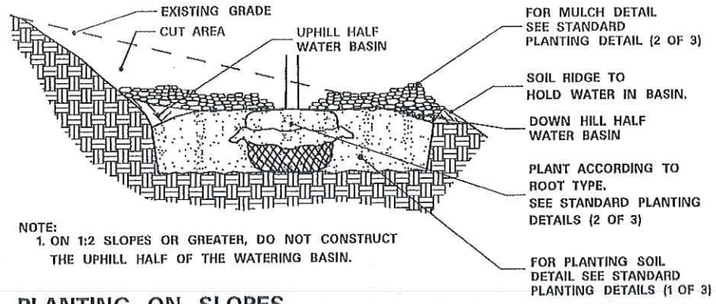
1. EXCAVATE HOLE OR BED 1/4 THE DEPTH OF THE ROOT MASS.
2. SET ROOT MASS IN HOLE.
3. CONSTRUCT BERM WITH PLANTING SOIL. EXTEND THE BERM BASE TO A WIDTH OF 3 TIMES THE BERM HEIGHT.
4. COMPLETE PLANTING ACCORDING ROOT TYPE. SEE STANDARD PLANTING DETAILS (2 OF 3).

MINI-BERM

NOTE:
1. THE NEED FOR USING PLANTING DETAILS FOR POORLY DRAINED SOILS AND WHICH TYPE TO USE ARE DETERMINED BY THE CONTRACTOR, SUBJECT TO ENGINEER APPROVAL.

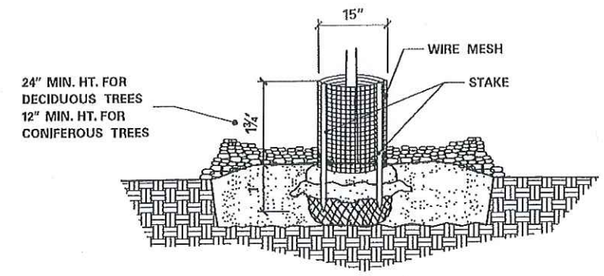
PLANTING DETAIL FOR POORLY DRAINED SOILS

(MnDOT 2571.3D.2(8))



NOTE:
1. ON 1:2 SLOPES OR GREATER, DO NOT CONSTRUCT THE UPHILL HALF OF THE WATERING BASIN.

PLANTING ON SLOPES

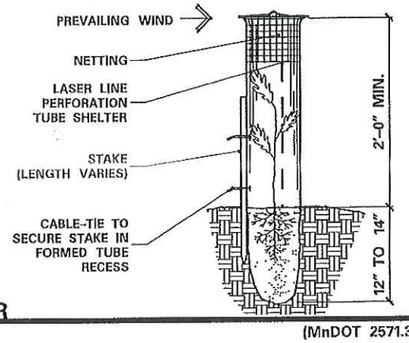


1. FORM A DOUBLE-LAYERED CYLINDER USING 0.25" GRID GALVANIZED WELDED WIRE MESH (HARDWARE CLOTH). OVERLAP THE CUT END 2".
2. DRIVE TWO 1" x 1" OPPOSING HEARTWOOD WHITE OAK STAKES INTO THE GROUND, 7" FROM THE CENTER OF THE TREE STEM.
3. SECURE THE MESH CYLINDER TO THE OUTSIDE OF THE STAKES USING EITHER, SCREWS AND WASHERS OR CABLE-TIES ALONG THE OVERLAP. SPACE APPROXIMATELY 4" ON CENTER ALONG THE OVERLAP.
   a. SCREWS SHALL BE ROUND HEAD GALVANIZED 18" DIA. x 3/4" LONG WITH WASHERS.
   OR
   b. CABLE-TIES SHALL BE NYLON, AT LEAST 8" LONG AND BETWEEN 75LB TO 120LB TENSILE STRENGTH.
4. EMBED THE LOWER EDGE OF THE MESH CYLINDER 1" BELOW THE SOIL SURFACE WITHOUT DISTURBING THE TREE ROOTS.
5. CUT EDGES WILL NOT BE PERMITTED AT THE TOP OF THE CYLINDER. STAKE WILL BE FLUSH WITH THE TOP OF THE CYLINDER.
6. MULCH WITHIN THE CYLINDER SHALL NOT EXCEED 3" DEPTH AND SHALL BE PULLED BACK FROM THE TRUNK AS SPECIFIED IN MULCH PLACEMENT DETAIL.
7. THE BOTTOM WHORL OF PINE AND LARCH BRANCHES MAY HAVE TO BE REMOVED TO PERMIT INSTALLATION OF 12" MIN. HEIGHT RODENT GUARDS.
8. INSTALL ON ALL DECIDUOUS, PINE AND LARCH TREES, DO NOT PLACE ON SPRUCE TREES.

RODENT PROTECTION

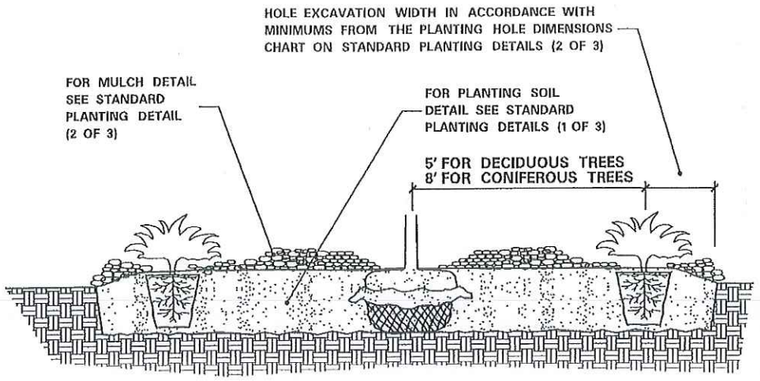
(MnDOT 2571.3I.2)

1. USE SEAMLESS, EXTRUDED, TWIN-WALL, RIGID AND SEMI TRANSLUCENT POLYPROPYLENE TUBES WITH A LASER LINE PERFORATION AND AN OUTWARD-FLARED TOP RIM.
2. SECURE SHELTER WITH NYLON CABLE-TIES ATTACHED TO A 1" x 1" WHITE OAK STAKE TO PREVENT DISLODGING OR TWISTING.
3. EMBED THE BOTTOM OF THE TUBE A MINIMUM OF 1" BELOW THE SOIL SURFACE WITHOUT DISTURBING THE TREE ROOTS.
4. PLACE A PLASTIC PHOTODEGRADABLE NETTING COVER AND SLEEVE OVER THE TOP OF THE TUBE. PULL NETTING DOWN AS SHOWN.

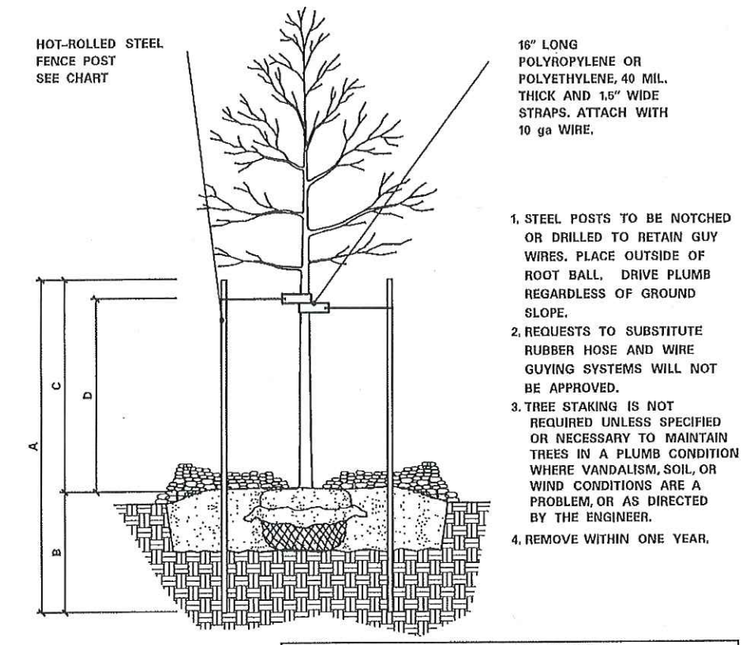


SEEDLING TREE SHELTER

(MnDOT 2571.3I.4)



PLANT SPACING IN MASS BEDS



1. STEEL POSTS TO BE NOTCHED OR DRILLED TO RETAIN GUY WIRES. PLACE OUTSIDE OF ROOT BALL. DRIVE PLUMB REGARDLESS OF GROUND SLOPE.
2. REQUESTS TO SUBSTITUTE RUBBER HOSE AND WIRE GUYING SYSTEMS WILL NOT BE APPROVED.
3. TREE STAKING IS NOT REQUIRED UNLESS SPECIFIED OR NECESSARY TO MAINTAIN TREES IN A PLUMB CONDITION WHERE VANDALISM, SOIL, OR WIND CONDITIONS ARE A PROBLEM, OR AS DIRECTED BY THE ENGINEER.
4. REMOVE WITHIN ONE YEAR.

STEEL POST SIZING

CALIPER	STEEL POST TYPE	A	B	C	D
LESS THAN 4 INCHES	HOT-ROLLED STEEL FENCE POST (MnDOT 3403) OR APPROVED EQUAL.	7'-0"	3'-0" MIN.	4'-0"	3'-0"
GREATER THAN 4 INCHES	10' 2.2 LB. FLANGED C-CHANNEL SIGN POST (MnDOT 3401) OR APPROVED EQUAL.	10'-0"	4'-0" MIN.	6'-0"	5'-0"

STAKING AND GUYING

(MnDOT 2571.3I.1)

REVISION:

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CHIEF ENVIRONMENTAL OFFICER

MINNESOTA DEPARTMENT OF TRANSPORTATION

STANDARD PLAN 5-297.301 | 3 OF 3

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STATE DESIGN ENGINEER

STANDARD PLANTING DETAILS

STATE PROJ. NO. 0206-969A (T.H. 47)

SHEET NO. 15 OF 15 SHEETS