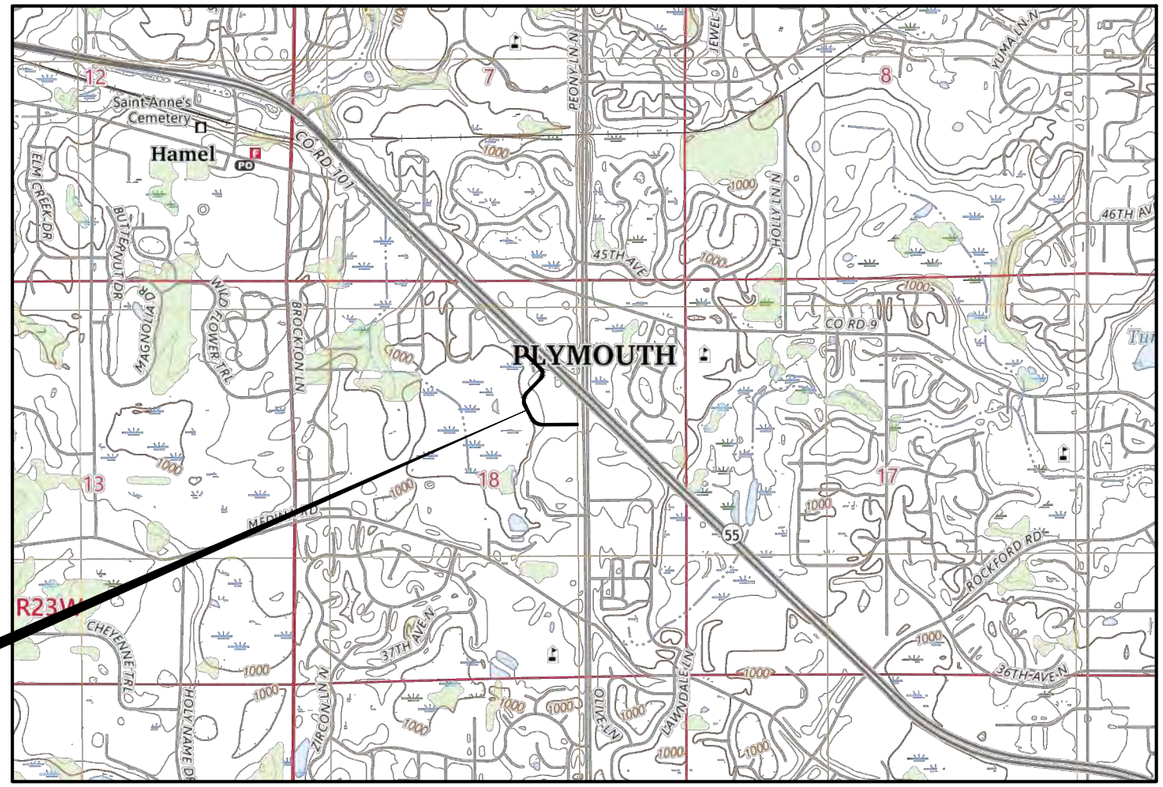
CITY OF PLYMOUTH

CONSTRUCTION PLANS FOR:

HAMEL ROAD EXTENSION

CITY PROJECT NO. ST170002



N

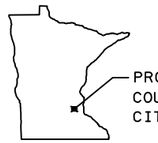
NOTE:

THE PLAN INDICATES THE GENERAL LOCATION OF KNOWN UTILITIES ON THE PROJECT. ALL UTILITY LOCATIONS ARE APPROXIMATE. PRIOR TO CONSTRUCTION THE CONTRACTOR SHALL VERIFY ALL UNDERGROUND UTILITY LOCATIONS AND ELEVATIONS WITH THE UTILITY COMPANIES.

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

SCALES

PLAN	50'
PROFILE	50'



PROJECT LOCATION
COUNTY: HENNEPIN
CITY: PLYMOUTH

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2/22/2025
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GOVERNING SPECIFICATIONS

THE 2024 EDITION OF THE CITY OF PLYMOUTH "ENGINEERING GUIDELINES AND STANDARD SPECIFICATIONS FOR CONSTRUCTION" SHALL GOVERN, SUPPLEMENTED BY THE 2020 EDITION OF THE MINNESOTA DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR CONSTRUCTION".

ALL TRAFFIC CONTROL DEVICES AND SIGNING SHALL CONFORM TO THE LATEST EDITION OF THE "MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MN MUTCD) INCLUDING THE LATEST "FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS".

SHEET INDEX

THIS PLAN CONTAINS 45 SHEETS

ALLIANT

SIGNATURE: _____ NAME: ERIC NELSON

DESIGN ENGINEER: 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.

2/27/2025 LICENSE NUMBER: 43560

City of Plymouth

_____ DATE: 3/3/2025

APPROVED: CITY OF PLYMOUTH

HAMEL ROAD EXTENSION

SHEET NO. 1 OF 45 SHEETS

STATEMENT OF ESTIMATED QUANTITIES

ITEM NO.	MNDOT ITEM NO.	ITEM		UNITS	TOTAL ESTIMATED QUANTITY
1	2021.501	MOBILIZATION		LUMP SUM	1
2	2101.502	CLEARING		EACH	2
3	2101.502	GRUBBING		EACH	2
4	2104.502	SALVAGE LIGHTING UNIT		EACH	1
5	2104.503	SAWING BIT PAVEMENT (FULL DEPTH)		LIN FT	175
6	2104.503	REMOVE PIPE CULVERTS	(1)	LIN FT	24
7	2104.503	REMOVE CURB & GUTTER		LIN FT	157
8	2104.503	SALVAGE FENCE		LIN FT	31
9	2104.504	REMOVE BITUMINOUS PAVEMENT		SQ YD	465
10	2104.518	REMOVE BITUMINOUS WALK		SQ FT	406
11	2106.507	EXCAVATION – COMMON	(P)	CU YD	3330
12	2106.507	EXCAVATION – SUBGRADE	(P)	CU YD	5750
13	2106.507	SELECT GRANULAR EMBANKMENT (CV)	(P)	CU YD	1630
14	2106.507	COMMON EMBANKMENT (CV)	(P)	CU YD	4530
15	2211.507	AGGREGATE BASE (CV) CLASS 5	(P)	CU YD	1410
16	2360.509	TYPE SP 12.5 WEARING COURSE MIX (3,C)		TON	470
17	2360.509	TYPE SP 12.5 NON WEARING COURSE MIX (3,C)		TON	470
18	2501.502	15" RC PIPE APRON		EACH	1
19	2502.503	6" PERF PVC PIPE DRAIN	(2)	LIN FT	2750
20	2502.602	6" PVC PIPE DRAIN CLEANOUT		EACH	15
21	2503.503	15" RC PIPE SEWER DES 3006 CL V		LIN FT	161
22	2506.502	CASTING ASSEMBLY	(3)	EACH	3
23	2506.502	ADJUST FRAME & RING CASTING		EACH	9
24	2506.602	CONNECT INTO EXISTING DRAINAGE STRUCTURE	(4)	EACH	4
25	2506.602	RECONSTRUCT DRAINAGE STRUCTURE		EACH	1
26	2506.603	CONST DRAINAGE STRUCTURE DESIGN SPECIAL	(5)	LIN FT	4.0
27	2506.603	CONST DRAINAGE STRUCTURE DESIGN SPECIAL 1	(6)	LIN FT	10.3
28	2511.507	RANDOM RIPRAP CLASS III	(7)	CU YD	4.8
29	2521.518	6" CONCRETE WALK		SQ FT	468
30	2521.518	3" BITUMINOUS WALK		SQ FT	11979
31	2521.602	DRILL & GROUT REINF BAR (EPOXY COATED)		EACH	27
32	2531.503	CONCRETE CURB & GUTTER DESIGN B424		LIN FT	24
33	2531.503	CONCRETE CURB & GUTTER DESIGN B618		LIN FT	2860
34	2531.504	8" CONCRETE DRIVEWAY PAVEMENT		SQ YD	42
35	2531.618	TRUNCATED DOMES		SQ FT	32
36	2545.602	INSTALL LIGHTING UNIT		EACH	1
37	2557.603	INSTALL FENCE		LIN FT	31
38	2563.601	TRAFFIC CONTROL SUPERVISOR		LUMP SUM	1
39	2563.601	TRAFFIC CONTROL		LUMP SUM	1
40	2564.618	SIGN		SQ FT	84
41	2573.501	STABILIZED CONSTRUCTION EXIT		EACH	2
42	2573.502	STORM DRAIN INLET PROTECTION		EACH	12
43	2573.503	SILT FENCE, TYPE HI		LIN FT	40
44	2573.503	SEDIMENT CONTROL LOG TYPE COMPOST		LIN FT	1995
45	2574.505	SOIL BED PREPARATION		ACRE	0.9
46	2574.507	COMMON TOPSOIL BORROW	(8)	CU YD	130
47	2574.508	FERTILIZER TYPE 1		POUND	120
48	2574.508	FERTILIZER TYPE 3		POUND	180
49	2575.504	ROLLED EROSION PREVENTION CATEGORY 35		SQ YD	36
50	2575.505	SEEDING		ACRE	0.9
51	2575.508	HYDRAULIC STABILIZED FIBER MATRIX		POUND	2480
52	2575.608	SEED RESIDENTIAL TURFGRASS		POUND	70
53	2575.608	SEED SOUTHERN TALLGRASS ROADSIDE		POUND	20
54	2582.503	4" SOLID LINE MULTI–COMPONENT		LIN FT	122
55	2582.503	4" DOUBLE SOLID LINE MULTI–COMPONENT		LIN FT	1408
56	2582.518	CROSSWALK PREFORM THERMOPLASTIC GROUND IN		SQ FT	72

NOTES:
(P) DENOTES PLAN QUANTITY ITEM.
(1) PIPE APRON REMOVAL IS INCIDENTAL.
(2) SUBDRAIN PIPE SHALL INCLUDE TYPE 1 GEOTEXTILE FABRIC (INCIDENTAL).
(3) SEE STORM SEWER TABULATION ON SHEET 32.
(4) FOR CONNECTION OF SUBDRAIN TO EXISTING STRUCTURES.
(5) SEE CITY STANDARD PLATE ST–2.
(6) SEE CITY STANDARD PLATE ST–6.
(7) RIPRAP SHALL BE GRANITE.
(8) CONTRACTOR SHALL SALVAGE AND INSTALL ONSITE TOPSOIL TO THE EXTENT POSSIBLE. QUANTITY ASSUMES 50 PERCENT OF REQUIRED TOPSOIL TO BE IMPORTED.

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NO	DATE	DWN	CKD	REVISIONS

ALLIANT

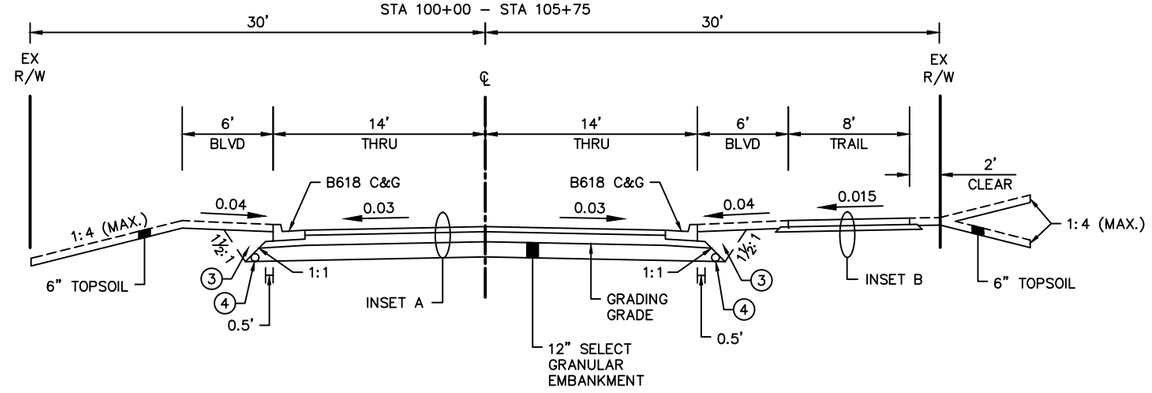
I HEREBY CERTIFY THAT THIS SHEET WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

PRINT NAME: ERIC NELSON
SIGNATURE:
DATE 2/27/2025 LICENSE # 43560

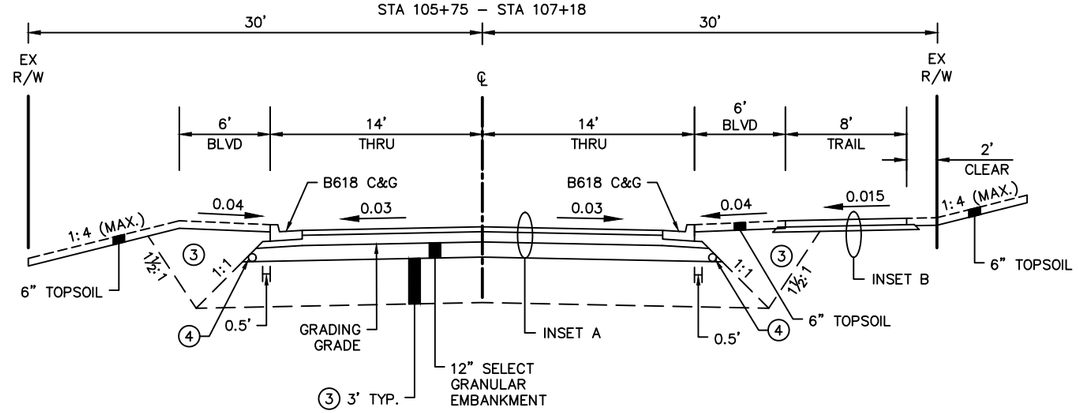
STATEMENT OF ESTIMATED QUANTITIES

HAMEL ROAD EXTENSION

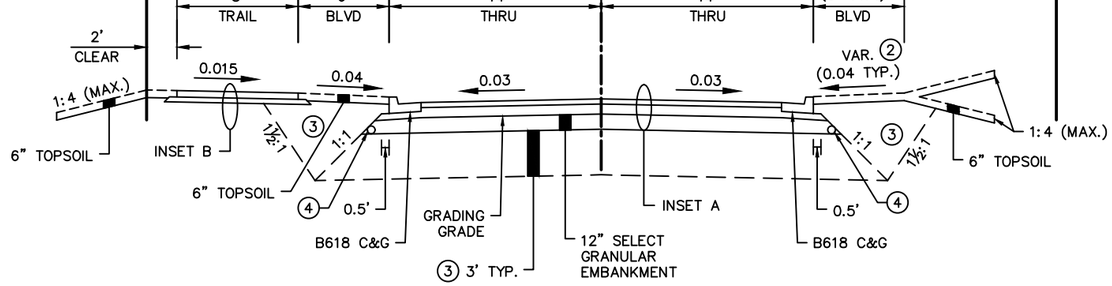
HAMEL ROAD
PROPOSED TYPICAL SECTION
STA 100+00 – STA 105+75



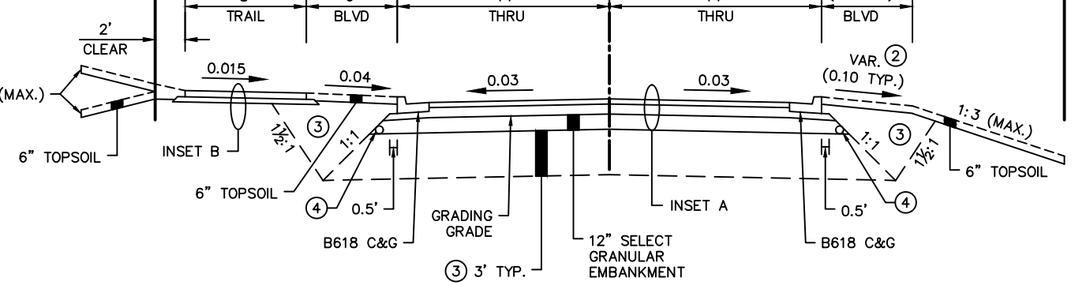
HAMEL ROAD
PROPOSED TYPICAL SECTION
STA 105+75 – STA 107+18



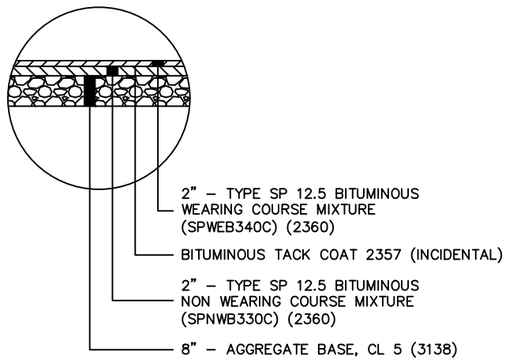
HAMEL ROAD
PROPOSED TYPICAL SECTION
STA 107+18 – STA 108+50
STA 113+50 – END OF PROJECT



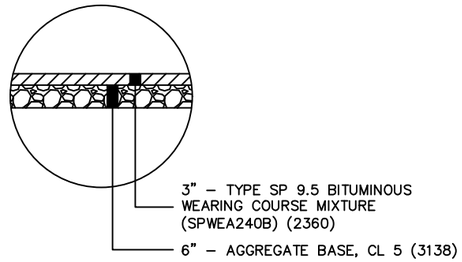
HAMEL ROAD
PROPOSED TYPICAL SECTION
STA 108+50 – STA 113+50



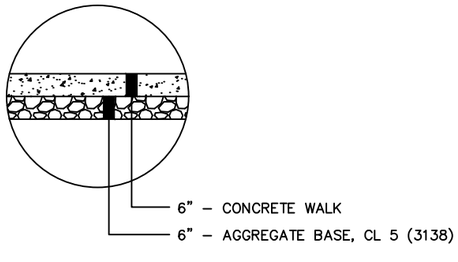
INSET A
BITUMINOUS ROADWAY



INSET B
BITUMINOUS TRAIL



INSET C
PEDESTRIAN RAMPS



SPECIFIC NOTES:

1. 4 FT BETWEEN STA 108+90–110+25 AND STA 112+55–113+25
2. 1:6 SLOPE BETWEEN STA 108+90–110+25 AND STA 112+55–113+25
3. EXTENTS AND DEPTH OF ADDITIONAL SUBGRADE EXCAVATION TO BE VERIFIED BY ENGINEER ON SITE. BACKFILL WITH COMMON EMBANKMENT PER MNDOT SPEC 2106.2.B.1
4. 6" PERF PVC PIPE DRAIN – SEE SHEETS 27–29 FOR ROUTING

GENERAL NOTES:

1. TYPICAL SECTIONS ARE NOT TO SCALE.
2. ALL CROSS SLOPES ARE EXPRESSED IN FT/FT.
3. SEE REMOVAL PLAN FOR SAWCUT LOCATIONS.
4. SEE CONSTRUCTION PLAN AND PROFILE FOR PAVEMENT LIMITS.
5. AGGREGATE BASE TO EXTEND 1' MINIMUM BEYOND EDGE OF TRAIL.
6. ALL DIMENSIONS AT CURB & GUTTER ARE MEASURED TO BACK OF CURB.
7. SEE CROSS SECTIONS FOR TIE IN SLOPES.

NO	DATE	DWN	CKD	REVISIONS

ALLIANT

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

PRINT NAME: ERIC NELSON
SIGNATURE:
DATE 2/27/2025 LICENSE # 43560

TYPICAL SECTIONS

HAMEL ROAD EXTENSION

SHEET NO. 3 OF 45 SHEETS

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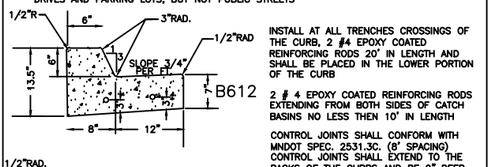
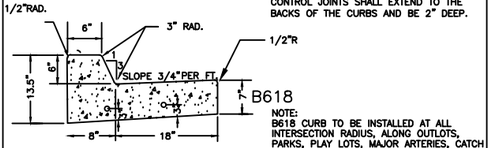
NOTE: B612 CURB MAY BE USED FOR PRIVATE DRIVES AND PARKING LOTS, BUT NOT PUBLIC STREETS



INSTALL AT ALL TRENCHES CROSSINGS OF THE CURB, 2 #4 EPOXY COATED REINFORCING RODS 20' IN LENGTH AND SHALL BE PLACED IN THE LOWER PORTION OF THE CURB

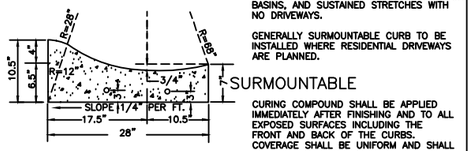
2 # 4 EPOXY COATED REINFORCING RODS EXTENDING FROM BOTH SIDES OF CATCH BASINS NO LESS THEN 10' IN LENGTH

CONTROL JOINTS SHALL CONFORM WITH MNDOT SPEC. 2531.3C. (8' SPACING) CONTROL JOINTS SHALL EXTEND TO THE BACKS OF THE CURBS AND BE 2" DEEP.

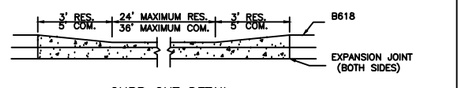


NOTE:
B618 CURB TO BE INSTALLED AT ALL INTERSECTION RADIUS, ALONG OUTLOTS, PARKS, PLAY LOTS, MAJOR ARTERIES, CATCH BASINS, AND SUSTAINED STRETCHES WITH NO DRIVEWAYS.

GENERALLY SURMOUNTABLE CURB TO BE INSTALLED WHERE RESIDENTIAL DRIVEWAYS ARE PLANNED.



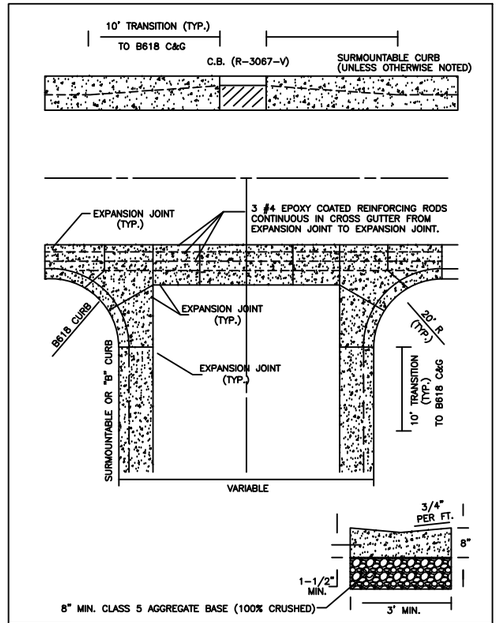
CURING COMPOUND SHALL BE APPLIED IMMEDIATELY AFTER FINISHING AND TO ALL EXPOSED SURFACES INCLUDING THE FRONT AND BACK OF THE CURBS. COVERAGE SHALL BE UNIFORM AND SHALL MATCH THE APPEARANCE OF A WHITE SHEET OF PAPER.



CURB CUT DETAIL

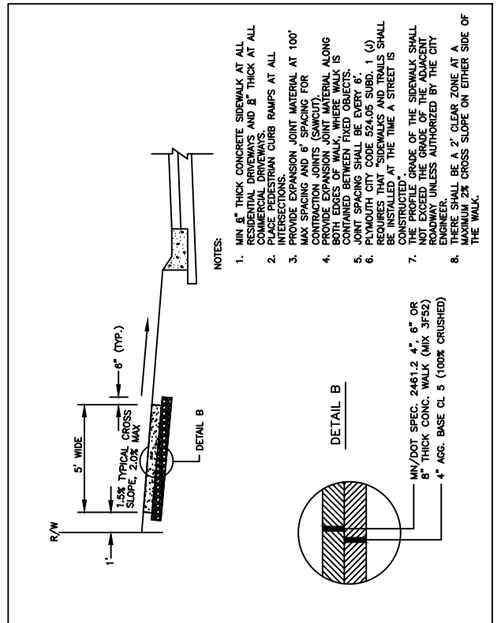
STANDARD DETAILS
STANDARD CURB DETAILS
CITY OF PLYMOUTH

PUBLISHED 1-24
CITY PL. NO. STRT-1
REVISED 1-22



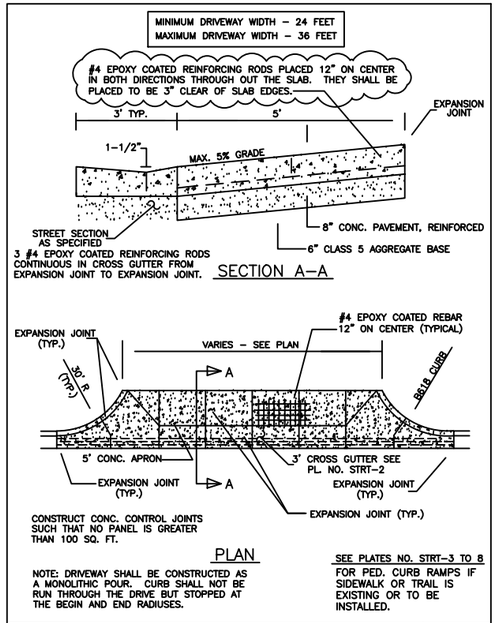
STANDARD DETAILS
CONCRETE CROSS GUTTER
CITY OF PLYMOUTH

PUBLISHED 1-24
CITY PL. NO. STRT-2
REVISED 1-22



STANDARD DETAILS
CONCRETE WALK SECTION
CITY OF PLYMOUTH

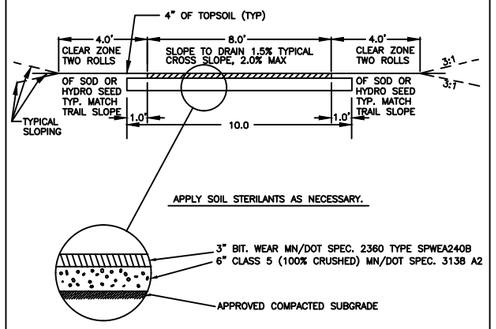
PUBLISHED 1-24
CITY PL. NO. STRT-10
REVISED 1-21



STANDARD DETAILS
INDUSTRIAL / COMMERCIAL DRIVEWAY
CITY OF PLYMOUTH

PUBLISHED 1-24
CITY PL. NO. STRT-12
REVISED 3-23

PUBLIC OR PRIVATE TRAILS



NOTES:

1. PLACE CONCRETE PEDESTRIAN CURB RAMPS AT ALL INTERSECTIONS SEE DETAILS STRT-3 THROUGH STRT-8.
2. PLYMOUTH CITY CODE 524.05 SUBD. 1 (J) REQUIRES THAT "SIDEWALKS AND TRAILS SHALL BE INSTALLED AT THE TIME A STREET IS CONSTRUCTED".
3. THE PROFILE GRADE OF THE TRAIL SHALL NOT EXCEED THE GRADE OF THE ADJACENT ROADWAY UNLESS AUTHORIZED BY THE CITY ENGINEER.

STANDARD DETAILS
TYPICAL TRAIL CROSS SECTION
CITY OF PLYMOUTH

PUBLISHED 1-24
CITY PL. NO. STRT-15
REVISED 1-24

THE INTENT OF THESE SPECIFICATIONS IS TO HAVE A UNIFORM TRAFFIC CONTROL SIGNS THROUGHOUT THE CITY. THIS IS IMPORTANT FOR AESTHETIC PURPOSES AND WILL EASE REPAIRS, KEEPING THE NUMBER AND TYPES OF PARTS NEEDED IN INVENTORY TO A MINIMUM.

THE SPECIFICATIONS INCLUDE, BUT ARE NOT LIMITED TO: REGULATORY, PARKING, SCHOOL, WARNING, PARK AND INFORMATION SIGNS.

ALL SIGNAGE SHALL BE SHOWN ON THE STREET PLANS OR A SEPARATE PLAN SHEET FOR THE PROJECT.

THE CITY PUBLIC WORKS DEPARTMENT SHALL APPROVE ALL SIGNS AND MATERIALS PRIOR TO INSTALLATION. (SUBMIT SHOP DRAWINGS FOR REVIEW AND APPROVAL)

SIGNS:
COMMON SIGN SIZES:
STOP - R1-1, 30" X 30"
"NO PARKING ANY TIME" (SYMBOL W/"ANY TIME" UNDERNEATH)- R7-2A, 12" X 18"
SPEED LIMIT - R2-1, 24" X 30"
STOP AHEAD - W3-1, 36" X 36"
SIGNAL AHEAD - W3-3, 36" X 36"
KEEP RIGHT - R4-7, 24" X 30"
OBJECT MARKER - OM1-2, 18" X 18" (BLACK BACKGROUND W/ YELLOW REFLECTORS)
NO OUTLET - W14-2, 30" X 30"

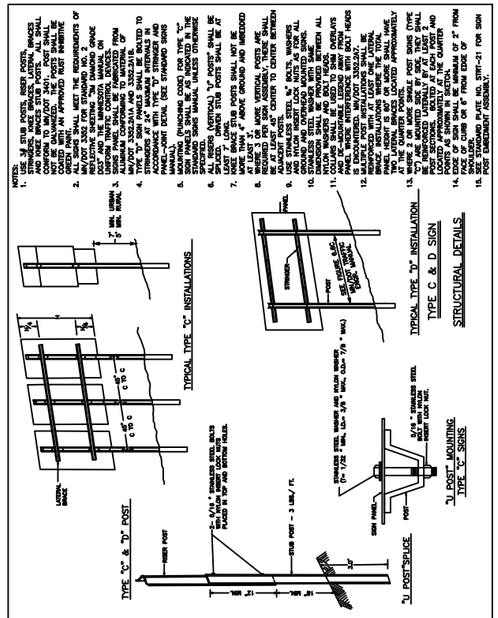
ALL SIGNS SHALL BE LYLE SIGNS OR APPROVED EQUAL.
ALL SIGNS WILL HAVE "3M" HIGH INTENSITY REFLECTIVE SHEETING OR APPROVED EQUAL.
ALL SIGNS SHALL BE ON ALUMINUM PLATE.
ALL SIGNS UP TO 18" SHALL BE .080 MIN. THICKNESS.
ALL SIGNS OVER 30" SHALL BE 0.100 MIN. THICKNESS.
ALL SIGNS TO BE SIZED ACCORDING TO MN MUTCD MANUAL.
AND PUNCHED WITH 3/8" HOLES MEETING MN/DOT SPECS.
STREET SIGNS SHALL NOT INCLUDE "N" FOR NORTH

POSTS:
THE SIGN SUPPORTS WILL BE EITHER A "U" CHANNEL POST, PAINTED GREEN OR A 3" DIAMETER, 12' LONG TUBE POST. THE POSTS SHALL BE 2 & 3 LBS. PER FT. AND 6,7 AND 8' IN LENGTH. ALL SIGNS UP TO 18" SHALL BE MOUNTED ON 2 U-CHANNEL POSTS, EACH 2 LBS., ONE 7' LONG AND ONE 6' LONG. THE LONGER POST TO BE DRIVEN IN THE GROUND FIRST.
ALL SIGNS 18" TO 30" SHALL USE A 8' - 3 LB. POST AND A 7' - 2 LB. POST, WITH THE 3LB. POST DRIVEN INTO THE GROUND FIRST.
ALL SIGNS OVER 30" SHALL USE 2 SETS OF POSTS. (THE HEAVIER POST PLACED IN THE GROUND FIRST)
ALL U-CHANNEL POSTS WILL BE POUNDED 3' INTO THE GROUND.

PLACEMENT AND MOUNTING HEIGHTS:
SEE PLATES STRT-21 THROUGH STRT-25
ALL TUBE POST SHALL BE PLACED IN A 10" DIAMETER BY 3' DEEP CONCRETE FOOTING FLARED AT THE BOTTOM.
IT WILL BE THE RESPONSIBILITY OF THE INSTALLER TO HAVE ALL UNDERGROUND UTILITIES LOCATED.

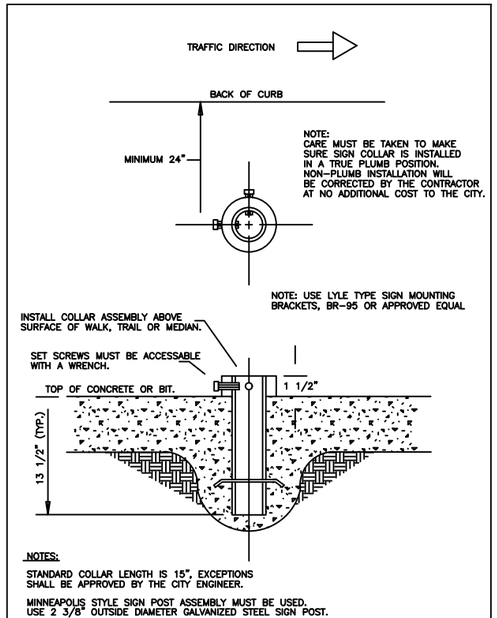
STANDARD DETAILS
TRAFFIC SIGN SPECIFICATIONS
CITY OF PLYMOUTH

PUBLISHED 1-24
CITY PL. NO. STRT-21
REVISED 1-20



STANDARD DETAILS
TRAFFIC SIGNS
CITY OF PLYMOUTH

PUBLISHED 1-24
CITY PL. NO. STRT-22
REVISED 3-11



NOTES:

STANDARD COLLAR LENGTH IS 15", EXCEPTIONS SHALL BE APPROVED BY THE CITY ENGINEER.

MINNEAPOLIS STYLE SIGN POST ASSEMBLY MUST BE USED. USE 2 3/8" OUTSIDE DIAMETER GALVANIZED STEEL SIGN POST.

STANDARD DETAILS
SIGN POST EMBEDMENT ASSEMBLY
CITY OF PLYMOUTH

PUBLISHED 1-24
CITY PL. NO. STRT-23
REVISED 3-11

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NO	DATE	DWN	CKD	REVISIONS

ALLIANT

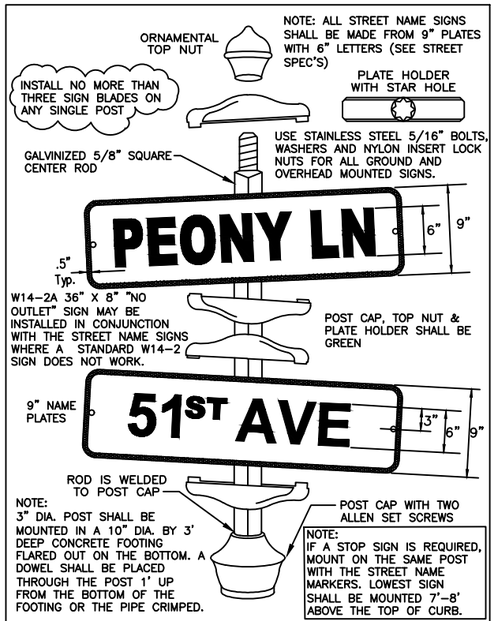
I HEREBY CERTIFY THAT THIS SHEET WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

PRINT NAME: ERIC NELSON
SIGNATURE:
DATE 2/27/2025 LICENSE # 43560

DETAILS & STANDARD PLANS

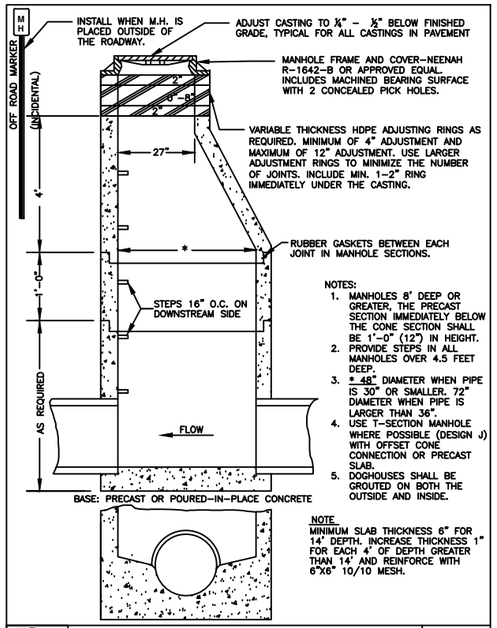
HAMEL ROAD EXTENSION

SHEET NO. 4 OF 45 SHEETS



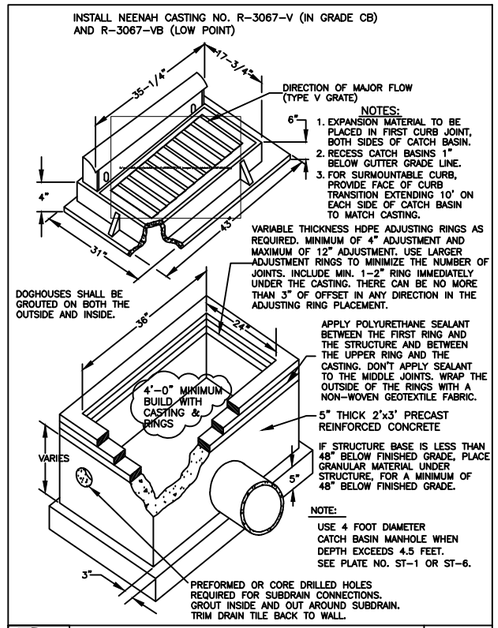
STANDARD DETAILS
STREET NAME MARKER
CITY OF PLYMOUTH

PUBLISHED 1-24
CITY PL. NO. STRT-24
REVISED 1-24



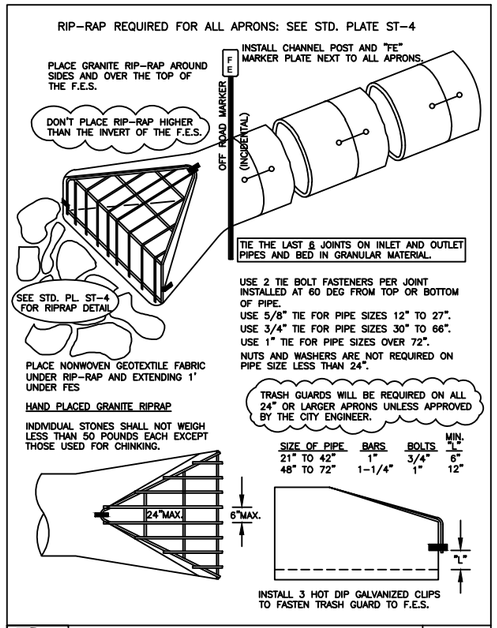
STANDARD DETAILS
STORM SEWER MANHOLE WITH CONE SECTION
CITY OF PLYMOUTH

PUBLISHED 1-24
CITY PL. NO. ST-1
REVISED 1-17



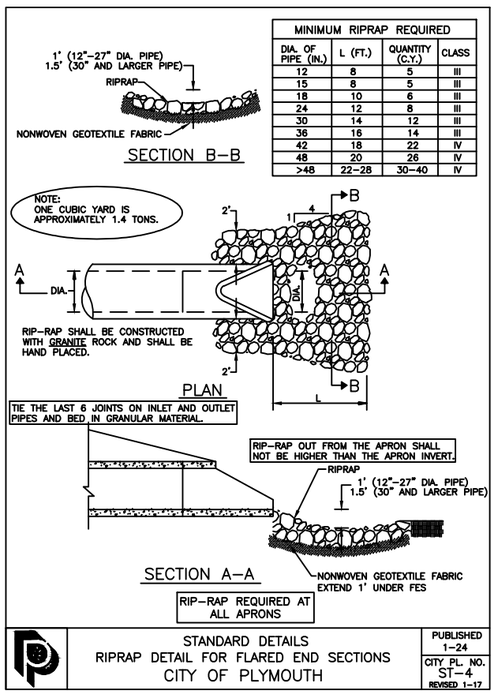
STANDARD DETAILS
CATCH BASIN (MAX. DEPTH 4.5')
CITY OF PLYMOUTH

PUBLISHED 1-24
CITY PL. NO. ST-2
REVISED 1-21



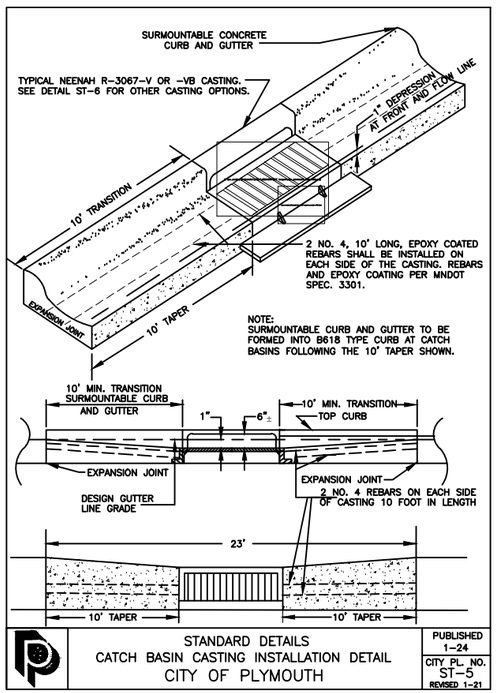
STANDARD DETAILS
INLET & OUTLET F.E.S. WITH TRASH GUARD
CITY OF PLYMOUTH

PUBLISHED 1-24
CITY PL. NO. ST-3
REVISED 1-17



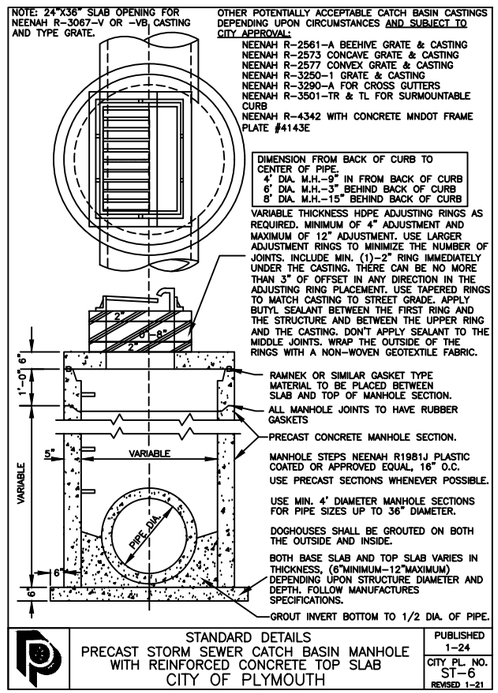
STANDARD DETAILS
RIPRAP DETAIL FOR FLARED END SECTIONS
CITY OF PLYMOUTH

PUBLISHED 1-24
CITY PL. NO. ST-4
REVISED 1-17



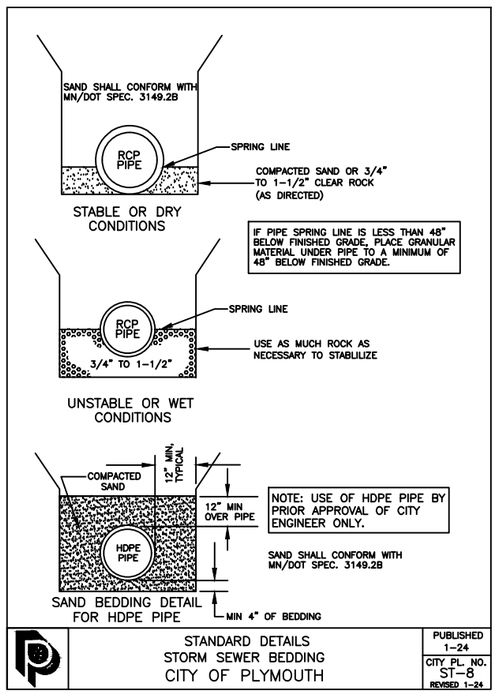
STANDARD DETAILS
CATCH BASIN CASTING INSTALLATION DETAIL
CITY OF PLYMOUTH

PUBLISHED 1-24
CITY PL. NO. ST-5
REVISED 1-21



STANDARD DETAILS
PRECAST STORM SEWER CATCH BASIN MANHOLE WITH REINFORCED CONCRETE TOP SLAB
CITY OF PLYMOUTH

PUBLISHED 1-24
CITY PL. NO. ST-6
REVISED 1-21



STANDARD DETAILS
STORM SEWER BEDDING
CITY OF PLYMOUTH

PUBLISHED 1-24
CITY PL. NO. ST-8
REVISED 1-24

10/24/2024 2:58 PM
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NO	DATE	DWN	CKD	REVISIONS

ALLIANT

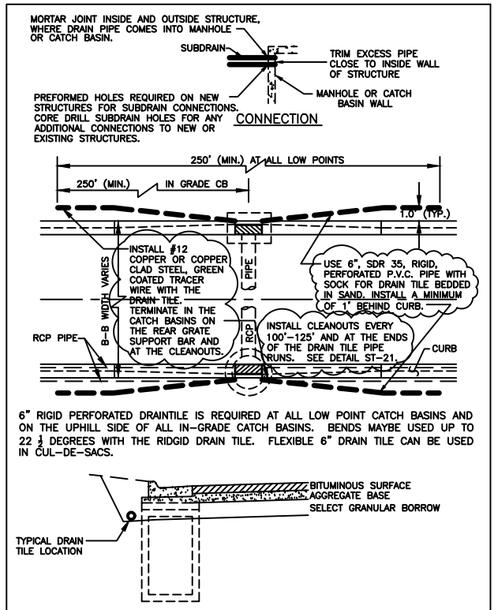
I HEREBY CERTIFY THAT THIS SHEET WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

PRINT NAME: ERIC NELSON
SIGNATURE:
DATE 2/27/2025 LICENSE # 43560

DETAILS & STANDARD PLANS

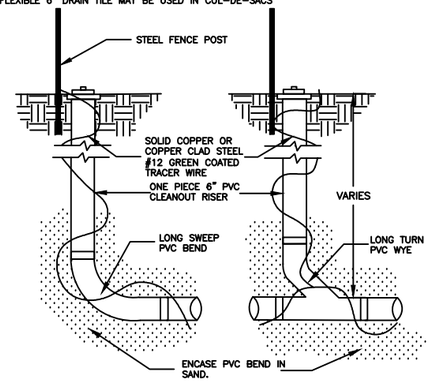
HAMEL ROAD EXTENSION

SHEET NO. 5 OF 45 SHEETS



	STANDARD DETAILS SUBDRAIN DETAILS CITY OF PLYMOUTH	PUBLISHED 1-24 CITY PL. NO. ST-9 REVISED 1-24

NOTE:
- 6" HUB WITH THREADED PVC CAP, DO NOT GLUE
- COVER WITH FORD METER BOX A-1 CASTING OR APPROVED EQUAL. SET COVER FLUSH WITH FINISHED GRADE AND PLACE TEMPORARY STEEL FENCE POST NEXT TO EACH CLEAN OUT
- TERMINATE #12 GREEN COATED TRACER WIRE UNDER THE METER BOX CASTING AND INSIDE THE CATCH BASINS ON THE REAR GRATE SUPPORT
- INSTALL STEEL FENCE POST BEHIND EACH CLEANOUT
- ENCLOSE LONG SWEEP BEND OR WYE IN AGGREGATE MATERIAL AS SHOWN
- BENDS SHALL NOT BE GREATER THAN 22 ½ DEGREES
- FLEXIBLE 6" DRAIN TILE MAY BE USED IN CUL-DE-SACS



END OF LINE CLEANOUT

IN LINE CLEANOUT

INSTALL CLEANOUTS EVERY 100' TO 125'. CONNECT STREET DRAINTILE CB TO CB WHERE PRACTICAL.

	STANDARD DETAILS PVC STREET DRAIN TILE CLEANOUTS CITY OF PLYMOUTH	PUBLISHED 1-24 CITY PL. NO. ST-21 REVISED 1-24

CITY OF PLYMOUTH [6"]

(PROJECT NAME) [3"]
(PROJECT NO.) [2-1/2"]

PROCEED WITH CAUTION [6"]

FOR INFORMATION: [2-1/2"]
(PROJECT WEBPAGE)
(763) 509-5500

(CONTRACTOR'S NAME) [2-1/2"]
(ADDRESS)
(LOCAL PHONE NO.)

SCHEDULED COMPLETION DATE: [2-1/2"]
(DATE)

NOTE:
Sign shall be 4' x 6' with a white background with black letters, (no hand lettering) and of proper height to be readily visible from an automobile, and located as directed by engineer. Sign shall be mounted on 4"x 4" posts

( ) Project Specific Information

	STANDARD DETAILS STANDARD CITY PROJECT SIGN CITY OF PLYMOUTH	PUBLISHED 1-24 CITY PL. NO. DWG-1 REVISED 1-22

NO	DATE	DWN	CKD	REVISIONS

ALLIANT

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

PRINT NAME: ERIC NELSON
SIGNATURE:
DATE 2/27/2025 LICENSE # 43560

DETAILS & STANDARD PLANS

HAMEL ROAD EXTENSION

SHEET NO. 6 OF 45 SHEETS

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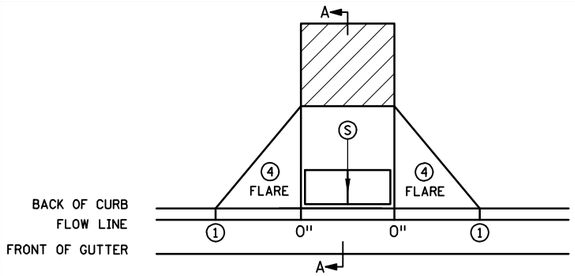
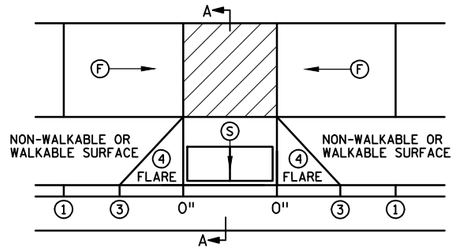
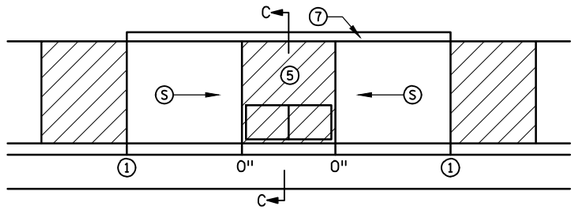


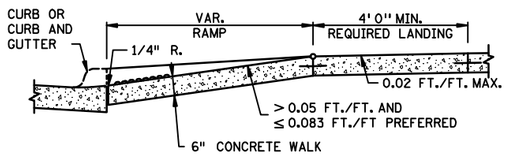
PERPENDICULAR



TIERED PERPENDICULAR

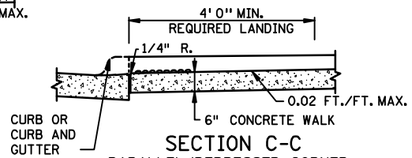


PARALLEL



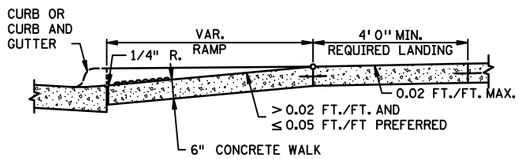
SECTION A-A

PERPENDICULAR/TIERED/DIAGONAL



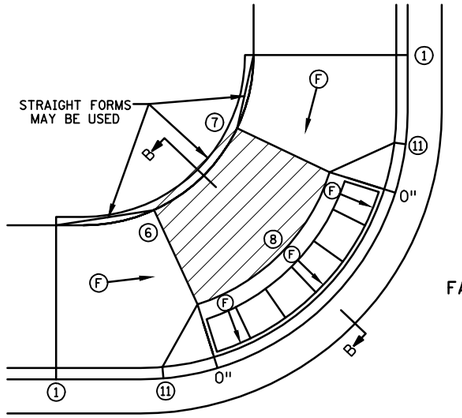
SECTION C-C

PARALLEL/DEPRESSED CORNER

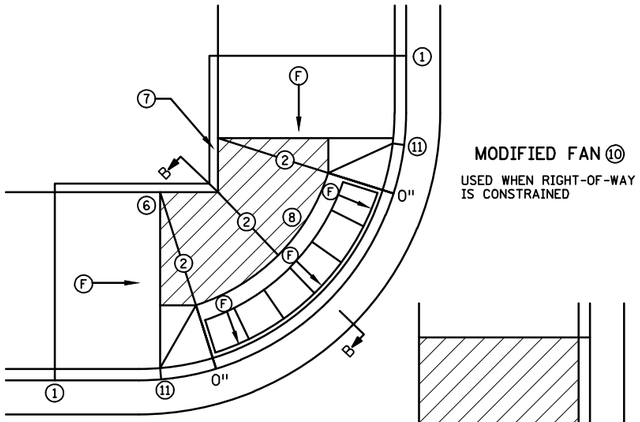


SECTION B-B

FAN

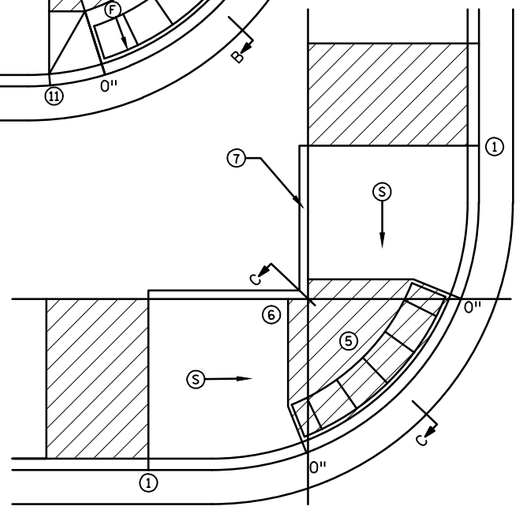


FAN (10)

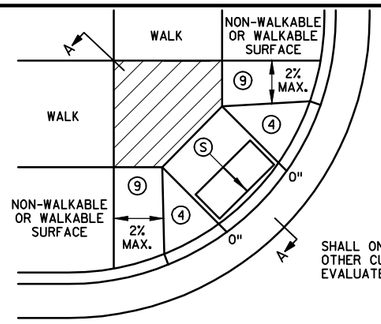


MODIFIED FAN (10)

USED WHEN RIGHT-OF-WAY
IS CONSTRAINED



DEPRESSED CORNER



DIAGONAL

SHALL ONLY BE USED AFTER ALL OTHER CURB RAMP TYPES HAVE BEEN EVALUATED AND DEEMED IMPRACTICAL

NOTES:

LANDINGS SHALL BE LOCATED ANYWHERE THE PEDESTRIAN ACCESS ROUTE (PAR) CHANGES DIRECTION, AT THE TOP OF RAMPS THAT HAVE RUNNING SLOPES GREATER THAN 5.0%, AND IF THE APPROACHING WALK IS INVERSE GRADE GREATER THAN 2%.

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

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

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

ALL GRADE BREAKS WITHIN THE PAR SHALL BE PERPENDICULAR TO THE PATH OF TRAVEL, THUS BOTH SIDES OF A SLOPED WALKING SURFACE MUST BE EQUAL LENGTH. (EXCEPT AS STATED IN (6) BELOW.

TO ENSURE RAMPS AND LANDINGS ARE PROPERLY CONSTRUCTED, ALL INITIAL LANDINGS AT A TOP OF A RAMPED SURFACE (RUNNING SLOPE GREATER THAN 2%) SHALL BE FORMED AND PLACED SEPARATELY IN AN INDEPENDENT CONCRETE POUR. FOLLOW SIDEWALK REINFORCEMENT DETAILS ON SHEET 6 OF 6 FOR ALL SEPARATELY POURED INITIAL LANDINGS.

WHEN SIDEWALK IS AT BACK OF CURB, TOP OF CURB SHALL MATCH PROPOSED ADJACENT WALK GRADE.

MAINTAIN POSITIVE BOULEVARD DRAINAGE TO TOP OF CURB.

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

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

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

RECTANGULAR DETECTABLE WARNINGS SHALL BE SETBACK 3" FROM THE BACK OF CURB. RADIAL DETECTABLE WARNINGS SHALL BE SETBACK 3" MINIMUM TO 6" MAXIMUM FROM THE BACK OF CURB.

(1) MATCH FULL HEIGHT CURB.

(2) 4' MINIMUM DEPTH LANDING REQUIRED ACROSS TOP OF RAMP.

(3) 3" HIGH CURB WHEN USING A 3' LONG RAMP, 4" HIGH CURB WHEN USING A 4' LONG RAMP.

(4) SEE SHEET 4 OF 6, TYPICAL SIDE TREATMENT OPTIONS, FOR DETAILS ON FLARES AND RETURNED CURBS.

(5) DETECTABLE WARNINGS MAY BE PART OF THE 4' X 4' MIN. LANDING AREA IF IT IS NOT FEASIBLE TO CONSTRUCT THE LANDING OUTSIDE OF THE DETECTABLE WARNING AREA.

(6) THE GRADE BREAK SHALL BE PERPENDICULAR TO THE BACK OF WALK. THIS WILL ENSURE THAT THE GRADE BREAK IS PERPENDICULAR TO THE DIRECTION OF TRAVEL. (TYPICAL FOR ALL)

(7) WHEN ADJACENT TO GRASS, GRADING SHALL ALWAYS BE USED WHEN FEASIBLE. V CURB, IF USED, SHALL BE PLACED OUTSIDE THE SIDEWALK LIMITS WHEN RIGHT OF WAY ALLOWS. WHEN ADJACENT TO PARKING LOTS, CONCRETE OR BITUMINOUS TAPERS LESS THAN 5% RUNNING SLOPE SHOULD BE USED OVER V CURB TO REDUCE TRIPPING HAZARDS AND FACILITATE SNOW & ICE REMOVAL.

(8) A 7' MIN TOP RADIUS GRADE BREAK IS REQUIRED TO BE CONSTRUCTIBLE.

(9) PAVE FULL WALK WIDTH.

(10) "S" SLOPES ON FANS SHALL ONLY BE USED WHEN ALL OTHER FEASIBLE OPTIONS HAVE BEEN EVALUATED AND DEEMED IMPRACTICAL.

(11) INTERMEDIATE CURB HEIGHTS TAPER SHALL RISE AT 8-10% TO A MINIMUM 3" CURB HEIGHT. REDUCE INTERMEDIATE CURB HEIGHT TO 2+ INCHES IF NECESSARY TO MATCH ADJACENT BOULEVARD OR SIDEWALK GRADES.

LEGEND

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

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

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

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

X" CURB HEIGHT

REVISION:

APPROVED: 11-04-2021

JEFFREY PERKINS
OPERATIONS DIVISION

MINNESOTA DEPARTMENT OF TRANSPORTATION

STANDARD PLAN ~~5-297.250~~ | 1 OF 6

APPROVED: 11-04-2021
REVISED:

THOMAS STYRBICKI
STATE DESIGN ENGINEER

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

PEDESTRIAN CURB RAMP DETAILS

NO	DATE	DWN	CKD	REVISIONS

ALLIANT

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

PRINT NAME: ERIC NELSON
SIGNATURE:
DATE 2/27/2025 LICENSE # 43560

DETAILS & STANDARD PLANS

HAMEL ROAD EXTENSION

SHEET NO. 7 OF 45 SHEETS

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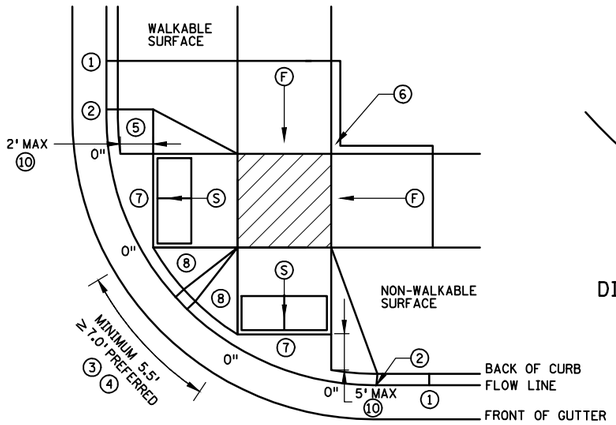
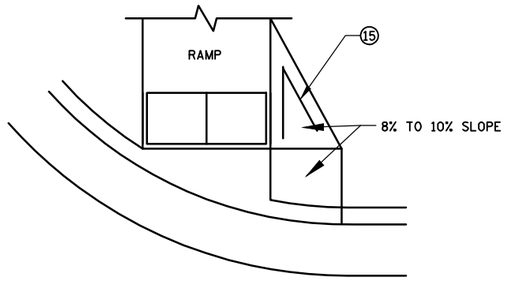
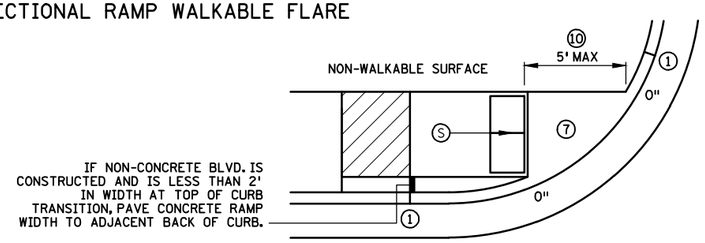


COMBINED DIRECTIONAL

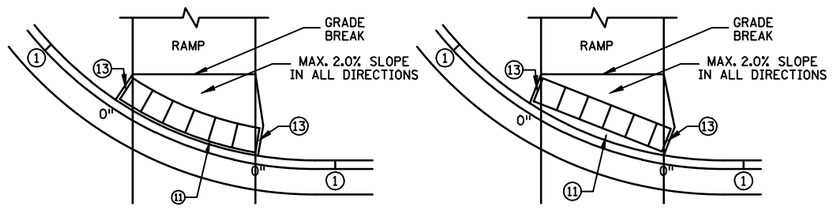


DIRECTIONAL RAMP WALKABLE FLARE



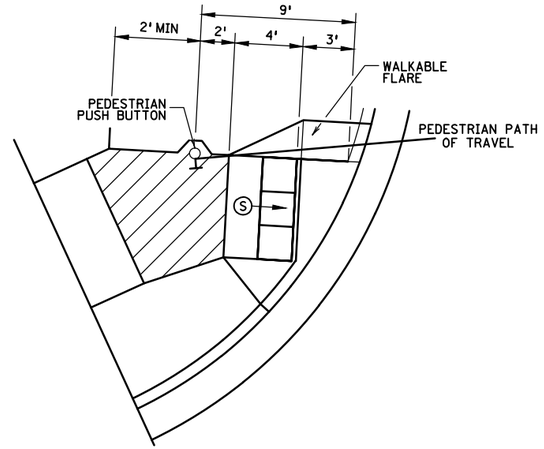
IF NON-CONCRETE BLVD. IS CONSTRUCTED AND IS LESS THAN 2' IN WIDTH AT TOP OF CURB TRANSITION, PAVE CONCRETE RAMP WIDTH TO ADJACENT BACK OF CURB.

STANDARD ONE-WAY DIRECTIONAL ⑨



DETECTABLE WARNING PLACEMENT WHEN SETBACK CRITERIA IS EXCEEDED ⑫

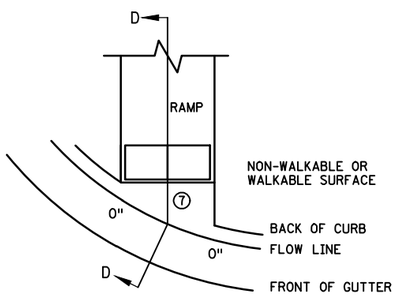
ONE-WAY DIRECTIONAL WITH DETECTABLE WARNING AT BACK OF CURB

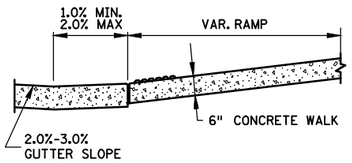


SEMI-DIRECTIONAL RAMP ③④⑨

3' DOME SETBACK, 4' LONG RAMP AND PUSH BUTTON 9' FROM THE BACK OF CURB

PRIMARILY USED FOR APS APPLICATIONS WHERE THE PAR DOES NOT CONTINUE PAST THE PUSH BUTTON (DEAD-END SIDEWALK)





SECTION D-D

CURB FOR DIRECTIONAL RAMPS ⑭

NOTES:

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

INITIAL CURB RAMP LANDINGS SHALL BE CONSTRUCTED WITHIN 15' FROM THE BACK OF CURB, WITH 5' FROM THE BACK OF CURB BEING THE PREFERRED DISTANCE, ONLY APPLICABLE WHEN THE INITIAL RAMP RUNNING SLOPE IS OVER 5.0%.

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

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

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

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

TOP OF CURB SHALL MATCH PROPOSED ADJACENT WALK GRADE.

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

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

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

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

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

① MATCH FULL CURB HEIGHT.

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

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

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

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

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

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

⑧ 8% TO 10% WALKABLE FLARE.

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

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

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

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

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

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

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

LEGEND

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

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

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

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

X" CURB HEIGHT

REVISION:

APPROVED: 11-04-2021
JEFFREY PERKINS
OPERATIONS DIVISION

MINNESOTA DEPARTMENT OF TRANSPORTATION

STANDARD PLAN ~~5-297.250~~ 2 OF 6

APPROVED: 11-04-2021
REVISED:

THOMAS SZYMECKI
STATE DESIGN ENGINEER

STATE PROJ. NO.

PEDESTRIAN CURB RAMP DETAILS

(T.H.) SHEET NO. OF SHEETS

NO	DATE	DWN	CKD	REVISIONS

ALLIANT

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

PRINT NAME: ERIC NELSON
SIGNATURE:
DATE 2/27/2025 LICENSE # 43560

DETAILS & STANDARD PLANS

HAMEL ROAD EXTENSION

SHEET NO. 8 OF 45 SHEETS

10/24/2024 2:58 PM
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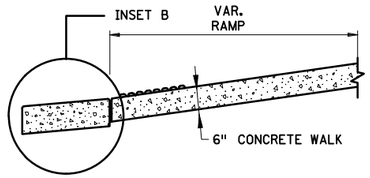
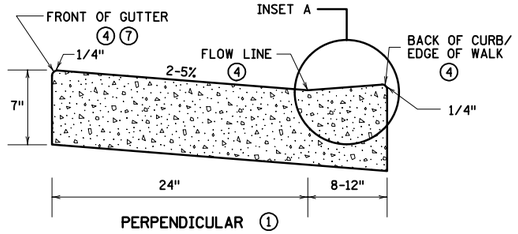
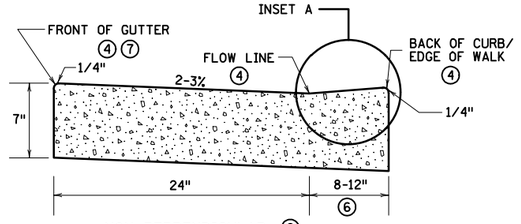
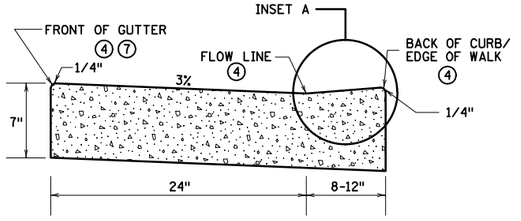




PERPENDICULAR ①

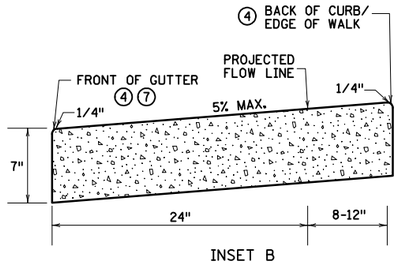


NON PERPENDICULAR ②

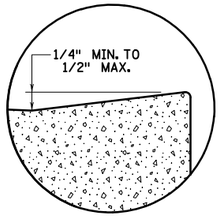


FOR CURB MACHINE PLACEMENT AROUND RADIUS ③
(REGARDLESS OF RAMP TYPE)

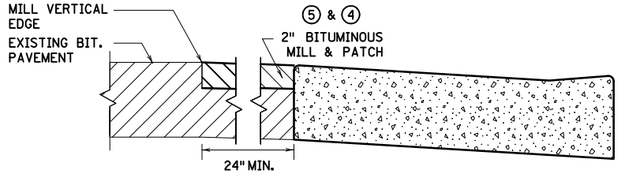
PEDESTRIAN ACCESS ROUTE CURB & GUTTER DETAIL

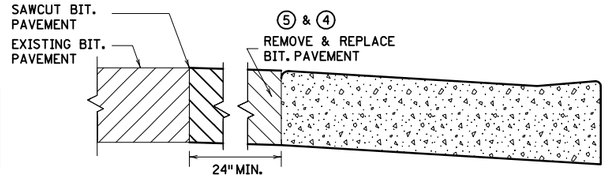


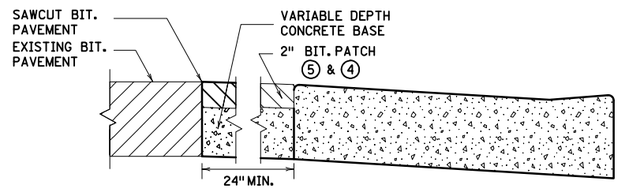
INSET B
OUTFLOW GUTTER ⑧



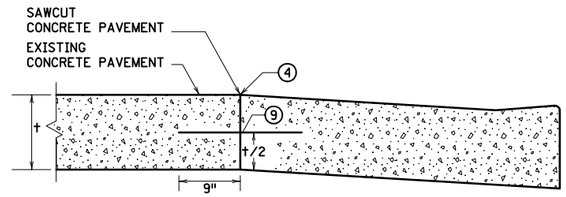
INSET A





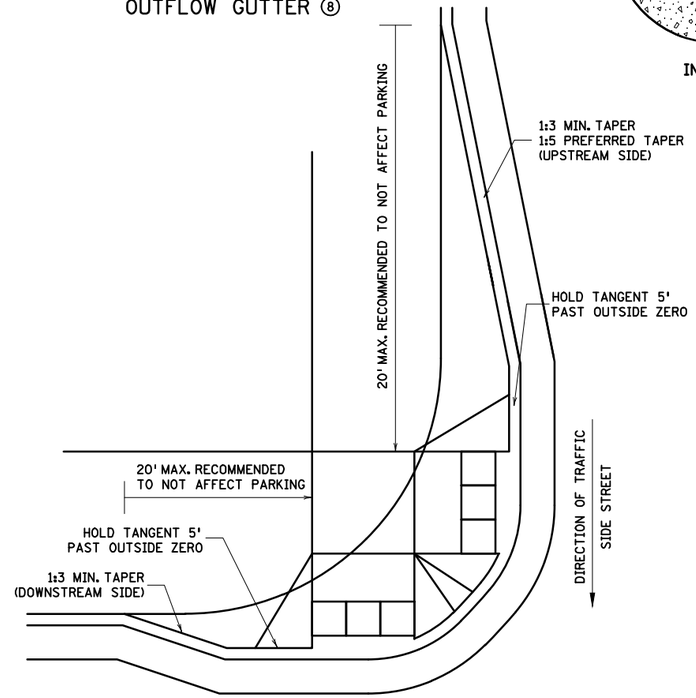


ONLY ALLOWED PER ENGINEER'S APPROVAL

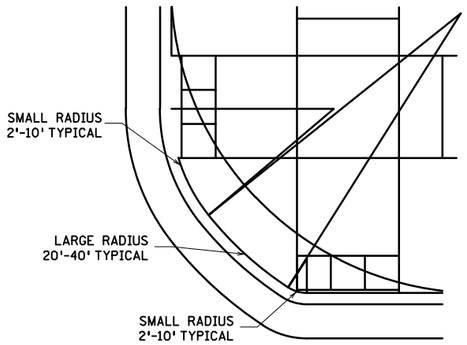


PAVEMENT TREATMENT OPTIONS IN FRONT OF CURB & GUTTER

FOR USE ON CURB RAMP RETROFITS



ADA CURB EXTENSION WITH COMPOUND RADIUS (BUMP OUT) ⑪



COMBINED DIRECTIONAL ⑩
(COMPOUND RADIUS)

NOTES:

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

NO PONDING SHALL BE PRESENT IN THE PAR.

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

① FOR USE AT CURB CUTS WHERE THE PEDESTRIAN'S PATH OF TRAVEL IS ASSUMED PERPENDICULAR TO THE GUTTER FLOW LINE. RAMP TYPES INCLUDE: PERPENDICULAR, TIERED PERPENDICULAR, PARALLEL, AND DIAGONAL RAMPS.

② FOR USE AT CURB RAMPS WHERE THE PEDESTRIAN'S PATH OF TRAVEL IS ASSUMED NON PERPENDICULAR TO THE GUTTER FLOW LINE. RAMP TYPES INCLUDE: FANS & DEPRESSED CORNERS.

③ BEGIN GUTTER SLOPE TRANSITION 10' OUTSIDE OF ALL CURB RAMPS.

④ THERE SHALL BE NO VERTICAL DISCONTINUITIES GREATER THAN 1/4".

⑤ ELEVATION CHANGE TAKES PLACE FROM THE EXISTING TO NEW FRONT OF GUTTER. PATCH IS USED TO MATCH THE NEW GUTTER FACE INTO THE EXISTING ROADWAY.

⑥ VARIABLE WIDTH FOR DIRECTIONAL CURB APPLICATIONS. SEE SHEET 2 FOR DIRECTIONAL CURB SLOPE REQUIREMENTS.

⑦ TOP FRONT OF GUTTER SHALL BE CONSTRUCTED FLUSH WITH PROPOSED ADJACENT PAVEMENT ELEVATION. TOP 1.5" OF THE GUTTER FACE MUST BE A FORMED EDGE. PAR GUTTER SHALL NOT BE OVERLAID.

⑧ SHOULD BE USED AT VERTICALLY CONSTRAINED AREAS WHEN AT A DRAINAGE HIGH POINT OR SUPER ELEVATED ROADWAY SEGMENTS.

⑨ DRILL AND GROUT NO. 4 EPOXY-COATED 18" LONG TIE BARS AT 30" CENTER TO CENTER INTO EXISTING CONCRETE PAVEMENT 1' MINIMUM FROM ALL JOINTS.

⑩ HELPS PROVIDE TWO SEPARATE RAMPS, REDUCES THE DOME SETBACK LENGTH AND MINIMIZES DIRECTIONAL CURB. THIS RADIUS DESIGN CLOSELY FOLLOWS THE TURNING VEHICLE PATH WHILE OPTIMIZING CURB RAMP LENGTH.

⑪ CURB EXTENSIONS SHOULD BE USED IN VERTICALLY CONSTRAINED AREAS, USUALLY IN DOWNTOWN ROADWAY SEGMENTS WHERE ON-STREET PARKING IS AVAILABLE. CURB EXTENSIONS SHOULD BE CONSIDERED FOR APS INTERSECTIONS WHERE SPACE IS LIMITED. PUSH BUTTONS MUST MEET APS CRITERIA AS DESCRIBED IN THE PUSH BUTTON LOCATION DETAIL SHEET.

REVISION:

APPROVED: 11-04-2021
JEFFREY PERKINS
OPERATIONS DIVISION

MINNESOTA DEPARTMENT OF TRANSPORTATION

STANDARD PLAN 5-297.250 | 3 OF 6

APPROVED: 11-04-2021
REVISED:
THOMAS STYRBICKI
STATE DESIGN ENGINEER

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

PEDESTRIAN CURB RAMP DETAILS

NO	DATE	DWN	CKD	REVISIONS

ALLIANT

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PRINT NAME: ERIC NELSON
SIGNATURE:
DATE 2/27/2025 LICENSE # 43560

DETAILS & STANDARD PLANS

HAMEL ROAD EXTENSION

SHEET NO. 9 OF 45 SHEETS

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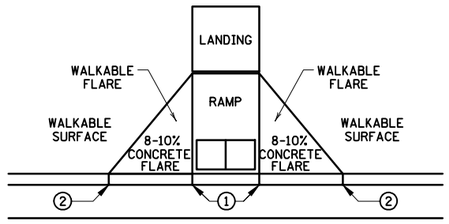
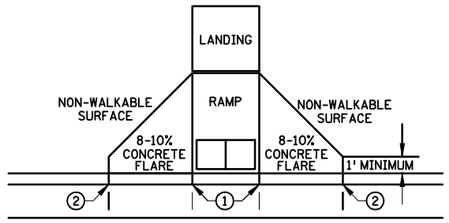
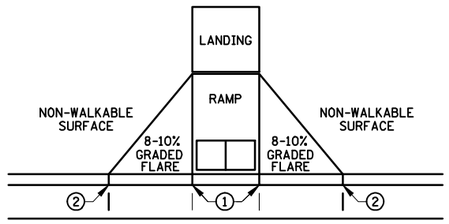


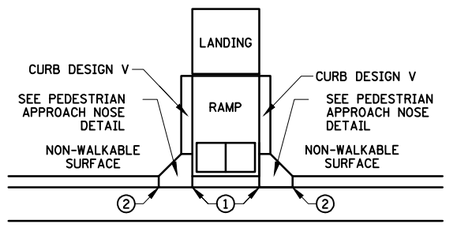
PAVED FLARES
ADJACENT TO WALKABLE SURFACE



PAVED FLARES
ADJACENT TO NON-WALKABLE SURFACE

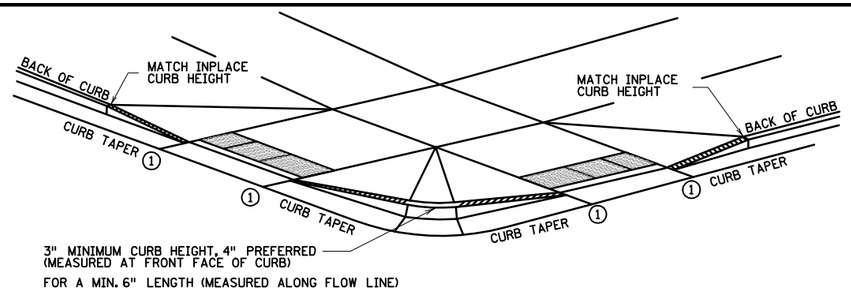


GRADED FLARES

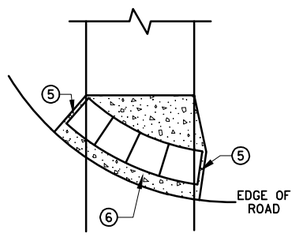


RETURNED CURB ④

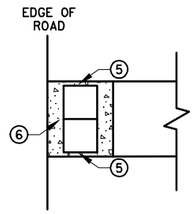
TYPICAL SIDE TREATMENT OPTIONS ③ ⑩



DETECTABLE EDGE WITH ⑦
CURB AND GUTTER

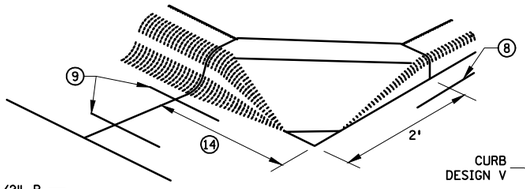


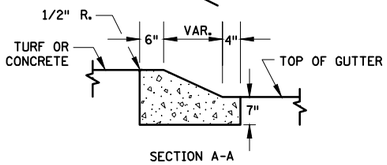
RADIAL DETECTABLE WARNING



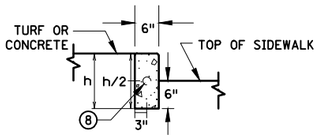
RECTANGULAR DETECTABLE WARNING

DETECTABLE EDGE WITHOUT CURB AND GUTTER

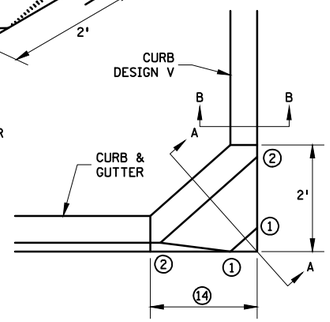




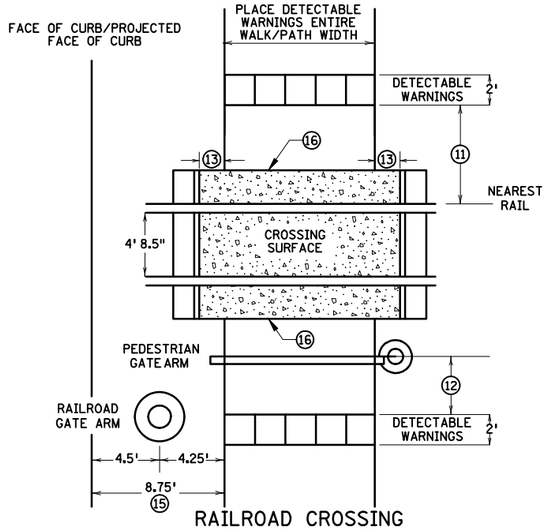
SECTION A-A



SECTION B-B



PEDESTRIAN APPROACH
NOSE DETAIL
(FOR RETURNED CURB
SIDE TREATMENT)



RAILROAD CROSSING
PLAN VIEW

NOTES:

INTERMEDIATE CURB HEIGHTS TAPER SHALL RISE AT 8-10% TO A MINIMUM 3 INCH CURB HEIGHT. INCREASE CURB TAPER LENGTH AT LESS THAN 8% OR REDUCE INTERMEDIATE CURB HEIGHT TO 2+ INCHES IF NECESSARY TO MATCH ADJACENT BOULEVARD OR SIDEWALK GRADES.

SEE STANDARD PLATE 7038 AND THIS SHEET FOR ADDITIONAL DETAILS ON DETECTABLE WARNING.

A WALKABLE SURFACE IS DEFINED AS A PAVED SURFACE ADJACENT TO A CURB RAMP WITHOUT RAISED OBSTACLES THAT COULD MISTAKENLY BE TRAVERSED BY A USER WHO IS VISUALLY IMPAIRED.

CONCRETE FLARE LENGTHS ADJACENT TO NON-WALKABLE SURFACES SHOULD BE LESS THAN 8' LONG MEASURED ALONG THE RAMPS FROM THE BACK OF CURB.

① 0" CURB HEIGHT. SEE INSET A ON SHEET 3 OF 6.

② FULL CURB HEIGHT.

③ SIDE TREATMENTS ARE APPLICABLE TO ALL RAMP TYPES AND SHOULD BE IMPLEMENTED AS NEEDED AS FIELD CONDITIONS DICTATE. THE ENGINEER SHALL DETERMINE THE RAMP SIDE TREATMENTS BASED ON MAINTENANCE OF BOTH ROADWAY AND SIDEWALK, ADJACENT PROPERTY CONSIDERATIONS, AND MITIGATING CONSTRUCTION IMPACTS.

④ TYPICALLY USED FOR MEDIANS AND ISLANDS.

⑤ WHEN NO CONCRETE FLARES ARE PROPOSED, THE CONCRETE WALK SHALL BE FORMED AND CONSTRUCTED PERPENDICULAR TO THE EDGE OF ROADWAY. MAINTAIN 3" MAX. BETWEEN EDGE OF DOMES AND EDGE OF CONCRETE.

⑥ IF NO CURB AND GUTTER IS PLACED IN RURAL SECTIONS, DETECTABLE WARNINGS SHALL BE PLACED 1' FROM THE EDGE OF BITUMINOUS ROADWAY AND/OR BITUMINOUS SHARED-USE PATH TO PROVIDE VISUAL CONTRAST.

⑦ ALL CONSTRUCTED CURBS MUST HAVE A CONTINUOUS DETECTABLE EDGE FOR THE VISUALLY IMPAIRED. THIS DETECTABLE EDGE REQUIRES DETECTABLE WARNINGS WHEREVER THERE IS ZERO-INCH HIGH CURB. CURB TAPERS ARE CONSIDERED A DETECTABLE EDGE WHEN THE TAPER STARTS WITHIN 3" OF THE EDGE OF THE DETECTABLE WARNINGS. AND UNIFORMLY RISES TO A 3-INCH MINIMUM CURB HEIGHT. ANY CURB NOT PART OF A CURB TAPER AND LESS THAN 3 INCHES IN HEIGHT IS NOT CONSIDERED A DETECTABLE EDGE AND THEREFORE IS NOT COMPLIANT WITH ACCESSIBILITY STANDARDS.

⑧ DRILL AND GROUT 1 - NO. 4 12" LONG REINFORCEMENT BAR (EPOXY COATED) WITH 3" MIN. COVER. REINFORCEMENT BARS ARE NOT NEEDED IF THE APPROACH NOSE IS POURED INTEGRAL WITH THE V CURB.

⑨ DRILL AND GROUT 2 - NO. 4 12" LONG REINFORCEMENT BARS (EPOXY COATED) WITH 3" MIN. COVER. REINFORCEMENT BARS ARE NOT NEEDED IF THE APPROACH NOSE IS POURED INTEGRAL WITH THE CURB AND GUTTER.

⑩ SIDE TREATMENT EXAMPLES SHOWN ARE WHEN THE INITIAL LANDING IS APPROXIMATELY LEVEL WITH THE FULL HEIGHT CURB (I.E. 6' LONG RAMP FOR 6" HIGH CURB). WHEN THE INITIAL LANDING IS MORE THAN 1" BELOW FULL HEIGHT CURB REFER TO SHEETS 1 & 2 TO MODIFY THE CURB HEIGHT TAPERS AND MAINTAIN POSITIVE BOULEVARD DRAINAGE. CONSTRUCT THESE TAPERS AT 0"-3" AT 8-10%, THEN LESS THAN 5% FROM 3" CURB TO FULL CURB HEIGHT.

⑪ NEAREST EDGE OF DETECTABLE WARNING SURFACES SHALL BE PLACED 12' MINIMUM TO 15' MAXIMUM FROM THE NEAREST RAIL. FOR SKEWED RAILWAYS IN NO INSTANCE SHALL THE DETECTABLE WARNING BE CLOSER THAN 12' MEASURED PERPENDICULAR TO THE NEAREST RAIL.

⑫ WHEN PEDESTRIAN GATES ARE PROVIDED, DETECTABLE WARNING SURFACES SHALL BE PLACED ON THE SIDE OF THE GATES OPPOSITE THE RAIL, 2' FROM THE APPROACHING SIDE OF THE GATE ARM. THIS CRITERIA GOVERNS OVER NOTE ⑪.

⑬ CROSSING SURFACE SHALL EXTEND 2' MINIMUM PAST THE OUTSIDE EDGE OF WALK OR SHARED-USE PATH.

⑭ 3' FOR MEDIANS AND SPLITTER ISLANDS. NOSE CAN BE REDUCED TO 2' ON FREE RIGHT ISLANDS.

⑮ SIDEWALK TO BE PLACED 8.75' MIN. FROM THE FACE OF CURB/PROJECTED FACE OF CURB. THIS ENSURES MIN. CLEARANCE BETWEEN THE SIDEWALK AND GATE ARM COUNTERWEIGHT SUPPORTS.

⑯ CONSTRUCT WITH EXPANSION MATERIAL PER MNDOT SPECIFICATION 3702 TYPES A-E. EXPANSION MATERIAL SHALL MATCH FULL HEIGHT OF ADJACENT CONCRETE.

REVISION:

APPROVED: 11-04-2021
JEFFREY J PERKINS
OPERATIONS DIVISION

MINNESOTA DEPARTMENT OF TRANSPORTATION

STANDARD PLAN ~~5-297.250~~ | 4 OF 6

APPROVED: 11-04-2021
REVISED:

THOMAS SZYMANSKI
STATE DESIGN ENGINEER

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

PEDESTRIAN CURB RAMP DETAILS

NO	DATE	DWN	CKD	REVISIONS

ALLIANT

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PRINT NAME: ERIC NELSON
SIGNATURE:
DATE 2/27/2025 LICENSE # 43560

DETAILS & STANDARD PLANS

HAMEL ROAD EXTENSION

SHEET NO. 10 OF 45 SHEETS

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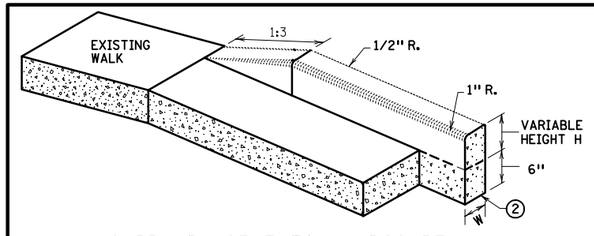
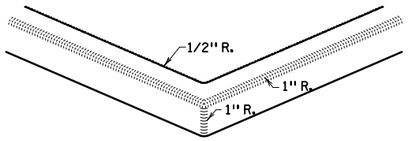


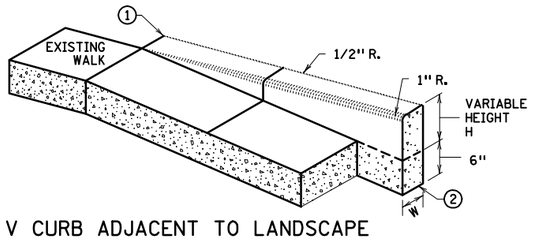
V CURB ADJACENT TO LANDSCAPE

CURB WITHIN SIDEWALK LIMITS



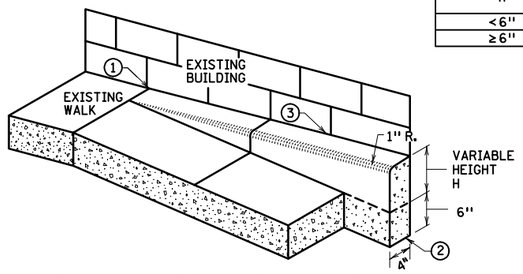
V CURB INTERSECTION

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

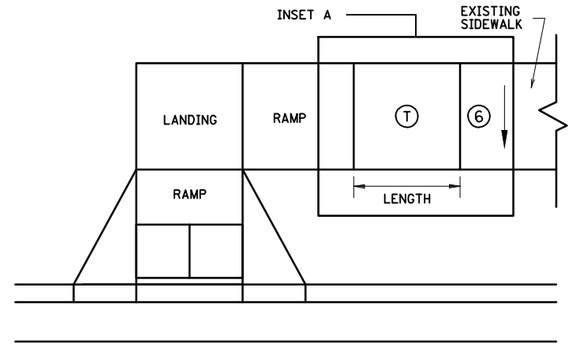


V CURB ADJACENT TO LANDSCAPE

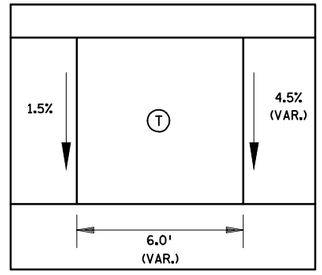
CURB OUTSIDE SIDEWALK LIMITS



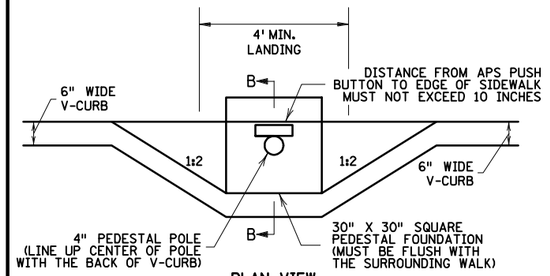
V CURB ADJACENT TO BUILDING OR BARRIER



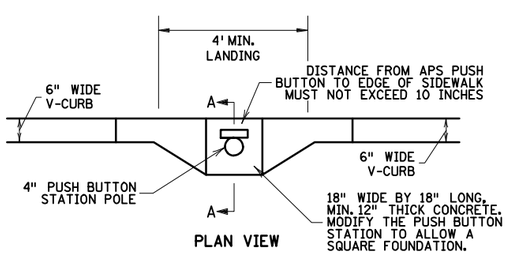
TRANSITION PANEL ④⑤



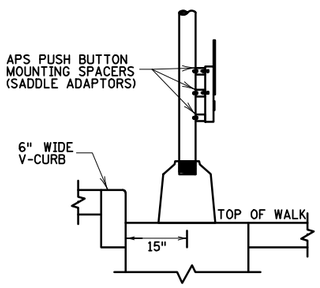
INSET A



PLAN VIEW

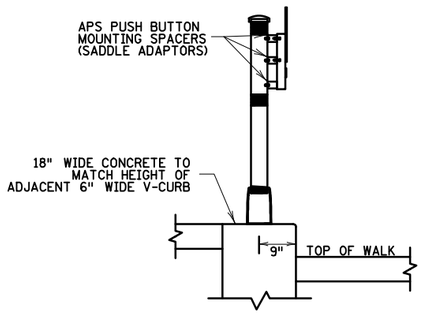


PLAN VIEW



SECTION B-B

SIGNAL PEDESTAL & PUSH BUTTON (V-CURB)



SECTION A-A

PUSH BUTTON STATION (V-CURB)

NOTES:

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

ALL V CURB CONTRACTION JOINTS SHALL MATCH CONCRETE WALK JOINTS.

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

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

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

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

② ALL V CURB SHALL MATCH BOTTOM OF ADJACENT WALK.

③ CONSTRUCT USING APPROVED EXPANSION MATERIAL PER MNDOT TYPE A-E EXPANSION. LEAVE A MINIMUM ½" TOP GAP AND SEAL WITH MNDOT APPROVED SILICONE PER MNDOT SPEC 3722.

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

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

⑥ EXISTING CROSS SLOPE GREATER THAN 2.0%.

LEGEND

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

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

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

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

REVISION:

APPROVED: 11-04-2021

JEFFREY PERKINS
OPERATIONS DIVISION

MINNESOTA DEPARTMENT OF TRANSPORTATION

THOMAS STYRBICKI
STATE DESIGN ENGINEER

STANDARD PLAN ~~5-297.250~~ 5 OF 6

APPROVED: 11-04-2021
REVISED:

STATE PROJ. NO.

PEDESTRIAN CURB RAMP DETAILS

(TH) SHEET NO. OF SHEETS

NO	DATE	DWN	CKD	REVISIONS

ALLIANT

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

PRINT NAME: ERIC NELSON

SIGNATURE:

DATE 2/27/2025 LICENSE # 43560

DETAILS & STANDARD PLANS

HAMEL ROAD EXTENSION

SHEET NO. 11 OF 45 SHEETS

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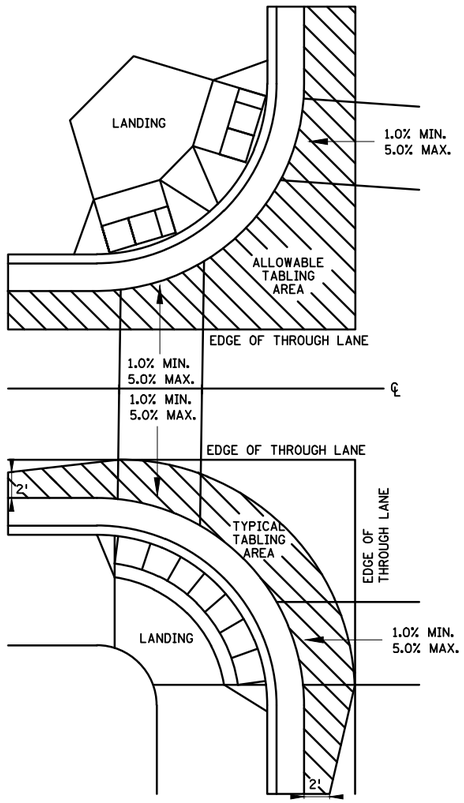
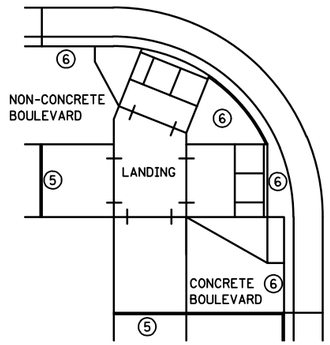
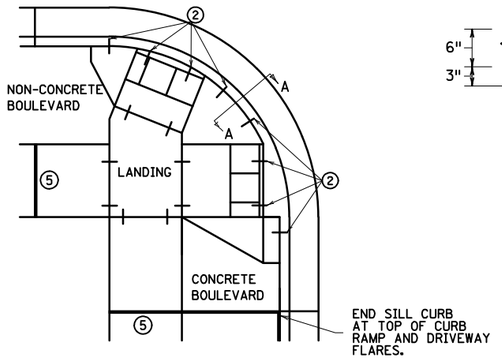


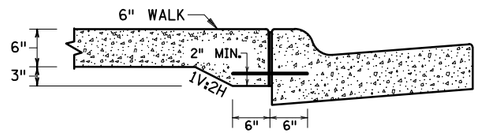
CURB LINE AND ROAD CROSSING ADJUSTMENTS



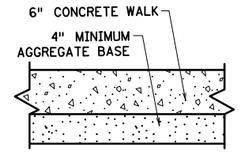
EXPANSION MATERIAL PLACEMENT
FOR CONCRETE ROADWAYS



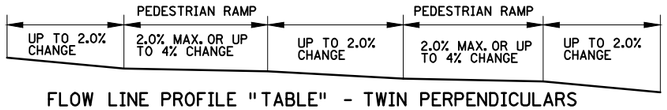
CURB LINE REINFORCEMENT ④
PLACEMENT ON BITUMINOUS ROADWAYS



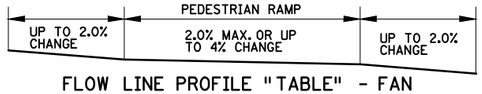
SECTION VIEW A-A
THICKENED SECTION
THROUGH CURB RAMP FLARES



TYPICAL SIDEWALK SECTION
WITHIN INTERSECTION CORNER



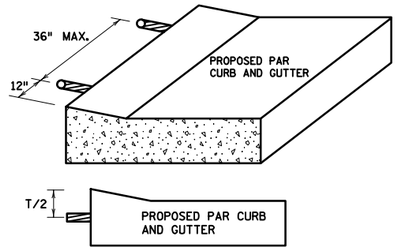
FLOW LINE PROFILE "TABLE" - TWIN PERPENDICULARS



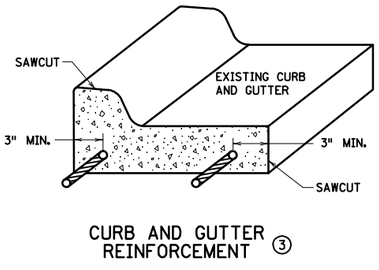
FLOW LINE PROFILE "TABLE" - FAN

FLOW LINE PROFILE RAISE - TWIN PERPENDICULARS

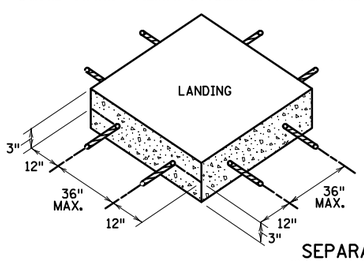
FLOW LINE PROFILE RAISE - FAN

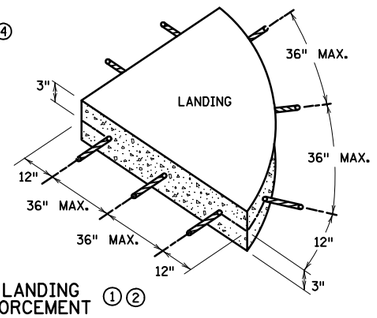


CURB RAMP REINFORCEMENT DETAILS ②④



CURB AND GUTTER
REINFORCEMENT ③





SEPARATE LANDING
POUR REINFORCEMENT ①②

GENERAL NOTES:

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

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

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

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

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

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

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

NOTES:

① TO ENSURE RAMPS AND LANDINGS ARE PROPERLY CONSTRUCTED, ALL INITIAL LANDINGS AT A TOP OF A RAMPED SURFACE (RUNNING SLOPE GREATER THAN 2%) SHALL BE FORMED AND PLACED SEPARATELY IN AN INDEPENDENT CONCRETE POUR. FOLLOW SIDEWALK REINFORCEMENT DETAILS ON THIS SHEET FOR ALL SEPARATELY POURED INITIAL LANDINGS.

② DRILL AND GROUT NO. 4 12" LONG REINFORCEMENT BARS (EPOXY COATED) AT 36" MAXIMUM CENTER TO CENTER MINIMUM 12" SPACING FROM CONSTRUCTION JOINTS. BARS TO BE ADJUSTED TO MATCH RAMP GRADE. BARS TO BE PAID BY EACH.

③ DRILL AND GROUT 2 - NO. 4 X 12" LONG (6" EMBEDDED) REINFORCEMENT BARS (EPOXY COATED). REINFORCEMENT REQUIRED FOR ALL CONSTRUCTION JOINTS. BARS TO BE PAID BY EACH.

④ THIS CURB LINE REINFORCEMENT DETAIL SHALL BE USED ON BITUMINOUS ROADWAYS. FOR CONCRETE ROADWAYS, SEE NOTE 6.

⑤ CONSTRUCT WITH EXPANSION MATERIAL PER MNDOT SPECIFICATION 3702 TYPES A-E. EXPANSION MATERIAL SHALL MATCH FULL HEIGHT OF ADJACENT CONCRETE.

⑥ USE AN APPROVED TYPE F (1/4 INCH THICK) SEPARATION MATERIAL. SEPARATION MATERIAL SHALL MATCH FULL HEIGHT DIMENSION OF ADJACENT CONCRETE.

REVISION:

APPROVED: 11-04-2021
JEFFREY PERKINS
OPERATIONS DIVISION

MINNESOTA DEPARTMENT OF TRANSPORTATION

THOMAS STYRBICKI
STATE DESIGN ENGINEER

STANDARD PLAN 5-297.250 | 6 OF 6

APPROVED: 11-04-2021
REVISED:

STATE PROJ. NO.

PEDESTRIAN CURB RAMP DETAILS

(TH) SHEET NO. OF SHEETS

NO	DATE	DWN	CKD	REVISIONS

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PRINT NAME: ERIC NELSON
SIGNATURE:
DATE 2/27/2025 LICENSE # 43560

DETAILS & STANDARD PLANS

HAMEL ROAD EXTENSION

SHEET NO. 12 OF 45 SHEETS

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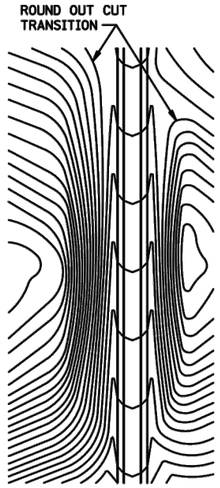
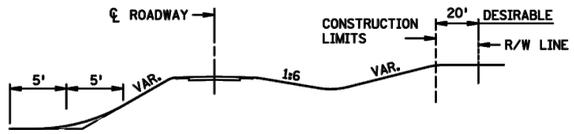
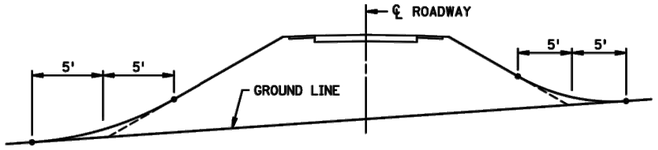


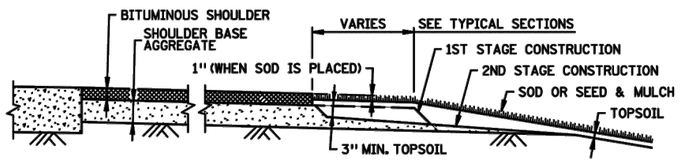
CONTOURING ROAD CUTS



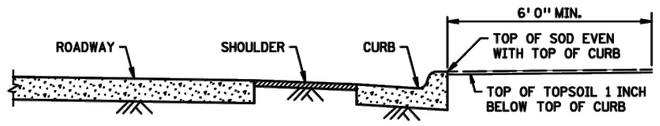
ROUNDING SHOULDERS AND BACKSLOPES



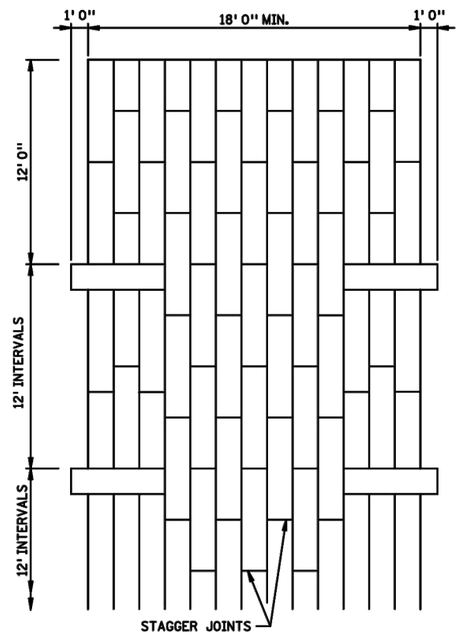
SHAPING FOR DRAINAGE ALONG THE TOE OF FILL SLOPES



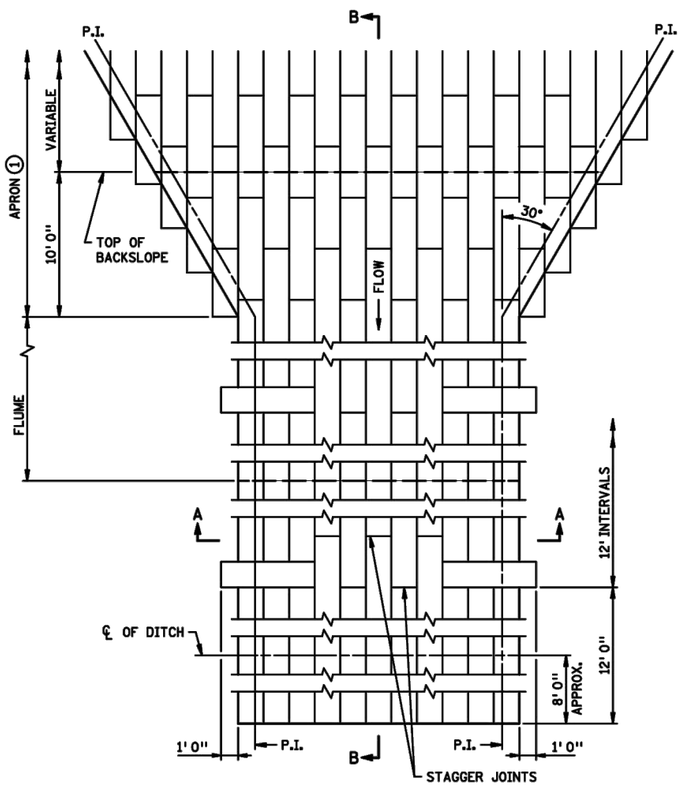
SHAPING AND TOPSOILING INSLOPES



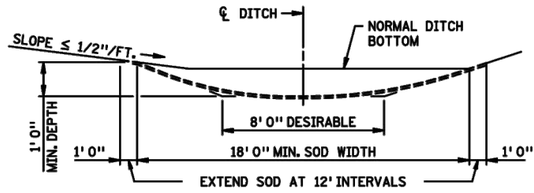
SHAPING ADJACENT TO CURBS WHEN SOD IS PLACED



PLAN VIEW

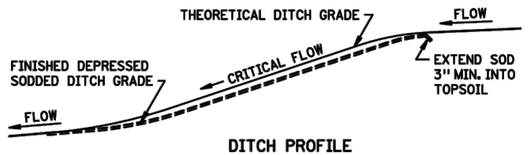


PLAN VIEW



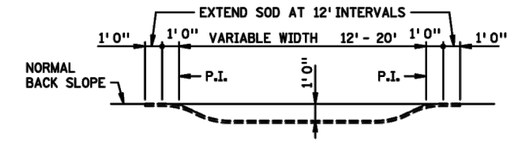
SODDED DITCH CROSS SECTION

WHERE FRONT OR BACK SLOPE IS FLAT (LESS THAN 1/2"/FT.), FIRST NOTCH DITCH AND THEN PROVIDE ROUNDING.

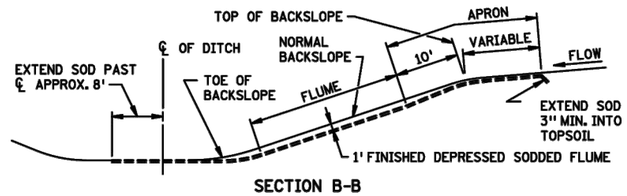


DITCH PROFILE

SODDED DITCH DETAILS



SECTION A-A



SECTION B-B

SODDED FLUME DETAILS

NOTES:

SEE SPEC. 2575.3 FOR ADDITIONAL INFORMATION.

① CONSTRUCT TAPER AS DIRECTED BY THE ENGINEER.

LEAD EXPERT OFFICE	LYNN CLARKOWSKI CHIEF ENVIRONMENTAL OFFICER OFFICE OF ENVIRNOMENTAL STEWARDSHIP		PERMANENT EROSION CONTROL ALONG ROADWAYS, DITCHES AND FLUMES	APPROVED: 02-28-2017 REVISED:	THOMAS STYRBICKI STATE DESIGN ENGINEER	STANDARD PLAN 5-297.404	1 OF 3
	DEPARTMENT OF TRANSPORTATION		STANDARD PLAN	STATE PROJ. NO.		SHEET NO.	
				TRUNK HWY.		TOTAL SHEETS	

NO	DATE	DWN	CKD	REVISIONS

ALLIANT

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

PRINT NAME: ERIC NELSON
SIGNATURE:
DATE 2/27/2025 LICENSE # 43560

DETAILS & STANDARD PLANS

HAMEL ROAD EXTENSION

SHEET NO. 13 OF 45 SHEETS

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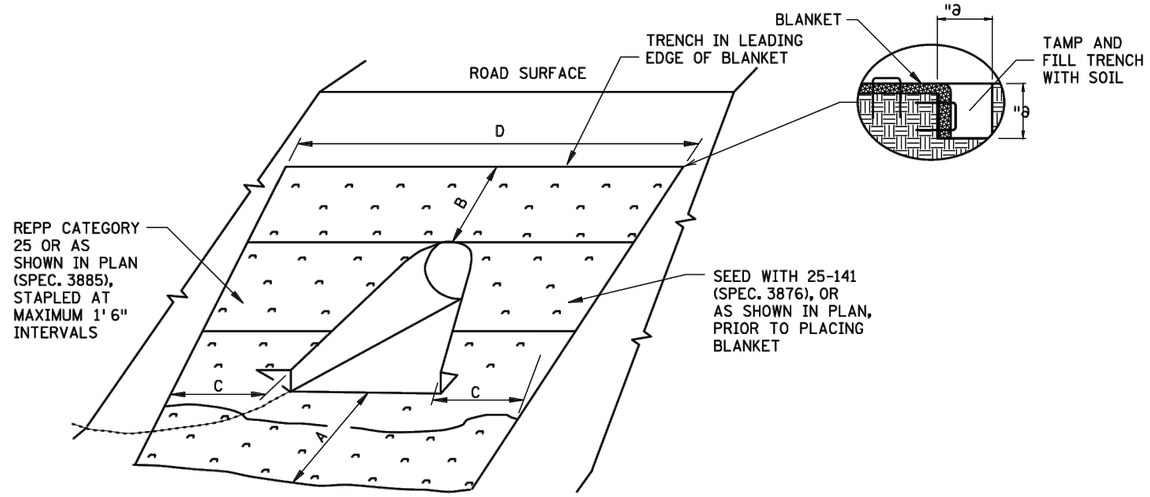
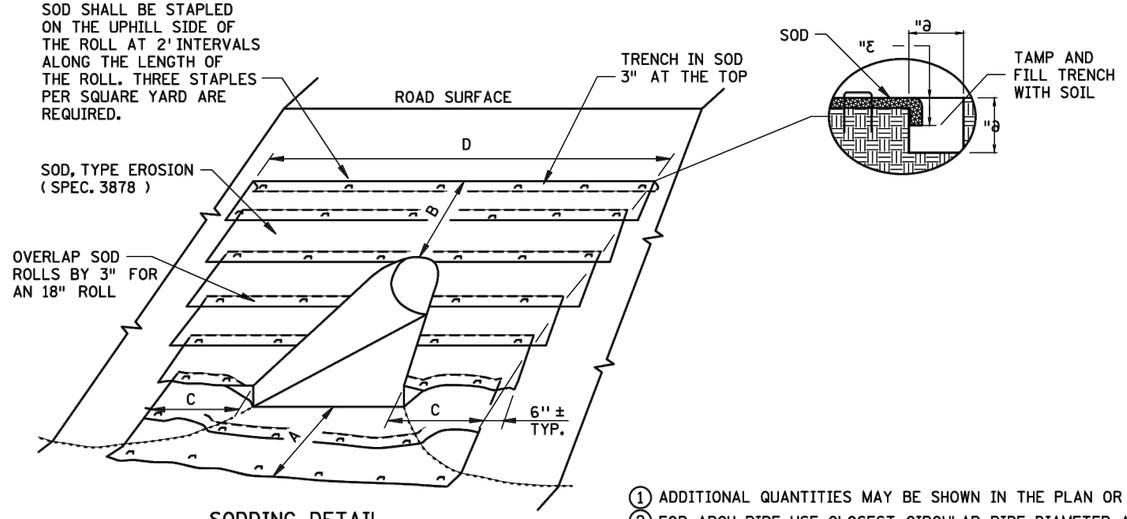


ROLLED EROSION PREVENTION PRODUCT (BLANKET) & SEED DETAIL

SOD SHALL BE STAPLED ON THE UPHILL SIDE OF THE ROLL AT 2' INTERVALS ALONG THE LENGTH OF THE ROLL. THREE STAPLES PER SQUARE YARD ARE REQUIRED.



SODDING DETAIL

CULVERT INLET APRON ①										
CULVERT DIAMETER ②	SOD OR REPP (SQ. YDS.)						"A"	"B"	"C"	"D"
	CIRCULAR AND ARCH PIPE METAL APRON (PLATE 3123, PLATE 3122)	CIRCULAR AND ARCH PIPE CONCRETE APRON (PLATE 3100, PLATE 3110)	CIRCULAR AND ARCH PIPE METAL SAFETY APRON 1:4 SLOPE (PLATE 3148)	CIRCULAR AND ARCH PIPE METAL SAFETY APRON 1:6 SLOPE (PLATE 3148)	CIRCULAR CORRUGATED METAL PIPE SAFETY APRON 1:6 SLOPE (PLATE 3128)	CIRCULAR CORRUGATED METAL PIPE SAFETY APRON 1:4 SLOPE (PLATE 3128)				
15"	9	9	8	8	N/A	N/A	3'	1.5'	3'	13'
18"	13	12	12	14	16	N/A	3'	3'	3'	16'
21"	14	14	14	16	18	14	3'	3'	3'	17'
24"	16	15	16	19	21	17	3'	3'	3'	18'
27"	N/A	20	N/A	N/A	N/A	N/A	3'	4.5'	3'	20'
30"	23	22	25	30	32	N/A	3'	4.5'	3'	22'
36"	34	34	39	48	51	37	4.5'	4.5'	4.5'	27'
42"	43	40	51	64	N/A	N/A	4.5'	6'	4.5'	30'
48"	54	50	66	82	N/A	N/A	4.5'	7.5'	4.5'	34'
54"	65	58	81	102	N/A	N/A	4.5'	9'	4.5'	37'
60"	69	59	91	115	N/A	N/A	4.5'	9'	4.5'	39'
66"	69	63	N/A	N/A	N/A	N/A	4.5'	9'	4.5'	39'
72"	78	72	99	122	N/A	N/A	4.5'	10.5'	4.5'	41'

CULVERT OUTLET APRON ①										
CULVERT DIAMETER ②	SOD OR REPP (SQ. YDS.)						"A"	"B"	"C"	"D"
	CIRCULAR AND ARCH PIPE METAL APRON (PLATE 3123, PLATE 3122)	CIRCULAR AND ARCH PIPE CONCRETE APRON (PLATE 3100, PLATE 3110)	CIRCULAR AND ARCH PIPE METAL SAFETY APRON 1:4 SLOPE (PLATE 3148)	CIRCULAR AND ARCH PIPE METAL SAFETY APRON 1:6 SLOPE (PLATE 3148)	CIRCULAR CORRUGATED METAL PIPE SAFETY APRON 1:6 SLOPE (PLATE 3128)	CIRCULAR CORRUGATED METAL PIPE SAFETY APRON 1:4 SLOPE (PLATE 3128)				
15"	10	10	9	10	N/A	N/A	4.5'	1.5'	3'	13'
18"	13	13	12	14	15	N/A	6'	1.5'	3'	14'
21"	16	14	16	18	19	15	6'	1.5'	3'	15'
24"	18	18	18	21	22	18	7.5'	1.5'	3'	16'
27"	N/A	19	N/A	N/A	N/A	N/A	7.5'	1.5'	3'	17'
30"	23	23	24	28	29	N/A	9'	1.5'	3'	18'
36"	36	35	38	47	48	37	10.5'	1.5'	4.5'	23'
42"	43	40	47	58	N/A	N/A	12'	1.5'	4.5'	25'
48"	50	46	57	70	N/A	N/A	13.5'	1.5'	4.5'	27'
54"	57	50	67	84	N/A	N/A	15'	1.5'	4.5'	29'
60"	74	63	90	113	N/A	N/A	16.5'	1.5'	6'	33'
66"	75	67	N/A	N/A	N/A	N/A	16.5'	1.5'	6'	33'
72"	77	70	92	114	N/A	N/A	16.5'	1.5'	6'	34'

① ADDITIONAL QUANTITIES MAY BE SHOWN IN THE PLAN OR REQUIRED BY THE ENGINEER.
② FOR ARCH PIPE USE CLOSEST CIRCULAR PIPE DIAMETER AND APRON SLOPE. DIAMETERS LARGER THAN 72" REQUIRE SPECIAL DESIGNS.

NOTES:

REPP = ROLLED EROSION PREVENTION PRODUCT.

AREA SHOWN IN SQUARE YARDS IS FOR ONE CULVERT END.

QUANTITIES ARE CALCULATED TO INCLUDE SOD REQUIRED TO PROVIDE A 3" OVERLAP ON ALL 18" WIDE ROLLS. THIS ALLOWS FOR SHRINKAGE OF THE SOD.

FOR PIPE ARCHES USE EQUIVALENT PIPE DIAMETER TO APPROXIMATE AREA.

FOR CORRUGATED POLYETHYLENE PIPE METAL APRON (PLATE 3129), USE THE METAL APRON COLUMN (PLATE 3123).

AREAS AND DIMENSIONS ARE APPROXIMATE AND ARE BASED ON APRON SIDE SLOPES OF NO STEEPER THAN 1:2, UNLESS INDICATED AS FOR SAFETY APRONS.

CARE SHOULD BE TAKEN IN SELECTING SOD TO STABILIZE THE APRON. RIP-RAP SHOULD BE USED FOR FLOW VELOCITIES GREATER THAN 6 FPS.

LEAD EXPERT OFFICE: MARNI KARNOWSKI, CHIEF ENVIRONMENTAL OFFICER, OFFICE OF ENVIRNOMENTAL STEWARDSHIP		PERMANENT EROSION CONTROL TURF ESTABLISHMENT DETAIL AT CULVERT ENDS	APPROVED: 01-08-2020 REVISED:	THOMAS STYRBICKI STATE DESIGN ENGINEER	STANDARD PLAN 5-297.404 — 2 OF 3
DEPARTMENT OF TRANSPORTATION		STANDARD PLAN	STATE PROJ. NO.		SHEET NO.
			TRUNK HWY.		TOTAL SHEETS

NO	DATE	DWN	CKD	REVISIONS

ALLIANT

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PRINT NAME: ERIC NELSON
SIGNATURE:
DATE 2/27/2025 LICENSE # 43560

DETAILS & STANDARD PLANS

HAMEL ROAD EXTENSION

SHEET NO. 14 OF 45 SHEETS

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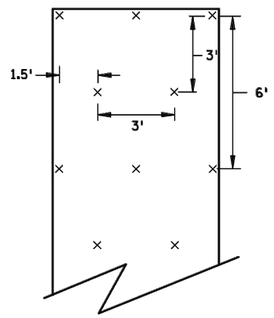
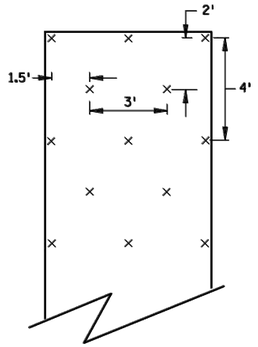
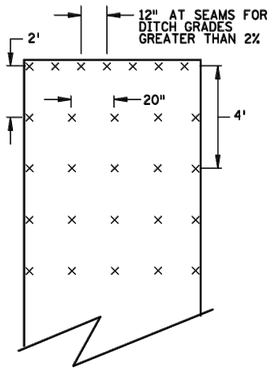


SLOPES FLATTER THAN 1:2
120 STAPLES PER 100 SQ YD

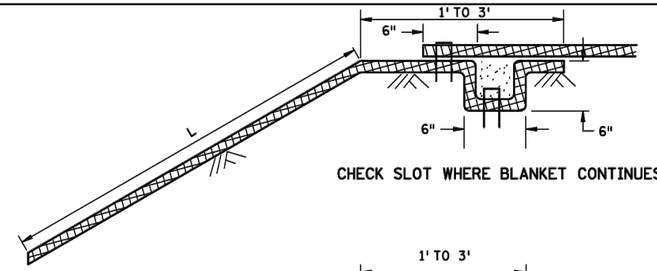


SLOPES 1:2 TO 1:1
170 STAPLES PER 100 SQ YD

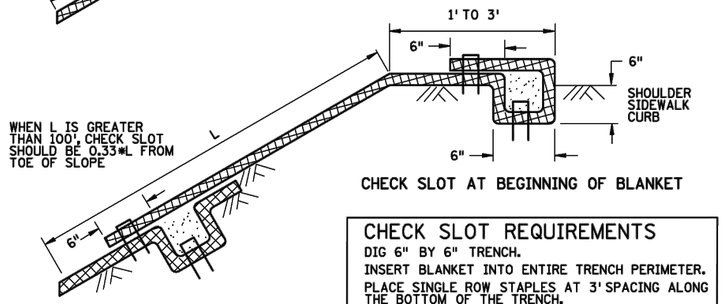


CHANNEL AND DITCH APPLICATIONS
350 STAPLES PER 100 SQ YD

BLANKET STAPLE PATTERN



CHECK SLOT WHERE BLANKET CONTINUES



CHECK SLOT AT BEGINNING OF BLANKET

CHECK SLOT REQUIREMENTS

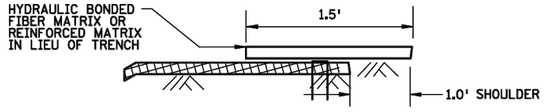
DIG 6" BY 6" TRENCH.

INSERT BLANKET INTO ENTIRE TRENCH PERIMETER.

PLACE SINGLE ROW STAPLES AT 3' SPACING ALONG THE BOTTOM OF THE TRENCH.

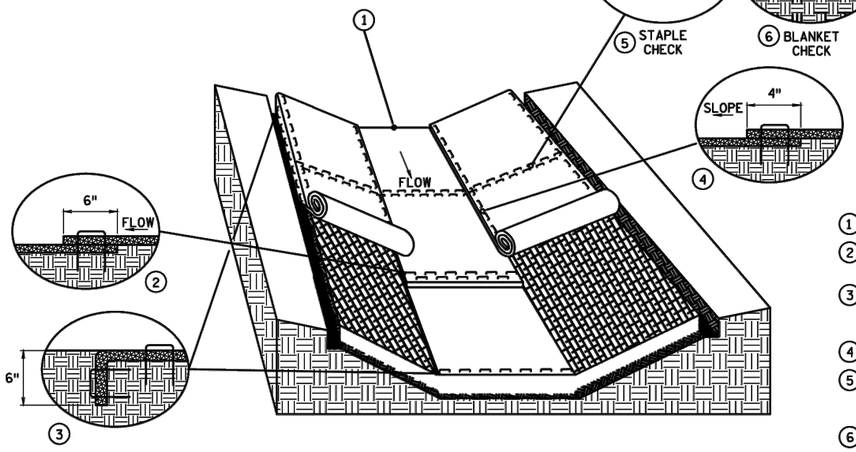
BACKFILL TRENCH WITH SOIL AND TAMP.

PLACE SINGLE ROW STAPLES AT 3' SPACING ON OVERLAP.

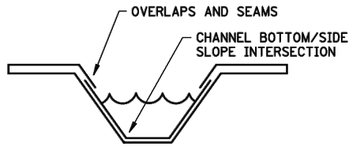


CHECK SLOT ALTERNATIVE
PLACE SINGLE ROW STAPLES AT 12" SPACING

CHECK SLOT DETAILS



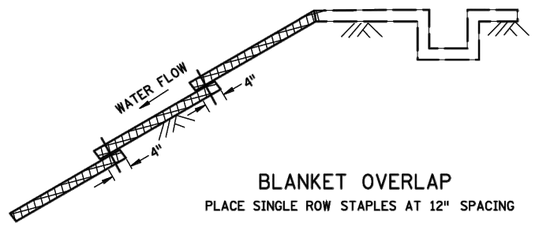
DITCH BLANKET STAPLE DETAIL



DITCH BLANKET CRITICAL POINTS (7)

NOTES:

1. USE CHECK SLOT DETAIL (NO ALTERNATES).
2. PLACE DOUBLE ROW OF STAPLES STAGGERED 4" APART AND 4" ON CENTER.
3. USE 6" X 6" TRENCH TO PLACE BLANKET. PLACE SINGLE ROW OF STAPLES ON TOP AND TRENCH SIDES AT 12" SPACING. BACKFILL TRENCH WITH SOIL AND TAMP.
4. PLACE SINGLE ROW OF STAPLES AT 12" SPACING.
5. USE STAPLE CHECK FOR CHANNEL SLOPES LESS THAN 2.5% GRADE AT 100' INTERVALS. PLACE DOUBLE ROW OF STAPLES STAGGERED 4" APART AND AT 4" SPACING.
6. USE BLANKET CHECKS FOR THE FOLLOWING SLOPES:
   2.5%-3% 100' INTERVALS
   3%-5% 50' INTERVALS
   5%-7% 25' INTERVALS
7. CRITICAL POINTS SHALL BE SECURED WITH PROPER STAPLE PATTERNS.



BLANKET OVERLAP
PLACE SINGLE ROW STAPLES AT 12" SPACING

GENERAL BLANKET INSTALLATION REQUIREMENTS

REPP = ROLLED EROSION PREVENTION PRODUCT.

PREPARE SOIL AS PER SPECIFICATION 2574.

LAY PARALLEL OR PERPENDICULAR TO THE DIRECTION OF WATER FLOW.

OVERLAP ADJACENT STRIP EDGES A MINIMUM OF 4".

OVERLAP BLANKET 6" (MINIMUM) AT EACH END. OVERLAP BOTTOM END OF UPPER BLANKET OVER TOP END OF LOWER BLANKET. STAPLE ALONG OVERLAP EVERY 1.5'.

THE UPPERMOST BLANKET OF ALL SLOPE APPLICATIONS MUST START IN A CHECK SLOT. IF SLOPE LENGTH (L) IS 100' OR GREATER, INSERT BLANKET INTO A CHECK SLOT ⅓ FROM THE BOTTOM OF THE SLOPE.

LEAD EXPERT OFFICE: MARNI KARNOWSKI, CHIEF ENVIRONMENTAL OFFICER, OFFICE OF ENVIRNOMENTAL STEWARDSHIP		PERMANENT EROSION CONTROL REPP (BLANKET) STAPLE PATTERN FOR SLOPES	APPROVED: 01-08-2020 REVISED:	THOMAS STYRBICKI STATE DESIGN ENGINEER	STANDARD PLAN 5-297.404	3 OF 3
	DEPARTMENT OF TRANSPORTATION	STANDARD PLAN	STATE PROJ. NO.		SHEET NO.	
			TRUNK HWY.		TOTAL SHEETS	

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DETAILS & STANDARD PLANS

HAMEL ROAD EXTENSION

SHEET NO. 15 OF 45 SHEETS

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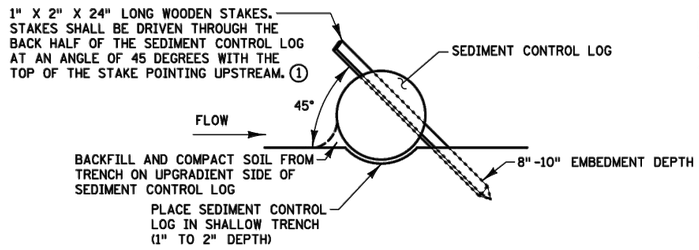
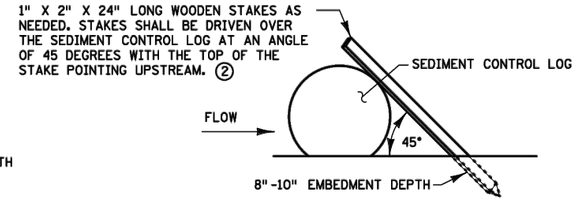
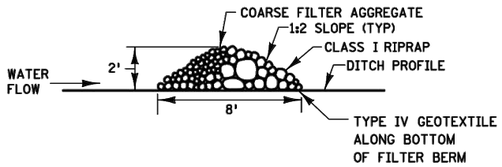


TYPES: STRAW, WOOD FIBER, OR COIR

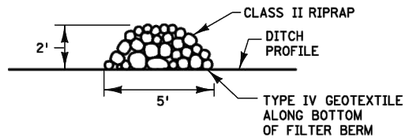


TYPES: WOOD CHIP, COMPOST, OR ROCK

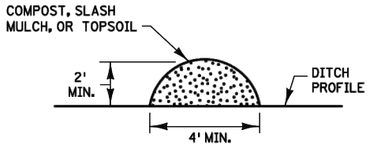
SEDIMENT CONTROL LOGS



TYPE 3 (ROCK WEEPER)

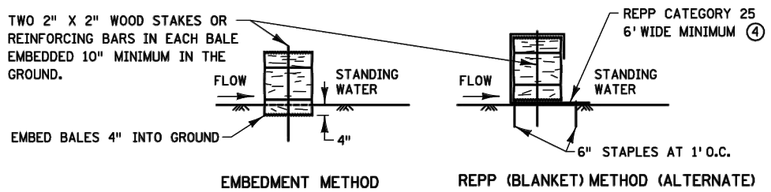


TYPE 5 (ROCK)



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

FILTER BERMS



EMBEDMENT METHOD

REPP (BLANKET) METHOD (ALTERNATE)

BALE BARRIERS (3)

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.

LEAD EXPERT OFFICE: MARNI KARNOWSKI, CHIEF ENVIRONMENTAL OFFICER, OFFICE OF ENVIRNOMENTAL STEWARDSHIP		TEMPORARY SEDIMENT CONTROL FILTER BERMS, SEDIMENT CONTROL LOGS, AND BALE BARRIERS	APPROVED: 01-08-2020 REVISED:	THOMAS STYRBICKI STATE DESIGN ENGINEER	STANDARD PLAN 5-297.405	2 OF 8
DEPARTMENT OF TRANSPORTATION		STANDARD PLAN	STATE PROJ. NO.		SHEET NO.	
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DETAILS & STANDARD PLANS

HAMEL ROAD EXTENSION

SHEET NO. 16 OF 45 SHEETS

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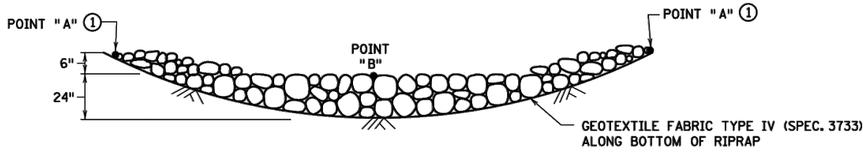
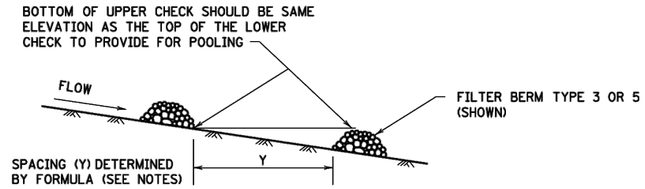
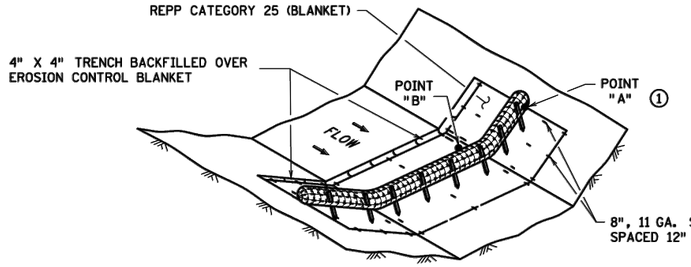
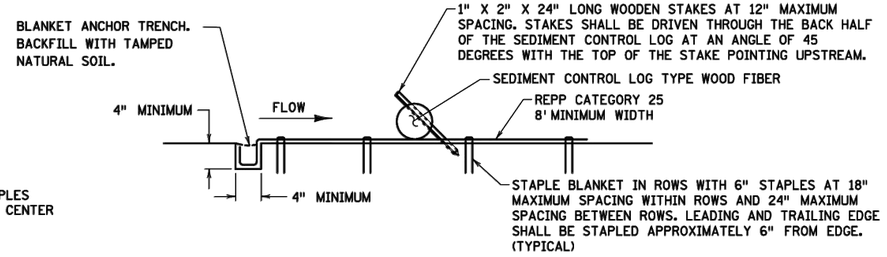


ROCK DITCH CHECKS
FILTER BERMS TYPE 3 (ROCK WEEPER) OR FILTER TYPE 5 (ROCK) ③
FOR USE ON ROUGH-GRADED AREAS
ONLY FOR USE OUTSIDE CLEAR ZONE ②

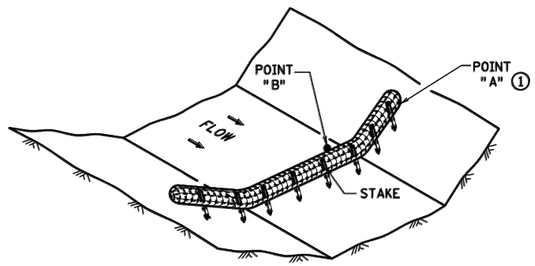


DITCH CHECK SPACING
FOR ALL FILTER BERM TYPES





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:

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

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.

LEAD EXPERT OFFICE	MARNI KARNOWSKI CHIEF ENVIRONMENTAL OFFICER OFFICE OF ENVIRNOMENTAL STEWARDSHIP		TEMPORARY SEDIMENT CONTROL DITCH CHECK	APPROVED: 01-08-2020 REVISED:	THOMAS STYRBICKI STATE DESIGN ENGINEER	STANDARD PLAN 5-297.405	3 OF 8
	DEPARTMENT OF TRANSPORTATION		STANDARD PLAN	STATE PROJ. NO.		SHEET NO.	
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DETAILS & STANDARD PLANS

HAMEL ROAD EXTENSION

SHEET NO. 17 OF 45 SHEETS

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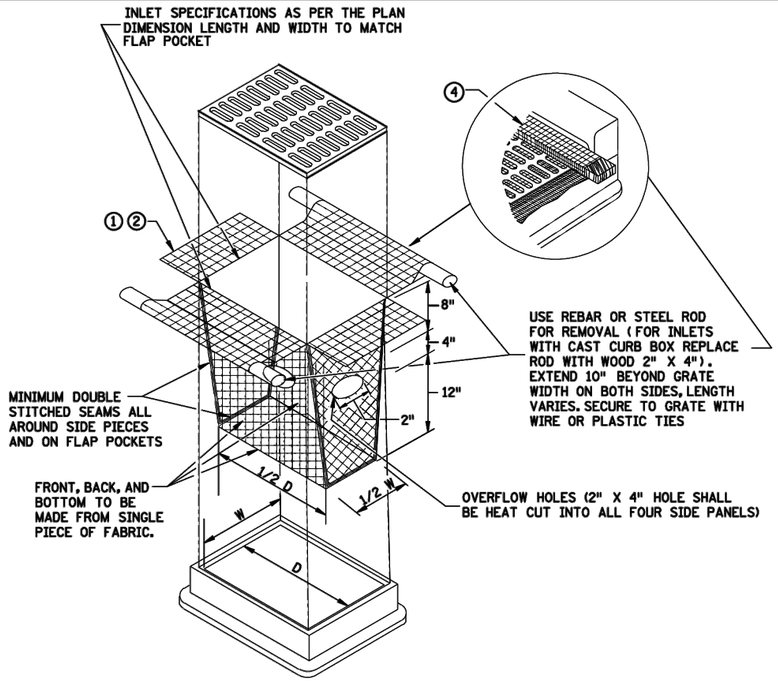
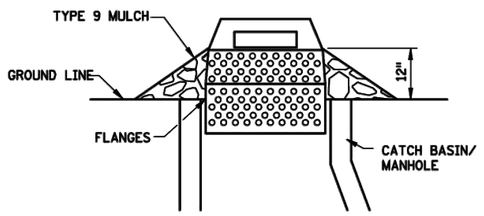


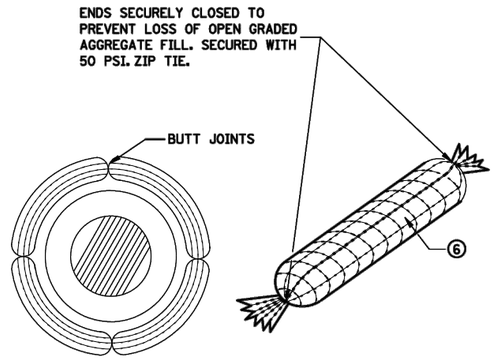
FILTER BAG INSERT ③

(CAN BE INSTALLED IN ANY INLET TYPE WITH OR WITHOUT A CURB BOX)

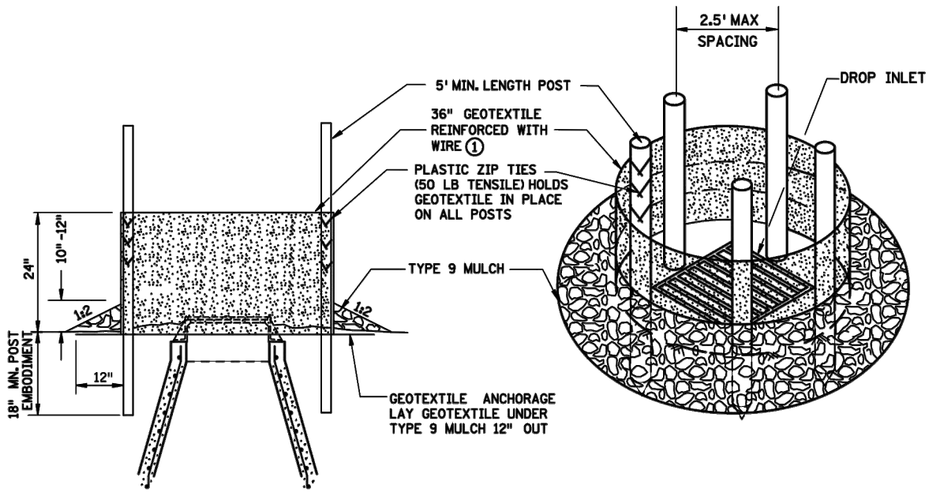


SEDIMENT CONTROL INLET HAT

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.

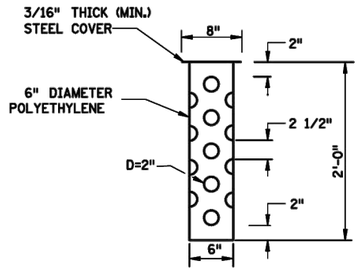


ROCK LOG/COMPOST LOG

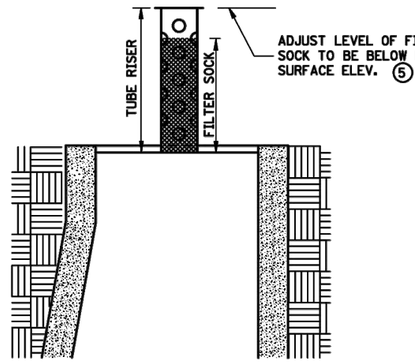


SILT FENCE RING AND ROCK FILTER BERM

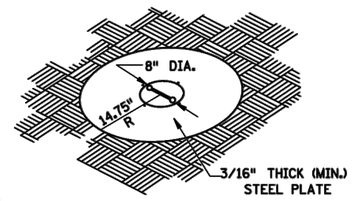
USE WHERE INLET DRAINS IN AN AREA WITH SLOPES AT 1:3 or LESS



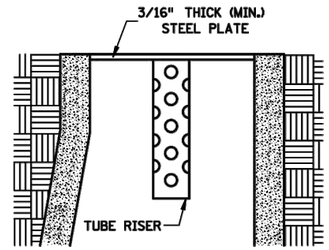
TUBE RISER



SECTION (UP POSITION)



PERSPECTIVE VIEW



SECTION (DOWN POSITION)

POP-UP HEAD

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

DEVICES MUST BE ADJUSTED ACCORDINGLY AS TO NOT CAUSE FLOODING ON ROADWAY THAT WOULD IMPEED 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.

LEAD EXPERT OFFICE	LYNN CLARKOWSKI CHIEF ENVIRONMENTAL OFFICER OFFICE OF ENVIRNOMENTAL STEWARDSHIP		TEMPORARY SEDIMENT CONTROL STORM DRAIN INLET PROTECTION	APPROVED: 02-28-2017 REVISED:	THOMAS STYRBICKI STATE DESIGN ENGINEER / STANDARD PLAN 5-297.405 / 4 OF 8
	DEPARTMENT OF TRANSPORTATION		STANDARD PLAN	STATE PROJ. NO.	SHEET NO.
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DETAILS & STANDARD PLANS

HAMEL ROAD EXTENSION

SHEET NO. 18 OF 45 SHEETS

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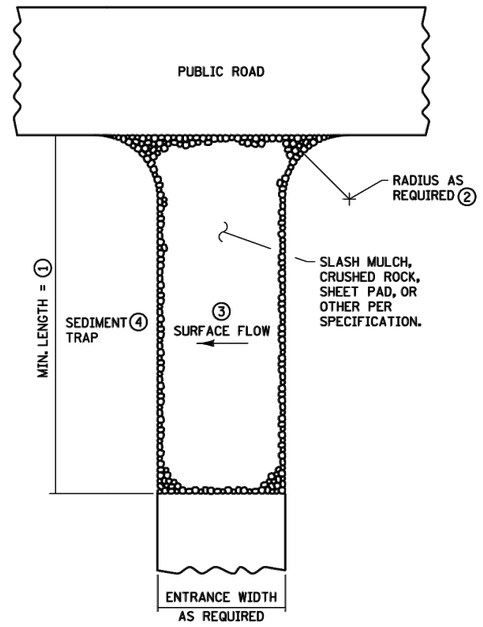
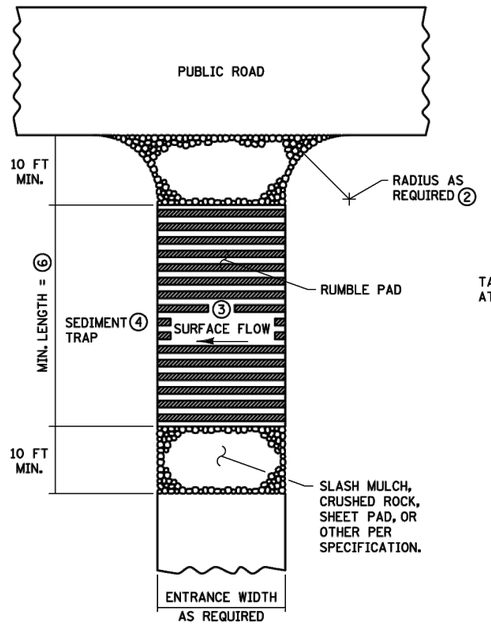
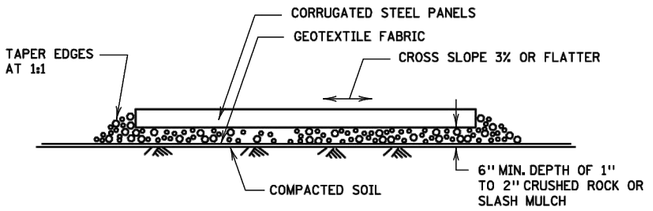


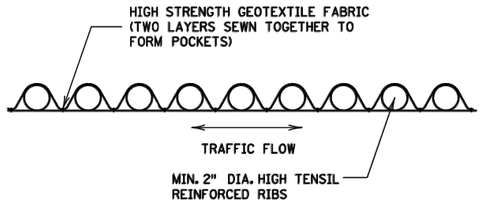
SLASH MULCH, CRUSHED ROCK, OR SHEET PAD CONSTRUCTION EXIT ⑤⑦



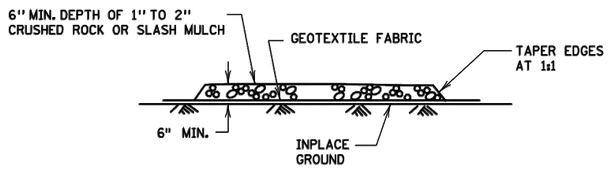
RUMBLE PAD CONSTRUCTION EXIT ⑤⑦



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.

LEAD EXPERT OFFICE: LYNN CLARKOWSKI, CHIEF ENVIRONMENTAL OFFICER, OFFICE OF ENVIRNOMENTAL STEWARDSHIP		TEMPORARY SEDIMENT CONTROL STABILIZED CONSTRUCTION EXIT	APPROVED: 02-28-2017 REVISED:	THOMAS STYRBICKI STATE DESIGN ENGINEER	STANDARD PLAN 5-297.405	5 OF 8
DEPARTMENT OF TRANSPORTATION		STANDARD PLAN	STATE PROJ. NO.		SHEET NO.	
			TRUNK HWY.		TOTAL SHEETS	

NO	DATE	DWN	CKD	REVISIONS

ALLIANT

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

PRINT NAME: ERIC NELSON
SIGNATURE:
DATE 2/27/2025 LICENSE # 43560

DETAILS & STANDARD PLANS

HAMEL ROAD EXTENSION

SHEET NO. 19 OF 45 SHEETS

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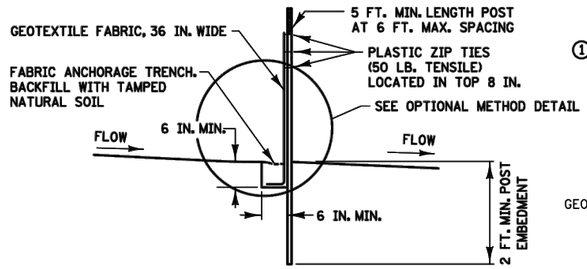
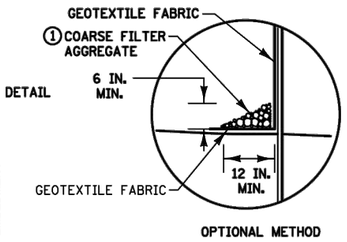
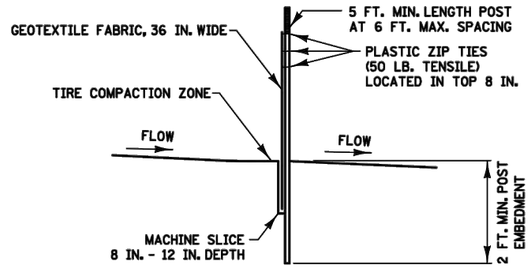
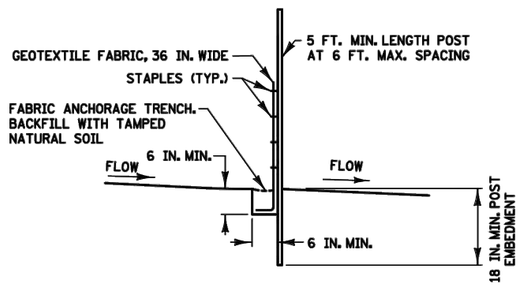




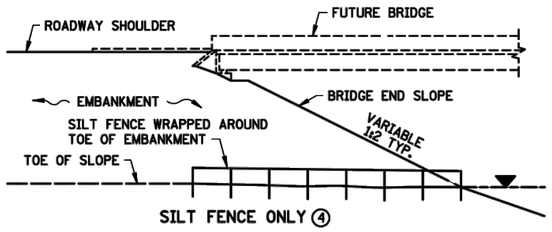
SILT FENCE TYPE HI ②
(HAND INSTALLED)



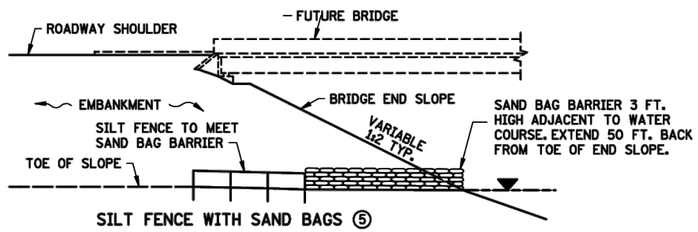
SILT FENCE TYPE MS ②
(MACHINE SLICED)



SILT FENCE TYPE PA ③
(PREASSEMBLED)

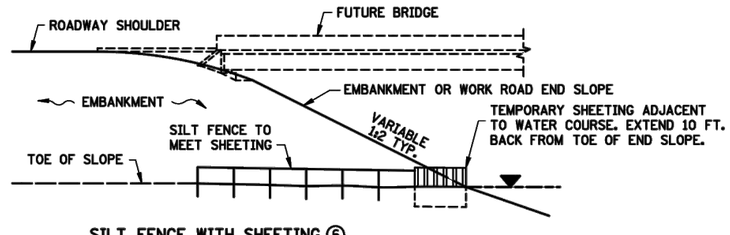


SILT FENCE ONLY ④

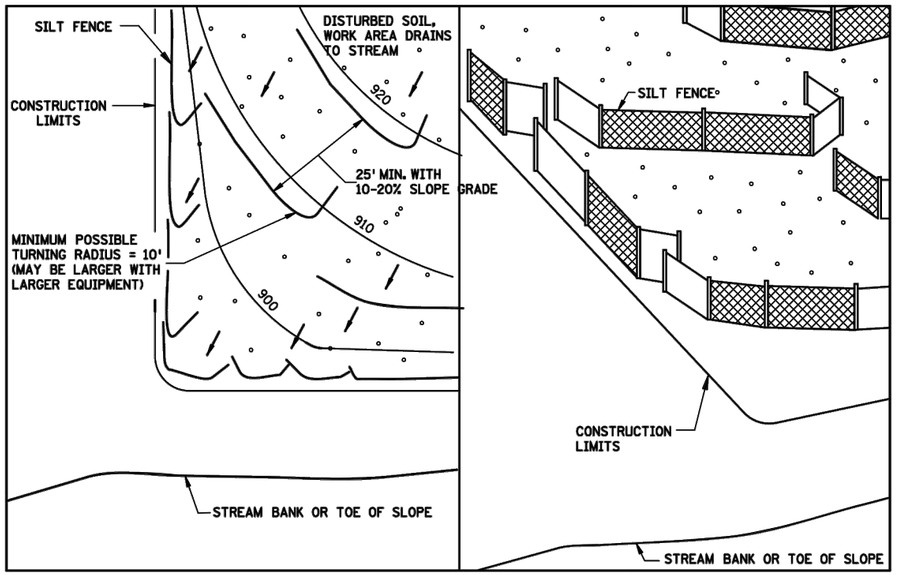


SILT FENCE WITH SAND BAGS ⑤

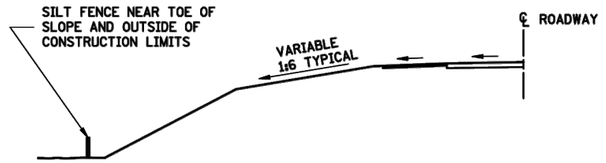
INSTALLATION AT BRIDGE EMBANKMENT ADJACENT TO WATER



SILT FENCE WITH SHEETING ⑥



J-HOOK INSTALLATION



LOCATION AT TOE OF ROADWAY EMBANKMENT

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.

LEAD EXPERT OFFICE	LYNN CLARKOWSKI CHIEF ENVIRONMENTAL OFFICER OFFICE OF ENVIRNOMENTAL STEWARDSHIP	TEMPORARY SEDIMENT CONTROL SILT FENCE	APPROVED: 02-28-2017 REVISED:	THOMAS STYRBICKI STATE DESIGN ENGINEER	STANDARD PLAN 5-297.405	6 OF 8
	DEPARTMENT OF TRANSPORTATION	STANDARD PLAN	STATE PROJ. NO.		SHEET NO.	
			TRUNK HWY.		TOTAL SHEETS	

NO	DATE	DWN	CKD	REVISIONS

ALLIANT

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SIGNATURE:
DATE 2/27/2025 LICENSE # 43560

DETAILS & STANDARD PLANS

HAMEL ROAD EXTENSION

SHEET NO. 20 OF 45 SHEETS

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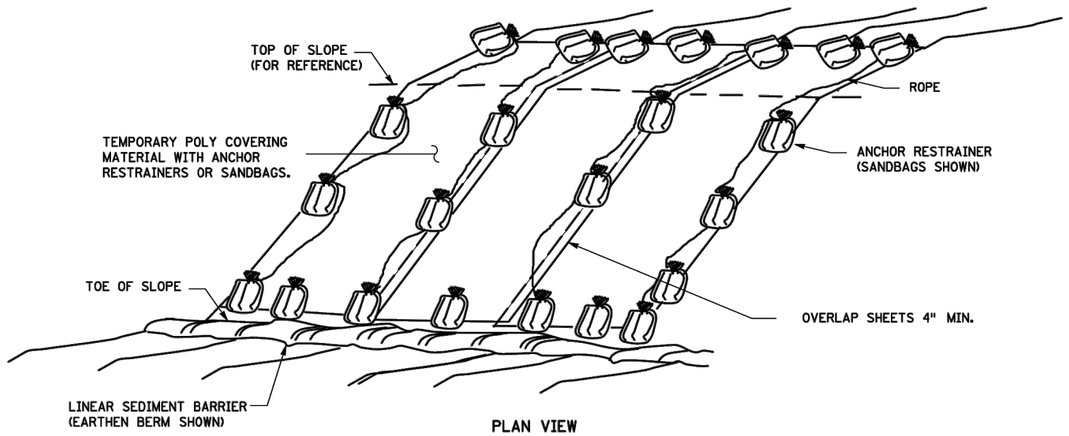
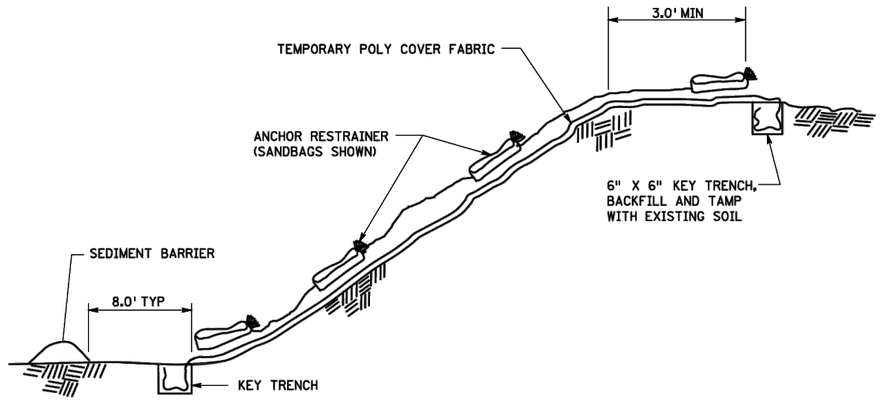
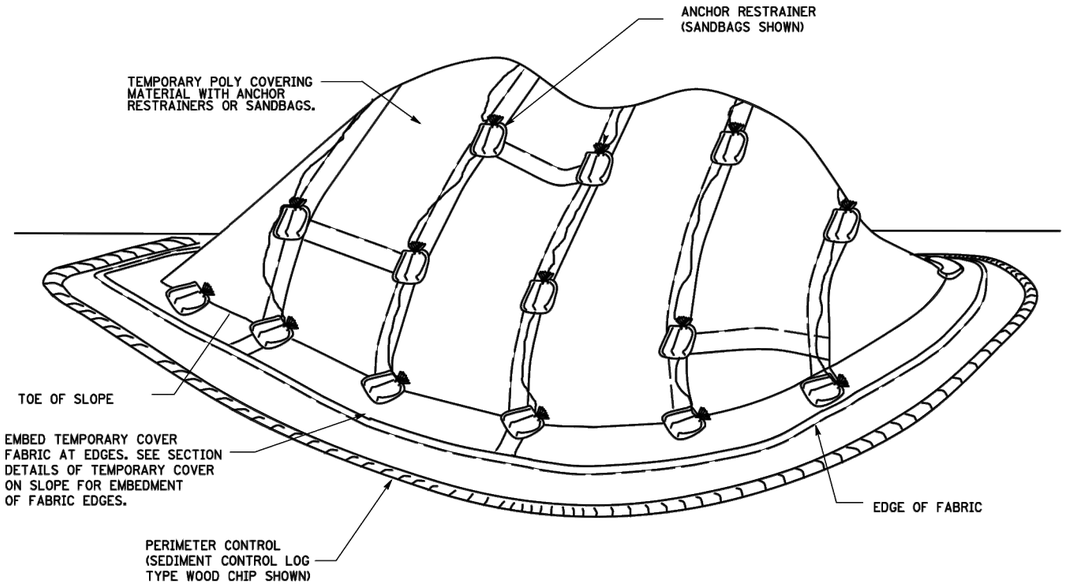


PLAN VIEW

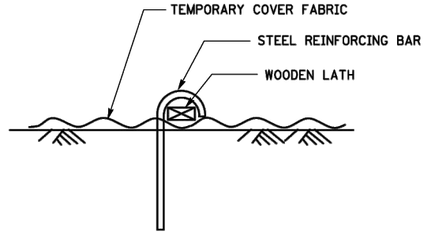


ELEVATION VIEW

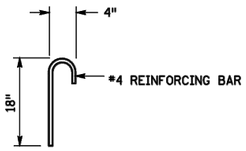
TEMPORARY POLY COVER ON SLOPE



TEMPORARY POLY COVER ON STOCKPILE



ANCHOR RESTRAINER
(STEEL BAR AND WOODEN LATH OPTION)



STEEL REINFORCING BAR DETAIL

NOTES:

ANCHOR RESTRAINERS: TYPE, QUANTITY, AND SPACING ARE INCIDENTAL TO POLY COVER. PROVIDE ON CORNERS AND SEAMS OF POLY COVER MATERIAL TO KEEP FROM BLOWING OFF. NO MINIMUM SPACING REQUIRED.

PERIMETER CONTROL: USE SEDIMENT CONTROL LOGS TYPE WOOD CHIP OR COMPOST, INCIDENTAL.

LEAD EXPERT OFFICE	LYNN CLARKOWSKI CHIEF ENVIRONMENTAL OFFICER OFFICE OF ENVIRNOMENTAL STEWARDSHIP		TEMPORARY EROSION CONTROL TEMPORARY POLY COVERINGS	APPROVED: 02-28-2017 REVISED:	THOMAS STYRBICKI STATE DESIGN ENGINEER	STANDARD PLAN 5-297.409	1 OF 1
	DEPARTMENT OF TRANSPORTATION		STANDARD PLAN	STATE PROJ. NO.		SHEET NO.	
				TRUNK HWY.		TOTAL SHEETS	

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DETAILS & STANDARD PLANS

HAMEL ROAD EXTENSION

SHEET NO. 21 OF 45 SHEETS

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PC: 103+38.18

100

L100

CITY OF PLYMOUTH
1811822120007

C100

SVK DEVELOPMENT LLC
1811822120055

PT: 106+75.74

L101

PC: 108+14.66

℄ HAMEL ROAD

PARK NICOLLET CLINIC
4155 CO RD NO 101
1811822130004

L200

118

℄ TRAIL 2

200'

PARK NICOLLET CLINIC
1811822130006

C101

PT: 110+03.06

110

L102

PC: 111+93.79

PT: 113+58.13

115

L103

C102

BUSCH LAND LLC
4045 CO RD NO 101
1811822130007

N

0 50 100
SCALE IN FEET

NO	DATE	DWN	CKD	REVISIONS

ALLIANT

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PRINT NAME: ERIC NELSON
SIGNATURE:
DATE 2/27/2025 LICENSE # 43560

ALIGNMENT PLAN

HAMEL ROAD EXTENSION

SHEET NO. 22 OF 45 SHEETS

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ALIGNMENT DATA
HAMEL ROAD

SEGMENT NUMBER	BEGINNING STATION	ENDING STATION	PI STATION	NOTES	DELTA	DEGREE	RADIUS (FT)	TANGENT (FT)	LENGTH (FT)	BEGINNING COORDINATES NORTHING	BEGINNING COORDINATES EASTING	ENDING COORDINATES NORTHING	ENDING COORDINATES EASTING	AZIMUTH
L100	100+00.00	103+38.18							338.18	188547.03	467051.01	188311.02	467293.21	134°15'26"
C100	103+38.18	106+75.74	105+53.02		89°57'28"	26°38'57.12"	215.00	214.84	337.56	188311.02	467293.21	188007.11	467297.27	134°15'26" 224°12'54"
L101	106+75.74	108+14.66							138.92	188007.11	467297.27	187907.54	467200.39	224°12'54"
C101	108+14.66	110+03.06	109+23.57		71°57'57"	38°11'49.87"	150.00	108.91	188.41	187907.54	467200.39	187733.09	467175.15	224°12'54" 152°14'58"
L102	110+03.06	111+93.79							190.72	187733.09	467175.15	187564.31	467263.96	152°14'58"
C102	111+93.79	113+58.13	112+85.30		62°46'34"	38°11'49.87"	150.00	91.52	164.35	187564.31	467263.96	187484.16	467398.08	152°14'58" 89°28'23"
L103	113+58.13	118+00.00							441.87	187484.16	467398.08	187488.22	467839.93	89°28'23"

ALIGNMENT DATA
TRAIL 2

SEGMENT NUMBER	BEGINNING STATION	ENDING STATION	PI STATION	NOTES	DELTA	DEGREE	RADIUS (FT)	TANGENT (FT)	LENGTH (FT)	BEGINNING COORDINATES NORTHING	BEGINNING COORDINATES EASTING	ENDING COORDINATES NORTHING	ENDING COORDINATES EASTING	AZIMUTH
L200	2000+00.00	2001+75.00							175.00	187507.17	467726.06	187508.78	467901.05	89°28'23"

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NO	DATE	DWN	CKD	REVISIONS

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PRINT NAME: ERIC NELSON
SIGNATURE:
DATE 2/27/2025 LICENSE # 43560

ALIGNMENT PLAN

HAMEL ROAD EXTENSION

SHEET NO. 23 OF 45 SHEETS

STATE HIGHWAY NO. 55

HAMEL ROAD

COUNTY ROAD 101

FRONTAGE ROAD

ARVIG

CENTERPOINT ENERGY

CENTURY LINK

CENTURY LINK [C]

CENTERPOINT ENERGY [C]

ZAYO

COMCAST

XCEL

HENNEPIN COUNTY

100

105

110

115

CITY OF PLYMOUTH
1811822120007

PARK NICOLLET CLINIC
4155 CO RD NO 101
1811822130004

PRETREATMENT BASIN
BOT EL. 1002

BIORETENTION BASIN
BOT EL. 1002

SVK DEVELOPMENT LLC
1811822120055

CONSTRUCTION LIMITS

FILTRATION BASIN
BOT EL. 996.5

POND
NWL EL. 1000.5

PARK NICOLLET CLINIC
1811822130005

PARK NICOLLET CLINIC
1811822130006

BUSCH LAND LLC
4045 CO RD NO 101
1811822130007

[B] XCEL

[D] BY CONTRACTOR

N

0 50 100
SCALE IN FEET

LEGEND
PROPOSED CONSTRUCTION

UTILITY ACTION LEGEND
[A] REMOVE
[B] RELOCATE
[C] ADJUST
[D] SALVAGE

GENERAL NOTES:

1. IT WILL BE THE CONTRACTOR'S RESPONSIBILITY TO UTILIZE THE "ONE CALL EXCAVATION NOTICE SYSTEM" REQUIRED BY MINNESOTA STATUTE 216D.
2. THE APPROXIMATE PORTIONS OF EXISTING UTILITY FACILITIES THAT ARE EXPECTED TO BE IMPACTED ARE SHOWN IN **BOLD.**
3. CONTRACTOR SHALL COORDINATE DIRECTLY WITH UTILITY OWNERS REGARDING PROTECTION AND/OR RELOCATION OF THEIR FACILITIES.

NO	DATE	DWN	CKD	REVISIONS

ALLIANT

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PRINT NAME: ERIC NELSON

SIGNATURE:

DATE 2/27/2025 LICENSE # 43560

EXISTING TOPOGRAPHY AND UTILITIES PLAN

HAMEL ROAD EXTENSION

SHEET NO. 24 OF 45 SHEETS

8/15/2024 2:29 PM
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CITY TO REMOVE EXISTING GUARDRAIL. CONTRACTOR SHALL REMOVE GUARDRAIL POSTS AND ANY OTHER ASSOCIATED ITEMS (INCIDENTAL).

HAMEL ROAD

+82.6

+92.8

REMOVE PERMANENT TYPE 3 BARRICADES (BY OTHERS)

PROTECT RETAINING WALL

SALVAGE FENCE – 31 LF

SVK DEVELOPMENT LLC 1811822120055

PRETREATMENT BASIN BOT EL. 1002

BIORETENTION BASIN BOT EL. 1002

℄ HAMEL ROAD

ST-3

ST-4

CITY OF PLYMOUTH 1811822120007

FIELD DRIVEWAY

REMOVE FIELD ENTRANCE, GRADE CONTINUATION OF MNDOT DITCH

REMOVE PIPE CULVERT – 24 LF

REMOVE APRON – 2 EA (INCIDENTAL)

MATCH LINE HAMEL ROAD STA 106+50

SCALE 0 50 100 IN FEET

MATCH LINE HAMEL ROAD STA 106+50

MATCH LINE HAMEL ROAD STA 112+50

PARK NICOLLET CLINIC 4155 CO RD NO 101 1811822130004

PARK NICOLLET CLINIC 1811822130005

ST-2

℄ HAMEL ROAD

POND NWL EL. 1000.5

FILTRATION BASIN BOT EL. 996.5

SCALE 0 50 100 IN FEET

LEGEND

REMOVE BITUMINOUS PAVEMENT	CONSTRUCTION LIMITS
REMOVE BITUMINOUS WALK	WETLAND BOUNDARY
GEOTECHNICAL BORING LOCATION	EXISTING R/W
REMOVE CONCRETE CURB & GUTTER	EXISTING D&U EASEMENT
CLEARING AND GRUBBING	PARCEL BOUNDARY

GENERAL NOTES:

1. CONTRACTOR TO VERIFY REMOVAL LIMITS WITH ENGINEER PRIOR TO PERFORMING SAW CUTTING.
2. STATION AND OFFSET CALLOUTS REFERENCE THE HAMEL ROAD ALIGNMENT UNLESS NOTED OTHERWISE.
3. CONTRACTOR TO PROVIDE TREE TRIMMING OR REMOVAL OF TREES/BRUSH LESS THAN 3" IN DIAMETER AS DIRECTED BY ENGINEER(INCIDENTAL).

SPECIFIC NOTES:

① SAWING BITUMINOUS PAVEMENT (FULL DEPTH)

NO	DATE	DWN	CKD	REVISIONS

ALLIANT

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PRINT NAME: ERIC NELSON

SIGNATURE:

DATE 2/27/2025 LICENSE # 43560

REMOVAL PLAN

HAMEL ROAD – BEGIN PROJECT TO STA 112+50

HAMEL ROAD EXTENSION

SHEET NO. 25 OF 45 SHEETS

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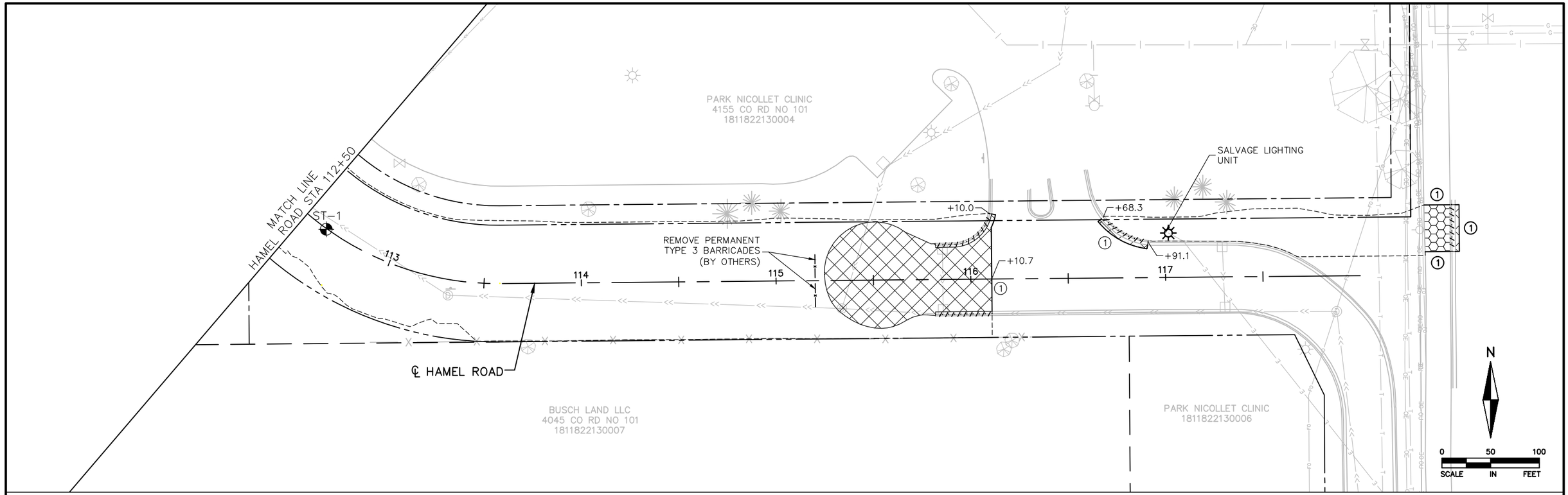

LEGEND			
	REMOVE BITUMINOUS PAVEMENT	– – – – – –	CONSTRUCTION LIMITS
	REMOVE BITUMINOUS WALK	· — · — ·	WETLAND BOUNDARY
⊕	GEOTECHNICAL BORING LOCATION	— – – – —	EXISTING R/W
	REMOVE CONCRETE CURB & GUTTER	—— – ——	EXISTING D&U EASEMENT
X	CLEARING AND GRUBBING	—— ——	PARCEL BOUNDARY

GENERAL NOTES:

1. CONTRACTOR TO VERIFY REMOVAL LIMITS WITH ENGINEER PRIOR TO PERFORMING SAW CUTTING.
2. STATION AND OFFSET CALLOUTS REFERENCE THE HAMEL ROAD ALIGNMENT UNLESS NOTED OTHERWISE.
3. CONTRACTOR TO PROVIDE TREE TRIMMING OR REMOVAL OF TREES/BRUSH LESS THAN 3" IN DIAMETER AS DIRECTED BY ENGINEER(INCIDENTAL).

SPECIFIC NOTES:

(1) SAWING BITUMINOUS PAVEMENT (FULL DEPTH)

NO	DATE	DWN	CKD	REVISIONS

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REMOVAL PLAN

HAMEL ROAD – STA 112+50 TO END PROJECT

HAMEL ROAD EXTENSION

SHEET NO. 26 OF 45 SHEETS

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ROTATE EXISTING HAMEL RD SIGN TO ALIGN WITH NEW ALIGNMENT (INCIDENTAL)

HAMEL RD

℄ HAMEL ROAD

HAMEL ROAD

100 101 +82.6 102 103 104 105 106

13.3' THRU

13.3' THRU

R8-3

B618 CONC. C&G

4" SOLID DOUBLE LINE YELLOW MULTI-COMPONENT

FIELD DRIVEWAY

SVK DEVELOPMENT LLC 1811822120055

PROTECT RETAINING WALL

INSTALL FENCE – 31 LF

PRETREATMENT BASIN BOT EL. 1002

BIORETENTION BASIN BOT EL. 1002

CITY OF PLYMOUTH 1811822120007

PROPOSED PERMANENT EASEMENT

MATCH LINE HAMEL ROAD STA 106+50

SCALE 0 25 50 IN FEET

GENERAL NOTES:
1. SUBDRAINS SHOWN SCHEMATICALLY FOR PLAN CLARITY. SEE TYPICAL SECTIONS FOR ACTUAL LOCATION.
2. INSTALL CLEANOUTS ON SUBDRAIN PER CITY STANDARD PLATE ST-21.

SPECIFIC NOTES:
(1) CONNECT INTO EX. DRAINAGE STRUCTURE (SUBDRAIN)
(2) ADJUST FRAME & RING CASTING
(3) RECONSTRUCT DRAINAGE STRUCTURE – CONTRACTOR TO SPIN CONE TO RELOCATE CASTING OUTSIDE PROPOSED GUTTER

LEGEND

- BITUMINOUS TRAIL
- EXISTING BITUMINOUS TRAIL
- BITUMINOUS PAVEMENT
- 6" CONCRETE WALK
- 8" CONCRETE DRIVEWAY PAVEMENT
- CONSTRUCTION LIMITS
- WETLAND BOUNDARY
- EXISTING R/W
- EXISTING D&U EASEMENT
- PARCEL BOUNDARY
- PVC DRAIN TILE CLEANOUT
- (S) INDICATES PEDESTRIAN RAMP – SLOPE SHALL BE BETWEEN 5.0% MIN AND 8.3% MAX DIRECTION SHOWN AND CROSS-SLOPE SHALL NOT EXCEED 2.0%
- (F) INDICATES PEDESTRIAN RAMP – SLOPE SHALL BE GREATER THAN 2.0% AND LESS THAN 5.0% IN DIRECTION SHOWN AND CROSS-SLOPE SHALL NOT EXCEED 2.0%

HAMEL ROAD

HIGH PT STA: 105+55.90
HIGH PT ELEV: 1014.37
PVI STA: 105+40.00
PVI ELEV: 1015.11
K: 22.61
LVC: 120.00

BVCS: 104+80.00
BVCE: 1013.09

EVCS: 106+00.00
EVCE: 1013.94

1030 1020 1010 1000

EXISTING GROUND PROFILE

STA = 101+89.12
ELEV = 1007.00

PROFILE GRADE ℄

3.36%

-1.00%

0.75%

1:20

1:20

GRADING GRADE

SUBGRADE

12" SELECT GRANULAR

ADDITIONAL SUBGRADE EXCAVATION. DEPTH AND EXTENTS TO BE VERIFIED BY ENGINEER ON SITE. BACKFILL WITH COMMON EMBANKMENT BELOW SUBGRADE ELEVATION.

MATCH LINE HAMEL ROAD STA 106+50

STA = 101+82.62
ELEV = 1007.07

BVCS: 102+55.00
BVCE: 1007.49

PVI STA: 103+30.00
PVI ELEV: 1008.06
K: 57.55
LVC: 150.00

EVCS: 104+05.00
EVCE: 1010.57

1007.0 1007.08 | 1006.8 1008.01 | 1010.0 1010.41 | 1013.3 1013.67 | 1014.6 1013.94

101+00 102+00 103+00 104+00 105+00 106+00

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NO	DATE	DWN	CKD	REVISIONS

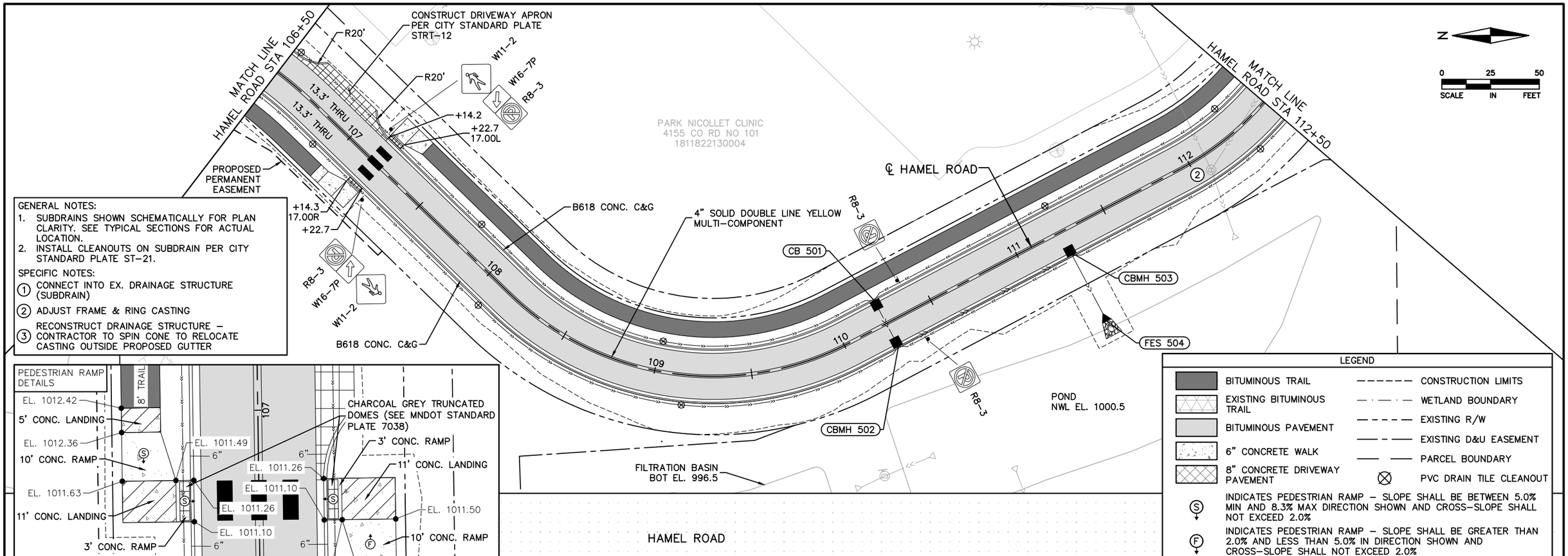
ALLIANT

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

PRINT NAME: ERIC NELSON
SIGNATURE:
DATE 2/27/2025 LICENSE # 43560

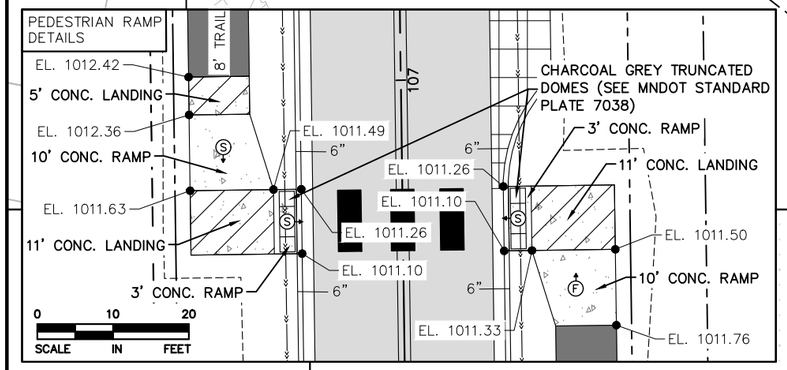
CONSTRUCTION PLAN AND PROFILE
HAMEL ROAD – BEGIN PROJECT TO STA 106+50

HAMEL ROAD EXTENSION
SHEET NO. 27 OF 45 SHEETS

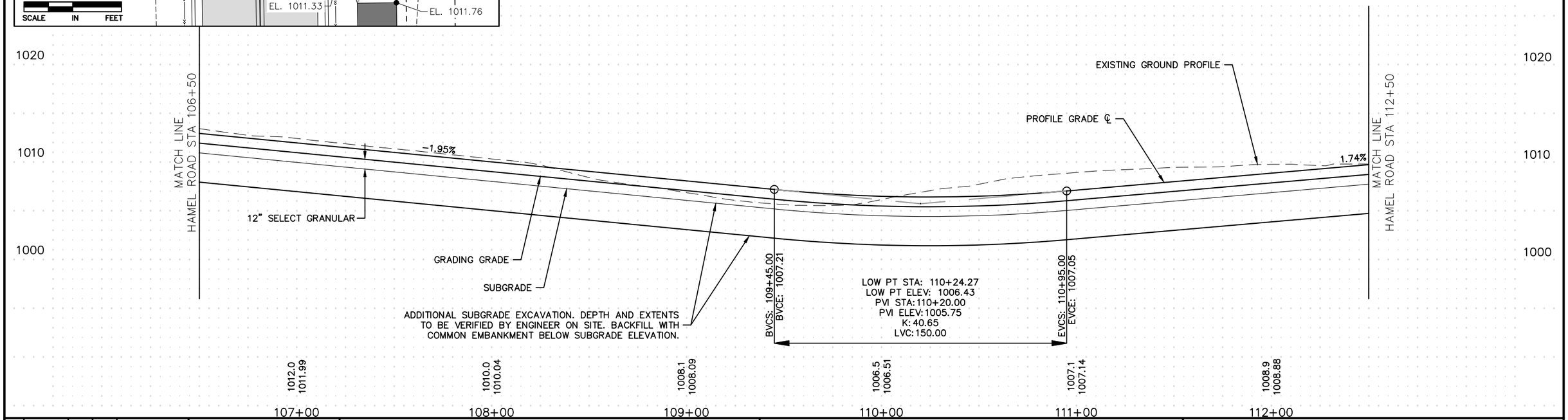


GENERAL NOTES:
1. SUBDRAINS SHOWN SCHEMATICALLY FOR PLAN CLARITY. SEE TYPICAL SECTIONS FOR ACTUAL LOCATION.
2. INSTALL CLEANOUTS ON SUBDRAIN PER CITY STANDARD PLATE ST-21.

SPECIFIC NOTES:
1. CONNECT INTO EX. DRAINAGE STRUCTURE (SUBDRAIN)
2. ADJUST FRAME & RING CASTING
3. RECONSTRUCT DRAINAGE STRUCTURE – CONTRACTOR TO SPIN CONE TO RELOCATE CASTING OUTSIDE PROPOSED GUTTER



HAMEL ROAD



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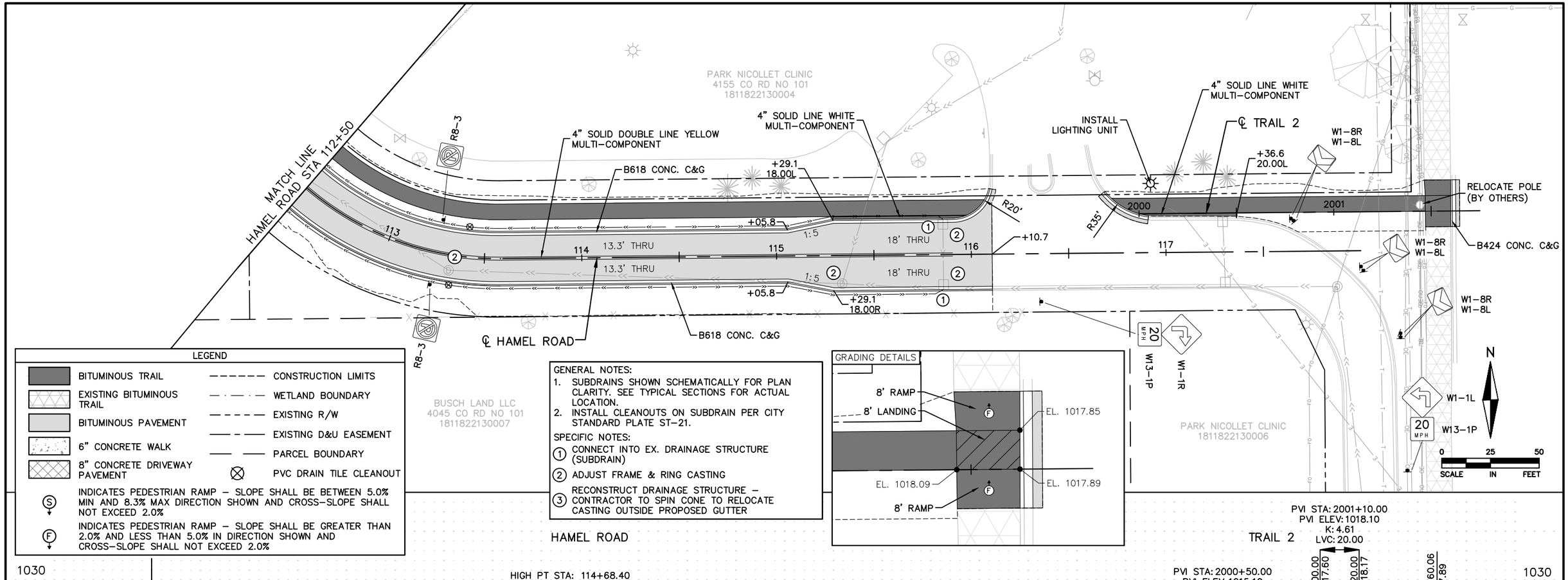
CONSTRUCTION PLAN AND PROFILE
HAMEL ROAD – STA 106+50 TO STA 112+50

HAMEL ROAD EXTENSION
SHEET NO. 28 OF 45 SHEETS



LEGEND

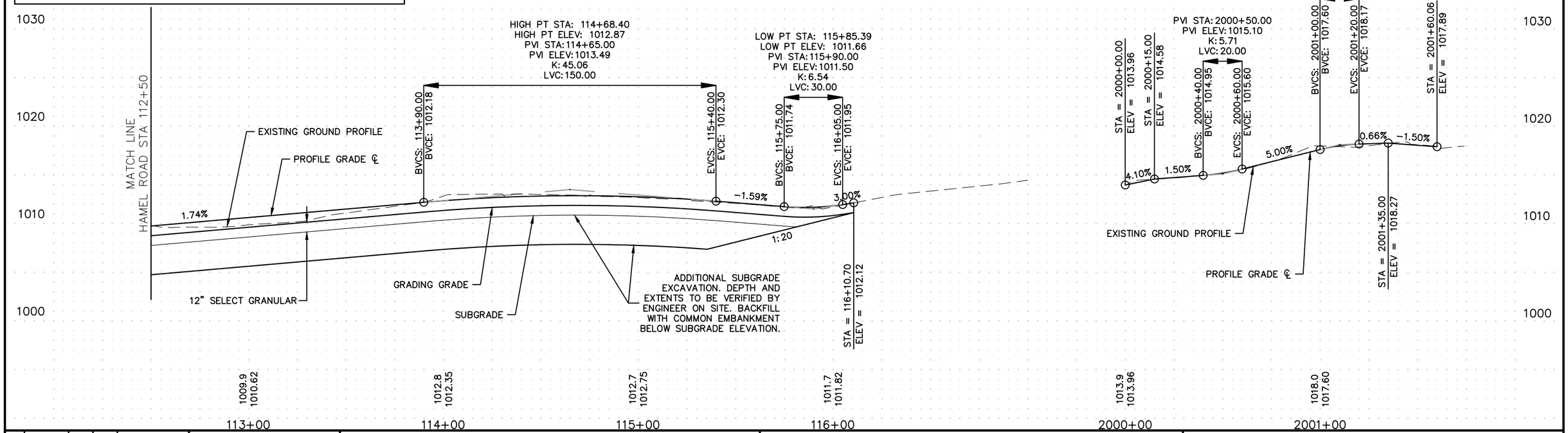
- BITUMINOUS TRAIL
- EXISTING BITUMINOUS TRAIL
- BITUMINOUS PAVEMENT
- 6" CONCRETE WALK
- 8" CONCRETE DRIVEWAY PAVEMENT
- CONSTRUCTION LIMITS
- WETLAND BOUNDARY
- EXISTING R/W
- EXISTING D&U EASEMENT
- PARCEL BOUNDARY
- PVC DRAIN TILE CLEANOUT
- (S) INDICATES PEDESTRIAN RAMP – SLOPE SHALL BE BETWEEN 5.0% MIN AND 8.3% MAX DIRECTION SHOWN AND CROSS-SLOPE SHALL NOT EXCEED 2.0%
- (F) INDICATES PEDESTRIAN RAMP – SLOPE SHALL BE GREATER THAN 2.0% AND LESS THAN 5.0% IN DIRECTION SHOWN AND CROSS-SLOPE SHALL NOT EXCEED 2.0%

GENERAL NOTES:
1. SUBDRAINS SHOWN SCHEMATICALLY FOR PLAN CLARITY. SEE TYPICAL SECTIONS FOR ACTUAL LOCATION.
2. INSTALL CLEANOUTS ON SUBDRAIN PER CITY STANDARD PLATE ST-21.

SPECIFIC NOTES:
1. CONNECT INTO EX. DRAINAGE STRUCTURE (SUBDRAIN)
2. ADJUST FRAME & RING CASTING
3. RECONSTRUCT DRAINAGE STRUCTURE – CONTRACTOR TO SPIN CONE TO RELOCATE CASTING OUTSIDE PROPOSED GUTTER

GRADING DETAILS

HAMEL ROAD



TRAIL 2

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CONSTRUCTION PLAN AND PROFILE
HAMEL ROAD – STA 112+50 TO END PROJECT

HAMEL ROAD EXTENSION
SHEET NO. 29 OF 45 SHEETS

SIGN TABULATION

ST

SIGN NO.	QTY.	POST NO. & TYPE	MTG HT. (FT.)	PANEL SIGN SIZE (INCH)	PANEL AREA (SQ. FT.)	PANEL TOTAL AREA (SQ. FT.)	CODE NO.	PANEL LEGEND
C-1	3	2-U	7	18 X 24	3.00	9.00	W1-8R	CHEVRON ALIGNMENT - LEFT
				18 X 24	3.00	9.00	W1-8L	CHEVRON ALIGNMENT - RIGHT
C-2	1	1-U	7	30 X 30	6.25	6.25	W1-1L	SHARP LEFT TURN
				18 X 18	2.25	2.25	W13-1P	20 MPH ADVISORY SPEED PLAQUE
C-3	1	1-U	7	30 X 30	6.25	6.25	W1-1R	SHARP RIGHT TURN
				18 X 18	2.25	2.25	W13-1P	20 MPH ADVISORY SPEED PLAQUE
C-4	2	1-U	7	30 X 30	6.25	12.50	W11-2	PEDESTRIAN CROSSING
				24 X 12	2.00	4.00	W16-7P	DIAGONAL DOWNWARD ARROW
				24 X 24	4.00	8.00	R8-3	NO PARKING
C-5	6	1-U	7	24 X 24	4.00	24.00	R8-3	NO PARKING
TOTAL						84		

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CONSTRUCTION PLAN AND PROFILE
SIGN TABULATION

HAMEL ROAD EXTENSION

KEEP IN PLACE UNTIL PLACEMENT OF AGGREGATE BASE

℄ HAMEL ROAD

HAMEL ROAD

FIELD DRIVEWAY

SVK DEVELOPMENT LLC 1811822120055

CITY OF PLYMOUTH 1811822120007

PRETREATMENT BASIN BOT EL. 1002

BIORETENTION BASIN BOT EL. 1002

PROPOSED PERMANENT EASEMENT

MATCH LINE HAMEL ROAD STA 106+50

MATCH LINE HAMEL ROAD STA 106+50

PROPOSED PERMANENT EASEMENT

℄ HAMEL ROAD

PARK NICOLLET CLINIC 4155 CO RD NO 101 1811822130004

PARK NICOLLET CLINIC 1811822130005

MATCH LINE HAMEL ROAD STA 112+50

CB 501

CBMH 503

ROLLED EROSION PREVENTION CATEGORY 35

RIPRAP

FES 504

CBMH 502

POND NWL EL. 1000.5

FILTRATION BASIN BOT EL. 996.5

100 101 102 103 104 105 106 107 108 109 110 111 112

N

0 25 50 SCALE IN FEET

LEGEND

- SURFACE FLOW DIRECTION
- STORM DRAIN INLET PROTECTION
- SILT FENCE TYPE HI
- SEDIMENT CONTROL LOG TYPE COMPOST
- CONSTRUCTION LIMITS
- WETLAND BOUNDARY
- EXISTING R/W
- EXISTING D&U EASEMENT
- PARCEL BOUNDARY
- SEED RESIDENTIAL TURFGRASS (200 LB/ACRE) FERTILIZER TYPE I (20-10-20 @ 350 LB/ACRE) HYDRAULIC STABILIZED FIBER MATRIX (3000 LB/ACRE)
- SEED SOUTHERN TALLGRASS ROADSIDE (26 LB/ACRE) FERTILIZER TYPE 3 (22-5-10 @ 350 LB/ACRE) HYDRAULIC STABILIZED FIBER MATRIX (3000 LB/ACRE)
- ROCK CONSTRUCTION ENTRANCE

NO	DATE	DWN	CKD	REVISIONS

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SIGNATURE:

DATE 2/27/2025 LICENSE # 43560

DRAINAGE, TURF ESTABLISHMENT, AND EROSION CONTROL PLAN

HAMEL ROAD – BEGIN PROJECT TO STA 112+50

HAMEL ROAD EXTENSION

SHEET NO. 31 OF 45 SHEETS

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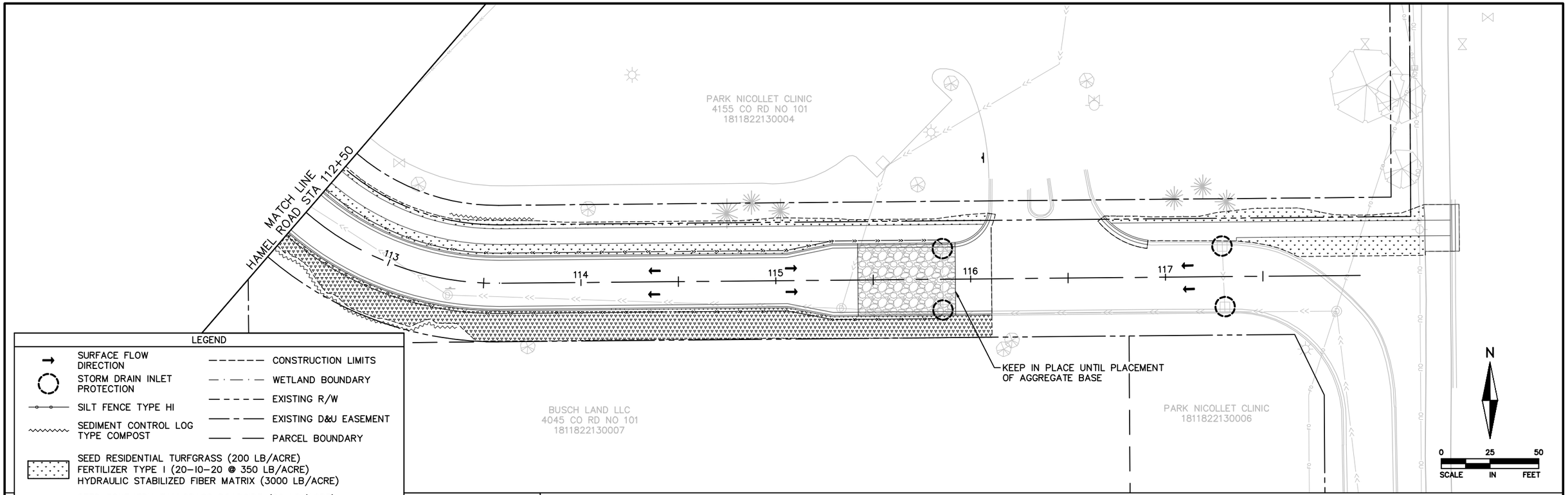
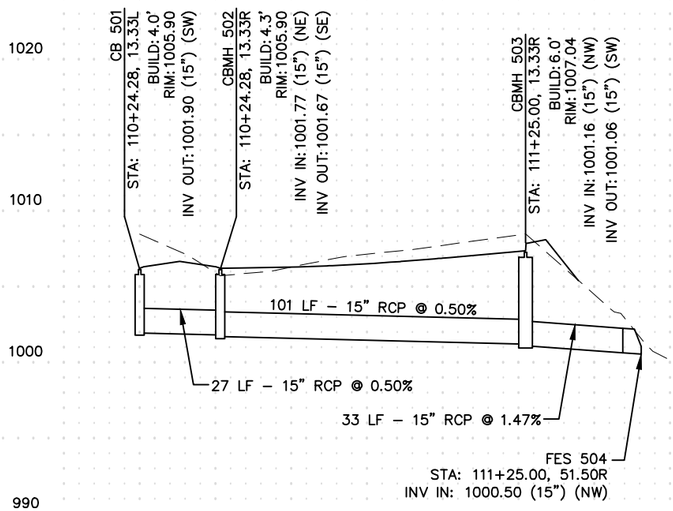


LEGEND

- SURFACE FLOW DIRECTION
- STORM DRAIN INLET PROTECTION
- SILT FENCE TYPE HI
- SEDIMENT CONTROL LOG TYPE COMPOST
- CONSTRUCTION LIMITS
- WETLAND BOUNDARY
- EXISTING R/W
- EXISTING D&U EASEMENT
- PARCEL BOUNDARY
- SEED RESIDENTIAL TURFGRASS (200 LB/ACRE) FERTILIZER TYPE I (20–10–20 @ 350 LB/ACRE) HYDRAULIC STABILIZED FIBER MATRIX (3000 LB/ACRE)
- SEED SOUTHERN TALLGRASS ROADSIDE (26 LB/ACRE) FERTILIZER TYPE 3 (22–5–10 @ 350 LB/ACRE) HYDRAULIC STABILIZED FIBER MATRIX (3000 LB/ACRE)
- ROCK CONSTRUCTION ENTRANCE



STORM SEWER TABULATION — A

FLOWS FROM STR. NO.	TYPE	STRUCTURE LOCATION (1) ALIGNMENT	STATION	OFFSET (FT)	TOP OF CASTING ELEV (2)	CASTING ASSEMBLY (EACH)	STEPS REQ'D (7)	OUTLET ELEV.	CITY STANDARD PLATE NO. ST–2 (LIN FT (3))	ST–6 (48" DIA.) (LIN FT (3))	DRAINS TO STR. NO.	% GRADE	INLET ELEV.	PIPE LENGTH (4) (5) (6) 15" RCP CL V (LIN FT)	15" RC PIPE APRON (EACH)	RANDOM RIPRAP CLASS III (9) (CU YD)	NOTES
CITY OF PLYMOUTH – HAMEL ROAD EXTENSION																	
501	CB	HAMEL ROAD	110+24.28	13.33 LT	1005.90	R–3067–VB	NO	1001.90	4.0		502	0.50	1001.77	27			
502	CBMH	HAMEL ROAD	110+24.28	13.33 RT	1005.90	R–3067–VB	NO	1001.67		4.3	503	0.50	1001.16	101			
503	CBMH	HAMEL ROAD	111+25.00	13.33 RT	1007.04	R–3067–V	YES	1001.06		6.0	504	1.47	1000.50	33			(8)
504	FES	HAMEL ROAD	111+25.00	51.50 RT											1	4.8	
PROJECT TOTAL:						3			4.0	10.3				161	1	4.8	

SPECIFIC NOTES:

(1) STATION AND OFFSET ARE GIVEN AT FACE OF CURB AND AT END OF APRONS.
(2) CATCH BASIN ELEVATIONS ARE 1" BELOW DESIGN GUTTER LINE GRADE.
(3) PAY HEIGHTS ARE FROM TOP OF CASTING ELEVATION TO INVERT.
(4) LENGTH OF PIPE IS TO CENTER OF STRUCTURE. DOES NOT INCLUDE APRON LENGTH.
(5) ALL CONCRETE PIPE IS DESIGN 3006 GASKET JOINT.
(6) PIPE BEDDING PER CITY STANDARD PLATE ST–8 (INCIDENTAL).
(7) DRAINAGE STRUCTURES OVER 4.5' IN HEIGHT REQUIRE STEPS.
(8) INVERT ELEVATION GIVEN AT END OF APRON.
(9) RIPRAP SHALL BE GRANITE.

NO	DATE	DWN	CKD	REVISIONS

ALLIANT

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PRINT NAME: ERIC NELSON
SIGNATURE:
DATE 2/27/2025 LICENSE # 43560

DRAINAGE, TURF ESTABLISHMENT, AND EROSION CONTROL PLAN
HAMEL ROAD – STA 112+50 TO END PROJECT

HAMEL ROAD EXTENSION

SHEET NO. 32 OF 45 SHEETS

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STORM WATER POLLUTION PREVENTION PLAN (SWPPP) NARRATIVE – SHEET 1 OF 2

HAMEL ROAD EXTENSION

THE HAMEL ROAD EXTENSION PROJECT COMPLETES A GAP IN HAMEL ROAD SOUTHEAST OF THE TH 55 AND CR 101 INTERSECTION. THE SCOPE OF THIS PROJECT INCLUDES: GRADING, AGGREGATE BASE, BITUMINOUS SURFACING, BITUMINOUS TRAIL, PEDESTRIAN RAMPS, CURB & GUTTER, STORM SEWER, AND SIGNING.

RECEIVING WATERS

RECEIVING WATERS LOCATED WITHIN ONE MILE AERIAL RADIUS) OF THE PROJECT LIMITS ARE IDENTIFIED ON THE USGS 7.5 MIN QUAD MAP. THE FOLLOWING IMPAIRED WATERS ARE LOCATED WITHIN ONE MILE (AERIAL RADIUS) OF THE PROJECT LIMITS AND RECEIVE RUNOFF FROM THE PROJECT SITE.

- ELM CREEK – EPA–APPROVED IMPAIRMENT FOR BENTHIC MACROINVERTEBRATES BIOASSESSMENTS, CHLORIDE, DISSOLVED OXYGEN, ESCHERICHIA COLI (E. COLI), FISH BIOASSESSMENTS, AND TOTAL SUSPENDED SOLIDS (TSS).
- UNNAMED CREEK – EPA–APPROVED IMPAIRMENT FOR BENTHIC MACROINVERTEBRATES BIOASSESSMENTS, CHLORIDE, ESCHERICHIA COLI (E. COLI).

PROJECT PERSONNEL AND TRAINING

THIS SWPPP NARRATIVE WAS PREPARED BY DAVID BAUER, WITH ALLIANT ENGINEERING. HE IS CERTIFIED IN THE DESIGN OF CONSTRUCTION SWPPPS BY THE UNIVERSITY OF MINNESOTA. TRAINING DOCUMENTATION BELOW.

UNIVERSITY OF MINNESOTA
David Bauer
Construction Site Management (May 31 2023)
Design of Construction SWPPP (May 31 2025)

THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING AN EROSION CONTROL SUPERVISOR IN GOOD STANDING WHO IS KNOWLEDGEABLE AND EXPERIENCED IN THE APPLICATION OF EROSION PREVENTION AND SEDIMENT CONTROL BEST MANAGEMENT PRACTICES AND CERTIFIED IN CONSTRUCTION SITE MANAGEMENT OR EQUIVALENT. THE EROSION CONTROL SUPERVISOR WILL WORK WITH THE PROJECT ENGINEER TO OVERSEE THE IMPLEMENTATION OF THE SWPPP AND THE INSTALLATION, INSPECTION AND MAINTENANCE OF THE EROSION PREVENTION AND SEDIMENT CONTROL BMPS BEFORE, DURING AND AFTER CONSTRUCTION UNTIL THE NOTICE OF TERMINATION (NOT) HAS BEEN FILED WITH THE MPCA. WORK WILL NOT BE ALLOWED TO COMMENCE UNTIL PROOF OF CERTIFICATION HAS BEEN PROVIDED TO THE PROJECT ENGINEER.

THE PRIME CONTRACTOR SHALL PROVIDE AT LEAST ONE CERTIFIED INSTALLER FOR EACH CONTRACTOR OR SUBCONTRACTOR THAT INSTALLS THE PRODUCTS LISTED IN SPECIFICATION SECTION 2573.3.A.2. WORK WILL NOT BE ALLOWED TO COMMENCE UNTIL PROOF OF CERTIFICATION HAS BEEN PROVIDED TO THE PROJECT ENGINEER.

CHAIN OF RESPONSIBILITY

CITY OF PLYMOUTH AND THE CONTRACTOR ARE CO–PERMITTEES FOR THE NPDES CONSTRUCTION PERMIT. THE CONTRACTOR IS RESPONSIBLE TO COMPLY WITH ALL ASPECTS OF THE NPDES CONSTRUCTION PERMIT AT ALL TIMES UNTIL THE NOTICE OF TERMINATION (NOT) HAS BEEN FILED WITH THE MPCA. THE CONTRACTOR WILL DEVELOP A CHAIN OF COMMAND WITH ALL OPERATORS ON THE SITE TO ENSURE THAT THE SWPPP WILL BE IMPLEMENTED AND STAY IN EFFECT UNTIL THE CONSTRUCTION PROJECT IS COMPLETE, THE ENTIRE SITE HAS UNDERGONE FINAL STABILIZATION, AND A NOT HAS BEEN SUBMITTED TO THE MPCA.

PROJECT CONTACTS

CITY OF PLYMOUTH AND THE CONTRACTOR ARE RESPONSIBLE FOR IMPLEMENTATION OF THE SWPPP AND INSTALLATION, INSPECTION AND MAINTENANCE OF THE EROSION PREVENTION AND SEDIMENT CONTROL BMPS BEFORE, DURING AND AFTER CONSTRUCTION UNTIL THE NOTICE OF TERMINATION (NOT) HAS BEEN FILED.

ORGANIZATION	CONTACT NAME	TITLE	PHONE
CITY OF PLYMOUTH	TONY MILLER	PROJECT MANAGER	763–509–5528
CONTRACTOR		PROJECT MANAGER	XXX–XXX–XXXX
CONTRACTOR		EROSION CONTROL SUPERVISOR	XXX–XXX–XXXX
MINNESOTA POLLUTION CONTROL AGENCY		MPCA COMPLIANCE AND ENFORCEMENT	507–206–2610

MPCA DUTY OFFICER 24 HOUR EMERGENCY NOTIFICATION: 651–649–5451 TOLL FREE: 800–422–0798

LONG TERM MAINTENANCE AND OPERATION

CITY OF PLYMOUTH IS RESPONSIBLE FOR THE LONG TERM MAINTENANCE AND OPERATION OF THE STORM SEWER SYSTEMS ON CITY ROW. PARK NICOLLET IS IS RESPONSIBLE FOR THE LONG TERM MAINTENANCE OF STORMWATER MANAGEMENT SYSTEMS ON PARK NICOLLET PROPERTY THAT RECEIVE RUNOFF FROM THIS PROJECT.

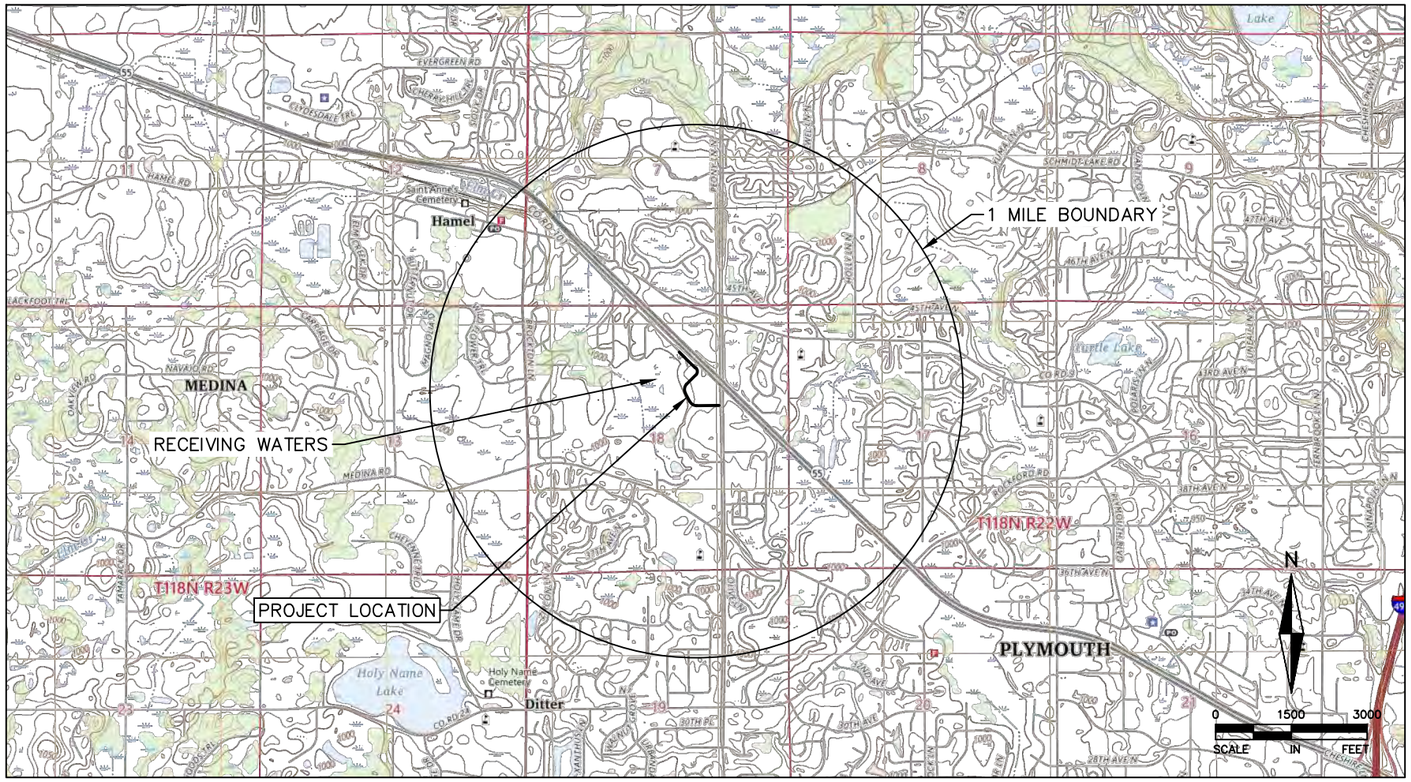
LOCATION OF SWPPP REQUIREMENTS

THE REQUIRED SWPPP ELEMENTS MAY BE LOCATED IN MANY PLACES WITHIN THE PLAN SET AS WELL AS IN THE SPECIAL PROVISIONS, MNDOT SPEC BOOK (2020 EDITION), OR ON FILE WITH THE COUNTY. THE NOTES AND TABLE BELOW ARE INTENDED TO BE A QUICK REFERENCE FOR THE CONTRACTOR AND PROJECT ENGINEER TO USE IN THE FIELD. THERE MAY BE ADDITIONAL REQUIRED SWPPP ELEMENTS INCLUDED ON THE PROJECT THAT ARE NOT LISTED ON THIS SHEET.

LOCATION OF SWPPP REQUIREMENTS IN PROJECT PLAN

DESCRIPTION	LOCATION
EROSION CONTROL AND TURF ESTABLISHMENT PLAN	SHEET NOS. 31 – 32
DRAINAGE PLAN	SHEET NOS. 31 – 32
STATEMENT OF ESTIMATED QUANTITIES	SHEET NO. 2

STORMWATER CALCULATIONS AND ADDITIONAL HYDRAULIC DESIGN INFORMATION IS AVAILABLE UPON REQUEST.



SITE INSPECTION AND MAINTENANCE

INSPECT THE ENTIRE CONSTRUCTION SITE A MINIMUM OF ONCE EVERY 7 DAYS DURING ACTIVE CONSTRUCTION AND WITHIN 24 HOURS AFTER A RAINFALL EVENT GREATER THAN 0.5 INCHES IN 24 HOURS. INSPECT ALL TEMPORARY AND PERMANENT WATER QUALITY MANAGEMENT, EROSION PREVENTION AND SEDIMENT CONTROL BMPS UNTIL THE SITE HAS UNDERGONE FINAL STABILIZATION AND THE NOT HAS BEEN SUBMITTED. INSPECT SURFACE WATERS FOR SIGNS OF EROSION AND SEDIMENT DEPOSITION. INSPECT CONSTRUCTION SITE VEHICLE EXIT LOCATIONS FOR EVIDENCE OF TRACKING ONTO PAVED SURFACES. INSPECT SURROUNDING PROPERTIES FOR EVIDENCE OF OFF SITE SEDIMENT ACCUMULATION.

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:

A. DATE AND TIME OF INSPECTIONS
B. NAME OF PERSONS CONDUCTING INSPECTIONS
C. FINDINGS OF INSPECTIONS, INCLUDING RECOMMENDATIONS FOR CORRECTIVE ACTIONS
D. CORRECTIVE ACTIONS TAKEN, INCLUDING DATES, TIMES, AND PARTY COMPLETING MAINTENANCE ACTIVITIES.
E. DATE AND AMOUNT OF ALL RAINFALL EVENTS GREATER THAN 0.5 INCH IN 24 HOURS
F. DOCUMENTS AND CHANGES MADE TO THE SWPPP

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.
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. 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 SITE MANAGEMENT PLAN FOR WORKING IN SURFACE WATERS. CONTACT ALL APPROPRIATE AUTHORITIES PRIOR TO WORKING IN SURFACE WATERS.
D. 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.
E. MAINTAIN ALL BMPS UNTIL WORK HAS BEEN COMPLETED, SITE HAS UNDERGONE FINAL STABILIZATION, AND THE NOT HAS BEEN SUBMITTED TO THE MPCA.

ENVIRONMENTAL REVIEW

THERE ARE NO STORMWATER MITIGATION MEASURES REQUIRED AS A RESULT OF AN ENVIRONMENTAL, ARCHEOLOGICAL OR AGENCY REVIEW. ALL MITIGATION MEASURES HAVE BEEN ADDRESSED IN THIS PLAN SET OR THE SPECIAL PROVISIONS.

THIS PROJECT IS NOT LOCATED IN A WELL HEAD PROTECTION AREA OR DRINKING WATER SUPPLY MANAGEMENT AREA (DWSMA).

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NO	DATE	DWN	CKD	REVISIONS

ALLIANT

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PRINT NAME: ERIC NELSON
SIGNATURE:
DATE 2/27/2025 LICENSE # 43560

STORM WATER POLLUTION PREVENTION PLAN

HAMEL ROAD EXTENSION

SHEET NO. 33 OF 45 SHEETS

STORM WATER POLLUTION PREVENTION PLAN (SWPPP) NARRATIVE – SHEET 2 OF 2

LAND FEATURE CHANGES

TOTAL DISTURBED AREA:	2.05	ACRES
TOTAL EXISTING IMPERVIOUS SURFACE AREA:	0.07	ACRES
TOTAL PROPOSED IMPERVIOUS SURFACE AREA:	1.23	ACRES
TOTAL PROPOSED NET CHANGE IN IMPERVIOUS SURFACE:	1.16	ACRES

STABILIZATION TIME FRAMES

AREA	TIME FRAME	NOTES
STOCKPILES AND BARE SOIL	WITHIN 7 DAYS	1

1. INITIATE STABILIZATION IMMEDIATELY WHEN CONSTRUCTION HAS TEMPORARILY OR PERMANENTLY CEASED ON ANY PORTION OF THE SITE. COMPLETE STABILIZATION WITHIN THE TIME FRAME LISTED. IN MANY INSTANCES THIS WILL REQUIRE STABILIZATION TO OCCUR MORE THAN ONCE DURING THE COURSE OF THE PROJECT. TEMPORARY SOIL STOCKPILES WITHOUT SIGNIFICANT CLAY OR SILT AND STOCKPILED AND CONSTRUCTED ROAD BASE ARE EXEMPT FROM THE STABILIZATION REQUIREMENT.

PROJECT SCHEDULE AND CONSTRUCTION PHASING

LAND DISTURBING ACTIVITY WILL BEGIN SPRING 2025 AND BE COMPLETED BY FALL 2025.

CONSTRUCTION WILL BE PHASED AND STAGED TO MINIMIZE THE DURATION OF EXPOSED SOIL AREAS.

GENERAL SWPPP NOTES FOR CONSTRUCTION ACTIVITY

1. AMEND THE SWPPP AND DOCUMENT ANY AND ALL CHANGES TO THE SWPPP AND ASSOCIATED PLAN SHEETS IN A TIMELY MANNER. CHANGES TO THE SWPPP SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL BY THE EROSION CONTROL SUPERVISOR. STORE THE SWPPP AND ALL AMENDMENTS ON SITE AT ALL TIMES.
2. PREPARE AND SUBMIT A SITE MANAGEMENT PLAN FOR THE ENGINEER'S ACCEPTANCE FOR CONCRETE MANAGEMENT, CONCRETE SLURRY APPLICATION AREAS, AREAS IDENTIFIED IN THE PLANS AS "SITE MANAGEMENT PLAN AREA," ANY WORK THAT WILL REQUIRE DEWATERING, AND AS DIRECTED BY THE ENGINEER. SUBMIT ALL SITE MANAGEMENT PLANS TO THE ENGINEER IN WRITING. ALLOW A MINIMUM OF 7 DAYS FOR THE COUNTY TO REVIEW AND ACCEPT SITE MANAGEMENT PLAN SUBMITTALS. WORK WILL NOT BE ALLOWED TO COMMENCE IF A SITE MANAGEMENT PLAN IS REQUIRED UNTIL ACCEPTANCE HAS GRANTED BY THE ENGINEER. THERE WILL BE NO EXTRA TIME ADDED TO THE CONTRACT DUE TO THE UNTIMELY SUBMITTAL.
3. IF THE CONTRACTOR DETERMINES THAT DEWATERING ACTIVITIES ARE NECESSARY FOR CONSTRUCTION, A DEWATERING ACTIVITY PLAN SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL.
4. DO NOT DISTURB AREAS OUTSIDE OF THE CONSTRUCTION LIMITS TO THE MAXIMUM EXTENT PRACTICABLE. DELINEATE AREAS NOT TO BE DISTURBED PRIOR TO STARTING GROUND DISTURBING ACTIVITIES. IF IT BECOMES NECESSARY TO DISTURB AREAS OUTSIDE OF THE CONSTRUCTION LIMITS, OBTAIN WRITTEN PERMISSION FROM THE PROJECT ENGINEER PRIOR TO PROCEEDING. PRESERVE ALL NATURAL BUFFERS SHOWN ON THE PLANS.
5. ROUTE STORMWATER AROUND UNSTABILIZED AREAS OF THE SITE WHENEVER FEASIBLE. PROVIDE EROSION CONTROL AND VELOCITY DISSIPATION DEVICES AS NEEDED TO KEEP CHANNELS FROM ERODING AND TO PREVENT NUISANCE CONDITIONS AT THE OUTLET.
6. DIRECT DISCHARGES FROM BMPS TO VEGETATED AREAS WHENEVER FEASIBLE. PROVIDE VELOCITY DISSIPATION DEVICES AS NEEDED TO PREVENT EROSION.
7. THE EROSION PREVENTION AND SEDIMENT CONTROL BMPS SHALL BE PLACED AS NECESSARY TO MINIMIZE EROSION FROM DISTURBED SURFACES AND TO CAPTURE SEDIMENT ON SITE. ALL SEDIMENT CONTROL MEASURES SHALL BE IN PLACE PRIOR TO COMMENCEMENT OF ANY REMOVAL WORK AND/OR GROUND DISTURBING ACTIVITIES COMMENCE.
8. ESTABLISH SEDIMENT CONTROL DEVICES ON ALL DOWN-GRADIENT PERIMETERS AND UP-GRADIENT OF ANY BUFFER ZONES BEFORE ANY UP-GRADIENT LAND DISTURBING ACTIVITIES BEGIN. MAINTAIN SEDIMENT CONTROL DEVICES UNTIL CONSTRUCTION IS COMPLETE AND THE SITE IS STABILIZED.
9. LOCATE PERIMETER CONTROL ON THE CONTOUR TO CAPTURE OVERLAND, LOW-VELOCITY SHEET FLOWS DOWN-GRADIENT OF ALL EXPOSED SOILS AND PRIOR TO DISCHARGING TO SURFACE WATERS OR INLETS.
10. PROVIDE PERIMETER CONTROL AROUND ALL STOCKPILES. PLACE BMP A MINIMUM OF 5 FEET FROM THE TOE OF SLOPE WHERE FEASIBLE. DO NOT PLACE STOCKPILES IN SURFACE WATERS OR STORMWATER CONVEYANCES.
11. PROTECT STORM SEWER INLETS AT ALL TIMES WITH THE APPROPRIATE INLET PROTECTION FOR EACH SPECIFIC PHASE OF CONSTRUCTION. PROVIDE INLET PROTECTION DEVICES WITH EMERGENCY OVERFLOW CAPABILITIES. SILT FENCE PLACED IN THE INLET GRATE IS NOT AN ACCEPTABLE INLET PROTECTION BMP FOR GRADING OPERATIONS. SILT FENCE PLACED IN THE GRATE IS ONLY ALLOWED FOR SHORT INTERVALS DURING MILLING OR PAVING OPERATIONS. INLET PROTECTION DEVICES MAY NEED TO BE PLACED MULTIPLE TIMES IN THE SAME LOCATION OVER THE LIFE OF THE CONTRACT. KEEP ALL STORM SEWER INLET PROTECTION DEVICES IN GOOD FUNCTIONAL CONDITION AT ALL TIMES. REPLACE INLET PROTECTION DEVICE WITH A SUITABLE ALTERNATIVE IF THE PROJECT ENGINEER DEEMS AN INLET PROTECTION DEVICE TO BE NONFUNCTIONAL, IN POOR CONDITION, INEFFECTIVE, OR NOT APPROPRIATE FOR THE CURRENT CONSTRUCTION ACTIVITIES. THERE WILL BE NO COST TO THE CITY FOR REPLACEMENT OF INLET PROTECTION DEVICES.
12. PROVIDE STABILIZATION IN ANY TRENCHES CUT FOR DEWATERING OR SITE DRAINING PURPOSES.
13. SEE SPECIAL PROVISIONS FOR METHODS TO BE USED FOR FINAL STABILIZATION OF ALL EXPOSED SOIL AREAS.
14. INPLACE VEGETATION SHALL BE MAINTAINED WHEREVER FEASIBLE. INPLACE TOPSOIL SHALL NOT BE RE-USED. SUBSOILING, SOD, OR SOIL BED PREPARATION PER MNDOT SPEC 2574 SHALL BE PERFORMED TO REDUCE SOIL COMPACTION PRIOR TO PLACING SEED, MULCH, AND FERTILIZER.

POLLUTION PREVENTION

1. PROVIDE A SPILL KIT AT EACH WORK LOCATION ON THE SITE.
2. REMOVE TRACKED SEDIMENT FROM PAVED SURFACES DAILY OR AS NEEDED.
3. STORE ALL BUILDING MATERIALS THAT HAVE THE POTENTIAL TO LEACH POLLUTANTS, PESTICIDES, HERBICIDES, INSECTICIDES, FERTILIZERS, TREATMENT CHEMICALS, AND LANDSCAPE MATERIALS UNDER COVER AND WITH SECONDARY CONTAINMENT.
4. PROVIDE A SECURE STORAGE AREA WITH RESTRICTED ACCESS FOR ALL HAZARDOUS MATERIALS AND TOXIC WASTE. RETURN ALL HAZARDOUS MATERIALS AND TOXIC WASTE TO THE DESIGNATED STORAGE AREA AT THE END OF THE BUSINESS DAY UNLESS INFEASIBLE. STORE ALL HAZARDOUS MATERIALS AND TOXIC WASTE (INCLUDING BUT NOT LIMITED TO OIL, DIESEL FUEL, GASOLINE, HYDRAULIC FLUIDS, PAINT, PETROLEUM BASED PRODUCTS, WOOD PRESERVATIVES, ADDITIVES, CURING COMPOUNDS, AND ACIDS) IN SEALED CONTAINERS WITH SECONDARY CONTAINMENT. CLEAN UP SPILLS IMMEDIATELY.
5. STORE, COLLECT AND DISPOSE OF ALL SOLID WASTE.
6. POSITION ALL PORTABLE TOILETS SO THAT THEY ARE SECURE AND CANNOT BE TIPPED OR KNOCKED OVER. LOCATE TOILETS AT LEAST 25' AWAY FROM CATCH BASINS, INLETS AND RECEIVING WATERS. TOILETS MUST BE EQUIPPED WITH A SPILL PAN. PROPERLY DISPOSE OF ALL SANITARY WASTE.
7. FUEL AND MAINTAIN VEHICLES IN A DESIGNATED CONTAINED AREA WHENEVER FEASIBLE. USE DRIP PANS OR ABSORBENT MATERIALS TO PREVENT SPILLS OR LEAKED CHEMICALS FROM DISCHARGING TO SURFACE WATER OR STORMWATER CONVEYANCES. PROVIDE A SPILL KIT AT EACH LOCATION THAT VEHICLES AND EQUIPMENT ARE FUELED OR MAINTAINED.
8. LIMIT VEHICLE AND EQUIPMENT WASHING TO A DEFINED AREA OF THE SITE. CONTAIN RUNOFF FROM THE WASHING AREA TO A TEMPORARY SEDIMENT BASIN OR OTHER EFFECTIVE CONTROL. COLLECT AND PROPERLY DISPOSE OF ALL WASTE GENERATED BY VEHICLE AND EQUIPMENT WASHING. ENGINE DEGREASING IS NOT ALLOWED ON THE SITE.
9. PROVIDE EFFECTIVE CONTAINMENT FOR ALL LIQUID AND SOLID WASTES GENERATED BY WASHOUT OF CONCRETE, STUCCO, PAINT, FORM RELEASE OILS, CURING COMPOUNDS AND OTHER CONSTRUCTION MATERIALS. LIQUID AND SOLID WASHOUT WASTES MUST NOT CONTACT THE GROUND OR ENTER STORM DRAINS. DESIGN THE CONTAINMENT SO THAT IT DOES NOT RESULT IN RUNOFF FROM THE WASHOUT OPERATIONS OR CONTAINMENT AREA.
10. CREATE AND FOLLOW A WRITTEN DISPOSAL PLAN FOR ALL WASTE MATERIALS. INCLUDE IN THE PLAN HOW THE MATERIAL WILL BE DISPOSED OF AND THE LOCATION OF THE DISPOSAL SITE. SUBMIT PLAN TO THE PROJECT ENGINEER.
11. USE METHODS AND OPERATIONAL PROCEDURES THAT PREVENT DISCHARGE OR PLACEMENT OF BITUMINOUS GRINDINGS, CUTTINGS, MILLINGS, AND OTHER BITUMINOUS WASTES FROM AREAS OF EXISTING OR FUTURE VEGETATED SOILS AND FROM ALL WATER CONVEYANCE SYSTEMS, INCLUDING INLETS, DITCHES AND CURB FLOW LINES.
12. USE METHODS AND OPERATIONAL PROCEDURES THAT PREVENT CONCRETE DUST, PARTICLES, CONCRETE WASH OUT, AND OTHER CONCRETE WASTES FROM LEAVING THE RIGHT OF WAY, DEPOSITING IN EXISTING OR FUTURE VEGETATED AREAS, AND FROM ENTERING STORMWATER CONVEYANCE SYSTEMS, INCLUDING INLETS AND CURB FLOW LINES. USE METHODS AND OPERATIONAL PROCEDURES THAT PREVENT SAW CUT SLURRY AND PLANING WASTE FROM LEAVING THE RIGHT OF WAY AND FROM ENTERING STORMWATER CONVEYANCE SYSTEMS.

FINAL STABILIZATION REQUIREMENTS

THESE NOTES ALONG WITH THE REQUIREMENTS IN THE NPDES CONSTRUCTION STORMWATER PERMIT DEFINE THE REQUIREMENTS THE CONTRACTOR SHALL MEET FOR FINAL STABILIZATION. FINAL STABILIZATION SHALL BE DEFINED AS:

1. UNIFORM PERENNIAL VEGETATIVE COVER ESTABLISHED TO 70% DENSITY OF ITS EXPECTED FINAL GROWTH
2. ALL DRAINAGE SWALES OR DITCHES ARE STABILIZED
3. ALL TEMPORARY SYNTHETIC OR STRUCTURAL BMPS ARE REMOVED

ALL SEDIMENT CLEANED OUT FROM CONVEYANCES AND BASINS (RETURNED TO FULL DESIGN CAPACITY)

WATER RESOURCES NOTES

THESE NOTES ALONG WITH THE SWPPP NARRATIVE ARE INTENDED TO GIVE INFORMATION ON CRITICAL DRAINAGE FEATURES, NATURAL RESOURCES AND CONTRACTOR OPERATIONS THAT MAY IMPACT DRAINAGE AND NATURAL RESOURCES.

1. THE SIZE AND ELEVATION OF STORM SEWER PIPES AND CATCH BASINS HAVE BEEN SPECIFICALLY DESIGNED TO CONFORM TO MNDOT STATE AID DESIGN STANDARDS AND MPCA PERMIT REQUIREMENTS. CHANGING THESE ITEMS OR THE DIRECTION OF FLOW FROM WHAT IS SHOWN ON THE PLANS MAY CAUSE PROBLEMS OFF THE PROJECT AND COULD MEAN THE PROJECT IS OUT OF COMPLIANCE WITH APPROVED PERMITS. ANY CHANGES TO THE SIZE, ELEVATION OR DIRECTION OF FLOW OF THE DRAINAGE SYSTEM MUST BE APPROVED BY THE ENGINEER OF RECORD.

WATER RELATED PERMITS THAT APPLY TO THIS PROJECT

AGENCY	TYPE OF PERMIT
MINNESOTA POLLUTION CONTROL AGENCY (MPCA)	NPDES STORMWATER CONSTRUCTION PERMIT
ELM CREEK WATERSHED MANAGEMENT COMMISSION (ECWMC)	EROSION AND SEDIMENT CONTROL

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DATE 2/27/2025 LICENSE # 43560

STORM WATER POLLUTION PREVENTION PLAN

HAMEL ROAD EXTENSION

SHEET NO. 34 OF 45 SHEETS

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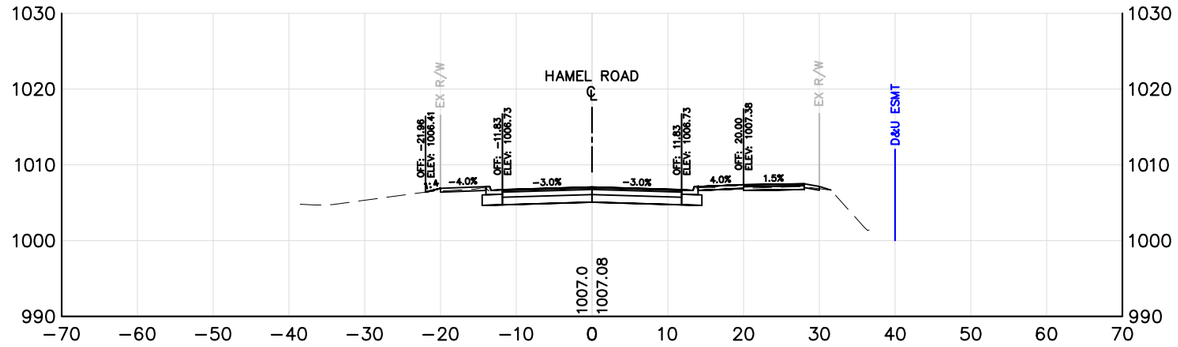

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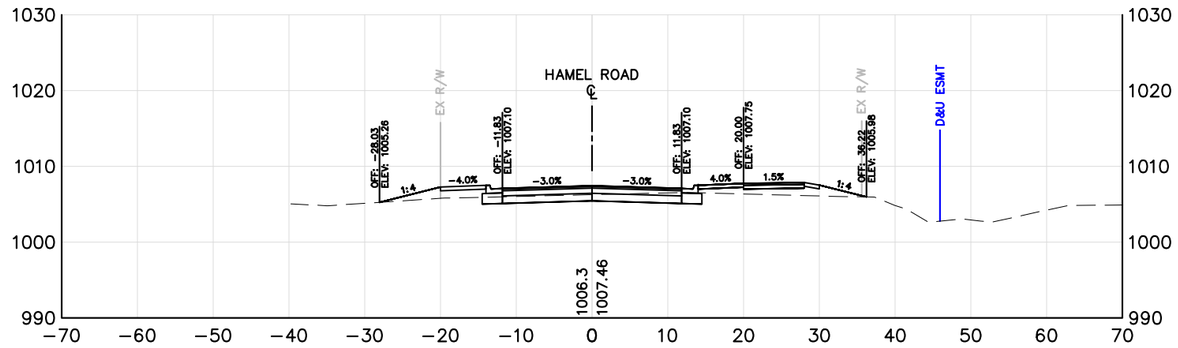

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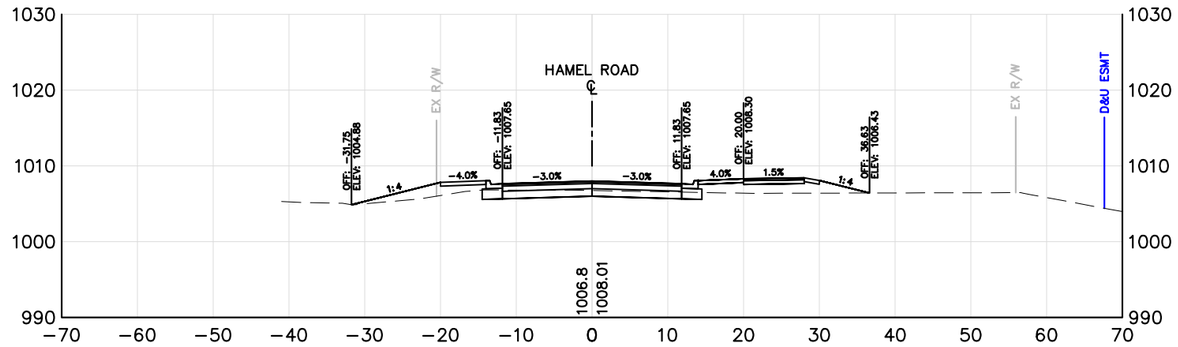

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HAMEL ROAD EXTENSION

SHEET NO. 35 OF 45 SHEETS

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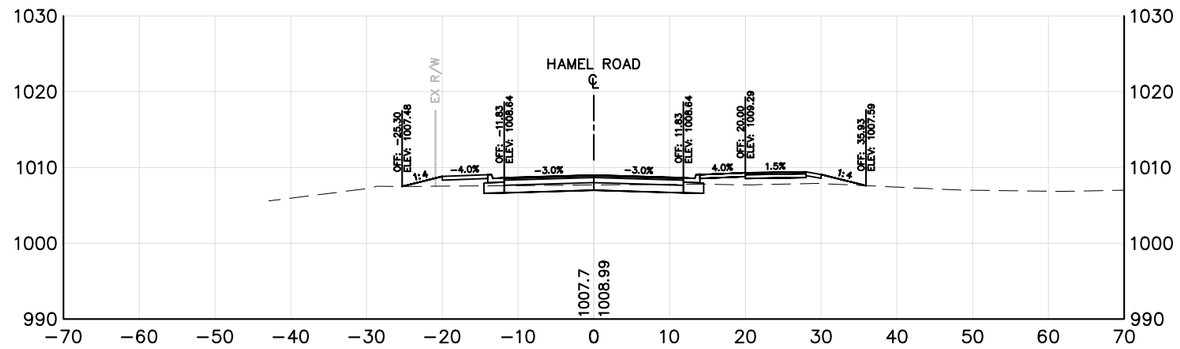

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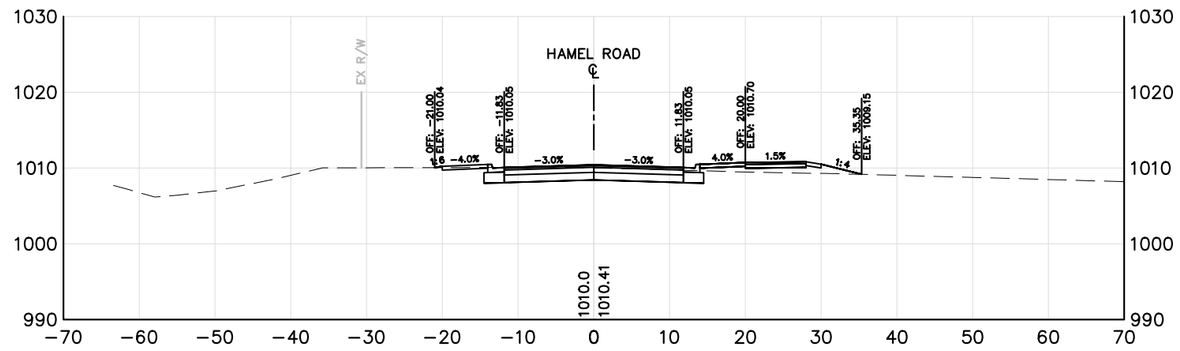

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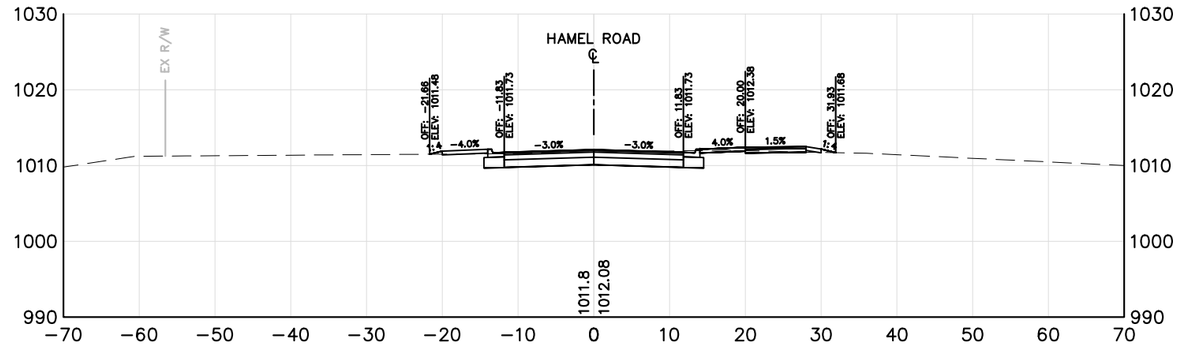

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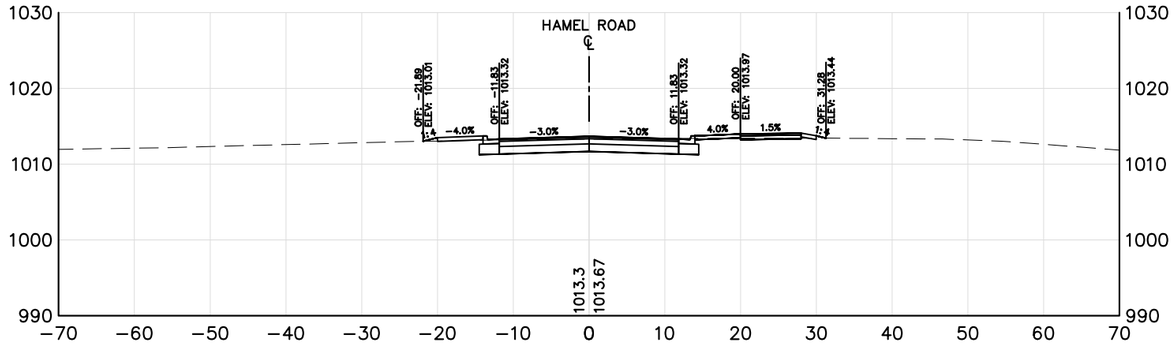

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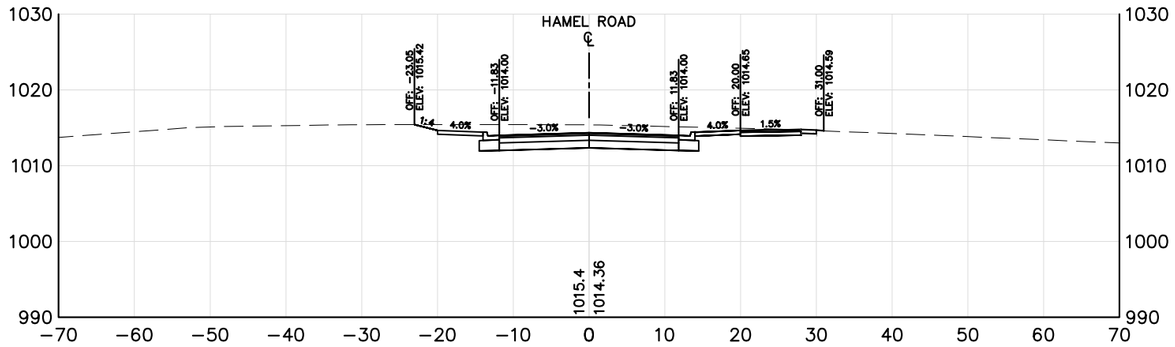

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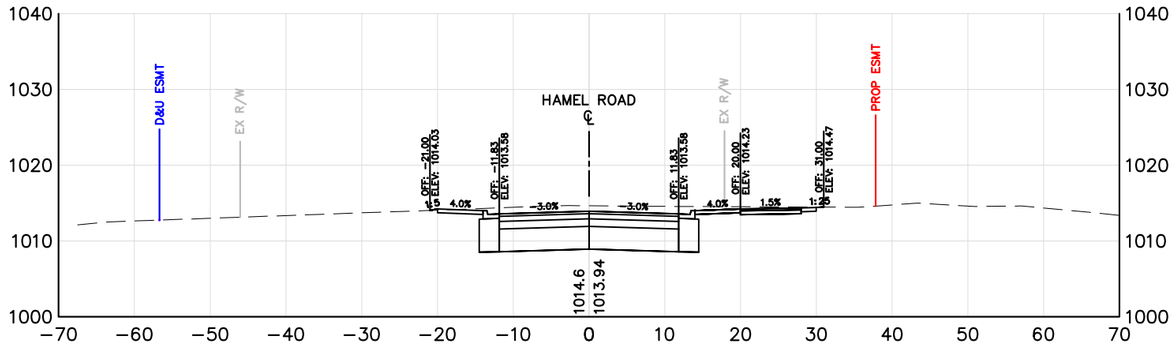

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SHEET NO. 37 OF 45 SHEETS

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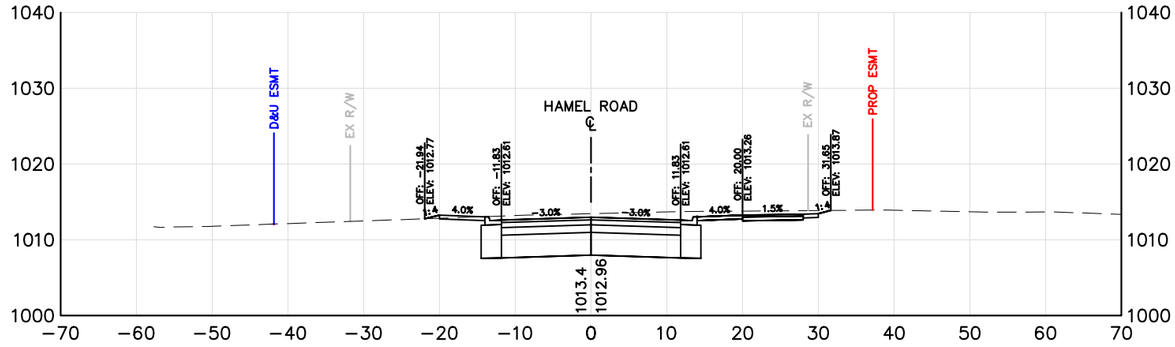

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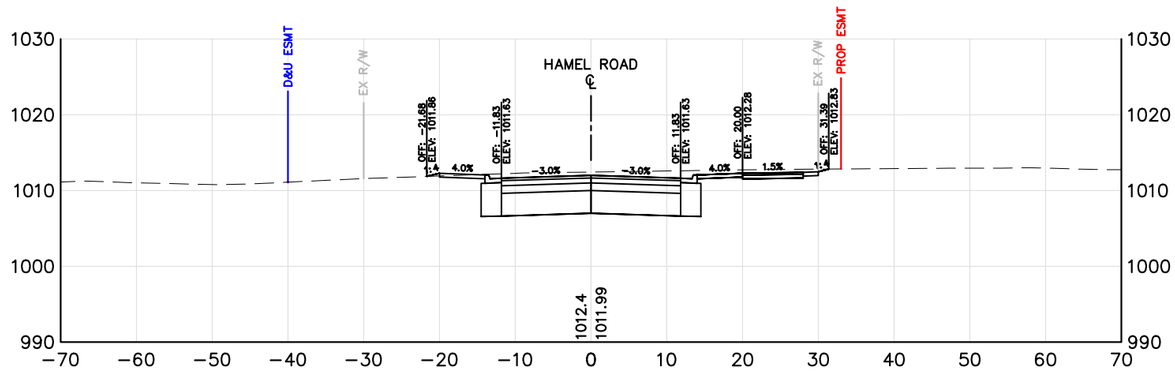

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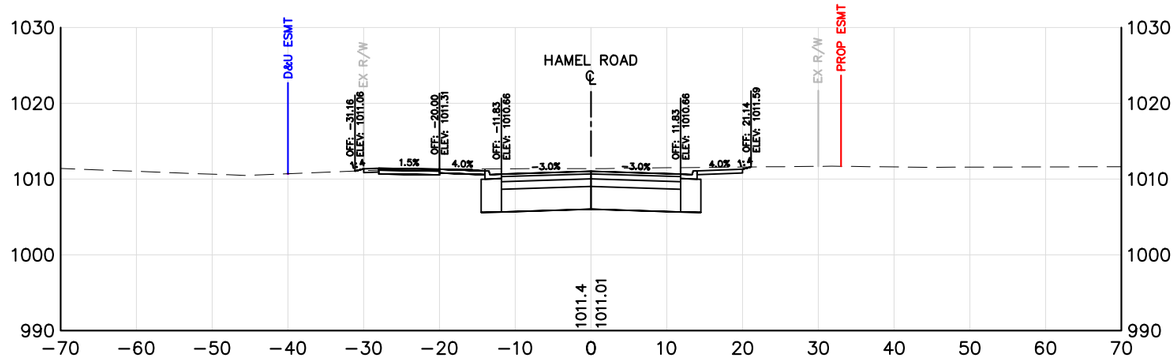

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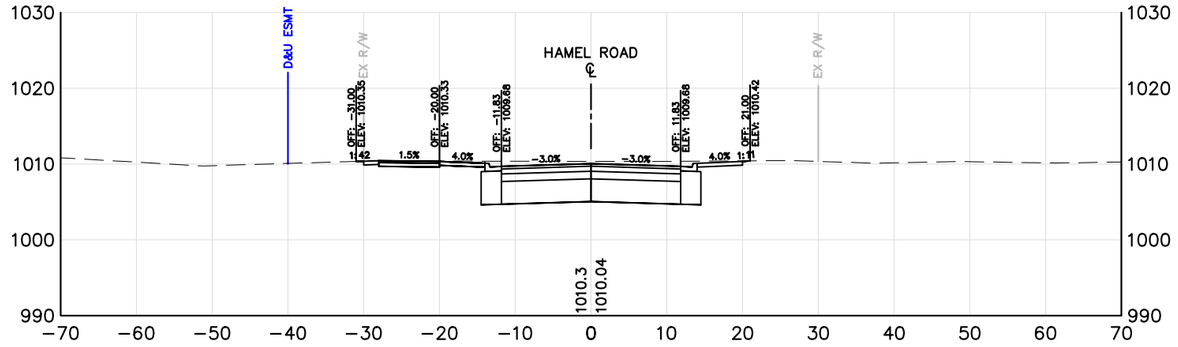

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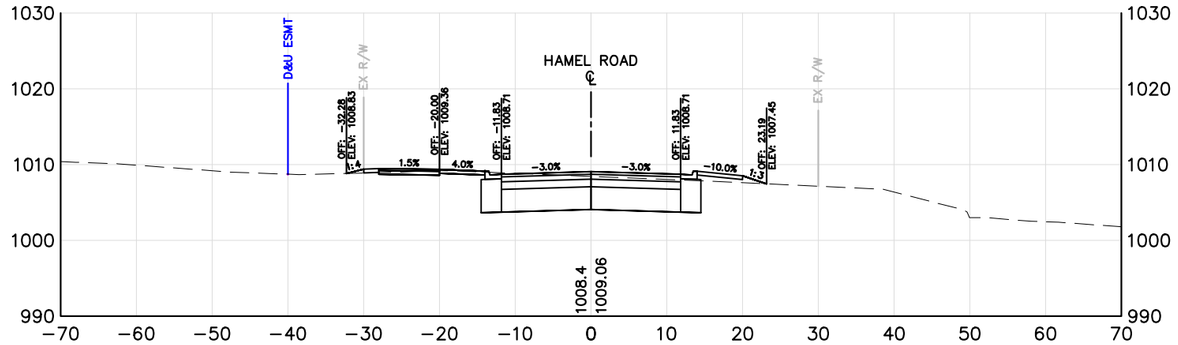

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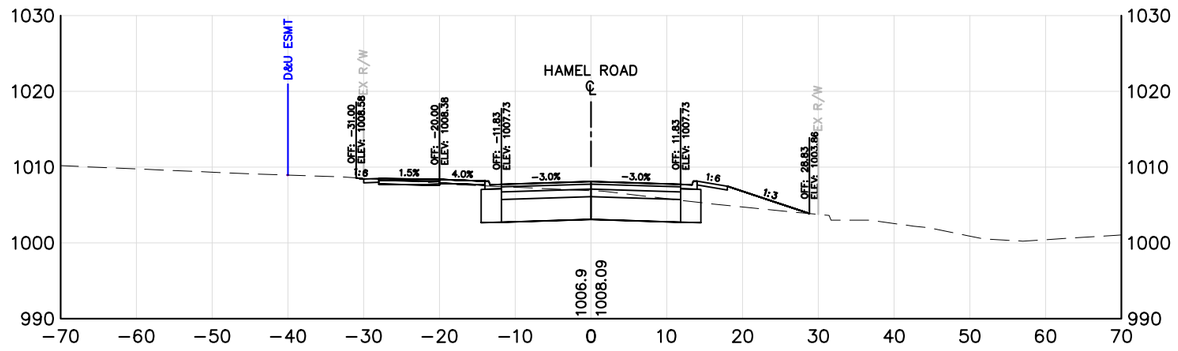

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SHEET NO. 39 OF 45 SHEETS

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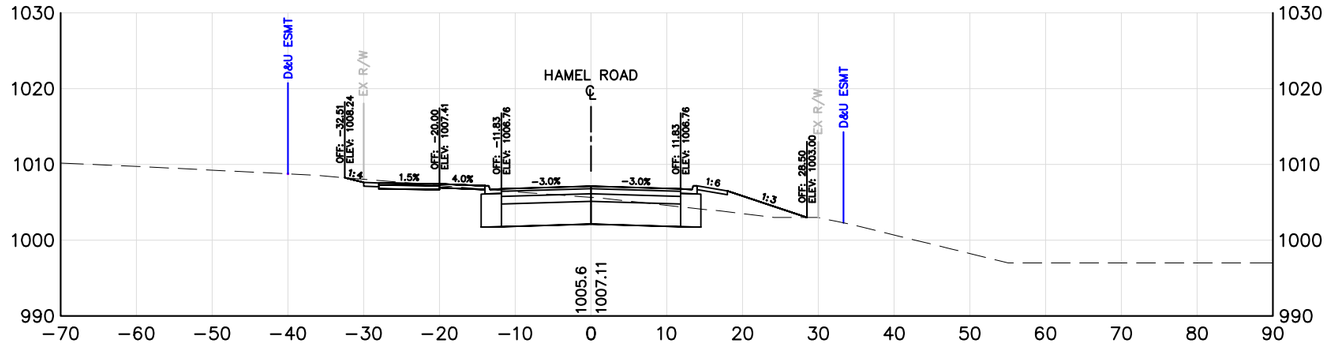

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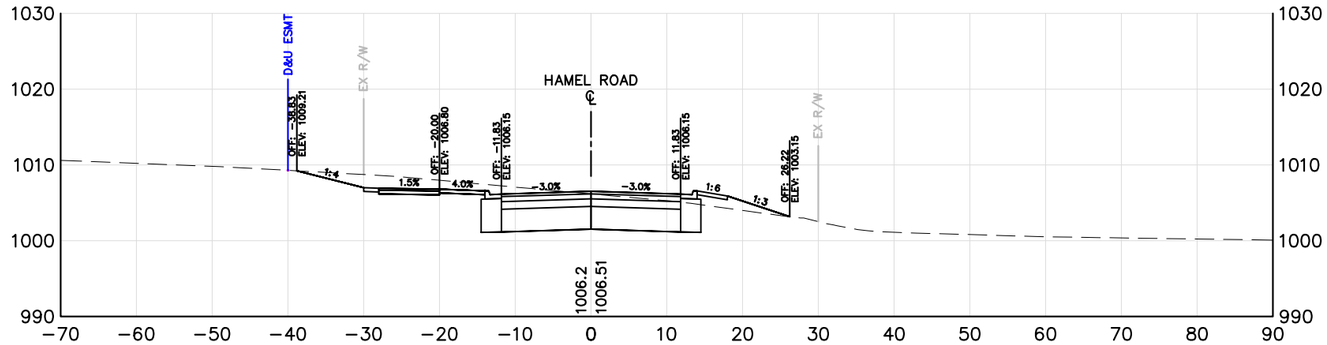

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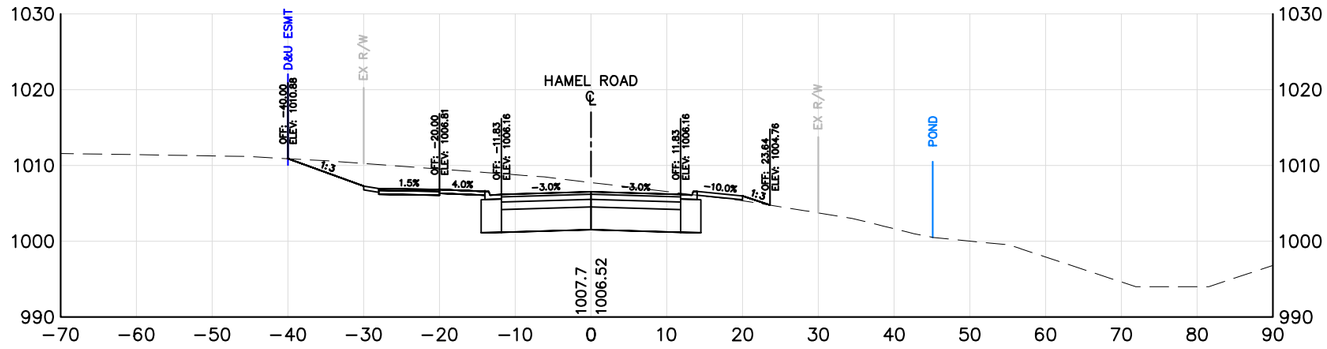

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SHEET NO. 40 OF 45 SHEETS

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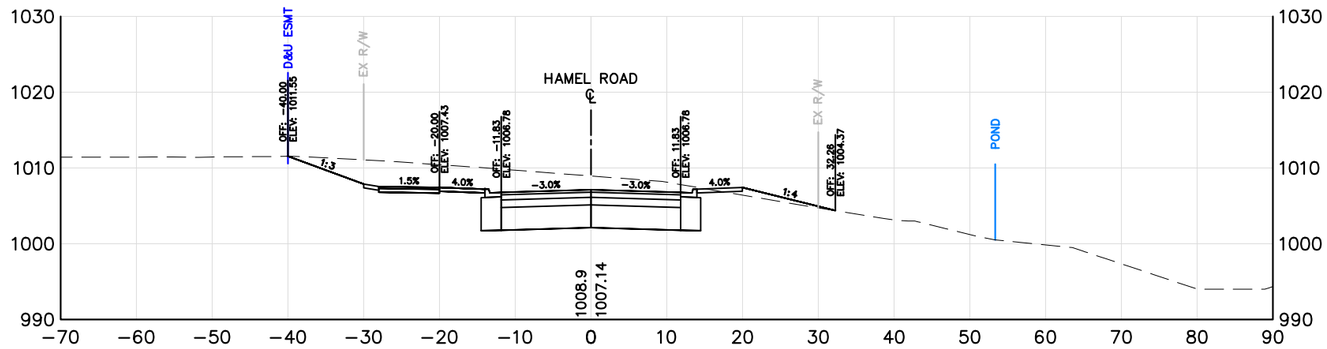

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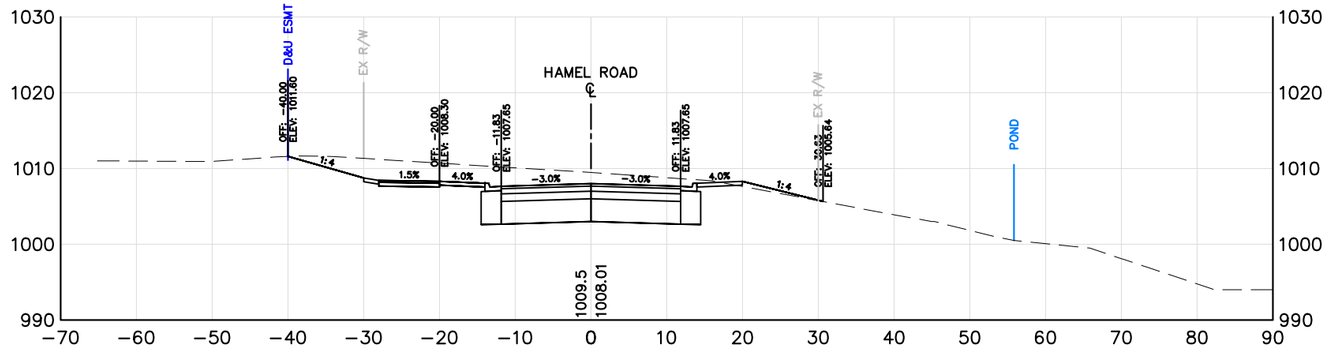

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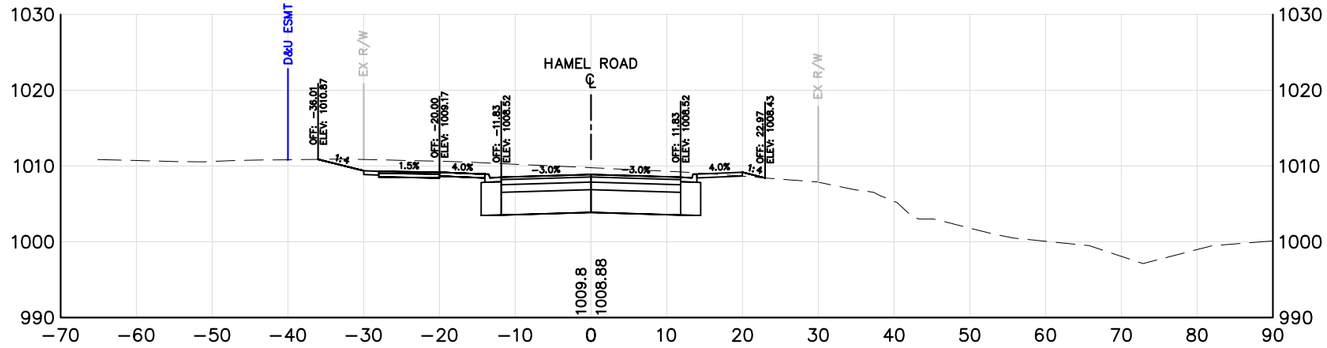

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HAMEL ROAD EXTENSION

SHEET NO. 41 OF 45 SHEETS

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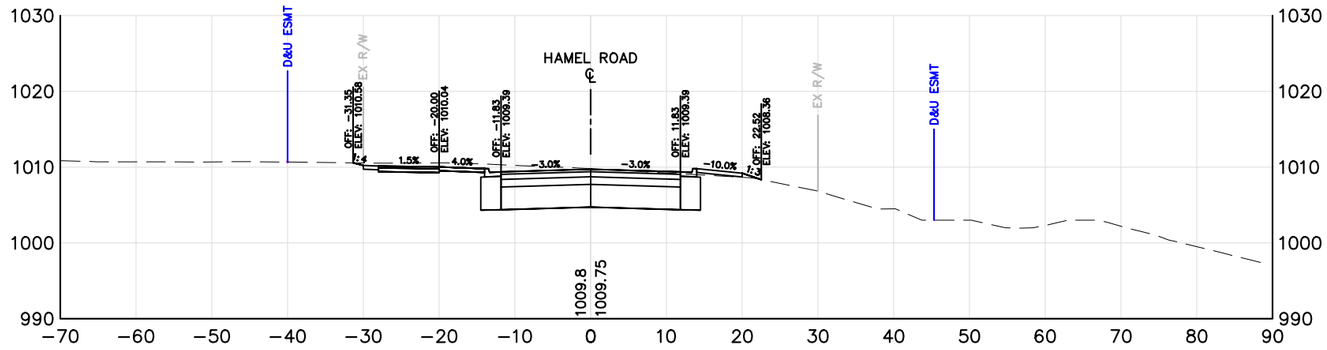

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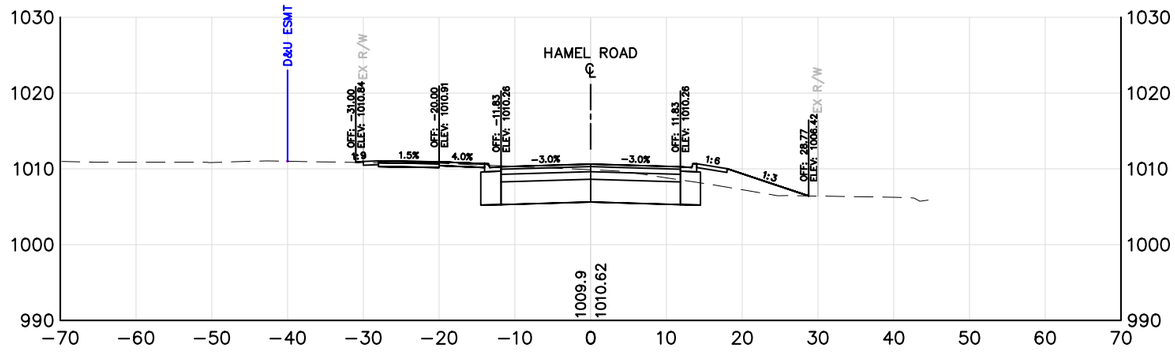

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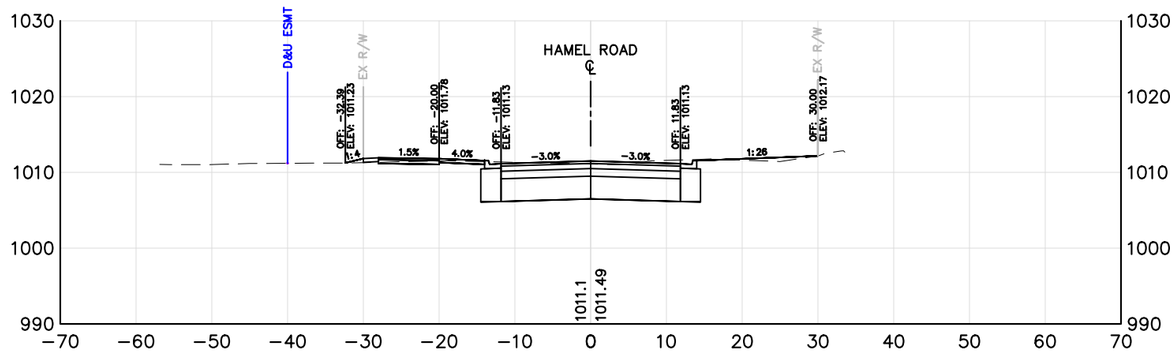

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SHEET NO. 42 OF 45 SHEETS

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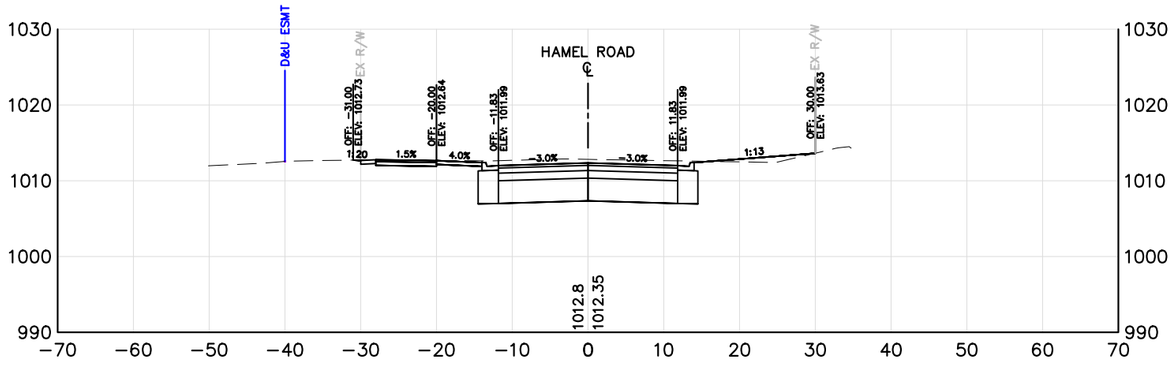

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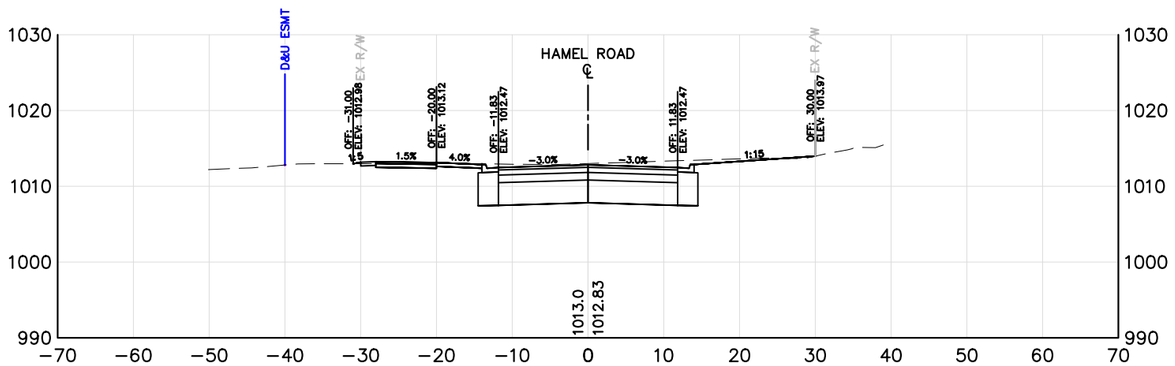

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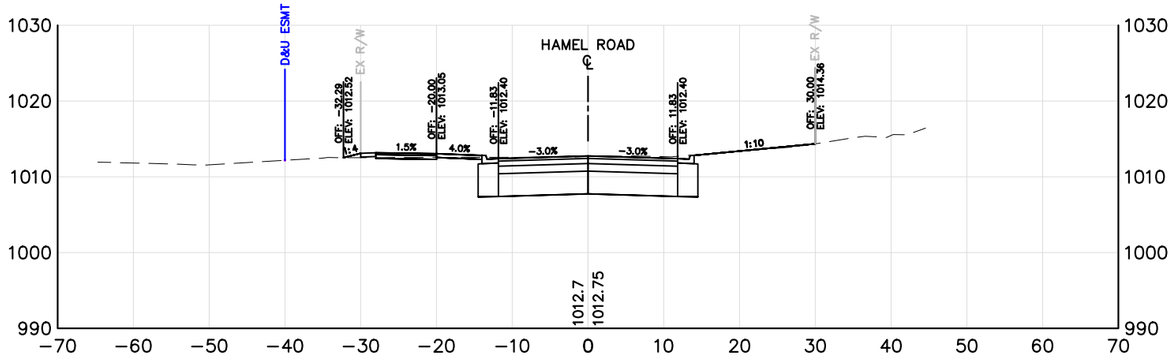

NO	DATE	DWN	CKD	REVISIONS

ALLIANT

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

PRINT NAME: ERIC NELSON
SIGNATURE:
DATE 2/27/2025 LICENSE # 43560

CROSS SECTIONS

HAMEL ROAD EXTENSION

SHEET NO. 43 OF 45 SHEETS

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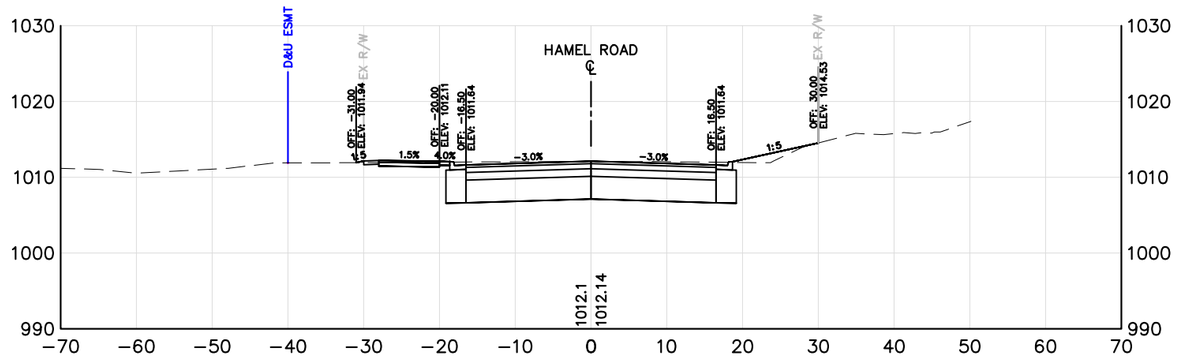

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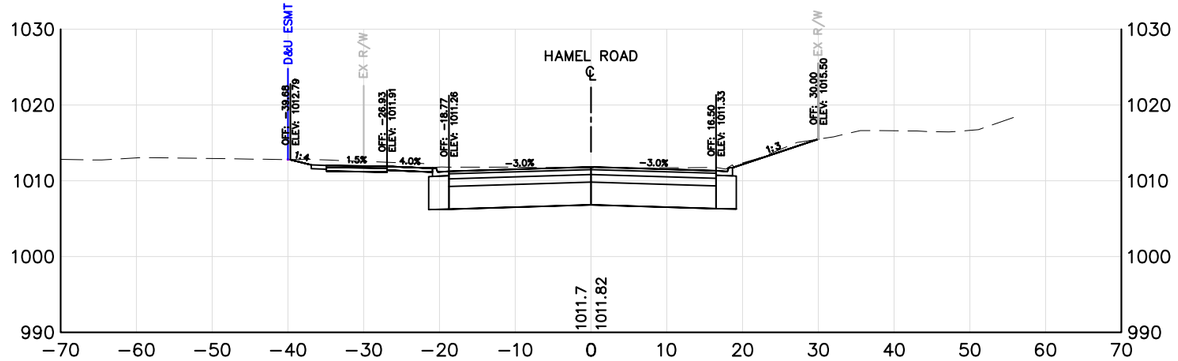

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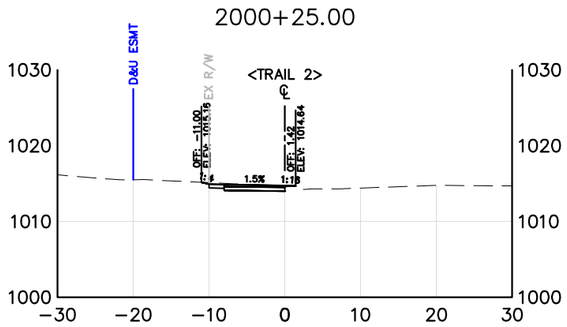
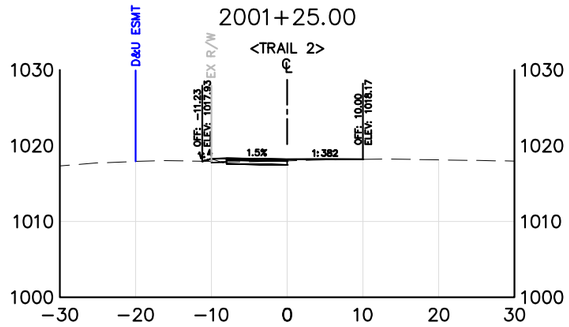
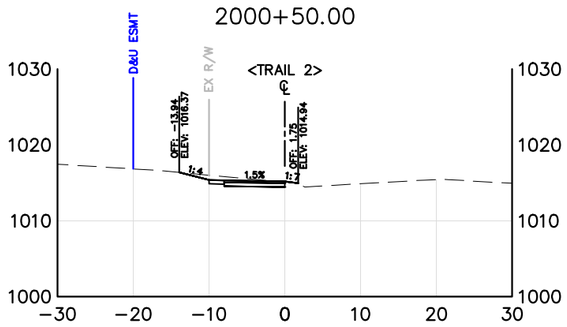
CROSS SECTIONS

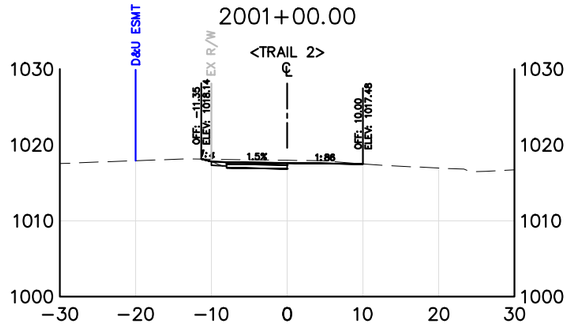
HAMEL ROAD EXTENSION

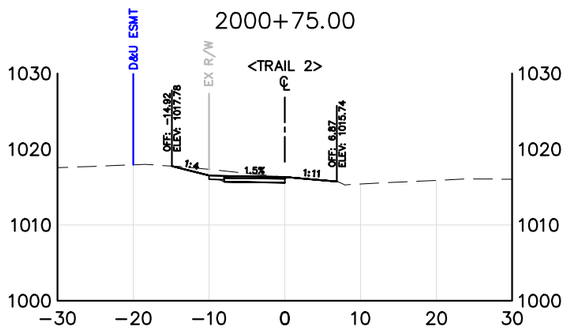
SHEET NO. 44 OF 45 SHEETS











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SHEET NO. 45 OF 45 SHEETS