CITY OF PLYMOUTH, MINNESOTA
CHANKAHDA TRAIL RECONSTRUCTION PHASE 3
CITY PROJECT NO. ST240002

S.A.P. 155–210–003 LOCATED ON: CHANKAHDA TRAIL FROM VICKSBURG LANE TO NORTHWEST BOULEVARD (CSAH 61) (GEOGRAPHIC DESCRIPTION)

CONSTRUCTION PLAN FOR GRADING, BITUMINOUS SURFACING, CONCRETE CURB, RETAINING WALLS, SIGNAL, AND ADA IMPROVEMENTS

LEGEND

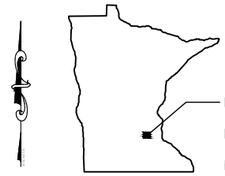
- INPLACE GATE VALVE
- INPLACE HYDRANT
- INPLACE CURB BOX
- INPLACE WATERMAIN MANHOLE
- INPLACE SANITARY MANHOLE
- INPLACE STORM MANHOLE
- INPLACE CATCH BASIN
- INPLACE GAS VALVE
- INPLACE CABLE TV BOX
- INPLACE TELEPHONE BOX
- INPLACE POWER POLE
- INPLACE ELECTRICAL MANHOLE
- INPLACE ELECTRICAL TRANSFORMER
- INPLACE LIGHT POLE
- INPLACE WATERMAIN
- INPLACE SANITARY SEWER
- INPLACE STORM SEWER
- INPLACE GAS MAIN
- INPLACE CABLE TV
- INPLACE UNDERGROUND TELEPHONE LINE
- INPLACE UNDERGROUND POWER
- INPLACE OVERHEAD POWER
- INPLACE CURB AND GUTTER
- INPLACE PAVEMENT
- INPLACE FENCE
- INPLACE RIGHT–OF–WAY
- INPLACE EASEMENT
- INPLACE MAILBOX
- INPLACE SOIL BORING
- INPLACE STREET SIGN
- INPLACE TREE
- INPLACE TREE LINE
- INPLACE WETLAND
- INPLACE CONTOUR
- PROPOSED CONTOUR
- PROPOSED GATE VALVE
- PROPOSED HYDRANT
- PROPOSED MANHOLE (STORM/SANITARY)
- PROPOSED CATCH BASIN
- PROPOSED WATERMAIN
- PROPOSED SANITARY SEWER
- PROPOSED STORM SEWER
- PROPOSED CURB AND GUTTER
- PROPOSED CONSTRUCTION LIMITS
- PROPOSED TEMPORARY EASEMENT
- DELINEATED WETLAND LIMITS
- WATER LINE

NOTE:
THE SUBSURFACE UTILITY INFORMATION IN THIS PLAN IS UTILITY QUALITY LEVEL D. THIS UTILITY 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".

THE EXACT LOCATION OF UNDERGROUND UTILITIES SHOWN IN THIS PLAN SET ARE UNKNOWN. THE CONTRACTOR SHALL CONTACT GOPHER STATE ONE PRIOR TO STARTING ANY EXCAVATION.

GOPHER STATE ONE CALL SYSTEM.....1–800–252–1166

CHANKAHDA TRAIL – S.A.P. 155–210–003			
GROSS LENGTH	10,481.27	FEET	1.98 MILES
BRIDGE LENGTH	243	FEET	0.04 MILES
EXCEPTION LENGTH	NA	FEET	NA MILES
NET LENGTH	10,481.07	FEET	1.98 MILES



PROJECT LOCATION

HENNEPIN COUNTY

METRO DISTRICT

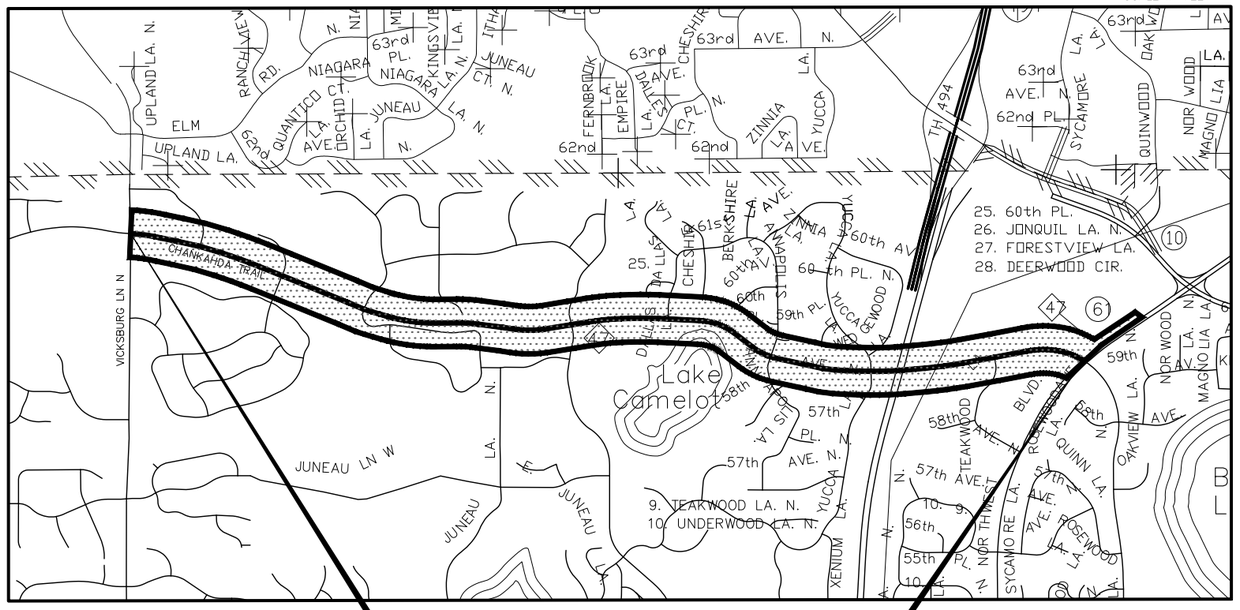
PLAN SET SCALES

ALIGNMENT 0 25 50 100 SCALE IN FEET

PLAN 0 15 30 60 SCALE IN FEET

PROFILE 0 5 10 20 SCALE IN FEET

CROSS-SECTIONS 0 5 10 20 SCALE IN FEET



CHANKAHDA TR STA.
115+43.23
BEGIN S.A.P. 155–210–003

CHANKAHDA TR STA.
220+24.50
END S.A.P. 155–210–003

DESIGN DESIGNATION: TRAIL – C.P. ST–24–0002, S.A.P. 155–210–003
Functional Classification: TRAIL
Designed Speed 20 mph Based on Stopping Sight Distance Height of eye 4.5' Height of Object 0.0'
Speed not achieved at: _____

DESIGN DESIGNATION: CHANKAHDA TR – S.A.P. 155–210–003
STA. 115+43.23 TO 220+24.50
Present ADT (2024) = 6,900 Projected ADT (2044) = 8,300
Functional Classification: MINOR ARTERIAL
No. of Traffic Lanes = 2 No. of Parking Lanes = NA
Shoulder Width = 6' Structural Design Strength = 10 tons
R–Value Designed 10 20 YR BESALS 1,556,000
Designed Speed 40 mph Based on Stopping Sight Distance Height of eye 3.5' Height of Object 2.0'
Speed not achieved at: _____

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

ENGINEER _____

DATE _____ REG. NO. _____

PLAN REVISONS

DATE	SHEET NO.	APPROVED BY

STATE AID PROJ. NO. S.A.P. 155–210–003

GOVERNING SPECIFICATIONS

CITY OF PLYMOUTH ENGINEERING GUIDELINES AND THE 2020 EDITION OF THE MINNESOTA DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR CONSTRUCTION" SHALL GOVERN. ALL TRAFFIC CONTROL SIGNING AND DEVICES SHALL CONFORM TO THE MMUTCD, INCLUDING THE FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS.

SHEET INDEX

SHEET NO.	DESCRIPTION
1	COVER SHEET
2 - 4	STATEMENT OF ESTIMATED QUANTITIES
5	GENERAL NOTES AND STANDARD PLATES
6 - 8	EARTHWORK TABULATION
9 - 13	INPLACE UTILITY TABULATIONS
14 - 18	CIVIL DETAILS
19 - 40	STANDARD PLANS
41 - 46	TYPICAL SECTIONS
47 - 57	ALIGNMENT PLAN AND TABULATION
58 - 65	TRAFFIC CONTROL
66 - 73	INPLACE CONDITION PLAN
74 - 76	STORM WATER POLLUTION PREVENTION PLAN
77 - 92	EROSION CONTROL AND TURF ESTABLISHMENT PLANS
93 - 108	REMOVAL PLANS
109 - 140	DRAINAGE PLANS LATERALS AND TABULATION AND DETAILS
141 - 155	UTILITY PLAN AND PROFILE
156	UTILITY TABULATIONS
157 - 177	CONSTRUCTION PLAN AND PROFILES
178 - 184	GRADING PLAN
185 - 199	INTERSECTION DETAIL PLAN
200 - 212	RETAINING WALL PLAN AND PROFILE
213 - 222	LANDSCAPING PLANS AND DETAILS
223 - 247	SIGNING AND STRIPING PLANS
248 - 276	TRAFFIC SIGNAL PLAN
277 - 354	CROSS SECTIONS
B1 - B6	BOARDWALK PLANS

THIS PLAN SET CONTAINS 360 SHEETS

Kimley»Horn

767 EUSTIS STREET, SUITE 100, ST. PAUL, MN 55114
PHONE: 651–645–4197
WWW.KIMLEY–HORN.COM

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

DATE 02/07/2025 LIC. NO. 41864

ENGINEER Chadd B. Larson
CHADD B. LARSON, PE

APPROVED _____ 2025
CITY OF PLYMOUTH ENGINEER

APPROVED Cara Stevens 2/28/2025
HENNEPIN COUNTY ENGINEER

RECOMMENDED FOR APPROVAL Jessica J Tabrynisch 2/28/2025
HENNEPIN COUNTY DESIGN DIVISION ENGINEER

_____ 2025
DISTRICT STATE AID ENGINEER: REVIEWED FOR COMPLIANCE WITH STATE AID RULES/POLICY

_____ 2025
APPROVED FOR STATE AID FUNDING: STATE AID ENGINEER

K:\TWC_Civil\City\PLYMOUTH\CHANKAHDA TRL PH3\CAD\Plan Sheets\CHANKAHDA_PH3_COVER.dwg February 07, 2025 - 11:26am

NOTES:

(P) DENOTES PLAN QUANTITY.

1. SEE BOARDWALK PLANS ON SHEETS B1 – B6.
2. BEDDING & ENCASEMENT MATERIAL (AGGREGATE BEDDING OR SAND PER DETAILS IN PLAN) CONSIDERED INCIDENTAL.
3. RIP–RAP SHALL BE CONSTRUCTED WITH GRANITE AND SHALL BE HAND PLACED. SEE CITY STANDARD PLATE ST–4.
4. MINIMUM SDR 35 SHALL BE USED.
5. DESIGN G STRUCTURE TO BE BUILT PER CITY OF PLYMOUTH STANDARD PLATE ST–2.
6. SEE BMP DETAILS SHEETS 178 – 184.
7. SEE RETAINING WALL DETAILS ON SHEET 201.
8. MUST BE AUTHORIZED BY ENGINEER PRIOR TO STARTING.
9. 75% OF THE SOD UNIT PRICE SHALL BE PAID WHEN INSTALLED. THE ADDITIONAL 25% SHALL BE PAID UPON SUCCESSFUL COMPLETION OF THE 30 DAY WARRANTY.
10. 75% OF THE SEEDING UNIT PRICE SHALL BE PAID WHEN FINISHED GRADED AND INSTALLED. 25% WILL BE PAID WHEN 70% COVERAGE OF THE INTENDED ESTABLISHMENT HAS BEEN ACHIEVED. WEEDS DO NOT COUNT TOWARDS THE 70% COVERAGE.
11. SDR 26 SHALL BE USED.
12. SEE LANDSCAPING DETAILS ON SHEETS 213 – 222.

STATEMENT OF ESTIMATED QUANTITIES

					S.A.P. 155-210-003		CITY OF PLYMOUTH	
					ROADWAY	STORM SEWER	UTILITIES	LOCAL FUNDING
					PARTICIPATING	PARTICIPATING	NON-PARTICIPATING	
NOTE	ITEM NO.	ITEM DESCRIPTION	UNIT	TOTAL ESTIMATED QUANTITY	ESTIMATED QUANTITY	ESTIMATED QUANTITY	ESTIMATED QUANTITY	ESTIMATED QUANTITY
8	2011.610	EXPLORATION	HOUR	**100**	100			
	2021.501	MOBILIZATION	LUMP SUM	**1**	1			
	2031.502	FIELD OFFICE	EACH	**1**	1			
	2101.502	CLEARING	EACH	**93**	93			
	2101.502	GRUBBING	EACH	**93**	93			
	2101.505	CLEARING	ACRE	**1.6**	1.6			
	2101.505	GRUBBING	ACRE	**1.6**	1.6			
	2102.518	PAVEMENT MARKING REMOVAL	SQ FT	**820**	820			
	2104.502	REMOVE PIPE APRON	EACH	**35**	35			
	2104.502	REMOVE MANHOLE OR CATCH BASIN	EACH	**21**	21			
	2104.502	REMOVE GATE VALVE	EACH	**14**	14			
	2104.502	REMOVE HYDRANT	EACH	**7**	7			
	2104.502	REMOVE DELINEATOR / MARKER	EACH	**16**	16			
	2104.502	REMOVE SIGN	EACH	**63**	63			
	2104.502	REMOVE SIGN PANEL	EACH	**2**	2			
	2104.502	REMOVE SIGN PANEL SPECIAL	EACH	**2**	2			
	2104.502	SALVAGE SIGN	EACH	**2**	2			
	2104.502	SALVAGE SIGN PANEL	EACH	**1**	1			
	2104.502	SALVAGE SIGN PANEL TYPE SPECIAL	EACH	**20**	20			
	2104.503	SAWING CONCRETE PAVEMENT (FULL DEPTH)	LIN FT	**45**	45			
	2104.503	SAWING BIT PAVEMENT (FULL DEPTH)	LIN FT	**1500**	1500			
	2104.503	REMOVE WATER MAIN	LIN FT	**1500**	1500			
	2104.503	REMOVE SEWER PIPE (STORM)	LIN FT	**2800**	2800			
	2104.503	REMOVE SEWER PIPE (SANITARY)	LIN FT	**650**	650			
	2104.503	REMOVE CURB & GUTTER	LIN FT	**3505**	3505			
	2104.503	REMOVE FENCE	LIN FT	**365**	365			
	2104.503	SALVAGE FENCE	LIN FT	**155**	155			
	2104.503	SALVAGE GUARDRAIL	LIN FT	**734**	734			
	2104.504	REMOVE CONCRETE MEDIAN	SQ YD	**50**	50			
7	2104.504	REMOVE SLOPE PAVING (P)	SQ YD	**385**	385			
	2104.504	REMOVE BITUMINOUS PAVEMENT	SQ YD	**55650**	55650			
	2104.518	REMOVE BITUMINOUS WALK	SQ FT	**29600**	29600			
	2104.518	REMOVE CONCRETE SIDEWALK	SQ FT	**1700**	1700			
	2104.603	ABANDON STORM SEWER	LIN FT	**10**	10			
	2104.603	SALVAGE FENCE TYPE SPECIAL	LIN FT	**211**	211			
6	2105.607	COMMON BORROW SPECIAL (CV)	CU YD	**1000**	1000			
	2106.507	EXCAVATION - COMMON (P)	CU YD	**103629**	103629			

STATEMENT OF ESTIMATED QUANTITIES

					S.A.P. 155-210-003		CITY OF PLYMOUTH	
					ROADWAY	STORM SEWER	UTILITIES	LOCAL FUNDING
					PARTICIPATING	PARTICIPATING	NON-PARTICIPATING	
NOTE	ITEM NO.	ITEM DESCRIPTION	UNIT	TOTAL ESTIMATED QUANTITY	ESTIMATED QUANTITY	ESTIMATED QUANTITY	ESTIMATED QUANTITY	ESTIMATED QUANTITY
	2106.507	SELECT GRANULAR EMBANKMENT (CV) (P)	CU YD	**22311**	22311			
	2106.507	COMMON EMBANKMENT (CV) (P)	CU YD	**30609**	30609			
	2106.601	DEWATERING	LUMP SUM	**1**	1			
1	2108.504	GEOTEXTILE FABRIC TYPE 1	SQ YD	**55**				55
	2123.610	STREET SWEEPER (WITH PICKUP BROOM)	HOUR	**200**	200			
	2130.623	WATER FOR DUST CONTROL	M GALLON	**500**	500			
	2130.623	WATER FOR TURF ESTABLISHMENT	M GALLON	**500**	500			
	2211.507	AGGREGATE BASE (CV) CLASS 5 (P)	CU YD	**14520**	14520			
	2360.509	TYPE SP 12.5 WEARING COURSE MIX (4;C)	TON	**13540**	13540			
	2360.509	TYPE SP 12.5 NON WEAR COURSE MIX (4;C)	TON	**6510**	6510			
1,7	2401.507	STRUCTURAL CONCRETE (3G52) (P)	CU YD	**24**	22			2
7	2401.508	REINFORCEMENT BARS (P)	POUND	**3000**	3000			
1	2403.522	TREATED WOOD	M BM	**23**				23
1	2403.603	TIMBER RAILING	LIN FT	**500**				500
1,7	2411.507	STRUCTURE EXCAVATION CLASS E (P)	CU YD	**387**	290			97
7	2411.618	PREFABRICATED MODULAR BLOCK WALL (P)	SQ FT	**6000**	6000			
6	2451.507	FINE FILTER AGGREGATE (CV)	CU YD	**1057**	1057			
1	2452.602	HELICAL PILE CAP	EACH	**36**				36
	2501.502	15" RC PIPE APRON	EACH	**4**		4		
	2501.502	18" RC PIPE APRON	EACH	**6**		6		
	2501.502	21" RC PIPE APRON	EACH	**4**		4		
	2501.502	24" RC PIPE APRON	EACH	**4**		4		
	2501.502	30" RC PIPE APRON	EACH	**3**		3		
	2501.502	36" RC PIPE APRON	EACH	**1**		1		
2	2501.503	15" RC PIPE CULVERT	LIN FT	**792**	792			
2	2501.503	18" RC PIPE CULVERT	LIN FT	**191**	191			
2	2501.503	21" RC PIPE CULVERT	LIN FT	**109**	109			
2	2501.503	24" RC PIPE CULVERT	LIN FT	**176**	176			
2	2501.503	30" RC PIPE CULVERT	LIN FT	**161**	161			
	2501.602	CLEAN EXISTING DRAINAGE STRUCTURE	EACH	**7**		7		
	2501.602	TRASH GUARD FOR 24" PIPE APRON	EACH	**1**		1		
4,7	2502.503	4" PERF TP PIPE DRAIN (P)	LIN FT	**122**	122			
2,4,6	2502.503	6" PERF PVC PIPE DRAIN	LIN FT	**19000**	19000			

No.	Date	Revisions	App.

DRAWING NAME: CHANKAHDA_PH3_NOTES.dwg

DESIGNED BY:	JWB
DRAWN BY:	RGS
CHECKED BY:	CBL
DATE:	02/07/2025
PROJECT NO.	160662010

Kimley»Horn
767 EUSTIS STREET, SUITE 100, ST. PAUL, MN 55114
PHONE: 651–645–4197
WWW.KIMLEY–HORN.COM

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

CHADD B. LARSON, PE

DATE: 02/07/2025 MN LIC. NO. 41864

City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3

CHANKAHDA TR
STATEMENT OF ESTIMATED QUANTITIES

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155–210–003
S.A.P.	

NOTES:

(P) DENOTES PLAN QUANTITY.

1. SEE BOARDWALK PLANS ON SHEETS B1 – B6.
2. BEDDING & ENCASEMENT MATERIAL (AGGREGATE BEDDING OR SAND PER DETAILS IN PLAN) CONSIDERED INCIDENTAL.
3. RIP–RAP SHALL BE CONSTRUCTED WITH GRANITE AND SHALL BE HAND PLACED. SEE CITY STANDARD PLATE ST–4.
4. MINIMUM SDR 35 SHALL BE USED.
5. DESIGN G STRUCTURE TO BE BUILT PER CITY OF PLYMOUTH STANDARD PLATE ST–2.
6. SEE BMP DETAILS SHEETS 178 – 184.
7. SEE RETAINING WALL DETAILS ON SHEET 201.
8. MUST BE AUTHORIZED BY ENGINEER PRIOR TO STARTING.
9. 75% OF THE SOD UNIT PRICE SHALL BE PAID WHEN INSTALLED. THE ADDITIONAL 25% SHALL BE PAID UPON SUCCESSFUL COMPLETION OF THE 30 DAY WARRANTY.
10. 75% OF THE SEEDING UNIT PRICE SHALL BE PAID WHEN FINISHED GRADED AND INSTALLED. 25% WILL BE PAID WHEN 70% COVERAGE OF THE INTENDED ESTABLISHMENT HAS BEEN ACHIEVED. WEEDS DO NOT COUNT TOWARDS THE 70% COVERAGE.
11. SDR 26 SHALL BE USED.
12. SEE LANDSCAPING DETAILS ON SHEETS 213 – 222.

STATEMENT OF ESTIMATED QUANTITIES

					S.A.P. 155-210-003		CITY OF PLYMOUTH	
					ROADWAY	STORM SEWER	UTILITIES	LOCAL FUNDING
					PARTICIPATING	PARTICIPATING	NON-PARTICIPATING	
NOTE	ITEM NO.	ITEM DESCRIPTION	UNIT	TOTAL ESTIMATED QUANTITY	ESTIMATED QUANTITY	ESTIMATED QUANTITY	ESTIMATED QUANTITY	ESTIMATED QUANTITY
6	2502.602	6" PVC PIPE DRAIN CLEANOUT	EACH	**9**	9			
2,11	2503.503	8" PVC PIPE SEWER	LIN FT	**219**			219	
2	2503.503	15" RC PIPE SEWER CLASS III	LIN FT	**4323**		4323		
2	2503.503	18" RC PIPE SEWER CLASS III	LIN FT	**2659**		2659		
2	2503.503	21" RC PIPE SEWER CLASS III	LIN FT	**389**		389		
2	2503.503	24" RC PIPE SEWER CLASS III	LIN FT	**1281**		1281		
2	2503.503	27" RC PIPE SEWER CLASS III	LIN FT	**1201**		1201		
2	2503.503	30" RC PIPE SEWER CLASS III	LIN FT	**598**		598		
2	2503.503	36" RC PIPE SEWER CLASS III	LIN FT	**581**		581		
	2503.602	CONNECT TO EXISTING SANITARY SEWER	EACH	**4**			4	
	2503.602	CONNECT TO EXISTING STORM SEWER	EACH	**1**		1		
	2503.602	CONNECT INTO EXISTING DRAINAGE STRUCTURE	EACH	**5**		5		
12	2504.601	IRRIGATION SYSTEM	LUMP SUM	**1**	1			
	2504.602	CONNECT TO EXISTING WATER MAIN	EACH	**15**			15	
	2504.602	HYDRANT	EACH	**8**			8	
	2504.602	ADJUST GATE VALVE	EACH	**23**			23	
	2504.602	6" GATE VALVE & BOX	EACH	**9**			9	
	2504.602	8" GATE VALVE & BOX	EACH	**3**			3	
	2504.602	16" GATE VALVE & BOX	EACH	**2**			2	
	2504.602	CURB STOP & BOX	EACH	**2**			2	
2	2504.603	1" TYPE PE PIPE	LIN FT	**63**			63	
2	2504.603	6" PVC WATERMAIN	LIN FT	**177**			177	
2	2504.603	8" PVC WATERMAIN	LIN FT	**222**			222	
2	2504.603	16" PVC WATERMAIN	LIN FT	**1242**			1242	
	2504.608	DUCTILE IRON FITTINGS	POUND	**3400**			3400	
	2506.502	CONST DRAINAGE STRUCTURE DESIGN SPEC 1	EACH	**1**		1		
	2506.502	CONST DRAINAGE STRUCTURE DESIGN SPEC 2	EACH	**1**		1		
	2506.502	CONST DRAINAGE STRUCTURE DESIGN SPEC 3	EACH	**1**		1		
	2506.502	CONST DRAINAGE STRUCTURE DESIGN SPEC 4	EACH	**1**		1		
	2506.502	CONST DRAINAGE STRUCTURE DESIGN SPEC 5	EACH	**1**		1		
	2506.502	CASTING ASSEMBLY	EACH	**121**		119	2	
	2506.502	ADJUST FRAME & RING CASTING	EACH	**22**		16	6	
5	2506.503	CONST DRAINAGE STRUCTURE DESIGN G	LIN FT	**143**		143		
	2506.503	CONST DRAINAGE STRUCTURE DESIGN 4007	LIN FT	**25**			25	
	2506.503	CONST DRAINAGE STRUCTURE DES 48-4020	LIN FT	**445**		445		
	2506.503	CONST DRAINAGE STRUCTURE DES 60-4020	LIN FT	**81**		81		
	2506.503	CONST DRAINAGE STRUCTURE DES 72-4020	LIN FT	**51**		51		
3	2511.507	RANDOM RIPRAP CLASS V	CU YD	**160**		160		
	2514.504	CONCRETE SLOPE PAVING (P)	SQ YD	**180**	180			

STATEMENT OF ESTIMATED QUANTITIES

					S.A.P. 155-210-003		CITY OF PLYMOUTH	
					ROADWAY	STORM SEWER	UTILITIES	LOCAL FUNDING
					PARTICIPATING	PARTICIPATING	NON-PARTICIPATING	
NOTE	ITEM NO.	ITEM DESCRIPTION	UNIT	TOTAL ESTIMATED QUANTITY	ESTIMATED QUANTITY	ESTIMATED QUANTITY	ESTIMATED QUANTITY	ESTIMATED QUANTITY
	2521.518	4" CONCRETE WALK	SQ FT	**10260**	10260			
	2521.518	6" CONCRETE WALK	SQ FT	**13500**	13500			
	2521.518	3" BITUMINOUS WALK	SQ FT	**162740**	162740			
	2521.518	6" COLORED CONCRETE	SQ FT	**2000**	2000			
	2521.518	8" COLORED CONCRETE	SQ FT	**5000**	5000			
1	2521.618	TIMBER WALK	SQ FT	**2800**				2800
	2531.503	CONCRETE CURB & GUTTER DESIGN B612	LIN FT	**20**	20			
	2531.503	CONCRETE CURB & GUTTER DESIGN B618	LIN FT	**22589**	22589			
	2531.503	CONCRETE CURB & GUTTER DESIGN B624	LIN FT	**250**	250			
	2531.503	CONCRETE CURB AND GUTTER DESIGN R418	LF	**346**	346			
	2531.503	CONCRETE CURB DESIGN B6	LIN FT	**246**	246			
	2531.603	CONCRETE CURB DESIGN SURMOUNTABLE	LIN FT	**100**	100			
	2531.603	CONCRETE CURB DESIGN V	LIN FT	**110**	110			
	2531.618	TRUNCATED DOMES	SQ FT	**1200**	1200			
12	2540.603	LANDSCAPE EDGER	LIN FT	**222**	222			
	2557.503	WIRE FENCE DESIGN SPECIAL VINYL COATED (P)	LIN FT	**524**	524			
	2557.503	WIRE FENCE DESIGN 60V-9322	LIN FT	**1050**	1050			
	2557.603	FENCE DESIGN SPECIAL - SPLIT RAIL	LIN FT	**2050**	2050			
	2557.603	INSTALL FENCE	LIN FT	**155**	155			
	2557.603	INSTALL FENCE TYPE SPECIAL	LIN FT	**211**	211			
	2563.601	TRAFFIC CONTROL	LUMP SUM	**1**	1			
	2564.502	INSTALL SIGN PANEL	EACH	**1**	1			
	2564.602	INSTALL SIGN	EACH	**5**	5			
	2564.602	INSTALL SIGN PANEL SPECIAL	EACH	**20**	20			
	2564.602	DELINEATOR / MARKER PANEL	EACH	**6**	6			
	2564.618	SIGN	SQ FT	**542**	542			
	2565.616	PEDESTRIAN CROSSWALK FLASHER SYSTEM A	SYSTEM	**1**	1			
	2565.616	PEDESTRIAN CROSSWALK FLASHER SYSTEM B	SYSTEM	**1**	1			
	2565.616	PEDESTRIAN CROSSWALK FLASHER SYSTEM C	SYSTEM	**1**	1			
	2565.616	PEDESTRIAN CROSSWALK FLASHER SYSTEM D	SYSTEM	**1**	1			
	2565.616	PEDESTRIAN CROSSWALK FLASHER SYSTEM E	SYSTEM	**1**	1			
	2565.616	REVISE SIGNAL SYSTEM A	SYSTEM	**1**	1			
	2565.616	REVISE SIGNAL SYSTEM B	SYSTEM	**1**	1			
12	2571.502	CONIFEROUS TREE 6' HT B&B	EACH	**5**	5			
12	2571.502	DECIDUOUS TREE 1.5" CAL B&B	EACH	**7**	7			
12	2571.502	CONIFEROUS SHRUB 3' HT CONT	EACH	**17**	17			
12	2571.502	DECIDUOUS SHRUB NO 5 CONT	EACH	**12**	12			
12	2571.502	PERENNIAL 4" CONT	EACH	**177**	177			

No.	Date	Revisions	App.

DRAWING NAME: CHANKAHDA_PH3_NOTES.dwg
DESIGNED BY: JWB
DRAWN BY: RGS
CHECKED BY: CBL
DATE: 02/07/2025
PROJECT NO. 160662010

Kimley»Horn
767 EUSTIS STREET, SUITE 100, ST, PAUL, MN 55114
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I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

CHADD B. LARSON, PE
DATE: 02/07/2025 MN LIC. NO. 41864

City of Plymouth
CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3

CHANKAHDA TR
STATEMENT OF ESTIMATED QUANTITIES

CITY PROJECT ST240002
COUNTY PROJECT
S.A.P. 155–210–003
S.A.P.

NOTES:

(P) DENOTES PLAN QUANTITY.

1. SEE BOARDWALK PLANS ON SHEETS B1 – B6.
2. BEDDING & ENCASEMENT MATERIAL (AGGREGATE BEDDING OR SAND PER DETAILS IN PLAN) CONSIDERED INCIDENTAL.
3. RIP–RAP SHALL BE CONSTRUCTED WITH GRANITE AND SHALL BE HAND PLACED. SEE CITY STANDARD PLATE ST–4.
4. MINIMUM SDR 35 SHALL BE USED.
5. DESIGN G STRUCTURE TO BE BUILT PER CITY OF PLYMOUTH STANDARD PLATE ST–2.
6. SEE BMP DETAILS SHEETS 178 – 184.
7. SEE RETAINING WALL DETAILS ON SHEET 201.
8. MUST BE AUTHORIZED BY ENGINEER PRIOR TO STARTING.
9. 75% OF THE SOD UNIT PRICE SHALL BE PAID WHEN INSTALLED. THE ADDITIONAL 25% SHALL BE PAID UPON SUCCESSFUL COMPLETION OF THE 30 DAY WARRANTY.
10. 75% OF THE SEEDING UNIT PRICE SHALL BE PAID WHEN FINISHED GRADED AND INSTALLED. 25% WILL BE PAID WHEN 70% COVERAGE OF THE INTENDED ESTABLISHMENT HAS BEEN ACHIEVED. WEEDS DO NOT COUNT TOWARDS THE 70% COVERAGE.
11. SDR 26 SHALL BE USED.
12. SEE LANDSCAPING DETAILS ON SHEETS 213 – 222.

STATEMENT OF ESTIMATED QUANTITIES

					S.A.P. 155-210-003		CITY OF PLYMOUTH	
					ROADWAY	STORM SEWER	UTILITIES	LOCAL FUNDING
					PARTICIPATING	PARTICIPATING	NON-PARTICIPATING	
NOTE	ITEM NO.	ITEM DESCRIPTION	UNIT	TOTAL ESTIMATED QUANTITY	ESTIMATED QUANTITY	ESTIMATED QUANTITY	ESTIMATED QUANTITY	ESTIMATED QUANTITY
	2573.501	STABILIZED CONSTRUCTION EXIT	LUMP SUM	1	1			
	2573.501	EROSION CONTROL SUPERVISOR	LUMP SUM	1	1			
	2573.502	STORM DRAIN INLET PROTECTION	EACH	160	160			
	2573.502	CULVERT END CONTROLS	EACH	19	19			
	2573.503	SILT FENCE; TYPE MS	LIN FT	27500	27500			
	2573.503	SEDIMENT CONTROL LOG TYPE WOOD FIBER	LIN FT	20725	20725			
	2573.601	UNDERGROUND STORM WATER MANAGEMENT SYSTEM	LUMP SUM	1	1			
	2573.602	TEMPORARY SEDIMENT REMOVAL DEVICE	EACH	3	3			
6	2574.507	FILTER TOPSOIL BORROW	CU YD	275	275			
12	2574.507	LOAM TOPSOIL BORROW	CU YD	150	150			
	2574.508	FERTILIZER TYPE 3	POUND	2840	2840			
	2574.508	FERTILIZER TYPE 4	POUND	340	340			
9	2575.504	SODDING TYPE LAWN	SQ YD	1000	1000			
	2575.504	ROLLED EROSION PREVENTION CATEGORY 20	SQ YD	30000	30000			
	2575.504	ROLLED EROSION PREVENTION CATEGORY 25	SQ YD	3500	3500			
	2575.505	SEEDING	ACRE	12.1	12.1			
	2575.505	RAPID STABILIZATION METHOD 2	ACRE	10	10			
12	2575.507	MULCH MATERIAL TYPE 6	CU YD	50	50			
12	2575.507	MULCH MATERIAL TYPE 9	CU YD	15	15			
	2575.508	HYDRAULIC MULCH MATRIX	POUND	14610	14610			
	2575.509	MULCH MATERIAL TYPE 3	TON	12.8	12.8			
10	2575.608	SEED WET DITCH	POUND	100	100			
10	2575.608	SEED SOUTHERN SHORTGRASS ROADSIDE	POUND	150	150			
10	2575.608	SEED OATS	POUND	755	755			
10	2575.608	SEED CITY SPECIAL MIX DESIGN A	POUND	1510	1510			
	2582.503	4" SOLID LINE PAINT	LIN FT	18785	18785			
	2582.503	6" SOLID LINE PAINT	LIN FT	195	195			
	2582.503	24" SOLID LINE PAINT	LIN FT	1770	1770			
	2582.503	4" DOTTED LINE PAINT	LIN FT	48	48			
	2582.503	8" DOTTED LINE PAINT	LIN FT	81	81			
	2582.503	4" DBLE SOLID LINE PAINT	LIN FT	13940	13940			
	2582.518	PAVT MSSG PAINT	SQ FT	571	571			
	2582.518	CROSSWALK PAINT	SQ FT	1820	1820			
	2582.518	CROSSWALK PREF THERMO GR IN ESR	SQ FT	1056	1056			

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CHADD B. LARSON, PE
DATE: 02/07/2025 MN LIC. NO. 41864

City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3

CHANKAHDA TR
STATEMENT OF ESTIMATED QUANTITIES

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155–210–003
S.A.P.	

CONSTRUCTION NOTES

GRADING, BASE AND SURFACE:

1. SUITABLE GRADING MATERIAL ON THIS PROJECT SHALL CONSIST OF ALL SOILS ENCOUNTERED WITH THE EXCEPTION OF TOPSOIL, DEBRIS, ORGANIC MATERIAL, MUCK AND OTHER UNSTABLE MATERIAL.
2. SELECT GRANULAR SHALL MEET THE REQUIREMENTS OF 3149.2B. SELECT GRANULAR SHALL BE VIRGIN MATERIAL FREE OF BITUMINOUS AND CONCRETE AND SHALL BE FREE DRAINING IN NATURE.
3. THE PROPOSED GRADE ON THIS PROJECT IS DEFINED AS THE TOP OF THE FINAL LIFT OF BITUMINOUS PAVEMENT, TOPSOIL, OR CONCRETE SURFACES. THE GRADING GRADE ON THIS PROJECT IS DEFINED AS THE BOTTOM OF THE AGGREGATE BASE.
4. STRIP AND REUSE AS SLOPE DRESSING ALL TOPSOIL AND INPLACE SLOPE DRESSING WHERE PRESENT IN AREAS TO BE DISTURBED BY CONSTRUCTION. ALL SLOPE DRESSING SHALL MEET THE REQUIREMENTS OF "TOPSOIL BORROW" (SPEC. 3877).
5. OBTAIN COMPACTION ON THE GRADING PORTIONS OF PERMANENT CONSTRUCTION IN ACCORDANCE WITH THE "QUALITY COMPACTION METHOD" REQUIREMENTS.
6. COMPACTION OF AGGREGATE ITEMS SHALL BE BY THE "PENETRATION INDEX (PI) METHOD" AS DESCRIBED IN MNDOT SPEC. 2211.3D.2.C.
7. THE BOTTOM OF ALL SUBCUTS SHALL BE SHAPED AND COMPACTED BY THE "QUALITY COMPACTION METHOD."
8. TEST ROLLING WILL BE REQUIRED ON ALL PREPARED SUBGRADE PRIOR TO PLACEMENT OF GRANULAR MATERIAL AND AT ANY LOCATIONS DIRECTED BY THE ENGINEER (INCIDENTAL).
9. DITCH BOTTOMS, TOE OF FILL, CUT RUNOUTS AND THE TOP EDGE OF THE BACKSLOPES SHALL BE ROUNDED REGARDLESS OF THE SECTION USED ON THE CROSS SECTION SHEETS.
10. WHERE A PROPOSED ROADWAY BEGINS AT OR TERMINATES AT AN EXISTING ROADWAY, PROVIDE A VERTICAL NOTCH TO THE BOTTOM OF THE AGGREGATE OR BITUMINOUS BASE AND A 20:1 TAPER.
11. PROVIDE 20:1 TAPERS BETWEEN LONGITUDINAL CHANGES IN SUBCUT DEPTHS.
12. USE BITUMINOUS TACK COAT BETWEEN ALL BITUMINOUS LAYERS. THE BITUMINOUS TACK COAT MATERIAL SHALL BE APPLIED AT A UNIFORM RATE OF 0.05 GAL/SQ. YD. AND SHALL CONFORM TO MNDOT SPEC. 2357. BITUMINOUS TACK COAT SHALL BE CONSIDERED INCIDENTAL.
13. ALL BITUMINOUS MIXTURES SHALL CONFORM TO SPEC. 2360.

REMOVALS:

1. PROVIDE A FULL DEPTH SAWCUT WHERE PLACING NEW PAVEMENT NEXT TO INPLACE PAVEMENT. LOCATE ALL SAWCUTS PERPENDICULAR TO LANE LINES.
2. ALL EXISTING MAILBOXES AFFECTED BY WORK SHALL BE RELOCATED PRIOR TO THE START OF CONSTRUCTION BY THE CONTRACTOR. THE CONTRACTOR SHALL COORDINATE ALL WORK WITH THE U.S. POSTAL SERVICE FOR TEMPORARY MAIL SERVICE DURING CONSTRUCTION. TEMPORARY MAILBOXES SHALL BE CONSIDERED INCIDENTAL. THE CONTRACTOR SHALL NOTIFY MAIL BOX OWNERS IN ADVANCE OF MAIL BOX REMOVAL AND TEMPORARY LOCATION.
3. THE CONTRACTOR SHALL PROTECT ALL INFRASTRUCTURE THAT IS NOT BEING REMOVED OR RELOCATED.
4. THE CONTRACTOR SHALL VERIFY ALL REMOVAL ITEMS WITH THE ENGINEER PRIOR TO PERFORMING WORK ON THAT ITEM.
5. BITUMINOUS CURB REMOVAL SHALL BE INCIDENTAL TO PAVEMENT REMOVAL.
6. NO DISPOSAL SITE IS PROVIDED. ALL EXCESS MATERIAL SHALL BECOME THE PROPERTY OF THE CONTRACTOR FOR DISPOSAL. THE CONTRACTOR SHALL DISPOSE OF MATERIAL UNSUITABLE FOR USE IN THE CONSTRUCTION, INCLUDING BUT NOT LIMITED TO BITUMINOUS, DRAINAGE STRUCTURES, PIPE AND OTHER MISCELLANEOUS OBJECTS, OUTSIDE OF THE PROJECT LIMITS IN ACCORDANCE WITH MNDOT SPEC 2104.3D AT NO ADDITIONAL COST.

TURF ESTABLISHMENT:

1. PLACE A MINIMUM OF 10" TOPSOIL OR SLOPE DRESSING ON ALL AREAS DISTURBED BY CONSTRUCTION AND SCHEDULED FOR PERMANENT TURF ESTABLISHMENT UNLESS SPECIFIED OTHERWISE.
2. SEEDING METHOD, SEED MIX AND RATE, FERTILIZER TYPE AND RATE, MULCH TYPE AND RATE, AND EROSION CONTROL SHALL BE APPLIED AS SHOWN ON THE EROSION CONTROL AND TURF ESTABLISHMENT PLANS.

MISCELLANEOUS:

1. UNDERGROUND UTILITIES EXIST WITHIN THE PROJECT AREA. THE CONTRACTOR SHALL HAVE ALL UNDERGROUND UTILITIES LOCATED PRIOR TO THE START OF CONSTRUCTION AND COORDINATE THE WORK SCHEDULE WITH UTILITY COMPANY CREWS PERFORMING RELOCATION WORK (INCIDENTAL).
2. THE CONTRACTOR MUST NOTIFY THE PROJECT ENGINEER AND CONSTRUCTION INSPECTOR VIA EMAIL PRIOR TO STARTING ANY ADDITIONAL WORK. THE CONTRACTOR MUST ALSO PROVIDE AN INVOICE WITH SUPPORTING DOCUMENTATION TO JUSTIFY THE ADDITIONAL COST WITHIN 15 DAYS OF THE WORK TAKING PLACE. FAILURE TO FOLLOW THESE REQUIREMENTS MAY RESULT IN NON-PAYMENT FOR THE ADDITIONAL WORK.
3. ALL ITEM NOTES IN THE PLAN THAT NEED TO BE FIELD VERIFIED MUST BE VERIFIED WITHIN 14 DAYS OF THE START OF CONSTRUCTION. THE CONTRACTOR WILL BE PAID UNDER THE BID ITEM "EXPLORATION" AS LONG AS THE ENGINEER IS NOTIFIED PRIOR TO START SO THEY CAN VERIFY TIME. CONTRACTOR TO PROVIDE INFORMATION TO ENGINEER, CONSTRUCTION INSPECTOR, AND ENGINEER REGARDING THE VERIFICATION.
4. MATERIAL STORAGE NEEDS TO REMAIN ON CITY RIGHT OF WAY UNLESS THE CONTRACTOR HAS A PRIVATE AGREEMENT WITH A PROPERTY OWNER.
5. DURING CONSTRUCTION, TRAFFIC SHOULD BE NO CLOSER THAN AN IMAGINARY 2:1 LINE DRAWN FROM THE BOTTOM OF ANY SUBCUT TO THE TRAVELED SURFACE.
6. WHERE SEDIMENT DEPOSITS IN WATERS OF THE STATE THE MATERIAL MUST BE REMOVED WITHIN 7 DAYS.
7. THE CONTRACTOR SHALL MAINTAIN ACCESS TO ALL PROPERTIES AT ALL TIMES TO THE SATISFACTION OF THE ENGINEER.
8. ALL SHAPING AROUND THE CULVERT ENDS AND STORM SEWER INLETS & OUTLETS, AS DIRECTED BY THE ENGINEER, WILL BE CONSIDERED INCIDENTAL.
9. NO WORK, INCLUDING THE STOCKPILE OF TOPSOIL, SHALL EXTEND BEYOND THE RIGHT-OF-WAY, DRAINAGE EASEMENTS, OR TEMPORARY EASEMENT UNLESS THE CONTRACTOR HAS PROVIDED THE CITY WITH A COPY OF THE OWNER WRITTEN PERMISSION FOR SUCH WORK.
10. CONCRETE PIPE TIES SHALL BE FURNISHED AND INSTALLED PER MNDOT SPEC. 2501 AND 2503. CONCRETE PIPE TIES SHALL BE INCIDENTAL.
11. ADJUSTING RINGS FOR ALL SANITARY AND STORM SEWER STRUCTURES SHALL BE HDPE MATERIAL PER CITY OF PLYMOUTH STANDARD PLATES SS-3, ST-1 AND ST-2.
12. THE LAKE CAMELOT PARK PROJECT WILL TAKE PLACE AT THE SAME TIME AS THIS PROJECT. THE CONTRACTOR OF THIS PROJECT WILL NEED TO COORDINATE WITH THE CONTRACTOR OF LAKE CAMELOT PARK TO ENSURE EACH IS ABLE TO COMPLETE THEIR WORK.

THE FOLLOWING STANDARD PLATES, APPROVED BY FEDERAL HIGHWAY ADMINISTRATION, SHALL APPLY ON THIS PROJECT.

MnDOT STANDARD PLATES	
PLATE NO.	DESCRIPTION
3000M	REINFORCED CONCRETE PIPE (6 SHEETS)
3006H	GASKET JOINT FOR R.C. PIPE (2 SHEETS)
3100G	CONCRETE APRON FOR REINFORCED CONCRETE PIPE
3145G	CONCRETE PIPE OR PRECAST BOX CULVERT TIES
4143E	STOOL GRATE & CONCRETE FRAME
7038A	DETECTABLE WARNING SURFACE TRUNCATED DOMES
8000K	TEMPORARY CHANNELIZERS (3 SHEETS)
8106D	EQUIPMENT PAD B (3 SHEETS)
8337D	PORTABLE PRECAST CONCRETE BARRIER – TYPE F (3 SHEETS)
9322K	CHAIN LINK FENCE (2 SHEETS)

SEE SHEET 249 FOR ADDITIONAL MNDOT STANDARD PLATES

THE FOLLOWING STANDARD PLATES, APPROVED BY THE CITY OF PLYMOUTH, SHALL APPLY ON THIS PROJECT.

CITY OF PLYMOUTH STANDARD PLATES	
PLATE NO.	DESCRIPTION
DWG-1	STANDARD CITY PROJECT SIGN
DWG-2	REQUIRED NOTES ON STREET AND STORM SEWER RECORD PLAN
DWG-3	REQUIRED NOTES ON WATERMAIN AND SANITARY SEWER RECORD PLAN
SPP-1	SEEDING AND OVERSEEDING RATES
SS-3	STANDARD SANITARY SEWER MANHOLE
SS-6	SANITARY SEWER BEDDING
SS-7	WATERTIGHT CASTING-MANHOLE
SS-8	WATERTIGHT CASTING-FLAT SLAB MANHOLE
ST-1	STORM SEWER MANHOLE WITH CONE SECTION
ST-2	CATCH BASIN (MAX. DEPTH 4.5')
ST-3	INLETS & OUTLET F.E.S. WITH TRASH GUARD
ST-4	RIPRAP DETAIL FOR FLARED END SECTIONS
ST-5	CATCH BASIN CASTING INSTALLATION DETAIL
ST-6	PRECAST STORM SEWER CATCH BASIN MANHOLE WITH REINFORCED CONCRETE TOP SLAB
ST-8	STORM SEWER BEDDING
ST-9	SUBDRAIN DETAILS
ST-10	PERFORATED DRAIN TILE PIPE
ST-11	SUMP CATCH BASIN MANHOLE
ST-15	SKIMMER STRUCTURE
ST-17	FLOTATION SILT CURTAIN DETAIL
ST-18	SILT FENCE DETAIL
ST-19	ROCK EXIT TO CONSTRUCTION SITE
ST-20	WETLAND BUFFER & STREAM BUFFER MONUMENT
ST-21	PVC STREET DRAIN TILE CLEANOUTS
ST-22	SAND FILTER BASIN
STRT-1	STANDARD CURB DETAILS
STRT-9	CONCRETE ISLAND APPROACH NOSE DETAIL
STRT-10	CONCRETE WALK SECTION
STRT-15	TYPICAL TRAIL CROSS SECTION
STRT-19	LOCATION OF PUBLIC UTILITIES
STRT-21	TRAFFIC SIGN SPECIFICATIONS
STRT-22	TRAFFIC SIGNS
STRT-23	SIGN POST EMBEDMENT ASSEMBLY
STRT-24	STREET NAME MARKER
STRT-26	TYPICAL RETAINING WALL DETAIL (USE FOR SPLIT RAIL FENCE DETAIL)
STRT-28	REMOVABLE BOLLARD
STRT-29	RISERS FOR EXTENSION OF GATE VALVES & MANHOLES
W-1	SEWER AND WATER SERVICE CONNECTION
W-2	HYDRANT AND GATE VALVE INSTALLTION
W-3	TYPICAL MEGALUG LOCATION
W-4	GATE VALVE AND BOX INSTALLATION
W-5	WATERMAIN WET TAP
W-6	WATERMAIN BEDDING
W-8	VERTICAL OFFSET DETAIL

No.	Date	Revisions	App.

DRAWING NAME: CHANKAHDA_PH3_NOTES.dwg

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CHADD B. LARSON, PE

DATE: 02/07/2025 MN LIC. NO. 41864

City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3

CHANKAHDA TR
GENERAL NOTES AND STANDARD PLATES

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

A

EARTHWORK SUMMARY

EARTHWORK BREAKDOWN		
COMMON EXCAVATION		
CHANKAHDA TR PH 3	66,327	CU. YDS
CHANKAHDA TR ROUNDABOUT	737	CU. YDS
TEAKWOOD LN	1,945	CU. YDS
NORTHWEST BOULEVARD TRAIL	388	CU. YDS
BMP 1	1,468	CU. YDS
BMP 2	3,352	CU. YDS
BMP 3	597	CU. YDS
BMP 4	2,863	CU. YDS
BMP 5	5,498	CU. YDS
TOPSOIL STRIPPING	20,454	CU. YDS
SUBTOTAL COMMON EXCAVATION	103,629	CU. YDS
EMBANKMENTS		
CHANKAHDA TR PH 3	14,987	CU. YDS
CHANKAHDA TR ROUNDABOUT	703	CU. YDS
TEAKWOOD LN	433	CU. YDS
NORTHWEST BOULEVARD TRAIL	385	CU. YDS
BMP 1	2	CU. YDS
BMP 2	3	CU. YDS
BMP 3	64	CU. YDS
BMP 4	0	CU. YDS
BMP 5	325	CU. YDS
TOPSOIL REQUIRED	13,707	CU. YDS
SUBTOTAL COMMON EMBANKMENT	30,609	CU. YDS

EARTHWORK SUMMARY		
COMMON EXCAVATION		
TOTAL CHANKAHDA TR PH 3 COMMON EXCAVATION (P)	103,629	CU. YDS
EMBANKMENTS		
TOTAL CHANKAHDA TR PH 3 TOTAL COMMON EMBANKMENT (P)	30,609	CU. YDS
SELECT GRANULAR		
SELECT GRANULAR CHANKAHDA TRAIL	22,311	CU. YDS
TOTAL SELECT GRANULAR EMBANKMENT (CV)	22,311	CU. YDS
FINE FILTER AGGREGATE		
BMP 4	334	CU. YDS
BMP 5	723	CU. YDS
TOTAL FINE FILTER AGGREGATE (CV)	1,057	CU. YDS
PAVEMENT REMOVAL		
BITUMINOUS ROADWAY AND WALK	14,299	CU. YDS

NOTE:
1) EMBANKMENT QUANTITIES ASSUME 0% SHRINKAGE FACTOR.

2) TOPSOIL STRIPPING ASSUMES 10" OF TOPSOIL IN ALL AREAS OF DISTURBANCE.

3) EARTHWORK QUANTITIES DO NOT INCLUDE PAVEMENT REMOVALS.

4) PAVEMENT REMOVAL ASSUMES 8.5" OF ROADWAY BITUMINOUS PAVEMENT AND 4" FOR BITUMINOUS TRAIL, CONCRETE WALK AND BITUMINOUS DRIVEWAYS FOR EARTHWORK CALCULATIONS. CONTRACTOR SHALL REFERENCE GEOTECHNICAL REPORT FOR ACTUAL PAVEMENT DEPTHS.

1. UNLESS PROVIDED FOR AS A PAY ITEM, ALL REMOVAL OF BITUMINOUS CURB, ROCK, OR CONCRETE RUBBLE WILL BE CONSIDERED INCIDENTAL. THE DISPOSAL OF REMOVED BITUMINOUS, CONCRETE CURB, CONCRETE PIPE, CONCRETE WALK, CONCRETE RUBBLE, ROCK, METAL PIPE, AND TREES IS THE RESPONSIBILITY OF THE CONTRACTOR. DISPOSAL SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF 2104.3D3.

2. UNLESS DIRECTED OTHERWISE BY THE ENGINEER, ANY MATERIAL THAT IS FOUND TO BE UNNECESSARY FOR THE CONSTRUCTION OF THE ROADWAY AND IF DISPOSAL OF SAME BECOMES NECESSARY, ON OR OFF THE PROJECT, THE DISPOSAL AND ALL RELATED ITEMS WILL BE CONSIDERED INCIDENTAL.

3. SEE CROSS SECTIONS FOR SUBCUT DEPTH AND LOCATIONS. SUBCUT QUANTITIES ARE INCLUDED IN COMMON EXCAVATION. ADDITIONAL SUBGRADE CORRECTIONS, IF REQUIRED, WILL BE DESIGNATED BY THE ENGINEER AND PAID FOR AS COMMON EXCAVATION. THE UPPER 2' OF ANY SUBCUT WILL BE FILLED WITH SELECT GRANULAR MATERIAL. INSTALLATION OF WEEP HOLES IN SUBCUT AREAS WILL BE REQUIRED, PLACEMENT AND LOCATION SHALL BE AT THE DISCRETION OF THE ENGINEER AND SHALL BE CONSIDERED INCIDENTAL.

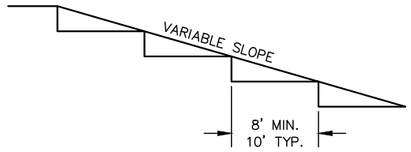
4. DITCH BOTTOMS AND TOPS OF BACKSLOPES ARE TO BE ROUNDED AS DIRECTED BY THE ENGINEER AND ALL WORK WILL BE CONSIDERED INCIDENTAL. SEE CROSS SECTIONS FOR DITCH DEPTHS.

5. ONLY SUITABLE MATERIAL AS APPROVED BY THE ENGINEER SHALL BE USED FOR ROADBED CONSTRUCTION WITHIN THE 2:1 SLOPES AS SHOWN ON THE TYPICAL SECTIONS. WHERE THE PROPOSED ALIGNMENT EXTENDS OFF THE EXISTING ROADWAY ALL TOPSOIL SHALL BE REMOVED FROM WITHIN THE 2:1 SLOPES.

6. LOCATION AND PREPARATION OF ENTRANCE & APPROACH CONSTRUCTION AND CULVERT INSTALLATION ARE TO BE APPROVED BY THE ENGINEER PRIOR TO CONSTRUCTION. INSLOPES OF ENTRANCES AND APPROACHES SHALL BE 1:6 IN THE RECOVERY AREA OR TO THE ROW WHICHEVER IS GREATER. THIS WILL BE CONSIDERED INCIDENTAL.

7. ALL SHAPING AROUND CULVERT ENDS AND STORM SEWER INLETS & OUTLETS, AS DIRECTED BY THE ENGINEER, WILL BE CONSIDERED INCIDENTAL.

8. NO WORK, INCLUDING THE STOCKPILING OF TOPSOIL, SHALL EXTEND BEYOND THE RIGHT-OF-WAY, TEMPORARY EASMENT, OR THE DRAINAGE & UTILITY EASEMENT UNLESS THE CONTRACTOR HAS PROVIDED THE CITY WITH A COPY OF THE OWNERS WRITTEN PERMISSION FOR SUCH WORK.



DETAIL NO. 1
BENCH CONSTRUCTION

(TO BE USED ON ALL FILL SLOPES STEEPER THAN 1V:4H)
SEE MnDOT SPEC. 2106.3D FOR MORE INFORMATION.

No.	Date	Revisions	App.

DRAWING NAME	
CHANKAHDA_PH3_EathWork	
DESIGNED BY:	JWB
DRAWN BY:	JWB
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Chadd B. Larson
CHADD B. LARSON, PE
DATE: 02/07/2025 MN LIC. NO. 41864

City of Plymouth
CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3

EARTHWORK
SUMMARY

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 6 / 354

Total Volume Table
CHANKAHDA TR

Station	Fill Volume	Cut Volume	Cumulative Fill Vol	Cumulative Cut Vol
115+50.00	0.00	0.00	0.00	0.00
116+00.00	0.18	164.78	0.18	164.78
116+50.00	24.00	313.18	24.18	477.97
117+00.00	47.25	305.50	71.43	783.46
117+50.00	39.79	328.92	111.22	1112.38
118+00.00	25.77	355.13	136.99	1467.51
118+50.00	16.91	346.14	153.90	1813.65
119+00.00	17.77	319.75	171.66	2133.40
119+50.00	24.20	302.18	195.87	2435.57
120+00.00	29.33	277.55	225.20	2713.13
120+50.00	33.79	261.38	258.99	2974.51
121+00.00	37.96	263.58	296.95	3238.09
121+50.00	32.59	277.40	329.54	3515.49
121+75.00	13.28	142.17	342.82	3657.67
122+50.00	42.13	506.13	384.95	4163.80
123+00.00	28.77	366.77	413.73	4530.56
123+50.00	25.88	337.57	439.60	4868.13
124+00.00	25.04	337.45	464.65	5205.58
124+50.00	27.44	338.09	492.09	5543.67
125+00.00	28.89	314.90	520.98	5858.57
125+50.00	34.89	276.24	555.87	6134.81
126+00.00	42.37	257.08	598.24	6391.90
126+50.00	47.19	252.78	645.43	6644.67
127+00.00	48.60	250.12	694.03	6894.80
127+50.00	50.09	253.79	744.11	7148.59
128+00.00	50.50	258.23	794.61	7406.82
128+50.00	42.84	262.97	837.45	7669.79
129+00.00	40.77	270.69	878.23	7940.48
129+50.00	32.80	278.62	911.03	8219.09
130+00.00	19.25	299.45	930.28	8518.54
130+50.00	21.28	305.53	951.56	8824.07
130+75.00	12.76	146.53	964.31	8970.59
131+50.00	19.13	675.21	983.44	9645.81
132+00.00	0.39	464.68	983.84	10110.49
132+50.00	4.37	308.37	988.20	10418.86
133+00.00	9.65	290.68	997.85	10709.54
133+50.00	15.45	280.34	1013.30	10989.88
134+00.00	17.75	261.03	1031.05	11250.91
134+50.00	20.46	232.30	1051.52	11483.21
135+00.00	23.94	217.17	1075.46	11700.38
135+50.00	23.58	210.24	1099.04	11910.62
136+00.00	28.01	206.48	1127.05	12117.11
136+50.00	26.02	221.11	1153.07	12338.22
137+00.00	12.63	240.08	1165.70	12578.30
137+50.00	3.42	252.69	1169.12	12830.99
138+00.00	14.01	267.14	1183.13	13098.13
138+50.00	39.41	269.70	1222.54	13367.82
139+00.00	67.01	262.49	1289.55	13630.31
139+50.00	71.39	268.11	1360.95	13898.41
140+00.00	36.62	300.42	1397.57	14198.84
140+65.00	7.69	857.88	1405.26	15056.72
141+00.00	0.00	668.08	1405.26	15724.80
141+50.00	0.92	682.63	1406.18	16407.43
142+00.00	1.04	442.83	1407.23	16850.25
142+50.00	11.73	431.66	1418.95	17281.92
143+00.00	65.05	417.36	1484.00	17699.28
143+47.51	94.57	376.49	1578.57	18075.76
143+50.00	4.51	19.12	1583.09	18094.88

Total Volume Table
CHANKAHDA TR

Station	Fill Volume	Cut Volume	Cumulative Fill Vol	Cumulative Cut Vol
144+00.00	87.85	358.90	1670.93	18453.79
144+50.00	80.15	318.60	1751.08	18772.38
145+00.00	63.14	296.49	1814.22	19068.87
145+50.00	51.58	287.19	1865.81	19356.06
146+00.00	48.07	284.28	1913.87	19640.34
146+50.00	46.04	286.30	1959.91	19926.63
147+00.00	46.76	298.51	2006.68	20225.14
147+50.00	48.31	329.42	2054.98	20554.57
148+00.00	45.81	343.03	2100.80	20897.60
148+50.00	45.68	333.41	2146.48	21231.01
149+00.00	24.69	330.11	2171.16	21561.12
149+50.00	11.10	292.91	2182.26	21854.03
150+00.00	45.88	230.71	2228.14	22084.74
150+50.00	110.07	190.63	2338.22	22275.36
151+00.00	137.29	189.41	2475.51	22464.77
151+50.00	125.22	216.74	2600.73	22681.51
152+00.00	120.91	233.03	2721.64	22914.55
152+50.00	193.96	232.00	2915.59	23146.54
153+00.00	302.38	216.22	3217.97	23362.76
153+50.00	300.76	199.37	3518.74	23562.14
154+00.00	340.55	190.61	3859.28	23752.75
154+50.00	364.39	181.68	4223.68	23934.43
155+00.00	388.43	178.70	4612.11	24113.13
155+50.00	437.32	188.38	5049.42	24301.51
156+00.00	424.93	208.80	5474.35	24510.31
156+50.00	365.47	227.76	5839.83	24738.07
157+00.00	240.56	240.28	6080.39	24978.36
157+50.00	128.45	245.44	6208.84	25223.80
158+00.00	89.30	231.81	6298.14	25455.61
158+50.00	109.44	200.78	6407.57	25656.39
159+00.00	121.49	174.09	6529.07	25830.48
159+50.00	120.84	180.29	6649.91	26010.77
160+00.00	91.77	219.06	6741.67	26229.83
160+50.00	93.58	242.46	6835.26	26472.29
161+00.00	114.69	250.17	6949.95	26722.46
161+50.00	120.72	248.11	7070.67	26970.57
162+00.00	118.61	216.81	7189.28	27187.38
162+25.00	63.12	89.19	7252.40	27276.56
163+00.00	106.21	805.31	7358.61	28081.87
163+75.00	10.83	906.98	7369.44	28988.85
164+00.00	15.51	151.32	7384.95	29140.18
164+50.00	78.03	310.80	7462.97	29450.98
165+00.00	79.74	323.88	7542.72	29774.86
165+50.00	50.16	323.72	7592.88	30098.58
166+00.00	24.82	303.63	7617.69	30402.20
166+50.00	1.02	268.35	7618.72	30670.56
167+00.00	54.35	224.60	7673.07	30895.16
167+50.00	126.31	213.49	7799.38	31108.65
168+00.00	138.14	224.80	7937.52	31333.44
168+50.00	168.92	233.43	8106.44	31566.87
169+00.00	200.23	241.37	8306.67	31808.24
169+50.00	149.36	262.88	8456.03	32071.12
170+00.00	94.20	277.06	8550.23	32348.18
170+50.00	110.15	270.19	8660.37	32618.37
171+00.00	156.66	283.29	8817.03	32901.66
171+50.00	169.36	298.24	8986.39	33199.90
172+00.00	161.28	292.22	9147.67	33492.12
172+50.00	184.79	270.47	9332.46	33762.59

Total Volume Table
CHANKAHDA TR

Station	Fill Volume	Cut Volume	Cumulative Fill Vol	Cumulative Cut Vol
173+15.00	136.35	533.20	9468.82	34295.79
173+75.00	0.03	568.67	9468.85	34864.46
174+00.00	0.01	212.99	9468.86	35077.45
174+50.00	0.05	558.04	9468.91	35635.49
174+80.00	0.46	414.11	9469.36	36049.60
175+50.00	1.00	1227.25	9470.36	37276.85
176+00.00	0.00	919.50	9470.36	38196.35
176+70.00	14.94	884.87	9485.31	39081.22
177+00.00	6.40	241.50	9491.71	39322.72
177+50.00	0.00	322.90	9491.71	39645.62
178+00.00	15.01	275.75	9506.72	39921.37
178+50.00	24.77	286.47	9531.49	40207.85
179+00.00	9.76	340.05	9541.25	40547.90
179+50.00	4.92	494.69	9546.17	41042.59
180+00.00	4.92	825.02	9551.09	41867.61
180+50.00	0.00	999.04	9551.09	42866.65
180+78.34	0.00	463.42	9551.09	43330.07
181+00.00	0.00	262.91	9551.09	43592.98
181+50.00	0.00	483.88	9551.09	44076.86
182+00.00	0.20	404.64	9551.29	44481.50
182+50.00	43.79	360.21	9595.08	44841.71
183+00.00	159.51	324.86	9754.59	45166.57
183+50.00	211.15	301.13	9965.74	45467.70
184+00.00	172.38	283.09	10138.11	45750.79
184+50.00	86.02	277.68	10224.14	46028.47
185+10.00	10.65	576.42	10234.79	46604.89
185+75.00	21.70	635.16	10256.49	47240.04
186+00.00	17.48	149.30	10273.97	47389.34
186+50.00	44.88	316.78	10318.85	47706.13
187+00.00	57.41	354.36	10376.26	48060.49
187+50.00	75.32	369.22	10451.58	48429.71
188+00.00	87.31	353.60	10538.89	48783.30
188+50.00	70.52	336.72	10609.42	49120.02
189+00.00	45.30	334.47	10654.72	49454.49
189+50.00	27.19	349.87	10681.91	49804.36
189+75.00	8.97	176.53	10690.88	49980.89
190+00.00	8.36	159.06	10699.24	50139.95
190+50.00	22.83	256.96	10722.07	50396.91
191+00.00	64.18	221.37	10786.25	50618.28
191+50.00	99.95	237.36	10886.20	50855.64
192+00.00	101.00	275.93	10987.20	51131.57
192+50.00	98.01	306.13	11085.21	51437.70
193+00.00	113.34	317.50	11198.55	51755.20
193+50.00	127.41	319.02	11325.97	52074.21
194+00.00	117.22	342.05	11443.19	52416.26
194+50.00	154.19	364.21	11597.38	52780.47
195+00.00	151.38	340.89	11748.75	53121.36
195+40.00	87.77	234.31	11836.52	53355.67
196+00.00	67.87	641.03	11904.39	53996.70
196+50.00	3.72	550.25	11908.11	54546.95
197+00.00	29.30	266.80	11937.41	54813.74
197+50.00	43.57	220.62	11980.98	55034.37
198+00.00	21.95	204.39	12002.92	55238.76
198+50.00	3.95	352.06	12006.88	55590.81
199+00.00	0.00	504.22	12006.88	56095.03
199+50.00	0.00	448.01	12006.88	56543.05
200+00.00	0.32	314.02	12007.19	56857.07
200+50.00	5.49	245.92	12012.68	57102.99

Total Volume Table
CHANKAHDA TR

Station	Fill Volume	Cut Volume	Cumulative Fill Vol	Cumulative Cut Vol
201+00.00	87.89	252.00	12100.58	57354.98
201+50.00	111.25	255.63	12211.82	57610.62
202+00.00	56.99	260.38	12268.81	57871.00
202+50.00	61.96	264.69	12330.77	58135.69
203+00.00	66.92	320.47	12397.69	58456.16
203+50.00	67.92	359.23	12465.62	58815.38
204+00.00	63.01	318.58	12528.63	59133.96
204+50.00	48.33	287.56	12576.96	59421.52
205+00.00	38.81	263.80	12615.76	59685.32
205+50.00	52.76	229.89	12668.52	59915.22
206+00.00	90.38	213.51	12758.91	60128.72
206+50.00	136.01	201.61	12894.92	60330.34
207+00.00	178.02	182.38	13072.94	60512.72
207+50.00	219.44	148.45	13292.38	60661.17
208+00.00	297.16	103.09	13589.54	60764.27
210+50.00	1017.64	731.11	14607.19	61495.38
211+00.00	37.75	214.77	14644.93	61710.15
211+50.00	19.16	216.97	14664.09	61927.12
212+00.00	19.28	219.99	14683.38	62147.11
212+50.00	21.22	241.18	14704.60	62388.29
213+00.00	12.01	299.20	14716.61	62687.49
213+50.00	7.00	364.31	14723.60	63051.80
214+00.00	15.00	364.99	14738.60	63416.79
214+50.00	37.77	314.79	14776.37	63731.57
215+00.00	39.44	292.18	14815.80	64023.76
215+50.00	28.36	279.59	14844.17	64303.35
216+00.00	36.81	263.23	14880.98	64566.57
216+50.00	42.74	257.84	14923.71	64824.41
217+00.00	33.95	255.69	14957.67	65080.10
217+50.00	15.96	278.85	14973.63	65358.95
218+00.00	6.24	315.00	14979.86	65673.95
218+50.00	3.95	407.81	14983.82	66081.76
219+00.00	2.86	245.05	14986.68	66326.81

No.	Date	Revisions	App.

DRAWING NAME: CHANKAHDA_PH3_EathWork

DESIGNED BY:	JWB
DRAWN BY:	JWB
CHECKED BY:	CBL
DATE:	02/07/2025
PROJECT NO.	160662010

Kimley»Horn
767 EUSTIS STREET, SUITE 100, ST, PAUL, MN 55114
PHONE: 651-645-4197
WWW.KIMLEY-HORN.COM

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

Chadd B. Larson
CHADD B. LARSON, PE
DATE: 02/07/2025 MN LIC. NO. 41864

City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3

EARTHWORK
TABULATION

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 7 / 354

Total Volume Table
CHANKAHDA TRAIL ROUNDABOUT LT

Station	Fill Volume	Cut Volume	Cumulative Fill Vol	Cumulative Cut Vol
0+00.00	0.00	0.00	0.00	0.00
0+50.00	41.23	212.87	41.23	212.87
1+00.00	65.45	220.16	106.68	433.03
1+50.00	303.66	71.95	410.35	504.97

Total Volume Table
CHANKAHDA TRAIL ROUNDABOUT RT

Station	Fill Volume	Cut Volume	Cumulative Fill Vol	Cumulative Cut Vol
0+10.00	0.00	0.00	0.00	0.00
0+50.00	37.24	103.41	37.24	103.41
1+00.00	140.34	87.68	177.59	191.09
1+40.00	113.77	40.64	291.36	231.72

Total Volume Table
SB SYCAMORE LN

Station	Fill Volume	Cut Volume	Cumulative Fill Vol	Cumulative Cut Vol
0+21.25	0.00	0.00	0.00	0.00
0+50.00	0.00	218.87	0.00	218.87
1+00.00	16.00	328.09	16.00	546.96
3+55.00	343.54	1160.06	359.54	1707.01
4+00.00	72.54	163.35	432.08	1870.36
4+24.43	0.00	74.49	432.08	1944.85

Total Volume Table
NORTHWEST BLVD TRAIL

Station	Fill Volume	Cut Volume	Cumulative Fill Vol	Cumulative Cut Vol
0+00.00	0.00	0.00	0.00	0.00
0+50.00	93.14	17.24	93.14	17.24
1+00.00	105.24	17.55	198.38	34.79
1+50.00	113.54	17.94	311.92	52.73
2+00.00	59.32	31.63	371.25	84.37
2+50.00	0.31	37.85	371.55	122.22
3+00.00	0.01	32.13	371.56	154.35
3+50.00	1.04	25.97	372.61	180.32
4+00.00	3.05	19.96	375.66	200.27
4+50.00	4.77	21.47	380.43	221.74
5+00.00	2.76	42.40	383.19	264.14
5+50.00	0.65	56.76	383.84	320.90
6+00.00	0.67	46.07	384.51	366.97
6+50.00	0.00	20.54	384.51	387.51

No.	Date	Revisions	App.

DRAWING NAME	CHANKAHDA_PH3_EathWork
DESIGNED BY:	JWB
DRAWN BY:	JWB
CHECKED BY:	CBL
DATE:	02/07/2025
PROJECT NO.	160662010

Kimley»Horn
767 EUSTIS STREET, SUITE 100, ST, PAUL, MN 55114
PHONE: 651-645-4197
WWW.KIMLEY-HORN.COM

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

CHADD B. LARSON, PE

DATE: 02/07/2025 MN LIC. NO. 41864

City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3

EARTHWORK
TABULATION

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 8 / 354

UTILITY CONTACTS

AGENCY	NAME	PHONE	EMAIL
ARVIG COMMUNICATION	BRIAN WOCHNICK	218-298-4951	brian.wochnick@arvig.com
AT&T TRANSMISSION	MARCK HENNING	760-213-8393	mh2497@att.com
CITY OF PLYMOUTH	JOE SHAMLA		jshamla@plymouthmn.gov
CENTERPOINT ENERGY	PAUL JACKS	612-321-5077	paul.jacks@centerpointenerygy.com
COMCAST CABLE LLC	MCCLAY LYFORD	651-925-6372	mcclay_lyford@comcast.com
LUMEN TECHNOLOGIES	BRANDON AMAN	701-866-7952	baman@congruex.com
MCI COMMUNICATION	STEVE HOTVEDT	612-437-0172	shotvedt@mi-tech.us
WRIGHT HENNEPIN COOP	TERRY HEIDECKER	612-751-6989	theidecker@whe.org
ZAYO GROUP LLC	JEREMY WEGLEITNER		jwegleitner@congruex.com

UTILITY LOCATIONS

GOPHER STATE ONE CALL 800-252-1166 OR 651-454-0002

NOTE: CONTRACTOR SHALL VERIFY ALL UNDERGROUND UTILITY LOCATIONS AND ELEVATIONS PRIOR TO CONSTRUCTION. ALL IN PLACE UTILITIES MAY NOT BE SHOWN ON THIS PLAN.

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." SOME UTILITIES WERE MARKED AND FIELD LOCATED BY SURVEY CREWS OR TAKEN FROM AERIAL MAPPING, AND OTHER UTILITIES WERE TAKEN FROM AS-BUILTS, MAPS AND DRAWINGS FURNISHED BY THE UTILITY COMPANIES TO CITY OF PLYMOUTH.

COMMUNICATIONS - COMCAST

ALIGNMENT	STATION	OFFSET				ITEM	ADJUST	RELOCATE	LEAVE AS IS	NOTES/REMARKS
CHANKAHDA TR	113+88.54 - 113+96.55	100.00	LT -	56.36	LT	FIBER OPTIC			X	
CHANKAHDA TR	113+98.75	56.31			LT	HAND HOLE			X	
CHANKAHDA TR	113+96.55 - 113+93.05	56.36	LT -	42.97	LT	FIBER OPTIC			X	
CHANKAHDA TR	113+93.05 - 113+97.87	42.97	LT -	64.40	RT	FIBER OPTIC			X	
CHANKAHDA TR	113+97.87 - 114+46.07	64.40	RT -	82.79	RT	FIBER OPTIC			X	
CHANKAHDA TR	114+46.07 - 114+49.08	82.79	RT -	100.00	RT	FIBER OPTIC			X	
CHANKAHDA TR	114+15.73	80.01			RT	PEDESTAL			X	
CHANKAHDA TR	113+98.75 - 116+35.57	56.31	LT -	53.62	LT	FIBER OPTIC			X	
CHANKAHDA TR	116+35.57 - 117+46.85	53.62	LT -	57.98	LT	FIBER OPTIC			X	
CHANKAHDA TR	117+46.85 - 118+82.97	57.98	LT -	54.77	LT	FIBER OPTIC			X	
CHANKAHDA TR	118+82.97 - 121+84.82	54.77	LT -	58.51	LT	FIBER OPTIC			X	
CHANKAHDA TR	121+84.82 - 121+83.17	58.51	LT -	181.36	LT	FIBER OPTIC			X	
CHANKAHDA TR	121+84.82 - 122+62.74	58.51	LT -	61.71	LT	FIBER OPTIC		X		
CHANKAHDA TR	122+62.74 - 125+32.48	61.71	LT -	54.19	LT	FIBER OPTIC			X	
CHANKAHDA TR	125+32.48 - 128+90.39	54.19	LT -	39.03	LT	FIBER OPTIC			X	
CHANKAHDA TR	128+90.39 - 128+97.51	39.03	LT -	45.53	LT	FIBER OPTIC			X	
CHANKAHDA TR	128+90.39 - 128+97.51	39.03	LT -	45.53	LT	FIBER OPTIC			X	
CHANKAHDA TR	128+97.51 - 129+00.38	45.53	LT -	52.26	LT	FIBER OPTIC			X	
CHANKAHDA TR	129+00.38	52.26			LT	HAND HOLE	X			
CHANKAHDA TR	129+14.40 - 129+17.49	54.62	LT -	50.21	LT	FIBER OPTIC			X	
CHANKAHDA TR	129+17.49 - 129+22.47	50.21	LT -	48.06	LT	FIBER OPTIC			X	
CHANKAHDA TR	129+22.47 - 130+87.58	48.06	LT -	47.11	LT	FIBER OPTIC			X	
CHANKAHDA TR	130+87.58 - 131+24.70	47.11	LT -	47.90	LT	FIBER OPTIC	X			
CHANKAHDA TR	131+24.70 - 131+23.59	47.90	LT -	95.26	LT	FIBER OPTIC	X			
CHANKAHDA TR	131+23.59 - 131+16.88	95.26	LT -	122.40	LT	FIBER OPTIC			X	
CHANKAHDA TR	131+16.88 - 131+56.03	122.40	LT -	128.46	LT	FIBER OPTIC			X	
CHANKAHDA TR	131+24.70 - 130+92.28	47.90	LT -	56.97	RT	FIBER OPTIC		X		
CHANKAHDA TR	130+92.28 - 130+95.35	56.97	RT -	169.41	RT	FIBER OPTIC	X			
CHANKAHDA TR	131+24.70 - 132+65.76	47.90	LT -	52.70	LT	FIBER OPTIC		X		
CHANKAHDA TR	132+65.76 - 135+13.43	52.70	LT -	58.25	LT	FIBER OPTIC			X	
CHANKAHDA TR	135+13.43 - 137+04.85	58.25	LT -	56.78	LT	FIBER OPTIC			X	
CHANKAHDA TR	137+04.85 - 139+20.37	56.78	LT -	58.11	LT	FIBER OPTIC			X	
CHANKAHDA TR	139+20.37 - 139+94.65	58.11	LT -	62.06	LT	FIBER OPTIC			X	
CHANKAHDA TR	139+94.65 - 140+30.24	62.06	LT -	68.25	LT	FIBER OPTIC			X	
CHANKAHDA TR	140+30.24 - 140+33.70	68.25	LT -	141.23	LT	FIBER OPTIC			X	
CHANKAHDA TR	140+30.24	68.25			LT	HAND HOLE			X	
CHANKAHDA TR	140+30.24 - 141+43.72	68.25	LT -	68.73	LT	FIBER OPTIC		X		
CHANKAHDA TR	141+43.72 - 142+75.74	68.73	LT -	53.92	LT	FIBER OPTIC			X	
CHANKAHDA TR	142+75.74 - 144+06.24	53.92	LT -	47.20	LT	FIBER OPTIC		X		
CHANKAHDA TR	144+06.24 - 144+56.65	47.20	LT -	43.93	LT	FIBER OPTIC		X		
CHANKAHDA TR	144+56.65 - 144+53.18	43.93	LT -	79.53	RT	FIBER OPTIC		X		
CHANKAHDA TR	144+56.65 - 145+22.11	43.93	LT -	37.87	LT	FIBER OPTIC		X		
CHANKAHDA TR	145+22.11 - 146+08.35	37.87	LT -	31.45	LT	FIBER OPTIC		X		
CHANKAHDA TR	146+08.35 - 146+98.96	31.45	LT -	19.69	LT	FIBER OPTIC		X		
CHANKAHDA TR	146+98.96 - 147+94.18	19.69	LT -	17.35	LT	FIBER OPTIC		X		
CHANKAHDA TR	147+94.18	17.35			LT	HAND HOLE		X		
CHANKAHDA TR	147+94.18 - 151+31.30	17.35	LT -	25.05	LT	FIBER OPTIC		X		
CHANKAHDA TR	151+31.30 - 152+16.12	25.05	LT -	22.35	LT	FIBER OPTIC		X		
CHANKAHDA TR	152+16.12 - 153+47.22	22.35	LT -	21.06	LT	FIBER OPTIC		X		
CHANKAHDA TR	153+47.22 - 155+01.58	21.06	LT -	24.49	LT	FIBER OPTIC		X		
CHANKAHDA TR	155+01.58 - 155+63.43	24.49	LT -	23.29	LT	FIBER OPTIC		X		
CHANKAHDA TR	155+63.43	23.29			LT	HAND HOLE		X		
CHANKAHDA TR	155+63.43 - 155+80.47	23.29	LT -	100.00	RT	FIBER OPTIC	X			
CHANKAHDA TR	184+87.31 - 185+60.99	38.98	LT -	37.28	LT	FIBER OPTIC		X		
CHANKAHDA TR	185+60.99 - 187+78.43	37.28	LT -	30.52	LT	FIBER OPTIC		X		
CHANKAHDA TR	186+86.31	35.72			LT	PEDESTAL		X		
CHANKAHDA TR	187+78.43 - 189+47.95	30.52	LT -	24.31	LT	FIBER OPTIC		X		
CHANKAHDA TR	189+47.95 - 191+16.41	24.31	LT -	23.75	LT	FIBER OPTIC		X		
CHANKAHDA TR	191+16.41 - 193+80.00	23.75	LT -	49.73	LT	FIBER OPTIC		X		
CHANKAHDA TR	193+80.00 - 195+58.77	49.73	LT -	45.53	LT	FIBER OPTIC		X		
CHANKAHDA TR	193+93.59	51.65			LT	HAND HOLE	X			
CHANKAHDA TR	193+92.63	57.61			LT	PEDESTAL			X	
CHANKAHDA TR	193+99.79	57.99			LT	PEDESTAL			X	
CHANKAHDA TR	195+58.77 - 195+66.69	45.53	LT -	46.00	LT	FIBER OPTIC		X		
CHANKAHDA TR	195+66.69 - 194+64.50	46.00	LT -	232.57	LT	FIBER OPTIC	X			
CHANKAHDA TR	195+63.80	64.96			LT	PEDESTAL	X			
CHANKAHDA TR	195+19.26	63.05			RT	PEDESTAL			X	
CHANKAHDA TR	195+27.14	65.19			RT	PEDESTAL			X	
CHANKAHDA TR	195+58.77 - 195+59.39	45.53	LT -	61.61	RT	FIBER OPTIC		X		
CHANKAHDA TR	195+59.39 - 195+59.93	61.61	RT -	159.09	RT	FIBER OPTIC			X	
CHANKAHDA TR	195+59.39 - 196+26.12	61.61	RT -	61.95	RT	FIBER OPTIC		X		
CHANKAHDA TR	196+28.97	61.01			RT	HAND HOLE	X			
CHANKAHDA TR	196+23.65	59.99			RT	HAND HOLE	X			
CHANKAHDA TR	196+26.12 - 196+68.86	61.95	RT -	55.34	RT	FIBER OPTIC			X	
CHANKAHDA TR	196+68.86 - 197+24.09	55.34	RT -	54.91	RT	FIBER OPTIC			X	
CHANKAHDA TR	197+24.09 - 198+14.00	54.91	RT -	50.62	RT	FIBER OPTIC			X	
CHANKAHDA TR	198+14.00 - 201+14.54	50.62	RT -	51.49	RT	FIBER OPTIC			X	
CHANKAHDA TR	201+14.54	51.49			RT	HAND HOLE			X	
CHANKAHDA TR	201+14.54 - 205+48.48	51.49	RT -	40.52	RT	FIBER OPTIC		X		
CHANKAHDA TR	202+36.92	57.57			RT	PEDESTAL			X	
CHANKAHDA TR	205+48.48 - 208+90.75	40.52	RT -	7.64	LT	FIBER OPTIC		X		
CHANKAHDA TR	208+85.68	0.06			LT	PEDESTAL		X		
CHANKAHDA TR	208+90.75 - 209+54.00	7.64	LT -	11.66	LT	FIBER OPTIC		X		
CHANKAHDA TR	209+54.80	7.47			LT	HAND HOLE		X		
CHANKAHDA TR	209+54.00 - 213+15.65	11.66	LT -	38.02	RT	FIBER OPTIC		X		
CHANKAHDA TR	212+59.88	40.09			RT	PEDESTAL			X	
CHANKAHDA TR	213+15.65 - 216+18.89	38.02	RT -	38.61	RT	FIBER OPTIC		X		
CHANKAHDA TR	216+18.89 - 218+04.40	38.61	RT -	40.82	RT	FIBER OPTIC		X		
CHANKAHDA TR	218+04.40 - 219+70.15	40.82	RT -	50.61	RT	FIBER OPTIC	X			
CHANKAHDA TR	219+69.45	49.71			RT	PEDESTAL			X	
CHANKAHDA TR	219+69.46 - 219+87.42	49.71	RT -	33.78	LT	FIBER OPTIC			X	
CHANKAHDA TR	219+87.42 - 219+86.97	33.78	LT -	66.34	LT	FIBER OPTIC			X	
CHANKAHDA TR	219+86.97 - 219+92.05	66.34	LT -	75.42	LT	FIBER OPTIC			X	
CHANKAHDA TR	219+94.04	70.92			LT	PEDESTAL			X	
CHANKAHDA TR	219+92.05 - 220+13.37	75.42	LT -	180.90	LT	FIBER OPTIC			X	

NOTE:
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COMMUNICATIONS - MCI

ALIGNMENT	STATION	OFFSET				ITEM	ADJUST	RELOCATE	LEAVE AS IS	NOTES/REMARKS
CHANKAHDA TR	115+18.74 - 115+22.64	99.13	LT -	65.39	LT	FIBER OPTIC			X	
CHANKAHDA TR	115+22.64 - 115+59.53	65.39	LT -	118.75	RT	FIBER OPTIC			X	
CHANKAHDA TR	115+59.90 - 115+60.46	100.00	RT -	71.62	RT	FIBER OPTIC			X	
CHANKAHDA TR	115+60.46 - 115+73.44	71.62	RT -	66.20	RT	FIBER OPTIC			X	
CHANKAHDA TR	115+73.44 - 117+26.31	66.20	RT -	55.02	RT	FIBER OPTIC			X	
CHANKAHDA TR	117+26.31 - 119+89.63	55.02	RT -	68.94	RT	FIBER OPTIC			X	
CHANKAHDA TR	119+89.63 - 122+26.50	68.94	RT -	67.11	RT	FIBER OPTIC			X	
CHANKAHDA TR	122+26.50 - 123+43.10	67.11	RT -	61.88	RT	FIBER OPTIC			X	
CHANKAHDA TR	123+43.10 - 125+03.26	61.88	RT -	45.72	RT	FIBER OPTIC			X	
CHANKAHDA TR	125+03.26 - 127+05.70	45.72	RT -	56.95	RT	FIBER OPTIC	X			
CHANKAHDA TR	127+05.70 - 128+62.62	56.95	RT -	55.75	RT	FIBER OPTIC			X	
CHANKAHDA TR	128+62.62 - 130+76.08	55.75	RT -	53.41	RT	FIBER OPTIC			X	
CHANKAHDA TR	130+76.08 - 130+96.34	53.41	RT -	44.11	RT	FIBER OPTIC	X			
CHANKAHDA TR	130+96.34 - 131+92.35	44.11	RT -	52.61	RT	FIBER OPTIC	X			
CHANKAHDA TR	131+92.35 - 135+24.36	52.61	RT -	47.37	RT	FIBER OPTIC			X	
CHANKAHDA TR	135+24.36 - 135+50.00	47.37	RT -	45.66	RT	FIBER OPTIC			X	
CHANKAHDA TR	135+50.00 - 136+99.81	45.66	RT -	41.28	RT	FIBER OPTIC			X	
CHANKAHDA TR	136+99.81 - 138+44.99	41.28	RT -	40.18	RT	FIBER OPTIC	X			
CHANKAHDA TR	138+44.99 - 139+68.42	40.18	RT -	37.27	RT	FIBER OPTIC	X			
CHANKAHDA TR	139+68.42 - 141+34.86	37.27	RT -	29.22	RT	FIBER OPTIC	X			
CHANKAHDA TR	141+34.86 - 143+30.22	29.22	RT -	32.04	RT	FIBER OPTIC	X			
CHANKAHDA TR	143+30.22 - 145+70.10	32.04	RT -	35.65	RT	FIBER OPTIC	X			
CHANKAHDA TR	145+70.10 - 147+16.95	35.65	RT -	44.67	RT	FIBER OPTIC			X	
CHANKAHDA TR	147+16.95 - 149+14.20	44.67	RT -	48.51	RT	FIBER OPTIC			X	
CHANKAHDA TR	149+14.20 - 152+10.60	48.51	RT -	42.53	RT	FIBER OPTIC			X	
CHANKAHDA TR	152+10.60 - 153+34.96	42.53	RT -	35.87	RT	FIBER OPTIC			X	
CHANKAHDA TR	153+34.96 - 156+05.52	35.87	RT -	35.04	RT	FIBER OPTIC	X			
CHANKAHDA TR	156+05.52 - 157+45.08	35.04	RT -	34.53	RT	FIBER OPTIC	X			
CHANKAHDA TR	157+45.08 - 159+51.86	34.53	RT -	34.79	RT	FIBER OPTIC	X			
CHANKAHDA TR	159+51.86 - 162+19.33	34.79	RT -	39.24	RT	FIBER OPTIC	X			
CHANKAHDA TR	162+19.33 - 162+38.15	39.24	RT -	45.15	RT	FIBER OPTIC	X			
CHANKAHDA TR	162+38.15 - 162+57.02	45.15	RT -	64.91	RT	FIBER OPTIC	X			
CHANKAHDA TR	162+57.02 - 162+59.02	64.91	RT -	98.38	RT	FIBER OPTIC	X			
CHANKAHDA TR	162+59.02 - 162+54.34	98.38	RT -	132.13	RT	FIBER OPTIC	X			
CHANKAHDA TR	162+54.34 - 162+44.01	132.13	RT -	167.23	RT	FIBER OPTIC	X			

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COMMUNICATIONS - ARVIG

ALIGNMENT	STATION	OFFSET				ITEM	ADJUST	RELOCATE	LEAVE AS IS	NOTES/REMARKS
CHANKAHDA TR	113+85.90 - 114+00.77	45.87	LT -	62.30	RT	FIBER OPTIC			X	
CHANKAHDA TR	114+00.77 - 114+48.73	62.30	RT -	80.60	RT	FIBER OPTIC			X	
CHANKAHDA TR	114+48.73 - 115+13.83	80.60	RT -	448.99	RT	FIBER OPTIC			X	
CHANKAHDA TR	195+53.59 - 195+51.51	204.68	RT -	71.91	RT	FIBER OPTIC			X	
CHANKAHDA TR	195+51.51 - 195+31.33	71.91	RT -	41.89	LT	FIBER OPTIC		X		
CHANKAHDA TR	195+31.33	41.89			LT	HAND HOLE		X		
CHANKAHDA TR	195+31.33 - 195+49.31	41.89	LT -	37.91	LT	FIBER OPTIC		X		
CHANKAHDA TR	195+49.31 - 196+68.00	37.91	LT -	41.68	LT	FIBER OPTIC		X		
CHANKAHDA TR	196+68.00 - 197+14.83	41.68	LT -	40.55	LT	FIBER OPTIC		X		
CHANKAHDA TR	197+14.83 - 198+25.45	40.55	LT -	44.66	LT	FIBER OPTIC		X		
CHANKAHDA TR	198+25.45 - 199+75.20	44.66	LT -	40.73	LT	FIBER OPTIC		X		
CHANKAHDA TR	199+75.20 - 200+34.99	40.73	LT -	40.26	LT	FIBER OPTIC		X		
CHANKAHDA TR	200+34.99 - 201+32.99	40.26	LT -	35.43	LT	FIBER OPTIC		X		
CHANKAHDA TR	201+32.99 - 202+55.22	35.43	LT -	30.39	LT	FIBER OPTIC		X		
CHANKAHDA TR	202+55.22 - 203+82.65	30.39	LT -	35.77	LT	FIBER OPTIC		X		
CHANKAHDA TR	203+82.65 - 205+16.72	35.77	LT -	30.85	LT	FIBER OPTIC		X		
CHANKAHDA TR	205+16.72 - 206+99.04	30.85	LT -	39.66	LT	FIBER OPTIC		X		
CHANKAHDA TR	206+99.04 - 208+17.40	39.66	LT -	41.11	LT	FIBER OPTIC		X		
CHANKAHDA TR	208+17.40 - 209+29.67	41.11	LT -	50.71	LT	FIBER OPTIC		X		
CHANKAHDA TR	208+26.86	49.11			LT	HAND HOLE		X		
CHANKAHDA TR	208+29.67	50.71			LT	HAND HOLE		X		
CHANKAHDA TR	208+29.67 - 209+76.48	50.71	LT -	82.34	LT	FIBER OPTIC		X		
CHANKAHDA TR	209+76.48 - 209+80.37	82.34	LT -	79.37	LT	FIBER OPTIC		X		
CHANKAHDA TR	209+80.37	79.37			LT	HAND HOLE		X		
CHANKAHDA TR	209+80.37 - 209+50.21	79.37	LT -	10.99	LT	FIBER OPTIC		X		
CHANKAHDA TR	209+50.21 - 209+41.98	10.99	LT -	11.76	RT	FIBER OPTIC		X		
CHANKAHDA TR	209+41.98 - 209+26.06	11.76	RT -	114.95	RT	FIBER OPTIC		X		
CHANKAHDA TR	209+80.37 - 209+86.56	79.37	LT -	77.96	LT	FIBER OPTIC		X		
CHANKAHDA TR	209+86.56 - 210+17.04	77.96	LT -	66.55	LT	FIBER OPTIC		X		
CHANKAHDA TR	210+17.04 - 211+43.13	66.55	LT -	41.01	LT	FIBER OPTIC		X		
CHANKAHDA TR	211+43.13 - 213+02.70	41.01	LT -	32.77	LT	FIBER OPTIC		X		
CHANKAHDA TR	212+63.81	31.06			LT	HAND HOLE		X		
CHANKAHDA TR	213+02.70 - 214+00.40	32.77	LT -	39.75	LT	FIBER OPTIC		X		
CHANKAHDA TR	214+00.40 - 214+99.84	39.75	LT -	47.43	LT	FIBER OPTIC		X		
CHANKAHDA TR	214+99.84 - 215+58.41	47.43	LT -	46.97	LT	FIBER OPTIC		X		
CHANKAHDA TR	215+58.41 - 216+46.22	46.97	LT -	45.28	LT	FIBER OPTIC		X		
CHANKAHDA TR	216+46.22 - 216+80.20	45.28	LT -	42.09	LT	FIBER OPTIC		X		
CHANKAHDA TR	216+80.20	42.09			LT	HAND HOLE	X			
CHANKAHDA TR	216+83.08	56.05			LT	HAND HOLE	X			
CHANKAHDA TR	216+80.20 - 216+89.57	42.09	LT -	41.80	LT	FIBER OPTIC		X		
CHANKAHDA TR	216+86.57 - 217+59.57	41.80	LT -	37.76	LT	FIBER OPTIC		X		
CHANKAHDA TR	217+59.57 - 218+93.60	37.76	LT -	37.85	LT	FIBER OPTIC		X		
CHANKAHDA TR	218+93.60 - 219+70.26	37.85	LT -	31.82	LT	FIBER OPTIC			X	
CHANKAHDA TR	219+70.26 - 219+87	31.82	LT -	27.64	LT	FIBER OPTIC			X	
CHANKAHDA TR	219+73.54 - 219+87.25	50.66	RT -	29.88	LT	FIBER OPTIC			X	
CHANKAHDA TR	219+87.25 - 219+94.02	29.88	LT -	70.89	LT	FIBER OPTIC			X	

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No.	Date	Revisions	App.

DRAWING NAME: CHANKAHDA_PH3_ExUtilTabs.dwg

DESIGNED BY:	JWB
DRAWN BY:	RGS
CHECKED BY:	CBL
DATE:	02/07/2025
PROJECT NO.	160662010

Kimley»Horn
767 EUSTIS STREET, SUITE 100, ST, PAUL, MN 55114
PHONE: 651-645-4197
WWW.KIMLEY-HORN.COM

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

CHADD B. LARSON, PE
DATE: 02/07/2025 MN LIC. NO. 41864

City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3

EXISTING UTILITY
TABULATION

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 9 / 354

COMMUNICATIONS - ZAYO

ALIGNMENT	STATION		OFFSET					ITEM	ADJUST	RELOCATE	LEAVE AS IS	NOTES/REMARKS
CHANKAHDA TR	114+02.01	114+37.04	100.00	LT	-	100.00	RT	FIBER OPTIC			X	
CHANKAHDA TR	195+59.36	196+25.02	55.61	RT	-	55.93	RT	FIBER OPTIC		X		
CHANKAHDA TR	196+25.02	196+24.72	55.93	RT	-	67.26	RT	FIBER OPTIC		X		
CHANKAHDA TR	196+24.72		67.26				RT	PEDESTAL		X		
CHANKAHDA TR	196+25.02	196+25.90	55.93	RT	-	38.26	RT	FIBER OPTIC		X		
CHANKAHDA TR	196+25.90	200+19.14	38.26	RT	-	30.50	RT	FIBER OPTIC		X		
CHANKAHDA TR	200+19.14	202+94.06	30.50	RT	-	31.25	RT	FIBER OPTIC		X		
CHANKAHDA TR	202+94.06	207+66.61	31.25	RT	-	35.81	RT	FIBER OPTIC		X		
CHANKAHDA TR	207+66.61	208+86.88	35.81	RT	-	12.41	LT	FIBER OPTIC		X		
CHANKAHDA TR	208+86.88	213+15.63	12.41	LT	-	32.02	RT	FIBER OPTIC		X		
CHANKAHDA TR	213+15.63	216+29.26	32.02	RT	-	32.69	RT	FIBER OPTIC		X		
CHANKAHDA TR	216+29.26	218+04.97	32.69	RT	-	34.82	RT	FIBER OPTIC		X		
CHANKAHDA TR	218+04.97	219+69.90	34.82	RT	-	44.61	RT	FIBER OPTIC		X		
CHANKAHDA TR	219+69.90		44.61				RT	PEDESTAL		X		

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COMMUNICATIONS - LUMEN

ALIGNMENT	STATION		OFFSET					ITEM	ADJUST	RELOCATE	LEAVE AS IS	NOTES/REMARKS
CHANKAHDA TR	115+38.89	115+38.20	94.68	LT	-	76.08	LT	FIBER OPTIC			X	
CHANKAHDA TR	115+38.20	115+54.97	76.08	LT	-	67.52	RT	FIBER OPTIC			X	
CHANKAHDA TR	115+54.97	115+60.87	67.52	RT	-	100.00	RT	FIBER OPTIC			X	
CHANKAHDA TR	115+38.20		76.08				LT	PEDESTAL			X	
CHANKAHDA TR	115+38.20	118+16.06	76.08	LT	-	68.04	LT	FIBER OPTIC			X	
CHANKAHDA TR	118+16.06	120+11.36	68.04	LT	-	45.72	LT	FIBER OPTIC			X	
CHANKAHDA TR	120+11.36	122+88.09	45.72	LT	-	49.77	LT	FIBER OPTIC		X		
CHANKAHDA TR	122+88.09	123+85.36	49.77	LT	-	49.71	LT	FIBER OPTIC		X		
CHANKAHDA TR	123+85.36	125+33.19	49.71	LT	-	46.15	LT	FIBER OPTIC		X		
CHANKAHDA TR	125+33.19	127+63.12	46.15	LT	-	37.07	LT	FIBER OPTIC		X		
CHANKAHDA TR	127+63.12	128+87.30	37.07	LT	-	29.93	LT	FIBER OPTIC		X		
CHANKAHDA TR	128+87.30	129+03.79	29.93	LT	-	34.95	LT	FIBER OPTIC		X		
CHANKAHDA TR	129+03.79	129+11.48	34.95	LT	-	53.48	LT	FIBER OPTIC		X		
CHANKAHDA TR	129+11.87		52.43				LT	HAND HOLE	X			
CHANKAHDA TR	129+11.87	129+18.28	52.43	LT	-	43.34	LT	FIBER OPTIC		X		
CHANKAHDA TR	129+18.28	129+22.36	43.34	LT	-	42.06	LT	FIBER OPTIC		X		
CHANKAHDA TR	129+22.36	130+87.61	42.06	LT	-	41.11	LT	FIBER OPTIC		X		
CHANKAHDA TR	130+87.61	132+66.50	41.11	LT	-	46.72	LT	FIBER OPTIC		X		
CHANKAHDA TR	132+66.50	135+13.48	46.72	LT	-	52.25	LT	FIBER OPTIC		X		
CHANKAHDA TR	135+13.48	137+04.89	52.25	LT	-	50.78	LT	FIBER OPTIC		X		
CHANKAHDA TR	137+04.89	139+20.71	50.78	LT	-	52.12	LT	FIBER OPTIC		X		
CHANKAHDA TR	139+20.71	139+95.79	52.12	LT	-	56.17	LT	FIBER OPTIC		X		
CHANKAHDA TR	139+95.79	140+30.86	56.17	LT	-	62.27	LT	FIBER OPTIC		X		
CHANKAHDA TR	140+30.86	141+43.39	62.27	LT	-	62.73	LT	FIBER OPTIC		X		
CHANKAHDA TR	141+43.39	142+75.60	62.73	LT	-	47.93	LT	FIBER OPTIC		X		
CHANKAHDA TR	142+75.60	144+05.91	47.93	LT	-	41.20	LT	FIBER OPTIC		X		
CHANKAHDA TR	144+05.91	144+59.53	41.20	LT	-	37.68	LT	FIBER OPTIC		X		
CHANKAHDA TR	144+59.53	145+21.77	37.68	LT	-	31.88	LT	FIBER OPTIC		X		
CHANKAHDA TR	145+21.77	146+98.90	31.88	LT	-	13.69	LT	FIBER OPTIC		X		
CHANKAHDA TR	146+98.90	147+94.32	13.69	LT	-	11.36	LT	FIBER OPTIC		X		
CHANKAHDA TR	147+94.32	148+46.64	11.36	LT	-	12.55	LT	FIBER OPTIC		X		
CHANKAHDA TR	144+59.53	144+57.44	37.68	LT	-	33.72	RT	FIBER OPTIC		X		
CHANKAHDA TR	144+57.44		33.72				RT	PEDESTAL		X		
CHANKAHDA TR	144+57.44	147+16.72	33.72	RT	-	42.75	RT	FIBER OPTIC		X		
CHANKAHDA TR	147+16.72	148+48.39	42.75	RT	-	39.93	RT	FIBER OPTIC			X	
CHANKAHDA TR	148+46.64	148+48.39	12.55	LT	-	39.93	RT	FIBER OPTIC		X		
CHANKAHDA TR	148+46.64	151+31.24	12.55	LT	-	19.05	LT	FIBER OPTIC		X		
CHANKAHDA TR	151+31.24	151+36.43	19.05	LT	-	56.75	LT	FIBER OPTIC		X		
CHANKAHDA TR	151+36.43	151+68.00	56.75	LT	-	118.38	LT	FIBER OPTIC			X	
CHANKAHDA TR	151+31.24	153+47.28	19.05	LT	-	15.06	LT	FIBER OPTIC		X		
CHANKAHDA TR	153+47.28	155+01.60	15.06	LT	-	18.49	LT	FIBER OPTIC		X		
CHANKAHDA TR	155+01.60	157+54.89	18.49	LT	-	12.98	LT	FIBER OPTIC		X		
CHANKAHDA TR	157+54.89	158+97.12	12.98	LT	-	21.31	LT	FIBER OPTIC		X		
CHANKAHDA TR	158+97.12	160+77.95	21.31	LT	-	27.81	LT	FIBER OPTIC		X		
CHANKAHDA TR	160+77.95	164+22.29	27.81	LT	-	34.59	LT	FIBER OPTIC		X		
CHANKAHDA TR	164+22.29	165+49.96	34.59	LT	-	34.90	LT	FIBER OPTIC		X		
CHANKAHDA TR	165+49.96	168+38.61	34.90	LT	-	27.39	LT	FIBER OPTIC		X		
CHANKAHDA TR	168+38.61		27.39				LT	PEDESTAL		X		
CHANKAHDA TR	148+48.39	149+15.57	39.93	RT	-	38.54	RT	FIBER OPTIC			X	
CHANKAHDA TR	149+15.57	149+19.26	38.54	RT	-	44.44	RT	FIBER OPTIC			X	
CHANKAHDA TR	149+19.26		44.44				RT	PEDESTAL			X	
CHANKAHDA TR	149+19.26	149+26.67	44.44	RT	-	37.61	RT	FIBER OPTIC			X	
CHANKAHDA TR	149+26.67	150+25.00	37.61	RT	-	35.23	RT	FIBER OPTIC		X		
CHANKAHDA TR	150+25.00	151+00.00	35.23	RT	-	33.78	RT	FIBER OPTIC		X		
CHANKAHDA TR	151+00.00	152+04.96	33.78	RT	-	37.00	RT	FIBER OPTIC		X		
CHANKAHDA TR	152+04.96	152+10.58	37.00	RT	-	40.04	RT	FIBER OPTIC		X		
CHANKAHDA TR	152+10.58		40.04				RT	PEDESTAL	X			

COMMUNICATIONS - LUMEN

ALIGNMENT	STATION		OFFSET					ITEM	ADJUST	RELOCATE	LEAVE AS IS	NOTES/REMARKS
CHANKAHDA TR	152+10.58	152+14.00	40.04	RT	-	37.28	RT	FIBER OPTIC		X		
CHANKAHDA TR	152+14.00	152+44.68	37.28	RT	-	39.48	RT	FIBER OPTIC		X		
CHANKAHDA TR	152+44.68	153+37.32	39.48	RT	-	33.82	RT	FIBER OPTIC		X		
CHANKAHDA TR	153+37.32	153+86.81	33.82	RT	-	33.86	RT	FIBER OPTIC		X		
CHANKAHDA TR	153+86.81	155+01.81	33.86	RT	-	41.63	RT	FIBER OPTIC		X		
CHANKAHDA TR	155+01.81	155+35.62	41.63	RT	-	42.29	RT	FIBER OPTIC		X		
CHANKAHDA TR	155+35.62	155+43.60	42.29	RT	-	100.00	RT	FIBER OPTIC	X			
CHANKAHDA TR	155+35.62	157+52.35	42.29	RT	-	47.07	RT	FIBER OPTIC		X		
CHANKAHDA TR	157+52.35	157+63.23	47.07	RT	-	46.63	RT	FIBER OPTIC		X		
CHANKAHDA TR	157+63.23	159+08.49	45.63	RT	-	37.70	RT	FIBER OPTIC		X		
CHANKAHDA TR	159+08.49	160+40.77	37.70	RT	-	42.26	RT	FIBER OPTIC		X		
CHANKAHDA TR	160+40.77	162+36.96	42.26	RT	-	49.30	RT	FIBER OPTIC		X		
CHANKAHDA TR	162+36.96		49.30				RT	HAND HOLE		X		
CHANKAHDA TR	162+36.96	162+47.32	49.30	RT	-	38.18	RT	FIBER OPTIC		X		
CHANKAHDA TR	162+47.32	162+67.27	38.18	RT	-	30.31	RT	FIBER OPTIC		X		
CHANKAHDA TR	162+67.27	163+91.57	30.31	RT	-	29.72	RT	FIBER OPTIC		X		
CHANKAHDA TR	163+91.57	164+51.81	29.72	RT	-	32.61	RT	FIBER OPTIC		X		
CHANKAHDA TR	164+51.81	165+91.49	32.61	RT	-	32.00	RT	FIBER OPTIC		X		
CHANKAHDA TR	165+91.49	166+56.77	32.00	RT	-	29.98	RT	FIBER OPTIC		X		
CHANKAHDA TR	166+56.77	166+60.25	29.98	RT	-	27.36	LT	FIBER OPTIC		X		
CHANKAHDA TR	166+56.77	166+49.03	29.98	RT	-	100.00	RT	FIBER OPTIC	X			
CHANKAHDA TR	166+56.77	168+64.25	29.98	RT	-	33.07	RT	FIBER OPTIC		X		
CHANKAHDA TR	168+64.25		33.07				RT	PEDESTAL		X		
CHANKAHDA TR	168+64.25	168+66.81	33.07	RT	-	24.78	LT	FIBER OPTIC		X		
CHANKAHDA TR	168+39.77	170+23.06	27.40	LT	-	20.67	LT	FIBER OPTIC		X		
CHANKAHDA TR	169+36.86		38.86				LT	PEDESTAL		X		
CHANKAHDA TR	170+23.06		20.67				LT	PEDESTAL		X		
CHANKAHDA TR	170+23.06	171+59.06	20.67	LT	-	16.27	LT	FIBER OPTIC		X		
CHANKAHDA TR	171+59.86	172+39.01	18.27	LT	-	23.81	LT	FIBER OPTIC		X		
CHANKAHDA TR	172+39.01	173+07.99	23.81	LT	-	23.56	LT	FIBER OPTIC		X		
CHANKAHDA TR	173+07.99	173+93.22	23.56	LT	-	21.27	LT	FIBER OPTIC		X		
CHANKAHDA TR	173+93.22	175+02.62	21.27	LT	-	17.86	LT	FIBER OPTIC		X		
CHANKAHDA TR	175+02.62	176+70.01	17.86	LT	-	17.47	LT	FIBER OPTIC		X		
CHANKAHDA TR	176+70.01	177+57.17	17.47	LT	-	23.68	LT	FIBER OPTIC		X		
CHANKAHDA TR	177+57.17	178+34.75	23.68	LT	-	28.87	LT	FIBER OPTIC		X		
CHANKAHDA TR	178+34.75	179+03.49	28.07	LT	-	30.32	LT	FIBER OPTIC		X		
CHANKAHDA TR	179+03.49	179+86.48	30.32	LT	-	29.16	LT	FIBER OPTIC		X		
CHANKAHDA TR	179+86.48	180+59.30	29.16	LT	-	27.57	LT	FIBER OPTIC		X		
CHANKAHDA TR	180+59.30	181+40.60	27.57	LT	-	28.06	LT	FIBER OPTIC		X		
CHANKAHDA TR	181+40.60	182+92.31	28.06	LT	-	34.29	LT	FIBER OPTIC		X		
CHANKAHDA TR	182+92.31	183+96.74	34.29	LT	-	34.16	LT	FIBER OPTIC		X		
CHANKAHDA TR	183+96.74	184+46.58	34.16	LT	-	34.01	LT	FIBER OPTIC		X		
CHANKAHDA TR	184+46.58	185+60.94	34.01	LT	-	34.28	LT	FIBER OPTIC		X		
CHANKAHDA TR	185+60.94	187+78.31	34.28	LT	-	27.52	LT	FIBER OPTIC		X		
CHANKAHDA TR	186+54.01		39.64				LT	PEDESTAL		X		
CHANKAHDA TR	186+54.16		39.67				LT	PEDESTAL		X		
CHANKAHDA TR	187+08.80		41.07				LT	PEDESTAL		X		
CHANKAHDA TR	187+78.31	189+47.92	27.52	LT	-	21.31	LT	FIBER OPTIC		X		
CHANKAHDA TR	189+47.92	191+16.58	21.31	LT	-	20.74	LT	FIBER OPTIC		X		
CHANKAHDA TR	191+16.58	193+45.20	20.74	LT	-	44.15	LT	FIBER OPTIC		X		
CHANKAHDA TR	193+45.20	193+92.37	44.15	LT	-	46.87	LT	FIBER OPTIC		X		
CHANKAHDA TR	193+92.37	195+58.78	46.87	LT	-	42.53	LT	FIBER OPTIC		X		
CHANKAHDA TR	195+58.78	196+09.01	42.53	LT	-	45.17	LT	FIBER OPTIC		X		
CHANKAHDA TR	196+09.01	196+43.26	45.17	LT	-	40.82	LT	FIBER OPTIC		X		
CHANKAHDA TR	196+43.26	196+71.24	40.82	LT	-	39.53	LT	FIBER OPTIC		X		
CHANKAHDA TR	196+71.24	197+04.19	39.53	LT	-	39.20	LT	FIBER OPTIC		X		
CHANKAHDA TR	197+04.19	197+57.97	39.20	LT	-	42.61	LT	FIBER OPTIC		X		
CHANKAHDA TR	197+57.97	198+25.00	42.61	LT	-	38.48	LT	FIBER OPTIC		X		
CHANKAHDA TR	198+25.00	199+85.27	38.48	LT	-	32.38	LT	FIBER OPTIC		X		
CHANKAHDA TR	199+85.27	200+45.19	32.38	LT	-	72.38	LT	FIBER OPTIC	X			
CHANKAHDA TR	200+45.19	200+85.10	72.38	LT	-	69.56	LT	FIBER OPTIC			X	
CHANKAHDA TR	200+85.10	199+84.08	69.56	LT	-	171.97	RT	FIBER OPTIC	X			
CHANKAHDA TR	200+85.10	201+45.13	69.56	LT	-	232.84	LT	FIBER OPTIC			X	

NOTE:
A FIELD CHECK OF THE DEPTH OF THE UTILITY WILL BE REQUIRED FOR POSSIBLE CONFLICTS. THE UTILITY OWNER WILL BE RESPONSIBLE FOR ANY ADJUSTMENT OR RELOCATION IF THEY OR THE ENGINEER DETERMINE THAT IT IS NECESSARY. ALL ADJUSTMENTS, REMOVALS AND RELOCATIONS ARE TO BE DONE BY LUMEN.

COMMUNICATIONS - ATT

ALIGNMENT	STATION		OFFSET					ITEM	ADJUST	RELOCATE	LEAVE AS IS	NOTES/REMARKS
CHANKAHDA TR	199+77.68	200+36.94	100.00	RT	-	30.33	LT	FIBER OPTIC	X			
CHANKAHDA TR	200+36.94	200+54.73	30.33	LT	-	100.00	LT	FIBER OPTIC	X			
CHANKAHDA TR	199+88.66	200+46.41	100.00	RT	-	27.00	LT	FIBER OPTIC	X			
CHANKAHDA TR	200+46.41	200+65.05	27.00	LT	-	100.00	LT	FIBER OPTIC	X			

NOTE:
A FIELD CHECK OF THE DEPTH OF THE UTILITY WILL BE REQUIRED FOR POSSIBLE CONFLICTS. THE UTILITY OWNER WILL BE RESPONSIBLE FOR ANY ADJUSTMENT OR RELOCATION IF THEY OR THE ENGINEER DETERMINE THAT IT IS NECESSARY. ALL ADJUSTMENTS, REMOVALS AND RELOCATIONS ARE TO BE DONE BY ATT.

GAS - CENTERPOINT ENERGY

ALIGNMENT	STATION		OFFSET					ITEM	ADJUST	RELOCATE	LEAVE AS IS	NOTES/REMARKS
CHANKAHDA TR	113+58.75	114+07.37	100.00	LT	-	49.06	LT	GAS			X	
CHANKAHDA TR	114+07.37	114+25.96	49.06	LT	-	13.26	RT	GAS			X	
CHANKAHDA TR	114+25.96	114+33.17	13.26	RT	-	100.00	RT	GAS			X	
CHANKAHDA TR	130+78.53	131+79.89	71.35	LT	-	61.80	LT	GAS		X		
CHANKAHDA TR	131+79.89	131+82.75	61.80	LT	-	53.33	LT	GAS		X		
CHANKAHDA TR	131+82.75	131+91.52	53.33	LT	-	38.83	LT	GAS		X		
CHANKAHDA TR	131+91.52	132+13.12	38.83	LT	-	37.35	LT	GAS		X		
CHANKAHDA TR	132+13.12	132+33.47	37.35	LT	-	37.50	LT	GAS		X		
CHANKAHDA TR	132+33.47	132+34.95	37.50	LT	-	73.22	RT	GAS		X		
CHANKAHDA TR	132+33.47	132+44.13	37.50	LT	-	36.50	LT	GAS		X		
CHANKAHDA TR	132+44.13	134+34.60	36.50	LT	-	39.71	LT	GAS		X		
CHANKAHDA TR	134+34.60	138+24.53	39.71	LT	-	44.99	LT	GAS		X		
CHANKAHDA TR	138+24.53	140+26.49	44.99	LT	-	48.72	LT	GAS		X		
CHANKAHDA TR	140+26.49	140+30.56	48.72	LT	-	64.95	LT	GAS		X		
CHANKAHDA TR	140+30.56	140+35.49	64.95	LT	-	100.00	LT	GAS			X	
CHANKAHDA TR	140+26.49	140+25.37	48.72	LT	-	40.81	LT	GAS		X		
CHANKAHDA TR	140+25.37	140+33.06	40.81	LT	-	22.84	RT	GAS		X		
CHANKAHDA TR	140+33.06	140+51.95	22.84	RT	-	40.88	RT	GAS		X		
CHANKAHDA TR	140+51.95	140+73.45	40.88	RT	-	100.00	RT	GAS	X			
CHANKAHDA TR	162+38.78	162+34.38	61.71	RT	-	113.49	RT	GAS	X			
CHANKAHDA TR	162+38.51	162+38.78	121.05	LT	-	61.71	RT	GAS		X		
CHANKAHDA TR	162+38.51	163+43.07	121.05	LT	-	105.13	LT	GAS			X	
CHANKAHDA TR	163+43.07	167+90.60	105.13	LT	-	56.96	LT	GAS			X	
CHANKAHDA TR	167+90.60	168+66.68	56.96	LT	-	29.95	LT	GAS			X	
CHANKAHDA TR	168+66.68	171+51.48	29.95	LT	-	27.04	LT	GAS		X		
CHANKAHDA TR	171+51.48	172+51.28	27.04	LT	-	33.53	LT	GAS		X		
CHANKAHDA TR	172+51.28	172+58.76	33.53	LT	-	27.80	LT	GAS		X		
CHANKAHDA TR	172+58.76	172+67.50	27.80	LT	-	49.38	RT	GAS		X		
CHANKAHDA TR	172+67.50	172+96.09	49.38	RT	-	50.14	RT	GAS		X		
CHANKAHDA TR	172+96.09	173+50.33	50.14	RT	-	43.21	RT	GAS		X		
CHANKAHDA TR	173+50.33	173+72.61	43.21	RT	-	39.70	RT	GAS		X		
CHANKAHDA TR	173+72.61	173+71.79	39.70	RT	-	56.69	LT	GAS		X		
CHANKAHDA TR	173+72.61	174+70.73	39.70	RT	-	40.62	RT	GAS		X		
CHANKAHDA TR	184+86.07	185+33.25	37.88	RT	-	40.87	RT	GAS		X		
CHANKAHDA TR	185+33.25	185+43.58	40.87	RT	-	39.73	RT	GAS		X		
CHANKAHDA TR	185+43.58	185+46.10	39.73	RT	-	85.26	RT	GAS		X		
CHANKAHDA TR	185+43.58	185+54.02	39.73	RT	-	38.64	RT	GAS		X		
CHANKAHDA TR	185+54.02	185+43.66	38.64	RT	-	68.05	LT	GAS		X		
CHANKAHDA TR	185+54.02	188+03.71	38.64	RT	-	31.38	RT	GAS		X		
CHANKAHDA TR	188+03.71	191+04.51	31.38	RT	-	36.71	RT	GAS		X		
CHANKAHDA TR	191+04.51	192+15.01	36.71	RT	-	39.44	RT	GAS		X		
CHANKAHDA TR	192+15.01	193+43.12	39.44	RT	-	42.19	RT	GAS		X		
CHANKAHDA TR	193+43.12	195+60.40	42.19	RT	-	45.22	RT	GAS		X		
CHANKAHDA TR	195+60.40	195+61.12	45.22	RT	-	67.59	RT	GAS			X	
CHANKAHDA TR	195+61.12	195+62.16	67.59	RT	-	100.00	RT	GAS			X	
CHANKAHDA TR	195+60.40	196+10.15	45.22	RT	-	44.81	RT	GAS		X		
CHANKAHDA TR	196+10.15	196+10.26	44.81	RT	-	46.85	LT	GAS		X		
CHANKAHDA TR	196+10.26	196+05.29	46.85	LT	-	100.00	LT	GAS	X			
CHANKAHDA TR	195+61.12	196+31.71	67.59	RT	-	69.35	RT	GAS			X	
CHANKAHDA TR	196+31.71	197+22.83	69.35	RT	-	62.61	RT	GAS			X	
CHANKAHDA TR	197+22.83	199+44.36	62.61	RT	-	53.57	RT	GAS			X	
CHANKAHDA TR	199+44.36	200+28.81	53.57	RT	-	55.85	RT	GAS			X	
CHANKAHDA TR	200+28.81	201+45.08	55.85	RT	-	55.25	RT	GAS			X	
CHANKAHDA TR	201+45.08	201+48.84	55.25	RT	-	44.48	RT	GAS			X	
CHANKAHDA TR	201+48.84	202+17.03	44.48	RT	-	39.74	RT	GAS		X		
CHANKAHDA TR	202+17.03	202+29.05	39.74	RT	-	107.17	RT	GAS	X			
CHANKAHDA TR	202+17.03	205+17.54	39.74	RT	-	31.04	RT	GAS		X		
CHANKAHDA TR	205+17.54	209+01.32	31.04	RT	-	24.85	LT	GAS		X		
CHANKAHDA TR	209+01.32	210+26.42	24.85	LT	-	6.06	RT	GAS		X		
CHANKAHDA TR	210+26.42	211+75.66	6.06	RT	-	22.50	RT	GAS		X		
CHANKAHDA TR	211+75.66	211+70.52	22.50	RT	-	65.47	RT	GAS		X		
CHANKAHDA TR	211+75.66	217+28.67	22.50	RT	-	93.24	LT	GAS		X		
CHANKAHDA TR	217+28.67	217+43.33	93.24	LT	-	102.89	LT	GAS		X		
CHANKAHDA TR	217+43.33	217+20.67	102.89	LT	-	145.61	LT	GAS	X			
CHANKAHDA TR	217+28.57	217+32.40	93.24	LT	-	86.39	LT	GAS		X		
CHANKAHDA TR	217+32.40	218+10.68	86.39	LT	-	31.83	LT	GAS		X		
CHANKAHDA TR	218+10.68	218+78.14	31.83	LT	-	27.88	LT	GAS		X		
CHANKAHDA TR	218+78.14	219+87.17	27.88	LT	-	23.45	LT	GAS		X		
CHANKAHDA TR	218+85.88	219+87.17	27.25	LT	-	23.45	LT	GAS			X	

NOTE:
A FIELD CHECK OF THE DEPTH OF THE UTILITY WILL BE REQUIRED FOR POSSIBLE CONFLICTS. THE UTILITY OWNER WILL BE RESPONSIBLE FOR ANY ADJUSTMENT OR RELOCATION IF THEY OR THE ENGINEER DETERMINE THAT IT IS NECESSARY. ALL ADJUSTMENTS, REMOVALS AND RELOCATIONS ARE TO BE DONE BY CENTERPOINT ENERGY.

No.	Date	Revisions	App.

DRAWING NAME: CHANKAHDA_PH3_ExUtilTabs.dwg

DESIGNED BY:	JWB
DRAWN BY:	RGS
CHECKED BY:	CBL
DATE:	02/07/2025
PROJECT NO.	160662010

Kimley»Horn
767 EUSTIS STREET, SUITE 100, ST, PAUL, MN 55114
PHONE: 651-645-4197
WWW.KIMLEY-HORN.COM

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

CHADD B. LARSON, PE
DATE: 02/07/2025 MN LIC. NO. 41864

City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3

EXISTING UTILITY
TABULATION

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 10 / 354

WATERMAIN - CITY OF PLYMOUTH

ALIGNMENT	STATION	OFFSET	ITEM	ADJUST	REMOVE	LEAVE AS IS	NOTES/REMARKS
CHANKAHDA TR	115+14.24 - 115+80.93	42.40 LT - 346.09 RT	PVC			X	
CHANKAHDA TR	115+36.68	86.71 RT	GATE VALVE			X	
CHANKAHDA TR	114+78.34 - 115+14.24	258.35 LT - 42.40 LT	PVC			X	
CHANKAHDA TR	115+30.50 - 115+30.75	65.81 LT - 62.44 LT	PVC			X	
CHANKAHDA TR	115+28.65	65.18 LT	GATE VALVE			X	
CHANKAHDA TR	115+30.50	65.81 LT	HYDRANT			X	
CHANKAHDA TR	115+14.24 - 117+35.87	42.40 LT - 54.02 LT	PVC	X			
CHANKAHDA TR	115+30.45	42.87 LT	GATE VALVE			X	
CHANKAHDA TR	117+35.87	54.02 LT	GATE VALVE			X	
CHANKAHDA TR	117+35.87 - 117+35.34	54.02 LT - 74.98 LT	PVC			X	
CHANKAHDA TR	117+35.87 - 118+62.21	54.02 LT - 53.81 LT	PVC			X	
CHANKAHDA TR	118+23.30	90.37 LT	GATE VALVE			X	
CHANKAHDA TR	118+25.19	90.31 LT	HYDRANT			X	
CHANKAHDA TR	118+36.36 - 118+36.34	53.67 LT - 57.58 LT	PVC			X	
CHANKAHDA TR	118+36.17	55.49 LT	GATE VALVE			X	
CHANKAHDA TR	118+36.34	57.58 LT	HYDRANT			X	
CHANKAHDA TR	118+62.21 - 120+32.81	53.81 LT - 43.80 LT	PVC	X			
CHANKAHDA TR	120+32.81 - 121+11.81	43.80 LT - 40.87 LT	PVC	X			
CHANKAHDA TR	121+11.81 - 122+43.41	40.87 LT - 36.17 LT	PVC	X			
CHANKAHDA TR	122+14.01	36.78 LT	GATE VALVE	X			
CHANKAHDA TR	122+43.41 - 122+35.36	36.17 LT - 102.29 LT	PVC	X			
CHANKAHDA TR	122+34.00	53.98 LT	GATE VALVE	X			
CHANKAHDA TR	122+34.45 - 122+54.49	71.34 LT - 70.57 LT	PVC			X	
CHANKAHDA TR	122+52.90	71.09 LT	GATE VALVE			X	
CHANKAHDA TR	122+54.49	70.57 LT	HYDRANT			X	
CHANKAHDA TR	122+35.36 - 122+43.99	102.29 LT - 174.35 LT	PVC	X			
CHANKAHDA TR	122+33.41 - 123+50.73	36.17 LT - 34.21 LT	PVC	X			
CHANKAHDA TR	123+50.73 - 124+20.70	34.11 LT - 34.15 LT	PVC	X			
CHANKAHDA TR	124+20.70 - 125+86.61	34.15 LT - 29.89 LT	PVC	X			
CHANKAHDA TR	125+86.61 - 126+77.55	29.89 LT - 27.97 LT	PVC	X			
CHANKAHDA TR	126+77.55 - 128+59.33	27.97 LT - 30.71 LT	PVC	X			
CHANKAHDA TR	127+29.40 - 127+29.29	28.27 LT - 40.14 LT	PVC		X		
CHANKAHDA TR	127+29.32	36.99 LT	GATE VALVE		X		
CHANKAHDA TR	127+29.29	40.14 LT	HYDRANT		X		
CHANKAHDA TR	128+59.33 - 130+61.53	30.71 LT - 34.42 LT	PVC	X			
CHANKAHDA TR	130+61.53 - 131+45.61	34.42 LT - 35.58 LT	PVC	X			
CHANKAHDA TR	131+45.61	35.58 LT	GATE VALVE	X			
CHANKAHDA TR	131+45.61 - 132+46.89	35.58 LT - 38.30 LT	PVC	X			
CHANKAHDA TR	131+59.64 - 131+61.07	95.32 RT - 165.32 RT	PVC			X	
CHANKAHDA TR	131+54.47 - 131+59.64	27.76 LT - 95.32 RT	PVC			X	
CHANKAHDA TR	131+59.09 - 131+82.17	82.37 RT - 81.37 RT	PVC			X	
CHANKAHDA TR	131+79.73	80.91 RT	GATE VALVE			X	
CHANKAHDA TR	131+82.17	81.37 RT	HYDRANT			X	
CHANKAHDA TR	131+54.47	27.76 LT	GATE VALVE			X	
CHANKAHDA TR	131+53.64 - 131+54.47	47.74 LT - 27.76 LT	PVC			X	
CHANKAHDA TR	131+53.64	47.74 LT	GATE VALVE			X	
CHANKAHDA TR	131+52.54 - 131+53.64	74.81 LT - 47.74 LT	PVC			X	
CHANKAHDA TR	131+38.42 - 131+52.54	144.87 LT - 74.81 LT	PVC	X			
CHANKAHDA TR	131+51.57 - 132+58.84	79.56 LT - 81.08 LT	PVC			X	
CHANKAHDA TR	131+56.95	80.43 LT	GATE VALVE			X	
CHANKAHDA TR	131+58.84	81.08 LT	HYDRANT			X	
CHANKAHDA TR	132+46.69 - 137+68.17	38.30 LT - 47.28 LT	PVC			X	
CHANKAHDA TR	137+68.17 - 137+68.35	47.28 LT - 58.76 LT	PVC			X	
CHANKAHDA TR	137+68.02	56.50 LT	GATE VALVE			X	
CHANKAHDA TR	137+68.35	58.76 LT	HYDRANT			X	
CHANKAHDA TR	137+68.17 - 138+41.49	47.28 LT - 48.54 LT	PVC			X	
CHANKAHDA TR	138+41.49 - 139+77.50	48.54 LT - 48.36 LT	PVC	X			
CHANKAHDA TR	139+77.50 - 140+08.46	48.36 LT - 49.16 LT	PVC	X			
CHANKAHDA TR	140+08.46 - 140+87.37	49.16 LT - 49.18 LT	PVC	X			
CHANKAHDA TR	139+84.72 - 139+84.33	48.58 LT - 43.60 LT	PVC	X			
CHANKAHDA TR	139+84.33	43.60 LT	GATE VALVE	X			
CHANKAHDA TR	139+84.33 - 139+84.16	43.60 LT - 41.46 LT	PVC	X			
CHANKAHDA TR	139+84.16 - 139+92.42	41.46 LT - 45.16 RT	PVC	X			
CHANKAHDA TR	139+92.42 - 140+46.73	45.16 RT - 153.65 RT	PVC	X			
CHANKAHDA TR	140+08.46 - 140+08.08	49.16 LT - 68.60 LT	PVC	X			
CHANKAHDA TR	140+41.16	67.89 LT	GATE VALVE	X			
CHANKAHDA TR	140+87.37 - 141+10.69	49.18 LT - 72.55 LT	PVC	X			
CHANKAHDA TR	140+97.89	59.82 LT	GATE VALVE	X			
CHANKAHDA TR	141+10.69 - 141+07.72	72.55 LT - 142.12 LT	PVC	X			
CHANKAHDA TR	141+09.88 - 141+22.24	92.31 LT - 93.24 LT	PVC	X			
CHANKAHDA TR	141+19.87	92.58 LT	GATE VALVE	X			
CHANKAHDA TR	141+22.24	93.24 LT	HYDRANT	X			
CHANKAHDA TR	162+62.78	101.85 RT	HYDRANT			X	
CHANKAHDA TR	162+65.14	101.67 RT	GATE VALVE			X	
CHANKAHDA TR	162+62.78 - 162+92.07	101.85 RT - 103.89 RT	PVC			X	
CHANKAHDA TR	162+91.86 - 162+92.07	106.84 RT - 103.89 RT	PVC			X	
CHANKAHDA TR	162+92.07 - 162+96.42	103.89 RT - 41.84 RT	PVC	X			
CHANKAHDA TR	162+96.42	41.84 RT	GATE VALVE	X			
CHANKAHDA TR	162+96.42 - 163+19.70	41.84 RT - 117.71 LT	PVC	X			
CHANKAHDA TR	163+14.86	84.61 LT	GATE VALVE	X			
CHANKAHDA TR	163+16.41 - 167+55.67	95.23 LT - 43.23 LT	PVC	X			
CHANKAHDA TR	167+55.67 - 167+86.25	43.23 LT - 30.69 LT	PVC	X			
CHANKAHDA TR	167+86.25 - 169+17.41	30.69 LT - 26.00 LT	PVC	X			
CHANKAHDA TR	168+75.31 - 168+75.24	31.82 LT - 28.06 LT	PVC	X			

WATERMAIN - CITY OF PLYMOUTH

ALIGNMENT	STATION	OFFSET	ITEM	ADJUST	REMOVE	LEAVE AS IS	NOTES/REMARKS
CHANKAHDA TR	169+75.31	31.87 LT	GATE VALVE			X	
CHANKAHDA TR	168+81.74 - 168+82.00	26.82 LT - 36.13 LT	PVC		X		
CHANKAHDA TR	168+81.58	35.70 LT	GATE VALVE		X		
CHANKAHDA TR	168+82.00	36.13 LT	HYDRANT		X		
CHANKAHDA TR	168+92.38 - 168+93.10	27.80 LT - 80.73 LT	PVC	X			
CHANKAHDA TR	168+92.50	37.13 LT	GATE VALVE			X	
CHANKAHDA TR	168+42.16 - 169+18.43	82.77 LT - 79.98 LT	PVC			X	
CHANKAHDA TR	169+17.41 - 171+07.97	26.00 LT - 28.27 LT	PVC	X			
CHANKAHDA TR	171+07.97 - 172+31.88	28.27 LT - 29.44 LT	PVC	X			
CHANKAHDA TR	172+31.88 - 173+36.51	29.44 LT - 25.85 LT	PVC	X			
CHANKAHDA TR	173+32.03	26.00 LT	GATE VALVE	X			
CHANKAHDA TR	173+36.51 - 173+34.53	25.85 LT - 131.16 LT	PVC	X			
CHANKAHDA TR	173+36.43	29.95 LT	GATE VALVE	X			
CHANKAHDA TR	173+36.25 - 173+46.66	39.33 LT - 39.52 LT	PVC		X		
CHANKAHDA TR	173+44.23	39.48 LT	GATE VALVE		X		
CHANKAHDA TR	173+46.17	38.81 LT	HYDRANT		X		
CHANKAHDA TR	173+36.51 - 174+33.35	25.85 LT - 22.53 LT	PVC	X			
CHANKAHDA TR	174+33.35 - 176+16.54	22.53 LT - 18.62 LT	PVC	X			
CHANKAHDA TR	176+16.54 - 177+05.81	18.62 LT - 22.69 LT	PVC	X			
CHANKAHDA TR	177+05.81 - 177+56.65	22.69 LT - 27.45 LT	PVC	X			
CHANKAHDA TR	177+56.65 - 178+13.16	27.45 LT - 33.23 LT	PVC	X			
CHANKAHDA TR	178+13.16 - 178+68.30	33.23 LT - 33.89 LT	PVC	X			
CHANKAHDA TR	178+69.30 - 179+79.52	33.89 LT - 25.37 LT	PVC	X			
CHANKAHDA TR	179+79.52 - 180+58.19	25.37 LT - 20.12 LT	PVC	X			
CHANKAHDA TR	180+58.19 - 180+61.31	20.12 LT - 20.31 LT	PVC	X			
CHANKAHDA TR	180+60.95 - 180+61.31	26.31 LT - 20.31 LT	PVC		X		
CHANKAHDA TR	180+61.07	24.85 LT	GATE VALVE		X		
CHANKAHDA TR	180+60.95	26.31 LT	HYDRANT		X		
CHANKAHDA TR	180+61.31 - 182+17.14	20.31 LT - 33.47 LT	PVC	X			
CHANKAHDA TR	182+17.14 - 183+61.99	33.47 LT - 36.04 LT	PVC	X			
CHANKAHDA TR	183+61.99 - 183+98.07	36.04 LT - 34.47 LT	PVC	X			
CHANKAHDA TR	183+98.07 - 184+75.87	34.47 LT - 34.77 LT	PVC	X			
CHANKAHDA TR	184+75.87 - 185+17.96	34.77 LT - 36.48 LT	PVC	X			
CHANKAHDA TR	185+04.52	36.18 LT	GATE VALVE	X			
CHANKAHDA TR	185+17.96 - 185+55.31	36.48 LT - 37.75 LT	PVC	X			
CHANKAHDA TR	185+24.53 - 185+24.21	60.32 LT - 41.77 LT	DIP		X		
CHANKAHDA TR	185+22.40	39.57 RT	GATE VALVE		X		
CHANKAHDA TR	185+38.53 - 185+22.59	39.63 RT - 39.14 RT	PVC		X		
CHANKAHDA TR	208+20.85 - 208+17.70	263.23 LT - 291.61 LT	PVC	X			
CHANKAHDA TR	185+38.53	39.63 RT	HYDRANT		X		
CHANKAHDA TR	185+24.21 - 185+22.17	41.77 LT - 63.48 RT	PVC		X		
CHANKAHDA TR	185+24.04	32.19 LT	GATE VALVE		X		
CHANKAHDA TR	185+24.21	41.77 LT	GATE VALVE		X		
CHANKAHDA TR	185+17.96 - 185+55.31	36.48 LT - 37.75 LT	PVC	X			
CHANKAHDA TR	185+24.58 - 185+36.99	65.34 LT - 65.35 LT	PVC	X			
CHANKAHDA TR	185+36.99	65.35 LT	HYDRANT	X			
CHANKAHDA TR	185+55.31 - 186+04.10	37.75 LT - 38.61 LT	PVC	X			
CHANKAHDA TR	186+04.10 - 188+50.01	38.63 LT - 32.84 LT	PVC	X			
CHANKAHDA TR	188+50.01 - 189+51.87	32.84 LT - 29.27 LT	PVC	X			
CHANKAHDA TR	189+51.87 - 190+48.57	29.27 LT - 30.86 LT	PVC	X			
CHANKAHDA TR	190+48.57 - 191+25.43	30.86 LT - 32.24 LT	PVC	X			
CHANKAHDA TR	191+25.43 - 192+29.64	32.24 LT - 40.89 LT	PVC	X			
CHANKAHDA TR	192+29.64 - 195+80.02	40.89 LT - 41.33 LT	PVC	X			
CHANKAHDA TR	195+64.80	41.27 LT	GATE VALVE		X		
CHANKAHDA TR	195+64.84 - 195+62.70	42.12 LT - 100.00 RT	PVC		X		
CHANKAHDA TR	195+63.40	51.73 RT	GATE VALVE		X		
CHANKAHDA TR	195+80.02 - 196+00.89	41.33 LT - 41.20 LT	PVC	X			
CHANKAHDA TR	195+94.80	41.25 LT	GATE VALVE	X			
CHANKAHDA TR	196+00.89 - 196+00.96	41.20 LT - 48.43 LT	PVC	X			
CHANKAHDA TR	196+00.96	48.43 LT	GATE VALVE	X			
CHANKAHDA TR	195+79.11 - 196+00.96	117.31 LT - 48.43 LT	PVC	X			
CHANKAHDA TR	196+00.89 - 196+71.31	41.20 LT - 39.71 LT	PVC	X			
CHANKAHDA TR	196+71.31 - 197+11.88	39.71 LT - 38.17 LT	PVC		X		
CHANKAHDA TR	197+11.88	38.17 LT	GATE VALVE		X		
CHANKAHDA TR	197+11.88 - 197+34.12	38.17 LT - 37.20 LT	PVC		X		
CHANKAHDA TR	197+34.12 - 197+65.34	37.10 LT - 24.12 LT	PVC		X		
CHANKAHDA TR	197+65.34 - 198+36.17	24.12 LT - 19.29 LT	PVC		X		
CHANKAHDA TR	198+36.17 - 200+37.84	19.29 LT - 14.87 LT	PVC		X		
CHANKAHDA TR	200+37.84 - 200+76.43	14.87 LT - 27.92 LT	PVC		X		
CHANKAHDA TR	200+76.43 - 201+70.65	27.92 LT - 29.20 LT	PVC		X		
CHANKAHDA TR	200+89.27 - 200+89.20	28.09 LT - 33.56 LT	PVC		X		
CHANKAHDA TR	200+80.86	27.98 LT	GATE VALVE		X		
CHANKAHDA TR	200+89.33	31.25 LT	GATE VALVE		X		
CHANKAHDA TR	200+89.20	33.56 LT	HYDRANT		X		
CHANKAHDA TR	201+70.65 - 202+90.14	29.20 LT - 30.53 LT	PVC		X		
CHANKAHDA TR	202+08.89	52.48 RT	GATE VALVE	X			
CHANKAHDA TR	202+90.14 - 203+85.20	30.13 LT - 31.72 LT	PVC		X		
CHANKAHDA TR	203+85.20 - 205+11.08	31.72 LT - 29.10 LT	PVC		X		
CHANKAHDA TR	205+11.28 - 205+61.60	29.10 LT - 29.96 LT	PVC		X		
CHANKAHDA TR	205+58.60	29.86 LT	GATE VALVE		X		
CHANKAHDA TR	205+61.60 - 205+61.50	29.96 LT - 32.96 LT	PVC		X		
CHANKAHDA TR	205+61.50	32.96 LT	GATE VALVE		X		
CHANKAHDA TR	205+61.50 - 205+61.37	32.96 LT - 36.83 LT	PVC		X		
CHANKAHDA TR	205+61.37	36.83 LT	HYDRANT		X		

WATERMAIN - CITY OF PLYMOUTH

ALIGNMENT	STATION	OFFSET	ITEM	ADJUST	REMOVE	LEAVE AS IS	NOTES/REMARKS
CHANKAHDA TR	205+61.60 - 208+29.89	29.96 LT - 44.64 LT	PVC		X		
CHANKAHDA TR	208+29.89	44.64 LT	GATE VALVE	X			
CHANKAHDA TR	208+29.89 - 208+57.78	44.64 LT - 69.13 LT	PVC	X			
CHANKAHDA TR	208+57.78 - 208+69.18	69.13 LT - 85.84 LT	PVC	X			
CHANKAHDA TR	208+49.18	85.84 LT	GATE VALVE	X			
CHANKAHDA TR	208+49.18 - 208+22.45	85.84 LT - 240.05 LT	PVC	X			
CHANKAHDA TR	208+57.78 - 209+80.23	69.13 LT - 73.78 LT	PVC	X			
CHANKAHDA TR	209+80.23	73.78 LT	GATE VALVE	X			
CHANKAHDA TR	208+22.45 - 210+55.10	240.05 LT - 220.99 LT	PVC	X			
CHANKAHDA TR	210+55.10 - 210+67.27	220.99 LT - 217.01 LT	PVC	X			
CHANKAHDA TR	210+67.27	217.01 LT	GATE VALVE	X			
CHANKAHDA TR	210+67.27 - 210+84.18	217.01 LT - 212.49 LT	PVC	X			
CHANKAHDA TR	208+22.45 - 208+22.10	240.05 LT - 244.87 LT	PVC	X			
CHANKAHDA TR	208+22.10 - 210+56.09	244.87 LT - 225.77 LT	PVC	X			
CHANKAHDA TR	210+56.09 - 210+67.80	225.77 LT - 221.94 LT	PVC	X			
CHANKAHDA TR	210+67.80	221.94 LT	GATE VALVE	X			
CHANKAHDA TR	210+67.80 - 210+84.67	221.94 LT - 217.43 LT	PVC	X			
CHANKAHDA TR	208+22.10 - 208+21.43	244.87 LT - 254.72 LT	PVC	X			
CHANKAHDA TR	208+21.43 - 208+20.85	254.72 LT - 263.23 LT	PVC	X			
CHANKAHDA TR	208+20.85 - 208+17.70	263.23 LT - 291.61 LT	PVC	X			
CHANKAHDA TR	208+17.70 - 210+64.19	291.61 LT - 285.41 LT	PVC	X			
CHANKAHDA TR	210+64.19	285.41 LT	HYDRANT	X			
CHANKAHDA TR	208+17.70 - 208+13.31	291.61 LT - 340.95 LT	PVC	X			
CHANKAHDA TR	208+13.31 - 208+09.56	340.95 LT - 371.54 LT	PVC	X			
CHANKAHDA TR	209+80.23 - 209+92.17	73.78 LT - 67.83 LT	PVC	X			
CHANKAHDA TR	209+92.17 - 210+38.95	67.83 LT - 49.62 LT	PVC			X	ABANDONED
CHANKAHDA TR	210+38.95 - 214+76.26	49.62 LT - 45.44 LT	PVC			X	ABANDONED
CHANKAHDA TR	214+76.26 - 215+79.98	45.44 LT - 75.48 LT	PVC			X	ABANDONED
CHANKAHDA TR	209+67.88 - 209+64.19	80.55 LT - 71.57 LT	PVC	X			
CHANKAHDA TR	209+64.19	71.57 LT	GATE VALVE	X			
CHANKAHDA TR	209+64.19 - 209+28.35	71.57 LT - 43.18 RT	PVC	X			
CHANKAHDA TR	209+34.30	27.31 LT	GATE VALVE	X			
CHANKAHDA TR	209+28.35 - 209+21.78	43.18 RT - 113.89 RT	PVC	X			
CHANKAHDA TR	209+92.17 - 210+29.33	67.83 LT - 88.90 LT	PVC	X			
CHANKAHDA TR	210+29.33 - 211+87.43	88.90 LT - 66.66 LT	PVC	X			
CHANKAHDA TR	211+87.43 - 211+86.76	66.66 LT - 49.35 LT	PVC	X			
CHANKAHDA TR	211+86.76	49.35 LT	GATE VALVE	X			
CHANKAHDA TR	211+86.76 - 211+86.62	49.35 LT - 45.75 LT	PVC	X			
CHANKAHDA TR	211+86.62	45.75 LT	GATE VALVE	X			
CHANKAHDA TR	211+87.43 - 215+50.80	66.66 LT - 99.39 LT	PVC	X			
CHANKAHDA TR	215+50.80 - 215+82.84	99.39 LT - 80.81 LT	PVC	X			
CHANKAHDA TR	215+82.84 - 215+63.96	80.81 LT - 41.21 LT	PVC	X			
CHANKAHDA TR	215+63.96	41.21 LT	GATE VALVE	X			
CHANKAHDA TR	215+63.96 - 215+62.63	41.21 LT - 38.55 LT	PVC	X			
CHANKAHDA TR	215+62.63	38.55 LT	HYDRANT	X			
CHANKAHDA TR	215+82.84 - 216+00.03	80.81 LT - 71.79 LT	PVC	X			
CHANKAHDA TR	216+00.03 - 216+01.63	71.79 LT - 67.50 LT	PVC	X			
CHANKAHDA TR	216+01.63	67.50 LT	GATE VALVE	X			
CHANKAHDA TR	216+01.63 - 216+25.19	67.50 LT - 9.12 LT	PVC	X			
CHANKAHDA TR	216+25.19 - 216+88.11	9.12 LT - 7.68 LT	PVC	X			
CHANKAHDA TR	216+88.11 - 218+09.36	7.68 LT - 6.62 LT	PVC	X			
CHANKAHDA TR	218+09.36 - 218+38.62	6.62 LT - 5.61 LT	PVC		X		
CHANKAHDA TR	218+38.62 - 218+75.65	5.61 LT - 5.15 LT	PVC	X			
CHANKAHDA TR	218+75.65	5.15 LT	GATE VALVE	X			
CHANKAHDA TR	218+75.65 - 218+85.00	5.15 LT - 5.31 LT	PVC	X			
CHANKAHDA TR	218+84.54 - 218+44.81	1.08 LT - 138.44 RT	PVC	X			
CHANKAHDA TR	218+84.54	1.08 LT	GATE VALVE	X			
CHANKAHDA TR	218+85.06 - 218+84.54	7.01 LT - 1.08 LT	PVC			X	
CHANKAHDA TR	218+85.06	7.01 LT	GATE VALVE			X	
CHANKAHDA TR	218+85.06 - 219+09.94	7.01 LT - 105.08 LT	PVC			X	
CHANKAHDA TR	218+85.00 - 219+86.13	5.31 LT - 2.85 LT	PVC			X	
CHANKAHDA TR	219+86.13	2.85 LT	GATE VALVE	X			
CHANKAHDA TR	219+86.13 - 220+05.50	2.85 LT - 3.81 LT	PVC			X	
CHANKAHDA TR	220+05.50 - 220+34.11	3.81 LT - 2.88 LT	PVC			X	

NOTE:
A FIELD CHECK OF THE DEPTH OF THE UTILITY WILL BE REQUIRED FOR POSSIBLE CONFLICTS. THE UTILITY OWNER WILL BE RESPONSIBLE FOR ANY ADJUSTMENT OR RELOCATION IF THEY OR THE ENGINEER DETERMINE THAT IT IS NECESSARY. ALL ADJUSTMENTS, REMOVALS AND RELOCATIONS ARE TO BE DONE BY THE CITY OF PLYMOUTH.

STORM SEWER - CITY OF PLYMOUTH

ALIGNMENT	STATION	OFFSET	ITEM	ADJUST	REMOVE	LEAVE AS IS	NOTES/REMARKS
CHANKAHDA TR	114+76.96	56.83 LT	MANHOLE			X	
CHANKAHDA TR	114+76.96 - 115+14.72	#N/A LT - 46.65 LT	RCP			X	
CHANKAHDA TR	115+14.72	46.65 LT	CATCH BASIN			X	
CHANKAHDA TR	115+14.72 - 115+54.19	46.65 LT - #N/A LT	RCP	X			
CHANKAHDA TR	115+54.19	41.15 LT	CATCH BASIN		X		
CHANKAHDA TR	115+14.72 - 115+35.06	46.65 LT - 46.67 RT	RCP			X	
CHANKAHDA TR	115+35.06	46.67 RT	MANHOLE			X	
CHANKAHDA TR	115+44.32 - 115+35.06	100 RT - 46.67 RT	RCP			X	

No.	Date	Revisions	App.

DRAWING NAME: CHANKAHDA_PH3_ExUtilTabs.dwg

DESIGNED BY:	JWB
DRAWN BY:	RGS
CHECKED BY:	CBL
DATE:	02/07/2025
PROJECT NO.	160662010

Kimley»Horn
767 EUSTIS STREET, SUITE 100, ST, PAUL, MN 55114
PHONE: 651-645-4197
WWW.KIMLEY-HORN.COM

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

CHADD B. LARSON, PE
DATE: 02/07/2025 MN LIC. NO. 41864

City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3

EXISTING UTILITY TABULATION

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 11 / 354

STORM SEWER - CITY OF PLYMOUTH

ALIGNMENT	STATION	OFFSET	ITEM	ADJUST	REMOVE	LEAVE AS IS	NOTES/REMARKS
CHANKAHDA TR	115+35.06 - 115+65.89	46.67 RT - 32.51 RT	RCP			X	
CHANKAHDA TR	115+65.89	32.51 RT	CATCH BASIN			X	
CHANKAHDA TR	115+65.89 - 115+98.18	32.51 RT - 44.03 RT	RCP	X			
CHANKAHDA TR	115+98.18	44.03 RT	CATCH BASIN			X	
CHANKAHDA TR	118+92.29	72.66 LT	CATCH BASIN			X	
CHANKAHDA TR	120+03.03	84.83 RT	MANHOLE			X	
CHANKAHDA TR	121+10.24	87.99 RT	MANHOLE			X	
CHANKAHDA TR	122+31.53	86.30 RT	MANHOLE			X	
CHANKAHDA TR	124+27.87	81.95 RT	MANHOLE			X	
CHANKAHDA TR	125+46.84	89.17 RT	FLARED END			X	
CHANKAHDA TR	126+25.69	109.44 LT	FLARED END			X	
CHANKAHDA TR	126+28.14 - 126+32.56	86.57 RT - 70.14 RT	RCP			X	
CHANKAHDA TR	126+32.56	70.14 RT	CATCH BASIN	X			
CHANKAHDA TR	126+32.56 - 126+26.09	70.14 RT - 95.13 LT	RCP	X			
CHANKAHDA TR	126+26.09	95.13 LT	MANHOLE	X			
CHANKAHDA TR	126+26.09 - 126+25.69	95.13 LT - 109.44 LT	RCP			X	
CHANKAHDA TR	128+62.06	92.70 RT	FLARED END			X	
CHANKAHDA TR	130+35.26 - 130+89.18	99.53 RT - 74.32 RT	RCP			X	
CHANKAHDA TR	130+89.18	74.32 RT	MANHOLE			X	
CHANKAHDA TR	130+89.18 - 131+14.10	74.32 RT - 62.02 RT	RCP	X			
CHANKAHDA TR	131+14.10	62.02 RT	CATCH BASIN	X			
CHANKAHDA TR	131+14.10 - 131+77.49	62.02 RT - 59.89 RT	RCP	X			
CHANKAHDA TR	131+77.49	59.89 RT	CATCH BASIN	X			
CHANKAHDA TR	131+77.49 - 132+22.34	59.89 RT - 81.26 RT	RCP	X			
CHANKAHDA TR	132+22.34	81.26 RT	MANHOLE			X	
CHANKAHDA TR	132+22.34 - 132+20.47	81.26 RT - 100.00 RT	RCP			X	
CHANKAHDA TR	132+48.48 - 132+22.34	82.76 RT - 81.26 RT	RCP			X	
CHANKAHDA TR	132+48.48	82.76 RT	FLARED END			X	
CHANKAHDA TR	130+83.60	62.26 RT	FLARED END	X			
CHANKAHDA TR	130+83.60 - 130+89.18	62.26 RT - 74.32 RT	RCP	X			
CHANKAHDA TR	131+32.77	52.31 LT	CATCH BASIN	X			
CHANKAHDA TR	131+32.77 - 131+55.77	52.31 LT - 53.16 LT	RCP	X			
CHANKAHDA TR	121+55.77	53.16 LT	CATCH BASIN	X			
CHANKAHDA TR	131+55.77 - 133+84.81	53.16 LT - 53.40 LT	RCP	X			
CHANKAHDA TR	133+84.81	53.40 LT	MANHOLE			X	
CHANKAHDA TR	133+84.81 - 133+87.59	53.4 LT - 110.67 LT	RCP	X			
CHANKAHDA TR	133+87.59	110.67 LT	FLARED END	X			
CHANKAHDA TR	141+08.65	223.16 LT	CATCH BASIN			X	
CHANKAHDA TR	141+08.65 - 140+52.14	223.16 LT - 86.87 LT	RCP	X			
CHANKAHDA TR	140+52.14	86.87 LT	CATCH BASIN	X			
CHANKAHDA TR	140+52.14 - 141+17.38	86.87 LT - 82.88 LT	RCP	X			
CHANKAHDA TR	141+17.38	82.88 LT	CATCH BASIN	X			
CHANKAHDA TR	141+17.38 - 141+40.47	82.88 LT - 63.36 LT	RCP	X			
CHANKAHDA TR	141+40.47	63.36 LT	FLARED END	X			
CHANKAHDA TR	143+72.30	68.35 RT	CATCH BASIN			X	
CHANKAHDA TR	146+18.68	51.32 RT	CATCH BASIN	X			
CHANKAHDA TR	151+24.72	57.68 LT	CATCH BASIN			X	
CHANKAHDA TR	151+56.17	53.41 LT	CATCH BASIN			X	
CHANKAHDA TR	152+60.86	78.82 LT	FLARED END			X	
CHANKAHDA TR	156+22.53	51.53 RT	FLARED END		X		
CHANKAHDA TR	156+22.53 - 156+03.12	51.53 RT - 49.89 LT	RCP		X		
CHANKAHDA TR	156+03.12	49.89 LT	FLARED END		X		
CHANKAHDA TR	157+63.99 - 158+36.54	103.96 RT - 54.74 RT	RCP			X	
CHANKAHDA TR	158+36.54	54.74 RT	CATCH BASIN			X	
CHANKAHDA TR	158+36.54 - 159+16.89	54.74 RT - 110.62 RT	RCP			X	
CHANKAHDA TR	162+30.48	47.79 RT	FLARED END		X		
CHANKAHDA TR	162+30.48 - 162+68.54	47.79 RT - 87.59 RT	RCP		X		
CHANKAHDA TR	162+68.54	87.59 RT	CATCH BASIN	X			
CHANKAHDA TR	162+68.54 - 163+32.44	87.59 RT - 103.78 RT	RCP	X			
CHANKAHDA TR	163+32.44	100.78 RT	CATCH BASIN	X			
CHANKAHDA TR	163+32.44 - 163+69.45	100.78 RT - 121.97 RT	RCP	X			
CHANKAHDA TR	164+57.19	39.26 RT	FLARED END		X		
CHANKAHDA TR	164+57.19 - 164+56.64	38.26 RT - 36.51 LT	RCP		X		
CHANKAHDA TR	164+56.64	36.51 LT	CATCH BASIN		X		
CHANKAHDA TR	164+56.64 - 164+55.38	36.51 LT - 66.09 LT	RCP		X		
CHANKAHDA TR	164+55.38	66.09 LT	FLARED END		X		
CHANKAHDA TR	168+63.35	85.34 LT	FLARED END			X	
CHANKAHDA TR	168+63.35 - 168+80.83	85.34 LT - 67.57 LT	RCP			X	
CHANKAHDA TR	168+80.83	67.57 LT	FLARED END			X	
CHANKAHDA TR	169+24.55	24.46 LT	FLARED END		X		
CHANKAHDA TR	169+24.55 - 169+26.78	24.46 LT - 44.12 RT	HDPE		X		
CHANKAHDA TR	169+26.78	44.12 RT	FLARED END		X		
CHANKAHDA TR	172+75.27	34.79 LT	FLARED END		X		
CHANKAHDA TR	172+75.27 - 173+09.22	34.79 LT - 48.64 LT	RCP		X		
CHANKAHDA TR	173+09.22	48.64 LT	CATCH BASIN		X		
CHANKAHDA TR	173+09.22 - 173+40.70	48.64 LT - 44.76 LT	RCP		X		
CHANKAHDA TR	173+40.70	44.76 LT	CATCH BASIN		X		
CHANKAHDA TR	172+82.95	53.40 RT	FLARED END	X			
CHANKAHDA TR	172+82.95 - 173+43.96	53.4 RT - 52.20 RT	CMP	X			
CHANKAHDA TR	173+43.96	52.20 RT	FLARED END	X			
CHANKAHDA TR	176+37.30	38.83 RT	FLARED END		X		
CHANKAHDA TR	176+37.30 - 176+68.79	38.83 RT - 37.99 RT	CMP		X		
CHANKAHDA TR	176+68.79	37.99 RT	FLARED END		X		
CHANKAHDA TR	178+21.84	31.05 LT	FLARED END		X		

STORM SEWER - CITY OF PLYMOUTH

ALIGNMENT	STATION	OFFSET	ITEM	ADJUST	REMOVE	LEAVE AS IS	NOTES/REMARKS
CHANKAHDA TR	178+21.84 - 178+22.59	31.05 LT - 42.54 RT	CMP		X		
CHANKAHDA TR	178+22.59	42.54 RT	FLARED END		X		
CHANKAHDA TR	184+71.67	40.97 LT	FLARED END		X		
CHANKAHDA TR	184+71.67 - 184+95.61	40.97 LT - 41.65 LT	RCP		X		
CHANKAHDA TR	184+95.61	41.65 LT	CATCH BASIN		X		
CHANKAHDA TR	184+95.61 - 185+35.80	41.65 LT - 41.63 LT	RCP		X		
CHANKAHDA TR	185+35.80	41.63 LT	CATCH BASIN		X		
CHANKAHDA TR	185+35.80 - 185+54.24	41.63 LT - 40.53 LT	RCP		X		
CHANKAHDA TR	185+54.24	40.53 LT	FLARED END		X		
CHANKAHDA TR	184+31.23	45.01 RT	FLARED END		X		
CHANKAHDA TR	184+31.23 - 184+99.57	45.01 RT - 55.76 RT	RCP		X		
CHANKAHDA TR	184+99.57	55.76 RT	CATCH BASIN	X			
CHANKAHDA TR	185+13.01 - 184+99.57	132.99 RT - 55.76 RT	RCP	X			
CHANKAHDA TR	184+99.57 - 185+29.27	55.76 RT - 55.29 RT	RCP	X			
CHANKAHDA TR	185+29.27	55.29 RT	CATCH BASIN	X			
CHANKAHDA TR	185+29.27 - 186+14.20	55.29 RT - 49.53 RT	RCP	X			
CHANKAHDA TR	186+14.20	49.53 RT	MANHOLE			X	
CHANKAHDA TR	186+19.21 - 186+14.20	53.16 RT - 49.53 RT	RCP			X	
CHANKAHDA TR	186+19.21	53.16 RT	FLARED END			X	
CHANKAHDA TR	186+14.20 - 186+17.69	49.53 RT - 20.72 RT	RCP		X		
CHANKAHDA TR	186+17.69	20.72 RT	CATCH BASIN		X		
CHANKAHDA TR	186+14.20 - 187+14.06	49.53 RT - 49.90 RT	RCP			X	
CHANKAHDA TR	187+14.06	49.90 RT	MANHOLE			X	
CHANKAHDA TR	187+14.06 - 187+67.03	49.9 RT - 51.17 RT	RCP			X	
CHANKAHDA TR	187+67.03	51.17 RT	MANHOLE			X	
CHANKAHDA TR	187+67.81 - 187+67.03	18.79 RT - 51.17 RT	RCP	X			
CHANKAHDA TR	187+67.81	18.79 RT	CATCH BASIN	X			
CHANKAHDA TR	187+67.03 - 189+68.08	51.17 RT - 56.07 RT	HDPE			X	
CHANKAHDA TR	189+68.08	56.07 RT	MANHOLE			X	
CHANKAHDA TR	189+56.59 - 189+68.08	68.15 RT - 56.07 RT	RCP			X	
CHANKAHDA TR	189+56.59	68.15 RT	FLARED END			X	
CHANKAHDA TR	189+68.08 - 191+65.11	56.07 RT - 62.95 RT	HDPE	X			
CHANKAHDA TR	191+65.11	62.95 RT	CATCH BASIN		X		
CHANKAHDA TR	191+72.11 - 191+65.11	126.64 RT - 62.95 RT	HDPE	X			
CHANKAHDA TR	191+65.11 - 191+66.35	62.95 RT - 41.14 RT	RCP		X		
CHANKAHDA TR	191+86.35	41.14 RT	FLARED END		X		
CHANKAHDA TR	192+11.00	46.50 RT	FLARED END		X		
CHANKAHDA TR	192+12.34 - 192+11.00	67.11 RT - 46.50 RT	RCP		X		
CHANKAHDA TR	192+12.34	67.11 RT	FLARED END		X		
CHANKAHDA TR	194+75.71	70.41 LT	FLARED END	X			
CHANKAHDA TR	194+75.71 - 195+72.13	70.41 LT - 66.86 LT	RCP	X			
CHANKAHDA TR	195+72.13	66.86 LT	CATCH BASIN	X			
CHANKAHDA TR	195+72.13 - 195+50.56	66.86 LT - 144.41 LT	RCP	X			
CHANKAHDA TR	195+58.58	53.43 RT	FLARED END		X		
CHANKAHDA TR	195+58.58 - 195+77.35	53.43 RT - 59.43 RT	HDPE	X			
CHANKAHDA TR	195+77.35	59.43 RT	CATCH BASIN	X			
CHANKAHDA TR	195+77.35 - 196+09.00	59.43 RT - 59.21 RT	HDPE	X			
CHANKAHDA TR	196+09.00	59.21 RT	CATCH BASIN	X			
CHANKAHDA TR	196+10.51 - 196+09.00	185.8 RT - 59.21 RT	HDPE	X			
CHANKAHDA TR	196+09.00 - 196+30.14	59.21 RT - 58.23 RT	HDPE	X			
CHANKAHDA TR	196+30.14	58.23 RT	FLARED END	X			
CHANKAHDA TR	197+22.38	27.20 LT	FLARED END		X		
CHANKAHDA TR	197+26.22 - 197+22.38	35.68 RT - 27.20 LT	CMP		X		
CHANKAHDA TR	197+26.22	35.68 RT	FLARED END		X		
CHANKAHDA TR	197+84.53	33.82 LT	FLARED END		X		
CHANKAHDA TR	200+05.82	39.63 RT	CATCH BASIN		X		
CHANKAHDA TR	200+05.82 - 200+09.17	39.63 RT - 10.59 RT	RCP		X		
CHANKAHDA TR	201+01.61	34.09 RT	FLARED END		X		
CHANKAHDA TR	201+01.61 - 201+00.82	34.09 RT - 22.85 LT	RCP		X		
CHANKAHDA TR	201+00.82	22.85 LT	FLARED END		X		
CHANKAHDA TR	201+12.85	40.61 RT	FLARED END		X		
CHANKAHDA TR	201+12.88 - 201+41.08	40.61 RT - 37.57 RT	RCP		X		
CHANKAHDA TR	201+41.08	37.57 RT	FLARED END		X		
CHANKAHDA TR	201+17.41	54.26 LT	MANHOLE		X		
CHANKAHDA TR	208+26.54	184.84 LT	CATCH BASIN	X			
CHANKAHDA TR	208+26.54 - 210+31.98	184.84 LT - 174.04 LT	RCP	X			
CHANKAHDA TR	210+33.98	174.04 LT	CATCH BASIN	X			
CHANKAHDA TR	210+33.98 - 210+61.43	174.04 LT - 298.19 LT	RCP	X			
CHANKAHDA TR	209+96.18	77.67 LT	FLARED END		X		
CHANKAHDA TR	209+71.45 - 209+96.18	9.02 LT - 77.67 LT	CMP		X		
CHANKAHDA TR	209+71.45	9.02 LT	MANHOLE		X		
CHANKAHDA TR	209+71.45 - 209+96.99	9.02 LT - 20.08 RT	RCP		X		
CHANKAHDA TR	209+96.99	20.08 RT	MANHOLE		X		
CHANKAHDA TR	209+96.99 - 209+93.72	20.08 RT - 32.85 RT	HDPE		X		
CHANKAHDA TR	209+93.72	32.85 RT	MANHOLE		X		
CHANKAHDA TR	209+93.72 - 214+59.67	32.85 RT - 60.46 RT	HDPE		X		
CHANKAHDA TR	214+59.67	60.46 RT	FLARED END		X		
CHANKAHDA TR	209+96.99 - 215+16.66	20.08 RT - 16.07 RT	RCP		X		
CHANKAHDA TR	215+16.66	16.07 RT	MANHOLE		X		
CHANKAHDA TR	215+16.66 - 217+87.02	16.07 RT - 28.31 RT	RCP		X		
CHANKAHDA TR	217+87.02	28.31 RT	MANHOLE		X		
CHANKAHDA TR	217+81.12 - 217+87.02	60.66 RT - 28.31 RT	RCP		X		
CHANKAHDA TR	217+81.12	60.66 RT	MANHOLE		X		
CHANKAHDA TR	217+77.08 - 217+81.12	81.33 RT - 60.66 RT	RCP		X		

STORM SEWER - CITY OF PLYMOUTH

ALIGNMENT	STATION	OFFSET	ITEM	ADJUST	REMOVE	LEAVE AS IS	NOTES/REMARKS
CHANKAHDA TR	217+77.08	81.33 RT	FLARED END		X		
CHANKAHDA TR	217+87.02 - 218+02.08	28.31 RT - 35.79 RT	RCP		X		
CHANKAHDA TR	218+02.08	35.79 RT	CATCH BASIN		X		
CHANKAHDA TR	218+02.08 - 218+45.26	35.79 RT - 69.89 RT	RCP		X		
CHANKAHDA TR	218+45.26	69.89 RT	CATCH BASIN			X	
CHANKAHDA TR	218+45.26 - 217+94.78	69.89 RT - 95.66 RT	RCP			X	
CHANKAHDA TR	217+94.78	95.66 RT	FLARED END	X			
CHANKAHDA TR	212+53.37	27.33 RT	FLARED END		X		
CHANKAHDA TR	212+53.37 - 212+82.98	27.33 RT - 31.82 RT	RCP		X		
CHANKAHDA TR	212+82.98	31.82 RT	MANHOLE		X		
CHANKAHDA TR	212+84.65 - 212+82.98	21.85 LT - 31.82 RT	HDPE		X		
CHANKAHDA TR	212+84.65	25.85 LT	FLARED END		X		
CHANKAHDA TR	212+82.98 - 214+27.83	31.82 RT - 39.33 RT	RCP		X		
CHANKAHDA TR	214+27.83	39.33 RT	MANHOLE		X		
CHANKAHDA TR	214+27.83 - 214+50.04	39.33 RT - 51.61 RT	RCP		X		
CHANKAHDA TR	214+50.04	51.61 RT	FLARED END		X		
CHANKAHDA TR	218+59.87	61.52 LT	FLARED END			X	
CHANKAHDA TR	218+59.87 - 218+69.08	61.52 LT - 14.43 LT	RCP	X			
CHANKAHDA TR	218+69.08	14.43 LT	MANHOLE	X			
CHANKAHDA TR	218+66.30 - 218+69.08	22.67 LT - 14.43 LT	RCP	X			
CHANKAHDA TR	218+66.30	22.67 LT	CATCH BASIN		X		
CHANKAHDA TR	218+69.08 - 218+63.19	14.43 LT - 124.43 RT	RCP		X		
CHANKAHDA TR	218+63.19	124.43 RT	MANHOLE			X	
CHANKAHDA TR	218+63.19 - 218+71.21	124.43 RT - 125.56 RT	RCP			X	
CHANKAHDA TR	218+71.21	125.56 RT	CATCH BASIN			X	
CHANKAHDA TR	218+71.21 - 218+88.78	125.56 RT - 76.81 RT	RCP			X	
CHANKAHDA TR	218+88.78	76.81 RT	CATCH BASIN			X	
CHANKAHDA TR	218+71.21 - 219+21.59	125.56 RT - 136.97 RT	RCP			X	
CHANKAHDA TR	219+21.59	136.97 RT	CATCH BASIN			X	
CHANKAHDA TR	218+67.09	92.08 LT	FLARED END			X	
CHANKAHDA TR	218+67.09 - 218+96.71	92.06 LT - 83.67 LT	RCP	X			
CHANKAHDA TR	218+96.71	83.67 LT	CATCH BASIN	X			
CHANKAHDA TR	218+71.07	111.73 LT	FLARED END		X		
CHANKAHDA TR	218+71.07 - 218+98.05	111.73 LT - 100.85 LT	RCP		X		
CHANKAHDA TR	218+98.05	100.85 LT	MANHOLE	X			
CHANKAHDA TR	218+98.05 - 219+85.87	100.85 LT - 18.78 LT	RCP			X	
CHANKAHDA TR	219+38.14	51.69 LT	CATCH BASIN			X	
CHANKAHDA TR	219+47.33	86.47 LT	CATCH BASIN			X	
CHANKAHDA TR	218+02.08 - 219+73.80	35.79 RT - 78.86 RT	RCP			X	
CHANKAHDA TR	219+73.80	78.86 RT	MANHOLE			X	
CHANKAHDA TR	219+73.80 - 219+94.06	78.86 RT - 12.33 LT	RCP	X			
CHANKAHDA TR	219+94.06	12.33 LT	MANHOLE	X			
CHANKAHDA TR	219+94.06 - 220+15.07	12.33 LT - 43.56 LT	RCP	X			
CHANKAHDA TR	220+15.07	43.56 LT	FLARED END			X	
CHANKAHDA TR	220+13.90	42.69 LT	FLARED END			X	
CHANKAHDA TR	220+34.14	10.69 LT	CATCH BASIN			X	
CHANKAHDA TR	219+94.06 - 219+75.14	12.33 LT - 78.89 LT	RCP	X			
CHANKAHDA TR	219+75.14	78.89 LT	CATCH BASIN			X	
CHANKAHDA TR	219+75.14 - 219+47.33	78.89 LT - 86.47 LT	RCP			X	
CHANKAHDA TR	219+47.33	86.47 LT	CATCH BASIN			X	
CHANKAHDA TR	219+47.33 - 219+38.14	86.47 LT - 51.69 LT	RCP			X	
CHANKAHDA TR	219+38.14	51.69 LT	CATCH BASIN			X	
CHANKAHDA TR	220+13.96	28.03 RT	CATCH BASIN			X	

NOTE:
A FIELD CHECK OF THE DEPTH OF THE UTILITY WILL BE REQUIRED FOR POSSIBLE CONFLICTS. THE UTILITY OWNER WILL BE RESPONSIBLE FOR ANY ADJUSTMENT OR RELOCATION IF THEY OR THE ENGINEER DETERMINE THAT IT IS NECESSARY. ALL ADJUSTMENTS, REMOVALS AND RELOCATIONS ARE TO BE DONE BY THE CITY OF PLYMOUTH.

COMMUNICATIONS - HENNEPIN

ALIGNMENT	STATION	OFFSET	ITEM	ADJUST	RELOCATE	LEAVE AS IS	NOTES/REMARKS
CHANKAHDA TR	217+82.89 - 218+37.08	210.25 RT - 86.67 RT	FIBER OPTIC			X	
CHANKAHDA TR	218+37.08 - 218+15.49	86.67 RT - 49.43 RT	FIBER OPTIC		X		
CHANKAHDA TR	218+15.49 - 218+28.98	49.43 RT - 27.36 LT	FIBER OPTIC		X		
CHANKAHDA TR	218+28.98 - 218+88.35	27.36 LT - 79.87 LT	FIBER OPTIC		X		
CHANKAHDA TR	218+88.35	79.87 LT	PEDESTAL		X		
CHANKAHDA TR	218+88.35 - 219+14.54	79.87 LT - 169.07 LT	FIBER OPTIC		X		
CHANKAHDA TR	219+14.54 - 219+49.97	169.07 LT - 301.13 LT	FIBER OPTIC		X		
CHANKAHDA TR	219+49.97 - 219+61.30	301.13 LT - 346.38 LT	FIBER OPTIC		X		
CHANKAHDA TR	219+61.30 - 220+11.57	346.38 LT - 534.73 LT	FIBER OPTIC		X		
CHANKAHDA TR	220+11.57 - 220+11.57	534.73 LT - 534.73 LT	FIBER OPTIC		X		

NOTE:
A FIELD CHECK OF THE DEPTH OF THE UTILITY WILL BE REQUIRED FOR POSSIBLE CONFLICTS. THE UTILITY OWNER WILL BE RESPONSIBLE FOR ANY ADJUSTMENT OR RELOCATION IF THEY OR THE ENGINEER DETERMINE THAT IT IS NECESSARY. ALL ADJUSTMENTS, REMOVALS AND RELOCATIONS ARE TO BE DONE BY HENNEPIN.

No.	Date	Revisions	App.

DRAWING NAME: CHANKAHDA_PH3_ExUtilTabs.dwg

DESIGNED BY:	JWB
DRAWN BY:	RGS
CHECKED BY:	CBL
DATE:	02/07/2025
PROJECT NO.	160662010

Kimley»Horn
767 EUSTIS STREET, SUITE 100, ST, PAUL, MN 55114
PHONE: 651-645-4197
WWW.KIMLEY-HORN.COM

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

CHADD B. LARSON, PE

DATE: 02/07/2025 MN LIC. NO. 41864

City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3

EXISTING UTILITY
TABULATION

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 12 / 354

SANITARY SEWER - CITY OF PLYMOUTH

ALIGNMENT	STATION	OFFSET	ITEM	ADJUST	RECONSTRUCT	REMOVE	LEAVE AS IS	NOTES/REMARKS
CHANKAHDA TR	126+66.32 - 125+90.64	134.96 LT - 71.08 LT	DIP	X				
CHANKAHDA TR	126+90.64	71.08 LT	MANHOLE	X				
CHANKAHDA TR	126+90.64 - 131+42.84	71.08 LT - 72.80 LT	DIP	X				
CHANKAHDA TR	131+42.84	72.80 LT	MANHOLE				X	
CHANKAHDA TR	131+42.84 - 131+28.81	72.80 LT - 142.88 LT	PVC				X	
CHANKAHDA TR	131+28.81	142.88 LT	MANHOLE				X	
CHANKAHDA TR	131+42.84 - 134+57.49	72.80 LT - 83.93 LT	DIP	X				
CHANKAHDA TR	134+57.49	83.93 LT	MANHOLE	X				
CHANKAHDA TR	134+57.49 - 135+50.36	83.93 LT - 57.05 RT	DIP	X				
CHANKAHDA TR	135+50.36	57.05 RT	MANHOLE				X	
CHANKAHDA TR	135+50.36 - 137+62.52	57.05 RT - 85.29 RT	DIP				X	
CHANKAHDA TR	137+62.52	85.29 RT	MANHOLE				X	
CHANKAHDA TR	137+62.52 - 140+83.20	85.29 RT - 119.22 RT	DIP				X	
CHANKAHDA TR	140+83.20	119.22 RT	MANHOLE				X	
CHANKAHDA TR	140+83.20 - 141+19.73	119.22 RT - 148.29 RT	DIP	X				
CHANKAHDA TR	140+83.20 - 140+84.73	119.22 RT - 108.18 LT	DIP				X	
CHANKAHDA TR	140+84.73	108.18 LT	MANHOLE				X	
CHANKAHDA TR	139+73.89	73.49 LT	CLEANOUT				X	
CHANKAHDA TR	143+84.01	76.47 RT	MANHOLE				X	
CHANKAHDA TR	146+03.80	71.45 RT	MANHOLE				X	
CHANKAHDA TR	185+45.42 - 185+31.17	173.04 RT - 145.13 RT	PVC	X				
CHANKAHDA TR	185+31.17	145.13 RT	MANHOLE	X				
CHANKAHDA TR	185+21.17 - 185+14.79	145.13 RT - 62.40 RT	PVC	X				
CHANKAHDA TR	185+14.79	62.40 RT	MANHOLE	X				
CHANKAHDA TR	185+14.79 - 185+13.77	62.40 RT - 60.16 LT	PVC	X				
CHANKAHDA TR	185+13.77	60.16 LT	MANHOLE				X	
CHANKAHDA TR	185+13.77 - 185+09.28	60.16 LT - 200.61 LT	PVC				X	
CHANKAHDA TR	185+09.28	200.61 LT	MANHOLE	X				
CHANKAHDA TR	209+50.36 - 209+79.50	66.92 RT - 26.66 RT	PVC			X		
CHANKAHDA TR	209+79.50	76.66 RT	MANHOLE			X		
CHANKAHDA TR	209+79.50 - 214+05.59	26.66 RT - 56.32 RT	PVC			X		
CHANKAHDA TR	214+05.59	56.32 RT	MANHOLE			X		
CHANKAHDA TR	214+12.73 - 214+05.59	93.16 RT - 56.32 RT	PVC			X		
CHANKAHDA TR	214+05.59 - 216+17.21	56.32 RT - 0.15 RT	PVC	X				
CHANKAHDA TR	216+17.21	0.15 RT	MANHOLE	X				
CHANKAHDA TR	215+17.21 - 215+82.95	0.15 RT - 92.71 LT	PVC	X				
CHANKAHDA TR	215+82.95	92.71 LT	MANHOLE	X				
CHANKAHDA TR	215+82.95 - 214+21.31	92.71 LT - 54.09 LT	PVC	X				
CHANKAHDA TR	214+21.31	54.09 LT	MANHOLE	X				
CHANKAHDA TR	214+20.30 - 214+21.31	44.48 LT - 54.09 LT	PVC	X				
CHANKAHDA TR	214+21.31 - 210+35.93	54.09 LT - 74.40 LT	PVC				X	
CHANKAHDA TR	210+35.93	74.40 LT	MANHOLE	X				
CHANKAHDA TR	210+12.20 - 210+35.93	85.74 LT - 74.40 LT	PVC	X				
CHANKAHDA TR	210+35.93 - 209+93.03	74.40 LT - 124.09 LT	PVC	X				
CHANKAHDA TR	209+93.03	124.09 LT	MANHOLE	X				
CHANKAHDA TR	209+93.03 - 210+24.87	124.09 LT - 204.15 LT	PVC	X				
CHANKAHDA TR	210+24.87	204.15 LT	MANHOLE	X				
CHANKAHDA TR	208+14.29 - 210+24.87	192.36 LT - 204.15 LT	PVC	X				
CHANKAHDA TR	210+59.39 - 210+24.87	173.11 LT - 204.15 LT	PVC	X				
CHANKAHDA TR	210+24.87 - 210+55.55	204.15 LT - 372.54 LT	PVC	X				
CHANKAHDA TR	210+55.55	372.54 LT	MANHOLE	X				
CHANKAHDA TR	216+17.21 - 218+39.37	0.15 RT - 3.23 RT	PVC	X				
CHANKAHDA TR	218+39.37	3.23 RT	MANHOLE	X				
CHANKAHDA TR	218+39.37 - 220+14.87	3.23 RT - 7.41 RT	PVC	X				
CHANKAHDA TR	220+14.87	7.41 RT	MANHOLE				X	
CHANKAHDA TR	220+14.87 - 220+14.87	7.41 RT - 7.41 RT	PVC				X	

NOTE:
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POWER - WRIGHT HENNEPIN CO-OP

ALIGNMENT	STATION	OFFSET	ITEM	ADJUST	RELOCATE	LEAVE AS IS	NOTES/REMARKS
CHANKAHDA TR	115+59.27 - 115+11.25	736.44 LT - 228.75 LT	UNDERGROUND			X	
CHANKAHDA TR	115+11.25 - 115+34.99	228.75 LT - 97.77 LT	UNDERGROUND			X	
CHANKAHDA TR	115+34.99 - 115+32.68	97.77 LT - 89.56 LT	UNDERGROUND			X	
CHANKAHDA TR	115+07.19 - 115+32.68	228.86 LT - 89.56 LT	UNDERGROUND			X	
CHANKAHDA TR	115+32.68	89.56 LT	TRANSFORMER			X	
CHANKAHDA TR	115+32.68 - 115+20.08	89.56 LT - 76.44 LT	UNDERGROUND			X	
CHANKAHDA TR	115+20.08	76.44 LT	PEDESTAL			X	
CHANKAHDA TR	115+20.08 - 115+21.01	76.44 LT - 71.29 LT	UNDERGROUND			X	
CHANKAHDA TR	115+21.01	71.29 LT	PEDESTAL			X	
CHANKAHDA TR	115+21.01 - 115+83.78	71.29 LT - 266.94 RT	UNDERGROUND			X	
CHANKAHDA TR	115+40.57	68.24 LT	TRANSFORMER			X	
CHANKAHDA TR	115+40.57 - 117+28.33	68.24 LT - 63.79 LT	UNDERGROUND			X	
CHANKAHDA TR	117+28.33 - 118+27.93	63.79 LT - 63.86 LT	UNDERGROUND			X	
CHANKAHDA TR	118+04.05	88.56 LT	LIGHT			X	
CHANKAHDA TR	118+27.93 - 121+65.81	63.86 LT - 63.73 LT	UNDERGROUND			X	
CHANKAHDA TR	118+76.65	69.63 LT	LIGHT			X	
CHANKAHDA TR	120+03.86	65.53 LT	LIGHT			X	
CHANKAHDA TR	121+65.81 - 122+51.64	63.73 LT - 45.74 LT	UNDERGROUND	X			
CHANKAHDA TR	122+57.51	64.94 LT	LIGHT			X	
CHANKAHDA TR	122+51.64 - 123+97.63	45.74 LT - 43.95 LT	UNDERGROUND	X			
CHANKAHDA TR	123+97.63 - 125+42.60	43.95 LT - 37.54 LT	UNDERGROUND	X			
CHANKAHDA TR	125+42.60 - 125+85.73	37.54 LT - 37.34 LT	UNDERGROUND	X			
CHANKAHDA TR	125+85.73 - 129+29.02	37.34 LT - 39.92 LT	UNDERGROUND	X			

POWER - WRIGHT HENNEPIN CO-OP

ALIGNMENT	STATION	OFFSET	ITEM	ADJUST	RELOCATE	LEAVE AS IS	NOTES/REMARKS
CHANKAHDA TR	129+29.02 - 129+28.94	39.92 LT - 49.12 LT	UNDERGROUND	X			
CHANKAHDA TR	129+28.94	49.12 LT	TRANSFORMER	X			
CHANKAHDA TR	129+28.94 - 129+17.26	49.12 LT - 60.91 LT	UNDERGROUND	X			
CHANKAHDA TR	129+17.26	60.91 LT	PEDESTAL	X			
CHANKAHDA TR	129+29.02 - 129+53.28	39.92 LT - 54.85 RT	UNDERGROUND	X			
CHANKAHDA TR	129+53.28 - 130+04.36	54.85 RT - 54.68 RT	UNDERGROUND	X			
CHANKAHDA TR	130+04.36 - 130+76.30	54.68 RT - 231.66 RT	UNDERGROUND	X			
CHANKAHDA TR	129+28.94 - 129+46.34	49.12 LT - 52.73 LT	UNDERGROUND	X			
CHANKAHDA TR	129+46.34	52.73 LT	TRANSFORMER	X			
CHANKAHDA TR	129+46.34 - 129+46.46	52.73 LT - 40.09 LT	UNDERGROUND	X			
CHANKAHDA TR	129+45.43 - 129+46.46	44.13 LT - 40.09 LT	UNDERGROUND	X			
CHANKAHDA TR	129+46.46 - 129+70.22	40.09 LT - 51.83 RT	UNDERGROUND	X			
CHANKAHDA TR	129+70.22 - 130+13.97	51.83 RT - 51.60 RT	UNDERGROUND	X			
CHANKAHDA TR	130+13.97 - 130+85.88	51.60 RT - 227.91 RT	UNDERGROUND	X			
CHANKAHDA TR	129+29.02 - 129+46.46	39.92 LT - 40.09 LT	UNDERGROUND	X			
CHANKAHDA TR	129+46.46 - 131+19.67	40.09 LT - 41.87 LT	UNDERGROUND	X			
CHANKAHDA TR	131+00.78	66.51 LT	PEDESTAL			X	
CHANKAHDA TR	131+19.67 - 131+62.65	41.87 LT - 42.34 LT	UNDERGROUND	X			
CHANKAHDA TR	131+62.65 - 131+62.46	42.34 LT - 55.55 LT	UNDERGROUND		X		
CHANKAHDA TR	131+62.46	55.55 LT	LIGHT		X		
CHANKAHDA TR	131+62.65 - 132+60.77	42.34 LT - 43.54 LT	UNDERGROUND	X			
CHANKAHDA TR	132+60.77 - 138+82.64	43.54 LT - 50.78 LT	UNDERGROUND	X			
CHANKAHDA TR	138+82.64 - 140+36.55	50.78 LT - 55.29 LT	UNDERGROUND	X			
CHANKAHDA TR	140+13.39	90.78 LT	PEDESTAL			X	
CHANKAHDA TR	140+42.96	76.34 LT	LIGHT		X		
CHANKAHDA TR	140+36.55 - 141+29.10	55.29 LT - 57.35 LT	UNDERGROUND	X			
CHANKAHDA TR	141+29.10 - 141+61.31	57.35 LT - 57.80 LT	UNDERGROUND	X			
CHANKAHDA TR	141+53.45	95.73 LT	PEDESTAL			X	
CHANKAHDA TR	141+61.31 - 146+46.29	57.80 LT - 48.13 LT	UNDERGROUND			X	
CHANKAHDA TR	141+23.45	39.72 RT	LIGHT		X		
CHANKAHDA TR	143+50.50	53.40 RT	PEDESTAL	X			
CHANKAHDA TR	146+46.29 - 146+41.55	48.13 LT - 43.02 RT	UNDERGROUND	X			
CHANKAHDA TR	146+41.55 - 150+42.04	43.02 RT - 51.40 RT	UNDERGROUND			X	
CHANKAHDA TR	150+42.04 - 153+22.66	51.40 RT - 32.95 RT	UNDERGROUND			X	
CHANKAHDA TR	153+22.66 - 155+77.19	33.95 RT - 32.91 RT	UNDERGROUND	X			
CHANKAHDA TR	155+77.19 - 157+18.47	32.91 RT - 32.15 RT	UNDERGROUND	X			
CHANKAHDA TR	157+18.47 - 159+95.05	32.15 RT - 24.08 RT	UNDERGROUND	X			
CHANKAHDA TR	159+95.05 - 162+30.13	24.08 RT - 26.42 RT	UNDERGROUND	X			
CHANKAHDA TR	162+30.13 - 162+29.81	26.42 RT - 142.28 LT	UNDERGROUND	X			
CHANKAHDA TR	162+29.81 - 162+44.81	142.28 LT - 142.31 LT	UNDERGROUND	X			
CHANKAHDA TR	162+45.13 - 162+44.81	26.39 RT - 142.31 LT	UNDERGROUND	X			
CHANKAHDA TR	162+30.13 - 162+45.13	26.42 RT - 26.39 RT	UNDERGROUND	X			
CHANKAHDA TR	162+45.13 - 162+45.21	26.39 RT - 70.46 RT	UNDERGROUND	X			
CHANKAHDA TR	162+45.21	70.46 RT	PEDESTAL		X		
CHANKAHDA TR	162+44.64	73.71 RT	PEDESTAL		X		
CHANKAHDA TR	162+44.81	142.31 LT	PEDESTAL		X		
CHANKAHDA TR	162+44.81 - 162+54.99	142.31 LT - 157.45 LT	UNDERGROUND			X	
CHANKAHDA TR	162+54.99	157.45 LT	PEDESTAL			X	
CHANKAHDA TR	162+54.99 - 163+51.38	157.45 LT - 147.04 LT	UNDERGROUND			X	
CHANKAHDA TR	163+51.38	147.04 LT	PEDESTAL			X	
CHANKAHDA TR	163+51.38 - 163+45.52	147.04 LT - 94.38 LT	UNDERGROUND			X	
CHANKAHDA TR	163+45.52	94.38 LT	TRANSFORMER			X	
CHANKAHDA TR	163+45.52 - 168+75.56	94.38 LT - 41.38 LT	UNDERGROUND			X	
CHANKAHDA TR	168+75.56	41.38 LT	PEDESTAL	X			
CHANKAHDA TR	168+75.56 - 168+76.63	41.38 LT - 55.05 LT	UNDERGROUND	X			
CHANKAHDA TR	168+76.63	55.05 LT	PEDESTAL			X	
CHANKAHDA TR	168+76.63 - 168+51.94	55.05 LT - 56.38 LT	UNDERGROUND			X	
CHANKAHDA TR	168+51.94 - 168+54.83	56.38 LT - 109.26 LT	UNDERGROUND			X	
CHANKAHDA TR	168+54.83 - 168+84.34	109.26 LT - 107.68 LT	UNDERGROUND			X	
CHANKAHDA TR	168+84.34 - 168+92.77	107.68 LT - 293.36 LT	UNDERGROUND			X	
CHANKAHDA TR	168+76.63 - 168+87.66	55.05 LT - 293.62 LT	UNDERGROUND			X	
CHANKAHDA TR	168+75.56 - 168+75.23	41.38 LT - 31.79 LT	UNDERGROUND	X			
CHANKAHDA TR	168+75.23 - 168+72.95	31.79 LT - 32.93 RT	UNDERGROUND	X			
CHANKAHDA TR	168+72.95 - 168+50.40	32.93 RT - 71.63 RT	UNDERGROUND	X			
CHANKAHDA TR	168+50.40 - 168+47.25	71.63 RT - 125.33 RT	UNDERGROUND			X	
CHANKAHDA TR	168+75.23 - 172+99.62	31.79 LT - 27.90 LT	UNDERGROUND	X			
CHANKAHDA TR	172+99.62 - 177+02.12	27.90 LT - 24.40 LT	UNDERGROUND	X			
CHANKAHDA TR	173+46.95 - 173+46.18	140.16 LT - 89.94 LT	UNDERGROUND	X			
CHANKAHDA TR	173+46.18 - 173+47.40	89.94 LT - 36.66 LT	UNDERGROUND	X			
CHANKAHDA TR	173+47.40 - 173+51.38	36.66 LT - 36.77 LT	UNDERGROUND	X			
CHANKAHDA TR	173+51.38	36.77 LT	LIGHT	X			
CHANKAHDA TR	173+47.40 - 173+49.28	36.66 LT - 45.39 RT	UNDERGROUND	X			
CHANKAHDA TR	177+02.12 - 180+46.43	24.40 LT - 39.38 LT	UNDERGROUND	X			
CHANKAHDA TR	180+46.43 - 183+11.96	39.38 LT - 40.94 LT	UNDERGROUND	X			
CHANKAHDA TR	183+11.96 - 184+92.64	40.94 LT - 37.14 LT	UNDERGROUND	X			
CHANKAHDA TR	184+83.11 - 184+96.45	165.58 LT - 55.74 RT	UNDERGROUND			X	
CHANKAHDA TR	184+96.45 - 185+27.06	55.74 RT - 176.51 RT	UNDERGROUND	X			
CHANKAHDA TR	184+92.64 - 185+64.33	37.14 LT - 38.80 LT	UNDERGROUND	X			
CHANKAHDA TR	185+41.52	46.32 LT	LIGHT		X		
CHANKAHDA TR	185+64.33 - 188+45.26	38.80 LT - 31.44 LT	UNDERGROUND	X			
CHANKAHDA TR	188+45.26 - 191+39.71	31.44 LT - 32.73 LT	UNDERGROUND	X			
CHANKAHDA TR	191+39.71 - 194+06.11	32.73 LT - 63.95 LT	UNDERGROUND	X			

POWER - WRIGHT HENNEPIN CO-OP

ALIGNMENT	STATION	OFFSET	ITEM	ADJUST	RELOCATE	LEAVE AS IS	NOTES/REMARKS
CHANKAHDA TR	194+06.11 - 195+47.51	63.95 LT - 41.55 LT	UNDERGROUND			X	
CHANKAHDA TR	195+55.43	40.75 LT	LIGHT		X		
CHANKAHDA TR	195+47.51 - 199+72.61	41.55 LT - 29.24 LT	UNDERGROUND	X			
CHANKAHDA TR	199+72.61 - 200+85.10	29.24 LT - 69.56 LT	UNDERGROUND	X			
CHANKAHDA TR	200+85.10	69.56 LT	TRANSFORMER			X	
CHANKAHDA TR	200+85.10 - 201+29.63	69.56 LT - 71.65 LT	UNDERGROUND			X	
CHANKAHDA TR	201+29.63	71.65 LT	TRANSFORMER			X	
CHANKAHDA TR	202+28.69 - 201+29.63	86.42 RT - 71.65 LT	UNDERGROUND			X	
CHANKAHDA TR	201+93.85 - 202+28.69	168.83 RT - 86.42 RT	UNDERGROUND			X	
CHANKAHDA TR	201+29.63 - 201+41.65	71.65 LT - 71.31 LT	UNDERGROUND			X	
CHANKAHDA TR	202+40.66 - 201+41.65	87.27 RT - 71.31 LT	UNDERGROUND			X	
CHANKAHDA TR	201+41.65 - 201+90.96	71.31 LT - 69.94 LT	UNDERGROUND			X	
CHANKAHDA TR	201+90.96	69.94 LT	TRANSFORMER			X	
CHANKAHDA TR	201+90.96 - 204+23.67	69.94 LT - 69.60 LT	UNDERGROUND			X	
CHANKAHDA TR	204+23.67 - 205+22.16	69.60 LT - 24.77 LT	UNDERGROUND	X			
CHANKAHDA TR	205+22.16 - 208+46.47	24.77 LT - 62.31 LT	UNDERGROUND	X			
CHANKAHDA TR	208+46.47 - 208+88.71	62.31 LT - 7.52 LT	UNDERGROUND	X			
CHANKAHDA TR	173+49.28 - 177+10.86	45.39 RT - 47.09 RT	UNDERGROUND	X			
CHANKAHDA TR	176+13.75	54.84 RT	TRANSFORMER		X		
CHANKAHDA TR	176+13.43	60.62 RT	TRANSFORMER		X		
CHANKAHDA TR	176+20.37	54.90 RT	TRANSFORMER		X		
CHANKAHDA TR	176+20.52	60.86 RT	TRANSFORMER		X		
CHANKAHDA TR	177+10.86 - 180+44.42	47.09 RT - 32.60 RT	UNDERGROUND	X			
CHANKAHDA TR	180+44.42 - 183+07.84	32.60 RT - 30.94 RT	UNDERGROUND	X			
CHANKAHDA TR	183+07.84 - 185+37.68	30.94 RT - 34.15 RT	UNDERGROUND	X			
CHANKAHDA TR	185+37.68 - 188+42.82	34.15 RT - 40.52 RT	UNDERGROUND	X			
CHANKAHDA TR	188+42.82 - 191+10.03	40.52 RT - 39.83 RT	UNDERGROUND	X			
CHANKAHDA TR	191+10.03 - 193+43.03	39.83 RT - 51.03 RT	UNDERGROUND	X			
CHANKAHDA TR	193+43.03 - 195+12.26	51.03 RT - 52.06 RT	UNDERGROUND	X			
CHANKAHDA TR	194+97.35	54.47 RT	PEDESTAL		X		
CHANKAHDA TR	195+12.26 - 195+12.03	52.06 RT - 59.08 RT	UNDERGROUND		X		
CHANKAHDA TR	195+12.03	59.08 RT	PEDESTAL	X			
CHANKAHDA TR	195+12.03 - 195+11.75	59.08 RT - 67.81 RT	UNDERGROUND	X			
CHANKAHDA TR	195+11.75 - 195+45.70	67.81 RT - 69.23 RT	UNDERGROUND	X			
CHANKAHDA TR	195+45.70 - 195+70.91	69.23 RT - 53.90 RT	UNDERGROUND	X			
CHANKAHDA TR	195+70.91	53.90 RT	LIGHT	X			
CHANKAHDA TR	195+70.91 - 196+11.36	53.90 RT - 47.46 LT	UNDERGROUND	X			
CHANKAHDA TR	196+11.36 - 195+92.27	47.46 LT - 147.80 LT	UNDERGROUND	X			
CHANKAHDA TR	197+08.39 - 194+36.99	258.60 LT - 625.66 RT	OVERHEAD			X	
CHANKAHDA TR	197+32.84 - 194+56.20	250.10 LT - 632.15 RT	OVERHEAD			X	
CHANKAHDA TR	197+72.77 - 194+94.15	210.86 LT - 639.32 RT	OVERHEAD			X	
CHANKAHDA TR	197+96.59 - 195+13.17	201.82 LT - 646.31 RT	OVERHEAD			X	
CHANKAHDA TR	195+12.26 - 195+60.26	52.06 RT - 54.06 RT	UNDERGROUND	X			
CHANKAHDA TR	195+60.26 - 196+30.13	54.06 RT - 53.71 RT	UNDERGROUND	X			
CHANKAHDA TR	196+30.13 - 196+29.96	53.71 RT - 81.74 RT	UNDERGROUND	X			
CHANKAHDA TR	196+29.96	81.74 RT	PEDESTAL			X	
CHANKAHDA TR	196+29.96 - 197+52.50	81.74 RT - 70.05 RT	UNDERGROUND			X	
CHANKAHDA TR	196+18.73 - 197+52.50	75.94 RT - 70.05 RT	UNDERGROUND			X	
CHANKAHDA TR	197+52.50 - 203+77.82	70.05 RT - 76.59 RT	UNDERGROUND			X	
CHANKAHDA TR	203+77.82 - 204+27.01	76.59 RT - 77.25 RT	UNDERGROUND			X	
CHANKAHDA TR	204+27.01 - 205+48.01	77.25 RT - 39.54 RT	UNDERGROUND			X	
CHANKAHDA TR	205+48.01 - 207+84.18	39.54 RT - 41.75 RT	UNDERGROUND			X	
CHANKAHDA TR	203+77.78 - 204+28.14	84.38 RT - 85.08 RT	UNDERGROUND			X	
CHANKAHDA TR	204+28.14 - 205+49.42	85.08 RT - 47.39 RT	UNDERGROUND			X	
CHANKAHDA TR	205+49.42 - 207+11.04	47.39 RT - 42.79 RT	UNDERGROUND	X			
CHANKAHDA TR	207+11.04 - 207+84.18	42.79 RT - 41.75 RT	UNDERGROUND	X			
CHANKAHDA TR	207+84.18 - 208+88.71	41.75 RT - 7.52 LT	UNDERGROUND	X			
CHANKAHDA TR	208+88.71 - 208+99.04	7.52 LT - 8.78 RT	UNDERGROUND	X			
CHANKAHDA TR	208+99.04	8.78 RT	LIGHT		X		
CHANKAHDA TR	208+99.04 - 212+12.35	8.78 RT - 63.44 RT	UNDERGROUND	X			
CHANKAHDA TR	212+12.35	63.44 RT	TRANSFORMER			X	
CHANKAHDA TR	212+12.35 - 214+53.78	63.44 RT - 74.34 RT	UNDERGROUND			X	
CHANKAHDA TR	214+53.78	74.34 RT	TRANSFORMER			X	
CHANKAHDA TR	216+90.11 - 216+77.53	297.23 RT - 313.89 RT	UNDERGROUND	X			
CHANKAHDA TR	216+48.76 - 216+90.11	229.13 RT - 297.23 RT	UNDERGROUND	X			
CHANKAHDA TR	216+35.01 - 216+48.76	166.71 RT - 229.13 RT	UNDERGROUND	X			
CHANKAHDA TR	215+63.15 - 216+35.01	121.16 RT - 166.71 RT	UNDERGROUND	X			
CHANKAHDA TR	214+53.78 - 215+63.15	74.34 RT - 121.16 RT	UNDERGROUND			X	
CHANKAHDA TR	214+53.78 - 214+72.30	74.34 RT - 40.25 LT	UNDERGROUND			X	
CHANKAHDA TR	214+72.30 - 216+61.98	40.25 LT - 31.83 LT	UNDERGROUND	X			
CHANKAHDA TR	216+61.98	31.83 LT	TRANSFORMER		X		
CHANKAHDA TR	216+70.35	48.36 LT	UTIL POLE	X			
CHANKAHDA TR	216+61.98 - 218+86.89	31.83 LT - 79.54 LT	UNDERGROUND	X			
CHANKAHDA TR	214+53.78 - 215+21.34	74.34 RT - 61.07 RT	UNDERGROUND	X			
CHANKAHDA TR	215+21.34 - 218+08.20	61.07 RT - 63.95 RT	UNDERGROUND	X			
CHANKAHDA TR	218+08.20 - 218+86.89	63.95 RT - 79.54 LT	UNDERGROUND	X			
CHANKAHDA TR	218+86.89 - 219+33.50	79.54 LT - 251.64 LT	UNDERGROUND	X			
CHANKAHDA TR	219+33.50 - 219+64.40	251.64 LT - 368.48 LT	UNDERGROUND			X	
CHANKAHDA TR	219+90.26	63.13 LT	PEDESTAL		X		
CHANKAHDA TR	219+90.18	66.48 LT	PEDESTAL		X		

NOTE:
A FIELD CHECK OF THE DEPTH OF THE UTILITY WILL BE REQUIRED FOR POSSIBLE CONFLICTS. THE UTILITY OWNER WILL BE RESPONSIBLE FOR ANY ADJUSTMENT OR RELOCATION IF THEY OR THE ENGINEER DETERMINE THAT IT IS NECESSARY. ALL ADJUSTMENTS, REMOVALS AND RELOCATIONS ARE TO BE DONE BY WRIGHT HENNEPIN CO-OP.

No.	Date	Revisions	App.

DRAWING NAME: CHANKAHDA_PH3_ExUtilTabs.dwg

DESIGNED BY:	JWB
DRAWN BY:	RGS
CHECKED BY:	CBL
DATE:	02/07/2025
PROJECT NO.	160662010

Kimley»Horn
767 EUSTIS STREET, SUITE 100, ST, PAUL, MN 55114
PHONE: 651-645-4197
WWW.KIMLEY-HORN.COM

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

CHADD B. LARSON, PE

DATE: 02/07/2025 MN LIC. NO. 41864

City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3

EXISTING UTILITY
TABULATION

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 13

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

THE CITY OF PLYMOUTH REQUIRES THAT THE CONTRACTOR'S NAME, TYPICAL STREET CROSS SECTION AND THE FOLLOWING NOTES AND STATEMENTS BE PLACED ON EACH STREET OR STORM SEWER RECORD PLAN SHEET.

RECORD PLAN NOTES:

1. ALL HYDRANT BENCHMARKS ARE TOP NUT OF HYDRANT.
2. DISTANCES, ELEVATIONS AND TIES ARE BASED ON FIELD MEASUREMENTS TAKEN AFTER CONSTRUCTION.

RECORD PLAN COMPLETED BY: _____

DATE: _____

STANDARD DETAILS
REQUIRED NOTES ON STREET
AND STORM SEWER RECORD PLAN
CITY OF PLYMOUTH

PUBLISHED 1-24
CITY PL. NO. DWG-2
REVISED 3-11

THE CITY OF PLYMOUTH REQUIRES THAT THE CONTRACTOR'S NAME AND THE FOLLOWING NOTES AND STATEMENTS BE PLACED ON EACH WATERMAIN OR SANITARY SEWER RECORD PLAN SHEET.

RECORD PLAN NOTES:

1. ALL HYDRANT BENCHMARKS ARE TOP NUT OF HYDRANT.
2. DISTANCES, ELEVATIONS AND TIES ARE BASED ON FIELD MEASUREMENTS TAKEN AFTER CONSTRUCTION. WYE LOCATIONS SUPPLIED BY CONTRACTORS.
3. ALL TIES AND DISTANCES ARE TO THE CENTER OF SURFACE STRUCTURES.
4. ALL HYDRANTS AND HYDRANT GATE VALVES ARE RETAINED AND TIED BACK TO THE WATERMAIN TEE BY MEANS OF APPROVED MEGALUGS UNLESS OTHERWISE NOTED.
5. ALL SEWER SERVICES ARE LOCATED 3 FEET DOWNSTREAM OF WATER SERVICES IF SEWER AND WATER ARE IN THE SAME TRENCH.
6. ALL WATER SERVICES ARE 1 INCH H.D.P.E. AND ALL SEWER SERVICES ARE 4 INCH P.V.C. UNLESS OTHERWISE SPECIFIED.
7. ALL SEWER AND WATER SERVICES ARE EXTENDED 10 FEET BEYOND THE PROPERTY LINE UNLESS OTHERWISE NOTED.

RECORD PLAN COMPLETED BY: _____

DATE: _____

STANDARD DETAILS
REQUIRED NOTES ON WATERMAIN
AND SANITARY SEWER RECORD PLAN
CITY OF PLYMOUTH

PUBLISHED 1-24
CITY PL. NO. DWG-3
REVISED 3-11

SEED RATES, TIMES AND SUGGESTIONS

BEST TIME TO SEED OR OVERSEED LISTED IN ORDER OF HIGHEST GERMINATION RATES:

1. AUGUST 15 TO SEPTEMBER 15
2. NOVEMBER 15 TO DECEMBER 15 (DORMANT SEEDING)
3. APRIL 15 TO MAY 15

NEW SEEDING AND OVER SEEDING RATES: 6 LB. PER 1000 SQ. FT. (261 LBS. PER ACRE)

30% PARADE KENTUCKY BLUE
20% AQUILA KENTUCKY BLUE
20% PARK KENTUCKY BLUE
30% PERENNIAL RYE-DELRAY

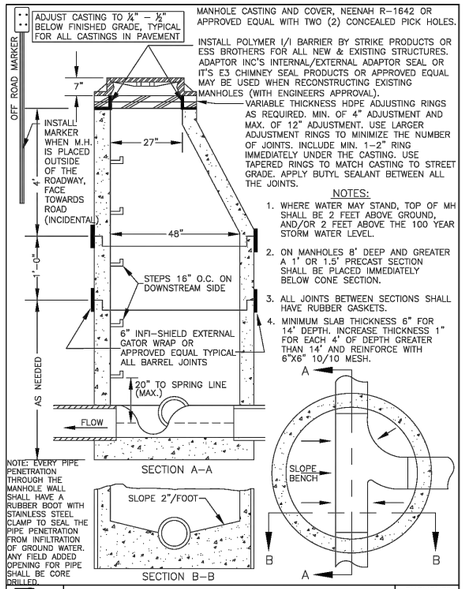
DIVIDE SEED IN HALF AND SOW IN TWO DIFFERENT DIRECTIONS.

OVERSEEDING SUGGESTIONS:

1. CLIP GRASS TO 1" HEIGHT OR LESS.
2. AERATE AREA WITH DRAG MAT TO BREAK UP PLUGS.
3. REMOVE DEBRIS
4. FERTILIZE WITH PHOSPHOROUS FREE STARTER FERTILIZER AT RECOMMENDED RATE.
5. TOP DRESS AREA IF NECESSARY.
6. SEED AT SUGGESTED RATE WITH SEEDER THATCHER MACHINE PULLING DRAG MAT.
7. WATER

STANDARD DETAILS
SEEDING AND OVERSEEDING RATES
CITY OF PLYMOUTH

PUBLISHED 1-24
CITY PL. NO. SPP-1
REVISED 3-11



MANHOLE CASTING AND COVER, NEENAH R-1642 OR APPROVED EQUAL WITH TWO (2) CONCEALED PICK HOLES.

INSTALL POLYMER I/I BARRIER BY STRIKE PRODUCTS OR ESS BROTHERS FOR ALL NEW & EXISTING STRUCTURES. ADAPTOR INC'S INTERNAL/EXTERNAL ADAPTOR SEAL OR IT'S E3 CHIMNEY SEAL PRODUCTS OR APPROVED EQUAL MAY BE USED WHEN RECONSTRUCTING EXISTING MANHOLES (WITH ENGINEERS APPROVAL).

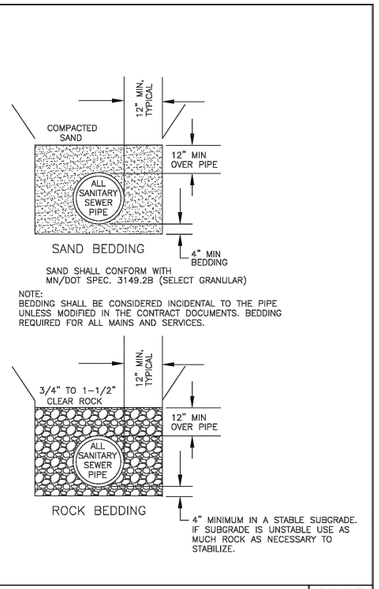
VARIABLE THICKNESS HDPE ADJUSTING RINGS AS REQUIRED. MIN. OF 4" ADJUSTMENT AND MAX. OF 12" ADJUSTMENT. USE LARGER ADJUSTMENT RINGS TO MINIMIZE THE NUMBER OF JOINTS. INCLUDE MIN. 1-2" RING IMMEDIATELY UNDER THE CASTING. USE TAPERED RINGS TO MATCH CASTING TO STREET GRADE. APPLY BUTYL SEALANT BETWEEN ALL THE JOINTS.

NOTES:

1. WHERE WATER MAY STAND, TOP OF MH SHALL BE 2 FEET ABOVE GROUND, AND/OR 2 FEET ABOVE THE 100 YEAR STORM WATER LEVEL.
2. ON MANHOLES 8' DEEP AND GREATER A 1' OR 1.5' PRECAST SECTION SHALL BE PLACED IMMEDIATELY BELOW CONE SECTION.
3. ALL JOINTS BETWEEN SECTIONS SHALL HAVE RUBBER GASKETS.
4. MINIMUM SLAB THICKNESS 6" FOR 14' DEPTH. INCREASE THICKNESS 1" FOR EACH 4' OF DEPTH GREATER THAN 14' AND REINFORCE WITH 6"X6" 10/10 MESH.

STANDARD DETAILS
STANDARD SANITARY SEWER MANHOLE
CITY OF PLYMOUTH

PUBLISHED 1-24
CITY PL. NO. SS-3
REVISED 1-22

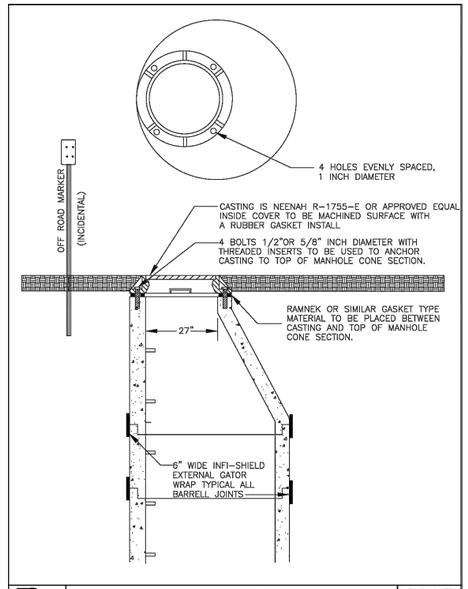


SAND SHALL CONFORM WITH MN/DOT SPEC. 3149.2B (SELECT GRANULAR)

NOTE:
BEDDING SHALL BE CONSIDERED INCIDENTAL TO THE PIPE UNLESS MODIFIED IN THE CONTRACT DOCUMENTS. BEDDING REQUIRED FOR ALL MAINS AND SERVICES.

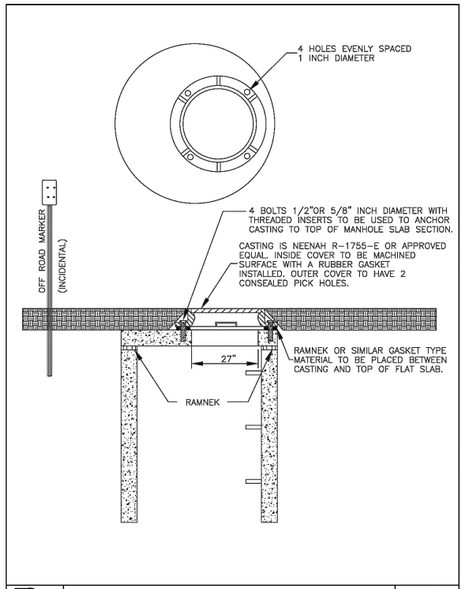
STANDARD DETAILS
SANITARY SEWER BEDDING
CITY OF PLYMOUTH

PUBLISHED 1-24
CITY PL. NO. SS-6
REVISED 1-24



STANDARD DETAILS
WATERTIGHT CASTING-MANHOLE
CITY OF PLYMOUTH

PUBLISHED 1-24
CITY PL. NO. SS-7
REVISED 1-17



STANDARD DETAILS
WATERTIGHT CASTING-FLAT SLAB MANHOLE
CITY OF PLYMOUTH

PUBLISHED 1-24
CITY PL. NO. SS-8
REVISED 1-17

No.	Date	Revisions	App.

DRAWING NAME: CHANKAHDA_PH3_PLATES.dwg

DESIGNED BY:	JWB
DRAWN BY:	RGS
CHECKED BY:	CBL
DATE:	02/07/2025
PROJECT NO.	160662010

Kimley»Horn
767 EUSTIS STREET, SUITE 100, ST, PAUL, MN 55114
PHONE: 651-645-4197
WWW.KIMLEY-HORN.COM

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

CHADD B. LARSON, PE

DATE: 02/07/2025 MN LIC. NO. 41864

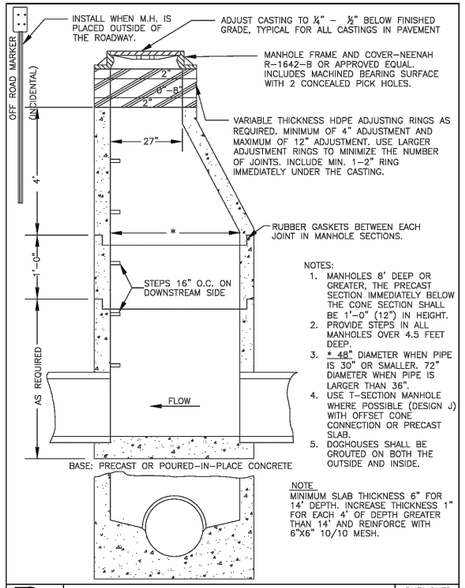
City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3

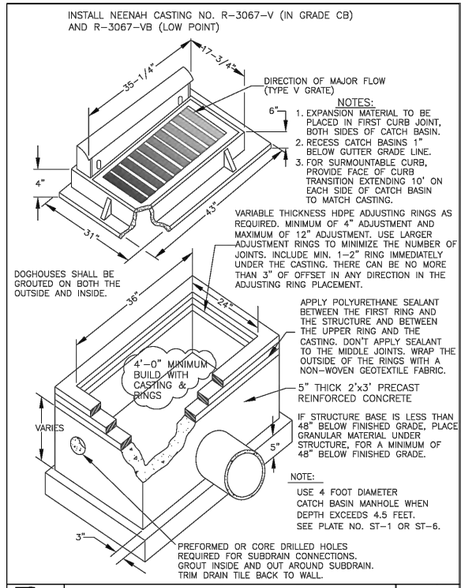
CHANKAHDA TR
CIVIL DETAILS

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

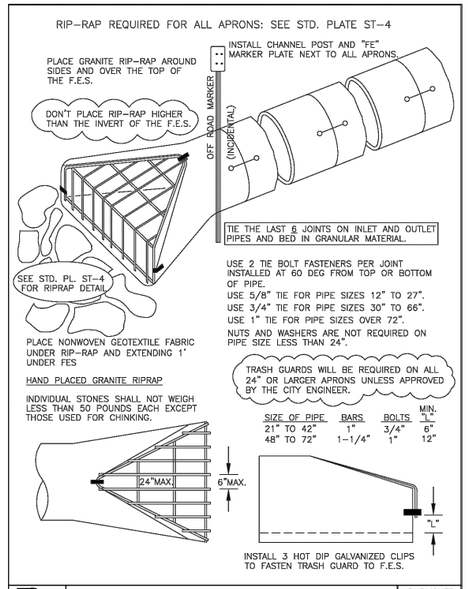
SHEET NO. 14 / 354



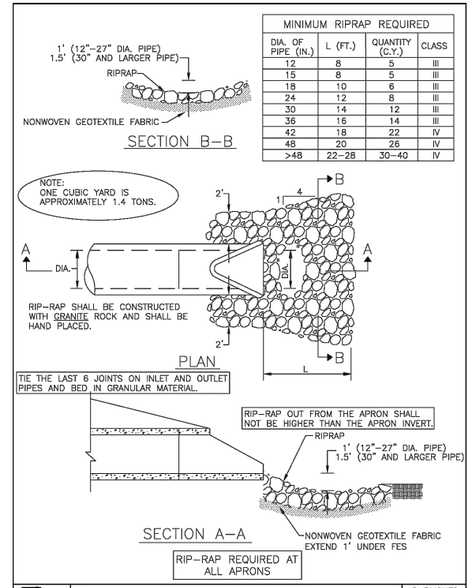
	STANDARD DETAILS STORM SEWER MANHOLE WITH CONE SECTION CITY OF PLYMOUTH	PUBLISHED 1–24 CITY PL. NO. ST–1 REVISED 1–17



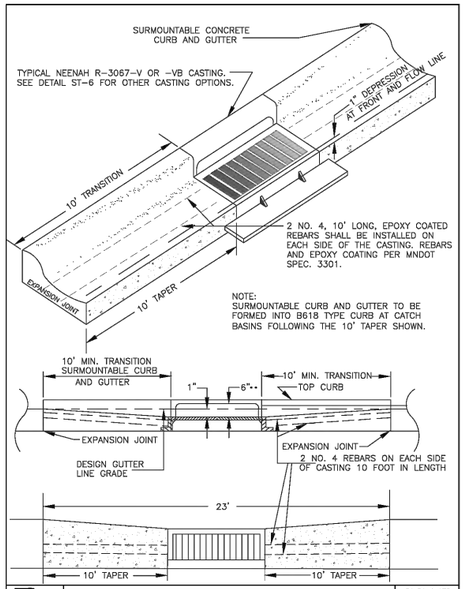
	STANDARD DETAILS CATCH BASIN (MAX. DEPTH 4.5') CITY OF PLYMOUTH	PUBLISHED 1–24 CITY PL. NO. ST–2 REVISED 1–21



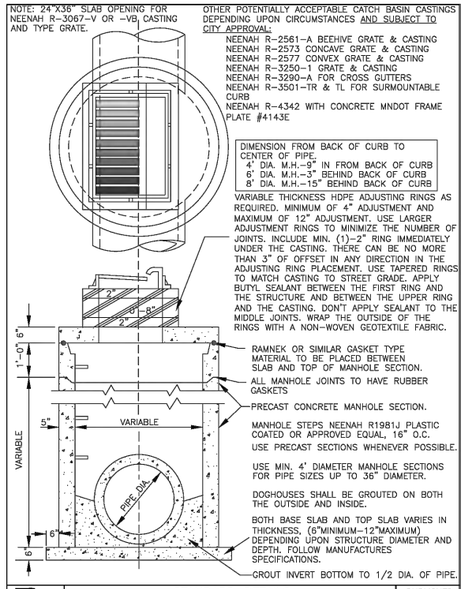
	STANDARD DETAILS INLET & OUTLET F.E.S. WITH TRASH GUARD CITY OF PLYMOUTH	PUBLISHED 1–24 CITY PL. NO. ST–3 REVISED 1–17



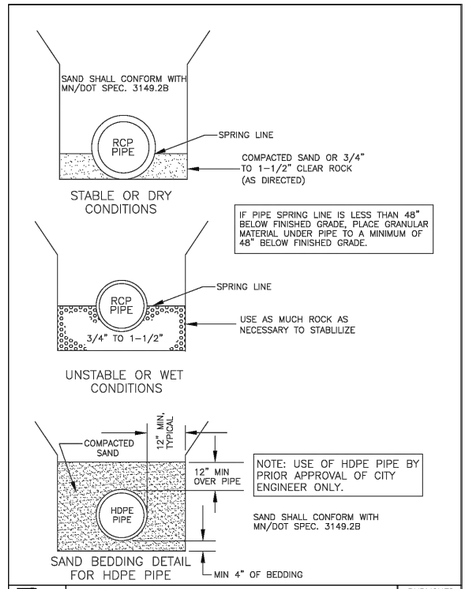
	STANDARD DETAILS RIPRAP DETAIL FOR FLARED END SECTIONS CITY OF PLYMOUTH	PUBLISHED 1–24 CITY PL. NO. ST–4 REVISED 1–17



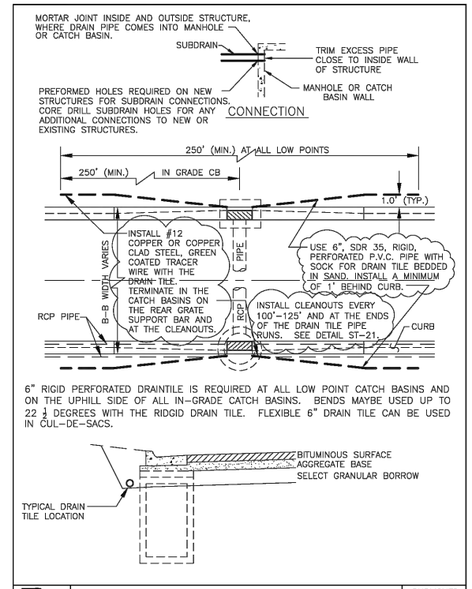
	STANDARD DETAILS CATCH BASIN CASTING INSTALLATION DETAIL CITY OF PLYMOUTH	PUBLISHED 1–24 CITY PL. NO. ST–5 REVISED 1–21



	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



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

No.	Date	Revisions	App.

DRAWING NAME: CHANKAHDA_PH3_PLATES.dwg

DESIGNED BY:	JWB
DRAWN BY:	RGS
CHECKED BY:	CBL
DATE:	02/07/2025
PROJECT NO.	160662010

Kimley»Horn
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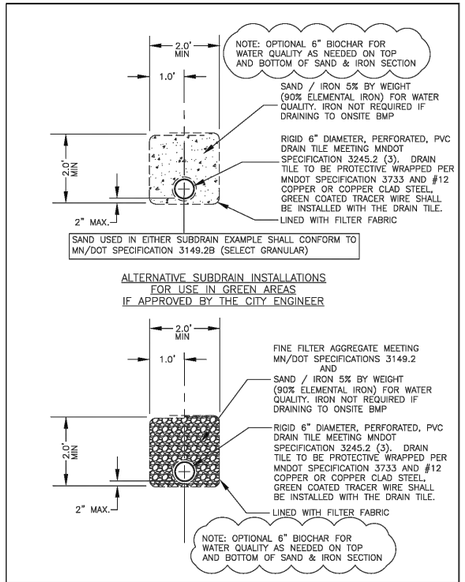
City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3

CHANKAHDA TR
CIVIL DETAILS

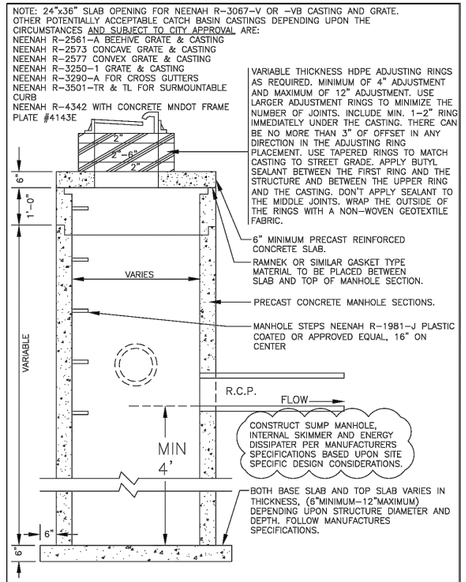
CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155–210–003
S.A.P.	

SHEET NO. 15 / 354



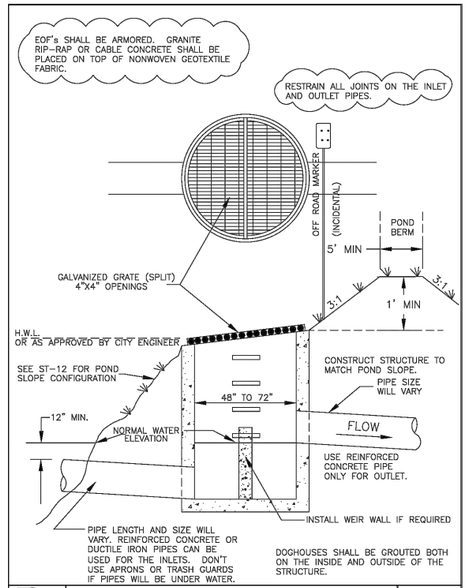
STANDARD DETAILS
PERFORATED DRAIN TILE PIPE
CITY OF PLYMOUTH

PUBLISHED 1-24
CITY PL. NO. ST-10
REVISED 1-24



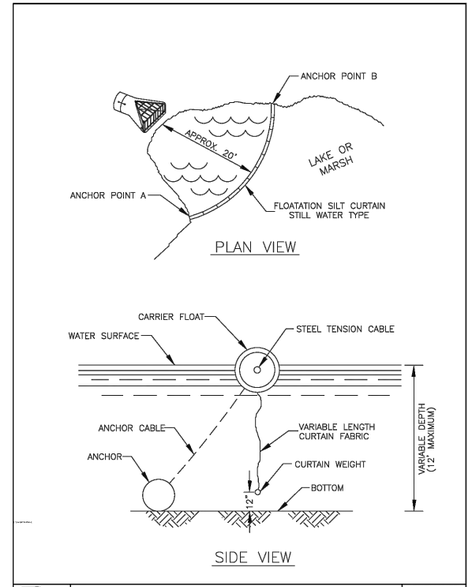
STANDARD DETAILS
SUMP CATCH BASIN MANHOLE
CITY OF PLYMOUTH

PUBLISHED 1-24
CITY PL. NO. ST-11
REVISED 1-21



STANDARD DETAILS
SKIMMER STRUCTURE
CITY OF PLYMOUTH

PUBLISHED 1-24
CITY PL. NO. ST-15
REVISED 3-23

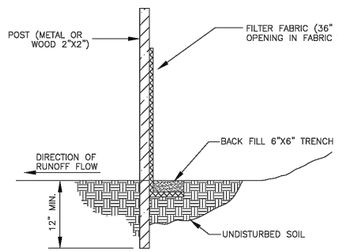


STANDARD DETAILS
FLOATATION SILT CURTAIN DETAIL
CITY OF PLYMOUTH

PUBLISHED 1-24
CITY PL. NO. ST-17
REVISED 3-16

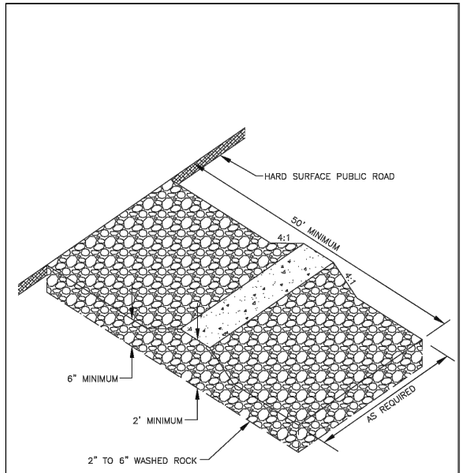
NOTES:

1. DIG A 6"X6" TRENCH ALONG THE INTENDED FENCE LINE.
2. DRIVE ALL POSTS INTO THE GROUND AT THE DOWNHILL SIDE OF THE TRENCH.
3. LAY OUT SILT FENCE ON THE UPHILL SIDE ALONG THE FENCE LINE, AND BACK FILL.
4. WOOD POSTS MAY BE SPACED UP TO 5 FEET APART. STEEL POSTS MAY BE SPACED UP TO 6 FEET APART
5. REMOVE SILT FENCE AFTER TURF IS ESTABLISHED.



STANDARD DETAILS
SILT FENCE DETAIL
CITY OF PLYMOUTH

PUBLISHED 1-24
CITY PL. NO. ST-18
REVISED 1-20



NOTES:

ROCK SHOULD BE 2" TO 6" IN SIZE SUCH AS WASHED ROCK OR CRUSHED CONCRETE

A GEOTEXTILE FABRIC MAY BE USED UNDER THE ROCK TO PREVENT MIGRATION OF THE UNDERLYING SOIL INTO THE STONE.

STANDARD DETAILS
ROCK EXIT TO CONSTRUCTION SITE
CITY OF PLYMOUTH

PUBLISHED 1-24
CITY PL. NO. ST-19
REVISED 1-20



SPECIFICATIONS:

MONUMENT

CONSISTS OF A POST AND A WETLAND BUFFER OR STREAM BUFFER SIGN

WETLAND BUFFER & STREAM BUFFER SIGNS

PURCHASED FROM THE CITY OF PLYMOUTH, COMMUNITY DEVELOPMENT DEPT.

MOUNTED FLUSH WITH THE TOP OF THE POSTS

FASTENED WITH NON-REMOVABLE SCREWS OR RIVETS

POST MATERIALS

4" X 4" SQUARE

TREATED WOOD OR OTHER CITY APPROVED MATERIAL

POST INSTALLATION

INSTALL POST PLUMB TO A HEIGHT OF FOUR FEET ABOVE GRADE.

SET AT LEAST 42 INCHES IN THE GROUND

INSTALLED AT EACH LOT LINE WHERE IT CROSSES A WETLAND BUFFER OR STREAM BUFFER, WITH A MAXIMUM SPACING OF 100 FEET BETWEEN SIGNS PER CITY CODE 21670.07 (IF NO BUFFER IS REQUIRED, THE MONUMENT SHALL BE AT THE EDGE OF THE WETLAND)

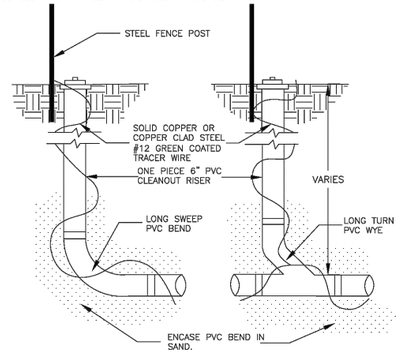
PLACE ADDITIONAL POSTS AS NECESSARY TO FOLLOW BUFFER CONTOUR LINE

STANDARD DETAILS
WETLAND BUFFER & STREAM BUFFER MONUMENT
CITY OF PLYMOUTH

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

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



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

No.	Date	Revisions	App.

DRAWING NAME: CHANKAHDA_PH3_PLATES.dwg

DESIGNED BY:	JWB
DRAWN BY:	RGS
CHECKED BY:	CBL
DATE:	02/07/2025
PROJECT NO.	160662010

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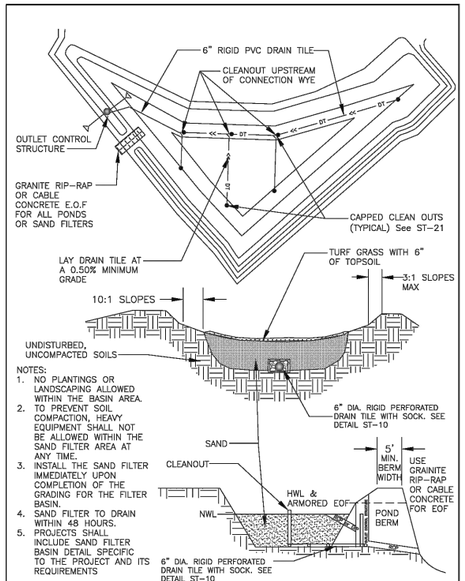
City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3

CHANKAHDA TR
CIVIL DETAILS

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

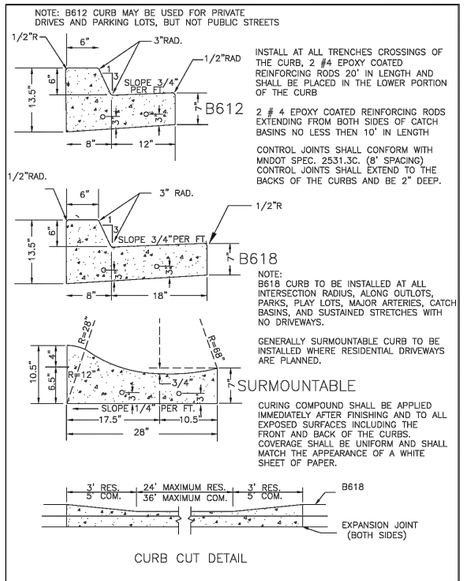
SHEET NO. 16



SAMPLE SAND FILTER
BASIN BASIN DETAIL
CITY OF PLYMOUTH

PUBLISHED 1-24
CITY PL. NO. ST-22
REVISED 3-23

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.

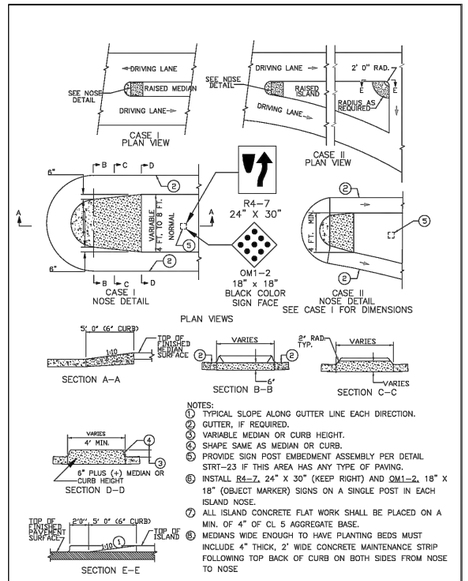
GENERALLY SURMOUNTABLE CURB TO BE INSTALLED WHERE RESIDENTIAL DRIVEWAYS ARE PLANNED.

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

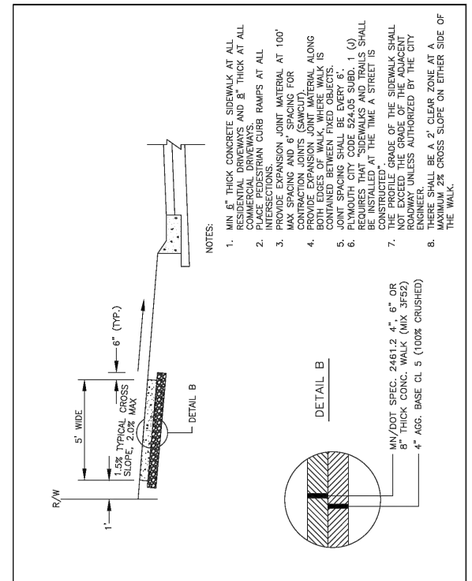
PUBLISHED 1-24
CITY PL. NO. STRT-1
REVISED 1-22



NOTES:
1. TYPICAL SLOPE ALONG GUTTER LINE EACH DIRECTION.
2. GUTTER, IF REQUIRED.
3. VARIABLE MEDIAN OR CURB HEIGHT.
4. SHAPE SAME AS MEDIAN OR CURB.
5. PROVIDE SIGN POST EMBEDMENT ASSEMBLY PER DETAIL STRT-23 IF THIS AREA HAS ANY TYPE OF PAVING.
6. INSTALL R4-7, 24" X 30" (KEEP RIGHT) AND OM1-2, 18" X 18" (OBJECT MARKER) SIGNS ON A SINGLE POST IN EACH ISLAND NOSE.
7. ALL ISLAND CONCRETE FLAT WORK SHALL BE PLACED ON A MIN. OF 4" OF CL 5 AGGREGATE BASE.
8. MEDIANS WIDE ENOUGH TO HAVE PLANTING BEDS MUST INCLUDE 4" THICK, 2' WIDE CONCRETE MAINTENANCE STRIP FOLLOWING TOP BACK OF CURB ON BOTH SIDES FROM NOSE TO NOSE

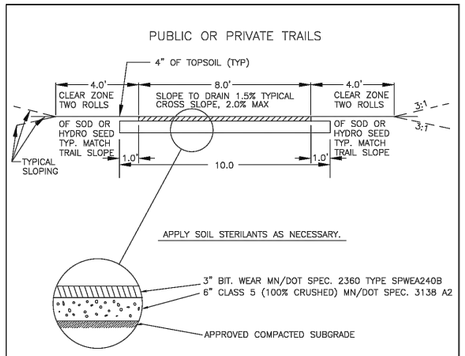
STANDARD DETAILS
CONCRETE ISLAND APPROACH NOSE DETAIL
CITY OF PLYMOUTH

PUBLISHED 1-24
CITY PL. NO. STRT-9
REVISED 1-20



STANDARD DETAILS
CONCRETE WALK SECTION
CITY OF PLYMOUTH

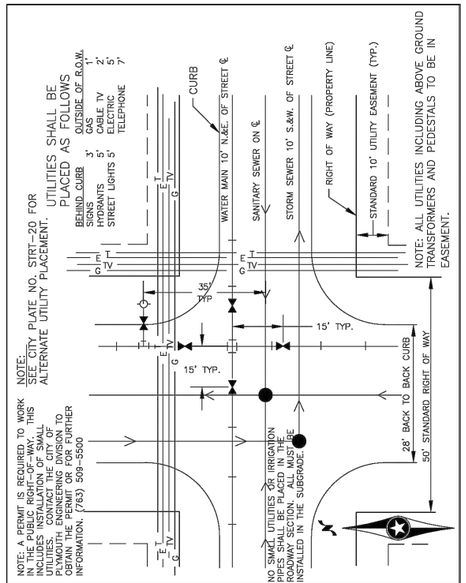
PUBLISHED 1-24
CITY PL. NO. STRT-10
REVISED 1-21



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



STANDARD DETAILS
LOCATION OF PUBLIC UTILITIES
CITY OF PLYMOUTH

PUBLISHED 1-24
CITY PL. NO. STRT-19
REVISED 3-16

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"

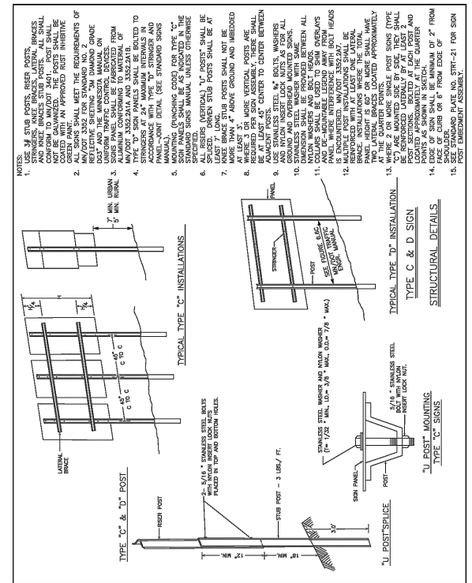
ALL SIGNS SHALL BE LYLE SIGNS OR APPROVED EQUAL.
ALL SIGNS WILL HAVE "3M" HIGH INTENSITY REFLECTIVE SHEETING OR APPROVED EQUAL.
ALL SIGNS SHALL BE ON ALUMINUM PLATE.
ALL SIGNS UP TO 18" SHALL BE .080 MIN. THICKNESS.
ALL SIGNS OVER 30" SHALL BE 0.100 MIN. THICKNESS.
ALL SIGNS TO BE SIZED ACCORDING TO MN MUTCD MANUAL.
AND PUNCHED WITH ⅜" 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

No.	Date	Revisions	App.

DRAWING NAME: CHANKAHDA_PH3_PLATES.dwg

DESIGNED BY:	JWB
DRAWN BY:	RGS
CHECKED BY:	CBL
DATE:	02/07/2025
PROJECT NO.	160662010

Kimley»Horn
767 EUSTIS STREET, SUITE 100, ST. PAUL, MN 55114
PHONE: 651-645-4197
WWW.KIMLEY-HORN.COM

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

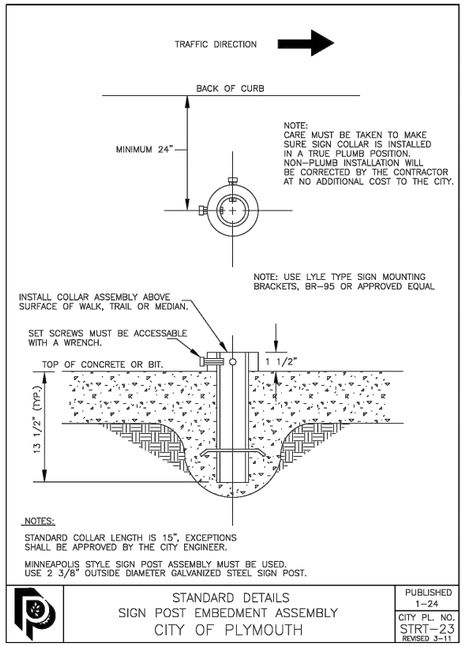
CHADD B. LARSON, PE
DATE: 02/07/2025 MN LIC. NO. 41864

City of Plymouth
CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3

CHANKAHDA TR
CIVIL DETAILS

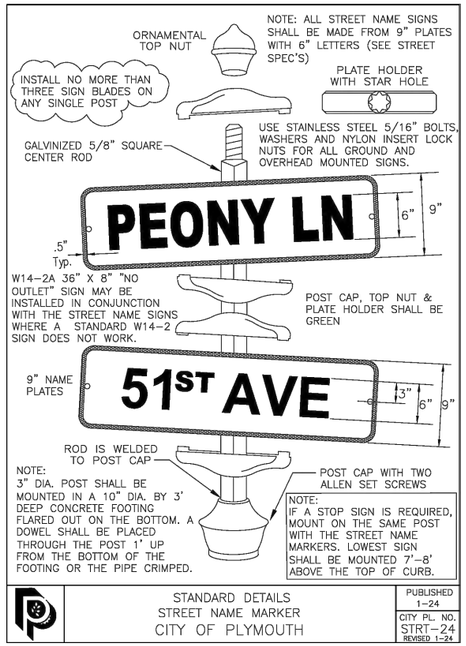
CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 17
354



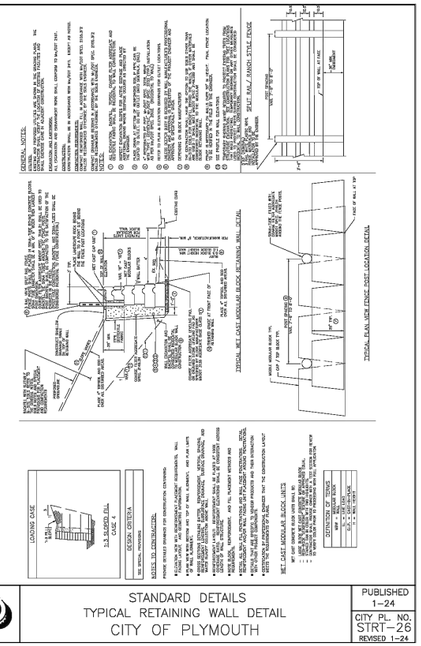
STANDARD DETAILS
SIGN POST EMBEDMENT ASSEMBLY
CITY OF PLYMOUTH

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



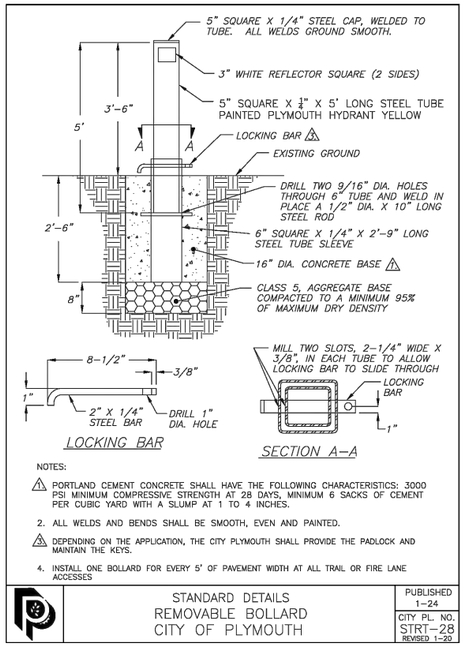
STANDARD DETAILS
STREET NAME MARKER
CITY OF PLYMOUTH

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



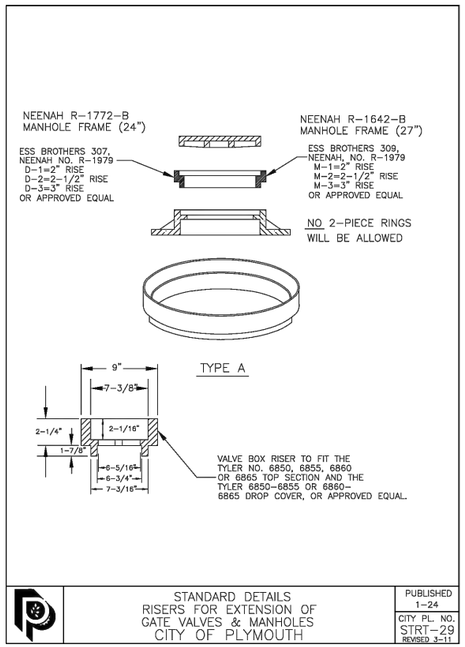
STANDARD DETAILS
TYPICAL RETAINING WALL DETAIL
CITY OF PLYMOUTH

PUBLISHED 1-24
CITY PL. NO. STRT-26
REVISED 1-24



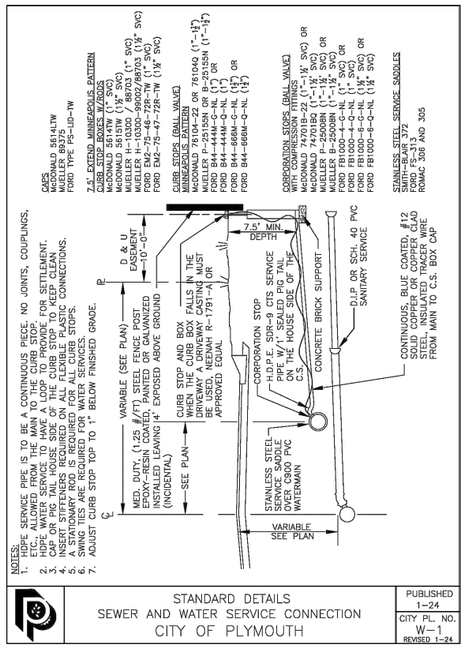
STANDARD DETAILS
REMOVABLE BOLLARD
CITY OF PLYMOUTH

PUBLISHED 1-24
CITY PL. NO. STRT-28
REVISED 1-20



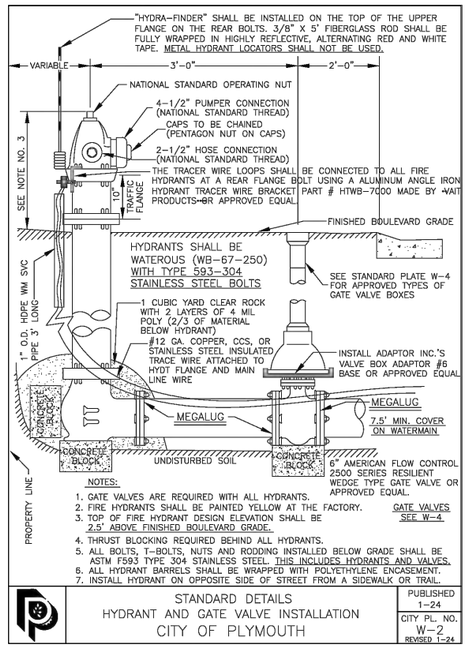
STANDARD DETAILS
RISERS FOR EXTENSION OF
GATE VALVES & MANHOLES
CITY OF PLYMOUTH

PUBLISHED 1-24
CITY PL. NO. STRT-29
REVISED 3-11



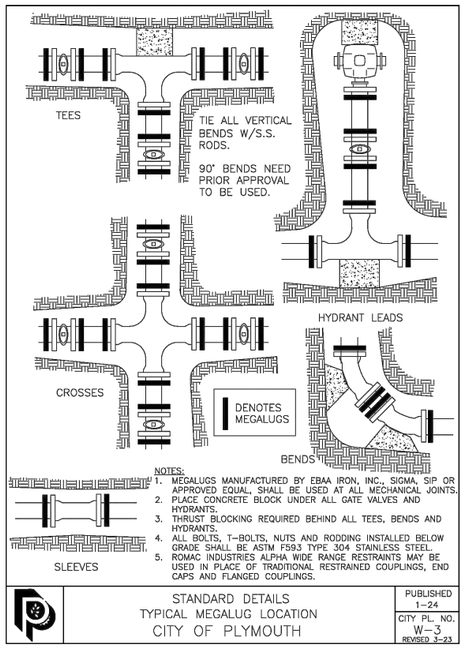
STANDARD DETAILS
SEWER AND WATER SERVICE CONNECTION
CITY OF PLYMOUTH

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



STANDARD DETAILS
HYDRANT AND GATE VALVE INSTALLATION
CITY OF PLYMOUTH

PUBLISHED 1-24
CITY PL. NO. W-2
REVISED 1-24



STANDARD DETAILS
TYPICAL MEGALUG LOCATION
CITY OF PLYMOUTH

PUBLISHED 1-24
CITY PL. NO. W-3
REVISED 3-23

No.	Date	Revisions	App.

DRAWING NAME: CHANKAHDA_PH3_PLATES.dwg

DESIGNED BY:	JWB
DRAWN BY:	RGS
CHECKED BY:	CBL
DATE:	02/07/2025
PROJECT NO.	160662010

Kimley»Horn
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CHADD B. LARSON, PE

DATE: 02/07/2025 MN LIC. NO. 41864

City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3

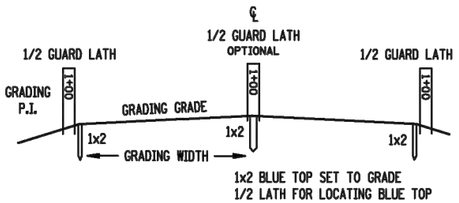
CHANKAHDA TR
CIVIL DETAILS

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

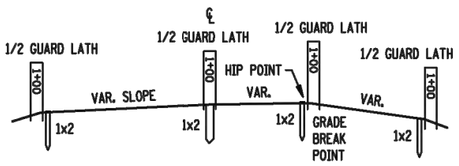
SHEET NO. 18 / 354

BLUE TOPS

NORMAL SECTION

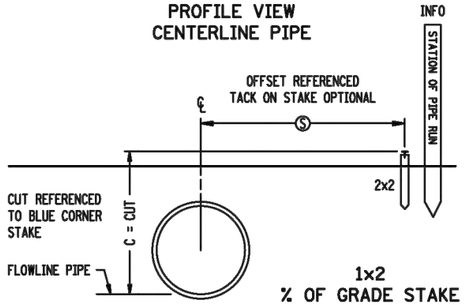


TRANSITION SECTION

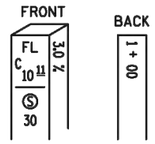


PIPE STAKING

PROFILE VIEW CENTERLINE PIPE

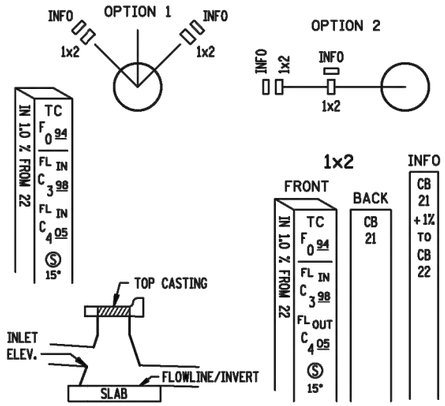


1x2 % OF GRADE STAKE



CATCH BASIN OR MANHOLE (CB/MH)

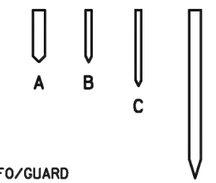
TOP VIEWS



FLOWLINE/INVERT + 0.7'

STANDARD STAKES

TYPES:
REFERENCE (REF)
INFORMATIONAL (INFO)
VISIBILITY (VIS)
GUARD (GUARD)



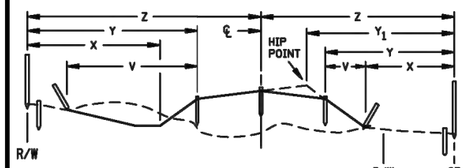
SIZES:
A = 2" X 2" X VAR. REF/INFO/GUARD
B = 1" X 2" X VAR. REF/INFO/GUARD
C = 1" X 2" X VAR. REF
D = LATH INFO/VIS/GUARD
1x2 OR LATH = INFO STAKES

ABBREVIATIONS

BBL = BARREL (PIPE)
B.C. = BACK CURB
C & G = CURB & GUTTER
C = CUT
CAP = CORR. ALUM. PIPE
CB = CATCH BASIN
℄ = CENTERLINE
CL & GR = CLEAR & GRUB
CMP = CORR. METAL PIPE
COR = CORNER
CR = CROWN
CSP = CORR. STEEL PIPE
℄ = DITCH CUT
D.E. = DRAINAGE EASEMENT
DI = DROP INLET
EB = EASTBOUND
E.M. = EDGE BITUMINOUS MAT
E.S. = EDGE CONCRETE SLAB
F = FILL
FF = FRONT FACE
FL = FLOW LINE
FL IN = FLOWLINE INLET
FL OUT = FLOWLINE OUTLET
GR = GRADE
GW = GRADING WIDTH
HH = HANDHOLE
HP = HIP POINT
LT = LEFT
MH = MANHOLE
NB = NORTHBOUND
Ⓢ = OFFSET
PAR = PARCEL
% = PERCENT GRADE
P.E. = PERM. EASEMENT
RAD = RADIUS POINT
RCP = REINF. CONC. PIPE
RP = REFERENCE POINT
RSC = REINF. SECT. CONC.
RT = RIGHT
R/W = RIGHT OF WAY
SB = SOUTHBOUND
SCP = SECT. CONC. PIPE
SH = SHOULDER
TC = TOP CASTING
OR TOP CURB
T.E. = TEMP. EASEMENT
3 :1 = SLOPE (EXAMPLE)
WB = WESTBOUND
WP = WORKING POINTS

SLOPE STAKES

SINGLE ROADWAY - EXAMPLE 'A'



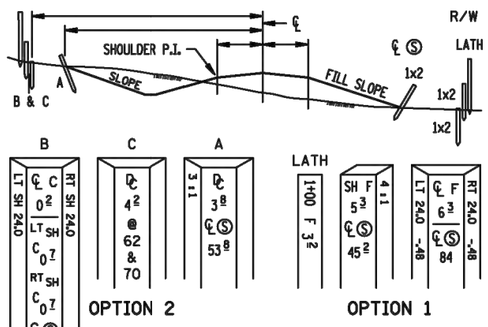
STAKE 'A'
FULL LATH AND HUB-STATION
DIST. TO ℄ WITH CUT/FILL TO ℄ (Z)
DIST. TO SHLD. WITH CUT/FILL TO SHLD. (Y) (Y1)
DIST. TO TOE OF SLOPE, CUT/FILL FROM HUB (X)
OFFSET TO SAFTY SLOPE
OFFSET TO HIP POINT

STAKE 'B'
FULL LATH
DITCH CUT/SHLD. FILL
SLOPE RATED
DISTANCE TO INSLOPE TOE (V1) OR SHOULDER (AS APPLIES) (V)

NOTE:
BLUE TOPS REQUIRED ON ℄ AND BOTH SHOULDERS AT MINIMUM
ALL CULVERTS TO BE STAKED
MINIMUM DATA TO BE PROVIDED
STAKE TO BOTTOM OF TOPSOIL

SLOPE STAKES

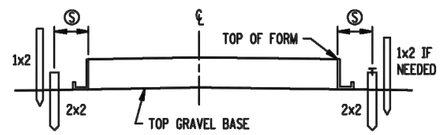
SINGLE ROADWAY - EXAMPLE 'B'



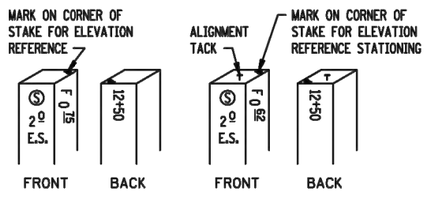
OPTION 2 OPTION 1

NOTES: ALL SLOPE STAKE REFERENCE DISTANCES GIVEN FROM ℄. STAKE TO BOTTOM OF TOP SOIL.
KEY STAKES: BLUE TOP SET AT R/W BOUNDARY LT. & RT. MAY BE EXCEPTIONS TO SETTING STAKE ON R/W.

CONCRETE PAVING STATIONARY FORM



OFFSET TO CONTRACTOR'S OPTION



NOTE INFORMATION ON STAKE IF NECESSARY

RECOMMENDED STAKING INTERVALS

FIGURE A

	SLOPE STAKES	SUB GRADE B.T.	CLASS MATERIAL B.T.	CONC PAVT	C & G	CL & GR LIMITS	MUCK EXC.	R/W	TEMP. EASE.
TANGENT	100	100	100	50	50	ALL CORNERS	100	ALL CORNERS	ALL CORNERS
HORIZ. CURVE									
0 - 3°	100	100	100	50	50	ALL CORNERS	100	ALL CORNERS	ALL CORNERS
OVER 3° -	100	50	50	25	25	ALL CORNERS	100	ALL CORNERS	ALL CORNERS
VERT. CURVE									
'M' 100' CHORD 0 - .25	100	100	100	50	50				
'M' OVER .25	100	50	50	25	25				
TRAN.		50	50						

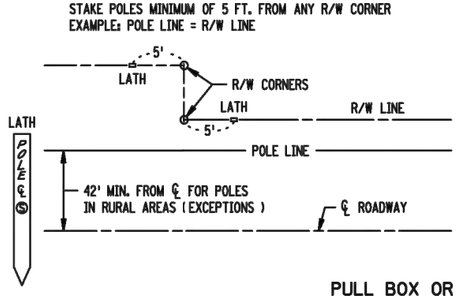
STAKING TOLERANCES (FEET)

	HORIZONTAL	VERTICAL
CONSTRUCTION LIMITS	± 1.5	
CLEARING & GRUBBING	2.0	
SLOPES STAKES	2.0	± 0.2
KEY STAKES	0.2	0.03
DRAINAGE STAKES	0.05	0.05
CURB & GUTTER	0.07	0.03
PAVING	0.05	0.03
ALIGNMENT	0.07	
UTILITY	0.10	0.05
STRUCTURAL	0.02	0.02
GUARD RAIL	0.5	
BUILDINGS	0.04	
O.H. SIGNS	0.05	0.05
MUCK EXCAVATION LIMITS	2.0	
R/W B-POINTS	0.10	
NOISE WALLS	1.0	0.5

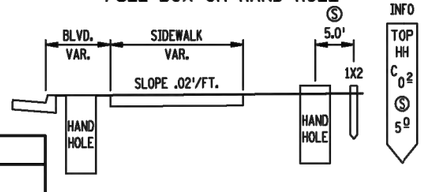
THE TOLERANCES ARE RELATIVE TO PROJECT DATUM

UTILITY (UTIL)

STAKE POLES MINIMUM OF 5 FT. FROM ANY R/W CORNER
EXAMPLE: POLE LINE = R/W LINE



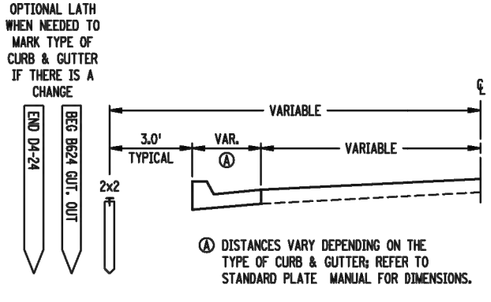
PULL BOX OR HAND HOLE



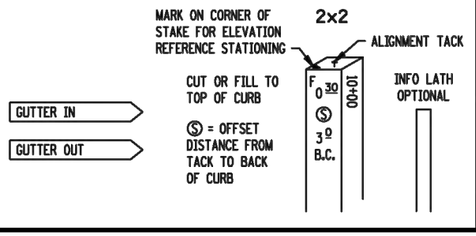
REVISION:
APPROVED: 8-6-2014
DIRECTOR, OFFICE OF LAND MANAGEMENT

CURB & GUTTER (CURB)

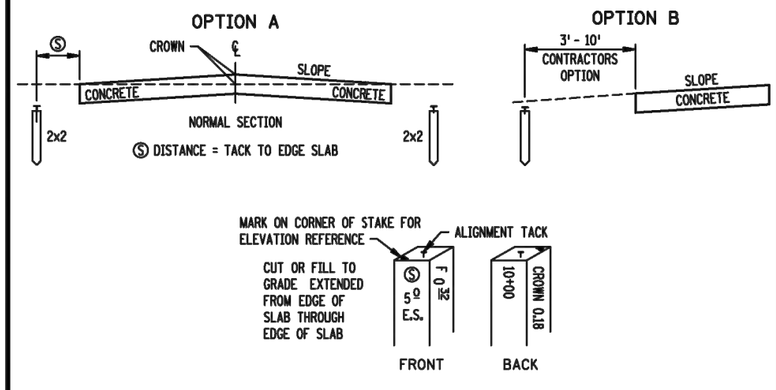
OPTIONAL LATH WHEN NEEDED TO MARK TYPE OF CURB & GUTTER IF THERE IS A CHANGE



Ⓐ DISTANCES VARY DEPENDING ON THE TYPE OF CURB & GUTTER; REFER TO STANDARD PLATE MANUAL FOR DIMENSIONS.



CONCRETE PAVING - SLIP FORM



DISCLAIMER

THESE STAKING INFORMATION SHEETS ARE FOR INFORMATION PURPOSES ONLY. STAKING PROCEDURES VARY AND MAY BE SUBJECT TO CHANGE DURING CONSTRUCTION BY CIRCUMSTANCES AND/OR AGREEMENTS BETWEEN SURVEY CREW AND CONTRACTOR.

MINNESOTA DEPARTMENT OF TRANSPORTATION

STANDARD PLAN 5-297.115 | 1 OF 2

APPROVED: 8-6-2014
REVISED:

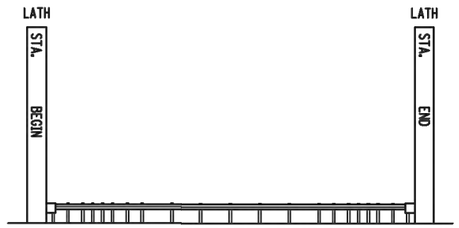
STATE DESIGN ENGINEER

STAKING INFORMATION SHEET

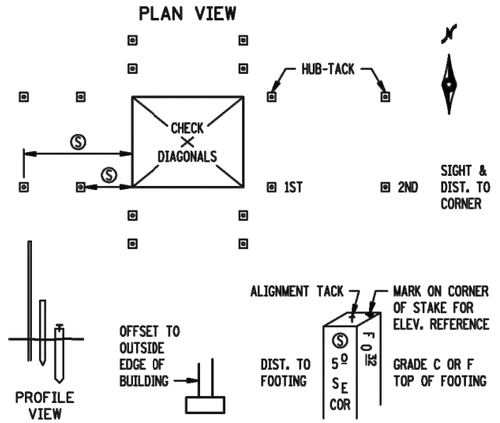
STATE AID PROJ. NO. 155-210-003 C.P.ST240002

SHEET NO. 19 OF 354 SHEETS

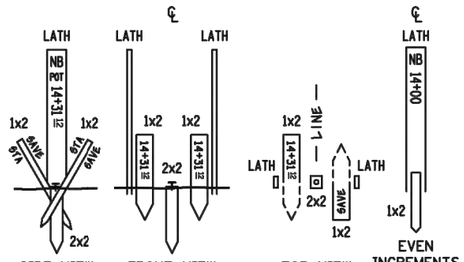
GUARDRAIL (GUARD)



BUILDING (BUILD) FOUNDATION / FOOTING



ALIGNMENT POINTS (ALIGN)



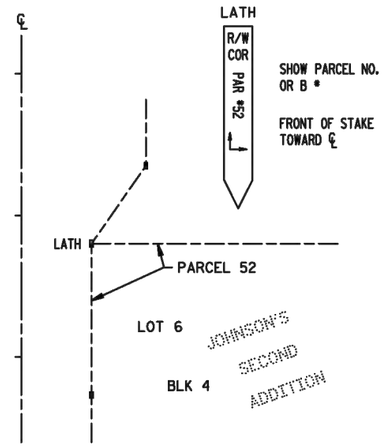
STAKE C = 2" X 2" HUB (LENGTH MAY VARY) SET AS TEMPORARY STAKE. MAY BE REPLACED BY MnDOT MARKER AFTER CONSTRUCTION IS COMPLETED.

SET AT GROUND LEVEL (TEMPORARY CONSTRUCTION STAKE).

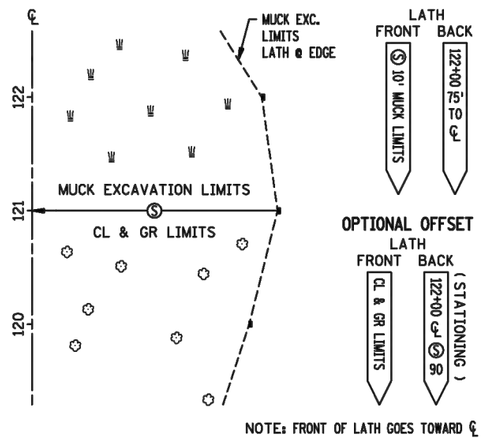
TACK SET AT ALIGNMENT POINTS.

STAKE A = GUARD STAKES SET AT ANGLE IN GROUND 6" EACH SIDE OF STAKE D, WITH STATIONING READ WHEN LOOKING UP STATION.

R/W & TEMP. EASEMENT (R/W)

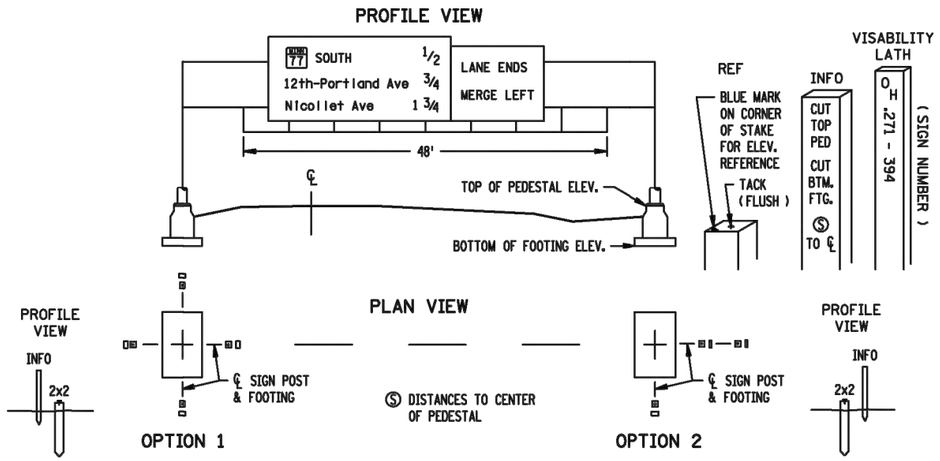


CLEAR & GRUBBING LIMITS (CLEAR) OR MUCK EXCAVATION LIMITS (MUCK)

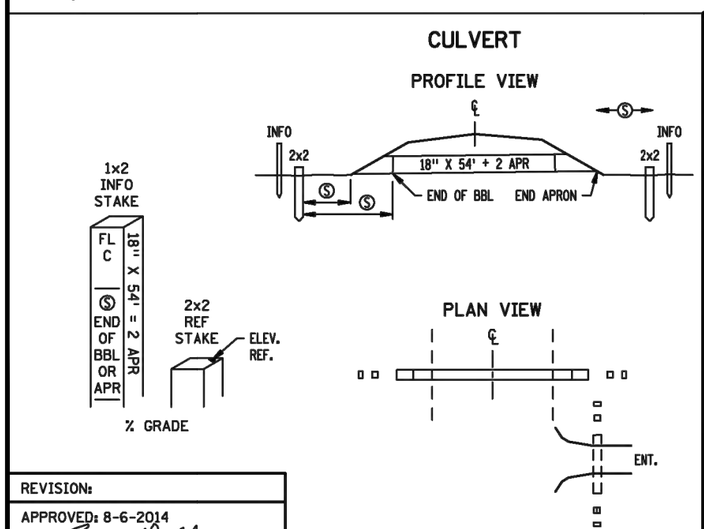


NOTE: FRONT OF LATH GOES TOWARD ℄

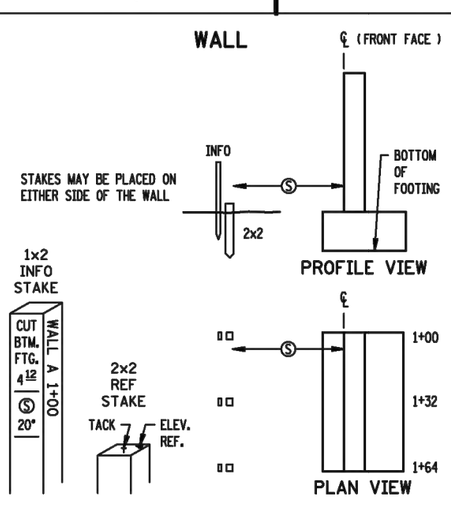
OVERHEAD SIGNS (SIGN)



CULVERT

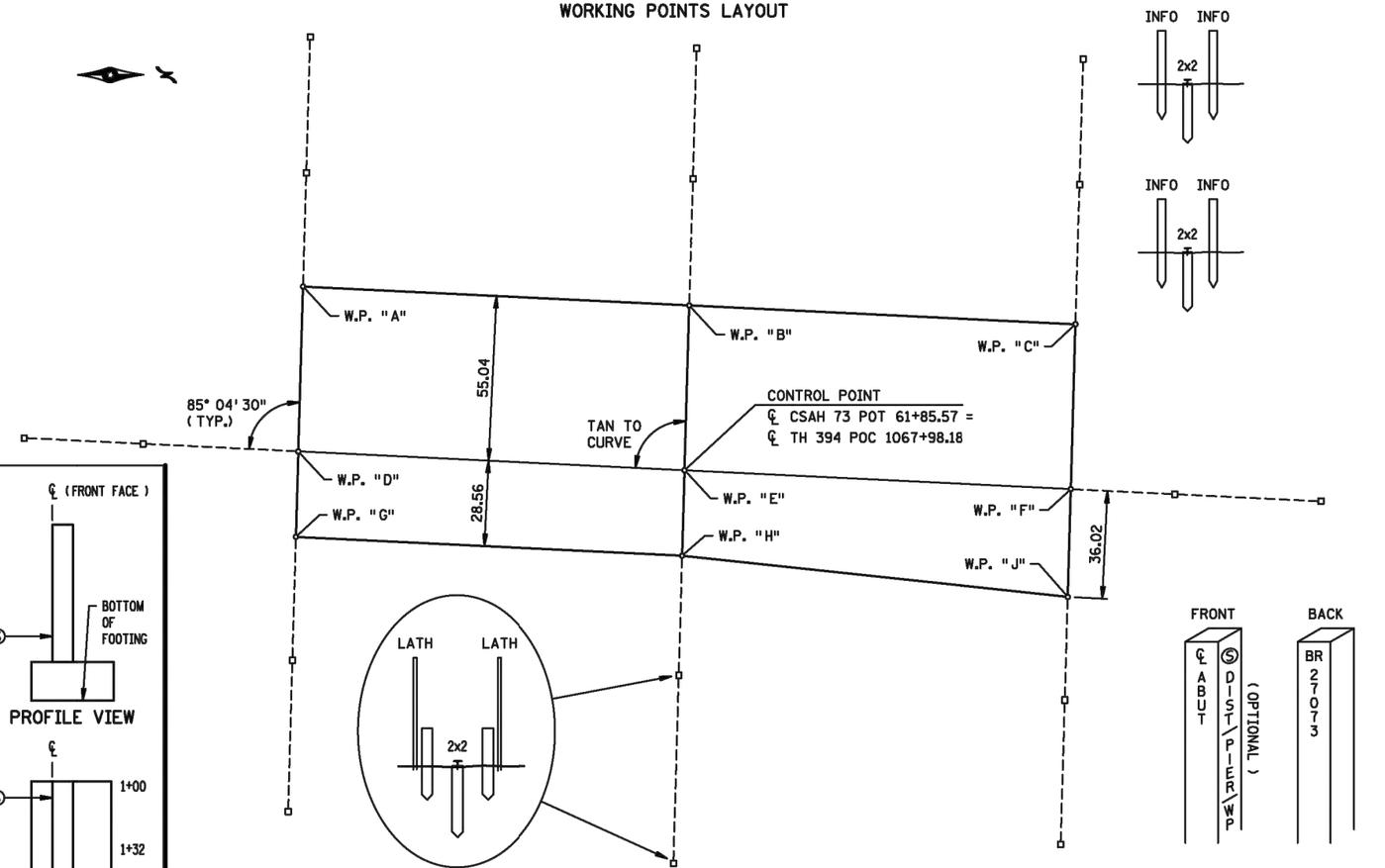


WALL



BRIDGESTAKING (BRIDGE)

WORKING POINTS LAYOUT



REVISION:

APPROVED: 8-6-2014

DIRECTOR, OFFICE OF LAND MANAGEMENT

MINNESOTA DEPARTMENT OF TRANSPORTATION

STANDARD PLAN 5-297.115 | 2 OF 2

APPROVED: 8-6-2014

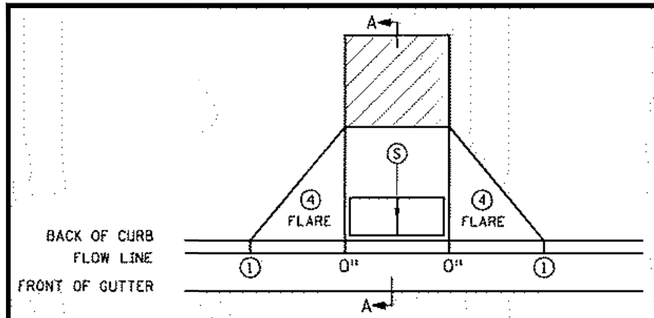
REVISED:

STATE DESIGN ENGINEER

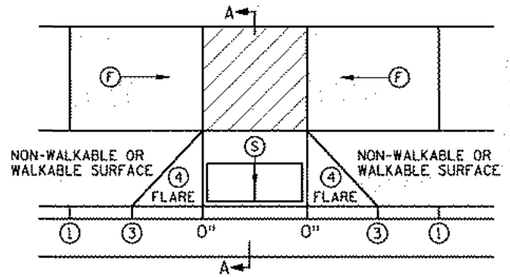
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STATE AID PROJ. NO. 155-210-003 C.P.ST240002

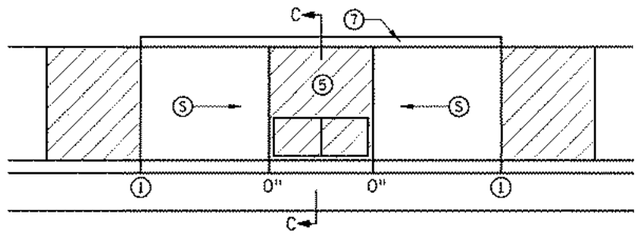
SHEET NO. 20 OF 354 SHEETS



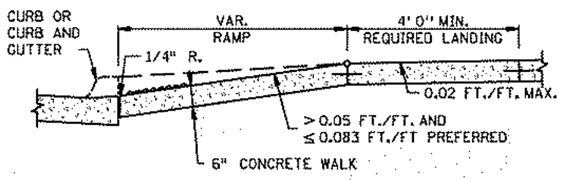
PERPENDICULAR



TIERED PERPENDICULAR

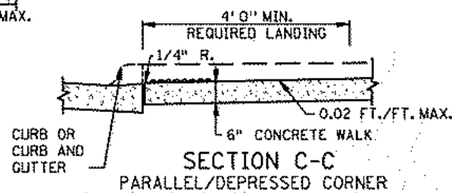


PARALLEL



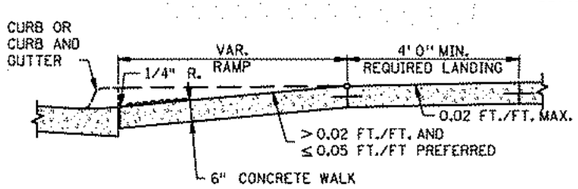
SECTION A-A

PERPENDICULAR/TIERED/DIAGONAL



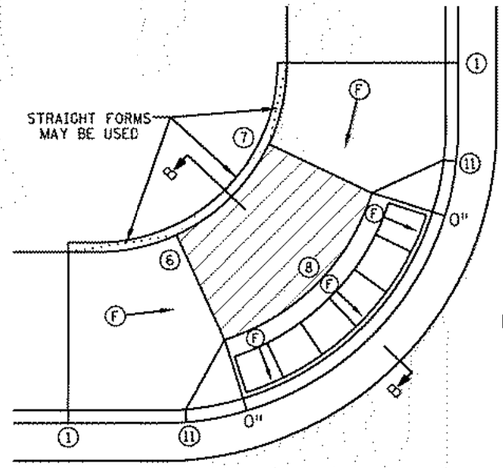
SECTION C-C

PARALLEL/DEPRESSED CORNER

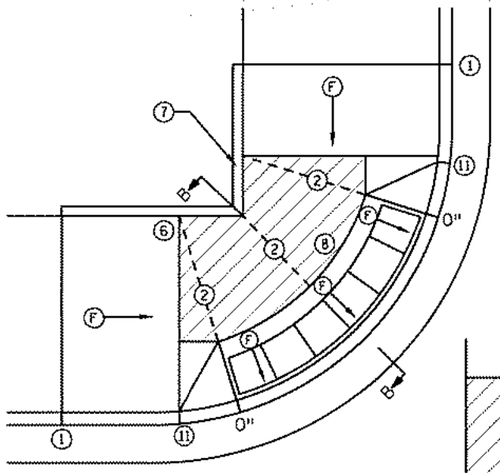


SECTION B-B

FAN

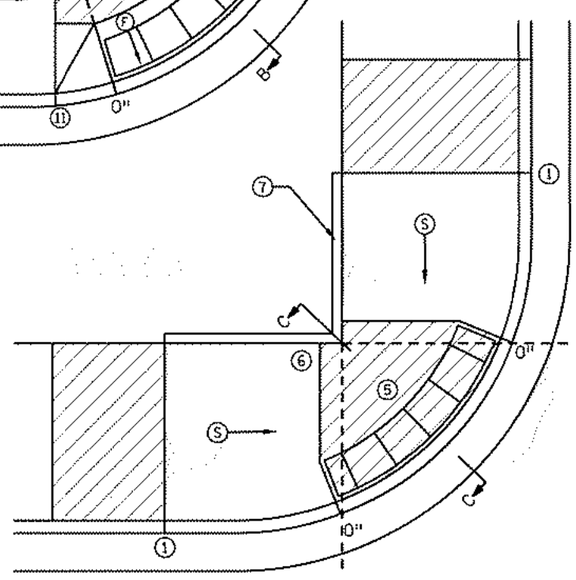


FAN⑩

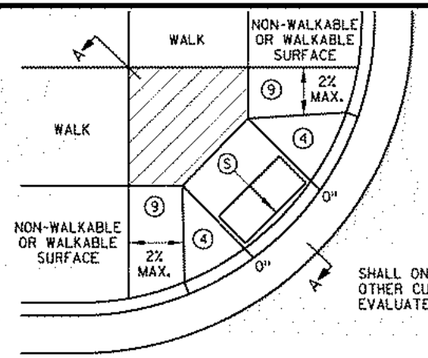


MODIFIED FAN⑩

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

JEFF PERKINS
OPERATIONS DIVISION

MINNESOTA DEPARTMENT OF TRANSPORTATION

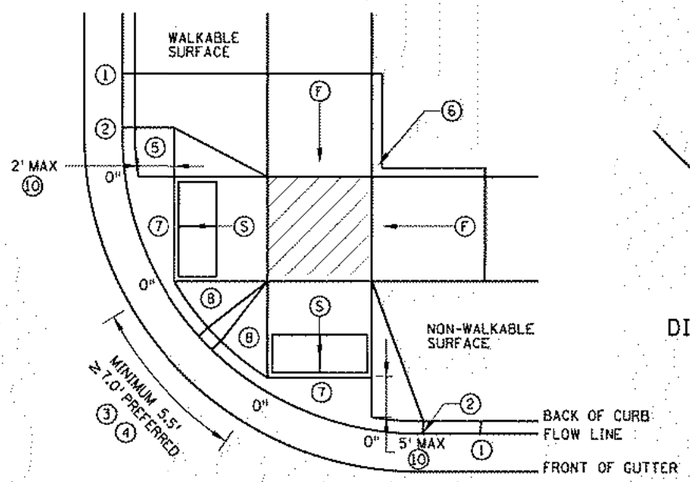
STANDARD PLAN 5-297.250 | 1 OF 6

APPROVED: 11-04-2021
REVISED:

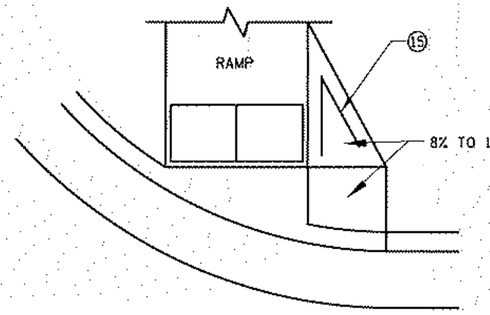
THOMAS STYRBICKI
STATE DESIGN ENGINEER

PEDESTRIAN CURB RAMP DETAILS

STATE AID PROJ. NO. 155-210-003 C.P.ST240002) SHEET NO. 21 OF 354 SHEETS

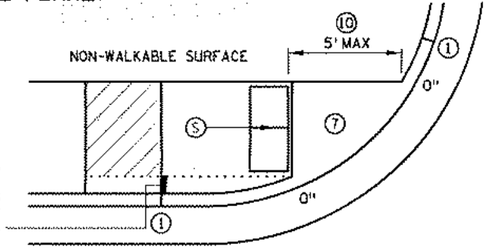


COMBINED DIRECTIONAL

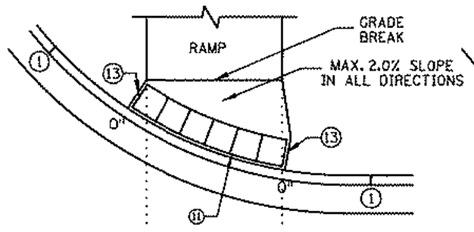


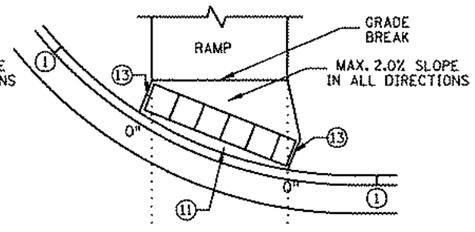
DIRECTIONAL RAMP WALKABLE FLARE

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.



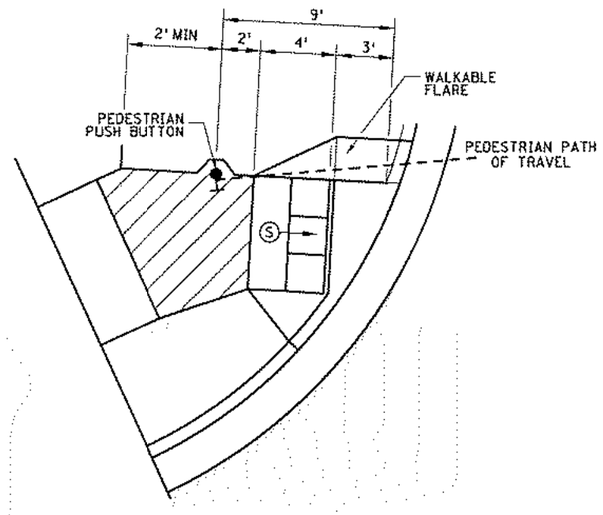
STANDARD ONE-WAY DIRECTIONAL ⑨





DETECTABLE WARNING PLACEMENT WHEN SETBACK CRITERIA IS EXCEEDED ⑫

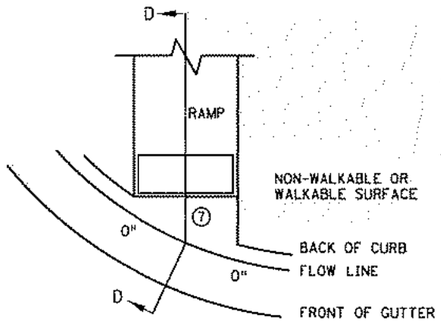
ONE-WAY DIRECTIONAL WITH DETECTABLE WARNING AT BACK OF CURB

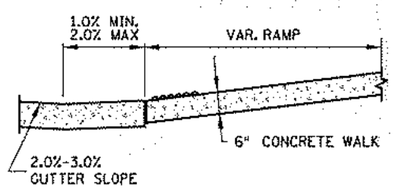


SEMI-DIRECTIONAL RAMP ③④⑨

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 6' FROM THE BACK OF CURB BEING THE PREFERRED DISTANCE, ONLY APPLICABLE WHEN THE INITIAL RAMP RUNNING SLOPE IS OVER 5.0%.

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

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

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

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

TOP OF CURB SHALL MATCH PROPOSED ADJACENT WALK GRADE.

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

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

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

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

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

① MATCH FULL CURB HEIGHT.

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

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

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

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

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

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

⑧ 8% TO 10% WALKABLE FLARE.

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

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

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

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

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

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

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

LEGEND

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

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

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

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

X" CURB HEIGHT

REVISION:

APPROVED: 11-04-2021
STEVE PERKINS
OPERATIONS DIVISION

MINNESOTA DEPARTMENT OF TRANSPORTATION

THOMAS STYRBICKI
STATE DESIGN ENGINEER

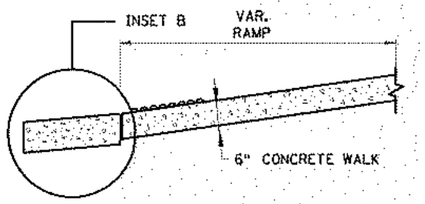
STANDARD PLAN 5-297.250 | 2 OF 6

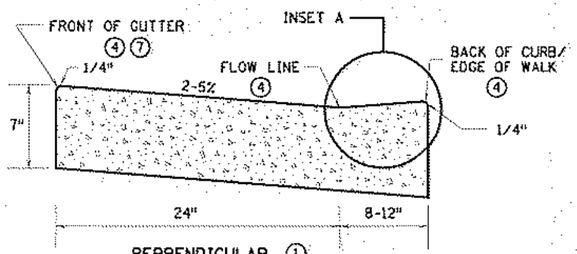
APPROVED: 11-04-2021
REVISED:

PEDESTRIAN CURB RAMP DETAILS

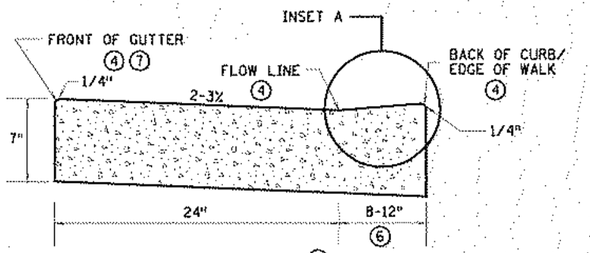
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SHEET NO. 22 OF 354 SHEETS

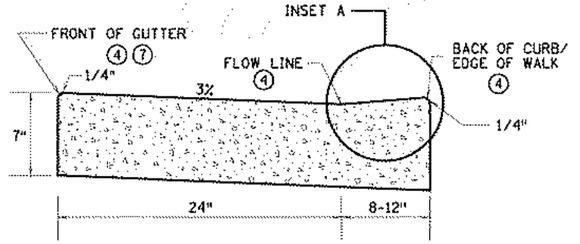




PERPENDICULAR ①

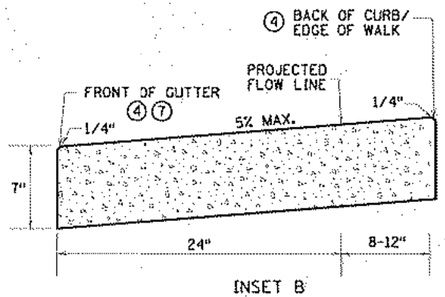


NON PERPENDICULAR ②

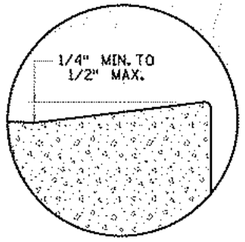


FOR CURB MACHINE PLACEMENT AROUND RADIUS ③
(REGARDLESS OF RAMP TYPE)

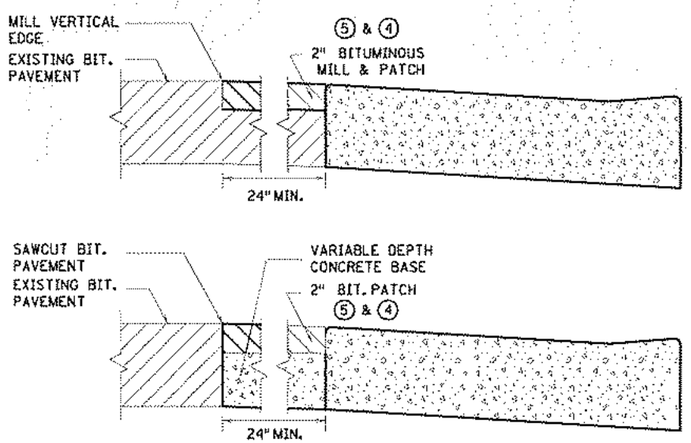
PEDESTRIAN ACCESS ROUTE CURB & GUTTER DETAIL



OUTFLOW GUTTER ⑧

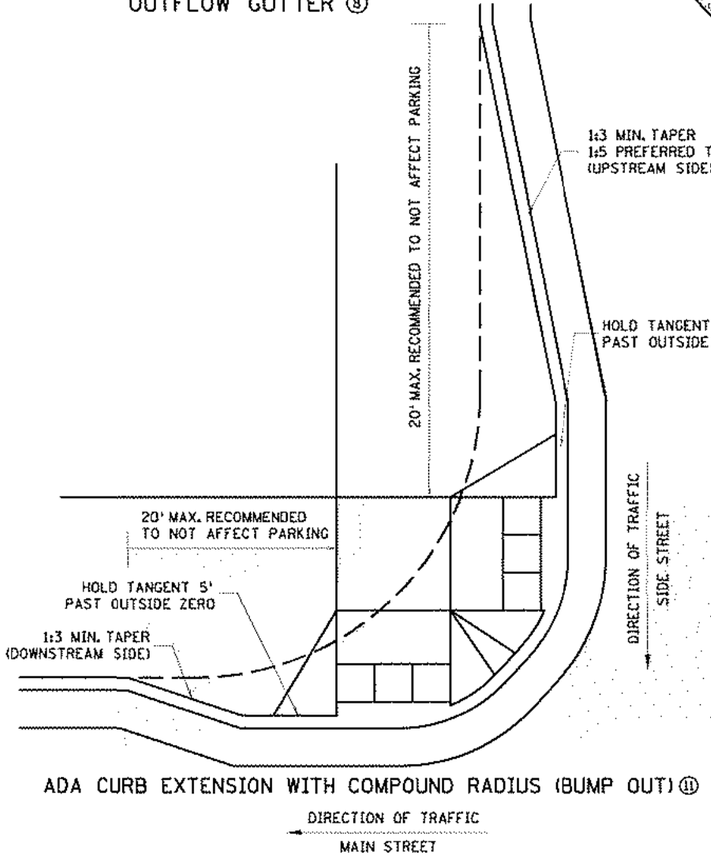


INSET A

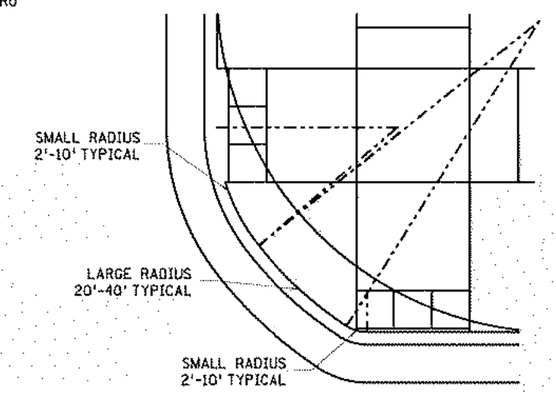


ONLY ALLOWED PER ENGINEER'S APPROVAL

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 J. PETERSON
STATE TRAFFIC ENGINEER
OPERATIONS DIVISION

MINNESOTA DEPARTMENT OF TRANSPORTATION

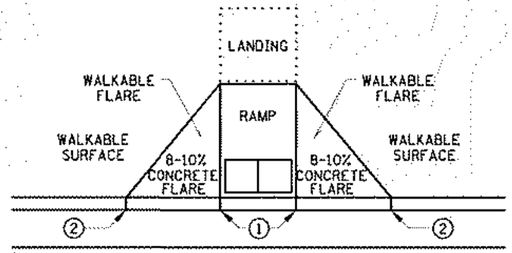
STANDARD PLAN 5-297.250 | 3 OF 6

APPROVED: 11-04-2021
REVISED:

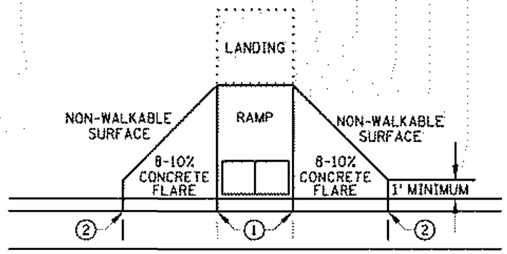
THOMAS STYRBICKI
STATE DESIGN ENGINEER

PEDESTRIAN CURB RAMP DETAILS

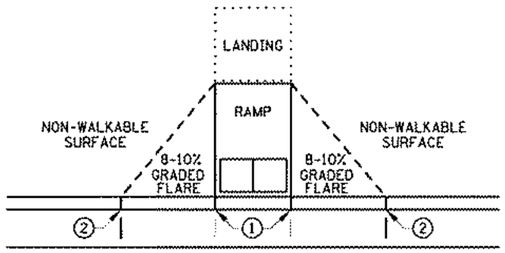
STATE AID PROJ. NO. 155-210-003 C.P.ST240002) SHEET NO. 23 OF 354 SHEETS



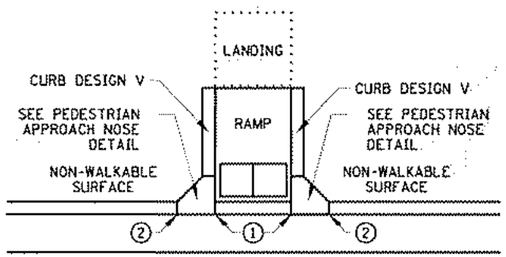
PAVED FLARES
ADJACENT TO WALKABLE SURFACE



PAVED FLARES
ADJACENT TO NON-WALKABLE SURFACE

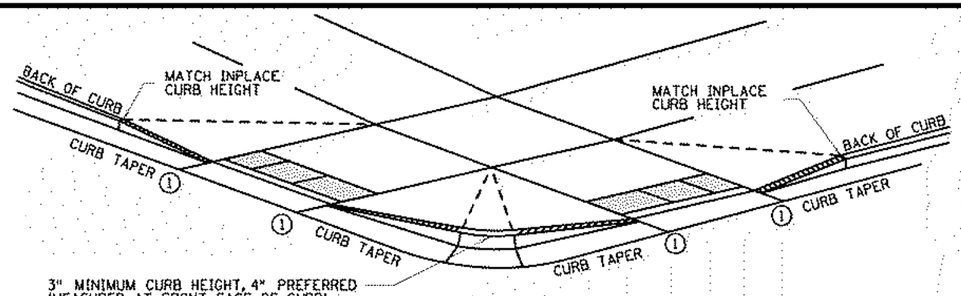


GRADED FLARES

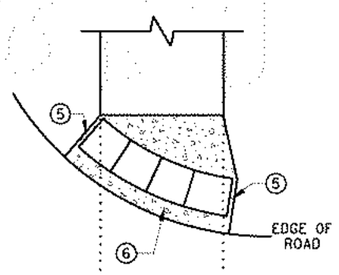


RETURNED CURB ④

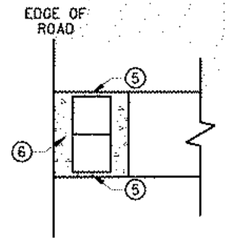
TYPICAL SIDE TREATMENT OPTIONS ③ ⑩



DETECTABLE EDGE WITH ⑦
CURB AND GUTTER

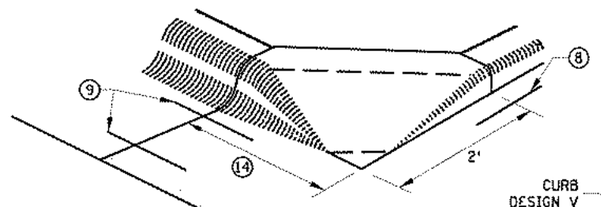


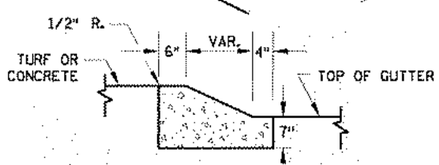
RADIAL DETECTABLE WARNING



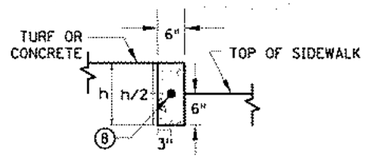
RECTANGULAR DETECTABLE WARNING

DETECTABLE EDGE WITHOUT CURB AND GUTTER

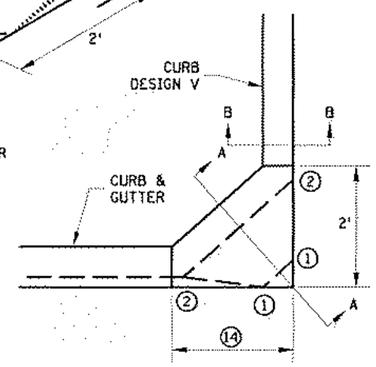




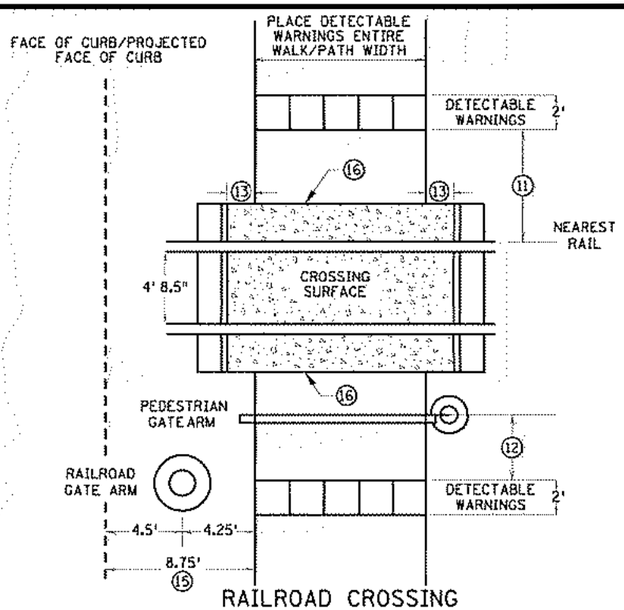
SECTION A-A



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
JEFF J. PERKINS
OPERATIONS DIVISION

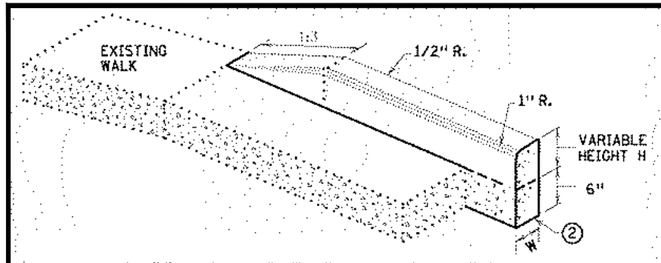
MINNESOTA DEPARTMENT OF TRANSPORTATION

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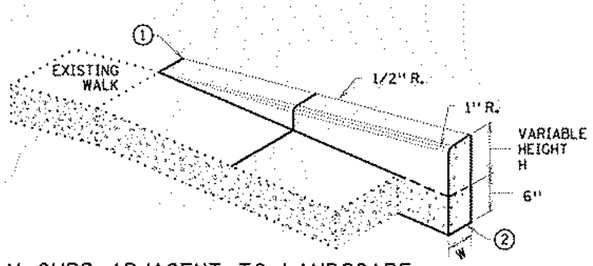
APPROVED: 11-04-2021
REVISED:
THOMAS STYRBICKI
STATE DESIGN ENGINEER

PEDESTRIAN CURB RAMP DETAILS

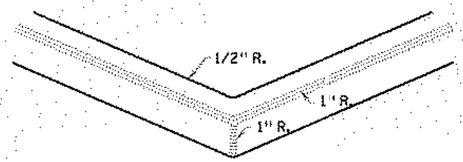
STATE AID PROJ. NO. 155-210-003 C.P.ST240002) SHEET NO. 24 OF 354 SHEETS



V CURB ADJACENT TO LANDSCAPE
CURB WITHIN SIDEWALK LIMITS

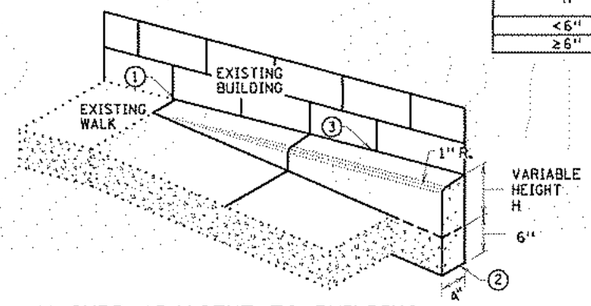


V CURB ADJACENT TO LANDSCAPE
CURB OUTSIDE SIDEWALK LIMITS

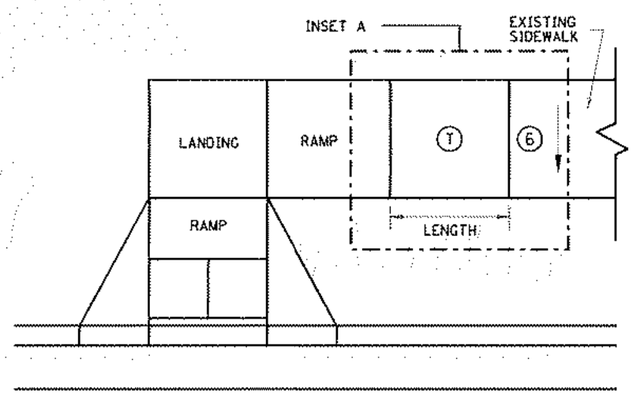


V CURB INTERSECTION

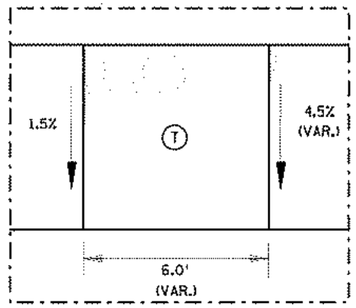
CONCRETE CURB DESIGN V	
CURB HEIGHT H	CURB WIDTH W
< 6"	4"
≥ 6"	6"



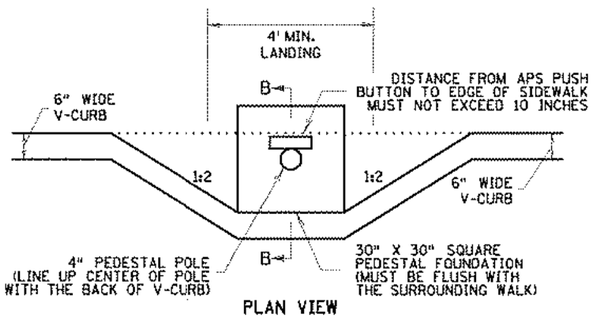
V CURB ADJACENT TO BUILDING OR BARRIER



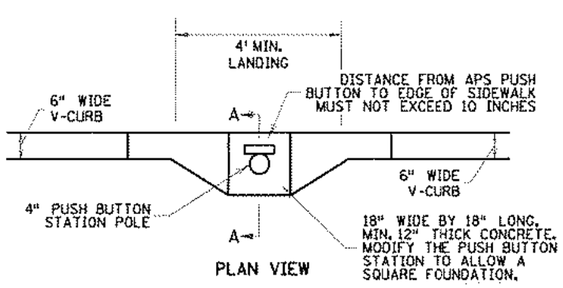
TRANSITION PANEL ④⑤



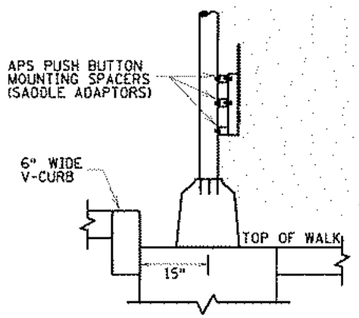
INSET A



PLAN VIEW

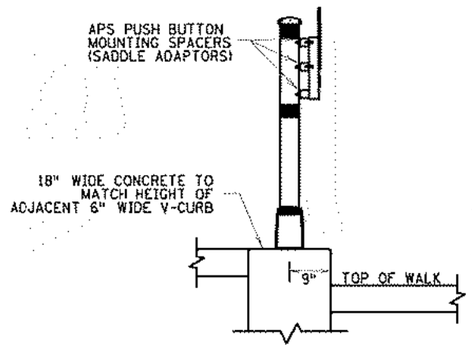


PLAN VIEW



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

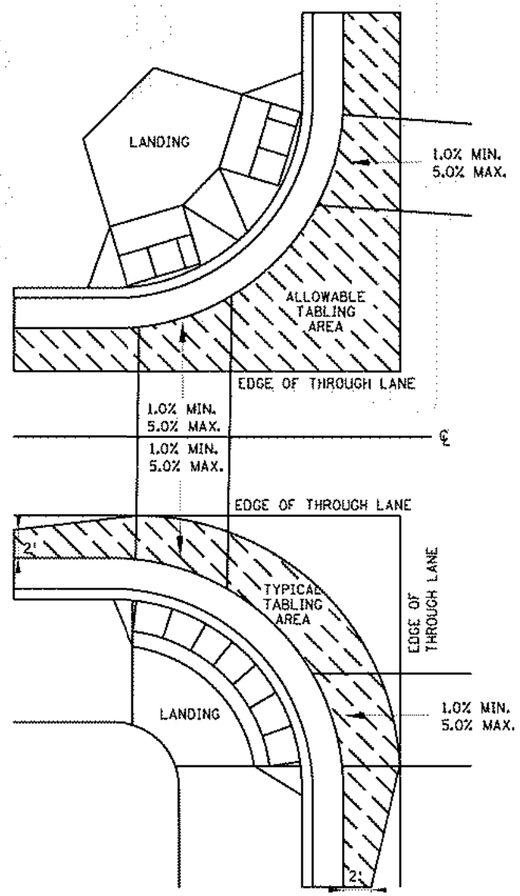
STANDARD PLAN 5-297.250 | 5 OF 6

APPROVED: 11-04-2021
REVISED:

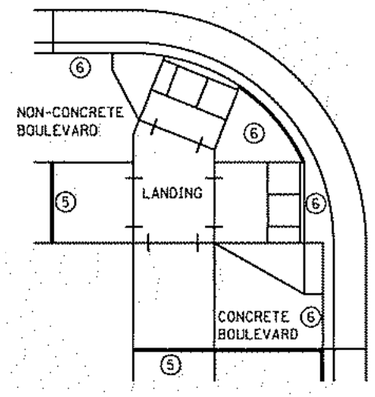
THOMAS STYRBICKI
STATE DESIGN ENGINEER

PEDESTRIAN CURB RAMP DETAILS

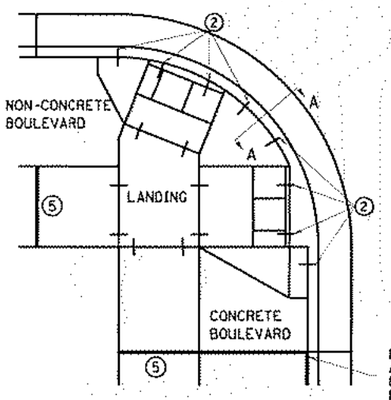
STATE AID PROJ. NO. 155-210-003 C.P.ST240002



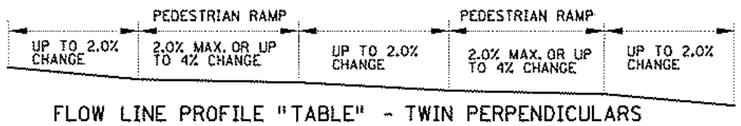
CURB LINE AND ROAD CROSSING ADJUSTMENTS



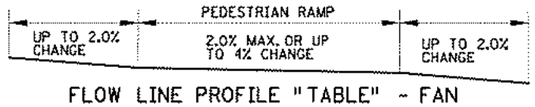
EXPANSION MATERIAL PLACEMENT FOR CONCRETE ROADWAYS



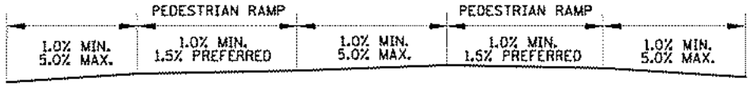
CURB LINE REINFORCEMENT ④ PLACEMENT ON BITUMINOUS ROADWAYS



FLOW LINE PROFILE "TABLE" - TWIN PERPENDICULARS



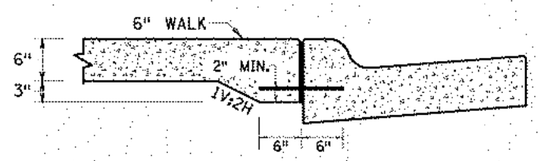
FLOW LINE PROFILE "TABLE" - FAN



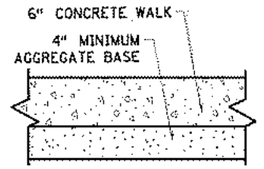
FLOW LINE PROFILE RAISE - TWIN PERPENDICULARS



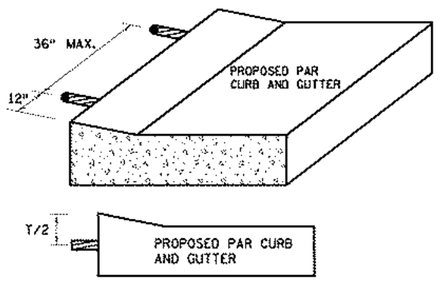
FLOW LINE PROFILE RAISE - FAN

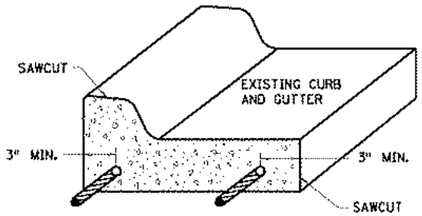


SECTION VIEW A-A
THICKENED SECTION
THROUGH CURB RAMP FLARES



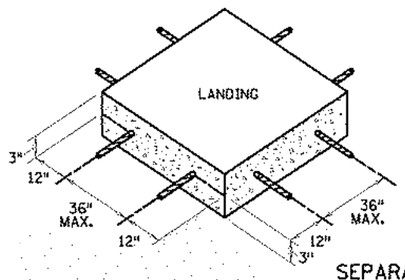
TYPICAL SIDEWALK SECTION
WITHIN INTERSECTION CORNER

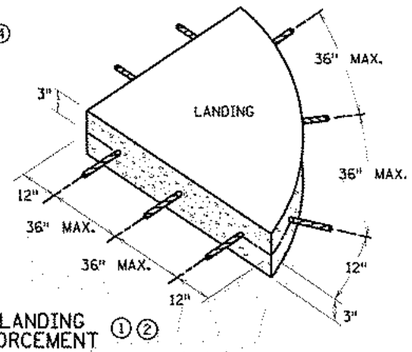




CURB AND GUTTER REINFORCEMENT ③

CURB RAMP REINFORCEMENT DETAILS ②④





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

STANDARD PLAN 5-297.250 | 6 OF 6

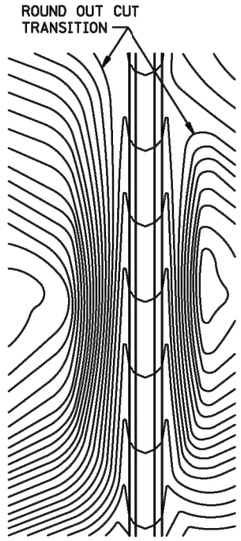
APPROVED: 11-04-2021
REVISED:

THOMAS STYRBICKI
STATE DESIGN ENGINEER

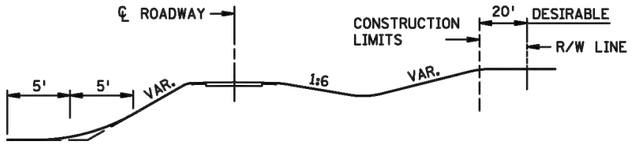
PEDESTRIAN CURB RAMP DETAILS

STATE AID PROJ. NO. 155-210-003 C.P.ST240002

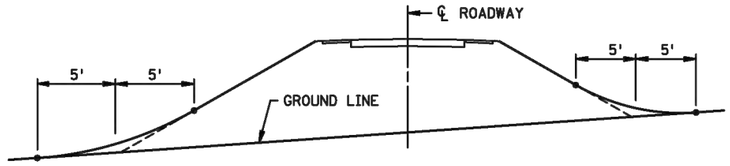
SHEET NO. 26 OF 354 SHEETS



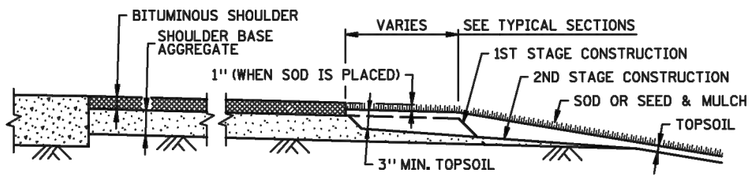
CONTOURING ROAD CUTS



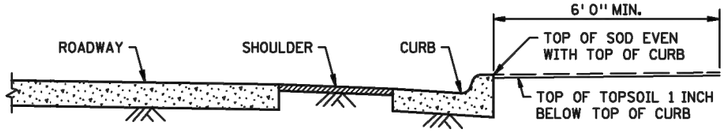
ROUNDING SHOULDERS AND BACKSLOPES



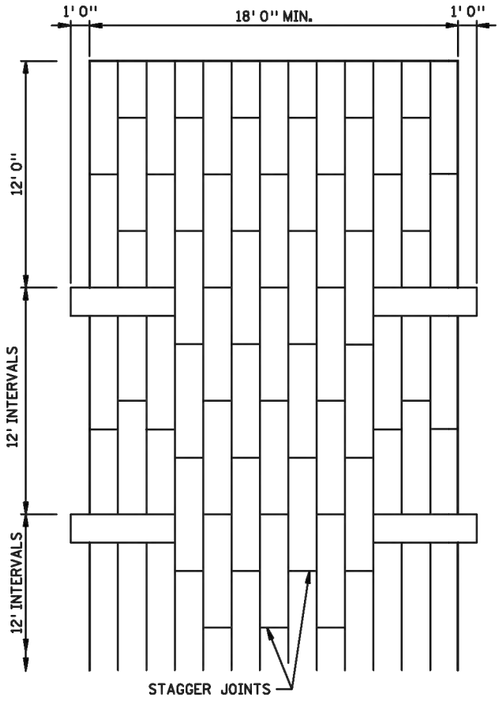
SHAPING FOR DRAINAGE ALONG THE TOE OF FILL SLOPES



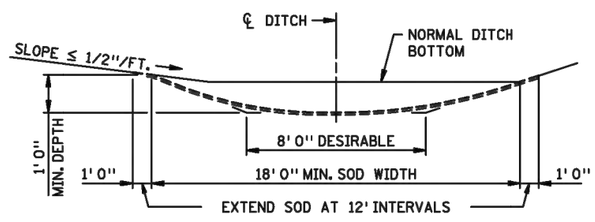
SHAPING AND TOPSOILING INSLOPES



SHAPING ADJACENT TO CURBS WHEN SOD IS PLACED

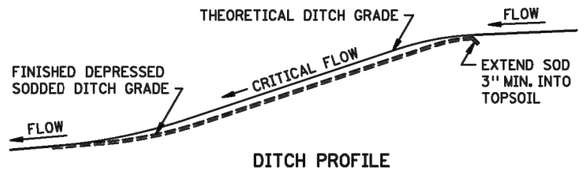


PLAN VIEW



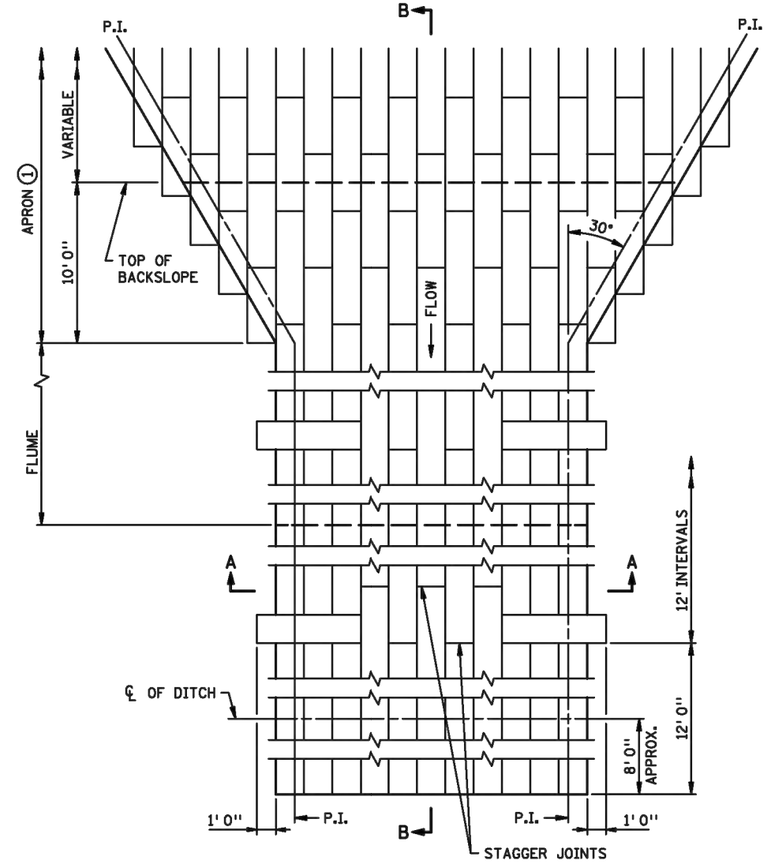
SODDED DITCH CROSS SECTION

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

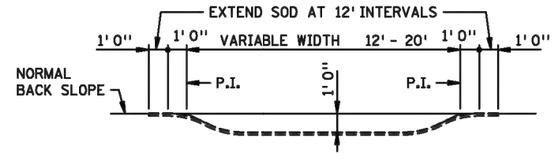


DITCH PROFILE

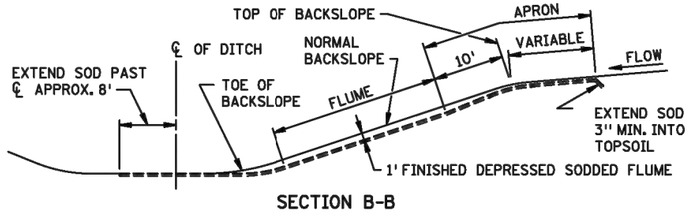
SODDED DITCH DETAILS



PLAN VIEW



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.

REVISION:

APPROVED: 2-28-2017

CHIEF ENVIRONMENTAL OFFICER

MINNESOTA DEPARTMENT OF TRANSPORTATION

STANDARD PLAN 5-297.404 | 1 OF 3

APPROVED: 2-28-2017

REVISED:

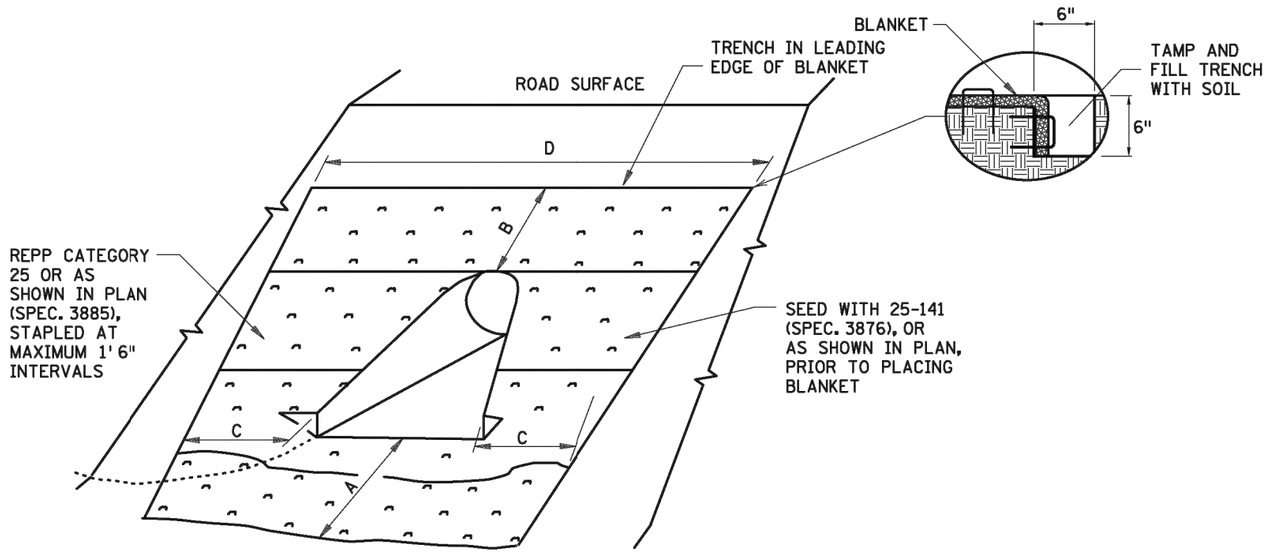
STATE DESIGN ENGINEER

PERMANENT EROSION CONTROL

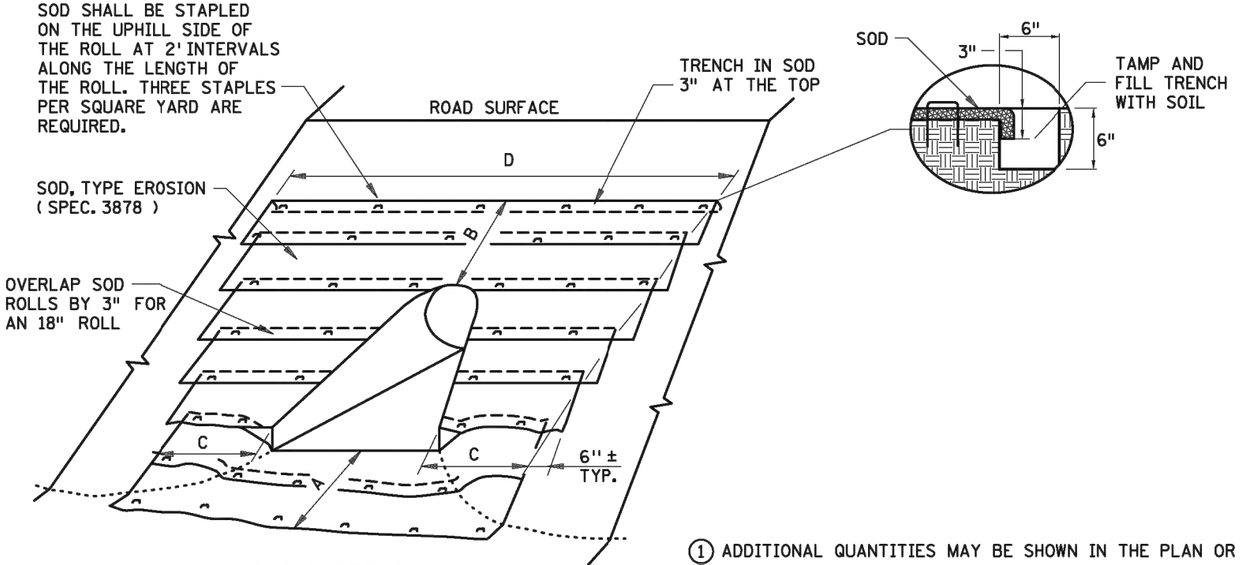
ALONG ROADWAYS, DITCHES AND FLUMES

STATE AID PROJ. NO. 155-210-003 C.P.ST240002

SHEET NO. 27 OF 354 SHEETS



ROLLED EROSION PREVENTION PRODUCT (BLANKET) & SEED DETAIL



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'

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.

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.

REVISION:

APPROVED: JANUARY 8, 2020

MARNI KARNOWSKI
CHIEF ENVIRONMENTAL OFFICER

MINNESOTA DEPARTMENT OF TRANSPORTATION

STANDARD PLAN 5-297.404 | 2 OF 3

APPROVED: 1-8-2020
REVISED:

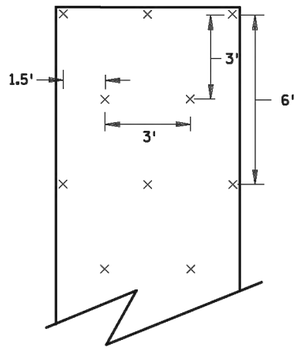
THOMAS STYRBICKI
STATE DESIGN ENGINEER

PERMANENT EROSION CONTROL

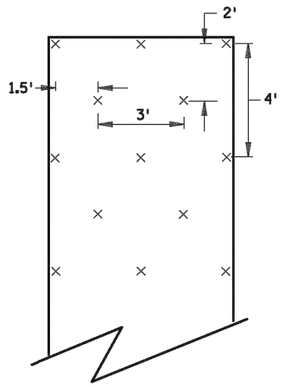
TURF ESTABLISHMENT DETAIL AT CULVERT ENDS

STATE AID PROJ. NO. 155-210-003 C.P.ST240002

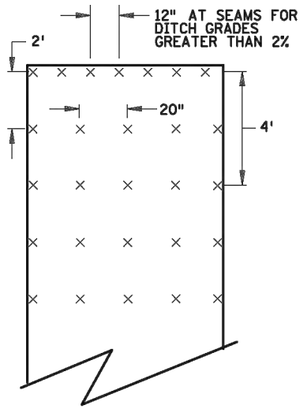
SHEET NO. 28 OF 354 SHEETS



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

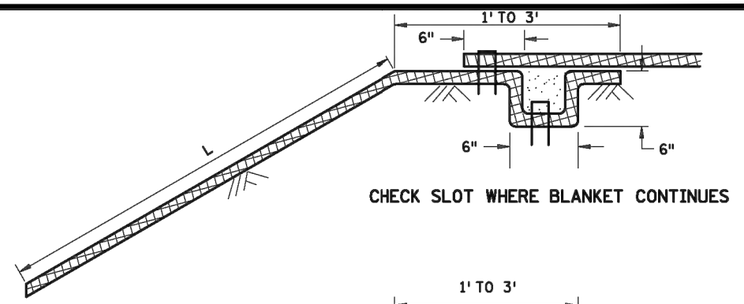


SLOPES 1:2 TO 1:1
170 STAPLES PER 100 SQ YD

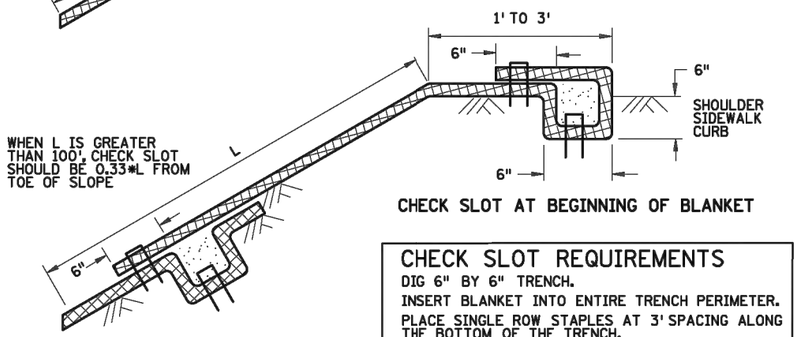


CHANNEL AND DITCH APPLICATIONS
350 STAPLES PER 100 SQ YD

BLANKET STAPLE PATTERN



CHECK SLOT WHERE BLANKET CONTINUES



CHECK SLOT AT BEGINNING OF BLANKET

CHECK SLOT REQUIREMENTS

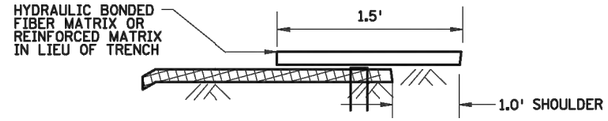
DIG 6" BY 6" TRENCH.

INSERT BLANKET INTO ENTIRE TRENCH PERIMETER.

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

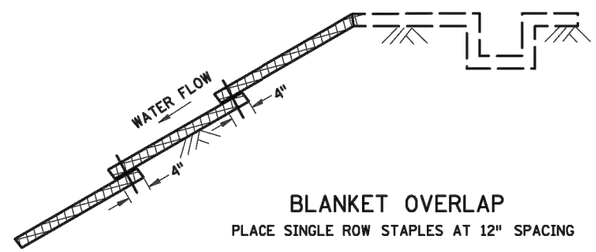
BACKFILL TRENCH WITH SOIL AND TAMP.

PLACE SINGLE ROW STAPLES AT 3' SPACING ON OVERLAP.

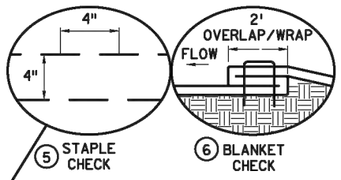


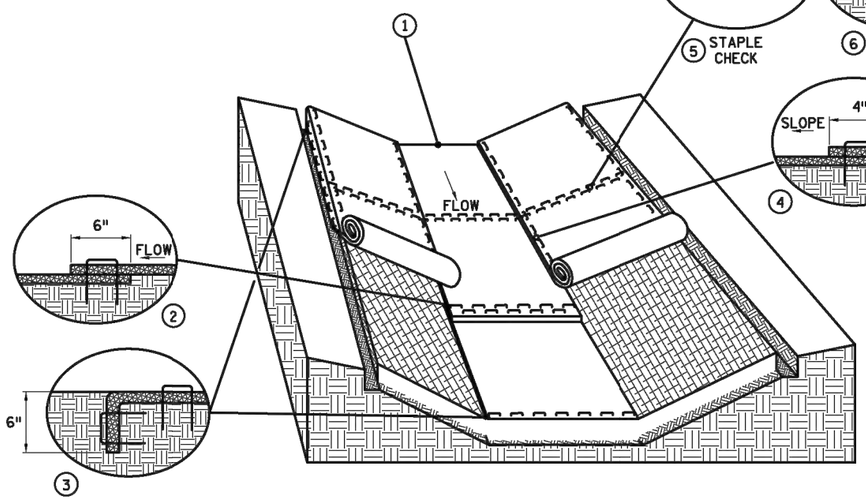
CHECK SLOT ALTERNATIVE
PLACE SINGLE ROW STAPLES AT 12" SPACING

CHECK SLOT DETAILS

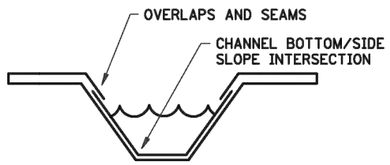


BLANKET OVERLAP
PLACE SINGLE ROW STAPLES AT 12" SPACING





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.

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 BLANKET 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.

REVISION:

APPROVED: JANUARY 8, 2020
MARNI KARNOWSKI
CHIEF ENVIRONMENTAL OFFICER

MINNESOTA DEPARTMENT OF TRANSPORTATION

STANDARD PLAN 5-297.404 | 3 OF 3

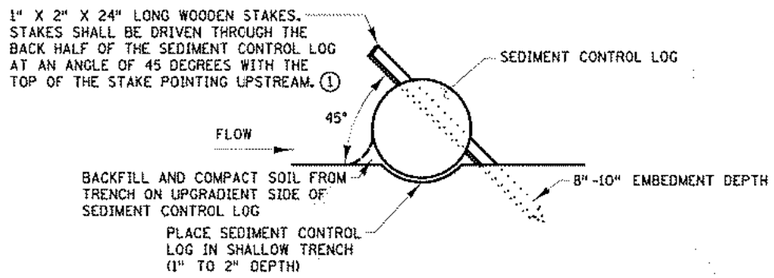
APPROVED: 1-8-2020
REVISED:
THOMAS STYRBICKI
STATE DESIGN ENGINEER

PERMANENT EROSION CONTROL

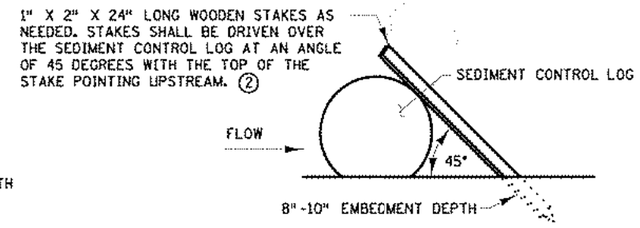
REPP (BLANKET) STAPLE PATTERN FOR SLOPES

STATE AID PROJ. NO. 155-210-003 C.P.ST240002

SHEET NO. 29 OF 354 SHEETS

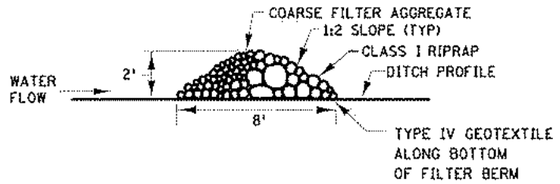


TYPES: STRAW, WOOD FIBER, OR COIR

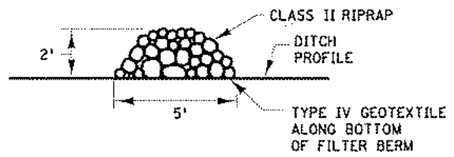


TYPES: WOOD CHIP, COMPOST, OR ROCK

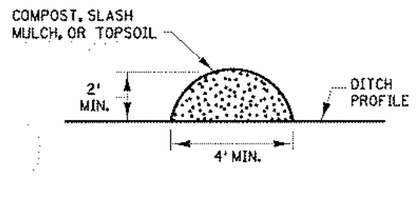
SEDIMENT CONTROL LOGS



TYPE 3 (ROCK WEEPER)

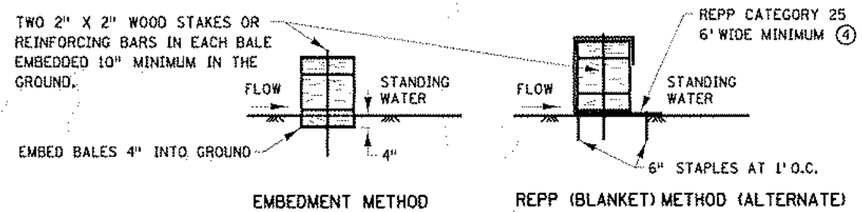


TYPE 5 (ROCK)



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

FILTER BERMS



EMBEDMENT METHOD

REPP (BLANKET) METHOD (ALTERNATE)

BALE 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.

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MARNI KARNOWSKI
CHIEF ENVIRONMENTAL OFFICER

MINNESOTA DEPARTMENT OF TRANSPORTATION

STANDARD PLAN 5-297.405 | 2 OF 8

APPROVED: 1-8-2020
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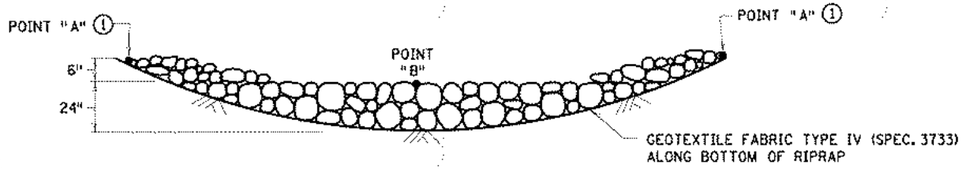
THOMAS STYRICKI
STATE DESIGN ENGINEER

TEMPORARY SEDIMENT CONTROL

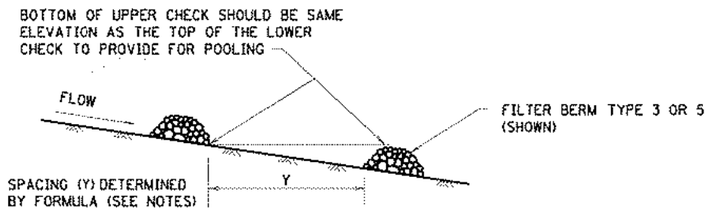
FILTER BERMS, SEDIMENT CONTROL LOGS, AND BALE BARRIERS

STATE AID PROJ. NO. 155-210-003 C.P.ST240002

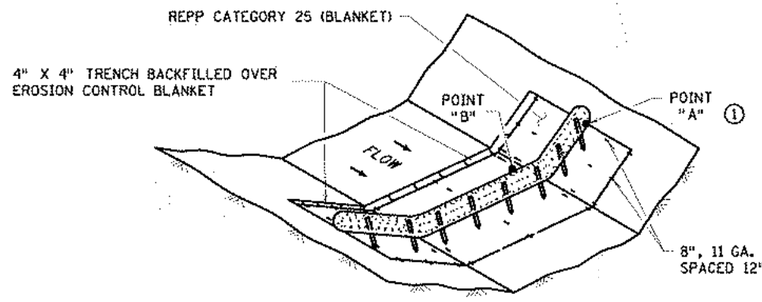
SHEET NO. 30 OF 354 SHEETS

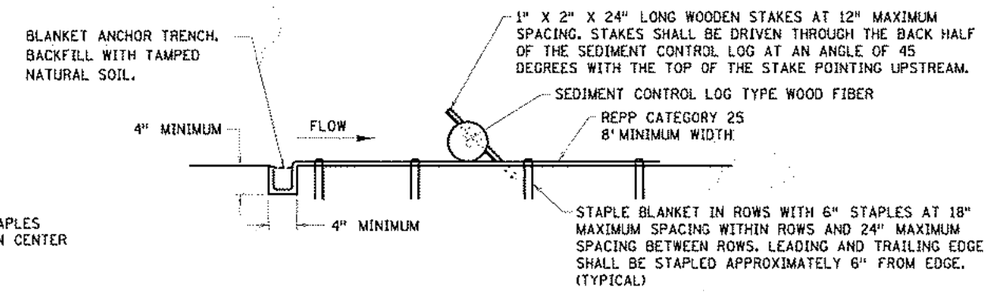


ROCK DITCH CHECKS
FILTER BERMS TYPE 3 (ROCK WEEPER) OR FILTER TYPE 5 (ROCK) ③
FOR USE ON ROUGH-GRADED AREAS
ONLY FOR USE OUTSIDE CLEAR ZONE ②

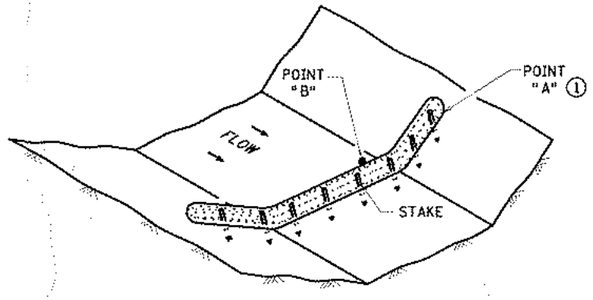


DITCH CHECK SPACING
FOR ALL FILTER BERM TYPES





SEDIMENT CONTROL LOG TYPE REPP (BLANKET) SYSTEM ④



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

NOTES:

REPP = ROLLED EROSION PREVENTION PRODUCT.

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

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

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

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

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.

REVISION:

APPROVED: JANUARY 8, 2020
MARNI KARNOWSKI
CHIEF ENVIRONMENTAL OFFICER

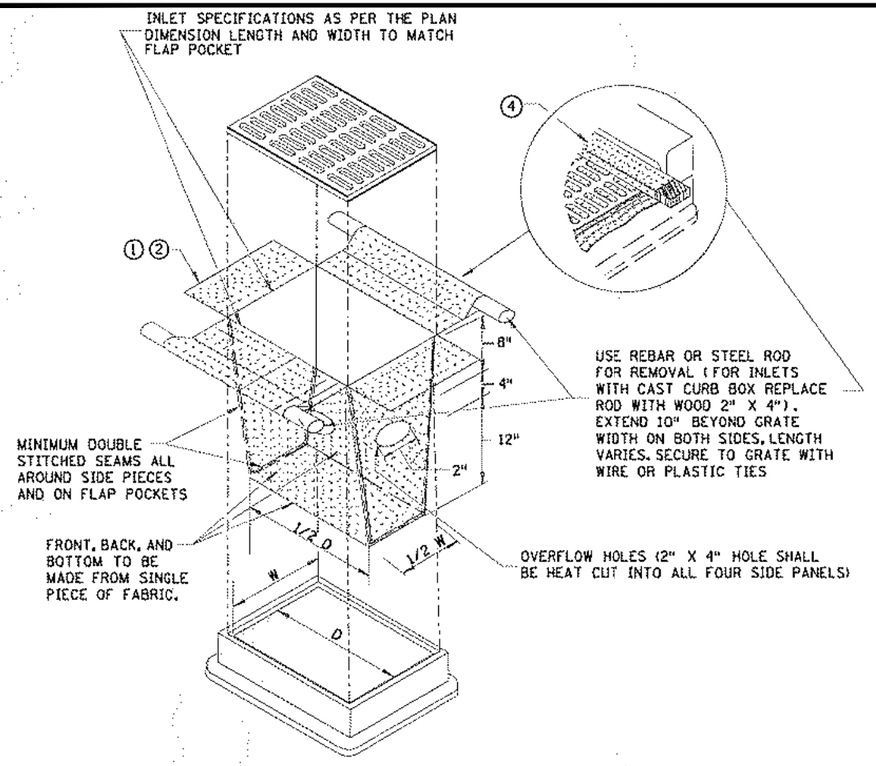
MINNESOTA DEPARTMENT OF TRANSPORTATION

STANDARD PLAN 5-297.405 | 3 OF 8

APPROVED: 1-8-2020
REVISED:
THOMAS STYRBICKI
STATE DESIGN ENGINEER

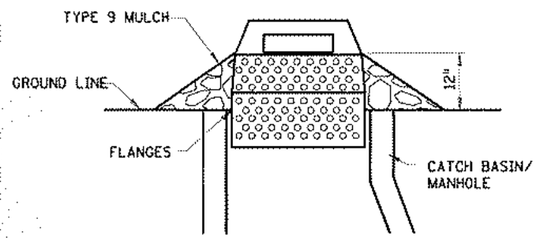
TEMPORARY SEDIMENT CONTROL
DITCH CHECK

STATE AID PROJ. NO. 155-210-003 C.P.ST240002



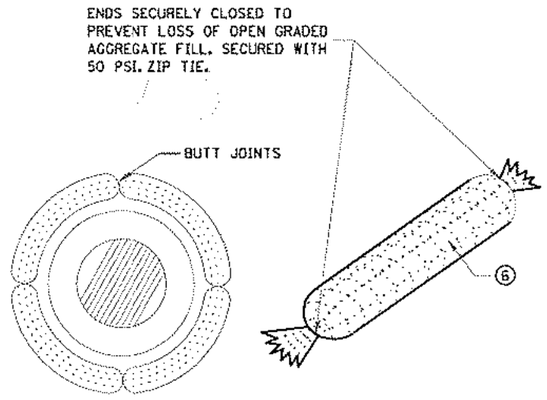
FILTER BAG INSERT ③

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

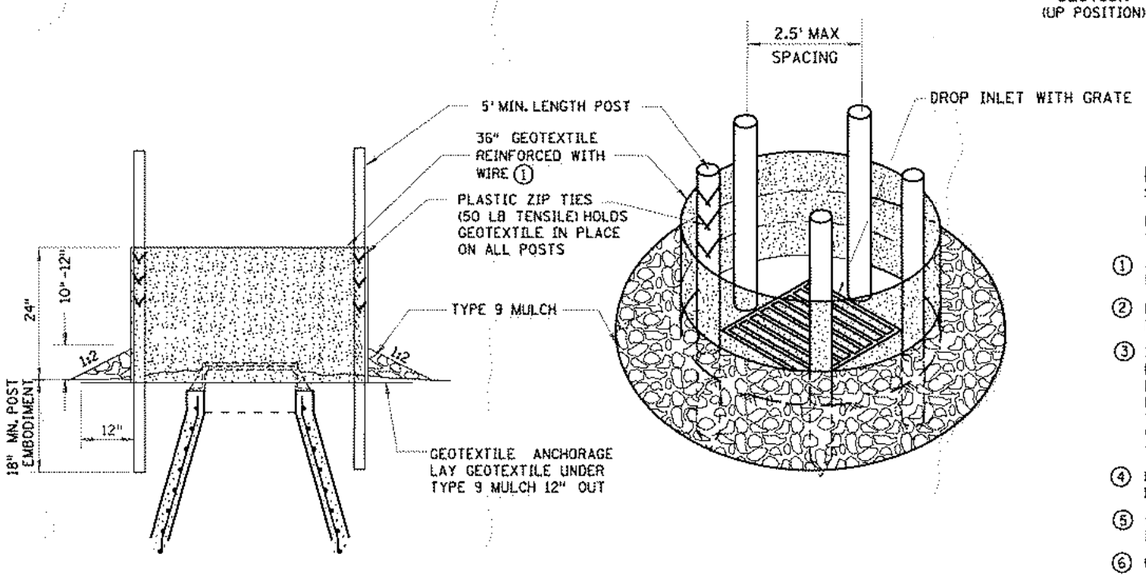


SEDIMENT CONTROL INLET HAT

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.

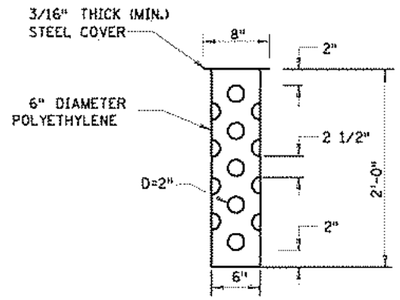


ROCK LOG/COMPOST LOG

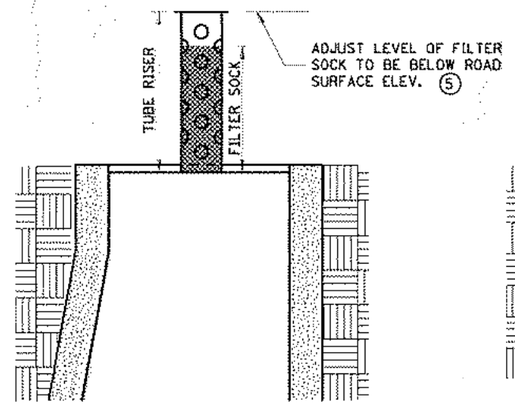


SILT FENCE RING AND ROCK FILTER BERM

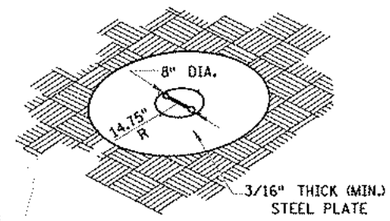
USE WHERE INLET DRAINS IN AN AREA WITH SLOPES AT 1:3 or LESS



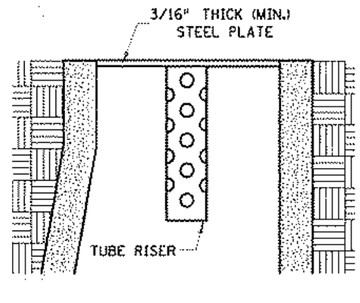
TUBE RISER



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.

REVISION:

APPROVED: 2-28-2017
CHIEF ENVIRONMENTAL OFFICER

MINNESOTA DEPARTMENT OF TRANSPORTATION

STANDARD PLAN 5-297.405 | 4 OF 8

APPROVED: 2-28-2017
REVISED:

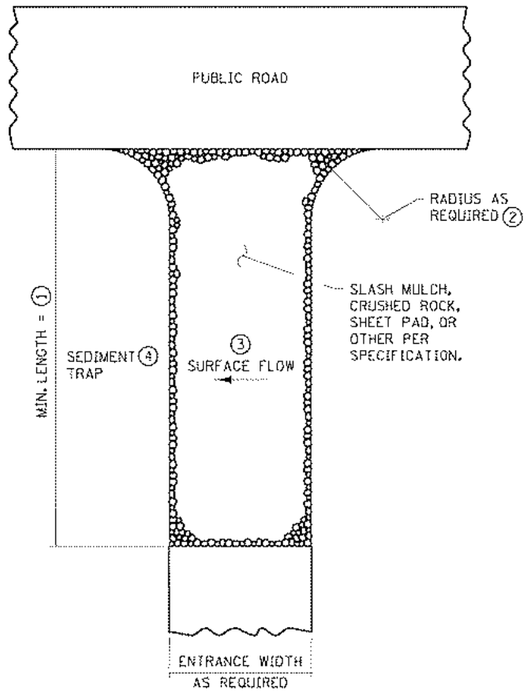
STATE DESIGN ENGINEER

TEMPORARY SEDIMENT CONTROL

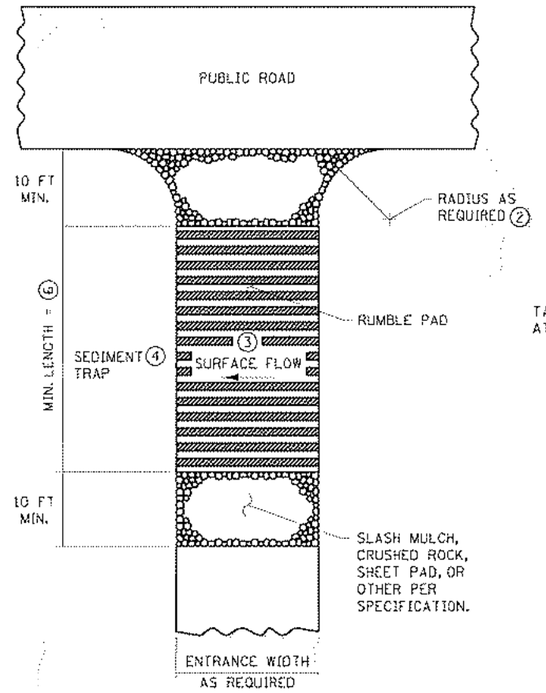
STORM DRAIN INLET PROTECTION

STATE AID PROJ. NO. 155-210-003 C.P.ST240002

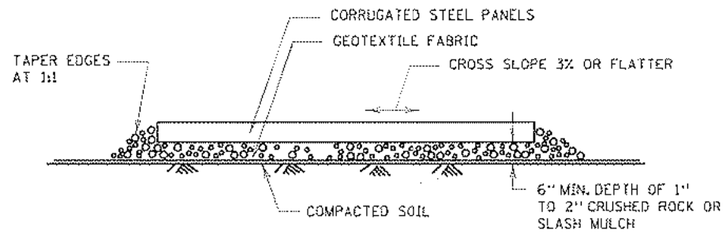
SHEET NO. 32 OF 354 SHEETS



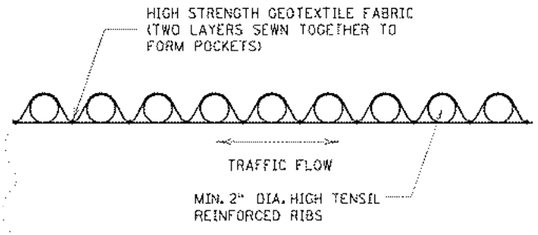
SLASH MULCH, CRUSHED ROCK, OR SHEET PAD CONSTRUCTION EXIT ⑤⑦



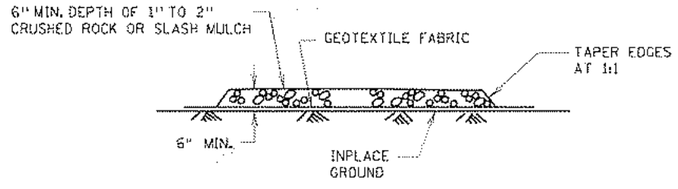
RUMBLE PAD CONSTRUCTION EXIT ⑤⑦



RUMBLE PAD



SHEET PAD



SLASH MULCH OR CRUSHED ROCK

NOTES:

SEE SPECS. 2573 & 3882.

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

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

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

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

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

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

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

REVISION:

APPROVED: 2-28-2017

CHIEF ENVIRONMENTAL OFFICER

MINNESOTA DEPARTMENT OF TRANSPORTATION

STATE DESIGN ENGINEER

STANDARD PLAN 5-297.405 | 5 OF 8

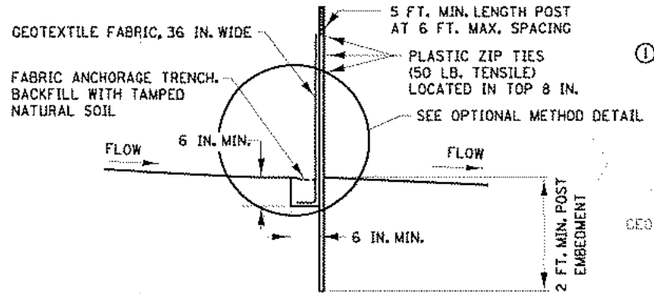
APPROVED: 2-28-2017

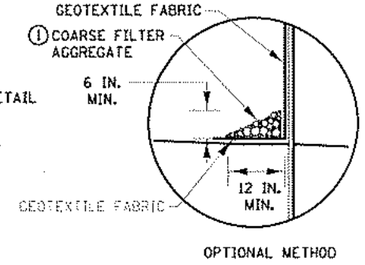
REVISED:

TEMPORARY SEDIMENT CONTROL

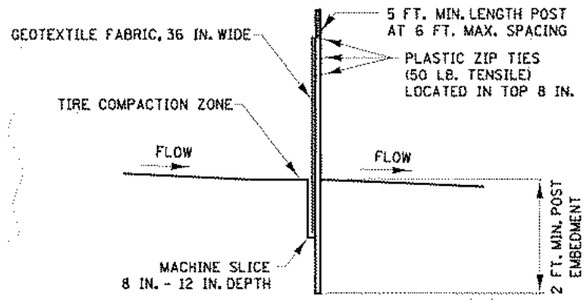
STABILIZED CONSTRUCTION EXIT

STATE AID PROJ. NO. 155-210-003 C.P.ST240002

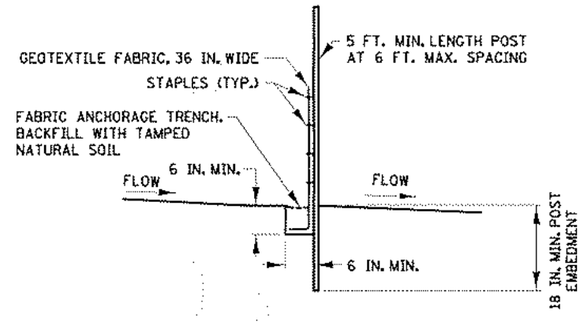




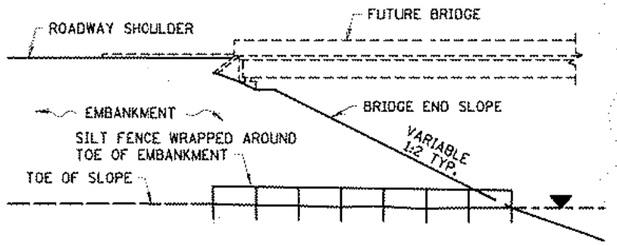
SILT FENCE TYPE HI ②
(HAND INSTALLED)



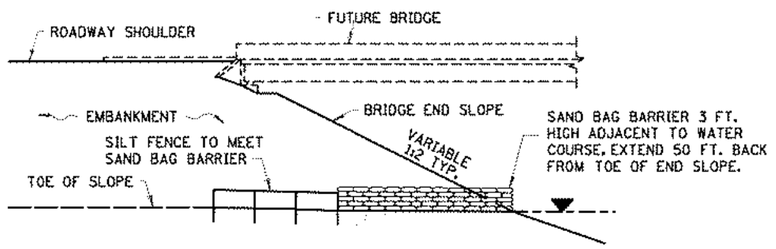
SILT FENCE TYPE MS ②
(MACHINE SLICED)



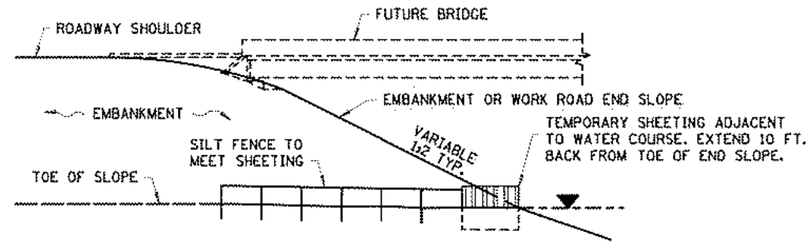
SILT FENCE TYPE PA ③
(PREASSEMBLED)



SILT FENCE ONLY ④

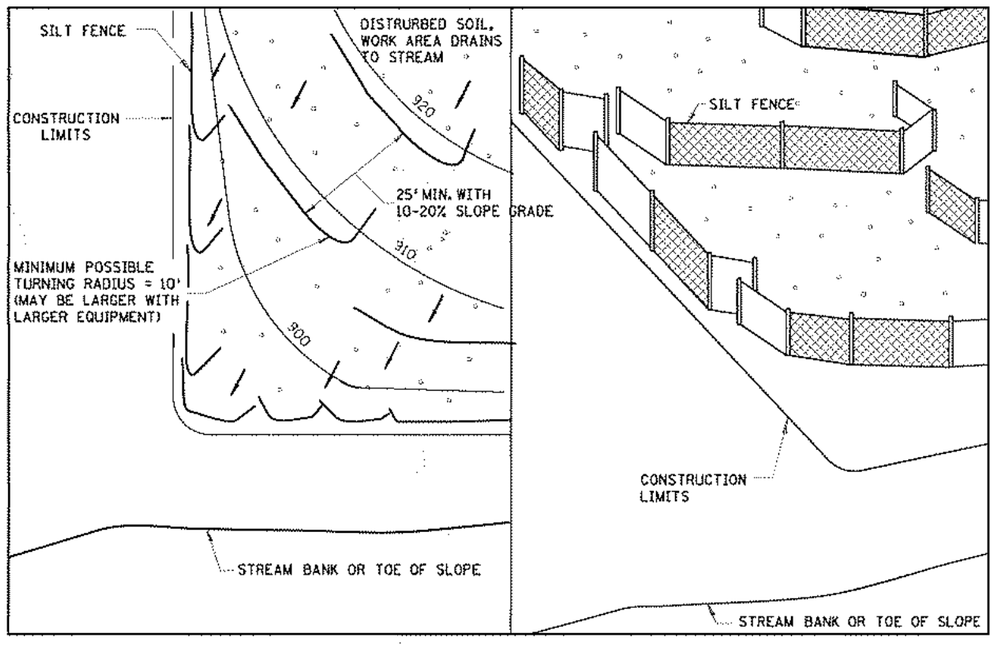


SILT FENCE WITH SAND BAGS ⑤



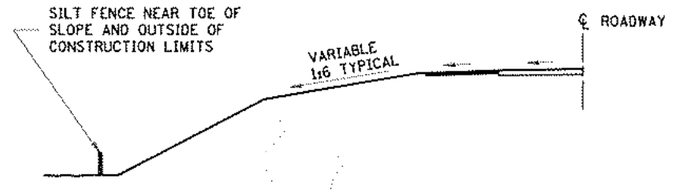
SILT FENCE WITH SHEETING ⑥

INSTALLATION AT BRIDGE EMBANKMENT ADJACENT TO WATER



PLAN VIEW PERSPECTIVE VIEW

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.

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

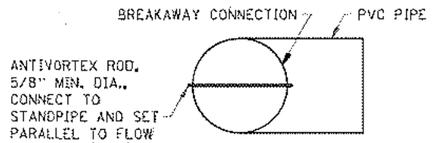
MINNESOTA DEPARTMENT OF TRANSPORTATION

STANDARD PLAN 5-297.405 | 6 OF 8

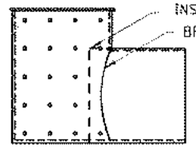
APPROVED: 2-28-2017
REVISED:
STATE DESIGN ENGINEER

TEMPORARY SEDIMENT CONTROL
SILT FENCE

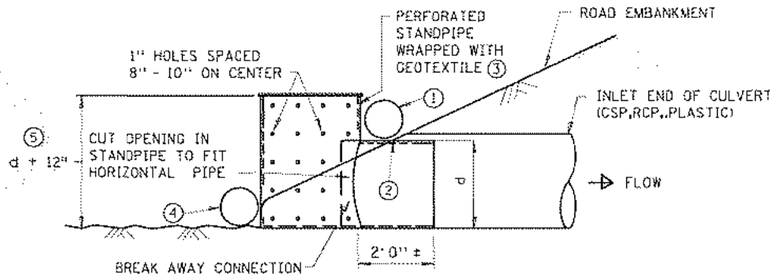
STATE AID PROJ. NO. 155-210-003 C.P.ST240002



PLAN VIEW



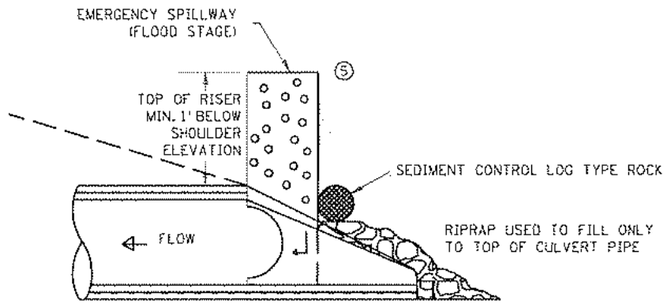
CULVERT STANDPIPE



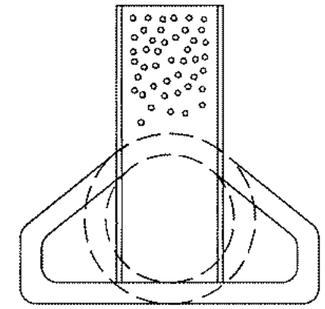
ELEVATION VIEW OF CULVERT INSTALLATION

CULVERT STANDPIPE INSERT (D-RISER)

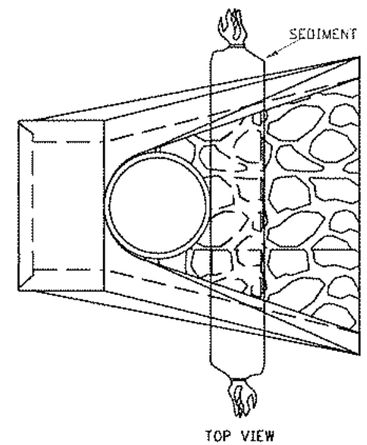
d= CULVERT SIZE: 12" - 36"



LONGITUDINAL SECTION



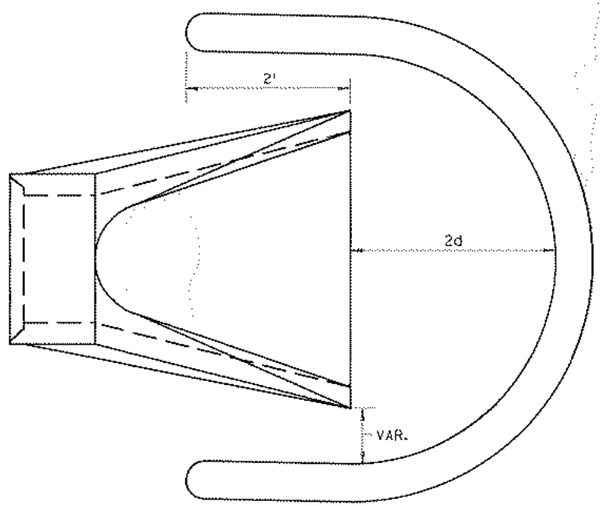
END VIEW



NOTE: SEDIMENT CONTROL LOG TYPE ROCK MAY BE WRAPPED AROUND RISER

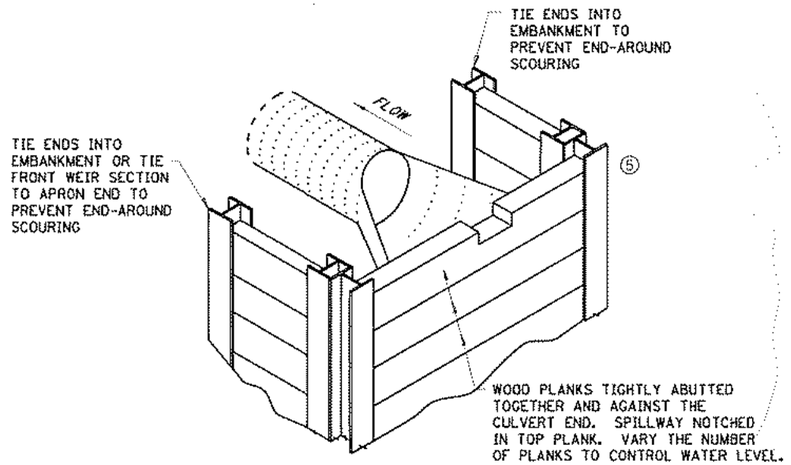
TOP VIEW

CULVERT STANDPIPE INSERT (D-RISER)



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

d = CULVERT SIZE: 12"-36"



WOOD PLANK WEIR

NOTES:

SEE SPECS. 2573, 3891 & 3893.

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

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

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

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

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

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

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

REVISION:

APPROVED: 2-28-2017

CHIEF ENVIRONMENTAL OFFICER

MINNESOTA DEPARTMENT OF TRANSPORTATION

STANDARD PLAN 5-297.405 | 8 OF 8

APPROVED: 2-28-2017

REVISED:

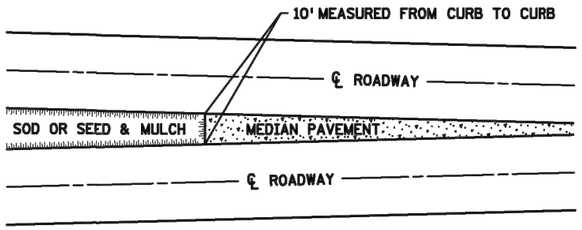
STATE DESIGN ENGINEER

TEMPORARY SEDIMENT CONTROL

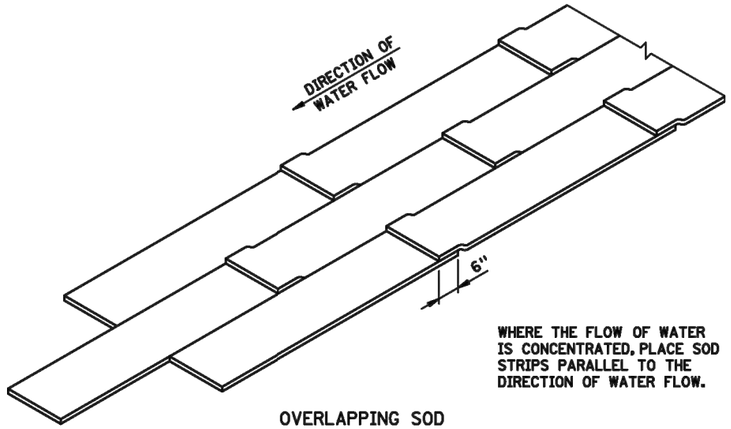
CULVERT END CONTROLS

STATE AID PROJ. NO. 155-210-003 C.P.ST240002

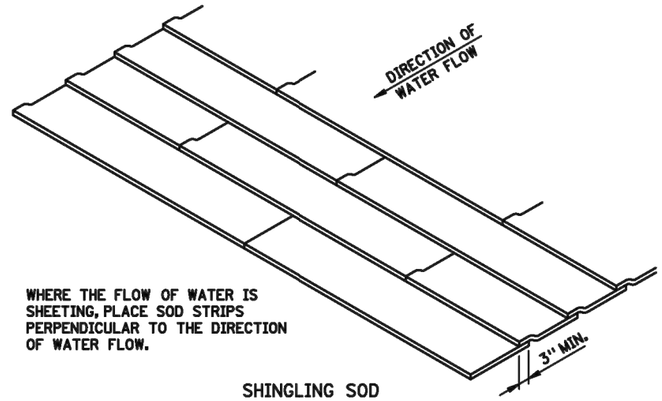
SHEET NO.35 OF 354 SHEETS



SODDING LIMITS AT GORE AREA

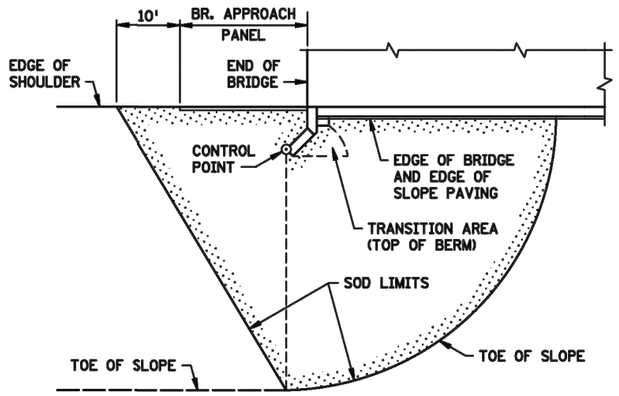


OVERLAPPING SOD

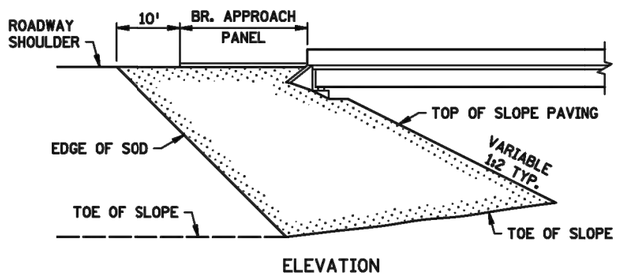


SHINGLING SOD

SPECIAL SOD PLACEMENT TECHNIQUES

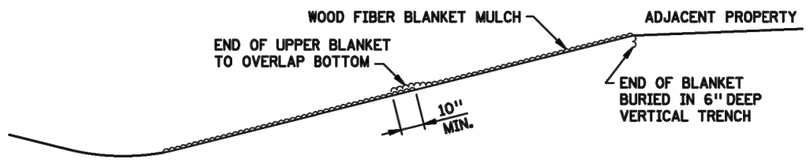


PLAN

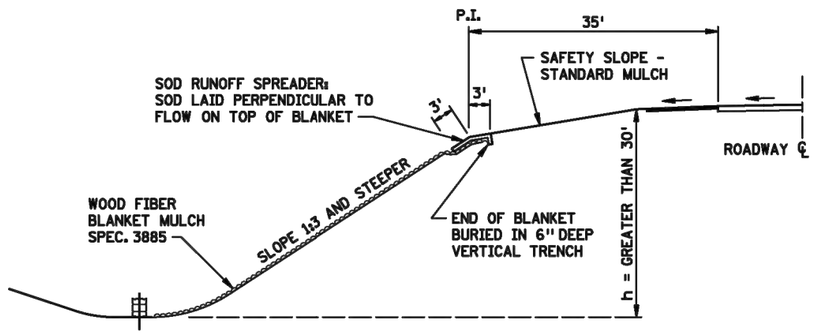


ELEVATION

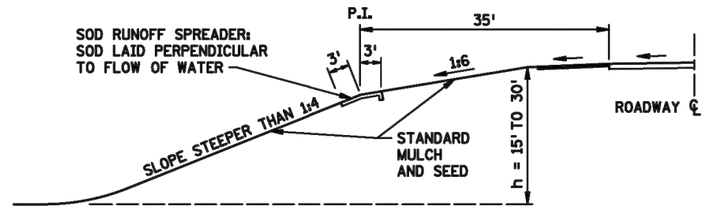
SODDING LIMITS AT BRIDGE APPROACH FILLS



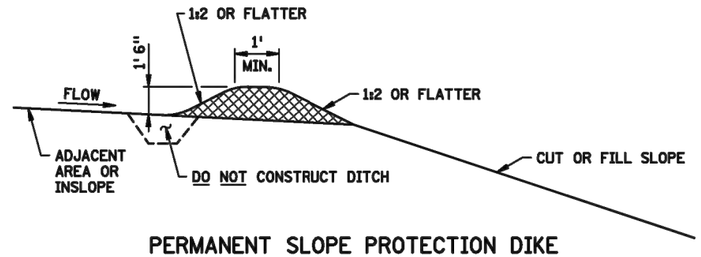
WOOD FIBER BLANKET INSTALLATION ON A CUT SLOPE



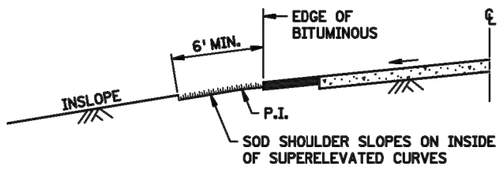
WOOD FIBER BLANKET INSTALLATION ON AN INSLOPE
(WHEN REQUIRED)



BROKEN-BACK SAFETY FILL SLOPE



PERMANENT SLOPE PROTECTION DIKE



SODDING INSLOPES OF SUPERELEVATED CURVES

REVISION:

APPROVED: 8-6-2014

CHIEF ENVIRONMENTAL OFFICER

MINNESOTA DEPARTMENT OF TRANSPORTATION

STANDARD PLAN 5-297.406 | 1 OF 1

APPROVED: 8-6-2014

REVISED:

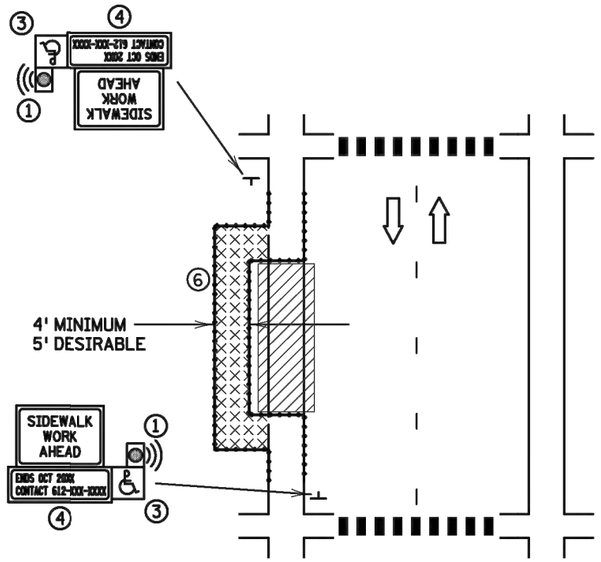
STATE DESIGN ENGINEER

PERMANENT SEDIMENT CONTROL

ALONG ROADWAYS AND AT GORE AREAS & BRIDGE APPROACH FILLS

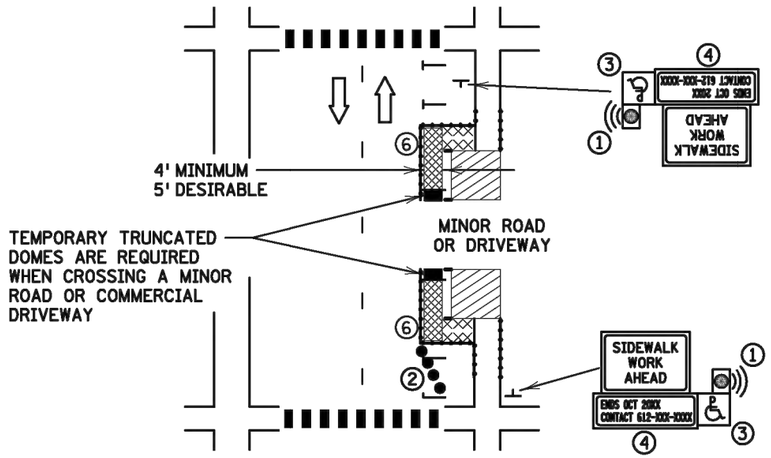
STATE AID PROJ. NO. 155-210-003 C.P.ST240002

SHEET NO. 36 OF 354 SHEETS



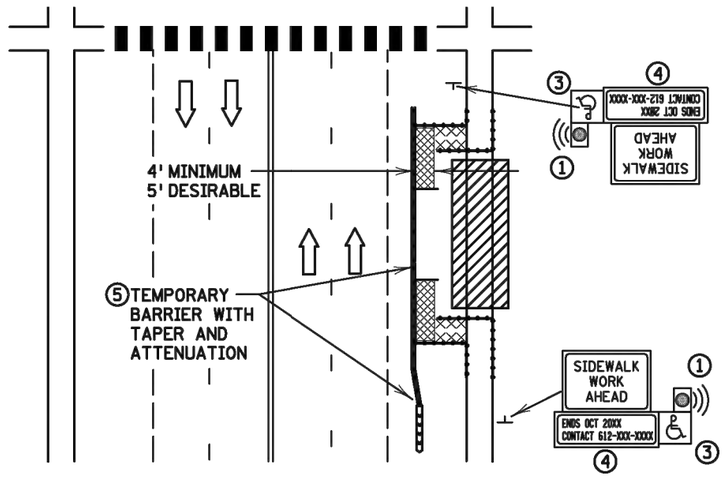
BYPASS TYPE A

BYPASS ON ADJACENT AVAILABLE RIGHT OF WAY



BYPASS TYPE B

SIDEWALK BYPASS USING PARKING OR SHOULDER ON LOW-SPEED ROADWAY



BYPASS TYPE C

SIDEWALK BYPASS USING SHOULDER OR PARKING LANE ON A MULTI-LANE OR HIGH-SPEED ROADWAY

NOTES:

WHEN CLOSING OR RELOCATING CROSSWALKS OR SIDEWALKS, PROVIDE DETECTABLE TEMPORARY FACILITIES AND INCLUDE ACCESSIBILITY FEATURES CONSISTENT WITH EXISTING PEDESTRIAN FACILITIES. THE ALTERNATE PEDESTRIAN ROUTE (APR) MUST REMAIN OPEN AT ALL TIMES.

TEMPORARY TRAFFIC CONTROL DEVICES FOR PEDESTRIANS ARE SHOWN. OTHER DEVICES MAY BE NECESSARY TO CONTROL VEHICULAR TRAFFIC. STAGE WORK AS NECESSARY TO PROVIDE AN APR AT ALL TIMES FOR ROADWAYS WITH NO AVAILABLE DETOURS. PROVIDE A SMOOTH, CONTINUOUS, HARD SURFACE THROUGH THE LENGTH OF THE APR.

PROVIDE A FIRM, STABLE, FREE-DRAINING, NON-SLIP, TEMPORARY WALKWAY SURFACE REGARDLESS OF WEATHER CONDITIONS. SUPPORT THE TEMPORARY WALKWAY SURFACE WITH A SOLID BASE TO COVER SHORT SEGMENTS OF ROUGH, SOFT, OR UNEVEN GROUND. THE TEMPORARY WALKWAY SURFACE WILL ALLOW NORMAL USAGE OF WHEELCHAIRS, WALKERS, STROLLERS, AND OTHER MOBILITY DEVICES. CONCRETE, BITUMINOUS, STEEL, RUBBER, WOOD (¾" OR THICKER), AND PLASTIC ARE ACCEPTABLE SURFACE MATERIALS FOR THE TEMPORARY WALKWAY SURFACE. GRAVEL, MILLINGS, AND OTHER UNEVEN SURFACES ARE NOT ACCEPTABLE SURFACE MATERIALS. IF NEEDED, PROVIDE SOIL STABILIZATION TO PREVENT EROSION AROUND TEMPORARY SURFACES. IF NEEDED, PROVIDE SOIL STABILIZATION TO PREVENT EROSION AROUND TEMPORARY SURFACES.

IF A 60" PEDESTRIAN WALKWAY WIDTH ISN'T PROVIDED FOR THE ROUTE, THEN A 60" BY 60" PASSING SPACE IS REQUIRED EVERY 200'. THE MINIMUM WIDTH OF THE WALKWAY IS 48".

COVER OR DEACTIVATE ANY PEDESTRIAN TRAFFIC SIGNALS CONTROLLING CLOSED CROSSWALKS.

POST-MOUNTED SIGNS LOCATED ADJACENT TO A SIDEWALK SHALL HAVE A 7' MINIMUM CLEARANCE FROM THE BOTTOM OF THE LOWEST SIGN TO THE SIDEWALK SURFACE. SHARED-USE PATH SHALL HAVE 8' MINIMUM CLEARANCE FROM THE BOTTOM OF THE LOWEST SIGN TO THE SHARED USE PATH SURFACE.

APR SHOULD BE KEPT FREE OF TRASH, SEDIMENT, AND DEBRIS.

ANY PORTABLE SIGN OR BARRICADE PLACED OR STORED IN A PEDESTRIAN WALKWAY THAT COULD POSE A HAZARD TO A VISUALLY-IMPAIRED PEDESTRIAN SHALL HAVE A DETECTABLE EDGE TO GUIDE THE PEDESTRIAN AROUND THE HAZARD. FOR ADDITIONAL GUIDANCE, SEE THE "DETECTABLE EDGE FOR SIGN ON PORTABLE STAND" DETAIL ON STADARD PLAN 5-297.813.

MINIMIZE DISRUPTION TO PEDESTRIANS TO THE MAXIMUM EXTENT FEASIBLE BY PROVIDING AN APR IN THE FOLLOWING ORDER OF PREFERENCE:

2. PROVIDE THE APR ON THE SAME SIDE OF THE ROADWAY AS THE DISRUPTED ROUTE UTILIZING BYPASSES.

3. WHERE NOT FEASIBLE TO PROVIDE A SAME-SIDE APR, PROVIDE AN APR DETOUR ON THE OTHER SIDE OF THE ROADWAY.

   WHERE NOT FEASIBLE TO PROVIDE AN APR ON EITHER SIDE OF THE ROADWAY, PROVIDE AN APR DETOUR WITH TRAILBLAZING SIGNS.

① CONSIDER PROVIDING AN APPROVED AUDIBLE MESSAGE DEVICE OR TACTILE MESSAGE FOR PEDESTRIANS WITH VISUAL DISABILITIES.

② RECOMMENDED TAPER WHEN THE CLOSED AREA WAS PREVIOUSLY USED AS AN INTERMITTENT TRAFFIC LANE OR BYPASS LANE IS 25' LONG USING FIVE EQUALLY-SPACED CHANNELIZING DEVICES.

③ FOR FULLY-ACCESSIBLE WALKWAYS THROUGH WORKZONES, CONSIDER DISPLAYING THE INTERNATIONAL SYMBOL OF ACCESSIBILITY.

④ INCLUDE INFORMATION SUCH AS THE DURATION OF THE WALKWAY RESTRICTIONS (BEGINNING AND/OR END DATES) AND A PROJECT CONTACT NUMBER FOR 24/7 QUESTIONS OR REPORTING HAZARDS ON SIGNS FOR TEMPORARY PEDESTRIAN DETOURS.

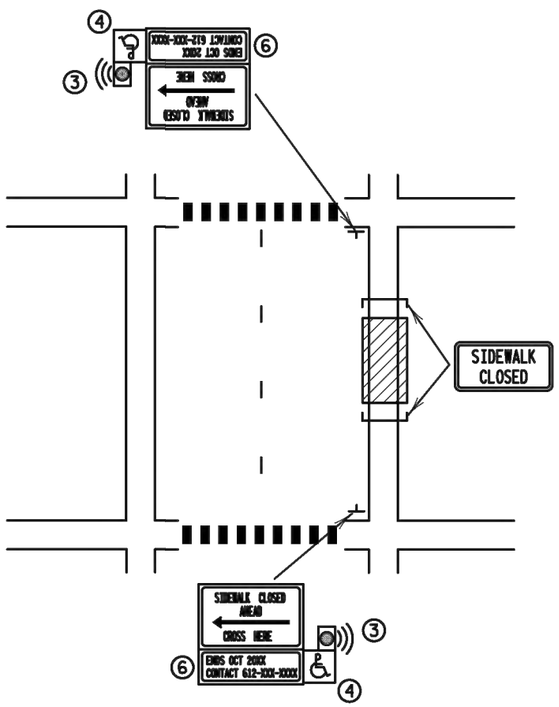
⑤ SEE THE MOST CURRENT EDTION OF THE MNDOT TEMPORARY BARRIER GUIDANCE MANUAL FOR GUIDANCE ON PLACEMENT AND USAGE OF TEMPORARY BARRIER.

⑥ PROVIDE SOIL STABILIZATION AROUND TEMPORARY SURFACES TO PREVENT EROSION, IF NEEDED.

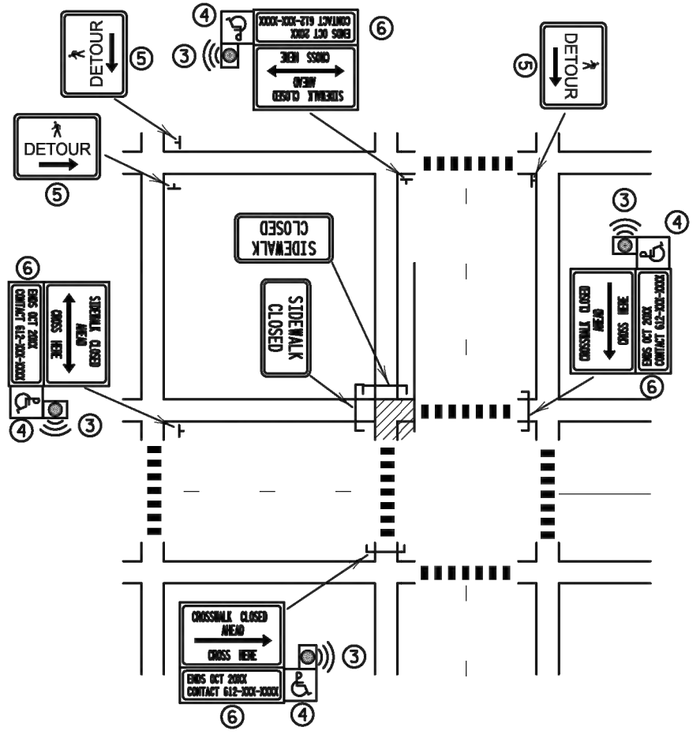
LEGEND

- SIGN
- WORK AREA
- PEDESTRIAN CHANNELIZATION DEVICE
- TEMPORARY BARRIER
- DIRECTION OF TRAFFIC
- CHANNELIZER
- AUDIBLE MESSAGE DEVICE (AMD)
- TEMPORARY CURB RAMP WITH DETECTABLE EDGES
- TEMPORARY WALKWAY SURFACE

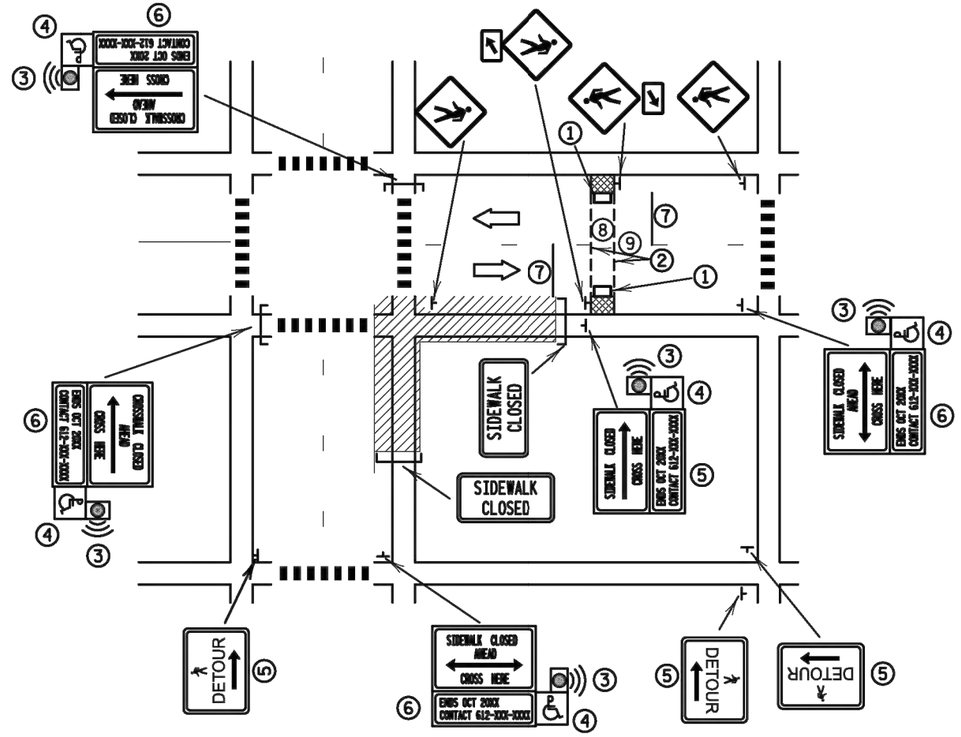
LEAD EXPERT OFFICE: BRIAN SORENSON, STATE TRAFFIC ENGINEER, OFFICE OF TRAFFIC ENGINEERING		ALTERNATE PEDESTRIAN ROUTE (APR) LAYOUTS	APPROVED: 03-18-2021 REVISED:	THOMAS STYRBICKI, STATE DESIGN ENGINEER	STANDARD PLAN 5-297.811	1 OF 2
	DEPARTMENT OF TRANSPORTATION	STANDARD PLAN		STATE AID PROJ. NO. 155-210-003 C.P.ST240002	SHEET NO. 37 TOTAL SHEETS 354



OTHER SIDE OF ROADWAY DETOUR
FOR MID-BLOCK CLOSURE



ONE QUADRANT CLOSED



OTHER SIDE OF STREET DETOUR OR DETOUR WITH TRAILBLAZING SIGNS
FOR CORNER SIDEWALK CLOSURE WITH OPTIONAL TEMPORARY CROSSWALK

NOTES:

WHEN CLOSING OR RELOCATING CROSSWALKS OR SIDEWALKS, PROVIDE DETECTABLE TEMPORARY FACILITIES AND INCLUDE ACCESSIBILITY FEATURES CONSISTENT WITH EXISTING PEDESTRIAN FACILITIES. THE MINIMUM TEMPORARY WALKWAY WIDTH SHOULD BE THE WIDTH OF THE EXISTING FACILITY. IF THE EXISTING FACILITY HAS A WIDTH GREATER THAN 60", THE WIDTH OF THE TEMPORARY FACILITY MAY BE 60". IF THE WIDTH OF THE DETOUR IS LESS THAN 60", A 60"-WIDE PASSING SPACE IS REQUIRED EVERY 200'.

TEMPORARY TRAFFIC CONTROL DEVICES FOR PEDESTRIANS ARE SHOWN. OTHER TRAILBLAZING SIGNS OR DEVICES MAY BE NEEDED FOR ADEQUATE ROUTING. STAGE WORK AS NECESSARY TO PROVIDE AN ALTERNATE PEDESTRIAN ROUTE (APR) AT ALL TIMES.

PROVIDE A SMOOTH, CONTINUOUS, HARD SURFACE THROUGH THE LENGTH OF THE APR. PROVIDE A FIRM, STABLE, FREE-DRAINING, NON-SLIP, TEMPORARY WALKWAY SURFACE REGARDLESS OF WEATHER CONDITIONS. SUPPORT THE TEMPORARY WALKWAY SURFACE WITH A SOLID BASE TO COVER SHORT SEGMENTS OF ROUGH, SOFT, OR UNEVEN GROUND. THE TEMPORARY WALKWAY SURFACE WILL ALLOW NORMAL USAGE OF WHEELCHAIRS, WALKERS, STROLLERS, AND OTHER MOBILITY DEVICES. CONCRETE, BITUMINOUS, STEEL, RUBBER, WOOD (3/4" OR THICKER), AND PLASTIC ARE ACCEPTABLE SURFACE MATERIALS FOR THE TEMPORARY WALKWAY SURFACE. GRAVEL, MILLINGS, OR OTHER UNEVEN SURFACES ARE NOT ACCEPTABLE SURFACE MATERIALS. IF NEEDED, PROVIDE SOIL STABILIZATION TO PREVENT EROSION AROUND TEMPORARY SURFACES.

COVER OR DEACTIVATE ANY PEDESTRIAN TRAFFIC SIGNALS CONTROLLING CLOSED CROSSWALKS.

APR SHOULD BE KEPT FREE OF TRASH, SEDIMENT, AND DEBRIS.

POST-MOUNTED SIGNS ADJACENT TO SIDEWALKS SHALL HAVE 7' MINIMUM CLEARANCE FROM THE BOTTOM OF THE LOWEST SIGN TO THE SIDEWALK SURFACE. SHARED-USE PATHS SHALL HAVE 8' MINIMUM CLEARANCE FROM THE BOTTOM OF THE LOWEST SIGN TO THE SHARED-USE PATH SURFACE.

ANY PORTABLE SIGN OR BARRICADE PLACED OR STORED IN A PEDESTRIAN WALKWAY THAT COULD BE A HAZARD TO A VISUALLY-IMPAIRED PEDESTRIAN SHALL HAVE A DETECTABLE EDGE TO GUIDE THE PEDESTRIAN AROUND THE HAZARD. FOR ADDITIONAL GUIDANCE SEE THE "TEMPORARY PEDESTRIAN ACCESS ROUTE (TPAR) DEVICES" STANDARD PLAN, "DETECTABLE EDGE FOR SIGN ON PORTABLE STAND" DETAIL.

MINIMIZE DISRUPTION TO PEDESTRIANS TO THE MAXIMUM EXTENT FEASIBLE BY PROVIDING AN APR IN THE FOLLOWING ORDER OF PREFERENCE:

1. PROVIDE THE APR ON THE SAME SIDE OF THE ROADWAY AS THE DISRUPTED ROUTE UTILIZING BYPASSES.
2. WHERE IT IS NOT FEASIBLE TO PROVIDE A SAME-SIDE APR, PROVIDE AN APR DETOUR ON THE OTHER SIDE OF THE ROADWAY.
3. WHERE IT IS NOT FEASIBLE TO PROVIDE AN APR ON EITHER SIDE OF THE ROADWAY, PROVIDE AN APR DETOUR WITH TRAILBLAZING SIGNS.

① TEMPORARY CURB RAMPS WITH DETECTABLE WARNINGS.

② TEMPORARY PAVEMENT MARKINGS FOR CROSSWALKS MAY USE CROSSWALK BLOCKS, TWO TRANSVERSE LINES OR TWO STRIPS OF 18" PREFORMED MARKING MATERIAL TO FORM 36" WIDE CROSSWALK BLOCKS.

③ PROVIDE AN APPROVED AUDIBLE MESSAGE DEVICE OR TACTILE MESSAGE FOR PEDESTRIANS WITH VISUAL DISABILITIES.

④ FOR FULLY ACCESSIBLE WALKWAYS THROUGH WORKZONES, CONSIDER DISPLAYING THE INTERNATIONAL SYMBOL OF ACCESSIBILITY.

⑤ USE PEDESTRIAN DETOUR TRAILBLAZING SIGNS IF THE PEDESTRIAN DETOUR IS NOT LOCATED ACROSS THE ROADWAY FROM THE SIDEWALK CLOSURE.

⑥ TYPICAL SIGN MESSAGE FOR AN ALTERNATE PEDESTRIAN ROUTE SHOULD INCLUDE INFORMATION SUCH AS THE DURATION OF THE WALKWAY RESTRICTIONS (BEGINNING AND/OR END DATES) AND A PROJECT CONTACT NUMBER FOR 24/7 QUESTIONS OR REPORTING HAZARDS. TYPICAL INFORMATION INCLUDED IN AN AUDIBLE MESSAGE CAN BE FOUND IN "TPAR - AUDIBLE MESSAGE CONTENT GUIDELINES" AVAILABLE ON THE MNDOT TRAFFIC ENGINEERING WEBSITE ON THE PEDESTRIAN ACCOMMODATIONS THROUGH WORK ZONES WEB PAGE. ADDITIONALLY, A SUMMARY OF THE MESSAGE CONTENT GUIDELINES CAN BE FOUND WITHIN THE PEDESTRIAN ACCOMMODATIONS THROUGH WORK ZONES DESIGN GUIDANCE DOCUMENT.

⑦ LOCATE STOP BAR 20' TO 50' BEFORE THE CROSSWALK. RESTRICT PARKING BETWEEN THE STOP BAR AND THE CROSSWALK. ON TWO-WAY ROADWAYS, RESTRICT PARKING BOTH BEFORE AND AFTER THE CROSSWALK FOR BOTH DIRECTIONS.

⑧ CONSIDER LIGHTING AT MID-BLOCK CROSSINGS IN ORDER TO ILLUMINATE PEDESTRIANS, IF NOT ALREADY LIT.

⑨ CONSIDER THE ADDITION OF R1-6a SIGNS AS MOTORISTS ARE NOT EXPECTING MID-BLOCK CROSSING.



R1-6a

LEGEND

- SIGN
- WORK AREA
- SIDEWALK BARRICADE
- DIRECTION OF TRAFFIC
- AUDIBLE MESSAGE DEVICE (AMD)
- TEMPORARY CURB RAMP WITH DETECTABLE EDGES

LEAD EXPERT OFFICE	BRIAN SORENSON STATE TRAFFIC ENGINEER OFFICE OF TRAFFIC ENGINEERING		ALTERNATE PEDESTRIAN ROUTE (APR) LAYOUTS	APPROVED: 03-18-2021 REVISED:	THOMAS STYRBICKI STATE DESIGN ENGINEER	STANDARD PLAN 5-297.811	2 OF 2
	DEPARTMENT OF TRANSPORTATION		STANDARD PLAN	STATE AID PROJ. NO. 155-210-003 C.P.ST240002		SHEET NO. 38 TOTAL SHEETS 354

NOTES;

TPAR SHOULD BE KEPT FREE OF TRASH, SEDIMENT, AND DEBRIS.

RAILINGS OR OTHER OBJECTS MAY PROTRUDE A MAXIMUM OF 4" INTO THE WALKWAY CLEAR SPACE WHEN LOCATED A MINIMUM OF 27" ABOVE THE WALKWAY SURFACE.

USE CRASHWORTHY TEMPORARY BARRIERS WHEN USED AS A PEDESTRIAN CHANNELIZERS.

PLACE SIDEWALK BARRICADES ACROSS THE ENTIRE WIDTH OF THE WALKWAYSURFACE, WHEN USED.

USE INTERLOCKING DEVICES TO CHANNELIZE PEDESTRIAN FLOW TO PREVENT GAPS THAT COULD ALLOW PEDESTRIANS TO STRAY FROM THE CHANNELIZED PATH.

① PROVIDE DETECTABLE EDGE TO ANY TRIPPING HAZARD IN THE WALKWAY. LOCATE BALLAST BEHIND THE DETECTABLE EDGE OR INTEGRAL TO THE DEVICE. ANY SUPPORT ON THE FRONT OF THE DEVICE SHOULD NOT EXTEND INTO THE 48" MINIMUM WALKWAY CLEAR SPACE. ANY SUPPORT THAT EXTENDS INTO THE WALKWAY SHALL NOT EXCEED ½" HEIGHT ABOVE THE WALKWAY SURFACE; IF GREATER THAN ¼", BEVEL AS SHOWN IN THE TRIP HAZARD DETAIL.

② PROVIDE CONTINUOUS DETECTABLE EDGES EXTENDING AT LEAST 6" ABOVE THE WALKWAY SURFACE. MARK DETECTABLE EDGES WITH A COLOR THAT CONTRASTS WITH THE WALKWAY SURFACE. PLACE THE DETECTABLE EDGE AROUND ANY PORTABLE SIGN STAND IN THE WALKWAY AREA WHERE THE SIGN POSES A HAZARD TO A VISUALLY-IMPAIRED PEDESTRIAN.

③ DEVICES AND DETECTABLE EDGES SHALL NOT BLOCK WATER DRAINAGE FROM THE WALKWAY. A GAP HEIGHT OR OPENING FROM THE WALKWAY SURFACE UP TO A MAXIMUM OF 2" IS ALLOWED FOR DRAINAGE PURPOSES.

④ USE HAND AND GUIDE RAILS WHEN REQUIRED. INSTALL TOP RAIL OR TOP SURFACE IN A VERTICAL PLANE PERPENDICULAR TO THE WALKWAY, ABOVE THE DETECTABLE EDGE. PROVIDE CONTINUOUS RAIL AT A HEIGHT OF 34" TO 38" ABOVE THE WALKWAY SURFACE. USE RAIL SUPPORTS THAT MINIMIZE CONTACT WITH PEDESTRIAN'S HANDS AND FINGERS. SEE "PUBLIC RIGHTS OF WAY ACCESSIBILITY GUIDELINES (PROWAG) 2005" FOR ADDITIONAL GUIDANCE ON USE OF HAND AND GUIDE RAILS.

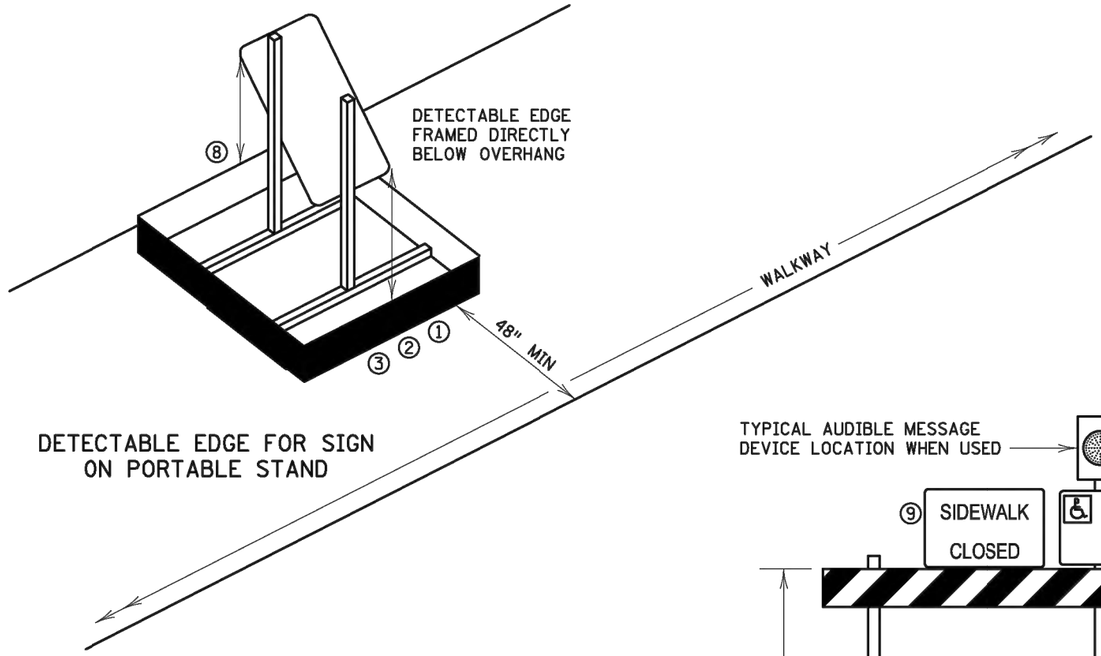
⑤ USE DEVICES FREE OF SHARP OR ROUGH EDGES, AND USE ROUNDED FASTENERS (BOLTS) TO PREVENT HARM TO A PEDESTRIAN'S HANDS, ARMS, AND CLOTHING.

⑥ REGARDLESS OF WEATHER CONDITIONS PROVIDE FIRM, STABLE, FREE-DRAINING, AND NON-SLIP TEMPORARY WALKWAY SURFACES. TEMPORARY WALKWAY SURFACES SHALL ALLOW NORMAL USAGE OF WHEELCHAIRS, WALKERS, STROLLERS, OR OTHER MOBILITY DEVICES. CONCRETE, BITUMINOUS, STEEL, RUBBER, WOOD (¾" OR THICKER), AND PLASTIC ARE ACCEPTABLE SURFACE MATERIALS FOR A TEMPORARY WALKWAY SURFACE. GRAVEL, MILLINGS, AND OTHER UNEVEN SURFACES ARE NOT ACCEPTABLE SURFACE MATERIALS.

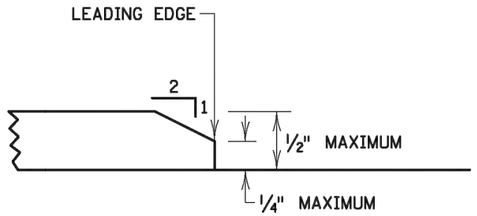
⑦ PROVIDE 32" HIGH OR GREATER LONGITUDINAL CHANNELIZING DEVICES FOR PEDESTRIANS.

⑧ AN EDGE OF THE FRAMING MAY BE REMOVED IF IT IS NOT NEEDED FOR PEDESTRIAN GUIDANCE. STABILITY OF THE DETECTABLE EDGE SHOULD BE MAINTAINED.

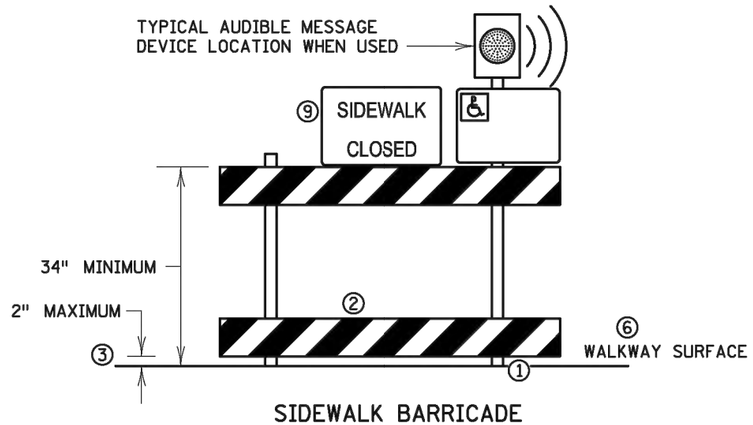
⑨ TYPICAL. SEE SIGNING PLAN FOR DETAILS.



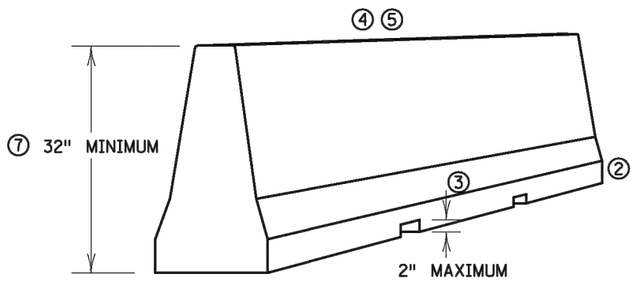
DETECTABLE EDGE FOR SIGN ON PORTABLE STAND



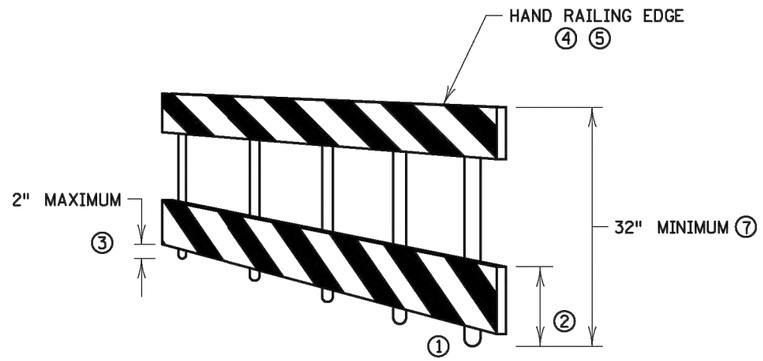
TRIP HAZARD



SIDEWALK BARRICADE



PEDESTRIAN CHANNELIZER DEVICE USING A PORTABLE CONCRETE BARRIER



PEDESTRIAN CHANNELIZER

LEAD EXPERT OFFICE	BRIAN SORENSON STATE TRAFFIC ENGINEER OFFICE OF TRAFFIC ENGINEERING		TEMPORARY PEDESTRIAN ACCESS ROUTE (TPAR) DEVICES CHANNELIZERS, SIDEWALK BARRICADES, AND PORTABLE STANDS	APPROVED: 03-18-2021 REVISED:	THOMAS STYRBICKI STATE DESIGN ENGINEER	STANDARD PLAN 5-297.813	1 OF 2
	DEPARTMENT OF TRANSPORTATION		STANDARD PLAN	STATE AID PROJ. NO. 155–210–003 C.P.ST240002		SHEET NO. 39 TOTAL SHEETS 354	

NOTES:

CONSTRUCT SLOPES AS INDICATED OR FLATTER, BUT NOT STEEPER.

TPAR SHOULD BE KEPT FREE OF TRASH, SEDIMENT, AND DEBRIS.

① CONSTRUCT CURB RAMPS AT LEAST 48" WIDE WITH A FIRM, STABLE, AND SLIP-RESISTANT SURFACE.

② PLACE PROTECTIVE EDGING WITH A 2" MINIMUM HEIGHT WHEN A CURB RAMP OR LANDING PLATFORM HAS A VERTICAL DROP OF 6" OR GREATER OR HAS A SIDE APRON SLOPE STEEPER THAN 1V:3H. CONSIDER PROTECTIVE EDGING WHEN CURB RAMPS OR LANDING PLATFORMS HAVE A VERTICAL DROP OF 3" OR MORE.

③ PLACE DETECTABLE EDGING WITH 6" MINIMUM HEIGHT AND CONTRASTING COLOR ON ALL CURB RAMP LANDINGS WHERE THE WALKWAY CHANGES DIRECTION.

④ CONSTRUCT CURB RAMPS AND LANDINGS WITH A 2% OR FLATTER CROSS SLOPE.

⑤ PROVIDE A CLEAR SPACE OF AT LEAST 48" X 48" ABOVE AND BELOW THE CURB RAMP.

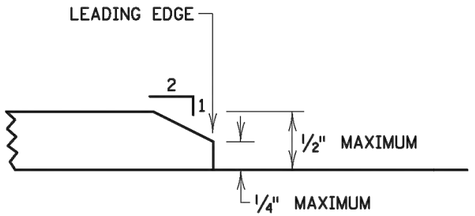
⑥ MARK THE CURB RAMP WALKWAY EDGE WITH A 2" TO 4" WIDE MARKING OF CONTRASTING COLOR. THE MARKING IS OPTIONAL WHERE COLOR-CONTRASTING EDGING IS USED.

⑦ DO NOT IMPEDE WATER FLOW IN THE GUTTER SYSTEM.

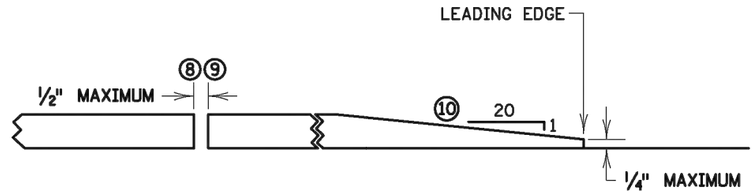
⑧ NO LATERAL JOINTS OR GAPS BETWEEN SURFACES SHALL EXCEED ½" WIDTH.

⑨ CHANGES BETWEEN SURFACE HEIGHTS SHALL NOT EXCEED ½". USE VERTICAL LATERAL EDGES UP TO ¼" HIGH, AND BEVELED AT 1V:2H FOR LATERAL EDGES BETWEEN ¼" AND ½" HEIGHT.

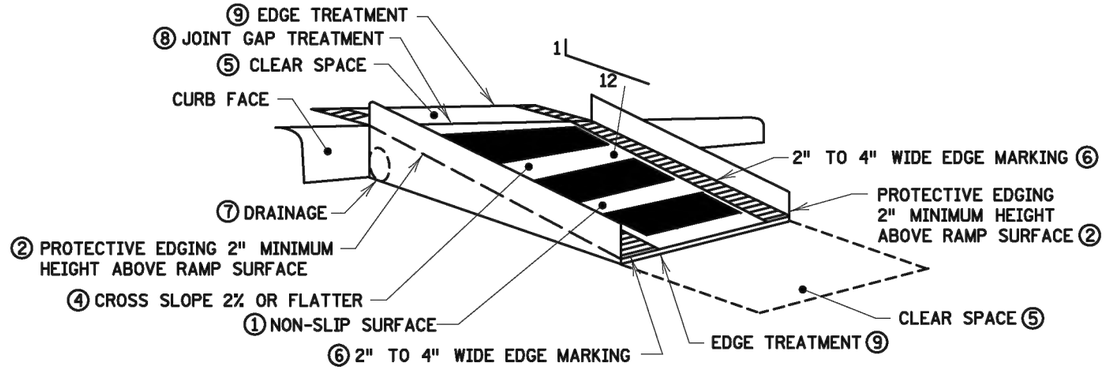
⑩ BEVEL THE EDGE OF TEMPORARY WALKWAY SURFACES ½" OR THINNER AT 1V:2H. FOR THICKER WALKWAY SURFACE BEVEL EDGE 1V:20H OR FLATTER.



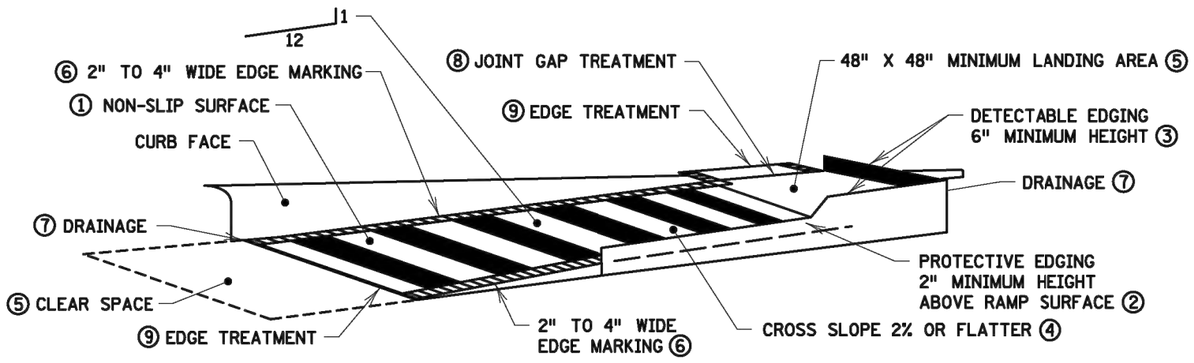
EDGE TREATMENT ⑨



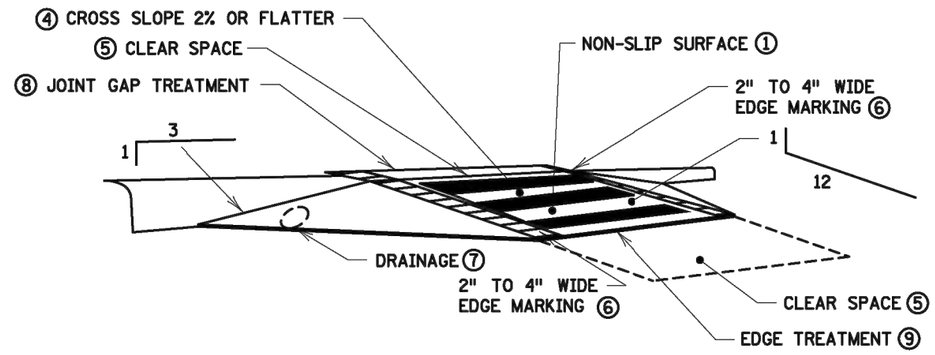
TEMPORARY WALKWAY SURFACE



TEMPORARY CURB RAMP PERPENDICULAR TO CURB
SHOWN WITH PROTECTIVE EDGE

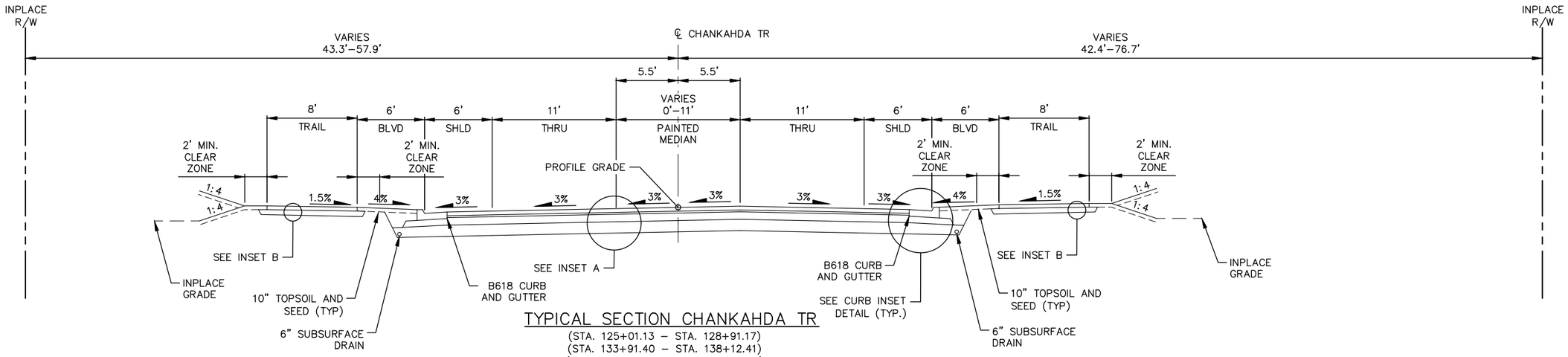


TEMPORARY CURB RAMP
PARALLEL TO CURB



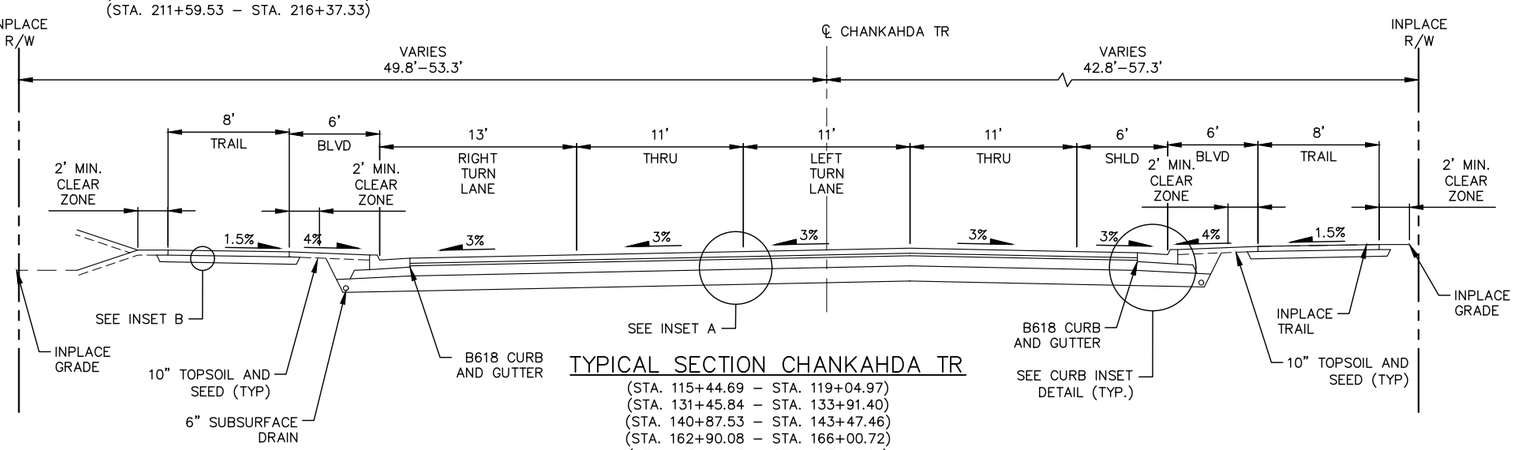
TEMPORARY CURB RAMP PERPENDICULAR TO CURB
SHOWN WITH SIDE APRON

LEAD EXPERT OFFICE: BRIAN SORENSON, STATE TRAFFIC ENGINEER, OFFICE OF TRAFFIC ENGINEERING		TEMPORARY PEDESTRIAN ACCESS ROUTE (TPAR) DEVICES TEMPORARY CURB RAMPS AND WALKWAY SURFACES	APPROVED: 03-18-2021 REVISED:	THOMAS STYRBICKI STATE DESIGN ENGINEER	STANDARD PLAN 5-297.813	2 OF 2
DEPARTMENT OF TRANSPORTATION		STANDARD PLAN	STATE AID PROJ. NO. 155–210–003 C.P.ST240002		SHEET NO. 40	TOTAL SHEETS 354



TYPICAL SECTION CHANKAHDA TR

(STA. 125+01.13 – STA. 128+91.17)
(STA. 133+91.40 – STA. 138+12.41)
(STA. 143+47.46 – STA. 147+34.50)
(STA. 156+01.67 – STA. 159+86.95)
(STA. 166+00.72 – STA. 170+26.15)
(STA. 181+28.23 – STA. 182+70.62)
(STA. 187+46.11 – STA. 193+43.16)
(STA. 199+66.56 – STA. 206+79.12)
(STA. 211+59.53 – STA. 216+37.33)



TYPICAL SECTION CHANKAHDA TR

(STA. 115+44.69 – STA. 119+04.97)
(STA. 131+45.84 – STA. 133+91.40)
(STA. 140+87.53 – STA. 143+47.46)
(STA. 162+90.08 – STA. 166+00.72)
(STA. 173+26.15 – STA. 175+19.21)
(STA. 185+22.19 – STA. 187+46.11)
(STA. 195+88.69 – STA. 198+35.95)

GENERAL NOTES:

NORMAL CROSS SLOPES ARE SHOWN (%)

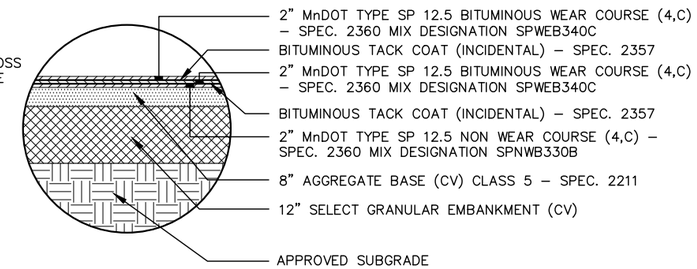
UNLESS OTHERWISE SPECIFIED, THE GRADING GRADE CROSS SLOPES SHALL BE THE SAME AS THE FINISHED SURFACE

SEE CROSS SECTIONS FOR VARIATIONS

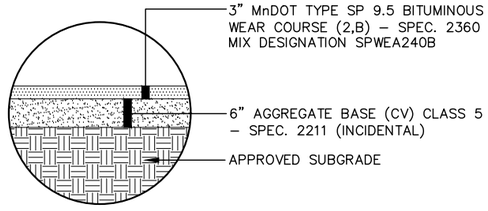
TACK COAT TO BE APPLIED BETWEEN BITUMINOUS PAVEMENT LIFTS (INCIDENTAL)

℄ INDICATES BASELINE

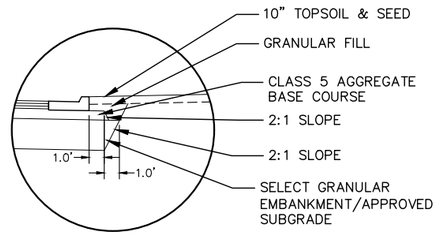
STATIONING IS BASED ON CHANKAHDA TRAIL PHASE 3 ALIGNMENT



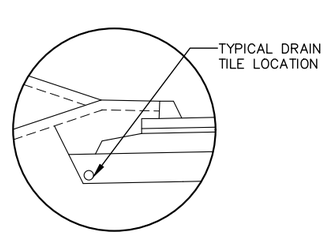
INSET A – BITUMINOUS PAVEMENT



INSET B – BITUMINOUS TRAIL



CURB INSET DETAIL



DRAIN TILE DETAIL

No.	Date	Revisions	App.

DRAWING NAME	
CHANKAHDA_PH3_TYP.dwg	
DESIGNED BY:	JWB
DRAWN BY:	RGS
CHECKED BY:	CBL
DATE:	02/07/2025
PROJECT NO.	160662010

Kimley»Horn
767 EUSTIS STREET, SUITE 100, ST, PAUL, MN 55114
PHONE: 651–645–4197
WWW.KIMLEY–HORN.COM

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

CHADD B. LARSON, PE

DATE: 02/07/2025 MN LIC. NO. 41864

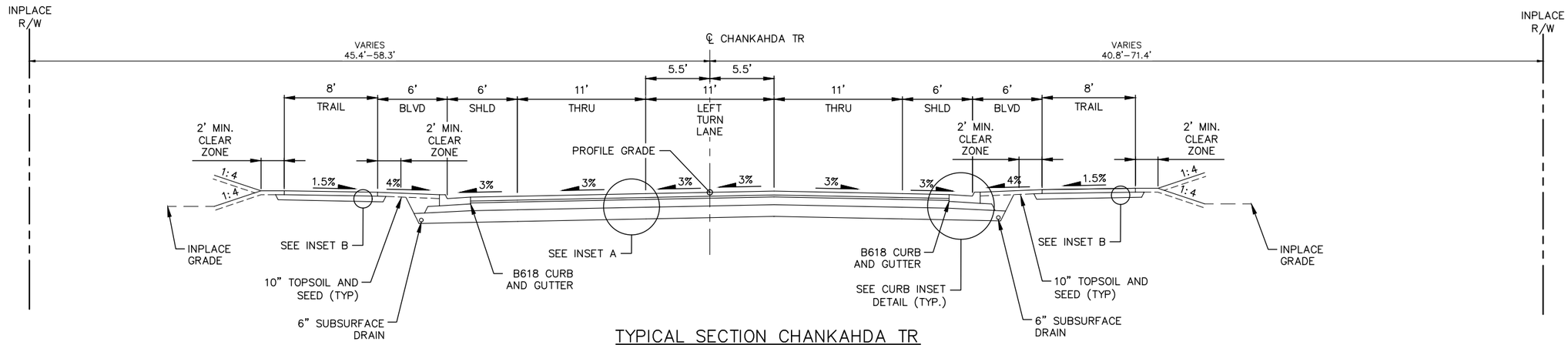
City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3

CHANKAHDA TR
TYPICAL SECTIONS

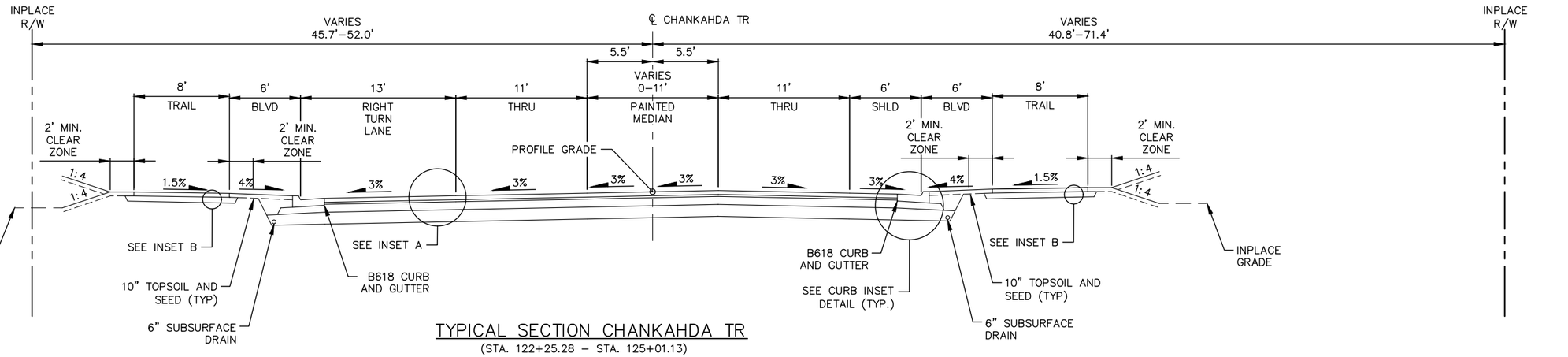
CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155–210–003
S.A.P.	

SHEET NO. 41 / 354



TYPICAL SECTION CHANKAHDA TR

(STA. 119+04.97 – STA. 122+25.28)



TYPICAL SECTION CHANKAHDA TR

(STA. 122+25.28 – STA. 125+01.13)

GENERAL NOTES:

NORMAL CROSS SLOPES ARE SHOWN (%)

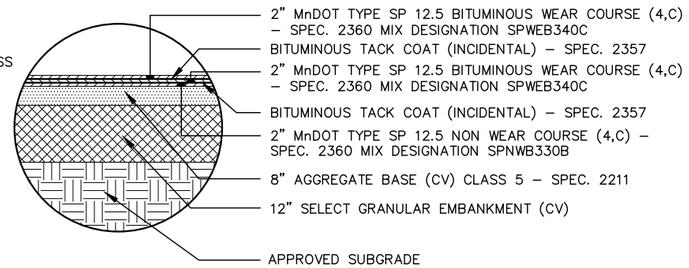
UNLESS OTHERWISE SPECIFIED, THE GRADING GRADE CROSS SLOPES SHALL BE THE SAME AS THE FINISHED SURFACE

SEE CROSS SECTIONS FOR VARIATIONS

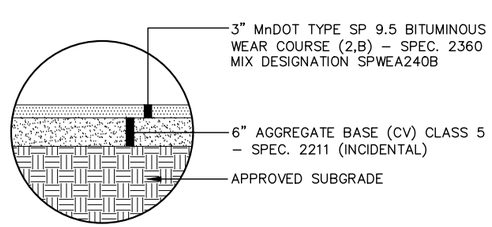
TACK COAT TO BE APPLIED BETWEEN BITUMINOUS PAVEMENT LIFTS (INCIDENTAL)

℄ INDICATES BASELINE

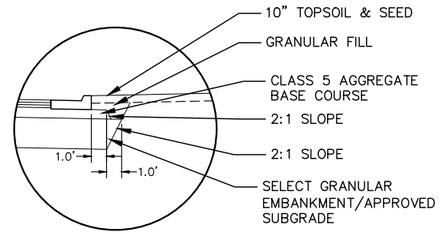
STATIONING IS BASED ON CHANKAHDA TRAIL PHASE 3 ALIGNMENT



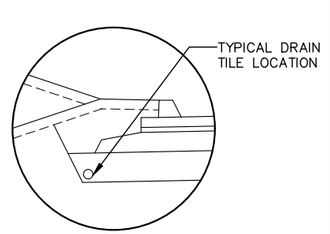
INSET A – BITUMINOUS PAVEMENT



INSET B – BITUMINOUS TRAIL



CURB INSET DETAIL



DRAIN TILE DETAIL

No.	Date	Revisions	App.

DRAWING NAME	
CHANKAHDA_PH3_TYP.dwg	
DESIGNED BY:	JWB
DRAWN BY:	RGS
CHECKED BY:	CBL
DATE:	02/07/2025
PROJECT NO.	160662010

Kimley»Horn
767 EUSTIS STREET, SUITE 100, ST, PAUL, MN 55114
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CHADD B. LARSON, PE

DATE: 02/07/2025 MN LIC. NO. 41864

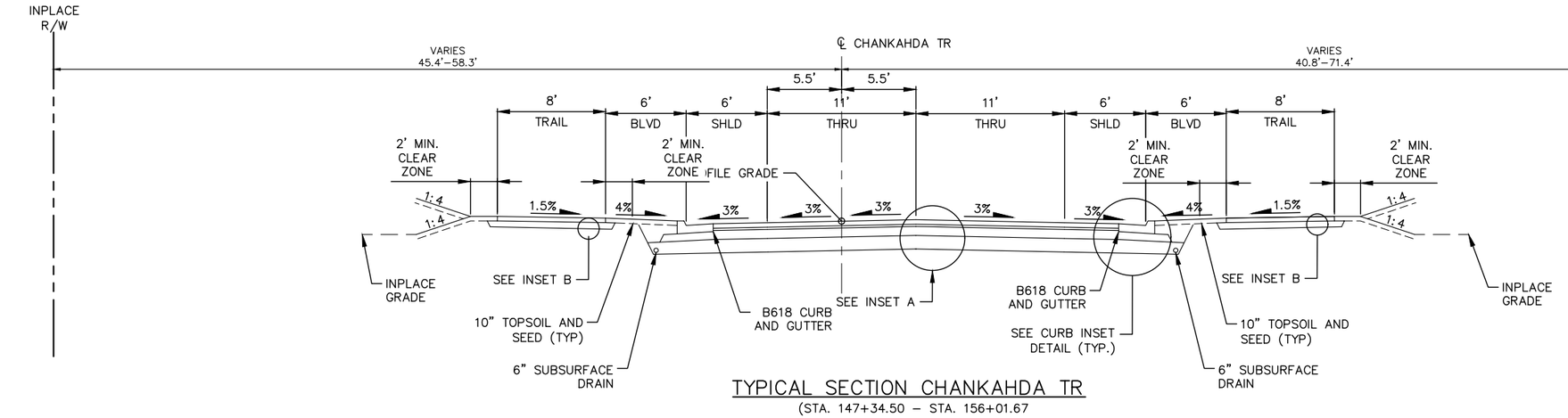
City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3

CHANKAHDA TR
TYPICAL SECTIONS

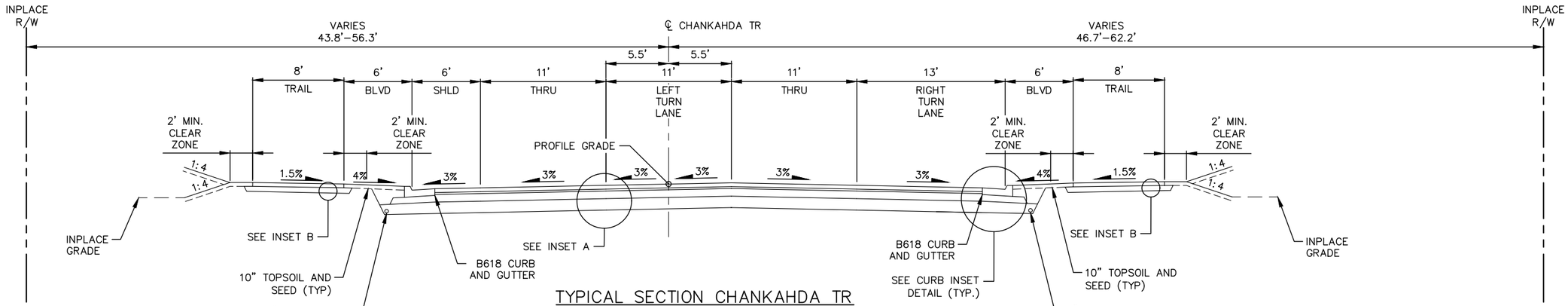
CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 42 / 354



TYPICAL SECTION CHANKAHDA TR

(STA. 147+34.50 – STA. 156+01.67



TYPICAL SECTION CHANKAHDA TR

(STA. 128+91.17 – STA. 131+45.84)
(STA. 138+12.41 – STA. 140+87.53)
(STA. 159+86.95 – STA. 162+90.08)
(STA. 170+90.87 – STA. 173+26.15)
(STA. 182+70.62 – STA. 185+22.19)
(STA. 193+43.16 – STA. 195+88.69)
(STA. 216+37.33 – STA. 218+79.22)

GENERAL NOTES:
NORMAL CROSS SLOPES ARE SHOWN (%)

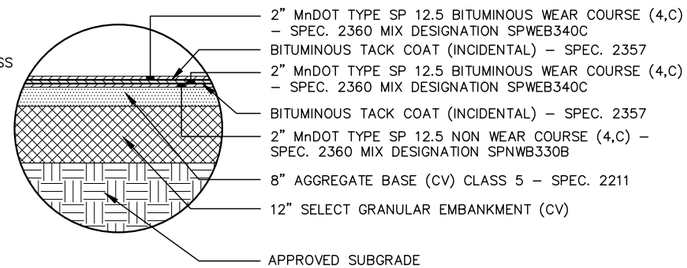
UNLESS OTHERWISE SPECIFIED, THE GRADING GRADE CROSS SLOPES SHALL BE THE SAME AS THE FINISHED SURFACE

SEE CROSS SECTIONS FOR VARIATIONS

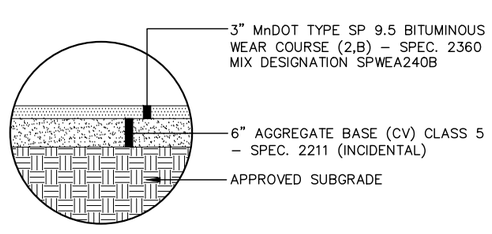
TACK COAT TO BE APPLIED BETWEEN BITUMINOUS PAVEMENT LIFTS (INCIDENTAL)

℄ INDICATES BASELINE

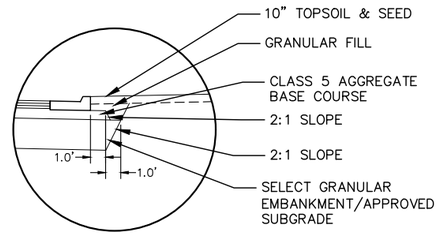
STATIONING IS BASED ON CHANKAHDA TRAIL PHASE 3 ALIGNMENT



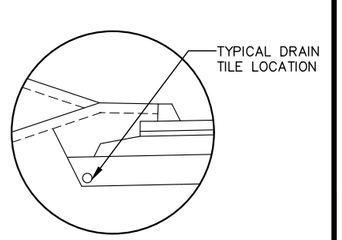
INSET A – BITUMINOUS PAVEMENT



INSET B – BITUMINOUS TRAIL



CURB INSET DETAIL



DRAIN TILE DETAIL

No.	Date	Revisions	App.

DRAWING NAME	
CHANKAHDA_PH3_TYP.dwg	
DESIGNED BY:	JWB
DRAWN BY:	RGS
CHECKED BY:	CBL
DATE:	02/07/2025
PROJECT NO.	160662010

Kimley»Horn
767 EUSTIS STREET, SUITE 100, ST, PAUL, MN 55114
PHONE: 651-645-4197
WWW.KIMLEY-HORN.COM

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CHADD B. LARSON, PE

DATE: 02/07/2025 MN LIC. NO. 41864

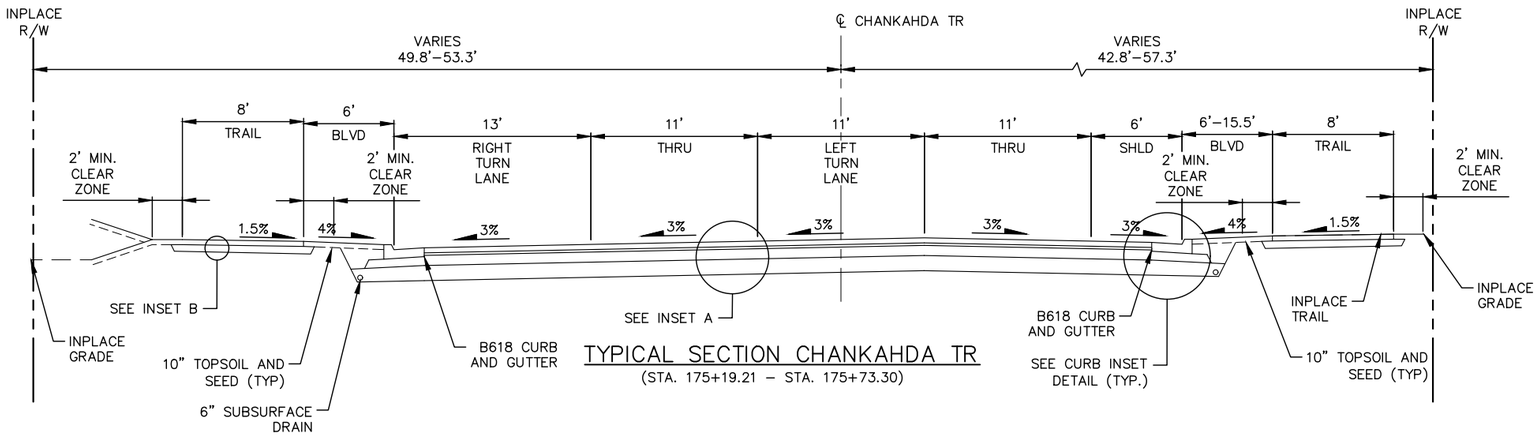
City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3

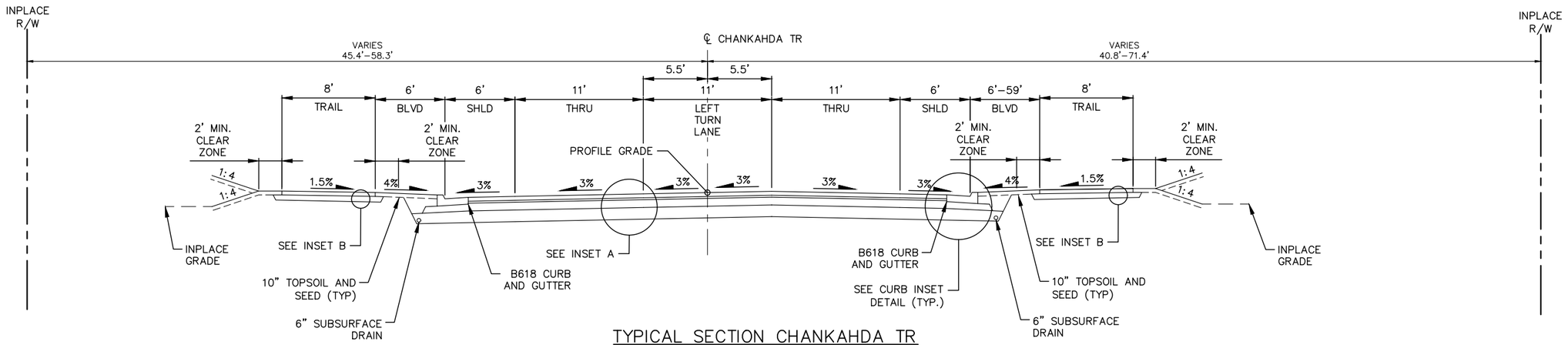
CHANKAHDA TR
TYPICAL SECTIONS

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 43 / 354



TYPICAL SECTION CHANKAHDA TR
(STA. 175+19.21 – STA. 175+73.30)



TYPICAL SECTION CHANKAHDA TR
(STA. 175+73.30 – STA. 181+28.23)

GENERAL NOTES:

NORMAL CROSS SLOPES ARE SHOWN (%)

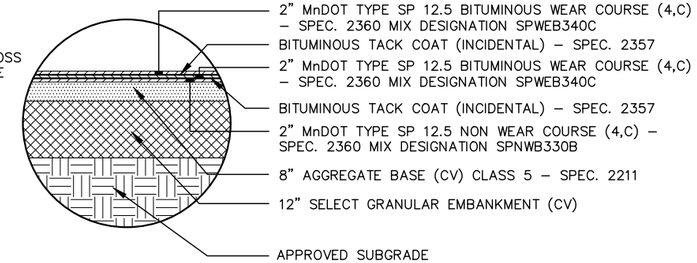
UNLESS OTHERWISE SPECIFIED, THE GRADING GRADE CROSS SLOPES SHALL BE THE SAME AS THE FINISHED SURFACE

SEE CROSS SECTIONS FOR VARIATIONS

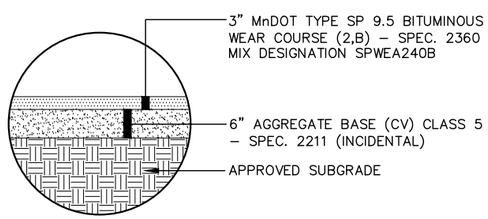
TACK COAT TO BE APPLIED BETWEEN BITUMINOUS PAVEMENT LIFTS (INCIDENTAL)

℄ INDICATES BASELINE

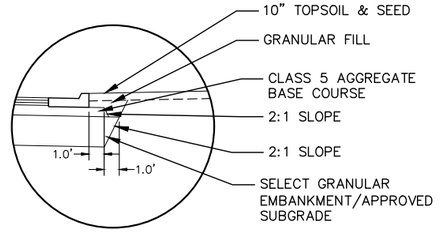
STATIONING IS BASED ON CHANKAHDA TRAIL PHASE 3 ALIGNMENT



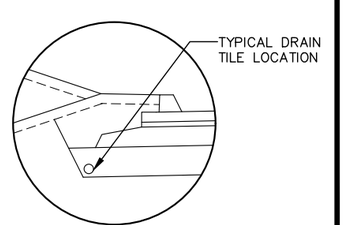
INSET A – BITUMINOUS PAVEMENT



INSET B – BITUMINOUS TRAIL



CURB INSET DETAIL



DRAIN TILE DETAIL

No.	Date	Revisions	App.

DRAWING NAME	
CHANKAHDA_PH3_TYP.dwg	
DESIGNED BY:	JWB
DRAWN BY:	RGS
CHECKED BY:	CBL
DATE:	02/07/2025
PROJECT NO.	160662010

Kimley»Horn
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CHADD B. LARSON, PE

DATE: 02/07/2025 MN LIC. NO. 41864

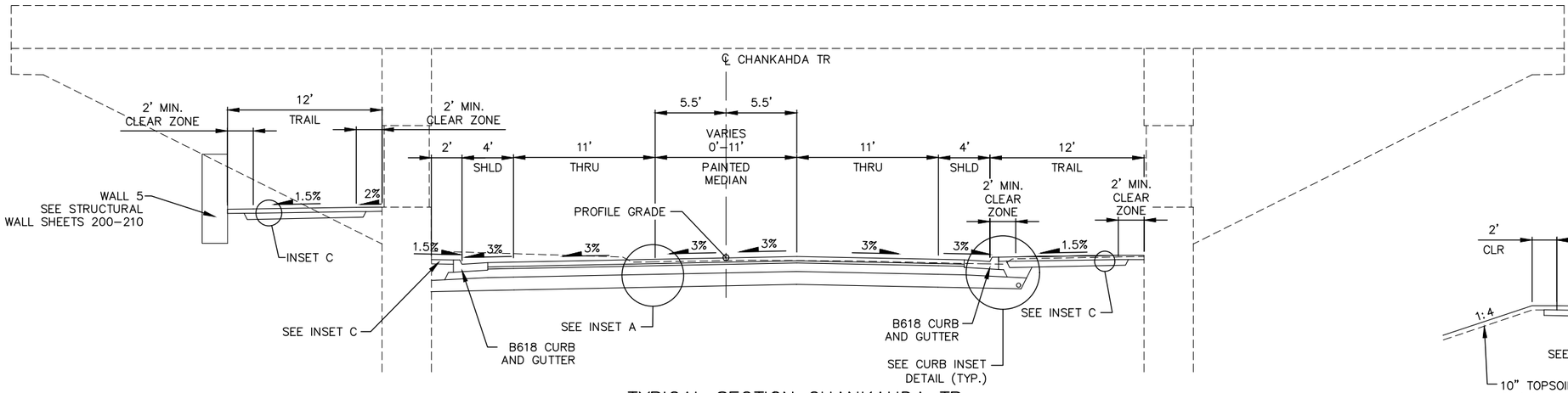
City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3

CHANKAHDA TR
TYPICAL SECTIONS

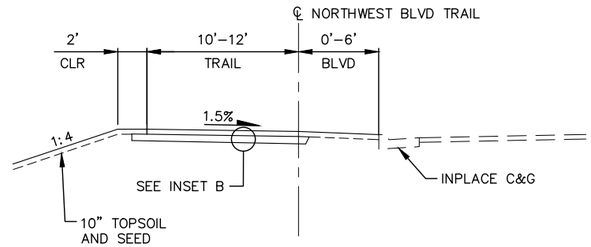
CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 44 / 354



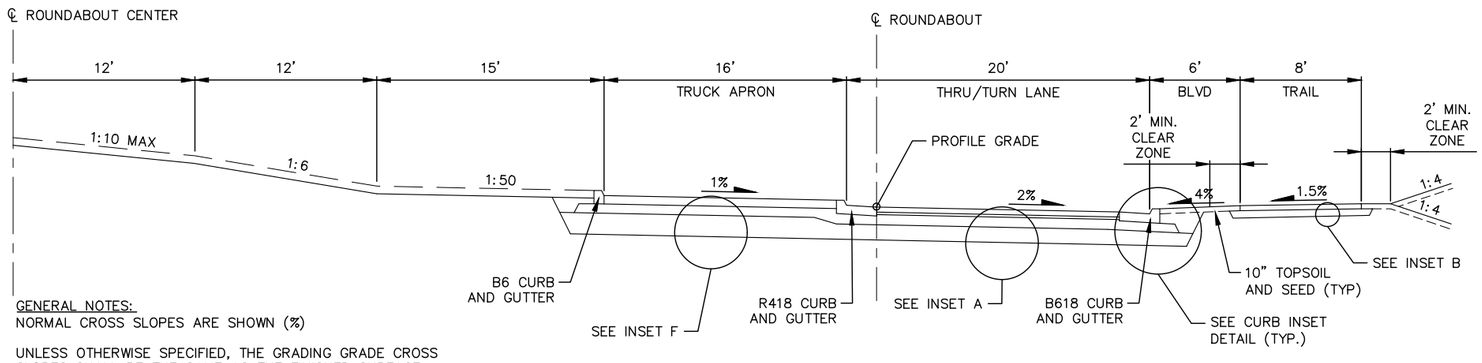
TYPICAL SECTION CHANKAHDA TR

(STA. 198+35.95 – STA. 199+66.56)



TYPICAL SECTION NORTHWEST BLVD TRAIL

(STA. 0+00 – STA. 6+13.90)



TYPICAL SECTION RAB CENTER

(STA. 208+28.91 – STA. 210+11.35)

GENERAL NOTES:

NORMAL CROSS SLOPES ARE SHOWN (%)

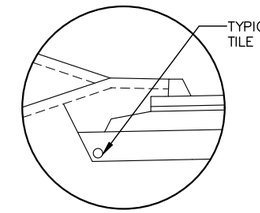
UNLESS OTHERWISE SPECIFIED, THE GRADING GRADE CROSS SLOPES SHALL BE THE SAME AS THE FINISHED SURFACE

SEE CROSS SECTIONS FOR VARIATIONS

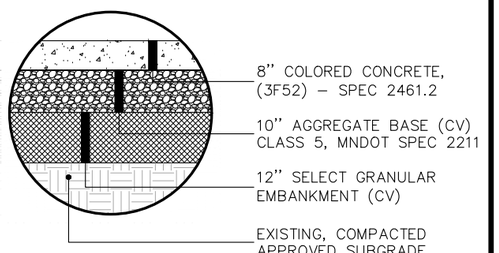
TACK COAT TO BE APPLIED BETWEEN BITUMINOUS PAVEMENT LIFTS (INCIDENTAL)

℄ INDICATES BASELINE

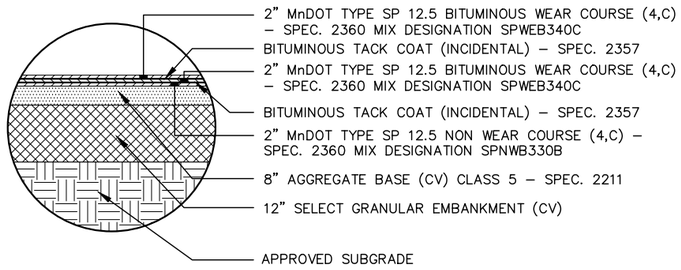
STATIONING IS BASED ON CHANKAHDA TRAIL PHASE 3 ALIGNMENT



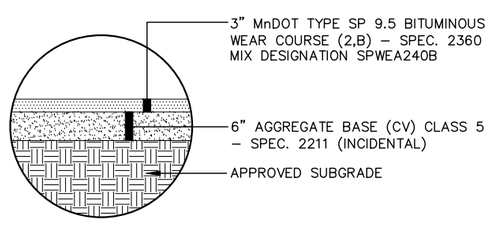
DRAIN TILE DETAIL



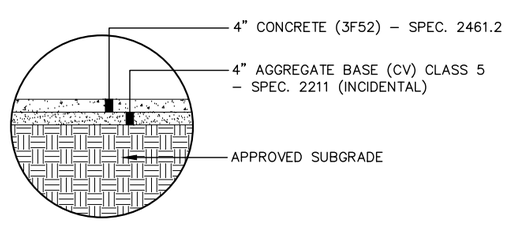
INSET F – 8" COLORED CONCRETE



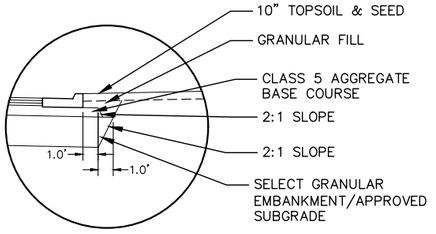
INSET A – BITUMINOUS PAVEMENT



INSET B – BITUMINOUS TRAIL



INSET C – 4" CONCRETE WALK



CURB INSET DETAIL

No.	Date	Revisions	App.

DRAWING NAME	
CHANKAHDA_PH3_TYP.dwg	
DESIGNED BY:	JWB
DRAWN BY:	RGS
CHECKED BY:	CBL
DATE:	02/07/2025
PROJECT NO.	160662010

Kimley»Horn
767 EUSTIS STREET, SUITE 100, ST, PAUL, MN 55114
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CHADD B. LARSON, PE

DATE: 02/07/2025 MN LIC. NO. 41864

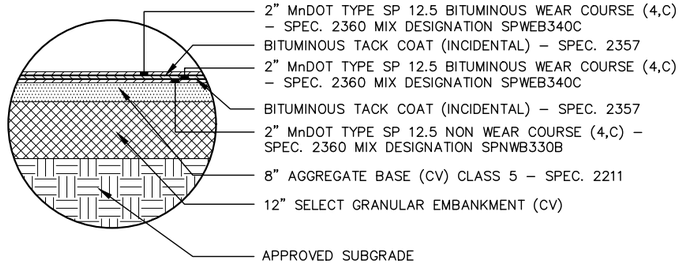
City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3

CHANKAHDA TR
TYPICAL SECTIONS

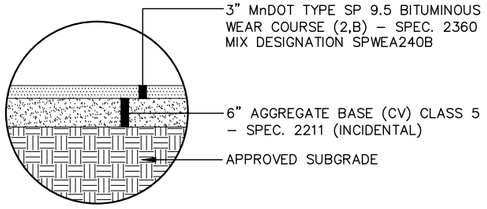
CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155–210–003
S.A.P.	

SHEET NO. 45 / 354

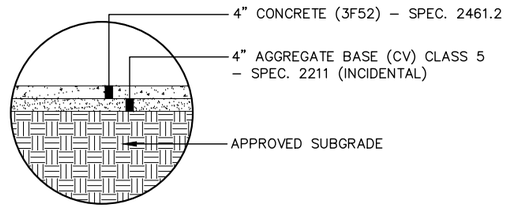


INSET A – BITUMINOUS PAVEMENT

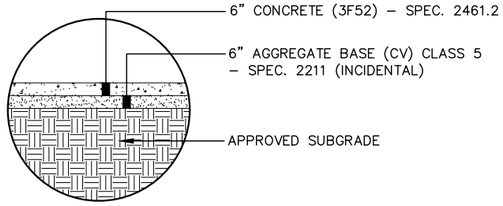
CHANKAHDA TR
CHESHIRE PKWY



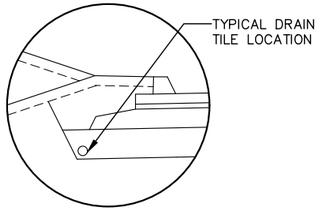
INSET B – BITUMINOUS TRAIL



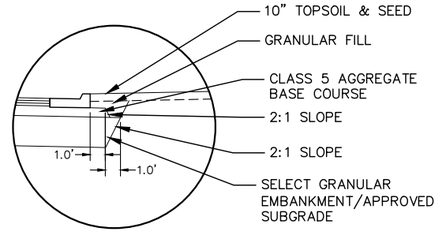
INSET C – 4" CONCRETE WALK



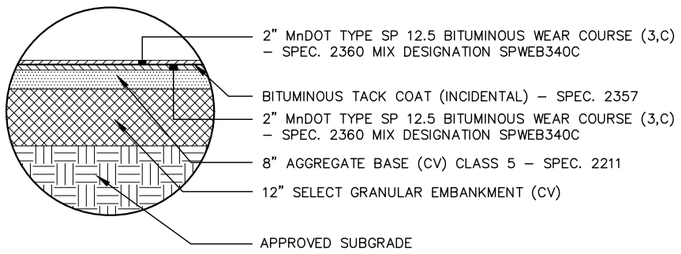
INSET D – 6" CONCRETE WALK



DRAIN TILE DETAIL

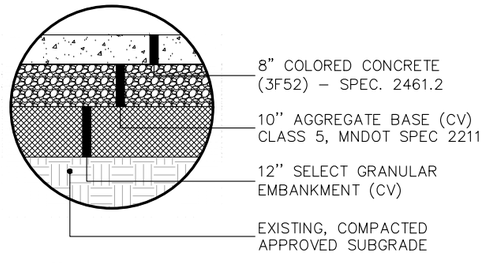


CURB INSET DETAIL

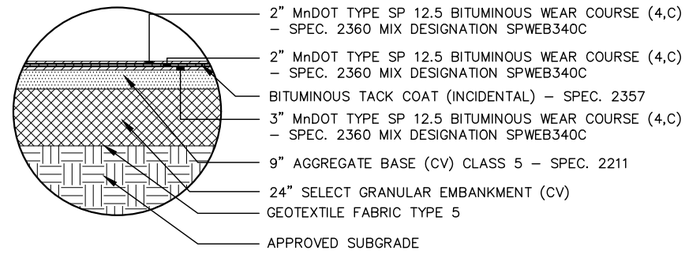


INSET E – BITUMINOUS PAVEMENT

LAKE CAMELOT PARK DRIVEWAY
SHENANDOAH LN
QUANTICO LN
NIAGARA LN
FERNBROOK LN
DALLAS LN
ANNAPOLIS LN
YUCA LN
TEAKWOOD LN

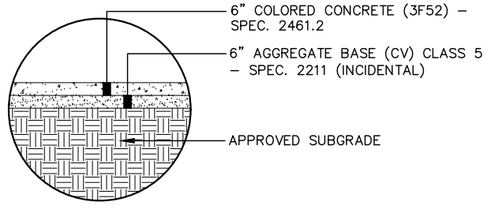


INSET F – 8" COLORED CONCRETE



INSET G – BITUMINOUS PAVEMENT

CSAH 61 (NORTHWEST BLVD)



INSET H – 6" COLORED CONCRETE

No.	Date	Revisions	App.

DRAWING NAME	CHANKAHDA_PH3_TYP.dwg
DESIGNED BY:	JWB
DRAWN BY:	RGS
CHECKED BY:	CBL
DATE:	02/07/2025
PROJECT NO.	160662010

Kimley»Horn
767 EUSTIS STREET, SUITE 100, ST, PAUL, MN 55114
PHONE: 651-645-4197
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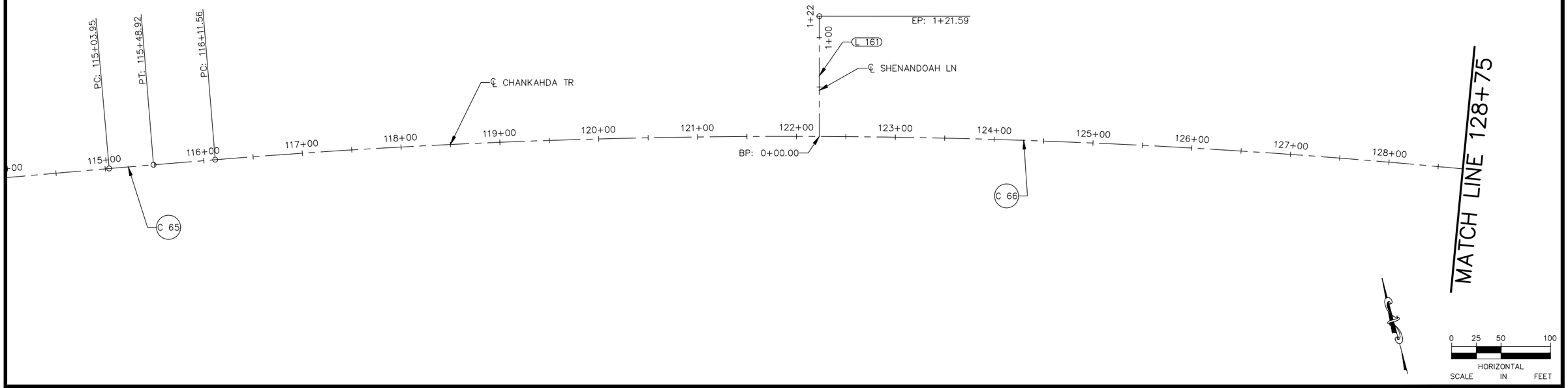
CHADD B. LARSON, PE
DATE: 02/07/2025 MN LIC. NO. 41864

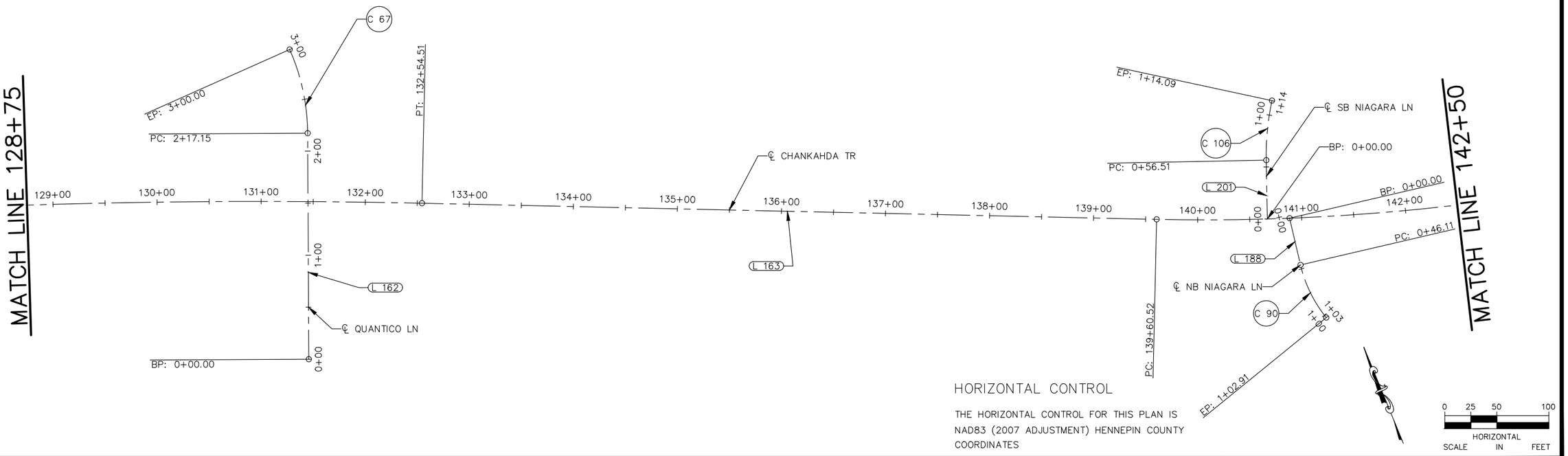
City of Plymouth
CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3

CHANKAHDA TR
TYPICAL SECTIONS INSETS

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 46 / 354





HORIZONTAL CONTROL

THE HORIZONTAL CONTROL FOR THIS PLAN IS NAD83 (2007 ADJUSTMENT) HENNEPIN COUNTY COORDINATES

No.	Date	Revisions	App.

DRAWING NAME	CHANKAHDA_PH3_ALGN-TAB.dwg
DESIGNED BY:	JWB
DRAWN BY:	RGS
CHECKED BY:	CBL
DATE:	02/07/2025
PROJECT NO.	160662010

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CHADD B. LARSON, PE

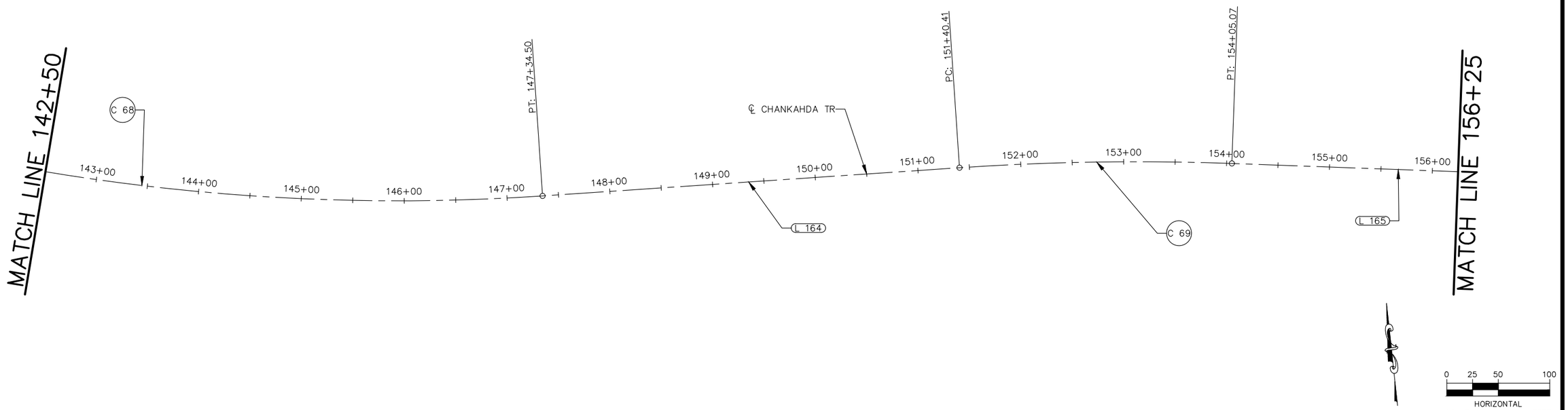
DATE: 02/07/2025 MN LIC. NO. 41864

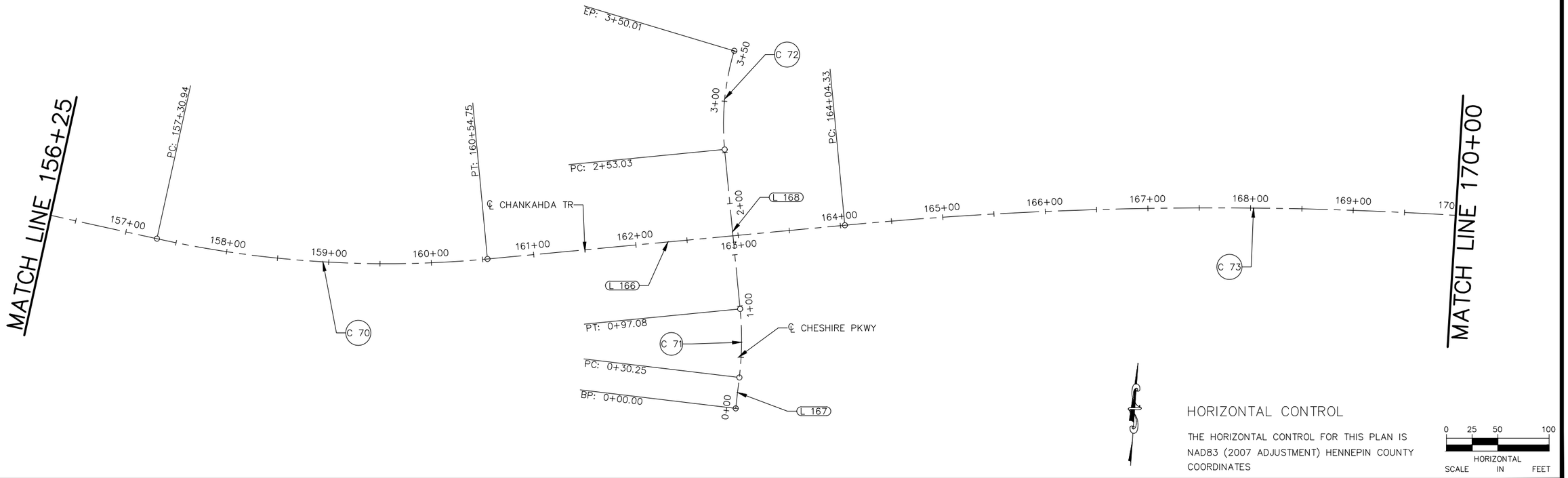
City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
ALIGNMENT PLAN
STA. 115+44.69 TO STA. 142+50

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 47 / 354





HORIZONTAL CONTROL

THE HORIZONTAL CONTROL FOR THIS PLAN IS NAD83 (2007 ADJUSTMENT) HENNEPIN COUNTY COORDINATES

0 25 50 100
HORIZONTAL
SCALE IN FEET

No.	Date	Revisions	App.

DRAWING NAME	CHANKAHDA_PH3_ALGN-TAB.dwg
DESIGNED BY:	JWB
DRAWN BY:	RGS
CHECKED BY:	CBL
DATE:	02/07/2025
PROJECT NO.	160662010

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CHADD B. LARSON, PE

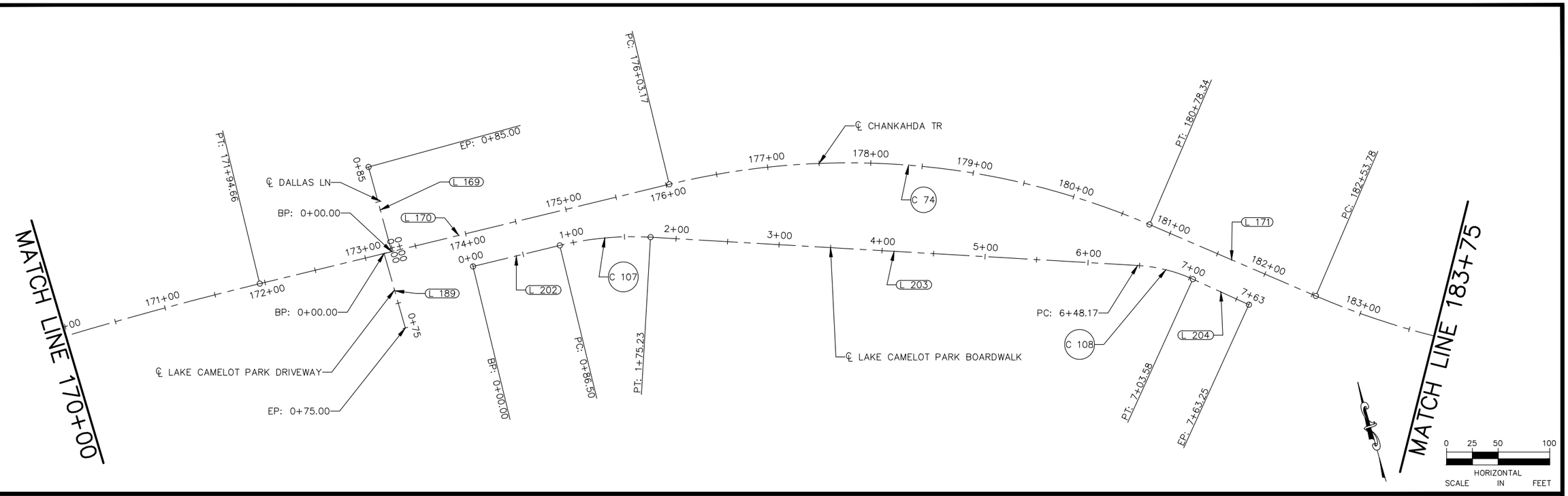
DATE: 02/07/2025 MN LIC. NO. 41864

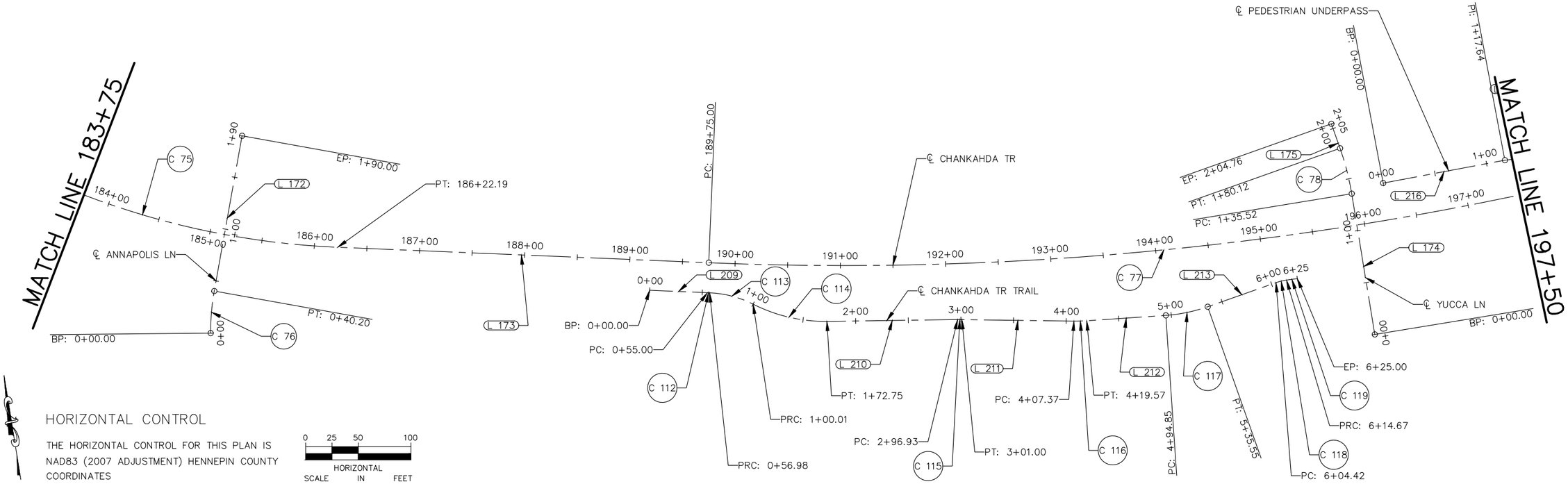
City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
ALIGNMENT PLAN
STA. 142+50 TO STA. 170+00

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 48 / 354





No.	Date	Revisions	App.

DRAWING NAME	CHANKAHDA_PH3_ALGN-TAB.dwg
DESIGNED BY:	JWB
DRAWN BY:	RGS
CHECKED BY:	CBL
DATE:	02/07/2025
PROJECT NO.	160662010

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CHADD B. LARSON, PE

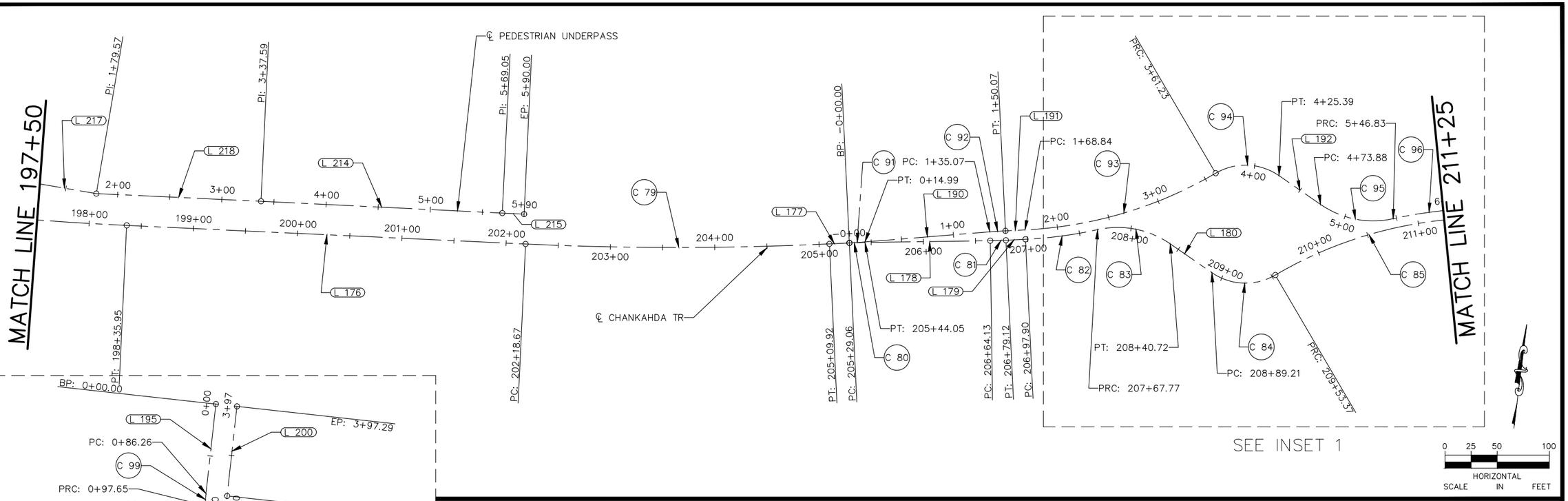
DATE: 02/07/2025 MN LIC. NO. 41864

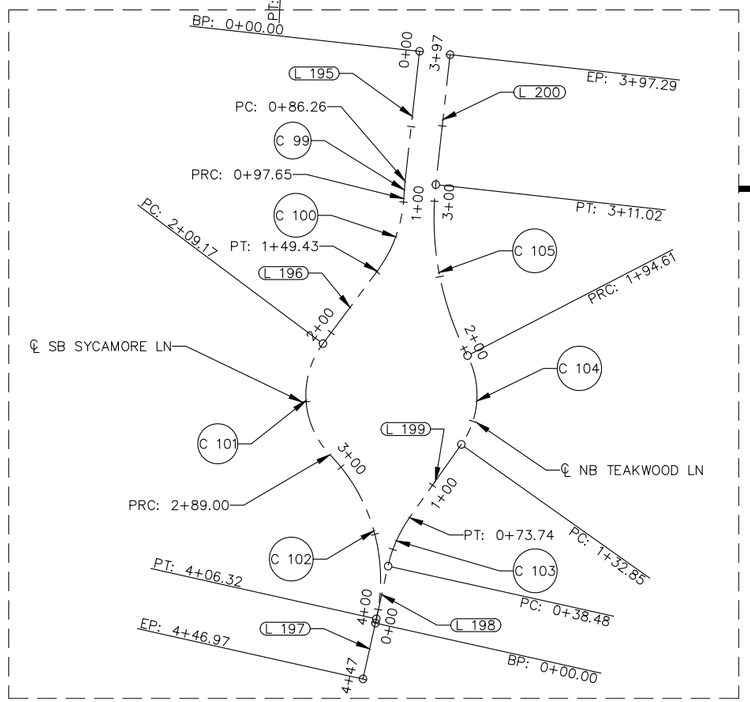
City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
ALIGNMENT PLAN
STA. 170+00 TO STA. 197+50

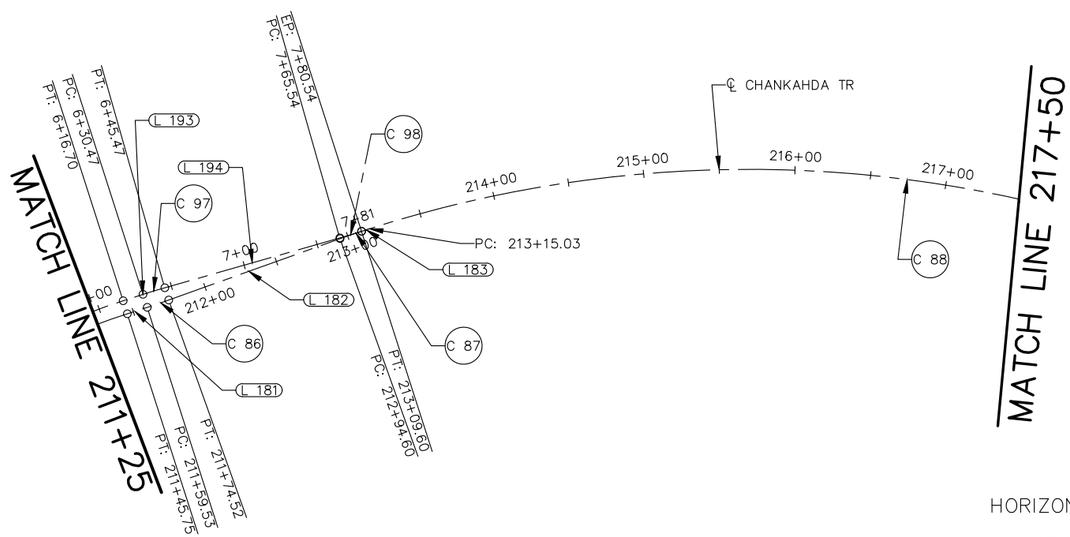
CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 49 / 354





INSET 1
CHANKAHDA TRL
STA. 208+59.53 – STA. 209+84.58



HORIZONTAL CONTROL

THE HORIZONTAL CONTROL FOR THIS PLAN IS NAD83 (2007 ADJUSTMENT) HENNEPIN COUNTY COORDINATES

0 25 50 100
HORIZONTAL SCALE IN FEET

No.	Date	Revisions	App.

DRAWING NAME	CHANKAHDA_PH3_ALGN-TAB.dwg
DESIGNED BY:	JWB
DRAWN BY:	RGS
CHECKED BY:	CBL
DATE:	02/07/2025
PROJECT NO.	160662010

Kimley»Horn
767 EUSTIS STREET, SUITE 100, ST, PAUL, MN 55114
PHONE: 651-645-4197
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I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

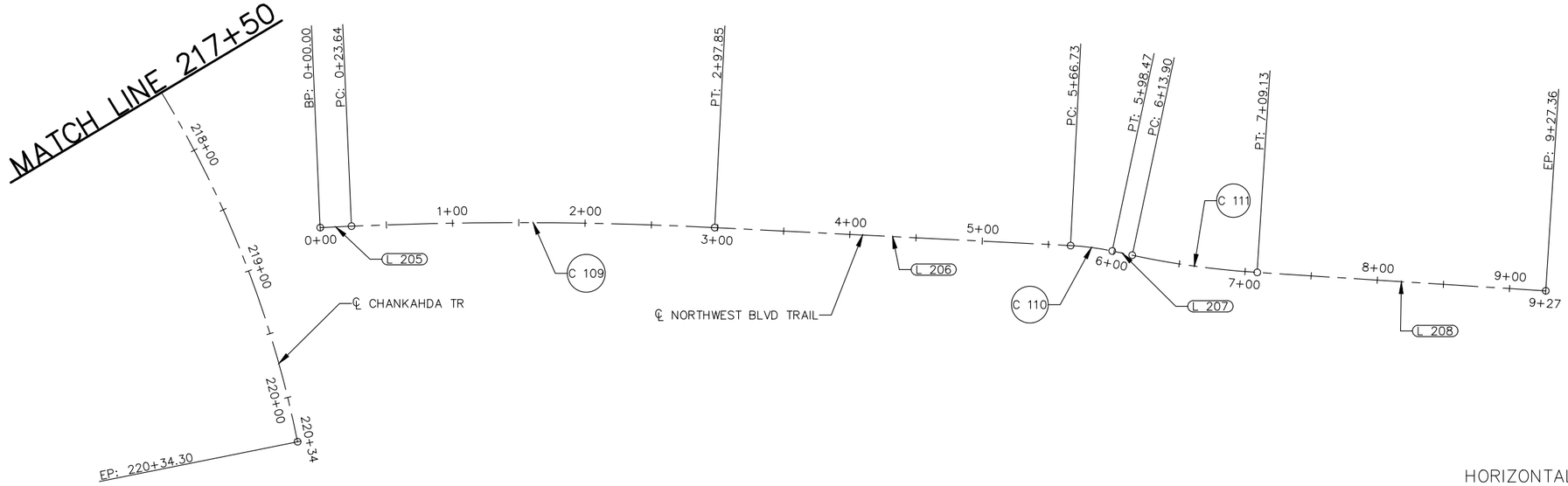
CHADD B. LARSON, PE
DATE: 02/07/2025 MN LIC. NO. 41864

City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
ALIGNMENT PLAN
STA. 197+50 TO STA. 217+50

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 50 / 354



HORIZONTAL CONTROL

THE HORIZONTAL CONTROL FOR THIS PLAN IS NAD83 (2007 ADJUSTMENT) HENNEPIN COUNTY COORDINATES

0 25 50 100
HORIZONTAL SCALE IN FEET

No.	Date	Revisions	App.

DRAWING NAME	CHANKAHDA_PH3_ALGN-TAB.dwg
DESIGNED BY:	JWB
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DATE:	02/07/2025
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CHADD B. LARSON, PE

DATE: 02/07/2025 MN LIC. NO. 41864

City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
ALIGNMENT PLAN
STA. 217+50 TO STA. 220+24.50

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 51 / 354

ALIGNMENT DATA
CHANKAHDA TR

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
C 65	115+03.95	115+48.92	115+26.44		0°20'14"	0°45'00.15"	7639.00	22.48	44.97	199627.91	474610.08	199620.27	474654.39	99°36'27" 99°56'41"
C 66	116+11.56	132+54.51	124+36.72		13°15'30"	0°48'25.14"	7100.00	825.16	1642.95	199609.46	474716.09	199141.85	476287.27	99°56'41" 113°12'11"
L 163	132+54.51	139+60.52							706.01	199141.85	476287.27	198863.68	476936.17	113°12'11"
C 68	139+60.52	147+34.50	143+52.02		21°17'22"	2°45'02.30"	2083.00	391.50	773.98	198863.68	476936.17	198696.36	477687.29	113°12'11" 91°54'49"
L 164	147+34.50	151+40.41							405.91	198696.36	477687.29	198682.81	478092.98	91°54'49"
C 69	151+40.41	154+05.07	152+72.86		5°57'22"	2°15'01.52"	2546.00	132.45	264.66	198682.81	478092.98	198660.25	478356.56	91°54'49" 97°52'11"
L 165	154+05.07	157+30.94							325.87	198660.25	478356.56	198615.63	478679.36	97°52'11"
C 70	157+30.94	160+54.75	158+94.16		17°48'18"	5°29'55.09"	1042.00	163.22	323.81	198615.63	478679.36	198621.44	479001.81	97°52'11" 80°03'53"
L 166	160+54.75	164+04.33							349.57	198621.44	479001.81	198681.76	479346.15	80°03'53"
C 73	164+04.33	171+94.66	168+00.91		11°51'15"	1°29'59.60"	3820.00	396.58	790.34	198681.76	479346.15	198736.90	480133.14	80°03'53" 91°55'08"
L 170	171+94.66	176+03.17							408.51	198736.90	480133.14	198723.22	480541.42	91°55'08"
C 74	176+03.17	180+78.34	178+49.30		36°50'26"	7°45'11.34"	739.00	246.12	475.17	198723.22	480541.42	198560.90	480979.33	91°55'08" 128°45'34"
L 171	180+78.34	182+53.78							175.44	198560.90	480979.33	198451.06	481116.14	128°45'34"
C 75	182+53.78	186+22.19	184+41.64		27°37'43"	7°29'58.01"	764.00	187.86	368.41	198451.06	481116.14	198297.19	481446.95	128°45'34" 101°07'51"
L 173	186+22.19	189+75.00							352.81	198297.19	481446.95	198229.08	481793.12	101°07'51"
C 77	189+75.00	198+35.95	194+08.26		15°54'46"	1°50'53.70"	3100.00	433.27	860.96	198229.08	481793.12	198181.55	482649.99	101°07'51" 85°13'06"
L 176	198+35.95	202+18.67							382.72	198181.55	482649.99	198213.45	483031.38	85°13'06"
C 79	202+18.67	205+09.92	203+64.40		5°22'59"	1°50'53.70"	3100.00	145.73	291.24	198213.45	483031.38	198251.32	483320.05	85°13'06" 79°50'07"
L 177	205+09.92	205+29.06							19.14	198251.32	483320.05	198254.70	483338.88	79°50'07"
C 80	205+29.06	205+44.05	205+36.55		1°54'33"	12°43'56.62"	450.00	7.50	14.99	198254.70	483338.88	198257.10	483353.69	79°50'07" 81°44'40"

No.	Date	Revisions	App.

DRAWING NAME: CHANKAHDA_PH3_ALGN-TAB.dwg
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DRAWN BY: RGS
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DATE: 02/07/2025
PROJECT NO. 160662010

Kimley»Horn
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CHADD B. LARSON, PE
DATE: 02/07/2025 MN LIC. NO. 41864

City of Plymouth
CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3

CHANKAHDA TR
ALIGNMENT TABULATION

CITY PROJECT ST240002
COUNTY PROJECT
S.A.P. 155-210-003
S.A.P.

SHEET NO. 52
354

ALIGNMENT DATA
CHANKAHDA TR

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
L 178	205+44.05	206+64.13							120.08	198257.10	483353.69	198274.34	483472.52	81°44'40"
C 81	206+64.13	206+79.12	206+71.63		1°54'33"	12°43'56.62"	450.00	7.50	14.99	198274.34	483472.52	198276.74	483487.32	81°44'40" 79°50'07"
L 179	206+79.12	206+97.90							18.78	198276.74	483487.32	198280.05	483505.80	79°50'07"
C 82	206+97.90	207+67.77	207+32.92		9°49'25"	14°03'37.13"	407.50	35.02	69.87	198280.05	483505.80	198298.20	483573.18	79°50'07" 70°00'42"
C 83	207+67.77	208+40.72	208+06.46		47°13'42"	64°44'27.58"	88.50	38.69	72.95	198298.20	483573.18	198293.72	483643.94	70°00'42" 117°14'24"
L 180	208+40.72	208+89.21							48.49	198293.72	483643.94	198271.52	483687.06	117°14'24"
C 84	208+89.21	209+53.37	209+25.25		65°03'54"	101°24'30.45"	56.50	36.04	64.16	198271.52	483687.06	198277.13	483747.57	117°14'24" 52°10'30"
C 85	209+53.37	211+45.75	210+51.47		27°39'38"	14°22'40.30"	398.50	98.10	192.38	198277.13	483747.57	198354.60	483921.62	52°10'30" 79°50'07"
L 181	211+45.75	211+59.53							13.78	198354.60	483921.62	198357.04	483935.18	79°50'07"
C 86	211+59.53	211+74.52	211+67.03		1°54'33"	12°43'56.62"	450.00	7.50	14.99	198357.04	483935.18	198359.93	483949.89	79°50'07" 77°55'34"
L 182	211+74.52	212+94.60							120.08	198359.93	483949.89	198385.04	484067.31	77°55'34"
C 87	212+94.60	213+09.60	213+02.10		1°54'33"	12°43'56.62"	450.00	7.50	14.99	198385.04	484067.31	198387.94	484082.03	77°55'34" 79°50'07"
L 183	213+09.60	213+15.03							5.44	198387.94	484082.03	198388.90	484087.38	79°50'07"
C 88	213+15.03	220+34.30	216+99.71		50°19'06"	6°59'44.96"	819.00	384.68	719.26	198388.90	484087.38	198208.73	484760.04	79°50'07" 130°09'14"

ALIGNMENT DATA
SHENANDOAH LN

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
L 161	0+00.00	1+21.59							121.59	199478.04	475313.17	199595.69	475343.90	14°38'20"

ALIGNMENT DATA
QUANTICO LN

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
L 162	0+00.00	2+17.15							217.15	199043.45	476130.36	199245.26	476210.53	21°39'54"
C 67	2+17.15	3+00.00	2+59.18		23°44'05"	28°38'52.40"	200.00	42.03	82.85	199245.26	476210.53	199326.32	476224.53	21°39'54" 357°55'49"

ALIGNMENT DATA
NB NIAGARA LN

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
L 188	0+00.00	0+46.11							46.11	198816.96	477055.12	198771.40	477048.04	188°50'08"
C 90	0+46.11	1+02.91	0+75.01		26°02'04"	45°50'11.84"	125.00	28.90	56.80	198771.40	477048.04	198715.24	477052.14	188°50'08" 162°48'04"

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PROJECT NO.	160662010

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CHADD B. LARSON, PE

DATE: 02/07/2025 MN LIC. NO. 41864

City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3

CHANKAHDA TR
ALIGNMENT TABULATION

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

ALIGNMENT DATA
SB NIAGARA LN

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
L 201	0+00.00	0+56.51							56.51	198824.27	477035.02	198877.08	477055.13	20°51'03"
C 106	0+56.51	1+14.09	0+85.43		13°15'49"	23°02'06.54"	248.73	28.92	57.58	198877.08	477055.13	198928.05	477081.65	20°51'03" 34°06'51"

ALIGNMENT DATA
CHESHIRE PKWY

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
L 167	0+00.00	0+30.25							30.25	198495.69	479254.29	198525.92	479255.48	2°15'44"
C 71	0+30.25	0+97.08	0+63.79		12°21'02"	18°28'57.03"	310.00	33.54	66.82	198525.92	479255.48	198592.45	479250.93	2°15'44" 349°54'42"
L 168	0+97.08	2+53.03							155.95	198592.45	479250.93	198746.00	479223.61	349°54'42"
C 72	2+53.03	3+50.01	3+02.14		22°13'35"	22°55'05.92"	250.00	49.11	96.98	198746.00	479223.61	198842.36	479225.33	349°54'42" 12°08'17"

ALIGNMENT DATA
LAKE CAMELOT PARK DRIVEWAY

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
L 189	0+00.00	0+75.00							75.00	198732.75	480257.16	198657.75	480257.60	179°39'38"

ALIGNMENT DATA
DALLAS LN

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
L 169	0+00.00	0+85.00							85.00	198732.49	480264.70	198817.49	480265.08	0°15'29"

ALIGNMENT DATA
LAKE CAMELOT PARK BOARDWALK

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
L 202	0+00.00	0+86.50							86.50	198697.56	480336.75	198694.66	480423.21	91°55'08"
C 107	0+86.50	1+75.23	1+31.20		16°56'45"	19°05'54.94"	300.00	44.69	88.73	198694.66	480423.21	198678.72	480510.16	91°55'08" 108°51'53"
L 203	1+75.23	6+48.17							472.93	198678.72	480510.16	198525.80	480957.69	108°51'53"
C 108	6+48.17	7+03.58	6+76.19		21°10'04"	38°11'49.87"	150.00	28.03	55.42	198525.80	480957.69	198498.71	481005.68	108°51'53" 130°01'57"
L 204	7+03.58	7+63.25							59.67	198498.71	481005.68	198460.33	481051.37	130°01'57"

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City of Plymouth
CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3

CHANKAHDA TR
ALIGNMENT TABULATION

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

ALIGNMENT DATA
ANNAPOLIS LN

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
C 76	0+00.00	0+40.20	0+20.16		10°42'51"	26°38'57.12"	215.00	20.16	40.20	198234.90	481315.32	198273.93	481324.74	8°12'48" 18°55'39"
L 172	0+40.20	1+90.00							149.80	198273.93	481324.74	198415.62	481373.33	18°55'39"

ALIGNMENT DATA
YUCCA LN

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
L 174	0+00.00	1+35.52							135.52	198065.50	482408.04	198201.02	482406.71	359°26'11"
C 78	1+35.52	1+80.12	1+57.88		10°13'16"	22°55'05.92"	250.00	22.36	44.60	198201.02	482406.71	198245.34	482402.31	359°26'11" 349°12'56"
L 175	1+80.12	2+04.76							24.63	198245.34	482402.31	198269.54	482397.70	349°12'56"

ALIGNMENT DATA
WB CHANKAHDA TR

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
C 91	−0+00.00	0+14.99	0+07.50		1°54'33"	12°43'56.62"	450.00	7.50	14.99	198254.70	483338.88	198257.59	483353.60	79°50'07" 77°55'34"
L 190	0+14.99	1+35.07							120.08	198257.59	483353.60	198282.71	483471.02	77°55'34"
C 92	1+35.07	1+50.07	1+42.57		1°54'33"	12°43'56.62"	450.00	7.50	14.99	198282.71	483471.02	198285.60	483485.73	77°55'34" 79°50'07"
L 191	1+50.07	1+68.84							18.78	198285.60	483485.73	198288.91	483504.21	79°50'07"
C 93	1+68.84	3+61.23	2+66.95		27°39'38"	14°22'40.30"	398.50	98.10	192.38	198288.91	483504.21	198366.39	483678.27	79°50'07" 52°10'30"
C 94	3+61.23	4+25.39	3+97.26		65°03'54"	101°24'30.45"	56.50	36.04	64.16	198366.39	483678.27	198371.99	483738.78	52°10'30" 117°14'24"
L 192	4+25.39	4+73.88							48.49	198371.99	483738.78	198349.80	483781.89	117°14'24"
C 95	4+73.88	5+46.83	5+12.57		47°13'42"	64°44'27.58"	88.50	38.69	72.95	198349.80	483781.89	198345.31	483852.65	117°14'24" 70°00'42"
C 96	5+46.83	6+16.70	5+81.85		9°49'25"	14°03'37.13"	407.50	35.02	69.87	198345.31	483852.65	198363.46	483920.03	70°00'42" 79°50'07"
L 193	6+16.70	6+30.47							13.78	198363.46	483920.03	198365.89	483933.59	79°50'07"
C 97	6+30.47	6+45.47	6+37.97		1°54'33"	12°43'56.62"	450.00	7.50	14.99	198365.89	483933.59	198368.29	483948.39	79°50'07" 81°44'40"
L 194	6+45.47	7+65.54							120.08	198368.29	483948.39	198385.54	484067.23	81°44'40"
C 98	7+65.54	7+80.54	7+73.04		1°54'33"	12°43'56.62"	450.00	7.50	14.99	198385.54	484067.23	198387.94	484082.03	81°44'40" 79°50'07"

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Kimley»Horn
767 EUSTIS STREET, SUITE 100, ST, PAUL, MN 55114
PHONE: 651-645-4197
WWW.KIMLEY-HORN.COM

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

CHADD B. LARSON, PE
DATE: 02/07/2025 MN LIC. NO. 41864

City of Plymouth
CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3

CHANKAHDA TR
ALIGNMENT TABULATION

CITY PROJECT ST240002
COUNTY PROJECT
S.A.P. 155-210-003
S.A.P.

SHEET NO. 55
354

ALIGNMENT DATA
SB SYCAMORE LN

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
L 195	0+00.00	0+86.26							86.26	198548.96	483701.86	198462.72	483703.61	178°50'14"
C 99	0+86.26	0+97.65	0+91.96		2°58'57"	26°10'53.70"	218.84	5.70	11.39	198462.72	483703.61	198451.34	483704.13	178°50'14" 175°51'17"
C 100	0+97.65	1+49.43	1+24.31		33°31'16"	64°44'27.58"	88.50	26.65	51.78	198451.34	483704.13	198401.53	483692.99	175°51'17" 209°22'33"
L 196	1+49.43	2+09.17							59.74	198401.53	483692.99	198349.47	483663.68	209°22'33"
C 101	2+09.17	2+89.00	2+57.39		80°57'21"	101°24'30.45"	56.50	48.22	79.83	198349.47	483663.68	198277.49	483677.81	209°22'33" 128°25'12"
C 102	2+89.00	4+06.32	3+52.97		56°43'29"	48°21'03.13"	118.50	63.97	117.32	198277.49	483677.81	198174.02	483722.19	128°25'12" 185°08'41"
L 197	4+06.32	4+46.97							40.65	198174.02	483722.19	198133.53	483718.54	185°08'41"

ALIGNMENT DATA
NB TEAKWOOD LN

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
L 198	0+00.00	0+38.48							38.48	198171.17	483721.93	198209.50	483725.31	5°02'27"
C 103	0+38.48	0+73.74	0+56.35		22°49'36"	64°44'27.58"	88.50	17.87	35.26	198209.50	483725.31	198243.09	483735.24	5°02'27" 27°52'02"
L 199	0+73.74	1+32.85							59.11	198243.09	483735.24	198295.35	483762.86	27°52'02"
C 104	1+32.85	1+94.61	1+67.22		62°37'53"	101°24'30.45"	56.50	34.37	61.76	198295.35	483762.86	198353.97	483759.33	27°52'02" 325°14'09"
C 105	1+94.61	3+11.02	2+54.55		33°36'06"	28°51'51.74"	198.50	59.93	116.41	198353.97	483759.33	198463.13	483723.94	325°14'09" 358°50'14"
L 200	3+11.02	3+97.29							86.26	198463.13	483723.94	198549.37	483722.19	358°50'14"

ALIGNMENT DATA
NORTHWEST BLVD TRAIL

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
L 205	0+00.00	0+23.64							23.64	198345.84	484672.66	198361.34	484690.50	49°00'35"
C 109	0+23.64	2+97.85	1+60.85		5°21'57"	1°57'24.56"	2928.00	137.21	274.21	198361.34	484690.50	198531.26	484905.60	49°00'35" 54°22'32"
L 206	2+97.85	5+66.73							268.88	198531.26	484905.60	198687.87	485124.16	54°22'32"
C 110	5+66.73	5+98.47	5+82.64		9°05'35"	28°38'52.40"	200.00	15.90	31.74	198687.87	485124.16	198704.24	485151.31	54°22'32" 63°28'07"
L 207	5+98.47	6+13.90							15.43	198704.24	485151.31	198711.13	485165.12	63°28'07"
C 111	6+13.90	7+09.13	6+61.60		8°19'48"	8°44'50.81"	655.00	47.70	95.23	198711.13	485165.12	198759.70	485246.93	63°28'07" 55°08'19"
L 208	7+09.13	9+27.36							218.23	198759.70	485246.93	198884.44	485426.00	55°08'19"

No.	Date	Revisions	App.

DRAWING NAME: CHANKAHDA_PH3_ALGN-TAB.dwg

DESIGNED BY:	JWB
DRAWN BY:	RGS
CHECKED BY:	CBL
DATE:	02/07/2025
PROJECT NO.	160662010

Kimley»Horn
767 EUSTIS STREET, SUITE 100, ST, PAUL, MN 55114
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CHADD B. LARSON, PE
DATE: 02/07/2025 MN LIC. NO. 41864

City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3

CHANKAHDA TR
ALIGNMENT TABULATION

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

ALIGNMENT DATA
CHANKAHDA TR TRAIL

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
L 209	0+00.00	0+55.00							55.00	198211.73	481733.65	198201.11	481787.62	101°07'51"
C 112	0+55.00	0+56.98	0+55.99		0°02'11"	1°49'53.09"	3128.50	0.99	1.98	198201.11	481787.62	198200.73	481789.56	101°07'51" 101°05'41"
C 113	0+56.98	1+00.01	0+78.83		24°39'22"	57°17'44.81"	100.00	21.85	43.03	198200.73	481789.56	198183.76	481828.74	101°05'41" 125°45'03"
C 114	1+00.01	1+72.75	1+37.11		27°46'58"	38°11'49.87"	150.00	37.10	72.74	198183.76	481828.74	198156.94	481895.59	125°45'03" 97°58'05"
L 210	1+72.75	2+96.93							124.19	198156.94	481895.59	198139.72	482018.58	97°58'05"
C 115	2+96.93	3+01.00	2+98.96		1°33'11"	38°11'49.87"	150.00	2.03	4.07	198139.72	482018.58	198139.11	482022.60	97°58'05" 99°31'15"
L 211	3+01.00	4+07.37							106.38	198139.11	482022.60	198121.51	482127.51	99°31'15"
C 116	4+07.37	4+19.57	4+13.47		4°39'32"	38°11'49.87"	150.00	6.10	12.20	198121.51	482127.51	198119.98	482139.60	99°31'15" 94°51'44"
L 212	4+19.57	4+94.85							75.28	198119.98	482139.60	198113.60	482214.62	94°51'44"
C 117	4+94.85	5+35.55	5+15.33		15°32'43"	38°11'49.87"	150.00	20.47	40.70	198113.60	482214.62	198115.66	482255.14	94°51'44" 79°19'01"
L 213	5+35.55	6+04.42							68.86	198115.66	482255.14	198128.43	482322.81	79°19'01"
C 118	6+04.42	6+14.67	6+09.56		11°45'04"	114°35'29.61"	50.00	5.15	10.25	198128.43	482322.81	198129.29	482333.01	79°19'01" 91°04'05"
C 119	6+14.67	6+25.00	6+19.84		0°11'18"	1°49'24.76"	3142.00	5.17	10.33	198129.29	482333.01	198129.11	482343.34	91°04'05" 90°52'47"

ALIGNMENT DATA
PEDESTRIAN UNDERPASS

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
L 216	0+00.00	1+17.64							117.64	198206.42	482437.76	198210.35	482555.34	88°05'03"
L 217	1+17.64	1+79.57							61.92	198210.35	482555.34	198208.00	482617.22	92°10'27"
L 218	1+79.57	3+37.59							158.03	198208.00	482617.22	198221.14	482774.69	85°13'47"
L 214	3+37.59	5+69.05							231.46	198221.14	482774.69	198239.88	483005.39	85°21'24"
L 215	5+69.05	5+90.00							20.95	198239.88	483005.39	198241.62	483026.27	85°13'06"

No.	Date	Revisions	App.

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DRAWN BY: RGS
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PROJECT NO. 160662010

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CHADD B. LARSON, PE
DATE: 02/07/2025 MN LIC. NO. 41864

City of Plymouth
CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3

CHANKAHDA TR
ALIGNMENT TABULATION

CITY PROJECT ST240002
COUNTY PROJECT
S.A.P. 155-210-003
S.A.P.

SHEET NO. 57
354

NOTES & GUIDELINES

GENERAL INFORMATION:

1. ALL DISTANCES ARE APPROXIMATE.

SIGNING:

1. TRAFFIC CONTROL FOR ALL LOCATIONS AND SUBPHASES ARE NOT INCLUDED IN THE PLANS. IF TRAFFIC CONTROL IS NOT PRESENT IN THE PLAN OR IF THE CONTRACTOR MODIFIES THE TRAFFIC CONTROL PLAN, THE CONTRACTOR SHALL SUBMIT DETAILED TRAFFIC CONTROL PLANS TO THE ENGINEER FOR ACCEPTANCE PRIOR TO PLACEMENT. ADDITIONAL TRAFFIC CONTROL PLANS ANTICIPATED INCLUDE BUT ARE NOT LIMITED TO TRAFFIC CONTROL WITHIN THE WORK AREAS FOR LOCAL TRAFFIC AND TRAFFIC CONTROL BETWEEN VICKSBURG LANE AND NORTHWEST BLVD (CR 61) THAT REQUIRED DURING THE VARIOUS PHASES. CONTRACTOR SHALL SUBMIT DETAILED TRAFFIC CONTROL PLANS FOR APPROVAL FOR THE INTERSECTION IMPROVEMENTS WORK AT CHANKAHDA TR/NORTHWEST BLVD (CR 61). THIS WORK SHALL BE CONSIDERED INCIDENTAL TO THE TRAFFIC CONTROL LUMP SUM PAY ITEM.
2. THE CONTRACTOR SHALL COORDINATE THE INSTALLATION OF THE FINAL SIGNS TO ASSURE THAT THE FINAL SIGNS ARE PLACED AS NEEDED, OR PROVIDE TEMPORARY SIGNING UNTIL THE FINAL SIGNING IS PLACED.
3. WHEN MULTIPLE GROUND MOUNTED SIGN STRUCTURES ARE PLACED ADJACENT TO EACH OTHER THERE SHOULD BE NO MORE THAN 2 POSTS WITHIN 84" OF EACH OTHER. WHEN THIS SPACING CAN NOT BE MAINTAINED, THEN SIGN STRUCTURES SHALL BE OFFSET, AND STAGGERED WITH A MINIMUM OF 4' BETWEEN SIGN STRUCTURES BOTH LATERALLY AND LONGITUDINALLY. EXAMPLE SHOWS DETOUR SIGNAGE, BUT THIS REQUIREMENT APPLIES TO ALL SIGNAGE.
4. WHEN A SIGN OR BARRICADE IS ORIENTED SUCH THAT VISIBILITY TO ROAD USERS INCLUDING BIKES AND PEDESTRIANS IS REDUCED ENOUGH TO CAUSE A HAZARD, DELINEATE THE SIGN/BARRICADE WITH APPROPRIATE DEVICES.
5. TEMPORARY SIGNS SHALL BE PLACED SUCH THAT OBSTACLES DO NOT BLOCK THEM FROM BEING VIEWED BY APPROACHING ROAD USERS. OBSTACLES MAY INCLUDE, BUT ARE NOT LIMITED TO, LIGHT POLES, TREES, SIGNS, AND BUILDINGS.
6. TEMPORARY SIGNS SHALL BE PLACED AND ORIENTED APPROXIMATELY AS SHOWN IN THE PLAN, AT RIGHT ANGLES TO DIRECTION OF AND FACING THE TRAFFIC THEY ARE INTENDED TO SERVE, UNLESS OTHERWISE SPECIFIED.
7. LONGITUDINAL DROPOFFS SHALL BE SIGNED AS SHOWN IN THE "MINNESOTA TEMPORARY TRAFFIC CONTROL FIELD MANUAL" PAGES (6K-aj) THRU (6K-al) UNLESS OTHERWISE SPECIFIED IN THESE PLANS.
8. AFTER REMOVAL OF SIGN AND/OR SIGN BASE, BACK FILL, COMPACT, AND LEVEL SOIL TO MATCH SURROUNDING SOIL.
9. CONTRACTOR SHALL MAINTAIN STOP SIGNS, SPEED LIMIT SIGNS, AND STREET NAME SIGNS AT ALL TIMES DURING CONSTRUCTION.

   TYPE A FLASHER SHALL SATISFY REQUIREMENTS OF THE MNMUTCD.

   AT HARD CLOSURE POINTS, ROAD CLOSED TYPE III BARRICADE ASSEMBLIES MAY NOT SHOW THE REQUIRED NUMBER OF BARRICADES. THE CONTRACTOR SHALL PLACE ENOUGH TYPE III BARRICADES TO ENSURE THAT THE ROAD IS CLOSED TIGHT.

CONSTRUCTION INFORMATION SIGNING:

1. THE CONTRACTOR SHALL USE CONSTRUCTION INFORMATION SIGNING AS SHOWN IN THE PLAN WHICH ARE TO BE USED AS FOLLOWS:

   PLACE THE G20-X1 ADVANCE CLOSURE NOTICE SIGN(S) 7 DAYS PRIOR TO THE PLANNED CLOSURE DATE.

   PLACE G20-X2 ADVANCE NOTICE SIGNS 7 DAYS PRIOR TO THE WORK STARTING DATE. ONCE WORK BEGINS, COVER THE START DATE LEGEND WITH SUGGESTED PLAQUE CONTAINED IN THIS PLAN. IF NO ALTERNATE MESSAGE IS SUGGESTED OR IF DIRECTED BY THE ENGINEER, DISPLAY THE CORRECT ESTIMATED FINISH DATE, MONTH, OR SEASON

   IF CONSTRUCTION INFORMATION SIGNING IS NO LONGER VISIBLE TO THE MOTORING PUBLIC ONCE WORK BEGINS, MOVE SAID SIGNING TO A SITE IN ADVANCE OF THE WORK ZONE OR CLOSURE AS DIRECTED BY THE PLAN OR ENGINEER.

TRAFFIC CONTROL DEVICES & SYMBOLS LEGEND

SYMBOL	DESCRIPTION
⊦	TRAFFIC CONTROL SIGN
⊔	TYPE III BARRICADE = 
Ⓕ	TYPE A FLASHING WARNING LIGHT

INDEX

TRAFFIC CONTROL SHEET NO.	DESCRIPTIONS
58	TITLE SHEET
59	TEMPORARY TRAFFIC CONTROL SIGN TABULATIONS
60	SPECIAL SIGN DETAILS
61	DETAILS
62-63	CONSTRUCTION PHASING
64	DETOUR PHASE 1
65	DETOUR PHASE 3

No.	Date	Revisions	App.

DRAWING NAME: CHANKAHDA-PH3_TrafCont.dwg

DESIGNED BY:	BWS
DRAWN BY:	HY
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BRIAN K. VILLA, PE

DATE: 02/07/2025 MN LIC. NO. 56090

City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
TRAFFIC CONTROL PLANS
TITLE SHEET

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 58 / 354

TRAFFIC CONTROL TABULATION SHEET

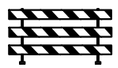
"W" SERIES

SIGN	SIGN NO.	COLOR	SIZE
	W20-2	BLACK ON ORANGE	36" x 36"
	W20-3	BLACK ON ORANGE	36" x 36"

"G" SERIES

	SIGN	SIGN NO.	COLOR	SIZE
		G20-X1	BLACK ON ORANGE	72" x 60"
①		WZ-1	BLACK ON ORANGE	96" x 84"
①		WZ-2	BLACK ON ORANGE	96" x 84"
①		WZ-5	BLACK ON ORANGE	96" x 15"

DEVICES

ITEM	SIGN NO.	COLOR	SIZE
	TYPE C		
	TYPE "A" FLASHER	YELLOW	

"M" SERIES

	SIGN	SIGN NO.	COLOR	SIZE
		M4-8a	BLACK ON ORANGE	24" x 18"
		M4-9MT	BLACK ON ORANGE	30" x 24"
		M4-9MATR	BLACK ON ORANGE	30" x 24"
		M4-9MR	BLACK ON ORANGE	30" x 24"
		M4-9ML	BLACK ON ORANGE	30" x 24"
		M4-9MATL	BLACK ON ORANGE	30" x 24"
①			BLACK ON ORANGE	36" x 12"

BARRICADE MOUNTED SIGNS

	SIGN	SIGN NO.	COLOR	SIZE (IN. X IN.) (W X H)
		R11-2M	BLACK ON WHITE	48" x 30"
①		WZ-3	BLACK ON ORANGE	60" x 30"
①		WZ-4	BLACK ON ORANGE	60" x 30"
		M4-10R	BLACK ON ORANGE	48" x 18"
		M4-10L	BLACK ON ORANGE	48" x 18"

SPECIFIC NOTES:

① SEE SHEET 60 FOR SIGN PANEL DIMENSIONS.

No.	Date	Revisions	App.

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BRIAN K. VILLA, PE

DATE: 02/07/2025 MN LIC. NO. 56090

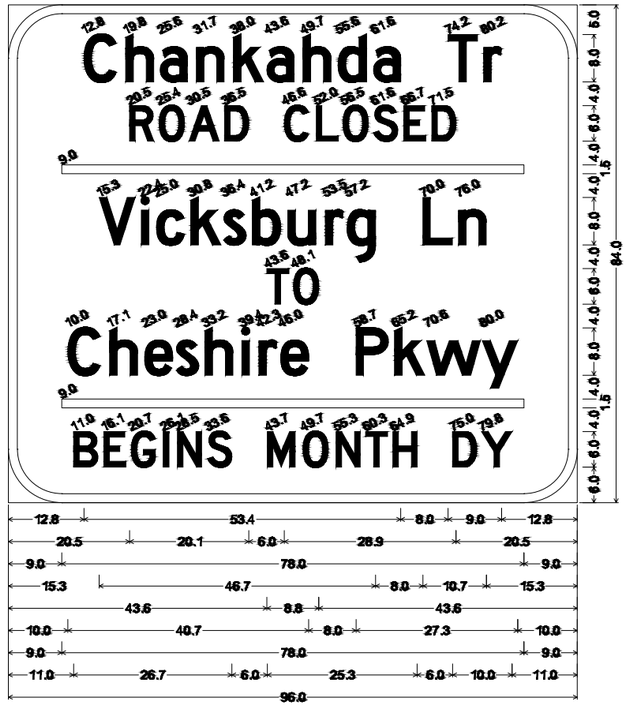
City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
TRAFFIC CONTROL PLANS
TEMPORARY SIGN TABULATIONS

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

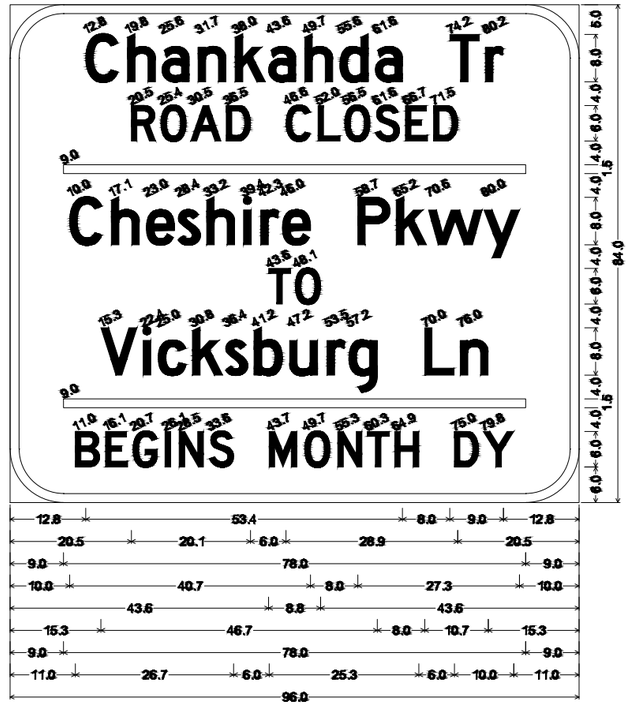
SHEET NO. 59 / 354

WZ–1



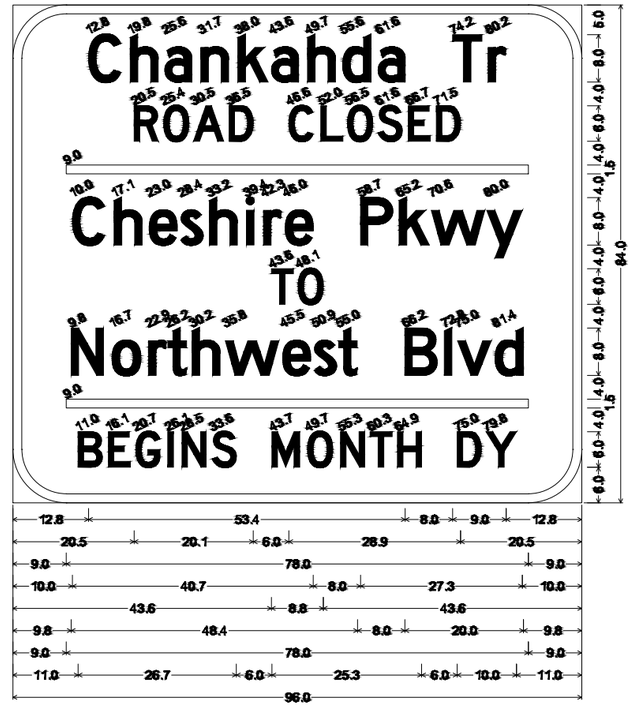
9.0" Radius, 1.5" Border, Black on Orange;
"Chankahda Tr", D 2K; "ROAD CLOSED", D 2K; "Vicksburg Ln", D 2K; "TO", D 2K;
"Cheshire Pkwy", D 2K; "BEGINS", D 2K; "MONTH DY", D 2K;

WZ–2



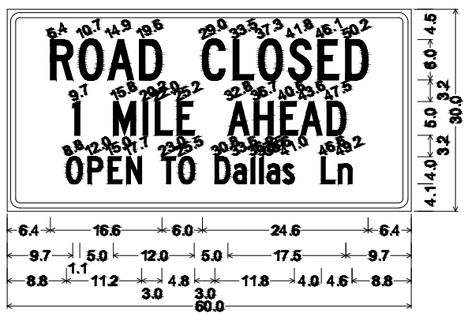
9.0" Radius, 1.5" Border, Black on Orange;
"Chankahda Tr", D 2K; "ROAD CLOSED", D 2K; "Cheshire Pkwy", D 2K; "TO", D 2K;
"Vicksburg Ln", D 2K; "BEGINS", D 2K; "MONTH DY", D 2K;

WZ–3



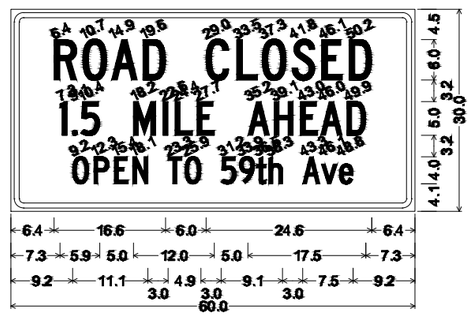
9.0" Radius, 1.5" Border, Black on Orange;
"Chankahda Tr", D 2K; "ROAD CLOSED", D 2K; "Cheshire Pkwy", D 2K; "TO", D 2K;
"Northwest Blvd", D 2K; "BEGINS", D 2K; "MONTH DY", D 2K;

WZ–4



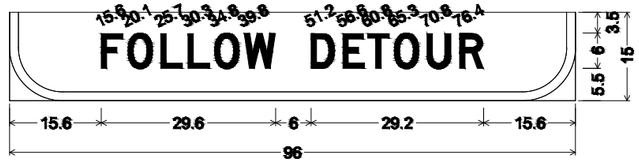
1.9" Radius, 0.8" Border, 0.5" Indent, Black on Orange;
"ROAD CLOSED", C 2K; "1 MILE AHEAD", C 2K;
"OPEN TO Dallas Ln", C 2K;

WZ–5



1.9" Radius, 0.8" Border, 0.5" Indent, Black on Orange;
"ROAD CLOSED", C 2K; "1.5 MILE AHEAD", C 2K;
"OPEN TO 59th Ave", C 2K;

WZ–6



9.0" Radius, 1.5" Border, Black on Orange;
"FOLLOW DETOUR", D 2K;

WZ–7



1.5" Radius, 0.6" Border, 0.4" Indent, Black on Orange;
"Chankahda Tr", B 2K;

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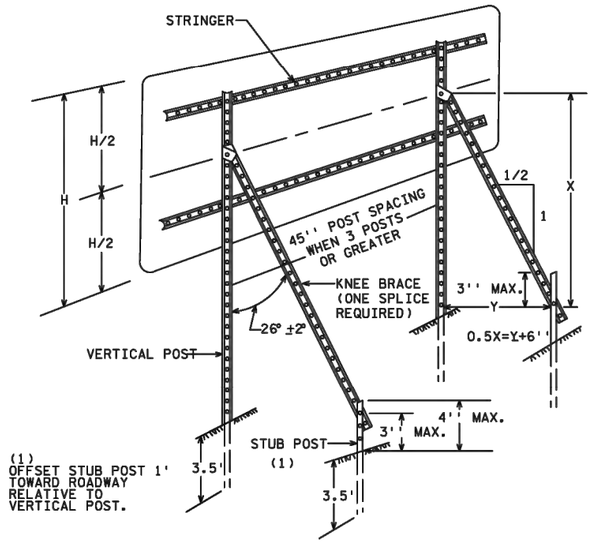
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BRIAN K. VILLA, PE
DATE: 02/07/2025 MN LIC. NO. 56090

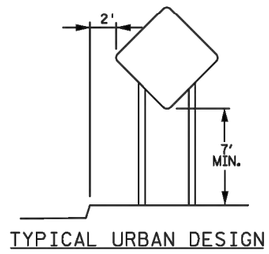
City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
TRAFFIC CONTROL PLANS
SPECIAL SIGN DETAILS

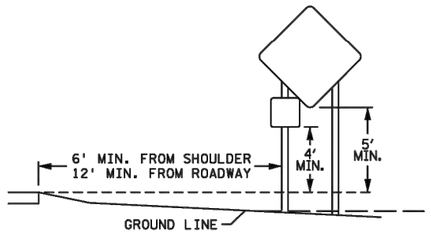
CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155–210–003
S.A.P.	



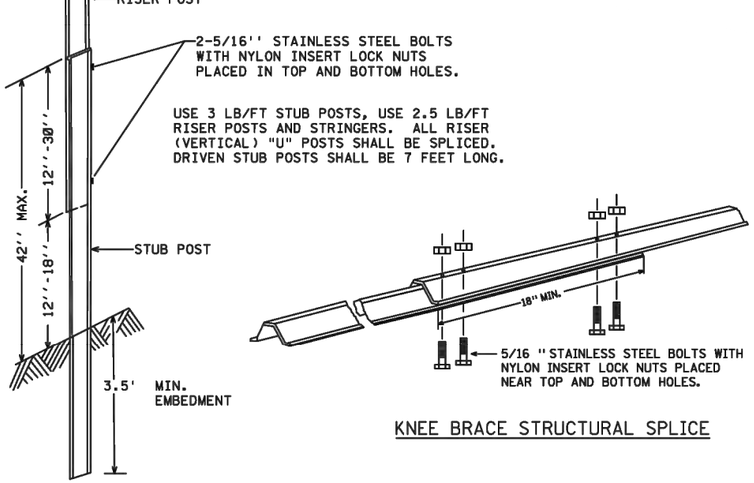
TYPICAL "A-FRAME" INSTALLATION
TYPE "D" SIGNS



TYPICAL URBAN DESIGN



TYPICAL RURAL DESIGN



KNEE BRACE STRUCTURAL SPLICE

"U" POST BREAKAWAY SPLICE

SIGN DATA

SIGNS TO BE PLACED ON DRIVEN U-POSTS SHALL BE PLACED IN ACCORDANCE WITH TABLE 1 OR 2 BELOW.IF THE TTC PLAN PLACES POST MOUNTED TEMPORARY SIGNS ADJACENT TO EXISTING STRUCTURES THERE SHALL BE NO MORE THAN TWO U-POST WITHIN 84 INCHES OF EACH OTHER ALIGNED IN THE SAME PLANE SO AS NOT TO COMPROMISE THAT STRUCTURE'S AND THE NEW DEVICE'S CRASHWORTHINESS. IF IT IS NOT POSSIBLE TO MAINTAIN THIS SPACING THEN THE POST MOUNTED TEMPORARY SIGNS SHALL BE PLACED A MIN OF 4' BEYOND THE IN PLACE STRUCTURES. SIGN PANELS SHALL BE PLACED ON SIGN STRUCTURES TO MEET THE 5' MIN DEPICTED ON THE TYPICAL RURAL DESIGN DETAIL, THE 7' MIN DEPICTED ON THE TYPICAL URBAN DESIGN DETAIL, AND THE 9' MIN DEPICTED ON THE TYPICAL MOUNTING DETAIL ON THIS SHEET.

STANDARD CONSTRUCTION SIGNS IN MnDOT STANDARD SIGNS AND MARKINGS MANUAL

TABLE 1

PANEL SIZE (IN.)	POSTS			
	NO. & TYPE	SPACING (IN.)	KNEE BRACES QUANT.	LENGTH (FT.)
24 x 24	2-U	18		13
30 x 24	2-U	18		13
36 x 30	2-U	24		13
36 x 36	2-U	18		14
42 x 36	2-U	30		14
48 x 48	2-U	30		15
60 x 60	2-U	42	1	16
66 X 60	2-U	42	2	16
72 x 72	2-U	42	2	17
96 x 54	2-U	54	2	19
96 X 84	2-U	54	2	19
132 X 108	3-U	45	3	22
168 x 132	4-U	48	4	25

GENERAL NOTES:
1. POST LENGTHS ARE APPROXIMATE AND INCLUDE EMBEDMENT, BUT DO NOT INCLUDE ADDITIONAL LENGTH REQUIRED FOR SPLICE.
2. SEE MnDOT STANDARD SIGNS AND MARKINGS MANUAL FOR PUNCHING HOLES.
3. MINIMUM OF 45" SPACING BETWEEN POSTS MUST BE MAINTAINED WHEN USING MORE THAN TWO POSTS.

TABLE 2
SPECIAL DESIGN CONSTRUCTION SIGNS

PANEL SIZE		POSTS			
LENGTH (IN.)	HEIGHT (IN.)	NO. & TYPE	SPACING (IN.)	KNEE BRACES QUANT.	LENGTH (FT.)
54 - 96	78	2-U	42	2	20
102 - 138	78	3-U	45	3	20
144 - 180	78	4-U	45	4	20

DESIGNER NOTE: INCLUDE SPECIAL SIGN DETAILS IN THE TRAFFIC CONTROL PLAN IN TABLE TWO.

NOTES:
FOR TEMPORARY CONSTRUCTION SIGN FRAMING, THE CONTRACTOR MAY USE GRADE 5 ZINC PLATED BOLTS FOR ALL BOLTED CONNECTIONS, EXCEPT FOR THE KNEE BRACE CONNECTION TO THE REAR STUB POST, WHICH SHALL UTILIZE A 5/16 INCH STAINLESS STEEL BOLT AND NYLON INSERT LOCK NUT. ADDITIONAL SIGN FRAMING DETAILS CAN BE FOUND IN THE TRAFFIC ENGINEERING MANUAL PART 6.

IF THE CONTRACTOR ELECTS TO USE SOME OTHER TYPE OF SIGN SUPPORT (OTHER THAN U-CHANNEL SIGN POSTS) FOR MOUNTING CONSTRUCTION SIGNS, DETAILS OF THE PROPOSED SIGN STRUCTURE SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PRIOR TO ORDERING THE SIGN STRUCTURE COMPONENTS. ANY SIGN STRUCTURE TO BE SUBMITTED TO THE ENGINEER SHALL BE AN FHWA ACCEPTED BREAKAWAY SIGN SUPPORT. SIGN STRUCTURE SHALL ALSO BE APPROVED FOR 90 MPH WIND LOAD.

PUBLISHED BY OTE 12/09/2019 | MODIFIED BY | **TYPICAL TEMPORARY SIGN FRAMING AND INSTALLATION DETAILS**

No.	Date	Revisions	App.

DRAWING NAME: CHANKAHDA-PH3_TrafCont.dwg

DESIGNED BY:	BWS
DRAWN BY:	HY
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DATE:	02/07/2025
PROJECT NO.	160662010

Kimley»Horn
767 EUSTIS STREET, SUITE 100, ST, PAUL, MN 55114
PHONE: 651-645-4197
WWW.KIMLEY-HORN.COM

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BRIAN K. VILLA, PE
DATE: 02/07/2025 MN LIC. NO. 56090

City of Plymouth
CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
TRAFFIC CONTROL PLANS
DETAILS

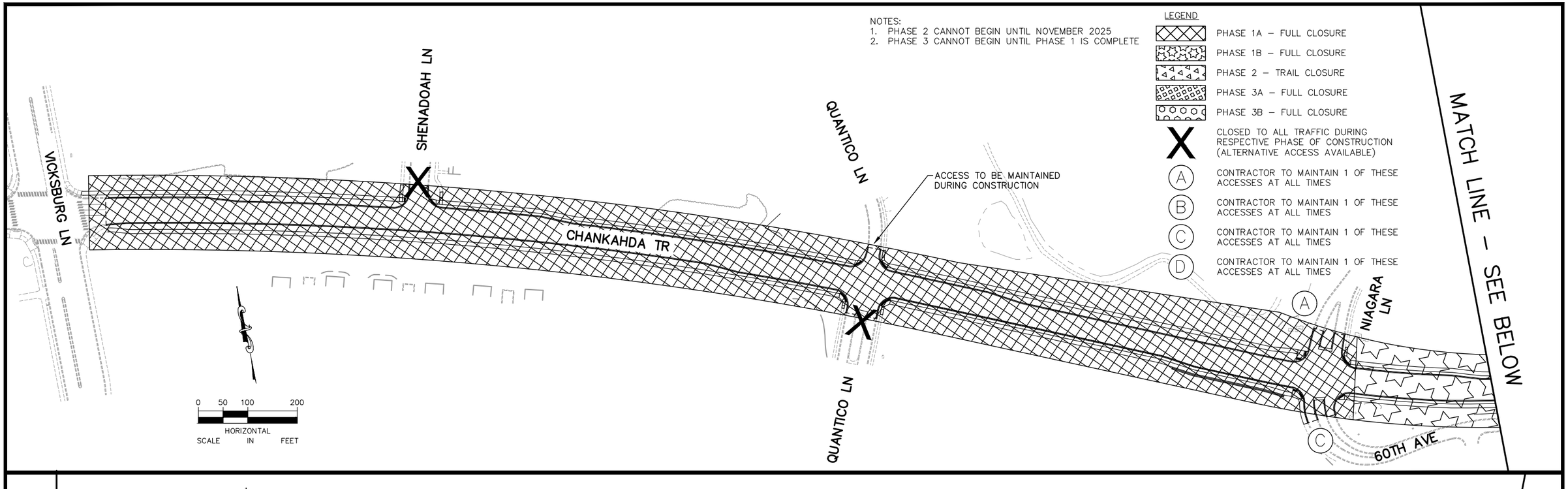
CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

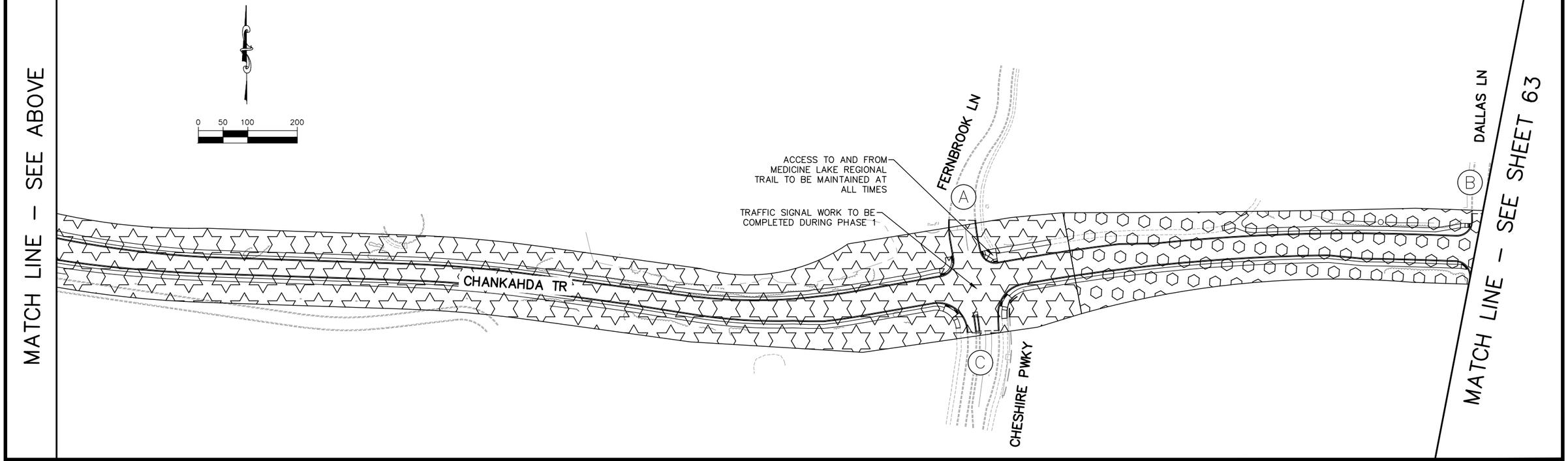
SHEET NO. 61 / 354

NOTES:
1. PHASE 2 CANNOT BEGIN UNTIL NOVEMBER 2025
2. PHASE 3 CANNOT BEGIN UNTIL PHASE 1 IS COMPLETE

LEGEND

- PHASE 1A – FULL CLOSURE
- PHASE 1B – FULL CLOSURE
- PHASE 2 – TRAIL CLOSURE
- PHASE 3A – FULL CLOSURE
- PHASE 3B – FULL CLOSURE
- X — CLOSED TO ALL TRAFFIC DURING RESPECTIVE PHASE OF CONSTRUCTION (ALTERNATIVE ACCESS AVAILABLE)
- (A) CONTRACTOR TO MAINTAIN 1 OF THESE ACCESSES AT ALL TIMES
- (B) CONTRACTOR TO MAINTAIN 1 OF THESE ACCESSES AT ALL TIMES
- (C) CONTRACTOR TO MAINTAIN 1 OF THESE ACCESSES AT ALL TIMES
- (D) CONTRACTOR TO MAINTAIN 1 OF THESE ACCESSES AT ALL TIMES





No.	Date	Revisions	App.

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BRIAN K. VILLA, PE

DATE: 02/07/2025 MN LIC. NO. 56090

City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
TRAFFIC CONTROL PLANS
CONSTRUCTION PHASING

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155–210–003
S.A.P.	

SHEET NO. 62 / 354

NOTES:
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2. PHASE 3 CANNOT BEGIN UNTIL PHASE 1 IS COMPLETE

LEGEND

- PHASE 1A – FULL CLOSURE
- PHASE 1B – FULL CLOSURE
- PHASE 2 – TRAIL CLOSURE
- PHASE 3A – FULL CLOSURE
- PHASE 3B – FULL CLOSURE
- X — CLOSED TO ALL TRAFFIC DURING RESPECTIVE PHASE OF CONSTRUCTION (ALTERNATIVE ACCESS AVAILABLE)
- (A) CONTRACTOR TO MAINTAIN 1 OF THESE ACCESSES AT ALL TIMES
- (B) CONTRACTOR TO MAINTAIN 1 OF THESE ACCESSES AT ALL TIMES
- (C) CONTRACTOR TO MAINTAIN 1 OF THESE ACCESSES AT ALL TIMES
- (D) CONTRACTOR TO MAINTAIN 1 OF THESE ACCESSES AT ALL TIMES

0 50 100 200
HORIZONTAL SCALE IN FEET

MATCH LINE – SEE SHEET 62

MATCH LINE – SEE BELOW

DALLAS LN

ANNAPOLIS LN

CHANKAHDA TR

YUCCA LN

MATCH LINE – SEE ABOVE

TEAKWOOD LN

NORTHWEST BLVD (CR 61)

TRAFFIC SIGNAL AND UTILITY WORK TO BE COMPLETED DURING PHASE 3A. CONTRACTOR SHALL SUBMIT DETAILED TRAFFIC CONTROL PLANS FOR COUNTY REVIEW AND APPROVAL FOR THE INTERSECTION IMPROVEMENT WORK AT CHANKAHDA TR/NORTHWEST BLVD (CR 61). ANY LANE CLOSURE TRAFFIC CONTROL NEEDED TO ACCOMMODATE THE CONSTRUCTION OF THE NEW PEDESTRIAN RAMPS AND UTILITIES IS CONSIDERED INCIDENTAL TO THE TRAFFIC CONTROL LUMP SUM PAY ITEM.

0 50 100 200
HORIZONTAL SCALE IN FEET

No.	Date	Revisions	App.

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CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
TRAFFIC CONTROL PLANS
CONSTRUCTION PHASING

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155–210–003
S.A.P.	

SHEET NO. 63 / 354

LEGEND

PHASE 1A

PHASE 1B

PROPOSED DETOUR

SPECIFIC NOTES:

1. PLACE 7 DAYS IN ADVANCE OF CLOSURE
2. MOUNT PANEL UPON START OF CLOSURE

CHANKAHDA TR

VICKSBURG LN

CHESHIRE PKWY

I-494

NORTHWEST BLVD (C.S.A.H. 61)

BASS LAKE RD (C.S.A.H. 10)

SCHMIDT LAKE RD

OLD ROCKFORD RD

Canadian Pacific Rail System

Lake Pomerleau

Carmel Lake

Bass Lake

Curtis Lake

Schmidt Lake

Turtle Lake

Pike Lake

0 400 800 1600

HORIZONTAL SCALE IN FEET

No.	Date	Revisions	App.

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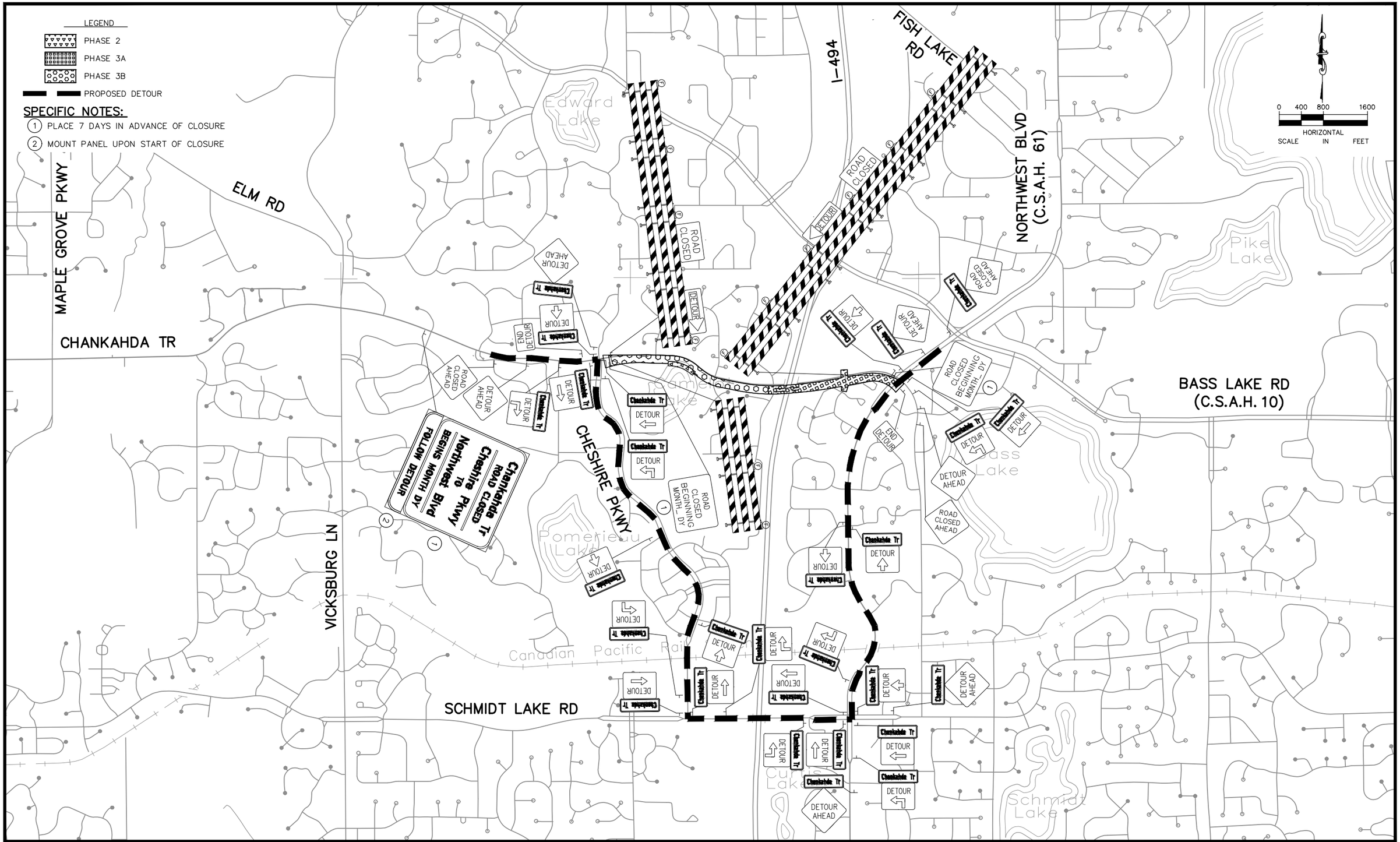
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City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
TRAFFIC CONTROL PLANS
DETOUR PHASE 1

CITY PROJECT	ST240002
COUNTY PROJECT	
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S.A.P.	

SHEET NO. 64 / 354



No.	Date	Revisions	App.

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City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
TRAFFIC CONTROL PLANS
DETOUR PHASE 3

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 65 / 354

BEGIN CONSTRUCTION
S.A.P. 155-210-003
CHANKAHDA TR STA. 115+43.23

BEGIN FULL DEPTH
CONSTRUCTION
CHANKAHDA TR 115+94.43

CHANKAHDA TR

℄ CHANKAHDA TR

VICKSBURB LN

INPLACE
R/W

MATCH LINE 121+50

15805 6025 15720 15716

115+00 116+00 117+00 118+00 119+00 120+00 121+00

0 15 30 60
HORIZONTAL
SCALE IN FEET

℄ SHENANDOAH LN

SHENANDOAH LN

1+22

1+00

6000 6045

MATCH LINE 121+50

MATCH LINE 128+50

122+00 123+00 124+00 125+00 126+00 127+00 128+00

0+00

CHANKAHDA TR

℄ CHANKAHDA TR

INPLACE
R/W

15660 15656 15630 15626

0 15 30 60
HORIZONTAL
SCALE IN FEET

LEGEND

- INPLACE GATE VALVE
- INPLACE HYDRANT
- INPLACE CURB BOX
- INPLACE WATERMAIN MANHOLE
- INPLACE SANITARY MANHOLE
- INPLACE STORM MANHOLE
- INPLACE CATCH BASIN
- INPLACE GAS VALVE
- INPLACE CABLE TV BOX
- INPLACE TELEPHONE BOX
- INPLACE POWER POLE
- INPLACE ELECTRICAL MANHOLE
- INPLACE ELECTRICAL TRANSFORMER
- INPLACE LIGHT POLE
- INPLACE WATERMAIN
- INPLACE SANITARY SEWER
- INPLACE STORM SEWER
- INPLACE GAS MAIN
- INPLACE CABLE TV
- INPLACE UNDERGROUND TELEPHONE LINE
- INPLACE UNDERGROUND POWER
- INPLACE OVERHEAD POWER
- INPLACE CURB AND GUTTER
- INPLACE PAVEMENT
- INPLACE FENCE
- INPLACE RIGHT-OF-WAY
- INPLACE EASEMENT
- INPLACE STREET SIGN
- INPLACE TREE
- INPLACE TREE LINE
- INPLACE WETLAND
- ABANDONED UTILITY

No.	Date	Revisions	App.

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DESIGNED BY:	JWB
DRAWN BY:	RGS
CHECKED BY:	CBL
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CHADD B. LARSON, PE

DATE: 02/07/2025 MN LIC. NO. 41864

City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
INPLACE CONDITIONS
STA. 115+43.23 TO STA. 128+50

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 66 / 354

MATCH LINE 128+50

MATCH LINE 135+50

℄ QUANTICO LN

INPLACE R/W

CHANKAHDA TR

INPLACE R/W

℄ CHANKAHDA TR

℄ QUANTICO LN

QUANTICO LN

6035 6025 6015 6000 15500 15514 15388 15386

129+00 130+00 131+00 132+00 133+00 134+00 135+00 1+00

0 15 30 60
HORIZONTAL SCALE IN FEET

MATCH LINE 135+50

MATCH LINE 142+50

℄ SB NIAGARA LN

NIAGARA LN

INPLACE R/W

℄ CHANKAHDA TR

CHANKAHDA TR

INPLACE R/W

℄ NB NIAGARA LN

136+00 137+00 138+00 139+00 140+00 141+00 142+00 1+14 1+00 0+00 1+03

0 15 30 60
HORIZONTAL SCALE IN FEET

LEGEND

- INPLACE GATE VALVE
- INPLACE HYDRANT
- INPLACE CURB BOX
- INPLACE WATERMAIN MANHOLE
- INPLACE SANITARY MANHOLE
- INPLACE STORM MANHOLE
- INPLACE CATCH BASIN
- INPLACE GAS VALVE
- INPLACE CABLE TV BOX
- INPLACE TELEPHONE BOX
- INPLACE POWER POLE
- INPLACE ELECTRICAL MANHOLE
- INPLACE ELECTRICAL TRANSFORMER
- INPLACE LIGHT POLE
- INPLACE WATERMAIN
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- INPLACE FENCE
- INPLACE RIGHT-OF-WAY
- INPLACE EASEMENT
- INPLACE STREET SIGN
- INPLACE TREE
- INPLACE TREE LINE
- INPLACE WETLAND
- ABANDONED UTILITY

No.	Date	Revisions	App.

DRAWING NAME: CHANKAHDA_PH3_ExistPlan.dwg

DESIGNED BY:	JWB
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CHECKED BY:	CBL
DATE:	02/07/2025
PROJECT NO.	160662010

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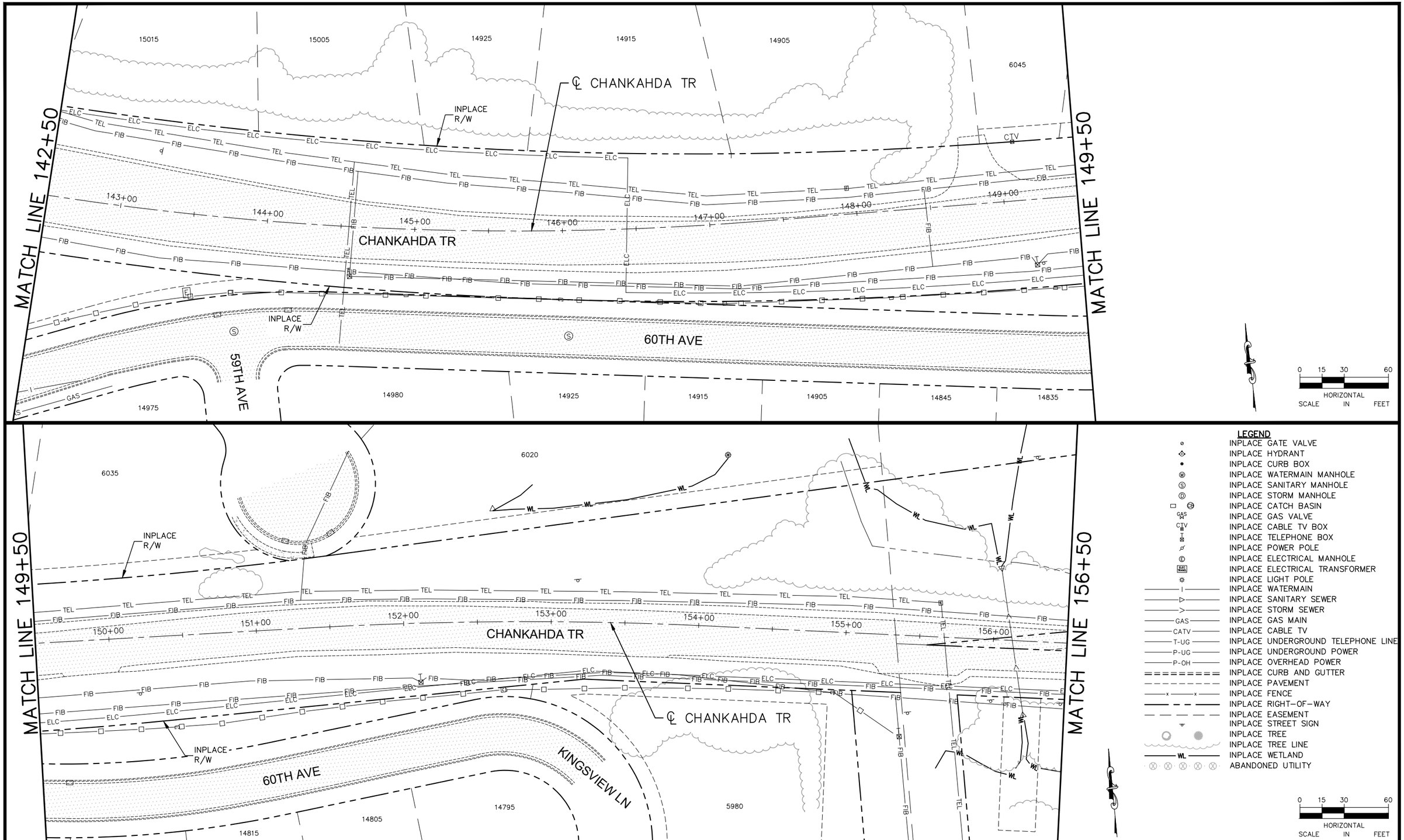
DATE: 02/07/2025 MN LIC. NO. 41864

City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
INPLACE CONDITIONS
STA. 128+50 TO STA. 142+50

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
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SHEET NO. 67 / 354



No.	Date	Revisions	App.

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City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
INPLACE CONDITIONS
STA. 142+50 TO STA. 156+50

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 68 / 354

MATCH LINE 156+50

MATCH LINE 164+00

MATCH LINE 170+50

INPLACE R/W

INPLACE R/W

INPLACE R/W

℄ CHESHIRE PKWY

℄ CHANKAHDA TR

℄ CHANKAHDA TR

CHANKAHDA TR

CHANKAHDA TR

FERNBROOK LN

CHESHIRE PKWY

157+00 158+00 159+00 160+00 161+00 162+00 163+00 164+00 165+00 166+00 167+00 168+00 169+00 170+00

1+00 2+00 3+00

14230 14235

0 15 30 60
HORIZONTAL SCALE IN FEET

LEGEND

- INPLACE GATE VALVE
- INPLACE HYDRANT
- INPLACE CURB BOX
- INPLACE WATERMAIN MANHOLE
- INPLACE SANITARY MANHOLE
- INPLACE STORM MANHOLE
- INPLACE CATCH BASIN
- INPLACE GAS VALVE
- INPLACE CABLE TV BOX
- INPLACE TELEPHONE BOX
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- INPLACE PAVEMENT
- INPLACE FENCE
- INPLACE RIGHT-OF-WAY
- INPLACE EASEMENT
- INPLACE STREET SIGN
- INPLACE TREE
- INPLACE TREE LINE
- INPLACE WETLAND
- ABANDONED UTILITY

0 15 30 60
HORIZONTAL SCALE IN FEET

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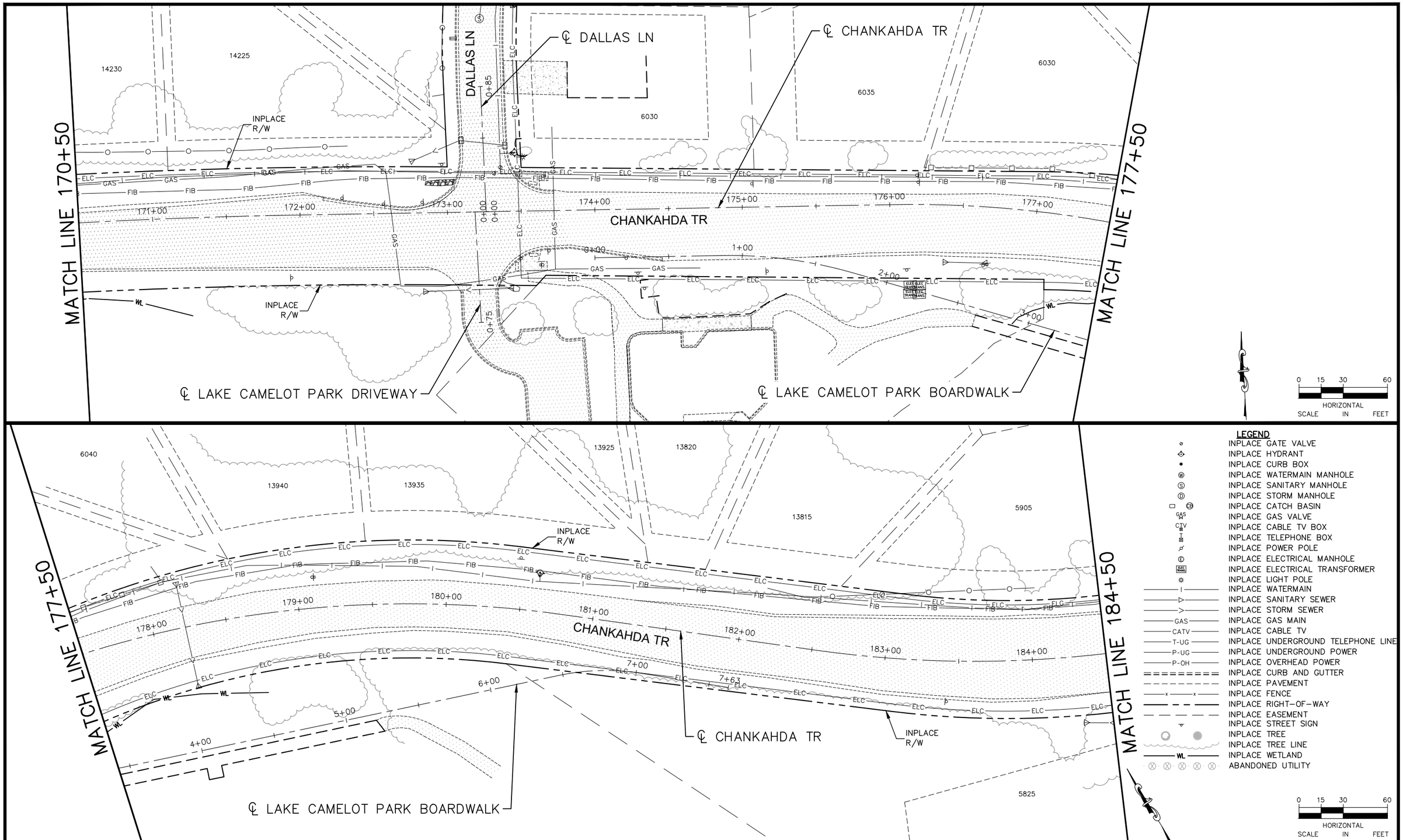
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City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
INPLACE CONDITIONS
STA. 156+50 TO STA. 170+50

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 69 / 354



No.	Date	Revisions	App.

DRAWING NAME	CHANKAHDA_PH3_ExistPlan.dwg
DESIGNED BY:	JWB
DRAWN BY:	RGS
CHECKED BY:	CBL
DATE:	02/07/2025
PROJECT NO.	160662010

Kimley»Horn
767 EUSTIS STREET, SUITE 100, ST, PAUL, MN 55114
PHONE: 651-645-4197
WWW.KIMLEY-HORN.COM

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

CHADD B. LARSON, PE

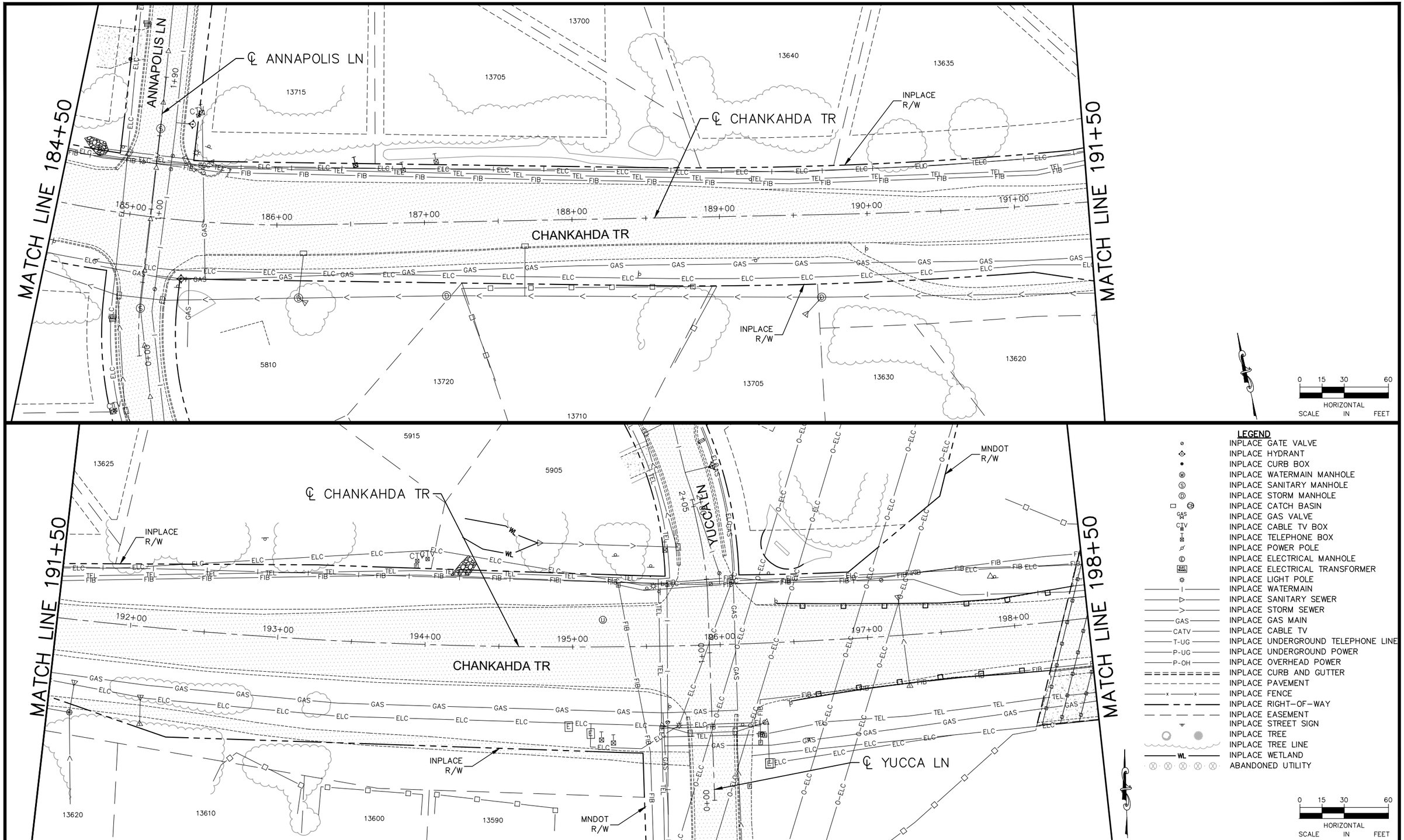
DATE: 02/07/2025 MN LIC. NO. 41864

City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
INPLACE CONDITIONS
STA. 170+50 TO STA. 184+50

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 70 / 354



LEGEND

- INPLACE GATE VALVE
- INPLACE HYDRANT
- INPLACE CURB BOX
- INPLACE WATERMAIN MANHOLE
- INPLACE SANITARY MANHOLE
- INPLACE STORM MANHOLE
- INPLACE CATCH BASIN
- INPLACE GAS VALVE
- INPLACE CABLE TV BOX
- INPLACE TELEPHONE BOX
- INPLACE POWER POLE
- INPLACE ELECTRICAL MANHOLE
- INPLACE ELECTRICAL TRANSFORMER
- INPLACE LIGHT POLE
- INPLACE WATERMAIN
- INPLACE SANITARY SEWER
- INPLACE STORM SEWER
- INPLACE GAS MAIN
- INPLACE CABLE TV
- INPLACE UNDERGROUND TELEPHONE LINE
- INPLACE UNDERGROUND POWER
- INPLACE OVERHEAD POWER
- INPLACE CURB AND GUTTER
- INPLACE PAVEMENT
- INPLACE FENCE
- INPLACE RIGHT-OF-WAY
- INPLACE EASEMENT
- INPLACE STREET SIGN
- INPLACE TREE
- INPLACE TREE LINE
- INPLACE WETLAND
- ABANDONED UTILITY

No.	Date	Revisions	App.

DRAWING NAME: CHANKAHDA_PH3_ExistPlan.dwg

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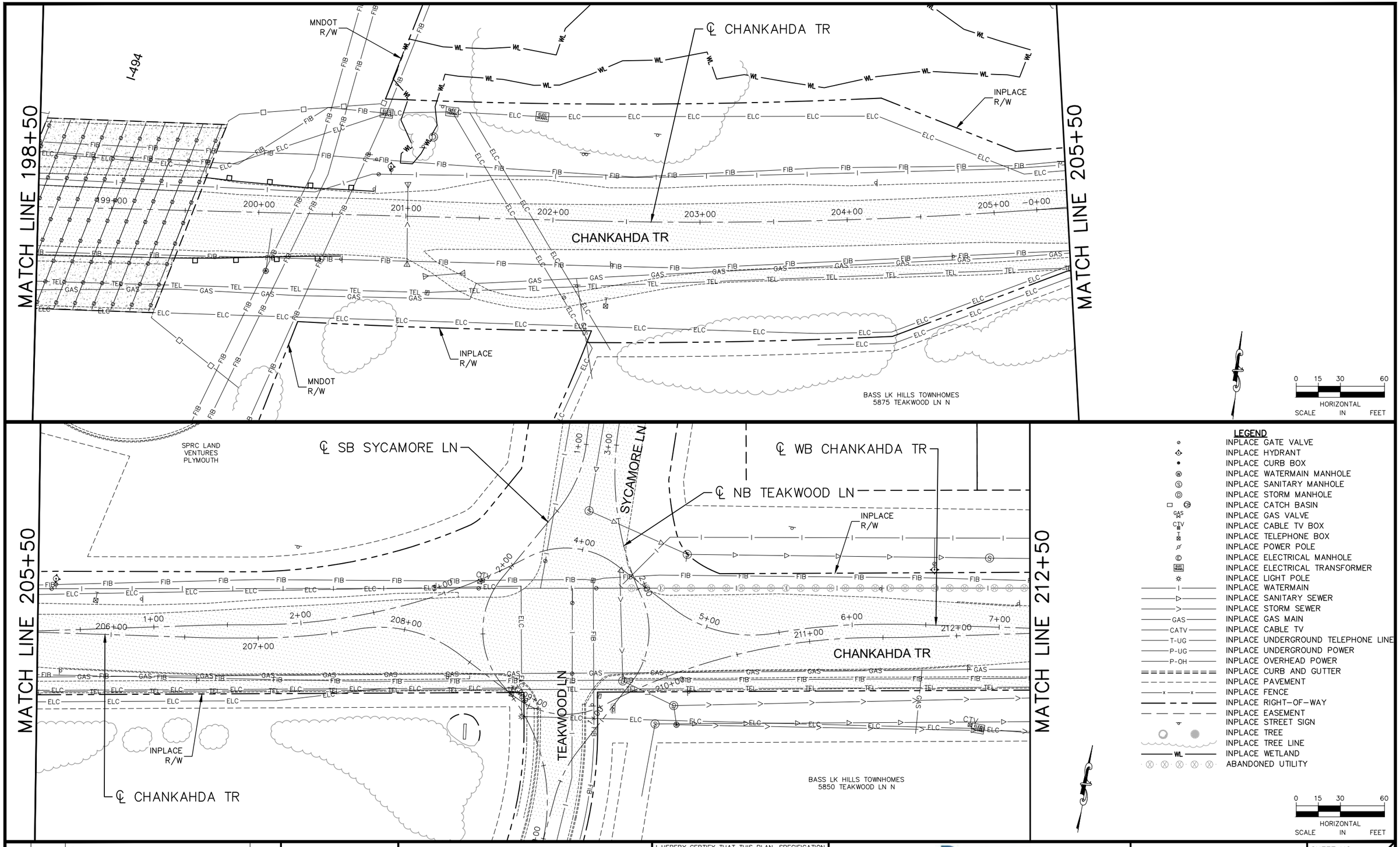
DATE: 02/07/2025 MN LIC. NO. 41864

City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
INPLACE CONDITIONS
STA. 184+50 TO STA. 198+50

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 71 / 354



No.	Date	Revisions	App.

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DESIGNED BY:	JWB
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CHADD B. LARSON, PE

DATE: 02/07/2025 MN LIC. NO. 41864

City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
INPLACE CONDITIONS
STA. 198+50 TO STA. 212+50

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 72 / 354

SPRC LAND VENTURES PLYMOUTH

MATCH LINE 212+50

SEE ABOVE

SEE BELOW

℄ NORTHWEST BLVD TRAIL

INPLACE R/W

CHANKAHDA TR

℄ CHANKAHDA TR

NORTHWEST BLVD

℄ NORTHWEST BLVD TRAIL

END FULL DEPTH CONSTRUCTION
S.A.P. 155-210-003
CHANKAHDA TR STA. 218+79.22

END CONSTRUCTION
S.A.P. 155-210-003
CHANKAHDA TR STA. 220+24.50

0 15 30 60
HORIZONTAL SCALE IN FEET

LEGEND

- INPLACE GATE VALVE
- INPLACE HYDRANT
- INPLACE CURB BOX
- INPLACE WATERMAIN MANHOLE
- INPLACE SANITARY MANHOLE
- INPLACE STORM MANHOLE
- INPLACE CATCH BASIN
- INPLACE GAS VALVE
- INPLACE CABLE TV BOX
- INPLACE TELEPHONE BOX
- INPLACE POWER POLE
- INPLACE ELECTRICAL MANHOLE
- INPLACE ELECTRICAL TRANSFORMER
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- INPLACE STORM SEWER
- INPLACE GAS MAIN
- INPLACE CABLE TV
- INPLACE UNDERGROUND TELEPHONE LINE
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- INPLACE OVERHEAD POWER
- INPLACE CURB AND GUTTER
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CHADD B. LARSON, PE
DATE: 02/07/2025 MN LIC. NO. 41864

City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
INPLACE CONDITIONS
STA. 212+50 TO STA. 220+24.50

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 73 / 354

STORM WATER POLLUTION PREVENTION PLAN (SWPPP) NARRATIVE

PROJECT DESCRIPTION/LOCATION:
S.A.P. 155–210–003 IS LOCATED ON CHANKAHDA TR FROM 100' EAST OF VICKSBURG LN TO 100' EAST OF NORTHWEST BLVD.

THE PLANNED SCOPE OF THE PROJECT INCLUDES:
GRADING, BITUMINOUS PAVING, RETAINING WALLS, SIGNAL, ADA IMPROVEMENTS, STORM SEWER, WATERMAIN, AND STORMWATER MANAGEMENT FACILITIES.

THE TOTAL SITE AREA IS 41.13 ACRES, WHICH INCLUDES A INCREASE OF 3.31 ACRES OF IMPERVIOUS AREA.

SPECIAL AND IMPAIRED WATERS:
THESE SPECIAL AND/OR IMPAIRED WATERS ARE LOCATED WITHIN ONE MILE OF THE PROJECT LIMITS AND RECEIVE RUNOFF FROM THE PROJECT SITE. DUE TO THE PROXIMITY OF THESE SPECIAL AND IMPAIRED WATERS THE BMPS DESCRIBED IN APPENDIX A OF THE NPDES PERMIT WILL APPLY TO ALL AREAS OF THE SITE.

WATERBODY	IMPAIRMENT(S)
ELM CREEK 07010206–508	BENTHIC MACROINVERTEBRATE BIOASSESSMENTS, CHLORIDE, DISSOLVED OXYGEN, ESCHERICHIA COLI, FISHES BIOASSESMENT CSW TMDL: TOTAL SUSPENDED SOLIDS – 0.18 LBS/DAY TOTAL PHOSPHORUS – 53.69 LBS/DAY

ENVIRONMENTAL REVIEW:
AN ENVIRONMENTAL REVIEW WAS NOT COMPLETED FOR THIS PROJECT. THERE WERE NOT ANY COMMITMENTS AS A RESULT OF THE ENVIRONMENTAL REVIEW.
THIS PROJECT IS NOT LOCATED IN A WELL HEAD PROTECTION OR DRINKING WATER SUPPLY MANAGEMENT AREA, AND IS NOT WITHIN AN EMERGENCY RESPONSE AREA (ERA).
THERE ARE NO KNOWN OR PROPOSED DISCHARGES TO CALCAREOUS FENS ON THIS PROJECT.

SWPPP TRAINING:
THE PROJECT SWPPP WAS PREPARED BY PERSONNEL THAT ARE CERTIFIED IN THE DESIGN OF CONSTRUCTION SWPPP'S. COPIES OF CERTIFICATIONS ARE AVAILABLE UPON REQUEST.

CERTIFIED SWPPP PERSONNEL: JOHN SEAGRIST
TRAINING EXPIRES: 2027

THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING A CERTIFIED EROSION CONTROL SUPERVISOR THAT IS RESPONSIBLE FOR OVERSEEING THE IMPLEMENTATION OF THE SWPPP. THE CONTRACTOR MUST PROVIDE PROOF OF CERTIFICATION AT THE PRECONSTRUCTION MEETING AND WILL NOT BE ALLOWED TO COMMENCE WORK UNTIL PROOF OF CERTIFICATION HAS BEEN PROVIDED TO THE PROJECT ENGINEER.

CERTIFIED EROSION CONTROL SUPERVISOR:
TRAINING EXPIRES:

EROSION CONTROL SUPERVISOR:
IN ACCORDANCE WITH SPEC. 2573, THE CONTRACTOR WILL PROVIDE A CERTIFIED EROSION CONTROL SUPERVISOR IN GOOD STANDING WHO IS KNOWLEDGEABLE AND EXPERIENCED IN THE APPLICATION OF EROSION PREVENTION AND SEDIMENT CONTROL BEST MANAGEMENT PRACTICES.

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.

THE EROSION CONTROL SUPERVISOR IS RESPONSIBLE FOR COMPLYING WITH ALL THE INSPECTION AND MAINTENANCE REQUIREMENTS STATED IN THE NPDES PERMIT PART IV.F. INSPECTIONS OF THE ENTIRE CONSTRUCTION SITE WILL OCCUR A MINIMUM OF ONCE EVERY SEVEN DAYS DURING ACTIVE CONSTRUCTION AND WITHIN 24 HOURS AFTER A RAINFALL EVENT GREATER THAN 0.5 INCHES IN 24 HOURS. THE EROSION CONTROL SUPERVISOR WILL THOROUGHLY INSPECT ALL EROSION PREVENTION AND SEDIMENT CONTROL BMPS TO ENSURE INTEGRITY AND EFFECTIVENESS OF EACH BMP. ALL INSPECTIONS AND MAINTENANCE CONDUCTED DURING CONSTRUCTION MUST BE RECORDED IN WRITING AND THESE RECORDS MUST BE RETAINED WITH THE SWPPP. INSPECTION REPORTS MUST BE SUBMITTED TO THE PROJECT ENGINEER IN A FORMAT THAT MEETS OR EXCEEDS THE PROJECT ENGINEERS EXPECTATIONS. RECORDS OF EACH INSPECTION AND MAINTENANCE ACTIVITY SHALL INCLUDE:

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.

SOIL TYPES:
A PRELIMINARY GEOTECHNICAL EVALUATION REPORT WAS COMPLETED BY BRAUN INTERTEC AND INCLUDES SOIL BORINGS. THE GEOTECHNICAL EVALUATION REPORTS ARE INCLUDED AS ATTACHMENTS TO THE PROJECT DRAINAGE REPORT. THE PROJECT SITE GENERALLY CONTAINS FILL, FLOODPLAIN ALLUVIUM, AND GLACIAL DEPOSITS. DUE TO THE FINE–GRAINED NATURE OF THE SITE SOILS, ZONES OF PERCHED GROUNDWATER COULD BE ENCOUNTERED, REFER TO THE GEOTECHNICAL REPORT FOR DISCUSSION OF GROUNDWATER.

MODIFICATIONS TO EXISTING CONDITIONS/DRAINAGE PATTERNS:
THERE ARE TEN (10) OUTFLOW POINTS ALONG CHANKAHDA TRAIL THAT DRAIN TO A VARIETY OF WATER BODIES ALONG THE SITE. IN GENERAL, THE DRAINAGE PATTERNS WILL REMAIN THE SAME POST PROJECT. THE PROPOSED DRAINAGE SYSTEM WILL CONVEY WATER TO FIVE PROPOSED STORMWATER TREATMENT FACILITIES. SEE PROJECT DRAINAGE REPORT FOR FURTHER DETAILS ON PROJECT OUTFLOW LOCATIONS.

SEQUENCE OF MAJOR CONSTRUCTION ACTIVITIES:
1. PLACE INLET PROTECTION ON ALL EXISTING INLETS.
2. PLACE TEMPORARY EROSION AND SEDIMENT CONTROLS SUCH AS EROSION CONTROL LOGS, TEMPORARY SEDIMENT REMOVAL DEVICES, SILT FENCE, CULVERT END CONTROLS, AND STORM DRAIN INLET PROTECTION.
3. CLEAR AND GRUB THE SITE. REMOVE PAVEMENTS, CURB AND GUTTER, AND OTHER REMOVAL ITEMS.
4. PLACE STABILIZED CONSTRUCTION EXITS.
5. PERFORM GRADING ACTIVITIES AND EXCAVATE STORM WATER BMPS.
6. PLACE UNDERGROUND UTILITY IMPROVEMENTS.
7. PLACE INLET PROTECTION ON ALL PROPOSED CATCH BASINS IMMEDIATELY AFTER PLACEMENT.
8. PLACE SEDIMENT CONTROL PROTECTION IMMEDIATELY AFTER CONSTRUCTION OF STORMWATER BMPS TO PROTECT BMP AREAS.
9. PLACE ALL OTHER TEMPORARY EROSION AND SEDIMENT CONTROLS SUCH AS RAPID STABILIZATION AND BIOROLLS.
10. CONSTRUCT CURB AND GUTTER, CONSTRUCT PAVEMENT, ANDOTHER PROPOSED IMPROVMENTS.
11. COMPLETE FINAL STABILIZATION.
12. REMOVE ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES.

PLAN SHEETS:

2 – 4	STATEMENT OF ESTIMATED QUANTITIES
66 – 73	INPLACE CONDITION PLAN
77 – 92	EROSION CONTROL AND TURF ESTABLISHMENT PLANS
93 – 108	REMOVAL PLANS
109 –140	DRAINAGE PLANS LATERALS AND TABULATION AND DETAILS
157 –177	CONSTRUCTION PLAN AND PROFILES
178 –184	GRADING PLAN

ATLAS 14 RAINFALL DATA:
2–YEAR 24 HOUR STORM EVENT = 2.87 INCHES
5–YEAR 24 HOUR STORM EVENT = 3.59 INCHES
10–YEAR 24 HOUR STORM EVENT = 4.28 INCHES
50–YEAR 24 HOUR STORM EVENT = 6.29 INCHES
100–YEAR 24 HOUR STORM EVENT = 7.32 INCHES

TOTAL DISTURBED AREA: 30.46 ACRES
TOTAL EXISTING IMPERVIOUS SURFACE AREA: 17.03 ACRES
TOTAL PROPOSED IMPERVIOUS SURFACE AREA: 20.34 ACRES
TOTAL PROPOSED NET CHANGE IN IMPERVIOUS SURFACE AREA: 3.31 ACRES

THE REQUIRED WATER QUALITY VOLUME FOR THE PROJECT IS 1.38 AC–FT. THE PROPOSED STORMWATER MANAGEMENT FACILITIES CONSTRUCTED BY THIS PROJECT PROVIDES 1.64 AC–FT OF WATER QUALITY VOLUME. CALCULATIONS AND ADDITIONAL DESIGN INFORMATION CAN BE MADE AVAILABLE UPON REQUEST.

LONG TERM MAINTENANCE AND OPERATION
CITY OF PLYMOUTH IS RESPONSIBLE FOR LONG TERM OPERATION AND MAINTENANCE OF PROPOSED STORMWATER MANAGEMENT FACILITIES.

MPCA CONTACT INFORMATION:
THE PROJECT ENGINEER AND CONTRACTOR ARE RESPONSIBLE FOR IMPLEMENTATION OF THE SWWPP AND INSTALLATION, INSPECTION, AND MALIGNANCE OF THE EROSION PREVENTION AND SEDIMENT CONTROL BMPS BEFORE, DURING AND AFTER CONSTRUCTION UNTIL THE NOTICE OF TERMINATION HAS BEEN FILED. MNDOT METRO DISTRICT WATER RESOURCES ARE ALSO AVAILABLE FOR TECHNICAL ASSISTANCE.

ORGANIZATION	CONTACT NAME	PHONE
WATER RESOUCRES (WRE) DESIGN	STEPHANIE THULIEN	612–431–2644
MNDOT METRO WRE (EROSION CONTROL/MS4)	SARAH THOMPSON & RYAN RUPP	651–234–7539
MINNESOTA POLLUTION CONTROL AGENCY (MPCA)	JOSH NORMAN	651–757–2389
MINNESOTA DEPARTMENT OF NATURAL RESOURCES (MnDNR)	WES SAUNDERS–PEARCE	651–259–5822
CITY OF PLYMOUTH	BEN SCHARENBROICH	763–509–5527
MPCA DUTY OFFICER 24 HOUR EMERGENCY NOTIFCATION: 651–649–5451 OR 800–422–0798		

GENERAL SWPPP NOTES FOR CONSTRUCTION ACTIVITY:
1. THE GENERAL CONTRACTOR IS RESPONSIBLE TO COMPLY WITH ALL ASPECTS OF THE NPDES CONSTRUCTION STORMWATER 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 NOTICE OF TERMINATION (NOT) HAS BEEN SUBMITTED TO THE MPCA.
2. THE CONTRACTOR WILL PREPARE A WRITTEN, NOT ORAL, WEEKLY SCHEDULE OF PROPOSED EROSION CONTROL ACTIVITIES FOR THE PROJECT ENGINEERS APPROVAL AS PER MN/DOT SPEC. 1717.
3. THE CONTRACTOR WILL PREPARE AND SUBMIT A SITE PLAN FOR THE ENGINEERS APPROVAL AS PER MN/DOT SPEC. 1717 FOR CONCRETE MANAGEMENT, WORK IN ENVIRONMENTALLY SENSITIVE AREAS, AREAS IDENTIFIED IN THE PLANS AS "SITE PLAN REQUIREMENT AREA." ANY WORK THAT WILL REQUIRE DEWATERING, THE STAGING OF INLET PROTECTION DEVICES OVER THE LIFE OF THE CONTRACT AND AS REQUESTED BY THE ENGINEER, ALL SITE PLANS MUST BE SUBMITTED TO THE ENGINEER IN WRITING. THE CONTRACTOR SHALL ALLOW A MINIMUM OF 7 DAYS FOR REVIEW AND APPROVE SITE PLAN SUBMITTALS. THE CONTRACTOR WILL NOT BE ALLOWED TO COMMENCE WORK FOR WHICH A SITE PLAN IS REQUIRED UNTIL APPROVAL HAS BEEN GRANTED BY THE ENGINEER. THE CONTRACTOR WILL NOT BE GIVEN ANY EXTRA TIME IN THE CONTRACT DUE TO THE UNTIMELY SUBMITTAL OF A SITE PLAN. THE CONTRACTOR SHALL SUBMIT A CONTRACTOR'S EROSION / SEDIMENT CONTROL SITE PLAN TO THE ENGINEER A MINIMUM OF 24 HOURS PRIOR TO THE FIRST PRE–CONSTRUCTION MEETING. THE CONTRACTOR'S EROSION / SEDIMENT CONTROL SITE PLAN SHALL INCLUDE:
   A. THE NAME OF THE CONTRACTOR'S DESIGNATED EROSION CONTROL SUPERVISOR WITH 24–HOUR CONTACT INFORMATION. (I.E. PHONE NUMBER, EMAIL, ETC.)
   B. NAME AND CONTACT INFORMATION FOR THE INDIVIDUAL(S) RESPONSIBLE FOR PERFORMING AND MAINTAINING THE SITE INSPECTION LOGS ON A WEEKLY BASIS (OR WITHIN 24 HOURS OF 0.5 INCHES OF A RAIN IN A 24 HOUR PERIOD).
   C. NAME AND CONTACT INFORMATION OF THE INDIVIDUAL(S) RESPONSIBLE FOR TEMPORARY AND PERMANENT STABILIZATION.
   D. NAME AND CONTACT INFORMATION OF THE INDIVIDUAL(S) WHO WILL BE RESPONSIBLE FOR EMERGENCY REPAIRS AND REPLACEMENTS.
   E. LOCATION WHERE THE SWPPP DOCUMENT AND NPDES PERMIT WILL BE KEPT ON–SITE. THE DOCUMENT SHOULD BE ACCESSIBLE AT ALL TIMES AND AVAILABLE IN THE TIME OF ESSENCE.
   F. WHERE AND HOW CONCRETE WASHOUT WILL OCCUR AND BE IN COMPLIANCE OF THE MINNESOTA POLLUTION CONTROL AGENCY'S (MPCA) MEMORANDUM "CONCRETE WASHOUT GUIDANCE".
   G. LOCATION OF STOCKPILES OF NATIVE SOILS AND/OR BORROW MATERIALS AND INDICATE HOW STOCKPILES WILL BE KEPT IN COMPLIANCE WITH NPDES AND MPCA REQUIREMENTS.
   H. LOCATION OF ANY TEMPORARY SEDIMENT BASINS AND TRAPS.
4. THE CONTRACTOR WILL COMPLY WITH THE REQUIREMENTS REGARDING POLLUTION PREVENTION MANAGEMENT DURING CONSTRUCTION, WHICH WILL INCLUDE, BUT NOT LIMITED TO PROVIDING:
   A. CONCRETE WASHOUT AREAS FOR USE BY ALL SUBCONTRACTORS AND PROJECT PERSONNEL. LOCATION OF WASHOUT AREAS MUST BE IDENTIFIED BY SIGNAGE AND MUST BE AT LEAST 200' FROM SITE PLAN REQUIREMENT AREAS OR ENVIRONMENTALLY SENSITIVE AREAS, AND UTILIZE A LEAK–PROOF CONTAINMENT FACILITY OR IMPERMEABLE LINER THAT PREVENTS RUNOFF ONTO ADJACENT SOILS. AN ENGINEERED COLLECTION SYSTEM CAN ALSO BE USED IF IT IS APPROVED BY THE PROJECT ENGINEER.
   B. SOLID WASTE COLLECTION AND REMOVAL
   C. SECONDARY CONTAINMENT
   D. SECURED HAZARDOUS WASTE STORAGE CONTAINERS
   E. CHEMICAL SPILL KITS
   F. PORTABLE RESTROOM FACILITIES THAT ARE ANCHORED TO PREVENT TIPPING

No.	Date	Revisions	App.

DRAWING NAME: CHANKAHDA_PH3_SWPPP.dwg

DESIGNED BY:	HB
DRAWN BY:	PD
CHECKED BY:	SLT
DATE:	02/07/2025
PROJECT NO.	160662010

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Stephanie Thulien
STEPHANIE L. THULIEN, PE
DATE: 02/07/2025 MN LIC. NO. 57230

City of Plymouth
CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3

CHANKAHDA TR
STORM WATER POLLUTION PREVENTION PLAN

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155–210–003
S.A.P.	

STORM WATER POLLUTION PREVENTION PLAN (SWPPP) NARRATIVE (CONTINUED)

5. CHEMICALS MUST BE KEPT IN A SECURE STORAGE AREA WHEN NOT IN USE. CHEMICAL STORAGE CONTAINERS MUST HAVE SECONDARY CONTAINMENT WHEN BEING USED OR STORED ON THE PROJECT SITE. CHEMICAL SPILLS OF ANY KIND (OIL, FUEL, FERTILIZER, ETC.) MUST BE CLEANED UP AND REMOVED FROM THE SITE IMMEDIATELY. THE CONTRACTOR MUST HAVE A SPILL KIT ON SITE AT ALL TIMES. THE FOLLOWING GOOD HOUSEKEEPING SPILL PREVENTION PRACTICES WILL BE FOLLOWED ONSITE DURING THE CONSTRUCTION PROJECT:
   A. AN EFFORT WILL BE MADE TO STORE ONLY ENOUGH PRODUCTS REQUIRED TO DO THE JOB.
   B. ALL MATERIALS STORED ONSITE WILL BE STORED IN A NEAT, ORDERLY MANNER IN THEIR APPROPRIATE CONTAINERS AND, IF POSSIBLE, UNDER A ROOF OR OTHER ENCLOSURE WITH SECONDARY CONTAINMENT.
   C. PRODUCTS WILL BE KEPT IN THEIR ORIGINAL CONTAINERS WITH THE ORIGINAL MANUFACTURER'S LABEL.
   D. SUBSTANCES WILL NOT BE MIXED WITH ONE ANOTHER UNLESS RECOMMENDED BY THE MANUFACTURER.
   E. WHENEVER POSSIBLE, ALL OF A PRODUCT WILL BE USED UP BEFORE DISPOSING OF THE CONTAINER.
   F. MANUFACTURERS' RECOMMENDATIONS FOR PROPER USE AND DISPOSAL WILL BE FOLLOWED.
   G. THE CONTRACTOR'S SITE SUPERINTENDENT WILL INSPECT DAILY TO ENSURE PROPER USE AND DISPOSAL OF MATERIALS ONSITE.

THE FOLLOWING PRACTICES WILL BE USED TO REDUCE THE RISKS ASSOCIATED WITH HAZARDOUS MATERIALS:
   A. PRODUCTS WILL BE KEPT IN THEIR ORIGINAL CONTAINERS UNLESS CANNOT BE RESEALED.
   B. ORIGINAL LABELS AND MATERIAL SAFETY DATA SHEETS WILL BE RETAINED ON SITE AND ACCESSIBLE AT ALL TIMES; THEY CONTAIN IMPORTANT PRODUCT AND SAFETY INFORMATION.
   C. IF SURPLUS PRODUCT MUST BE DISPOSED OF, MANUFACTURERS' OR LOCAL AND STATE RECOMMENDED METHODS FOR PROPER DISPOSAL WILL BE FOLLOWED.

IN ADDITION TO THE GOOD HOUSEKEEPING AND MATERIAL MANAGEMENT PRACTICES DISCUSSED IN THE PREVIOUS SECTIONS OF THIS PLAN, THE FOLLOWING PRACTICES WILL BE FOLLOWED FOR SPILL PREVENTION AND CLEANUP:
   A. MANUFACTURERS' RECOMMENDED METHODS FOR SPILL CLEANUP WILL BE CLEARLY POSTED AND SITE PERSONNEL WILL BE MADE AWARE OF THE PROCEDURES AND THE LOCATION OF THE INFORMATION AND CLEANUP SUPPLIES.
   B. MATERIALS AND EQUIPMENT NECESSARY FOR SPILL CLEANUP WILL BE KEPT IN A MATERIAL STORAGE AREA LOCATED ONSITE. EQUIPMENT AND MATERIALS WILL INCLUDE BUT NOT BE LIMITED TO BROOMS, DUST PANS, MOPS, RAGS, GLOVES, GOGGLES, CAT LITTER, SAND, SAWDUST, AND PLASTIC AND METAL TRASH CONTAINERS SPECIFICALLY FOR THIS PURPOSE.
   C. ALL SPILLS WILL BE CLEANED UP IMMEDIATELY AFTER DISCOVERY.
   D. THE SPILL AREA WILL BE KEPT WELL VENTILATED AND PERSONNEL WILL WEAR APPROPRIATE PROTECTIVE CLOTHING TO PREVENT INJURY FROM CONTACT WITH A HAZARDOUS SUBSTANCE.
   E. SPILLS OF TOXIC OR HAZARDOUS MATERIAL WILL BE REPORTED TO THE APPROPRIATE STATE OR LOCAL GOVERNMENT AGENCY, REGARDLESS OF THE SIZE. IN ADDITION TO REPORTING TO LOCAL AUTHORITIES, REPORT SPILLS TO THE MINNESOTA POLLUTION CONTROL AGENCY (STATE DUTY OFFICER: 800-422-0798 OR 651-297-8610). ANY SPILLS ABOVE THE REPORTABLE QUANTITIES LIMITS IN THE CODE OF FEDERAL REGULATIONS (CFR), TITLE 40, PART 302 SHALL BE REPORTED TO THE EPA NATIONAL RESPONSE CENTER (800-424-8802). THE REPORT WILL INCLUDE MEASURES TO PREVENT SPILLS FROM REOCCURRING AND INFORMATION REGARDING HOW TO REMEDIATE SPILLS IF A SIMILAR OCCURRENCE HAPPENS. A DESCRIPTION OF THE SPILL, WHAT CAUSED IT, AND THE CLEANUP MEASURES WILL ALSO BE INCLUDED.
   F. THE CONTRACTOR'S EROSION CONTROL SUPERVISOR SHALL BE THE SPILL PREVENTION AND CLEANUP COORDINATOR.
   G. SPILLS WILL BE STUDIED TO UNDERSTAND WHY THEY OCCURRED AND PREVENTIVE METHODS WILL BE CREATED TO ENSURE SIMILAR SPILLS TO DO NOT OCCUR IN THE FUTURE.

6. ALL ONSITE VEHICLES WILL BE MONITORED FOR LEAKS AND RECEIVE REGULAR PREVENTIVE MAINTENANCE TO REDUCE THE CHANCE OF LEAKAGE. PETROLEUM PRODUCTS WILL BE STORED IN TIGHTLY SEALED CONTAINERS WHICH ARE CLEARLY LABELED. ANY ASPHALT BASED MATERIALS USED ONSITE WILL BE APPLIED AND STORED ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS. ANY SPILLS PETROLEUM PRODUCTS OF 5 GALLONS OR MORE SHALL BE REPORTED TO THE MINNESOTA POLLUTION CONTROL AGENCY AT 651-297-8610.

7. WHENEVER POSSIBLE, VEHICLE REFUELING AND MAINTENANCE SHOULD NOT BE PERFORMED ON THE CONSTRUCTION SITE. HOWEVER, ANY VEHICLE REFUELING OR MAINTENANCE THAT MUST TAKE PLACE ON THE CONSTRUCTION SITE MUST HAVE PROPER SPILL PREVENTION CONTROLS IN PLACE PRIOR TO COMMENCING WORK.

8. THE CONTRACTOR IS RESPONSIBLE FOR CREATING AND FOLLOWING A WRITTEN DISPOSAL PLAN FOR ALL WASTE MATERIALS INCLUDING HAZARDOUS AND SANITARY WASTE. THE PLAN WILL INCLUDE HOW THE MATERIAL WILL BE DISPOSED OF AND THE LOCATION OF THE DISPOSAL SITE. SUBMIT TO THE ENGINEER.

9. ALL PAINT AND CLEANING SOLVENT CONTAINERS WILL BE TIGHTLY SEALED AND STORED WHEN NOT REQUIRED FOR USE. EXCESS PAINT AND SOLUTIONS WILL NOT BE DISCHARGED TO THE STORM SEWER SYSTEM BUT WILL BE PROPERLY DISPOSED OF ACCORDING TO MANUFACTURERS' INSTRUCTIONS OR STATE AND LOCAL REGULATIONS.

10. CONCRETE, CONCRETE TOOLS, AND CONCRETE TRUCKS ALL MUST WASH OUT IN A DESIGNATED AREA. THE DESIGNATED AREA MUST BE CLEARLY IDENTIFIED ON THE SITE AND COMMUNICATED TO ALL PERSONNEL INVOLVED WITH CAST-IN-PLACE CONCRETE AS THE WASHOUT AREA. THIS DESIGNATED AREA MUST MEET THE MPCA REGULATIONS OF A DEFINED CONCRETE WASHOUT AREA. THE FOLLOWING THREE OPTIONS ARE CONSIDERED AN APPROVED METHOD:
   A. KEEPING ALL CONCRETE WASHOUT SELF-CONTAINED AND RETURNED TO AN INDUSTRIAL SITE TO BE DISPOSED OF IN A MPCA APPROVED MANNER.
   B. PROVIDING A PREFABRICATED CONCRETE WASHOUT CONTAINER THAT ALL CONCRETE WASHOUT CAN BE COLLECTED IN. THESE CONTAINERS SHOULD BE MAINTAINED ON A REGULAR BASIS.
   C. CREATING A SELF-INSTALLED WASHOUT FACILITY WITH AN IMPERMEABLE LINER. AN ENGINEERED CLAY LINER WILL BE CONSIDERED AN IMPERMEABLE LINER. FOR ADDITIONAL INFORMATION ON CONCRETE WASHOUT REGULATIONS, PLEASE SEE THE MPCA'S MEMORANDUM "CONCRETE WASHOUT GUIDANCE".

11. BURNING OF ANY MATERIAL IS NOT ALLOWED WITHIN PROJECT BOUNDARY.

12. THE EROSION PREVENTION AND SEDIMENT CONTROL BMPS SHALL BE INSTALLED AS NECESSARY TO MINIMIZE EROSION FROM DISTURBED SURFACES AND CAPTURE SEDIMENT ONSITE. ALL EROSION CONTROL MEASURES SHALL BE IN PLACE PRIOR TO ANY REMOVAL WORK AND/OR GROUND DISTURBING ACTIVITIES COMMENCE AND SHALL BE MAINTAINED UNTIL THE POTENTIAL FOR EROSION HAS BEEN ELIMINATED. THE FOLLOWING CONTROL MEASURES WILL BE COORDINATED WITH CONSTRUCTION ACTIVITIES:
   A. THE STABILIZED CONSTRUCTION ENTRANCE/EXIT SHALL BE THE FIRST PROJECT ITEM INSTALLED. 12 TOTAL CONSTRUCTION ENTRANCES/EXITS SHALL BE INSTALLED ACROSS THE PROJECT LENGTH PER PLAN.
   B. SILT FENCE SHALL BE CONSTRUCTED PRIOR TO ANY SOIL DISTURBANCE AND SHALL REMAIN IN PLACE UNTIL PERMANENT STABILIZATION HAS TAKEN PLACE;
   C. STORM SEWER INLET PROTECTION DEVICES AND STORM SEWER OUTFALL STABILIZATION SHALL BE INSTALLED PRIOR TO ANY SOIL DISTURBANCE AND SHALL REMAIN IN PLACE UNTIL PERMANENT STABILIZATION HAS TAKEN PLACE.
   D. CLEARING, GRADING AND PAVEMENT REMOVAL WILL NOT OCCUR IN AN AREA UNTIL IT IS NECESSARY FOR CONSTRUCTION TO PROCEED;
   E. EROSION AND SEDIMENT CONTROL DEVICES WILL BE SATISFACTORILY MAINTAINED UNTIL THE CONSTRUCTION IS COMPLETED AND THE POTENTIAL FOR EROSION HAS PASSED.

13 SEDIMENT CONTROL DEVICES MUST BE ESTABLISHED ON ALL DOWN GRADIENT PERIMETERS BEFORE ANY UP GRADIENT LAND DISTURBING ACTIVITIES BEGIN. SEDIMENT CONTROL DEVICES INCLUDE, BUT ARE NOT LIMITED TO:
   A. PERIMETER CONTROL SHALL BE LOCATED ON THE CONTOUR TO CAPTURE OVERLAND. LOW-VELOCITY SHEET FLOWS DOWN GRADIENT OF ALL EXPOSED SOILS AND PRIOR TO DISCHARGING TO SURFACE WATERS WITH THE BMP J-HOOKED AT A MAXIMUM OF 100 FOOT INTERVALS AND SHALL CONTAIN NO MORE THAN ¼ ACRE OF DRAINAGE AREA.
   B. SEDIMENT DAMAGE FROM STOCKPILES WILL BE MINIMIZED BY PLACING A ROW OF SILT FENCE A MINIMUM 5 FEET FROM THE TOE. IF THERE IS NOT ADEQUATE PROJECT AREA TO PLACE THE SILT FENCE MORE THAN 5 FEET FROM THE TOE OF THE SLOPE THE CONTRACTOR MAY SUBMIT AN ALTERNATIVE FOR APPROVAL BY THE PROJECT ENGINEER.

14. STORM SEWER INLETS WILL BE PROTECTED AT ALL TIMES WITH THE APPROPRIATE INLET PROTECTION FOR EACH SPECIFIC PHASE OF CONSTRUCTION. INLET PROTECTION DEVICES MAY NEED TO BE PLACED MULTIPLE TIMES IN THE SAME LOCATION OVER THE LIFE OF THE CONTRACT. INLET PROTECTION DEVICES WILL BE PAID FOR ONCE PER INLET REGARDLESS OF THE NUMBER OF TIMES THE BMP IS PLACED. ALL STORM SEWER INLET PROTECTION DEVICES WILL BE KEPT IN GOOD FUNCTIONAL CONDITION AT ALL TIMES. IF THE PROJECT ENGINEER DEEMS AN INLET PROTECTION DEVICE TO BE NONFUNCTIONAL, IN POOR CONDITION, INEFFECTIVE OR NOT APPROPRIATE FOR THE CURRENT CONSTRUCTION ACTIVITIES IT WILL BE REPLACED WITH A SUITABLE ALTERNATIVE AT NO COST TO THE CITY. FAILURE TO PERFORM WILL RESULT IN DEDUCT.

15. THE CONTRACTOR WILL PLACE CONSTRUCTION EXITS, AS NECESSARY, TO PREVENT TRACKING OF SEDIMENT ONTO PAVED SURFACES AND IN COMPLIANCE WITH PART IV OF THE NPDES PERMIT. CONSTRUCTION EXITS WILL BE SUFFICIENTLY SIZED AND MAINTAINED TO PREVENT TRACK OUT. TYPE 5 MULCH (SLASH MULCH) OR AN APPROVED ENGINEERED PRODUCT WILL BE ALLOWED FOR CONSTRUCTION EXITS IN LIEU OF CRUSHED ROCK. THIS WORK WILL BE PAD FOR AS A LUMP SUM OR AS INDICATED ELSE WHERE IN THE PLAN.

16. THE CONTRACTOR MUST USE METHODS AND OPERATION PROCEDURES THAT PREVENT DISCHARGE OR PLACEMENT OF BITUMINOUS GRINDINGS, CUTTINGS, MILLINGS, AND OTHER BITUMINOUS WASTES FROM AREAS OF EXISTING OR FUTURE VEGETATED SOILS, AND ALL WATER CONVEYANCE SYSTEMS, INCLUDING INLETS.

17. THE CONTRACTOR MUST USE METHODS AND OPERATIONAL PROCEDURES THAT PREVENT CONCRETE DUST, PARTICLES, SAW CUT SLURRY, PLANING WASTE AND OTHER CONCRETE WASTES FROM LEAVING CITY RIGHT-OF-WAY. DEPOSITING IN EXISTING OR FUTURE VEGETATED AREAS OR ENTERING STORMWATER CONVEYANCE SYSTEM INCLUDING INLETS AND CURB FLOW LINES.

18. DITCHES AND EXPOSED SOILS MUST BE KEPT IN AN EVEN ROUGH GRADED CONDITION IN ORDER TO BE ABLE TO APPLY EROSION CONTROL MULCHES AND BLANKETS.

19. ALL EXPOSED SOIL AREAS SHALL BE STABILIZED IMMEDIATELY AND MUST BE TEMPORARILY OR PERMANENTLY STABILIZED NO MORE THAN 7 DAYS AFTER CONSTRUCTION ACTIVITY ON THAT PORTION OF THE SITE HAS TEMPORARILY OR PERMANENTLY CEASED. IN MANY INSTANCES, THIS WILL REQUIRE STABILIZATION TO OCCUR MORE THAN ONCE DURING ROUGH GRADING. RAPID STABILIZATION METHOD 3 WILL BE USED TO PROVIDE TEMPORARY COVER IN THESE AREAS AS APPROPRIATE.

20. THE NORMAL WETTED PERIMETER OF ANY TEMPORARY OR PERMANENT DRAINAGE DITCH THAT DRAINS WATER FROM THE CONSTRUCTION SITE, OR DIVERTS WATER AROUND THE CONSTRUCTION SITE, MUST BE STABILIZED WITHIN 200 LINEAL FEET (100 LINEAL FEET IF WITHIN 1 MILE OF AND DRAINS TO A SPECIAL OR IMPAIRED WATER) FROM THE PROPERTY EDGE OR POINT OF DISCHARGE TO ANY SURFACE WATER. STABILIZATION MUST OCCUR WITHIN 24 HOURS OF CONNECTION TO A SURFACE WATER, EXISTING GUTTER, STORM SEWER INLET, DRAINAGE DITCH OR OTHER STORMWATER CONVEYANCE SYSTEM ACCORDING TO SPEC 1717. RAPID STABILIZATION METHOD 4 WILL BE USED TO STABILIZE THESE AREAS. THE REMAINDER OF THE DITCH MUST BE STABILIZED WITHIN 7 DAYS OF CONNECTING TO THE SURFACE WATER. PERMANENT EROSION CONTROL BLANKET OR RAPID STABILIZATION METHOD 4 WILL BE USED TO STABILIZE THESE AREAS. DISC ANCHORED MULCH AND HYDRAULIC SOIL STABILIZERS ARE NOT ALLOWED TO BE USED FOR PERMANENT DITCH STABILIZATION.

21. OUTLETS INTO SURFACE WATERS SHALL BE STABILIZED WITH ENERGY DISSIPATION WITHIN 24 HOURS OF BEING CONSTRUCTED.

22. ALL EXPOSED SOIL AREAS WILL BE STABILIZED PRIOR TO THE ONSET OF WINTER, ANY WORK STILL BEING PERFORMED WILL BE SNOW MULCHED, SEEDED, OR BLANKETED WITHIN THE TIME FRAMES IN THE NPDES PERMIT.

23. THE CONTRACTOR SHALL COMPLY WITH THE FOLLOWING INSPECTION AND MAINTENANCE REQUIREMENTS:
   A. SILT FENCE MUST BE REPAIRED, REPLACED OR SUPPLEMENTED WHEN IT BECOMES NON-FUNCTIONAL OR SEDIMENT REACHES 1/3 THE HEIGHT OF THE SILT FENCE. REPAIRS MUST BE MADE WITHIN 24 HOURS OF DISCOVERY.
   B. INLET PROTECTION DEVICES SHOULD BE REPAIRED WHEN THEY BECOME NON-FUNCTIONAL OR SEDIMENT REACHES 1/3 THE HEIGHT AND/OR DEPTH OF THE DEVICE.
   C. TEMPORARY SEDIMENT BASIN MUST HAVE THE SEDIMENT REMOVED ONCE THE SEDIMENT HAS REACHED ½ THE STORAGE VOLUME WITHIN 72 HOURS OF DISCOVERY.
   D. TRACKED SEDIMENT MUST BE REMOVED WITHIN 24 HOURS OF DISCOVERY OF TRACKING ONTO PAVED SURFACES.
   E. ALL OTHER NON-FUNCTIONAL BMPS MUST BE REPAIRED, REPLACED, OR SUPPLEMENTED WITHIN 24 HOURS OF DISCOVERY.
   F. CONTRACTOR IS RESPONSIBLE FOR MAINTAINING ALL BMPS UNTIL WORK HAS BEEN COMPLETED, SITE HAS GONE UNDER FINAL STABILIZATION, AND THE NOTICE OF TERMINATION HAS BEEN SUBMITT4D TO THE MPCA IN ACCORDANCE WITH PART 11.B.5 OF THE CONSTRUCTION GENERAL PERMIT.

24. IF SEDIMENT DEPOSITS IN A WATER OF THE STATE, THE MATERIAL MUST BE REMOVED WITHIN 7 DAYS.

25. PAVEMENT SURFACES SHALL BE SWEPT WITHIN 24 HOURS OF DISCOVERY OF SEDIMENT OR TRACKING ONTO PAVEMENT THAT DRAINS TO CURB, INLETS, DITCHES OR PONDS. PAVEMENT SHALL BE LIGHTLY WETTED PRIOR TO SWEEPING. THIS WORK IS INCIDENTAL TO THE PROJECT.

26. TEMPORARY DEWATERING ACTIVITIES MAY BE REQUIRED FOR THE ROADWAY CONSTRUCTION AND UTILITY WORK. THEREFORE IT IS POSSIBLE THAT A PERMIT FOR THE TEMPORARY APPROPRIATION OF WATERS OF THE STATE, NON-IRRIGATION FROM MNDNR WILL BE REQUIRED FOR THIS PROJECT. THE CONTRACTOR WILL BE RESPONSIBLE FOR OBTAINING THIS PERMIT. ALL TEMPORARY DEWATERING SHALL BE DISCHARGED TO AN APPROVED LOCATION FOR TREATMENT PRIOR TO DISCHARGE TO THE RECEIVING WATER. THE CONTRACTOR IS REQUIRED TO SUBMIT SITE PLANS TO THE ENGINEER FOR APPROVAL PRIOR TO COMMENCING WORK ACCORDING TO SPEC 1717.

27. BASIN DRAINING ACTIVITIES OF TURBID OR SEDIMENT LADEN WATER WILL BE DISCHARGED TO TEMPORARY SEDIMENT BASINS WHENEVER POSSIBLE. IN THE EVENT THAT IT IS NOT POSSIBLE TO DISCHARGE THE SEDIMENT LADEN WATER TO A TEMPORARY SEDIMENT BASIN, THE WATER MUST BE TREATED SO THAT IT DOES NOT CAUSE A NUISANCE CONDITION IN THE RECEIVING WATERS OR TO THE DOWNSTREAM LANDOWNERS.

28. IT IS THE DESIGNER'S INTENT THAT THE CONTRACTOR BUILD PONDS AND INSTALL EROSION CONTROL BEFORE PUTTING THEM IN ACTIVE SERVICE TO THE MAXIMUM EXTENT PRACTICAL. ALL PONDS FOR THE PROJECT WILL BE SUBJECT TO THE SITE PLAN REQUIREMENT AREA EROSION CONTROL SCHEDULE AS PER 1717.

29. THE CONTRACTOR MAY NOT DRIVE ANY EQUIPMENT ON FINISHED POND BOTTOMS OR POND CORNERS. IF DISTURBED, POND BOTTOM AND POND CORNERS MUST BE RESTORED TO PRE-EXISTING CONDITIONS WITHIN 24 HOURS. ANY RUTS OR DAMAGED TURF THAT COULD CREATE SEDIMENT DISCHARGE TO POND BOTTOMS MUST BE REPAIRED WITHIN 24 HOURS.

30. ANY SUBSURFACE DRAINAGE TILES DAMAGED DURING CONSTRUCTION SHALL BE REPAIRED, REPLACED OR REROUTED AND CONNECTED TO THE EXISTING TILE OR DRAINAGE SYSTEM TO ENSURE THAT EXISTING UPLAND DRAINAGE IS PERPETUATED. THIS SHOULD BE DONE TO THE APPROVAL AND SATISFACTION OF THE ENGINEER.

31. TILLING FOR BEDS OR TREE HOLES MUST BE PLANTED AND MULCHED WITH WOODCHIP WITHIN 7 DAYS OR STRAW MULCHED UNTIL PLANTING OPERATIONS CAN BE COMPLETED.

32. ANY POND CORNERS OPENED DUE TO TILING FOR SHRUB BEDS OR TREE HOLES MUST BE PLANTED AND MULCHED WITH WOODCHIP WITHIN 24 HOURS OR STRAW MULCHED UNTIL PLATING OPERATIONS CAN BE COMPLETED.

33. ALL PERMANENT STORMWATER BASINS USED AS TEMPORARY SEDIMENT TRAPS WILL BE CLEANED OUT TO THE DESIGN CAPACITY AFTER ALL UPGRADIENT LAND DISTURBING ACTIVITY IS COMPLETED.

No.	Date	Revisions	App.

DRAWING NAME: CHANKAHDA_PH3_SWPPP.dwg

DESIGNED BY:	HB
DRAWN BY:	PD
CHECKED BY:	SLT
DATE:	02/07/2025
PROJECT NO.	160662010

Kimley»Horn
767 EUSTIS STREET, SUITE 100, ST, PAUL, MN 55114
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I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

Stephanie Thulien
STEPHANIE L. THULIEN, PE
DATE: 02/07/2025 MN LIC. NO. 57230

City of Plymouth
CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
STORM WATER POLLUTION PREVENTION PLAN

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 75 / 354

STABILIZATION TIME FRAMES

AREA	TIME FRAME	NOTES
LAST 200 LINEAL FEET OF DRAINAGE DITCH OR SWALE	WITHIN 24 HRS. OF CONNECTION TO SURFACE WATER OR PROPERTY EDGE	1, 2, 3
REMAINING PORTIONS OF DRAINAGE DITCH OR SWALE	7 DAYS	1, 3
PIPE AND CULVERT OUTLETS	24 HOURS	
EXPOSED SOILS AND STOCKPILES	7 DAYS	1
WITHIN 200 LINEAL FEET OF A PUBLIC WATER	24 HOURS	7

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 THE CONTRACT. 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.
2. STABILIZE WETTED PERIMETER OF DITCH (I.E. WHERE THE DITCH GETS WET).
3. APPLICATION OF MULCH, HYDROMULCH, TACKIFIER, AND POLYACRYLAMIDE ARE NOT ACCEPTABLE STABILIZATION METHODS IN THESE AREAS.
4. STABILIZE ALL AREAS OF THE SITE PRIOR TO THE ONSET OF WINTER. ANY WORK STILL BEING PERFORMED WILL BE SNOW MULCHED, SEEDED, AND BLANKETED WITHIN THE TIME FRAMES IN THE NPDES PERMIT.
5. TOPSOIL BERMS MUST BE STABILIZED IN ORDER TO BE CONSIDERED PERIMETER CONTROL BMPS. USE RAPID STABILIZATION METHOD 2, 3, OR 4 AS DIRECTED BY THE CONSTRUCTION REPRESENTATIVE. THE SEED MIX USED IN THE RAPID STABILIZATION MAY BE SUBSTITUTED AS FOLLOWS:
   A. SINGLE YEAR CONSTRUCTION BETWEEN MAY 1 – AUGUST 1, SEED WITH OATS (O)
   B. SINGLE YEAR CONSTRUCTION BETWEEN AUGUST 1 AND OCTOBER 31, SEED WITH WINTER WHEAT (WW)
   C. MULTI YEAR CONSTRUCTION 22–1117. KEEP DITCHES AND EXPOSED SOILS IN AN EVEN ROUGH GRADED CONDITION IN ORDER TO BE ABLE TO APPLY EROSION CONTROL MULCHES, HYDROMULCHES, AND BLANKETS.8. SEE WATER RESOURCES NOTES FOR A LIST OF PUBLIC WATER EXCLUSION DATES. TWENTY–FOUR HOUR STABILIZATION REQUIREMENT ONLY APPLIES DURING THE EXCLUSION DATES.
6. THE FOLLOWING TYPES OF WATERS HAVE WORK IN WATER EXCLUSIONS. NO WORK IN THE WATER IS ALLOWED DURING THE EXCLUSION DATES. SEE DNR PERMIT FOR WHICH WATERBODIES THIS APPLIES TO.

7. THE FOLLOWING TABLE LISTS PUBLIC WATERS EXCLUSION DATES. TWENTY FOUR HOUR STABILIZATION REQUIREMENT ONLY APPLIES DURING THE EXCLUSION DATES.

WATERBODY	EXCLUSION DATES
LAKES	APRIL 1 – JUNE 30
NON–TROUT STREAMS	MARCH 15 – JUNE 15
TROUT STREAMS	SEPTEMBER 1 – APRIL 1

WATER RESOURCES NOTES

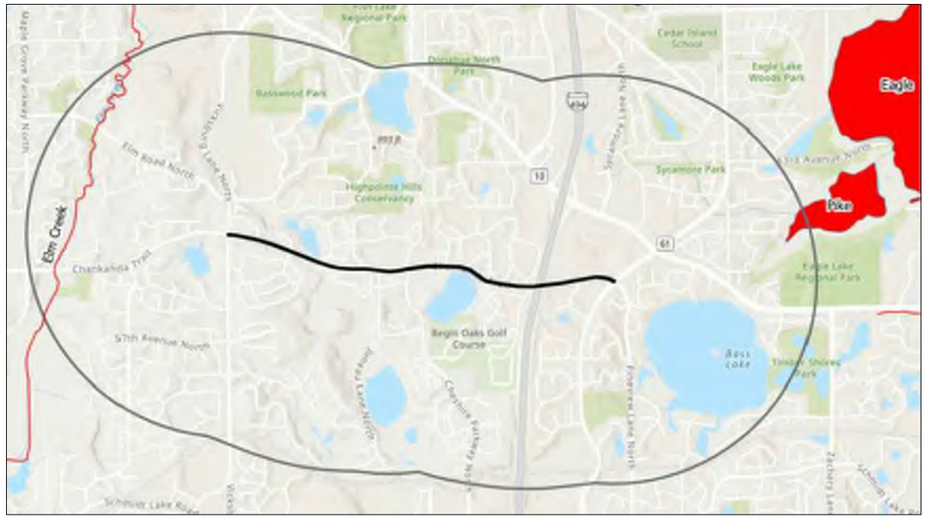
THESE NOTES ALONG WITH THE STORMWATER POLLUTION PREVENTION PLAN (SWPPP) NARRATIVE ARE INTENDED TO GIVE INFORMATION ON CRITICAL DRAINAGE FEATURES, NATURAL RESOURCES AND CONTRACTOR OPERATIONS THAT MAY IMPACT DRAINAGE AND NATURAL RESOURCES.

1. THE SIZE AND ELEVATION OF STORM SEWER PIPES, INLETS, PERMEABLE DITCH BLOCKS, AND OVERFLOW DEVICES HAVE BEEN SPECIFICALLY DESIGNED TO CONFORM TO PROJECT DESIGN STANDARDS, MINNESOTA POLLUTION CONTROL AGENCY (MPCA), AND WATERSHED MANAGEMENT ORGANIZATION REQUIREMENTS. THE PROJECT'S FINAL DRAINAGE REPORT CONTAINS A SITE MAP WITH EXISTING AND FINAL GRADES, INCLUDING DRAINAGE AREA BOUNDARIES, DIRECTIONS OF FLOW AND ALL DISCHARGE POINTS WHERE STORMWATER IS LEAVING THE SITE OR ENTERING A SURFACE WATER, AND INDENTIFICATION OF SURFACE WATERS WITHIN 1 MILE OF THE PROJECT THAT RECEIVE RUNOFF FORM THE PROJECT. THE REPORT ALSO INCLUDES INFORMATION RELATING TO IMPERVIOUS SURFACE CHANGES AND SOIL TYPES. THERE ARE NO STEEP SLOPE AREAS OR POLLUTANT GENERATING ACTIVITES WIHTIN THE PROJECT LIMITS. CHANGING 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 SYTEM MUST BE APPROVED BY THE WATER RESOURCES DESIGNER.

2. THE FOLLOWING PERMITS AND APPROVALS APPLY TO THIS PROJECT:
   A. NPDES – THE CONTRACTOR IS RESPONSIBLE FOR COMPLETING THE ONLINE FORM AND SUBMITTING TO THE MPCA PRIOR TO COMMENCING WORK ON SITE
   B. ELM CREEK WMC – THE OWNER IS RESPONSIBLE FOR COMPLETING THE PERMIT APPLICATION FORM, BUT THE CONTRACTOR IS RESPONSIBLE FOR MEETING THE CONSTRUCTION REQUIREMENTS OF THE PERMIT.
   C. SHINGLE CREEK WMC – A PORTION OF THE PROJECT IS WITHIN THE SHINGLE CREEK WMC AND IS SUBJECT TO THEIR REQUIREMENTS. PERMITTING WILL BE COMPLETED THROUGH THE ELM CREEK WMC.
   D. DNR PUBLIC WATERS WORK PERMIT – THE OWNERS IS RESPONSIBLE FOR COMPLETING THE ONLINE FORM AND SUBMITTING TO THE DNR THROUGH THE MPARS SITE PRIOR TO COMMENCING WORK ON SITE
3. WITHIN AREAS WHERE PERMEABLE DITCH BLOCKS AND FILTRATION BASIN ARE CONSTRUCTED, ONLY TRACKED VEHICLES MAY BE USED. WHEELED VEHICLES ARE PROHIBITED FROM THESE AREAS IN ORDER TO LIMIT THE COMPACTION OF THE EXISTING AND INSTALLED ENGINEERED SOILS. EXTRA CARE SHOULD BE TAKEN TO AVOID DISCHARGE OF CONSTRUCTION SEDIMENT TO THESE DRAINAGE FEATURES. IN THE EVENT THAT SEDIMENT IS DISCHARGED ONTO THE EXISTING SOILS PRECEDING PLACEMENT OF ENGINEERED SOILS OR ONTO THE SURFACE OF ENGINEERED SOILS, THE DAMAGED AREAS WILL BE REPLACED WITH ENGINEERED SOILS. IF THESE AREAS BECOME COMPACTED, THE CONTRACTOR WILL SUBSOIL THE BASIN, IN ACCORDANCE WITH MNDOT SPECIFICATION 2105, INSTALL ADDITIONAL ENGINEERED SOILS, OR USE OTHER METHODS RECOMMENDED BY THE ENGINEER AT NO COST TO THE OWNER. THE CONTRACTOR WILL THEN VERIFY USING A DOUBLE RING INFILTROMETER THAT THE BASIN WILL FUNCTION AS DESIGNED.

4. SUBSOILING SHALL NOT BE APPLIED TO THIS PROJECT, EXCEPT IN THE CONDITION DESCRIBED IN NOTE 3 ABOVE.

PROJECT LOCATION AND SPECIAL AND IMPAIRED WATERS



CERTIFIED SWPPP PERSONNEL AND EROSION CONTROL SUPERVISOR TRAINING CREDENTIALS


UNIVERSITY OF MINNESOTA

John C Seagrist

Design of Construction SWPPP (May 31 2027)


Erosion and Stormwater Management

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

Card Issued: 6/1/2024

No.	Date	Revisions	App.

DRAWING NAME: CHANKAHDA_PH3_SWPPP.dwg

DESIGNED BY:	HB
DRAWN BY:	PD
CHECKED BY:	SLT
DATE:	02/07/2025
PROJECT NO.	160662010

Kimley»Horn
767 EUSTIS STREET, SUITE 100, ST, PAUL, MN 55114
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I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

STEPHANIE L. THULIEN, PE

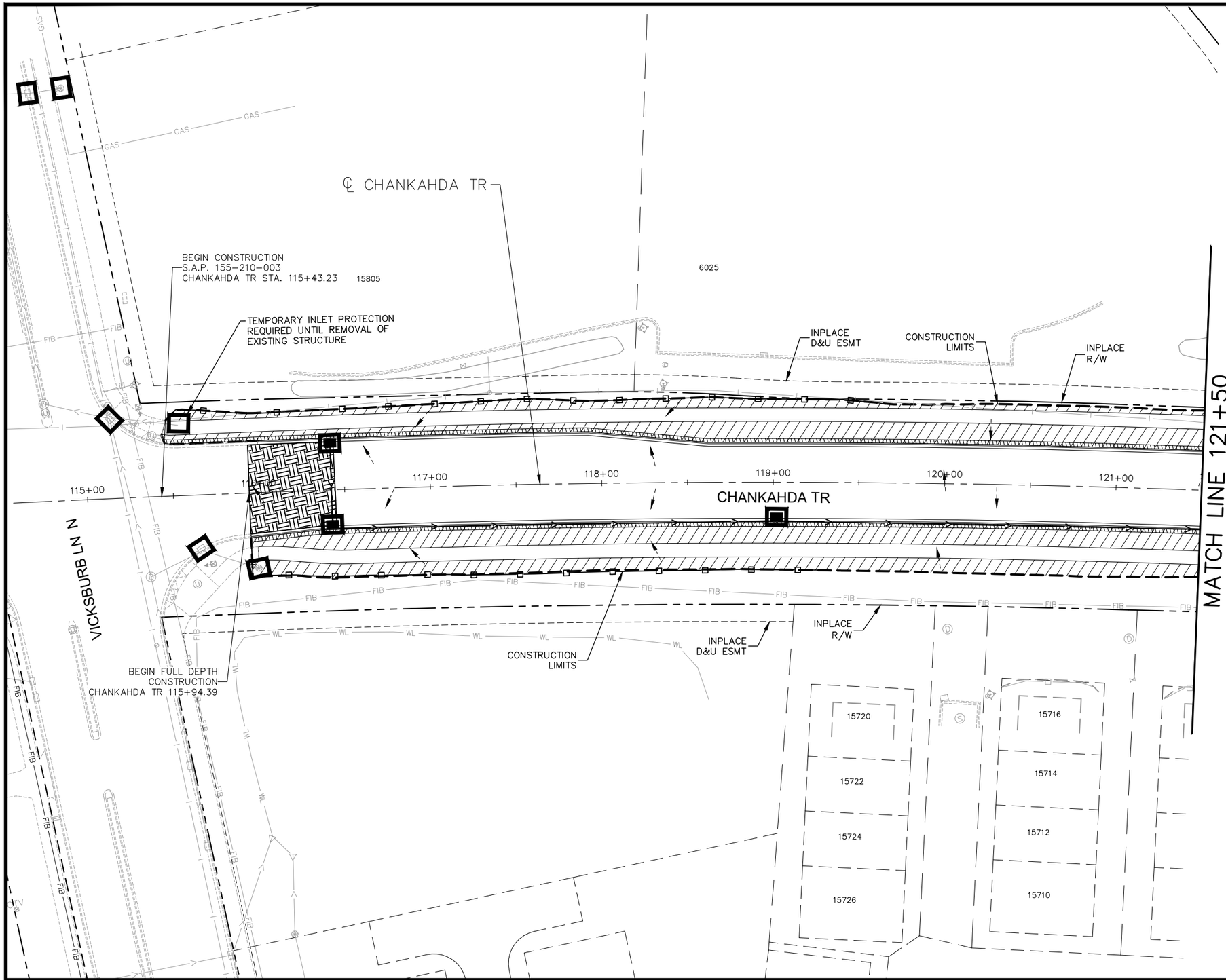
DATE: 02/07/2025 MN LIC. NO. 57230

City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3

CHANKAHDA TR
STORM WATER POLLUTION PREVENTION PLAN

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155–210–003
S.A.P.	



LEGEND

- HYDROSEED
  SEED MIX – CITY SPECIAL MIX DESIGN A @ 160 LBS/ACRE
  FERTILIZER TYPE 3 – 22-5-10 @ 350 LBS/ACRE
  HYDRAULIC MULCH MATRIX @ 2100 LBS/ACRE
  TEMPORARY EROSION CONTROL: MnDOT TYPE 3 MULCH @ 2 TONS/ACRE
  SEED MIX – OATS (O) @ 100 LBS/ACRE
- HARROWED OR RAKED AND THEN CULTIVATED
  SEED MIX – WET DITCH (WD) @ 20 LBS/ACRE
  FERTILIZER TYPE 4 – 18-1-18 @ 120 LBS/ACRE
  ROLLED EROSION PREVENTION CATEGORY 20
  TEMPORARY EROSION CONTROL: RAPID STABILIZATION METHOD 2
- HARROWED OR RAKED AND THEN CULTIVATED
  SEED MIX – SOUTHERN SHORTGRASS ROADSIDE(SSR)
  @ 26 LBS/ACRE
  FERTILIZER TYPE 3 – 22-5-10 @ 200 LBS/ACRE
  ROLLED EROSION PREVENTION CATEGORY 20
  TEMPORARY EROSION CONTROL: RAPID STABILIZATION METHOD 2
- HARROWED OR RAKED AND THEN CULTIVATED
  SEED MIX – SOUTHERN SHORTGRASS ROADSIDE(SSR)
  @ 26 LBS/ACRE
  FERTILIZER TYPE 3 – 22-5-10 @ 200 LBS/ACRE
  ROLLED EROSION PREVENTION CATEGORY 25
  TEMPORARY EROSION CONTROL: RAPID STABILIZATION METHOD 2
- SOD TYPE LAWN
  FERTILIZER TYPE 3 – 22-5-10 @ 200 LBS/ACRE
  TEMPORARY EROSION CONTROL: HYDRAULIC MULCH MATRIX @ 2100 LBS/ACRE
- GRANITE RIPRAP TO BE PLACED WITHIN 24 HOURS OF STORM PLACEMENT
- STABILIZED CONSTRUCTION EXIT
  REFER TO MNDOT STANDARD PLAN 5-297.405 ON SHEET 33
- CONCRETE WASHOUT AREA
- 25-FOOT WETLAND BUFFER
- STORM DRAIN INLET PROTECTION
- STORM SEWER MANHOLES
- STORM SEWER FES
- SILT FENCE
- DRAINAGE DIRECTION
- FILTER LOG – TYPE WOOD BIOROLL – TYPE 3

NOTES

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL LABOR, EQUIPMENT, TOOLS, AND APPERTUNANCES REQUIRED TO COMPLETE AND MAINTAIN TEMPORARY DRAINAGE FOR THE DURATION OF THE PROJECT. ALL WORK RELATED TO TEMPORARY DRAINAGE SHALL BE CONSIDERED INCIDENTAL.

0 15 30 60
HORIZONTAL SCALE IN FEET

No.	Date	Revisions	App.

DRAWING NAME: CHANKAHDA_PH3_ErosTurf.dwg

DESIGNED BY:	HB
DRAWN BY:	PD
CHECKED BY:	CBL
DATE:	02/07/2025
PROJECT NO.	160662010

Kimley»Horn
767 EUSTIS STREET, SUITE 100, ST, PAUL, MN 55114
PHONE: 651-645-4197
WWW.KIMLEY-HORN.COM

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

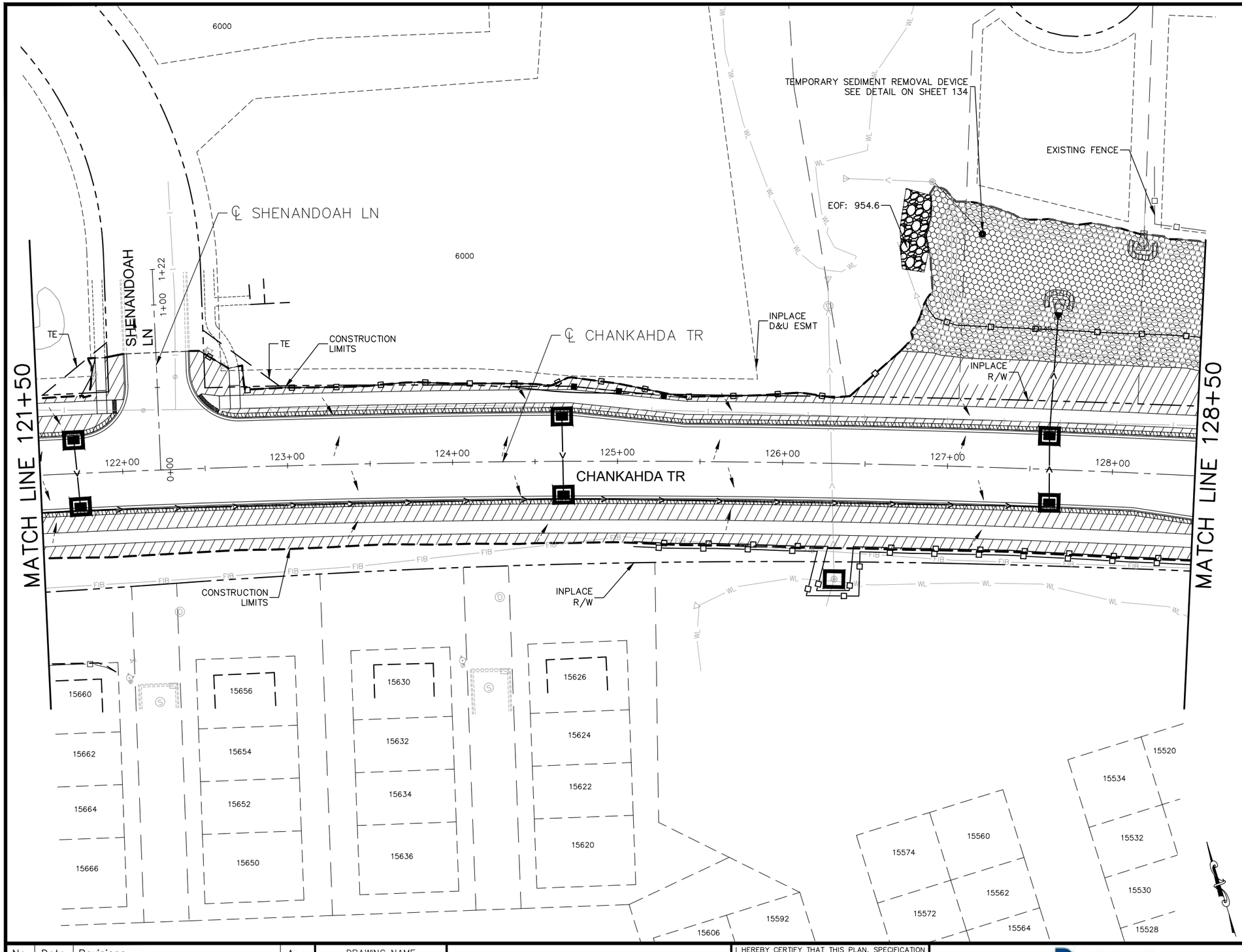
Chadd B. Larson
CHADD B. LARSON, PE
DATE: 02/07/2025 MN LIC. NO. 41864

City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
EROSION CONTROL AND TURF ESTABLISHMENT PLAN
STA. 115+43.23 TO STA. 121+50

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 77 / 354



LEGEND

- HYDROSEED
  SEED MIX – CITY SPECIAL MIX DESIGN A @ 160 LBS/ACRE
  FERTILIZER TYPE 3 – 22–5–10 @ 350 LBS/ACRE
  HYDRAULIC MULCH MATRIX @ 2100 LBS/ACRE
  TEMPORARY EROSION CONTROL: MnDOT TYPE 3 MULCH @ 2 TONS/ACRE
  SEED MIX – OATS (O) @ 100 LBS/ACRE
- HARROWED OR RAKED AND THEN CULTIVATED
  SEED MIX – WET DITCH (WD) @ 20 LBS/ACRE
  FERTILIZER TYPE 4 – 18–1–18 @ 120 LBS/ACRE
  ROLLED EROSION PREVENTION CATEGORY 20
  TEMPORARY EROSION CONTROL: RAPID STABILIZATION METHOD 2
- HARROWED OR RAKED AND THEN CULTIVATED
  SEED MIX – SOUTHERN SHORTGRASS ROADSIDE(SSR) @ 26 LBS/ACRE
  FERTILIZER TYPE 3 – 22–5–10 @ 200 LBS/ACRE
  ROLLED EROSION PREVENTION CATEGORY 20
  TEMPORARY EROSION CONTROL: RAPID STABILIZATION METHOD 2
- HARROWED OR RAKED AND THEN CULTIVATED
  SEED MIX – SOUTHERN SHORTGRASS ROADSIDE(SSR) @ 26 LBS/ACRE
  FERTILIZER TYPE 3 – 22–5–10 @ 200 LBS/ACRE
  ROLLED EROSION PREVENTION CATEGORY 25
  TEMPORARY EROSION CONTROL: RAPID STABILIZATION METHOD 2
- SOD TYPE LAWN
  FERTILIZER TYPE 3 – 22–5–10 @ 200 LBS/ACRE
  TEMPORARY EROSION CONTROL: HYDRAULIC MULCH MATRIX @ 2100 LBS/ACRE
- GRANITE RIPRAP TO BE PLACED WITHIN 24 HOURS OF STORM PLACEMENT
- STABILIZED CONSTRUCTION EXIT
  REFER TO MNDOT STANDARD PLAN 5–297.405 ON SHEET 33
- CONCRETE WASHOUT AREA
- 25–FOOT WETLAND BUFFER
- STORM DRAIN INLET PROTECTION
- STORM SEWER MANHOLES
- STORM SEWER FES
- SILT FENCE
- DRAINAGE DIRECTION
- FILTER LOG – TYPE WOOD BIOROLL – TYPE 3

NOTES

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL LABOR, EQUIPMENT, TOOLS, AND APPERTUNANCES REQUIRED TO COMPLETE AND MAINTAIN TEMPORARY DRAINAGE FOR THE DURATION OF THE PROJECT. ALL WORK RELATED TO TEMPORARY DRAINAGE SHALL BE CONSIDERED INCIDENTAL.

0 15 30 60
HORIZONTAL SCALE IN FEET

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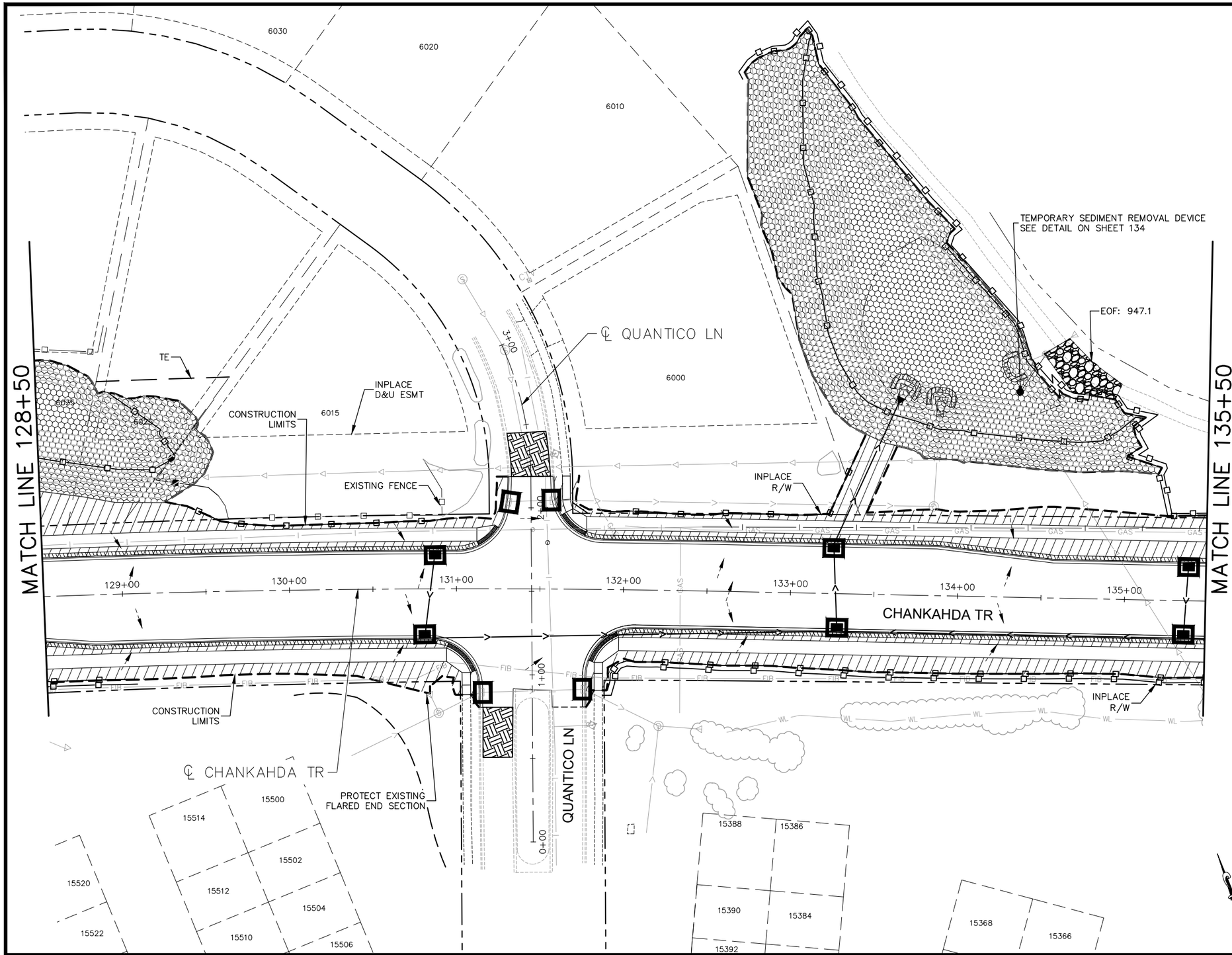
CHADD B. LARSON, PE
DATE: 02/07/2025 MN LIC. NO. 41864

City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
EROSION CONTROL AND TURF ESTABLISHMENT PLAN
STA. 121+50 TO STA. 128+50

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155–210–003
S.A.P.	

SHEET NO. 78 / 354



LEGEND

- HYDROSEED
  SEED MIX – CITY SPECIAL MIX DESIGN A @ 160 LBS/ACRE
  FERTILIZER TYPE 3 – 22–5–10 @ 350 LBS/ACRE
  HYDRAULIC MULCH MATRIX @ 2100 LBS/ACRE
  TEMPORARY EROSION CONTROL: MnDOT TYPE 3 MULCH @ 2 TONS/ACRE
  SEED MIX – OATS (O) @ 100 LBS/ACRE
- HARROWED OR RAKED AND THEN CULTIVATED
  SEED MIX – WET DITCH (WD) @ 20 LBS/ACRE
  FERTILIZER TYPE 4 – 18–1–18 @ 120 LBS/ACRE
  ROLLED EROSION PREVENTION CATEGORY 20
  TEMPORARY EROSION CONTROL: RAPID STABILIZATION METHOD 2
- HARROWED OR RAKED AND THEN CULTIVATED
  SEED MIX – SOUTHERN SHORTGRASS ROADSIDE(SSR) @ 26 LBS/ACRE
  FERTILIZER TYPE 3 – 22–5–10 @ 200 LBS/ACRE
  ROLLED EROSION PREVENTION CATEGORY 20
  TEMPORARY EROSION CONTROL: RAPID STABILIZATION METHOD 2
- HARROWED OR RAKED AND THEN CULTIVATED
  SEED MIX – SOUTHERN SHORTGRASS ROADSIDE(SSR) @ 26 LBS/ACRE
  FERTILIZER TYPE 3 – 22–5–10 @ 200 LBS/ACRE
  ROLLED EROSION PREVENTION CATEGORY 25
  TEMPORARY EROSION CONTROL: RAPID STABILIZATION METHOD 2
- SOD TYPE LAWN
  FERTILIZER TYPE 3 – 22–5–10 @ 200 LBS/ACRE
  TEMPORARY EROSION CONTROL: HYDRAULIC MULCH MATRIX @ 2100 LBS/ACRE
- GRANITE RIPRAP TO BE PLACED WITHIN 24 HOURS OF STORM PLACEMENT
- STABILIZED CONSTRUCTION EXIT
  REFER TO MNDOT STANDARD PLAN 5–297.405 ON SHEET 33
- CONCRETE WASHOUT AREA
- 25–FOOT WETLAND BUFFER
- STORM DRAIN INLET PROTECTION
- STORM SEWER MANHOLES
- STORM SEWER FES
- SILT FENCE
- DRAINAGE DIRECTION
- FILTER LOG – TYPE WOOD BIOROLL – TYPE 3

NOTES

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL LABOR, EQUIPMENT, TOOLS, AND APPERTUNANCES REQUIRED TO COMPLETE AND MAINTAIN TEMPORARY DRAINAGE FOR THE DURATION OF THE PROJECT. ALL WORK RELATED TO TEMPORARY DRAINAGE SHALL BE CONSIDERED INCIDENTAL.

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HORIZONTAL SCALE IN FEET

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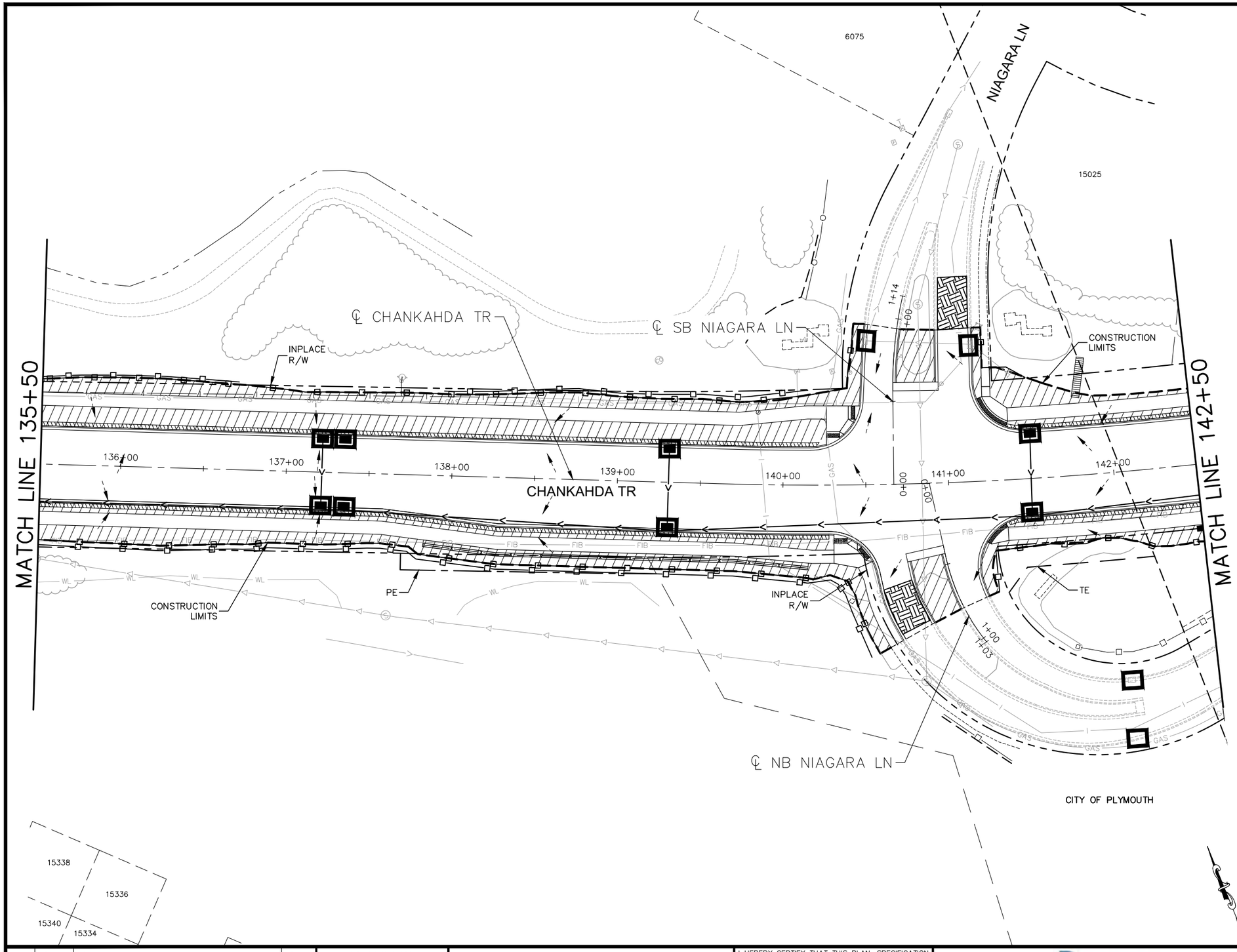
CHADD B. LARSON, PE
DATE: 02/07/2025 MN LIC. NO. 41864

City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
EROSION CONTROL AND TURF ESTABLISHMENT PLAN
STA. 128+50 TO STA. 135+50

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155–210–003
S.A.P.	

SHEET NO. 79 / 354



LEGEND

- HYDROSEED
  SEED MIX – CITY SPECIAL MIX DESIGN A @ 160 LBS/ACRE
  FERTILIZER TYPE 3 – 22–5–10 @ 350 LBS/ACRE
  HYDRAULIC MULCH MATRIX @ 2100 LBS/ACRE
  TEMPORARY EROSION CONTROL: MnDOT TYPE 3 MULCH @ 2 TONS/ACRE
  SEED MIX – OATS (O) @ 100 LBS/ACRE
- HARROWED OR RAKED AND THEN CULTIVATED
  SEED MIX – WET DITCH (WD) @ 20 LBS/ACRE
  FERTILIZER TYPE 4 – 18–1–18 @ 120 LBS/ACRE
  ROLLED EROSION PREVENTION CATEGORY 20
  TEMPORARY EROSION CONTROL: RAPID STABILIZATION METHOD 2
- HARROWED OR RAKED AND THEN CULTIVATED
  SEED MIX – SOUTHERN SHORTGRASS ROADSIDE(SSR) @ 26 LBS/ACRE
  FERTILIZER TYPE 3 – 22–5–10 @ 200 LBS/ACRE
  ROLLED EROSION PREVENTION CATEGORY 20
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  ROLLED EROSION PREVENTION CATEGORY 25
  TEMPORARY EROSION CONTROL: RAPID STABILIZATION METHOD 2
- SOD TYPE LAWN
  FERTILIZER TYPE 3 – 22–5–10 @ 200 LBS/ACRE
  TEMPORARY EROSION CONTROL: HYDRAULIC MULCH MATRIX @ 2100 LBS/ACRE
- GRANITE RIPRAP TO BE PLACED WITHIN 24 HOURS OF STORM PLACEMENT
- STABILIZED CONSTRUCTION EXIT
  REFER TO MNDOT STANDARD PLAN 5–297.405 ON SHEET 33
- CONCRETE WASHOUT AREA
- 25–FOOT WETLAND BUFFER
- STORM DRAIN INLET PROTECTION
- STORM SEWER MANHOLES
- STORM SEWER FES
- SILT FENCE
- DRAINAGE DIRECTION
- FILTER LOG – TYPE WOOD BIOROLL – TYPE 3

NOTES

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL LABOR, EQUIPMENT, TOOLS, AND APPERTUNANCES REQUIRED TO COMPLETE AND MAINTAIN TEMPORARY DRAINAGE FOR THE DURATION OF THE PROJECT. ALL WORK RELATED TO TEMPORARY DRAINAGE SHALL BE CONSIDERED INCIDENTAL.

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HORIZONTAL SCALE IN FEET

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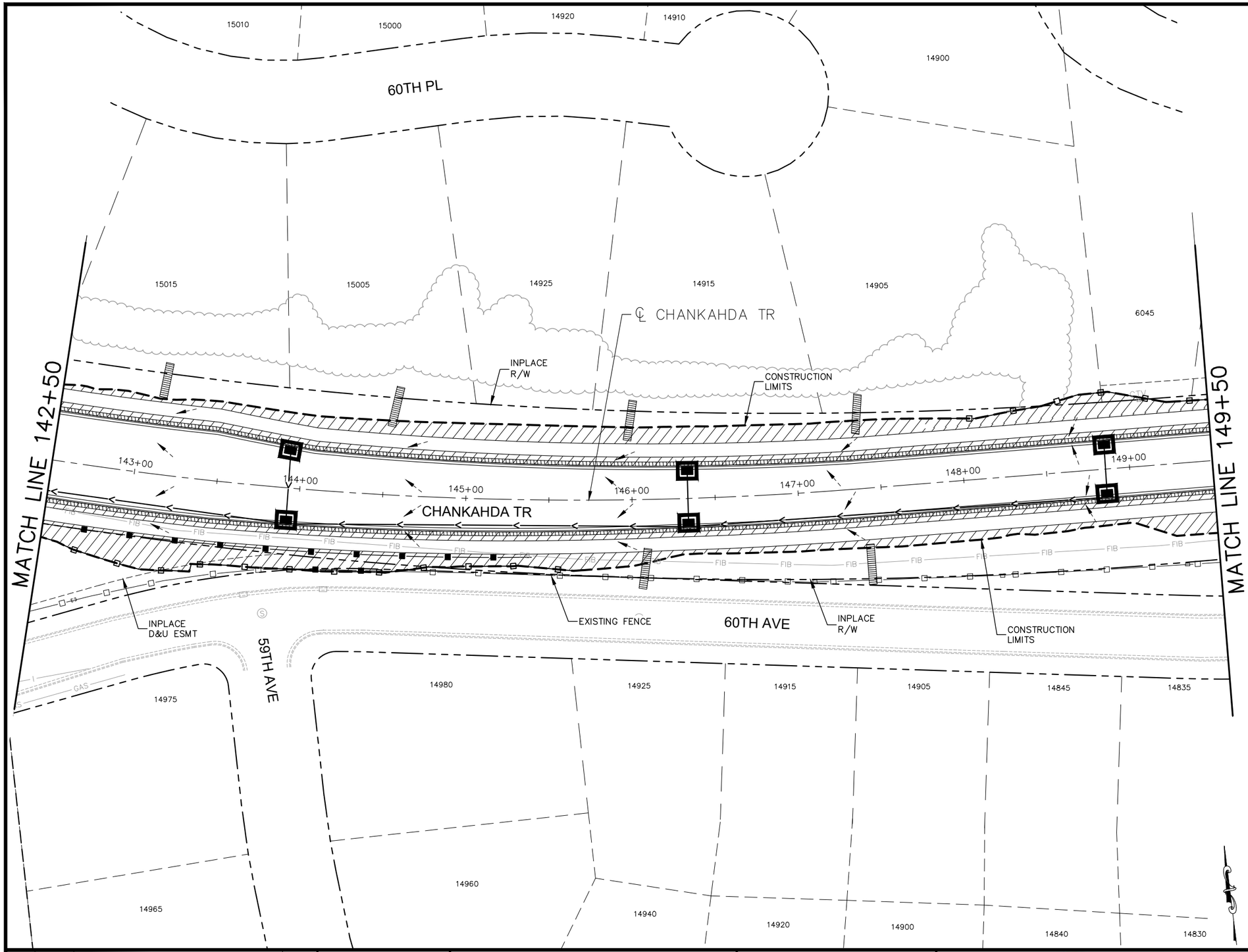
CHADD B. LARSON, PE
DATE: 02/07/2025 MN LIC. NO. 41864

City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
EROSION CONTROL AND TURF ESTABLISHMENT PLAN
STA. 135+50 TO STA. 142+50

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155–210–003
S.A.P.	

SHEET NO. 80 / 354



LEGEND

- HYDROSEED
  SEED MIX – CITY SPECIAL MIX DESIGN A @ 160 LBS/ACRE
  FERTILIZER TYPE 3 – 22–5–10 @ 350 LBS/ACRE
  HYDRAULIC MULCH MATRIX @ 2100 LBS/ACRE
  TEMPORARY EROSION CONTROL: MnDOT TYPE 3 MULCH @ 2 TONS/ACRE
  SEED MIX – OATS (O) @ 100 LBS/ACRE
- HARROWED OR RAKED AND THEN CULTIVATED
  SEED MIX – WET DITCH (WD) @ 20 LBS/ACRE
  FERTILIZER TYPE 4 – 18–1–18 @ 120 LBS/ACRE
  ROLLED EROSION PREVENTION CATEGORY 20
  TEMPORARY EROSION CONTROL: RAPID STABILIZATION METHOD 2
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- STABILIZED CONSTRUCTION EXIT
  REFER TO MNDOT STANDARD PLAN 5–297.405 ON SHEET 33
- CONCRETE WASHOUT AREA
- 25–FOOT WETLAND BUFFER
- STORM DRAIN INLET PROTECTION
- STORM SEWER MANHOLES
- STORM SEWER FES
- SILT FENCE
- DRAINAGE DIRECTION
- FILTER LOG – TYPE WOOD BIOROLL – TYPE 3

NOTES

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL LABOR, EQUIPMENT, TOOLS, AND APPERTUNANCES REQUIRED TO COMPLETE AND MAINTAIN TEMPORARY DRAINAGE FOR THE DURATION OF THE PROJECT. ALL WORK RELATED TO TEMPORARY DRAINAGE SHALL BE CONSIDERED INCIDENTAL.

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HORIZONTAL SCALE IN FEET

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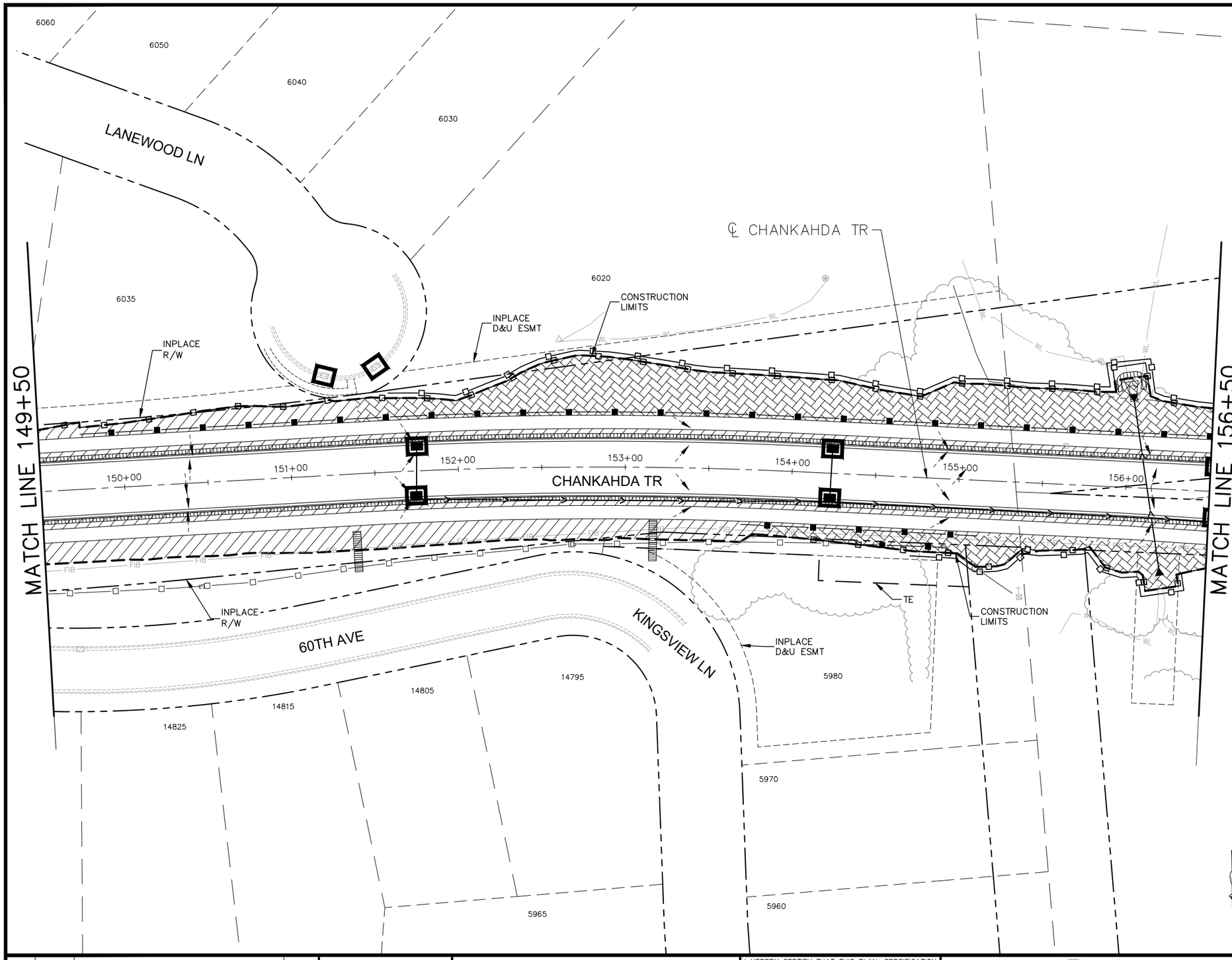
CHADD B. LARSON, PE
DATE: 02/07/2025 MN LIC. NO. 41864

City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
EROSION CONTROL AND TURF ESTABLISHMENT PLAN
STA. 142+50 TO STA. 149+50

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155–210–003
S.A.P.	

SHEET NO. 81 / 354



LEGEND

- HYDROSEED
  SEED MIX – CITY SPECIAL MIX DESIGN A @ 160 LBS/ACRE
  FERTILIZER TYPE 3 – 22–5–10 @ 350 LBS/ACRE
  HYDRAULIC MULCH MATRIX @ 2100 LBS/ACRE
  TEMPORARY EROSION CONTROL: MnDOT TYPE 3 MULCH @ 2 TONS/ACRE
  SEED MIX – OATS (O) @ 100 LBS/ACRE
- HARROWED OR RAKED AND THEN CULTIVATED
  SEED MIX – WET DITCH (WD) @ 20 LBS/ACRE
  FERTILIZER TYPE 4 – 18–1–18 @ 120 LBS/ACRE
  ROLLED EROSION PREVENTION CATEGORY 20
  TEMPORARY EROSION CONTROL: RAPID STABILIZATION METHOD 2
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- GRANITE RIPRAP TO BE PLACED WITHIN 24 HOURS OF STORM PLACEMENT
- STABILIZED CONSTRUCTION EXIT
  REFER TO MNDOT STANDARD PLAN 5–297.405 ON SHEET 33
- CONCRETE WASHOUT AREA
- 25–FOOT WETLAND BUFFER
- STORM DRAIN INLET PROTECTION
- STORM SEWER MANHOLES
- STORM SEWER FES
- SILT FENCE
- DRAINAGE DIRECTION
- FILTER LOG – TYPE WOOD BIOROLL – TYPE 3

NOTES

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL LABOR, EQUIPMENT, TOOLS, AND APPERTUNANCES REQUIRED TO COMPLETE AND MAINTAIN TEMPORARY DRAINAGE FOR THE DURATION OF THE PROJECT. ALL WORK RELATED TO TEMPORARY DRAINAGE SHALL BE CONSIDERED INCIDENTAL.

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HORIZONTAL SCALE IN FEET

No.	Date	Revisions	App.

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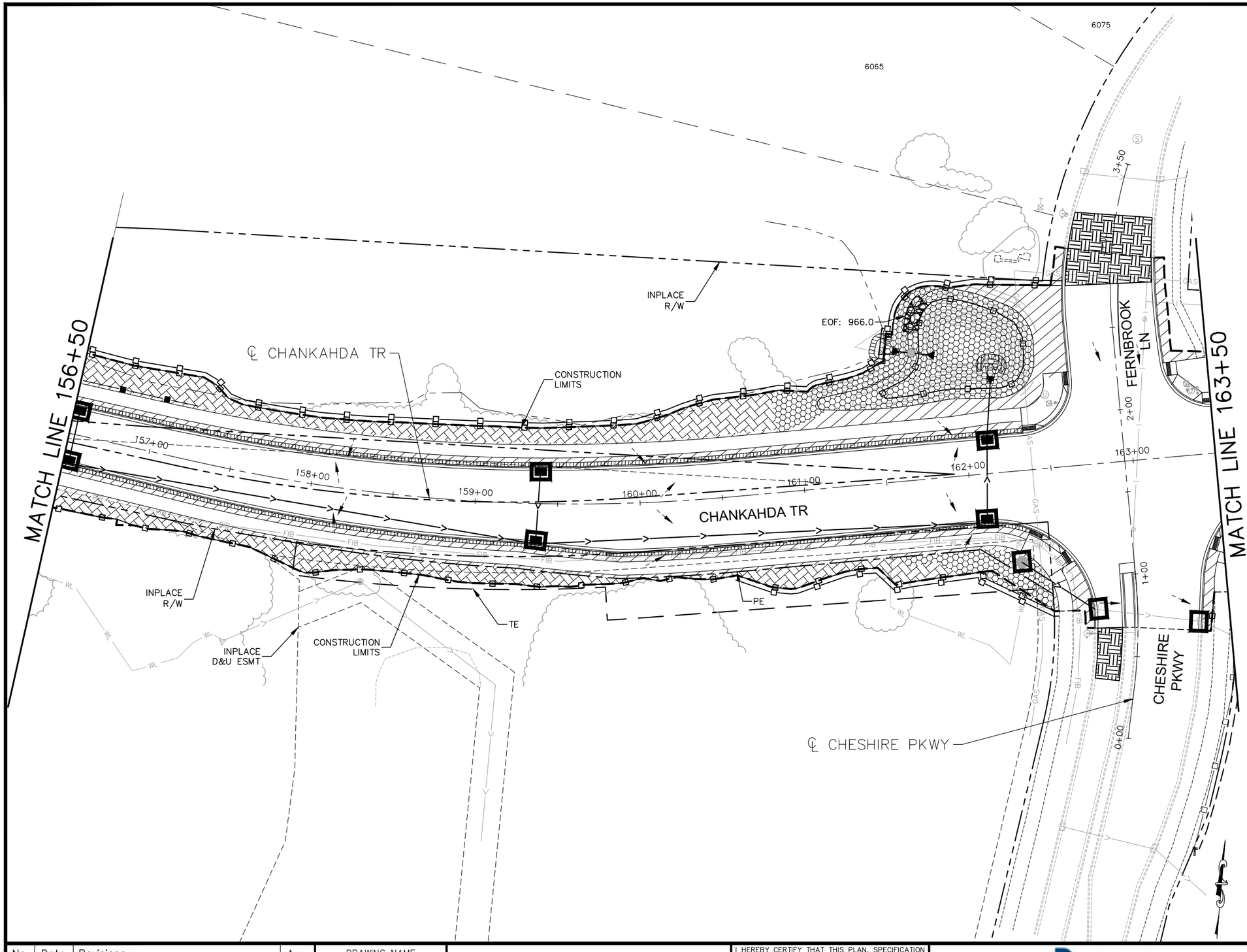
Chadd B. Larson
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DATE: 02/07/2025 MN LIC. NO. 41864

City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
EROSION CONTROL AND TURF ESTABLISHMENT PLAN
STA. 149+50 TO STA. 156+50

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155–210–003
S.A.P.	

SHEET NO. 82 / 354



LEGEND

- HYDROSEED
  SEED MIX – CITY SPECIAL MIX DESIGN A @ 160 LBS/ACRE
  FERTILIZER TYPE 3 – 22–5–10 @ 350 LBS/ACRE
  HYDRAULIC MULCH MATRIX @ 2100 LBS/ACRE
  TEMPORARY EROSION CONTROL: MnDOT TYPE 3 MULCH @ 2 TONS/ACRE
  SEED MIX – OATS (O) @ 100 LBS/ACRE
- HARROWED OR RAKED AND THEN CULTIVATED
  SEED MIX – WET DITCH (WD) @ 20 LBS/ACRE
  FERTILIZER TYPE 4 – 18–1–18 @ 120 LBS/ACRE
  ROLLED EROSION PREVENTION CATEGORY 20
  TEMPORARY EROSION CONTROL: RAPID STABILIZATION METHOD 2
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- STABILIZED CONSTRUCTION EXIT
  REFER TO MNDOT STANDARD PLAN 5–297.405 ON SHEET 33
- CONCRETE WASHOUT AREA
- 25–FOOT WETLAND BUFFER
- STORM DRAIN INLET PROTECTION
- STORM SEWER MANHOLES
- STORM SEWER FES
- SILT FENCE
- DRAINAGE DIRECTION
- FILTER LOG – TYPE WOOD BIOROLL – TYPE 3

NOTES

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL LABOR, EQUIPMENT, TOOLS, AND APPERTUNANCES REQUIRED TO COMPLETE AND MAINTAIN TEMPORARY DRAINAGE FOR THE DURATION OF THE PROJECT. ALL WORK RELATED TO TEMPORARY DRAINAGE SHALL BE CONSIDERED INCIDENTAL.

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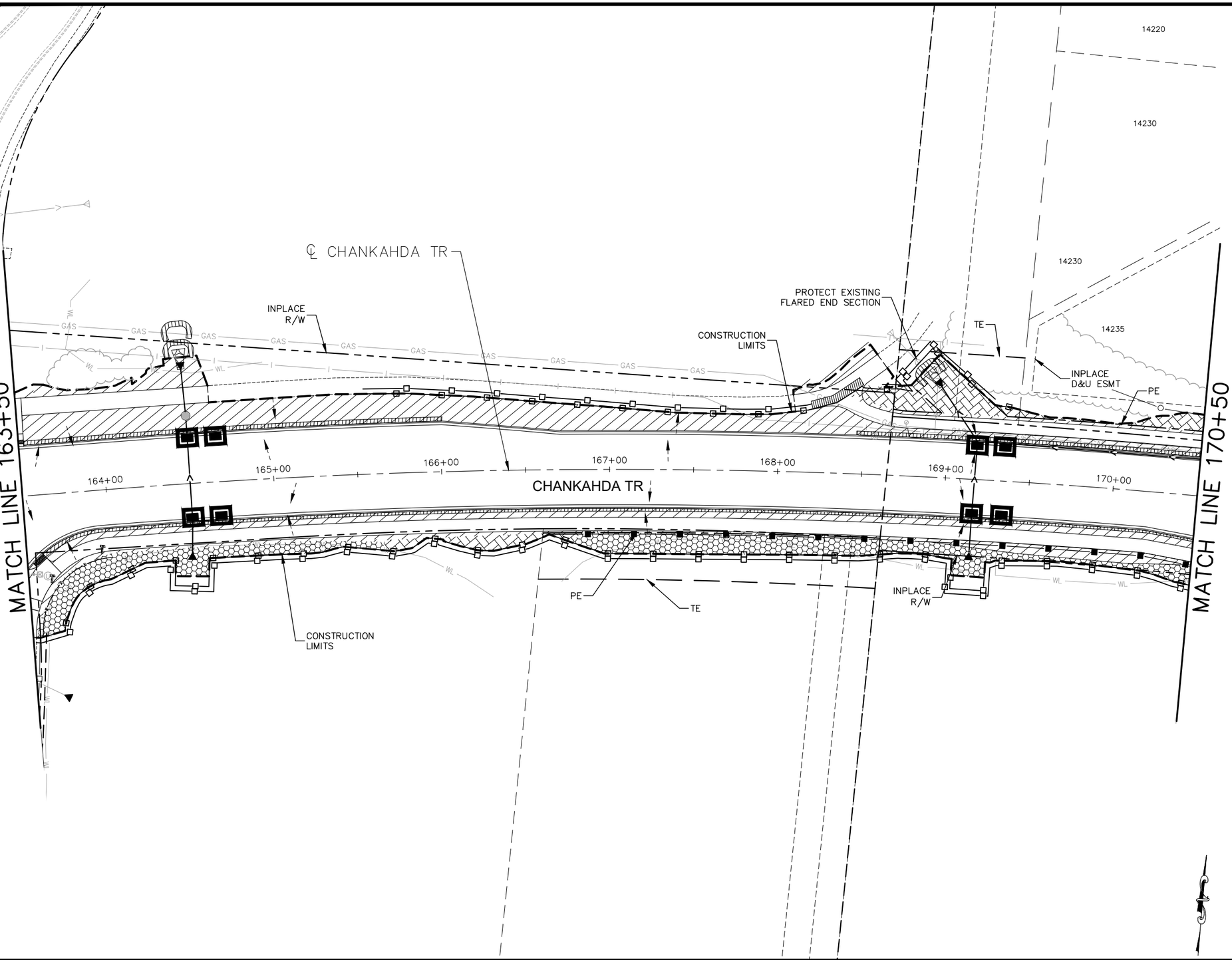
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City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
EROSION CONTROL AND TURF ESTABLISHMENT PLAN
STA. 156+50 TO STA. 163+50

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155–210–003
S.A.P.	

SHEET NO. 83 / 354



LEGEND

- HYDROSEED
  SEED MIX – CITY SPECIAL MIX DESIGN A @ 160 LBS/ACRE
  FERTILIZER TYPE 3 – 22–5–10 @ 350 LBS/ACRE
  HYDRAULIC MULCH MATRIX @ 2100 LBS/ACRE
  TEMPORARY EROSION CONTROL: MnDOT TYPE 3 MULCH @ 2 TONS/ACRE
  SEED MIX – OATS (O) @ 100 LBS/ACRE
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  SEED MIX – WET DITCH (WD) @ 20 LBS/ACRE
  FERTILIZER TYPE 4 – 18–1–18 @ 120 LBS/ACRE
  ROLLED EROSION PREVENTION CATEGORY 20
  TEMPORARY EROSION CONTROL: RAPID STABILIZATION METHOD 2
- HARROWED OR RAKED AND THEN CULTIVATED
  SEED MIX – SOUTHERN SHORTGRASS ROADSIDE(SSR)
  @ 26 LBS/ACRE
  FERTILIZER TYPE 3 – 22–5–10 @ 200 LBS/ACRE
  ROLLED EROSION PREVENTION CATEGORY 20
  TEMPORARY EROSION CONTROL: RAPID STABILIZATION METHOD 2
- HARROWED OR RAKED AND THEN CULTIVATED
  SEED MIX – SOUTHERN SHORTGRASS ROADSIDE(SSR)
  @ 26 LBS/ACRE
  FERTILIZER TYPE 3 – 22–5–10 @ 200 LBS/ACRE
  ROLLED EROSION PREVENTION CATEGORY 25
  TEMPORARY EROSION CONTROL: RAPID STABILIZATION METHOD 2
- SOD TYPE LAWN
  FERTILIZER TYPE 3 – 22–5–10 @ 200 LBS/ACRE
  TEMPORARY EROSION CONTROL: HYDRAULIC MULCH MATRIX @ 2100 LBS/ACRE
- GRANITE RIPRAP TO BE PLACED WITHIN 24 HOURS OF STORM PLACEMENT
- STABILIZED CONSTRUCTION EXIT
  REFER TO MNDOT STANDARD PLAN 5–297.405 ON SHEET 33
- CONCRETE WASHOUT AREA
- 25–FOOT WETLAND BUFFER
- STORM DRAIN INLET PROTECTION
- STORM SEWER MANHOLES
- STORM SEWER FES
- SILT FENCE
- DRAINAGE DIRECTION
- FILTER LOG – TYPE WOOD BIOROLL – TYPE 3

NOTES

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL LABOR, EQUIPMENT, TOOLS, AND APPERTUNANCES REQUIRED TO COMPLETE AND MAINTAIN TEMPORARY DRAINAGE FOR THE DURATION OF THE PROJECT. ALL WORK RELATED TO TEMPORARY DRAINAGE SHALL BE CONSIDERED INCIDENTAL.

0 15 30 60
HORIZONTAL SCALE IN FEET

No.	Date	Revisions	App.

DRAWING NAME: CHANKAHDA_PH3_ErosTurf.dwg

DESIGNED BY:	HB
DRAWN BY:	PD
CHECKED BY:	CBL
DATE:	02/07/2025
PROJECT NO.	160662010

Kimley»Horn
767 EUSTIS STREET, SUITE 100, ST, PAUL, MN 55114
PHONE: 651–645–4197
WWW.KIMLEY–HORN.COM

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

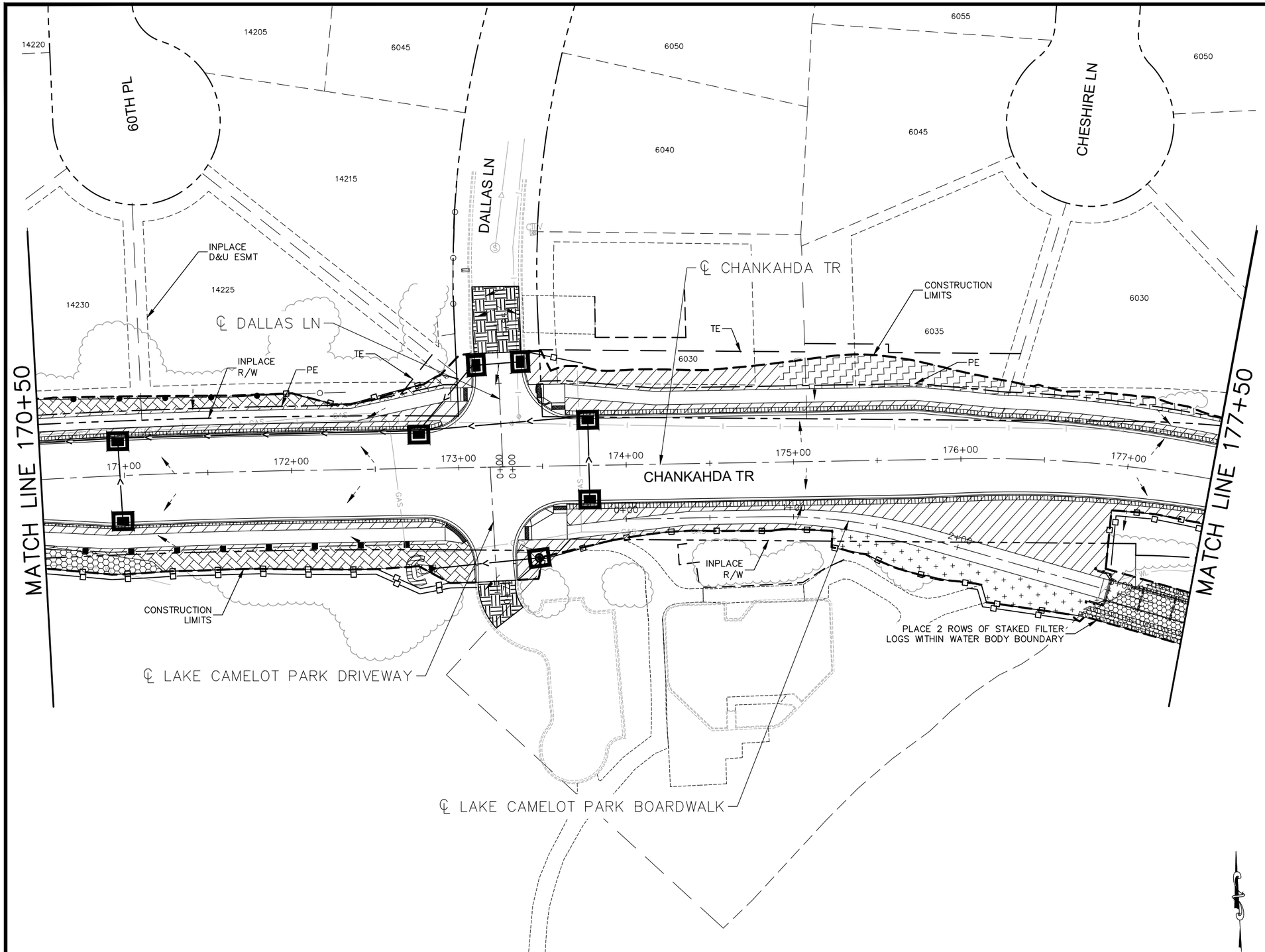
CHADD B. LARSON, PE
DATE: 02/07/2025 MN LIC. NO. 41864

City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
EROSION CONTROL AND TURF ESTABLISHMENT PLAN
STA. 163+50 TO STA. 170+50

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155–210–003
S.A.P.	

SHEET NO. 84 / 354



LEGEND

- HYDROSEED
  SEED MIX – CITY SPECIAL MIX DESIGN A @ 160 LBS/ACRE
  FERTILIZER TYPE 3 – 22–5–10 @ 350 LBS/ACRE
  HYDRAULIC MULCH MATRIX @ 2100 LBS/ACRE
  TEMPORARY EROSION CONTROL: MnDOT TYPE 3 MULCH @ 2 TONS/ACRE
  SEED MIX – OATS (O) @ 100 LBS/ACRE
- HARROWED OR RAKED AND THEN CULTIVATED
  SEED MIX – WET DITCH (WD) @ 20 LBS/ACRE
  FERTILIZER TYPE 4 – 18–1–18 @ 120 LBS/ACRE
  ROLLED EROSION PREVENTION CATEGORY 20
  TEMPORARY EROSION CONTROL: RAPID STABILIZATION METHOD 2
- HARROWED OR RAKED AND THEN CULTIVATED
  SEED MIX – SOUTHERN SHORTGRASS ROADSIDE(SSR) @ 26 LBS/ACRE
  FERTILIZER TYPE 3 – 22–5–10 @ 200 LBS/ACRE
  ROLLED EROSION PREVENTION CATEGORY 20
  TEMPORARY EROSION CONTROL: RAPID STABILIZATION METHOD 2
- HARROWED OR RAKED AND THEN CULTIVATED
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  FERTILIZER TYPE 3 – 22–5–10 @ 200 LBS/ACRE
  ROLLED EROSION PREVENTION CATEGORY 25
  TEMPORARY EROSION CONTROL: RAPID STABILIZATION METHOD 2
- SOD TYPE LAWN
  FERTILIZER TYPE 3 – 22–5–10 @ 200 LBS/ACRE
  TEMPORARY EROSION CONTROL: HYDRAULIC MULCH MATRIX @ 2100 LBS/ACRE
- GRANITE RIPRAP TO BE PLACED WITHIN 24 HOURS OF STORM PLACEMENT
- STABILIZED CONSTRUCTION EXIT REFER TO MNDOT STANDARD PLAN 5–297.405 ON SHEET 33
- CONCRETE WASHOUT AREA
- 25–FOOT WETLAND BUFFER
- STORM DRAIN INLET PROTECTION
- STORM SEWER MANHOLES
- STORM SEWER FES
- SILT FENCE
- DRAINAGE DIRECTION
- FILTER LOG – TYPE WOOD BIOROLL – TYPE 3

NOTES

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL LABOR, EQUIPMENT, TOOLS, AND APPERTUNANCES REQUIRED TO COMPLETE AND MAINTAIN TEMPORARY DRAINAGE FOR THE DURATION OF THE PROJECT. ALL WORK RELATED TO TEMPORARY DRAINAGE SHALL BE CONSIDERED INCIDENTAL.

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HORIZONTAL SCALE IN FEET

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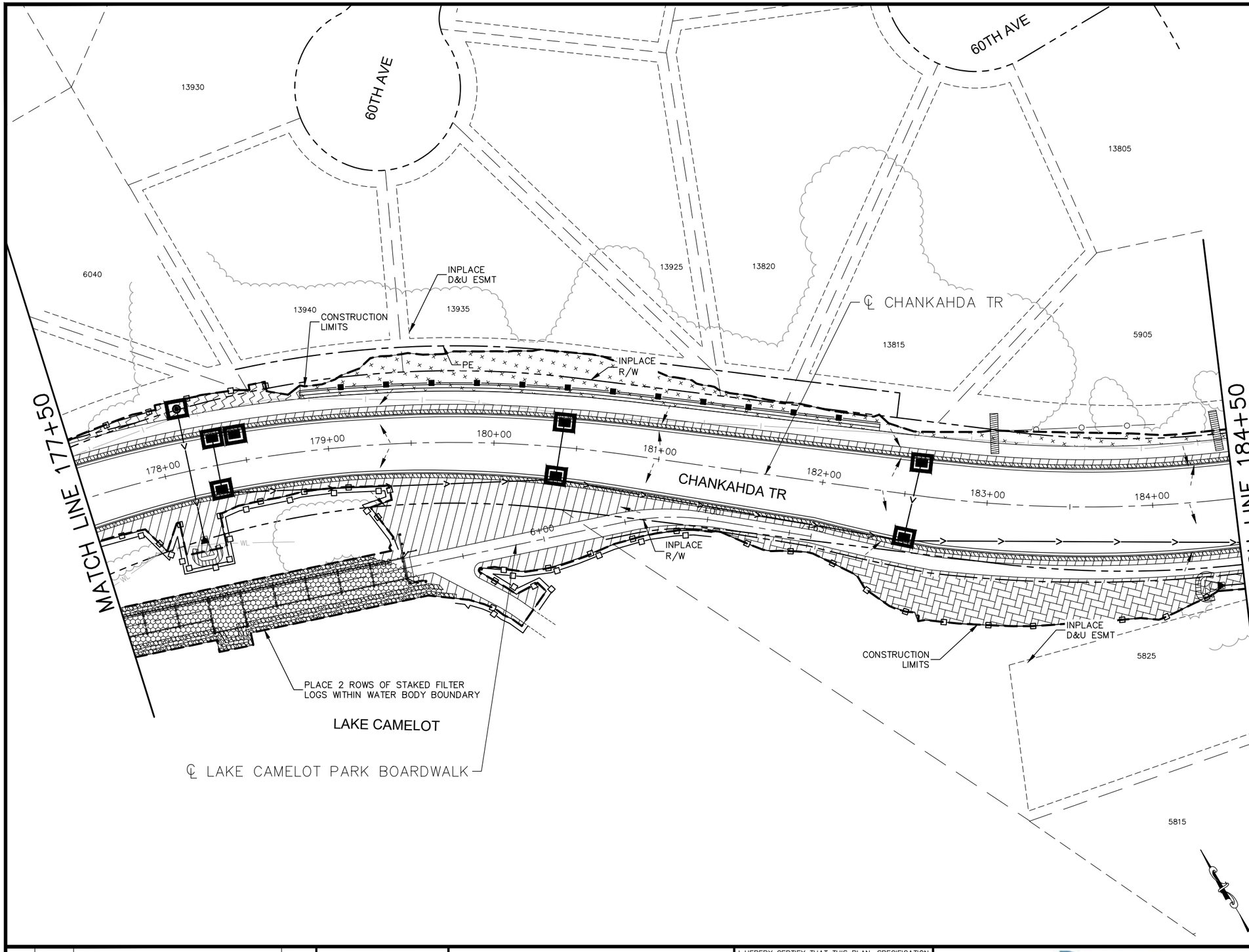
DATE: 02/07/2025 MN LIC. NO. 41864

City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
EROSION CONTROL AND TURF ESTABLISHMENT PLAN
STA. 170+50 TO STA. 177+50

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155–210–003
S.A.P.	

SHEET NO. 85 / 354



LEGEND

- HYDROSEED
  SEED MIX – CITY SPECIAL MIX DESIGN A @ 160 LBS/ACRE
  FERTILIZER TYPE 3 – 22–5–10 @ 350 LBS/ACRE
  HYDRAULIC MULCH MATRIX @ 2100 LBS/ACRE
  TEMPORARY EROSION CONTROL: MnDOT TYPE 3 MULCH @ 2 TONS/ACRE
  SEED MIX – OATS (O) @ 100 LBS/ACRE
- HARROWED OR RAKED AND THEN CULTIVATED
  SEED MIX – WET DITCH (WD) @ 20 LBS/ACRE
  FERTILIZER TYPE 4 – 18–1–18 @ 120 LBS/ACRE
  ROLLED EROSION PREVENTION CATEGORY 20
  TEMPORARY EROSION CONTROL: RAPID STABILIZATION METHOD 2
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  REFER TO MNDOT STANDARD PLAN 5–297.405 ON SHEET 33
- CONCRETE WASHOUT AREA
- 25–FOOT WETLAND BUFFER
- STORM DRAIN INLET PROTECTION
- STORM SEWER MANHOLES
- STORM SEWER FES
- SILT FENCE
- DRAINAGE DIRECTION
- FILTER LOG – TYPE WOOD BIOROLL – TYPE 3

NOTES

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL LABOR, EQUIPMENT, TOOLS, AND APPERTUNANCES REQUIRED TO COMPLETE AND MAINTAIN TEMPORARY DRAINAGE FOR THE DURATION OF THE PROJECT. ALL WORK RELATED TO TEMPORARY DRAINAGE SHALL BE CONSIDERED INCIDENTAL.

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HORIZONTAL SCALE IN FEET

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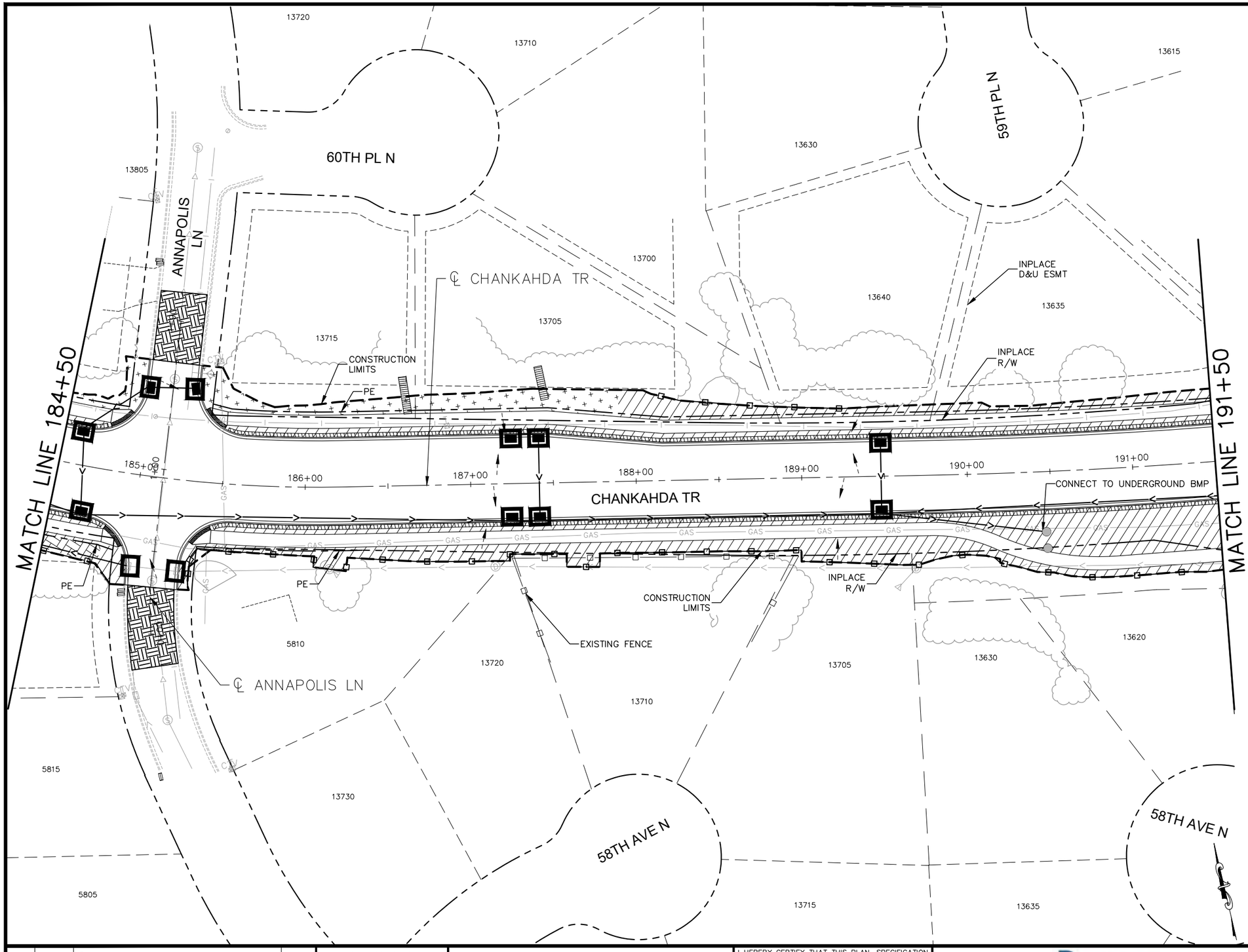
CHADD B. LARSON, PE
DATE: 02/07/2025 MN LIC. NO. 41864

City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
EROSION CONTROL AND TURF ESTABLISHMENT PLAN
STA. 177+50 TO STA. 184+50

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155–210–003
S.A.P.	

SHEET NO. 86 / 354



LEGEND

- HYDROSEED
  SEED MIX – CITY SPECIAL MIX DESIGN A @ 160 LBS/ACRE
  FERTILIZER TYPE 3 – 22–5–10 @ 350 LBS/ACRE
  HYDRAULIC MULCH MATRIX @ 2100 LBS/ACRE
  TEMPORARY EROSION CONTROL: MnDOT TYPE 3 MULCH @ 2 TONS/ACRE
  SEED MIX – OATS (O) @ 100 LBS/ACRE
- HARROWED OR RAKED AND THEN CULTIVATED
  SEED MIX – WET DITCH (WD) @ 20 LBS/ACRE
  FERTILIZER TYPE 4 – 18–1–18 @ 120 LBS/ACRE
  ROLLED EROSION PREVENTION CATEGORY 20
  TEMPORARY EROSION CONTROL: RAPID STABILIZATION METHOD 2
- HARROWED OR RAKED AND THEN CULTIVATED
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- GRANITE RIPRAP TO BE PLACED WITHIN 24 HOURS OF STORM PLACEMENT
- STABILIZED CONSTRUCTION EXIT
  REFER TO MNDOT STANDARD PLAN 5–297.405 ON SHEET 33
- CONCRETE WASHOUT AREA
- 25–FOOT WETLAND BUFFER
- STORM DRAIN INLET PROTECTION
- STORM SEWER MANHOLES
- STORM SEWER FES
- SILT FENCE
- DRAINAGE DIRECTION
- FILTER LOG – TYPE WOOD BIOROLL – TYPE 3

NOTES

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL LABOR, EQUIPMENT, TOOLS, AND APPERTUNANCES REQUIRED TO COMPLETE AND MAINTAIN TEMPORARY DRAINAGE FOR THE DURATION OF THE PROJECT. ALL WORK RELATED TO TEMPORARY DRAINAGE SHALL BE CONSIDERED INCIDENTAL.

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HORIZONTAL SCALE IN FEET

No.	Date	Revisions	App.

DRAWING NAME	CHANKAHDA_PH3_ErosTurf.dwg
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DATE:	02/07/2025
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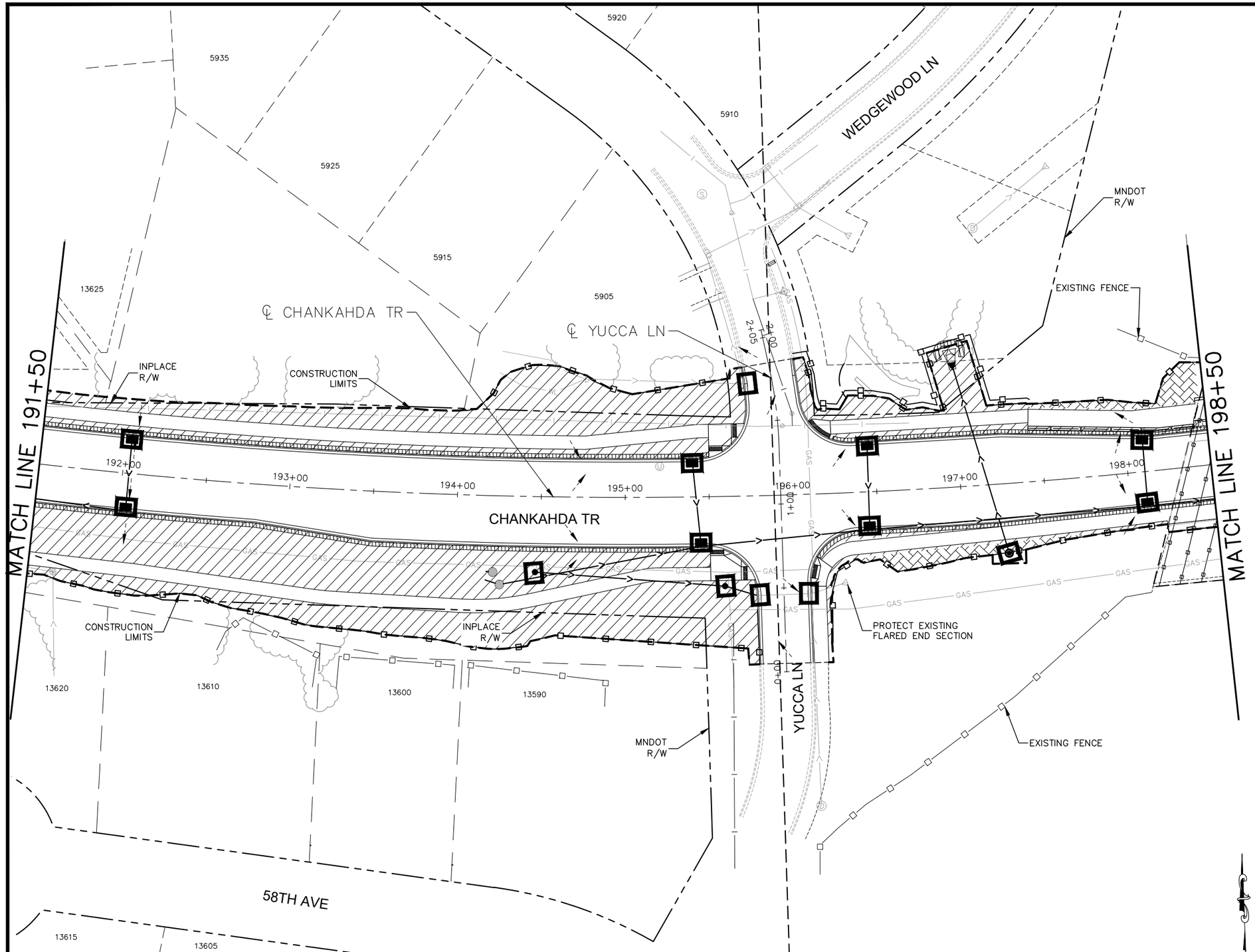
DATE: 02/07/2025 MN LIC. NO. 41864

City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
EROSION CONTROL AND TURF ESTABLISHMENT PLAN
STA. 184+50 TO STA. 191+50

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155–210–003
S.A.P.	

SHEET NO. 87 / 354



LEGEND

- HYDROSEED
  SEED MIX – CITY SPECIAL MIX DESIGN A @ 160 LBS/ACRE
  FERTILIZER TYPE 3 – 22–5–10 @ 350 LBS/ACRE
  HYDRAULIC MULCH MATRIX @ 2100 LBS/ACRE
  TEMPORARY EROSION CONTROL: MnDOT TYPE 3 MULCH @ 2 TONS/ACRE
  SEED MIX – OATS (O) @ 100 LBS/ACRE
- HARROWED OR RAKED AND THEN CULTIVATED
  SEED MIX – WET DITCH (WD) @ 20 LBS/ACRE
  FERTILIZER TYPE 4 – 18–1–18 @ 120 LBS/ACRE
  ROLLED EROSION PREVENTION CATEGORY 20
  TEMPORARY EROSION CONTROL: RAPID STABILIZATION METHOD 2
- HARROWED OR RAKED AND THEN CULTIVATED
  SEED MIX – SOUTHERN SHORTGRASS ROADSIDE(SSR) @ 26 LBS/ACRE
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- GRANITE RIPRAP TO BE PLACED WITHIN 24 HOURS OF STORM PLACEMENT
- STABILIZED CONSTRUCTION EXIT REFER TO MNDOT STANDARD PLAN 5–297.405 ON SHEET 33
- CONCRETE WASHOUT AREA
- 25–FOOT WETLAND BUFFER
- STORM DRAIN INLET PROTECTION
- STORM SEWER MANHOLES
- STORM SEWER FES
- SILT FENCE
- DRAINAGE DIRECTION
- FILTER LOG – TYPE WOOD BIOROLL – TYPE 3

NOTES

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL LABOR, EQUIPMENT, TOOLS, AND APPERTUNANCES REQUIRED TO COMPLETE AND MAINTAIN TEMPORARY DRAINAGE FOR THE DURATION OF THE PROJECT. ALL WORK RELATED TO TEMPORARY DRAINAGE SHALL BE CONSIDERED INCIDENTAL.

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HORIZONTAL SCALE IN FEET

No.	Date	Revisions	App.

DRAWING NAME	CHANKAHDA_PH3_ErosTurf.dwg
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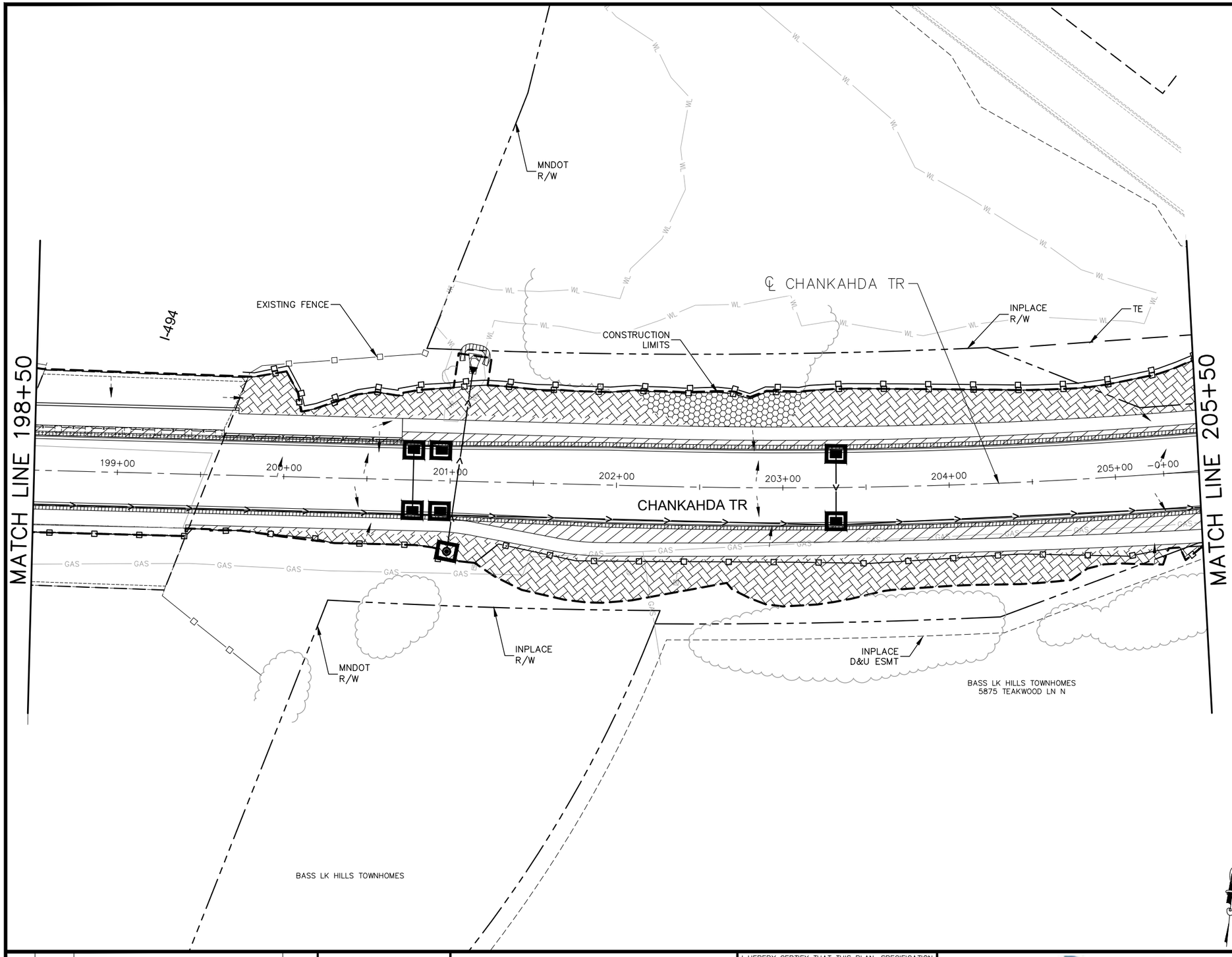
CHADD B. LARSON, PE
DATE: 02/07/2025 MN LIC. NO. 41864

City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
EROSION CONTROL AND TURF ESTABLISHMENT PLAN
STA. 191+50 TO STA. 198+50

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155–210–003
S.A.P.	

SHEET NO. 88 / 354



LEGEND

- HYDROSEED
  SEED MIX – CITY SPECIAL MIX DESIGN A @ 160 LBS/ACRE
  FERTILIZER TYPE 3 – 22–5–10 @ 350 LBS/ACRE
  HYDRAULIC MULCH MATRIX @ 2100 LBS/ACRE
  TEMPORARY EROSION CONTROL: MnDOT TYPE 3 MULCH @ 2 TONS/ACRE
  SEED MIX – OATS (O) @ 100 LBS/ACRE
- HARROWED OR RAKED AND THEN CULTIVATED
  SEED MIX – WET DITCH (WD) @ 20 LBS/ACRE
  FERTILIZER TYPE 4 – 18–1–18 @ 120 LBS/ACRE
  ROLLED EROSION PREVENTION CATEGORY 20
  TEMPORARY EROSION CONTROL: RAPID STABILIZATION METHOD 2
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  REFER TO MNDOT STANDARD PLAN 5–297.405 ON SHEET 33
- CONCRETE WASHOUT AREA
- 25–FOOT WETLAND BUFFER
- STORM DRAIN INLET PROTECTION
- STORM SEWER MANHOLES
- STORM SEWER FES
- SILT FENCE
- DRAINAGE DIRECTION
- FILTER LOG – TYPE WOOD BIOROLL – TYPE 3

NOTES

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0 15 30 60
HORIZONTAL SCALE IN FEET

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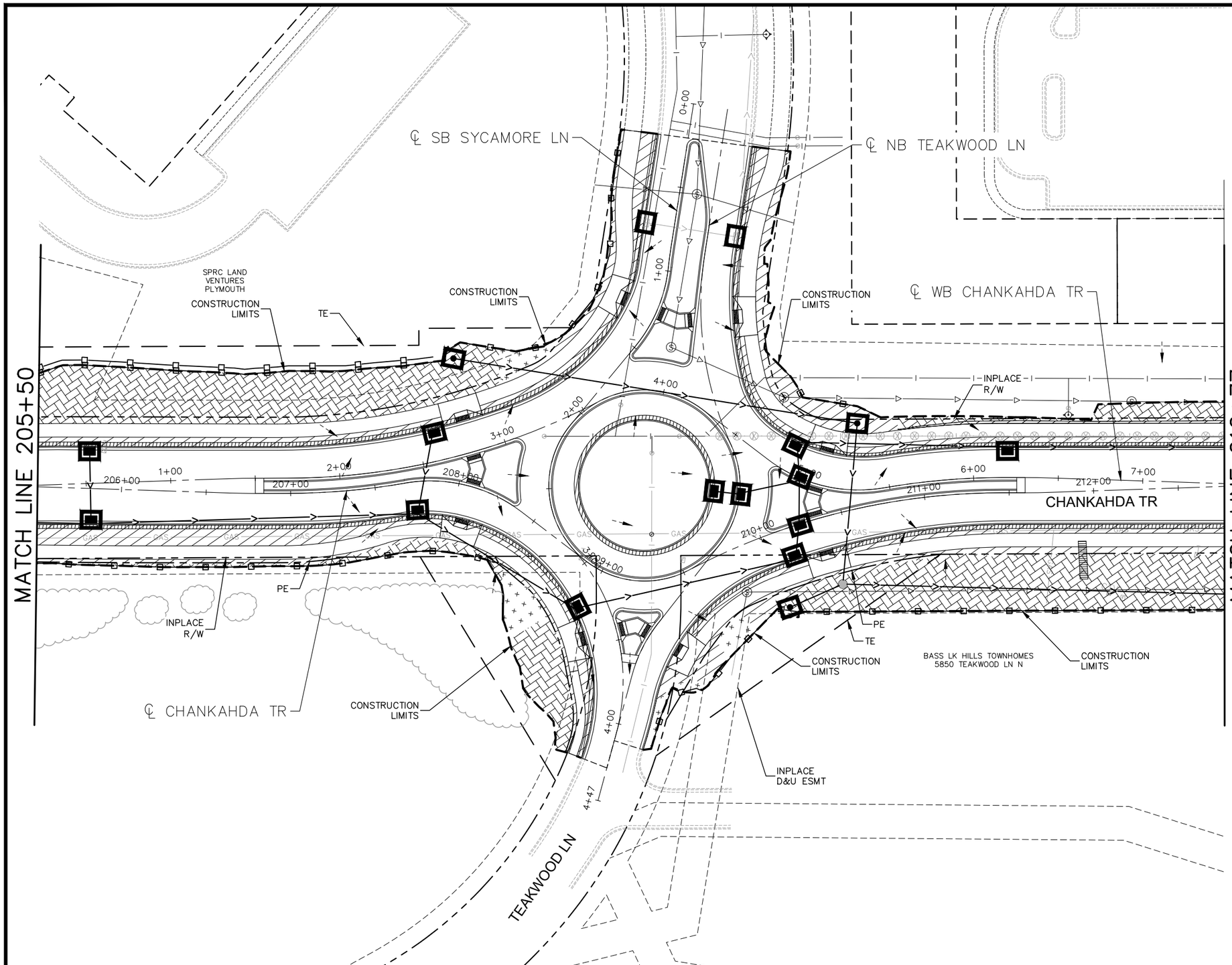
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City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
EROSION CONTROL AND TURF ESTABLISHMENT PLAN
STA. 198+50 TO STA. 205+50

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155–210–003
S.A.P.	

SHEET NO. 89 / 354



LEGEND

- HYDROSEED
  SEED MIX – CITY SPECIAL MIX DESIGN A @ 160 LBS/ACRE
  FERTILIZER TYPE 3 – 22–5–10 @ 350 LBS/ACRE
  HYDRAULIC MULCH MATRIX @ 2100 LBS/ACRE
  TEMPORARY EROSION CONTROL: MnDOT TYPE 3 MULCH @ 2 TONS/ACRE
  SEED MIX – OATS (O) @ 100 LBS/ACRE
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- DRAINAGE DIRECTION
- FILTER LOG – TYPE WOOD BIOROLL – TYPE 3

NOTES

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Kimley»Horn
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PHONE: 651–645–4197
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I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

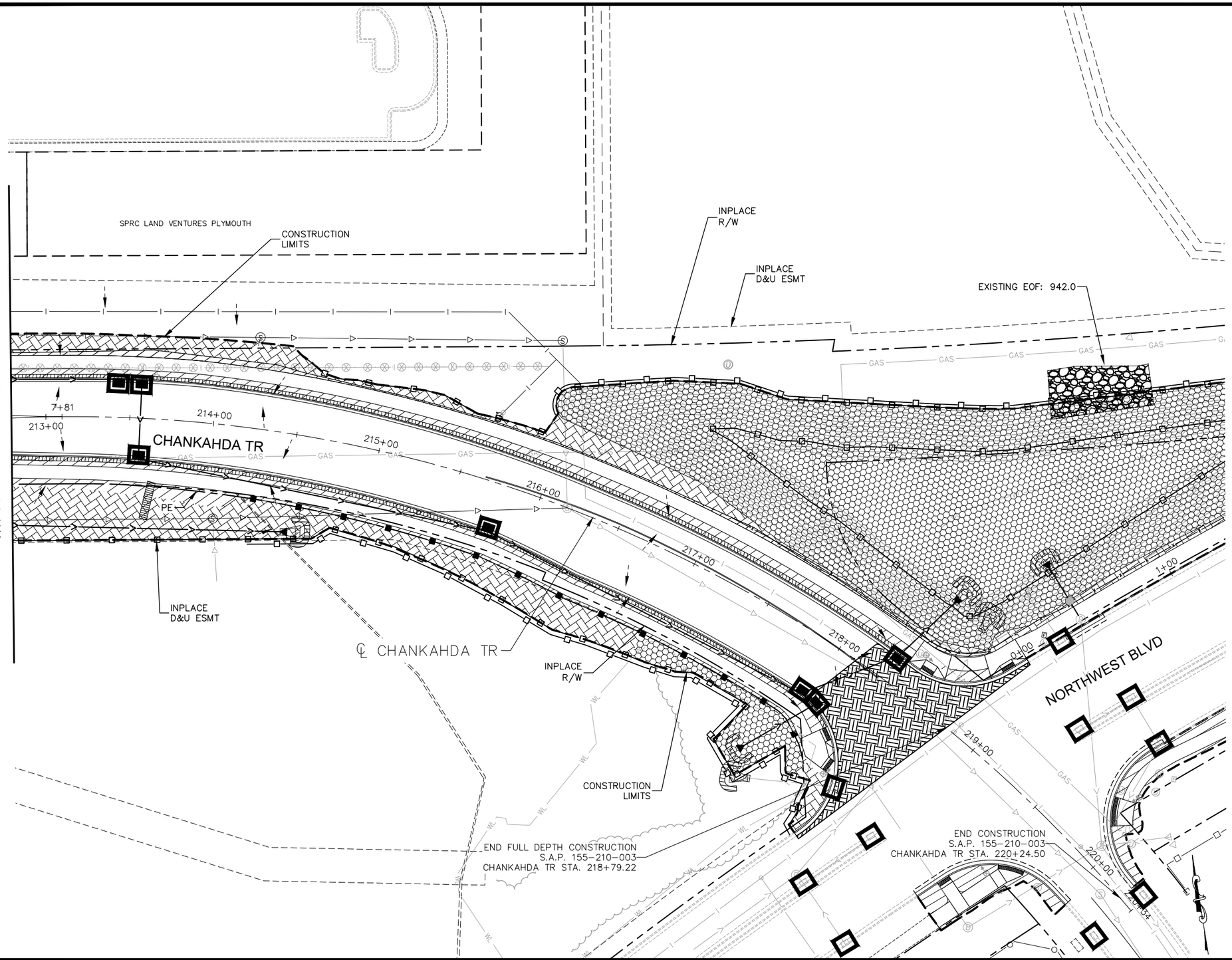
CHADD B. LARSON, PE
DATE: 02/07/2025 MN LIC. NO. 41864

City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
EROSION CONTROL AND TURF ESTABLISHMENT PLAN
STA. 205+50 TO STA. 212+77

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155–210–003
S.A.P.	

SHEET NO. 90 / 354



LEGEND

- HYDROSEED
  SEED MIX – CITY SPECIAL MIX DESIGN A @ 160 LBS/ACRE
  FERTILIZER TYPE 3 – 22-5-10 @ 350 LBS/ACRE
  HYDRAULIC MULCH MATRIX @ 2100 LBS/ACRE
  TEMPORARY EROSION CONTROL: MnDOT TYPE 3 MULCH @ 2 TONS/ACRE
  SEED MIX – OATS (O) @ 100 LBS/ACRE
- HARROWED OR RAKED AND THEN CULTIVATED
  SEED MIX – WET DITCH (WD) @ 20 LBS/ACRE
  FERTILIZER TYPE 4 – 18-1-18 @ 120 LBS/ACRE
  ROLLED EROSION PREVENTION CATEGORY 20
  TEMPORARY EROSION CONTROL: RAPID STABILIZATION METHOD 2
- HARROWED OR RAKED AND THEN CULTIVATED
  SEED MIX – SOUTHERN SHORTGRASS ROADSIDE(SSR) @ 26 LBS/ACRE
  FERTILIZER TYPE 3 – 22-5-10 @ 200 LBS/ACRE
  ROLLED EROSION PREVENTION CATEGORY 20
  TEMPORARY EROSION CONTROL: RAPID STABILIZATION METHOD 2
- HARROWED OR RAKED AND THEN CULTIVATED
  SEED MIX – SOUTHERN SHORTGRASS ROADSIDE(SSR) @ 26 LBS/ACRE
  FERTILIZER TYPE 3 – 22-5-10 @ 200 LBS/ACRE
  ROLLED EROSION PREVENTION CATEGORY 25
  TEMPORARY EROSION CONTROL: RAPID STABILIZATION METHOD 2
- SOD TYPE LAWN
  FERTILIZER TYPE 3 – 22-5-10 @ 200 LBS/ACRE
  TEMPORARY EROSION CONTROL: HYDRAULIC MULCH MATRIX @ 2100 LBS/ACRE
- GRANITE RIPRAP TO BE PLACED WITHIN 24 HOURS OF STORM PLACEMENT
- STABILIZED CONSTRUCTION EXIT
  REFER TO MNDOT STANDARD PLAN 5-297.405 ON SHEET 33
- CONCRETE WASHOUT AREA
- 25-FOOT WETLAND BUFFER
- STORM DRAIN INLET PROTECTION
- STORM SEWER MANHOLES
- STORM SEWER FES
- SILT FENCE
- DRAINAGE DIRECTION
- FILTER LOG – TYPE WOOD BIOROLL – TYPE 3

NOTES

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL LABOR, EQUIPMENT, TOOLS, AND APPERTUNANCES REQUIRED TO COMPLETE AND MAINTAIN TEMPORARY DRAINAGE FOR THE DURATION OF THE PROJECT. ALL WORK RELATED TO TEMPORARY DRAINAGE SHALL BE CONSIDERED INCIDENTAL.

0 15 30 60
HORIZONTAL SCALE IN FEET

No.	Date	Revisions	App.

DRAWING NAME: CHANKAHDA_PH3_ErosTurf.dwg

DESIGNED BY:	HB
DRAWN BY:	PD
CHECKED BY:	CBL
DATE:	02/07/2025
PROJECT NO.	160662010

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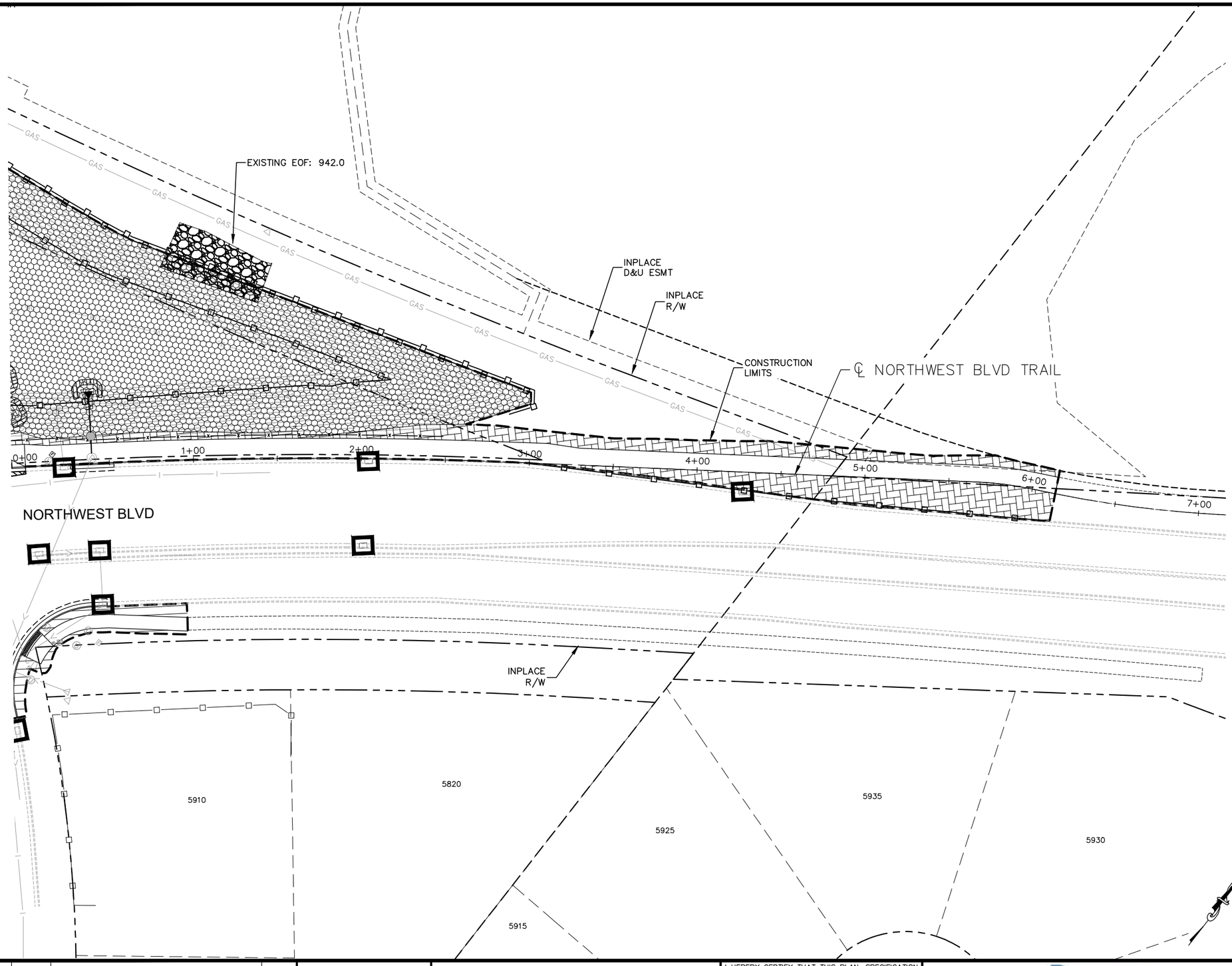
Chadd B. Larson
CHADD B. LARSON, PE
DATE: 02/07/2025 MN LIC. NO. 41864

City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
EROSION CONTROL AND TURF ESTABLISHMENT PLAN
STA. 212+77 TO STA. 220+24.50

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 91 / 354



LEGEND

- HYDROSEED
  SEED MIX – CITY SPECIAL MIX DESIGN A @ 160 LBS/ACRE
  FERTILIZER TYPE 3 – 22–5–10 @ 350 LBS/ACRE
  HYDRAULIC MULCH MATRIX @ 2100 LBS/ACRE
  TEMPORARY EROSION CONTROL: MnDOT TYPE 3 MULCH @ 2 TONS/ACRE
  SEED MIX – OATS (O) @ 100 LBS/ACRE
- HARROWED OR RAKED AND THEN CULTIVATED
  SEED MIX – WET DITCH (WD) @ 20 LBS/ACRE
  FERTILIZER TYPE 4 – 18–1–18 @ 120 LBS/ACRE
  ROLLED EROSION PREVENTION CATEGORY 20
  TEMPORARY EROSION CONTROL: RAPID STABILIZATION METHOD 2
- HARROWED OR RAKED AND THEN CULTIVATED
  SEED MIX – SOUTHERN SHORTGRASS ROADSIDE(SSR)
  @ 26 LBS/ACRE
  FERTILIZER TYPE 3 – 22–5–10 @ 200 LBS/ACRE
  ROLLED EROSION PREVENTION CATEGORY 20
  TEMPORARY EROSION CONTROL: RAPID STABILIZATION METHOD 2
- HARROWED OR RAKED AND THEN CULTIVATED
  SEED MIX – SOUTHERN SHORTGRASS ROADSIDE(SSR)
  @ 26 LBS/ACRE
  FERTILIZER TYPE 3 – 22–5–10 @ 200 LBS/ACRE
  ROLLED EROSION PREVENTION CATEGORY 25
  TEMPORARY EROSION CONTROL: RAPID STABILIZATION METHOD 2
- SOD TYPE LAWN
  FERTILIZER TYPE 3 – 22–5–10 @ 200 LBS/ACRE
  TEMPORARY EROSION CONTROL: HYDRAULIC MULCH MATRIX @ 2100 LBS/ACRE
- GRANITE RIPRAP TO BE PLACED WITHIN 24 HOURS OF STORM PLACEMENT
- STABILIZED CONSTRUCTION EXIT
  REFER TO MNDOT STANDARD PLAN 5–297.405 ON SHEET 33
- CONCRETE WASHOUT AREA
- 25–FOOT WETLAND BUFFER
- STORM DRAIN INLET PROTECTION
- STORM SEWER MANHOLES
- STORM SEWER FES
- SILT FENCE
- DRAINAGE DIRECTION
- FILTER LOG – TYPE WOOD BIOROLL – TYPE 3

NOTES

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL LABOR, EQUIPMENT, TOOLS, AND APPERTUNANCES REQUIRED TO COMPLETE AND MAINTAIN TEMPORARY DRAINAGE FOR THE DURATION OF THE PROJECT. ALL WORK RELATED TO TEMPORARY DRAINAGE SHALL BE CONSIDERED INCIDENTAL.

0 15 30 60
HORIZONTAL SCALE IN FEET

No.	Date	Revisions	App.

DRAWING NAME: CHANKAHDA_PH3_ErosTurf.dwg

DESIGNED BY:	HB
DRAWN BY:	PD
CHECKED BY:	CBL
DATE:	02/07/2025
PROJECT NO.	160662010

Kimley»Horn
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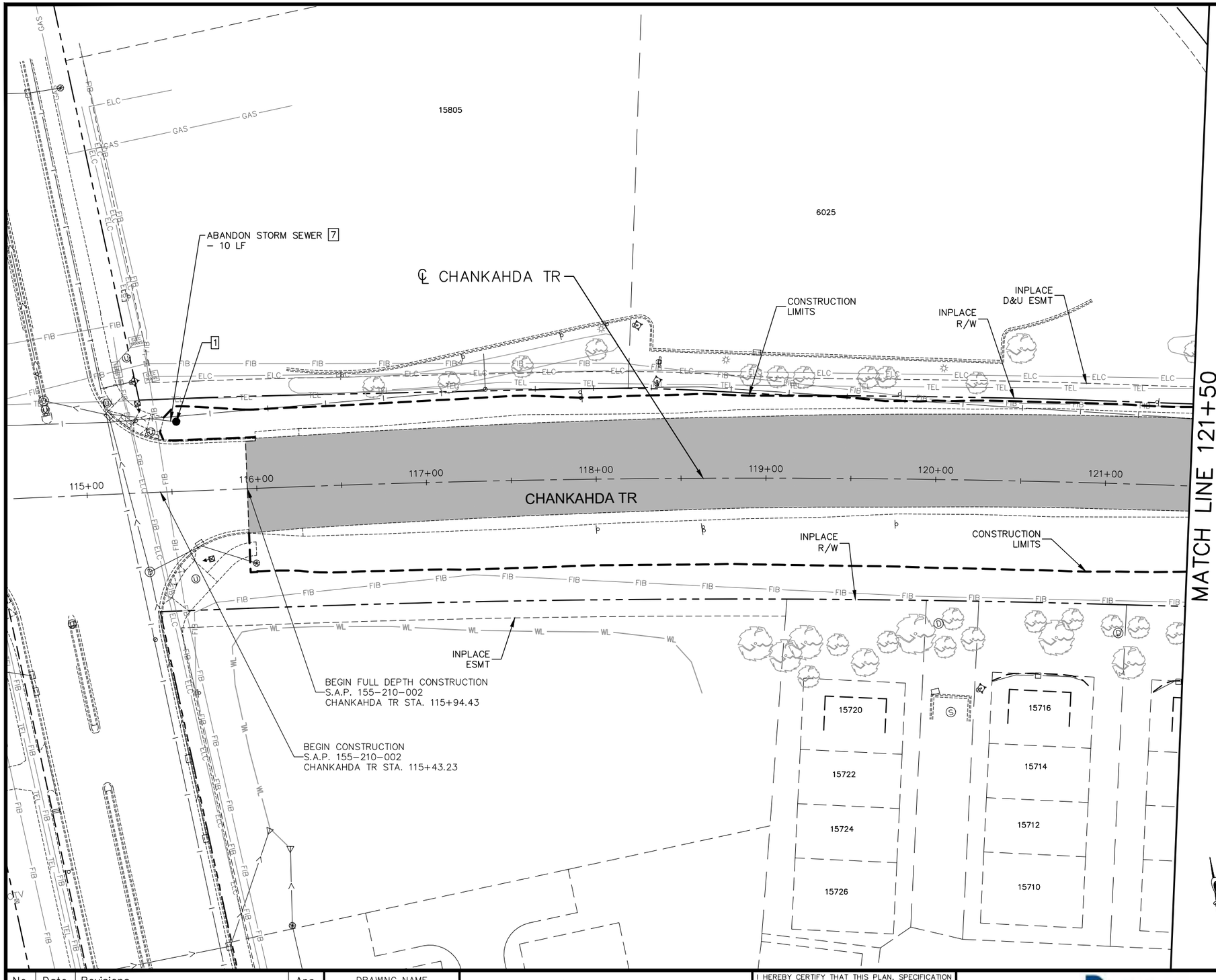
Chadd B. Larson
CHADD B. LARSON, PE
DATE: 02/07/2025 MN LIC. NO. 41864

City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
EROSION CONTROL AND TURF ESTABLISHMENT PLAN
STA. 0+00 TO STA. 7+00

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155–210–003
S.A.P.	

SHEET NO. 92 / 354



GENERAL REMOVAL NOTES:

1. CONTRACTOR SHALL CALL GOPHER STATE ONE CALL AT 651–454–0002. ALL UTILITIES MUST BE LOCATED PRIOR TO THE START OF CONSTRUCTION.
2. CONTRACTOR TO VERIFY REMOVAL LIMITS WITH ENGINEER.
3. SIGN REMOVALS ARE SHOWN ON THE SIGNAGE PLANS (SHEET 223 –247)
4. CONTRACTOR SHALL PROTECT ALL INPLACE UTILITY STRUCTURES THAT ARE NOT BEING REMOVED OR RELOCATED.
5. TRENCH BOXES OR OTHER TRENCH STABILIZATION METHODS MAY BE REQUIRED DURING CONSTRUCTION TO MINIMIZE REMOVAL LIMITS.

UTILITY NOTES:

1. THE SUBSURFACE UTILITY INFORMATION IN THIS PLAN IS UTILITY QUALITY LEVEL D. THIS QUALITY LEVEL WAS DETERMINED ACCORDING TO THE GUIDELINES OF CI/ASCE 38–2, ENTITLED "STANDARD GUIDELINES FOR THE COLLECTION AND DEPICTION OF INPLACE SUBSURFACE UTILITY DATA".

NOTES LEGEND:

- 1 REMOVE MANHOLE OR CATCH BASIN
- 2 REMOVE SEWER PIPE (STORM)
- 3 PROTECT INPLACE PRIVATE UTILITY
- 4 INPLACE PRIVATE UTILITY TO BE REMOVED/RELOCATED (BY OTHERS).
- 5 REMOVE PIPE APRON
- 6 REMOVE GATE VALVE
- 7 ABANDON STORM SEWER
- 8 REMOVE HYDRANT
- 9 REMOVE SEWER PIPE (SANITARY)

- REMOVE BITUMINOUS PAVEMENT (ALL DEPTHS)
- REMOVE SLOPE PAVING
- REMOVE CONCRETE MEDIAN
- REMOVE CONCRETE WALK
- REMOVE BITUMINOUS WALK
- CLEARING AND GRUBBING (ACRE)
- REMOVE SEWER PIPE (STORM)
- REMOVE SEWER PIPE (SANITARY)
- REMOVE WATER MAIN
- REMOVE FENCE
- SALVAGE FENCE
- REMOVE CURB & GUTTER
- SAWING BIT PAVEMENT (FULL DEPTH)
- CONSTRUCTION LIMITS
- REMOVE TREE

0 15 30 60
HORIZONTAL SCALE IN FEET

No.	Date	Revisions	App.

DRAWING NAME	CHANKAHDA_PH3_Removals.dwg
DESIGNED BY:	JWB
DRAWN BY:	RGS
CHECKED BY:	CBL
DATE:	02/07/2025
PROJECT NO.	160662010

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CHADD B. LARSON, PE
DATE: 02/07/2025 MN LIC. NO. 41864

City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
REMOVAL PLAN
STA. 115+94.43 TO STA. 121+50

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155–210–003
S.A.P.	

SHEET NO. 93 / 354

GENERAL REMOVAL NOTES:

1. CONTRACTOR SHALL CALL GOPHER STATE ONE CALL AT 651–454–0002. ALL UTILITIES MUST BE LOCATED PRIOR TO THE START OF CONSTRUCTION.
2. CONTRACTOR TO VERIFY REMOVAL LIMITS WITH ENGINEER.
3. SIGN REMOVALS ARE SHOWN ON THE SIGNAGE PLANS (SHEET 223 –247)
4. CONTRACTOR SHALL PROTECT ALL INPLACE UTILITY STRUCTURES THAT ARE NOT BEING REMOVED OR RELOCATED.
5. TRENCH BOXES OR OTHER TRENCH STABILIZATION METHODS MAY BE REQUIRED DURING CONSTRUCTION TO MINIMIZE REMOVAL LIMITS.

UTILITY NOTES:

1. THE SUBSURFACE UTILITY INFORMATION IN THIS PLAN IS UTILITY QUALITY LEVEL D. THIS QUALITY LEVEL WAS DETERMINED ACCORDING TO THE GUIDELINES OF CI/ASCE 38–2, ENTITLED "STANDARD GUIDELINES FOR THE COLLECTION AND DEPICTION OF INPLACE SUBSURFACE UTILITY DATA".

NOTES LEGEND:

- 1 REMOVE MANHOLE OR CATCH BASIN
- 2 REMOVE SEWER PIPE (STORM)
- 3 PROTECT INPLACE PRIVATE UTILITY
- 4 INPLACE PRIVATE UTILITY TO BE REMOVED/RELOCATED (BY OTHERS).
- 5 REMOVE PIPE APRON
- 6 REMOVE GATE VALVE
- 7 ABANDON STORM SEWER
- 8 REMOVE HYDRANT
- 9 REMOVE SEWER PIPE (SANITARY)
- REMOVE BITUMINOUS PAVEMENT (ALL DEPTHS)
- REMOVE SLOPE PAVING
- REMOVE CONCRETE MEDIAN
- REMOVE CONCRETE WALK
- REMOVE BITUMINOUS WALK
- CLEARING AND GRUBBING (ACRE)
- REMOVE SEWER PIPE (STORM)
- REMOVE SEWER PIPE (SANITARY)
- REMOVE WATER MAIN
- REMOVE FENCE
- SALVAGE FENCE
- REMOVE CURB & GUTTER
- SAWING BIT PAVEMENT (FULL DEPTH)
- CONSTRUCTION LIMITS
- REMOVE TREE

HORIZONTAL SCALE IN FEET: 0 15 30 60

MATCH LINE 121+50

MATCH LINE 128+50

℄ SHENANDOAH LN

SHENADOAH LN 1+22

0+00 1+00

℄ CHANKAHDA TR

CHANKAHDA TR

122+00 123+00 124+00 125+00 126+00 127+00 128+00

CONSTRUCTION LIMITS

INPLACE R/W

INPLACE D&U ESMT

REMOVE WATERMAIN

6000 6045

15660 15662 15664 15666 15656 15654 15652 15650 15630 15632 15634 15636 15626 15624 15622 15620 15592 15606 15574 15560 15562 15572 15564 15534 15520 15532 15530 15528

No.	Date	Revisions	App.

DRAWING NAME	CHANKAHDA_PH3_Removals.dwg
DESIGNED BY:	JWB
DRAWN BY:	RGS
CHECKED BY:	CBL
DATE:	02/07/2025
PROJECT NO.	160662010

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CHADD B. LARSON, PE

DATE: 02/07/2025 MN LIC. NO. 41864

City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
REMOVAL PLAN
STA. 121+50 TO STA. 128+50

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155–210–003
S.A.P.	

SHEET NO. 94 / 354

GENERAL REMOVAL NOTES:

1. CONTRACTOR SHALL CALL GOPHER STATE ONE CALL AT 651–454–0002. ALL UTILITIES MUST BE LOCATED PRIOR TO THE START OF CONSTRUCTION.
2. CONTRACTOR TO VERIFY REMOVAL LIMITS WITH ENGINEER.
3. SIGN REMOVALS ARE SHOWN ON THE SIGNAGE PLANS (SHEET 223 –247)
4. CONTRACTOR SHALL PROTECT ALL INPLACE UTILITY STRUCTURES THAT ARE NOT BEING REMOVED OR RELOCATED.
5. TRENCH BOXES OR OTHER TRENCH STABILIZATION METHODS MAY BE REQUIRED DURING CONSTRUCTION TO MINIMIZE REMOVAL LIMITS.

UTILITY NOTES:

1. THE SUBSURFACE UTILITY INFORMATION IN THIS PLAN IS UTILITY QUALITY LEVEL D. THIS QUALITY LEVEL WAS DETERMINED ACCORDING TO THE GUIDELINES OF CI/ASCE 38–2, ENTITLED "STANDARD GUIDELINES FOR THE COLLECTION AND DEPICTION OF INPLACE SUBSURFACE UTILITY DATA".

NOTES LEGEND:

1 REMOVE MANHOLE OR CATCH BASIN

2 REMOVE SEWER PIPE (STORM)

3 PROTECT INPLACE PRIVATE UTILITY

4 INPLACE PRIVATE UTILITY TO BE REMOVED/RELOCATED (BY OTHERS).

5 REMOVE PIPE APRON

6 REMOVE GATE VALVE

7 ABANDON STORM SEWER

8 REMOVE HYDRANT

9 REMOVE SEWER PIPE (SANITARY)

REMOVE BITUMINOUS PAVEMENT (ALL DEPTHS)

REMOVE SLOPE PAVING

REMOVE CONCRETE MEDIAN

REMOVE CONCRETE WALK

REMOVE BITUMINOUS WALK

CLEARING AND GRUBBING (ACRE)

REMOVE SEWER PIPE (STORM)

REMOVE SEWER PIPE (SANITARY)

REMOVE WATER MAIN

REMOVE FENCE

SALVAGE FENCE

REMOVE CURB & GUTTER

SAWING BIT PAVEMENT (FULL DEPTH)

CONSTRUCTION LIMITS

REMOVE TREE

0 15 30 60
HORIZONTAL SCALE IN FEET

No.	Date	Revisions	App.

DRAWING NAME: CHANKAHDA_PH3_Removals.dwg
DESIGNED BY: JWB
DRAWN BY: RGS
CHECKED BY: CBL
DATE: 02/07/2025
PROJECT NO. 160662010

Kimley»Horn
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CHADD B. LARSON, PE
DATE: 02/07/2025 MN LIC. NO. 41864

City of Plymouth
CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
REMOVAL PLAN
STA. 128+50 TO STA. 135+50

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155–210–003
S.A.P.	

SHEET NO. 95 / 354

GENERAL REMOVAL NOTES:

1. CONTRACTOR SHALL CALL GOPHER STATE ONE CALL AT 651–454–0002. ALL UTILITIES MUST BE LOCATED PRIOR TO THE START OF CONSTRUCTION.
2. CONTRACTOR TO VERIFY REMOVAL LIMITS WITH ENGINEER.
3. SIGN REMOVALS ARE SHOWN ON THE SIGNAGE PLANS (SHEET 223 –247)
4. CONTRACTOR SHALL PROTECT ALL INPLACE UTILITY STRUCTURES THAT ARE NOT BEING REMOVED OR RELOCATED.
5. TRENCH BOXES OR OTHER TRENCH STABILIZATION METHODS MAY BE REQUIRED DURING CONSTRUCTION TO MINIMIZE REMOVAL LIMITS.

UTILITY NOTES:

1. THE SUBSURFACE UTILITY INFORMATION IN THIS PLAN IS UTILITY QUALITY LEVEL D. THIS QUALITY LEVEL WAS DETERMINED ACCORDING TO THE GUIDELINES OF CI/ASCE 38–2, ENTITLED "STANDARD GUIDELINES FOR THE COLLECTION AND DEPICTION OF INPLACE SUBSURFACE UTILITY DATA".

NOTES LEGEND:

- [1] REMOVE MANHOLE OR CATCH BASIN
- [2] REMOVE SEWER PIPE (STORM)
- [3] PROTECT INPLACE PRIVATE UTILITY
- [4] INPLACE PRIVATE UTILITY TO BE REMOVED/RELOCATED (BY OTHERS).
- [5] REMOVE PIPE APRON
- [6] REMOVE GATE VALVE
- [7] ABANDON STORM SEWER
- [8] REMOVE HYDRANT
- [9] REMOVE SEWER PIPE (SANITARY)

- REMOVE BITUMINOUS PAVEMENT (ALL DEPTHS)
- REMOVE SLOPE PAVING
- REMOVE CONCRETE MEDIAN
- REMOVE CONCRETE WALK
- REMOVE BITUMINOUS WALK
- CLEARING AND GRUBBING (ACRE)
- REMOVE SEWER PIPE (STORM)
- REMOVE SEWER PIPE (SANITARY)
- REMOVE WATER MAIN
- REMOVE FENCE
- SALVAGE FENCE
- REMOVE CURB & GUTTER
- SAWING BIT PAVEMENT (FULL DEPTH)
- CONSTRUCTION LIMITS
- REMOVE TREE

HORIZONTAL SCALE IN FEET: 0 15 30 60

No.	Date	Revisions	App.

DRAWING NAME: CHANKAHDA_PH3_Removals.dwg

DESIGNED BY:	JWB
DRAWN BY:	RGS
CHECKED BY:	CBL
DATE:	02/07/2025
PROJECT NO.	160662010

Kimley»Horn
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CHADD B. LARSON, PE

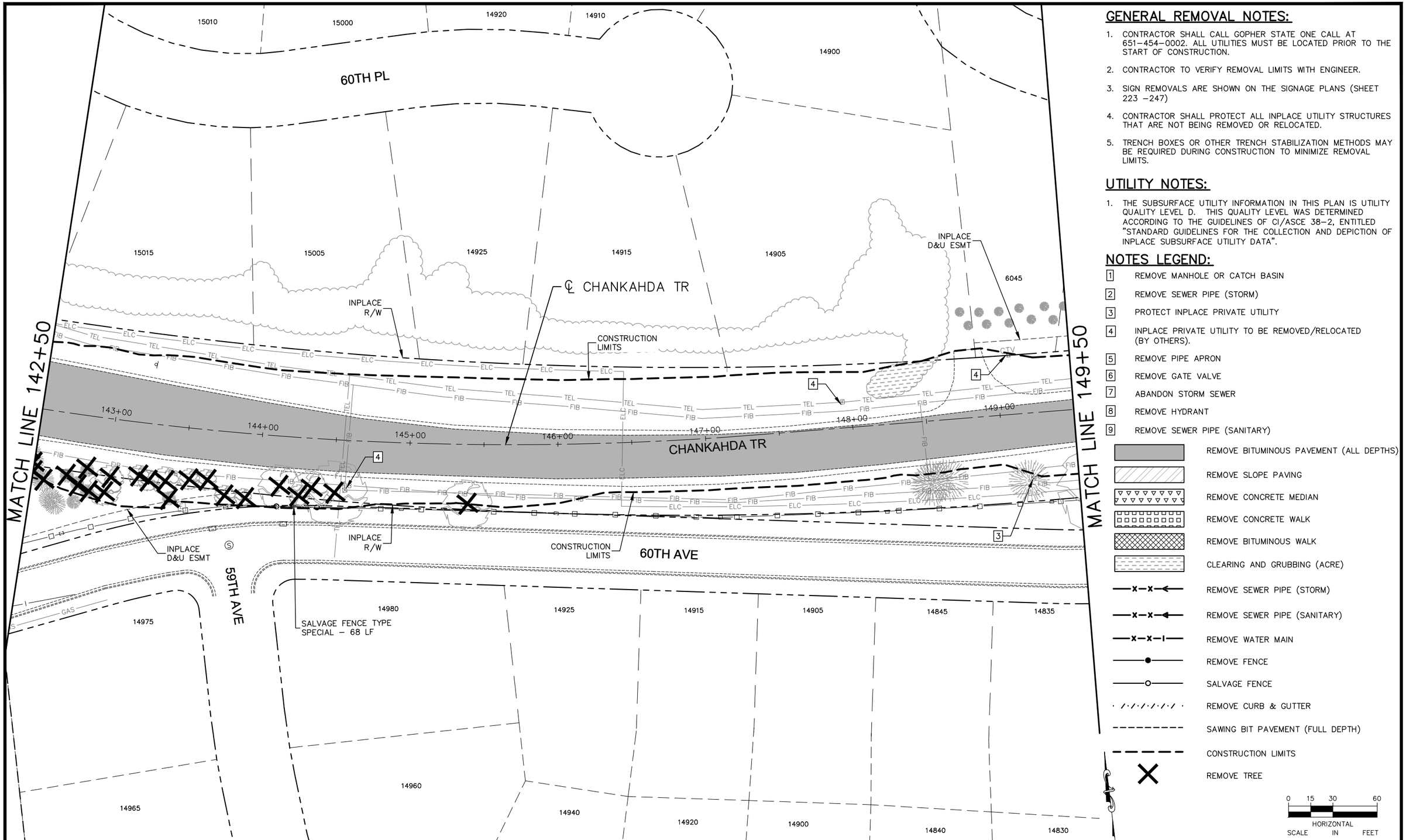
DATE: 02/07/2025 MN LIC. NO. 41864

City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
REMOVAL PLAN
STA. 135+50 TO STA. 142+50

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155–210–003
S.A.P.	

SHEET NO. 96 / 354



GENERAL REMOVAL NOTES:

1. CONTRACTOR SHALL CALL GOPHER STATE ONE CALL AT 651–454–0002. ALL UTILITIES MUST BE LOCATED PRIOR TO THE START OF CONSTRUCTION.
2. CONTRACTOR TO VERIFY REMOVAL LIMITS WITH ENGINEER.
3. SIGN REMOVALS ARE SHOWN ON THE SIGNAGE PLANS (SHEET 223 –247)
4. CONTRACTOR SHALL PROTECT ALL INPLACE UTILITY STRUCTURES THAT ARE NOT BEING REMOVED OR RELOCATED.
5. TRENCH BOXES OR OTHER TRENCH STABILIZATION METHODS MAY BE REQUIRED DURING CONSTRUCTION TO MINIMIZE REMOVAL LIMITS.

UTILITY NOTES:

1. THE SUBSURFACE UTILITY INFORMATION IN THIS PLAN IS UTILITY QUALITY LEVEL D. THIS QUALITY LEVEL WAS DETERMINED ACCORDING TO THE GUIDELINES OF CI/ASCE 38–2, ENTITLED "STANDARD GUIDELINES FOR THE COLLECTION AND DEPICTION OF INPLACE SUBSURFACE UTILITY DATA".

NOTES LEGEND:

- [1] REMOVE MANHOLE OR CATCH BASIN
- [2] REMOVE SEWER PIPE (STORM)
- [3] PROTECT INPLACE PRIVATE UTILITY
- [4] INPLACE PRIVATE UTILITY TO BE REMOVED/RELOCATED (BY OTHERS).
- [5] REMOVE PIPE APRON
- [6] REMOVE GATE VALVE
- [7] ABANDON STORM SEWER
- [8] REMOVE HYDRANT
- [9] REMOVE SEWER PIPE (SANITARY)
- REMOVE BITUMINOUS PAVEMENT (ALL DEPTHS)
- REMOVE SLOPE PAVING
- REMOVE CONCRETE MEDIAN
- REMOVE CONCRETE WALK
- REMOVE BITUMINOUS WALK
- CLEARING AND GRUBBING (ACRE)
- REMOVE SEWER PIPE (STORM)
- REMOVE SEWER PIPE (SANITARY)
- REMOVE WATER MAIN
- REMOVE FENCE
- SALVAGE FENCE
- REMOVE CURB & GUTTER
- SAWING BIT PAVEMENT (FULL DEPTH)
- CONSTRUCTION LIMITS
- REMOVE TREE

0 15 30 60
HORIZONTAL SCALE IN FEET

No.	Date	Revisions	App.

DRAWING NAME	CHANKAHDA_PH3_Removals.dwg
DESIGNED BY:	JWB
DRAWN BY:	RGS
CHECKED BY:	CBL
DATE:	02/07/2025
PROJECT NO.	160662010

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CHADD B. LARSON, PE

DATE: 02/07/2025 MN LIC. NO. 41864

City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
REMOVAL PLAN
STA. 142+50 TO STA. 149+50

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155–210–003
S.A.P.	

SHEET NO. 97 / 354

GENERAL REMOVAL NOTES:

1. CONTRACTOR SHALL CALL GOPHER STATE ONE CALL AT 651–454–0002. ALL UTILITIES MUST BE LOCATED PRIOR TO THE START OF CONSTRUCTION.
2. CONTRACTOR TO VERIFY REMOVAL LIMITS WITH ENGINEER.
3. SIGN REMOVALS ARE SHOWN ON THE SIGNAGE PLANS (SHEET 223 –247)
4. CONTRACTOR SHALL PROTECT ALL INPLACE UTILITY STRUCTURES THAT ARE NOT BEING REMOVED OR RELOCATED.
5. TRENCH BOXES OR OTHER TRENCH STABILIZATION METHODS MAY BE REQUIRED DURING CONSTRUCTION TO MINIMIZE REMOVAL LIMITS.

UTILITY NOTES:

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NOTES LEGEND:

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2 REMOVE SEWER PIPE (STORM)
3 PROTECT INPLACE PRIVATE UTILITY
4 INPLACE PRIVATE UTILITY TO BE REMOVED/RELOCATED (BY OTHERS).
5 REMOVE PIPE APRON
6 REMOVE GATE VALVE
7 ABANDON STORM SEWER
8 REMOVE HYDRANT
9 REMOVE SEWER PIPE (SANITARY)

REMOVE BITUMINOUS PAVEMENT (ALL DEPTHS)
REMOVE SLOPE PAVING
REMOVE CONCRETE MEDIAN
REMOVE CONCRETE WALK
REMOVE BITUMINOUS WALK
CLEARING AND GRUBBING (ACRE)
REMOVE SEWER PIPE (STORM)
REMOVE SEWER PIPE (SANITARY)
REMOVE WATER MAIN
REMOVE FENCE
SALVAGE FENCE
REMOVE CURB & GUTTER
SAWING BIT PAVEMENT (FULL DEPTH)
CONSTRUCTION LIMITS
REMOVE TREE

0 15 30 60
HORIZONTAL SCALE IN FEET

No.	Date	Revisions	App.

DRAWING NAME: CHANKAHDA_PH3_Removals.dwg

DESIGNED BY:	JWB
DRAWN BY:	RGS
CHECKED BY:	CBL
DATE:	02/07/2025
PROJECT NO.	160662010

Kimley»Horn
767 EUSTIS STREET, SUITE 100, ST, PAUL, MN 55114
PHONE: 651–645–4197
WWW.KIMLEY–HORN.COM

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

CHADD B. LARSON, PE
DATE: 02/07/2025 MN LIC. NO. 41864

City of Plymouth
CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
REMOVAL PLAN
STA. 149+50 TO STA. 156+50

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155–210–003
S.A.P.	

SHEET NO. 98 / 354

GENERAL REMOVAL NOTES:

1. CONTRACTOR SHALL CALL GOPHER STATE ONE CALL AT 651–454–0002. ALL UTILITIES MUST BE LOCATED PRIOR TO THE START OF CONSTRUCTION.
2. CONTRACTOR TO VERIFY REMOVAL LIMITS WITH ENGINEER.
3. SIGN REMOVALS ARE SHOWN ON THE SIGNAGE PLANS (SHEET 223 –247)
4. CONTRACTOR SHALL PROTECT ALL INPLACE UTILITY STRUCTURES THAT ARE NOT BEING REMOVED OR RELOCATED.
5. TRENCH BOXES OR OTHER TRENCH STABILIZATION METHODS MAY BE REQUIRED DURING CONSTRUCTION TO MINIMIZE REMOVAL LIMITS.

UTILITY NOTES:

1. THE SUBSURFACE UTILITY INFORMATION IN THIS PLAN IS UTILITY QUALITY LEVEL D. THIS QUALITY LEVEL WAS DETERMINED ACCORDING TO THE GUIDELINES OF CI/ASCE 38–2, ENTITLED "STANDARD GUIDELINES FOR THE COLLECTION AND DEPICTION OF INPLACE SUBSURFACE UTILITY DATA".

NOTES LEGEND:

1 REMOVE MANHOLE OR CATCH BASIN
2 REMOVE SEWER PIPE (STORM)
3 PROTECT INPLACE PRIVATE UTILITY
4 INPLACE PRIVATE UTILITY TO BE REMOVED/RELOCATED (BY OTHERS).
5 REMOVE PIPE APRON
6 REMOVE GATE VALVE
7 ABANDON STORM SEWER
8 REMOVE HYDRANT
9 REMOVE SEWER PIPE (SANITARY)

REMOVE BITUMINOUS PAVEMENT (ALL DEPTHS)
REMOVE SLOPE PAVING
REMOVE CONCRETE MEDIAN
REMOVE CONCRETE WALK
REMOVE BITUMINOUS WALK
CLEARING AND GRUBBING (ACRE)
REMOVE SEWER PIPE (STORM)
REMOVE SEWER PIPE (SANITARY)
REMOVE WATER MAIN
REMOVE FENCE
SALVAGE FENCE
REMOVE CURB & GUTTER
SAWING BIT PAVEMENT (FULL DEPTH)
CONSTRUCTION LIMITS
REMOVE TREE

0 15 30 60
HORIZONTAL SCALE IN FEET

No.	Date	Revisions	App.

DRAWING NAME	CHANKAHDA_PH3_Removals.dwg
DESIGNED BY:	JWB
DRAWN BY:	RGS
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DATE:	02/07/2025
PROJECT NO.	160662010

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CHADD B. LARSON, PE
DATE: 02/07/2025 MN LIC. NO. 41864

City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
REMOVAL PLAN
STA. 156+50 TO STA. 163+50

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155–210–003
S.A.P.	

SHEET NO. 99 / 354

GENERAL REMOVAL NOTES:

1. CONTRACTOR SHALL CALL GOPHER STATE ONE CALL AT 651–454–0002. ALL UTILITIES MUST BE LOCATED PRIOR TO THE START OF CONSTRUCTION.
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7 ABANDON STORM SEWER
8 REMOVE HYDRANT
9 REMOVE SEWER PIPE (SANITARY)

REMOVE BITUMINOUS PAVEMENT (ALL DEPTHS)
REMOVE SLOPE PAVING
REMOVE CONCRETE MEDIAN
REMOVE CONCRETE WALK
REMOVE BITUMINOUS WALK
CLEARING AND GRUBBING (ACRE)
REMOVE SEWER PIPE (STORM)
REMOVE SEWER PIPE (SANITARY)
REMOVE WATER MAIN
REMOVE FENCE
SALVAGE FENCE
REMOVE CURB & GUTTER
SAWING BIT PAVEMENT (FULL DEPTH)
CONSTRUCTION LIMITS
REMOVE TREE

0 15 30 60
HORIZONTAL SCALE IN FEET

No.	Date	Revisions	App.

DRAWING NAME: CHANKAHDA_PH3_Removals.dwg
DESIGNED BY: JWB
DRAWN BY: RGS
CHECKED BY: CBL
DATE: 02/07/2025
PROJECT NO. 160662010

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CHADD B. LARSON, PE
DATE: 02/07/2025 MN LIC. NO. 41864

City of Plymouth
CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
REMOVAL PLAN
STA. 163+50 TO STA. 170+50

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155–210–003
S.A.P.	

SHEET NO. 100 / 354

GENERAL REMOVAL NOTES:

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7 ABANDON STORM SEWER
8 REMOVE HYDRANT
9 REMOVE SEWER PIPE (SANITARY)

REMOVE BITUMINOUS PAVEMENT (ALL DEPTHS)
REMOVE SLOPE PAVING
REMOVE CONCRETE MEDIAN
REMOVE CONCRETE WALK
REMOVE BITUMINOUS WALK
CLEARING AND GRUBBING (ACRE)
REMOVE SEWER PIPE (STORM)
REMOVE SEWER PIPE (SANITARY)
REMOVE WATER MAIN
REMOVE FENCE
SALVAGE FENCE
REMOVE CURB & GUTTER
SAWING BIT PAVEMENT (FULL DEPTH)
CONSTRUCTION LIMITS
REMOVE TREE

0 15 30 60
HORIZONTAL SCALE IN FEET

No.	Date	Revisions	App.

DRAWING NAME: CHANKAHDA_PH3_Removals.dwg
DESIGNED BY: JWB
DRAWN BY: RGS
CHECKED BY: CBL
DATE: 02/07/2025
PROJECT NO. 160662010

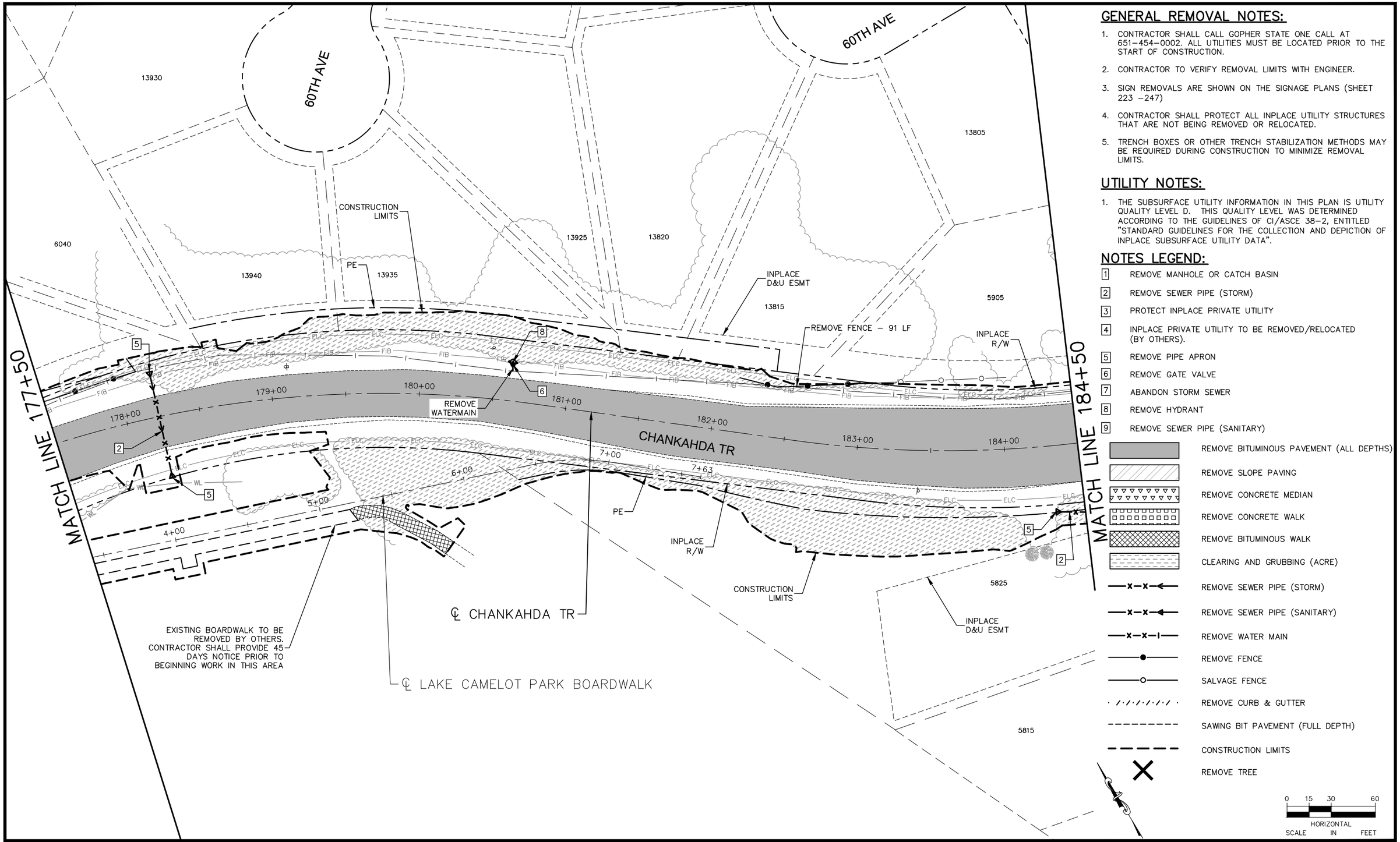
Kimley»Horn
767 EUSTIS STREET, SUITE 100, ST, PAUL, MN 55114
PHONE: 651–645–4197
WWW.KIMLEY–HORN.COM

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CHADD B. LARSON, PE
DATE: 02/07/2025 MN LIC. NO. 41864

City of Plymouth
CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
REMOVAL PLAN
STA. 170+50 TO STA. 177+50

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155–210–003
S.A.P.	

SHEET NO. 101 / 354



GENERAL REMOVAL NOTES:

1. CONTRACTOR SHALL CALL GOPHER STATE ONE CALL AT 651–454–0002. ALL UTILITIES MUST BE LOCATED PRIOR TO THE START OF CONSTRUCTION.
2. CONTRACTOR TO VERIFY REMOVAL LIMITS WITH ENGINEER.
3. SIGN REMOVALS ARE SHOWN ON THE SIGNAGE PLANS (SHEET 223 –247)
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UTILITY NOTES:

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NOTES LEGEND:

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2 REMOVE SEWER PIPE (STORM)
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4 INPLACE PRIVATE UTILITY TO BE REMOVED/RELOCATED (BY OTHERS).
5 REMOVE PIPE APRON
6 REMOVE GATE VALVE
7 ABANDON STORM SEWER
8 REMOVE HYDRANT
9 REMOVE SEWER PIPE (SANITARY)

- REMOVE BITUMINOUS PAVEMENT (ALL DEPTHS)
- REMOVE SLOPE PAVING
- REMOVE CONCRETE MEDIAN
- REMOVE CONCRETE WALK
- REMOVE BITUMINOUS WALK
- CLEARING AND GRUBBING (ACRE)
- REMOVE SEWER PIPE (STORM)
- REMOVE SEWER PIPE (SANITARY)
- REMOVE WATER MAIN
- REMOVE FENCE
- SALVAGE FENCE
- REMOVE CURB & GUTTER
- SAWING BIT PAVEMENT (FULL DEPTH)
- CONSTRUCTION LIMITS
- REMOVE TREE

No.	Date	Revisions	App.

DRAWING NAME: CHANKAHDA_PH3_Removals.dwg

DESIGNED BY:	JWB
DRAWN BY:	RGS
CHECKED BY:	CBL
DATE:	02/07/2025
PROJECT NO.	160662010

Kimley»Horn
767 EUSTIS STREET, SUITE 100, ST, PAUL, MN 55114
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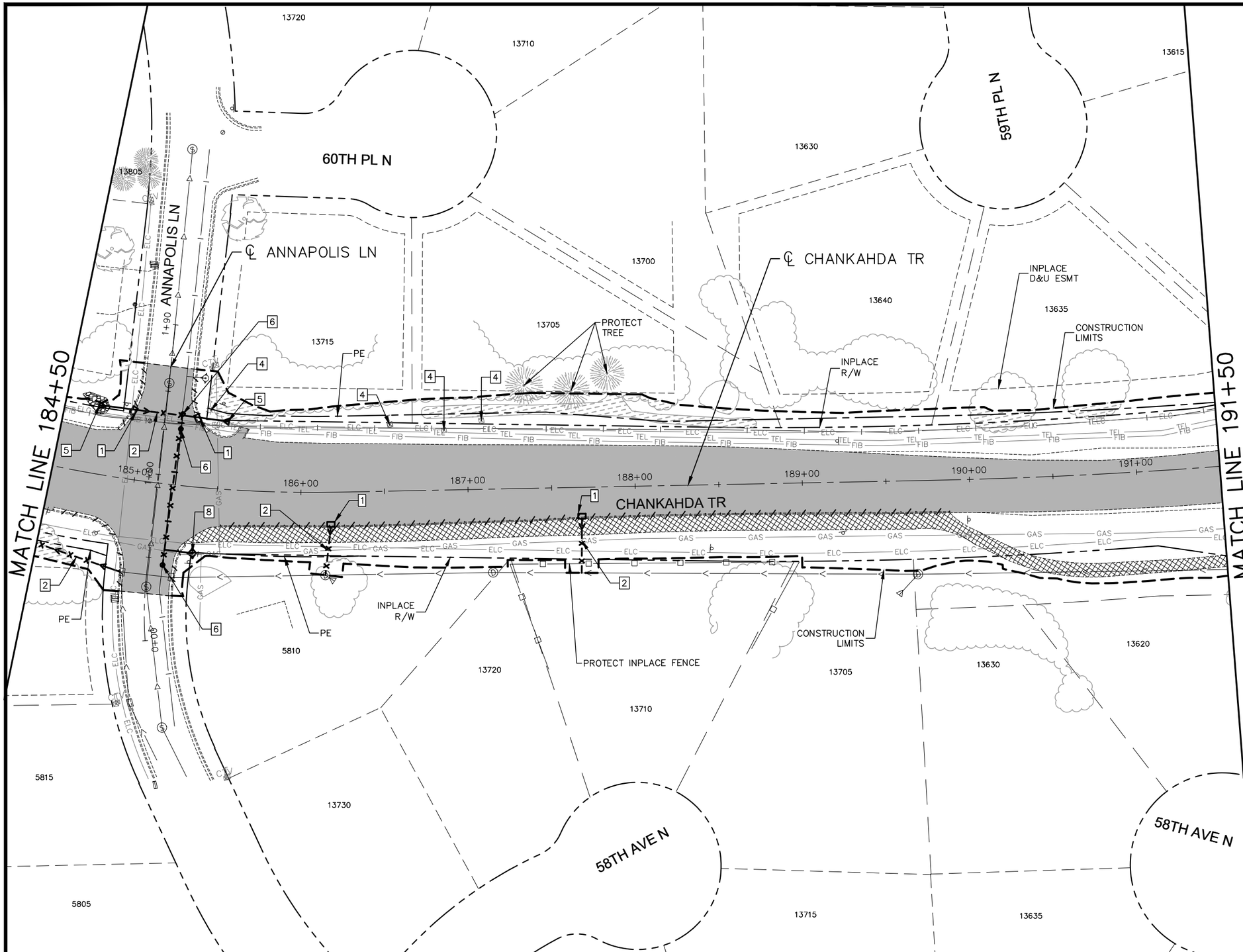
CHADD B. LARSON, PE
DATE: 02/07/2025 MN LIC. NO. 41864

City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
REMOVAL PLAN
STA. 177+50 TO STA. 184+50

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155–210–003
S.A.P.	

SHEET NO. 102 / 354



GENERAL REMOVAL NOTES:

1. CONTRACTOR SHALL CALL GOPHER STATE ONE CALL AT 651–454–0002. ALL UTILITIES MUST BE LOCATED PRIOR TO THE START OF CONSTRUCTION.
2. CONTRACTOR TO VERIFY REMOVAL LIMITS WITH ENGINEER.
3. SIGN REMOVALS ARE SHOWN ON THE SIGNAGE PLANS (SHEET 223 –247)
4. CONTRACTOR SHALL PROTECT ALL INPLACE UTILITY STRUCTURES THAT ARE NOT BEING REMOVED OR RELOCATED.
5. TRENCH BOXES OR OTHER TRENCH STABILIZATION METHODS MAY BE REQUIRED DURING CONSTRUCTION TO MINIMIZE REMOVAL LIMITS.

UTILITY NOTES:

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NOTES LEGEND:

1	REMOVE MANHOLE OR CATCH BASIN
2	REMOVE SEWER PIPE (STORM)
3	PROTECT INPLACE PRIVATE UTILITY
4	INPLACE PRIVATE UTILITY TO BE REMOVED/RELOCATED (BY OTHERS).
5	REMOVE PIPE APRON
6	REMOVE GATE VALVE
7	ABANDON STORM SEWER
8	REMOVE HYDRANT
9	REMOVE SEWER PIPE (SANITARY)
	REMOVE BITUMINOUS PAVEMENT (ALL DEPTHS)
	REMOVE SLOPE PAVING
	REMOVE CONCRETE MEDIAN
	REMOVE CONCRETE WALK
	REMOVE BITUMINOUS WALK
	CLEARING AND GRUBBING (ACRE)
	REMOVE SEWER PIPE (STORM)
	REMOVE SEWER PIPE (SANITARY)
	REMOVE WATER MAIN
	REMOVE FENCE
	SALVAGE FENCE
	REMOVE CURB & GUTTER
	SAWING BIT PAVEMENT (FULL DEPTH)
	CONSTRUCTION LIMITS
	REMOVE TREE

0 15 30 60
HORIZONTAL SCALE IN FEET

No.	Date	Revisions	App.

DRAWING NAME: CHANKAHDA_PH3_Removals.dwg

DESIGNED BY:	JWB
DRAWN BY:	RGS
CHECKED BY:	CBL
DATE:	02/07/2025
PROJECT NO.	160662010

Kimley»Horn
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CHADD B. LARSON, PE

DATE: 02/07/2025 MN LIC. NO. 41864

City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
REMOVAL PLAN
STA. 184+55 TO STA. 191+50

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155–210–003
S.A.P.	

SHEET NO. 103 / 354

GENERAL REMOVAL NOTES:

1. CONTRACTOR SHALL CALL GOPHER STATE ONE CALL AT 651–454–0002. ALL UTILITIES MUST BE LOCATED PRIOR TO THE START OF CONSTRUCTION.
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UTILITY NOTES:

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4 INPLACE PRIVATE UTILITY TO BE REMOVED/RELOCATED (BY OTHERS).
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8 REMOVE HYDRANT
9 REMOVE SEWER PIPE (SANITARY)

REMOVE BITUMINOUS PAVEMENT (ALL DEPTHS)
REMOVE SLOPE PAVING
REMOVE CONCRETE MEDIAN
REMOVE CONCRETE WALK
REMOVE BITUMINOUS WALK
CLEARING AND GRUBBING (ACRE)
REMOVE SEWER PIPE (STORM)
REMOVE SEWER PIPE (SANITARY)
REMOVE WATER MAIN
REMOVE FENCE
SALVAGE FENCE
REMOVE CURB & GUTTER
SAWING BIT PAVEMENT (FULL DEPTH)
CONSTRUCTION LIMITS
REMOVE TREE

0 15 30 60
HORIZONTAL SCALE IN FEET

No.	Date	Revisions	App.

DRAWING NAME: CHANKAHDA_PH3_Removals.dwg

DESIGNED BY:	JWB
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PROJECT NO.	160662010

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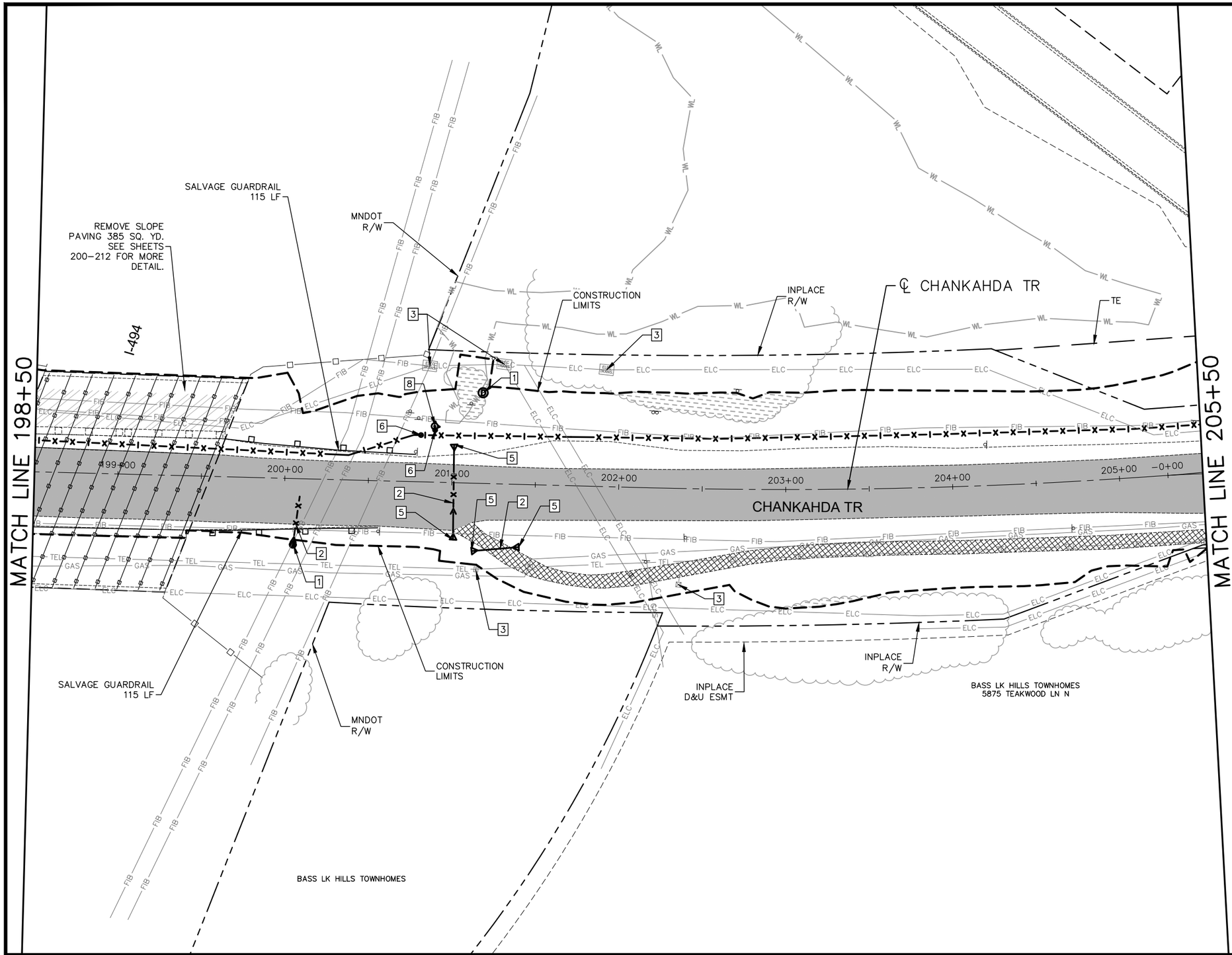
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CHADD B. LARSON, PE
DATE: 02/07/2025 MN LIC. NO. 41864

City of Plymouth
CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
REMOVAL PLAN
STA. 191+50 TO STA. 198+50

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155–210–003
S.A.P.	

SHEET NO. 104 / 354



GENERAL REMOVAL NOTES:

1. CONTRACTOR SHALL CALL GOPHER STATE ONE CALL AT 651–454–0002. ALL UTILITIES MUST BE LOCATED PRIOR TO THE START OF CONSTRUCTION.
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9 REMOVE SEWER PIPE (SANITARY)

REMOVE BITUMINOUS PAVEMENT (ALL DEPTHS)
REMOVE SLOPE PAVING
REMOVE CONCRETE MEDIAN
REMOVE CONCRETE WALK
REMOVE BITUMINOUS WALK
CLEARING AND GRUBBING (ACRE)
REMOVE SEWER PIPE (STORM)
REMOVE SEWER PIPE (SANITARY)
REMOVE WATER MAIN
REMOVE FENCE
SALVAGE FENCE
REMOVE CURB & GUTTER
SAWING BIT PAVEMENT (FULL DEPTH)
CONSTRUCTION LIMITS
REMOVE TREE

0 15 30 60
HORIZONTAL SCALE IN FEET

No.	Date	Revisions	App.

DRAWING NAME: CHANKAHDA_PH3_Removals.dwg

DESIGNED BY:	JWB
DRAWN BY:	RGS
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DATE:	02/07/2025
PROJECT NO.	160662010

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CHADD B. LARSON, PE
DATE: 02/07/2025 MN LIC. NO. 41864

City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
REMOVAL PLAN
STA. 198+50 TO STA. 205+50

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155–210–003
S.A.P.	

SHEET NO. 105 / 354

GENERAL REMOVAL NOTES:

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- 8 REMOVE HYDRANT
- 9 REMOVE SEWER PIPE (SANITARY)

- REMOVE BITUMINOUS PAVEMENT (ALL DEPTHS)
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- REMOVE CONCRETE MEDIAN
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- REMOVE SEWER PIPE (STORM)
- REMOVE SEWER PIPE (SANITARY)
- REMOVE WATER MAIN
- REMOVE FENCE
- SALVAGE FENCE
- REMOVE CURB & GUTTER
- SAWING BIT PAVEMENT (FULL DEPTH)
- CONSTRUCTION LIMITS
- REMOVE TREE

HORIZONTAL SCALE IN FEET: 0 15 30 60

No.	Date	Revisions	App.

DRAWING NAME: CHANKAHDA_PH3_Removals.dwg

DESIGNED BY:	JWB
DRAWN BY:	RGS
CHECKED BY:	CBL
DATE:	02/07/2025
PROJECT NO.	160662010

Kimley»Horn
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CHADD B. LARSON, PE

DATE: 02/07/2025 MN LIC. NO. 41864

City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
REMOVAL PLAN
STA. 205+50 TO STA. 212+77

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155–210–003
S.A.P.	

SHEET NO. 106 / 354

GENERAL REMOVAL NOTES:

1. CONTRACTOR SHALL CALL GOPHER STATE ONE CALL AT 651–454–0002. ALL UTILITIES MUST BE LOCATED PRIOR TO THE START OF CONSTRUCTION.
2. CONTRACTOR TO VERIFY REMOVAL LIMITS WITH ENGINEER.
3. SIGN REMOVALS ARE SHOWN ON THE SIGNAGE PLANS (SHEET 223 –247)
4. CONTRACTOR SHALL PROTECT ALL INPLACE UTILITY STRUCTURES THAT ARE NOT BEING REMOVED OR RELOCATED.
5. TRENCH BOXES OR OTHER TRENCH STABILIZATION METHODS MAY BE REQUIRED DURING CONSTRUCTION TO MINIMIZE REMOVAL LIMITS.

UTILITY NOTES:

1. THE SUBSURFACE UTILITY INFORMATION IN THIS PLAN IS UTILITY QUALITY LEVEL D. THIS QUALITY LEVEL WAS DETERMINED ACCORDING TO THE GUIDELINES OF CI/ASCE 38–2, ENTITLED "STANDARD GUIDELINES FOR THE COLLECTION AND DEPICTION OF INPLACE SUBSURFACE UTILITY DATA".

NOTES LEGEND:

1 REMOVE MANHOLE OR CATCH BASIN
2 REMOVE SEWER PIPE (STORM)
3 PROTECT INPLACE PRIVATE UTILITY
4 INPLACE PRIVATE UTILITY TO BE REMOVED/RELOCATED (BY OTHERS).
5 REMOVE PIPE APRON
6 REMOVE GATE VALVE
7 ABANDON STORM SEWER
8 REMOVE HYDRANT
9 REMOVE SEWER PIPE (SANITARY)

REMOVE BITUMINOUS PAVEMENT (ALL DEPTHS)
REMOVE SLOPE PAVING
REMOVE CONCRETE MEDIAN
REMOVE CONCRETE WALK
REMOVE BITUMINOUS WALK
CLEARING AND GRUBBING (ACRE)
REMOVE SEWER PIPE (STORM)
REMOVE SEWER PIPE (SANITARY)
REMOVE WATER MAIN
REMOVE FENCE
SALVAGE FENCE
REMOVE CURB & GUTTER
SAWING BIT PAVEMENT (FULL DEPTH)
CONSTRUCTION LIMITS
REMOVE TREE

0 15 30 60
HORIZONTAL SCALE IN FEET

MATCH LINE 212+77

SPRC LAND VENTURES PLYMOUTH

CONSTRUCTION LIMITS

℄ NORTHWEST BLVD TRAIL

CHANKAHDA TR

213+00

214+00

215+00

216+00

217+00

218+00

219+00

220+00

220+24

INPLACE D&U ESMT

PE

℄ CHANKAHDA TR

INPLACE R/W

CONSTRUCTION LIMITS

END FULL DEPTH CONSTRUCTION
S.A.P. 155–210–001
CHANKAHDA TR STA. 218+79.22

NORTHWEST BLVD

INPLACE R/W

END CONSTRUCTION
S.A.P. 155–210–001
CHANKAHDA TR STA. 220+24.50

No.	Date	Revisions	App.

DRAWING NAME	CHANKAHDA_PH3_Removals.dwg
DESIGNED BY:	JWB
DRAWN BY:	RGS
CHECKED BY:	CBL
DATE:	02/07/2025
PROJECT NO.	160662010

Kimley»Horn
767 EUSTIS STREET, SUITE 100, ST, PAUL, MN 55114
PHONE: 651–645–4197
WWW.KIMLEY–HORN.COM

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

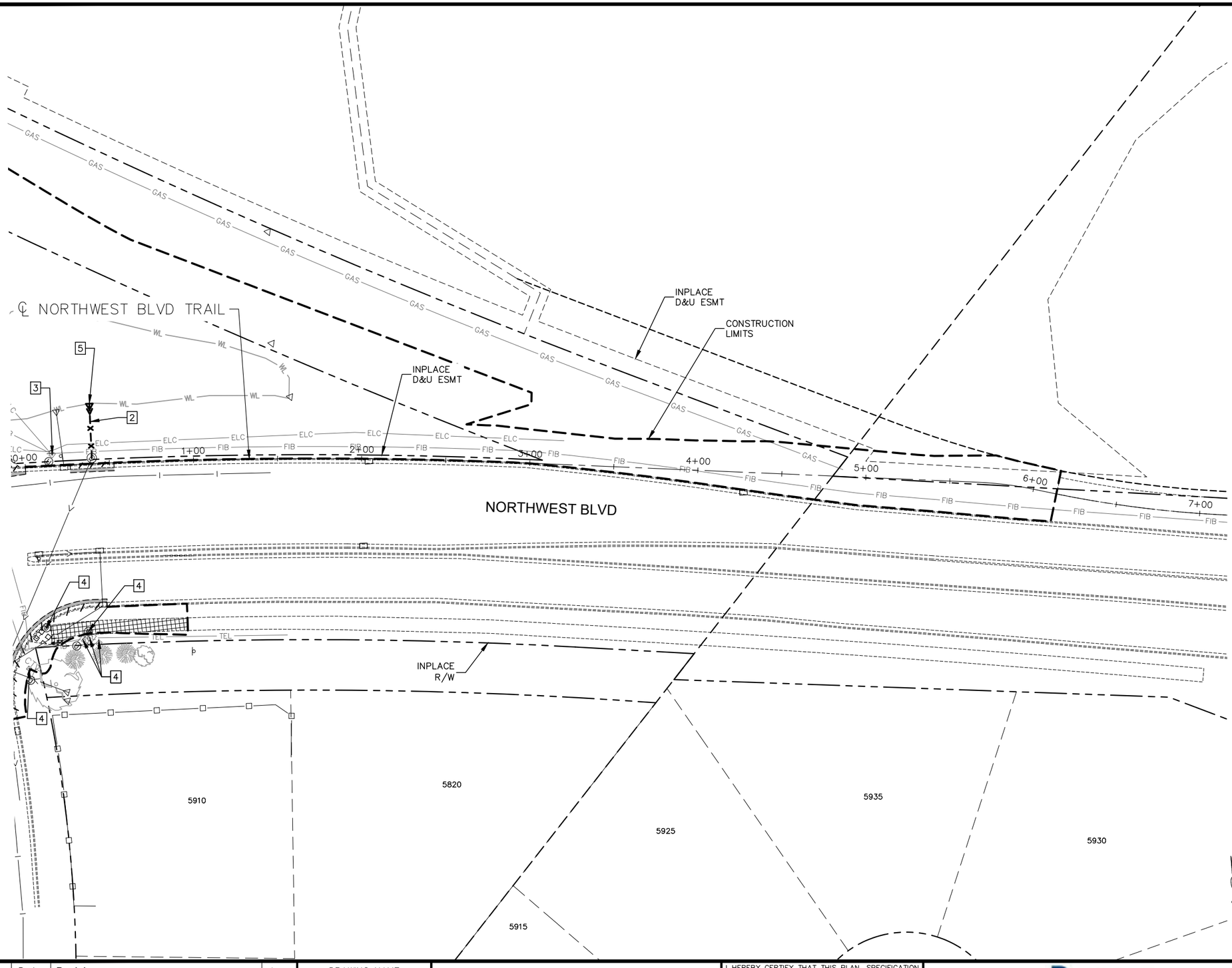
CHADD B. LARSON, PE
DATE: 02/07/2025 MN LIC. NO. 41864

City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
REMOVAL PLAN
STA. 212+77 TO STA. 220+24.50

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155–210–003
S.A.P.	

SHEET NO. 107 / 354



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- REMOVE BITUMINOUS WALK
- CLEARING AND GRUBBING (ACRE)
- REMOVE SEWER PIPE (STORM)
- REMOVE SEWER PIPE (SANITARY)
- REMOVE WATER MAIN
- REMOVE FENCE
- SALVAGE FENCE
- REMOVE CURB & GUTTER
- SAWING BIT PAVEMENT (FULL DEPTH)
- CONSTRUCTION LIMITS
- REMOVE TREE

0 15 30 60
HORIZONTAL SCALE IN FEET

No.	Date	Revisions	App.

DRAWING NAME	CHANKAHDA_PH3_Removals.dwg
DESIGNED BY:	JWB
DRAWN BY:	RGS
CHECKED BY:	CBL
DATE:	02/07/2025
PROJECT NO.	160662010

Kimley»Horn
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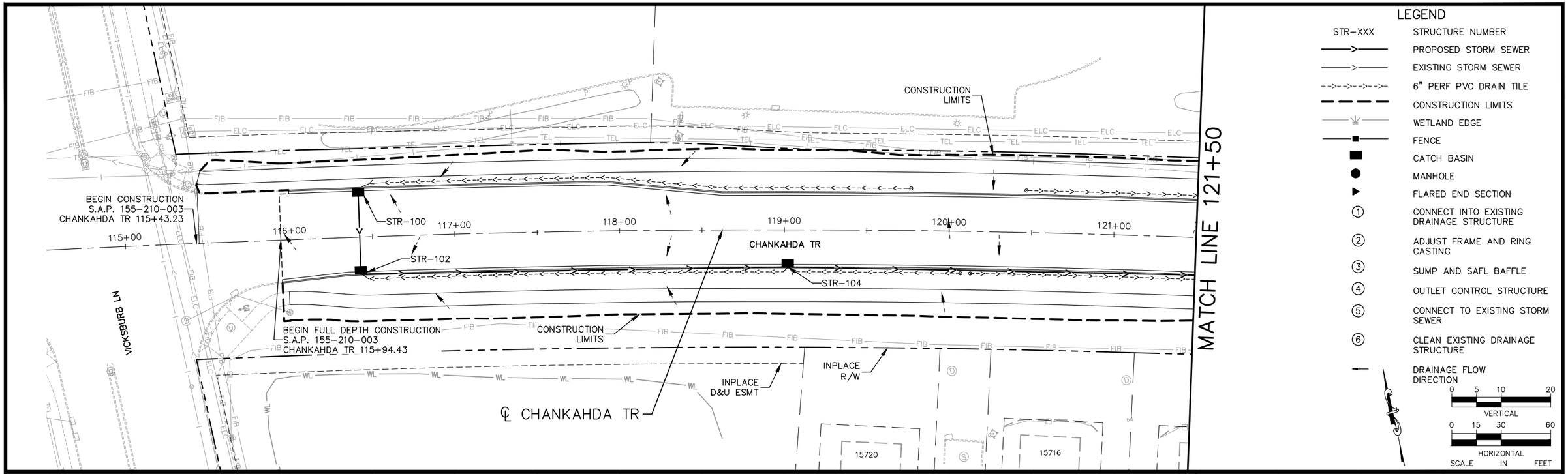
CHADD B. LARSON, PE
DATE: 02/07/2025 MN LIC. NO. 41864

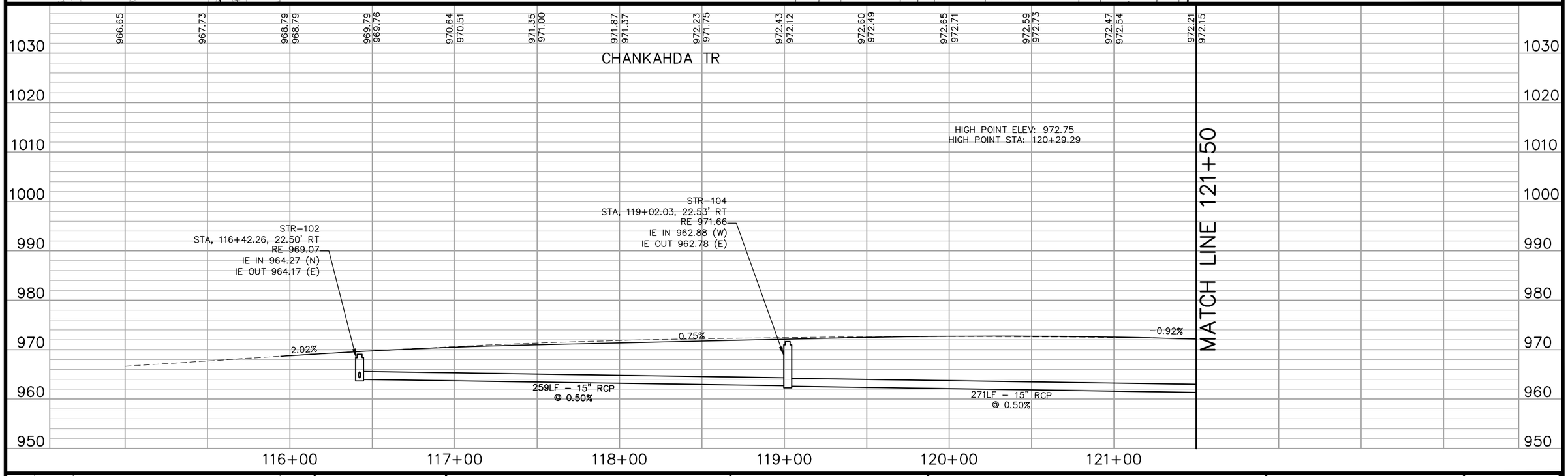
City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
REMOVAL PLAN
STA. 0+00 TO STA. 7+00

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155–210–003
S.A.P.	

SHEET NO. 108 / 354





No.	Date	Revisions	App.

DRAWING NAME: CHANKAHDA_PH3_DrainPlan.dwg

DESIGNED BY:	HB
DRAWN BY:	PD
CHECKED BY:	SLT
DATE:	02/07/2025
PROJECT NO.	160662010

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Stephanie Thulien

STEPHANIE L. THULIEN, PE

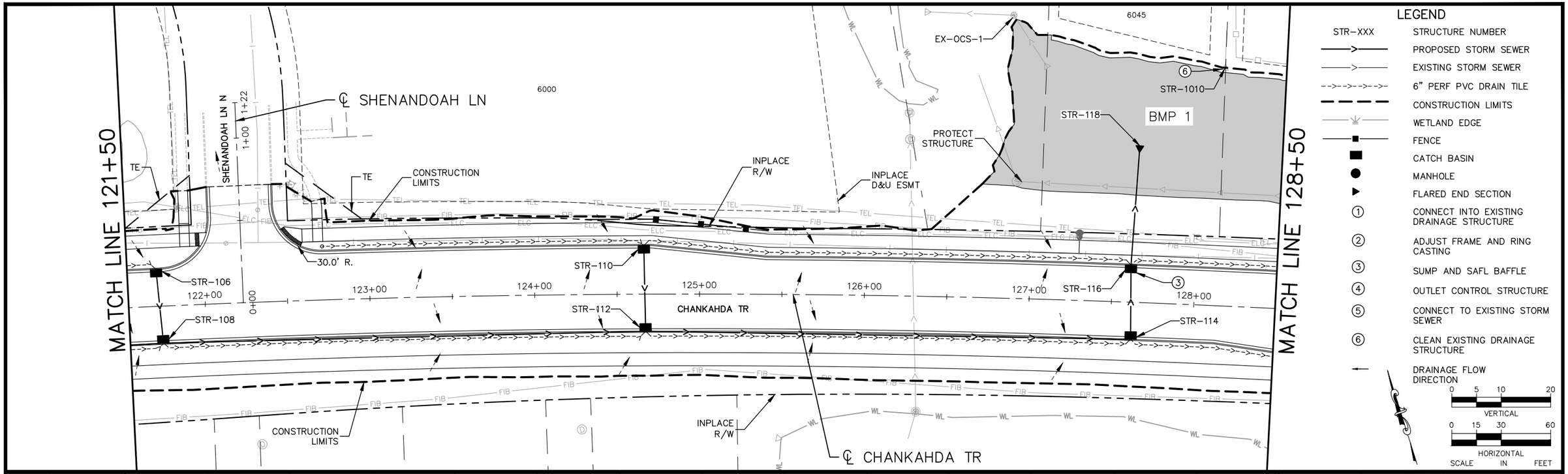
DATE: 02/07/2025 MN LIC. NO. 57230

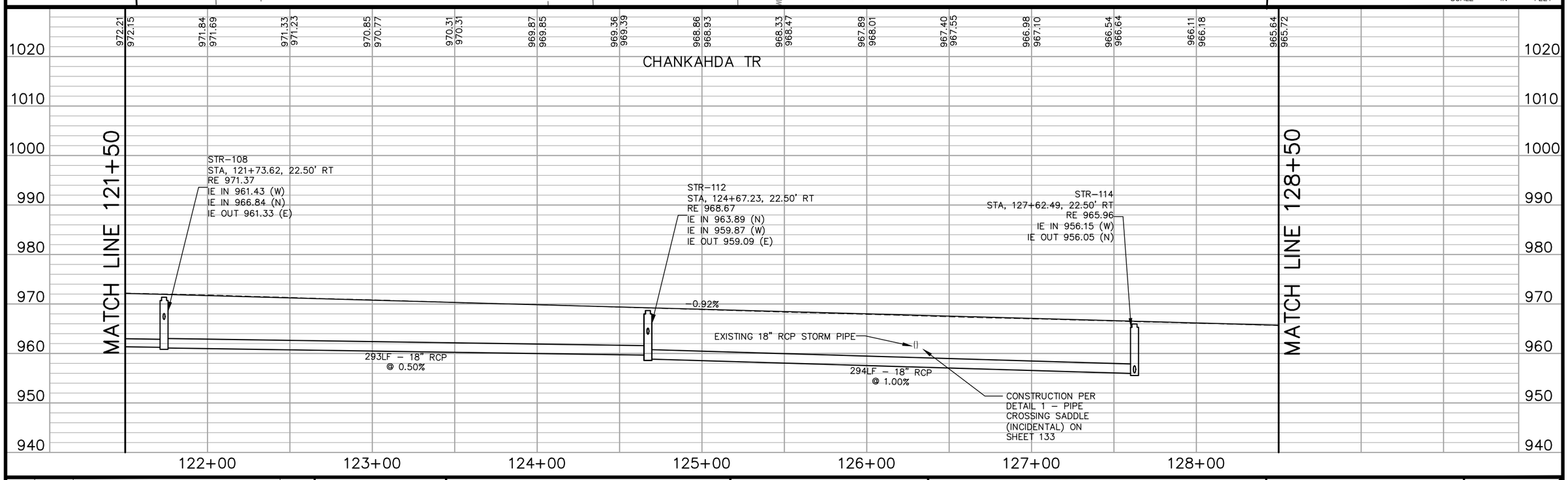
City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
DRAINAGE PLAN AND PROFILE
STA. 115+43.23 TO STA. 121+50

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 109 / 354





No.	Date	Revisions	App.

DRAWING NAME: CHANKAHDA_PH3_DrainPlan.dwg

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DRAWN BY:	PD
CHECKED BY:	SLT
DATE:	02/07/2025
PROJECT NO.	160662010

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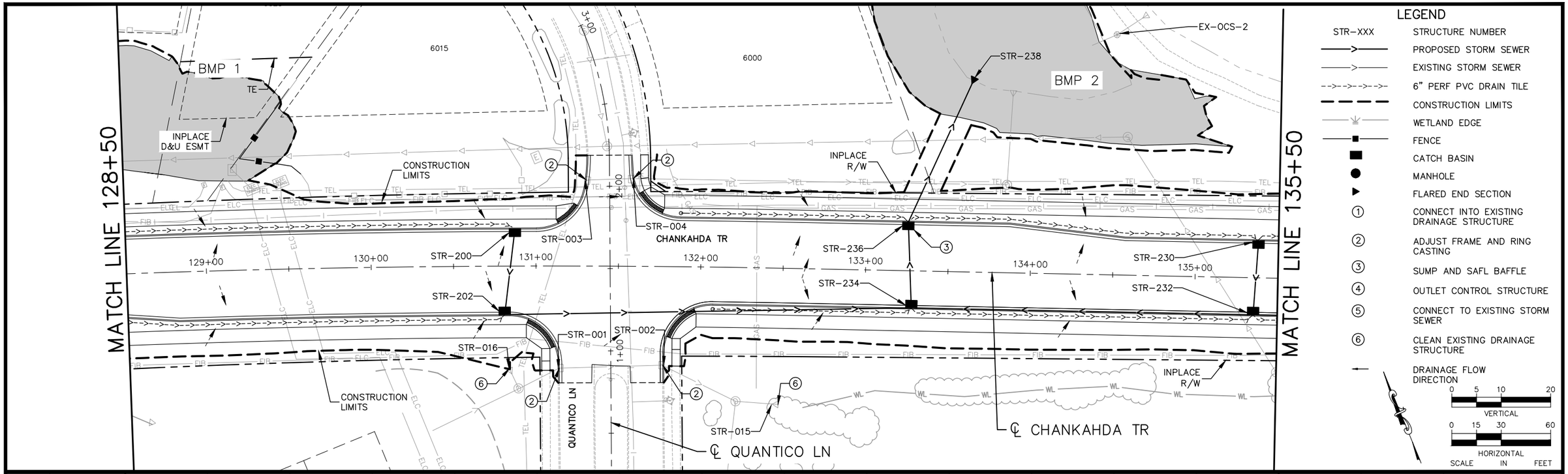
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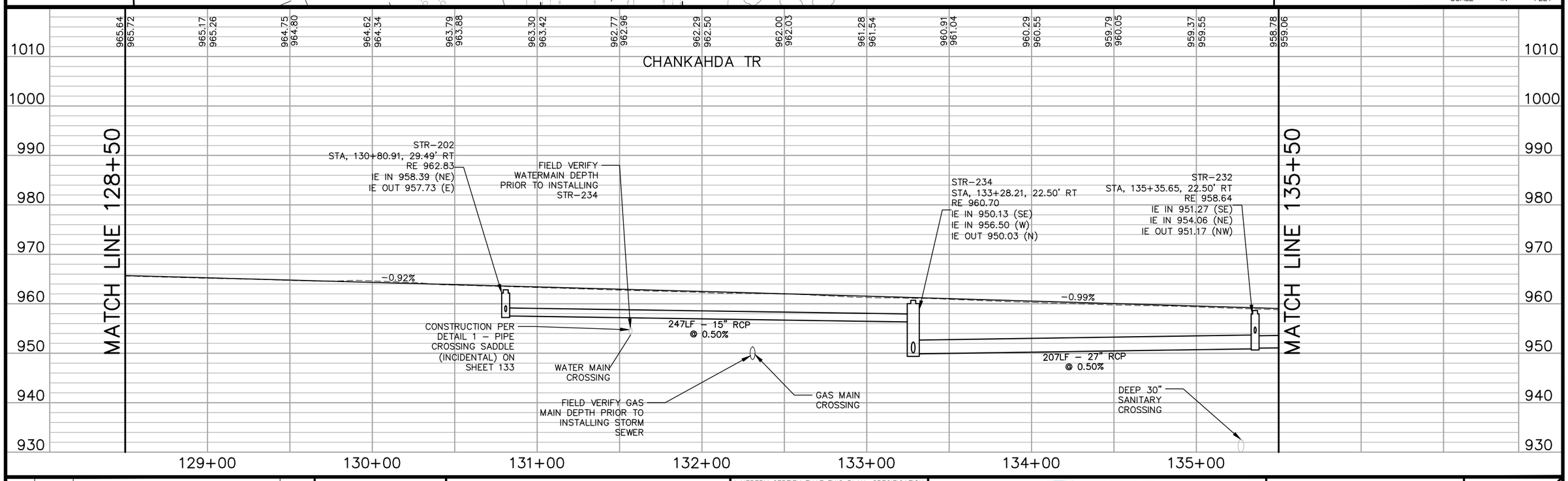
City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
DRAINAGE PLAN AND PROFILE
STA. 121+50 TO STA. 128+50

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 110 / 354





No.	Date	Revisions	App.

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DESIGNED BY:	HB
DRAWN BY:	PD
CHECKED BY:	SLT
DATE:	02/07/2025
PROJECT NO.	160662010

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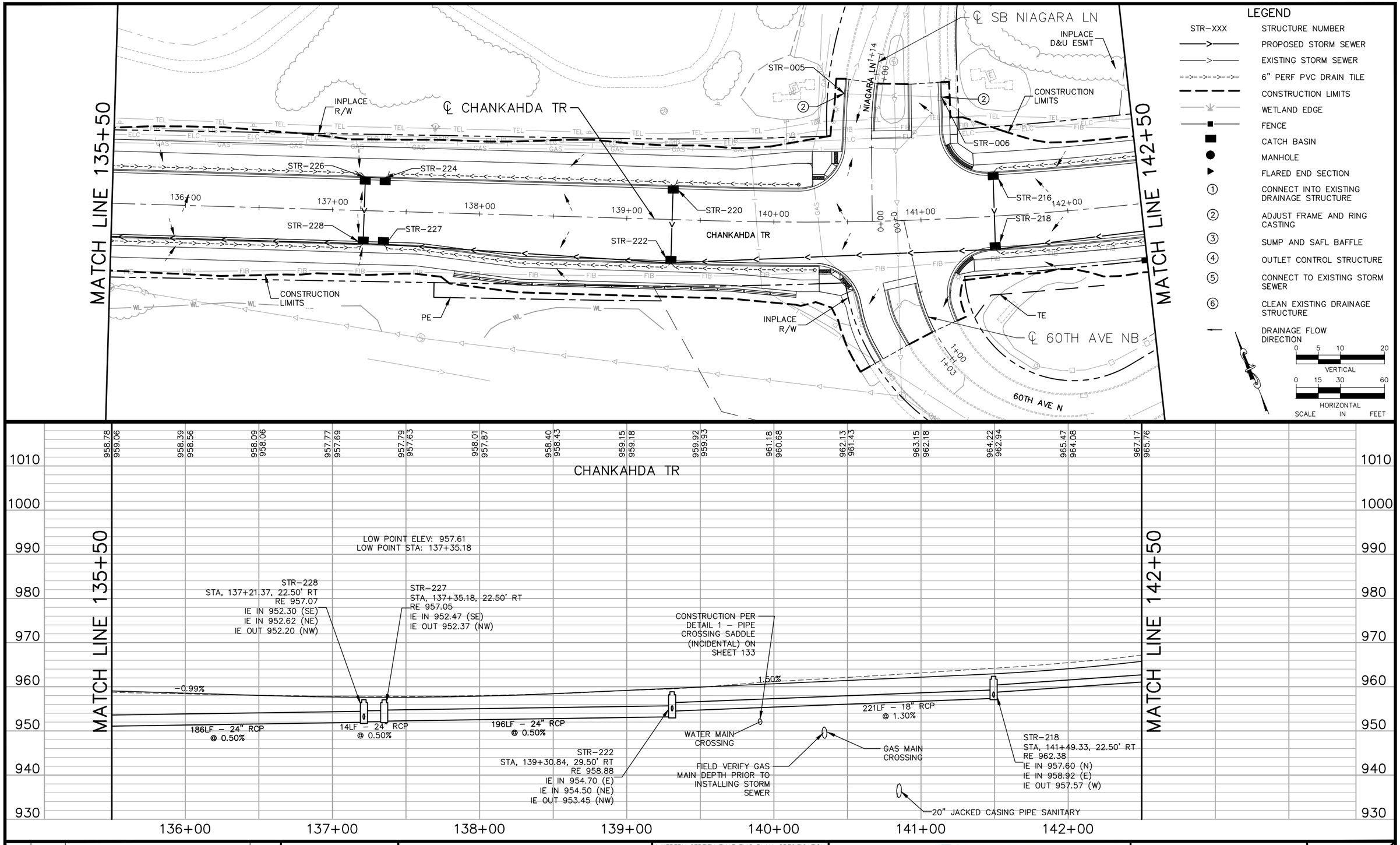
DATE: 02/07/2025 MN LIC. NO. 57230

City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
DRAINAGE PLAN AND PROFILE
STA. 128+50 TO STA. 135+50

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 111 / 354



No.	Date	Revisions	App.

DRAWING NAME	CHANKAHDA_PH3_DrainPlan.dwg
DESIGNED BY:	HB
DRAWN BY:	PD
CHECKED BY:	SLT
DATE:	02/07/2025
PROJECT NO.	160662010

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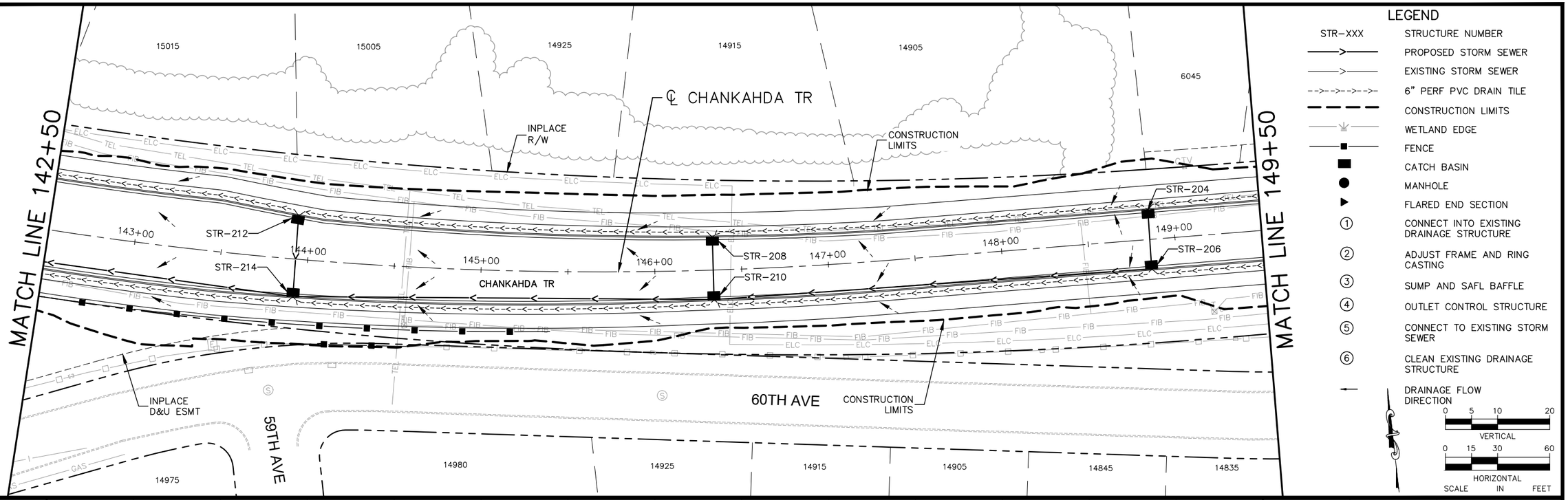
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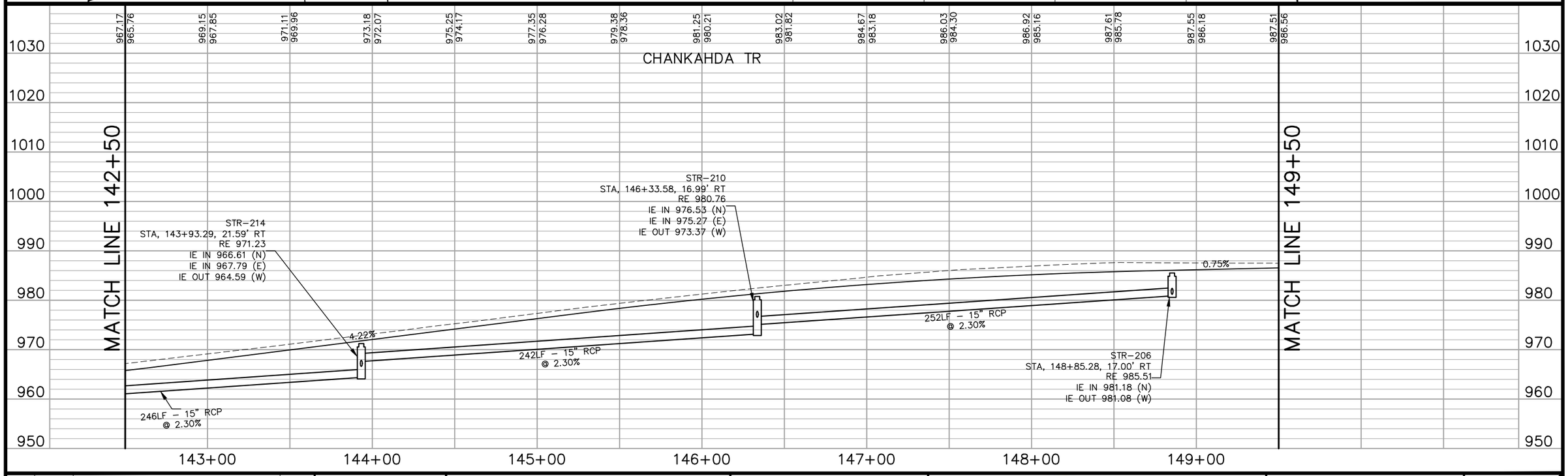
City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
DRAINAGE PLAN AND PROFILE
STA. 135+50 TO STA. 142+50

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 112 / 354





No.	Date	Revisions	App.

DRAWING NAME: CHANKAHDA_PH3_DrainPlan.dwg

DESIGNED BY:	HB
DRAWN BY:	PD
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DATE:	02/07/2025
PROJECT NO.	160662010

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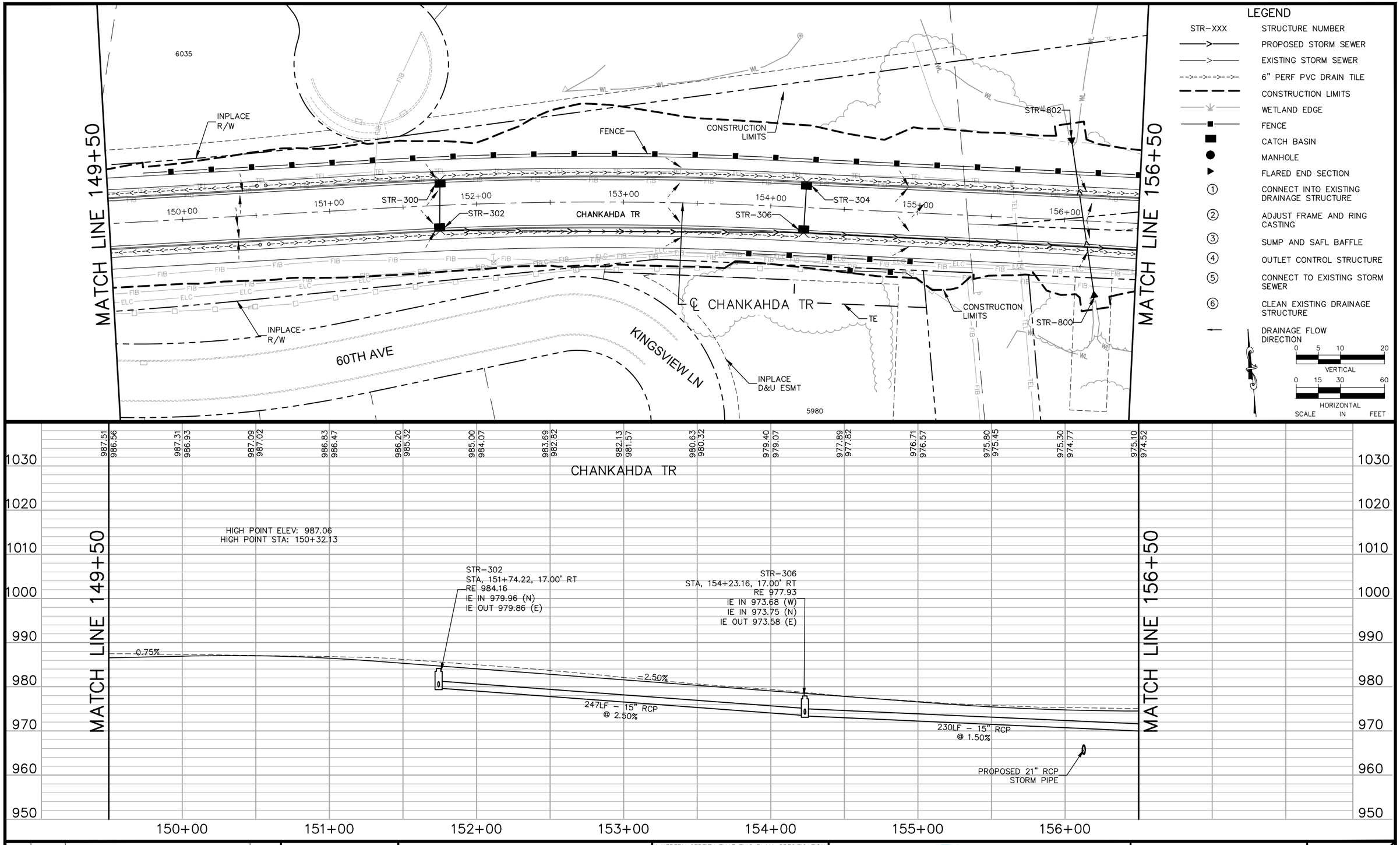
DATE: 02/07/2025 MN LIC. NO. 57230

City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
DRAINAGE PLAN AND PROFILE
STA. 142+50 TO STA. 149+50

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 113 / 354



No.	Date	Revisions	App.

DRAWING NAME: CHANKAHDA_PH3_DrainPlan.dwg

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DATE:	02/07/2025
PROJECT NO.	160662010

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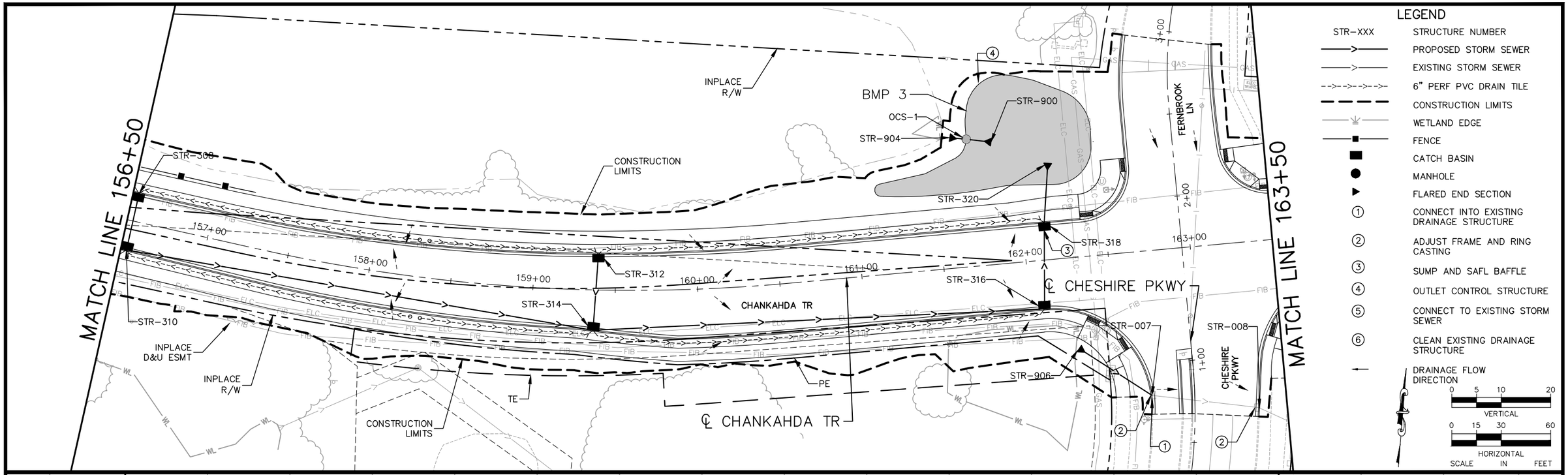
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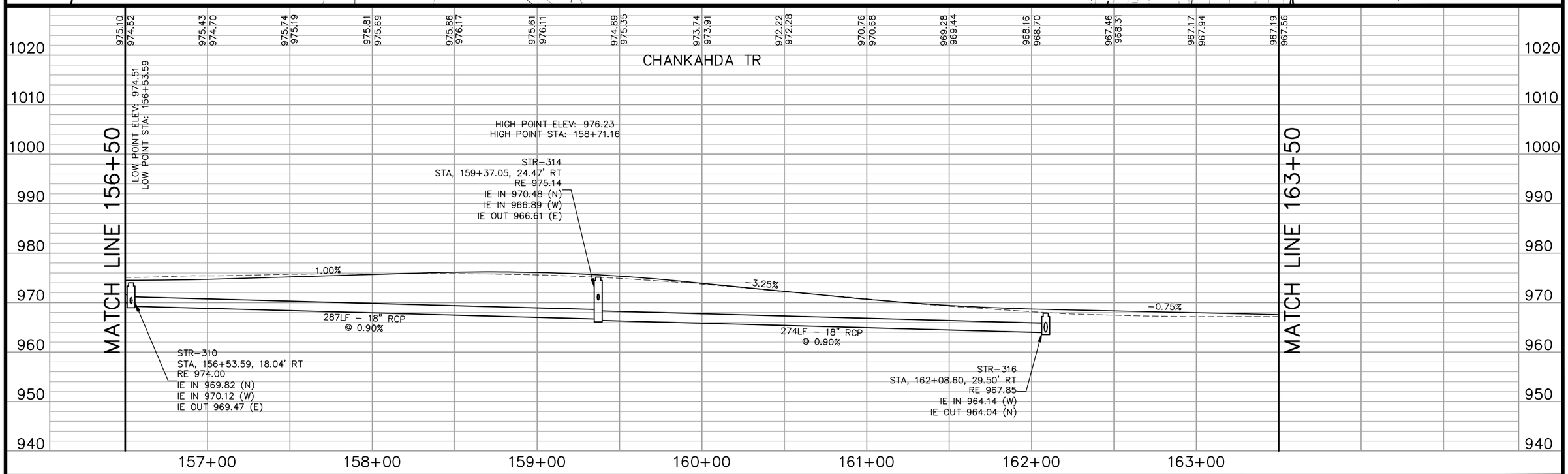
City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
DRAINAGE PLAN AND PROFILE
STA. 149+50 TO STA. 156+50

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 114 / 354





No.	Date	Revisions	App.

DRAWING NAME: CHANKAHDA_PH3_DrainPlan.dwg

DESIGNED BY:	HB
DRAWN BY:	PD
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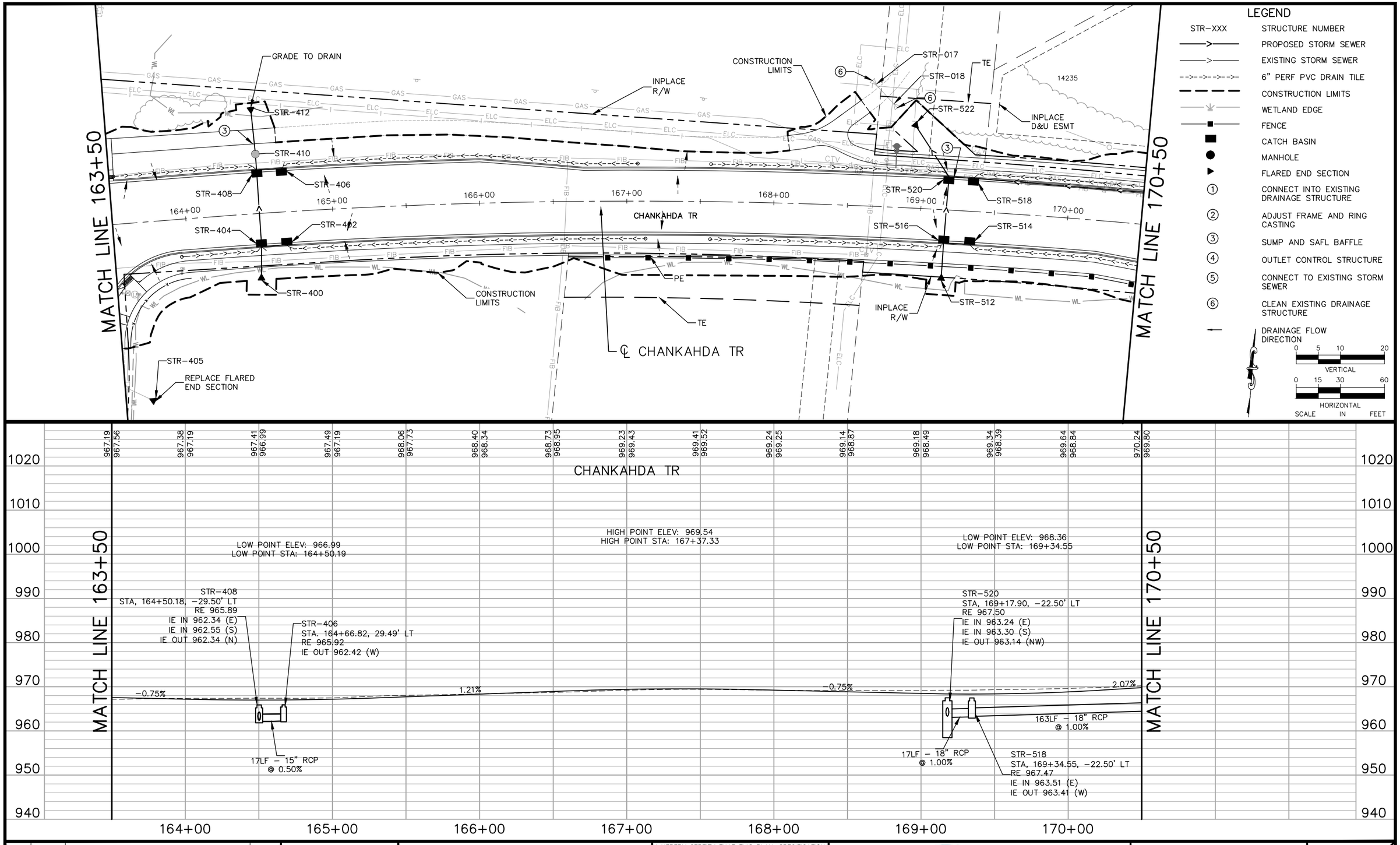
DATE: 02/07/2025 MN LIC. NO. 57230

City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
DRAINAGE PLAN AND PROFILE
STA. 156+50 TO STA. 163+50

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 115 / 354



No.	Date	Revisions	App.

DRAWING NAME	CHANKAHDA_PH3_DrainPlan.dwg
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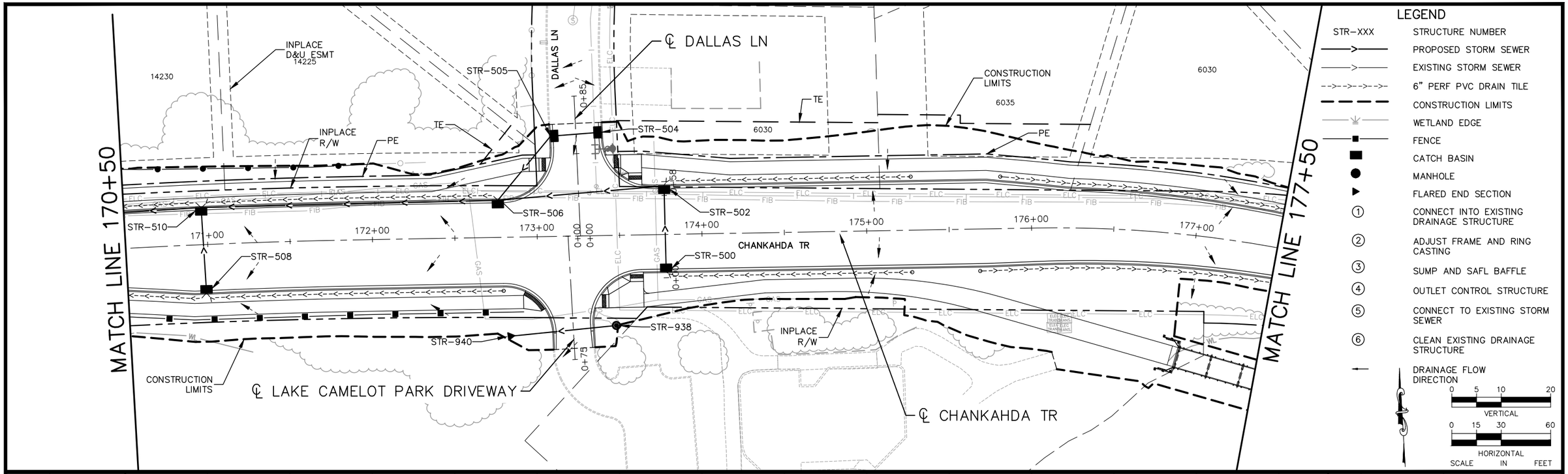
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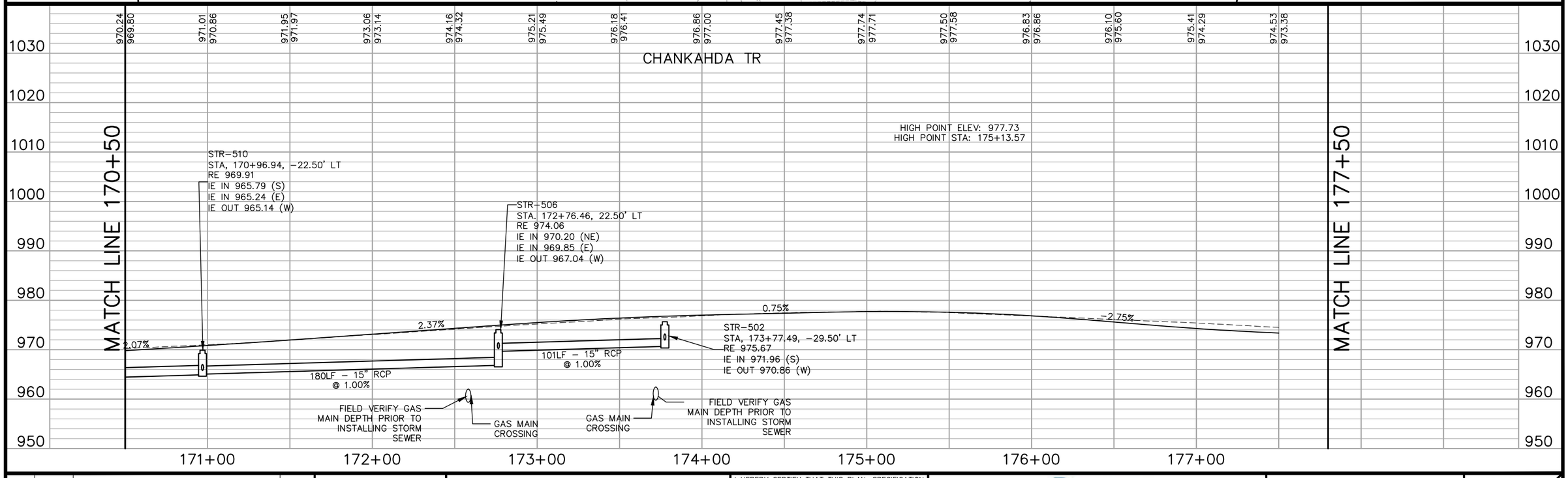
City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
DRAINAGE PLAN AND PROFILE
STA. 163+50 TO STA. 170+50

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 116 / 354





No.	Date	Revisions	App.

DRAWING NAME: CHANKAHDA_PH3_DrainPlan.dwg

DESIGNED BY:	HB
DRAWN BY:	PD
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DATE:	02/07/2025
PROJECT NO.	160662010

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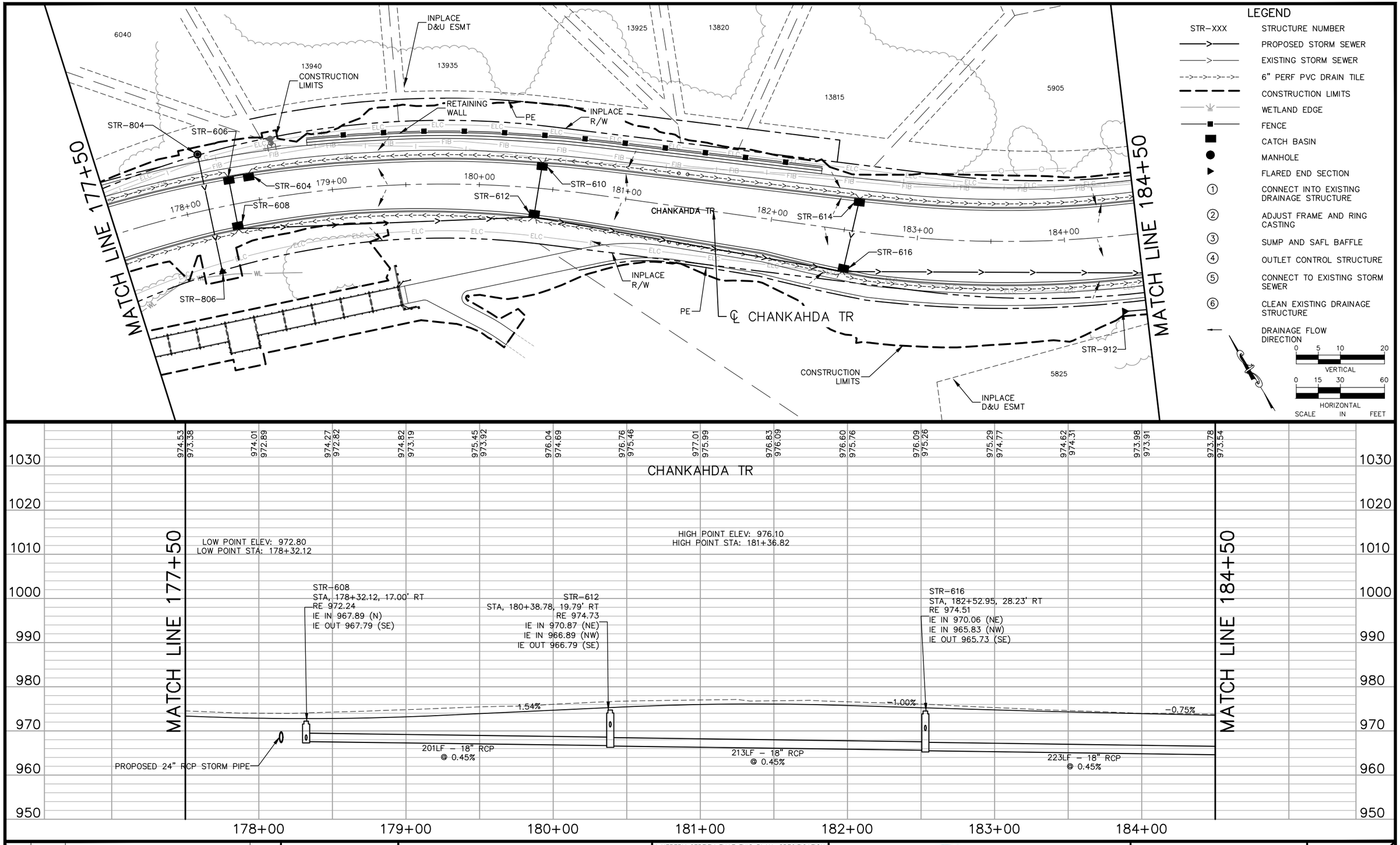
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City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
DRAINAGE PLAN AND PROFILE
STA. 170+50 TO STA. 177+50

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 117 / 354



No.	Date	Revisions	App.

DRAWING NAME: CHANKAHDA_PH3_DrainPlan.dwg

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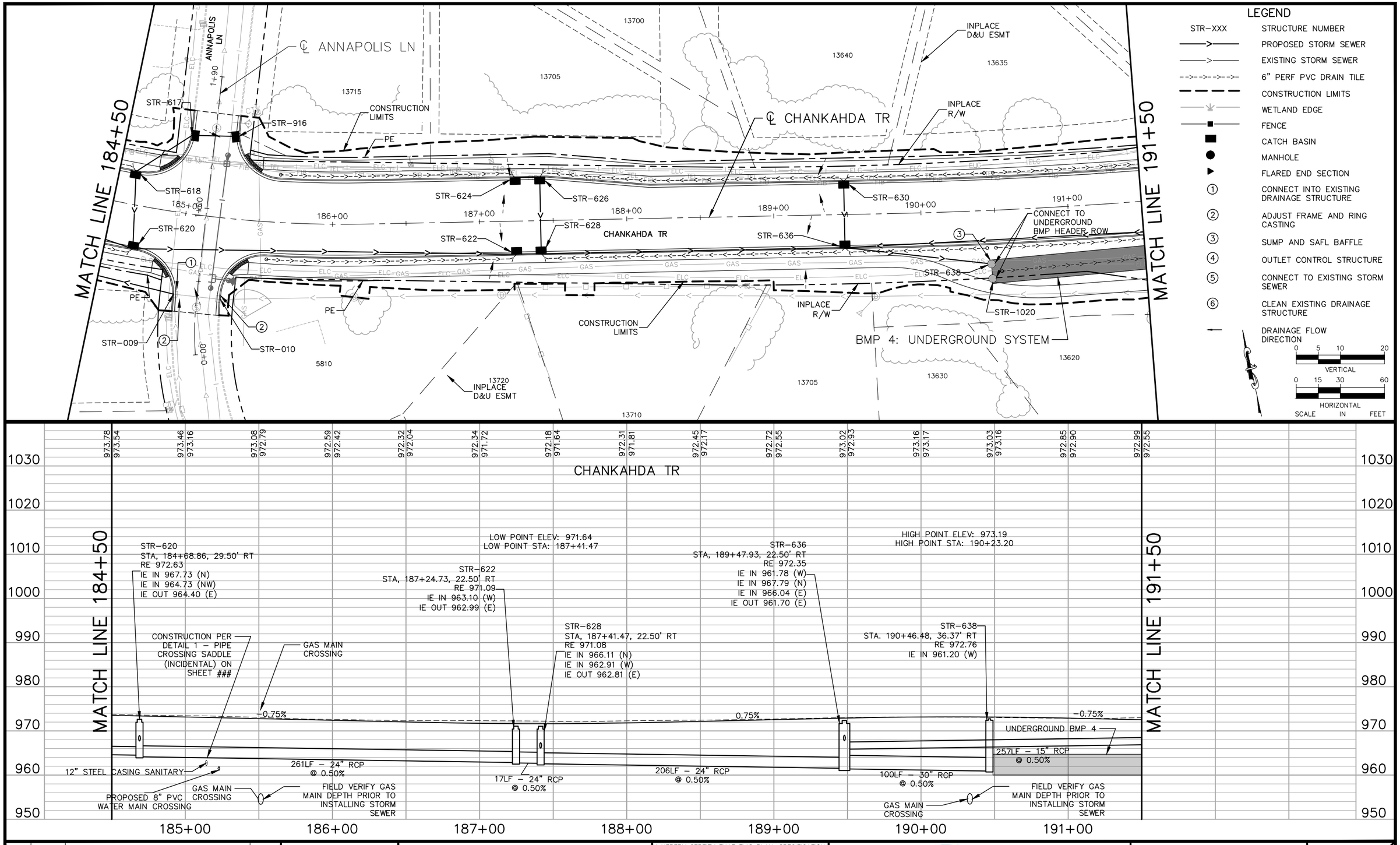
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City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
DRAINAGE PLAN AND PROFILE
STA. 177+50 TO STA. 184+50

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 118 / 354



No.	Date	Revisions	App.

DRAWING NAME: CHANKAHDA_PH3_DrainPlan.dwg

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PROJECT NO.	160662010

Kimley»Horn
767 EUSTIS STREET, SUITE 100, ST, PAUL, MN 55114
PHONE: 651-645-4197
WWW.KIMLEY-HORN.COM

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

Stephanie Thulien

STEPHANIE L. THULIEN, PE

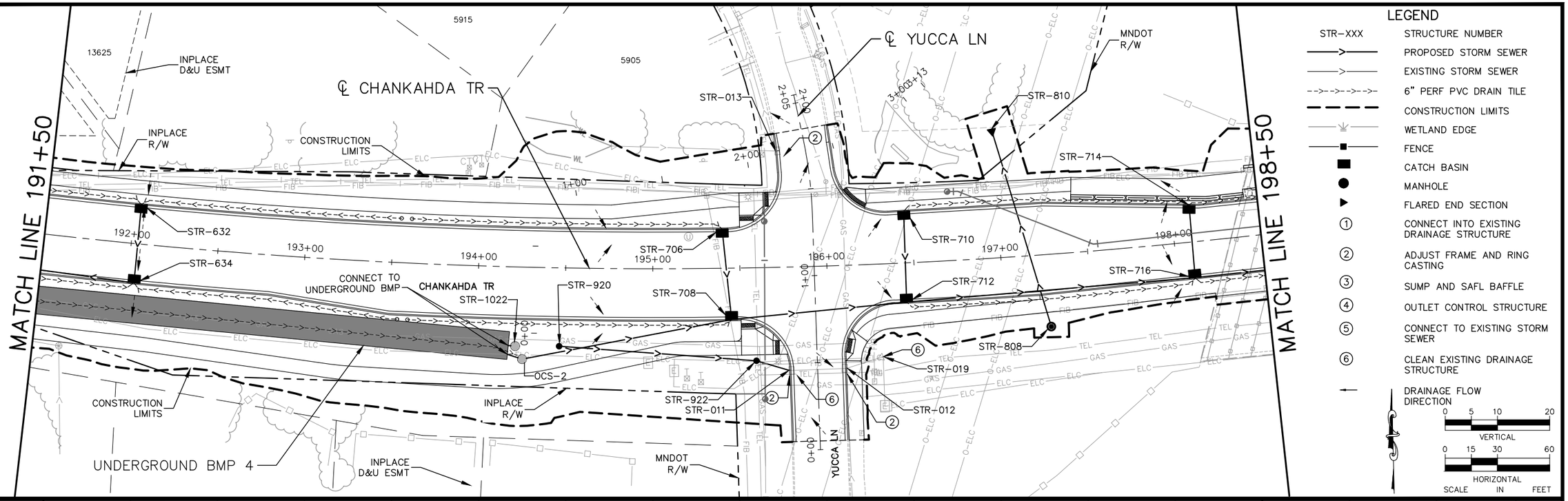
DATE: 02/07/2025 MN LIC. NO. 57230

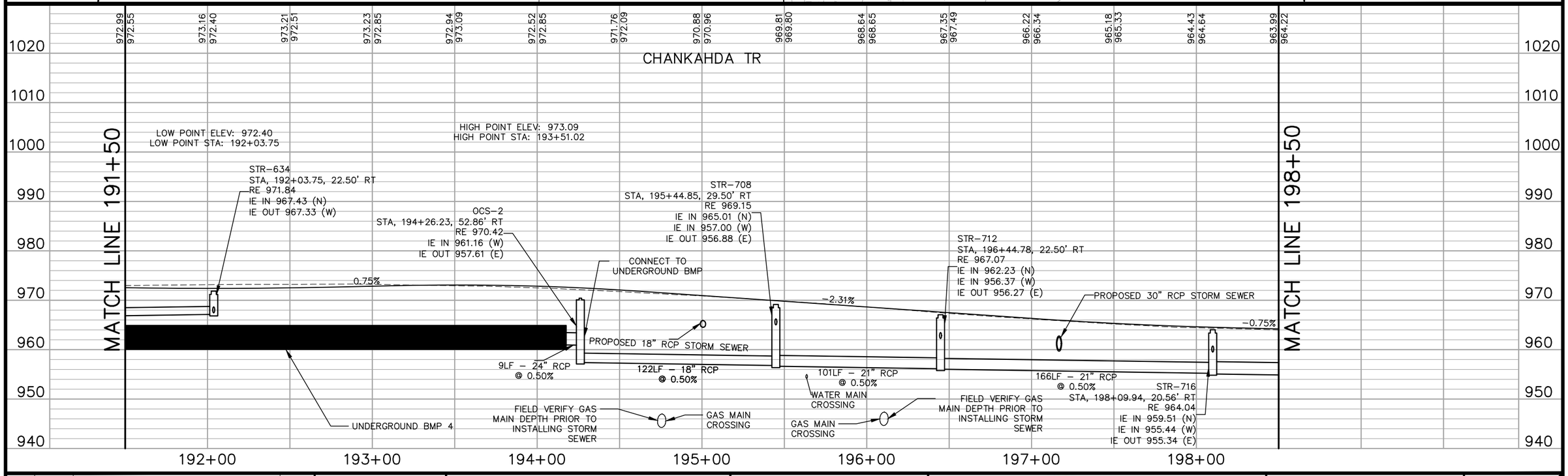
City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
DRAINAGE PLAN AND PROFILE
STA. 184+50 TO STA. 191+50

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 119 / 354





No.	Date	Revisions	App.

DRAWING NAME: CHANKAHDA_PH3_DrainPlan.dwg

DESIGNED BY:	HB
DRAWN BY:	PD
CHECKED BY:	SLT
DATE:	02/07/2025
PROJECT NO.	160662010

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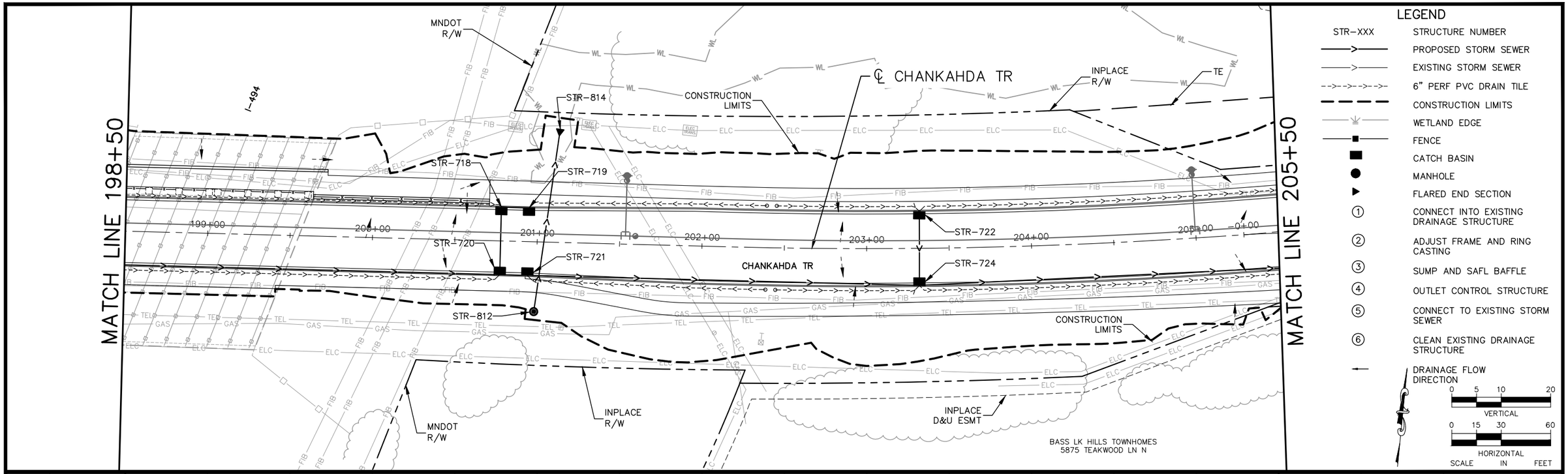
DATE: 02/07/2025 MN LIC. NO. 57230

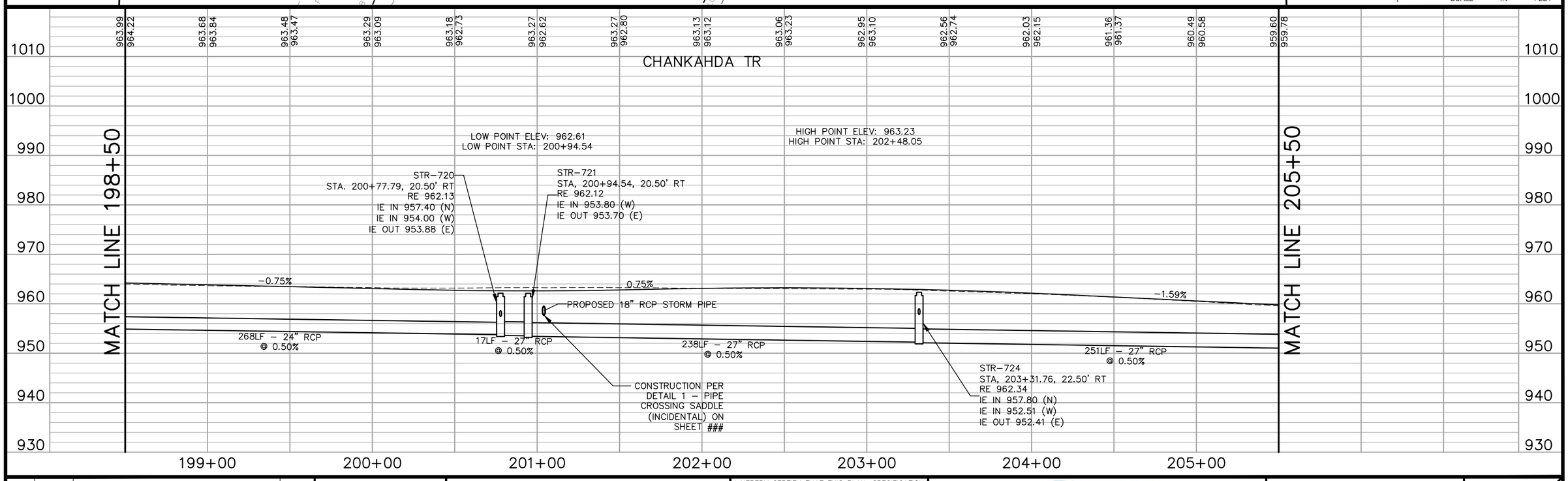
City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
DRAINAGE PLAN AND PROFILE
STA. 191+50 TO STA. 198+50

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 120 / 354





No.	Date	Revisions	App.

DRAWING NAME: CHANKAHDA_PH3_DrainPlan.dwg

DESIGNED BY:	HB
DRAWN BY:	PD
CHECKED BY:	SLT
DATE:	02/07/2025
PROJECT NO.	160662010

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Stephanie Thulien

STEPHANIE L. THULIEN, PE

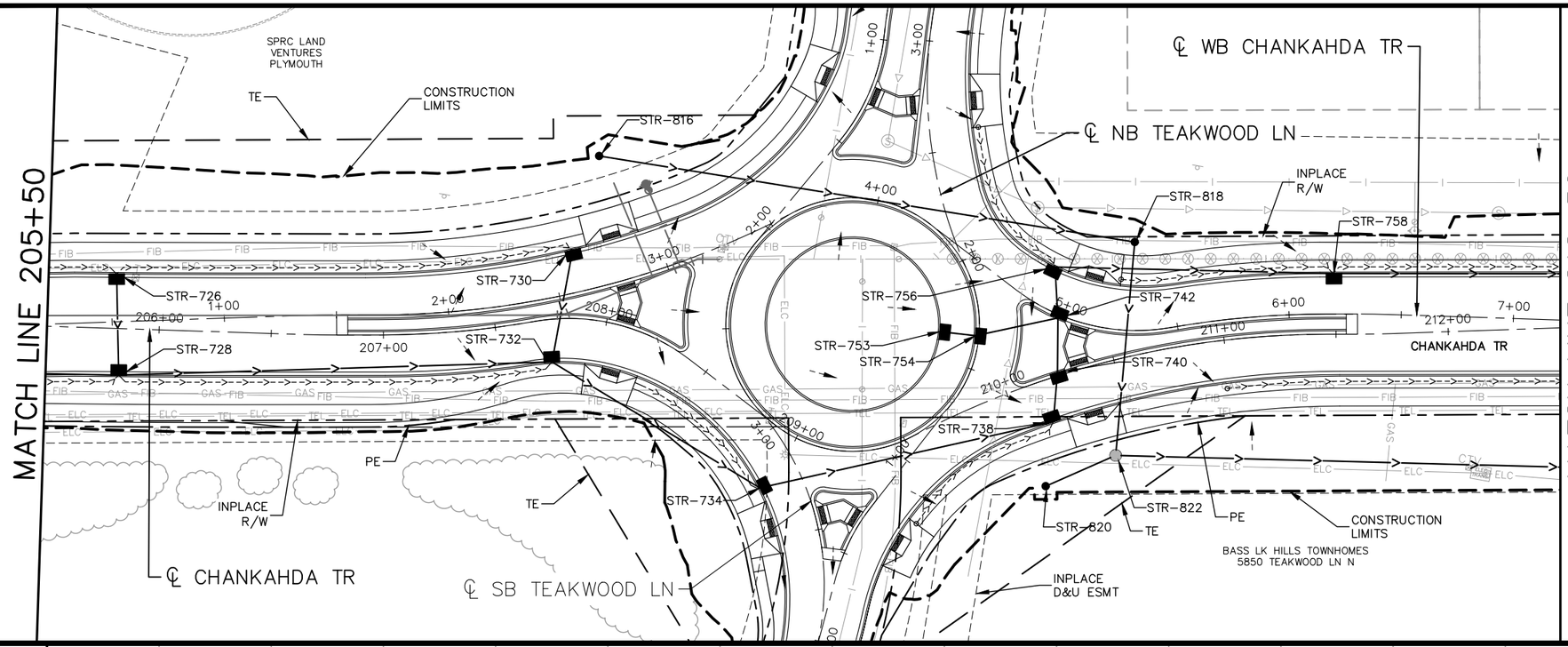
DATE: 02/07/2025 MN LIC. NO. 57230

City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
DRAINAGE PLAN AND PROFILE
STA. 198+50 TO STA. 205+50

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 121 / 354



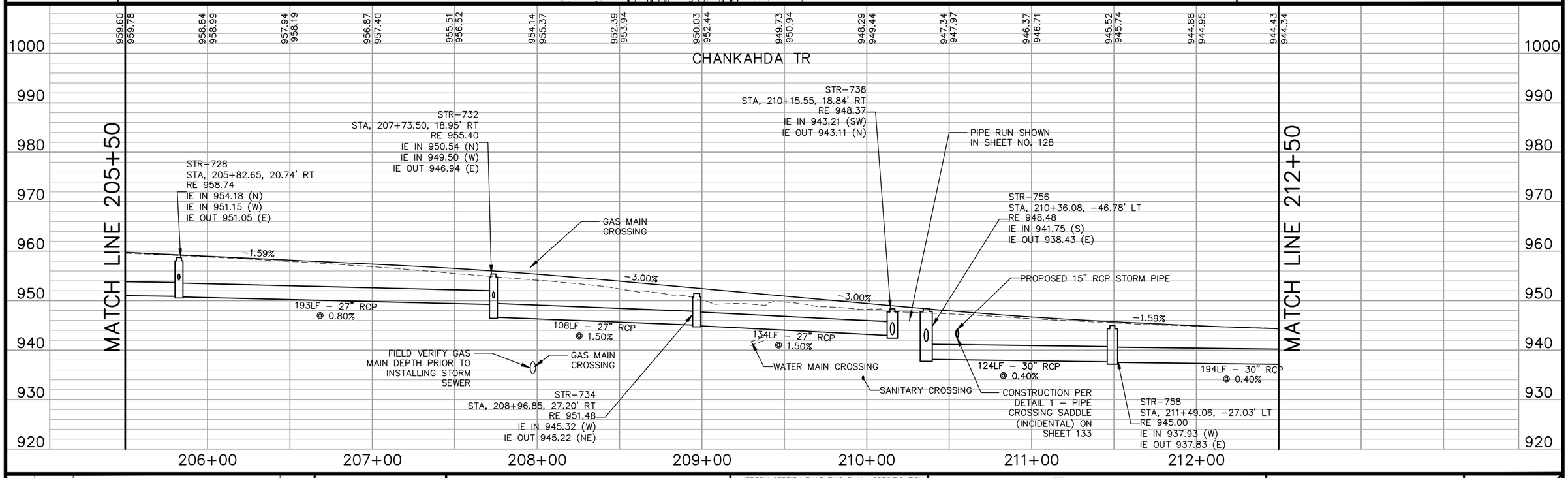
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- STR-XXX — STRUCTURE NUMBER
- PROPOSED STORM SEWER
- EXISTING STORM SEWER
- 6" PERF PVC DRAIN TILE
- CONSTRUCTION LIMITS
- WETLAND EDGE
- FENCE
- CATCH BASIN
- MANHOLE
- FLARED END SECTION
- ① CONNECT INTO EXISTING DRAINAGE STRUCTURE
- ② ADJUST FRAME AND RING CASTING
- ③ SUMP AND SAFL BAFFLE
- ④ OUTLET CONTROL STRUCTURE
- ⑤ CONNECT TO EXISTING STORM SEWER
- ⑥ CLEAN EXISTING DRAINAGE STRUCTURE
- DRAINAGE FLOW DIRECTION

0 5 10 20 VERTICAL

0 15 30 60 HORIZONTAL

SCALE IN FEET



No.	Date	Revisions	App.

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Stephanie Thulien

STEPHANIE L. THULIEN, PE

DATE: 02/07/2025 MN LIC. NO. 57230

City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
DRAINAGE PLAN AND PROFILE
STA. 205+50 TO STA. 212+50

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 122 / 354

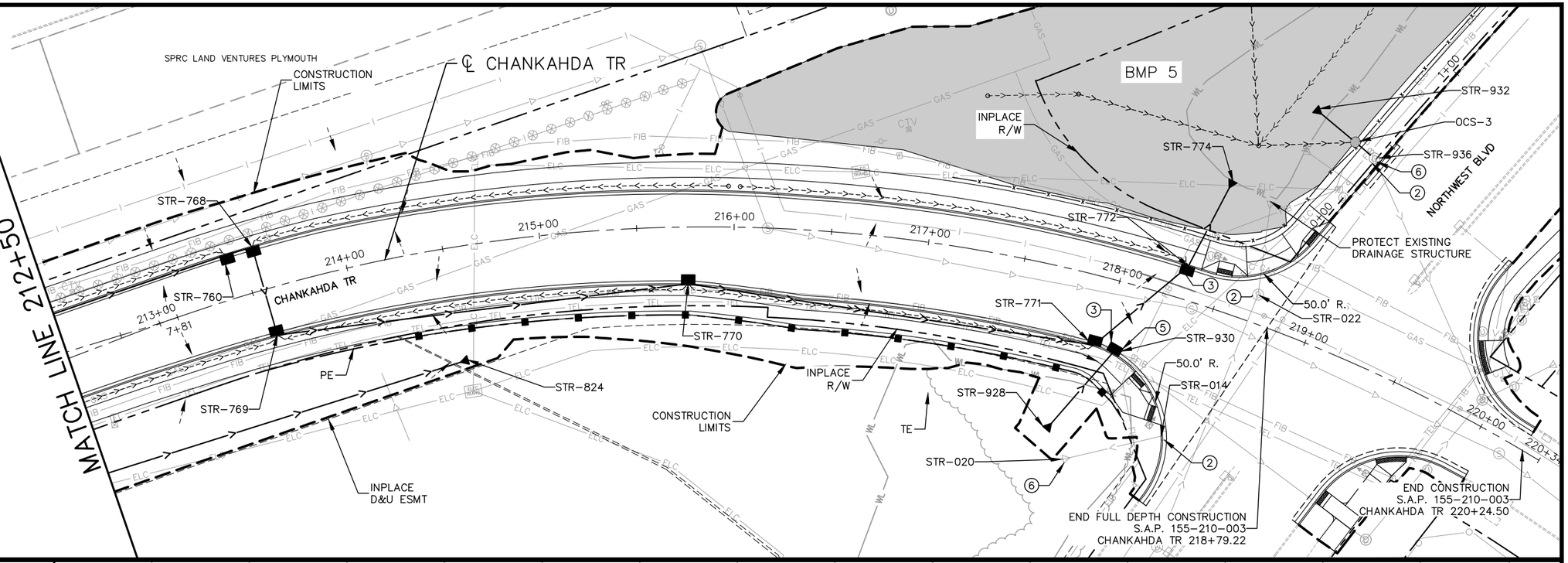
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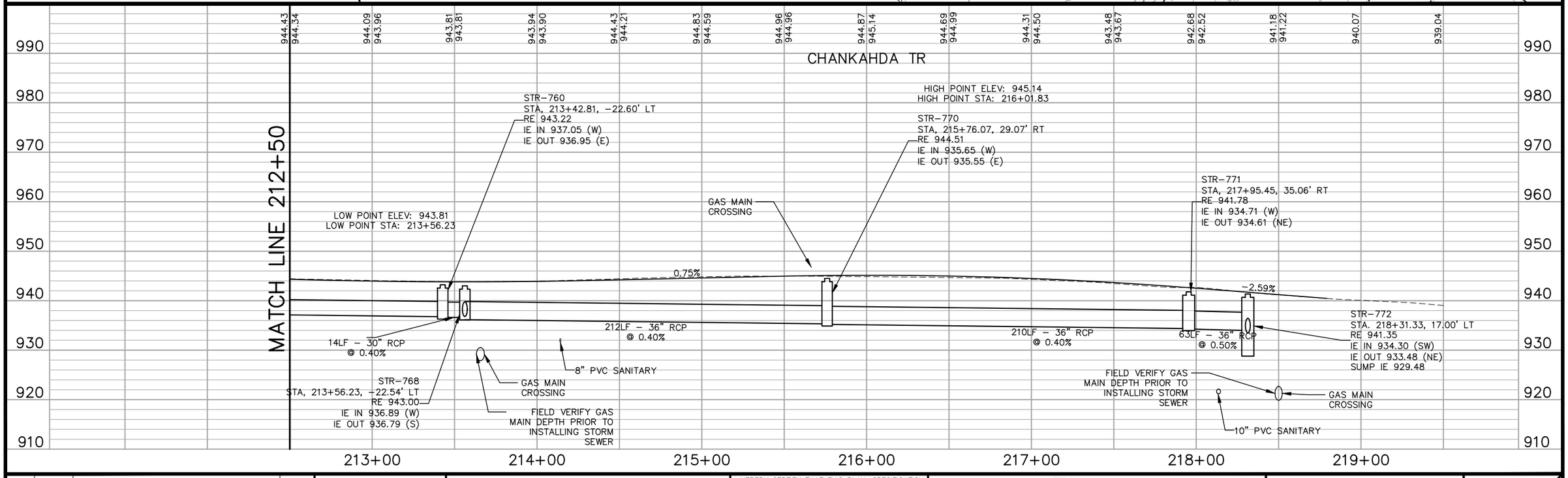
STR-XXX	STRUCTURE NUMBER
	PROPOSED STORM SEWER
	EXISTING STORM SEWER
	6" PERF PVC DRAIN TILE
	CONSTRUCTION LIMITS
	WETLAND EDGE
	FENCE
	CATCH BASIN
	MANHOLE
	FLARED END SECTION
①	CONNECT INTO EXISTING DRAINAGE STRUCTURE
②	ADJUST FRAME AND RING CASTING
③	SUMP AND SAFL BAFFLE
④	OUTLET CONTROL STRUCTURE
⑤	CONNECT TO EXISTING STORM SEWER
⑥	CLEAN EXISTING DRAINAGE STRUCTURE
	DRAINAGE FLOW DIRECTION

0 5 10 20 VERTICAL

0 15 30 60 HORIZONTAL

SCALE IN FEET





No.	Date	Revisions	App.

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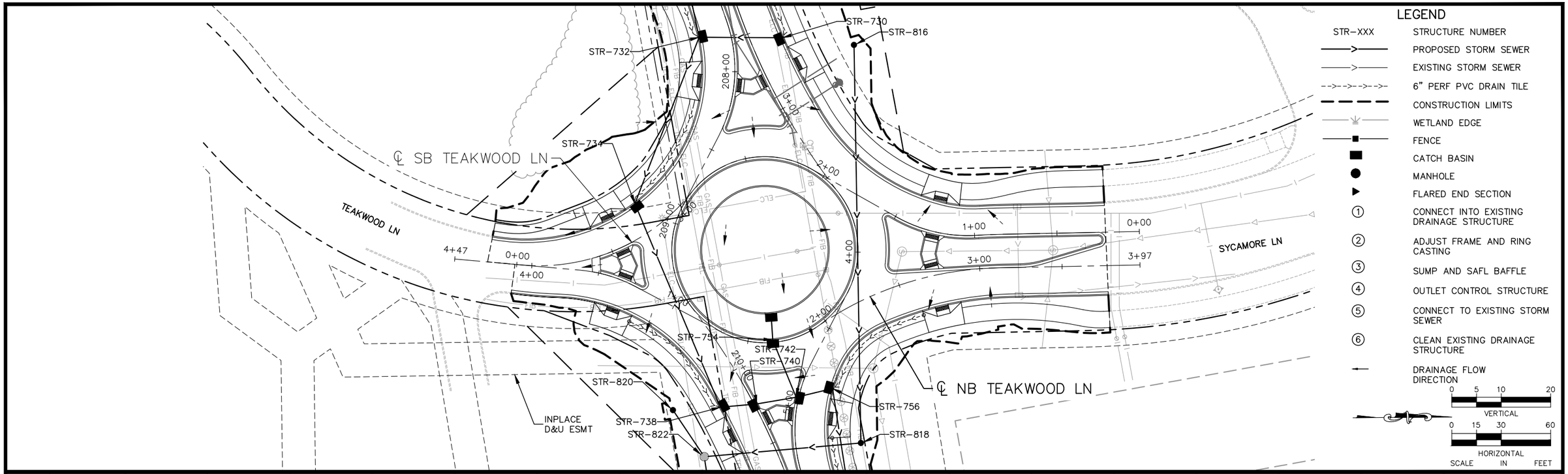
DATE: 02/07/2025 MN LIC. NO. 57230

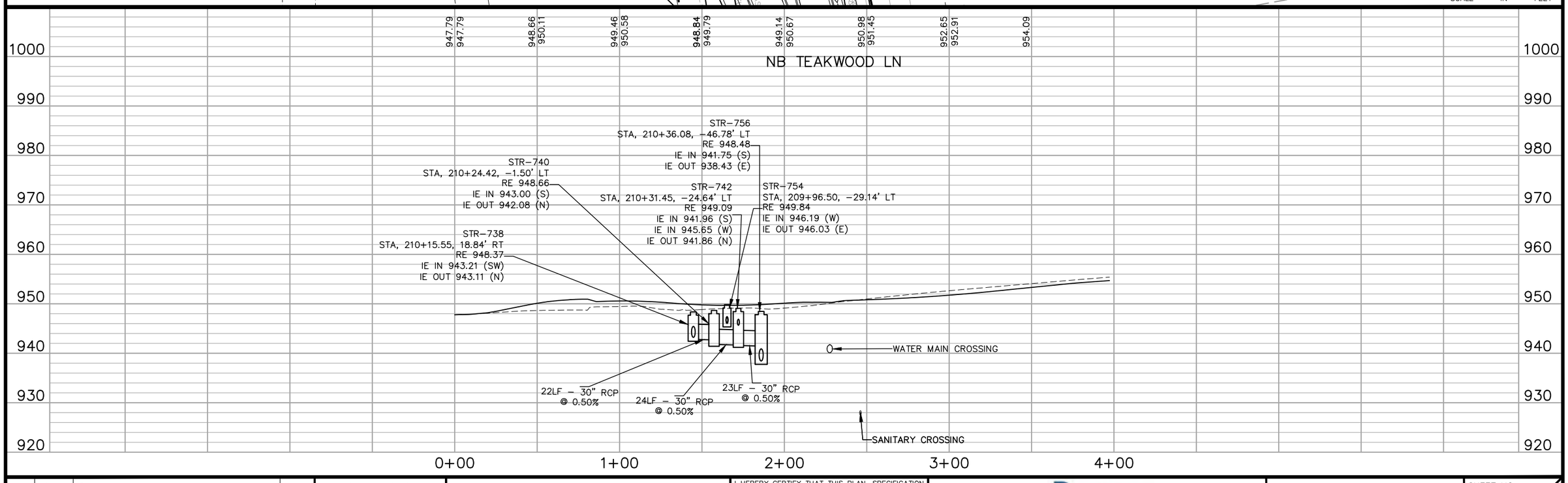
City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
DRAINAGE PLAN AND PROFILE
STA. 212+50 TO STA. 220+24.50

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 123 / 354





No.	Date	Revisions	App.

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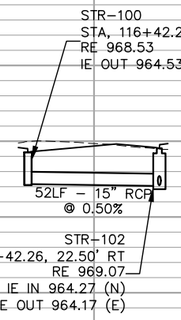
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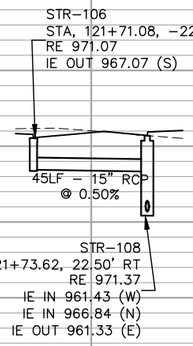
City of Plymouth

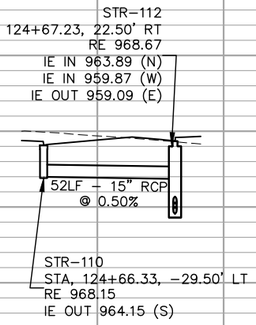
CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
DRAINAGE PLAN AND PROFILE

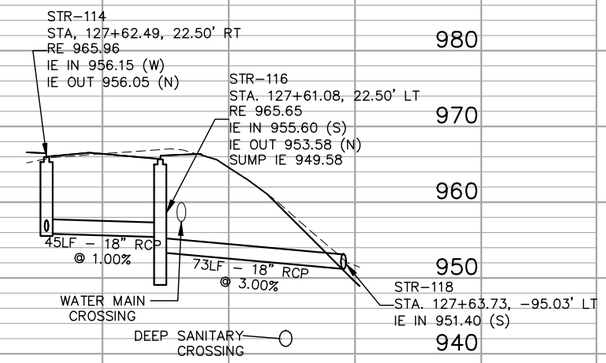
CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

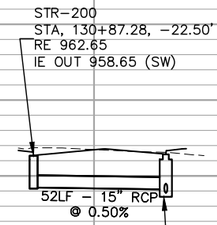
SHEET NO. 124 / 354

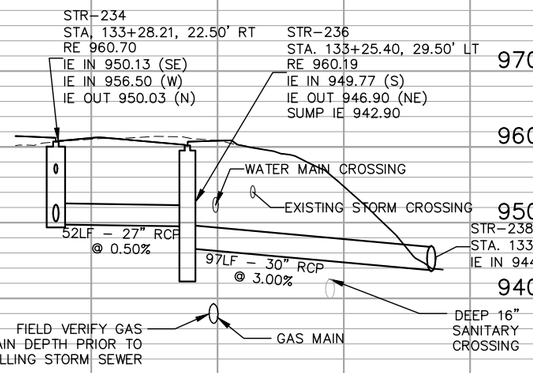


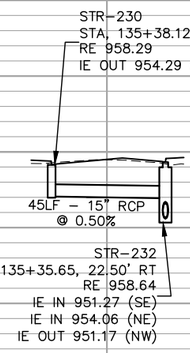


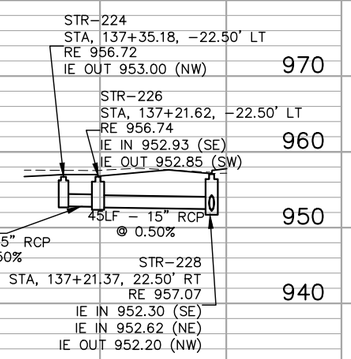


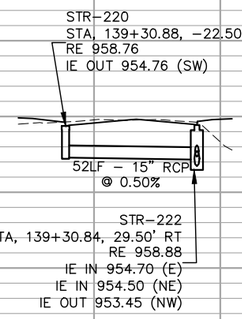


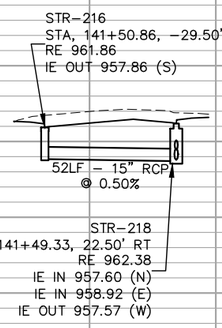


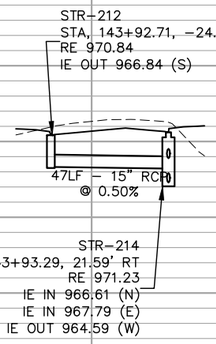


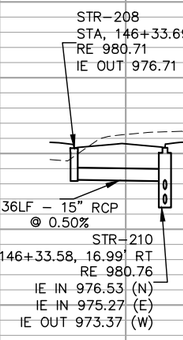


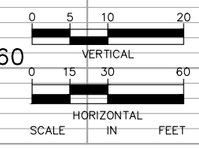












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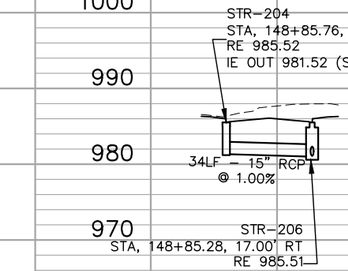
Stephanie Thulien
STEPHANIE L. THULIEN, PE
DATE: 02/07/2025 MN LIC. NO. 57230

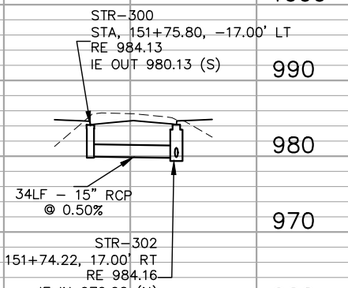
City of Plymouth

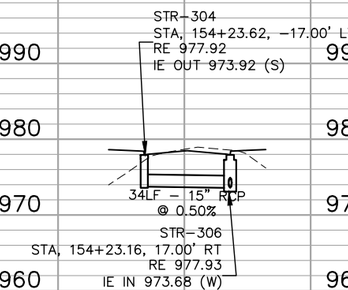
CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
DRAINAGE LATERAL PROFILES

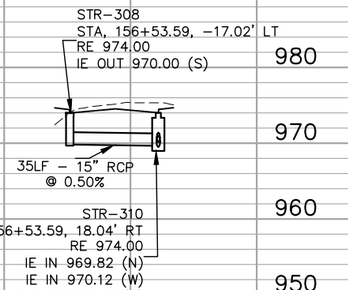
CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

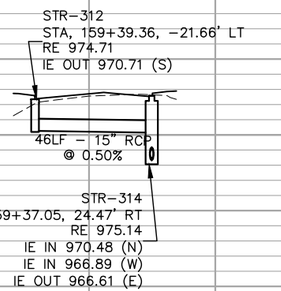
SHEET NO. 125 / 354

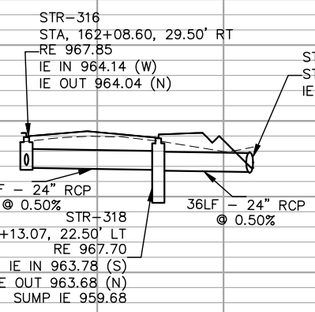


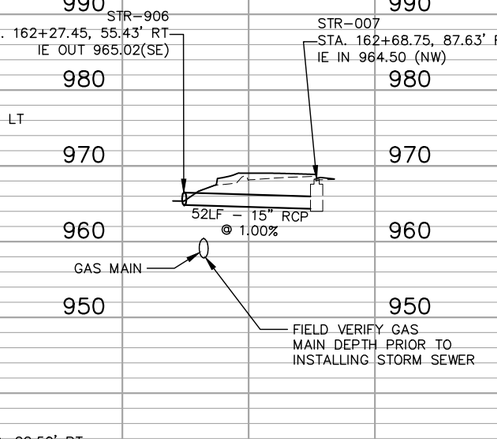


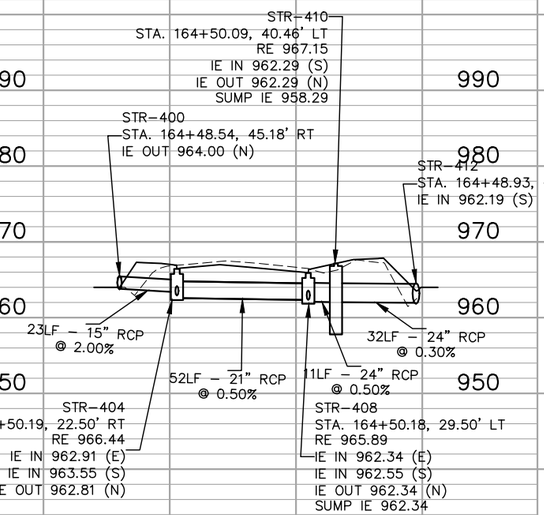


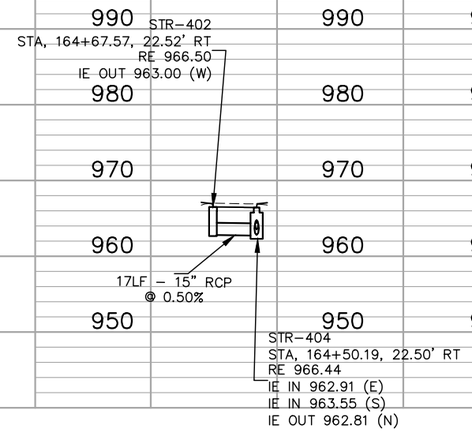


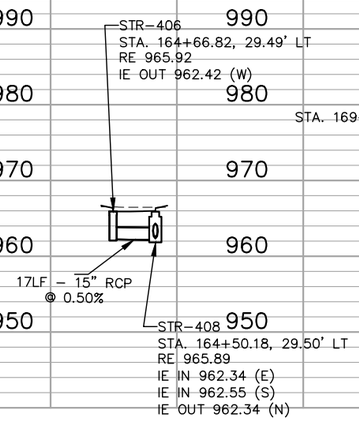


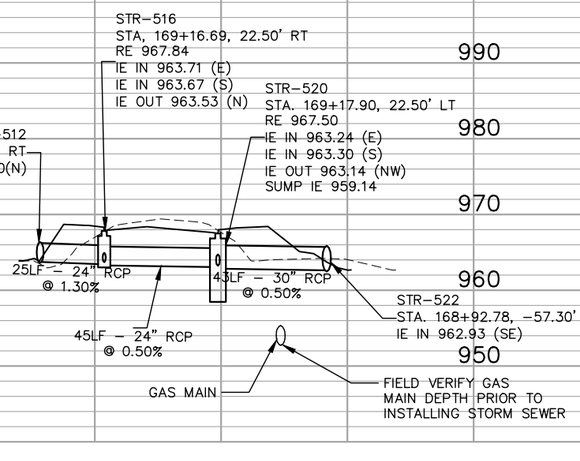


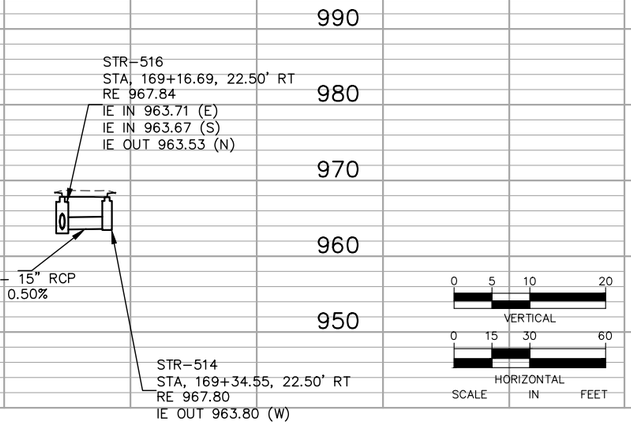












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Stephanie Thulien

STEPHANIE L. THULIEN, PE

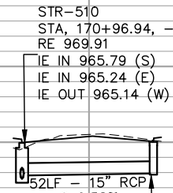
DATE: 02/07/2025 MN LIC. NO. 57230

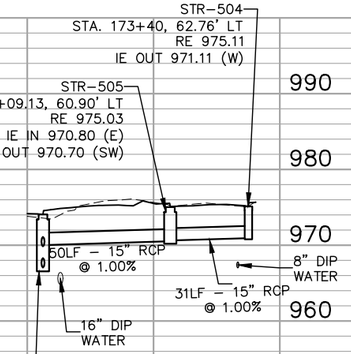
City of Plymouth

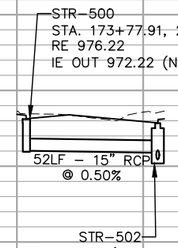
CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
DRAINAGE LATERAL PROFILES

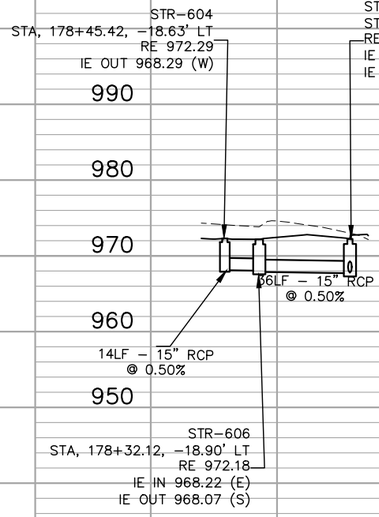
CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155–210–003
S.A.P.	

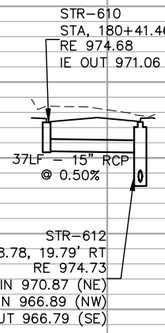
SHEET NO. 126 / 354

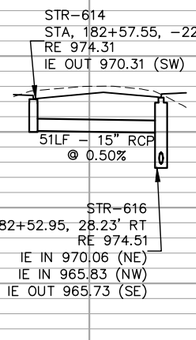


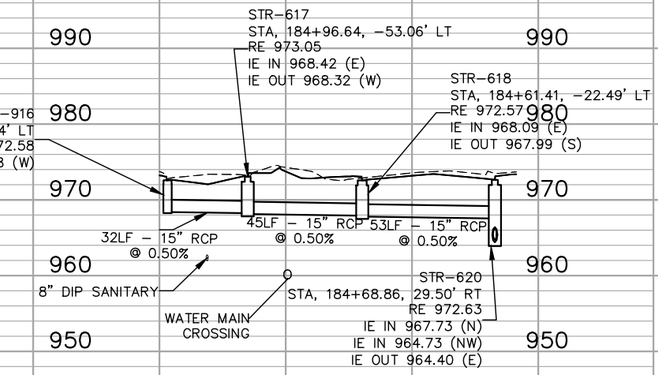


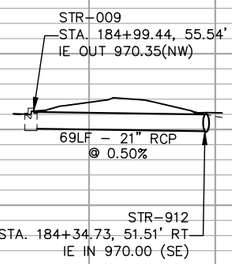


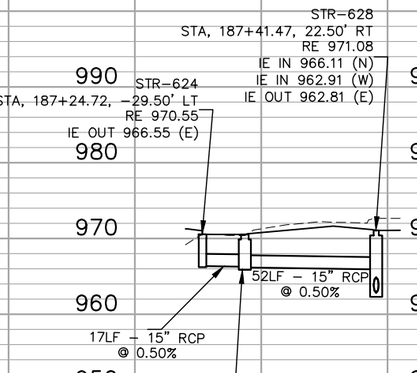


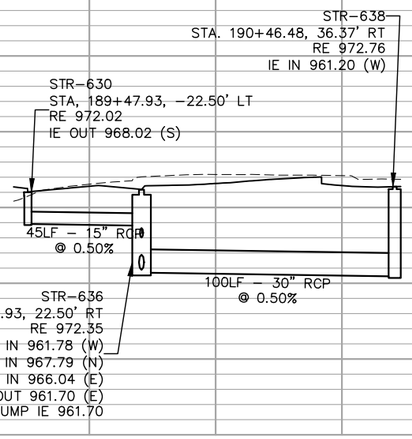


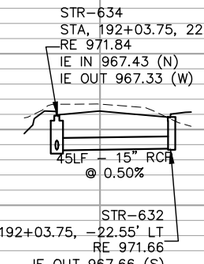


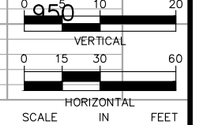












No.	Date	Revisions	App.

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DESIGNED BY:	HB
DRAWN BY:	PD
CHECKED BY:	SLT
DATE:	02/07/2025
PROJECT NO.	160662010

Kimley»Horn
767 EUSTIS STREET, SUITE 100, ST, PAUL, MN 55114
PHONE: 651-645-4197
WWW.KIMLEY-HORN.COM

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

Stephanie Thulien

STEPHANIE L. THULIEN, PE

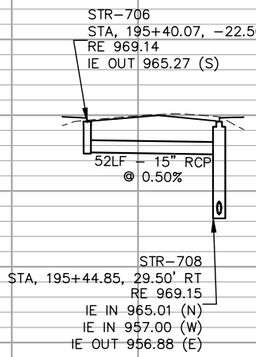
DATE: 02/07/2025 MN LIC. NO. 57230

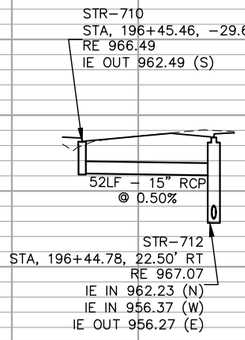
City of Plymouth

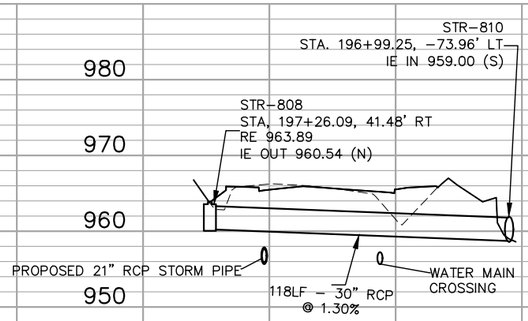
CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
DRAINAGE LATERAL PROFILES

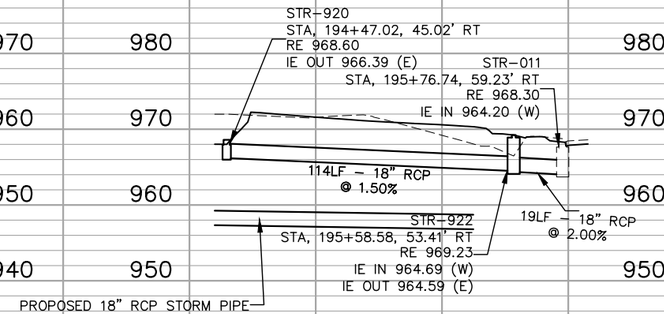
CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

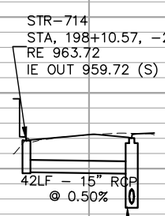
SHEET NO. 127 / 354

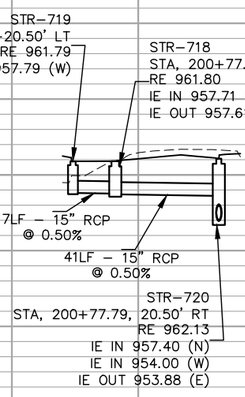


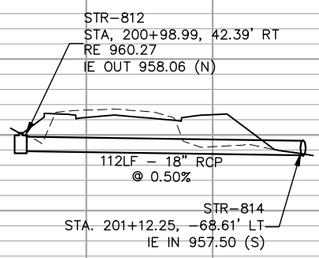


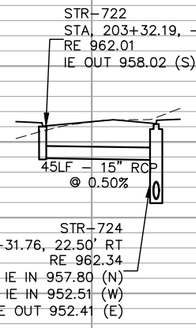


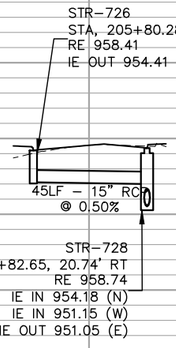


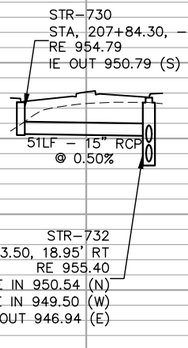


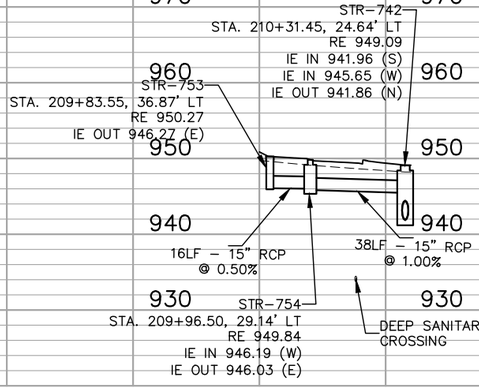


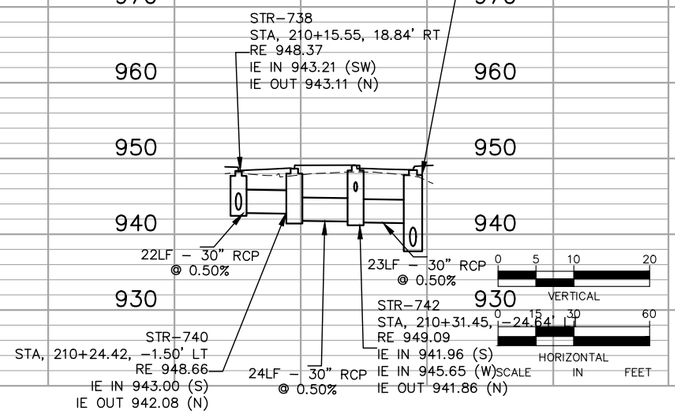












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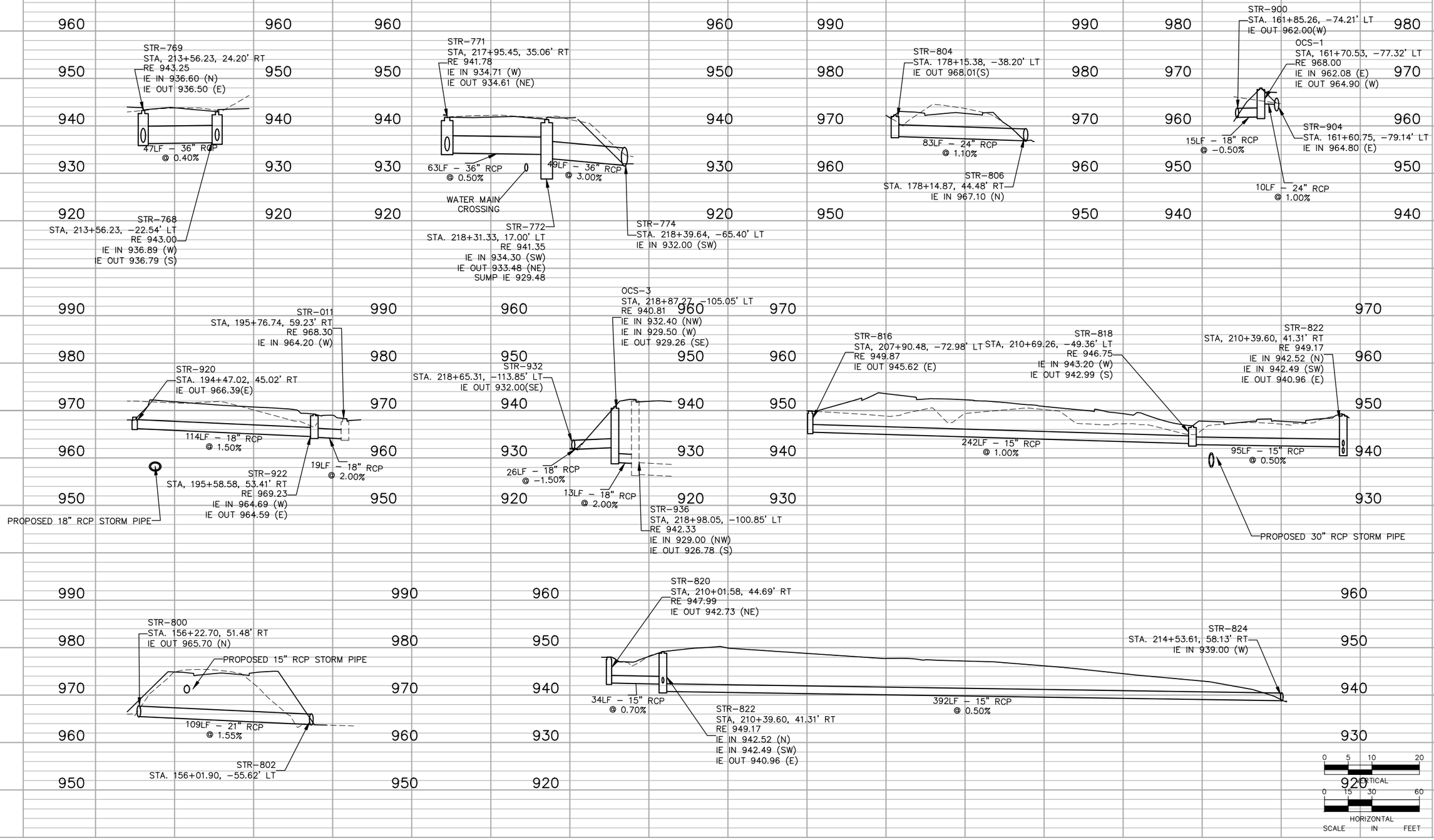
Stephanie Thulien
STEPHANIE L. THULIEN, PE
DATE: 02/07/2025 MN LIC. NO. 57230

City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
DRAINAGE LATERAL PROFILES

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 128 / 354



No.	Date	Revisions	App.

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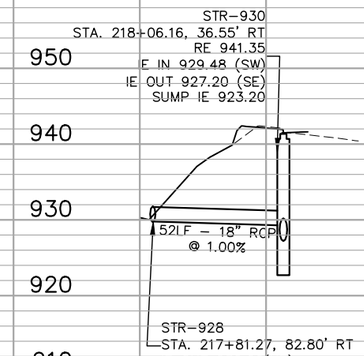
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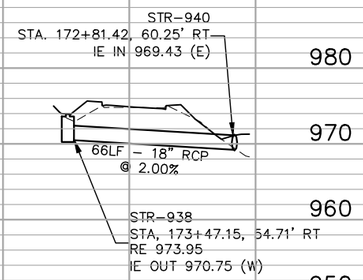
City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
DRAINAGE LATERAL PROFILES

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COUNTY PROJECT	
S.A.P.	155-210-003
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0 5 10 20
VERTICAL
0 15 30 60
HORIZONTAL
SCALE IN FEET

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City of Plymouth

CHANKAHDA TRAIL
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CITY PROJECT	ST240002
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S.A.P.	155-210-003
S.A.P.	

SHEET NO. 130 / 354

FLOWS FROM		STRUCTURE LOCATION				TOP OF CASTING ELEVATION	CASTING ASSEMBLY	STEPS REQUIRED	OUTLET ELEVATION	DRAINAGE STRUCTURE DESIGN									DRAINS TO				15" RCP PIPE CULVERT	18" RCP PIPE CULVERT	21" RCP PIPE CULVERT	24" RCP PIPE CULVERT	30" RCP PIPE CULVERT	15" RCP PIPE SEWER CLASS III	18" RCP PIPE SEWER CLASS III	21" RCP PIPE SEWER CLASS III	24" RCP PIPE SEWER CLASS III	27" RCP PIPE SEWER CLASS III	30" RCP PIPE SEWER CLASS III	36" RCP PIPE SEWER CLASS III	APRON	APRON TYPE	SAFL BAFFLE	GRANITE RIP RAP CLV	TRASH GUARD	CONNECT TO EXISTING STORM SEWER	CONNECT TO EXISTING DRAINAGE STRUCTURE	CLEAN EXISTING DRAINAGE STRUCTURE	ADJUST FRAME AND RING CASTING	NOTES
STR. NO.	TYPE	ALIGNMENT	STATION	OFFSET						DESIGN G-4006	DESIGN 48-4020	DESIGN 60-4020	DESIGN 72-4020	DESIGN SPECIAL 1	DESIGN SPECIAL 2	DESIGN SPECIAL 3	DESIGN SPECIAL 4	DESIGN SPECIAL 5	STR. NO.	TYPE	% GRADE	INLET ELEVATION (FT)																							
				LT	RT					LIN FT	LIN FT	LIN FT	LIN FT	EACH	EACH	EACH	EACH	EACH					LIN FT	LIN FT	LIN FT	LIN FT	LIN FT	LIN FT	LIN FT	LIN FT	LIN FT	LIN FT	LIN FT	LIN FT	EACH		EACH	CY	EACH	EACH	EACH	EACH	
EX-OCS-2	MH	CHANKAHDA TR	334+49.79	-248.80										1																											SEE OCS DETAILS
OCS-1	OCS	CHANKAHDA TR	161+70.53	-77.32		968.00	R-1642	YES	964.90							1			STR-904	FES	1.00%	964.80				10																	OUTLET CONTROL STRUCTURE
BMP-1	BMP								961.20										OCS-2	OCS	0.50%	961.16						9																UNDERGROUND BMP
OCS-2	OCS	CHANKAHDA TR	196+73.66		40.27	970.42	R-1642	YES	957.61								1		STR-708	MHCB	0.50%	957.00						122															OUTLET CONTROL STRUCTURE
OCS-3	OCS	CHANKAHDA TR	218+87.27	-103.06		940.92		YES	929.90									1	STR-936	MH	2.00%	929.24						33															OUTLET CONTROL STRUCTURE
STR-001	MHCB	CHANKAHDA TR	331+13.53		67.17																																						
STR-002	MHCB	CHANKAHDA TR	331+78.13		59.79																																						
STR-003	MHCB	CHANKAHDA TR	331+29.74	-52.28																																							
STR-004	MHCB	CHANKAHDA TR	331+58.73	-53.25																																							
STR-005	MHCB	CHANKAHDA TR	340+49.12	-87.10																																							
STR-006	MHCB	CHANKAHDA TR	141+18.07	-82.30																																							
STR-007	MHCB	CHANKAHDA TR	152+63.75		87.63																																						
STR-008	MHCB	CHANKAHDA TR	153+33.07		101.11																																						
STR-009	MHCB	CHANKAHDA TR	184+99.45		55.94														STR-912	FES	0.50%	970.00								80													
STR-010	MHCB	CHANKAHDA TR	185+29.28		55.22																																						
STR-011	MHCB	CHANKAHDA TR	195+76.76		59.23																																						
STR-012	MHCB	CHANKAHDA TR	196+09.66		59.05																																						
STR-013	MHCB	CHANKAHDA TR	195+72.00	-66.87																																							
STR-014	MHCB	CHANKAHDA TR	218+66.79		70.19																																						
STR-015	FES	CHANKAHDA TR	232+88.85		82.58																																						
STR-016	FES	CHANKAHDA TR	130+93.00		62.26																																						
STR-017	FES	CHANKAHDA TR	168+65.75	-82.74																																							
STR-018	FES	CHANKAHDA TR	168+78.31	-70.08																																							
STR-019	FES	CHANKAHDA TR	196+30.14		53.23																																						
STR-020	FES	CHANKAHDA TR	217+04.79		95.65																																						
STR-002	MH	CHANKAHDA TR	218+59.02	-14.43																																							
STR-100	CB	CHANKAHDA TR	116+42.23	-29.50		968.53	R-3067-V		964.53	4.0									STR-102	MHCB	0.50%	964.37						52																			
STR-102	MHCB	CHANKAHDA TR	116+42.26		22.50	969.07	R-3067-V	YES	964.17		4.9								STR-104	MHCB	0.50%	962.88						239																			
STR-104	MHCB	CHANKAHDA TR	119+02.01		22.53	971.66	R-3067-V	YES	962.78		8.9								STR-108	MHCB	0.50%	961.43						271																			
STR-106	CB	CHANKAHDA TR	121+71.06	22.50		971.07	R-3067-V		967.07	4.0									STR-108	MHCB	0.50%	966.84						45																			
STR-108	MHCB	CHANKAHDA TR	121+73.62		22.50	971.37	R-3067-V	YES	961.33		10.0								STR-112	MHCB	0.50%	959.67						203																			
STR-110	CB	CHANKAHDA TR	124+66.33	-29.50		968.15	R-3067-V		964.15	4.0									STR-112	MHCB	0.50%	963.89						57																			
STR-112	MHCB	CHANKAHDA TR	124+87.23		22.50	968.67	R-3067-V	YES	959.09		9.6								STR-114	MHCB	1.00%	956.15						204																			
STR-114	MHCB	CHANKAHDA TR	127+62.90		22.50	965.95	R-3067-V	YES	956.05		9.9								STR-116	MHCB	1.00%	955.60						45																			
STR-116	MHCB	CHANKAHDA TR	127+61.06	-22.50		965.65	R-3067-V	YES	953.53		26.1								STR-118	FES	3.00%	951.46						73												1							4' SUMP & SAFL BAFFLE
STR-118	FES	CHANKAHDA TR	127+63.73	-95.03																																				1	18 RCP		7				
STR-200	CB	CHANKAHDA TR	330+87.33	-22.50		962.65	R-3067-V		958.65	4.0									STR-202	MHCB	0.50%	958.39						52																			
STR-202	MHCB	CHANKAHDA TR	330+80.91		29.48	963.23	R-3067-V	YES	957.73		5.5								STR-234	MHCB	0.50%	956.50						247																			
STR-204	CB	CHANKAHDA TR	148+85.76	-17.00		986.52	R-3067-V		983.52	4.0									STR-206	MHCB	1.00%	981.18						34																			
STR-206	MHCB	CHANKAHDA TR	148+85.28		17.00	986.51	R-3067-V	YES	981.08		4.4								STR-210	MHCB	2.30%	975.27						253																			
STR-208	CB	CHANKAHDA TR	345+93.69	-18.98		980.71	R-3067-V		976.71	4.0									STR-210	MHCB	0.50%	976.59						36																			
STR-210	MHCB	CHANKAHDA TR	345+93.58		18.98	980.76	R-3067-V	YES	973.37		7.4								STR-214	MHCB	2.30%	967.79						242																			
STR-212	CB	CHANKAHDA TR	343+92.71	-24.98		970.84	R-3067-V		966.84	4.0									STR-214	MHCB	0.50%	966.61						47																			
STR-214	MHCB	CHANKAHDA TR	343+93.29		21.56	971.23	R-3067-V	YES	964.39		6.6								STR-218	MHCB	2.30%	958.92						346																			
STR-216	CB	CHANKAHDA TR	341+50.88	-29.50		961.86	R-3067-V		957.86	4.0									STR-218	MHCB	0.50%	957.60						52																			
STR-218	MHCH	CHANKAHDA TR	341+49.33		22.50	962.33	R-3067-V	YES	957.57		4.3								STR-222	MHCB	1.30%	954.70						221																			
STR-220	CB	CHANKAHDA TR	336+30.88	-22.50		958.76	R-3067-V		954.76	4.0									STR-222	MHCB	0.50%	954.50						52																			
STR-222	MHCH	CHANKAHDA TR	336+30.84		20.50	958.88	R-3067-V	YES	953.45		5.4								STR-227	MHCB	0.50%	952.47						198																			
STR-224	CB	CHANKAHDA TR	337+85.18	-22.59		956.72	R-3067-VB		953.00	3.7									STR-226	MHCB	0.50%	952.93						14																			
STR-226	MHCH	CHANKAHDA TR	337+21.62	-22.59		957.01	R-3067-V	YES	952.65		4.2								STR-228	MHCB	0.50%	952.62						45																			
STR-227	MHCB	CHANKAHDA TR	337+85.18		22.50	957.05	R-3067-VB	YES	952.37		4.7								STR-228	MHCB	0.50%	952.36						14																			
STR-228	MHCB	CHANKAHDA TR	337+21.37		21.50	957.07	R-3067-V	YES	952.20		4.9								STR-232	MHCB	0.50%	951.27						186																			
STR-230	CB	CHANKAHDA TR	335+38.12	-22.50		958.29	R-3067-V		954.29	4.0									STR-232	MHCB	0.50%	954.06						45																			
STR-232	MHCB	CHANKAHDA TR	335+35.65		22.50	958.64	R-3067-V	YES	951.17		7.5								STR-234	MHCB	0.50%	950.13											207												
STR-234	MHCB	CHANKAHDA TR	333+28.21		22.60	960.70	R-3067-V	YES	950.03			10.7							STR-236	MHCB	0.50%	949.77						52																			
STR-236	MHCB	CHANKAHDA TR	333+25.40	-25.50		960.19	R-3067-V	YES	946.90		17.3								STR-238	FES	3.00%	944.06													97					1						4' SUMP & SAFL BAFFLE
STR-238	FES	CHANKAHDA TR	333+63.95	-118.02																																				1	30 RCP		13				
STR-300	CB	CHANKAHDA TR	351+75.80	-17.00		984.13	R-3067-V		980.13	4.0									STR-302	MHCB	0.50%	979.96						34																			
STR-302	MHCB	CHANKAHDA TR	351+76.22		17.00	984.16	R-3067-V	YES	979.86		4.3								STR-306	MHCB	2.50%	973.68						247																			
STR-304	CB	CHANKAHDA TR	354+23.67	-17.00		977.92	R-3067-V		973.92	4.0									STR-306	MHCB	0.50%	974.75						34																			
STR-306	MHCB	CHANKAHDA TR	354+23.16		17.00	977.93	R-3067-V	YES	973.58		4.4								STR-310	MHCB	1.50%	970.12						230																			
STR-308	CB	CHANKAHDA TR	356+53.38	-17.02		974.00	R-3067-VB		970.00	4.0									STR-310	MHCB	0.50%	969.82						35																			
STR-310	MHCU	CHANKAHDA TR	356+53.56		18.04	974.00	R-3067-VB	YES	969.47		4.5								STR-314	MHCB	0.90%	966.89								287																
STR-312	CB	CHANKAHDA TR	359+39.36	-21.56		974.71	R-3067-V		970.71	4.0									STR-314	MHCB	0.50%	970.48						46																			
STR-314	MHCB	CHANKAHDA TR	359+37.05		24.47	975.14	R-3067-V	YES	965.61		8.5								STR-316	MHCB	0.90%	964.34								274																
STR-316	MHCB	CHANKAHDA TR	362+08.00		29.50	968.22	R-3067-V	YES	964.04		4.2								STR-318	MHCB	0.50%	963.78						52																			
STR-318	MHCB	CHANKAHDA TR	362+13.07	-22.50		967.70	R-3067-V	YES	963.68		8.0								STR-320	FES	0.50%	963.50						36																			
STR-320	FES	CHANKAHDA TR	362+13.47	-58.26																																				1	24 RCP		10				
STR-400	FES	CHANKAHDA TR	358+42.39		51.12				964.00										STR-404	MHCB	3.33%	962.42	39																			1	15 RCP						
STR-402	CB	CHANKAHDA TR	359+67.57		22.52	986.50	R-3067-V		963.00	3.5									STR-404	MHCB	0.50%	962.91						17																			
STR-404	MHCB	CHANKAHDA TR	358+60.19		22.50	966.66	R-3067-VB	YES	962.81		3.6								STR-408	MHCB	0.50%	962.55								52																
STR-405	FES	CHANKAHDA TR	253+69.45		121.97																																			1	15 RCP		5				
STR-406	CB	CHANKAHDA TR	354+96.82	-29.49		965.92	R-3067-V		962.42	3.5									STR-408	MHCB	0.50%	962.34						17																			
STR-408	MHCB	CHANKAHDA TR	354+50.19	-29.54		966.89	R-3067-VB	YES	962.34		3.6								STR-410	MH	0.50%	962.25				15																				
STR-410	MH	CHANKAHDA TR	354+50.05	-45.36		967.15	R-1642	YES	962.29		9.0								STR-412	FES	0.30%	962.19				32																	1				4' SUMP & SAFL BAFFLE
STR-412	FES	CHANKAHDA TR	254+49.33	-65.20																																				1	24 RCP		10				
STR-500	CB	CHANKAHDA TR	373+77.91		22.50	976.22	R-3067-V		972.22	4.0									STR-502	MHCB	0.50%	971.96						52																			
STR-502	MHCB	CHANKAHDA TR	373+77.40	-29.30		975.67	R-3067-V	YES	970.86		4.8								STR-506	MHCB	1.90%	969.85						101																			
STR-504	CB	CHANKAHDA TR	373+80.00	-82.76		975.11	R-3067-V		971.11	4.0									STR-505	MHCB	1.00%	970.80						31																			
STR-505	MHCB	CHANKAHDA TR	373+92.13	-60.90		975.03	R-3067-V	YES	970.70		4.3								STR-506	MHCB	1.00%	970.20						50																			
STR-506	MHCB	CHANKAHDA TR	373+76.46	-22.50		974.06	R-3067-V	YES	967.04		7.0								STR-510	MHCB	1.00%	965.29						180																			
STR-508	CB	CHANKAHDA TR	370+98.06		29.50	970.06	R-3067-V		966.06	4.0									STR-510	MHCB	0.50%	965.79						52																			
STR-510	MHCH	CHANKAHDA TR	370+96.50	-22.50		969.91	R-3067-V	YES	965.14		4.8								STR-518	MHCB	1.00%	963.51								161																
STR-512	FES	CHANKAHDA TR	369+16.79		56.24				964.00										STR-516	MHCB	13.00%	961.67				25															1	24 RCP		1				
STR-514	CB	CHANKAHDA TR	369+34.55		22.50	967.80	R-3067-VB		963.80	4.0									STR-518	MHCB	0.50%	963.71				0		18																			

No.	Date	Revisions	App.

DRAWING NAME: CHANKAHDA_PH3_DrainPlan.dwg

DESIGNED BY:	HB
DRAWN BY:	PD
CHECKED BY:	SLT
DATE:	02/07/2025
PROJECT NO.	160662010

Kimley»Horn
767 EUSTIS STREET, SUITE 100, ST. PAUL, MN 55114
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I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

Stephanie Thulien

STEPHANIE L. THULIEN, PE

DATE: 02/07/2025 MN LIC. NO. 57230

City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
DRAINAGE TABULATION

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 131 / 354

FLOWS FROM		STRUCTURE LOCATION				TOP OF CASTING ELEVATION	CASTING ASSEMBLY	STEPS REQUIRED	OUTLET ELEVATION	DRAINAGE STRUCTURE DESIGN									DRAINS TO				15" RCP PIPE CULVERT	18" RCP PIPE CULVERT	21" RCP PIPE CULVERT	24" RCP PIPE CULVERT	30" RCP PIPE CULVERT	15" RCP PIPE SEWER CLASS III	18" RCP PIPE SEWER CLASS III	21" RCP PIPE SEWER CLASS III	24" RCP PIPE SEWER CLASS III	27" RCP PIPE SEWER CLASS III	30" RCP PIPE SEWER CLASS III	36" RCP PIPE SEWER CLASS III	APRON	APRON TYPE	SAFL BAFFLE	GRANITE RIP RAP CLV	TRASH GUARD	CONNECT TO EXISTING STORM SEWER	CONNECT TO EXISTING DRAINAGE STRUCTURE	CLEAN EXISTING DRAINAGE STRUCTURE	ADJUST FRAME AND RING CASTING	NOTES
STR NO	TYPE	ALIGNMENT	STATION	OFFSET						DESIGN G 4005	DESIGN 48-4020	DESIGN 60-4020	DESIGN 72-4020	DESIGN SPECIAL 1	DESIGN SPECIAL 2	DESIGN SPECIAL 3	DESIGN SPECIAL 4	DESIGN SPECIAL 5	STR NO	TYPE	% GRADE	INLET ELEVATION (FT)																				
				CT.	Rt.					LIN FT	LIN FT	LIN FT	LIN FT	EACH	EACH	EACH	EACH	EACH					LIN FT	LIN FT	LIN FT	LIN FT	LIN FT	LIN FT	LIN FT	LIN FT	LIN FT	LIN FT	LIN FT	LIN FT	EACH		EACH	CY	EACH	EACH	EACH	EACH	EACH	
STR-535	MHCB	CHANKAHDA TR	169+16.69		22.94	967.95	R-3067-V	YES	963.53		4.4								STR-530	MHCB	0.50%	963.50								45											
STR-528	MHCB	CHANKAHDA TR	169+34.55	-22.50		967.47	R-3067-VB	YES	963.41		4.1								STR-526	MHCB	1.00%	963.24						17													
STR-520	MHCB	CHANKAHDA TR	169+17.90	-22.50		967.50	R-3067-V	YES	963.14			8.4							STR-522	FES	0.50%	962.93				43															4' SUMP & SAFL BAFFLE
STR-522	FES	CHANKAHDA TR	168+92.78	-57.30																															1	30 RCP							
STR-604	CB	CHANKAHDA TR	178+45.42	-18.63		972.29	R-3067-V		968.29	4.0									STR-606	MHCB	0.50%	968.22						18													
STR-606	MHCB	CHANKAHDA TR	178+32.12	-28.90		972.18	R-3067-VB	YES	968.07		4.1								STR-608	MHCB	0.50%	967.99						35													
STR-608	MHCB	CHANKAHDA TR	178+32.12		17.00	972.24	R-3067-VB	YES	967.79		4.4								STR-612	MHCB	0.45%	966.89						201													
STR-610	CB	CHANKAHDA TR	180+41.45	-17.31		973.68	R-3067-V		971.06	3.6									STR-616	MHCB	0.45%	970.87						37													
STR-612	MHCB	CHANKAHDA TR	180+38.78		19.79	974.73	R-3067-V	YES	968.79		7.9								STR-616	MHCB	0.45%	965.80						223													
STR-614	CB	CHANKAHDA TR	182+57.55	-22.11		974.31	R-3067-V		970.31	4.0									STR-616	MHCB	0.50%	970.06						51													
STR-616	MHCB	CHANKAHDA TR	182+52.99		28.73	974.51	R-3067-V	YES	969.73		8.8								STR-620	MHCB	0.45%	964.73						223													
STR-618	MHCB	CHANKAHDA TR	184+96.64	-53.06		973.06	R-3067-V	YES	968.32		4.7								STR-628	MHCB	0.50%	968.09						46													
STR-619	MHCB	CHANKAHDA TR	184+61.42	-22.49		972.94	R-3067-V	YES	967.99		4.9								STR-620	MHCB	0.50%	967.73						53													
STR-620	MHCB	CHANKAHDA TR	184+68.86		29.50	973.63	R-3067-V	YES	964.40		8.2								STR-622	MHCB	0.50%	963.10								261											
STR-622	MHCB	CHANKAHDA TR	187+24.73		22.50	971.09	R-3067-V	YES	962.99		8.1								STR-628	MHCB	0.50%	962.91						17													
STR-624	CB	CHANKAHDA TR	187+24.72	-29.50		970.55	R-3067-V		966.55	4.0									STR-626	MHCB	0.50%	966.47						17													
STR-626	MHCB	CHANKAHDA TR	187+41.47	-29.50		970.34	R-3067-VB	YES	966.37		4.2								STR-629	MHCB	0.50%	966.11						52													
STR-628	MHCB	CHANKAHDA TR	187+41.47		22.50	971.08	R-3067-VB	YES	962.81		8.3								STR-636	MHCB	0.50%	961.28								206											
STR-630	CB	CHANKAHDA TR	189+47.93	-22.50		972.02	R-3067-V		968.02	4.0									STR-636	MHCB	0.50%	967.79						65													
STR-632	CB	CHANKAHDA TR	192+03.75	-22.55		971.86	R-3067-VB		967.86	4.0									STR-634	MHCB	0.50%	967.63						65													
STR-634	MHCB	CHANKAHDA TR	192+03.75		22.50	971.84	R-3067-VB	YES	967.33		4.5								STR-636	MHCB	0.50%	966.04						257													
STR-636	MHCB	CHANKAHDA TR	189+47.93		22.50	972.35	R-3067-V	YES	961.70				10.7						STR-638	MH	0.50%	961.20											100								
STR-638	MH	CHANKAHDA TR	190+42.13		34.90	972.76	R-1642	YES	961.20		11.6								BMP 2			961.20																					4' SUMP & SAFL BAFFLE CONNECT TO UNDERGROUND BMP
STR-706	CB	CHANKAHDA TR	195+30.07	-22.50		988.27	R-3067-V		965.27	4.0									STR-708	MHCB	0.50%	965.01						52													
STR-708	MHCB	CHANKAHDA TR	195+44.86		29.90	989.15	R-3067-V	YES	957.47		11.7								STR-712	MHCB	0.50%	956.97								101											
STR-710	CB	CHANKAHDA TR	196+45.45	-25.63		988.49	R-3067-V		962.49	4.0									STR-712	MHCB	0.50%	962.23						52													
STR-712	MHCB	CHANKAHDA TR	196+44.78		22.50	967.07	R-3067-V	YES	956.87		10.2								STR-716	MHCB	0.50%	956.04								166											
STR-714	CB	CHANKAHDA TR	198+10.57	-21.12		963.72	R-3067-V		959.72	4.0									STR-716	MHCB	0.50%	959.51						42													
STR-716	MHCB	CHANKAHDA TR	198+09.94		20.73	964.04	R-3067-V	YES	955.94		8.1								STR-720	MHCB	0.50%	954.60								268											
STR-718	MHCB	CHANKAHDA TR	200+77.79	-20.50		961.80	R-3067-V	YES	957.61		4.2								STR-720	MHCB	0.50%	957.40						41													
STR-719	CB	CHANKAHDA TR	200+94.54	-20.50		961.79	R-3067-VB		957.79	4.0									STR-718	MHCB	0.50%	957.71						17													
STR-720	MHCB	CHANKAHDA TR	200+77.79		20.50	962.13	R-3067-V	YES	953.88		8.2								STR-721	MHCB	0.50%	953.60									17										
STR-721	MHCB	CHANKAHDA TR	200+94.54		20.50	962.12	R-3067-VB	YES	953.70		8.4								STR-726	MHCB	0.50%	952.51									238										
STR-722	CB	CHANKAHDA TR	203+32.19	-22.45		962.01	R-3067-V		958.02	4.0									STR-724	MHCB	0.50%	957.80						45													
STR-724	MHCB	CHANKAHDA TR	203+31.78		22.50	983.34	R-3067-V	YES	952.41		9.9								STR-728	MHCB	0.50%	951.15									251										
STR-726	CB	CHANKAHDA TR	205+80.28	-24.21		958.41	R-3067-V		954.41	4.0									STR-728	MHCB	0.50%	954.18						45													
STR-728	MHCB	CHANKAHDA TR	205+82.55		20.74	958.74	R-3067-V	YES	951.05		7.7								STR-732	MHCB	0.80%	950.50									193										
STR-730	CB	CHANKAHDA TR	207+84.30	-30.54		954.79	R-3067-V		950.79	4.0									STR-732	MHCB	0.50%	950.54						51													
STR-732	MHCB	CHANKAHDA TR	207+73.50		18.95	955.40	R-3067-V	YES	946.94		8.5								STR-734	MHCB	1.30%	945.32									208										
STR-734	MHCB	CHANKAHDA TR	208+96.85		27.20	951.68	R-3067-V	YES	945.22		5.3								STR-738	MHCB	1.50%	943.71									134										
STR-738	MHCB	CHANKAHDA TR	210+15.55		18.84	948.37	R-3067-V	YES	943.11			5.3							STR-740	MHCB	0.50%	943.00									22										
STR-740	MHCB	CHANKAHDA TR	210+74.47	-1.50		948.36	R-3067-V	YES	942.08			6.6							STR-742	MHCB	0.50%	941.95									74										
STR-742	MHCB	CHANKAHDA TR	210+31.45	-24.64		949.00	R-3067-V	YES	942.86			7.2							STR-756	MHCB	0.50%	941.75									23										
STR-753	CB	CHANKAHDA TR	209+83.55	-35.87		950.27	R-3067-V		946.27	4.0									STR-754	MHCB	0.50%	946.19						16													
STR-754	MHCB	CHANKAHDA TR	209+56.50	-25.14		949.86	R-3067-V		946.03		4.0								STR-742	MHCB	1.00%	945.65						38													
STR-756	MHCB	CHANKAHDA TR	210+36.08	-46.78		948.68	R-3067-V	YES	938.43				10.1						STR-758	MHCB	0.40%	937.93									124										
STR-758	MHCB	CHANKAHDA TR	211+49.06	-27.03		945.00	R-3067-V	YES	937.83			7.1							STR-760	MHCB	0.40%	937.05									194										
STR-760	MHCB	CHANKAHDA TR	213+42.83	-22.60		943.22	R-3067-V	YES	936.95			6.3							STR-768	MHCB	0.40%	936.89									14										
STR-768	MHCB	CHANKAHDA TR	213+56.23	-22.54		943.00	R-3067-VB	YES	936.79			6.2							STR-769	MHCB	0.40%	936.60										67									
STR-705	MHCB	CHANKAHDA TR	213+56.23		24.20	943.25	R-3067-VB	YES	936.50			6.8							STR-770	MHCB	0.40%	935.65										213									
STR-770	MHCB	CHANKAHDA TR	213+76.07		29.07	944.51	R-3067-V	YES	935.55			9.0							STR-771	MHCB	0.40%	934.71										210									
STR-771	MHCB	CHANKAHDA TR	217+95.45		35.06	941.78	R-3067-V	YES	934.61				7.2						STR-772	MHCB	0.50%	934.30										63									
STR-772	MHCB	CHANKAHDA TR	218+31.33	-57.00		941.35	R-3067-V	YES	933.48				12.9						STR-776	FES	3.00%	932.00										69		1							4' SUMP & SAFL BAFFLE
STR-774	FES	CHANKAHDA TR	218+39.64	-65.40																															1	36 RCP		29					
STR-800	FES	CHANKAHDA TR	156+22.70		51.48				965.70										STR-802	FES	1.35%	964.00					109														1	21 RCP		9					
STR-802	FES	CHANKAHDA TR	155+97.84	-76.33																															1	21 RCP		8					
STR-804	DI	CHANKAHDA TR	178+15.38	-38.30		972.32	R-4342	YES	968.01		4.3								STR-806	FES	1.10%	967.10					83														
STR-808	FES	CHANKAHDA TR	178+14.87		44.48																														1	24 RCP		19					
STR-808	DI	CHANKAHDA TR	197+25.09		21.42	963.29	R-4342		960.54		3.3								STR-810	FES	1.30%	959.00					118														
STR-810	FES	CHANKAHDA TR	196+92.25	-73.96																															1	30 RCP		15					
STR-812	DI	CHANKAHDA TR	200+98.99		42.39	960.32	R-4342		958.06		2.3								STR-814	FES	0.50%	957.50						117														
STR-814	FES	CHANKAHDA TR	201+12.25	-68.61																															1	18 RCP		7					
STR-816	DI	CHANKAHDA TR	207+90.48	-72.98		949.87	R-4342	YES	945.63		4.3								STR-818	DI	1.00%	943.20	242																			
STR-818	DI	CHANKAHDA TR	210+69.26	-49.36		946.94	R-4342		942.99		3.9								STR-822	MH	0.50%	942.52	55																			
STR-820	DI	CHANKAHDA TR	210+01.58		44.69	947.99	R-4342	YES	942.73		5.3								STR-822	MH	0.70%	942.49	34																			
STR-822	MH	CHANKAHDA TR	210+39.60		41.31	949.19	R-1642	YES	940.96		8.2								STR-824	FES	0.50%	939.00	392																			
STR-824	FES	CHANKAHDA TR	214+53.61		58.13																														1	15 RCP		5					
STR-900	FES	CHANKAHDA TR	161+85.26	-74.21					962.00										OCS-1	OCS	-0.50%	962.08						15																	
STR-904	FES	CHANKAHDA TR	161+60.75	-79.14																															1	21 RCP		9					
STR-906	FES	CHANKAHDA TR	162+27.45		55.43				965.07										STR-907	MHCB	1.00%	964.50						52														
STR-912	FES	CHANKAHDA TR	184+34.73		51.51																														1	21 RCP		8					
STR-916	CB	CHANKAHDA TR	185+30.66	-56.14		972.58	R-3067-V		968.58	4.0									STR-917	MHCB	0.30%	968.42						32														
STR-920	DI	CHANKAHDA TR	194+47.02		45.02	989.17	R-4342		986.39		2.8								STR-922	DI	1.50%	984.89									134										
STR-922	DI	CHANKAHDA TR	195+58.58		53.41	968.94	R-4342	YES	964.99		4.4								STR-011	MHCB	2.00%	964.20									19										
STR-928	FES	CHANKAHDA TR	217+81.27		82.80				930.00										STR-930	MHCB	1.00%	929.48									52										
STR-930	MHCB	CHANKAHDA TR	218+06.16		36.65	941.35	R-3067-V	YES	927.20		13.7																								1	18 RCP							
STR-932	FES	CHANKAHDA TR	218+70.52	-111.88					932.00										OCS-3	OCS	-1.50%	932.60									28										
STR-936	MH	CHANKAHDA TR	218+58.05	-100.85																																							
STR-938	DI	CHANKAHDA TR	173+47.15		54.71	973.95	R-4342		970.75		3.2								STR-940	FES	2.00%	969.43									69										
STR-940	FES	CHANKAHDA TR	172+81.42		60.25																														1	18 RCP		7					
STR-1020	MH	CHANKAHDA TR	150+46.80		46.36	975.25	R-1642	YES	962.20		11.1								KMP 2			961.20																					CONNECT TO UNDERGROUND BMP
STR-1022	MH	CHANKAHDA TR	144+22.09		45.51	909.87	R-1642		961.20		8.7																																CONNECT TO UNDERGROUND BMP
STR-1010	FES	CHANKAHDA TR	128+12.94	-244.68																																19				1			
TOTAL										142.3	444.2	80.2	50.5	1	1	1	1	1					792	193	109	161	161	4323	2659	389	1281	1201	598	581	22		8	160	1	1	5	7	16	

No.	Date	Revisions	App.

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PROJECT NO.	160662010

Kimley»Horn
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Stephanie Thulien

STEPHANIE L. THULIEN, PE

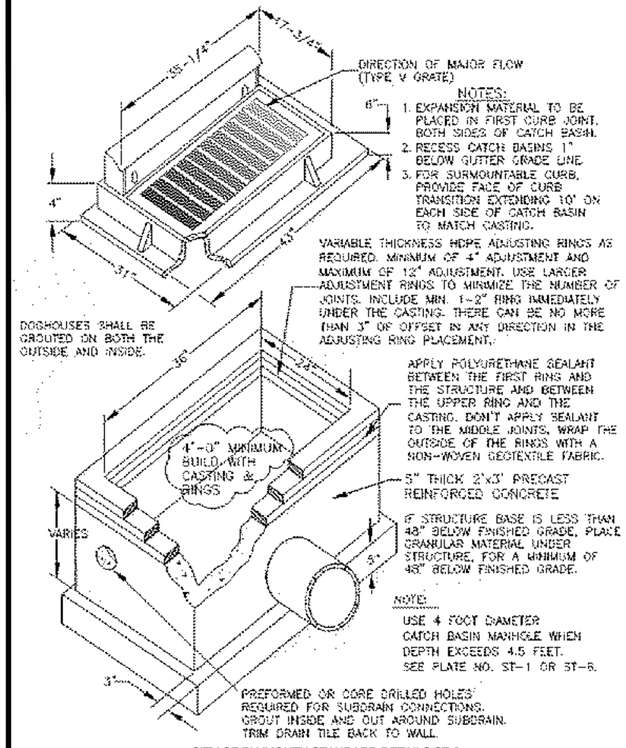
DATE: 02/07/2025 MN LIC. NO. 57230

City of Plymouth

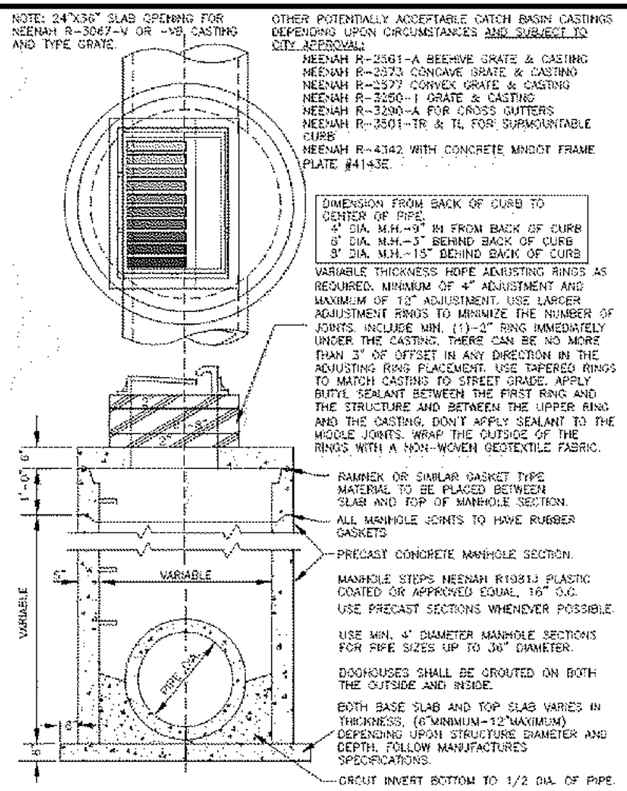
CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
DRAINAGE TABULATION

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

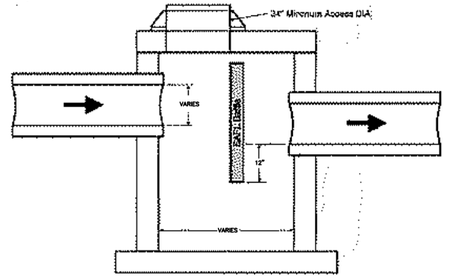
SHEET NO. 132 / 354



CITY OF PLYMOUTH STANDARD DETAILS ST-2



CITY OF PLYMOUTH STANDARD DETAILS ST-6



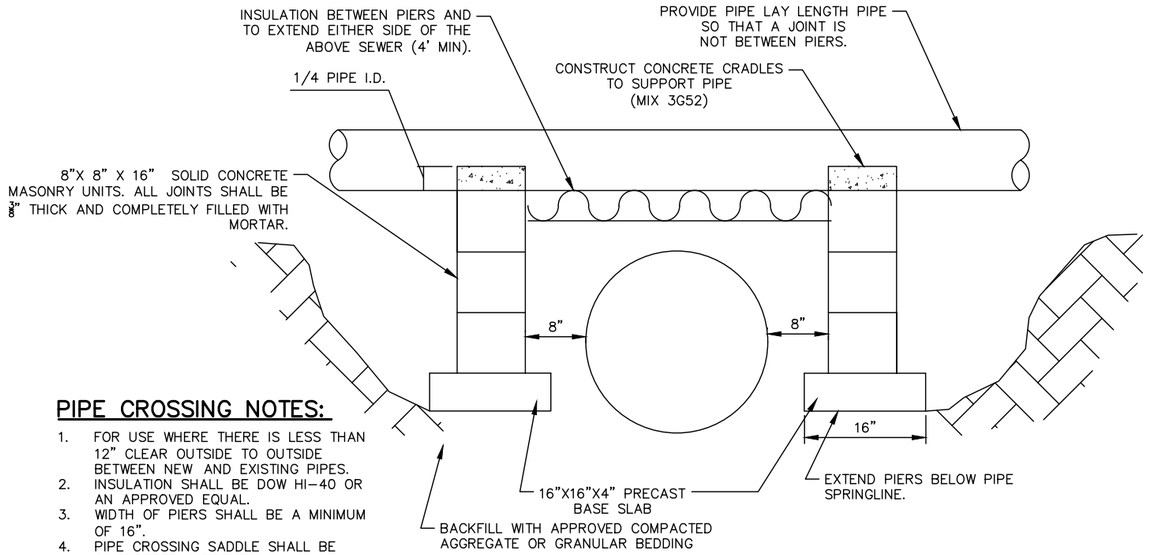
REFER TO THE MANUFACTURER DESIGN GUIDE FOR ADDITIONAL DETAILS

Sump Structure with SAFL Baffle	Pipes In	Pipes Out
STR-116	18" RCP @ 955.60	18" RCP @ 953.58
STR-236	27" RCP @ 949.77	30" RCP @ 946.90
STR-318	24" RCP @ 963.78	24" RCP @ 963.68
STR-410	24" RCP @ 962.29	24" RCP @ 962.29
STR-520	24" RCP @ 963.30 18" RCP @ 963.24	30" RCP @ 963.14
STR-638	30" RCP @ 961.20	BMP 4 @ 961.20
STR-772	36" RCP @ 934.30	36" RCP @ 933.48
STR-930	18" RCP@ 929.48	36" RCP @ 927.20

SAFL BAFFLE DETAIL

Casting	Number
R-3067-V	86
R-3067-VB	18
R-1642	8
R-4342	9
Total	121

CASTING ASSEMBLY SUMMARY



PIPE CROSSING NOTES:

1. FOR USE WHERE THERE IS LESS THAN 12" CLEAR OUTSIDE TO OUTSIDE BETWEEN NEW AND EXISTING PIPES.
2. INSULATION SHALL BE DOW HI-40 OR AN APPROVED EQUAL.
3. WIDTH OF PIERS SHALL BE A MINIMUM OF 16".
4. PIPE CROSSING SADDLE SHALL BE CONSIDERED INCIDENTAL.

DETAIL 1 - PIPE CROSSING SADDLE

GENERAL NOTES:

1. STRUCTURE LOCATIONS ARE TO CENTER OF CASTING FOR MH AND DI. FACE OF CURB FOR CB AND MHCB. END OF APRONS FOR FES.
2. PAY HEIGHTS ARE FROM RIM OR CASTING ELEVATION TO INVERT AND ARE PROVIDED FOR INFORMATION ONLY.
3. LENGTH OF PIPE ARE TO CENTER OF STRUCTURE OR END OF APRON.
4. DRAINAGE STRUCTURES OVER 4.0' IN HEIGHT REQUIRE STEPS.
5. DRAINAGE STRUCTURE AND PIPE DATA AREA SHOWN FOR INFORMATION PURPOSES. DATA IS TO BE USED FOR STRUCTURE MANUFACTURING AND SHOP DRAWINGS.
6. TIE ALL PIPE JOINTS FROM APRON TO MANHOLE OR FROM APRON TO APRON WITH WASHINGTON PIPE TIES (INCIDENTAL).
7. DESIGN G STRUCTURE TO BE BUILT PER CITY OF PLYMOUTH STANDARD PLATE ST-2
8. DESIGN SPECIAL 1 IS AN EXISTING OUTLET CONTROL STRUCTURE (EX-OCS-1) WHICH WILL BE MODIFIED PER THE DETAIL ON SHEET 135.
9. DESIGN SPECIAL 2 IS AN EXISTING OUTLET CONTROL STRUCTURE (EX-OCS-2) WHICH WILL BE MODIFIED PER THE DEATIL ON SHEET 135.
10. DESIGN SPECIAL 3 IS OUTLET CONTROL STRUCTURE #1 TO BE CONSTRUCTED PER THE DETAIL ON SHEET 135
11. DESIGN SPECIAL 4 IS OUTLET CONTROL STRUCTURE #2 TO BE CONSTRUCTED PER THE DETAIL ON SHEET 135
12. DESIGN SPECIAL 5 IS OUTLET CONTROL STRUCTURE #3 TO BE CONSTRUCTED PER THE DETAIL ON SHEET 135
13. SAFL BAFFLE WILL BE INSTALLED PER MANUFACTURER SPECIFICATIONS

No.	Date	Revisions	App.

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Stephanie Thulien

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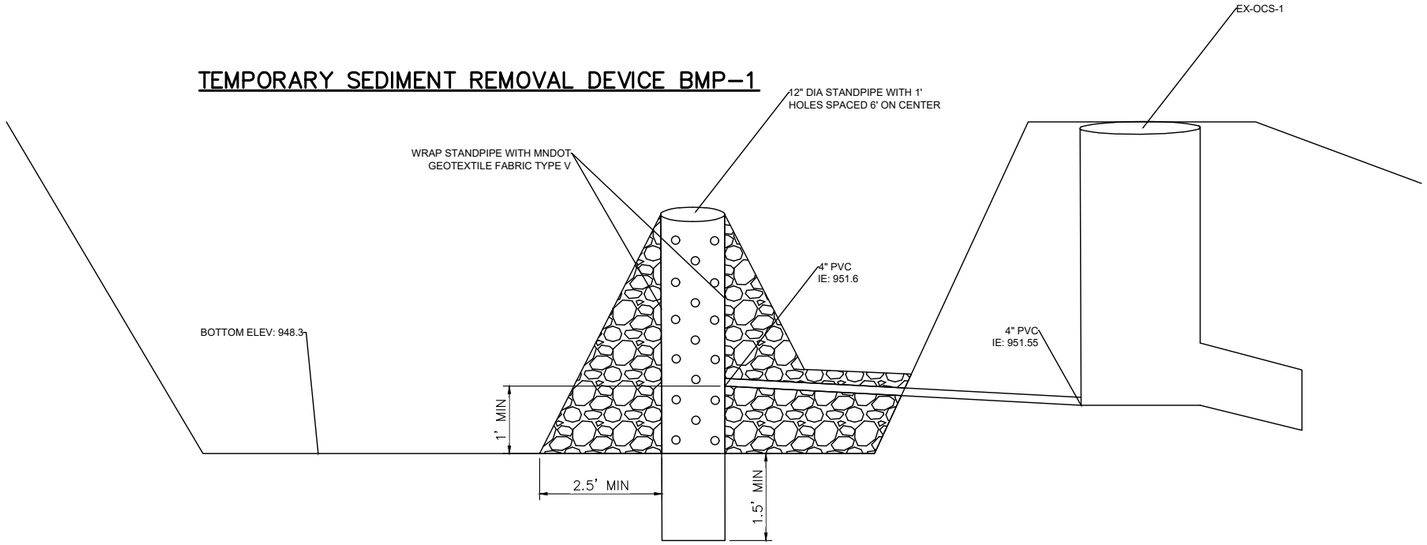
City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
DRAINAGE DETAILS

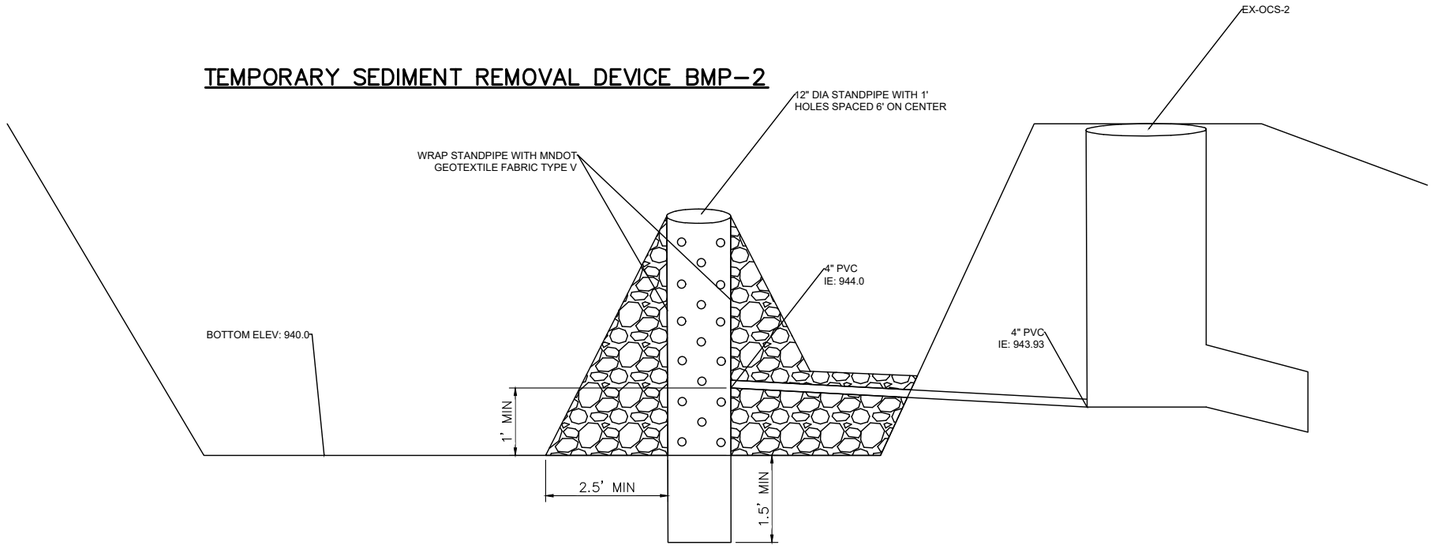
CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 133 / 354

TEMPORARY SEDIMENT REMOVAL DEVICE BMP–1



TEMPORARY SEDIMENT REMOVAL DEVICE BMP–2



TEMPORARY SEDIMENT REMOVAL DEVICE NOTES:

THIS TEMPORARY SEDIMENT REMOVAL DEVICE IS INTENDED TO AID IN PRESERVING THE BMP FILTRATION CAPACITY, PLANT ESTABLISHMENT, AND DEWATERING DURING THE PROPOSED EXPANSION OF THE EXISTING BASINS. THE 4" PVC FROM THE STANDPIPE TO THE OUTLET CONTROL STRUCTURE IS INTENDED TO KEEP THE BASIN FROM BEING INUNDATED WHILE PLANTS AR ESTABLISHING. THE STANDPIPE WITH GEOTEXTILE FABRICS IS INTENDED TO FILTER ANY ADDITIONAL FINE SEDIMENTS FROM WASHING INTO AND CLOGGING THE OUTLET CONTROL STRUCTURE. THE GEOTEXTILE FABRIC WILL REQUIRE INSPECTION FOR ACCUMULATION OF SEDIMENT.

1. 1 12 DIA STANDPIPE WILL HAVE 1" DIA HOLES SPACED 6" ON CENTER. STANDPIPE WILL EXTEND AT MINIMUM 1.5' BELOW THE BASIN BOTTOM. STANDPIPE WILL BE WRAPPED WITH MNDOT GEOTEXTILE FABRIC TYPE V. PLACE CLASS V RIPRAP AROUND THE STANDPIPE IN A CONICAL SHAPE WITH A MINIMUM DIAMETER OF 5' ON THE BASIN BOTTOM.
2. GEOTEXTILE SHALL BE INSPECTED FOR ACCUMULATION OF SEDIMENT ON A WEEKLY BASIS AND AFTER EACH RAIN EVENT. ACCUMULATED SEDIMENT SHALL BE REMOVED AFTER $\frac{1}{4}$ OF THE RISER DEPTH.
3. A 4" PVC PIPE WILL BE CORED INTO THE STANDPIPE AT THE ELEVATION NOTED AND EXTEND INTO THE OUTLET CONTROL STRUCTURE. PROVIDE MINIMUM 0.3% SLOPE ON 4" PVC. PLACE MINIMUM 9 INCHES OF ROCK SURROUNDING AND TOP OF 4" PIPE.
4. DEVICE SHALL STAY IN PLACE UNTIL BASIN GRADING HAS BEEN COMPLETED. UPON ENGINEER'S APPROVAL, THE HOLE CREATED WITHIN THE OUTLET CONTROL STRUCTURE SHALL BE GROUTED SHUT AND GEOTEXTILE, STANDPIPE AND 4" PVC PIPE REMOVED. ACCUMULATED SEDIMENT SHALL BE REMOVED TO THE EXTENT NECESSARY TO MATCH THE DESIGN BASIN BOTTOM.

NOTE:
DRAINAGE DETAILS NOT DRAWN TO SCALE

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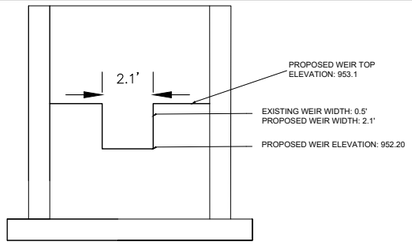
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City of Plymouth

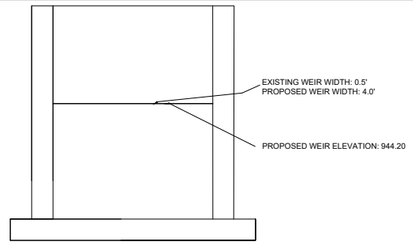
CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
DRAINAGE DETAILS

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COUNTY PROJECT	
S.A.P.	155–210–003
S.A.P.	

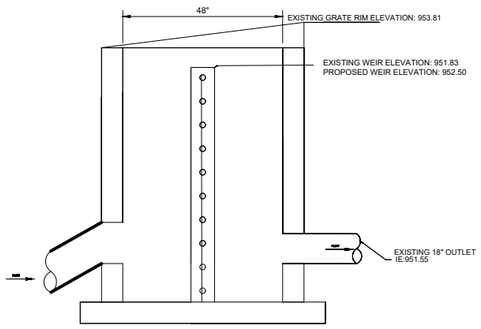
SHEET NO. 134 / 354



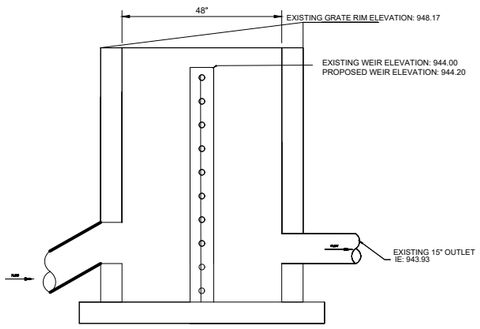
PROPOSED WEIR VIEW



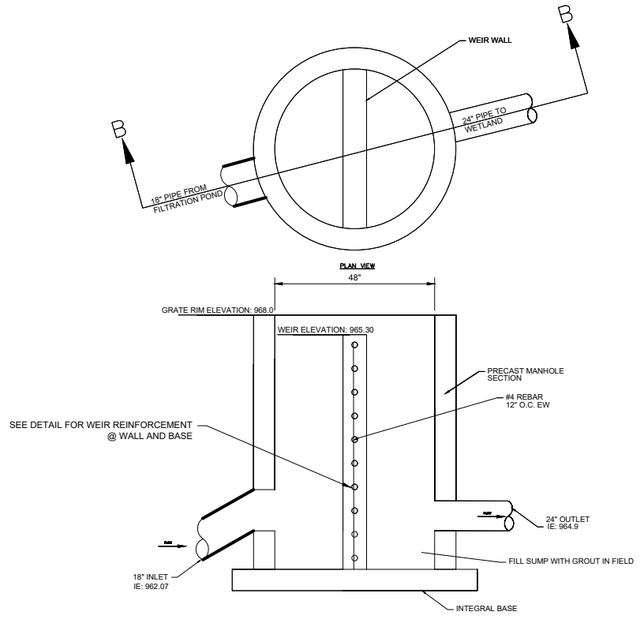
PROPOSED WEIR VIEW



EX-OCS-1 - BMP 1 - Pond 2NW

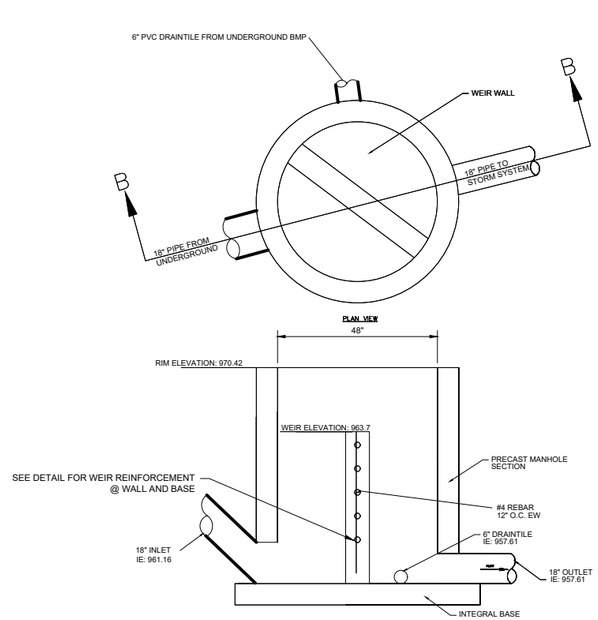


EX-OCS-2 - BMP 2 - Pond 1TP



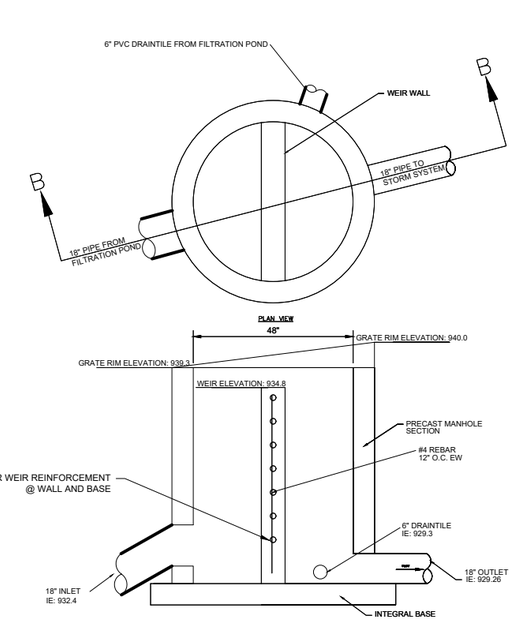
OUTLET CONTROL STRUCTURE (OCS) #1

BMP 3



OUTLET CONTROL STRUCTURE (OCS) #2

BMP 4



OUTLET CONTROL STRUCTURE (OCS) #3

BMP 5

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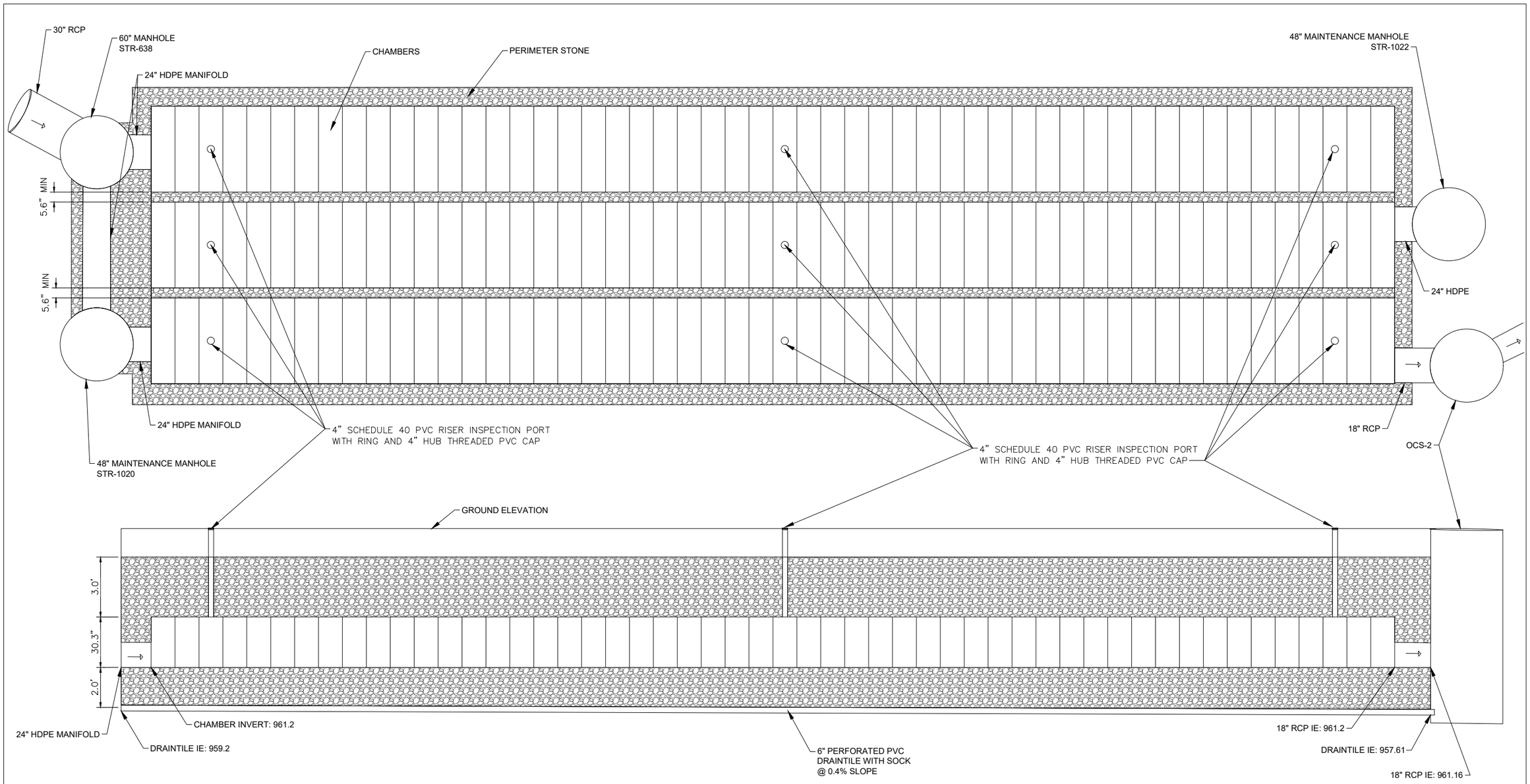
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City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
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SHEET NO. 135 / 354



BMP–4 UNDERGROUND STORM WATER MANAGEMENT SYSTEM

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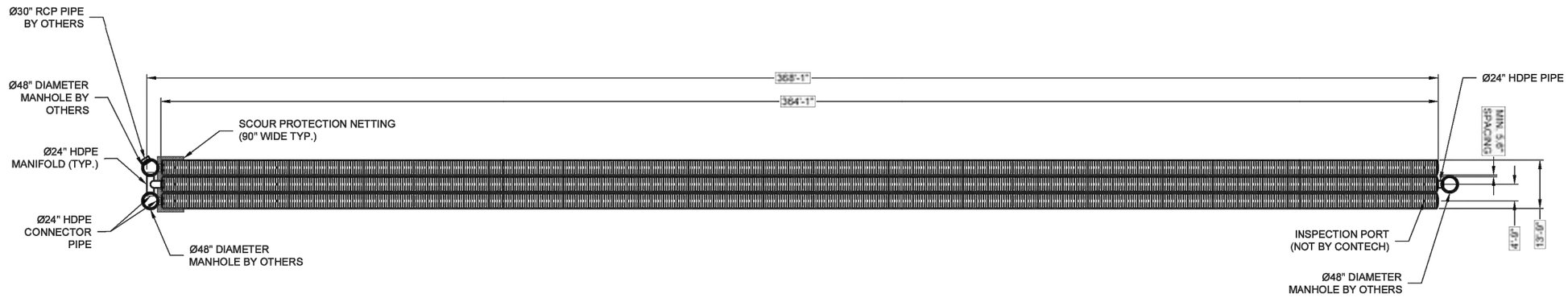
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SHEET NO. 136 / 354



ASSEMBLY

SCALE: 1'=30'
CHAMBER VOLUME: 7,385 CF
STONE VOLUME: 14,935 CF
TOTAL VOLUME: 22,320 CF
LOADING: H20/H25

ITEM NUMBER	ITEM DESCRIPTION	CES PART NUMBER	QTY	UNITS
1	CHAMBERMAXX START CHAMBER	APCM 003.3051.001	3	EA
2	CHAMBERMAXX MIDDLE CHAMBER	APCM 003.3051.002	150	EA
3	CHAMBERMAXX END CHAMBER	APCM 003.3051.006	3	EA
4	CONTECH C-40 NON-WOVEN GEOTEXTILE 15 FT X 360 FT	APCM 001.0015.002	1	ROLL
5	SCOUR PROTECTION NETTING, 7.5 FT WIDE	APCM 007.0075.001	1 @ 16	QTY @ LF

ITEM NUMBER	ITEM DESCRIPTION	CES PART NUMBER	QTY	UNITS
6	Ø24" HDPE TEE	APCM 001.0024.001	1	EA
7	Ø24" HDPE CONNECTOR PIPE	APCM 001.0024.004	5 @ 2'	QTY @ LF
8	Ø24" HDPE SPLIT COUPLER	PEF24SPCP	2	EA
9	INSTALLATION GUIDE	N/A	1	EA

I:\MEN\PROJECT\ACT\PD\836705\09\836705-010-CMAXX CONF ASD.DWG 2/3/2025 12:14 PM

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CHAMBERMaxx® PATENT PENDING
CONTECH PROPOSAL DRAWING

CHAMBERMAXX RETENTION SYSTEM - 836705-010
UNDERGROUND CHAMBERMAXX SYSTEM
PLYMOUTH, MN
SITE DESIGNATION: N/A

PROJECT No.:	SEQ. No.:	DATE:
836705	010	1/28/25
DESIGNED: WPC	DRAWN: WPC	
CHECKED: —	APPROVED: —	
SHEET NO.: 1 OF 4		

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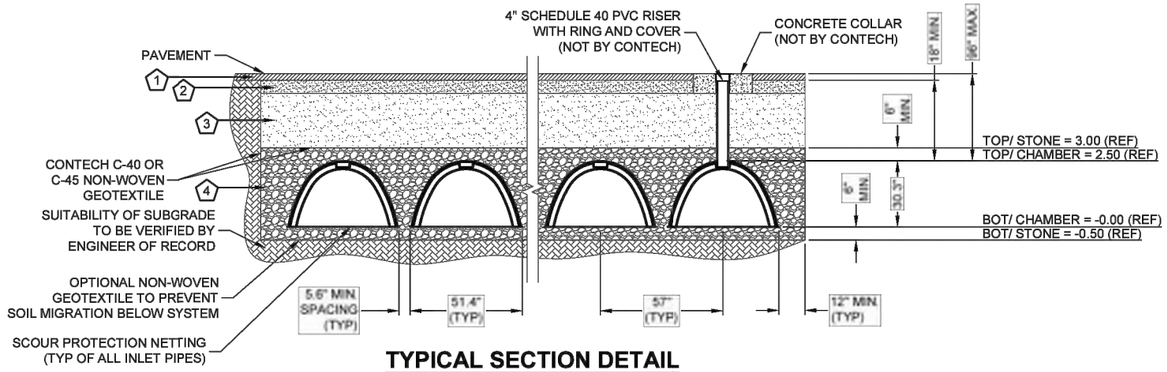
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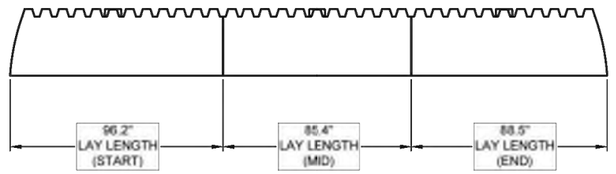
City of Plymouth
CHANKAHDA TRAIL
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DRAINAGE DETAILS

CITY PROJECT ST240002
COUNTY PROJECT
S.A.P. 155-210-003
S.A.P.

SHEET NO. 137 / 354



TYPICAL SECTION DETAIL
NOT TO SCALE



TYPICAL ELEVATION VIEW
NOT TO SCALE

KEY
1. FLEXIBLE PAVEMENT.
2. GRANULAR ROAD BASE.
3. ANY SUITABLE NATIVE OR GENERAL BACKFILL, SEE ENGINEER PLANS.
4. THE BACKFILL MATERIAL SHALL BE FREE-DRAINING ANGULAR WASHED STONE 3/4" - 2" PARTICLE SIZE. MATERIAL SHALL BE PLACED IN 8"-10" MAXIMUM LIFTS. MATERIAL SHALL BE WORKED INTO THE CHAMBER SPACING BY MEANS OF SHOVEL-SLICING, RODDING, AIR-TAMPER, VIBRATORY ROD, OR OTHER EFFECTIVE METHODS. COMPACTION IS CONSIDERED ADEQUATE WHEN NO FURTHER YIELDING OF THE MATERIAL IS OBSERVED UNDER THE COMPACTOR, OR UNDER FOOT, AND THE PROJECT ENGINEER OR THEIR REPRESENTATIVE IS SATISFIED WITH THE LEVEL OF COMPACTION. INADEQUATE COMPACTION CAN LEAD TO EXCESSIVE DEFLECTIONS WITHIN THE SYSTEM AND SETTLEMENT OF THE SOILS OVER THE SYSTEM. BACKFILL SHALL BE PLACED SUCH THAT THERE IS NO MORE THAN A TWO-LIFT DIFFERENTIAL BETWEEN THE SIDES OF ANY CHAMBER IN THE SYSTEM AT ALL TIMES DURING THE BACKFILL PROCESS. BACKFILL SHALL BE ADVANCED ALONG THE LENGTH OF THE SYSTEM AT THE SAME RATE TO AVOID DIFFERENTIAL LOADING ON ANY PIPES IN THE SYSTEM.

EQUIPMENT USED TO PLACE AND COMPACT THE BACKFILL SHALL BE OF A SIZE AND TYPE SO AS NOT TO DISTORT, DAMAGE, OR DISPLACE THE CHAMBERS. ATTENTION MUST BE GIVEN TO PROVIDING ADEQUATE MINIMUM COVER FOR SUCH EQUIPMENT, AND MAINTAIN BALANCED LOADING ON ALL CHAMBERS IN THE SYSTEM, DURING ALL SUCH OPERATIONS.

OTHER ALTERNATE BACKFILL MATERIAL MAY BE ALLOWED DEPENDING ON SITE SPECIFIC CONDITIONS. CONTACT YOUR LOCAL CONTECH REPRESENTATIVE FOR DETAILS.

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www.ContechES.com
9100 Centre Pointe Dr., Suite 400, West Chester, OH 45069
800-338-1122 513-645-7000 513-645-7993 FAX

CHAMBERMaxx® PATENT PENDING
CONTECH **CONTRACT** DRAWING

CHAMBERMAXX RETENTION SYSTEM - 836705-010
UNDERGROUND CHAMBERMAXX SYSTEM
PLYMOUTH, MN
SITE DESIGNATION: N/A

PROJECT No.:	SEQ. No.:	DATE:
836705	010	1/28/25
DESIGNED: WPC	DRAWN: WPC	
CHECKED: ---	APPROVED: ---	
SHEET NO.: 2 OF 4		

No.	Date	Revisions	App.

DRAWING NAME: CHANKAHDA_PH3_DrainPlan.dwg

DESIGNED BY:	HB
DRAWN BY:	PD
CHECKED BY:	SLT
DATE:	02/07/2025
PROJECT NO.	160662010

Kimley»Horn
767 EUSTIS STREET, SUITE 100, ST. PAUL, MN 55114
PHONE: 651-645-4197
WWW.KIMLEY-HORN.COM

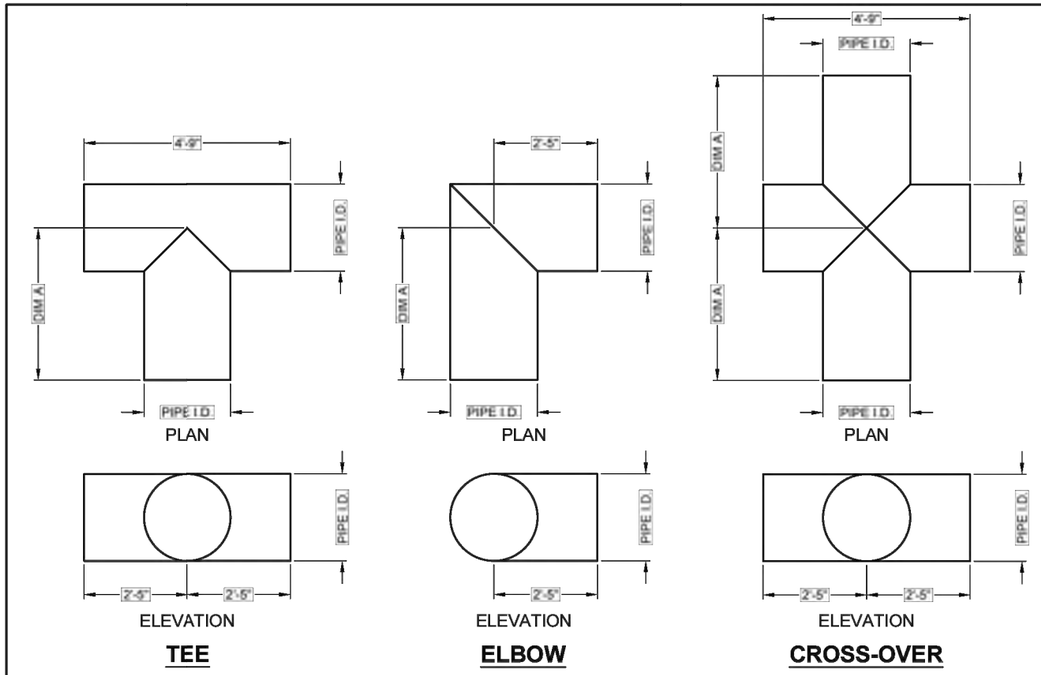
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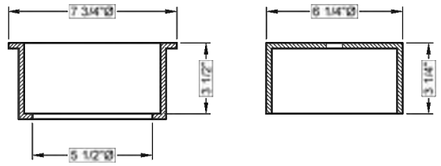
Stephanie Thulien
STEPHANIE L. THULIEN, PE
DATE: 02/07/2025 MN LIC. NO. 57230

City of Plymouth
CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
DRAINAGE DETAILS

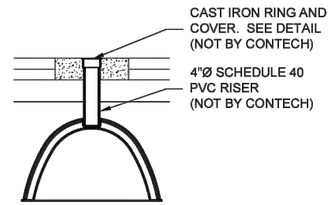
CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 138 / 354

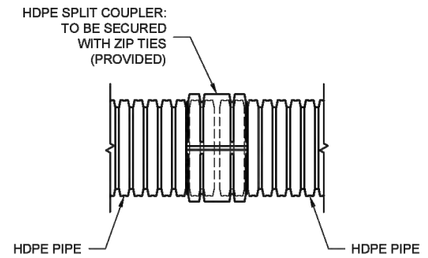




RING AND COVER DETAIL
NOT TO SCALE



INSPECTION PORT DETAIL
NOT TO SCALE



HDPE SPLIT COUPLER DETAIL

STANDARD MANIFOLD COMPONENTS - NOT TO SCALE				
	AVAILABLE DIAMETERS - INCHES			
TEE	12	15	18	24
ELBOW	12	15	18	24
DIM A	42	42	48	48

GENERAL NOTES:
1. FITTING MATERIAL TO BE MANUFACTURED FROM CORRUGATED HIGH DENSITY POLYETHYLENE, AASHTO M294 PIPE.
2. FITTINGS TO BE FABRICATED IN ACCORDANCE WITH THE REQUIREMENT OF AASHTO M294.
3. FITTINGS DESIGNED TO PROTRUDE 6" INTO THE END OF THE INLET CHAMBERS.
4. MANIFOLD TEE AND ELBOW JOINT TO BE CONNECTED UTILIZING HDPE SPLIT COUPLERS.

TYPICAL MANIFOLD DETAILS

HDPE SPLIT COUPLERS	
COUPLER SIZE	PART NUMBER
12"Ø SPLIT COUPLER	PEF12SPCP
15"Ø SPLIT COUPLER	PEF15SPCP
18"Ø SPLIT COUPLER	PEF18SPCP
24"Ø SPLIT COUPLER	PEF24SPCP

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CHAMBERMaxx® PATENT PENDING
CONTECH **CONTRACT** DRAWING

CHAMBERMAXX RETENTION SYSTEM - 836705-010
UNDERGROUND CHAMBERMAXX SYSTEM
PLYMOUTH, MN
SITE DESIGNATION: N/A

PROJECT No.:	SEQ. No.:	DATE:
836705	010	1/28/25
DESIGNED: WPC	DRAWN: WPC	
CHECKED: ---	APPROVED: ---	
SHEET No.: 3 OF 4		

No.	Date	Revisions	App.

DRAWING NAME: CHANKAHDA_PH3_DrainPlan.dwg

DESIGNED BY:	HB
DRAWN BY:	PD
CHECKED BY:	SLT
DATE:	02/07/2025
PROJECT NO.	160662010

Kimley»Horn
767 EUSTIS STREET, SUITE 100, ST, PAUL, MN 55114
PHONE: 651-645-4197
WWW.KIMLEY-HORN.COM

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Stephanie Thulien
STEPHANIE L. THULIEN, PE
DATE: 02/07/2025 MN LIC. NO. 57230

City of Plymouth
CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
DRAINAGE DETAILS

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 139 / 354

CHAMBERMAXX DESIGN DETAILS			
FEATURE	START CHAMBER	MIDDLE CHAMBER	END CHAMBER
OVERALL CHAMBER HEIGHT - IN	30.3	30.3	30.3
OVERALL CHAMBER WIDTH - IN	51.4	51.4	51.4
ACTUAL LENGTH - IN	98.4	91.0	92.0
INSTALLED LAY LENGTHS - IN	96.2	85.4	88.5
CHAMBER STORAGE VOLUME - CF	50.2	47.2	46.2
CHAMBER STORAGE PER LINEAR FOOT - CF/LF	6.3	6.6	6.3
*MIN. INSTALLED CHAMBER VOLUME - CF	78.1	75.1	74.1
*MIN. INSTALLED CHAMBER VOLUME PER LINEAR FOOT - CF/LF	9.7	10.6	10.0
CHAMBER WEIGHT - LB	83	73	76
*6" OF STONE ABOVE AND BELOW CHAMBER, 5.6" CHAMBER SPACING AND 40% POROSITY			

GENERAL NOTES

1. ALL ELEVATIONS, DIMENSIONS AND LOCATIONS OF RISERS AND INLETS SHALL BE VERIFIED BY THE ENGINEER OF RECORD.
2. PRIOR TO INSTALLATION OF THE CHAMBERMAXX SYSTEM A PRE-CONSTRUCTION MEETING SHALL BE CONDUCTED. THOSE REQUIRED TO ATTEND ARE THE SUPPLIER OF THE SYSTEM, THE GENERAL CONTRACTOR, SUB-CONTRACTORS AND THE ENGINEER.
3. CHAMBERMAXX CHAMBERS ARE MANUFACTURED FROM POLYPROPYLENE PLASTIC.
4. CHAMBERMAXX SYSTEM TO MEET AASHTO HS20/HS25 LIVE LOADING, PER AASHTO LRFD SECTION 12.
5. ACCESS COVERS TO MEET AASHTO HS20/HS25 LIVE LOADING.
6. MINIMUM COVER IS 18-INCHES TO BOTTOM OF FLEXIBLE PAVEMENT OR TO TOP OF RIGID PAVEMENT. FOR COVER HEIGHTS GREATER THAN 96-INCHES CONTACT YOUR LOCAL REPRESENTATIVE.
7. ALL PARTS PROVIDED BY CONTECH UNLESS OTHERWISE NOTED.
8. FOR INFORMATION ON PRE-TREATMENT SYSTEMS, REFERENCE CONTECH PRE-TREATMENT SYSTEM STANDARD DETAILS OR CONTACT YOUR LOCAL REPRESENTATIVE.
9. CHAMBERMAXX BY CONTECH ENGINEERED SOLUTIONS (800) 925-5240

INSTALLATION NOTES

1. CHAMBERMAXX INSTALLATION GUIDE TO BE REVIEWED BY CONTRACTOR PRIOR TO INSTALLATION.
2. PRIOR TO PLACING BEDDING, THE FOUNDATION MUST BE CONSTRUCTED TO A UNIFORM AND STABLE GRADE. IN THE EVENT THAT UNSUITABLE FOUNDATION MATERIALS ARE ENCOUNTERED DURING EXCAVATION, UNSUITABLE MATERIAL SHALL BE REMOVED AND BROUGHT BACK TO GRADE WITH FILL MATERIAL AS APPROVED BY THE ENGINEER OF RECORD. ONCE THE FOUNDATION PREPARATION IS COMPLETE, THE BEDDING MATERIAL CAN BE PLACED.
3. THE SCOUR PROTECTION NETTING TO EXTEND 1'-0" BEYOND OUTSIDE EDGE OF INLET CHAMBERS.
4. COVER ANY OPEN VOID SPACES GREATER THAN 3/4" ON CHAMBERS WITH A NON-WOVEN GEOTEXTILE TO PREVENT INFILTRATION OF BACKFILL MATERIAL.
5. STONE EMBEDMENT MATERIAL SHALL BE INSTALLED TO 95% STANDARD PROCTOR DENSITY AND PLACED IN 6-INCH TO 8-INCH LIFTS SUCH THAT THERE IS NO MORE THAN A TWO LIFT DIFFERENTIAL BETWEEN ANY OF THE CHAMBERS AT ANY TIME. GRANULAR BACKFILL MATERIAL SHALL BE COMPACTED TO 90% SPD. BACKFILLING SHALL BE ADVANCED ALONG THE LENGTH OF THE CHAMBER ROWS AT THE SAME RATE TO AVOID DIFFERENTIAL LOADING AND DISPLACEMENT OF THE CHAMBERS. THE MINIMUM CHAMBER SPACING MUST BE MAINTAINED.
6. REFER TO CHAMBERMAXX INSTALLATION GUIDE FOR TEMPORARY CONSTRUCTION LOADING GUIDELINES.
7. IT IS ALWAYS THE CONTRACTOR'S RESPONSIBILITY TO FOLLOW OSHA GUIDELINES FOR SAFE PRACTICES.
8. GENERAL INSTALLATION METHODS AND MATERIALS TO BE IN ACCORDANCE WITH ASTM D2321.
9. ANTI-FLOTATION PROVISIONS DUE TO HIGH GROUNDWATER OR OTHER FLOTATION CONCERNS ARE SITE-SPECIFIC DESIGN CONSIDERATIONS AND SHALL BE SPECIFIED BY ENGINEER ON RECORD.

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CHAMBERMaxx® PATENT PENDING

CONTECH CONTRACT DRAWING

CHAMBERMAXX RETENTION SYSTEM - 836705-010
UNDERGROUND CHAMBERMAXX SYSTEM
PLYMOUTH, MN
SITE DESIGNATION: N/A

PROJECT No.:	SEQ. No.:	DATE:
836705	010	1/28/25
DESIGNED: WPC	DRAWN: WPC	
CHECKED: ---	APPROVED: ---	
SHEET NO.: 4 OF 4		

No.	Date	Revisions	App.

DRAWING NAME: CHANKAHDA_PH3_DrainPlan.dwg

DESIGNED BY:	HB
DRAWN BY:	PD
CHECKED BY:	SLT
DATE:	02/07/2025
PROJECT NO.	160662010

Kimley»Horn
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Stephanie Thulien

STEPHANIE L. THULIEN, PE

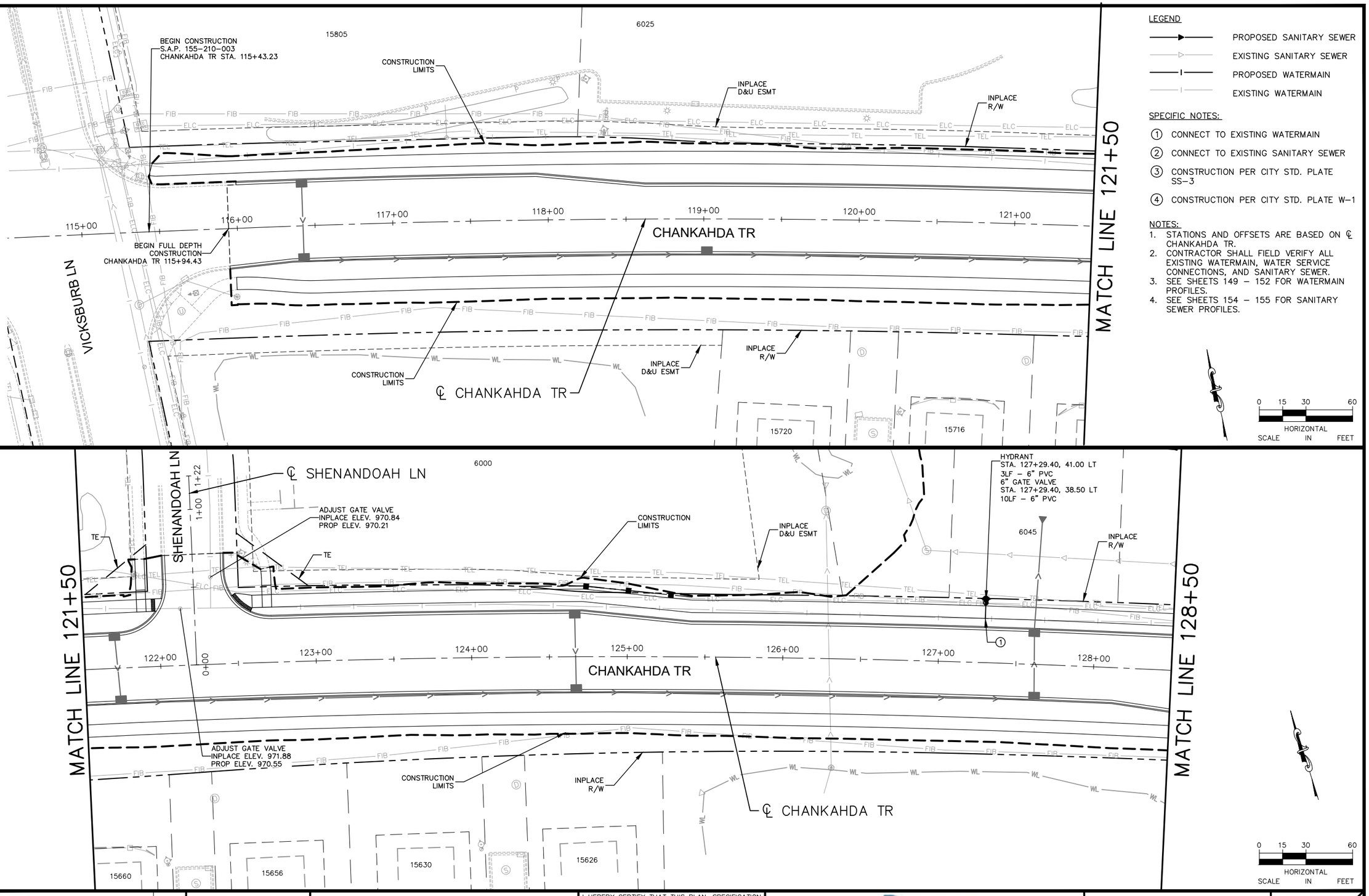
DATE: 02/07/2025 MN LIC. NO. 57230

City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
DRAINAGE DETAILS

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 140 / 354



No.	Date	Revisions	App.

DRAWING NAME: CHANKAHDA_PH3_UtilPlanProfile.dwg

DESIGNED BY:	JWB
DRAWN BY:	RGS
CHECKED BY:	CBL
DATE:	02/07/2025
PROJECT NO.	160662010

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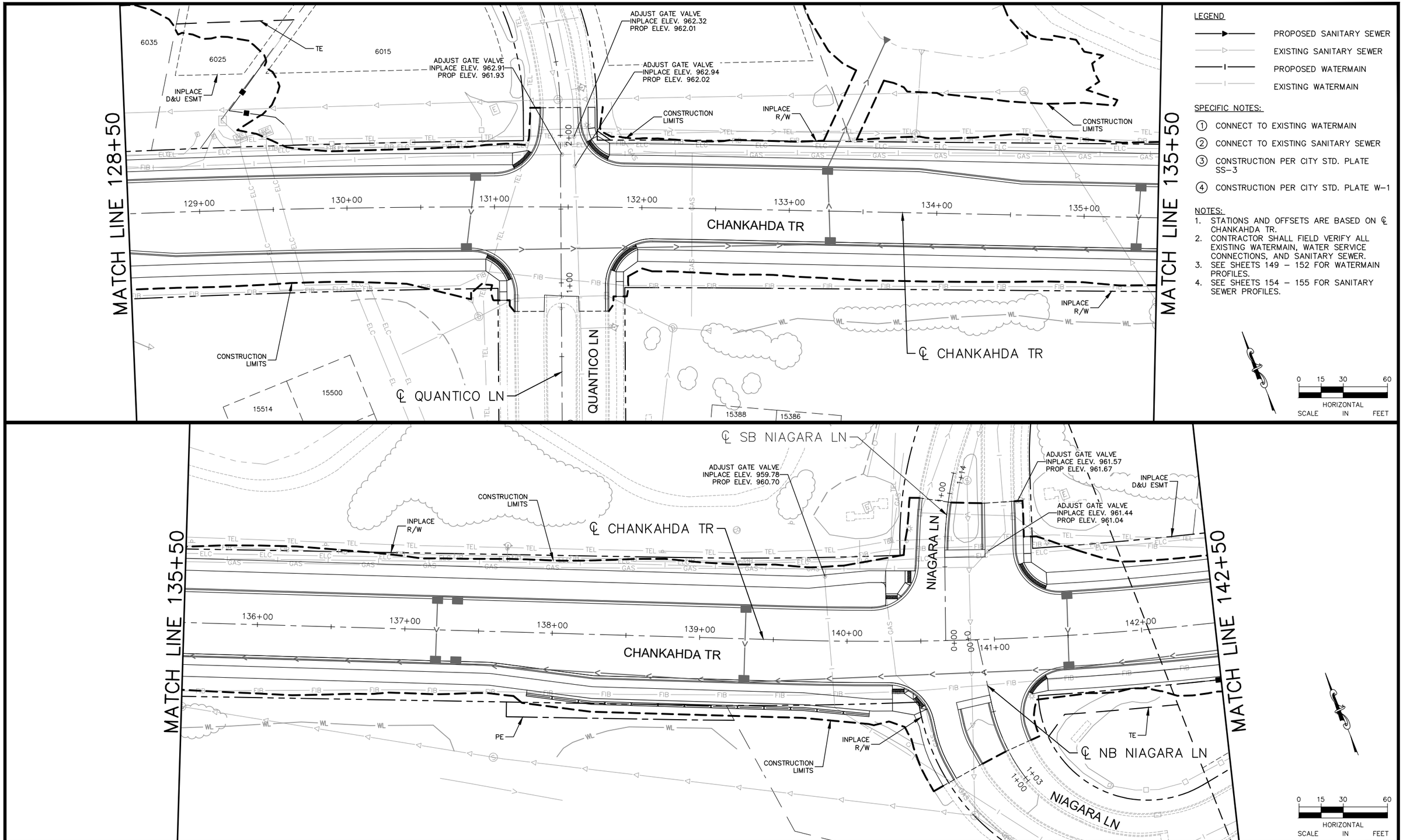
Chadd B. Larson
CHADD B. LARSON, PE
DATE: 02/07/2025 MN LIC. NO. 41864

City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
UTILITY PLAN AND PROFILE
STA. 115+43.23 TO STA. 128+50

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155–210–003
S.A.P.	

SHEET NO. 141 / 354



No.	Date	Revisions	App.

DRAWING NAME: CHANKAHDA_PH3_UtilPlanProfile.dwg

DESIGNED BY:	JWB
DRAWN BY:	RGS
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DATE:	02/07/2025
PROJECT NO.	160662010

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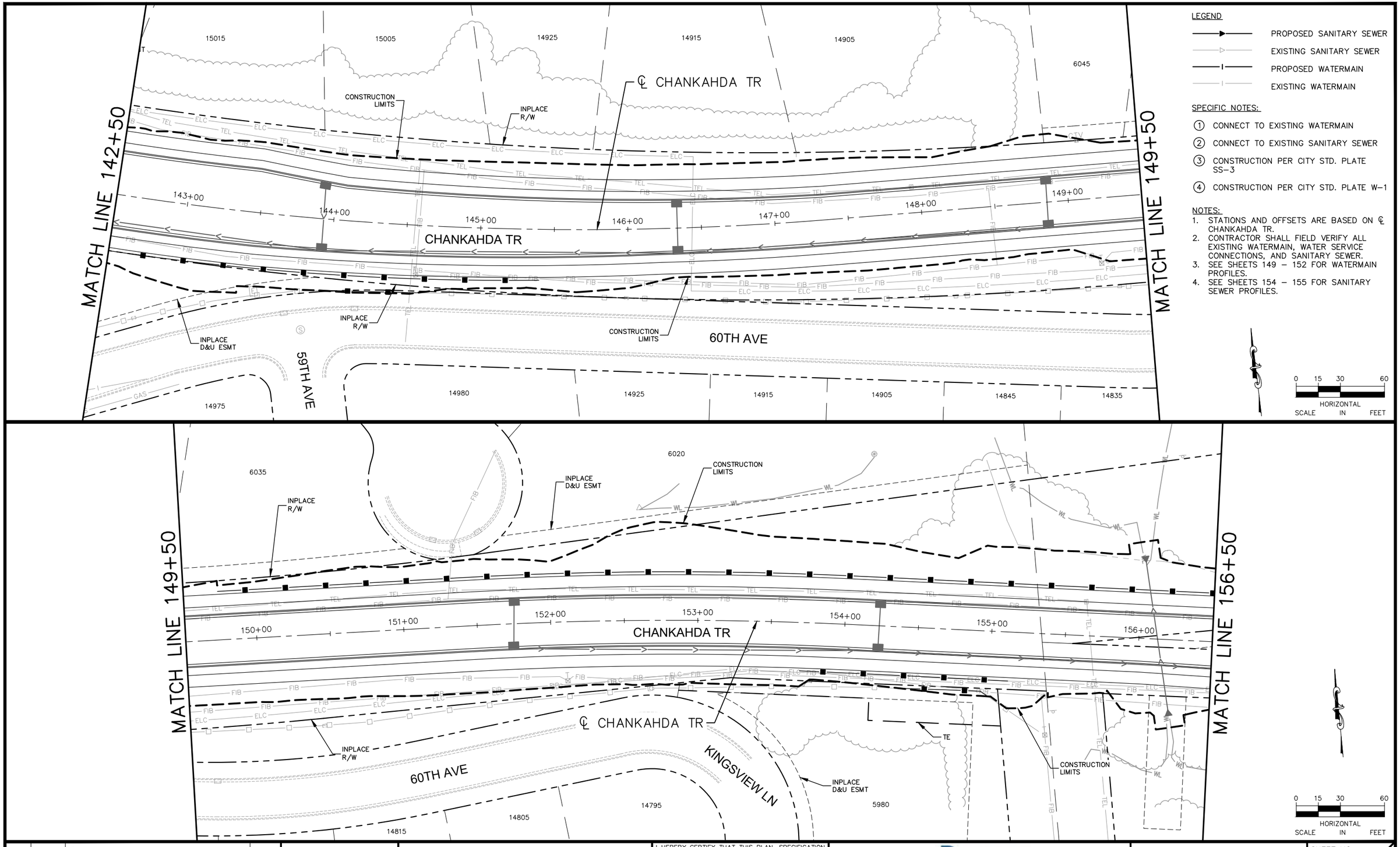
DATE: 02/07/2025 MN LIC. NO. 41864

City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
UTILITY PLAN AND PROFILE
STA. 128+50 TO STA. 142+50

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 142 / 354



LEGEND

- PROPOSED SANITARY SEWER
- EXISTING SANITARY SEWER
- PROPOSED WATERMAIN
- EXISTING WATERMAIN

SPECIFIC NOTES:

1. CONNECT TO EXISTING WATERMAIN
2. CONNECT TO EXISTING SANITARY SEWER
3. CONSTRUCTION PER CITY STD. PLATE SS-3
4. CONSTRUCTION PER CITY STD. PLATE W-1

NOTES:

1. STATIONS AND OFFSETS ARE BASED ON ℄ CHANKAHDA TR.
2. CONTRACTOR SHALL FIELD VERIFY ALL EXISTING WATERMAIN, WATER SERVICE CONNECTIONS, AND SANITARY SEWER.
3. SEE SHEETS 149 – 152 FOR WATERMAIN PROFILES.
4. SEE SHEETS 154 – 155 FOR SANITARY SEWER PROFILES.

No.	Date	Revisions	App.

DRAWING NAME: CHANKAHDA_PH3_UtilPlanProfile.dwg

DESIGNED BY:	JWB
DRAWN BY:	RGS
CHECKED BY:	CBL
DATE:	02/07/2025
PROJECT NO.	160662010

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CHADD B. LARSON, PE

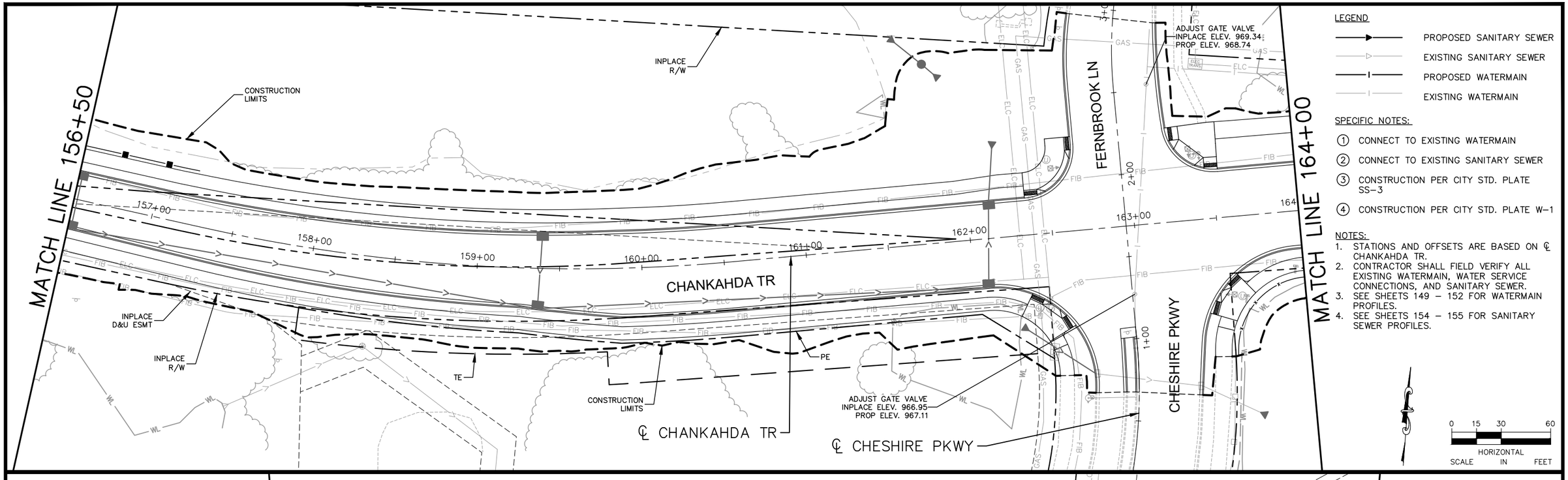
DATE: 02/07/2025 MN LIC. NO. 41864

City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
UTILITY PLAN AND PROFILE
STA. 142+50 TO STA. 156+50

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 143 / 354



No.	Date	Revisions	App.

DRAWING NAME: CHANKAHDA_PH3_UtilPlanProfile.dwg

DESIGNED BY:	JWB
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DATE:	02/07/2025
PROJECT NO.	160662010

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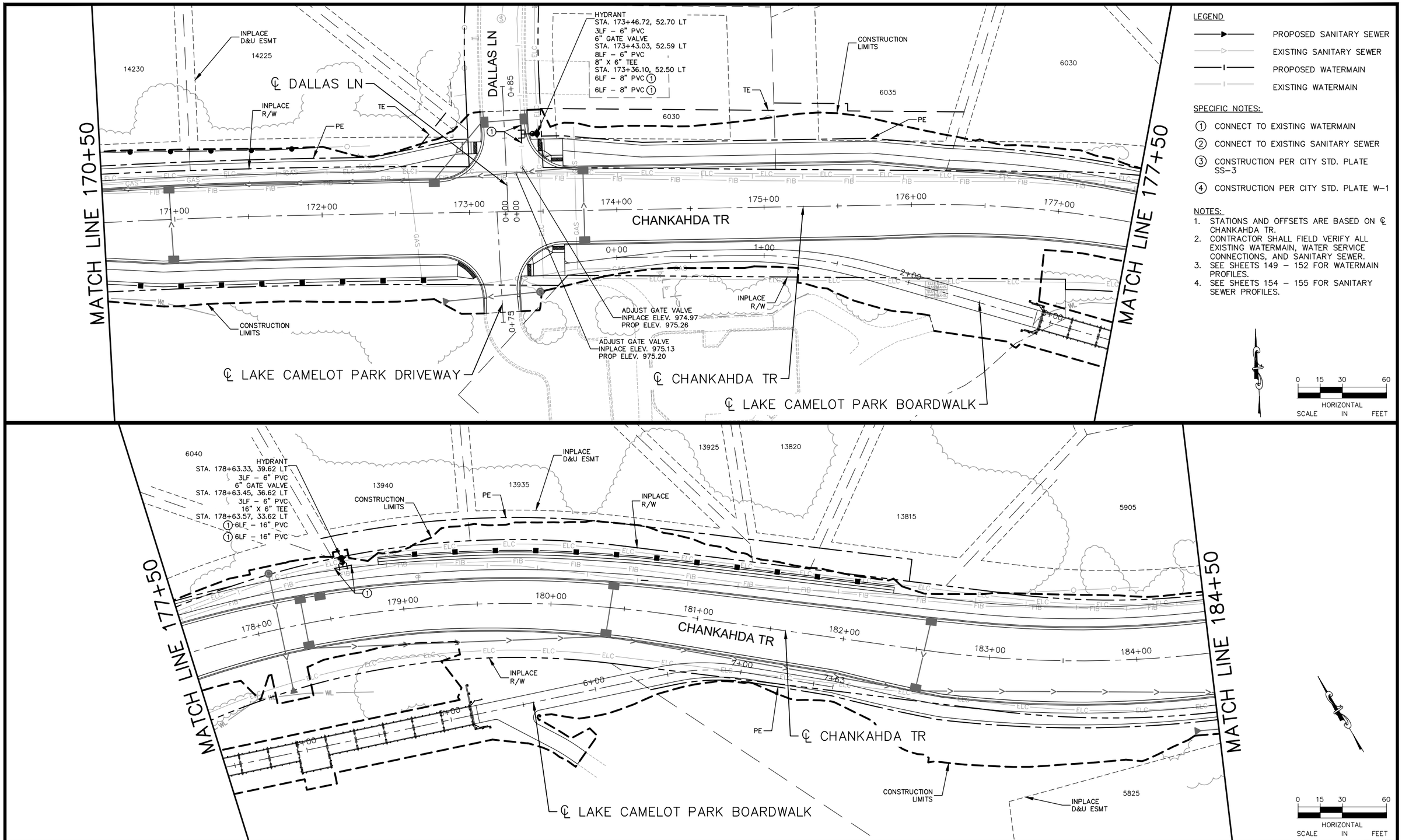
DATE: 02/07/2025 MN LIC. NO. 41864

City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
UTILITY PLAN AND PROFILE
STA. 156+50 TO STA. 170+50

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 144 / 354



LEGEND

- PROPOSED SANITARY SEWER
- EXISTING SANITARY SEWER
- PROPOSED WATERMAIN
- EXISTING WATERMAIN

SPECIFIC NOTES:

(1) CONNECT TO EXISTING WATERMAIN

(2) CONNECT TO EXISTING SANITARY SEWER

(3) CONSTRUCTION PER CITY STD. PLATE SS–3

(4) CONSTRUCTION PER CITY STD. PLATE W–1

NOTES:

1. STATIONS AND OFFSETS ARE BASED ON ℄ CHANKAHDA TR.
2. CONTRACTOR SHALL FIELD VERIFY ALL EXISTING WATERMAIN, WATER SERVICE CONNECTIONS, AND SANITARY SEWER.
3. SEE SHEETS 149 – 152 FOR WATERMAIN PROFILES.
4. SEE SHEETS 154 – 155 FOR SANITARY SEWER PROFILES.

No.	Date	Revisions	App.

DRAWING NAME: CHANKAHDA_PH3_UtilPlanProfile.dwg

DESIGNED BY:	JWB
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CHADD B. LARSON, PE

DATE: 02/07/2025 MN LIC. NO. 41864

City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
UTILITY PLAN AND PROFILE
STA. 170+50 TO STA. 184+50

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155–210–003
S.A.P.	

SHEET NO. 145 / 354

℄ ANNAPOLIS LN

MATCH LINE 184+50

ADJUST SANITARY SEWER MANHOLE INPLACE ELEV. 973.41 PROP ELEV. 972.23

6" GATE VALVE (1) STA. 185+24.23, 42.69 LT

8" X 6" REDUCER STA. 185+24.16, 39.69 LT

16" X 8" CROSS (1) STA. 185+24.10, 36.81 LT

(1) ADJUST GATE VALVE INPLACE ELEV. 972.96 PROP ELEV. 972.39

(1) 8" GATE VALVE STA. 185+22.43, 48.26 RT

ADJUST SANITARY SEWER MANHOLE INPLACE ELEV. 972.25 PROP ELEV. 972.22

HYDRANT STA. 185+35.91, 41.52 RT

3LF – 6" PVC

6" GATE VALVE STA. 185+33.07, 41.42 RT

11LF – 6" PVC

8" X 6" TEE STA. 185+22.55, 41.66 RT

PE

CONSTRUCTION LIMITS

INPLACE R/W

INPLACE D&U ESMT

℄ CHANKAHDA TR

CHANKAHDA TR

ANNAPOLIS LN

MATCH LINE 191+50

13700 13705 13640 13635 13720 13710 13705 13630 13620

LEGEND

- PROPOSED SANITARY SEWER
- EXISTING SANITARY SEWER
- PROPOSED WATERMAIN
- EXISTING WATERMAIN

SPECIFIC NOTES:

(1) CONNECT TO EXISTING WATERMAIN

(2) CONNECT TO EXISTING SANITARY SEWER

(3) CONSTRUCTION PER CITY STD. PLATE SS–3

(4) CONSTRUCTION PER CITY STD. PLATE W–1

NOTES:

1. STATIONS AND OFFSETS ARE BASED ON ℄ CHANKAHDA TR.
2. CONTRACTOR SHALL FIELD VERIFY ALL EXISTING WATERMAIN, WATER SERVICE CONNECTIONS, AND SANITARY SEWER.
3. SEE SHEETS 149 – 152 FOR WATERMAIN PROFILES.
4. SEE SHEETS 154 – 155 FOR SANITARY SEWER PROFILES.

0 15 30 60
HORIZONTAL SCALE IN FEET

℄ YUCCA LN

℄ CHANKAHDA TR

MATCH LINE 191+50

MATCH LINE 198+50

8" GATE VALVE STA. 195+64.57, 26.57 LT

ADJUST GATE VALVE INPLACE ELEV. 966.95 PROP ELEV. 967.22

ADJUST GATE VALVE INPLACE ELEV. 966.60 PROP ELEV. 966.62

16" GATE VALVE (1) STA. 196+71.31, 39.71 LT

16" 22.5° BEND STA. 196+77.38, 39.51 LT

16" 22.5° BEND STA. 197+53.65, 3.91 LT

INPLACE R/W

CONSTRUCTION LIMITS

CURB STOP & BOX STA. 195+46.63, 72.28 RT

17LF – 1" TYPE PE PIPE SERVICE IS FOR WATERMAIN TESTING. LOCATION OF SERVICE IS TO BE COORDINATED WITH FIELD ENGINEER.

(1) 8" GATE VALVE STA. 195+63.07, 75.49 RT

CHANKAHDA TR

YUCCA LN

13625 5915 5905 13620 13610 13600 13590

0 15 30 60
HORIZONTAL SCALE IN FEET

No.	Date	Revisions	App.

DRAWING NAME: CHANKAHDA_PH3_UtilPlanProfile.dwg

DESIGNED BY:	JWB
DRAWN BY:	RGS
CHECKED BY:	CBL
DATE:	02/07/2025
PROJECT NO.	160662010

Kimley»Horn
767 EUSTIS STREET, SUITE 100, ST. PAUL, MN 55114
PHONE: 651–645–4197
WWW.KIMLEY–HORN.COM

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CHADD B. LARSON, PE

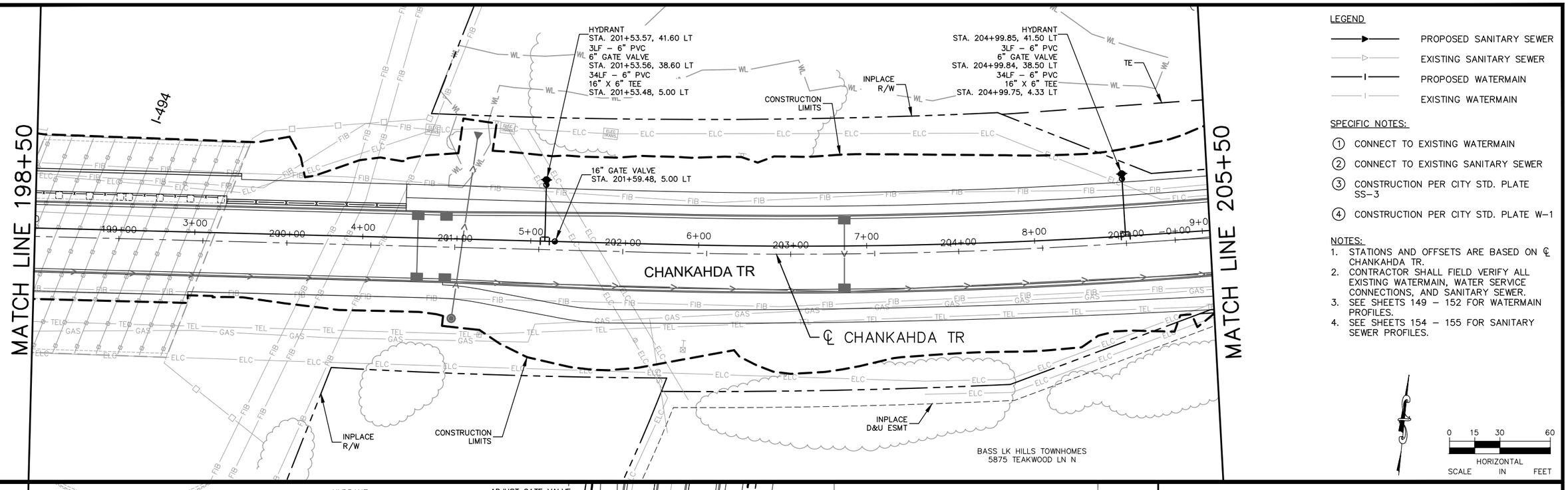
DATE: 02/07/2025 MN LIC. NO. 41864

City of Plymouth

CHANKAHDA TRAIL RECONSTRUCTION PHASE 3
CHANKAHDA TR
UTILITY PLAN AND PROFILE
STA. 184+50 TO STA. 198+50

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155–210–003
S.A.P.	

SHEET NO. 146 / 354



No.	Date	Revisions	App.

DRAWING NAME: CHANKAHDA_PH3_UtilPlanProfile.dwg

DESIGNED BY:	JWB
DRAWN BY:	RGS
CHECKED BY:	CBL
DATE:	02/07/2025
PROJECT NO.	160662010

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WWW.KIMLEY–HORN.COM

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CHADD B. LARSON, PE

DATE: 02/07/2025 MN LIC. NO. 41864

City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
UTILITY PLAN AND PROFILE
STA. 198+50 TO STA. 212+50

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155–210–003
S.A.P.	

SHEET NO. 147 / 354

LEGEND

PROPOSED SANITARY SEWER

EXISTING SANITARY SEWER

PROPOSED WATERMAIN

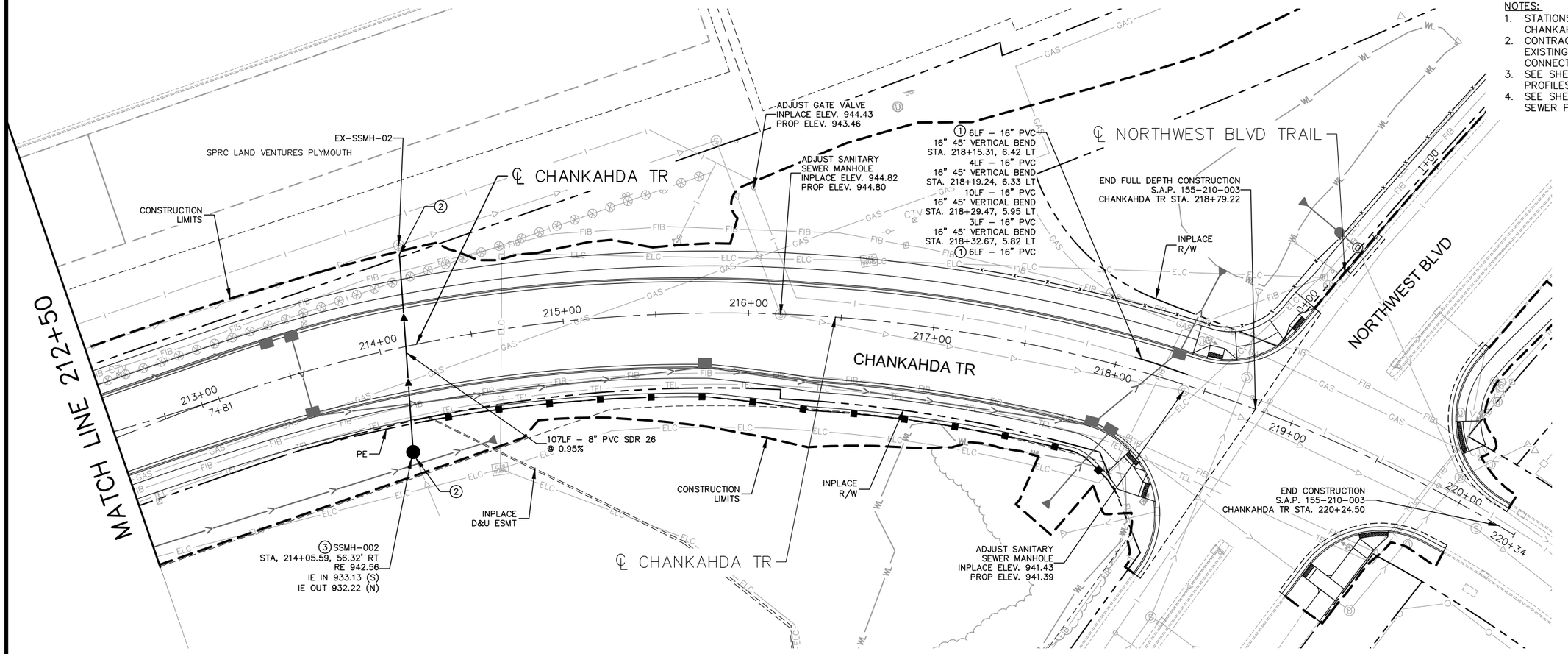
EXISTING WATERMAIN

SPECIFIC NOTES:

1. CONNECT TO EXISTING WATERMAIN
2. CONNECT TO EXISTING SANITARY SEWER
3. CONSTRUCTION PER CITY STD. PLATE SS-3
4. CONSTRUCTION PER CITY STD. PLATE W-1

NOTES:

1. STATIONS AND OFFSETS ARE BASED ON ℄ CHANKAHDA TR.
2. CONTRACTOR SHALL FIELD VERIFY ALL EXISTING WATERMAIN, WATER SERVICE CONNECTIONS, AND SANITARY SEWER.
3. SEE SHEETS 149 – 152 FOR WATERMAIN PROFILES.
4. SEE SHEETS 154 – 155 FOR SANITARY SEWER PROFILES.



0 15 30 60

HORIZONTAL SCALE IN FEET

No.	Date	Revisions	App.

DRAWING NAME: CHANKAHDA_PH3_UtilPlanProfile.dwg

DESIGNED BY:	JWB
DRAWN BY:	RGS
CHECKED BY:	CBL
DATE:	02/07/2025
PROJECT NO.	160662010

Kimley»Horn

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CHADD B. LARSON, PE

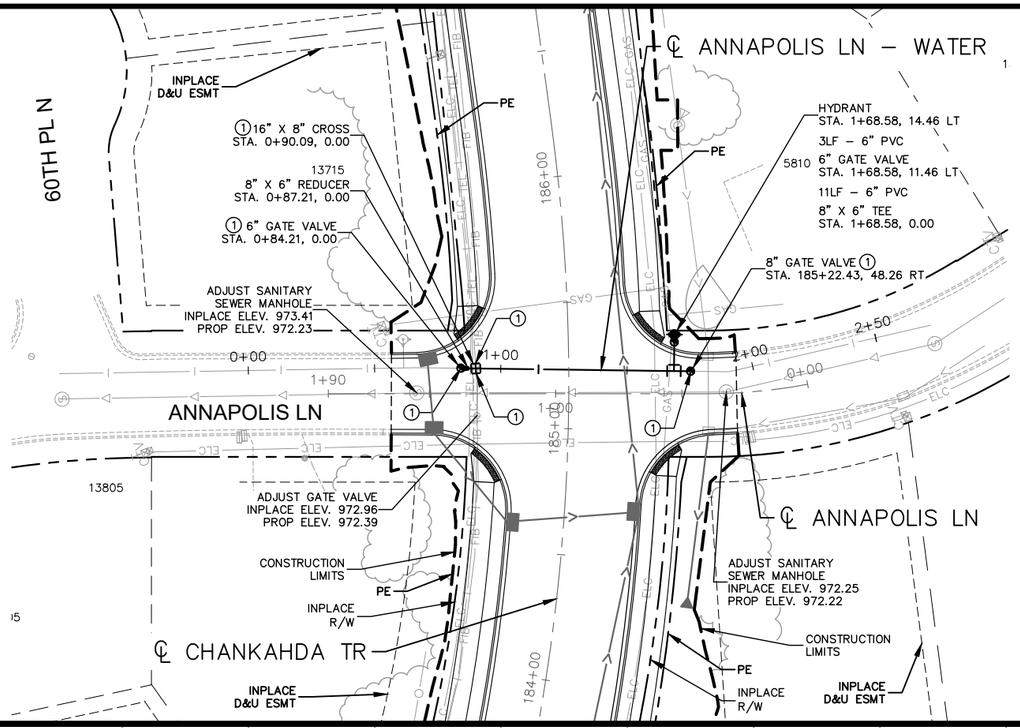
DATE: 02/07/2025 MN LIC. NO. 41864

City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
UTILITY PLAN AND PROFILE
STA. 212+50 TO STA. 220+24.50

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 148 / 354



LEGEND

- PROPOSED SANITARY SEWER
- EXISTING SANITARY SEWER
- PROPOSED WATERMAIN
- EXISTING WATERMAIN

SPECIFIC NOTES:

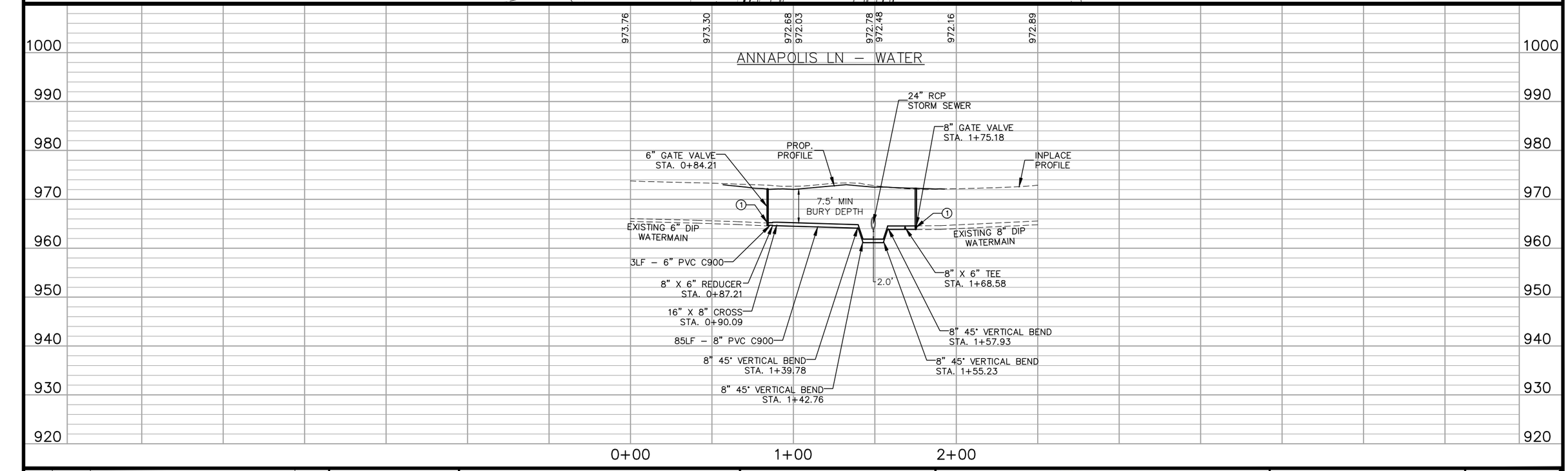
1. CONNECT TO EXISTING WATERMAIN
2. CONNECT TO EXISTING SANITARY SEWER
3. CONSTRUCTION PER CITY STD. PLATE SS–3
4. CONSTRUCTION PER CITY STD. PLATE W–1

NOTES:

1. STATIONS AND OFFSETS ARE BASED ON ℄ ANNAPOLIS LN – WATER.
2. CONTRACTOR SHALL FIELD VERIFY ALL EXISTING WATERMAIN, WATER SERVICE CONNECTIONS, AND SANITARY SEWER.

0 5 10 20
VERTICAL

0 15 30 60
HORIZONTAL
SCALE IN FEET



No.	Date	Revisions	App.

DRAWING NAME: CHANKAHDA_PH3_UtilPlanProfile.dwg

DESIGNED BY:	JWB
DRAWN BY:	RGS
CHECKED BY:	CBL
DATE:	02/07/2025
PROJECT NO.	160662010

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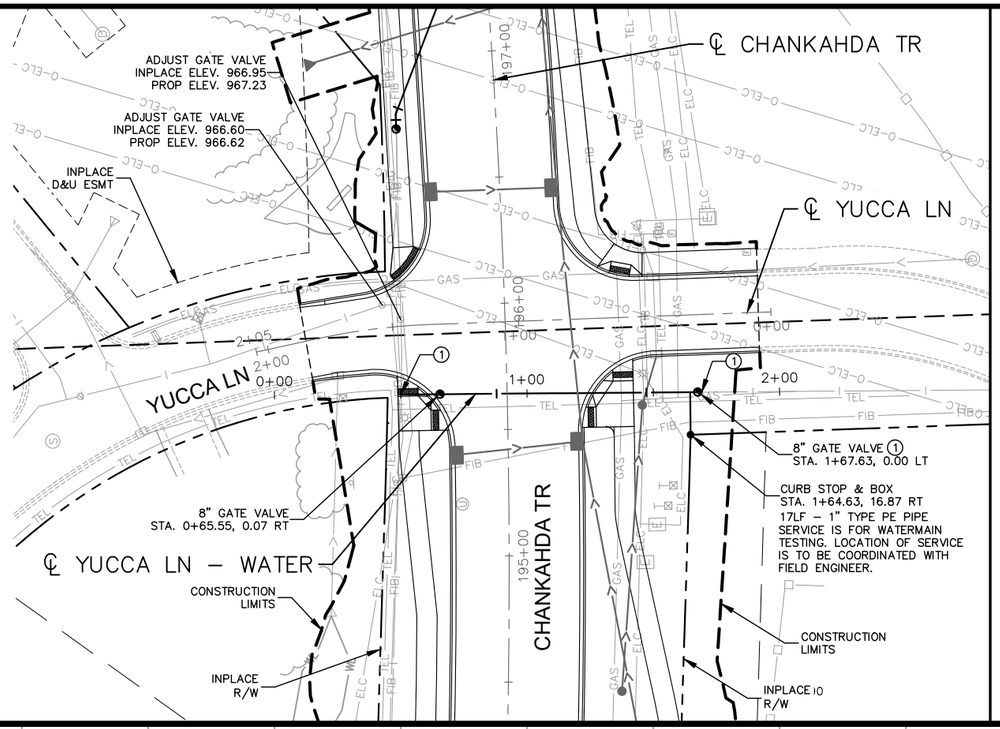
DATE: 02/07/2025 MN LIC. NO. 41864

City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
UTILITY PLAN AND PROFILE
STA. 0+00 TO STA. 2+50

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155–210–003
S.A.P.	

SHEET NO. 149 / 354



LEGEND

- PROPOSED SANITARY SEWER
- EXISTING SANITARY SEWER
- PROPOSED WATERMAIN
- EXISTING WATERMAIN

SPECIFIC NOTES:

① CONNECT TO EXISTING WATERMAIN

② CONNECT TO EXISTING SANITARY SEWER

③ CONSTRUCTION PER CITY STD. PLATE SS–3

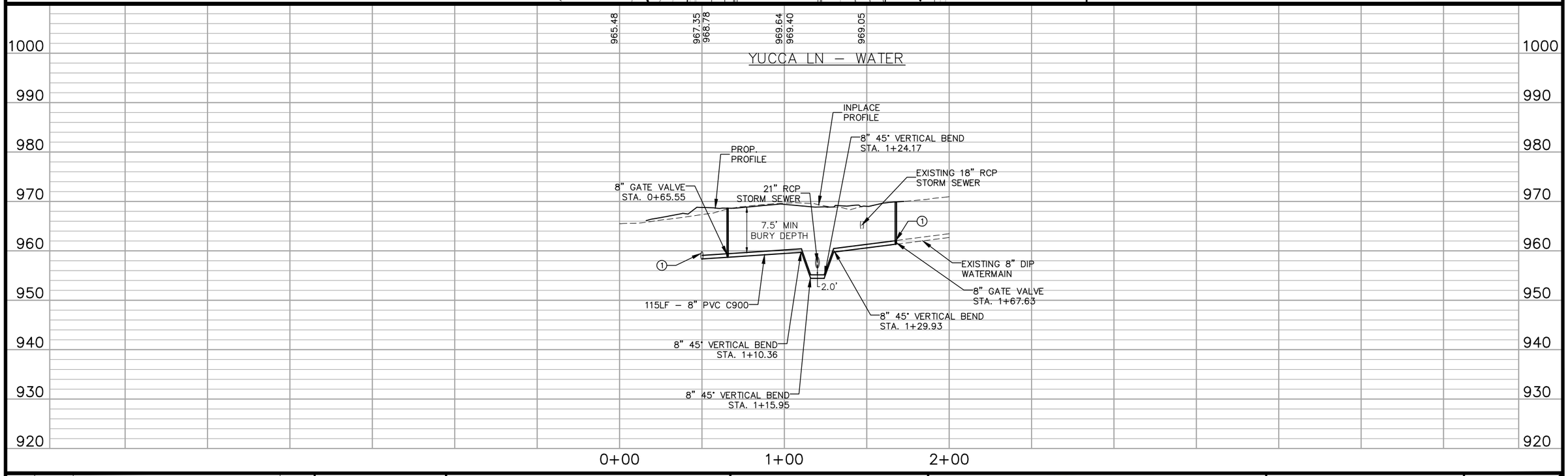
④ CONSTRUCTION PER CITY STD. PLATE W–1

NOTES:

1. STATIONS AND OFFSETS ARE BASED ON ℄ YUCCA LN – WATER.
2. CONTRACTOR SHALL FIELD VERIFY ALL EXISTING WATERMAIN, WATER SERVICE CONNECTIONS, AND SANITARY SEWER.

0 5 10 20
VERTICAL

0 15 30 60
HORIZONTAL
SCALE IN FEET



No.	Date	Revisions	App.

DRAWING NAME: CHANKAHDA_PH3_UtilPlanProfile.dwg

DESIGNED BY:	JWB
DRAWN BY:	RGS
CHECKED BY:	CBL
DATE:	02/07/2025
PROJECT NO.	160662010

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CHADD B. LARSON, PE

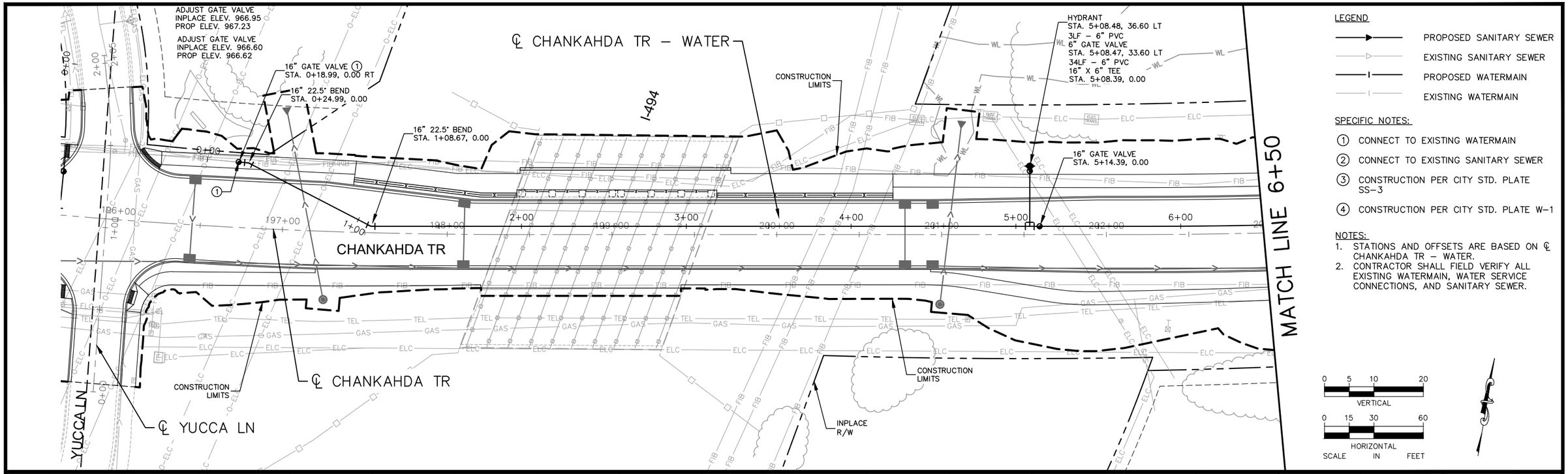
DATE: 02/07/2025 MN LIC. NO. 41864

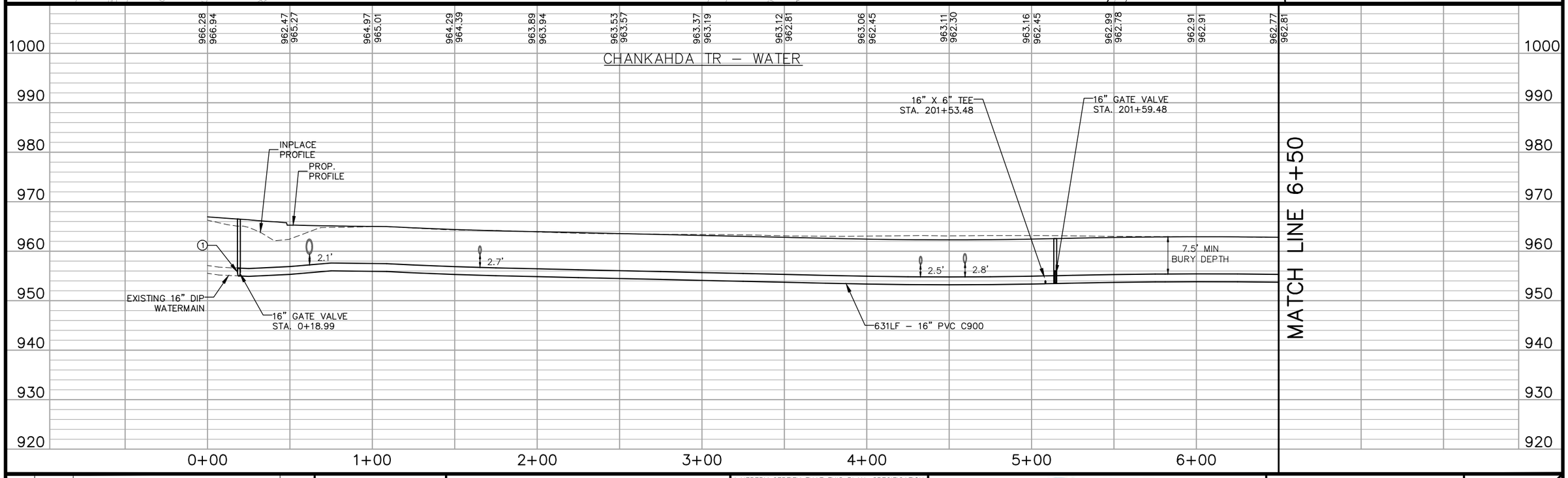
City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
UTILITY PLAN AND PROFILE
STA. 0+00 TO STA. 2+00

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155–210–003
S.A.P.	

SHEET NO. 150 / 354





No.	Date	Revisions	App.

DRAWING NAME: CHANKAHDA_PH3_UtilPlanProfile.dwg

DESIGNED BY:	JWB
DRAWN BY:	RGS
CHECKED BY:	CBL
DATE:	02/07/2025
PROJECT NO.	160662010

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PHONE: 651-645-4197
WWW.KIMLEY-HORN.COM

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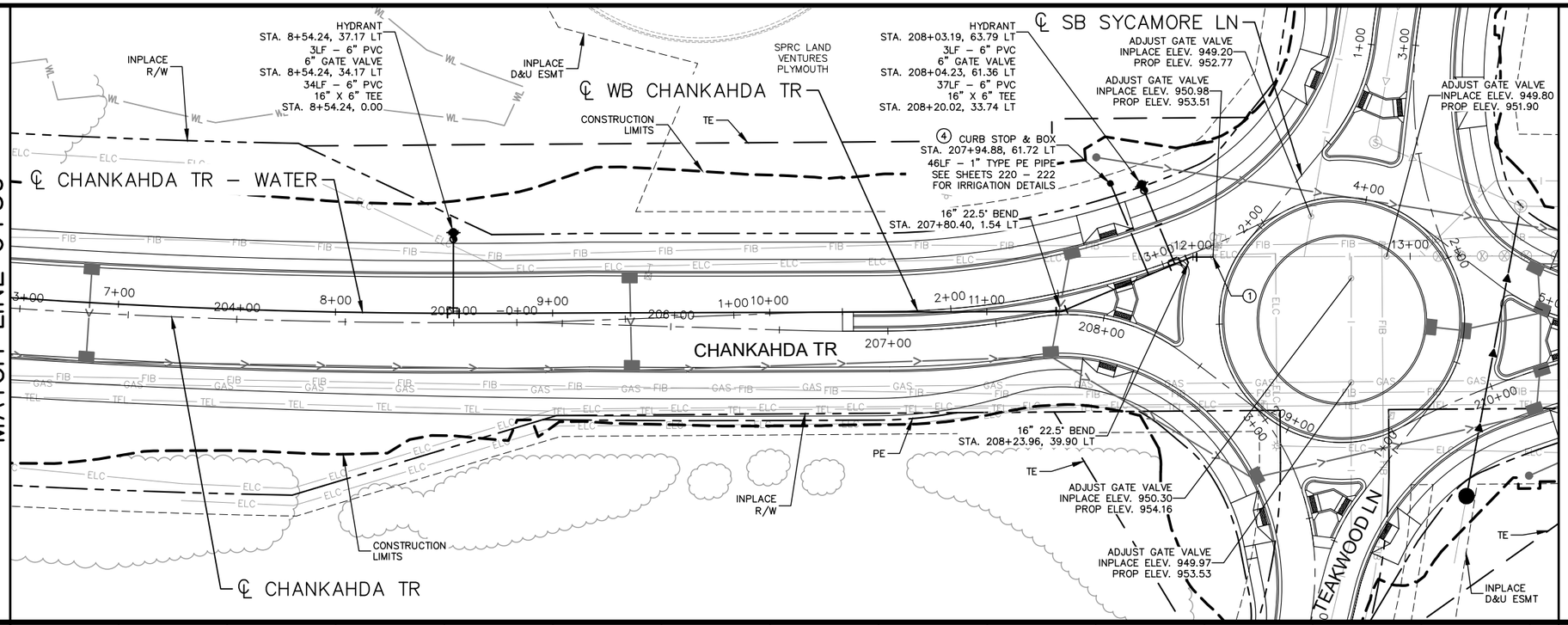
Chadd B. Larson
CHADD B. LARSON, PE
DATE: 02/07/2025 MN LIC. NO. 41864

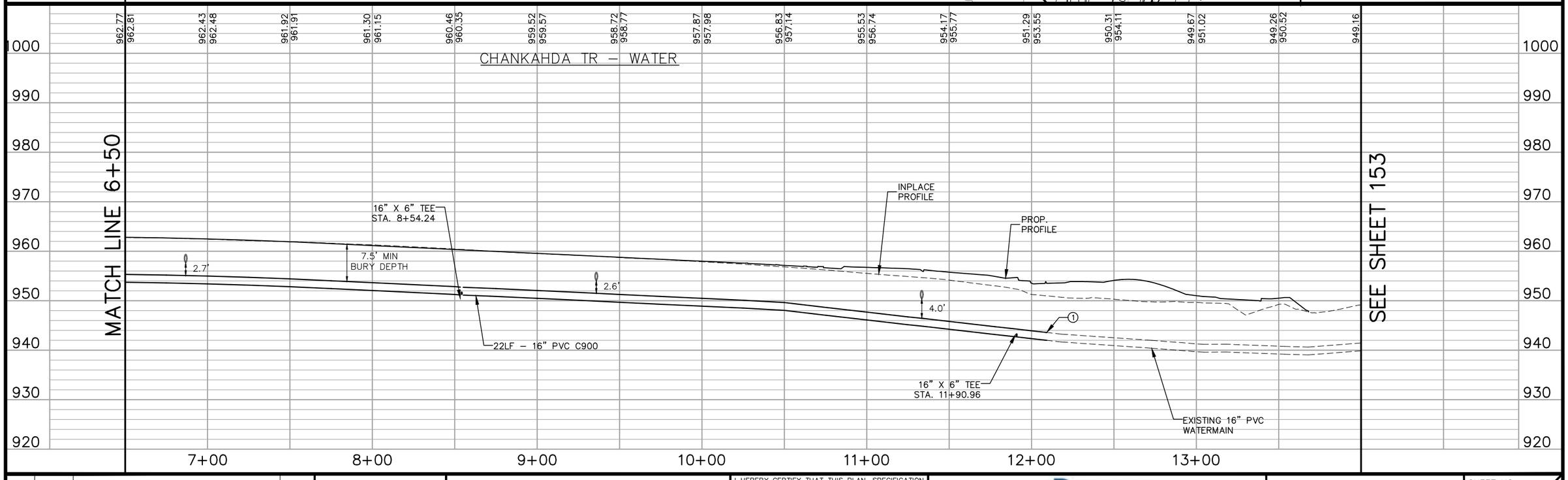
City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
UTILITY PLAN AND PROFILE
STA. 0+00 TO STA. 6+50

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 151 / 354





No.	Date	Revisions	App.

DRAWING NAME: CHANKAHDA_PH3_UtilPlanProfile.dwg

DESIGNED BY:	JWB
DRAWN BY:	RGS
CHECKED BY:	CBL
DATE:	02/07/2025
PROJECT NO.	160662010

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CHADD B. LARSON, PE

DATE: 02/07/2025 MN LIC. NO. 41864

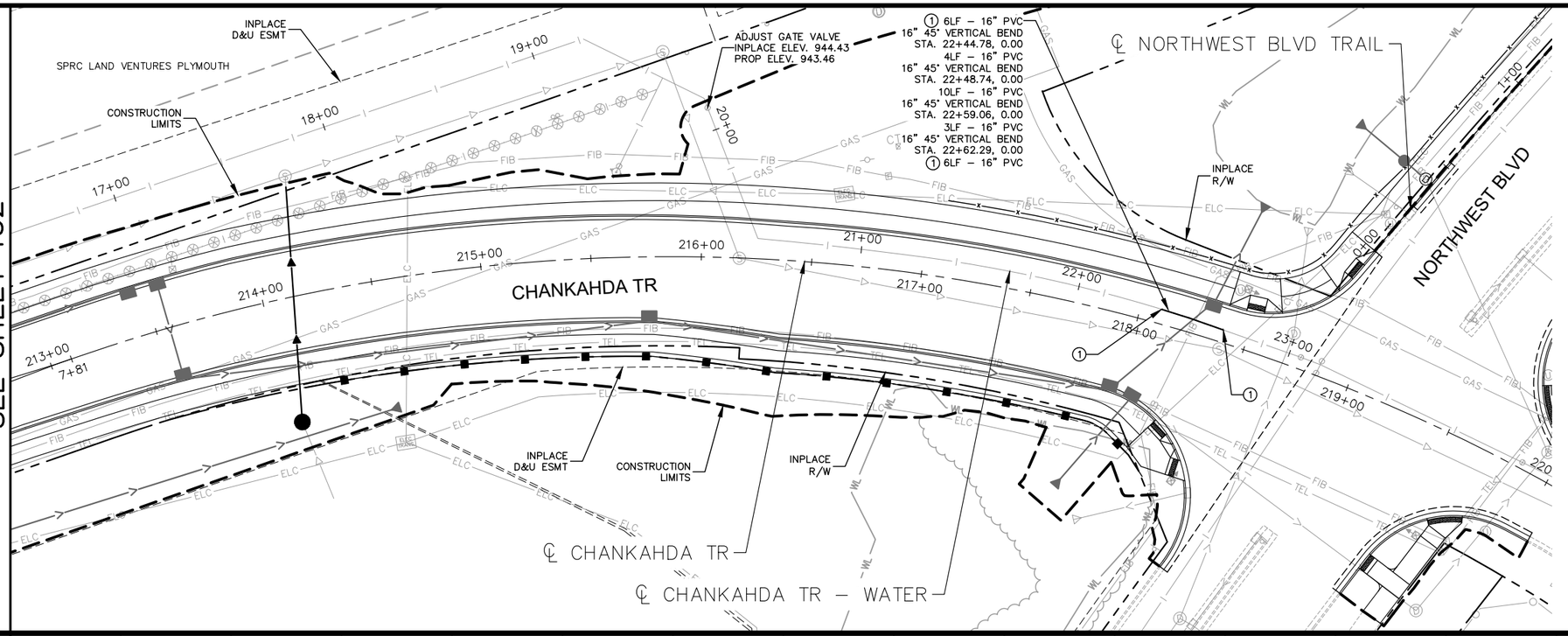
City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
UTILITY PLAN AND PROFILE
STA. 6+50 TO STA. 12+50

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155–210–003
S.A.P.	

SHEET NO. 152 / 354

SEE SHEET 152



LEGEND

- PROPOSED SANITARY SEWER
- EXISTING SANITARY SEWER
- PROPOSED WATERMAIN
- EXISTING WATERMAIN

SPECIFIC NOTES:

① CONNECT TO EXISTING WATERMAIN

② CONNECT TO EXISTING SANITARY SEWER

③ CONSTRUCTION PER CITY STD. PLATE SS–3

④ CONSTRUCTION PER CITY STD. PLATE W–1

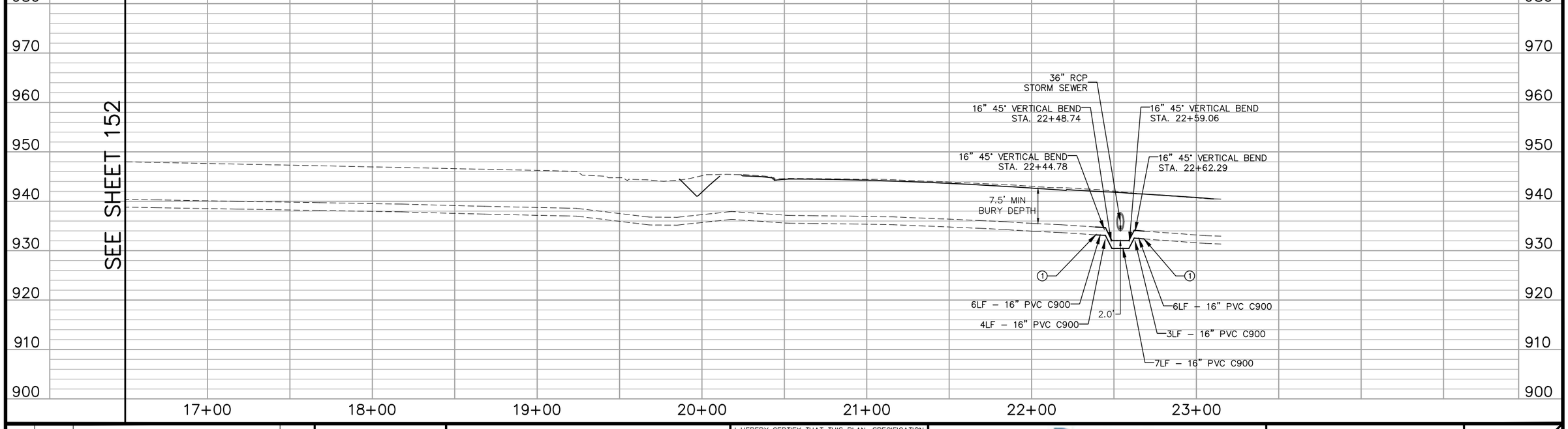
NOTES:

1. STATIONS AND OFFSETS ARE BASED ON ℄ CHANKAHDA TR – WATER.
2. CONTRACTOR SHALL FIELD VERIFY ALL EXISTING WATERMAIN, WATER SERVICE CONNECTIONS, AND SANITARY SEWER.

0 5 10 20
VERTICAL

0 15 30 60
HORIZONTAL
SCALE IN FEET

SEE SHEET 152



No.	Date	Revisions	App.

DRAWING NAME: CHANKAHDA_PH3_UtilPlanProfile.dwg

DESIGNED BY:	JWB
DRAWN BY:	RGS
CHECKED BY:	CBL
DATE:	02/07/2025
PROJECT NO.	160662010

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CHADD B. LARSON, PE

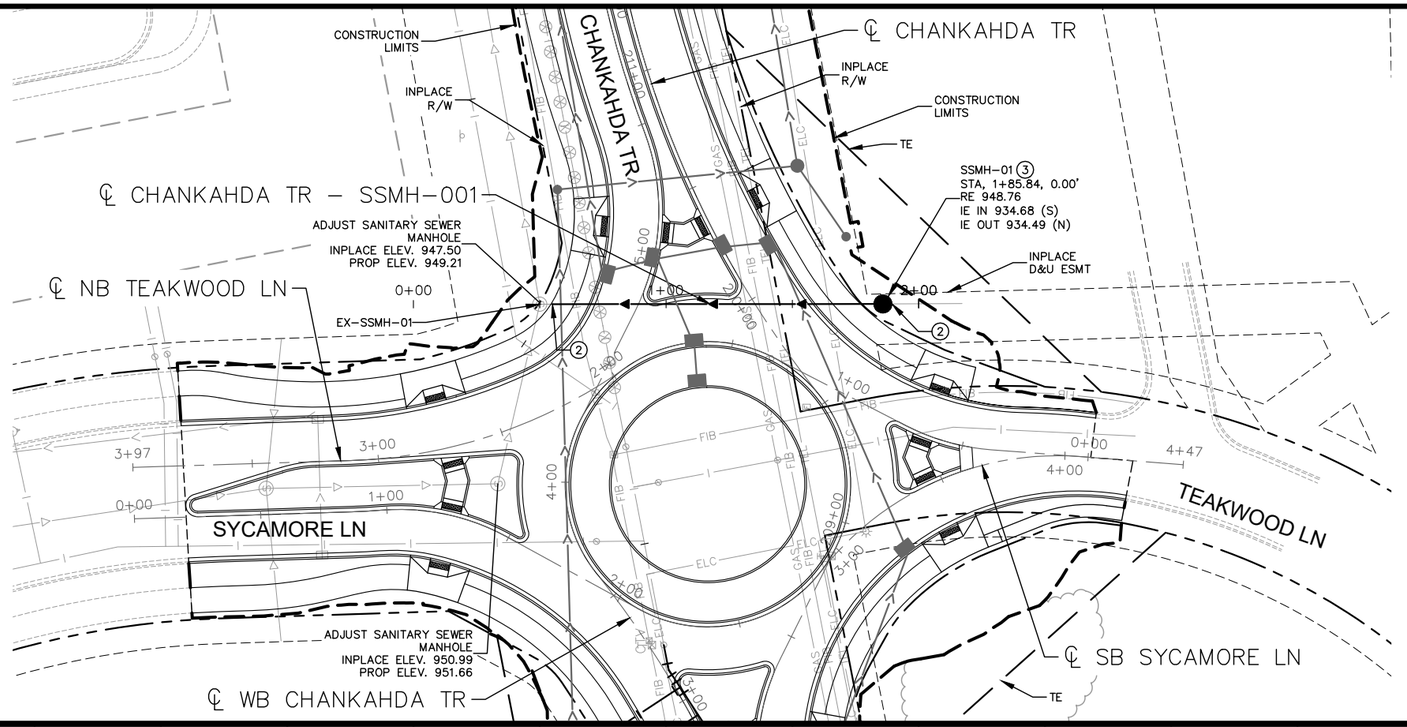
DATE: 02/07/2025 MN LIC. NO. 41864

City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
UTILITY PLAN AND PROFILE
STA. 16+50 TO STA. 23+00

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155–210–003
S.A.P.	

SHEET NO. 153 / 354



LEGEND

- PROPOSED SANITARY SEWER
- EXISTING SANITARY SEWER
- PROPOSED WATERMAIN
- EXISTING WATERMAIN

SPECIFIC NOTES:

① CONNECT TO EXISTING WATERMAIN

② CONNECT TO EXISTING SANITARY SEWER

③ CONSTRUCTION PER CITY STD. PLATE SS–3

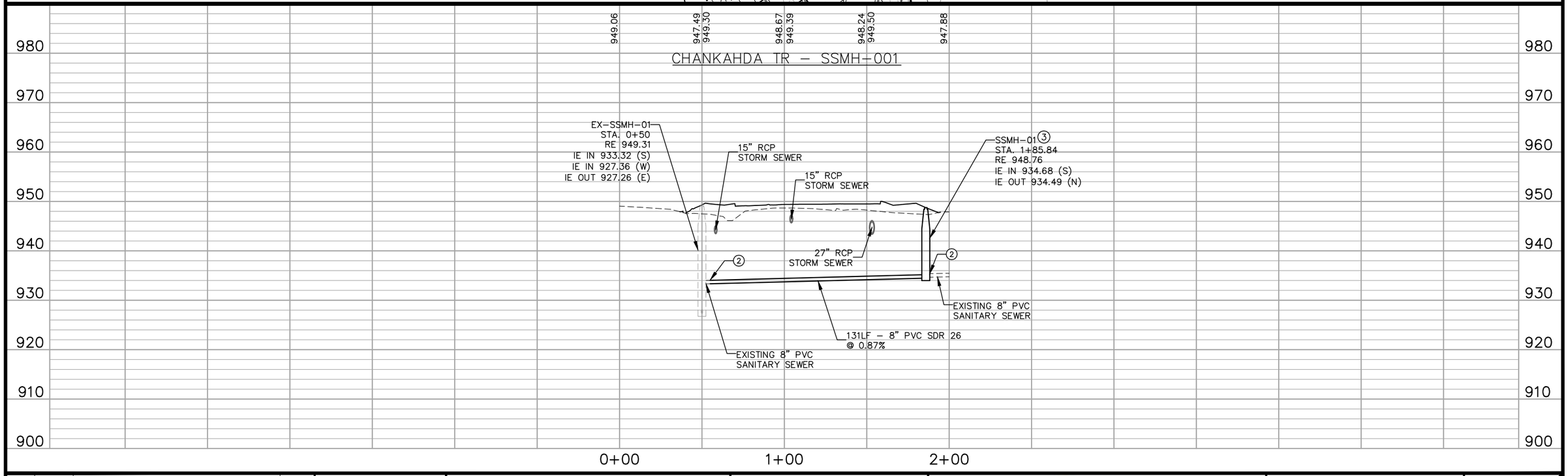
④ CONSTRUCTION PER CITY STD. PLATE W–1

NOTES:

1. STATIONS AND OFFSETS ARE BASED ON ℄ CHANKAHDA TR – SSMH–01.
2. CONTRACTOR SHALL FIELD VERIFY ALL EXISTING WATERMAIN, WATER SERVICE CONNECTIONS, AND SANITARY SEWER.

0 5 10 20
VERTICAL

0 15 30 60
HORIZONTAL
SCALE IN FEET



No.	Date	Revisions	App.

DRAWING NAME: CHANKAHDA_PH3_UtilPlanProfile.dwg

DESIGNED BY:	JWB
DRAWN BY:	RGS
CHECKED BY:	CBL
DATE:	02/07/2025
PROJECT NO.	160662010

Kimley»Horn
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WWW.KIMLEY–HORN.COM

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CHADD B. LARSON, PE

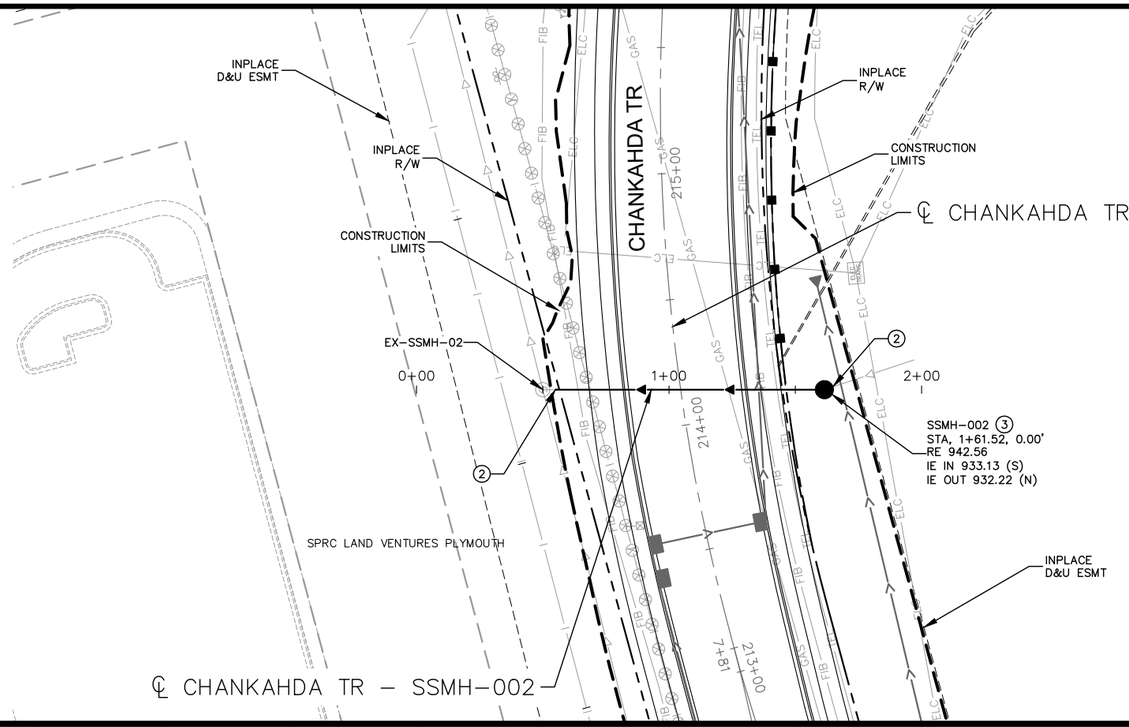
DATE: 02/07/2025 MN LIC. NO. 41864

City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
UTILITY PLAN AND PROFILE
STA. 0+00 TO STA. 2+00

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155–210–003
S.A.P.	

SHEET NO. 154 / 354



LEGEND

- PROPOSED SANITARY SEWER
- EXISTING SANITARY SEWER
- PROPOSED WATERMAIN
- EXISTING WATERMAIN

SPECIFIC NOTES:

① CONNECT TO EXISTING WATERMAIN

② CONNECT TO EXISTING SANITARY SEWER

③ CONSTRUCTION PER CITY STD. PLATE SS-3

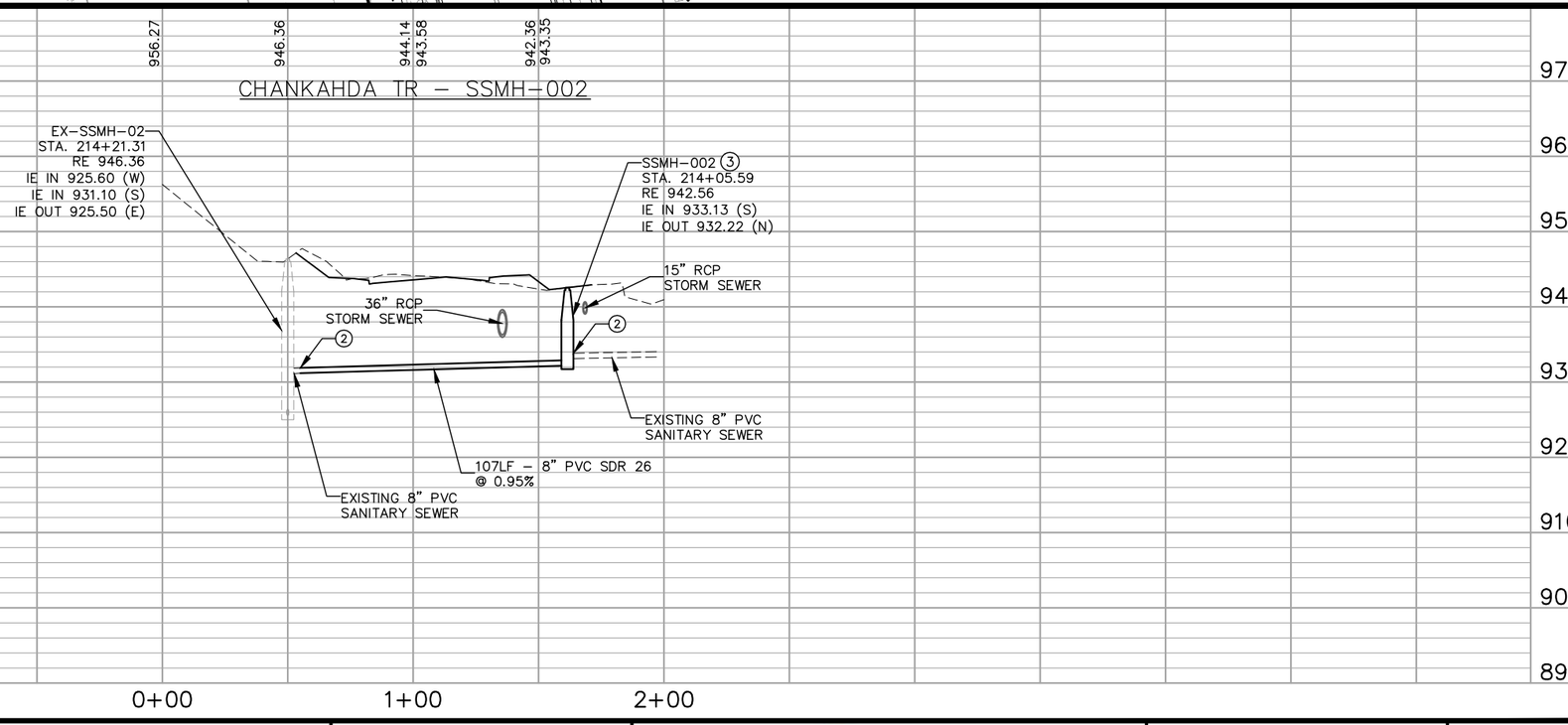
④ CONSTRUCTION PER CITY STD. PLATE W-1

NOTES:

1. STATIONS AND OFFSETS ARE BASED ON ℄ CHANKAHDA TR – SSMH-02.
2. CONTRACTOR SHALL FIELD VERIFY ALL EXISTING WATERMAIN, WATER SERVICE CONNECTIONS, AND SANITARY SEWER.

0 5 10 20
VERTICAL

0 15 30 60
HORIZONTAL
SCALE IN FEET



No.	Date	Revisions	App.

DRAWING NAME: CHANKAHDA_PH3_UtilPlanProfile.dwg

DESIGNED BY:	JWB
DRAWN BY:	RGS
CHECKED BY:	CBL
DATE:	02/07/2025
PROJECT NO.	160662010

Kimley»Horn
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PHONE: 651-645-4197
WWW.KIMLEY-HORN.COM

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CHADD B. LARSON, PE

DATE: 02/07/2025 MN LIC. NO. 41864

City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
UTILITY PLAN AND PROFILE
STA. 0+00 TO STA. 2+00

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 155 / 354

CHANKAHDA TRAIL RECONSTRUCTION PHASE 3 WATERMAIN STRUCTURE TABULATION

ALIGNMENT	STATION	LOCATION	DESCRIPTION	CONNECT TO EXISTING WATERMAIN	ADJUST GATE VALVE			CURB STOP & BOX	6" GATE VALVE	8" GATE VALVE	15" GATE VALVE	HYDRANT	DUCTILE IRON FITTINGS
				EACH	EACH	INPLACE ELEV.	PROPOSED ELEV.	EACH	EACH	EACH	EACH	EACH	LBS
CHANKAHDA TR	122+14.00	36.46 LT	ADJUST GATE VALVE		1	971.88	970.55						
CHANKAHDA TR	122+33.92	55.69 LT	ADJUST GATE VALVE		1	970.84	970.21						
CHANKAHDA TR	127+29.40	41.00 LT	HYDRANT									1	
CHANKAHDA TR	127+29.40	36.50 LT	6" GATE VALVE						1				
CHANKAHDA TR	127+28.40	28.27 LT	CONNECT TO EXISTING	1									
CHANKAHDA TR	131+45.61	35.58 LT	ADJUST GATE VALVE		1	962.91	961.93						
CHANKAHDA TR	131+53.64	47.74 LT	ADJUST GATE VALVE		1	962.32	962.01						
CHANKAHDA TR	131+54.47	27.76 LT	ADJUST GATE VALVE		1	962.94	962.02						
CHANKAHDA TR	139+84.33	43.60 LT	ADJUST GATE VALVE		1	959.78	960.70						
CHANKAHDA TR	140+97.89	59.92 LT	ADJUST GATE VALVE		1	961.44	961.04						
CHANKAHDA TR	141+19.87	92.56 LT	ADJUST GATE VALVE		1	961.57	961.67						
CHANKAHDA TR	162+96.42	41.64 RT	ADJUST GATE VALVE		1	966.95	967.11						
CHANKAHDA TR	163+14.72	84.63 LT	ADJUST GATE VALVE		1	969.34	968.74						
CHANKAHDA TR	168+75.31	31.82 LT	ADJUST GATE VALVE		1	964.96	966.02						
CHANKAHDA TR	168+81.74	41.50 LT	HYDRANT									1	
CHANKAHDA TR	168+81.74	38.50 LT	6" GATE VALVE						1				
CHANKAHDA TR	168+81.74	26.82 LT	CONNECT TO EXISTING	1									
CHANKAHDA TR	168+92.51	37.13 LT	ADJUST GATE VALVE		1	964.92	966.40						
CHANKAHDA TR	173+32.03	25.94 LT	ADJUST GATE VALVE		1	975.13	975.20						
CHANKAHDA TR	173+36.41	29.91 LT	ADJUST GATE VALVE		1	974.97	975.26						
CHANKAHDA TR	173+46.72	52.70 LT	HYDRANT									1	
CHANKAHDA TR	173+43.72	52.65 LT	6" GATE VALVE						1				
CHANKAHDA TR	173+36.10	52.50 LT	8" X 6" TEE										75
CHANKAHDA TR	173+35.89	58.48 LT	CONNECT TO EXISTING	1									
CHANKAHDA TR	173+36.12	46.55 LT	CONNECT TO EXISTING	1									
CHANKAHDA TR	178+57.83	33.40 LT	CONNECT TO EXISTING	1									
CHANKAHDA TR	178+63.33	39.62 LT	HYDRANT									1	
CHANKAHDA TR	178+63.45	36.62 LT	6" GATE VALVE						1				
CHANKAHDA TR	178+63.57	33.62 LT	16" X 6" TEE										229
CHANKAHDA TR	178+69.30	33.89 LT	CONNECT TO EXISTING	1									
CHANKAHDA TR	180+61.41	20.82 LT	16" PIPE PLUG										95
CHANKAHDA TR	185+04.52	36.21 LT	ADJUST GATE VALVE		1	972.96	972.39						
CHANKAHDA TR	185+24.23	42.69 LT	6" GATE VALVE						1				
CHANKAHDA TR	185+24.23	42.69 LT	CONNECT TO EXISTING	1									
CHANKAHDA TR	185+24.16	39.69 LT	8" X 6" REDUCER										32
CHANKAHDA TR	185+24.10	36.81 LT	16" X 8" CROSS										289
CHANKAHDA TR	185+24.10	36.81 LT	CONNECT TO EXISTING	2									
CHANKAHDA TR	185+23.08	12.87 RT	8" 45° VERTICAL BEND										49
CHANKAHDA TR	185+23.02	15.84 RT	8" 45° VERTICAL BEND										49
CHANKAHDA TR	185+22.79	28.32 RT	8" 45° VERTICAL BEND										49
CHANKAHDA TR	185+22.74	31.01 RT	8" 45° VERTICAL BEND										49
CHANKAHDA TR	185+38.25	42.08 RT	HYDRANT									1	
CHANKAHDA TR	185+33.41	41.96 RT	8" GATE VALVE						1				
CHANKAHDA TR	185+22.55	41.86 RT	8" X 6" TEE										75
CHANKAHDA TR	185+22.43	48.26 RT	8" GATE VALVE							1			
CHANKAHDA TR	195+46.63	72.28 RT	CURB STOP & BOX					1					
CHANKAHDA TR	195+64.81	42.12 LT	CONNECT TO EXISTING	1									
CHANKAHDA TR	195+64.57	26.57 LT	8" GATE VALVE							1			
CHANKAHDA TR	195+63.94	18.23 RT	8" 45° VERTICAL BEND										49
CHANKAHDA TR	195+63.81	23.82 RT	8" 45° VERTICAL BEND										49
CHANKAHDA TR	195+63.69	32.03 RT	8" 45° VERTICAL BEND										49
CHANKAHDA TR	195+63.63	37.80 RT	8" 45° VERTICAL BEND										49
CHANKAHDA TR	195+63.07	75.49 RT	8" GATE VALVE							1			
CHANKAHDA TR	195+63.07	75.49 RT	CONNECT TO EXISTING	1									
CHANKAHDA TR	195+94.90	41.27 LT	ADJUST GATE VALVE		1	968.95	967.22						
CHANKAHDA TR	196+00.99	48.45 LT	ADJUST GATE VALVE		1	966.60	966.62						
CHANKAHDA TR	196+71.31	39.71 LT	16" GATE VALVE								1		
CHANKAHDA TR	196+71.31	39.71 LT	CONNECT TO EXISTING	1									
CHANKAHDA TR	196+77.38	39.51 LT	16" 22.5° BEND										179
CHANKAHDA TR	197+53.65	3.91 LT	16" 22.5° BEND										179
CHANKAHDA TR	201+53.57	41.60 LT	HYDRANT									1	
CHANKAHDA TR	201+53.56	38.60 LT	6" GATE VALVE						1				
CHANKAHDA TR	201+53.48	5.00 LT	16" X 6" TEE										229
CHANKAHDA TR	201+59.48	5.00 LT	16" GATE VALVE								1		
CHANKAHDA TR	204+99.85	41.50 LT	HYDRANT									1	
CHANKAHDA TR	204+99.84	38.50 LT	6" GATE VALVE						1				
CHANKAHDA TR	204+99.75	4.33 LT	16" X 6" TEE										229
CHANKAHDA TR	207+80.40	1.54 LT	16" 22.5° BEND										179
CHANKAHDA TR	207+94.88	61.72 LT	CURB STOP & BOX					1					
CHANKAHDA TR	208+03.19	63.79 LT	HYDRANT									1	
CHANKAHDA TR	208+04.23	61.36 LT	6" GATE VALVE						1				
CHANKAHDA TR	208+20.02	33.74 LT	16" X 6" TEE										229
CHANKAHDA TR	208+23.96	39.90 LT	16" 22.5° BEND										179
CHANKAHDA TR	208+29.89	44.64 LT	CONNECT TO EXISTING	1									
CHANKAHDA TR	208+29.89	44.64 LT	ADJUST GATE VALVE		1	950.98	953.51						
CHANKAHDA TR	208+49.19	85.86 LT	ADJUST GATE VALVE		1	949.20	952.77						
CHANKAHDA TR	209+34.30	27.31 LT	ADJUST GATE VALVE		1	949.97	953.59						
CHANKAHDA TR	209+64.19	71.57 LT	ADJUST GATE VALVE		1	950.30	954.16						
CHANKAHDA TR	209+80.23	73.76 LT	ADJUST GATE VALVE		1	948.90	951.90						
CHANKAHDA TR	216+01.63	67.50 LT	ADJUST GATE VALVE		1	944.43	943.46						
CHANKAHDA TR	218+09.36	6.58 LT	CONNECT TO EXISTING	1									
CHANKAHDA TR	218+15.31	6.42 LT	16" 45° VERTICAL BEND										202
CHANKAHDA TR	218+19.24	6.33 LT	16" 45° VERTICAL BEND										202
CHANKAHDA TR	218+29.47	5.96 LT	16" 45° VERTICAL BEND										202
CHANKAHDA TR	218+32.67	5.83 LT	16" 45° VERTICAL BEND										202
CHANKAHDA TR	218+38.62	5.81 LT	CONNECT TO EXISTING	1									
TOTALS				15	23			2	9	3	2	8	3398

CHANKAHDA TRAIL RECONSTRUCTION PHASE 3 WATERMAIN PIPE TABULATION

ALIGNMENT	STATION BEGIN	LOCATION	STATION END	LOCATION	TYPE PE PIPE	PVC C900		
					1" DIA	6" DIA	8" DIA	16" DIA
					LIN FT	LIN FT	LIN FT	LIN FT
CHANKAHDA TR	127+29.40	28.27 LT	127+29.40	41.00 LT		13		
CHANKAHDA TR	168+81.74	26.82 LT	168+81.74	41.50 LT		15		
CHANKAHDA TR	173+36.10	52.50 LT	173+46.03	52.69 LT		11		
CHANKAHDA TR	173+36.19	46.50 LT	173+35.96	59.50 LT			12	
CHANKAHDA TR	178+57.83	33.40 LT	178+69.30	33.89 LT				12
CHANKAHDA TR	178+63.57	33.62 LT	178+63.33	39.62 LT		6		
CHANKAHDA TR	185+24.23	42.69 LT	185+24.16	39.69 LT		3		
CHANKAHDA TR	185+24.16	39.69 LT	185+24.10	36.81 LT			3	
CHANKAHDA TR	185+24.10	36.81 LT	185+22.79	28.32 RT			50	
CHANKAHDA TR	185+22.79	28.32 RT	185+22.74	31.01 RT			3	
CHANKAHDA TR	185+22.74	31.01 RT	185+22.79	28.32 RT			13	
CHANKAHDA TR	185+22.79	28.32 RT	185+22.74	31.01 RT			3	
CHANKAHDA TR	185+22.74	31.01 RT	185+22.55	41.66 RT			11	
CHANKAHDA TR	185+22.55	41.66 RT	185+22.43	48.26 RT			7	
CHANKAHDA TR	185+22.55	41.14 RT	185+36.25	42.06 RT		14		
CHANKAHDA TR	195+64.81	42.12 LT	195+64.57	26.57 LT			16	
CHANKAHDA TR	195+64.57	26.57 LT	195+63.94	18.23 RT			45	
CHANKAHDA TR	195+63.94	18.23 RT	195+63.81	23.82 RT			6	
CHANKAHDA TR	195+63.81	23.82 RT	195+63.69	32.03 RT			9	
CHANKAHDA TR	195+63.69	32.03 RT	195+63.63	37.80 RT			6	
CHANKAHDA TR	195+63.63	37.80 RT	195+53.11	72.49 RT			35	
CHANKAHDA TR	195+63.11	72.49 RT	195+46.63	72.28 RT	17			
CHANKAHDA TR	195+63.11	72.49 RT	195+63.07	75.49 RT			3	
CHANKAHDA TR	196+71.31	39.71 LT	196+77.38	39.51 LT				6
CHANKAHDA TR	196+77.38	39.51 LT	197+53.65	3.91 LT				90
CHANKAHDA TR	197+53.65	3.91 LT	201+53.48	5.00 LT				400
CHANKAHDA TR	201+53.48	5.00 LT	201+53.57	41.60 LT		37		
CHANKAHDA TR	201+53.48	5.00 LT	201+59.48	5.00 LT				6
CHANKAHDA TR	201+59.48	5.00 LT	204+99.75	4.33 LT				340
CHANKAHDA TR	204+99.75	4.33 LT	204+99.84	38.50 LT		38		
CHANKAHDA TR	204+99.75	4.33 LT	207+80.40	1.54 LT				281
CHANKAHDA TR	207+80.40	1.54 LT	208+12.98	24.63 LT				44
CHANKAHDA TR	208+12.98	24.63 LT	207+94.88	61.72 LT	46			
CHANKAHDA TR	208+12.98	24.63 LT	208+20.02	33.74 LT				13
CHANKAHDA TR	208+20.02	33.74 LT	208+03.19	63.79 LT		40		
CHANKAHDA TR	208+20.02	33.74 LT	208+23.96	39.90 LT				8
CHANKAHDA TR	208+23.96	39.90 LT	208+29.89	44.64 LT				10
CHANKAHDA TR	218+09.36	6.58 LT	218+19.24	6.33 LT				10
CHANKAHDA TR	218+19.24	6.33 LT	218+22.33	6.28 LT				4
CHANKAHDA TR	218+22.33	6.28 LT	218+29.47	5.95 LT				8
CHANKAHDA TR	218+29.47	5.96 LT	218+38.62	5.81 LT				10
TOTALS					63	177	222	1242

CHANKAHDA TRAIL RECONSTRUCTION PHASE 3 SANITARY SEWER TABULATION

ALIGNMENT	STATION	LOCATION	DESCRIPTION	ADJUST SANITARY SEWER MANHOLE			CONST SS-3 STRUCTURE DES 4007	CONNECT TO EXISTING SANITARY
				EACH	INPLACE ELEV.	PROPOSED ELEV.	EACH	EACH
CHANKAHDA TR	185+13.77	60.16 LT	EXISTING MANHOLE	1	973.41	972.23		
CHANKAHDA TR	195+14.79	32.40 RT	EXISTING MANHOLE	1	972.25	972.22		
CHANKAHDA TR	209+67.70	41.88 RT	SSMH-001			948.78	14.27	2
CHANKAHDA TR	209+93.03	124.09 LT	EXISTING MANHOLE	1	950.99	951.66		
CHANKAHDA TR	210+35.93	74.40 LT	EXISTING MANHOLE	1	947.49	949.31		
CHANKAHDA TR	214+05.59	56.32 RT	SSMH-002			942.56	10.34	2
CHANKAHDA TR	216+17.21	0.15 RT	EXISTING MANHOLE	1	944.82	944.80		
CHANKAHDA TR	218+39.37	3.23 RT	EXISTING MANHOLE	1	941.43	941.39		
TOTALS				6			24.61	4

CHANKAHDA TRAIL RECONSTRUCTION PHASE 3 SANITARY SEWER PIPE TABULATION

ALIGNMENT	STATION BEGIN	LOCATION	STATION END	LOCATION	PVC SDR 26
					8" DIA
					LIN FT
CHANKAHDA TR	209+97.70	41.88 RT	210+34.03	69.93 LT	112
CHANKAHDA TR	214+05.59	56.32 RT	214+20.69	49.14 LT	107
TOTALS					219

No.	Date	Revisions	App.

DRAWING NAME: CHANKAHDA_PH3_UtilPlanProfile.dwg

DESIGNED BY:	JWB
DRAWN BY:	RGS
CHECKED BY:	CBL
DATE:	02/07/2025
PROJECT NO.	160662010

Kimley»Horn
767 EUSTIS STREET, SUITE 100, ST, PAUL, MN 55114
PHONE: 651-645-4197
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CHADD B. LARSON, PE
DATE: 02/07/2025 MN LIC. NO. 41864

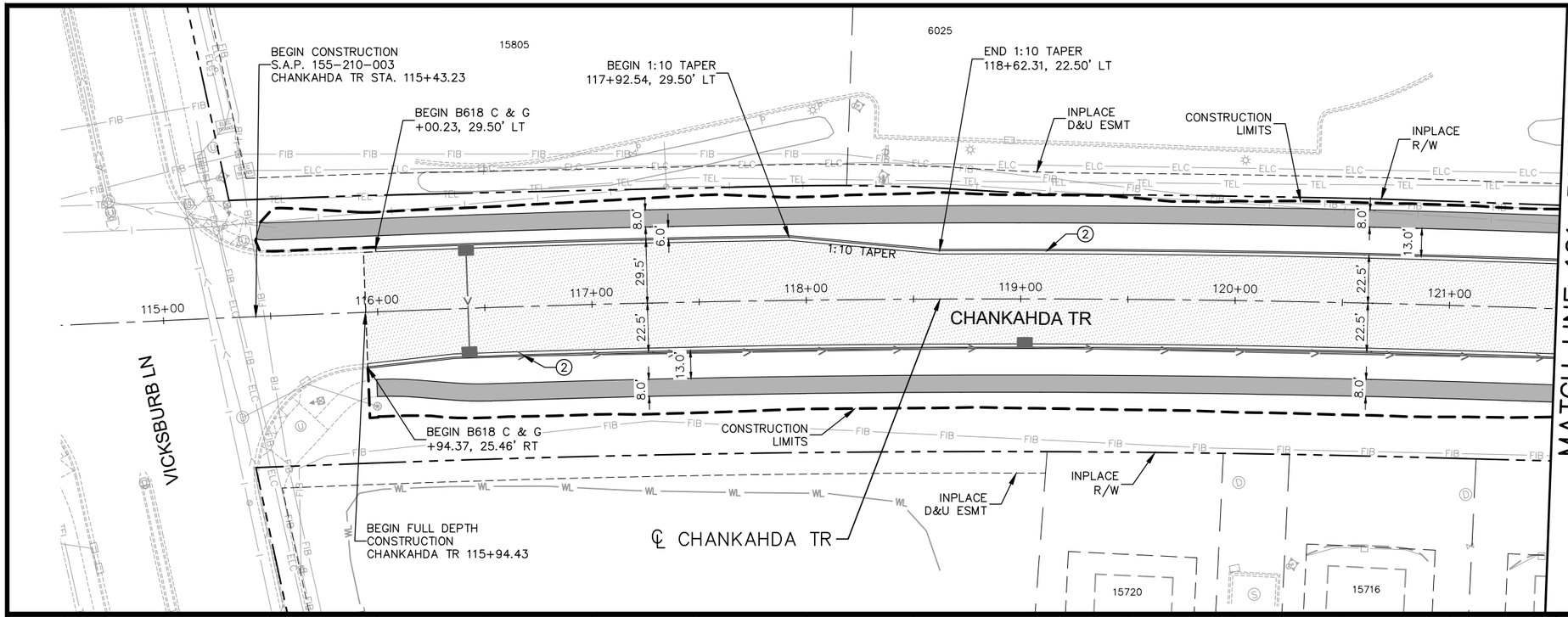
City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3

CHANKAHDA TR
UTILITY TABULATIONS

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 156 / 354



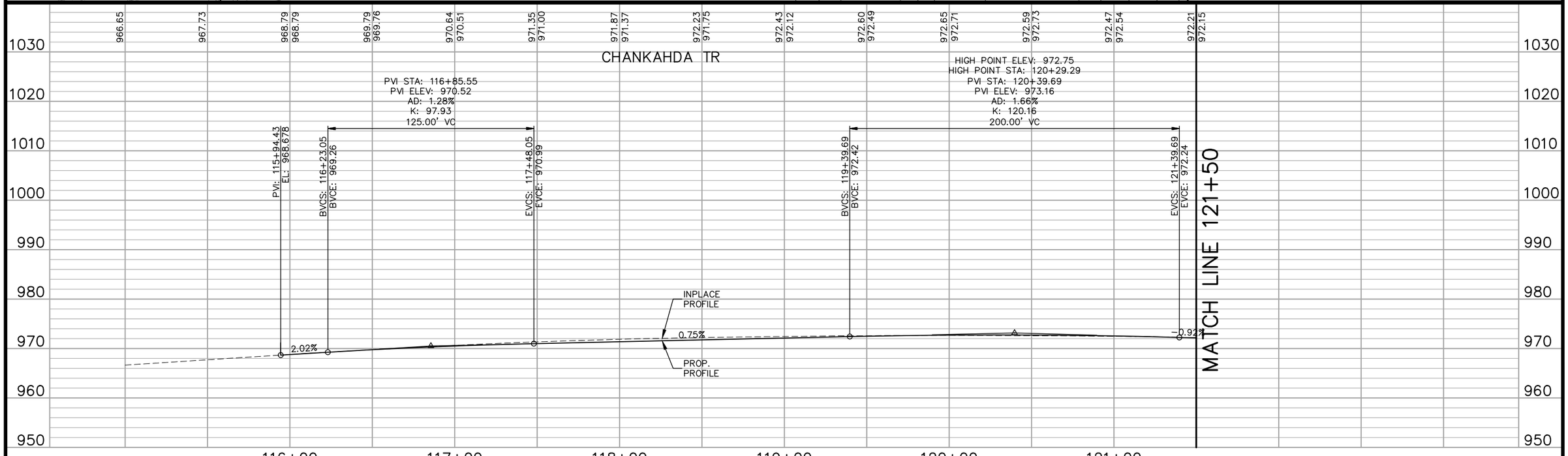
NOTES:
1. ALL DIMENSIONS ARE TO FACE OF CURB UNLESS OTHERWISE NOTED.
2. SEE SHEET 174–177 FOR ADDITIONAL AND SIDE STREET PROFILES.

LEGEND

① SURMOUNTABLE CURB AND GUTTER
② B618 CURB AND GUTTER
③ B612 CURB AND GUTTER
④ CURB TRANSITION
⑤ PEDESTRIAN CURB RAMP
⑥ CONCRETE APPROACH NOSE. SEE CITY STD. PLATE STRT–9
⑦ FENCE DESIGN SPECIAL – SPLIT RAIL. SEE CITY STD. PLATE STRT–26.
⑧ CHAIN LINK FENCE 60V–9322. SEE MNDOT STD. PLATE 9322
⑨ FENCE DESIGN SPECIAL – SEE PAGES 208–210 FOR DETAILS.

- BIT. PAVEMENT (INSET A)
- BIT TRAIL (INSET B)
- 4" CONC. WALK (INSET C)
- 6" CONC. WALK (INSET D)
- BIT. PAVEMENT (INSET E)
- 6" COLORED CONC. (INSET H)
- 8" COLORED CONC. (INSET F)
- BIT. PAVEMENT (INSET G)
- LIGHT POLE – BY OTHERS

HORIZONTAL SCALE IN FEET: 0 15 30 60
VERTICAL: 0 5 10 20



No.	Date	Revisions	App.

DRAWING NAME: CHANKAHDA_PH3_PlanProfile.dwg
DESIGNED BY: JWB
DRAWN BY: RGS
CHECKED BY: CBL
DATE: 02/07/2025
PROJECT NO. 160662010

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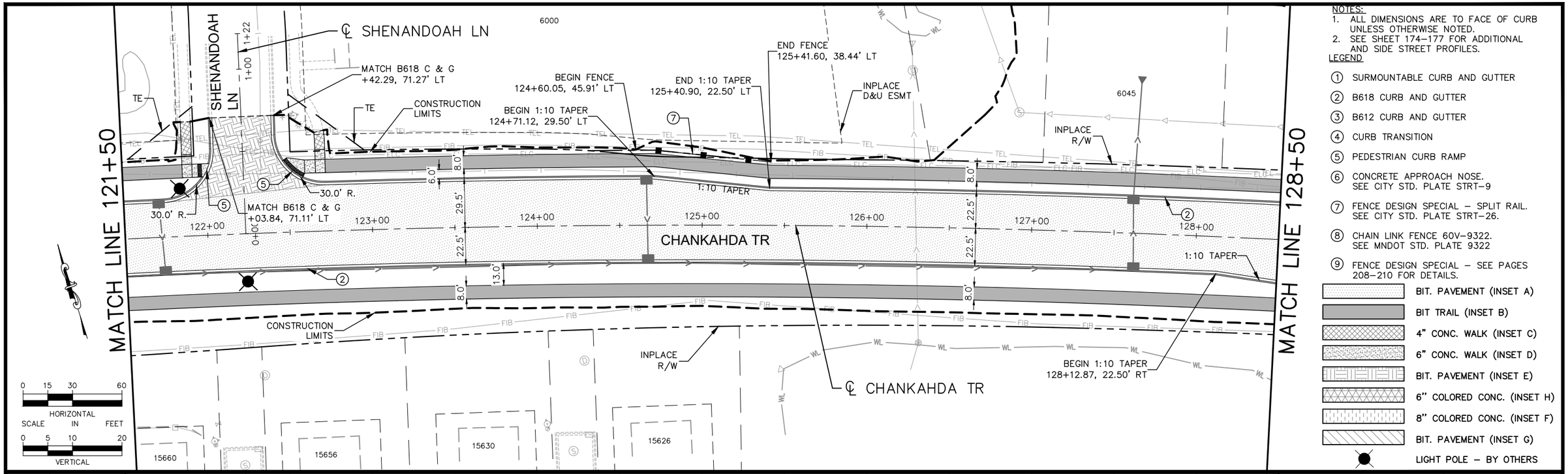
CHADD B. LARSON, PE
DATE: 02/07/2025 MN LIC. NO. 41864

City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
CONSTRUCTION PLAN AND PROFILE
STA. 115+43.23 TO STA. 121+50

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155–210–003
S.A.P.	

SHEET NO. 157 / 354

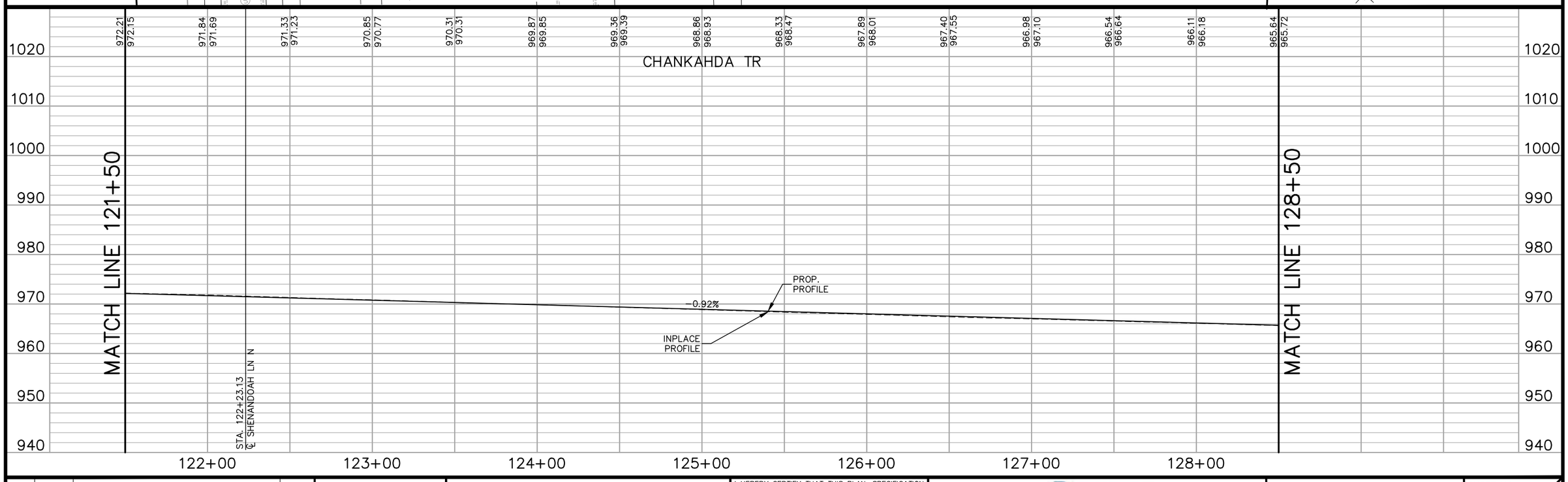


NOTES:
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2. SEE SHEET 174–177 FOR ADDITIONAL AND SIDE STREET PROFILES.

LEGEND

1. SURMOUNTABLE CURB AND GUTTER
2. B618 CURB AND GUTTER
3. B612 CURB AND GUTTER
4. CURB TRANSITION
5. PEDESTRIAN CURB RAMP
6. CONCRETE APPROACH NOSE. SEE CITY STD. PLATE STRT–9
7. FENCE DESIGN SPECIAL – SPLIT RAIL. SEE CITY STD. PLATE STRT–26.
8. CHAIN LINK FENCE 60V–9322. SEE MNDOT STD. PLATE 9322
9. FENCE DESIGN SPECIAL – SEE PAGES 208–210 FOR DETAILS.

- BIT. PAVEMENT (INSET A)
- BIT TRAIL (INSET B)
- 4" CONC. WALK (INSET C)
- 6" CONC. WALK (INSET D)
- BIT. PAVEMENT (INSET E)
- 6" COLORED CONC. (INSET H)
- 8" COLORED CONC. (INSET F)
- BIT. PAVEMENT (INSET G)
- LIGHT POLE – BY OTHERS



No.	Date	Revisions	App.

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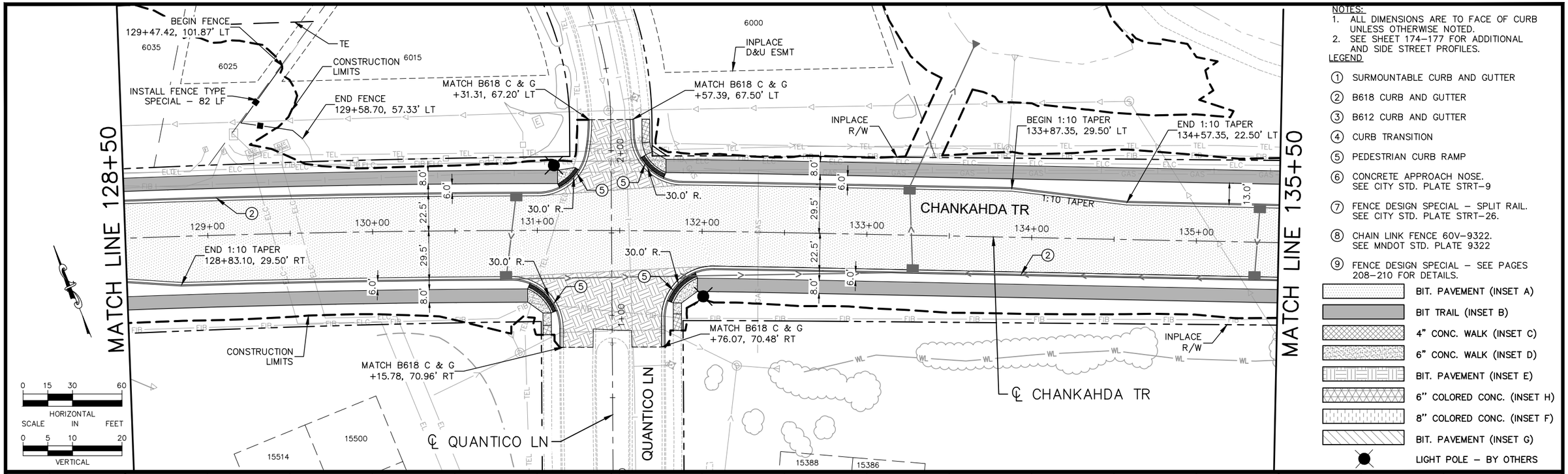
DATE: 02/07/2025 MN LIC. NO. 41864

City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
CONSTRUCTION PLAN AND PROFILE
STA. 121+50 TO STA. 128+50

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155–210–003
S.A.P.	

SHEET NO. 158 / 354



HORIZONTAL SCALE IN FEET: 0 15 30 60

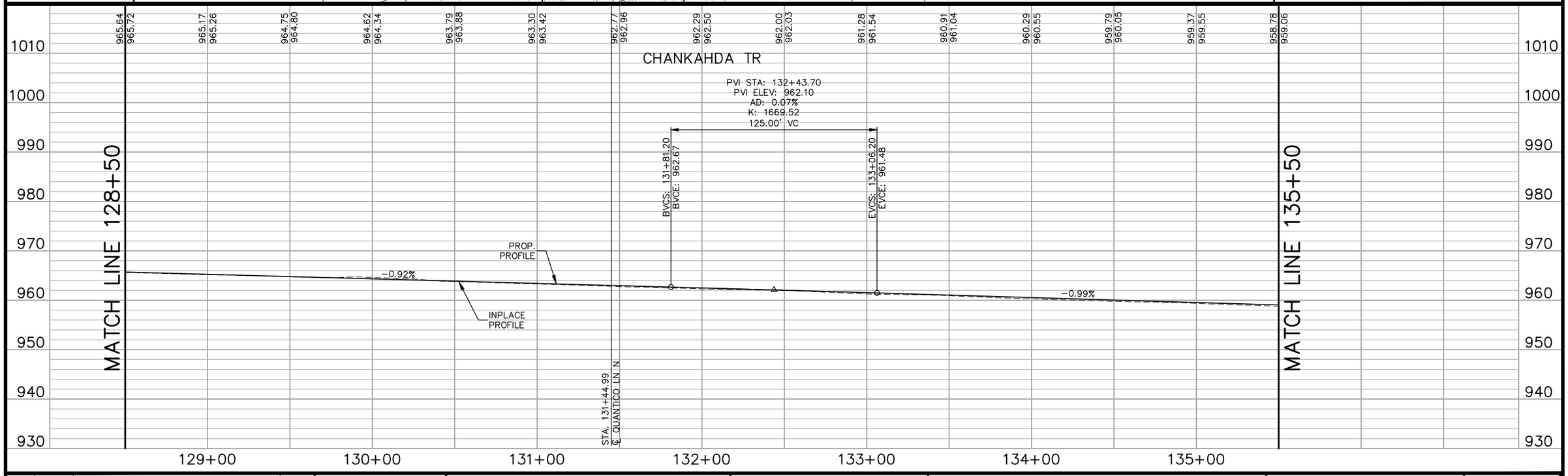
VERTICAL: 0 5 10 20

NOTES:
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LEGEND

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3. B612 CURB AND GUTTER
4. CURB TRANSITION
5. PEDESTRIAN CURB RAMP
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- BIT TRAIL (INSET B)
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- 6" CONC. WALK (INSET D)
- BIT. PAVEMENT (INSET E)
- 6" COLORED CONC. (INSET H)
- 8" COLORED CONC. (INSET F)
- BIT. PAVEMENT (INSET G)
- LIGHT POLE – BY OTHERS



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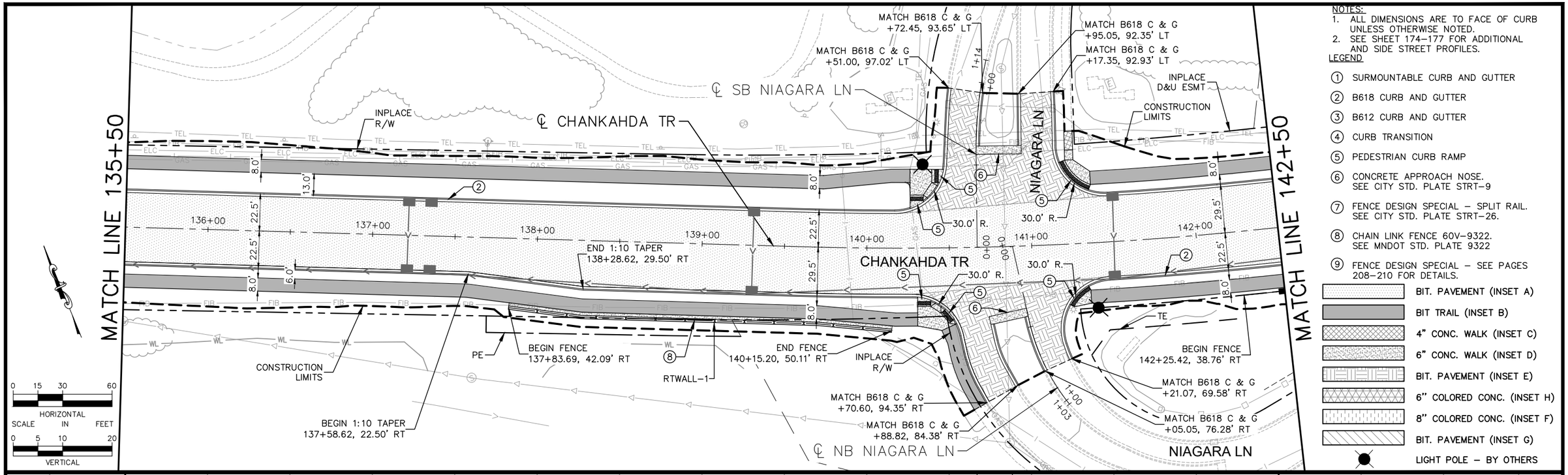
DATE: 02/07/2025 MN LIC. NO. 41864

City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
CONSTRUCTION PLAN AND PROFILE
STA. 128+50 TO STA. 135+50

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155–210–003
S.A.P.	

SHEET NO. 159 / 354

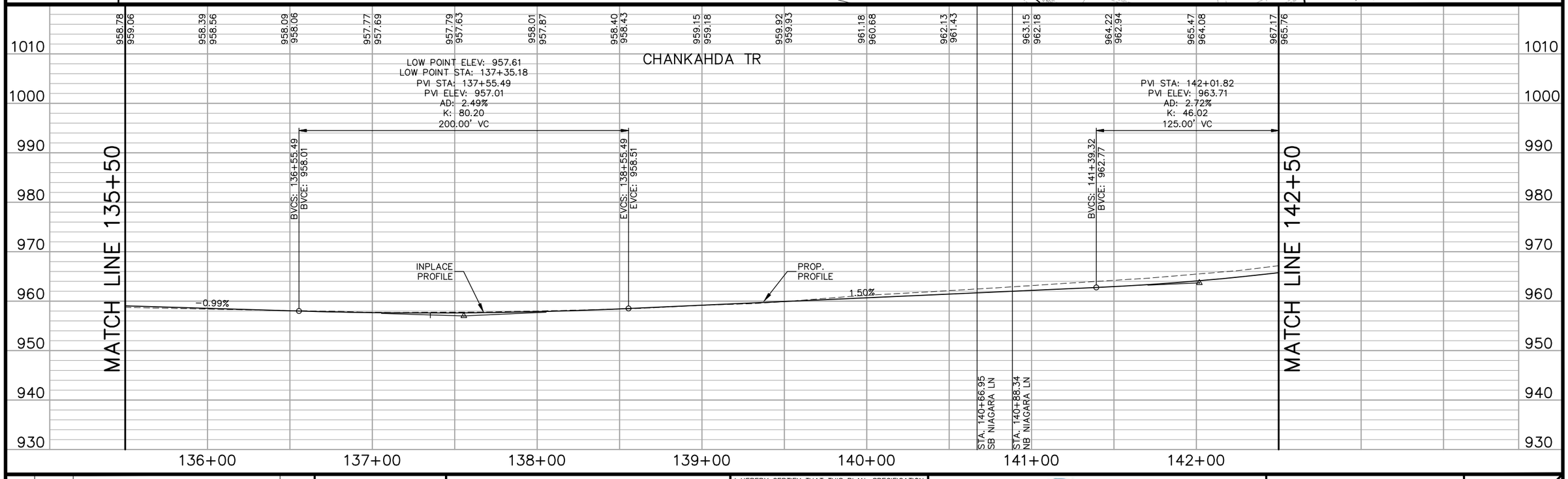


NOTES:
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2. SEE SHEET 174–177 FOR ADDITIONAL AND SIDE STREET PROFILES.

LEGEND

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- 8" COLORED CONC. (INSET F)
- BIT. PAVEMENT (INSET G)
- LIGHT POLE – BY OTHERS



No.	Date	Revisions	App.

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CHADD B. LARSON, PE

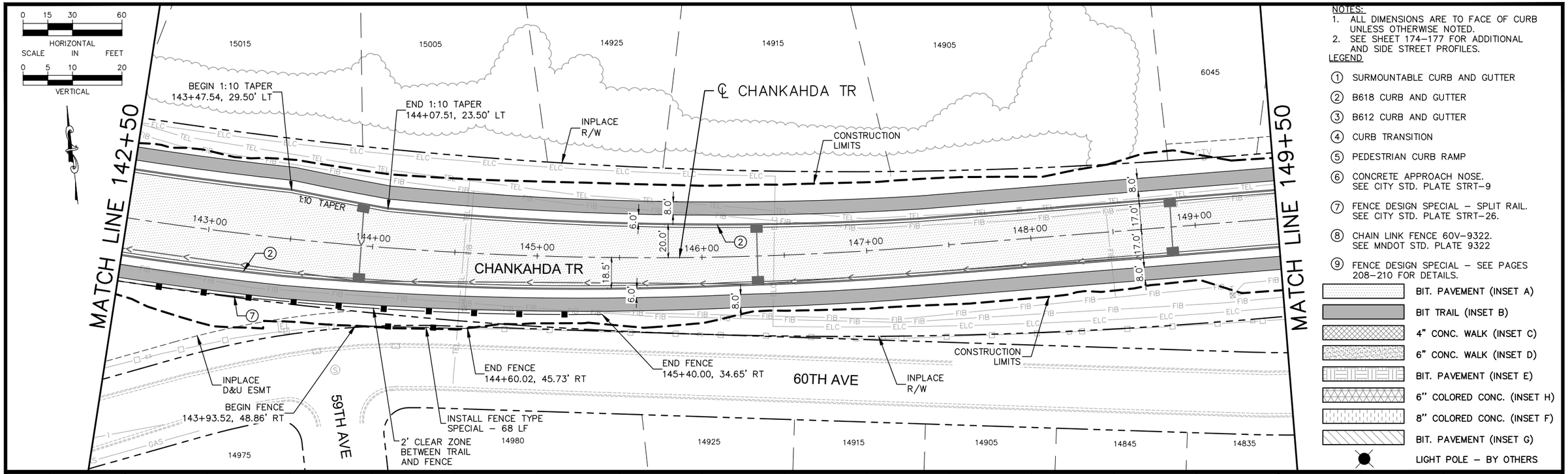
DATE: 02/07/2025 MN LIC. NO. 41864

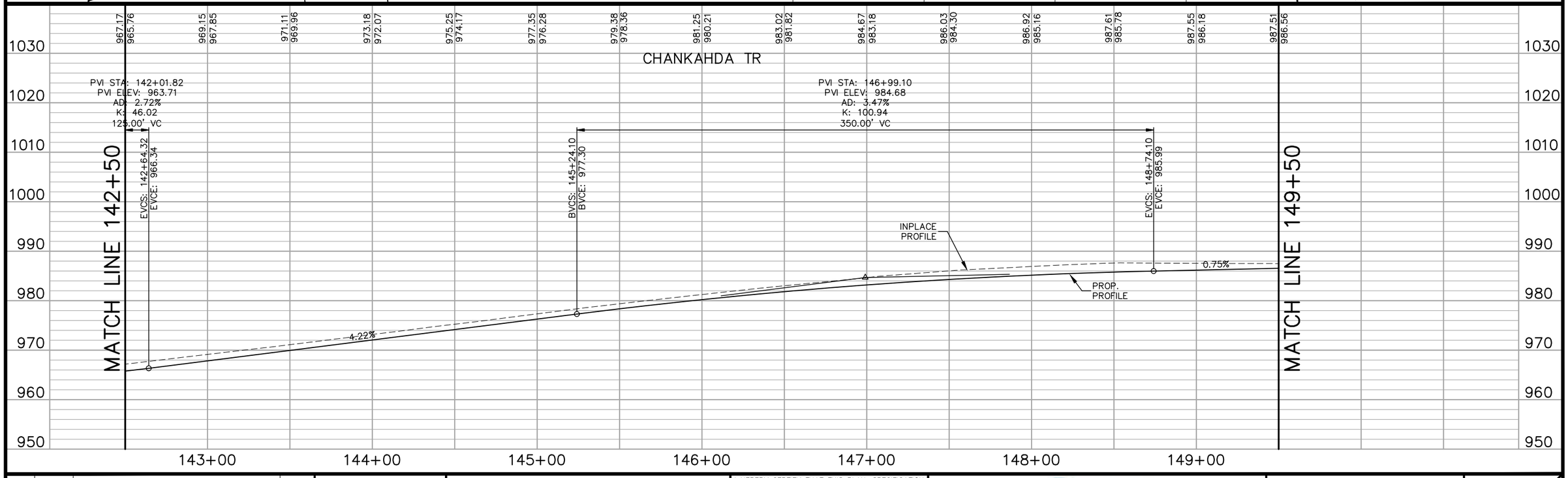
City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
CONSTRUCTION PLAN AND PROFILE
STA. 135+50 TO STA. 142+50

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155–210–003
S.A.P.	

SHEET NO. 160 / 354





No.	Date	Revisions	App.

DRAWING NAME: CHANKAHDA_PH3_PlanProfile.dwg

DESIGNED BY:	JWB
DRAWN BY:	RGS
CHECKED BY:	CBL
DATE:	02/07/2025
PROJECT NO.	160662010

Kimley»Horn
767 EUSTIS STREET, SUITE 100, ST, PAUL, MN 55114
PHONE: 651-645-4197
WWW.KIMLEY-HORN.COM

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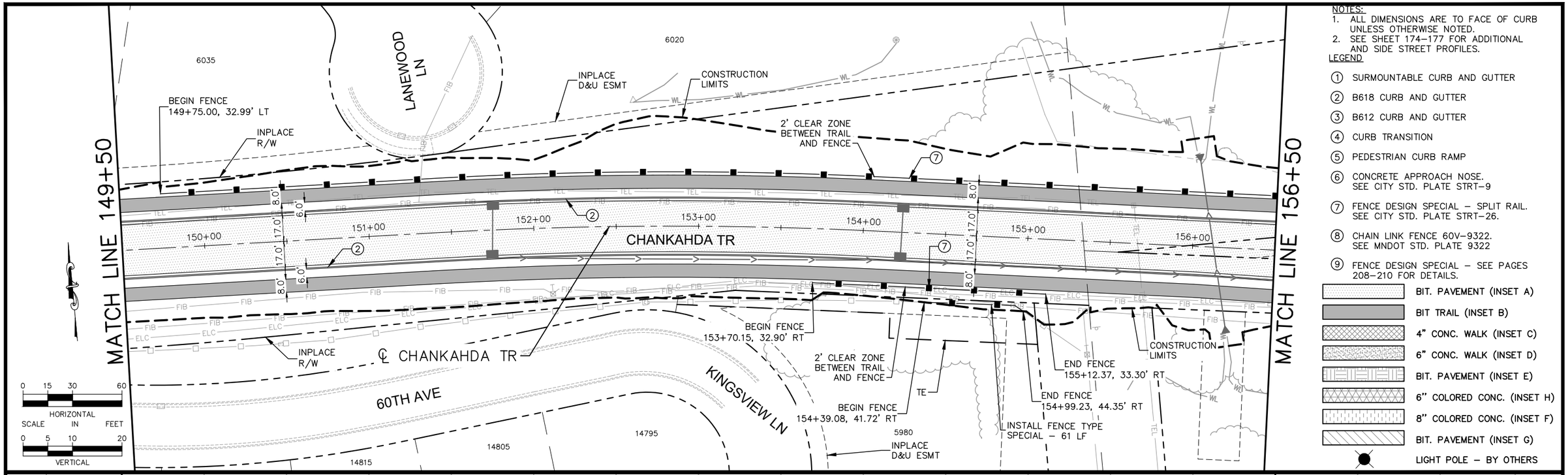
DATE: 02/07/2025 MN LIC. NO. 41864

City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
CONSTRUCTION PLAN AND PROFILE
STA. 142+50 TO STA. 149+50

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 161 / 354

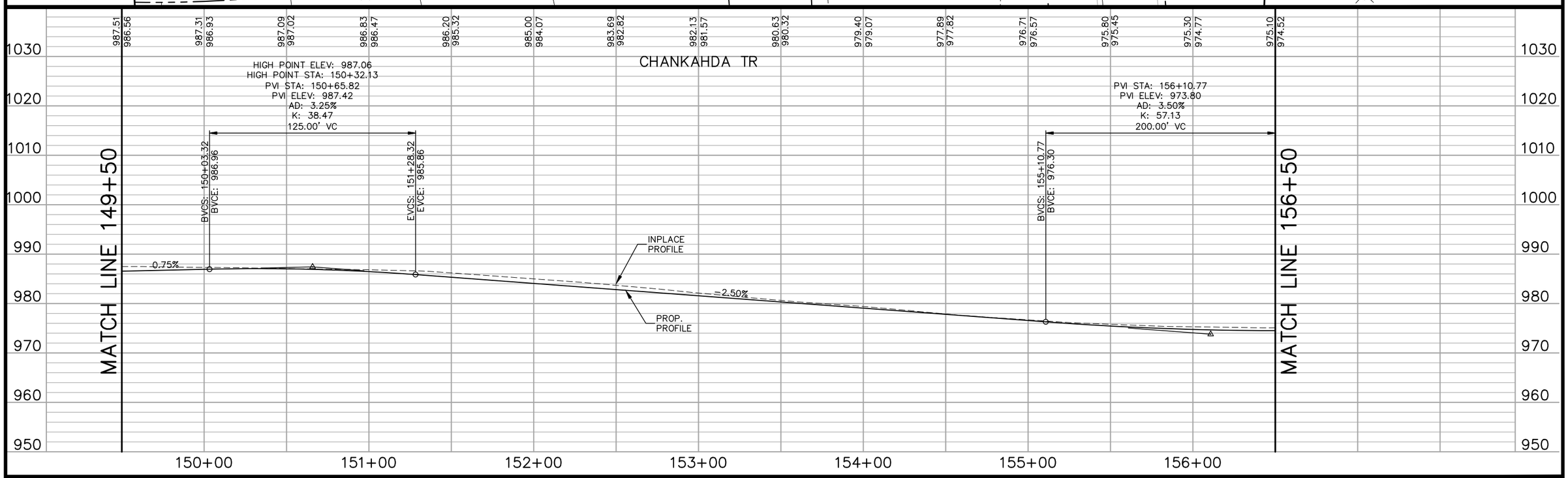


NOTES:
1. ALL DIMENSIONS ARE TO FACE OF CURB UNLESS OTHERWISE NOTED.
2. SEE SHEET 174–177 FOR ADDITIONAL AND SIDE STREET PROFILES.

LEGEND

① SURMOUNTABLE CURB AND GUTTER
② B618 CURB AND GUTTER
③ B612 CURB AND GUTTER
④ CURB TRANSITION
⑤ PEDESTRIAN CURB RAMP
⑥ CONCRETE APPROACH NOSE. SEE CITY STD. PLATE STRT–9
⑦ FENCE DESIGN SPECIAL – SPLIT RAIL. SEE CITY STD. PLATE STRT–26.
⑧ CHAIN LINK FENCE 60V–9322. SEE MNDOT STD. PLATE 9322
⑨ FENCE DESIGN SPECIAL – SEE PAGES 208–210 FOR DETAILS.

BIT. PAVEMENT (INSET A)
BIT TRAIL (INSET B)
4" CONC. WALK (INSET C)
6" CONC. WALK (INSET D)
BIT. PAVEMENT (INSET E)
6" COLORED CONC. (INSET H)
8" COLORED CONC. (INSET F)
BIT. PAVEMENT (INSET G)
LIGHT POLE – BY OTHERS



No.	Date	Revisions	App.

DRAWING NAME: CHANKAHDA_PH3_PlanProfile.dwg

DESIGNED BY:	JWB
DRAWN BY:	RGS
CHECKED BY:	CBL
DATE:	02/07/2025
PROJECT NO.	160662010

Kimley»Horn
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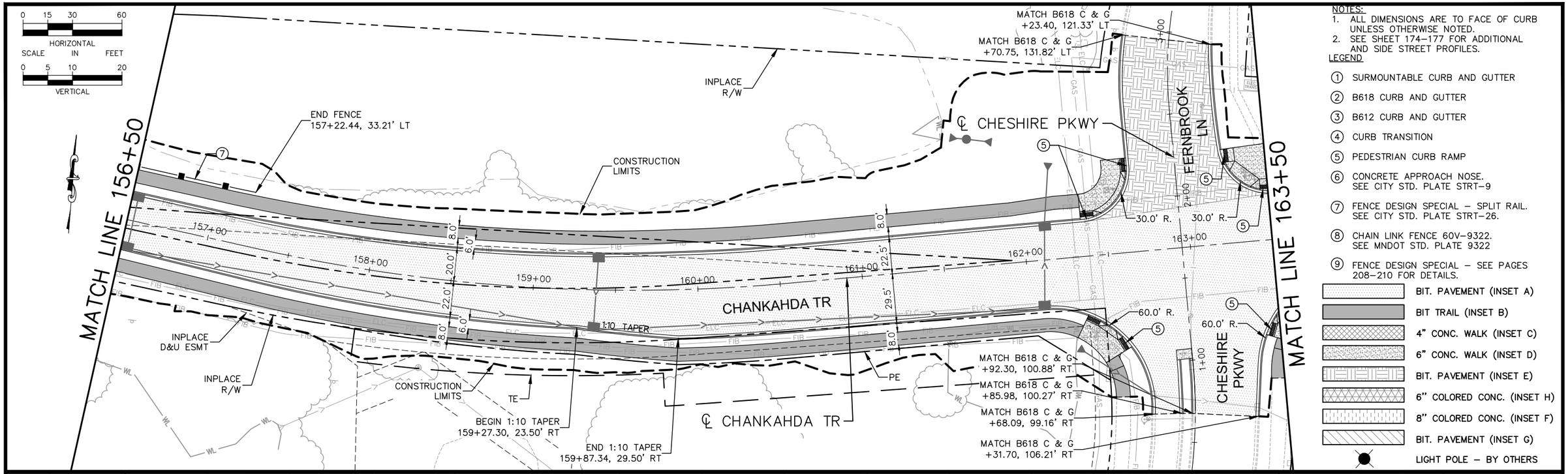
CHADD B. LARSON, PE
DATE: 02/07/2025 MN LIC. NO. 41864

City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
CONSTRUCTION PLAN AND PROFILE
STA. 149+50 TO STA. 156+50

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155–210–003
S.A.P.	

SHEET NO. 162 / 354



No.	Date	Revisions	App.

DRAWING NAME: CHANKAHDA_PH3_PlanProfile.dwg

DESIGNED BY:	JWB
DRAWN BY:	RGS
CHECKED BY:	CBL
DATE:	02/07/2025
PROJECT NO.	160662010

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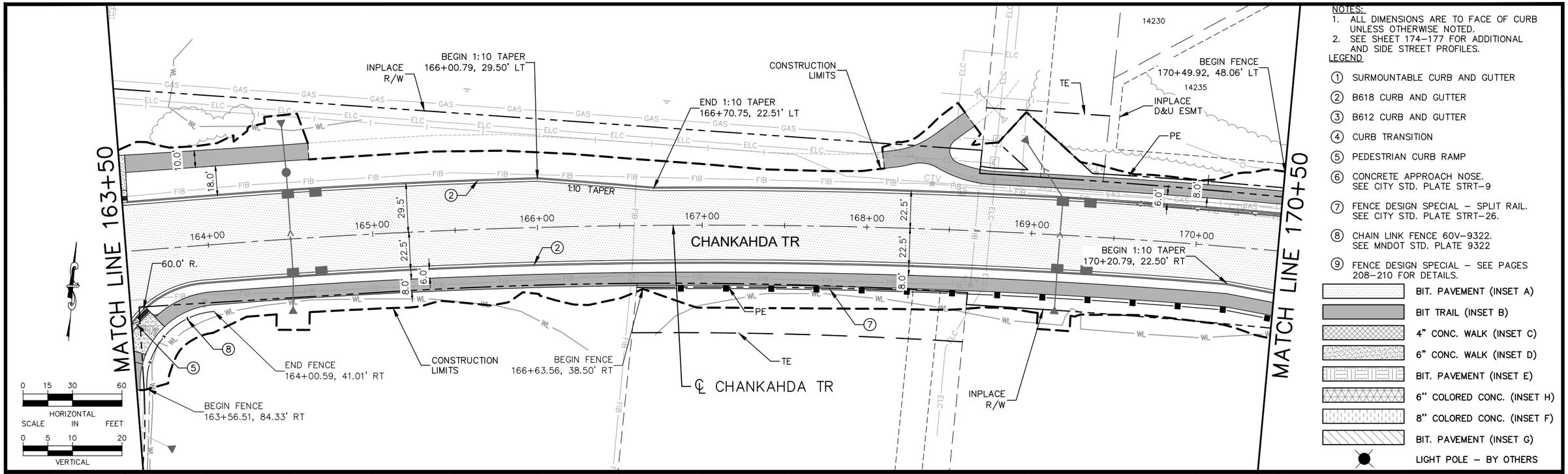
DATE: 02/07/2025 MN LIC. NO. 41864

City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
CONSTRUCTION PLAN AND PROFILE
STA. 156+50 TO STA. 163+50

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155–210–003
S.A.P.	

SHEET NO. 163 / 354

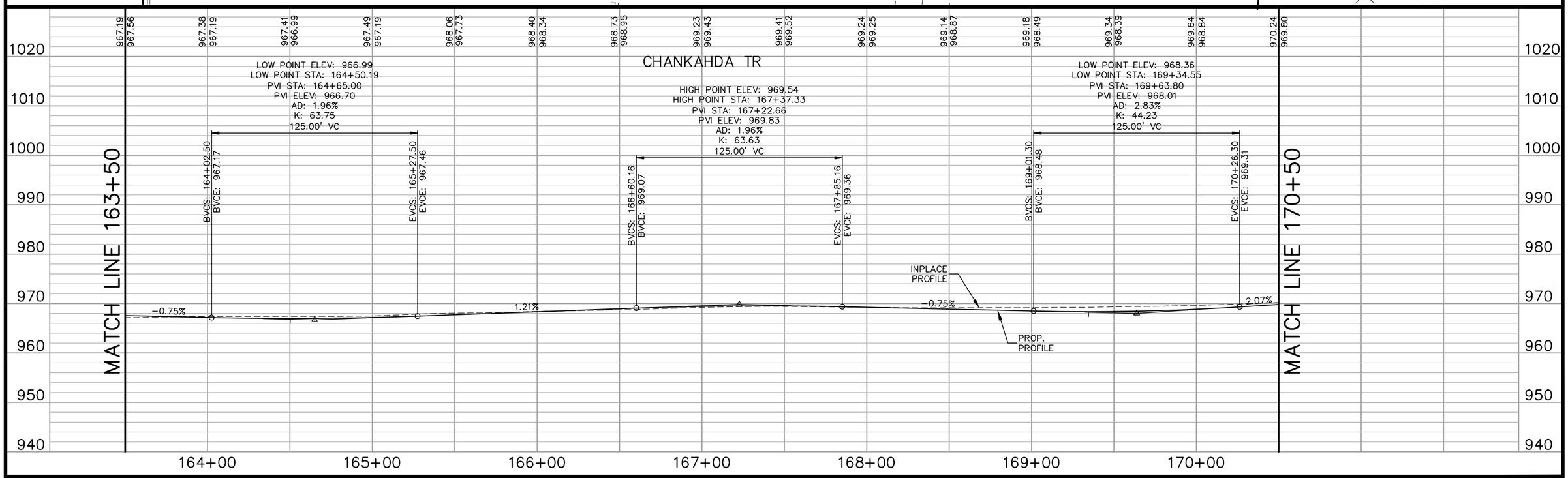


NOTES:
1. ALL DIMENSIONS ARE TO FACE OF CURB UNLESS OTHERWISE NOTED.
2. SEE SHEET 174–177 FOR ADDITIONAL AND SIDE STREET PROFILES.

LEGEND

1. SURMOUNTABLE CURB AND GUTTER
2. B618 CURB AND GUTTER
3. B612 CURB AND GUTTER
4. CURB TRANSITION
5. PEDESTRIAN CURB RAMP
6. CONCRETE APPROACH NOSE. SEE CITY STD. PLATE STRT–9
7. FENCE DESIGN SPECIAL – SPLIT RAIL. SEE CITY STD. PLATE STRT–26.
8. CHAIN LINK FENCE 60V–9322. SEE MNDOT STD. PLATE 9322
9. FENCE DESIGN SPECIAL – SEE PAGES 208–210 FOR DETAILS.

- BIT. PAVEMENT (INSET A)
- BIT TRAIL (INSET B)
- 4" CONC. WALK (INSET C)
- 6" CONC. WALK (INSET D)
- BIT. PAVEMENT (INSET E)
- 6" COLORED CONC. (INSET H)
- 8" COLORED CONC. (INSET F)
- BIT. PAVEMENT (INSET G)
- LIGHT POLE – BY OTHERS



No.	Date	Revisions	App.

DRAWING NAME: CHANKAHDA_PH3_PlanProfile.dwg

DESIGNED BY:	JWB
DRAWN BY:	RGS
CHECKED BY:	CBL
DATE:	02/07/2025
PROJECT NO.	160662010

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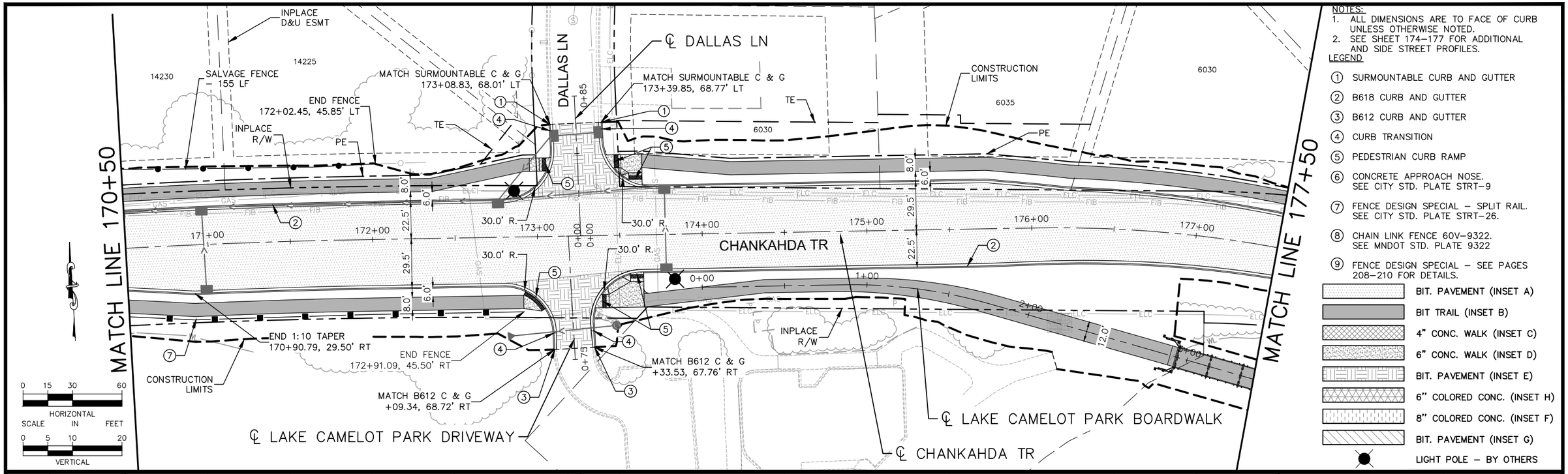
DATE: 02/07/2025 MN LIC. NO. 41864

City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
CONSTRUCTION PLAN AND PROFILE
STA. 163+50 TO STA. 170+50

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155–210–003
S.A.P.	

SHEET NO. 164 / 354

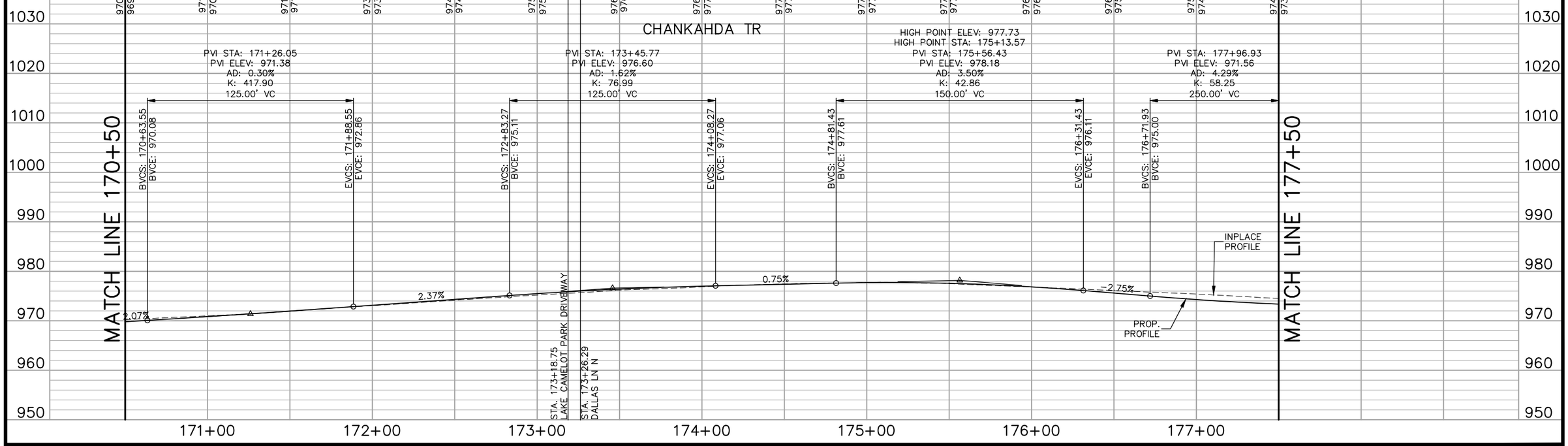


NOTES:
1. ALL DIMENSIONS ARE TO FACE OF CURB UNLESS OTHERWISE NOTED.
2. SEE SHEET 174–177 FOR ADDITIONAL AND SIDE STREET PROFILES.

LEGEND

1. SURMOUNTABLE CURB AND GUTTER
2. B618 CURB AND GUTTER
3. B612 CURB AND GUTTER
4. CURB TRANSITION
5. PEDESTRIAN CURB RAMP
6. CONCRETE APPROACH NOSE. SEE CITY STD. PLATE STRT–9
7. FENCE DESIGN SPECIAL – SPLIT RAIL. SEE CITY STD. PLATE STRT–26.
8. CHAIN LINK FENCE 60V–9322. SEE MNDOT STD. PLATE 9322
9. FENCE DESIGN SPECIAL – SEE PAGES 208–210 FOR DETAILS.

- BIT. PAVEMENT (INSET A)
- BIT TRAIL (INSET B)
- 4" CONC. WALK (INSET C)
- 6" CONC. WALK (INSET D)
- BIT. PAVEMENT (INSET E)
- 6" COLORED CONC. (INSET H)
- 8" COLORED CONC. (INSET F)
- BIT. PAVEMENT (INSET G)
- LIGHT POLE – BY OTHERS



No.	Date	Revisions	App.

DRAWING NAME: CHANKAHDA_PH3_PlanProfile.dwg

DESIGNED BY:	JWB
DRAWN BY:	RGS
CHECKED BY:	CBL
DATE:	02/07/2025
PROJECT NO.	160662010

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CHADD B. LARSON, PE

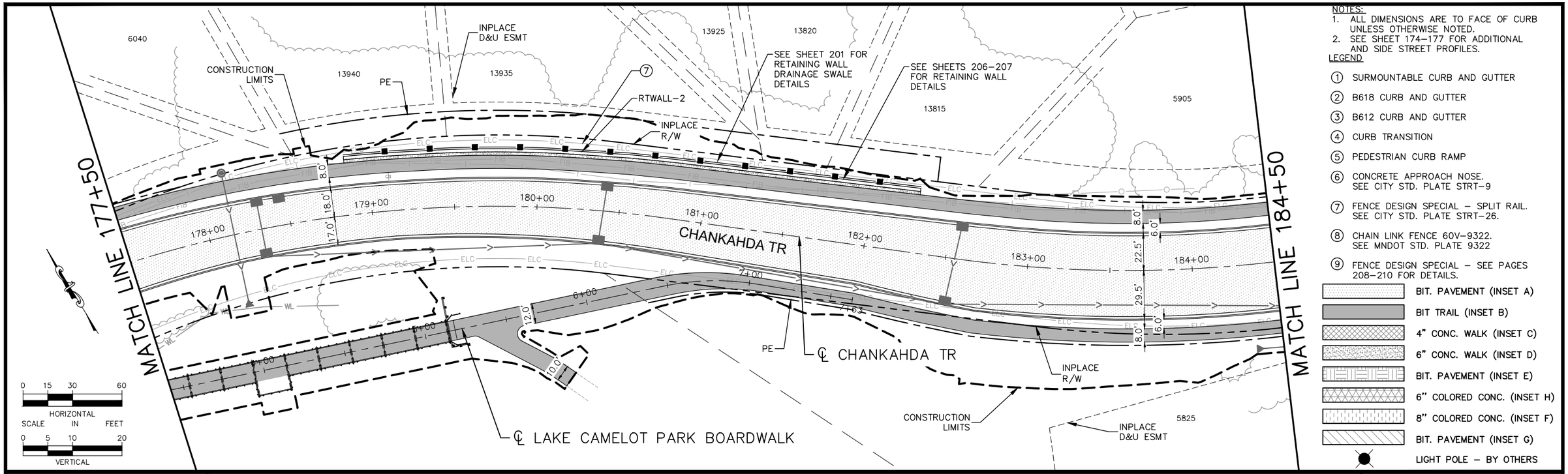
DATE: 02/07/2025 MN LIC. NO. 41864

City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
CONSTRUCTION PLAN AND PROFILE
STA. 170+50 TO STA. 177+50

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155–210–003
S.A.P.	

SHEET NO. 165 / 354

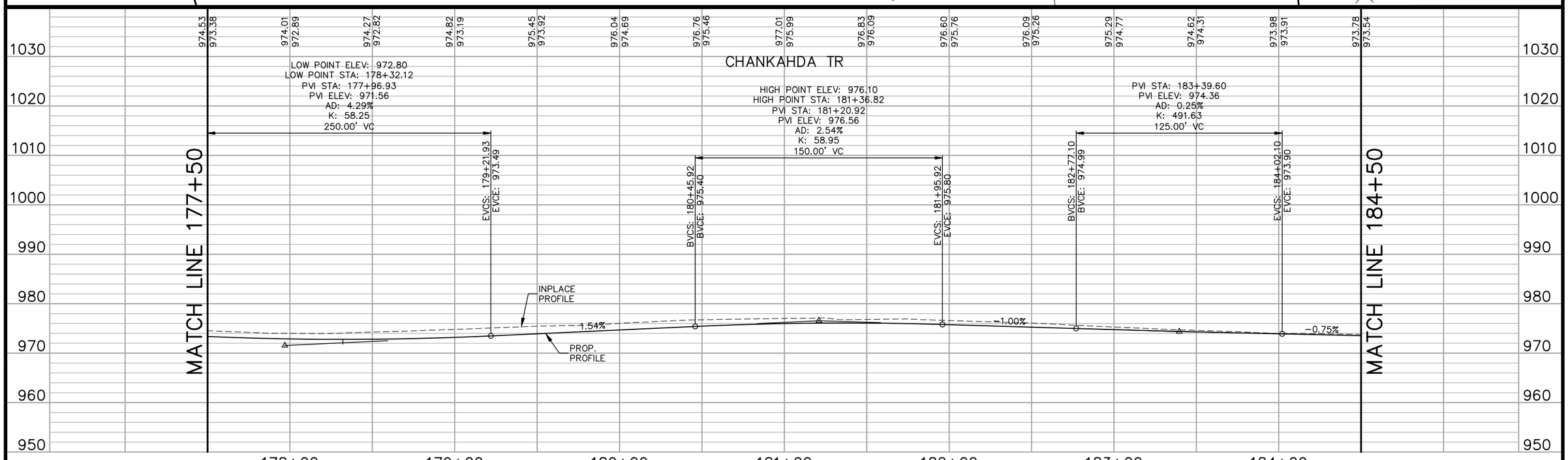


NOTES:
1. ALL DIMENSIONS ARE TO FACE OF CURB UNLESS OTHERWISE NOTED.
2. SEE SHEET 174–177 FOR ADDITIONAL AND SIDE STREET PROFILES.

LEGEND

1. SURMOUNTABLE CURB AND GUTTER
2. B618 CURB AND GUTTER
3. B612 CURB AND GUTTER
4. CURB TRANSITION
5. PEDESTRIAN CURB RAMP
6. CONCRETE APPROACH NOSE. SEE CITY STD. PLATE STRT–9
7. FENCE DESIGN SPECIAL – SPLIT RAIL. SEE CITY STD. PLATE STRT–26.
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9. FENCE DESIGN SPECIAL – SEE PAGES 208–210 FOR DETAILS.

- BIT. PAVEMENT (INSET A)
- BIT TRAIL (INSET B)
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- 6" CONC. WALK (INSET D)
- BIT. PAVEMENT (INSET E)
- 6" COLORED CONC. (INSET H)
- 8" COLORED CONC. (INSET F)
- BIT. PAVEMENT (INSET G)
- LIGHT POLE – BY OTHERS



No.	Date	Revisions	App.

DRAWING NAME: CHANKAHDA_PH3_PlanProfile.dwg

DESIGNED BY:	JWB
DRAWN BY:	RGS
CHECKED BY:	CBL
DATE:	02/07/2025
PROJECT NO.	160662010

Kimley»Horn
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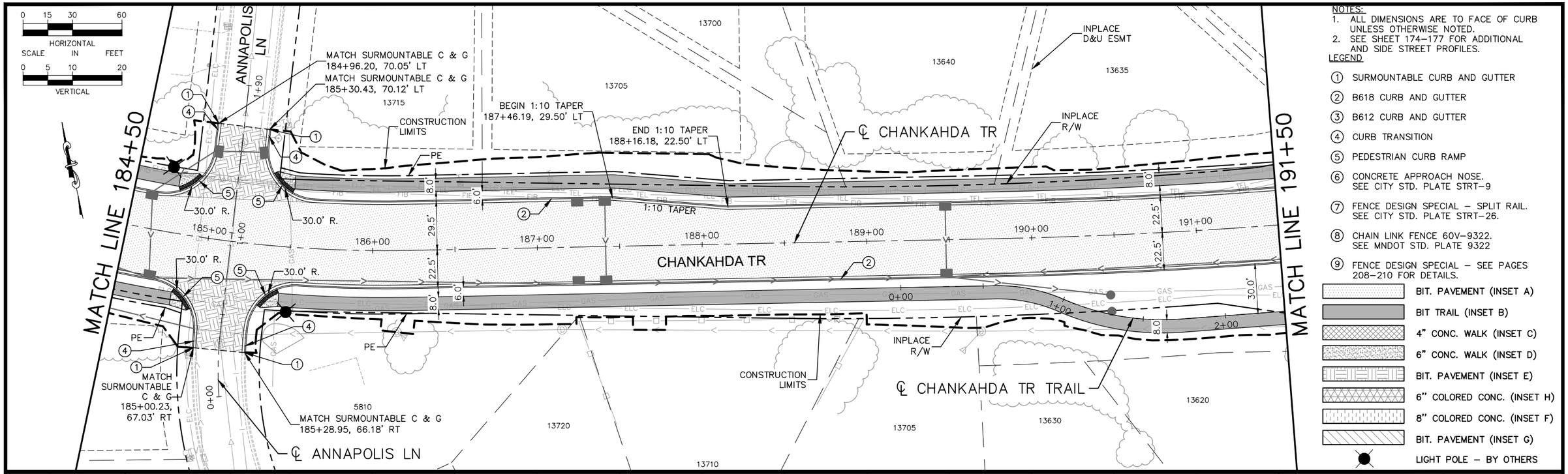
DATE: 02/07/2025 MN LIC. NO. 41864

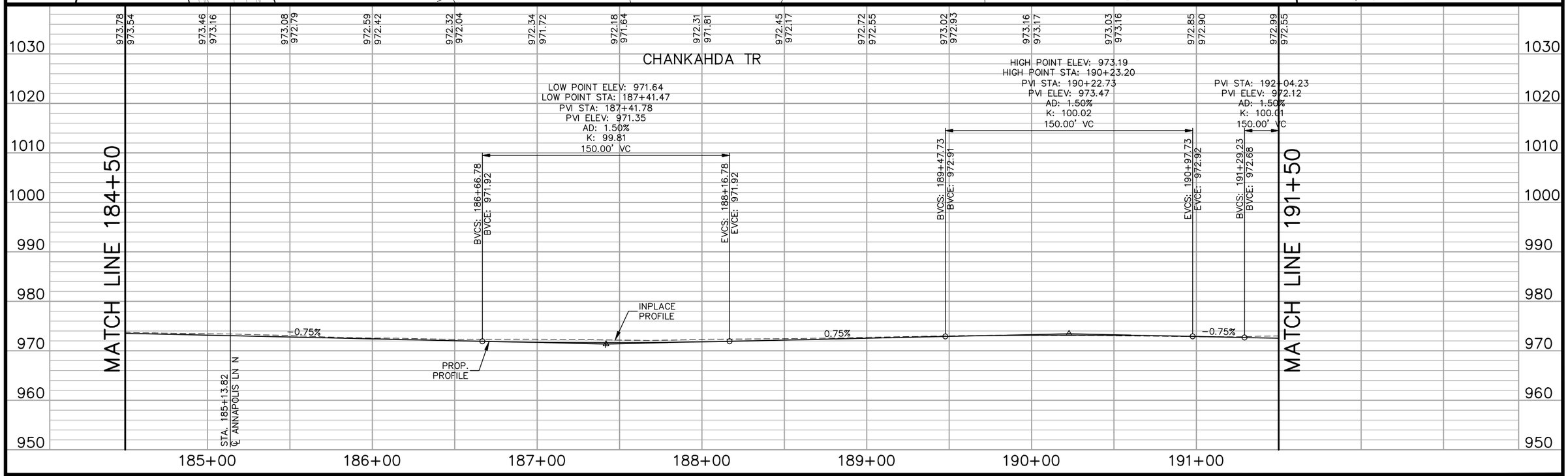
City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
CONSTRUCTION PLAN AND PROFILE
STA. 177+50 TO STA. 184+50

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 166 / 354





No.	Date	Revisions	App.

DRAWING NAME: CHANKAHDA_PH3_PlanProfile.dwg

DESIGNED BY:	JWB
DRAWN BY:	RGS
CHECKED BY:	CBL
DATE:	02/07/2025
PROJECT NO.	160662010

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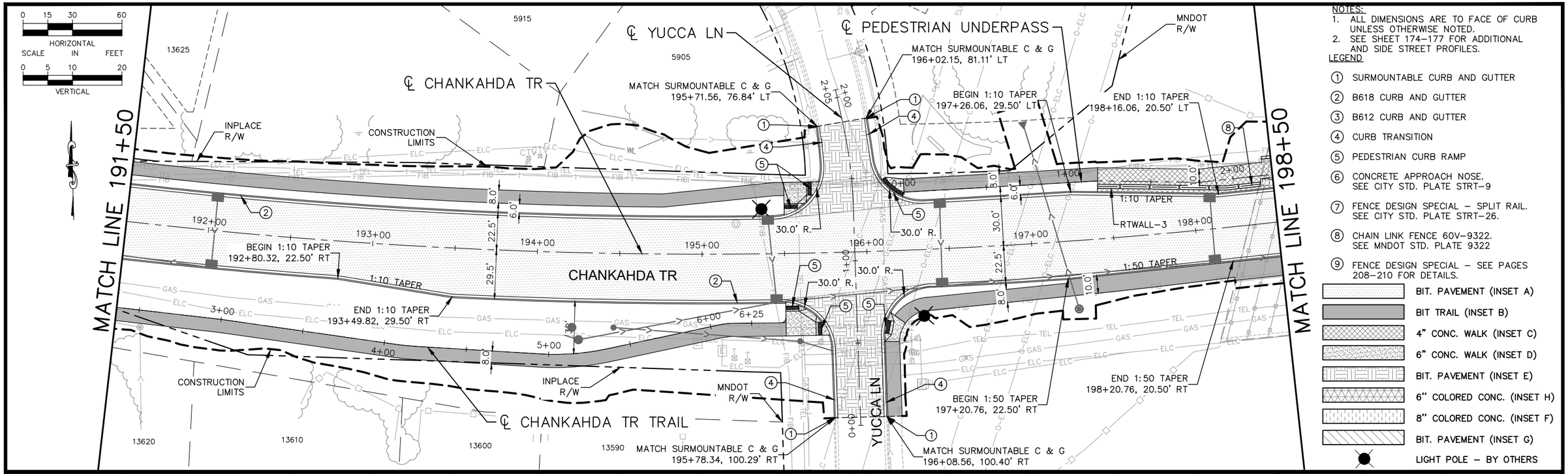
DATE: 02/07/2025 MN LIC. NO. 41864

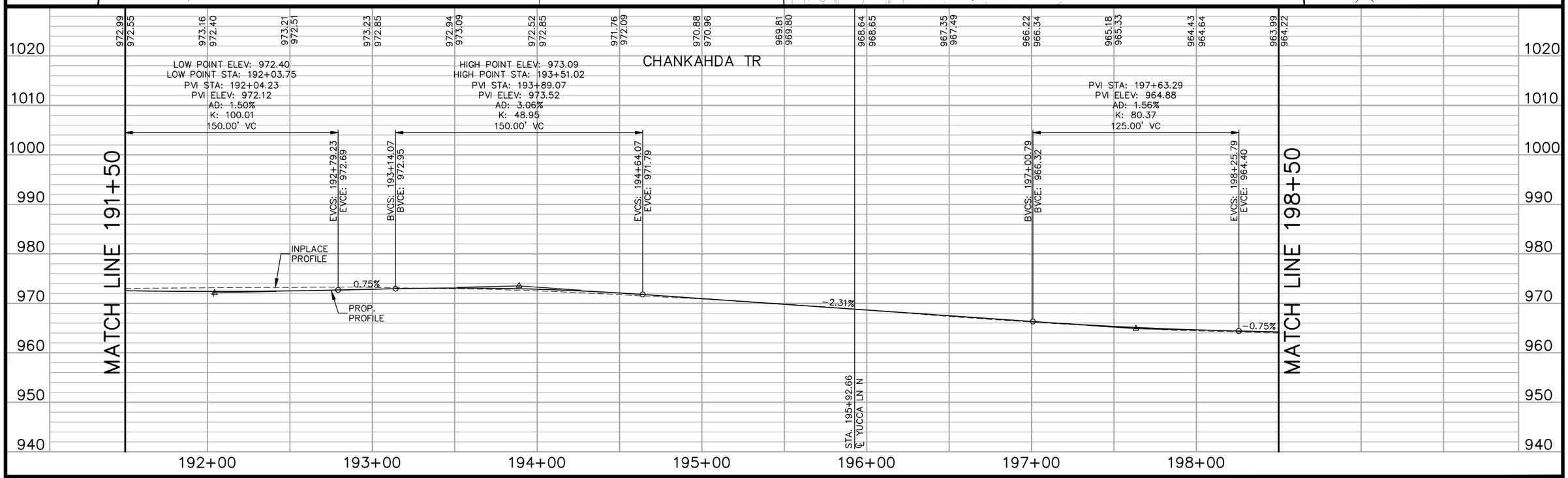
City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
CONSTRUCTION PLAN AND PROFILE
STA. 184+50 TO STA. 191+50

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155–210–003
S.A.P.	

SHEET NO. 167 / 354





No.	Date	Revisions	App.

DRAWING NAME: CHANKAHDA_PH3_PlanProfile.dwg

DESIGNED BY:	JWB
DRAWN BY:	RGS
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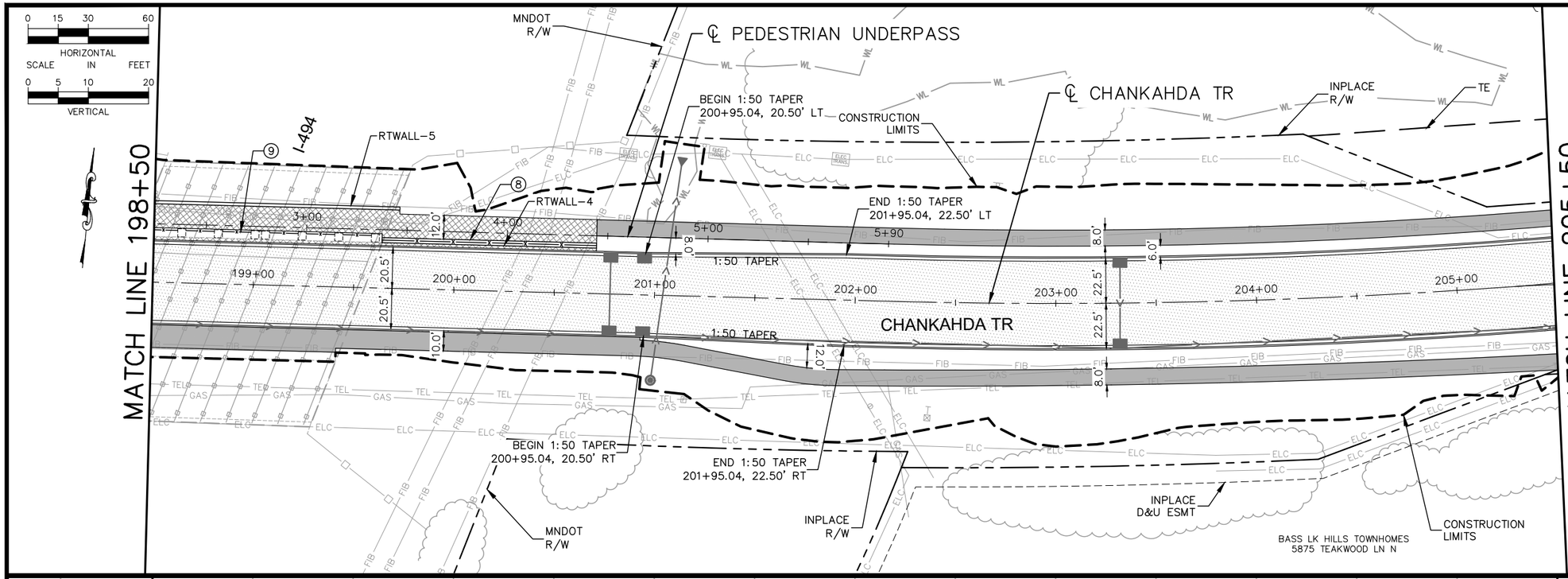
DATE: 02/07/2025 MN LIC. NO. 41864

City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
CONSTRUCTION PLAN AND PROFILE
STA. 191+50 TO STA. 198+50

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 168 / 354

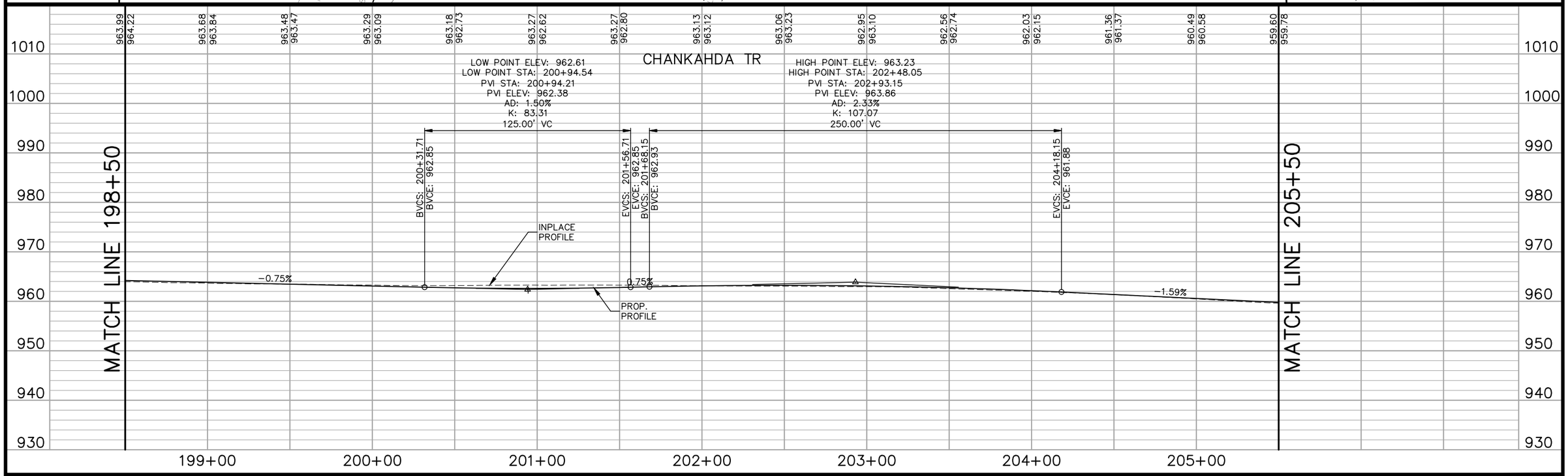


NOTES:
1. ALL DIMENSIONS ARE TO FACE OF CURB UNLESS OTHERWISE NOTED.
2. SEE SHEET 174–177 FOR ADDITIONAL AND SIDE STREET PROFILES.

LEGEND

1. SURMOUNTABLE CURB AND GUTTER
2. B618 CURB AND GUTTER
3. B612 CURB AND GUTTER
4. CURB TRANSITION
5. PEDESTRIAN CURB RAMP
6. CONCRETE APPROACH NOSE. SEE CITY STD. PLATE STRT–9
7. FENCE DESIGN SPECIAL – SPLIT RAIL. SEE CITY STD. PLATE STRT–26.
8. CHAIN LINK FENCE 60V–9322. SEE MNDOT STD. PLATE 9322
9. FENCE DESIGN SPECIAL – SEE PAGES 208–210 FOR DETAILS.

- BIT. PAVEMENT (INSET A)
- BIT TRAIL (INSET B)
- 4" CONC. WALK (INSET C)
- 6" CONC. WALK (INSET D)
- BIT. PAVEMENT (INSET E)
- 6" COLORED CONC. (INSET H)
- 8" COLORED CONC. (INSET F)
- BIT. PAVEMENT (INSET G)
- LIGHT POLE – BY OTHERS



No.	Date	Revisions	App.

DRAWING NAME	CHANKAHDA_PH3_PlanProfile.dwg
DESIGNED BY:	JWB
DRAWN BY:	RGS
CHECKED BY:	CBL
DATE:	02/07/2025
PROJECT NO.	160662010

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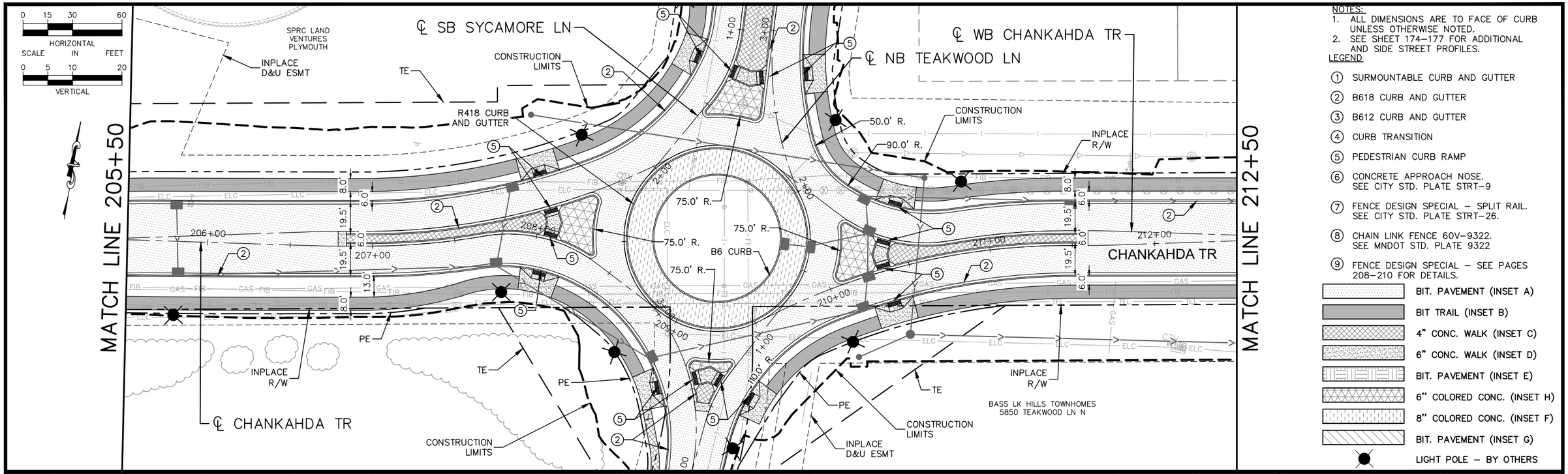
DATE: 02/07/2025 MN LIC. NO. 41864

City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
CONSTRUCTION PLAN AND PROFILE
STA. 198+50 TO STA. 205+50

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155–210–003
S.A.P.	

SHEET NO. 169 / 354

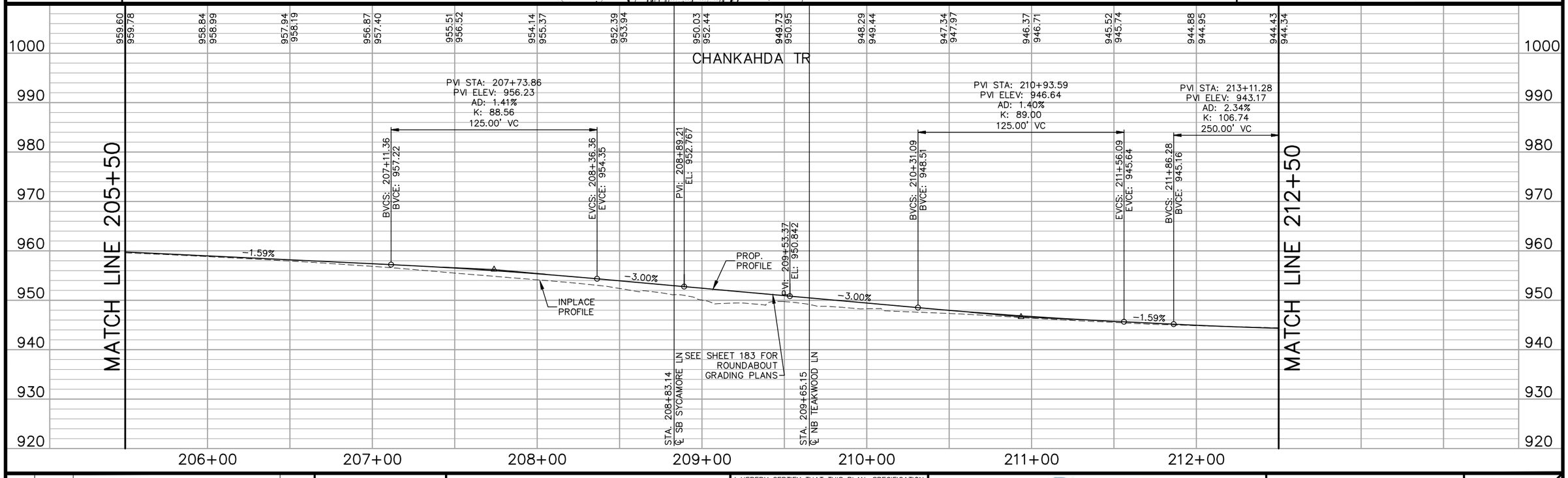


NOTES:
1. ALL DIMENSIONS ARE TO FACE OF CURB UNLESS OTHERWISE NOTED.
2. SEE SHEET 174–177 FOR ADDITIONAL AND SIDE STREET PROFILES.

LEGEND

1. SURMOUNTABLE CURB AND GUTTER
2. B618 CURB AND GUTTER
3. B612 CURB AND GUTTER
4. CURB TRANSITION
5. PEDESTRIAN CURB RAMP
6. CONCRETE APPROACH NOSE. SEE CITY STD. PLATE STRT–9
7. FENCE DESIGN SPECIAL – SPLIT RAIL. SEE CITY STD. PLATE STRT–26.
8. CHAIN LINK FENCE 60V–9322. SEE MNDOT STD. PLATE 9322
9. FENCE DESIGN SPECIAL – SEE PAGES 208–210 FOR DETAILS.

- BIT. PAVEMENT (INSET A)
- BIT TRAIL (INSET B)
- 4" CONC. WALK (INSET C)
- 6" CONC. WALK (INSET D)
- BIT. PAVEMENT (INSET E)
- 6" COLORED CONC. (INSET H)
- 8" COLORED CONC. (INSET F)
- BIT. PAVEMENT (INSET G)
- LIGHT POLE – BY OTHERS



No.	Date	Revisions	App.

DRAWING NAME: CHANKAHDA_PH3_PlanProfile.dwg

DESIGNED BY:	JWB
DRAWN BY:	RGS
CHECKED BY:	CBL
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CHADD B. LARSON, PE

DATE: 02/07/2025 MN LIC. NO. 41864

City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
CONSTRUCTION PLAN AND PROFILE
STA. 205+50 TO STA. 212+50

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155–210–003
S.A.P.	

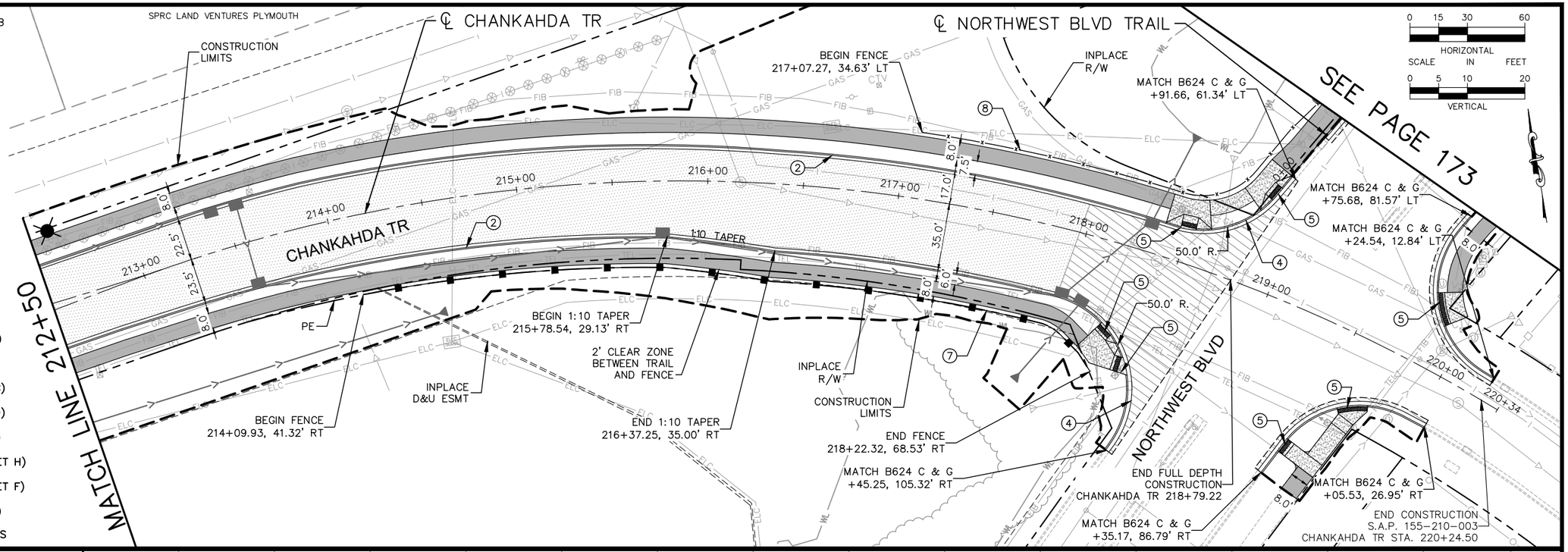
SHEET NO. 170 / 354

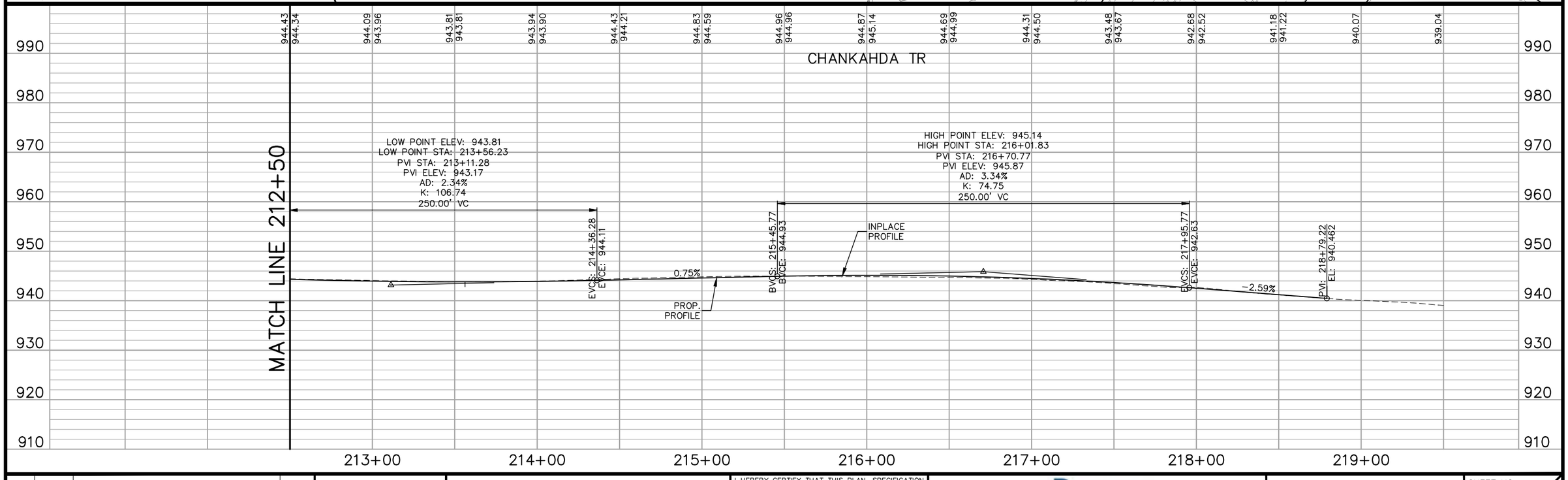
NOTES:
1. ALL DIMENSIONS ARE TO FACE OF CURB UNLESS OTHERWISE NOTED.
2. SEE SHEET 174–177 FOR ADDITIONAL AND SIDE STREET PROFILES.

LEGEND

1. SURMOUNTABLE CURB AND GUTTER
2. B618 CURB AND GUTTER
3. B612 CURB AND GUTTER
4. CURB TRANSITION
5. PEDESTRIAN CURB RAMP
6. CONCRETE APPROACH NOSE. SEE CITY STD. PLATE STRT–9
7. FENCE DESIGN SPECIAL – SPLIT RAIL. SEE CITY STD. PLATE STRT–26.
8. CHAIN LINK FENCE 60V–9322. SEE MNDOT STD. PLATE 9322
9. FENCE DESIGN SPECIAL – SEE PAGES 208–210 FOR DETAILS.

BIT. PAVEMENT (INSET A)
BIT TRAIL (INSET B)
4" CONC. WALK (INSET C)
6" CONC. WALK (INSET D)
BIT. PAVEMENT (INSET E)
6" COLORED CONC. (INSET H)
8" COLORED CONC. (INSET F)
BIT. PAVEMENT (INSET G)
LIGHT POLE – BY OTHERS





No.	Date	Revisions	App.

DRAWING NAME	CHANKAHDA_PH3_PlanProfile.dwg
DESIGNED BY:	JWB
DRAWN BY:	RGS
CHECKED BY:	CBL
DATE:	02/07/2025
PROJECT NO.	160662010

Kimley»Horn
767 EUSTIS STREET, SUITE 100, ST, PAUL, MN 55114
PHONE: 651–645–4197
WWW.KIMLEY–HORN.COM

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CHADD B. LARSON, PE
DATE: 02/07/2025 MN LIC. NO. 41864

City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
CONSTRUCTION PLAN AND PROFILE
STA. 212+50 TO STA. 220+24.50

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155–210–003
S.A.P.	

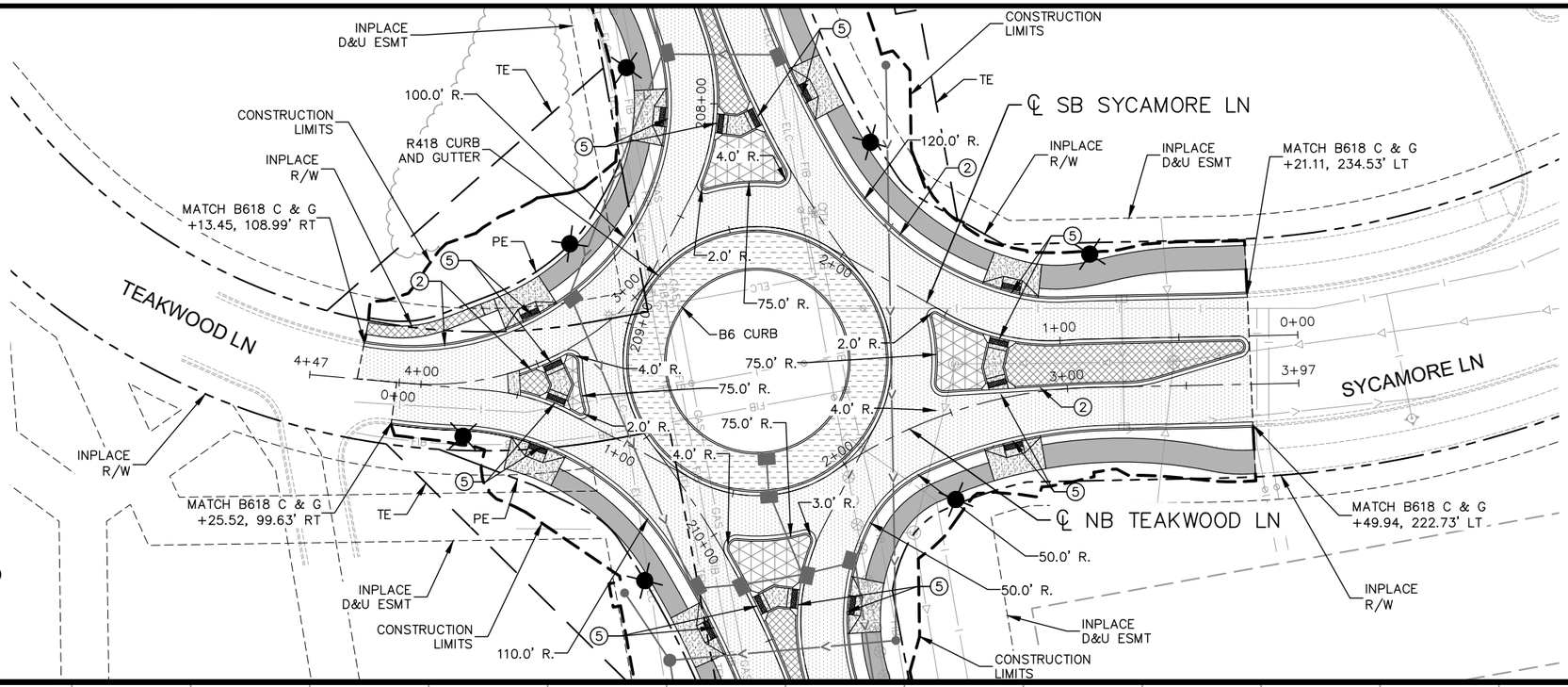
SHEET NO. 171 / 354

NOTES:
1. ALL DIMENSIONS ARE TO FACE OF CURB UNLESS OTHERWISE NOTED.
2. SEE SHEET 174–177 FOR ADDITIONAL AND SIDE STREET PROFILES.

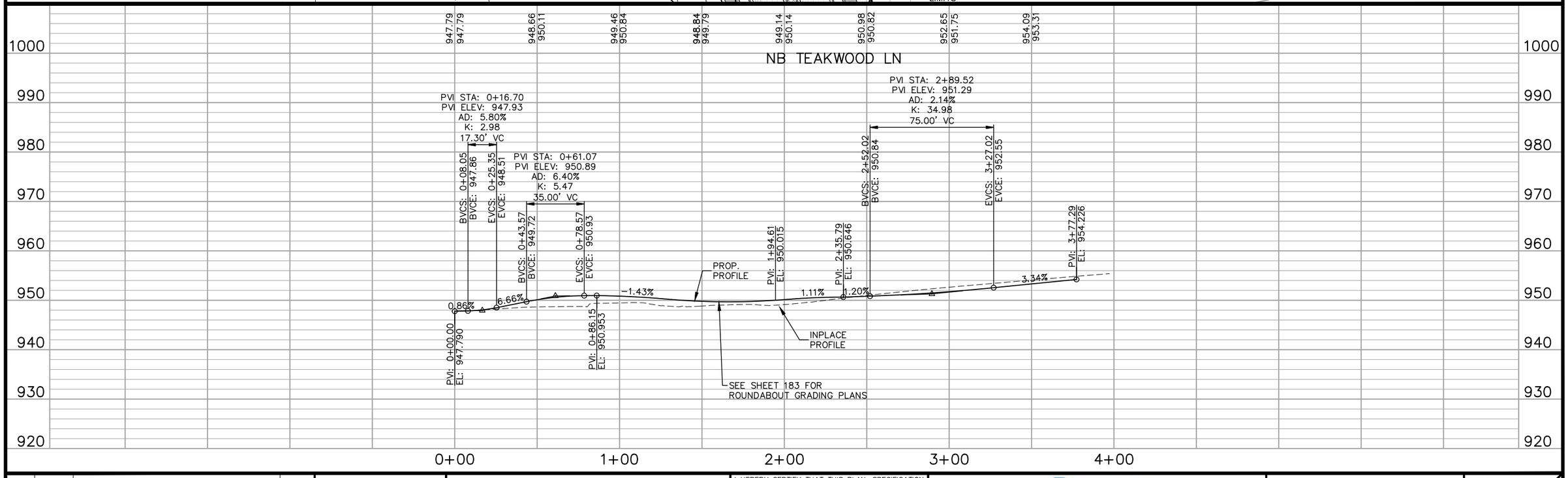
LEGEND

1. SURMOUNTABLE CURB AND GUTTER
2. B618 CURB AND GUTTER
3. B612 CURB AND GUTTER
4. CURB TRANSITION
5. PEDESTRIAN CURB RAMP
6. CONCRETE APPROACH NOSE. SEE CITY STD. PLATE STRT–9
7. FENCE DESIGN SPECIAL – SPLIT RAIL. SEE CITY STD. PLATE STRT–26.
8. CHAIN LINK FENCE 60V–9322. SEE MNDOT STD. PLATE 9322
9. FENCE DESIGN SPECIAL – SEE PAGES 208–210 FOR DETAILS.

BIT. PAVEMENT (INSET A)
BIT TRAIL (INSET B)
4" CONC. WALK (INSET C)
6" CONC. WALK (INSET D)
BIT. PAVEMENT (INSET E)
6" COLORED CONC. (INSET H)
8" COLORED CONC. (INSET F)
BIT. PAVEMENT (INSET G)
LIGHT POLE – BY OTHERS



0 5 10 20 VERTICAL
0 15 30 60 HORIZONTAL SCALE IN FEET



No.	Date	Revisions	App.

DRAWING NAME: CHANKAHDA_PH3_PlanProfile.dwg
DESIGNED BY: JWB
DRAWN BY: RGS
CHECKED BY: CBL
DATE: 02/07/2025
PROJECT NO. 160662010

Kimley»Horn
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CHADD B. LARSON, PE
DATE: 02/07/2025 MN LIC. NO. 41864

City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
NB TEAKWOOD LN N
CONSTRUCTION PLAN AND PROFILE

CITY PROJECT ST240002
COUNTY PROJECT
S.A.P. 155–210–003
S.A.P.

SHEET NO. 172 / 354

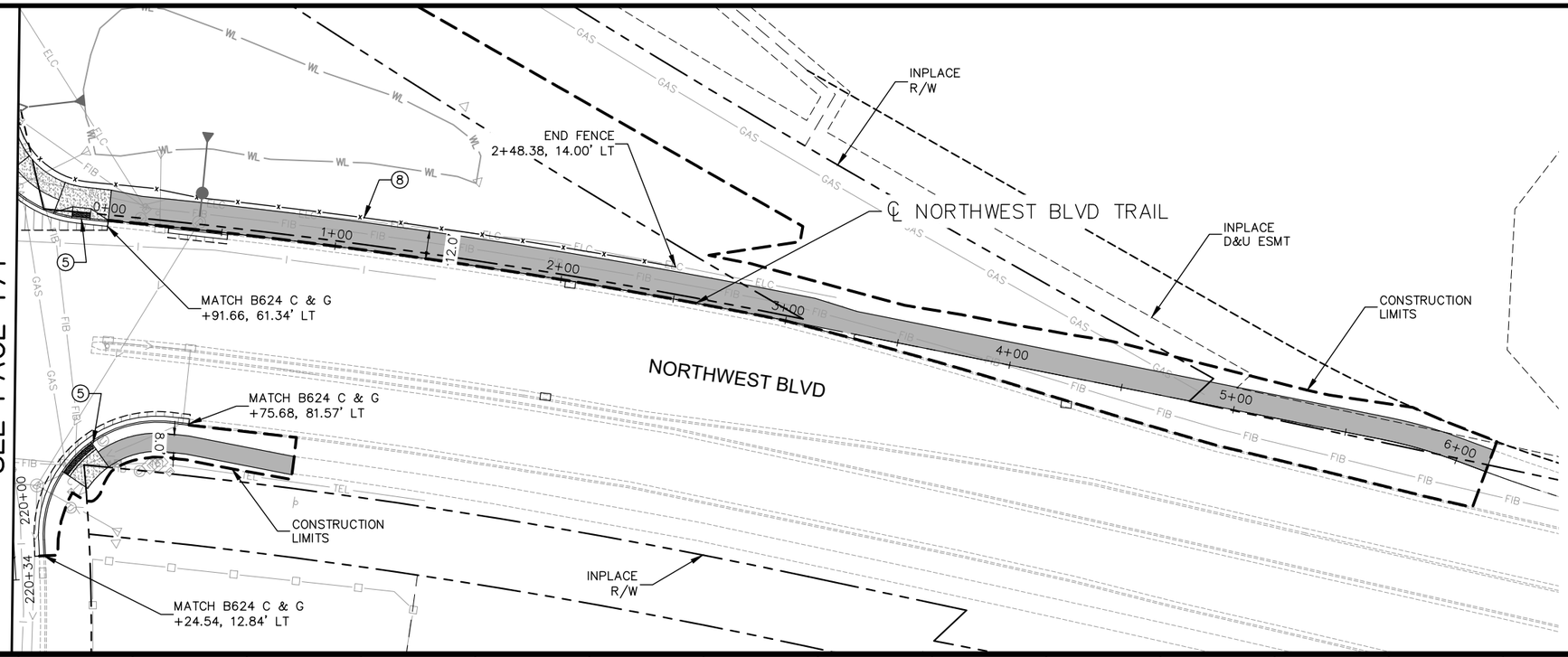
NOTES:
1. ALL DIMENSIONS ARE TO FACE OF CURB UNLESS OTHERWISE NOTED.
2. SEE SHEET 174–177 FOR ADDITIONAL AND SIDE STREET PROFILES.

LEGEND

1. SURMOUNTABLE CURB AND GUTTER
2. B618 CURB AND GUTTER
3. B612 CURB AND GUTTER
4. CURB TRANSITION
5. PEDESTRIAN CURB RAMP
6. CONCRETE APPROACH NOSE. SEE CITY STD. PLATE STRT–9
7. FENCE DESIGN SPECIAL – SPLIT RAIL. SEE CITY STD. PLATE STRT–26.
8. CHAIN LINK FENCE 60V–9322. SEE MNDOT STD. PLATE 9322
9. FENCE DESIGN SPECIAL – SEE PAGES 208–210 FOR DETAILS.

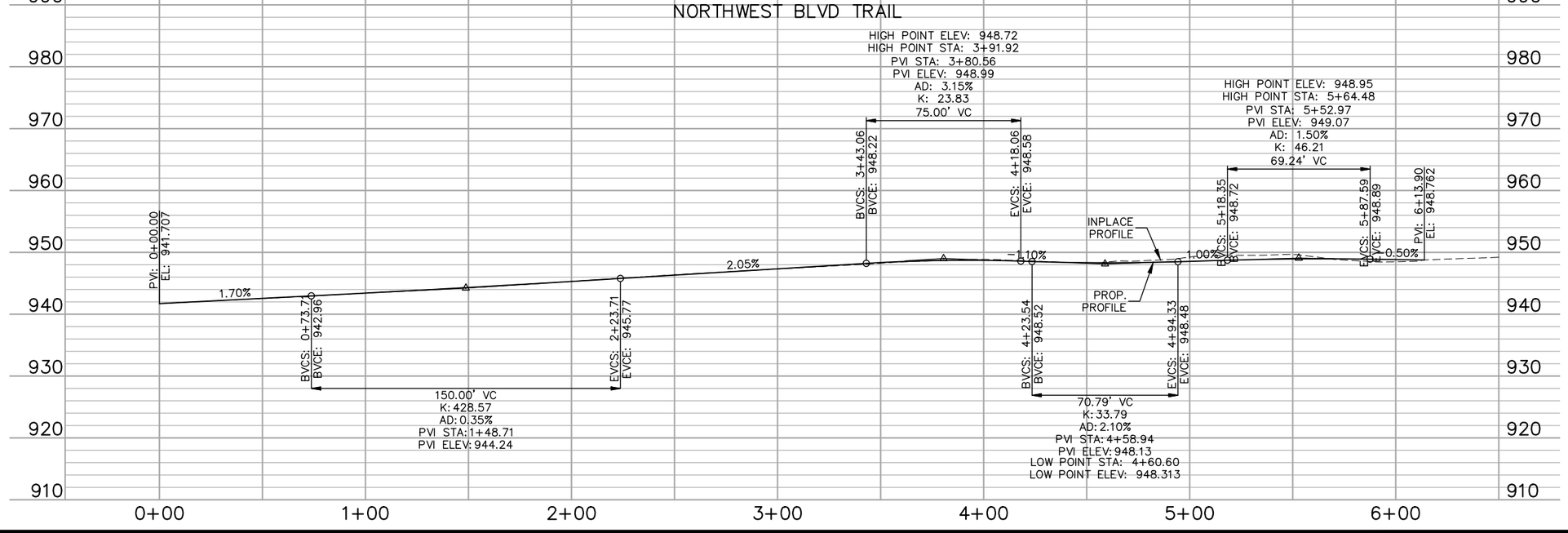
- BIT. PAVEMENT (INSET A)
- BIT TRAIL (INSET B)
- 4" CONC. WALK (INSET C)
- 6" CONC. WALK (INSET D)
- BIT. PAVEMENT (INSET E)
- 6" COLORED CONC. (INSET H)
- 8" COLORED CONC. (INSET F)
- BIT. PAVEMENT (INSET G)
- LIGHT POLE – BY OTHERS

SEE PAGE 171



0 5 10 20
VERTICAL

0 15 30 60
HORIZONTAL
SCALE IN FEET



No.	Date	Revisions	App.

DRAWING NAME: CHANKAHDA_PH3_PlanProfile.dwg

DESIGNED BY:	JWB
DRAWN BY:	RGS
CHECKED BY:	CBL
DATE:	02/07/2025
PROJECT NO.	160662010

Kimley»Horn
767 EUSTIS STREET, SUITE 100, ST, PAUL, MN 55114
PHONE: 651–645–4197
WWW.KIMLEY–HORN.COM

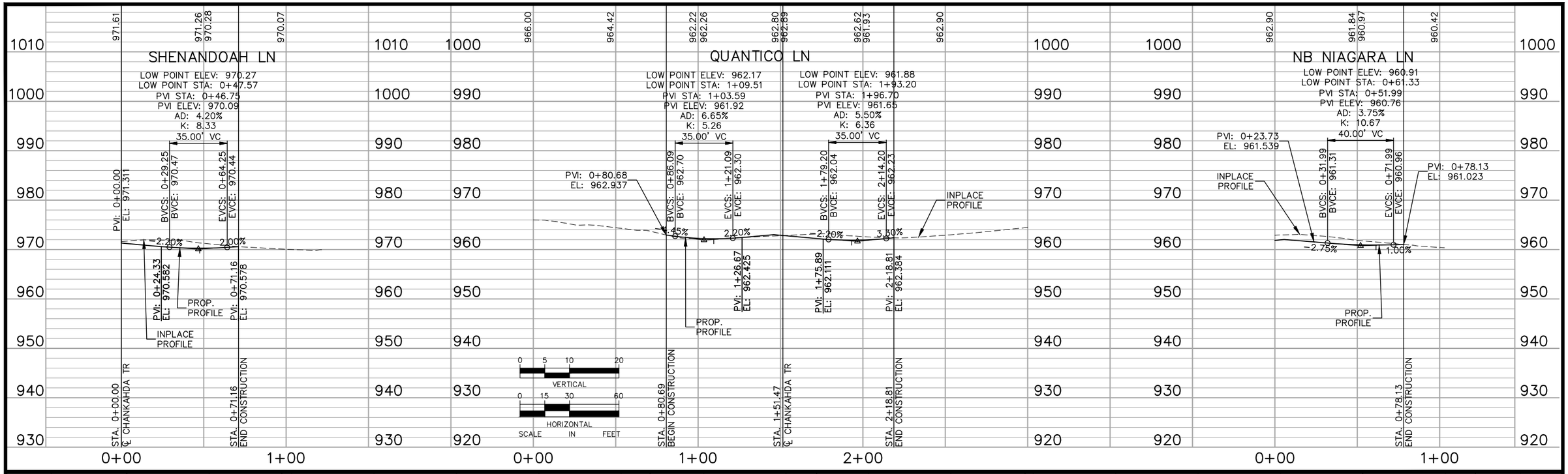
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CHADD B. LARSON, PE
DATE: 02/07/2025 MN LIC. NO. 41864

City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
NORTHWEST BLVD TRAIL
CONSTRUCTION PLAN AND PROFILE

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155–210–003
S.A.P.	



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CHECKED BY:	CBL
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Chadd B. Larson

CHADD B. LARSON, PE

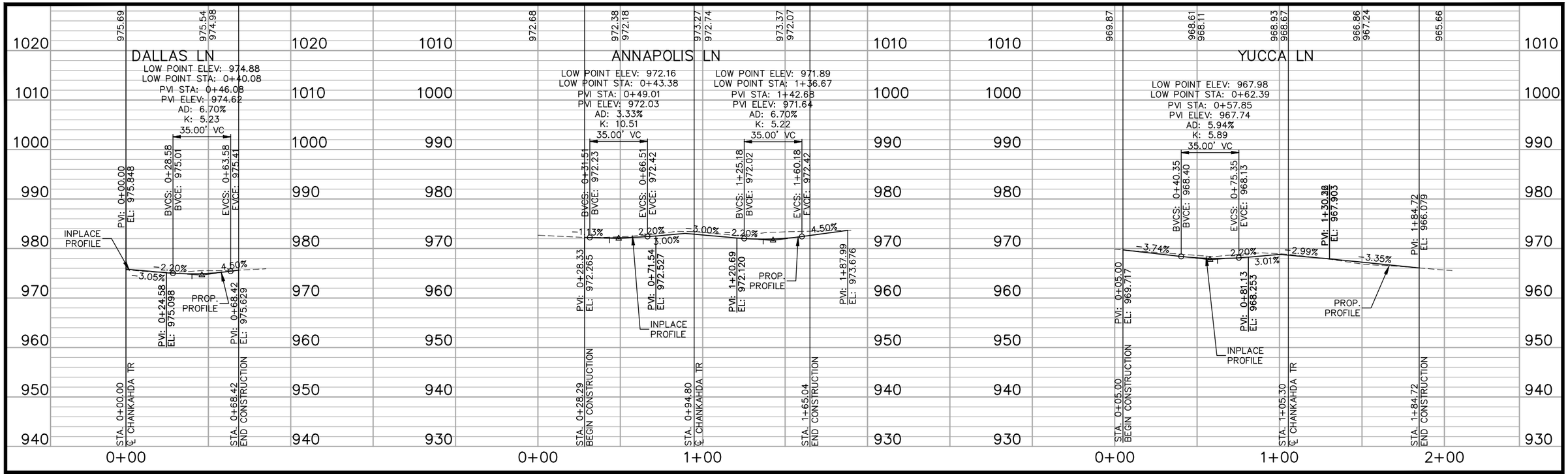
DATE: 02/07/2025 MN LIC. NO. 41864

City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
SIDE STREET
CONSTRUCTION PROFILE

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 174 / 354



No.	Date	Revisions	App.

DRAWING NAME: CHANKAHDA_PH3_PlanProfile.dwg

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DATE:	02/07/2025
PROJECT NO.	160662010

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CHADD B. LARSON, PE

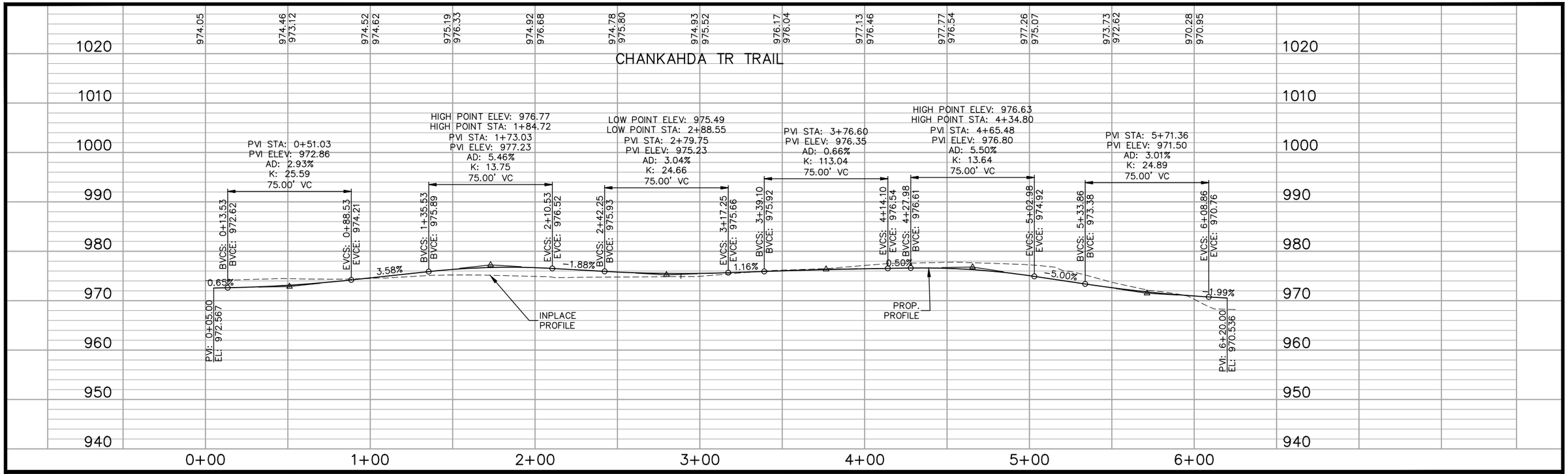
DATE: 02/07/2025 MN LIC. NO. 41864

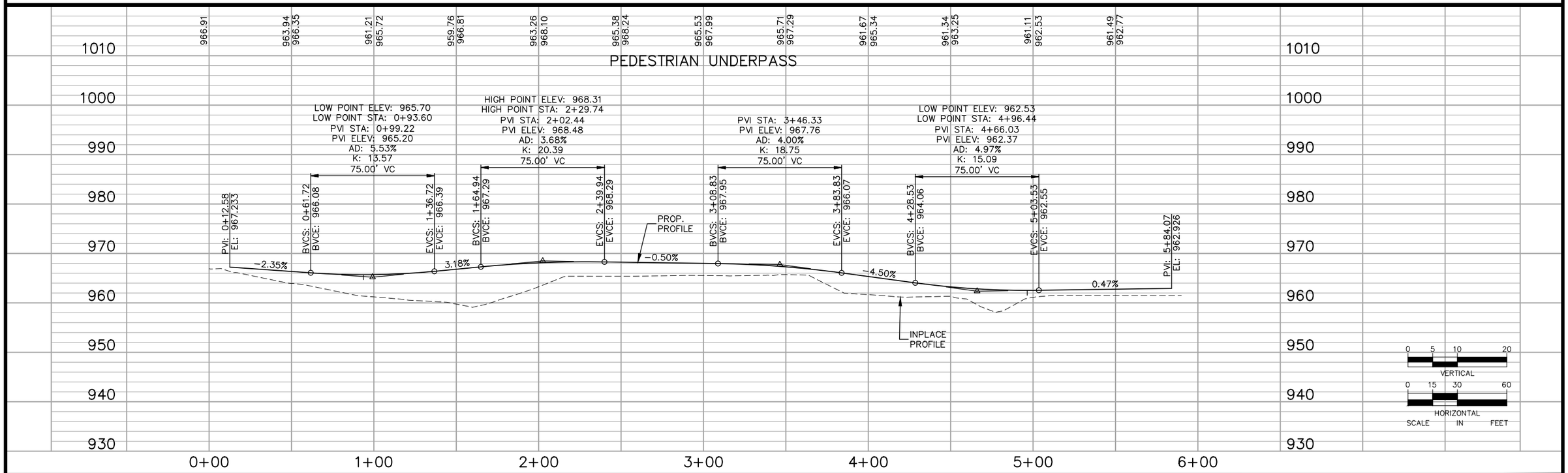
City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
SIDE STREET
CONSTRUCTION PROFILE

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 175 / 354





No.	Date	Revisions	App.

DRAWING NAME: CHANKAHDA_PH3_PlanProfile.dwg

DESIGNED BY:	JWB
DRAWN BY:	RGS
CHECKED BY:	CBL
DATE:	02/07/2025
PROJECT NO.	160662010

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CHADD B. LARSON, PE

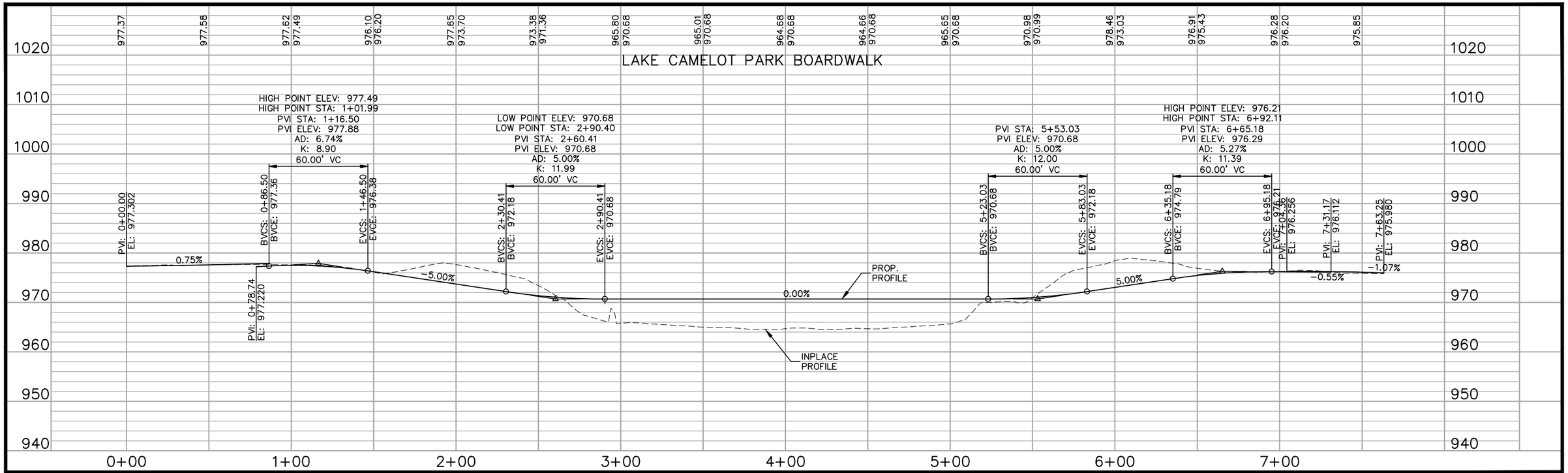
DATE: 02/07/2025 MN LIC. NO. 41864

City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
SIDE STREET
CONSTRUCTION PROFILE

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 176 / 354



No.	Date	Revisions	App.

DRAWING NAME	CHANKAHDA_PH3_PlanProfile.dwg
DESIGNED BY:	183
DRAWN BY:	RGS
CHECKED BY:	CBL
DATE:	02/07/2025
PROJECT NO.	160662010

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767 EUSTIS STREET, SUITE 100, ST, PAUL, MN 55114
PHONE: 651-645-4197
WWW.KIMLEY-HORN.COM

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CHADD B. LARSON, PE

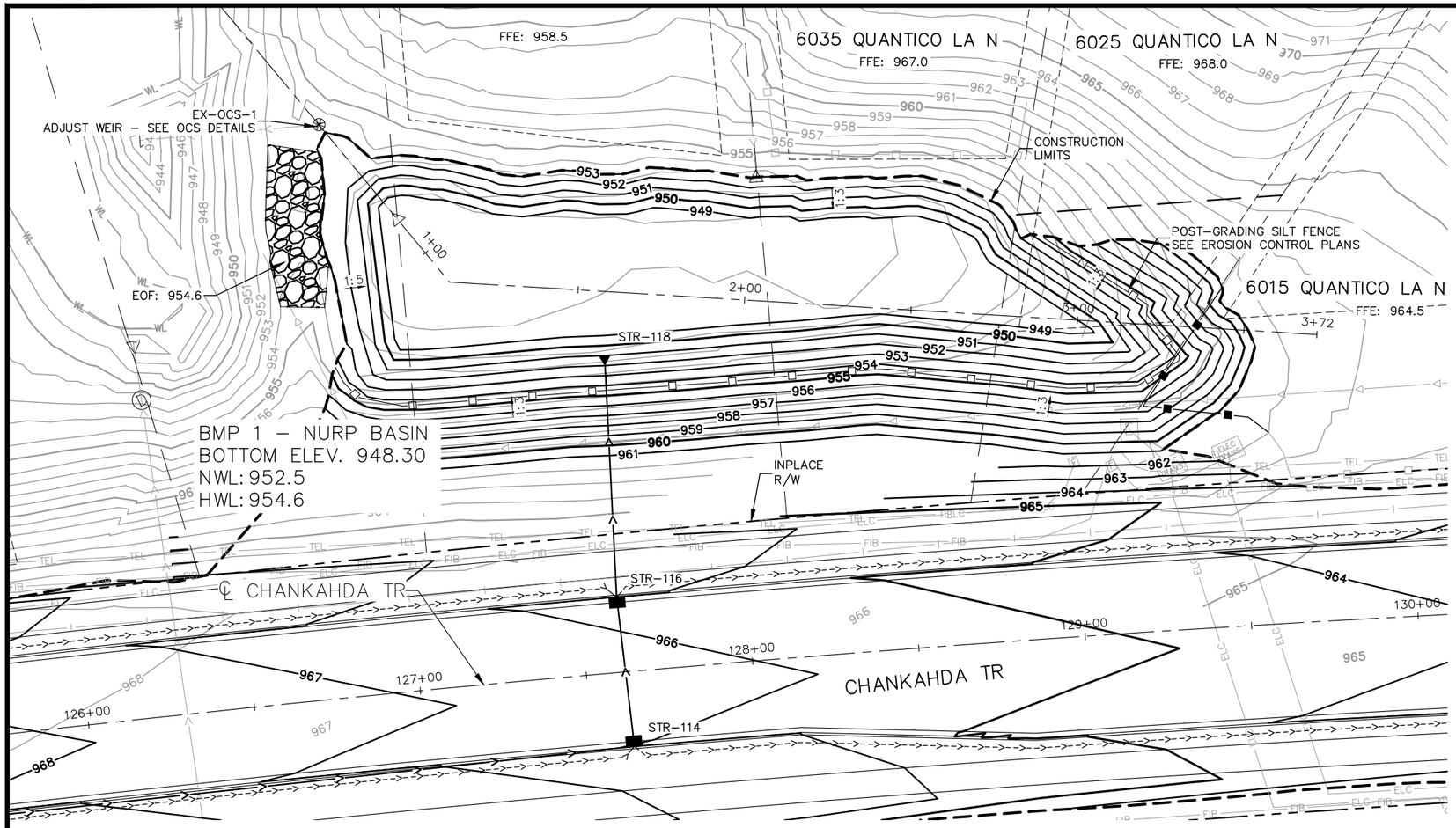
DATE: 02/07/2025 MN LIC. NO. 41864

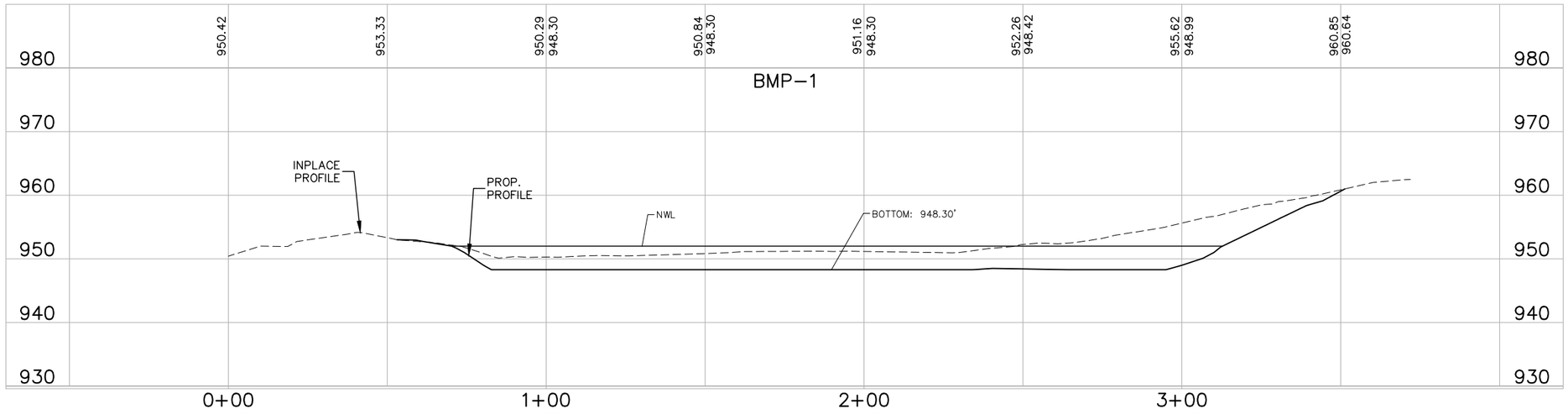
City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
SIDE STREET
CONSTRUCTION PROFILE

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 177 / 354





0 10 20 40
HORIZONTAL SCALE IN FEET

No.	Date	Revisions	App.

DRAWING NAME: CHANKAHDA_PH3_Grading.dwg

DESIGNED BY:	HB
DRAWN BY:	PD
CHECKED BY:	CBL
DATE:	02/07/2025
PROJECT NO.	160662010

Kimley»Horn
767 EUSTIS STREET, SUITE 100, ST, PAUL, MN 55114
PHONE: 651-645-4197
WWW.KIMLEY-HORN.COM

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CHADD B. LARSON, PE

DATE: 02/07/2025 MN LIC. NO. 41864

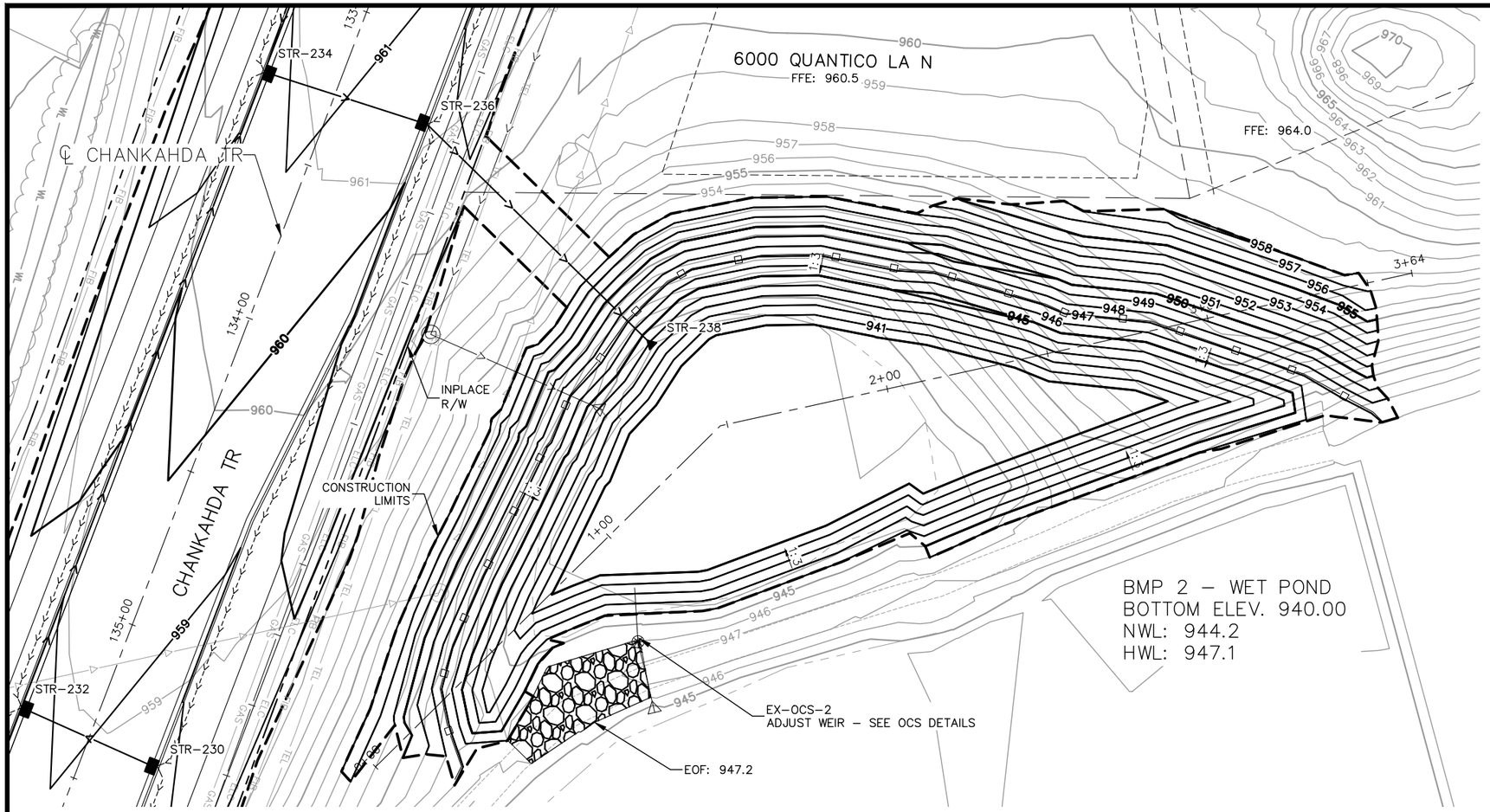
City of Plymouth

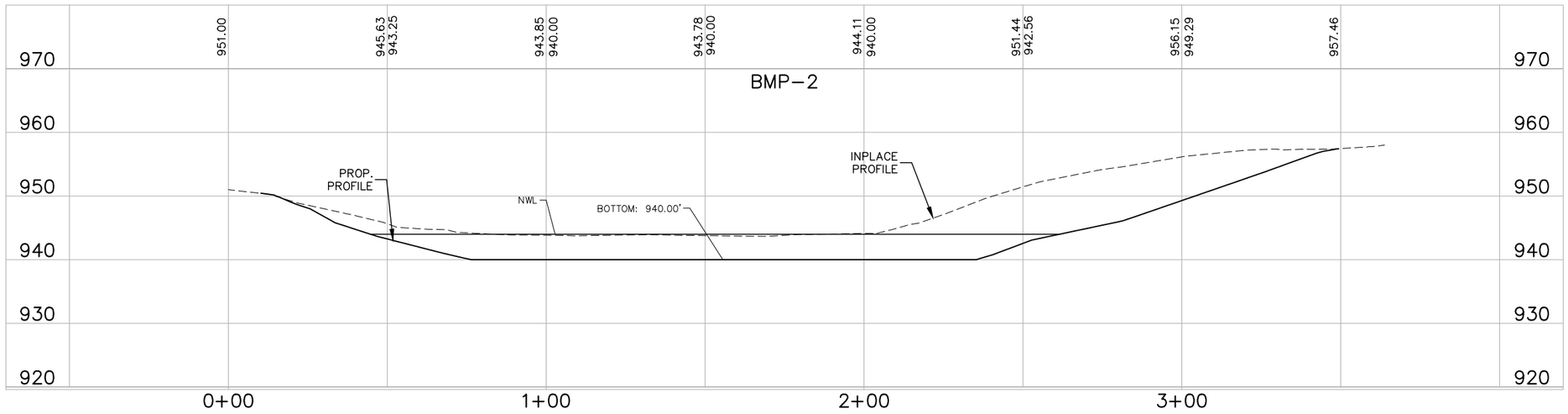
CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3

CHANKAHDA TR
BMP 1

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 178 / 354





No.	Date	Revisions	App.

DRAWING NAME	CHANKAHDA_PH3_Grading.dwg
DESIGNED BY:	HB
DRAWN BY:	PD
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DATE:	02/07/2025
PROJECT NO.	160662010

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CHADD B. LARSON, PE

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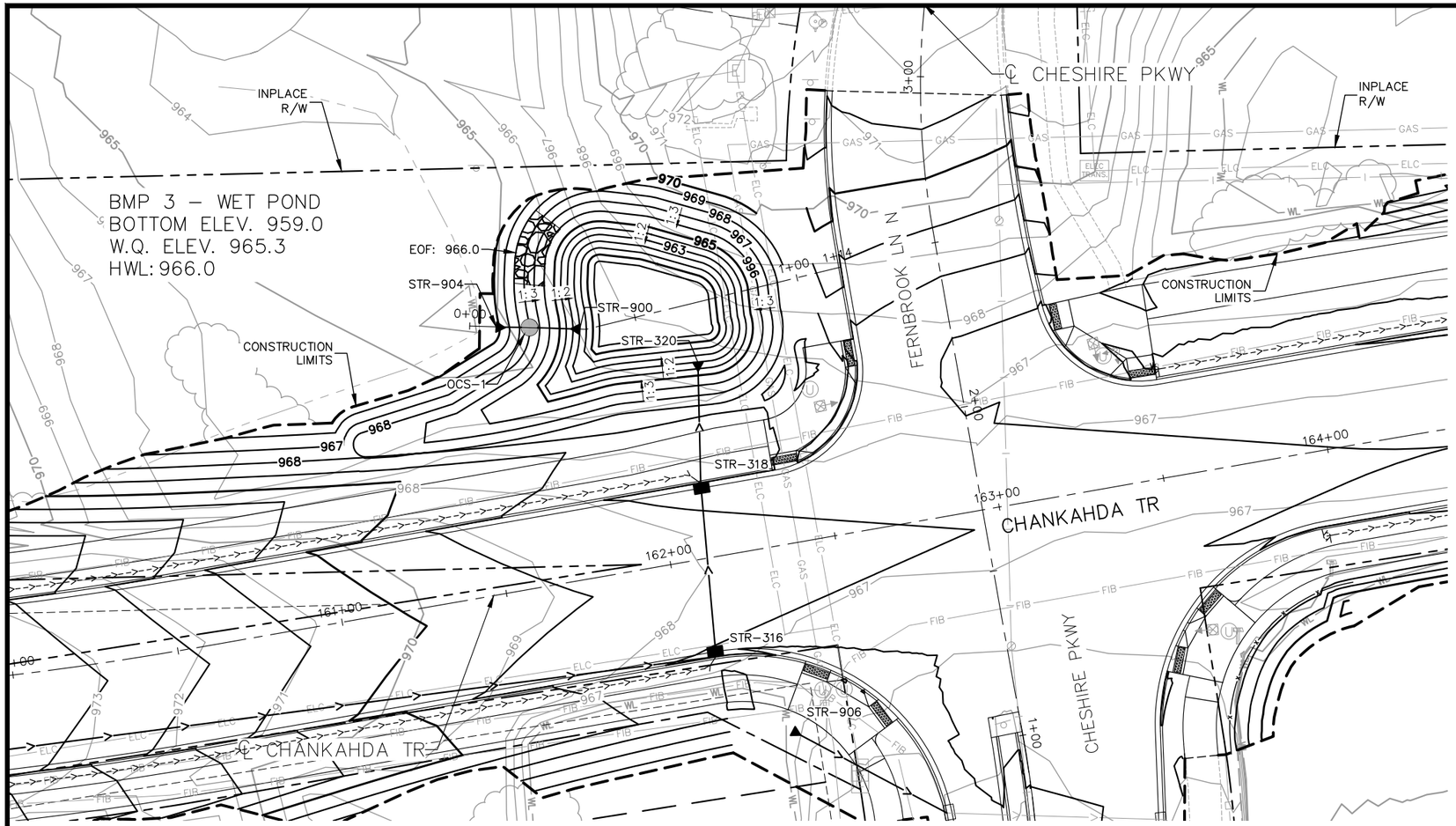
City of Plymouth

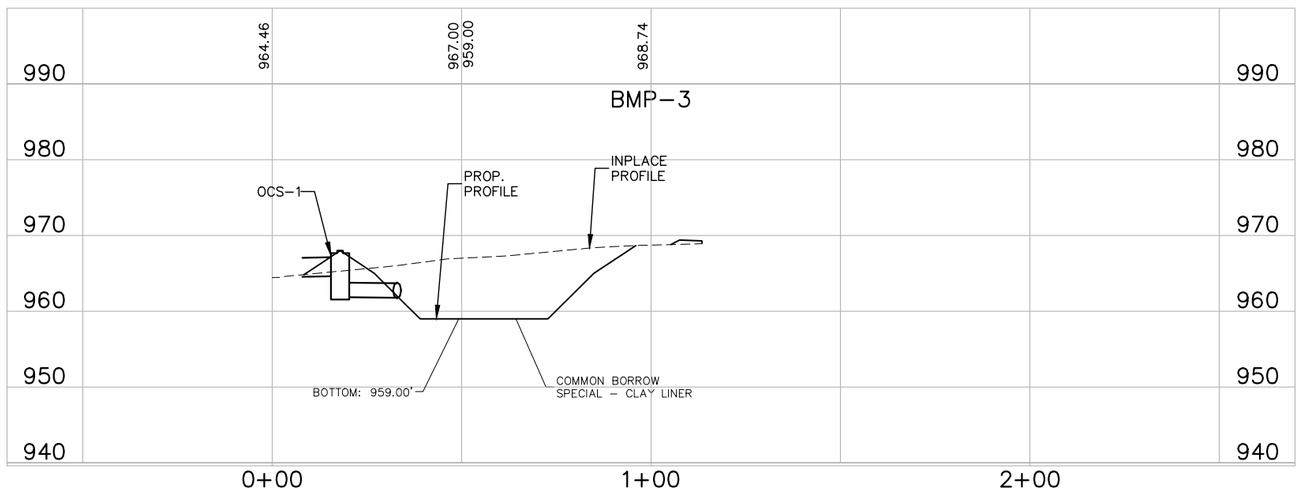
CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3

CHANKAHDA TR
BMP 2

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 179 / 354





0 10 20 40
HORIZONTAL SCALE IN FEET

No.	Date	Revisions	App.

DRAWING NAME: CHANKAHDA_PH3_Grading.dwg

DESIGNED BY:	HB
DRAWN BY:	PD
CHECKED BY:	CBL
DATE:	02/07/2025
PROJECT NO.	160662010

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CHADD B. LARSON, PE
DATE: 02/07/2025 MN LIC. NO. 41864

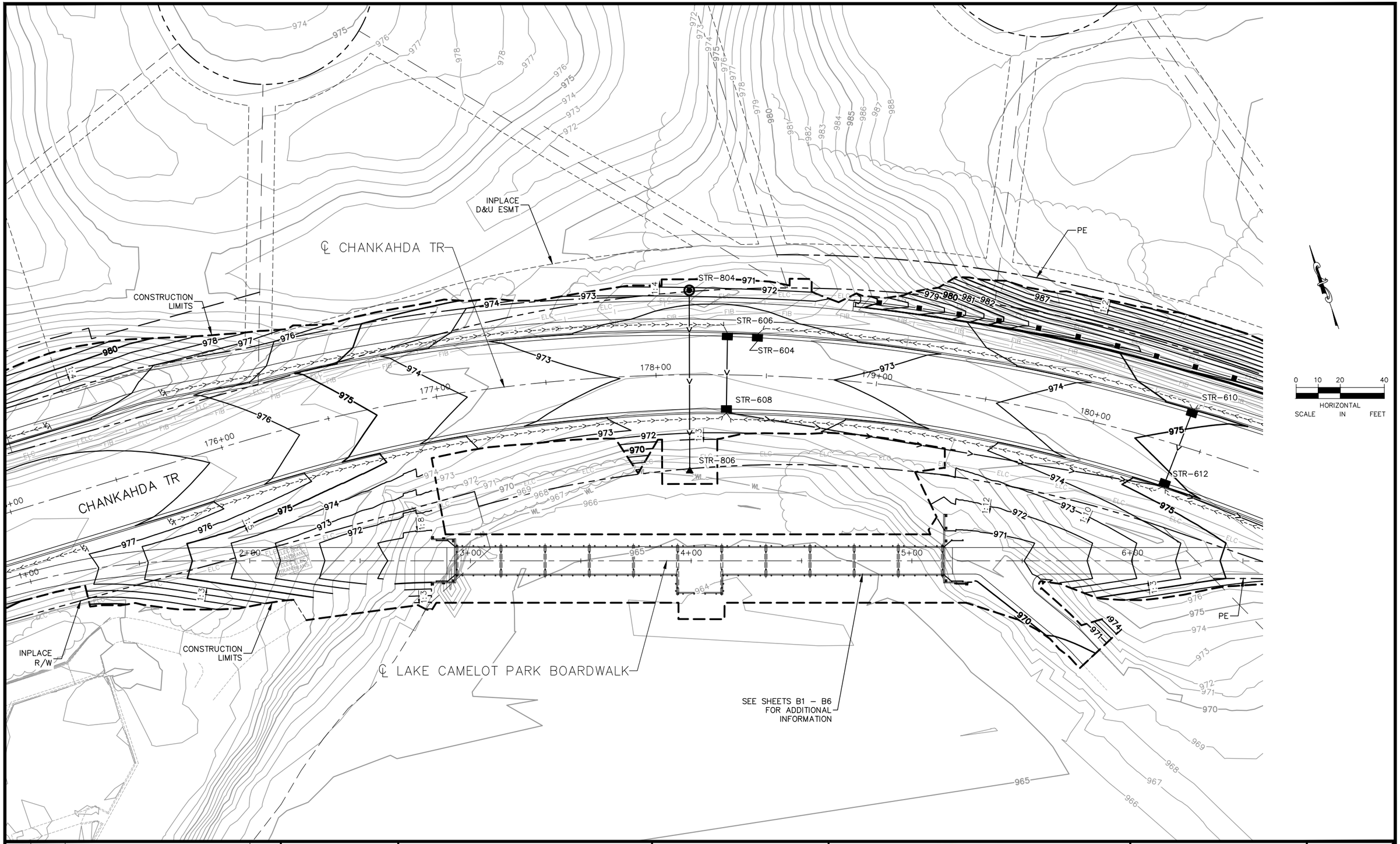
City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3

CHANKAHDA TR
BMP 3

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 180 / 354



No.	Date	Revisions	App.

DRAWING NAME	CHANKAHDA_PH3_Grading.dwg
DESIGNED BY:	JWB
DRAWN BY:	JWB
CHECKED BY:	CBL
DATE:	02/07/2025
PROJECT NO.	160662010

Kimley»Horn
767 EUSTIS STREET, SUITE 100, ST, PAUL, MN 55114
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WWW.KIMLEY-HORN.COM

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CHADD B. LARSON, PE

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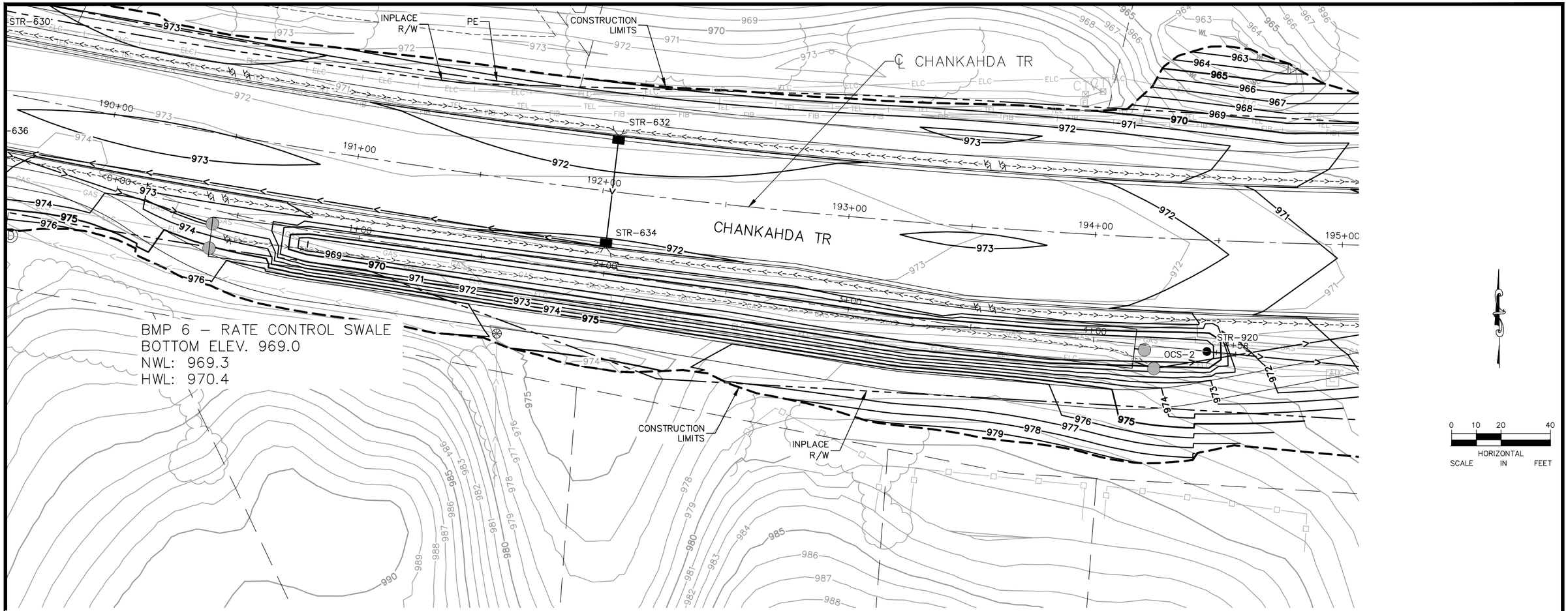
City of Plymouth

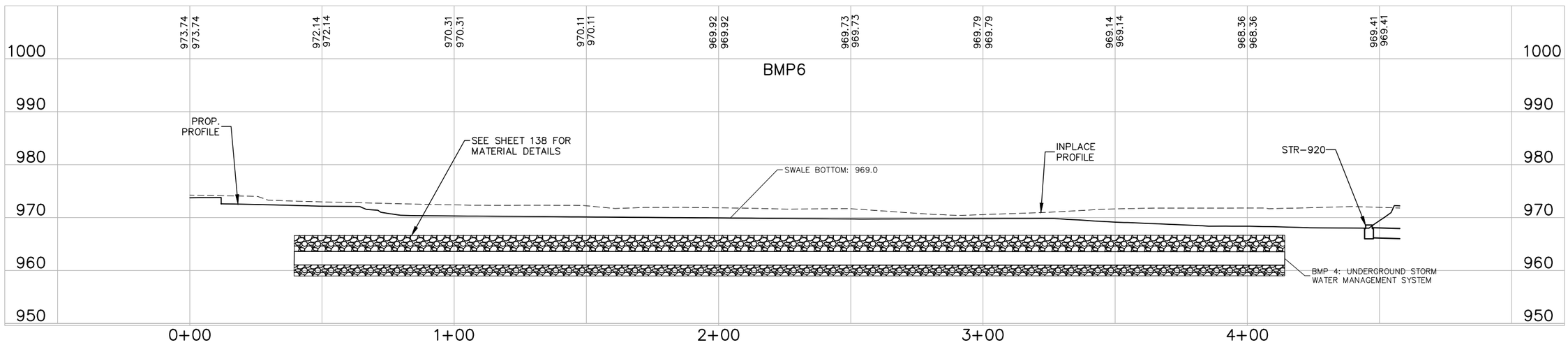
CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3

CHANKAHDA TR
BOARDWALK

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO.
181
354





No.	Date	Revisions	App.

DRAWING NAME	CHANKAHDA_PH3_Grading.dwg
DESIGNED BY:	HB
DRAWN BY:	PD
CHECKED BY:	CBL
DATE:	02/07/2025
PROJECT NO.	160662010

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CHADD B. LARSON, PE

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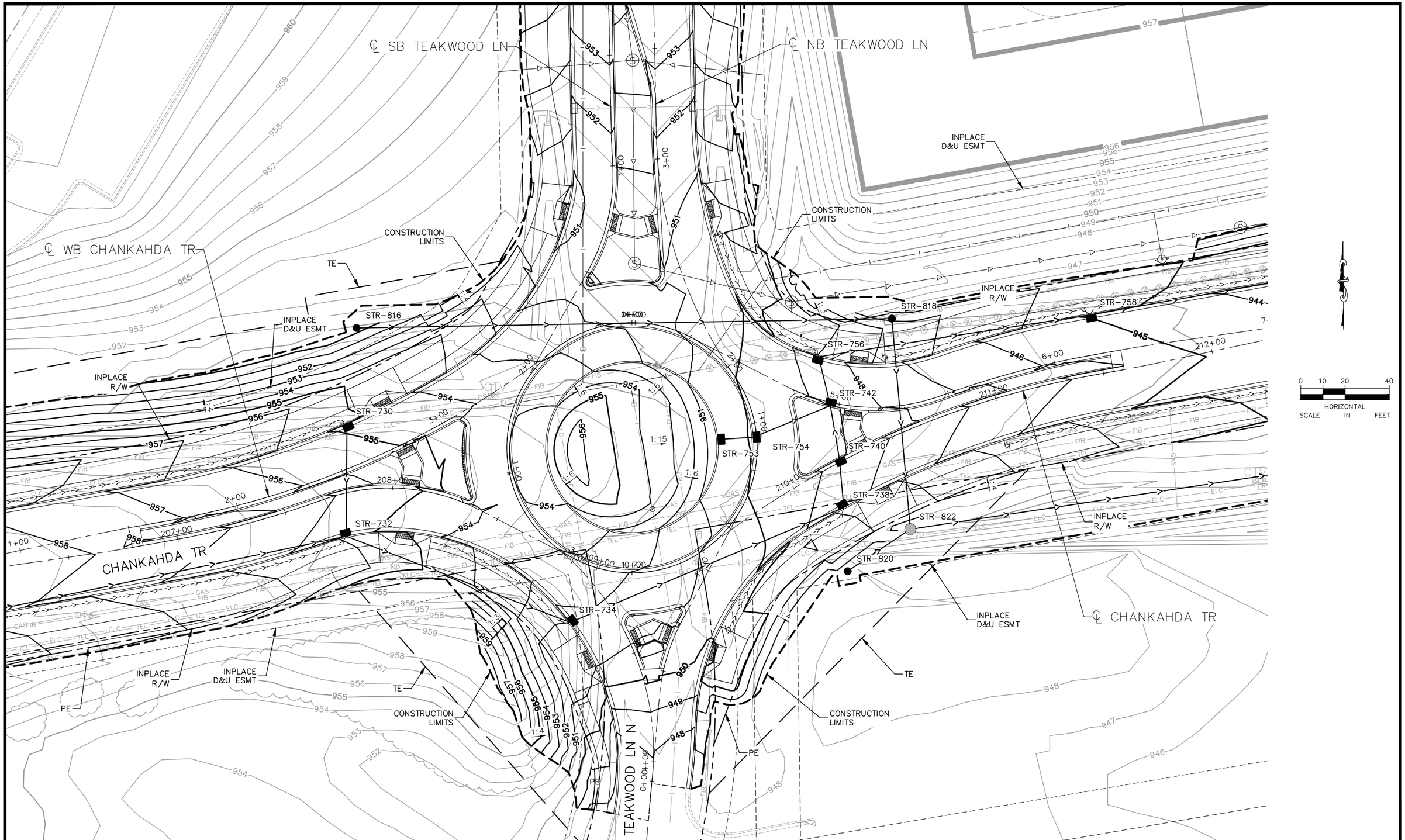
City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3

CHANKAHDA TR
BMP 6

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 182 / 354



No.	Date	Revisions	App.

DRAWING NAME: CHANKAHDA_PH3_Grading.dwg

DESIGNED BY:	JWB
DRAWN BY:	JWB
CHECKED BY:	CBL
DATE:	02/07/2025
PROJECT NO.	160662010

Kimley»Horn
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CHADD B. LARSON, PE

DATE: 02/07/2025 MN LIC. NO. 41864

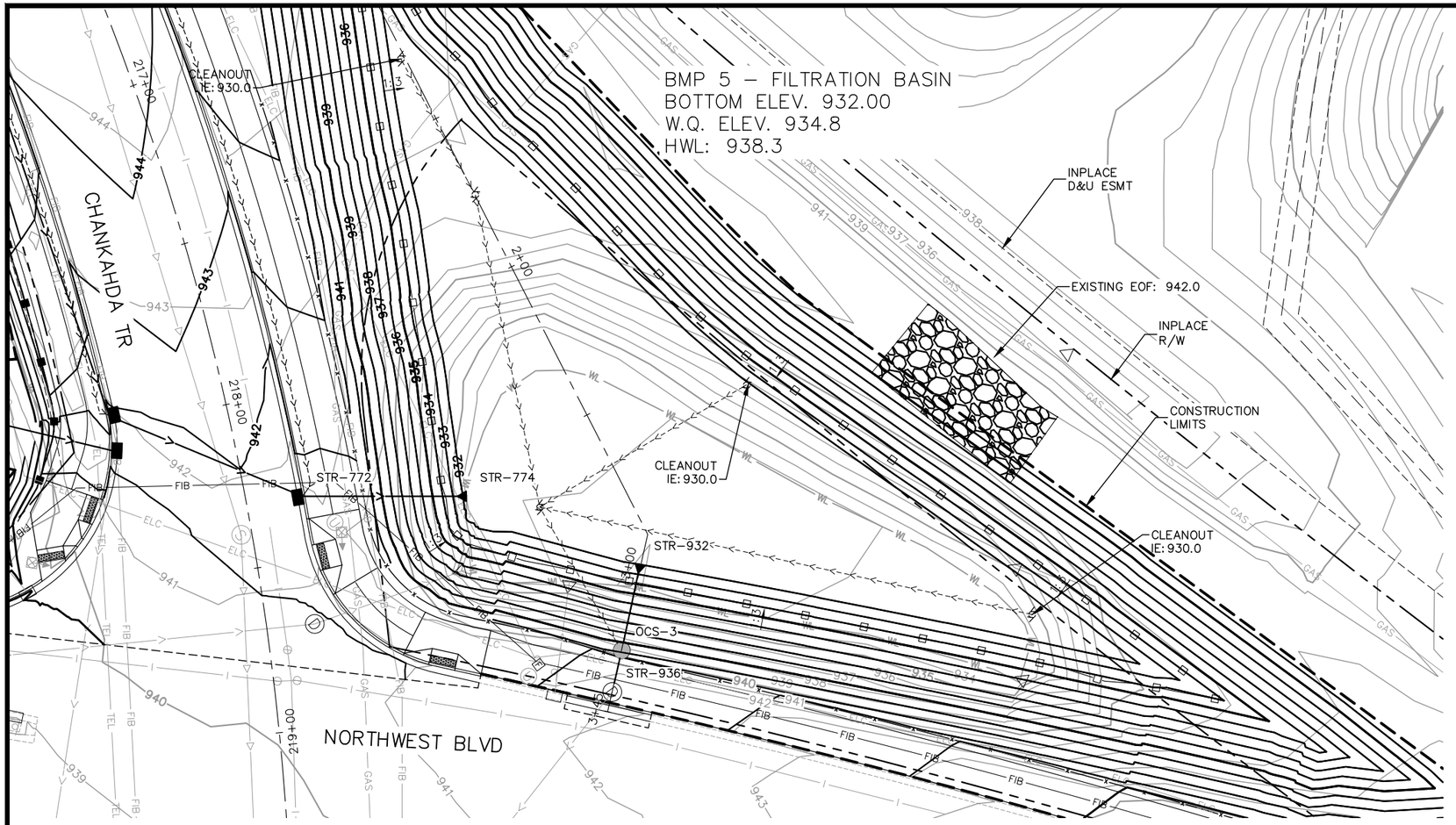
City of Plymouth

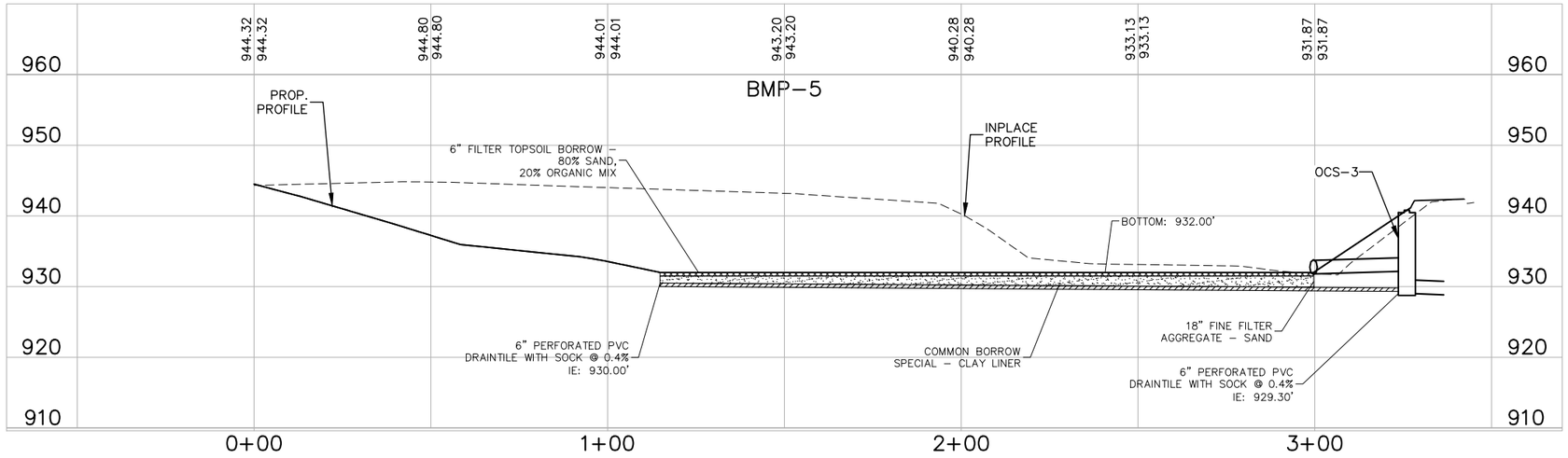
CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3

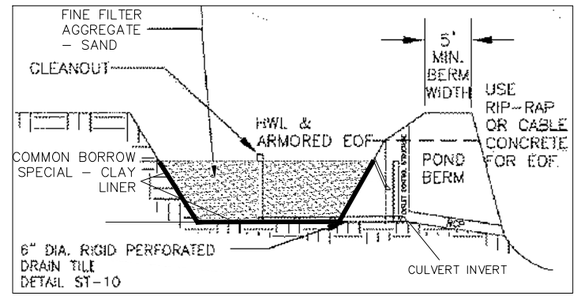
CHANKAHDA TR
ROUNDABOUT

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 183 / 354







TYPICAL BMP PROFILE DETAIL

0 10 20 40
HORIZONTAL
SCALE IN FEET

No.	Date	Revisions	App.

DRAWING NAME	CHANKAHDA_PH3_Grading.dwg
DESIGNED BY:	HB
DRAWN BY:	PD
CHECKED BY:	CBL
DATE:	02/07/2025
PROJECT NO.	160662010

Kimley»Horn
767 EUSTIS STREET, SUITE 100, ST. PAUL, MN 55114
PHONE: 651–645–4197
WWW.KIMLEY–HORN.COM

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

CHADD B. LARSON, PE

DATE: 02/07/2025 MN LIC. NO. 41864

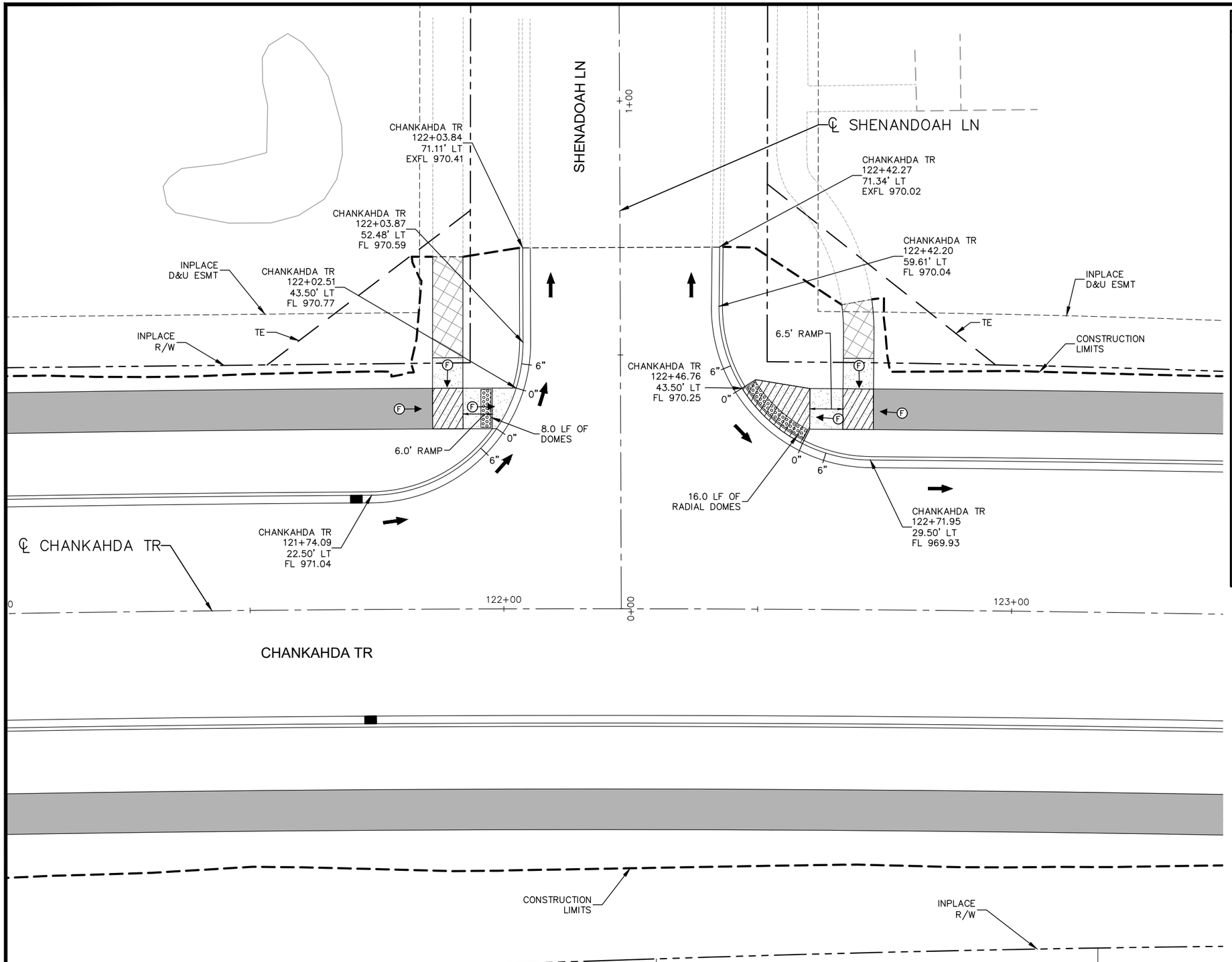
City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3

CHANKAHDA TR
BMP 5

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155–210–003
S.A.P.	

SHEET NO. 184 / 354



LEGEND

- INPLACE SIGNAL POLE
- MODIFY SIGNAL POLE
- PROPOSED SIGNAL POLE
- PEDESTRIAN PUSH BUTTON STATION
- PEDESTRIAN PUSH BUTTON
- XX — CONTROL POINTS
- TRUNCATED DOMES (SEE STANDARD PLATE 7038)
- X" — CURB HEIGHT
- LANDING AREA – 4' X 4' MIN. DIMENSIONS AND MAX 2.0% SLOPE IN ALL DIRECTIONS
- (S) INDICATES PEDESTRIAN RAMP – SLOPE SHALL BE BETWEEN 5.0% MINIMUM AND 8.3% MAXIMUM IN THE 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 THE DIRECTION SHOWN AND CROSS SLOPE SHALL NOT EXCEED 2.0%
- DRAINAGE FLOW ARROW
- GRADING BREAK LINE
- FL — FLOW LINE
- EXFL — INPLACE FLOW LINE – MATCH EXISTING ELEVATION
- 4" CONC. WALK
- 6" CONC. WALK
- 6" COLORED CONC.
- 8" COLORED CONC.
- BIT. TRAIL

NOTES:
1. ALL STATIONS AND OFFSETS ARE WITH RESPECT TO CHANKAHDA TR ℄ UNLESS OTHERWISE NOTED.
2. ALL PANELS SHALL BE SEPARATE POURS.
3. ALL CURB PANELS SHALL BE DOWELED.
4. ALL CONCRETE SIDEWALK PANELS SHALL BE DOWELED.

0 5 10 20
HORIZONTAL
SCALE IN FEET

No.	Date	Revisions	App.

DRAWING NAME: CHANKAHDA_PH3_INT.dwg
DESIGNED BY: JWB
DRAWN BY: RGS
CHECKED BY: CBL
DATE: 02/07/2025
PROJECT NO. 160662010

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CHADD B. LARSON, PE
DATE: 02/07/2025 MN LIC. NO. 41864

City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3

CHANKAHDA TR
INTERSECTION DETAILS

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 185 / 354

℄ QUANTICO LN

QUANTICO LN

CHANKAHDA TR
131+31.32
67.20' LT
EXFL 962.11

CHANKAHDA TR
131+29.58
46.99' LT
FL 962.19

CHANKAHDA TR
131+25.51
36.50' LT
FL 962.37

CONSTRUCTION LIMITS

6"

0"

6"

0"

CHANKAHDA TR
131+00.29
22.50' LT
FL 962.55

16.0 LF OF RADIAL DOMES

℄ CHANKAHDA TR

131+00

CHANKAHDA TR

132+00

CHANKAHDA TR
130+95.57
31.81' RT
FL 962.46

CHANKAHDA TR
130+83.96
29.50' RT
FL 962.80

6"

0"

3.5' RAMP

24.0 LF OF DOMES

CHANKAHDA TR
131+14.22
59.45' RT
FL 961.86

0"

6"

INPLACE R/W

CHANKAHDA TR
131+14.26
70.96' RT
EXFL 961.78

2+00

1+00

CHANKAHDA TR
131+57.39
67.50' LT
EXFL 962.14

CHANKAHDA TR
131+57.90
58.17' LT
FL 961.90

CHANKAHDA TR
131+60.07
48.13' LT
FL 962.11

INPLACE R/W

6"

0"

3.5' RAMP

18.5 LF OF DOMES

0"

6"

CHANKAHDA TR
131+87.63
29.50' LT
FL 961.52

CHANKAHDA TR
131+95.99
24.81' RT
FL 962.12

CHANKAHDA TR
132+07.59
22.50' RT
FL 961.87

0"

6"

3.5' RAMP

24.0 LF OF DOMES

0"

6"

CHANKAHDA TR
131+77.37
52.93' RT
FL 961.71

CONSTRUCTION LIMITS

CHANKAHDA TR
131+77.59
70.46' RT
EXFL 961.68

LEGEND

- INPLACE SIGNAL POLE
- MODIFY SIGNAL POLE
- PROPOSED SIGNAL POLE
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- 6" CONC. WALK
- 6" COLORED CONC.
- 8" COLORED CONC.
- BIT. TRAIL

NOTES:
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3. ALL CURB PANELS SHALL BE DOWELED.
4. ALL CONCRETE SIDEWALK PANELS SHALL BE DOWELED.

0 5 10 20
HORIZONTAL SCALE IN FEET

No.	Date	Revisions	App.

DRAWING NAME: CHANKAHDA_PH3_INT.dwg

DESIGNED BY:	JWB
DRAWN BY:	RGS
CHECKED BY:	CBL
DATE:	02/07/2025
PROJECT NO.	160662010

Kimley»Horn
767 EUSTIS STREET, SUITE 100, ST, PAUL, MN 55114
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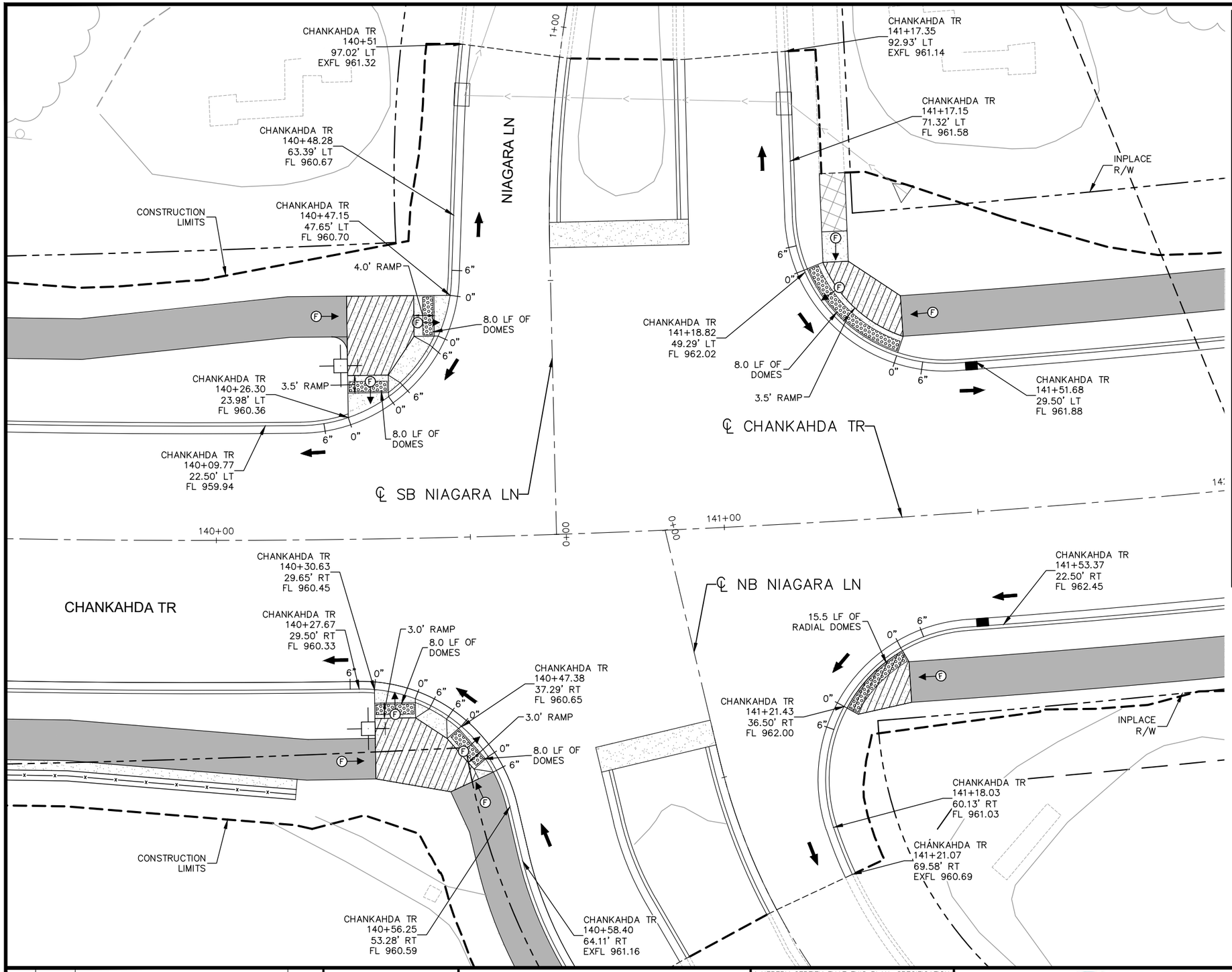
City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3

CHANKAHDA TR
INTERSECTION DETAILS

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 186 / 354



LEGEND

- INPLACE SIGNAL POLE
- MODIFY SIGNAL POLE
- PROPOSED SIGNAL POLE
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- 8" COLORED CONC.
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0 5 10 20
HORIZONTAL SCALE IN FEET

No.	Date	Revisions	App.

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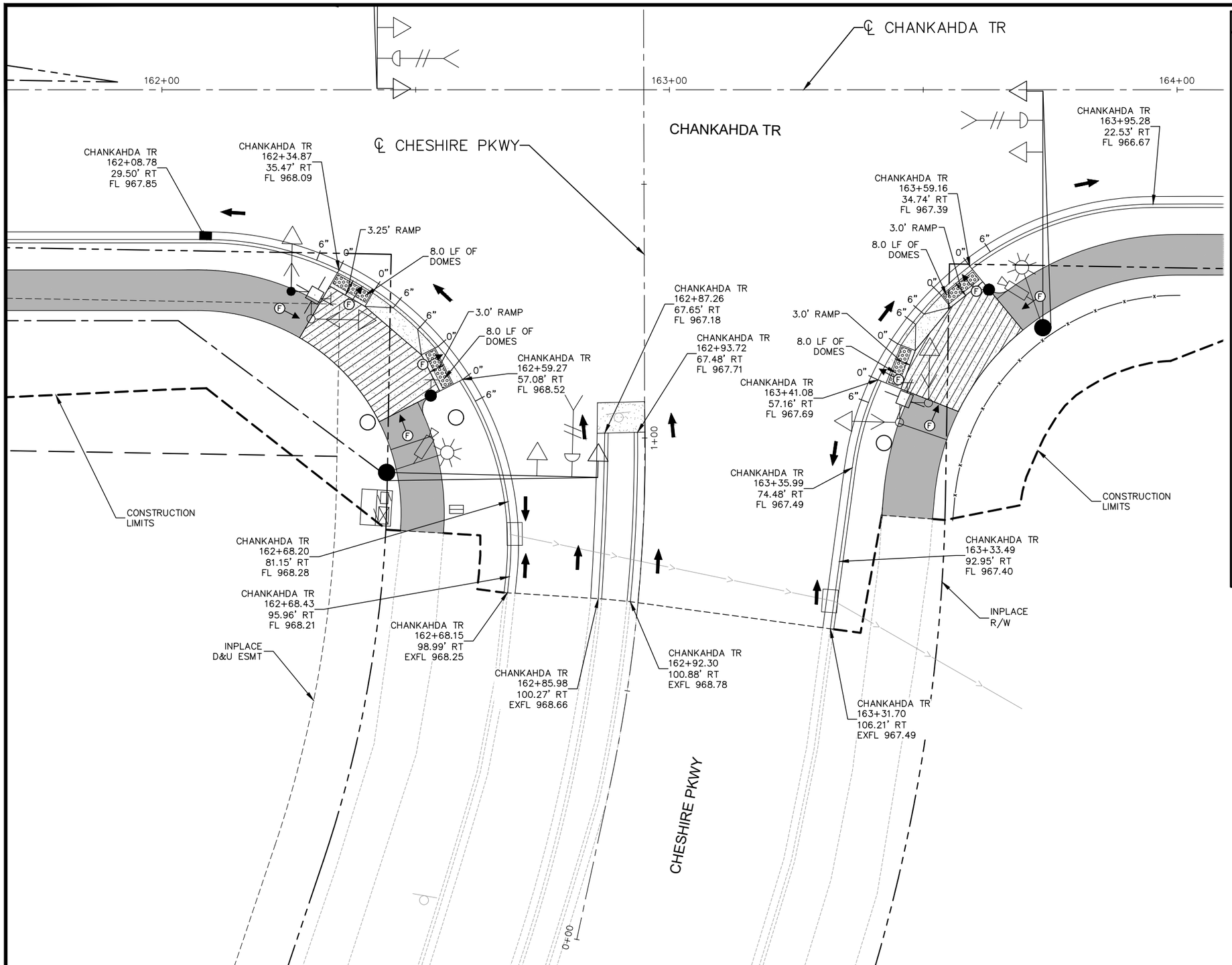
City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3

CHANKAHDA TR
INTERSECTION DETAILS

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 187 / 354



LEGEND

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0 5 10 20
HORIZONTAL SCALE IN FEET

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DRAWING NAME: CHANKAHDA_PH3_INT.dwg
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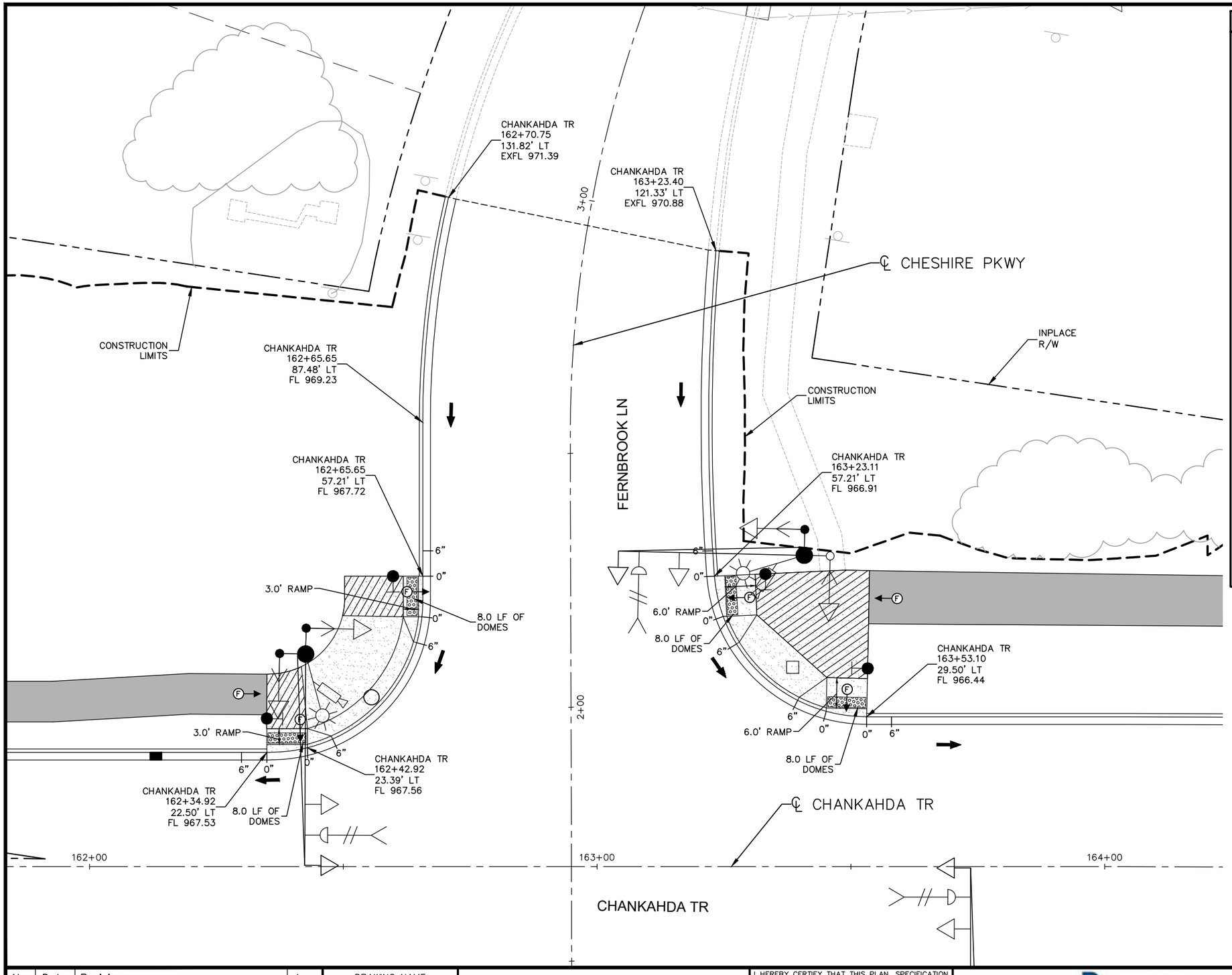
City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3

CHANKAHDA TR
INTERSECTION DETAILS

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 188 / 354



LEGEND

- INPLACE SIGNAL POLE
- MODIFY SIGNAL POLE
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HORIZONTAL
SCALE IN FEET

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DRAWING NAME CHANKAHDA_PH3_INT.dwg	
DESIGNED BY:	JWB
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DATE:	02/07/2025
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Chadd B. Larson
CHADD B. LARSON, PE
DATE: 02/07/2025 MN LIC. NO. 41864

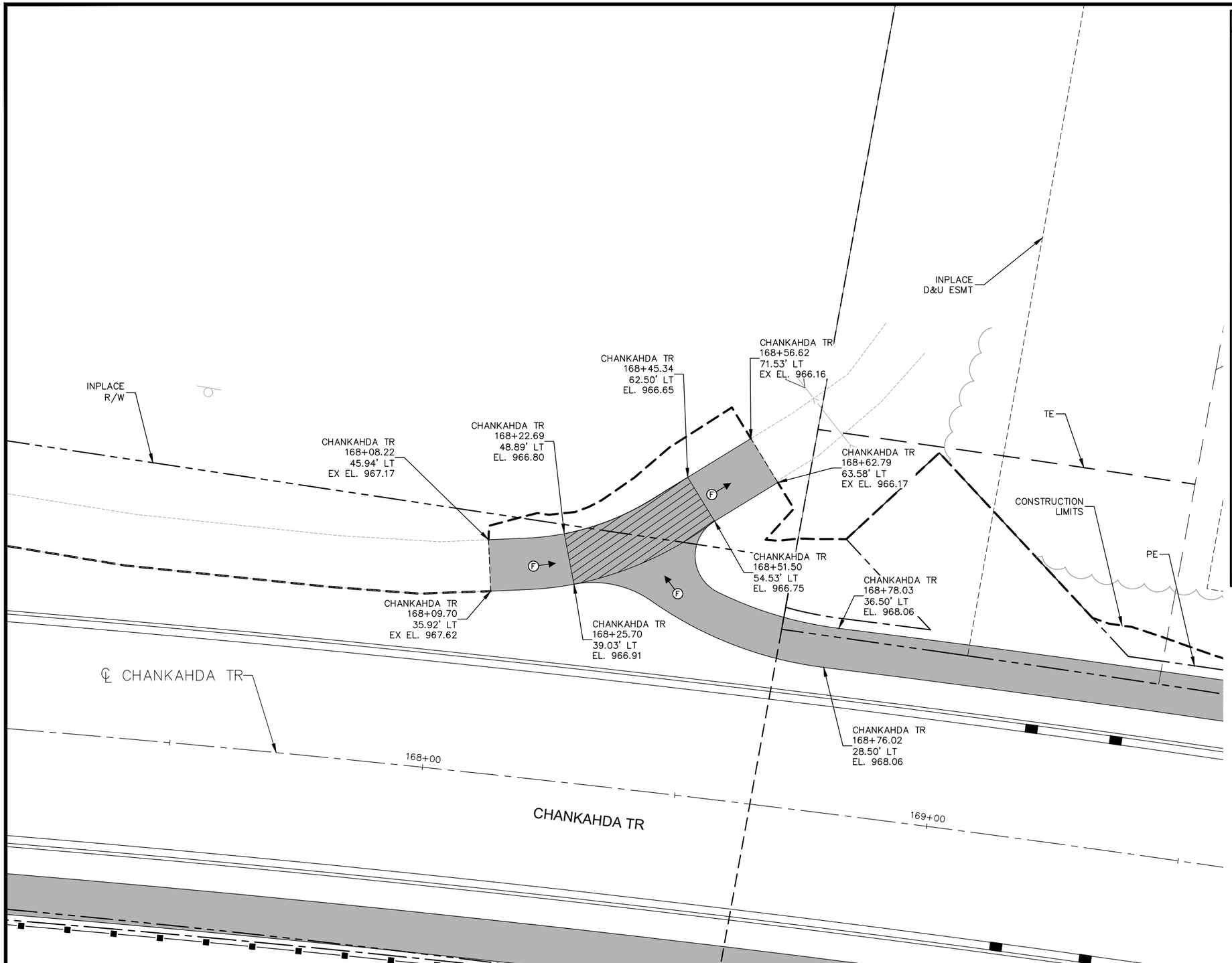
City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3

CHANKAHDA TR
INTERSECTION DETAILS

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 189 / 354



LEGEND

- INPLACE SIGNAL POLE
- MODIFY SIGNAL POLE
- PROPOSED SIGNAL POLE
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0 5 10 20
HORIZONTAL SCALE IN FEET

No.	Date	Revisions	App.

DRAWING NAME CHANKAHDA_PH3_INT.dwg	
DESIGNED BY:	JWB
DRAWN BY:	RGS
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DATE:	02/07/2025
PROJECT NO.	160662010

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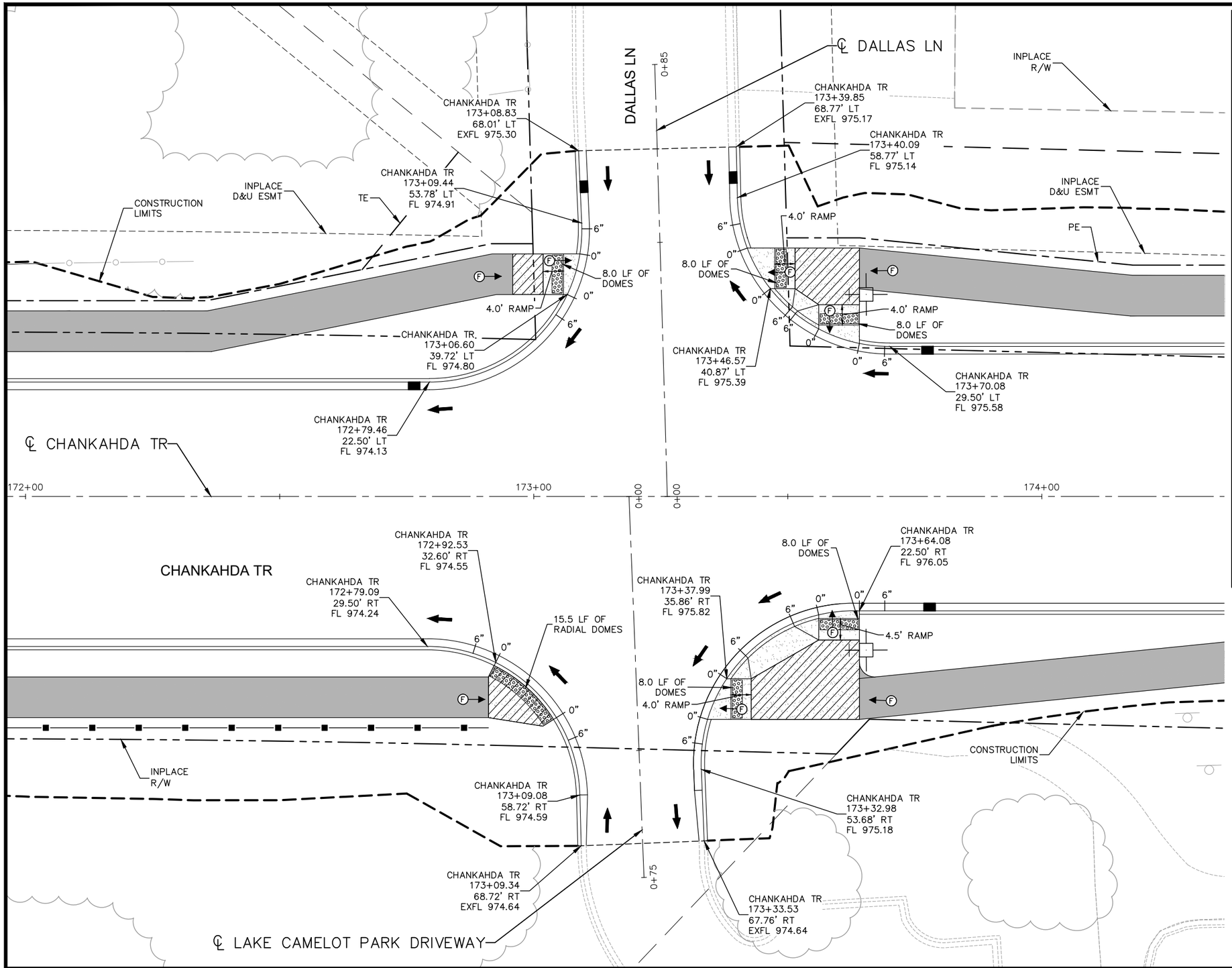
City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3

CHANKAHDA TR
INTERSECTION DETAILS

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 190 / 354



LEGEND

- INPLACE SIGNAL POLE
- MODIFY SIGNAL POLE
- PROPOSED SIGNAL POLE
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HORIZONTAL SCALE IN FEET: 0 5 10 20

No.	Date	Revisions	App.

DRAWING NAME	
CHANKAHDA_PH3_INT.dwg	
DESIGNED BY:	JWB
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City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3

CHANKAHDA TR
INTERSECTION DETAILS

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 191 / 354

℄ ANNAPOLIS LN

ANNAPOLIS LN

1+90

1+00

CHANKAHDA TR
184+96.20
70.05' LT
EXFL 973.39

CHANKAHDA TR
184+96.63
53.85' LT
FL 973.05

CHANKAHDA TR
184+91.37
36.50' LT
FL 972.87

CHANKAHDA TR
185+30.43
70.12' LT
EXFL 973.13

CHANKAHDA TR
185+30.42
60.16' LT
FL 972.70

INPLACE
D&U ESMT

INPLACE
R/W

CONSTRUCTION
LIMITS

PE

6"
0"
6"

15.5 LF OF
RADIAL DOMES

CHANKAHDA TR
185+35.75
43.50' LT
FL 972.22

CHANKAHDA TR
185+62.97
29.50' LT
FL 971.59

℄ CHANKAHDA TR

184+00

185+00

186+00

CHANKAHDA TR
184+64.42
22.50' LT
FL 972.54

CHANKAHDA TR

CHANKAHDA TR
184+71.78
29.50' RT
FL 972.60

CHANKAHDA TR
184+84.43
32.74' RT
FL 972.42

15.0 LF OF
RADIAL DOMES

CHANKAHDA TR
184+99.57
57.08' RT
FL 971.90

CHANKAHDA TR
185+00.23
67.03' RT
EXFL 971.68

CHANKAHDA TR
185+43.98
25.74' RT
FL 972.35

CHANKAHDA TR
185+56.73
22.50' RT
FL 972.18

CHANKAHDA TR
185+28.66
51.58' RT
FL 972.16

CHANKAHDA TR
185+28.95
66.18' RT
EXFL 972.12

LEGEND

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- MODIFY SIGNAL POLE
- PROPOSED SIGNAL POLE
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- 6" CONC. WALK
- 6" COLORED CONC.
- 8" COLORED CONC.
- BIT. TRAIL

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0 5 10 20
HORIZONTAL
SCALE IN FEET

No.	Date	Revisions	App.

DRAWING NAME: CHANKAHDA_PH3_INT.dwg

DESIGNED BY:	JWB
DRAWN BY:	RGS
CHECKED BY:	CBL
DATE:	02/07/2025
PROJECT NO.	160662010

Kimley»Horn
767 EUSTIS STREET, SUITE 100, ST. PAUL, MN 55114
PHONE: 651-645-4197
WWW.KIMLEY-HORN.COM

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CHADD B. LARSON, PE
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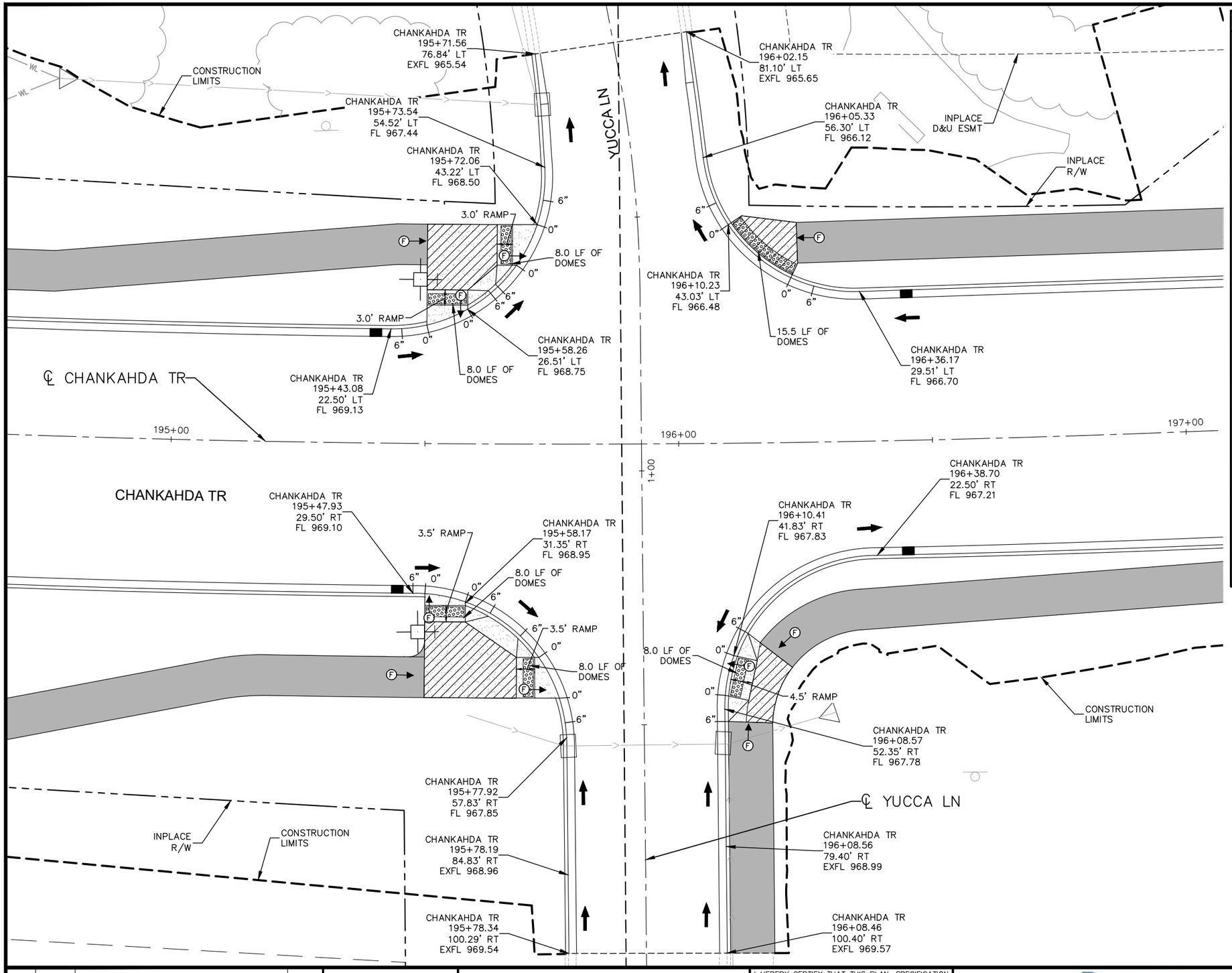
City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3

CHANKAHDA TR
INTERSECTION DETAILS

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 192 / 354



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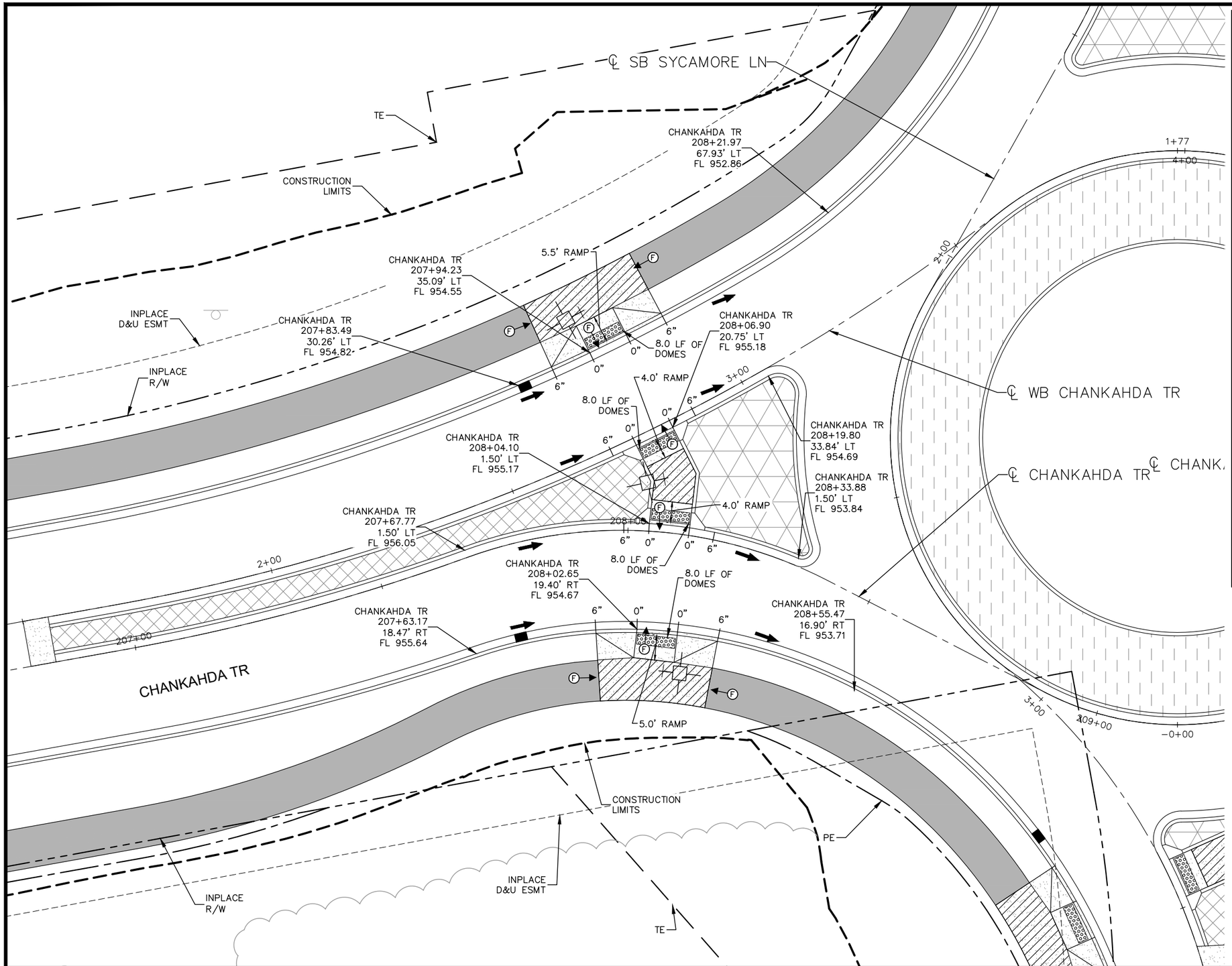
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City of Plymouth
CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3

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SHEET NO. 194 / 354

℄ SB SYCAMORE LN

SYCAMORE LN

℄ NB TEAKWOOD LN

CHANKAHDA TR
210+09.03
178.27' LT
FL 951.88

CHANKAHDA TR
208+28.49
162.66' LT
FL 951.12

CONSTRUCTION
LIMITS

CONSTRUCTION
LIMITS

CHANKAHDA TR
210+33.98
168.52' LT
FL 951.70

CHANKAHDA TR
210+19.69
170.16' LT
FL 951.95

1100

3300

6"

4.0' RAMP

8.0 LF OF
DOMES

0"

5.5' RAMP

4.0' RAMP

6"

0"

8.0 LF OF
DOMES

0"

8.0 LF OF
DOMES

0"

6"

5.0' RAMP

6"

0"

8.0 LF OF
DOMES

0"

6"

CHANKAHDA TR
208+30.78
135.17' LT
FL 950.75

TE

CHANKAHDA TR
208+30.88
123.02' LT
FL 950.93

CHANKAHDA TR
208+38.45
138.81' LT
FL 951.52

CHANKAHDA TR
210+05.66
130.63' LT
FL 951.16

CHANKAHDA TR
208+38.90
118.29' LT
FL 952.01

CHANKAHDA TR
210+22.82
124.73' LT
FL 950.54

INPLACE
D&U ESMT

CHANKAHDA TR
210+18.72
90.84' LT
FL 950.01

INPLACE
R/W

CHANKAHDA TR
208+21.97
67.93' LT
FL 952.86

CHANKAHDA TR
209+99.08
113.98' LT
FL 950.88

CHANKAHDA TR

1+77

4+00

2+00

2+00

℄ WB CHANKAHDA TR

5+00

3+00

1+00

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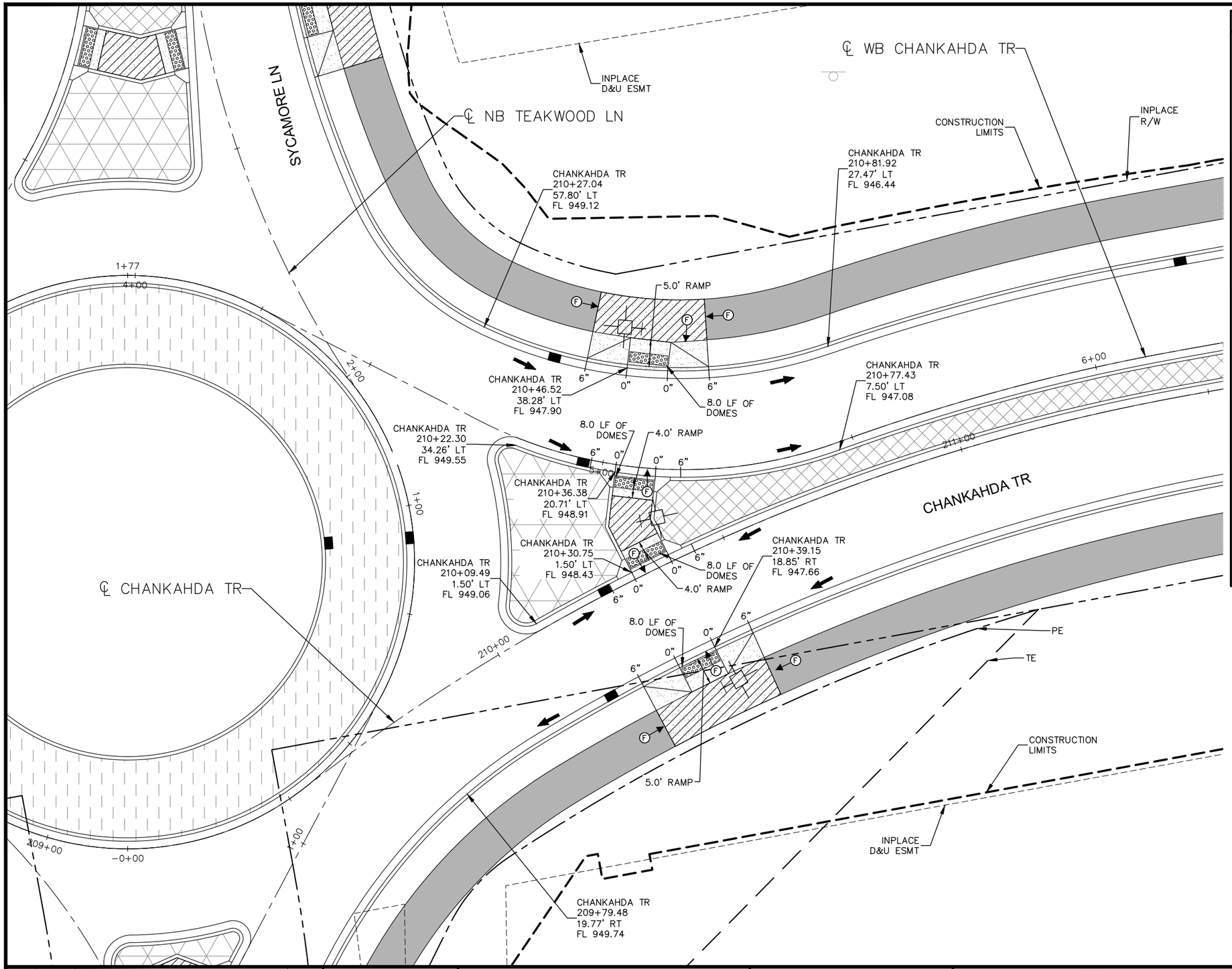
City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3

CHANKAHDA TR
INTERSECTION DETAILS

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 195 / 354



LEGEND

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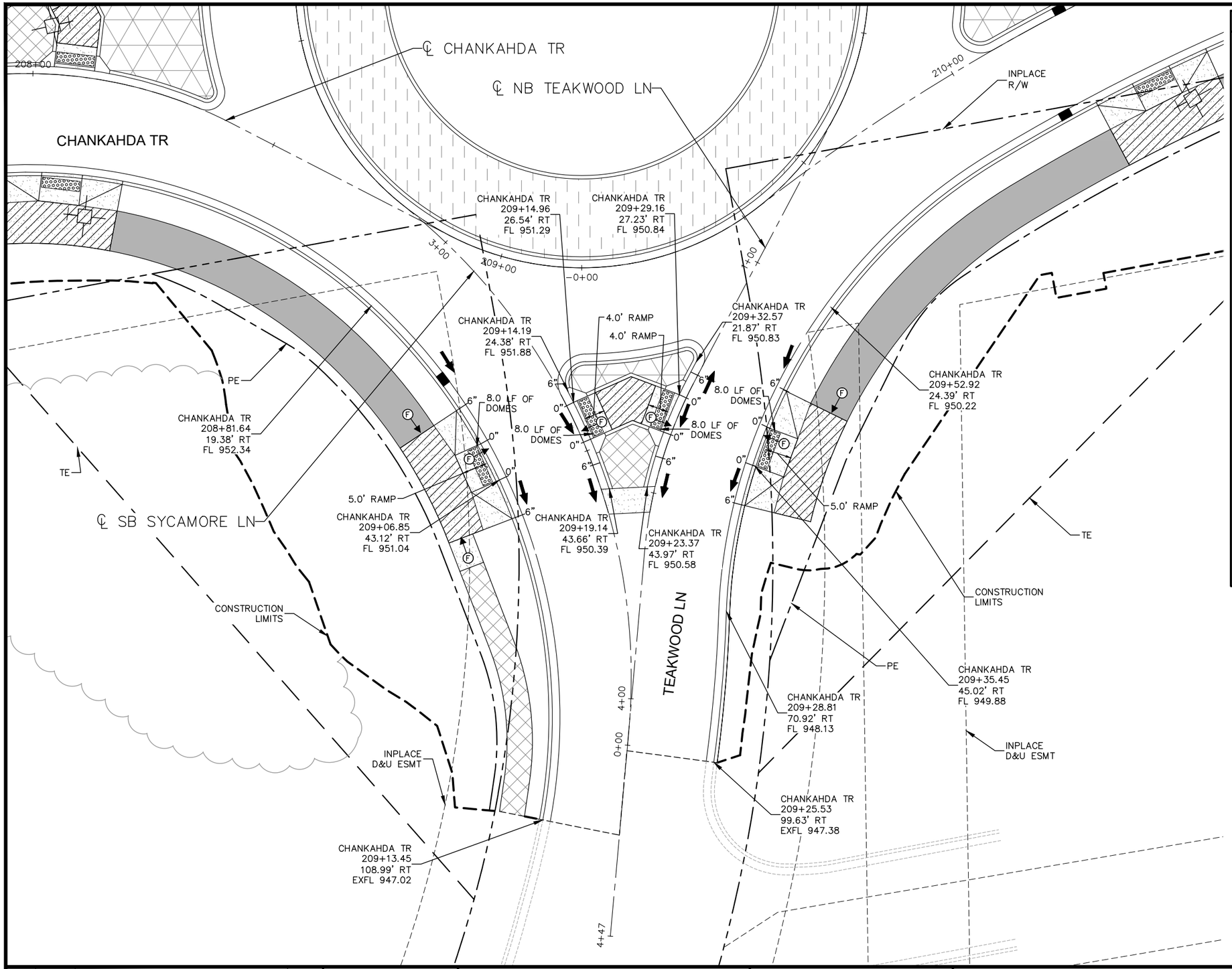
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City of Plymouth
CHANKAHDA TRAIL
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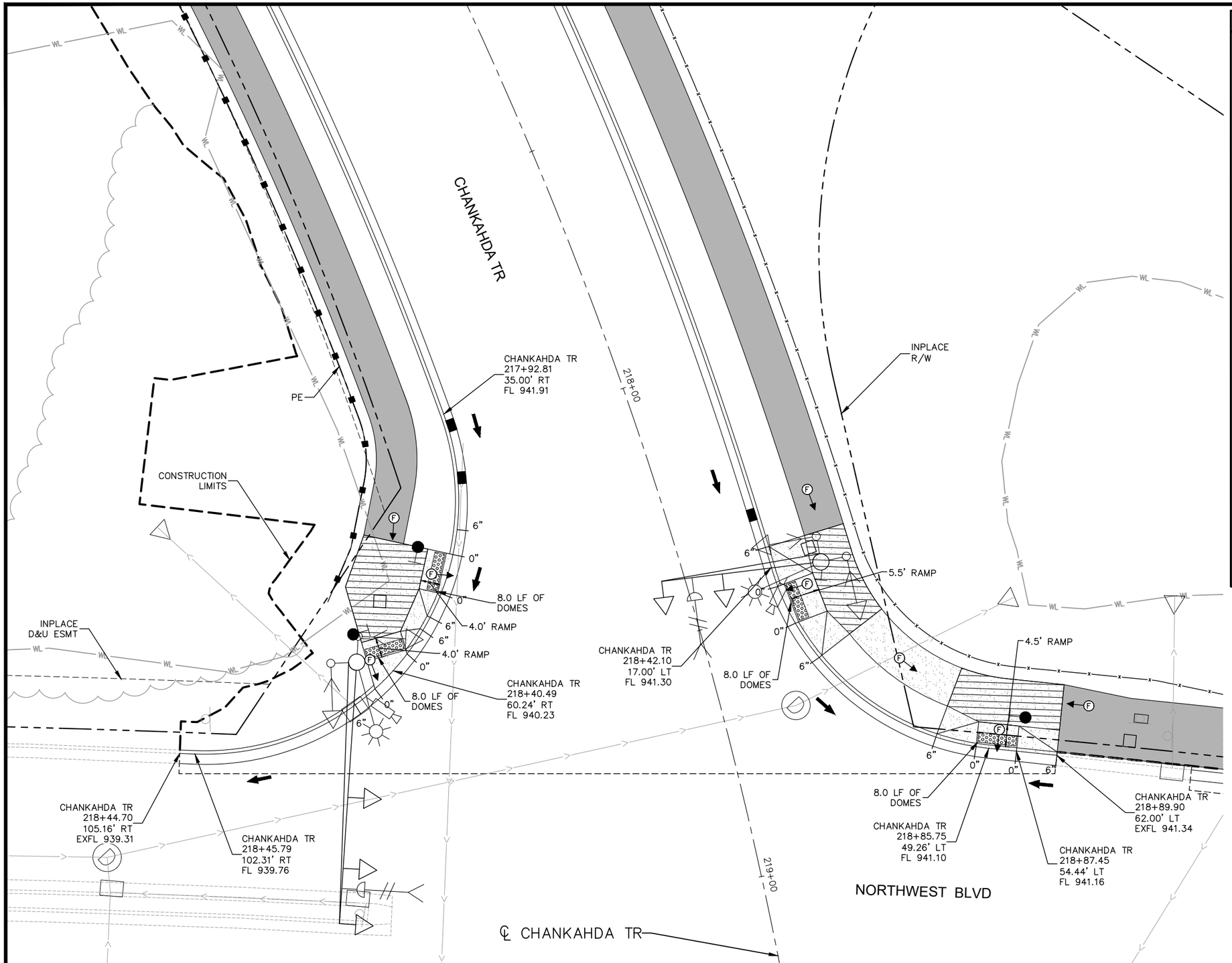
City of Plymouth

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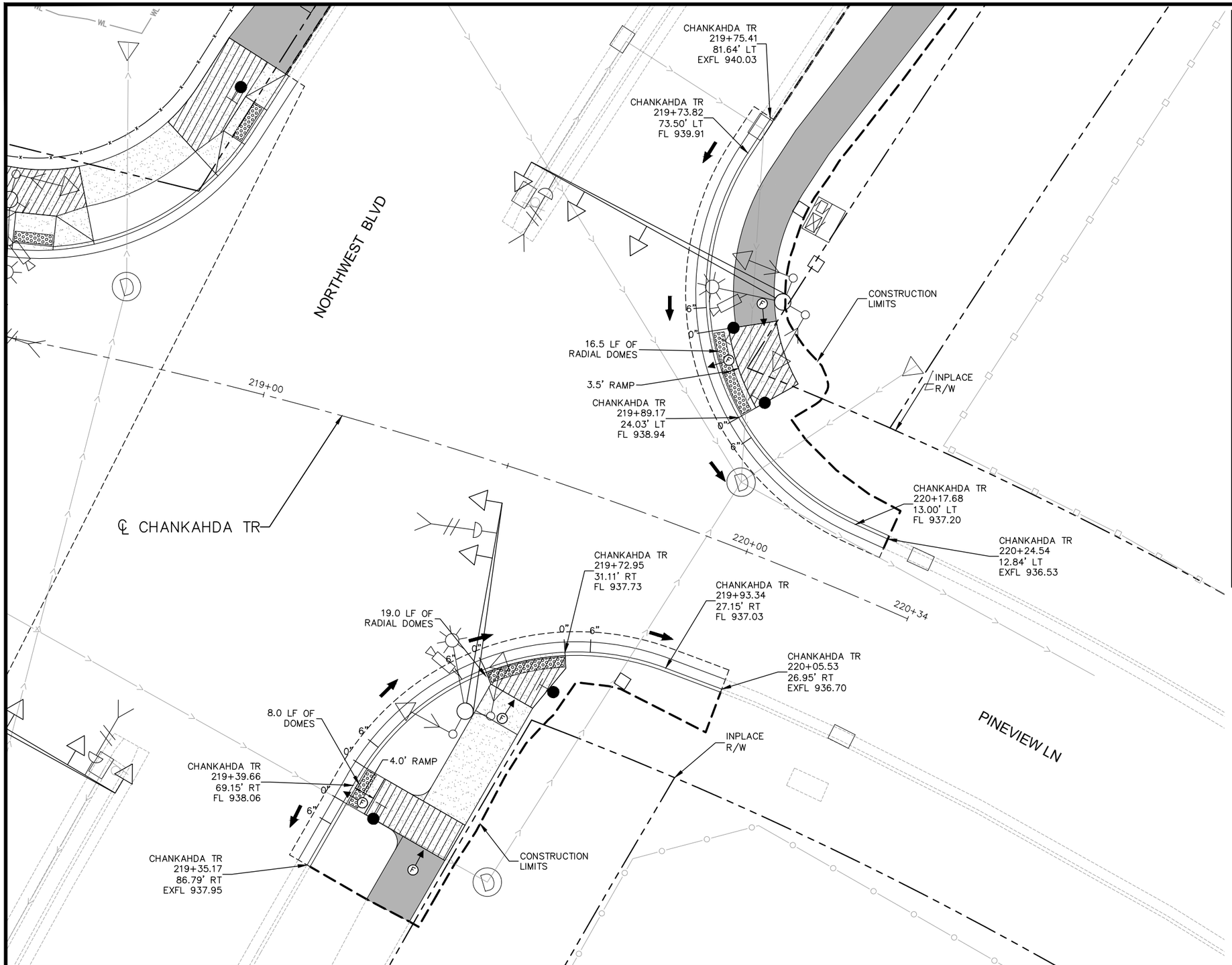
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GENERAL NOTES:

UTILITIES:
EXISTING AND PROPOSED UTILITIES ARE SHOWN IN THE GRADING PLANS. THE CONTRACTOR SHALL VERIFY THE LOCATION OF EXISTING FACILITIES AND SHALL EXERCISE CARE IN ADJACENT CONSTRUCTION.

EXCAVATION AND BACKFILL LIMITS:
PAY ITEMS FOR UNIT PRICE BID PROJECTS ARE SHOWN IN THE SECTIONS. EXCAVATION AND BACKFILL PER THE PLANS AND SPECIFICATIONS FOR RETAINING WALL CONSTRUCTION IS INCIDENTAL. ACTUAL EXCAVATION SLOPE IS DETERMINED BY OSHA REGULATIONS AND IN-SITU SOILS: EXCAVATIONS BEYOND THE SLOPES SHOWN ARE AT THE CONTRACTOR'S EXPENSE.

EXCAVATION AND EARTHWORK:
ALL EXCAVATION AND EMBANKMENT WORK SHALL CONFORM TO MnDOT 2451.

CONSTRUCTION:
CONSTRUCTION SHALL BE IN ACCORDANCE WITH SPEC. 2411, EXCEPT AS NOTED.

COMPACTION REQUIREMENTS:
COMPACT REINFORCED WALL FILL IN ACCORDANCE WITH SPEC. 2106.3.F.1 UNLESS RECOMMENDED OTHERWISE BY THE SOILS ENGINEER.

COMPACT GRANULAR BEDDING IN ACCORDANCE WITH SPEC. 2106.3.F.1 UNLESS RECOMMENDED OTHERWISE BY THE SOILS ENGINEER.

NOTES TO THE CONTRACTOR:

ARCHITECTURAL SURFACE FINISH SHALL BE APPLIED TO EXPOSED SURFACE OF PREFABRICATED MODULAR BLOCK RETAINING WALL, INCLUDING 2'-0" BELOW FINISHED GRADE ON FRONT FACE, TOP AND SIDES OF CAP BLOCK AND TO BOTTOM OF TEXTURED BLOCK ON BACKFACE OF WALL. ALL WORK AND MATERIALS ASSOCIATED WITH CONSTRUCTING THE ARCHITECTURAL SURFACE FINISH ARE INCLUDED IN THE BID ITEM "PREFABRICATED MODULAR BLOCK WALL".

PROVIDE DETAILED DRAWINGS FOR CONSTRUCTION CONTAINING:

1. ELEVATION VIEW WITH REINFORCEMENT PLACEMENT REQUIREMENTS, WALL FACING LAYOUT, AND GEOMETRIC INFORMATION. TOP WALL BLOCK MAY EXTEND UP TO 2" MIN. ABOVE FINISHED GRADE AT BACK FACE OF WALL.
2. PLAN VIEW WITH BOTTOM AND TOP OF WALL ALIGNMENT, LEVELING PAD THICKNESS AND ALIGNMENT, AND PLAN LIMITS OF WALL ALIGNMENT.
3. CROSS SECTIONS DETAILING BATTER, REINFORCEMENT, VERTICAL SPACING, REINFORCEMENT LENGTHS, SUBSURFACE DRAINAGE, SURFACE DRAINAGE, AND WATER RUNOFF COLLECTION ABOVE WALL.
4. NOTE BLOCK, FILL PLACEMENT METHODS AND REQUIREMENTS.
5. DETAIL ALL WALL FILL PENETRATIONS AND WALL FACE PENETRATIONS. DETAIL WALL FACING UNIT PLACEMENT AROUND PENETRATIONS.
6. DETAILS THAT ARE SPECIFIC TO VENDOR PRODUCTS AND THEIR INTERACTION WITH OTHER PROJECT COMPONENTS.
7. DETAILS OF CAP BLOCKS AND INSTALLATION INSTRUCTIONS FOR THE CAPS. CAP BLOCKS TO HAVE ARCHITECTURAL TEXTURE ON TOP, SIDES, AND END FACES.
8. DETAILS OF THE RAILING BASE PLATE CONNECTION TO THE CAP BLOCK, INCLUDING DETAILS FOR THE TYPE, SIZE, AND MANUFACTURER OF THE ADHESIVE ANCHOR.
9. CERTIFICATION BY PROFESSIONAL ENGINEER THAT THE CONSTRUCTION LAYOUT MEETS THE REQUIREMENTS OF PLANS AND SPECIFICATIONS.
10. PREFABRICATED MODULAR BLOCK RETAINING WALL TO HAVE THE FOLLOWING ARCHITECTURAL TEXTURE AND FINISH:
    - 10.1 ARCHITECTURAL CONCRETE TEXTURE
      - 10.1.1 LEDGESTONE – REDI ROCK RETAINING WALL SYSTEMS
      - 10.1.2. OR APPROVED EQUAL BY THE OWNER
    - 10.2 ARCHITECTURAL SURFACE FINISH (MULTI-COLOR)
      - 10.2.1. TAN COLOR SYSTEM (WITH TWO HIGHLIGHTS)
11. PREFABRICATED MODULAR BLOCK RETAINING WALL CAP BLOCKS TO HAVE THE FOLLOWING ARCHITECTURAL FINISH:
    - 11.1. ARCHITECTURAL SURFACE FINISH (SINGLE COLOR)
      - 11.1.1. [AMS-STD-595A COLOR NO. 33531 (SAND)].

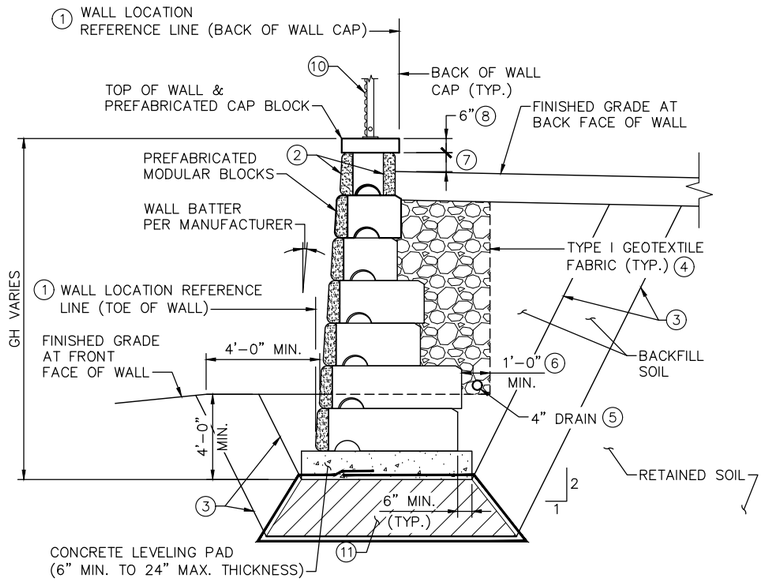
DESIGN CRITERIA:

DESIGN CRITERIA FOLLOWS THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, LATEST, WITH ALL INTERIMS. DESIGN CRITERIA ARE IN ACCORDANCE WITH MnDOT POLICY, AS RECORDED IN THE MnDOT ROAD DESIGN MANUAL. SEE SPECIAL PROVISIONS FOR SPECIFIC DESIGN CRITERIA.

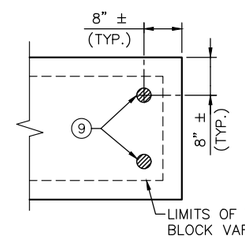
ALL DESIGN AND MATERIALS SHALL CONFORM TO REQUIREMENTS IN THE SPECIAL PROVISIONS.

NOTES:

1. LOCATION OF WALL REFERENCE LINE VARIES FOR EACH WALL. WALL ALIGNMENT AND REFERENCE LINE MAY BE LOCATED AT FRONT FACE OF WALL OR BACK FACE OF WALL CAP. REFER TO THE PLAN AND PROFILE SHEETS FOR MINIMUM REQUIREMENTS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO LOCATE AND VERIFY THE WALL REFERENCE LINE, ACCOUNTING FOR WALL MANUFACTURER'S BATTER, PMBW BLOCK DIMENSIONS, AND CAP BLOCK DIMENSIONS. CONTRACTOR SHALL NOT DECREASE THE TRAIL WIDTH OR TRAIL SHOULDER WIDTH. CONTRACTOR SHALL BE RESPONSIBLE TO LOCATE AND SURVEY PROPOSED WALL REFERENCE LINE ONCE PMBW MANUFACTURER'S SHOP DRAWINGS HAVE BEEN APPROVED.
2. ALL EXPOSED FACES OF PREFABRICATED MODULAR BLOCKS SHALL BE TEXTURED, SEE SPECIAL PROVISIONS.
3. PAY LIMITS (2V:1H). ACTUAL EXCAVATION SLOPE IS DETERMINED BY OSHA REGULATIONS AND IN-SITU SOILS: EXCAVATION BEYOND THESE LIMITS AT CONTRACTOR'S EXPENSE.
4. THE WRAP LENGTH FOR GEOTEXTILE FABRIC SHALL NOT BE MORE THAN 6".
5. 4" THERMOPLASTIC PERFORATED PIPE, SPEC. 3245. WRAP WITH TYPE 1 GEOTEXTILE, SPEC. 3733, INSTALLATION AS PER SPEC. 2502. CONNECT TO DRAINAGE SYSTEM OR OUTLET THROUGH WALL USING 6" T.P. NON-PERFORATED PIPE WITH RODENT SCREEN. ALL WORK AND MATERIALS ASSOCIATED WITH CONSTRUCTING THE 4" DRAINS ARE INCLUDED IN THE BID ITEM "PREFABRICATED MODULAR BLOCK WALL".
6. 1'-0" MIN. DRAINAGE ZONE, COARSE AGGREGATE, SPEC. 3149.2.H.
7. TOP OF WALL BLOCK MAY EXTEND UP TO 2" MIN. ABOVE FINISHED GRADE AT BACK FACE OF WALL.
8. PREFABRICATED CAP BLOCK DIMENSIONS MAY VARY BY MANUFACTURER. THIS PLAN ASSUMES A 2'-6" WIDE X 6" THICK CAP. PREFABRICATED CAP BLOCK SHALL HAVE A MAXIMUM CAP THICKNESS OF 9".
9. CLEAN AND APPLY 1½" THICK X 3" DIA. BEAD OF ADHESIVE TO TOP COURSE PRIOR TO PLACING CAP BLOCK. ADHESIVE SHALL WITHSTAND MOISTURE AND TEMPERATURE CHANGES, REMAIN FLEXIBLE, AND BE SPECIFICALLY FORMULATED FOR BONDING MASONRY TO MASONRY. ALL WORK AND MATERIALS ASSOCIATED WITH CONSTRUCTING THE ADHESIVE FOR THE CAP BLOCKS ARE INCLUDED IN THE BID ITEM "PREFABRICATED MODULAR BLOCK WALL".
10. SEE SHEETS 202 FOR TOP OF WALL FALL PROTECTION REQUIREMENTS.
11. FILL BELOW LEVELING PAD SHALL BE GRANULAR MATERIAL PER SPEC 3149.2.B.1. COMPACT PER REQUIREMENTS OF SPEC 2451 AND 2106. WRAP WITH GEOTEXTILE FABRIC TYPE IV PER SPEC 3733. SEAM ALL FABRIC SIDES AND ENDS PER SPEC. TABLE 3733-1 INCLUDING FOOTNOTE (E) OR OVERLAP A MINIMUM OF 3 FT. ALL AT NO ADDITIONAL COST. A GEOTECHNICAL REPRESENTATIVE, UNDER THE DIRECTION OF A PROFESSIONAL GEOTECHNICAL ENGINEER, SHOULD OBSERVE FILL PLACEMENT AND PERFORM TESTING. FOUNDATION PREPARATION SHALL INCLUDE VISUAL INSPECTION OF FOUNDATION SUBGRADE SOILS WITH HAND AUGERS PROBES AND DCP TESTS AS NECESSARY TO EVALUATE THE SOILS.



TYPICAL SECTION THRU PREFABRICATED MODULAR BLOCK RETAINING WALL
(WITHOUT REINFORCEMENT)



PARTIAL PLAN VIEW – CAP BLOCK
(BOTTOM OF CAP SHOWN)

No.	Date	Revisions	App.

DRAWING NAME: CHANKAHDA_PH3_RtwDtl.dwg
DESIGNED BY: JWB
DRAWN BY: RGS
CHECKED BY: BLF
DATE: 02/07/2025
PROJECT NO. 160662010

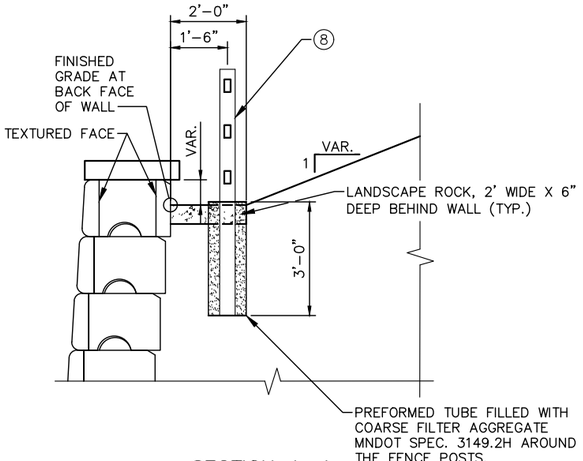
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767 EUSTIS STREET, SUITE 100, ST, PAUL, MN 55114
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I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
Brian Fleming
BRIAN FLEMING, PE
DATE: 02/07/2025 MN LIC. NO. 49486

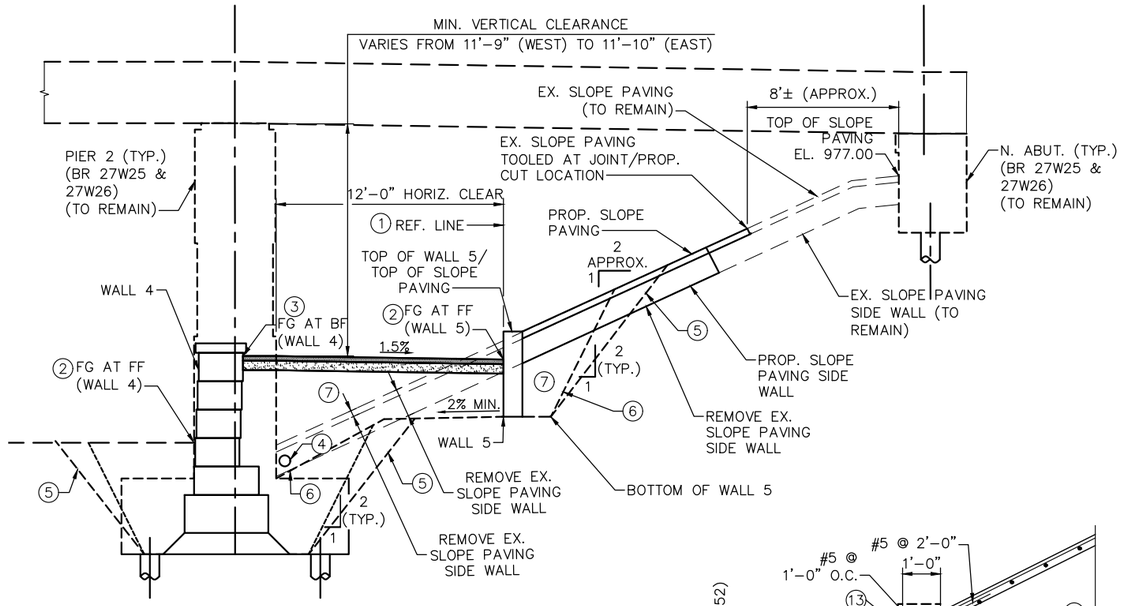
City of Plymouth
CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
RETAINING WALL PLANS
RETAINING WALL DETAILS

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

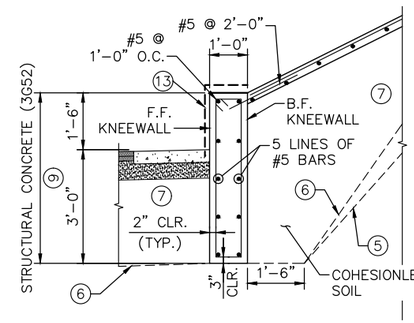
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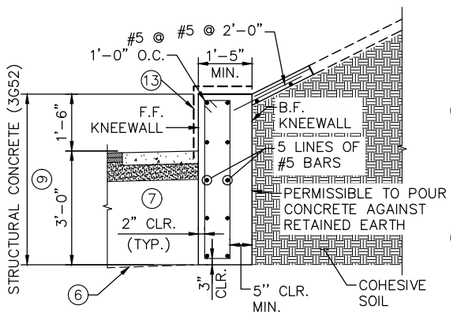
SECTION A–A
RTWALL–2



SECTION B–B
RTWALL–5
(SECTION VIEWED LOOKING WEST FROM EAST DECK EDGE)



10 12 **TYPICAL SECTION – RTWALL 5**
ALTERNATIVE #1 (WITH COHESIONLESS SOIL)



11 12 **TYPICAL SECTION – RTWALL5**
ALTERNATIVE #2 (WITH COHESIVE SOIL)

SCHEDULE OF QUANTITIES FOR RETAINING WALLS

	ITEM	RTWALL-1	RTWALL-2	RTWALL-3	RTWALL-4	RTWALL-5	UNIT	TOTAL	
A	REMOVE SLOPE PAVING	-	-	-	-	385	SQ YD	385	
B	STRUCTURE EXCAVATION CLASS E	-	-	-	-	290	CU YD	290	(P)
B	STRUCTURAL CONCRETE (3G52)	-	-	-	-	22	CU YD	22	(P)
	REINFORCEMENT BARS	-	-	-	-	3,000	POUND	3,000	(P)
C	PREFABRICATED MODULAR BLOCK WALL	1,650	3,075	600	675	-	SQ FT	6,000	(P)
	4" PERF TP PIPE DRAIN	-	-	-	-	122	LIN FT	122	(P)
D	CONCRETE SLOPE PAVING	-	-	-	-	180	SQ YD	180	
E	WIRE FENCE DESIGN SPECIAL VINYL COATED	231	-	100	107	86	LIN FT	524	(P)

NOTES:

(A) BID ITEM INCLUDES THE COST TO REMOVE AND DISPOSE OF EXISTING SLOPE PAVING, SLOPE PAVING SIDEWALL, SOIL, AND DEBRIS. ADDITIONALLY, ITEM INCLUDES REPLACEMENT BACKFILL AND COMPACTION TO DEPRESSIONS IN EXISTING SLOPE MATERIAL TO REMAIN DUE TO CONSTRUCTION RELATED DEPRESSIONS CREATED BY CONTRACTOR DURING CONCRETE SLOPE PAVING REMOVALS. PLAN QUANTITIES ASSUME COHESIONLESS SOIL ALTERNATIVE, THE ENGINEER WILL MEASURE AND PAY FOR ACTUAL REMOVAL AREA ON THE BASIS ACTUAL WIDTH AND LENGTHS AS REMOVED IN PLAN VIEW.

(B) BID ITEM QUANTITY ASSUMES COHESIONLESS SOIL ALTERNATIVE, THE ENGINEER WILL NOT MEASURE OR RECALCULATE QUANTITY FOR COHESIVE SOIL ALTERNATIVE.

(C) BID ITEM INCLUDES BLOCKS, CAP BLOCKS, ARCHITECTURAL TEXTURE, ARCHITECTURAL FINISH, ANTI–GRAFFITI COATING, SOIL REINFORCEMENT, CONNECTION DEVICES, JOINT MATERIALS, LEVELING PAD, CAP BLOCK ADHESIVE, TECHNICAL REPRESENTATIVES, EXCAVATION, SUBCUT, STRUCTURAL BACKFILLS, GEOTEXTILE FABRIC, DRAINAGE SYSTEM (PERFORATED AND NON–PERFORATED PIPES, FITTINGS, CONCRETE HEADWALLS, CONNECTIONS TO STORM STRUCTURES), AND OTHER ITEMS WHICH DO NOT HAVE SEPARATE PAY ITEMS BUT ARE NECESSARY TO COMPLETE THE PMBW.

(D) PLAN QUANTITIES ASSUME COHESIONLESS SOIL ALTERNATIVE, THE ENGINEER WILL MEASURE AND PAY FOR ACTUAL CONSTRUCTED AREA ON THE BASIS ACTUAL WIDTH AND LENGTHS AS CONSTRUCTED IN PLAN VIEW.

(E) BID ITEM INCLUDES ALL WORK AND MATERIALS TO INSTALL WIRE FENCE DESIGN SPECIAL, INCLUDING ELECTRICAL GROUNDS, FENCE POST ANCHORAGES, STEEL STRAPS, AND ALL HARDWARE. PAYMENT LENGTH BASED ON PLAN DIMENSIONS, ACTUAL WIRE FENCE DESIGN SPECIAL LENGTH SHALL BE FIELD MEASURED BASED ON CONSTRUCTED WALL LENGTH.

GENERAL NOTES

SEE SHEETS 206–207 FOR LOCATION OF SECTION A–A.

SEE SHEET 210 FOR LOCATION OF SECTION B–B.

SEE SHEETS 211–212 FOR CONCRETE SLOPE PAVING DETAILS AND REINFORCEMENT.

THE BAR SIZES SHOWN IN THIS PLAN ARE IN U.S. CUSTOMARY DESIGNATIONS.

MINIMUM BAR SPLICE LENGTH: 2'–7" FOR #5 BARS.

CONTRACTOR SHALL BACKFILL BOTH THE FRONT FACE AND BACK FACE OF THE KNEEWALL SIMULTANEOUSLY.

SLOPE PAVING REMOVAL AND RECONSTRUCTION SHALL BE INCLUDED IN PAY ITEMS "REMOVE SLOPE PAVING" AND "CONCRETE SLOPE PAVING" RESPECTIVELY.

(1) RETAINING WALL ALIGNMENT MEASURED ALONG WALL REFERENCE LINE WHICH IS FRONT FACE OF RETAINING WALL.

(2) FINISHED GRADE AT FRONT FACE OF WALL.

(3) FINISHED GRADE AT BACK FACE OF WALL.

(4) 4" PERF TP PIPE DRAIN PER SPEC 3245 WRAPPED WITH APPROVED GEOTEXTILE PER SPEC 3733 (TYP). SLOPE PIPE TO ENSURE PROPER DRAINAGE AT ALL TIMES. RUN ENTIRE LENGTH OF BRIDGE PIERS. PIPE DRAIN SHALL BE INCLUDED IN PRICE BID FOR "4" PERF TP PIPE DRAIN" AND WILL INCLUDE BUT IS NOT LIMITED TO PIPE DRAIN, ELBOWS, CAPS, AND COUPLINGS ALONG FULL LENGTH OF PIER 2 FOR BRIDGES 27W25 & 27W26.

(5) ACTUAL EXCAVATION SLOPE IS DETERMINED BY OSHA REGULATIONS AND IN–SITU SOILS: EXCAVATION BEYOND THESE LIMITS AT CONTRACTOR'S EXPENSE.

(6) LIMITS OF STRUCTURE EXCAVATION CLASS E AND STRUCTURAL BACKFILL, FULL LENGTH OF WALL 5. INCLUDED IN PRICE BID FOR STRUCTURE EXCAVATION CLASS E. DIMENSIONS AND SLOPES ARE MEASURED PERPENDICULAR TO THE BACK OF BRIDGE PIER.

(7) SELECT GRANULAR EMBANKMENT MOD 10% (PER SPEC. 3149.2.B). COMPACT BACKFILL TO NOT LESS THAN 100% SPECIFIED DENSITY PER SPEC 2106.3.G.1, "SPECIFIED DENSITY". THE MAXIMUM LIFT SIZE IS 8 INCHES LOOSE, DECREASE THE LIFT THICKNESS, IF NECESSARY, TO OBTAIN COMPACTION COMPLIANCE. THE CONTRACTOR SHALL SIMULTANEOUSLY PLACE AND COMPACT BACKFILL IN A MANNER THAT ENSURES UNIFORM AND EQUAL DISTRIBUTION OF MATERIAL ON BOTH SIDES OF THE PROPOSED WALL, UP TO THE PROPOSED GRADES AS SHOWN ON THE PLANS.

(8) FENCE DESIGN SPECIAL – SPLIT RAIL SEE CITY STD. PLATE STRT–26. POST HOLE CONSTRUCTION, AGGREGATE BACKFILL, LANDSCAPE ROCK, PREFORMED TUBES SHALL BE CONSIDERED INCIDENTAL TO FENCE CONSTRUCTION.

(9) 0.17 CU. YD. OF CONCRETE/LIN. FT.
23.47 LBS. OF REINFORCEMENT/LIN. FT.

(10) IN COHESIONLESS SOIL CONDITIONS, THE CONTRACTOR IS REQUIRED TO PROVIDE SAFE SLOPES FOR EXCAVATION. THE CONTRACTOR MUST ENSURE THAT THE EXCAVATION IS STABLE AND THAT FORMWORK IS ADEQUATELY SUPPORTED TO PREVENT COLLAPSE OR SHIFTING DURING THE CONCRETE POURING PROCESS. ADDITIONAL MEASURES MAY BE REQUIRED BASED ON SITE CONDITIONS AND SAFE WORKING CONDITIONS. FORMWORK WILL BE REQUIRED ON BOTH THE FRONT AND BACK FACES PRIOR TO CONCRETE PLACEMENT.

(11) IN COHESIVE SOIL CONDITIONS, CONCRETE MAY BE POURED DIRECTLY AGAINST THE EMBANKMENT, PROVIDED THE RETAINED SOIL APPEARS STABLE UPON VISUAL INSPECTION. THE CONTRACTOR IS RESPONSIBLE FOR EVALUATING THE STABILITY OF EXISTING SOIL CONDITIONS UPON REMOVAL OF SLOPE PAVING THROUGH VISUAL INSPECTION AND ASSESSMENT, ENSURING THAT THE SOIL SHOWS NO SIGNS OF INSTABILITY SUCH AS EXCESSIVE EROSION, SLOUGHING, OR DISPLACEMENT.

(12) THE CONTRACTOR SHALL BEGIN BACKFILLING OF THE RETAINING WALL WITHIN 7 DAYS OF COMPLETION OF EXCAVATION. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING TEMPORARY SUPPORT TO THE WALL AND FOR TAKING NECESSARY MEASURES TO PREVENT POTENTIAL SLOPE DESTABILIZATION AND IMPACTS TO BRIDGE ABUTMENT DUE TO PROLONGED EXPOSURE TO WEATHER OR SITE CONDITIONS.

(13) LIMITS OF ANTI–GRAFFITI COATING AND ARCHITECTURAL SURFACE FINISH SINGLE COLOR. PROVIDE PER SPECIAL PROVISIONS TO EXPOSED FACE OF RETAINING WALL TO 6" BELOW FINISHED GRADE AT FRONT FACE AND ENDS OF WALL, FULL LENGTH OF WALL. INCLUDED IN PRICE BID FOR "STRUCTURAL CONCRETE (3G52)".

No.	Date	Revisions	App.

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DESIGNED BY: JWB
DRAWN BY: RGS
CHECKED BY: BLF
DATE: 02/07/2025
PROJECT NO. 160662010

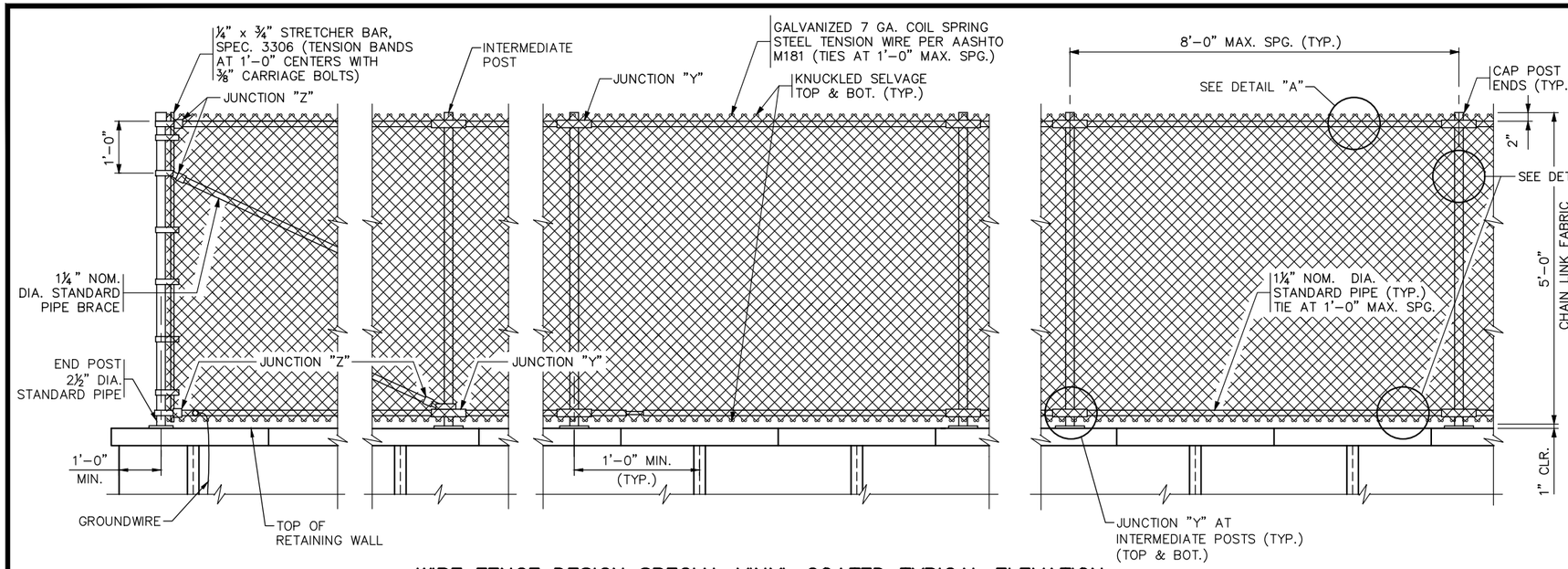
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767 EUSTIS STREET, SUITE 100, ST. PAUL, MN 55114
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I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
BRIAN FLEMING, PE
DATE: 02/07/2025 MN LIC. NO. 49486

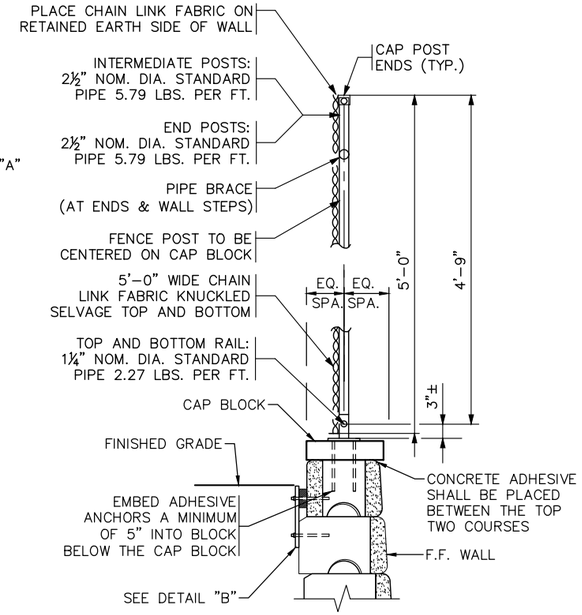
City of Plymouth
CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
RETAINING WALL PLANS
RETAINING WALL DETAILS

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155–210–003
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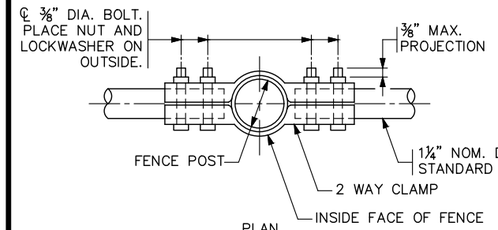
SHEET NO. 201 / 354



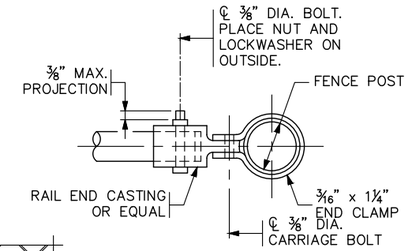
WIRE FENCE DESIGN SPECIAL VINYL COATED TYPICAL ELEVATION



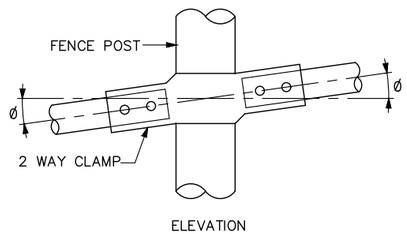
TYPICAL SECTION THROUGH FENCE



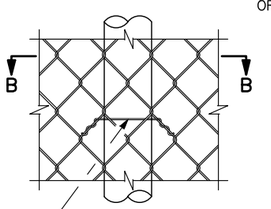
2 WAY CLAMP BENDING TABLE	
GRADE OF FENCE	Ø
0° TO 2°	0°
2° TO 6°	4°
6° TO 10°	8°



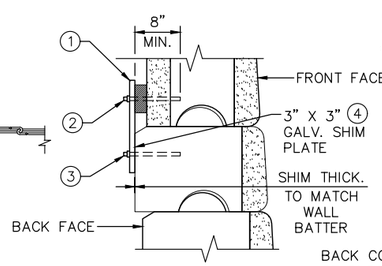
JUNCTION "Z"



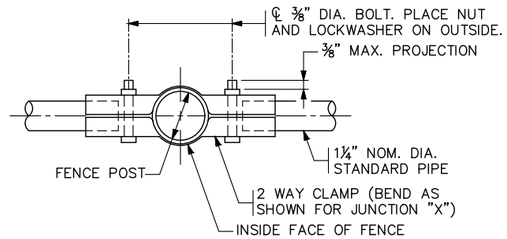
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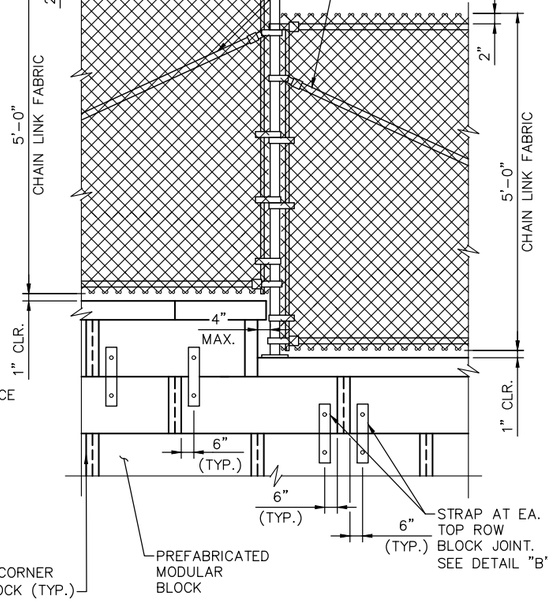
DETAIL "A"



DETAIL "B"



JUNCTION "Y"



WIRE FENCE DESIGN SPECIAL VINYL COATED TYPICAL ELEVATION @ WALL STEP

(BACK OF WALL SHOWN)

NOTES:

CONTRACTOR SHALL FIELD MEASURE AND PROVIDE SHOP DRAWINGS THAT SHOW THE CONSTRUCTED TOP OF WALL PLAN VIEW, WALL PROFILE, WALL ALIGNMENT, WALL LENGTH AND WALL STEPS TO INCLUDE IN THE FENCE SHOP DRAWING. SUBMIT FENCE SHOP DRAWING TO THE ENGINEER AT LEAST 3 WEEKS BEFORE FABRICATION OF FENCE.

REFER TO SPEC. 2557 AND SPECIAL PROVISIONS FOR ADDITIONAL REQUIREMENTS AND BASIS OF PAYMENT.

ALL WORK AND MATERIALS TO INSTALL WIRE FENCE DESIGN SPECIAL SHALL BE INCIDENTAL INCLUDING ELECTRICAL GROUNDS, FENCE POST ANCHORAGES, STEEL STRAPS, AND ALL HARDWARE.

RAILING SHALL BE GROUNDED WITH 5/8" DIA. COPPER ROD AS PER SPEC. 2557.

FURNISH AND INSTALL TYPE A FENCE POST ANCHORAGE PER B905 FENCE POST ANCHORAGE PLAN SHEET. INSTALL FENCE POSTS AND ANCHORAGES PLUMB UNLESS OTHERWISE NOTED.

ALL POSTS, FABRIC, FITTINGS, CAPS, AND FENCE COMPONENT PARTS SHALL BE VINYL COATED "BLACK".

PROVIDE WIRE TIES WITH 9 GA. (0.148" CORE) ALUMINUM PER ASTM B 211, ALLOY 1100 H18 WITH VINYL COATING (6 GA. AFTER COATING) OR 10 GA. (0.135" CORE) STEEL CL. 3 GALV. WIRE WITH FUSION BONDED VINYL COATING (9 GA. AFTER COATING). USE SAME VINYL THICKNESS COATING REQUIREMENTS AS VINYL COATED FABRIC.

USE 12 GA. GALVANIZED STEEL OR 9 GA. ALUMINUM ALLOY 1350-H19 HOG RINGS FOR TENSION WIRE TIES.

STRUCTURAL STEEL PER SPEC. 3306

GALVANIZE STEEL STRAPS AFTER FABRICATION PER SPEC. 3394.

GALVANIZE THE FASTENERS PER SPEC. 3392

(1) GALV. 1/4" X 3" X 1'-1" LONG CLIP PLATE WITH 2 GALV. 5/8"ø X 10" MIN. THREADED RODS (ASTM A36), HEX NUTS, AND WASHERS. DRILL 5" MIN. DEEP X 3/4"ø HOLE AND SET THREADED RODS WITH APPROVED EPOXY ADHESIVE.

(2) THREADS PROJECTION BEYOND NUT TO BE NO LONGER THAN 1/2". NUT TO BE TACK WELDED TO THREAD FOLLOWING ASSEMBLY TO PREVENT LOOSENING.

(3) LOWER HOLE IN PLATE TO BE 1"ø OVERSIZE WITH OVERSIZED WASHER. NUT TO BE FINGER TIGHT ONLY TO PLATE AND WELDED TO THREADS TO PREVENT BACK OFF. CONTRACTOR MAY PROPOSE TO USE A BENT CLIP PLATE IN-LIEU OF THE SHIM. THE BENT CLIP PLATE SHALL BE MANUFACTURED TO AN OFFSET SIMILAR TO THE PMBW BATTER. SHOP DRAWINGS ARE REQUIRED.

(4) SHIM SHOWN ON LOWER BLOCK. SHIM MAY BE LOCATED ON TOP BLOCK AS NEEDED FOR VARIABILITY WITH BLOCK DIMENSIONS AND TEXTURE DEPTH.

No.	Date	Revisions	App.

DRAWING NAME	CHANKAHDA_PH3_RtwDtl.dwg
DESIGNED BY:	JWB
DRAWN BY:	RGS
CHECKED BY:	BLF
DATE:	02/07/2025
PROJECT NO.	160662010

Kimley»Horn
767 EUSTIS STREET, SUITE 100, ST. PAUL, MN 55114
PHONE: 651-645-4197
WWW.KIMLEY-HORN.COM

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BRIAN FLEMING, PE

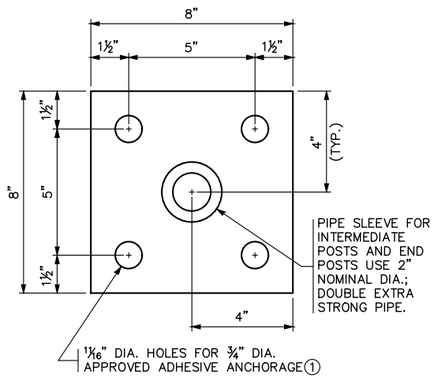
DATE: 02/07/2025 MN LIC. NO. 49486

City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
RETAINING WALL PLANS
WIRE FENCE DESIGN SPECIAL VINYL COATED

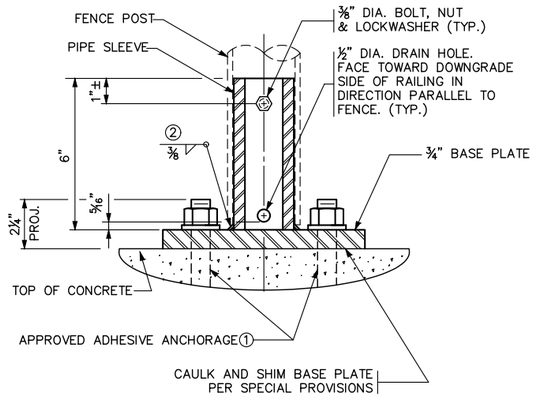
CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 202 / 354



PLAN VIEW – TYPE A

ESTIMATED WEIGHT = 18 LBS.



TYPICAL SECTION

NOTES:

ALL PIPE DIAMETERS ARE NOMINAL.

SEE SPECIAL PROVISIONS FOR REQUIREMENTS NOT INCLUDED ON THIS SHEET.

STRUCTURAL STEEL PER SPEC. 3306

STRUCTURAL PIPE PER SPEC. 3362

GALVANIZE THE FENCE POST ANCHORAGE AFTER FABRICATION PER SPEC. 3394.

GALVANIZE THE FASTENERS PER SPEC. 3392.

FURNISHING AND INSTALLING FENCE POST ANCHORAGES IS INCIDENTAL TO THE WIRE FENCE.

(1) ADHESIVE ANCHORAGE WITH ¾" DIA. ANCHOR ROD PER SPEC. 3385, TYPE A WITH HEX NUT AND WASHER. PROVIDE AN ADHESIVE WITH A MINIMUM CHARACTERISTIC BOND STRENGTH IN UNCRACKED CONCRETE OF 1.5 KSI. EMBED THE ANCHORAGE NO LESS THAN 5" REGARDLESS OF CHARACTERISTIC BOND STRENGTH. DRILL THROUGH REINFORCEMENT (IF ENCOUNTERED) TO ACHIEVE MINIMUM EMBEDMENT. ENSURE HEX NUT IS IN CONTACT WITH THE ADJACENT SURFACE AND TORQUE TO 60 FT–LBS UNLESS A HIGHER TORQUE IS RECOMMENDED BY THE MANUFACTURER. PROOF LOAD TO 7.8 KIPS. SEE SPECIAL PROVISIONS FOR ADDITIONAL REQUIREMENTS.

(2) E70X ELECTRODES FOR ⅜" POST TO BASE PLATE WELD.

DOUBLE EXTRA STRONG PIPE WEIGHTS;
2" NOMINAL DIA. = 9.03 LBS./FT.

APPROVED: JANUARY 05, 2017 Kevin Western STATE BRIDGE ENGINEER	STATE OF MINNESOTA DEPARTMENT OF TRANSPORTATION **FENCE POST ANCHORAGE** (TYPE A)	REVISION	DETAIL NO. **B905**

No.	Date	Revisions	App.

DRAWING NAME	CHANKAHDA_PH3_RtwDtl.dwg
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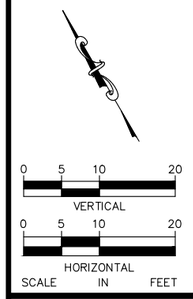
Brian Fleming
BRIAN FLEMING, PE
DATE: 02/07/2025 MN LIC. NO. 49486

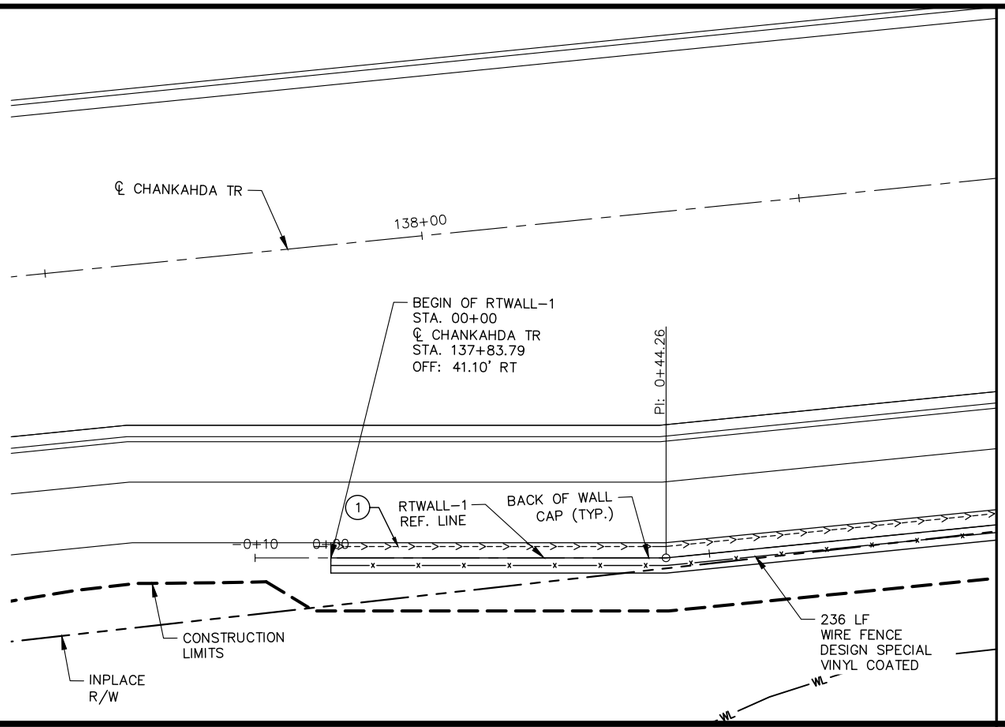
City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
RETAINING WALL PLANS
FENCE POST ANCHORAGE DETAIL

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155–210–003
S.A.P.	

SHEET NO. 203 / 354





MATCH LINE 0+90

GENERAL NOTES:

SEE SHEET 200 FOR PREFABRICATED MODULAR BLOCK WALL DETAILS.

SEE SHEETS 202–203 FOR WIRE FENCE DESIGN SPECIAL VINYL COATED DETAILS. CONTRACTOR SHALL FIELD VERIFY CONSTRUCTED TOP OF WALL PROFILE AND INCLUDE ELEVATIONS, STEP LOCATIONS, JOINT LOCATIONS AND DIMENSIONS IN SHOP DRAWINGS.

SEE CROSS SECTIONS AND GRADING PLAN FOR PROPOSED SURFACES.

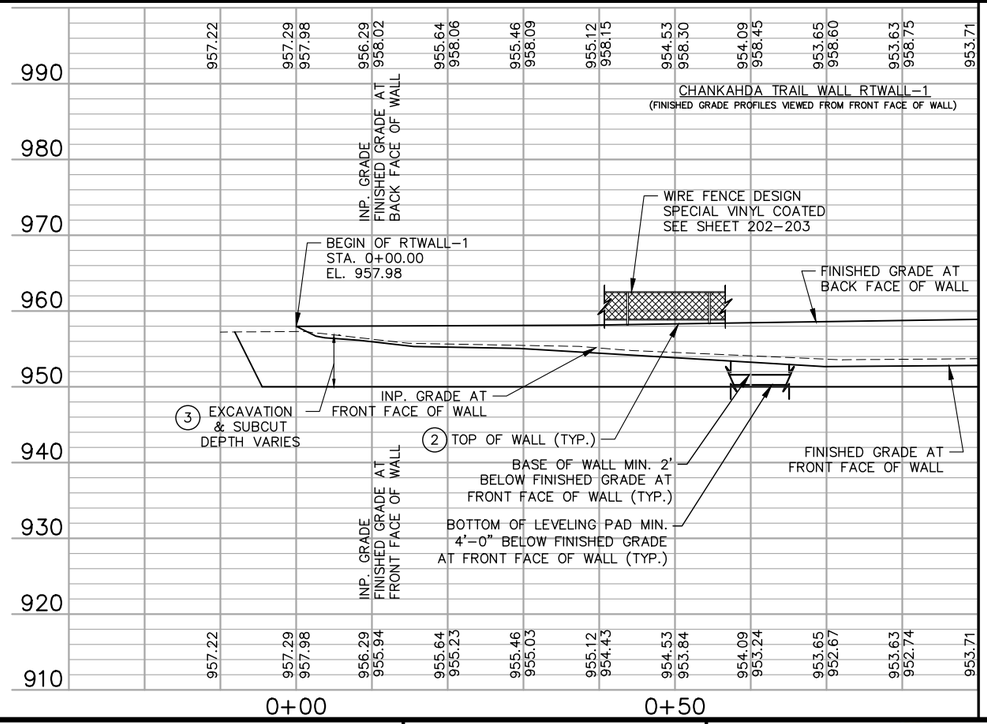
FINISHED GRADE PROFILES: FRONT AND BACK FACE OF WALL ARE SHOWN. THE PREFABRICATED MODULAR BLOCK WALL DESIGN ENGINEER AND MANUFACTURER SHALL PROVIDE BLOCK LAYOUT THAT MEETS THE CRITERIA IN THIS PLAN AND SPECIAL PROVISION.

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WALL DESIGN ENGINEER AND MANUFACTURER SHALL PROVIDE BLOCK LAYOUT THAT MEETS THE CRITERIA IN THIS PLAN AND SPECIAL PROVISIONS.

(1) 4" DRAIN

(2) EACH WALL STEP SHALL CONSIST OF A MINIMUM OF 1 FULL BLOCK WIDTH AND A HALF WIDTH



MATCH LINE 0+90

(3) A GEOTECHNICAL REPRESENTATIVE, UNDER THE DIRECTION OF A PROFESSIONAL GEOTECHNICAL ENGINEER, SHOULD OBSERVE SUBCUT, FILL PLACEMENT AND PERFORM TESTING. FOUNDATION PREPARATION SHALL INCLUDE VISUAL INSPECTION OF FOUNDATION SUBGRADE SOILS WITH HAND AUGERS, PROBES AND DCP TESTS AS NECESSARY TO EVALUATE THE SOILS.

No.	Date	Revisions	App.

DRAWING NAME: CHANKAHDA_PH3_RtWallPlan.dwg

DESIGNED BY:	JWB
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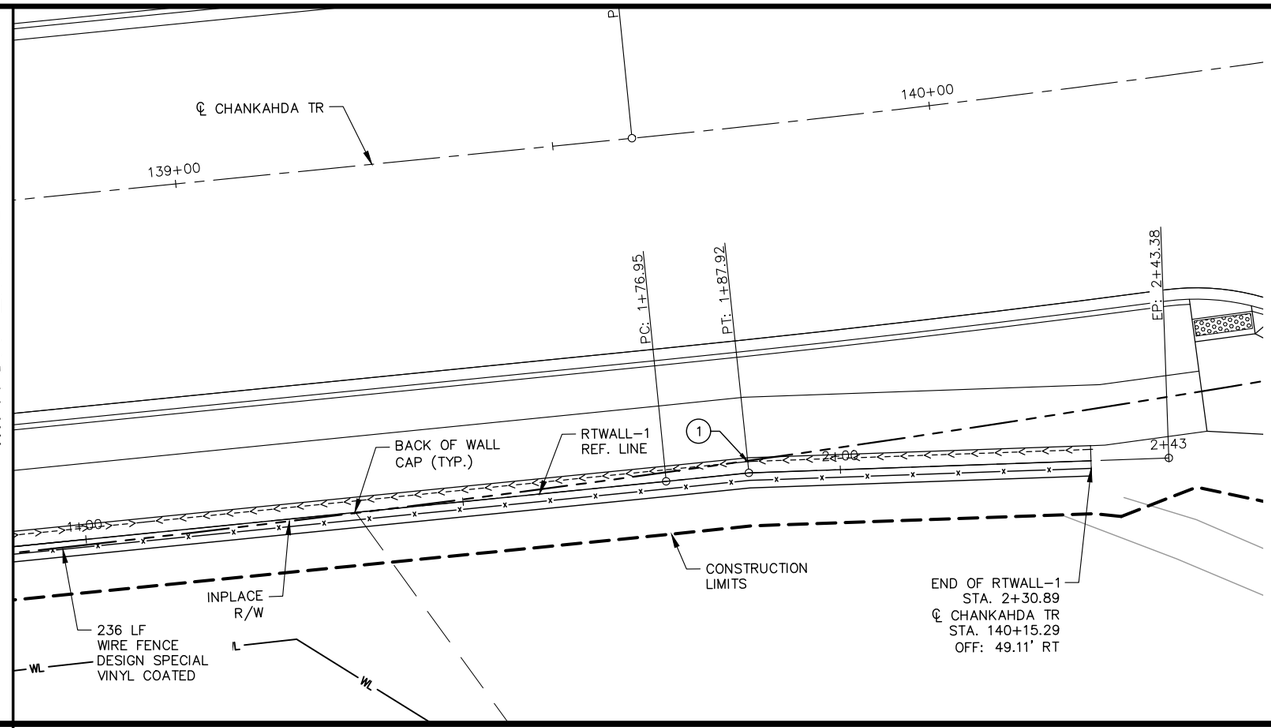
Brian Fleming
BRIAN FLEMING, PE
DATE: 02/07/2025 MN LIC. NO. 49486

City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
RTWALL-1 PLAN AND PROFILE

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

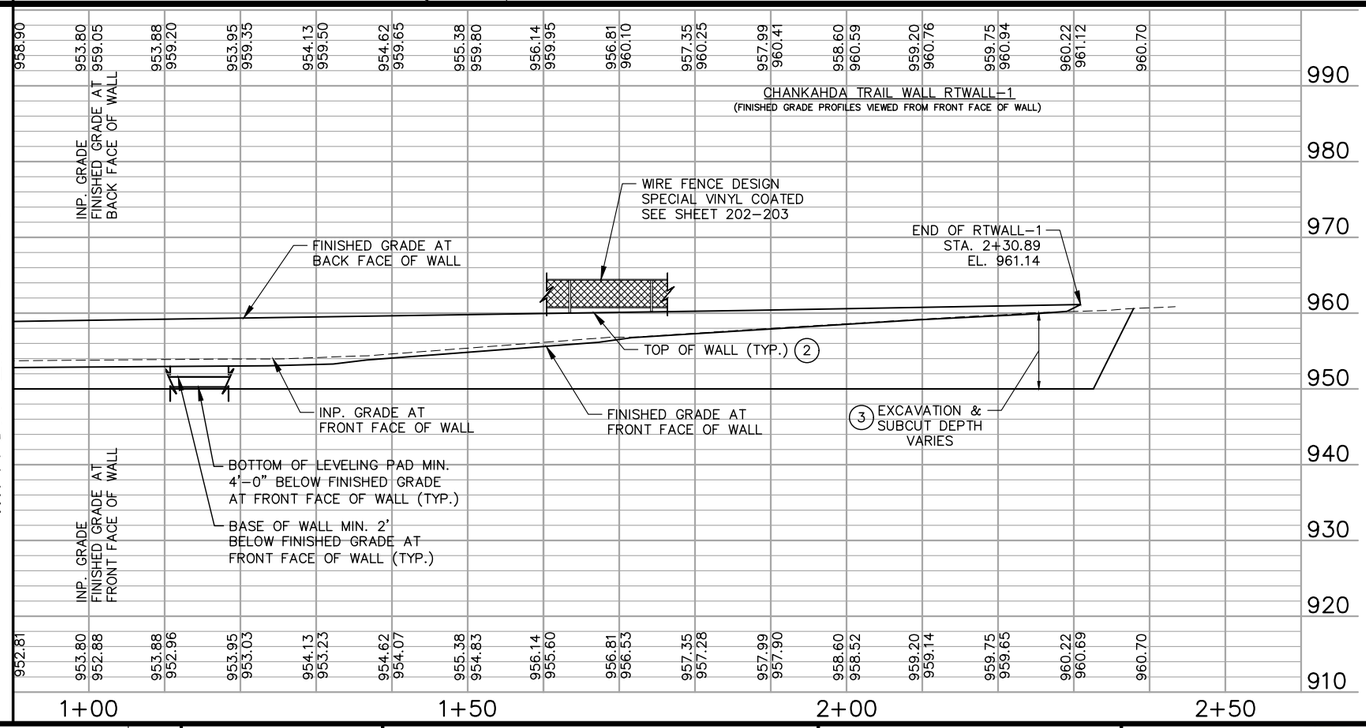
SHEET NO. 204 / 354



0 5 10 20
VERTICAL

0 5 10 20
HORIZONTAL

SCALE IN FEET



GENERAL NOTES:

SEE SHEET 200 FOR PREFABRICATED MODULAR BLOCK WALL DETAILS.

SEE SHEETS 202–203 FOR WIRE FENCE DESIGN SPECIAL VINYL COATED DETAILS. CONTRACTOR SHALL FIELD VERIFY CONSTRUCTED TOP OF WALL PROFILE AND INCLUDE ELEVATIONS, STEP LOCATIONS, JOINT LOCATIONS AND DIMENSIONS IN SHOP DRAWINGS.

SEE CROSS SECTIONS AND GRADING PLAN FOR PROPOSED SURFACES.

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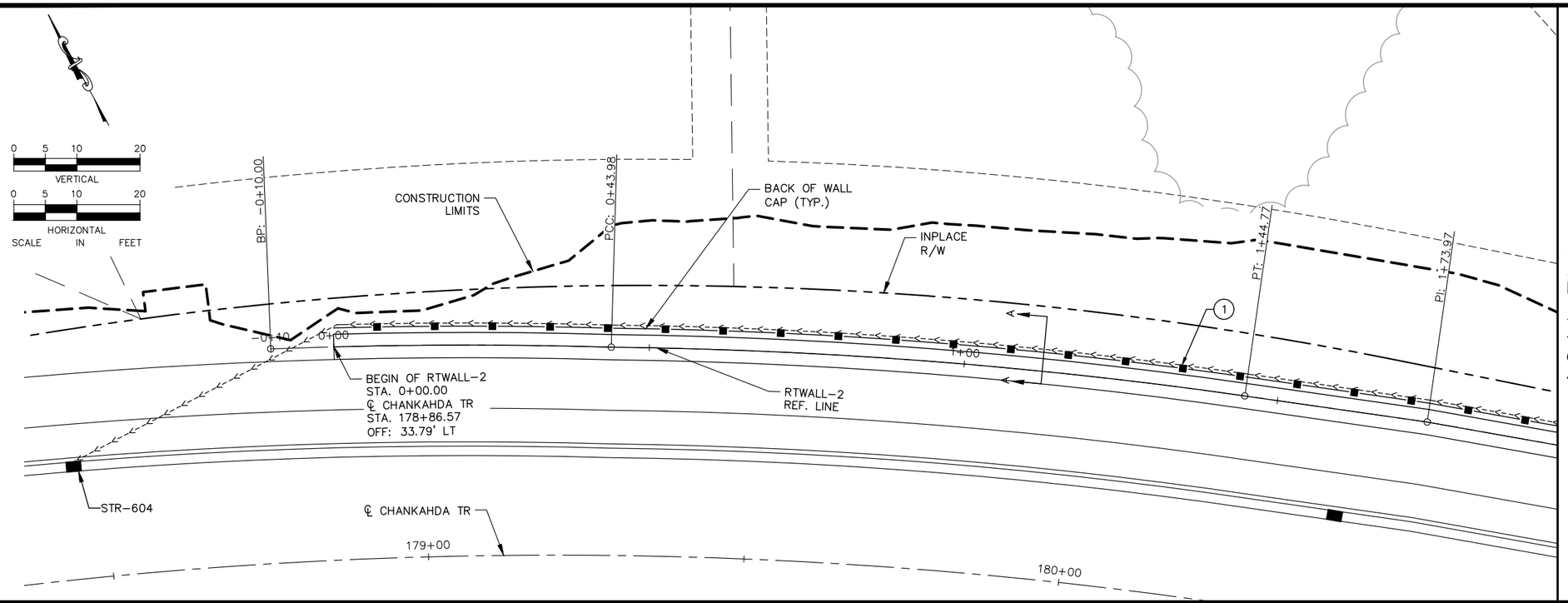
Brian Fleming
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City of Plymouth

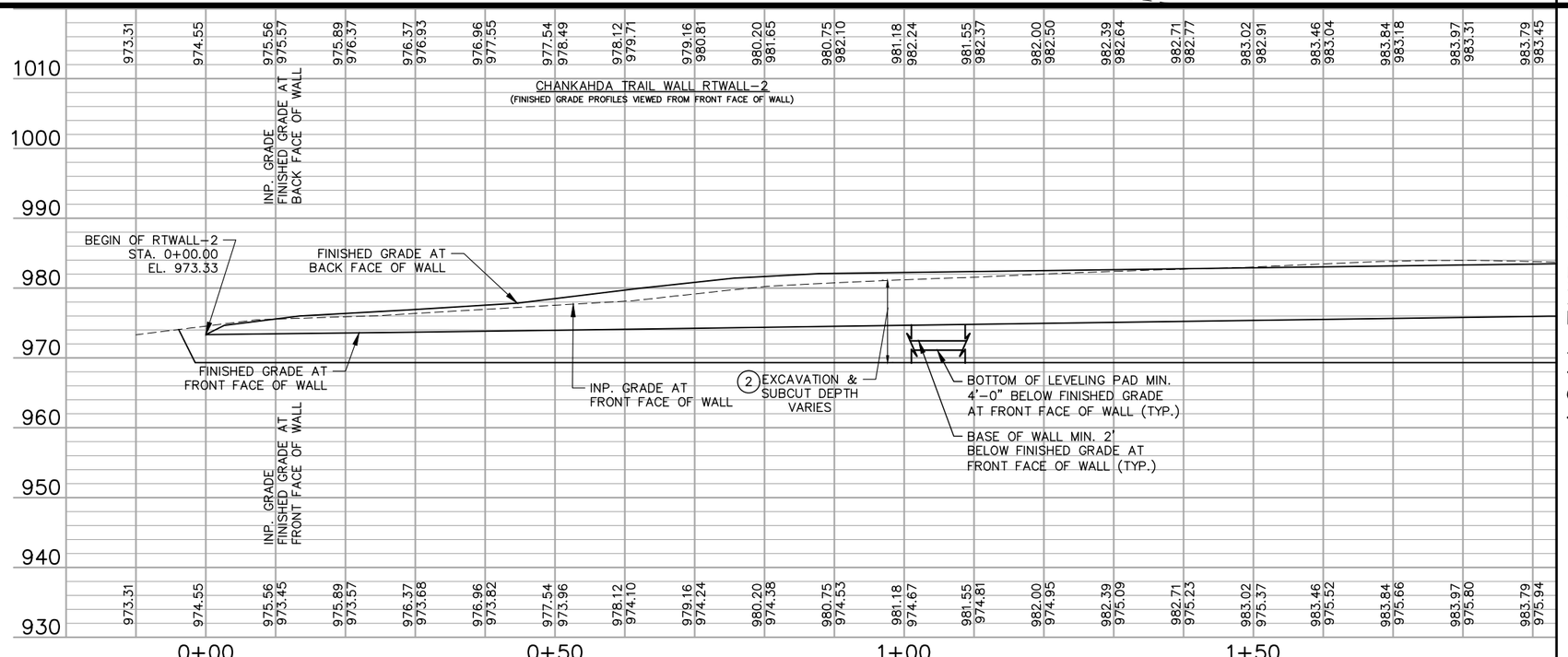
CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
RTWALL-1 PLAN AND PROFILE

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 205 / 354



MATCH LINE 1+94



MATCH LINE 1+94

GENERAL NOTES:

SEE SHEET 200 FOR PREFABRICATED MODULAR BLOCK WALL DETAILS.

SEE SHEET 201 FOR SECTION A–A.

SEE CROSS SECTIONS AND GRADING PLAN FOR PROPOSED SURFACES.

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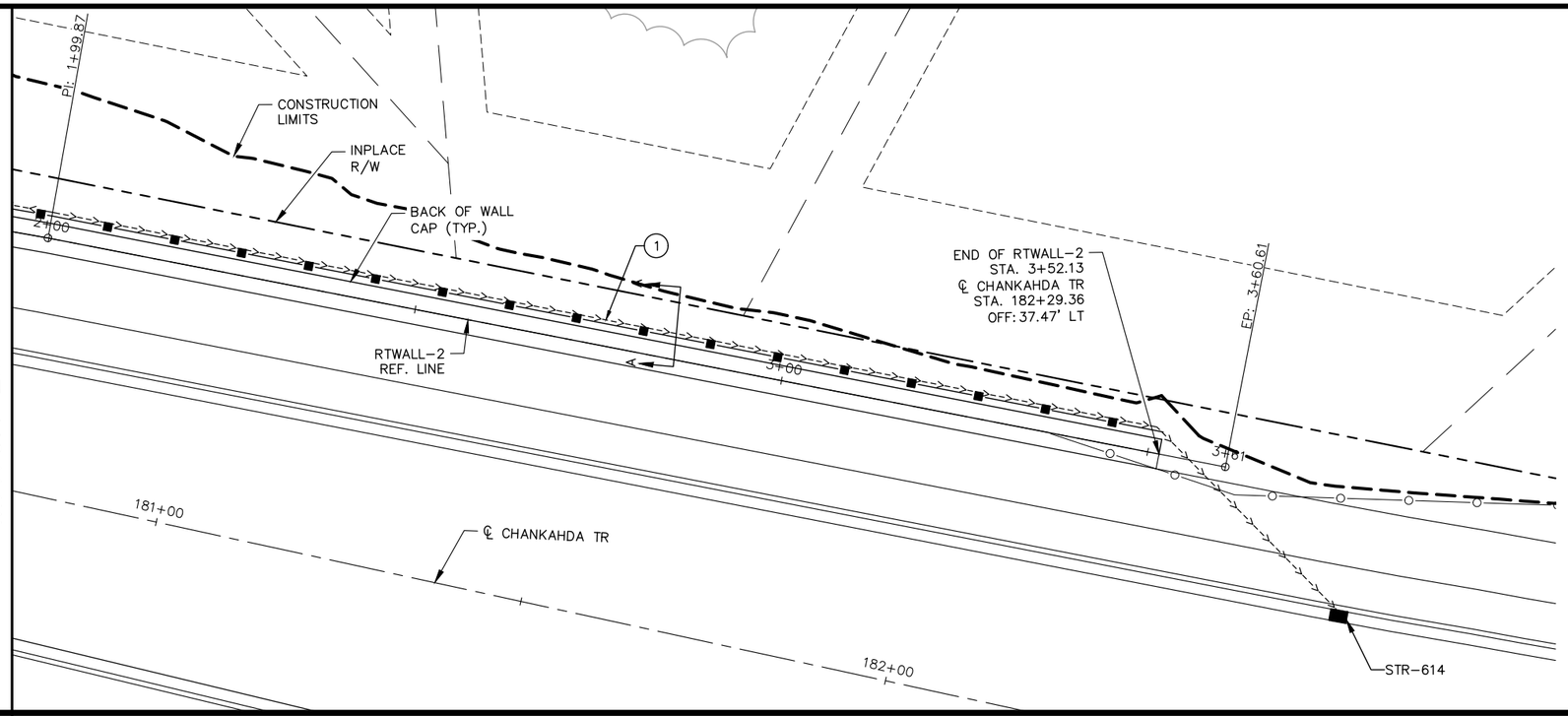
DATE: 02/07/2025 MN LIC. NO. 49486

City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
RTWALL-2 PLAN AND PROFILE

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 206 / 354





GENERAL NOTES:

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SEE SHEET 201 FOR SECTION A–A.

SEE CROSS SECTIONS AND GRADING PLAN FOR PROPOSED SURFACES.

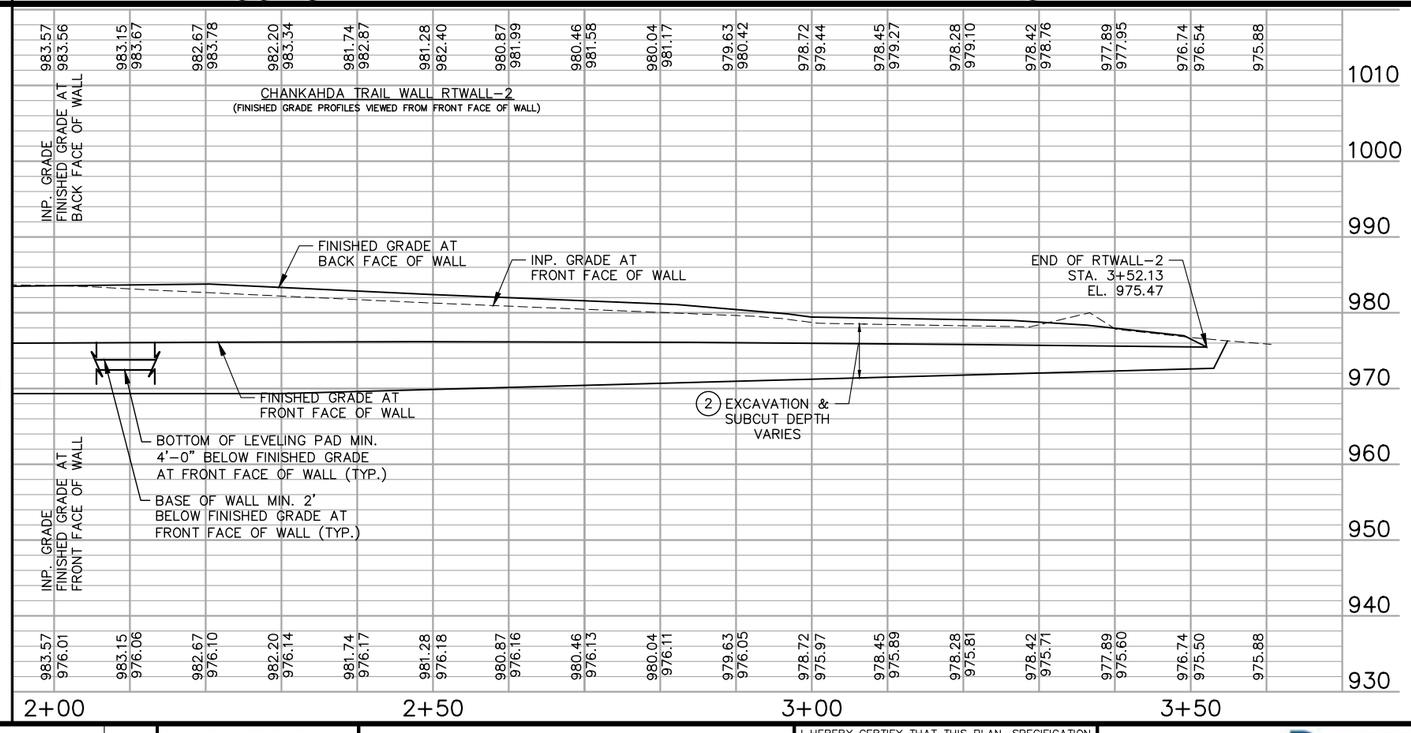
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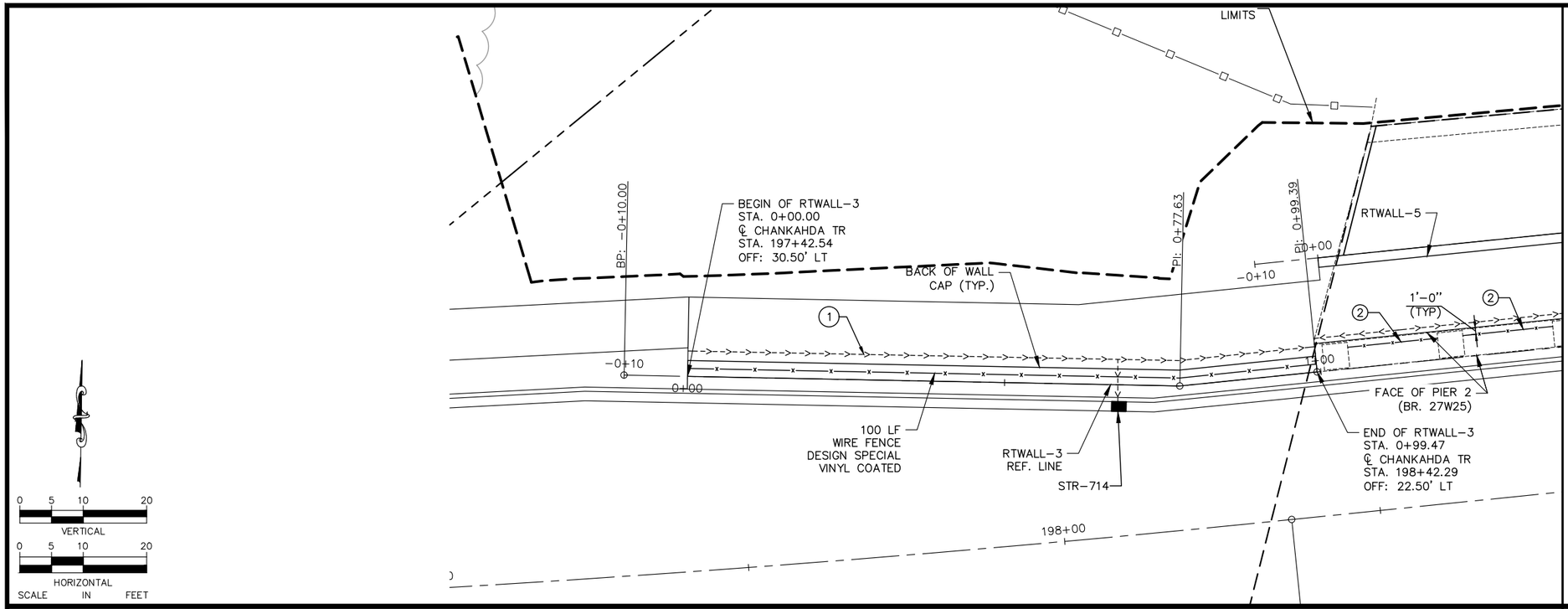
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City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
RTWALL-2 PLAN AND PROFILE

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 207 / 354



MATCH LINE 1+48

GENERAL NOTES:

SEE SHEET 200 FOR PREFABRICATED MODULAR BLOCK WALL DETAILS.

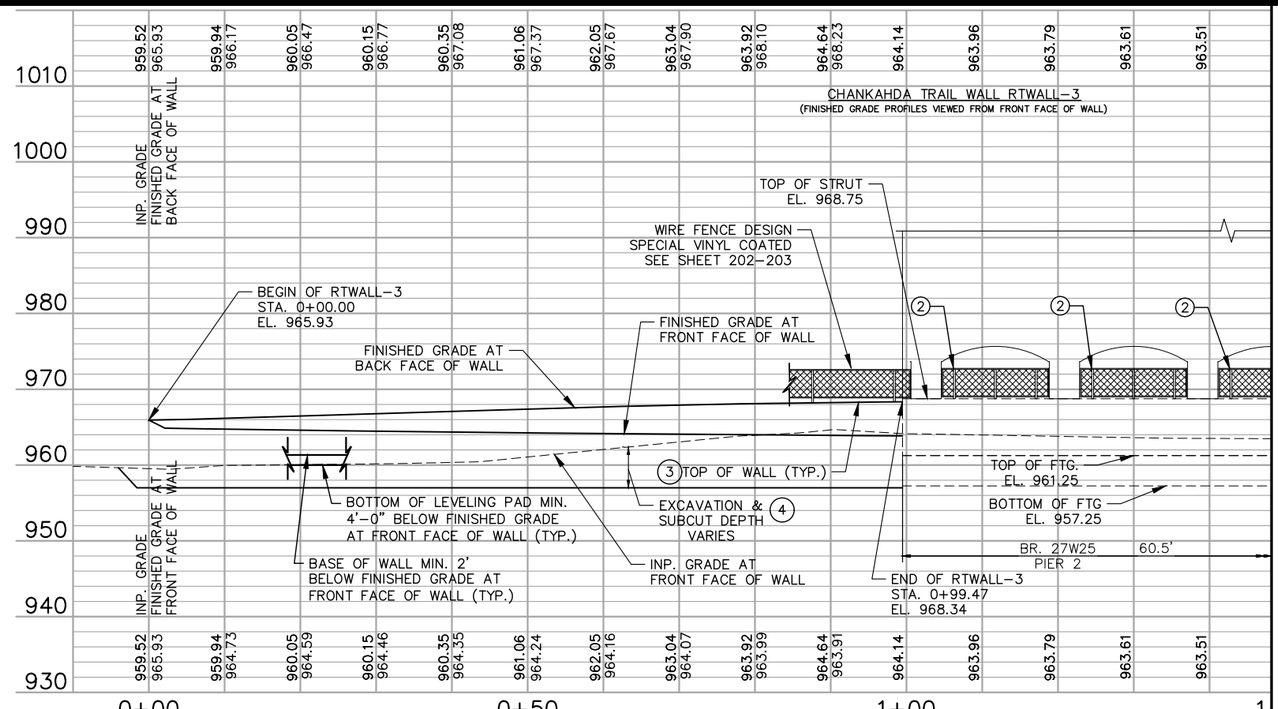
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MATCH LINE 1+48

(1) 4" DRAIN

(2) APPROXIMATELY 14 LF OF WIRE FENCE DESIGN SPECIAL VINYL COATED LOCATED ON PIER WALL, FIELD VERIFY ACTUAL LENGTH. PROVIDE 3" OPEN GAP TO CONCRETE PIER COLUMN TEXTURED FACE. CONTRACTOR SHALL INCLUDE 1' MIN. TO 2' MAX. FENCE CANTILEVERS TO ACCOMMODATE FENCE POST INSTALLATION BETWEEN PIER COLUMNS. SEE SHEET 202–203 FOR DETAILS.

(3) EACH WALL STEP SHALL CONSIST OF A MINIMUM OF 1 FULL BLOCK WIDTH AND A HALF WIDTH

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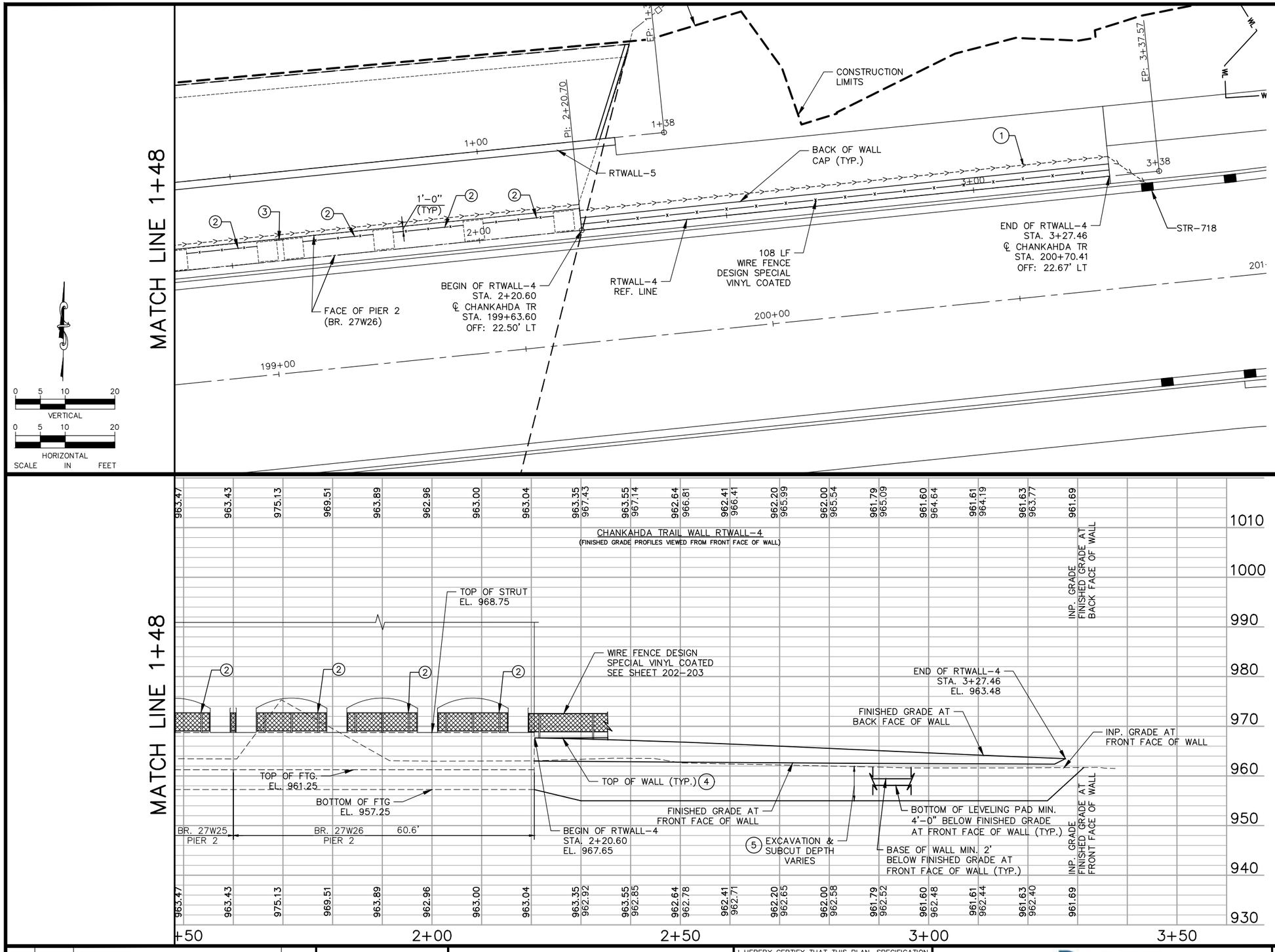
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City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
RTWALL-3 PLAN AND PROFILE

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 208 / 354



GENERAL NOTES:

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(3) 2 LF OF WIRE FENCE DESIGN SPECIAL VINYL COATED MOUNTED TO PIER COLUMN FACE. SEE SHEET 202–203 FOR DETAILS.

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Brian Fleming

BRIAN FLEMING, PE

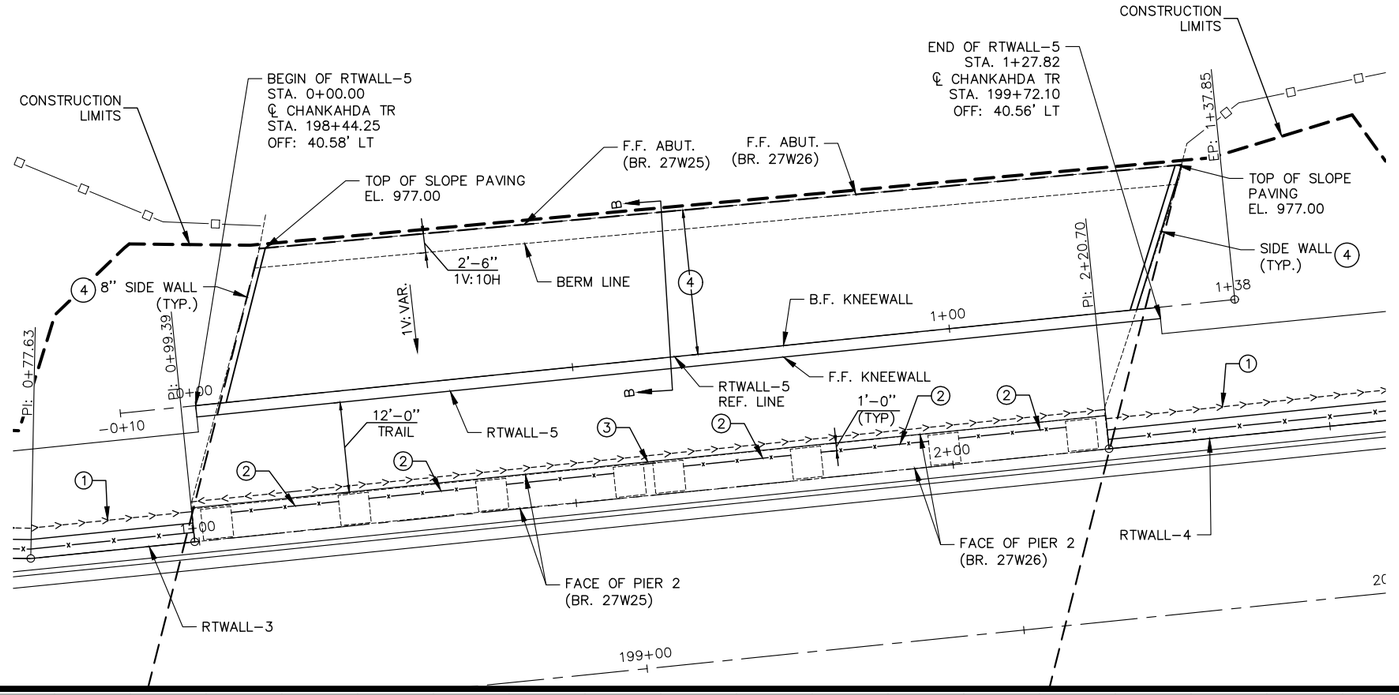
DATE: 02/07/2025 MN LIC. NO. 49486

City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
RTWALL-4 PLAN AND PROFILE

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

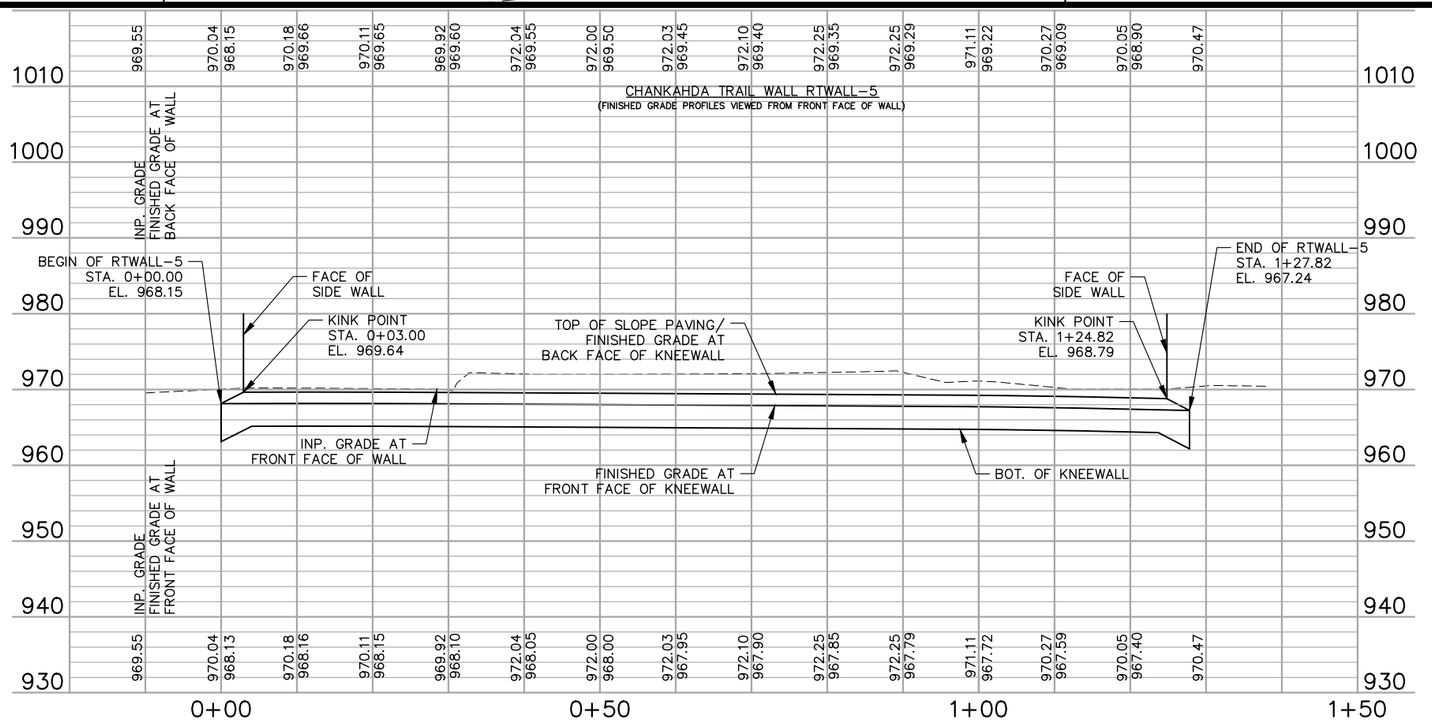
SHEET NO. 209 / 354



0 5 10 20
VERTICAL

0 5 10 20
HORIZONTAL

SCALE IN FEET



GENERAL NOTES:

SEE SHEET 201 FOR SECTION B–B.

SEE CROSS SECTIONS AND GRADING PLAN FOR PROPOSED SURFACES.

FINISHED GRADE PROFILES: FRONT AND BACK FACE OF WALL ARE SHOWN.

SEE SHEETS 211 –212 FOR CONCRETE SLOPE PAVING DETAILS. EXISTING CONCRETE SLOPE PAVING DETAILS PROVIDED AS CONSTRUCTION DETAILS OF PROPOSED CONCRETE SLOPE PAVING, EXCEPT AS NOTED.

(1) 4" DRAIN

(2) APPROXIMATELY 14 LF OF WIRE FENCE DESIGN SPECIAL VINYL COATED LOCATED ON PIER WALL, FIELD VERIFY ACTUAL LENGTH. PROVIDE 3" OPEN GAP TO CONCRETE PIER COLUMN TEXTURED FACE. CONTRACTOR SHALL INCLUDE 1' MIN. TO 2' MAX. FENCE CANTILEVERS TO ACCOMMODATE FENCE POST INSTALLATION BETWEEN PIER COLUMNS. CONTRACTOR TO PROVIDE FENCE CANTILEVER DETAIL TO ENGINEER FOR REVIEW. SEE SHEET 202 –203 FOR DETAILS.

(3) APPROXIMATELY 2 LF OF WIRE FENCE DESIGN SPECIAL VINYL COATED LOCATED ON PIER COLUMN FACES, FIELD VERIFY ACTUAL LENGTH. PROVIDE ATTACHMENTS TO TEXTURED CONCRETE PIER COLUMN FACES WITHOUT POSTS. CONTRACTOR TO PROVIDE FENCE ATTACHMENT DETAILS TO ENGINEER FOR REVIEW. SEE SHEET 202 FOR ADDITIONAL DETAILS.

(4) CONCRETE SLOPE PAVING TO BE CONSTRUCTED BELOW BRIDGE 27W25 AND 27W26, SEE SHEETS 211–212 FOR DETAILS.

No.	Date	Revisions	App.

DRAWING NAME: CHANKAHDA_PH3_RtWallPlan.dwg

DESIGNED BY:	JWB
DRAWN BY:	RGS
CHECKED BY:	BLF
DATE:	02/07/2025
PROJECT NO.	160662010

Kimley»Horn
767 EUSTIS STREET, SUITE 100, ST, PAUL, MN 55114
PHONE: 651–645–4197
WWW.KIMLEY–HORN.COM

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BRIAN FLEMING, PE

DATE: 02/07/2025 MN LIC. NO. 49486

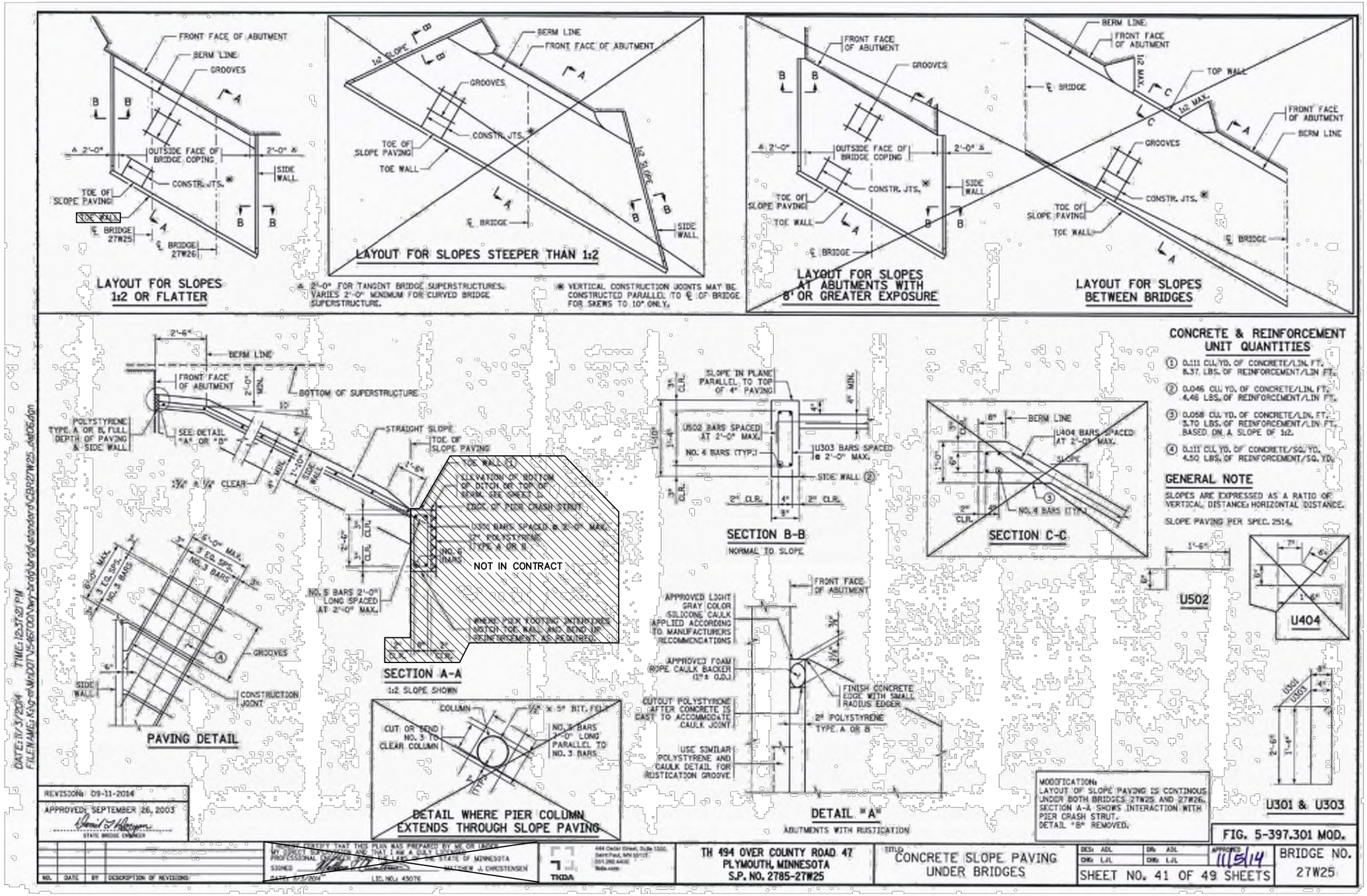
City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
RTWALL-5 PLAN AND PROFILE

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155–210–003
S.A.P.	

SHEET NO. 210 / 354

ORIGINAL CONSTRUCTION PLAN SHEET PROVIDED FOR RECONSTRUCTION OF SLOPE PAVING AND SIDEWALLS ONLY



No.	Date	Revisions	App.

DRAWING NAME	CHANKAHDA_PH3_RtwDtl.dwg
DESIGNED BY:	JWB
DRAWN BY:	RGS
CHECKED BY:	BLF
DATE:	02/07/2025
PROJECT NO.	160662010

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Brian Fleming

BRIAN FLEMING, PE

DATE: 02/07/2025 MN LIC. NO. 49486

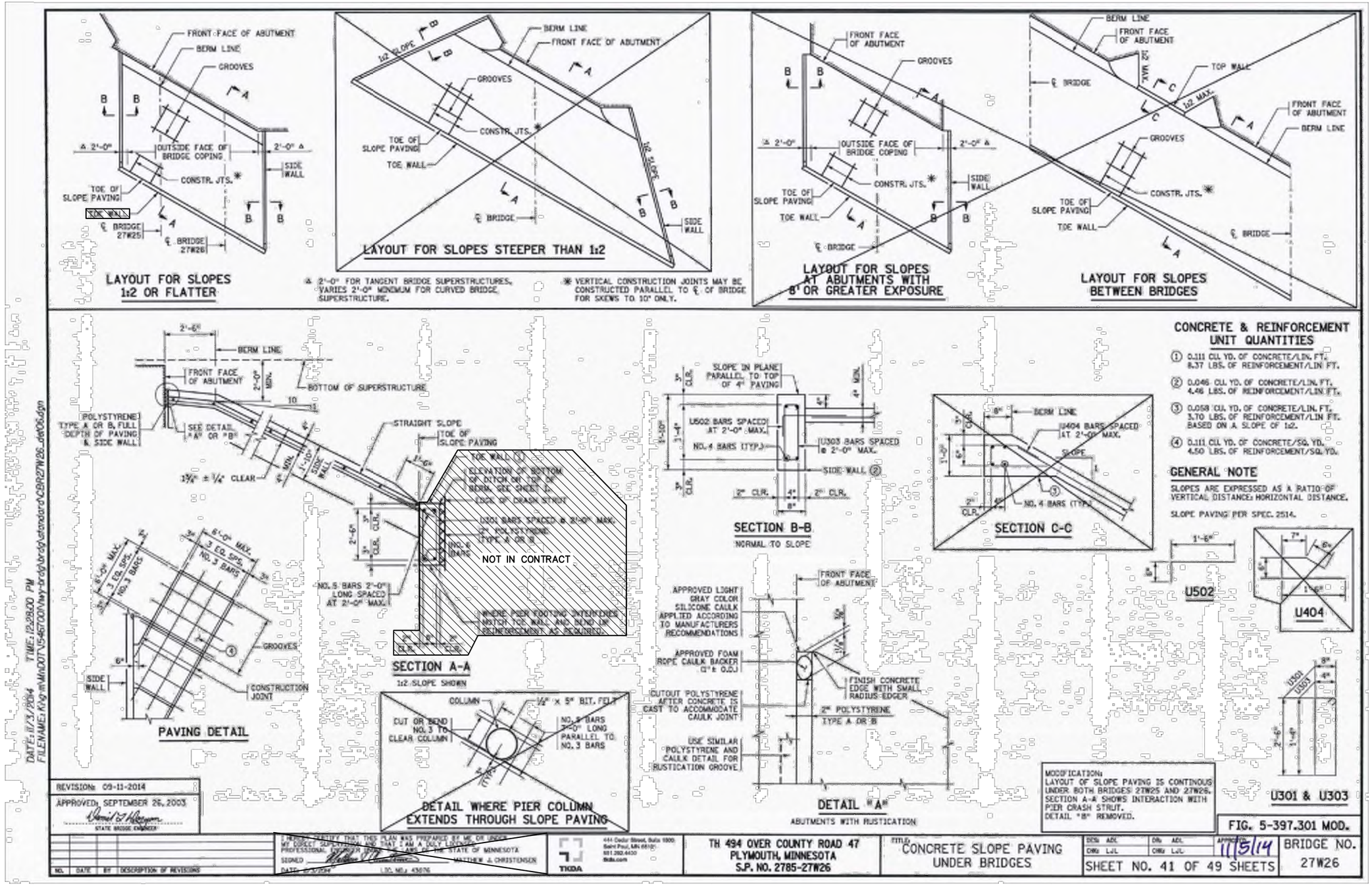
City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
RETAINING WALL PLANS
CONCRETE SLOPE PAVING DETAIL

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 211 / 354

ORIGINAL CONSTRUCTION PLAN SHEET PROVIDED FOR RECONSTRUCTION OF SLOPE PAVING AND SIDEWALLS ONLY



CONCRETE & REINFORCEMENT UNIT QUANTITIES

① 0.111 CU. YD. OF CONCRETE/LIN. FT. 8.37 LBS. OF REINFORCEMENT/LIN FT.

② 0.046 CU. YD. OF CONCRETE/LIN. FT. 4.46 LBS. OF REINFORCEMENT/LIN FT.

③ 0.058 CU. YD. OF CONCRETE/LIN. FT. 3.70 LBS. OF REINFORCEMENT/LIN FT. BASED ON A SLOPE OF 1:2.

④ 0.111 CU. YD. OF CONCRETE/SQ. YD. 4.50 LBS. OF REINFORCEMENT/SQ. YD.

GENERAL NOTE

SLOPES ARE EXPRESSED AS A RATIO OF VERTICAL DISTANCE: HORIZONTAL DISTANCE.

SLOPE PAVING PER SPEC. 2514.

MODIFICATION:
LAYOUT OF SLOPE PAVING IS CONTINOUS UNDER BOTH BRIDGES 27W25 AND 27W26. SECTION A-A SHOWS INTERACTION WITH PIER CRASH STRUT. DETAIL "B" REMOVED.

FIG. 5-397.301 MOD.

REVISIONS: 09-11-2014

APPROVED: SEPTEMBER 26, 2003
DAVID C. HOLMGREN
STATE BRIDGE 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.
SIGNED
MATTHEW A. CHRISTENSEN
DATE: 8/3/2014 LIC. NO. 43076

TKDA
444 Cedar Street, Suite 1500
Saint Paul, MN 55101
651.292.4400
tkda.com

TH 494 OVER COUNTY ROAD 47
PLYMOUTH, MINNESOTA
S.P. NO. 2785-27W26

TITLE: CONCRETE SLOPE PAVING UNDER BRIDGES

DESIGNED: ADL | DRAWN: ADL | CHKD: LJL | CHKD: LJL | APPROVED: 11/5/14

SHEET NO. 41 OF 49 SHEETS

BRIDGE NO. 27W26

DATE: 8/3/2014 TIME: 12:28:00 PM
FILENAME: K:\pm\MnDOT\045700\hwy\bridge\standard\C28R27W26_det05.dgn

No.	Date	Revisions	App.

DRAWING NAME: CHANKAHDA_PH3_RtwDtl.dwg

DESIGNED BY:	JWB
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DATE:	02/07/2025
PROJECT NO.	160662010

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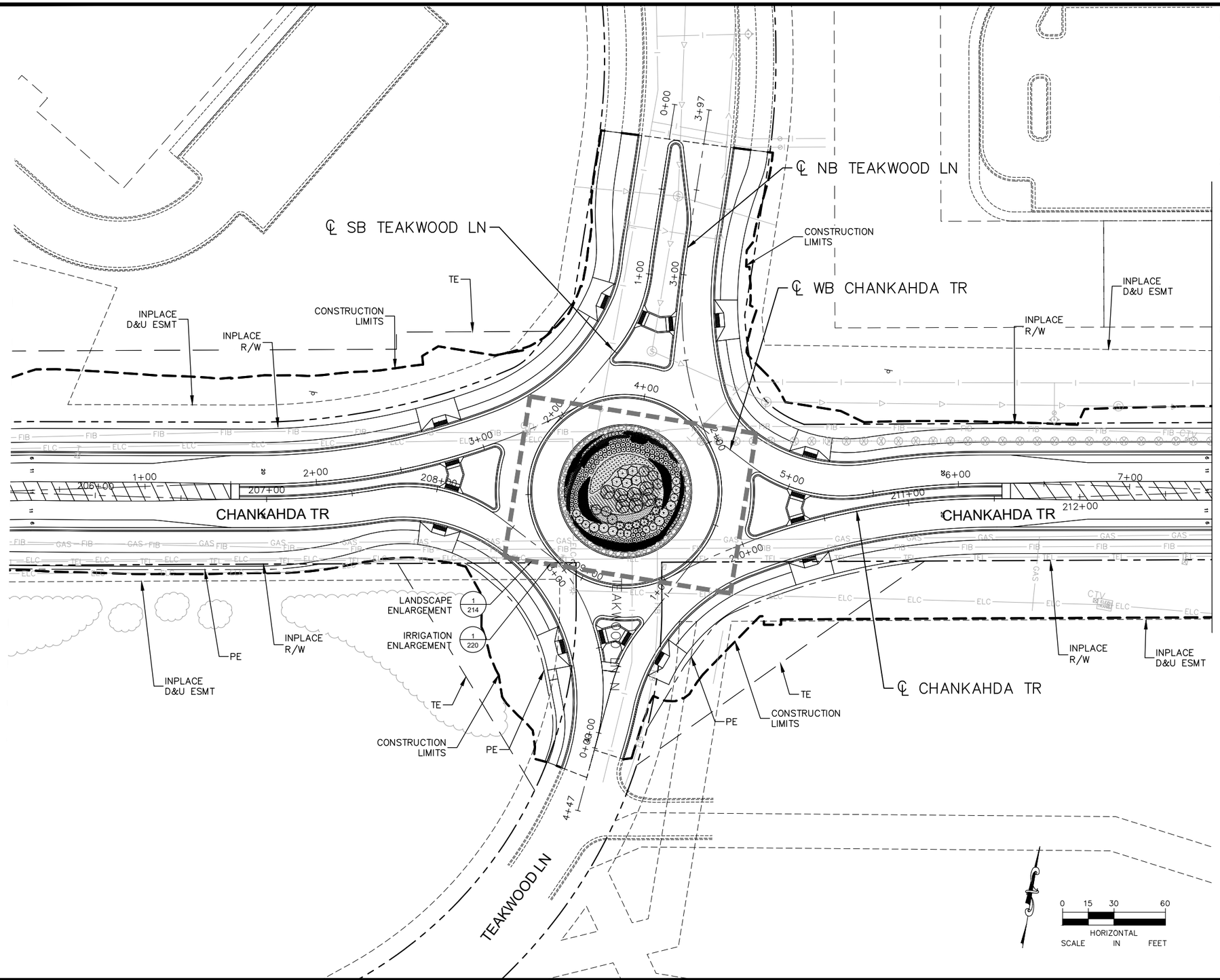
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BRIAN FLEMING, PE
DATE: 02/07/2025 MN LIC. NO. 49486

City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
RETAINING WALL PLANS
CONCRETE SLOPE PAVING DETAIL

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 212 / 354



LEGEND

CONSTRUCTION LIMITS

EXISTING TREES TO REMAIN

GENERAL NOTES

1. NOTIFY ALL PROPERTY OWNERS A MINIMUM OF 48 HOURS PRIOR TO THE EXPIRATION DATE OF THE 30 DAY MAINTENANCE PERIOD FOR SOD AND 45 DAY MAINTENANCE PRIOR FOR SEEDING.
2. MAINTAIN A MINIMUM OF 15' FROM CENTER OF TREE TRUNK TO EDGE OF TRAIL.
3. STAKE ALL TREES FOR LANDSCAPE ARCHITECTS REVIEW PRIOR TO PLANTING.
4. SPADE EDGE TO BE 6' MINIMUM FROM CENTER OF TREE.
5. PLACE 4" DEPTH DOUBLE SHREDDED HARDWOOD MULCH, NATURAL IN COLOR, WITHIN ENTIRE LIMITS OF SPADE EDGE BED AND WITHIN THE ENTIRE PLANTING BED NOTED ON THE PLAN..
6. PLACE 4" DEPTH RIVER ROCK MULCH; 2–3" DIAMETER.
7. SEE SHEETS 216 – 219 FOR LANDSCAPE DETAILS
8. CONFIRM LOCATION OF UTILITIES PRIOR TO ANY PLANTING. BRING ANY CONFLICTS TO LANDSCAPE ARCHITECTS ATTENTION PRIOR TO INSTALLATION.
9. SEE SHEET 215 FOR PLANT SCHEDULE. USE PLAN QUANTITIES IN CASE OF DISCREPANCIES.

No.	Date	Revisions	App.

DRAWING NAME: CHANKAHDA_PH3_Landscape.dwg

DESIGNED BY:	JWB
DRAWN BY:	RGS
CHECKED BY:	CBL
DATE:	02/07/2025
PROJECT NO.	160662010

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RYAN A. HYLLESTED, PLA

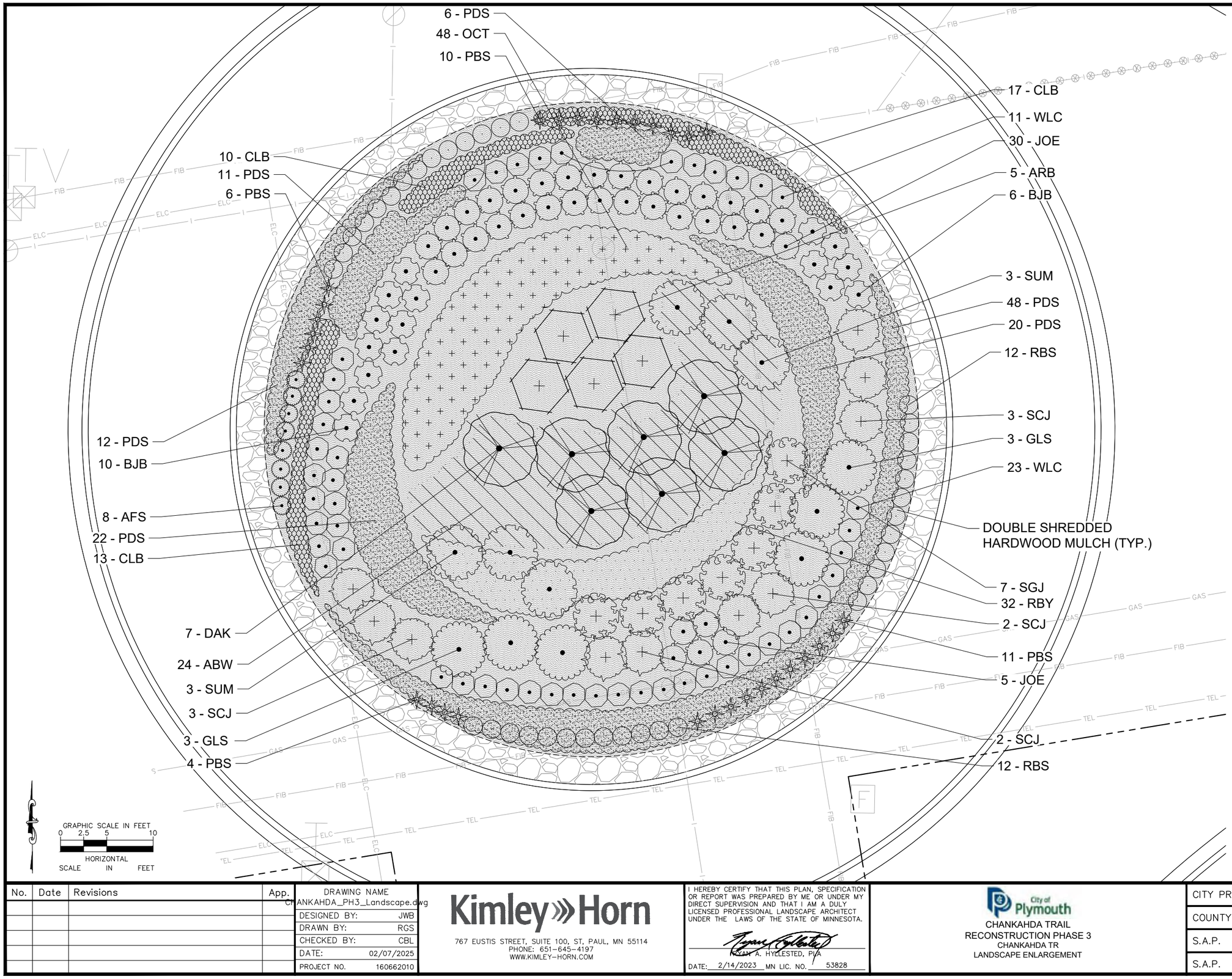
DATE: 2/14/2023 MN LIC. NO. 53828

City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
LANDSCAPE PLAN

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 213 / 354



LANDSCAPE LEGEND

- STEEL EDGER (TYP.) 222 LINEAR FEET
- ROCK MULCH (TYP.) 8.5 CUBIC YARDS
- DOUBLE SHREDDED HARDWOOD MULCH (TYP.) 36 CUBIC YARDS

PLANT KEY

SYMBOL	CODE	COMMON NAME
CONIFEROUS TREE		
	ARB	TECHNY ARBORVITAE
ORNAMENTAL TREE		
	DAK	DAKOTA PINNACLE BIRCH
CONIFEROUS SHRUBS		
	SCJ	SCANDIA JUNIPER
	SGJ	SEA GREEN JUNIPER
DECIDUOUS SHRUBS		
	GLS	GRO-LOW FRAGRANT SUMAC
	SUM	TIGER EYES® STAGHORN SUMAC
PERENNIALS		
	AFS	AUTUMN FIRE SEDUM
	BJB	BLUE JEAN BABY RUSSIAN SAGE
	JOE	PHANTOM JOE PYE WEED
	PBS	PRAIRIE BLAZING STAR
	RBS	RUBY STAR CONEFLOWER
	WLC	WALKER'S LOW CATMINT
SHRUB AREAS		
	ABW	DWARF BLUE LEAF WILLOW
PERENNIALS		
	CLB	CAROUSEL LITTLE BLUESTEM
	OCT	RED OCTOBER BIG BLUESTEM
	PDS	PRAIRIE DROPSEED
	RBY	RUBY RIBBONS® SWITCH GRASS

NOTE:
SEE SHEET 215 FOR FULL PLANT SCHEDULE

No.	Date	Revisions	App.

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RYAN A. HYLLESTED, PLA

DATE: 2/14/2023 MN LIC. NO. 53828

City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
LANDSCAPE ENLARGEMENT

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 214 / 354

PLANT SCHEDULE

SYMBOL	CODE	QTY	COMMON NAME	BOTANICAL NAME	CONTAINER	CAL.	MATURE HEIGHT X WIDTH
CONIFEROUS TREE							
	ARB	5	TECHNY ARBORVITAE	THUJA OCCIDENTALIS 'TECHNY'	B & B	6` HT.	H:12-15' W:6-10'
ORNAMENTAL TREE							
	DAK	7	DAKOTA PINNACLE BIRCH	BETULA PLATYPHYLLA `FARGO`	B & B	1.5" CAL	H:30-40' W:10-12'

SYMBOL	CODE	QTY	COMMON NAME	BOTANICAL NAME	CONTAINER	SPACING	MATURE HEIGHT X WIDTH
CONIFEROUS SHRUBS							
	SCJ	10	SCANDIA JUNIPER	JUNIPERUS SABINA `SCANDIA`	#5 CONT.	5` O.C.	H: 16-20" W: 36-60"
	SGJ	7	SEA GREEN JUNIPER	JUNIPERUS CHINENSIS `SEA GREEN`	#5 CONT.	5` O.C.	H:48-60" W:48-60"
DECIDUOUS SHRUBS							
	GLS	6	GRO-LOW FRAGRANT SUMAC	RHUS AROMATICA `GRO-LOW`	#5 CONT.	6` O.C.	H:20-24" W:6-8'
	SUM	6	TIGER EYES® STAGHORN SUMAC	RHUS TYPHINA 'BAILTIGER'	#5 CONT.	5` O.C.	H:6-8' W:6-8'
PERENNIALS							
	AFS	8	AUTUMN FIRE SEDUM	SEDUM X 'AUTUMN FIRE'	#1 CONT.	24" O.C.	H:16-20" W:18-24"
	BJB	16	BLUE JEAN BABY RUSSIAN SAGE	PEROVSKIA ATRIPLICIFOLIA 'BLUE JEAN BABY'	#1 CONT.	3` O.C.	H:24-36" W:24-36"
	JOE	35	PHANTOM JOE PYE WEED	EUPATORIUM X 'PHANTOM'	#1 CONT.	36" O.C.	H:36-48" W:24-36"
	PBS	31	PRAIRIE BLAZING STAR	LIATRIS PYCNOSTACHYA	2" PLUGS	24" O.C.	H:36-48" W:24-36"
	RBS	38	RUBY STAR CONEFLOWER	ECHINACEA PURPUREA 'RUBINSTERN'	#1 CONT.	2` O.C.	H:16-20" W:18-24"
	WLC	49	WALKER'S LOW CATMINT	NEPETA X FAASSENII 'WALKER'S LOW'	#1 CONT.	30" O.C.	H:24-36" W:24-36"

SYMBOL	CODE	QTY	COMMON NAME	BOTANICAL NAME	CONT	SPACING	MATURE HEIGHT X WIDTH
SHRUB AREAS							
	ABW	24	DWARF BLUE LEAF WILLOW	SALIX PURPUREA 'NANA'	#5 CONT.	5' O.C.	H:48-60" W:48-60"

SYMBOL	CODE	QTY	COMMON NAME	BOTANICAL NAME	CTNR.	SPACING	MATURE HEIGHT X WIDTH
PERENNIALS							
	CLB	40	CAROUSEL LITTLE BLUESTEM	SCHIZACHYRIUM SCOPARIUM 'CAROUSEL'	#1 CONT.	24" O.C.	H:16-20" W:18-24"
	OCT	48	RED OCTOBER BIG BLUESTEM	ANDROPOGON GERARDII 'RED OCTOBER'	#1 CONT.	30" O.C.	H:60-72" W:18-24"
	PDS	119	PRAIRIE DROPSEED	SPOROBOLUS HETEROLEPIS	#1 CONT.	30" O.C.	H:16-20" W:18-24"
	RBY	32	RUBY RIBBONS® SWITCH GRASS	PANICUM VIRGATUM 'RR1'	#1 CONT.	30" O.C.	H:36-48" W:24-36"

NOTE:
QUANTITIES ON PLAN SUPERSEDE LIST QUANTITIES IN THE EVENT OF A DISCREPANCY.

ABBREVIATIONS:
B&B = BALLED AND BURLAPPED CAL. = CALIPER HT. = HEIGHT MIN. = MINIMUM O.C. = ON CENTER SP. = SPECIES
QTY. = QUANTITY

No.	Date	Revisions	App.

DRAWING NAME: CHANKAHDA_PH3_Landscape.dwg
DESIGNED BY: JWB
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DATE: 02/07/2025
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RYAN A. HYLLESTED, PLA
DATE: 2/14/2023 MN LIC. NO. 53828

City of Plymouth
CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
LANDSCAPE PLAN AND DETAILS

CITY PROJECT ST240002
COUNTY PROJECT
S.A.P. 155-210-003
S.A.P.

SHEET NO. 215 / 354

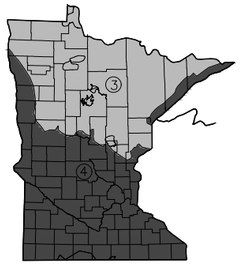
GENERAL NOTES

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

WATERING GUIDELINES (MnDOT 2571.3G)

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

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

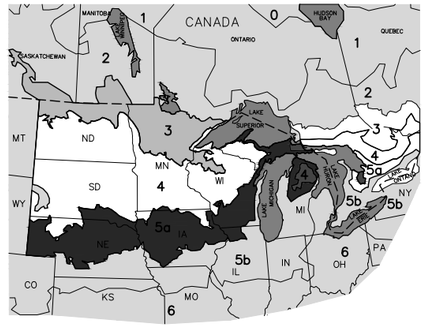


1. BARE ROOT PERENNIALS MUST BE PLACED IN THE SPRING NO LATER THAN JUNE 1ST OR FOLLOW THE FALL DECIDUOUS PLANTING DATES.
2. ACTUAL DATES MAY CHANGE DEPENDING UPON SEASONAL CONDITIONS, AS DETERMINED BY THE ENGINEER.
3. FALL PLANTING IS NOT ALLOWED FOR BARE ROOT FORM OF THE FOLLOWING SPECIES: HAWTHORN,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

PLANTING DATES BY ZONE

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

PLANT INSTALLATION PERIOD



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

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

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

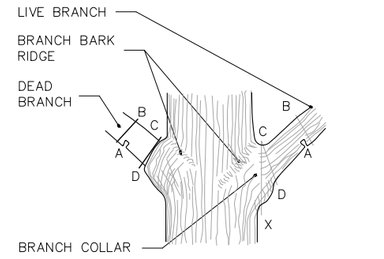
A. PLANT STOCK CONTINUOUSLY GROWN FOR AT LEAST THE LAST TWO YEARS WITHIN THE ACCEPTABLE LIMITS SHOWN.

OR

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

ACCEPTABLE PLANT STOCK GROWING RANGE LIMITS

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



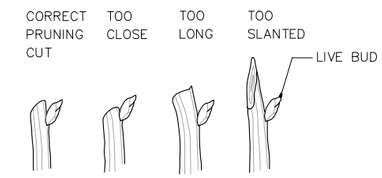
BRANCHES PRUNED AT TRUNK (SHIGO METHOD)

STEPS TO PRUNING WITH PRUNING SAW:

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

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

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



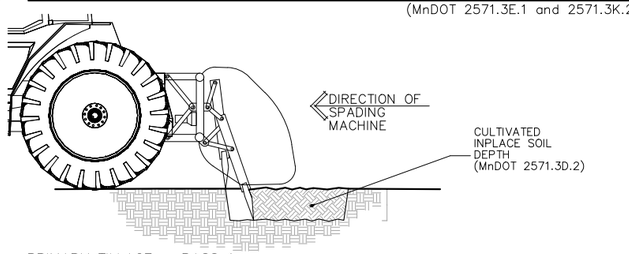
BRANCHES PRUNED TO LIVE BUD

PRUNING NOTES:

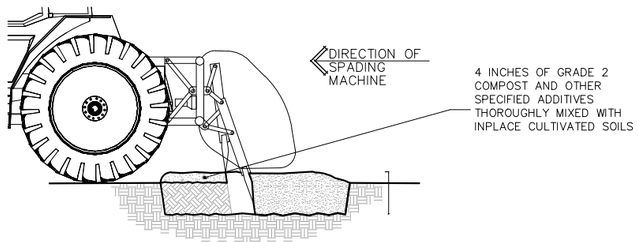
1. PRUNE USING CLEAN AND SHARP SCISSOR–TYPE PRUNER OR PRUNING SAW.
2. THE BEST TIME TO PRUNE IS LATE DORMANT SEASON OR EARLY SPRING.
3. AVOID PRUNING OAKS IN APRIL, MAY, JUNE OR JULY.
4. IF PRUNING IS NECESSARY OR IF WOUNDS OCCUR TO OAK TREES IN APRIL, MAY, JUNE OR JULY, IMMEDIATELY PAINT CUT SURFACE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

PRUNING

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



PRIMARY TILLAGE – PASS 1



INCORPORATION TILLAGE – PASS 2

PLANTING SOIL

(MnDOT 2571.3D)

LEAD EXPERT OFFICE	LYNN CLARKOWSKI CHIEF ENVIRONMENTAL OFFICER OFFICE OF ENVIRNOMENTAL STEWARDSHIP		STANDARD PLANTING DETAILS	APPROVED: 12-11-2015 REVISED: 02-14-2019	THOMAS STYRBICKI STATE DESIGN ENGINEER	STANDARD PLAN 5-297.301	1 OF 3

No.	Date	Revisions	App.

DRAWING NAME	CHANKAHDA_PH3_LANDSCDET.dwg
DESIGNED BY:	CFK
DRAWN BY:	CFK
CHECKED BY:	RAH
DATE:	02/07/2025
PROJECT NO.	160662010

Kimley»Horn
767 EUSTIS STREET, SUITE 100, ST. PAUL, MN 55114
PHONE: 651–645–4197
WWW.KIMLEY–HORN.COM

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

RYAN A. HYLLESTED, PLA

DATE: 2/14/2023 MN LIC. NO. 53828

City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
LANDSCAPE DETAILS

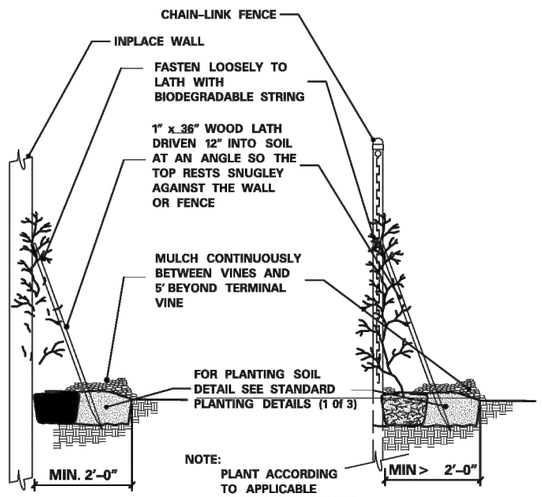
CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155–210–003
S.A.P.	

SHEET NO. 216 / 354

PLANTING HOLE DIMENSIONS

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

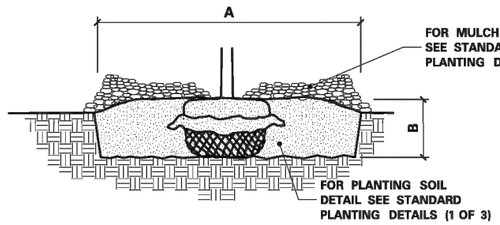
PLANT TYPE	PLANT SIZE UP TO AND INCLUDING	(A) MINIMUM HOLE WIDTH	(B) APPROXIMATE HOLE DEPTH
DECIDUOUS & ORNAMENTAL TREES	3' B.R.	46"	13"
	4' B.R	46"	14"
	5' B.R.	48"	14"
	6' B.R.	54"	15"
	7' B.R	60"	16"
	8' B.R.	66"	19"
	0.75" B.R.	48'	12"
	1" B.R.	54"	14"
	1.25" B.R.	60"	14"
	1.5 B.R.	66"	15"
	1.75" B.R	72"	16"
	2" B.R.	84"	19"
	4' B.B.	42"	11"
	5' B.B.	48"	12"
	6' B.B.	52"	14"
	8' B.B.	66"	16"
	10' B.B.	66"	16"
	12' B.B.	48"	16"
	1" B.B.	54"	14"
	1.25" B.B.	56"	15"
	1.5" B.B.	61"	15"
	1.75" B.B.	66"	16"
	2" B.B.	72"	16"
	2.5" B.B.	84"	19"
	3" B.B.	96"	20"
	3.5" B.B.	114"	23"
	4" B.B.	128"	25"
DECIDUOUS SHRUBS, ROSES AND PERENNIALS PERENNIAL HOLE DEPTH AND WIDTH SHALL BE BASED UPON ON-CENTER SPACING IN A CONTINUOUS TRENCH.	12" B.R.	24"	7"
	15" B.R.	28"	8"
	18" B.R.	30"	8"
	2' B.R.	33"	9"
	3' B.R.	42"	11"
	4' B.B.	48"	12"
	5' B.R.	54"	14"
	6' B.R.	60"	14"
	18" B.B.	27"	7"
	2' B.B.	30"	8"
	3' B.B.	36"	9"
	4' B.B.	42"	11"
	5' B.B.	48"	12"
	6' B.B.	54"	14"



WALL INSTALLATION

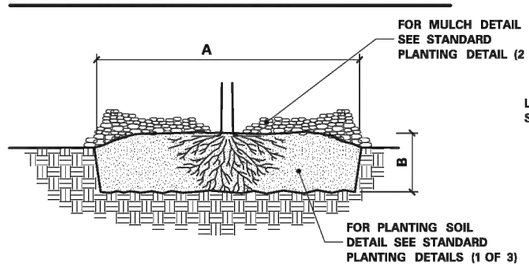
FENCE INSTALLATION

INSTALLATION OF VINES



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

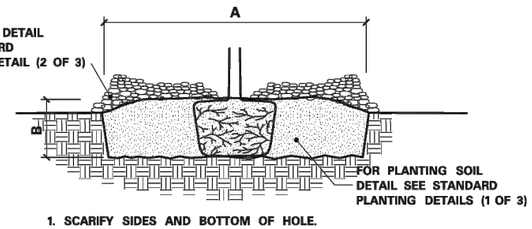
BALLED & BURLAPPED STOCK



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

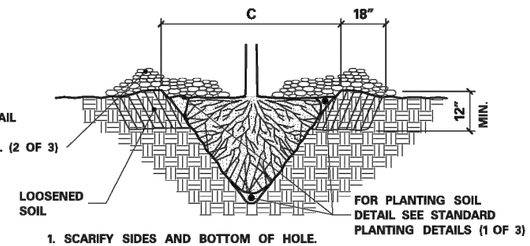
BARE ROOT STOCK

INSTALLATION OF PLANTS



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

CONTAINER STOCK



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

MINIMUM TREE SPADE SIZE REQUIREMENTS

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

MACHINE MOVED STOCK

PLANTING HOLE DIMENSIONS

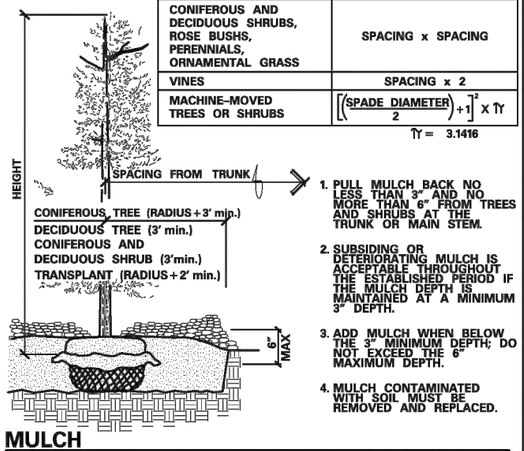
HOLE DEPTH FOR B&B AND CONTAINER PLANTS SHALL NOT EXCEED MEASUREMENT FROM ROOT FLARE TO BOTTOM OF SOIL BALL.

PLANT TYPE	PLANT SIZE UP TO AND INCLUDING	(A) MINIMUM HOLE WIDTH	(B) APPROXIMATE HOLE DEPTH
CONIFEROUS TREES AT LEAST 2/3 OF ALL CONIFER BRANCHES WILL CONTAIN TERMINAL BUDS	2' B.B	38"	10"
	3' B.B	42"	11"
	4' B.B	51"	13"
	5' B.B	60"	13"
	6' B.B	66"	15"
	7' B.B	72"	16"
	8' B.B	81"	18"
	9' B.B	90"	20"
	10' B.B	102"	21"
	12' B.B	114"	24"
CONIFEROUS SHRUBS (UPRIGHT)	18" B.B.	24"	7"
	3' B.B.	48"	12"
CONIFEROUS SHRUBS (SPREADING)	18" SPR B.B.	30"	8"
	2' SPR B.B.	36"	9"
CONTAINER GROWN PLANTS	CELLPACKS / PLUGS	6"	2.5"
	2.25" CONT.	7"	3"
	3.5" CONT.	10"	3"
	4" CONT.	11"	4"
	4.5" CONT.	13"	4"
	6"/1 QT CONT.	15"	5.5"
	1# CONT.	18"	6"
	2# CONT.	23"	7.5"
	3# CONT.	29"	8.5"
	5# CONT.	30"	11"
	7# CONT.	37"	11"
	15# CONT.	44"	14"
	10# CONT.	45"	15"
	20# CONT.	60"	16"
	25# CONT.	72"	17"
SEEDLINGS	6" SEEDLING	15"	14"
	9" SEEDLING	18"	14"
	12" SEEDLING	23"	16"
	18" SEEDLING	30"	16"
	2' SEEDLING	36"	18"
VINES	1 YR. MED B.R.	15"	11"
	1 YR. NO. 1 B.R.	17"	14'
	2 YR. MED. B.R.	33"	12"
	2 YR. NO. 1 B.R.	42"	15"

MULCH AREA CALCULATOR

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

π = 3.1416



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

MULCH

(MnDOT 2571.3F)

(MnDOT 2571.3H)

LEAD EXPERT OFFICE	LYNN CLARKOWSKI CHIEF ENVIRONMENTAL OFFICER OFFICE OF ENVIRNOMENTAL STEWARDSHIP	STANDARD PLANTING DETAILS	APPROVED: 12-11-2015 REVISED:	THOMAS STYRBICKI STATE DESIGN ENGINEER STANDARD PLAN 5-297.301	2 OF 3

DEPARTMENT OF TRANSPORTATION

STANDARD PLAN

STATE PROJ. NO.	SHEET NO.
TRUNK HWY.	TOTAL SHEETS

No.	Date	Revisions	App.

DRAWING NAME	CHANKAHDA_PH3_LANDSCDET.dwg
DESIGNED BY:	CFK
DRAWN BY:	CFK
CHECKED BY:	RAH
DATE:	02/07/2025
PROJECT NO.	160662010

Kimley»Horn
767 EUSTIS STREET, SUITE 100, ST, PAUL, MN 55114
PHONE: 651-645-4197
WWW.KIMLEY-HORN.COM

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RYAN A. HYLESTED, PLA

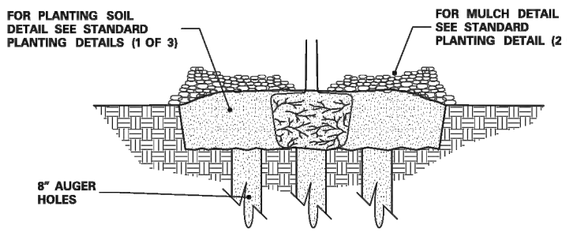
DATE: 2/14/2023 MN LIC. NO. 53828

City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
LANDSCAPE DETAILS

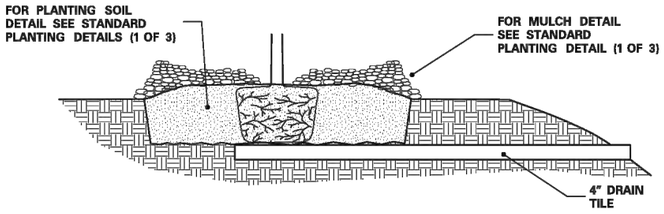
CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 217 / 354



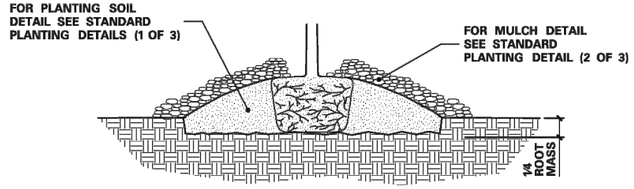
1. EXCAVATE HOLE OR BED TO ALLOW PLACING THE TOP OF ROOT MASS 1"–3" HIGHER THAN FINISHED GRADE.
2. AUGER 8" DIAMETER HOLES ENTIRELY THROUGH IMPERVIOUS OR POORLY DRAINED HARD PAN SOIL LAYER TO ADEQUATELY DRAIN SUBSOIL.
3. TEST FOR POSITIVE DRAINAGE. RE–AUGER AN ADDITIONAL 8" IF NECESSARY FOR POSITIVE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

GRANULAR FILTER



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

TILE DRAINAGE



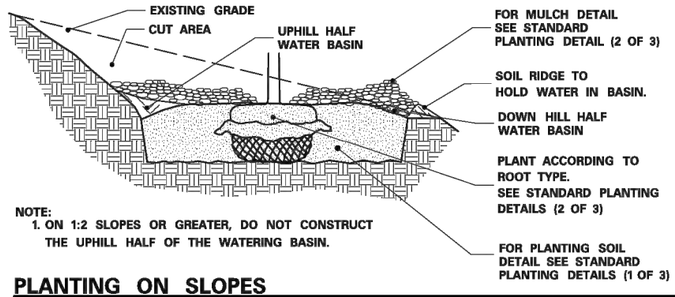
1. EXCAVATE HOLE OR BED 1/4 THE DEPTH OF THE ROOT MASS.
2. SET ROOT MASS IN HOLE.
3. CONSTRUCT BERM WITH PLANTING SOIL. EXTEND THE BERM BASE TO A WIDTH OF 3 TIMES THE BERM HEIGHT.
4. COMPLETE PLANTING ACCORDING ROOT TYPE. SEE STANDARD PLANTING DETAILS (2 OF 3).

MINI–BERM

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

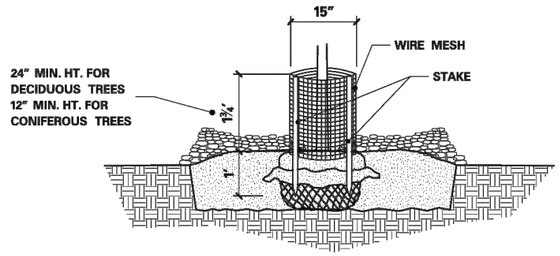
PLANTING DETAIL FOR POORLY DRAINED SOILS

(MnDOT 2571.3D.2(8))



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

PLANTING ON SLOPES

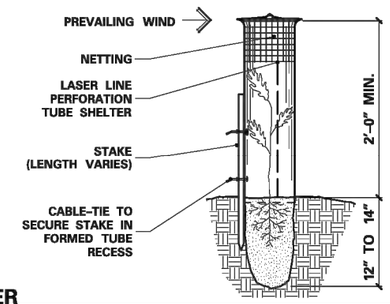


1. FORM A DOUBLE–LAYERED CYLINDER USING 0.25" GRID GALVANIZED WELDED WIRE MESH (HARDWARE CLOTH). OVERLAP THE CUT END 2".
2. DRIVE TWO 1" x 1" OPPOSING HEARTWOOD WHITE OAK STAKES INTO THE GROUND, 7" FROM THE CENTER OF THE TREE STEM.
3. SECURE THE MESH CYLINDER TO THE OUTSIDE OF THE STAKES USING EITHER,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

RODENT PROTECTION

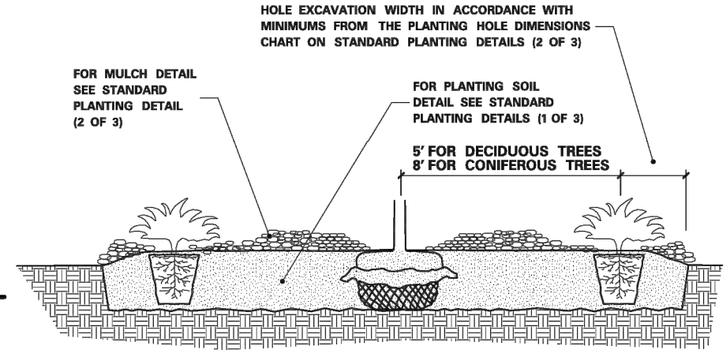
(MnDOT 2571.3I.2)

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

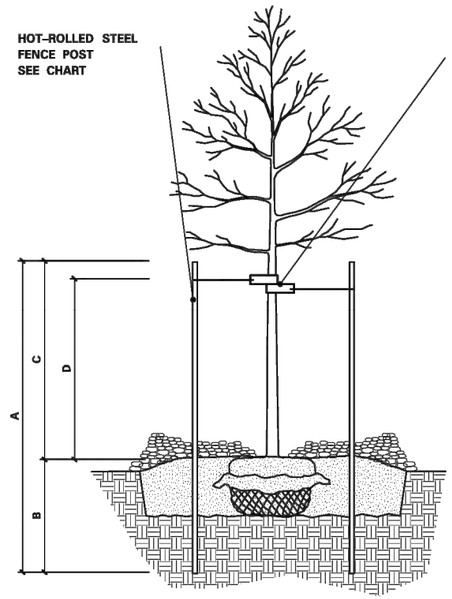


SEEDLING TREE SHELTER

(MnDOT 2571.3I.4)



PLANT SPACING IN MASS BEDS



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

STEEL POST SIZING

CALIPER	STEEL POST TYPE	A	B	C	D
LESS THAN 4 INCHES	HOT–ROLLED STEEL FENCE POST (MnDOT 3403) OR APPROVED EQUAL.	7'–0"	2'–0" MIN.	4'–0"	3'–0"
GREATER THAN 4 INCHES	10' 2.2 LB. FLANGED CHANNEL SIGN POST (MnDOT 3401) OR APPROVED EQUAL.	10'–0"	4'–0" MIN.	6'–0"	5'–0"

STAKING AND GUYING

(MnDOT 2571.3I.1)

LEAD EXPERT OFFICE	LYNN CLARKOWSKI CHIEF ENVIRONMENTAL OFFICER OFFICE OF ENVIRNOMENTAL STEWARDSHIP	STANDARD PLANTING DETAILS	APPROVED: 12-11-2015 REVISED:	THOMAS STYRBICKI STATE DESIGN ENGINEER	STANDARD PLAN 5-297.301	3 OF 3
	DEPARTMENT OF TRANSPORTATION	STANDARD PLAN			STATE PROJ. NO. / TRUNK HWY.	SHEET NO. / TOTAL SHEETS

No.	Date	Revisions	App.

DRAWING NAME: CHANKAHDA_PH3_LANDSCDET.dwg

DESIGNED BY:	CFK
DRAWN BY:	CFK
CHECKED BY:	RAH
DATE:	02/07/2025
PROJECT NO.	160662010

Kimley»Horn
767 EUSTIS STREET, SUITE 100, ST, PAUL, MN 55114
PHONE: 651–645–4197
WWW.KIMLEY–HORN.COM

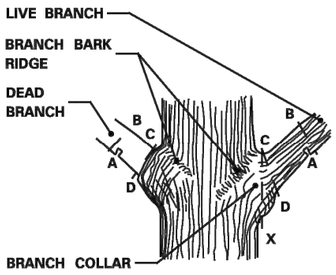
I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL LANDSCAPE ARCHITECT UNDER THE LAWS OF THE STATE OF MINNESOTA.

RYAN A. HYLLESTED, PLA
DATE: 2/14/2023 MN LIC. NO. 53828

City of Plymouth
CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
LANDSCAPE DETAILS

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155–210–003
S.A.P.	

SHEET NO. 218 / 354



BRANCHES PRUNED AT TRUNK

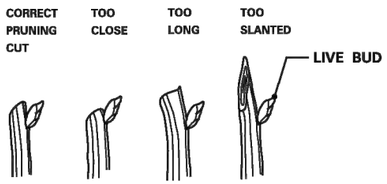
(SHIGO METHOD)

STEPS TO PRUNING WITH PRUNING SAW:

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

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

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



BRANCHES PRUNED TO LIVE BUD

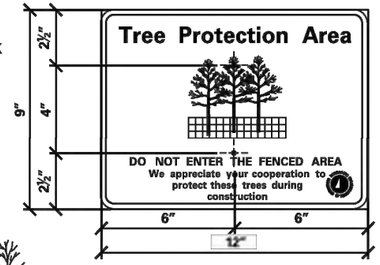
PRUNING NOTES:

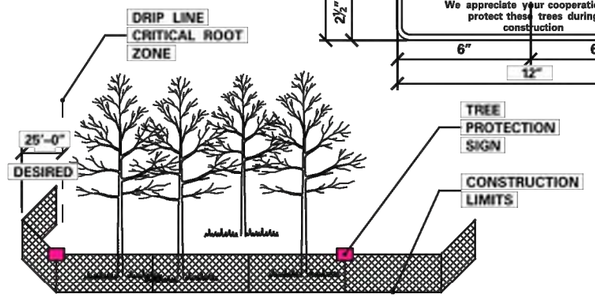
1. PRUNE USING CLEAN AND SHARP SCISSOR-TYPE PRUNER OR PRUNING SAW.
2. THE BEST TIME TO PRUNE IS LATE DORMANT SEASON OR EARLY SPRING.
3. AVOID PRUNING OAKS IN APRIL, MAY, JUNE OR JULY.
4. IF PRUNING IS NECESSARY OR IF WOUNDS OCCUR TO OAK TREES IN APRIL, MAY, JUNE OR JULY, IMMEDIATELY PAINT CUT SURFACE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

PRUNING

(MnDOT 2571.3K2a9 and 2571.3E1)

1. FABRICATE 12" X 9" X 3/8" SIGN WITH 0.75" RADIUS CORNERS.
2. SIGN SHALL BE WHITE WITH BLACK LETTERING.
3. ATTACH SIGN TO POST USING 1" LENGTH WOOD SCREWS.

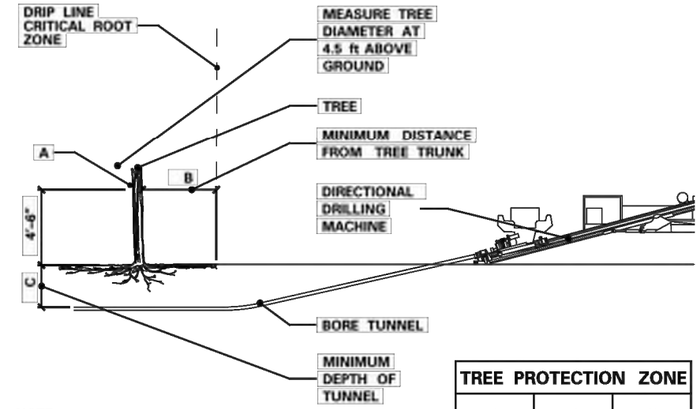




1. FURNISH AND INSTALL TEMPORARY FENCE AT THE TREE'S DRIPLINE OR CONSTRUCTION LIMITS AS SPECIFIED, PRIOR TO ANY CONSTRUCTION.
2. WHEN POSSIBLE PLACE FENCE 25 FEET BEYOND THE DRIP LINE.
3. PLACE TREE PROTECTION SIGNS ALONG FENCE AT 50' INTERVALS.

TEMPORARY FENCE

(MnDOT 2572.3A1)



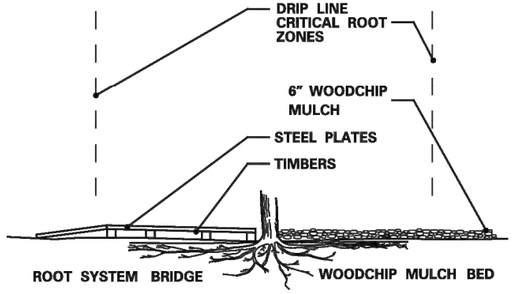
NOTE:

1. (A) IS THE DIAMETER OF TREES MEASURED 4-6 FEET ABOVE THE GROUND AND IS TERMED THE "DIAMETER AT BREAST HEIGHT," (DBH).
2. USING A TREE DIAMETER TAPE, WRAP THE TAPE AROUND THE GIRTH OF THE TREE, AT THE DBH, BEING CAREFUL NOT TO TWIST THE TAPE.

TREE PROTECTION ZONE		
A	B	C
<2"	2'	2'
2-4"	4'	2.5'
>4-9"	6'	2.5'
>9-14"	10'	3'
>14-19"	12'	3.25'
>19"	15'	4'

UTILITY CONSTRUCTION

(MnDOT 2572.3A5)



IF CONSTRUCTION VEHICLES MUST PASS OVER ROOT ZONES, THE CONTRACTOR MUST EITHER:

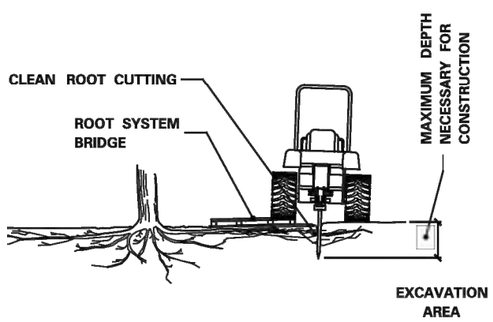
1. CONSTRUCT ROOT SYSTEM BRIDGES WITH STEEL PLATE SUPPORTED ON WOOD TIMBERS PLACED RADIALLY TO THE TREE TRUNK.

OR

2.PLACE A 6 INCH LAYER OF WOODCHIP MULCH OVER A TYPE III GEOTEXTILE (MnDOT 3733).

OTHER VEGETATION PROTECTION MEASURES

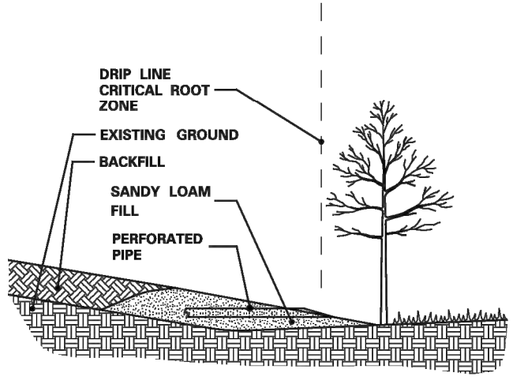
(MnDOT 2572.3A12)



1. WHEN DESIGNATED IN THE PLAN OR DIRECTED BY THE ENGINEER, PRIOR TO EXCAVATION, ALL TREE ROOTS WILL BE CLEANLY CUT BY A VIBRATORY PLOW OR OTHER APPROVED ROOT CUTTER.
2. THE TREE ROOTS WILL BE CUT CLEANLY TO THE MAXIMUM DEPTH NECESSARY FOR CONSTRUCTION.
3. IMMEDIALTLY, AND CLEANLY CUT DAMAGED AND EXPOSED ROOTS.
4. ROOT ENDS EXPOSED BY EXCAVATION ACTIVITIES SHALL BE IMMEDIATELY COVERED WITH A 6" LAYER OF ADJACENT SOIL.

CLEAN ROOT CUTTING

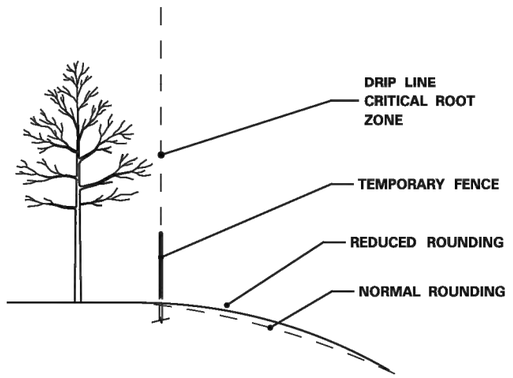
(MnDOT 2572.3A2)



1. ANY FILL REQUIRED WITHIN THE DRIP LINE OF TREES, IS UNCOMPACTED SANDY LOAM TOPSOIL (WITH A COARSE SAND COMPONENT).
2. EXCESSIVE FILL MAY REQUIRE INSTALLING PERFORATED PIPE WITH AT LEAST ONE DAYLIGHTED END OPENING AS AN AERATION SYSTEM.

SANDY LOAM TOPSOIL

(MnDOT 2572.3A4)



SIGNIFICANT TREES NEAR THE PROPOSED CONSTRUCTION LIMITS WILL BE IDENTIFIED IN THE PLAN OR BY THE ENGINEER AND WILL BE PRESERVED BY THE CONTRACTOR.

1. PLACE THE TEMPORARY FENCE.
2. REDUCE SLOPE ROUNDING WHERE ROOT ZONES ARE DISTURBED BY NORMAL SLOPE ROUNDING.
3. VARY BACKSLOPE STEEPNESS TO AVOID TREE LOSS OR UNNECESSARY ROOT DAMAGE.

SLOPE ROUNDING

DATE PRINTED: JANUARY /01/2013

PROJECT MANAGER: DAVID LARSON

DRAWN BY: OFFICE OF ENVIRONMENTAL STEWARDSHIP

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

PROTECTION AND RESTORATION OF VEGETATION

STATE PROJECT 9210-99 (T.H. 60) SHEET NO. 100 OF XX SHEETS

No.	Date	Revisions	App.

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DESIGNED BY:	CFK
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DATE:	02/07/2025
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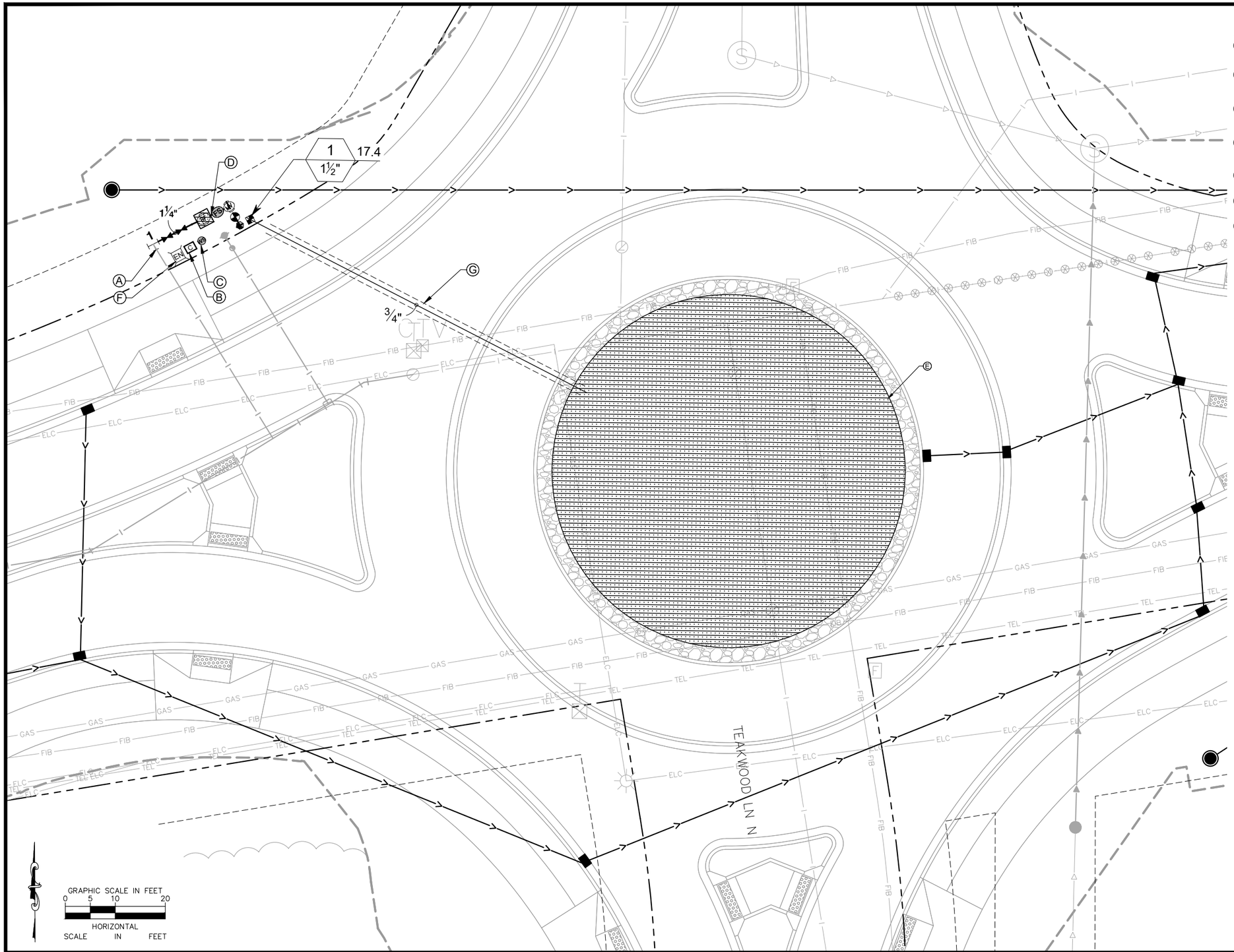
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City of Plymouth

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RECONSTRUCTION PHASE 3
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SHEET NO. 219 / 354



IRRIGATION KEYNOTES

(A) POINT OF CONNECTION, SEE CIVIL, VERIFY WITH CITY.

(B) IRRIGATION CONTROLLER, TO BE FIELD LOCATED BY OWNER. PRIOR TO INSTALLATION, PROVIDE ELECTRICAL SUPPLY PER MANUFACTURERS SPECIFICATION. CONTRACTOR TO SUPPLY ALL CONNECTIONS FROM CONTROLLER.

(C) RAIN AND FREEZE SENSOR, AVOID OVERHEAD OBSTRUCTIONS AND OVERSPRAY. VERIFY LOCATION WITH OWNER.

(D) MAINLINE & VALVES SHOWN FOR CLARITY. INSTALL MAINLINE AND VALVE 6" FROM B.O.C WHEN POSSIBLE, AND IN GREEN SPACE. COORDINATE WITH OTHER DISCIPLINES TO AVOID CONFLICTS (TYP.)

(E) ALL DRIP ZONES TO HAVE MINIMUM 12" SETBACK (CLEAR ZONE) BETWEEN DRIPLINE AND SOD EDGE OR PAVEMENT EDGE. (TYP.)

(F) EXTERIOR ENCLOSURE IRRIGATION CONNECTION (SEE DETAIL). CONFIRM LOCATION WITH CITY.

(G) SLEEVING SHOWN FOR CLARITY. INSTALL LATERALS IN ONE SLEEVE AND SIZE SLEEVE ACCORDINGLY(TYP.)

IRRIGATION SCHEDULE

SYMBOL	MANUFACTURER/MODEL/DESCRIPTION	QTY
	RAIN BIRD XCZ-150-LCS (OR APPROVED EQUAL) HIGH FLOW CONTROL ZONE KIT, FOR LARGE COMMERCIAL DRIP ZONES. 1-1/2IN. PEB GLOBE VALVE WITH SINGLE 1-1/2IN. PRESSURE REGULATING 40PSI QUICK-CHECK BASKET FILTER. FLOW RANGE: 15-62 GPM.	1
	AREA TO RECEIVE DRIPLINE RAIN BIRD XFS-CV-04-18 (OR APPROVED EQUAL) XFS-CV SUB-SURFACE AND ON-SURFACE LANDSCAPE DRIPLINE WITH A HEAVY-DUTY 4.3 PSI CHECK VALVE. 0.4 GPH EMITTERS AT 18" O.C. DRIPLINE LATERALS SPACED AT 18" APART, WITH EMITTERS OFFSET FOR TRIANGULAR PATTERN. SPECIFY XF INSERT FITTINGS.	2,617 L.F

SYMBOL	MANUFACTURER/MODEL/DESCRIPTION	QTY
	WEATHERMATIC 8200CR-XPR (OR APPROVED EQUAL) BRASS REMOTE CONTROL VALVE WITH PRESSURE REGULATOR	1
	WEATHERMATIC 7643-QCVLYEL (OR APPROVED EQUAL) 1IN. NPT QUICK COUPLING VALVE, ACME THREADS WITH YELLOW LOCKING COVER. NICKEL-PLATED BRASS. MAXIMUM FLOW 20 GPM.	1
MV	RAIN BIRD PEB (OR APPROVED EQUAL) 2" 2IN. PLASTIC INDUSTRIAL MASTER VALVES. LOW FLOW OPERATING CAPABILITY, GLOBE CONFIGURATION.	1
BF	ZURN 975XL 1" REDUCED PRESSURE BACKFLOW DEVICE	1
C	WEATHERMATIC SL800 SMARTLINE 4-ZONE BASE MODEL CONTROLLER, EXTERNAL TRANSFORMER, LARGE BACKLIT LCD DISPLAY	1
WS	WEATHERMATIC SLW5 WIRELESS WEATHER SENSOR FOR ET BASED WATERING, 900MHZ - 1500FT. LINE OF SITE RANGE	1
FS	FLOWMEC FLOW SENSOR (OR APPROVED EQUAL) FLOWMEC FLOW SENSOR WITH BL-5308 FLOW DECODER	1
EN	POLVOLNY STEEL BOX ENCLOSURE (OR APPROVED EQUAL) CUSTOM PAINTED STEEL ENCLOSURE TO CONTAIN CONNECTION EQUIPMENT.	1
	IRRIGATION LATERAL LINE: PVC CLASS 200 SDR 21 PVC CLASS 200 IRRIGATION PIPE. ONLY LATERAL TRANSITION PIPE SIZES 1" AND ABOVE ARE INDICATED ON THE PLAN, WITH ALL OTHERS BEING 3/4" IN SIZE.	75.7 L.F.
	IRRIGATION MAINLINE: PVC CLASS 200 SDR 21 PVC CLASS 200 IRRIGATION PIPE.	23.6 L.F.
	PIPE SLEEVE: PVC SCHEDULE 40 TYPICAL PIPE SLEEVE FOR IRRIGATION PIPE. PIPE SLEEVE SIZE SHALL ALLOW FOR IRRIGATION PIPING AND THEIR RELATED COUPLINGS TO EASILY SLIDE THROUGH SLEEVING MATERIAL. EXTEND SLEEVES 18 INCHES BEYOND EDGES OF PAVING FOR CONSTRUCTION.	70.7 L.F.

Valve Callout
Valve Number
Valve Flow
Valve Size

No.	Date	Revisions	App.

DRAWING NAME: CHANKAHDA_PH3_Landscape_Irrigation.dwg

DESIGNED BY:	JWB
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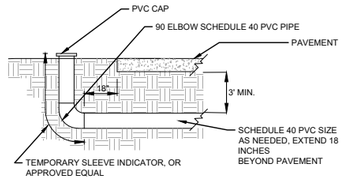
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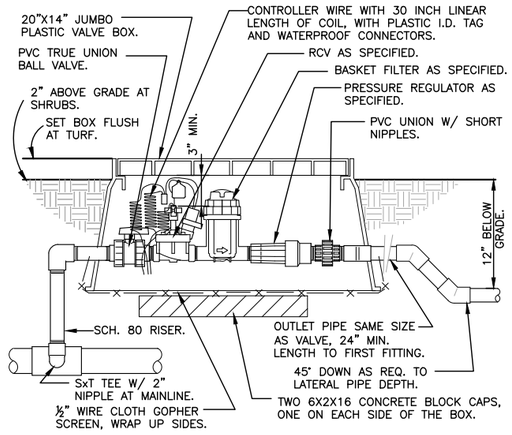
SHEET NO. 220 / 354



1 TYPICAL SLEEVE DETAIL

SCALE: NTS

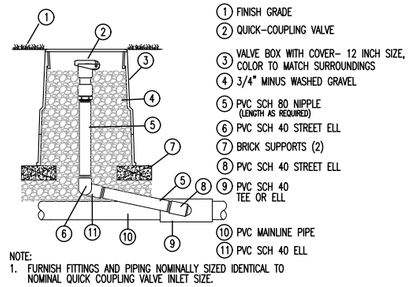
221



2 1" DRIP VALVE W/BASKET FILTER

SCALE: NTS

221



NOTE:
1. FURNISH FITTINGS AND PIPING NOMINALLY SIZED IDENTICAL TO NOMINAL QUICK COUPLING VALVE INLET SIZE.

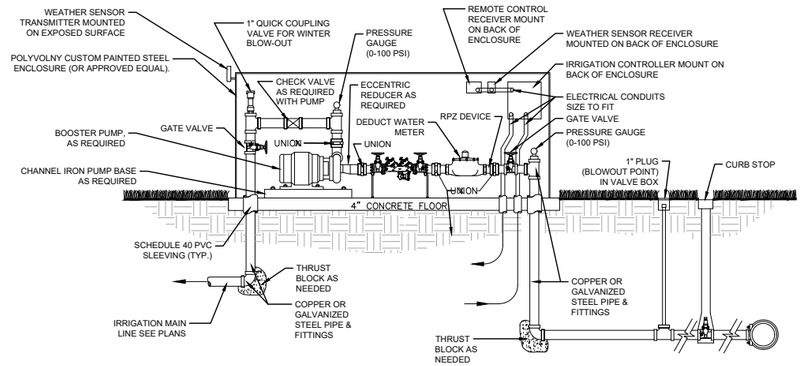
3 QUICK COUPLING VALVE

SCALE: NTS

221

NOTE:
CUSTOM ENCLOSURE / IRRIGATION CABINET AVAILABLE FROM:

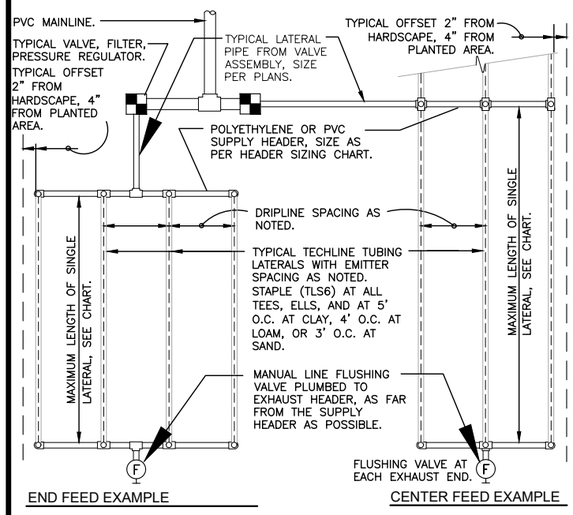
Povolny Specialties
Address: 7350 Courthouse Blvd,
Inver Grove Heights, MN 55077
Phone: (651) 452-7335
Web: www.povolnyspecialties.com



4 SCHEMATIC ILLUSTRATION OF EXTERIOR ENCLOSURE IRRIGATION CONNECTION

SCALE: NTS

221



MAXIMUM LENGTH OF SINGLE LATERAL (FEET)

DRIPPER SPACING			12"				18"				24"	
DRIPPER FLOW RATE (GPH)			0.26	0.4	0.6	0.9	0.26	0.4	0.6	0.9	0.6	0.9
INLET PRESSURE (PSI)		15	127	109	86	65	177	151	120	91	152	116
		25	427	325	256	194	604	459	361	274	458	348
		35	539	409	322	244	763	579	456	346	580	440
		45	618	469	369	280	877	664	523	397	666	506

FLOW PER 100 FEET

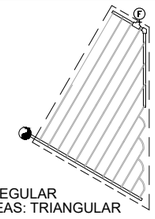
DRIPPER SPACING	0.26 GPH DRIPPER		0.4 GPH DRIPPER		0.6 GPH DRIPPER		0.9 GPH DRIPPER	
	GPH	GPM	GPH	GPM	GPH	GPM	GPH	GPM
12"	26.40	0.44	40.00	0.67	61.00	1.02	92.00	1.53
18"	17.58	0.29	26.67	0.44	41.00	0.68	61.00	1.02
24"	N/A	N/A	N/A	N/A	31.00	0.51	46.00	0.77

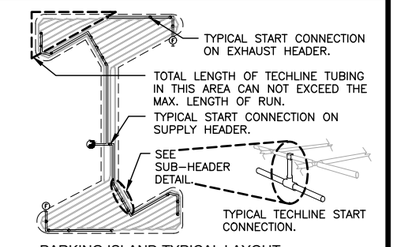
SUPPLY AND EXHAUST HEADER SIZING CHART (UNLESS NOTED ON PLANS)

STEP 1: ADD LENGTH OF ALL TECHLINE LATERAL TUBING CONNECTED TO THE HEADER.
STEP 2: DIVIDE THIS TOTAL LENGTH BY 100 TO INDICATE THE LENGHT IN UNITS OF 100.
STEP 3: LOCATE THE GPM THAT APPLIES FOR EACH UNIT OF 100 FEET LENGTH ON THE CHART "TECHLINE FLOW PER 100 FEET". MULTIPLY THIS GPM NUMBER TIMES THE UNITS OF 100 FEET FOR THE TOTAL GPM AT THIS HEADER.
STEP 4: SIZE THE HEADER WITH THE FOLLOWING:
1 TO 6 GPM: 3/4" HEADER. 6 TO 10 GPM: 1" HEADER.
10 TO 20 GPM: 1 1/4" HEADER. 20 TO 30 GPM: 1 1/2" HEADER.

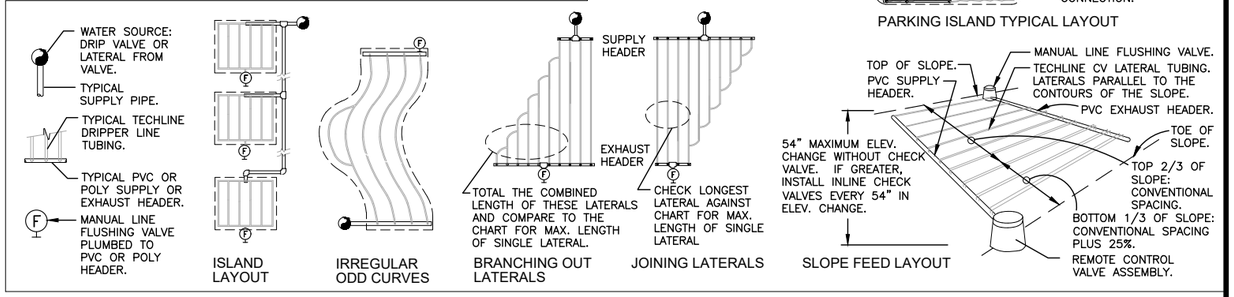
GENERAL GUIDELINES FOR WATERING TIME

	TURF			SHRUB & GROUND COVER		
	CLAY	LOAM	SANDY	CLAY	LOAM	SANDY
DIPPER FLOW (GPH)	0.26	0.4	0.6	0.26	0.4	0.6
DRIPPER INTERVAL	18"	12"	12"	18"	18"	12"
LATERAL (ROW) SPACING	18"–22"	18"–22"	12"–16"	18"–24"	18"–24"	16"–20"
APPLICATION RATE (IN/HR)	.19–0.15	.43–.35	.96–.72	.19–.21	.29–.21	.72–.58
TIME TO APPLY 1/4"	79–100	35–43	16–21	79–107	52–71	21–26





PARKING ISLAND TYPICAL LAYOUT



5 DRIP LINE TYPICAL LAYOUT

SCALE: NTS

221

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PHONE: 651-645-4197
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I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL LANDSCAPE ARCHITECT UNDER THE LAWS OF THE STATE OF MINNESOTA.

RYAN A. HYLLESTED, PLA

DATE: 2/14/2023 MN LIC. NO. 53828

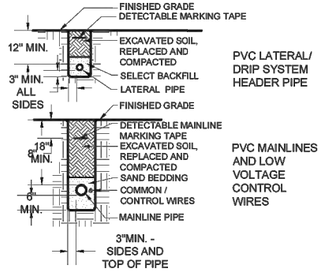
City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
IRRIGATION DETAILS

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

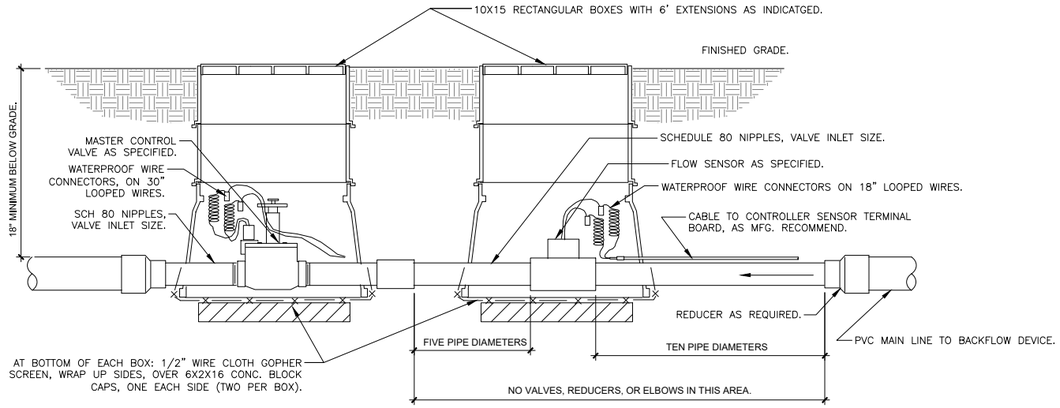
SHEET NO. 221 / 354

NOTES:
1. SELECT BACKFILL SHALL BE SAND OR SOIL FREE OF ROCKS AND STONES LARGER THAN 1/4" DIA.
2. BACKFILL MATERIAL SHALL BE WATERED IN AND COMPACTED TO DENSITY OF ADJACENT UNDISTURBED SOIL.
3. TRENCHING TO BE A MINIMUM OF 36" BELOW BOTTOM OF PAVEMENT.



1 PIPE TRENCHING AND BACKFILL - MAINLINE, LATERALS, AND MARKING TAPE

SCALE: N.T.S.



2 MASTER VALVE/FLOW SENSOR ASSEMBLY

1 1/2" = 1'-0"

TWC-160-662-010-04

IRRIGATION NOTES

1. IRRIGATION SYSTEM IS DIAGRAMMATIC, CONTRACTOR TO VERIFY AND DESIGN PER ACTUAL PRESSURE, PER LOCAL CODES, AND PER SITE REQUIREMENTS. FIELD VERIFY LOCATION OF COMPONENTS WITH ACTUAL CONDITIONS PRIOR TO INSTALLATION, ADJUST AS NEEDED FOR COMPLETE COVERAGE. SYSTEM TO INCLUDE ALL PLUMBING AND ELECTRICAL, INCLUDING CONDUIT, SLEEVING, AND WEATHER-PROOF ENCLOSURES. SYSTEM SHALL BE COMPLETE. CONTRACTOR TO PROVIDE SHOP DRAWINGS, DESIGN PRESSURE DESIGN CALCULATIONS, AND RELATED PRODUCT SHEETS FOR OWNER OR LANDSCAPE ARCHITECT APPROVAL. CONTRACTOR TO PROVIDE "AS-BUILT" DRAWINGS OF IRRIGATION SYSTEM AT THE COMPLETION OF THE PROJECT. SYSTEM SHALL HAVE A ONE-YEAR WARRANTY ON PARTS AND LABOR. THE IRRIGATION SYSTEM SHALL BE INSTALLED AS PER MANUFACTURER'S SPECIFICATION. SEE SITE IRRIGATION SPECIFICATION SECTION FOR ADDITIONAL REQUIREMENTS, IF APPLICABLE. ZONE PARAMETERS: TURF AREAS SHALL HAVE SPRAYS/ROTORS, SHRUB/ PERENNIAL AREAS SHALL HAVE DRIP, AND TREES SHALL HAVE BUBBLERS.
2. ALL PIPE 1.5" OR GREATER SHALL BE SDR 26 CLASS 200 FOR MAINLINE AND CLASS 160 FOR LATERLINE PVC PIPE(DO NOT EXCEED 35 GPM FOR 1.5" AND 58 GPM FOR 2"). ALL PIPE 1.25" OR 1" SHALL BE 100 POLY PIPE OR CLASS 160 PVC PIPE, AS INDICATED(DO NOT EXCEED 13 GPM FOR 1" AND 22 GPM FOR 1.25"). PIPE SIZE TO BE IDENTIFIED BY CONTRACTOR PER ZONE REQUIREMENTS. DEPTH OF PIPE TO BE APPROXIMATELY 18" FOR MAINLINE AND 12" FOR LATERAL LINES, OR AS REQUIRED, FIELD VERIFY. LOCATE IRRIGATION PIPE AWAY FROM PLANT MATERIAL.
3. ALL WIRING, BACKFLOW PREVENTOR, AND PLUMBING AS PER LOCAL CODE. WATER CONNECTION BY MECHANICAL AND UTILITY CONTRACTOR. VERIFY AND ADD BOOSTER PUMP AS REQUIRED. VERIFY POWER CONNECTION WITH ELECTRICAL.
4. ALL VALVES, FLOW SENSORS, AND QUICK COUPLERS SHALL BE LOCATED IN VALVE BOXES(SIZED FOR NORMAL MAINTENANCE, FLUSH WITH FINAL GRADE. PROVIDE (2) QUICK COUPLER KEYS AND HOSE SWIVELS. PROVIDE DECODERS FOR 2-WIRE SYSTEM AT EACH VALVE. FOR DRIP ZONES, PROVIDE DRIP KIT OF VALVE, PRESSURE REDUCER, AND FILTER WITHIN ONE VALVE BOX. DRIP ZONE AIR RELIEF VALVE AND FLUSH VALVE TO BE IN SEPARATE VALVE BOXES.
5. CONTROLLER TO BE COMMERCIAL TYPE, SIZED FOR NUMBER OF ZONES, CAPABLE OF 2-WIRE TECHNOLOGY, INCLUDING DECODER MODULE AND SURGE PROTECTION. SYSTEM TO BE 2-WIRE TECHNOLOGY WITH REQUIRED GROUNDING(LIGHTING PROTECTION). MOUNT AND CONNECT CONTROLLER AND OTHER CONTROLLER ACCESSORIES, SUCH AS HAND HELD REMOTE, WEATHER/RAIN/FREEZE SENSOR, FLOW SENSOR, AND OTHER RELATED ITEMS. THIS ALSO INCLUDES PAINTED CONDUIT AND MOUNTING BOARDS AND HARDWARE FOR ALL EXPOSED AREA, AS DIRECTED BY OWNER. INSTALL WEATHER/RAIN/FREEZE SENSOR ON EXTERIOR WEATHER EXPOSED VERTICAL SURFACE(S) PER OWNER'S APPROVAL.
6. FIRST YEAR WINTERIZATION AND SPRING START UP OF SYSTEM SHALL BE PERFORMED BY IRRIGATION CONTRACTOR, UNLESS INDICATED OTHERWISE.
7. MINIMUM 4" PVC SCHEDULE 40 SLEEVING SHALL BE REQUIRED UNDER ALL WALKS AND PAVEMENTS FOR IRRIGATION PIPE AND WIRES. PROVIDE 12" LENGTH OF #3 REBAR AT EACH TEMPORARILY SEALED END, STAND PIPE, OR OTHER APPROVED METHODS FOR FUTURE LOCATING. EXTEND SLEEVING AT LEAST 1 FOOT BEYOND EDGE OF PAVEMENT. PROVIDE PVC STAND PIPE FOR LOCATING ENDS OF SLEEVING. PROVIDE MINIMUM TWO SIZES LARGER THAN PIPE SIZE. PROVIDE ADDITIONAL SLEEVING FOR WIRING, AS NEEDED. SLEEVE DEPTH IS PRIMARILY 18 INCHES, OR AS REQUIRED. COORDINATE AND PLACE SLEEVING PRIOR TO PAVEMENT INSTALLATION. DIRECTIONAL BORE UNDER PAVEMENT IN EXISTING CONDITIONS TO REMAIN.
8. BIDDING CONTRACTORS SHOULD BECOME THOROUGHLY FAMILIAR WITH ALL FACETS OF THE PROPOSED IRRIGATION SYSTEM. FAILURE TO CLARIFY MISUNDERSTANDINGS, OR INTENT OF THESE DRAWINGS AND SPECIFICATIONS BEFORE SUBMITTAL OF BID SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
9. THE IRRIGATION CONTRACTOR SHALL LOCATE ALL UNDERGROUND UTILITIES AND SHALL TAKE PROPER PRECAUTIONS NOT TO DAMAGE OR DISTURB UTILITIES OR EXISTING CONDITIONS. CONTRACTOR SHALL REPAIR/RESTORE ANY DAMAGE INVOLVING IRRIGATION INSTALLATION.
10. INSTALL WEATHER/RAIN/FREEZE SENSOR(S) ON EXTERIOR WEATHER EXPOSED VERTICAL SURFACE(S). COORDINATE WITH OWNER'S AUTHORIZED REPRESENTATIVE AS TO FINAL LOCATION.
11. CONTROL WIRE WILL BE SOLID COPPER WIRE U.L. APPROVED FOR DIRECT BURIAL IN GROUND, MINIMUM GAUGE: MINIMUM #14 U.F. FOR EITHER MULTI-STRAND OR TWO-WIRE. COMMON GROUND WIRE, IF APPLICABLE, SHALL BE MINIMUM #12 GAUGE WHITE. FOR MULTI-STRAND SYSTEMS, PROVIDE TWO EXTRA CIRCUIT WIRES AND ONE EXTRA COMMON GROUND WIRE FOR ENTIRE MAINLINE LENGTH, MARK AS APPROPRIATE. 24 VAC WIRE SPLICING MATERIAL WILL BE DIRECT BURIAL SPLICE KIT AS MANUFACTURED BY 3M.
12. SOME AREAS MAY REQUIRE RISER EXTENSIONS FOR SPRINKLERS OR A FIXED RISER WITH A SHRUB HEAD OR SHRUB ADAPTER TO OBTAIN PROPER COVERAGE. ROTOR NOZZLES TO PROVIDE PROPER COVERAGE AND MATCH PRECIPITATION, AS REQUIRED. FIELD ADJUST AS NEEDED. SPRAY HEADS IN TURF AREAS TO BE 6" POP-UPS AND IN LANDSCAPE BEDS TO BE 12" POP-UPS. INSTALL ROTOR AND SPRAY HEADS TO LATERAL LINE WITH FLEX TUBING OR SWING JOINTS. BUBBLERS TO BE ON 6" POP-UP.
13. VERIFY AND COORDINATE FINAL LOCATION OF WATER SOURCE AND ELECTRICAL POWER CONNECTION.
14. COORDINATE INSTALLATION OF IRRIGATION SYSTEM WITH OTHER IMPROVEMENTS.
15. PROVIDE 1" VALVES FOR SPRAY AND ROTOR ZONES FOR 30 GPM OR LESS, AND 1.5" VALVE FOR ZONES GREATER THAN 31 GPM. DRIP ZONES PROVIDE 3/4" OR 1" VALVES PER DEMAND OF ZONE.
16. CONTRACTOR TO SCHEDULE AND PROGRAM CONTROLLER AND VALVES FOR APPROPRIATE LANDSCAPE WATER REQUIREMENTS. VERIFY WITH OWNER AS TO TIME AND SPECIFIC REQUIREMENTS.
17. DRIP IRRIGATION TO FOLLOW MANUFACTURERS RECOMMENDATION FOR TYPE, SIZE, AND LOCATION PER LANDSCAPE CONDITION. EACH DRIP ZONE SHALL HAVE ZONE VALVE, PRESSURE REDUCER, AND FILTER, AIR RELIEF VALVE, FLUSH VALVE, SUPPLY LATERAL LINES, DRIP TUBING WITH EMBEDDED EMITTERS, AND OTHER RELATED ITEMS. DRIP TUBING SHALL BE ANCHORED AND UNDER LANDSCAPE MULCH, HIDDEN FROM VIEW, WITH EMITTERS LOCATED AT PLANT LOCATIONS. DRIP TUBING SHALL ALSO BE LOOPED AND INTERCONNECTED, WITH NO DEAD-ENDS. ANY ADDITIONAL EMITTERS, AS NOTED ON PLAN.

No.	Date	Revisions	App.

DRAWING NAME: CHANKAHDA_PH3_Landscape_Irrigation.dwg

DESIGNED BY:	JWB
DRAWN BY:	RGS
CHECKED BY:	CBL
DATE:	02/07/2025
PROJECT NO.	160662010

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RYAN A. HYLLESTED, PLA

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City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
IRRIGATION DETAILS

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 222 / 354

SIGNING AND PAVEMENT MARKING PLAN

NOTES & GUIDELINES

GENERAL INFORMATION:

1. SEE 2582 IN THE SPECIAL PROVISIONS FOR PAVEMENT MARKING SPOTTING RESPONSIBILITIES.
2. EDGE LINES AND LANE LINES ARE TO BE BROKEN ONLY AT INTERSECTIONS WITH PUBLIC ROADS, AND AT PRIVATE ENTRANCES IF THEY ARE CONTROLLED BY AN AGENCY PLACED YIELD SIGN, STOP SIGN OR TRAFFIC SIGNAL. THE BREAK POINT IS TO BE AT THE START OF THE MAINLINE RADIUS.
3. DO NOT APPLY THE PAVEMENT MARKINGS WHEN WEATHER AND OTHER CONDITIONS CAUSE A FILM OF DUST OR DEBRIS TO BE DEPOSITED ON THE PAVEMENT SURFACE AFTER CLEANING AND BEFORE THE MARKING MATERIAL IS APPLIED.
4. THE FILLING OF TANKS, POURING OF MATERIALS OR CLEANING OF EQUIPMENT SHALL NOT BE PERFORMED ON UNPROTECTED PAVEMENT SURFACES UNLESS ADEQUATE PROVISIONS ARE MADE TO PREVENT SPILLAGE OF MATERIAL.

PERMANENT SIGNING SUMMARY			ST
TAB	ITEM	UNIT	TOTAL SIGNING QUANTITIES
ST-A	REMOVE DELINEATOR / MARKER	EACH	16
ST-A	REMOVE SIGN	EACH	63
ST-A	REMOVE SIGN PANEL	EACH	2
ST-B	REMOVE SIGN PANEL SPECIAL	EACH	2
ST-A	SALVAGE SIGN	EACH	2
ST-A	SALVAGE SIGN PANEL	EACH	1
ST-B	SALVAGE SIGN PANEL SPECIAL	EACH	20
ST-A	INSTALL SIGN PANEL	EACH	1
ST-A	INSTALL SIGN	EACH	5
ST-B	INSTALL SIGN PANEL SPECIAL	EACH	20
ST-A	DELINEATOR / MARKER PANEL	EACH	6
ST-A	SIGN	SQ FT	542

CITY STANDARD PLATES	
NUMBER	DESCRIPTION
STRT-21	TRAFFIC SIGN SPECIFICATION
STRT-22	TRAFFIC SIGNS
STRT-23	SIGN POST EMBEDMENT ASSEMBLY
STRT-24	STREET NAME MARKER

PERMANENT PAVEMENT MARKING TABULATION		PM	
ITEM	UNIT	TOTAL MARKING QUANTITIES	
PAVEMENT MARKING REMOVAL	SQ FT	612	
4" SOLID LINE PAINT	LIN FT	18,785	(1)
6" SOLID LINE PAINT	LIN FT	195	(2)
24" SOLID LINE PAINT	LIN FT	1,770	(3)
4" DOTTED LINE PAINT	LIN FT	48	(4)
8" DOTTED LINE PAINT	LIN FT	81	(2)
4" DOUBLE SOLID LINE PAINT	LIN FT	13,940	(4)
PAVEMENT MESSAGE PAINT	SQ FT	571	(5)
CROSSWALK PAINT	SQ FT	1,820	(6)
CROSSWALK PREFORM THERMOPLASTIC GROUND IN ESR	SQ FT	1,056	(7)

GENERAL NOTES:
1. LENGTHS ARE APPROXIMATE AND DO NOT INCLUDE GAPS

SPECIFIC NOTES:
(1) 18700 LIN FT WHITE, 85 LIN FT YELLOW
(2) WHITE
(3) 210 LIN FT WHITE, 1560 LIN FT YELLOW
(4) YELLOW
(5) 16 RIGHT ARROWS (248 SQ FT)
17 LEFT ARROWS (263 SQ FT)
1 THRU/RIGHT ARROW (30 SQ FT)
1 LEFT/THRU ARROW (30 SQ FT)
(6) 1820 SQ FT WHITE (2.5' X 8' BLOCK)
(7) 1056 SQ FT WHITE (3' X 8' BLOCK)

SIGNING AND PAVEMENT MARKING PLAN INDEX

223	TITLE SHEET
224 – 227	TABULATIONS
228 – 230	PAVEMENT MARKING DETAILS
231	SIGN PANEL LAYOUTS
232 – 247	SIGNING & PAVEMENT MARKING PLAN

SYMBOLS & MATERIALS LEGEND

CROSSWALK BLOCK

PAVEMENT MESSAGE (LEFT ARROW)

PAVEMENT MESSAGE (RIGHT ARROW)

STRIPING KEY

TRIANGLE–PAINT

OCTAGON–PREF THERMO

1ST DIGIT WIDTH
4", 8", ETC.

2ND DIGIT PATTERN
S – SOLID
B – BROKEN
T – DOTTED
D – DOUBLE SOLID
K – DOUBLE BROKEN
H – DOUBLE DOTTED

3RD DIGIT COLOR
W – WHITE
Y – YELLOW
B – BLACK

G=GROUND IN W=WET REFLECTIVE
C=CONTRAST E=ENHANCED SKID RESISTANCE

EXAMPLE: 4SW GCW = 4" SOLID LINE WHITE PREF THERMO GROUND IN, CONTRAST, WET REFLECTIVE

SIGNING ABBREVIATIONS

R	ROUND
U	U CHANNEL

SIGNING LEGEND

SIGN
SIGN BACK TO BACK
STREET NAME SIGN
SIGN ON POLE

No.	Date	Revisions	App.

DRAWING NAME: CHANKAHDA_PH3_SgnStrpDtl.dwg

DESIGNED BY:	BWS
DRAWN BY:	RCH
CHECKED BY:	BKV
DATE:	02/07/2025
PROJECT NO.	160662010

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BRIAN K. VILLA, PE
DATE: 02/07/2025 MN LIC. NO. 56090

City of Plymouth
CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
SIGNING AND PAVEMENT MARKING PLAN
TITLE SHEET

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 223 / 354

SIGN AND DELINEATOR / MARKER

ST-A

SIGN NUMBER	PANEL				SUPPORT		REMOVE SIGN	SIGN	SALVAGE SIGN	INSTALL SIGN	REMOVE SIGN PANEL	SALVAGE SIGN PANEL	INSTALL SIGN PANEL	REMOVE DELINEATOR / MARKER	DELINEATOR / MARKER PANEL
	PANEL CODE	LEGEND	SIZE (W x H)	MOUNTING HEIGHT	TYPE	NUMBER OF POSTS									
			INCHES	FEET			EACH	SQ FT	EACH	EACH	EACH	EACH	EACH	EACH	EACH
S-1	R2-1	SPEED LIMIT 50	24 x 30				1								
	R2-1	SPEED LIMIT 40	24 x 30	7	U-SOIL	1		5.00							
S-2	R3-8AC	L-T	36 x 30	7	U-SOIL	2	1	7.50							
S-3		CITY OF PLYMOUTH ADOPT A STREET	36 x 24	7	U-SOIL	2			1	1					
	R8-3	NO PARKING	24 x 24								1				
S-4	R8-3	NO PARKING	24 x 24				1								
S-5	R3-8ACA	L-T-R	54 x 30	7	U-SOIL	2	1	11.25							
S-6	R8-3	NO PARKING	24 x 24				1								
S-7	R8-3	NO PARKING	24 x 24				1								
S-8	R3-8ACA	L-T-R	54 x 30	7	U-SOIL	2	1	11.25							
S-9	R8-3	NO PARKING	24 x 24				1								
S-10	R8-3	NO PARKING	24 x 24				1								
S-11	R3-8CA	T-R	36 x 30	7	U-SOIL	2	1	7.50							
S-12	R8-3	NO PARKING	24 x 24				1								
S-13	R1-1	STOP	30 x 30	8	R-SOIL	1	1	6.25							
S-14	R1-1	STOP	30 x 30	8	R-SOIL	1	1	6.25							
S-15	R8-3	NO PARKING	24 x 24				1								
S-16	R8-3	NO PARKING	24 x 24				1								
S-17	R1-1	STOP	30 x 30	8	R-SOIL	1	1	6.25							
S-18	R2-1	SPEED LIMIT 50	24 x 30				1								
	R2-1	SPEED LIMIT 40	24 x 30	7	U-SOIL	1		5.00							
S-19	R8-3	NO PARKING	24 x 24				1								
S-20	R3-8ACA	L-T-R	54 x 30	7	U-SOIL	2	1	11.25							
S-20.1	R4-7	KEEP RIGHT	24 x 30	7	U-SOIL	1	1	5.00							
	OM1-2	TYPE 1 OBJECT MARKER	18 x 18	4											1
S-21	R1-1	STOP	30 x 30	8	R-SOIL	1	1	6.25							
S-22	R8-3	NO PARKING	24 x 24				1								
S-23	R1-1	STOP	30 x 30	8	R-SOIL	1	1	6.25							
S-24	R8-3	NO PARKING	24 x 24				1								
S-25	R3-8ACA	L-T-R	54 x 30	7	U-SOIL	2	1	11.25							
S-26	W1-4	REVERSE SHARP CURVE RIGHT	30 x 30				1								
S-27	R3-8ACA	L-T-R	54 x 30	7	U-SOIL	2	1	11.25							
S-28	W3-3	SIGNAL AHEAD	30 x 30				1								
S-29	R3-8ACA	L-T-R	54 x 30	8	(3)		1	11.25							
S-30	R4-7	KEEP RIGHT	24 x 30	7	U-SOIL	1	1	5.00							
	OM1-2	TYPE 1 OBJECT MARKER	18 x 18	4											1
S-31	R1-1	STOP	18 x 18				1								
S-32	R2-1	SPEED LIMIT 50	24 x 30				1								
	R2-1	SPEED LIMIT 40	24 x 30	7	U-SOIL	1		5.00							
S-33	R2-1	SPEED LIMIT 45	24 x 30				1								
S-34	W3-3	SIGNAL AHEAD	30 x 30				1								
S-35	R3-8ACA	L-T-R	54 x 30	7	U-SOIL	2	1	11.25							
S-36	R2-1	SPEED LIMIT 40	24 x 30	7	U-SOIL	1		5.00							
(2) S-37		LAKE CAMELOT PARK R	x	7	U-SOIL	2				1					
S-38	R3-8ACA	L-T-R	54 x 30	7	U-SOIL	2		11.25							
S-38.1	R1-1	STOP	18 x 18	7	U-SOIL	1		2.25							
S-38.2	W2-2L	SIDE ROAD LEFT	18 x 18	7	U-SOIL	1		2.25							
S-38.3	W2-2R	SIDE ROAD RIGHT	18 x 18	7	U-SOIL	1		2.25							
(1)(2) S-39		MEDICINE LAKE REGIONAL TRAIL	12 x 18	7	U-SOIL	1				1					
		THROUGH ARROW	12 x 12												
		MEDICINE LAKE REGIONAL TRAIL	12 x 18												
		LEFT ARROW	12 x 12												

No.	Date	Revisions	App.

DRAWING NAME: CHANKAHDA_PH3_SgnStrpDtl.dwg

DESIGNED BY:	BWS
DRAWN BY:	RCH
CHECKED BY:	BKV
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City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
SIGNING AND PAVEMENT MARKING PLAN
TABULATIONS

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SIGN AND DELINEATOR / MARKER

ST-A

	SIGN NUMBER	PANEL				SUPPORT		REMOVE SIGN	SIGN	SALVAGE SIGN	INSTALL SIGN	REMOVE SIGN PANEL	SALVAGE SIGN PANEL	INSTALL SIGN PANEL	REMOVE DELINEATOR / MARKER	DELINEATOR / MARKER PANEL
		PANEL CODE	LEGEND	SIZE (W x H)	MOUNTING HEIGHT	TYPE	NUMBER OF POSTS									
				INCHES	FEET			EACH	SQ FT	EACH	EACH	EACH	EACH	EACH	EACH	EACH
	S-40	W1-4	REVERSE SHARP CURVE RIGHT	30 x 30				1								
		W13-1P	40 MPH PLAQUE	18 x 18												
	S-41	R1-1	STOP	30 x 30	8	R-SOIL	1	1	6.25							
	S-42	OM1-2	TYPE 1 OBJECT MARKER	18 x 18											1	
	S-43	OM3-R	TYPE 3 OBJECT MARKER RIGHT	12 x 36											1	
	S-44	OM3-R	TYPE 3 OBJECT MARKER RIGHT	12 x 36											1	
	S-45	OM3-R	TYPE 3 OBJECT MARKER RIGHT	12 x 36											1	
	S-45.1	DESIGN	BRIDGE WEIGHT LIMIT 10 TONS	12 x 18	7	U-SOIL	1		1.50							
	S-46	R3-7R	RIGHT LANE MUST TURN RIGHT	30 x 30				1								
	S-47	R1-1	STOP	30 x 30	8	R-SOIL	1	1	6.25							
	S-48	OM3-R	TYPE 3 OBJECT MARKER RIGHT	12 x 36											1	
	S-49	R3-8ACA	L-T-R	54 x 30	8	(3)			11.25							
	S-49.1	DESIGN	BRIDGE WEIGHT LIMIT 10 TONS	12 x 18	7	U-SOIL	1		1.50							
	S-50	X4-1	GUIDE DELINEATOR	8 x 24											1	
	S-51	R3-8ACA	L-T-R	54 x 30	8	(3)			11.25							
(2)	S-52		LAKE CAMELOT PARK L	x	7	U-SOIL	1				1					
	S-53	X3-5	SNOWPLOW MARKER UP	6 x 12											1	
	S-54		PARK ENTRANCE	24 x 24				1								
	S-55	R1-1	STOP	30 x 30	8	R-SOIL	1	1	6.25							
			NEIGHBORHOOD WATCH	x									1	1		
	S-56	W1-4	REVERSE SHARP CURVE RIGHT	30 x 30				1								
		W13-1P	40 MPH PLAQUE	18 x 18												
	S-57	R1-1	STOP	30 x 30	8	R-SOIL	1	1	6.25							
	S-58	R3-8ACA	L-T-R	54 x 30	8	(3)			11.25							
	S-59	R2-1	SPEED LIMIT 45	24 x 30				1								
	S-60	W11-2	PEDESTRIAN CROSSING	30 x 30				1								
		W16-7PL	DOWN ARROW LEFT PLAQUE (YELLOW)	24 x 12												
	S-61	R1-1	STOP	30 x 30	8	R-SOIL	1	1	6.25							
	S-62	X3-5	SNOWPLOW MARKER UP	6 x 12											1	
	S-63	X3-5	SNOWPLOW MARKER DOWN	6 x 12											1	
	S-64	R2-1	SPEED LIMIT 30	24 x 30				1								
	S-65	R1-1	STOP	30 x 30	8	R-SOIL	1	1	6.25							
	S-66	W11-2	PEDESTRIAN CROSSING	30 x 30				1								
		W16-7PL	DOWN ARROW LEFT PLAQUE (YELLOW)	24 x 12												
	S-67	R2-1	SPEED LIMIT 45	24 x 30				1								
		R2-1	SPEED LIMIT 40	24 x 30	7	U-SOIL	1		5.00							
	S-68	R3-8ACA	L-T-R	54 x 30	7	U-SOIL	2		11.25							
	S-69	R2-1	SPEED LIMIT 40	24 x 30	7	U-SOIL	1		5.00							
	S-70	R3-8ACA	L-T-R	54 x 30	8	(3)			11.25							
	S-71	X3-5	SNOWPLOW MARKER DOWN	6 x 12											1	
	S-72	R8-3	NO PARKING	24 x 24				1								
	S-73	R8-3	NO PARKING	24 x 24				1								
	S-74	R8-3	NO PARKING	24 x 24				1								
	S-75	X3-5	SNOWPLOW MARKER UP	6 x 12											1	
	S-76	X3-5	SNOWPLOW MARKER UP	6 x 12											1	
	S-77	R3-7R	RIGHT LANE MUST TURN RIGHT	30 x 30				1								
	S-78	R8-3	NO PARKING	24 x 24				1								
		W13-1P	40 MPH PLAQUE	18 x 18												
		W1-2R	CURVE RIGHT	30 x 30												
	S-79	R1-1	STOP	30 x 30				1								
	S-80	W3-3	SIGNAL AHEAD	30 x 30				1								
	S-81	X3-5	SNOWPLOW MARKER DOWN	6 x 12											1	

No.	Date	Revisions	App.

DRAWING NAME CHANKAHDA_PH3_SgnStrpDtl.dwg

DESIGNED BY:	BWS
DRAWN BY:	RCH
CHECKED BY:	BKV
DATE:	02/07/2025
PROJECT NO.	160662010

Kimley»Horn
767 EUSTIS STREET, SUITE 100, ST. PAUL, MN 55114
PHONE: 651-645-4197
WWW.KIMLEY-HORN.COM

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

BRIAN K. VILLA, PE

DATE: 02/07/2025 MN LIC. NO. 56090

City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
SIGNING AND PAVEMENT MARKING PLAN
TABULATIONS

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SIGN AND DELINEATOR / MARKER

ST-A

SIGN NUMBER	PANEL				SUPPORT		REMOVE SIGN	SIGN	SALVAGE SIGN	INSTALL SIGN	REMOVE SIGN PANEL	SALVAGE SIGN PANEL	INSTALL SIGN PANEL	REMOVE DELINEATOR / MARKER	DELINEATOR / MARKER PANEL
	PANEL CODE	LEGEND	SIZE (W x H)	MOUNTING HEIGHT	TYPE	NUMBER OF POSTS									
			INCHES	FEET			EACH	SQ FT	EACH	EACH	EACH	EACH	EACH	EACH	EACH
S-82	X3-5	SNOWPLOW MARKER UP	6 x 12											1	
S-83	X3-5	SNOWPLOW MARKER DOWN	6 x 12											1	
S-84		CITY OF PLYMOUTH ADOPT A STREET	36 x 24	7	U-SOIL	2			1	1					
		NO PARKING ANY TIME	x								1				
S-85	R8-3	NO PARKING	24 x 24				1								
S-86	R4-7	KEEP RIGHT	24 x 30	7	R-CONC	1		5.00							
	OM1-2	TYPE 1 OBJECT MARKER	18 x 18	4											1
S-87	W16-17P	ROUNDABOUT PLAQUE	36 x 12	7	U-SOIL	1		3.00							
	W2-6	ROUNDABOUT	30 x 30					6.25							
	W13-1P	15 MPH PLAQUE	18 x 18					2.25							
S-88	R1-2	YIELD	36 x 36 x 36	7	R-CONC	1		3.90							
	R6-2R	ONE WAY RIGHT	24 x 30					5.00							
S-89	R1-2	YIELD	36 x 36 x 36	7	U-SOIL	1		3.90							
S-90	R6-1R	ONE WAY RIGHT	36 x 12	7	U-SOIL	2		3.00							
	R6-4a	ROUNDABOUT DIRECTIONAL (3 ARROWS)	48 x 24					8.00							
S-91	W11-2	PEDESTRIAN CROSSING	30 x 30	7	U-SOIL	1		6.25							
	W16-7PL	DOWN ARROW LEFT PLAQUE (YELLOW)	24 x 12					2.00							
S-92	DESIGN	TEAKWOOD LN R45	84 x 18	7	R-CONC	2		10.50							
S-93	R4-7	KEEP RIGHT	24 x 30	7	R-CONC	1		5.00							
	OM1-2	TYPE 1 OBJECT MARKER	18 x 18	4											1
S-94	W16-17P	ROUNDABOUT PLAQUE	36 x 12	7	U-SOIL	1		3.00							
	W2-6	ROUNDABOUT	30 x 30					6.25							
	W13-1P	15 MPH PLAQUE	18 x 18					2.25							
S-95	R1-2	YIELD	36 x 36 x 36	7	R-CONC	1		3.90							
	R6-2R	ONE WAY RIGHT	24 x 30					5.00							
S-96	R1-2	YIELD	36 x 36 x 36	7	U-SOIL	1		3.90							
S-97	R6-1R	ONE WAY RIGHT	36 x 12	7	U-SOIL	2		3.00							
	R6-4a	ROUNDABOUT DIRECTIONAL (3 ARROWS)	48 x 24					8.00							
S-98	DESIGN	CHANKAHDA TR R45	90 x 18	7	R-CONC	2		11.25							
S-99	R4-7	KEEP RIGHT	24 x 30	7	R-CONC	1		5.00							
	OM1-2	TYPE 1 OBJECT MARKER	18 x 18	4											1
S-100	W16-17P	ROUNDABOUT PLAQUE	36 x 12	7	U-SOIL	1		3.00							
	W2-6	ROUNDABOUT	30 x 30					6.25							
	W13-1P	15 MPH PLAQUE	18 x 18					2.25							
S-101	R1-2	YIELD	36 x 36 x 36	7	R-CONC	1		3.90							
	R6-2R	ONE WAY RIGHT	24 x 30					5.00							
S-102	R1-2	YIELD	36 x 36 x 36	7	U-SOIL	1		3.90							
S-103	R6-1R	ONE WAY RIGHT	36 x 12	7	U-SOIL	2		3.00							
	R6-4a	ROUNDABOUT DIRECTIONAL (3 ARROWS)	48 x 24					8.00							
S-104	DESIGN	SYCAMORE LN R45	84 x 18	7	R-CONC	2		10.50							
S-105	W11-2	PEDESTRIAN CROSSING	30 x 30	7	U-SOIL	1		6.25							
	W16-7PL	DOWN ARROW LEFT PLAQUE (YELLOW)	24 x 12					2.00							
S-106	R4-7	KEEP RIGHT	24 x 30	7	R-CONC	1		5.00							
	OM1-2	TYPE 1 OBJECT MARKER	18 x 18	4											1
S-107	W16-17P	ROUNDABOUT PLAQUE	36 x 12	7	U-SOIL	1		3.00							
	W2-6	ROUNDABOUT	30 x 30					6.25							
	W13-1P	15 MPH PLAQUE	18 x 18					2.25							
S-108	R1-2	YIELD	36 x 36 x 36	7	R-CONC	1		3.90							
	R6-2R	ONE WAY RIGHT	24 x 30					5.00							
S-109	R1-2	YIELD	36 x 36 x 36	7	U-SOIL	1		3.90							
S-110	R6-1R	ONE WAY RIGHT	36 x 12	7	U-SOIL	2		3.00							
	R6-4a	ROUNDABOUT DIRECTIONAL (3 ARROWS)	48 x 24					8.00							

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Brian K. Villa

BRIAN K. VILLA, PE

DATE: 02/07/2025 MN LIC. NO. 56090

City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
SIGNING AND PAVEMENT MARKING PLAN
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S.A.P.	155-210-003
S.A.P.	

SIGN AND DELINEATOR / MARKER — ST-A

SIGN NUMBER	PANEL				SUPPORT		REMOVE SIGN	SIGN	SALVAGE SIGN	INSTALL SIGN	REMOVE SIGN PANEL	SALVAGE SIGN PANEL	INSTALL SIGN PANEL	REMOVE DELINEATOR / MARKER	DELINEATOR / MARKER PANEL
	PANEL CODE	LEGEND	SIZE (W x H)	MOUNTING HEIGHT	TYPE	NUMBER OF POSTS									
			INCHES	FEET			EACH	SQ FT	EACH	EACH	EACH	EACH	EACH	EACH	EACH
S-111	DESIGN	CHANKAHDA TR R45	90 x 18	7	R-CONC	2		11.25							
S-112	R2-1	SPEED LIMIT 40	24 x 30	7	U-SOIL	1		5.00							
S-113	M2-1	JCT (BLUE)	21 x 15	7	U-SOIL	1	1	2.19							
	M1-6M	HENNEPIN COUNTY 61	24 x 24					4.00							
	R8-3	NO PARKING	24 x 24												
S-114	X3-5	SNOWPLOW MARKER UP	6 x 12											1	
S-115	R3-8AELA	L-LT-R	48 x 30	8	(3)			10.00							
S-116	M1-6M	HENNEPIN COUNTY 61	24 x 24	7	U-SOIL	1	1	4.00							
	M6-4	DOUBLE ARROW (BLUE)	21 x 15					2.19							
S-116.1	R MISC	BIKE LANE AHEAD	12 x 18				1								
S-117	R3-7R	RIGHT LANE MUST TURN RIGHT	36 x 36	7	SQ-SOIL	1	1	9.00							
S-118	R2-1	SPEED LIMIT 45	24 x 30				1								
	R8-3	NO PARKING	24 x 24												
	R2-1	SPEED LIMIT 40	24 x 30	7	U-SOIL	1		5.00							
						TOTAL	63	542	2	5	2	1	1	16	6

(1) MOUNT BACK TO BACK.
(2) PANELS TO BE PROVIDED TO THE CONTRACTOR.
(3) CONTRACTOR TO INSTALL SIGN ON ONE 2-1/2" SQUARE TUBE POST. SEE MNDOT STANDARD PLAN 5-297.724 FOR MOUNTING INFORMATION.

SIGN SPECIAL — ST-B

	SIGN NUMBER	PANEL LEGEND	PANEL SIZE (W x H)	REMOVE SIGN PANEL SPECIAL	SALVAGE SIGN PANEL SPECIAL	INSTALL SIGN PANEL SPECIAL
			INCH	EACH	EACH	EACH
(1)	SP-1	CHANKAHDA TR	x		1	1
		SHENANDOAH LN	x		1	1
(2)	SP-2	CHANKAHDA TR	x		1	1
		QUANTICO LN	x		1	1
(3)	SP-3	CHANKAHDA TR	x		1	1
		QUANTICO LN	x		1	1
(4)	SP-4	CHANKAHDA TR	x		1	1
		NIAGARA LN	x		1	1
(5)	SP-5	CHANKAHDA TR	x		1	1
		NIAGARA LN	x		1	1
(6)	SP-6	CHANKAHDA TR	x		1	1
		DALLAS LN	x		1	1
(7)	SP-7	CHANKAHDA TR	x		1	1
		ANAPOLIS LN	x		1	1
(8)	SP-8	CHANKAHDA TR	x		1	1
		ANAPOLIS LN	x		1	1
(9)	SP-9	CHANKAHDA TR	x		1	1
		YUCCA LN	x		1	1
(10)	SP-10	CHANKAHDA TR	x		1	1
		YUCCA LN	x		1	1
	SP-11	CHANKAHDA TR	x	1		
		TEAKWOOD LN	x	1		
			TOTAL	2	20	20

SPECIFIC NOTE(S):
(1) MOUNT ABOVE SIGN S-13
(2) MOUNT ABOVE SIGN S-14
(3) MOUNT ABOVE SIGN S-17
(4) MOUNT ABOVE SIGN S-21
(5) MOUNT ABOVE SIGN S-23
(6) MOUNT ABOVE SIGN S-47
(7) MOUNT ABOVE SIGN S-55
(8) MOUNT ABOVE SIGN S-57
(9) MOUNT ABOVE SIGN S-61
(10) MOUNT ABOVE SIGN S-65

No.	Date	Revisions	App.

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PROJECT NO. 160662010

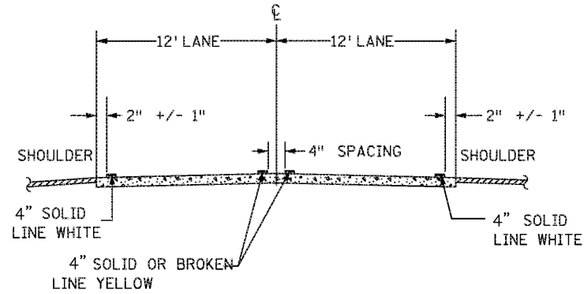
Kimley»Horn
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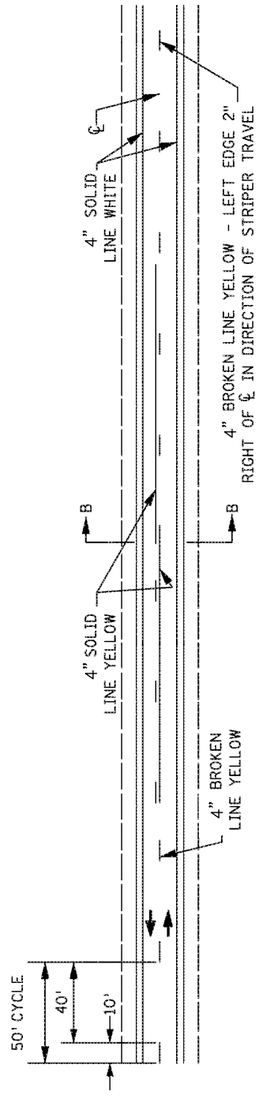
City of Plymouth
CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
SIGNING AND PAVEMENT MARKING PLAN
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CITY PROJECT ST240002
COUNTY PROJECT
S.A.P. 155-210-003
S.A.P.

TWO-LANE, TWO-WAY



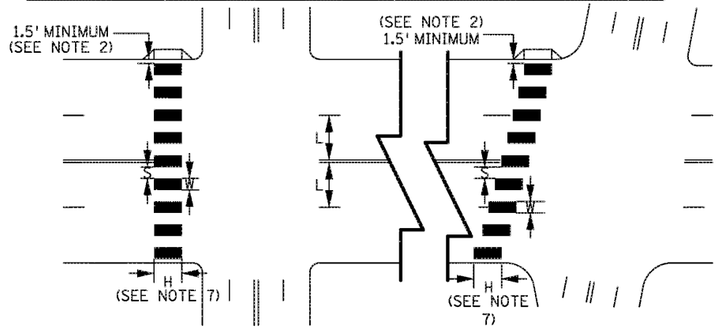
SECTION B-B



PUBLISHED BY OTE: 16 NOV 2021 | MODIFIED:

PEDESTRIAN CROSSWALK MARKINGS

(L) WIDTH OF INSIDE LANE	(W) WIDTH OF PAINTED AREA	(S) WIDTH OF SPACE	ALTERNATE (W) WIDTH OF PAINTED AREA	ALTERNATE (S) WIDTH OF SPACE
9'	2.0'	2.5'	—	—
10'	2.5'	2.5'	2.0'	3.0'
11'	2.5'	3.0'	2.0'	3.5'
12'	3.0'	3.0'	2.5'	3.5'
13'	3.0'	3.5'	—	—



NOTES:

1. PAINTED AREAS TO BE CENTERED ON CENTERLINE AND LANE LINES.
2. A MINIMUM OF 1.5 FT. CLEAR DISTANCE SHALL BE LEFT ADJACENT TO THE CURB FACE. IF LAST PAINTED AREA FALLS INTO THIS DISTANCE IT MUST BE OMITTED.
3. ON TWO LANE TWO WAY STREETS, USE SPACING SHOWN FOR AN 11 FT. INSIDE LANE.
4. FOR DIVIDED ROADWAYS, ADJUSTMENTS IN SPACING OF THE BLOCKS SHOULD BE MADE IN THE MEDIAN SO THAT THE BLOCKS ARE MAINTAINED IN THEIR PROPER LOCATION ACROSS THE TRAVELED PORTION OF THE ROADWAY.
5. AT SKEWED CROSSWALKS, THE BLOCKS ARE TO REMAIN PARALLEL TO THE LANE LINES AS SHOWN.
6. THE BLOCKS SHALL BE PLACED SO THAT THEY ARE NOT LOCATED IN THE WHEEL PATH OF THE VEHICLES.
7. THE BLOCKS SHALL BE A MINIMUM OF 6' LONG AND AT LEAST AS LONG AS THE TRUNCATED DOMES, FOR FANNED TRUNCATED DOMES THE BLOCKS SHALL BE AT LEAST AS LONG AS THE APPROACHING SIDEWALK OR SHARED USE PATH.
8. THE ALTERNATE (W) AND (S) MAY BE USED WHEN BLOCKS LONGER THAN 6' (H) ARE USED.

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City of Plymouth

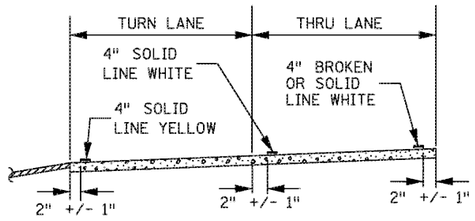
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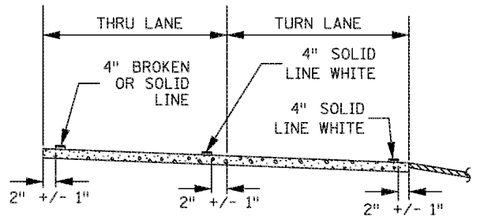
SHEET NO. 228 / 354

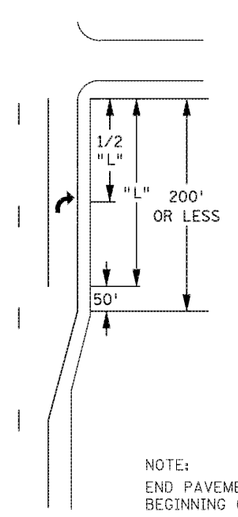
TURN LANE WITH ARROW MESSAGE

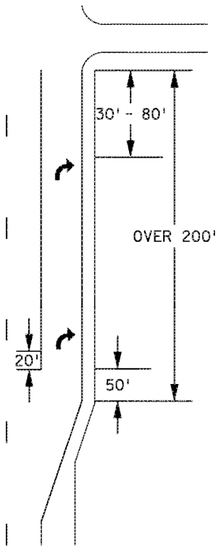
LEFT TURN LANE

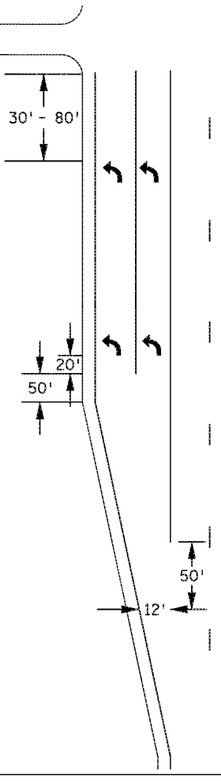


RIGHT TURN LANE





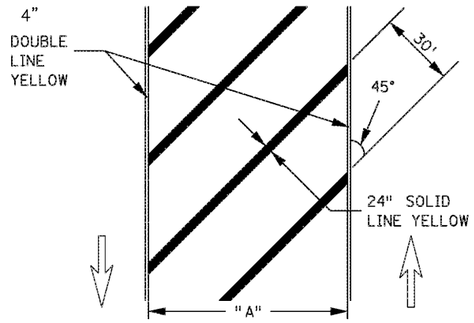


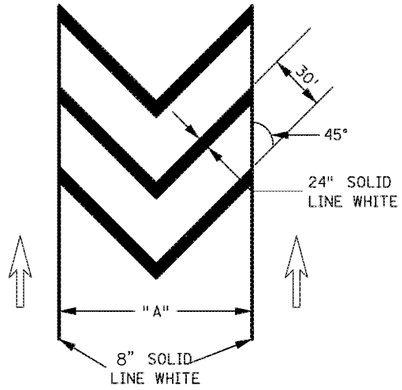


NOTE:
END PAVEMENT MARKINGS AT BEGINNING OF RADIUS

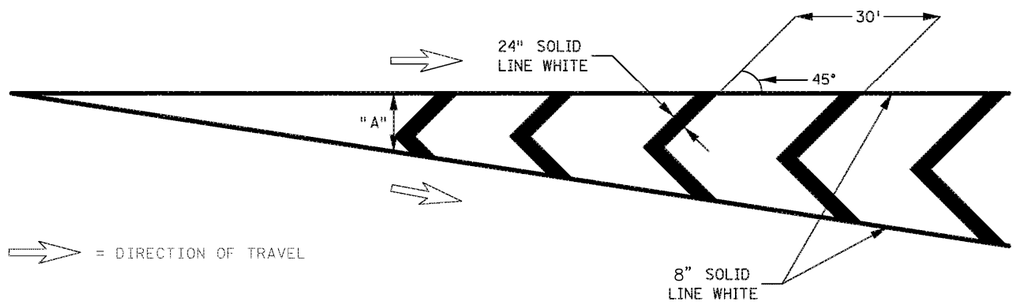
PUBLISHED BY OTE: 6 APR 2018 | MODIFIED:

CROSSHATCHING





WHEN "A" IS LESS THAN 4' NO CROSSHATCHING REQUIRED.



PUBLISHED BY OTE: 16 NOV 2021 | MODIFIED:

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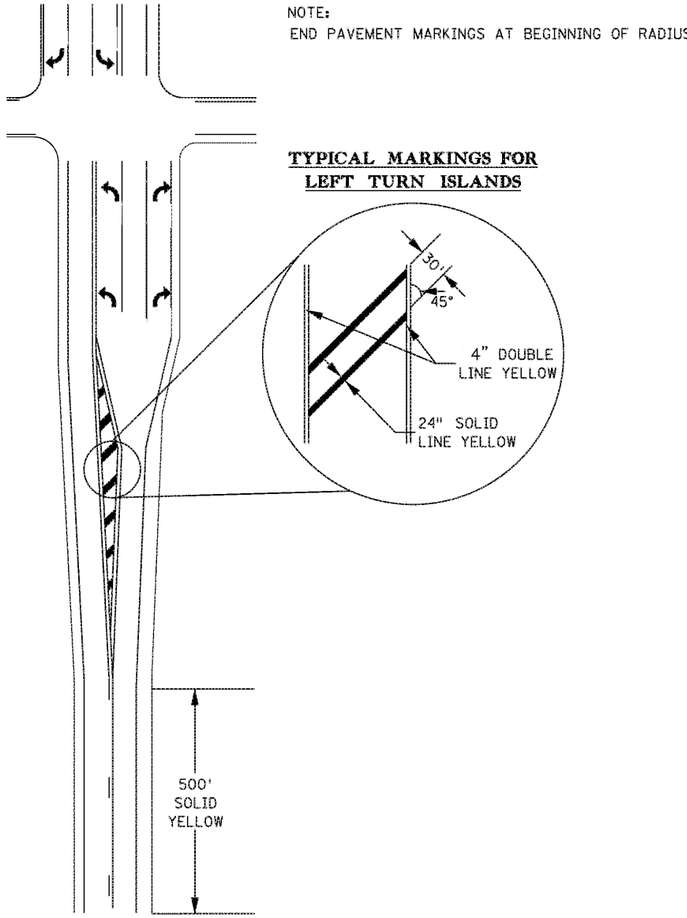
City of Plymouth

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SHEET NO. 229 / 354

LEFT TURN LANE ISLAND



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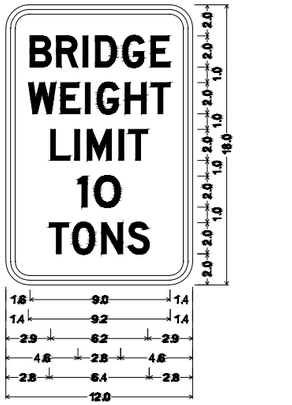
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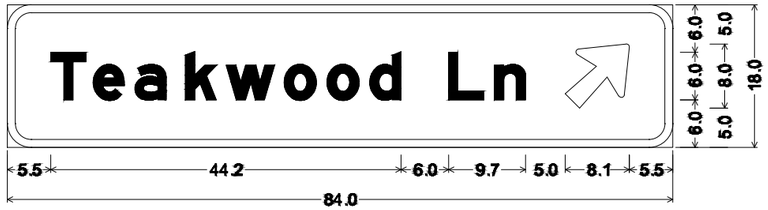
CITY PROJECT	ST240002
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S.A.P.	

S-45.1, S-49.1



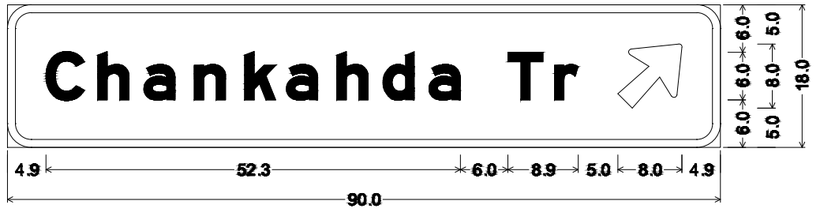
BRIDGE WEIGHT LIMIT 10 TONS;
1.5" Radius, 0.3" Border, 0.3" Indent, Black on White;
"BRIDGE", D 2K;
"WEIGHT", D 2K;
"LIMIT", D 2K; "10", E 2K;
"TONS", D 2K;

S-92



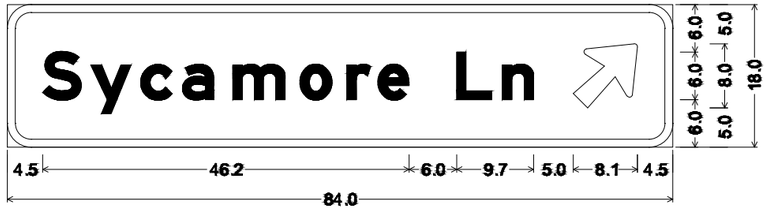
3.0" Radius, 1.0" Border, White on Green;
"Teakwood Ln", E Mod 2K; Arrow 3 - 10.0" 45°;

S-98, S-111



3.0" Radius, 1.0" Border, White on Green;
"Chankahda Tr", E Mod 2K; Arrow 3 - 10.0" 45°;

S-104



3.0" Radius, 1.0" Border, White on Green;
"Sycamore Ln", E Mod 2K; Arrow 3 - 10.0" 45°;

No.	Date	Revisions	App.

DRAWING NAME	CHANKAHDA_PH3_SgnStrpDtl.dwg
DESIGNED BY:	BWS
DRAWN BY:	GD
CHECKED BY:	BKV
DATE:	02/07/2025
PROJECT NO.	160662010

Kimley»Horn
767 EUSTIS STREET, SUITE 100, ST. PAUL, MN 55114
PHONE: 651-645-4197
WWW.KIMLEY-HORN.COM

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

BRIAN K. VILLA, PE

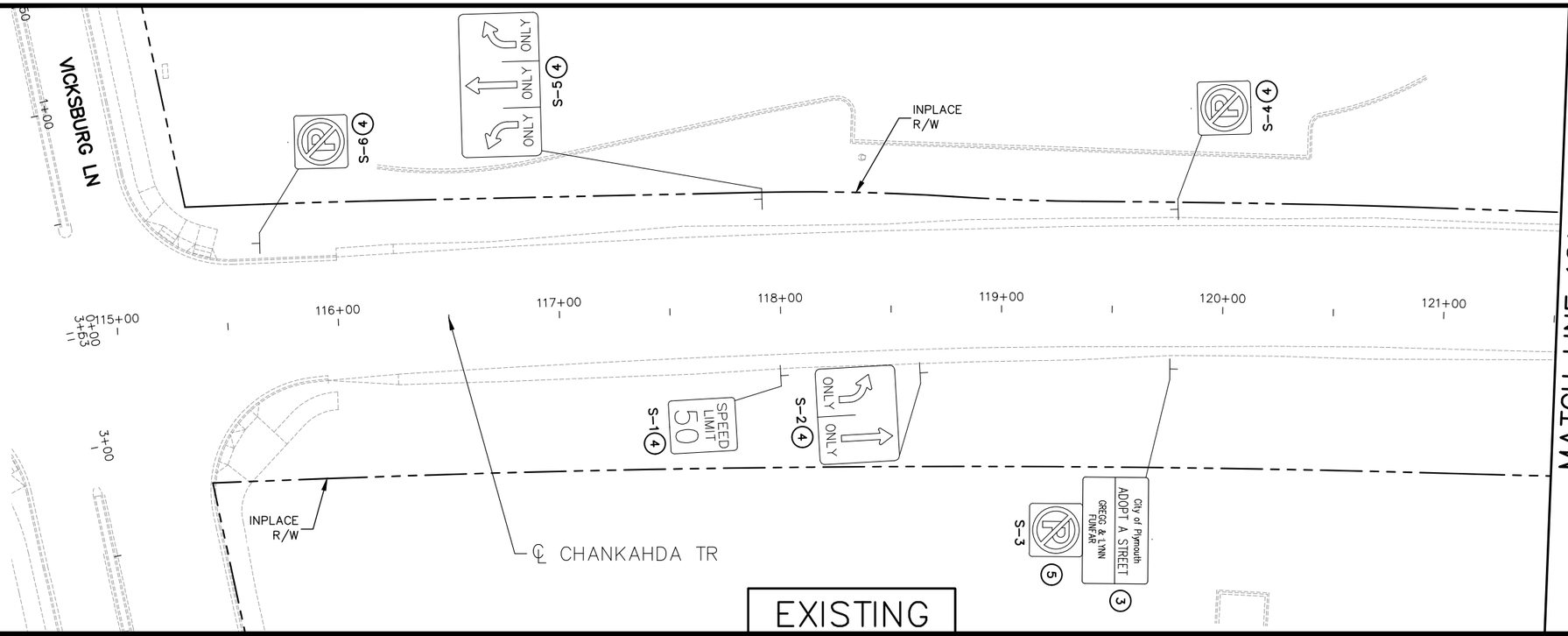
DATE: 02/07/2025 MN LIC. NO. 56090

City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
SIGNING AND PAVEMENT MARKING PLAN
SIGN PANEL LAYOUTS

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 231 / 354

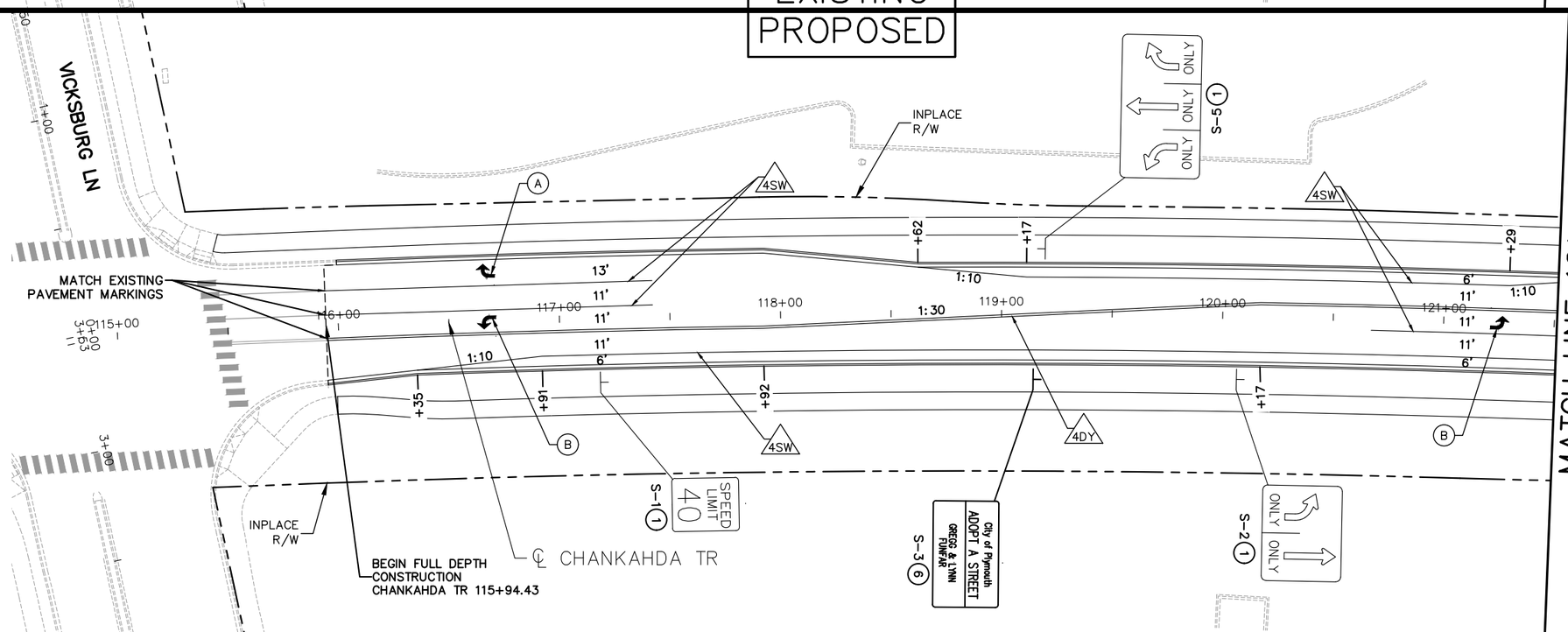


SPECIFIC NOTES:

(3) SALVAGE
(4) REMOVE
(5) REMOVE SIGN PANEL

0 15 30 60
HORIZONTAL SCALE IN FEET

EXISTING
PROPOSED



SPECIFIC NOTES:

(1) F. & I.
(6) INSTALL
(A) PAVEMENT MESSAGE (RIGHT ARROW) PAINT
(B) PAVEMENT MESSAGE (LEFT ARROW) PAINT

0 15 30 60
HORIZONTAL SCALE IN FEET

No.	Date	Revisions	App.

DRAWING NAME	CHANKAHDA_PH3_SgnStrp.dwg
DESIGNED BY:	BWS
DRAWN BY:	MBG
CHECKED BY:	BKV
DATE:	02/07/2025
PROJECT NO.	160662010

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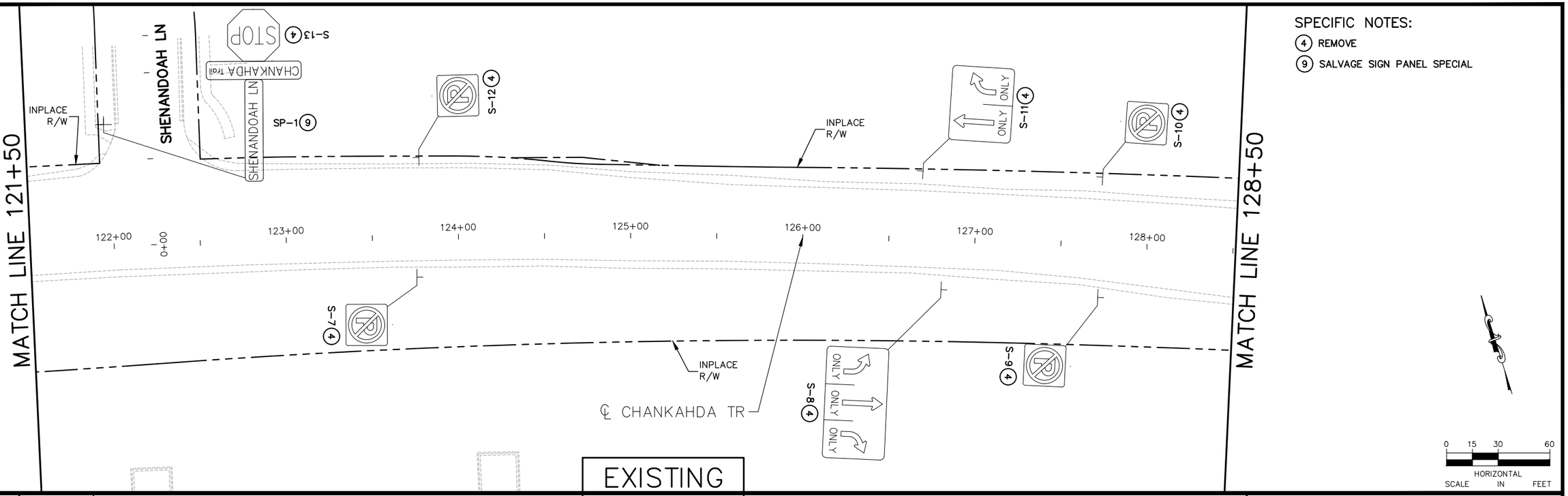
City of Plymouth

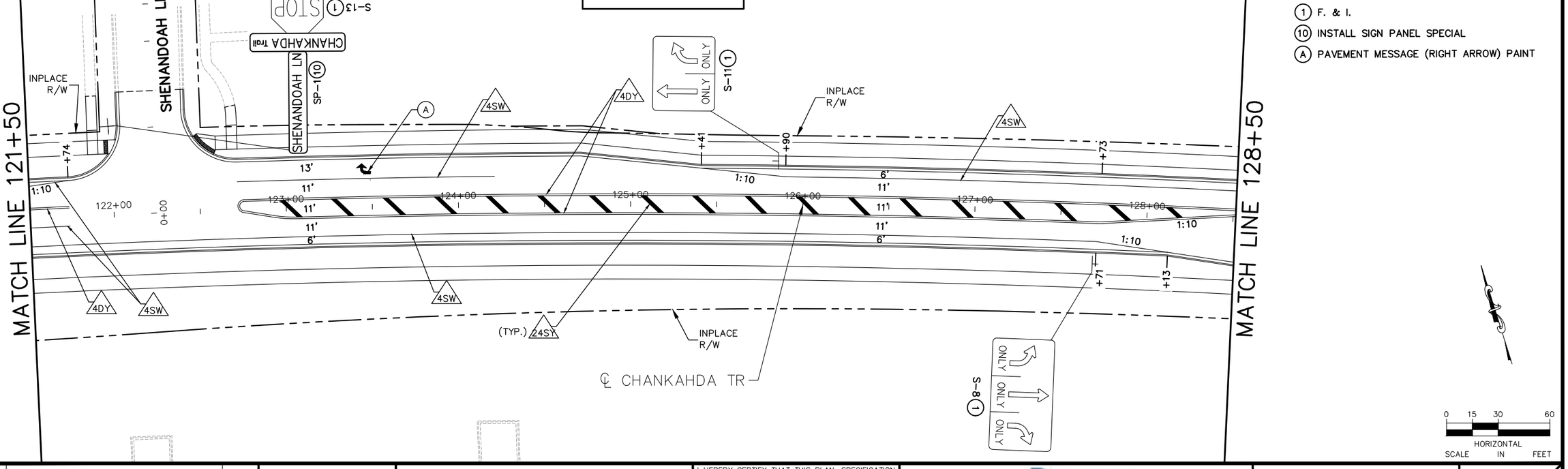
CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3

SIGNING AND PAVEMENT MARKING PLAN
STA. 115+00 TO STA. 121+50

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 232 / 354





No.	Date	Revisions	App.

DRAWING NAME	CHANKAHDA_PH3_SgnStrp.dwg
DESIGNED BY:	BWS
DRAWN BY:	MBG
CHECKED BY:	BKV
DATE:	02/07/2025
PROJECT NO.	160662010

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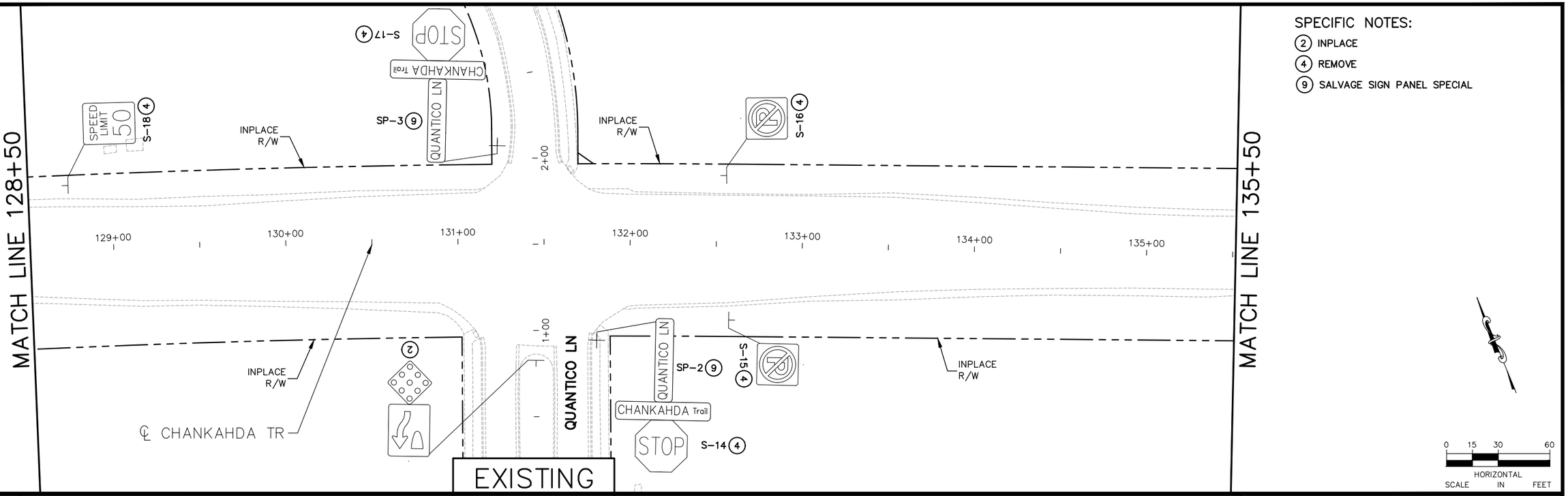
City of Plymouth

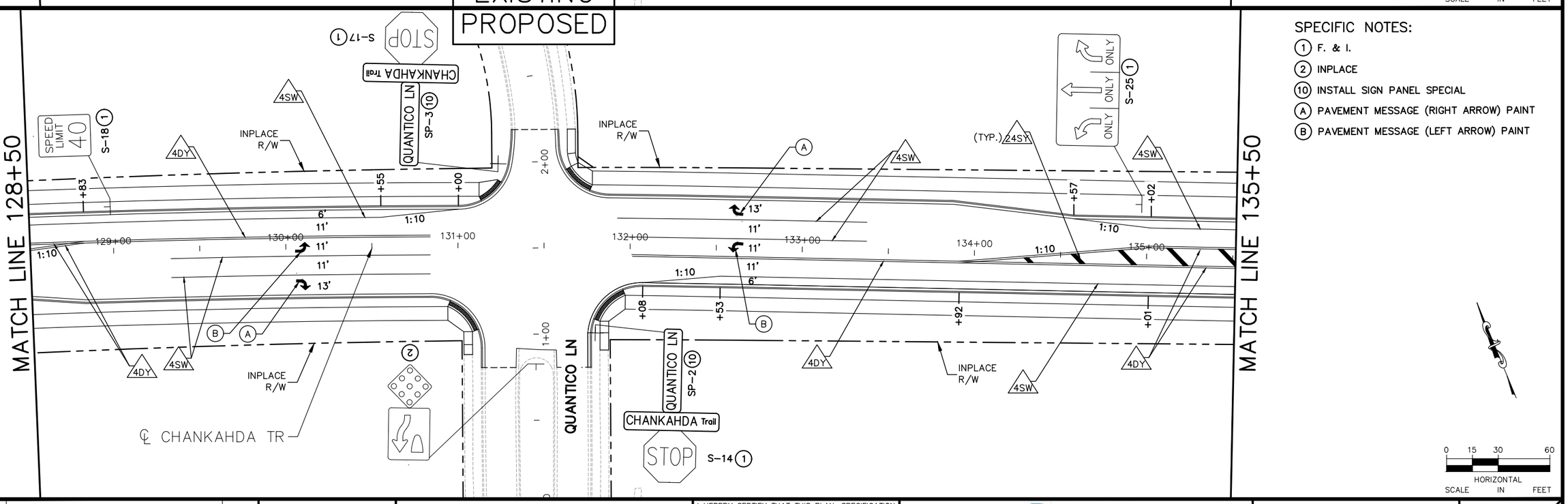
CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3

SIGNING AND PAVEMENT MARKING PLAN
STA. 121+50 TO STA. 128+50

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 233 / 354





No.	Date	Revisions	App.

DRAWING NAME	CHANKAHDA_PH3_SgnStrp.dwg
DESIGNED BY:	BWS
DRAWN BY:	MBG
CHECKED BY:	BKV
DATE:	02/07/2025
PROJECT NO.	160662010

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DATE: 02/07/2025 MN LIC. NO. 56090

City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3

SIGNING AND PAVEMENT MARKING PLAN
STA. 128+50 TO STA. 135+50

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 234 / 354

EXISTING

PROPOSED

MATCH LINE 135+50

MATCH LINE 142+50

NIAGARA LN

CHANKAHDA TR

CHANKAHDA Trail

NIAGARA LN

INPLACE R/W

PROP. R/W

S-25 (4)

S-24 (4)

S-19 (4)

S-20 (4)

S-20.1 (4)

S-22 (4)

S-23 (4)

SP-5 (9)

SP-4 (9)

S-21 (4)

S-20 (1)

S-20.1 (1)

S-23 (1)

SP-5 (10)

SP-4 (10)

S-21 (1)

136+00 137+00 138+00 139+00 140+00 141+00 142+00

24SY (TYP.) 4SW 4DY 24SW

+19 +29 +71 +20 +14 +59 +46 +92

6' 11' 11' 11' 6' 1:10 13'

SPECIFIC NOTES:

(4) REMOVE

(9) SALVAGE SIGN PANEL SPECIAL

SPECIFIC NOTES:

(1) F. & I.

(8) SEE RRFB PLAN

(10) INSTALL SIGN PANEL SPECIAL

(A) PAVEMENT MESSAGE (RIGHT ARROW) PAINT

(B) PAVEMENT MESSAGE (LEFT ARROW) PAINT

(C) CROSSWALK (2.5' x 8') PAINT

0 15 30 60

HORIZONTAL SCALE IN FEET

No.	Date	Revisions	App.

DRAWING NAME: CHANKAHDA_PH3_SgnStrp.dwg

DESIGNED BY:	BWS
DRAWN BY:	MBG
CHECKED BY:	BKV
DATE:	02/07/2025
PROJECT NO.	160662010

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Brian K. Villa

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DATE: 02/07/2025 MN LIC. NO. 56090

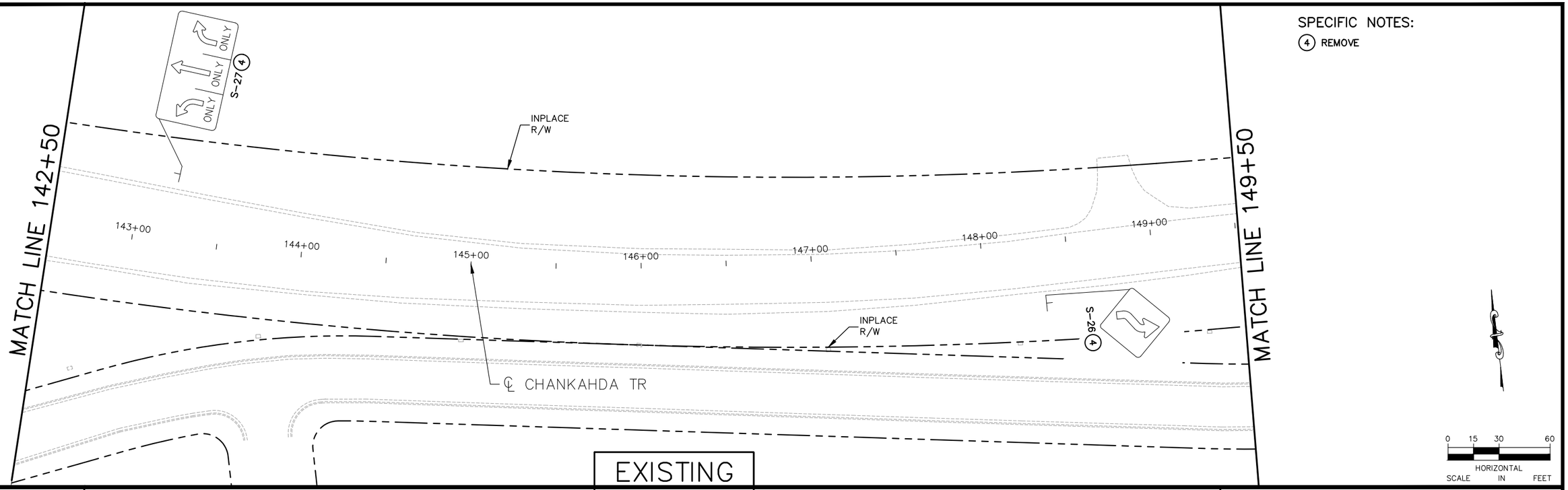
City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3

SIGNING AND PAVEMENT MARKING PLAN
STA. 135+50 TO STA. 142+50

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 235 / 354



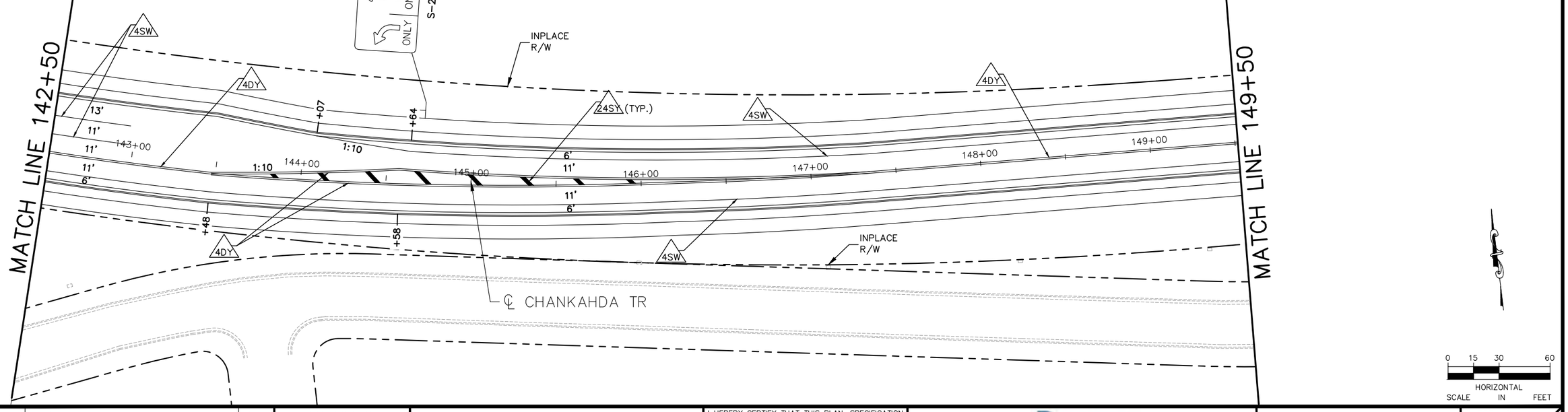
SPECIFIC NOTES:

(4) REMOVE

0 15 30 60

HORIZONTAL SCALE IN FEET

EXISTING
PROPOSED



SPECIFIC NOTES:

(1) F. & I.

0 15 30 60

HORIZONTAL SCALE IN FEET

No.	Date	Revisions	App.

DRAWING NAME CHANKAHDA_PH3_SgnStrp.dwg	
DESIGNED BY:	BWS
DRAWN BY:	MBG
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DATE:	02/07/2025
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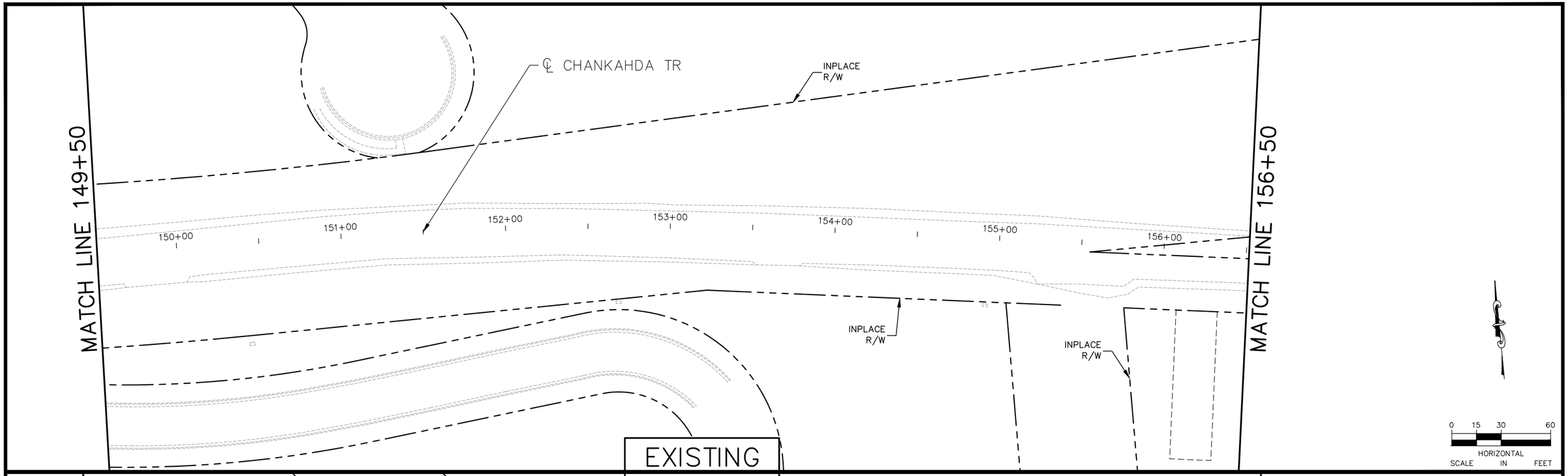
City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3

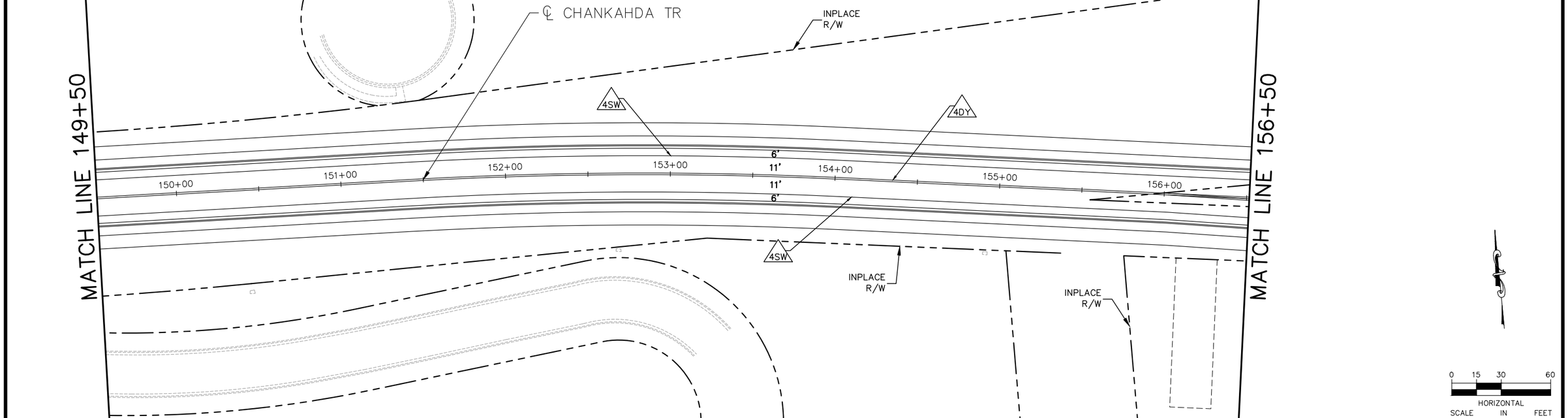
SIGNING AND PAVEMENT MARKING PLAN
STA. 142+50 TO STA. 149+50

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 236 / 354



EXISTING
PROPOSED



No.	Date	Revisions	App.

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DRAWN BY:	MBG
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DATE:	02/07/2025
PROJECT NO.	160662010

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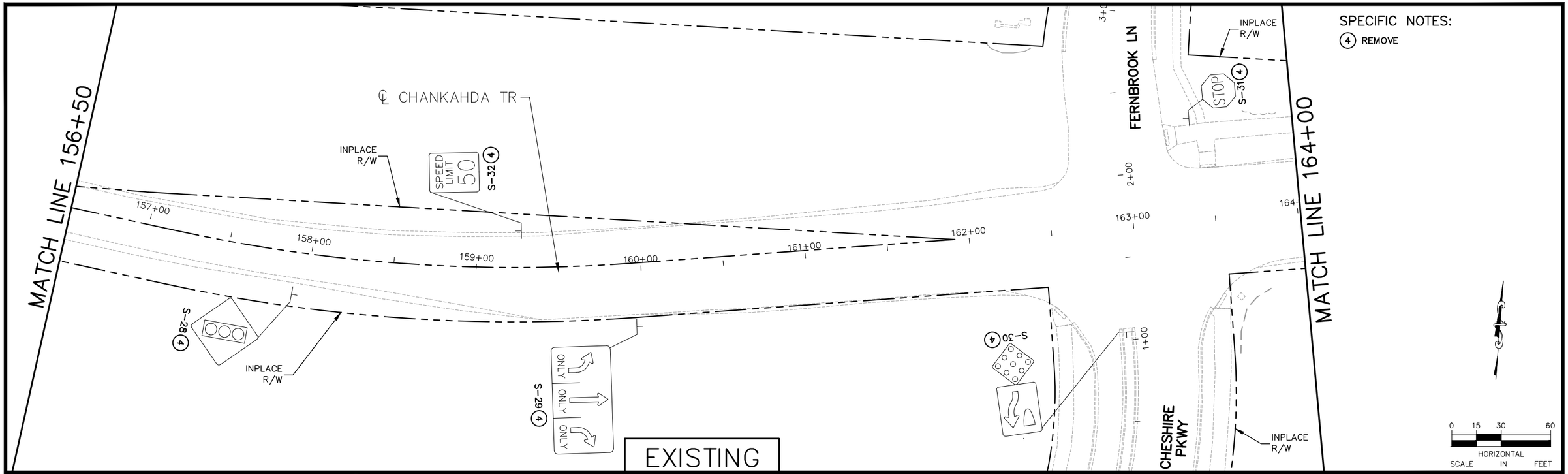
City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3

SIGNING AND PAVEMENT MARKING PLAN
STA. 149+50 TO STA. 156+50

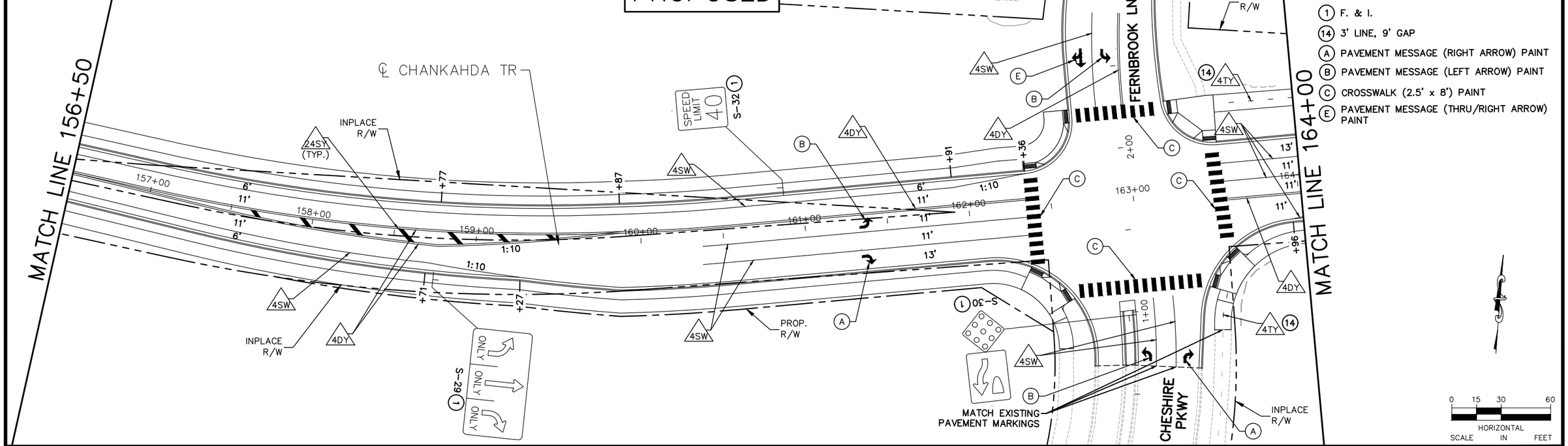
CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 237 / 354



EXISTING

PROPOSED



No.	Date	Revisions	App.

DRAWING NAME: CHANKAHDA_PH3_SgnStrp.dwg

DESIGNED BY:	BWS
DRAWN BY:	MBG
CHECKED BY:	BKV
DATE:	02/07/2025
PROJECT NO.	160662010

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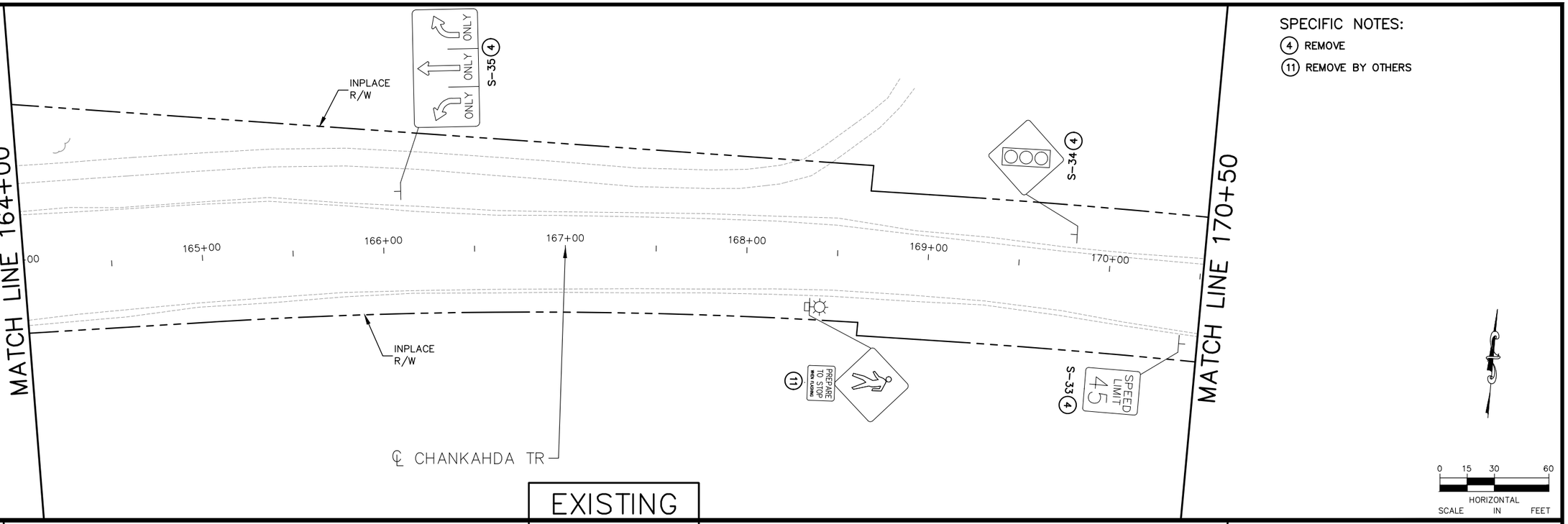
City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3

SIGNING AND PAVEMENT MARKING PLAN
STA. 156+50 TO STA. 164+00

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 238 / 354

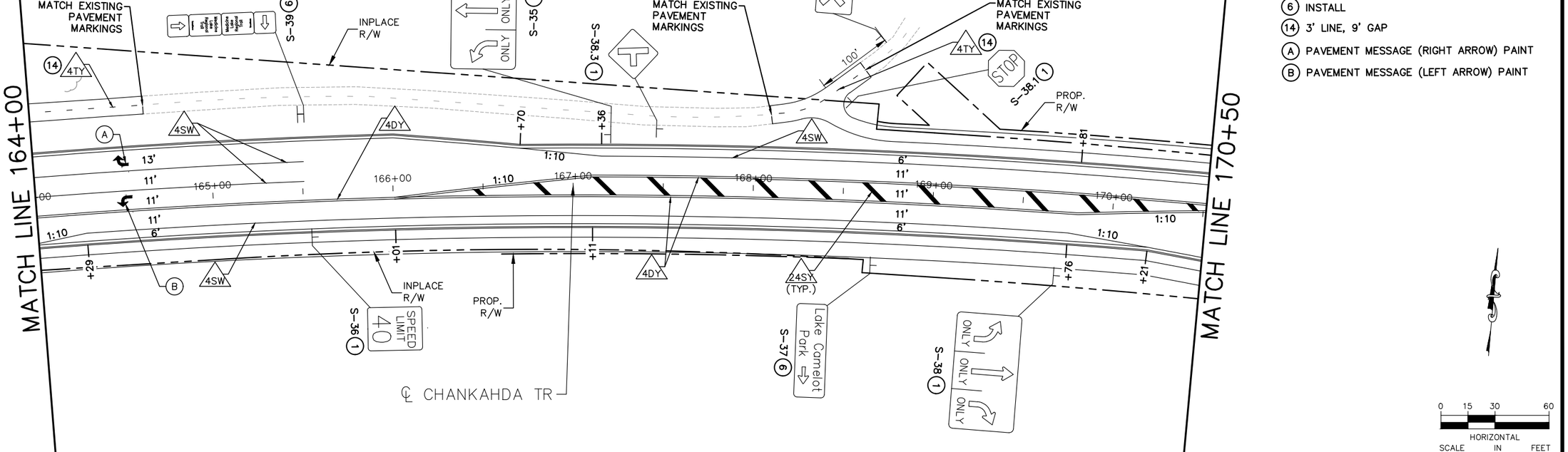


SPECIFIC NOTES:

(4) REMOVE

(11) REMOVE BY OTHERS

EXISTING
PROPOSED



SPECIFIC NOTES:

(1) F. & I.

(6) INSTALL

(14) 3' LINE, 9' GAP

(A) PAVEMENT MESSAGE (RIGHT ARROW) PAINT

(B) PAVEMENT MESSAGE (LEFT ARROW) PAINT

No.	Date	Revisions	App.

DRAWING NAME: CHANKAHDA_PH3_SgnStrp.dwg

DESIGNED BY:	BWS
DRAWN BY:	MBG
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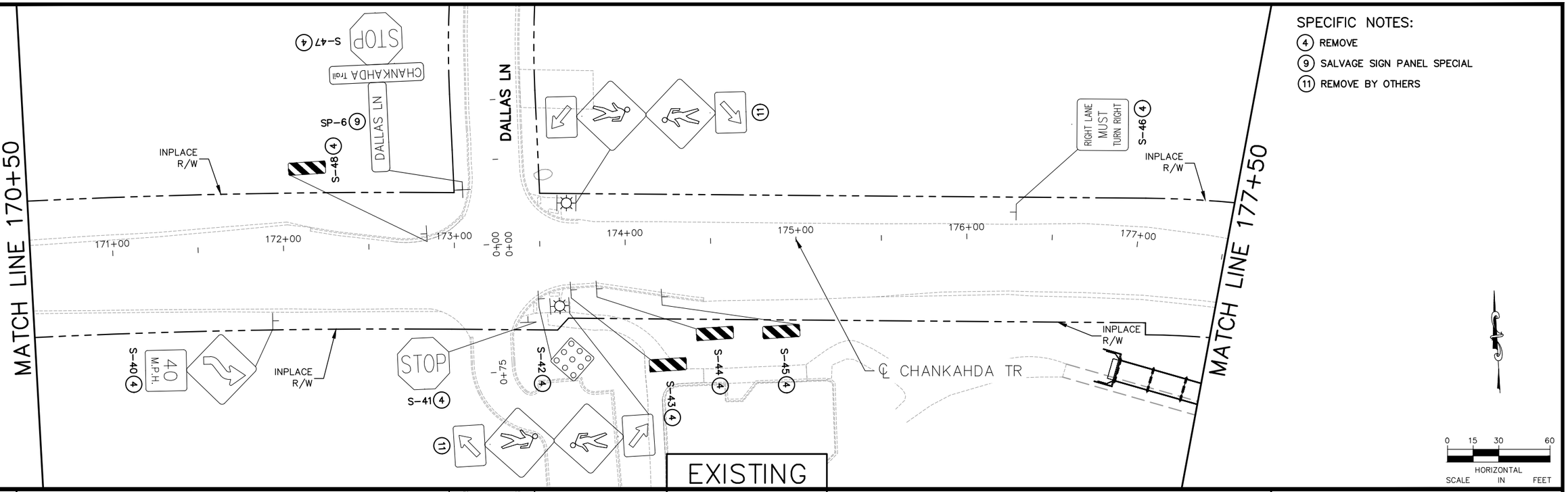
City of Plymouth

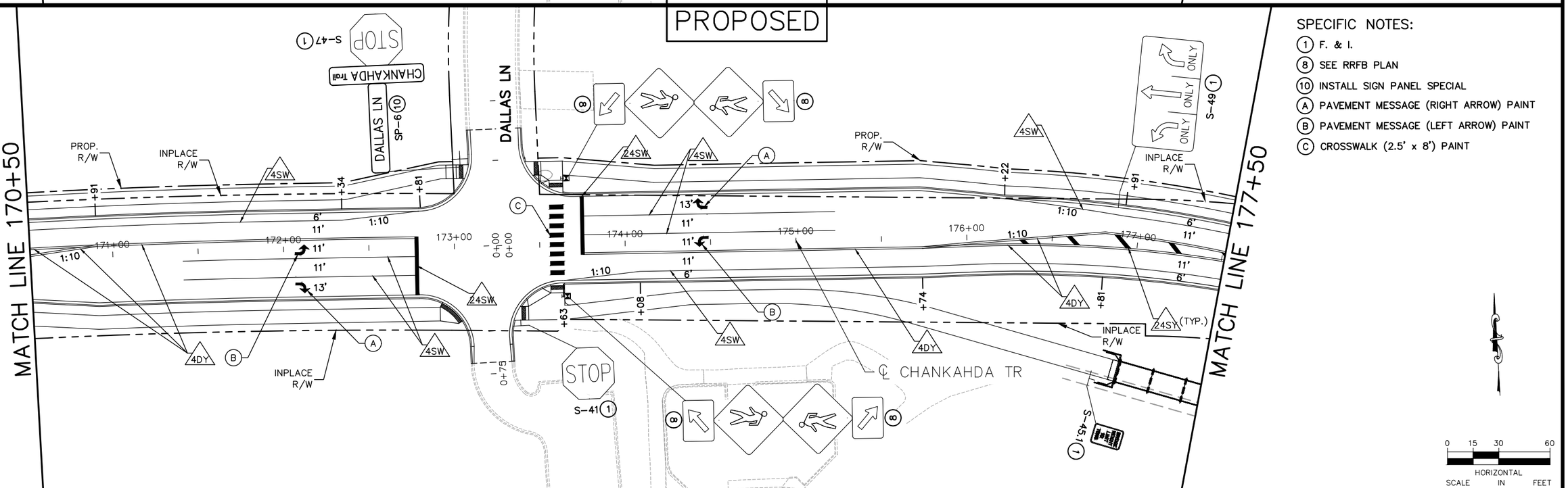
CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3

SIGNING AND PAVEMENT MARKING PLAN
STA. 164+00 TO STA. 170+50

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 239 / 354





No.	Date	Revisions	App.

DRAWING NAME	CHANKAHDA_PH3_SgnStrp.dwg
DESIGNED BY:	BWS
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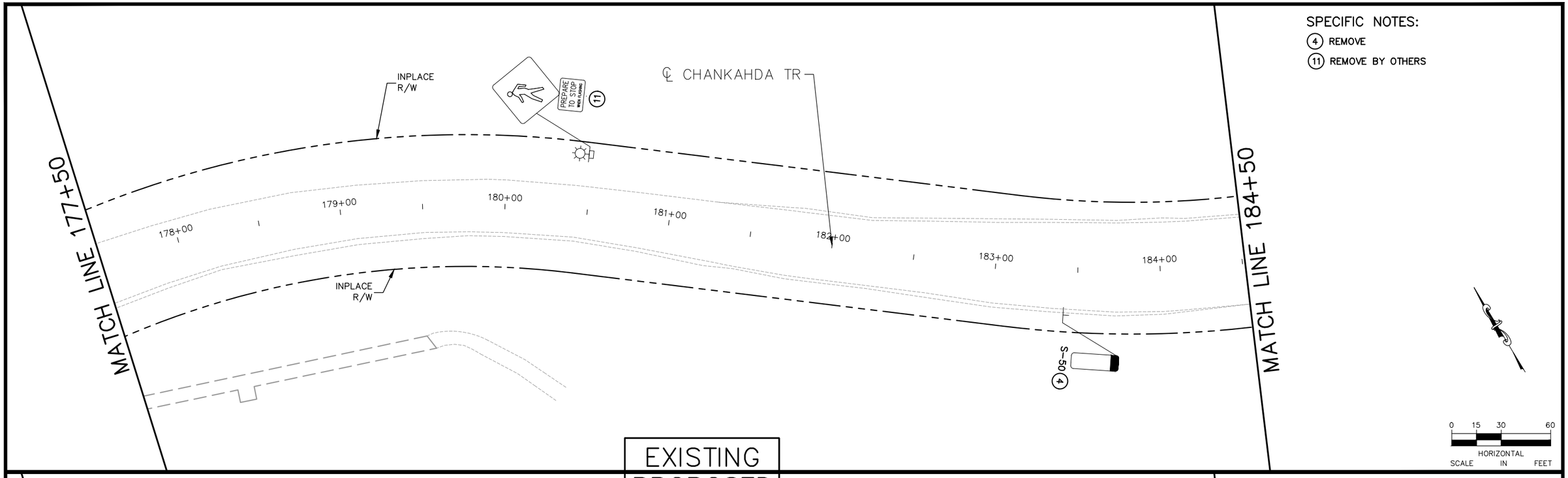
City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3

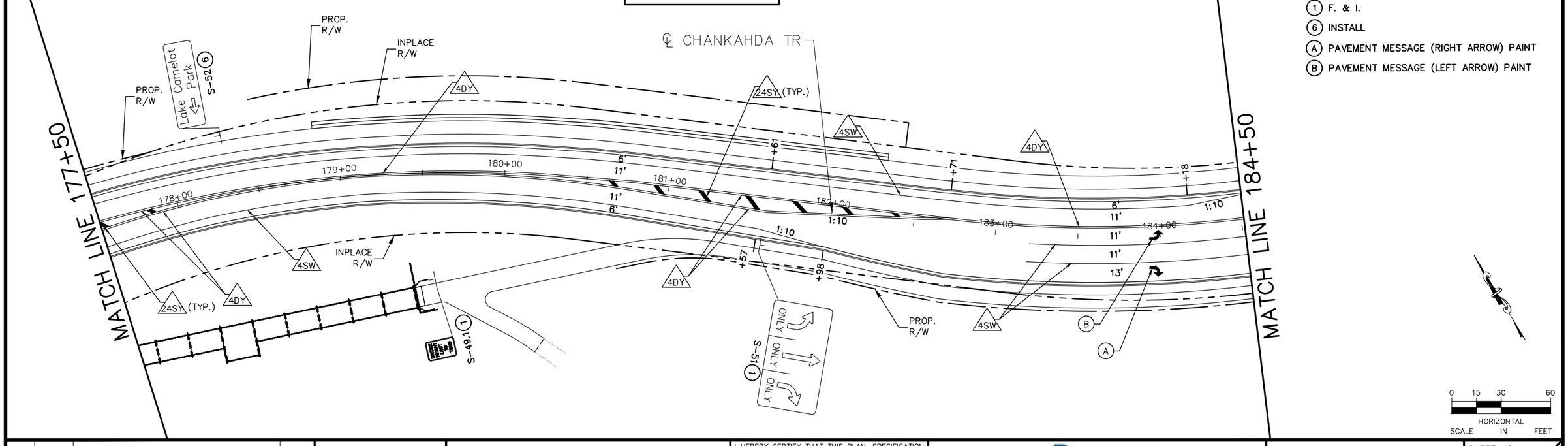
SIGNING AND PAVEMENT MARKING PLAN
STA. 170+50 TO STA. 177+50

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 240 / 354



EXISTING
PROPOSED



No.	Date	Revisions	App.

DRAWING NAME	CHANKAHDA_PH3_SgnStrp.dwg
DESIGNED BY:	BWS
DRAWN BY:	MBG
CHECKED BY:	BKV
DATE:	02/07/2025
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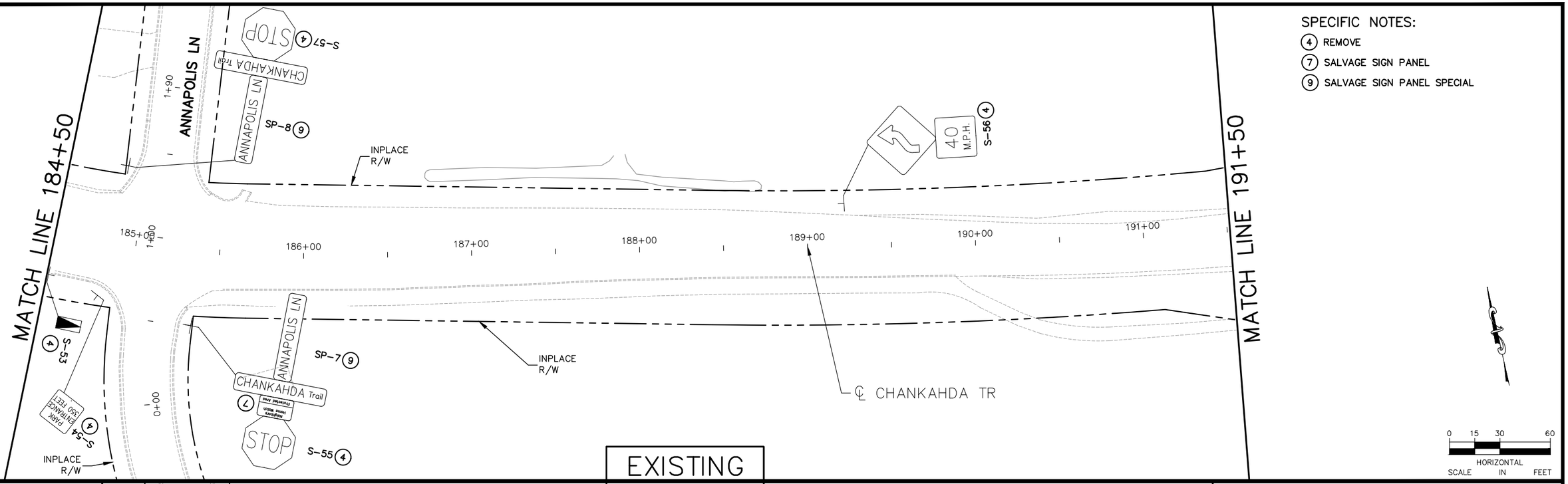
City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3

SIGNING AND PAVEMENT MARKING PLAN
STA. 177+50 TO STA. 184+50

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 241 / 354



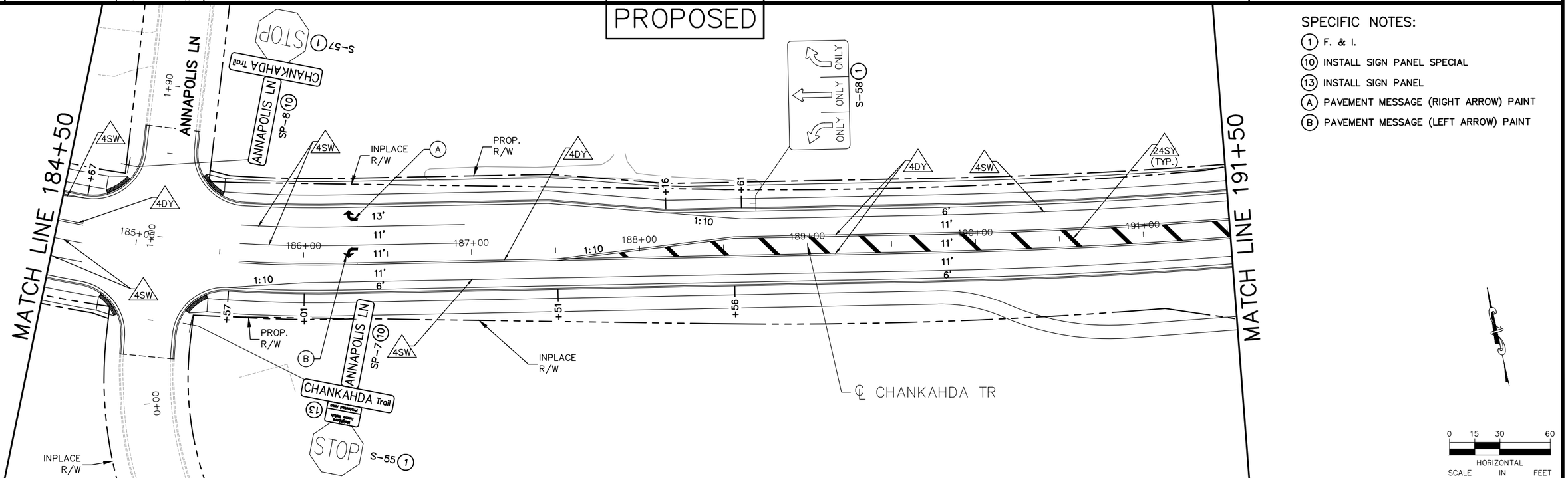
SPECIFIC NOTES:

(4) REMOVE

(7) SALVAGE SIGN PANEL

(9) SALVAGE SIGN PANEL SPECIAL

EXISTING
PROPOSED



SPECIFIC NOTES:

(1) F. & I.

(10) INSTALL SIGN PANEL SPECIAL

(13) INSTALL SIGN PANEL

(A) PAVEMENT MESSAGE (RIGHT ARROW) PAINT

(B) PAVEMENT MESSAGE (LEFT ARROW) PAINT

No.	Date	Revisions	App.

DRAWING NAME: CHANKAHDA_PH3_SgnStrp.dwg

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BRIAN K. VILLA, PE

DATE: 02/07/2025 MN LIC. NO. 56090

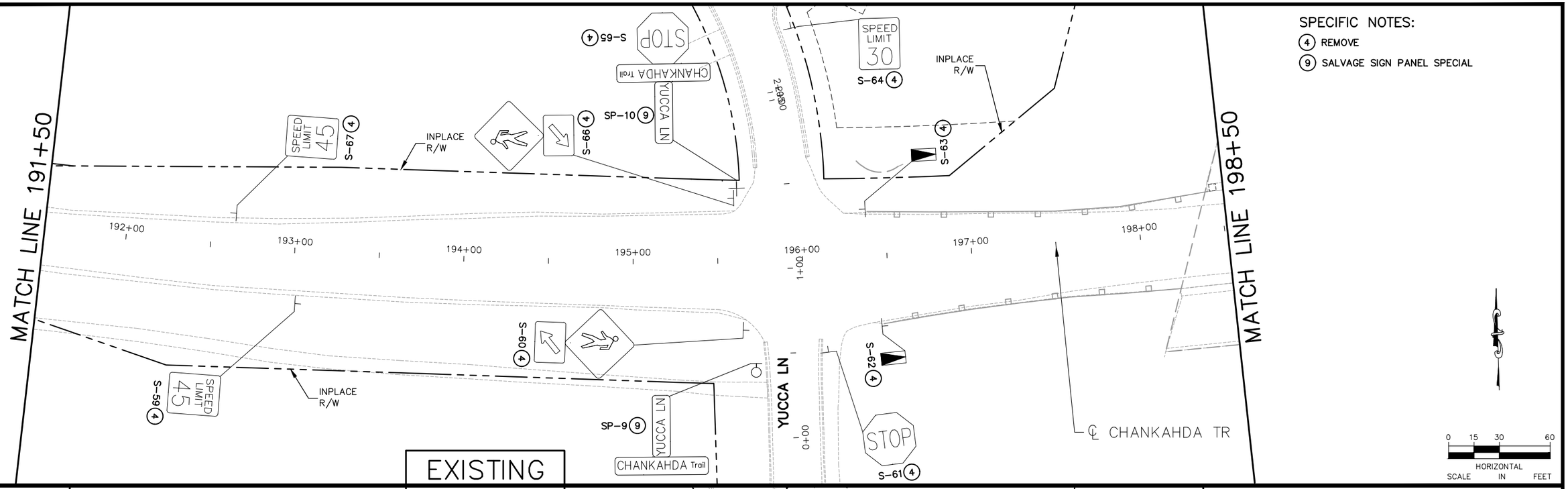
City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3

SIGNING AND PAVEMENT MARKING PLAN
STA. 184+50 TO STA. 191+50

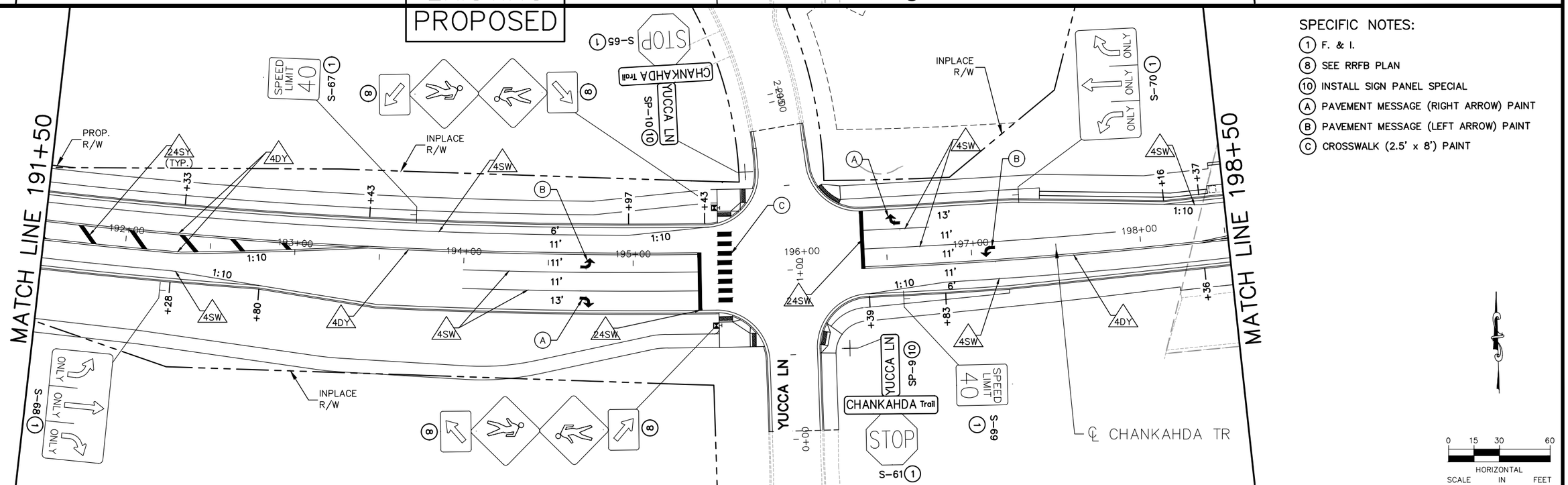
CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 242 / 354



EXISTING

PROPOSED



SPECIFIC NOTES:

(4) REMOVE

(9) SALVAGE SIGN PANEL SPECIAL

SPECIFIC NOTES:

(1) F. & I.

(8) SEE RRFB PLAN

(10) INSTALL SIGN PANEL SPECIAL

(A) PAVEMENT MESSAGE (RIGHT ARROW) PAINT

(B) PAVEMENT MESSAGE (LEFT ARROW) PAINT

(C) CROSSWALK (2.5' x 8') PAINT

No.	Date	Revisions	App.

DRAWING NAME: CHANKAHDA_PH3_SgnStrp.dwg

DESIGNED BY:	BWS
DRAWN BY:	MBG
CHECKED BY:	BKV
DATE:	02/07/2025
PROJECT NO.	160662010

Kimley»Horn
767 EUSTIS STREET, SUITE 100, ST, PAUL, MN 55114
PHONE: 651-645-4197
WWW.KIMLEY-HORN.COM

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

BRIAN K. VILLA, PE

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City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3

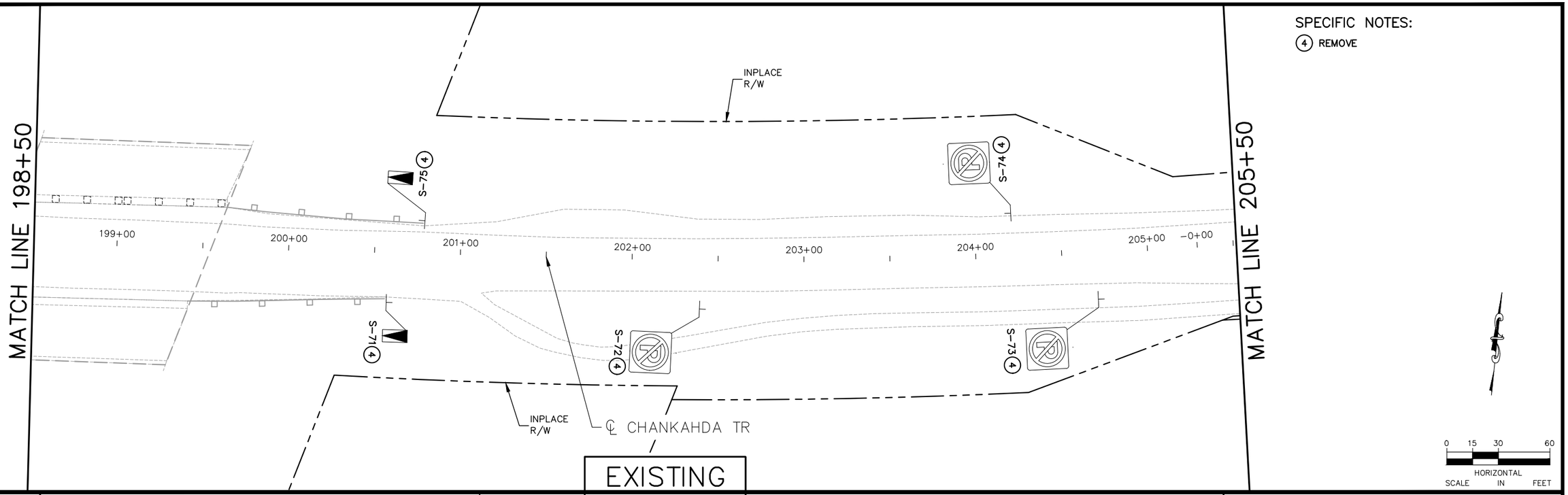
SIGNING AND PAVEMENT MARKING PLAN
STA. 191+50 TO STA. 198+50

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

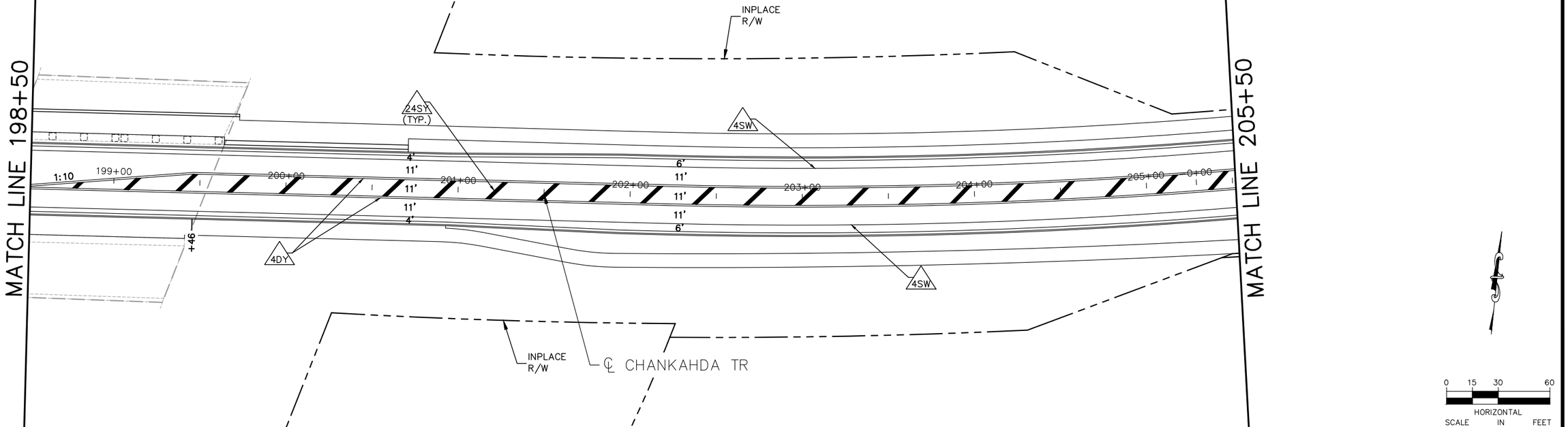
SHEET NO. 243 / 354

SPECIFIC NOTES:

(4) REMOVE



EXISTING
PROPOSED



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DATE: 02/07/2025 MN LIC. NO. 56090

City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3

SIGNING AND PAVEMENT MARKING PLAN
STA. 198+50 TO STA. 205+50

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 244 / 354

MATCH LINE 205+50

℄ CHANKAHDA TR

S-85 (4)

(3) City of Plymouth ADOPT A STREET GREGG & LYNN FUNFAR

(5) S-84

206+00 1+00 2+00 207+00 208+00 3+00 4+00 2+00 1+00 3+00

S-76 (4)

S-77 (4) RIGHT LANE MUST TURN RIGHT

S-78 (4) 40 M.P.H.

3+00 2+00 1+00 TEAKWOOD LN

SP-11 (12)

CHANKAHDA Trail

STOP

S-79 (4)

S-80 (4)

210+00 211+00 5+00 6+00 212+00 7+00 2+00

S-83 (4)

S-82 (4) INPLACE R/W

S-81 (4) INPLACE R/W

MATCH LINE 212+77

EXISTING
PROPOSED

SPECIFIC NOTES:

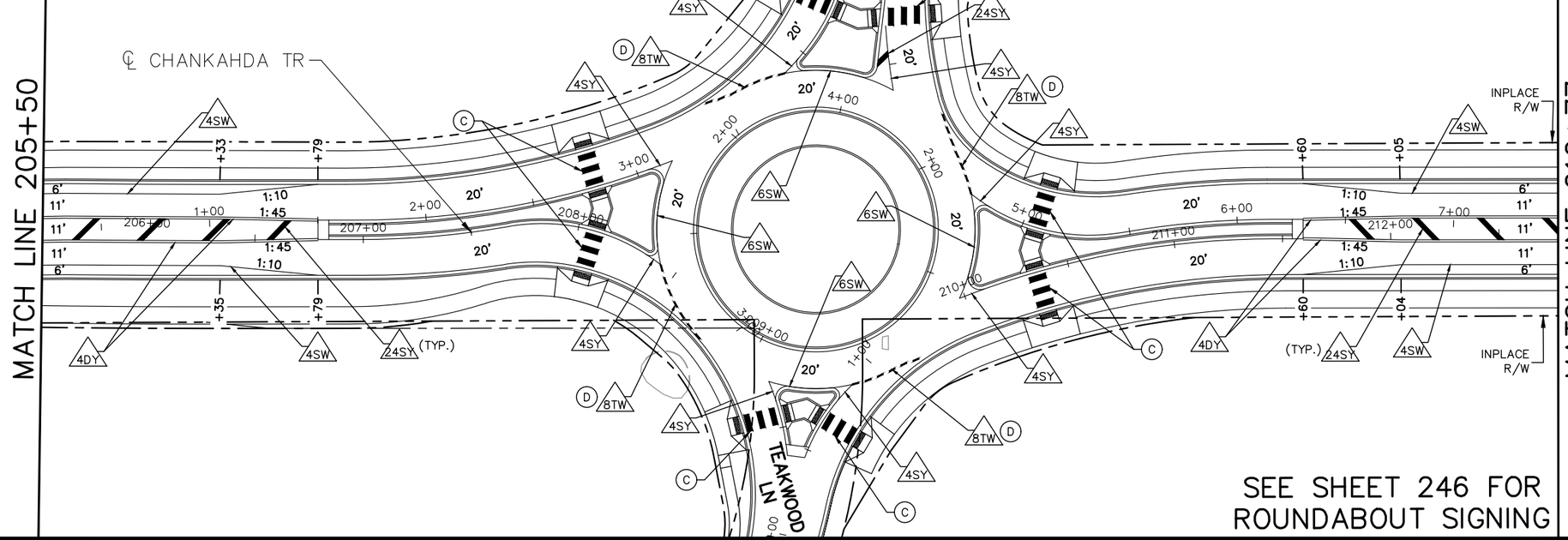
(3) SALVAGE

(4) REMOVE

(5) REMOVE SIGN PANEL

(12) REMOVE SIGN PANEL SPECIAL

0 15 30 60
HORIZONTAL SCALE IN FEET



SEE SHEET 246 FOR ROUNDABOUT SIGNING

SPECIFIC NOTES:

(C) CROSSWALK (2.5' x 8') PAINT

(D) 3' LINE, 3' GAP

0 15 30 60
HORIZONTAL SCALE IN FEET

No.	Date	Revisions	App.

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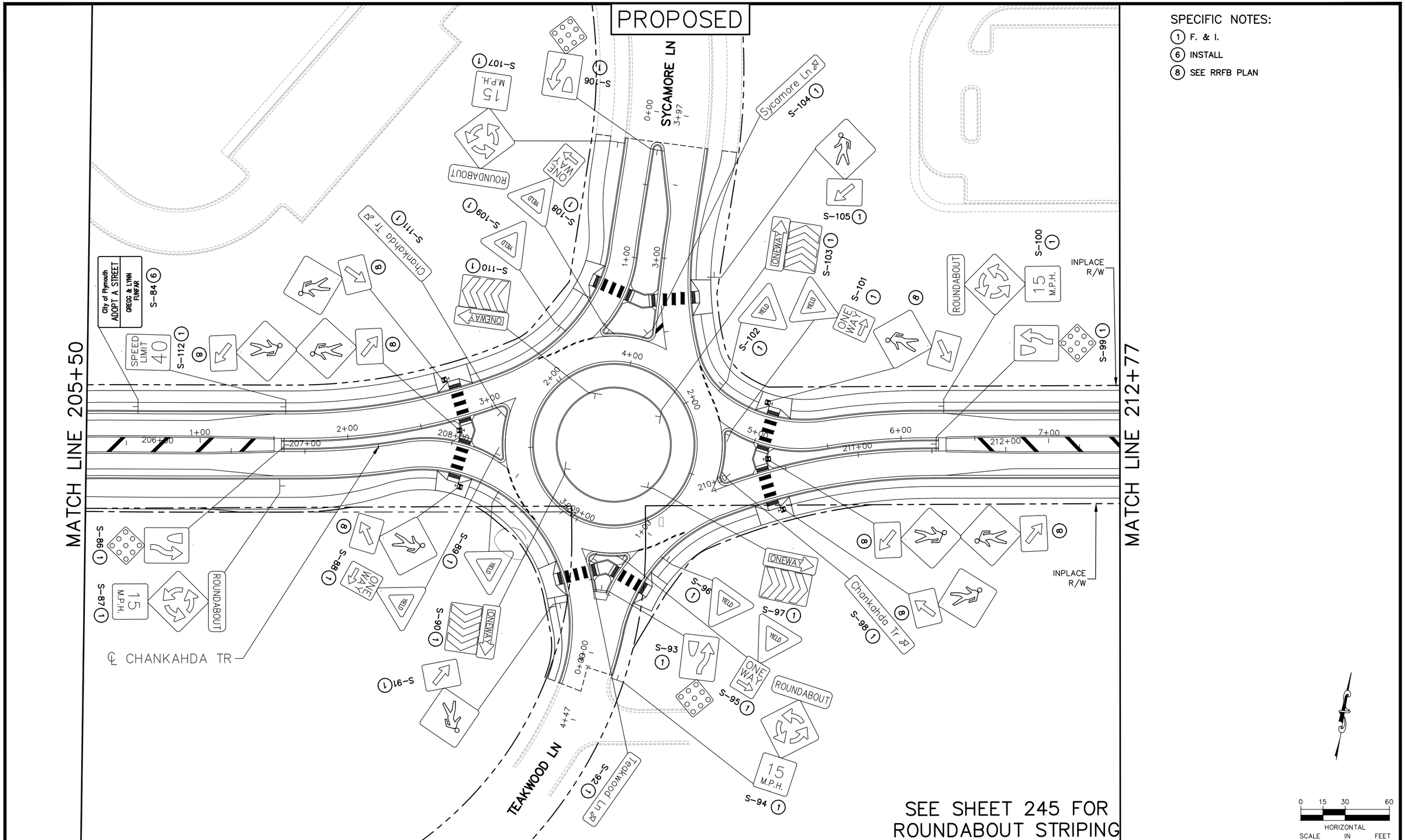
City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3

SIGNING AND PAVEMENT MARKING PLAN
STA. 205+50 TO STA. 212+77

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 245 / 354



SPECIFIC NOTES:

(1) F. & I.

(6) INSTALL

(8) SEE RRFB PLAN

No.	Date	Revisions	App.

DRAWING NAME	CHANKAHDA_PH3_SgnStrp.dwg
DESIGNED BY:	BWS
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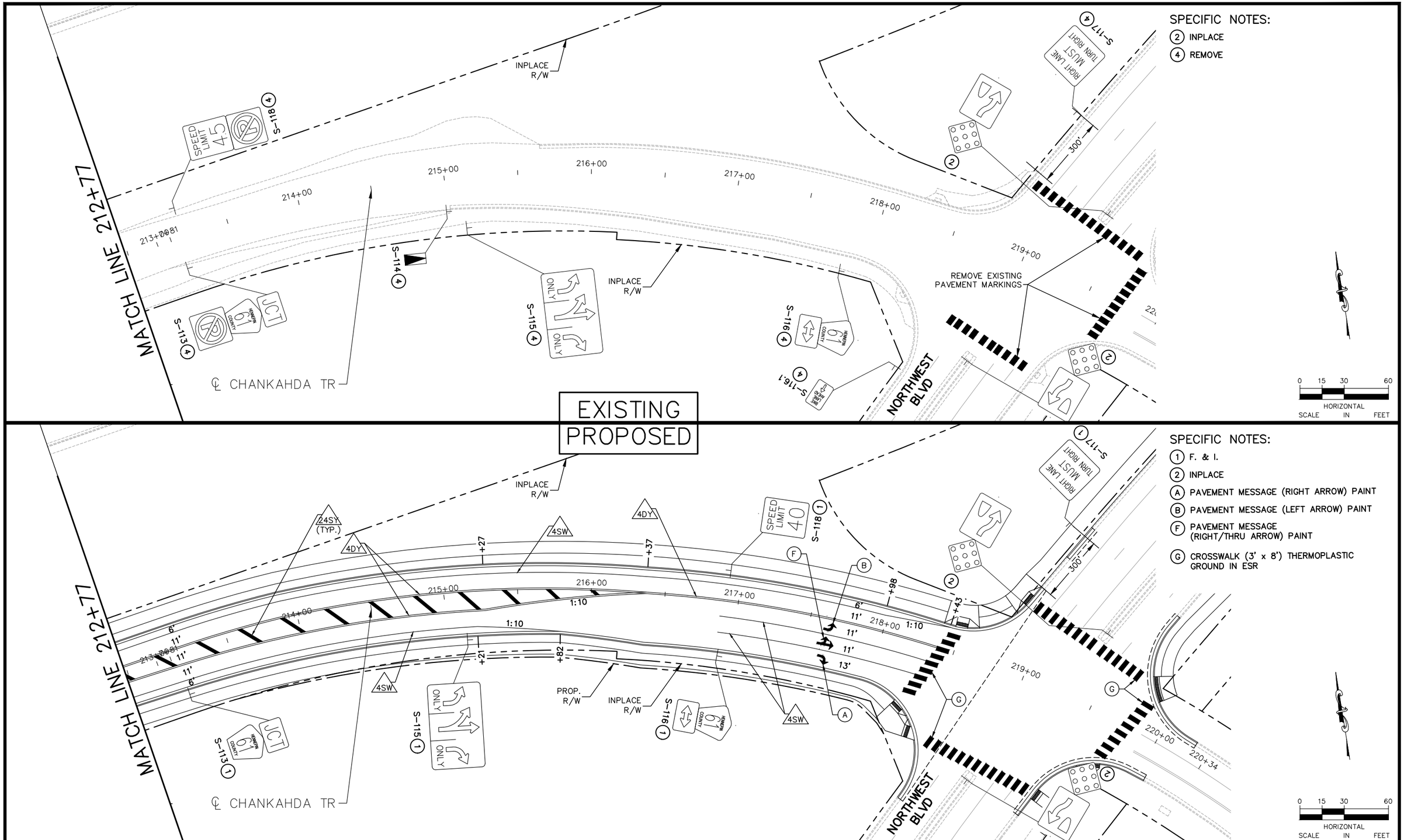
City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3

SIGNING AND PAVEMENT MARKING PLAN
STA. 205+50 TO STA. 212+77

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 246 / 354



No.	Date	Revisions	App.

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DATE: 02/07/2025 MN LIC. NO. 56090

City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3

SIGNING AND PAVEMENT MARKING PLAN
STA. 212+77 TO STA. 219+87

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 247 / 354

THE FOLLOWING STANDARD PLATES, APPROVED BY THE FEDERAL HIGHWAY ADMINISTRATION, SHALL APPLY ON THIS PROJECT.

MNDOT STANDARD PLATES		
	PLATE NO.	PLATE DESCRIPTION
	8110E	TRAFFIC SIGNAL BRACKETING (POLE MOUNTED)
	8111E	TRAFFIC SIGNAL BRACKETING (PEDESTAL MOUNTED), (3 SHEETS)
(1)	8122F	PEDESTAL & PEDESTAL BASE (FOR TRAFFIC CONTROL SIGNALS SUPPORT), (2 SHEETS)
(2)	8123G	POLE AND MAST ARM, (2 SHEETS)

(1) SEE SPECIAL PROVISIONS.
(2) SIGNAL MOUNTING PLATE (END OF MAST ARM) APPLIES.

TABULATION OF ESTIMATED QUANTITIES			
NOTES	ITEM DESCRIPTION	UNIT	TOTAL
(1)	PEDESTRIAN CROSSWALK FLASHER SYSTEM A	SYS	1
(2)	PEDESTRIAN CROSSWALK FLASHER SYSTEM B	SYS	1
(3)	PEDESTRIAN CROSSWALK FLASHER SYSTEM C	SYS	1
(4)	PEDESTRIAN CROSSWALK FLASHER SYSTEM D	SYS	1
(5)	PEDESTRIAN CROSSWALK FLASHER SYSTEM E	SYS	1
(6)	REVISE SIGNAL SYSTEM A	SYS	1
(7)	REVISE SIGNAL SYSTEM B	SYS	1

(1) CHANKAHDA TR AND NIAGARA LN N
(2) CHANKAHDA TR AND DALLAS LN N
(3) CHANKAHDA TR AND YUCCA LN N
(4) CHANKAHDA TR AND TEAKWOOD LN N (WEST CROSSING)
(5) CHANKAHDA TR AND TEAKWOOD LN N (EAST CROSSING)
(6) CHANKAHDA TR AND CHESHIRE PKWY
(7) CHANKAHDA TR AND NORTHWEST BLVD (CSAH 61)

COLOR CODING OF CONDUCTORS

R	RED
O	ORANGE
BL	BLUE
WH	WHITE
R/BLK	RED WITH BLACK TRACER
O/BLK	ORANGE WITH BLACK TRACER
BL/BLK	BLUE WITH BLACK TRACER
WH/BLK	WHITE WITH BLACK TRACER
BLK	BLACK
BLK/WH	BLACK WITH WHITE TRACER
BLK/R	BLACK WITH RED TRACER
WH/R	WHITE WITH RED TRACER
G/BLK	GREEN WITH BLACK TRACER
G	GREEN
Y	YELLOW

ABBREVIATIONS

WIRING DIAGRAM LEGEND

●	DENOTES TAP OF CABLED CONDUCTOR OR PARALLELING OF CABLED CONDUCTORS WITH TAPS AS INDICATED BY THE WIRING DIAGRAM
Ø	PHASE
2–1	SIGNAL PHASE AND FACE NUMBER
RED	RED
YEL	YELLOW
GRN	GREEN
RLTA	RED LEFT TURN ARROW
YLTA	YELLOW LEFT TURN ARROW
FYLTA	FLASHING YELLOW LEFT TURN ARROW
GLTA	GREEN LEFT TURN ARROW
RRTA	RED RIGHT TURN ARROW
YRTA	YELLOW RIGHT TURN ARROW
FYRTA	FLASHING YELLOW RIGHT TURN ARROW
GRTA	GREEN RIGHT TURN ARROW
DW	DON'T WALK
W	WALK
NEU	NEUTRAL
SPARE	SPARE CONDUCTOR
EQG	EQUIPMENT GROUND
○	EQUIPMENT GROUND CONNECTION
PB	PUSH BUTTON
IND	INDICATOR
EVP	EMERGENCY VEHICLE PREEMPTION
PED OR P	PEDESTRIAN INDICATION
APS	ACCESSIBLE PEDESTRIAN SIGNAL
LUM	LUMINAIRE
CAC	CONTROLLER AND CABINET
SC	SERVICE CABINET
SOP	SOURCE OF POWER
HH	HANDHOLE
MA	MAST ARM
SA	SIGNAL ASSEMBLY PEDESTAL MOUNT
PFA	PEDESTRIAN FLASHER ASSEMBLY PEDESTAL MOUNT
FYEL	FLASHING YELLOW
D_	DETECTOR LOOP (_ DENOTES PHASE)
TMC	TRAFFIC MANAGEMENT CAMERA

SIGNAL PLAN LAYOUT LEGEND

SC / CAC — INPLACE CONTROLLER CABINET AND SERVICE CABINET WITH METER AND DISCONNECT ON ONE CONCRETE PAD

HH — PVC HANDHOLE WITH METAL COVER

MA — INPLACE MAST ARM POLE

MA — INPLACE MAST ARM POLE ON NEW FOUNDATION

SA — SIGNAL ASSEMBLY PEDESTAL MOUNT

PBS — APS PUSH BUTTON STATION

SV — SIGNAL INTERCONNECT SPLICE VAULT

SOP — INPLACE SOURCE OF POWER PAD MOUNTED POLE MOUNTED

HH — INPLACE HANDHOLE

SV — SIGNAL INTERCONNECT SPLICE VAULT

INPLACE VIDEO DETECTION CAMERA

INPLACE EMERGENCY VEHICLE PREEMPTION (EVP) ONE–WAY

INPLACE SIGNAL FACE WITH BACKGROUND SHIELD

PROPOSED PEDESTRIAN INDICATION

INPLACE PEDESTRIAN INDICATION

2–1 SIGNAL PHASE AND FACE NUMBER

---------- SIGNAL SYSTEM RIGID STEEL CONDUIT (RSC)

— · — · — NON–METALLIC CONDUIT (NMC) HIGH DENSITY POLYETHYLENE (HDPE)

========== INPLACE CONDUIT

CITY OF PLYMOUTH TRAFFIC SIGNAL CABLES		
NOTES	TYPE	USAGE
	12/C #14	VEHICULAR AND PEDESTRIAN INDICATIONS
	5/C #14	VEHICULAR AND PEDESTRIAN INDICATIONS
	4/C #14	PEDESTRIAN INDICATIONS
	3/C #14	EVP INDICATOR LIGHT AND LUMINAIRES
	2/C #14 (SHLD)	PEDESTRIAN PUSH BUTTONS
	3/C #18	VIDEO DETECTION CAMERAS
	1–CAT–6	TRAFFIC MANAGEMENT CAMERAS
	3/C #20 (SHLD)	EVP DETECTOR
	1/C # 2	INCOMING POWER
	1/C # 3	INCOMING POWER
	1/C # 8	INCOMING POWER
	6PR #19	BATTERY BACK–UP SERVICE CABINET COMMUNICATION CONTROL
	1/C # 6 GRN	EQUIPMENT GROUND
	1/C #10	TRAFFIC MANAGEMENT CAMERA GROUND
(1)	1/C #12	LOCATE AND TRACER
	144SM FIBER OPTIC	SIGNAL INTERCONNECT
	48SM FIBER OPTIC	SIGNAL INTERCONNECT

(1) FOR USE WITH NON–METALLIC (NMC) CONDUIT ONLY.

HENNEPIN COUNTY TRAFFIC SIGNAL CABLES		
NOTES	TYPE	USAGE
	6/C #14	VEHICULAR INDICATIONS
	4/C #14	PEDESTRIAN INDICATIONS
	3/C #14	EVP INDICATOR LIGHT AND LUMINAIRES
	2/C #14 (SHLD)	PEDESTRIAN PUSH BUTTONS
	3/C #18	VIDEO DETECTION CAMERAS AND BATTERY BACK–UP SERVICE CABINET COMMUNICATION CONTROL
	CAT 5	BATTERY BACK–UP AND REMOTE BATTERY MANAGEMENT CAMERAS
	CAT 6	TRAFFIC MANAGEMENT CAMERAS
	3/C #20 (SHLD)	EVP DETECTOR
	1/C # 3	INCOMING POWER
	1/C # 8	INCOMING POWER
	1/C # 6 GRN	EQUIPMENT GROUND
	1/C #10	TRAFFIC MANAGEMENT CAMERA GROUND
(1)	1/C #12	LOCATE AND TRACER
	144SM FIBER OPTIC	SIGNAL INTERCONNECT
	48SM FIBER OPTIC	SIGNAL INTERCONNECT

(1) TO BE USED AS A TRACER AND LOCATOR WIRE. PLACE WIRES OUTSIDE OF THE CONDUIT. FOR USE WITH NON METALLIC CONDUIT (NMC) ONLY.

No.	Date	Revisions	App.

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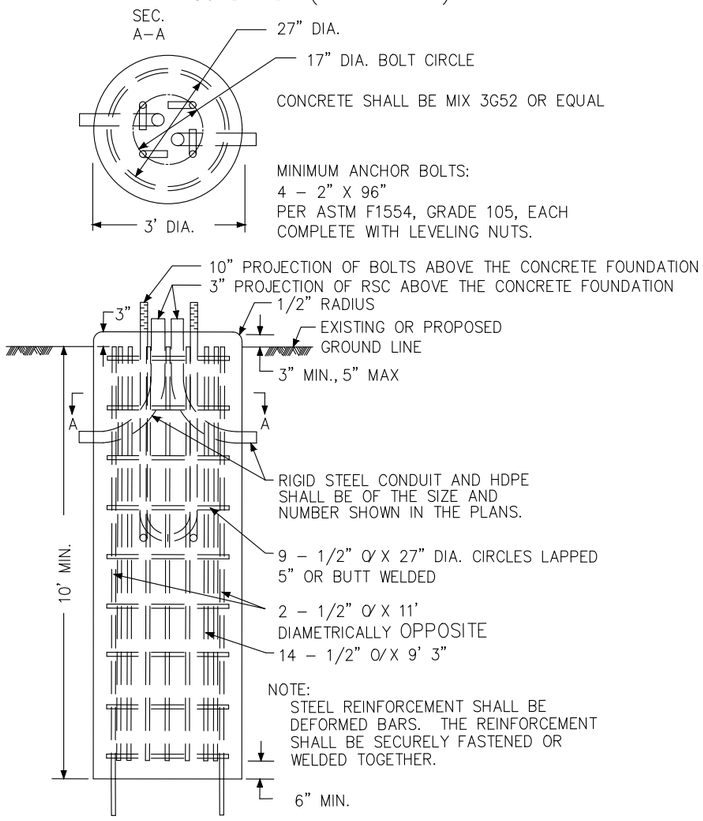
City of Plymouth
CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3

TRAFFIC SIGNAL PLANS
ABBREVIATIONS, SYMBOLS, STANDARD PLATES

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155–210–003
S.A.P.	

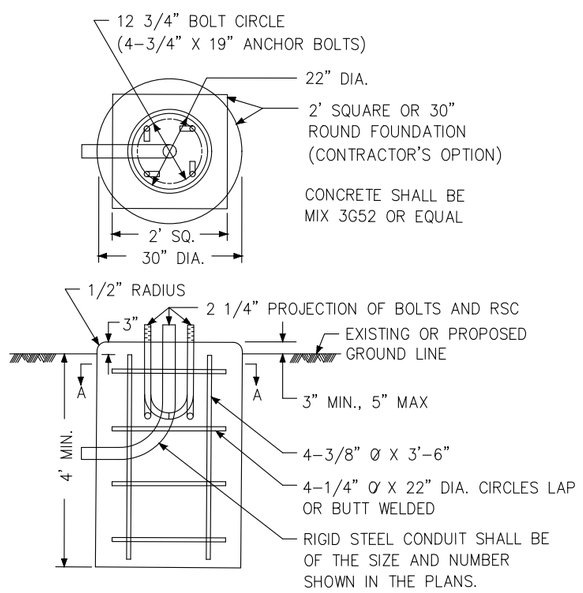
SHEET NO. 248 / 354

MAST ARM SIGNAL POLE FOUNDATION (NO SCALE)



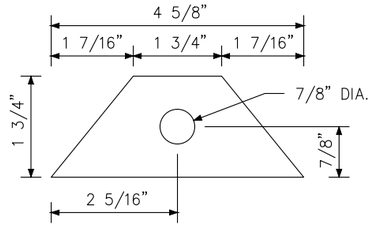
SIGNAL ASSEMBLY PEDESTAL MOUNT FOUNDATION (NO SCALE)

SEC. A–A



NOTE:
STEEL REINFORCEMENT SHALL BE DEFORMED BARS. THE REINFORCEMENT SHALL BE SECURELY FASTENED OR WELDED TOGETHER.

SIGNAL ASSEMBLY PEDESTAL MOUNT FLAT WASHER TYPICAL (NO SCALE)



NOTE:
FLAT WASHERS SHALL BE 1/4" THICK A36 GALVANIZED STEEL.

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City of Plymouth

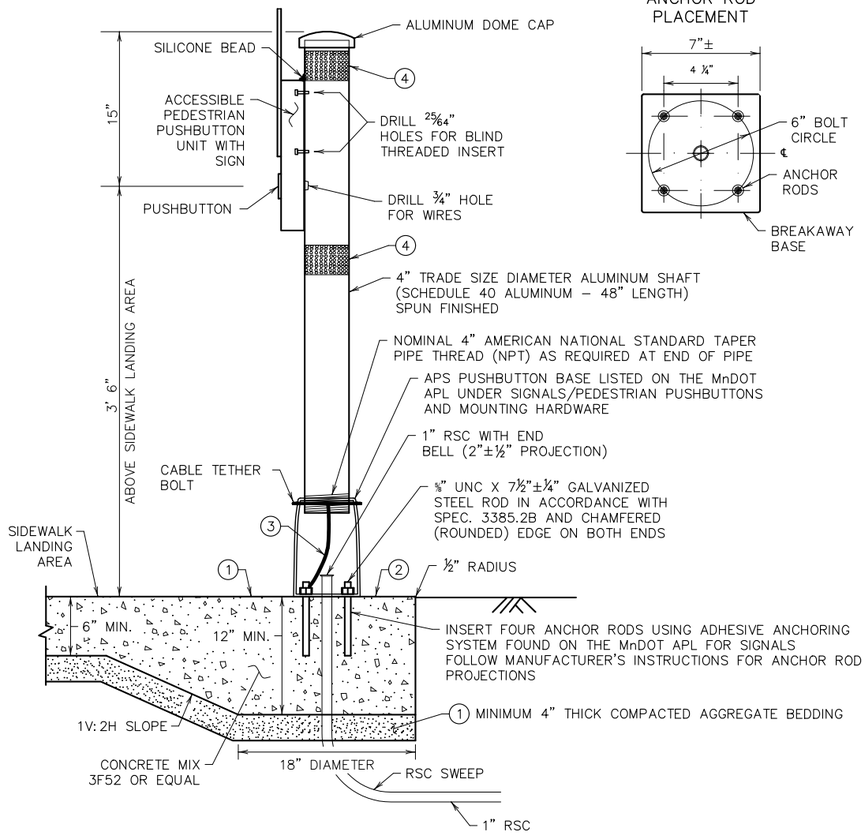
CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3

TRAFFIC SIGNAL PLANS
SIGNAL SYSTEM FOUNDATION DETAILS

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155–210–003
S.A.P.	

SHEET NO. 249 / 354

APS PUSHBUTTON STATION



ANCHOR ROD PLACEMENT

NOTES:

MOUNT THE BUTTON SO THAT THE FACE IS PARALLEL WITH THE ASSOCIATED CROSSWALK. SCREW IN SHAFT TO A TIGHTENED POSITION BEFORE MOUNTING ACCESSIBLE PEDESTRIAN PUSHBUTTON UNIT TO THE SHAFT.

ORIENT THE BASE ACCESS OPENING DIRECTLY BELOW THE APS BUTTON.

PLUMB AND LEVEL APS PUSHBUTTON STATIONS, AND TIGHTEN ANCHOR RODS IN ACCORDANCE WITH CONTRACT DOCUMENTS.

FURNISH AND INSTALL BLIND THREADED INSERTS USING MANUFACTURER'S SPECIFIC INSERTION TOOL.

USE APS ¼"–20 STAINLESS STEEL MOUNTING BOLTS. APPLY BRUSH–ON ANTI–SEIZE COMPOUND TO BOLTS BEFORE ASSEMBLY.

APPLY A BEAD OF 100% SILICONE SEALANT ALONG THE TOP OF THE PUSHBUTTON UNIT WHERE IT CONTACTS THE 4" SHAFT.

(1) THE PUSHBUTTON STATION FOUNDATION IS MONOLITHIC (POURED AT ONE TIME) WITH THE SIDEWALK. PROVIDE A 1V:2H SLOPE GRADE WHERE THE 6" MINIMUM SIDEWALK DEPTH TRANSITIONS TO THE 12" MINIMUM FOUNDATION DEPTH. MAINTAIN THE COMPACTED AGGREGATE BEDDING AND THICKNESS USED FOR THE SIDEWALK THROUGHOUT THE SLOPE AND FOUNDATION GRADING. PROVIDE 1V:2H SLOPE GRADING 360 DEGREES FOR THE TRANSITION FROM THE SIDEWALK TO THE FOUNDATION WHEN THE FOUNDATION IS NOT LOCATED NEAR EDGE OF SIDEWALK AND IS SURROUNDED BY CONCRETE WALK.

(2) ENSURE CONCRETE CONTROL JOINTS AND EDGE OF CONCRETE WALK ARE A MINIMUM OF 9" FROM THE CENTER OF THE PUSHBUTTON FOUNDATION.

(3) FURNISH AND INSTALL THE MANUFACTURER–PROVIDED CABLE TETHER ASSEMBLY IN ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION INSTRUCTIONS.

(4) FURNISH AND INSTALL 3" WIDE TUBULAR DELINEATOR/MARKER SHEETING FROM MnDOT'S APL FOR SIGNING/SHEETING MATERIALS THAT MATCHES THE COLOR OF THE NEAREST EDGE LINE.

APS PEDESTRIAN PUSHBUTTON LOCATION

NOTES:

(5) POSITION THE FACE OF THE PUSHBUTTON PARALLEL WITH THE OUTSIDE EDGE OF THE CROSSWALK.

(6) CONSTRUCT A MINIMUM 4'x4' LANDING AREA ADJACENT TO EACH PUSHBUTTON, WITH A 2% MAXIMUM SLOPE IN ALL DIRECTIONS.

(7) POSITION PUSHBUTTONS WITHIN 5' OF THE OUTSIDE EDGE OF THE CROSSWALK. DISTANCE IS MEASURED PERPENDICULARLY FROM EXTENSION OF CROSSWALK.

(8) POSITION PUSHBUTTONS BETWEEN 1.5' AND 10' FROM THE BACK OF CURB OR EDGE OF ROADWAY, MEASURED IN THE DIRECTION OF TRAVEL. STANDALONE PUSHBUTTON STATIONS SHOULD BE 4' MINIMUM FROM THE BACK OF CURB TO AVOID KNOCKDOWNS.

(9) POSITION PUSHBUTTONS AT LEAST 10' APART (PUSHBUTTON FACE TO PUSHBUTTON FACE).

(10) PROVIDE A MAINTENANCE ACCESS ROUTE (MAR) WHEREVER POSSIBLE FOR SNOW REMOVAL PURPOSES. A MAR REQUIRES A 6' MINIMUM CLEAR DISTANCE FOR SIDEWALKS (10' FOR SHARED–USE PATHS) BETWEEN A PUSHBUTTON AND ANY OBSTRUCTIONS, INCLUDING BUILDINGS, V–CURB, ELECTRICAL FOUNDATIONS, SIGNAL CABINETS, OR ANOTHER PUSHBUTTON.

(11) POSITION PUSHBUTTON 2' MINIMUM FROM CURB RAMP GRADE BREAK AND BACK OF SIDEWALK.

(12) CONSTRUCT AN 8%–10% WALKABLE CONCRETE FLARE WHEN THE PUSHBUTTON IS OFFSET FROM THE EDGE OF THE CROSSWALK SO USERS DEPARTING FROM THE PUSHBUTTON WILL TRAVERSE A CONCRETE SURFACE.

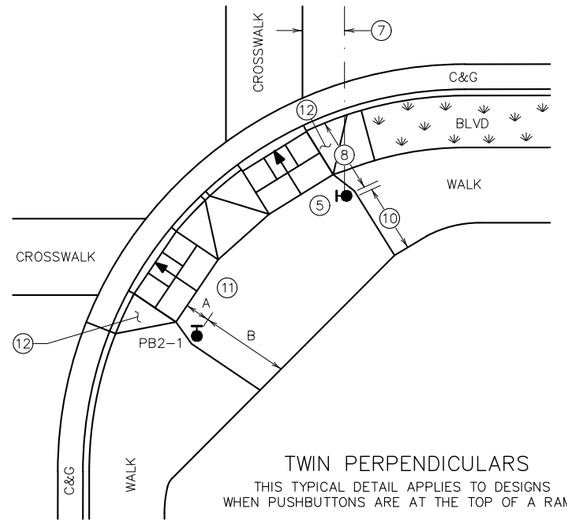
SAMPLE TABLE				
SIGNAL CONTROL POINTS			DISTANCE TO FRONT OF LANDING (FT)	DISTANCE TO BACK OF LANDING (FT)
SIGNAL NO.	X	Y		
PB2–1	–	–	A	B
PB4–2	–	–	C	D

A – DISTANCE MEASURED FROM THE PUSHBUTTON TO THE FRONT OF LANDING/TOP OF RAMP

B – CLEAR DISTANCE MEASURED FROM THE PUSHBUTTON TO THE BACK OF LANDING/EDGE OF WALK

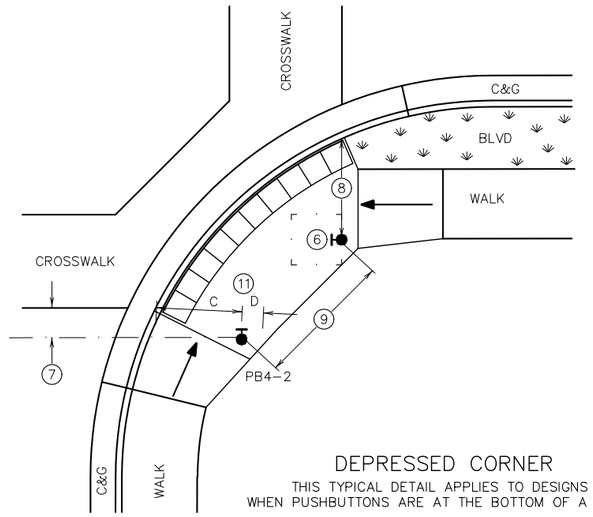
C – DISTANCE MEASURED FROM THE PUSHBUTTON TO THE OUTSIDE EDGE OF DOMES IN THE DIRECTION OF TRAVEL

D – CLEAR DISTANCE FROM THE PUSHBUTTON TO THE BACK OF LANDING MEASURED IN THE OPPOSITE DIRECTION OF TRAVEL



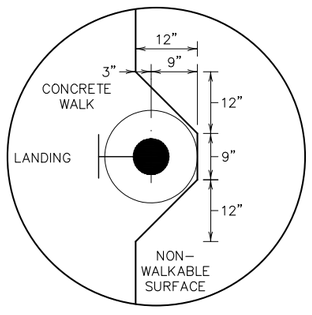
TWIN PERPENDICULARS

THIS TYPICAL DETAIL APPLIES TO DESIGNS WHEN PUSHBUTTONS ARE AT THE TOP OF A RAMP

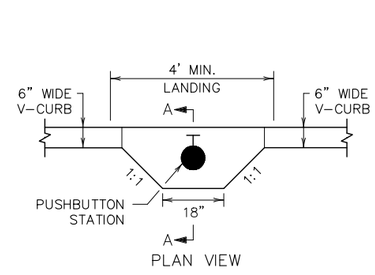


DEPRESSED CORNER

THIS TYPICAL DETAIL APPLIES TO DESIGNS WHEN PUSHBUTTONS ARE AT THE BOTTOM OF A RAMP



PUSHBUTTON STATION FOUNDATION FORMING



INTEGRAL PUSHBUTTON STATION WITH V–CURB

No.	Date	Revisions	App.

DRAWING NAME	CHANKAHDA_PH3_SignalDtl.dwg
DESIGNED BY:	BWS
DRAWN BY:	MBG
CHECKED BY:	BKV
DATE:	02/07/2025
PROJECT NO.	160662010

Kimley»Horn
767 EUSTIS STREET, SUITE 100, ST, PAUL, MN 55114
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BRIAN K. VILLA, PE

DATE: 02/07/2025 MN LIC. NO. 56090

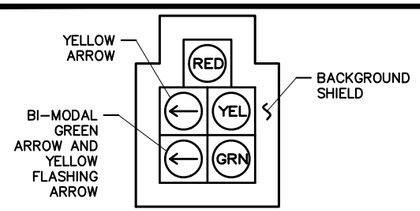
City of Plymouth

CHANKAHDA TRAIL RECONSTRUCTION PHASE 3

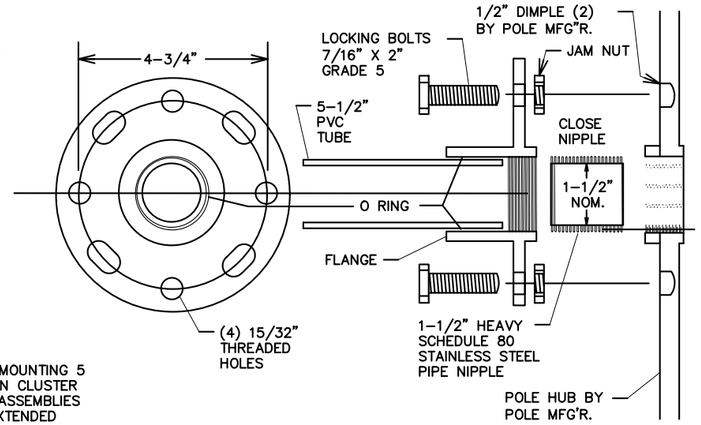
TRAFFIC SIGNAL PLANS
APS PUSHBUTTON STATION DETAILS

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155–210–003
S.A.P.	

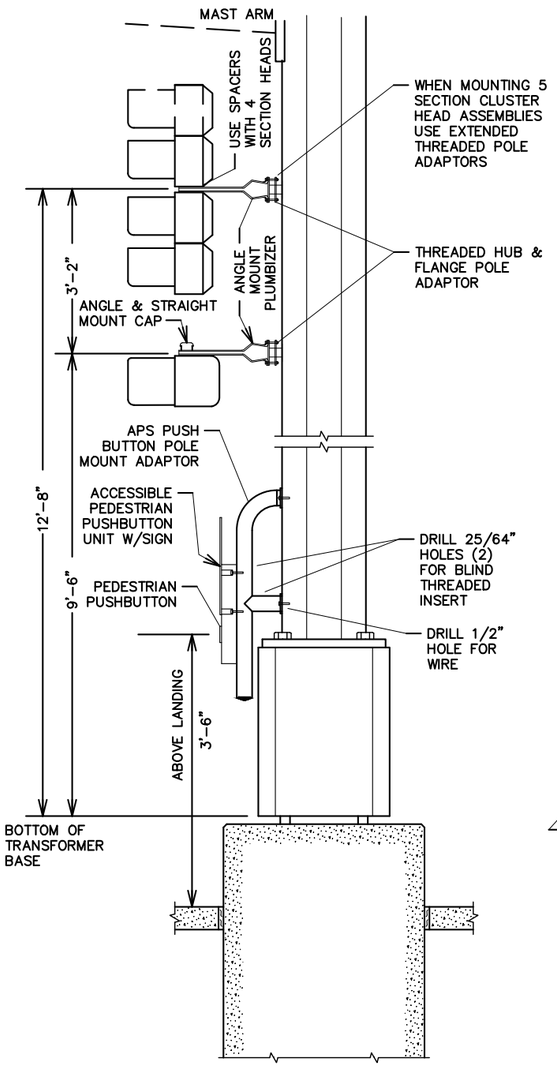
SHEET NO. 250 / 354



5 SECTION FYA CLUSTER HEAD DETAIL



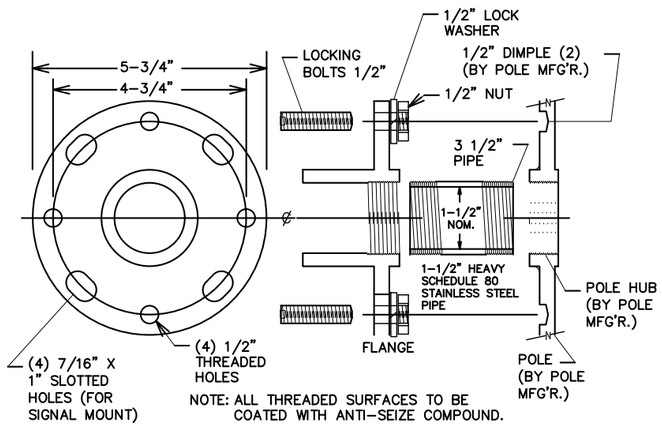
THREADED HUB AND FLANGE POLE ADAPTOR



TYPICAL SIGNAL POLE MOUNTING

NOT TO SCALE



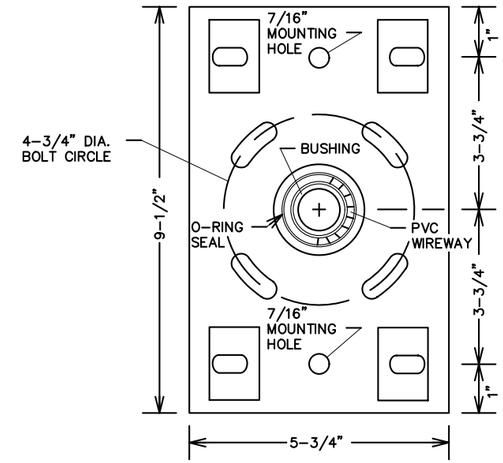


NOTE: ALL THREADED SURFACES TO BE COATED WITH ANTI-SEIZE COMPOUND.

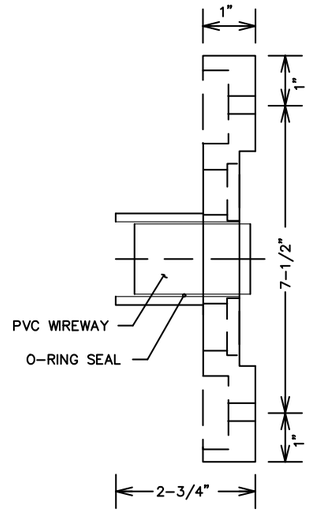
EXTENDED THREADED POLE ADAPTER

NOTES:

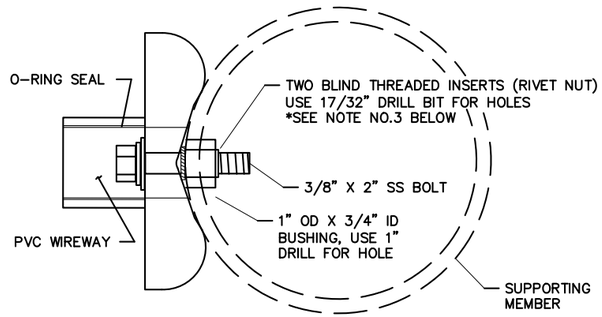
1. ALL THREADED SURFACES TO BE COATED WITH ANTI-SEIZE COMPOUND.
2. USE SIGNAL HEAD MOUNTED SPACERS FOR 4 SECTION POLY HEADS.
3. SEE STANDARD PLATE NUMBER 8123 FOR ADDITIONAL SIGNAL POLE DETAILS.
4. EXTENDED THREADED POLE ADAPTOR ONLY USED WITH 5 SECTION CLUSTER HEADS.



BOLT ON HUB & FLANGE



SIDE VIEW

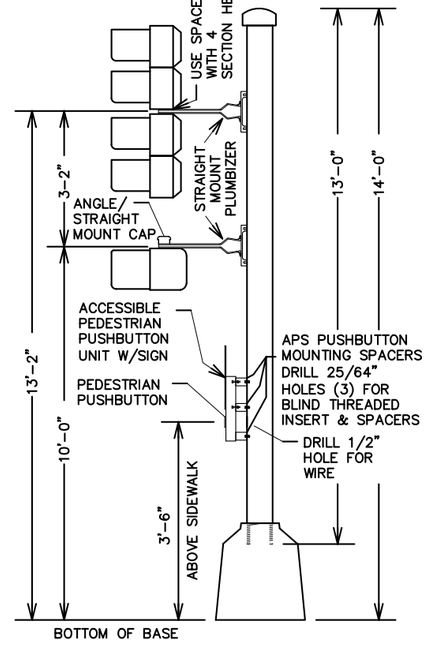


TOP VIEW



NOTES:

1. ALL THREADED SURFACES TO BE COATED WITH ANTI-SEIZE COMPOUND.
2. USE SIGNAL HEAD MOUNTED SPACERS FOR 4 SECTION POLY HEADS.
3. BLIND THREADED INSERTS (RIVET NUT) MUST BE INSERTED USING MANUFACTURERS SPECIFIC INSERTION TOOL. NO OTHER METHOD IS ACCEPTABLE.
4. SEE STANDARD PLATE NUMBER 8122 FOR ADDITIONAL PEDESTAL POLE DETAILS.



TYPICAL PEDESTAL MOUNTING

NOT TO SCALE

No.	Date	Revisions	App.

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BRIAN K. VILLA, PE

DATE: 02/07/2025 MN LIC. NO. 56090

City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3

TRAFFIC SIGNAL PLANS
SIGNAL POLE MOUNT DETAIL

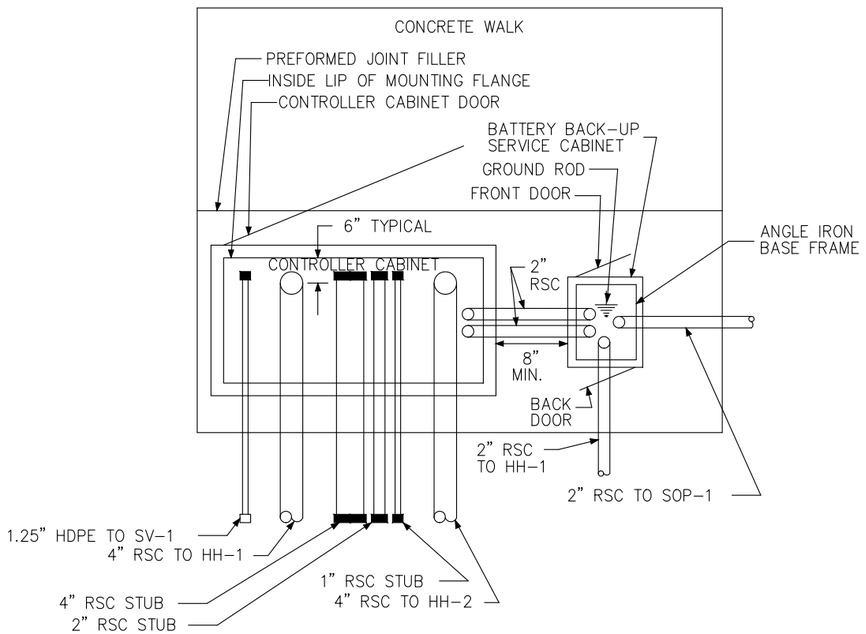
CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 251 / 354

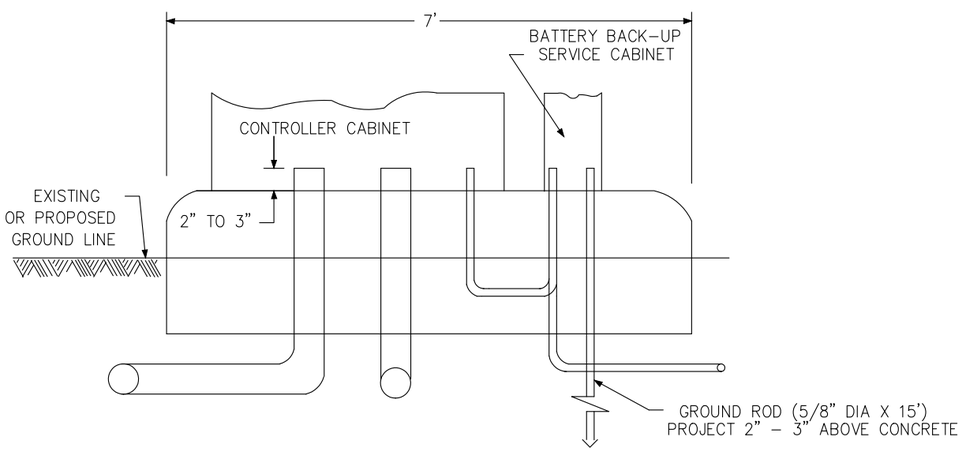
TYPICAL PAD WITH CONTROLLER CABINET AND SERVICE CABINET

NOT TO SCALE FOR ILLUSTRATION ONLY
SEE SIGNAL PLAN LAYOUT FOR ADDITIONAL INFORMATION

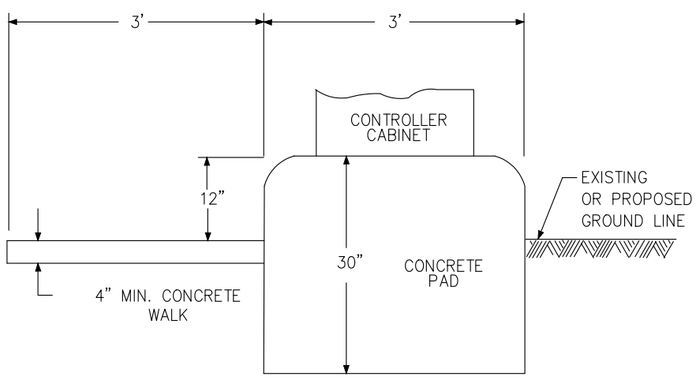
PLAN VIEW



FRONT VIEW



SIDE VIEW

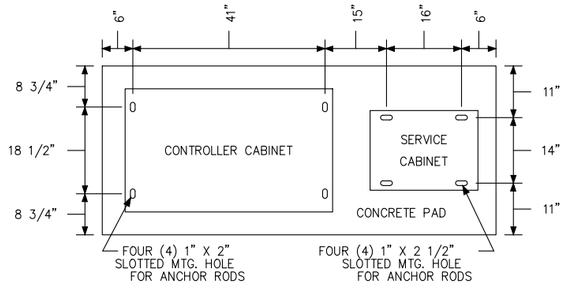


NOTES:

1. THE UPPER PART OF THE CONCRETE PAD SHALL BE BEVELED OR CHAMFERED IN A NEAT MANNER, AS DIRECTED BY THE ENGINEER.
2. THE TOP OF THE CONDUITS SHALL BE THREADED AND CAPPED AFTER INSTALLATION (UNTIL CABLES ARE INSTALLED).
3. THE LOCATION OF CONDUITS WITHIN THE CONCRETE PAD SHALL BE 6" TO THE CENTER OF THE CONDUIT FROM THE INSIDE LIP OF THE MOUNTING FLANGE ON THE DOOR SIDE OF THE CABINET. THE CONDUITS SHALL PROJECT 2" TO 3" ABOVE THE CONCRETE. THE CONDUITS SHALL NOT INTERFERE WITH THE CABINET FUNCTIONS (CONTROL EQUIPMENT, SUPPORTING MEMBERS, ETC.). FINAL CONDUIT LOCATIONS, AS DIRECTED BY THE ENGINEER.
4. CONDUITS WITH BOTH ENDS TERMINATING WITHIN THE PAD SHALL BE INSTALLED WITHIN THE CONCRETE PAD.
5. A CONCRETE SIDEWALK SHALL BE ON THE DOOR SIDE OF THE CONTROLLER CABINET, AS DIRECTED BY THE ENGINEER.
6. THE CONCRETE PAD AND THE CONCRETE WALK SHALL BE CONCRETE MIX 3G52 OR EQUAL, AS DIRECTED BY THE ENGINEER.
7. THE CONCRETE PAD ELEVATION SHALL BE ADJUSTED TO MAINTAIN THE 12" CLEARANCE ABOVE THE EXISTING OR PROPOSED GROUND LINE, AS DIRECTED BY THE ENGINEER.
8. THE SERVICE CABINET DOORS SHALL FACE AWAY FROM THE CONTROLLER CABINET TO AVOID CONFLICT WITH THE CONTROLLER CABINET OR THE CONTROLLER CABINET DOOR OPEN AS SHOWN.
9. THREAD AND CAP BOTH ENDS OF ALL RSC STUBS. THE CAPS LOCATED WITHIN THE CONTROLLER CABINET SHALL BE PERMANENTLY MARKED WITH AN ARROW TO INDICATE THE DIRECTION OF THE RSC STUBS. NO RSC STUB SHALL BE TERMINATED UNDER ANY FORM OF PAVEMENT OR HARD SURFACE, AS DIRECTED BY THE ENGINEER.
10. ORIENT THE CONTROLLER CABINET SUCH THAT WHEN THE CABINET DOOR IS OPENED A PERSON WORKING IN THE CABINET HAS A CLEAR LINE OF SITE TO SEE THE INTERSECTION AND SEE IN THE CABINET. THE CONTROLLER CABINET SHALL NOT BE ORIENTATED SUCH THAT A PERSON HAS THEIR BACK TO THE INTERSECTION WHEN WORKING IN THE CABINET.

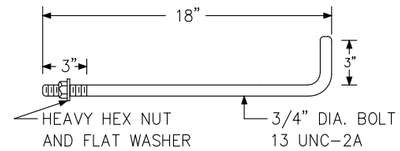
TPYICAL ANCHOR ROD LOCATION CONTROLLER CABINET AND SERVICE CABINET

(NO SCALE)



TYPICAL ANCHOR ROD CONTROLLER CABINET AND SERVICE CABINET

(NO SCALE)



NOTES:

1. MATERIAL STEEL SHALL BE ASTM, A-36. 3/4" DIA. X 21" LONG BEFORE BENDING.
2. HOT DIP GALVANIZE FULL LENGTH. NUTS SHALL RUN FREE AFTER PLATING.
3. RODS TO BE SUPPLIED WITH GALVANIZED HEAVY HEX NUT AND FLAT WASHER, ASTM, A-563 ASSEMBLED AFTER ROD PLATING.

No.	Date	Revisions	App.

DRAWING NAME	CHANKAHDA_PH3_SignalDtl.dwg
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DRAWN BY:	MBG
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DATE:	02/07/2025
PROJECT NO.	160662010

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BRIAN K. VILLA, PE

DATE: 02/07/2025 MN LIC. NO. 56090

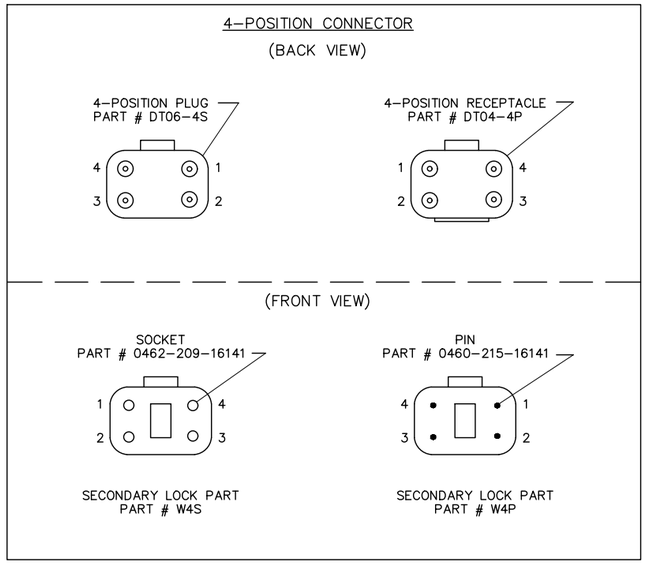
City of Plymouth

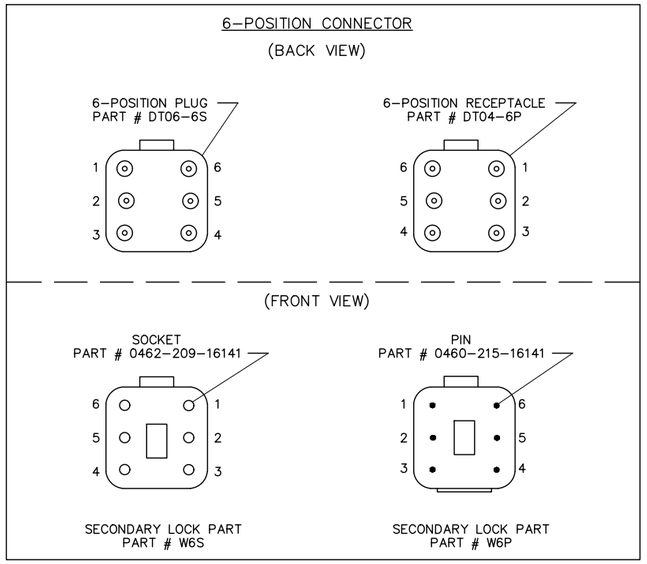
CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3

TRAFFIC SIGNAL PLANS
REVISE SIGNAL SYSTEM A EQUIPMENT PAD DETAIL

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 252 / 354





4 Position DT Connector (3 Section Head/DWK/WLK)			
Wire to Control Cabinet	Connector pin #	Wire to Signal Indication	Signal Indication
R or R/BLK or BLK	1	R	RED or DWK
O or O/BLK or BLK/WH or BLK	2	BLK/R	YEL or WLK
BL or BL/BLK or BLK/R or BLK	3	BLK	GRN or SPR
WH or WH/BLK or WH/R	4	WH	NEU

6 Position DT Connector (4 and 5 Section Heads)			
Wire to Control Cabinet	Connector pin #	Wire to Signal Indication	Signal Indication
R	1	R	RED
O	2	O	YEL
BL	3	BL	GRN
WH	4	WH	NEU
O/BLK or BLK/R (6/C)	5	BLK/R	YLA or FYLA
BL/BLK or BLK (6/C)	6	BLK	GLA

4 Position DT Connector (Used with 3 Conductor Cable Only) (EVP LHT/LUM/AWF/ VID CAM/ENF LHT)			
Wire to Control Cabinet	Connector pin #	Wire to Signal Indication	Signal Indication
BLK	1	BLK	EVP LHT or LUM or RED or YEL or VID CAM or ENF LHT or AWF
(Not Used)	2	(Not Used)	(Not Used) (See Note #8)
G	3	G	EQ.G
WH	4	WH	NEU

4 Position DT Connectors (Use Two Connectors for 5 Section FYA Cluster Heads)			
12 Conductor Wire to Control Cabinet	Connector pin #	4 Conductor to Signal Indication	Signal Indication
R	1	R	RED
O	2	BLK/R	YEL
BL	3	BLK	GRN
WH	4	WH	NEU
R/BLK	1	R	FYA
O/BLK	2	BLK/R	YLA
BL/BLK	3	BLK	GLA
WH/BLK	4	WH	NEU

NOTES:

1. DT04-P RECEPTACLE SHALL BE TERMINATED TO THE WIRING HARNESS RUNNING FROM THE BASE/JUNCTION BOX OF THE POLE TO SIGNAL INDICATIONS.
2. DT06-_S PLUG SHALL BE TERMINATED TO THE CABLES RUNNING FROM THE TRAFFIC SIGNAL CABINET TO THE BASE/JUNCTION BOX OF THE POLE.
3. THERE SHALL BE A MINIMUM OF 24 INCHES OF SLACK ON EACH CABLE IN EVERY POLE BASE /JUNCTION BOX.
4. STRIP A MAXIMUM OF 6 INCHES OF THE OUTER JACKET OF EACH SIGNAL CABLE.
5. STRIP .250 INCHES OF INSULATION FROM EACH INDIVIDUAL CONDUCTOR.
6. CRIMP PINS OR SOCKETS USING RATCHETING TYPE CRIMPING TOOL HDT-48-00. NO OTHER CRIMPING TOOL WILL BE ALLOWED.
7. WIRES MUST BE TERMINATED AS DETAILED IN TABLES DEPENDING ON WIRE COUNT.
8. ANY UNUSED PIN MUST HAVE A SEALING PLUG PLACED IN BOTH THE PLUG & RECEPTACLE (PART # 114017).
9. LABEL EACH HALF OF THE CONNECTOR (PLUG AND RECEPTACLE) WITH THE DEVICE DESIGNATION (AS INDICATED IN THE WIRING DIAGRAM) USING A PERMANENT BLACK MARKER.

No.	Date	Revisions	App.

DRAWING NAME: CHANKAHDA_PH3_SignalDtl.dwg

DESIGNED BY:	BWS
DRAWN BY:	MBG
CHECKED BY:	BKV
DATE:	02/07/2025
PROJECT NO.	160662010

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BRIAN K. VILLA, PE

DATE: 02/07/2025 MN LIC. NO. 56090

City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3

TRAFFIC SIGNAL PLANS
REVISE SIGNAL SYSTEM A WIRING DIAGRAM DETAIL

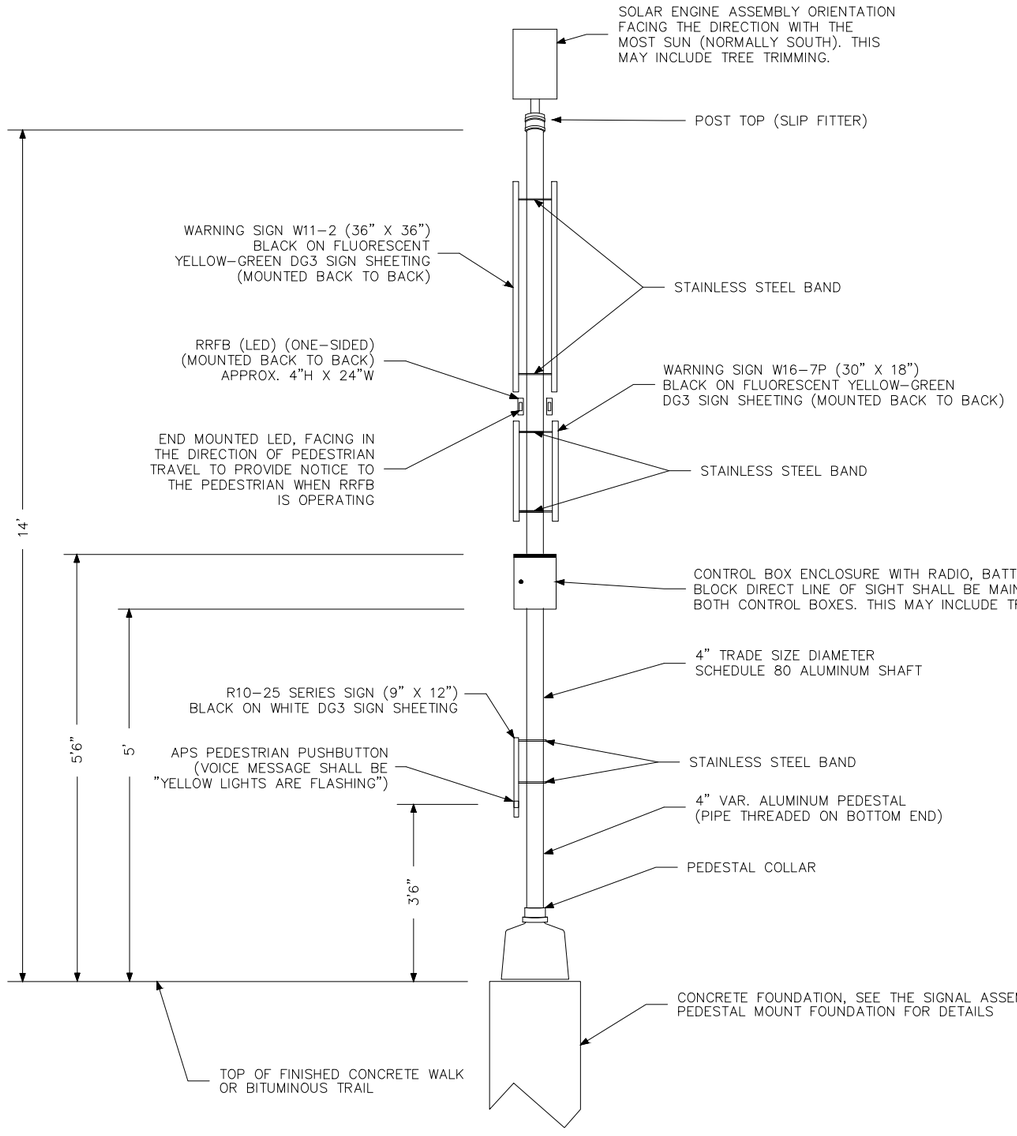
CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 253 / 354

SA 1 SA 2

PEDESTRIAN FLASHER ASSEMBLY PEDESTAL MOUNT
RECTANGULAR RAPID FLASHING BEACON LED (RRFB) SOLAR POWERED

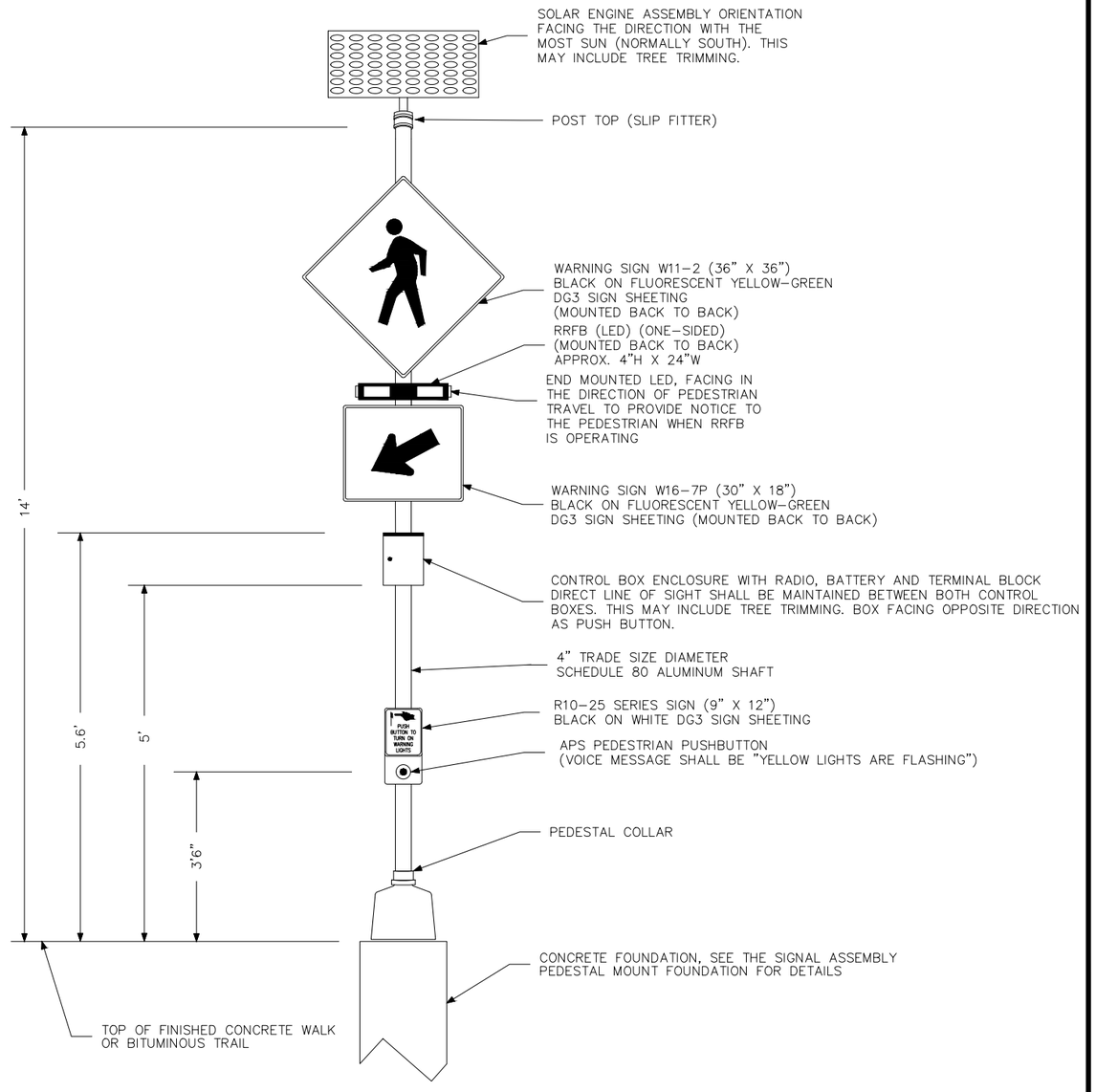
(NO SCALE)



SA 1 SA 2

PEDESTRIAN FLASHER ASSEMBLY PEDESTAL MOUNT
RECTANGULAR RAPID FLASHING BEACON LED (RRFB) SOLAR POWERED

(NO SCALE)



No.	Date	Revisions	App.

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DATE: 02/07/2025 MN LIC. NO. 56090

City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
TRAFFIC SIGNAL PLANS
PEDESTRIAN CROSSWALK FLASHER SYSTEM A
PEDESTRIAN FLASHER ASSEMBLY PEDESTAL DETAILS

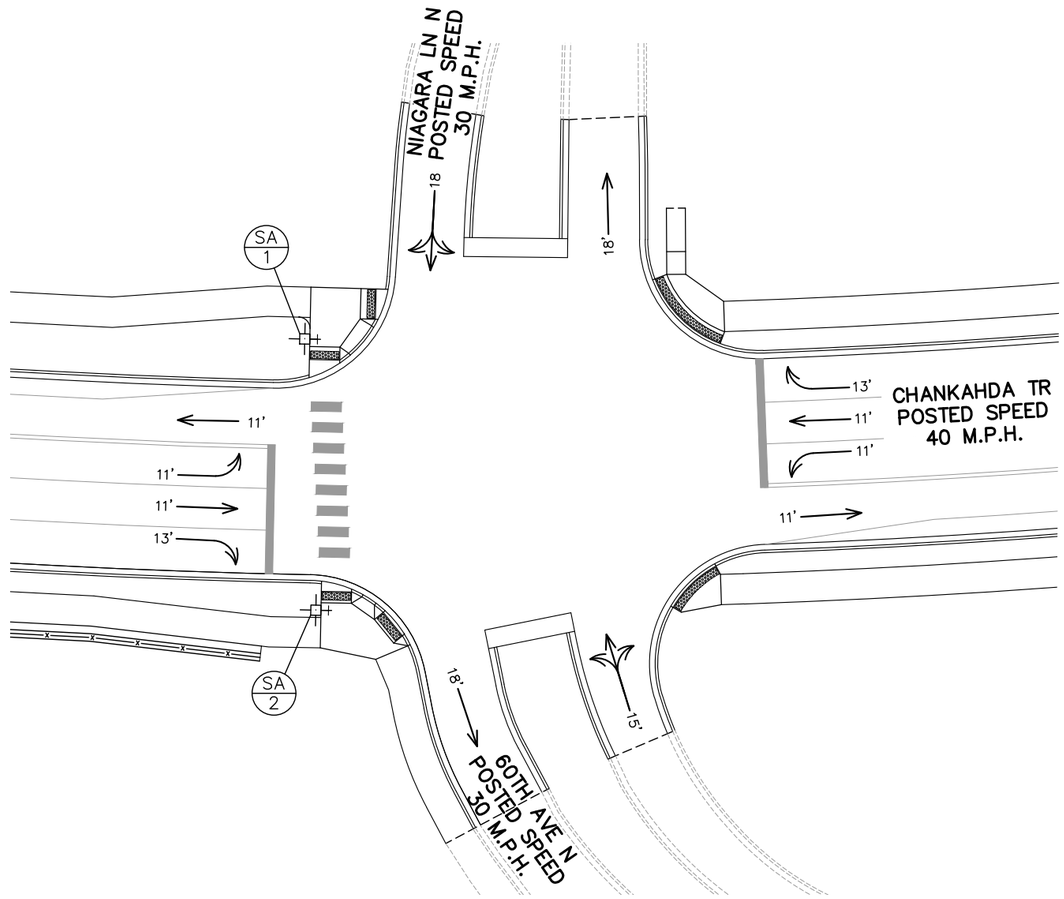
CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 254 / 354

NOTES:
1. SEE SPECIAL PROVISIONS FOR ADDITIONAL REQUIREMENTS.
2. ONE APS PEDESTRIAN PUSH BUTTON WITH SIGN R10-25 (9" X 12") SHALL BE INSTALLED ON SA-1 AND SA-2 FOR OPERATION AS SHOWN IN THE PLANS.
3. THE CONTRACTOR SHALL PLACE COMMON BACK FILL AND RESTORE ALL DISTURBED TURF, CONCRETE OR BITUMINOUS WALK, ETC. TO ITS ORIGINAL CONDITION OR BETTER.
4. THE CONTRACTOR SHALL VERIFY ALL UTILITY LOCATIONS PRIOR TO CONSTRUCTION.
5. EXACT LOCATIONS OF POLES AND BASES SHALL BE DETERMINED IN THE FIELD.
6. THE CONTRACTOR SHALL SUBMIT RRFB AND SIGN PANEL ATTACHMENT DETAILS FOR APPROVAL TO THE ENGINEER. THE CONTRACTOR SHALL FURNISH AND INSTALL ALL RRFB, CONTROLLER, SIGN PANEL, PEDESTAL POLE AND ATTACHMENT HARDWARE.
7. ALL WORK AS DETAILED IN NOTES 1-6 SHALL BE DIRECTED BY AND TO THE SATISFACTION OF THE ENGINEER AND ALL COSTS SHALL BE INCLUDED IN THE UNIT PRICE BID FOR PEDESTRIAN CROSSWALK FLASHER SYSTEM (SYS).



0 10 20 40
HORIZONTAL
SCALE IN FEET



SIGNAL STRUCTURE LOCATIONS	
NO.	LOCATION (1)
SA-1	X: 477008.9830, Y: 198870.7497
SA-2	X: 476987.0145, Y: 198802.5660

(1) TO THE CENTER OF THE CONCRETE FOUNDATION.

ALL COORDINATES ARE HENNEPIN COUNTY GROUND FEET, BASED ON THE MINNESOTA COORDINATE SYSTEM, SOUTHERN ZONE, NAD83 1986 (NON-HARN VALUES).

No.	Date	Revisions	App.

DRAWING NAME: CHANKAHDA_PH3_SignalRRFB.dwg

DESIGNED BY:	BWS
DRAWN BY:	MBG
CHECKED BY:	BKV
DATE:	02/07/2025
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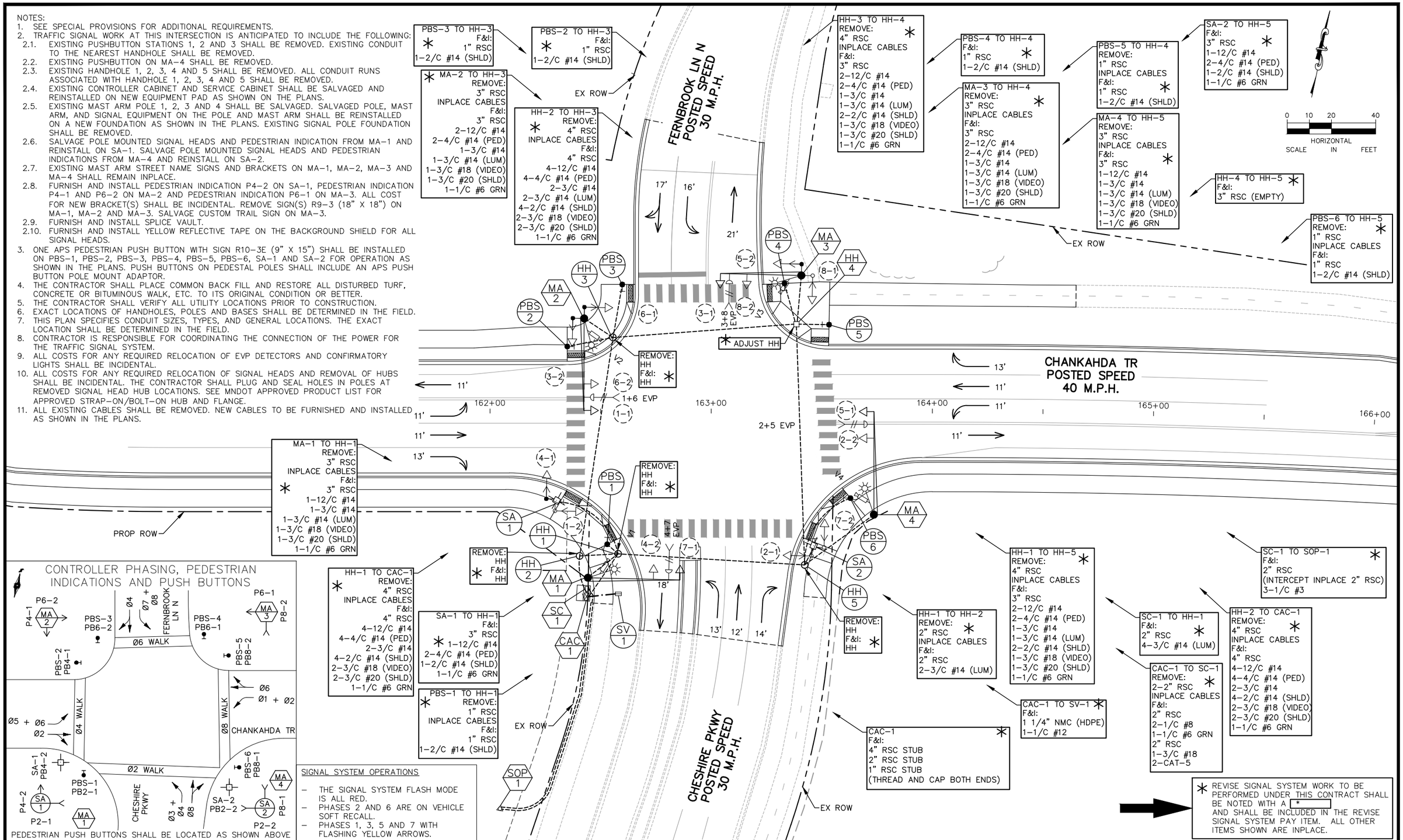
City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
TRAFFIC SIGNAL PLANS
PEDESTRIAN CROSSWALK FLASHER SYSTEM A
INTERSECTION LAYOUT

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 255 / 354

NOTES:
1. SEE SPECIAL PROVISIONS FOR ADDITIONAL REQUIREMENTS.
2. TRAFFIC SIGNAL WORK AT THIS INTERSECTION IS ANTICIPATED TO INCLUDE THE FOLLOWING:
   2.1. EXISTING PUSHBUTTON STATIONS 1, 2 AND 3 SHALL BE REMOVED. EXISTING CONDUIT TO THE NEAREST HANDHOLE SHALL BE REMOVED.
   2.2. EXISTING PUSHBUTTON ON MA-4 SHALL BE REMOVED.
   2.3. EXISTING HANDHOLE 1, 2, 3, 4 AND 5 SHALL BE REMOVED. ALL CONDUIT RUNS ASSOCIATED WITH HANDHOLE 1, 2, 3, 4 AND 5 SHALL BE REMOVED.
   2.4. EXISTING CONTROLLER CABINET AND SERVICE CABINET SHALL BE SALVAGED AND REINSTALLED ON NEW EQUIPMENT PAD AS SHOWN ON THE PLANS.
   2.5. EXISTING MAST ARM POLE 1, 2, 3 AND 4 SHALL BE SALVAGED. SALVAGED POLE, MAST ARM, AND SIGNAL EQUIPMENT ON THE POLE AND MAST ARM SHALL BE REINSTALLED ON A NEW FOUNDATION AS SHOWN IN THE PLANS. EXISTING SIGNAL POLE FOUNDATION SHALL BE REMOVED.
   2.6. SALVAGE POLE MOUNTED SIGNAL HEADS AND PEDESTRIAN INDICATION FROM MA-1 AND REINSTALL ON SA-1. SALVAGE POLE MOUNTED SIGNAL HEADS AND PEDESTRIAN INDICATIONS FROM MA-4 AND REINSTALL ON SA-2.
   2.7. EXISTING MAST ARM STREET NAME SIGNS AND BRACKETS ON MA-1, MA-2, MA-3 AND MA-4 SHALL REMAIN INPLACE.
   2.8. FURNISH AND INSTALL PEDESTRIAN INDICATION P4-2 ON SA-1, PEDESTRIAN INDICATION P4-1 AND P6-2 ON MA-2 AND PEDESTRIAN INDICATION P6-1 ON MA-3. ALL COST FOR NEW BRACKET(S) SHALL BE INCIDENTAL. REMOVE SIGN(S) R9-3 (18" X 18") ON MA-1, MA-2 AND MA-3. SALVAGE CUSTOM TRAIL SIGN ON MA-3.
   2.9. FURNISH AND INSTALL SPLICE VAULT.
   2.10. FURNISH AND INSTALL YELLOW REFLECTIVE TAPE ON THE BACKGROUND SHIELD FOR ALL SIGNAL HEADS.
3. ONE APS PEDESTRIAN PUSH BUTTON WITH SIGN R10-3E (9" X 15") SHALL BE INSTALLED ON PBS-1, PBS-2, PBS-3, PBS-4, PBS-5, PBS-6, SA-1 AND SA-2 FOR OPERATION AS SHOWN IN THE PLANS. PUSH BUTTONS ON PEDESTAL POLES SHALL INCLUDE AN APS PUSH BUTTON POLE MOUNT ADAPTOR.
4. THE CONTRACTOR SHALL PLACE COMMON BACK FILL AND RESTORE ALL DISTURBED TURF, CONCRETE OR BITUMINOUS WALK, ETC. TO ITS ORIGINAL CONDITION OR BETTER.
5. THE CONTRACTOR SHALL VERIFY ALL UTILITY LOCATIONS PRIOR TO CONSTRUCTION.
6. EXACT LOCATIONS OF HANDHOLES, POLES AND BASES SHALL BE DETERMINED IN THE FIELD.
7. THIS PLAN SPECIFIES CONDUIT SIZES, TYPES, AND GENERAL LOCATIONS. THE EXACT LOCATION SHALL BE DETERMINED IN THE FIELD.
8. CONTRACTOR IS RESPONSIBLE FOR COORDINATING THE CONNECTION OF THE POWER FOR THE TRAFFIC SIGNAL SYSTEM.
9. ALL COSTS FOR ANY REQUIRED RELOCATION OF EVP DETECTORS AND CONFIRMATORY LIGHTS SHALL BE INCIDENTAL.
10. ALL COSTS FOR ANY REQUIRED RELOCATION OF SIGNAL HEADS AND REMOVAL OF HUBS SHALL BE INCIDENTAL. THE CONTRACTOR SHALL PLUG AND SEAL HOLES IN POLES AT REMOVED SIGNAL HEAD HUB LOCATIONS. SEE MNDOT APPROVED PRODUCT LIST FOR APPROVED STRAP-ON/BOLT-ON HUB AND FLANGE.
11. ALL EXISTING CABLES SHALL BE REMOVED. NEW CABLES TO BE FURNISHED AND INSTALLED AS SHOWN IN THE PLANS.



CONTROLLER PHASING, PEDESTRIAN INDICATIONS AND PUSH BUTTONS

PEDESTRIAN PUSH BUTTONS SHALL BE LOCATED AS SHOWN ABOVE

SIGNAL SYSTEM OPERATIONS

- THE SIGNAL SYSTEM FLASH MODE IS ALL RED.
- PHASES 2 AND 6 ARE ON VEHICLE SOFT RECALL.
- PHASES 1, 3, 5 AND 7 WITH FLASHING YELLOW ARROWS.

* REVISE SIGNAL SYSTEM WORK TO BE PERFORMED UNDER THIS CONTRACT SHALL BE NOTED WITH A [*] AND SHALL BE INCLUDED IN THE REVISE SIGNAL SYSTEM PAY ITEM. ALL OTHER ITEMS SHOWN ARE INPLACE.

No.	Date	Revisions	App.

DRAWING NAME: CHANKAHDA_PH3_Signal.dwg

DESIGNED BY:	BWS
DRAWN BY:	MBG
CHECKED BY:	BKV
DATE:	02/07/2025
PROJECT NO.	160662010

Kimley»Horn
767 EUSTIS STREET, SUITE 100, ST, PAUL, MN 55114
PHONE: 651-645-4197
WWW.KIMLEY-HORN.COM

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

BRIAN K. VILLA, PE

DATE: 02/07/2025 MN LIC. NO. 56090

City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
TRAFFIC SIGNAL PLANS
REVISE SIGNAL SYSTEM A
INTERSECTION LAYOUT

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 256 / 354

SIGNAL STRUCTURE LOCATIONS

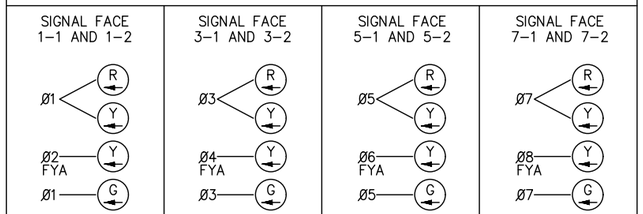
NO.	LOCATION (1)	NO.	LOCATION (1)
HH–1	X: 479213.1081, Y: 198592.8936	PBS–3	X: 479193.9121, Y: 198713.1730
HH–2	X: 479196.1999, Y: 198588.8566	PBS–4	X: 479266.0783, Y: 198726.2606
HH–3	X: 479193.8494, Y: 198688.9155	PBS–5	X: 479289.1584, Y: 198711.4081
HH–4	INPLACE	PBS–6	X: 479312.1972, Y: 198635.8261
HH–5	X: 479296.9366, Y: 198602.4583	SC–1	X: 479200.6966, Y: 198572.6887
PBS–1	X: 479207.4601, Y: 198596.2737	CAC–1	
PBS–2	X: 479174.2497, Y: 198681.2614	SOP–1	INPLACE
		SV–1	X: 479216.9495, Y: 198575.1903

NO.	LOCATION		MAST ARM
	FOUNDATION (1)	AIM ARM TO	
MA–1	X: 479179.5868, Y: 198695.0799	X: 479186.5781 Y: 198654.0739	INPLACE
MA–2	X: 479178.1093, Y: 198694.8211	X: 479185.1006, Y: 198563.8151	INPLACE
MA–3	X: 479272.9759, Y: 198731.1733	X: 479236.7930, Y: 198725.7170	INPLACE
MA–4	X: 479323.9358, Y: 198630.2839	X: 479315.9053, Y: 198676.1902	INPLACE
SA–1	X: 479182.5770, Y: 198611.4653	–	–
SA–2	X: 479299.7486, Y: 198612.7541	–	–

(1) TO THE CENTER OF THE HANDHOLE OR CONCRETE FOUNDATION.

ALL COORDINATES ARE HENNEPIN COUNTY GROUND FEET, BASED ON THE MINNESOTA COORDINATE SYSTEM, SOUTHERN ZONE, NAD83 1986 (NON–HARN VALUES).

TYPICAL 4–SECTION SIGNAL HEAD PHASING WITH FLASHING YELLOW ARROW



SIGNAL INDICATIONS AND MOUNTING

SIG. POLE NO.	FACE NO.	SIGNAL FACE MOUNT	SIG. Ø	LED INDICATIONS 12" INDICATIONS RED	YEL	FYEL	GRN	PED	PLUMBIZER MOUNTING ANGLE.
MA–1	7–1	MAST ARM (END)	7	←	←		←		INPLACE
			8			←			
	4–2	MAST ARM (MID)	4	O	O		O		INPLACE
MA–2	1–1	MAST ARM (END)	1	←	←		←		INPLACE
			2			←			
	6–2	MAST ARM (MID)	6	O	O		O		INPLACE
	6–1	POLE MOUNT	6	O	O		O		180° ANGLE MOUNT PLUMBIZER
*	P6–2	POLE MOUNT	6					***	180° ANGLE MOUNT PLUMBIZER
	3–2	POLE MOUNT	3	←	←		←		90° ANGLE MOUNT PLUMBIZER
			4			←			
*	P4–1	POLE MOUNT	4					***	90° ANGLE MOUNT PLUMBIZER
MA–3	3–1	MAST ARM (END)	3	←	←		←		INPLACE
			4			←			
	8–2	MAST ARM (MID)	8	O	O		O		INPLACE
	8–1	POLE MOUNT	8	O	O		O		INPLACE
	P8–2	POLE MOUNT	8					INPLACE	INPLACE
	5–2	POLE MOUNT	5	←	←		←		INPLACE
			6			←			
*	P6–1	POLE MOUNT	6					***	90° ANGLE MOUNT PLUMBIZER
MA–4	5–1	MAST ARM (END)	5	←	←		←		INPLACE
			6			←			
	2–2	MAST ARM (MID)	2	O	O		O		INPLACE
SA–1	4–1	POLE MOUNT	4	O	O		O		STRAIGHT MOUNT PLUMBIZER
	P4–2	POLE MOUNT	4					***	STRAIGHT MOUNT PLUMBIZER
	1–2	POLE MOUNT	1	←	←		←		STRAIGHT MOUNT PLUMBIZER
			2			←			
*	P2–1	POLE MOUNT	2					S&R	STRAIGHT MOUNT PLUMBIZER
SA–2	2–1	POLE MOUNT	2	O	O		O		STRAIGHT MOUNT PLUMBIZER
	P2–2	POLE MOUNT	2					S&R	STRAIGHT MOUNT PLUMBIZER
	7–2	POLE MOUNT	7	←	←		←		STRAIGHT MOUNT PLUMBIZER
			8			←			
	P8–1	POLE MOUNT	8					S&R	STRAIGHT MOUNT PLUMBIZER

*** INTERNATIONAL SYMBOLS IN A DUAL FACE SIGNAL HOUSING WITH PEDESTRIAN COUNTDOWN TIMER.

S&R = SALVAGE AND REINSTALL

* REVISE SIGNAL SYSTEM WORK TO BE PERFORMED UNDER THIS CONTRACT SHALL BE NOTED WITH A [*] AND SHALL BE INCLUDED IN THE REVISE SIGNAL SYSTEM PAY ITEM. ALL OTHER ITEMS SHOWN ARE INPLACE.

No.	Date	Revisions	App.

DRAWING NAME: CHANKAHDA_PH3_Signal.dwg

DESIGNED BY:	BWS
DRAWN BY:	MBG
CHECKED BY:	BKV
DATE:	02/07/2025
PROJECT NO.	160662010

Kimley»Horn
767 EUSTIS STREET, SUITE 100, ST, PAUL, MN 55114
PHONE: 651–645–4197
WWW.KIMLEY–HORN.COM

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

BRIAN K. VILLA, PE

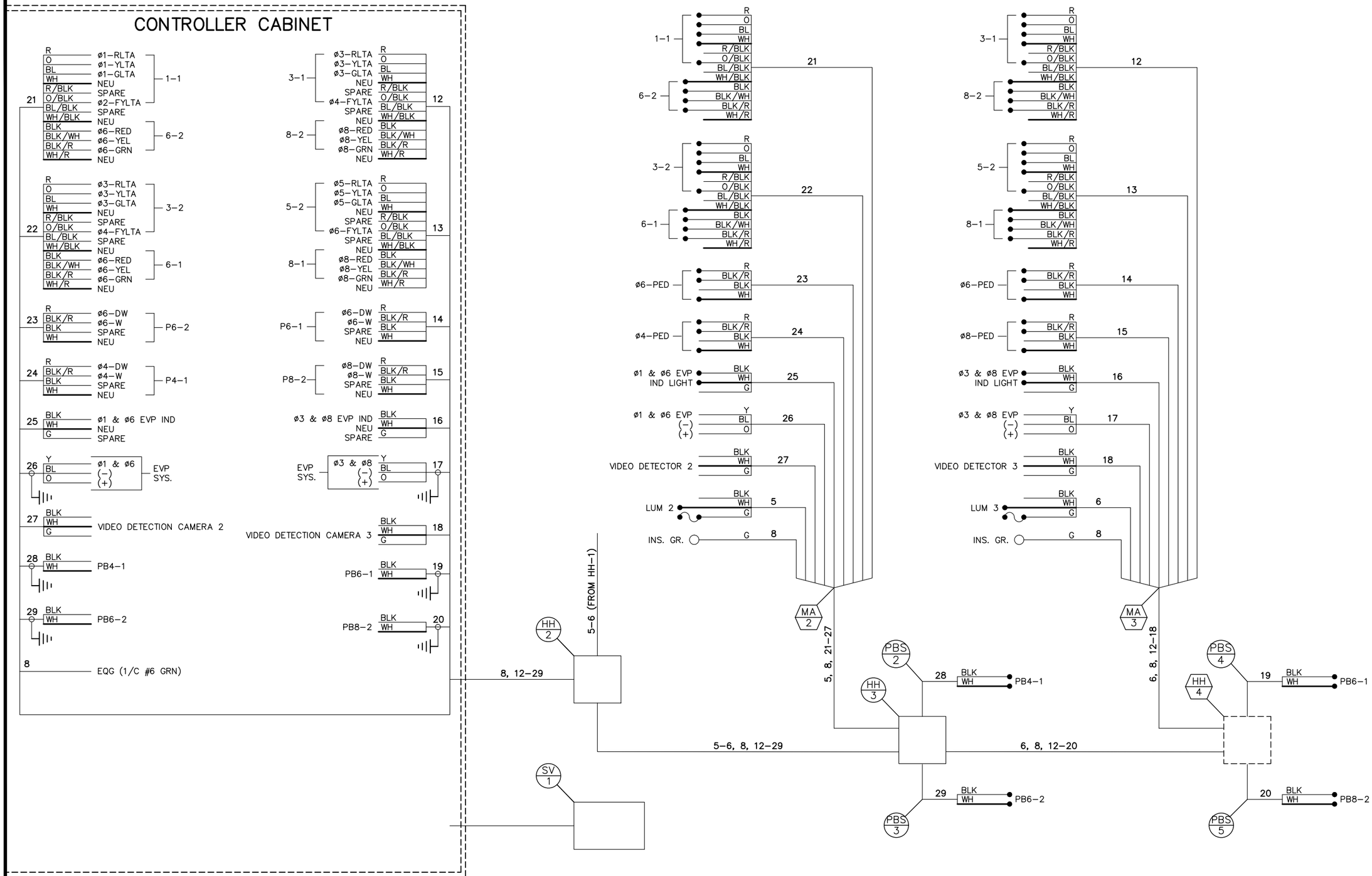
DATE: 02/07/2025 MN LIC. NO. 56090

City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
TRAFFIC SIGNAL PLANS
REVISE SIGNAL SYSTEM A
TABULATIONS

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155–210–003
S.A.P.	

SHEET NO. 257 / 354



No.	Date	Revisions	App.

DRAWING NAME: CHANKAHDA_PH3_Signal.dwg

DESIGNED BY:	BWS
DRAWN BY:	MBG
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DATE:	02/07/2025
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BRIAN K. VILLA, PE

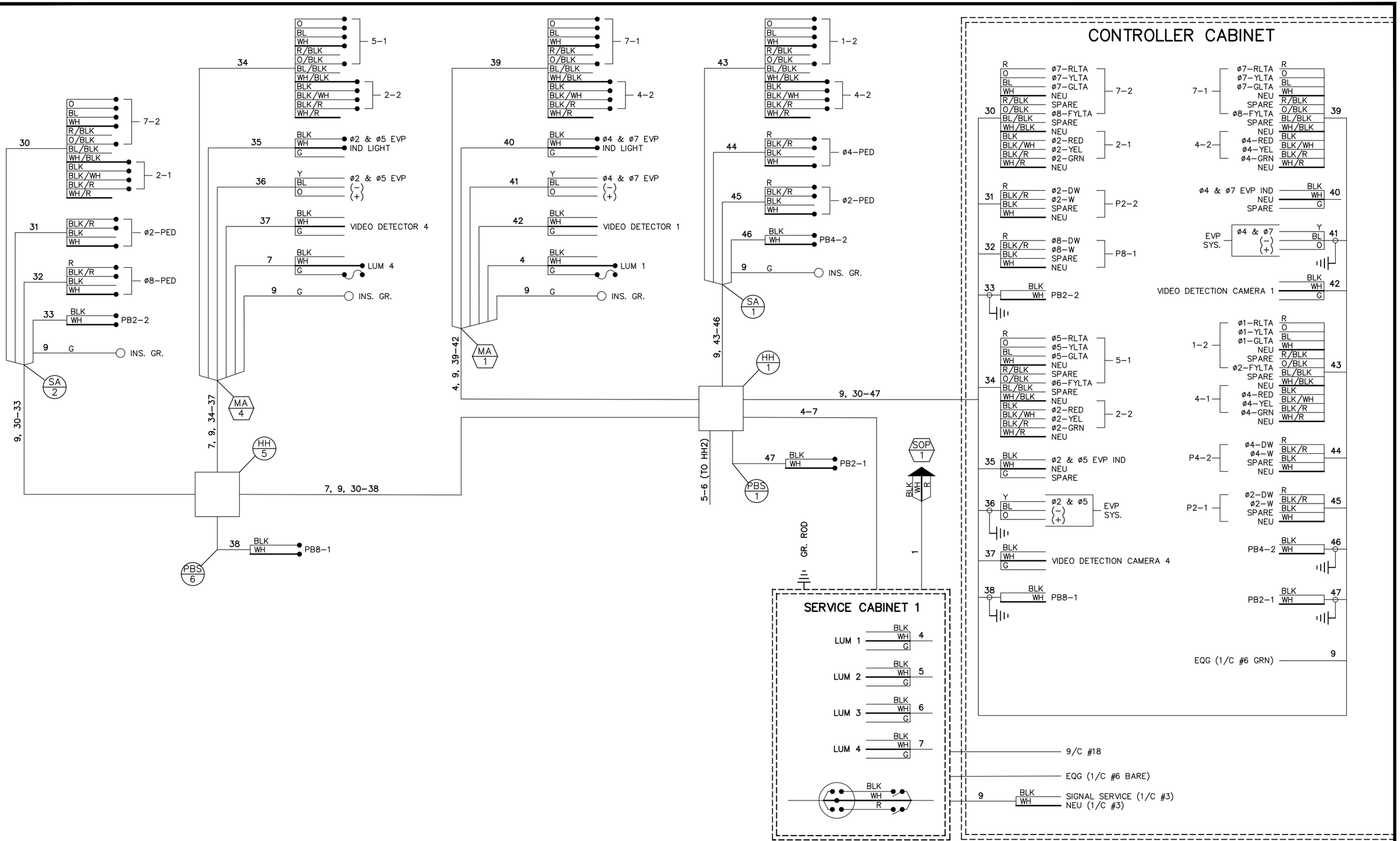
DATE: 02/07/2025 MN LIC. NO. 56090

City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
TRAFFIC SIGNAL PLANS
REVISE SIGNAL SYSTEM A
FIELD WIRING DIAGRAM (1 OF 2)

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155–210–003
S.A.P.	

SHEET NO. 258 / 354



No.	Date	Revisions	App.

DRAWING NAME	CHANKAHDA_PH3_Signal.dwg
DESIGNED BY:	BWS
DRAWN BY:	MBG
CHECKED BY:	BKV
DATE:	02/07/2025
PROJECT NO.	160662010

Kimley»Horn
767 EUSTIS STREET, SUITE 100, ST, PAUL, MN 55114
PHONE: 651-645-4197
WWW.KIMLEY-HORN.COM

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

BRIAN K. VILLA, PE

DATE: 02/07/2025 MN LIC. NO. 56090

City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
TRAFFIC SIGNAL PLANS
REVISE SIGNAL SYSTEM A
FIELD WIRING DIAGRAM (2 OF 2)

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

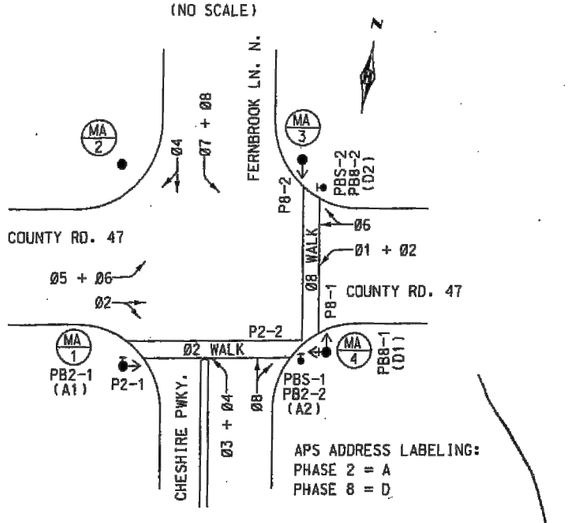
SHEET NO. 259 / 354

4- CAMERAS

FOR INFORMATION ONLY

CONTROLLER PHASING LAYOUT

(NO SCALE)



APS ADDRESS LABELING:
PHASE 2 = A
PHASE 8 = D

SIGNAL SYSTEM OPERATION

- SIGNAL SYSTEM FLASH MODE IS ALL RED.
- PHASES 2 AND 6 ARE ON VEHICLE RECALL.
- PHASES 1, 3, 5, AND 7 WITH FLASHING YELLOW ARROWS.

SOP-1 TO HH-1
HH-1 TO SP-1
2" RSC
3- 1/C #3

SP-1 TO CAC-1
2" RSC
2- 1/C #3
1- 1/C #6 GRN
2" RSC
1- 9/C #18

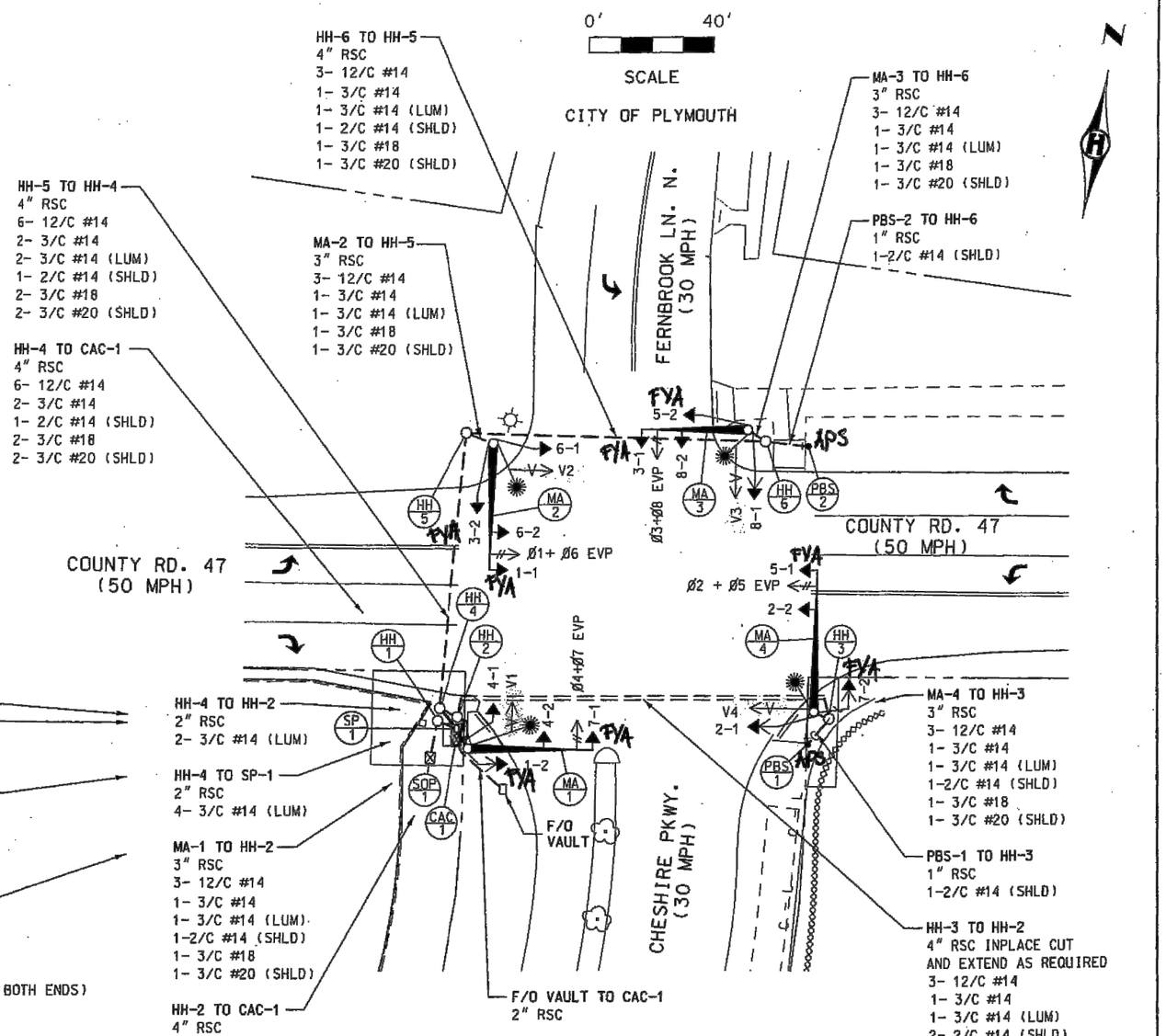
CAC-1
4" RSC STUB
2" RSC STUB
1" RSC STUB
(THREAD AND CAP BOTH ENDS)

HH-6 TO HH-5
4" RSC
3- 12/C #14
1- 3/C #14
1- 3/C #14 (LUM)
1- 2/C #14 (SHLD)
1- 3/C #18
1- 3/C #20 (SHLD)

HH-5 TO HH-4
4" RSC
6- 12/C #14
2- 3/C #14
2- 3/C #14 (LUM)
1- 2/C #14 (SHLD)
2- 3/C #18
2- 3/C #20 (SHLD)

MA-2 TO HH-5
3" RSC
3- 12/C #14
1- 3/C #14
1- 3/C #14 (LUM)
1- 3/C #18
1- 3/C #20 (SHLD)

HH-4 TO CAC-1
4" RSC
6- 12/C #14
2- 3/C #14
1- 2/C #14 (SHLD)
2- 3/C #18
2- 3/C #20 (SHLD)



HH-4 TO HH-2
2" RSC
2- 3/C #14 (LUM)

HH-4 TO SP-1
2" RSC
4- 3/C #14 (LUM)

MA-1 TO HH-2
3" RSC
3- 12/C #14
1- 3/C #14
1- 3/C #14 (LUM)
1-2/C #14 (SHLD)
1- 3/C #18
1- 3/C #20 (SHLD)

HH-2 TO CAC-1
4" RSC
6- 12/C #14
2- 3/C #14
3- 2/C #14 (SHLD)
2- 3/C #18
2- 3/C #20 (SHLD)

F/O VAULT TO CAC-1
2" RSC

MA-3 TO HH-6
3" RSC
3- 12/C #14
1- 3/C #14
1- 3/C #14 (LUM)
1- 3/C #18
1- 3/C #20 (SHLD)

PBS-2 TO HH-6
1" RSC
1-2/C #14 (SHLD)

MA-4 TO HH-3
3" RSC
3- 12/C #14
1- 3/C #14
1- 3/C #14 (LUM)
1-2/C #14 (SHLD)
1- 3/C #18
1- 3/C #20 (SHLD)

PBS-1 TO HH-3
1" RSC
1-2/C #14 (SHLD)

HH-3 TO HH-2
4" RSC INPLACE CUT
AND EXTEND AS REQUIRED
3- 12/C #14
1- 3/C #14
1- 3/C #14 (LUM)
2- 2/C #14 (SHLD)
1- 3/C #18
1- 3/C #20 (SHLD)

SEE SHEET S7 FOR ADDITIONAL NOTES

Hennepin

I HEREBY CERTIFY THAT THESE SIGNAL PLANS WERE PREPARED BY ME OR UNDER MY DIRECT SUPERVISION, THAT THIS PLAN CONFORMS TO THE CURRENT MN MUTCD (EXCEPT WHERE A VARIANCE HAS BEEN GRANTED), AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

MAURY J. HOOPER, PROFESSIONAL ENGINEER — 26435 LICENSE NO. — 4/29/15 DATE

DESIGN BY: J. WING
CAD BY: J. WING
CHECKED BY: J. WANNER
LAST REVISION:

SIGNAL PLAN LAYOUT SHEET

CO. RD. 47 AT CHESHIRE PKWY. / FERNBROOK LN. N.
I.D. NO. 8057975

SHEET S6 / S12

No.	Date	Revisions	App.

DRAWING NAME: CHANKAHDA_PH3_Signal.dwg
DESIGNED BY: BWS
DRAWN BY: MBG
CHECKED BY: BKV
DATE: 02/07/2025
PROJECT NO. 160662010

Kimley»Horn
767 EUSTIS STREET, SUITE 100, ST, PAUL, MN 55114
PHONE: 651-645-4197
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City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
TRAFFIC SIGNAL PLANS
REVISE SIGNAL SYSTEM A
FOR INFORMATION ONLY - INTERSECTION LAYOUT

CITY PROJECT ST240002
COUNTY PROJECT
S.A.P. 155-210-003
S.A.P.

SHEET NO. 260 / 354

BLACK HEADS

NOTES:

1.) ONE APS PEDESTRIAN PUSH BUTTON WITH SIGN R10-3E (9" X 15") SHALL BE INSTALLED ON EACH PUSH BUTTON STATION FOR OPERATIONAS SHOWN IN THE PHASING LAYOUT.

2.) ONE LED LUMINAIRE SHALL BE INSTALLED ON EACH MAST ARM LUMINAIRE SHAFT EXTENSION. SEE SPECIAL PROVISIONS.

3.) INSTALL ONE VIDEO DETECTION CAMERA ON EACH DAVIT ARM.

4.) INSTALL ONE R10-X12 SIGN (36" X 42") ON THE MAST ARM OF MA-1, MA-2, MA-3, AND MA-4, AND MOUNTED TO SIGN BRACKET "D."

5.) INSTALL ONE R9-3 SIGN (18" X 18") ON THE UPRIGHT POLE OF MA-2 FACING MA-1, ONE ON MA-1 FACING MA-2, ONE ON MA-2 FACING MA-3, AND ONE ON MA-3 FACING MA-2 AS DIRECTED BY THE ENGINEER.

6.) THE CITY WILL BE BILLED FOR ALL TRAFFIC SIGNAL SYSTEM POWER COSTS AND WHICH THE CITY WILL PAY TO THE POWER COMPANY.
HENNEPIN COUNTY SHALL NOT BE BILLED.
THE CONTRACTOR SHALL BE RESPONSIBLE TO PROVIDE TO THE POWER COMPANY THE FOLLOWING BILLING INFORMATION. THE CITY OF PLYMOUTH
3400 PLYMOUTH BOULEVARD, PLYMOUTH, MN 55447-1482

7.) VERIFY ALL UTILITY LOCATIONS PRIOR TO CONSTRUCTION.

8.) PLACE COMMON BACK FILL AND RESTORE ALL DISTURBED TURF, CONCRETE OR BITUMINOUS WALK, ETC. TO ITS ORIGINAL CONDITION OR BETTER.

9.) THE INPLACE GRADES ADJACENT TO THE INPLACE CONCRETE RAMPS IN THE SOUTHEAST AND SOUTHWEST QUADRANTS ARE LOW AND NOT THE FINAL GRADE. ADDITIONAL FILL SHALL BE PLACED AND COMPACTED TO RAISE THE GRADE SO THAT PROPOSED SIGNAL HANDHOLES AND FIBER OPTIC VAULT WILL BE INSTALLED AT THE FINISHED GRADE AND TO MAINTAIN INPLACE DRAINAGE PATTERNS TO THE ADJACENT DITCHES.

10.) DESIGN PERSONNEL SHALL BE CONSULTED PRIOR TO FINAL INSTALLATION IF ANY PROPOSED SIGNAL STRUCTURE CAN NOT BE INSTALLED AS FIELD STAKED AND AS DETAILED IN THIS PLAN FOR ANY REASON AND FIELD MODIFICATION IS REQUIRED.

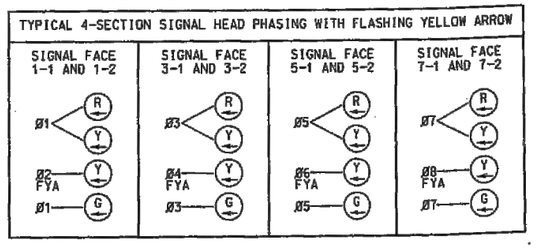
3-SECT. BALL = 8
4-SECT. ARROW = 8 (FYA)
4 = COUNTDOWN TIMERS
4 = FYA SIGNS
4 = 10-B BRACKET
4 = 10-A BRACKET
1 = EVP SYSTEM
2 = APS-P.B. STATION
4 - LED LUMINAIRE
1 - VIDEO DETECTION SYSTEM
1 - BATTERY BACKUP

SIGNAL INDICATIONS AND BRACKETING

SIG. POLE NO.	FACE NO.	SIGNAL FACE MOUNT	SIG. Ø	LED INDICATIONS 12" INDICATIONS RED	YEL	FYEL	GRN	PED SYM.	BRACKET MOUNTING ANGLE, TYPE, AND STANDARD PLATE NO.
MA-1	7-1	MAST ARM (END)	7	←	←		←		**
			8			←			
	4-2	MAST ARM (MID)	4	●	●		●		**
	4-1	POLE MOUNT	4	●	●		●		180° PLATE 8110E TYPE 10A
	1-2	POLE MOUNT	1	←	←		←		90° PLATE 8110E TYPE 10B
			2			←			
			2					*	
MA-2	1-1	MAST ARM (END)	1	←	←		←		**
			2			←			
	6-2	MAST ARM (MID)	6	●	●		●		**
	6-1	POLE MOUNT	6	●	●		●		180° PLATE 8110E TYPE 10A
	3-2	POLE MOUNT	3	←	←		←		90° PLATE 8110E TYPE 10A
			4			←			
MA-3	3-1	MAST ARM (END)	3	←	←		←		**
			4			←			
	8-2	MAST ARM (MID)	8	●	●		●		**
	8-1	POLE MOUNT	8	●	●		●	*	180° PLATE 8110E TYPE 10B
	5-2	POLE MOUNT	5	←	←		←		90° PLATE 8110E TYPE 10A
			6			←			
MA-4	5-1	MAST ARM (END)	5	←	←		←		**
			6			←			
	2-2	MAST ARM (MID)	2	●	●		●		**
	2-1	POLE MOUNT	2	●	●		●	*	180° PLATE 8110E TYPE 10B
	7-2	POLE MOUNT	7	←	←		←		90° PLATE 8110E TYPE 10B
			8			←			
			8					*	

* PEDESTRIAN INDICATIONS SHALL BE INTERNATIONAL SYMBOLS IN A DUAL FACE SINGLE HOUSING WITH PEDESTRIAN COUNTDOWN TIMER.
** STRAIGHT MOUNT PLUMBIZER, SEE SPECIAL PROVISIONS.

TYPICAL 4-SECTION SIGNAL HEAD PHASING WITH FLASHING YELLOW ARROW



I HEREBY CERTIFY THAT THESE SIGNAL PLANS WERE PREPARED BY ME OR UNDER MY DIRECT SUPERVISION, THAT THIS PLAN CONFORMS TO THE CURRENT MN MUTCD (EXCEPT WHERE A VARIANCE HAS BEEN GRANTED), AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

MAURY J. HOOPER, PROFESSIONAL ENGINEER — 26435 LICENSE NO. — 4/29/15 DATE

DESIGN BY: J. WING
CAD BY: J. WING
CHECKED BY: J. WANNER
LAST REVISION:

SIGNAL TABULATION SHEET

CO. RD. 47 AT CHESHIRE PKWY. / FERNBROOK LN. N.
I.D. NO. 8057975

SHEET S7 / S12

FOR INFORMATION ONLY

No.	Date	Revisions	App.

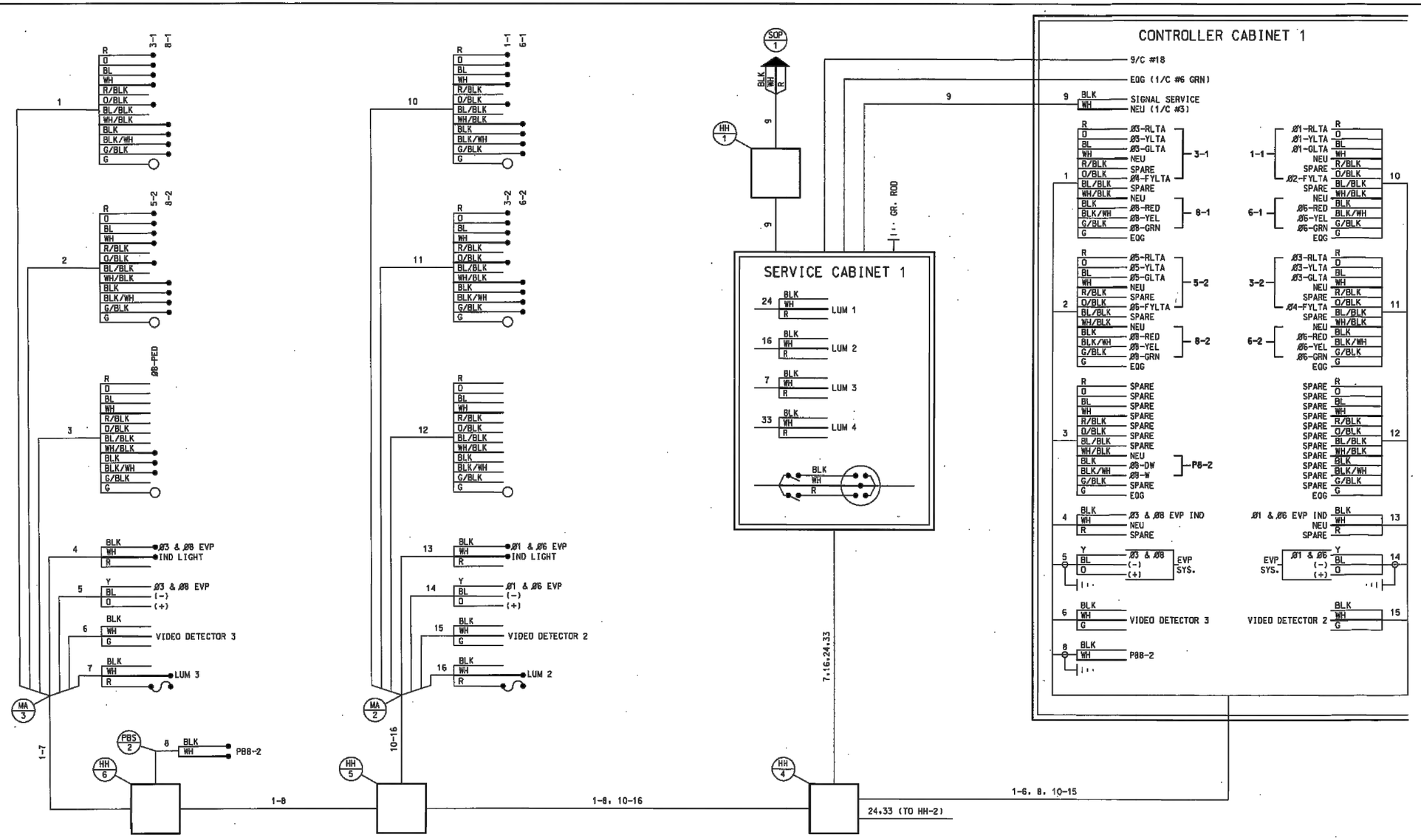
DRAWING NAME: CHANKAHDA_PH3_Signal.dwg
DESIGNED BY: BWS
DRAWN BY: MBG
CHECKED BY: BKV
DATE: 02/07/2025
PROJECT NO. 160662010

Kimley»Horn
767 EUSTIS STREET, SUITE 100, ST. PAUL, MN 55114
PHONE: 651-645-4197
WWW.KIMLEY-HORN.COM

City of Plymouth
CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
TRAFFIC SIGNAL PLANS
REVISE SIGNAL SYSTEM A
FOR INFORMATION ONLY - TABULATIONS

CITY PROJECT ST240002
COUNTY PROJECT
S.A.P. 155-210-003
S.A.P.

SHEET NO. 261 / 354



I HEREBY CERTIFY THAT THESE SIGNAL PLANS WERE PREPARED BY ME OR UNDER MY DIRECT SUPERVISION, THAT THIS PLAN CONFORMS TO THE CURRENT MN MUTCD (EXCEPT WHERE A VARIANCE HAS BEEN GRANTED), AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

MAURY J. HOOPER, PROFESSIONAL ENGINEER — LICENSE NO. 26435 — DATE 4/29/15

DESIGN BY: J. WING
CAD BY: J. WING
CHECKED BY: J. WANNER
LAST REVISION:

FIELD WIRING DIAGRAM

CO. RD. 47 AT CHESHIRE PKWY. / FERNBROOK LN. N.
I.D. NO. 8057975

SHEET S8 / S12

FOR INFORMATION ONLY

No.	Date	Revisions	App.

DRAWING NAME: CHANKAHDA_PH3_Signal.dwg

DESIGNED BY:	BWS
DRAWN BY:	MBG
CHECKED BY:	BKV
DATE:	02/07/2025
PROJECT NO.	160662010

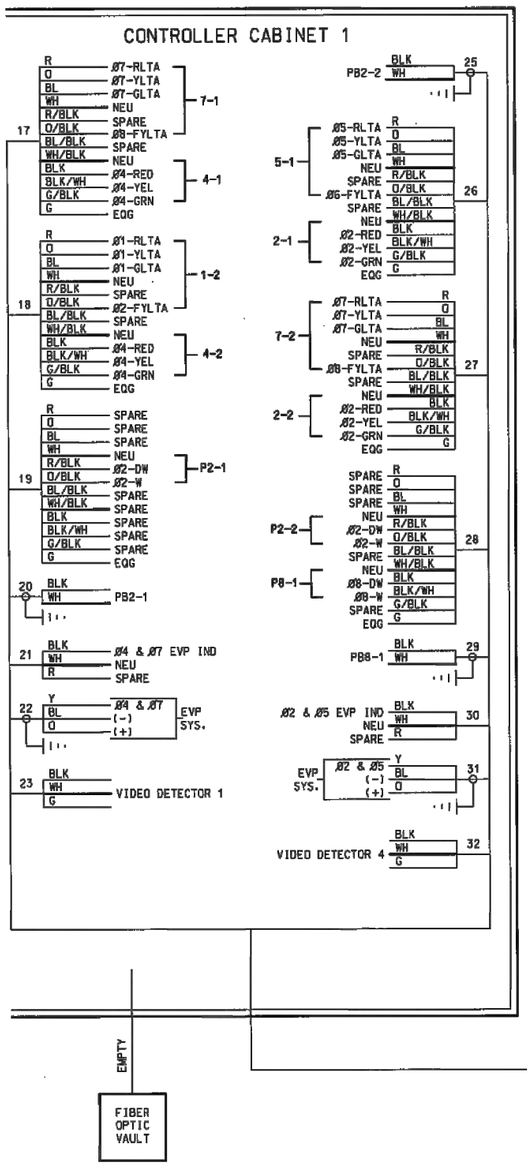
Kimley»Horn
767 EUSTIS STREET, SUITE 100, ST. PAUL, MN 55114
PHONE: 651-645-4197
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City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
TRAFFIC SIGNAL PLANS
REVISE SIGNAL SYSTEM A
FOR INFORMATION ONLY - FIELD WIRING DIAGRAM (1 OF 2)

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 262 / 354



I HEREBY CERTIFY THAT THESE SIGNAL PLANS WERE PREPARED BY ME OR UNDER MY DIRECT SUPERVISION, THAT THIS PLAN CONFORMS TO THE CURRENT MN MUTCD (EXCEPT WHERE A VARIANCE HAS BEEN GRANTED), AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

MAURY J. HOOPER, PROFESSIONAL ENGINEER | 26435 LICENSE NO. | 4/29/15 DATE

DESIGN BY: J. WING
CAD BY: J. WING
CHECKED BY: J. WANNER
LAST REVISION:

FIELD WIRING DIAGRAM

CO. RD. 47 AT CHESHIRE PKWY. / FERNBROOK LN. N.
I.D. NO. 8057975

SHEET S9 / S12

FOR INFORMATION ONLY

No.	Date	Revisions	App.

DRAWING NAME: CHANKAHDA_PH3_Signal.dwg

DESIGNED BY:	BWS
DRAWN BY:	MBG
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DATE:	02/07/2025
PROJECT NO.	160662010

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City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
TRAFFIC SIGNAL PLANS
REVISE SIGNAL SYSTEM A
FOR INFORMATION ONLY - FIELD WIRING DIAGRAM (2 OF 2)

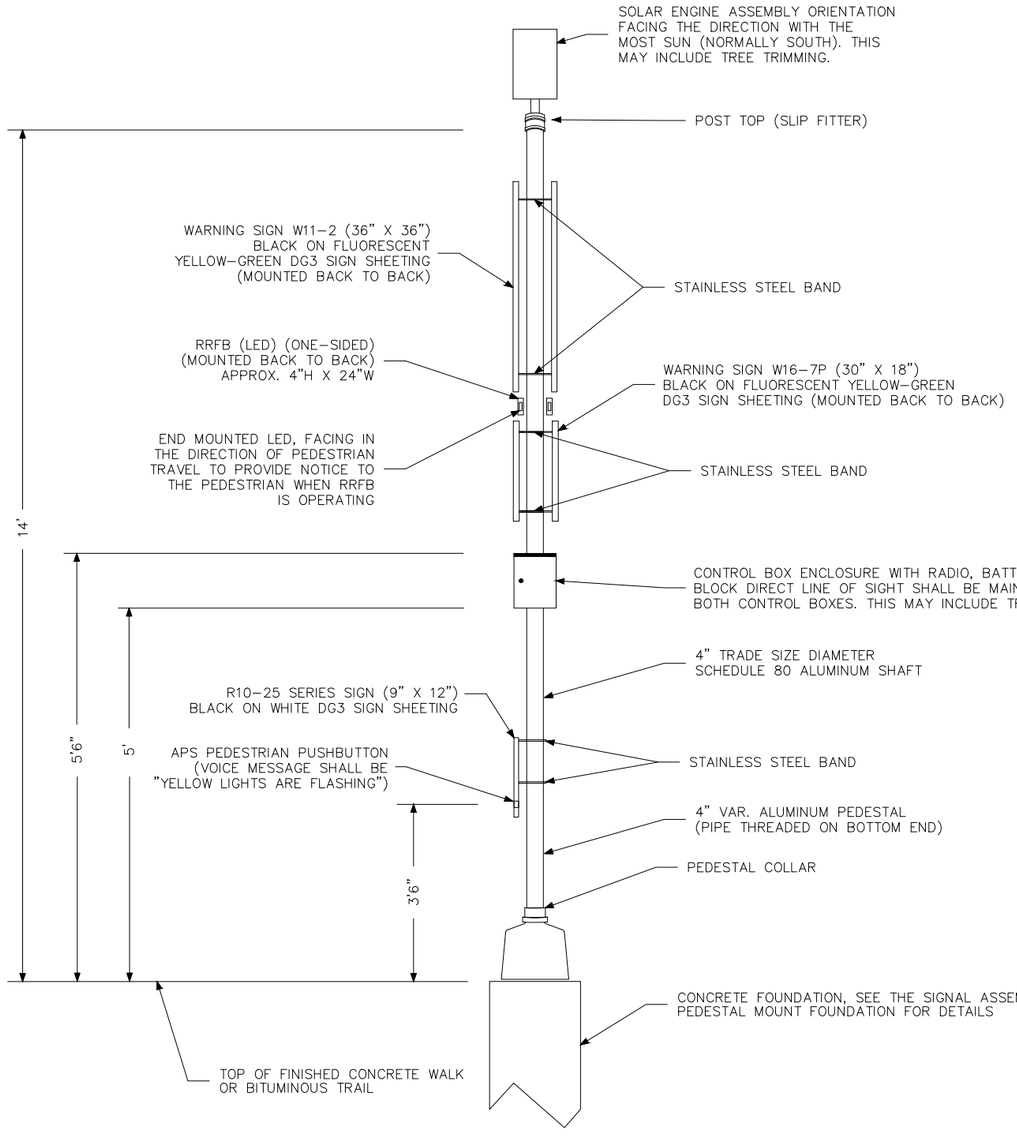
CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 263 / 354

SA 1 SA 2

PEDESTRIAN FLASHER ASSEMBLY PEDESTAL MOUNT
RECTANGULAR RAPID FLASHING BEACON LED (RRFB) SOLAR POWERED

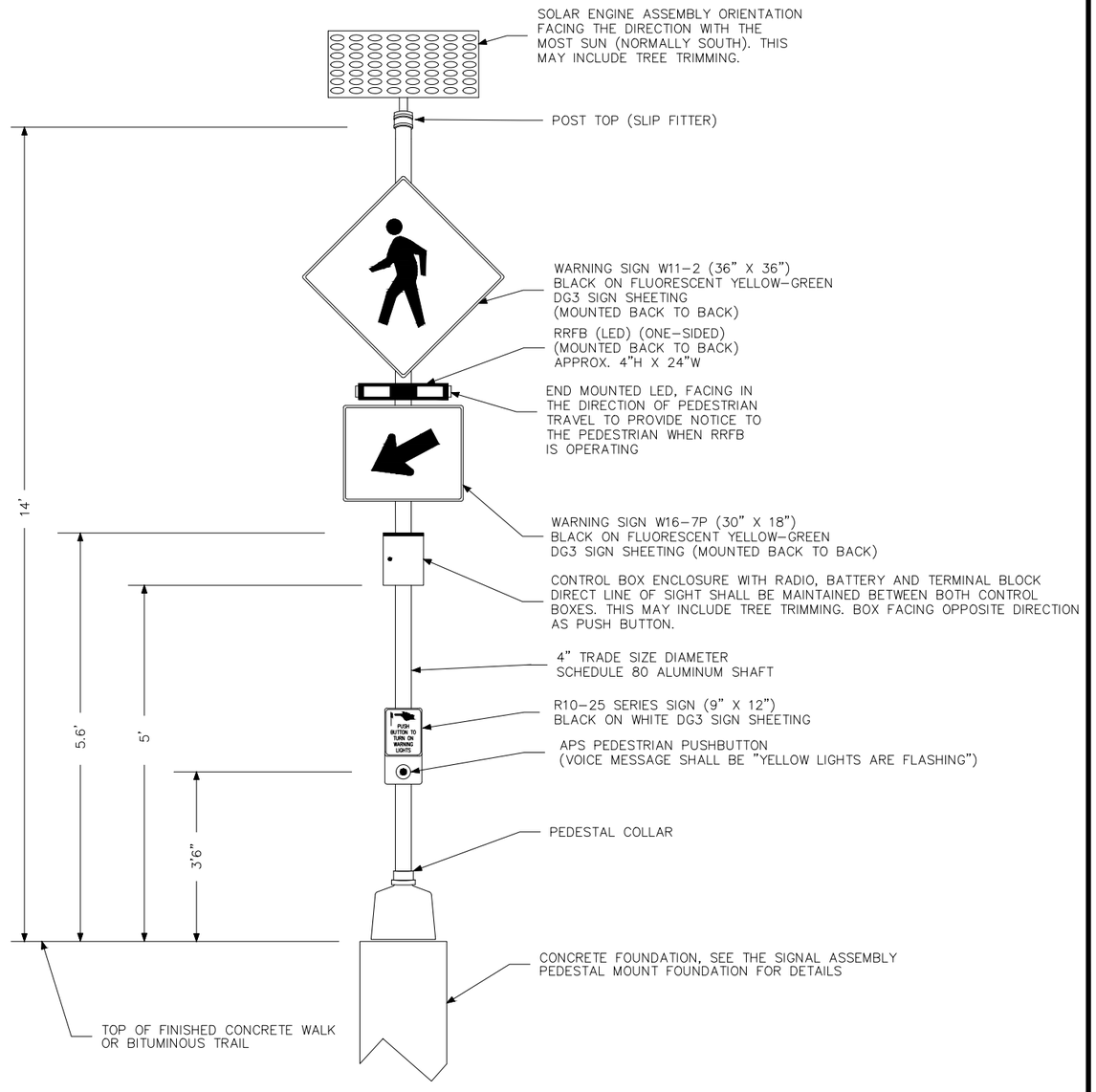
(NO SCALE)



SA 1 SA 2

PEDESTRIAN FLASHER ASSEMBLY PEDESTAL MOUNT
RECTANGULAR RAPID FLASHING BEACON LED (RRFB) SOLAR POWERED

(NO SCALE)



No.	Date	Revisions	App.

DRAWING NAME: CHANKAHDA_PH3_SignalRRFB.dwg

DESIGNED BY:	BWS
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DATE:	02/07/2025
PROJECT NO.	160662010

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BRIAN K. VILLA, PE

DATE: 02/07/2025 MN LIC. NO. 56090

City of Plymouth

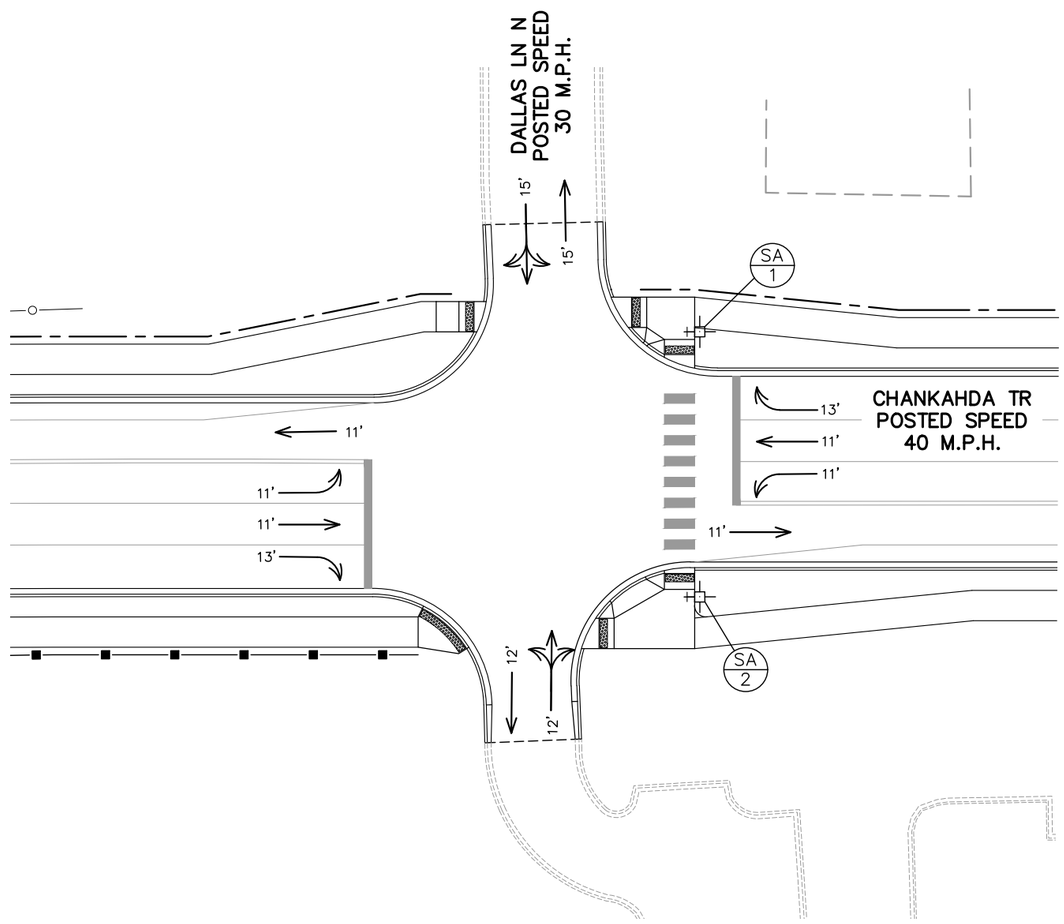
CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
TRAFFIC SIGNAL PLANS
PEDESTRIAN CROSSWALK FLASHER SYSTEM B
PEDESTRIAN FLASHER ASSEMBLY PEDESTAL DETAILS

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 264 / 354

NOTES:
1. SEE SPECIAL PROVISIONS FOR ADDITIONAL REQUIREMENTS.
2. ONE APS PEDESTRIAN PUSH BUTTON WITH SIGN R10-25 (9" X 12") SHALL BE INSTALLED ON SA-1 AND SA-2 FOR OPERATION AS SHOWN IN THE PLANS.
3. THE CONTRACTOR SHALL PLACE COMMON BACK FILL AND RESTORE ALL DISTURBED TURF, CONCRETE OR BITUMINOUS WALK, ETC. TO ITS ORIGINAL CONDITION OR BETTER.
4. THE CONTRACTOR SHALL VERIFY ALL UTILITY LOCATIONS PRIOR TO CONSTRUCTION.
5. EXACT LOCATIONS OF POLES AND BASES SHALL BE DETERMINED IN THE FIELD.
6. THE CONTRACTOR SHALL SUBMIT RRFB AND SIGN PANEL ATTACHMENT DETAILS FOR APPROVAL TO THE ENGINEER. THE CONTRACTOR SHALL FURNISH AND INSTALL ALL RRFB, CONTROLLER, SIGN PANEL, PEDESTAL POLE AND ATTACHMENT HARDWARE.
7. ALL WORK AS DETAILED IN NOTES 1-6 SHALL BE DIRECTED BY AND TO THE SATISFACTION OF THE ENGINEER AND ALL COSTS SHALL BE INCLUDED IN THE UNIT PRICE BID FOR PEDESTRIAN CROSSWALK FLASHER SYSTEM (SYS).
8. REMOVAL OF INPLACE RRFB IS INCIDENTAL.

0 10 20 40
HORIZONTAL SCALE IN FEET



SIGNAL STRUCTURE LOCATIONS	
NO.	LOCATION (1)
SA-1	X: 480304.3387, Y: 198770.9188
SA-2	X: 480301.9962, Y: 198700.9936

(1) TO THE CENTER OF THE CONCRETE FOUNDATION.

ALL COORDINATES ARE HENNEPIN COUNTY GROUND FEET, BASED ON THE MINNESOTA COORDINATE SYSTEM, SOUTHERN ZONE, NAD83 1986 (NON-HARN VALUES).

No.	Date	Revisions	App.

DRAWING NAME: CHANKAHDA_PH3_SignalRRFB.dwg

DESIGNED BY:	BWS
DRAWN BY:	MBG
CHECKED BY:	BKV
DATE:	02/07/2025
PROJECT NO.	160662010

Kimley»Horn
767 EUSTIS STREET, SUITE 100, ST, PAUL, MN 55114
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WWW.KIMLEY-HORN.COM

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BRIAN K. VILLA, PE
DATE: 02/07/2025 MN LIC. NO. 56090

City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
TRAFFIC SIGNAL PLANS
PEDESTRIAN CROSSWALK FLASHER SYSTEM B
INTERSECTION LAYOUT

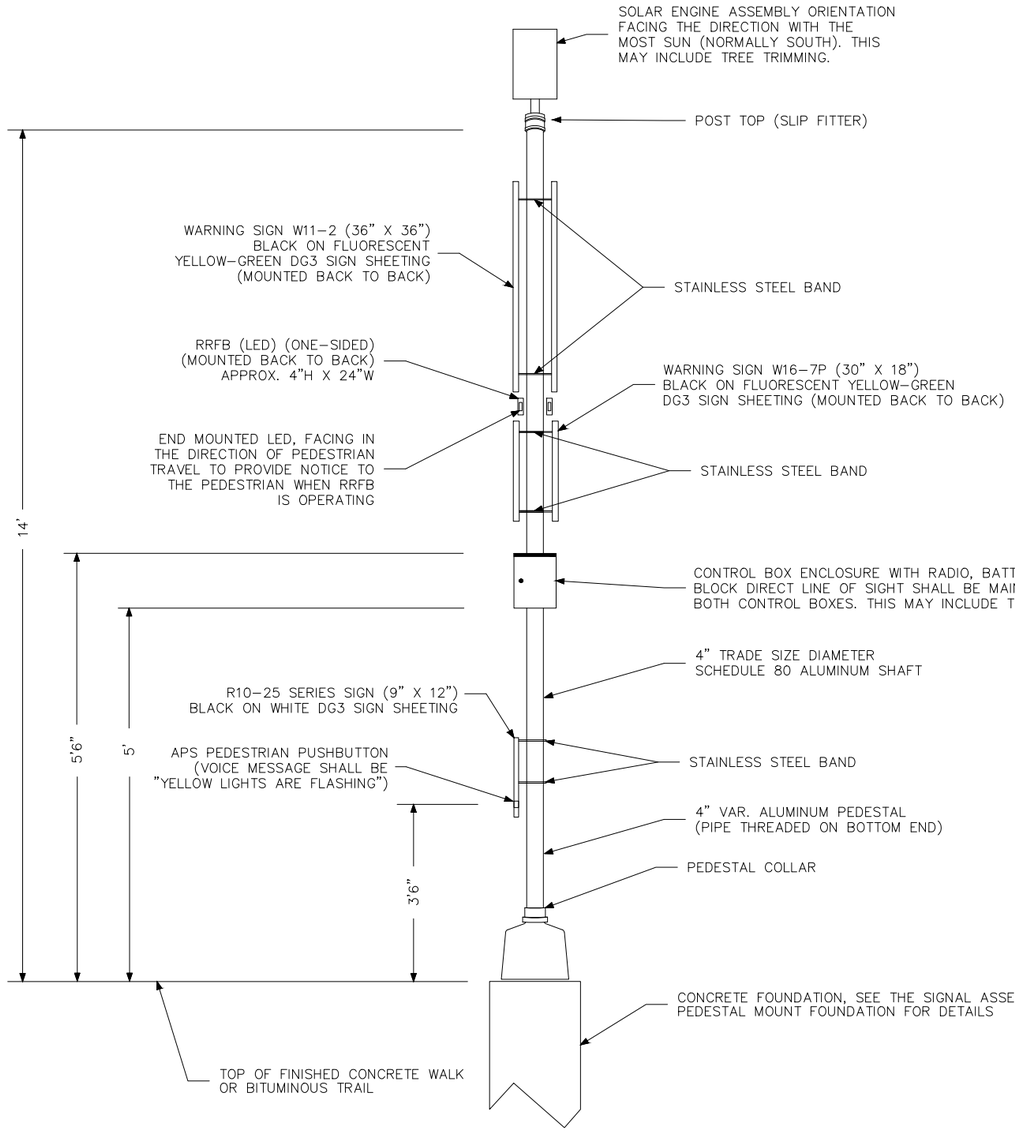
CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 265 / 354

SA 1 SA 2

PEDESTRIAN FLASHER ASSEMBLY PEDESTAL MOUNT
RECTANGULAR RAPID FLASHING BEACON LED (RRFB) SOLAR POWERED

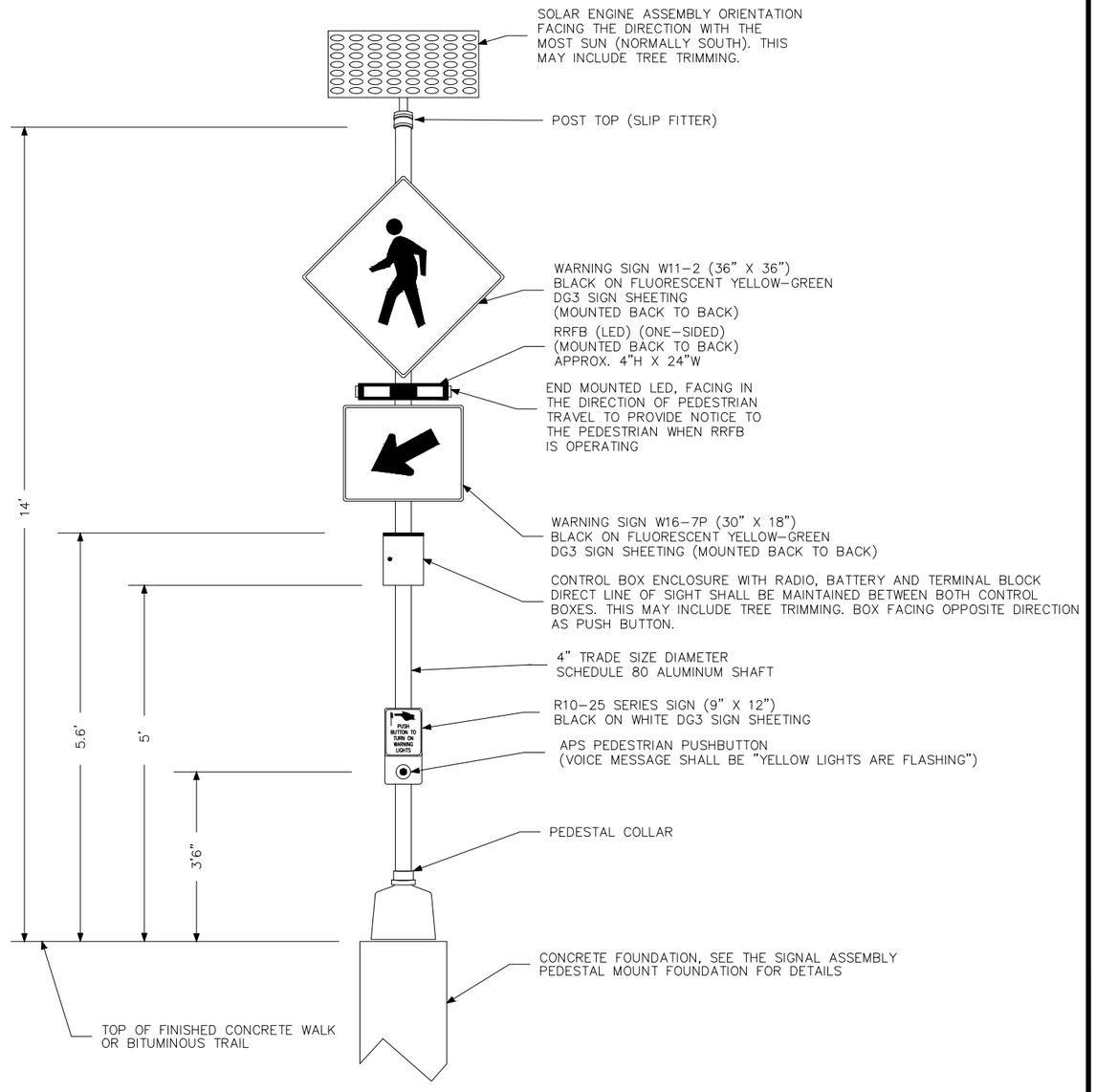
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SA 1 SA 2

PEDESTRIAN FLASHER ASSEMBLY PEDESTAL MOUNT
RECTANGULAR RAPID FLASHING BEACON LED (RRFB) SOLAR POWERED

(NO SCALE)



No.	Date	Revisions	App.

DRAWING NAME: CHANKAHDA_PH3_SignalRRFB.dwg

DESIGNED BY:	BWS
DRAWN BY:	MBG
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DATE:	02/07/2025
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BRIAN K. VILLA, PE

DATE: 02/07/2025 MN LIC. NO. 56090

City of Plymouth

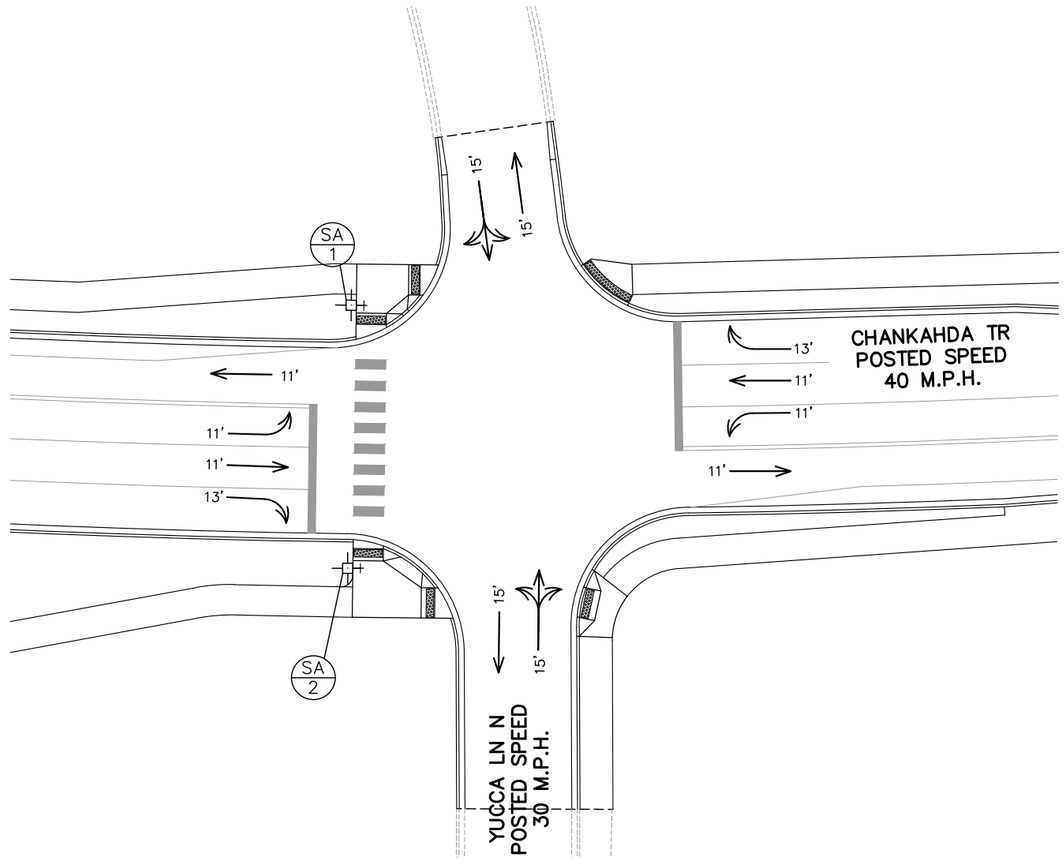
CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
TRAFFIC SIGNAL PLANS
PEDESTRIAN CROSSWALK FLASHER SYSTEM C
PEDESTRIAN FLASHER ASSEMBLY PEDESTAL DETAILS

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 266 / 354

NOTES:
1. SEE SPECIAL PROVISIONS FOR ADDITIONAL REQUIREMENTS.
2. ONE APS PEDESTRIAN PUSH BUTTON WITH SIGN R10-25 (9" X 12") SHALL BE INSTALLED ON SA-1 AND SA-2 FOR OPERATION AS SHOWN IN THE PLANS.
3. THE CONTRACTOR SHALL PLACE COMMON BACK FILL AND RESTORE ALL DISTURBED TURF, CONCRETE OR BITUMINOUS WALK, ETC. TO ITS ORIGINAL CONDITION OR BETTER.
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7. ALL WORK AS DETAILED IN NOTES 1-6 SHALL BE DIRECTED BY AND TO THE SATISFACTION OF THE ENGINEER AND ALL COSTS SHALL BE INCLUDED IN THE UNIT PRICE BID FOR PEDESTRIAN CROSSWALK FLASHER SYSTEM (SYS).

0 10 20 40
HORIZONTAL
SCALE IN FEET



SIGNAL STRUCTURE LOCATIONS	
NO.	LOCATION (1)
SA-1	X: 482364.2641, Y: 198203.1952
SA-2	X: 482363.7277, Y: 198133.7937

(1) TO THE CENTER OF THE CONCRETE FOUNDATION.

ALL COORDINATES ARE HENNEPIN COUNTY GROUND FEET, BASED ON THE MINNESOTA COORDINATE SYSTEM, SOUTHERN ZONE, NAD83 1986 (NON-HARN VALUES).

No.	Date	Revisions	App.

DRAWING NAME: CHANKAHDA_PH3_SignalRRFB.dwg

DESIGNED BY:	BWS
DRAWN BY:	MBG
CHECKED BY:	BKV
DATE:	02/07/2025
PROJECT NO.	160662010

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BRIAN K. VILLA, PE
DATE: 02/07/2025 MN LIC. NO. 56090

City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
TRAFFIC SIGNAL PLANS
PEDESTRIAN CROSSWALK FLASHER SYSTEM C
INTERSECTION LAYOUT

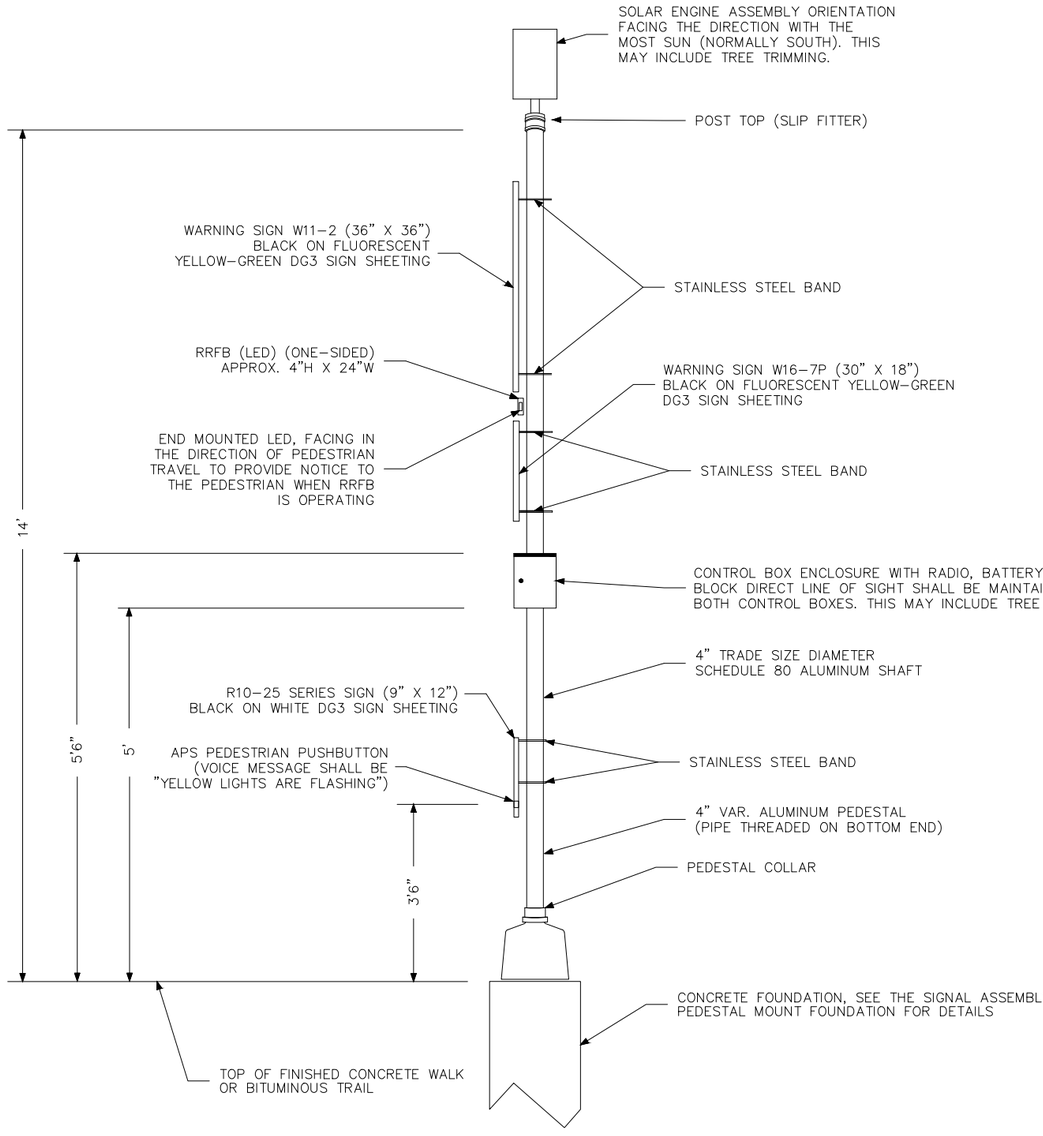
CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 267 / 354

SA 1 SA 3

PEDESTRIAN FLASHER ASSEMBLY PEDESTAL MOUNT
RECTANGULAR RAPID FLASHING BEACON LED (RRFB) SOLAR POWERED

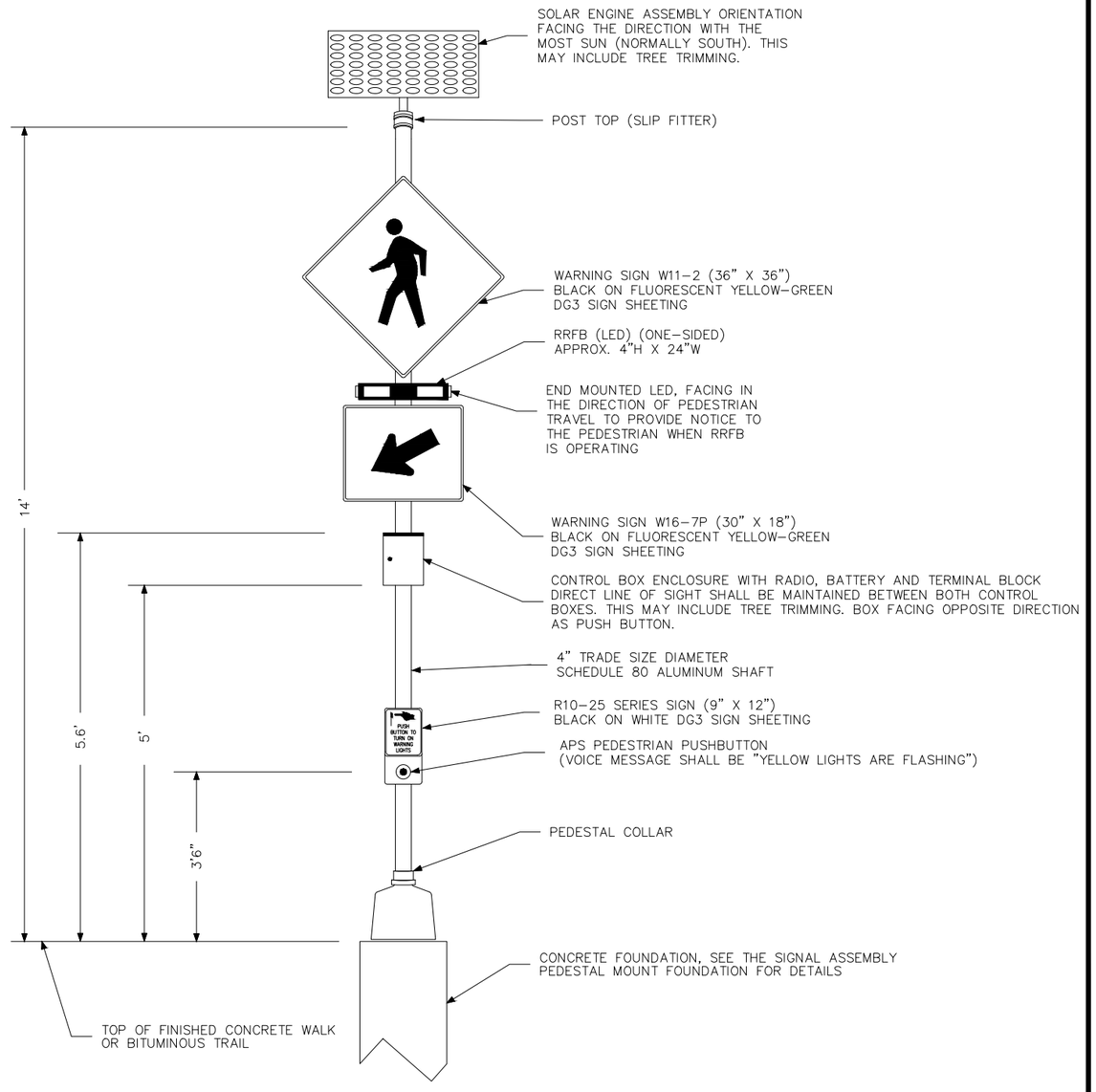
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SA 1 SA 3

PEDESTRIAN FLASHER ASSEMBLY PEDESTAL MOUNT
RECTANGULAR RAPID FLASHING BEACON LED (RRFB) SOLAR POWERED

(NO SCALE)



No.	Date	Revisions	App.

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DATE: 02/07/2025 MN LIC. NO. 56090

City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
TRAFFIC SIGNAL PLANS
PEDESTRIAN CROSSWALK FLASHER SYSTEM D
PEDESTRIAN FLASHER ASSEMBLY PEDESTAL DETAILS

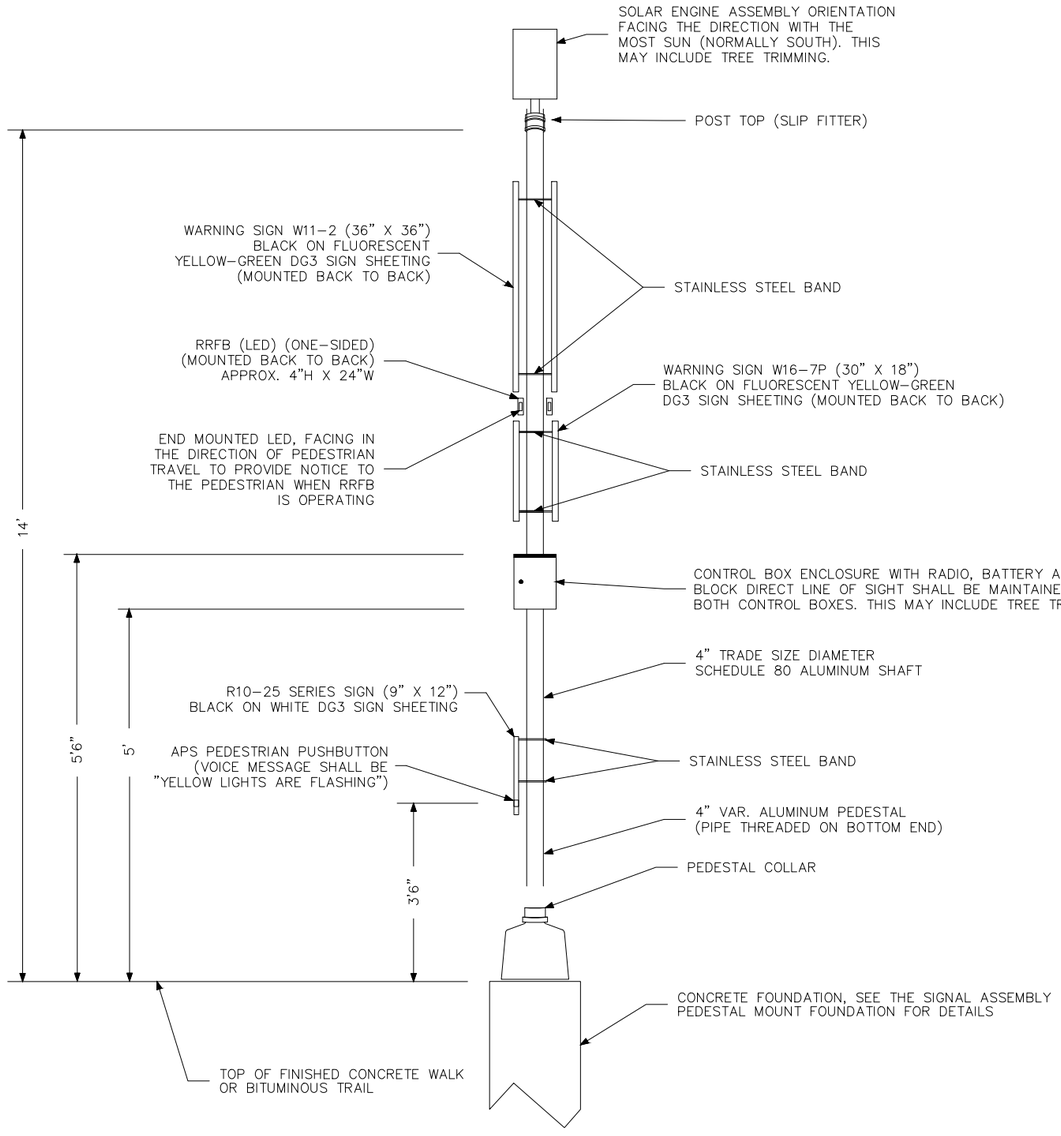
CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 268 / 354

SA
2

PEDESTRIAN FLASHER ASSEMBLY PEDESTAL MOUNT
RECTANGULAR RAPID FLASHING BEACON LED (RRFB) SOLAR POWERED

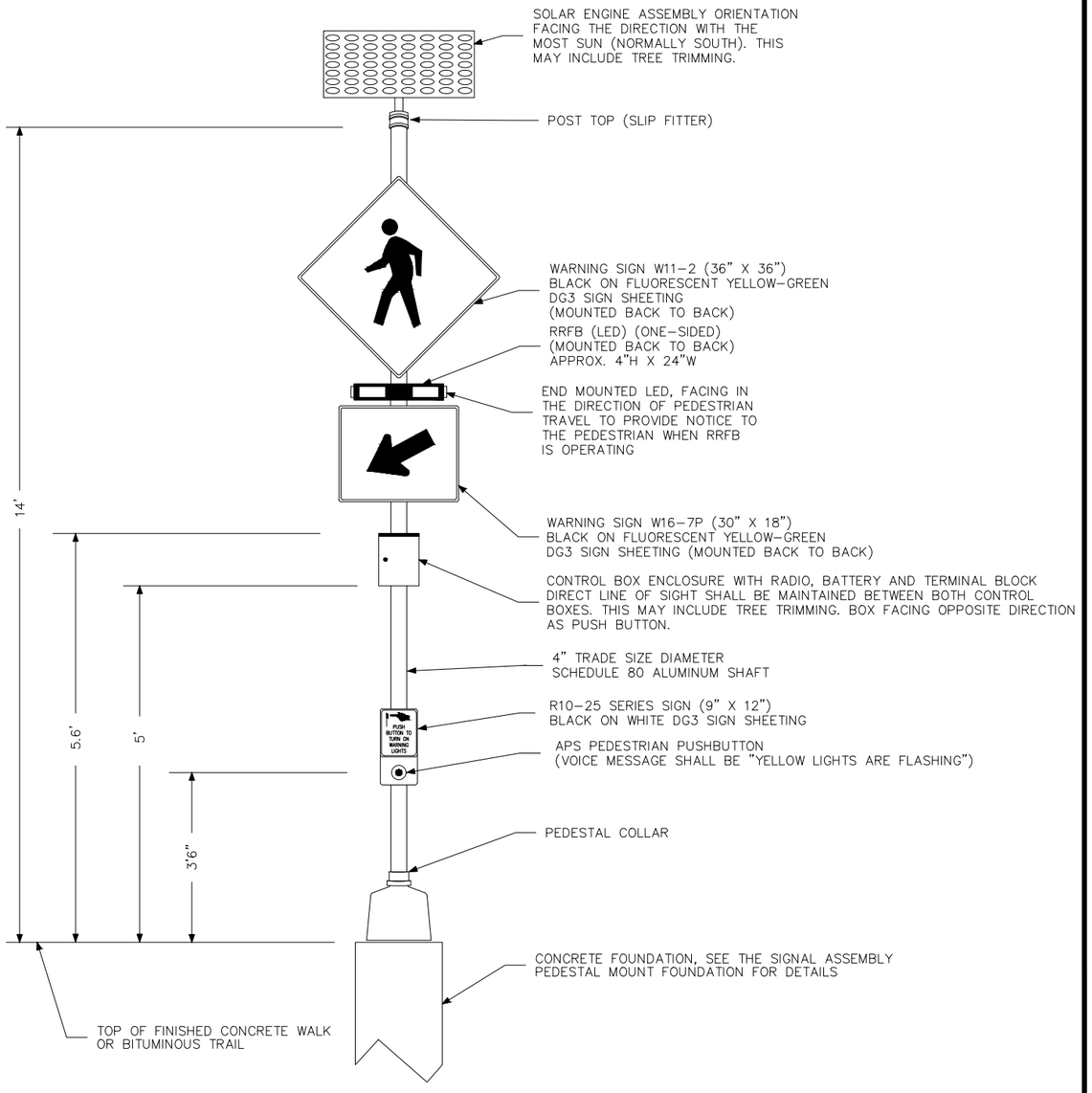
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SA
2

PEDESTRIAN FLASHER ASSEMBLY PEDESTAL MOUNT
RECTANGULAR RAPID FLASHING BEACON LED (RRFB) SOLAR POWERED

(NO SCALE)



No.	Date	Revisions	App.

DRAWING NAME: CHANKAHDA_PH3_SignalRRFB.dwg

DESIGNED BY:	BWS
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CHECKED BY:	BKV
DATE:	02/07/2025
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BRIAN K. VILLA, PE

DATE: 02/07/2025 MN LIC. NO. 56090

City of Plymouth

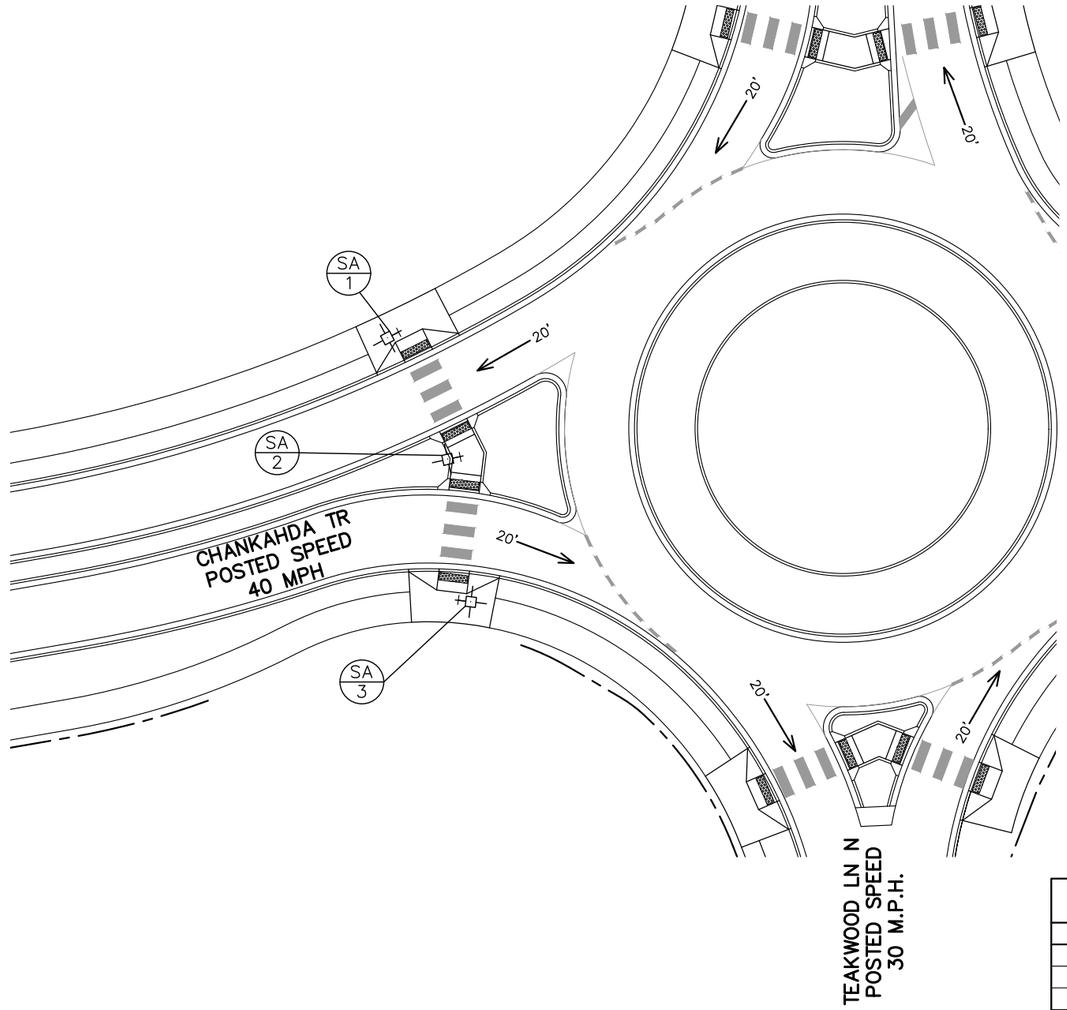
CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
TRAFFIC SIGNAL PLANS
PEDESTRIAN CROSSWALK FLASHER SYSTEM D
PEDESTRIAN FLASHER ASSEMBLY PEDESTAL DETAILS

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 269 / 354

NOTES:
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2. ONE APS PEDESTRIAN PUSH BUTTON WITH SIGN R10-25 (9" X 12") SHALL BE INSTALLED ON SA-1, SA-2, AND SA-3 FOR OPERATION AS SHOWN IN THE PLANS.
3. THE CONTRACTOR SHALL PLACE COMMON BACK FILL AND RESTORE ALL DISTURBED TURF, CONCRETE OR BITUMINOUS WALK, ETC. TO ITS ORIGINAL CONDITION OR BETTER.
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0 10 20 40
HORIZONTAL
SCALE IN FEET



SIGNAL STRUCTURE LOCATIONS	
NO.	LOCATION (1)
SA-1	X: 483593.2444, Y: 198345.2822
SA-2	X: 483609.4255, Y: 198313.1540
SA-3	X: 483614.1629, Y: 198275.4853

(1) TO THE CENTER OF THE CONCRETE FOUNDATION.

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No.	Date	Revisions	App.

DRAWING NAME	CHANKAHDA_PH3_SignalRRFB.dwg
DESIGNED BY:	BWS
DRAWN BY:	MBG
CHECKED BY:	BKV
DATE:	02/07/2025
PROJECT NO.	160662010

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BRIAN K. VILLA, PE

DATE: 02/07/2025 MN LIC. NO. 56090

City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
TRAFFIC SIGNAL PLANS
PEDESTRIAN CROSSWALK FLASHER SYSTEM D
INTERSECTION LAYOUT

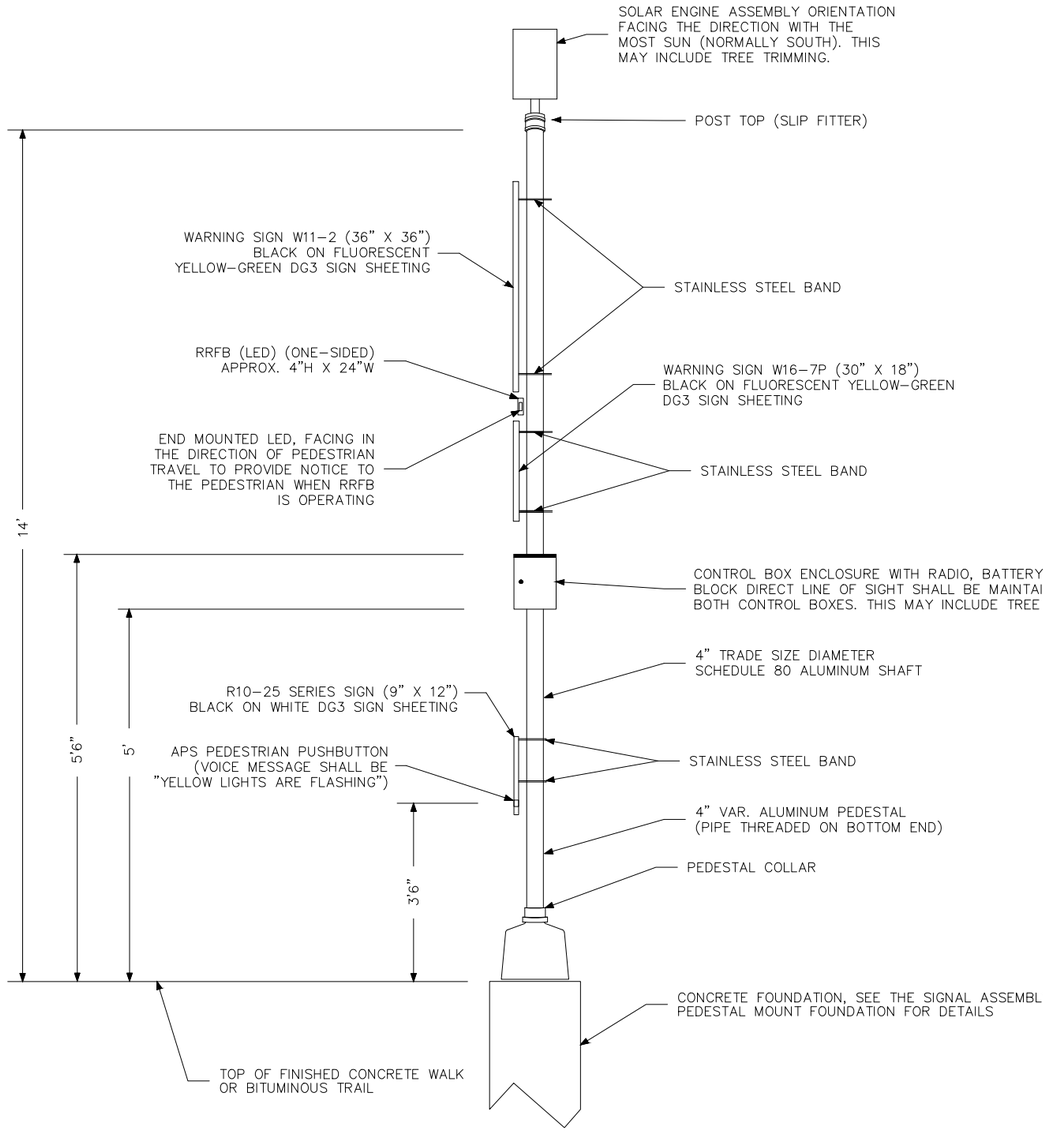
CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 270 / 354

SA 1 | SA 3

PEDESTRIAN FLASHER ASSEMBLY PEDESTAL MOUNT
RECTANGULAR RAPID FLASHING BEACON LED (RRFB) SOLAR POWERED

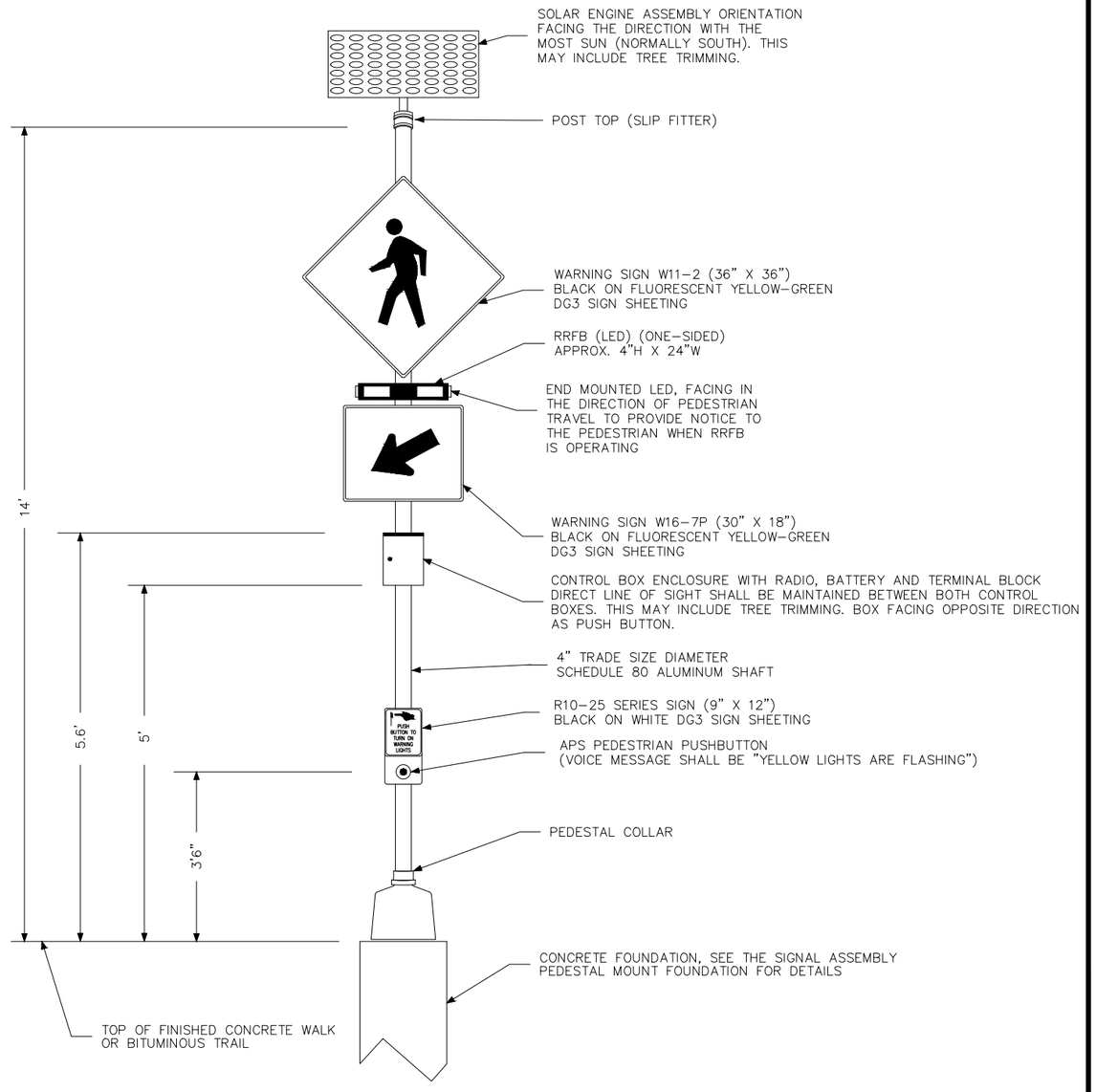
(NO SCALE)



SA 1 | SA 3

PEDESTRIAN FLASHER ASSEMBLY PEDESTAL MOUNT
RECTANGULAR RAPID FLASHING BEACON LED (RRFB) SOLAR POWERED

(NO SCALE)



No.	Date	Revisions	App.

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City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
TRAFFIC SIGNAL PLANS
PEDESTRIAN CROSSWALK FLASHER SYSTEM E
PEDESTRIAN FLASHER ASSEMBLY PEDESTAL DETAILS

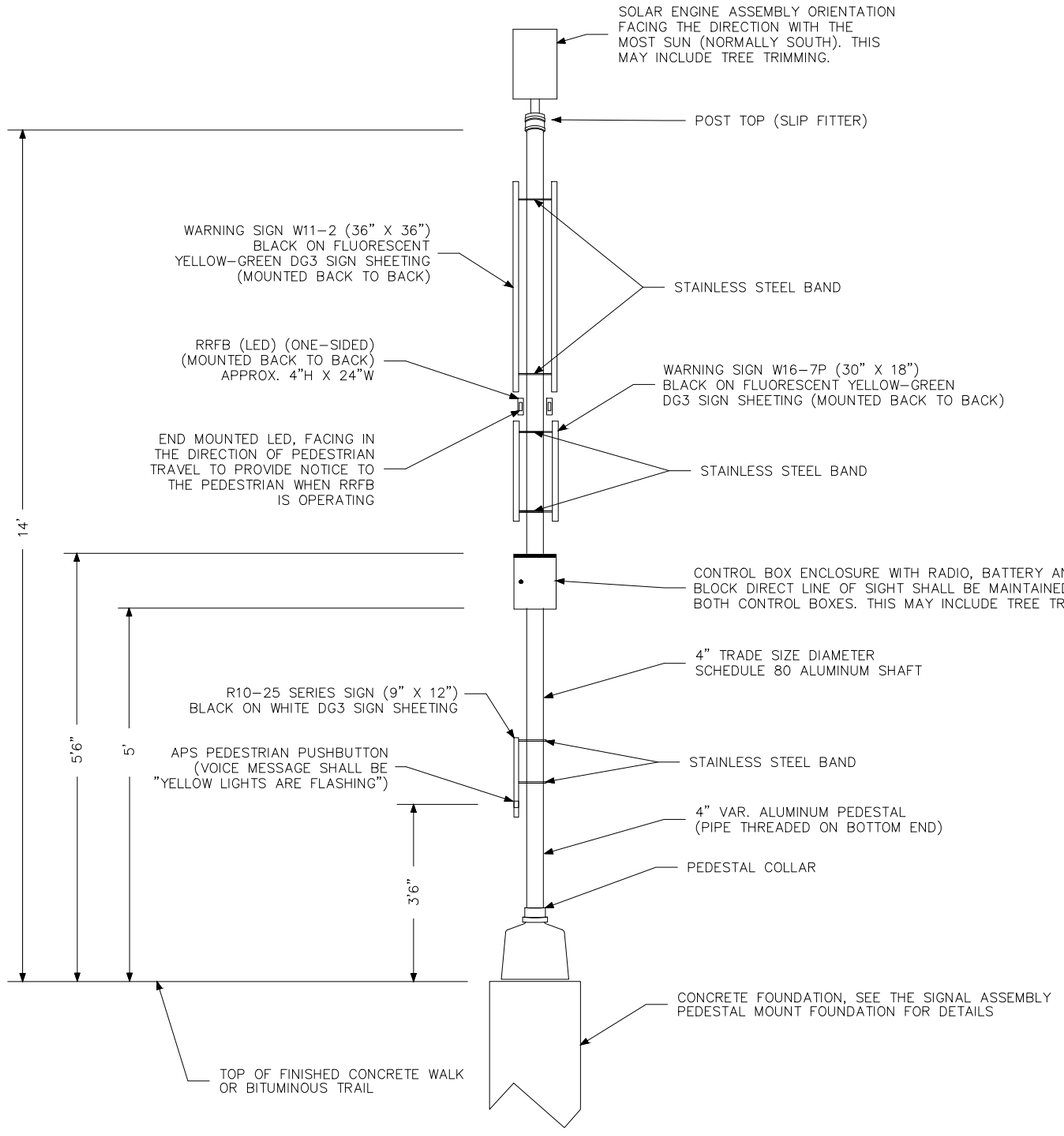
CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 271 / 354

SA
2

PEDESTRIAN FLASHER ASSEMBLY PEDESTAL MOUNT
RECTANGULAR RAPID FLASHING BEACON LED (RRFB) SOLAR POWERED

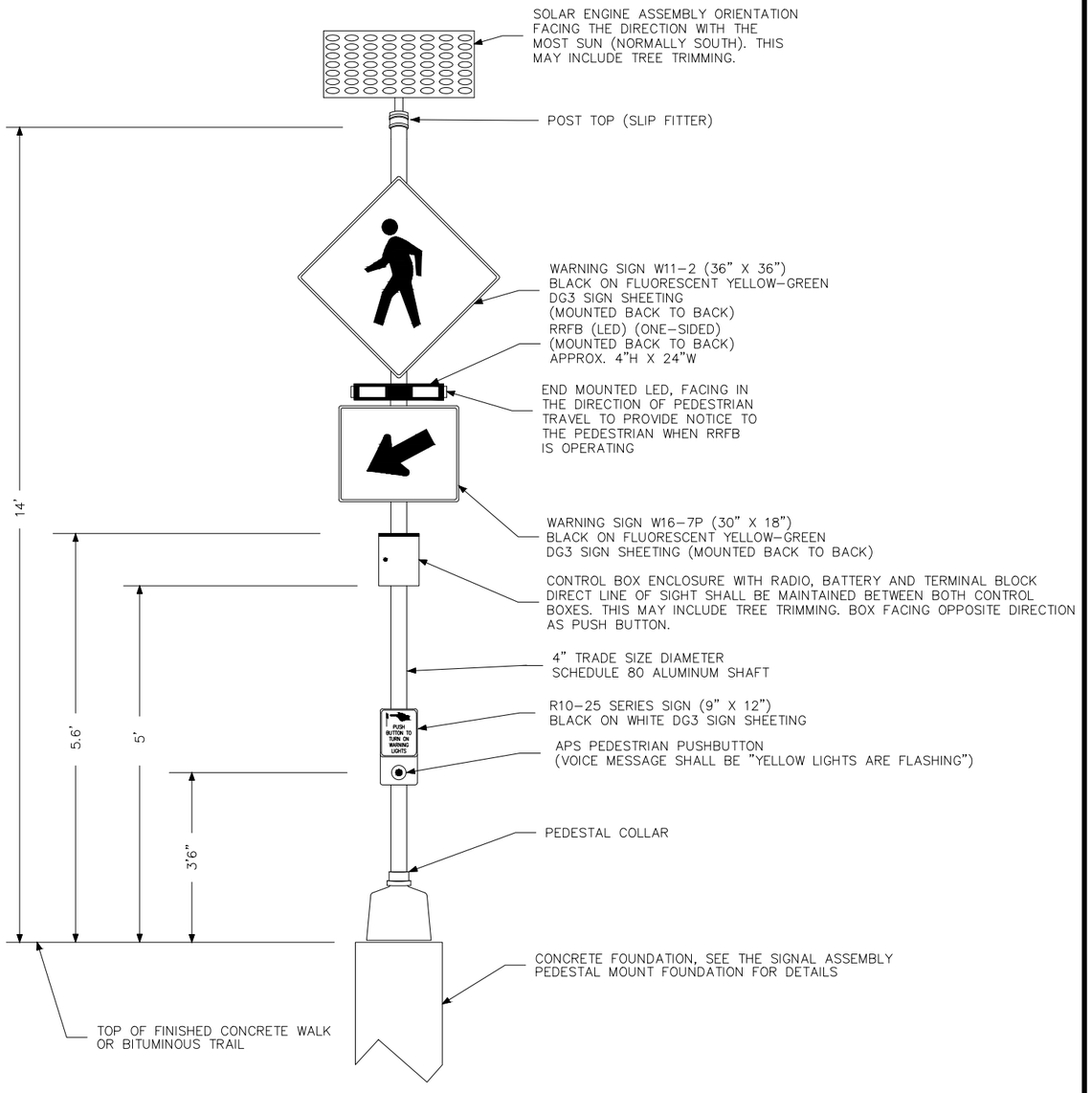
(NO SCALE)



SA
2

PEDESTRIAN FLASHER ASSEMBLY PEDESTAL MOUNT
RECTANGULAR RAPID FLASHING BEACON LED (RRFB) SOLAR POWERED

(NO SCALE)



No.	Date	Revisions	App.

DRAWING NAME: CHANKAHDA_PH3_SignalRRFB.dwg

DESIGNED BY:	BWS
DRAWN BY:	MBG
CHECKED BY:	BKV
DATE:	02/07/2025
PROJECT NO.	160662010

Kimley»Horn
767 EUSTIS STREET, SUITE 100, ST, PAUL, MN 55114
PHONE: 651-645-4197
WWW.KIMLEY-HORN.COM

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

BRIAN K. VILLA, PE

DATE: 02/07/2025 MN LIC. NO. 56090

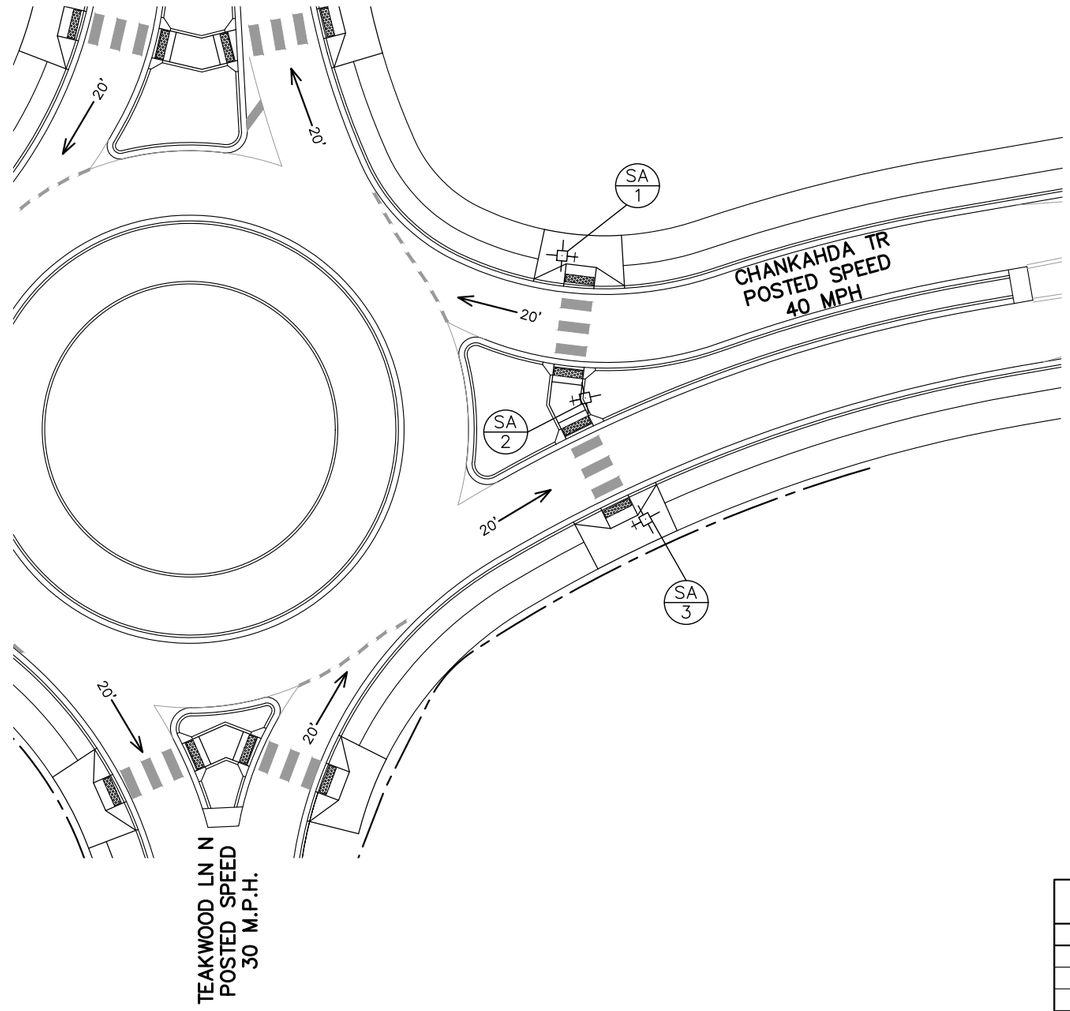
City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
TRAFFIC SIGNAL PLANS
PEDESTRIAN CROSSWALK FLASHER SYSTEM E
PEDESTRIAN FLASHER ASSEMBLY PEDESTAL DETAILS

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 272 / 354

NOTES:
1. SEE SPECIAL PROVISIONS FOR ADDITIONAL REQUIREMENTS.
2. ONE APS PEDESTRIAN PUSH BUTTON WITH SIGN R10-25 (9" X 12") SHALL BE INSTALLED ON SA-1, SA-2, AND SA-3 FOR OPERATION AS SHOWN IN THE PLANS.
3. THE CONTRACTOR SHALL PLACE COMMON BACK FILL AND RESTORE ALL DISTURBED TURF, CONCRETE OR BITUMINOUS WALK, ETC. TO ITS ORIGINAL CONDITION OR BETTER.
4. THE CONTRACTOR SHALL VERIFY ALL UTILITY LOCATIONS PRIOR TO CONSTRUCTION.
5. EXACT LOCATIONS OF POLES AND BASES SHALL BE DETERMINED IN THE FIELD.
6. THE CONTRACTOR SHALL SUBMIT RRFB AND SIGN PANEL ATTACHMENT DETAILS FOR APPROVAL TO THE ENGINEER. THE CONTRACTOR SHALL FURNISH AND INSTALL ALL RRFB, CONTROLLER, SIGN PANEL, PEDESTAL POLE AND ATTACHMENT HARDWARE.
7. ALL WORK AS DETAILED IN NOTES 1-6 SHALL BE DIRECTED BY AND TO THE SATISFACTION OF THE ENGINEER AND ALL COSTS SHALL BE INCLUDED IN THE UNIT PRICE BID FOR PEDESTRIAN CROSSWALK FLASHER SYSTEM (SYS).



0 10 20 40
HORIZONTAL
SCALE IN FEET

SIGNAL STRUCTURE LOCATIONS	
NO.	LOCATION (1)
SA-1	X: 483811.6681, Y: 198368.0115
SA-2	X: 483816.4074, Y: 198330.3611
SA-3	X: 483832.5884, Y: 198298.2329

(1) TO THE CENTER OF THE CONCRETE FOUNDATION.

ALL COORDINATES ARE HENNEPIN COUNTY GROUND FEET, BASED ON THE MINNESOTA COORDINATE SYSTEM, SOUTHERN ZONE, NAD83 1986 (NON-HARN VALUES).

No.	Date	Revisions	App.

DRAWING NAME: CHANKAHDA_PH3_SignalRRFB.dwg

DESIGNED BY:	BWS
DRAWN BY:	MBG
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DATE:	02/07/2025
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Kimley»Horn
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BRIAN K. VILLA, PE

DATE: 02/07/2025 MN LIC. NO. 56090

City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
TRAFFIC SIGNAL PLANS
PEDESTRIAN CROSSWALK FLASHER SYSTEM E
INTERSECTION LAYOUT

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 273 / 354

NOTES:
1. SEE SPECIAL PROVISIONS FOR ADDITIONAL REQUIREMENTS.
2. TRAFFIC SIGNAL WORK AT THIS INTERSECTION IS ANTICIPATED TO INCLUDE THE FOLLOWING:
   2.1. EXISTING PUSHBUTTON STATION 1 SHALL BE REMOVED. EXISTING CONDUIT TO THE NEAREST HANDHOLE SHALL BE REMOVED.
   2.2. EXISTING PUSHBUTTONS ON MA–1B, MA–2B, MA–3B AND MA–4B SHALL BE REMOVED.
   2.3. ADJUST INPLACE SPLICE VAULT.
3. ONE APS PEDESTRIAN PUSH BUTTON WITH SIGN R10–3E (9" X 15") SHALL BE INSTALLED ON PBS–1B, PBS–2B, PBS–3B, PBS–4B, PBS–5B, PBS–6B, PBS–7B AND MA–4B FOR OPERATION AS SHOWN IN THE PLANS. PUSH BUTTONS ON MAST ARM POLES SHALL INCLUDE AN APS PUSH BUTTON POLE MOUNT ADAPTOR.
4. THE CONTRACTOR SHALL PLACE COMMON BACK FILL AND RESTORE ALL DISTURBED TURF, CONCRETE OR BITUMINOUS WALK, ETC. TO ITS ORIGINAL CONDITION OR BETTER.
5. THE CONTRACTOR SHALL VERIFY ALL UTILITY LOCATIONS PRIOR TO CONSTRUCTION.
6. EXACT LOCATIONS OF POLES AND BASES SHALL BE DETERMINED IN THE FIELD.
7. THIS PLAN SPECIFIES CONDUIT SIZES, TYPES, AND GENERAL LOCATIONS. THE EXACT LOCATION SHALL BE DETERMINED IN THE FIELD.
8. ALL COSTS FOR ANY REQUIRED RELOCATION OF EVP DETECTORS AND CONFIRMATORY LIGHTS SHALL BE INCIDENTAL.
9. THE CONTRACTOR SHALL PLUG AND SEAL HOLES IN POLES AT REMOVED PUSHBUTTON LOCATIONS.

SIGNAL STRUCTURE LOCATIONS

NO.	LOCATION (1)	NO.	LOCATION (1)
HH–1B	INPLACE	PBS–5B	X: 484560.9863, Y: 198260.3792
HH–2B	INPLACE	PBS–6B	X: 484557.1197, Y: 198281.4493
HH–3B	INPLACE	PBS–7B	X: 484663.4195, Y: 198345.9179
HH–4B	INPLACE	SC–1B	INPLACE
HH–5B	INPLACE	CAC–1B	INPLACE
HH–6B	INPLACE	SOP–1B	INPLACE
PBS–1B	X: 484743.2114, Y: 198273.3022	SV–1	INPLACE
PBS–2B	X: 484744.9927, Y: 198257.3931		
PBS–3B	X: 484689.0893, Y: 198214.3948		
PBS–4B	X: 484648.0896, Y: 198200.3939		

NO.	LOCATION		MAST
	FOUNDATION (1)	AIM ARM TO	ARM
MA–1B	INPLACE	INPLACE	55'
MA–2B	INPLACE	INPLACE	40'
MA–3B	INPLACE	INPLACE	50'
MA–4B	INPLACE	INPLACE	30'

(1) TO THE CENTER OF THE HANDHOLE OR CONCRETE FOUNDATION.

ALL COORDINATES ARE HENNEPIN COUNTY GROUND FEET, BASED ON THE MINNESOTA COORDINATE SYSTEM, SOUTHERN ZONE, NAD83 1986 (NON–HARN VALUES).

CHANKAHDA TR POSTED SPEED 40 M.P.H.

C.S.A.H. NO. 61 (NORTHWEST BLVD) POSTED SPEED 45 M.P.H.

PINEVIEW LN POSTED SPEED 40 M.P.H.

PROP R/W

INPLACE R/W

MA–4B TO HH–4B INPLACE: 3" RSC 2–12/C #12 3–3/C #12 1–VIDEO CABLE 1–3/C #20 (SHLD) REMOVE: 1–3/C #12 F&I: 1–2/C #14 (SHLD)

PBS–5B TO HH–3B F&I: 1" RSC 1–2/C #14 (SHLD)

PBS–6B TO HH–3B F&I: 1" RSC 1–2/C #14 (SHLD)

MA–3B TO HH–3B INPLACE: 3" RSC 3–12/C #12 2–3/C #12 1–VIDEO CABLE 1–3/C #20 (SHLD) REMOVE: 1–3/C #12

HH–3B TO HH–4B INPLACE: 4" RSC 3–12/C #12 2–3/C #12 1–VIDEO CABLE 1–3/C #20 (SHLD) REMOVE: 1–3/C #12 F&I: 2–2/C #14 (SHLD)

HH–4B TO HH–5B INPLACE: 4" RSC 5–12/C #12 5–3/C #12 2–VIDEO CABLES 2–3/C #20 (SHLD) REMOVE: 2–3/C #12 F&I: 3–2/C #14 (SHLD)

PBS–7B TO HH–5B F&I: 1" RSC 1–2/C #14 (SHLD)

HH–5B TO HH–6B INPLACE: 4" RSC 5–12/C #12 5–3/C #12 2–VIDEO CABLES 2–3/C #20 (SHLD) REMOVE: 2–3/C #12 F&I: 4–2/C #14 (SHLD)

ADJUST HH

ADJUST SPLICE VAULT

INPLACE: SV2B TO SOUTH 1–1–1/4" NMC (HDPE) 1–144 SM FIBER OPTIC CABLE 1–1/C #12 (PROTECT INPLACE)

INPLACE: 1–1–1/4" NMC (HDPE) 1–288 SM FIBER OPTIC CABLE 1–1/C #12 (PROTECT INPLACE)

INPLACE: SV2B TO NORTH 1–1–1/4" NMC (HDPE) 1–144 SM FIBER OPTIC CABLE 1–1/C #12 (PROTECT INPLACE)

ø1 & ø6 EVP

ø2 & ø5 EVP

ø4 EVP

ø8 EVP

V–1B V–2B V–3B V–4B

HH–1B TO CAC–1B INPLACE: 4" RSC 5–12/C #12 4–3/C #12 2–VIDEO CABLES 2–3/C #20 (SHLD) REMOVE: 2–3/C #12 F&I: 2" RSC 4–2/C #14 (SHLD)

HH–6B TO CAC–1B INPLACE: 4" RSC 5–12/C #12 5–3/C #12 2–VIDEO CABLES 2–3/C #20 (SHLD) REMOVE: 2–3/C #12 F&I: 4–2/C #14 (SHLD)

HH–6B TO HH–1B INPLACE: 2" RSC 1–3/C #12

PBS–6B TO HH–1B F&I: 1" RSC 1–2/C #14 (SHLD)

SC–1B TO HH–6B INPLACE: 2" RSC 2–3/C #12

CAC–1B TO SV–1B INPLACE: 2–1 1/4" NMC (HDPE) 1–48SM FIBER OPTIC CABLE 1–1/C #12

MA–1B TO HH–1B INPLACE: 3" RSC 3–12/C #12 2–3/C #12 1–VIDEO CABLE 1–3/C #20 (SHLD) REMOVE: 1–3/C #12

PBS–4B TO HH–2B F&I: 1" RSC 1–2/C #14 (SHLD)

PBS–3B TO HH–2B F&I: 1" RSC 1–2/C #14 (SHLD)

MA–2B TO HH–2B INPLACE: 3" RSC 2–12/C #12 3–3/C #12 1–VIDEO CABLE 1–3/C #20 (SHLD) REMOVE: 1–3/C #12

PBS–2B TO HH–1B F&I: 1" RSC 1–2/C #14 (SHLD)

SC–1B TO SOP–1B INPLACE: 2" RSC 3–1/C #2

PBS–1B TO HH–1B F&I: 1" RSC 1–2/C #14 (SHLD)

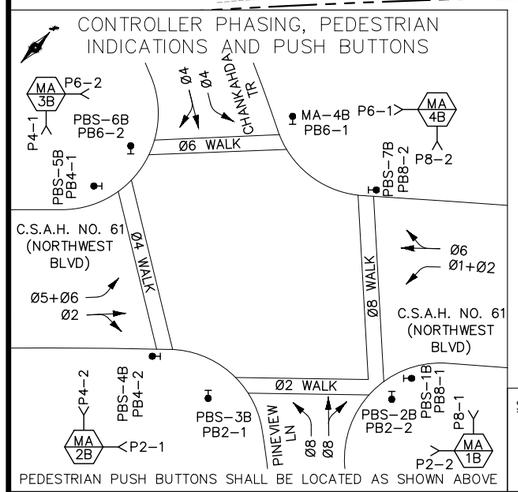
HH–2B TO HH–1B INPLACE: 4" RSC 2–12/C #12 3–3/C #12 1–VIDEO CABLE 1–3/C #20 (SHLD) REMOVE: 1–3/C #12 F&I: 2–2/C #14 (SHLD)

SC–1B TO CAC–1B INPLACE: 2" RSC 2–1/C #2 1–1/C #6 BARE

* REVISE SIGNAL SYSTEM WORK TO BE PERFORMED UNDER THIS CONTRACT SHALL BE NOTED WITH A [*] AND SHALL BE INCLUDED IN THE REVISE SIGNAL SYSTEM PAY ITEM. ALL OTHER ITEMS SHOWN ARE INPLACE.

HENNEPIN COUNTY SIGNAL ID: 8050200

CONTROLLER PHASING, PEDESTRIAN INDICATIONS AND PUSH BUTTONS



PEDESTRIAN PUSH BUTTONS SHALL BE LOCATED AS SHOWN ABOVE

SCALE: HORIZONTAL 1 IN = 40 FEET (0, 10, 20, 40)

SIGNAL SYSTEM OPERATIONS

- SIGNAL SYSTEM FLASH MODE IS ALL RED.
- PHASES 1 AND 5 SHALL BE FLASHING YELLOW ARROW LEFT TURNS BY TIME OF DAY.
- PHASES 4 AND 8 ARE SEQUENTIAL.

No.	Date	Revisions	App.

DRAWING NAME	CHANKAHDA_PH3_Signal.dwg
DESIGNED BY:	BWS
DRAWN BY:	MBG
CHECKED BY:	BKV
DATE:	02/07/2025
PROJECT NO.	160662010

Kimley»Horn
767 EUSTIS STREET, SUITE 100, ST, PAUL, MN 55114
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BRIAN K. VILLA, PE

DATE: 02/07/2025 MN LIC. NO. 56090

City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
TRAFFIC SIGNAL PLANS
REVISE SIGNAL SYSTEM B
INTERSECTION LAYOUT

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155–210–003
S.A.P.	

SHEET NO. 274 / 354

SIGNAL INDICATIONS AND BRACKETING

SIGNAL POLE NO.	MAST ARM LENGTH	FACE NO.	SIGNAL FACE MOUNT	SIGNAL Ø	INDICATIONS: RED	YEL.	GRN	RLTA	YLTA	GLTA	PED	BRACKET MOUNTING, TYPE, STD PLATE NO.	
MA-1	55'	5-1	MAST ARM (END)	5				←	←	←		STD ONE-WAY/PLATE 8124	
		2-3	MAST ARM (12' FROM END)	2	●		●					STD ONE-WAY/PLATE 8124	
		2-2	MAST ARM (28' FROM END)	2		●						STD ONE-WAY/PLATE 8124	
		4-1	POLE MOUNT	4	●	●	●				*	TYPE 10B @ 180°/PLATE 8110	
		2-1		7				←	←	←	*	TYPE 10B @ 90°/PLATE 8110	
MA-2	40'	4-3	MAST ARM (END)	4		●						STD ONE-WAY/PLATE 8124	
		4-2	MAST ARM (11' FROM END)	4	●	●	●					STD ONE-WAY/PLATE 8124	
		4-1	POLE MOUNT	4	●	●	●				*	TYPE 10B @ 180°/PLATE 8110	
		1-2		1				←	←	←	*	TYPE 10B @ 90°/PLATE 8110	REMOVE
		1-1	MAST ARM (END)	1				←	←	←		STD ONE-WAY/PLATE 8124	REMOVE
MA-3	50'	6-3	MAST ARM (10' FROM END)	6	●	●	●					STD ONE-WAY/PLATE 8124	
		6-2	MAST ARM (24' FROM END)	6	●	●	●					STD ONE-WAY/PLATE 8124	
		6-1	POLE MOUNT	6	●	●	●				*	TYPE 10B @ 180°/PLATE 8110	
		8-4		8				←	←	←	*	TYPE 10B @ 90°/PLATE 8110	
MA-4	30'	8-3	MAST ARM (END)	8	●							STD ONE-WAY/PLATE 8124	
		8-2	MAST ARM (12' FROM END)	8	●	●	●					STD ONE-WAY/PLATE 8124	
		8-1	POLE MOUNT	8	●	●	●				*	TYPE 10B @ 180°/PLATE 8110	
		5-2		5				←	←	←	*	TYPE 10B @ 90°/PLATE 8110	REMOVE

ALL INDICATIONS SHALL BE 12" LED. BACKGROUND SHIELDS SHALL BE PROVIDED ON EACH SIGNAL FACE.

*PEDESTRIAN INDICATIONS SHALL BE INTERNATIONAL SYMBOLS.

SIGNAL INDICATION AND BRACKETING

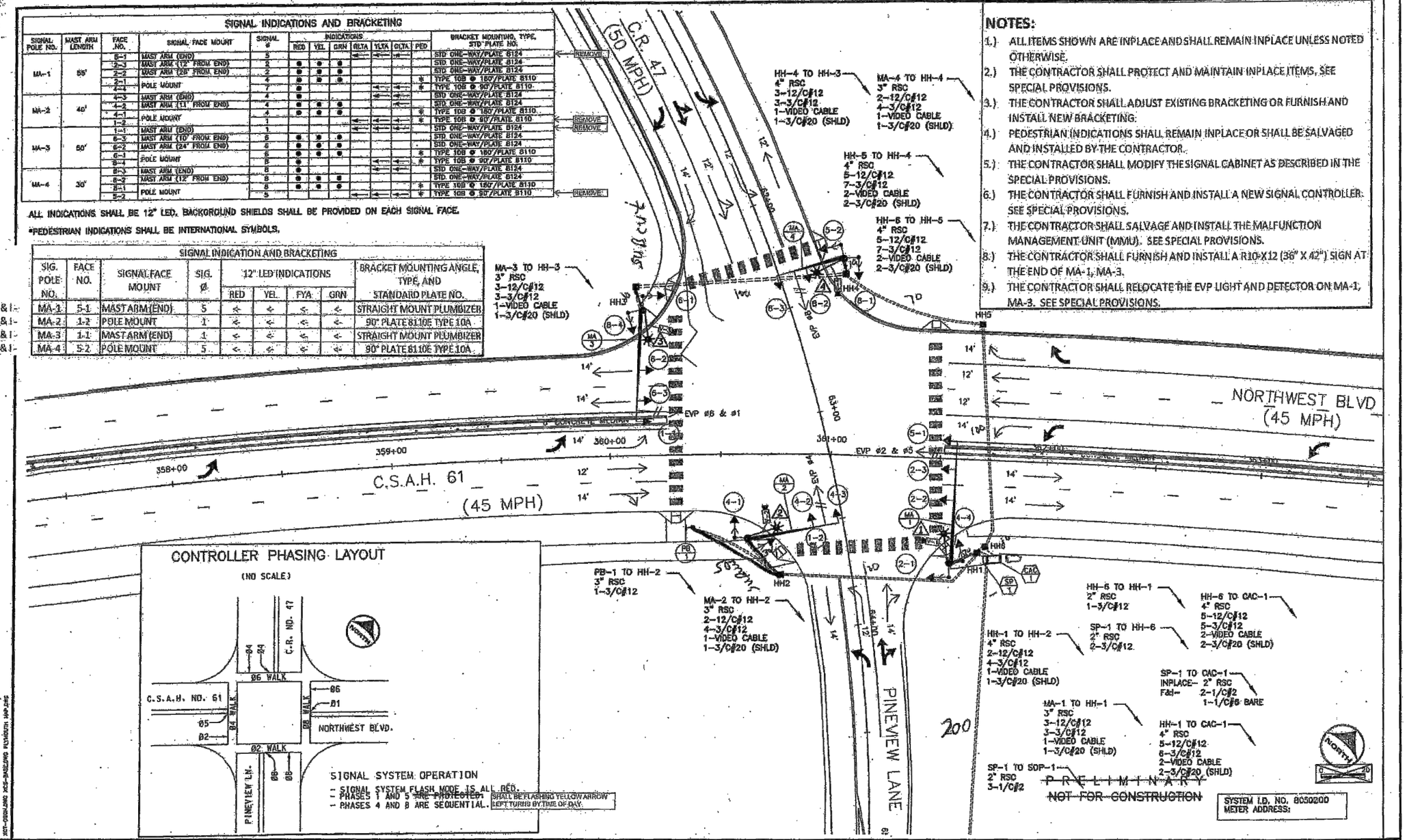
	SIG. POLE NO.	FACE NO.	SIGNAL FACE MOUNT	SIG. Ø	12" LED INDICATIONS: RED	YEL.	FYA	GRN	BRACKET MOUNTING ANGLE, TYPE, AND STANDARD PLATE NO.
F&I-	MA-1	5-1	MAST ARM (END)	5	←	←	←	←	STRAIGHT MOUNT PLUMBIZER
F&I-	MA-2	1-2	POLE MOUNT	1	←	←	←	←	90° PLATE 8110E TYPE 10A
F&I-	MA-3	1-1	MAST ARM (END)	1	←	←	←	←	STRAIGHT MOUNT PLUMBIZER
F&I-	MA-4	5-2	POLE MOUNT	5	←	←	←	←	90° PLATE 8110E TYPE 10A

CONTROLLER PHASING LAYOUT

(NO SCALE)

SIGNAL SYSTEM OPERATION

- SIGNAL SYSTEM FLASH MODE IS ALL RED.
- PHASES 1 AND 5 ~~ARE PROTECTED~~ SHALL BE FLASHING YELLOW ARROW LEFT TURNING BY TIME OF DAY.
- PHASES 4 AND 8 ARE SEQUENTIAL.



NOTES:

1.) ALL ITEMS SHOWN ARE INPLACE AND SHALL REMAIN INPLACE UNLESS NOTED OTHERWISE.
2.) THE CONTRACTOR SHALL PROTECT AND MAINTAIN INPLACE ITEMS, SEE SPECIAL PROVISIONS.
3.) THE CONTRACTOR SHALL ADJUST EXISTING BRACKETING OR FURNISH AND INSTALL NEW BRACKETING.
4.) PEDESTRIAN INDICATIONS SHALL REMAIN INPLACE OR SHALL BE SALVAGED AND INSTALLED BY THE CONTRACTOR.
5.) THE CONTRACTOR SHALL MODIFY THE SIGNAL CABINET AS DESCRIBED IN THE SPECIAL PROVISIONS.
6.) THE CONTRACTOR SHALL FURNISH AND INSTALL A NEW SIGNAL CONTROLLER. SEE SPECIAL PROVISIONS.
7.) THE CONTRACTOR SHALL SALVAGE AND INSTALL THE MALFUNCTION MANAGEMENT UNIT (MMU). SEE SPECIAL PROVISIONS.
8.) THE CONTRACTOR SHALL FURNISH AND INSTALL A R10-X12 (36" X 42") SIGN AT THE END OF MA-1, MA-3.
9.) THE CONTRACTOR SHALL RELOCATE THE EVP LIGHT AND DETECTOR ON MA-1, MA-3. SEE SPECIAL PROVISIONS.

~~P R E L I M I N A R Y~~
~~NOT FOR CONSTRUCTION~~

SYSTEM I.D. NO. 8050200
METER ADDRESS:

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.
Print Name: SCOTT C. POSKA
Date: 2-6-15 License # 47089

DRAWN BY
DESIGNED BY
CHECKED BY SCP
COMM. NO. 8801

SRF Consulting Group, Inc. — ENGINEERS PLANNERS DESIGNERS

CITY OF PLYMOUTH
~~SIGNAL REVISION PLANS~~
2015 PLYMOUTH EVA SIGNAL REVISIONS
~~REVISED~~ SIGNAL SYSTEM "D"
CO RD 47 AT CO RD 61

SHEET 10 OF 129

NO | DATE | BY | CKD | APP'R

O:\PROJECTS\CURRENT PROJECTS\2010-2019\15008 FLASHING YELLOW ARROWS\SRF DOCS\8801_R01.DWG: SYSTEM D1

FOR INFORMATION ONLY

No.	Date	Revisions	App.

DRAWING NAME: CHANKAHDA_PH3_Signal.dwg

DESIGNED BY:	BWS
DRAWN BY:	MBG
CHECKED BY:	BKV
DATE:	02/07/2025
PROJECT NO.	160662010

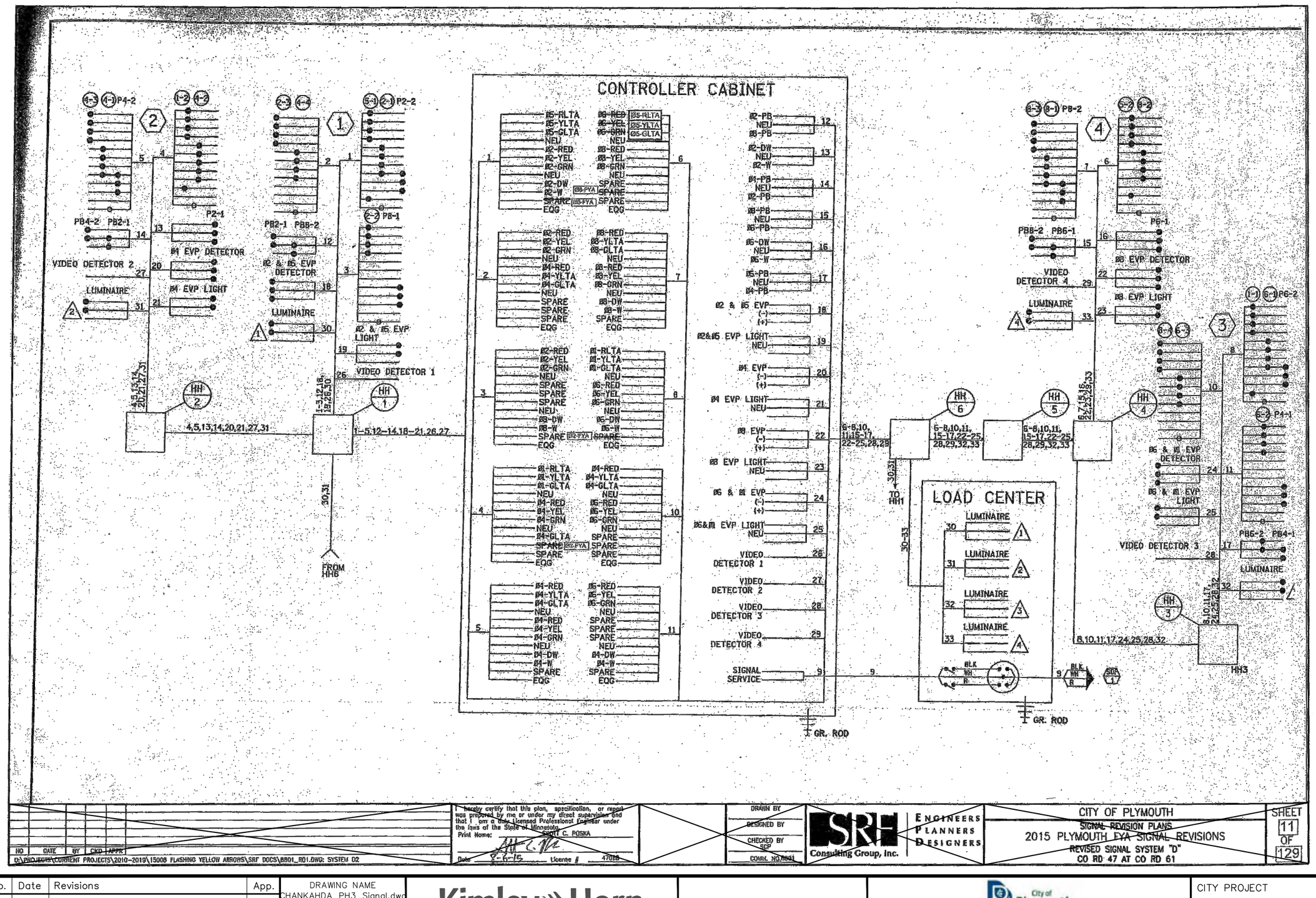
Kimley»Horn
767 EUSTIS STREET, SUITE 100, ST. PAUL, MN 55114
PHONE: 651-645-4197
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City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
TRAFFIC SIGNAL PLANS
REVISE SIGNAL SYSTEM B
FOR INFORMATION ONLY - INTERSECTION LAYOUT

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 275 / 354



NO | DATE | BY | CKD | APPR

D:\PROJECTS\CURRENT PROJECTS\2010-2019\15008 FLASHING YELLOW ARROWS\SRF DOCS\8801_R01.DWG: SYSTEM D2

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.
Print Name: SCOTT C. ROSKA
Date: 5-6-15 License #: 47008

DRAWN BY
DESIGNED BY
CHECKED BY SCR
COMM. NO. 8801

SRF Consulting Group, Inc. — Engineers Planners Designers

CITY OF PLYMOUTH
SIGNAL REVISION PLANS
2015 PLYMOUTH EYA SIGNAL REVISIONS
REVISED SIGNAL SYSTEM "D"
CO RD 47 AT CO RD 61

SHEET 11 OF 129

FOR INFORMATION ONLY

No.	Date	Revisions	App.

DRAWING NAME: CHANKAHDA_PH3_Signal.dwg

DESIGNED BY:	BWS
DRAWN BY:	MBG
CHECKED BY:	BKV
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City of Plymouth

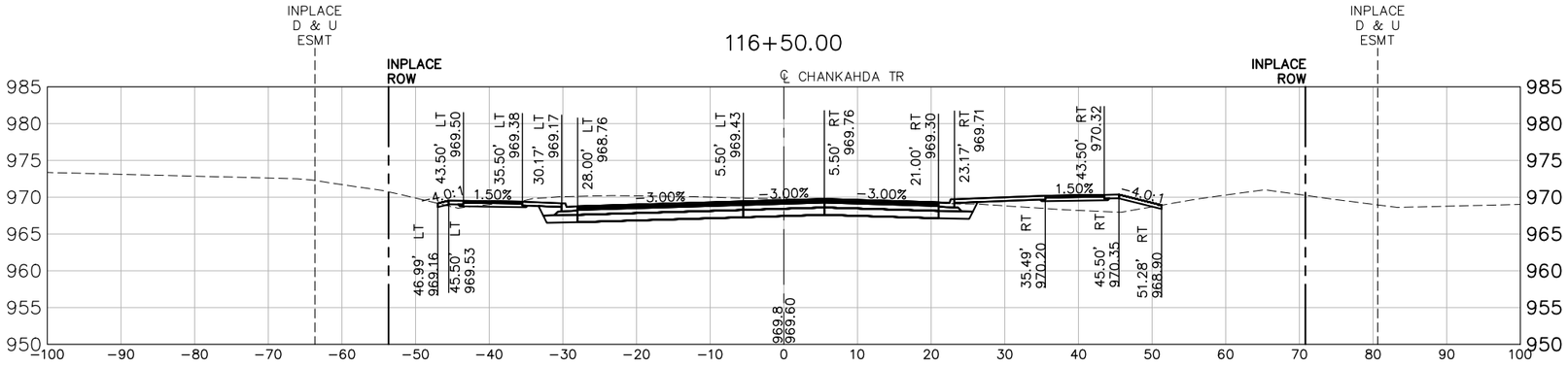
CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
TRAFFIC SIGNAL PLANS
REVISE SIGNAL SYSTEM B
FOR INFORMATION ONLY - FIELD WIRING DIAGRAM

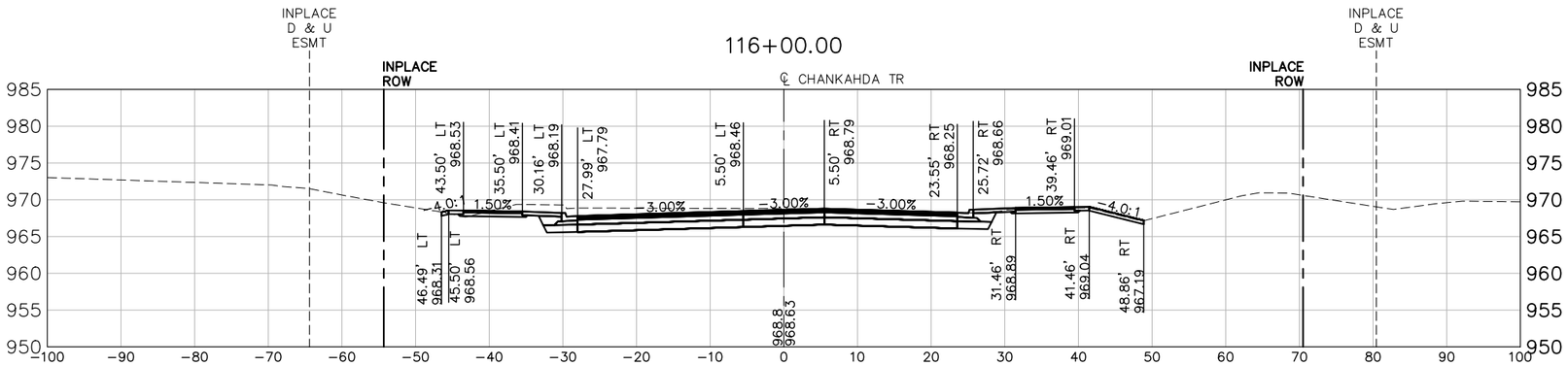
CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

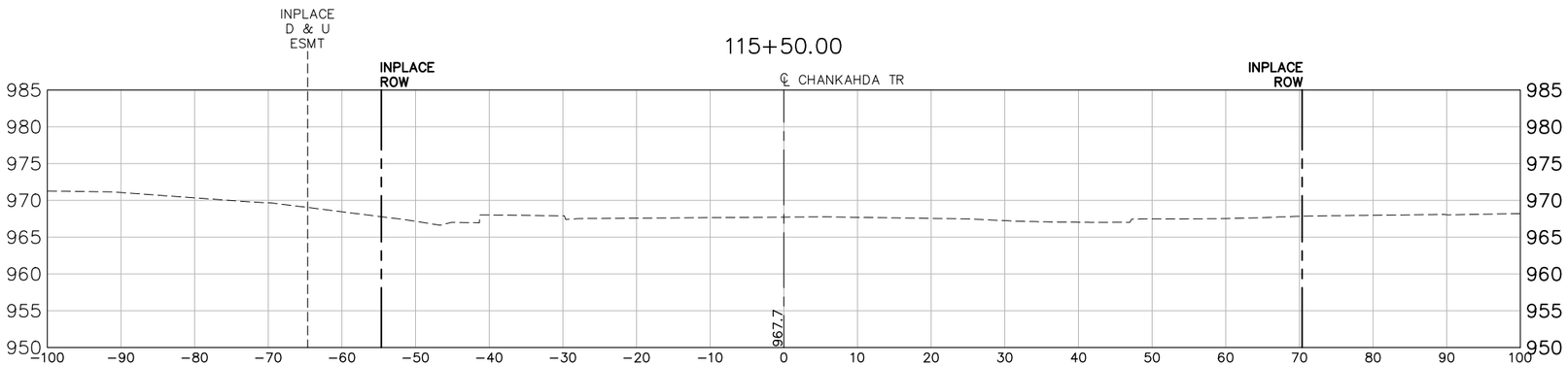
SHEET NO. 276 / 354

0 5 10 20 VERTICAL

0 5 10 20 HORIZONTAL SCALE IN FEET







No.	Date	Revisions	App.

DRAWING NAME	CHANKAHDA_PH3_Sections.dwg
DESIGNED BY:	JWB
DRAWN BY:	JWB
CHECKED BY:	CBL
DATE:	02/07/2025
PROJECT NO.	160662010

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CHADD B. LARSON, PE

DATE: 02/07/2025 MN LIC. NO. 41864

City of Plymouth

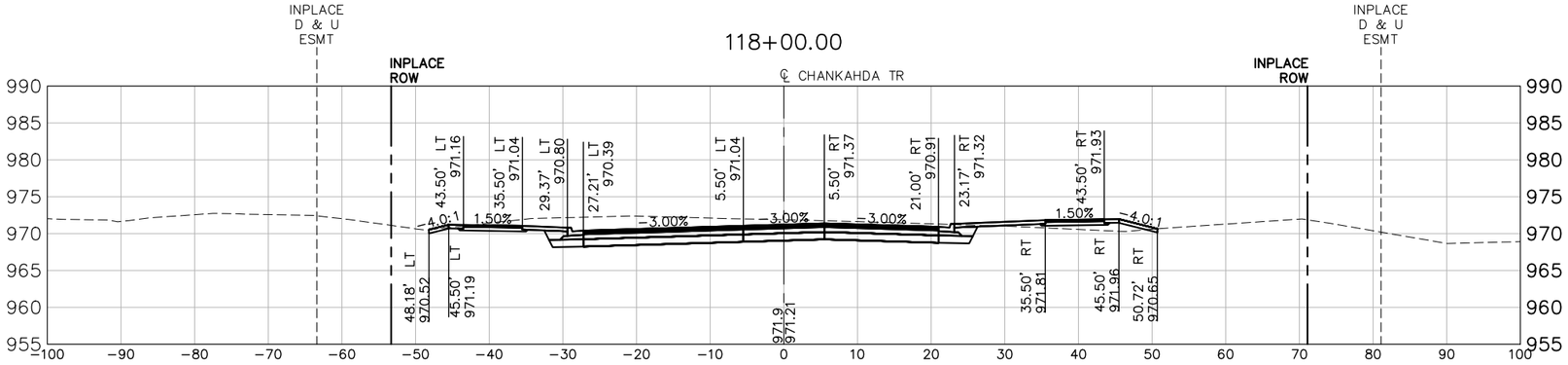
CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
CROSS SECTIONS
STA. 115+50 TO STA. 116+50

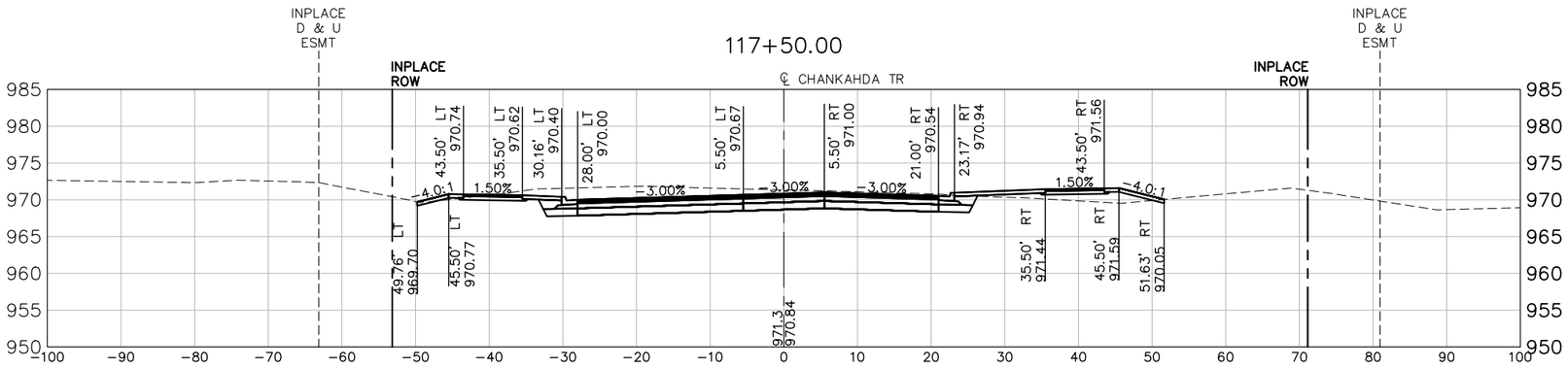
CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

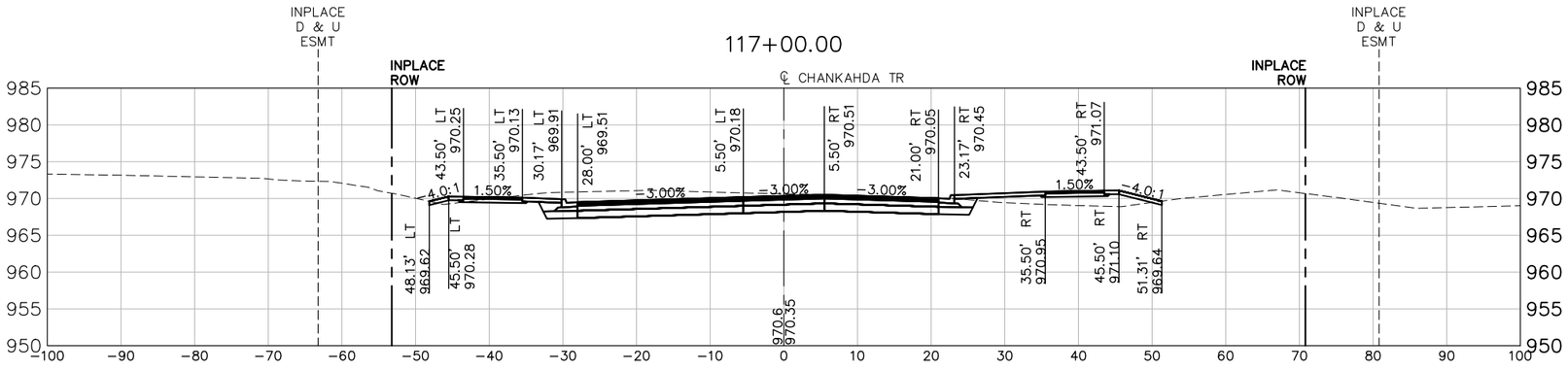
SHEET NO. 277 / 354

VERTICAL 0 5 10 20

HORIZONTAL SCALE IN FEET 0 5 10 20







No.	Date	Revisions	App.

DRAWING NAME	CHANKAHDA_PH3_Sections.dwg
DESIGNED BY:	JWB
DRAWN BY:	JWB
CHECKED BY:	CBL
DATE:	02/07/2025
PROJECT NO.	160662010

Kimley»Horn
767 EUSTIS STREET, SUITE 100, ST. PAUL, MN 55114
PHONE: 651-645-4197
WWW.KIMLEY-HORN.COM

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

Chadd B. Larson

CHADD B. LARSON, PE

DATE: 02/07/2025 MN LIC. NO. 41864

City of Plymouth

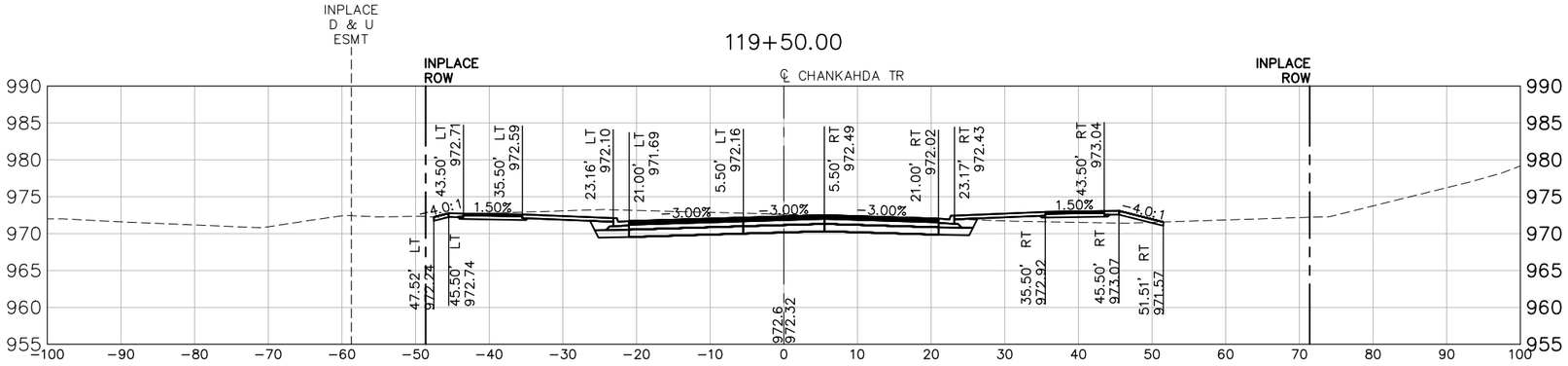
CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
CROSS SECTIONS
STA. 117+00 TO STA. 118+00

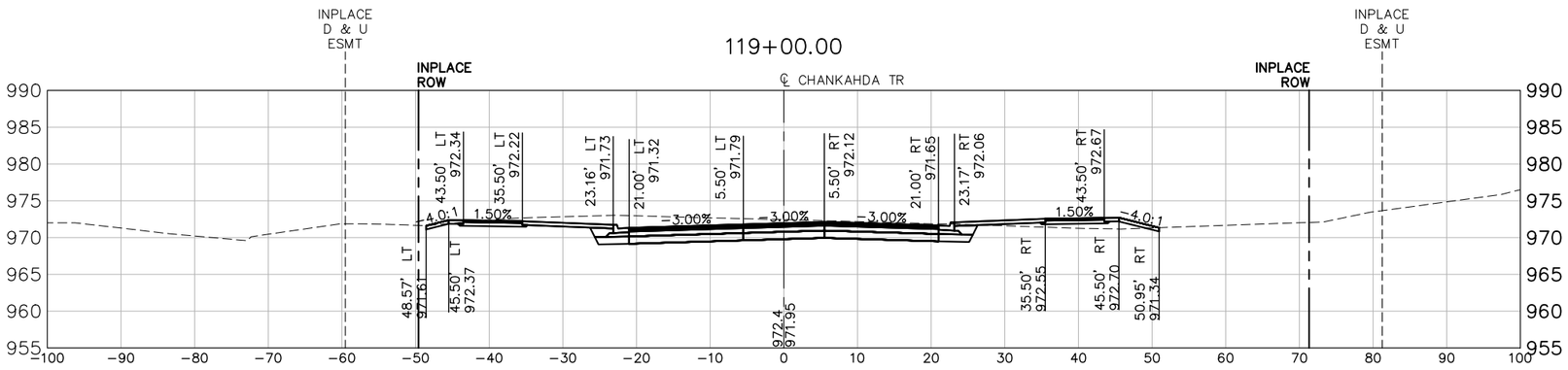
CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

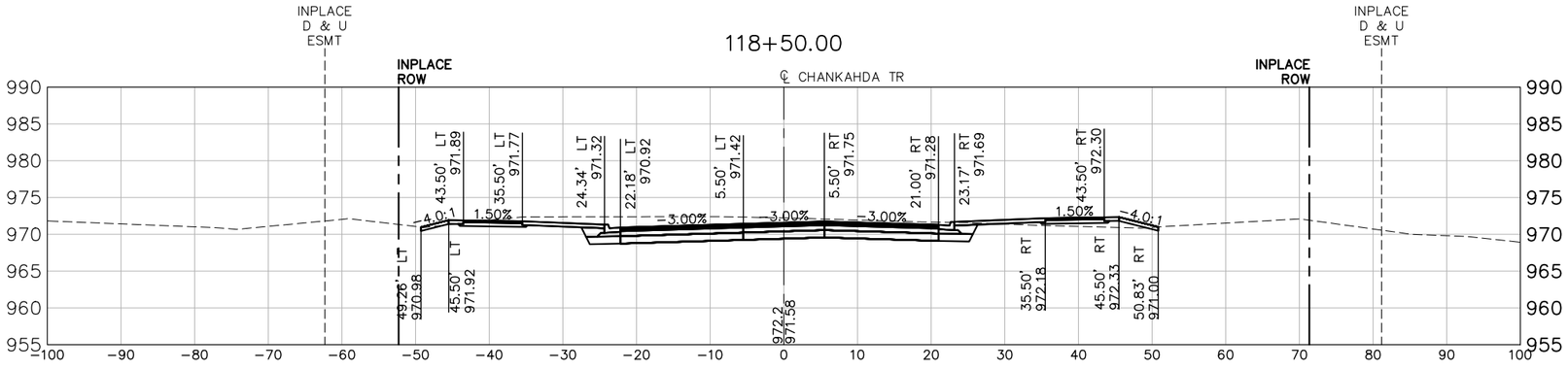
SHEET NO. 278 / 354

VERTICAL 0 5 10 20

HORIZONTAL SCALE IN FEET 0 5 10 20







No.	Date	Revisions	App.

DRAWING NAME	CHANKAHDA_PH3_Sections.dwg
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DATE:	02/07/2025
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DATE: 02/07/2025 MN LIC. NO. 41864

City of Plymouth

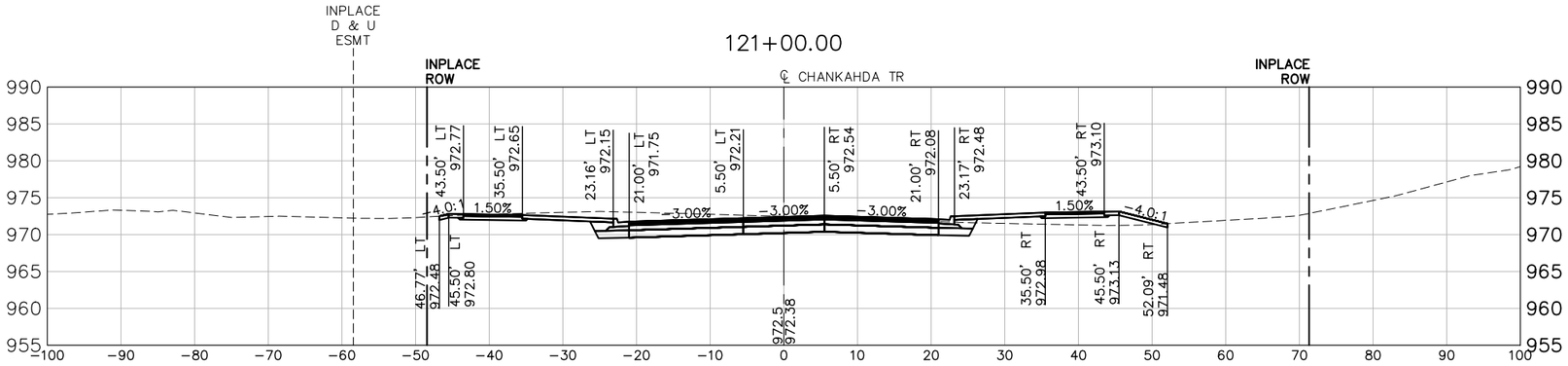
CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
CROSS SECTIONS
STA. 118+50 TO STA. 119+50

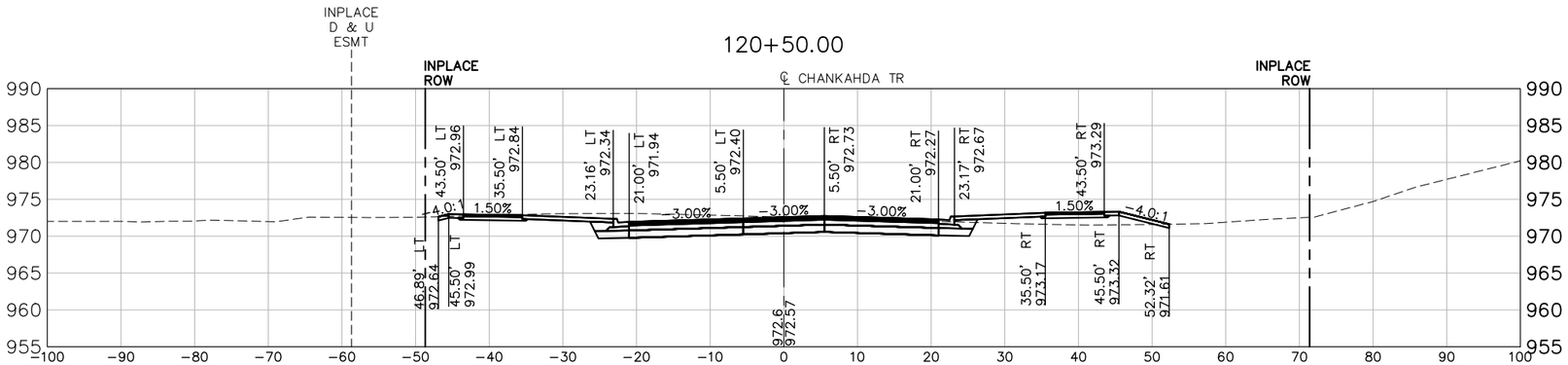
CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

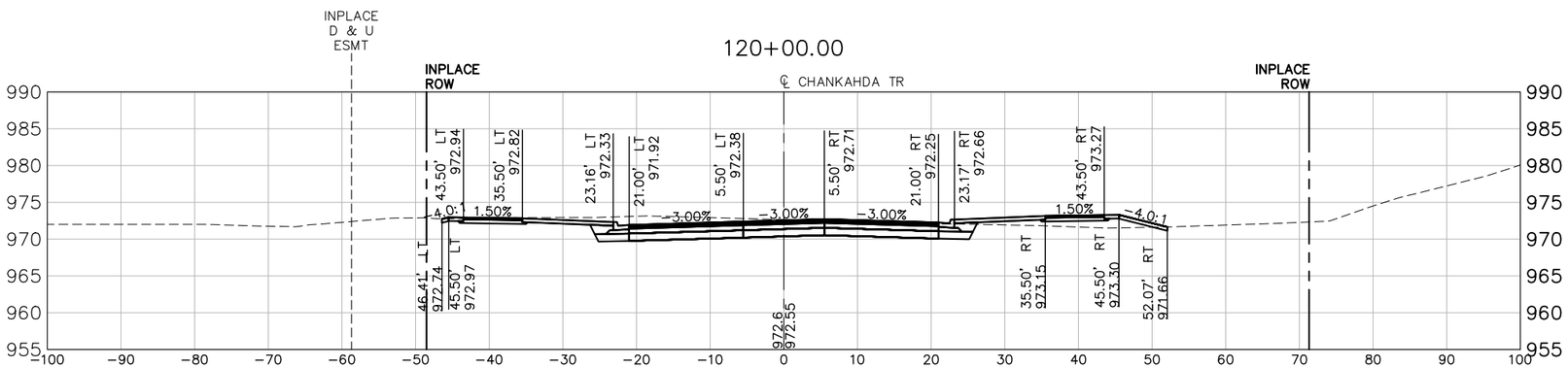
SHEET NO. 279 / 354

0 5 10 20 VERTICAL

0 5 10 20 HORIZONTAL SCALE IN FEET







No.	Date	Revisions	App.

DRAWING NAME	CHANKAHDA_PH3_Sections.dwg
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DATE: 02/07/2025 MN LIC. NO. 41864

City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
CROSS SECTIONS
STA. 120+00 TO STA. 121+00

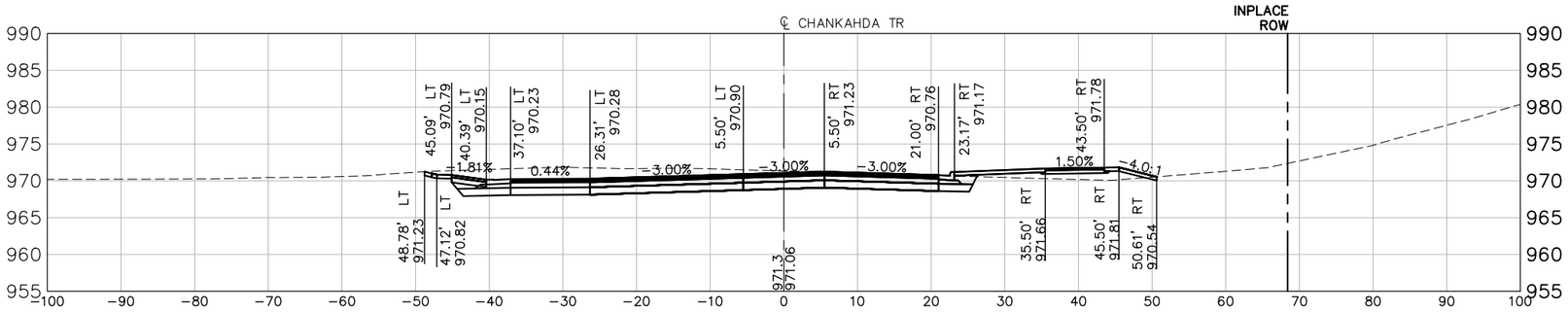
CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 280 / 354

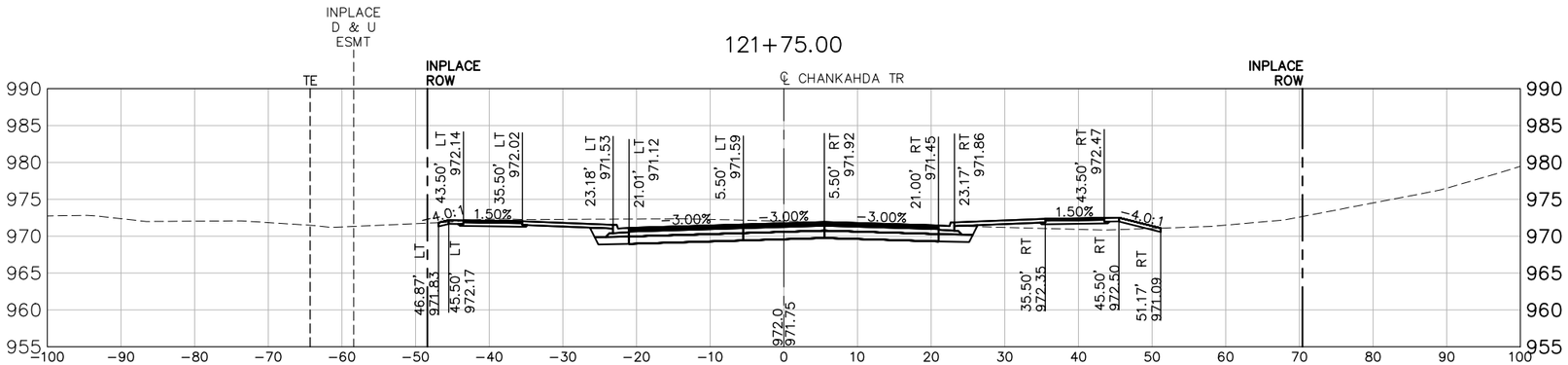
0 5 10 20 VERTICAL

0 5 10 20 HORIZONTAL SCALE IN FEET

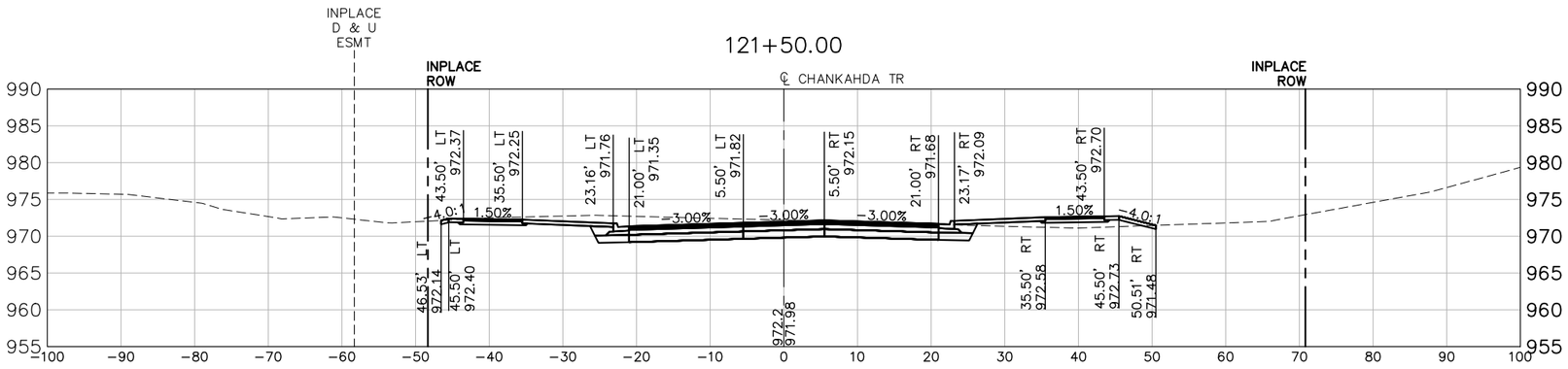
122+50.00



121+75.00



121+50.00



No.	Date	Revisions	App.

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City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
CROSS SECTIONS
STA. 121+50 TO STA. 122+50

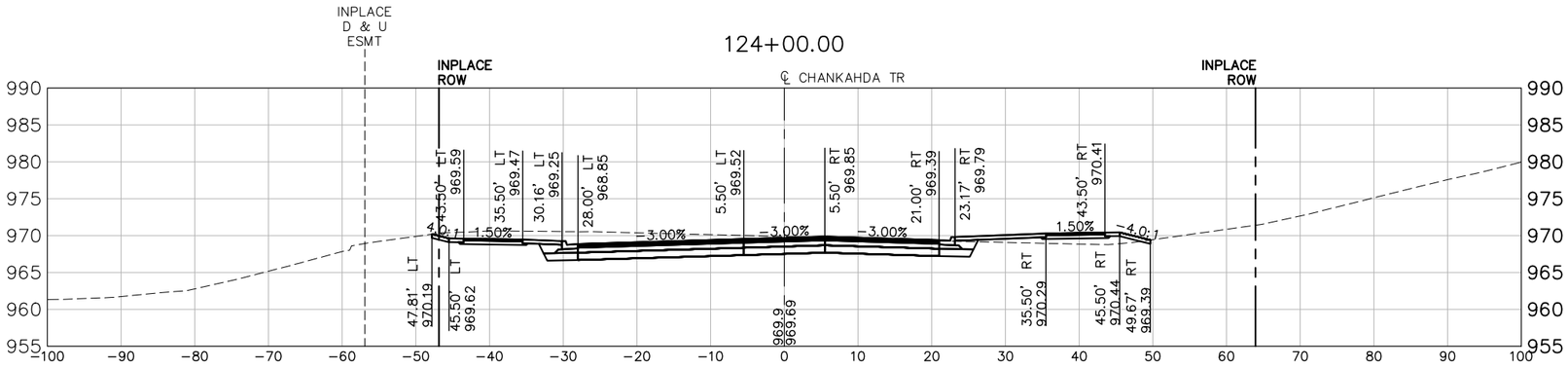
CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 281 / 354

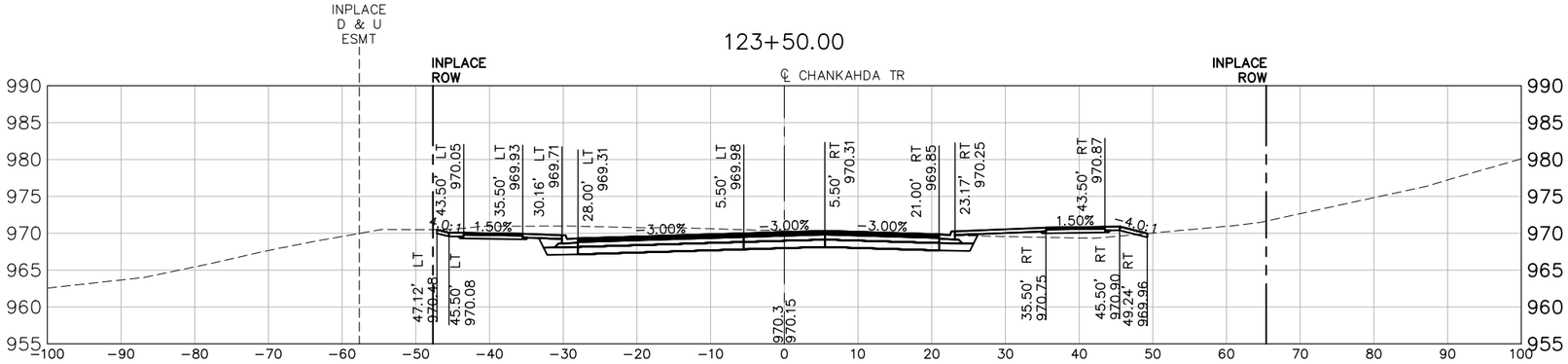
0 5 10 20 VERTICAL

0 5 10 20 HORIZONTAL SCALE IN FEET

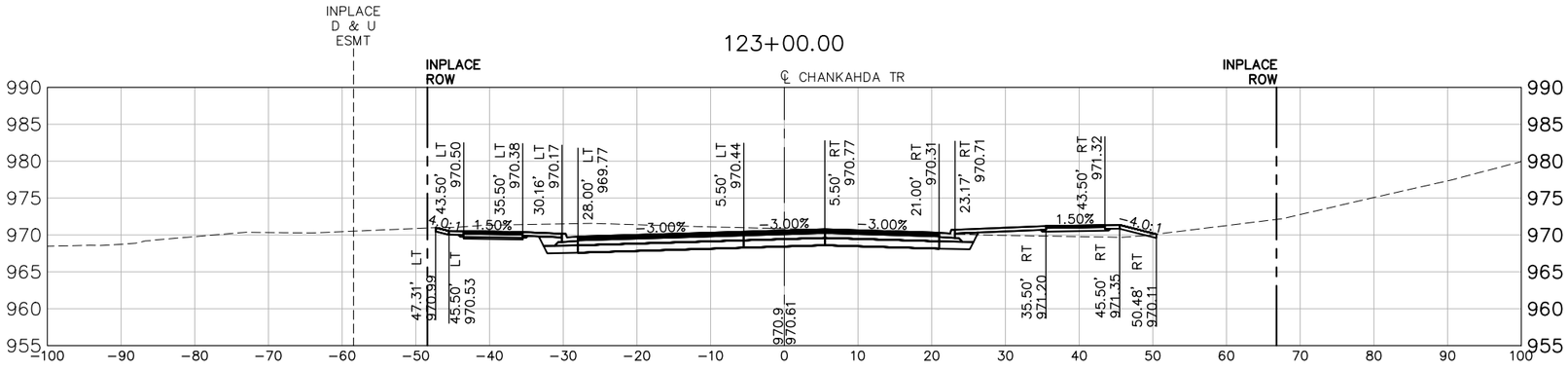
124+00.00



123+50.00



123+00.00



No.	Date	Revisions	App.

DRAWING NAME	CHANKAHDA_PH3_Sections.dwg
DESIGNED BY:	JWB
DRAWN BY:	JWB
CHECKED BY:	CBL
DATE:	02/07/2025
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CHADD B. LARSON, PE

DATE: 02/07/2025 MN LIC. NO. 41864

City of Plymouth

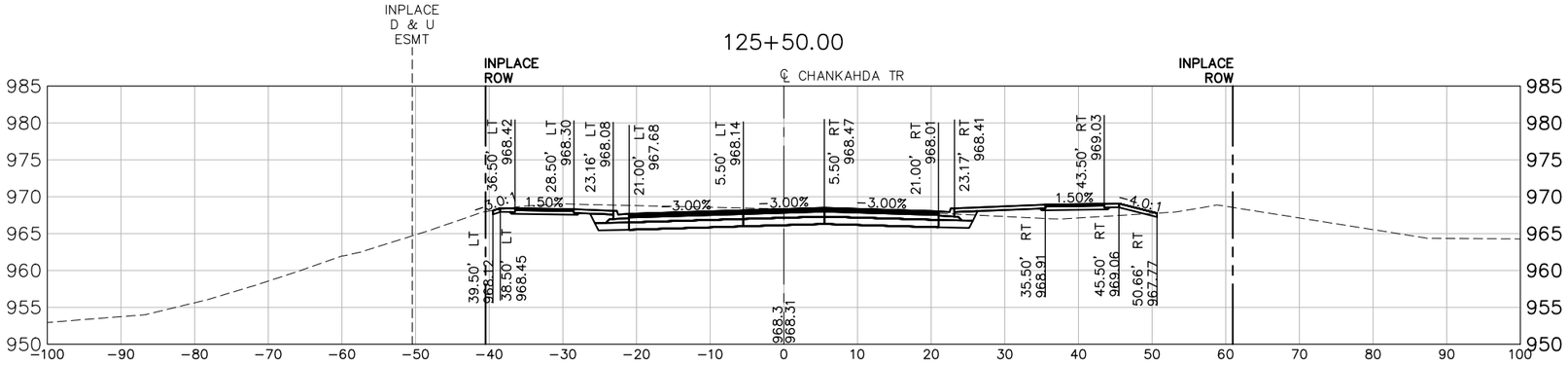
CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
CROSS SECTIONS
STA. 123+00 TO STA. 124+00

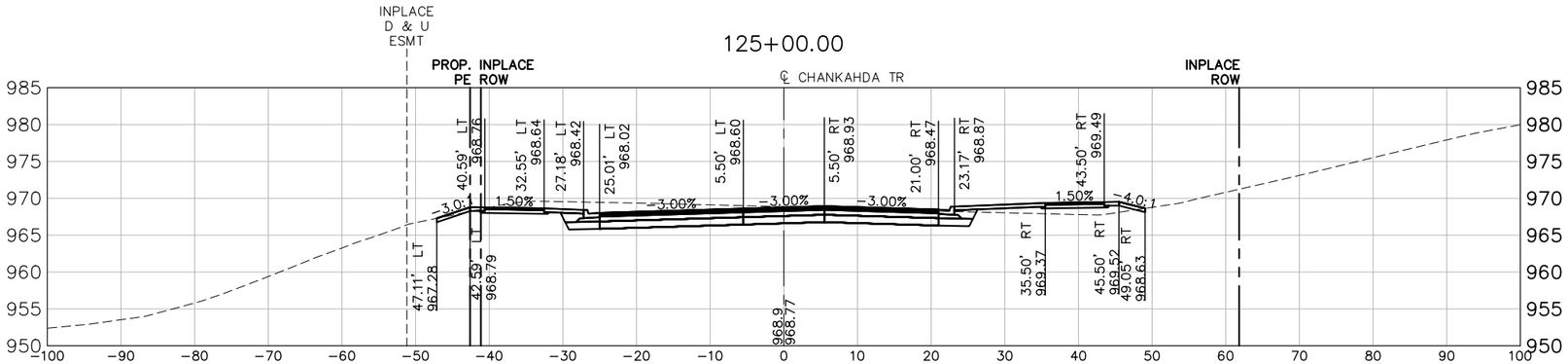
CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

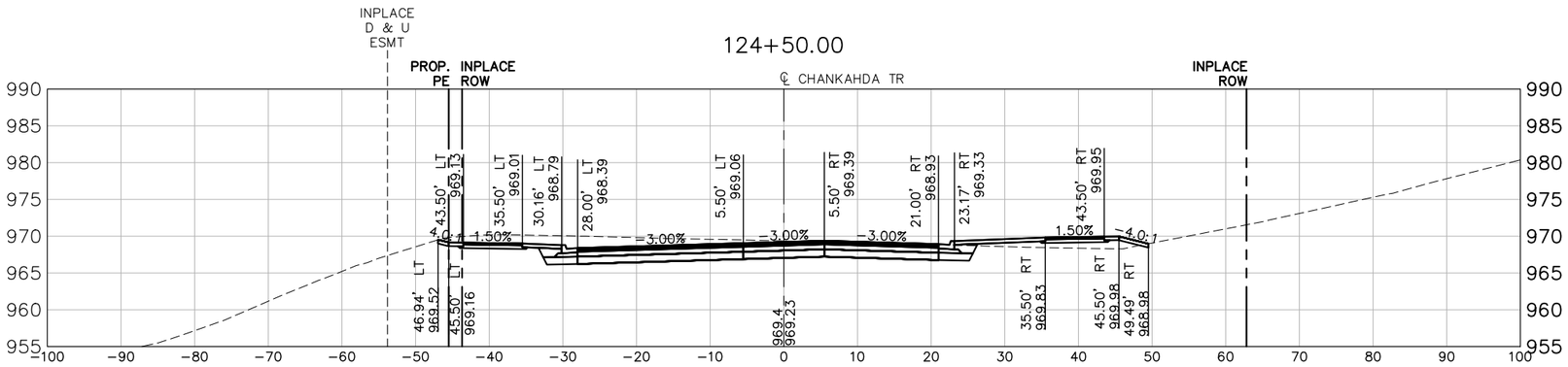
SHEET NO. 282 / 354

0 5 10 20 VERTICAL

0 5 10 20 HORIZONTAL SCALE IN FEET







No.	Date	Revisions	App.

DRAWING NAME	CHANKAHDA_PH3_Sections.dwg
DESIGNED BY:	JWB
DRAWN BY:	JWB
CHECKED BY:	CBL
DATE:	02/07/2025
PROJECT NO.	160662010

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CHADD B. LARSON, PE

DATE: 02/07/2025 MN LIC. NO. 41864

City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
CROSS SECTIONS
STA. 124+50 TO STA. 125+50

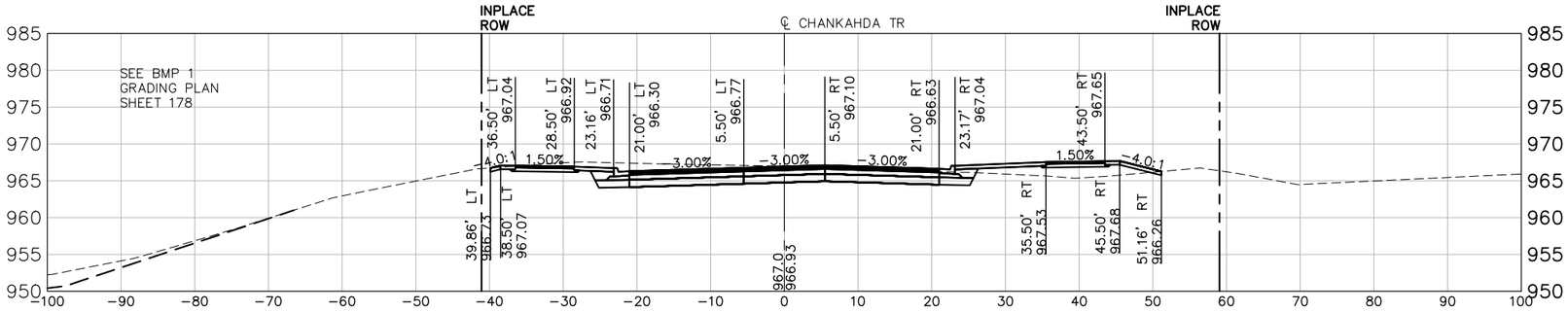
CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 283 / 354

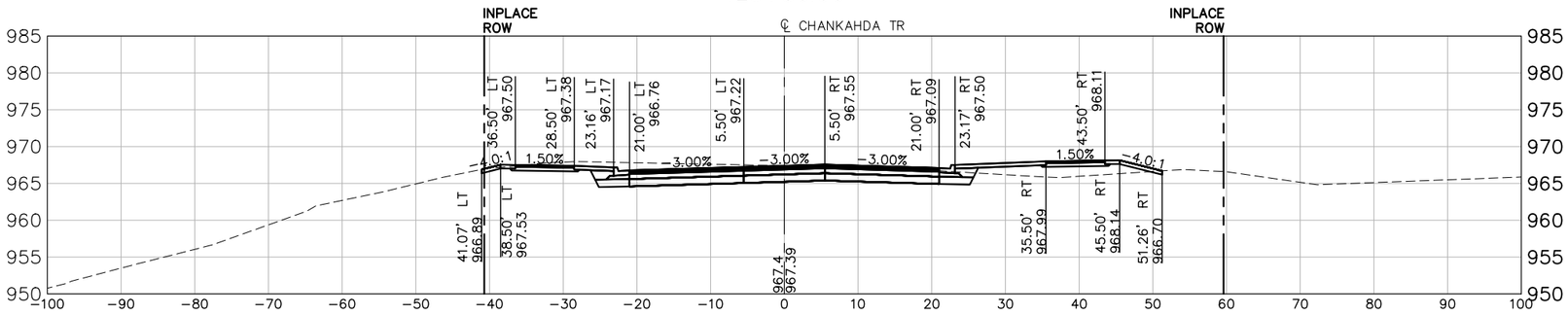
0 5 10 20 VERTICAL

0 5 10 20 HORIZONTAL SCALE IN FEET

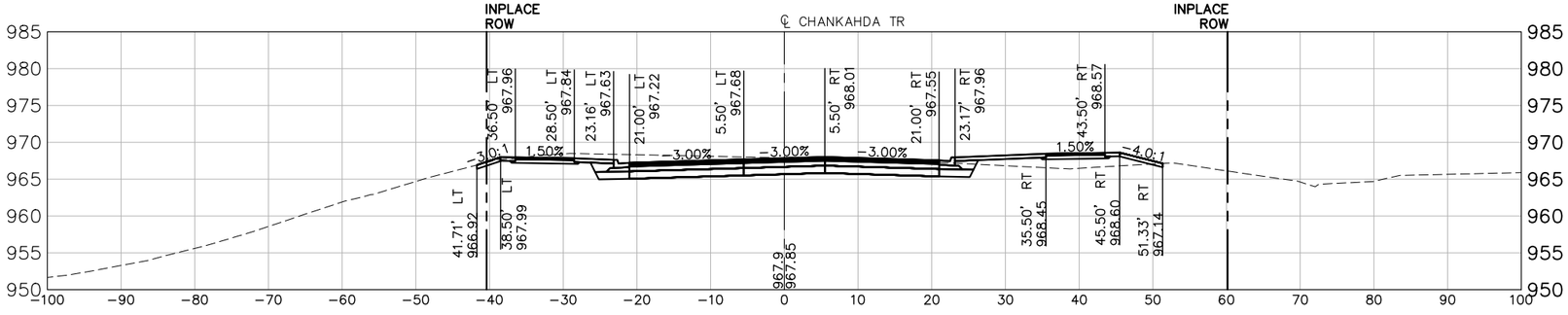
127+00.00



126+50.00



126+00.00



No.	Date	Revisions	App.

DRAWING NAME	CHANKAHDA_PH3_Sections.dwg
DESIGNED BY:	JWB
DRAWN BY:	JWB
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DATE:	02/07/2025
PROJECT NO.	160662010

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CHADD B. LARSON, PE

DATE: 02/07/2025 MN LIC. NO. 41864

City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
CROSS SECTIONS
STA. 126+00 TO STA. 127+00

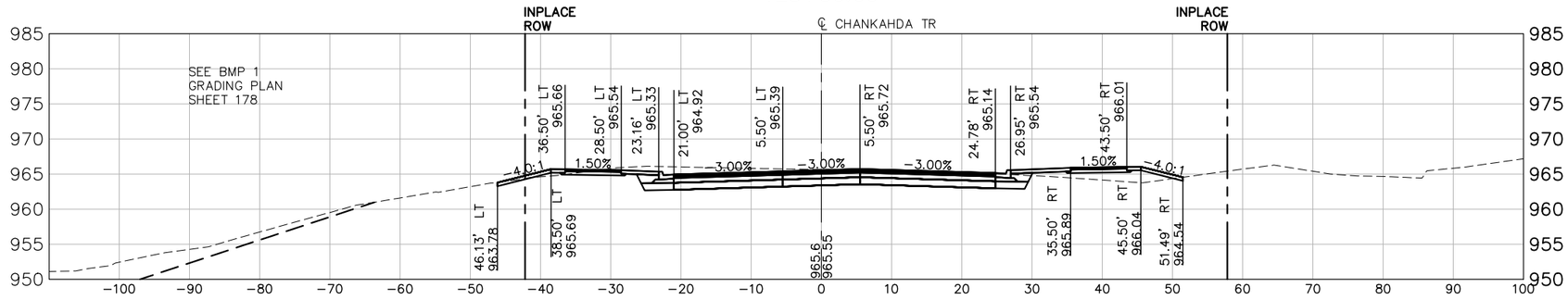
CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 284 / 354

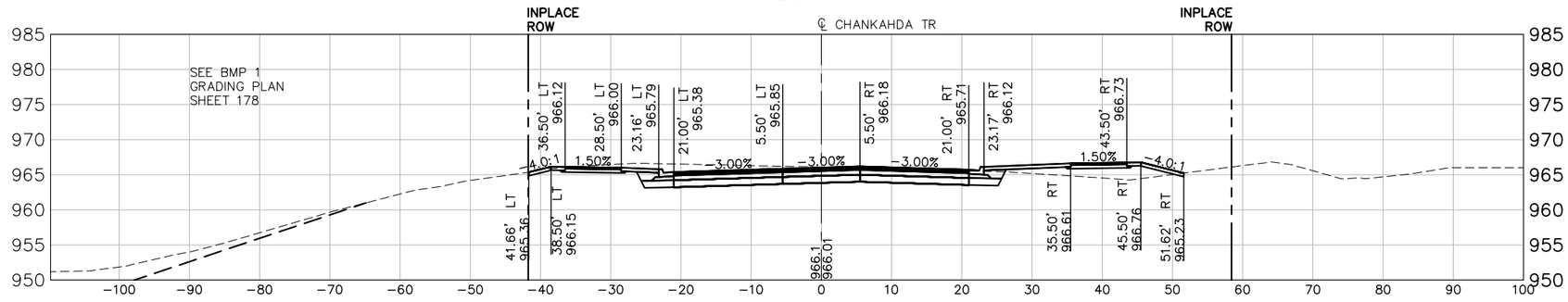
0 5 10 20 VERTICAL

0 5 10 20 HORIZONTAL SCALE IN FEET

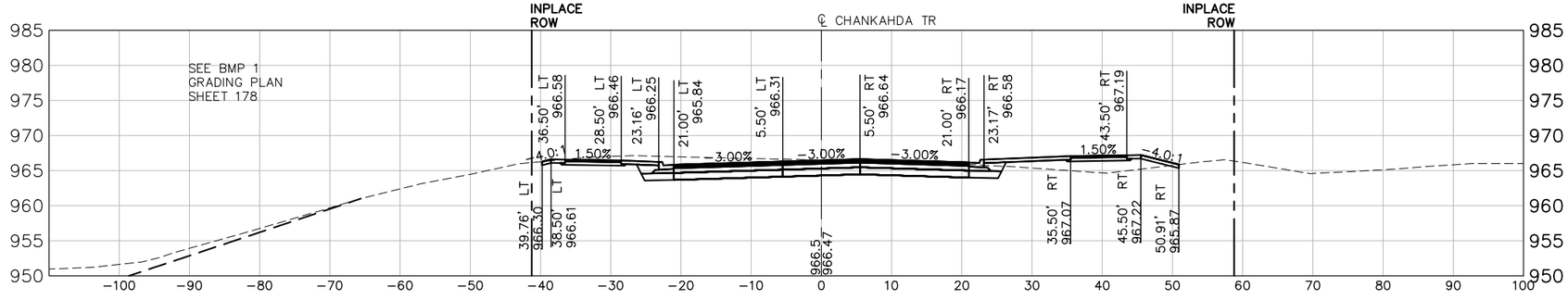
128+50.00



128+00.00



127+50.00



No.	Date	Revisions	App.

DRAWING NAME: CHANKAHDA_PH3_Sections.dwg

DESIGNED BY:	JWB
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City of Plymouth

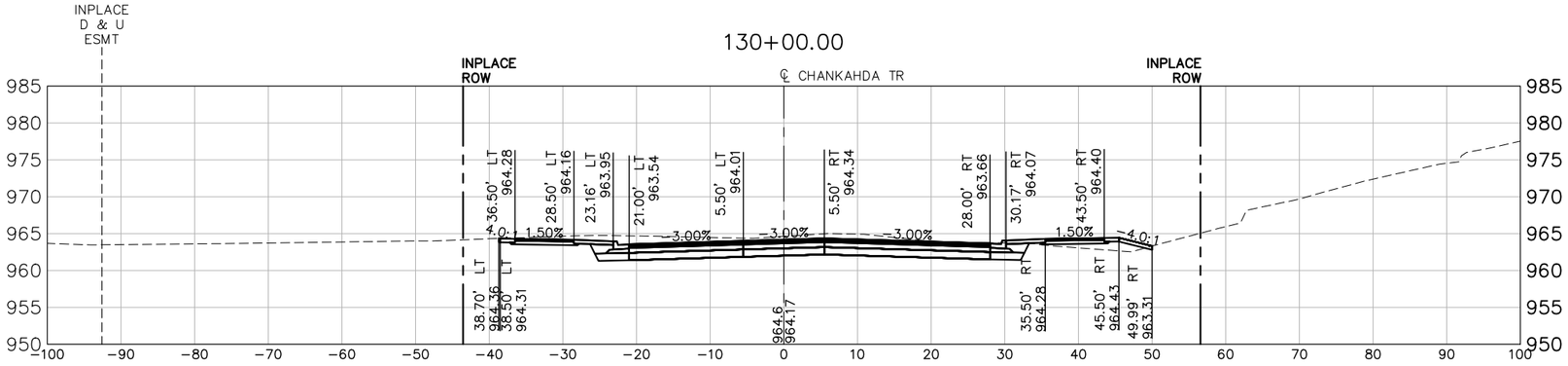
CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
CROSS SECTIONS
STA. 127+50 TO STA. 128+50

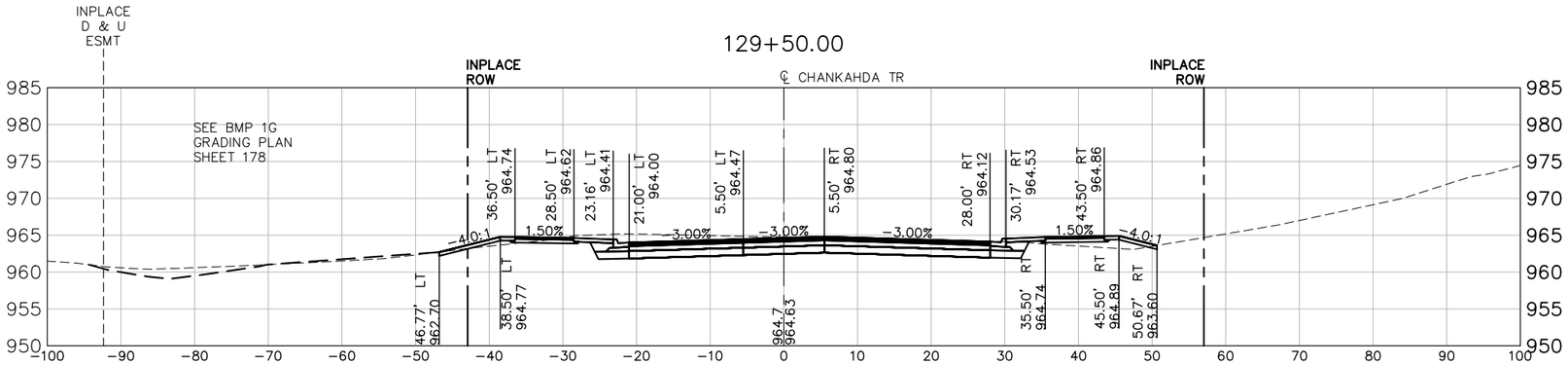
CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

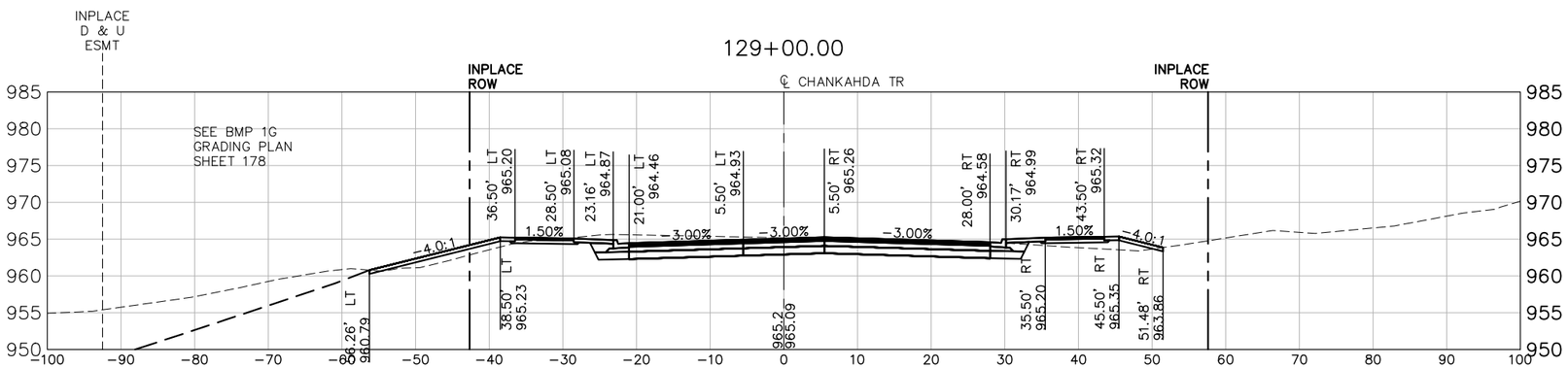
SHEET NO. 285 / 354

0 5 10 20 VERTICAL

0 5 10 20 HORIZONTAL SCALE IN FEET







No.	Date	Revisions	App.

DRAWING NAME	CHANKAHDA_PH3_Sections.dwg
DESIGNED BY:	JWB
DRAWN BY:	JWB
CHECKED BY:	CBL
DATE:	02/07/2025
PROJECT NO.	160662010

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DATE: 02/07/2025 MN LIC. NO. 41864

City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
CROSS SECTIONS
STA. 129+00 TO STA. 130+00

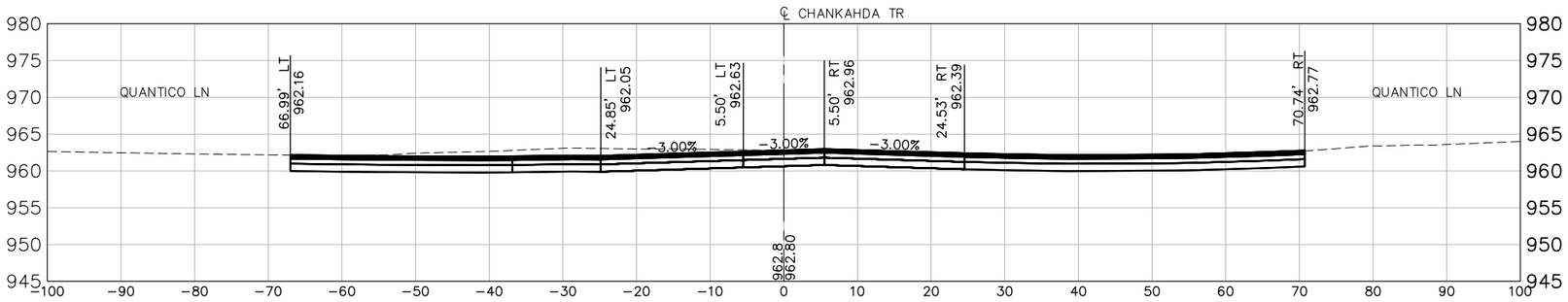
CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 286 / 354

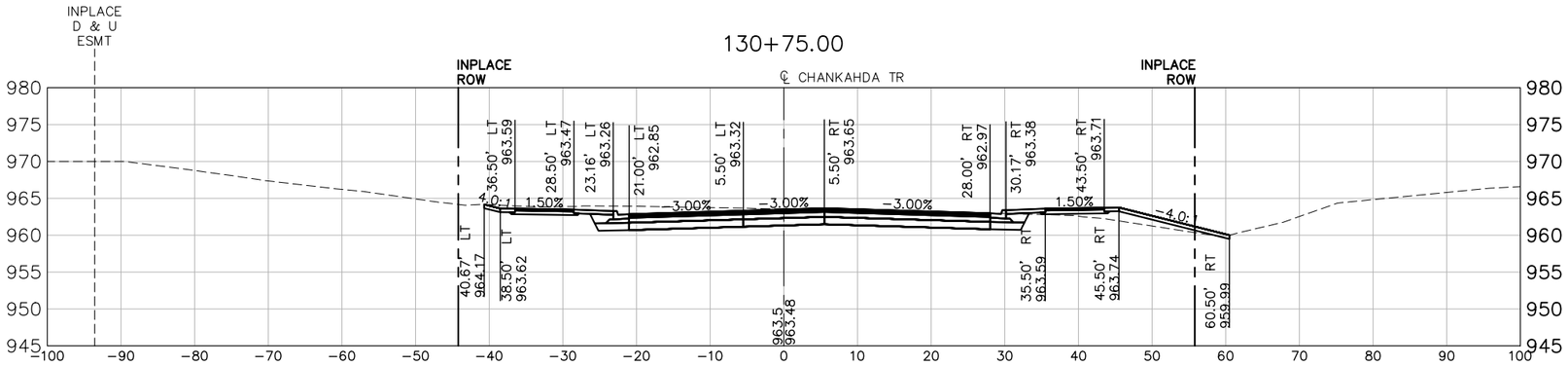
0 5 10 20 VERTICAL

0 5 10 20 HORIZONTAL SCALE IN FEET

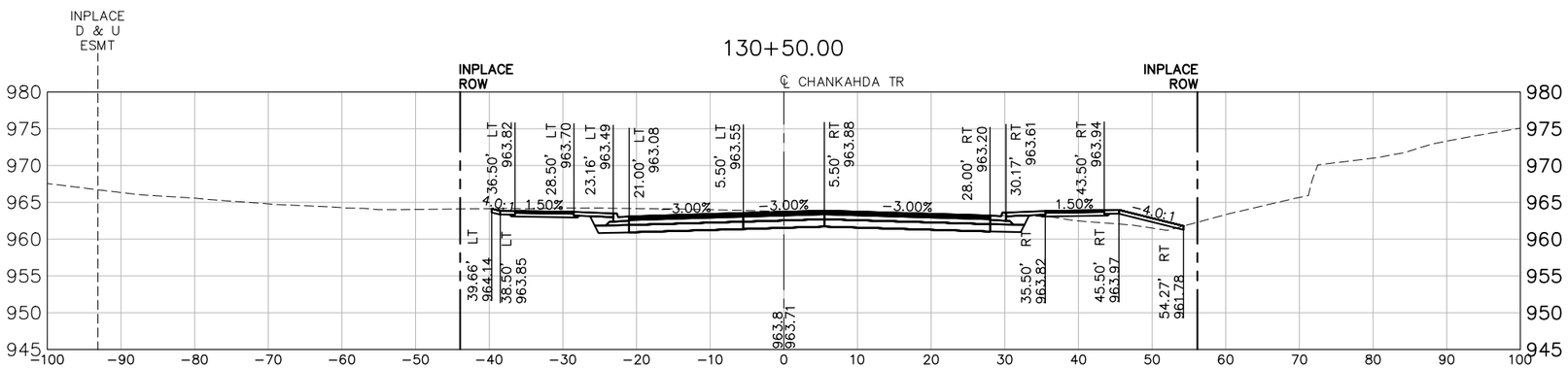
131+50.00



130+75.00



130+50.00



No.	Date	Revisions	App.

DRAWING NAME	CHANKAHDA_PH3_Sections.dwg
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DATE:	02/07/2025
PROJECT NO.	160662010

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City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
CROSS SECTIONS
STA. 130+50 TO STA. 131+50

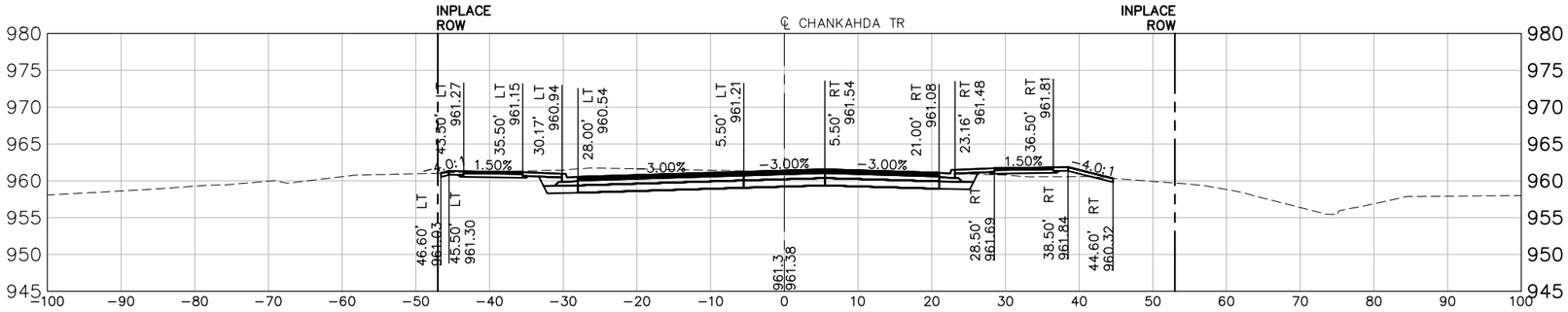
CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 287 / 354

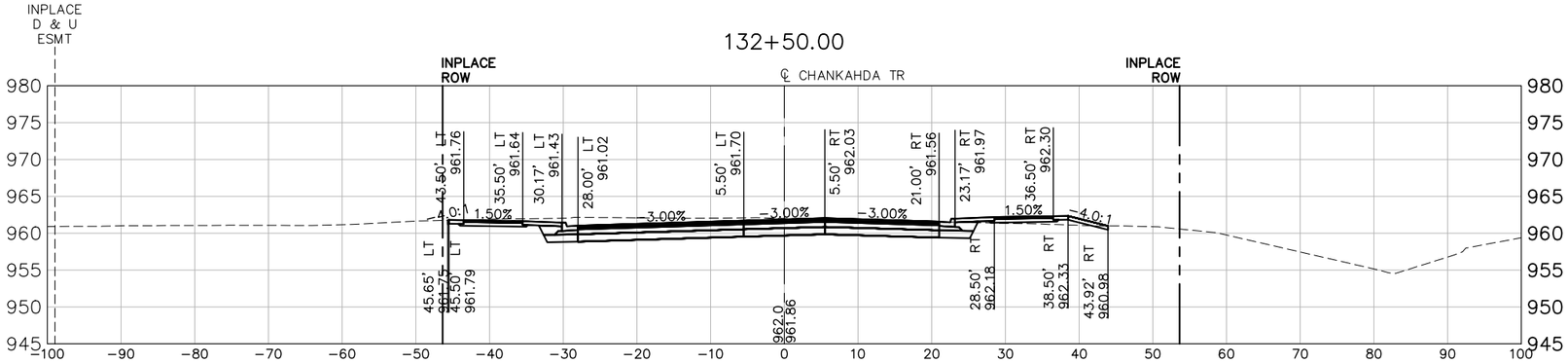
0 5 10 20 VERTICAL

0 5 10 20 HORIZONTAL SCALE IN FEET

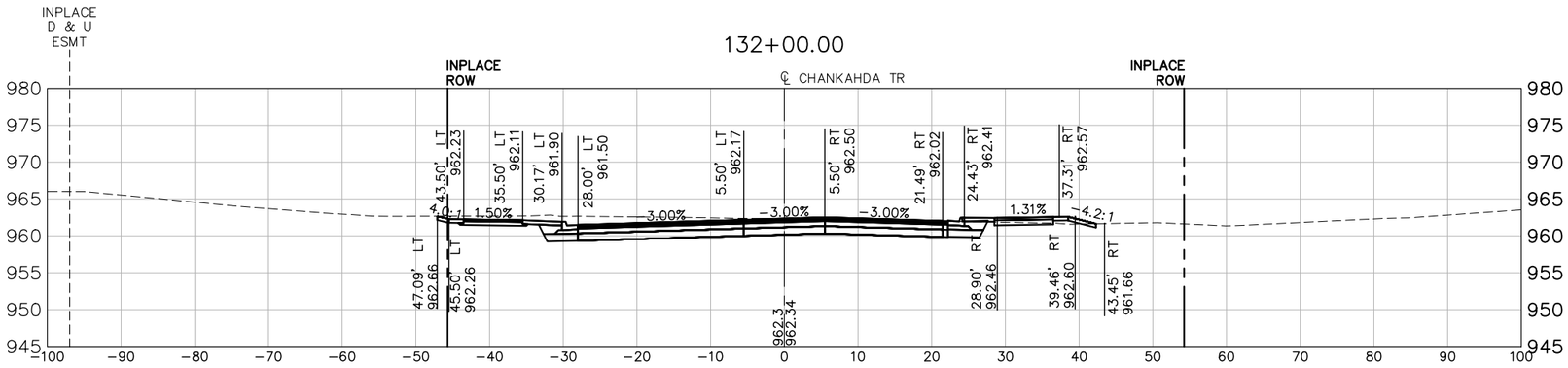
133+00.00



132+50.00



132+00.00



No.	Date	Revisions	App.

DRAWING NAME: CHANKAHDA_PH3_Sections.dwg

DESIGNED BY:	JWB
DRAWN BY:	JWB
CHECKED BY:	CBL
DATE:	02/07/2025
PROJECT NO.	160662010

Kimley»Horn
767 EUSTIS STREET, SUITE 100, ST, PAUL, MN 55114
PHONE: 651-645-4197
WWW.KIMLEY-HORN.COM

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

CHADD B. LARSON, PE

DATE: 02/07/2025 MN LIC. NO. 41864

City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
CROSS SECTIONS
STA. 132+00 TO STA. 133+00

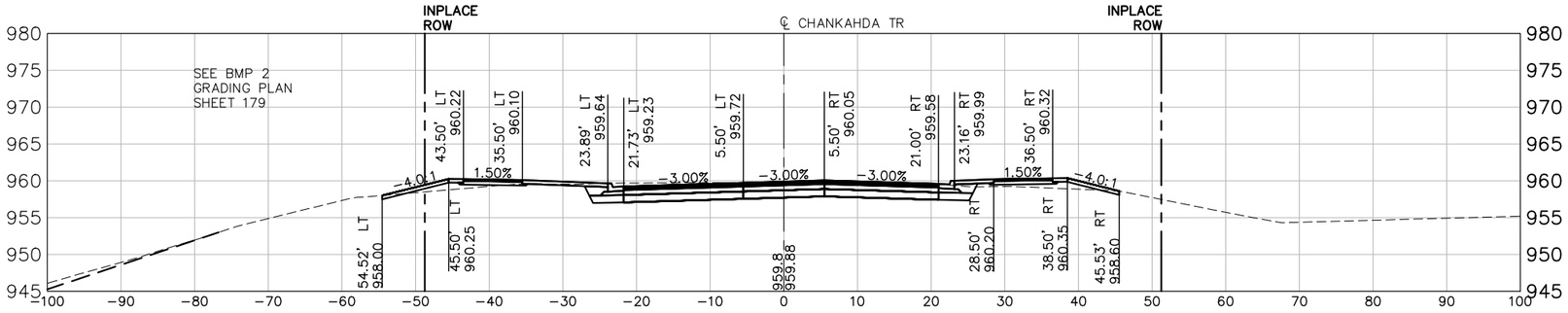
CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 288 / 354

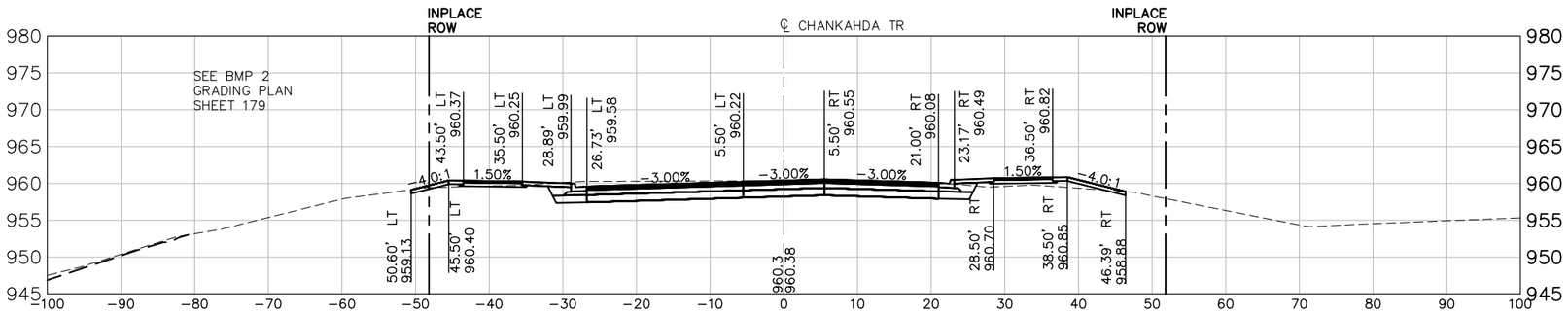
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0 5 10 20 HORIZONTAL SCALE IN FEET

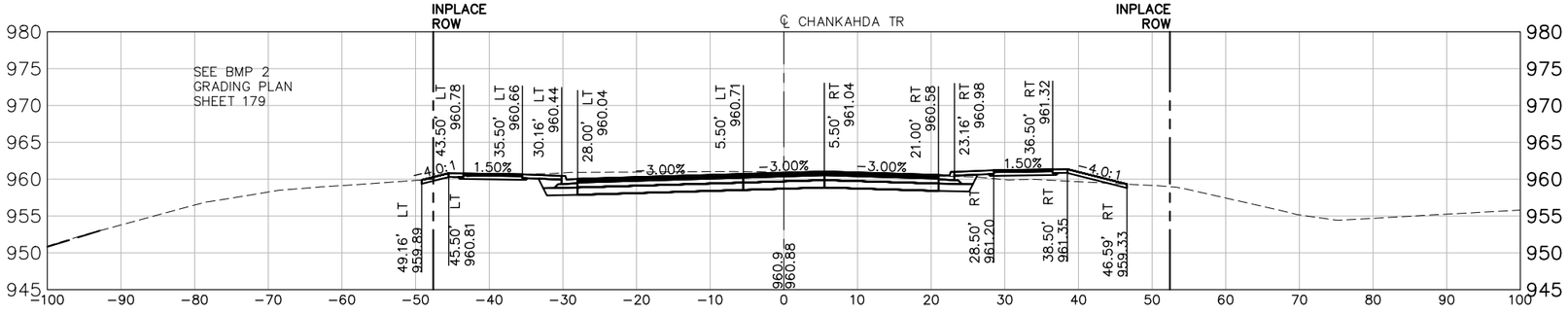
134+50.00



134+00.00



133+50.00



No.	Date	Revisions	App.

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Chadd B. Larson

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DATE: 02/07/2025 MN LIC. NO. 41864

City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
CROSS SECTIONS
STA. 133+50 TO STA. 134+50

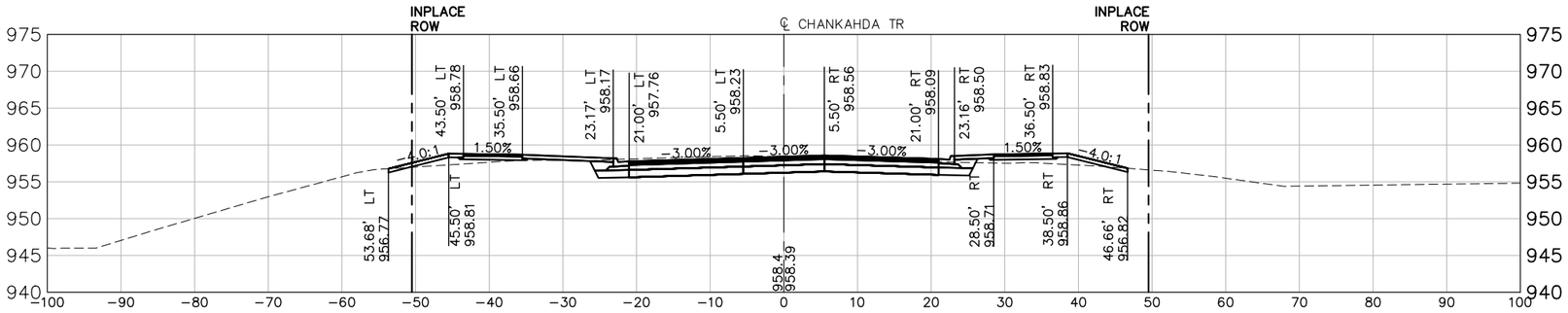
CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 289 / 354

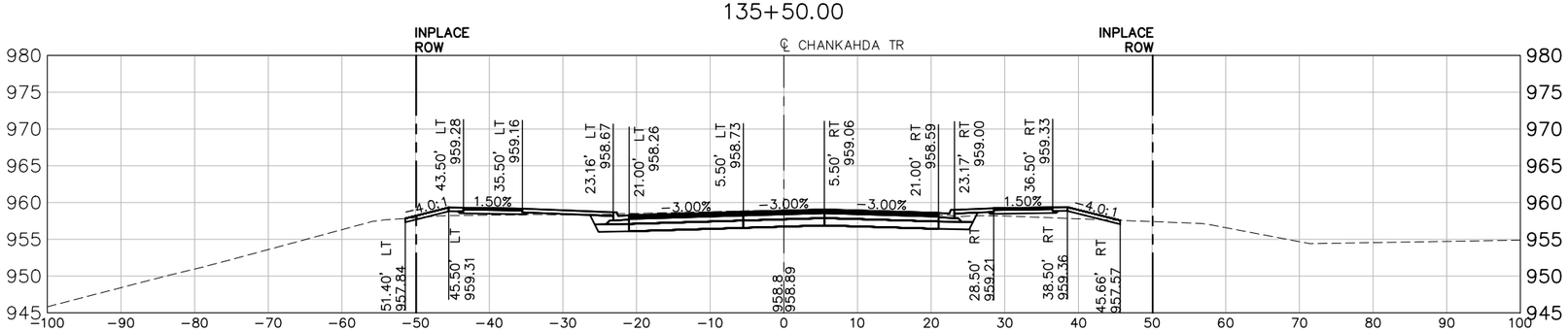
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0 5 10 20 HORIZONTAL SCALE IN FEET

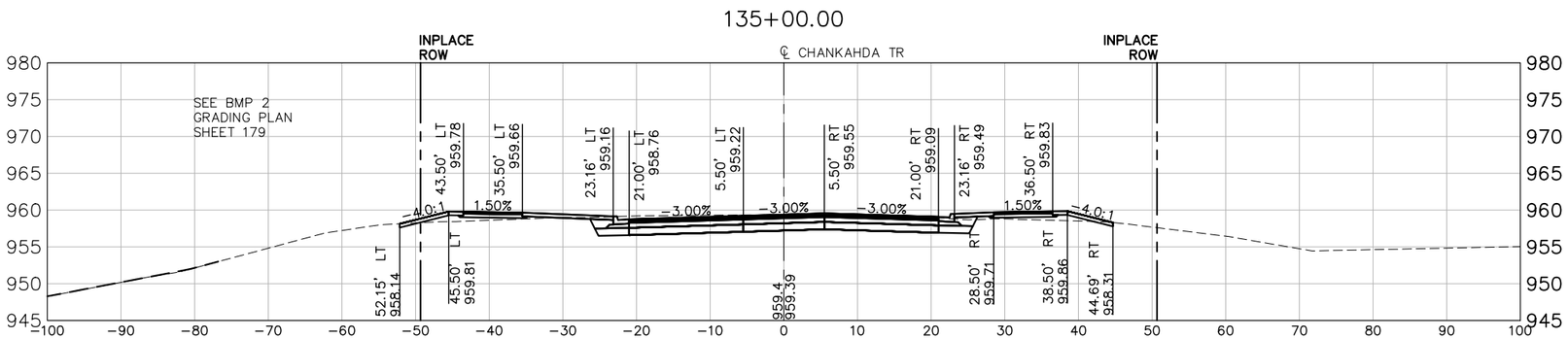
136+00.00



135+50.00



135+00.00



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City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
CROSS SECTIONS
STA. 135+00 TO STA. 136+00

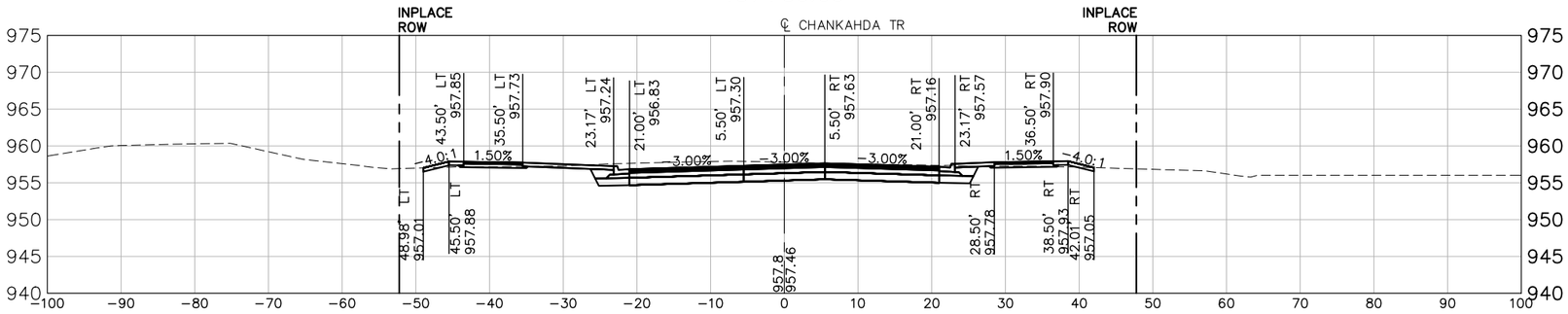
CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 290 / 354

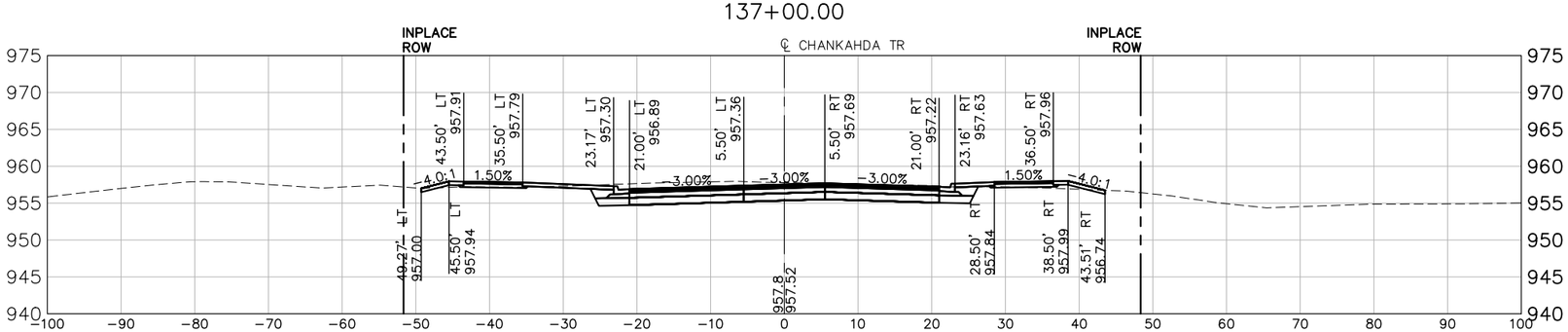
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0 5 10 20 HORIZONTAL SCALE IN FEET

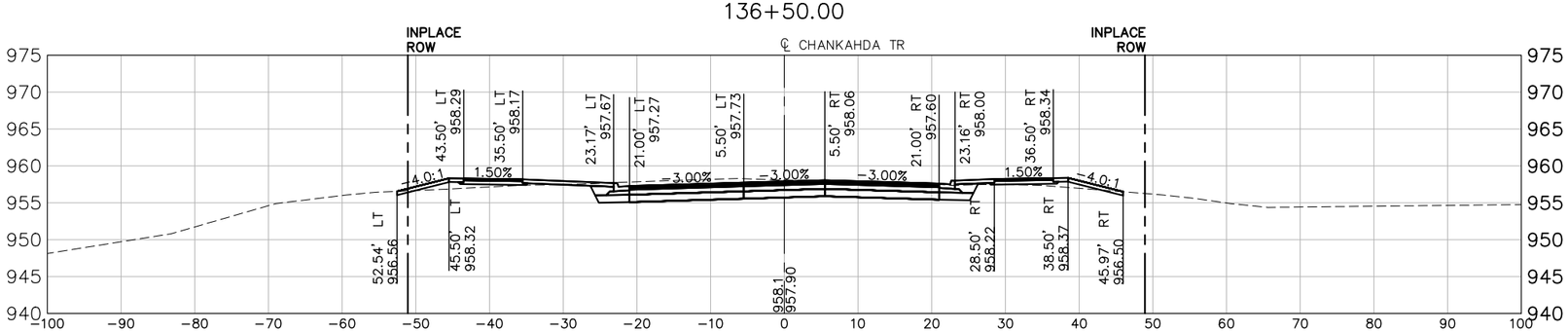
137+50.00



137+00.00



136+50.00



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City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
CROSS SECTIONS
STA. 136+50 TO STA. 137+50

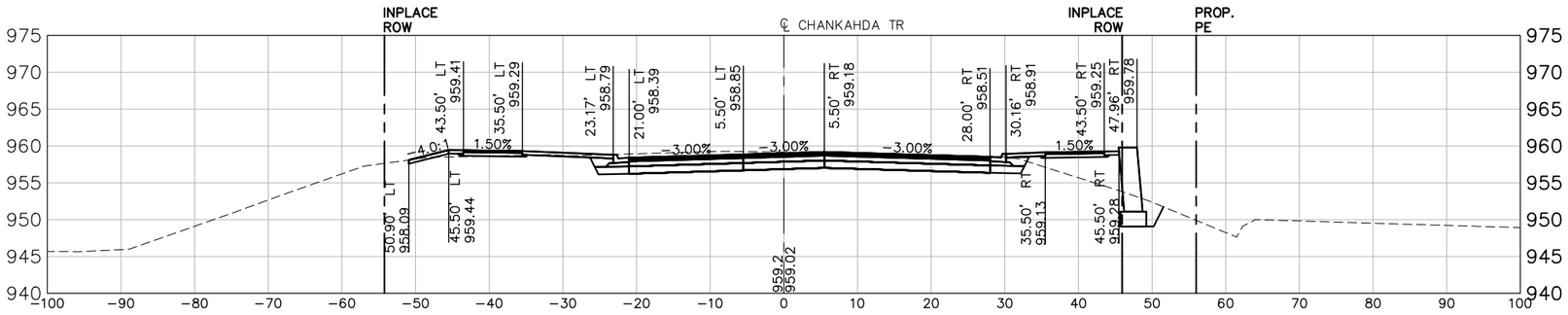
CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 291 / 354

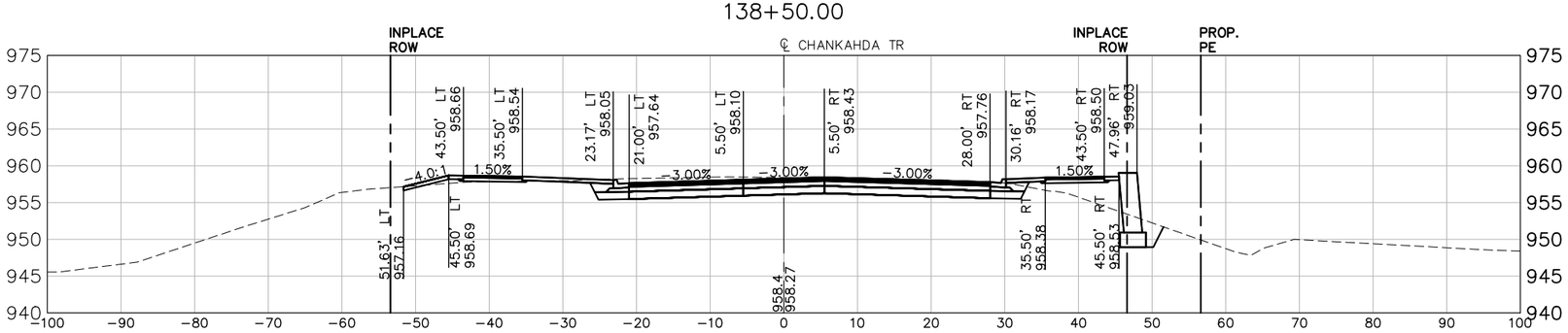
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0 5 10 20 HORIZONTAL SCALE IN FEET

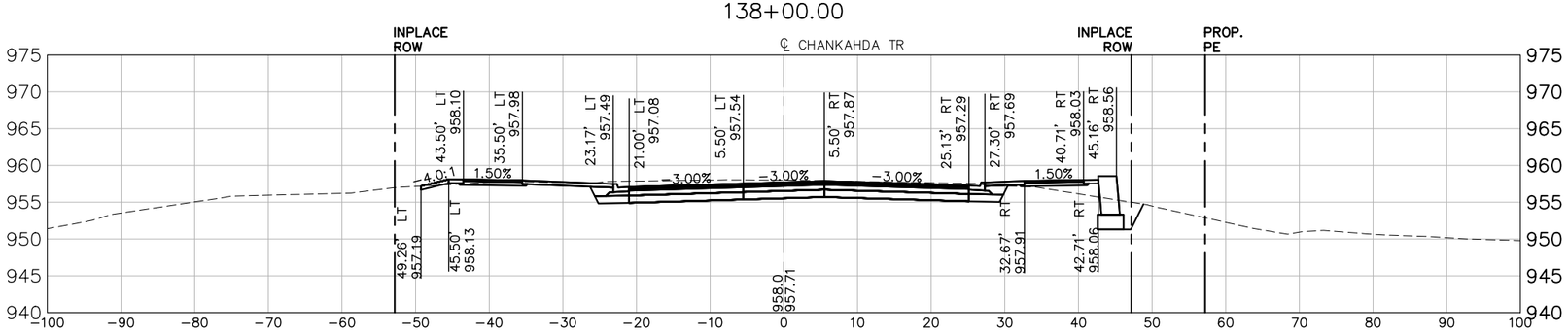
139+00.00



138+50.00



138+00.00



No.	Date	Revisions	App.

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CHADD B. LARSON, PE

DATE: 02/07/2025 MN LIC. NO. 41864

City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
CROSS SECTIONS
STA. 138+00 TO STA. 139+00

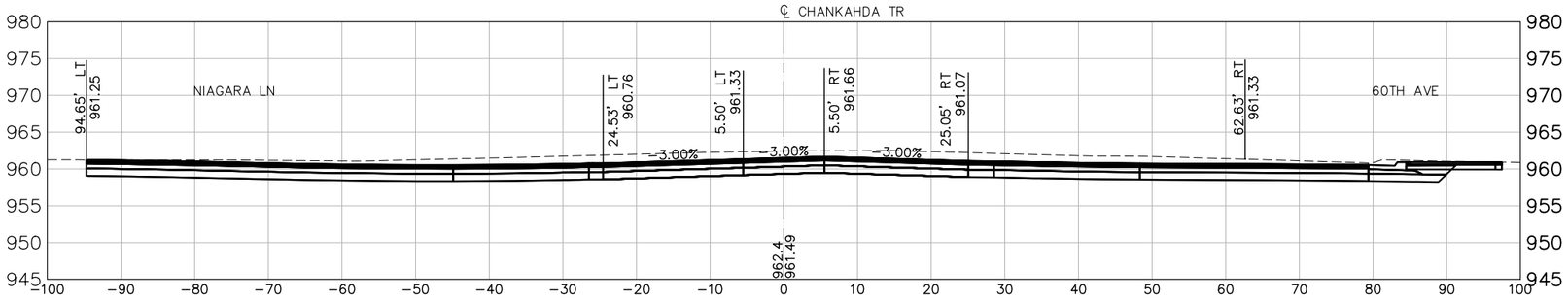
CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 292 / 354

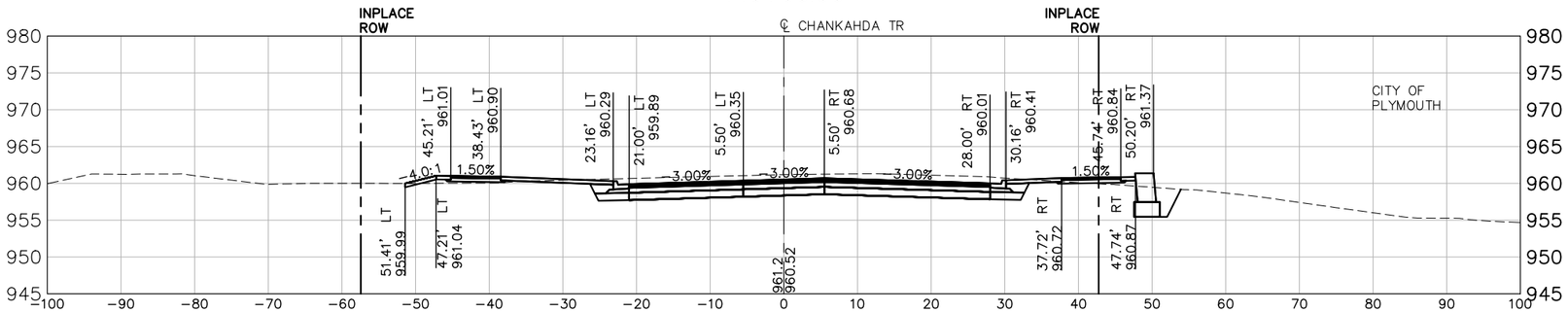
0 5 10 20 VERTICAL

0 5 10 20 HORIZONTAL SCALE IN FEET

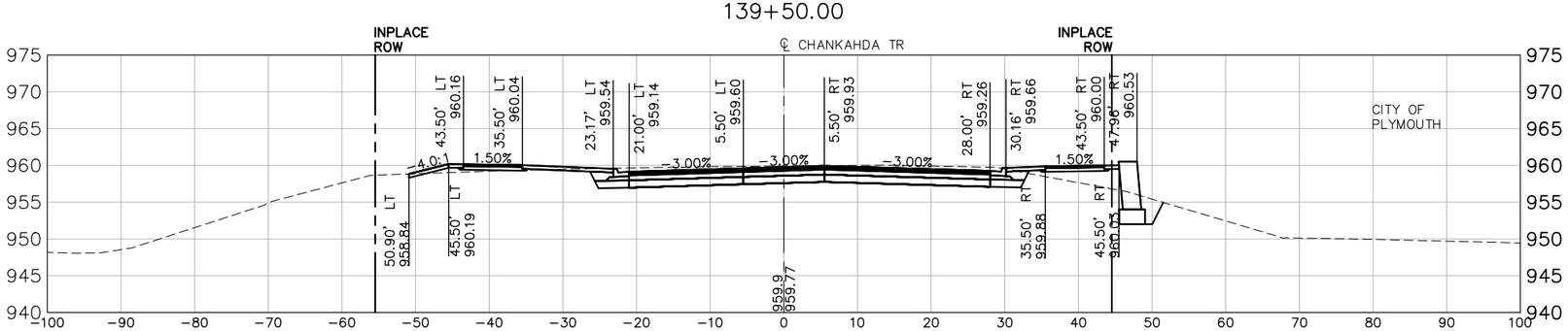
140+65.00



140+00.00



139+50.00



No.	Date	Revisions	App.

Kimley»Horn
767 EUSTIS STREET, SUITE 100, ST, PAUL, MN 55114
PHONE: 651-645-4197
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Chadd B Larson

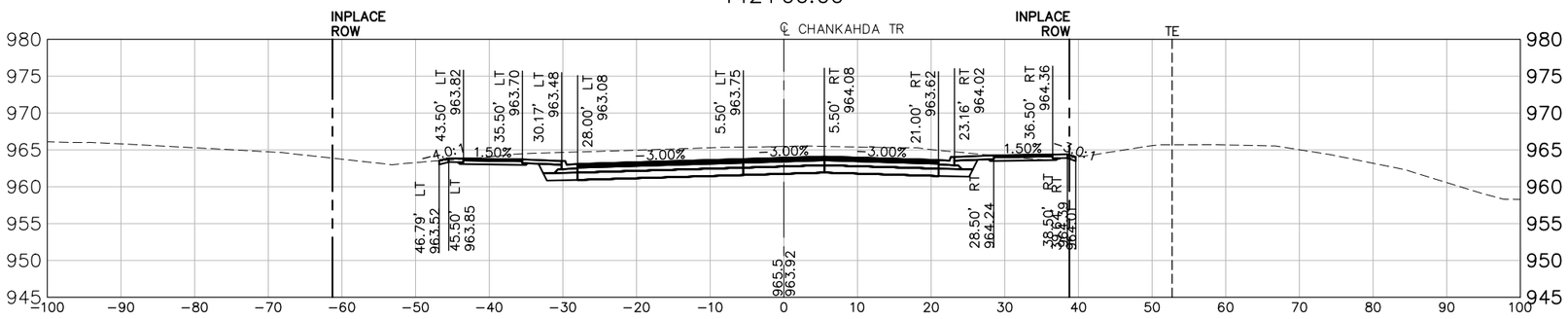
City of Plymouth

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

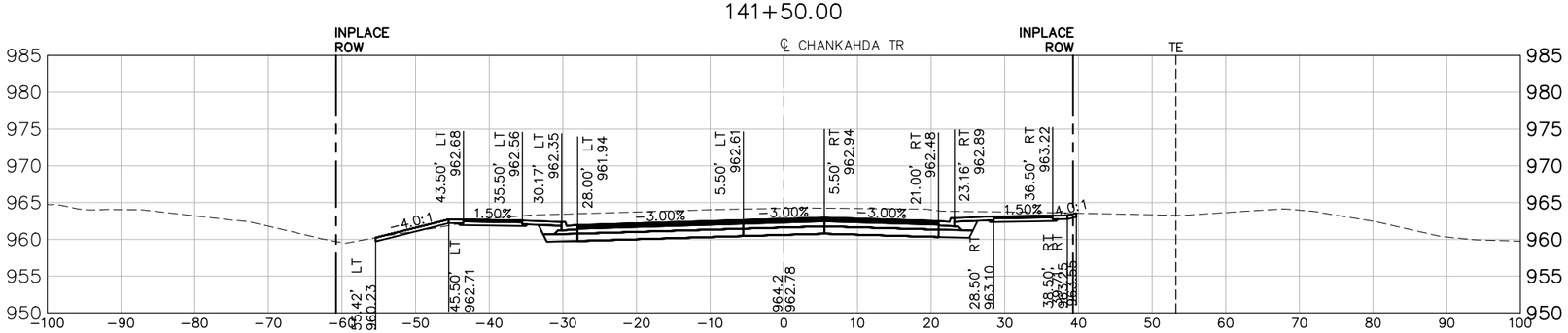
VERTICAL 0 5 10 20

HORIZONTAL SCALE IN FEET 0 5 10 20

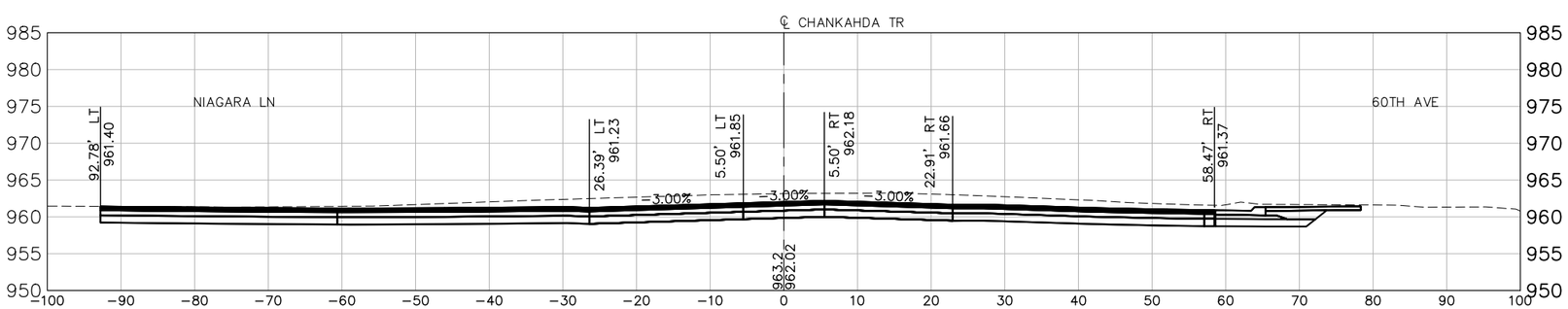
142+00.00



141+50.00



141+00.00



No.	Date	Revisions	App.

DRAWING NAME: CHANKAHDA_PH3_Sections.dwg

DESIGNED BY:	JWB
DRAWN BY:	JWB
CHECKED BY:	CBL
DATE:	02/07/2025
PROJECT NO.	160662010

Kimley»Horn
767 EUSTIS STREET, SUITE 100, ST, PAUL, MN 55114
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Chadd B. Larson

CHADD B. LARSON, PE

DATE: 02/07/2025 MN LIC. NO. 41864

City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
CROSS SECTIONS
STA. 141+00 TO STA. 142+00

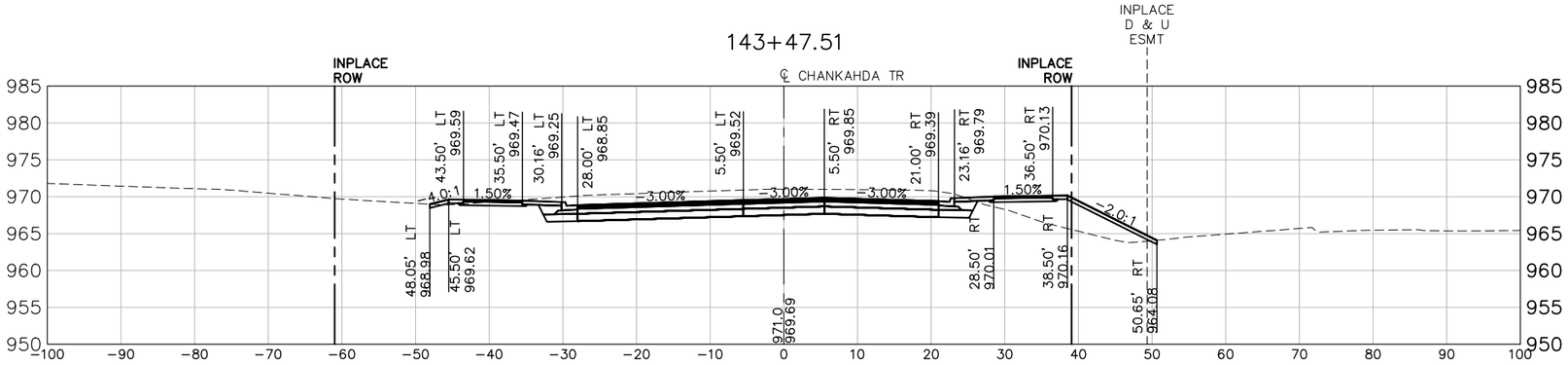
CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 294 / 354

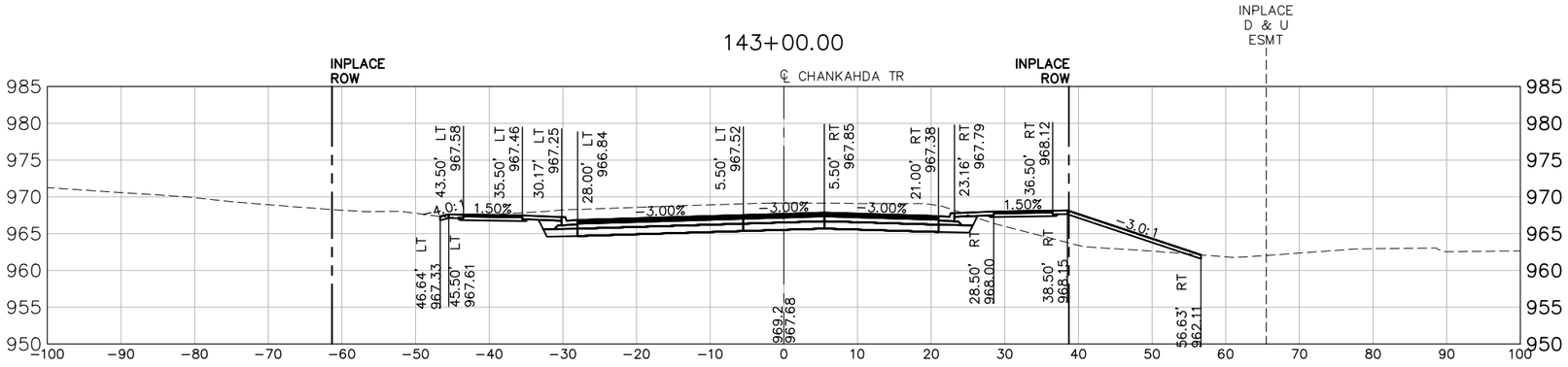
0 5 10 20
VERTICAL

0 5 10 20
HORIZONTAL SCALE IN FEET

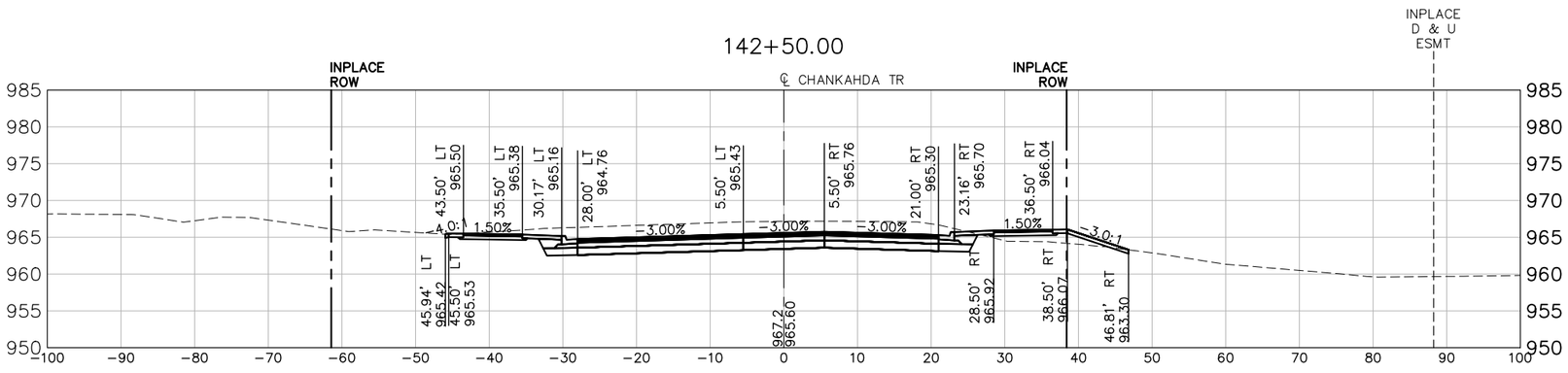
143+47.51



143+00.00



142+50.00



No.	Date	Revisions	App.

DRAWING NAME	CHANKAHDA_PH3_Sections.dwg
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DATE: 02/07/2025 MN LIC. NO. 41864

City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
CROSS SECTIONS
STA. 142+50 TO STA. 143+47

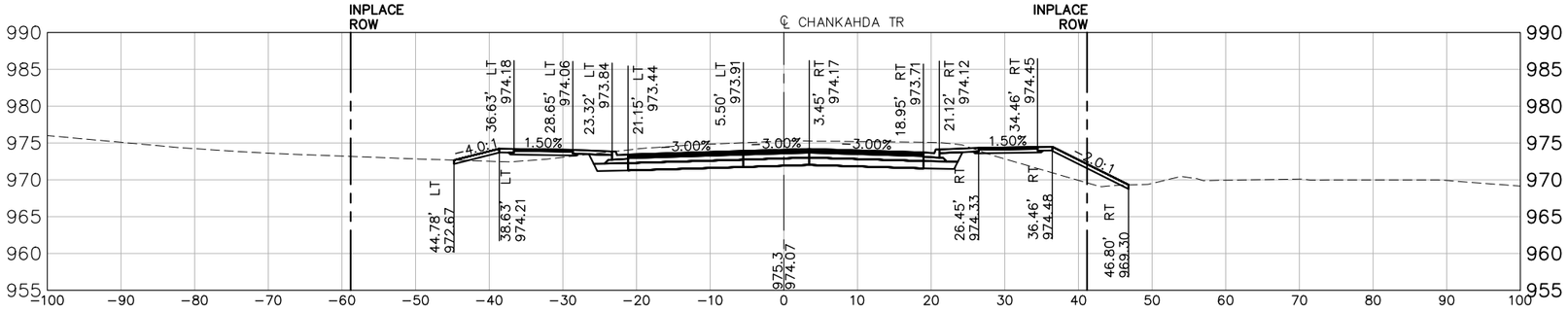
CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 295 / 354

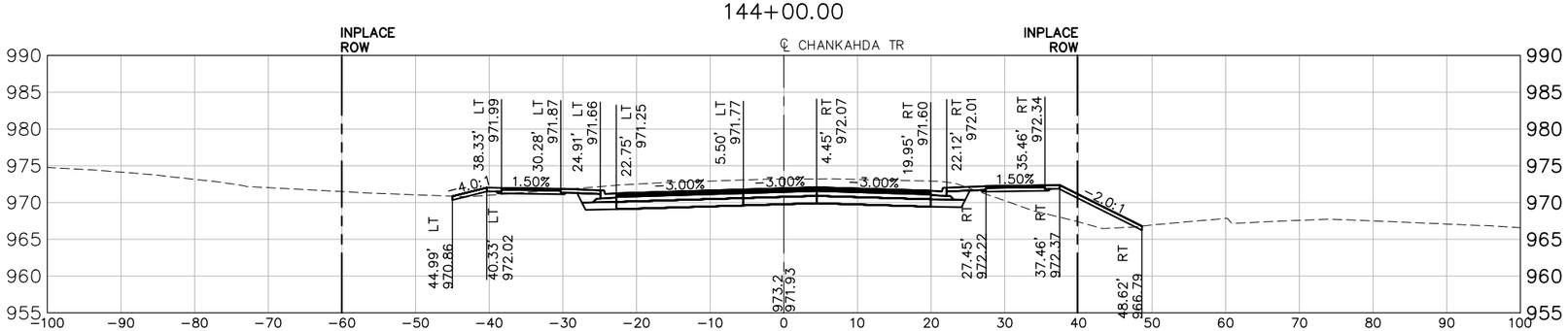
VERTICAL 0 5 10 20

HORIZONTAL SCALE IN FEET 0 5 10 20

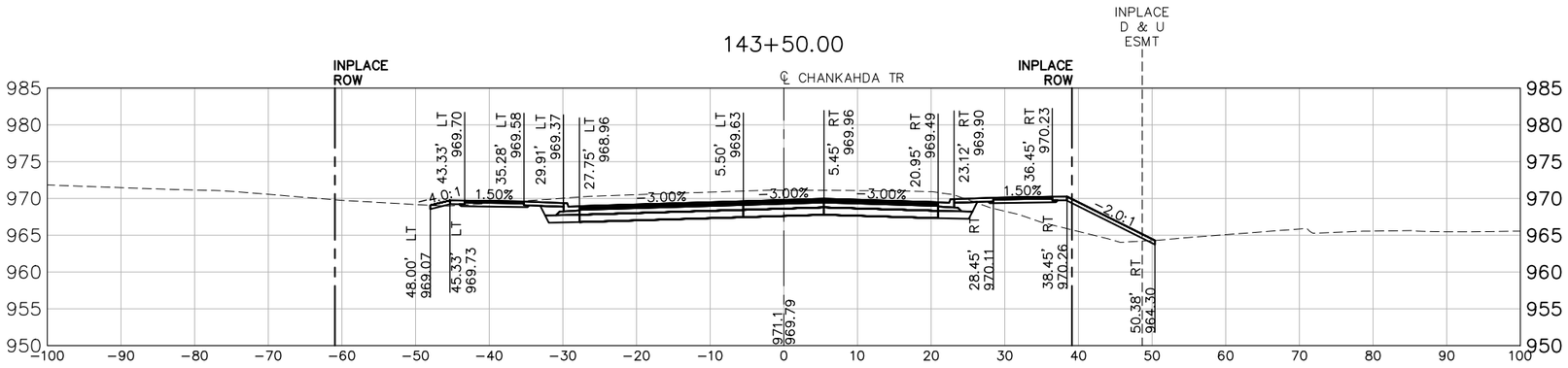
144+50.00



144+00.00



143+50.00



No.	Date	Revisions	App.

DRAWING NAME: CHANKAHDA_PH3_Sections.dwg

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City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
CROSS SECTIONS
STA. 143+50 TO STA. 144+50

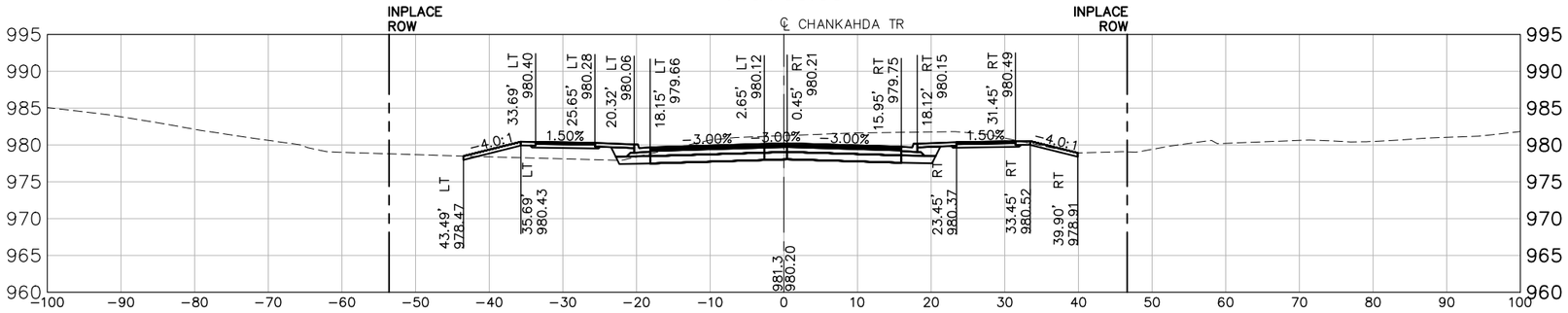
CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 296 / 354

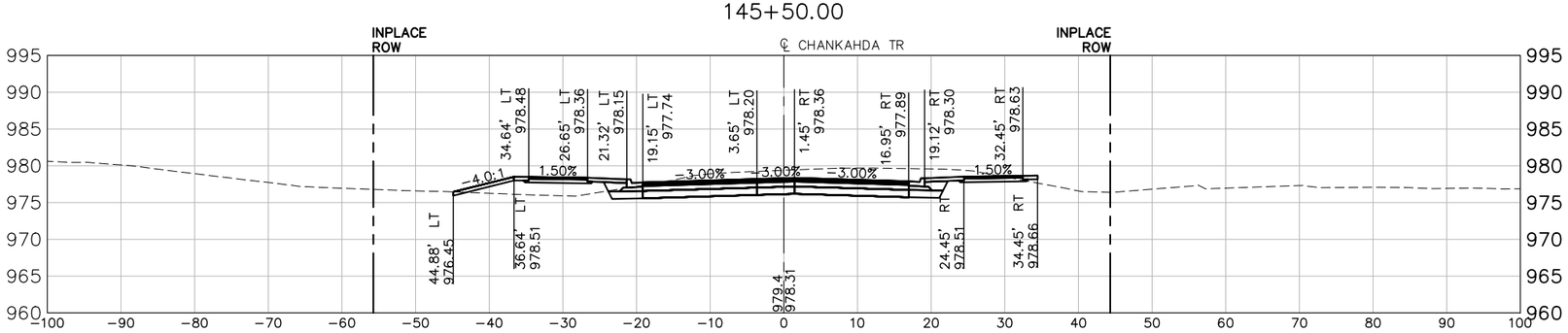
0 5 10 20
VERTICAL

0 5 10 20
HORIZONTAL SCALE IN FEET

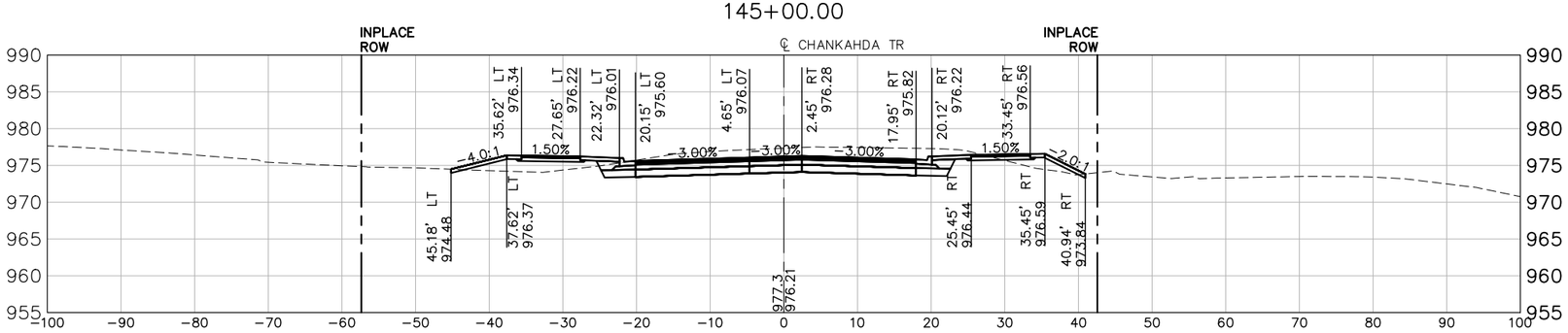
146+00.00



145+50.00



145+00.00



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City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
CROSS SECTIONS
STA. 145+00 TO STA. 146+00

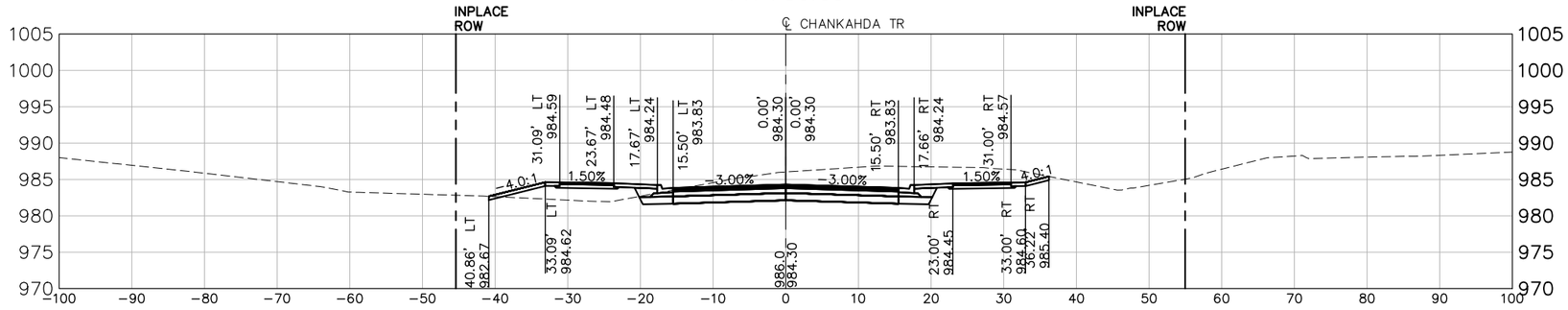
CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 297 / 354

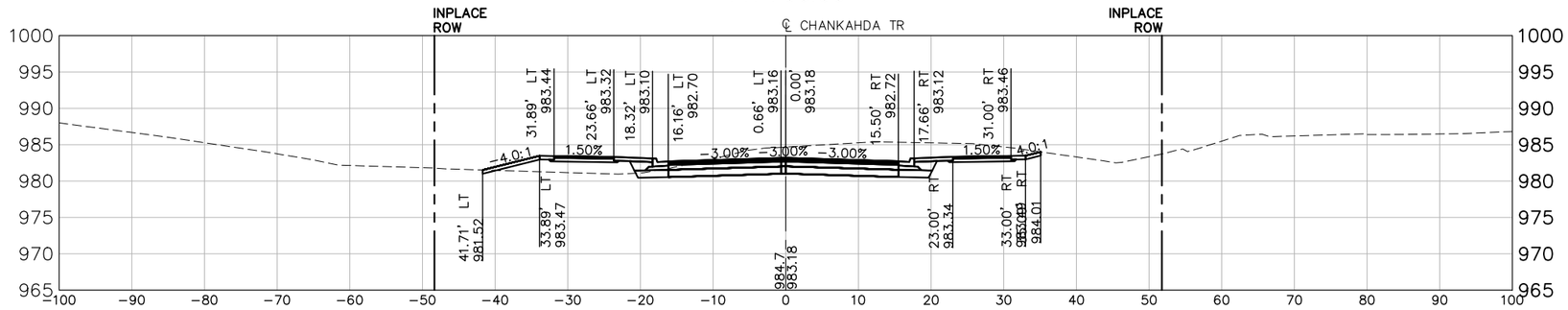
0 5 10 20 VERTICAL

0 5 10 20 HORIZONTAL SCALE IN FEET

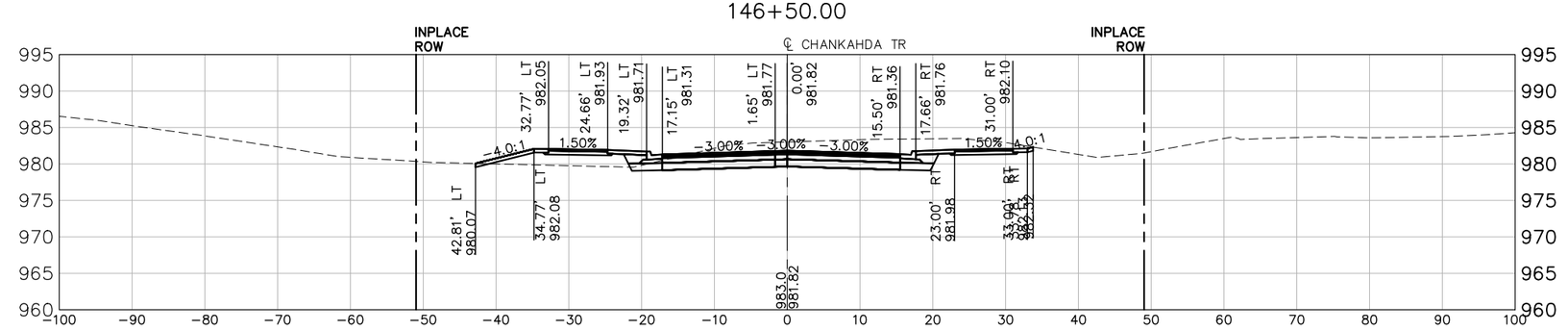
147+50.00



147+00.00



146+50.00



No.	Date	Revisions	App.

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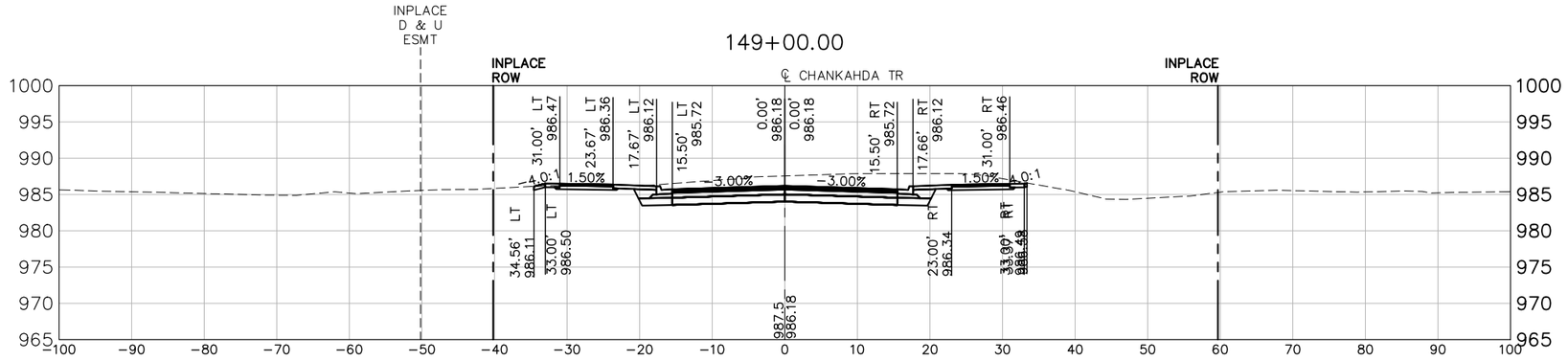
CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
CROSS SECTIONS
STA. 146+50 TO STA. 147+50

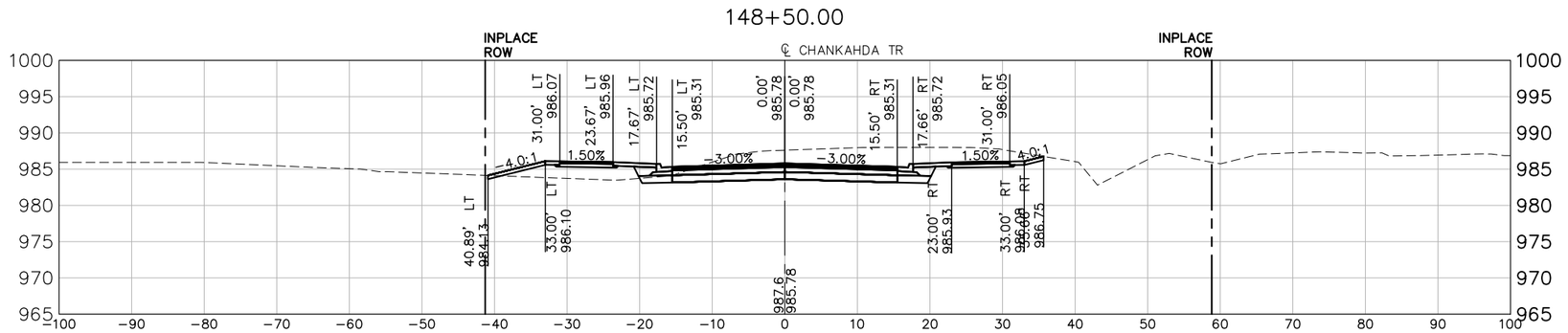
CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

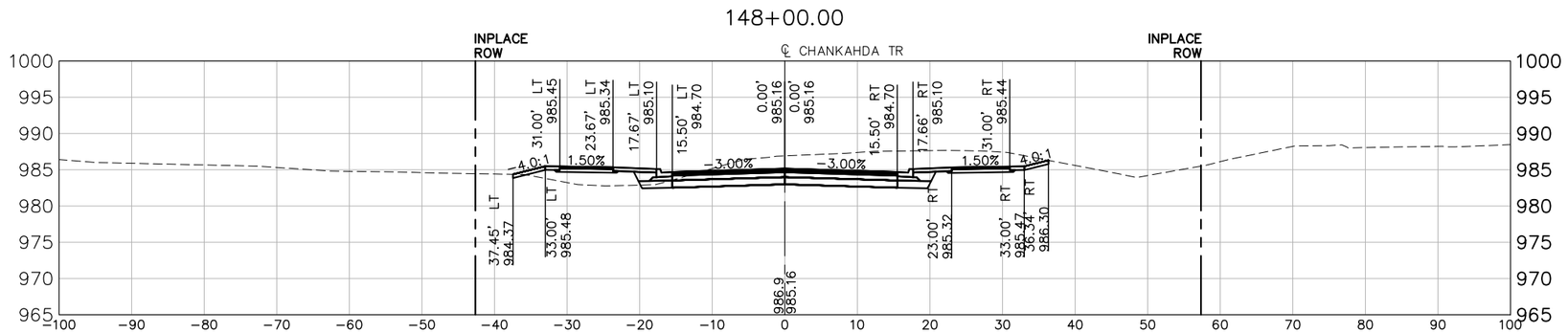
SHEET NO. 298 / 354

VERTICAL 0 5 10 20

HORIZONTAL SCALE IN FEET 0 5 10 20







No.	Date	Revisions	App.

DRAWING NAME: CHANKAHDA_PH3_Sections.dwg

DESIGNED BY:	JWB
DRAWN BY:	JWB
CHECKED BY:	CBL
DATE:	02/07/2025
PROJECT NO.	160662010

Kimley»Horn
767 EUSTIS STREET, SUITE 100, ST, PAUL, MN 55114
PHONE: 651-645-4197
WWW.KIMLEY-HORN.COM

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

CHADD B. LARSON, PE

DATE: 02/07/2025 MN LIC. NO. 41864

City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
CROSS SECTIONS
STA. 148+00 TO STA. 149+00

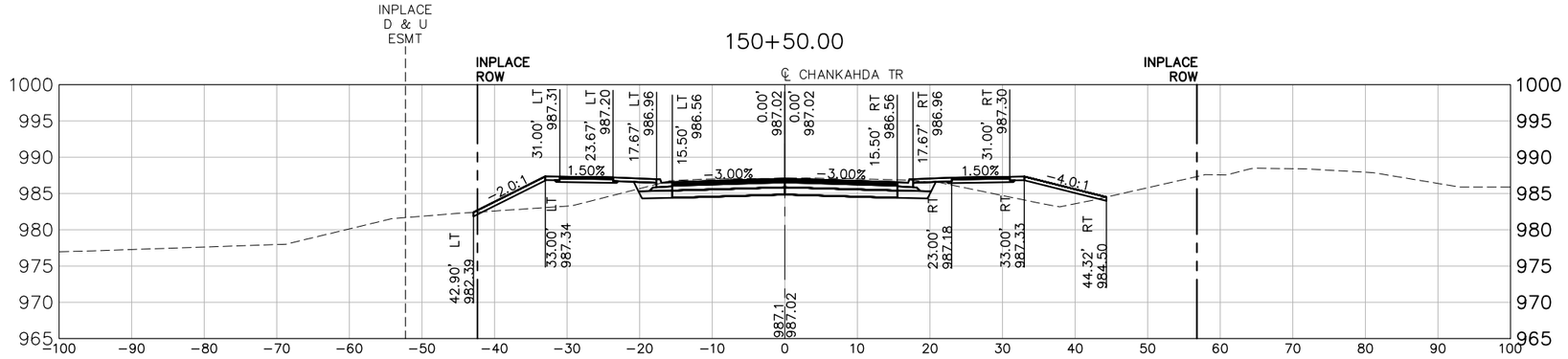
CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 299 / 354

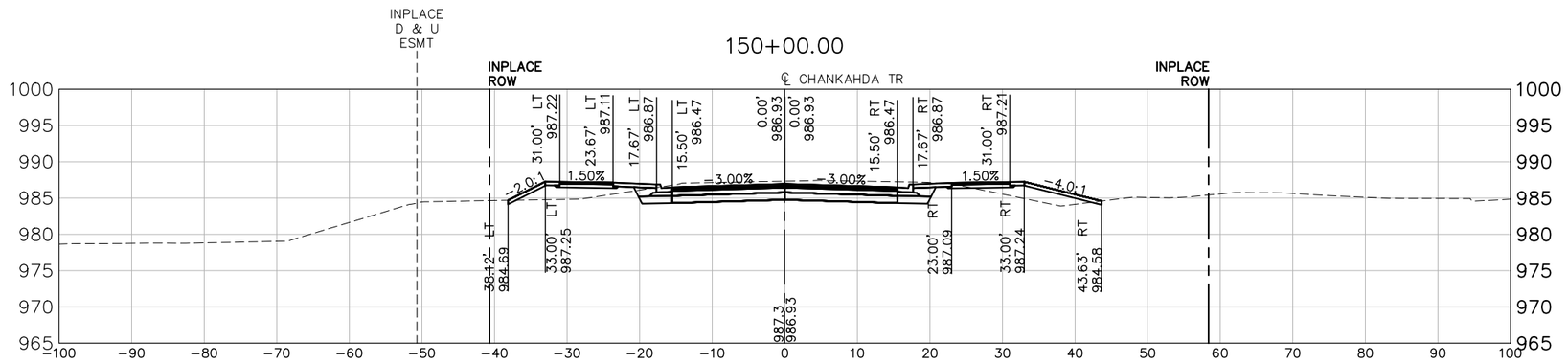
VERTICAL 0 5 10 20

HORIZONTAL SCALE IN FEET 0 5 10 20

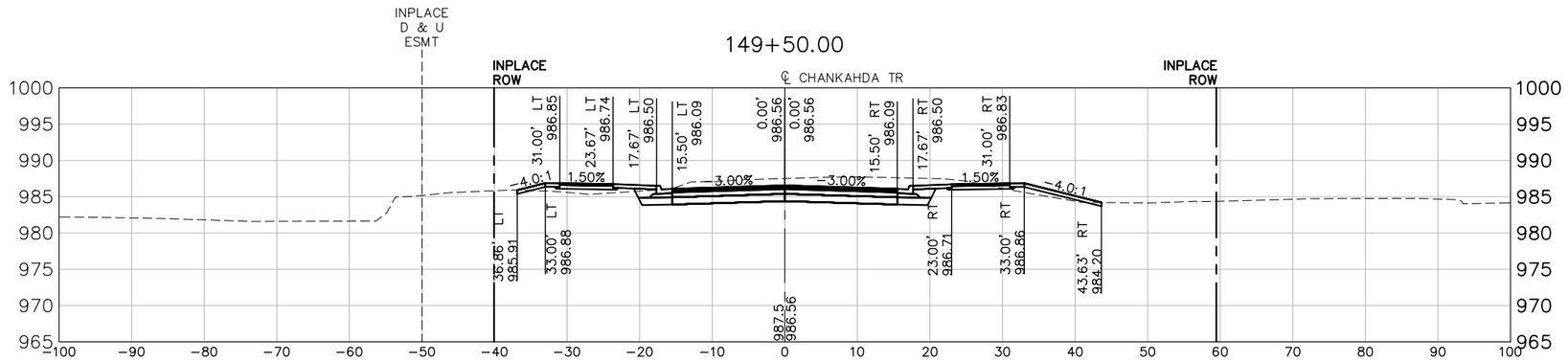
150+50.00



150+00.00



149+50.00



No.	Date	Revisions	App.

DRAWING NAME: CHANKAHDA_PH3_Sections.dwg

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City of Plymouth

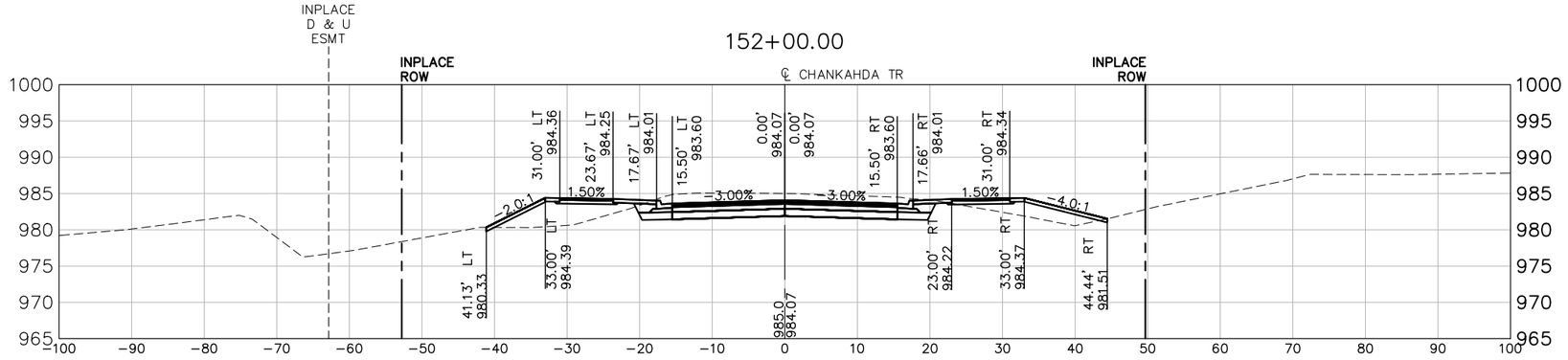
CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
CROSS SECTIONS
STA. 149+50 TO STA. 150+50

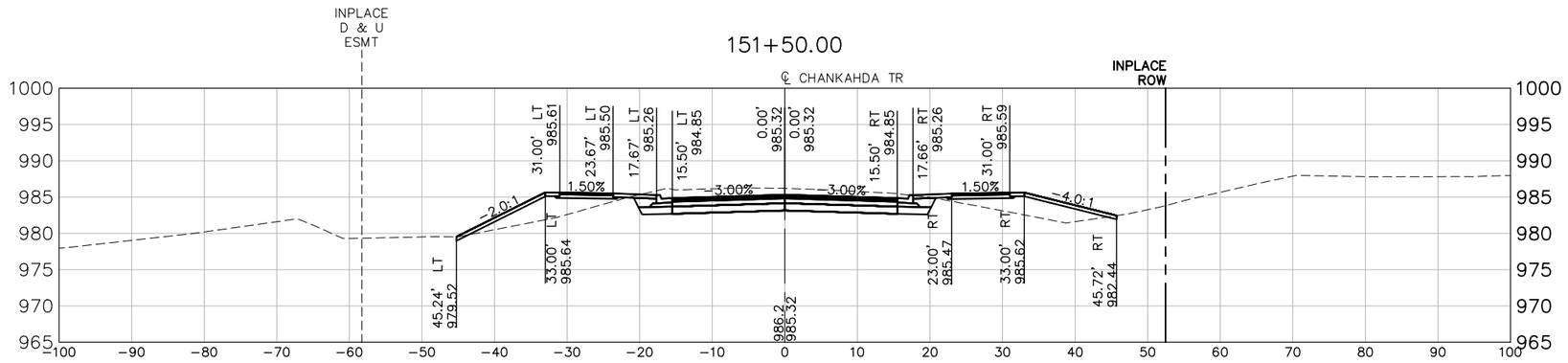
CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

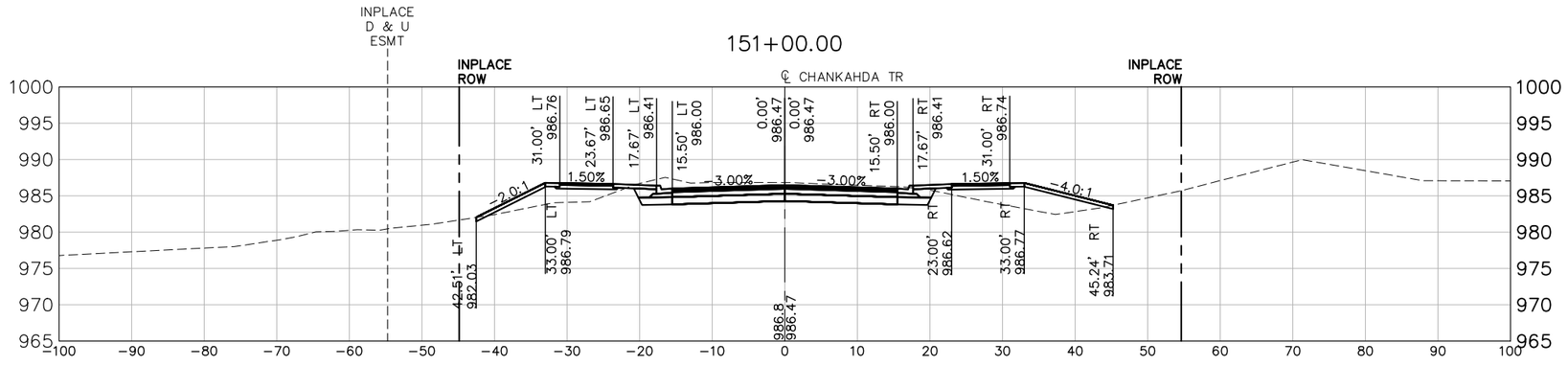
SHEET NO. 300 / 354

VERTICAL 0 5 10 20

HORIZONTAL SCALE IN FEET 0 5 10 20







No.	Date	Revisions	App.

DRAWING NAME	CHANKAHDA_PH3_Sections.dwg
DESIGNED BY:	JWB
DRAWN BY:	JWB
CHECKED BY:	CBL
DATE:	02/07/2025
PROJECT NO.	160662010

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CHADD B. LARSON, PE

DATE: 02/07/2025 MN LIC. NO. 41864

City of Plymouth

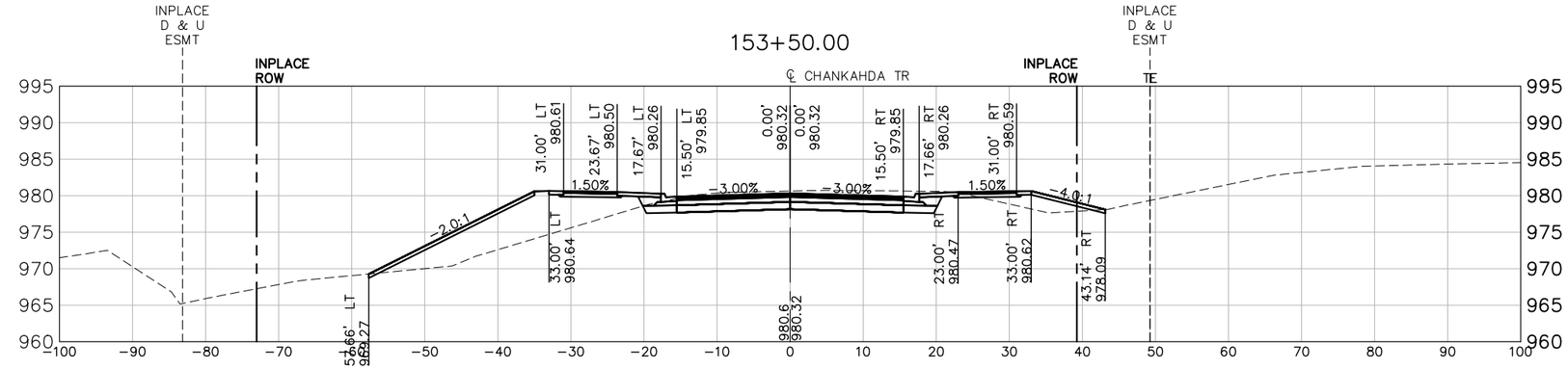
CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
CROSS SECTIONS
STA. 151+00 TO STA. 152+00

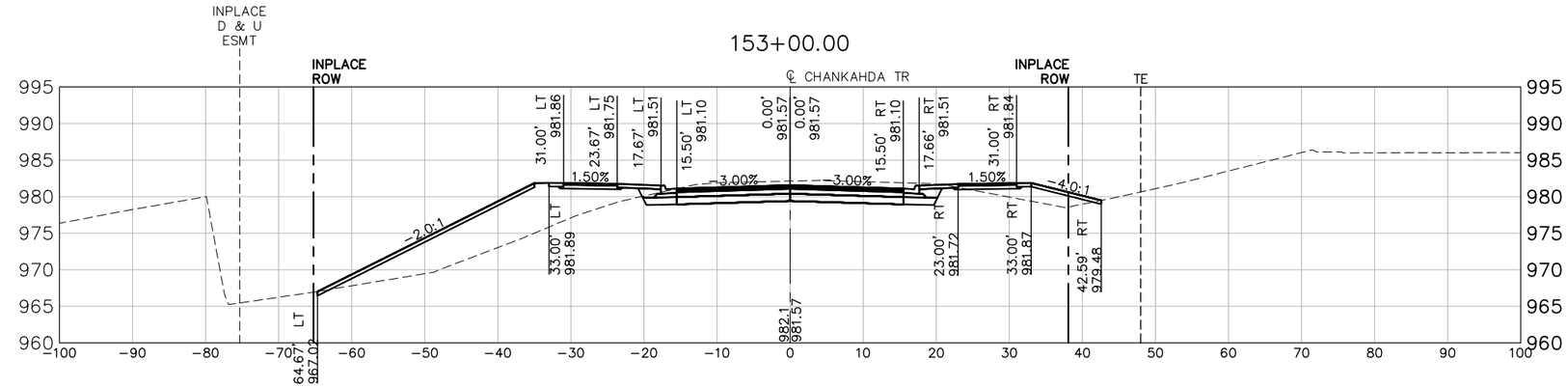
CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

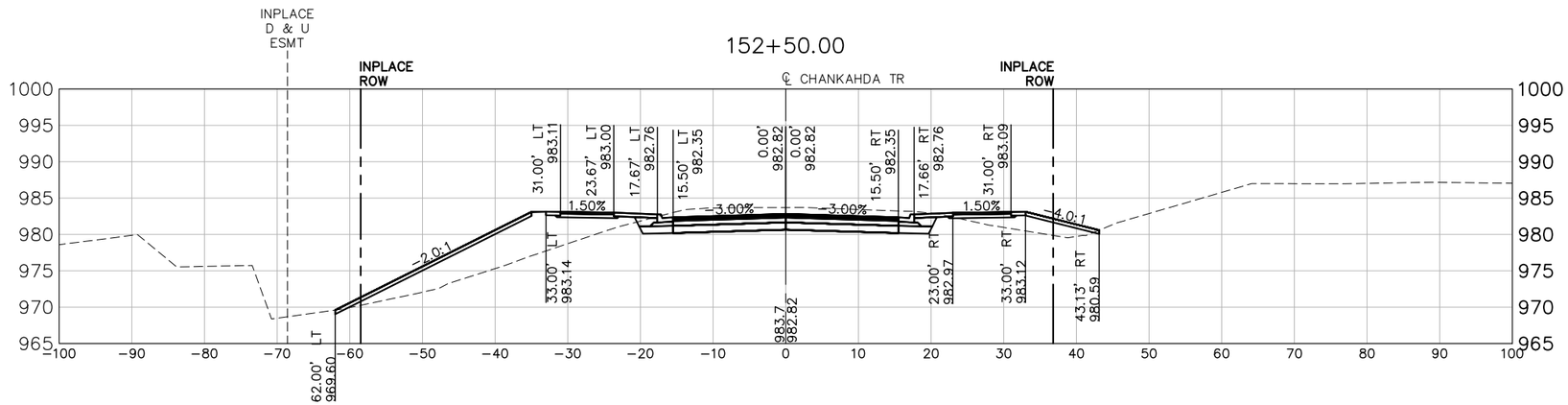
SHEET NO. 301 / 354

VERTICAL 0 5 10 20

HORIZONTAL SCALE IN FEET 0 5 10 20







No.	Date	Revisions	App.

DRAWING NAME: CHANKAHDA_PH3_Sections.dwg

DESIGNED BY:	JWB
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DATE:	02/07/2025
PROJECT NO.	160662010

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CHADD B. LARSON, PE

DATE: 02/07/2025 MN LIC. NO. 41864

City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
CROSS SECTIONS
STA. 152+50 TO STA. 153+50

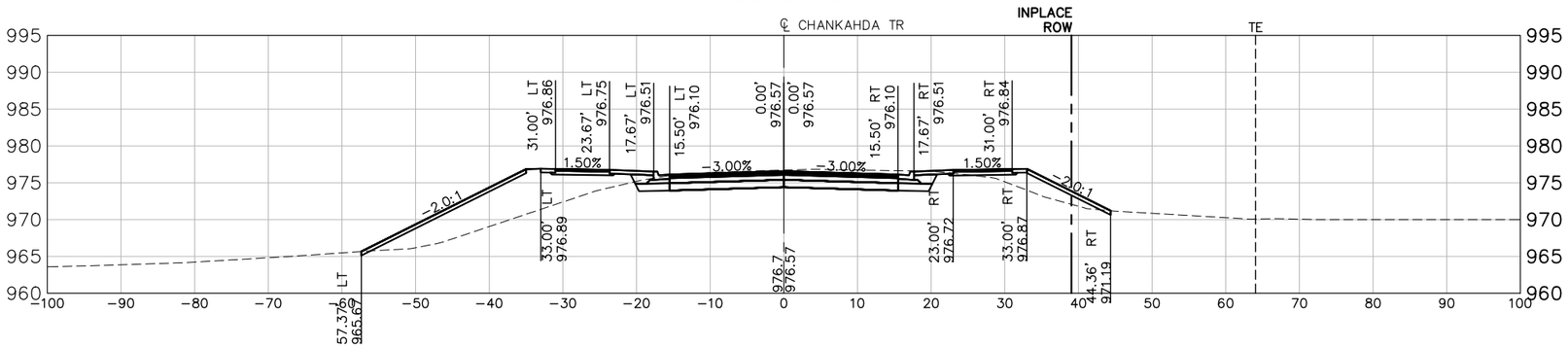
CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 302 / 354

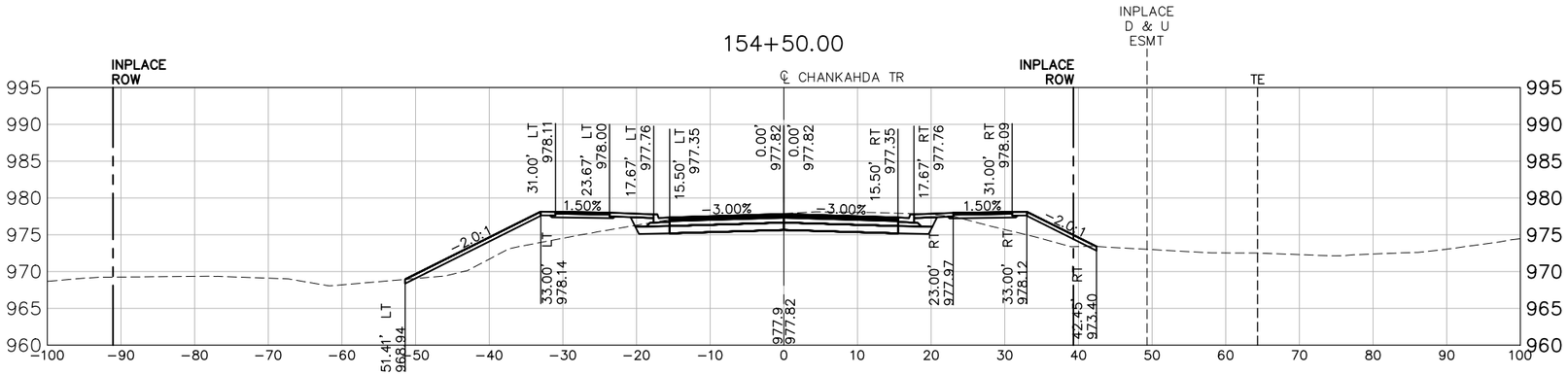
VERTICAL 0 5 10 20

HORIZONTAL SCALE IN FEET 0 5 10 20

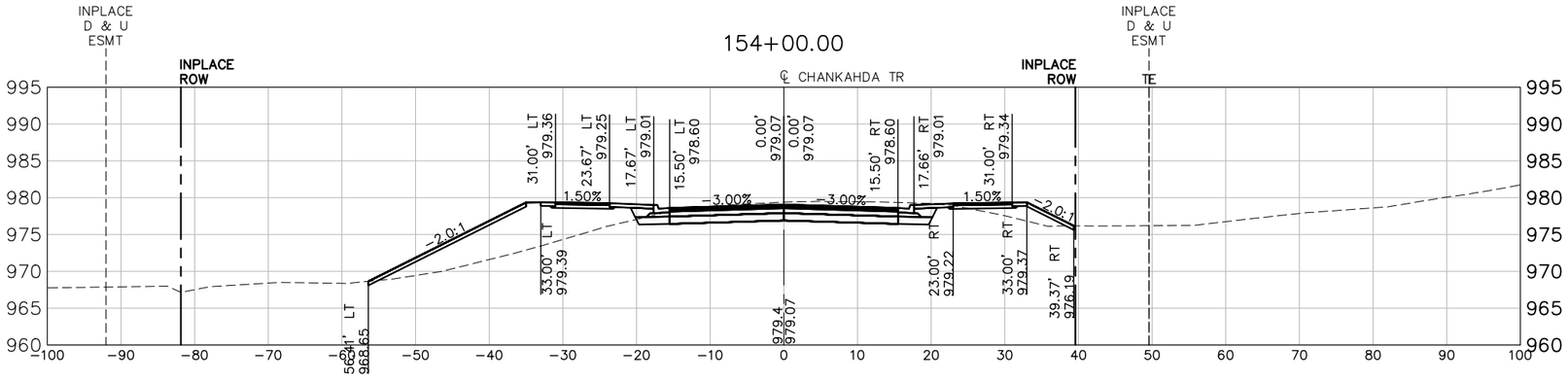
155+00.00



154+50.00



154+00.00



No.	Date	Revisions	App.

DRAWING NAME	CHANKAHDA_PH3_Sections.dwg
DESIGNED BY:	JWB
DRAWN BY:	JWB
CHECKED BY:	CBL
DATE:	02/07/2025
PROJECT NO.	160662010

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Chadd B. Larson

CHADD B. LARSON, PE

DATE: 02/07/2025 MN LIC. NO. 41864

City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
CROSS SECTIONS
STA. 154+00 TO STA. 155+00

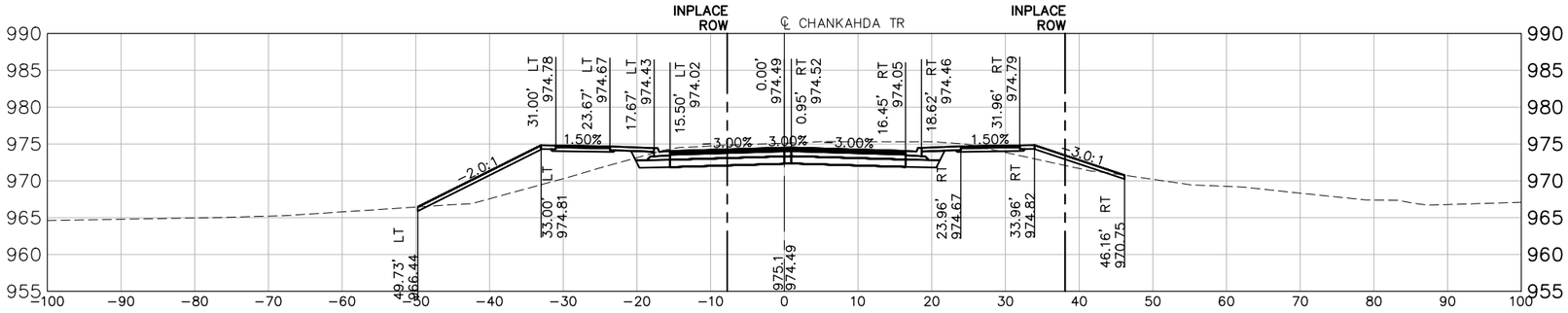
CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 303 / 354

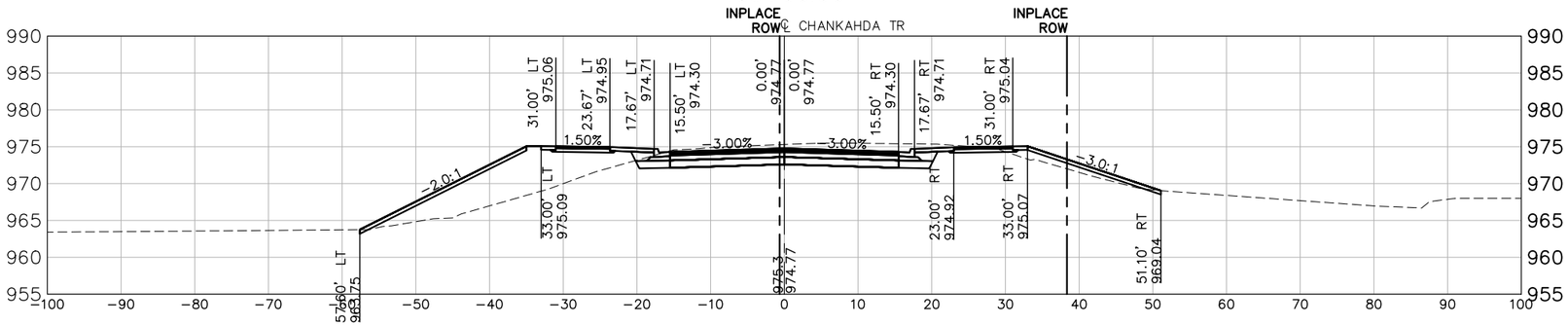
VERTICAL 0 5 10 20

HORIZONTAL SCALE IN FEET 0 5 10 20

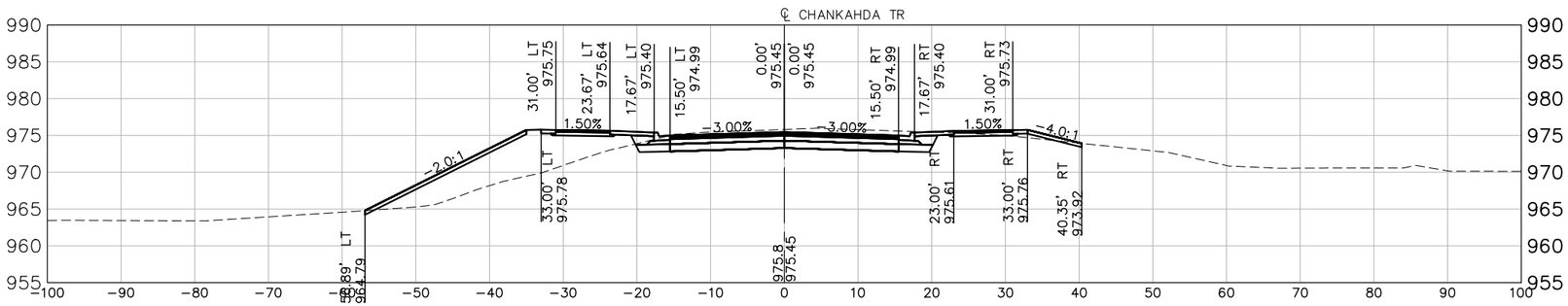
156+50.00



156+00.00



155+50.00



No.	Date	Revisions	App.

DRAWING NAME: CHANKAHDA_PH3_Sections.dwg

DESIGNED BY:	JWB
DRAWN BY:	JWB
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DATE:	02/07/2025
PROJECT NO.	160662010

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CHADD B. LARSON, PE

DATE: 02/07/2025 MN LIC. NO. 41864

City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
CROSS SECTIONS
STA. 155+50 TO STA. 156+50

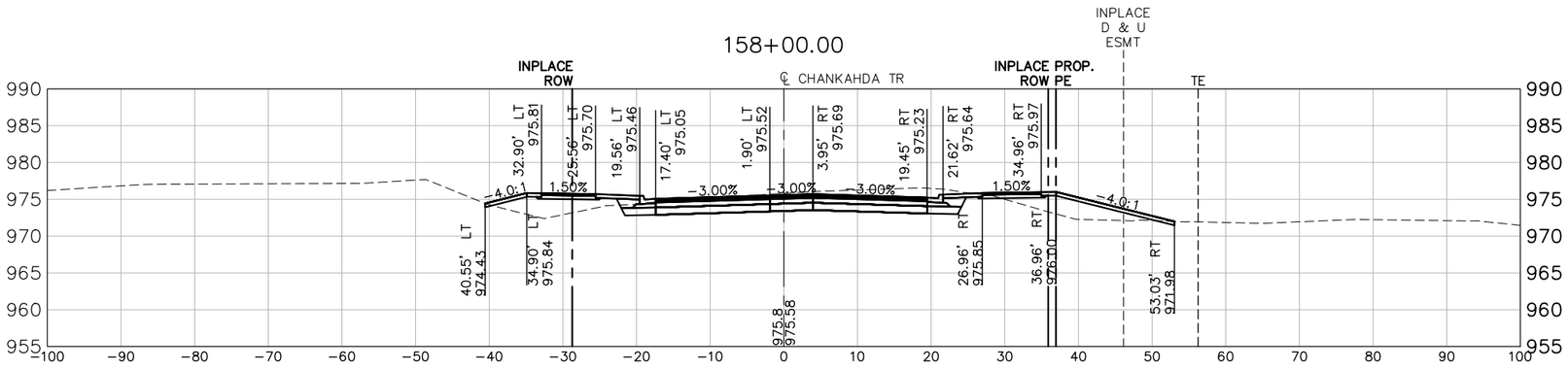
CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 304 / 354

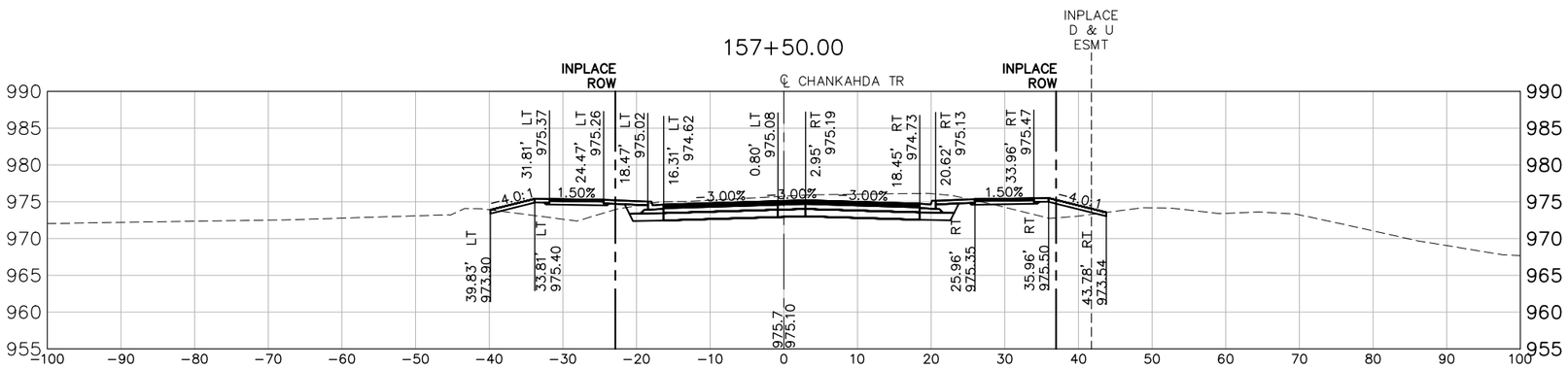
0 5 10 20 VERTICAL

0 5 10 20 HORIZONTAL SCALE IN FEET

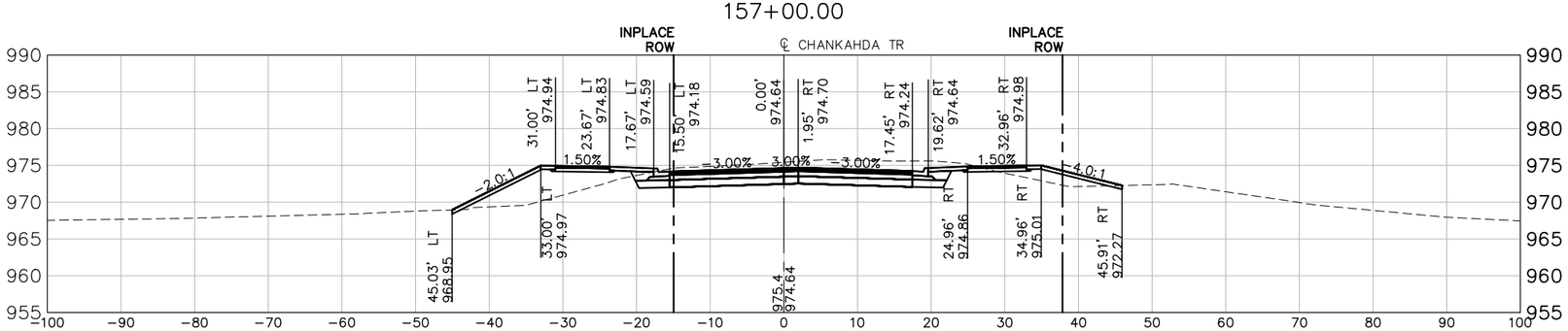
158+00.00



157+50.00



157+00.00



No.	Date	Revisions	App.

DRAWING NAME	CHANKAHDA_PH3_Sections.dwg
DESIGNED BY:	JWB
DRAWN BY:	JWB
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DATE:	02/07/2025
PROJECT NO.	160662010

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CHADD B. LARSON, PE

DATE: 02/07/2025 MN LIC. NO. 41864

City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
CROSS SECTIONS
STA. 157+00 TO STA. 158+00

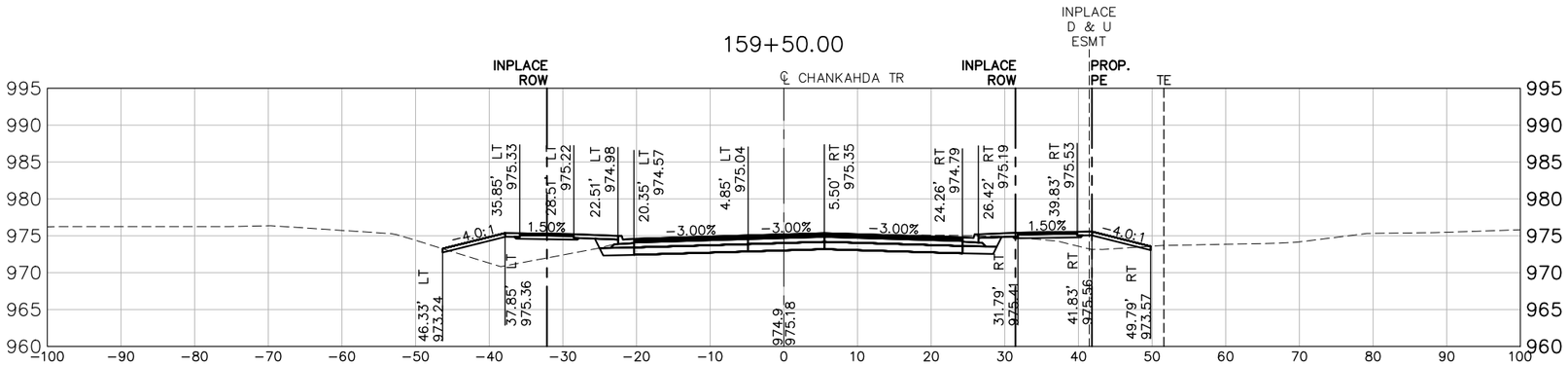
CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 305 / 354

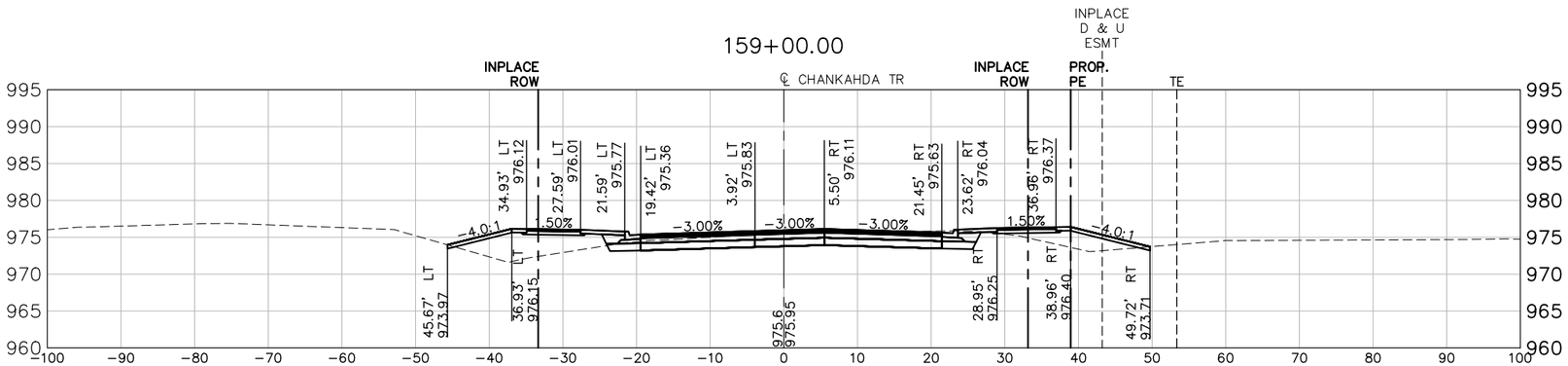
0 5 10 20 VERTICAL

0 5 10 20 HORIZONTAL SCALE IN FEET

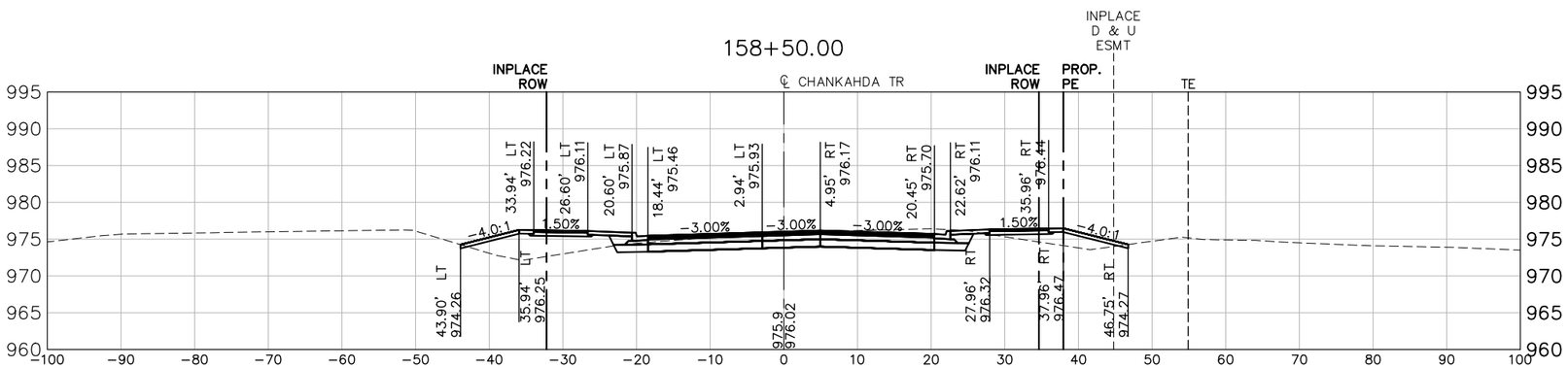
159+50.00



159+00.00



158+50.00



No.	Date	Revisions	App.

DRAWING NAME	CHANKAHDA_PH3_Sections.dwg
DESIGNED BY:	JWB
DRAWN BY:	JWB
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DATE:	02/07/2025
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CHADD B. LARSON, PE

DATE: 02/07/2025 MN LIC. NO. 41864

City of Plymouth

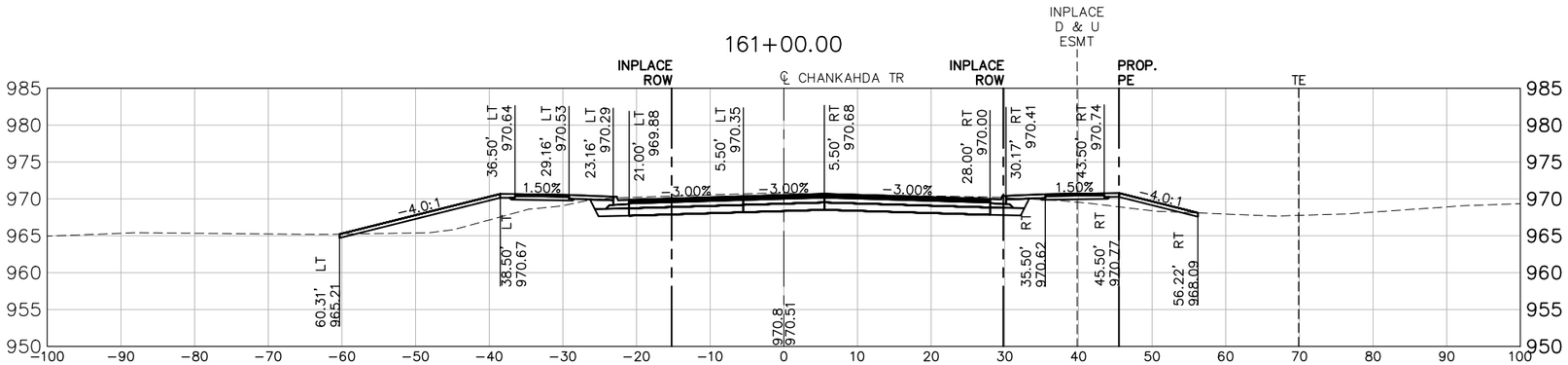
CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
CROSS SECTIONS
STA. 158+50 TO STA. 159+50

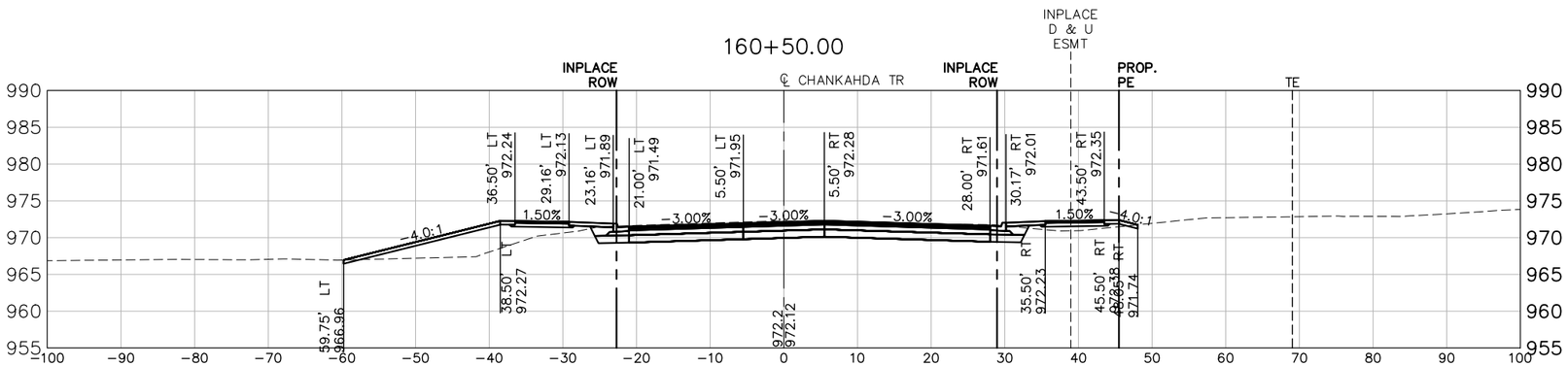
CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

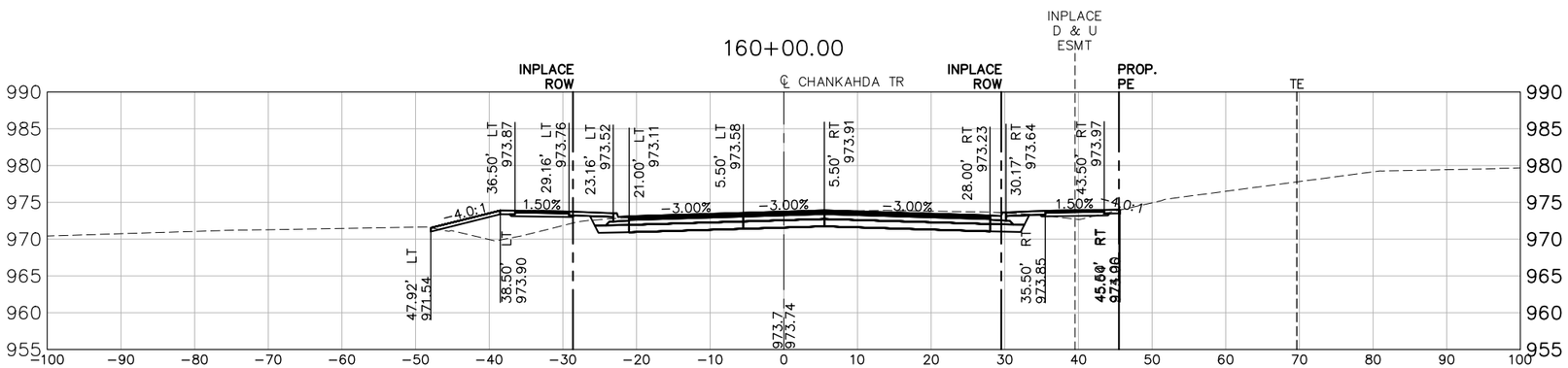
SHEET NO. 306 / 354

0 5 10 20 VERTICAL

0 5 10 20 HORIZONTAL SCALE IN FEET







No.	Date	Revisions	App.

DRAWING NAME	CHANKAHDA_PH3_Sections.dwg
DESIGNED BY:	JWB
DRAWN BY:	JWB
CHECKED BY:	CBL
DATE:	02/07/2025
PROJECT NO.	160662010

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CHADD B. LARSON, PE

DATE: 02/07/2025 MN LIC. NO. 41864

City of Plymouth

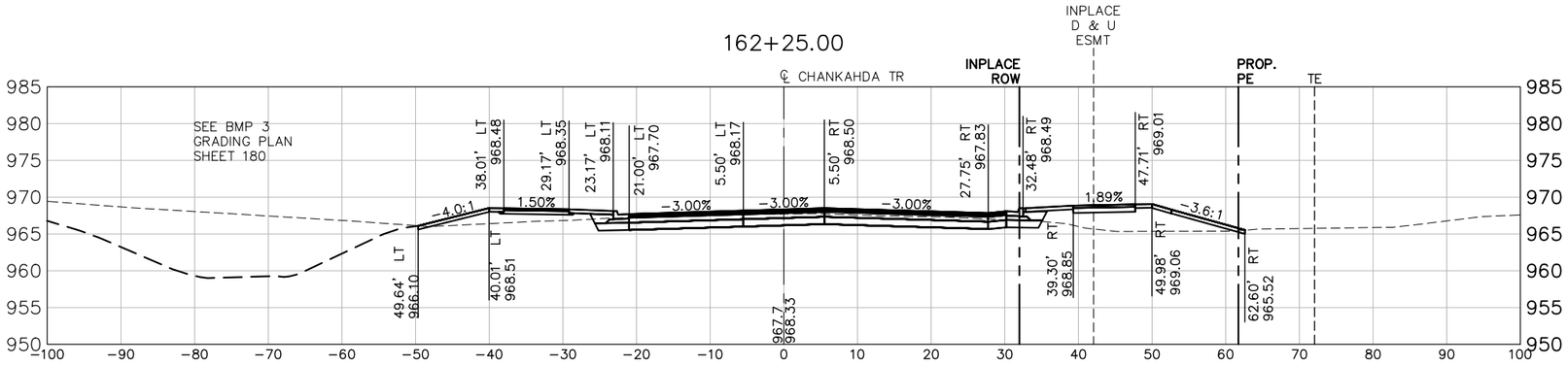
CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
CROSS SECTIONS
STA. 160+00 TO STA. 161+00

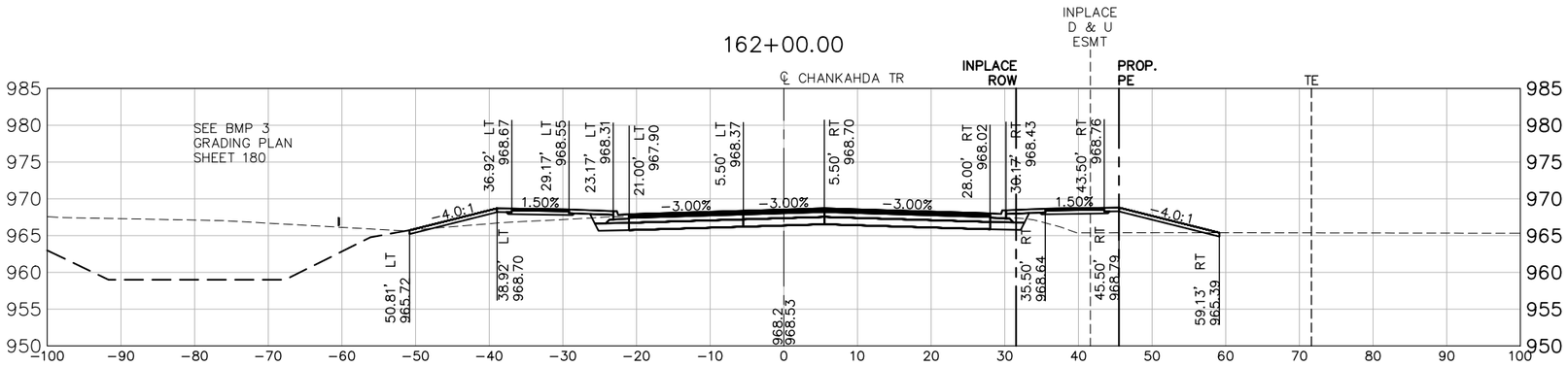
CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

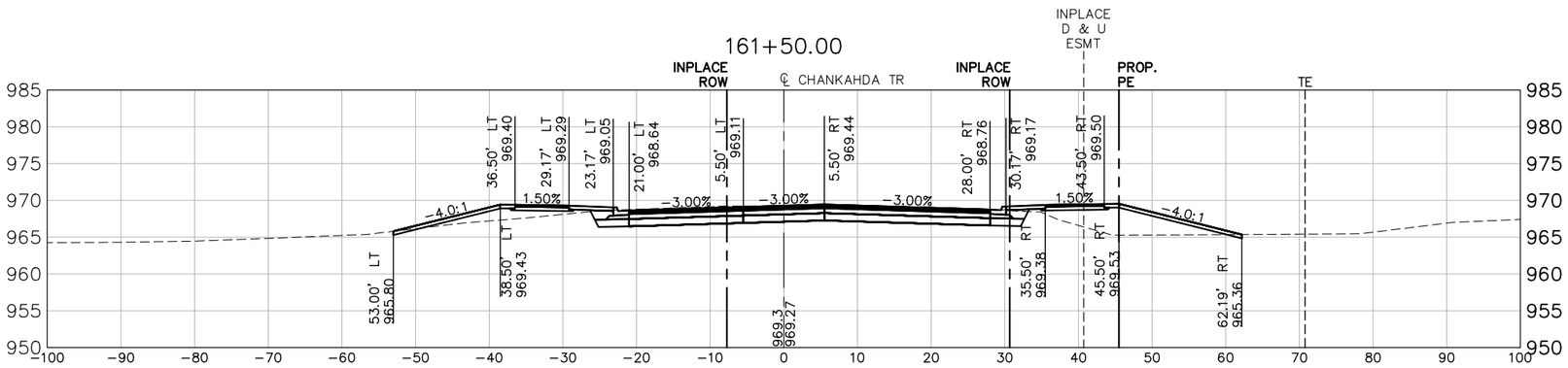
SHEET NO. 307 / 354

VERTICAL 0 5 10 20

HORIZONTAL SCALE IN FEET 0 5 10 20







No.	Date	Revisions	App.

DRAWING NAME: CHANKAHDA_PH3_Sections.dwg

DESIGNED BY:	JWB
DRAWN BY:	JWB
CHECKED BY:	CBL
DATE:	02/07/2025
PROJECT NO.	160662010

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CHADD B. LARSON, PE

DATE: 02/07/2025 MN LIC. NO. 41864

City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
CROSS SECTIONS
STA. 161+50 TO STA. 162+25

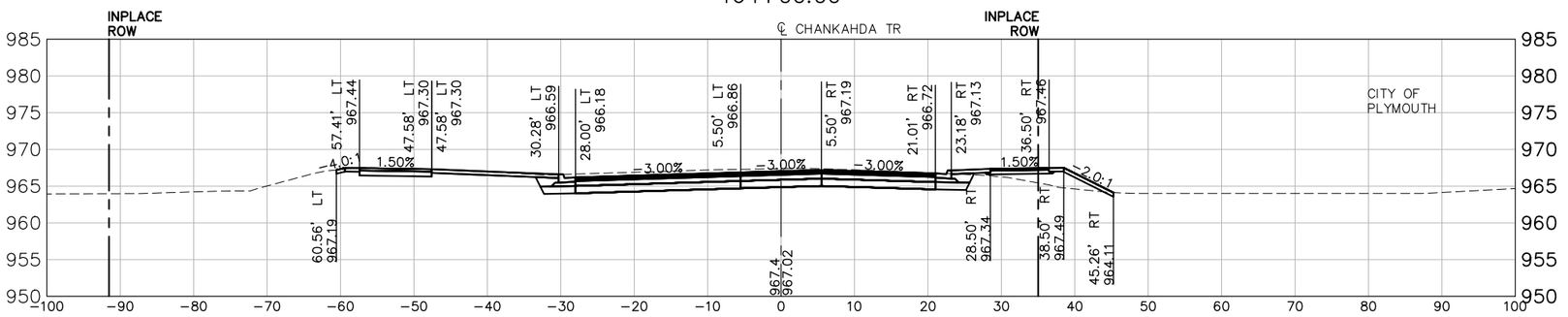
CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 308 / 354

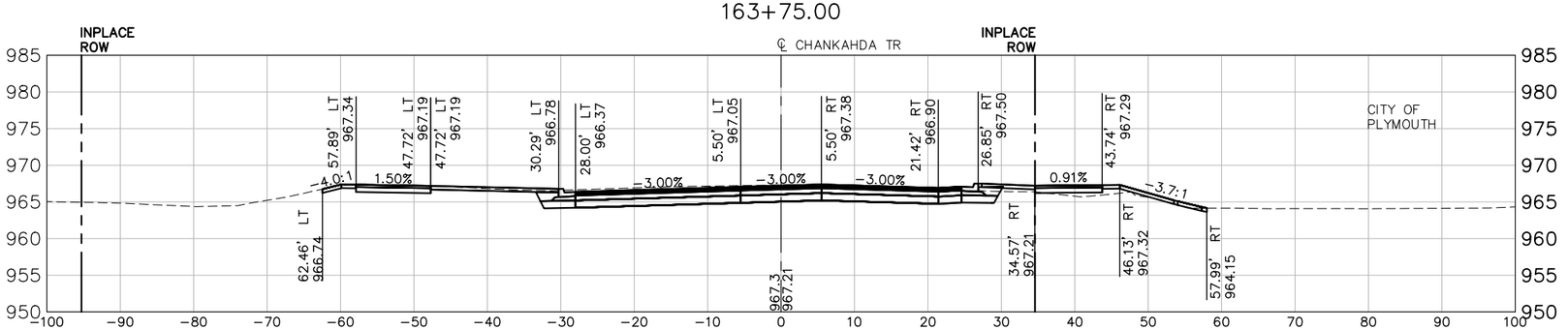
VERTICAL 0 5 10 20

HORIZONTAL SCALE IN FEET 0 5 10 20

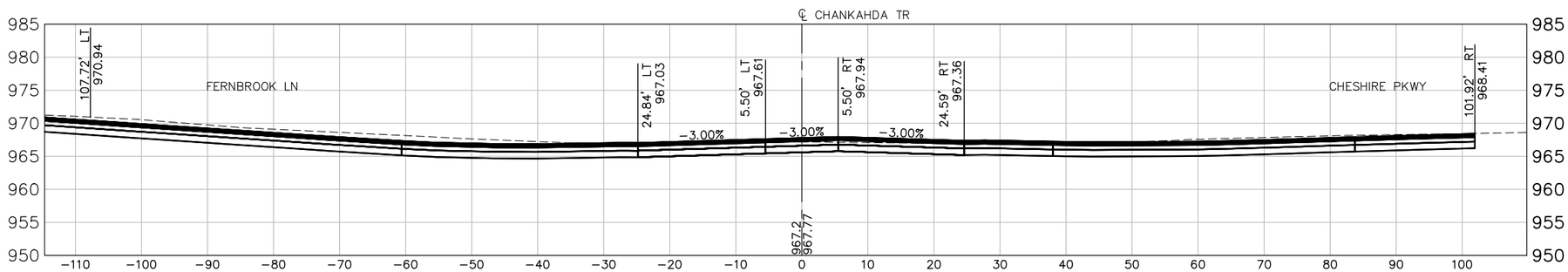
164+00.00



163+75.00



163+00.00



No.	Date	Revisions	App.

DRAWING NAME: CHANKAHDA_PH3_Sections.dwg

DESIGNED BY:	JWB
DRAWN BY:	JWB
CHECKED BY:	CBL
DATE:	02/07/2025
PROJECT NO.	160662010

Kimley»Horn
767 EUSTIS STREET, SUITE 100, ST. PAUL, MN 55114
PHONE: 651-645-4197
WWW.KIMLEY-HORN.COM

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

CHADD B. LARSON, PE

DATE: 02/07/2025 MN LIC. NO. 41864

City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
CROSS SECTIONS
STA. 163+00 TO STA. 164+00

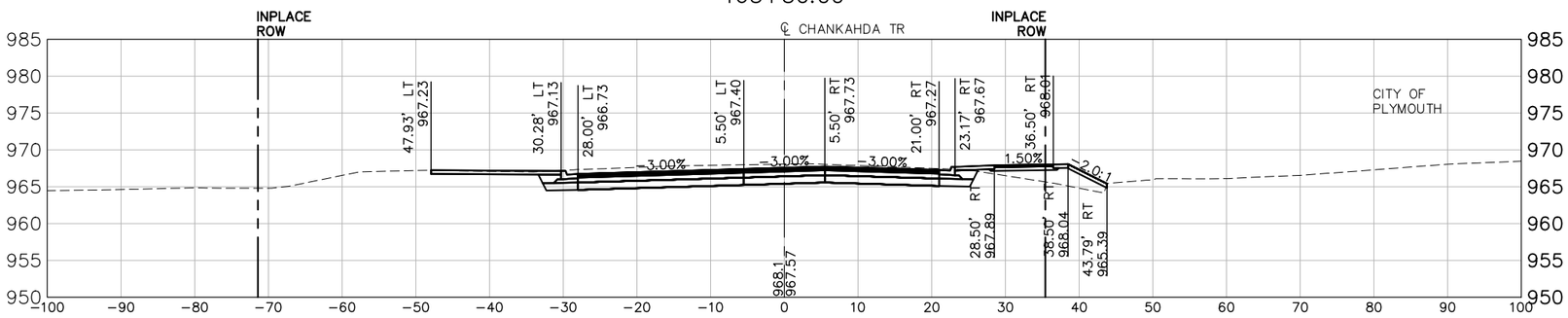
CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 309 / 354

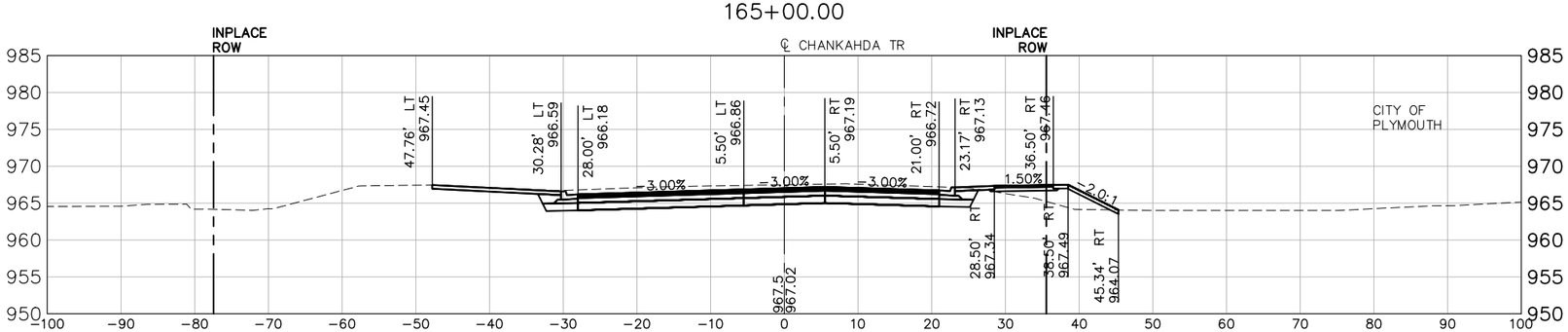
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0 5 10 20 HORIZONTAL SCALE IN FEET

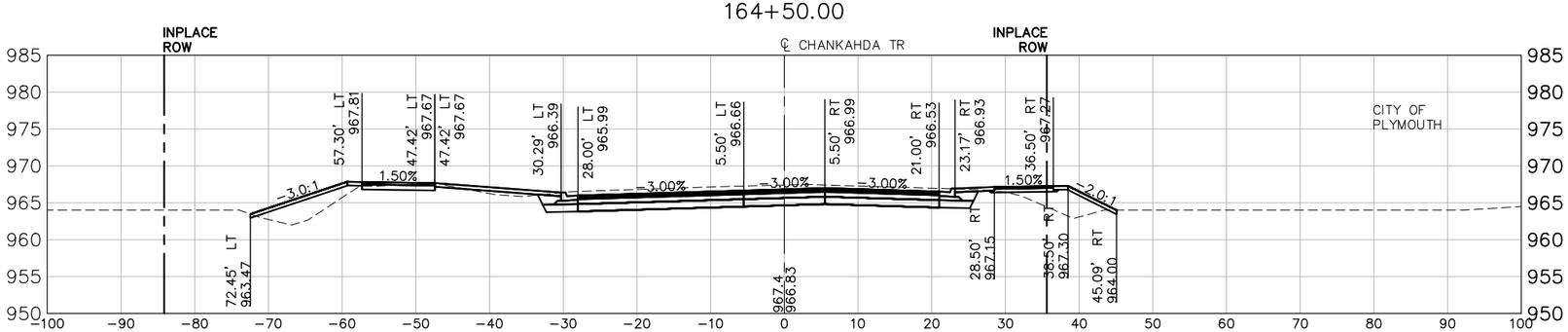
165+50.00



165+00.00



164+50.00



No.	Date	Revisions	App.

DRAWING NAME	CHANKAHDA_PH3_Sections.dwg
DESIGNED BY:	JWB
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Chadd B. Larson

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DATE: 02/07/2025 MN LIC. NO. 41864

City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
CROSS SECTIONS
STA. 164+50 TO STA. 165+50

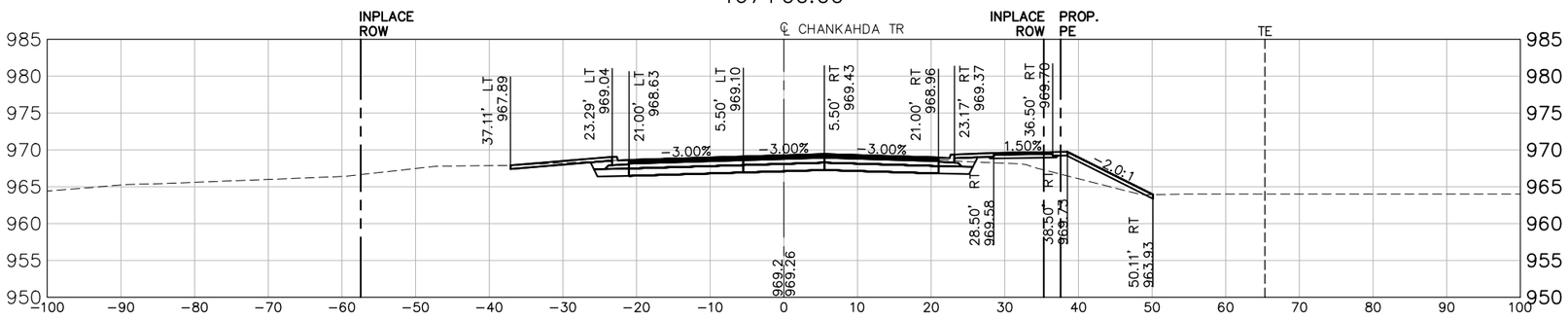
CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 310 / 354

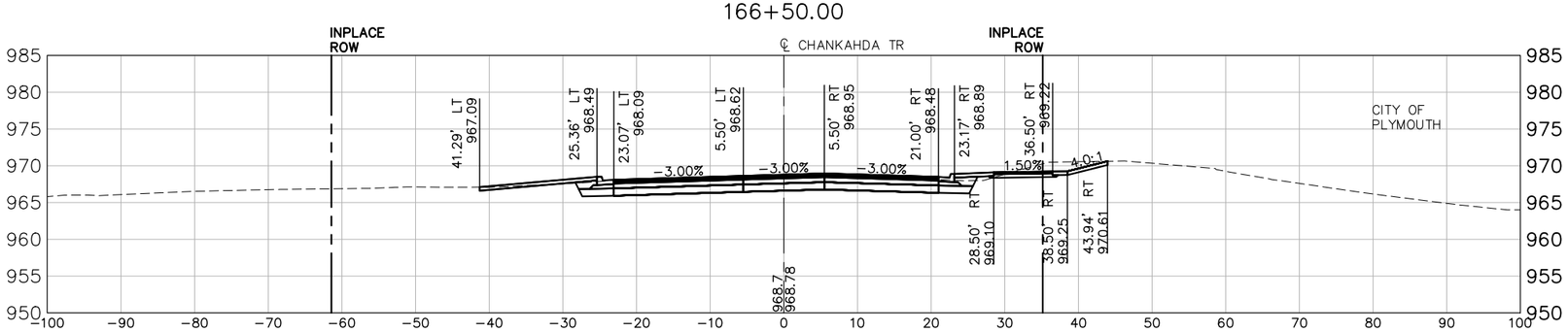
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0 5 10 20 HORIZONTAL SCALE IN FEET

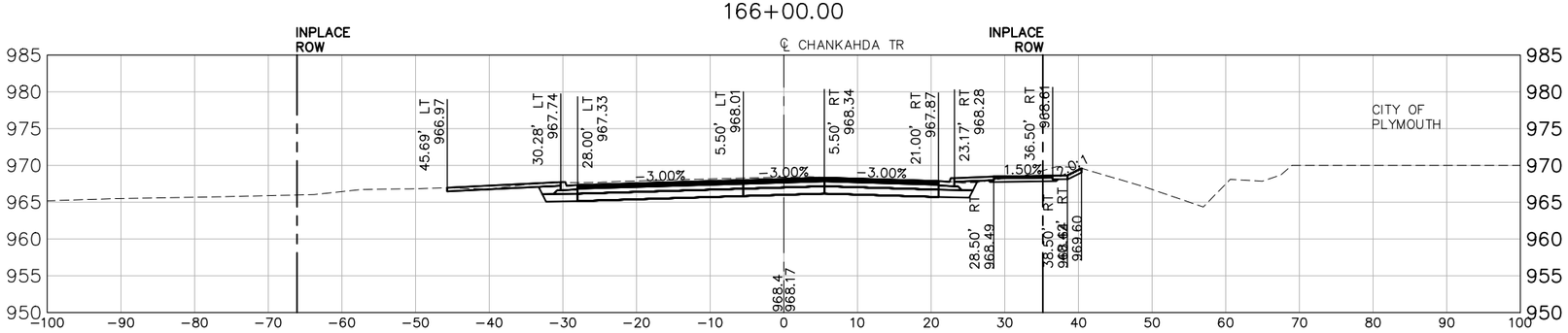
167+00.00



166+50.00



166+00.00



No.	Date	Revisions	App.

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City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
CROSS SECTIONS
STA. 166+00 TO STA. 167+00

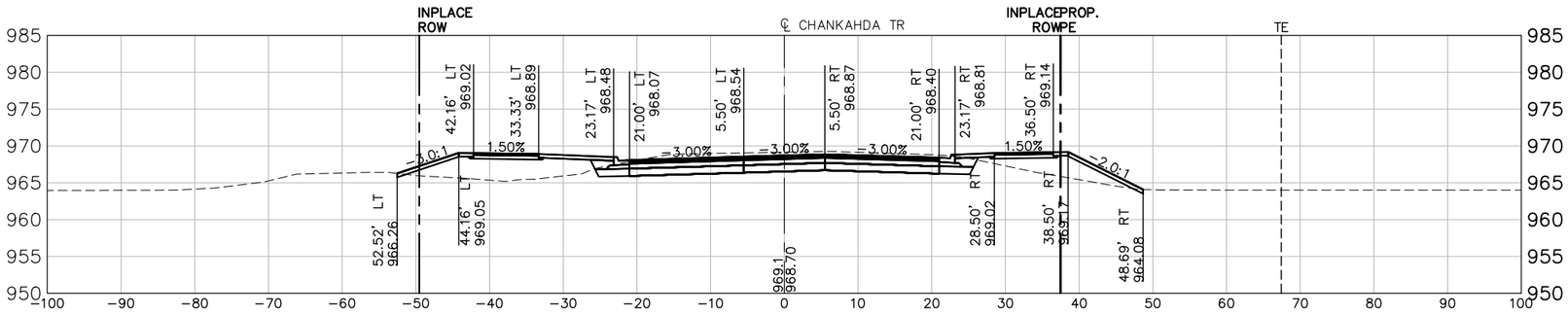
CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 311 / 354

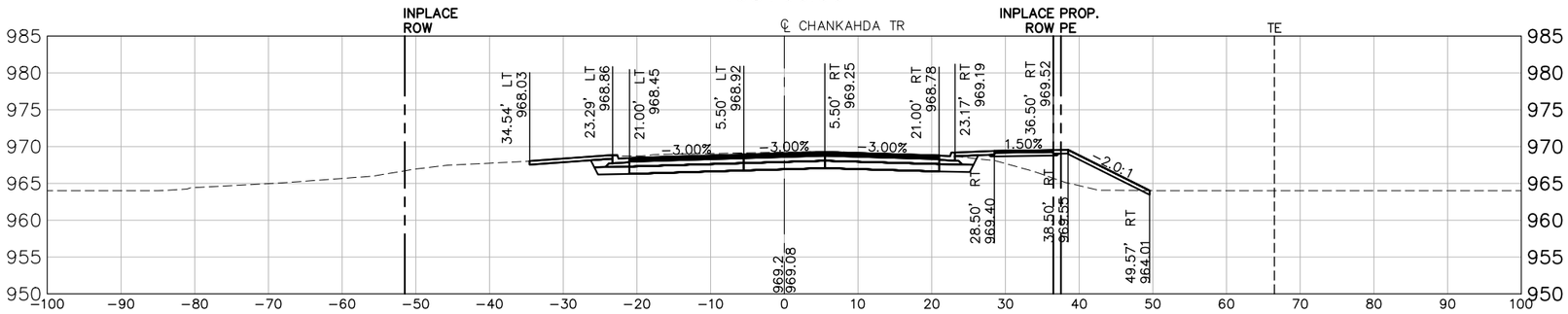
0 5 10 20 VERTICAL

0 5 10 20 HORIZONTAL SCALE IN FEET

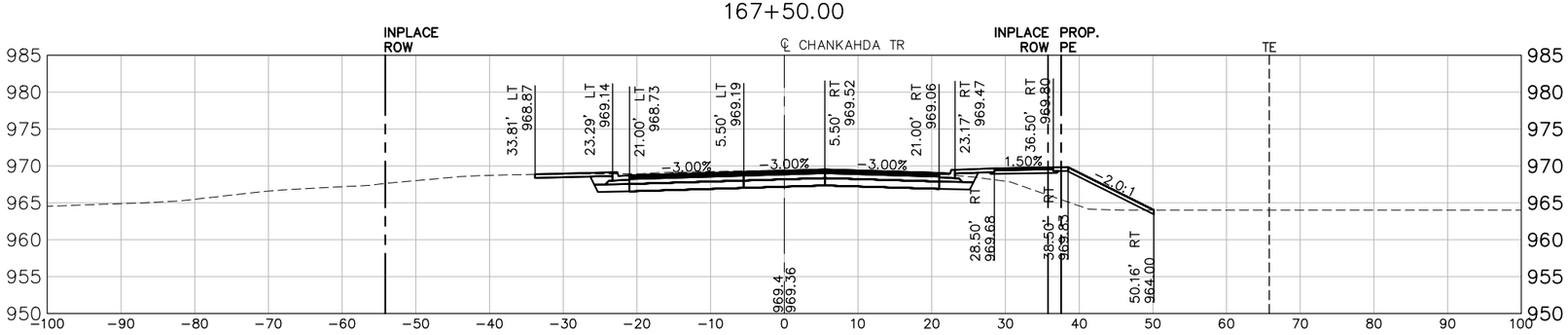
168+50.00



168+00.00



167+50.00



No.	Date	Revisions	App.

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City of Plymouth

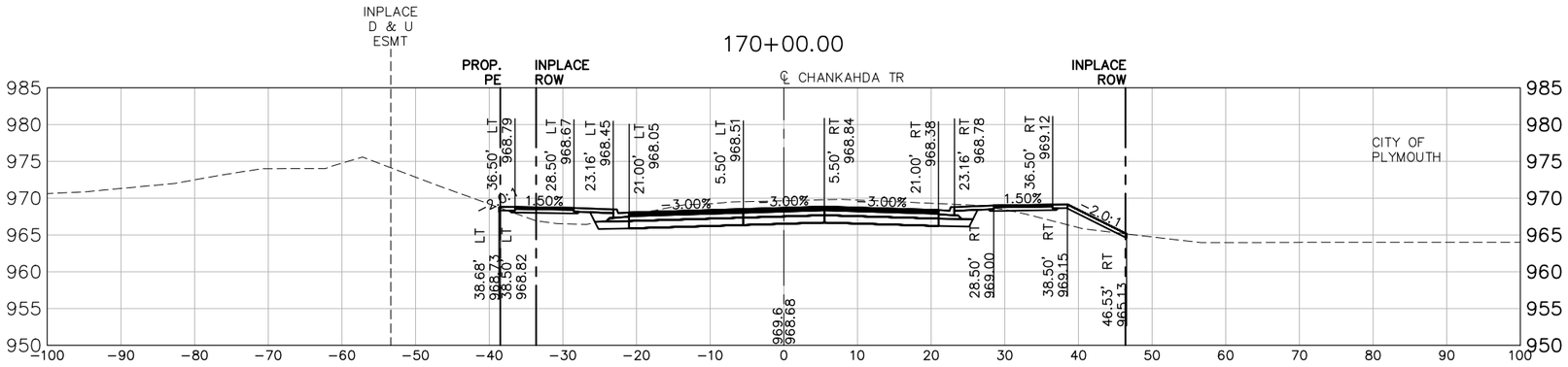
CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
CROSS SECTIONS
STA. 167+50 TO STA. 168+50

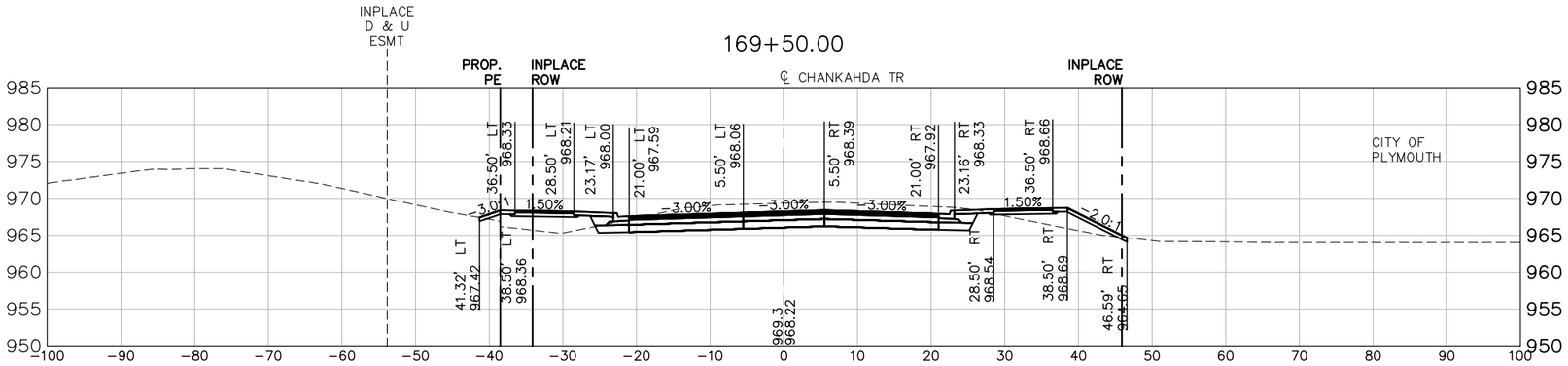
CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

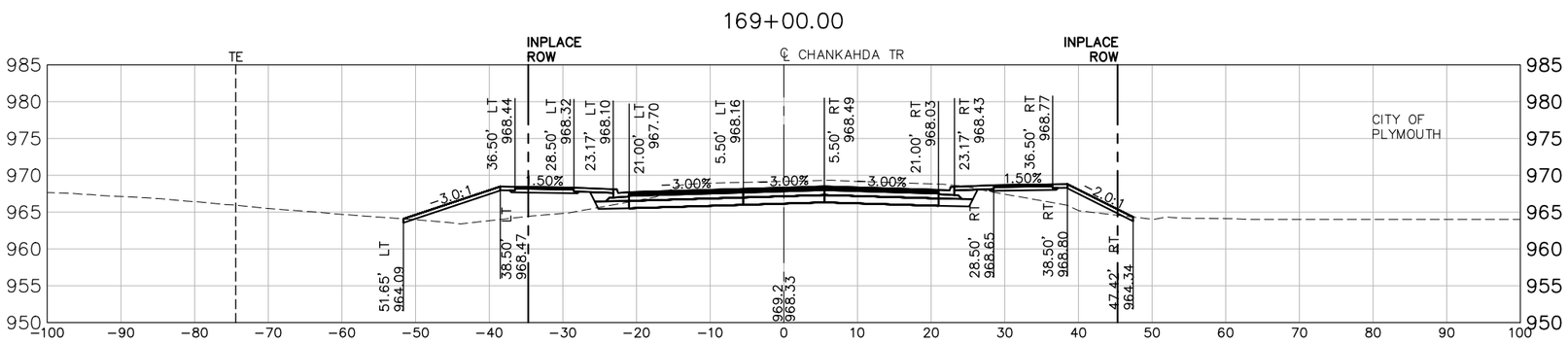
SHEET NO. 312 / 354

0 5 10 20 VERTICAL

0 5 10 20 HORIZONTAL SCALE IN FEET







No.	Date	Revisions	App.

DRAWING NAME	CHANKAHDA_PH3_Sections.dwg
DESIGNED BY:	JWB
DRAWN BY:	JWB
CHECKED BY:	CBL
DATE:	02/07/2025
PROJECT NO.	160662010

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CHADD B. LARSON, PE

DATE: 02/07/2025 MN LIC. NO. 41864

City of Plymouth

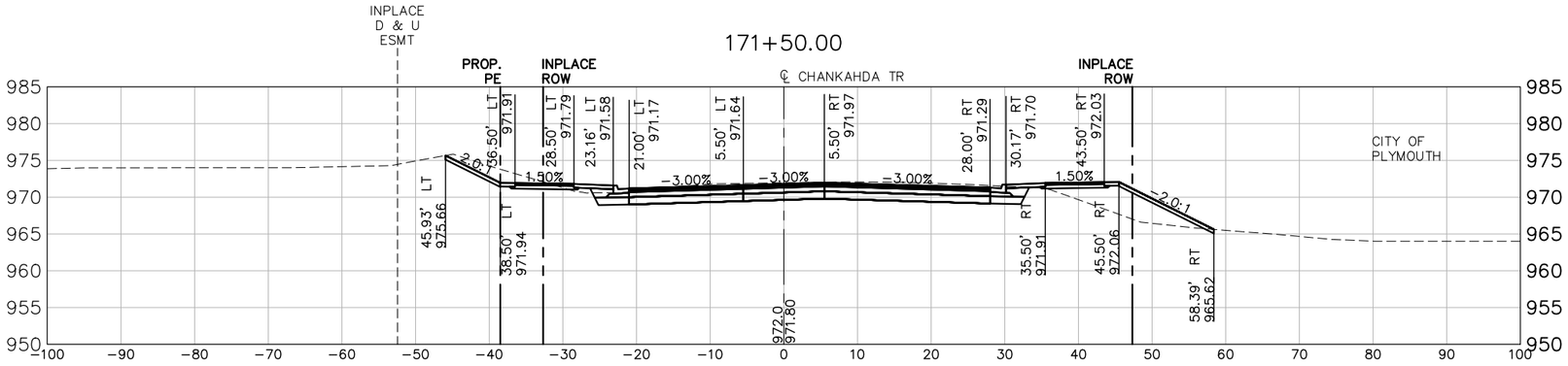
CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
CROSS SECTIONS
STA. 169+00 TO STA. 170+00

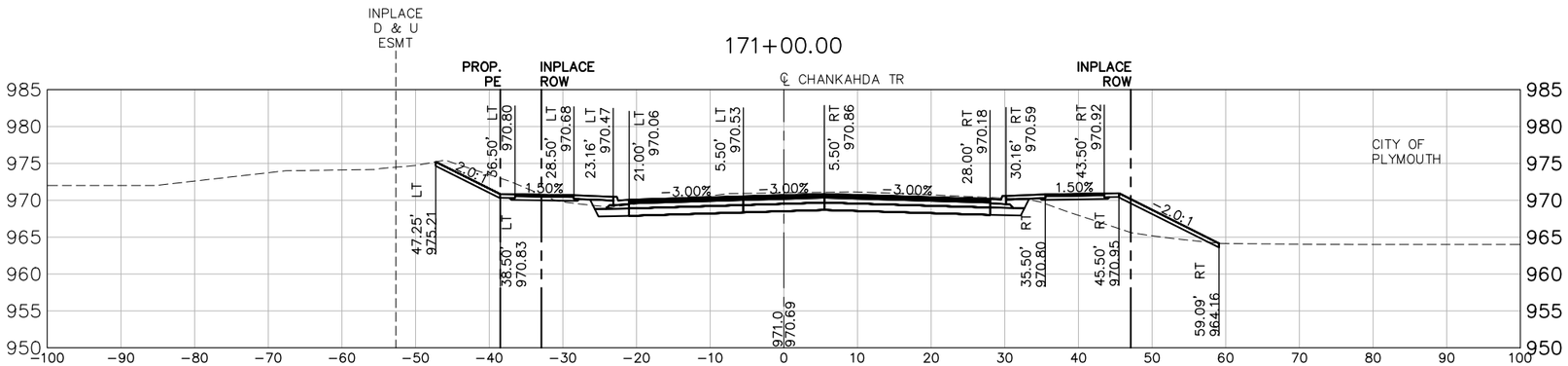
CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

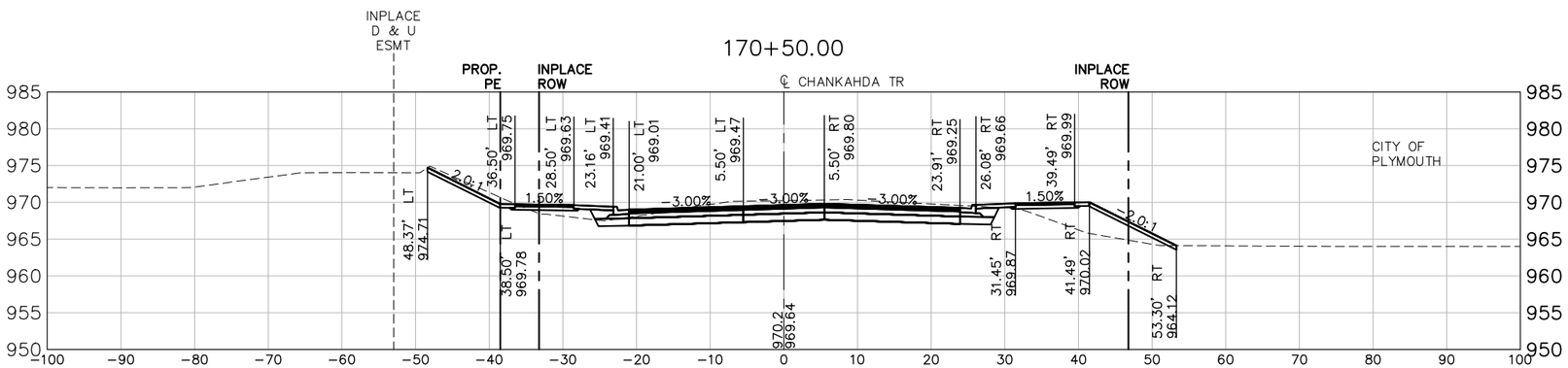
SHEET NO. 313 / 354

0 5 10 20 VERTICAL

0 5 10 20 HORIZONTAL SCALE IN FEET







No.	Date	Revisions	App.

DRAWING NAME	CHANKAHDA_PH3_Sections.dwg
DESIGNED BY:	JWB
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DATE:	02/07/2025
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Chadd B. Larson

CHADD B. LARSON, PE

DATE: 02/07/2025 MN LIC. NO. 41864

City of Plymouth

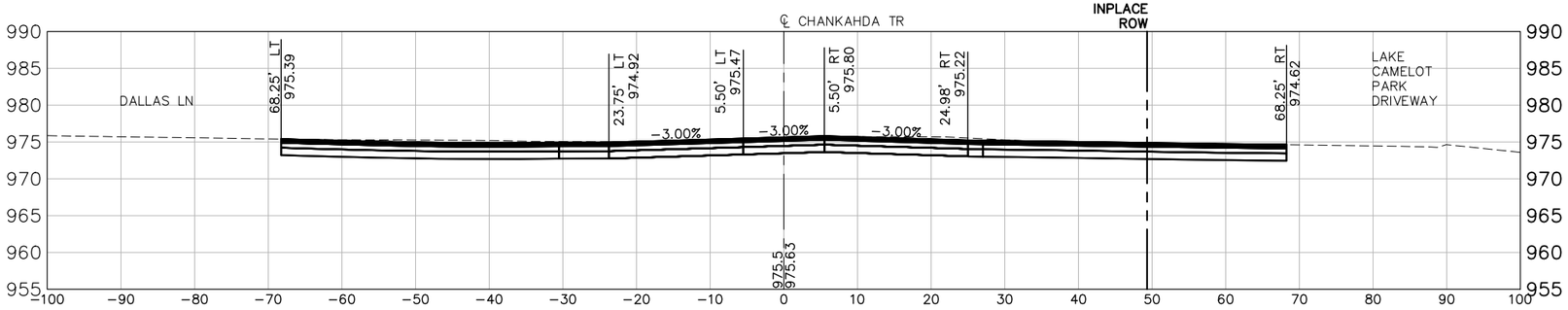
CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
CROSS SECTIONS
STA. 170+50 TO STA. 171+50

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

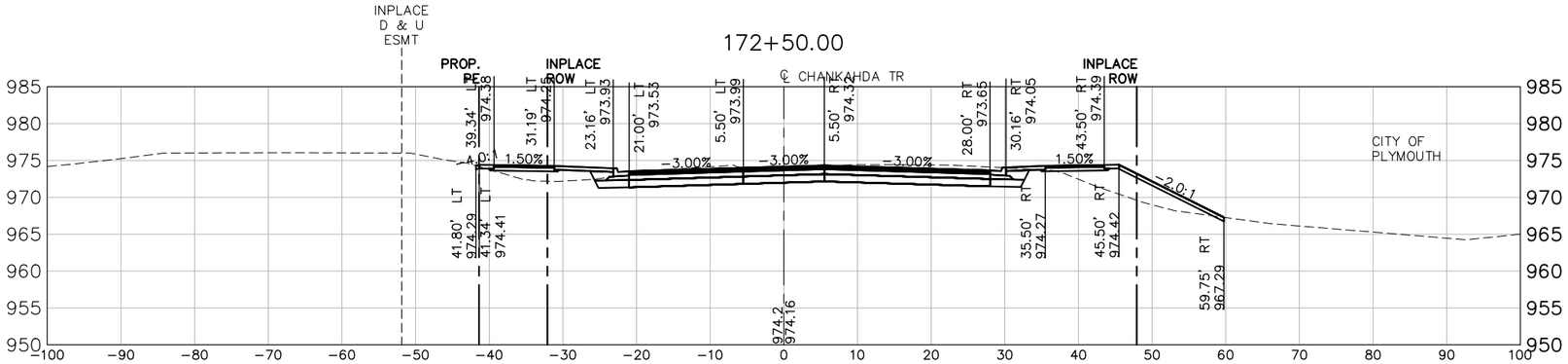
SHEET NO. 314 / 354

VERTICAL 0 5 10 20 — HORIZONTAL SCALE IN FEET 0 5 10 20

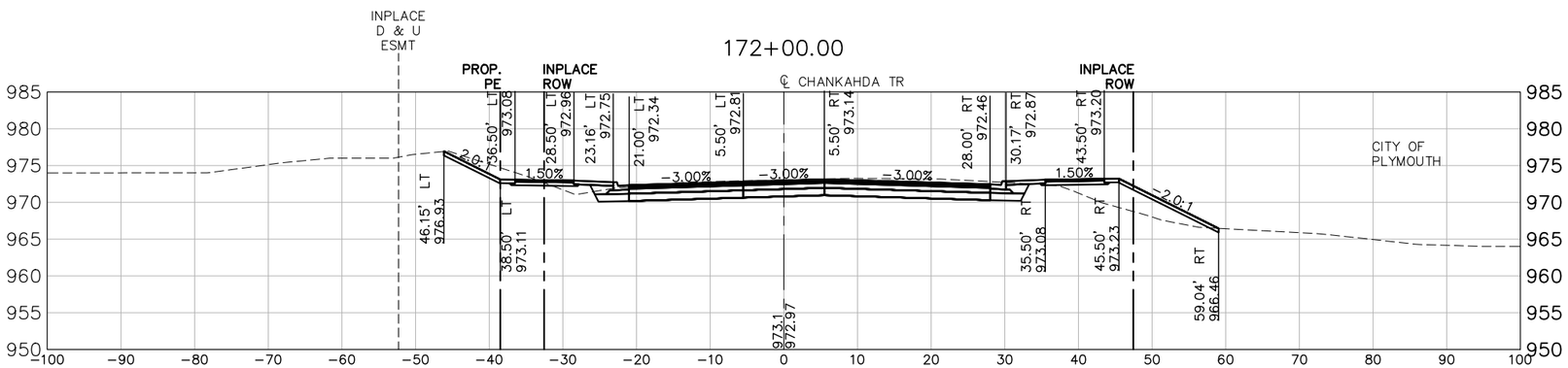
173+15.00



172+50.00



172+00.00



No.	Date	Revisions	App.

DRAWING NAME	CHANKAHDA_PH3_Sections.dwg
DESIGNED BY:	JWB
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DATE:	02/07/2025
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City of Plymouth

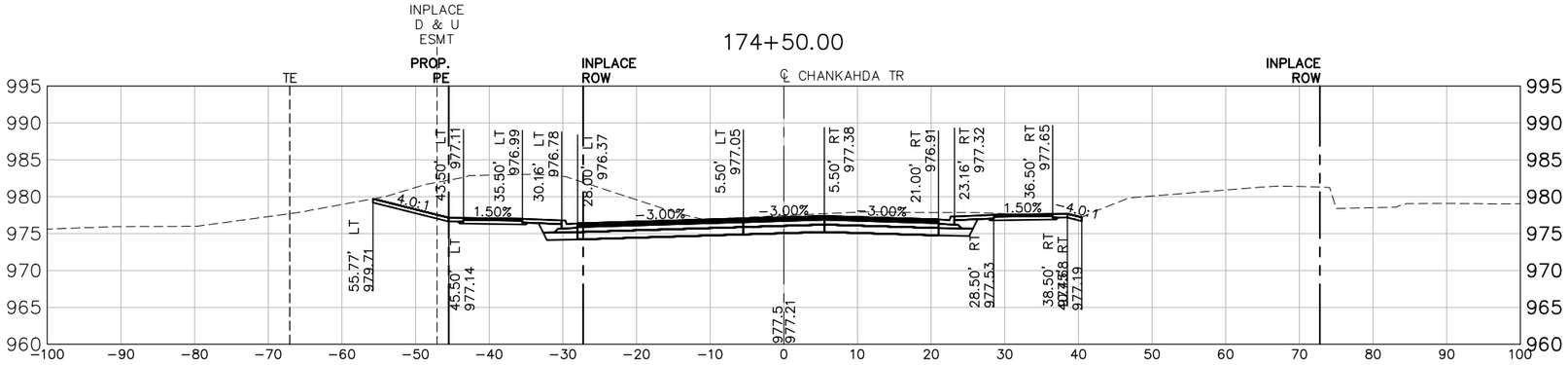
CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
CROSS SECTIONS
STA. 172+00 TO STA. 173+15

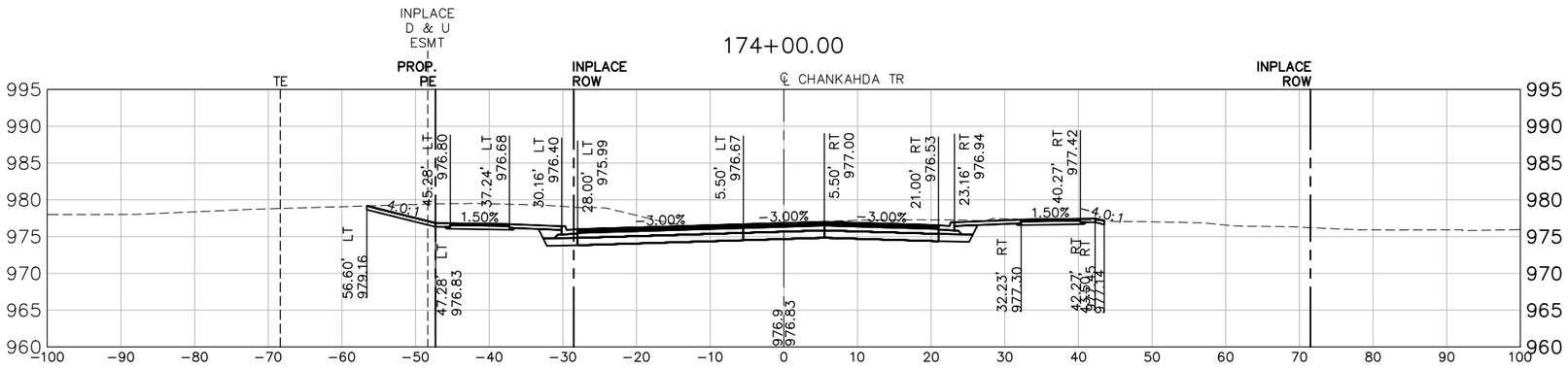
CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

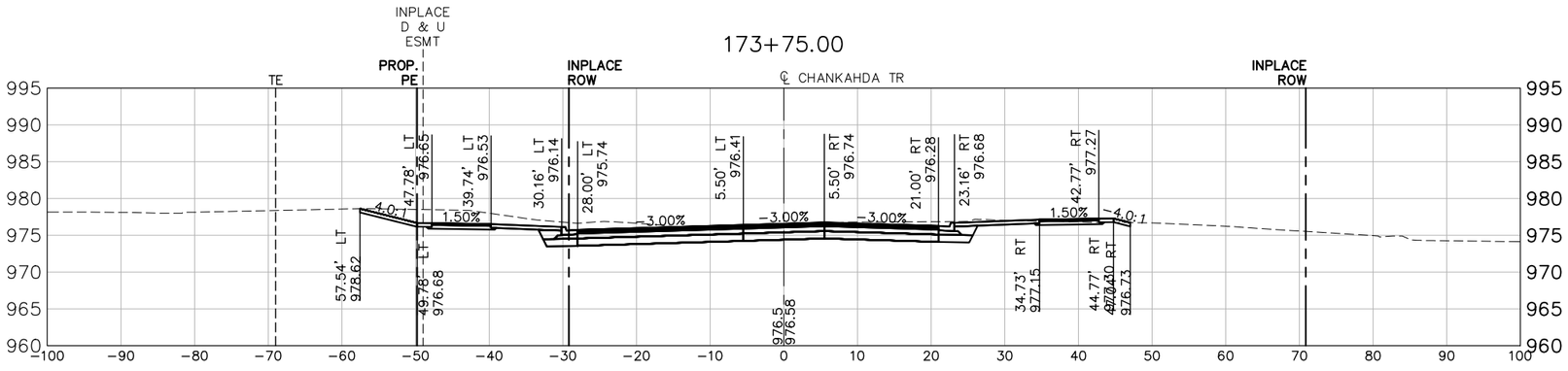
SHEET NO. 315 / 354

0 5 10 20 VERTICAL

0 5 10 20 HORIZONTAL SCALE IN FEET







No.	Date	Revisions	App.

DRAWING NAME	CHANKAHDA_PH3_Sections.dwg
DESIGNED BY:	JWB
DRAWN BY:	JWB
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DATE:	02/07/2025
PROJECT NO.	160662010

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City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
CROSS SECTIONS
STA. 173+75 TO STA. 174+50

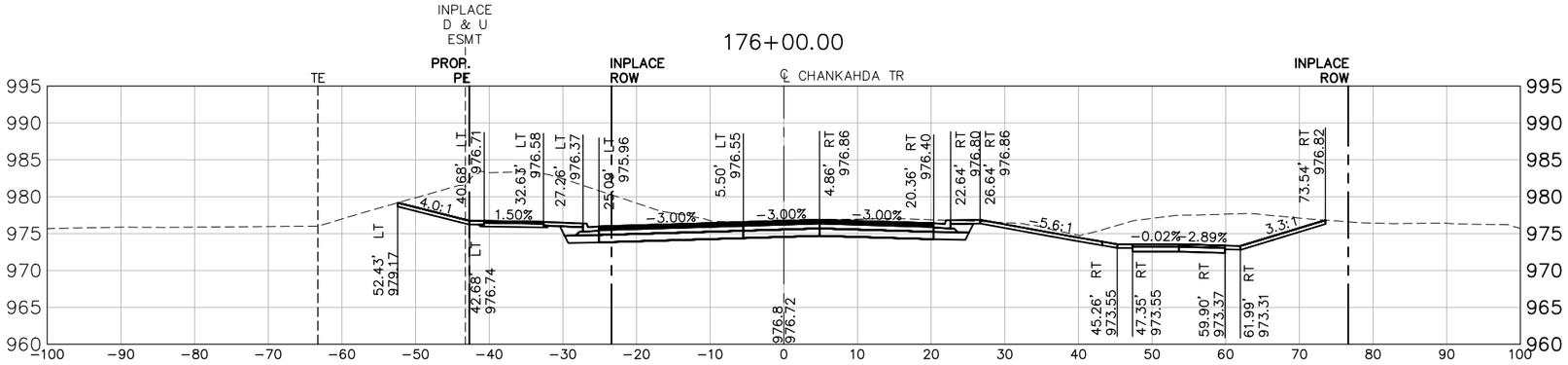
CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 316 / 354

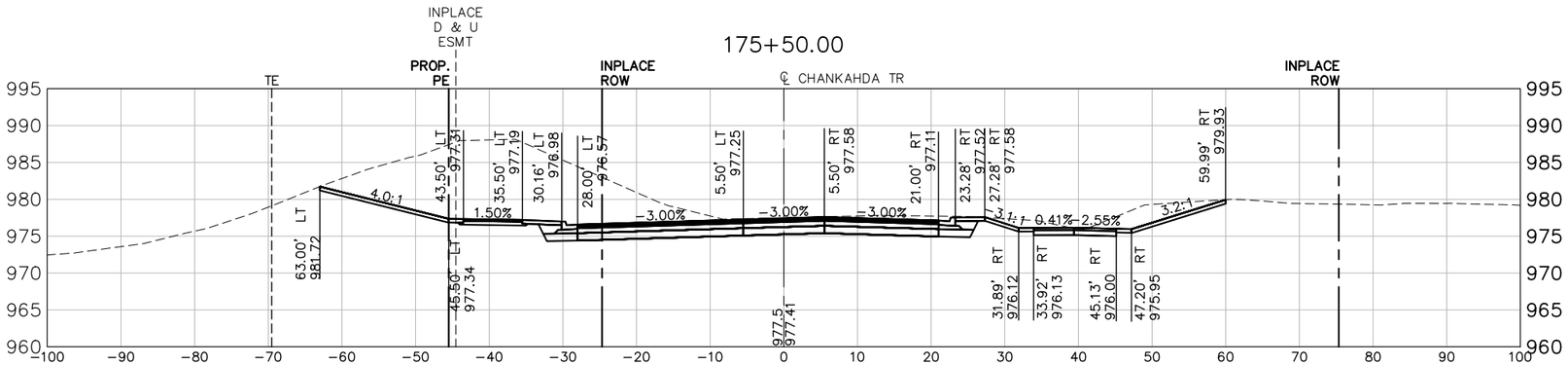
0 5 10 20 VERTICAL

0 5 10 20 HORIZONTAL SCALE IN FEET

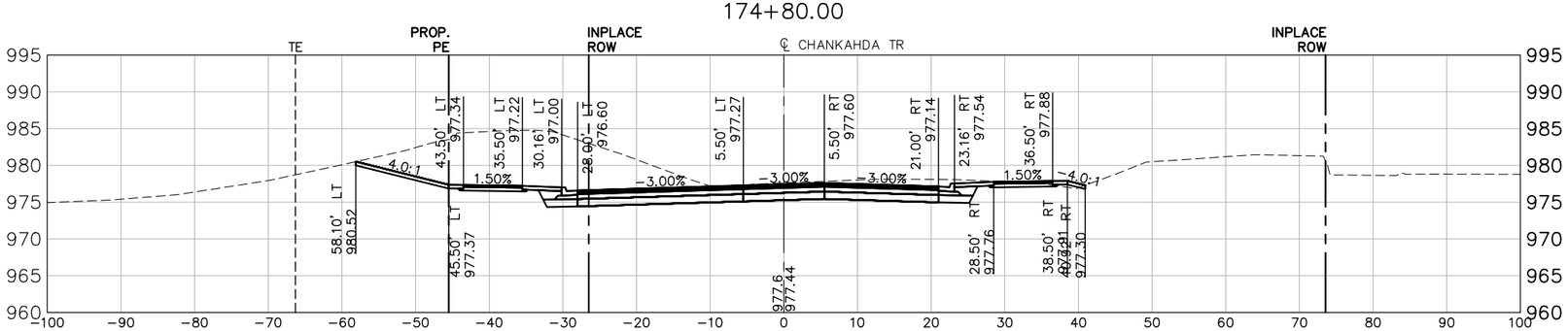
176+00.00



175+50.00



174+80.00



No.	Date	Revisions	App.

DRAWING NAME	CHANKAHDA_PH3_Sections.dwg
DESIGNED BY:	JWB
DRAWN BY:	JWB
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PROJECT NO.	160662010

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City of Plymouth

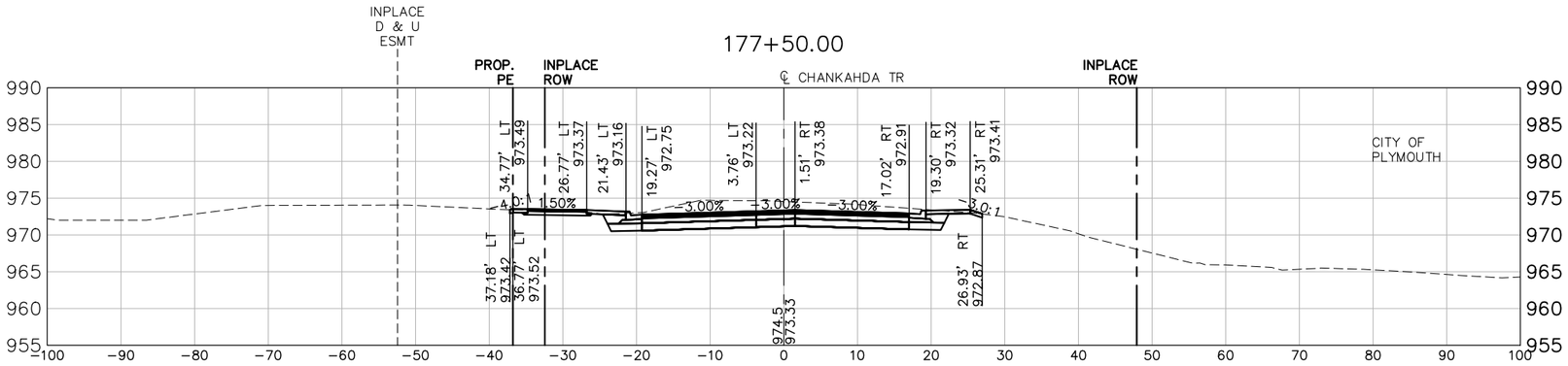
CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
CROSS SECTIONS
STA. 175+00 TO STA. 176+00

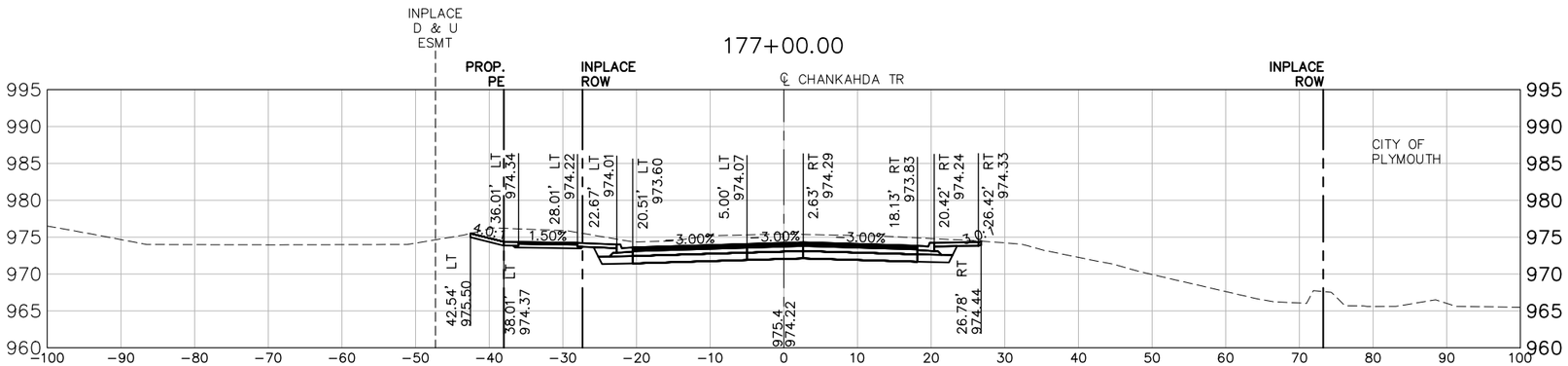
CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

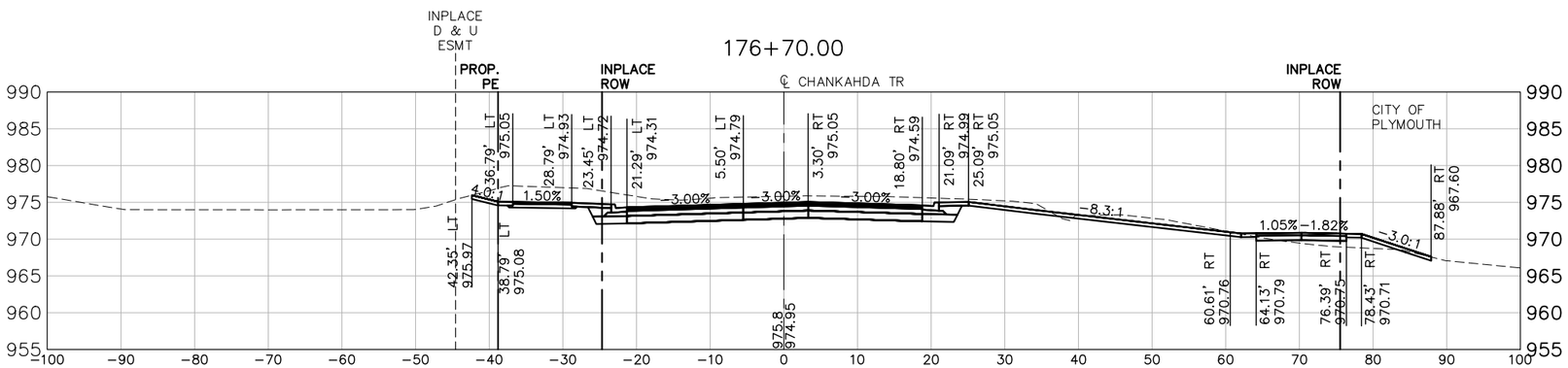
SHEET NO. 317 / 354

VERTICAL 0 5 10 20

HORIZONTAL SCALE IN FEET 0 5 10 20







No.	Date	Revisions	App.

DRAWING NAME	CHANKAHDA_PH3_Sections.dwg
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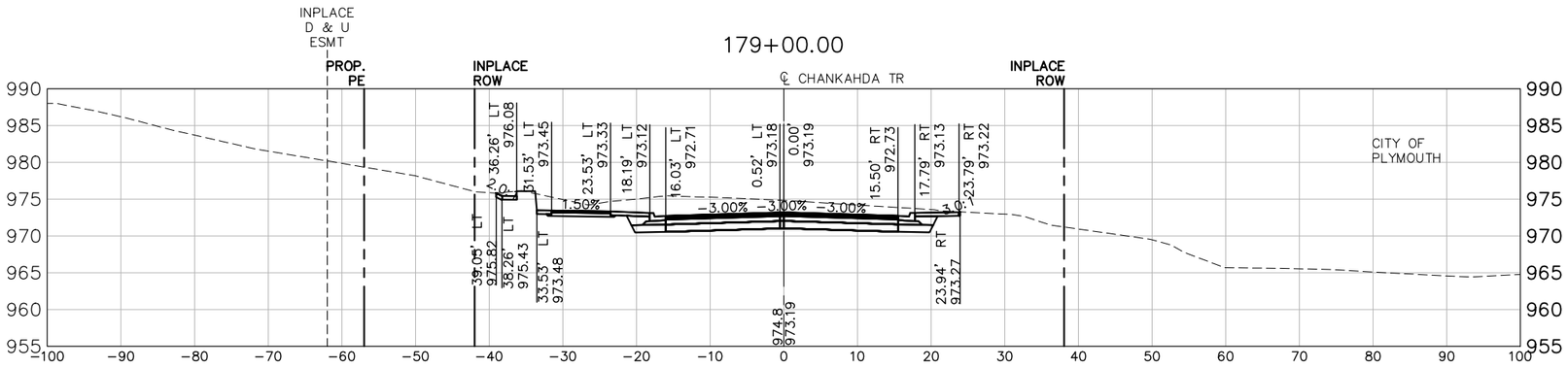
CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
CROSS SECTIONS
STA. 176+50 TO STA. 177+50

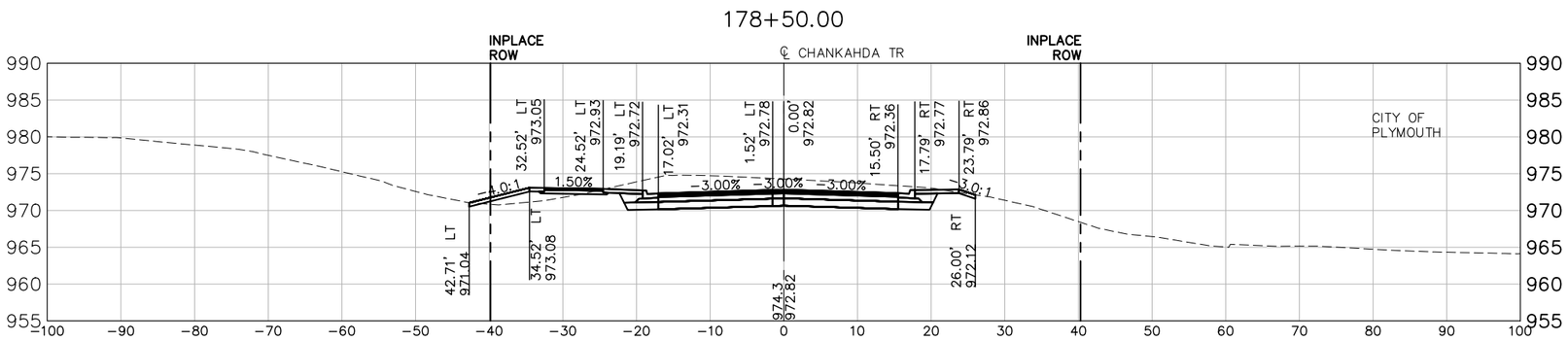
CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

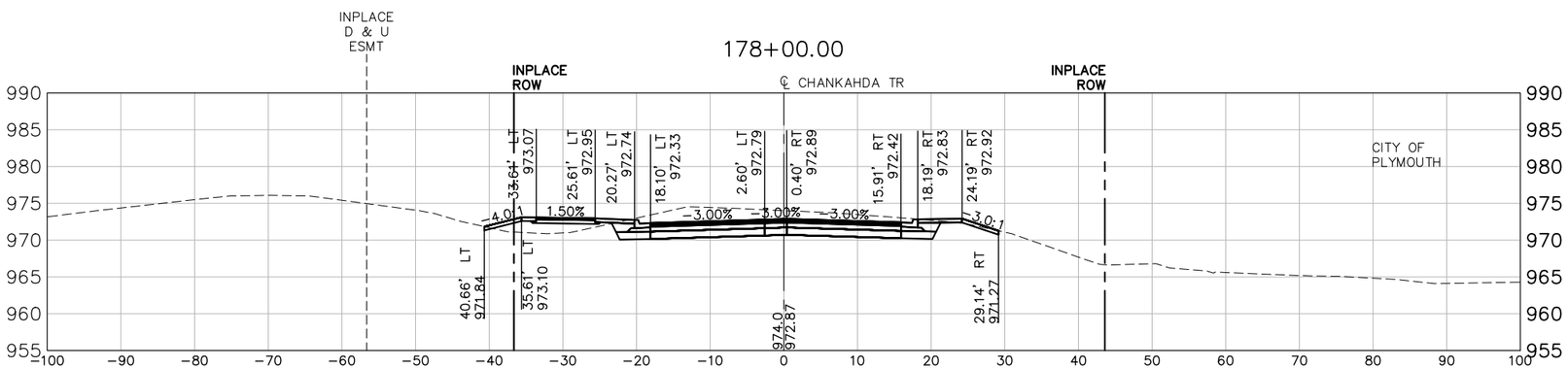
SHEET NO. 318 / 354

0 5 10 20 VERTICAL

0 5 10 20 HORIZONTAL SCALE IN FEET







No.	Date	Revisions	App.

DRAWING NAME	CHANKAHDA_PH3_Sections.dwg
DESIGNED BY:	JWB
DRAWN BY:	JWB
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DATE:	02/07/2025
PROJECT NO.	160662010

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City of Plymouth

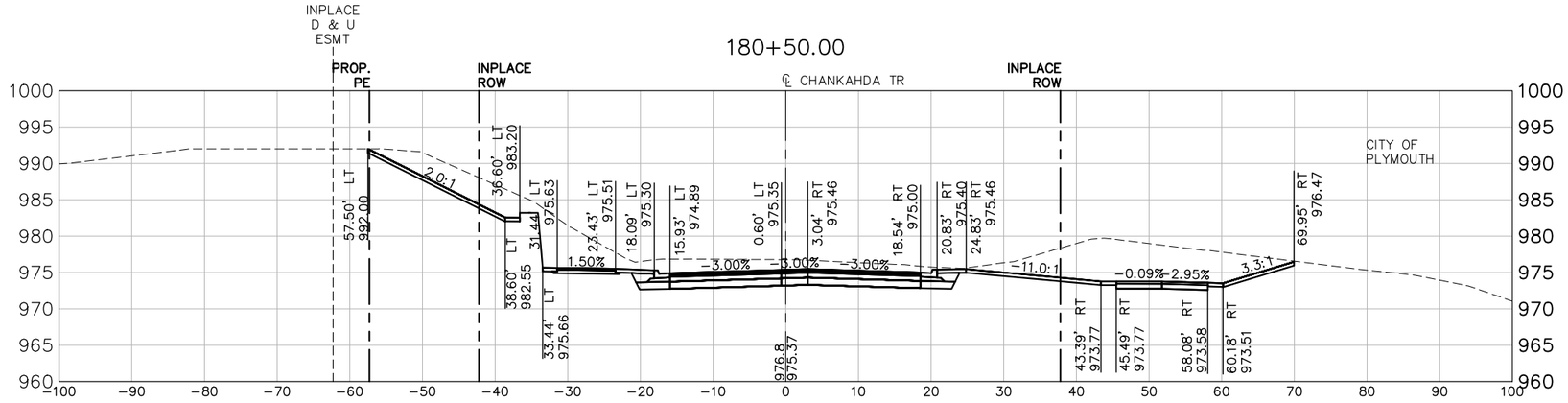
CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
CROSS SECTIONS
STA. 178+00 TO STA. 179+00

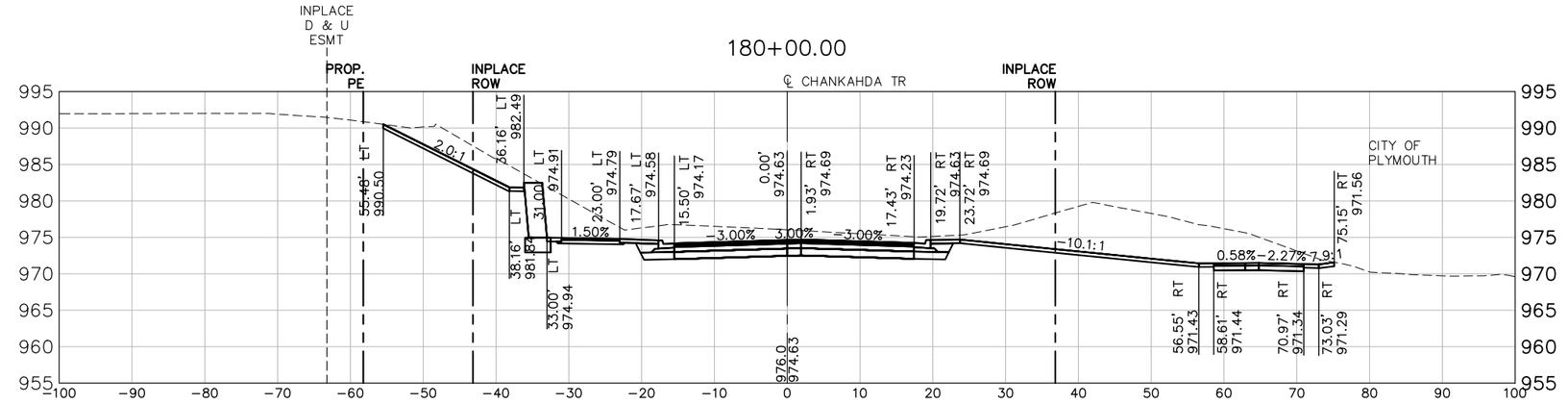
CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

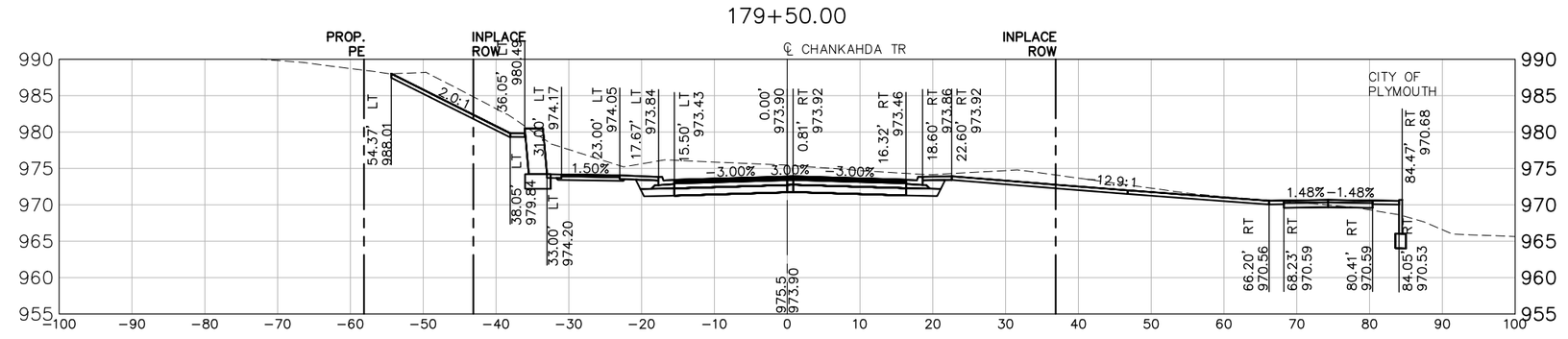
SHEET NO. 319 / 354

0 5 10 20 VERTICAL

0 5 10 20 HORIZONTAL SCALE IN FEET







No.	Date	Revisions	App.

DRAWING NAME	CHANKAHDA_PH3_Sections.dwg
DESIGNED BY:	JWB
DRAWN BY:	JWB
CHECKED BY:	CBL
DATE:	02/07/2025
PROJECT NO.	160662010

Kimley»Horn
767 EUSTIS STREET, SUITE 100, ST, PAUL, MN 55114
PHONE: 651-645-4197
WWW.KIMLEY-HORN.COM

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

Chadd B. Larson
CHADD B. LARSON, PE

DATE: 02/07/2025 MN LIC. NO. 41864

City of Plymouth

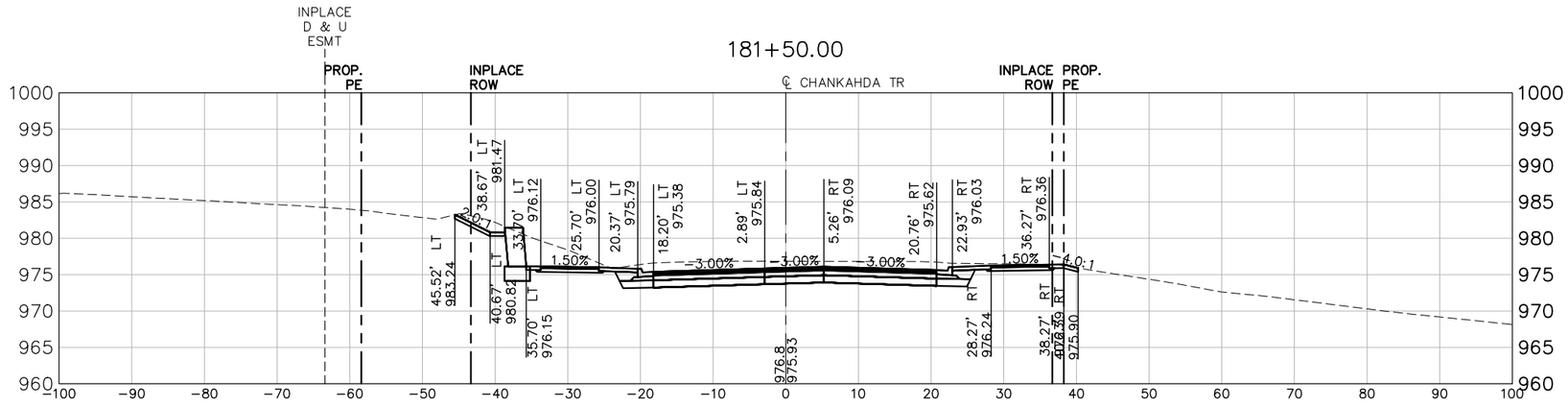
CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
CROSS SECTIONS
STA. 179+50 TO STA. 180+50

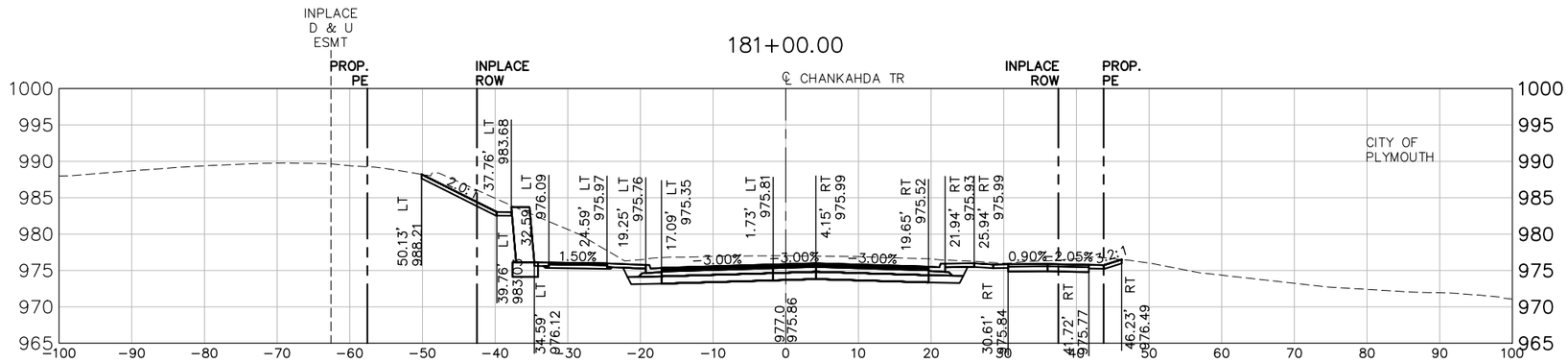
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COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

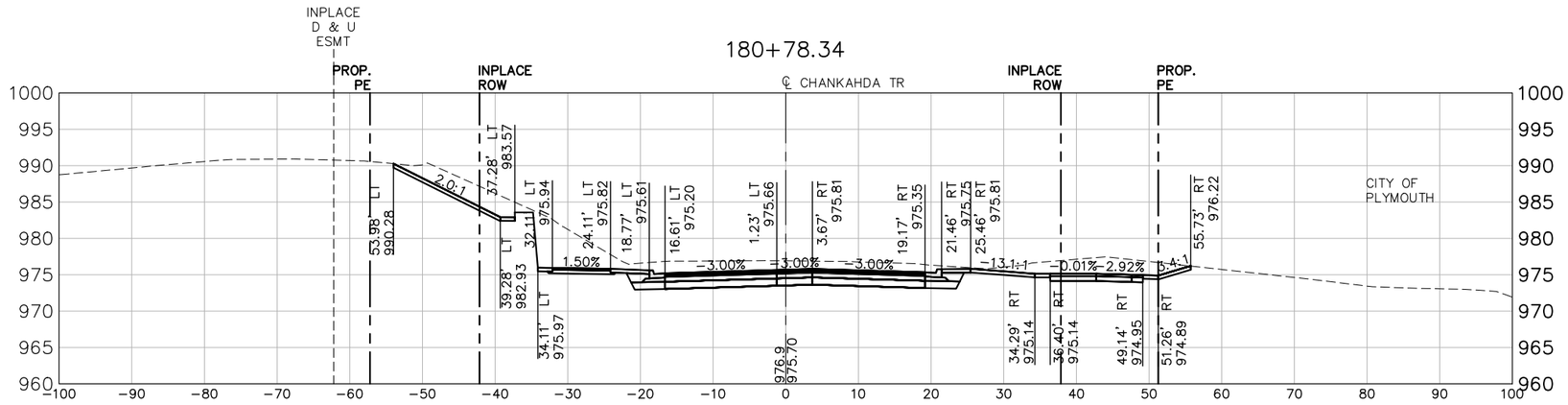
SHEET NO. 320 / 354

0 5 10 20 VERTICAL

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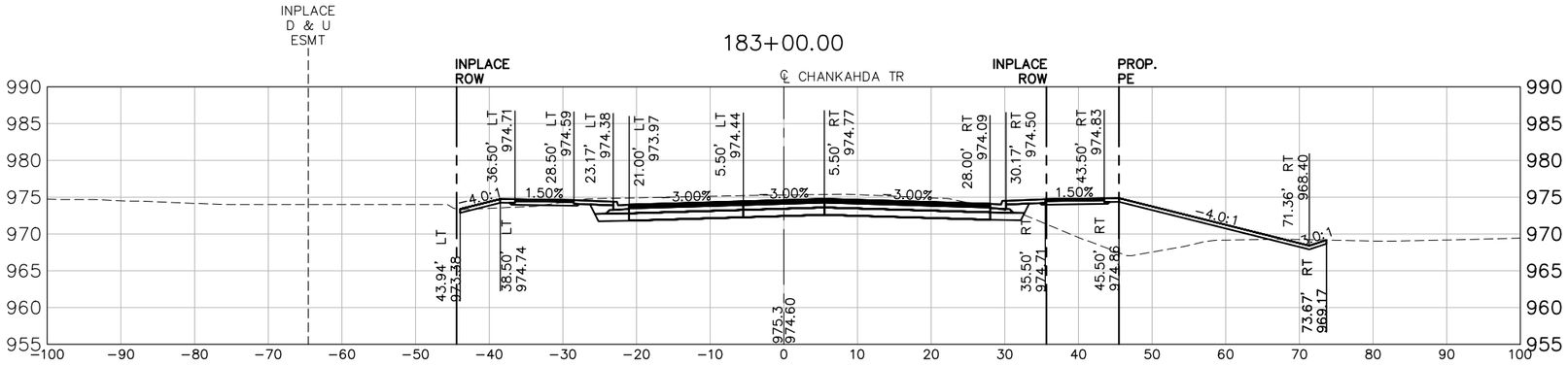
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RECONSTRUCTION PHASE 3
CHANKAHDA TR
CROSS SECTIONS
STA. 180+78 TO STA. 181+50

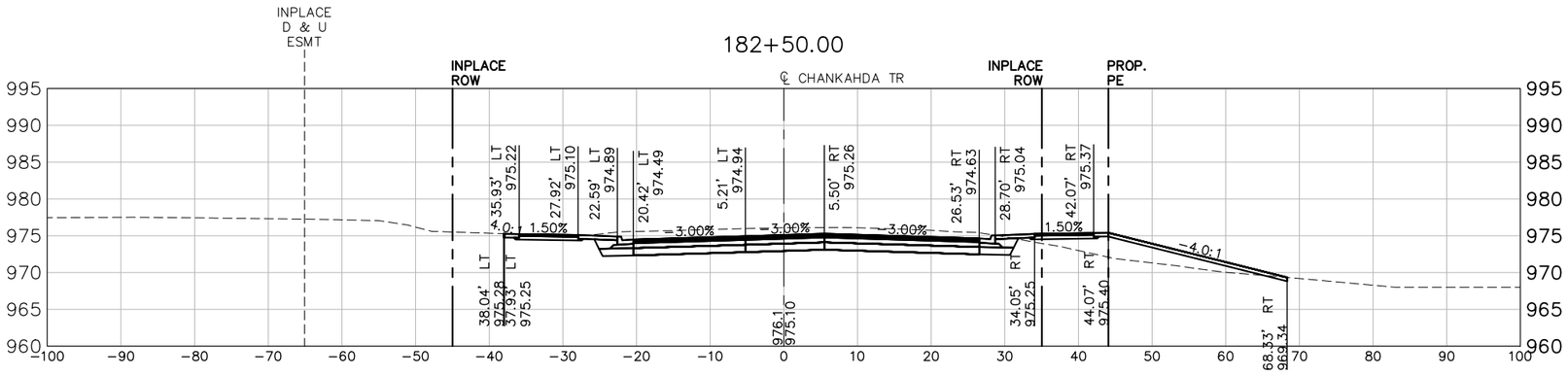
CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

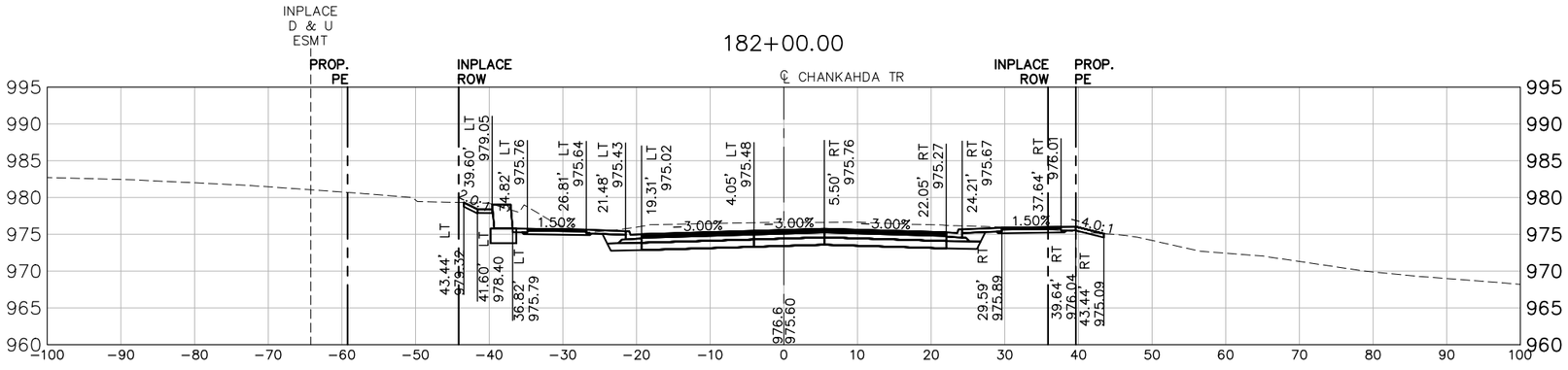
SHEET NO. 321 / 354

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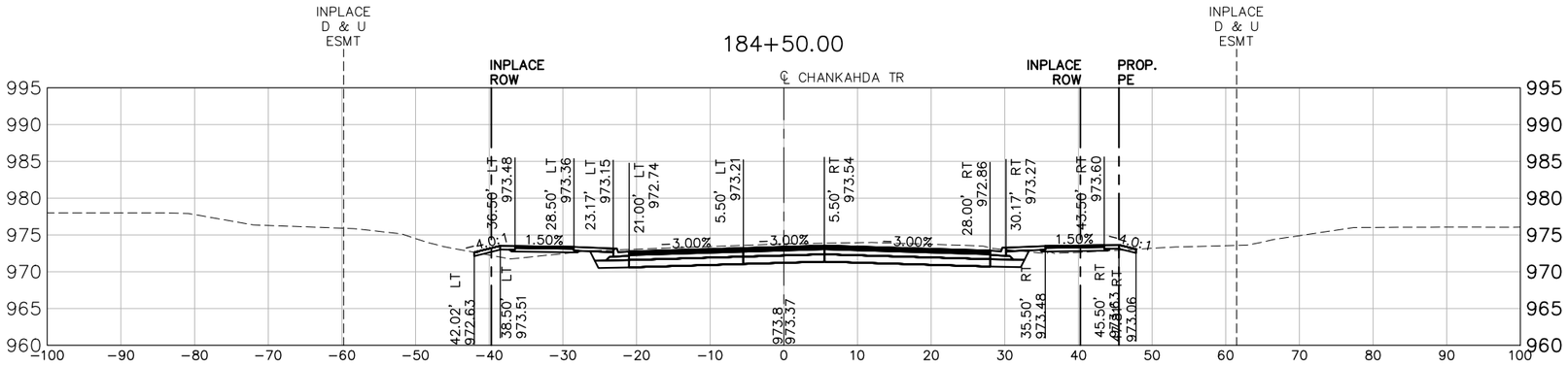
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RECONSTRUCTION PHASE 3
CHANKAHDA TR
CROSS SECTIONS
STA. 182+00 TO STA. 183+00

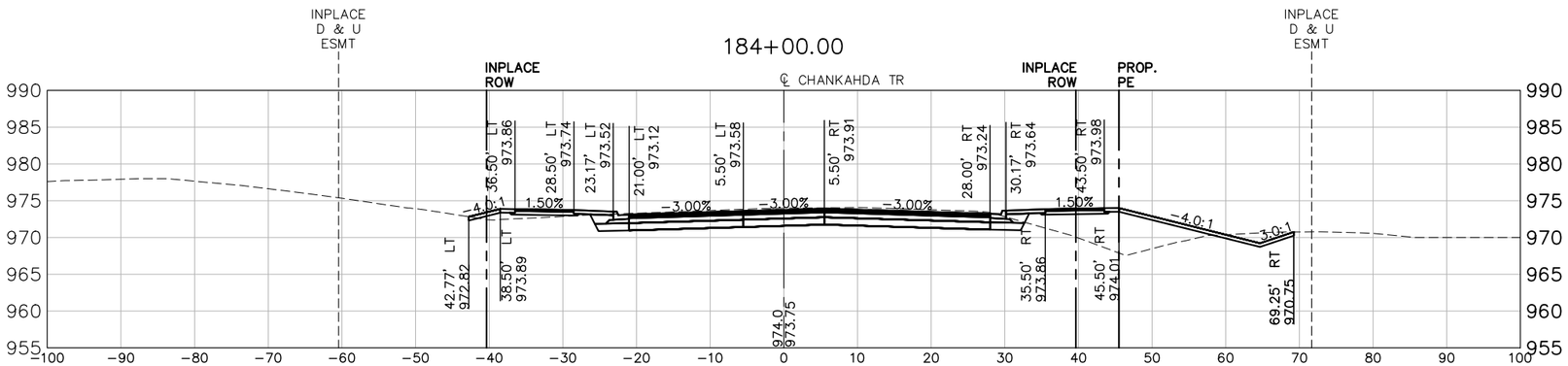
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COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

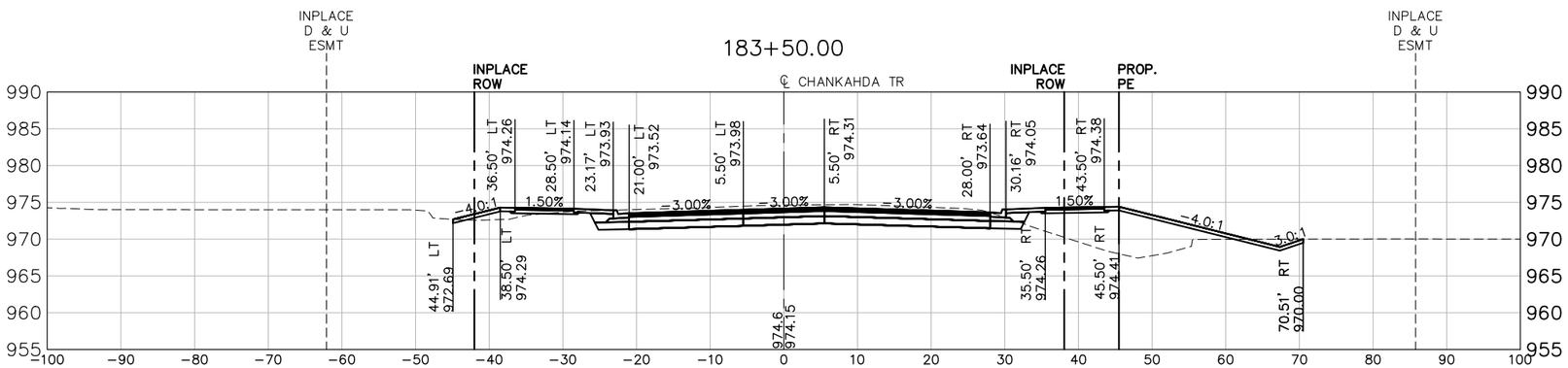
SHEET NO. 322 / 354

VERTICAL 0 5 10 20

HORIZONTAL SCALE IN FEET 0 5 10 20







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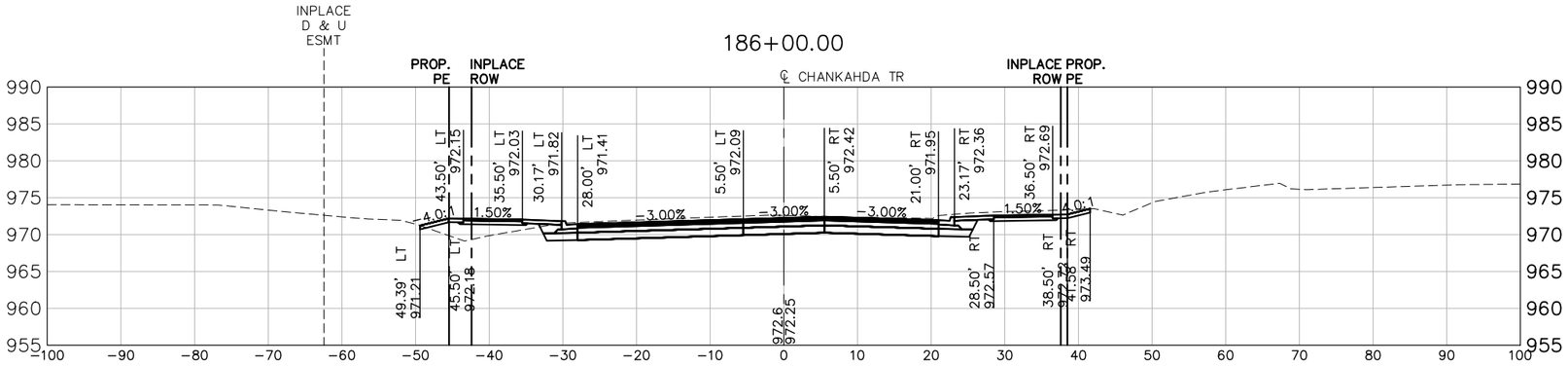
CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
CROSS SECTIONS
STA. 183+50 TO STA. 184+50

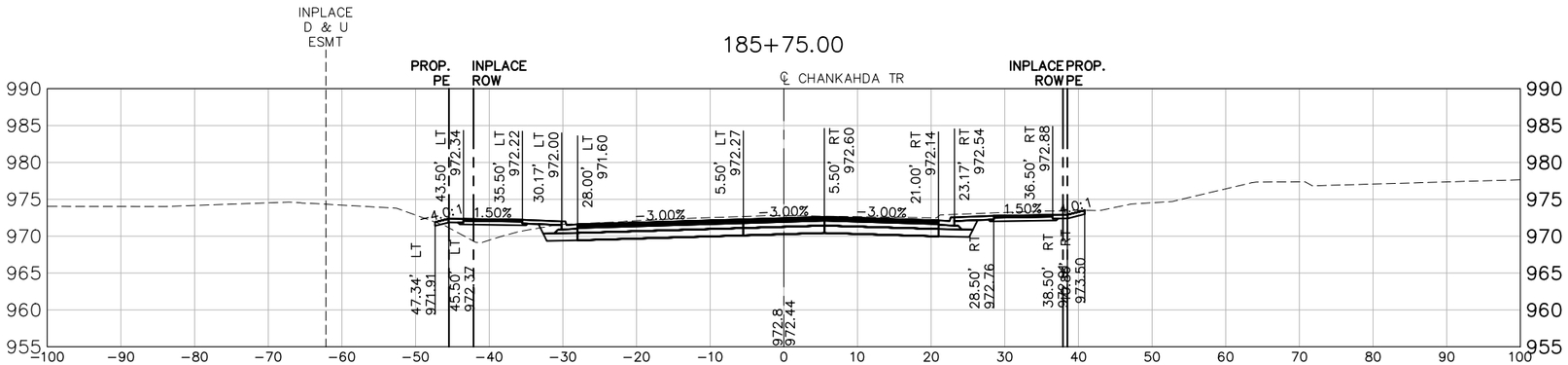
CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

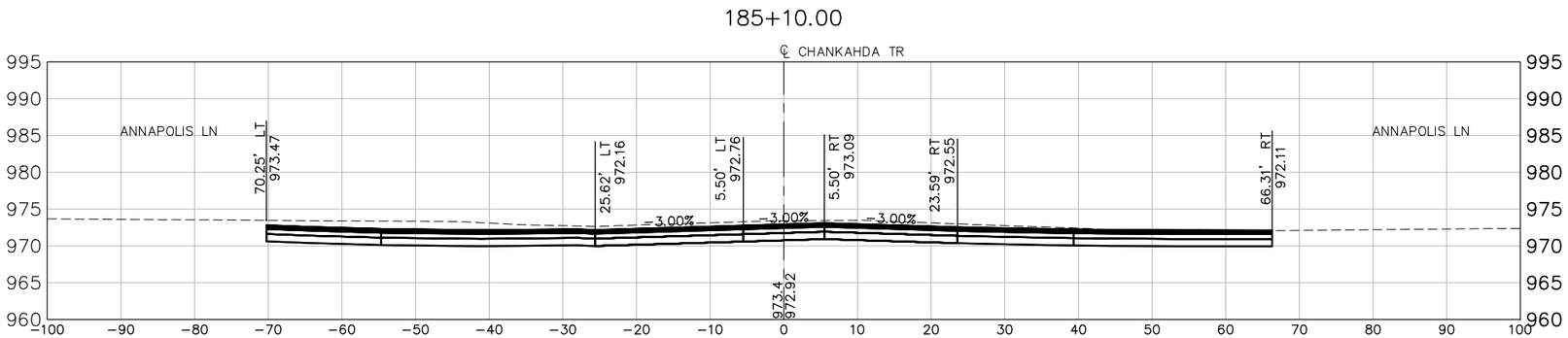
SHEET NO. 323 / 354

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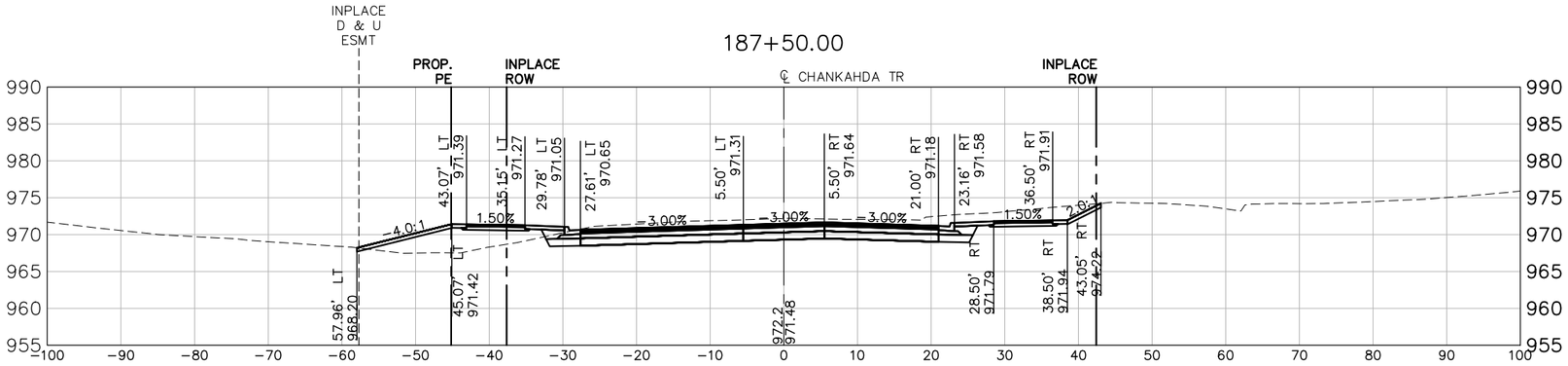
CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
CROSS SECTIONS
STA. 185+10 TO STA. 186+00

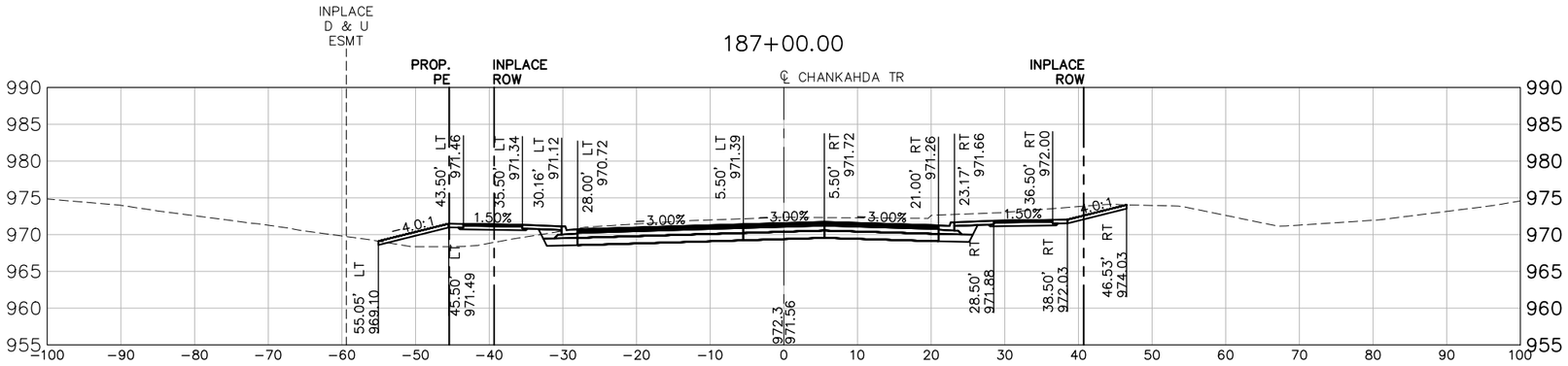
CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
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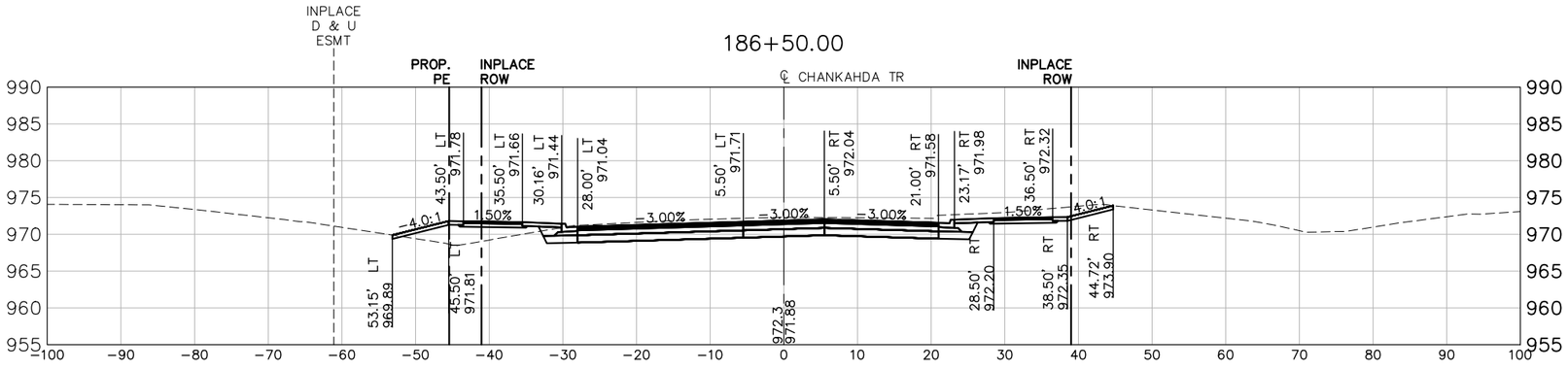
SHEET NO. 324 / 354

VERTICAL 0 5 10 20

HORIZONTAL SCALE IN FEET 0 5 10 20







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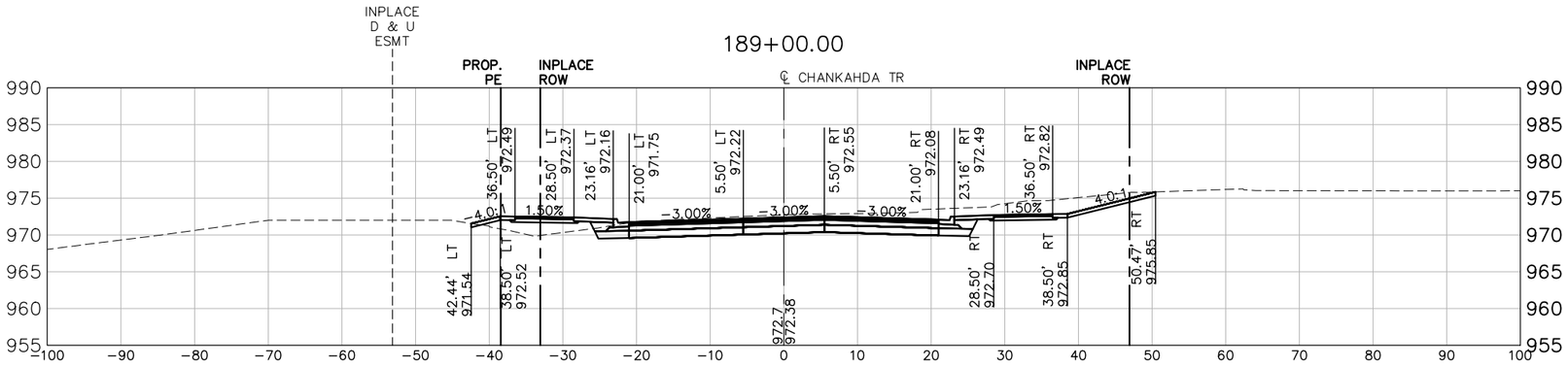
CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
CROSS SECTIONS
STA. 186+50 TO STA. 187+50

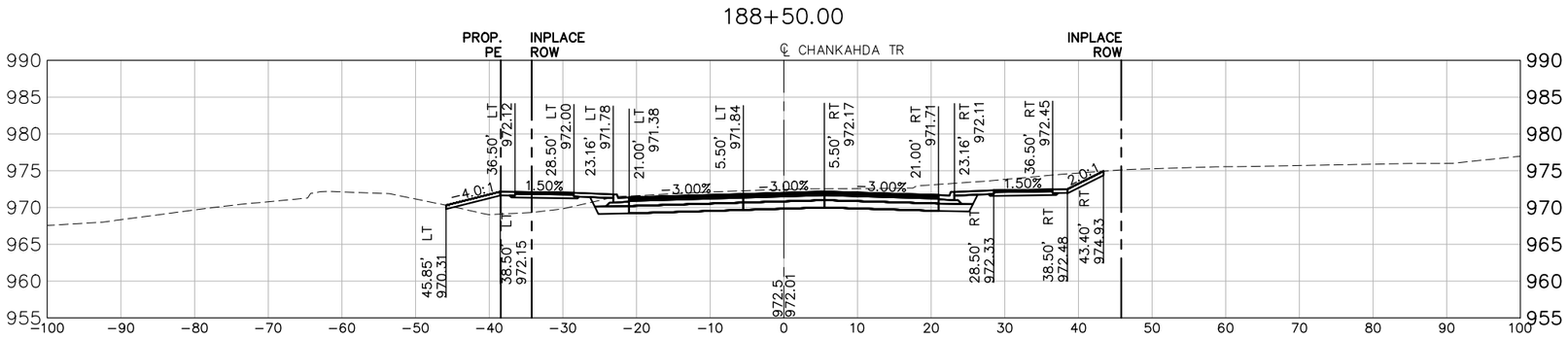
CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
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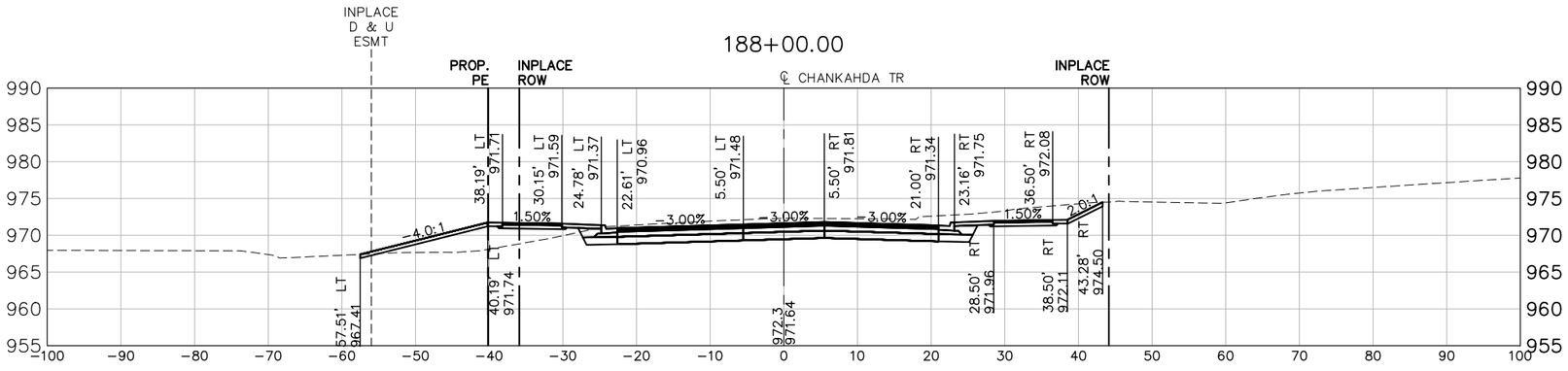
SHEET NO. 325 / 354

VERTICAL 0 5 10 20

HORIZONTAL SCALE IN FEET 0 5 10 20







No.	Date	Revisions	App.

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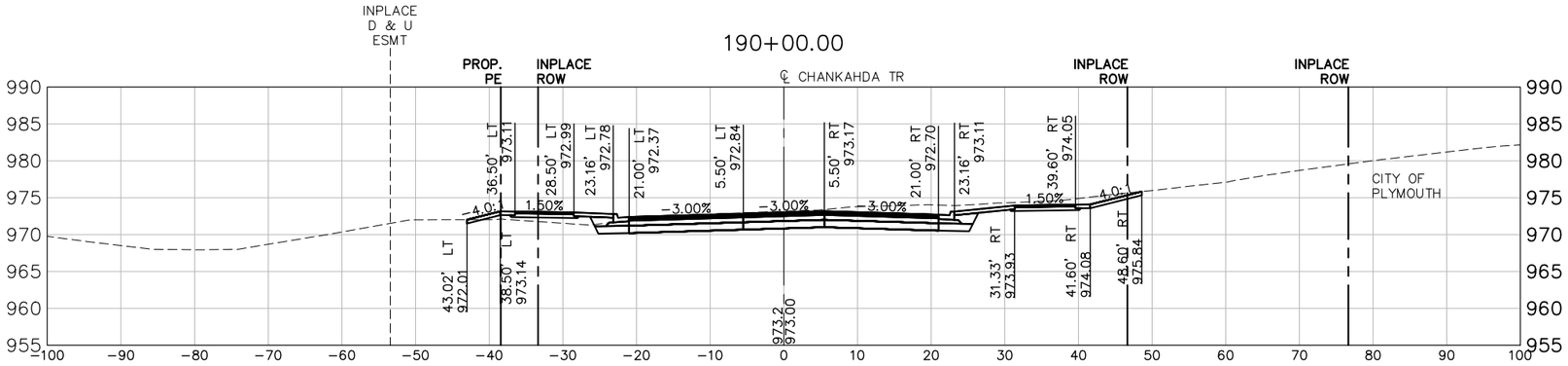
CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
CROSS SECTIONS
STA. 188+00 TO STA. 189+00

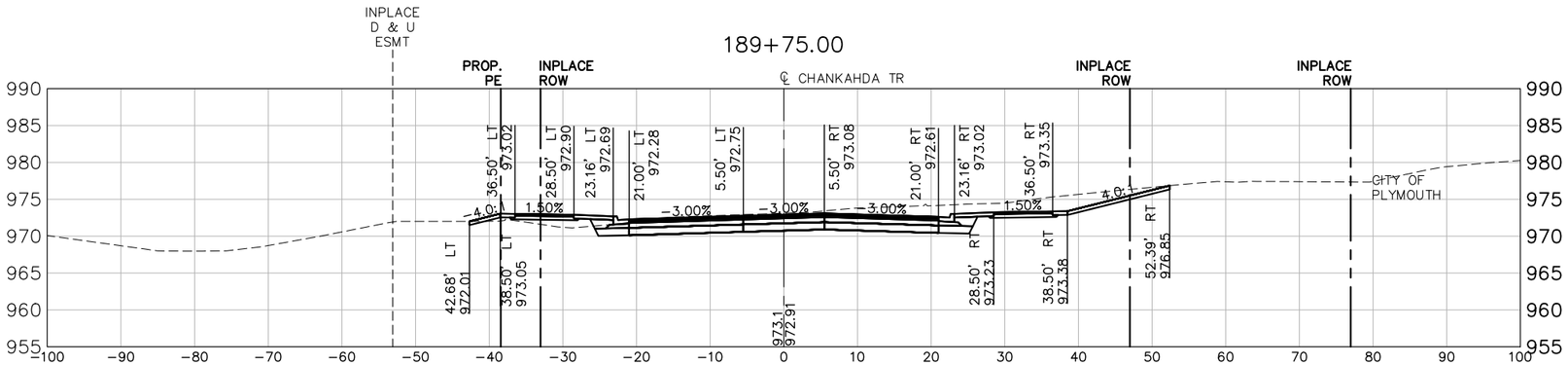
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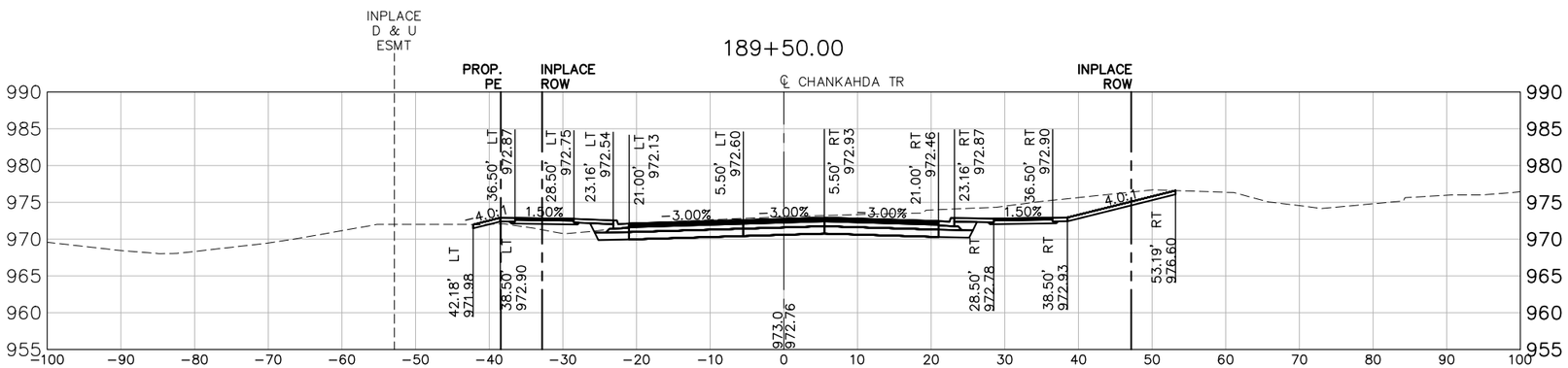
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VERTICAL 0 5 10 20

HORIZONTAL SCALE IN FEET 0 5 10 20







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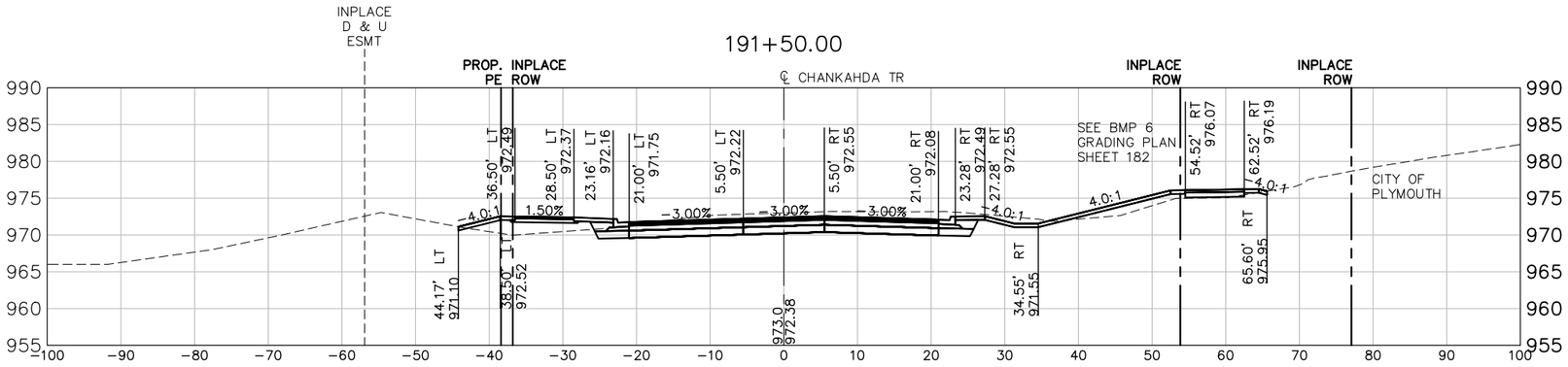
CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
CROSS SECTIONS
STA. 189+50 TO STA. 190+00

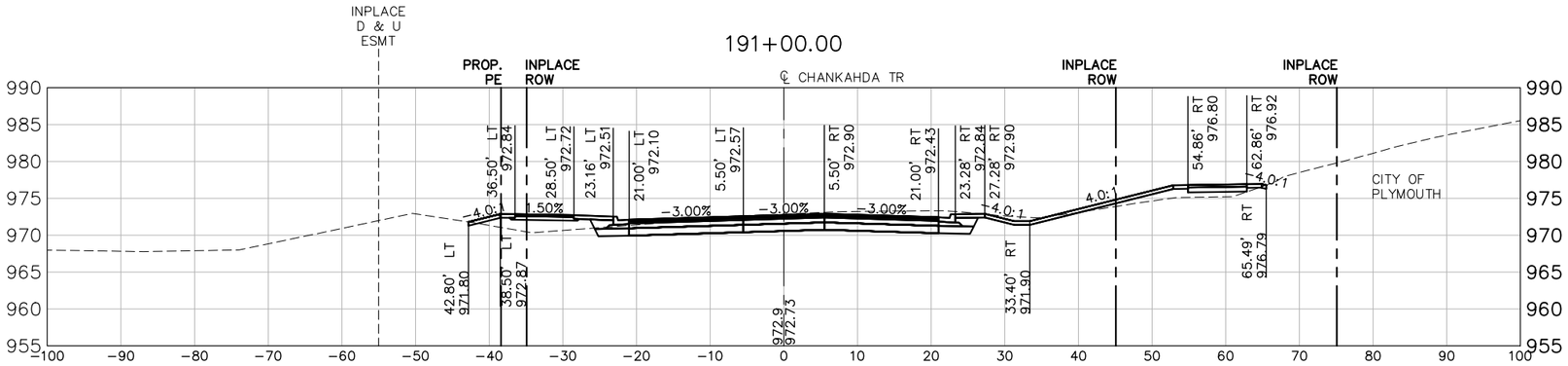
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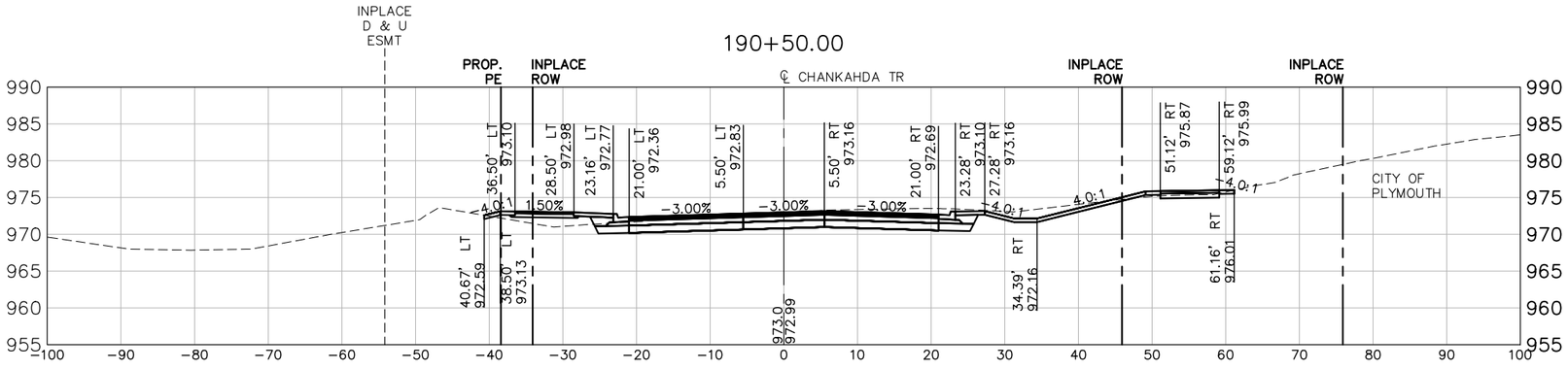
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CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
CROSS SECTIONS
STA. 190+50 TO STA. 191+50

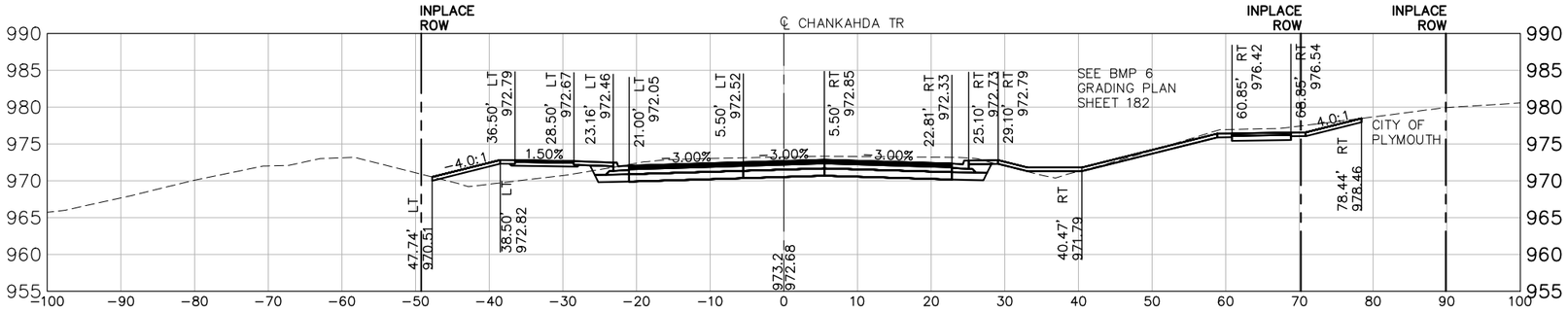
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S.A.P.	155-210-003
S.A.P.	

SHEET NO. 328 / 354

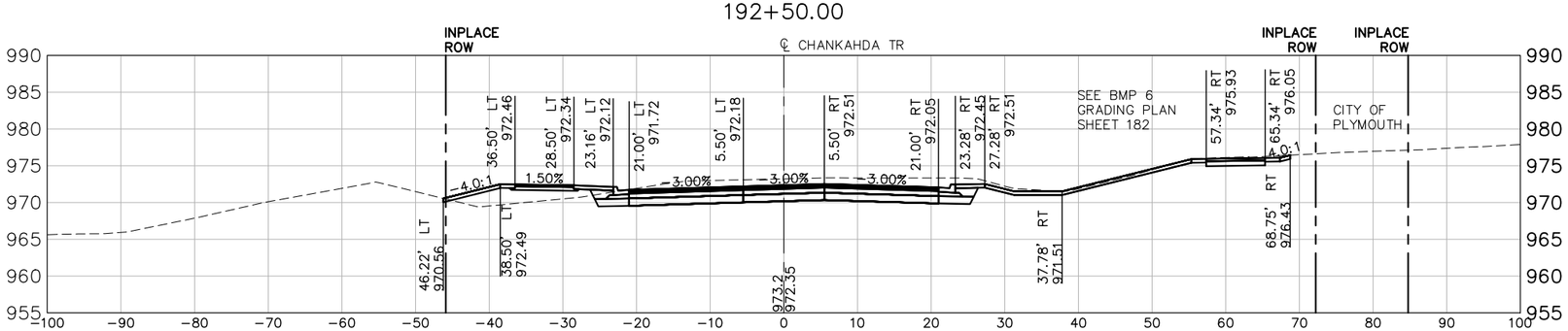
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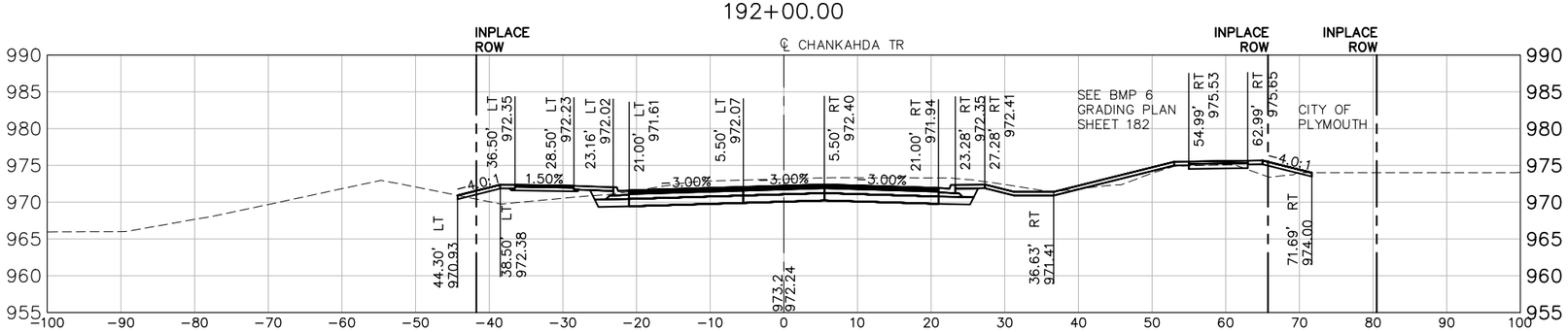
193+00.00



192+50.00



192+00.00



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CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
CROSS SECTIONS
STA. 192+00 TO STA. 193+00

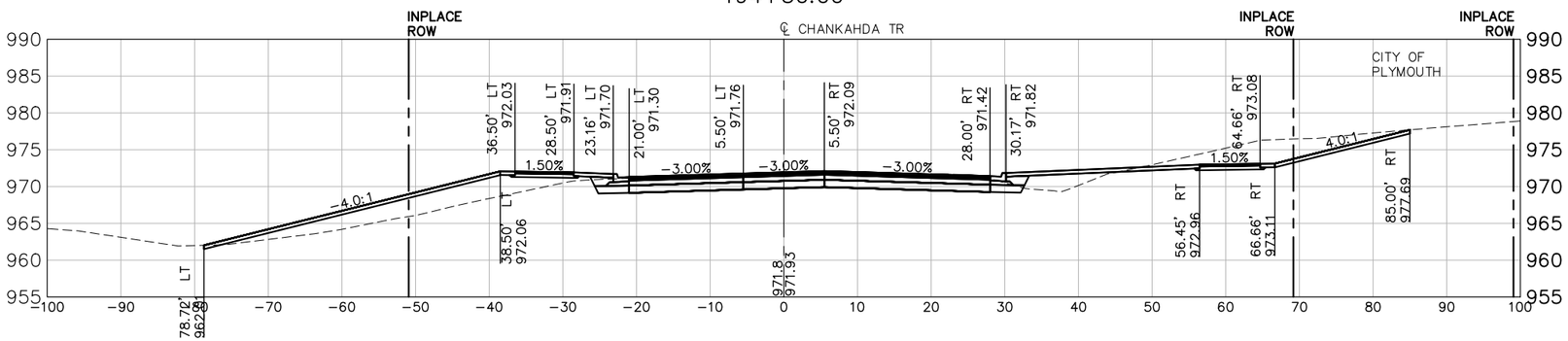
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COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 329 / 354

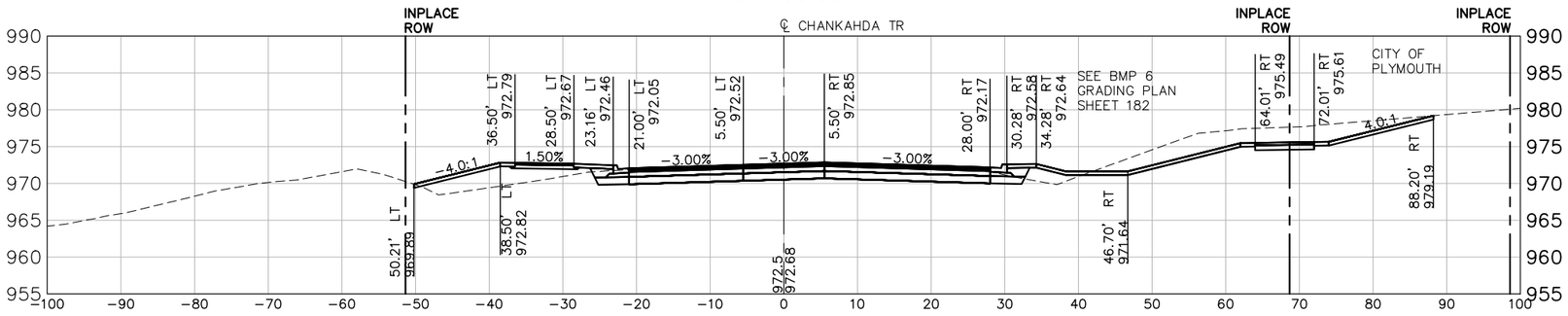
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HORIZONTAL SCALE IN FEET 0 5 10 20

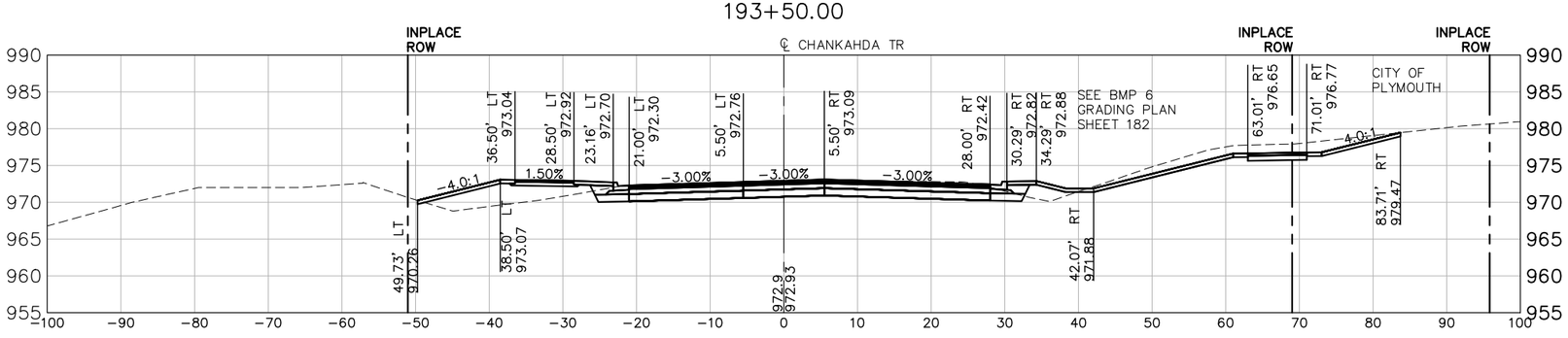
194+50.00



194+00.00



193+50.00



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PROJECT NO.	160662010

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767 EUSTIS STREET, SUITE 100, ST, PAUL, MN 55114
PHONE: 651-645-4197
WWW.KIMLEY-HORN.COM

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

CHADD B. LARSON, PE

DATE: 02/07/2025 MN LIC. NO. 41864

City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
CROSS SECTIONS
STA. 193+50 TO STA. 194+50

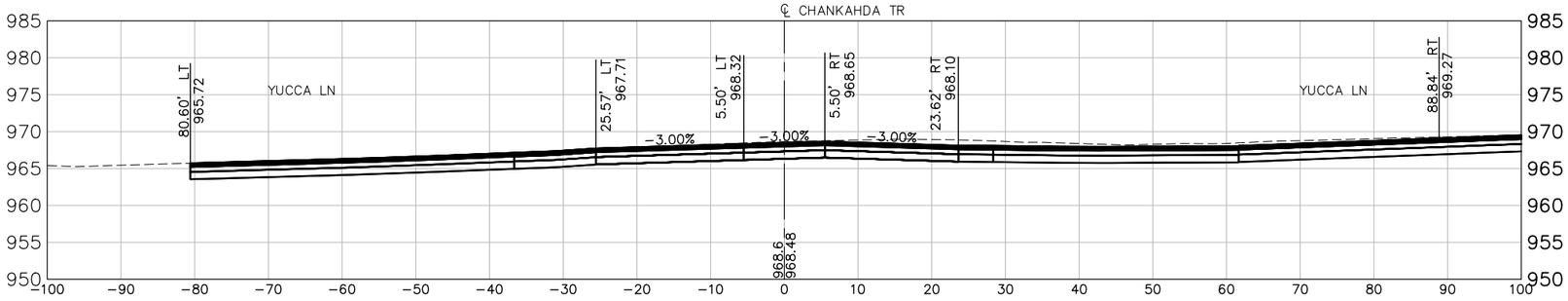
CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 330 / 354

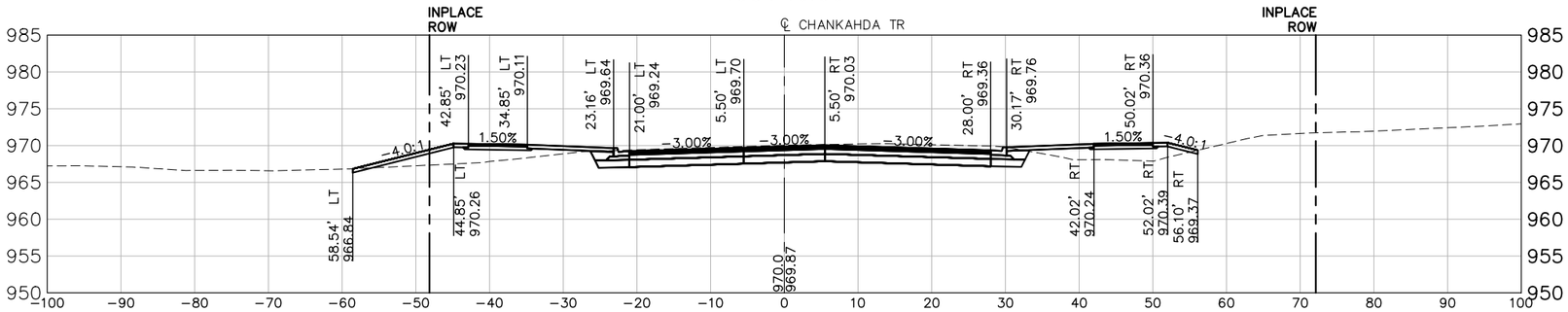
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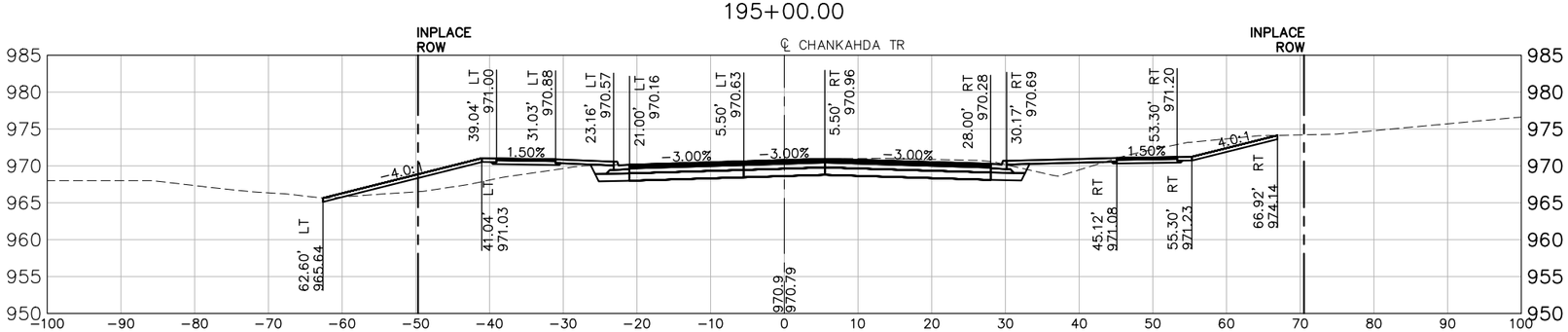
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195+40.00



195+00.00



No.	Date	Revisions	App.

DRAWING NAME	CHANKAHDA_PH3_Sections.dwg
DESIGNED BY:	JWB
DRAWN BY:	JWB
CHECKED BY:	CBL
DATE:	02/07/2025
PROJECT NO.	160662010

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City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
CROSS SECTIONS
STA. 195+00 TO STA. 196+00

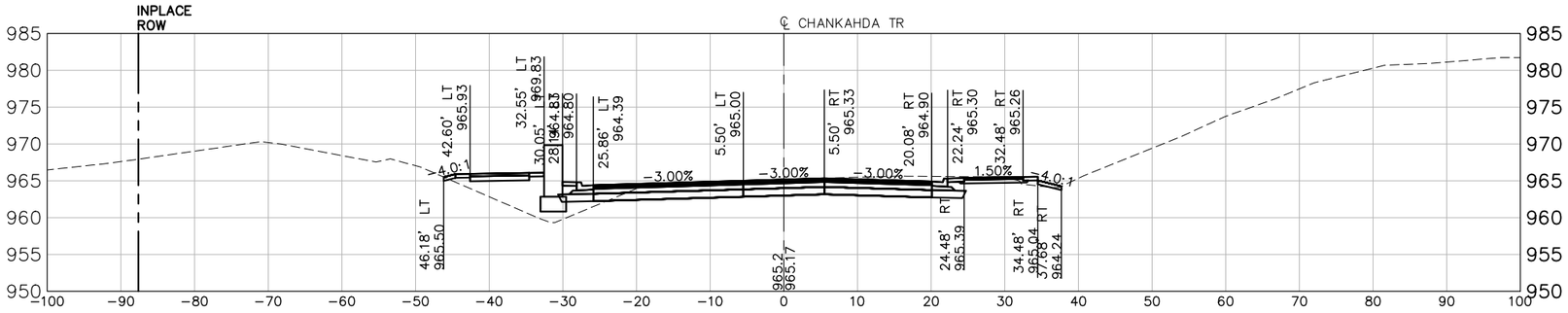
CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 331 / 354

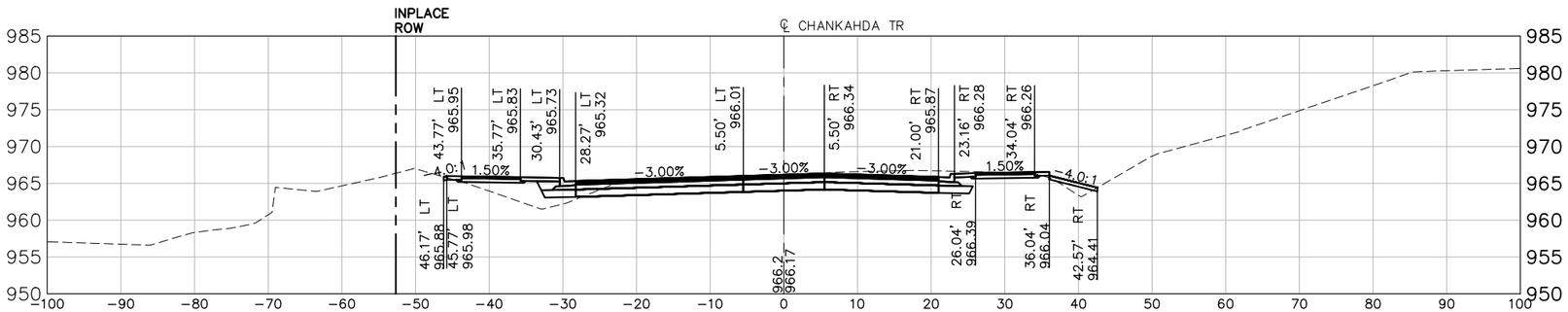
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0 5 10 20 HORIZONTAL SCALE IN FEET

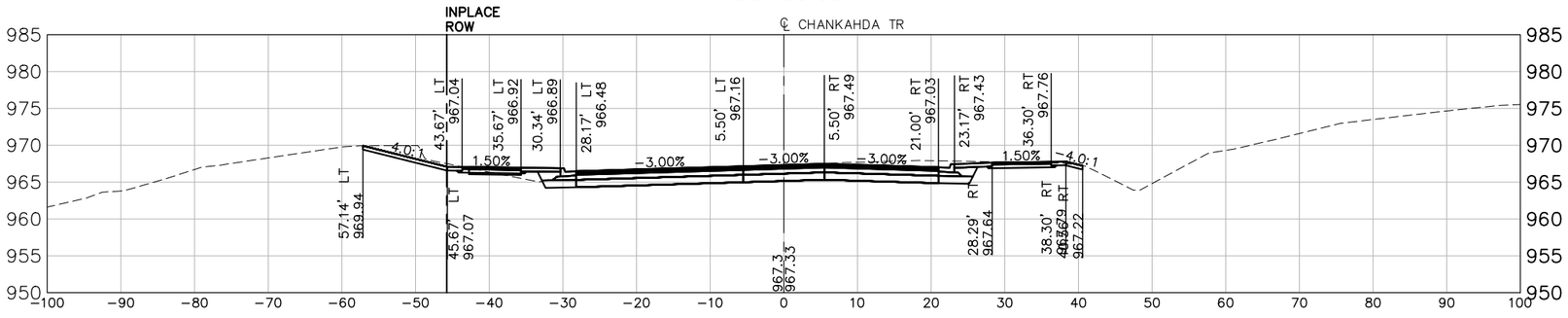
197+50.00



197+00.00



196+50.00



No.	Date	Revisions	App.

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City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
CROSS SECTIONS
STA. 196+50 TO STA. 197+50

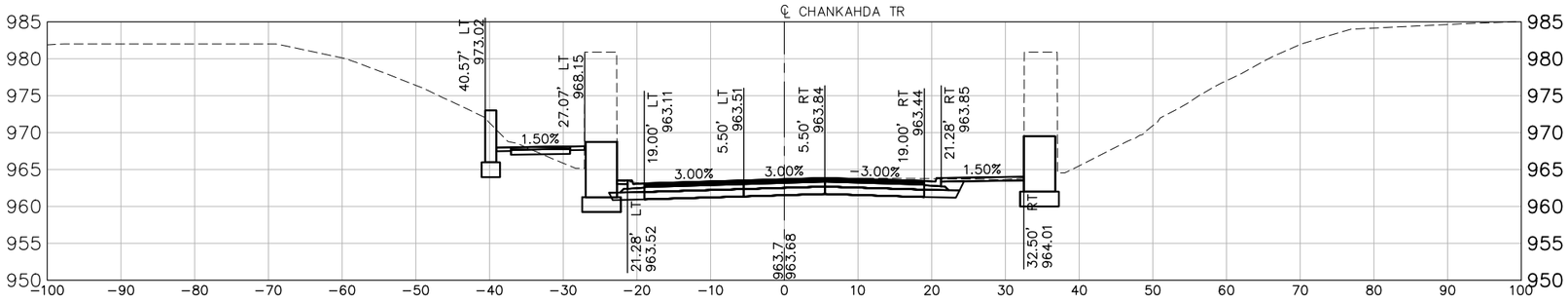
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COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 332 / 354

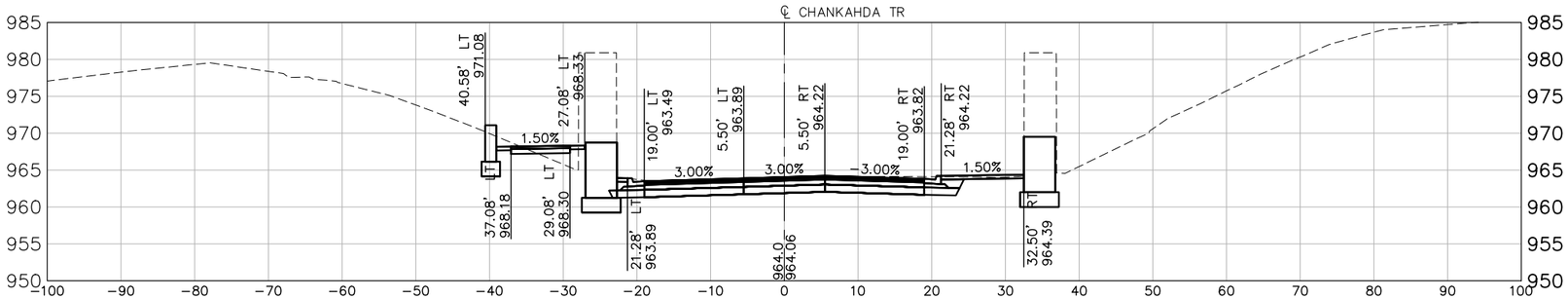
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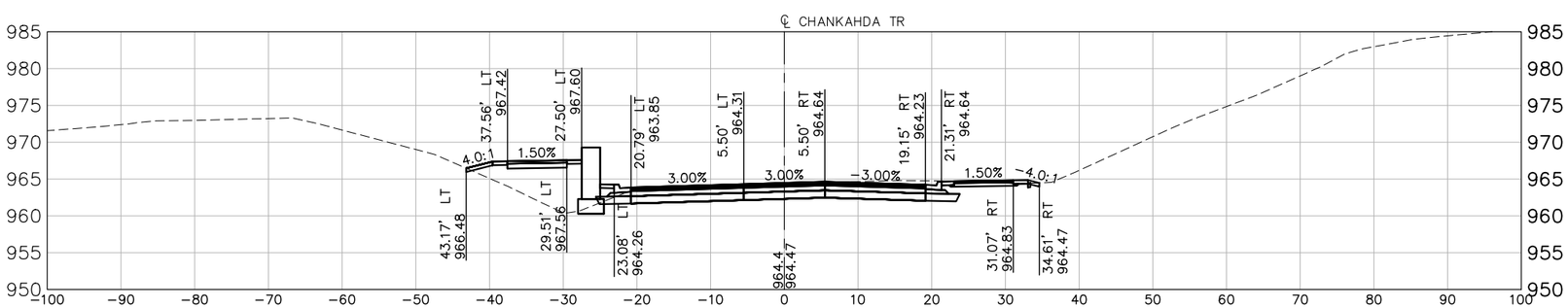
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198+50.00



198+00.00



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Chadd B. Larson

CHADD B. LARSON, PE

DATE: 02/07/2025 MN LIC. NO. 41864

City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
CROSS SECTIONS
STA. 198+00 TO STA. 199+00

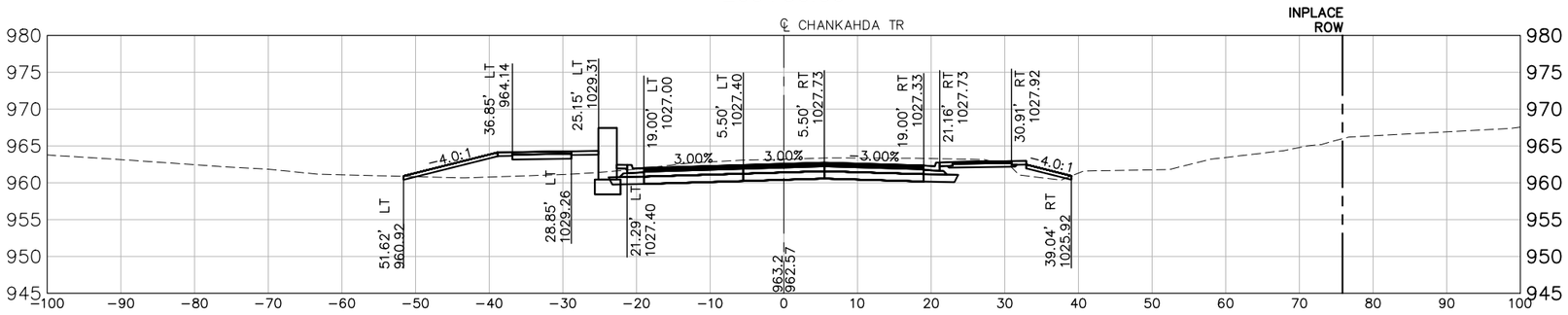
CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 333 / 354

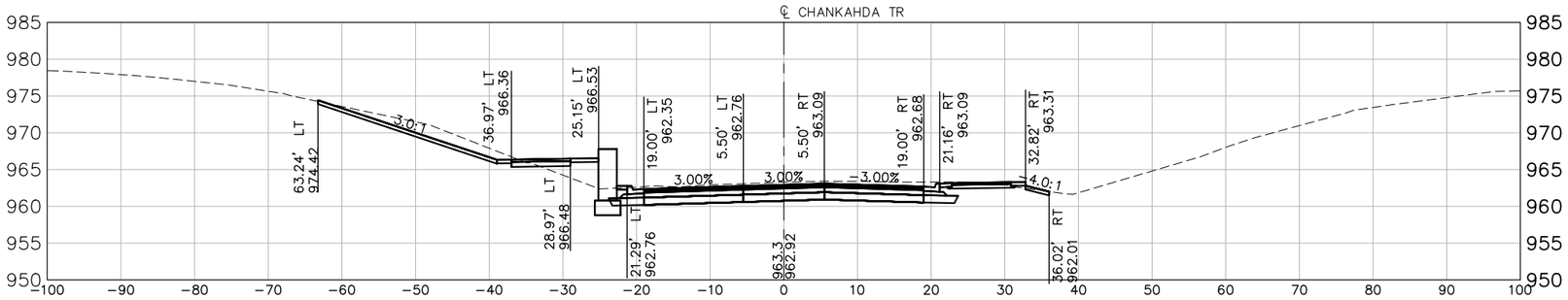
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0 5 10 20 HORIZONTAL SCALE IN FEET

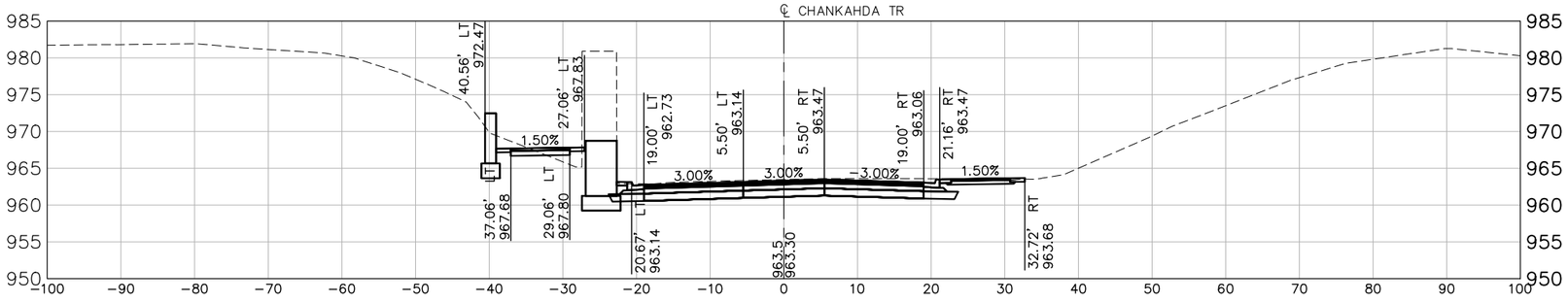
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200+00.00



199+50.00



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City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
CROSS SECTIONS
STA. 199+50 TO STA. 200+50

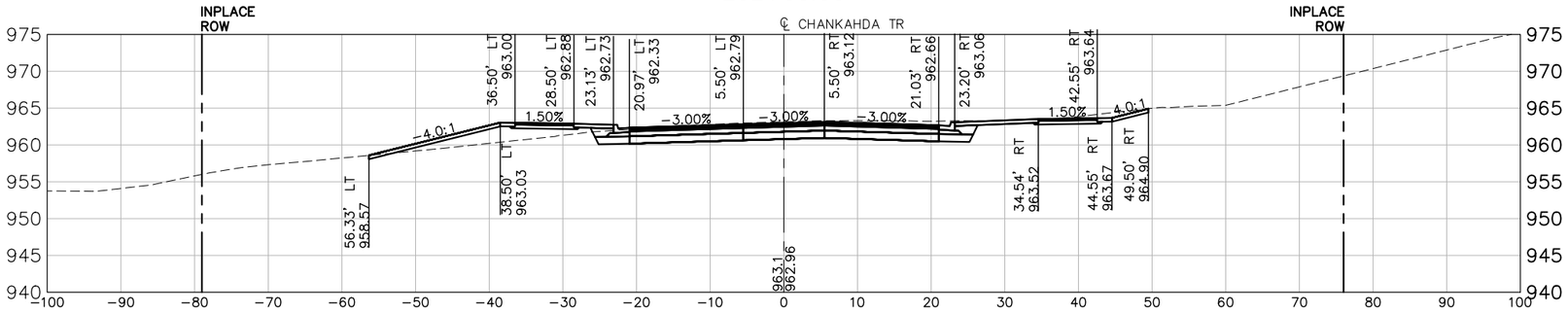
CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 334 / 354

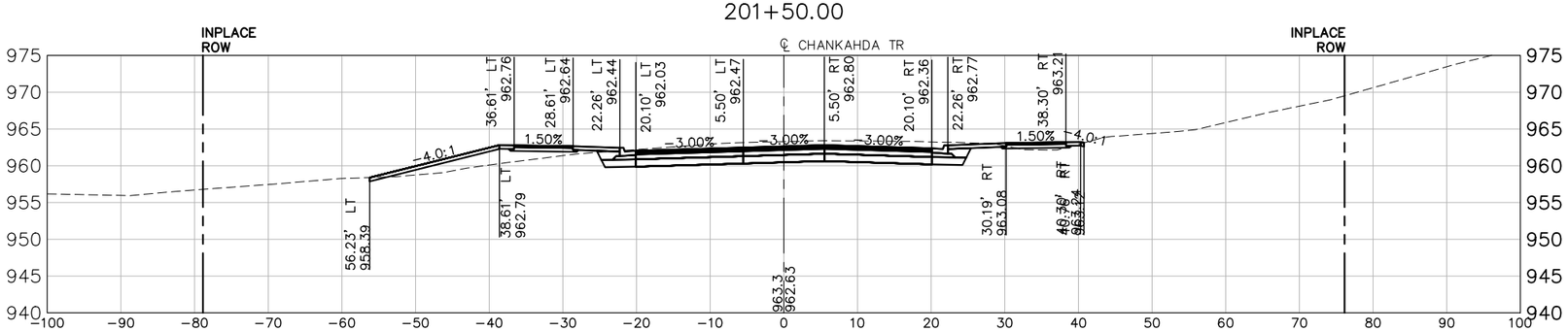
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HORIZONTAL SCALE IN FEET 0 5 10 20

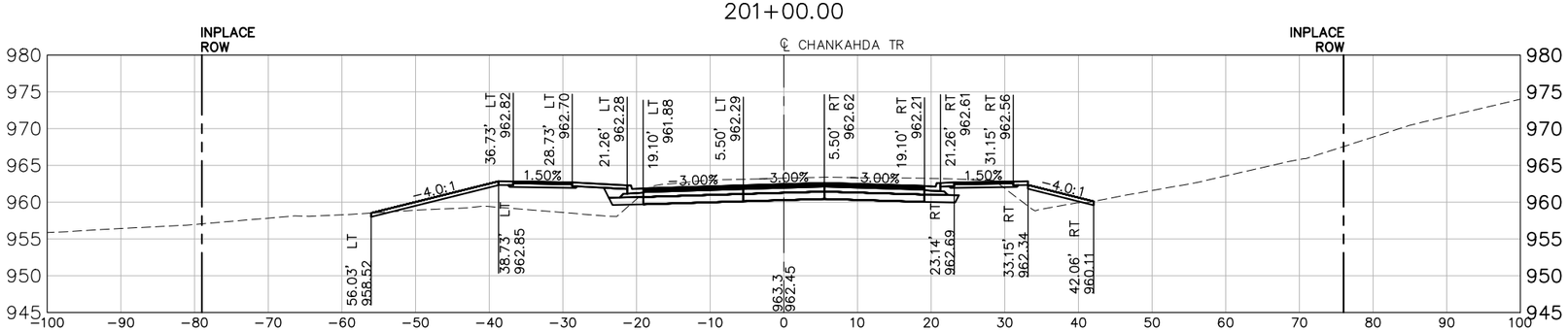
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201+50.00



201+00.00



No.	Date	Revisions	App.

DRAWING NAME: CHANKAHDA_PH3_Sections.dwg

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City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
CROSS SECTIONS
STA. 201+00 TO STA. 202+00

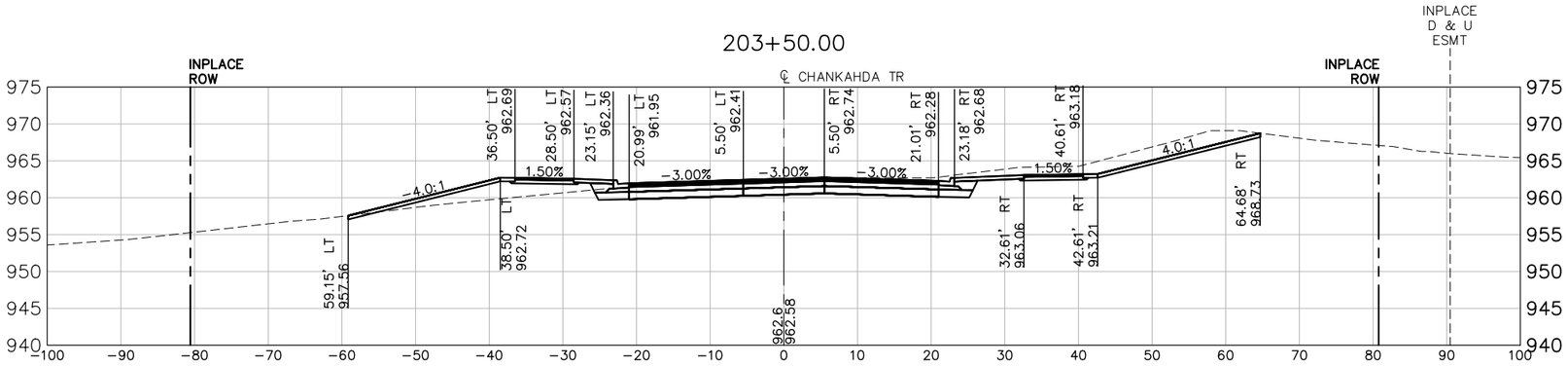
CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 335 / 354

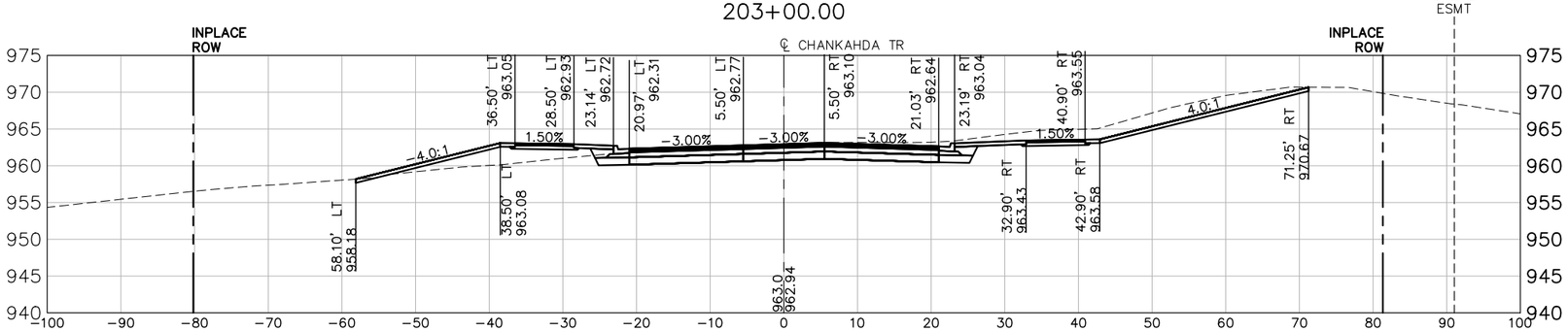
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0 5 10 20 HORIZONTAL SCALE IN FEET

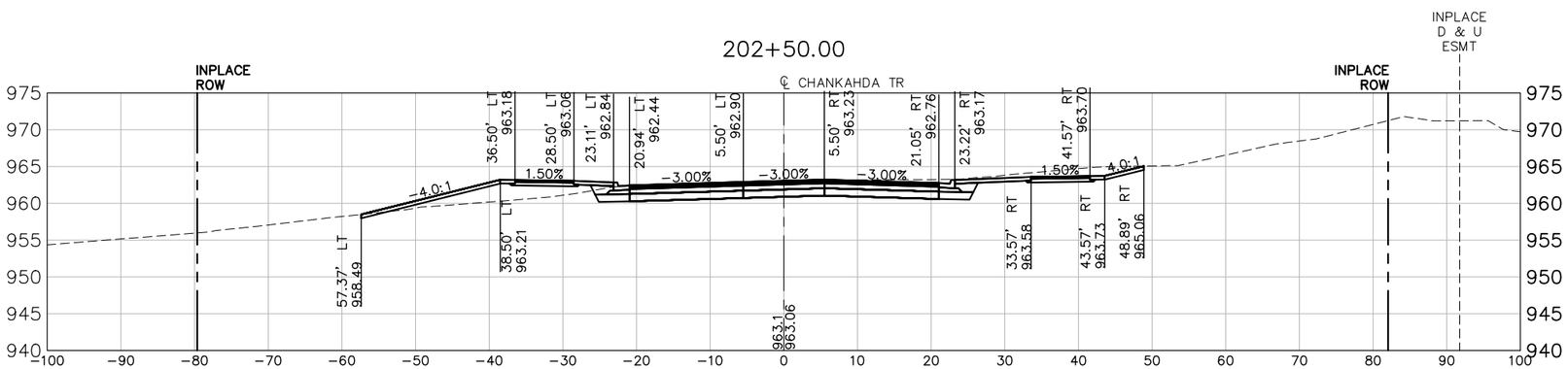
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203+00.00



202+50.00



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CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
CROSS SECTIONS
STA. 202+50 TO STA. 203+50

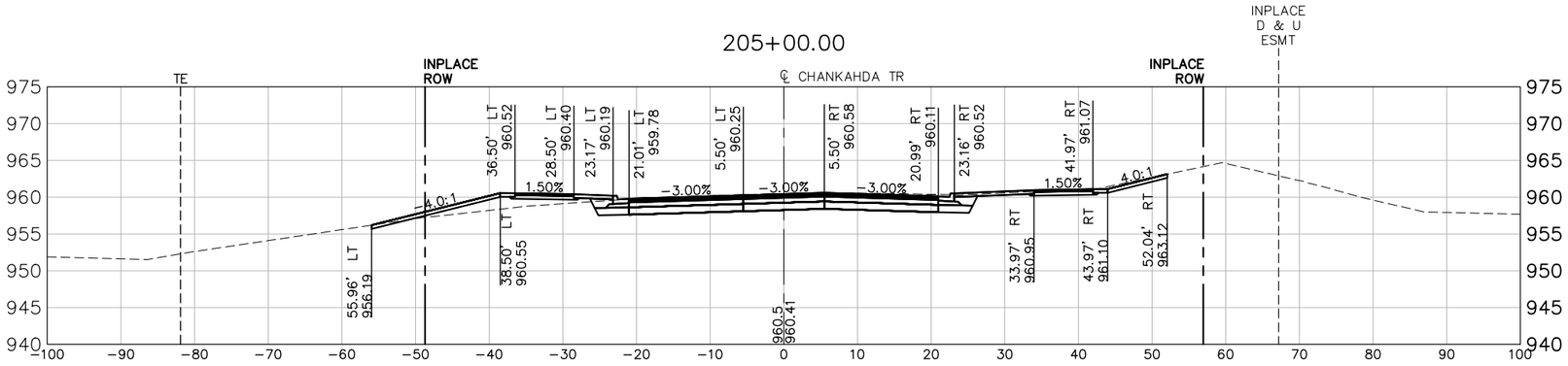
CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 336 / 354

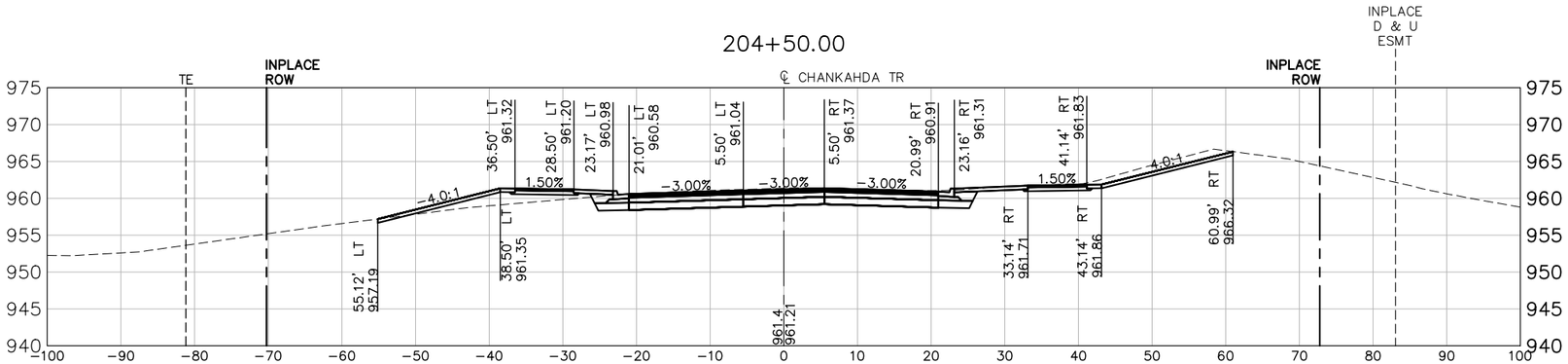
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0 5 10 20 HORIZONTAL SCALE IN FEET

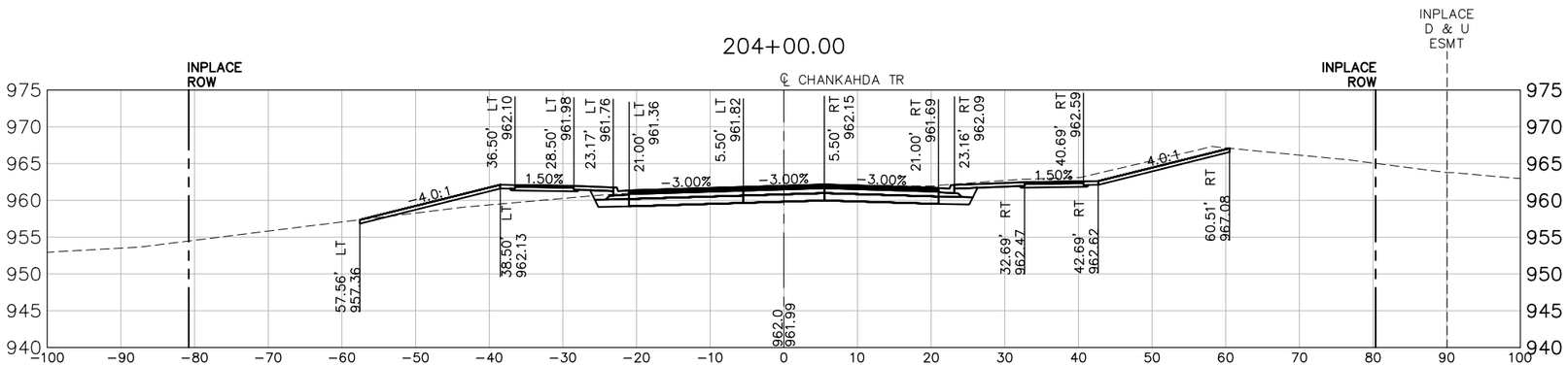
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204+50.00



204+00.00



No.	Date	Revisions	App.

DRAWING NAME	CHANKAHDA_PH3_Sections.dwg
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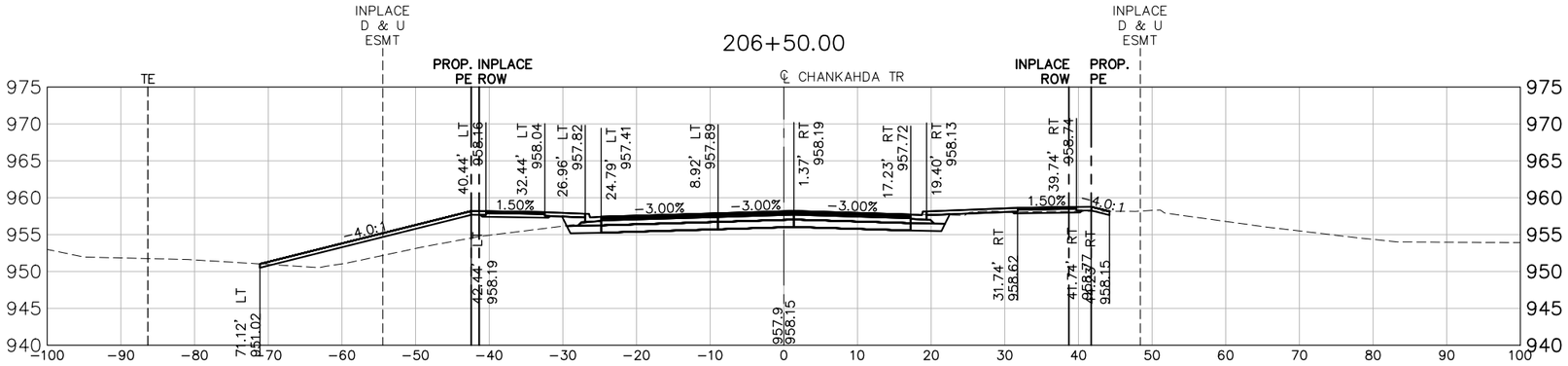
CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
CROSS SECTIONS
STA. 204+00 TO STA. 205+00

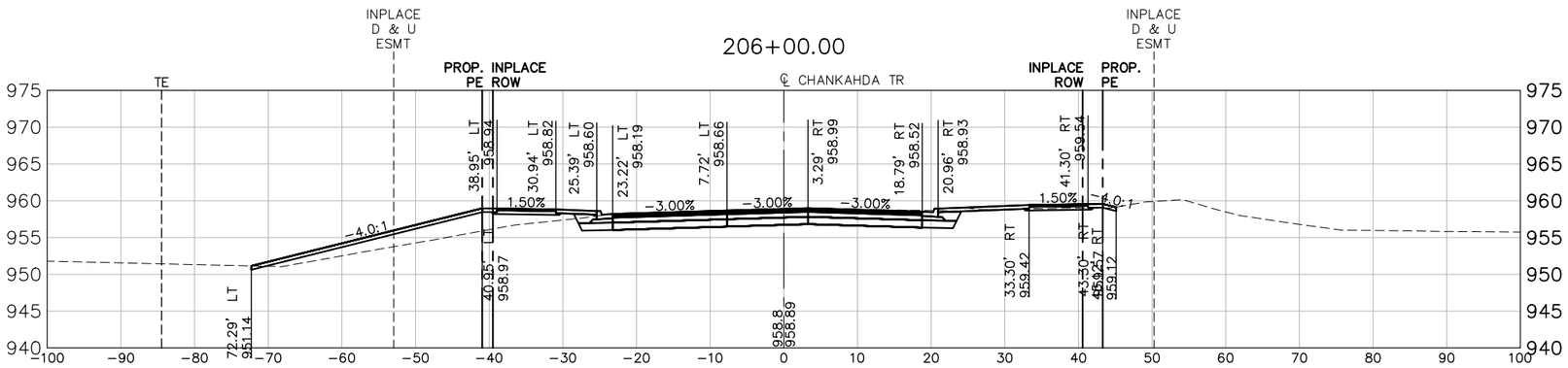
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COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

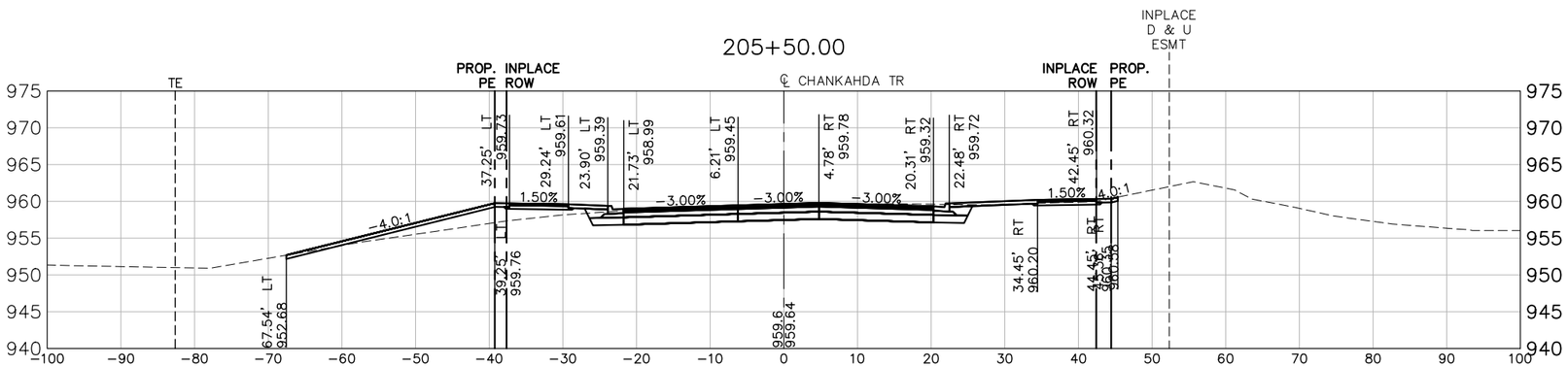
SHEET NO. 337 / 354

VERTICAL 0 5 10 20

HORIZONTAL SCALE IN FEET 0 5 10 20







No.	Date	Revisions	App.

DRAWING NAME: CHANKAHDA_PH3_Sections.dwg

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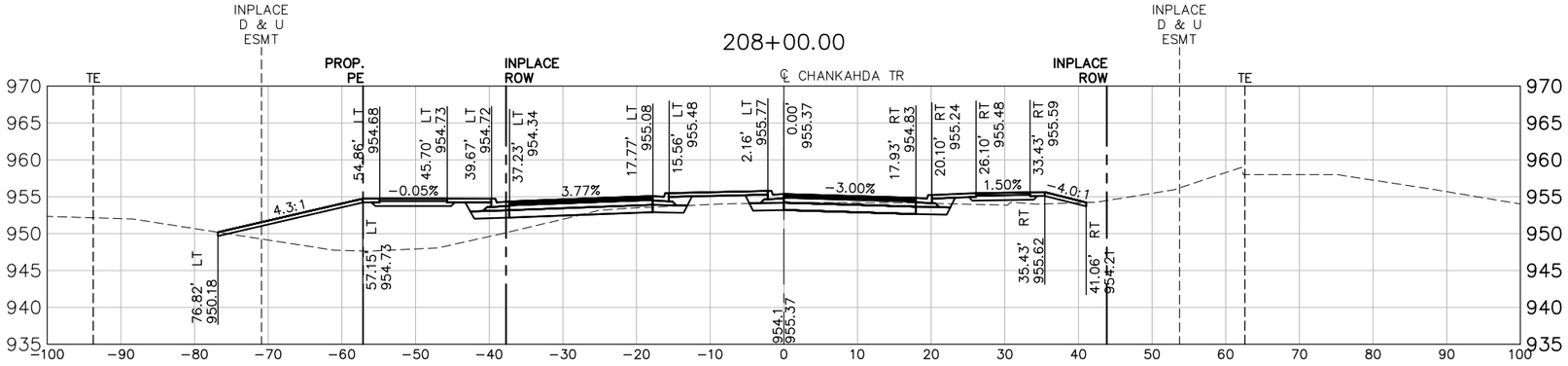
CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
CROSS SECTIONS
STA. 205+50 TO STA. 206+50

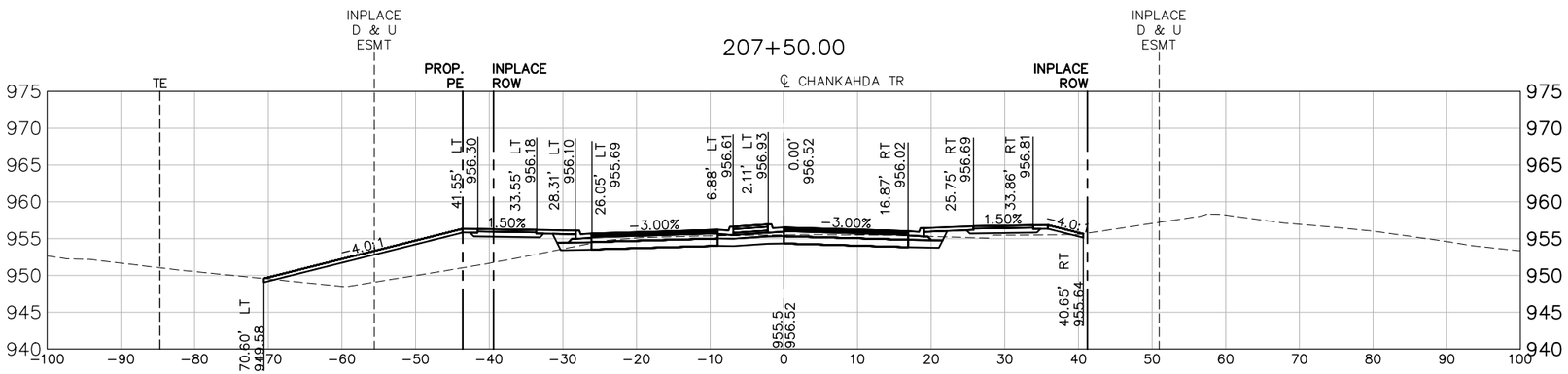
CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

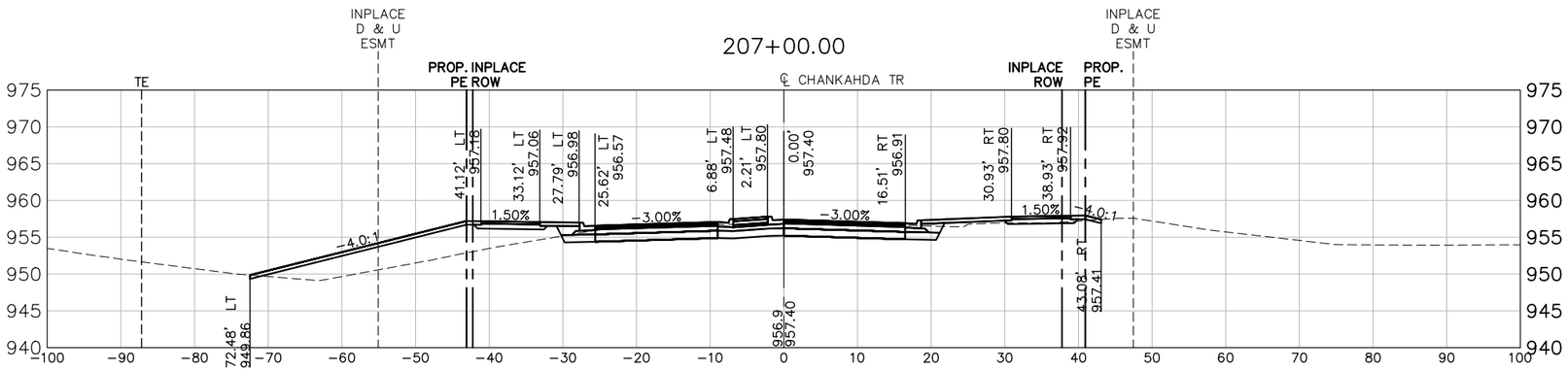
SHEET NO. 338 / 354

VERTICAL 0 5 10 20

HORIZONTAL SCALE IN FEET 0 5 10 20







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City of Plymouth

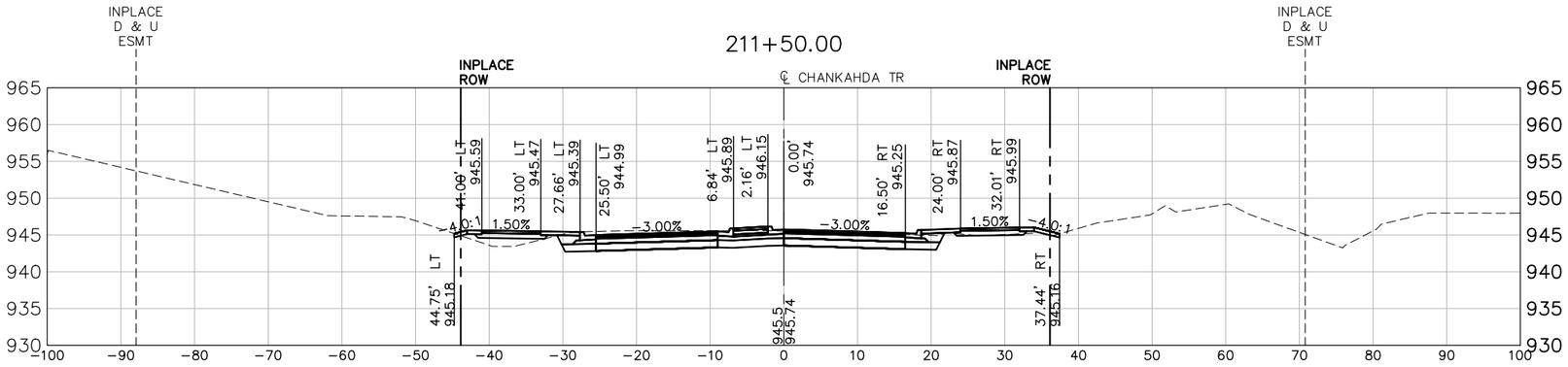
CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
CROSS SECTIONS
STA. 207+00 TO STA. 208+00

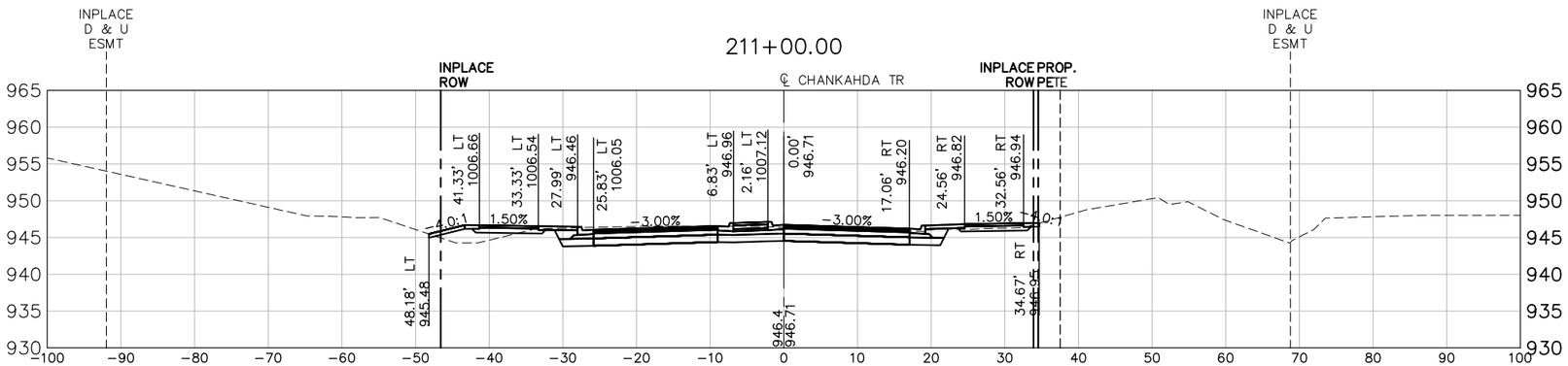
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COUNTY PROJECT	
S.A.P.	155-210-003
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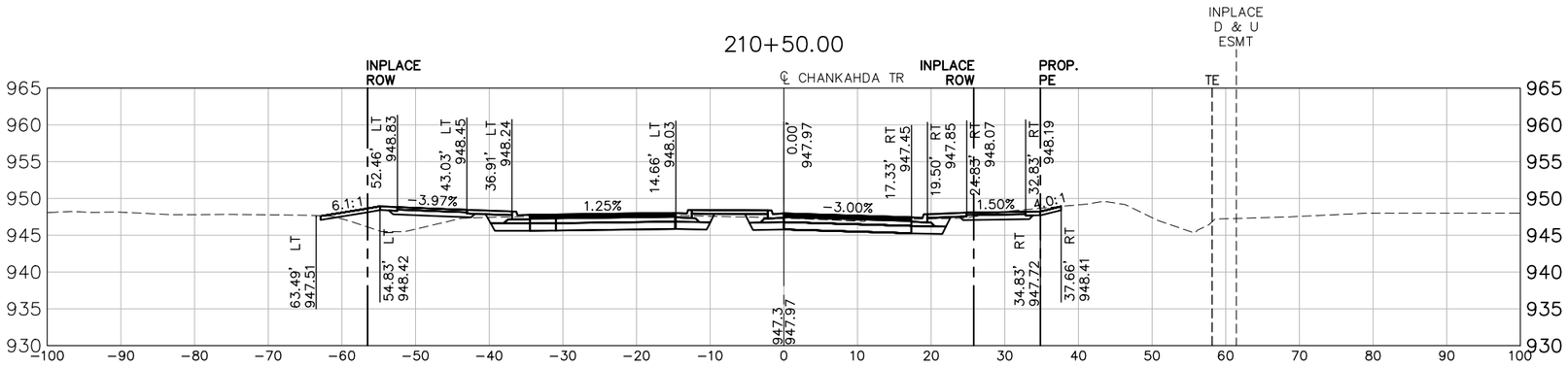
SHEET NO. 339 / 354

0 5 10 20 VERTICAL

0 5 10 20 HORIZONTAL SCALE IN FEET







No.	Date	Revisions	App.

DRAWING NAME: CHANKAHDA_PH3_Sections.dwg

DESIGNED BY:	JWB
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Chadd B. Larson

CHADD B. LARSON, PE

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City of Plymouth

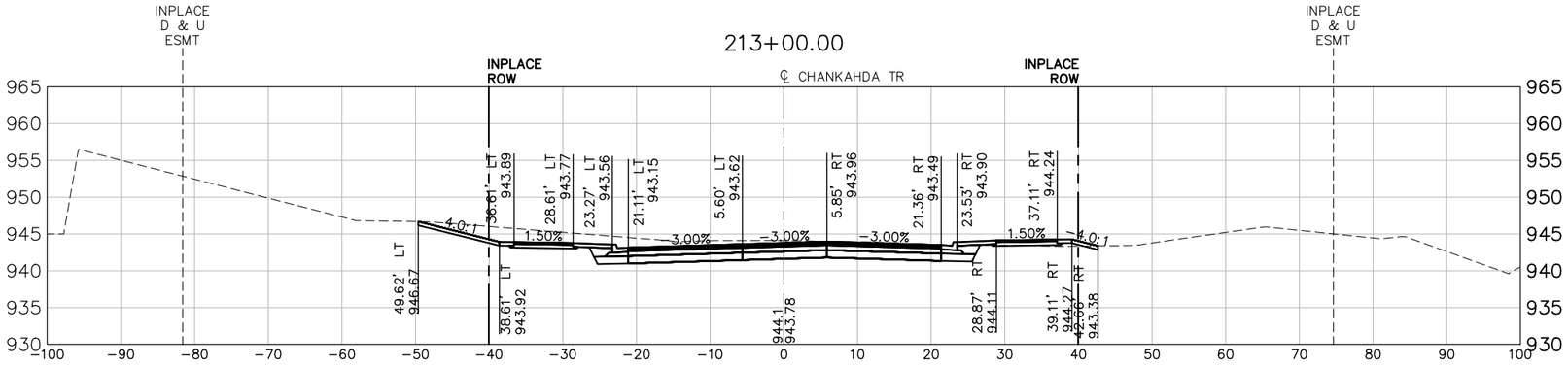
CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
CROSS SECTIONS
STA. 210+50 TO STA. 211+50

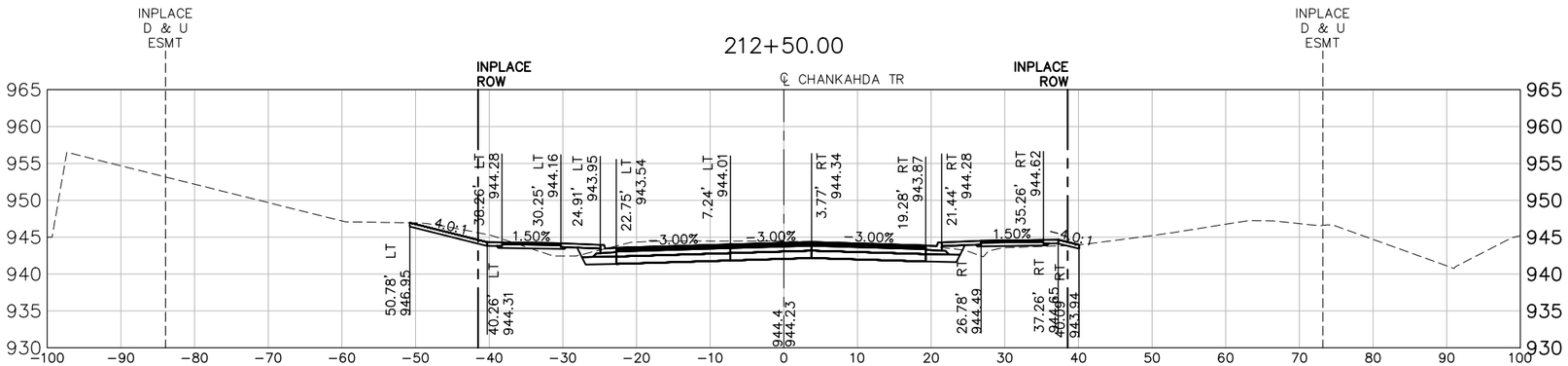
CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

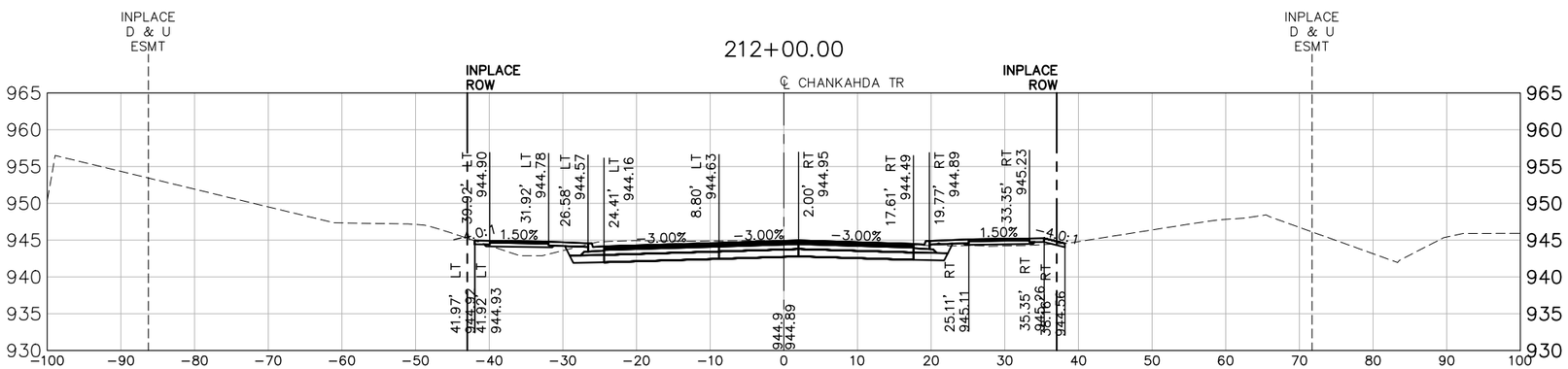
SHEET NO. 340 / 354

0 5 10 20 VERTICAL

0 5 10 20 HORIZONTAL SCALE IN FEET







No.	Date	Revisions	App.

DRAWING NAME	CHANKAHDA_PH3_Sections.dwg
DESIGNED BY:	JWB
DRAWN BY:	JWB
CHECKED BY:	CBL
DATE:	02/07/2025
PROJECT NO.	160662010

Kimley»Horn
767 EUSTIS STREET, SUITE 100, ST, PAUL, MN 55114
PHONE: 651-645-4197
WWW.KIMLEY-HORN.COM

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

CHADD B. LARSON, PE

DATE: 02/07/2025 MN LIC. NO. 41864

City of Plymouth

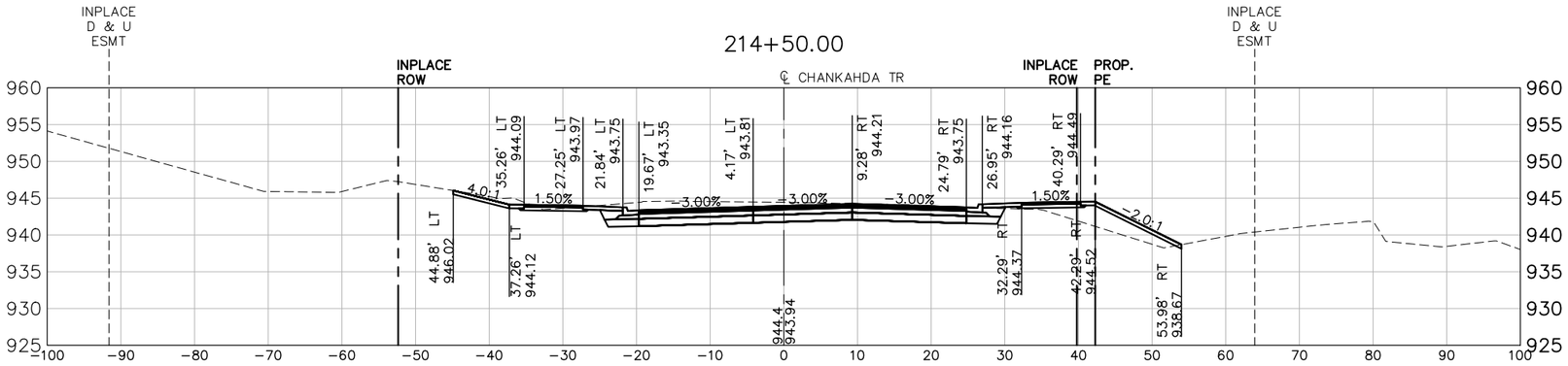
CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
CROSS SECTIONS
STA. 212+00 TO STA. 213+00

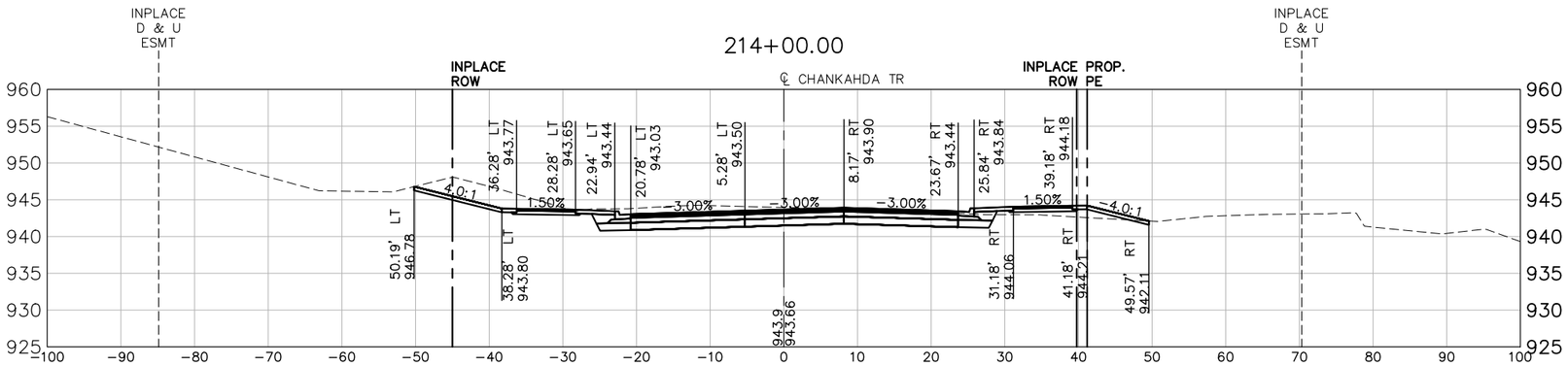
CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

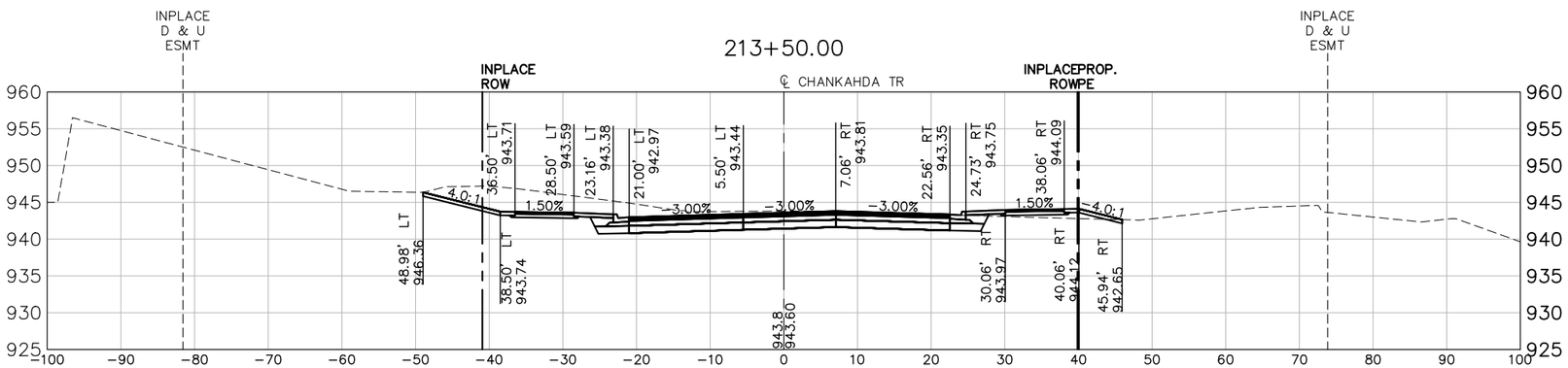
SHEET NO. 341 / 354

0 5 10 20 VERTICAL

0 5 10 20 HORIZONTAL SCALE IN FEET







No.	Date	Revisions	App.

DRAWING NAME: CHANKAHDA_PH3_Sections.dwg

DESIGNED BY:	JWB
DRAWN BY:	JWB
CHECKED BY:	CBL
DATE:	02/07/2025
PROJECT NO.	160662010

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Chadd B. Larson

CHADD B. LARSON, PE

DATE: 02/07/2025 MN LIC. NO. 41864

City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
CROSS SECTIONS
STA. 213+50 TO STA. 214+50

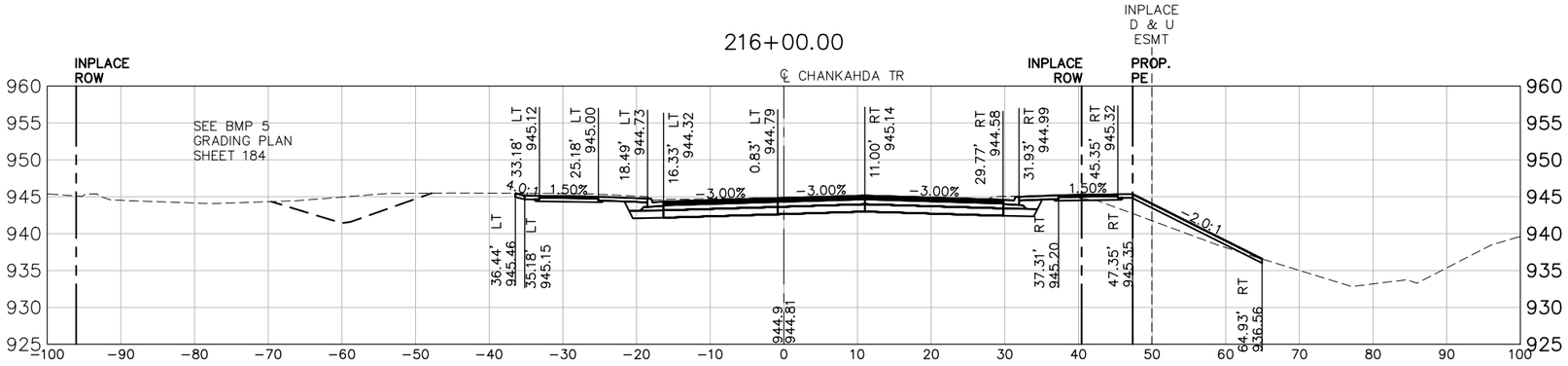
CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 342 / 354

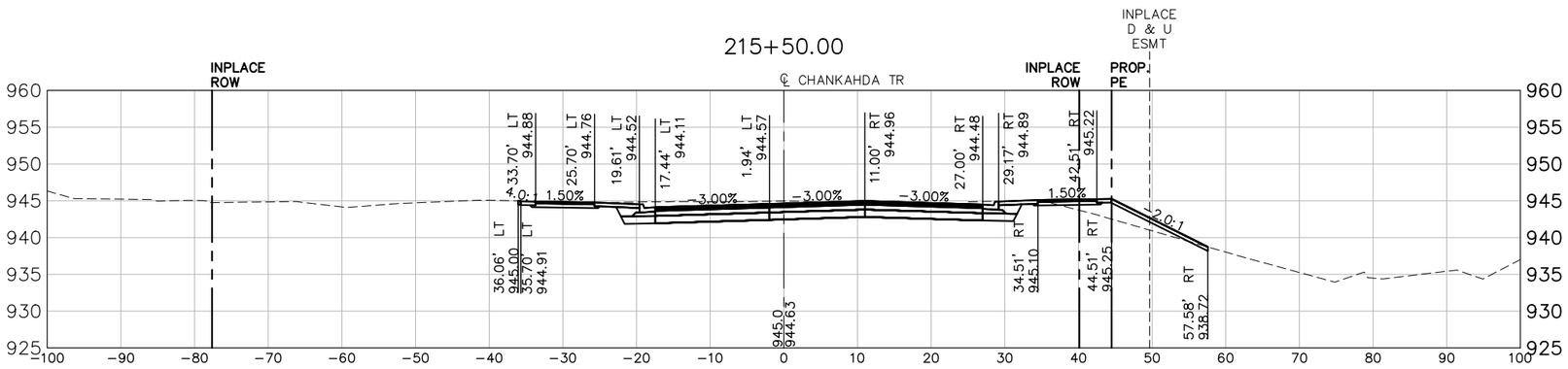
VERTICAL 0 5 10 20

HORIZONTAL SCALE IN FEET 0 5 10 20

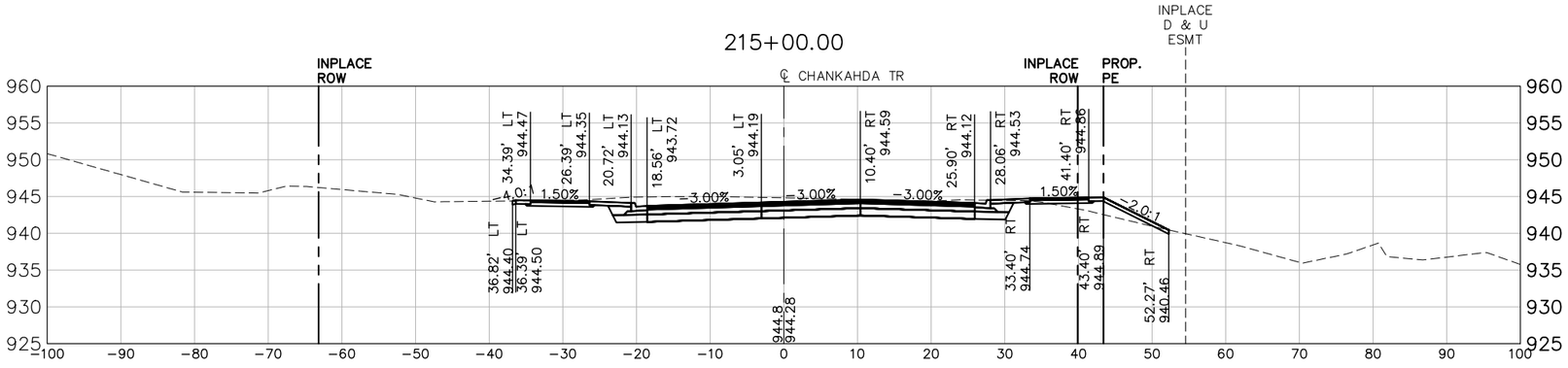
216+00.00



215+50.00



215+00.00



No.	Date	Revisions	App.

DRAWING NAME	CHANKAHDA_PH3_Sections.dwg
DESIGNED BY:	JWB
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CHADD B. LARSON, PE

DATE: 02/07/2025 MN LIC. NO. 41864

City of Plymouth

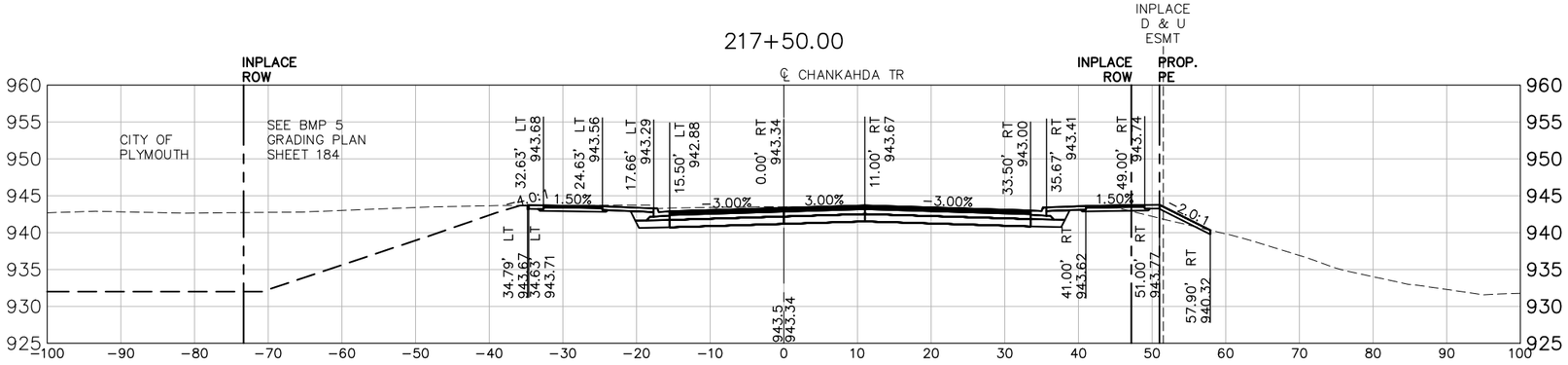
CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
CROSS SECTIONS
STA. 215+00 TO STA. 216+00

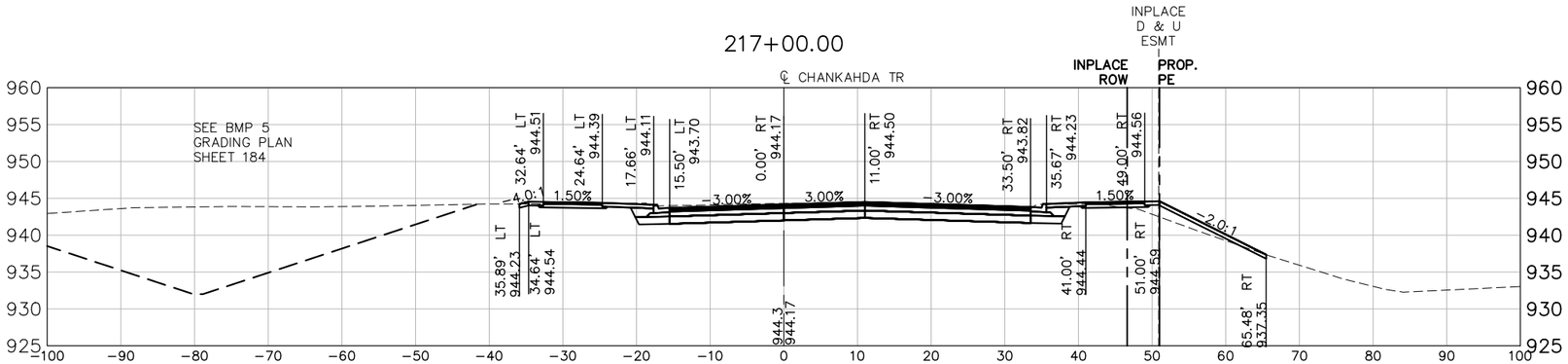
CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

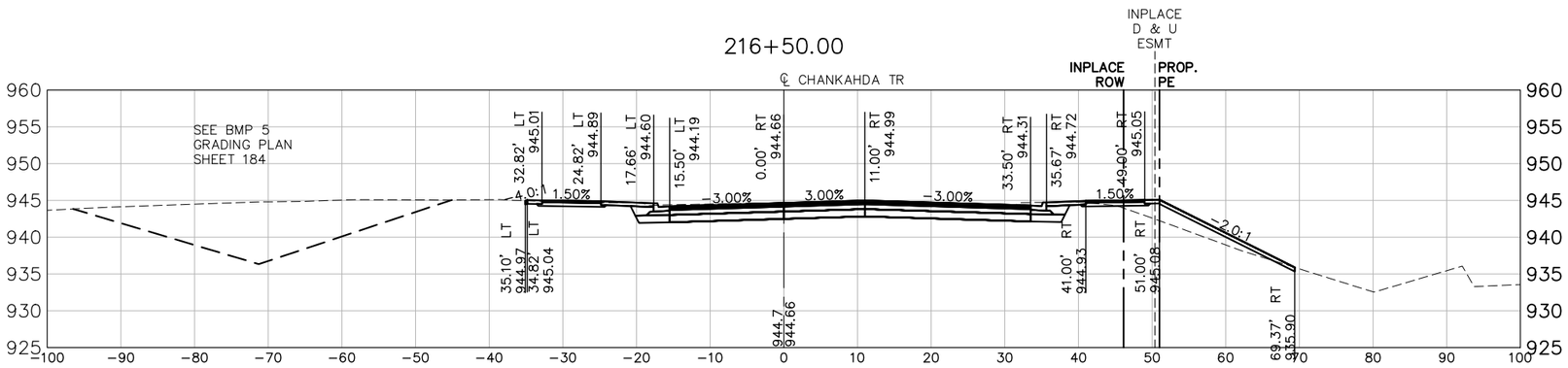
SHEET NO. 343 / 354

0 5 10 20 VERTICAL

0 5 10 20 HORIZONTAL SCALE IN FEET







No.	Date	Revisions	App.

DRAWING NAME: CHANKAHDA_PH3_Sections.dwg

DESIGNED BY:	JWB
DRAWN BY:	JWB
CHECKED BY:	CBL
DATE:	02/07/2025
PROJECT NO.	160662010

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CHADD B. LARSON, PE

DATE: 02/07/2025 MN LIC. NO. 41864

City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
CROSS SECTIONS
STA. 216+50 TO STA. 217+50

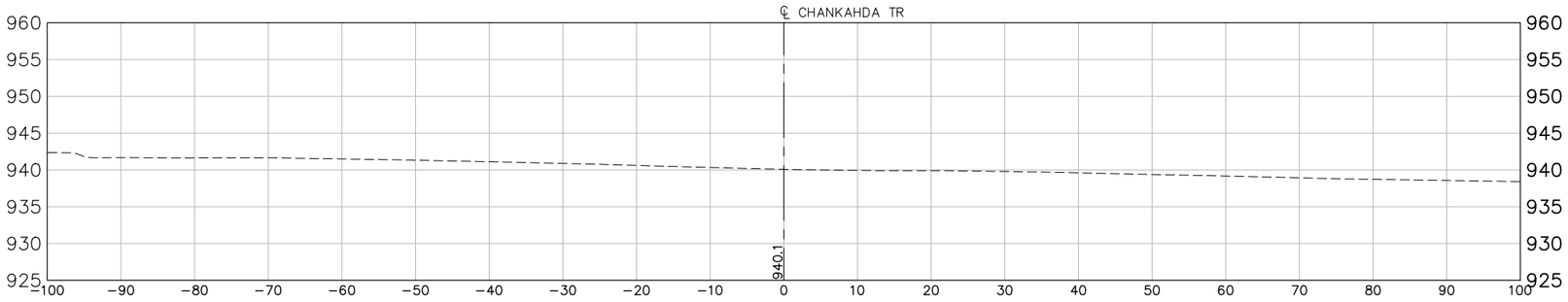
CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 344 / 354

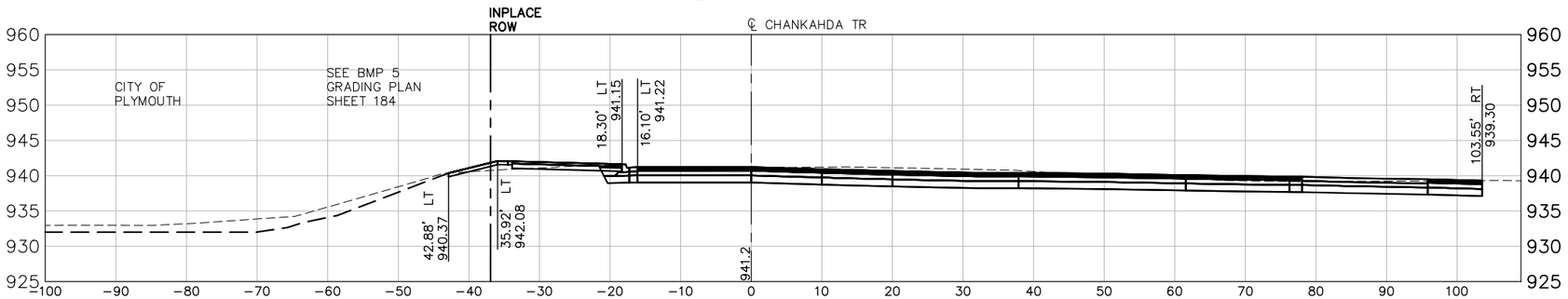
0 5 10 20 VERTICAL

0 5 10 20 HORIZONTAL SCALE IN FEET

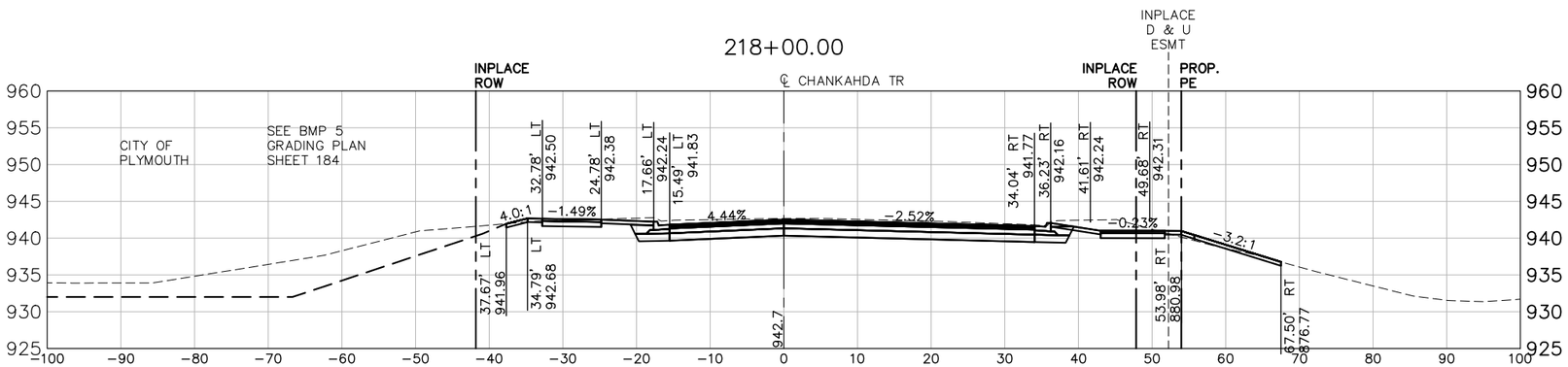
219+00.00



218+50.00



218+00.00



No.	Date	Revisions	App.

DRAWING NAME	CHANKAHDA_PH3_Sections.dwg
DESIGNED BY:	JWB
DRAWN BY:	JWB
CHECKED BY:	CBL
DATE:	02/07/2025
PROJECT NO.	160662010

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CHADD B. LARSON, PE

DATE: 02/07/2025 MN LIC. NO. 41864

City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
CROSS SECTIONS
STA. 218+00 TO STA. 219+00

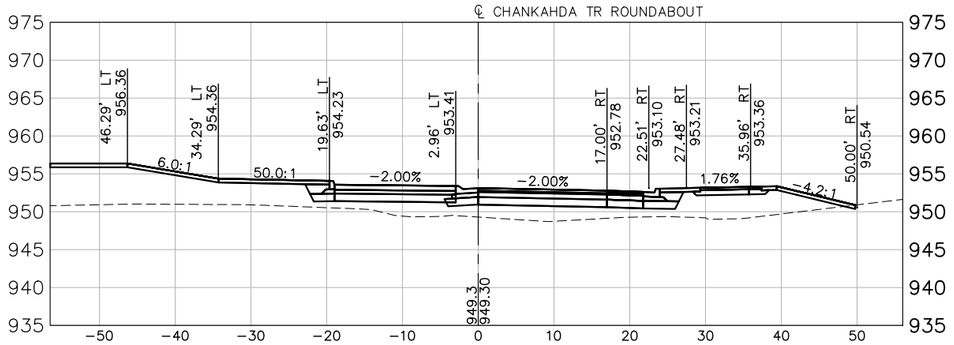
CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 345 / 354

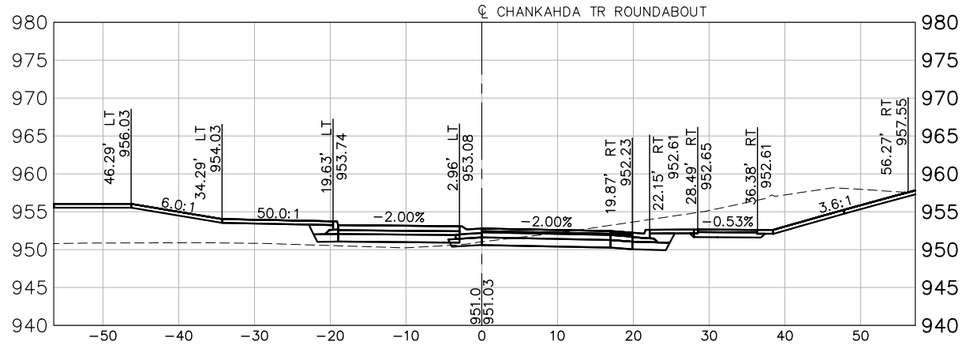
0 5 10 20 VERTICAL

0 5 10 20 HORIZONTAL SCALE IN FEET

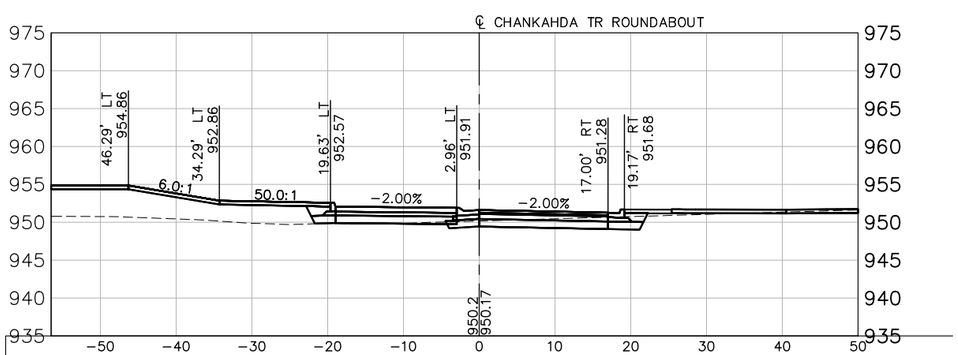
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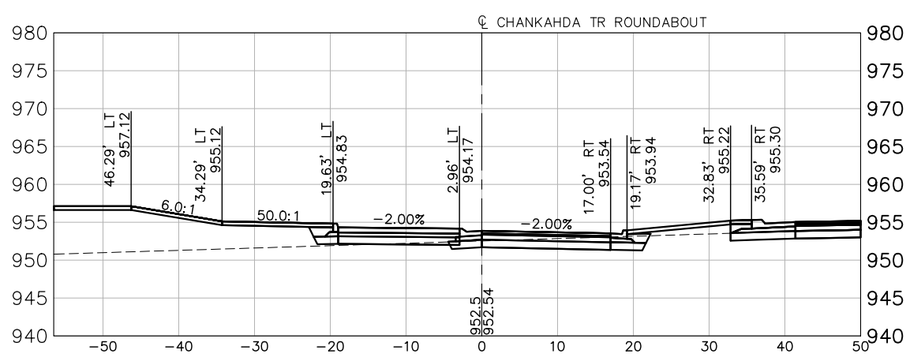
1+50.00



0+00.00



1+00.00



No.	Date	Revisions	App.

DRAWING NAME	CHANKAHDA_PH3_Sections.dwg
DESIGNED BY:	JWB
DRAWN BY:	JWB
CHECKED BY:	CBL
DATE:	02/07/2025
PROJECT NO.	160662010

Kimley»Horn

767 EUSTIS STREET, SUITE 100, ST, PAUL, MN 55114
PHONE: 651-645-4197
WWW.KIMLEY-HORN.COM

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CHADD B. LARSON, PE

DATE: 02/07/2025 MN LIC. NO. 41864

City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR ROUNDABOUT
CROSS SECTIONS
STA. 0+00 TO STA. 1+50

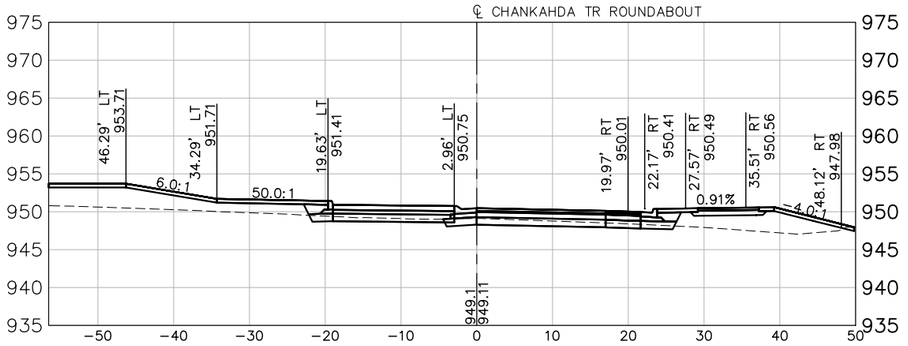
CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 346 / 354

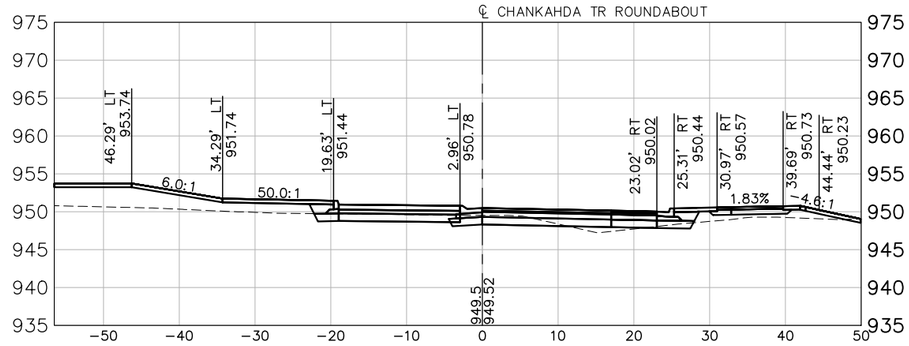
0 5 10 20
VERTICAL

0 5 10 20
HORIZONTAL SCALE IN FEET

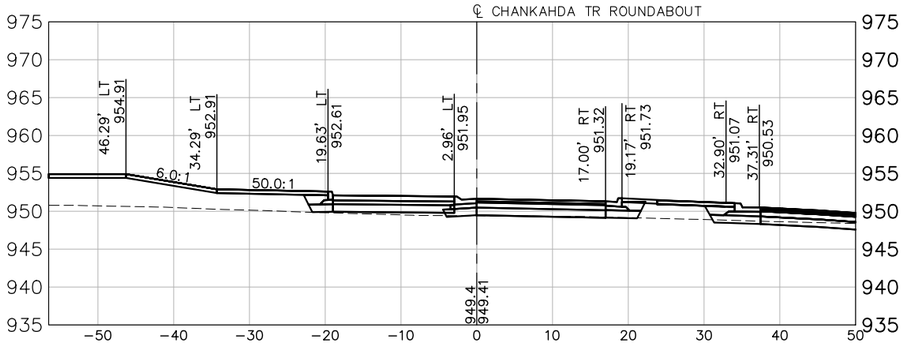
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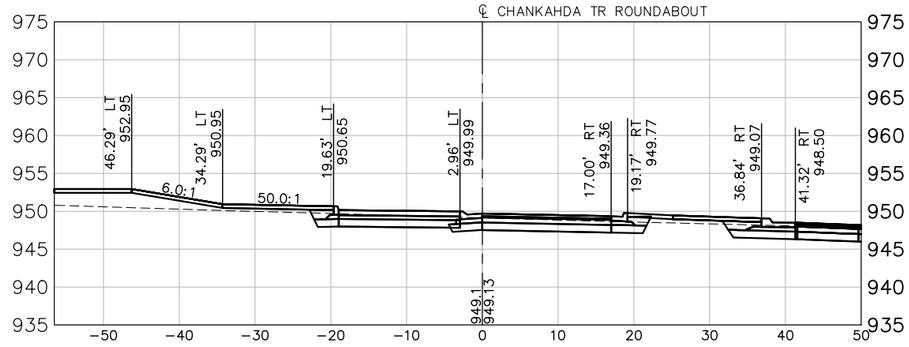
1+40.00



0+10.00



1+00.00



No.	Date	Revisions	App.

DRAWING NAME: CHANKAHDA_PH3_Sections.dwg

DESIGNED BY:	JWB
DRAWN BY:	JWB
CHECKED BY:	CBL
DATE:	02/07/2025
PROJECT NO.	160662010

Kimley»Horn
767 EUSTIS STREET, SUITE 100, ST, PAUL, MN 55114
PHONE: 651-645-4197
WWW.KIMLEY-HORN.COM

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Chadd B. Larson
CHADD B. LARSON, PE
DATE: 02/07/2025 MN LIC. NO. 41864

City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR ROUNDABOUT
CROSS SECTIONS
STA. 0+00 TO STA. 1+40

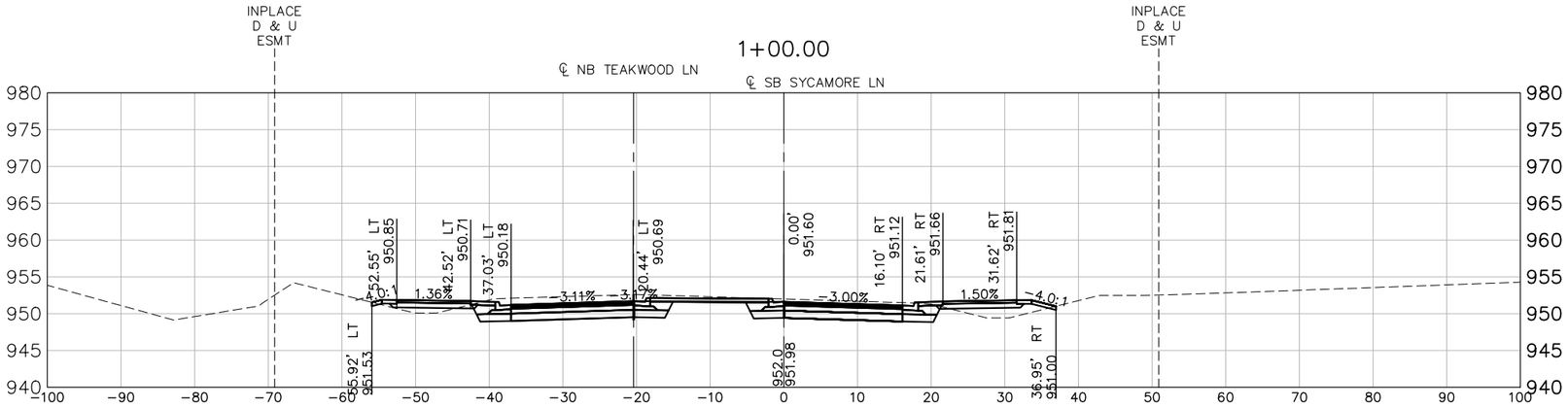
CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 347 / 354

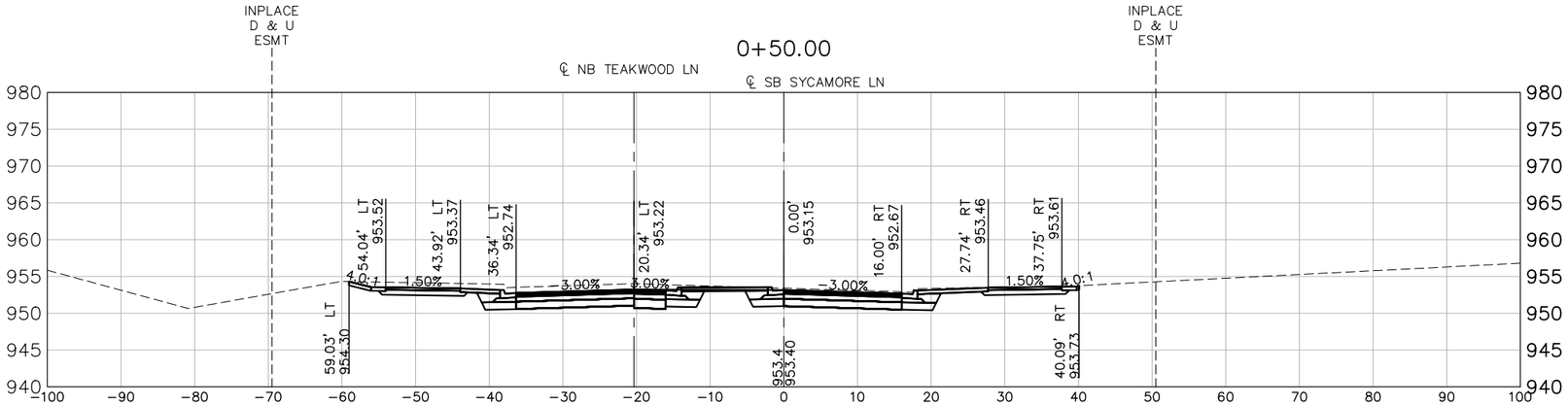
0 5 10 20 VERTICAL

0 5 10 20 HORIZONTAL SCALE IN FEET

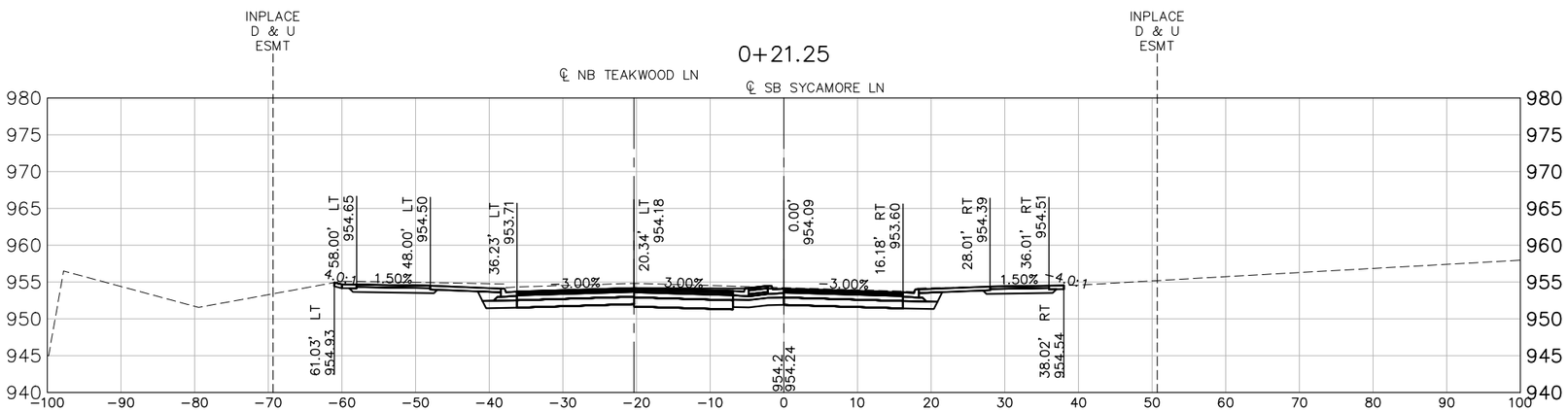
1+00.00



0+50.00



0+21.25



No.	Date	Revisions	App.

DRAWING NAME	CHANKAHDA_PH3_Sections.dwg
DESIGNED BY:	JWB
DRAWN BY:	JWB
CHECKED BY:	CBL
DATE:	02/07/2025
PROJECT NO.	160662010

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DATE: 02/07/2025 MN LIC. NO. 41864

City of Plymouth

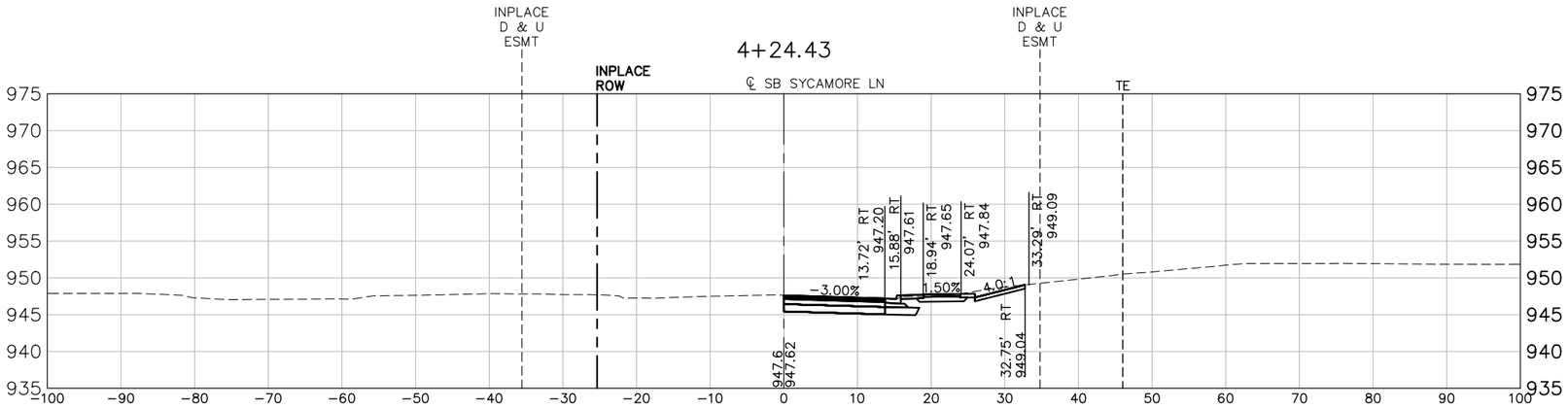
CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
TEAKWOOD LN
CROSS SECTIONS
STA. 0+21 TO STA. 1+00

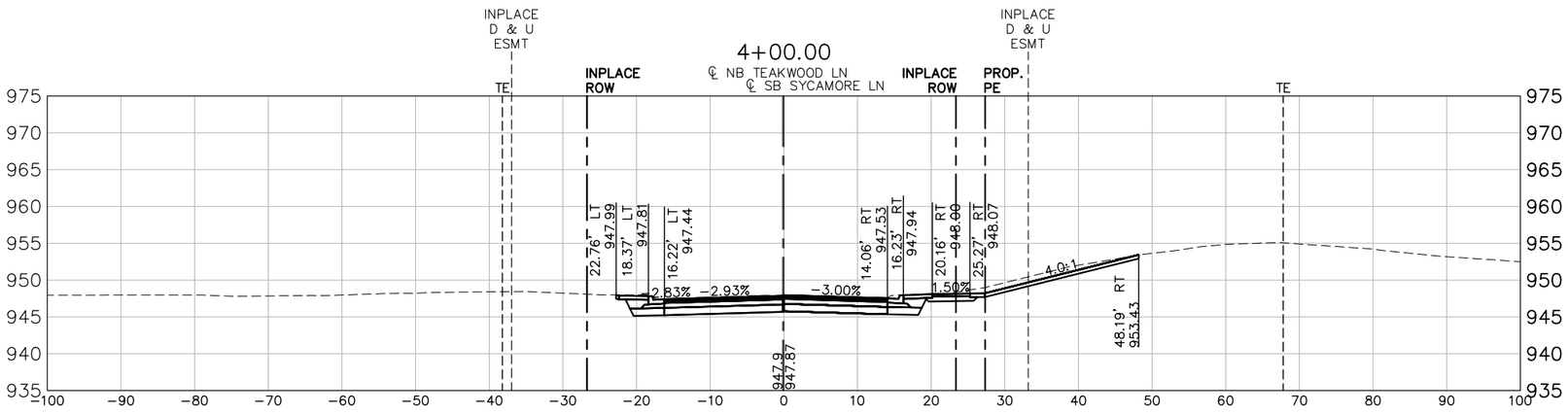
CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

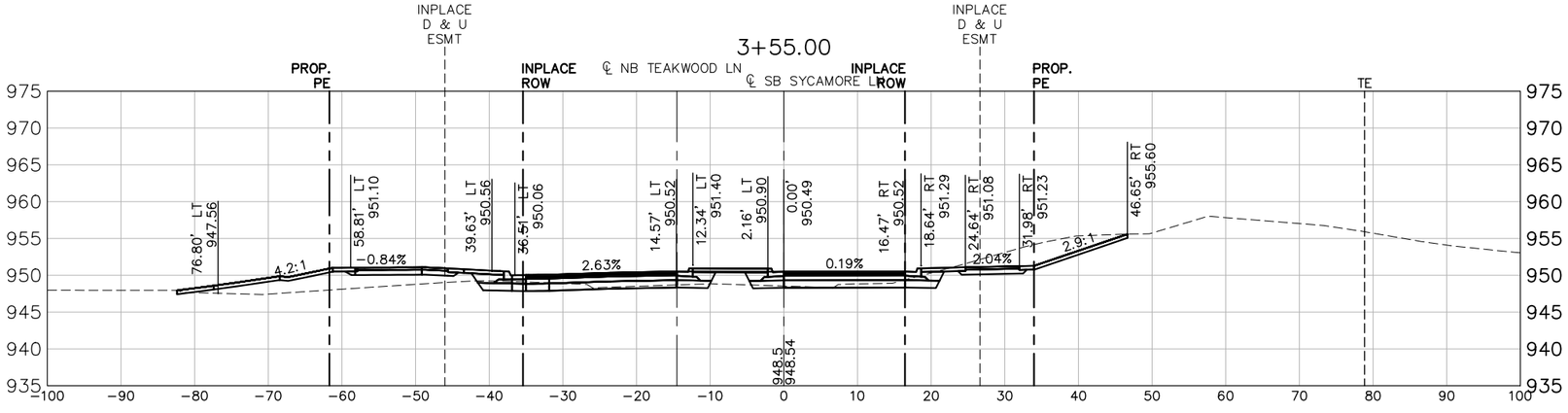
SHEET NO. 348 / 354

0 5 10 20 VERTICAL

0 5 10 20 HORIZONTAL SCALE IN FEET







No.	Date	Revisions	App.

DRAWING NAME	CHANKAHDA_PH3_Sections.dwg
DESIGNED BY:	JWB
DRAWN BY:	JWB
CHECKED BY:	CBL
DATE:	02/07/2025
PROJECT NO.	160662010

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CHADD B. LARSON, PE

DATE: 02/07/2025 MN LIC. NO. 41864

City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
TEAKWOOD LN
CROSS SECTIONS
STA. 3+60 TO STA. 4+24

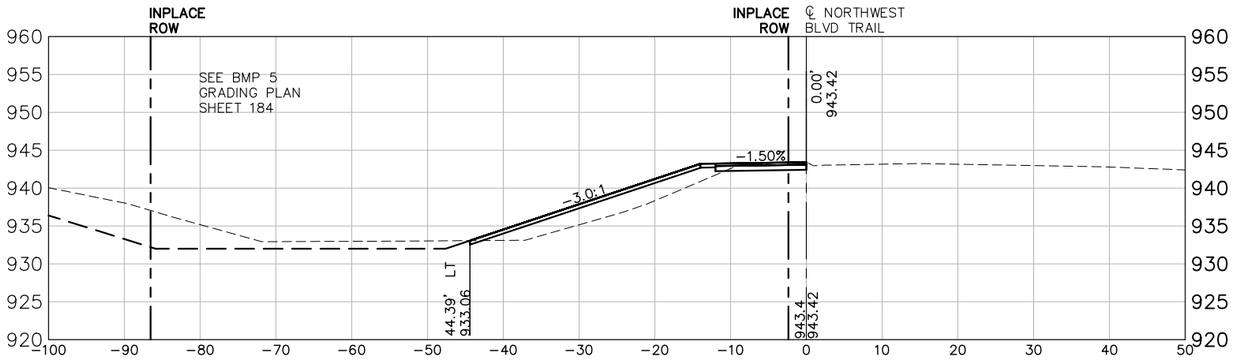
CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 349 / 354

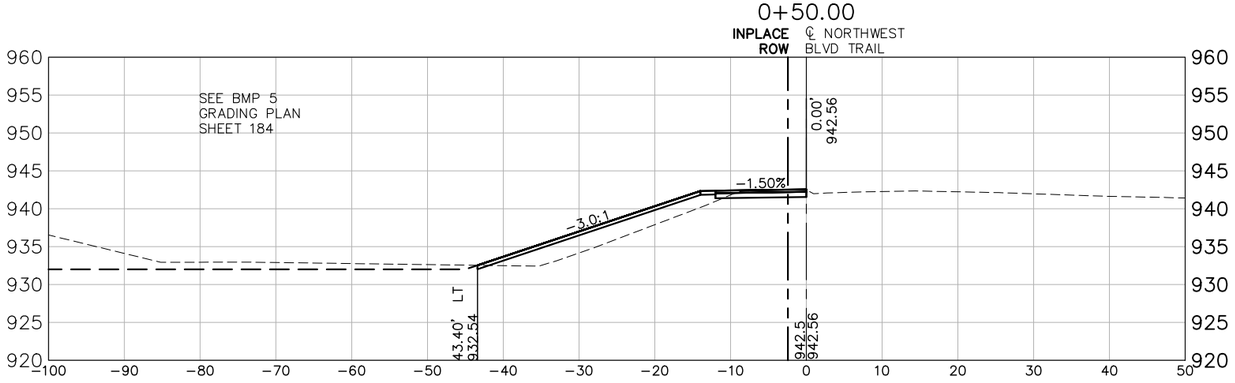
0 5 10 20 VERTICAL

0 5 10 20 HORIZONTAL SCALE IN FEET

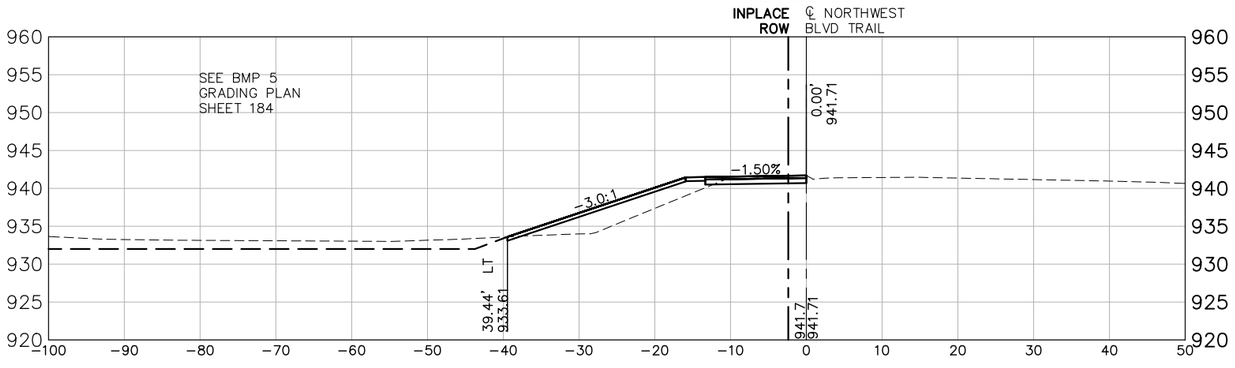
1+00.00



0+50.00



0+00.00



No.	Date	Revisions	App.

DRAWING NAME	CHANKAHDA_PH3_Sections.dwg
DESIGNED BY:	JWB
DRAWN BY:	JWB
CHECKED BY:	CBL
DATE:	02/07/2025
PROJECT NO.	160662010

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Chadd B. Larson

CHADD B. LARSON, PE

DATE: 02/07/2025 MN LIC. NO. 41864

City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
NORTHWEST BLVD TRAIL
CROSS SECTIONS
STA. 0+00 TO STA. 1+00

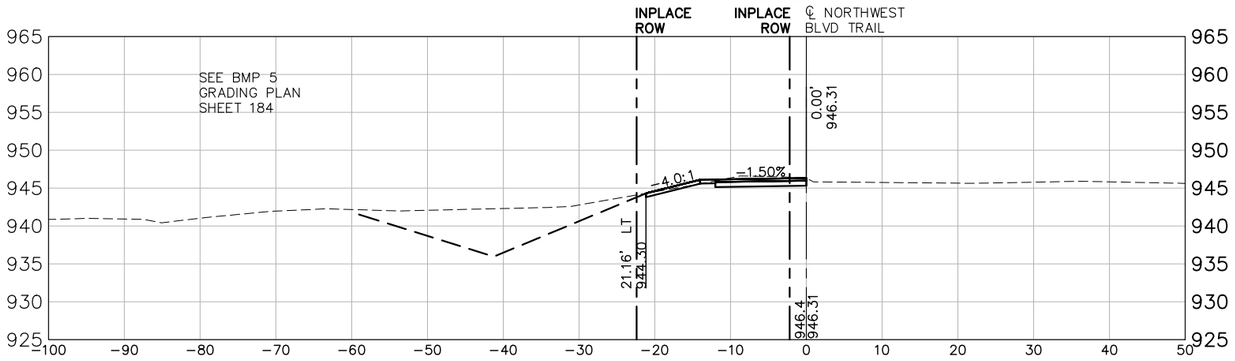
CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 350 / 354

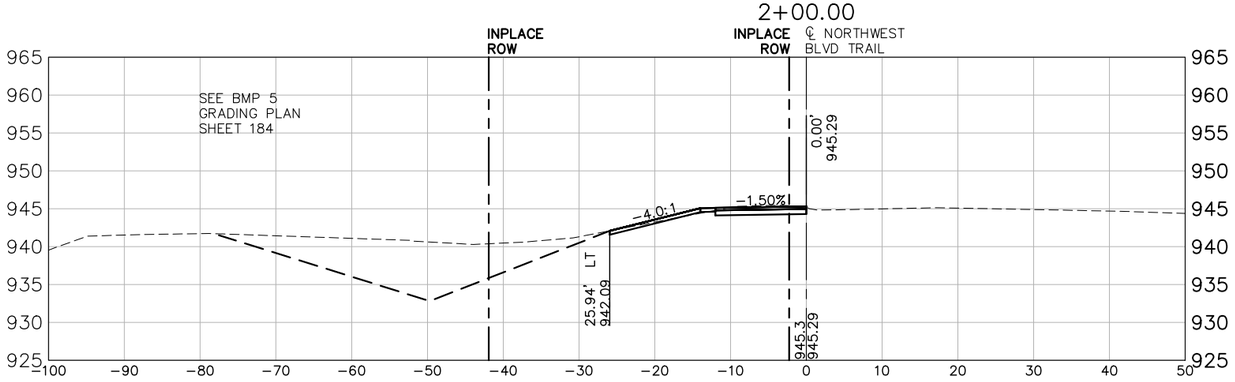
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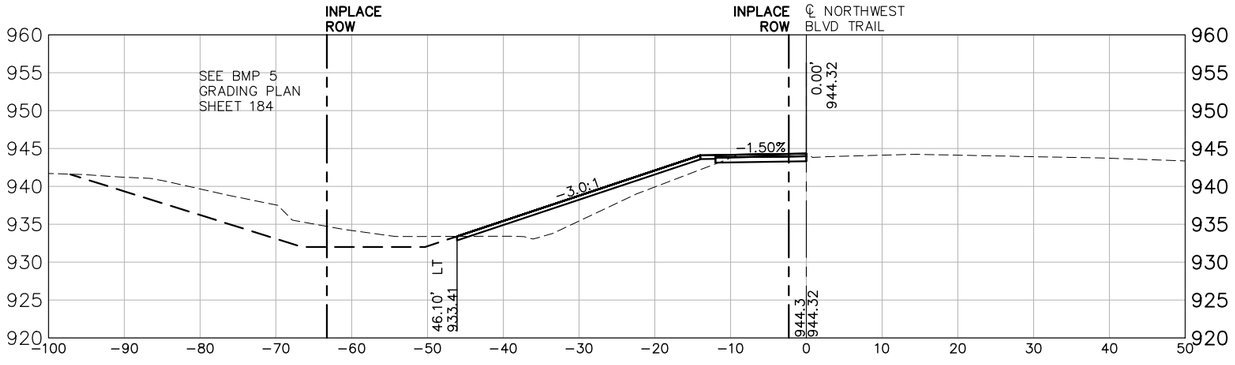
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2+00.00



1+50.00



No.	Date	Revisions	App.

DRAWING NAME: CHANKAHDA_PH3_Sections.dwg

DESIGNED BY:	JWB
DRAWN BY:	JWB
CHECKED BY:	CBL
DATE:	02/07/2025
PROJECT NO.	160662010

Kimley»Horn
767 EUSTIS STREET, SUITE 100, ST. PAUL, MN 55114
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Chadd B. Larson

CHADD B. LARSON, PE

DATE: 02/07/2025 MN LIC. NO. 41864

City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
NORTHWEST BLVD TRAIL
CROSS SECTIONS
STA. 1+50 TO STA. 2+50

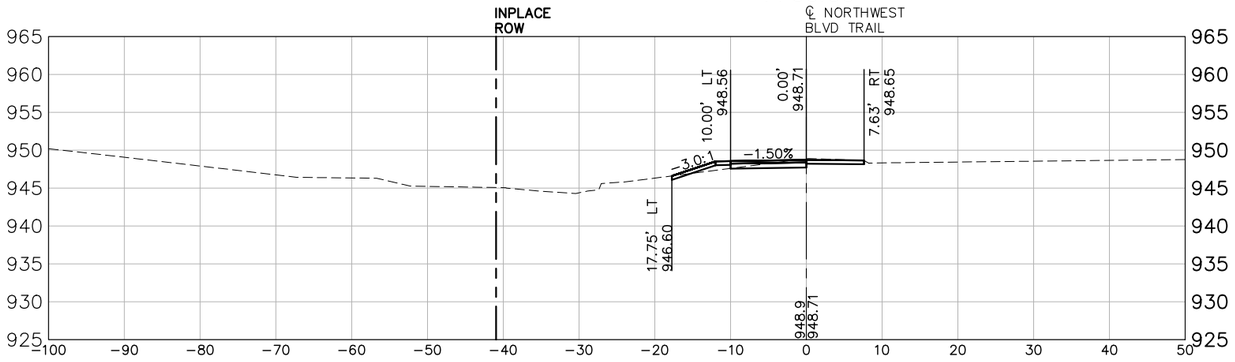
CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 351 / 354

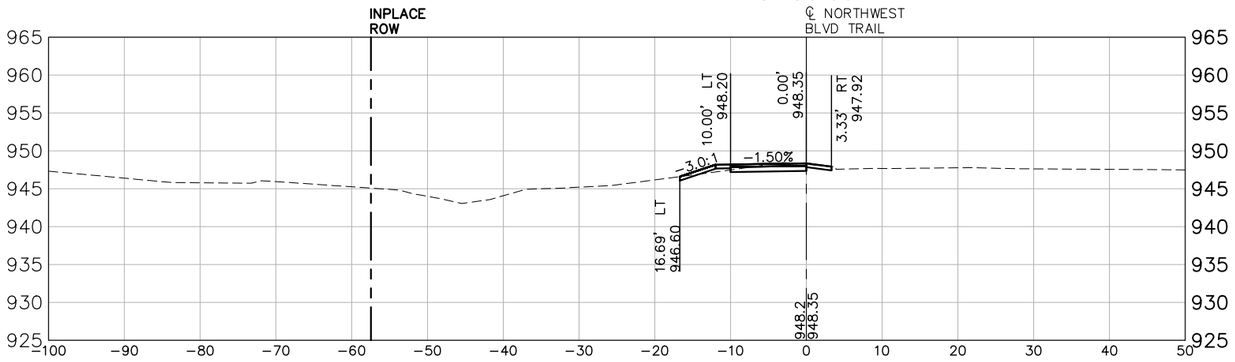
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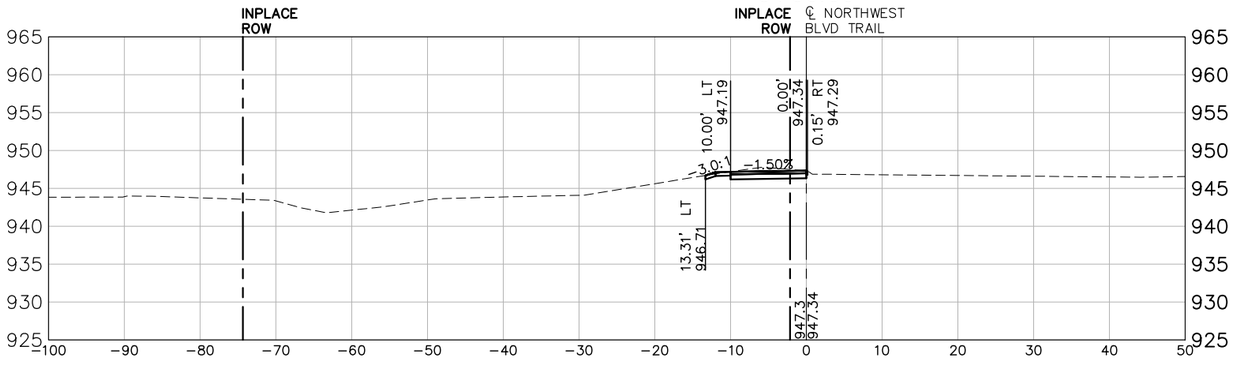
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3+50.00



3+00.00



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City of Plymouth

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RECONSTRUCTION PHASE 3
NORTHWEST BLVD TRAIL
CROSS SECTIONS
STA. 3+00 TO STA. 4+00

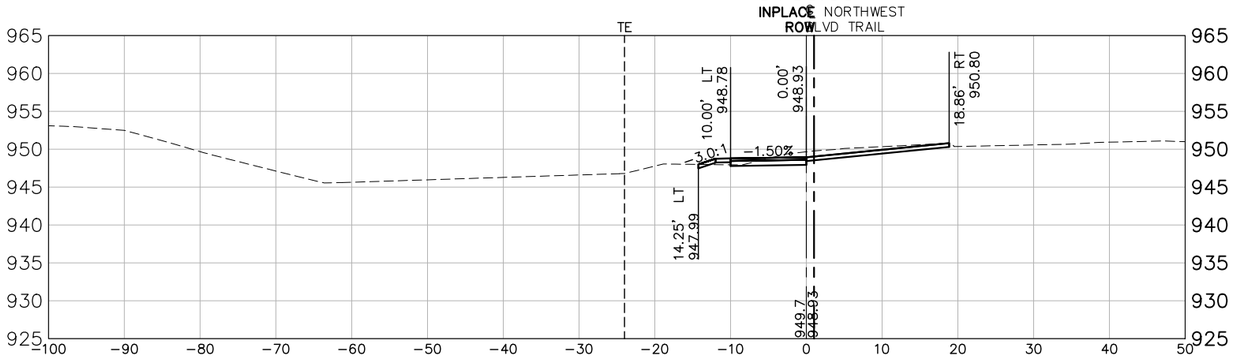
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COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 352 / 354

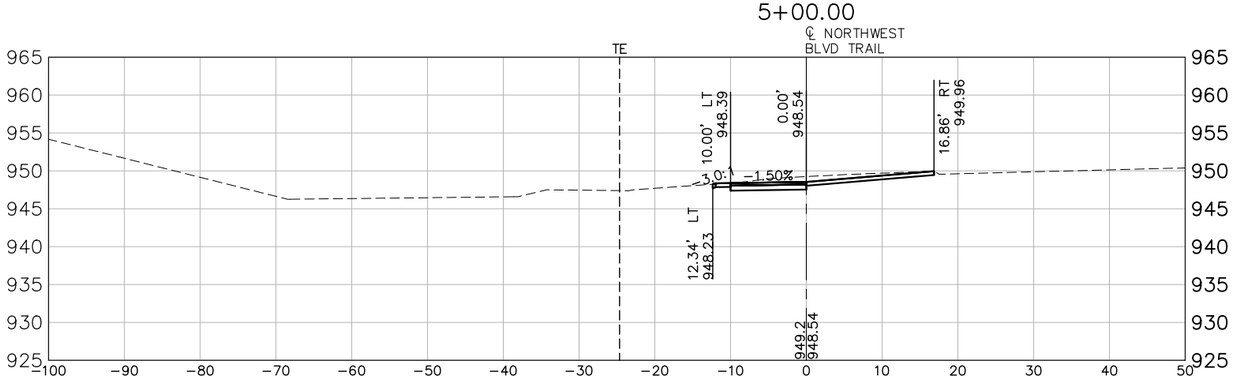
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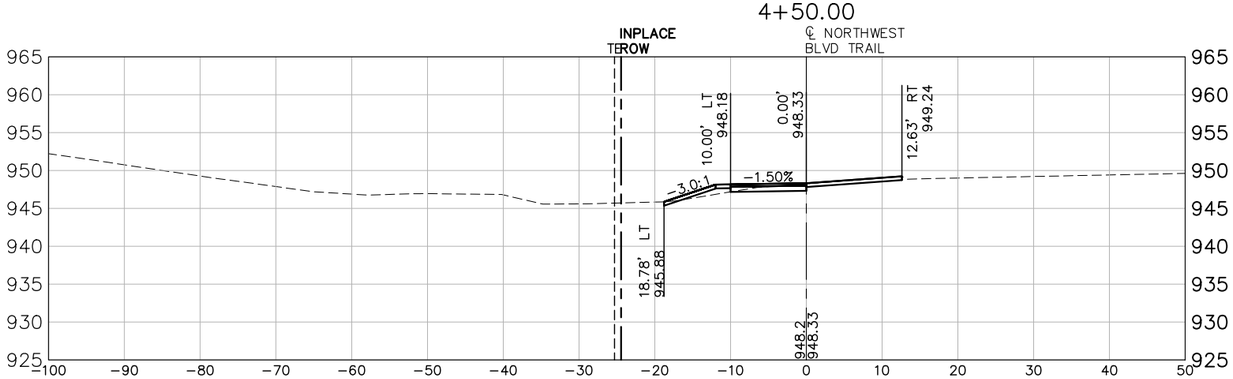
5+50.00



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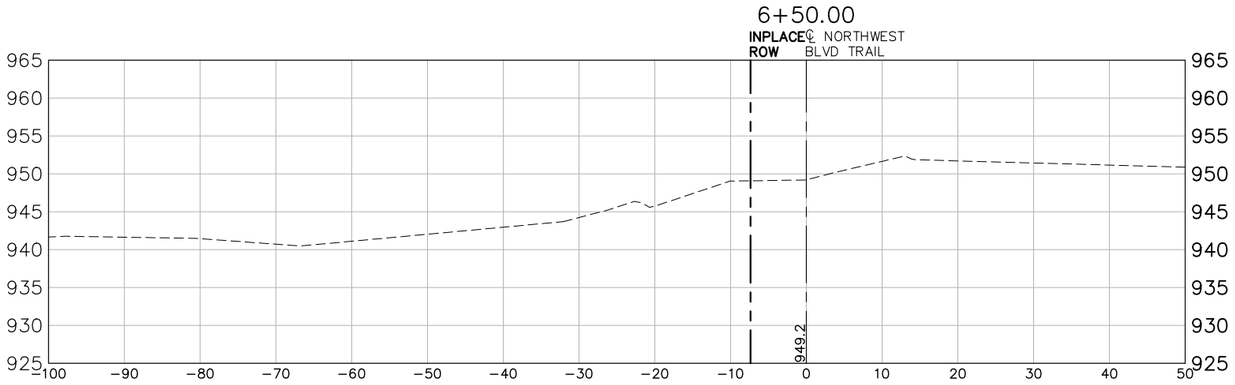
CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
NORTHWEST BLVD TRAIL
CROSS SECTIONS
STA. 4+50 TO STA. 5+50

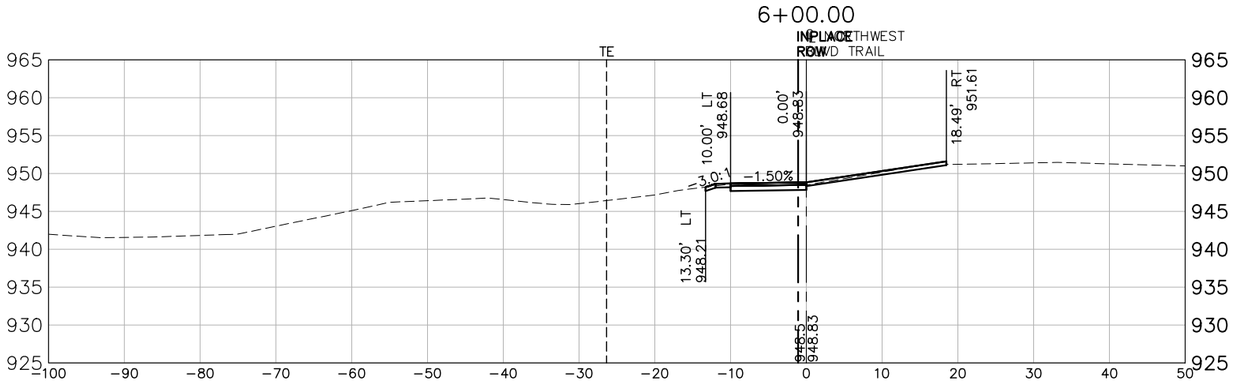
CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 353 / 354

0 5 10 20
VERTICAL

0 5 10 20
HORIZONTAL SCALE IN FEET





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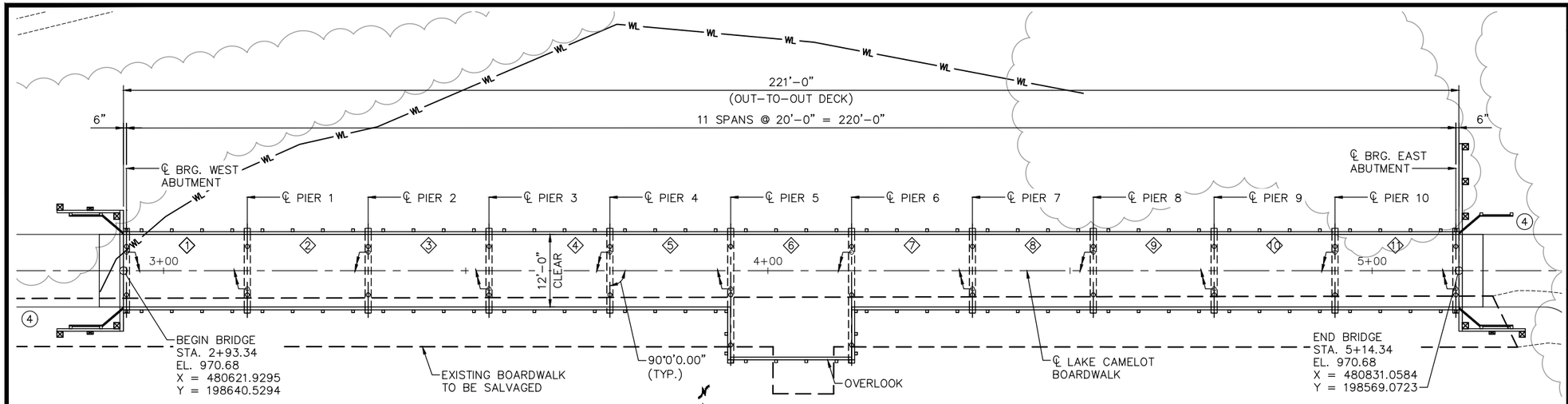
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City of Plymouth

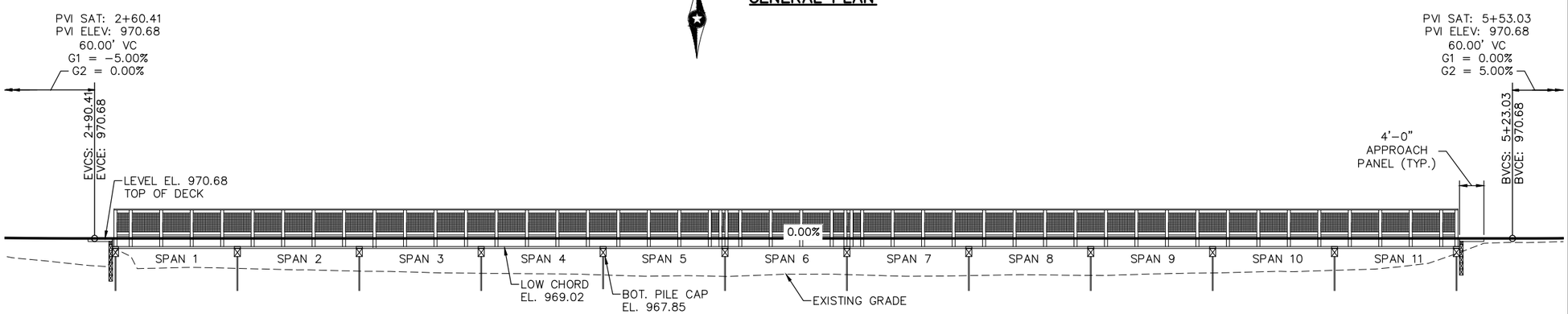
CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
NORTHWEST BLVD TRAIL
CROSS SECTIONS
STA. 6+00 TO STA. 6+50

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 354 / 354



GENERAL PLAN



GENERAL ELEVATION

SCHEDULE OF QUANTITIES FOR BOARDWALK			
ITEM NO.	ITEM	UNIT	QUANTITY
(1) 2108.504	GEOTEXTILE FABRIC TYPE 1	SQ YD	52
(2) 2411.507	STRUCTURAL CONCRETE (3G52)	CU YD	2
(1) 2411.507	STRUCTURE EXCAVATION CLASS E	CU YD	97
(3) 2403.522	TREATED WOOD	MBM	22.8
(5) 2403.603	TIMBER RAILING	LIN FT	500
(6) 2521.618	TIMBER WALK	SQ FT	2800
2452.602	HELICAL PILE CAP	EACH	36

SCHEDULE OF QUANTITIES NOTES:

(1) PRICE BID FOR STRUCTURE EXCAVATION CLASS E TO INCLUDE SELECT GRANULAR EMBANKMENT MOD 10%. STRUCTURE EXCAVATION ARE DEFINED BY PAY LIMITS SHOWN ON CONCRETE APPROACH SLAB DETAIL FOR THE LENGTH OF THE ABUTMENTS & WINGWALLS.

(2) STRUCTURAL CONCRETE 3G52 INCLUDES ALL CONCRETE AND EPOXY COATED REINFORCING FOR APPROACH SLABS.

(3) INCLUDES CAPS, STRINGERS, EDGE BEAMS, DIAPHRAGMS, ABUTMENT, AND WINGWALL TIMBER.

(5) PRICE BID FOR TIMBER RAILING INCLUDES ALL WORK AND MATERIALS TO CONSTRUCT TIMBER RAILING ON THE BOARDWALK AND APPROACHES. THE PRICE BID INCLUDES TIMBER MATERIALS FOR (RAIL CAPS, RAILS, CLEATS, RAIL POSTS, CURBS, SCUPPER BLOCKS, & BEARING BLOCKS), MESH PANELS, BRACKETS, HARDWARE, CONCRETE, HOLD-DOWNS, ADHESIVE AND OTHER ITEMS WHICH DO NOT HAVE SEPARATE PAY ITEMS BUT ARE NECESSARY TO COMPLETE THE TIMBER RAILING SYSTEM AS SHOWN IN THESE PLANS.

(6) TIMBER WALK SHALL BE MEASURED BETWEEN CURBS AND ALONG CENTERLINE FROM BEGIN STATION TO END STATION OF BRIDGE.

NOTES:

(1) DENOTES BOARDWALK SECTION IDENTIFIER

(4) SIGN TYPE R12-1A_12X18 IDENTIFYING BRIDGE WEIGHT LIMITS 10 TONS. MOUNT ON POST LOCATED BEFORE BRIDGE ABUTMENT. SEE SIGNING AND STRIPING PLANS FOR DETAILS.

CONSTRUCTION NOTES

THE 2020 EDITION OF THE MINNESOTA DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR CONSTRUCTION" SHALL GOVERN.

CONSTRUCTION REQUIREMENTS SHALL CONFORM TO SPEC. 2403 EXCEPT AS NOTED IN SPECIAL PROVISIONS.

SEE SPECIAL PROVISIONS FOR ALL XXXX.6XX SERIES PAY ITEMS FOR ADDITIONAL REQUIREMENTS.

ALL DRILLING AND CUTTING OF TIMBER EXCEEDING 2" THICKNESS SHALL BE COMPLETED BEFORE PRESSURE TREATMENT UNLESS OTHERWISE AUTHORIZED BY THE ENGINEER.

ALL TIMBER CUT OR DRILLED IN THE FIELD SHALL BE TREATED WITH AN APPROVED PRESERVATIVE.

THE SUBSURFACE UTILITY INFORMATION IN THIS PLAN IS UTILITY QUALITY LEVEL D. THIS UTILITY QUALITY LEVEL WAS DETERMINED ACCPRDING TO THE GUIDELINES OF CI/ASCE 38-22, ENTITLED "STANDARD GUIDELINE FOR INVESTIGATING AND DOCUMENTING EXISTING UTILITIES".

DESIGN DATA

DESIGNED IN ACCORDANCE WITH 9TH EDITION 2020 AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS.

DESIGNED IN ACCORDANCE WITH 2009 AND CURRENT INTERIM AASHTO LRFD GUIDE SPECIFICATIONS FOR THE DESIGN OF PEDESTRIAN BRIDGES.

BRIDGE HAS BEEN DESIGNED TO MEET THE GREATER OF THE FOLLOWING LIVE LOADING REQUIREMENTS:

1. A MINIMUM UNIFORM LIVE LOAD OF 90 P.S.F. APPLIED TO THE ENTIRE DECK SURFACE. OR
2. A SINGLE H10 TRUCK WITH NO PEDESTRIAN LOAD

DECK AREA 3029 SQ. FT.

LOAD POSTED 10 TONS

TIMBER AND MATERIALS INSTALLED SHALL COMPLY WITH, OR EXCEED THE FOLLOWING SCHEDULE:

STRINGERS, DIAPHRAMS, EDGE BEAM, & BEARING BLOCK:	DOUGLAS FIR, SELECT STRUCTURAL FULL SAWN Fb=1,600 P.S.I.
PILE CAPS:	DOUGLAS FIR, SELECT STRUCTURAL FULL SAWN Fb=1500 P.S.I.
DECK PLANKING:	DOUGLAS FIR, NO. 1 & BETTER, S1S1E, Fb=1,200 P.S.I.
RAIL POST, RAIL, CLEAT, RAIL CAP, CURB, & SCUPPER BLOCK:	SOUTHERN PINE, NO. 2 OR BETTER, S4S, Fb=850 P.S.I.
ABUTMENT & WINGWALL TIMBER:	DOUGLAS FIR-LARCH, NO. 1, FULL SAWN, Fb=1,350 P.S.I.
WOOD PRESERVATIVE TREATMENT:	ALL TIMBER IS TO BE PRESSURE TREATED PER SPEC. 3491. PRESERVATIVE TREATMENT FOR ALL HORIZONTAL RAIL ELEMENTS SHALL BE IN ACCORDANCE WITH SPEC. 3491, EXCEPT THAT BOTH ENVP AND MCA SERVICE CATEGORY UC4A WILL BE CONSIDERED TO BE APPROVED PRODUCT. PRESERVATIVE TREATMENT FOR ALL OTHER WOOD SHALL BE COPPER NAPHTHENATE OR ACQ. SERVICE CATEGORY FOR ALL OTHER TIMBER ELEMENTS SHALL BE AWCA UC4C.
TIMBER CONNECTORS, HARDWARE, & HELICAL ANCHOR PILING:	BOLTS & NUTS SHALL BE GALVANIZED AND MEET THE REQUIREMENTS OF MnDOT SPEC. 3391.2.A & 3392. ALL HARDWARE & HELICAL PILING SHALL BE GALVANIZED AND MEET THE REQUIREMENTS OF MnDOT SPEC. 3306, 3362 & 3394.

LIST OF SHEETS

NO.	DESCRIPTION
B1	GENERAL PLAN AND ELEVATION
B2	SUPERSTRUCTURE DETAILS
B3-B4	SUBSTRUCTURE DETAILS
B5-B6	RAIL DETAILS

No.	Date	Revisions	App.

DRAWING NAME: CHKDA_PH3_BR_GPE.dwg

DESIGNED BY:	MJN
DRAWN BY:	NSS
CHECKED BY:	BLF
DATE:	02/07/2025
PROJECT NO.	160662010

Kimley»Horn
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BRIAN FLEMING, PE

DATE: 02/07/2025 MN LIC. NO. 49486

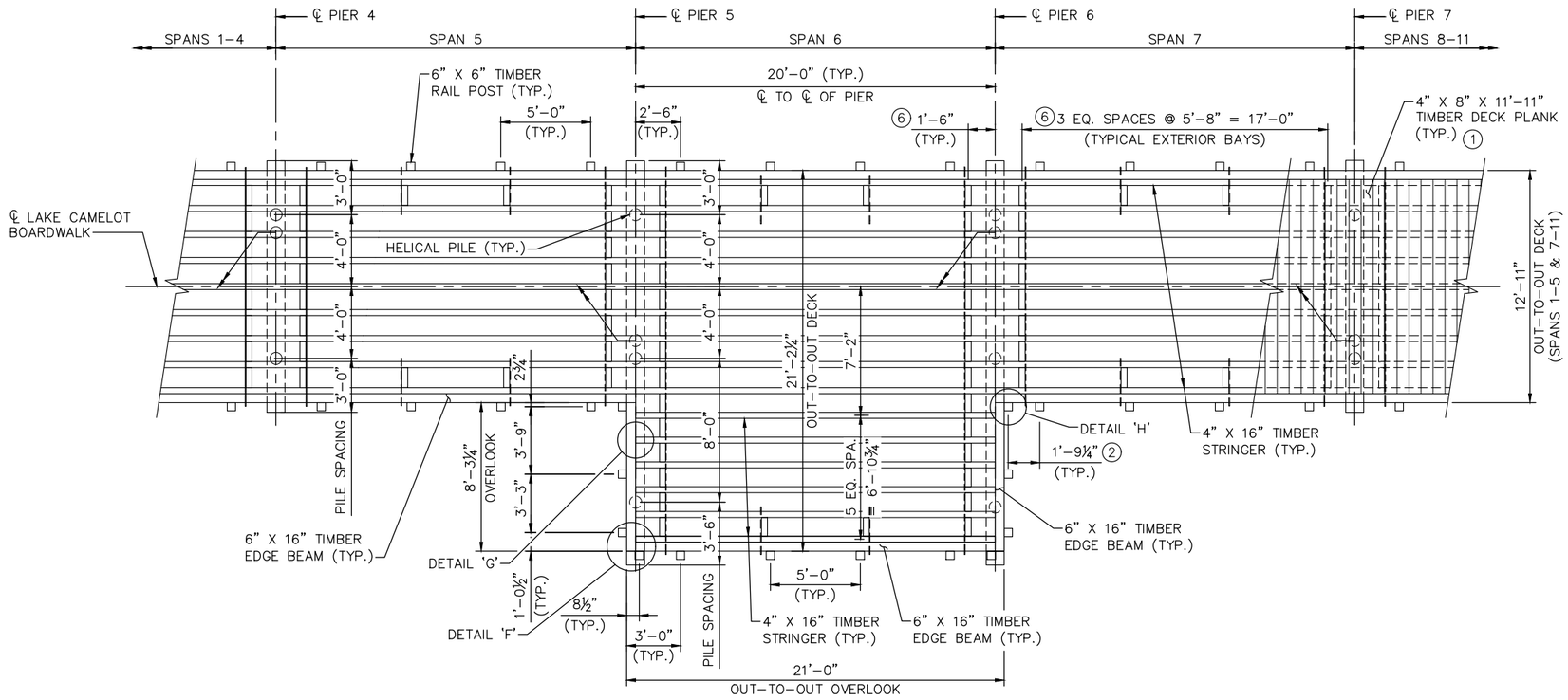
City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
LAKE CAMELOT BOARDWALK
GENERAL PLAN AND ELEVATION

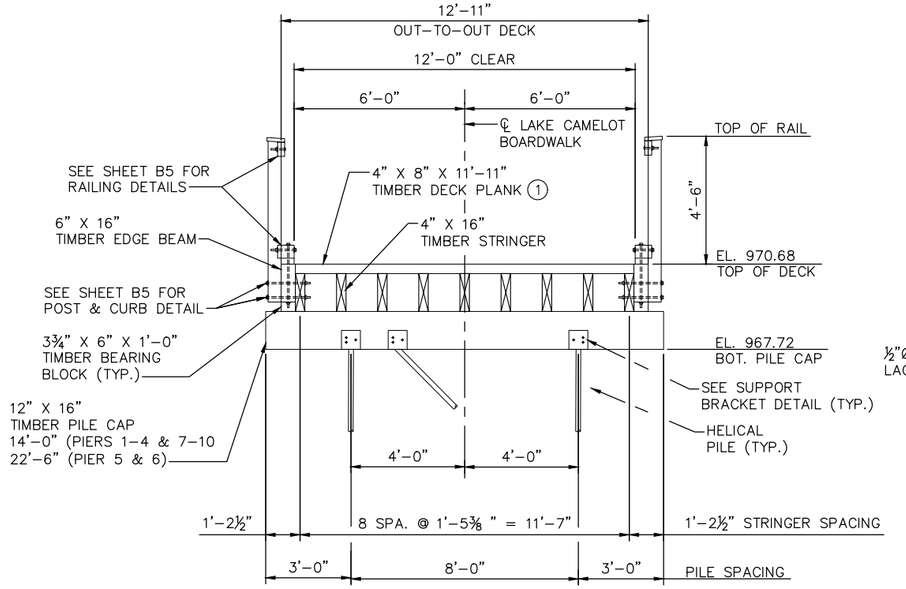
CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. B1 / B6

Feb, 25 2025 01:48 pm \\kimley-horn.com\MW_TWC\TWC_Civil\City\PLYMOUTH\CHANKAHDA TRL PH3\CAD\Plan Sheets\Bridge\CHKDA_PH3_BR_GPE.dwg By: Matthew.Nelson

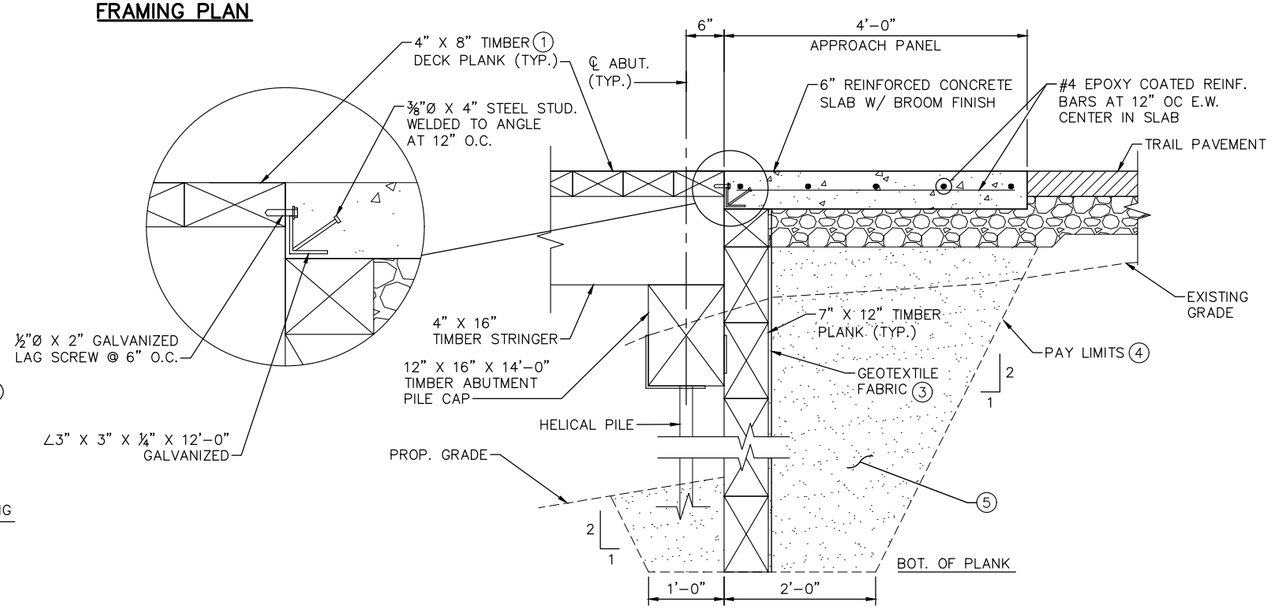


FRAMING PLAN



TYPICAL SECTION

(ABUTMENTS & PIERS 1–4 & 7–10)



CONCRETE APPROACH SLAB

NOTES:

SEE SHEET B6 FOR DETAIL 'F', 'G', AND 'H'.

① PLACE DECK PLANKING ROUGH SIDE UP WITH NO GAPS BETWEEN BOARDS. FASTEN TO STRINGERS W/ 2–¼"Ø X 6" COUNTERSUNK GALVANIZED WOOD SCREWS AT EACH INTERSECTION. PLACE ALL SCREWS FOR EACH PLANK AT THE TIME OF INSTALLATION.

② COORDINATE RAIL POST AND DIAPHRAGM SPACING.

③ GEOTEXTILE FABRIC TYPE 1 (PER SPEC. 3733) SHALL BE INSTALLED FULL HEIGHT AND FULL LENGTH OF ABUTMENT AND WINGWALL PLANKS.

④ PAY LIMITS (2V:1H). EXCAVATION SLOPE IS DETERMINED BY OSHA REGULATIONS AND IN–SITU SOILS: EXCAVATION BEYOND THESE LIMITS AT CONTRACTOR'S EXPENSE.

⑤ QUANTITY OF SELECT GRANULAR EMBANKMENT MOD 10% (PER SPEC. 3149.2B) IS BASED ON DIMENSIONS SHOWN, SEE SHEET B1 FOR PAYMENT METHOD. IF THE CONTRACTOR CHOOSES TO INCREASE DIMENSIONS IN ORDER TO FACILITATE CONSTRUCTION OPERATIONS, ANY QUANTITY INCREASES ARE CONSIDERED INCIDENTAL. COMPACT PER REQUIREMENTS OF SPEC. 2106.3G.2.

⑥ TYPICAL DIAPHRAGM SPACING

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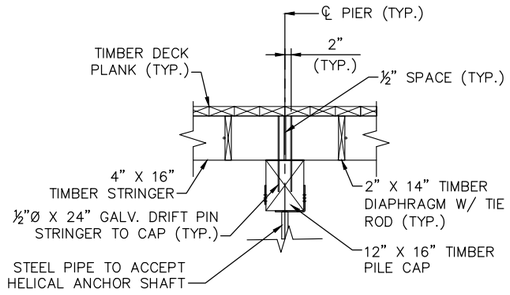
City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
LAKE CAMELOT BOARDWALK
SUPERSTRUCTURE DETAILS

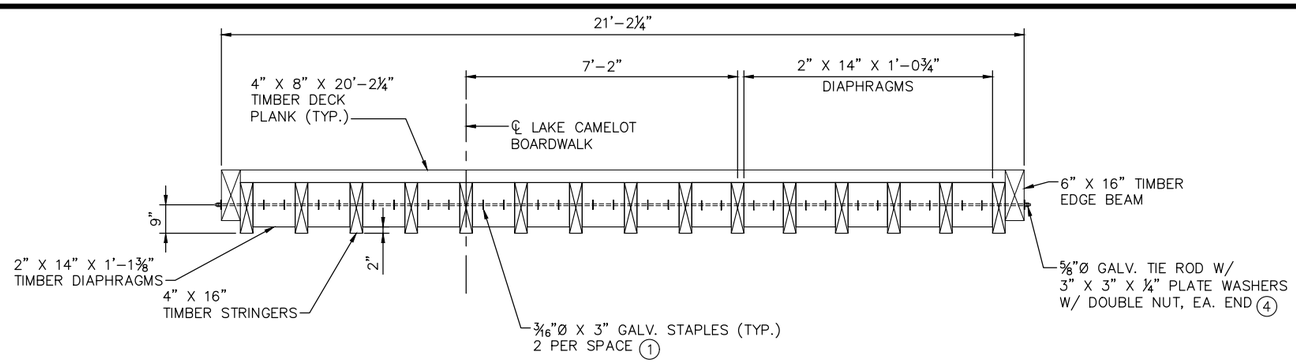
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COUNTY PROJECT	
S.A.P.	155–210–003
S.A.P.	

SHEET NO. B2 / B6

Feb. 25 2025 01:48 pm \\kimley-horn.com\MW_TWC\TWC_Civil\City\PLYMOUTH\CHANKAHDA TRL PH3\CAD\Plan Sheets\Bridge\CHKDA_PH3_BR_SUP.dwg By: Matthew.Nelson



PIER DETAIL

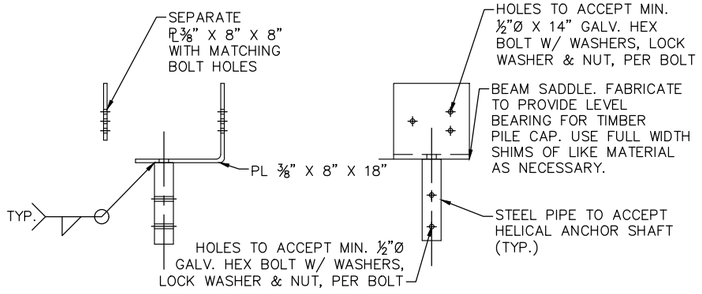


DIAPHRAGM DETAIL

(SPAN 6)

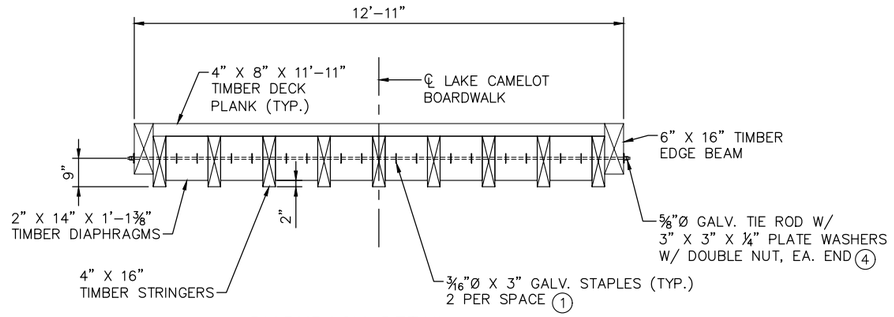
NOTES:

1. COORDINATE DIAPHRAGM SPACING. FASTEN 2" X 14" ROUGH SAWN TIMBER DIAPHRAGM BLOCKS TO ⅝"Ø. TIE RODS WITH 2–3/16"Ø X 3" STAPLES. TOE NAIL ALL DIAPHRAGMS TO STRINGERS WITH 8 – 30D NAILS, 2 ON EACH FACE AND EACH END (TYP. EA. DIAPH.) MODIFY AS NECESSARY WITH APPROVAL BY ENGINEER.
2. SUPPORT BRACKETS TO BE FABRICATED FROM ⅜" HOT ROLLED STEEL PLATE (SPEC 3306) AND HOT DIP GALVANIZED AFTER FABRICATION (SPEC 3394).
3. SUPPORT BRACKETS DESIGNED TO 15,000 LB. LOAD – COMPRESSION ONLY.
4. TIE RODS SHALL HAVE A MINIMUM OF 3" OF THREAD ON EACH END OF TIE ROD.



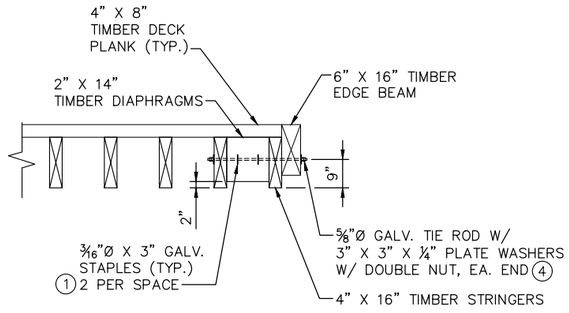
SUPPORT BRACKET DETAIL (2)(3)

FOR ILLUSTRATION ONLY. OTHER BRACKET TYPES MAY BE CONSIDERED. CONTRACTOR TO SUBMIT CALCULATIONS AND DETAILS OF THE SPECIFIC BRACKET FOR THE ENGINEER'S APPROVAL.



DIAPHRAGM DETAIL

(SPANS 1–5 & 7–11)



DIAPHRAGM DETAIL – EXTERIOR BAYS

(ALL SPANS)

COMPUTED VERTICAL HELICAL PILE LOAD – KIPS/PILE (SERVICE LOADS)	
DEAD LOAD	10
LIVE LOAD	12
DESIGN LOAD	22

* LOADS SHOWN ARE FOR SERVICE CONDITIONS.
* HELICAL PILE SYSTEM SHALL HAVE A LATERAL SERVICE RESISTANCE OF 5 KIPS IN BOTH TENSION & COMPRESSION THAT IS PERPENDICULAR TO THE BOARDWALK ALIGNMENT.
* SEE GEOTECHNICAL REPORT IN SPECIAL PROVISIONS FOR TESTING REQUIREMENTS.

HELICAL PILE NOTES:

26 PILES SHALL BE VERTICAL AND ARE LOCATED AS SHOWN ON THE GENERAL PLAN.

12 PILES SHALL BE BATTERED AT A RATIO OF 1:1 AND ARE LOCATED AS SHOWN ON THE GENERAL PLAN. PILES SHALL BE SET AT AN APPROXIMATE HORIZONTAL ANGLE OF 10° FROM PIER CAP TO AVOID CONFLICT WITH OTHER PILES.

ANCHOR SPACING SHOWN IS AT BOTTOM OF BEAM AND MUST BE FIELD VERIFIED AFTER INSTALLATION.

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BRIAN FLEMING, PE

DATE: 02/07/2025 MN LIC. NO. 49486

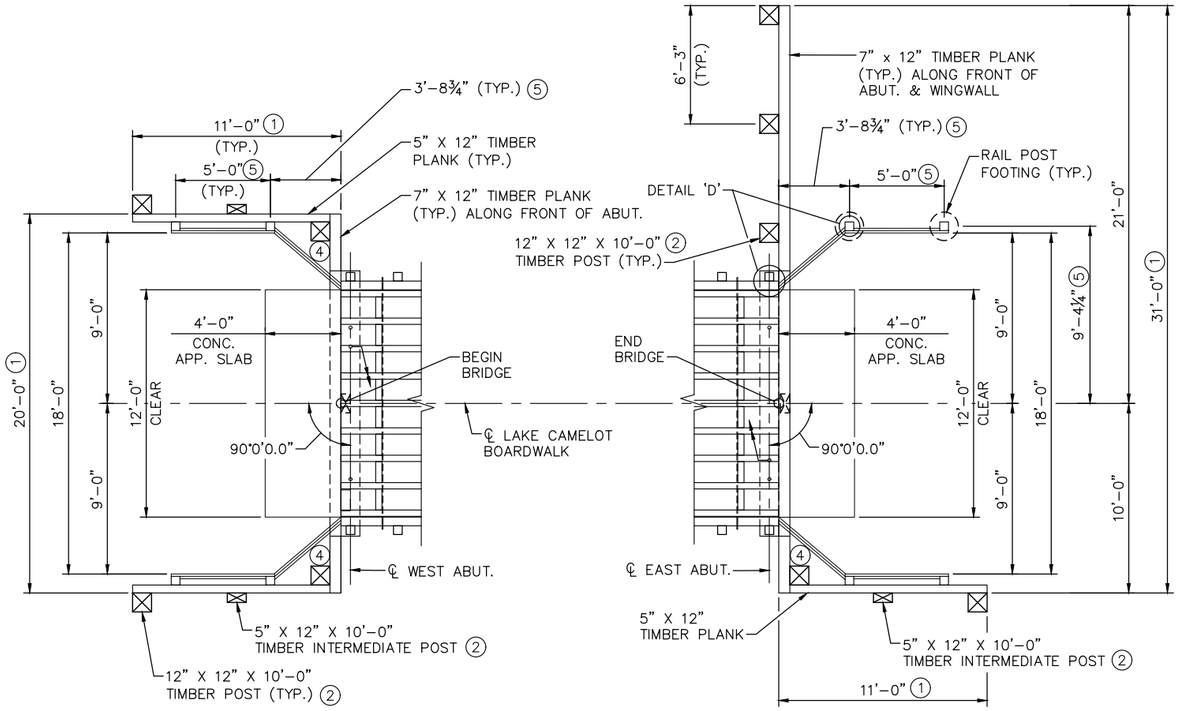
City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
LAKE CAMELOT BOARDWALK
SUBSTRUCTURE DETAILS

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

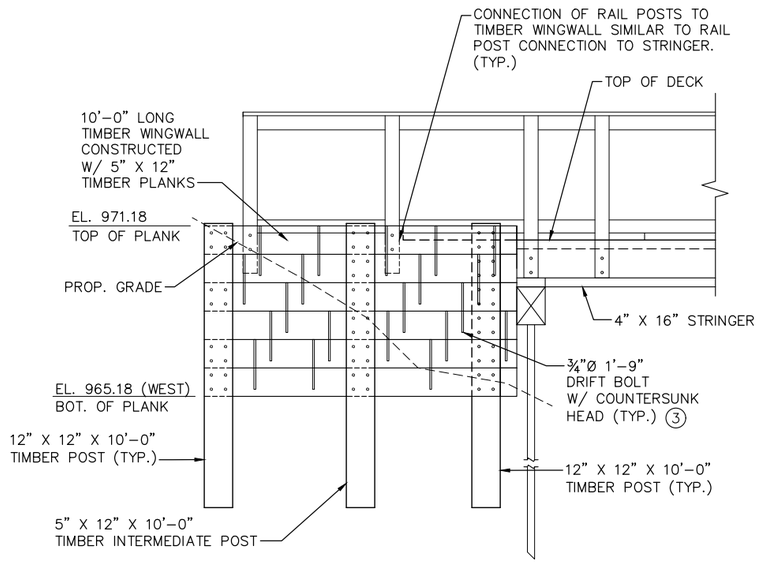
SHEET NO. B3 / B6

Feb, 25 2025 02:08 pm \\kimley-horn.com\WW_TWC\TWC_Civil\City\PLYMOUTH\CHANKAHDA TRL PH3\CAD\Plan Sheets\Bridge\CHKDA_PH3_BR_SUP.dwg By: Matthew.Nelson



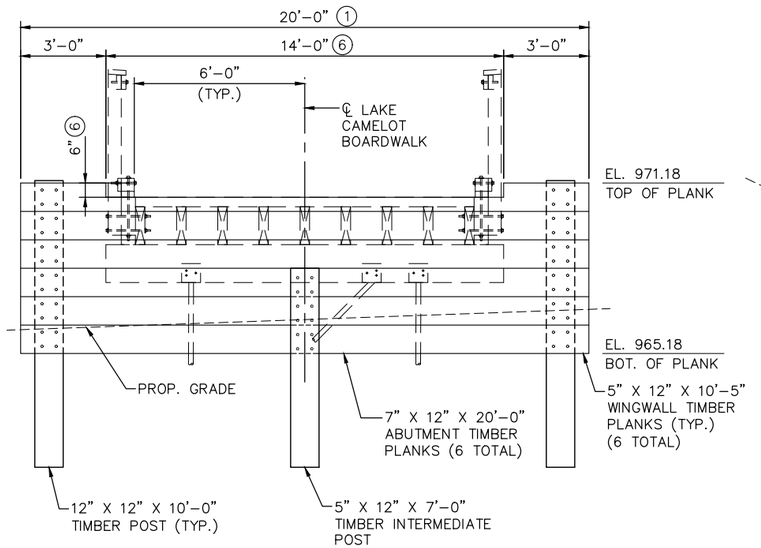
WEST ABUTMENT PLAN

EAST ABUTMENT PLAN



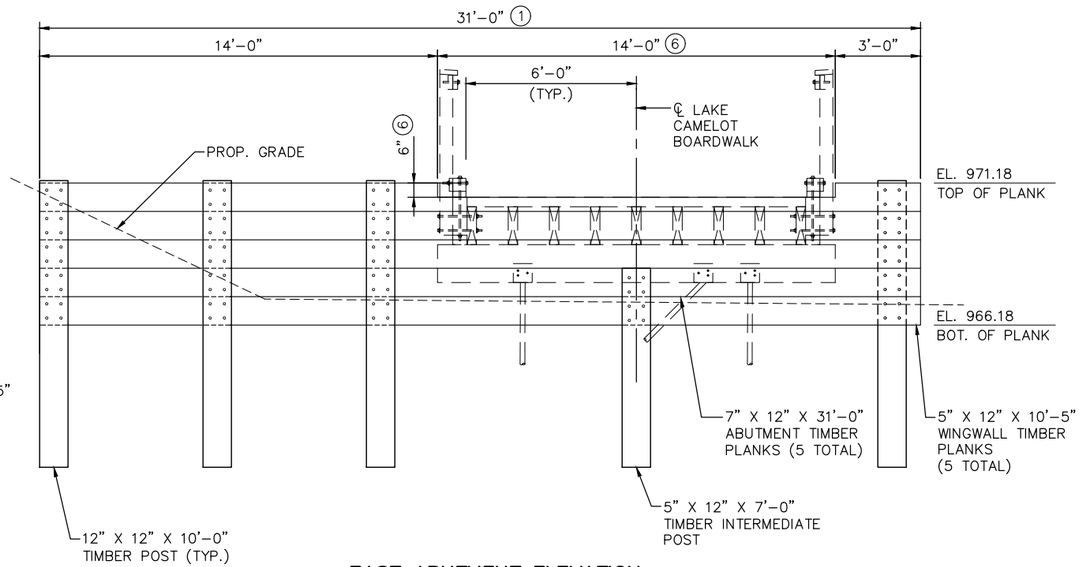
WINGWALL ELEVATION

(TYP. FOR NW & SW)
(SE WINGWALL SIMLAR)



WEST ABUTMENT ELEVATION

(LOOKING WEST)



EAST ABUTMENT ELEVATION

(LOOKING EAST)

NOTES:

SEE SHEET B6 FOR DETAIL 'D'.

(1) PAY LIMITS FOR STRUCTURE EXCAVATION AND SELECT GRANULAR EMBANKMENT MOD. 10%. EXCAVATION AND BACKFILL OUTSIDE OF THE PAY LIMITS INCIDENTAL.

(2) CONNECT WINGWALL TIMBERS TO POST WITH (5 FOR EAST ABUTMENT, 6 FOR WEST ABUTMENT) ⅜"Ø X 8" R.S NAILS AT EACH POST. NAILS TO BE DRIVEN FLUSH TO SURFACE.

(3) CONTRACTOR SHALL STABILIZE TIMBER PLANKS WHILE INSERTING THE DRIFT BOLTS.

(4) CONNECT ABUTMENT TIMBERS AND WINGWALL TIMBERS TO CORNER POST WITH (4) ⅜"Ø X 12" R.S. NAILS AT EACH POST. NAILS TO BE DRIVEN FLUSH TO SURFACE.

(5) MEASURED TO CENTER OF RAIL POST.

(6) TOP TIMBER PLANK TO BE SHOP CUT AND TREATED PRIOR TO DELIVERY.

No.	Date	Revisions	App.

DRAWING NAME	CHKDA_PH3_BR_ABT.dwg
DESIGNED BY:	MJN
DRAWN BY:	NSS
CHECKED BY:	BLF
DATE:	02/07/2025
PROJECT NO.	160662010

Kimley»Horn
767 EUSTIS STREET, SUITE 100, ST, PAUL, MN 55114
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WWW.KIMLEY-HORN.COM

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BRIAN FLEMING, PE

DATE: 02/07/2025 MN LIC. NO. 49486

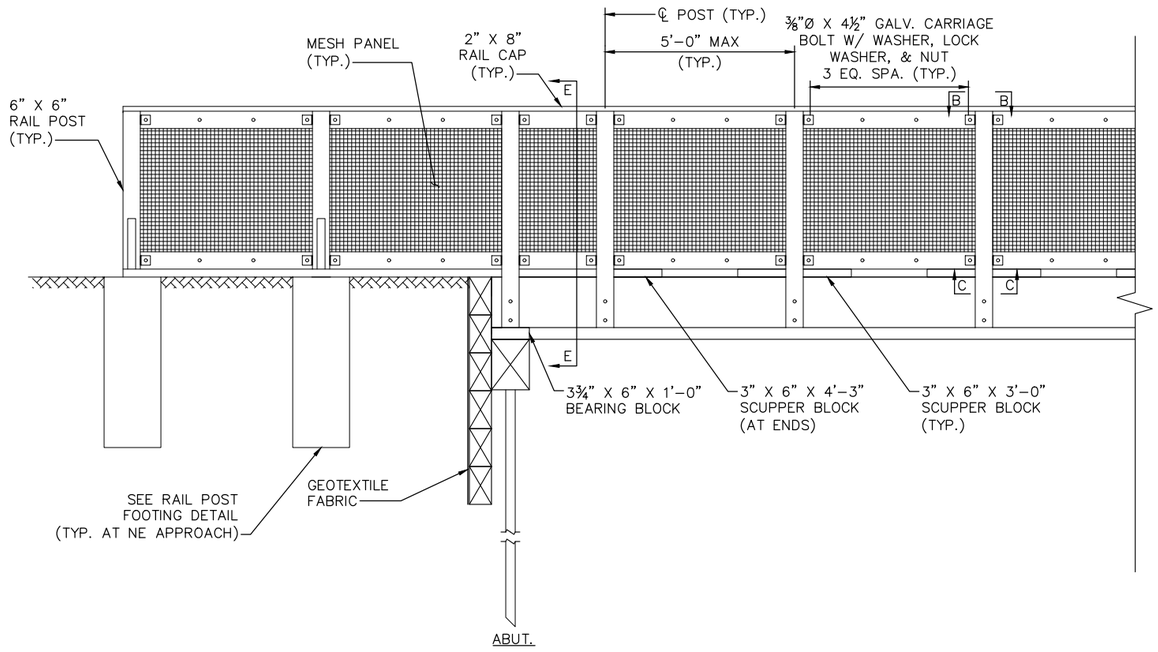
City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
LAKE CAMELOT BOARDWALK
SUBSTRUCTURE DETAILS

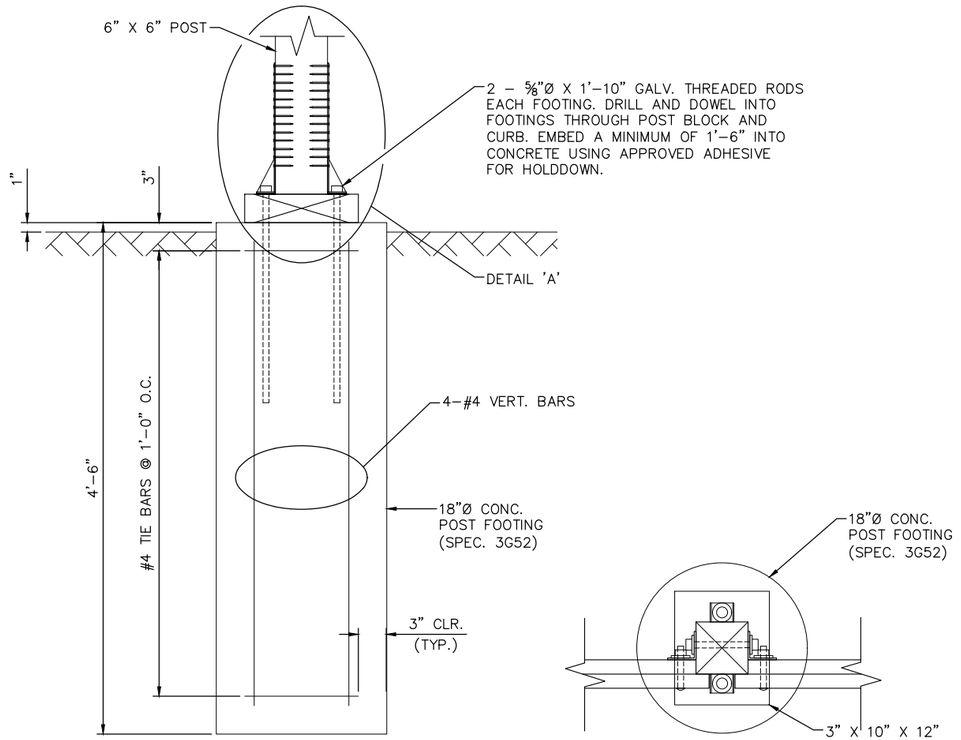
CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. B4 / B6

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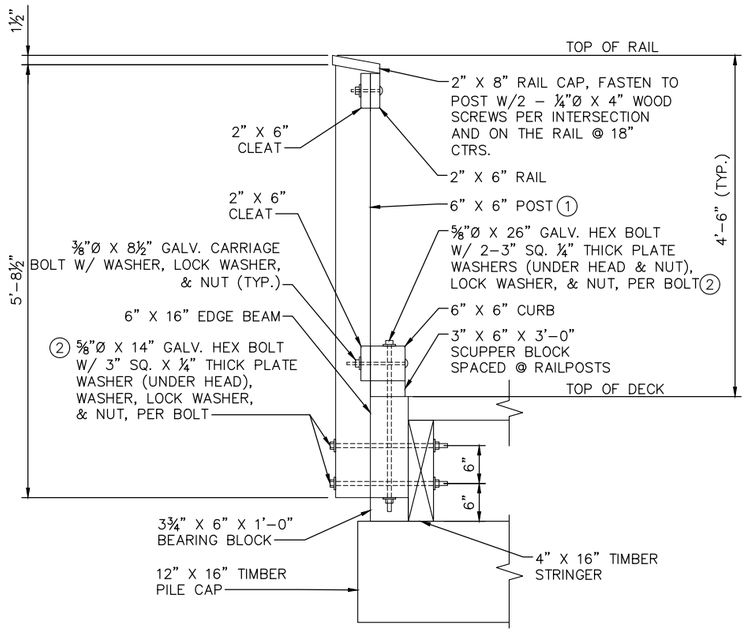


OUTSIDE RAILING ELEVATION

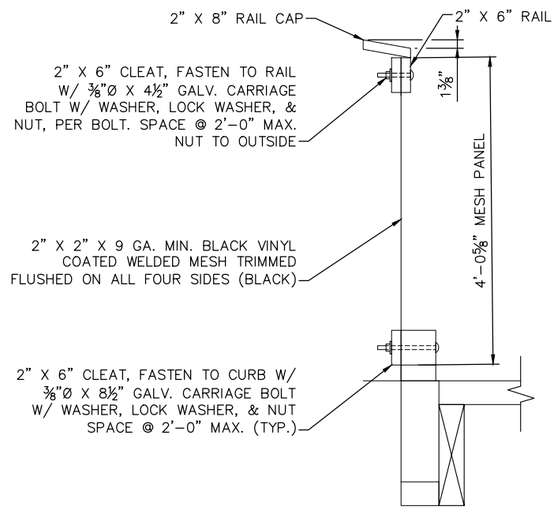


ELEVATION

PLAN



POST AND CURB DETAIL

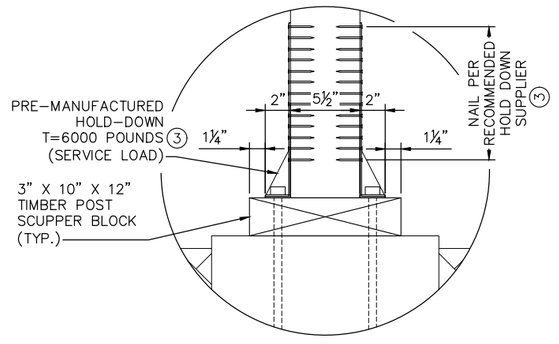


RAIL SECTION AT MESH PANEL

(SOME BOLTS NOT SHOWN FOR CLARITY)

RAIL POST FOOTING DETAIL

AT NORTHEAST APPROACH (2 TOTAL)



DETAIL 'A'

NOTES:

SEE SHEET B6 FOR SECTIONS 'B–B', 'C–C', AND 'E–E'.

TOP ELEVATIONS OF APPROACH RAILING AND BOARDWALK RAILING SHALL MATCH.

CENTER WELDED MESH BETWEEN POSTS. GAPS BETWEEN MESH AND POSTS SHALL BE LESS THAN 4".

(1) TOP OF POST SLOPED (1" HEIGHT DIFFERENCE OUTSIDE FACE/INSIDE FACE)

(2) SQUARE PLATE WASHERS (SPEC. 3306) TO BE ORIENTED PARALLEL TO TIMBER MEMBER.

(3) HOLDDOWNS SHALL BE GALVANIZED PER MnDOT 3392. BOLTS/NAILS LISTED ARE BASED ON USE OF THE SIMPSON HTT5 HOLDDOWNS.

No.	Date	Revisions	App.

DRAWING NAME	CHKDA_PH3_BR_RAIL.dwg
DESIGNED BY:	MJN
DRAWN BY:	NSS
CHECKED BY:	BLF
DATE:	02/07/2025
PROJECT NO.	160662010

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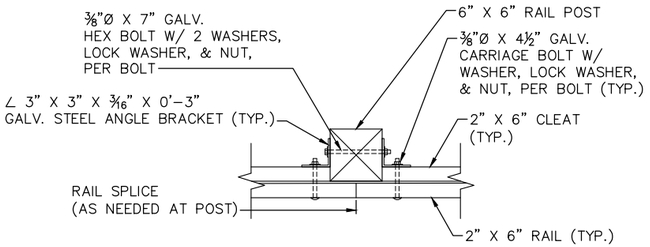
City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
LAKE CAMELOT BOARDWALK
SUBSTRUCTURE DETAILS

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COUNTY PROJECT	
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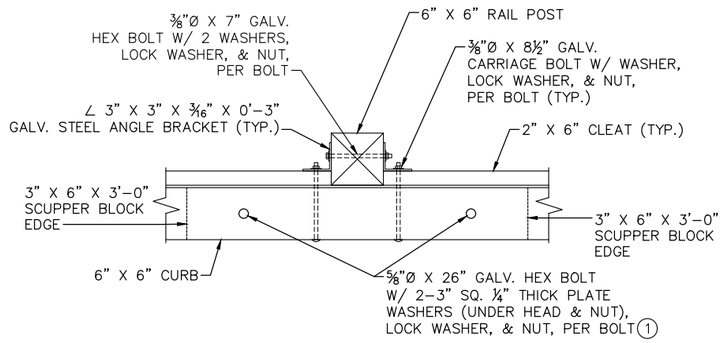
SHEET NO. B5 / B6

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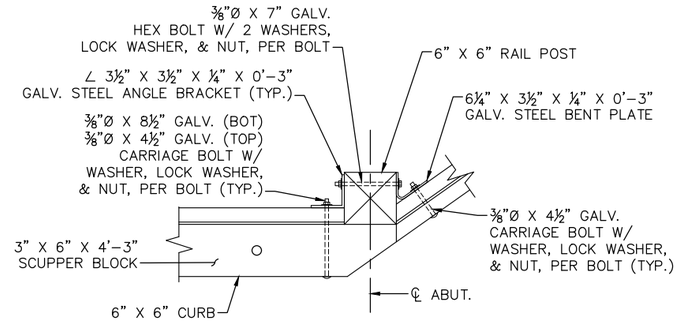
SECTION 'B-B'

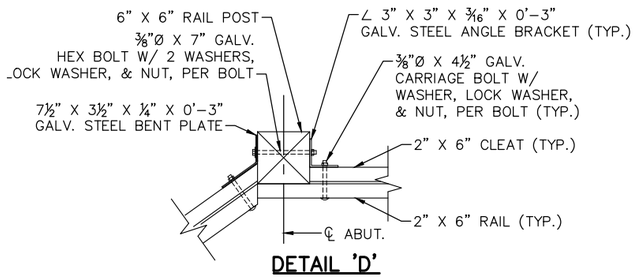
TYPICAL PLAN VIEW
TOP RAIL POST CONNECTION



SECTION 'C-C'

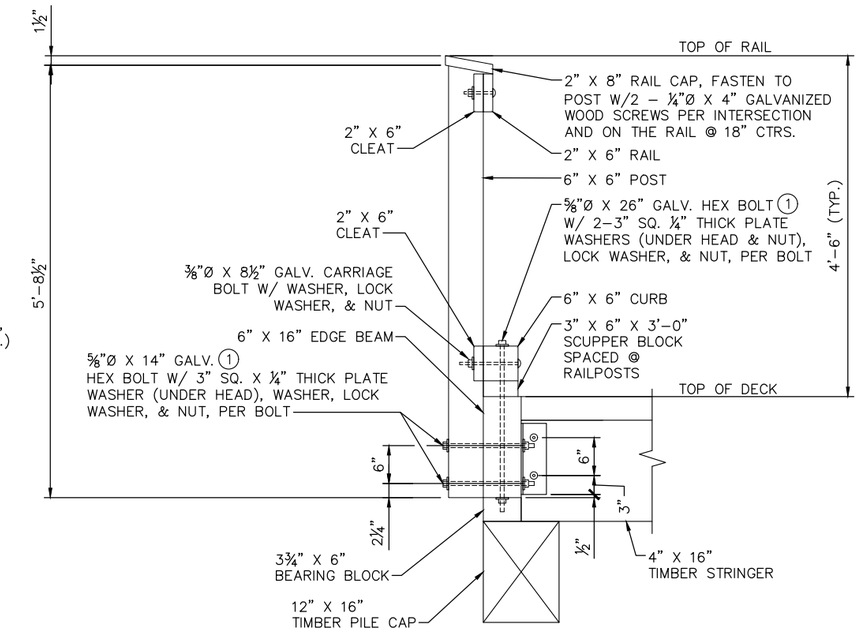
TYPICAL PLAN VIEW
BOTTOM RAIL POST CONNECTION





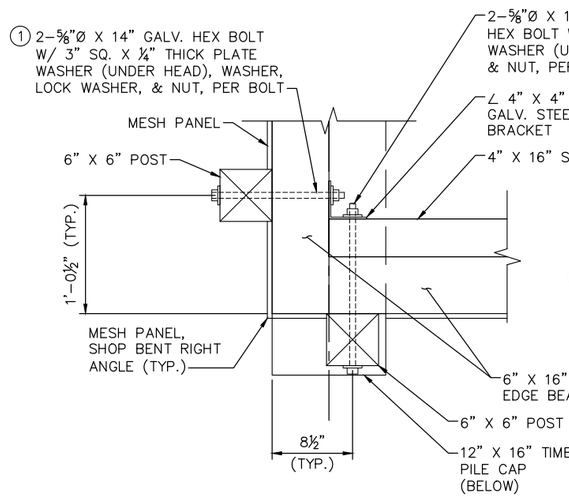
DETAIL 'D'

PLAN VIEW BOTTOM
RAIL POST CONNECTION
APPROACH TO BRIDGE
(TOP RAIL SIMILAR)



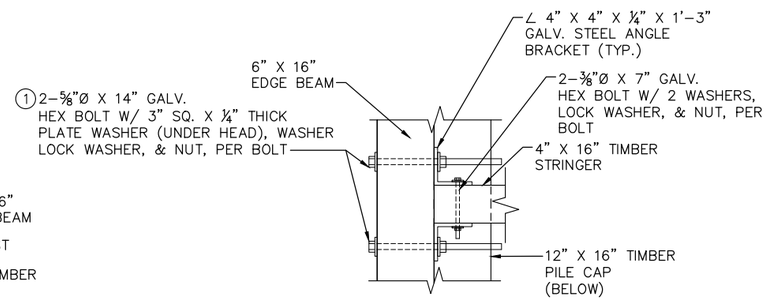
SECTION 'E-E'

RAILING TO END BLOCK
CONNECTION DETAIL ON OVERLOOK



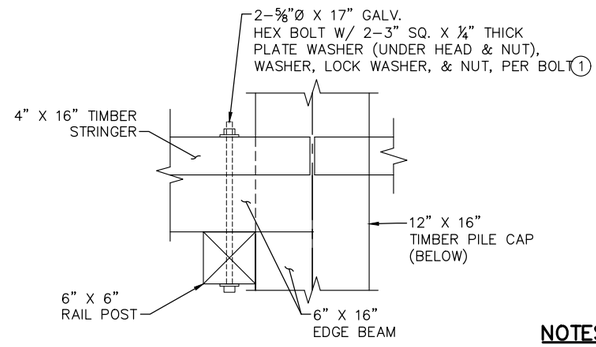
DETAIL 'F'

POST TO STRINGER CONNECTION
(AT OVERLOOK EXTERIOR CORNER)



DETAIL 'G'

STRINGER TO EDGE
BEAM CONNECTION
(AT OVERLOOK)



DETAIL 'H'

RAILING TO STRINGER
CONNECTION DETAIL
(AT OVERLOOK)

NOTES:

(1) PLATE WASHERS TO BE ORIENTED PARALLEL TO TIMBER MEMBER.

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Brian Fleming

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SHEET NO. B6 / B6

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