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 (GEOGRAPHIC DESCRIPTION)

CONSTRUCTION PLAN FOR GRADING, BITUMINOUS SURFACING, 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

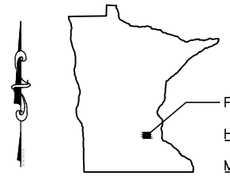
NOTE:
THE SUBSURFACE UTILITY INFORMATION IN THIS PLAN IS UTILITY QUALITY LEVEL D. THIS UTILITY QUALITY LEVEL WAS DETERMINED ACCORDING TO THE GUIDELINES OF CI/ASCE 38–02, ENTITLED "STANDARD GUIDELINES FOR THE COLLECTION AND DEPICTION OF EXISTING SUBSURFACE UTILITY DATA".

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

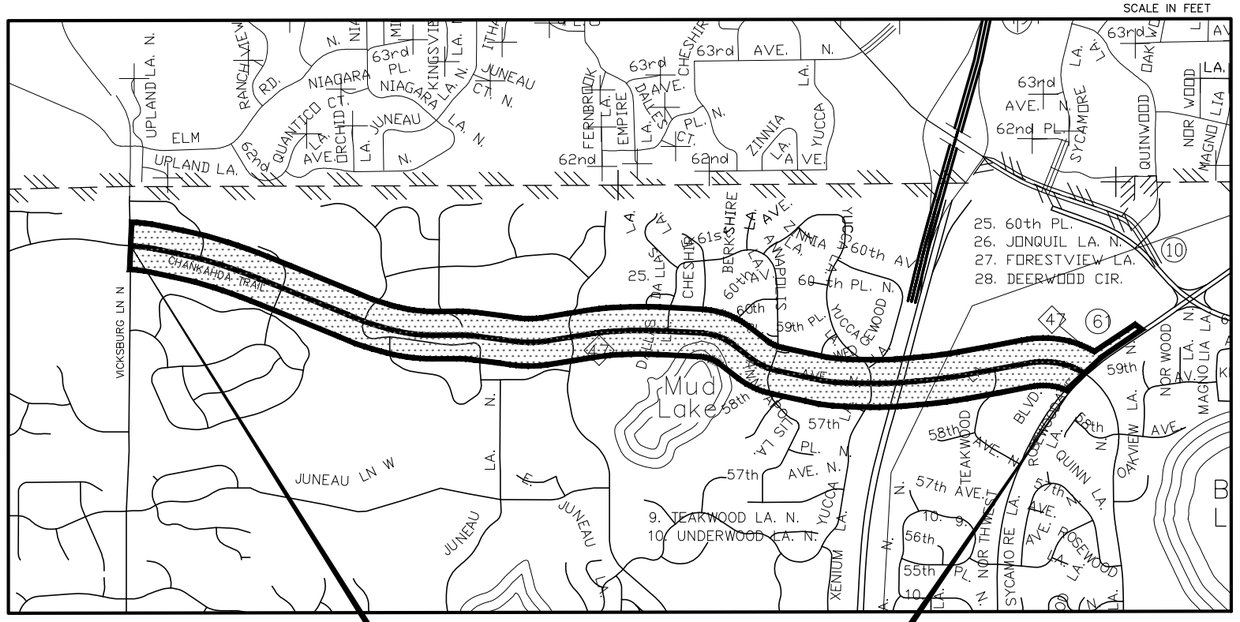
PLAN SET SCALES

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 568,000
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" AND THE "SUPPLEMENTAL SPECIFICATIONS" DATED SEPTEMBER 2022 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
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6 - 8	EARTHWORK TABULATION
9 - 13	INPLACE UTILITY TABULATIONS
14 - 31	STANDARD PLANS
32 - 37	TYPICAL SECTIONS
38 - 47	ALIGNMENT PLAN AND TABULATION
48 - 55	TRAFFIC CONTROL
56 - 63	INPLACE CONDITION PLAN
64 - 66	STORM WATER POLLUTION PREVENTION PLAN
67 - 82	EROSION CONTROL AND TURF ESTABLISHMENT PLANS
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129 - 142	UTILITY PLAN AND PROFILE
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144 - 163	CONSTRUCTION PLAN AND PROFILES
164 - 169	GRADING PLAN
170 - 184	INTERSECTION DETAIL PLAN
185 - 197	RETAINING WALL PLAN AND PROFILE
198 - 204	LANDSCAPING PLANS AND DETAILS
205 - 230	SIGNING AND STRIPING PLANS
231 - 270	TRAFFIC SIGNAL PLAN
271 - 348	CROSS SECTIONS
B1 - B6	BOARDWALK PLANS

THIS PLAN SET CONTAINS 354 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 11/04/2024 LIC. NO. 41864

ENGINEER _____
CHADD B. LARSON, PE

APPROVED _____ 2025
CITY OF PLYMOUTH ENGINEER

APPROVED _____ 2025
HENNEPIN COUNTY ENGINEER

RECOMMENDED FOR APPROVAL _____ 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 November 04, 2024 - 6:11pm

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 164 – 169.
7. SEE RETAINING WALL DETAILS ON SHEET 186.

STATEMENT OF ESTIMATED QUANTITIES

					S.A.P. 155-210-003			CITY OF PLYMOUTH
					ROADWAY	STORM SEWER	NORTHWEST BOULEVARD INTERSECTION	UTILITIES
					PARTICIPATING	PARTICIPATING	PARTICIPATING	NON-PARTICIPATING
NOTE	ITEM NO.	ITEM DESCRIPTION	UNIT	TOTAL ESTIMATED QUANTITY	ESTIMATED QUANTITY	ESTIMATED QUANTITY	ESTIMATED QUANTITY	ESTIMATED QUANTITY
	2011.610	EXPLORATION	HOUR	100	100			
	2021.501	MOBILIZATION	LUMP SUM	1	1			
	2031.502	FIELD OFFICE	EACH	1	1			
	2101.502	CLEARING	EACH	92	92			
	2101.502	GRUBBING	EACH	92	92			
	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	34	34			
	2104.502	REMOVE MANHOLE OR CATCH BASIN	EACH	23	23			
	2104.502	REMOVE GATE VALVE	EACH	15	15			
	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	1200		300	
	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	620	620			
	2104.503	REMOVE CURB & GUTTER	LIN FT	3405	3200		205	
	2104.503	REMOVE FENCE	LIN FT	375	375			
	2104.503	REMOVE GUARDRAIL	LIN FT	610	610			
	2104.504	REMOVE CONCRETE MEDIAN	SQ YD	50	50			
	2104.504	REMOVE SLOPE PAVING (P)	SQ YD	505	505			
	2104.504	REMOVE BITUMINOUS PAVEMENT	SQ YD	55510	55460		50	
	2104.518	REMOVE BITUMINOUS WALK	SQ FT	28500	27300		1200	
	2104.518	REMOVE CONCRETE SIDEWALK	SQ FT	1710	1470		240	
	2104.603	ABANDON STORM SEWER	LIN FT	10	10			
	2105.607	COMMON BORROW SPECIAL (CV)	CU YD	1160		1160		
(P)	2108.507	EXCAVATION - COMMON	CU YD	104342	104342			
(P)	2108.507	SELECT GRANULAR EMBANKMENT (CV)	CU YD	22260	22228		32	
1	2108.507	SELECT GRANULAR EMBANKMENT MOD ±0% (CV)	CU YD	85	85			

STATEMENT OF ESTIMATED QUANTITIES

					S.A.P. 155-210-003			CITY OF PLYMOUTH
					ROADWAY	STORM SEWER	NORTHWEST BOULEVARD INTERSECTION	UTILITIES
					PARTICIPATING	PARTICIPATING	PARTICIPATING	NON-PARTICIPATING
NOTE	ITEM NO.	ITEM DESCRIPTION	UNIT	TOTAL ESTIMATED QUANTITY	ESTIMATED QUANTITY	ESTIMATED QUANTITY	ESTIMATED QUANTITY	ESTIMATED QUANTITY
(P)	2106.507	COMMON EMBANKMENT (CV)	CU YD	33911	33911			
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	35	35			
	2130.623	WATER FOR TURF ESTABLISHMENT	M GALLON	15	15			
(P)	2211.507	AGGREGATE BASE (CV) CLASS 5	CU YD	14520	14500		20	
	2360.509	TYPE SP 12.5 NON WEAR COURSE MIX (3;B)	TON	6510	6500		10	
	2360.509	TYPE SP 12.5 WEARING COURSE MIX (3;C)	TON	13520	13500		20	
7	2401.507	STRUCTURAL CONCRETE (3G52)	CU YD	74	74			
7	2401.508	REINFORCEMENT BARS	POUND	3000	3000			
1	2401.601	STRUCTURE EXCAVATION	LUMP SUM	1	1			
1	2403.522	TREATED WOOD	M B M	23	23			
1	2403.603	TIMBER RAILING	LIN FT	500	500			
(P)	2411.618	PREFABRICATED MODULAR BLOCK WALL (P)	SQ FT	8000	8000			
6	2451.507	FINE FILTER AGGREGATE (CV)	CU YD	1149		1149		
1	2452.602	ANCHOR PILING	EACH	26	26			
	2501.502	12" RC PIPE APRON	EACH	1		1		
	2501.502	15" RC PIPE APRON	EACH	4		4		
	2501.502	18" RC PIPE APRON	EACH	5		5		
	2501.502	21" RC PIPE APRON	EACH	3		3		
	2501.502	24" RC PIPE APRON	EACH	4		4		
	2501.502	30" RC PIPE APRON	EACH	2		2		
	2501.502	36" RC PIPE APRON	EACH	1		1		
2	2501.503	15" RC PIPE CULVERT	LIN FT	815		815		
2	2501.503	18" RC PIPE CULVERT	LIN FT	263		263		
2	2501.503	21" RC PIPE CULVERT	LIN FT	130		130		
2	2501.503	24" RC PIPE CULVERT	LIN FT	108		108		
2	2501.503	30" RC PIPE CULVERT	LIN FT	119		119		
	2501.602	CLEAN EXISTING DRAINAGE STRUCTURE	EACH	6		6		
	2501.602	TRASH GUARD FOR 12" PIPE APRON	EACH	1		1		
	2501.602	TRASH GUARD FOR 24" PIPE APRON	EACH	1		1		
	2501.602	30" HDPE PIPE APRON	EACH	1		1		
2,4	2502.503	6" PERF PVC PIPE DRAIN	LIN FT	19000	18000	1000		

No.	Date	Revisions	App.

DRAWING NAME: CHANKAHDA_PH3_NOTES.dwg
DESIGNED BY: JWB
DRAWN BY: RGS
CHECKED BY: CBL
DATE: 11/04/2024
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: 11/04/2024 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 164 – 169.
7. SEE RETAINING WALL DETAILS ON SHEET 186.

STATEMENT OF ESTIMATED QUANTITIES

					S.A.P. 155-210-003			CITY OF PLYMOUTH
					ROADWAY	STORM SEWER	NORTHWEST BOULEVARD INTERSECTION	UTILITIES
					PARTICIPATING	PARTICIPATING	PARTICIPATING	NON-PARTICIPATING
NOTE	ITEM NO.	ITEM DESCRIPTION	UNIT	TOTAL ESTIMATED QUANTITY	ESTIMATED QUANTITY	ESTIMATED QUANTITY	ESTIMATED QUANTITY	ESTIMATED QUANTITY
	2502.602	6" PVC PIPE DRAIN CLEANOUT	EACH	9		9		
	2503.503	8" PVC PIPE SEWER	LIN FT	219				219
2	2503.503	12" RC PIPE SEWER CLASS V	LIN FT	523		523		
2	2503.503	15" RC PIPE SEWER CLASS III	LIN FT	4352		4352		
2	2503.503	18" RC PIPE SEWER CLASS III	LIN FT	2492		2492		
2	2503.503	21" RC PIPE SEWER CLASS III	LIN FT	389		389		
2	2503.503	24" RC PIPE SEWER CLASS III	LIN FT	1279		1279		
2	2503.503	27" RC PIPE SEWER CLASS III	LIN FT	1185		1185		
2	2503.503	30" RC PIPE SEWER CLASS III	LIN FT	594		594		
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	2		2		
	2503.602	CONNECT INTO EXISTING DRAINAGE STRUCTURE	EACH	3		3		
2	2503.603	24" HDPE PIPE SEWER	LIN FT	78		78		
2	2503.603	30" HDPE PIPE SEWER	LIN FT	47		47		
	2504.602	CONNECT TO EXISTING WATER MAIN	EACH	10				10
	2504.602	HYDRANT	EACH	7				7
	2504.602	ADJUST GATE VALVE	EACH	16				16
	2504.602	6" GATE VALVE & BOX	EACH	8				8
	2504.602	8" GATE VALVE & BOX	EACH	4				4
	2504.602	16" GATE VALVE & BOX	EACH	4				4
	2504.602	CURB STOP & BOX	EACH	1				1
	2504.603	1" TYPE PE PIPE	LIN FT	10				10
2	2504.603	6" PVC WATERMAIN	LIN FT	94				94
	2504.603	8" PVC WATERMAIN	LIN FT	195				195
2	2504.603	16" PVC WATERMAIN	LIN FT	1193				1193
	2504.603	30" STEEL CASING PIPE	LIN FT	366				366
	2504.608	DUCTILE IRON FITTINGS	POUND	3000				3000
	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	127		127		
	2506.502	ADJUST FRAME & RING CASTING	EACH	25		16		9
5	2506.503	CONST DRAINAGE STRUCTURE DESIGN G	LIN FT	164		164		
	2506.503	CONST DRAINAGE STRUCTURE DESIGN 4007	LIN FT	26				26
	2506.503	CONST DRAINAGE STRUCTURE DES 48-4020	LIN FT	480		480		
	2506.503	CONST DRAINAGE STRUCTURE DES 60-4020	LIN FT	75		75		
	2506.503	CONST DRAINAGE STRUCTURE DES 72-4020	LIN FT	28		28		
3	2511.507	RANDOM RIPRAP CLASS III	CU YD	148		148		

STATEMENT OF ESTIMATED QUANTITIES

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					PARTICIPATING	PARTICIPATING	PARTICIPATING	NON-PARTICIPATING
NOTE	ITEM NO.	ITEM DESCRIPTION	UNIT	TOTAL ESTIMATED QUANTITY	ESTIMATED QUANTITY	ESTIMATED QUANTITY	ESTIMATED QUANTITY	ESTIMATED QUANTITY
	2514.504	CONCRETE SLOPE PAVING (P)	SQ YD	295	295			
	2521.518	4" CONCRETE WALK	SQ FT	6500	6500			
	2521.518	6" CONCRETE WALK	SQ FT	14650	14000		650	
	2521.518	8" CONCRETE WALK	SQ FT	5000	5000			
	2521.518	3" BITUMINOUS WALK	SQ FT	165900	165000		900	
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	22526	22526			
	2531.503	CONCRETE CURB & GUTTER DESIGN B624	LIN FT	225	20		205	
	2531.503	CONCRETE CURB & GUTTER DESIGN S518	LIN FT	346	346			
	2531.503	CONCRETE CURB DESIGN DR4-8	LIN FT	246	246			
	2531.603	CONCRETE CURB DESIGN SURMOUNTABLE	LIN FT	100	100			
	2531.603	CONCRETE CURB DESIGN V	LIN FT	115	115			
	2531.618	TRUNCATED DOMES	SQ FT	1100	1000		100	
	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	600	600			
	2557.603	FENCE DESIGN SPECIAL - SPLIT RAIL	LIN FT	2250	2250			
	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	528	528			
	2565.516	TRAFFIC CONTROL SIGNAL SYSTEM B	SYSTEM	1			1	
	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	TEMPORARY SIGNAL SYSTEM A	SYSTEM	1			1	
	2571.502	CONIFEROUS TREE 6' HT B&B	EACH	6	6			
	2571.502	DECIDUOUS TREE 1.5" CAL B&B	EACH	11	11			
	2571.502	CONIFEROUS SHRUB 3' HT CONT	EACH	10	10			
	2571.502	DECIDUOUS SHRUB NO 5 CONT	EACH	27	27			

No.	Date	Revisions	App.

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CHADD B. LARSON, PE
DATE: 11/04/2024 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.

SHEET NO. 3
348

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 164 – 169.
7. SEE RETAINING WALL DETAILS ON SHEET 186.

STATEMENT OF ESTIMATED QUANTITIES

					S.A.P. 155-210-003			CITY OF PLYMOUTH
					ROADWAY	STORM SEWER	NORTHWEST BOULEVARD INTERSECTION	UTILITIES
					PARTICIPATING	PARTICIPATING	PARTICIPATING	NON-PARTICIPATING
NOTE	ITEM NO.	ITEM DESCRIPTION	UNIT	TOTAL ESTIMATED QUANTITY	ESTIMATED QUANTITY	ESTIMATED QUANTITY	ESTIMATED QUANTITY	ESTIMATED QUANTITY
	2571.502	PERENNIAL 4" CONT	EACH	429	429			
	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	150	150			
	2573.502	CULVERT END CONTROLS	EACH	16	16			
	2573.503	SILT FENCE, TYPE MS	LIN FT	27500	27500			
	2573.503	SEDIMENT CONTROL LOG TYPE WOOD FIBER	LIN FT	750	750			
	2574.507	FILTER TOPSOIL BORROW	CU YD	275		275		
	2574.507	LOAM TOPSOIL BORROW	CU YD	142	142			
	2574.508	FERTILIZER TYPE 3	POUND	2836	2816		20	
	2574.508	FERTILIZER TYPE 4	POUND	317	317			
	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	11.6		0.5	
	2575.505	RAPID STABILIZATION METHOD 2	ACRE	10	10			
	2575.507	MULCH MATERIAL TYPE 6	CU YD	50	50			
	2575.507	MULCH MATERIAL TYPE 9	CU YD	15	15			
	2575.508	HYDRAULIC MULCH MATRIX	POUND	14610	14500		110	
	2575.509	MULCH MATERIAL TYPE 3	TON	12.1	11.6		0.5	
	2575.608	SEED WET DITCH	POUND	100	100			
	2575.608	SEED SOUTHERN SHORTGRASS ROADSIDE	POUND	150	150			
	2575.608	SEED OATS	POUND	755	750		5	
	2575.608	SEED CITY SPECIAL MIX DESIGN A	POUND	1510	1500		10	
	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	1778	1770			
	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	575	575			
	2582.518	CROSSWALK PAINT	SQ FT	1840	1840			
	2582.518	CROSSWALK PREF THERMO GR IN	SQ FT	1350			1350	

No.	Date	Revisions	App.

DRAWING NAME: CHANKAHDA_PH3_NOTES.dwg
DESIGNED BY: JWB
DRAWN BY: RGS
CHECKED BY: CBL
DATE: 11/04/2024
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: 11/04/2024 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

14. PROVIDE A FULL DEPTH SAWCUT WHERE PLACING NEW PAVEMENT NEXT TO INPLACE PAVEMENT. LOCATE ALL SAWCUTS PERPENDICULAR TO LANE LINES.
15. BITUMINOUS, DRAINAGE STRUCTURES, PIPE AND OTHER MISCELLANEOUS OBJECTS TO BE REMOVED UNDER THIS PROJECT SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND EITHER RECYCLED OR DISPOSED OF OUTSIDE OF THE PROJECT LIMITS IN ACCORDANCE WITH MNDOT SPEC. 2104.3D.
16. 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.
17. THE CONTRACTOR SHALL PROTECT ALL EXISTING UTILITY STRUCTURES THAT ARE NOT BEING REMOVED OR RELOCATED.
18. THE CONTRACTOR SHALL VERIFY ALL REMOVAL ITEMS WITH THE ENGINEER PRIOR TO PERFORMING WORK ON THAT ITEM.
19. BITUMINOUS CURB REMOVAL SHALL BE INCIDENTAL TO PAVEMENT REMOVAL.
20. 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

21. PLACE A MINIMUM OF 10" TOPSOIL OR SLOPE DRESSING ON ALL AREAS DISTURBED BY CONSTRUCTION AND SCHEDULED FOR PERMANENT TURF ESTABLISHMENT UNLESS SPECIFIED OTHERWISE.
22. 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:

23. 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).
24. DURING CONSTRUCTION, TRAFFIC SHOULD BE NO CLOSER THAN AN IMAGINARY 2:1 LINE DRAWN FROM THE BOTTOM OF ANY SUBCUT TO THE TRAVELED SURFACE.
25. WHERE SEDIMENT DEPOSITS IN WATERS OF THE STATE THE MATERIAL MUST BE REMOVED WITHIN 7 DAYS.
26. THE CONTRACTOR SHALL MAINTAIN ACCESS TO ALL PROPERTIES AT ALL TIMES TO THE SATISFACTION OF THE ENGINEER.
27. ALL SHAPING AROUND THE CULVERT ENDS AND STORM SEWER INLETS & OUTLETS, AS DIRECTED BY THE ENGINEER, WILL BE CONSIDERED INCIDENTAL.
28. 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.
29. CONCRETE PIPE TIES SHALL BE FURNISHED AND INSTALLED PER MNDOT SPEC. 2501 AND 2503. CONCRETE PIPE TIES SHALL BE INCIDENTAL.
30. 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.

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 205 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

DESIGNED BY:	JWB
DRAWN BY:	RGS
CHECKED BY:	CBL
DATE:	11/04/2024
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: 11/04/2024 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	66,239	CU. YDS
CHANKAHDA TR ROUNDABOUT	1,244	CU. YDS
TEAKWOOD LN	2,266	CU. YDS
NORTHWEST BOULEVARD TRAIL	379	CU. YDS
BMP 1	1,040	CU. YDS
BMP 2	3,053	CU. YDS
BMP 3	3,053	CU. YDS
BMP 4	2,855	CU. YDS
BMP 5	3,673	CU. YDS
TOPSOIL STRIPPING	20,541	CU. YDS
SUBTOTAL COMMON EXCAVATION	104,342	CU. YDS
EMBANKMENTS		
CHANKAHDA TR PH 3	15,862	CU. YDS
CHANKAHDA TR ROUNDABOUT	673	CU. YDS
TEAKWOOD LN	290	CU. YDS
NORTHWEST BOULEVARD TRAIL	291	CU. YDS
BMP 1	2	CU. YDS
BMP 2	2	CU. YDS
BMP 3	2	CU. YDS
BMP 4	0	CU. YDS
BMP 5	236	CU. YDS
TOPSOIL REQUIRED	16,553	CU. YDS
SUBTOTAL COMMON EMBANKMENT	33,911	CU. YDS

EARTHWORK SUMMARY		
COMMON EXCAVATION		
TOTAL CHANKAHDA TR PH 3 COMMON EXCAVATION (P)	104,342	CU. YDS
EMBANKMENTS		
TOTAL CHANKAHDA TR PH 3 TOTAL COMMON EMBANKMENT (P)	33,911	CU. YDS
SELECT GRANULAR		
SELECT GRANULAR CHANKAHDA TRAIL	22,260	CU. YDS
TOTAL SELECT GRANULAR EMBANKMENT (CV)	22,260	CU. YDS
FINE FILTER AGGREGATE		
BMP 1	94	CU. YDS
BMP 2	333	CU. YDS
BMP 3	722	CU. YDS
TOTAL FINE FILTER AGGREGATE (CV)	1,149	CU. YDS
PAVEMENT REMOVAL		
BITUMINOUS ROADWAY AND WALK	14,254	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.

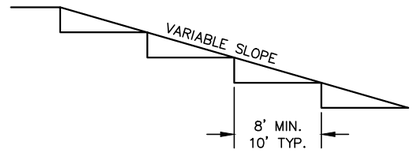
4. DITCH BOTTOMS AND TOPS OF BACKSLOPES ARE TO BE ROUNDED AS DIRECTED BY THE ENGINEER AND ALL WORK WILL BE CONSIDERED INCIDENTAL. SEE CROSS SECTIONS FOR DITCH DEPTHS.

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
CHECKED BY:	CBL
DATE:	11/04/2024
PROJECT NO.	160662010

Kimley»Horn
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CHADD B. LARSON, PE
DATE: 11/04/2024 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

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	141.17	342.82	3656.67
122+50.00	42.13	486.82	384.95	4143.49
123+00.00	28.77	350.08	413.73	4493.57
123+50.00	25.88	331.76	439.60	4825.33
124+00.00	25.04	337.45	464.65	5162.78
124+50.00	27.44	338.09	492.09	5500.86
125+00.00	28.89	314.90	520.98	5815.77
125+50.00	34.89	276.24	555.87	6092.01
126+00.00	42.37	257.08	598.24	6349.09
126+50.00	47.19	252.78	645.43	6601.87
127+00.00	48.60	250.12	694.03	6852.00
127+50.00	50.09	253.79	744.11	7105.79
128+00.00	50.50	258.23	794.61	7364.01
128+50.00	42.84	262.97	837.45	7626.99
129+00.00	40.77	270.69	878.23	7897.67
129+50.00	32.80	278.62	911.03	8176.29
130+00.00	19.25	299.45	930.28	8475.74
130+50.00	21.28	305.53	951.56	8781.26
130+75.00	10.42	144.15	961.97	8925.42
131+50.00	12.11	665.60	974.09	9591.01
132+00.00	1.50	457.01	975.58	10048.02
132+50.00	5.47	302.36	981.06	10350.38
133+00.00	9.65	290.68	990.70	10641.07
133+50.00	15.45	280.34	1006.15	10921.40
134+00.00	17.75	261.03	1023.90	11182.44
134+50.00	20.46	232.30	1044.37	11414.74
135+00.00	23.94	217.17	1068.31	11631.91
135+50.00	23.58	210.24	1091.89	11842.15
136+00.00	28.01	206.48	1119.90	12048.63
136+50.00	26.02	221.11	1145.92	12269.74
137+00.00	12.63	240.08	1158.55	12509.82
137+50.00	3.42	252.69	1161.97	12762.51
138+00.00	22.94	267.14	1184.91	13029.65
138+50.00	74.64	269.70	1259.55	13299.35
139+00.00	96.62	262.49	1356.18	13561.83
139+50.00	63.64	268.11	1419.82	13829.94
140+00.00	25.72	300.42	1445.54	14130.36
140+65.00	7.88	765.75	1453.42	14896.10
141+00.00	0.00	587.40	1453.42	15483.50
141+50.00	0.88	630.30	1454.30	16113.80
142+00.00	1.01	434.87	1455.31	16548.67
142+50.00	11.73	431.66	1467.03	16980.33
143+00.00	65.05	417.36	1532.09	17397.69
143+47.51	94.57	376.49	1626.65	17774.18
143+50.00	4.51	19.12	1631.17	17793.30

Total Volume Table
CHANKAHDA TR

Station	Fill Volume	Cut Volume	Cumulative Fill Vol	Cumulative Cut Vol
144+00.00	87.85	358.90	1719.01	18152.20
144+50.00	80.15	318.60	1799.16	18470.80
145+00.00	63.14	296.49	1862.30	18767.29
145+50.00	51.58	287.19	1913.89	19054.48
146+00.00	48.07	284.28	1961.95	19338.75
146+50.00	46.04	286.30	2007.99	19625.05
147+00.00	46.76	298.51	2054.76	19923.56
147+50.00	48.31	329.42	2103.06	20252.98
148+00.00	45.81	343.03	2148.88	20596.02
148+50.00	45.68	333.41	2194.56	20929.42
149+00.00	24.69	330.11	2219.24	21259.54
149+50.00	11.10	292.91	2230.34	21552.44
150+00.00	49.98	230.94	2280.33	21783.39
150+50.00	135.72	191.72	2416.05	21975.11
151+00.00	183.25	190.30	2599.30	22165.41
151+50.00	179.44	216.91	2778.73	22382.32
152+00.00	170.98	233.93	2949.72	22616.25
152+50.00	332.87	232.38	3282.58	22848.63
153+00.00	578.52	215.45	3861.10	23064.08
153+50.00	585.22	198.75	4446.32	23262.83
154+00.00	467.49	190.39	4913.82	23453.22
154+50.00	364.39	181.68	5278.21	23634.90
155+00.00	388.43	178.70	5666.64	23813.60
155+50.00	437.32	188.38	6103.96	24001.99
156+00.00	424.93	208.80	6528.89	24210.79
156+50.00	365.47	227.76	6894.36	24438.55
157+00.00	240.56	240.28	7134.92	24678.83
157+50.00	128.45	245.44	7263.37	24924.27
158+00.00	89.30	231.81	7352.67	25156.09
158+50.00	109.44	200.78	7462.11	25356.86
159+00.00	121.49	174.09	7583.60	25530.96
159+50.00	120.84	180.29	7704.44	25711.25
160+00.00	91.77	219.06	7796.21	25930.31
160+50.00	93.58	242.46	7889.79	26172.77
161+00.00	114.69	250.17	8004.48	26422.93
161+50.00	120.72	248.11	8125.20	26671.04
162+00.00	118.61	216.81	8243.81	26887.85
162+25.00	61.39	86.62	8305.20	26974.47
163+00.00	101.00	798.04	8406.19	27772.51
163+75.00	10.83	907.55	8417.02	28680.06
164+00.00	15.51	151.37	8432.53	28831.42
164+50.00	78.03	310.80	8510.56	29142.23
165+00.00	79.74	323.88	8590.30	29466.10
165+50.00	50.16	323.72	8640.46	29789.82
166+00.00	24.82	303.52	8665.28	30093.35
166+50.00	1.03	268.16	8666.31	30361.51
167+00.00	54.35	224.43	8720.66	30585.94
167+50.00	126.31	213.40	8846.97	30799.34
168+00.00	138.14	224.45	8985.11	31023.79
168+50.00	168.92	233.11	9154.03	31256.90
169+00.00	200.23	241.37	9354.26	31498.26
169+50.00	149.36	262.88	9503.62	31761.15
170+00.00	94.20	277.06	9597.82	32038.21
170+50.00	110.15	270.19	9707.96	32308.39
171+00.00	156.66	283.29	9864.62	32591.68
171+50.00	169.36	298.24	10033.98	32889.92
172+00.00	161.28	292.22	10195.26	33182.14
172+50.00	184.79	270.47	10380.05	33452.62

Total Volume Table
CHANKAHDA TR

Station	Fill Volume	Cut Volume	Cumulative Fill Vol	Cumulative Cut Vol
173+15.00	136.35	533.58	10516.40	33986.20
173+75.00	0.00	582.87	10516.40	34569.07
174+00.00	0.00	218.75	10516.40	34787.82
174+50.00	0.05	558.04	10516.45	35345.87
174+80.00	0.46	414.11	10516.91	35759.98
175+50.00	1.00	1227.15	10517.90	36987.13
176+00.00	0.00	919.61	10517.90	37906.74
176+70.00	14.81	889.26	10532.71	38796.00
177+00.00	6.35	243.28	10539.06	39039.28
177+50.00	0.00	322.90	10539.06	39362.17
178+00.00	15.01	275.75	10554.07	39637.93
178+50.00	24.77	286.47	10578.84	39924.40
179+00.00	9.76	344.72	10588.60	40269.12
179+50.00	4.84	521.31	10593.44	40790.43
180+00.00	4.84	863.82	10598.29	41654.25
180+50.00	0.00	1034.66	10598.29	42688.91
180+78.34	0.00	481.45	10598.29	43170.36
181+00.00	0.00	271.88	10598.29	43442.23
181+50.00	0.00	490.40	10598.29	43932.63
182+00.00	0.20	406.09	10598.48	44338.72
182+50.00	43.79	362.81	10642.27	44701.52
183+00.00	159.51	324.86	10801.78	45026.39
183+50.00	211.15	301.13	11012.93	45327.51
184+00.00	172.38	283.09	11185.31	45610.60
184+50.00	86.02	277.68	11271.33	45888.28
185+10.00	10.65	576.68	11281.98	46464.97
185+75.00	21.69	635.50	11303.68	47100.47
186+00.00	17.48	149.32	11321.16	47249.79
186+50.00	44.88	316.78	11366.04	47566.57
187+00.00	57.41	354.36	11423.44	47920.93
187+50.00	75.32	369.22	11498.77	48290.15
188+00.00	87.31	353.60	11586.08	48643.74
188+50.00	70.52	336.72	11656.60	48980.47
189+00.00	45.30	334.47	11701.90	49314.94
189+50.00	27.19	349.87	11729.10	49664.80
189+75.00	8.97	176.53	11738.06	49841.33
190+00.00	8.36	159.06	11746.42	50000.39
190+50.00	22.83	256.96	11769.26	50257.35
191+00.00	64.18	221.37	11833.44	50478.72
191+50.00	99.95	237.36	11933.38	50716.09
192+00.00	101.00	275.93	12034.38	50992.02
192+50.00	98.01	306.13	12132.39	51298.14
193+00.00	113.34	317.50	12245.74	51615.64
193+50.00	127.41	319.02	12373.15	51934.65
194+00.00	117.22	342.05	12490.37	52276.70
194+50.00	154.19	364.21	12644.56	52640.92
195+00.00	151.38	340.89	12795.94	52981.80
195+40.00	60.53	231.13	12856.46	53212.94
196+00.00	27.00	598.45	12883.47	53811.38
196+50.00	6.20	515.19	12889.67	54326.58
197+00.00	31.77	263.25	12921.44	54589.83
197+50.00	43.57	220.62	12965.01	54810.46
198+00.00	21.95	204.39	12986.96	55014.85
198+50.00	3.95	352.53	12990.91	55367.38
199+00.00	0.00	504.93	12990.91	55872.31
199+50.00	0.00	448.25	12990.91	56320.56
200+00.00	0.32	314.02	12991.22	56634.58
200+50.00	5.49	245.92	12996.71	56880.50

Total Volume Table
CHANKAHDA TR

Station	Fill Volume	Cut Volume	Cumulative Fill Vol	Cumulative Cut Vol
201+00.00	87.89	252.00	13084.61	57132.49
201+50.00	111.25	255.63	13195.85	57388.13
202+00.00	56.99	260.38	13252.84	57648.51
202+50.00	61.96	264.69	13314.80	57913.20
203+00.00	66.92	320.47	13381.72	58233.67
203+50.00	67.92	359.23	13449.65	58592.89
204+00.00	63.01	318.58	13512.66	58911.47
204+50.00	48.33	287.56	13560.99	59199.03
205+00.00	38.81	263.80	13599.79	59462.83
205+50.00	52.76	229.89	13652.55	59692.73
206+00.00	90.38	213.51	13742.94	59906.23
206+50.00	136.01	201.61	13878.95	60107.85
207+00.00	178.02	182.38	14056.97	60290.23
207+50.00	219.44	148.45	14276.41	60438.68
208+00.00	297.16	103.10	14573.57	60541.78
210+50.00	979.43	726.85	15553.00	61268.63
211+00.00	19.68	222.93	15572.68	61491.56
211+50.00	0.74	240.77	15573.42	61732.33
212+00.00	3.28	247.22	15576.71	61979.54
212+50.00	8.66	251.09	15585.36	62230.63
213+00.00	7.80	296.96	15593.17	62527.59
213+50.00	7.34	381.22	15600.51	62908.81
214+00.00	15.00	408.84	15615.50	63317.64
214+50.00	37.77	341.57	15653.27	63659.22
215+00.00	39.44	291.74	15692.71	63950.95
215+50.00	28.36	279.59	15721.07	64230.54
216+00.00	36.81	263.23	15757.88	64493.77
216+50.00	42.74	257.84	15800.62	64751.61
217+00.00	33.95	255.69	15834.57	65007.29
217+50.00	15.00	271.06	15849.57	65278.35
218+00.00	5.27	307.29	15854.85	65585.64
218+50.00	3.95	407.87	15858.80	65993.51
219+00.00	2.86	245.04	15861.66	66238.55

No.	Date	Revisions	App.

DRAWING NAME: CHANKAHDA_PH3_EathWork

DESIGNED BY:	JWB
DRAWN BY:	JWB
CHECKED BY:	CBL
DATE:	11/04/2024
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: 11/04/2024 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.	

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	39.51	391.87	39.51	391.87
1+00.00	65.10	340.67	104.61	732.54
1+50.00	303.91	122.56	408.52	855.10

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	35.41	144.11	35.41	144.11
1+00.00	136.51	138.49	171.92	282.60
1+40.00	92.19	106.08	264.11	388.68

Total Volume Table
SB TEAKWOOD 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	219.80	0.00	219.80
1+00.00	0.00	383.00	0.00	602.80
3+55.00	227.65	1422.69	227.65	2025.49
4+00.00	62.33	165.88	289.97	2191.37
4+24.43	0.00	74.49	289.97	2265.86

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	73.70	17.05	73.70	17.05
1+00.00	73.20	17.26	146.90	34.31
1+50.00	79.78	17.45	226.68	51.76
2+00.00	41.50	49.58	268.17	101.34
2+50.00	0.00	61.87	268.17	163.21
3+00.00	0.00	35.47	268.17	198.68
3+50.00	1.08	23.51	269.25	222.19
4+00.00	4.19	17.49	273.44	239.69
4+50.00	6.46	17.73	279.90	257.42
5+00.00	4.01	26.81	283.91	284.23
5+50.00	3.94	33.60	287.85	317.83
6+00.00	3.40	38.72	291.25	356.55
6+50.00	0.00	22.17	291.25	378.72

No.	Date	Revisions	App.

DRAWING NAME: CHANKAHDA_PH3_EathWork
DESIGNED BY: JWB
DRAWN BY: JWB
CHECKED BY: CBL
DATE: 11/04/2024
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: 11/04/2024 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
348

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+88.64 - 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+13.73		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	-	128.44	LT	FIBER OPTIC			X	
CHANKAHDA TR	131+24.70 - 130+92.28	47.90	LT	-	56.87	RT	FIBER OPTIC		X		
CHANKAHDA TR	130+92.28 - 130+95.35	56.87	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	

COMMUNICATIONS - COMCAST

ALIGNMENT	STATION	OFFSET					ITEM	ADJUST	RELOCATE	LEAVE AS IS	NOTES/REMARKS
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+53.38	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+87.21 - 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		63.09			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		7.42			LT	HAND HOLE		X		
CHANKAHDA TR	209+54.00 - 213+15.65	11.66	LT	-	38.02	RT	FIBER OPTIC		X		
CHANKAHDA TR	212+59.89		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+69.46		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+89.97	33.78	LT	-	66.34	LT	FIBER OPTIC			X	
CHANKAHDA TR	219+89.97 - 219+92.05	66.34	LT	-	75.42	LT	FIBER OPTIC			X	
CHANKAHDA TR	219+94.04		70.90			LT	PEDESTAL			X	
CHANKAHDA TR	219+92.05 - 220+13.37	75.42	LT	-	180.90	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 COMCAST.

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	

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 MCI.

COMMUNICATIONS - ARVIG

ALIGNMENT	STATION	OFFSET					ITEM	ADJUST	RELOCATE	LEAVE AS IS	NOTES/REMARKS
CHANKAHDA TR	113+95.92 - 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 - 208+29.67	41.11	LT	-	50.71	LT	FIBER OPTIC		X		
CHANKAHDA TR	208+28.86		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+89.57 - 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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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			

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No.	Date	Revisions	App.

DRAWING NAME: CHANKAHDA_PH3_ExUtilTabs.dwg

DESIGNED BY:	JWB
DRAWN BY:	RGS
CHECKED BY:	CBL
DATE:	11/04/2024
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: 11/04/2024 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 / 348

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+25.50	55.93	RT	-	38.26	RT		FIBER OPTIC		X		
CHANKAHDA TR	196+25.50	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+34.97	76.08	LT	-	67.52	RT		FIBER OPTIC			X	
CHANKAHDA TR	115+34.97	115+60.97	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	149+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	-	38.34	RT		FIBER OPTIC			X	
CHANKAHDA TR	149+15.57	149+19.26	38.34	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		

COMMUNICATIONS - LUMEN

ALIGNMENT	STATION		OFFSET						ITEM	ADJUST	RELOCATE	LEAVE AS IS	NOTES/REMARKS
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			
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	46.63	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+54.25		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+59.86	20.67	LT	-	18.27	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	28.87	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		39.87				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+38.78	46.87	LT	-	42.53	LT		FIBER OPTIC		X		
CHANKAHDA TR	195+38.78	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:
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GAS - CENTERPOINT ENERGY

ALIGNMENT	STATION		OFFSET						ITEM	ADJUST	RELOCATE	LEAVE AS IS	NOTES/REMARKS
CHANKAHDA TR	113+98.75	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+33.12	13.26	RT	-	100.00	RT		GAS			X	
CHANKAHDA TR	131+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+73.46	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+39.79	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	384+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	-	68.95	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	-	107.12	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+28.67	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+85.68	219+87.17	27.25	LT	-	23.45	LT		GAS			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:	11/04/2024
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: 11/04/2024 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 / 348

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		

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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+78.14 - 115+14.24	258.55	LT	-	42.40	LT	PVC			X	
CHANKAHDA TR	115+30.50 - 115+10.75	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+30.66		42.81			LT	GATE VALVE			X	
CHANKAHDA TR	117+35.87		54.92			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		90.32			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+33.41	40.87	LT	-	36.17	LT	PVC	X			
CHANKAHDA TR	122+14.01		36.78			LT	GATE VALVE	X			
CHANKAHDA TR	122+33.41 - 122+35.36	36.17	LT	-	102.29	LT	PVC	X			
CHANKAHDA TR	122+34.00		35.98			LT	GATE VALVE	X			
CHANKAHDA TR	122+34.45 - 122+54.49	71.54	LT	-	70.57	LT	PVC			X	
CHANKAHDA TR	122+52.30		71.06			LT	GATE VALVE			X	
CHANKAHDA TR	122+54.49		70.57			LT	HYDRANT			X	
CHANKAHDA TR	122+35.36 - 122+33.99	102.29	LT	-	174.35	LT	PVC	X			
CHANKAHDA TR	122+33.41 - 123+30.73	36.17	LT	-	34.11	LT	PVC	X			
CHANKAHDA TR	123+30.73 - 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+72.55	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+29.26		40.14			LT	HYDRANT		X		
CHANKAHDA TR	128+59.33 - 130+62.53	30.71	LT	-	36.42	LT	PVC	X			
CHANKAHDA TR	130+61.53 - 131+45.61	36.42	LT	-	35.58	LT	PVC	X			
CHANKAHDA TR	131+45.61		35.58			LT	GATE VALVE	X			
CHANKAHDA TR	131+45.61 - 132+46.69	35.58	LT	-	38.30	LT	PVC	X			
CHANKAHDA TR	132+30.64 - 131+61.07	95.32	RT	-	165.32	RT	PVC			X	
CHANKAHDA TR	132+54.47 - 131+59.64	27.76	LT	-	95.32	RT	PVC			X	
CHANKAHDA TR	132+59.09 - 131+82.17	92.37	RT	-	81.37	RT	PVC			X	
CHANKAHDA TR	131+79.73		80.91			RT	GATE VALVE			X	
CHANKAHDA TR	131+82.17		82.37			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	144.97	LT	-	74.81	LT	PVC	X			
CHANKAHDA TR	132+51.57 - 131+58.84	79.56	LT	-	81.08	LT	PVC			X	
CHANKAHDA TR	131+56.96		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		56.51			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 - 141+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			

WATERMAIN - CITY OF PLYMOUTH

ALIGNMENT	STATION	OFFSET					ITEM	ADJUST	REMOVE	LEAVE AS IS	NOTES/REMARKS
CHANKAHDA TR	140+42.16		67.89			LT	GATE VALVE	X			
CHANKAHDA TR	140+87.37 - 141+10.69	49.28	LT	-	72.55	LT	PVC	X			
CHANKAHDA TR	140+97.89		59.82			LT	GATE VALVE	X			
CHANKAHDA TR	141+10.69 - 141+07.77	72.55	LT	-	142.22	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	-	41.64	RT	PVC	X			
CHANKAHDA TR	162+96.42		41.64			RT	GATE VALVE	X			
CHANKAHDA TR	162+96.42 - 163+19.70	41.64	RT	-	137.71	LT	PVC	X			
CHANKAHDA TR	163+14.86		84.61			LT	GATE VALVE	X			
CHANKAHDA TR	163+16.41 - 167+55.67	96.21	LT	-	43.73	LT	PVC	X			
CHANKAHDA TR	167+55.67 - 167+85.25	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	-	28.08	LT	PVC	X			
CHANKAHDA TR	168+75.31		31.82			LT	GATE VALVE		X		
CHANKAHDA TR	168+81.74 - 168+82.00	26.82	LT	-	36.13	LT	PVC		X		
CHANKAHDA TR	168+82.58		34.70			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	-	30.73	LT	PVC	X			
CHANKAHDA TR	168+92.51		37.13			LT	GATE VALVE		X		
CHANKAHDA TR	168+42.16 - 169+18.41	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+31.86	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+34.93	25.85	LT	-	131.16	LT	PVC	X			
CHANKAHDA TR	173+36.03		29.91			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		39.81			LT	HYDRANT		X		
CHANKAHDA TR	173+36.51 - 174+33.35	25.85	LT	-	22.53	LF	PVC	X			
CHANKAHDA TR	174+33.35 - 176+16.54	22.53	LF	-	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	LF	-	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+69.30	33.23	LF	-	33.89	LT	PVC	X			
CHANKAHDA TR	178+69.30 - 179+79.52	33.89	LF	-	25.37	LT	PVC	X			
CHANKAHDA TR	179+79.52 - 180+58.19	25.37	LF	-	30.12	LT	PVC	X			
CHANKAHDA TR	180+58.19 - 180+61.31	20.12	LF	-	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	LF	-	33.47	LT	PVC	X			
CHANKAHDA TR	182+17.14 - 183+61.99	33.47	LF	-	36.04	LT	PVC	X			
CHANKAHDA TR	183+61.99 - 183+98.07	36.04	LF	-	34.47	LT	PVC	X			
CHANKAHDA TR	183+98.07 - 184+75.87	34.47	LF	-	34.77	LT	PVC	X			
CHANKAHDA TR	184+75.87 - 185+17.96	34.77	LF	-	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	LF	-	37.75	LT	PVC	X			
CHANKAHDA TR	185+24.63 - 185+22.17	60.32	LF	-	63.48	RT	DIP		X		
CHANKAHDA TR	185+22.43		48.37			RT	GATE VALVE	X			
CHANKAHDA TR	185+38.53 - 185+22.39	39.63	RT	-	39.14	RT	PVC		X		
CHANKAHDA TR	185+38.53		39.63			RT	HYDRANT		X		
CHANKAHDA TR	185+24.04		33.67			LT	GATE VALVE	X			
CHANKAHDA TR	185+17.96 - 185+55.31	36.48	LF	-	37.75	LT	PVC	X			
CHANKAHDA TR	185+24.58 - 185+36.99	65.34	LF	-	65.35	LT	PVC	X			
CHANKAHDA TR	185+35.99		65.35			LT	HYDRANT	X			
CHANKAHDA TR	185+55.31 - 186+04.10	37.75	LF	-	38.63	LT	PVC	X			
CHANKAHDA TR	186+04.10 - 188+50.01	38.63	LF	-	32.84	LT	PVC	X			
CHANKAHDA TR	188+50.01 - 189+51.87	32.84	LF	-	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	LF	-	32.24	LT	PVC	X			
CHANKAHDA TR	191+25.43 - 192+29.64	32.24	LF	-	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		45.27			LT	GATE VALVE		X		
CHANKAHDA TR	195+64.84 - 195+62.70	42.22	LF	-	100.00	RT	PVC		X		
CHANKAHDA TR	195+63.40		56.73			RT	GATE VALVE	X			
CHANKAHDA TR	195+80.02 - 196+00.89	41.33	LF	-	41.20	LT	PVC	X			
CHANKAHDA TR	195+94.80		45.25			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	217.31	LF		48.43	LT	PVC	X			
CHANKAHDA TR	196+00.89 - 196+71.31	41.20	LF	-	39.71	LT	PVC	X			
CHANKAHDA TR	196+71.31 - 197+11.88	39.71	LF	-	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	-	37.10	LT	PVC	X			
CHANKAHDA TR	197+34.12 - 197+65.34	37.10	LF	-	24.12	LT	PVC	X			
CHANKAHDA TR	197+65.34 - 198+36.17	24.12	LT	-	19.29	LT	PVC		X		

WATERMAIN - CITY OF PLYMOUTH

ALIGNMENT	STATION	OFFSET					ITEM	ADJUST	REMOVE	LEAVE AS IS	NOTES/REMARKS
CHANKAHDA TR	198+36.17 - 200+37.84	19.25	LT	-	34.87	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+60.14	29.20	LT	-	30.13	LT	PVC		X		
CHANKAHDA TR	202+08.89		52.48			RT	GATE VALVE			X	
CHANKAHDA TR	202+60.14 - 203+85.20	30.13	LT	-	31.72	LT	PVC		X		
CHANKAHDA TR	203+85.20 - 205+11.38	31.72	LT	-	29.10	LT	PVC		X		
CHANKAHDA TR	205+11.38 - 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		
CHANKAHDA TR	205+61.60 - 208+57.78	29.96	LT	-	69.13	LT	PVC		X		
CHANKAHDA TR	208+57.78		69.13			LT	GATE VALVE		X		
CHANKAHDA TR	208+57.78 - 208+22.45	69.13	LT	-	240.05	LT	PVC		X		
CHANKAHDA TR	208+22.45 - 210+55.10	240.05	LT	-	220.99	LT	PVC		X		
CHANKAHDA TR	210+55.10 - 210+84.18	220.99	LT	-	232.49	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+84.67	225.77	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 - 210+56.32	254.72	LT	-	236.20	LT	PVC		X		
CHANKAHDA TR	210+56.32		236.20			LT	GATE VALVE			X	
CHANKAHDA TR	208+21.43 - 208+20.85	254.72	LT	-	263.23	LT	PVC	X			
CHANKAHDA TR	208+20.85 - 208+13.31	263.23	LT	-	340.95	LT	PVC	X			
CHANKAHDA TR	208+13.31 - 208+09.56	340.95	LT	-	371.54	LT	PVC	X			
CHANKAHDA TR	208+57.78 - 209+92.17	69.13	LT	-	67.83	LT	PVC	X			
CHANKAHDA TR	209+67.88 - 209+62.68	90.55	LT	-	67.99	LT	PVC	X			
CHANKAHDA TR	209+62.68		67.99			LT	GATE VALVE	X			
CHANKAHDA TR	209+62.68 - 209+28.35	67.99	LT	-	43.18	RT	PVC	X			
CHANKAHDA TR	209+34.30		27.31			LT	GATE VALVE	X			
CHANKAHDA TR	209+28.35 - 209+27.78	43.18	RT	-	113.69	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	-	86.66	LT	PVC	X			
CHANKAHDA TR	211+87.43 - 211+88.62	86.66	LT	-	45.75	LT	PVC	X			
CHANKAHDA TR	211+88.62		45.75			LT	GATE VALVE	X			
CHANKAHDA TR	211+87.43 - 215+50.80	86.66	LT	-	99.39	LT	PVC	X			
CHANKAHDA TR	215+50.80 - 215+82.84	99.39	LT	-	80.82	LT	PVC	X			
CHANKAHDA TR	215+82.84 - 215+62.63	80.81	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+25.19	71.79	LT	-	9.12	LT	PVC	X			
CHANKAHDA TR	216+25.19 - 216+89.41	9.12	LT	-	7.70	LT	PVC	X			
CHANKAHDA TR	216+89.41 - 218+22.33	7.76	LT	-	6.28	LT	PVC	X			
CHANKAHDA TR	218+22.33 - 218+85.00	6.28	LT	-	5.31	LT	PVC	X			
CHANKAHDA TR	218+86.54 - 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 - 219+09.91	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.

No.	Date	Revisions	App.

DRAWING NAME: CHANKAHDA_PH3_ExUtilTabs.dwg

DESIGNED BY:	JWB
DRAWN BY:	RGS
CHECKED BY:	CBL
DATE:	11/04/2024
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: 11/04/2024 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 / 348

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	56.83 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 - 41.15	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	
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+39.96 - 126+39.28	86.03 LT - 105.57	LT	HDPE			X	
CHANKAHDA TR	125+39.18	105.57	LT	FLARED END			X	
CHANKAHDA TR	126+28.14 - 126+32.56	86.57 RT - 70.14	RT	RCP			X	
CHANKAHDA TR	125+32.56	70.14	RT	CATCH BASIN	X			
CHANKAHDA TR	126+32.56 - 126+88.90	70.14 RT - 67.85	LT	RCP	X			
CHANKAHDA TR	126+68.90	67.85	LT	MANHOLE	X			
CHANKAHDA TR	126+68.90 - 126+73.14	67.85 LT - 84.31	LT	RCP			X	
CHANKAHDA TR	128+62.05	92.70	RT	FLARED END			X	
CHANKAHDA TR	130+36.26 - 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	62.25 RT - 74.32	RT	RCP	X			
CHANKAHDA TR	132+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	133+55.77	53.26	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	68.36	RT	CATCH BASIN			X	
CHANKAHDA TR	144+18.68	61.32	RT	CATCH BASIN	X			
CHANKAHDA TR	151+74.72	57.98	LT	CATCH BASIN			X	
CHANKAHDA TR	151+56.17	69.41	LT	CATCH BASIN			X	
CHANKAHDA TR	152+60.86	78.82	LT	FLARED END			X	
CHANKAHDA TR	156+22.53	51.51	RT	FLARED END		X		
CHANKAHDA TR	156+22.53 - 156+03.12	51.51 RT - 49.89	LT	RCP		X		
CHANKAHDA TR	158+03.12	49.89	LT	FLARED END		X		
CHANKAHDA TR	157+63.99 - 158+36.54	103.86 RT - 54.74	RT	RCP			X	
CHANKAHDA TR	158+36.54	54.74	RT	CATCH BASIN			X	
CHANKAHDA TR	158+36.54 - 159+26.89	54.74 RT - 119.62	RT	RCP			X	
CHANKAHDA TR	162+30.48	47.79	RT	FLARED END		X		
CHANKAHDA TR	162+30.48 - 162+88.54	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 - 100.78	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	39.26 RT - 36.51	LT	RCP		X		
CHANKAHDA TR	164+36.64	36.51	LT	CATCH BASIN		X		
CHANKAHDA TR	164+56.64 - 164+55.38	36.51 LT - 86.09	LT	RCP		X		
CHANKAHDA TR	164+55.38	86.09	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	44.22	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		

STORM SEWER - CITY OF PLYMOUTH

ALIGNMENT	STATION	OFFSET		ITEM	ADJUST	REMOVE	LEAVE AS IS	NOTES/REMARKS
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+41.96	53.4 RT - 52.20	RT	CMP	X			
CHANKAHDA TR	173+43.96	52.20	RT	FLARED END	X			
CHANKAHDA TR	176+37.30	38.89	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		
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+19.01 - 184+99.57	132.89 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+24.20 - 187+24.06	49.53 RT - 49.90	RT	RCP			X	
CHANKAHDA TR	187+24.06	49.90	RT	MANHOLE			X	
CHANKAHDA TR	187+24.06 - 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+66.35	41.14	RT	FLARED END	X			
CHANKAHDA TR	192+11.00	46.50	RT	FLARED END	X			
CHANKAHDA TR	192+52.34 - 192+11.00	67.21 RT - 46.50	RT	RCP	X			
CHANKAHDA TR	192+12.34	67.31	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+72.23	66.86	LT	CATCH BASIN	X			
CHANKAHDA TR	195+72.13 - 195+50.56	66.86 LT - 144.42	LT	RCP	X			
CHANKAHDA TR	195+58.58	53.41	RT	FLARED END	X			
CHANKAHDA TR	195+58.58 - 195+77.35	53.41 RT - 59.43	RT	HDPE	X			
CHANKAHDA TR	195+77.35	59.63	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+30.51 - 196+09.00	185.8 RT - 59.22	RT	HDPE	X			
CHANKAHDA TR	196+09.00 - 196+30.34	59.2) RT - 53.23	RT	HDPE	X			
CHANKAHDA TR	196+30.34	53.23	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 - 10.69	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+12.88	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	209+96.38	77.67	LT	FLARED END		X		
CHANKAHDA TR	209+07.18 - 209+71.45	78.34 LT - 9.02	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		

STORM SEWER - CITY OF PLYMOUTH

ALIGNMENT	STATION	OFFSET		ITEM	ADJUST	REMOVE	LEAVE AS IS	NOTES/REMARKS
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		
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 - 95.65	RT	RCP			X	
CHANKAHDA TR	217+94.78	95.65	RT	FLARED END	X			
CHANKAHDA TR	212+53.37	27.39	RT	FLARED END		X		
CHANKAHDA TR	212+53.37 - 212+82.98	27.38 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	21.85	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+88.28	125.56 RT - 76.81	RT	RCP			X	
CHANKAHDA TR	218+88.28	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	92.06	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+19.90	42.65	LT	FLARED END			X	
CHANKAHDA TR	220+36.14	10.66	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+33.96	28.03	RT	CATCH BASIN			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:	11/04/2024
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: 11/04/2024 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

SANITARY SEWER - CITY OF PLYMOUTH

ALIGNMENT	STATION	OFFSET	ITEM	ADJUST	RECONSTRUCT	REMOVE	LEAVE AS IS	NOTES/REMARKS
CHANKAHDA TR	125+56.32 - 126+50.64	134.96 LT - 71.08 LT	D/P	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	D/P	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	D/P	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	D/P	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	D/P				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	D/P				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	D/P	X				
CHANKAHDA TR	140+83.20 - 140+84.73	119.22 RT - 108.18 LT	D/P				X	
CHANKAHDA TR	140+84.73	108.18 LT	MANHOLE				X	
CHANKAHDA TR	139+23.10	73.49 LT	CLEANOUT				X	
CHANKAHDA TR	143+84.01	76.47 RT	MANHOLE				X	
CHANKAHDA TR	146+03.20	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+31.17 - 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	86.92 RT - 26.66 RT	PVC			X		
CHANKAHDA TR	209+79.50	26.66 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+20.10 - 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+32.20 - 210+35.93	65.74 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+59.19 - 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	215+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	

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POWER - WRIGHT HENNEPIN CO-OP

ALIGNMENT	STATION	OFFSET	ITEM	ADJUST	RELOCATE	LEAVE AS IS	NOTES/REMARKS
CHANKAHDA TR	115+59.22 - 115+11.25	236.44 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+04.06	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	66.63 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	32.95 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+44.61	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+84.54	109.26 LT - 107.68 LT	UNDERGROUND			X	
CHANKAHDA TR	168+84.54 - 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 - 37.10 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	37.10 LT - 38.80 LT	UNDERGROUND	X			
CHANKAHDA TR	185+41.51	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	108.83 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+13.71	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+39.86 - 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 - 625.86 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 - 47.29 RT	UNDERGROUND			X	
CHANKAHDA TR	205+49.42 - 207+11.04	47.29 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 - 313.83 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	48.34 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:	11/04/2024
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: 11/04/2024 MN LIC. NO. 41864

City of Plymouth
CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3

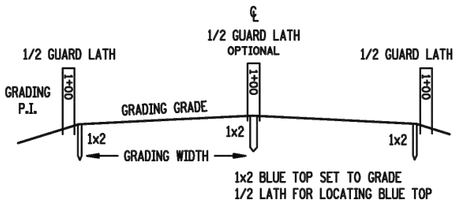
EXISTING UTILITY TABULATION

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

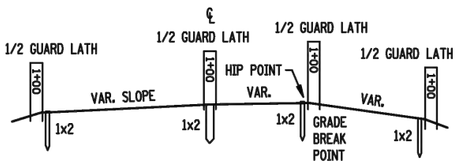
SHEET NO. 13 / 348

BLUE TOPS

NORMAL SECTION

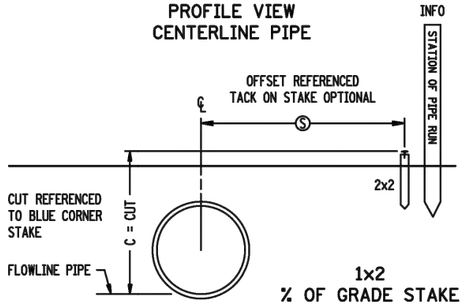


TRANSITION SECTION

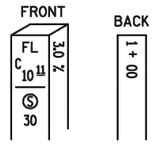


PIPE STAKING

PROFILE VIEW CENTERLINE PIPE

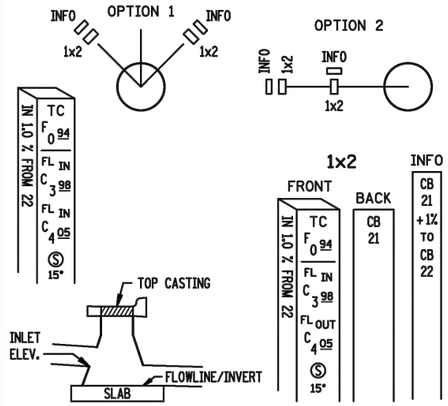


1x2 % OF GRADE STAKE



CATCH BASIN OR MANHOLE (CB/MH)

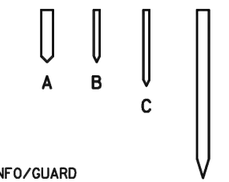
TOP VIEWS



FLOWLINE/INVERT + 0.7'

STANDARD STAKES

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



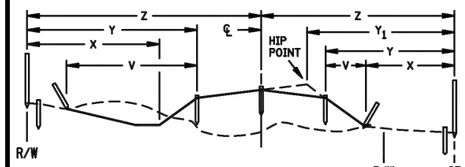
SIZES:
A = 2" X 2" X VAR. REF/INFO/GUARD
B = 1" X 2" X VAR. REF/INFO/GUARD
C = 1" X 2" X VAR. REF
D = LATH INFO/VIS/GUARD
1x2 OR LATH = INFO STAKES

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

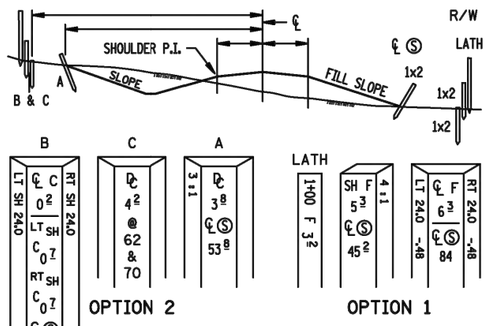
STAKE 'B'

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

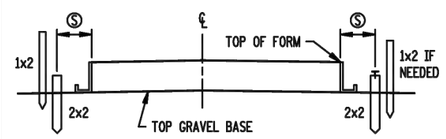
SINGLE ROADWAY - EXAMPLE 'B'



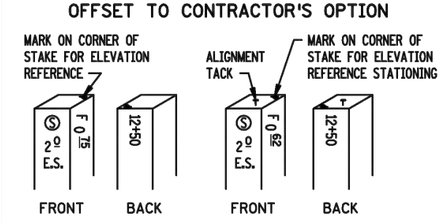
OPTION 2 OPTION 1

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						

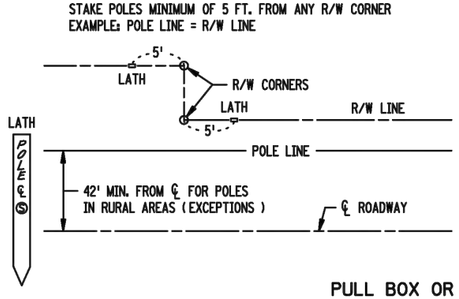
STAKING TOLERANCES (FEET)

	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

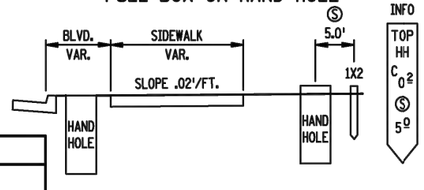
THE TOLERANCES ARE RELATIVE TO PROJECT DATUM

UTILITY (UTIL)

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



PULL BOX OR HAND HOLE

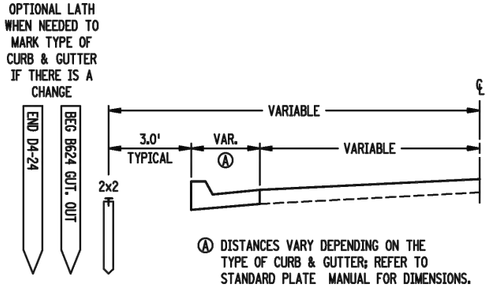


REVISION:

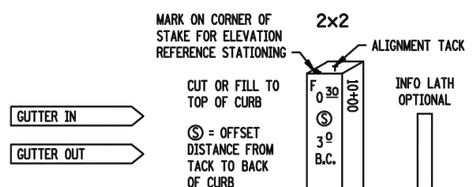
APPROVED: 8-6-2014
DIRECTOR, OFFICE OF LAND MANAGEMENT

CURB & GUTTER (CURB)

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

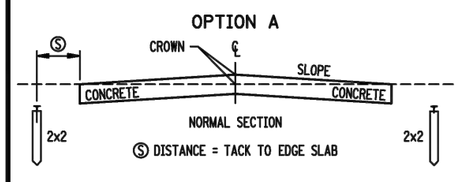


Ⓐ DISTANCES VARY DEPENDING ON THE TYPE OF CURB & GUTTER; REFER TO STANDARD PLATE MANUAL FOR DIMENSIONS.

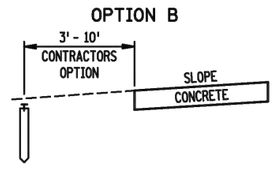


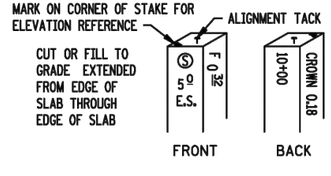
CONCRETE PAVING - SLIP FORM

OPTION A



OPTION B





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:

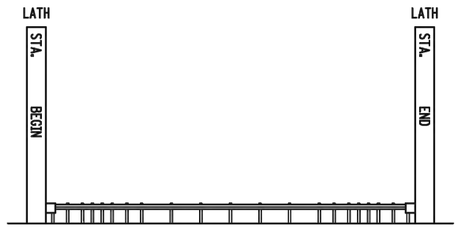
STATE DESIGN ENGINEER

STAKING INFORMATION SHEET

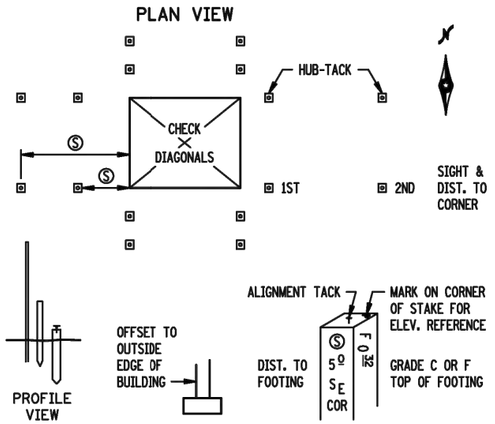
STATE AID PROJ. NO. 155-210-003 C.P.ST240002

SHEET NO. 14 OF 348 SHEETS

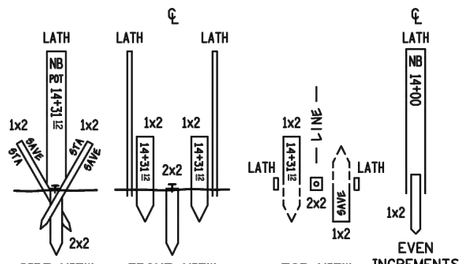
GUARDRAIL (GUARD)



BUILDING (BUILD) FOUNDATION / FOOTING



ALIGNMENT POINTS (ALIGN)



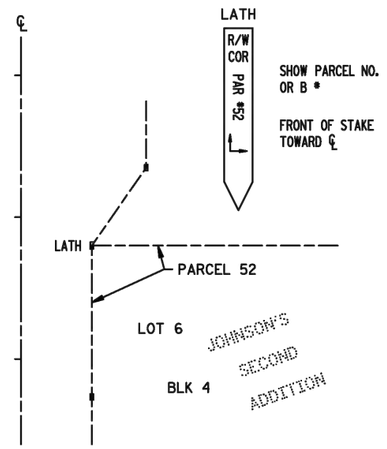
STAKE C = 2" X 2" HUB (LENGTH MAY VARY) SET AS TEMPORARY STAKE. MAY BE REPLACED BY MnDOT MARKER AFTER CONSTRUCTION IS COMPLETED.

SET AT GROUND LEVEL (TEMPORARY CONSTRUCTION STAKE).

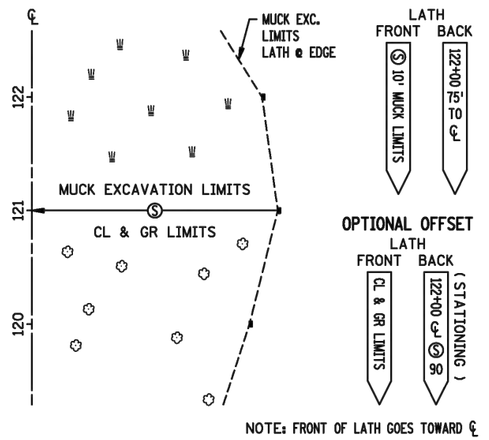
TACK SET AT ALIGNMENT POINTS.

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)

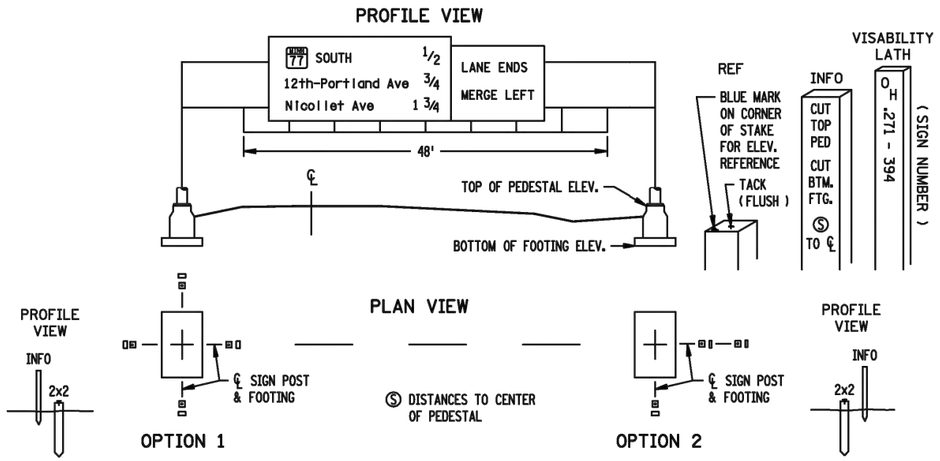


CLEAR & GRUBBING LIMITS (CLEAR) OR MUCK EXCAVATION LIMITS (MUCK)

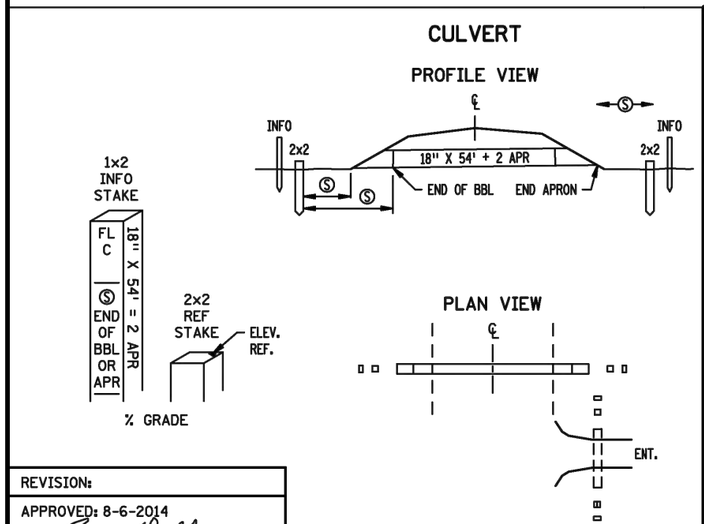


NOTE: FRONT OF LATH GOES TOWARD ℄

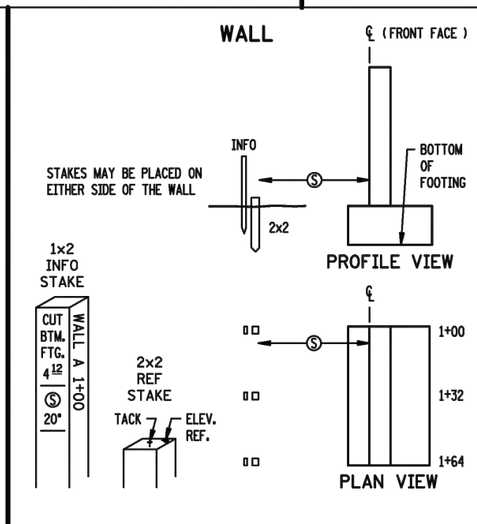
OVERHEAD SIGNS (SIGN)



CULVERT

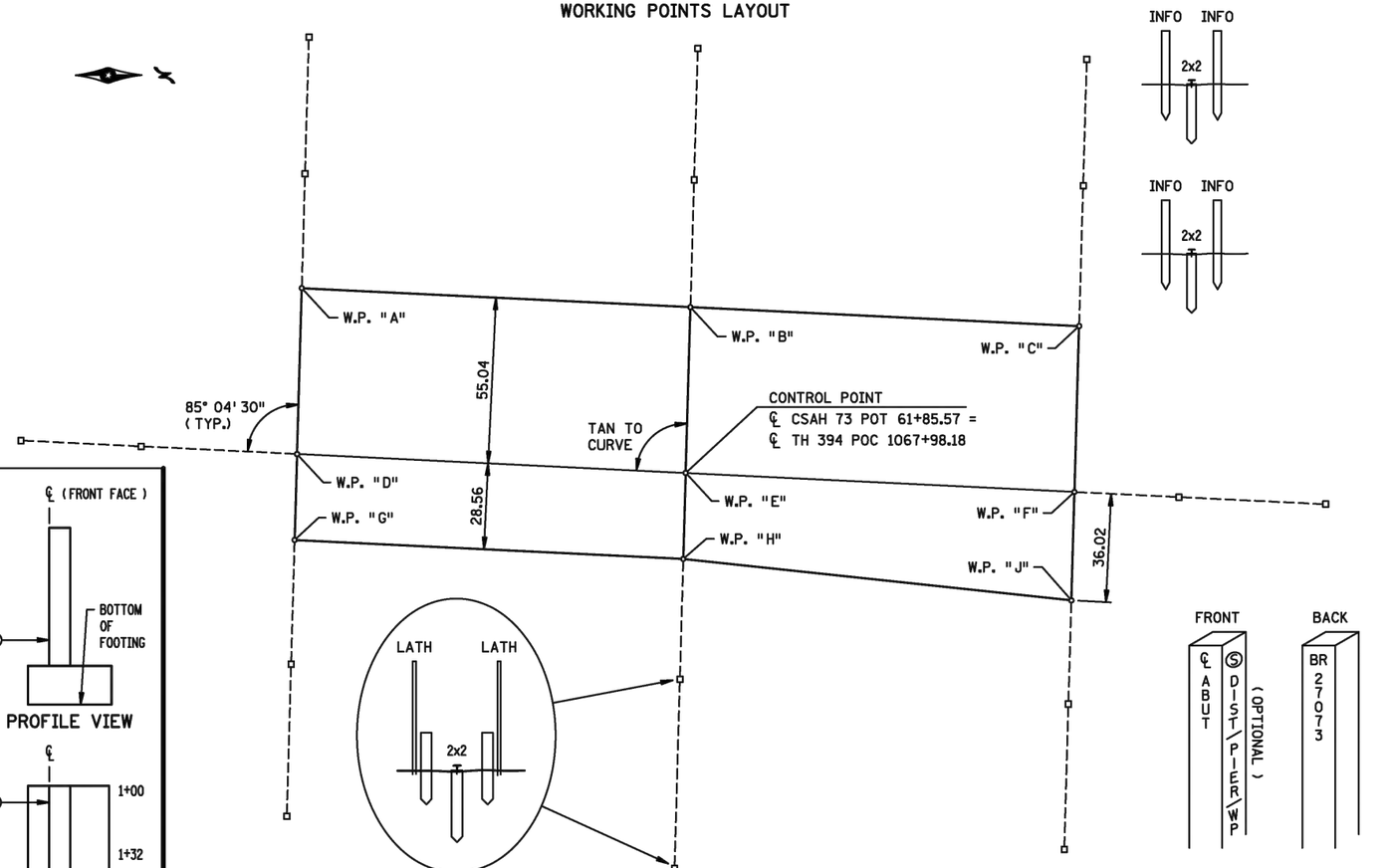


WALL



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

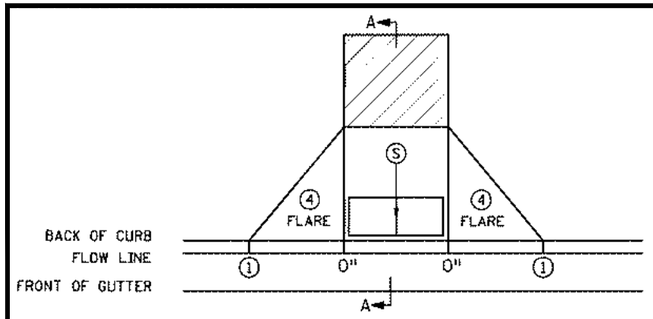
REVISED:

STATE DESIGN ENGINEER

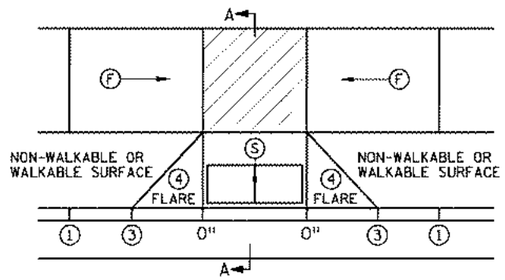
STAKING INFORMATION SHEET

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

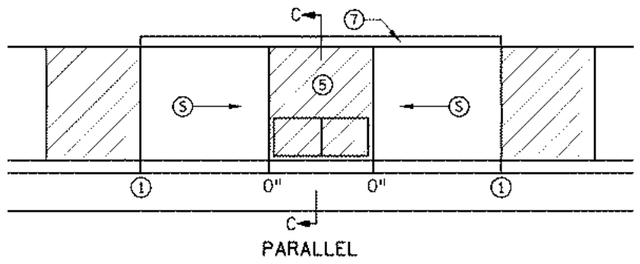
SHEET NO. 15 OF 348 SHEETS



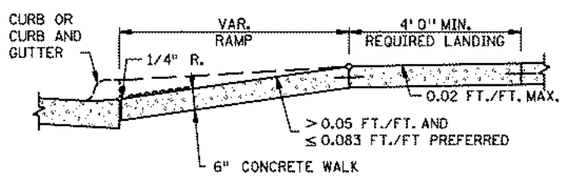
PERPENDICULAR



TIERED PERPENDICULAR

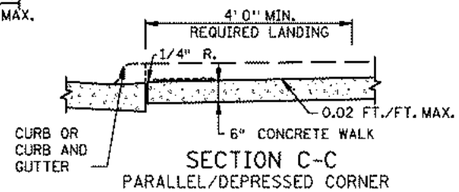


PARALLEL



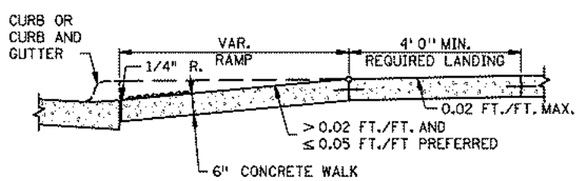
SECTION A-A

PERPENDICULAR/TIERED/DIAGONAL



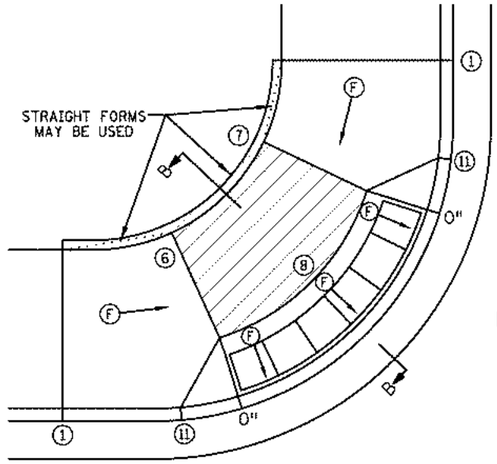
SECTION C-C

PARALLEL/DEPRESSED CORNER

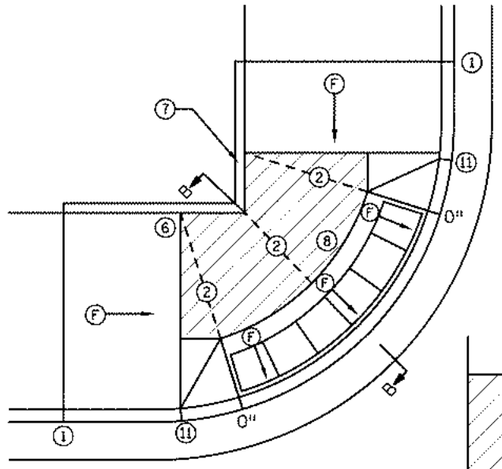


SECTION B-B

FAN

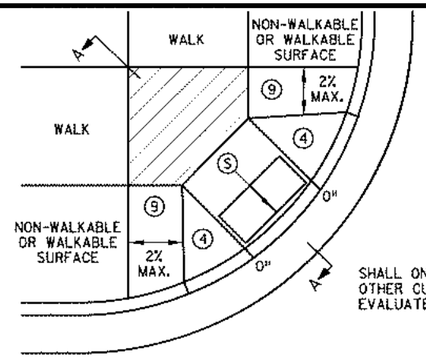


FAN (10)



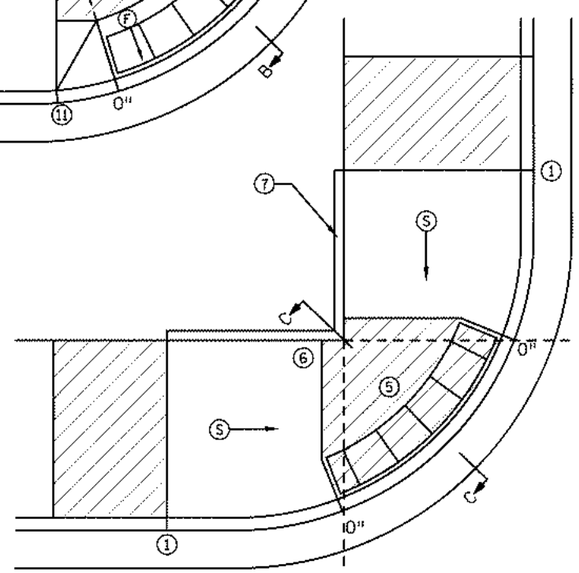
MODIFIED FAN (10)

USED WHEN RIGHT-OF-WAY IS CONSTRAINED



DIAGONAL

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



DEPRESSED CORNER

NOTES:

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

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

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

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

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

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

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

MAINTAIN POSITIVE BOULEVARD DRAINAGE TO TOP OF CURB.

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

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

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

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

(1) MATCH FULL HEIGHT CURB.

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

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

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

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

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

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

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

(9) PAVE FULL WALK WIDTH.

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

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

LEGEND

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

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

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

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

X" CURB HEIGHT

REVISION:

APPROVED: 11-04-2021

JEFFREY PERKINS
OPERATIONS DIVISION

MINNESOTA DEPARTMENT OF TRANSPORTATION

THOMAS STYBRICKI
STATE DESIGN ENGINEER

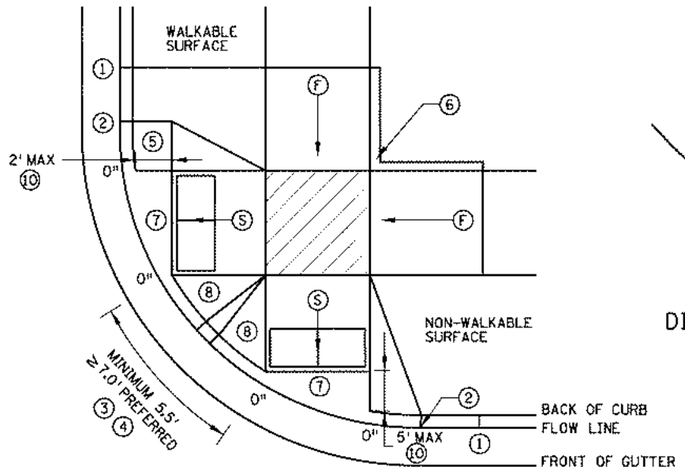
STANDARD PLAN 5-297.250 | 1 OF 6

APPROVED: 11-04-2021

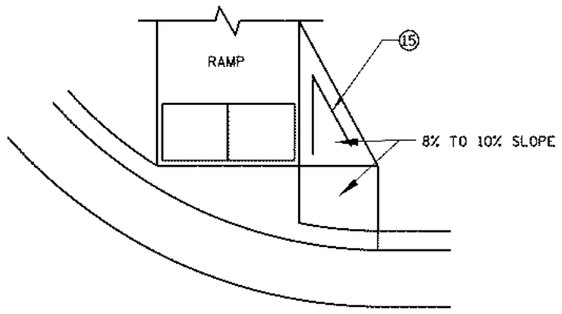
REVISED:

PEDESTRIAN CURB RAMP DETAILS

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

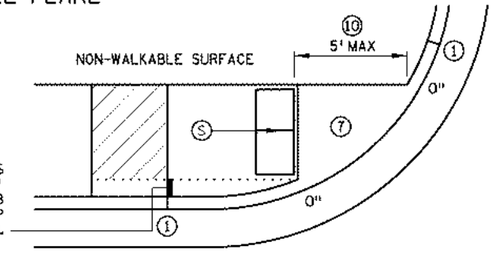


COMBINED DIRECTIONAL

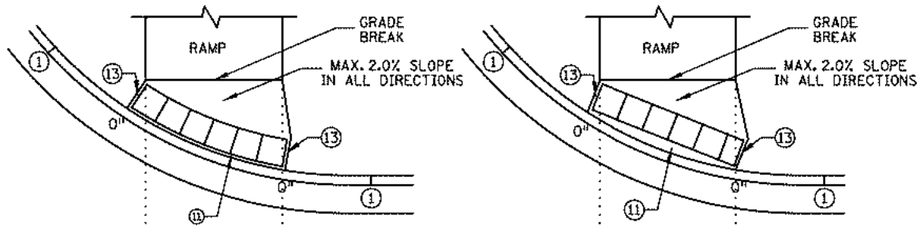


DIRECTIONAL RAMP WALKABLE FLARE

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.

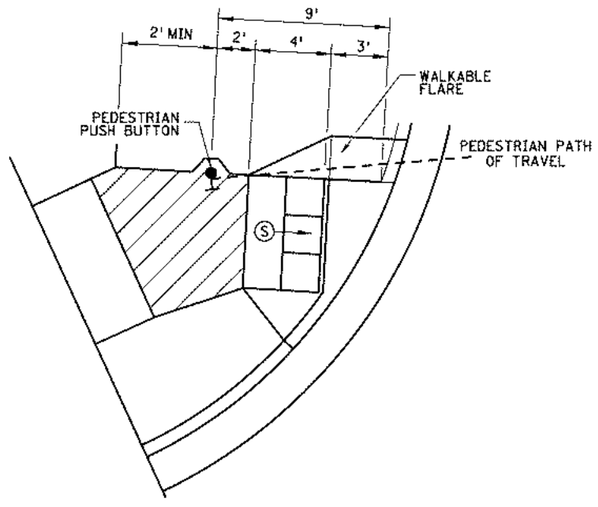


STANDARD ONE-WAY DIRECTIONAL ⑨



DETECTABLE WARNING PLACEMENT WHEN SETBACK CRITERIA IS EXCEEDED ⑫

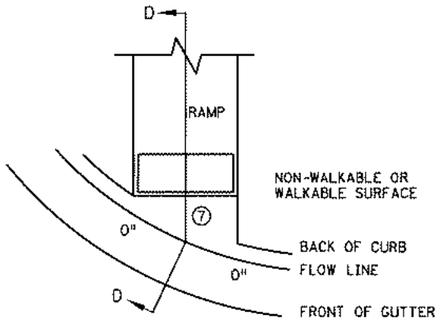
ONE-WAY DIRECTIONAL WITH DETECTABLE WARNING AT BACK OF CURB

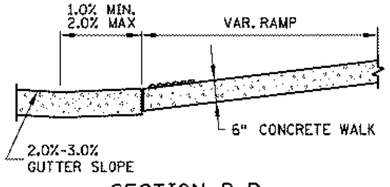


SEMI-DIRECTIONAL RAMP ③④⑨

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
JEFFREY PERKINS
OPERATIONS DIVISION

MINNESOTA DEPARTMENT OF TRANSPORTATION

THOMAS STYRBICKI
STATE DESIGN ENGINEER

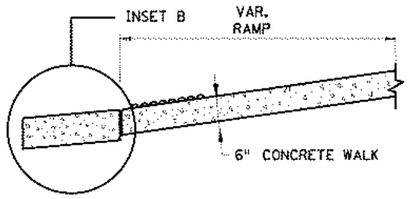
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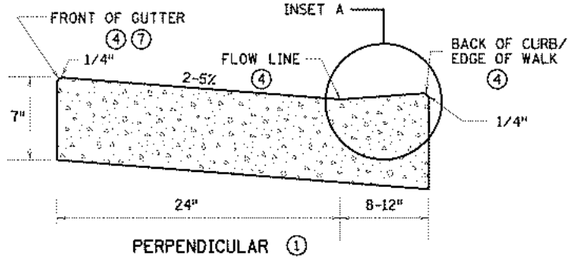
APPROVED: 11-04-2021
REVISED:

PEDESTRIAN CURB RAMP DETAILS

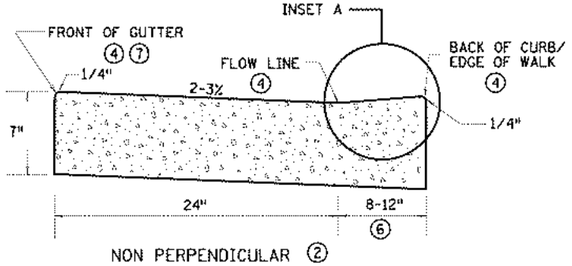
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SHEET NO. 17 OF 348 SHEETS

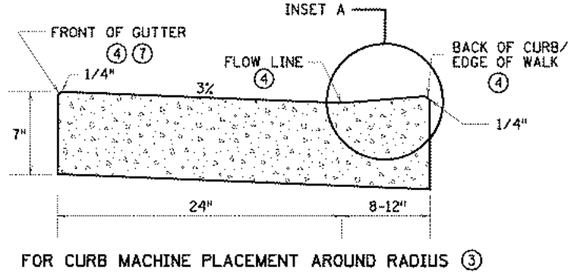




PERPENDICULAR ①

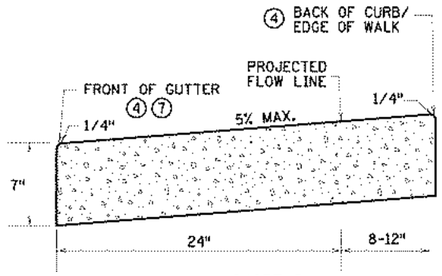


NON PERPENDICULAR ②

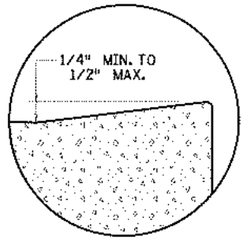


FOR CURB MACHINE PLACEMENT AROUND RADIUS ③
(REGARDLESS OF RAMP TYPE)

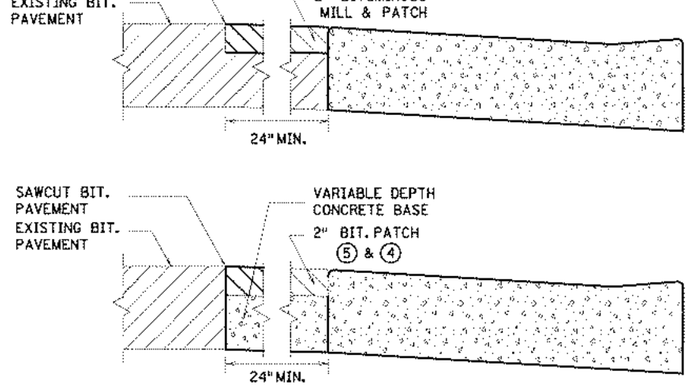
PEDESTRIAN ACCESS ROUTE CURB & GUTTER DETAIL



OUTFLOW GUTTER ⑧



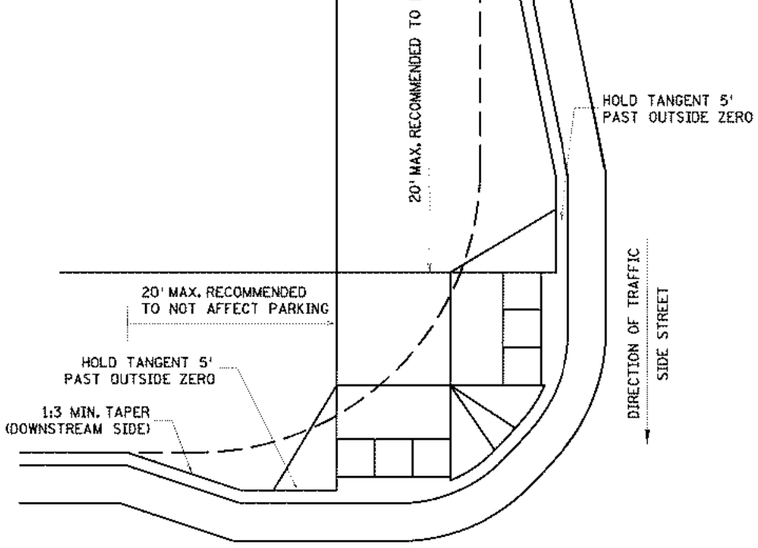
INSET A



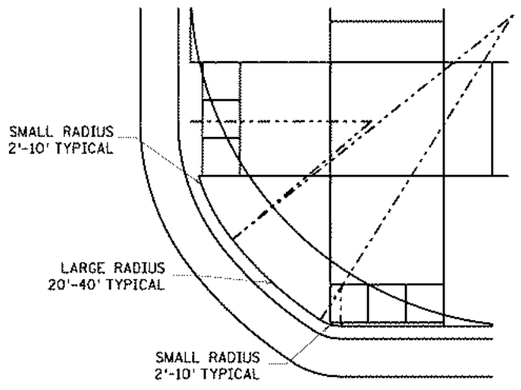
ONLY ALLOWED PER ENGINEER'S APPROVAL

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:

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JEFFREY PERKINS
OPERATIONS DIVISION

MINNESOTA DEPARTMENT OF TRANSPORTATION

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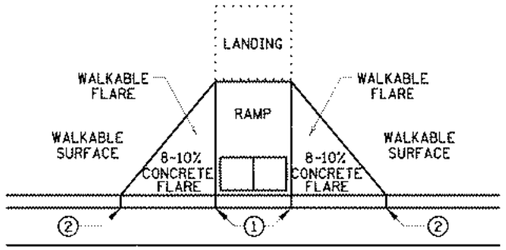
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THOMAS STYBRICKI
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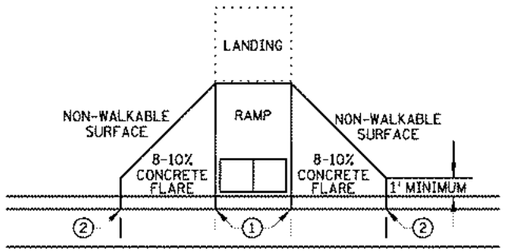
PEDESTRIAN CURB RAMP DETAILS

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

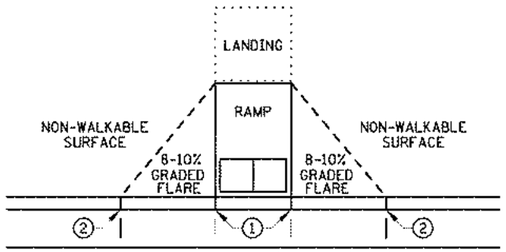
SHEET NO. 18 OF 348 SHEETS



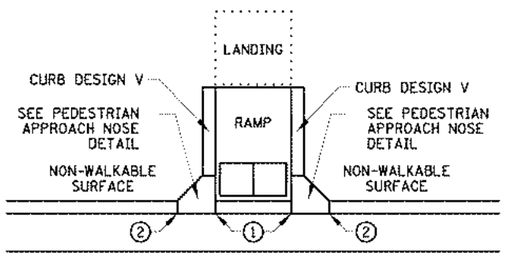
PAVED FLARES
ADJACENT TO WALKABLE SURFACE



PAVED FLARES
ADJACENT TO NON-WALKABLE SURFACE

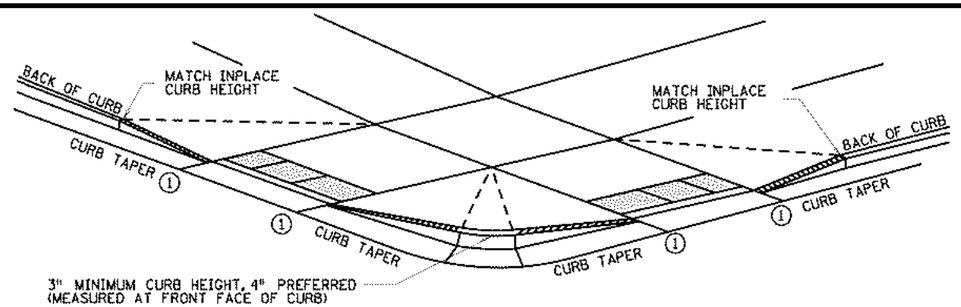


GRADED FLARES

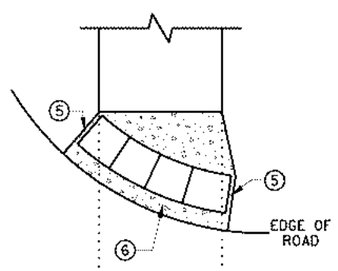


RETURNED CURB ④

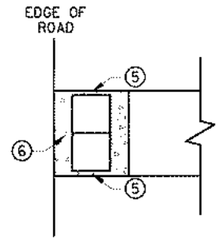
TYPICAL SIDE TREATMENT OPTIONS ③ ⑩



DETECTABLE EDGE WITH ⑦
CURB AND GUTTER

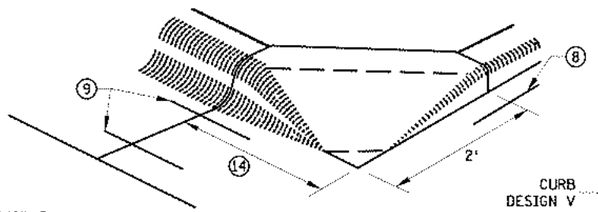


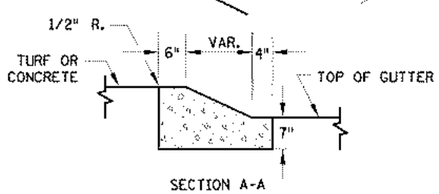
RADIAL DETECTABLE WARNING



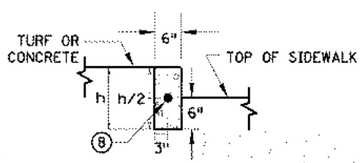
RECTANGULAR DETECTABLE WARNING

DETECTABLE EDGE WITHOUT CURB AND GUTTER

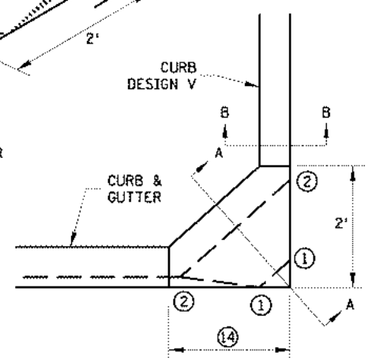




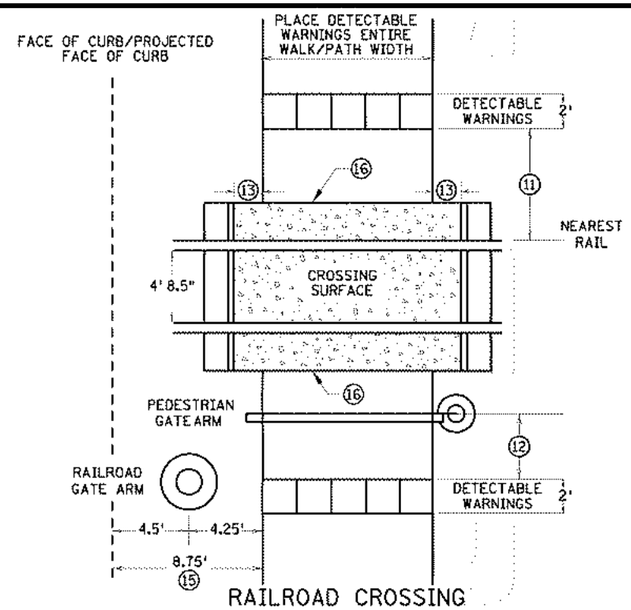
SECTION A-A



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
JEFFREY PERKINS
OPERATIONS DIVISION

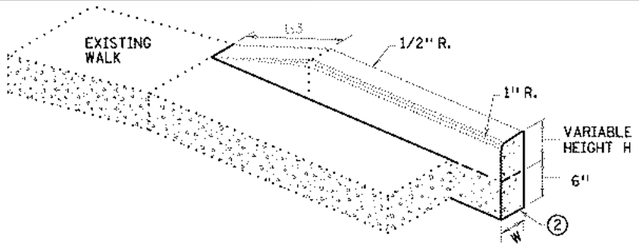
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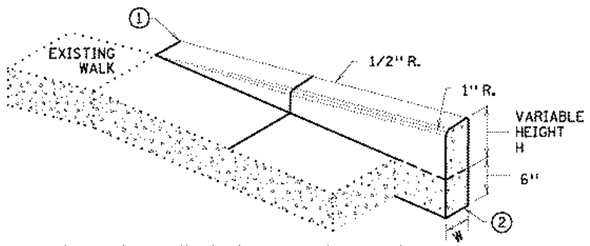
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REVISED:
THOMAS STYBRICKI
STATE DESIGN ENGINEER

PEDESTRIAN CURB RAMP DETAILS

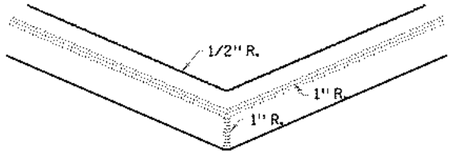
STATE AID PROJ. NO. 155-210-003 C.P.ST240002) SHEET NO. 19 OF 348 SHEETS



V CURB ADJACENT TO LANDSCAPE
CURB WITHIN SIDEWALK LIMITS

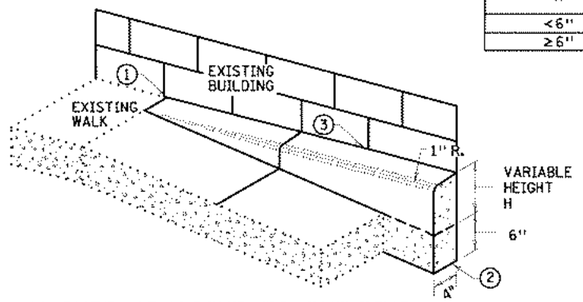


V CURB ADJACENT TO LANDSCAPE
CURB OUTSIDE SIDEWALK LIMITS

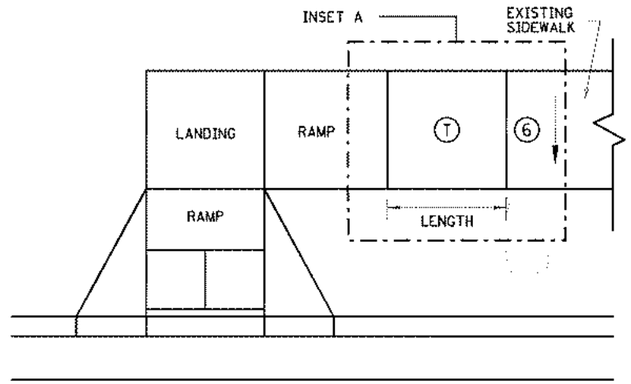


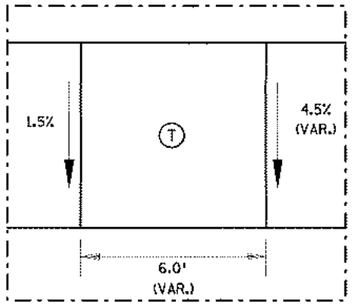
V CURB INTERSECTION

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



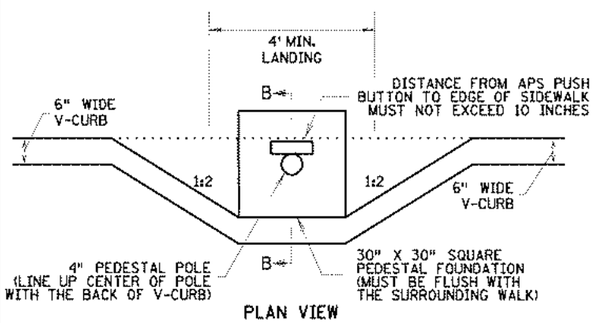
V CURB ADJACENT TO BUILDING OR BARRIER



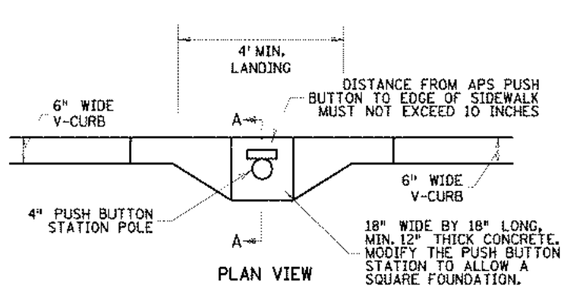


TRANSITION PANEL ④⑤

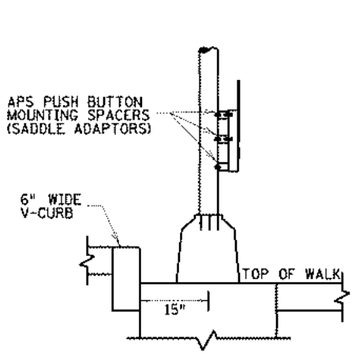
INSET A



PLAN VIEW

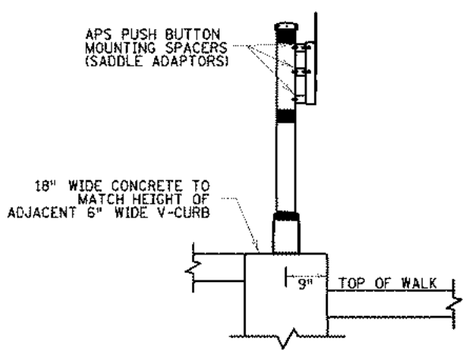


PLAN VIEW



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

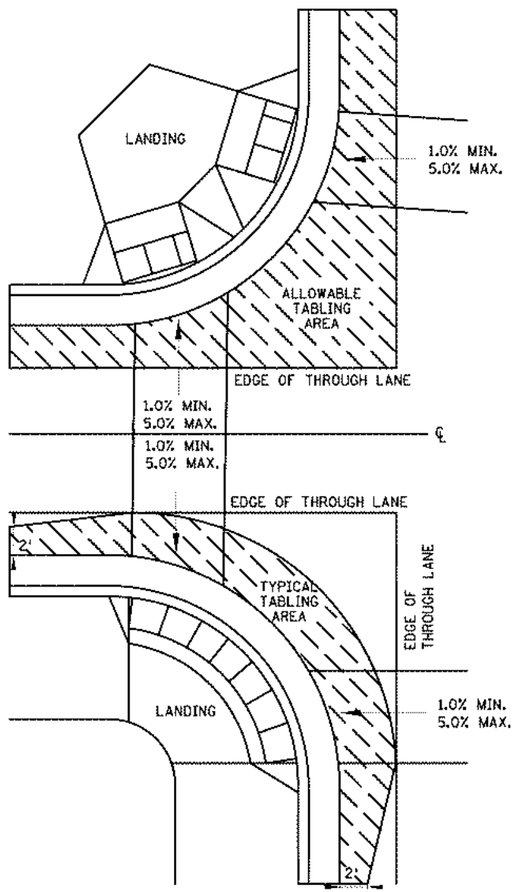
APPROVED: 11-04-2021
REVISED:

THOMAS STYBRICKI
STATE DESIGN ENGINEER

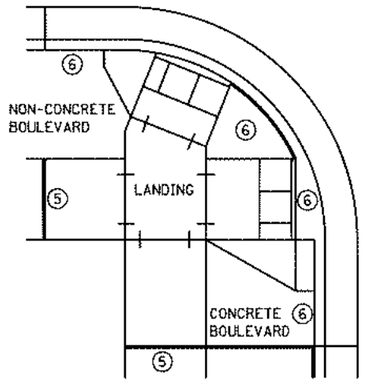
PEDESTRIAN CURB RAMP DETAILS

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

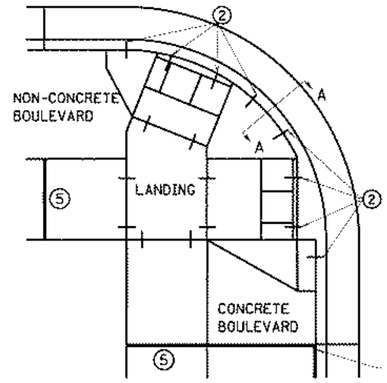
SHEET NO. 20 OF 348 SHEETS



CURB LINE AND ROAD CROSSING ADJUSTMENTS

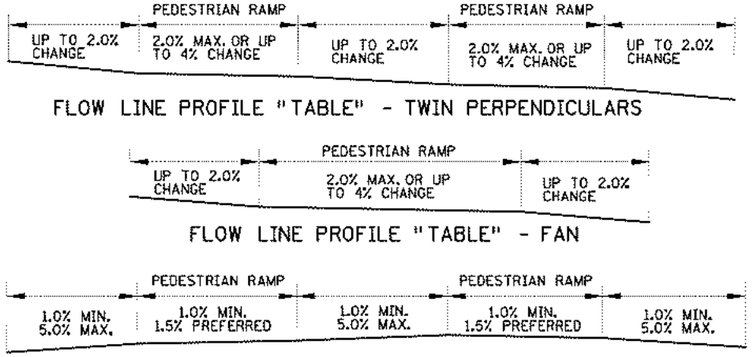


EXPANSION MATERIAL PLACEMENT FOR CONCRETE ROADWAYS



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

CURB LINE REINFORCEMENT ④ PLACEMENT ON BITUMINOUS ROADWAYS

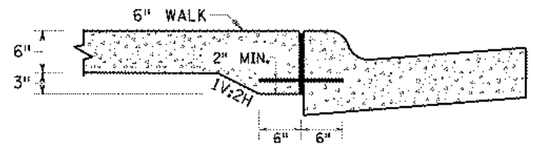


FLOW LINE PROFILE "TABLE" - TWIN PERPENDICULARS

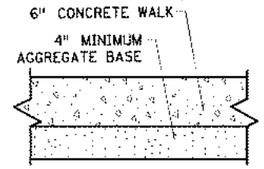
FLOW LINE PROFILE "TABLE" - FAN

FLOW LINE PROFILE RAISE - TWIN PERPENDICULARS

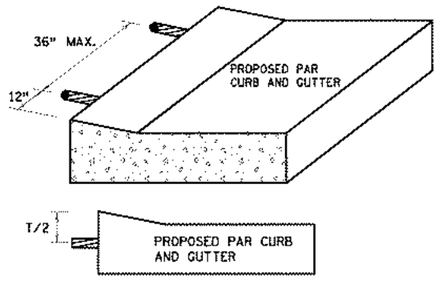
FLOW LINE PROFILE RAISE - FAN

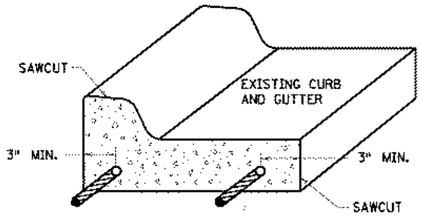


SECTION VIEW A-A
THICKENED SECTION
THROUGH CURB RAMP FLARES



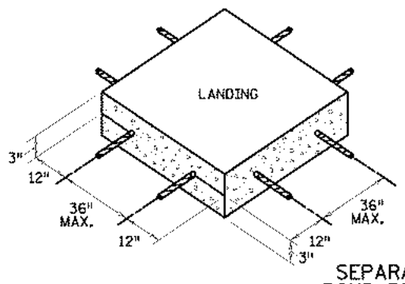
TYPICAL SIDEWALK SECTION
WITHIN INTERSECTION CORNER

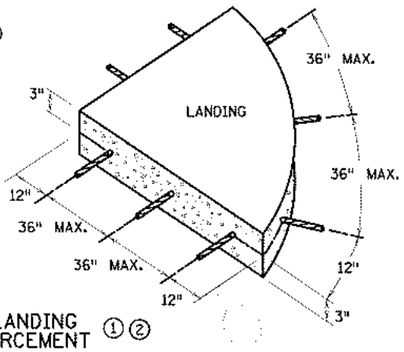




CURB AND GUTTER REINFORCEMENT ③

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

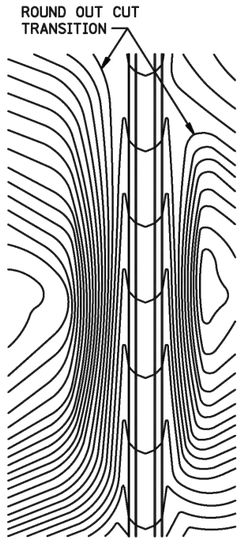
APPROVED: 11-04-2021
REVISED:

THOMAS STYBRICKI
STATE DESIGN ENGINEER

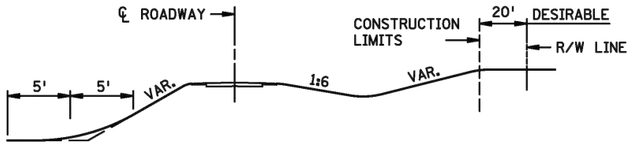
PEDESTRIAN CURB RAMP DETAILS

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

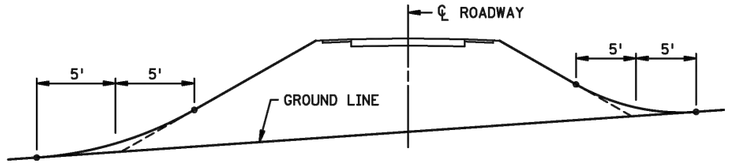
SHEET NO. 21 OF 348 SHEETS



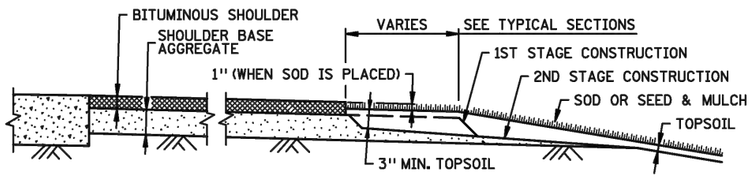
CONTOURING ROAD CUTS



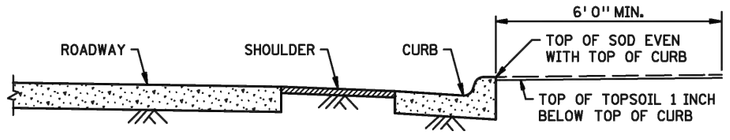
ROUNDING SHOULDERS AND BACKSLOPES



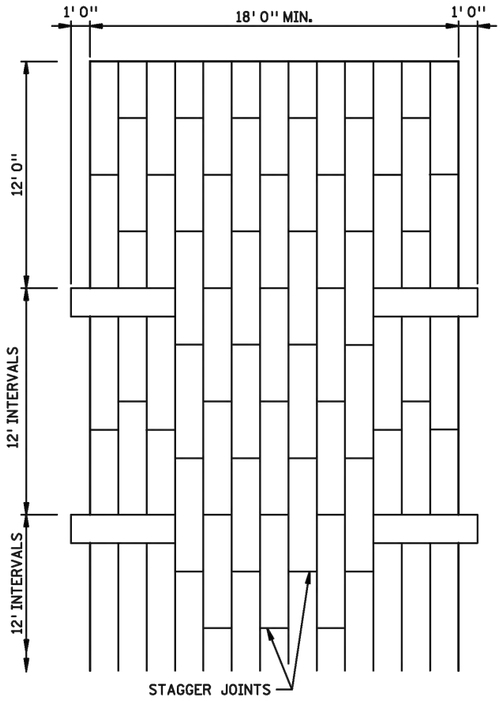
SHAPING FOR DRAINAGE ALONG THE TOE OF FILL SLOPES



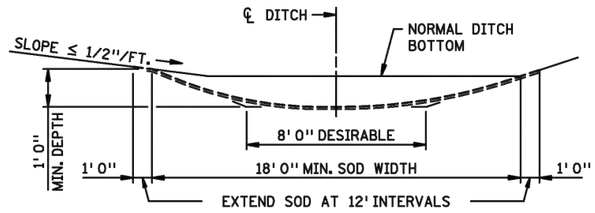
SHAPING AND TOPSOILING INSLOPES



SHAPING ADJACENT TO CURBS WHEN SOD IS PLACED

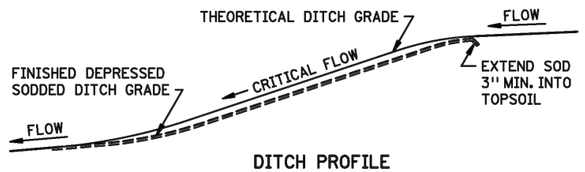


PLAN VIEW



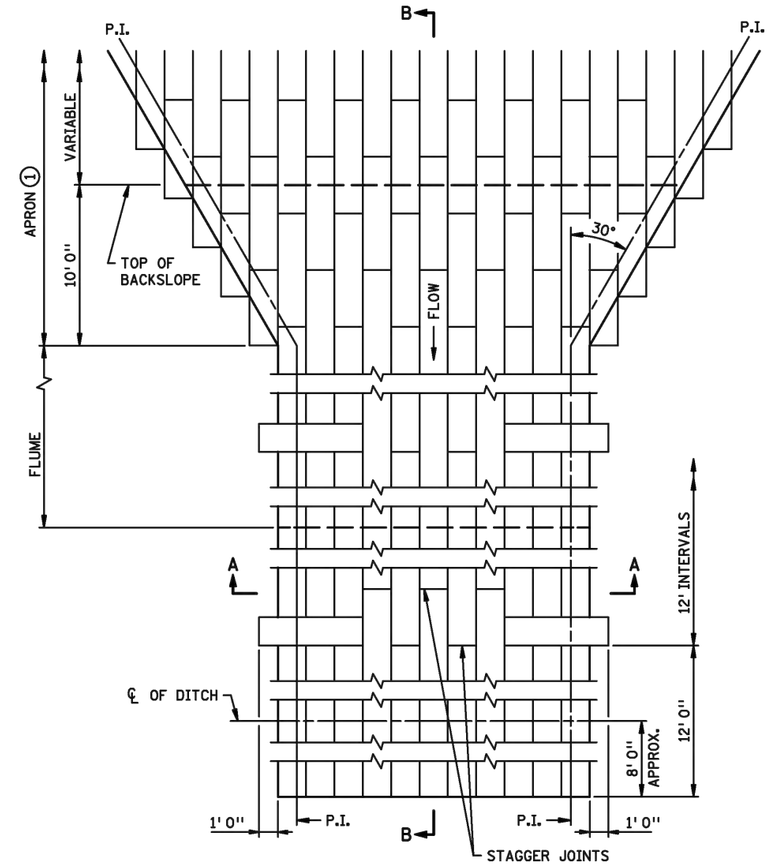
SODDED DITCH CROSS SECTION

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

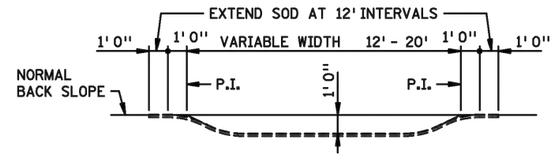


DITCH PROFILE

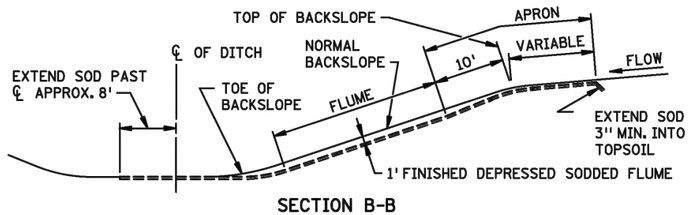
SODDED DITCH DETAILS



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:

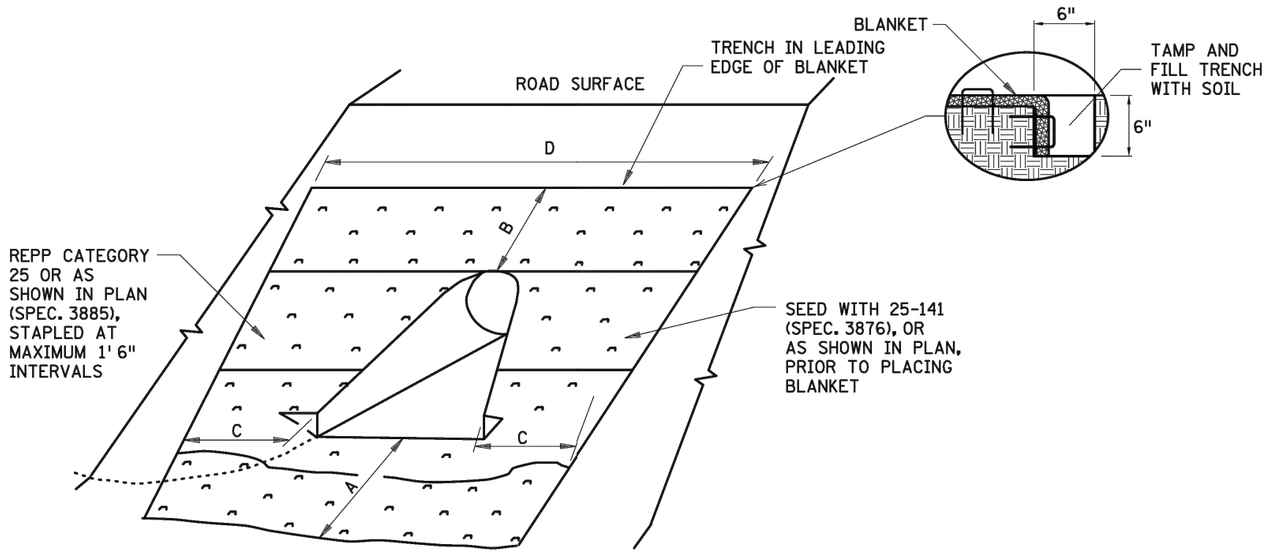
STATE DESIGN ENGINEER

PERMANENT EROSION CONTROL

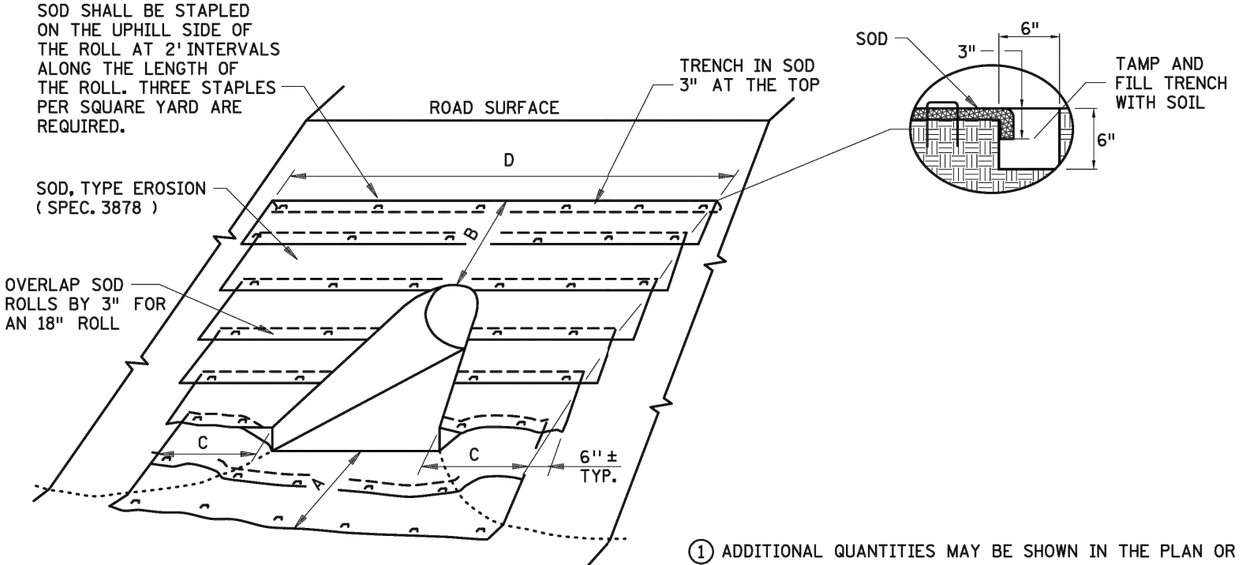
ALONG ROADWAYS, DITCHES AND FLUMES

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

SHEET NO. 22 OF 348 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

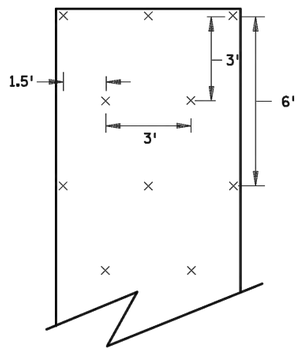
APPROVED: 1-8-2020
REVISED:

THOMAS STYRBICKI
STATE DESIGN ENGINEER

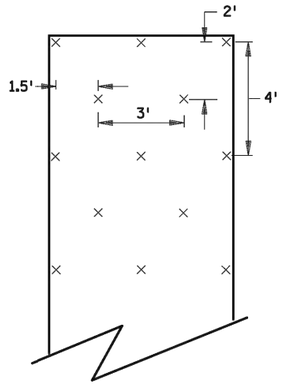
PERMANENT EROSION CONTROL

TURF ESTABLISHMENT DETAIL AT CULVERT ENDS

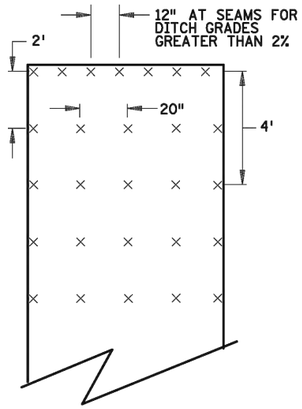
STATE AID PROJ. NO. | 155-210-003 C.P.ST240002 | SHEET NO. 23 OF 348 SHEETS



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

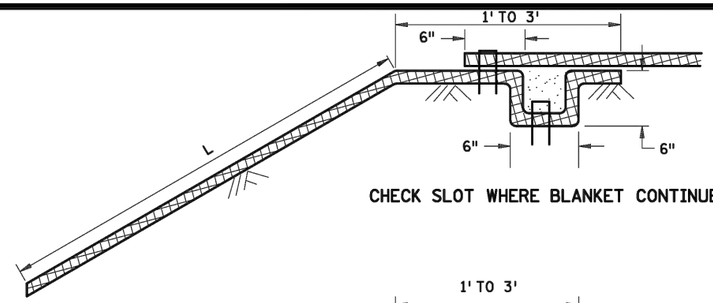


SLOPES 1:2 TO 1:1
170 STAPLES PER 100 SQ YD

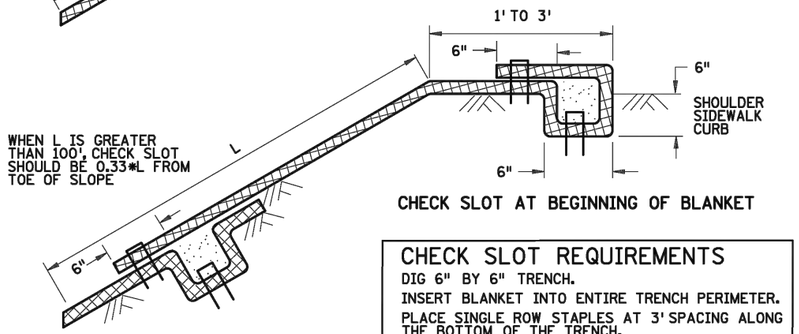


CHANNEL AND DITCH APPLICATIONS
350 STAPLES PER 100 SQ YD

BLANKET STAPLE PATTERN



CHECK SLOT WHERE BLANKET CONTINUES



CHECK SLOT AT BEGINNING OF BLANKET

CHECK SLOT REQUIREMENTS

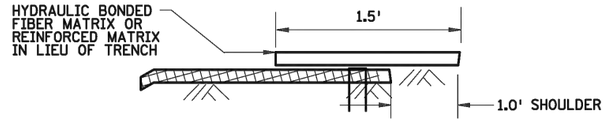
DIG 6" BY 6" TRENCH.

INSERT BLANKET INTO ENTIRE TRENCH PERIMETER.

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

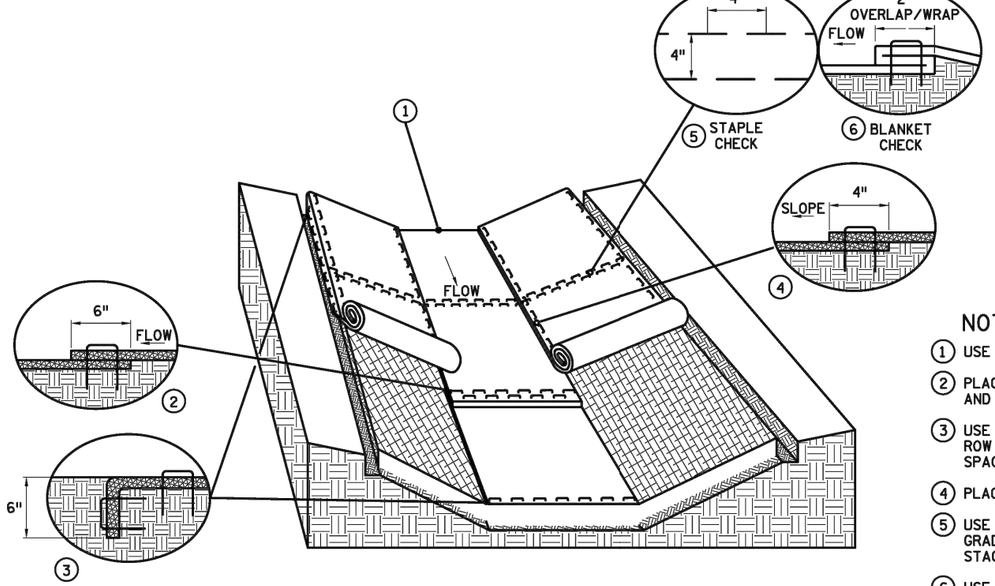
BACKFILL TRENCH WITH SOIL AND TAMP.

PLACE SINGLE ROW STAPLES AT 3' SPACING ON OVERLAP.

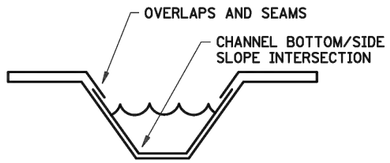


CHECK SLOT ALTERNATIVE
PLACE SINGLE ROW STAPLES AT 12" SPACING

CHECK SLOT DETAILS



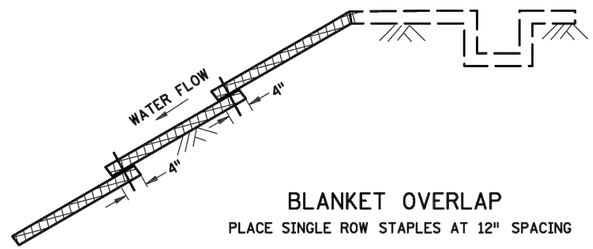
DITCH BLANKET STAPLE DETAIL



DITCH BLANKET CRITICAL POINTS (7)

NOTES:

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



BLANKET OVERLAP
PLACE SINGLE ROW STAPLES AT 12" SPACING

GENERAL BLANKET INSTALLATION REQUIREMENTS

REPP = ROLLED EROSION PREVENTION PRODUCT.

PREPARE SOIL AS PER SPECIFICATION 2574.

LAY PARALLEL OR PERPENDICULAR TO THE DIRECTION OF WATER FLOW.

OVERLAP ADJACENT STRIP EDGES A MINIMUM OF 4".

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

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

REVISION:

APPROVED: JANUARY 8, 2020
MARNI KARNOWSKI
CHIEF ENVIRONMENTAL OFFICER

MINNESOTA DEPARTMENT OF TRANSPORTATION

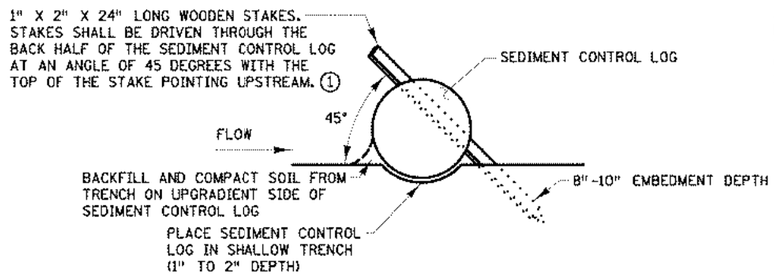
STANDARD PLAN 5-297.404 | 3 OF 3

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

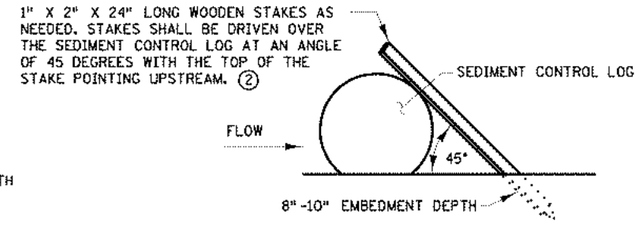
PERMANENT EROSION CONTROL

REPP (BLANKET) STAPLE PATTERN FOR SLOPES

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

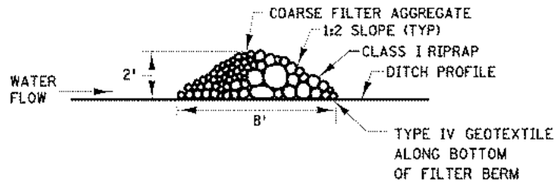


TYPES: STRAW, WOOD FIBER, OR COIR

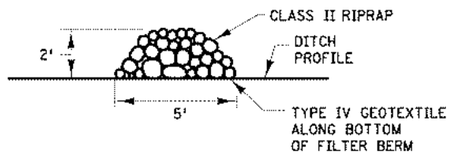


TYPES: WOOD CHIP, COMPOST, OR ROCK

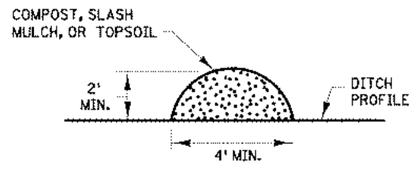
SEDIMENT CONTROL LOGS



TYPE 3 (ROCK WEEPER)

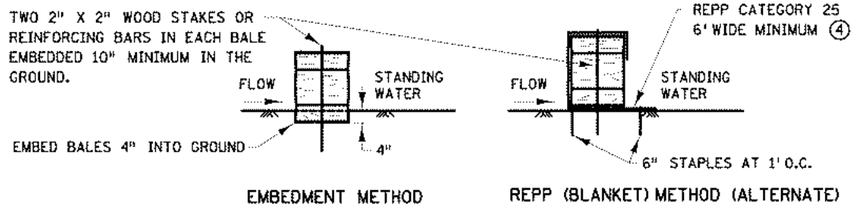


TYPE 5 (ROCK)



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
REVISED:

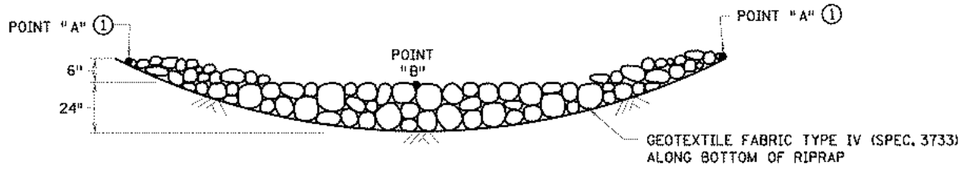
THOMAS STYRBICKI
STATE DESIGN ENGINEER

TEMPORARY SEDIMENT CONTROL

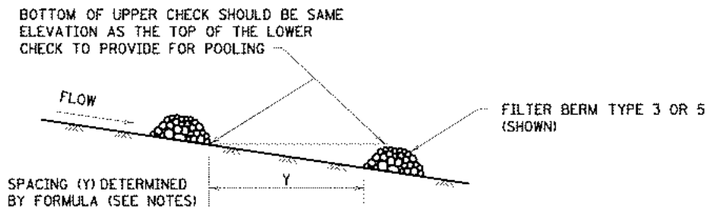
FILTER BERMS, SEDIMENT CONTROL LOGS, AND BALE BARRIERS

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

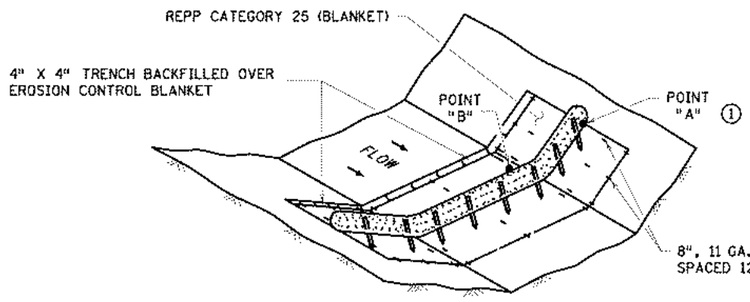
SHEET NO. 25 OF 348 SHEETS

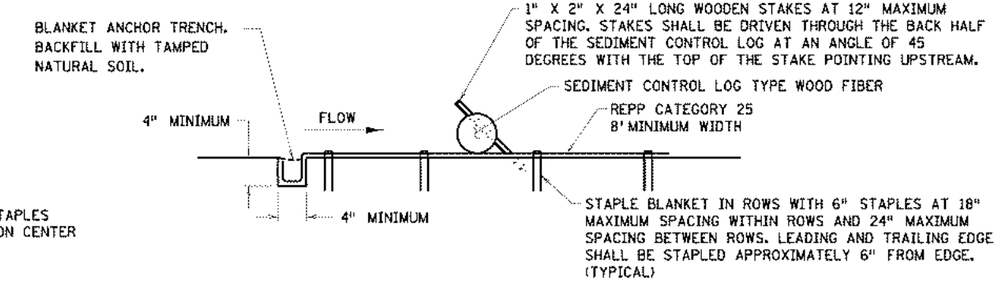


ROCK DITCH CHECKS
FILTER BERMS TYPE 3 (ROCK WEEPER) OR FILTER TYPE 5 (ROCK) ③
FOR USE ON ROUGH-GRADED AREAS
ONLY FOR USE OUTSIDE CLEAR ZONE ②

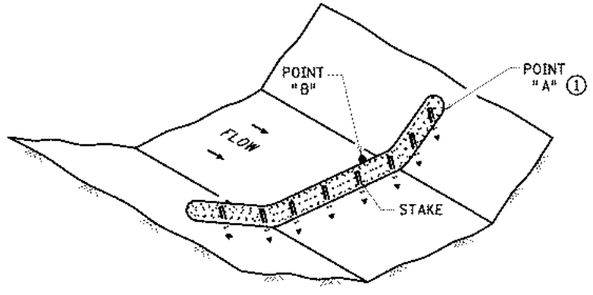


DITCH CHECK SPACING
FOR ALL FILTER BERM TYPES





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

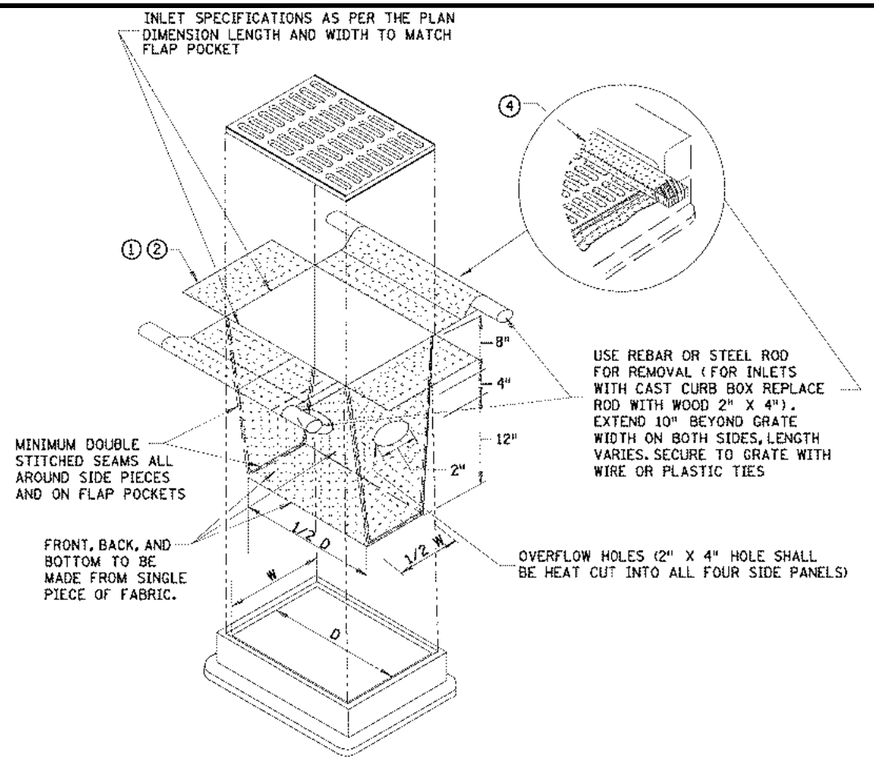
STANDARD PLAN 5-297.405 | 3 OF 8

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

TEMPORARY SEDIMENT CONTROL
DITCH CHECK

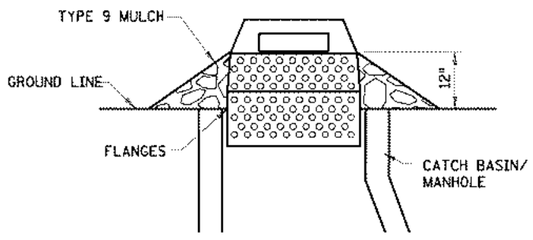
STATE AID PROJ. NO. 155-210-003 C.P.ST240002

SHEET NO. 26 OF 348 SHEETS



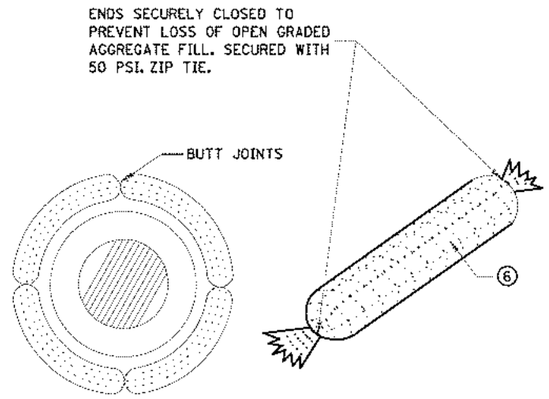
FILTER BAG INSERT ③

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

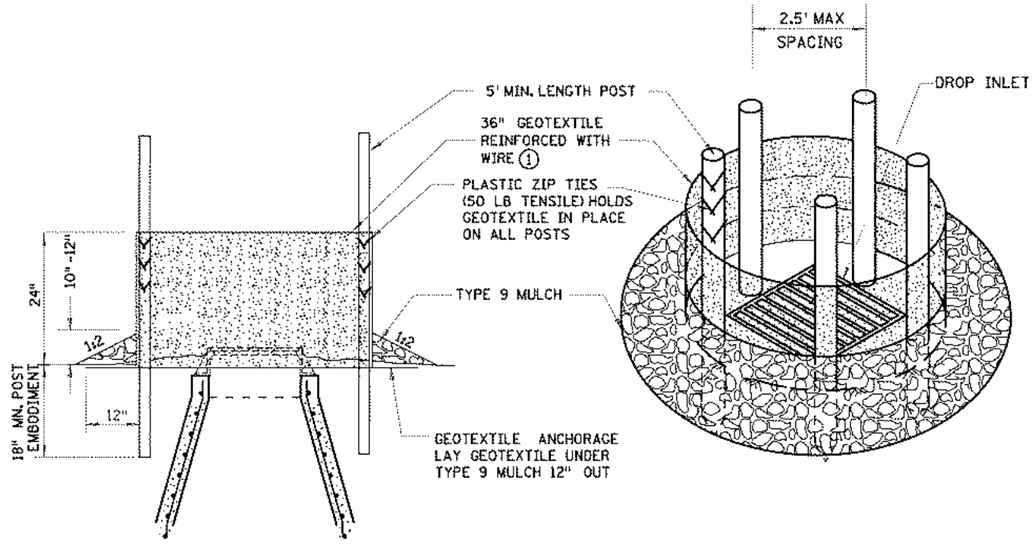


SEDIMENT CONTROL INLET HAT

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.

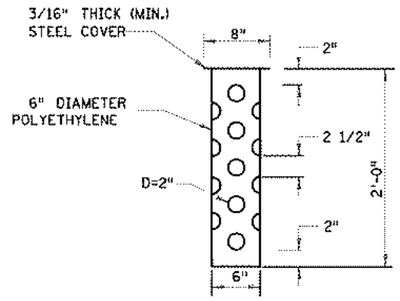


ROCK LOG/COMPOST LOG

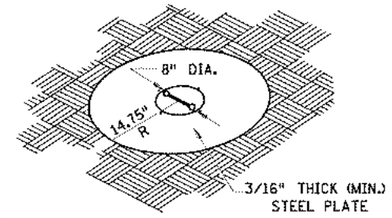


SILT FENCE RING AND ROCK FILTER BERM

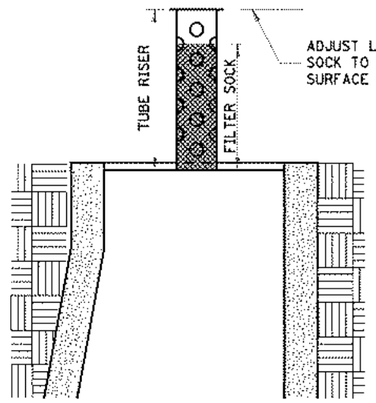
USE WHERE INLET DRAINS IN AN AREA WITH SLOPES AT 1:3 or LESS



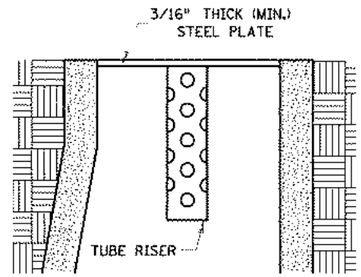
TUBE RISER



PERSPECTIVE VIEW



SECTION (UP POSITION)



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

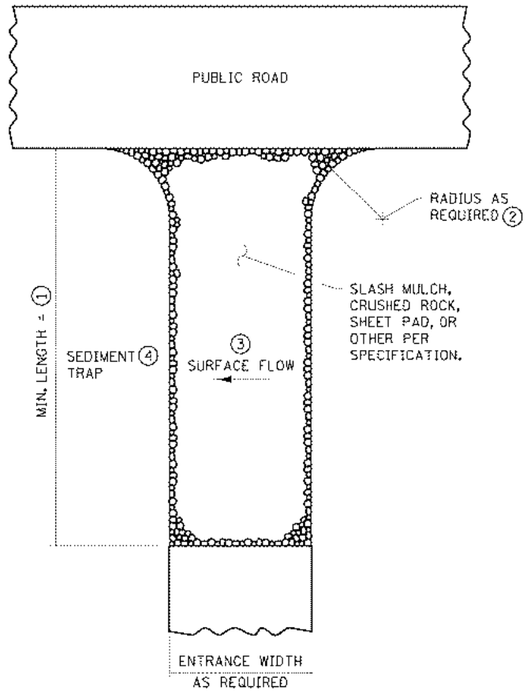
STANDARD PLAN 5-297.405 | 4 OF 8

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

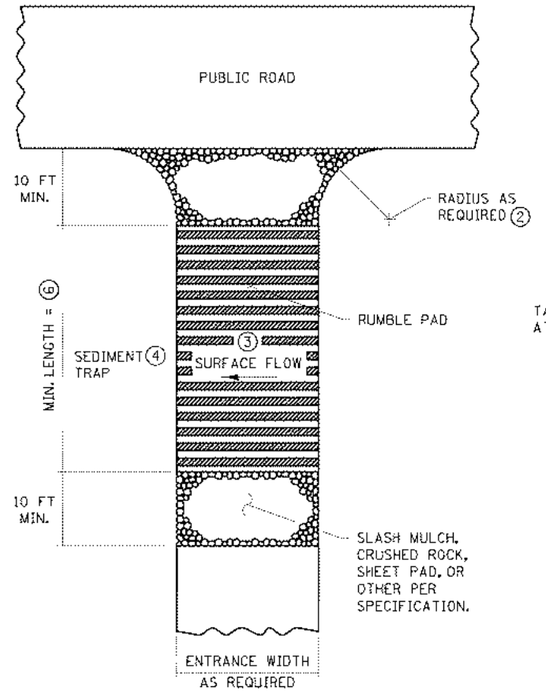
TEMPORARY SEDIMENT CONTROL

STORM DRAIN INLET PROTECTION

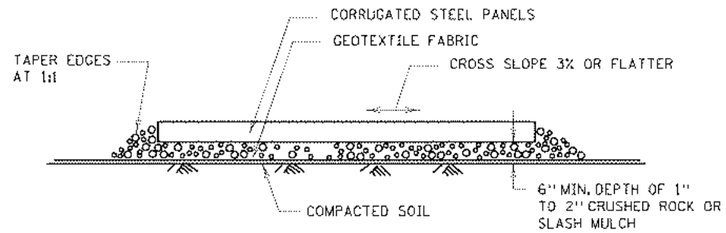
STATE AID PROJ. NO. 155-210-003 C.P.ST240002



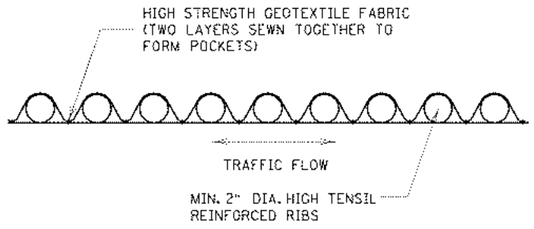
SLASH MULCH, CRUSHED ROCK, OR SHEET PAD CONSTRUCTION EXIT ⑤⑦



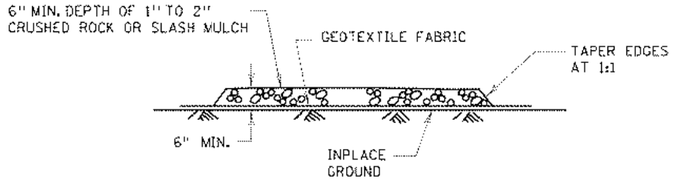
RUMBLE PAD CONSTRUCTION EXIT ⑤⑦



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

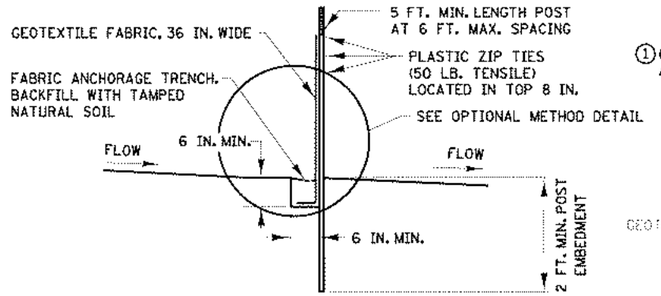
APPROVED: 2-28-2017

REVISED:

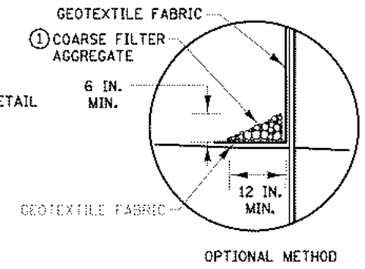
TEMPORARY SEDIMENT CONTROL

STABILIZED CONSTRUCTION EXIT

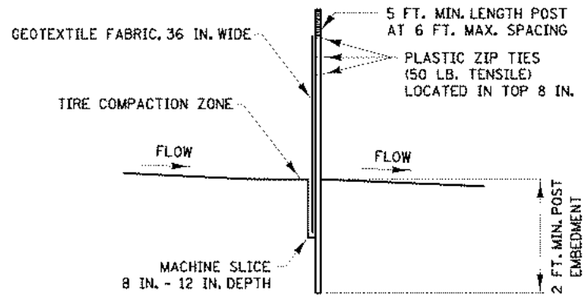
STATE AID PROJ. NO. 155-210-003 C.P.ST240002



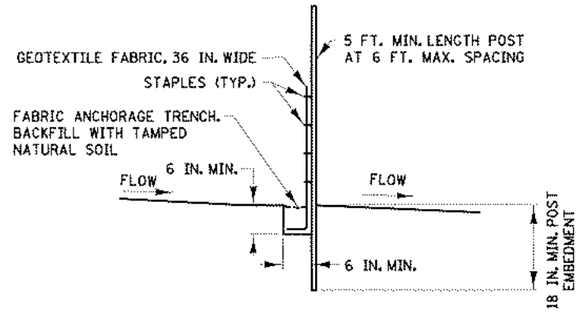
SILT FENCE TYPE HI ②
(HAND INSTALLED)



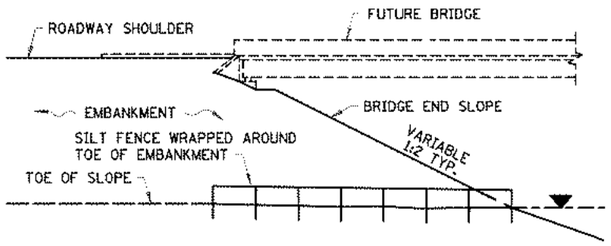
OPTIONAL METHOD



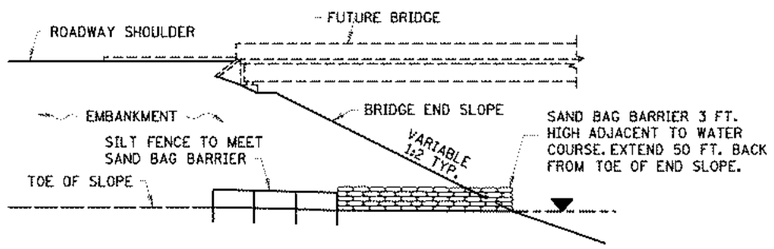
SILT FENCE TYPE MS ②
(MACHINE SLICED)



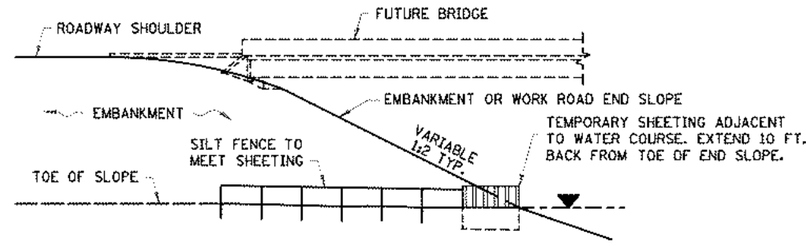
SILT FENCE TYPE PA ③
(PREASSEMBLED)



SILT FENCE ONLY ④



SILT FENCE WITH SAND BAGS ⑤

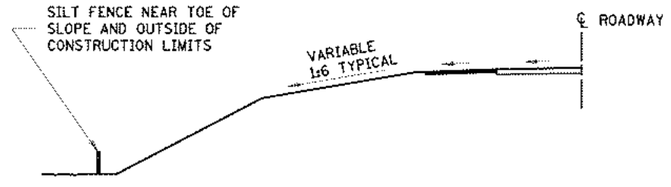


SILT FENCE WITH SHEETING ⑥

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

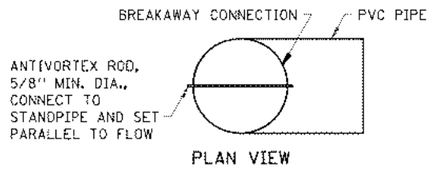
APPROVED: 2-28-2017
REVISED:

STATE DESIGN ENGINEER

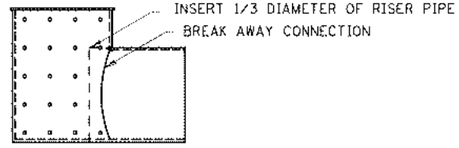
TEMPORARY SEDIMENT CONTROL

SILT FENCE

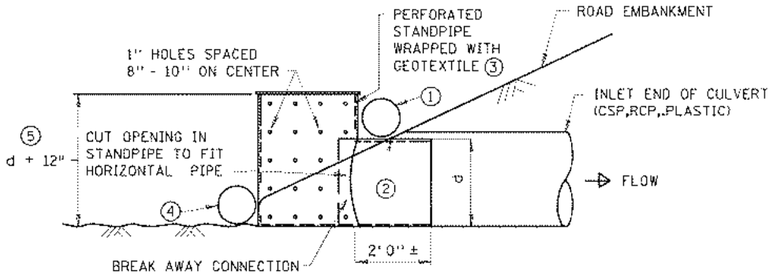
STATE AID PROJ. NO. 155-210-003 C.P.ST240002



PLAN VIEW



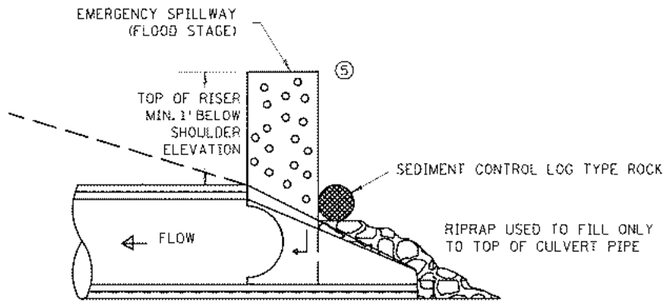
CULVERT STANDPIPE



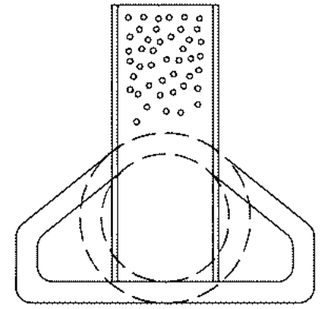
ELEVATION VIEW OF CULVERT INSTALLATION

CULVERT STANDPIPE INSERT (D-RISER)

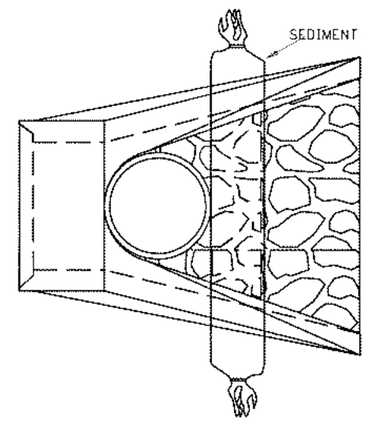
d= CULVERT SIZE: 12" - 36"



LONGITUDINAL SECTION



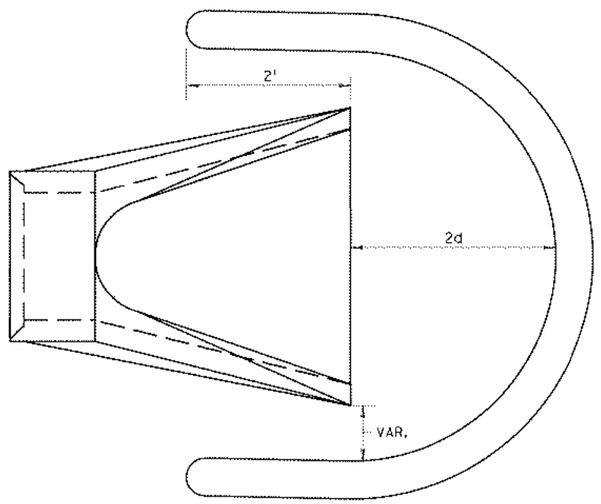
END VIEW



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

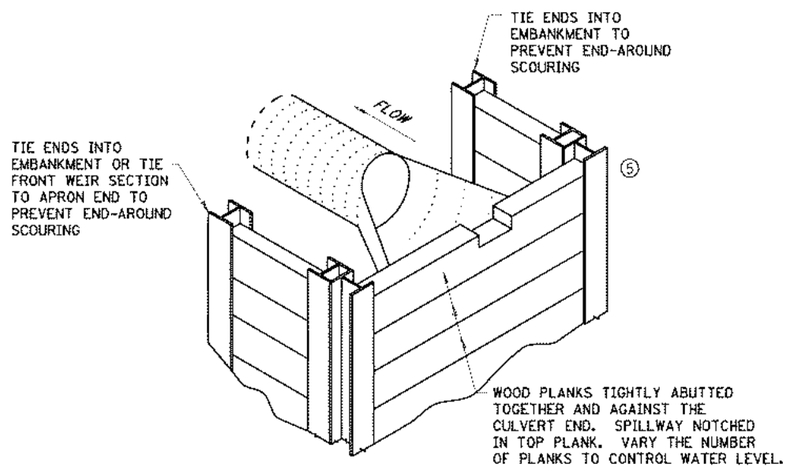
TOP VIEW

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

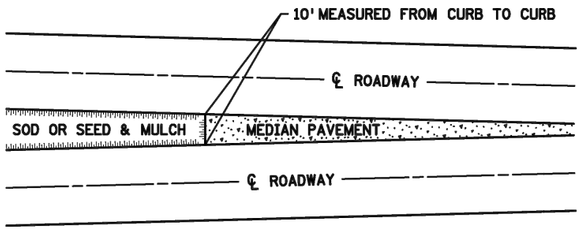
REVISED:

STATE DESIGN ENGINEER

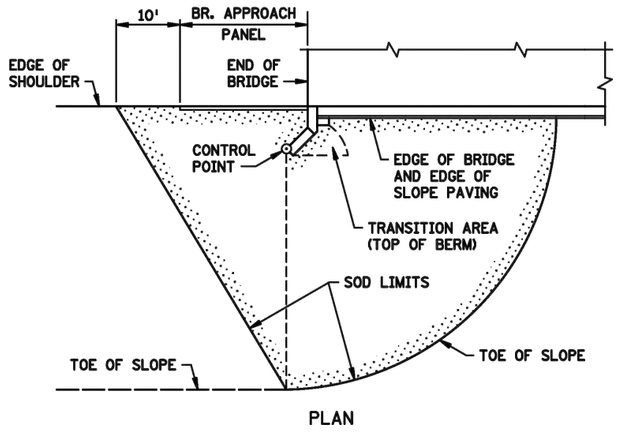
TEMPORARY SEDIMENT CONTROL

CULVERT END CONTROLS

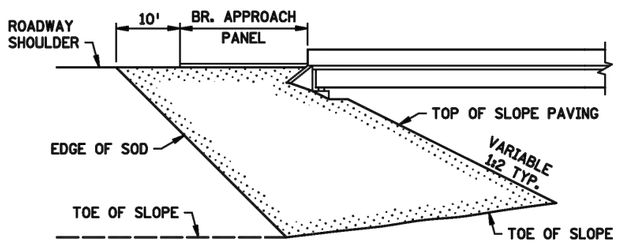
STATE AID PROJ. NO. 155-210-003 C.P.ST240002



SODDING LIMITS AT GORE AREA

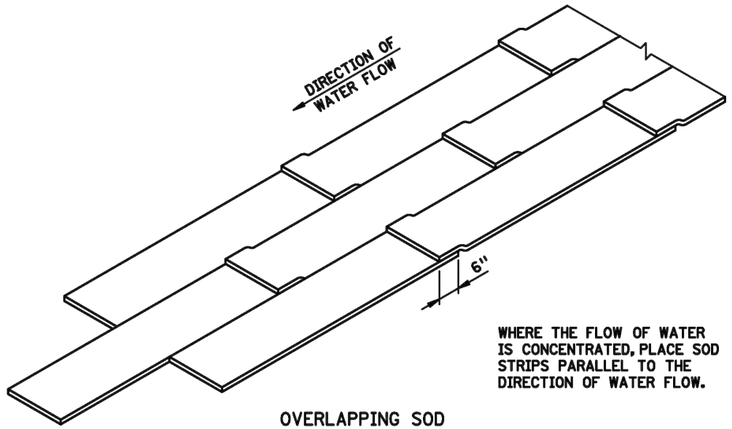


PLAN

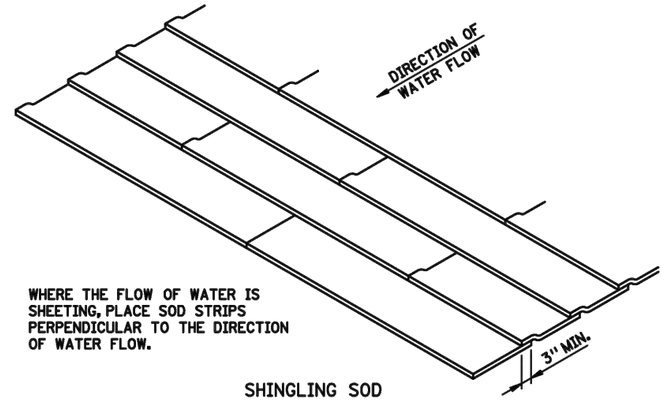


ELEVATION

SODDING LIMITS AT BRIDGE APPROACH FILLS

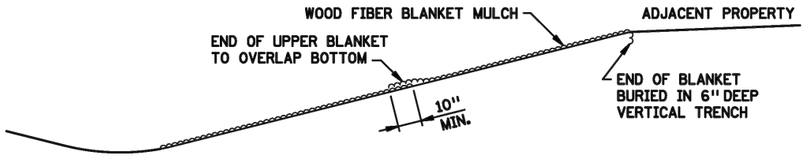


OVERLAPPING SOD

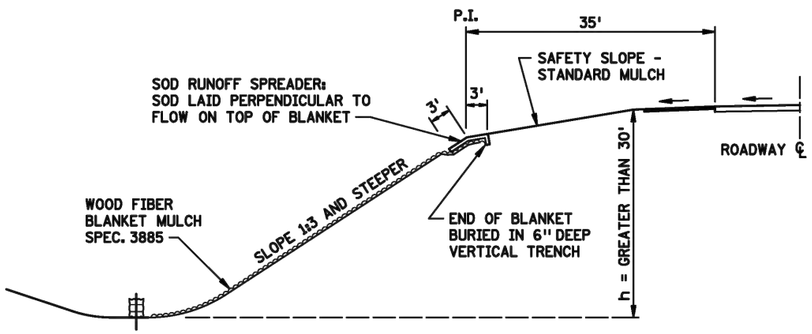


SHINGLING SOD

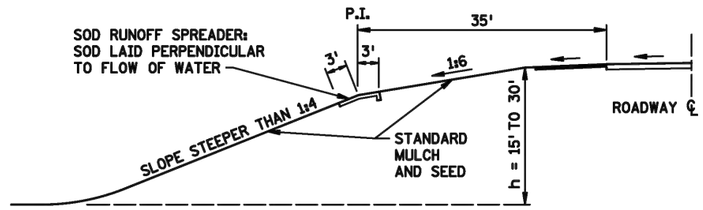
SPECIAL SOD PLACEMENT TECHNIQUES



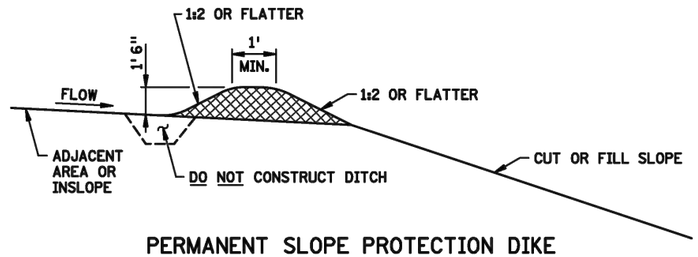
WOOD FIBER BLANKET INSTALLATION ON A CUT SLOPE



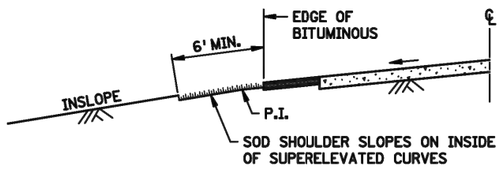
WOOD FIBER BLANKET INSTALLATION ON AN INSLOPE
(WHEN REQUIRED)



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

STATE DESIGN ENGINEER

STANDARD PLAN 5-297.406 | 1 OF 1

APPROVED: 8-6-2014

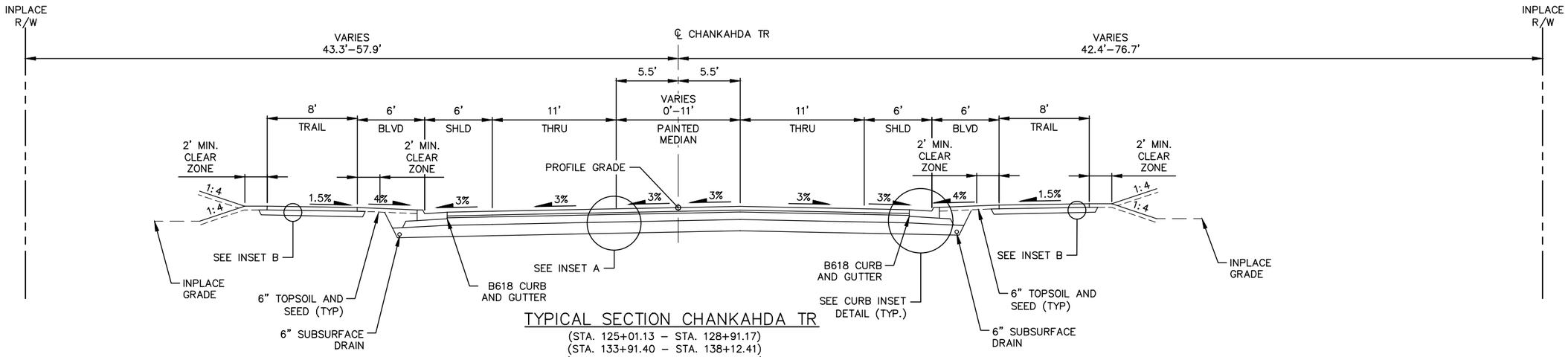
REVISED:

PERMANENT SEDIMENT CONTROL

ALONG ROADWAYS AND AT GORE AREAS & BRIDGE APPROACH FILLS

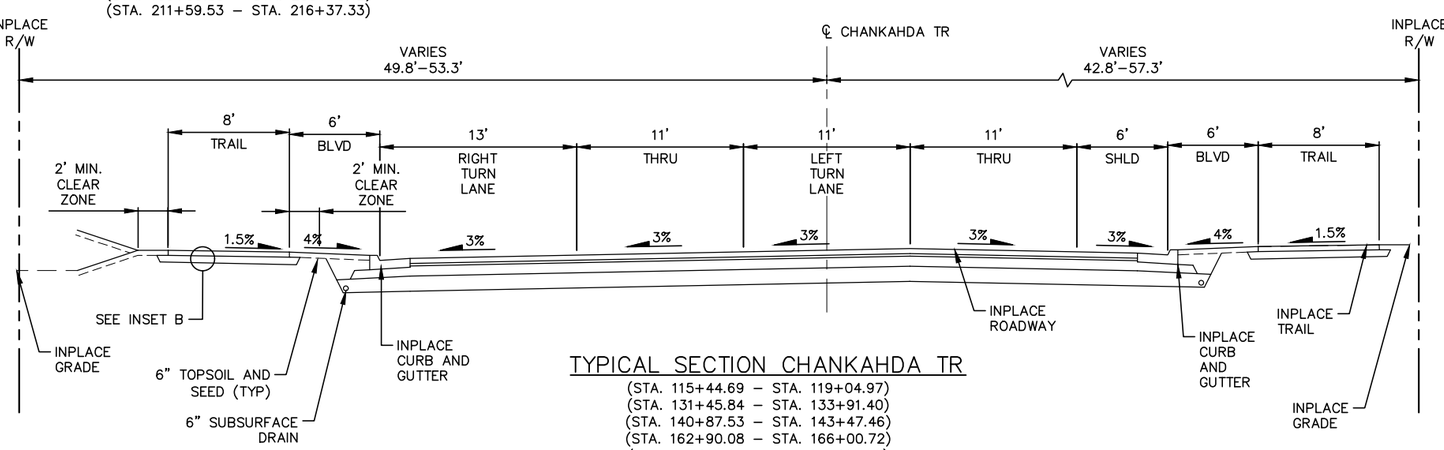
STATE AID PROJ. NO. 155-210-003 C.P.ST240002

SHEET NO. 31 OF 348 SHEETS



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 (%)

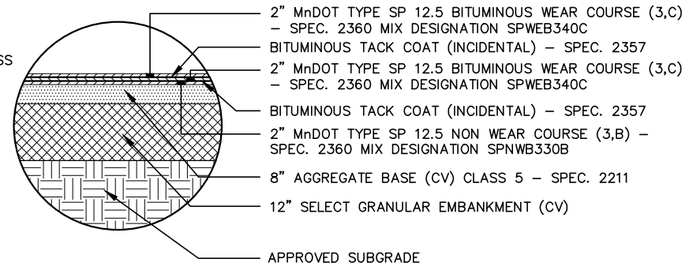
UNLESS OTHERWISE SPECIFIED, THE GRADING GRADE CROSS SLOPES SHALL BE THE SAME AS THE FINISHED SURFACE

SEE CROSS SECTIONS FOR VARIATIONS

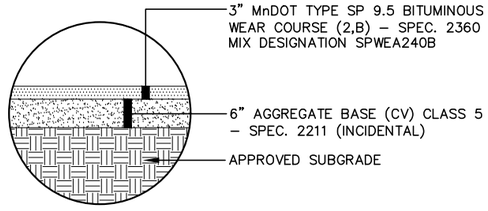
TACK COAT TO BE APPLIED BETWEEN BITUMINOUS PAVEMENT LIFTS (INCIDENTAL)

℄ INDICATES BASELINE

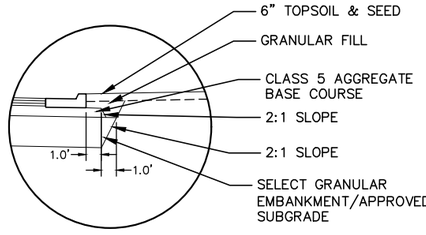
STATIONING IS BASED ON CHANKAHDA TRAIL PHASE 3 ALIGNMENT



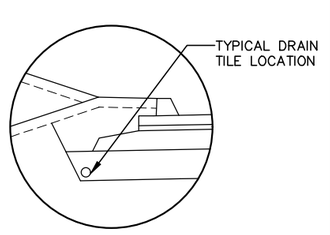
INSET A – BITUMINOUS PAVEMENT



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:	11/04/2024
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.

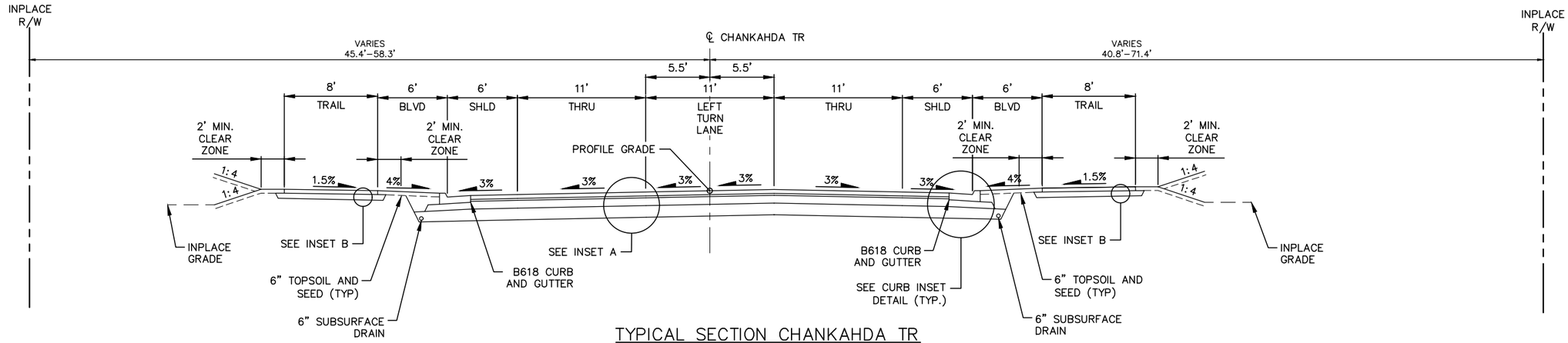
CHADD B. LARSON, PE
DATE: 11/04/2024 MN LIC. NO. 41864

City of Plymouth
CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3

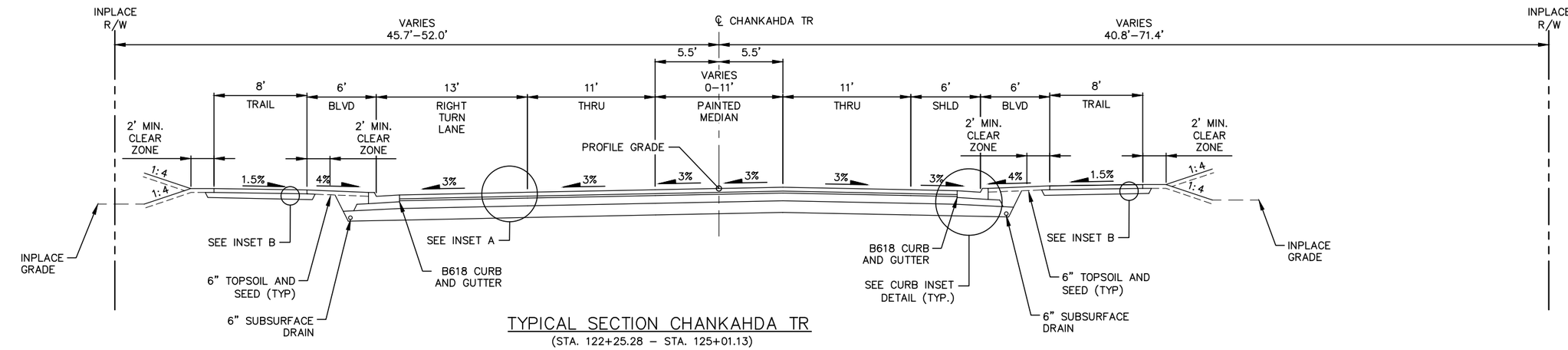
CHANKAHDA TR
TYPICAL SECTIONS

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

SHEET NO. 32 / 348



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 (%)

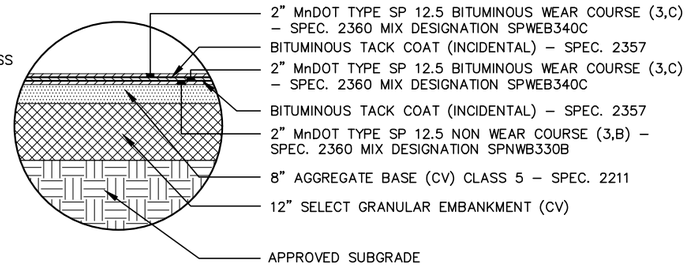
UNLESS OTHERWISE SPECIFIED, THE GRADING GRADE CROSS SLOPES SHALL BE THE SAME AS THE FINISHED SURFACE

SEE CROSS SECTIONS FOR VARIATIONS

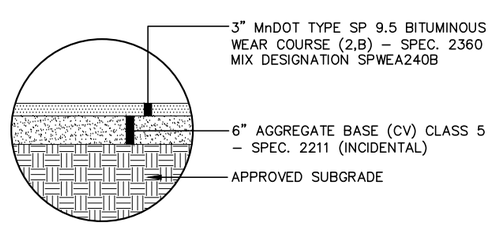
TACK COAT TO BE APPLIED BETWEEN BITUMINOUS PAVEMENT LIFTS (INCIDENTAL)

℄ INDICATES BASELINE

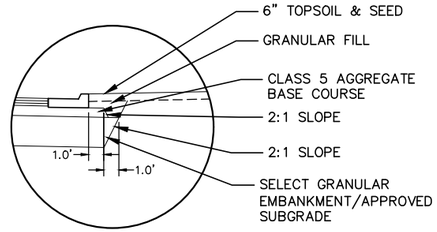
STATIONING IS BASED ON CHANKAHDA TRAIL PHASE 3 ALIGNMENT



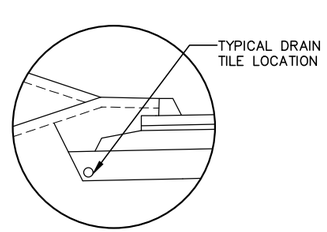
INSET A – BITUMINOUS PAVEMENT



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:	11/04/2024
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: 11/04/2024 MN LIC. NO. 41864

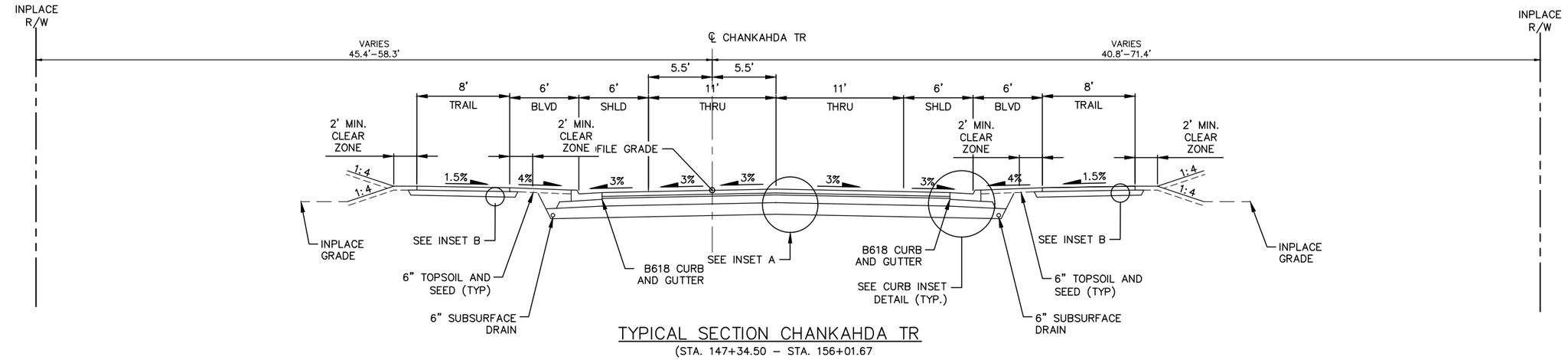
City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3

CHANKAHDA TR
TYPICAL SECTIONS

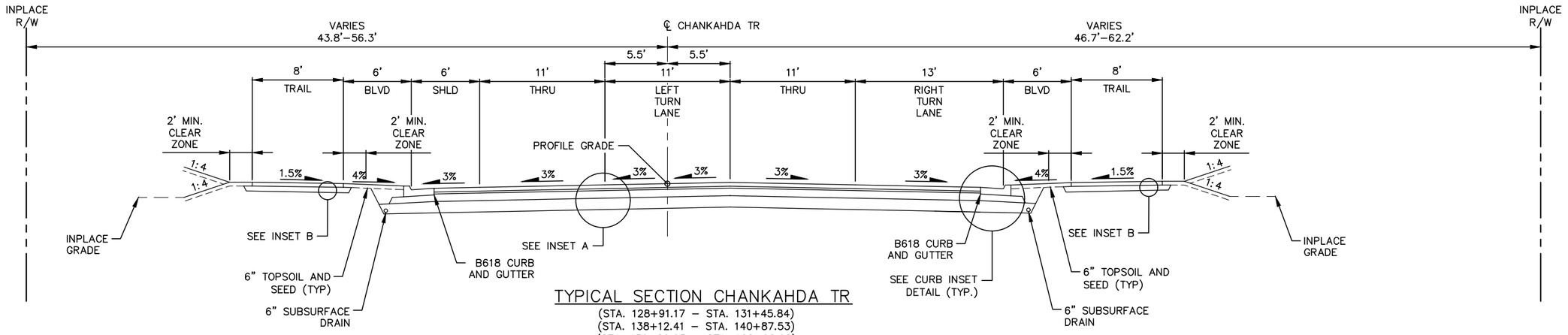
CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155–210–003
S.A.P.	

SHEET NO. 33 / 348



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 (%)

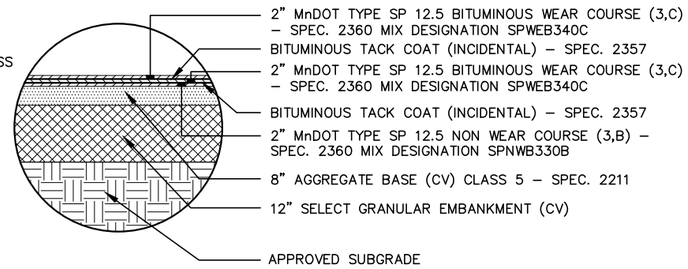
UNLESS OTHERWISE SPECIFIED, THE GRADING GRADE CROSS SLOPES SHALL BE THE SAME AS THE FINISHED SURFACE

SEE CROSS SECTIONS FOR VARIATIONS

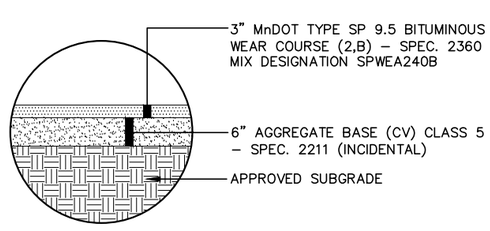
TACK COAT TO BE APPLIED BETWEEN BITUMINOUS PAVEMENT LIFTS (INCIDENTAL)

℄ INDICATES BASELINE

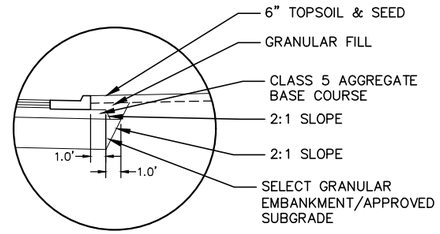
STATIONING IS BASED ON CHANKAHDA TRAIL PHASE 3 ALIGNMENT



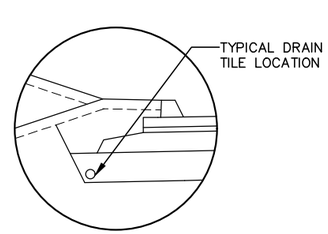
INSET A – BITUMINOUS PAVEMENT



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:	11/04/2024
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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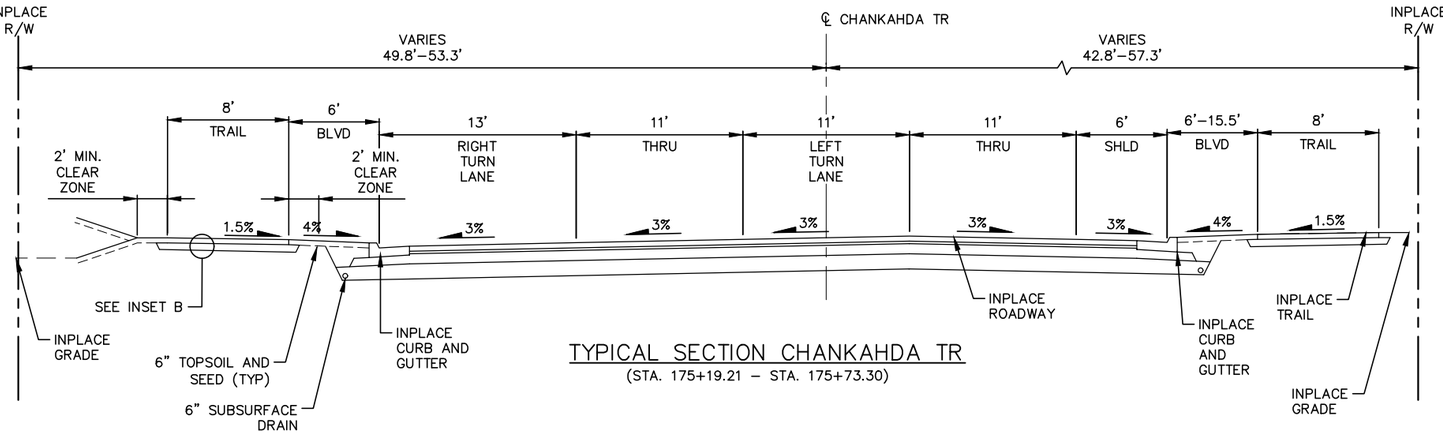
CHADD B. LARSON, PE
DATE: 11/04/2024 MN LIC. NO. 41864

City of Plymouth
CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3

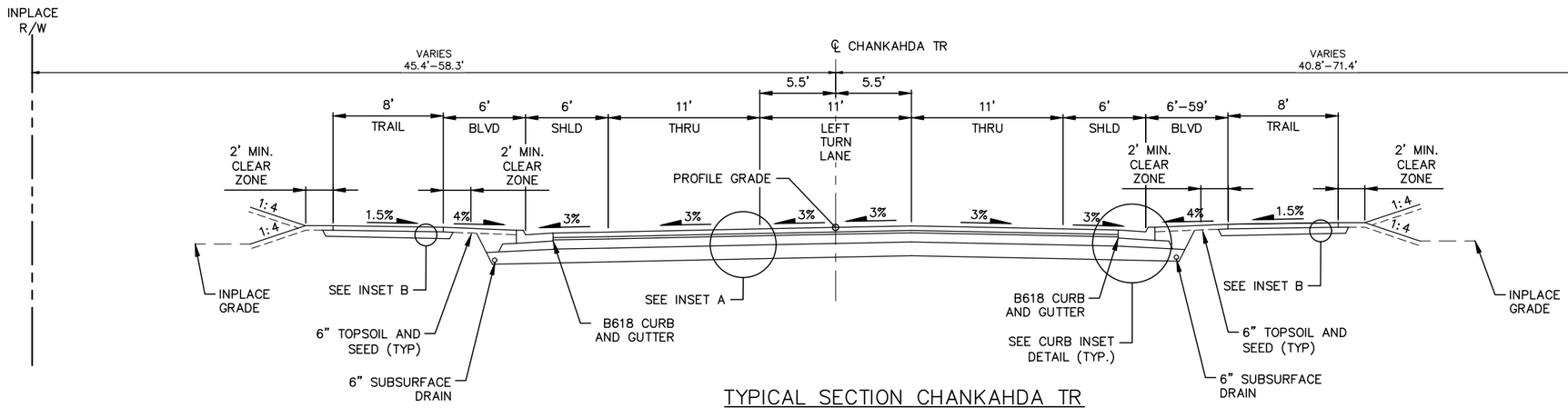
CHANKAHDA TR
TYPICAL SECTIONS

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

SHEET NO. 34 / 348



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 (%)

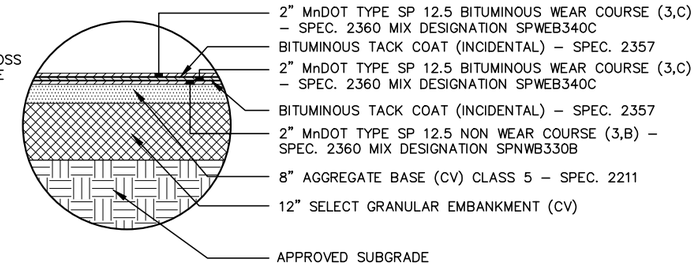
UNLESS OTHERWISE SPECIFIED, THE GRADING GRADE CROSS SLOPES SHALL BE THE SAME AS THE FINISHED SURFACE

SEE CROSS SECTIONS FOR VARIATIONS

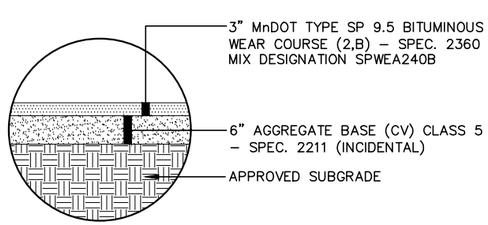
TACK COAT TO BE APPLIED BETWEEN BITUMINOUS PAVEMENT LIFTS (INCIDENTAL)

℄ INDICATES BASELINE

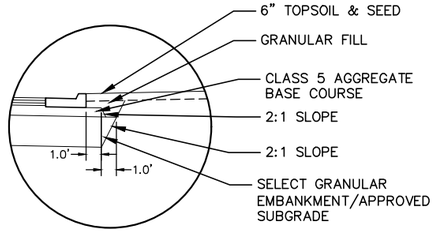
STATIONING IS BASED ON CHANKAHDA TRAIL PHASE 3 ALIGNMENT



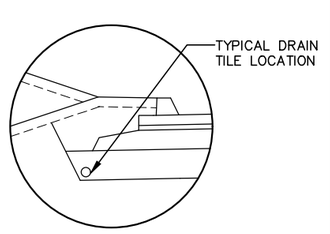
INSET A – BITUMINOUS PAVEMENT



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:	11/04/2024
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: 11/04/2024 MN LIC. NO. 41864

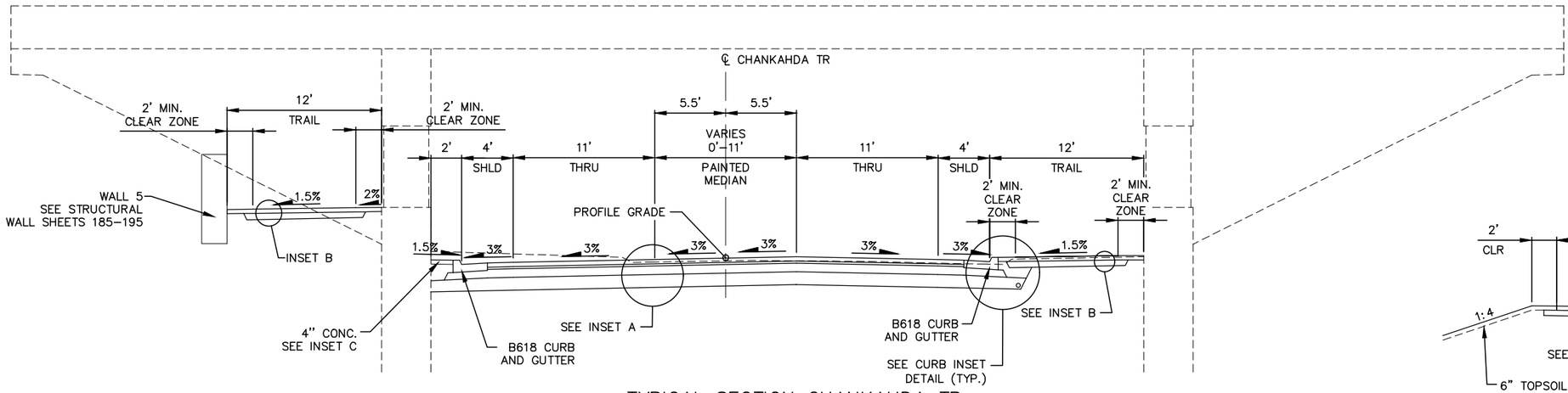
City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3

CHANKAHDA TR
TYPICAL SECTIONS

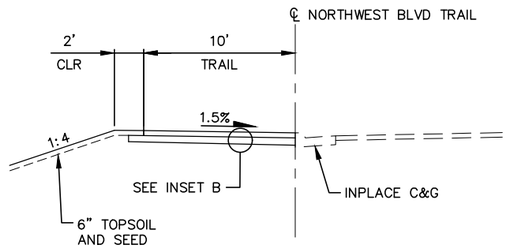
CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 35 / 348



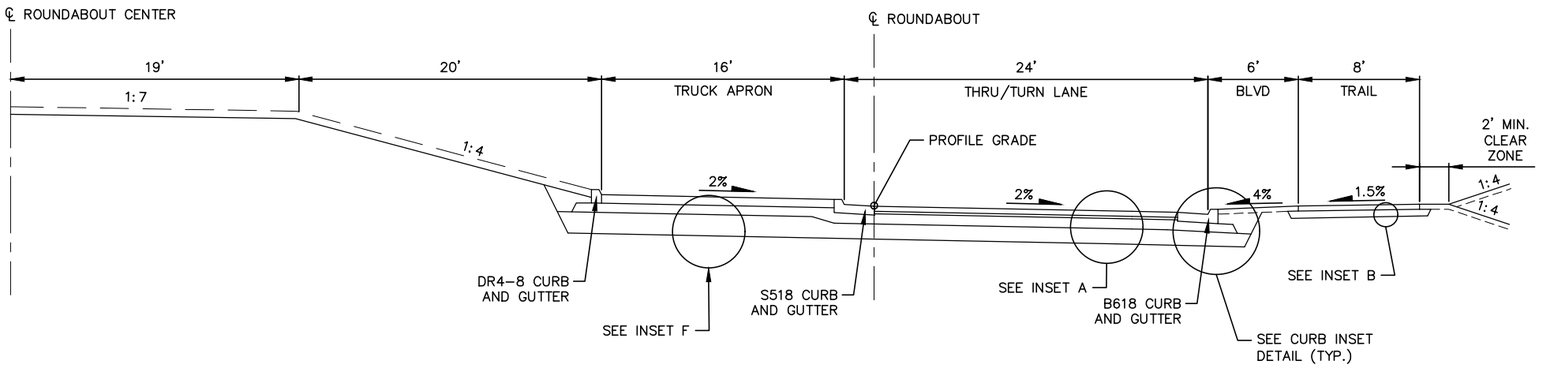
TYPICAL SECTION CHANKAHDA TR

(STA. 198+35.95 – STA. 199+66.56)



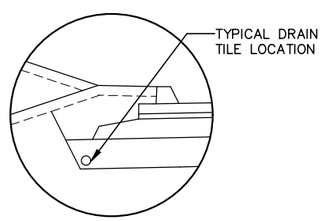
TYPICAL SECTION NORTHWEST BLVD TRAIL

(STA. 0+00 – STA. 6+13.90)

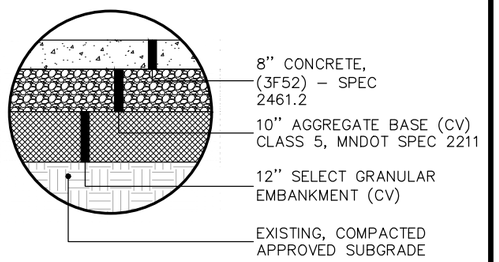


TYPICAL SECTION RAB CENTER

(STA. 208+28.91 – STA. 210+11.35)



DRAIN TILE DETAIL



INSET F: TRUCK APRON

GENERAL NOTES:

NORMAL CROSS SLOPES ARE SHOWN (%)

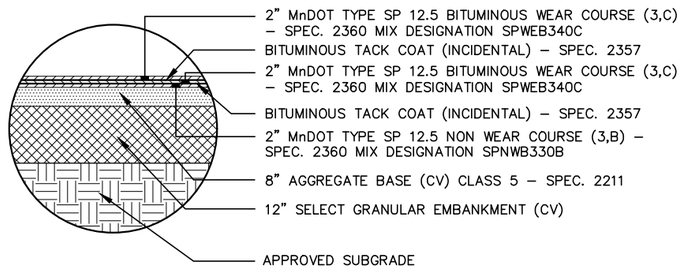
UNLESS OTHERWISE SPECIFIED, THE GRADING GRADE CROSS SLOPES SHALL BE THE SAME AS THE FINISHED SURFACE

SEE CROSS SECTIONS FOR VARIATIONS

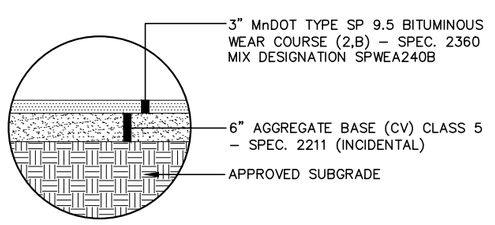
TACK COAT TO BE APPLIED BETWEEN BITUMINOUS PAVEMENT LIFTS (INCIDENTAL)

℄ INDICATES BASELINE

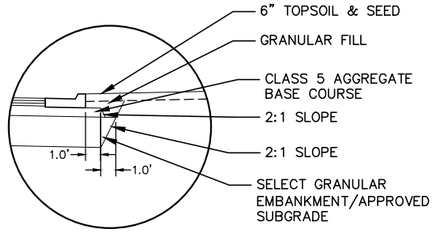
STATIONING IS BASED ON CHANKAHDA TRAIL PHASE 3 ALIGNMENT



INSET A – BITUMINOUS PAVEMENT



INSET B – BITUMINOUS TRAIL



CURB INSET DETAIL

No.	Date	Revisions	App.

DRAWING NAME	
CHANKAHDA_PH3_TYP.dwg	
DESIGNED BY:	JWB
DRAWN BY:	RGS
CHECKED BY:	CBL
DATE:	11/04/2024
PROJECT NO.	160662010

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

DATE: 11/04/2024 MN LIC. NO. 41864

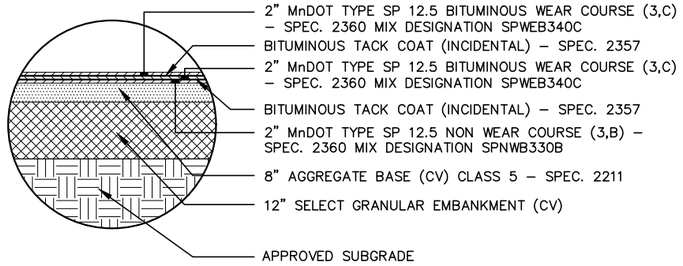
City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3

CHANKAHDA TR
TYPICAL SECTIONS

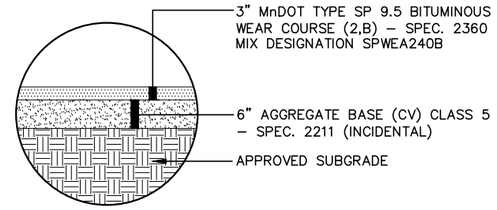
CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155–210–003
S.A.P.	

SHEET NO. 36 / 348

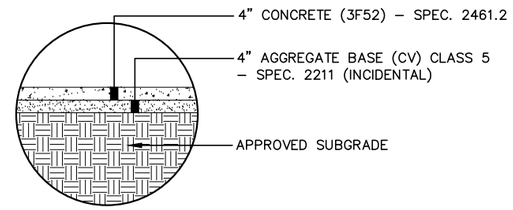


INSET A – BITUMINOUS PAVEMENT

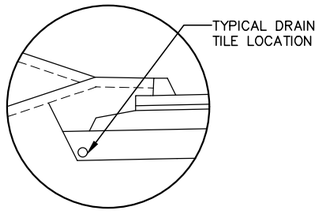
CHANKAHDA TR
CHESHIRE PKWY
NORTHWEST BLVD



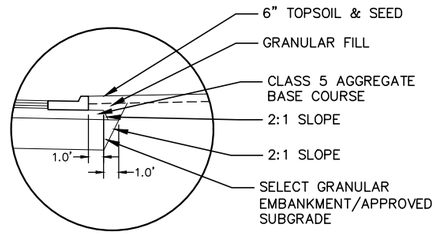
INSET B – BITUMINOUS TRAIL



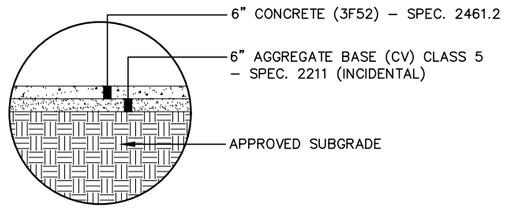
INSET C – 4" CONCRETE WALK



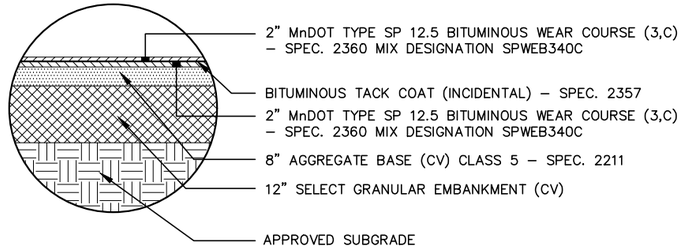
DRAIN TILE DETAIL



CURB INSET DETAIL

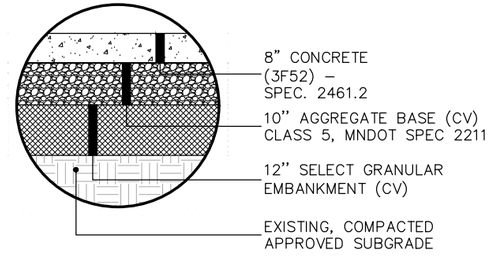


INSET D – 6" CONCRETE WALK



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: TRUCK APRON

No.	Date	Revisions	App.

DRAWING NAME	CHANKAHDA_PH3_TYP.dwg
DESIGNED BY:	JWB
DRAWN BY:	RGS
CHECKED BY:	CBL
DATE:	11/04/2024
PROJECT NO.	160662010

Kimley»Horn
767 EUSTIS STREET, SUITE 100, ST, PAUL, MN 55114
PHONE: 651-645-4197
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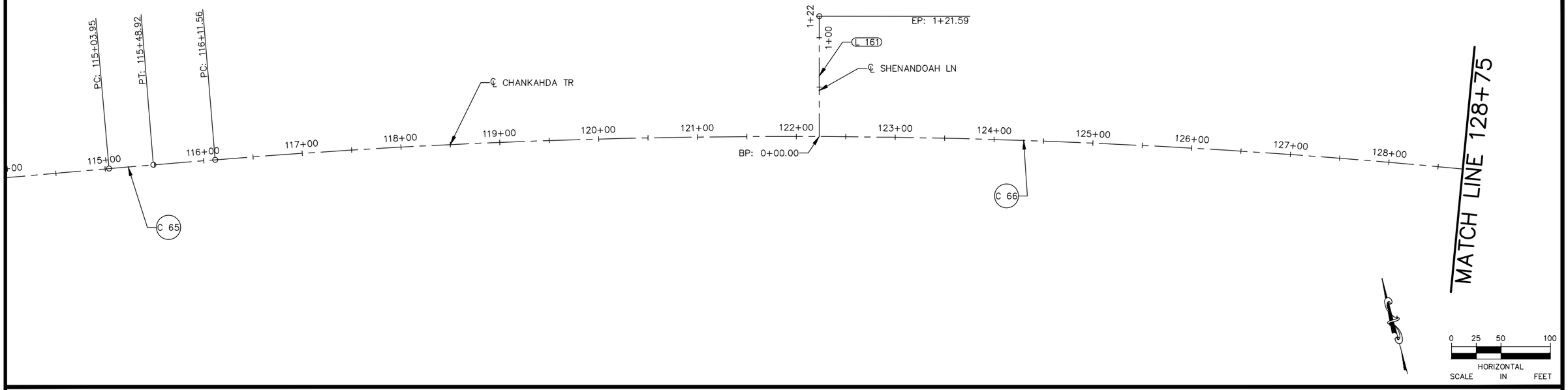
CHADD B. LARSON, PE
DATE: 11/04/2024 MN LIC. NO. 41864

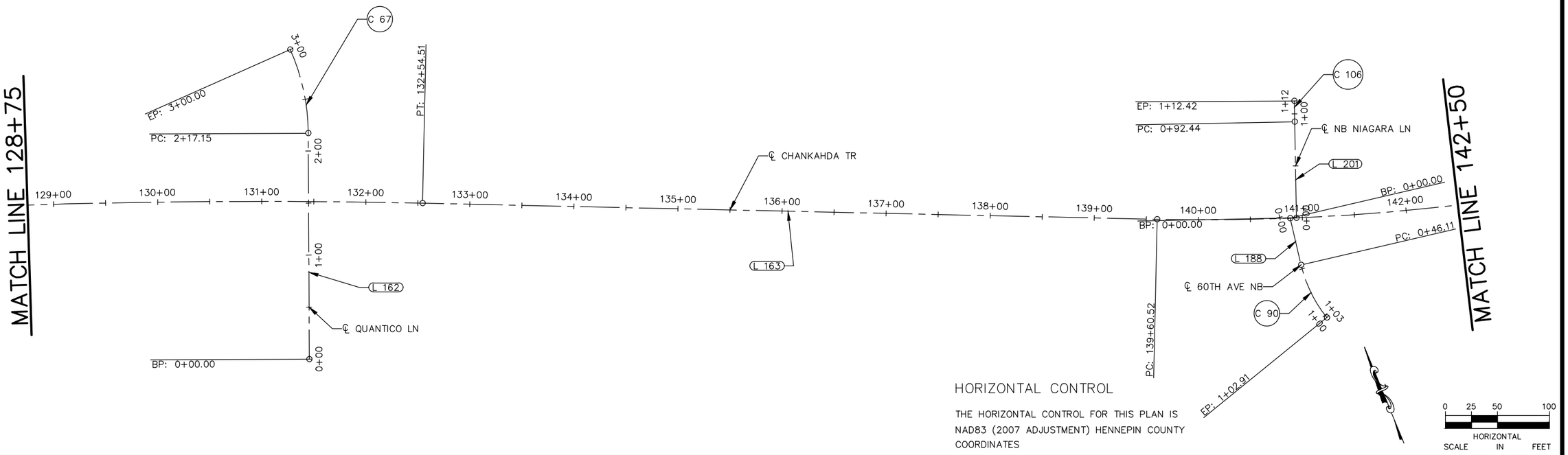
City of Plymouth
CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3

CHANKAHDA TR
TYPICAL SECTIONS INSETS

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

SHEET NO. 37 / 348





No.	Date	Revisions	App.

DRAWING NAME	CHANKAHDA_PH3_ALGN-TAB.dwg
DESIGNED BY:	JWB
DRAWN BY:	RGS
CHECKED BY:	CBL
DATE:	11/04/2024
PROJECT NO.	160662010

Kimley»Horn
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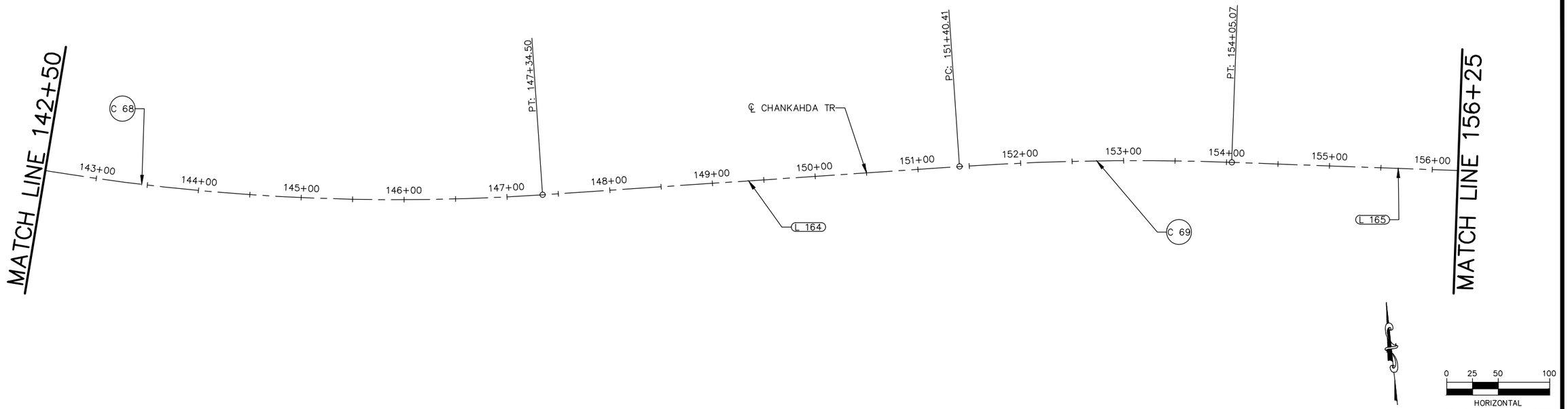
CHADD B. LARSON, PE
DATE: 11/04/2024 MN LIC. NO. 41864

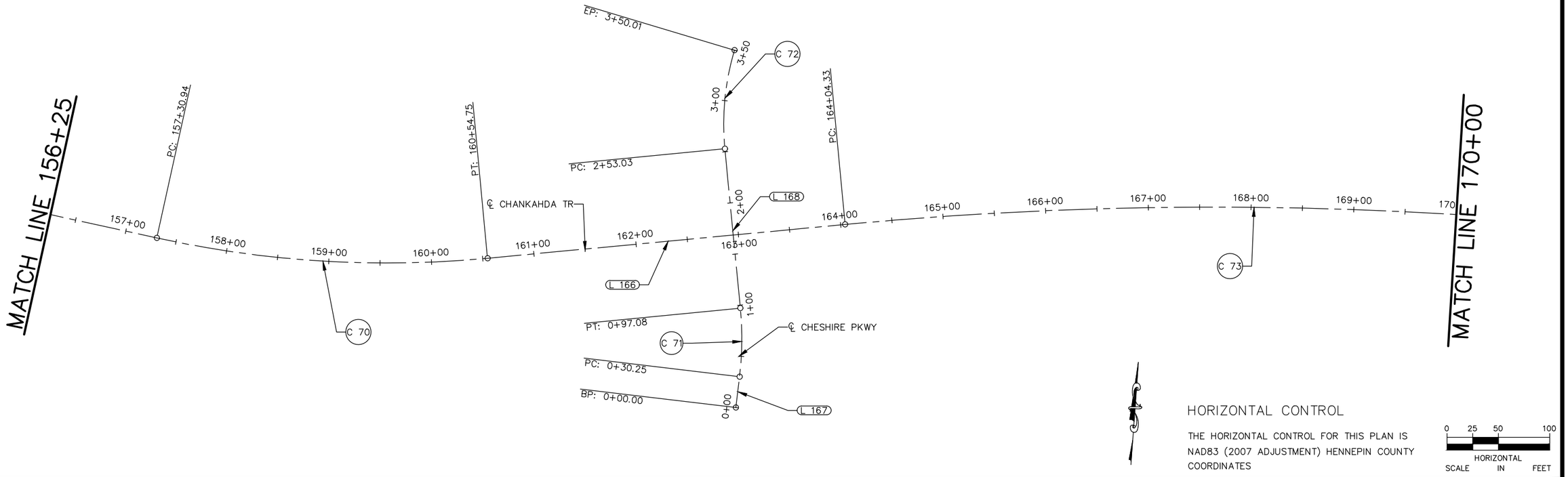
City of Plymouth

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. 38 / 348





No.	Date	Revisions	App.

DRAWING NAME	CHANKAHDA_PH3_ALGN-TAB.dwg
DESIGNED BY:	JWB
DRAWN BY:	RGS
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CHADD B. LARSON, PE

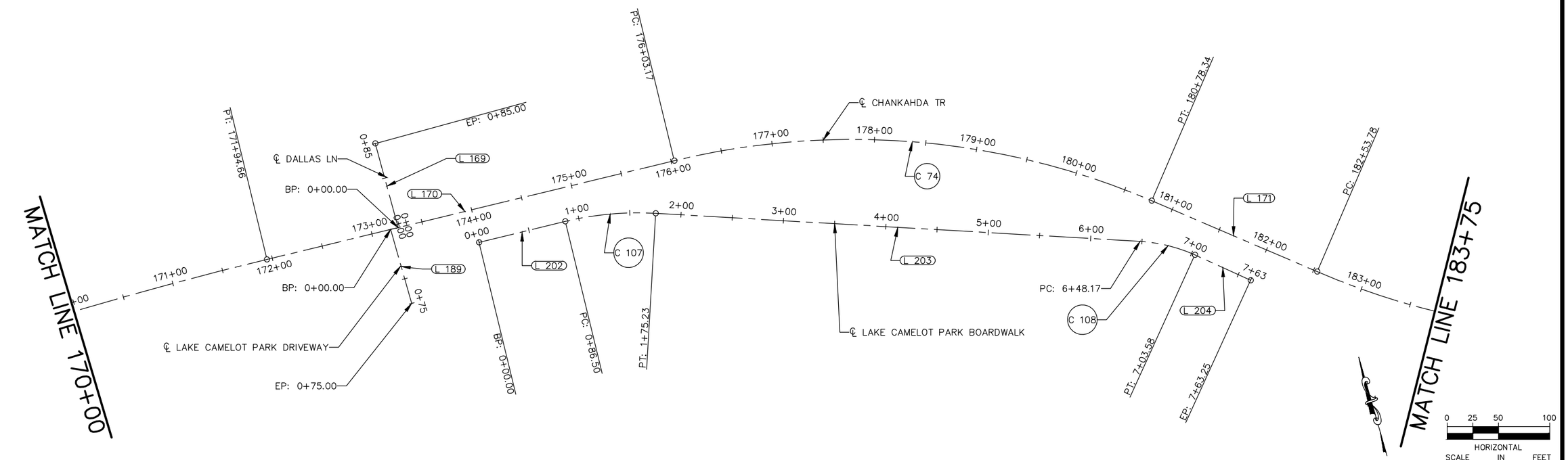
DATE: 11/04/2024 MN LIC. NO. 41864

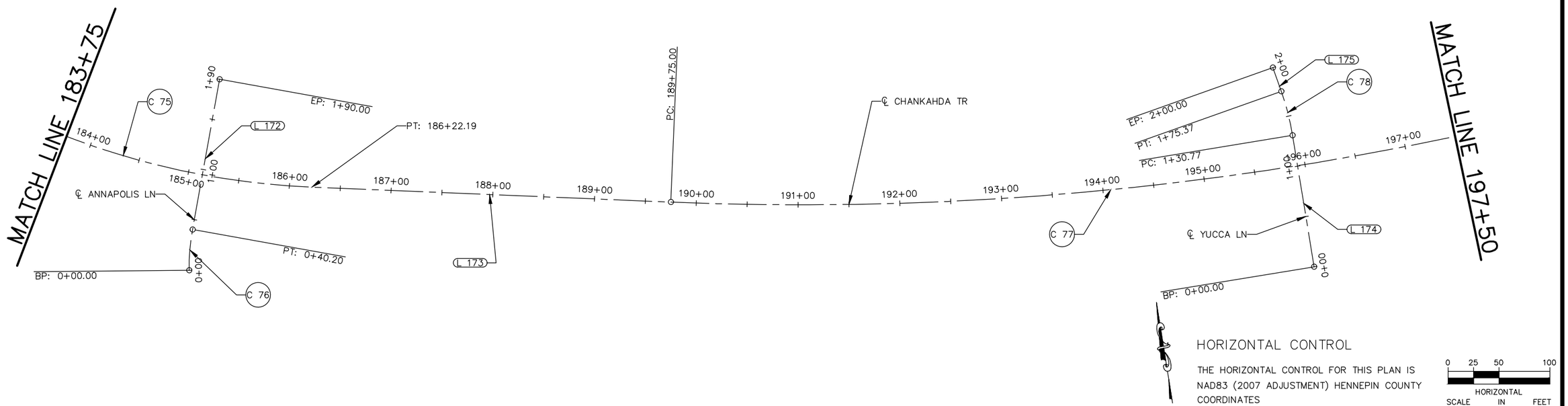
City of Plymouth

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. 39 / 348





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:	11/04/2024
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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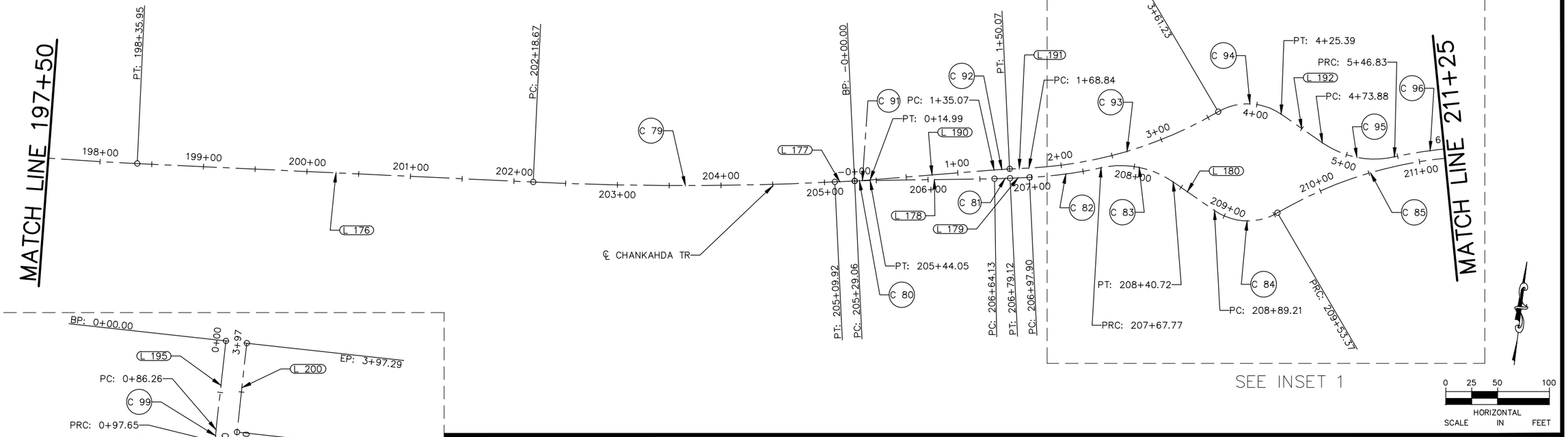
CHADD B. LARSON, PE
DATE: 11/04/2024 MN LIC. NO. 41864

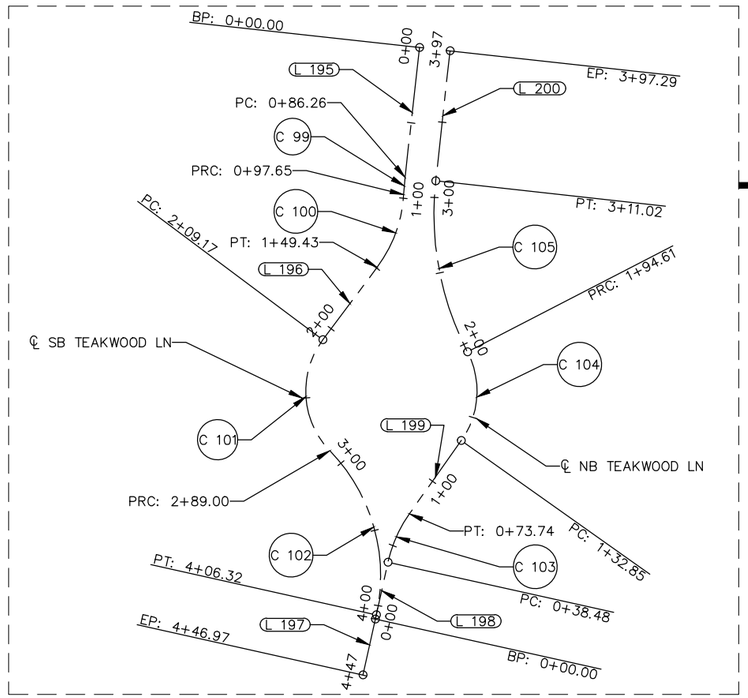
City of Plymouth

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

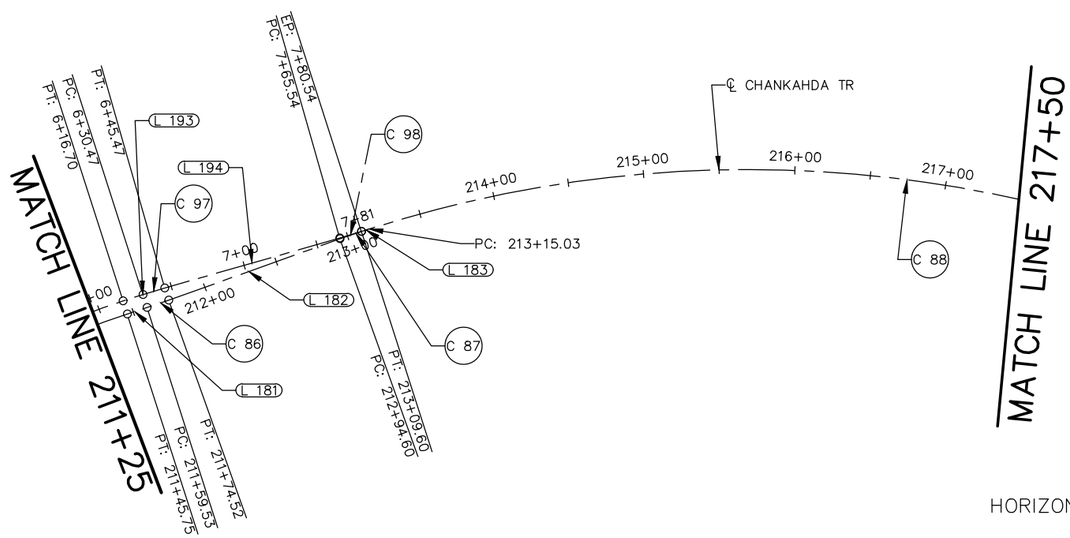
CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 40 / 348





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

HORIZONTAL SCALE IN FEET

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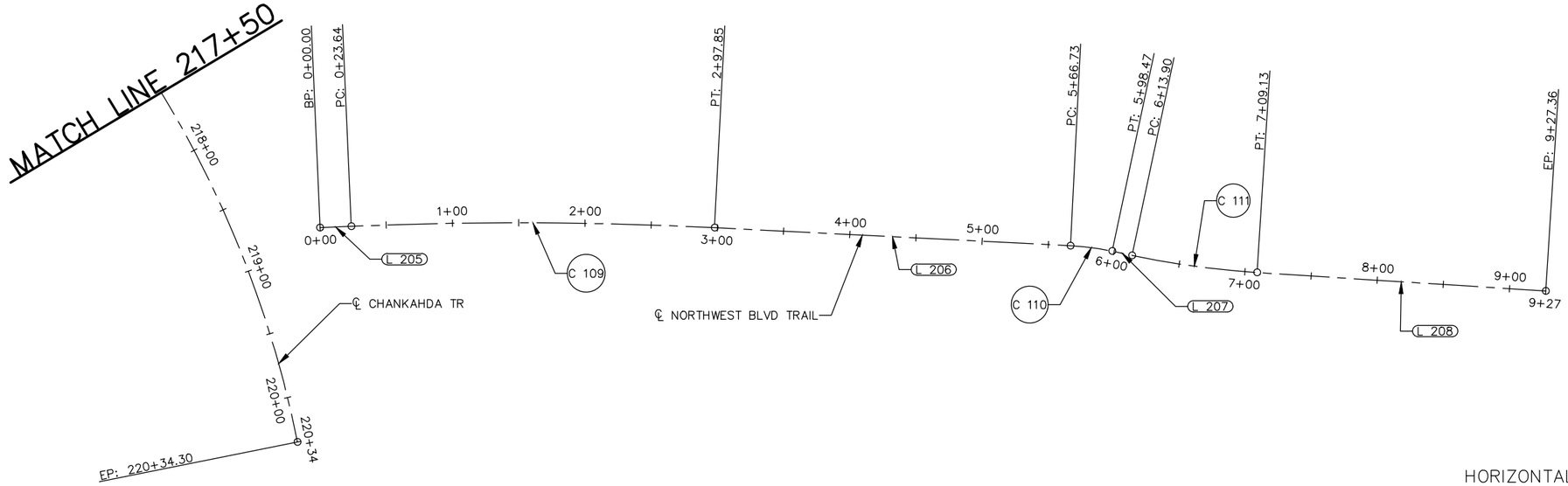
CHADD B. LARSON, PE
DATE: 11/04/2024 MN LIC. NO. 41864

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. 41 / 348



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.

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DATE: 11/04/2024 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. 42 / 348

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

DESIGNED BY:	JWB
DRAWN BY:	RGS
CHECKED BY:	CBL
DATE:	11/04/2024
PROJECT NO.	160662010

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CHADD B. LARSON, PE
DATE: 11/04/2024 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

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
60TH AVE NB

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"

No.	Date	Revisions	App.

DRAWING NAME: CHANKAHDA_PH3_ALGN-TAB.dwg

DESIGNED BY:	JWB
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CHADD B. LARSON, PE
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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.	

SHEET NO. 44 / 348

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 201	0+00.00	0+92.44							92.44	198814.94	477060.80	198901.32	477093.71	20°51'04"
C 106	0+92.44	1+12.42	1+02.43		0°49'04"	4°05'33.20"	1400.00	9.99	19.98	198901.32	477093.71	198919.94	477100.95	20°51'04" 21°40'08"

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"

No.	Date	Revisions	App.

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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+30.77							130.77	198070.25	482407.99	198201.02	482406.71	359°26'11"
C 78	1+30.77	1+75.37	1+53.13		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+75.37	2+00.00							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"

No.	Date	Revisions	App.

DRAWING NAME: CHANKAHDA_PH3_ALGN-TAB.dwg

DESIGNED BY:	JWB
DRAWN BY:	RGS
CHECKED BY:	CBL
DATE:	11/04/2024
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: 11/04/2024 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. 46 / 348

ALIGNMENT DATA
SB 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 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"

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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: 11/04/2024 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.	

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
48	TITLE SHEET
49	TEMPORARY TRAFFIC CONTROL SIGN TABULATIONS
50	SPECIAL SIGN DETAILS
51	DETAILS
52–53	CONSTRUCTION PHASING
54	DETOUR PHASE 1
55	DETOUR PHASE 2

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DRAWN BY:	HY
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PHONE: 651-645-4197
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BRIAN K. VILLA, PE

DATE: 11/04/2024 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. 48 / 348

TRAFFIC CONTROL TABULATION SHEET

"W" SERIES

SIGN	SIGN NO.	COLOR	SIZE
DETOUR AHEAD	W20-2	BLACK ON ORANGE	36" x 36"
ROAD CLOSED AHEAD	W20-3	BLACK ON ORANGE	36" x 36"

"G" SERIES

	SIGN	SIGN NO.	COLOR	SIZE
	ROAD CLOSED BEGINNING MONTH DY	G20-X1	BLACK ON ORANGE	72" x 60"
①	Chankahda Tr ROAD WORK Vicksburg Ln TO Cheshire Pkwy BEGINS MONTH DY	WZ-1	BLACK ON ORANGE	96" x 84"
①	Chankahda Tr ROAD WORK Cheshire Pkwy TO Northwest Blvd BEGINS MONTH DY	WZ-2	BLACK ON ORANGE	96" x 84"
①	FOLLOW DETOUR	WZ-5	BLACK ON ORANGE	96" x 15"

DEVICES

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

"M" SERIES

	SIGN	SIGN NO.	COLOR	SIZE
	END DETOUR	M4-8a	BLACK ON ORANGE	24" x 18"
	DETOUR ⇧	M4-9MT	BLACK ON ORANGE	30" x 24"
	DETOUR ⇗	M4-9MATR	BLACK ON ORANGE	30" x 24"
	DETOUR ⇨	M4-9MR	BLACK ON ORANGE	30" x 24"
	DETOUR ⇦	M4-9ML	BLACK ON ORANGE	30" x 24"
	DETOUR ⇖	M4-9MATL	BLACK ON ORANGE	30" x 24"
①	Chankahda Tr		BLACK ON ORANGE	36" x 12"

BARRICADE MOUNTED SIGNS

	SIGN	SIGN NO.	COLOR	SIZE (IN. X IN.) (W X H)
	ROAD CLOSED	R11-2M	BLACK ON WHITE	48" x 30"
①	ROAD CLOSED 1 MILE AHEAD OPEN TO Dallas Ln	WZ-3	BLACK ON ORANGE	60" x 30"
①	ROAD CLOSED 1.5 MILE AHEAD OPEN TO 59th Ave	WZ-4	BLACK ON ORANGE	60" x 30"
	DETOUR ⇨	M4-10R	BLACK ON ORANGE	48" x 18"
	⇦ DETOUR	M4-10L	BLACK ON ORANGE	48" x 18"

SPECIFIC NOTES:

① SEE SHEET 50 FOR SIGN PANEL DIMENSIONS.

No.	Date	Revisions	App.

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767 EUSTIS STREET, SUITE 100, ST, PAUL, MN 55114
PHONE: 651-645-4197
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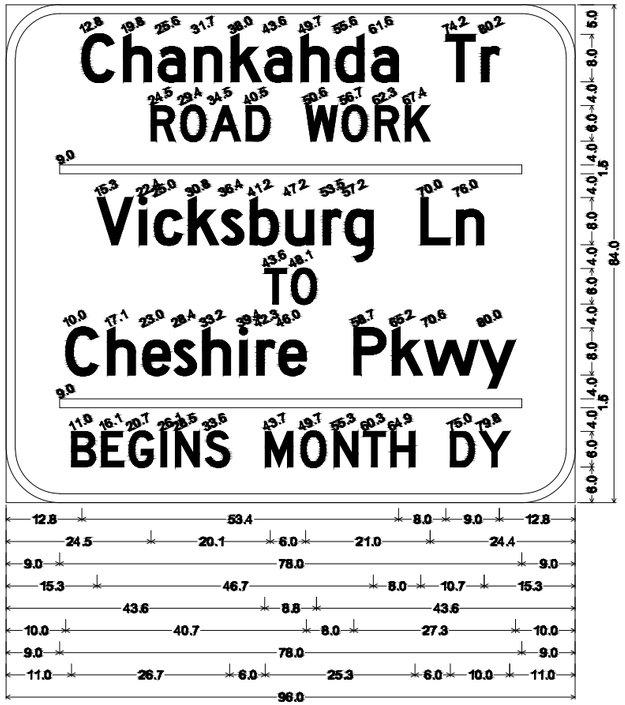
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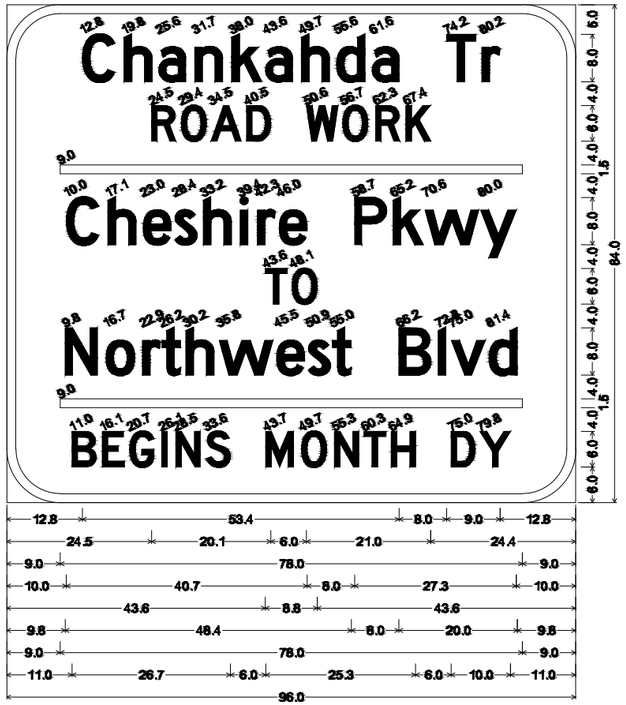
City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
TRAFFIC CONTROL PLANS
TEMPORARY SIGN TABULATIONS

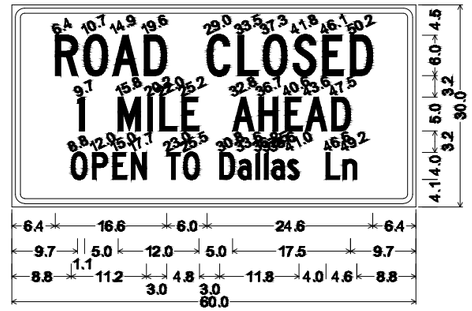
CITY PROJECT	ST240002
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S.A.P.	



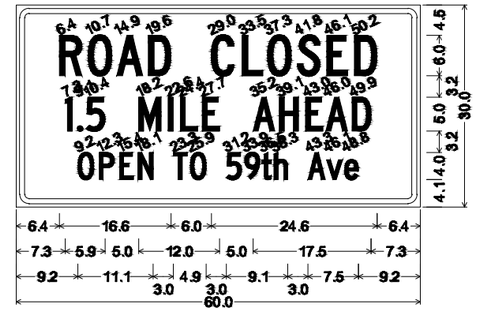
WZ-1;
9.0" Radius, 1.5" Border, Black on Orange;
"Chankahda Tr", D 2K; "ROAD WORK", D 2K; "Vicksburg Ln", D 2K; "TO", D 2K;
"Cheshire Pkwy", D 2K; "BEGINS", D 2K; "MONTH DY", D 2K;



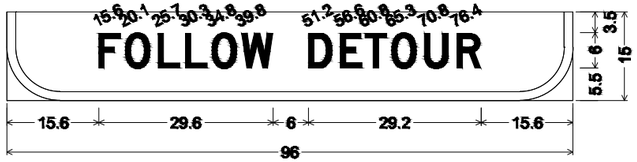
WZ-2;
9.0" Radius, 1.5" Border, Black on Orange;
"Chankahda Tr", D 2K; "ROAD WORK", D 2K; "Cheshire Pkwy", D 2K; "TO", D 2K;
"Northwest Blvd", D 2K; "BEGINS", D 2K; "MONTH DY", D 2K;



WZ-3;
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-4;
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-5;
9.0" Radius, 1.5" Border, Black on Orange;
"FOLLOW DETOUR", D 2K;



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

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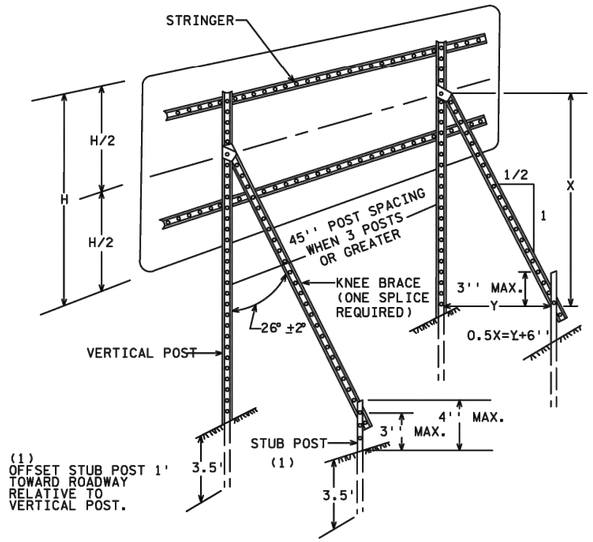
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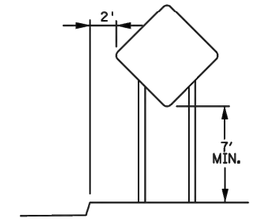
City of Plymouth
CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
TRAFFIC CONTROL PLANS
SPECIAL SIGN DETAILS

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
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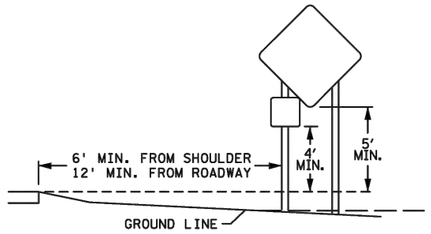
SHEET NO. 50 / 348



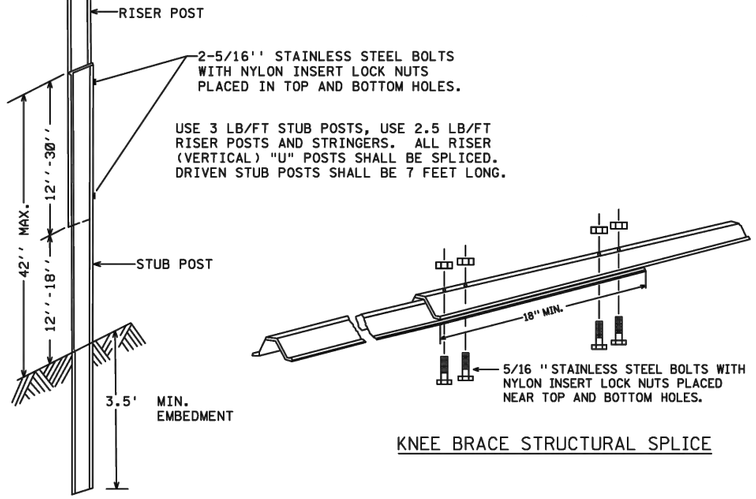
TYPICAL "A-FRAME" INSTALLATION
TYPE "D" SIGNS



TYPICAL URBAN DESIGN



TYPICAL RURAL DESIGN



"U" POST BREAKAWAY SPLICE

KNEE BRACE STRUCTURAL 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:	11/04/2024
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: 11/04/2024 MN LIC. NO. 56090

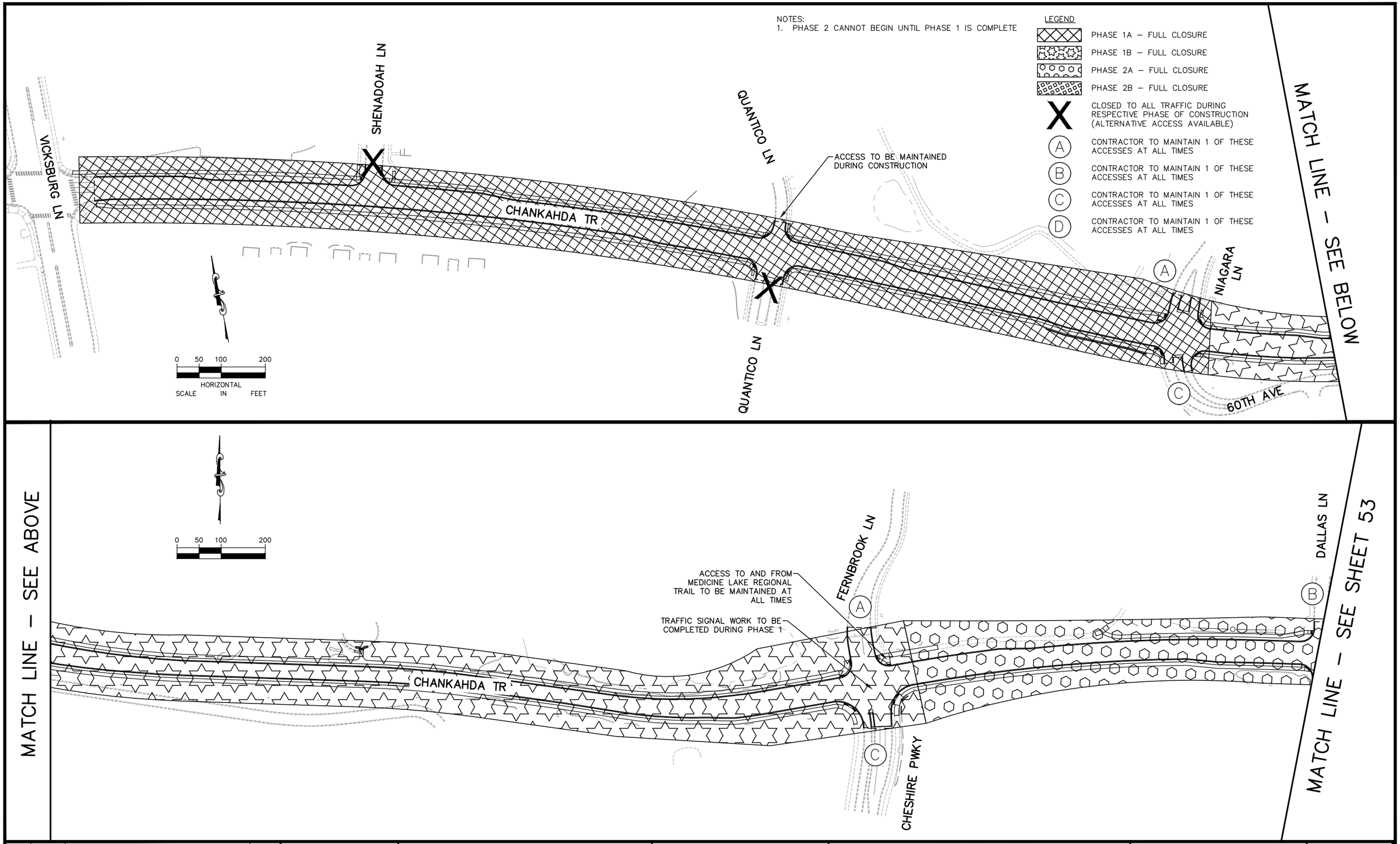
City of Plymouth
CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
TRAFFIC CONTROL PLANS
DETAILS

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

SHEET NO. 51 / 348

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

LEGEND
- PHASE 1A – FULL CLOSURE
- PHASE 1B – FULL CLOSURE
- PHASE 2A – FULL CLOSURE
- PHASE 2B – 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: 11/04/2024 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. 52 / 348

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

LEGEND

- PHASE 1A – FULL CLOSURE
- PHASE 1B – FULL CLOSURE
- PHASE 2A – FULL CLOSURE
- PHASE 2B – 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 52

MATCH LINE – SEE BELOW

MATCH LINE – SEE ABOVE

DALLAS LN

ANNAPOLIS LN

YUCCA LN

CHANKAHDA TR

TEAKWOOD LN

NORTHWEST BLVD (CR 61)

TRAFFIC SIGNAL WORK TO BE COMPLETED DURING PHASE 2B. CONTRACTOR SHALL SUBMIT DETAILED TRAFFIC CONTROL PLANS FOR APPROVAL FOR THE INTERSECTION IMPROVEMENT WORK AT CHANKAHDA TR/ NORTHWEST BLVD (CR 61).

0 50 100 200
HORIZONTAL SCALE IN FEET

No.	Date	Revisions	App.

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DESIGNED BY:	BWS
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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. 53 / 348

LEGEND

PHASE 1A

PHASE 1B

PROPOSED DETOUR

SPECIFIC NOTES:

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

0 400 800 1600

HORIZONTAL SCALE IN FEET

CHANKAHDA TR

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

NORTHWEST BLVD (C.R. 61)

VICKSBURG LN

CHESHIRE PKWY

I-494

SCHMIDT LAKE RD

OLD ROCKFORD RD

Chankahda Tr ROAD WORK Vicksburg Ln TO Cheshire Pkwy BEGINS MONTH DY FOLLOW DETOUR

ROAD CLOSED BEGINNING MONTH_ DY

ROAD CLOSED

ROAD CLOSED 1 MILE AHEAD OPEN TO Shiloh Ave.

ROAD CLOSED 1.5 MILE AHEAD OPEN TO Shiloh Ave.

DETOUR

DETOUR AHEAD

ROAD CLOSED AHEAD

END DETOUR

Pike Lake

Bass Lake

Pomerleau Lake

Canadian Pacific Rail System

Curtis Lake

Schmidt Lake

Turtle Lake

No.	Date	Revisions	App.

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BRIAN K. VILLA, PE

DATE: 11/04/2024 MN LIC. NO. 56090

City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
TRAFFIC CONTROL PLANS
DETOUR PHASE 1

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

LEGEND

PHASE 2A

PHASE 2B

PROPOSED DETOUR

SPECIFIC NOTES:

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

0 400 800 1600

HORIZONTAL SCALE IN FEET

MAPLE GROVE PKWY

ELM RD

CHANKAHDA TR

VICKSBURG LN

SCHMIDT LAKE RD

CHESHIRE PKWY

I-494

FISH LAKE RD

NORTHWEST BLVD (C.R. 61)

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

Edward Lake

Pike Lake

Pomerleau Lake

Canadian Pacific Railway

Bass Lake

Schmidt Lake

Chankahda Trail Reconstruction Phase 3 Cheshire Pkwy to Northwest Blvd Work BEGINS MONTH DY FOLLOW DETOUR

ROAD CLOSED

DETOUR

ROAD CLOSED AHEAD

DETOUR AHEAD

END DETOUR

ROAD CLOSED BEGINNING MONTH_ DY

DETOUR AHEAD

No.	Date	Revisions	App.

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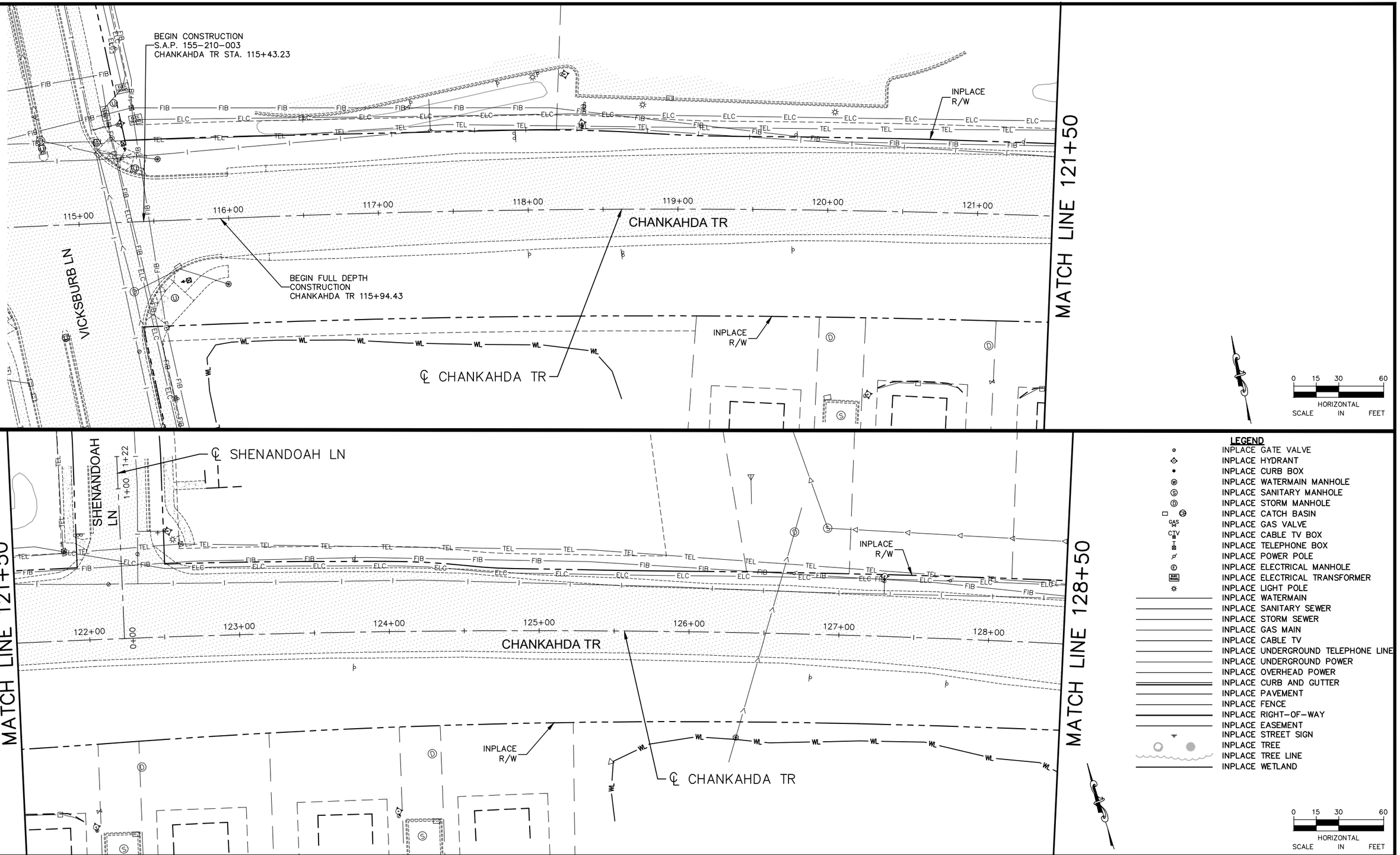
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City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
TRAFIC CONTROL PLANS
DETOUR PHASE 2

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

SHEET NO. 55 / 348



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

No.	Date	Revisions	App.

DRAWING NAME	CHANKAHDA_PH3_ExistPlan.dwg
DESIGNED BY:	JWB
DRAWN BY:	RGS
CHECKED BY:	CBL
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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: 11/04/2024 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. 56 / 348

MATCH LINE 128+50

MATCH LINE 135+50

INPLACE R/W

CHANKAHDA TR

℄ CHANKAHDA TR

℄ QUANTICO LN

QUANTICO LN

INPLACE R/W

0 15 30 60

HORIZONTAL SCALE IN FEET

MATCH LINE 135+50

INPLACE R/W

℄ CHANKAHDA TR

NIAGARA LN

℄ NB NIAGARA LN

CHANKAHDA TR

INPLACE R/W

℄ 60TH AVE NB

60TH AVE

MATCH LINE 142+50

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
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- INPLACE PAVEMENT
- INPLACE FENCE
- INPLACE RIGHT-OF-WAY
- INPLACE EASEMENT
- INPLACE STREET SIGN
- INPLACE TREE
- INPLACE TREE LINE
- INPLACE WETLAND

0 15 30 60

HORIZONTAL SCALE IN FEET

No.	Date	Revisions	App.

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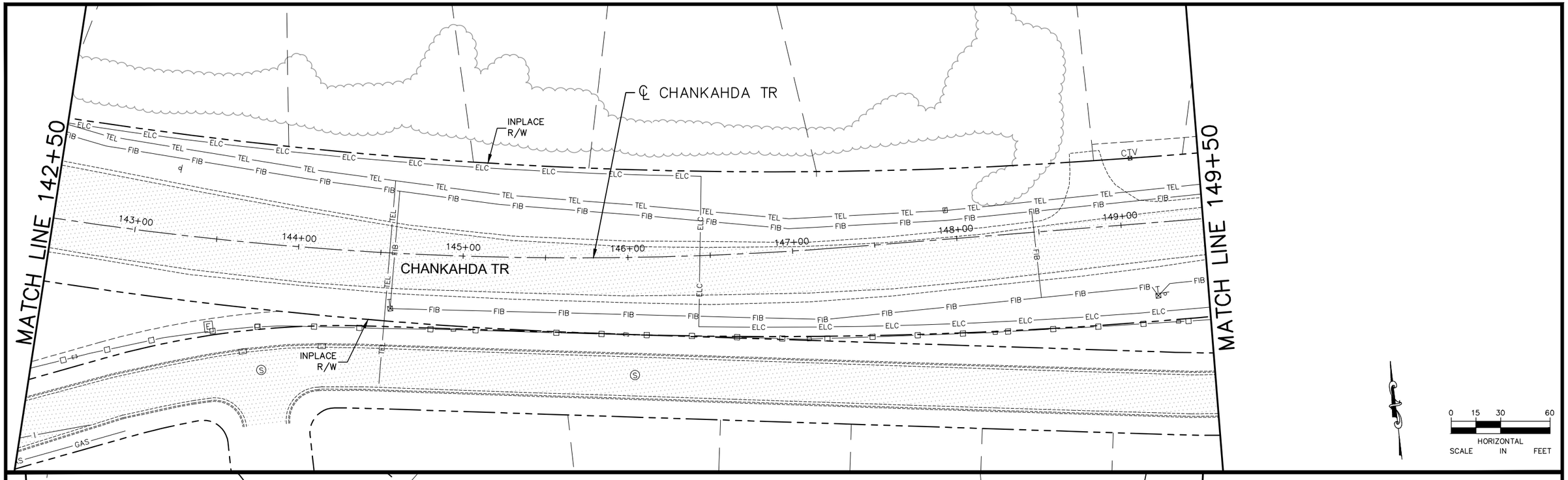
DATE: 11/04/2024 MN LIC. NO. 41864

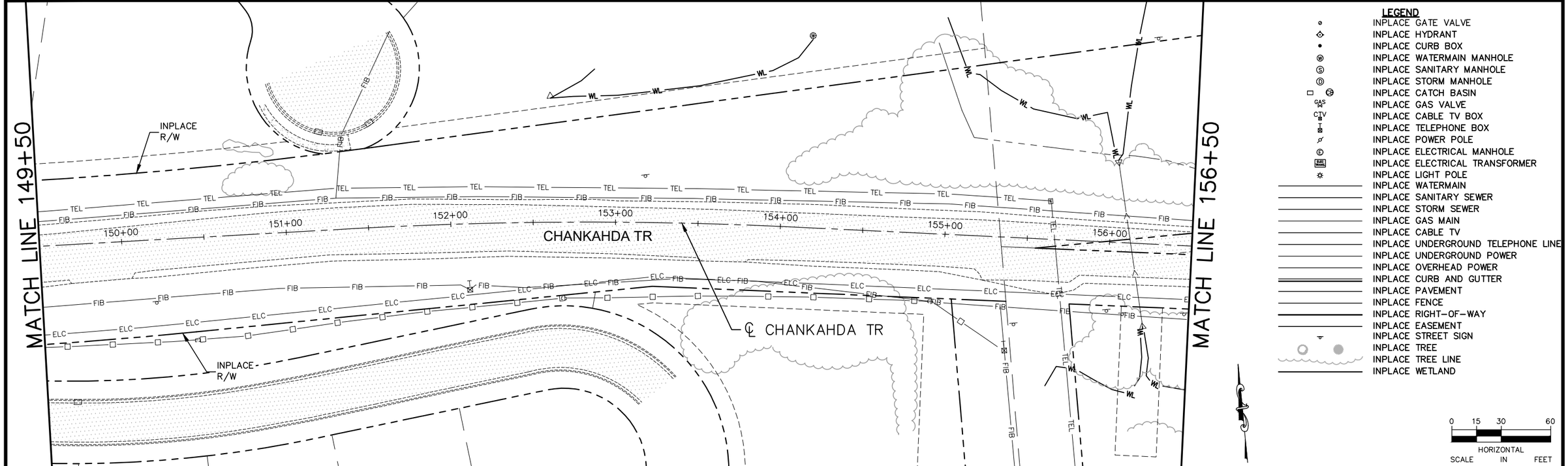
City of Plymouth

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
S.A.P.	

SHEET NO. 57 / 348





LEGEND

- INPLACE GATE VALVE
- INPLACE HYDRANT
- INPLACE CURB BOX
- INPLACE WATERMAIN MANHOLE
- INPLACE SANITARY MANHOLE
- INPLACE STORM MANHOLE
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- INPLACE STREET SIGN
- INPLACE TREE
- INPLACE TREE LINE
- INPLACE WETLAND

0 15 30 60
HORIZONTAL SCALE IN FEET

No.	Date	Revisions	App.

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Kimley»Horn
767 EUSTIS STREET, SUITE 100, ST, PAUL, MN 55114
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CHADD B. LARSON, PE
DATE: 11/04/2024 MN LIC. NO. 41864

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. 58 / 348

MATCH LINE 156+50

MATCH LINE 164+00

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

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
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- INPLACE TREE
- INPLACE TREE LINE
- INPLACE WETLAND

0 15 30 60

HORIZONTAL SCALE IN FEET

No.	Date	Revisions	App.

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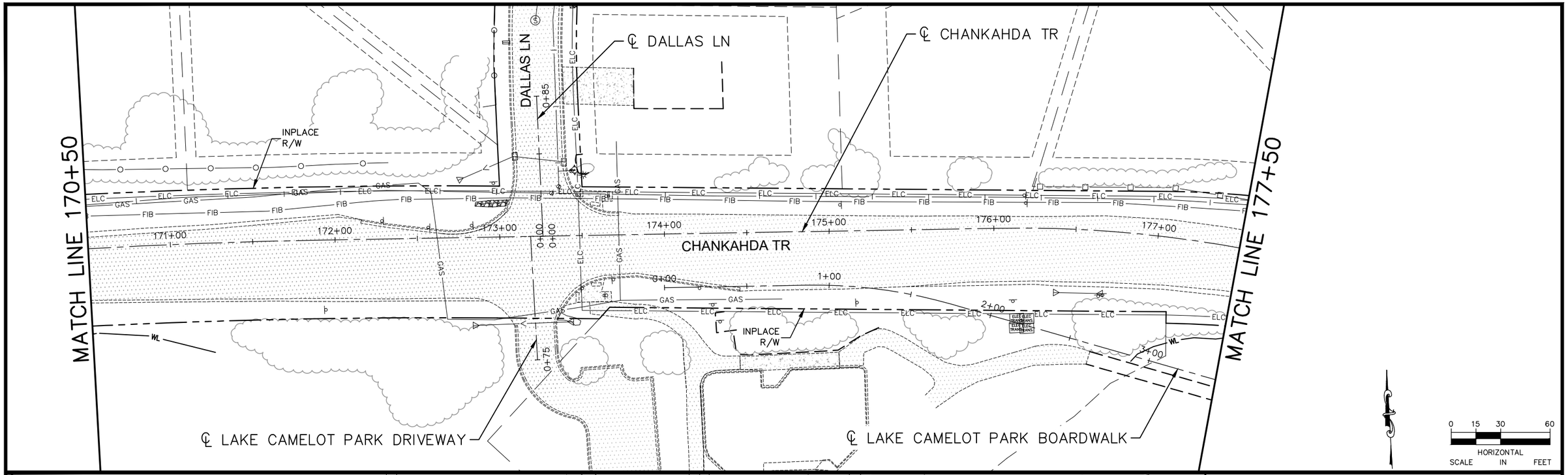
DATE: 11/04/2024 MN LIC. NO. 41864

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. 59 / 348



No.	Date	Revisions	App.

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CHADD B. LARSON, PE

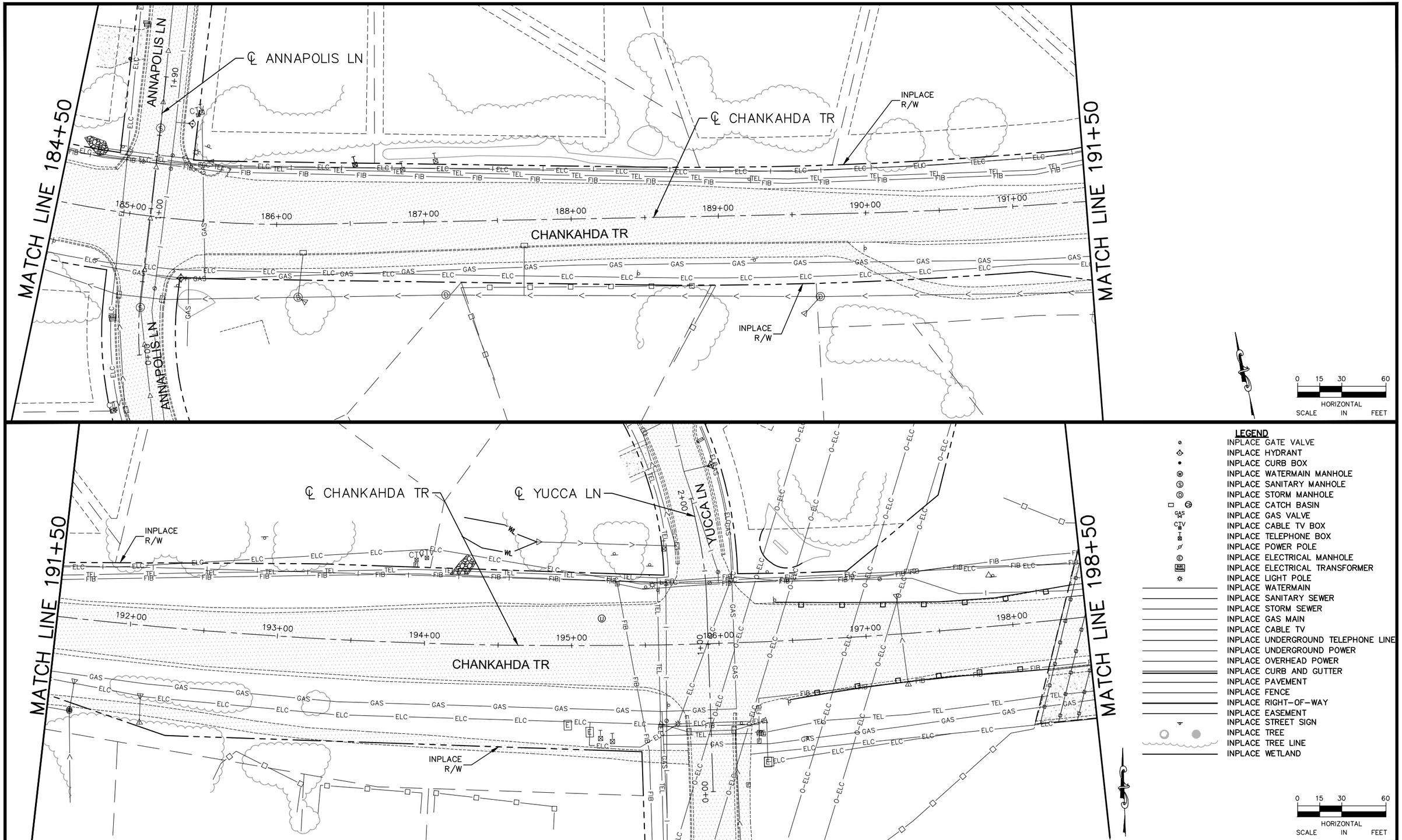
DATE: 11/04/2024 MN LIC. NO. 41864

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. 60 / 348



No.	Date	Revisions	App.

DRAWING NAME	CHANKAHDA_PH3_ExistPlan.dwg
DESIGNED BY:	JWB
DRAWN BY:	RGS
CHECKED BY:	CBL
DATE:	11/04/2024
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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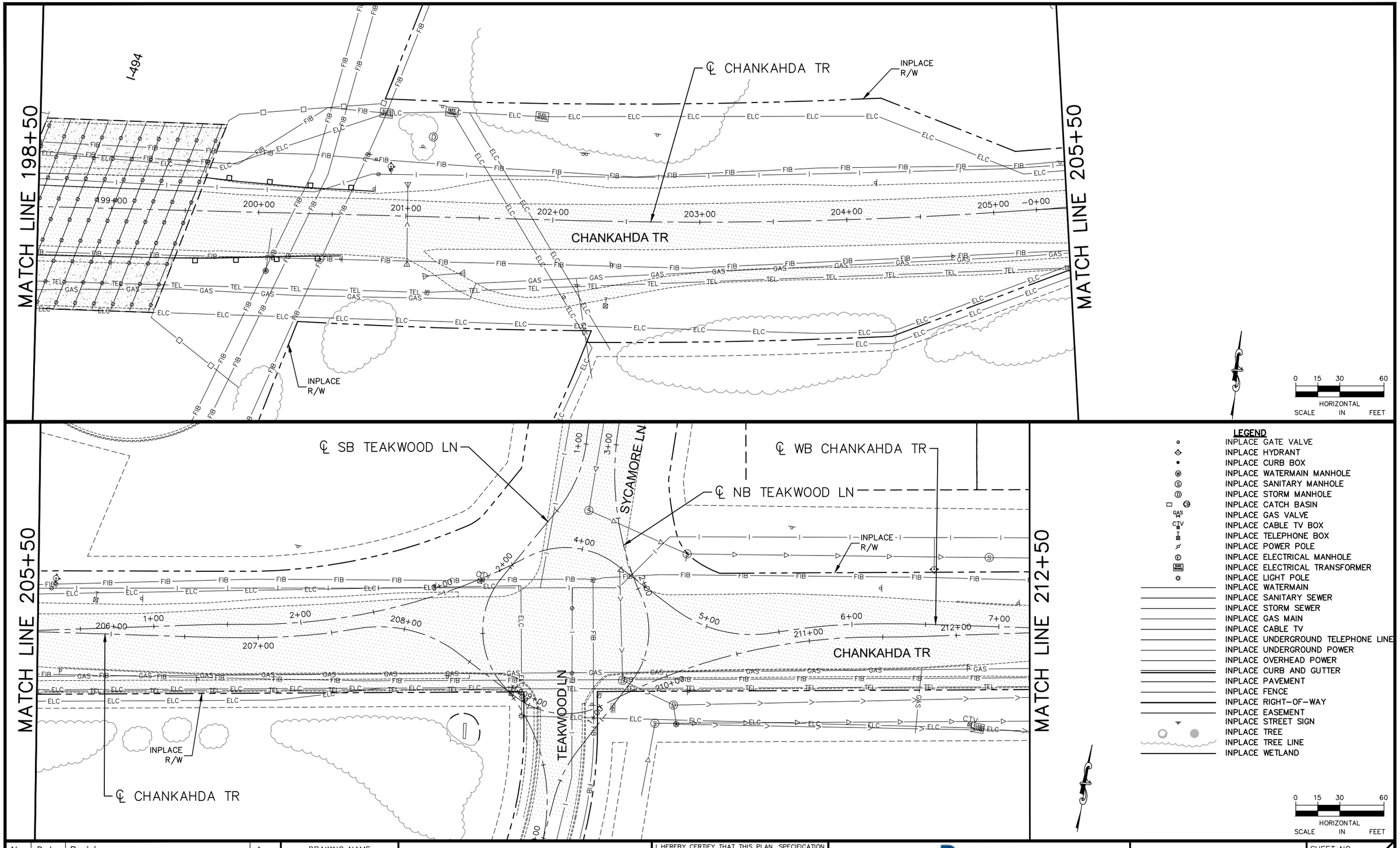
CHADD B. LARSON, PE
DATE: 11/04/2024 MN LIC. NO. 41864

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. 61 / 348



No.	Date	Revisions	App.

DRAWING NAME	CHANKAHDA_PH3_ExistPlan.dwg
DESIGNED BY:	JWB
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DATE:	11/04/2024
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767 EUSTIS STREET, SUITE 100, ST, PAUL, MN 55114
PHONE: 651-645-4197
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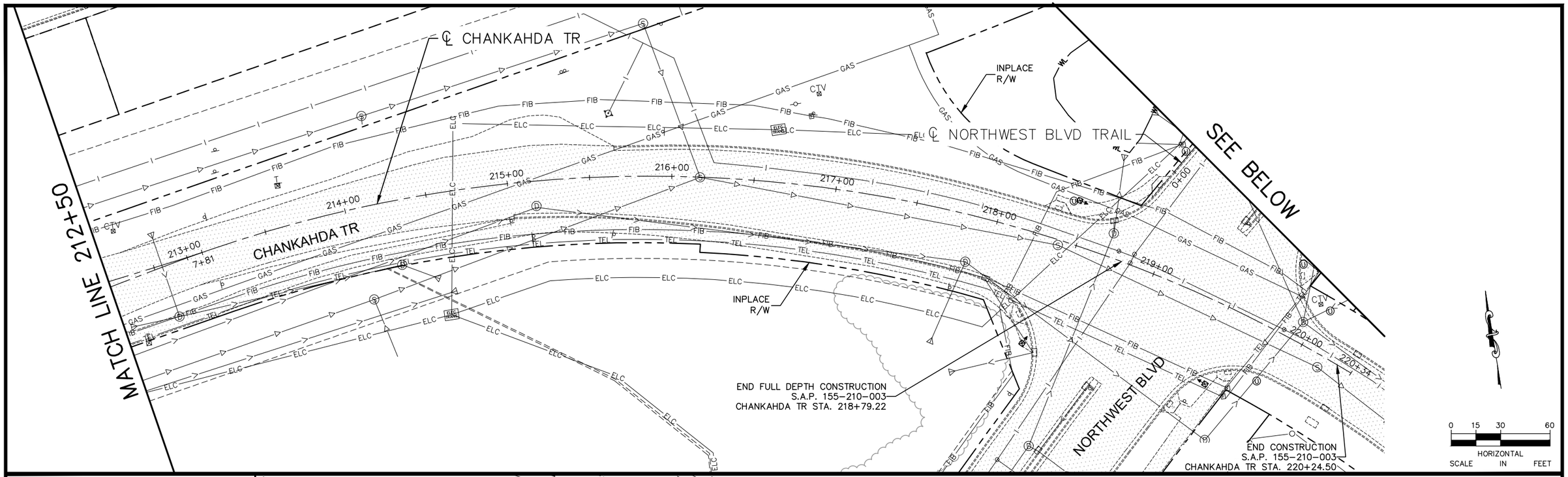
DATE: 11/04/2024 MN LIC. NO. 41864

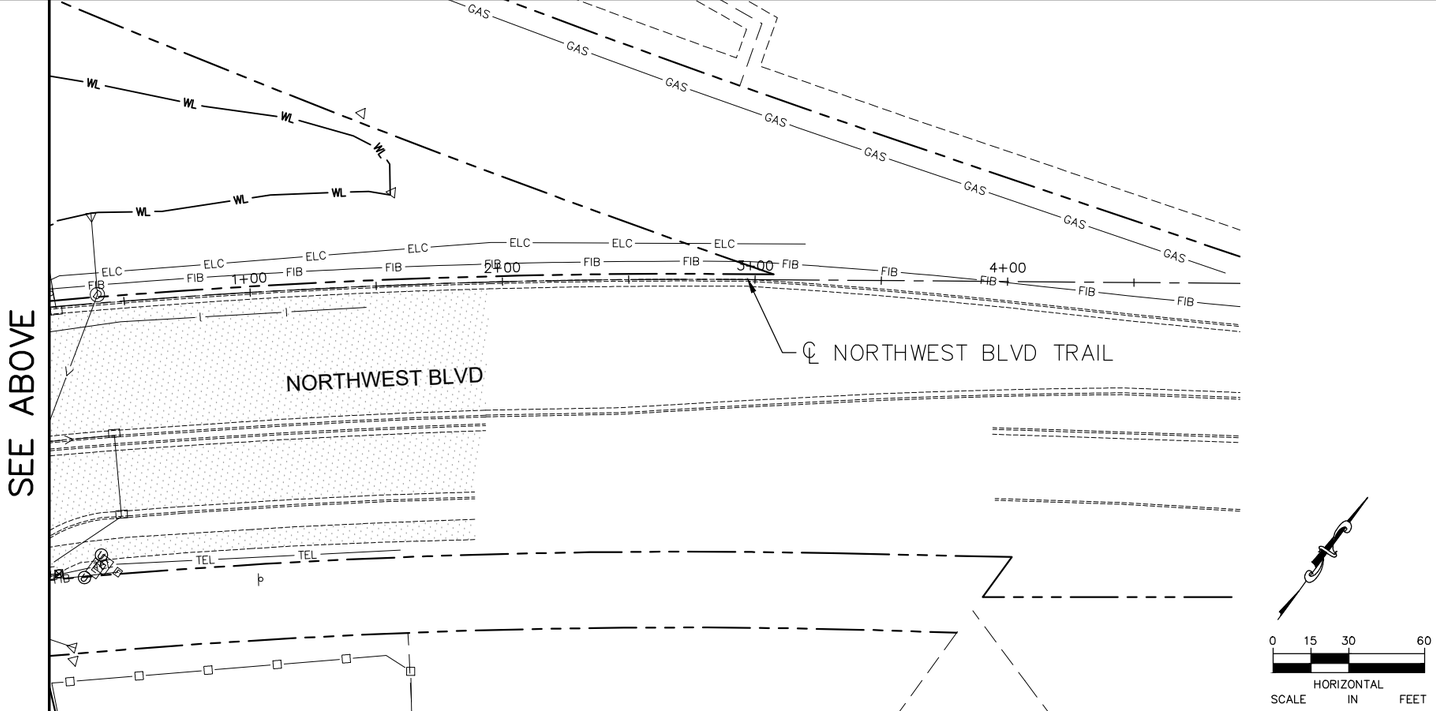
City of Plymouth

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. 62 / 348





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

No.	Date	Revisions	App.

DRAWING NAME	CHANKAHDA_PH3_ExistPlan.dwg
DESIGNED BY:	JWB
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DATE:	11/04/2024
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767 EUSTIS STREET, SUITE 100, ST. PAUL, MN 55114
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CHADD B. LARSON, PE
DATE: 11/04/2024 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. 63 / 348

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.

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, 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
56 – 63	INPLACE CONDITION PLAN
67 – 81	EROSION CONTROL AND TURF ESTABLISHMENT PLANS
83 – 97	REMOVAL PLANS
99 – 128	DRAINAGE PLANS LATERALS AND TABULATION AND DETAILS
144 –163	CONSTRUCTION PLAN AND PROFILES
164 –169	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:	11/04/2024
PROJECT NO.	160662010

Kimley»Horn
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STEPHANIE L. THULIEN, PE
DATE: 11/04/2024 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
   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:	11/04/2024
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 L. THULIEN, PE
DATE: 11/04/2024 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. 65 / 348

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

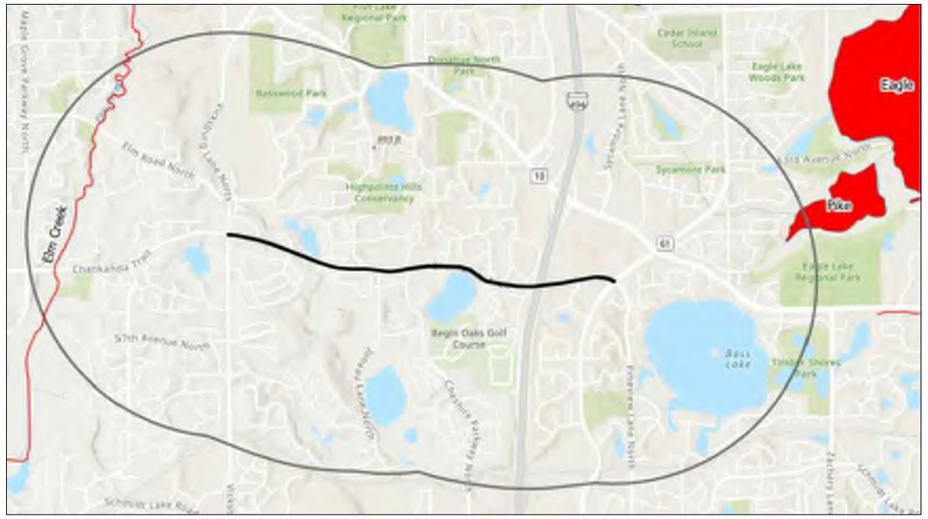
THESE NOTES ALONG WITH THE STORMWATER POLLUTION PREVENTION PLAN (SWPPP) NARRATIVE ARE INTENDED TO GIVE INFORMATION ON CRITICAL DRAINAGE FEATURES, NATURAL RESOURCES AND CONTRACTOR OPERATIONS THAT MAY IMPACT DRAINAGE AND NATURAL RESOURCES.

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



No.	Date	Revisions	App.

DRAWING NAME: CHANKAHDA_PH3_SWPPP.dwg

DESIGNED BY:	HB
DRAWN BY:	PD
CHECKED BY:	SLT
DATE:	11/04/2024
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.

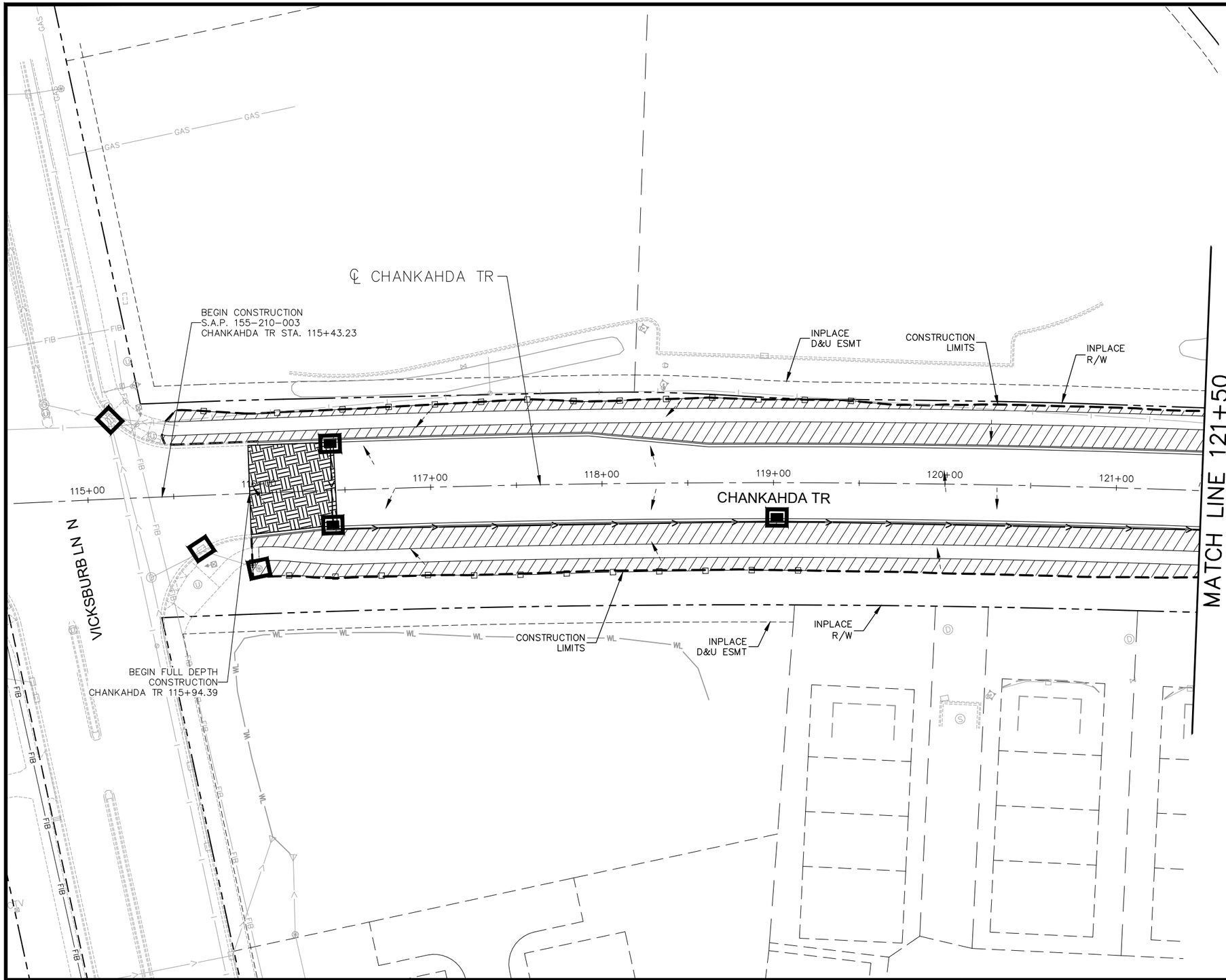
STEPHANIE L. THULIEN, PE
DATE: 11/04/2024 MN LIC. NO. 57230

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. 66 / 348



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
  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 26
- 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

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:	11/04/2024
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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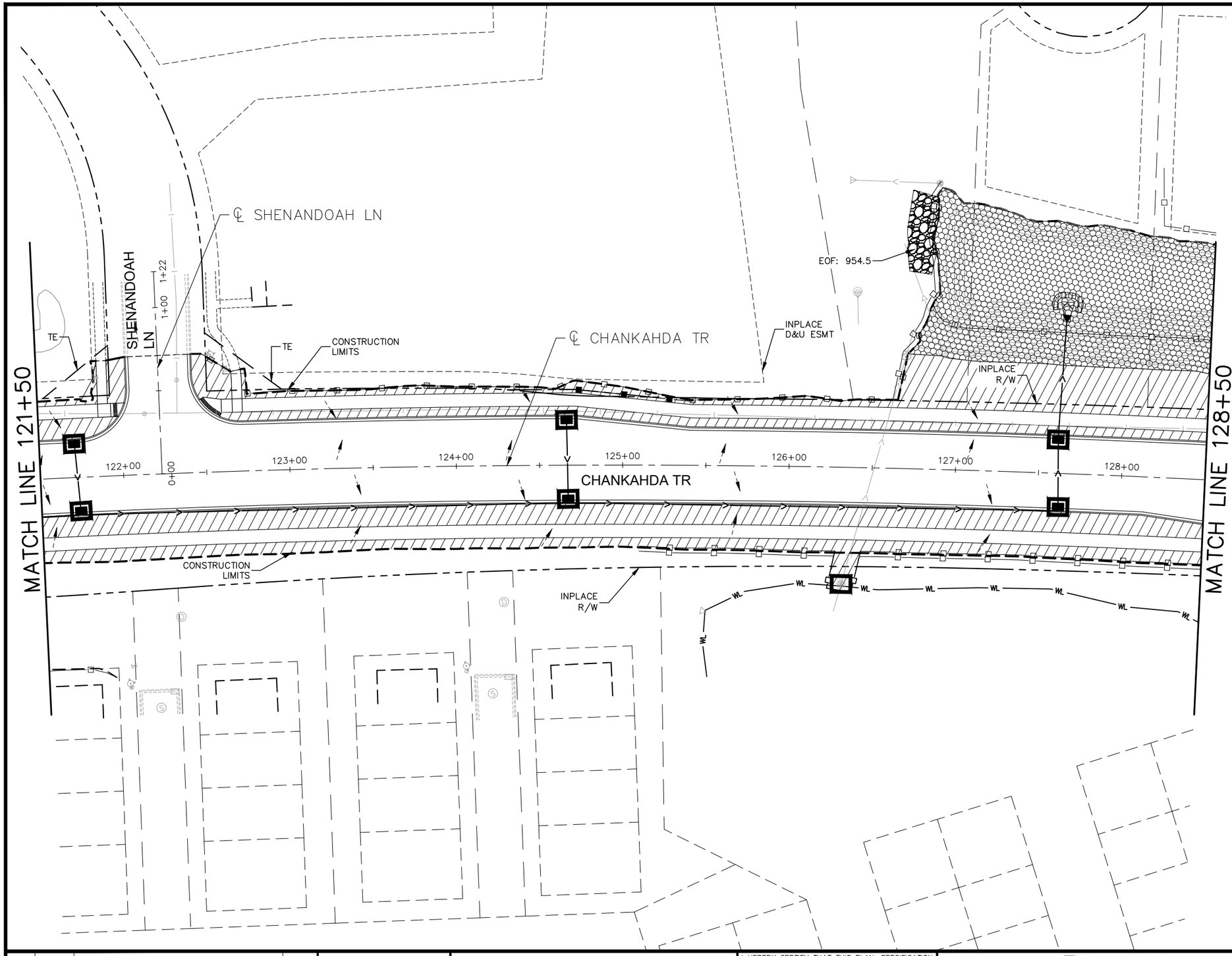
CHADD B. LARSON, PE
DATE: 11/04/2024 MN LIC. NO. 41864

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. 67 / 348



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
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HARROWED OR RAKED AND THEN CULTIVATED
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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
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 26

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

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:	11/04/2024
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.

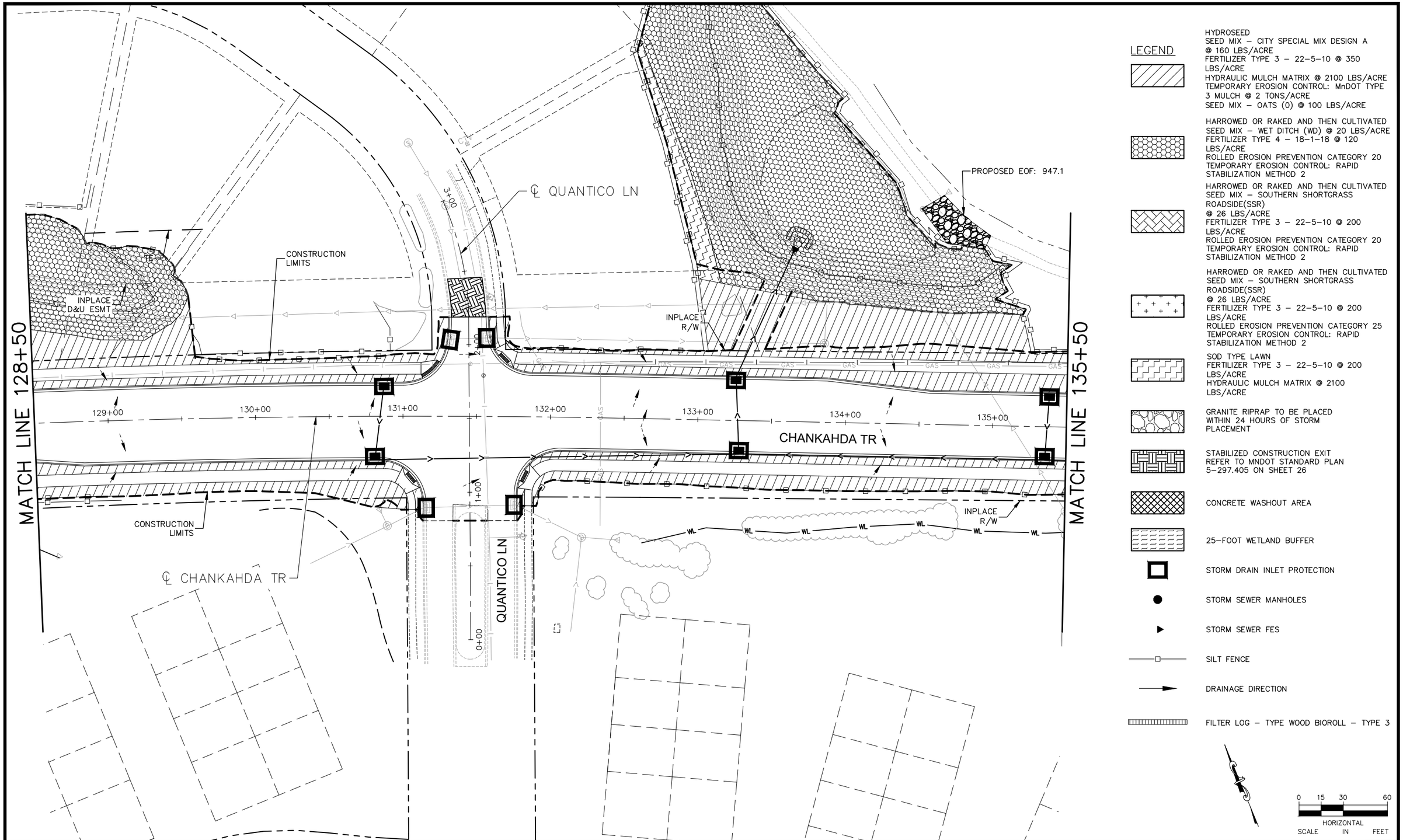
CHADD B. LARSON, PE
DATE: 11/04/2024 MN LIC. NO. 41864

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. 68 / 348



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
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- SOD TYPE LAWN
  FERTILIZER TYPE 3 – 22–5–10 @ 200 LBS/ACRE
  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 26
- 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

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:	11/04/2024
PROJECT NO.	160662010

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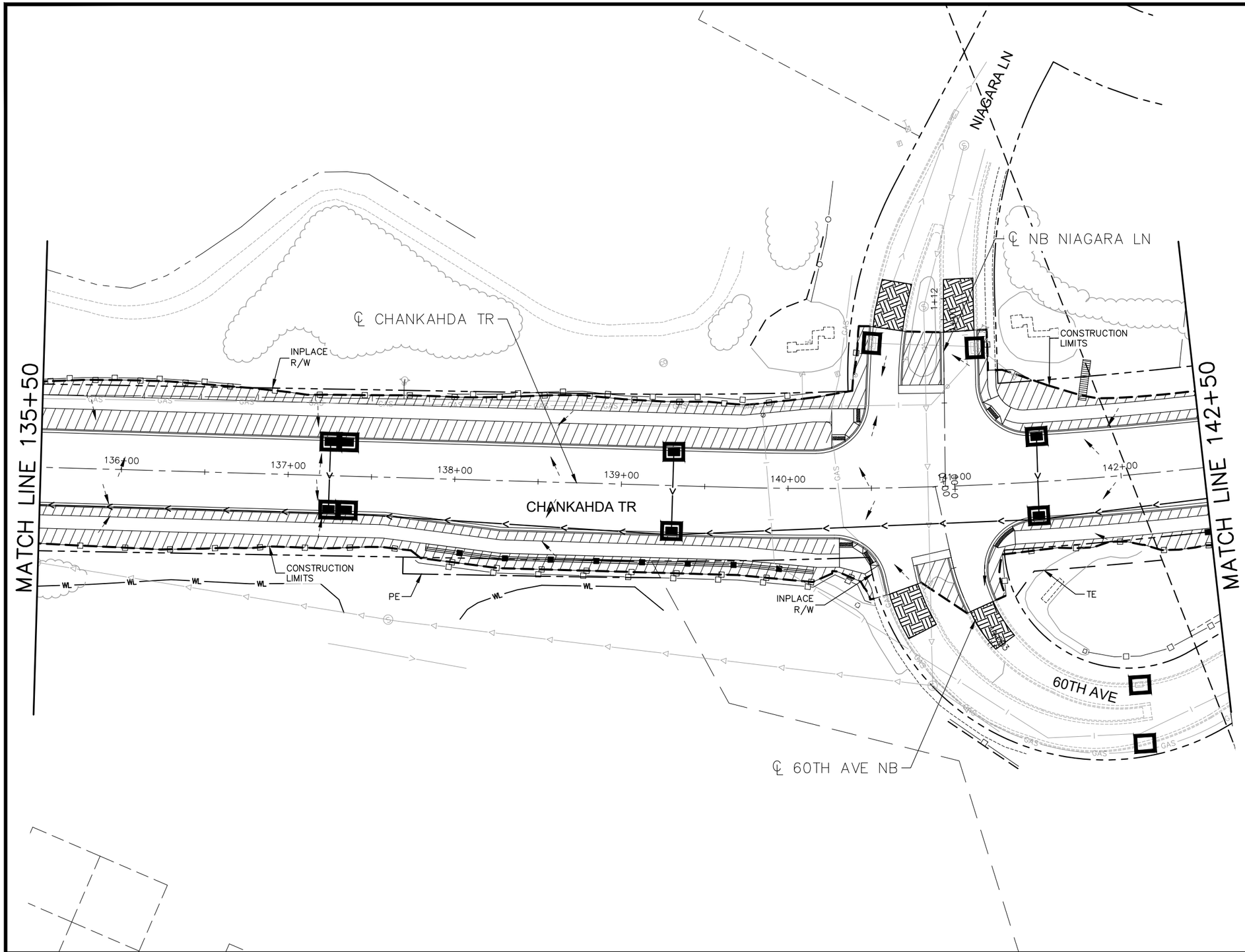
CHADD B. LARSON, PE
DATE: 11/04/2024 MN LIC. NO. 41864

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. 69 / 348



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
  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 26
- 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

0 15 30 60
HORIZONTAL SCALE IN FEET

No.	Date	Revisions	App.

DRAWING NAME: CHANKAHDA_PH3_ErosTurf.dwg

DESIGNED BY:	HB
DRAWN BY:	PD
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DATE:	11/04/2024
PROJECT NO.	160662010

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CHADD B. LARSON, PE
DATE: 11/04/2024 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. 70 / 348



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
  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 26
- 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

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:	11/04/2024
PROJECT NO.	160662010

Kimley»Horn
767 EUSTIS STREET, SUITE 100, ST, PAUL, MN 55114
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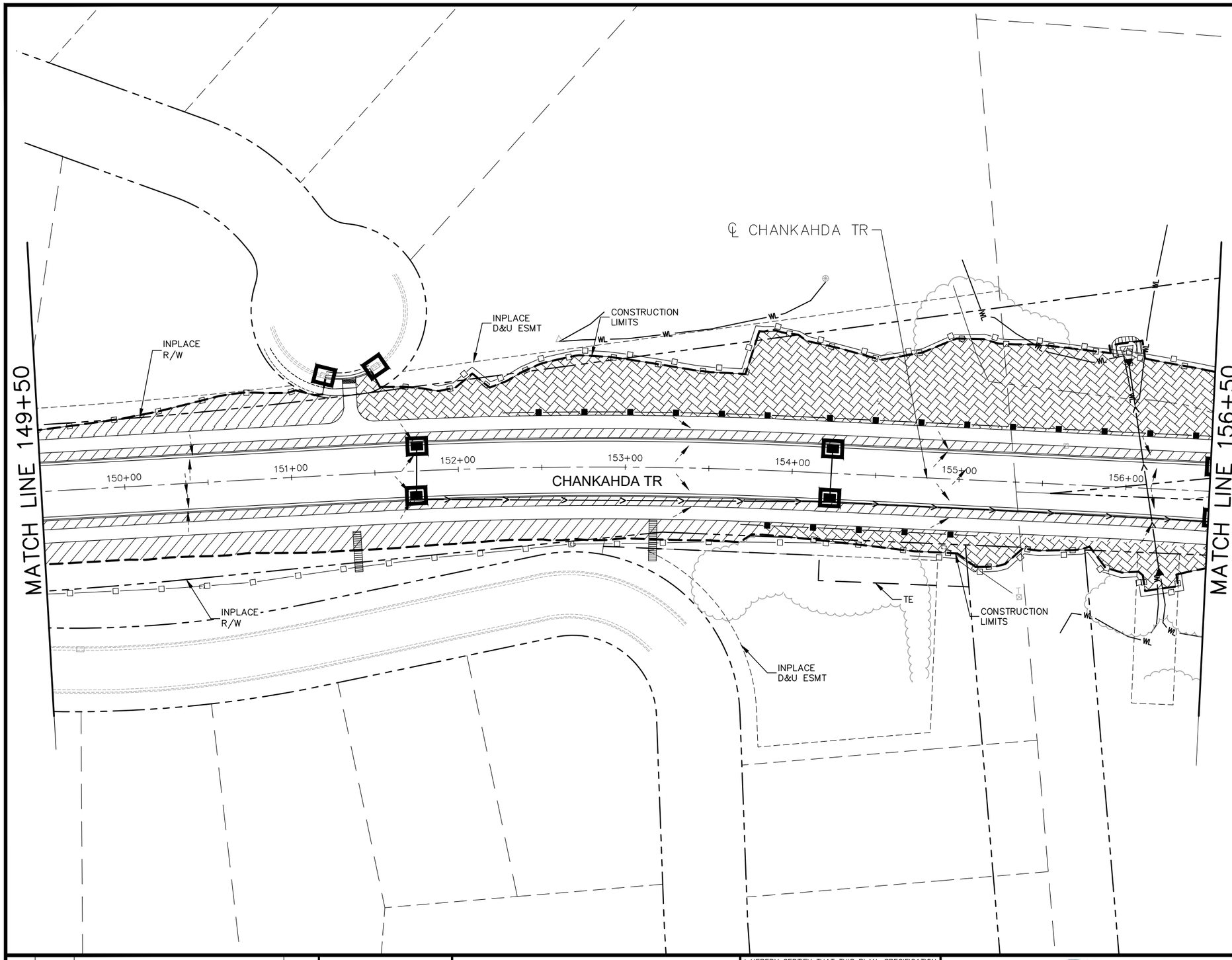
CHADD B. LARSON, PE
DATE: 11/04/2024 MN LIC. NO. 41864

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. 71 / 348



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
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  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
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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
  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 26
- 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

0 15 30 60
HORIZONTAL SCALE IN FEET

No.	Date	Revisions	App.

DRAWING NAME: CHANKAHDA_PH3_ErosTurf.dwg

DESIGNED BY:	HB
DRAWN BY:	PD
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DATE:	11/04/2024
PROJECT NO.	160662010

Kimley»Horn
767 EUSTIS STREET, SUITE 100, ST. PAUL, MN 55114
PHONE: 651–645–4197
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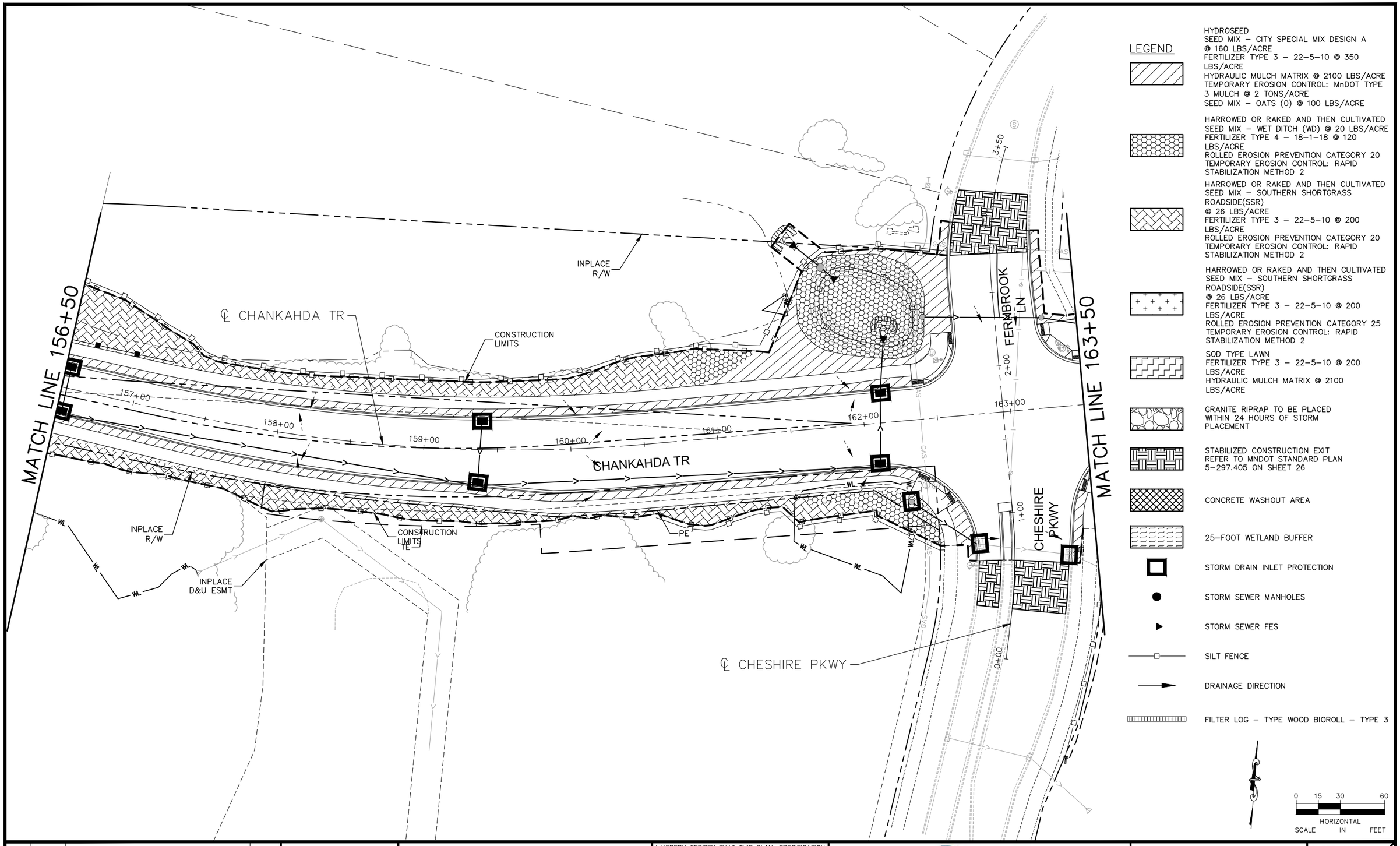
CHADD B. LARSON, PE
DATE: 11/04/2024 MN LIC. NO. 41864

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. 72 / 348



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
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  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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  FERTILIZER TYPE 3 – 22–5–10 @ 200 LBS/ACRE
  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 26
- 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

0 15 30 60
HORIZONTAL SCALE IN FEET

No.	Date	Revisions	App.

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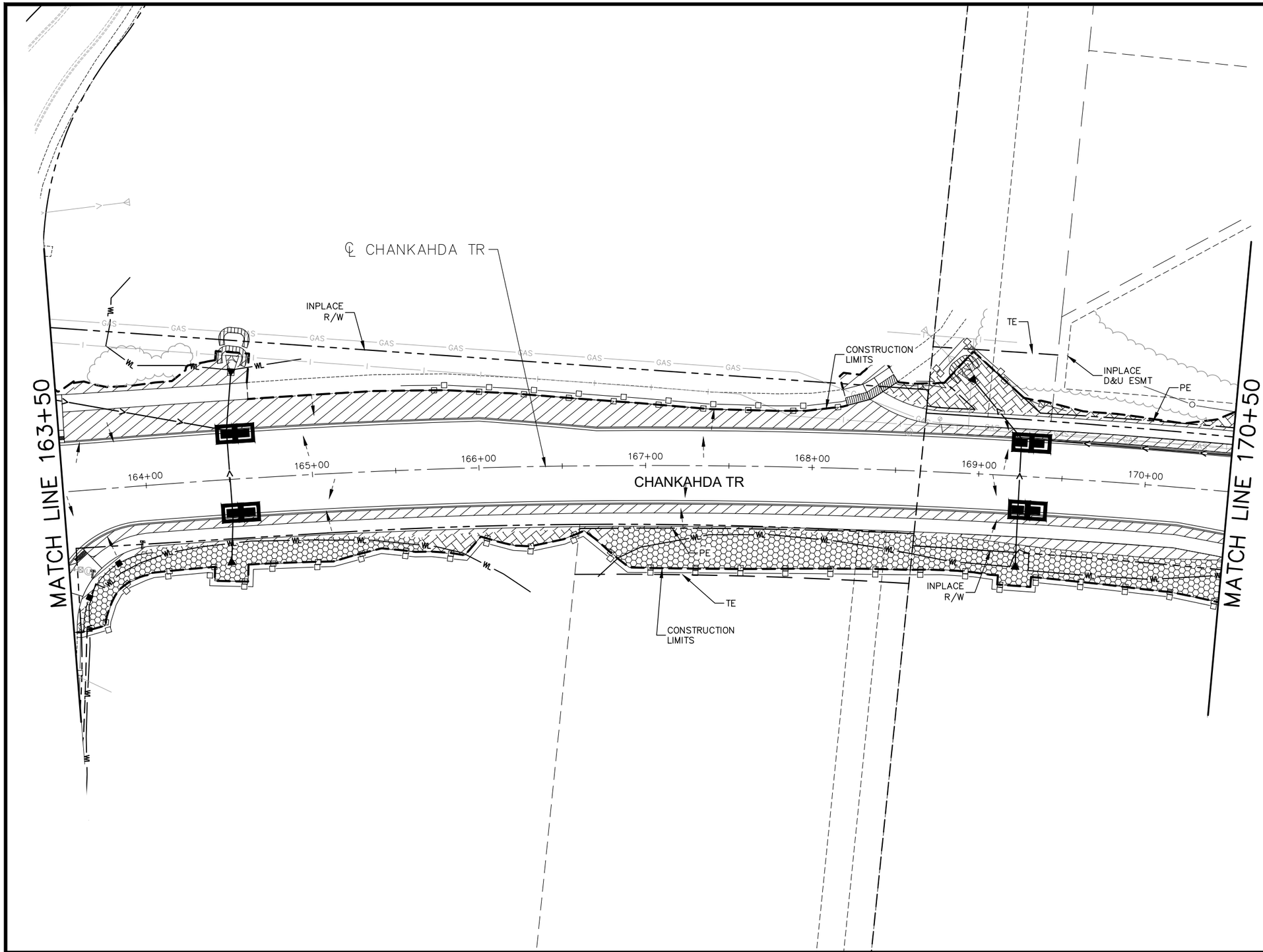
CHADD B. LARSON, PE
DATE: 11/04/2024 MN LIC. NO. 41864

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. 73 / 348



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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  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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  @ 26 LBS/ACRE
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  HYDRAULIC MULCH MATRIX @ 2100 LBS/ACRE
- GRANITE RIPRAP TO BE PLACED WITHIN 24 HOURS OF STORM PLACEMENT
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  REFER TO MNDOT STANDARD PLAN 5–297.405 ON SHEET 26
- 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

0 15 30 60
HORIZONTAL SCALE IN FEET

No.	Date	Revisions	App.

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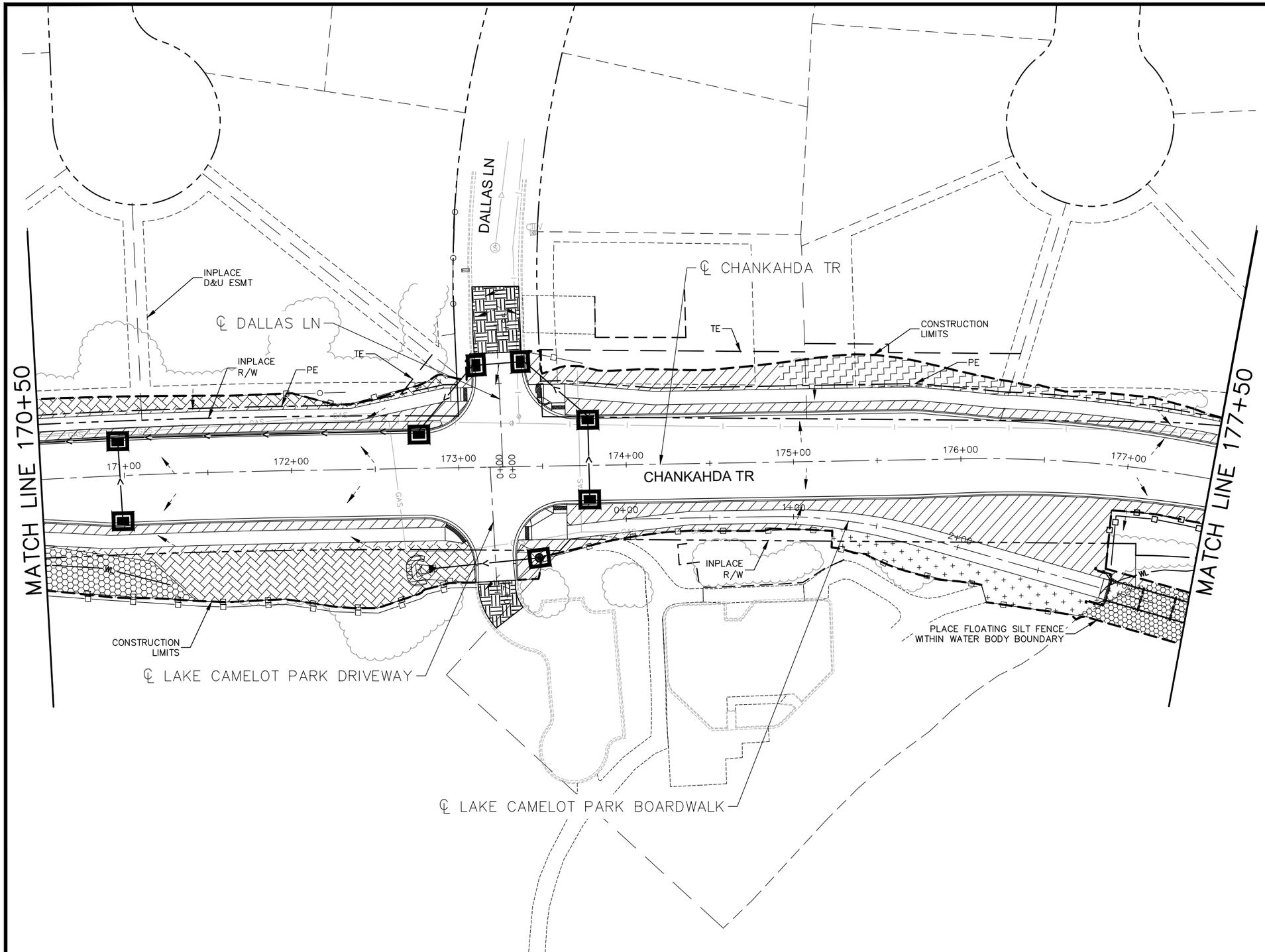
CHADD B. LARSON, PE
DATE: 11/04/2024 MN LIC. NO. 41864

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. 74 / 348



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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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
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 26

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

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:	11/04/2024
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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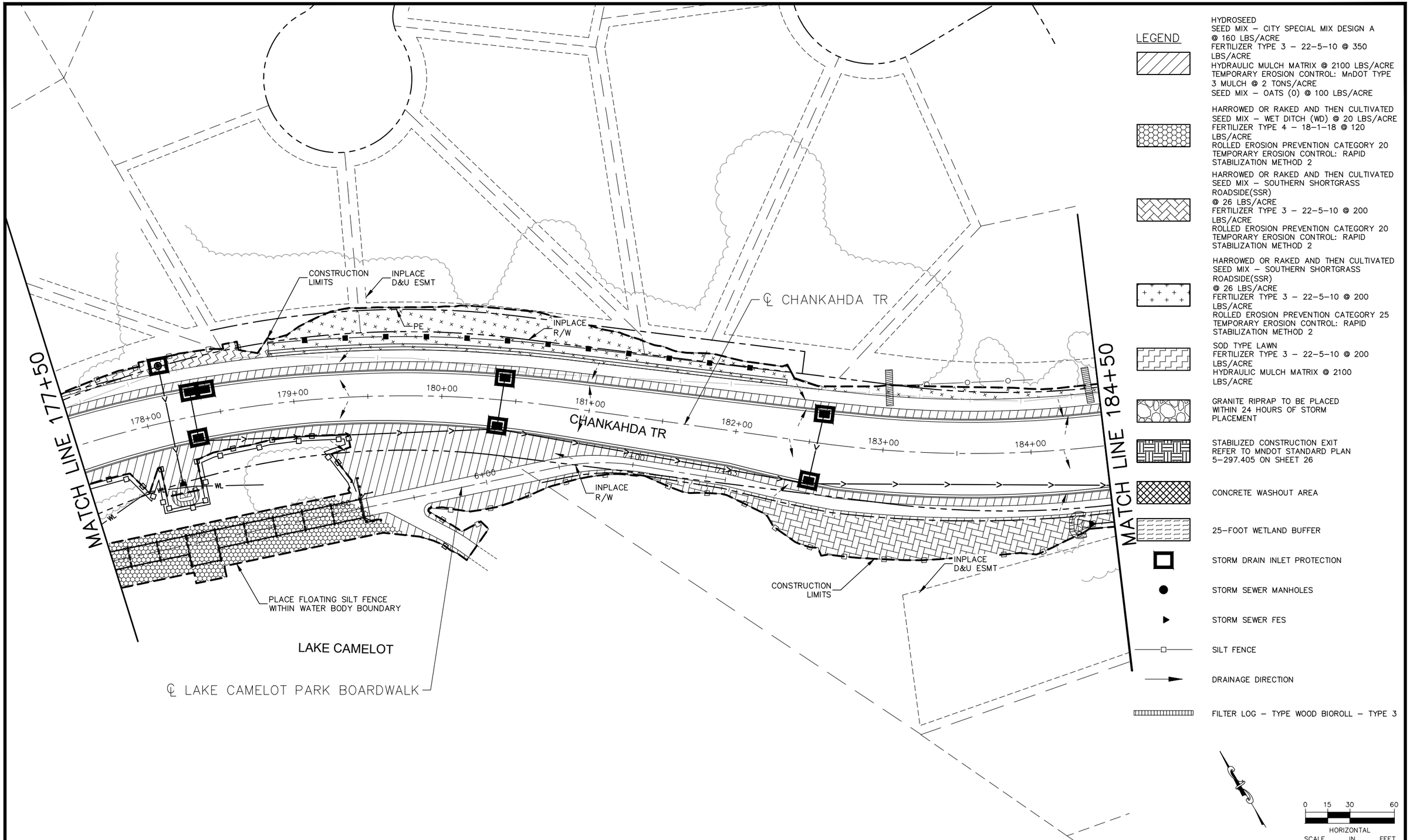
CHADD B. LARSON, PE
DATE: 11/04/2024 MN LIC. NO. 41864

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. 75 / 348



No.	Date	Revisions	App.

DRAWING NAME: CHANKAHDA_PH3_ErosTurf.dwg

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CHADD B. LARSON, PE

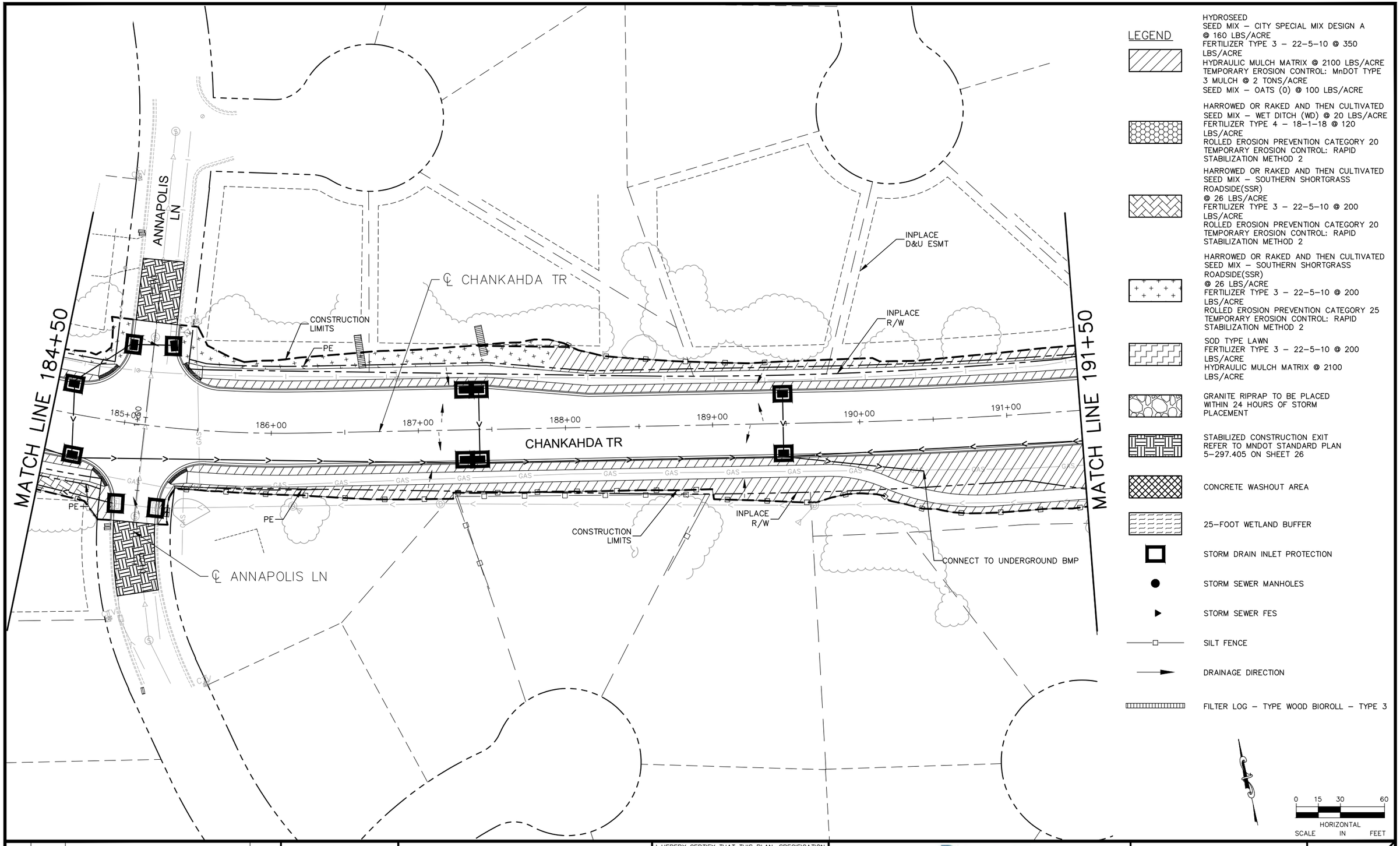
DATE: 11/04/2024 MN LIC. NO. 41864

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. 76 / 348



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
  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 26
- 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

0 15 30 60
HORIZONTAL SCALE IN FEET

No.	Date	Revisions	App.

DRAWING NAME: CHANKAHDA_PH3_ErosTurf.dwg

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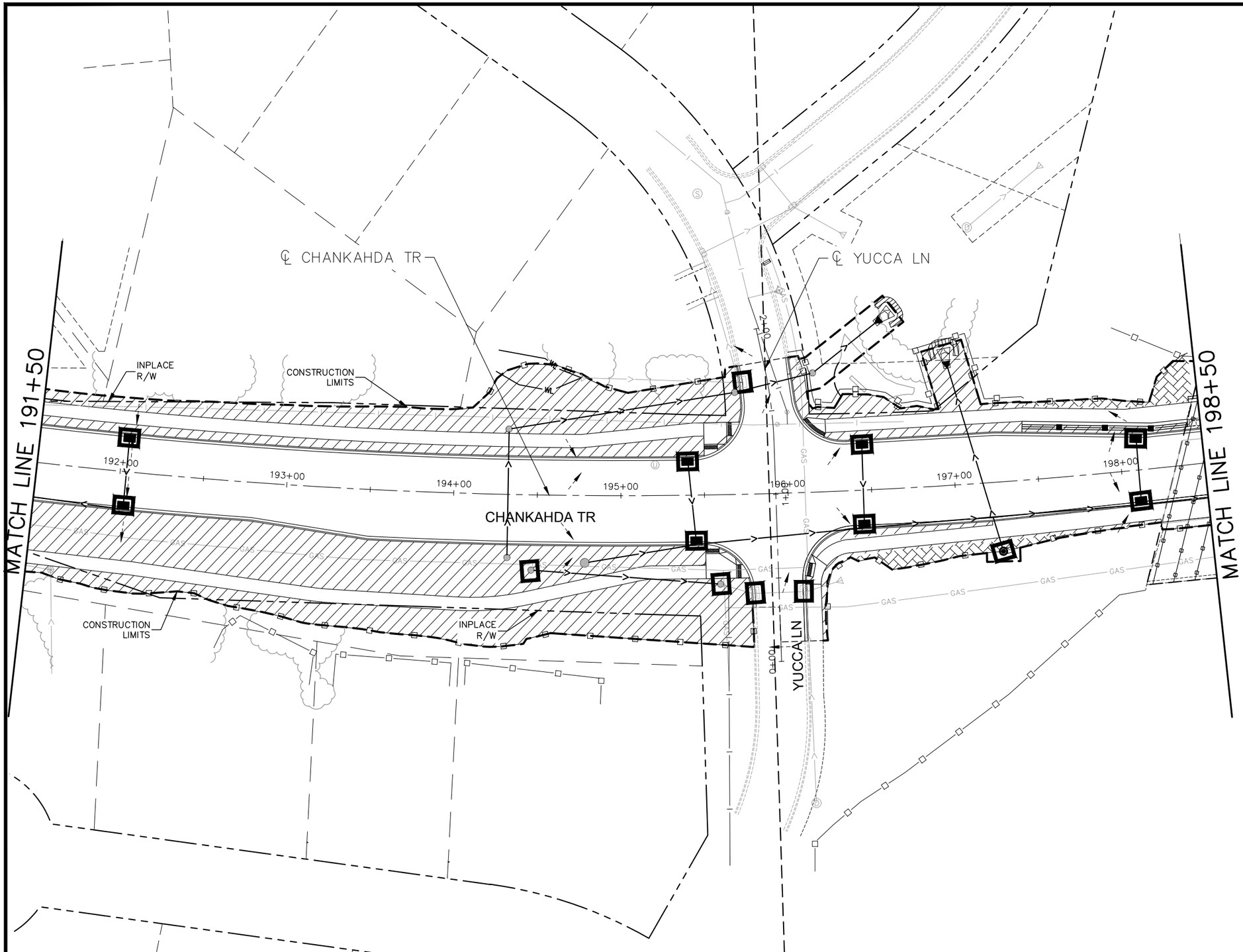
CHADD B. LARSON, PE
DATE: 11/04/2024 MN LIC. NO. 41864

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. 77 / 348



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
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  ROLLED EROSION PREVENTION CATEGORY 20
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  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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  REFER TO MNDOT STANDARD PLAN 5–297.405 ON SHEET 26
- 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

0 15 30 60
HORIZONTAL SCALE IN FEET

No.	Date	Revisions	App.

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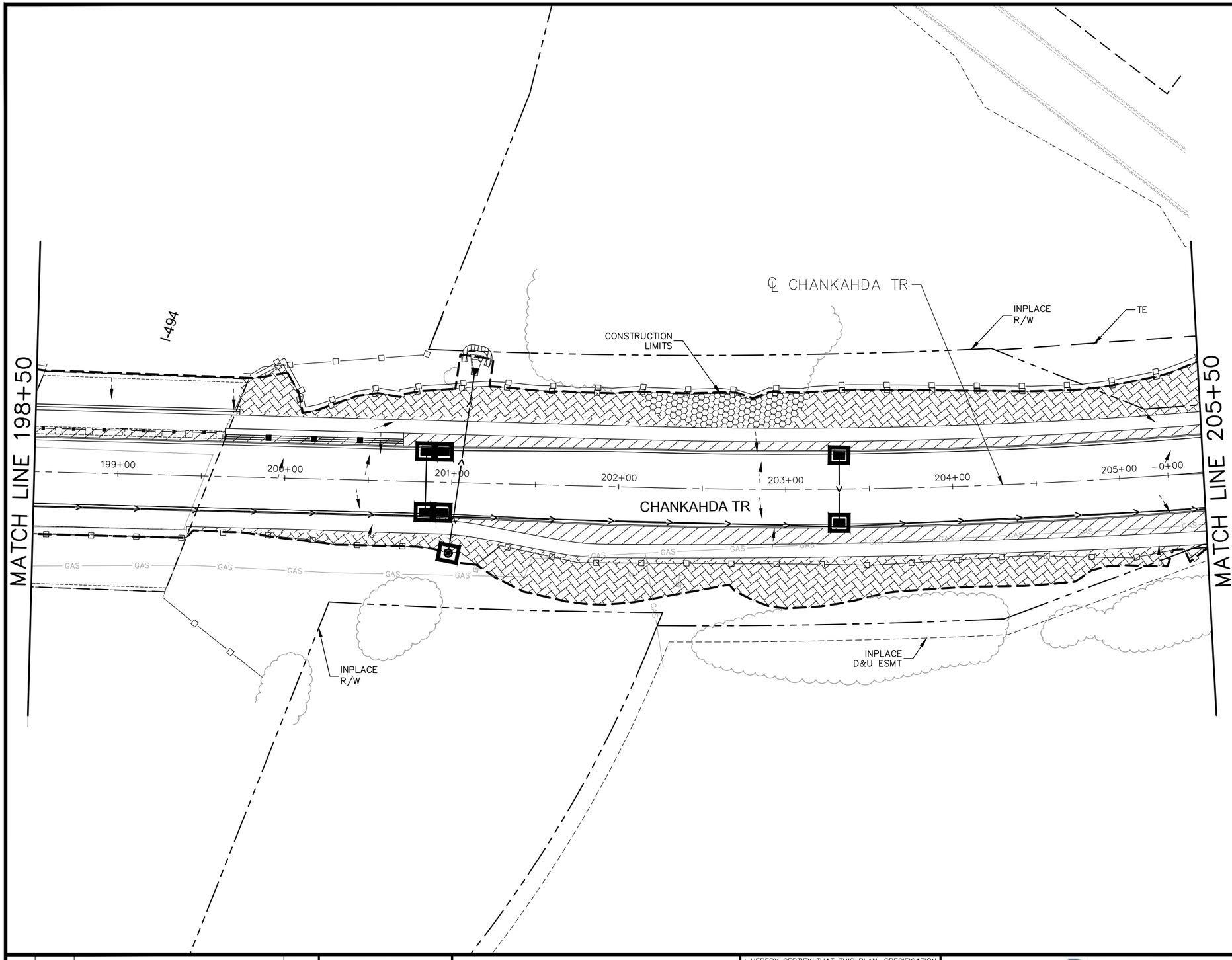
CHADD B. LARSON, PE
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City of Plymouth

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. 78 / 348



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
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  ROLLED EROSION PREVENTION CATEGORY 20
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- DRAINAGE DIRECTION
- FILTER LOG – TYPE WOOD BIOROLL – TYPE 3

0 15 30 60
HORIZONTAL SCALE IN FEET

No.	Date	Revisions	App.

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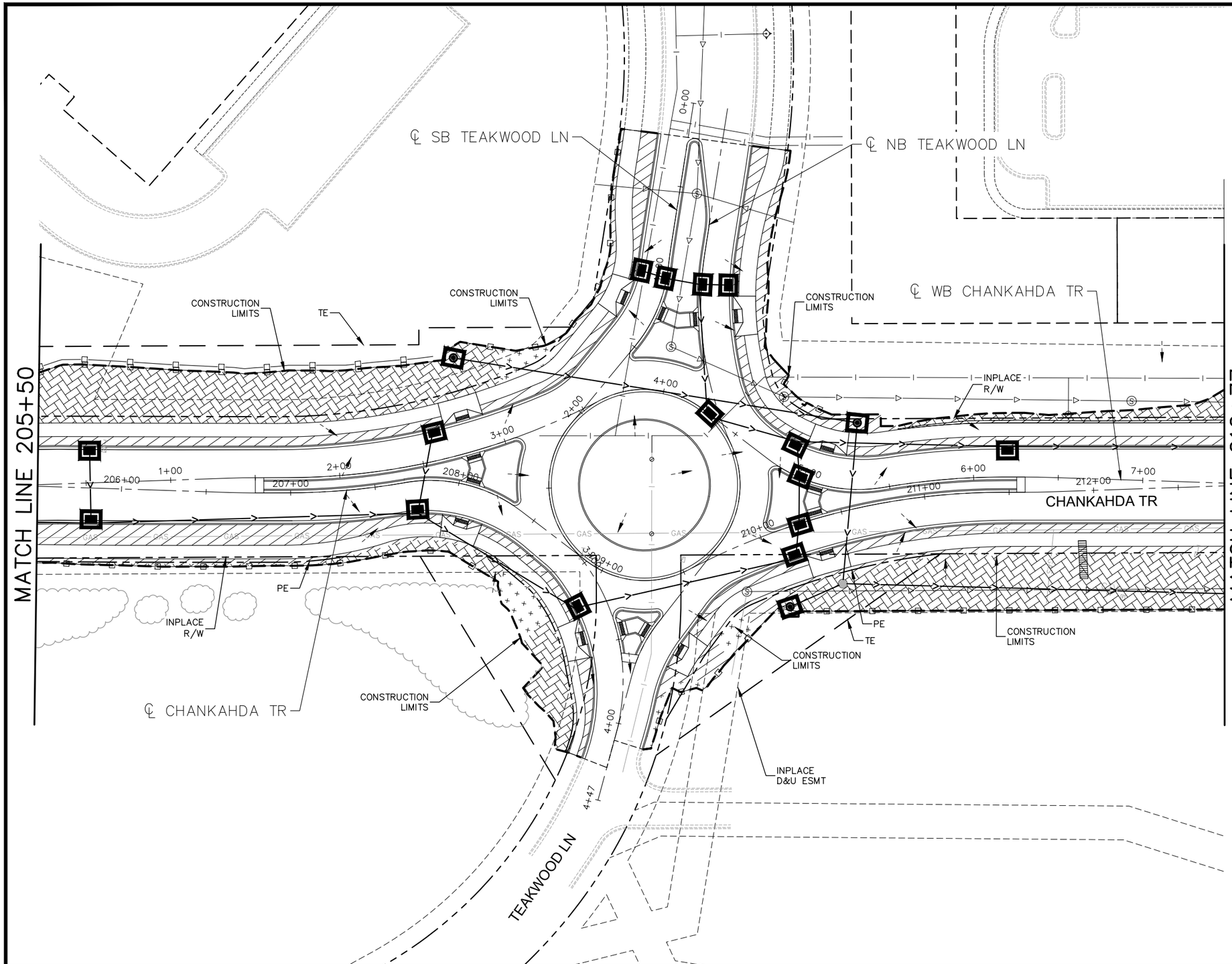
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City of Plymouth

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. 79 / 348



LEGEND

- HYDROSEED
  SEED MIX – CITY SPECIAL MIX DESIGN A @ 160 LBS/ACRE
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- STORM DRAIN INLET PROTECTION
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- FILTER LOG – TYPE WOOD BIOROLL – TYPE 3

0 15 30 60
HORIZONTAL SCALE IN FEET

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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. 80 / 348

MATCH LINE 212+77

CONSTRUCTION LIMITS

213+00.81

214+00

215+00

216+00

217+00

218+00

219+00

220+00

CHANKAHDA TR

PE

INPLACE D&U ESMT

℄ CHANKAHDA TR

INPLACE R/W

TE

CONSTRUCTION LIMITS

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

EXISTING EOF: 942.0

INPLACE R/W

NORTHWEST BLVD

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

GAS

WL

LEGEND

HYDROSEED
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FERTILIZER TYPE 4 – 18-1-18 @ 120 LBS/ACRE
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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 26

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

0 15 30 60
HORIZONTAL SCALE IN FEET

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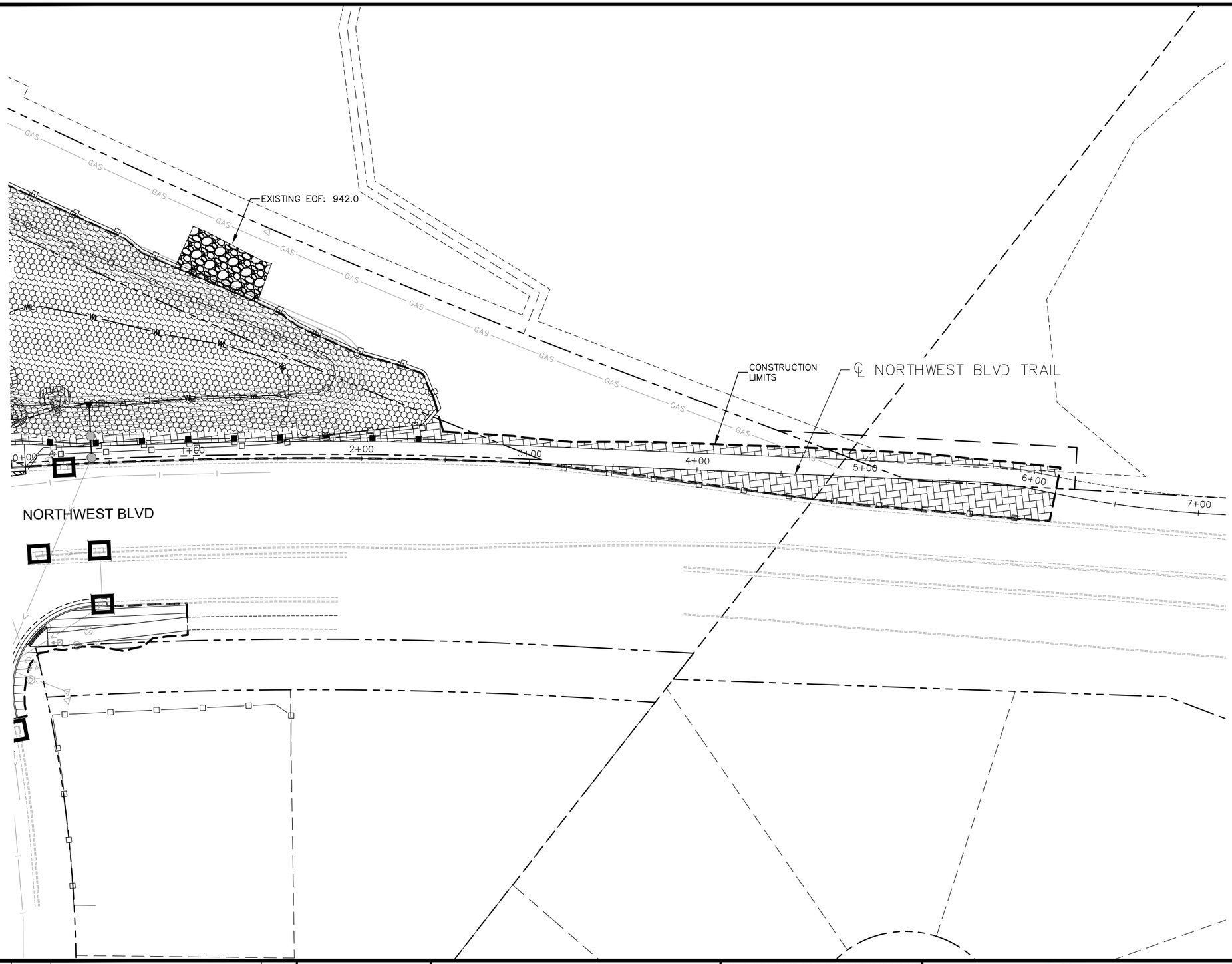
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City of Plymouth

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

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

SHEET NO. 81 / 348



LEGEND

HYDROSEED
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FERTILIZER TYPE 3 – 22–5–10 @ 350 LBS/ACRE
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STABILIZED CONSTRUCTION EXIT
REFER TO MNDOT STANDARD PLAN 5–297.405 ON SHEET 26

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

0 15 30 60
HORIZONTAL SCALE IN FEET

No.	Date	Revisions	App.

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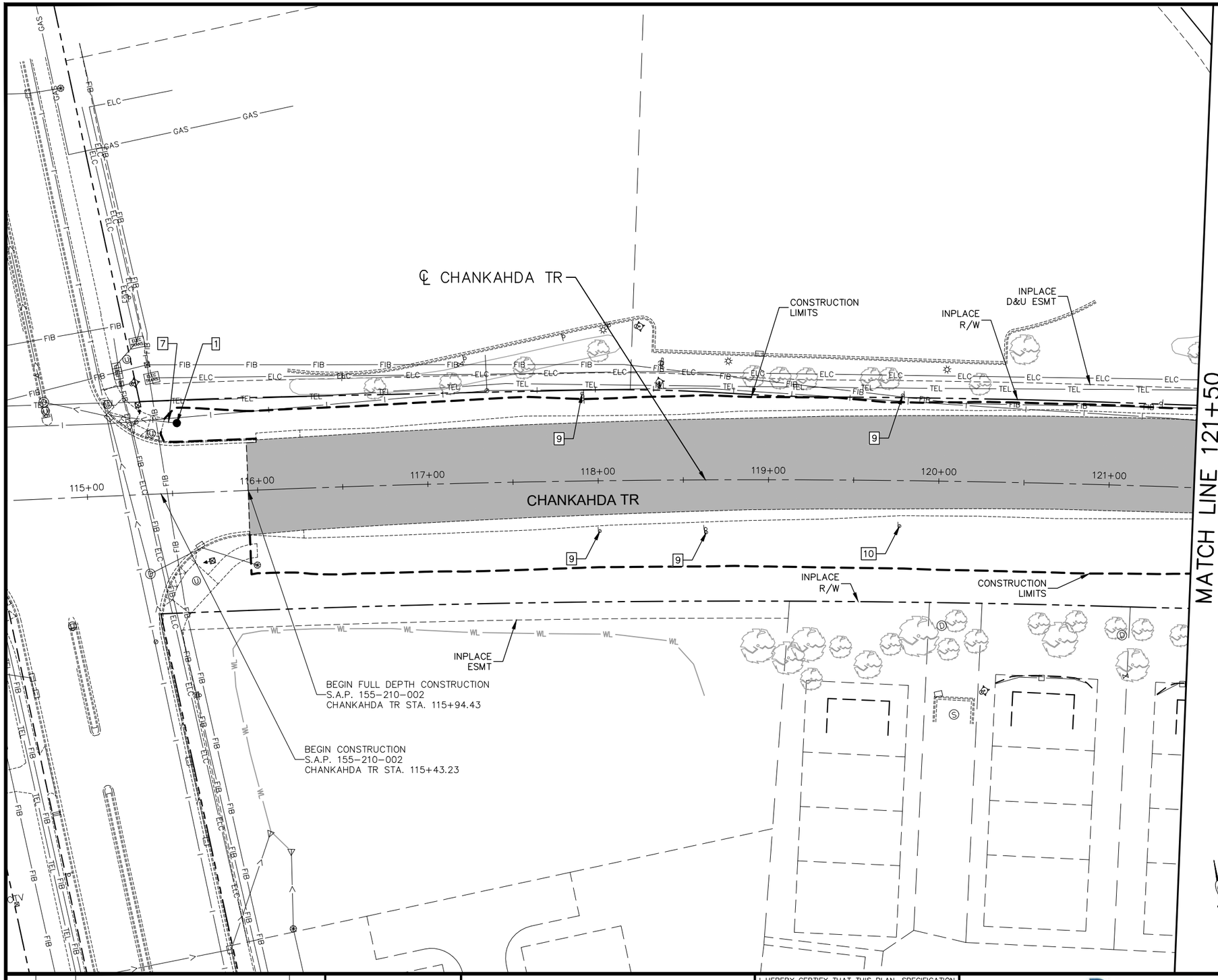
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City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
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STA. 212+77 TO STA. 220+24.50

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

SHEET NO. 81 / 348



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. CONTRACTOR SHALL PROTECT ALL INPLACE UTILITY STRUCTURES THAT ARE NOT BEING REMOVED OR RELOCATED.
4. 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 SIGN
10 SALVAGE SIGN
11 REMOVE SEWER PIPE (SANITARY)

REMOVE BITUMINOUS PAVEMENT
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: 11/04/2024
PROJECT NO. 160662010

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

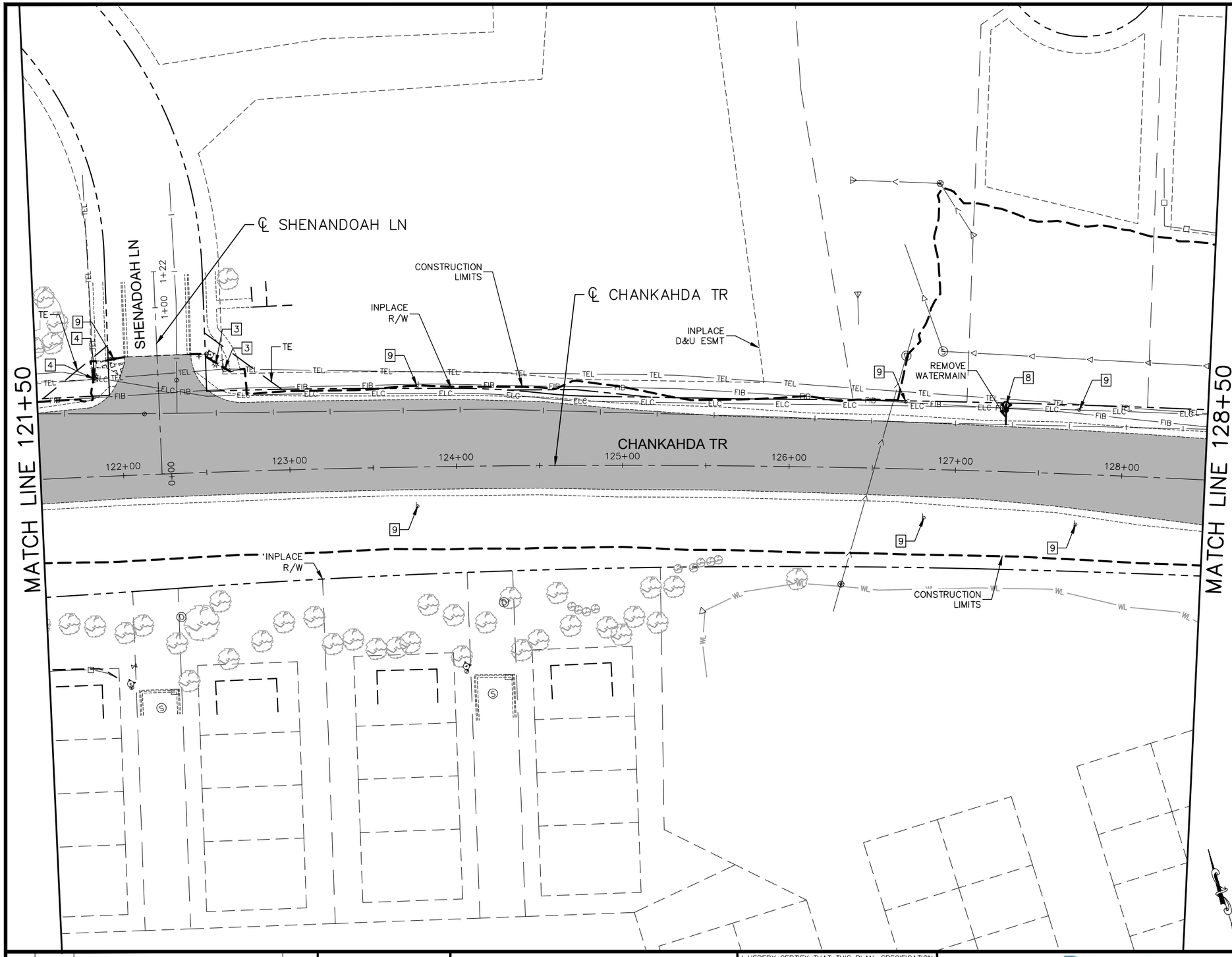
I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

CHADD B. LARSON, PE
DATE: 11/04/2024 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. 83 / 348



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. CONTRACTOR SHALL PROTECT ALL INPLACE UTILITY STRUCTURES THAT ARE NOT BEING REMOVED OR RELOCATED.
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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 SIGN
10	SALVAGE SIGN
11	REMOVE SEWER PIPE (SANITARY)

- REMOVE BITUMINOUS PAVEMENT
- 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:	11/04/2024
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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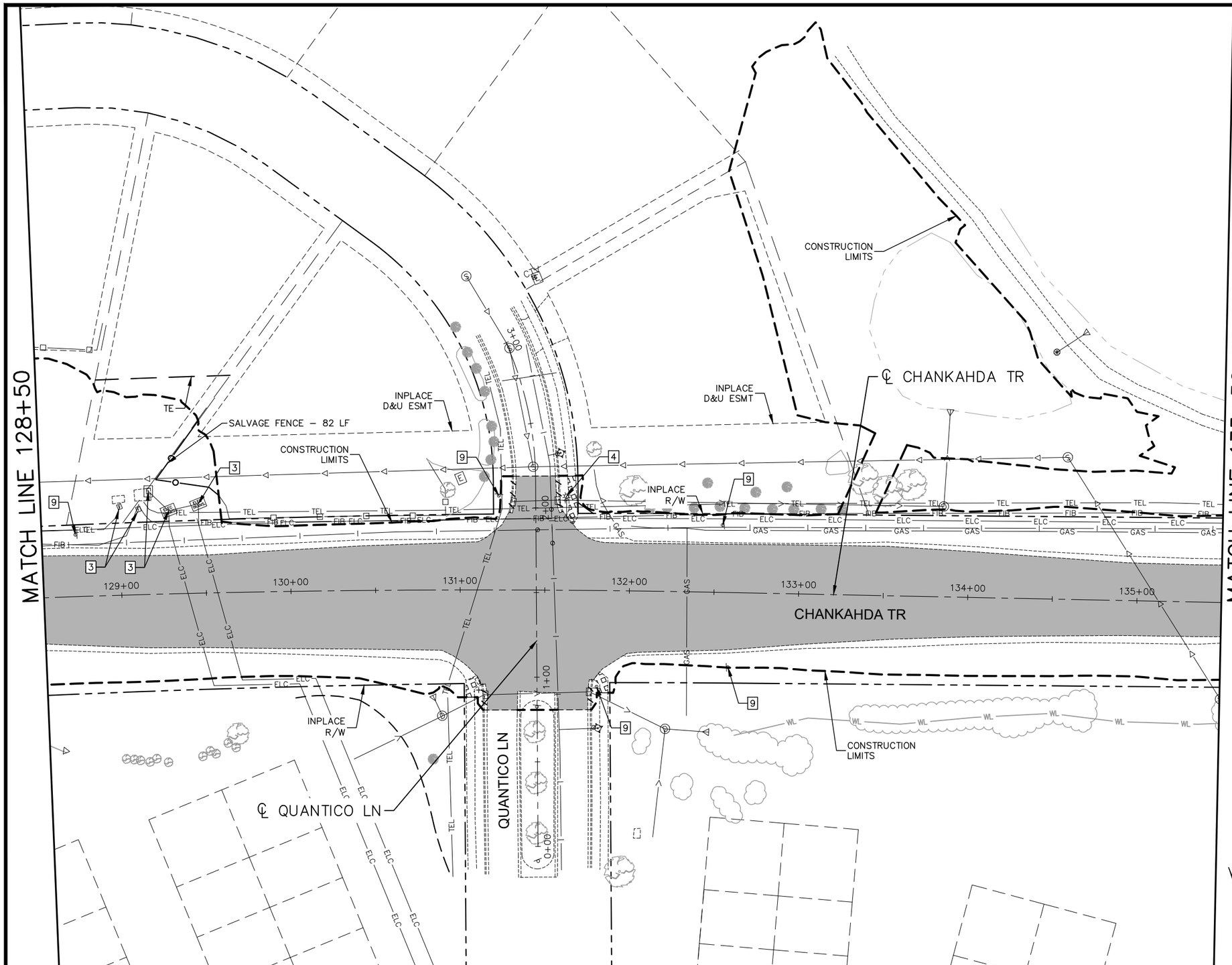
CHADD B. LARSON, PE
DATE: 11/04/2024 MN LIC. NO. 41864

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. 84 / 348



GENERAL REMOVAL NOTES:

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UTILITY NOTES:

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- [7] ABANDON STORM SEWER
- [8] REMOVE HYDRANT
- [9] REMOVE SIGN
- [10] SALVAGE SIGN
- [11] REMOVE SEWER PIPE (SANITARY)

- REMOVE BITUMINOUS PAVEMENT
- REMOVE SLOPE PAVING
- REMOVE CONCRETE MEDIAN
- REMOVE CONCRETE WALK
- REMOVE BITUMINOUS WALK
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- 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:	11/04/2024
PROJECT NO.	160662010

Kimley»Horn
767 EUSTIS STREET, SUITE 100, ST, PAUL, MN 55114
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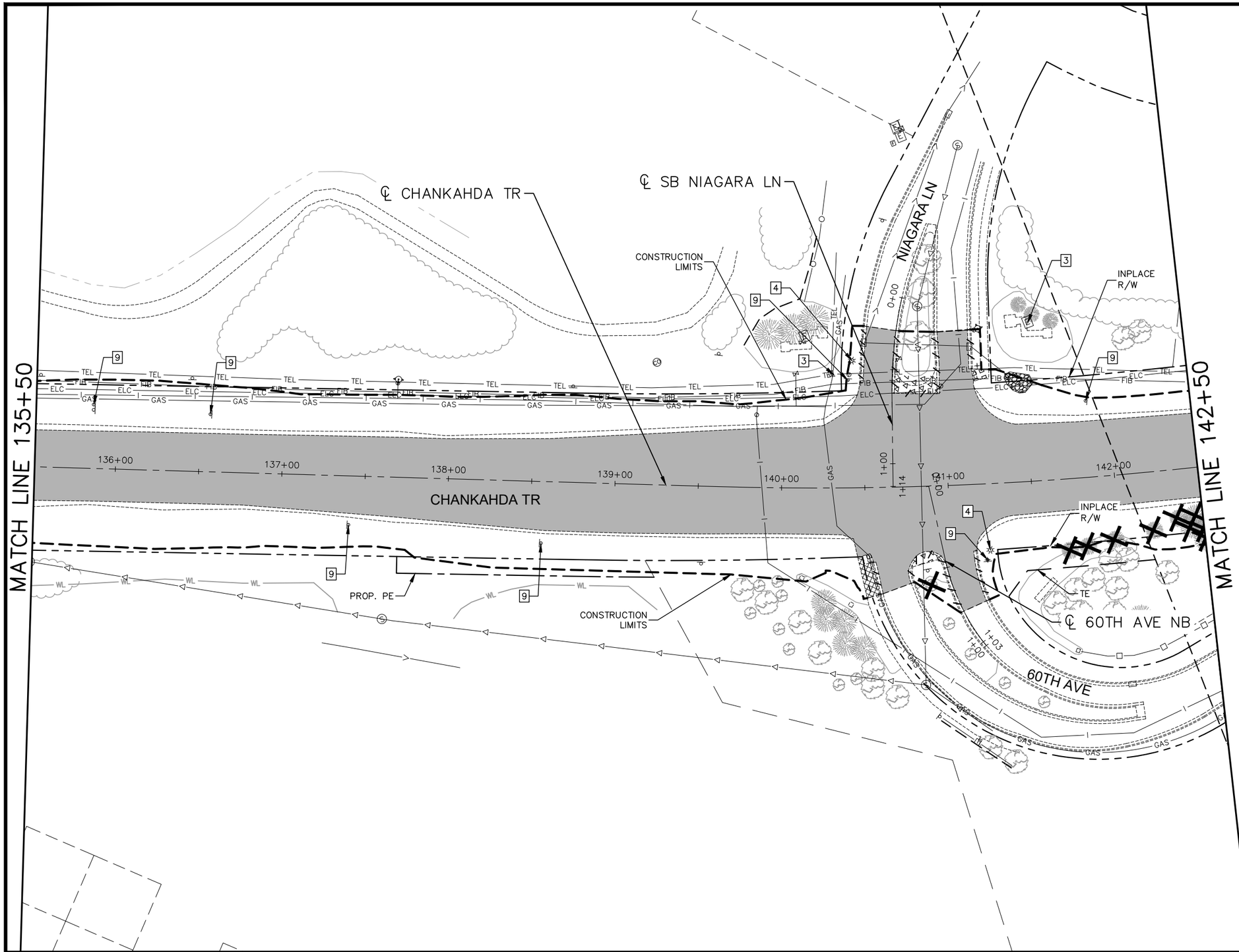
CHADD B. LARSON, PE
DATE: 11/04/2024 MN LIC. NO. 41864

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. 85 / 348



GENERAL REMOVAL NOTES:

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UTILITY NOTES:

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NOTES LEGEND:

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6	REMOVE GATE VALVE
7	ABANDON STORM SEWER
8	REMOVE HYDRANT
9	REMOVE SIGN
10	SALVAGE SIGN
11	REMOVE SEWER PIPE (SANITARY)

- REMOVE BITUMINOUS PAVEMENT
- 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:	11/04/2024
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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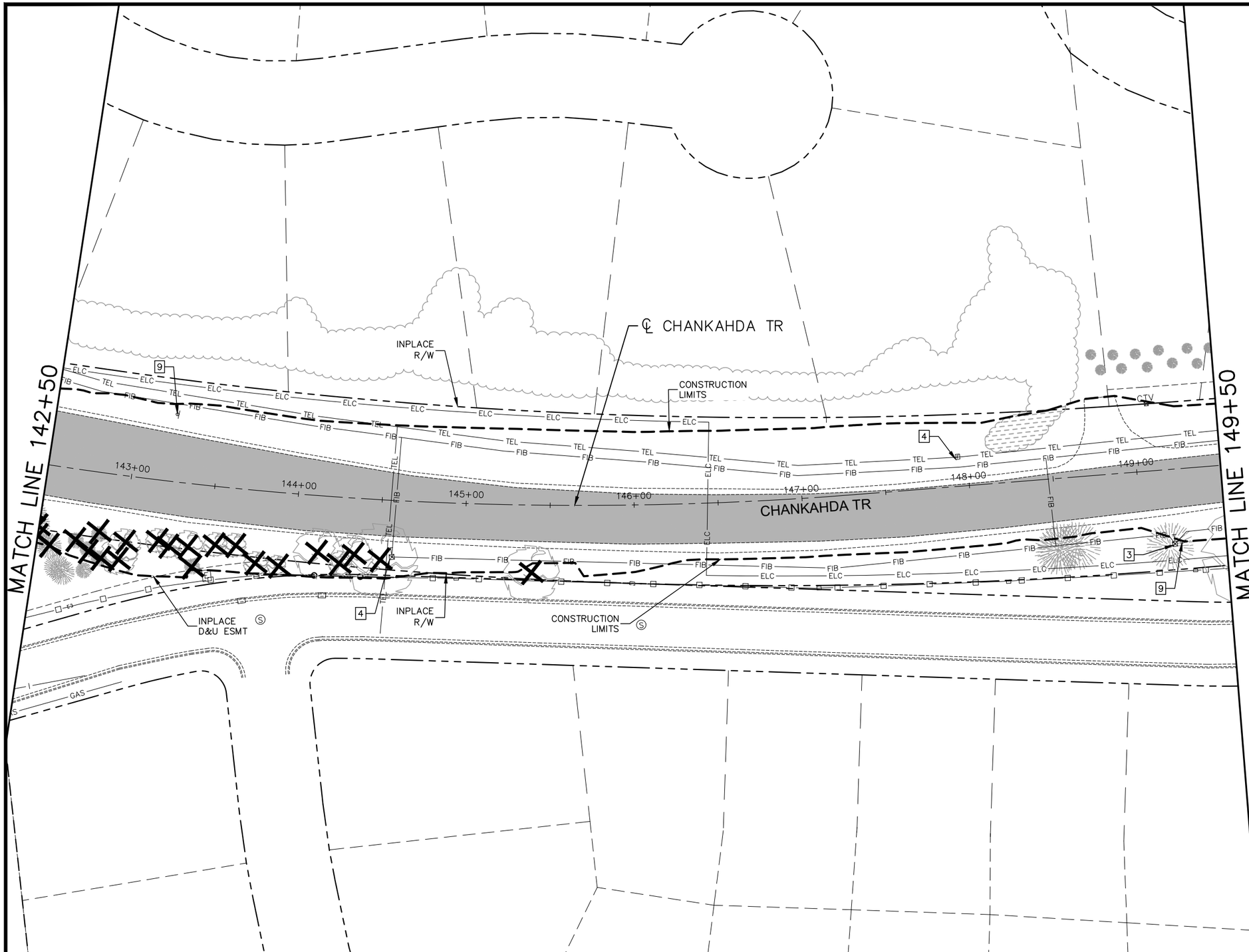
CHADD B. LARSON, PE
DATE: 11/04/2024 MN LIC. NO. 41864

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. 86 / 348



GENERAL REMOVAL NOTES:

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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 SIGN
- [10] SALVAGE SIGN
- [11] REMOVE SEWER PIPE (SANITARY)

- REMOVE BITUMINOUS PAVEMENT
- REMOVE SLOPE PAVING
- REMOVE CONCRETE MEDIAN
- REMOVE CONCRETE WALK
- REMOVE BITUMINOUS WALK
- CLEARING AND GRUBBING (ACRE)
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- 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:	11/04/2024
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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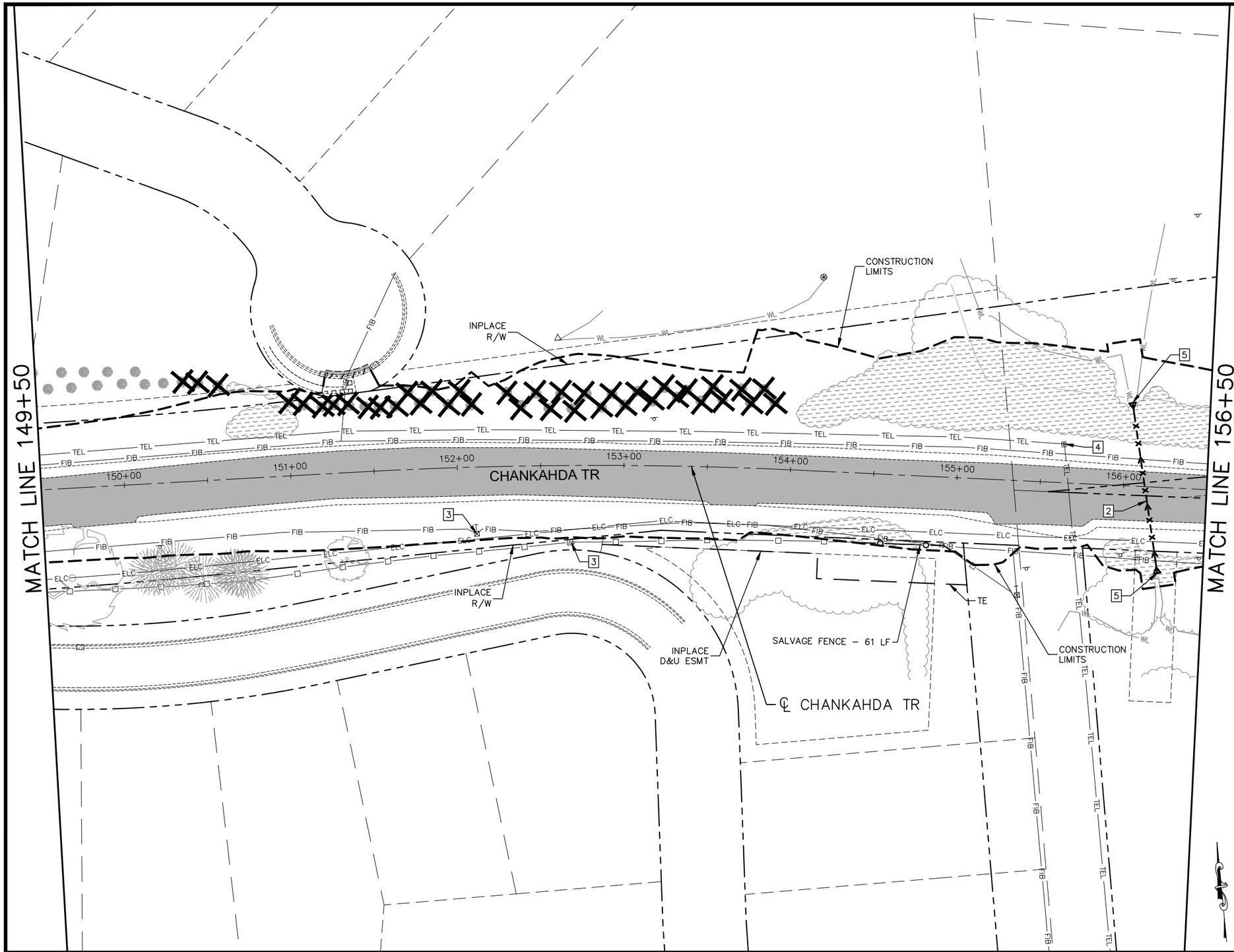
CHADD B. LARSON, PE
DATE: 11/04/2024 MN LIC. NO. 41864

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. 87 / 348



GENERAL REMOVAL NOTES:

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UTILITY NOTES:

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NOTES LEGEND:

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

REMOVE BITUMINOUS PAVEMENT
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:	11/04/2024
PROJECT NO.	160662010

Kimley»Horn
767 EUSTIS STREET, SUITE 100, ST. PAUL, MN 55114
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CHADD B. LARSON, PE
DATE: 11/04/2024 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. 88 / 348

GENERAL REMOVAL NOTES:

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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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CHADD B. LARSON, PE
DATE: 11/04/2024 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. 89 / 348

GENERAL REMOVAL NOTES:

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REMOVE BITUMINOUS PAVEMENT
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REMOVE BITUMINOUS WALK
CLEARING AND GRUBBING (ACRE)
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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 163+50
MATCH LINE 170+50
℄ CHANKAHDA TR
CHANKAHDA TR
164+00 165+00 166+00 167+00 168+00 169+00 170+00
INPLACE R/W
CONSTRUCTION LIMITS
REMOVE WATERMAIN
PROP. PE
TE
REMOVE SIGN BY OTHERS
INPLACE D&U ESMT
SALVAGE EXISTING SIGN
SALVAGE EXISTING SIGN
INPLACE R/W
CONSTRUCTION LIMITS
PROP. PE
TE
INPLACE R/W

No.	Date	Revisions	App.

DRAWING NAME: CHANKAHDA_PH3_Removals.dwg

DESIGNED BY:	JWB
DRAWN BY:	RGS
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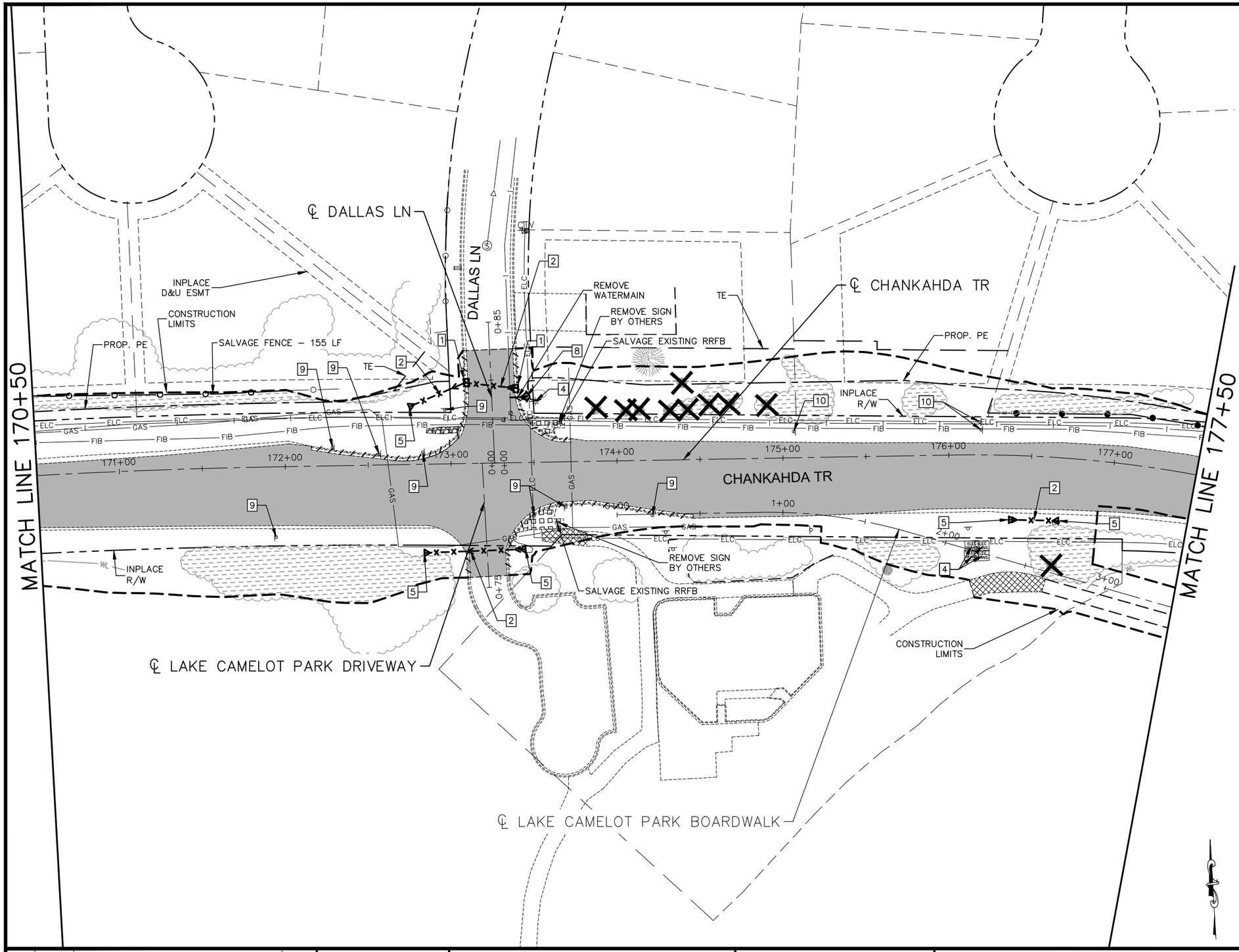
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CHADD B. LARSON, PE
DATE: 11/04/2024 MN LIC. NO. 41864

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. 90 / 348



GENERAL REMOVAL NOTES:

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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 SIGN
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11. REMOVE SEWER PIPE (SANITARY)

- REMOVE BITUMINOUS PAVEMENT
- 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:	11/04/2024
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: 11/04/2024 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. 91 / 348

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.
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- 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:	11/04/2024
PROJECT NO.	160662010

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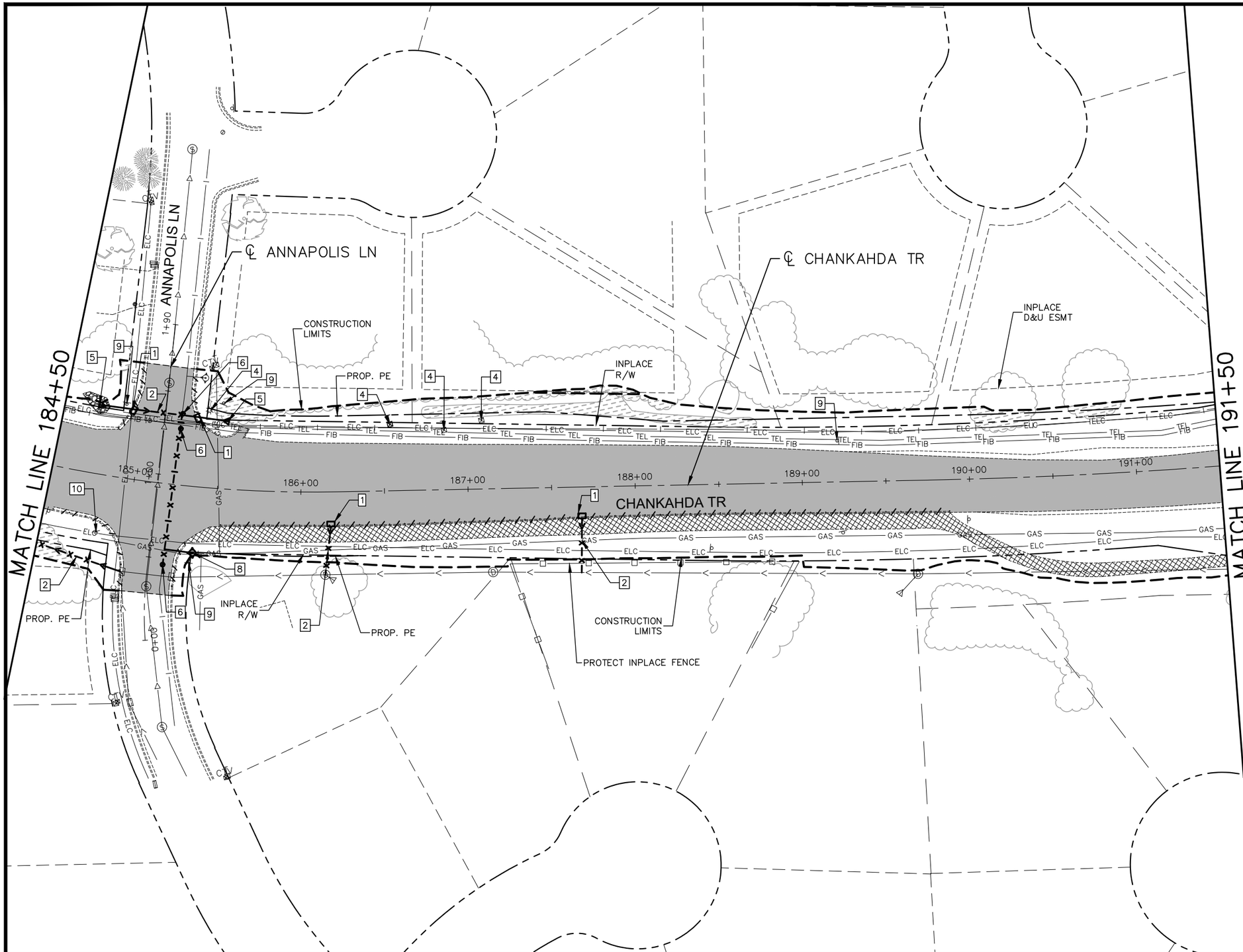
CHADD B. LARSON, PE
DATE: 11/04/2024 MN LIC. NO. 41864

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. 92 / 348



GENERAL REMOVAL NOTES:

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- 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:	11/04/2024
PROJECT NO.	160662010

Kimley»Horn
767 EUSTIS STREET, SUITE 100, ST, PAUL, MN 55114
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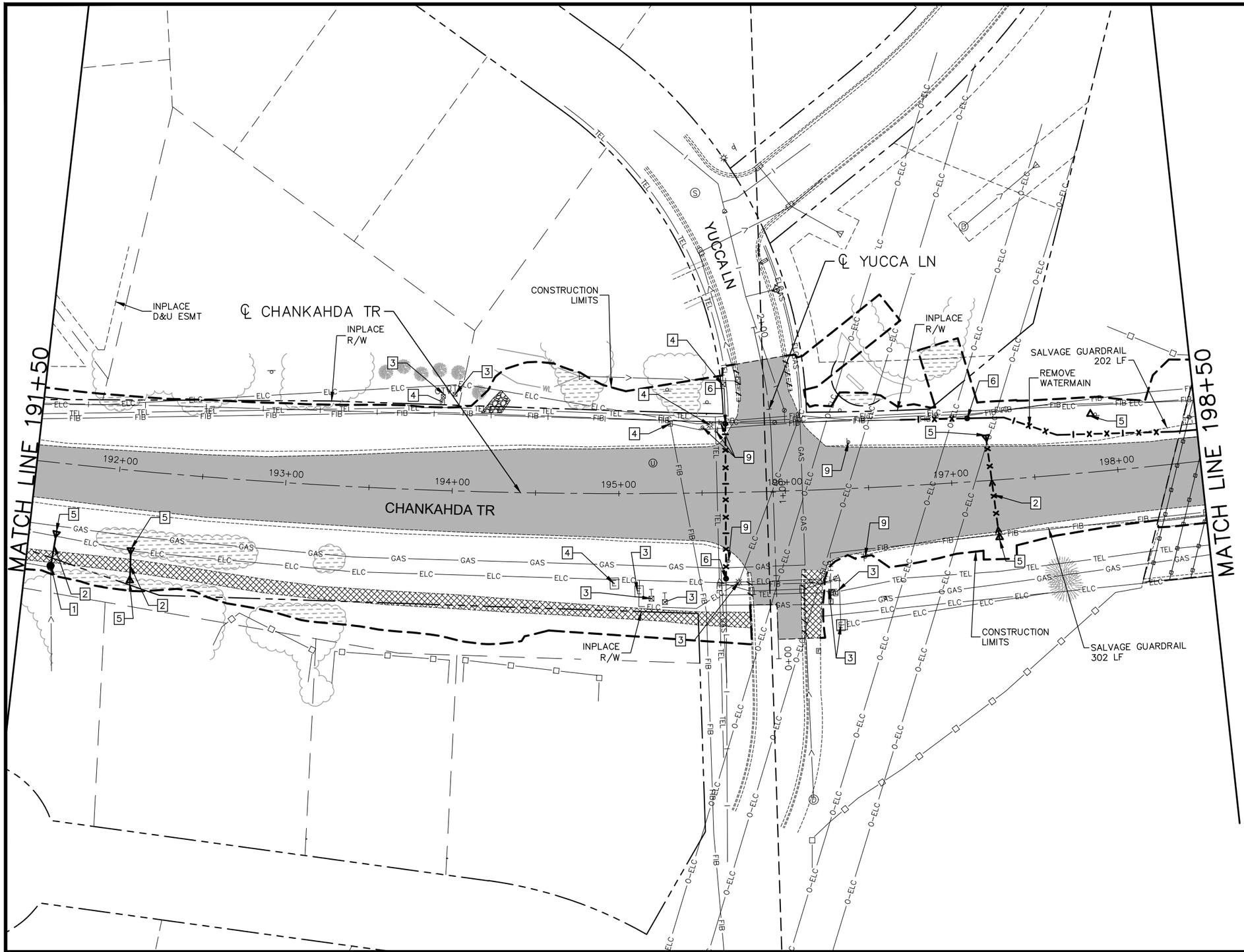
CHADD B. LARSON, PE
DATE: 11/04/2024 MN LIC. NO. 41864

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. 93 / 348



GENERAL REMOVAL NOTES:

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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:	11/04/2024
PROJECT NO.	160662010

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

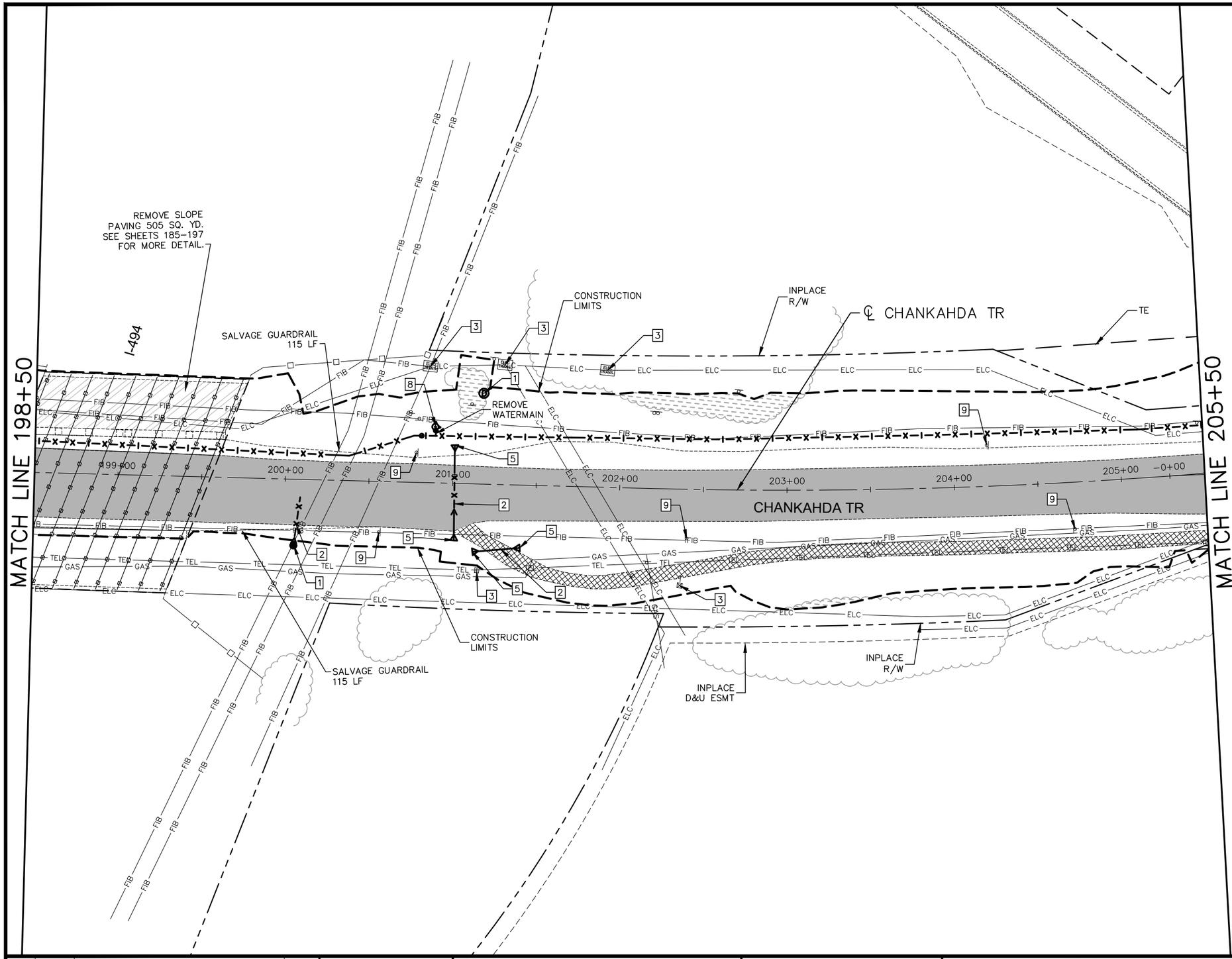
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CHADD B. LARSON, PE
DATE: 11/04/2024 MN LIC. NO. 41864

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. 94 / 348



GENERAL REMOVAL NOTES:

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- 8 REMOVE HYDRANT
- 9 REMOVE SIGN
- 10 SALVAGE SIGN
- 11 REMOVE SEWER PIPE (SANITARY)

- REMOVE BITUMINOUS PAVEMENT
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- REMOVE CONCRETE WALK
- REMOVE BITUMINOUS WALK
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- 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:	11/04/2024
PROJECT NO.	160662010

Kimley»Horn
767 EUSTIS STREET, SUITE 100, ST, PAUL, MN 55114
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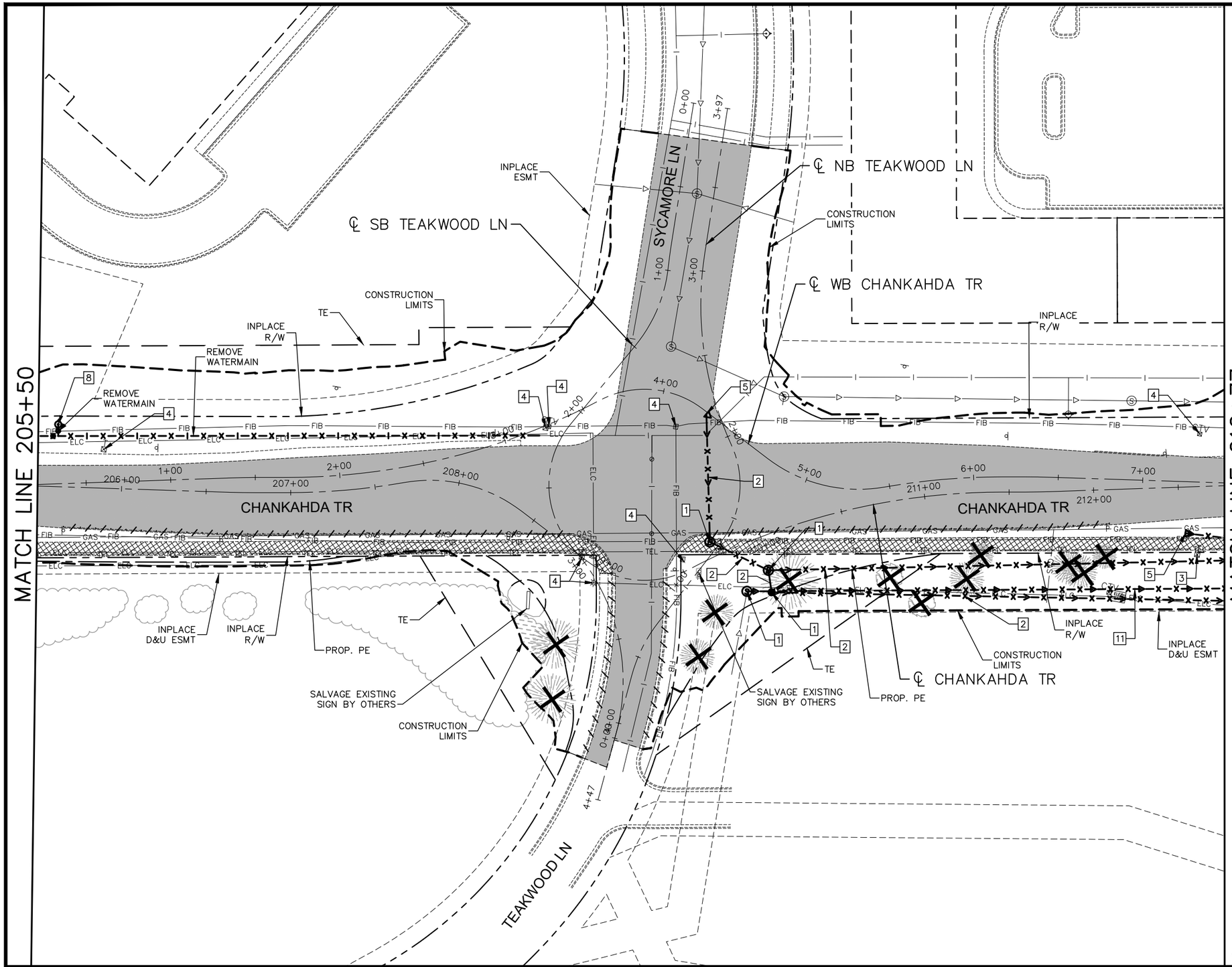
CHADD B. LARSON, PE
DATE: 11/04/2024 MN LIC. NO. 41864

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. 95 / 348



GENERAL REMOVAL NOTES:

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- 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:	11/04/2024
PROJECT NO.	160662010

Kimley»Horn
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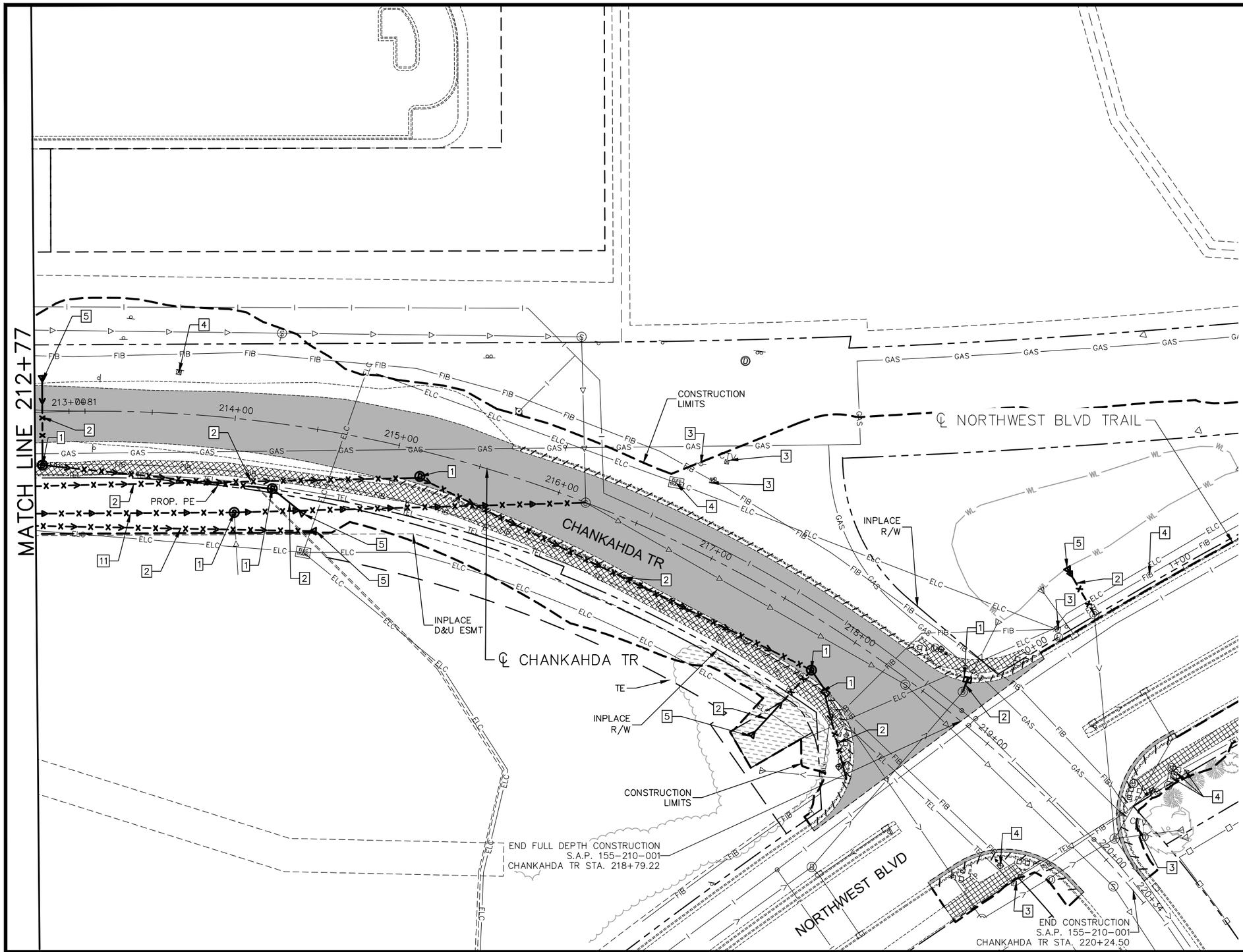
CHADD B. LARSON, PE
DATE: 11/04/2024 MN LIC. NO. 41864

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. 96 / 348



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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:	11/04/2024
PROJECT NO.	160662010

Kimley»Horn
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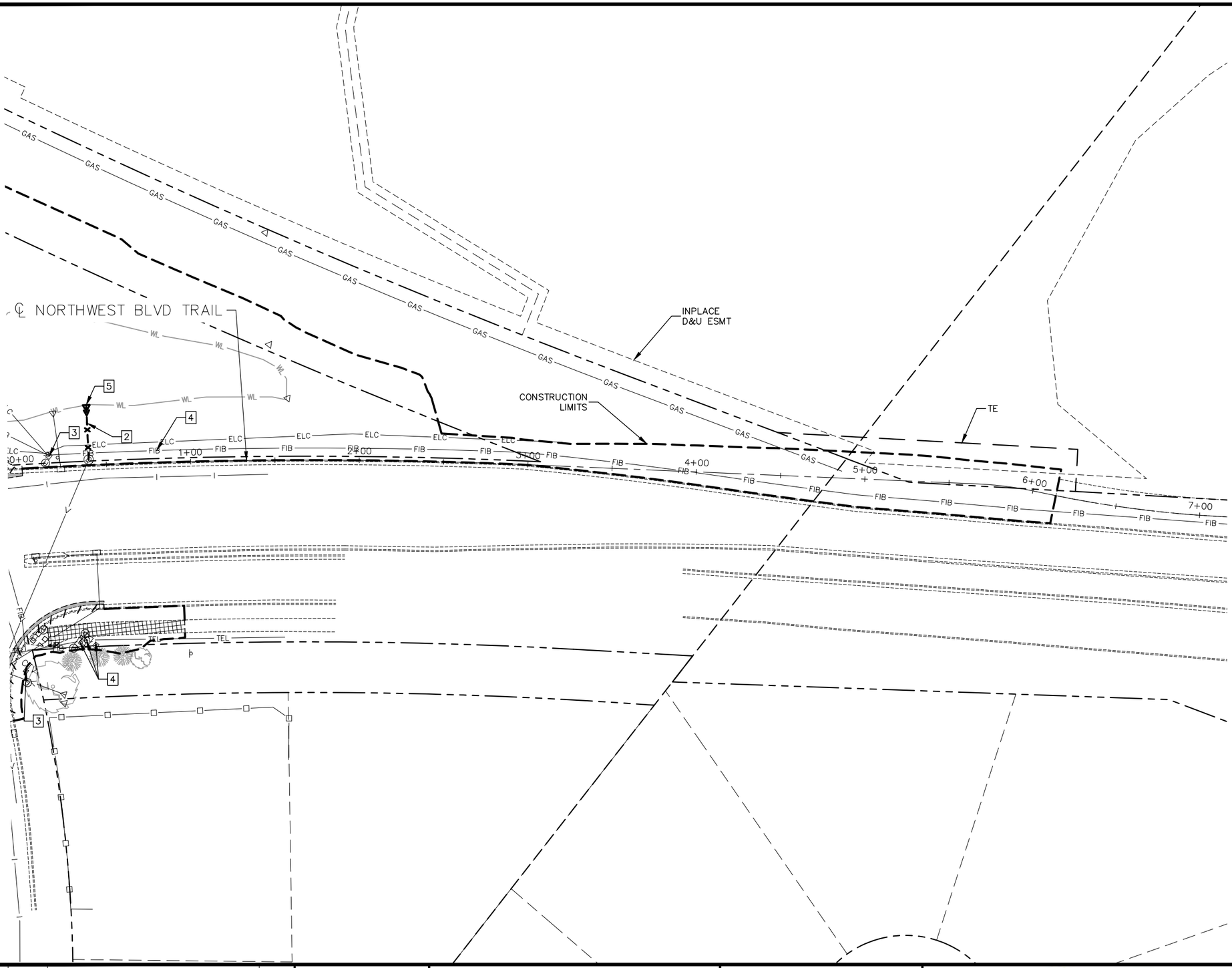
CHADD B. LARSON, PE
DATE: 11/04/2024 MN LIC. NO. 41864

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. 97 / 348



GENERAL REMOVAL NOTES:

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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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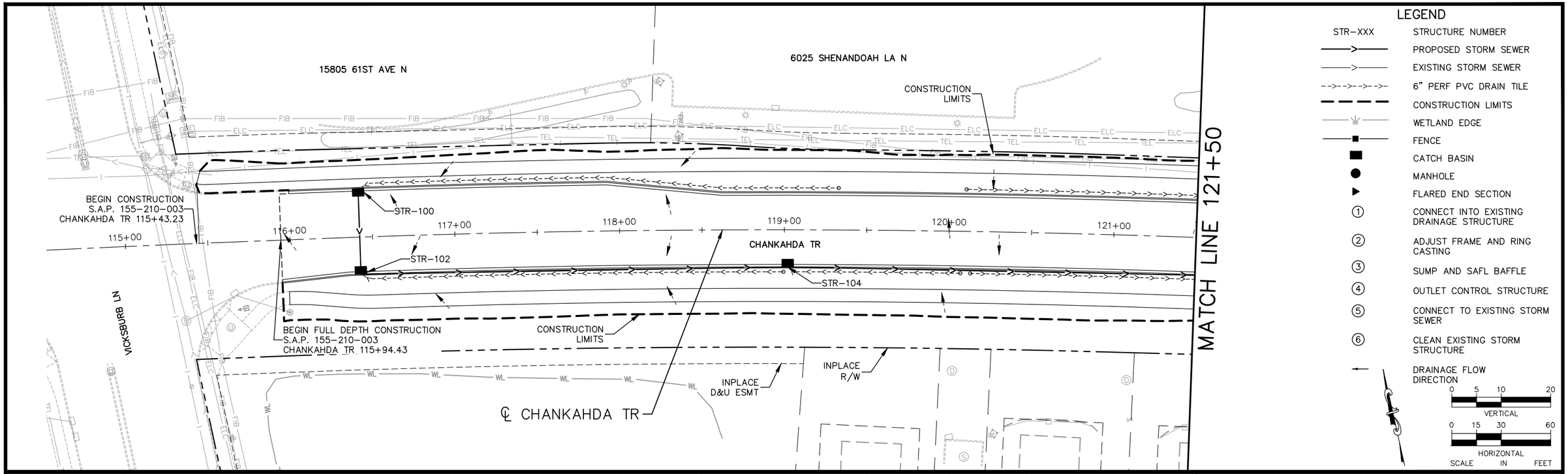
CHADD B. LARSON, PE
DATE: 11/04/2024 MN LIC. NO. 41864

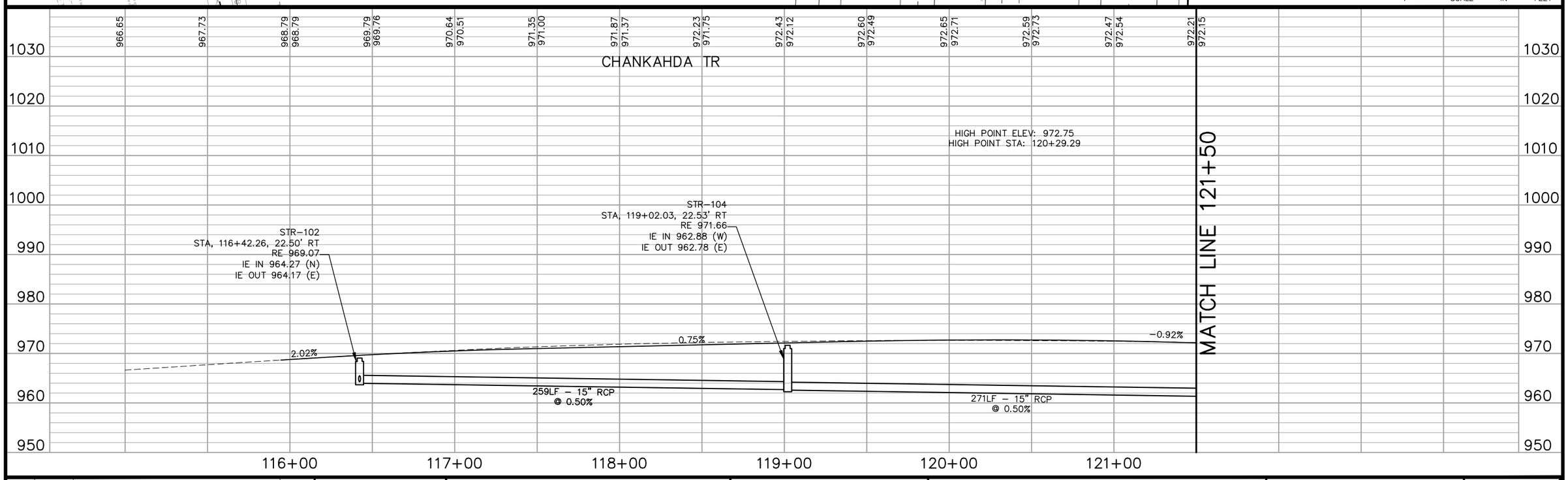
City of Plymouth

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. 98 / 348





No.	Date	Revisions	App.

DRAWING NAME: CHANKAHDA_PH3_DrainPlan.dwg

DESIGNED BY:	HB
DRAWN BY:	PD
CHECKED BY:	SLT
DATE:	11/04/2024
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.

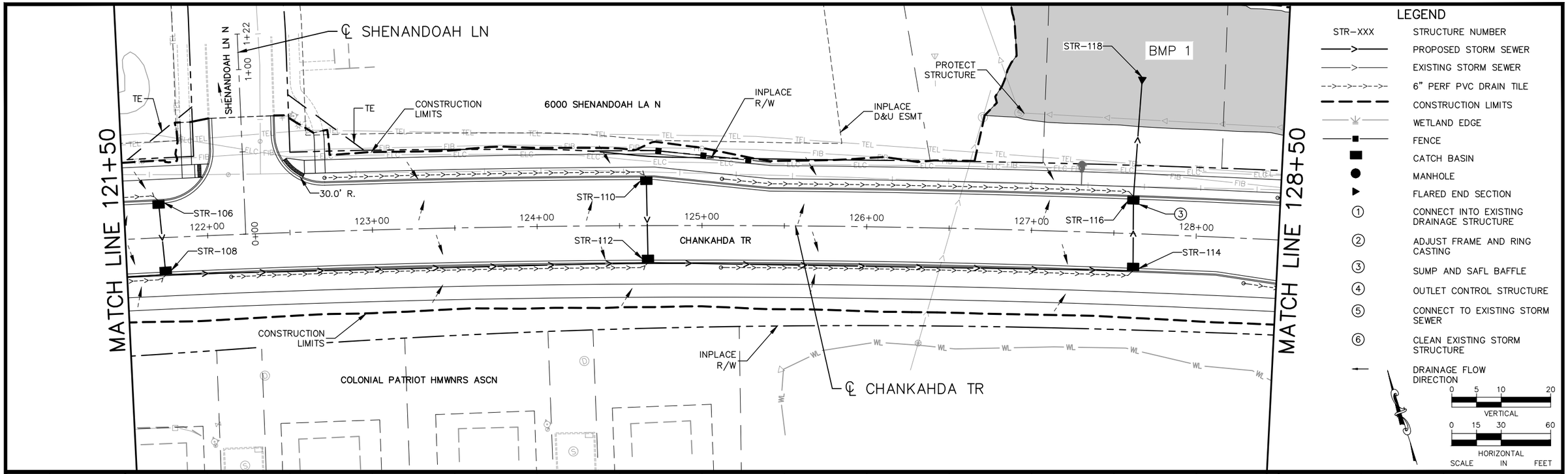
STEPHANIE L. THULIEN, PE
DATE: 11/04/2024 MN LIC. NO. 57230

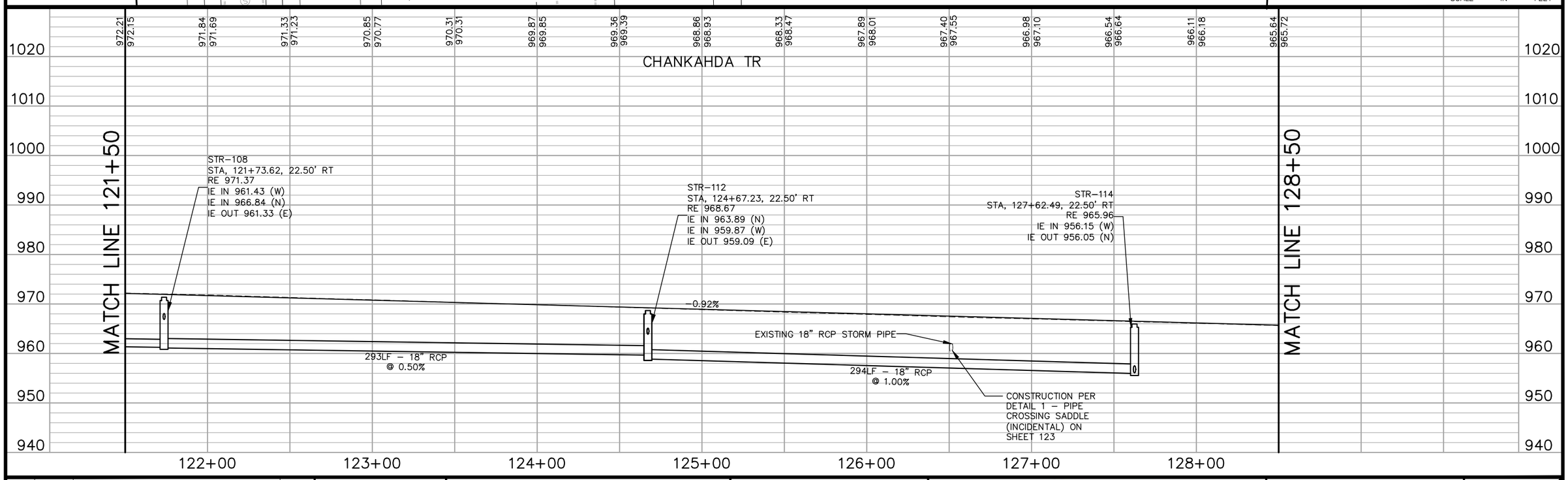
City of Plymouth

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. 99 / 348





No.	Date	Revisions	App.

DRAWING NAME: CHANKAHDA_PH3_DrainPlan.dwg

DESIGNED BY:	HB
DRAWN BY:	PD
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DATE:	11/04/2024
PROJECT NO.	160662010

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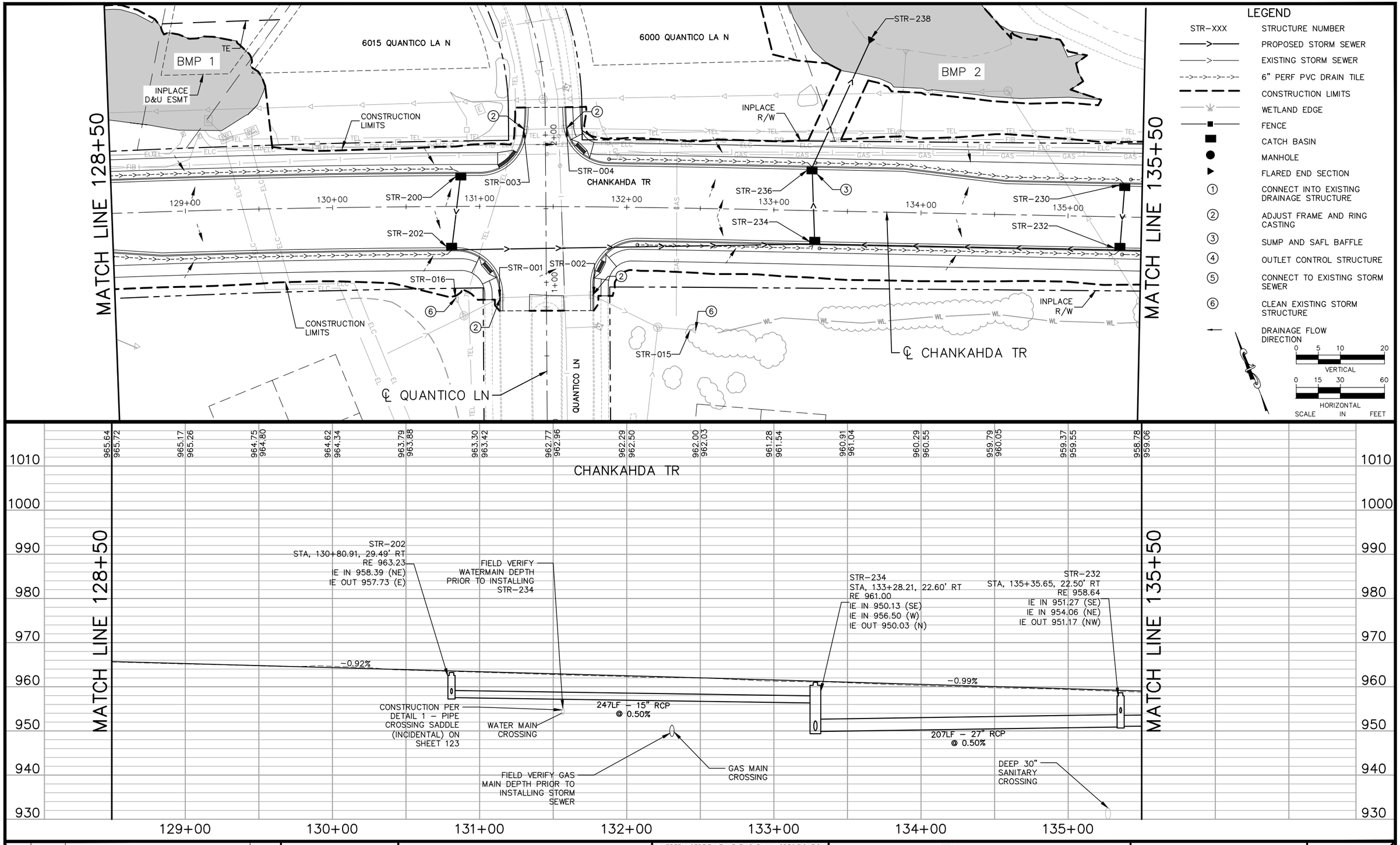
STEPHANIE L. THULIEN, PE
DATE: 11/04/2024 MN LIC. NO. 57230

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. 100 / 348



No.	Date	Revisions	App.

DRAWING NAME: CHANKAHDA_PH3_DrainPlan.dwg

DESIGNED BY:	HB
DRAWN BY:	PD
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DATE:	11/04/2024
PROJECT NO.	160662010

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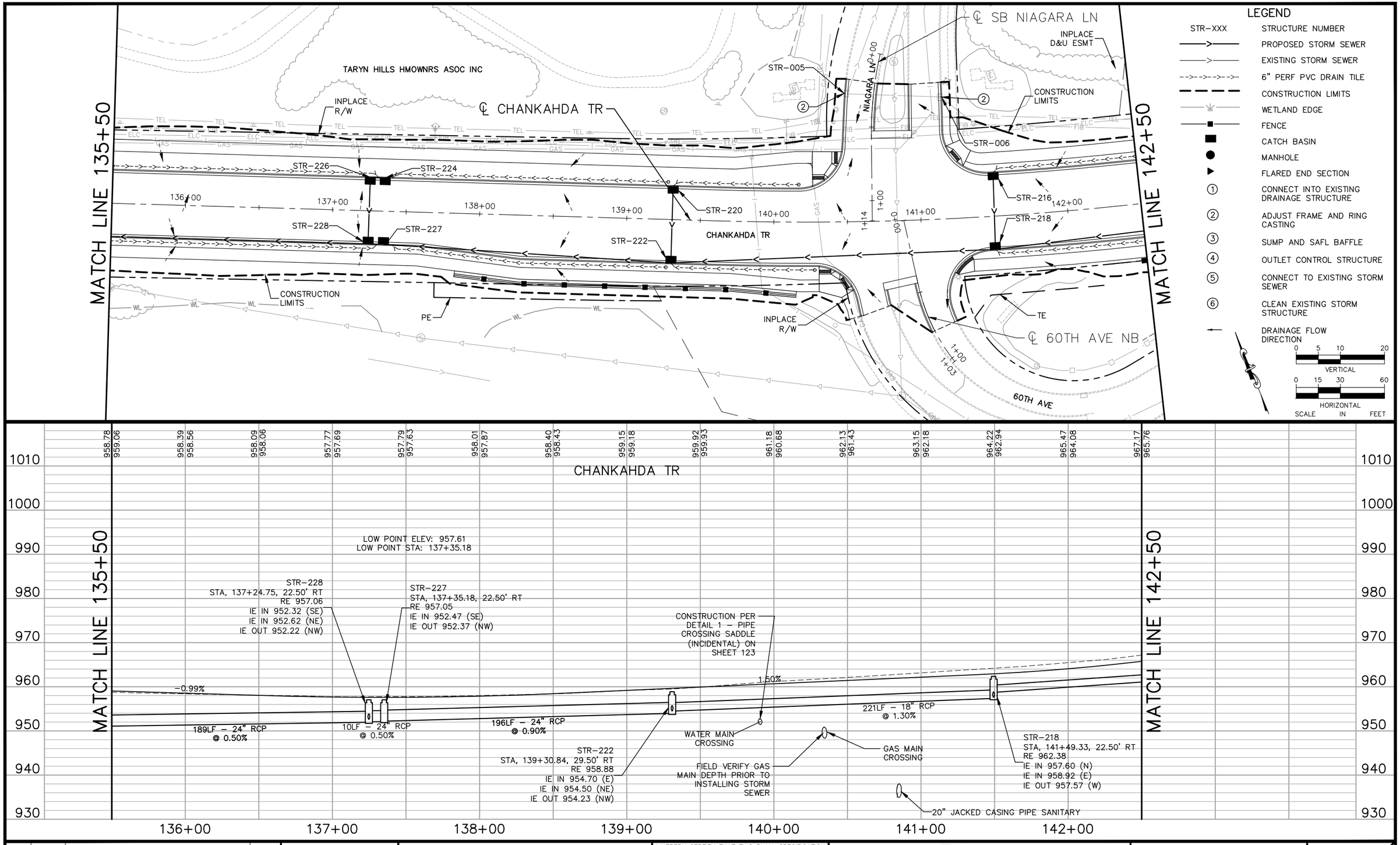
STEPHANIE L. THULIEN, PE
DATE: 11/04/2024 MN LIC. NO. 57230

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. 101 / 348



No.	Date	Revisions	App.

DRAWING NAME	CHANKAHDA_PH3_DrainPlan.dwg
DESIGNED BY:	HB
DRAWN BY:	PD
CHECKED BY:	SLT
DATE:	11/04/2024
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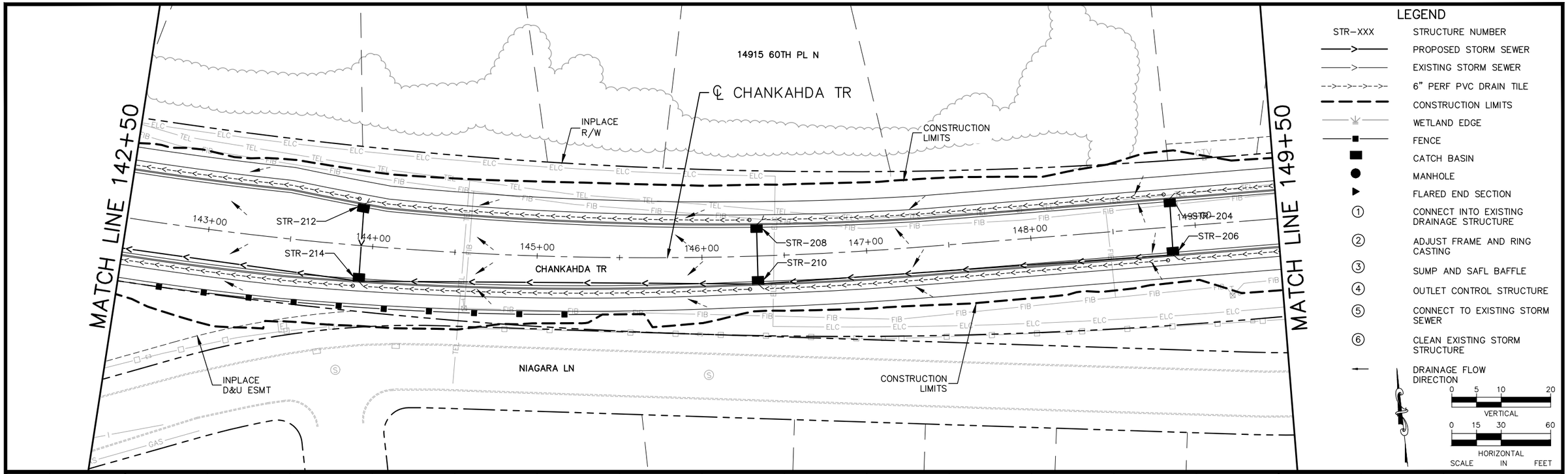
STEPHANIE L. THULIEN, PE
DATE: 11/04/2024 MN LIC. NO. 57230

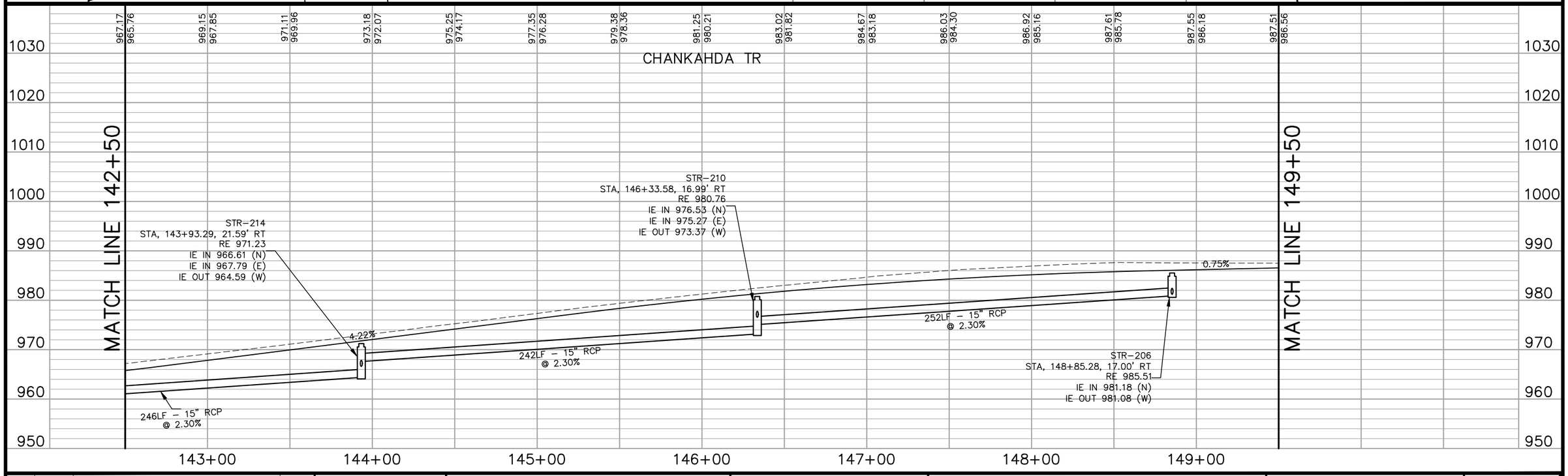
City of Plymouth

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. 102 / 348





No.	Date	Revisions	App.

DRAWING NAME: CHANKAHDA_PH3_DrainPlan.dwg

DESIGNED BY:	HB
DRAWN BY:	PD
CHECKED BY:	SLT
DATE:	11/04/2024
PROJECT NO.	160662010

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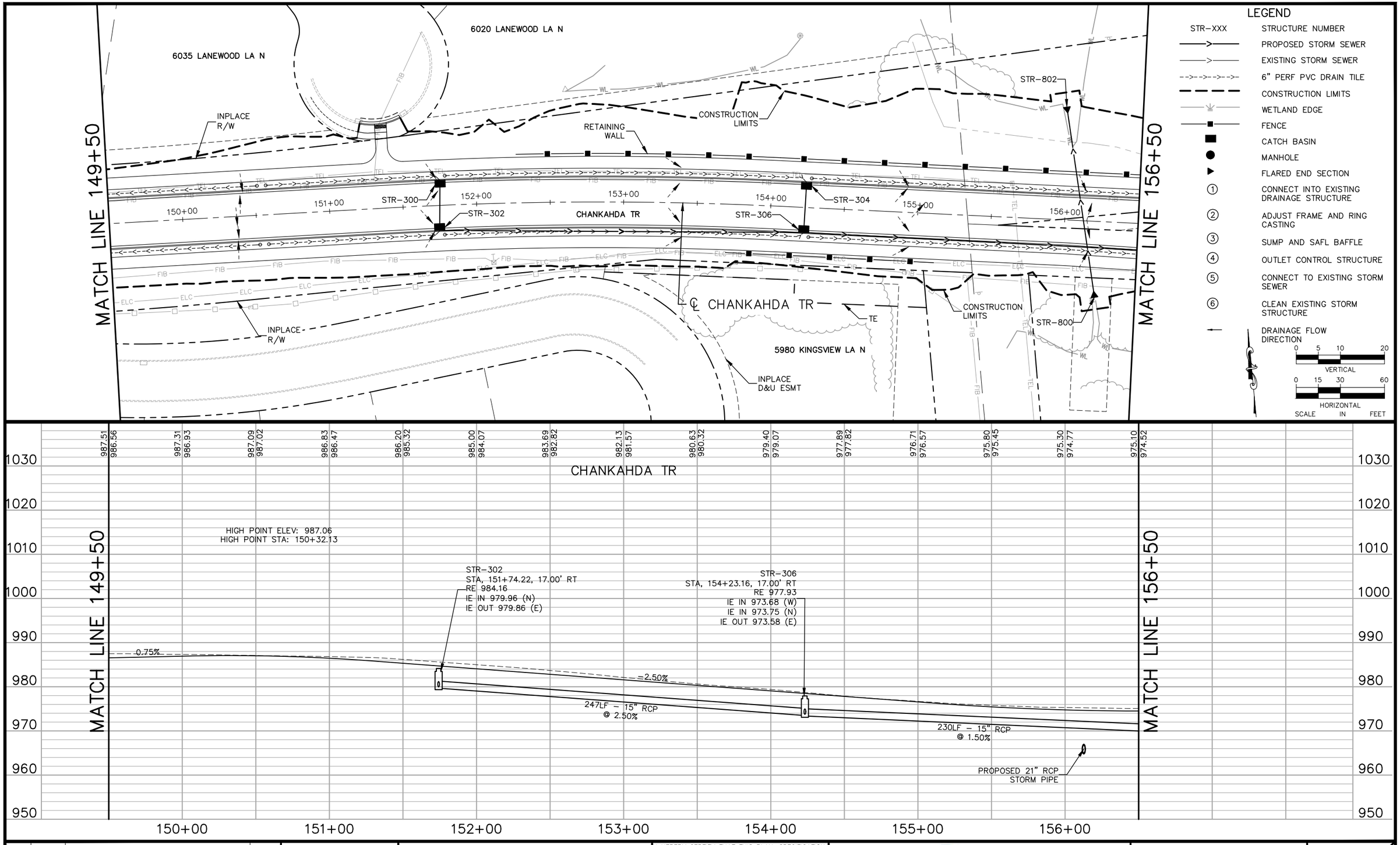
STEPHANIE L. THULIEN, PE
DATE: 11/04/2024 MN LIC. NO. 57230

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. 103 / 348



No.	Date	Revisions	App.

DRAWING NAME: CHANKAHDA_PH3_DrainPlan.dwg

DESIGNED BY:	HB
DRAWN BY:	PD
CHECKED BY:	SLT
DATE:	11/04/2024
PROJECT NO.	160662010

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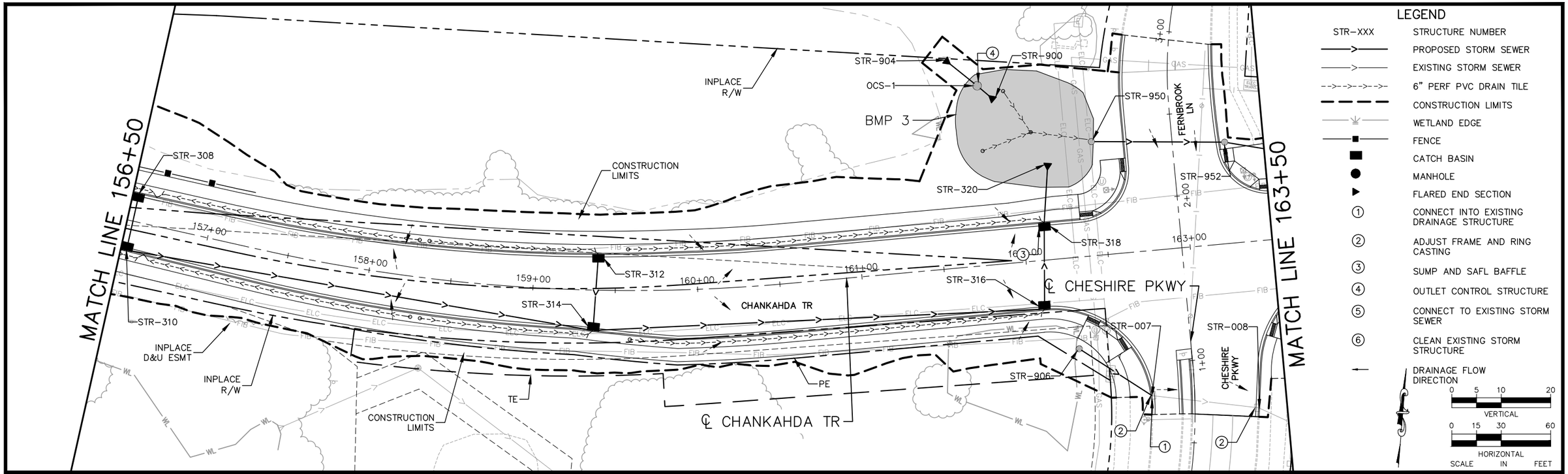
STEPHANIE L. THULIEN, PE
DATE: 11/04/2024 MN LIC. NO. 57230

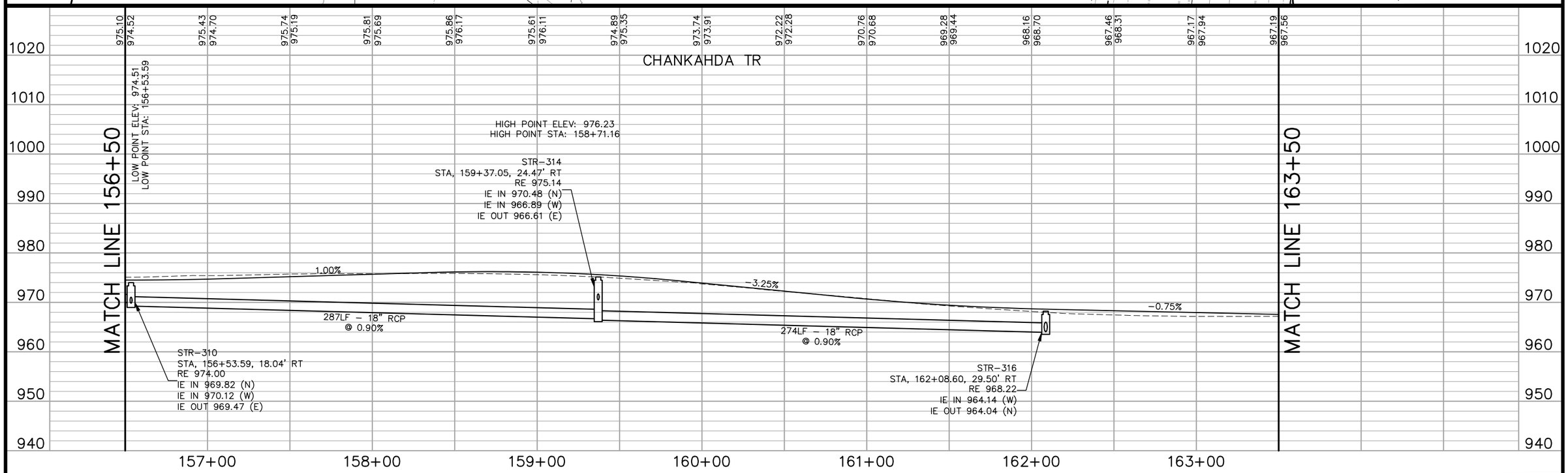
City of Plymouth

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. 104 / 348





No.	Date	Revisions	App.

DRAWING NAME: CHANKAHDA_PH3_DrainPlan.dwg

DESIGNED BY:	HB
DRAWN BY:	PD
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DATE:	11/04/2024
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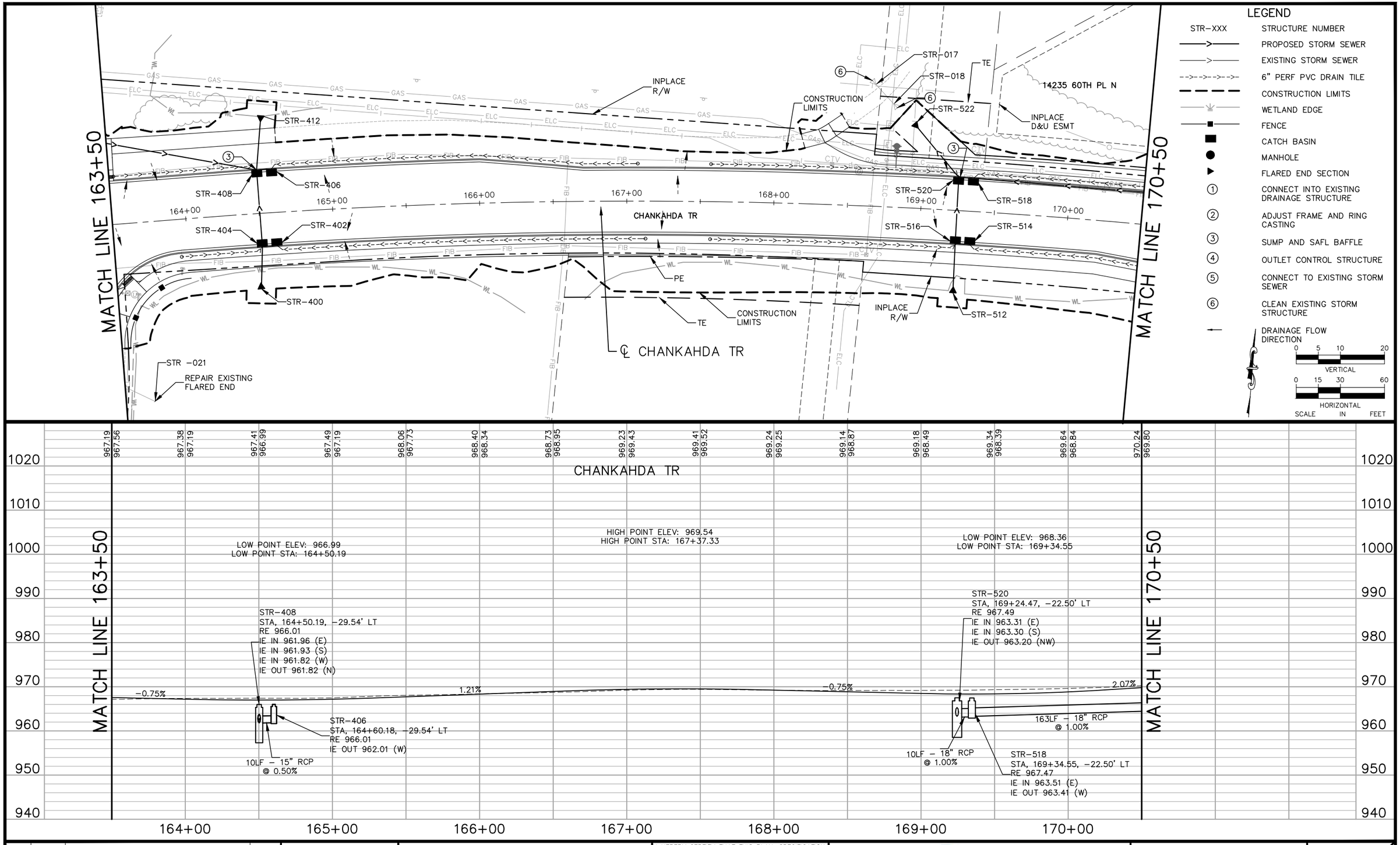
STEPHANIE L. THULIEN, PE
DATE: 11/04/2024 MN LIC. NO. 57230

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. 105 / 348



No.	Date	Revisions	App.

DRAWING NAME: CHANKAHDA_PH3_DrainPlan.dwg

DESIGNED BY:	HB
DRAWN BY:	PD
CHECKED BY:	SLT
DATE:	11/04/2024
PROJECT NO.	160662010

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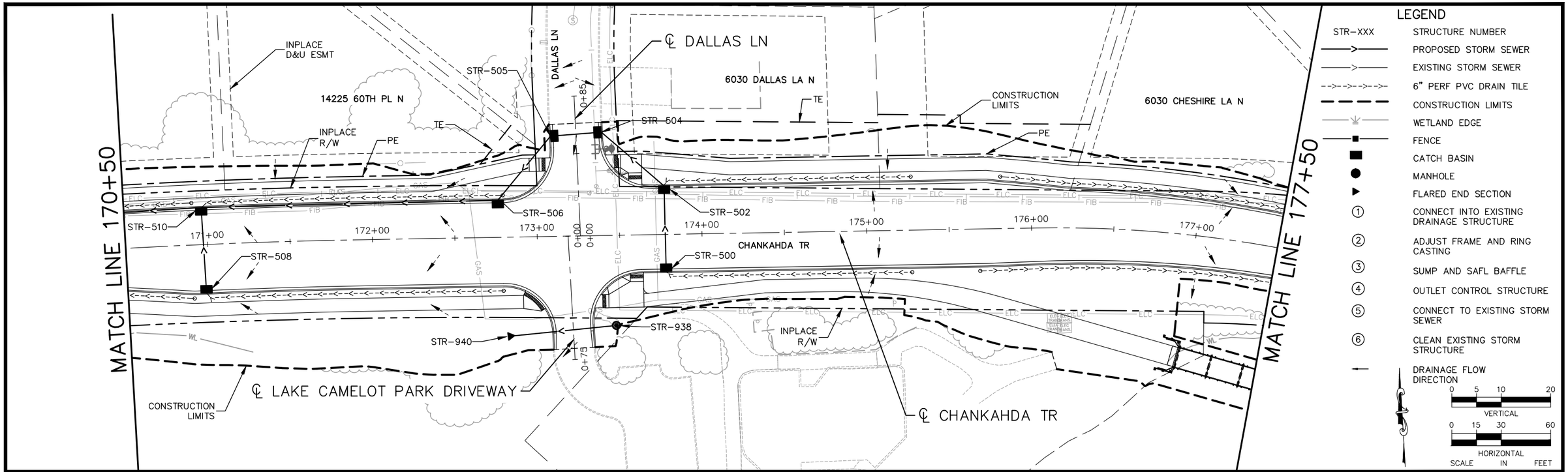
STEPHANIE L. THULIEN, PE
DATE: 11/04/2024 MN LIC. NO. 57230

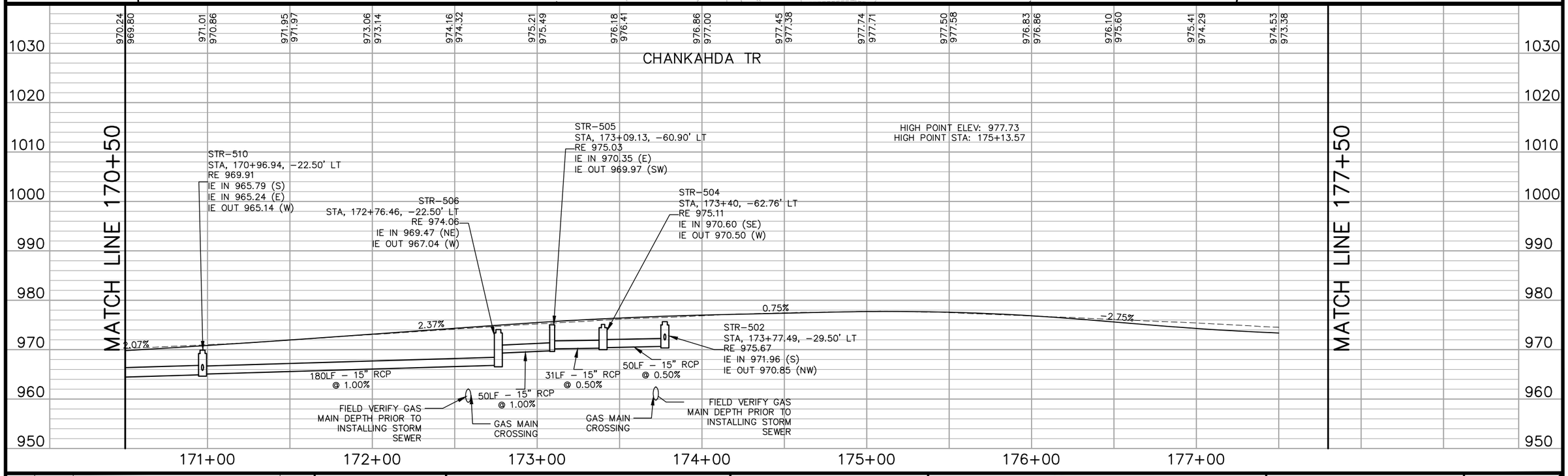
City of Plymouth

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. 106 / 348





No.	Date	Revisions	App.

DRAWING NAME: CHANKAHDA_PH3_DrainPlan.dwg

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DRAWN BY:	PD
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DATE:	11/04/2024
PROJECT NO.	160662010

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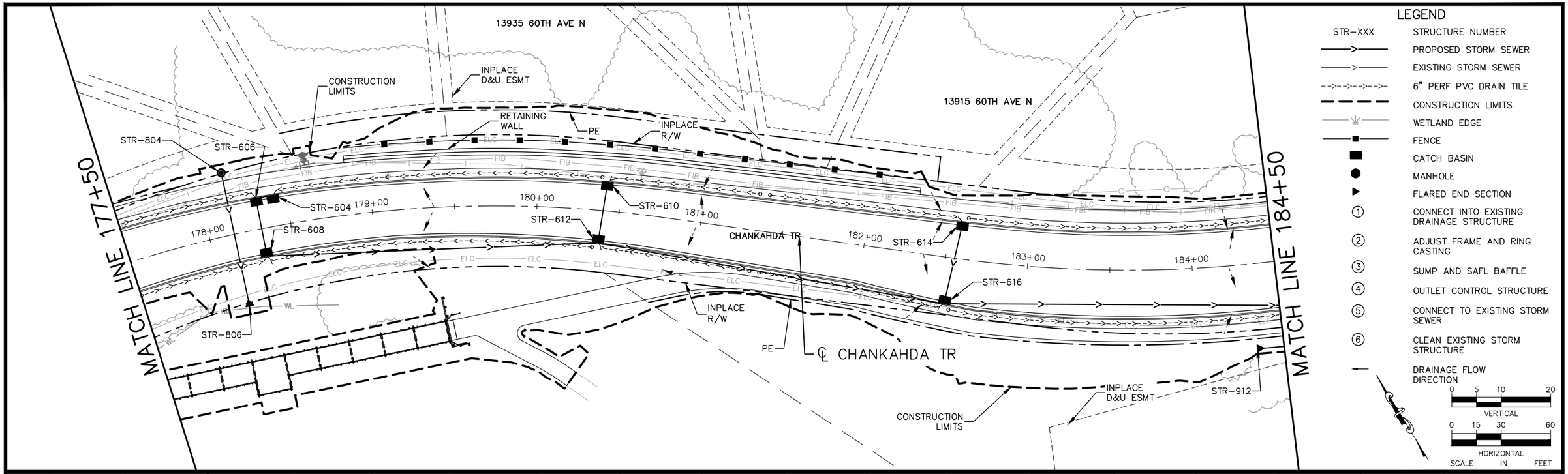
STEPHANIE L. THULIEN, PE
DATE: 11/04/2024 MN LIC. NO. 57230

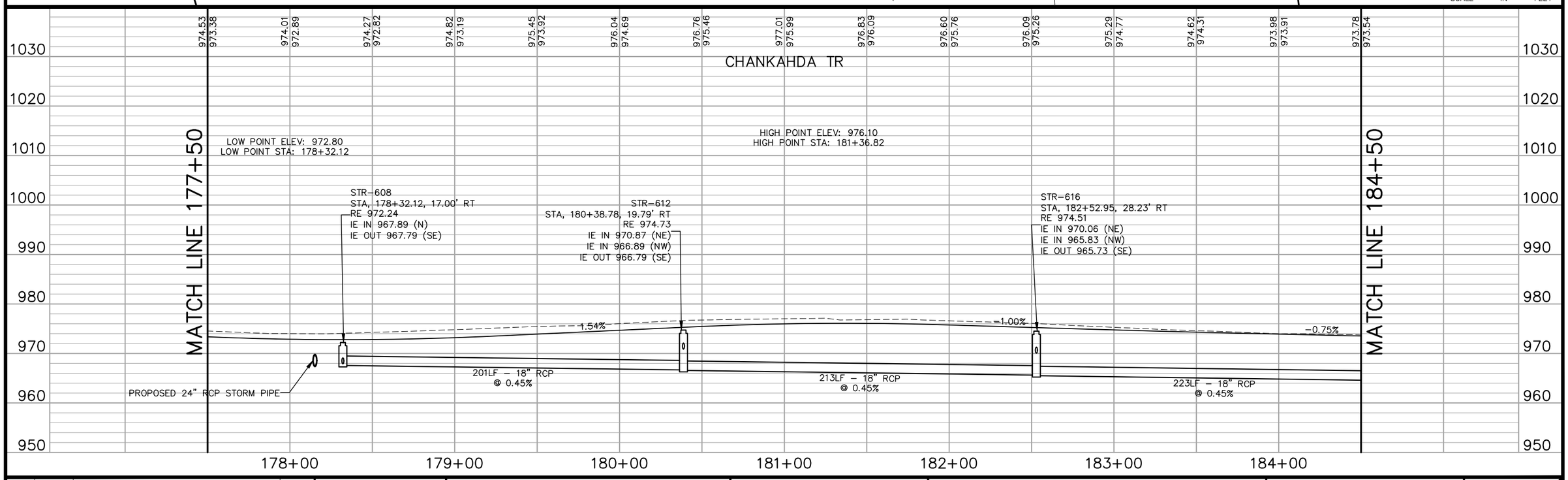
City of Plymouth

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. 107 / 348





No.	Date	Revisions	App.

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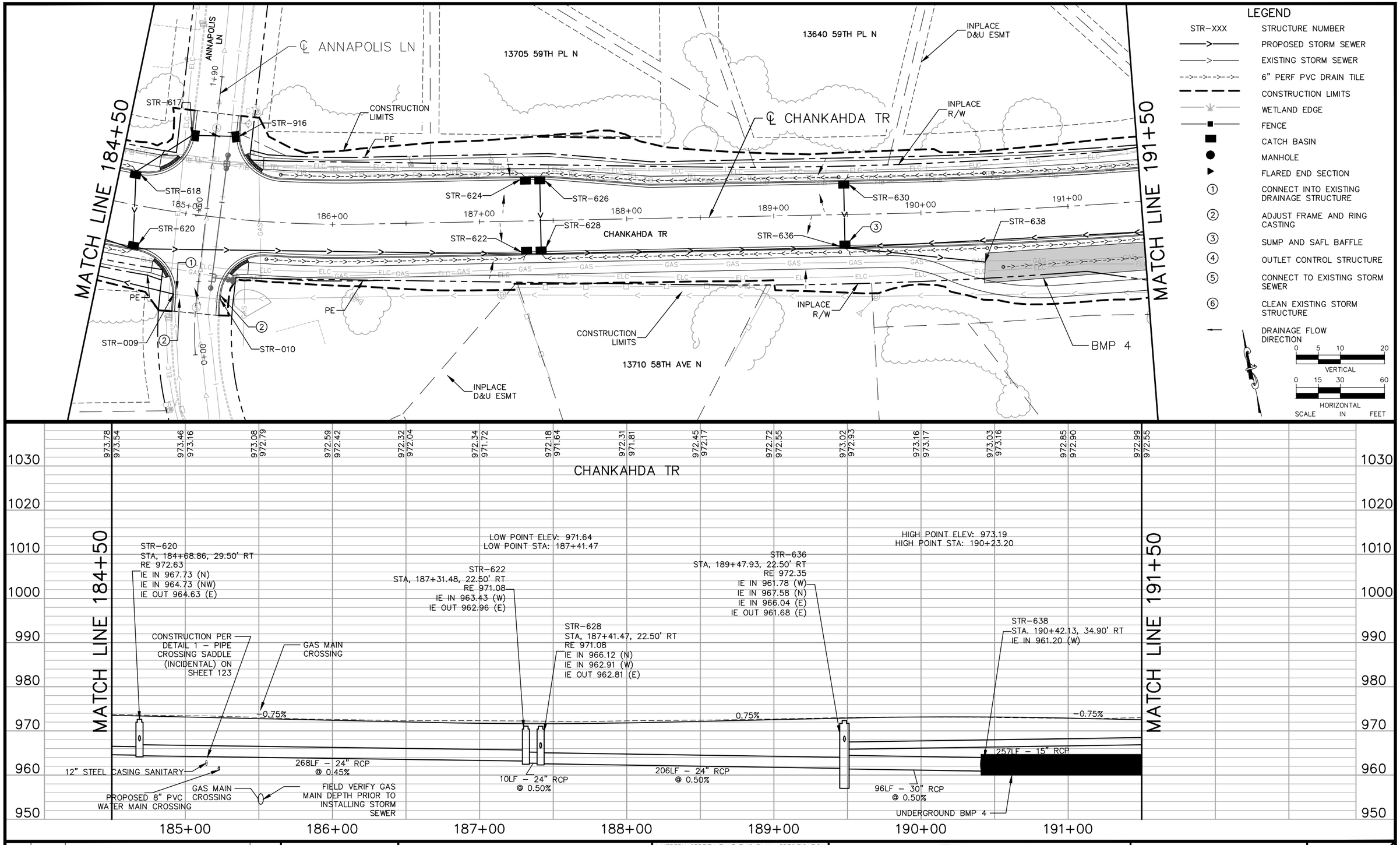
STEPHANIE L. THULIEN, PE
DATE: 11/04/2024 MN LIC. NO. 57230

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. 108 / 348



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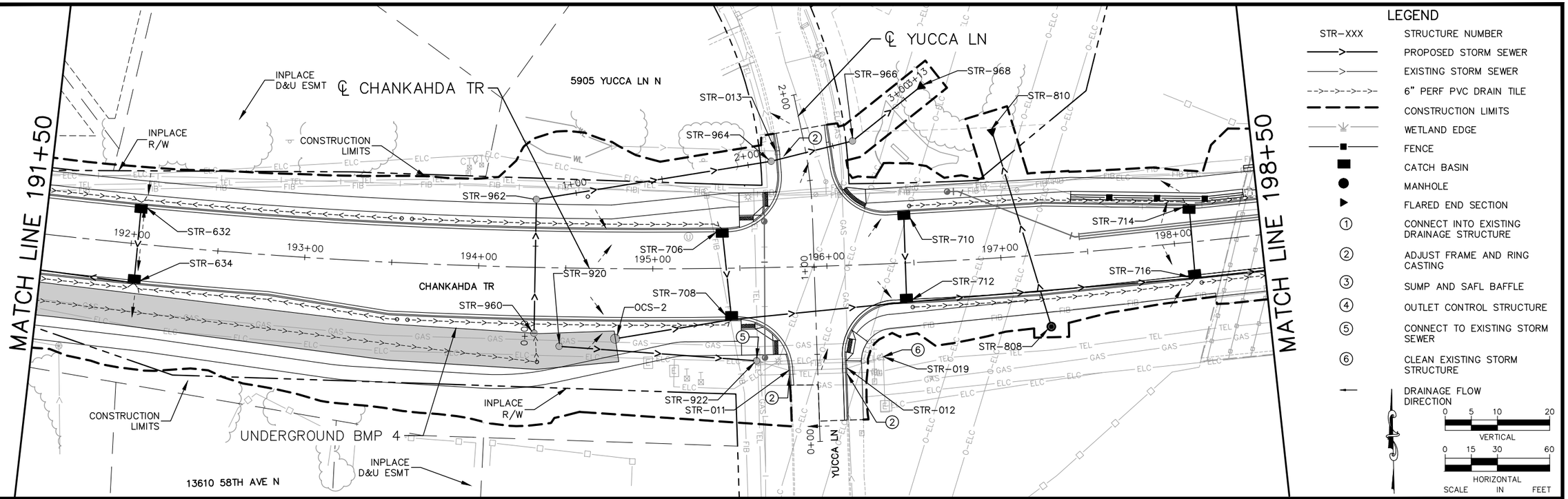
STEPHANIE L. THULIEN, PE
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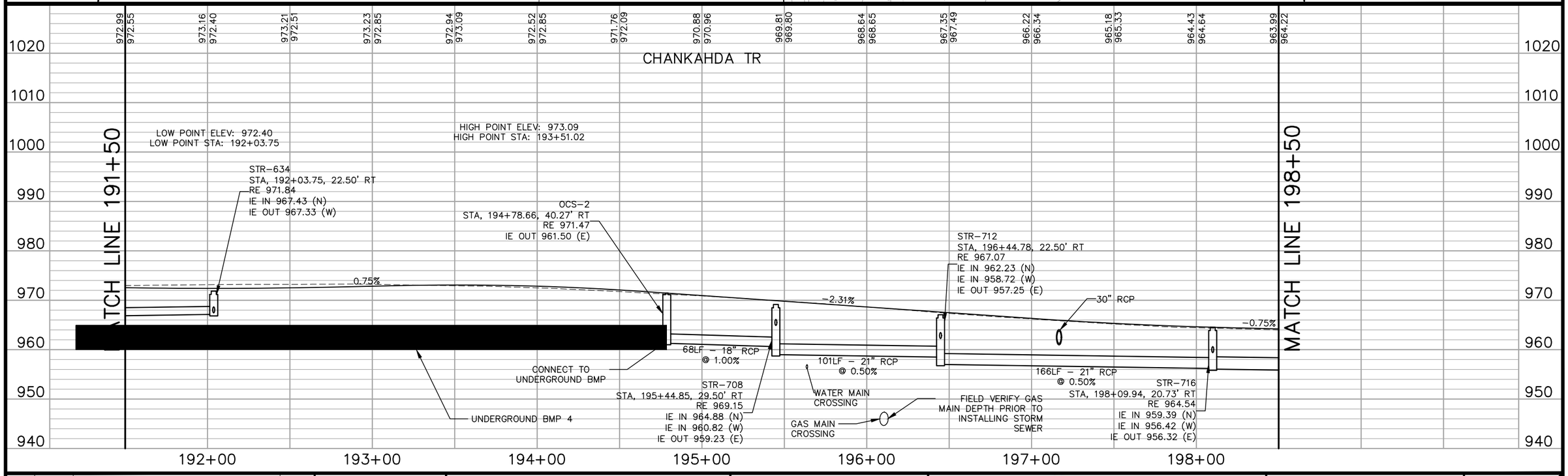
City of Plymouth

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. 109 / 348





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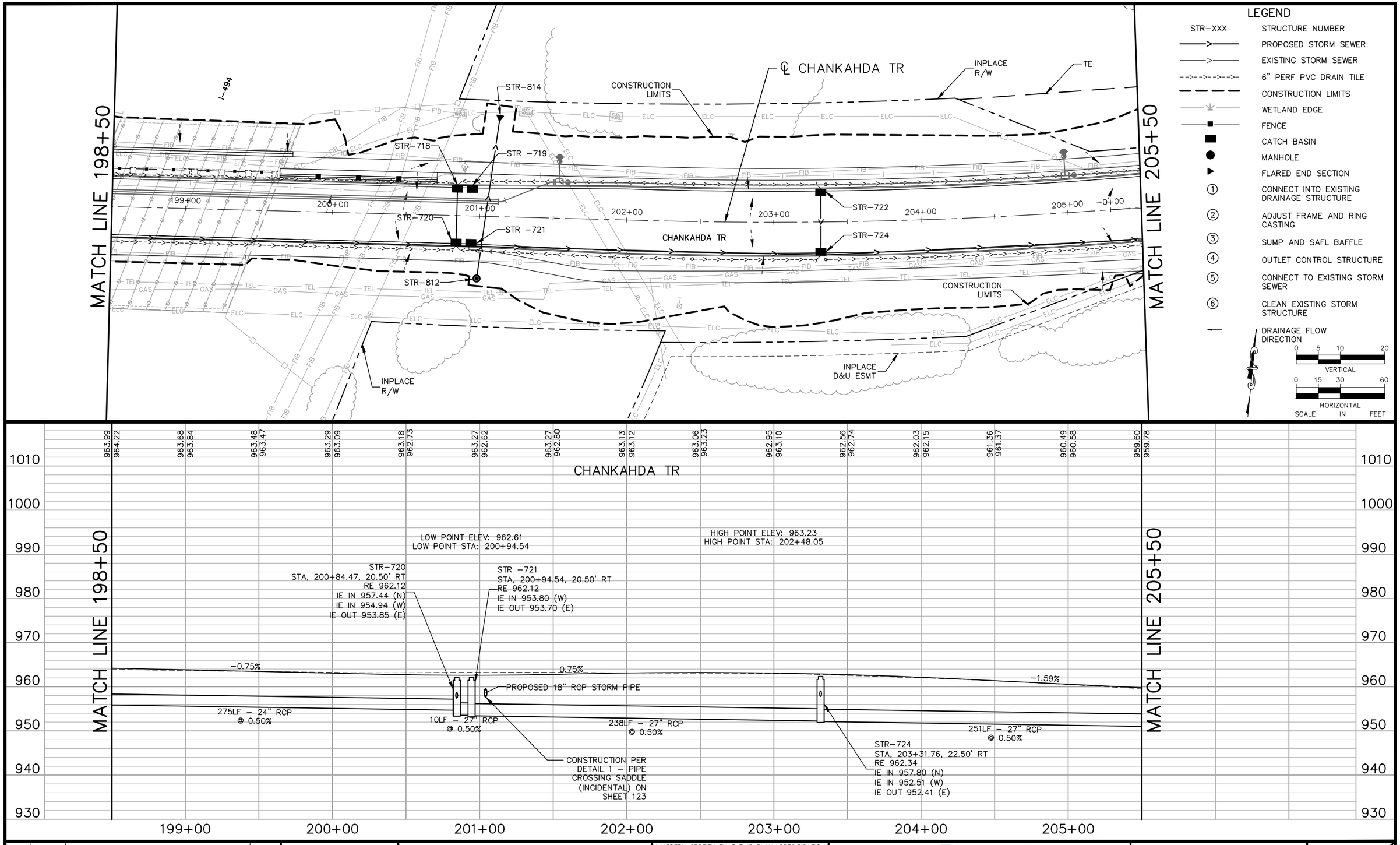
STEPHANIE L. THULIEN, PE
DATE: 11/04/2024 MN LIC. NO. 57230

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. 110 / 348



No.	Date	Revisions	App.

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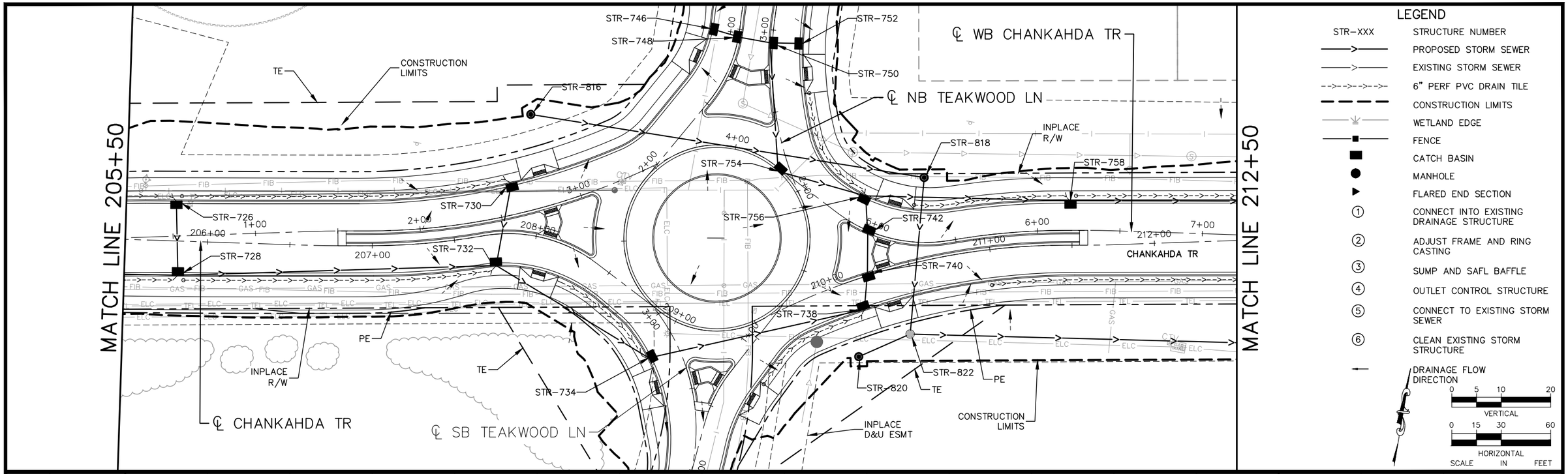
DATE: 11/04/2024 MN LIC. NO. 57230

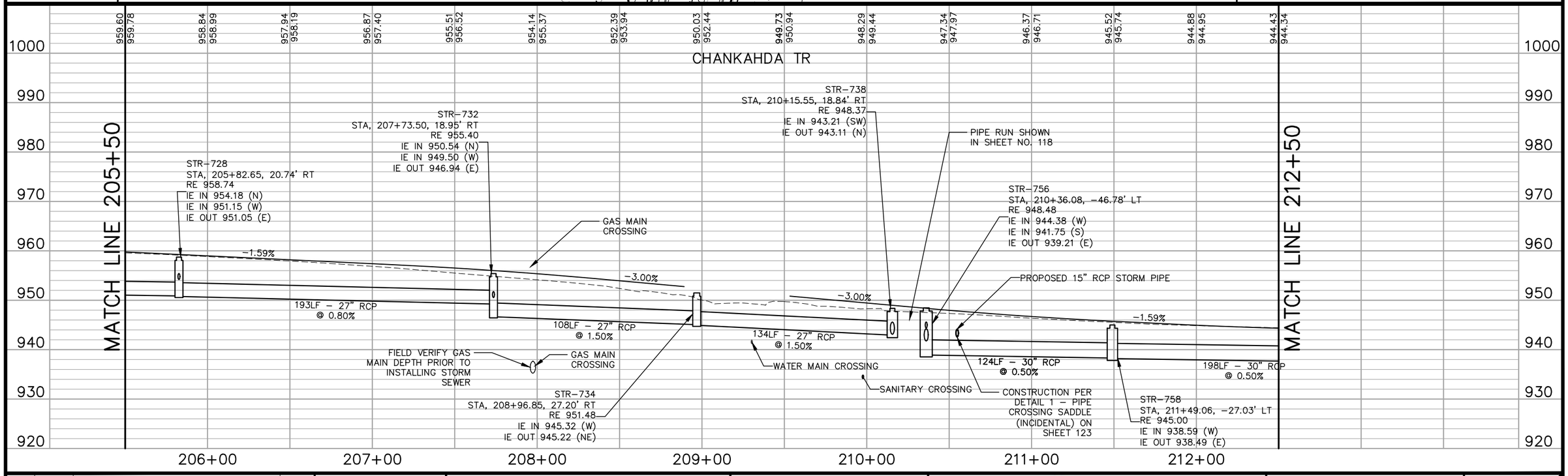
City of Plymouth

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. 111 / 348





No.	Date	Revisions	App.

DRAWING NAME: CHANKAHDA_PH3_DrainPlan.dwg

DESIGNED BY:	HB
DRAWN BY:	PD
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DATE:	11/04/2024
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STEPHANIE L. THULIEN, PE
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City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
DRAINAGE PLAN AND PROFILE
STA. 205+50 TO STA. 212+50

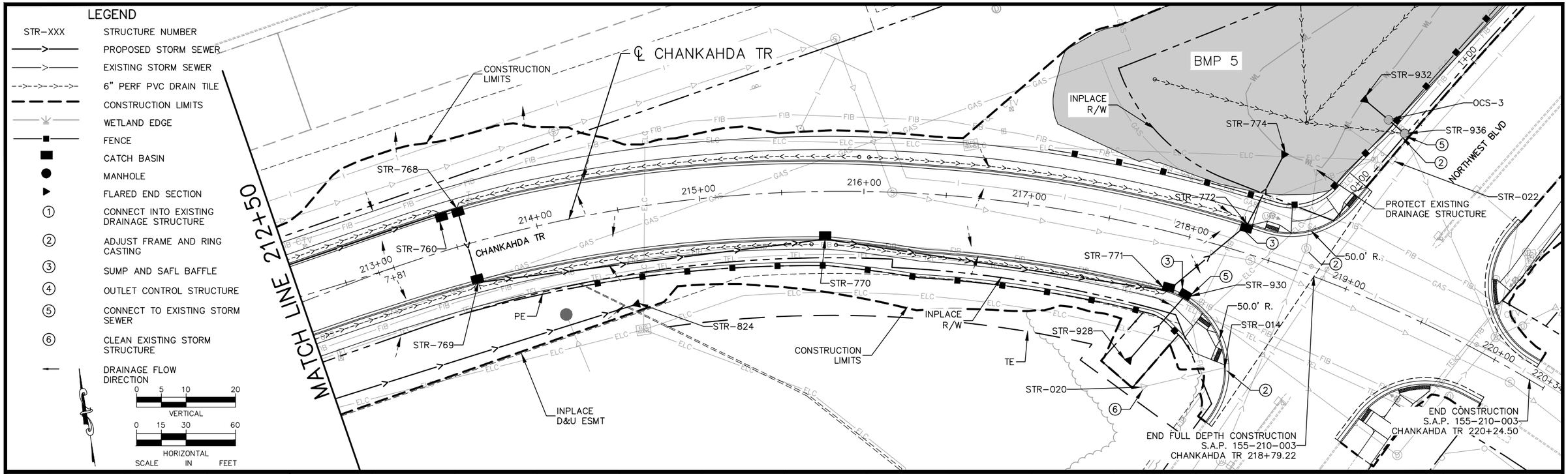
CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

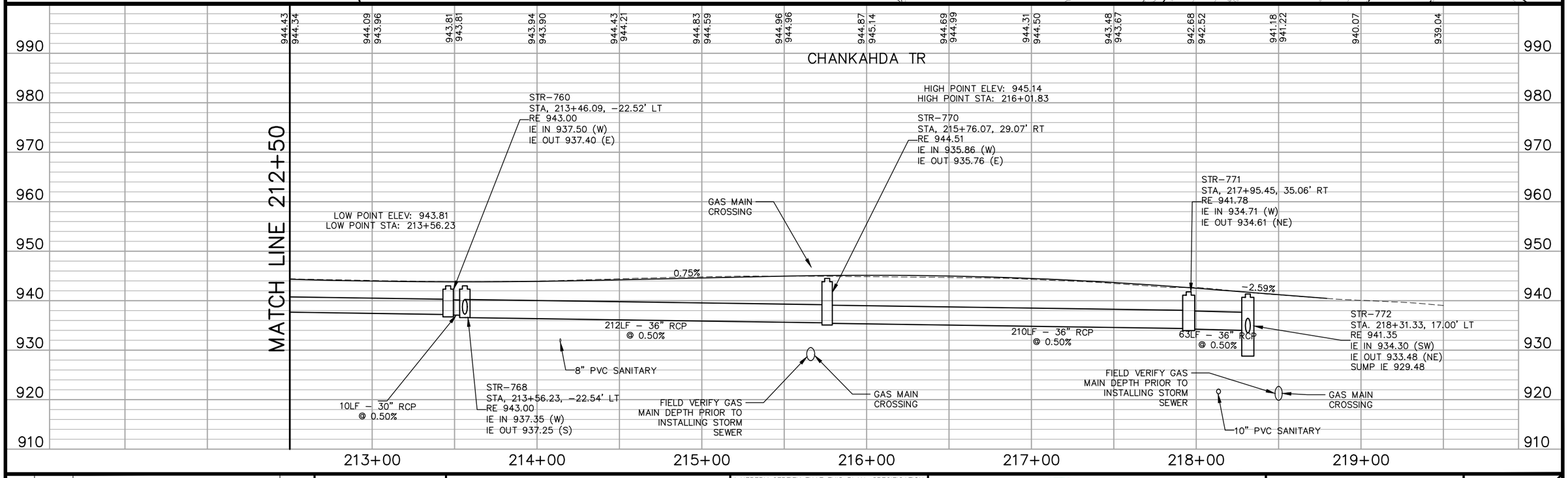
SHEET NO. 112 / 348

LEGEND

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 STORM STRUCTURE
	DRAINAGE FLOW DIRECTION

HORIZONTAL SCALE IN FEET: 0 5 10 20 (VERTICAL); 0 15 30 60 (HORIZONTAL)





No.	Date	Revisions	App.

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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.

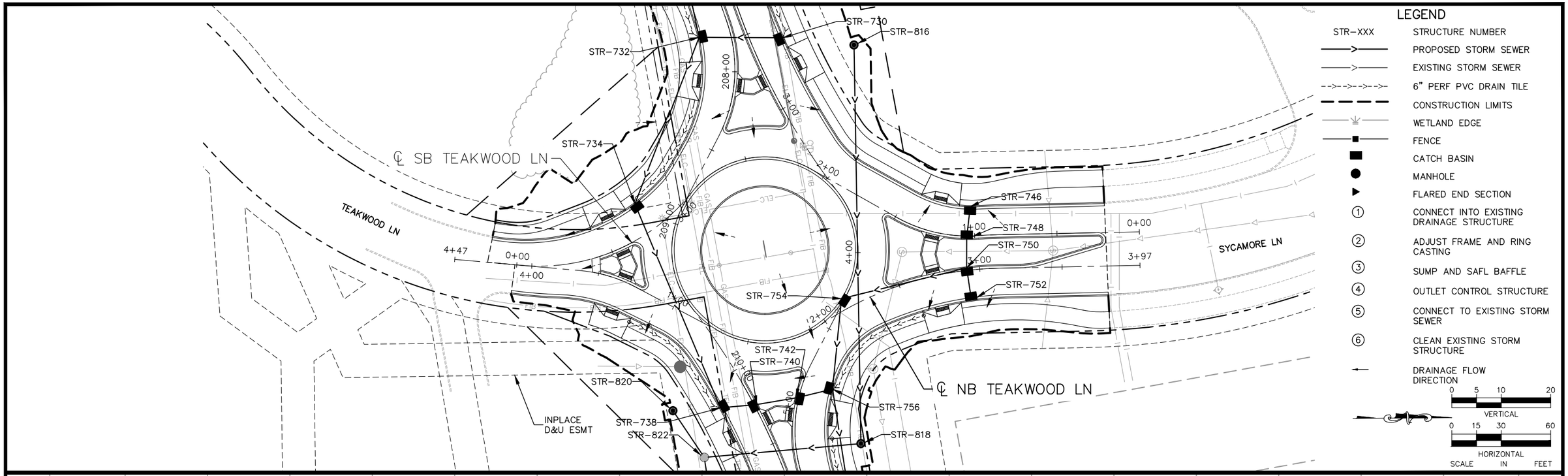
STEPHANIE L. THULIEN, PE
DATE: 11/04/2024 MN LIC. NO. 57230

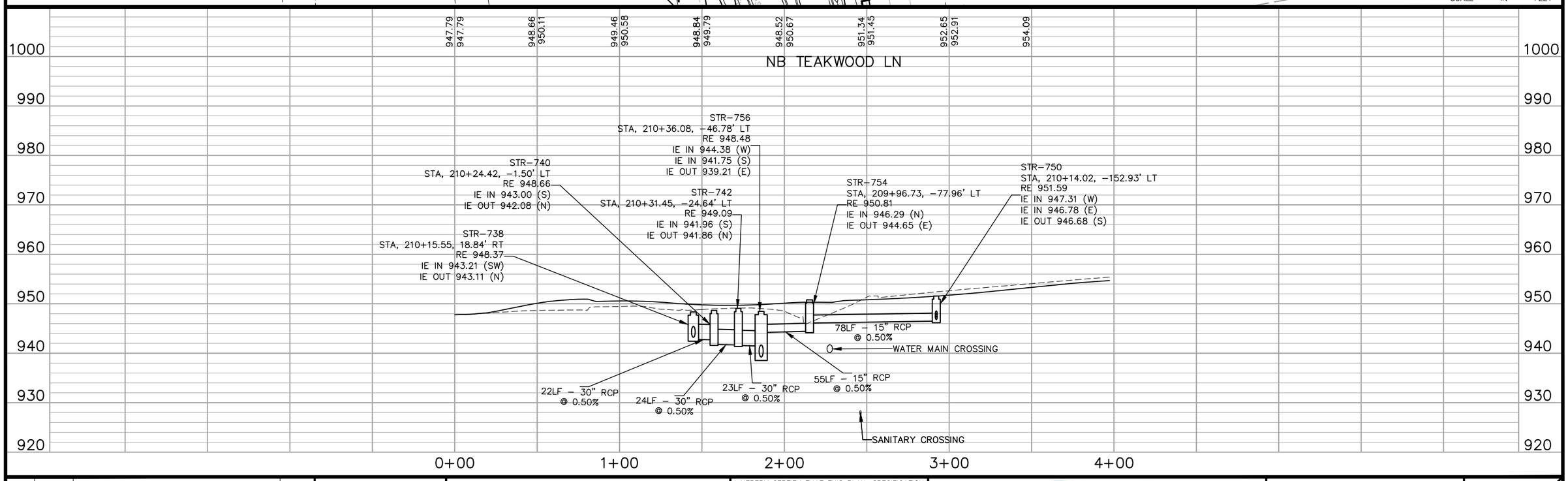
City of Plymouth

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. 113 / 348





No.	Date	Revisions	App.

DRAWING NAME: CHANKAHDA_PH3_DrainPlan.dwg

DESIGNED BY:	HB
DRAWN BY:	PD
CHECKED BY:	SLT
DATE:	11/04/2024
PROJECT NO.	160662010

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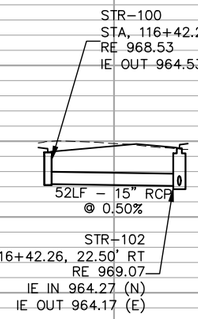
STEPHANIE L. THULIEN, PE
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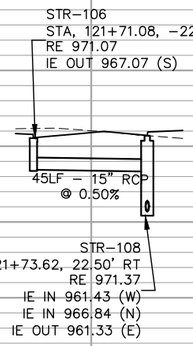
City of Plymouth

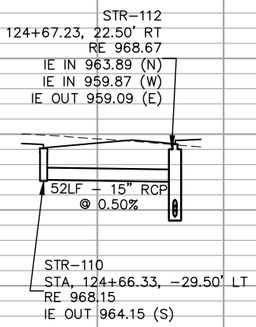
CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
DRAINAGE PLAN AND PROFILE

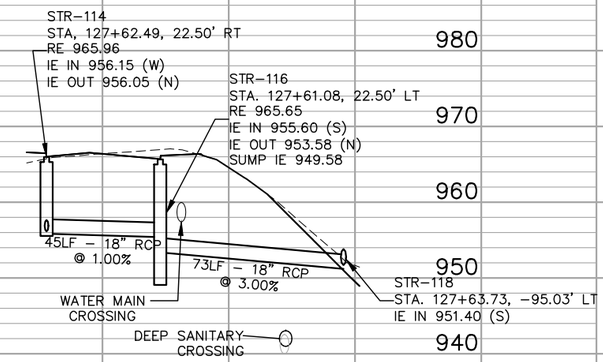
CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

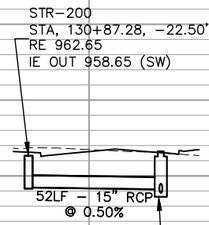
SHEET NO. 114 / 348

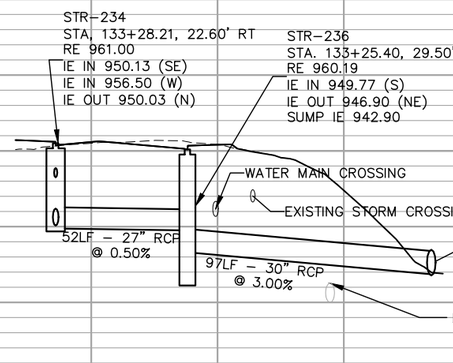


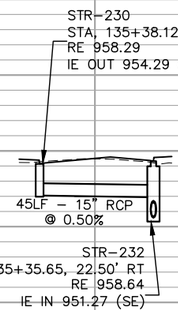


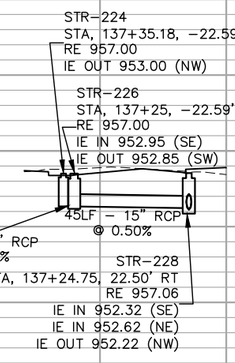


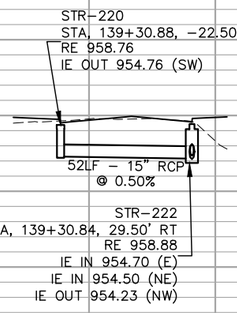


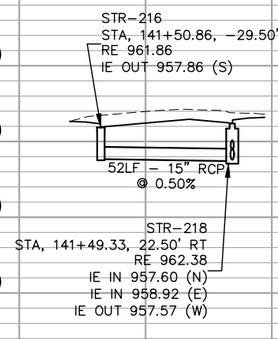


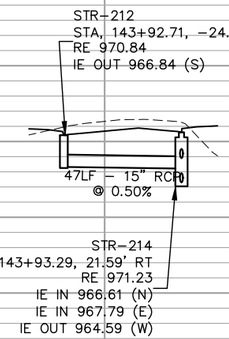


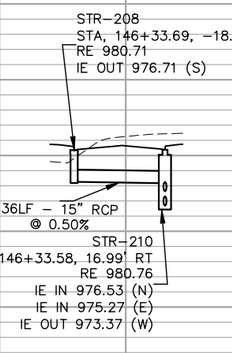


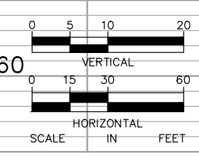












No.	Date	Revisions	App.

DRAWING NAME: CHANKAHDA_PH3_DrainPlan.dwg

DESIGNED BY:	HB
DRAWN BY:	PD
CHECKED BY:	SLT
DATE:	11/04/2024
PROJECT NO.	160662010

Kimley»Horn
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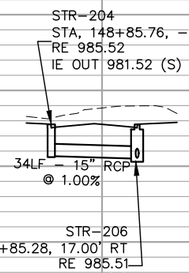
STEPHANIE L. THULIEN, PE
DATE: 11/04/2024 MN LIC. NO. 57230

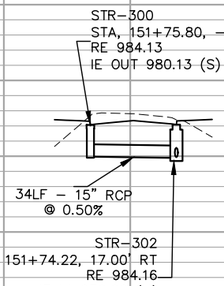
City of Plymouth

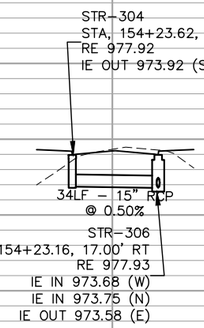
CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
DRAINAGE LATERAL PROFILES

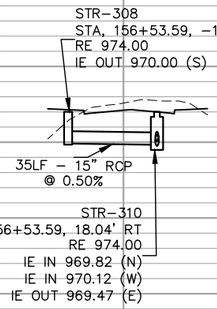
CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

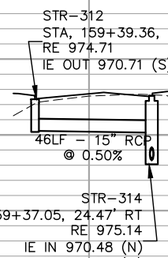
SHEET NO. 115 / 348

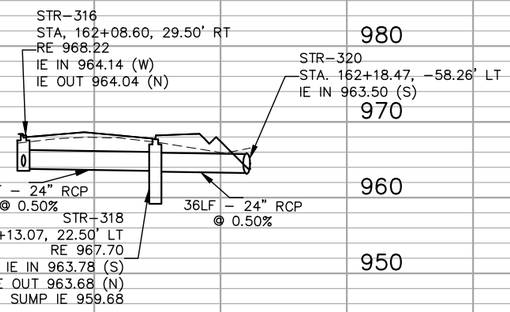


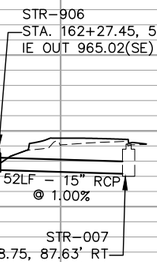


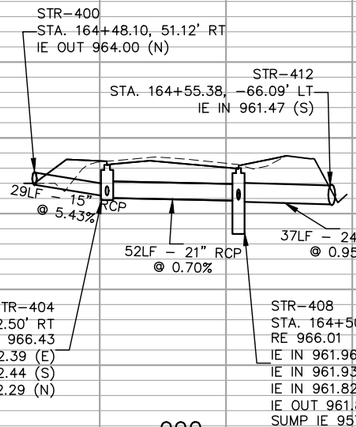


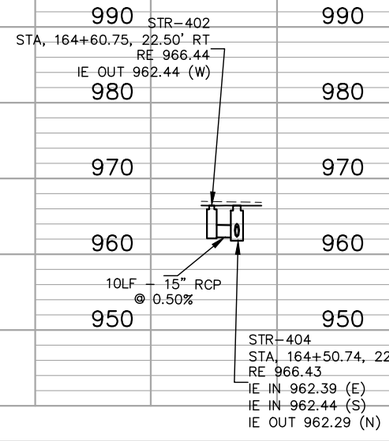


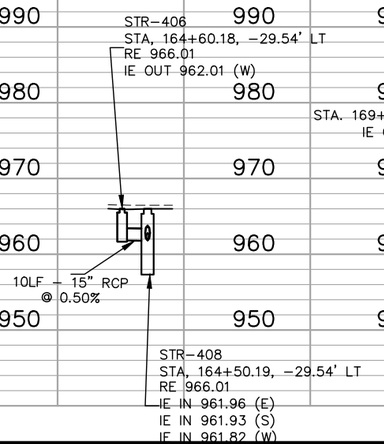


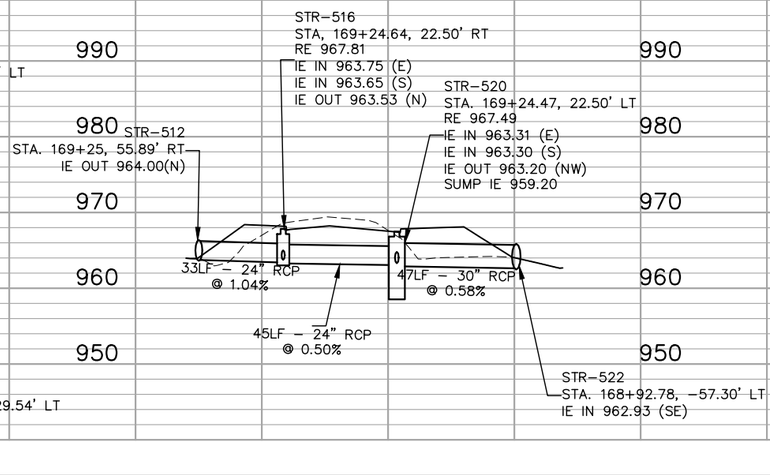


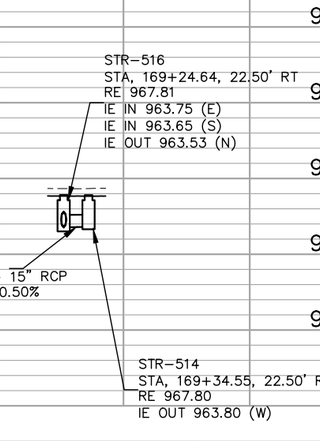


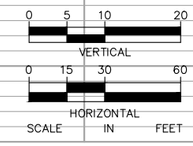












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DESIGNED BY:	HB
DRAWN BY:	PD
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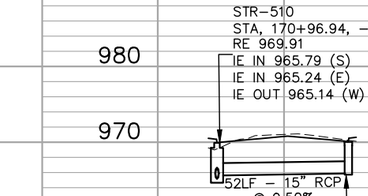
STEPHANIE L. THULIEN, PE
DATE: 11/04/2024 MN LIC. NO. 57230

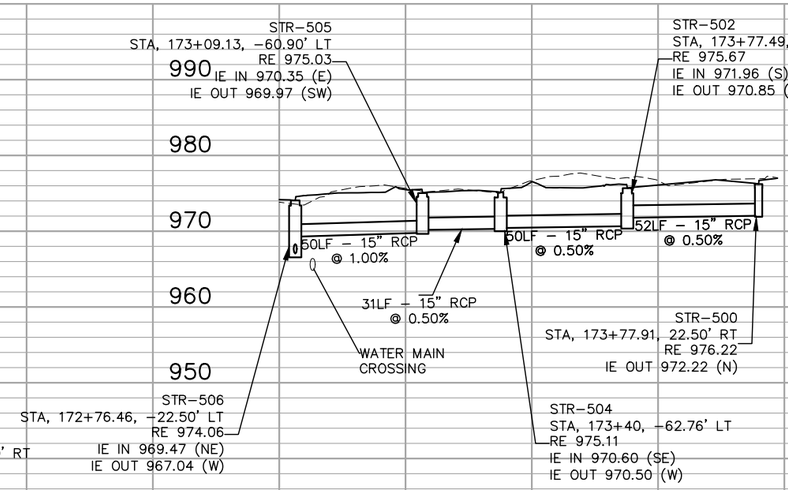
City of Plymouth

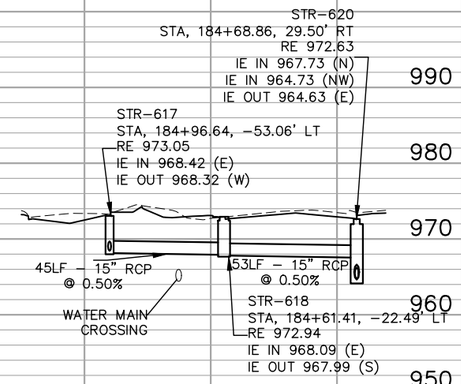
CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
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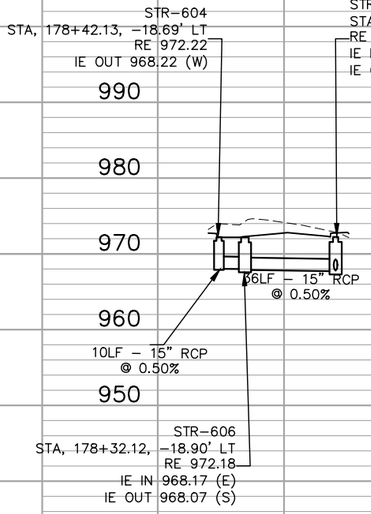
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COUNTY PROJECT	
S.A.P.	155–210–003
S.A.P.	

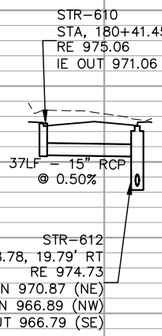
SHEET NO. 116 / 348

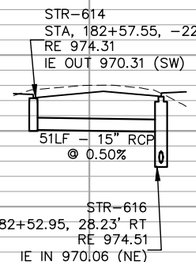


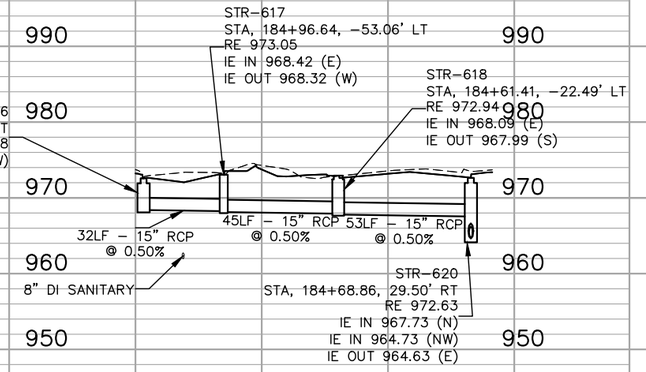


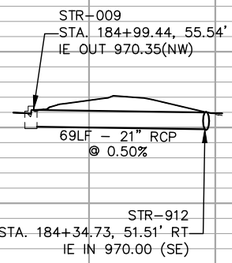


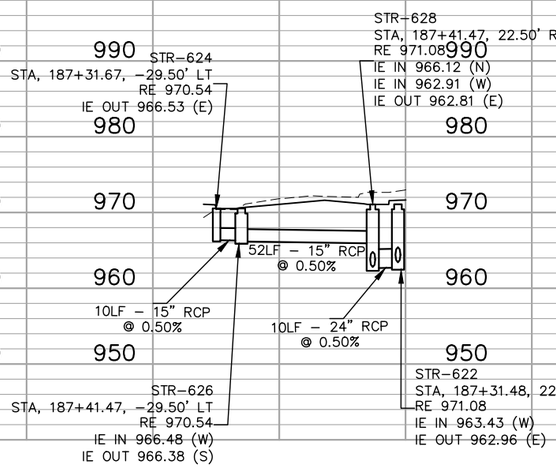


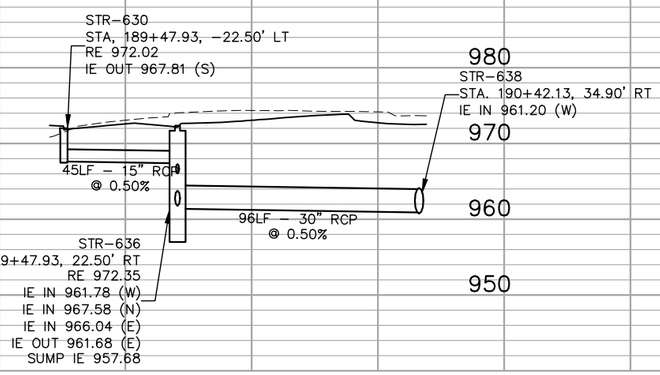


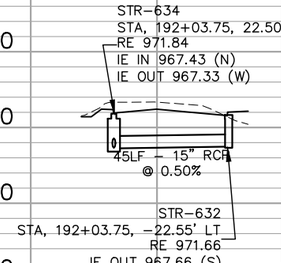


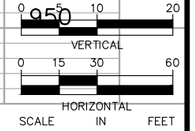












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DRAWING NAME: CHANKAHDA_PH3_DrainPlan.dwg

DESIGNED BY:	HB
DRAWN BY:	PD
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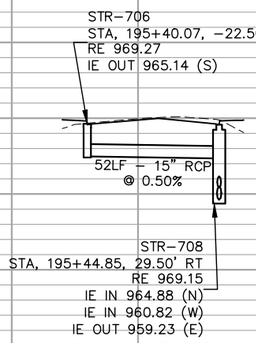
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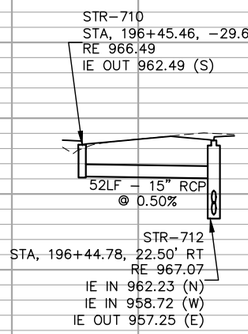
City of Plymouth

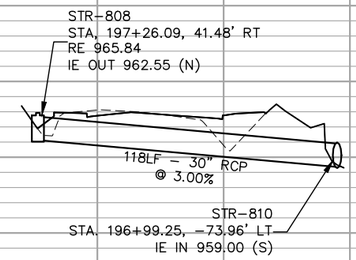
CHANKAHDA TRAIL
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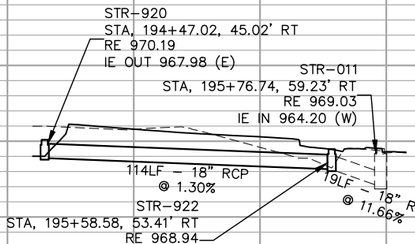
CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

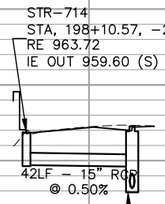
SHEET NO. 117 / 348

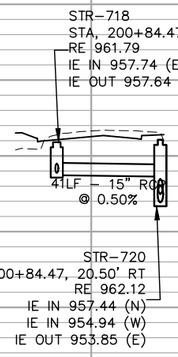


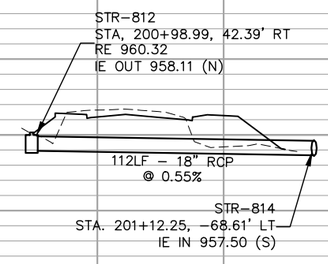


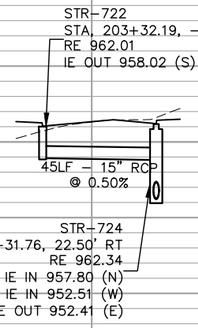


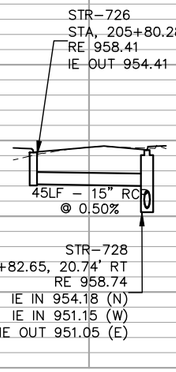


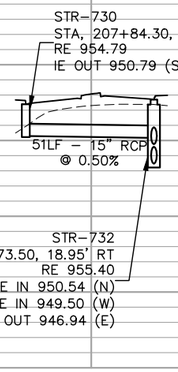


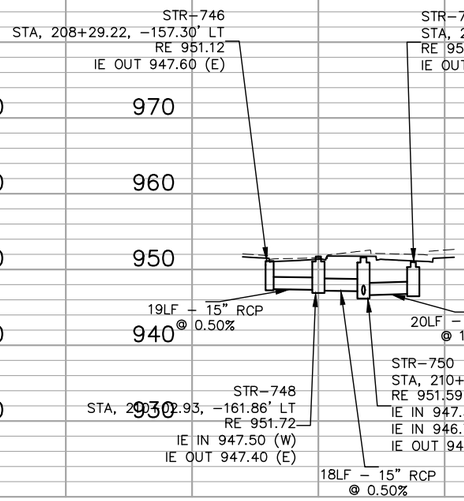


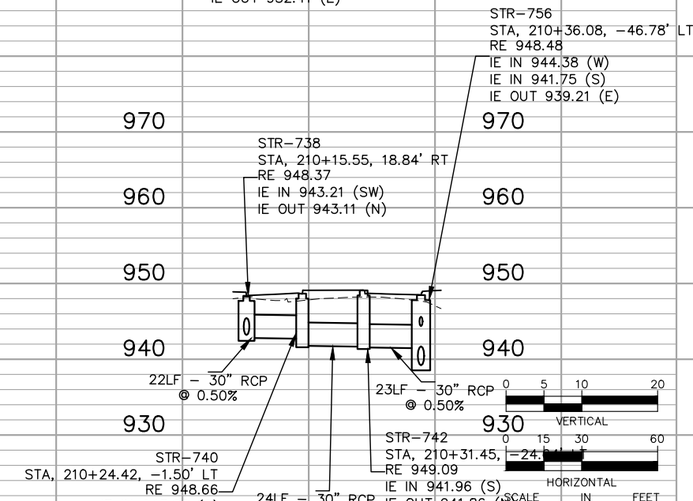












No.	Date	Revisions	App.

DRAWING NAME: CHANKAHDA_PH3_DrainPlan.dwg

DESIGNED BY:	HB
DRAWN BY:	PD
CHECKED BY:	SLT
DATE:	11/04/2024
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.

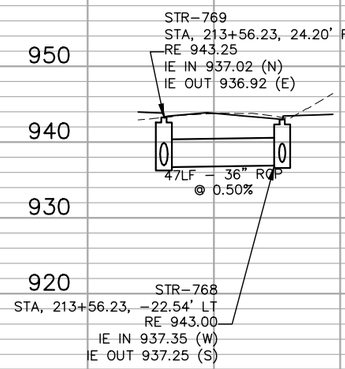
STEPHANIE L. THULIEN, PE
DATE: 11/04/2024 MN LIC. NO. 57230

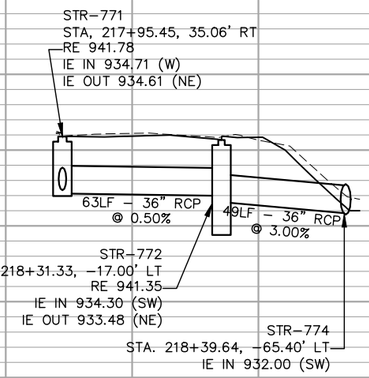
City of Plymouth

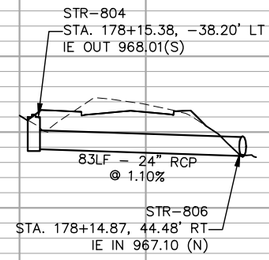
CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
DRAINAGE LATERAL PROFILES

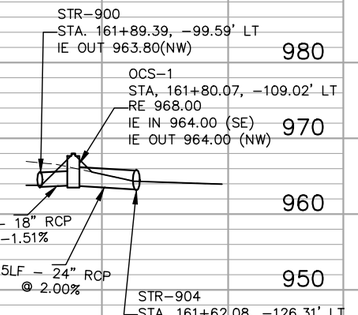
CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

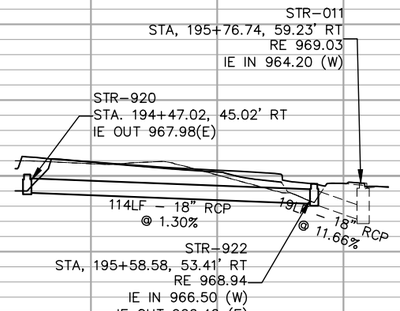
SHEET NO. 118 / 348

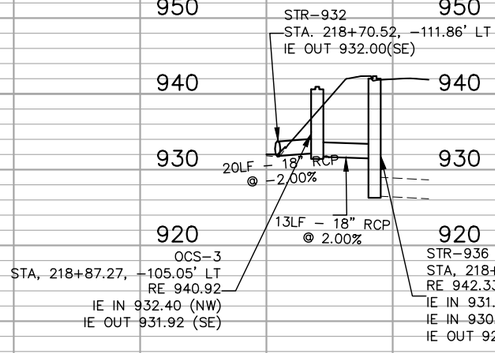


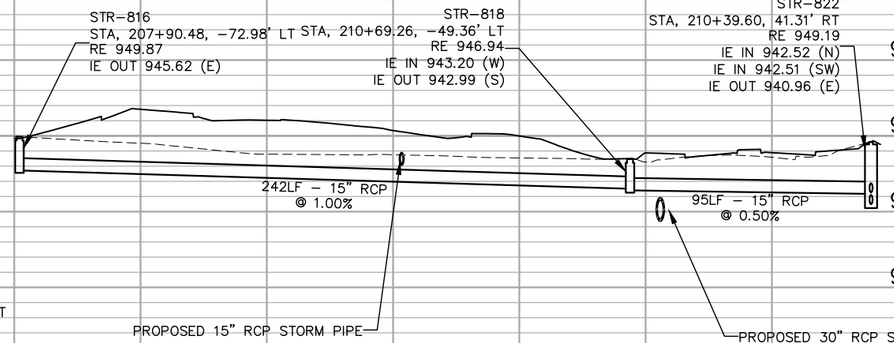


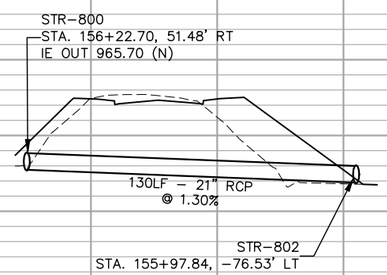


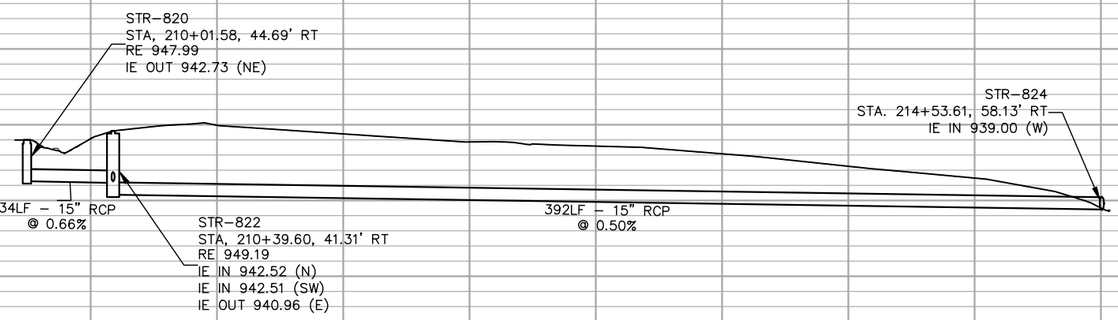


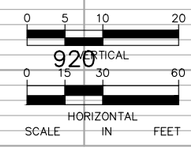












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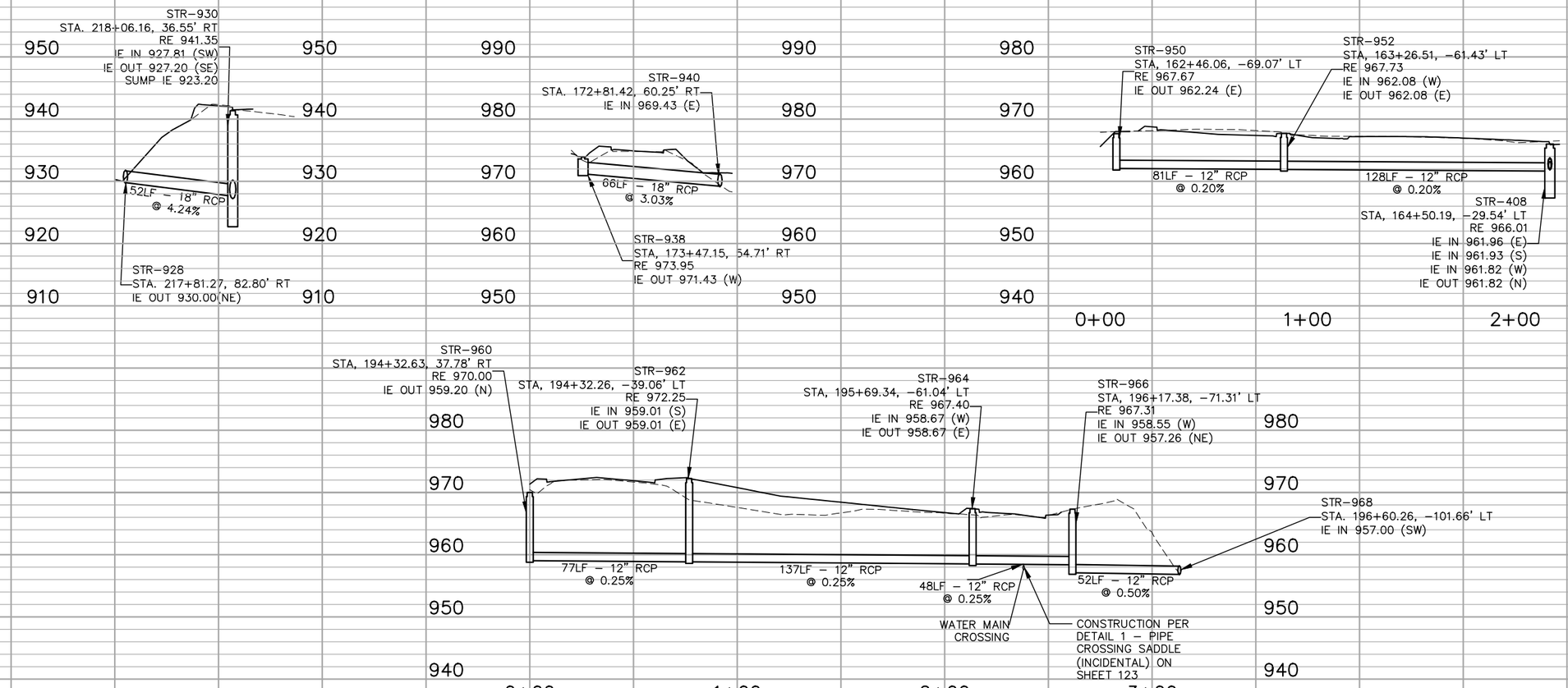
STEPHANIE L. THULIEN, PE
DATE: 11/04/2024 MN LIC. NO. 57230

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. 119 / 348



No.	Date	Revisions	App.

DRAWING NAME	CHANKAHDA_PH3_DrainPlan.dwg
DESIGNED BY:	HB
DRAWN BY:	PD
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767 EUSTIS STREET, SUITE 100, ST, PAUL, MN 55114
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STEPHANIE L. THULIEN, PE

DATE: 11/04/2024 MN LIC. NO. 57230

City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3

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

SHEET NO. 120 / 348

FLOWS FROM		STRUCTURE LOCATION				TOP OF CASTING ELEVATION	CASTING ASSEMBLY	STEPS REQUIRED	OUTLET ELEVATION	DRAINAGE STRUCTURE DESIGN									DRAINS TO				12" RCP PIPE SEWER CLASS V	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	24" HDPE PIPE	27" RCP PIPE SEWER CLASS III	30" RCP PIPE SEWER CLASS III	30" HDPE PIPE	36" RCP PIPE SEWER CLASS III	APRON	APRON TYPE	SAFL BAFFLE	GRANITE RIP RAP CL III	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 LT	OFFSET RT					DESIGN S 6006	DESIGN 6S 6020	DESIGN 6S-60 6020	DESIGN 7S-6020	DESIGN SPECIAL 1	DESIGN SPECIAL 2	DESIGN SPECIAL 3	DESIGN SPECIAL 4	DESIGN SPECIAL 5	STR. NO.	Type	% GRADE	INLET ELEVATION (FT)	LIN FT	LIN FT	LIN FT	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	
EX-DCS-1	MH	CHANHAHDA TR												1																													SEE DCS DETAILS
EX-DCS-2	MH	CHANHAHDA TR																1																										SEE DCS DETAILS
OCS-1	MH	CHANHAHDA TR	140+00.07	-109.02		968.00	R-1642	YES	966.00				1						STR-004	PES	1.00%	965.50					25																	OU TUFF CONTROL STRUCTURE
OCS-2	MH	CHANHAHDA TR	139+78.66		60.27	972.67	R-1642	YES	962.32			1							STR-708	MHCB	1.00%	960.82							68																	OU TUFF CONTROL STRUCTURE
OCS-3	MH	CHANHAHDA TR	138+87.77	-105.05		969.58	R-1642	YES	955.82				1						STR-936	MH	1.00%	955.66							13																	OU TUFF CONTROL STRUCTURE
STR-001	WMCB	CHANHAHDA TR	1+11+13.95		62.11																																					1		
STR-002	WMCB	CHANHAHDA TR	2+12+78.13		59.79																																					1		
STR-003	WMCB	CHANHAHDA TR	3+10+29.74	-62.96																																						1		
STR-006	WMCB	CHANHAHDA TR	5+12+03.74	-93.23																																						1		
STR-005	WMCB	CHANHAHDA TR	5+10+49.12	-87.20																																						1		
STR-006	WMCB	CHANHAHDA TR	6+10+18.07	-82.80																																						1		
STR-007	WMCB	CHANHAHDA TR	7+10+03.73		87.83																																					1		
STR-008	WMCB	CHANHAHDA TR	7+09+11.07		101.11																																					1		
STR-009	WMCB	CHANHAHDA TR	8+09+99.44		55.54														STR-813	PES	0.50%	959.88									69														1		
STR-010	WMCB	CHANHAHDA TR	9+09+29.28		50.22																																					1		
STR-011	WMCB	CHANHAHDA TR	9+09+76.74		59.23																																					1		
STR-012	WMCB	CHANHAHDA TR	10+09+09.66		59.20																																					1		
STR-013	WMCB	CHANHAHDA TR	11+09+72.61	-98.97																																						1		
STR-014	WMCB	CHANHAHDA TR	12+09+44.79		78.05																																					1		
STR-015	FES	CHANHAHDA TR	13+09+44.83		82.50																																						1		
STR-016	FES	CHANHAHDA TR	13+09+83.90		62.26																																						1		
STR-017	FES	CHANHAHDA TR	14+09+83.74	-82.74																																						1		
STR-018	FES	CHANHAHDA TR	15+09+78.91	-78.08																																						1		
STR-019	FES	CHANHAHDA TR	16+09+30.14		59.29																																					1		
STR-020	FES	CHANHAHDA TR	17+09+84.73		80.85																																					1		
STR-021	FES	CHANHAHDA TR	18+09+69.83		121.97																																								REPAIR EXISTING FLARED END
STR-022	WMCB	CHANHAHDA TR	2+18+09.06	-14.43																																						1		
STR-100	CB	CHANHAHDA TR	138+42.28	-29.90		968.50	R-0067-V		966.50	6.0									STR-102	MHCB	0.30%	966.27							30																				
STR-102	WMCB	CHANHAHDA TR	138+41.26		23.50	968.97	R-0067-V	YES	966.17		4.9								STR-104	MHCB	0.30%	967.88							159																				
STR-104	WMCB	CHANHAHDA TR	139+03.03		22.83	970.68	R-0067-V	YES	967.78		8.9								STR-108	MHCB	0.30%	967.43							275																				
STR-106	CB	CHANHAHDA TR	137+47.08	-32.90		971.37	R-0067-V	YES	967.37	6.0									STR-108	MHCB	0.30%	969.89							65																				
STR-108	WMCB	CHANHAHDA TR	139+73.82		23.50	971.87	R-0067-V	YES	967.33		10.9								STR-113	MHCB	0.30%	969.87								246																				
STR-110	CB	CHANHAHDA TR	139+06.33	-29.90		968.15	R-0067-V	YES	966.15	6.0									STR-112	MHCB	0.30%	963.89							30																				
STR-112	WMCB	CHANHAHDA TR	139+97.23		23.50	968.87	R-0067-V	YES	966.09		9.6								STR-114	MHCB	1.00%	966.15								234																				
STR-114	WMCB	CHANHAHDA TR	137+62.69		23.50	965.96	R-0067-V	YES	966.26		9.9								STR-116	MHCB	1.00%	965.60							65																				
STR-116	WMCB	CHANHAHDA TR	137+61.08	-32.90		960.80	R-0067-V	YES	960.08		28.1								STR-118	PES	3.00%	961.40							72																				6' SUMP & SAFL BAFFLE
STR-118	FES	CHANHAHDA TR	137+63.71	-96.04																																					1	18 RCP		3					
STR-200	CB	CHANHAHDA TR	130+67.28	-32.90		962.65	R-0067-V	YES	958.65	6.0									STR-202	MHCB	0.30%	958.39							32																				
STR-202	WMCB	CHANHAHDA TR	130+80.91		29.49	963.23	R-0067-V	YES	957.73		9.3								STR-234	MHCB	0.30%	958.30							147																				
STR-204	CB	CHANHAHDA TR	148+83.76	-17.00		965.53	R-0067-V	YES	961.53	6.0									STR-206	MHCB	1.00%	961.18							34																				
STR-206	WMCB	CHANHAHDA TR	148+83.28		17.30	965.50	R-0067-V	YES	961.08		4.6								STR-210	MHCB	2.30%	959.27							210																				
STR-208	CB	CHANHAHDA TR	148+33.69	-28.98		969.71	R-0067-V	YES	979.71	6.0									STR-210	MHCB	0.30%	959.50							36																				
STR-210	WMCB	CHANHAHDA TR	148+33.58		16.99	965.76	R-0067-V	YES	959.37		7.6								STR-214	MHCB	2.30%	957.79							262																				
STR-212	CB	CHANHAHDA TR	145+93.71	-24.98		972.26	R-0067-V	YES	968.26	6.0									STR-214	MHCB	0.30%	959.80							87																				
STR-214	WMCB	CHANHAHDA TR	148+83.28	21.59		971.29	R-0067-V	YES	966.59		6.6								STR-218	MHCB	2.30%	958.80							246																				
STR-216	CB	CHANHAHDA TR	145+90.86	-29.90		962.86	R-0067-V	YES	957.86	6.0									STR-218	MHCB	0.30%	957.60							32																				
STR-218	WMCB	CHANHAHDA TR	145+83.33		23.50	962.08	R-0067-V	YES	957.57		4.8								STR-232	MHCB	1.00%	956.72								171																				
STR-220	CB	CHANHAHDA TR	139+30.86	-32.90		968.76	R-0067-V	YES	964.76	6.0									STR-222	MHCB	0.30%	964.50							30																				
STR-222	WMCB	CHANHAHDA TR	139+30.86	29.50		968.88	R-0067-V	YES	964.28		6.8								STR-227	MHCB	0.30%	962.47									186																		
STR-224	CB	CHANHAHDA TR	137+35.18	-32.90		967.90	R-0067-V	YES	963.90	6.0									STR-226	MHCB	0.50%	962.95							59																				
STR-226	WMCB	CHANHAHDA TR	137+25.00	-32.98		967.00	R-0067-V8	YES	962.85		6.1								STR-228	MHCB	0.30%	962.60							65																				
STR-227	WMCB	CHANHAHDA TR	137+33.28		23.50	967.09	R-0067-V8	YES	962.87		6.7								STR-228	MHCB	0.30%	962.32									30																		
STR-228	WMCB	CHANHAHDA TR	137+34.76		23.50	967.06	R-0067-V	YES	962.20		6.8								STR-232	MHCB	0.50%	961.27									189																		
STR-230	CB	CHANHAHDA TR	138+38.12	-32.90		968.28	R-0067-V	YES	966.28	6.0									STR-232	MHCB	0.30%	966.06							65																				
STR-232	WMCB	CHANHAHDA TR	138+39.66		23.50	968.64	R-0067-V	YES	966.07		7.6								STR-234	MHCB	0.50%	966.00													207													
STR-234	WMCB	CHANHAHDA TR	138+38.31		23.60	961.00	R-0067-V	YES	960.33		11.9								STR-236	MHCB	0.30%	959.77													52													
STR-236	WMCB	CHANHAHDA TR	138+33.80	-29.90		960.19	R-0067-V	YES	958.92			17.3							STR-238	PES	3.00%	964.30															97											6' SUMP & SAFL BAFFLE
STR-238	FES	CHANHAHDA TR	138+63.95	-108.62																																					1	30 RCP		10					
STR-300	CB	CHANHAHDA TR	132+72.80	-27.00		968.13	R-0067-V	YES	960.13	6.0									STR-302	MHCB	0.30%	959.96							36																				
STR-302	WMCB	CHANHAHDA TR	132+74.61		17.99	964.16	R-0067-V	YES	959.86		4.9								STR-306	MHCB	0.50%	959.68							147																				
STR-304	CB	CHANHAHDA TR	150+23.62	-27.00		977.80	R-0067-V	YES	973.80	6.0									STR-306	MHCB	0.30%	973.75							36																				
STR-306	WMCB	CHANHAHDA TR	150+23.26		17.30	977.80	R-0067-V	YES	973.58		4.6								STR-310	MHCB	1.30%	972.32							232																				
STR-308	CB	CHANHAHDA TR	150+61.09	-27.02		979.00	R-0067-V8	YES	975.00	6.0									STR-310	MHCB	0.30%	969.80							36																				
STR-310	WMCB	CHANHAHDA TR	150+61.59	18.94		979.00	R-0067-V8	YES	968.67		4.8								STR-314	MHCB	0.30%	966.39								267																				
STR-311	CB	CHANHAHDA TR	159+99.96	-31.98		978.71	R-0067-V	YES	970.71	6.0									STR-314	MHCB	0.30%	970.46							46																				
STR-314	WMCB	CHANHAHDA TR	159+97.04	24.67		979.14	R-0067-V	YES	968.61		6.5								STR-316	MHCB	0.30%	968.04								276																				
STR-316	WMCB	CHANHAHDA TR	160+08.60	28.80		968.22	R-0067-V	YES	966.24		4.2								STR-318	MHCB	0.30%	965.78									57																		
STR-318	WMCB	CHANHAHDA TR	160+13.67	-32.90		967.79	R-0067-V	YES	963.68		4.0								STR-330	PES	0.50%	963.50									96																		6' SUMP & SAFL BAFFLE
STR-320	FES	CHANHAHDA TR	160+18.47	-68.36																																					1	24 RCP		10					
STR-400	FES	CHANHAHDA TR	160+68.20		51.72				966.22										STR-404	MHCB	3.00%	962.61							29																				
STR-402	CB	CHANHAHDA TR	160+60.76		23.50	968.66	R-0067-V8	YES	962.66	6.0									STR-404	MHCB	0.50%	962.39							18																				
STR-404	WMCB	CHANHAHDA TR	160+60.74		23.50	968.63	R-0067-V8	YES	962.28		6.1								STR-408	MHCB	0.70%	961.93										53																	
STR-406	CB	CHANHAHDA TR	160+60.18	-29.54		966.80	R-0067-V	YES	962.80	6.0									STR-408	MHCB	0.50%	961.80							18																				
STR-408	WMCB	CHANHAHDA TR	160+60.19	-29.54		966.80	R-0067-V8	YES	961.83		6.2								STR-413	PES	0.90%	961.47									57																		6' SUMP & SAFL BAFFLE
STR-412	FES	CHANHAHDA TR	160+93.38	-66.08																																					1	24 RCP		10					
STR-500	CB	CHANHAHDA TR	170+77.91		23.50	978.20	R-0067-V	YES	974.20	6.0									STR-502	MHCB	0.50%	971.96							42																				
STR-502	WMCB	CHANHAHDA TR	170+77.69	-28.90		975.67	R-0067-V	YES	970.85		4.8								STR-504	MHCB	0.50%	970.63							53																				
STR-504	WMCB	CHANHAHDA TR	170+60.00	-62.98		975.15	R-0067-V	YES	970.50		4.6								STR-506	MHCB	0.50%	970.25							50																				
STR-506	WMCB	CHANHAHDA TR	170+06.11	-62.90		975.00	R-0067-V	YES	969.97		5.1								STR-508	MHCB	1.50%	969.47							59																				
STR-508	WMCB	CHANHAHDA TR	170+76.66	-32.90		976.08	R-0067-V	YES	967.24		7.9								STR-510	MHCB	1.00%	965.26							183																				
STR-508	CB	CHANHAHDA TR	170+98.06		29.50	979.05	R-0067-V	YES	968.05	6.0									STR-510	MHCB	0.50%	964.79							52																				
STR-510	WMCB	CHANHAHDA TR	170+96.94	-32.90		969.80	R-0067-V	YES	965.14		4.8								STR-516	MHCB	1.00%	963.51								148																				
STR-512	FES	CHANHAHDA TR	180+21.00		55.89				964.39										STR-516	MHCB	1.58%	963.55											30															
STR-514	CB	CHANHAHDA TR	169+34.95		23.50	967.88	R-0067-V	YES	963.88	6.0									STR-516	MHCB	0.50%	963.75							18																				
STR-516	WMCB	CHANHAHDA TR	169+20.47		23.50	967.81	R-0067-V8	YES	963.53		4.3								STR-530	MHCB	0.30%	963.30											60															
STR-518	WMCB	CHANHAHDA TR	169+19.76	-32.90		966.80	R-0067-V	YES	960.80		4.1								STR-520	MHCB	1.80%	960.30								19																				
STR-520	WMCB	CHANHAHDA TR	169+31.40	-32.90		967.69	R-0067-V8	YES	963.28			6.9							STR-531	PES	0.50%	962.90															67											6' SUMP & SAFL BAFFLE
STR-522	FES	CHANHAHDA TR	188+93.78	-97.90																																					1	30 RCP		10					
STR-604	CB	CHANHAHDA TR	179+43.15	-28.68		972.22	R-0067-V	YES	968.22	6.0									STR-606	MHCB	0.50%	968.07							18																				
STR-606	WMCB	CHANHAHDA TR	178+33.12	-28.90		972.18	R-0067-V8	YES	968.27		4.1								STR-608	MHCB	0.30%	967.89							36																				
STR-608	WMCB	CHANHAHDA TR	178+33.11		17.99	972.19	R-0067-V8	YES	967.79		4.6								STR-611	MHCB	0.45%	966.89								231																				
STR-610	CB	CHANHAHDA TR	180+41.69	-17.34		975.06	R-0067-V	YES	971.06	6.0									STR-611	MHCB	0.50%	970.87							57																				
STR-612	WMCB	CHANHAHDA TR	180+38.78	28.79		974.72	R-0067-V	YES	968.79		7.9								STR-618	MHCB	0.45%	965.33								228																				
STR-614	CB	CHANHAHDA TR	180+95.96	-32.11		974.95	R-0067-V	YES	970.95	6.0									STR-616	MHCB	0.50%	970.86							55																				
STR-616	WMCB	CHANHAHDA TR	180+63.95		28.23	974.51	R-0067-V	YES	968.79		5.8								STR-630	MHCB	0.45%	964.79								228																				
STR-617	WMCB	CHANHAHDA TR	180+96.84	-93.06		972.55	R-0067-V	YES	968.32		4.7								STR-618	MHCB	0.30%	968.09							45																				
STR-618	WMCB	CHANHAHDA TR	180+61.41	-83.49		972.84	R-0067-V	YES	967.99		4.9								STR-620	MHCB	0.30%	967.70							56																				
STR-620	WMCB	CHANHAHDA TR	180+63.84		28.50	972.83	R-0067-V	YES	966.83		5.2								STR-621	MHCB	0.45%	963.40									208																		
STR-621	WMCB	CHANHAHDA TR	180+91.48	23.50		971.98	R-0067-V	YES	962.96		8.1								STR-624	MHCB	0.30%	962.80									59																		
STR-624	CB	CHANHAHDA TR	187+31.67	-29.50		979.54	R-0067-V	YES	966.53	6.0									STR-626	MHCB	0.30%	966.48							19																				
STR-626	WMCB	CHANHAHDA TR	187+41.47	-29.90		979.54	R-0067-V8	YES	968.38		4.2								STR-638	MHCB	0.30%	968.22							32																				
STR-628	WMCB	CHANHAHDA TR	187+41.47		23.50	979.08	R-0067-V8	YES	968.80		6.5								STR-636	MHCB	0.50%	968.78									206																		
STR-630	CB	CHANHAHDA TR	188+47.93	-32.50		972.50	R-0067-V	YES	967.81	6.2									STR-636	MHCB	0.50%	967.56							45																		
STR-631	CB	CHANHAHDA TR	190+03.79	-32.50		977.66	R-0067-V8	YES	967.66	6.0									STR-634	MHCB	0.50%	967.40							65																		
STR-634	WMCB	CHANHAHDA TR	190+03.79	23.50		977.66	R-0067-V8	YES	967.59		4.5								STR-636	MHCB	0.50%	966.86							163																		
STR-636	WMCB	CHANHAHDA TR	188+47.93	23.50		972.35	R-0067-V	YES	962.68			10.7							STR-638	PES	0.30%	962.33															96											6' SUMP & SAFL BAFFLE
STR-638	FES	CHANHAHDA TR	189+41.13	24.90																																									CONNECT TO UNDERGROUND
STR-706	CB	CHANHAHDA TR	190+60.07	-32.90		969.27	R-0067-V	YES	965.14	6.1									STR-708	MHCB	0.30%	964.88							52																		
STR-708	WMCB	CHANHAHDA TR	190+44.93	28.50		969.15	R-0067-V	YES	958.23		9.9								STR-712	MHCB	0.30%	958.72									201																		
STR-710	CB	CHANHAHDA TR	190+45.46	-29.68		966.69	R-0067-V	YES	962.69	6.0									STR-712	MHCB	0.50%	962.20							52																		

No.	Date	Revisions	App.

DRAWING NAME: CHANKAHDA_PH3_DrainPlan.dwg

DESIGNED BY:	HB
DRAWN BY:	PD
CHECKED BY:	SLT
DATE:	11/04/2024
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 L. THULIEN, PE
DATE: 11/04/2024 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. 121 / 348

FLOWS FROM		STRUCTURE LOCATION				TOP OF CASTING ELEVATION	CASTING ASSEMBLY	STEPS REQUIRED	OUTLET ELEVATION	DRAINAGE STRUCTURE DESIGN							DRAWS TO				12" RCP PIPE SEWER CLASS V	15" RCP PIPE CULVERT	18" RCP PIPE CULVERT	21" RCP PIPE CULVERT	24" RCP PIPE CULVERT	30" RCP PIPE CULVERT	18" RCP PIPE SEWER CLASS III	18" RCP PIPE SEWER CLASS IV	21" RCP PIPE SEWER CLASS III	24" RCP PIPE SEWER CLASS III	24" HDPE PIPE	27" RCP PIPE SEWER CLASS III	30" RCP PIPE SEWER CLASS III	30" HDPE PIPE	36" RCP PIPE SEWER CLASS III	APRON	APRON TYPE	SAFL BAFFLE	GRANITE RIP RAP CL III	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 S-1006	DESIGN MS-6020	DESIGN MS-6030	DESIGN TS-6020	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	LIN FT	LIN FT	LIN FT	EACH		EACH	CY	EACH	EACH	EACH	EACH	EACH	EACH	
STR-712	MHCB	CHANKAHDA TR	1180+66.78		23.50	967.07	R-3067-V	YES	957.25		9.8									STR-706	MHCB	0.00%	956.62																									
STR-714	CB	CHANKAHDA TR	1180+23.57	-20.12		963.72	R-3067-V	YES	958.82	6.1										STR-706	MHCB	0.00%	959.39						42																			
STR-716	MHCB	CHANKAHDA TR	1180+79.94	23.73		964.94	R-3067-V	YES	956.32		8.2									STR-707	MHCB	0.00%	956.94								275																	
STR-718	MHCB	CHANKAHDA TR	1180+86.47	-20.50		965.79	R-3067-V	YES	957.66		4.2									STR-709	MHCB	0.00%	957.66						41																			
STR-719	CB	CHANKAHDA TR	1180+86.54	-20.50		965.79	R-3067-VB		957.79	6.2										STR-708	MHCB	0.00%	957.76						35																			
STR-720	MHCB	CHANKAHDA TR	1180+86.47		20.50	962.13	R-3067-V	YES	953.65		6.3									STR-705	MHCB	0.00%	953.80						30																			
STR-721	MHCB	CHANKAHDA TR	1180+86.54		20.50	962.13	R-3067-VB	YES	953.79		8.6									STR-706	MHCB	0.00%	952.51														208											
STR-722	CB	CHANKAHDA TR	1180+20.19	-23.49		963.60	R-3067-V	YES	958.00	6.2										STR-706	MHCB	0.00%	957.80						49																			
STR-724	MHCB	CHANKAHDA TR	1180+81.76		20.50	962.36	R-3067-V	YES	952.61		9.9									STR-706	MHCB	0.00%	951.16														261											
STR-726	CB	CHANKAHDA TR	1181+80.28	-24.21		958.65	R-3067-V	YES	954.65	6.2										STR-728	MHCB	0.00%	954.18						61																			
STR-728	MHCB	CHANKAHDA TR	1181+80.65		24.74	958.76	R-3067-V	YES	951.06		7.7									STR-702	MHCB	0.00%	949.50														193											
STR-730	CB	CHANKAHDA TR	1181+84.30	-30.54		956.79	R-3067-V	YES	950.79	6.0										STR-703	MHCB	0.00%	950.54						61																			
STR-732	MHCB	CHANKAHDA TR	1181+73.50		18.95	955.83	R-3067-V	YES	946.34		8.5									STR-704	MHCB	1.50%	945.32														108											
STR-734	MHCB	CHANKAHDA TR	1181+86.85		27.20	955.68	R-3067-V	YES	946.22		6.5									STR-706	MHCB	1.50%	945.01														104											
STR-738	MHCB	CHANKAHDA TR	1182+26.93		18.84	948.37	R-3067-V	YES	940.11			5.3								STR-700	MHCB	0.00%	940.00															20										
STR-740	MHCB	CHANKAHDA TR	1181+34.43	-5.50		948.66	R-3067-V	YES	942.08		6.6									STR-700	MHCB	0.00%	941.98															19										
STR-742	MHCB	CHANKAHDA TR	1181+31.45	-24.64		949.38	R-3067-V	YES	941.86		7.2									STR-706	MHCB	0.00%	941.76															19										
STR-746	CB	CHANKAHDA TR	1181+39.23	-257.80		950.12	R-3067-V		947.80	0.5										STR-748	MHCB	0.00%	947.50						29																			
STR-748	MHCB	CHANKAHDA TR	1181+82.94	-261.86		951.79	R-3067-V	YES	947.59		4.2									STR-749	MHCB	0.00%	947.31						18																			
STR-750	MHCB	CHANKAHDA TR	1181+34.83	-262.81		951.59	R-3067-V	YES	946.68		4.8									STR-706	MHCB	0.00%	946.29						78																			
STR-752	CB	CHANKAHDA TR	1181+37.51	-266.39		950.99	R-3067-V		948.98	0.5										STR-705	MHCB	1.00%	948.78						20																			
STR-754	MHCB	CHANKAHDA TR	1181+86.73	-77.96		956.80	R-3067-V	YES	948.65		6.7									STR-705	MHCB	0.00%	946.98						66																			
STR-756	MHCB	CHANKAHDA TR	1181+36.08	-68.78		948.68	R-3067-V	YES	938.22				9.3							STR-758	MHCB	0.00%	938.39															126										
STR-758	MHCB	CHANKAHDA TR	1181+49.06	-67.68		946.99	R-3067-V	YES	938.49			6.5								STR-759	MHCB	0.00%	937.50															198										
STR-760	MHCB	CHANKAHDA TR	1181+62.57	-70.97		940.99	R-3067-V	YES	937.40			5.6								STR-768	MHCB	0.00%	937.35															19										
STR-768	MHCB	CHANKAHDA TR	1181+62.71	-72.78		940.99	R-3067-VB	YES	937.25			5.8								STR-769	MHCB	0.00%	937.02																47										
STR-769	MHCB	CHANKAHDA TR	1181+62.71		24.53	940.15	R-3067-VB	YES	936.92			6.6								STR-770	MHCB	0.00%	936.86																213										
STR-770	MHCB	CHANKAHDA TR	1182+76.67		28.27	948.92	R-3067-V	YES	938.78			8.7								STR-771	MHCB	0.00%	938.71																220										
STR-771	MHCB	CHANKAHDA TR	1179+95.43		35.98	941.78	R-3067-V	YES	936.60				7.2							STR-772	MHCB	0.00%	936.30																83										
STR-773	MHCB	CHANKAHDA TR	1180+81.33	-57.66		940.35	R-3067-V	YES	938.87				10.4							STR-774	FES	3.00%	938.00																49									4' SUMP & SAFL BAFFLE
STR-774	FES	CHANKAHDA TR	1181+39.84	-60.60																																							
STR-800	FES	CHANKAHDA TR	1184+32.70		50.88				988.78											STR-802	FES	1.30%	984.00					130																			1	36 RCP		20				
STR-802	FES	CHANKAHDA TR	1181+97.84	-76.93																																					1	21 RCP		8				
STR-804	DI	CHANKAHDA TR	1182+23.78	-88.35		972.50	R-4340	YES	968.30		4.2									STR-806	FES	1.20%	967.50																														
STR-806	FES	CHANKAHDA TR	1182+24.67		44.68																																				1	18 RCP		7				
STR-808	DI	CHANKAHDA TR	1182+26.09		61.68	969.86	R-4340		962.36	3.5										STR-803	FES	3.00%	959.00																														
STR-810	FES	CHANKAHDA TR	1184+99.25	-73.96																																					1	30 RCP		18				
STR-812	DI	CHANKAHDA TR	1182+98.89		62.39	960.50	R-4340		958.10	2.2										STR-804	FES	0.03%	957.80				112																									
STR-814	FES	CHANKAHDA TR	1181+22.23	-68.61																																					1	18 RCP		8				
STR-816	DI	CHANKAHDA TR	1181+80.68	-72.98		969.87	R-4340	YES	958.82		4.5									STR-816	DI	1.00%	965.30		260																									
STR-818	DI	CHANKAHDA TR	1182+89.26	-69.38		968.80	R-4340	YES	962.99	3.8										STR-822	MH	0.00%	962.32		90																									
STR-820	DI	CHANKAHDA TR	1184+05.38		64.89	967.89	R-4340	YES	962.72		3.2									STR-822	MH	0.66%	962.31		34																									
STR-823	MH	CHANKAHDA TR	1181+39.60		61.51	969.18	R-1642	YES	960.96		8.2									STR-824	FES	0.00%	959.00		180																									
STR-824	FES	CHANKAHDA TR	1181+84.73		66.37																																				1	18 RCP		8				
STR-900	FES	CHANKAHDA TR	1180+89.39	-89.98					962.80											OCS-1	MH	-1.50%	964.00				11																									
STR-904	FES	CHANKAHDA TR	1180+82.08	-108.81																																					1	24 RCP		10				
STR-906	DI	CHANKAHDA TR	1180+77.83		59.83	967.79	R-4340		958.30	2.7										STR-907	MHCB	1.00%	964.30		52																									
STR-913	FES	CHANKAHDA TR	1184+34.73		51.51																																				1	21 RCP		6				
STR-916	CB	CHANKAHDA TR	1181+30.66	66.14		972.58	R-3067-V	YES	968.36	3.8										STR-917	MHCB	0.00%	968.82						32																			
STR-920	DI	CHANKAHDA TR	1180+67.83		65.80	979.19	R-4340	YES	967.86	2.2										STR-909	DI	1.00%	966.50							114																			
STR-923	DI	CHANKAHDA TR	1180+58.58		53.61	968.96	R-4340		966.66	2.5										STR-911	MHCB																								1				
STR-938	FES	CHANKAHDA TR	1177+80.37		82.80				930.00											STR-802	MHCB	4.26%	927.82				52																									
STR-930	MHCB	CHANKAHDA TR	1181+06.16		56.65	961.56	R-3067-V	YES	951.29		10.3									OCS-2	MH	-2.00%	952.60				20																								1	18 RCP			4' SUMP & SAFL BAFFLE
STR-932	FES	CHANKAHDA TR	1184+70.57	-123.86					952.50																																1	18 RCP						
STR-936	MH	CHANKAHDA TR	1181+98.05	-199.85																																											1	648 RING-GV-1 CONNECT DRAINTILE
STR-938	DI	CHANKAHDA TR	1176+47.15		54.71	970.95	R-4340		971.45	2.5										STR-940	FES	3.03%	969.65				66																									
STR-940	FES	CHANKAHDA TR	1176+80.43		60.25																																				1	18 RCP		5				
STR-950	MH	CHANKAHDA TR	1180+85.06	-69.07		968.00	R-1642	YES	962.24		5.8									STR-952	MH	0.30%	962.08	81																												
STR-952	MH	CHANKAHDA TR	1180+26.51	-61.43		967.73	R-1642	YES	962.08		5.7									STR-808	MHCB	0.30%	961.82	128																												
STR-960	MH	CHANKAHDA TR	1180+57.63		57.78	971.39	R-1642	YES	958.29		11.1									STR-962	MH	0.75%	958.01	77																												
STR-962	MH	CHANKAHDA TR	1180+32.36	-39.06		970.26	R-1642	YES	958.01		11.3									STR-964	MH	0.75%	956.67	137																												
STR-964	MH	CHANKAHDA TR	1180+09.34	-40.04		967.60	R-1642		956.67		8.7									STR-968	MH	0.75%	955.33	68																												
STR-966	MH	CHANKAHDA TR	1180+37.38	-71.31		967.39	R-1642		957.26		10.0									STR-968	FES	0.50%	957.00	52																												
STR-968	FES	CHANKAHDA TR	1180+82.26	-101.86																																					1	12 RCP		5	1			
TOTAL										160.2	480.0	76.4	27.8	1.0	1.0	1.0	1.0	1.0					521	855	260	130	108	119	482	260	385	1275	78	1085	556	47	581	25		8	160	2	2	3	6	16	

No.	Date	Revisions	App.

DRAWING NAME: CHANKAHDA_PH3_DrainPlan.dwg

DESIGNED BY:	HB
DRAWN BY:	PD
CHECKED BY:	SLT
DATE:	11/04/2024
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 L. THULIEN, PE

DATE: 11/04/2024 MN LIC. NO. 57230

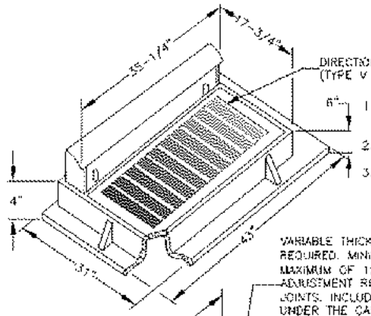
City of Plymouth

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. 122 / 348

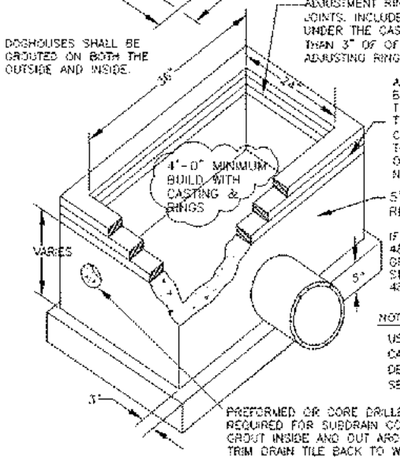
INSTALL NEENAH CASTING NO. R-3067-V (IN GRADE CB) AND R-3067-VB (LOW POINT)



NOTES:
1. EXPANSION MATERIAL TO BE PLACED IN FIRST CURB JOINT, BOTH SIDES OF CATCH BASIN.
2. RECESS CATCH BASINS 1" BELOW GUTTER GRADE LINE
3. FOR SURMOUNTABLE CURB, PROVIDE FACE OF CURB TRANSITION EXTENDING 10' ON EACH SIDE OF CATCH BASIN TO MATCH CASTING.

VARIABLE THICKNESS HDPE ADJUSTING RINGS AS REQUIRED. MINIMUM OF 4" ADJUSTMENT AND MAXIMUM OF 12" ADJUSTMENT. USE LARGER ADJUSTMENT RINGS TO MINIMIZE THE NUMBER OF JOINTS. INCLUDE MIN. 1-2" RING IMMEDIATELY UNDER THE CASTING. THERE CAN BE NO MORE THAN 3" OF OFFSET IN ANY DIRECTION IN THE ADJUSTING RING PLACEMENT.

DOGHOUSES SHALL BE GROUTED ON BOTH THE OUTSIDE AND INSIDE.



APPLY POLYURETHANE SEALANT BETWEEN THE FIRST RING AND THE STRUCTURE AND BETWEEN THE UPPER RING AND THE CASTING. DON'T APPLY SEALANT TO THE MIDDLE JOINTS. WRAP THE OUTSIDE OF THE RINGS WITH A NON-WOVEN GEOTEXTILE FABRIC.

5" THICK 2'x3' PRECAST REINFORCED CONCRETE

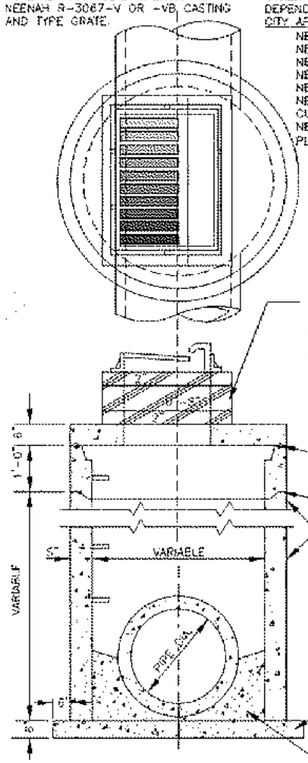
IF STRUCTURE BASE IS LESS THAN 48" BELOW FINISHED GRADE, PLACE GRANULAR MATERIAL UNDER STRUCTURE, FOR A MINIMUM OF 48" BELOW FINISHED GRADE.

NOTE:
USE 4 FOOT DIAMETER CATCH BASIN MANHOLE WHEN DEPTH EXCEEDS 4.5 FEET. SEE PLATE NO. ST-1 OR ST-6.

PREFORMED OR CORE DRILLED HOLES REQUIRED FOR SUBDRAIN CONNECTIONS. GROUT INSIDE AND OUT AROUND SUBDRAIN. TRIM DRAIN TILE BACK TO WALL.

CITY OF PLYMOUTH STANDARD DETAILS ST-2

NOTE: 24"X36" SLAB OPENING FOR NEENAH R-3067-V OR -VB CASTING AND TYPE GRATE.



OTHER POTENTIALLY ACCEPTABLE CATCH BASIN CASTINGS DEPENDING UPON CIRCUMSTANCES AND SUBJECT TO CITY APPROVAL:
- NEENAH R-2561-A BEEHIVE GRATE & CASTING
- NEENAH R-2573 CONCAVE GRATE & CASTING
- NEENAH R-2577 CONVEX GRATE & CASTING
- NEENAH R-3250-I GRATE & CASTING
- NEENAH R-3290-A FOR CROSS GUTTERS
- NEENAH R-3501-TR & TL FOR SURMOUNTABLE CURB
- NEENAH R-4342 WITH CONCRETE MNDOT FRAME PLATE #4143E

DIMENSION FROM BACK OF CURB TO CENTER OF PIPE
- 4' DIA. M.H.-9" IN FROM BACK OF CURB
- 6' DIA. M.H.-3" BEHIND BACK OF CURB
- 8' DIA. M.H.-15" BEHIND BACK OF CURB

VARIABLE THICKNESS HDPE ADJUSTING RINGS AS REQUIRED. MINIMUM OF 4" ADJUSTMENT AND MAXIMUM OF 12" ADJUSTMENT. USE LARGER ADJUSTMENT RINGS TO MINIMIZE THE NUMBER OF JOINTS. INCLUDE MIN. (1)-2" RING IMMEDIATELY UNDER THE CASTING. THERE CAN BE NO MORE THAN 3" OF OFFSET IN ANY DIRECTION IN THE ADJUSTING RING PLACEMENT. USE TAPERED RINGS TO MATCH CASTING TO STREET GRADE. APPLY BUTYL SEALANT BETWEEN THE FIRST RING AND THE STRUCTURE AND BETWEEN THE UPPER RING AND THE CASTING. DON'T APPLY SEALANT TO THE MIDDLE JOINTS. WRAP THE OUTSIDE OF THE RINGS WITH A NON-WOVEN GEOTEXTILE FABRIC.

RAMNEK OR SIMILAR GASKET TYPE MATERIAL TO BE PLACED BETWEEN SLAB AND TOP OF MANHOLE SECTION.

ALL MANHOLE JOINTS TO HAVE RUBBER GASKETS

PRECAST CONCRETE MANHOLE SECTION.

MANHOLE STEPS NEENAH R1981J PLASTIC COATED OR APPROVED EQUAL, 16" O.C.

USE PRECAST SECTIONS WHENEVER POSSIBLE

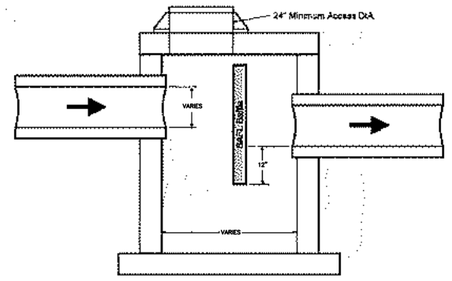
USE MIN. 4' DIAMETER MANHOLE SECTIONS FOR PIPE SIZES UP TO 36" DIAMETER.

DOGHOUSES SHALL BE GROUTED ON BOTH THE OUTSIDE AND INSIDE.

BOTH BASE SLAB AND TOP SLAB VARIES IN THICKNESS. (6"MINIMUM-12"MAXIMUM) DEPENDING UPON STRUCTURE DIAMETER AND DEPTH. FOLLOW MANUFACTURES SPECIFICATIONS.

GROUT INVERT BOTTOM TO 1/2 DIA. OF PIPE.

CITY OF PLYMOUTH STANDARD DETAILS ST-6



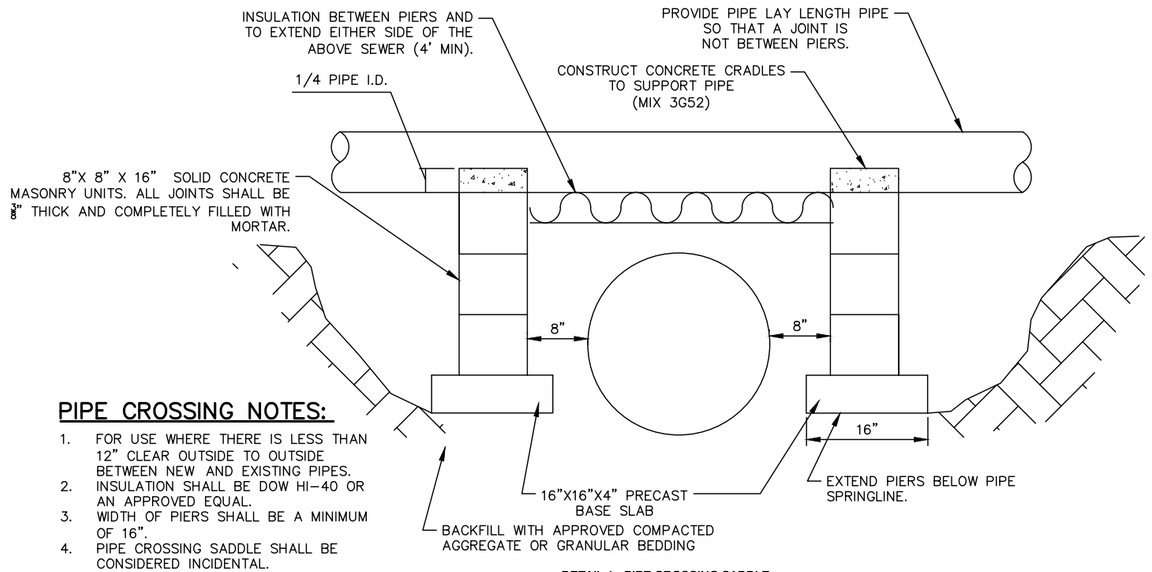
REFER TO THE MANUFACTURER DESIGN GUIDE FOR ADDITIONAL DETAILS

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	21" RCP @ 963.78	24" RCP @ 963.68
STR-408	21" RCP @ 963.93 15" RCP @ 963.96 12" RCP @ 963.82	24" RCP @ 963.82
STR-520	24" HDPE @ 963.30 18" RCP @ 963.31	30" HDPE @ 963.20
STR-636	24" RCP @ 963.78 15" RCP @ 967.58 15" RCP @ 966.06	30" RCP @ 963.68
STR-772	30" RCP @ 934.30	36" RCP @ 933.48
STR-930	18" RCP @ 927.81	36" RCP @ 927.20

SAFL BAFFLE DETAIL

Casting	Number
R-3067-V	89
R-3067-VB	18
R-1642	10
R-4342	10
Total	127

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 A 48" STRUCTURE AND INCLUDES A 4' SUMP AND SAFL BAFFLE.
9. DESIGN SPECIAL 2 IS A 60' STRUCTURE AND INCLUDES A 4' SUMP AND SAFL BAFFLE
10. DESIGN SPECIAL 3 IS OUTLET CONTROL STRUCTURE 1
11. DESIGN SPECIAL 4 IS EXISTING OUTLET CONTROL STRUCTURE 1
12. DESIGN SPECIAL 5 IS EXISTING OUTLET CONTROL STRUCTURE 2

No.	Date	Revisions	App.

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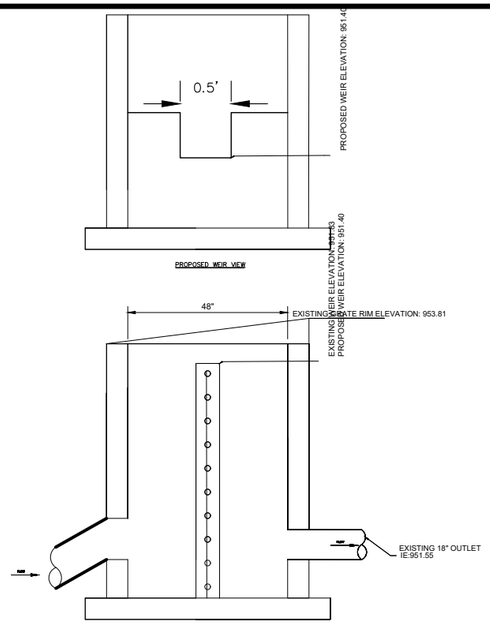
STEPHANIE L. THULIEN, PE
DATE: 11/04/2024 MN LIC. NO. 57230

City of Plymouth

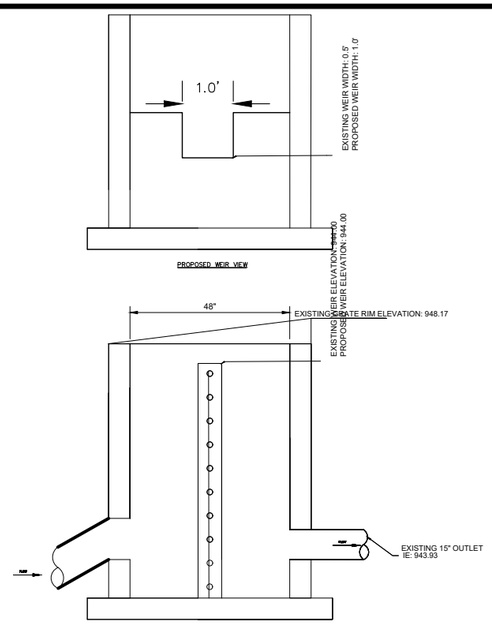
CHANKAHDA TRAIL
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DRAINAGE DETAILS

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COUNTY PROJECT	
S.A.P.	155-210-003
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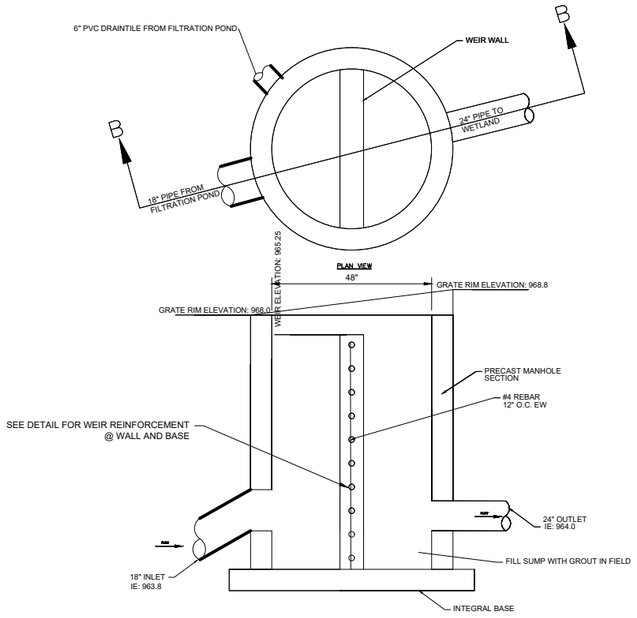
SHEET NO. 123 / 348



EX-OCS-1 - BMP 1 - Pond 2NW

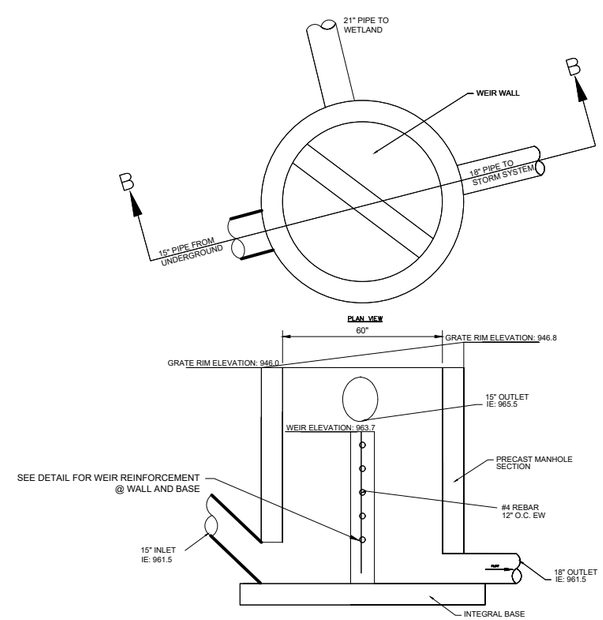


EX-OCS-2 - BMP 2 - Pond 1TP



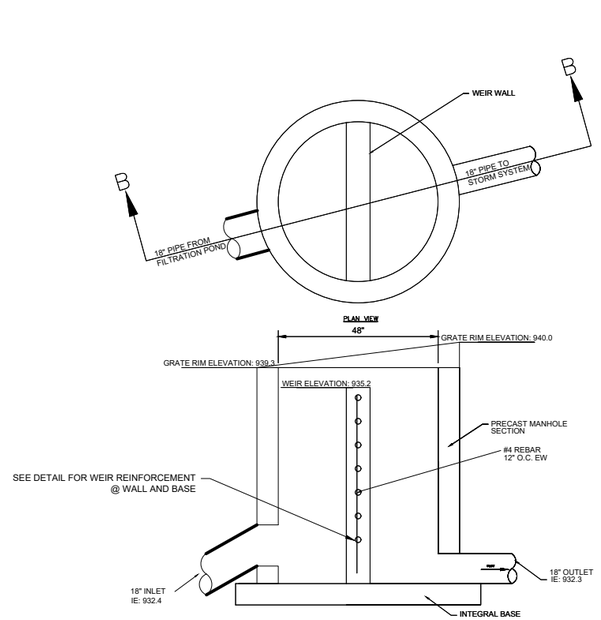
OUTLET CONTROL STRUCTURE (OCS) #1

BMP 3



OUTLET CONTROL STRUCTURE (OCS) #2

BMP 4



OUTLET CONTROL STRUCTURE (OCS) #3

BMP 5

No.	Date	Revisions	App.

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City of Plymouth
CHANKAHDA TRAIL
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DRAINAGE DETAILS

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

SHEET NO. 124 / 348

PROJECT SUMMARY

DESIGN PARAMETERS

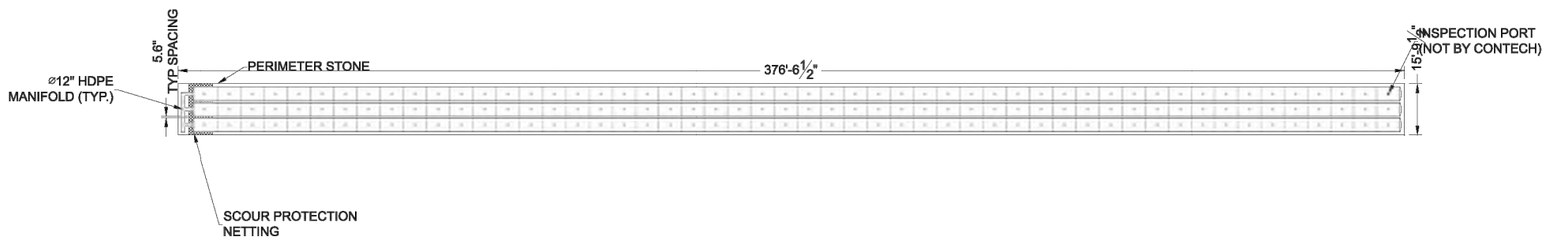
- PRETREATMENT METHOD = None
- STORAGE VOLUME REQUIRED = 21983ft³
- INVERT DEPTH = 6ft
- MANIFOLD DIAMETER = 12in.
- SPACING BETWEEN CHAMBERS = 5.6in.
- SIDE PERIMETER STONE WIDTH = 12in.
- END PERIMETER STONE WIDTH = 12in.
- TOP PERIMETER STONE WIDTH = 36in.
- BOTTOM PERIMETER STONE WIDTH = 24in.
- STONE POROSITY = 40%

SYSTEM DETAILS

- TOTAL ELBOW MANIFOLDS = 1
- TOTAL TEE MANIFOLDS = 2
- TOTAL START CHAMBERS = 3
- TOTAL MID CHAMBERS = 150
- TOTAL END CHAMBERS = 3
- TOTAL NUMBER OF CHAMBERS = 156
- NUMBER OF ROWS = 3
- CHAMBERS PER ROW = 48
- CHAMBER STORAGE VOLUME = 7369.2ft³
- MANIFOLD STORAGE VOLUME = 16.4ft³
- BACKFILL STORAGE VOLUME = 14935.23ft³
- TOTAL STORAGE PROVIDED = 22320.83ft³

SYSTEM DIMENSIONS AND OTHER MATERIALS

- RECTANGULAR FOOTPRINT = 376.56x15.78ft
- TOTAL EXCAVATION = 1760.99y³
- STONE BACKFILL = 1382.6y³
- REMAINING BACKFILL TO PAVEMENT = 104.56y³
- WOVEN GEOTEXTILE QTY = 0y²
- NON-WOVEN GEOTEXTILE QTY = 660.37y²
- SCOUR PROTECTION FITTING = 15.78x7.5ft
- APPROXIMATE TRUCKLOADS = 1



ASSEMBLY
SCALE: 1"=40'

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

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www.ContechES.com
8301 State Highway 29 North, Alexandria, MN 56308
800-328-2047 320-852-7500 320-852-7067 FAX

CHAMBERMaxx® PATENT PENDING
CONTECH **DYODS** DRAWING

DYO51954 Plymouth Project
ChamberMaxx System
Minneapolis, MN
CHAMBERMAXX

PROJECT No.:	SEQ. No.:	DATE:
36222	51954	10/28/2024
DESIGNED: DYO	DRAWN: DYO	
CHECKED: DYO	APPROVED: DYO	
SHEET NO.: D1 OF D4		

No.	Date	Revisions	App.

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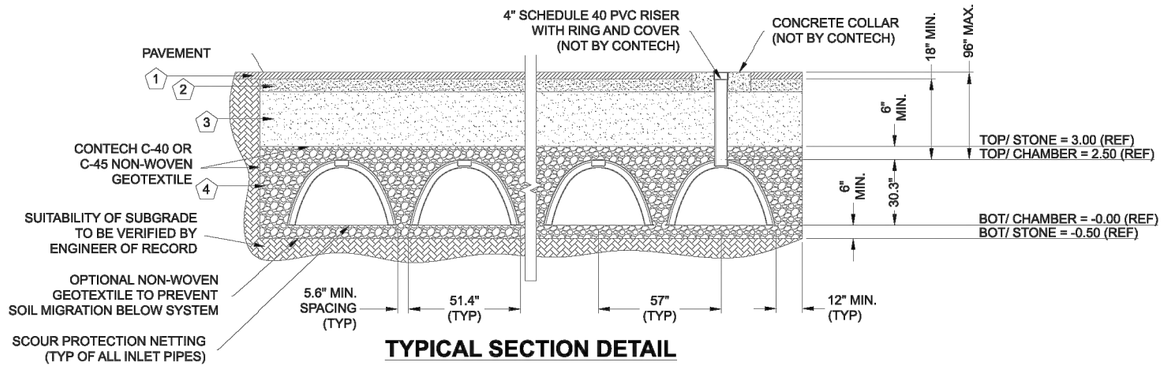
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CITY PROJECT	ST240002
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S.A.P.	155-210-003
S.A.P.	

SHEET NO. 125 / 348

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.



TYPICAL SECTION DETAIL

NOT TO SCALE

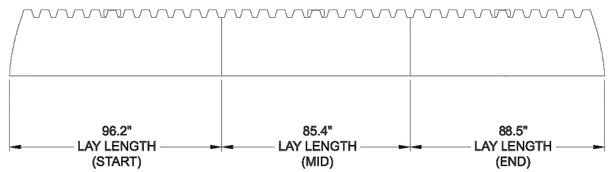
KEY
1. FLEXIBLE PAVEMENT.
2. GRANULAR ROAD BASE.
3. ANY SUITABLE NATIVE OR GENERAL BACKFILL, SEE ENGINEER PLANS.
4. THE BACKFILL MATERIAL SHALL BE FREE-DRAINING ANGULAR WASHED STONE 3/4" - 2" PARTICLE SIZE. MATERIAL SHALL BE PLACED IN 8"-10" MAXIMUM LIFTS. MATERIAL SHALL BE WORKED INTO THE CHAMBER SPACING 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.

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			



TYPICAL ELEVATION VIEW

NOT TO SCALE

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DYO51954 Plymouth Project
ChamberMaxx System
Minneapolis, MN
CHAMBERMAXX

PROJECT No.:	SEQ. No.:	DATE:
36222	51954	10/28/2024
DESIGNED: DYO	DRAWN: DYO	
CHECKED: DYO	APPROVED: DYO	
SHEET NO.: D2 OF D4		

No.	Date	Revisions	App.

DRAWING NAME: CHANKAHDA_PH3_DrainPlan.dwg

DESIGNED BY:	HB
DRAWN BY:	PD
CHECKED BY:	SLT
DATE:	11/04/2024
PROJECT NO.	160662010

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

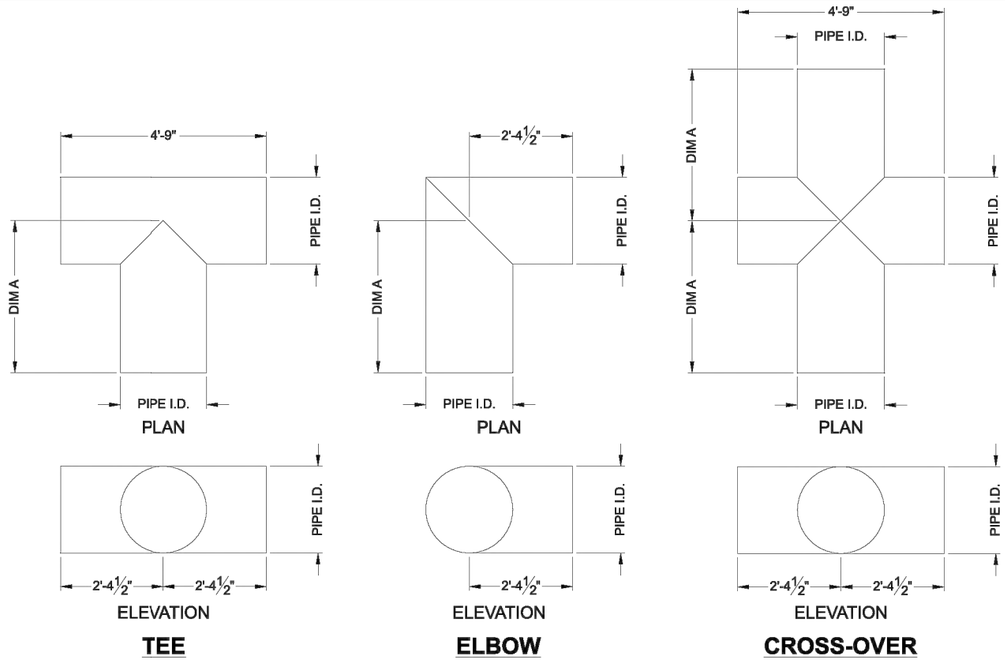
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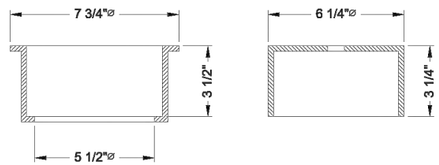
STEPHANIE L. THULIEN, PE
DATE: 11/04/2024 MN LIC. NO. 57230

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.	

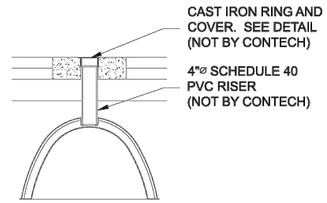
SHEET NO. 126 / 348





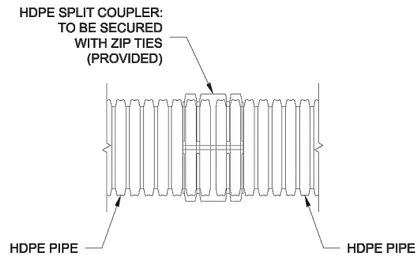
RING AND COVER DETAIL

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"⌀ SPLIT COUPLER	PEF12SPCP
15"⌀ SPLIT COUPLER	PEF15SPCP
18"⌀ SPLIT COUPLER	PEF18SPCP
24"⌀ SPLIT COUPLER	PEF24SPCP

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8301 State Highway 29 North, Alexandria, MN 56308
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CHAMBERMaxx® PATENT PENDING

CONTECH **DYODS** DRAWING

DYO51954 Plymouth Project

ChamberMaxx System

Minneapolis, MN

CHAMBERMAXX

PROJECT No.:	SEQ. No.:	DATE:
36222	51954	10/28/2024
DESIGNED: DYO	DRAWN: DYO	
CHECKED: DYO	APPROVED: DYO	
SHEET NO.: D3 OF D4		

No.	Date	Revisions	App.

DRAWING NAME: CHANKAHDA_PH3_DrainPlan.dwg

DESIGNED BY:	HB
DRAWN BY:	PD
CHECKED BY:	SLT
DATE:	11/04/2024
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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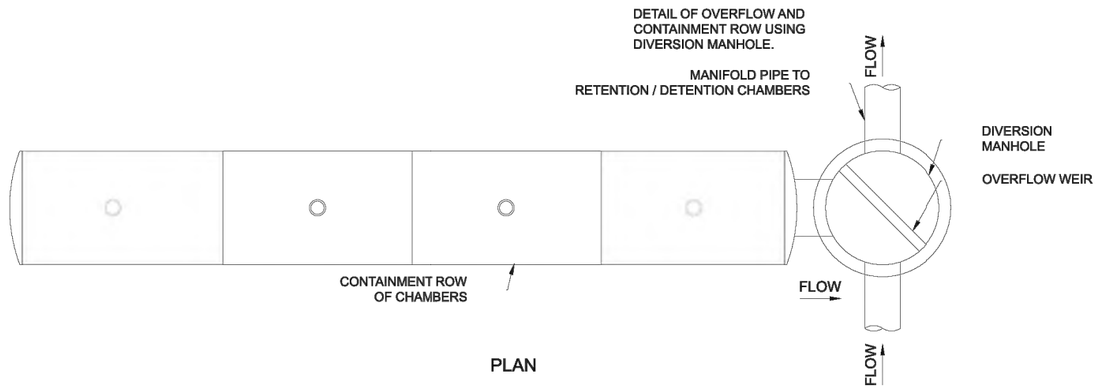
DATE: 11/04/2024 MN LIC. NO. 57230

City of Plymouth

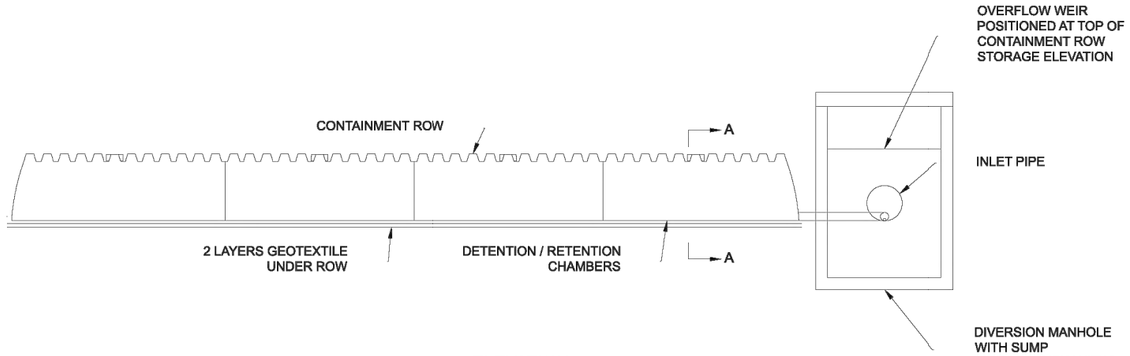
CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
DRAINAGE DETAILS

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

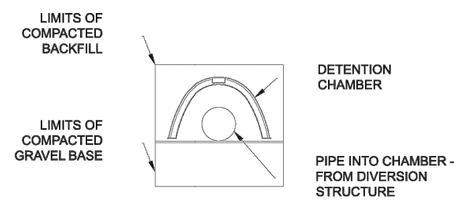
SHEET NO. 127 / 348



PLAN



ELEVATION



SECTION A-A

CONTAINMENT ROW DETAILS

NOT TO SCALE

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CHAMBERMaxx® PATENT PENDING

CONTECH **DYODS** DRAWING

DYO51954 Plymouth Project

ChamberMaxx System

Minneapolis, MN

CHAMBERMAXX

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CHECKED: DYO	APPROVED: DYO	
SHEET NO.: D4 OF D4		

No.	Date	Revisions	App.

DRAWING NAME	CHANKAHDA_PH3_DrainPlan.dwg
DESIGNED BY:	HB
DRAWN BY:	PD
CHECKED BY:	SLT
DATE:	11/04/2024
PROJECT NO.	160662010

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PHONE: 651-645-4197
WWW.KIMLEY-HORN.COM

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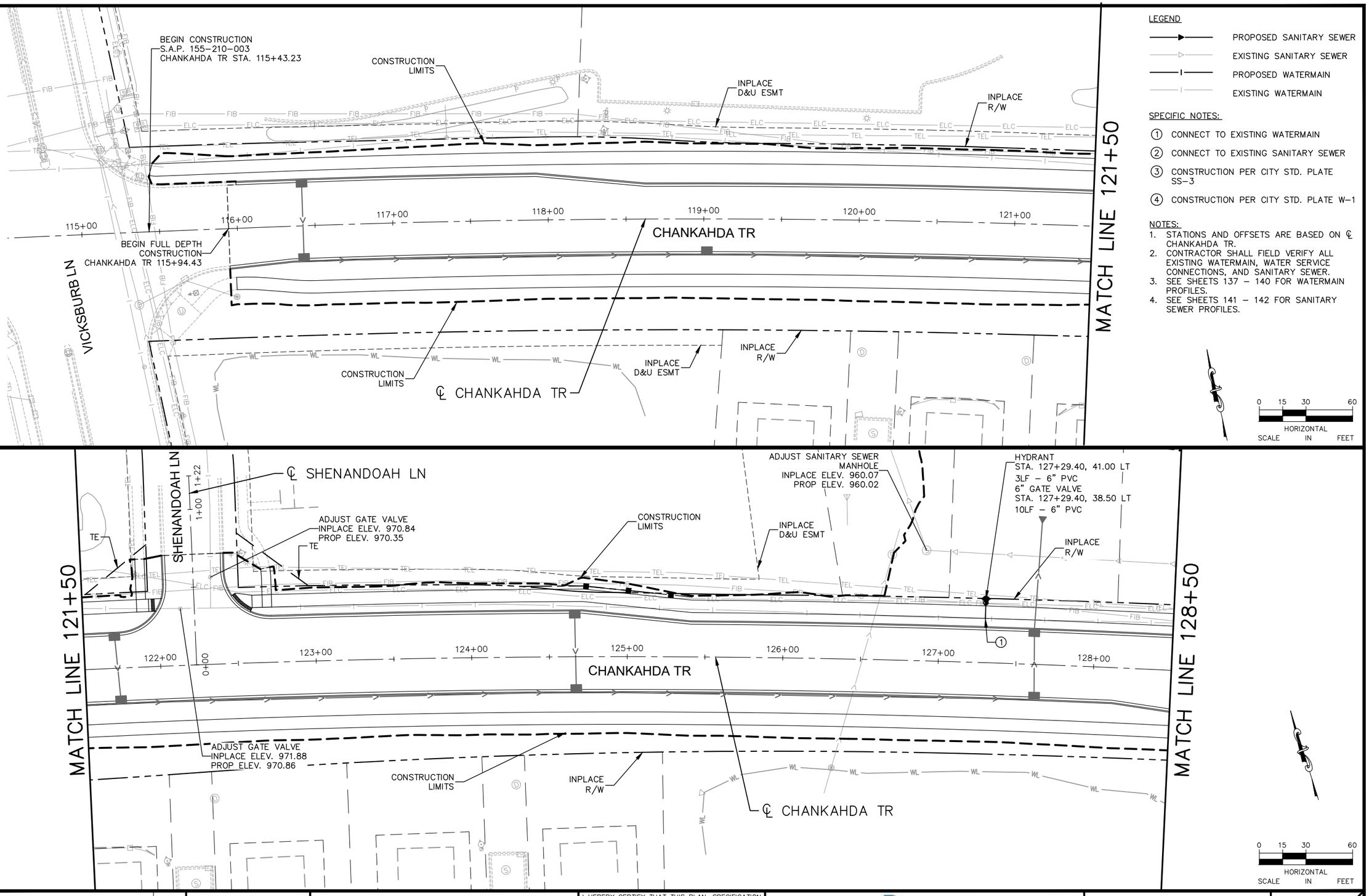
DATE: 11/04/2024 MN LIC. NO. 57230

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. 128 / 348



No.	Date	Revisions	App.

DRAWING NAME: CHANKAHDA_PH3_UtilPlanProfile.dwg

DESIGNED BY:	JWB
DRAWN BY:	RGS
CHECKED BY:	CBL
DATE:	11/04/2024
PROJECT NO.	160662010

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PHONE: 651-645-4197
WWW.KIMLEY-HORN.COM

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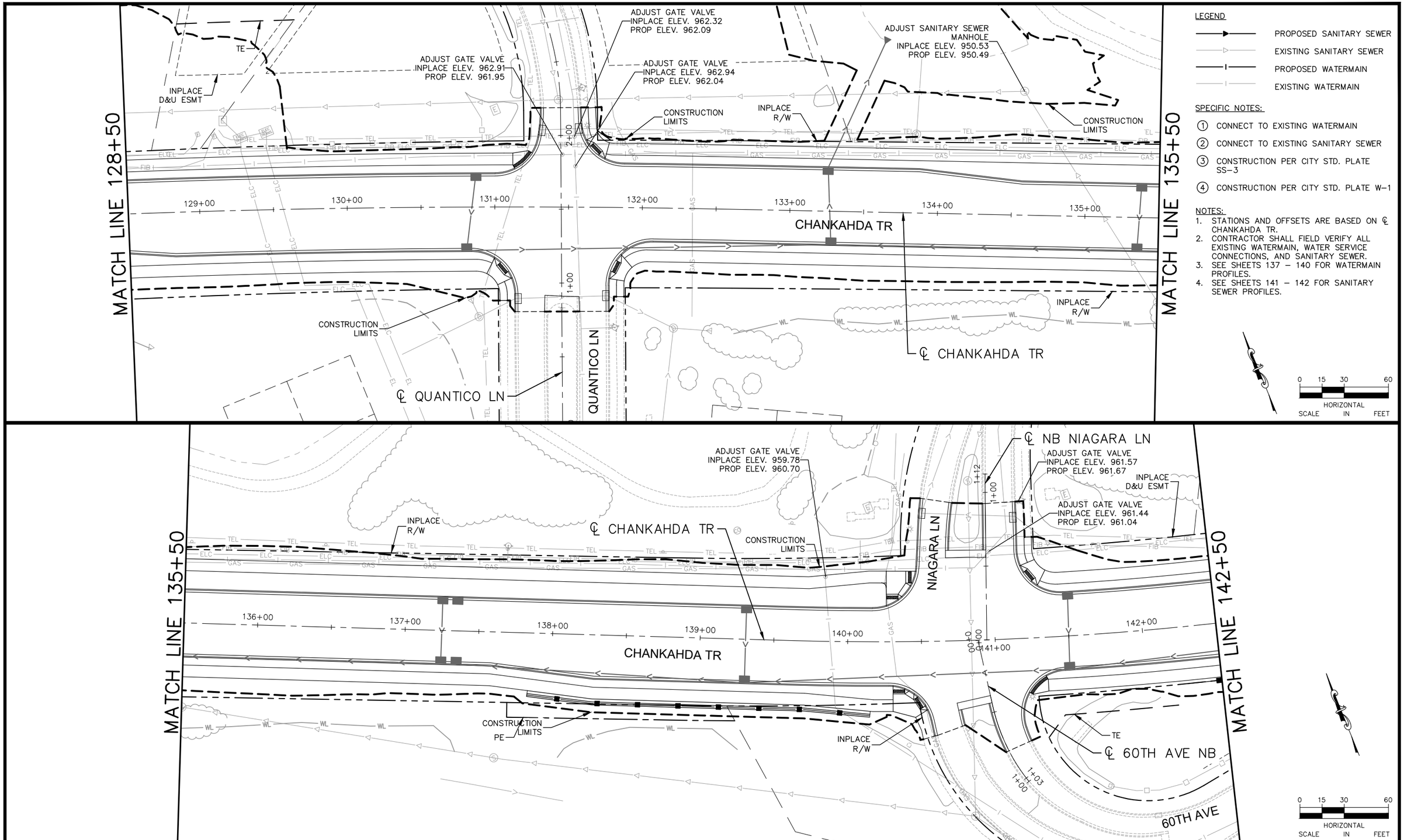
DATE: 11/04/2024 MN LIC. NO. 41864

City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
WATERMAIN 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. 129 / 348



No.	Date	Revisions	App.

DRAWING NAME: CHANKAHDA_PH3_UtilPlanProfile.dwg

DESIGNED BY:	JWB
DRAWN BY:	RGS
CHECKED BY:	CBL
DATE:	11/04/2024
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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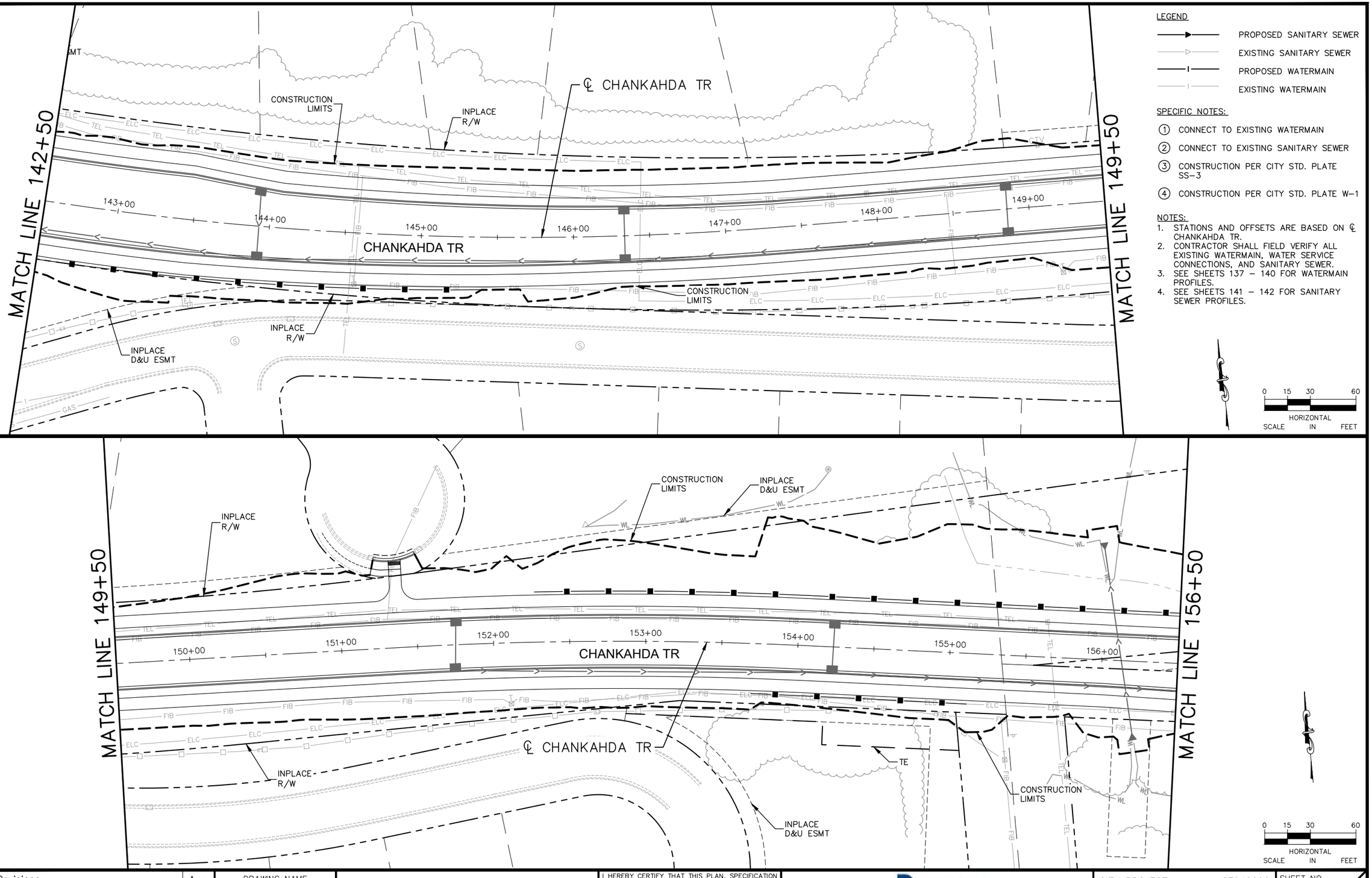
DATE: 11/04/2024 MN LIC. NO. 41864

City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
WATERMAIN 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. 130 / 348



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 137 – 140 FOR WATERMAIN PROFILES.
4. SEE SHEETS 141 – 142 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:	11/04/2024
PROJECT NO.	160662010

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767 EUSTIS STREET, SUITE 100, ST. PAUL, MN 55114
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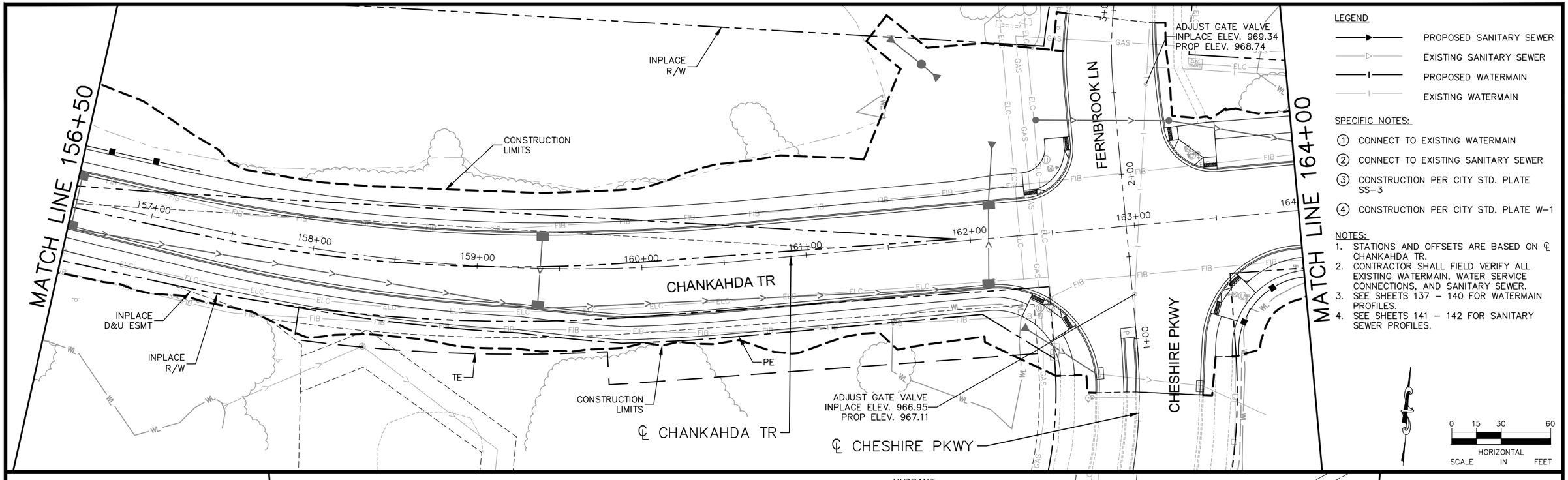
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DATE: 11/04/2024 MN LIC. NO. 41864

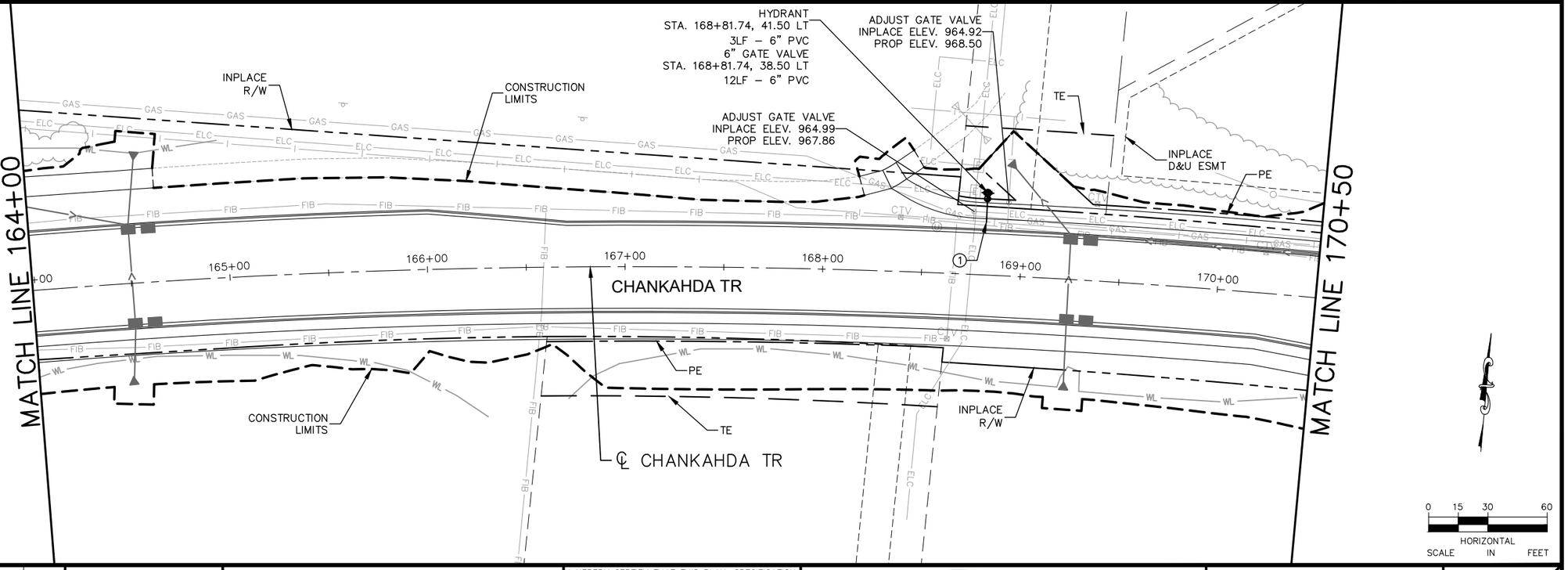
City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
WATERMAIN 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. 131 / 348





No.	Date	Revisions	App.

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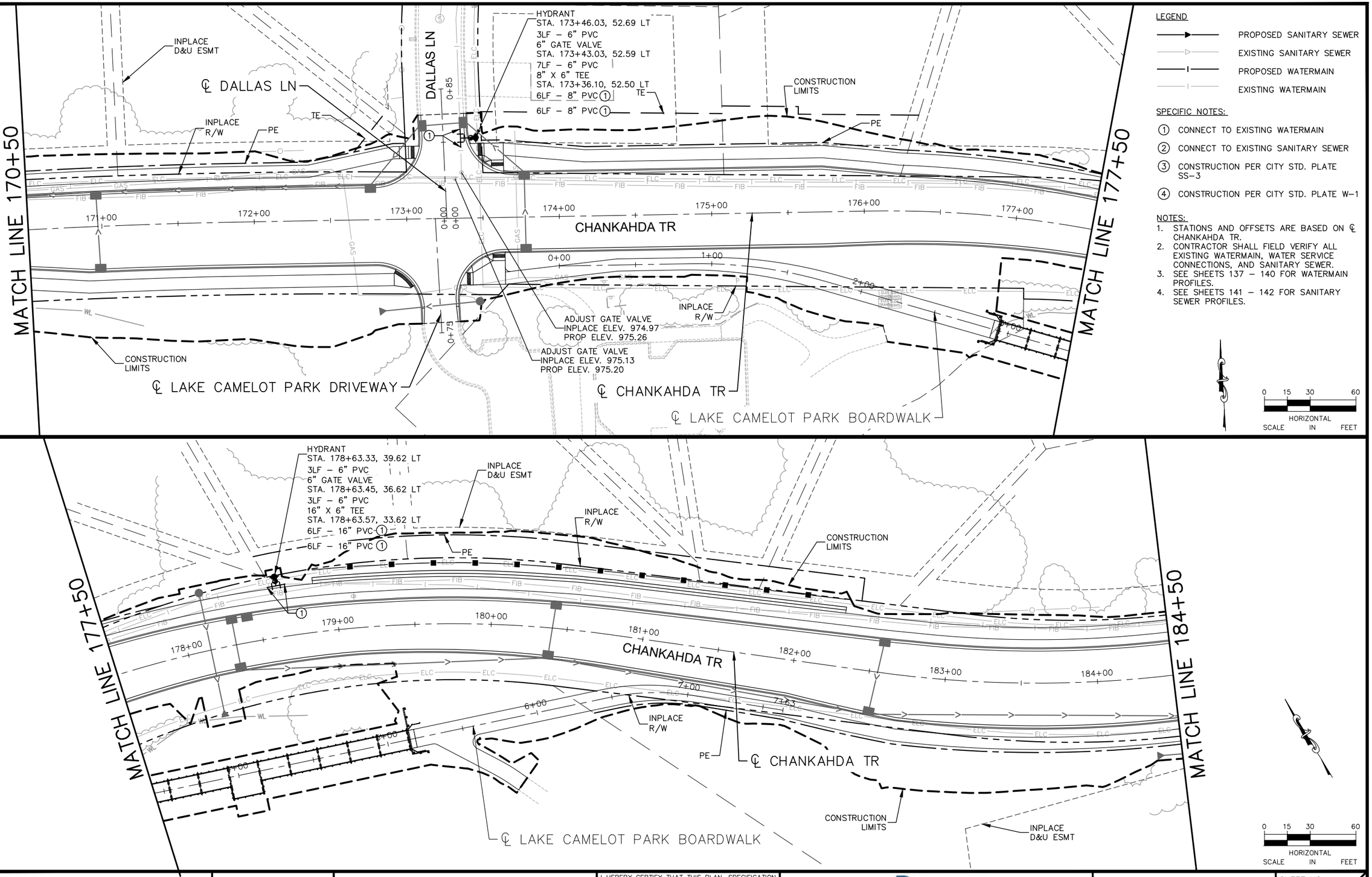
CHADD B. LARSON, PE
DATE: 11/04/2024 MN LIC. NO. 41864

City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
WATERMAIN 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. 132 / 348



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 137 – 140 FOR WATERMAIN PROFILES.
4. SEE SHEETS 141 – 142 FOR SANITARY SEWER PROFILES.

No.	Date	Revisions	App.

DRAWING NAME: CHANKAHDA_PH3_UtilPlanProfile.dwg

DESIGNED BY:	JWB
DRAWN BY:	RGS
CHECKED BY:	CBL
DATE:	11/04/2024
PROJECT NO.	160662010

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

DATE: 11/04/2024 MN LIC. NO. 41864

City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
WATERMAIN 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. 133 / 348

℄ ANNAPOLIS LN

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 STA. 185+24.10, 36.81 LT

8" GATE VALVE STA. 185+24.03, 33.67 LT

ADJUST GATE VALVE INPLACE ELEV. 972.96 PROP ELEV. 972.39

CONSTRUCTION LIMITS

INPLACE D&U ESMT

INPLACE R/W

℄ CHANKAHDA TR

MATCH LINE 184+50

MATCH LINE 191+50

CHANKAHDA TR

PE

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, 41.14 RT

CONSTRUCTION LIMITS

INPLACE R/W

8" GATE VALVE (1) STA. 185+22.43, 48.26 RT

ADJUST SANITARY SEWER MANHOLE INPLACE ELEV. 972.25 PROP ELEV. 972.22

ANNAPOLIS LN

185+00 186+00 187+00 188+00 189+00 190+00 191+00

1+90 0+00

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 137 – 140 FOR WATERMAIN PROFILES.
4. SEE SHEETS 141 – 142 FOR SANITARY SEWER PROFILES.

0 15 30 60
HORIZONTAL SCALE IN FEET

℄ YUCCA LN

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 STA. 196+71.31, 39.71 LT

16" 22.5° BEND STA. 196+77.38, 39.51 LT

16" 22.5° BEND STA. 197+43.35, 8.87 LT

℄ CHANKAHDA TR

8" GATE VALVE STA. 195+64.57, 26.57 LT

INPLACE R/W

CONSTRUCTION LIMITS

MATCH LINE 191+50

MATCH LINE 198+50

CHANKAHDA TR

192+00 193+00 194+00 195+00 196+00 197+00 198+00

2+00 1+00 0+00

INPLACE R/W

(1) 8" GATE VALVE STA. 195+63.40, 51.73 RT

CONSTRUCTION LIMITS

YUCCA LN

0 15 30 60
HORIZONTAL SCALE IN FEET

No.	Date	Revisions	App.

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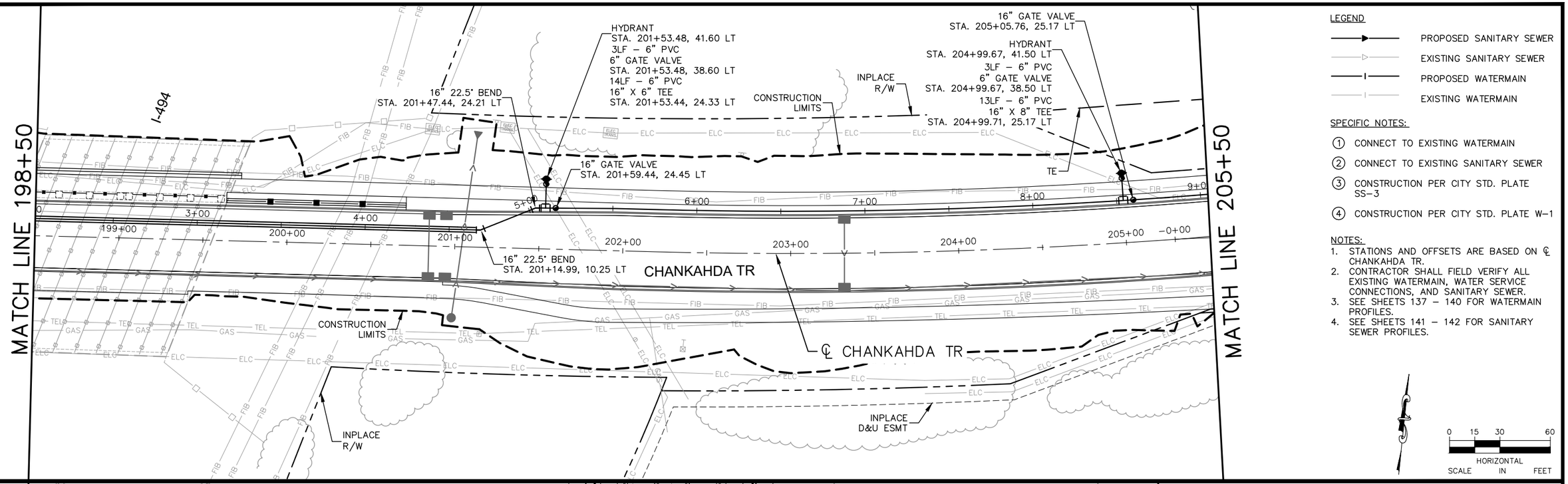
DATE: 11/04/2024 MN LIC. NO. 41864

City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
WATERMAIN 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. 134 / 348



No.	Date	Revisions	App.

DRAWING NAME: CHANKAHDA_PH3_UtilPlanProfile.dwg

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DRAWN BY:	RGS
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CHADD B. LARSON, PE
DATE: 11/04/2024 MN LIC. NO. 41864

City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
WATERMAIN 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. 135 / 348

LEGEND

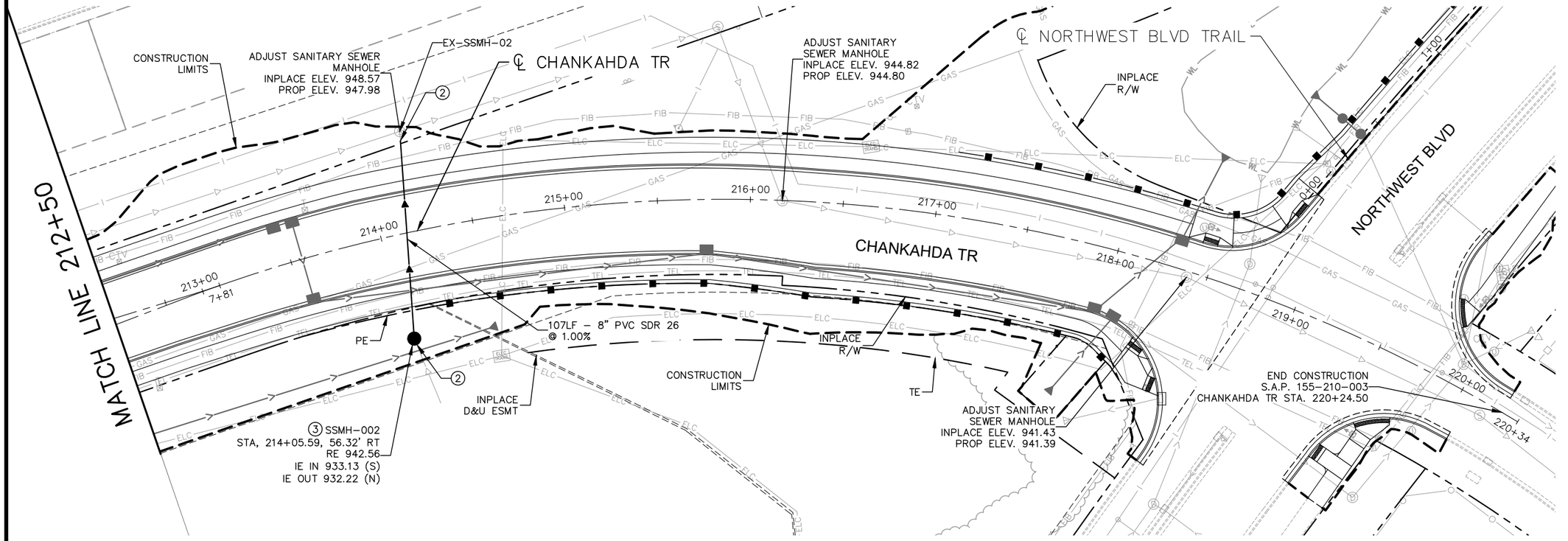
- PROPOSED SANITARY SEWER
- EXISTING SANITARY SEWER
- PROPOSED WATERMAIN
- EXISTING WATERMAIN

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:

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2. CONTRACTOR SHALL FIELD VERIFY ALL EXISTING WATERMAIN, WATER SERVICE CONNECTIONS, AND SANITARY SEWER.
3. SEE SHEETS 137 – 140 FOR WATERMAIN PROFILES.
4. SEE SHEETS 141 – 142 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:	11/04/2024
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

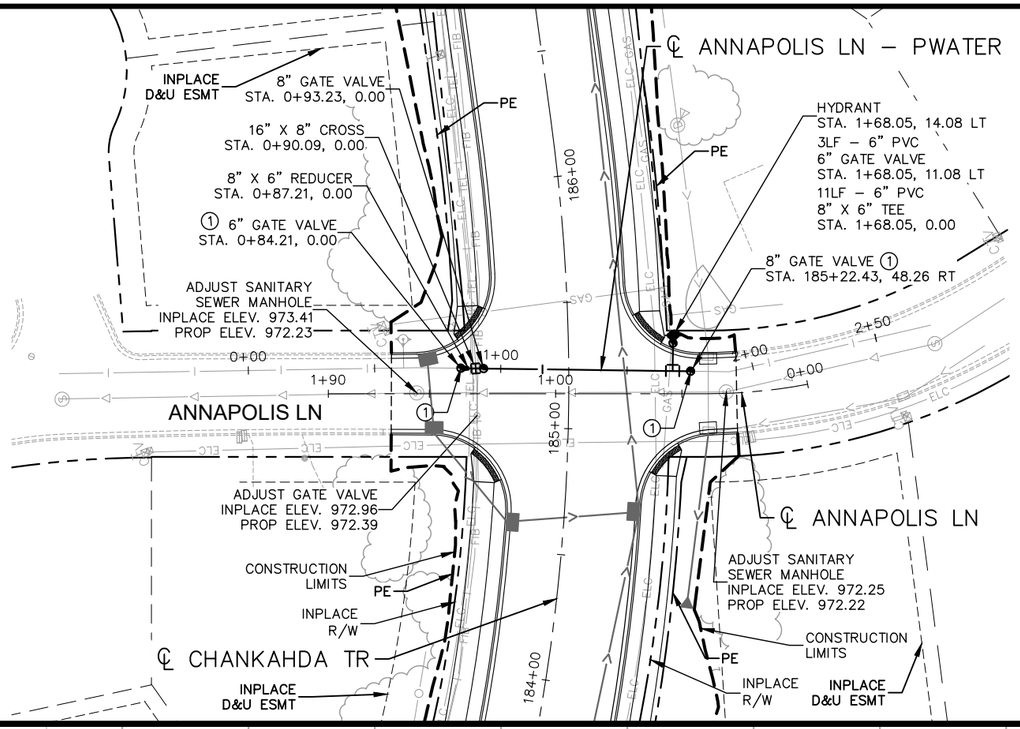
DATE: 11/04/2024 MN LIC. NO. 41864

City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
WATERMAIN 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. 136 / 348



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

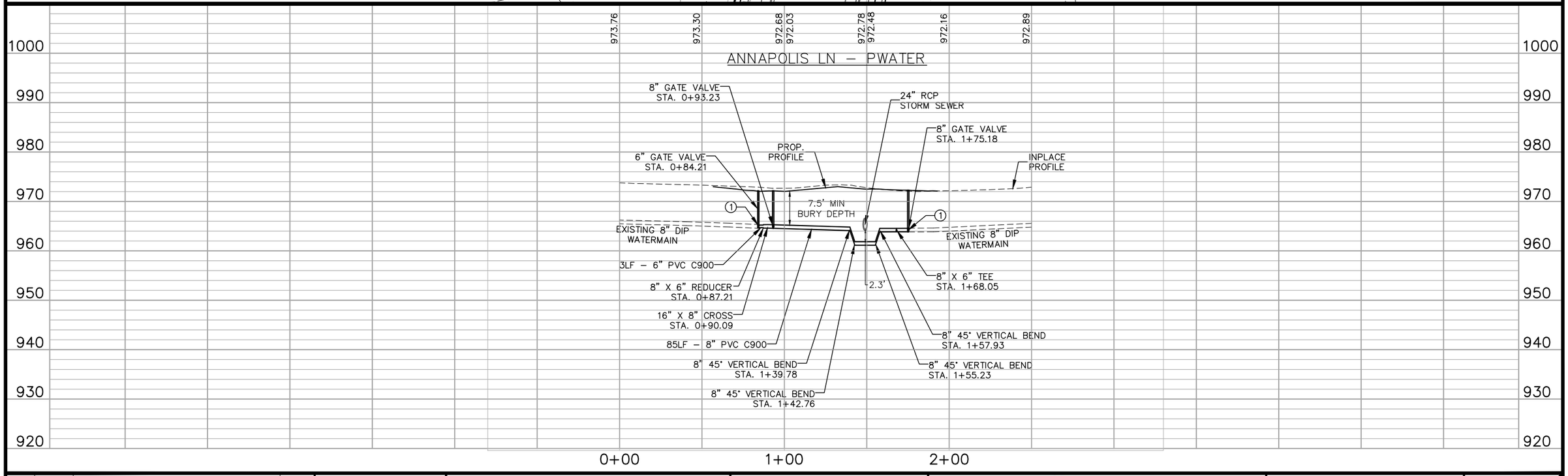
④ CONSTRUCTION PER CITY STD. PLATE W–1

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:	11/04/2024
PROJECT NO.	160662010

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PHONE: 651-645-4197
WWW.KIMLEY-HORN.COM

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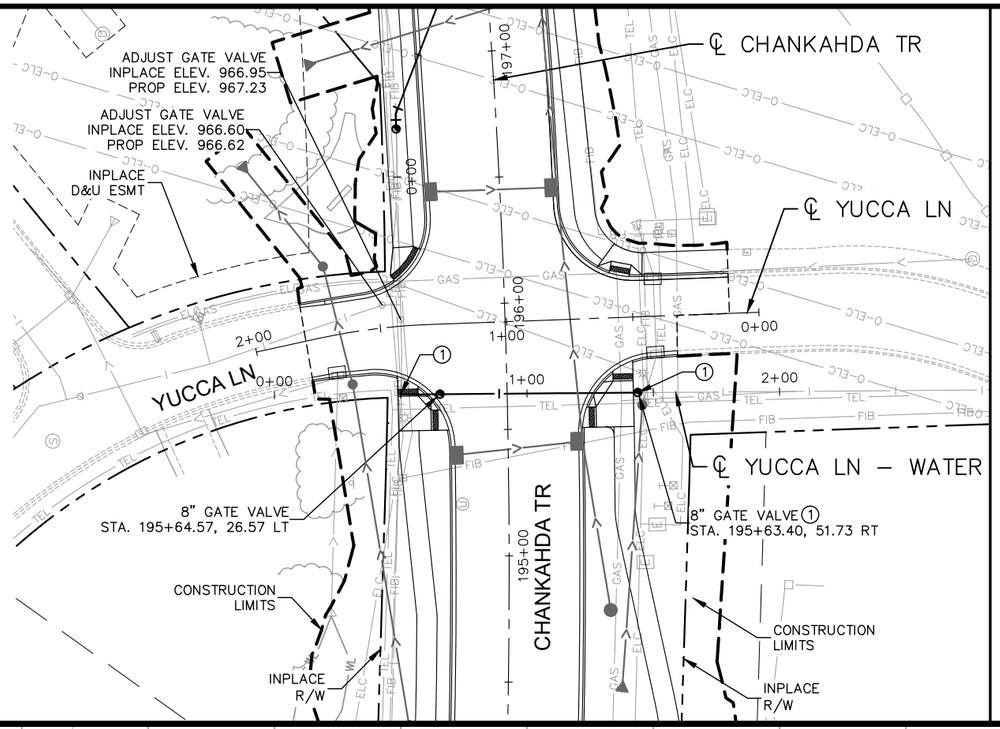
DATE: 11/04/2024 MN LIC. NO. 41864

City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
WATERMAIN 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. 137 / 348



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

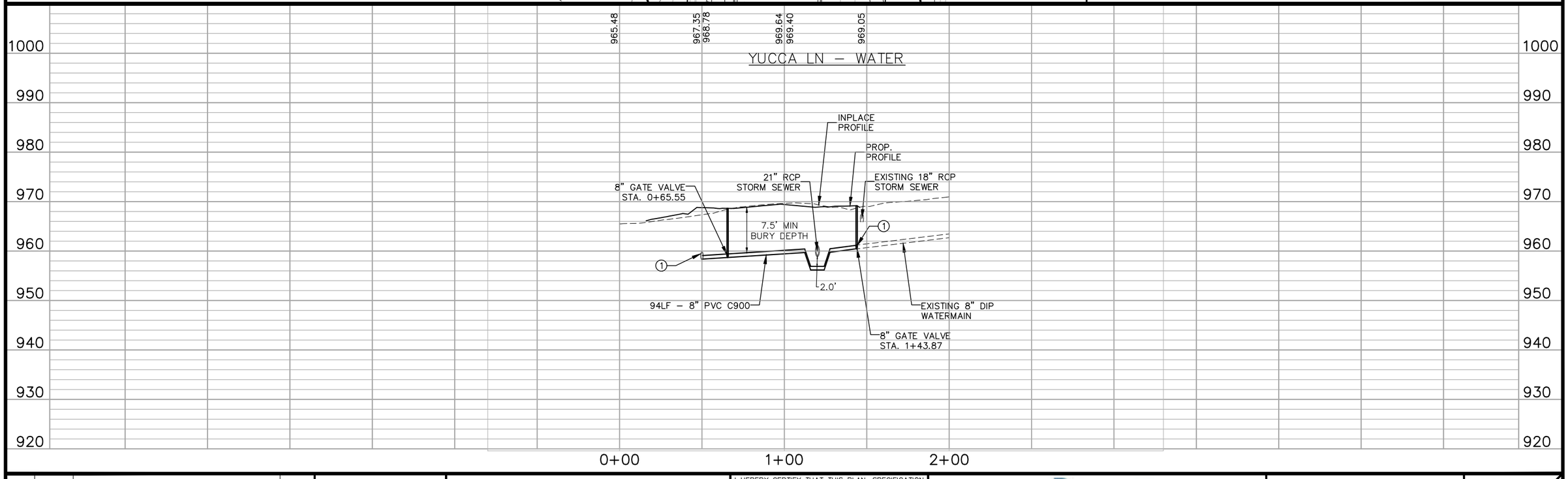
④ CONSTRUCTION PER CITY STD. PLATE W–1

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:	11/04/2024
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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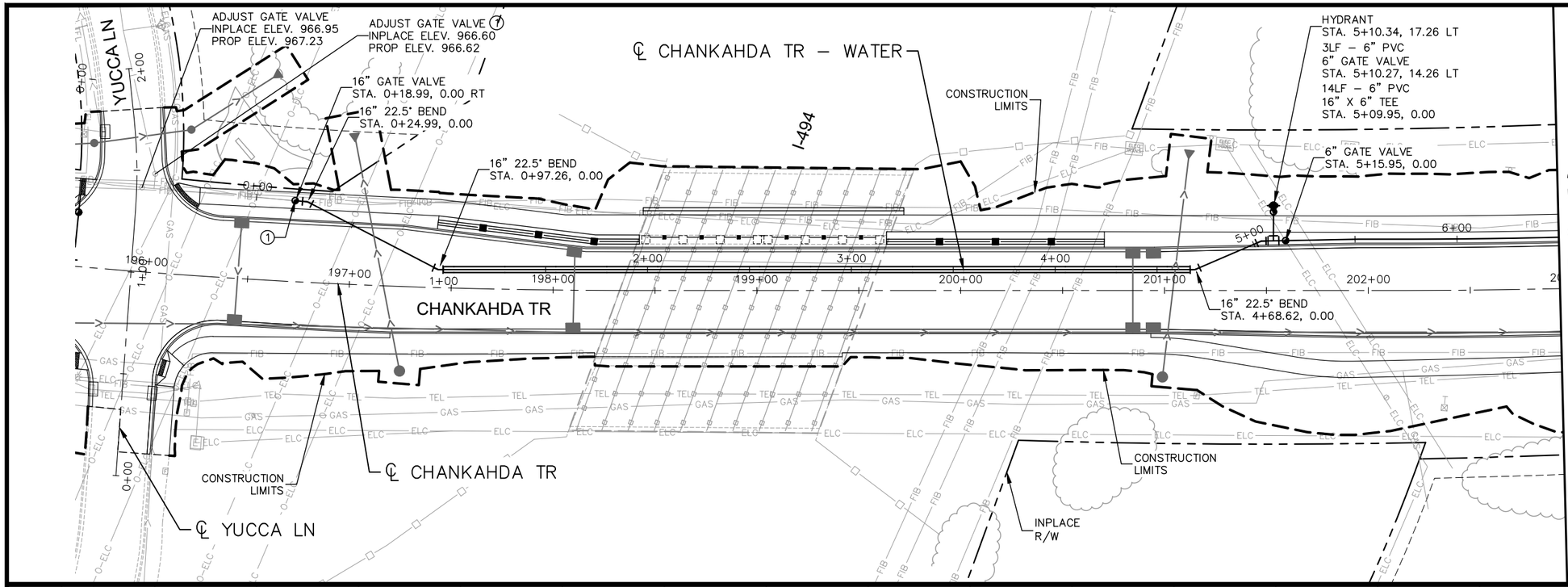
DATE: 11/04/2024 MN LIC. NO. 41864

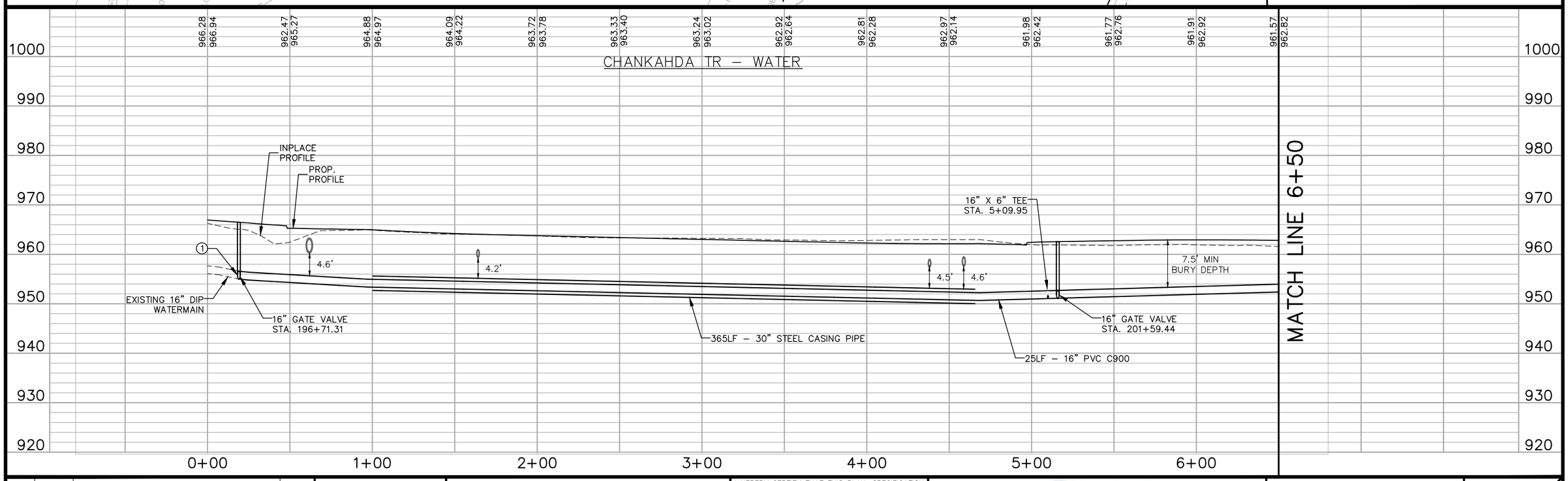
City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
WATERMAIN 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. 138 / 348





No.	Date	Revisions	App.

DRAWING NAME: CHANKAHDA_PH3_UtilPlanProfile.dwg

DESIGNED BY:	JWB
DRAWN BY:	RGS
CHECKED BY:	CBL
DATE:	11/04/2024
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

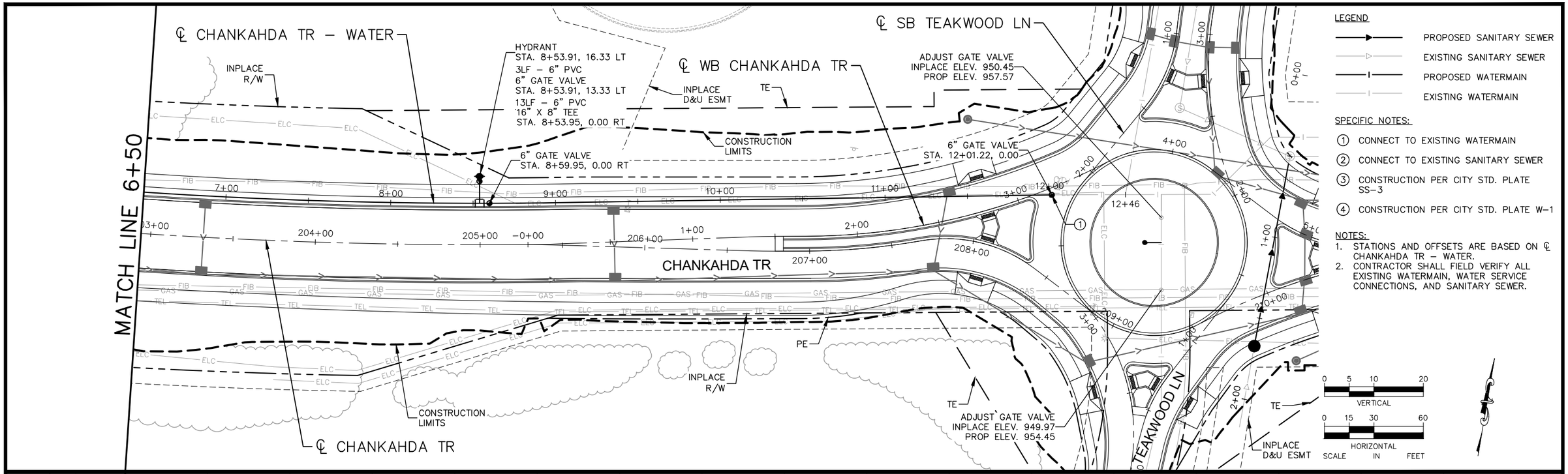
DATE: 11/04/2024 MN LIC. NO. 41864

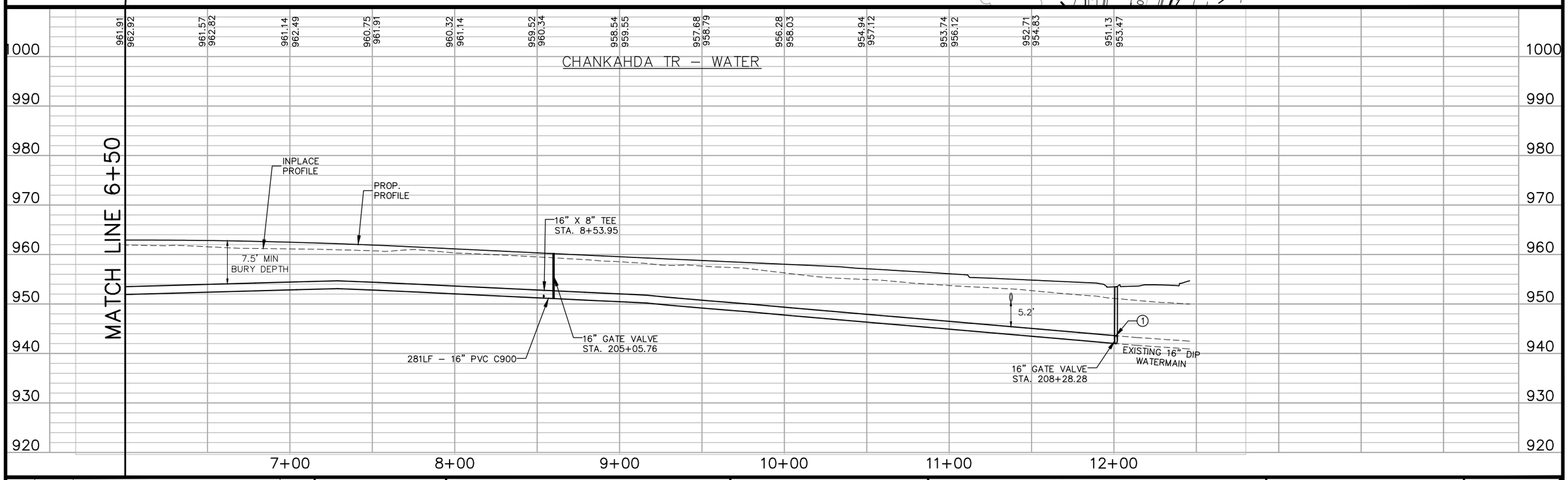
City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
WATERMAIN 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. 139 / 348





No.	Date	Revisions	App.

DRAWING NAME: CHANKAHDA_PH3_UtilPlanProfile.dwg

DESIGNED BY:	JWB
DRAWN BY:	RGS
CHECKED BY:	CBL
DATE:	11/04/2024
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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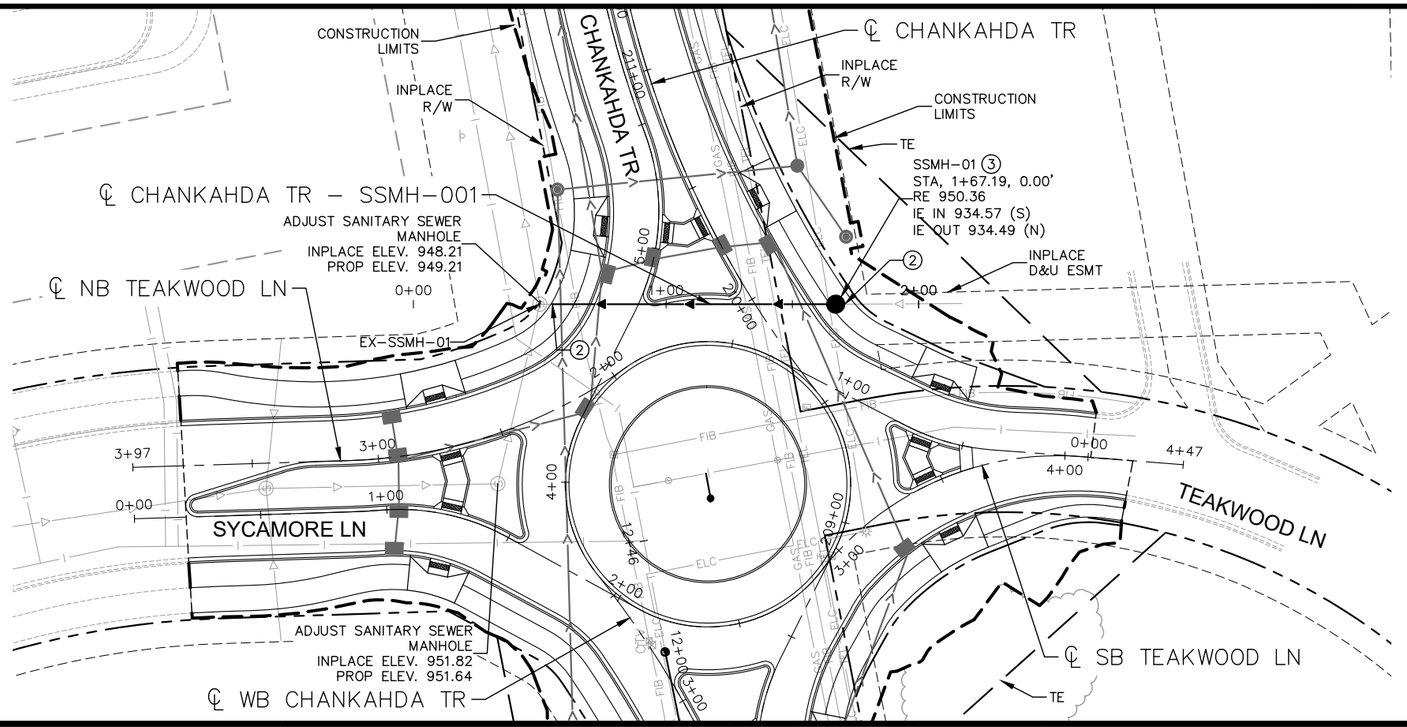
DATE: 11/04/2024 MN LIC. NO. 41864

City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
WATERMAIN 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. 140 / 348



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

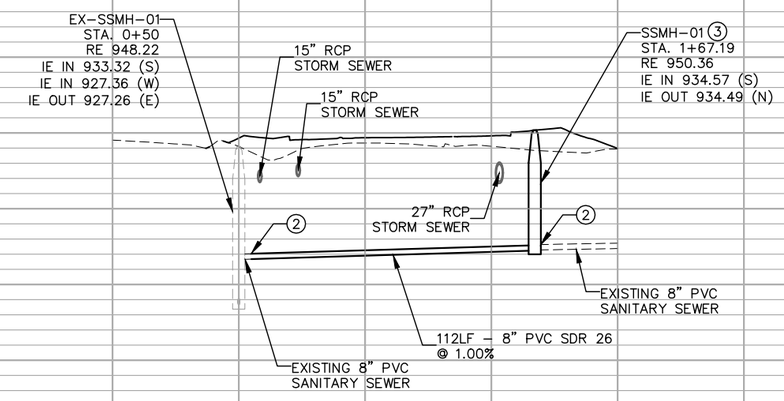
NOTES:

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

CHANKAHDA TR – SSMH–001



No.	Date	Revisions	App.

DRAWING NAME: CHANKAHDA_PH3_UtilPlanProfile.dwg

DESIGNED BY:	JWB
DRAWN BY:	RGS
CHECKED BY:	CBL
DATE:	11/04/2024
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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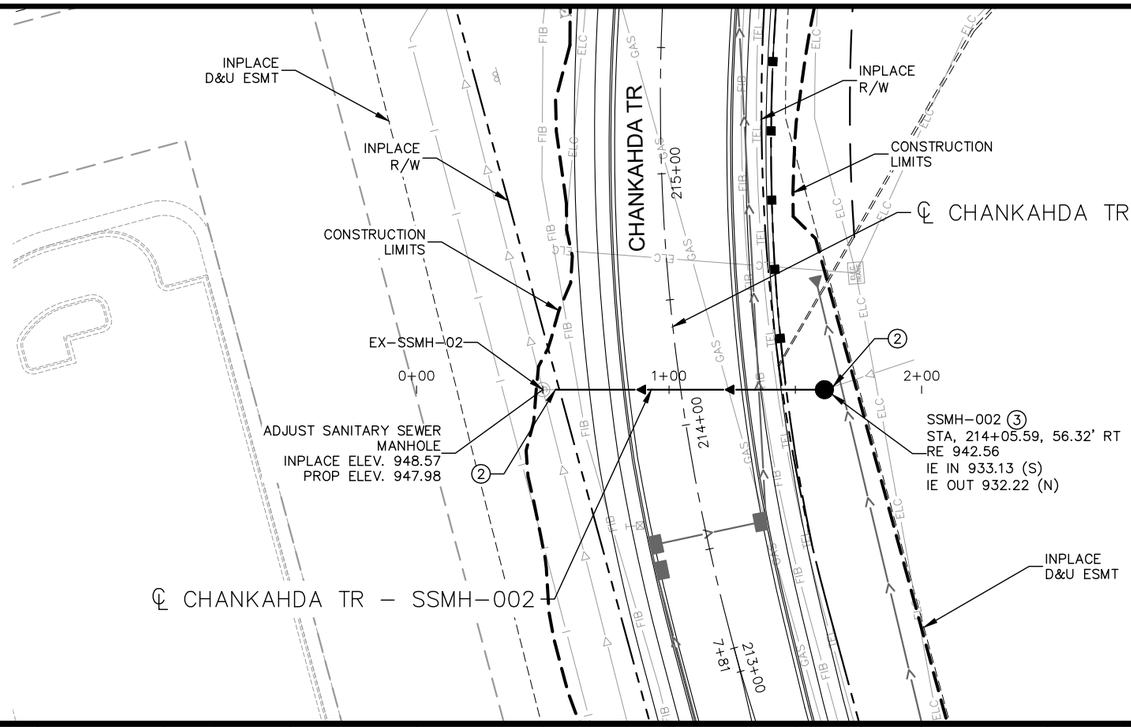
DATE: 11/04/2024 MN LIC. NO. 41864

City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
WATERMAIN 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. 141 / 348



LEGEND

- PROPOSED SANITARY SEWER
- EXISTING SANITARY SEWER
- PROPOSED WATERMAIN
- EXISTING WATERMAIN

SPECIFIC NOTES:

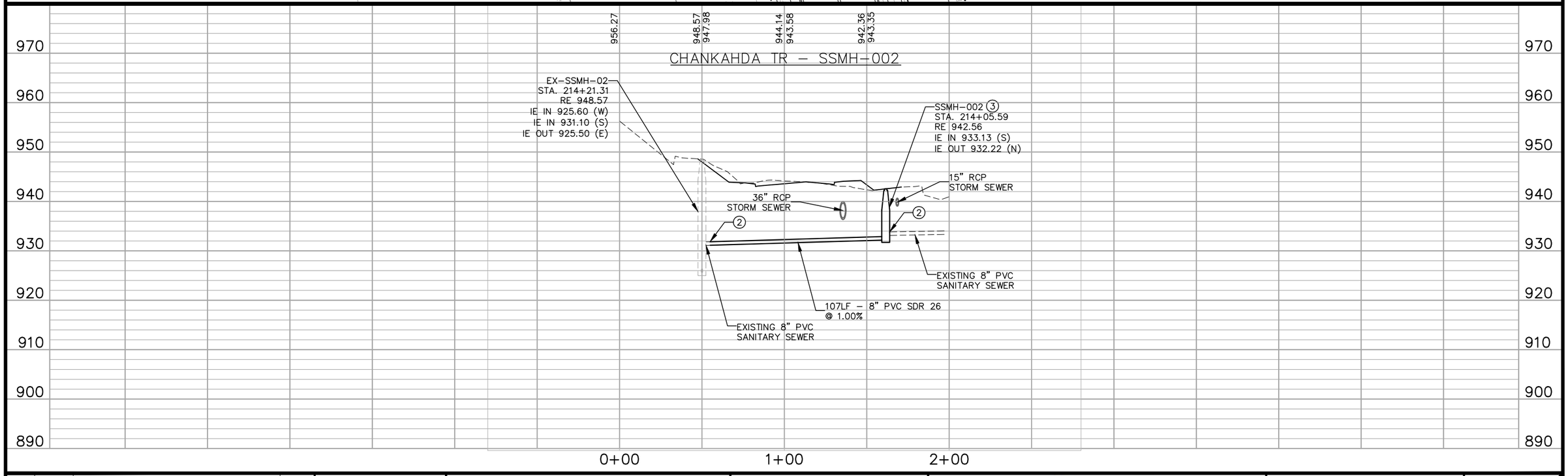
1. CONNECT TO EXISTING WATERMAIN
2. CONNECT TO EXISTING SANITARY SEWER
3. CONSTRUCTION PER CITY STD. PLATE SS-3
4. CONSTRUCTION PER CITY STD. PLATE W-1

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:	11/04/2024
PROJECT NO.	160662010

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CHADD B. LARSON, PE

DATE: 11/04/2024 MN LIC. NO. 41864

City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
WATERMAIN 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. 142 / 348

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	16" 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	970.86						
CHANKAHDA TR	122+33.92	55.99 LT	ADJUST GATE VALVE		1	970.84	970.35						
CHANKAHDA TR	127+29.40	41.00 LT	HYDRANT									1	
CHANKAHDA TR	127+29.40	38.50 LT	6" GATE VALVE						1				
CHANKAHDA TR	127+29.40	28.27 LT	CONNECT TO EXISTING	1									
CHANKAHDA TR	131+45.61	35.58 LT	ADJUST GATE VALVE		1	962.91	961.95						
CHANKAHDA TR	131+53.64	47.74 LT	ADJUST GATE VALVE		1	962.32	962.09						
CHANKAHDA TR	131+54.47	27.76 LT	ADJUST GATE VALVE		1	962.94	962.04						
CHANKAHDA TR	139+84.33	43.60 LT	ADJUST GATE VALVE		1	959.78	960.70						
CHANKAHDA TR	140+97.89	59.82 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	967.04						
CHANKAHDA TR	163+14.72	84.63 LT	ADJUST GATE VALVE		1	969.34	968.71						
CHANKAHDA TR	168+75.31	31.82 LT	ADJUST GATE VALVE		1	964.99	968.81						
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	968.92						
CHANKAHDA TR	173+32.03	25.94 LT	ADJUST GATE VALVE		1	975.13	975.2						
CHANKAHDA TR	173+36.41	39.91 LT	ADJUST GATE VALVE		1	974.97	975.26						
CHANKAHDA TR	173+46.03	52.69 LT	HYDRANT									1	
CHANKAHDA TR	173+43.03	52.59 LT	6" GATE VALVE						1				
CHANKAHDA TR	173+38.10	52.50 LT	6" 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	33.89 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	185+24.23	42.69 LT	6" GATE VALVE						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+24.03	33.67 LT	8" GATE VALVE							1			
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+35.91	41.52 RT	HYDRANT									1	
CHANKAHDA TR	185+33.07	41.42 RT	6" GATE VALVE						1				
CHANKAHDA TR	185+22.55	41.14 RT	8" X 6" TEE										75
CHANKAHDA TR	185+22.43	48.26 RT	8" GATE VALVE							1			
CHANKAHDA TR	185+64.81	42.12 LT	CONNECT TO EXISTING	1									
CHANKAHDA TR	195+64.57	26.57 LT	8" GATE VALVE							1			
CHANKAHDA TR	195+63.86	20.26 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	35.59 RT	8" 45° VERTICAL BEND										49
CHANKAHDA TR	195+63.40	51.73 RT	8" GATE VALVE							1			
CHANKAHDA TR	195+94.90	41.27 LT	ADJUST GATE VALVE		1	966.96	967.22						
CHANKAHDA TR	196+00.99	48.45 LT	ADJUST GATE VALVE		1	966.6	966.62						
CHANKAHDA TR	196+71.31	39.71 LT	16" GATE VALVE	1							1		
CHANKAHDA TR	196+77.38	39.51 LT	16" 22.5° BEND										179
CHANKAHDA TR	197+43.35	8.87 LT	16" 22.5° BEND										179
CHANKAHDA TR	201+14.99	10.25 LT	16" 22.5° BEND										179
CHANKAHDA TR	201+47.44	24.21 LT	16" 22.5° BEND										179
CHANKAHDA TR	201+53.48	41.60 LT	HYDRANT									1	
CHANKAHDA TR	201+53.48	38.60 LT	6" GATE VALVE						1				
CHANKAHDA TR	201+53.44	24.33 LT	16" X 6" TEE										229
CHANKAHDA TR	201+59.44	24.45 LT	16" GATE VALVE								1		
CHANKAHDA TR	204+99.67	41.50 LT	HYDRANT									1	
CHANKAHDA TR	204+99.67	38.50 LT	6" GATE VALVE						1				
CHANKAHDA TR	204+99.71	25.17 LT	16" X 6" TEE										229
CHANKAHDA TR	205+05.76	25.17 LT	16" GATE VALVE								1		
CHANKAHDA TR	208+28.28	43.27 LT	16" GATE VALVE	1							1		
CHANKAHDA TR	208+84.69	53.07 LT	CURB STOP & BOX	1				1					
TOTALS				10	16			1	8	4	4	7	2266

CHANKAHDA TRAIL RECONSTRUCTION PHASE 3 WATERMAIN PIPE TABULATION

ALIGNMENT	STATION BEGIN	LOCATION	STATION END	LOCATION	TYPE PE PIPE	PVC C900			STEEL CASING PIPE
					1" DIA	6" DIA	8" DIA	16" DIA	30" DIA
					LIN FT	LIN FT	LIN FT	LIN FT	LIN FT
CHANKAHDA TR	127+29.40	28.27 LT	127+39.40	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		10			
CHANKAHDA TR	173+36.19	46.50 LT	173+35.95	58.50 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+24.03	33.67 LT			3		
CHANKAHDA TR	185+24.03	33.67 LT	185+23.08	12.87 RT			47		
CHANKAHDA TR	185+23.08	12.87 RT	185+23.02	15.84 RT			3		
CHANKAHDA TR	185+23.02	15.84 RT	185+22.79	28.32 RT			12		
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	41.14 RT			10		
CHANKAHDA TR	185+22.55	41.14 RT	185+22.43	48.26 RT			7		
CHANKAHDA TR	185+22.55	41.14 RT	185+35.91	41.52 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+63.86	20.26 RT			47		
CHANKAHDA TR	195+63.86	20.26 RT	195+63.81	23.82 RT			4		
CHANKAHDA TR	195+63.81	23.82 RT	195+63.69	32.03 RT			8		
CHANKAHDA TR	195+63.69	32.03 RT	195+63.63	35.59 RT			4		
CHANKAHDA TR	195+63.63	35.59 RT	195+63.40	51.73 RT			16		
CHANKAHDA TR	196+71.31	39.71 LT	196+77.38	39.51 LT				6	
CHANKAHDA TR	196+77.38	39.51 LT	197+43.35	8.87 LT				72	
CHANKAHDA TR	197+43.35	8.87 LT	201+14.99	10.25 LT				371	
CHANKAHDA TR	197+46.36	8.96 LT	201+11.99	10.25 LT					366
CHANKAHDA TR	201+14.99	10.25 LT	201+47.44	24.21 LT				35	
CHANKAHDA TR	201+47.44	24.21 LT	201+53.44	24.33 LT				6	
CHANKAHDA TR	201+53.44	24.33 LT	201+53.48	41.60 LT		17			
CHANKAHDA TR	201+53.44	24.33 LT	201+59.44	24.45 LT				6	
CHANKAHDA TR	201+59.44	24.45 LT	204+99.71	25.17 LT				336	
CHANKAHDA TR	204+99.71	25.17 LT	204+99.67	41.50 LT		18			
CHANKAHDA TR	204+99.71	25.17 LT	205+05.76	25.17 LT				6	
CHANKAHDA TR	205+05.76	25.17 LT	208+28.28	43.27 LT				341	
CHANKAHDA TR	208+84.69	53.07 LT	209+56.73	54.50 LT	10				
TOTALS					10	94	195	1193	366

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	126+80.64	71.08 LT	EXISTING MANHOLE	1	960.07	960.02		
CHANKAHDA TR	134+57.49	83.93 LT	EXISTING MANHOLE	1	950.53	950.49		
CHANKAHDA TR	185+13.77	60.16 LT	EXISTING MANHOLE	1	973.41	972.23		
CHANKAHDA TR	185+14.79	32.40 RT	EXISTING MANHOLE	1	972.25	972.22		
CHANKAHDA TR	209+79.50	26.66 RT	SSMH-001				15.87	2
CHANKAHDA TR	209+93.03	124.09 LT	EXISTING MANHOLE	1	951.82	951.64		
CHANKAHDA TR	210+35.93	74.40 LT	EXISTING MANHOLE	1	948.21	949.21		
CHANKAHDA TR	214+05.59	56.32 RT	SSMH-002				10.34	2
CHANKAHDA TR	214+21.31	54.09 LT	EXISTING MANHOLE	1	948.57	947.98		
CHANKAHDA TR	215+17.21	0.15 RT	EXISTING MANHOLE	1	944.82	944.8		
CHANKAHDA TR	218+39.37	3.23 RT	EXISTING MANHOLE	1	941.43	941.42		
TOTALS				9			26.21	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+79.50	26.66 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:	11/04/2024
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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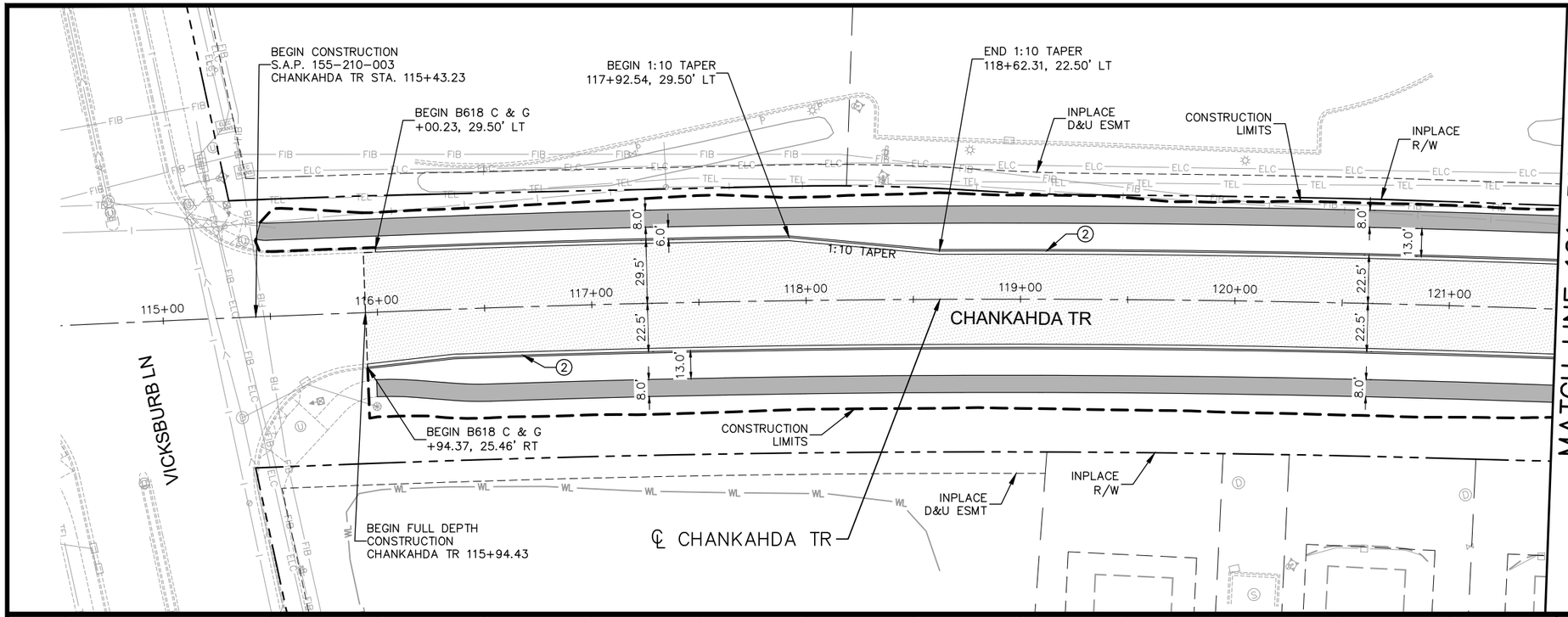
CHADD B. LARSON, PE
DATE: 11/04/2024 MN LIC. NO. 41864

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. 143 / 348



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 193-195 FOR DETAILS.

NOTES:

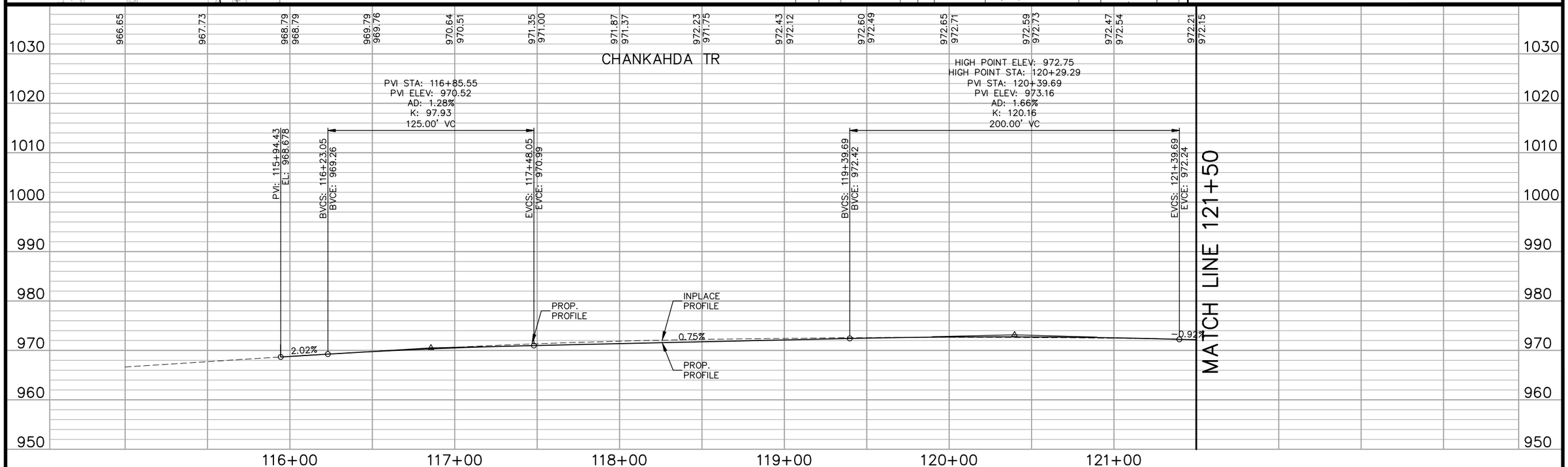
1. ALL DIMENSIONS ARE TO FACE OF CURB UNLESS OTHERWISE NOTED.
2. SEE SHEET 161-163 FOR ADDITIONAL AND SIDE STREET PROFILES.

LEGEND

- BIT. PAVEMENT (INSET A)
- BIT TRAIL (INSET B)
- 4" CONC. WALK (INSET C)
- 6" CONC. WALK (INSET D)
- BIT. PAVEMENT (INSET E)
- 8" CONC. APRON (INSET F)
- 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
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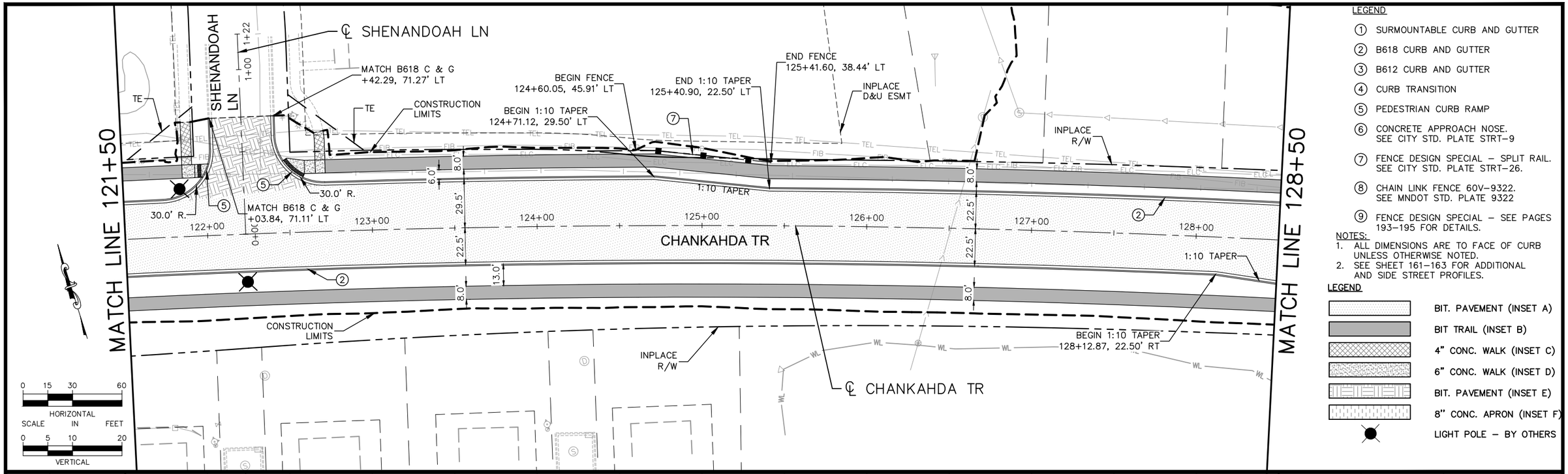
DATE: 11/04/2024 MN LIC. NO. 41864

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. 144 / 348



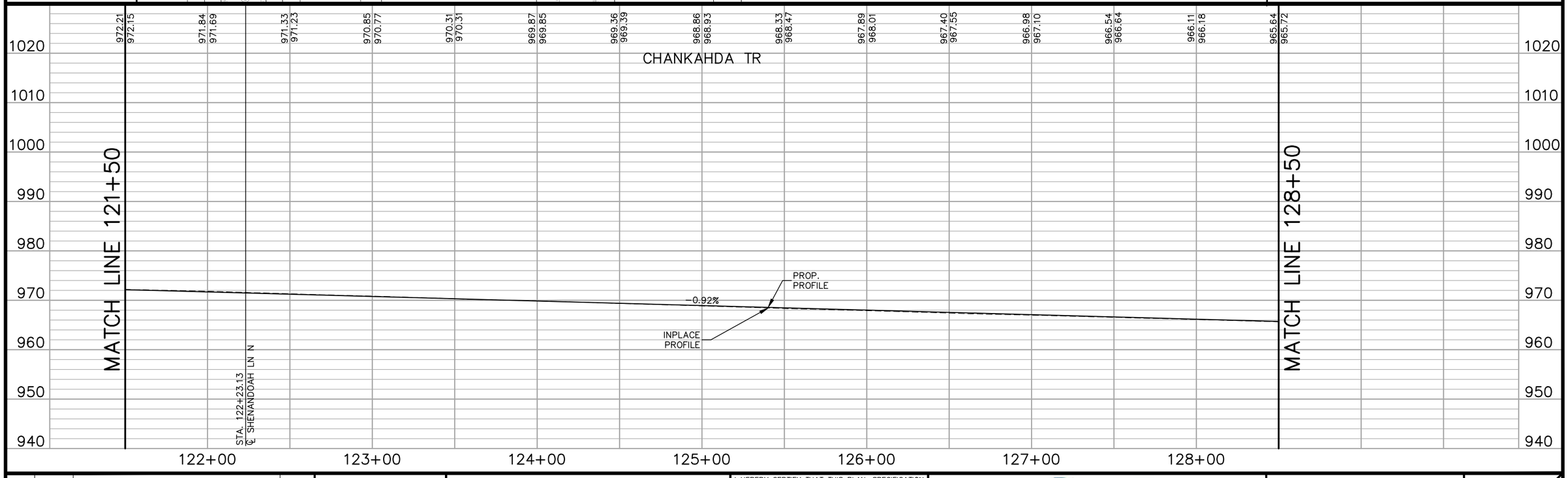
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9. FENCE DESIGN SPECIAL – SEE PAGES 193-195 FOR DETAILS.

NOTES:
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LEGEND

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- BIT TRAIL (INSET B)
- 4" CONC. WALK (INSET C)
- 6" CONC. WALK (INSET D)
- BIT. PAVEMENT (INSET E)
- 8" CONC. APRON (INSET F)
- LIGHT POLE – BY OTHERS



No.	Date	Revisions	App.

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767 EUSTIS STREET, SUITE 100, ST, PAUL, MN 55114
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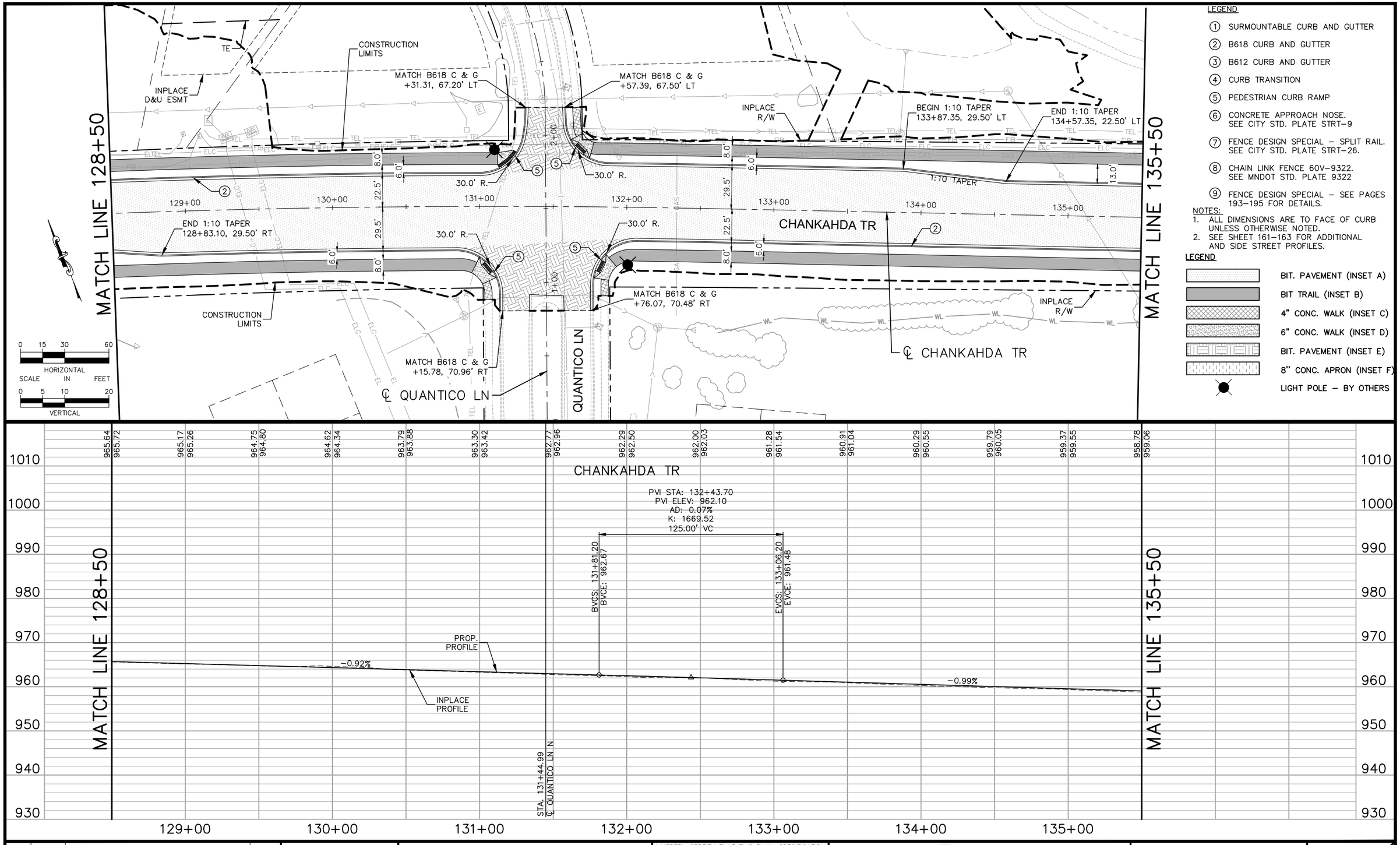
DATE: 11/04/2024 MN LIC. NO. 41864

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. 145 / 348



No.	Date	Revisions	App.

DRAWING NAME: CHANKAHDA_PH3_PlanProfile.dwg

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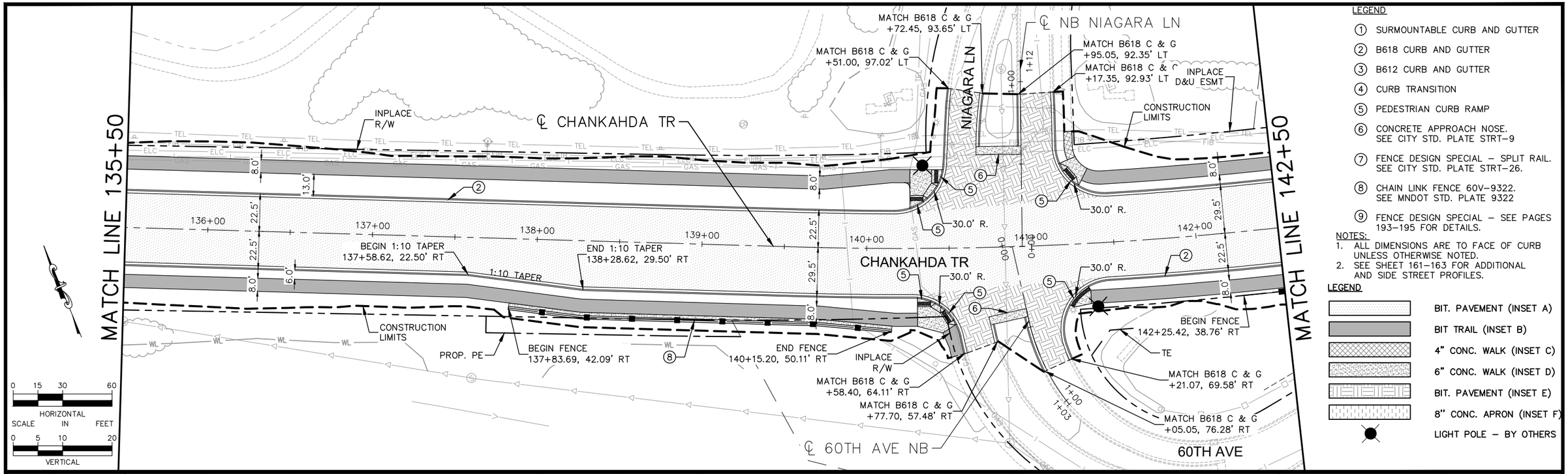
DATE: 11/04/2024 MN LIC. NO. 41864

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. 146 / 348



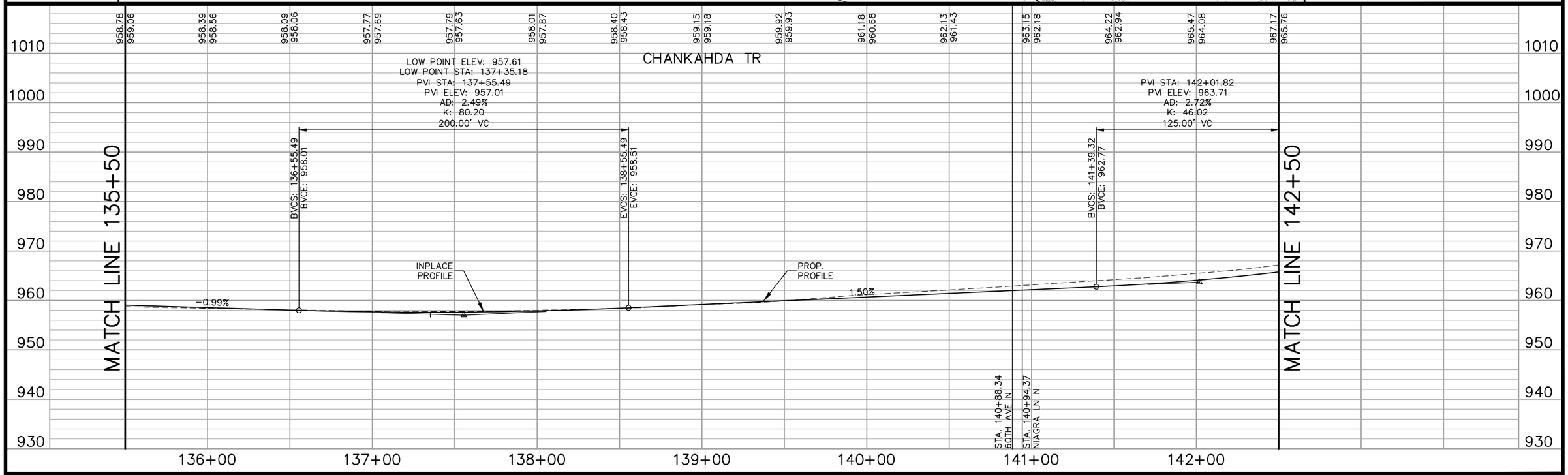
LEGEND

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2. B618 CURB AND GUTTER
3. B612 CURB AND GUTTER
4. CURB TRANSITION
5. PEDESTRIAN CURB RAMP
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8. CHAIN LINK FENCE 60V-9322. SEE MNDOT STD. PLATE 9322
9. FENCE DESIGN SPECIAL – SEE PAGES 193-195 FOR DETAILS.

NOTES:
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2. SEE SHEET 161-163 FOR ADDITIONAL AND SIDE STREET PROFILES.

LEGEND

- BIT. PAVEMENT (INSET A)
- BIT TRAIL (INSET B)
- 4" CONC. WALK (INSET C)
- 6" CONC. WALK (INSET D)
- BIT. PAVEMENT (INSET E)
- 8" CONC. APRON (INSET F)
- LIGHT POLE – BY OTHERS



No.	Date	Revisions	App.

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767 EUSTIS STREET, SUITE 100, ST. PAUL, MN 55114
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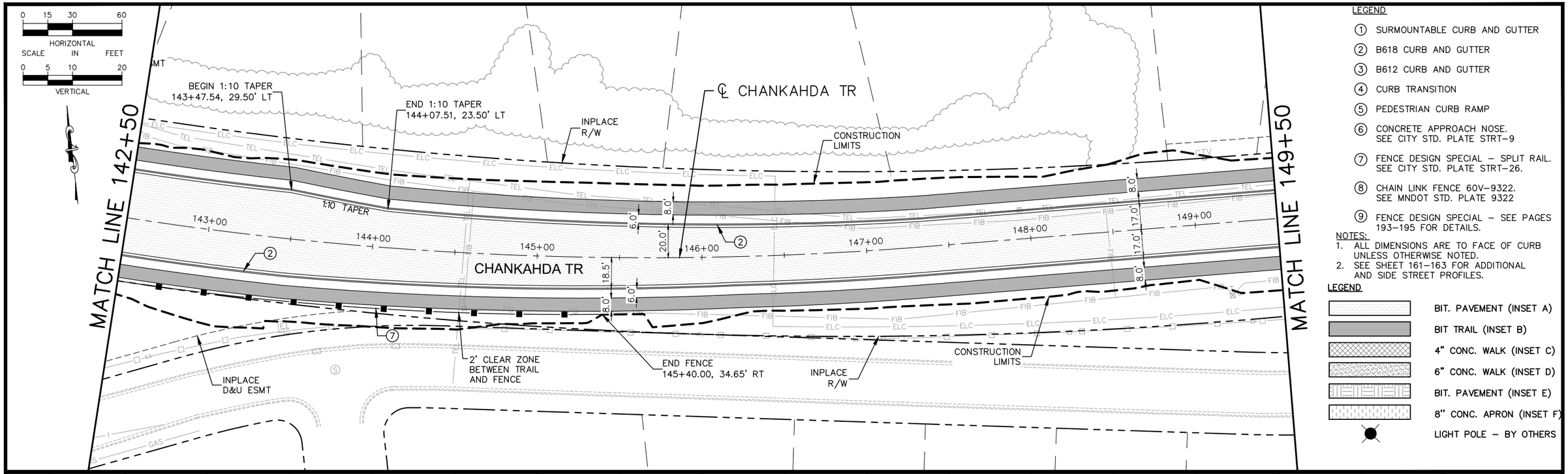
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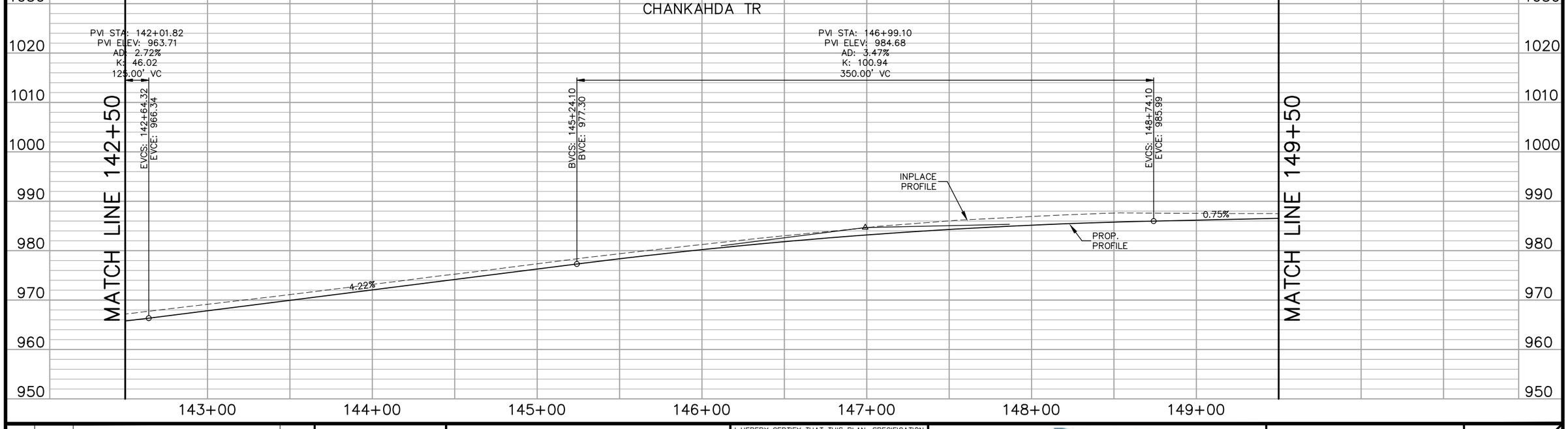
City of Plymouth

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. 147 / 348





No.	Date	Revisions	App.

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767 EUSTIS STREET, SUITE 100, ST, PAUL, MN 55114
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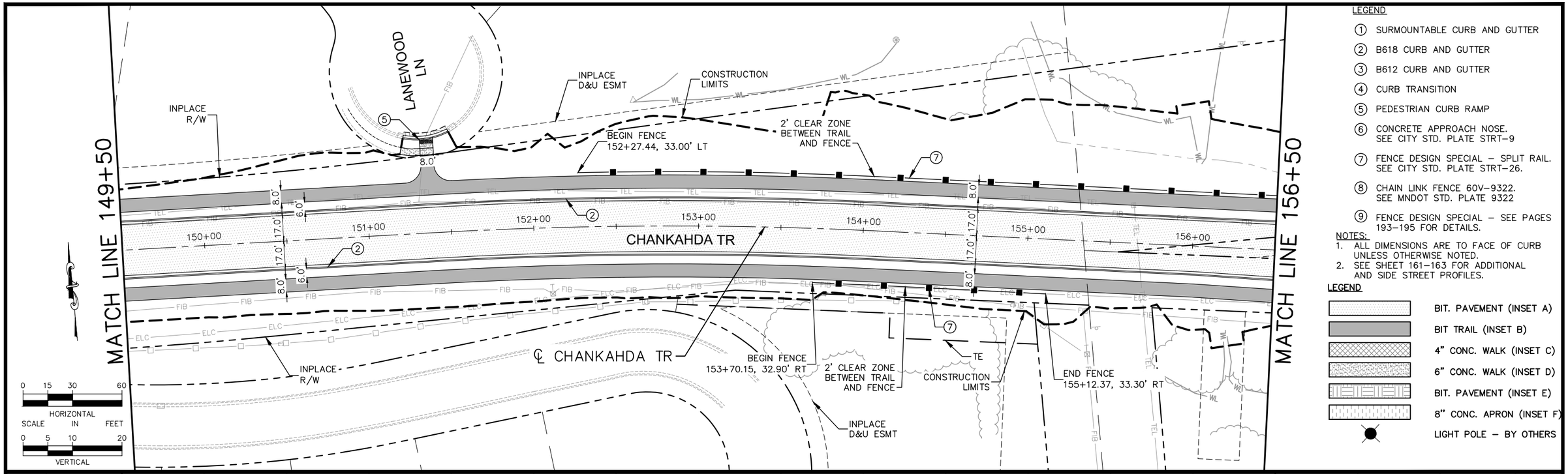
CHADD B. LARSON, PE
DATE: 11/04/2024 MN LIC. NO. 41864

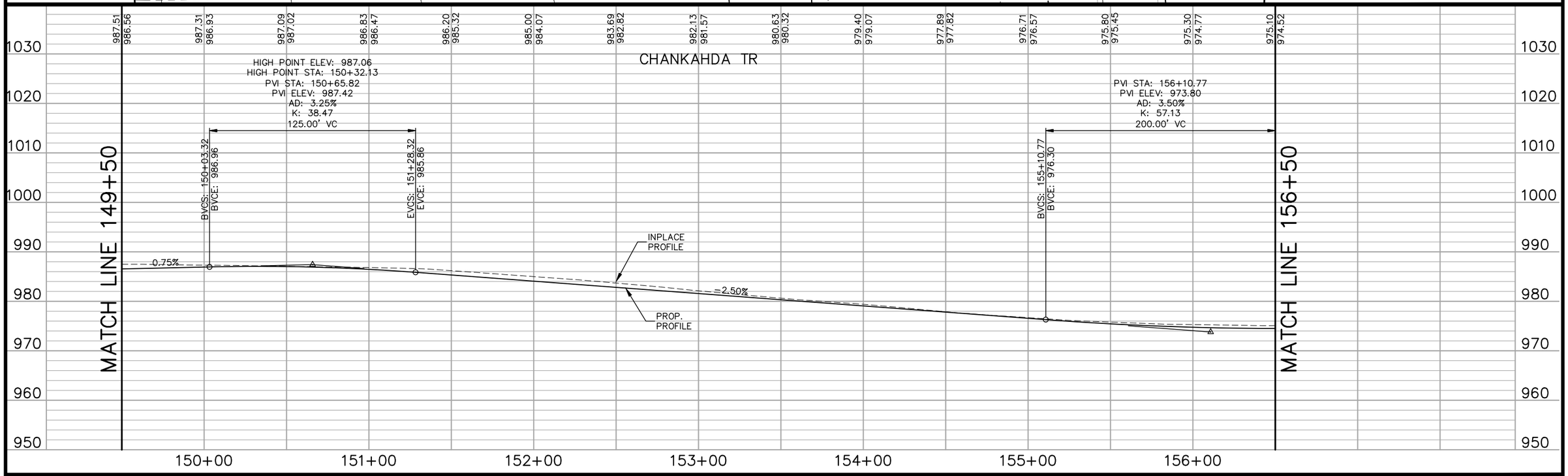
City of Plymouth

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. 148 / 348





No.	Date	Revisions	App.

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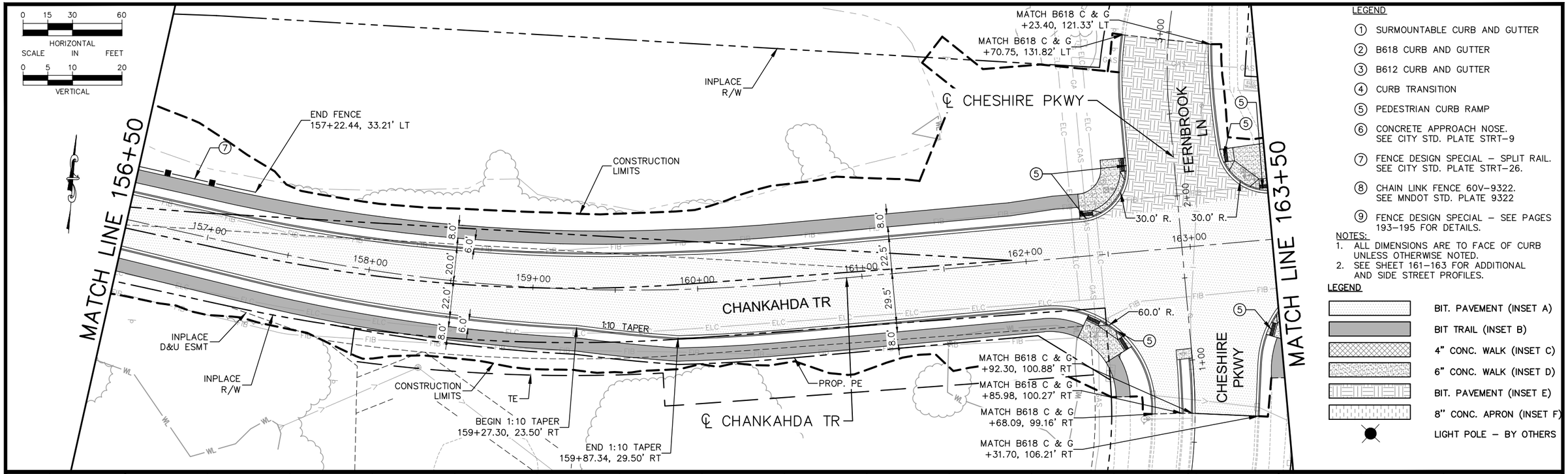
CHADD B. LARSON, PE
DATE: 11/04/2024 MN LIC. NO. 41864

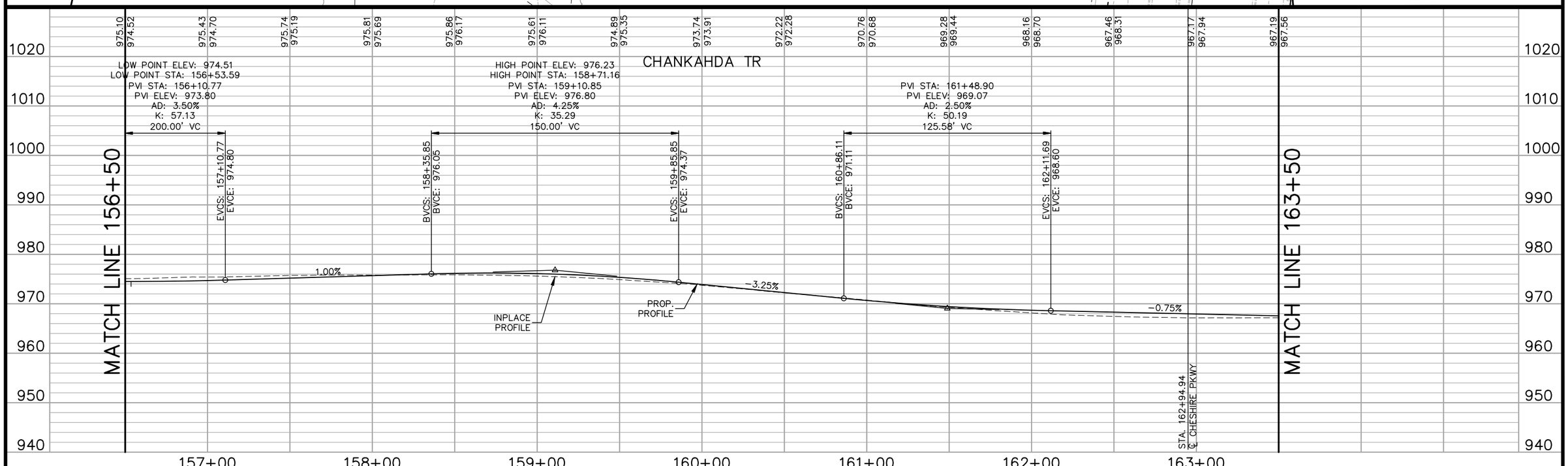
City of Plymouth

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. 149 / 348





No.	Date	Revisions	App.

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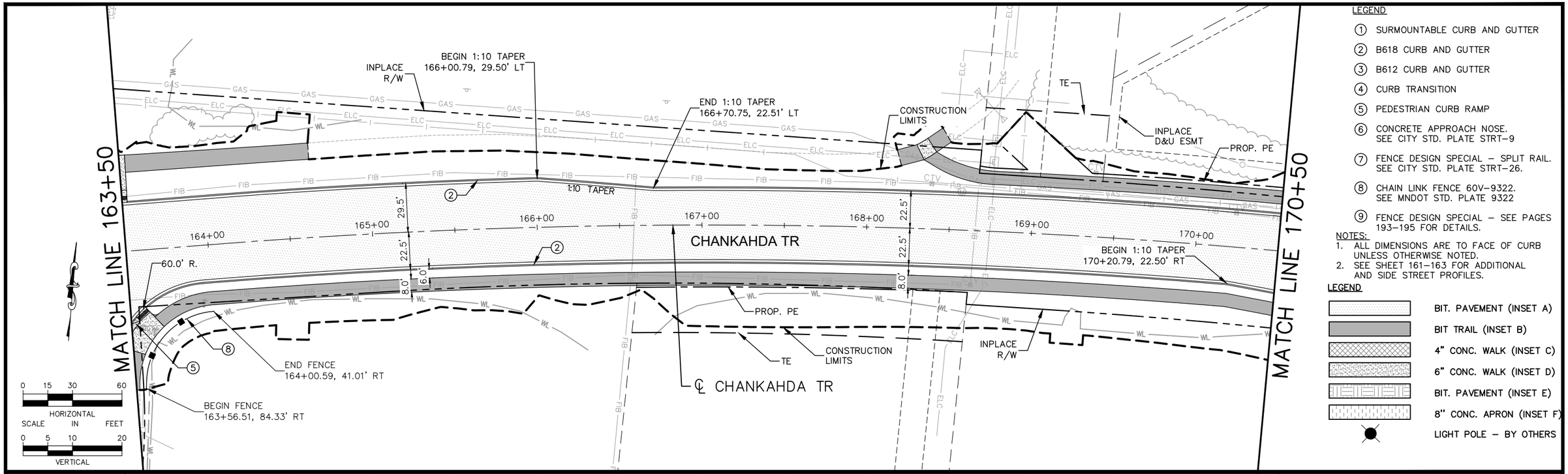
CHADD B. LARSON, PE
DATE: 11/04/2024 MN LIC. NO. 41864

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. 150 / 348



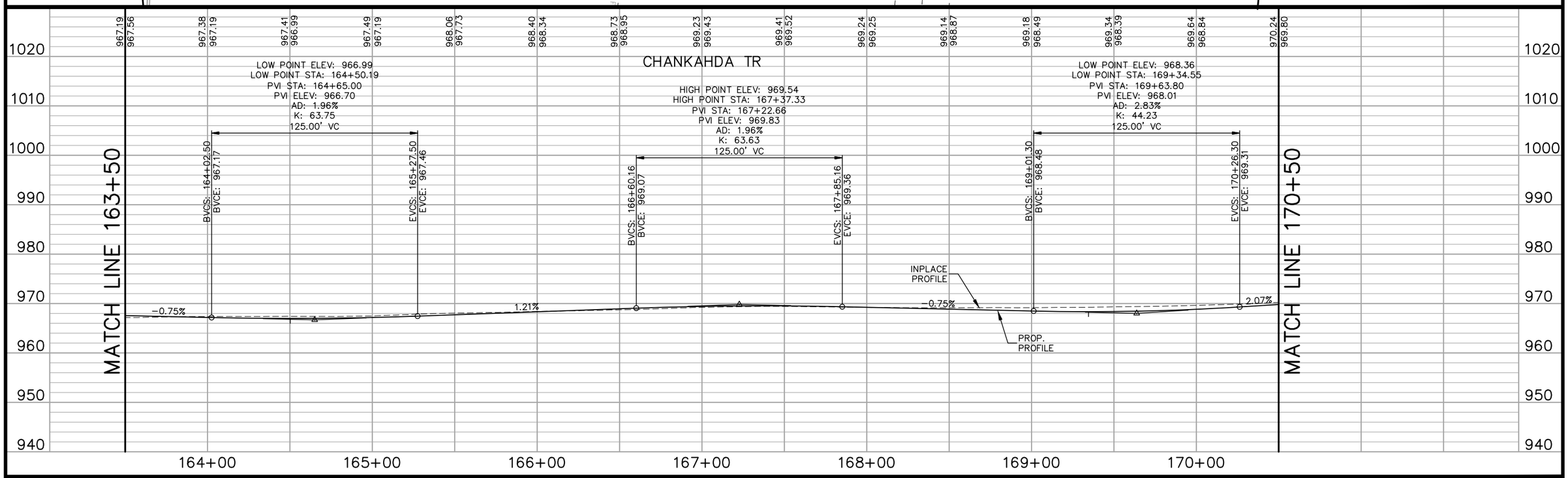
LEGEND

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9. FENCE DESIGN SPECIAL – SEE PAGES 193-195 FOR DETAILS.

NOTES:
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2. SEE SHEET 161-163 FOR ADDITIONAL AND SIDE STREET PROFILES.

LEGEND

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- 4" CONC. WALK (INSET C)
- 6" CONC. WALK (INSET D)
- BIT. PAVEMENT (INSET E)
- 8" CONC. APRON (INSET F)
- LIGHT POLE – BY OTHERS



No.	Date	Revisions	App.

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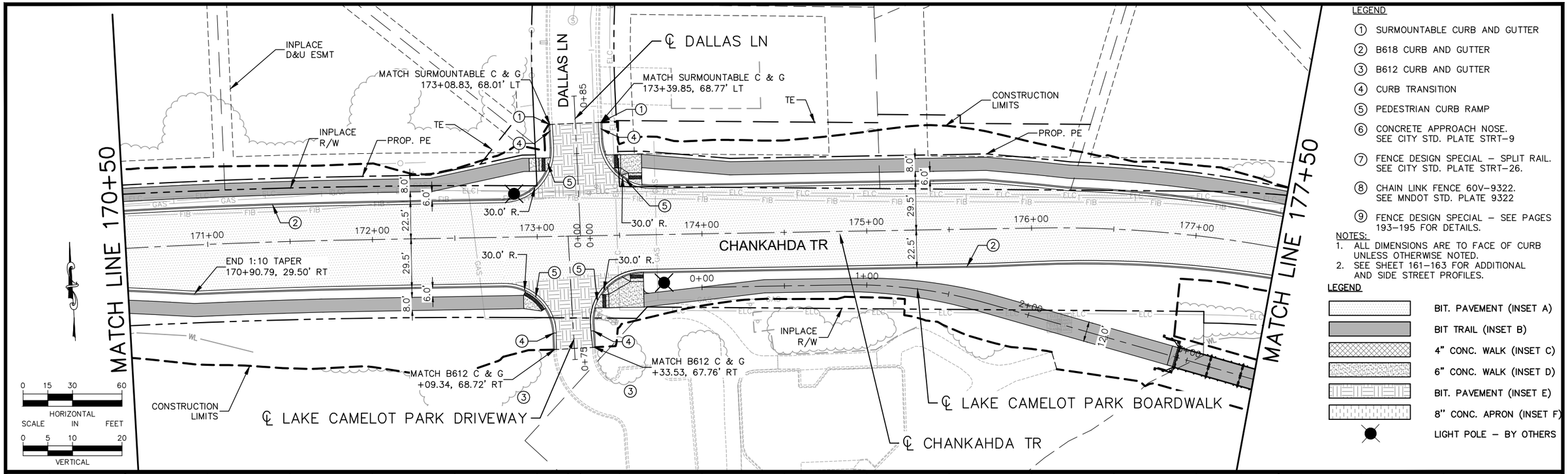
DATE: 11/04/2024 MN LIC. NO. 41864

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. 151 / 348



LEGEND

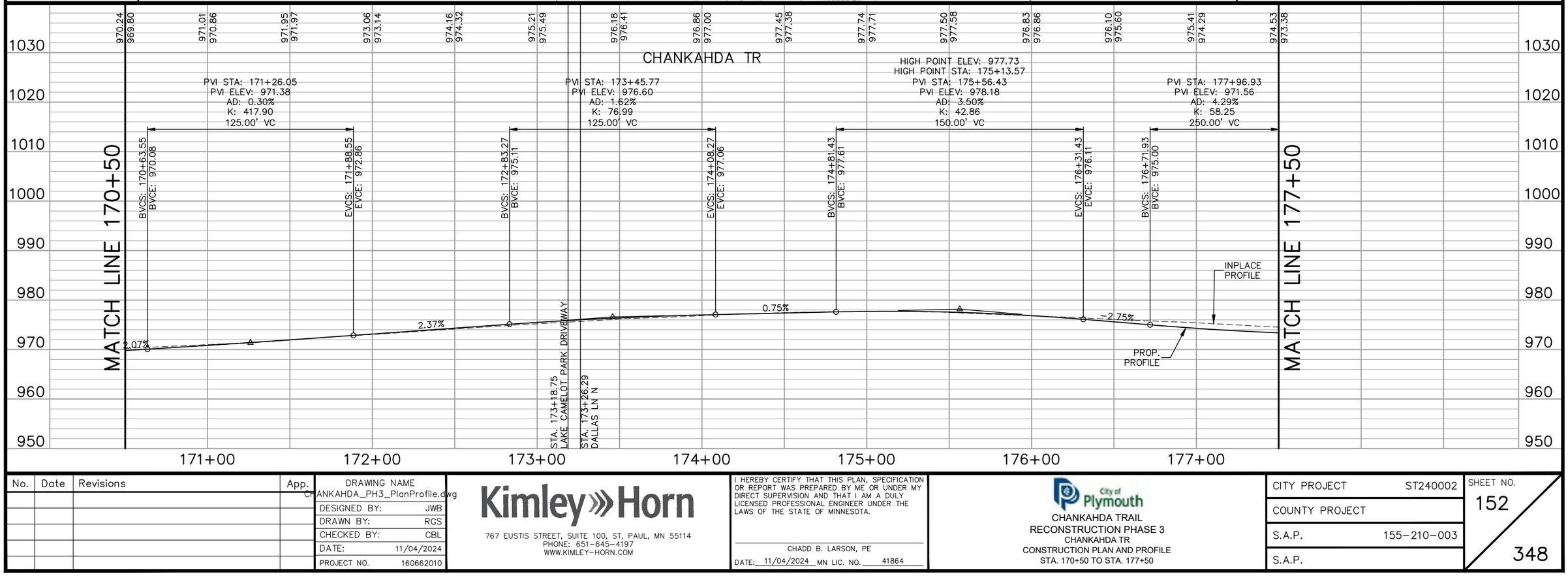
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- 8" CONC. APRON (INSET F)
- LIGHT POLE – BY OTHERS



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CHADD B. LARSON, PE

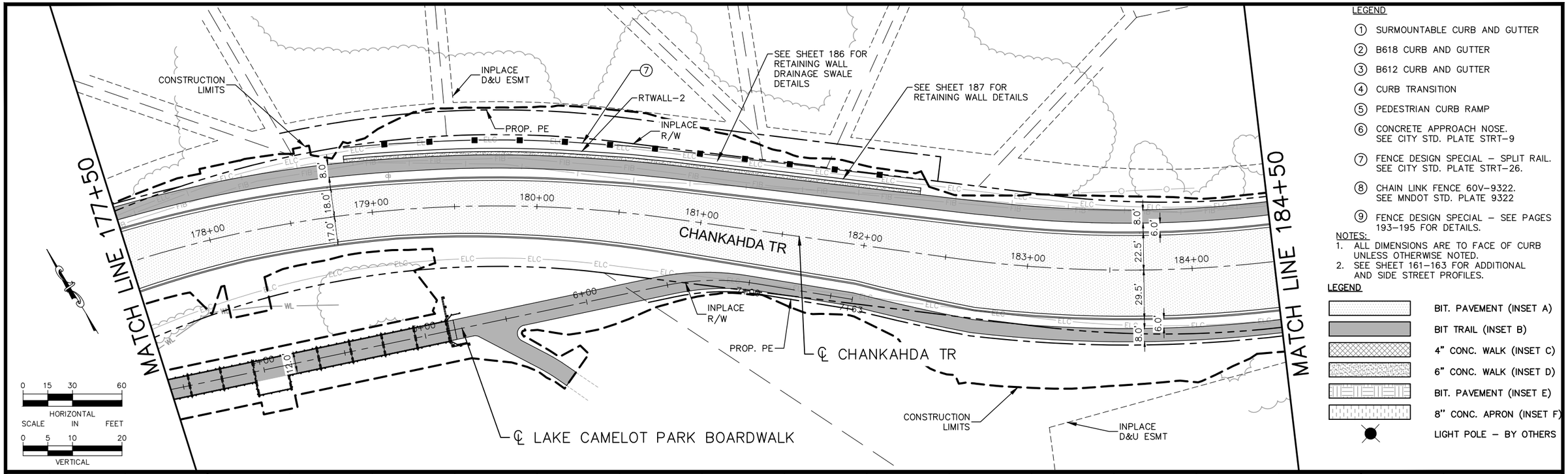
DATE: 11/04/2024 MN LIC. NO. 41864

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. 152 / 348



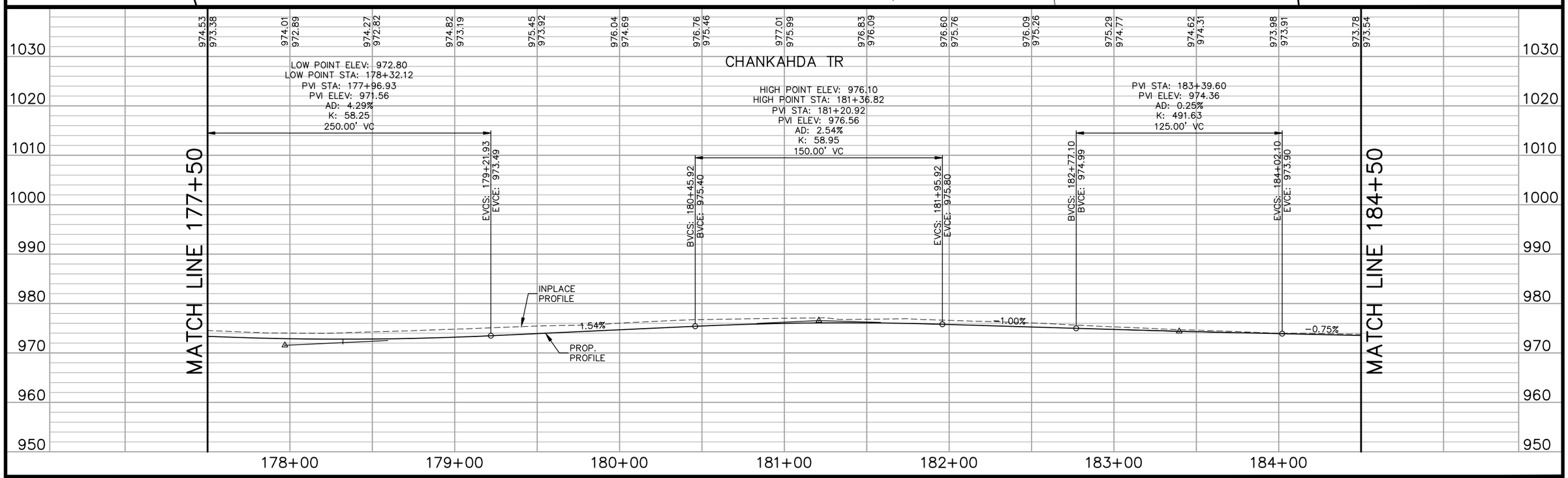
LEGEND

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 193-195 FOR DETAILS.

NOTES:
1. ALL DIMENSIONS ARE TO FACE OF CURB UNLESS OTHERWISE NOTED.
2. SEE SHEET 161-163 FOR ADDITIONAL AND SIDE STREET PROFILES.

LEGEND

- BIT. PAVEMENT (INSET A)
- BIT TRAIL (INSET B)
- 4" CONC. WALK (INSET C)
- 6" CONC. WALK (INSET D)
- BIT. PAVEMENT (INSET E)
- 8" CONC. APRON (INSET F)
- LIGHT POLE – BY OTHERS



No.	Date	Revisions	App.

DRAWING NAME	CHANKAHDA_PH3_PlanProfile.dwg
DESIGNED BY:	JWB
DRAWN BY:	RGS
CHECKED BY:	CBL
DATE:	11/04/2024
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

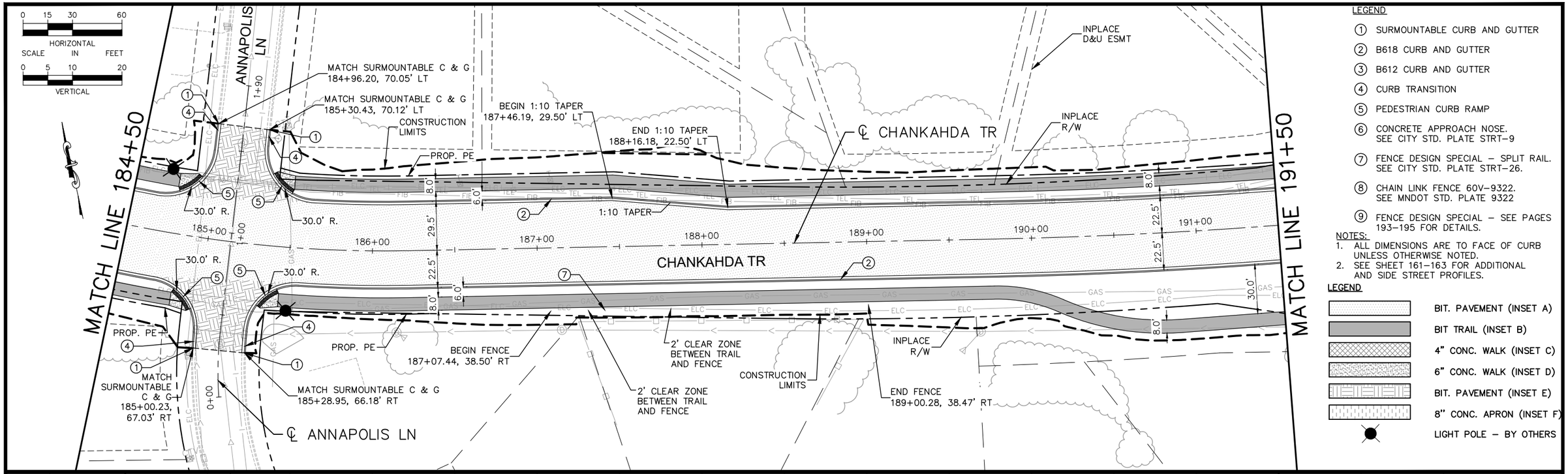
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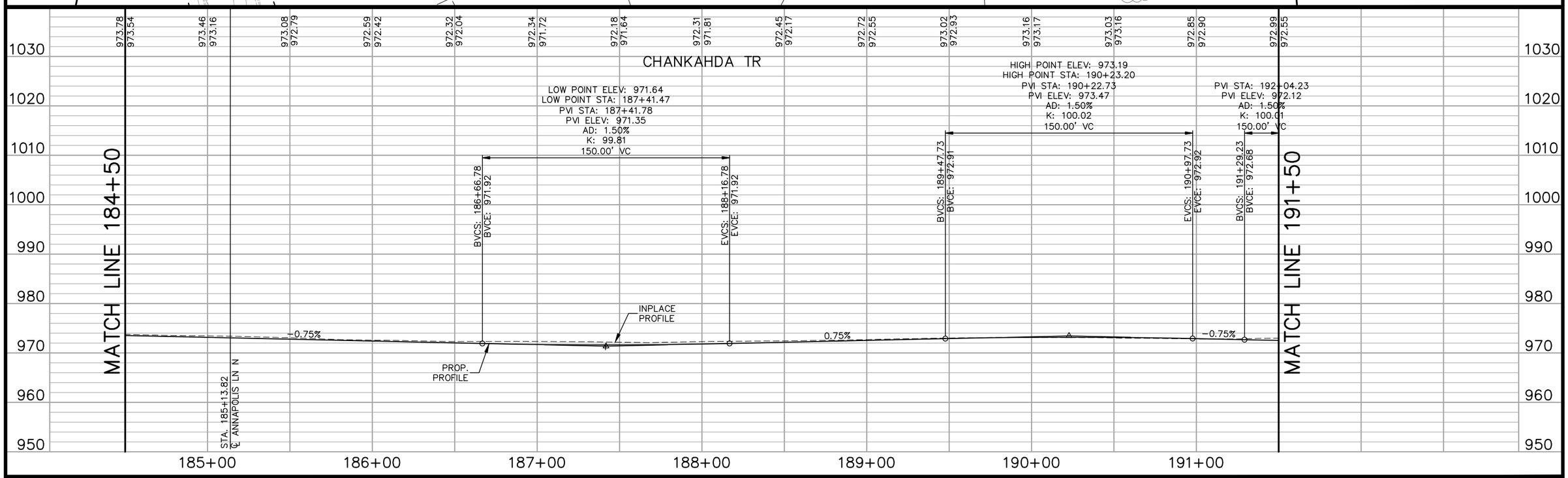
City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
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. 153 / 348





No.	Date	Revisions	App.

DRAWING NAME	CHANKAHDA_PH3_PlanProfile.dwg
DESIGNED BY:	JWB
DRAWN BY:	RGS
CHECKED BY:	CBL
DATE:	11/04/2024
PROJECT NO.	160662010

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767 EUSTIS STREET, SUITE 100, ST. PAUL, MN 55114
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WWW.KIMLEY-HORN.COM

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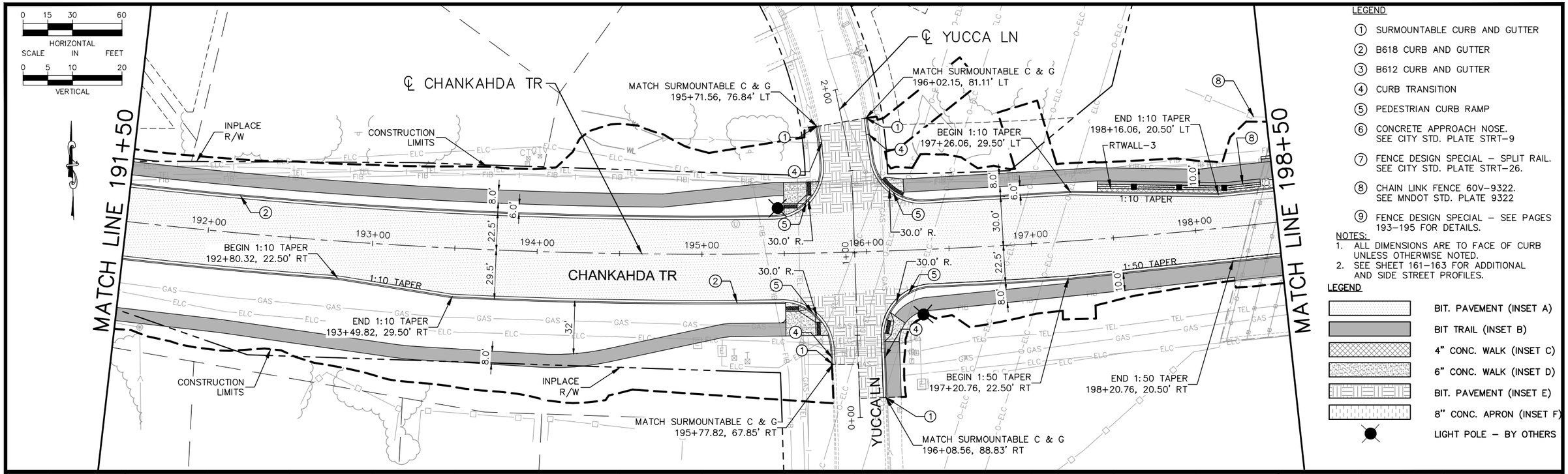
DATE: 11/04/2024 MN LIC. NO. 41864

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. 154 / 348



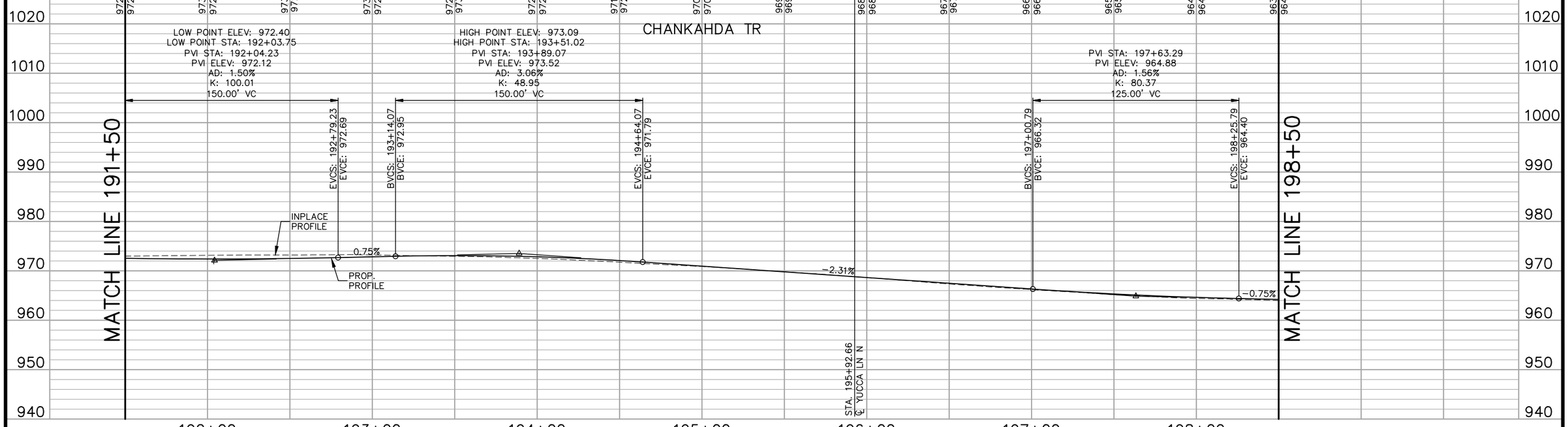
LEGEND

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 193-195 FOR DETAILS.

NOTES:
1. ALL DIMENSIONS ARE TO FACE OF CURB UNLESS OTHERWISE NOTED.
2. SEE SHEET 161-163 FOR ADDITIONAL AND SIDE STREET PROFILES.

LEGEND

- BIT. PAVEMENT (INSET A)
- BIT TRAIL (INSET B)
- 4" CONC. WALK (INSET C)
- 6" CONC. WALK (INSET D)
- BIT. PAVEMENT (INSET E)
- 8" CONC. APRON (INSET F)
- LIGHT POLE – BY OTHERS



No.	Date	Revisions	App.

DRAWING NAME: CHANKAHDA_PH3_PlanProfile.dwg

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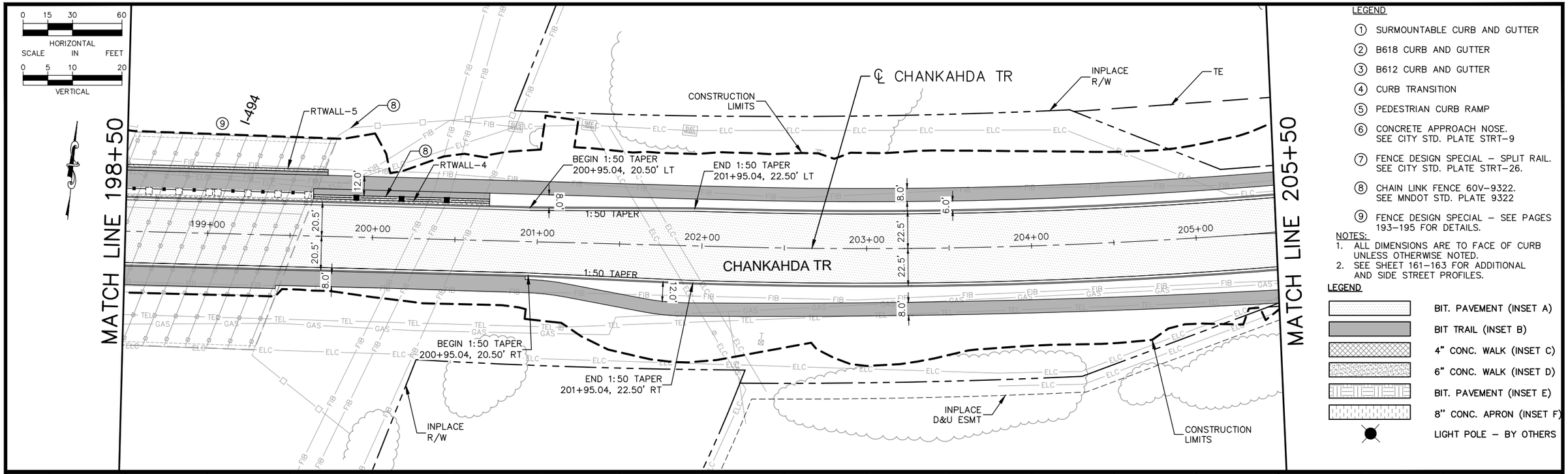
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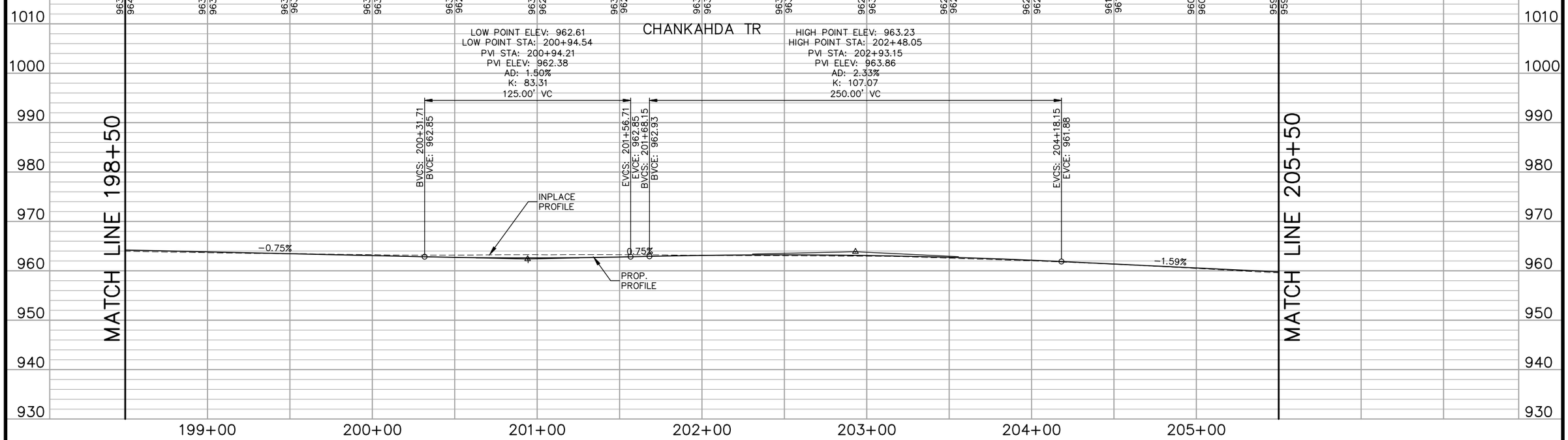
City of Plymouth

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. 155 / 348





No.	Date	Revisions	App.

DRAWING NAME	CHANKAHDA_PH3_PlanProfile.dwg
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DATE:	11/04/2024
PROJECT NO.	160662010

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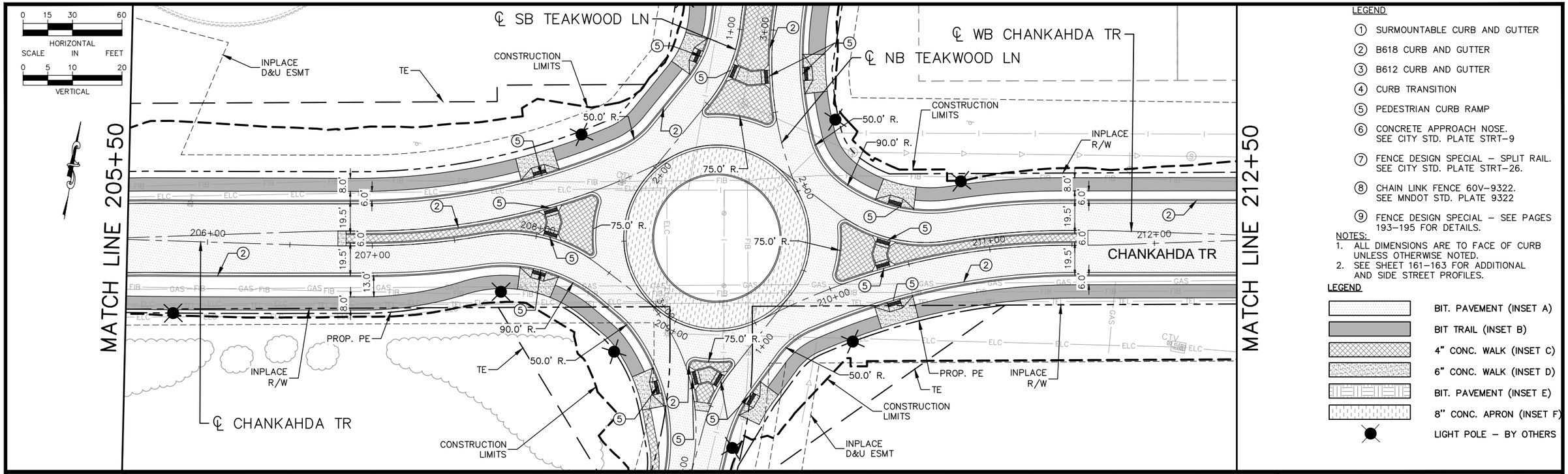
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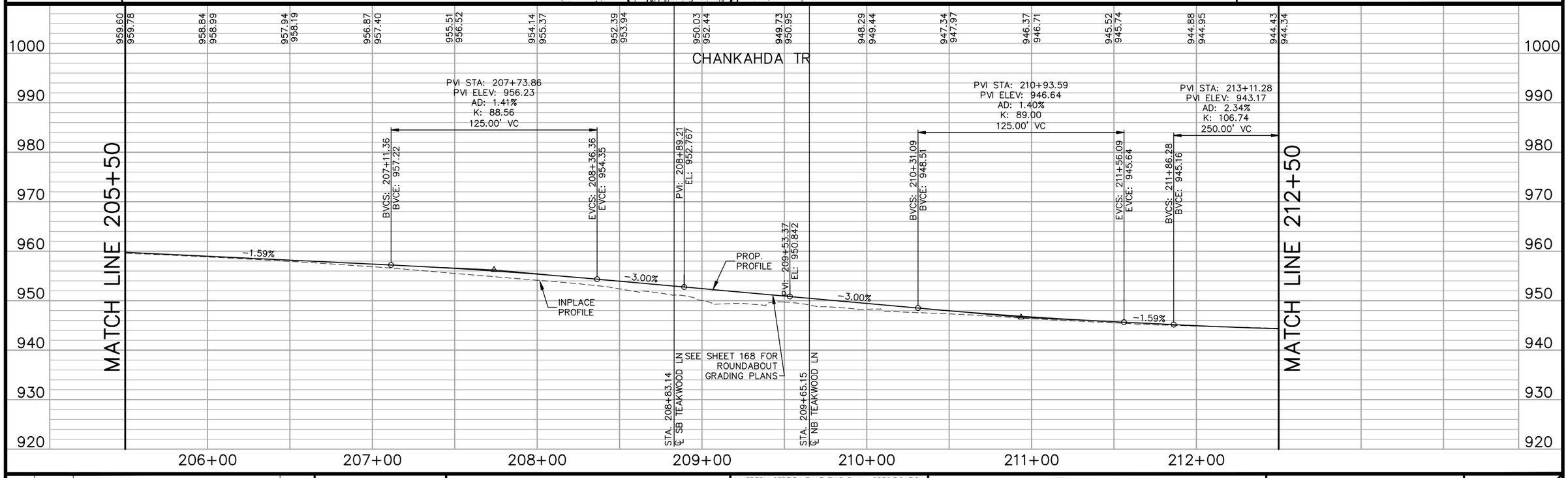
City of Plymouth

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. 156 / 348





No.	Date	Revisions	App.

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CHADD B. LARSON, PE

DATE: 11/04/2024 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. 157 / 348

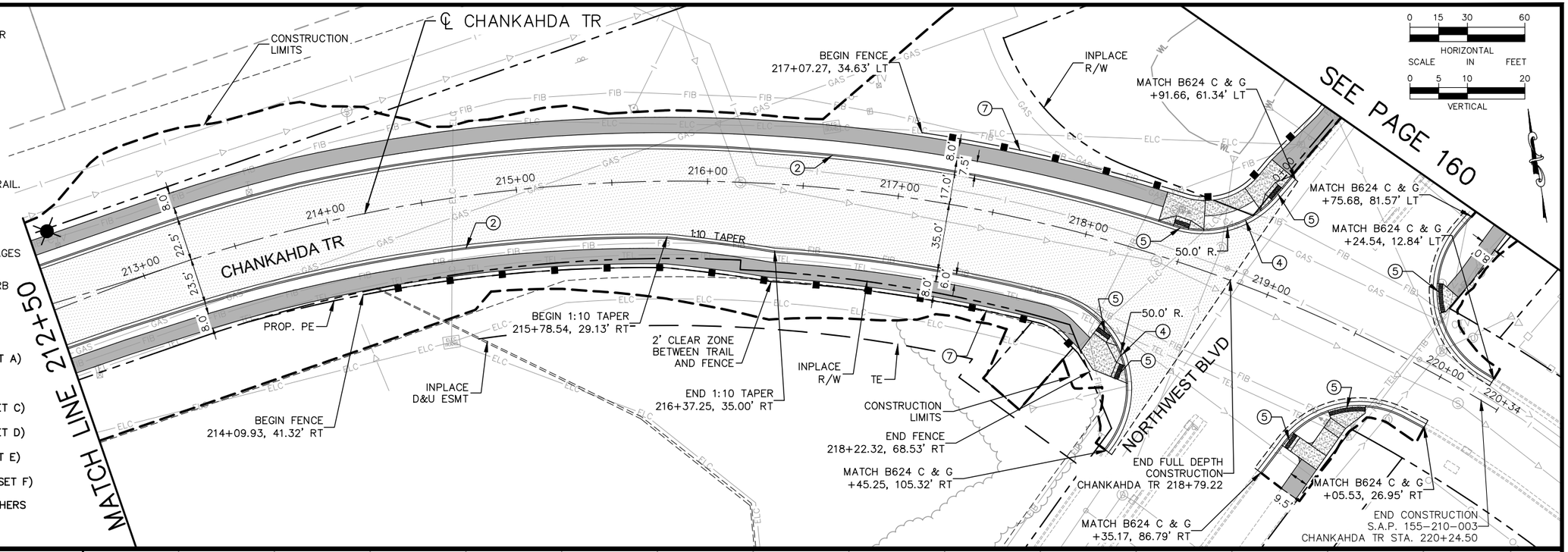
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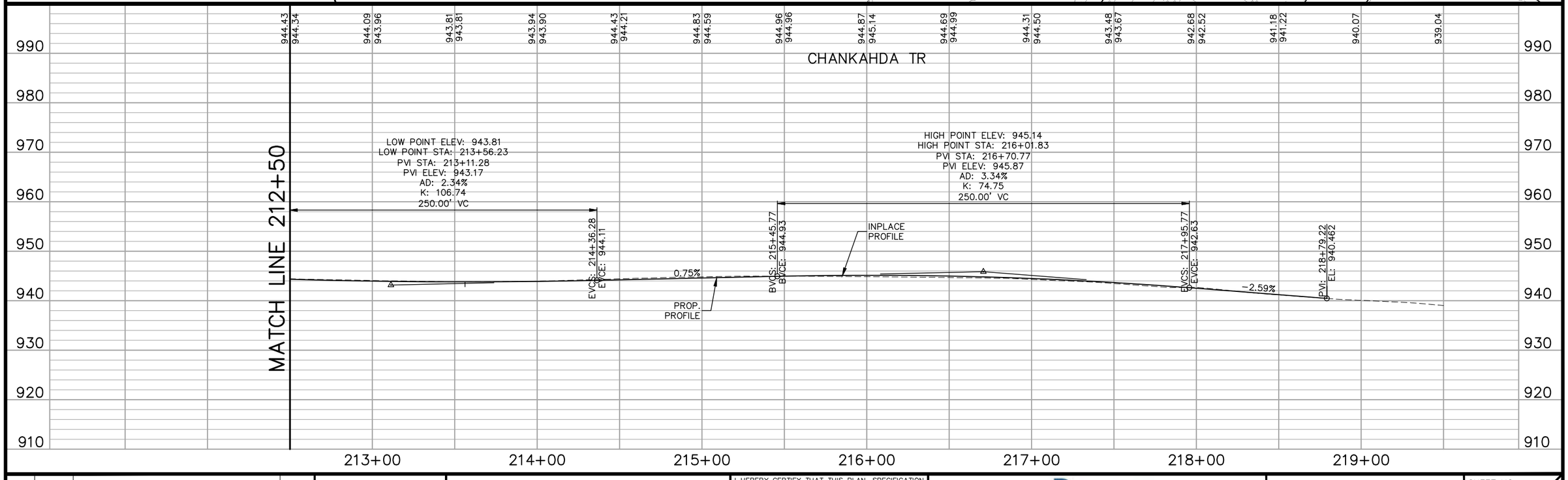
1. SURMOUNTABLE CURB AND GUTTER
2. B618 CURB AND GUTTER
3. B612 CURB AND GUTTER
4. CURB TRANSITION
5. PEDESTRIAN CURB RAMP
6. CONCRETE APPROACH NOSE. SEE CITY STD. PLATE STRT-9
7. FENCE DESIGN SPECIAL – SPLIT RAIL. SEE CITY STD. PLATE STRT-26.
8. CHAIN LINK FENCE 60V-9322. SEE MNDOT STD. PLATE 9322
9. FENCE DESIGN SPECIAL – SEE PAGES 193-195 FOR DETAILS.

NOTES:
1. ALL DIMENSIONS ARE TO FACE OF CURB UNLESS OTHERWISE NOTED.
2. SEE SHEET 161-163 FOR ADDITIONAL AND SIDE STREET PROFILES.

LEGEND

- BIT. PAVEMENT (INSET A)
- BIT TRAIL (INSET B)
- 4" CONC. WALK (INSET C)
- 6" CONC. WALK (INSET D)
- BIT. PAVEMENT (INSET E)
- 8" CONC. APRON (INSET F)
- LIGHT POLE – BY OTHERS





No.	Date	Revisions	App.

DRAWING NAME: CHANKAHDA_PH3_PlanProfile.dwg

DESIGNED BY:	JWB
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PROJECT NO.	160662010

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767 EUSTIS STREET, SUITE 100, ST, PAUL, MN 55114
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CHADD B. LARSON, PE
DATE: 11/04/2024 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. 158 / 348

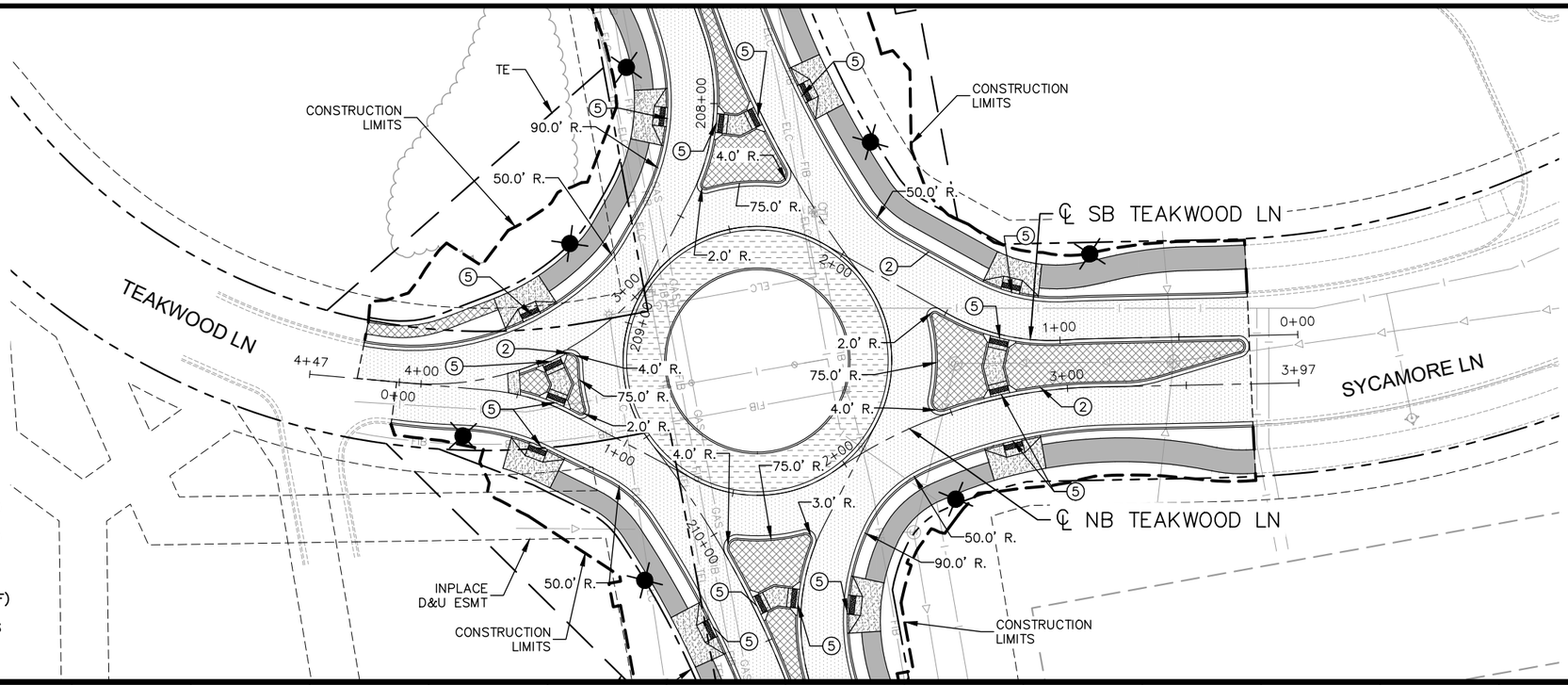
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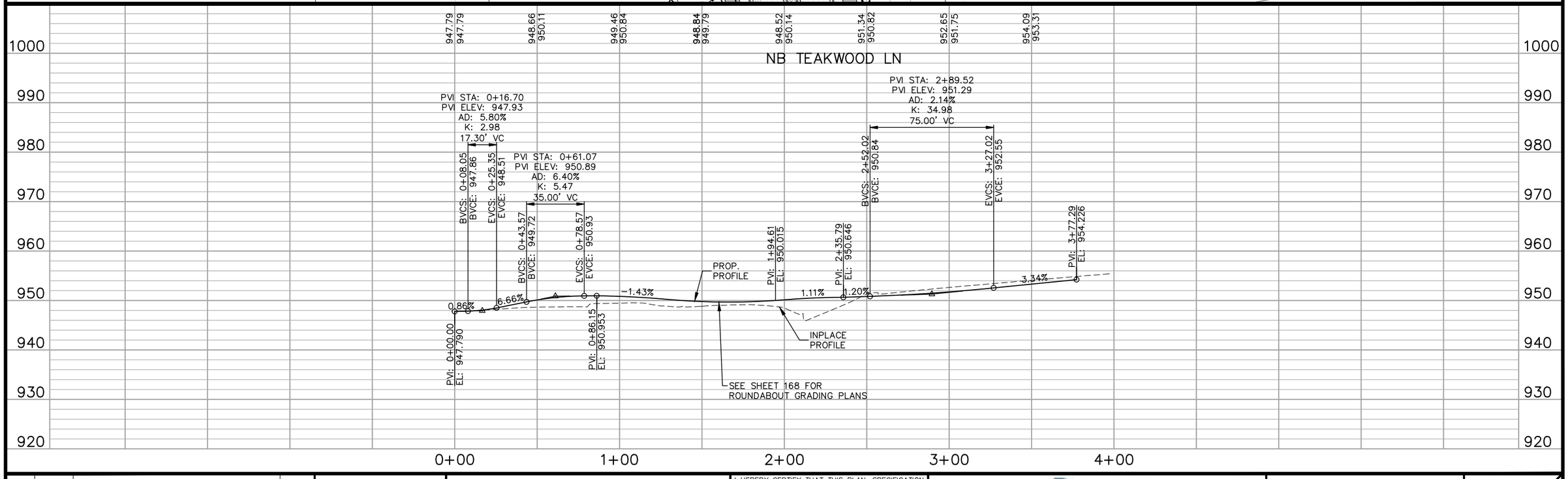
1. SURMOUNTABLE CURB AND GUTTER
2. B618 CURB AND GUTTER
3. B612 CURB AND GUTTER
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5. PEDESTRIAN CURB RAMP
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NOTES:
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LEGEND

- BIT. PAVEMENT (INSET A)
- BIT TRAIL (INSET B)
- 4" CONC. WALK (INSET C)
- 6" CONC. WALK (INSET D)
- BIT. PAVEMENT (INSET E)
- 8" CONC. APRON (INSET F)
- LIGHT POLE – BY OTHERS





No.	Date	Revisions	App.

DRAWING NAME: CHANKAHDA_PH3_PlanProfile.dwg

DESIGNED BY:	JWB
DRAWN BY:	RGS
CHECKED BY:	CBL
DATE:	11/04/2024
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: 11/04/2024 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. 159 / 348

LEGEND

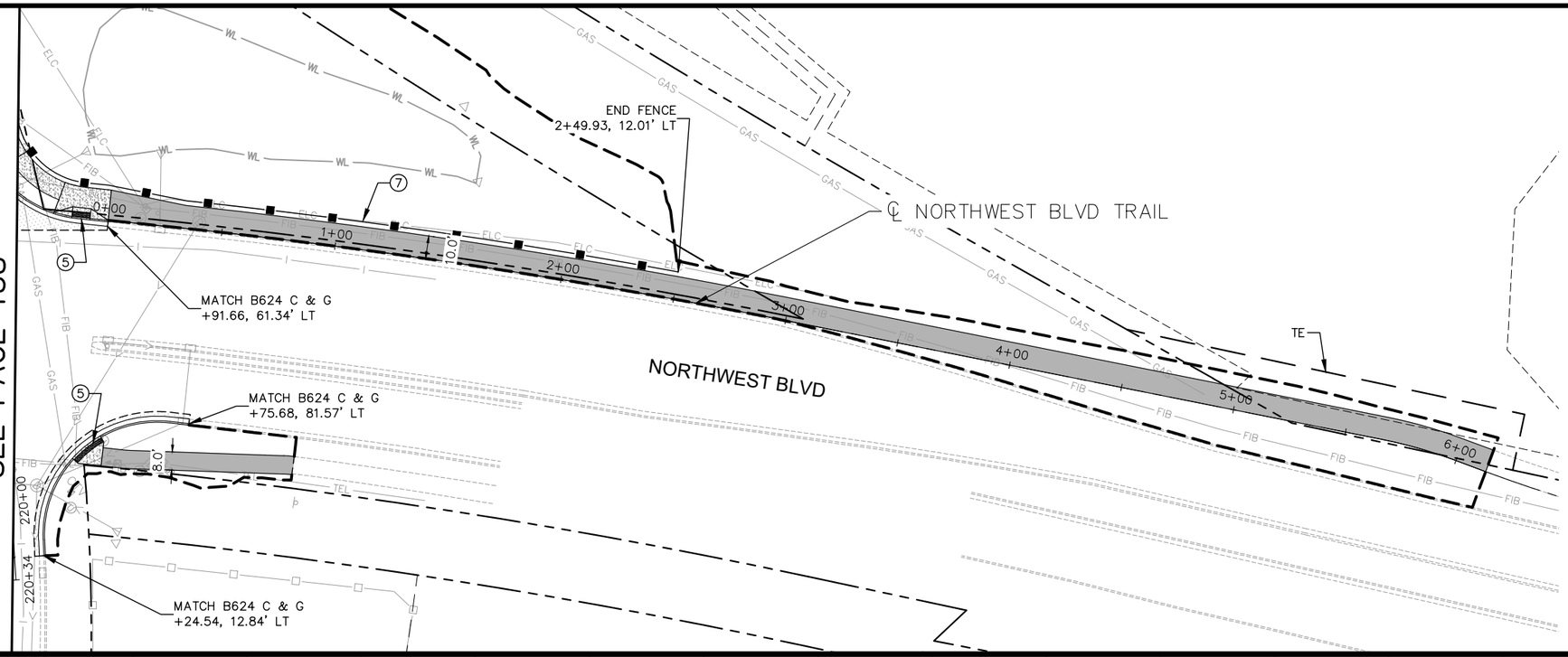
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2. B618 CURB AND GUTTER
3. B612 CURB AND GUTTER
4. CURB TRANSITION
5. PEDESTRIAN CURB RAMP
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LEGEND

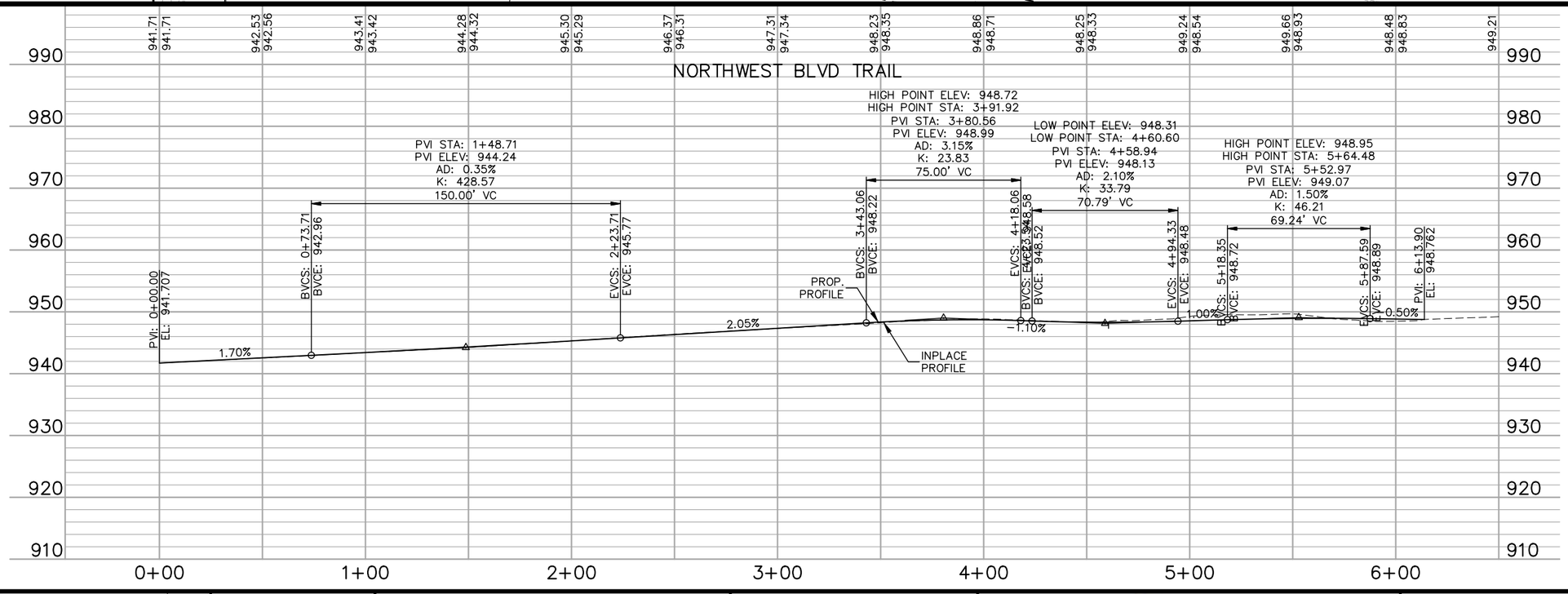
- BIT. PAVEMENT (INSET A)
- BIT TRAIL (INSET B)
- 4" CONC. WALK (INSET C)
- 6" CONC. WALK (INSET D)
- BIT. PAVEMENT (INSET E)
- 8" CONC. APRON (INSET F)
- LIGHT POLE – BY OTHERS

SEE PAGE 158



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:	11/04/2024
PROJECT NO.	160662010

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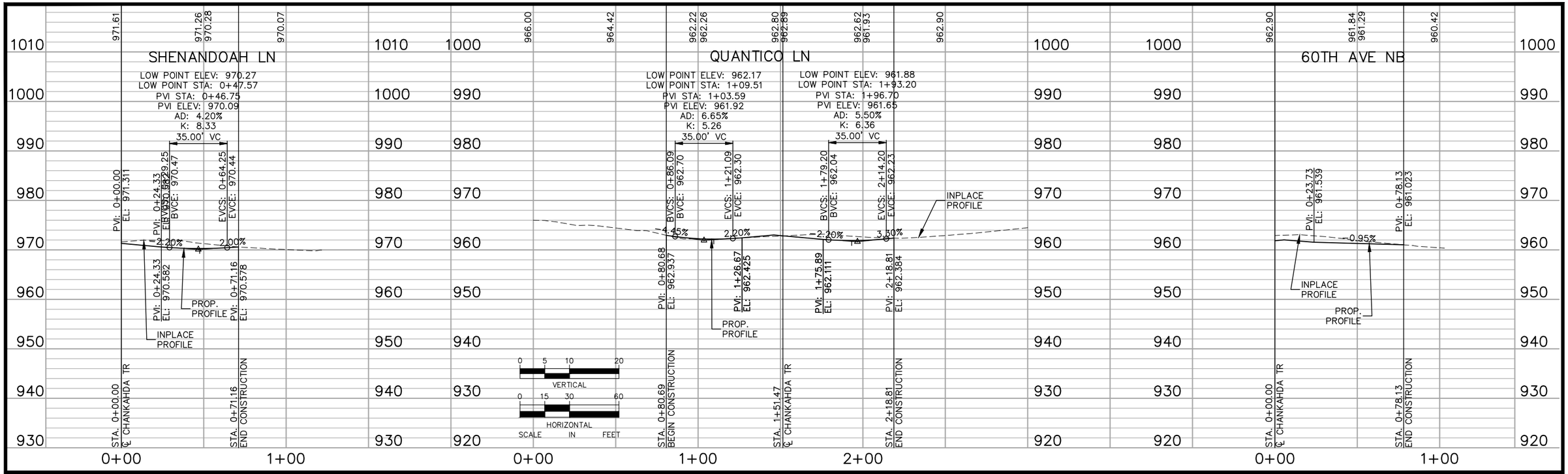
CHADD B. LARSON, PE
DATE: 11/04/2024 MN LIC. NO. 41864

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.	

SHEET NO. 160 / 348



No.	Date	Revisions	App.

DRAWING NAME: CHANKAHDA_PH3_PlanProfile.dwg

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PROJECT NO.	160662010

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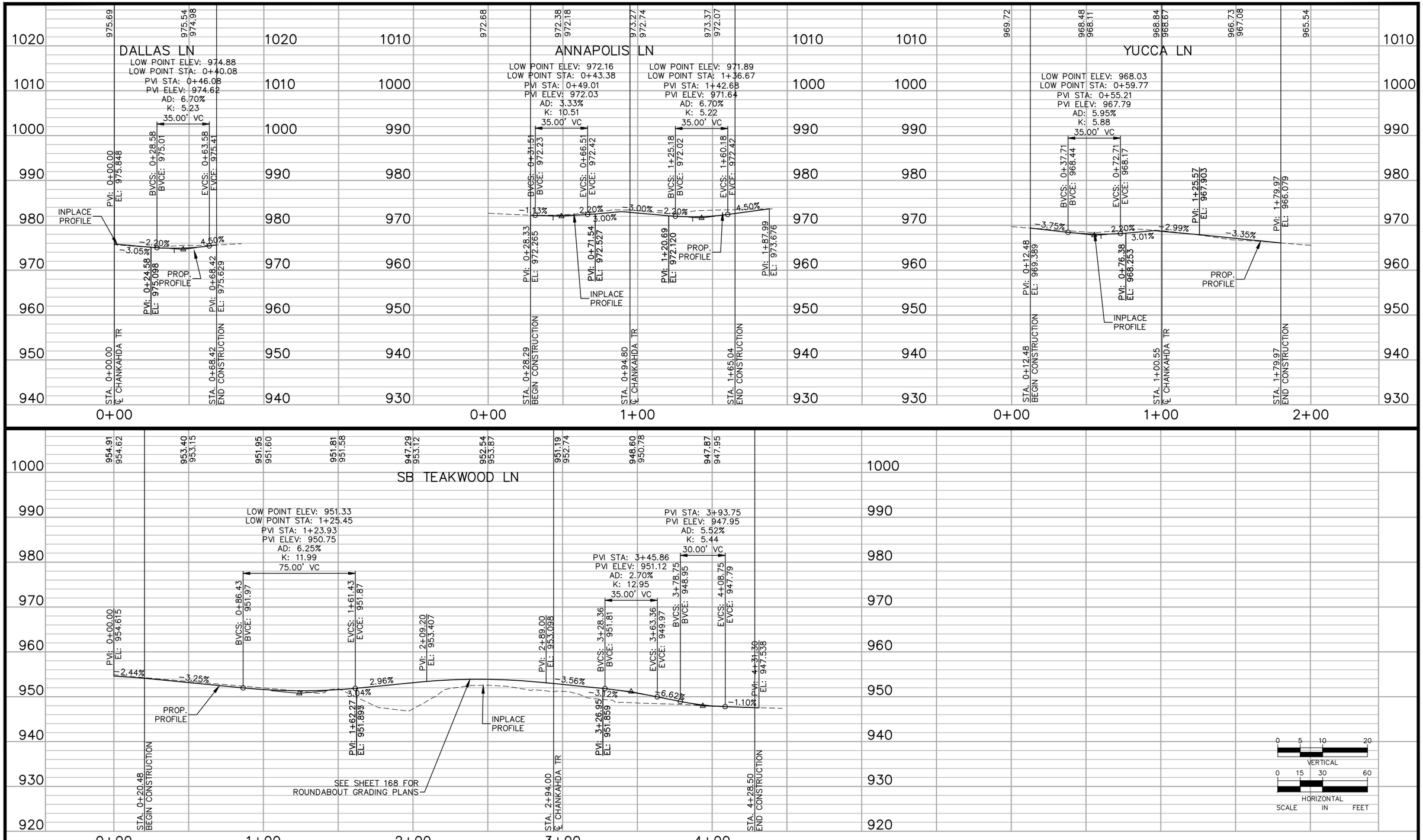
DATE: 11/04/2024 MN LIC. NO. 41864

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. 161 / 348



No.	Date	Revisions	App.

DRAWING NAME: CHANKAHDA_PH3_PlanProfile.dwg

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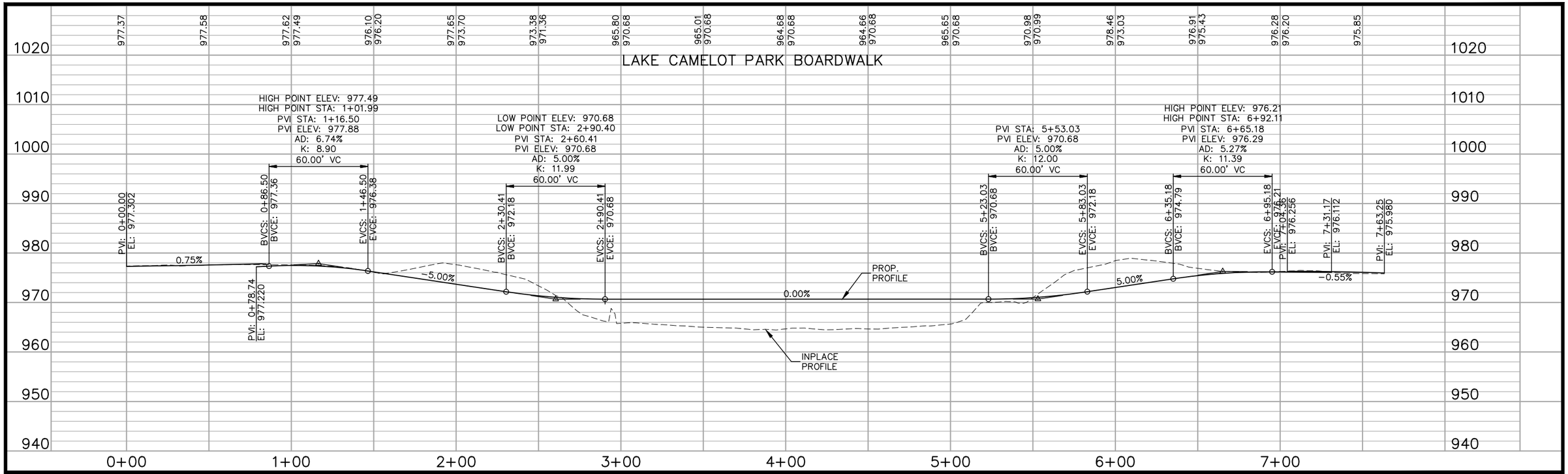
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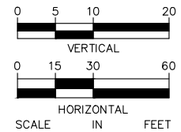
City of Plymouth

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. 162 / 348





No.	Date	Revisions	App.

DRAWING NAME	CHANKAHDA_PH3_PlanProfile.dwg
DESIGNED BY:	168
DRAWN BY:	RGS
CHECKED BY:	CBL
DATE:	11/04/2024
PROJECT NO.	160662010

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CHADD B. LARSON, PE

DATE: 11/04/2024 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. 163 / 348

BMP 1 – WET POND
BOTTOM ELEV. 948.60
NWL: 951.4
HWL: 954.5

EX–OCS–1
LOWER WEIR – SEE OCS DETAILS

EOF: 954.5

CONSTRUCTION LIMITS

6035 QUANTICO LA N

6025 QUANTICO LA N

6015 QUANTICO LA N

STR–118

STR–116

STR–114

INPLACE R/W

℄ CHANKAHDA TR

CHANKAHDA TR

1+00

2+00

3+00

3+72

126+00

127+00

128+00

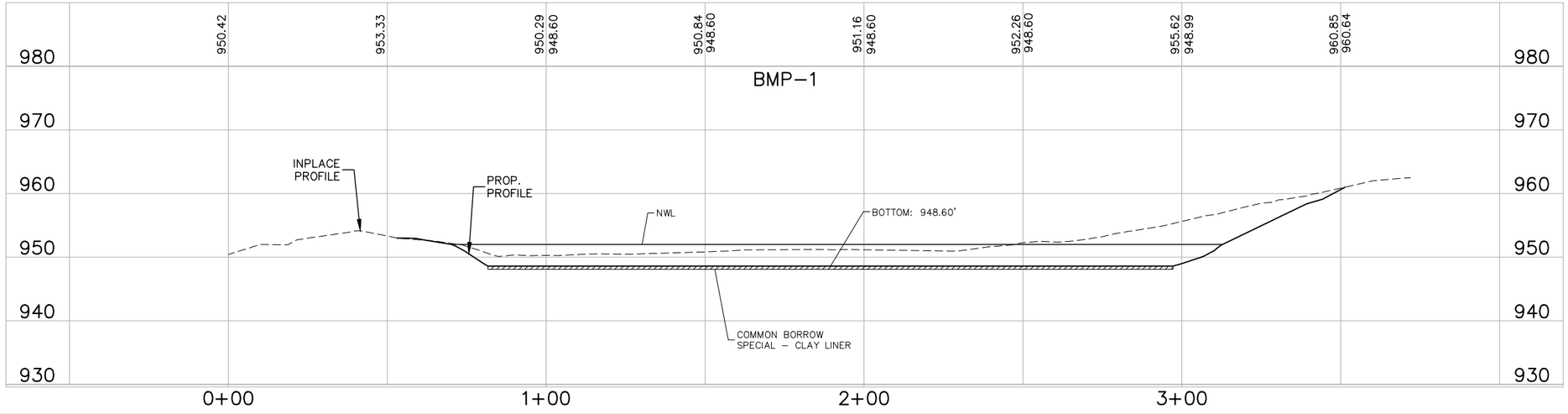
129+00

130+00

1:3

1:5

0 10 20 40
HORIZONTAL SCALE IN FEET



No.	Date	Revisions	App.

DRAWING NAME: CHANKAHDA_PH3_Grading.dwg
DESIGNED BY: JWB
DRAWN BY: RGS
CHECKED BY: CBL
DATE: 11/04/2024
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.

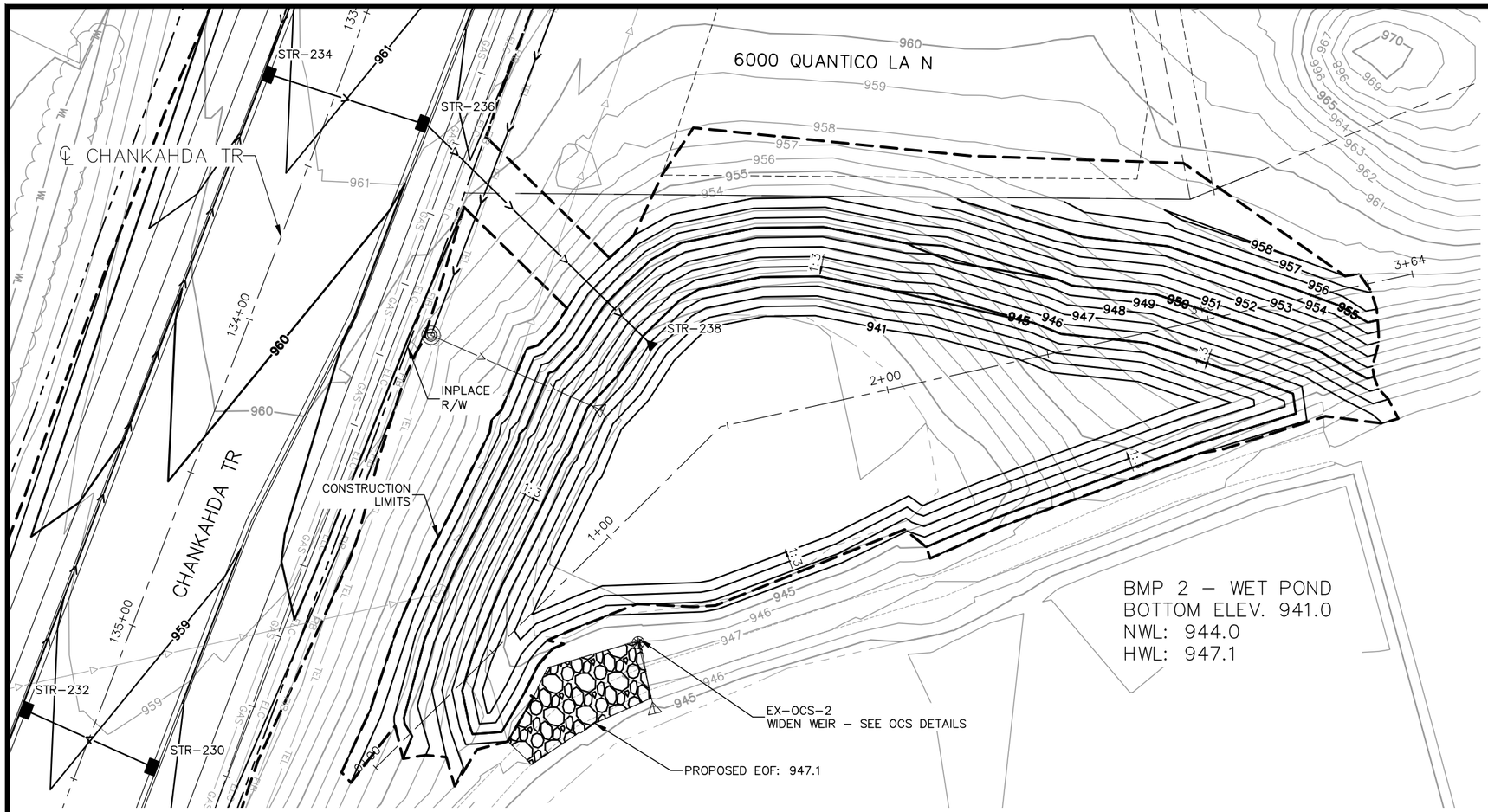
CHADD B. LARSON, PE
DATE: 11/04/2024 MN LIC. NO. 41864

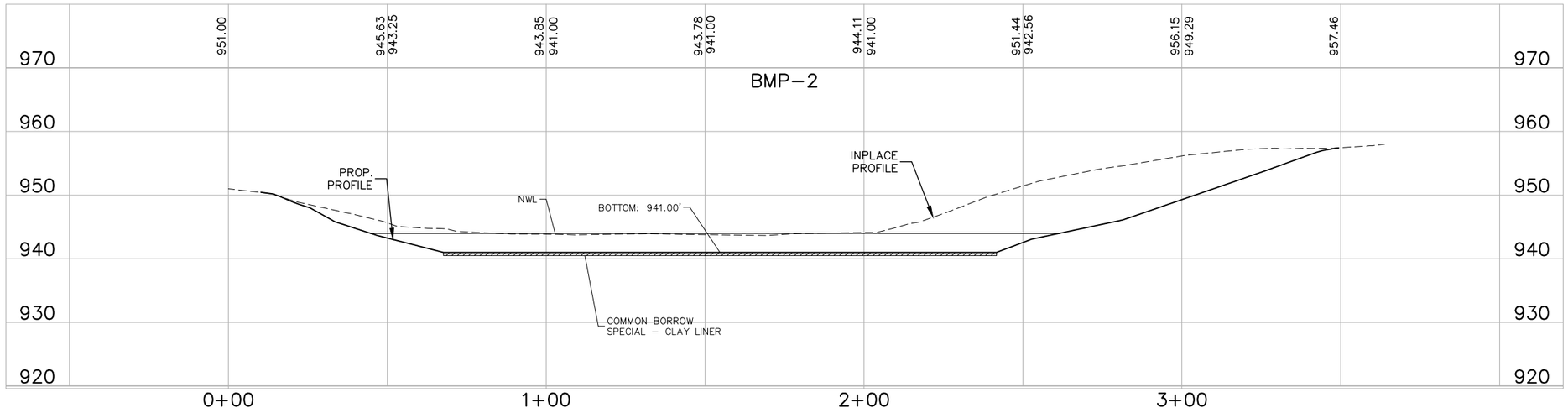
City of Plymouth
CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3

CHANKAHDA TR
BMP 1

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

SHEET NO. 164 / 348





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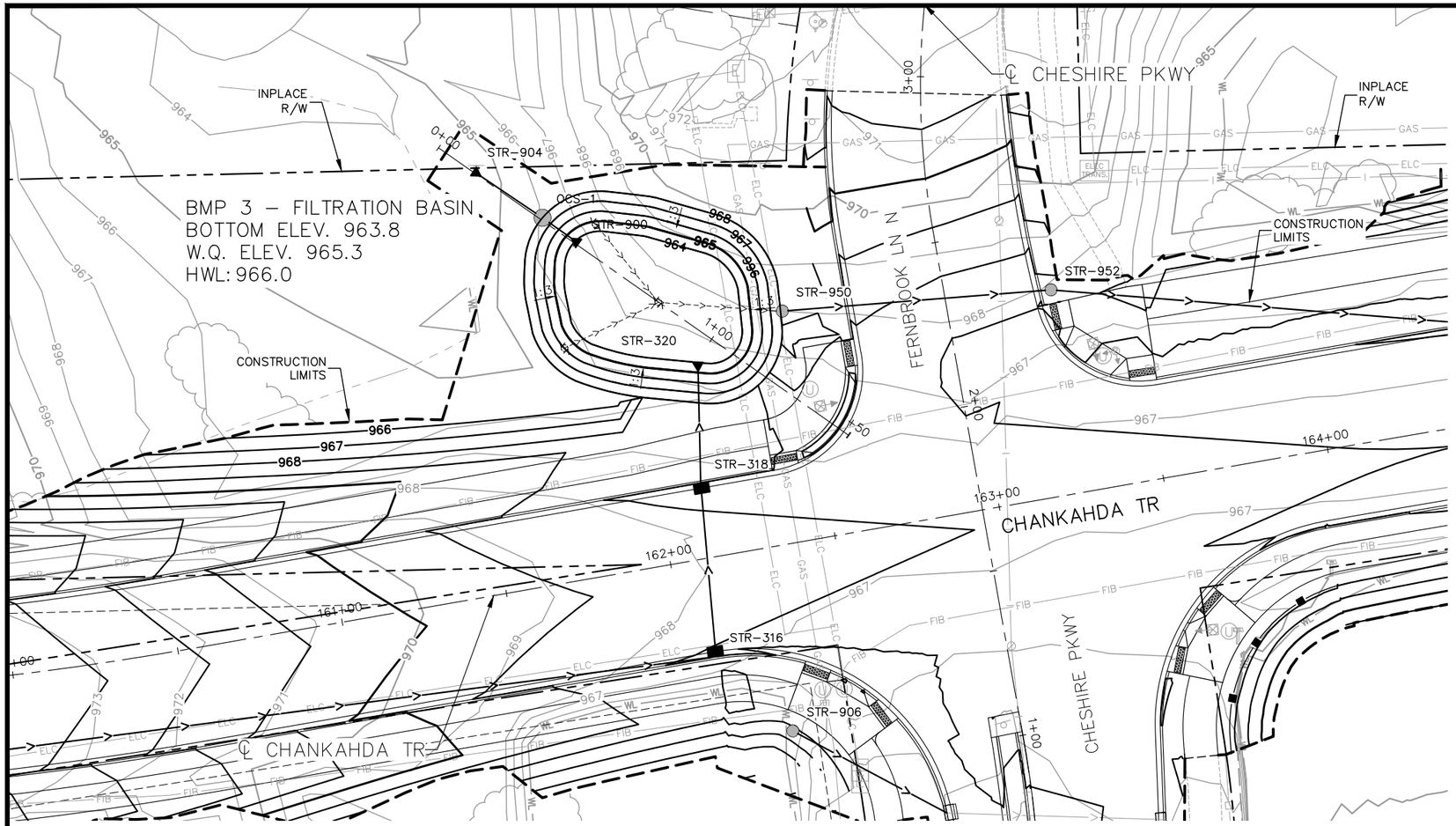
City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3

CHANKAHDA TR
BMP 2

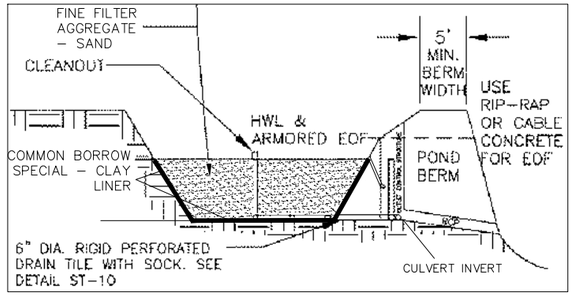
CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 165 / 348

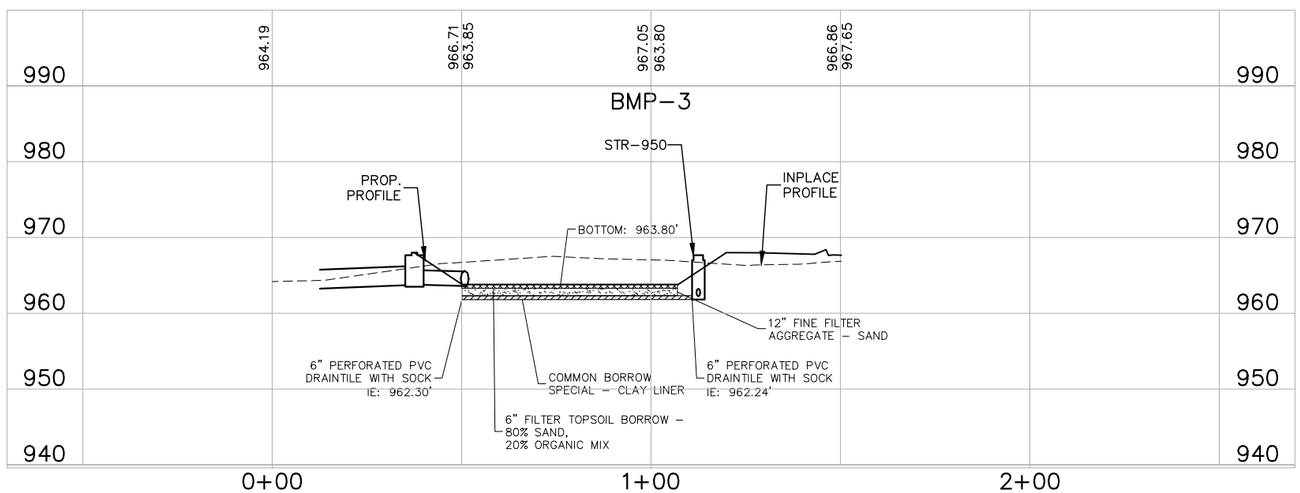


0 10 20 40

HORIZONTAL SCALE IN FEET



TYPICAL BMP PROFILE DETAIL



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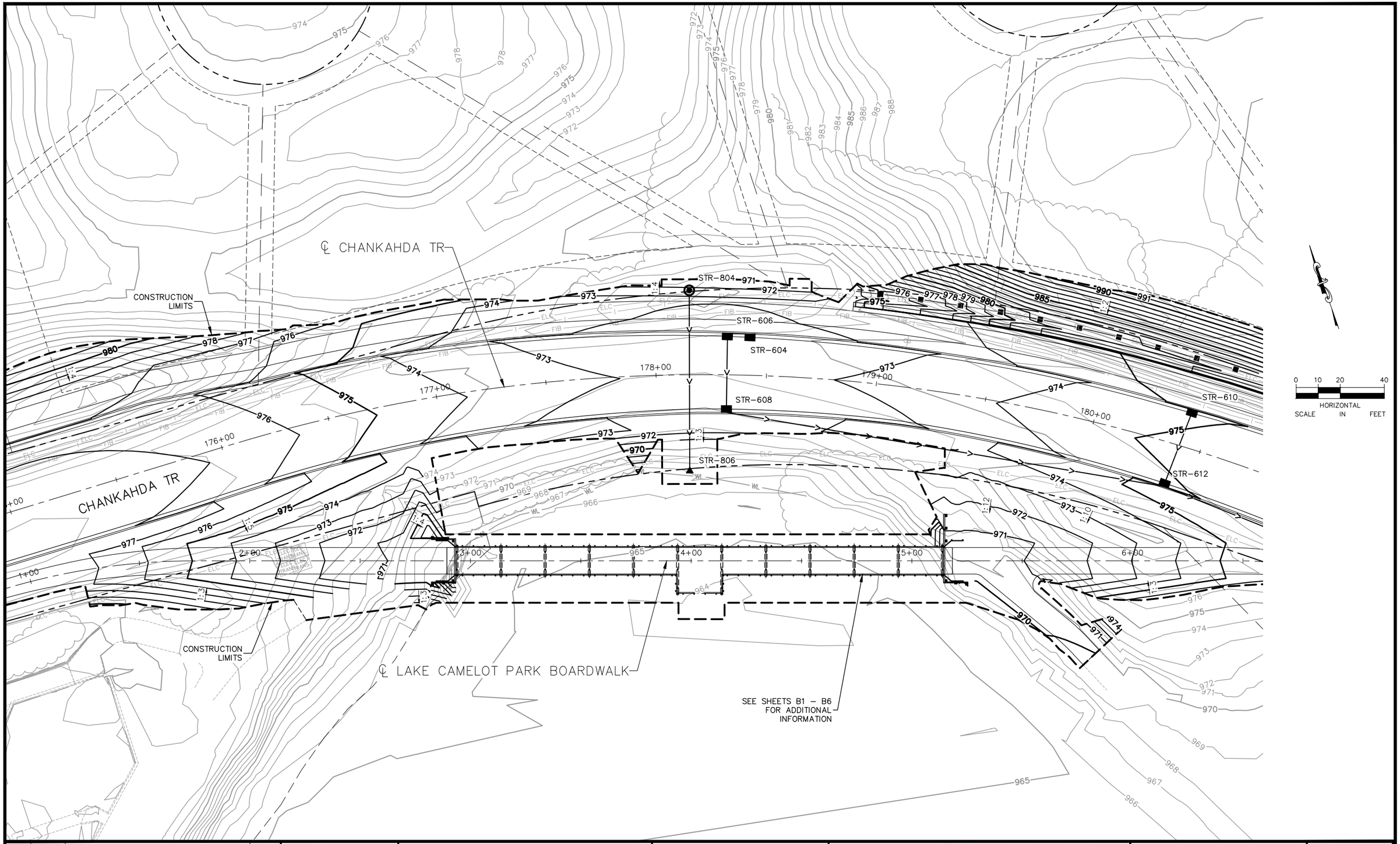
City of Plymouth

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. 166 / 348



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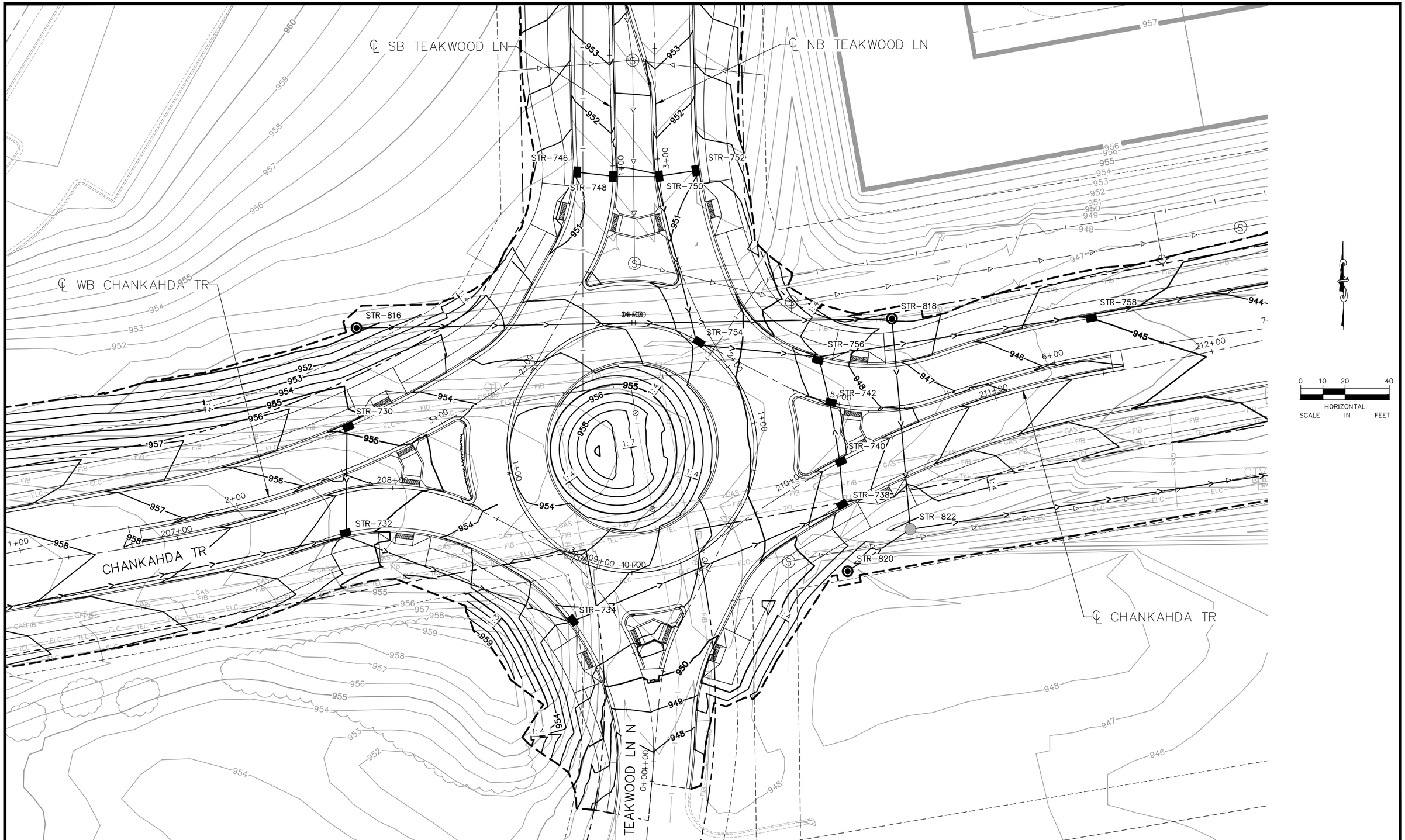
City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3

CHANKAHDA TR
BOARDWALK

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

SHEET NO.
167
348



No.	Date	Revisions	App.

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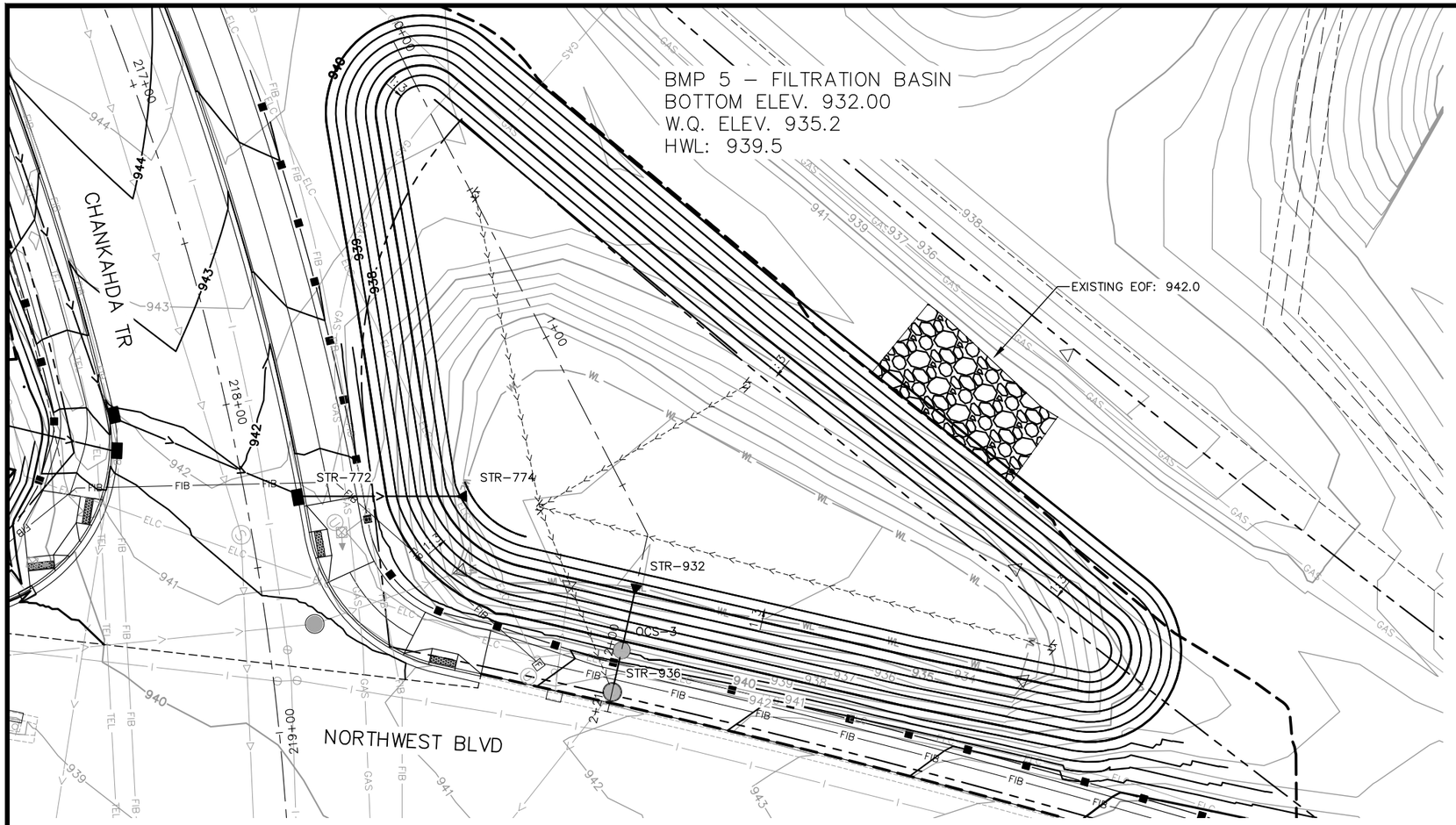
City of Plymouth

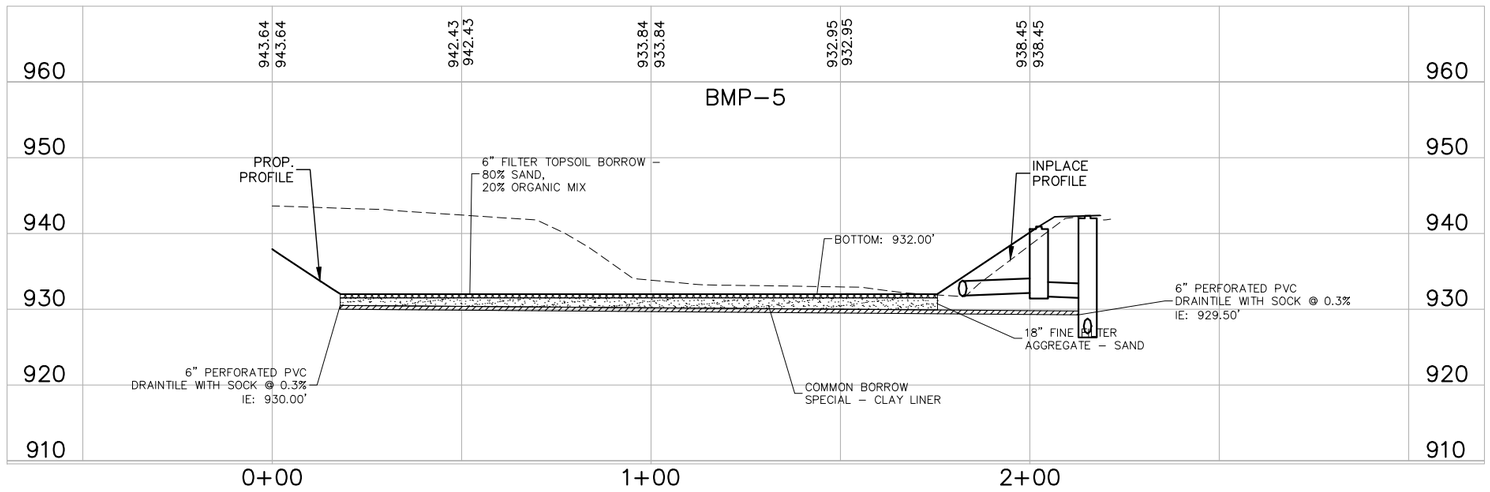
CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3

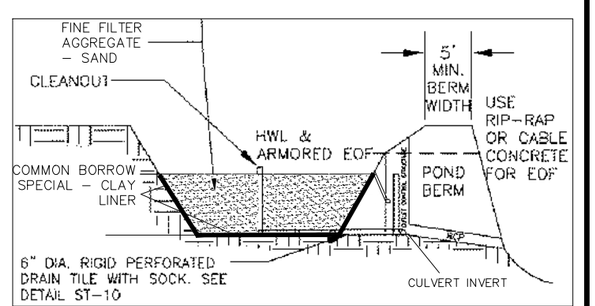
CHANKAHDA TR
ROUNDABOUT

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

SHEET NO.
168
348







TYPICAL BMP PROFILE DETAIL

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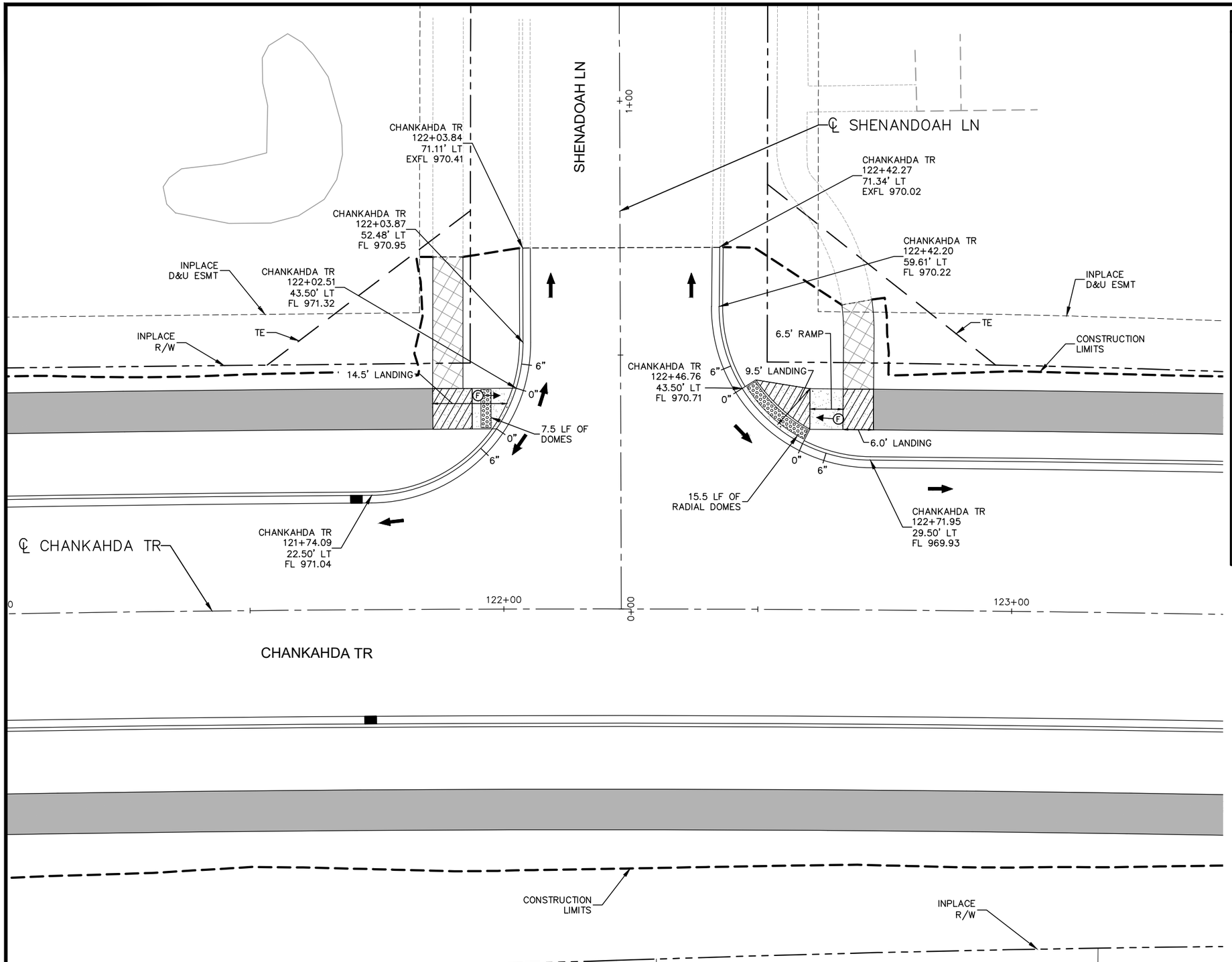
City of Plymouth

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. 169 / 348



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
- 8" CONC. APRON
- 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.

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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. 170 / 348

℄ QUANTICO LN

QUANTICO LN

CHANKAHDA TR
131+57.39
67.50' LT
EXFL 962.14

CHANKAHDA TR
131+57.90
58.17' LT
FL 961.96

CHANKAHDA TR
131+64.20
40.97' LT
FL 962.15

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

INPLACE R/W

9.5' LANDING

9.5' LANDING

6"
0"
6"
0"
6"
0"

7.5 LF OF DOMES

15.5 LF OF RADIAL DOMES

CHANKAHDA TR
131+00.29
22.50' LT
FL 962.78

CHANKAHDA TR
131+87.63
29.50' LT
FL 961.52

2+00

℄ CHANKAHDA TR

131+00

132+00

CHANKAHDA TR

CHANKAHDA TR
132+07.59
22.50' RT
FL 961.87

CHANKAHDA TR
131+82.46
35.88' RT
FL 962.09

CHANKAHDA TR
131+04.28
37.30' RT
FL 962.36

CHANKAHDA TR
130+83.96
29.50' RT
FL 962.80

6"
0"
6"
0"
6"
0"

7.5 LF OF DOMES

4.0' RAMP

7.5 LF OF DOMES

11.0' LANDING

10.5' LANDING

CHANKAHDA TR
131+78.92
43.06' RT
FL 962.00

1+00

CONSTRUCTION LIMITS

INPLACE R/W

CHANKAHDA TR
131+14.22
59.45' RT
FL 961.83

CHANKAHDA TR
131+77.37
52.93' RT
FL 961.80

CHANKAHDA TR
131+77.59
70.46' RT
EXFL 961.68

CHANKAHDA TR
131+14.26
70.96' RT
EXFL 961.78

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
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- GRADING BREAK LINE
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- EXFL — INPLACE FLOW LINE – MATCH EXISTING ELEVATION
- 4" CONC. WALK
- 6" CONC. WALK
- 8" CONC. APRON
- 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

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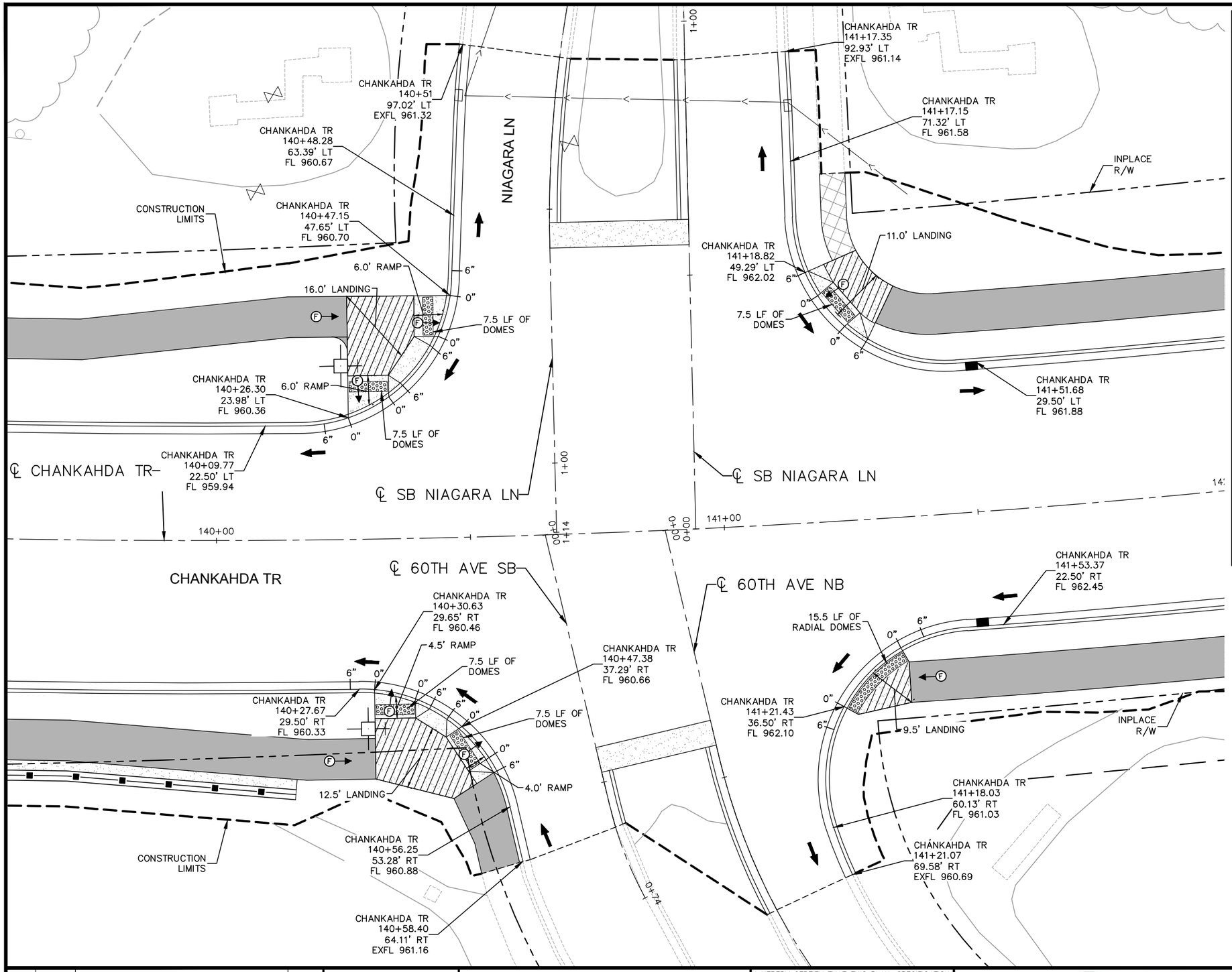
City of Plymouth

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. 171 / 348



LEGEND

- INPLACE SIGNAL POLE
- MODIFY SIGNAL POLE
- PROPOSED SIGNAL POLE
- PEDESTRIAN PUSH BUTTON STATION
- PEDESTRIAN PUSH BUTTON
- XX — CONTROL POINTS
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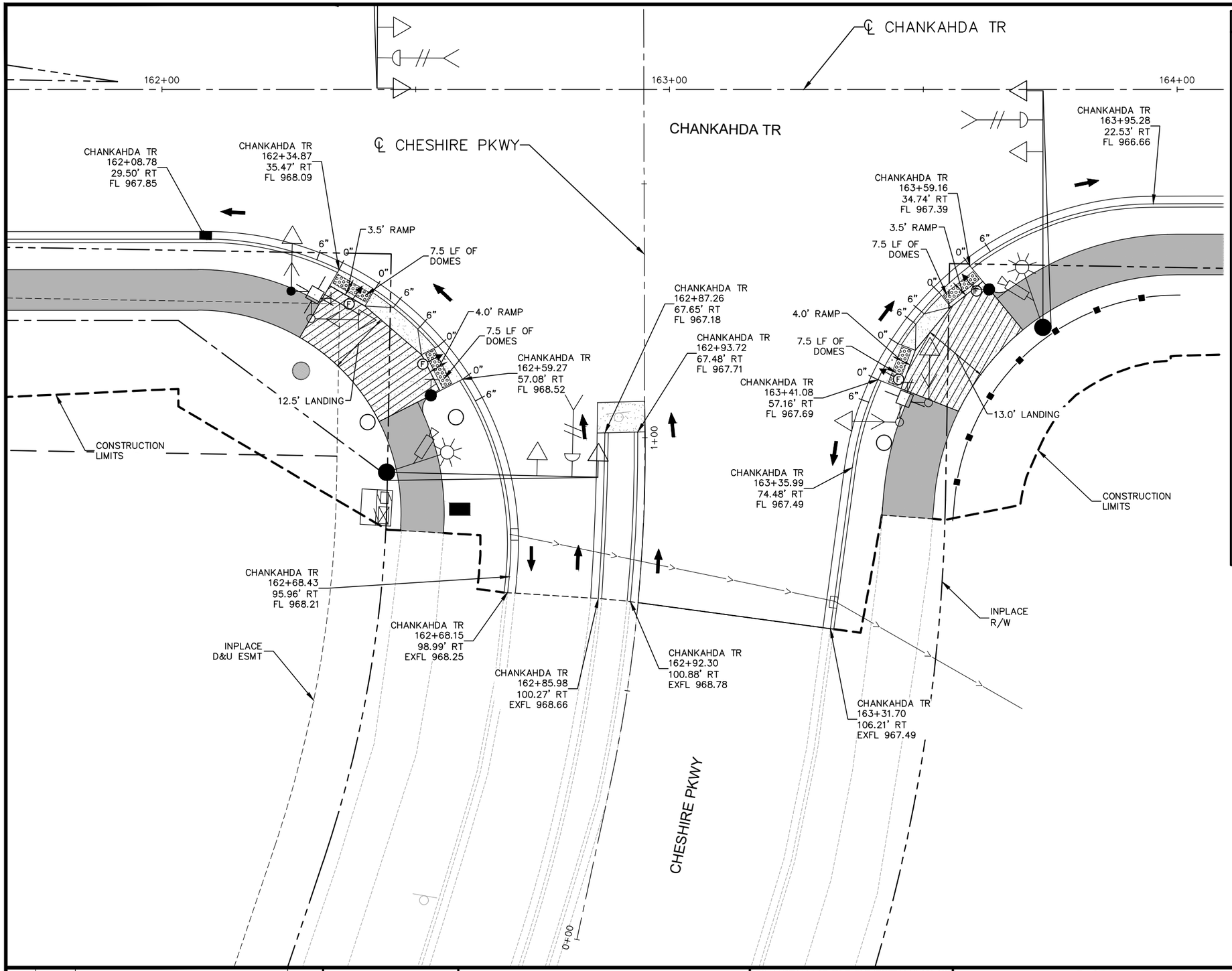
City of Plymouth

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. 172 / 348



LEGEND

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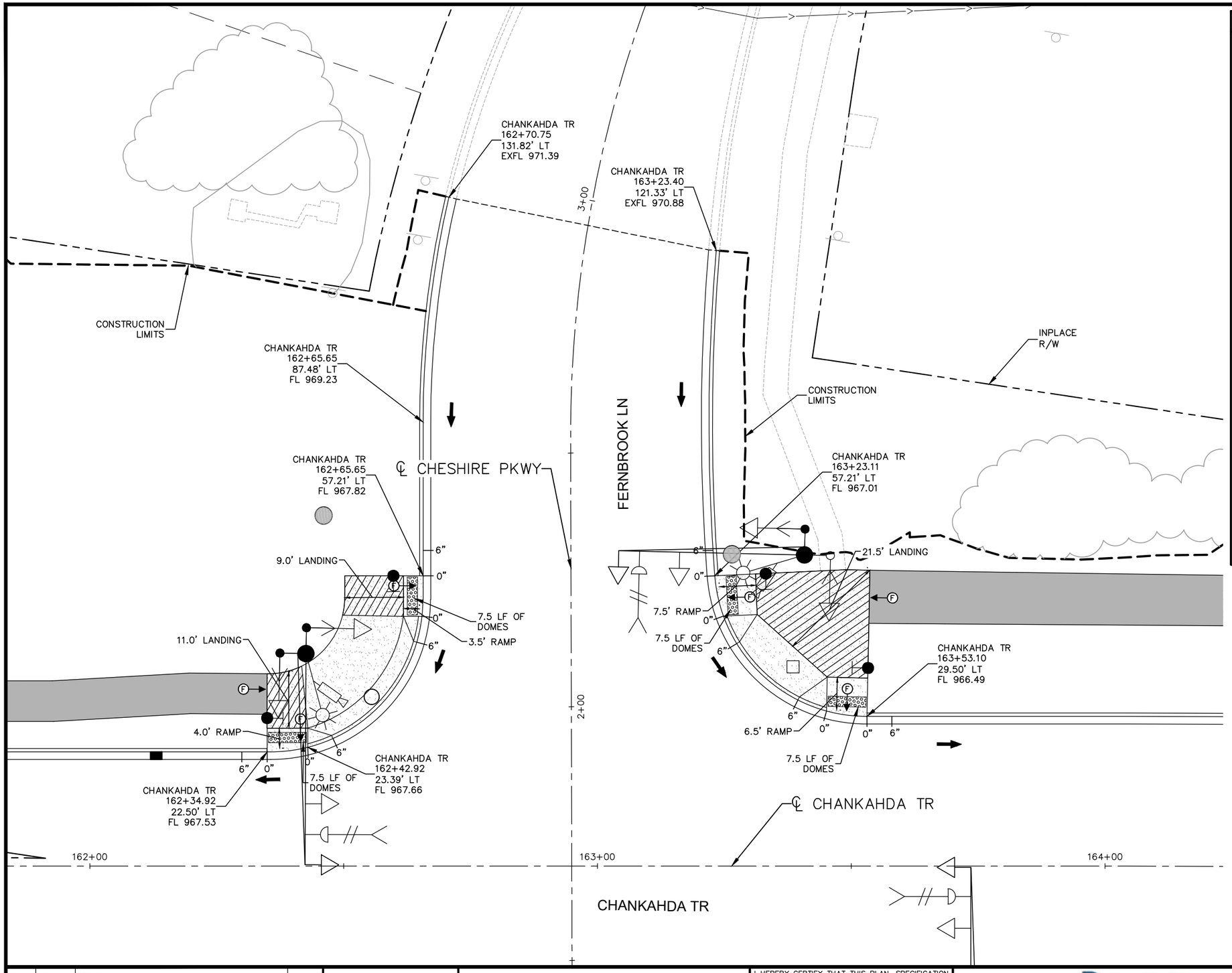
City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3

CHANKAHDA TR
INTERSECTION DETAILS

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COUNTY PROJECT	
S.A.P.	155-210-003
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SHEET NO. 173 / 348



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- DRAINAGE FLOW ARROW
- GRADING BREAK LINE
- FL — FLOW LINE
- EXFL — INPLACE FLOW LINE – MATCH EXISTING ELEVATION
- 4" CONC. WALK
- 6" CONC. WALK
- 8" CONC. APRON
- 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:	11/04/2024
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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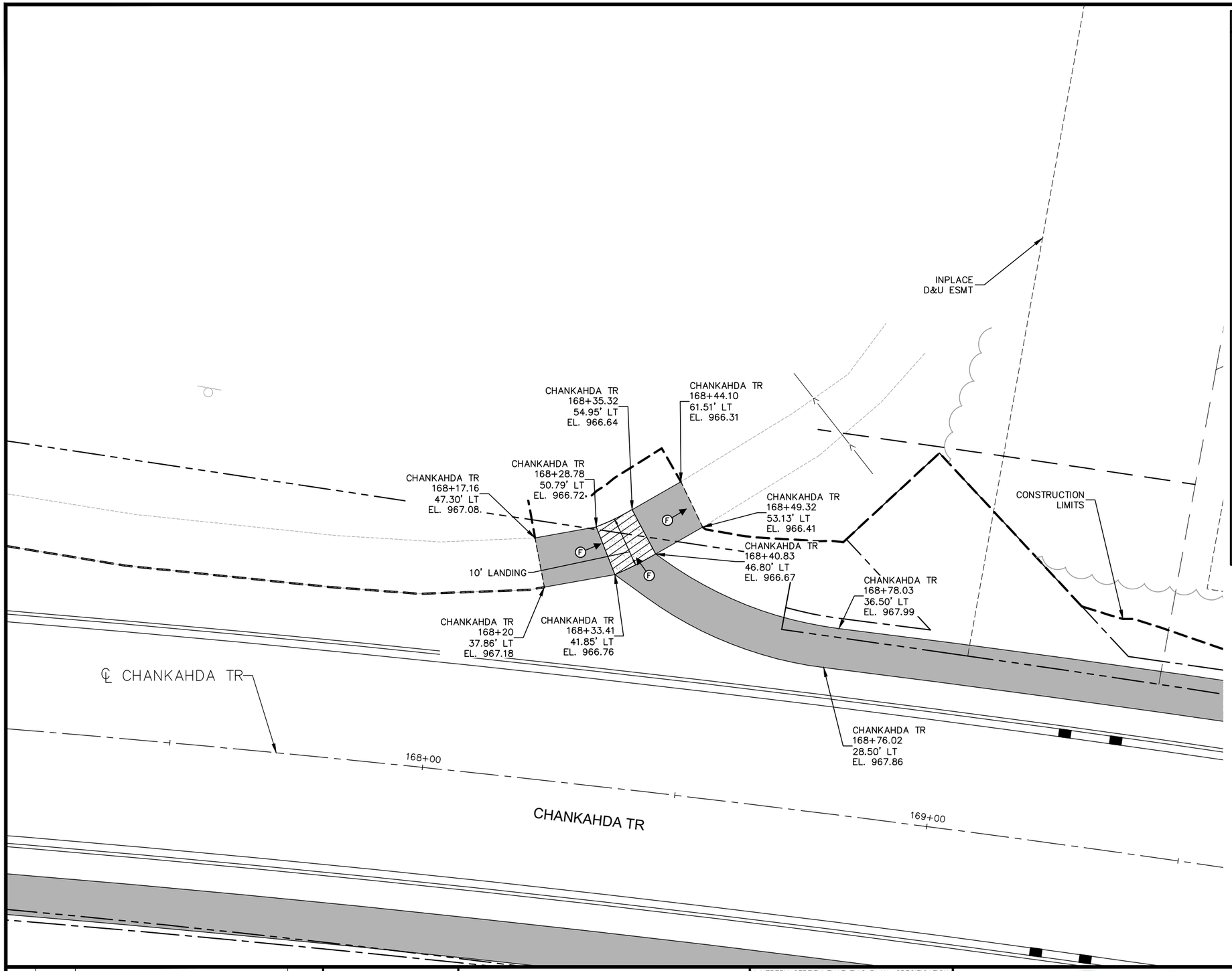
City of Plymouth

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. 174 / 348



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
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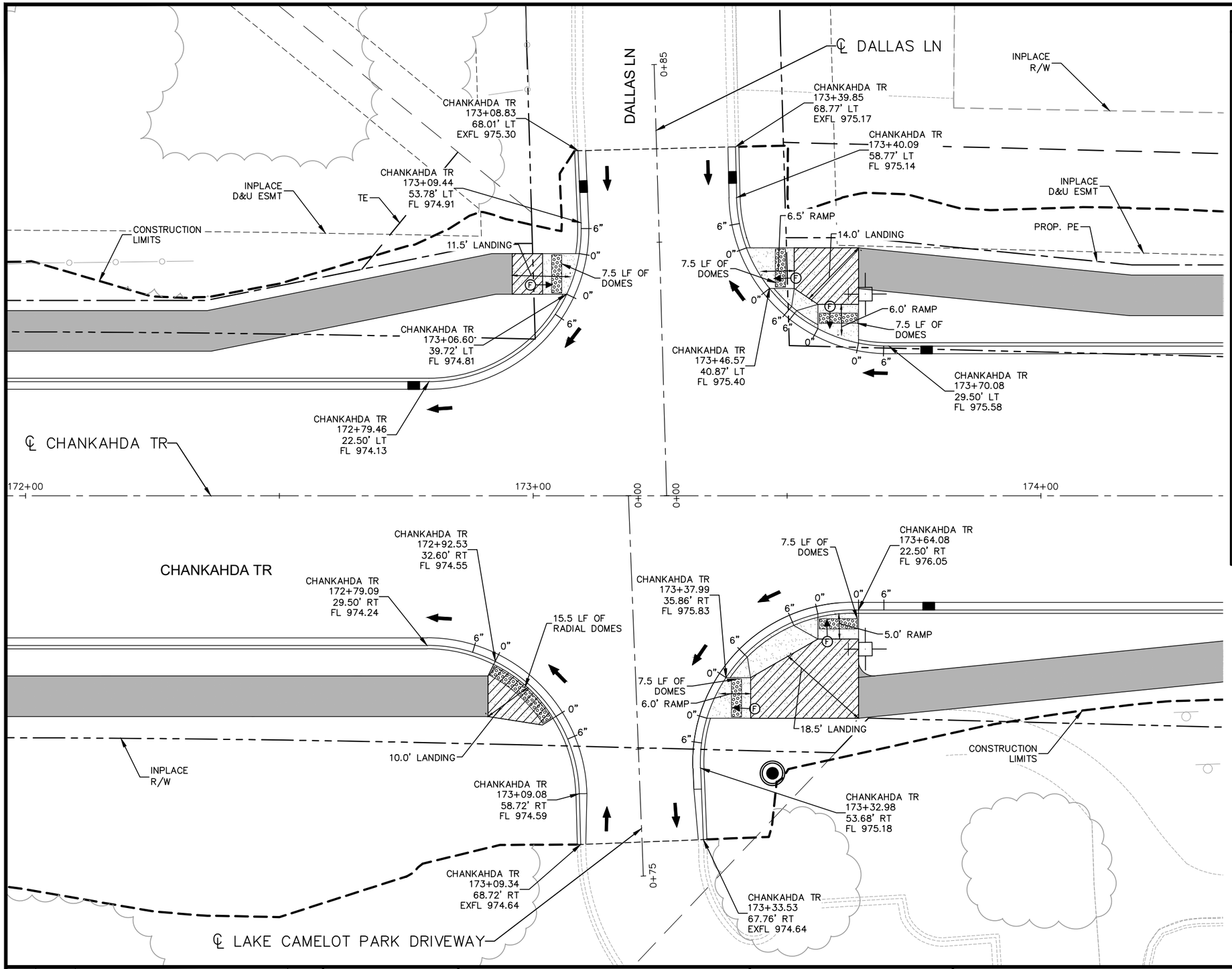
City of Plymouth

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. 175 / 348



LEGEND

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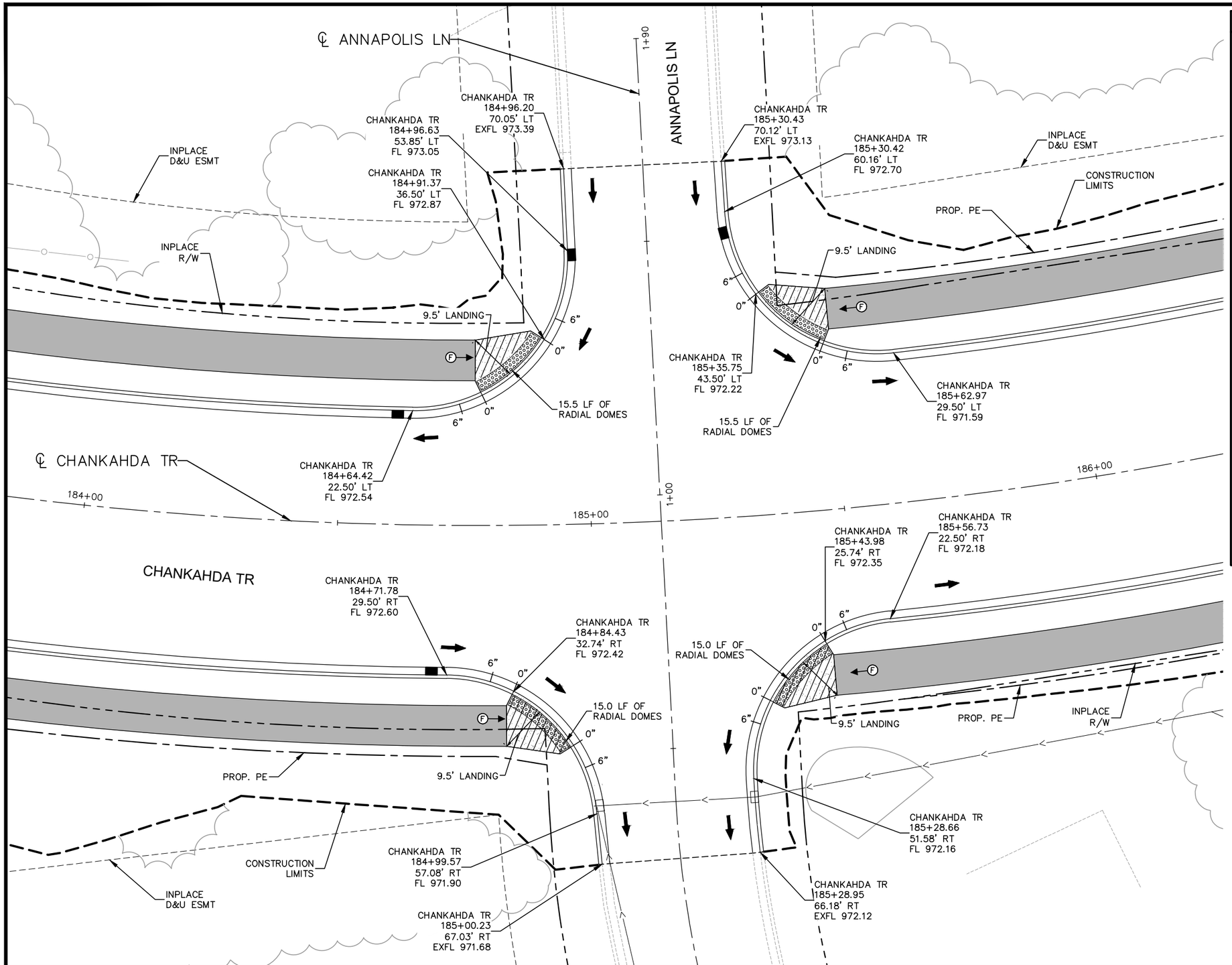
City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3

CHANKAHDA TR
INTERSECTION DETAILS

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
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SHEET NO. 176 / 348



LEGEND

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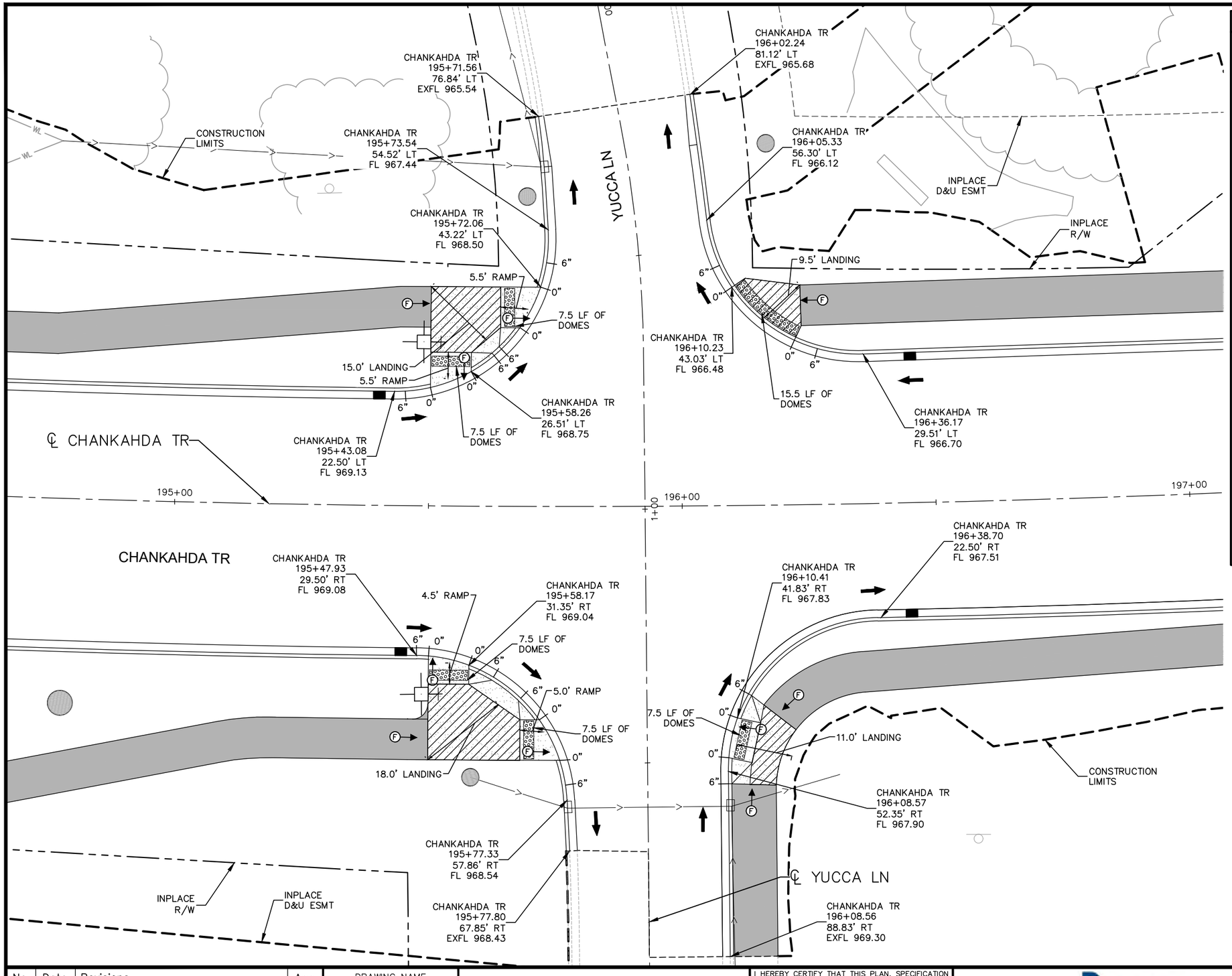
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City of Plymouth
CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3

CHANKAHDA TR
INTERSECTION DETAILS

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COUNTY PROJECT	
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S.A.P.	

SHEET NO. 177 / 348



LEGEND

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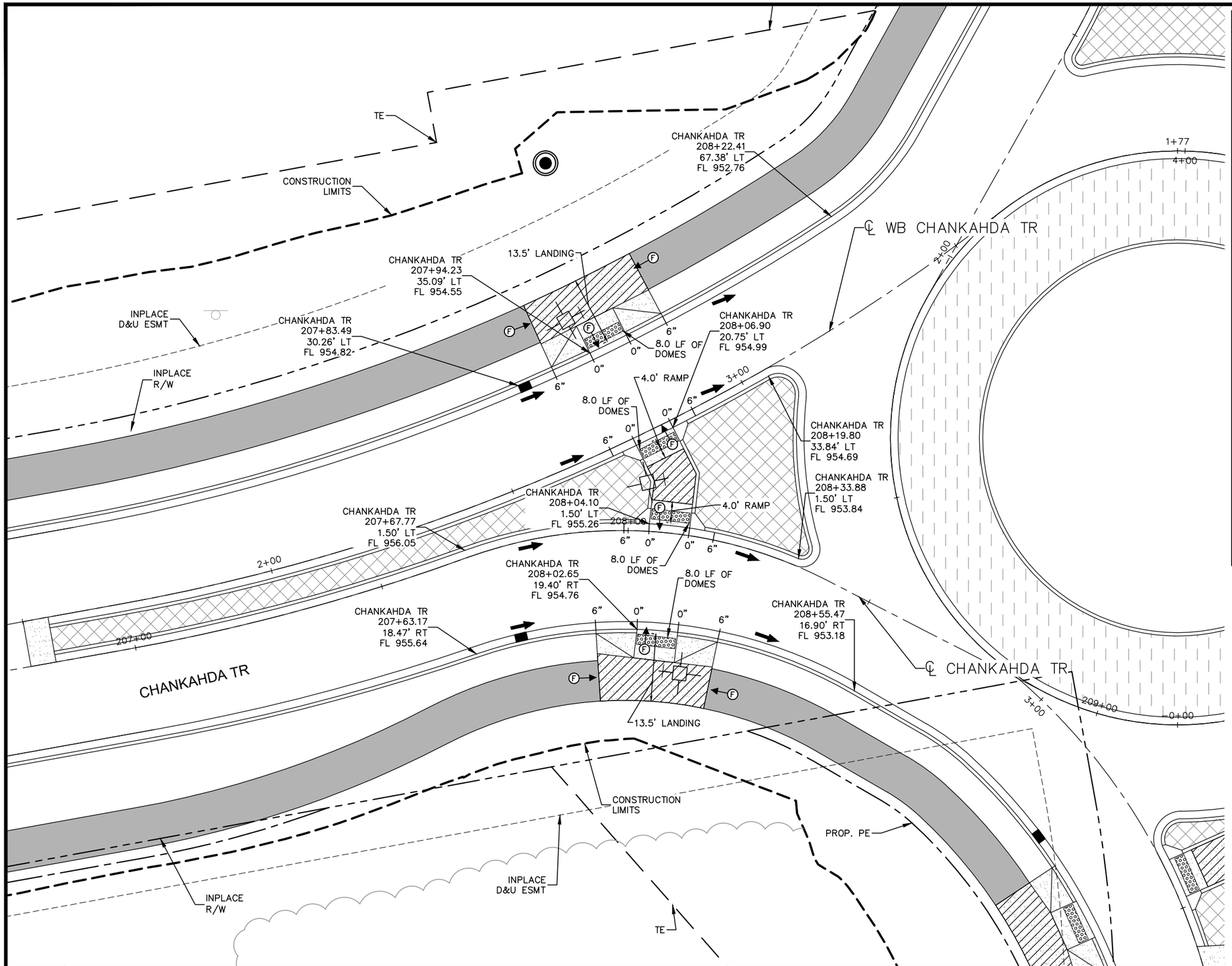
City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3

CHANKAHDA TR
INTERSECTION DETAILS

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
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SHEET NO. 178 / 348



LEGEND

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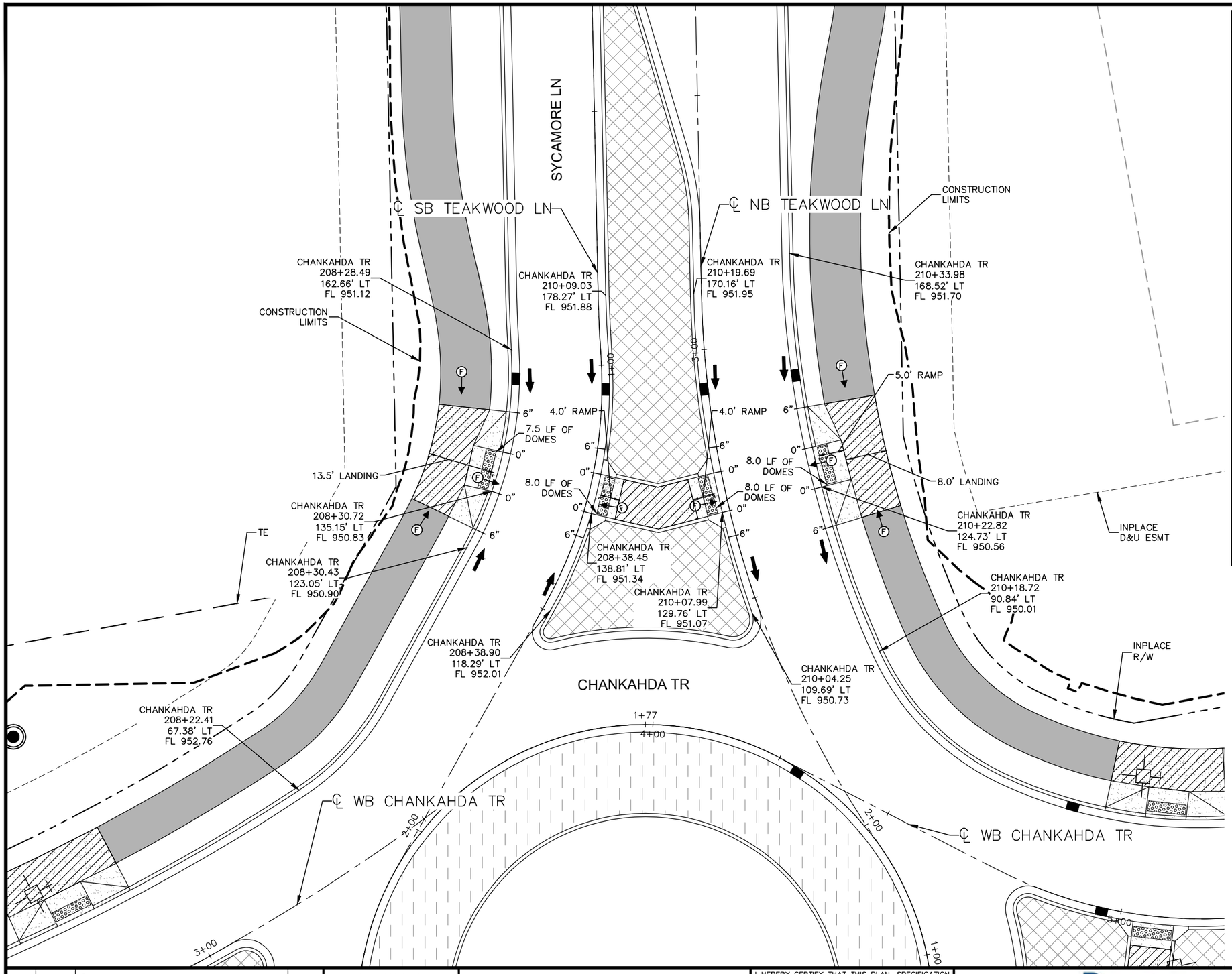
City of Plymouth

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. 179 / 348



LEGEND

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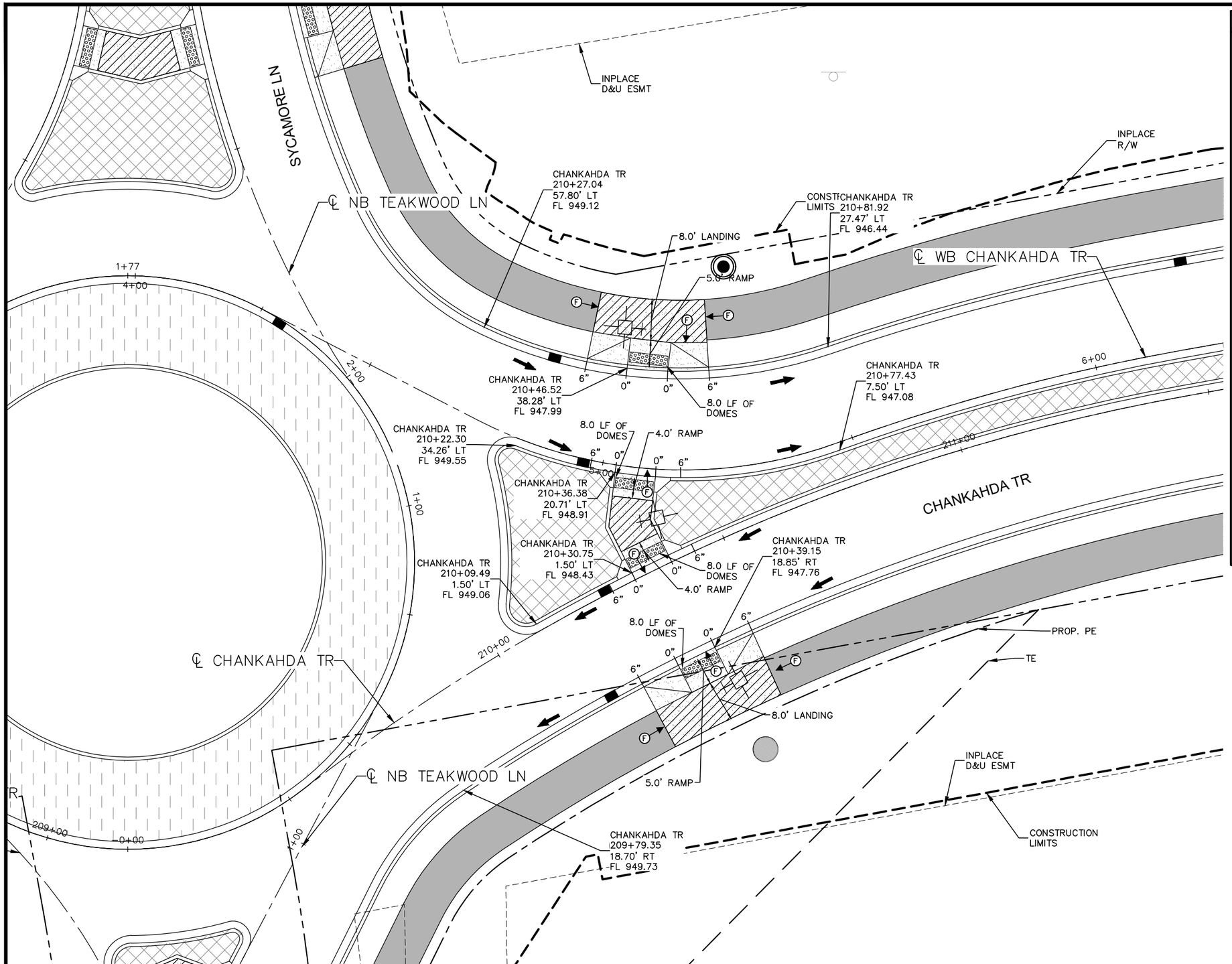
City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3

CHANKAHDA TR
INTERSECTION DETAILS

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
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SHEET NO. 180 / 348



LEGEND

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- PROPOSED SIGNAL POLE
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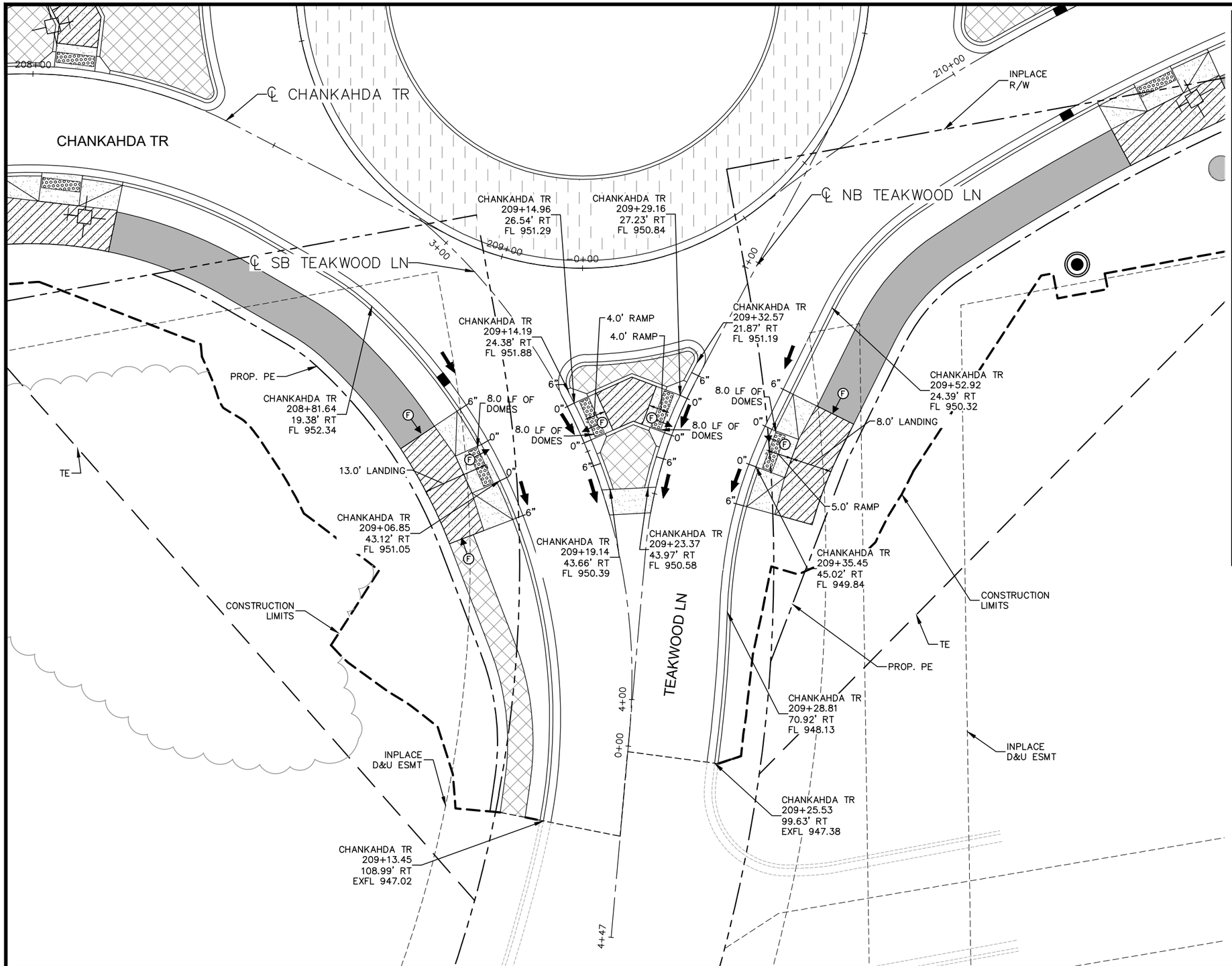
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City of Plymouth
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SHEET NO. 181 / 348



LEGEND

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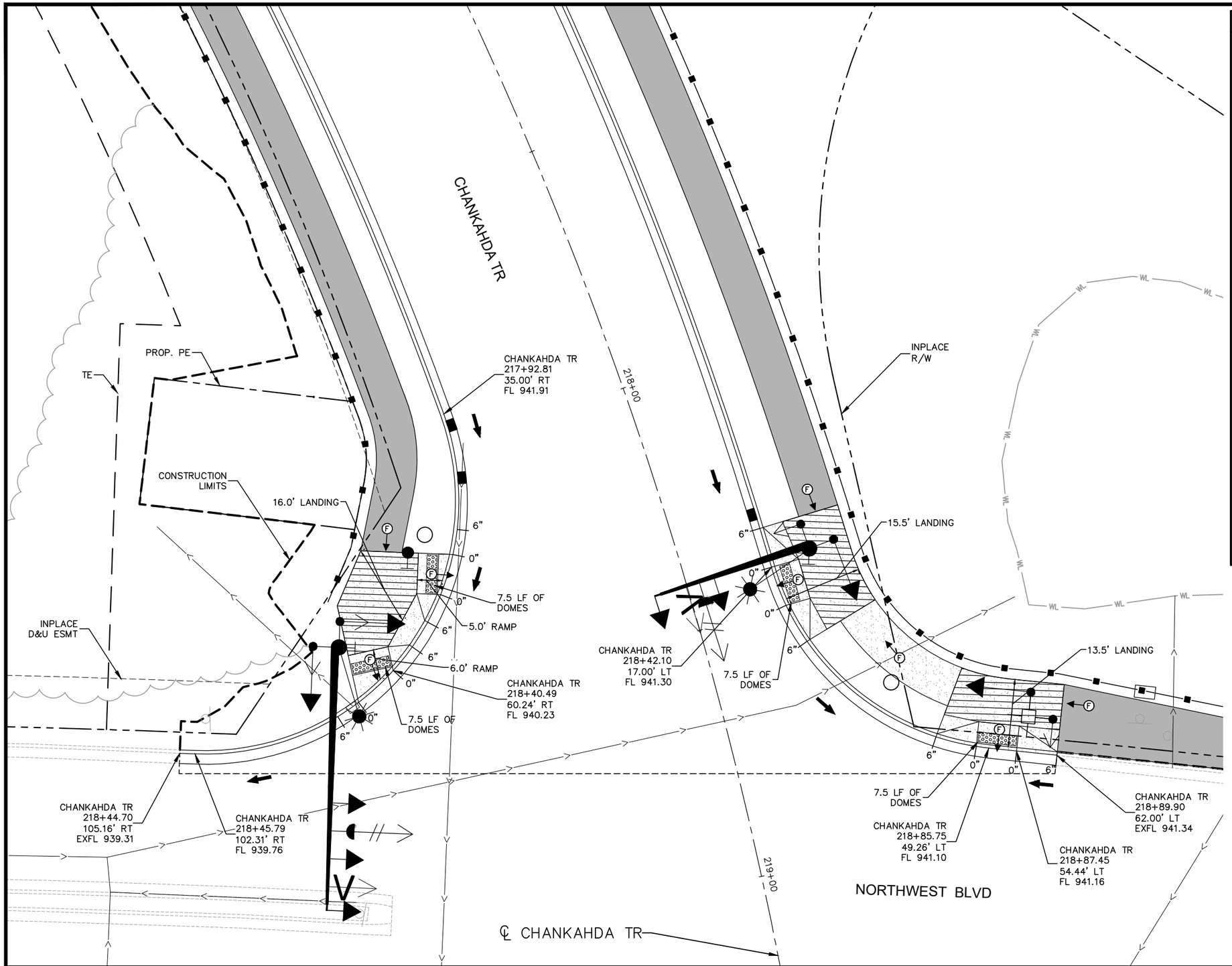
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- (S) — INDICATES PEDESTRIAN RAMP – SLOPE SHALL BE BETWEEN 5.0% MINIMUM AND 8.3% MAXIMUM IN THE DIRECTION SHOWN AND CROSS SLOPE SHALL NOT EXCEED 2.0%
- (F) — INDICATES PEDESTRIAN RAMP – SLOPE SHALL BE GREATER THAN 2.0% AND LESS THAN 5.0% IN THE DIRECTION 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
- 8" CONC. APRON
- 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:	11/04/2024
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: 11/04/2024 MN LIC. NO. 41864

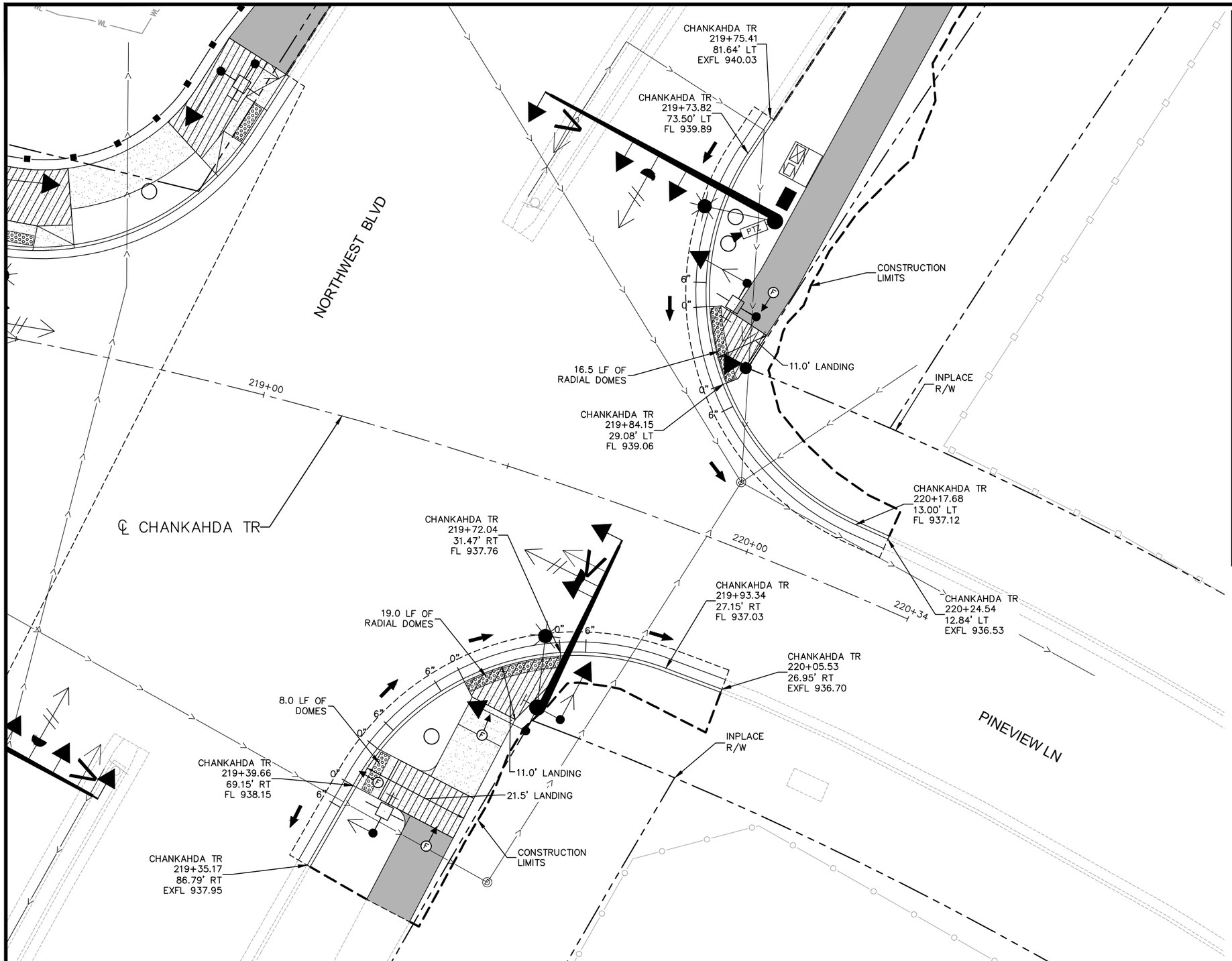
City of Plymouth

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. 183 / 348



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%
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SHEET NO. 184 / 348

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)

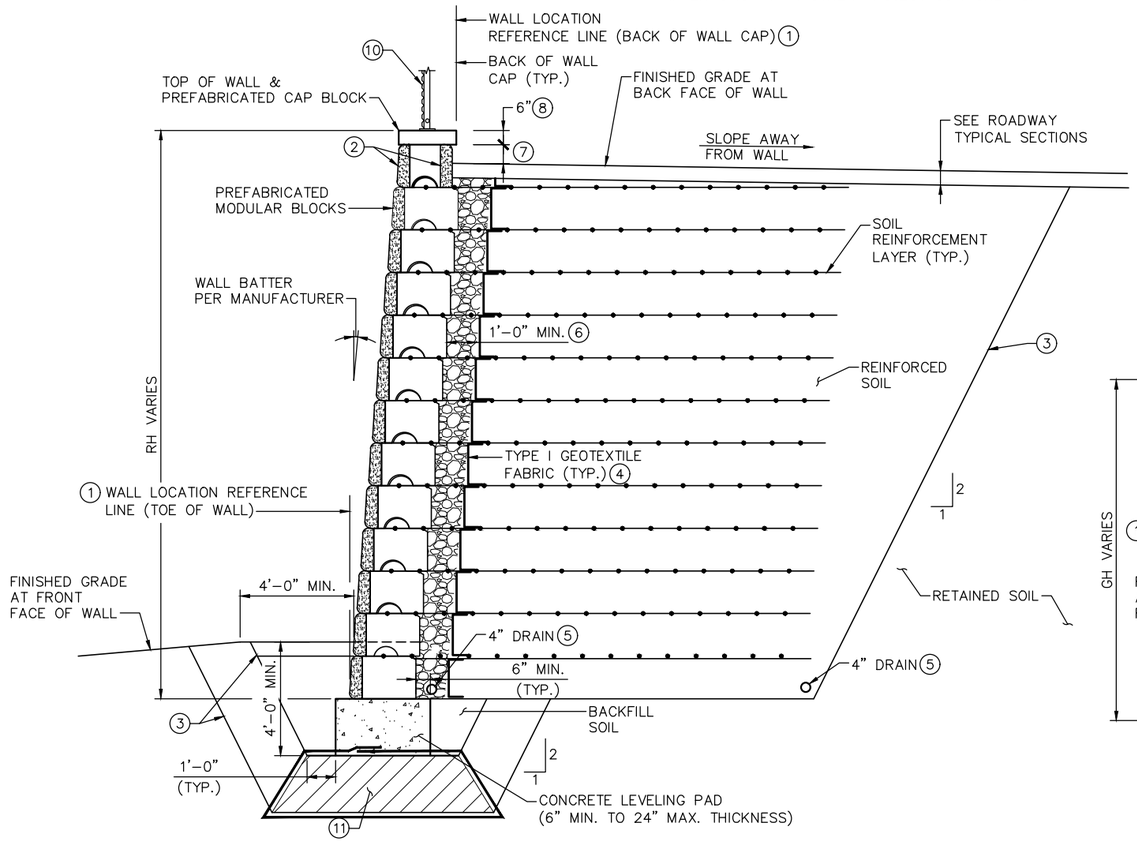
DESIGN CRITERIA:

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.

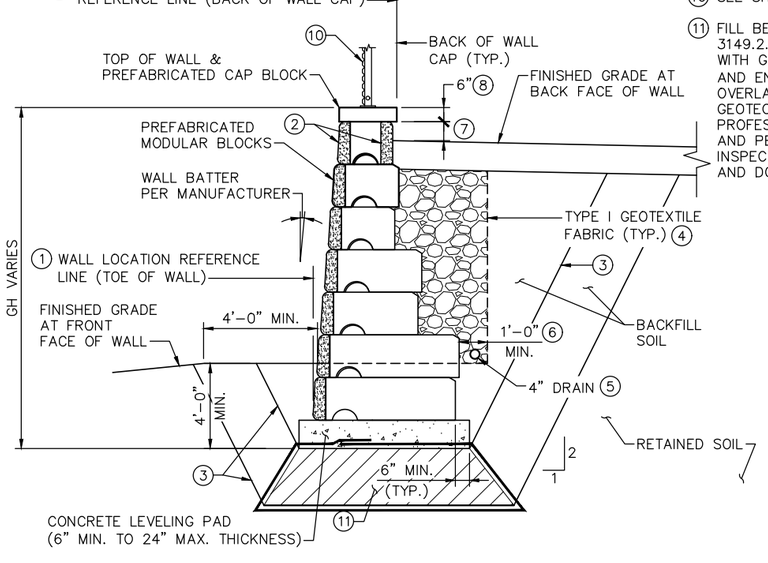
ALL DESIGN AND MATERIALS SHALL CONFORM TO REQUIREMENTS IN THE SPECIAL PROVISIONS.

NOTES:

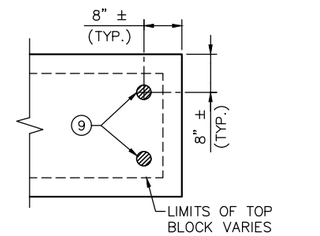
1. LOCATION OF WALL REFERENCE LINE VARIES FOR EACH WALL. WALL ALIGNMENT AND REFERENCE LINE MAY BE LOCATED AT FRONT FACE OF WALL OR BACK FACE OF WALL CAP. REFER TO THE PLAN AND PROFILE SHEETS FOR MINIMUM REQUIREMENTS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO LOCATE AND VERIFY THE WALL REFERENCE LINE, 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 187 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
(WITH REINFORCEMENT)



TYPICAL SECTION THRU PREFABRICATED MODULAR BLOCK RETAINING WALL
(WITHOUT REINFORCEMENT)



PARTIAL PLAN VIEW – CAP BLOCK
(BOTTOM OF CAP SHOWN)

No.	Date	Revisions	App.

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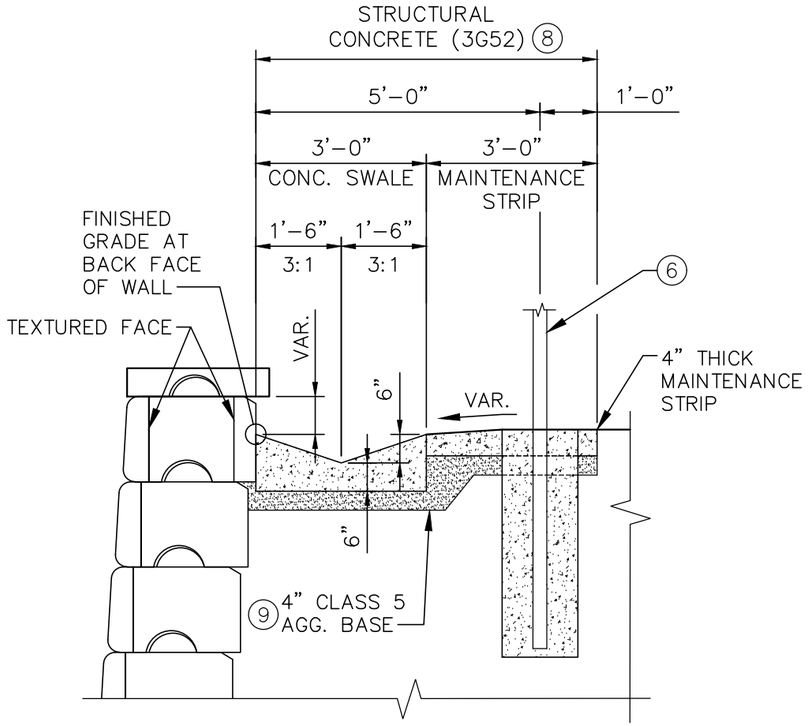
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BRIAN FLEMING, PE
DATE: 11/04/2024 MN LIC. NO. 49486

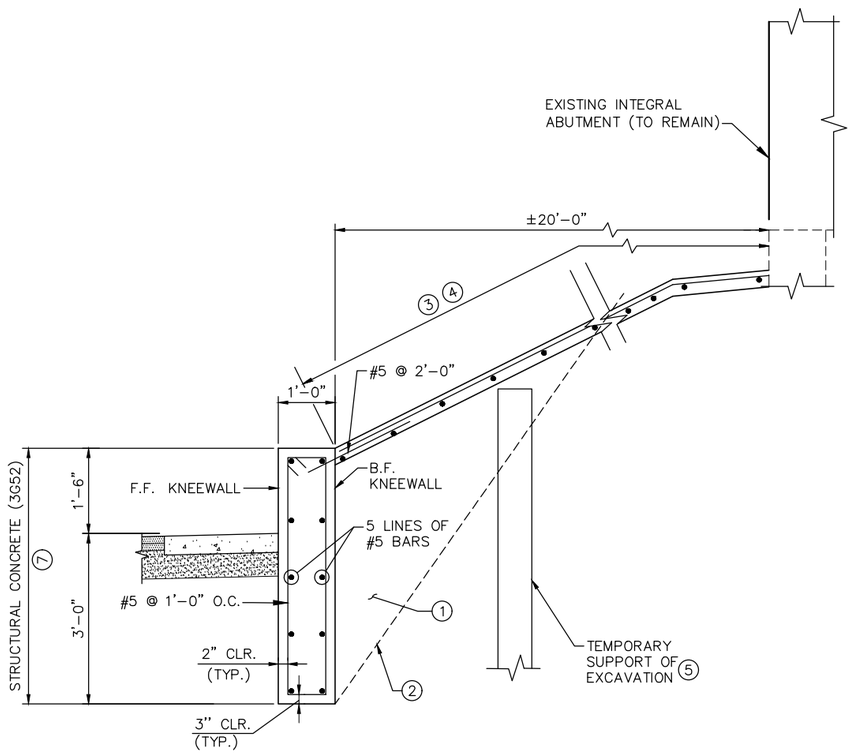
City of Plymouth
CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
RETAINING WALL PLANS
RETAINING WALL DETAILS

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

SHEET NO. 185 / 348



SECTION A–A
RTWALL–2



SECTION B–B
RTWALL–5

SCHEDULE OF QUANTITIES FOR RETAINING WALLS

	ITEM NO.	ITEM	RTWALL-1	RTWALL-2	RTWALL-3	RTWALL-4	RTWALL-5	UNIT	TOTAL
(A)	2104.504/00060	REMOVE SLOPE PAVING	-	-	-	-	505	SQ YD	505 (P)
	2211.507/00170	AGGREGATE BASE (CV) CLASS 5	-	75	-	-	-	CU YD	75 (P)
	2411.507/03752	STRUCTURAL CONCRETE (3G52)	-	50	-	-	22	CU YD	72 (P)
	2411.508/00010	REINFORCEMENT BARS	-	-	-	-	3,000	POUND	3,000 (P)
(B)	2411.618/00007	PREFABRICATED MODULAR BLOCK WALL	1,650	3,075	600	675	-	SQ FT	6,000 (P)
(A)	2514.504/00010	CONCRETE SLOPE PAVING	-	-	-	-	295	SQ YD	295 (P)
(C)	2557.503/00002	WIRE FENCE DESIGN SPECIAL VINYL COATED	231	-	143	150	-	LIN FT	524 (P)

NOTES:

(A) BID ITEM INCLUDES BACKFILL AND COMPACTION TO DEPRESSIONS IN EXISTING SLOPE MATERIAL TO REMAIN DUE TO CONSTRUCTION RELATED DEPRESSIONS CREATED BY CONTRACTOR DURING CONCRETE SLOPE PAVING REMOVALS.

(B) 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.

(C) 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 191–192 FOR LOCATION OF SECTION A–A.

SEE SHEET 195 FOR LOCATION OF SECTION B–B.

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.

(1) BACKFILL KNEEWALL WITH SELECT GRANULAR BACKFILL CONFORMING TO MNDOT SPEC. 3149.2B2. KNEEWALL BACKFILL INCIDENTAL TO BID ITEM "STRUCTURAL CONCRETE (3G52)".

(2) CONTRACTOR TO DETERMINE SLOPE OF EXCAVATION. EXCAVATION SHALL NOT UNDERMINE ABUTMENTS OR PIERS OF BR. 27W25 OR BR. 27W26.

(3) SLOPE PAVING REMOVAL AND RECONSTRUCTION SHALL BE INCLUDED IN PAY ITEMS "REMOVE SLOPE PAVING" AND "CONCRETE SLOPE PAVING" RESPECTIVELY.

(4) SEE SHEETS 196–197 FOR CONCRETE SLOPE PAVING DETAILS AND REINFORCEMENT.

(5) TEMPORARY SUPPORT OF EXCAVATION MAY BE REQUIRED TO CONSTRUCT THE KNEEWALL. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE LOCATIONS AND LIMITS OF SUPPORT OF EXCAVATION BASED ON SELECTED MEANS AND METHODS OF CONSTRUCTION. TEMPORARY SUPPORT OF EXCAVATION INCIDENTAL TO BID ITEM "STRUCTURAL CONCRETE (3G52)".

(6) FENCE DESIGN SPECIAL – SPLIT RAIL SEE CITY STD. PLATE STRT–26.

(7) 0.167 CU. YD. OF CONCRETE/LIN. FT.
23.471 LBS. OF REINFORCEMENT/LIN. FT.

(8) 0.133 CU. YD. OF CONCRETE/LIN. FT.

(9) 0.100 CU. YD. OF AGGREGATE BASE/LIN. FT.

No.	Date	Revisions	App.

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DESIGNED BY: JWB
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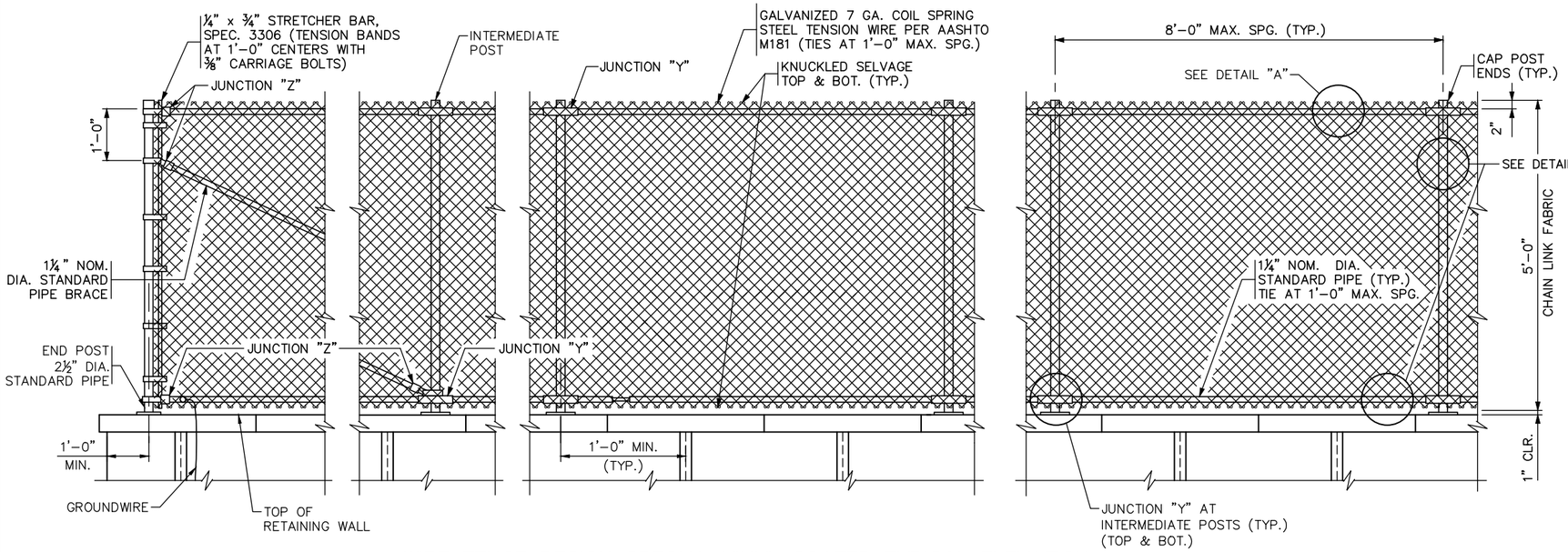
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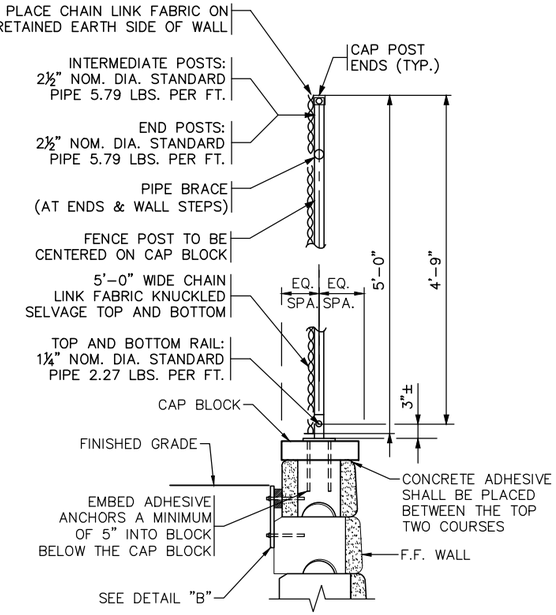
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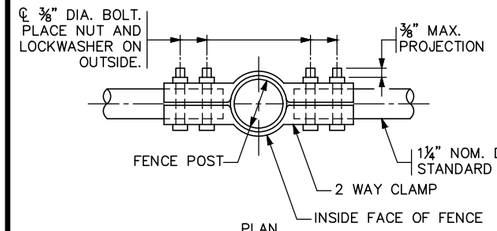
SHEET NO. 186 / 348



WIRE FENCE DESIGN SPECIAL VINYL COATED TYPICAL ELEVATION

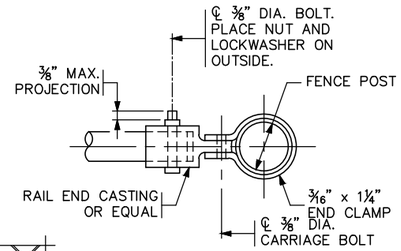


TYPICAL SECTION THROUGH FENCE

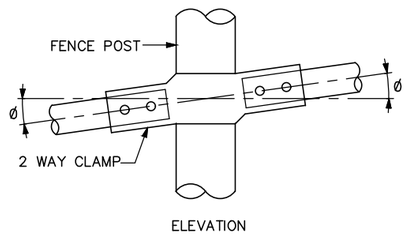


PLAN

2 WAY CLAMP BENDING TABLE	
GRADE OF FENCE	Ø
0° TO 2°	0°
2° TO 6°	4°
6° TO 10°	8°

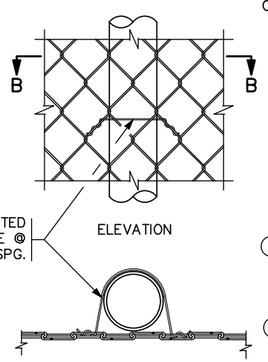


JUNCTION "Z"



ELEVATION

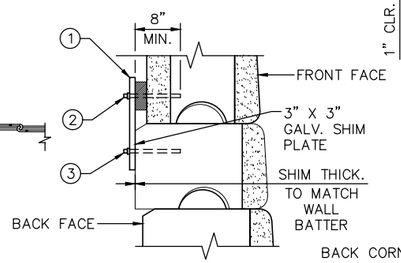
JUNCTION "X"



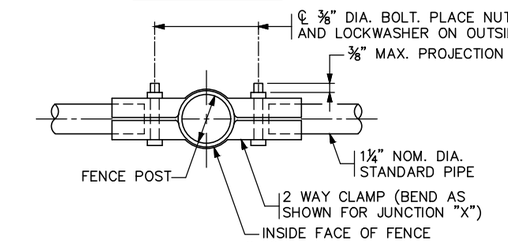
ELEVATION

SECTION B-B

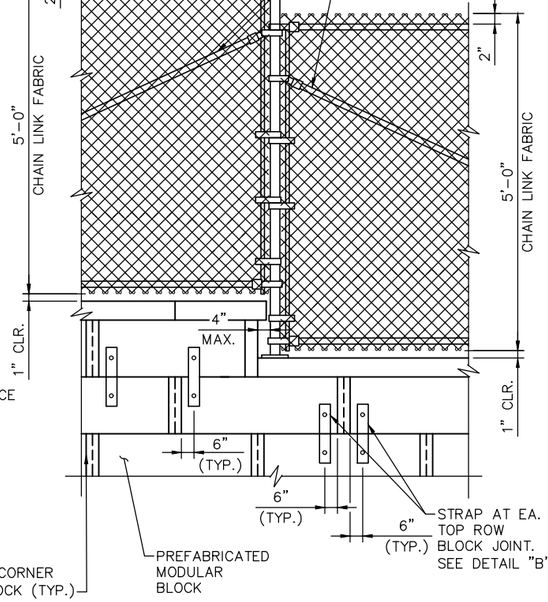
DETAIL "A"



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 ⅝" 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. ¼" X 3" X 1'-1" LONG CLIP PLATE WITH 2 GALV. OR STAINLESS STEEL ⅝"ø X 10" MIN. THREADED RODS (ASTM A36), HEX NUTS, AND WASHERS. DRILL 5" MIN. DEEP X ¾"ø HOLE AND SET THREADED RODS WITH APPROVED EPOXY ADHESIVE.

(2) THREADS PROJECTION BEYOND NUT TO BE NO LONGER THAN ½". 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:	11/04/2024
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

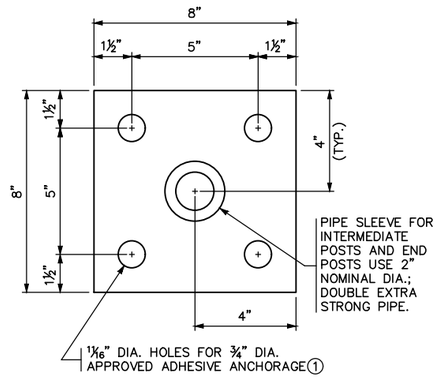
DATE: 11/04/2024 MN LIC. NO. 49486

City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
RETAINING WALL PLANS
WIRE FENCE DESIGN SPECIAL VINYL COATED

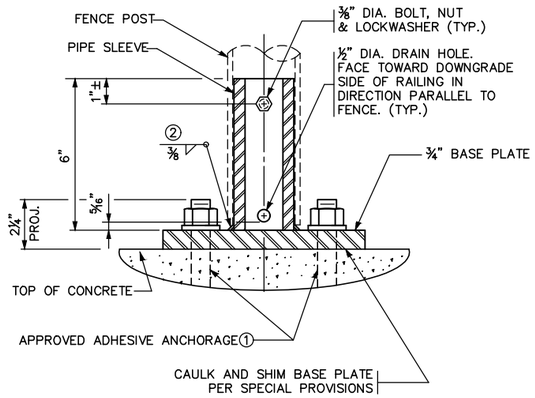
CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 187 / 348



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	STATE OF MINNESOTA DEPARTMENT OF TRANSPORTATION	REVISION	DETAIL NO.
Kevin Western STATE BRIDGE ENGINEER	FENCE POST ANCHORAGE (TYPE A)		B905

No.	Date	Revisions	App.

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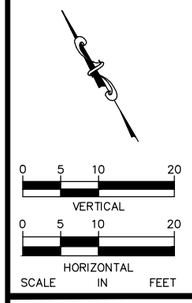
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DATE: 11/04/2024 MN LIC. NO. 49486

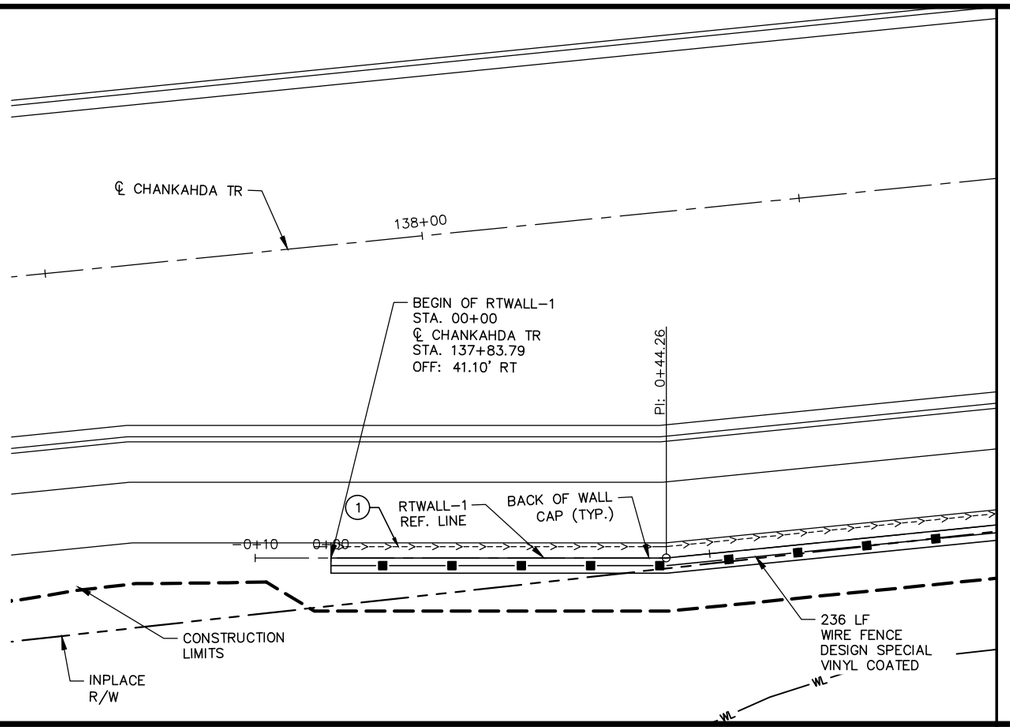
City of Plymouth

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. 188 / 348





MATCH LINE 0+90

GENERAL NOTES:

SEE SHEET 185 FOR PREFABRICATED MODULAR BLOCK WALL DETAILS.

SEE SHEETS 187–188 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.

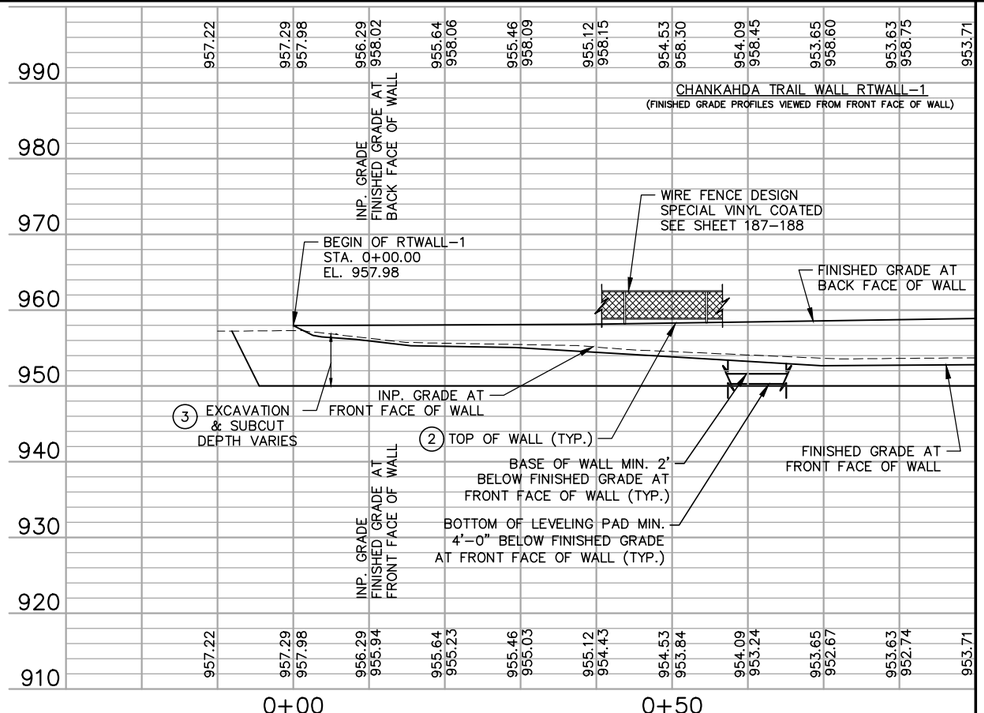
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(1) 4" DRAIN

(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.

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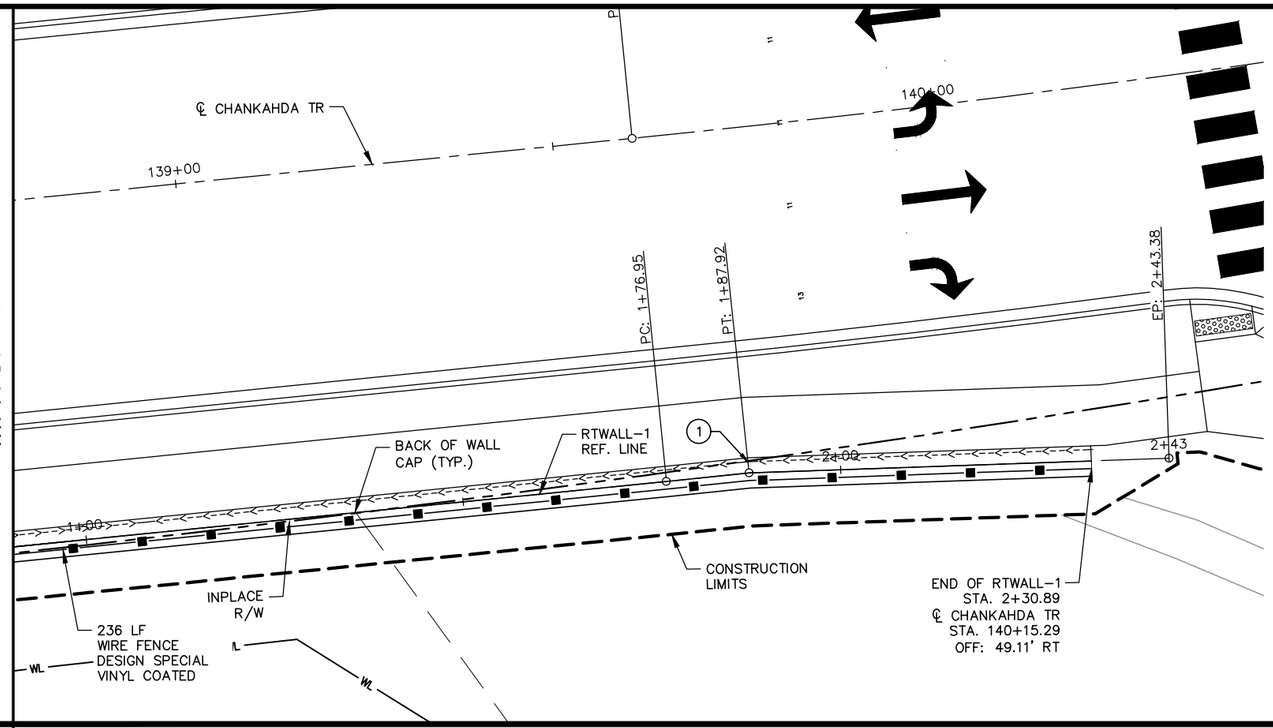
BRIAN FLEMING, PE
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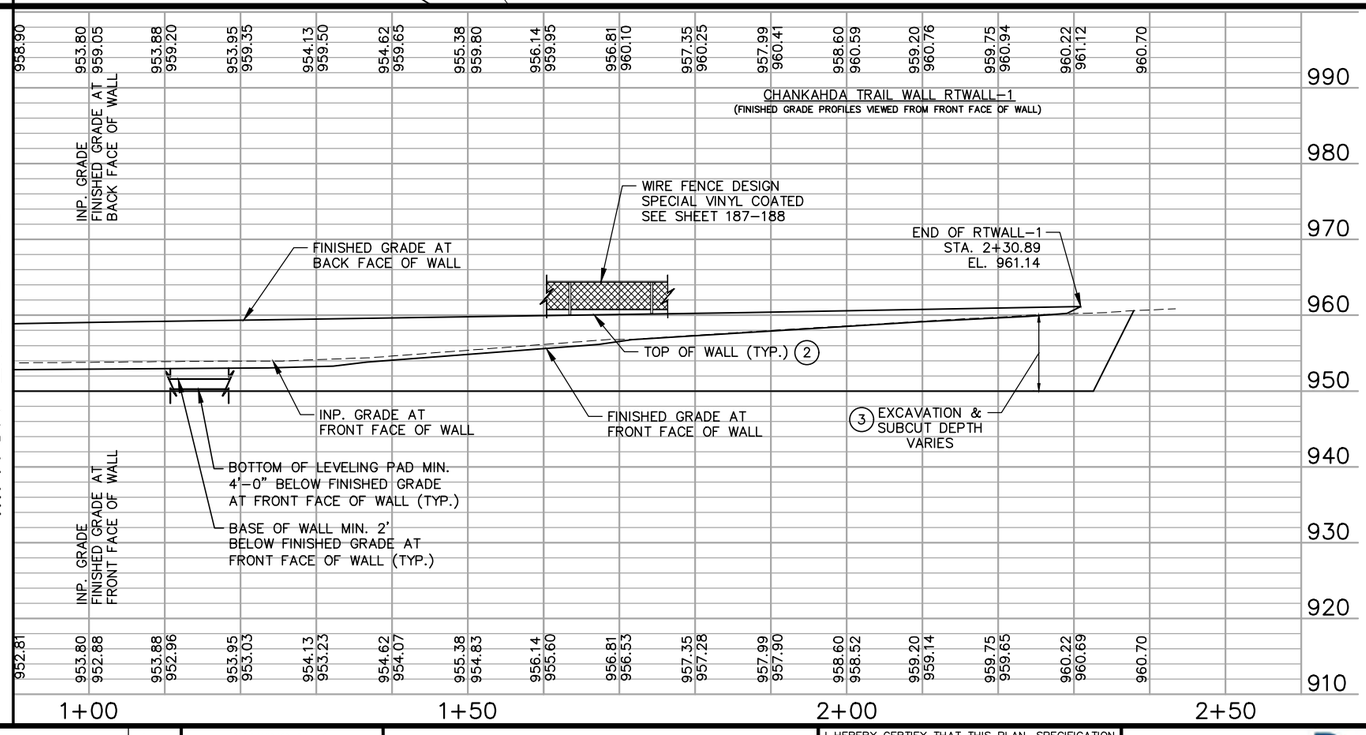
City of Plymouth

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. 189 / 348





GENERAL NOTES:

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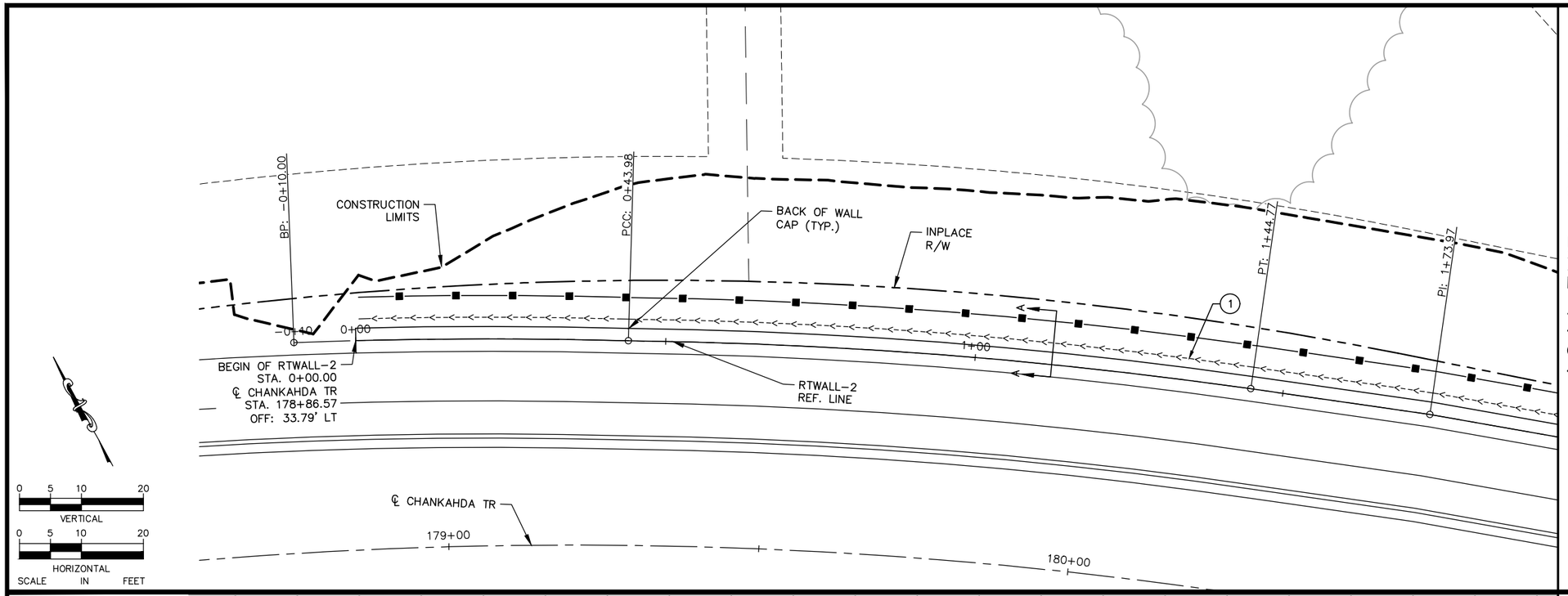
BRIAN FLEMING, PE
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City of Plymouth

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. 190 / 348



MATCH LINE 1+94

GENERAL NOTES:

SEE SHEET 185 FOR PREFABRICATED MODULAR BLOCK WALL DETAILS.

SEE SHEET 186 FOR SECTION A–A.

SEE CROSS SECTIONS AND GRADING PLAN FOR PROPOSED SURFACES.

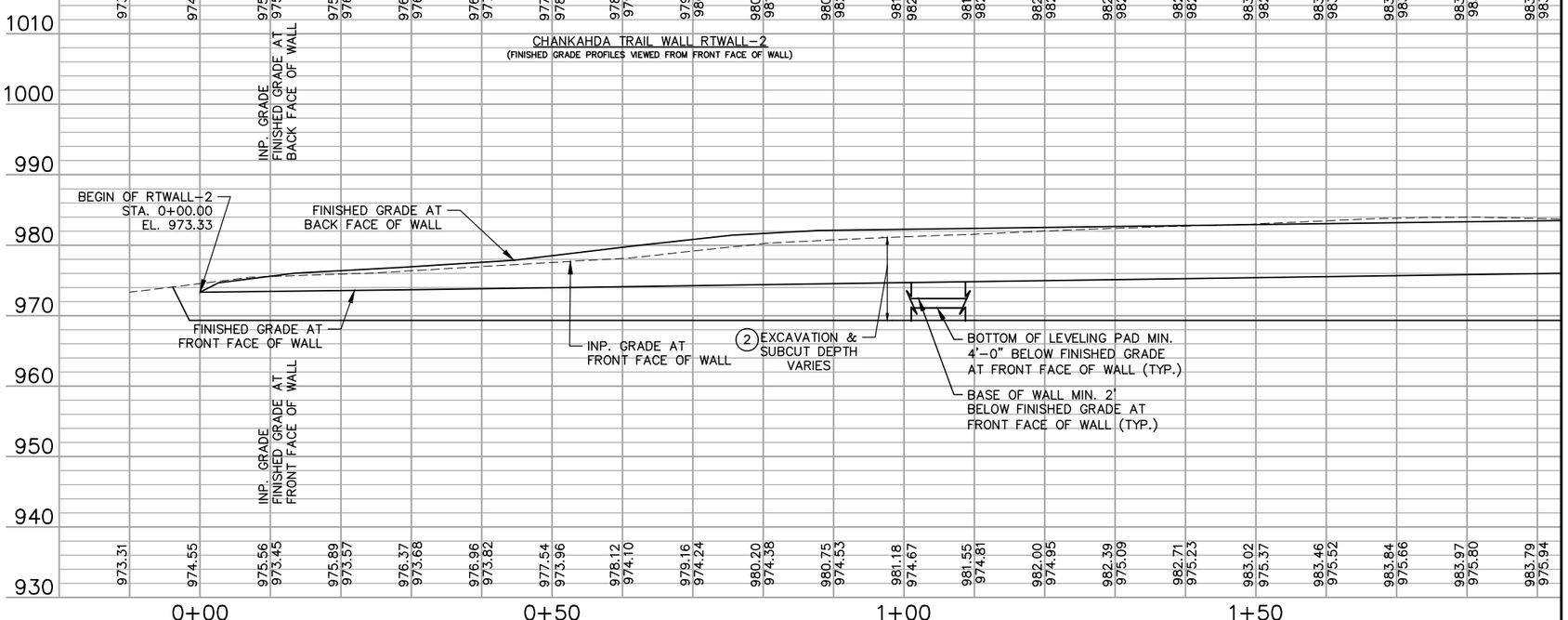
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MATCH LINE 1+94

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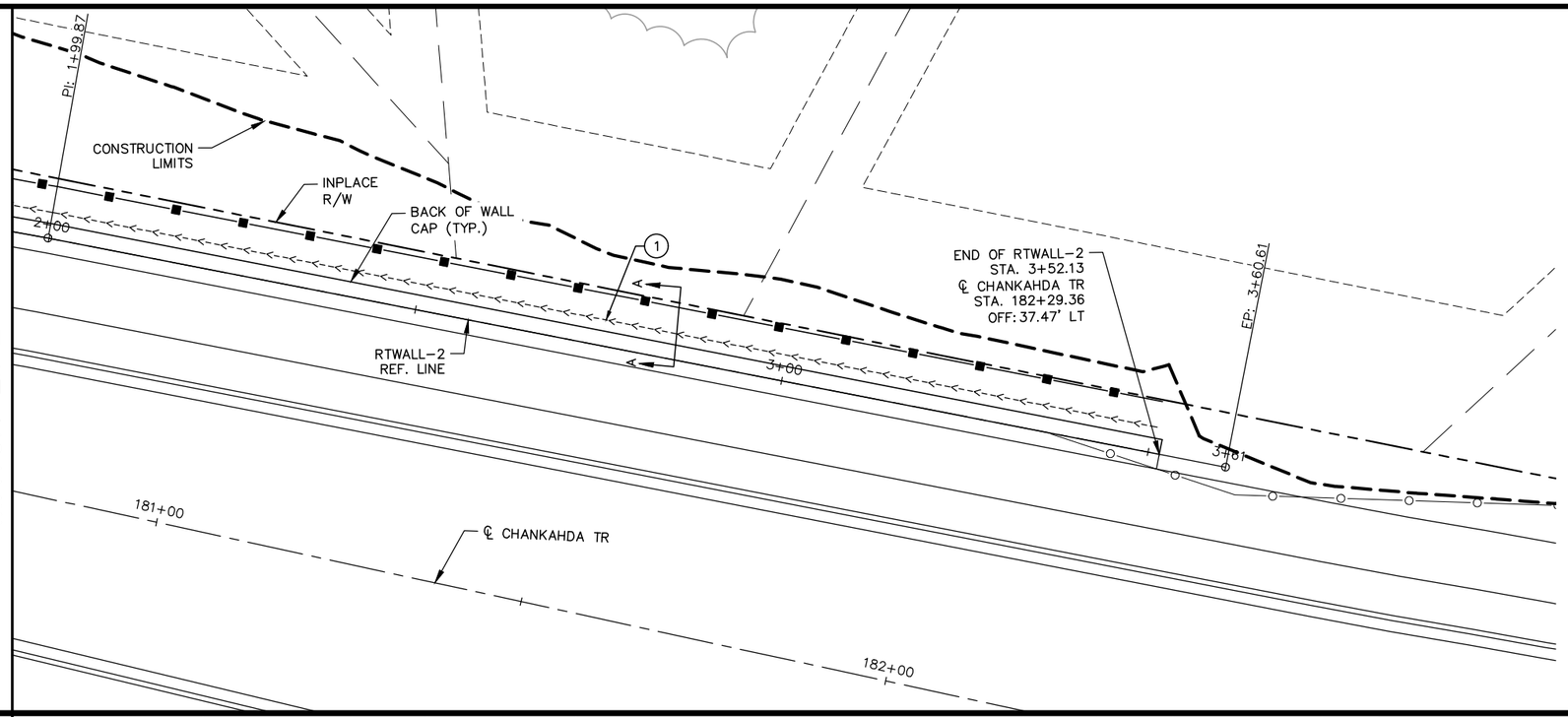
City of Plymouth

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.	

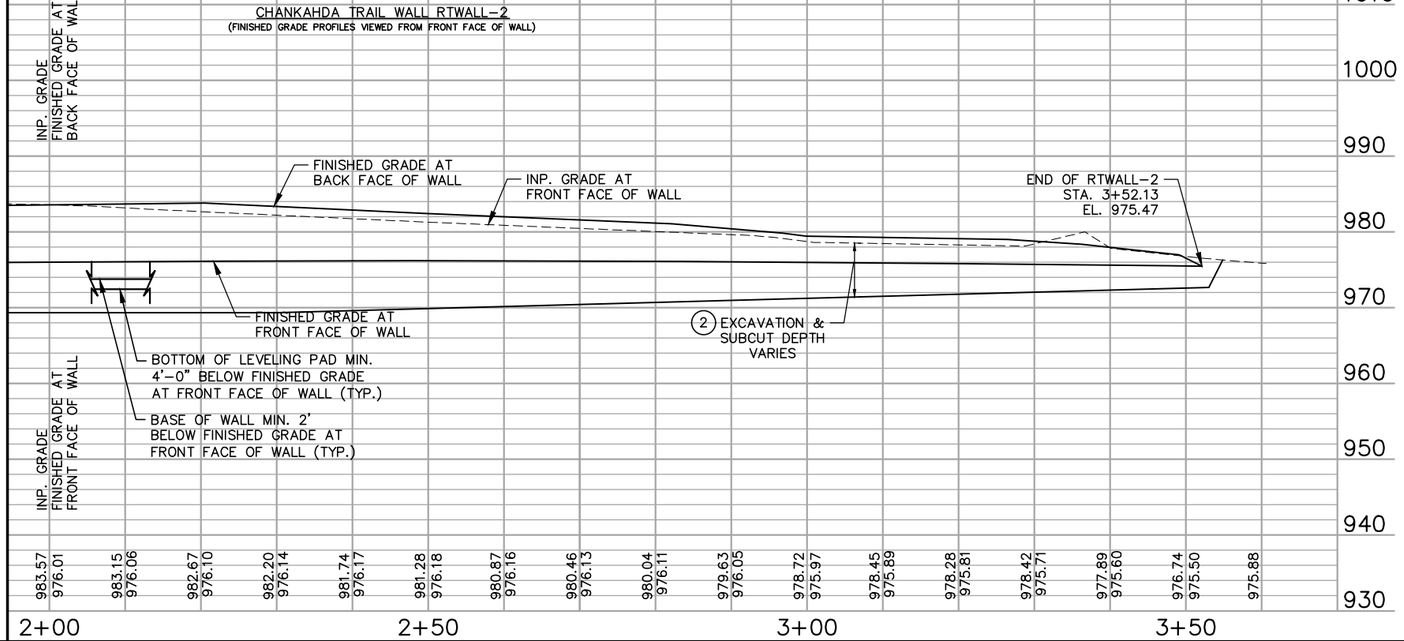
SHEET NO. 191 / 348

MATCH LINE 1+94



0 5 10 20
VERTICAL
0 5 10 20
HORIZONTAL
SCALE IN FEET

MATCH LINE 1+94



GENERAL NOTES:

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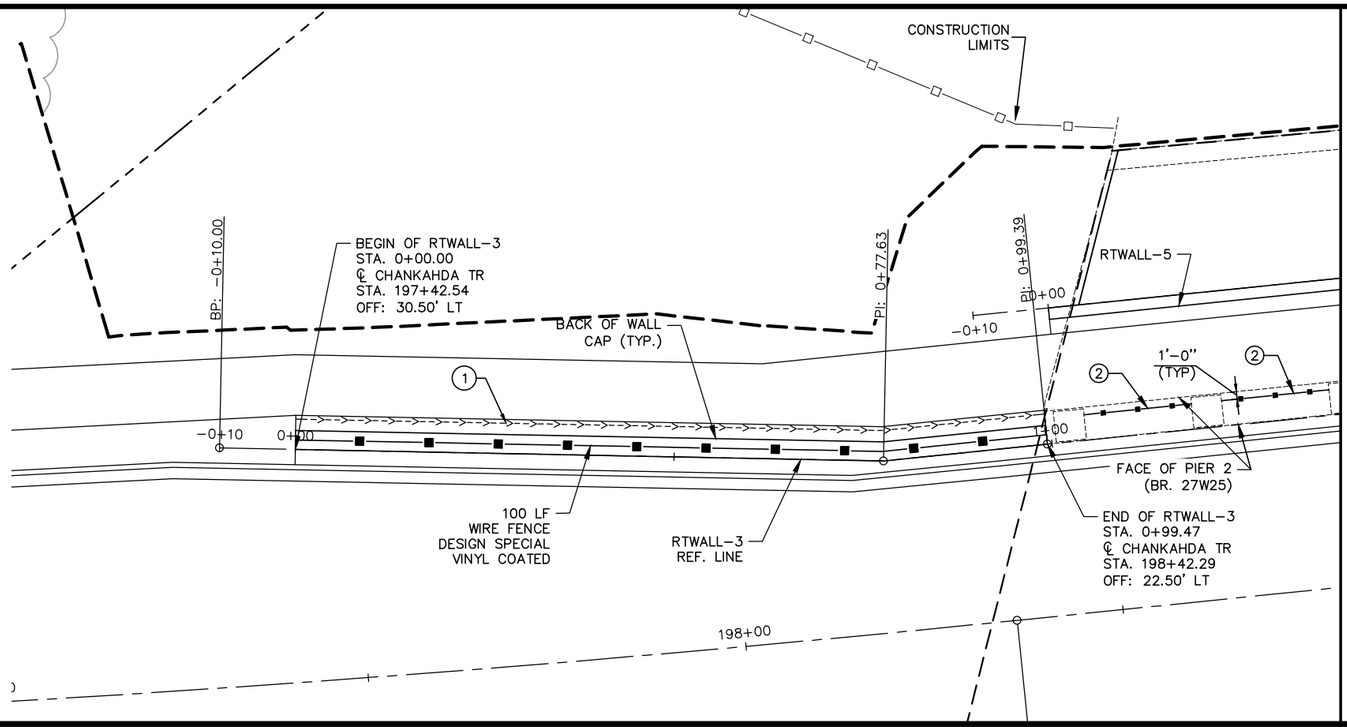
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City of Plymouth

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. 192 / 348



0 5 10 20
VERTICAL
0 5 10 20
HORIZONTAL
SCALE IN FEET

MATCH LINE 1+48

GENERAL NOTES:

SEE SHEET 185 FOR PREFABRICATED MODULAR BLOCK WALL DETAILS.

SEE SHEETS 187–188 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.

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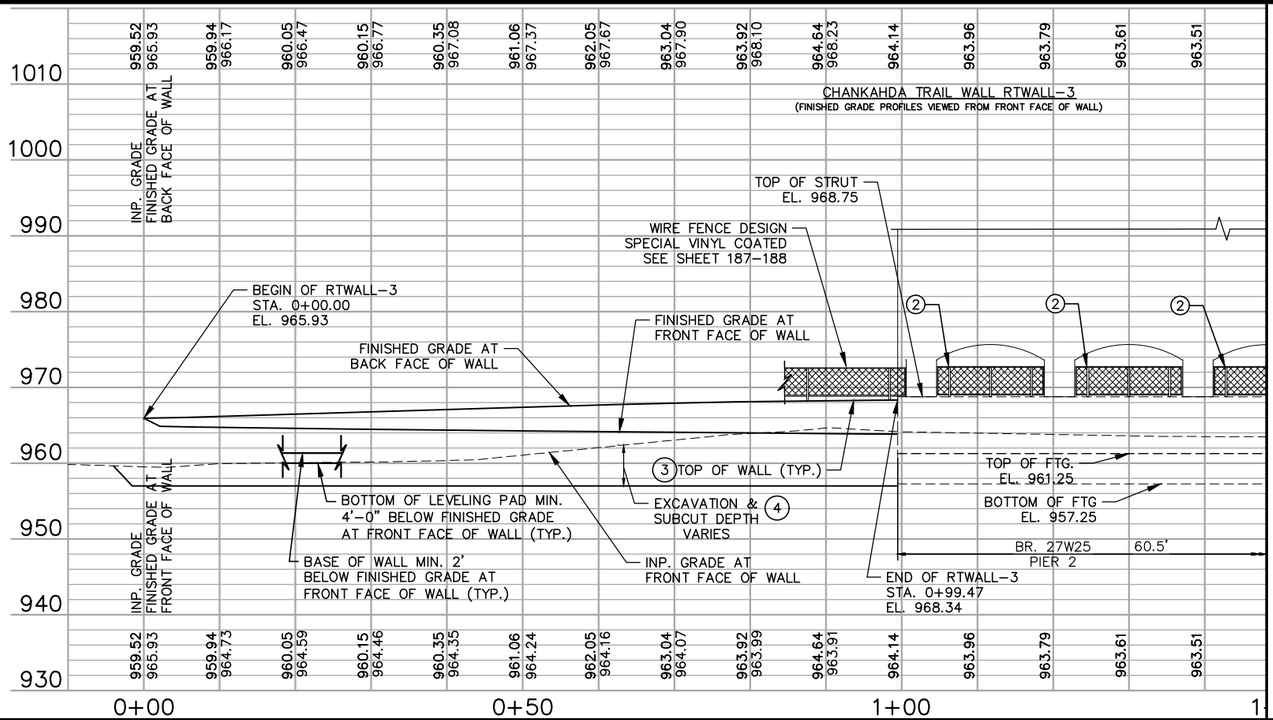
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(1) 4" DRAIN

(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 187–188 FOR DETAILS.

(3) EACH WALL STEP SHALL CONSIST OF A MINIMUM OF 1 FULL BLOCK WIDTH AND A HALF WIDTH

(4) 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.



MATCH LINE 1+48

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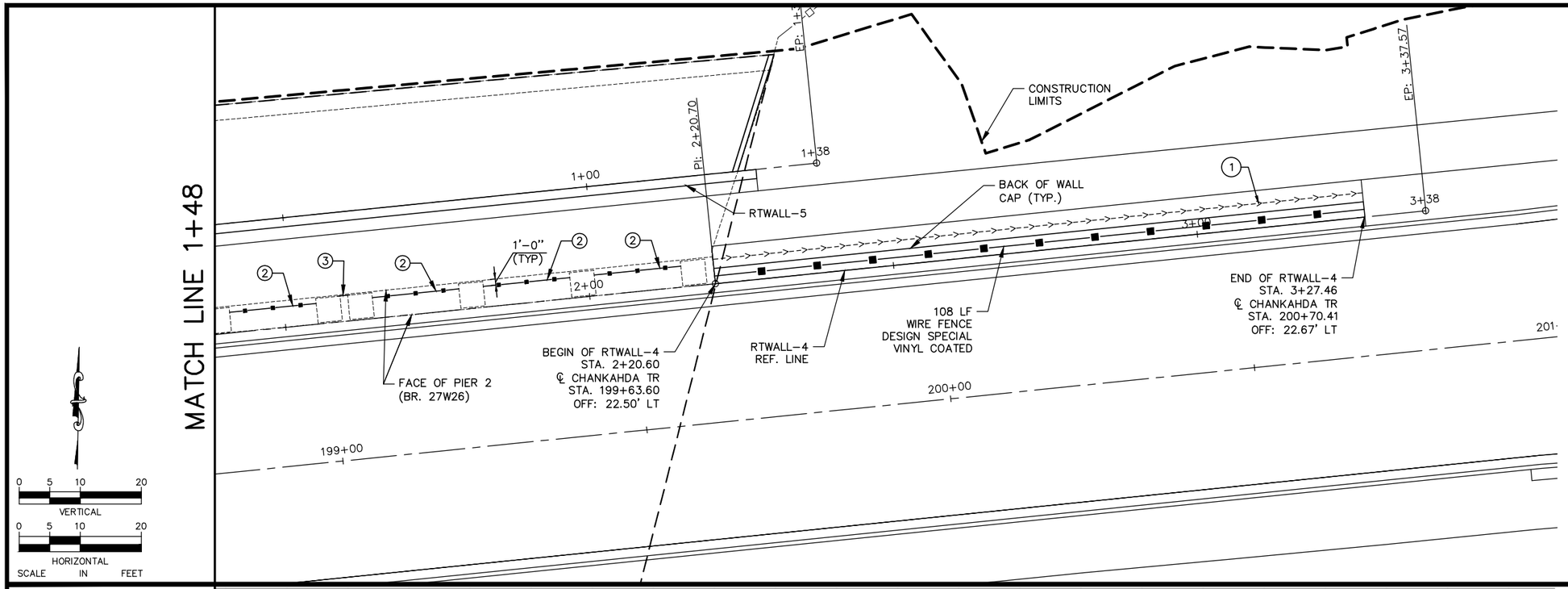
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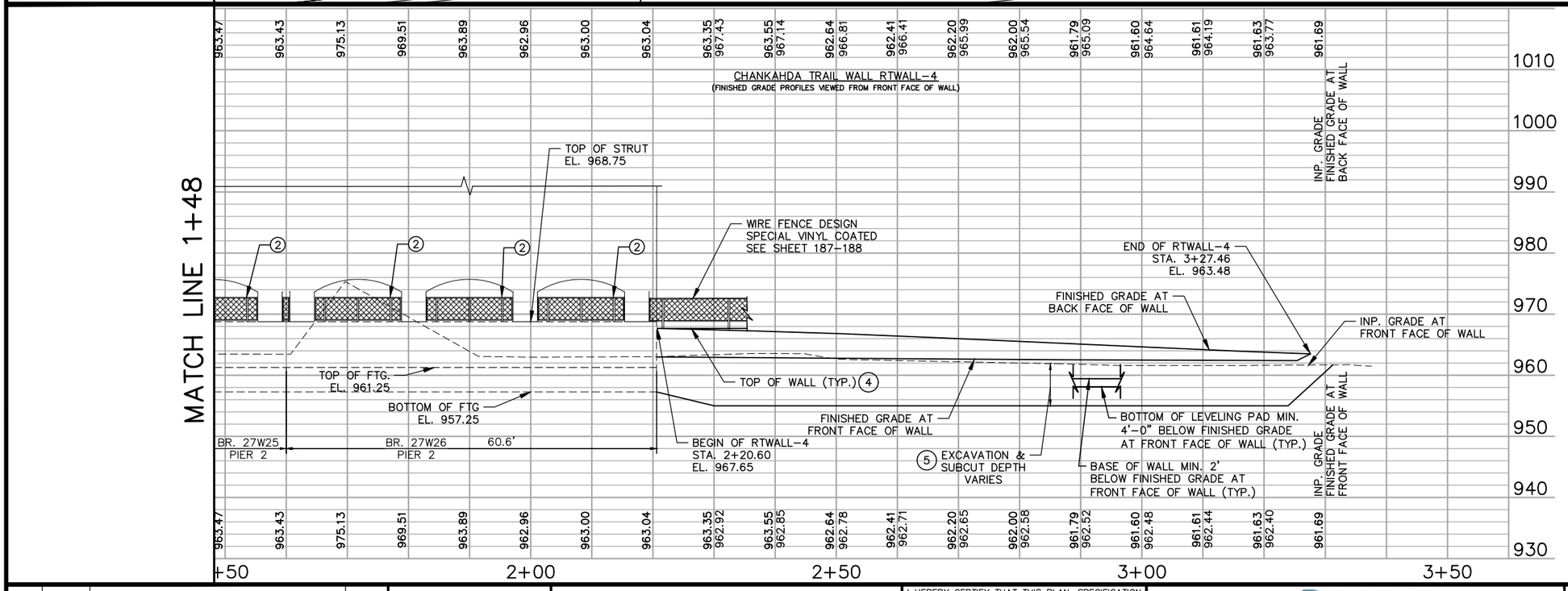
City of Plymouth

CHANKAHDA TRAIL
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CHANKAHDA TR
RTWALL-3 PLAN AND PROFILE

CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
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SHEET NO. 193 / 348





GENERAL NOTES:

SEE SHEET 185 FOR PREFABRICATED MODULAR BLOCK WALL DETAILS.

SEE SHEETS 187–188 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.

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.

WALL DESIGN ENGINEER AND MANUFACTURER SHALL PROVIDE BLOCK LAYOUT THAT MEETS THE CRITERIA IN THIS PLAN AND SPECIAL PROVISIONS.

(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 187–188 FOR DETAILS.

(3) 2 LF OF WIRE FENCE DESIGN SPECIAL VINYL COATED MOUNTED TO PIER COLUMN FACE. SEE SHEET 187–188 FOR DETAILS.

(4) EACH WALL STEP SHALL CONSIST OF A MINIMUM OF 1 FULL BLOCK WIDTH AND A HALF WIDTH

(5) 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
DRAWN BY:	RGS
CHECKED BY:	BLF
DATE:	11/04/2024
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.

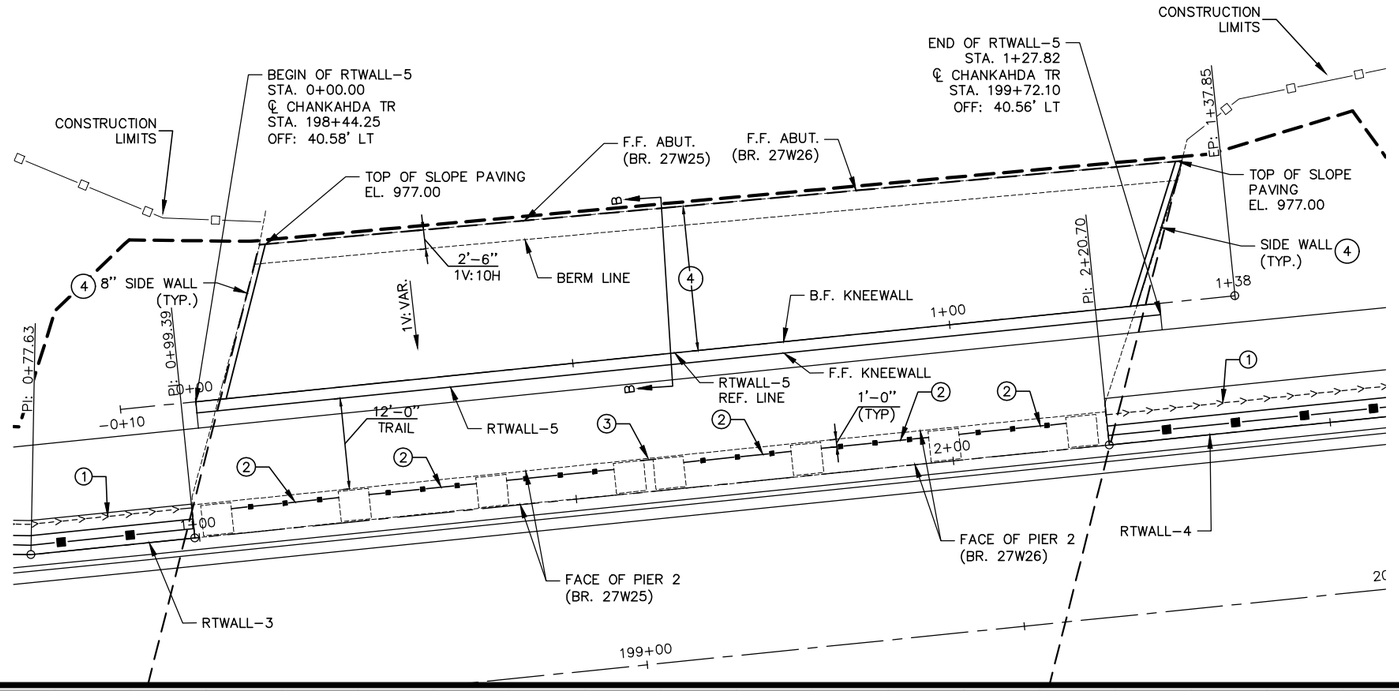
BRIAN FLEMING, PE
DATE: 11/04/2024 MN LIC. NO. 49486

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. 194 / 348



0 5 10 20
VERTICAL
0 5 10 20
HORIZONTAL
SCALE IN FEET

GENERAL NOTES:

SEE SHEET 186 FOR SECTION B–B.

SEE CROSS SECTIONS AND GRADING PLAN FOR PROPOSED SURFACES.

FINISHED GRADE PROFILES: FRONT AND BACK FACE OF WALL ARE SHOWN.

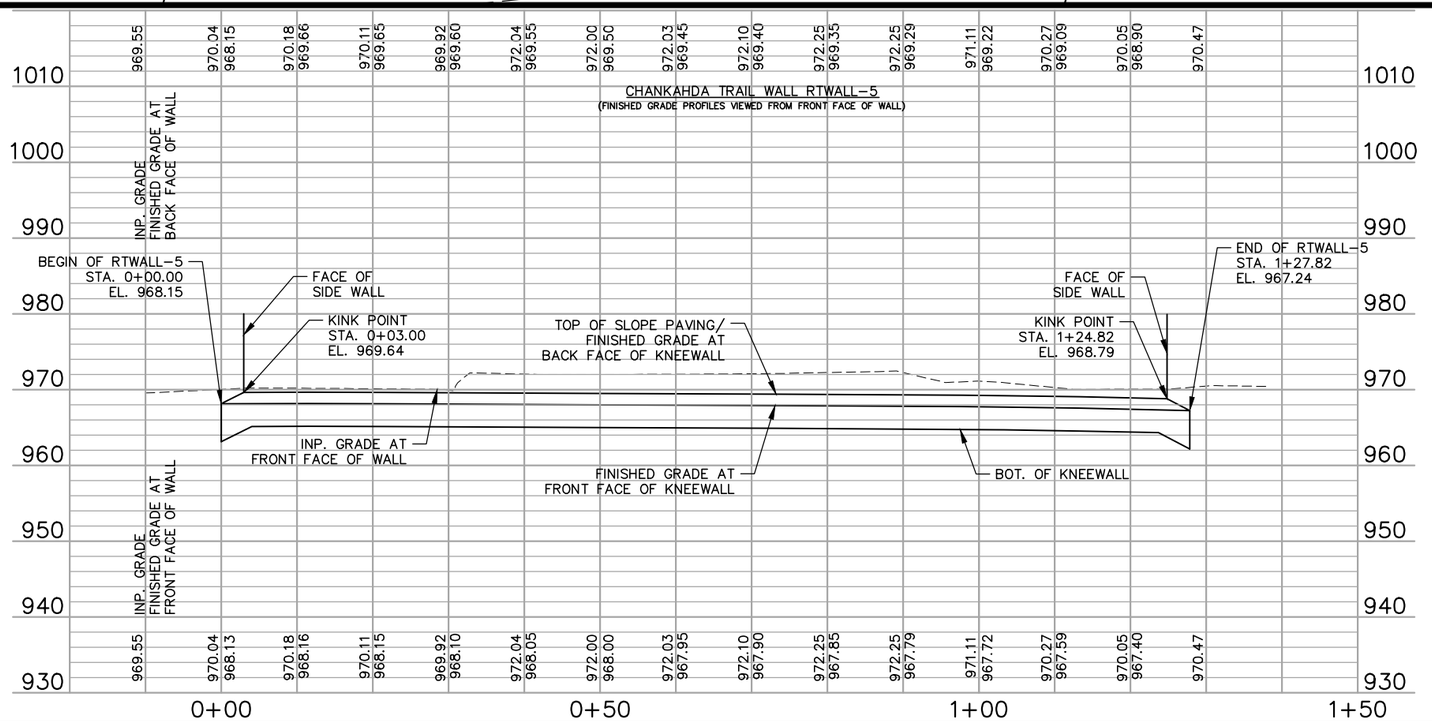
SEE SHEETS 196 –197 FOR CONCRETE SLOPE PAVING DETAILS. EXISTING CONCRETE SLOPE PAVING DETAILS PROVIDED AS CONSTRUCTION DETAILS OF PROPOSED CONCRETE SLOPE PAVING, EXCEPT AS NOTED.

(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 187 –188 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 187 FOR ADDITIONAL DETAILS.

(4) CONCRETE SLOPE PAVING TO BE CONSTRUCTED BELOW BRIDGE 27W25 AND 27W26, SEE SHEETS 196–197 FOR DETAILS.



No.	Date	Revisions	App.

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PROJECT NO.	160662010

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BRIAN FLEMING, PE

DATE: 11/04/2024 MN LIC. NO. 49486

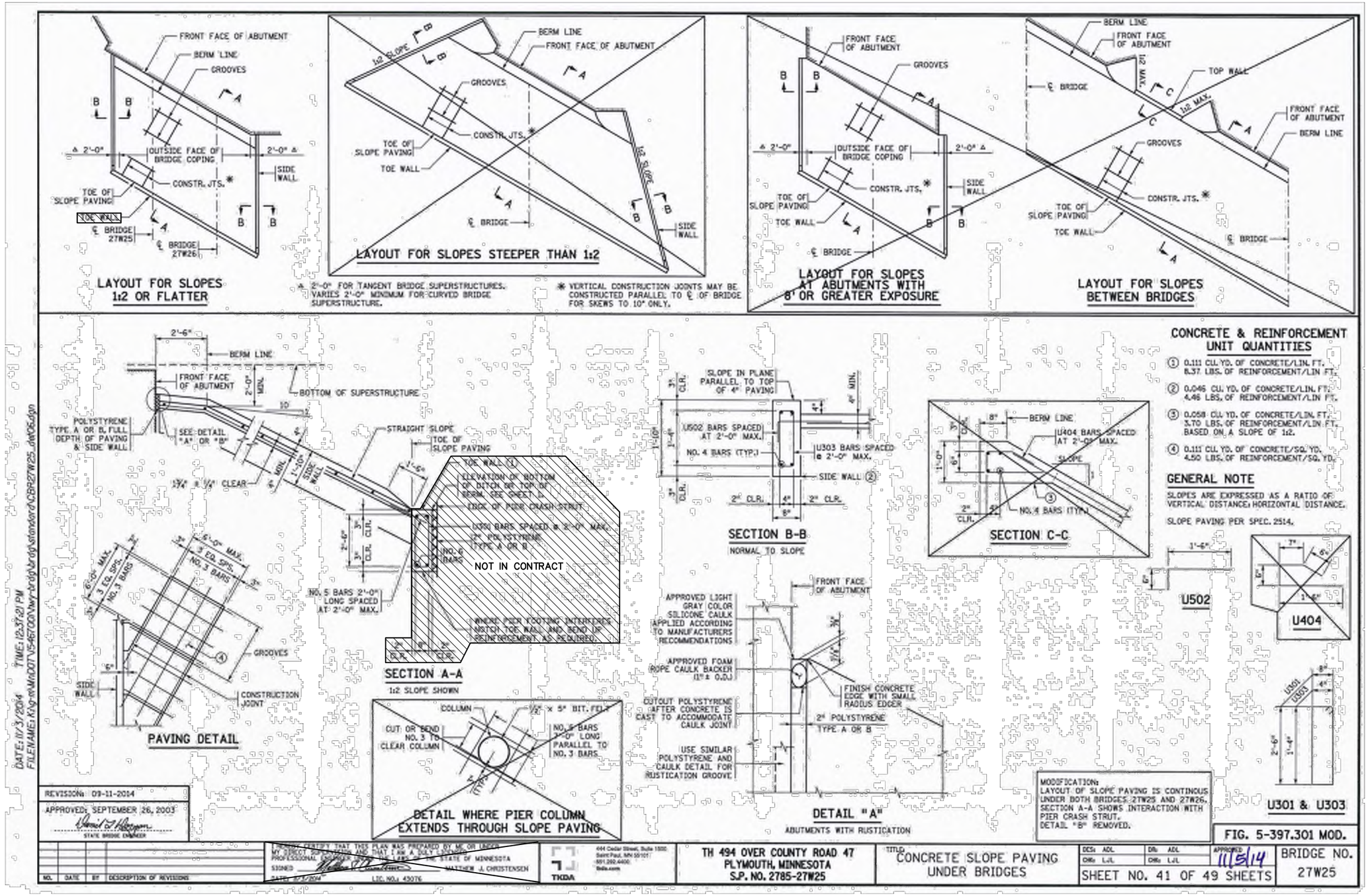
City of Plymouth

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. 195 / 348

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
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DATE:	11/04/2024
PROJECT NO.	160662010

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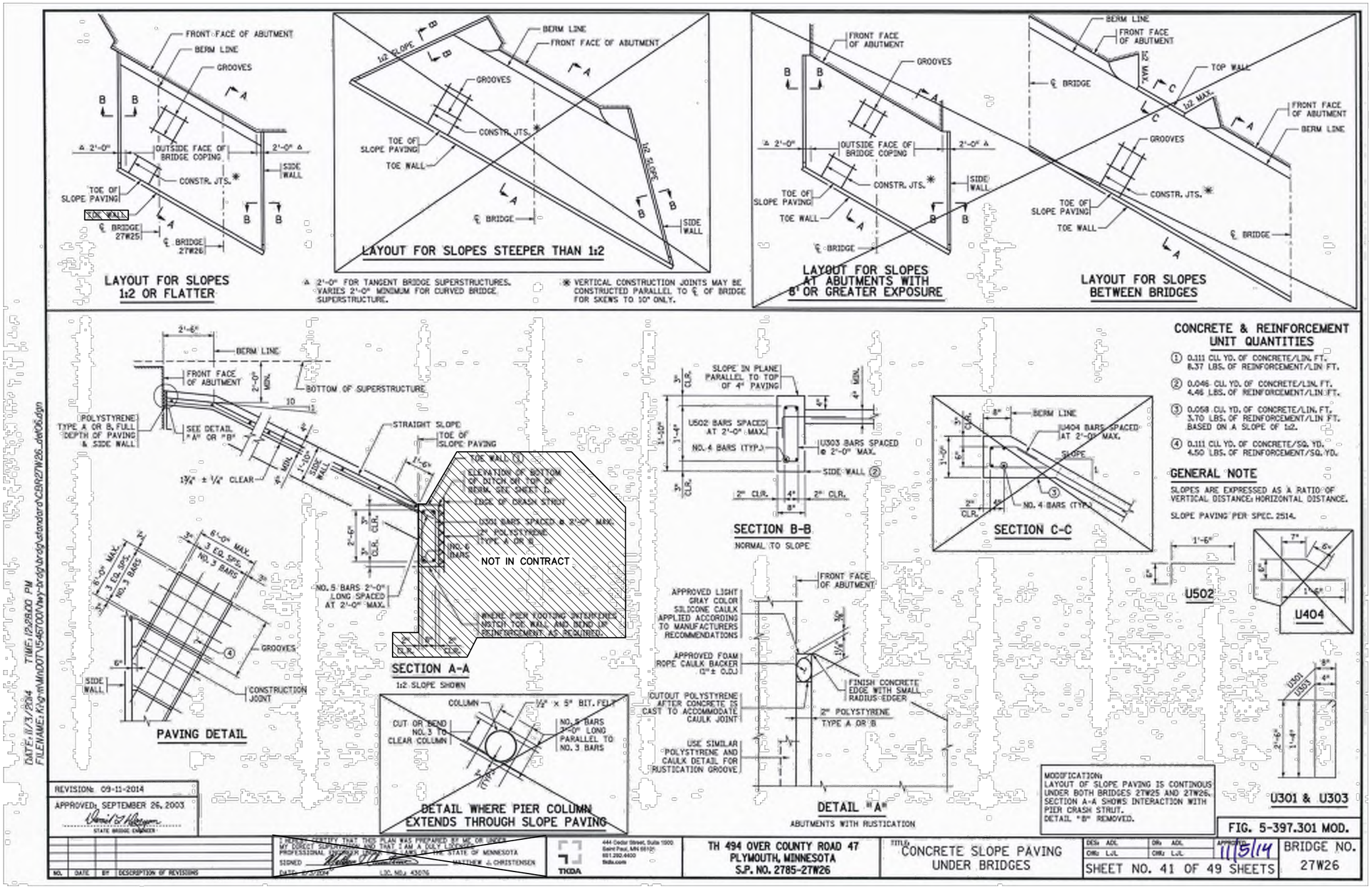
BRIAN FLEMING, PE
DATE: 11/04/2024 MN LIC. NO. 49486

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. 196 / 348

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.

REVISION: 09-11-2014
APPROVED: SEPTEMBER 26, 2003
STATE BRIDGE ENGINEER

NO.	DATE	BY	DESCRIPTION OF REVISIONS

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 J. CHRISTENSEN
DATE: 11/05/2014
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

DES: ADL	DR: ADL	APPROVED: 11/5/14
CHK: LJL	CHK: LJL	

SHEET NO. 41 OF 49 SHEETS

BRIDGE NO. 27W26

DATE: 11/3/2014 TIME: 12:28:00 PM
FILENAME: K:\g-m\MnDOT\545700\Hwy-bridge\standard\CBR27W26_detO6.dgn

No.	Date	Revisions	App.

DRAWING NAME: CHANKAHDA_PH3_RtwDtl.dwg

DESIGNED BY:	JWB
DRAWN BY:	RGS
CHECKED BY:	BLF
DATE:	11/04/2024
PROJECT NO.	160662010

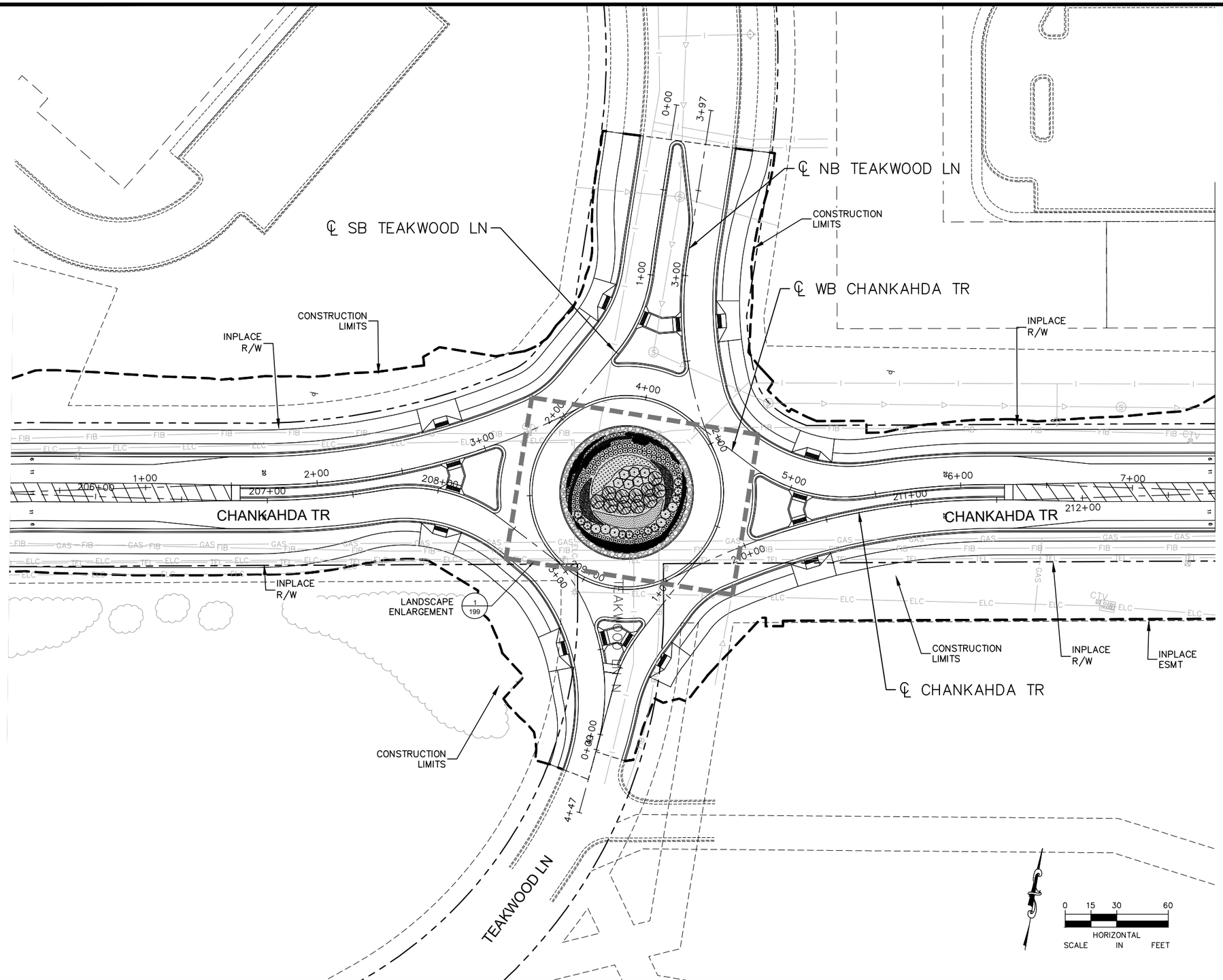
Kimley»Horn
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PHONE: 651-645-4197
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BRIAN FLEMING, PE
DATE: 11/04/2024 MN LIC. NO. 49486

City of Plymouth
CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
RETAINING WALL PLANS
CONCRETE SLOPE PAVING DETAIL

CITY PROJECT	ST240002	SHEET NO. 197
COUNTY PROJECT		348
S.A.P.	155-210-003	
S.A.P.		



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 WITHIN ENTIRE LIMITS OF SPADE EDGE BED.
6. SEE SHEETS 201 – 204 FOR LANDSCAPE DETAILS
7. CONFIRM LOCATION OF UTILITIES PRIOR TO ANY PLANTING. BRING ANY CONFLICTS TO LANDSCAPE ARCHITECTS ATTENTION PRIOR TO INSTALLATION.
8. SEE SHEET 200 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
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RYAN A. HYLLESTED, PLA

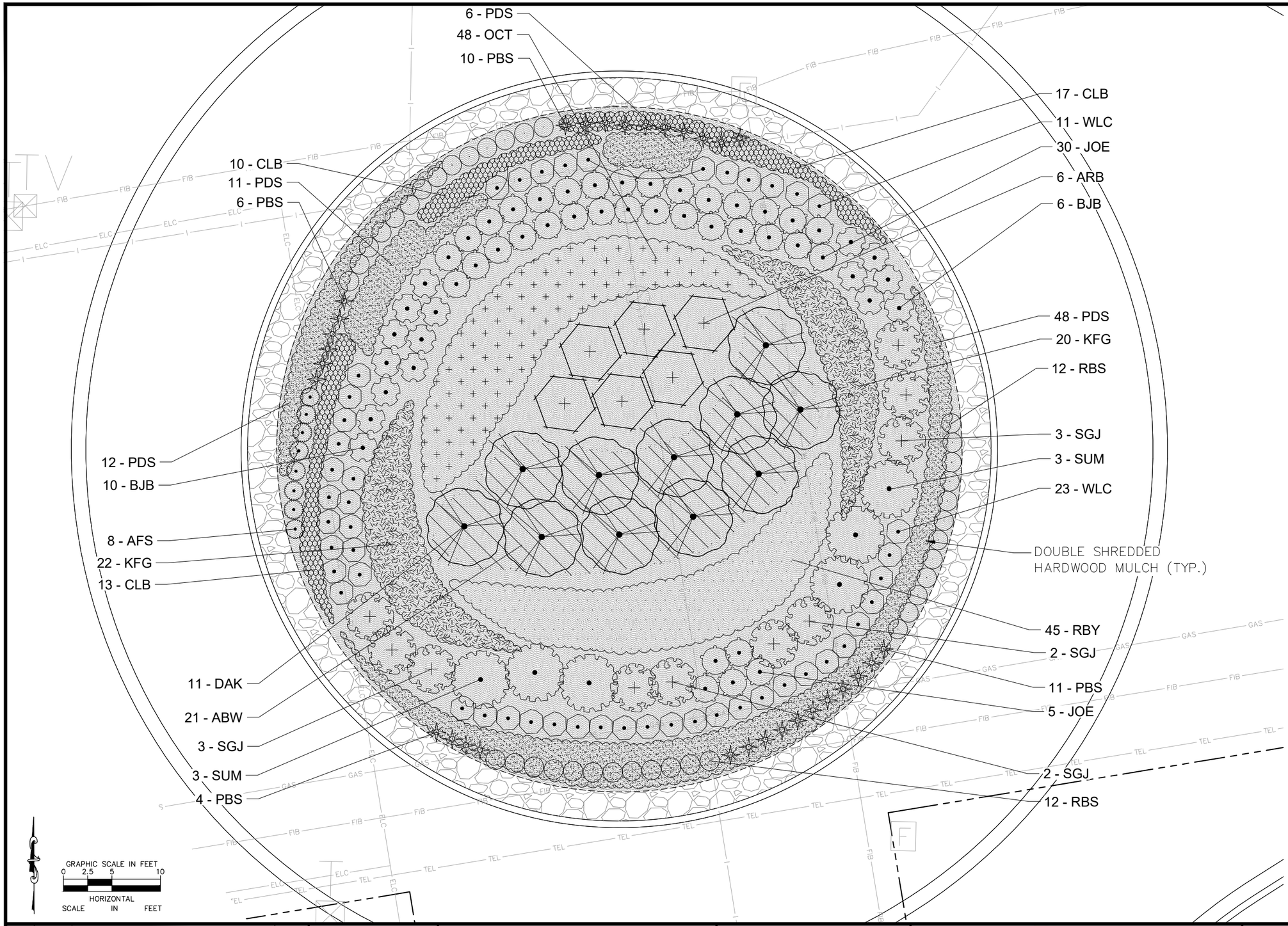
DATE: 2/14/2023 MN LIC. NO. 53828

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. 198 / 348



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		
	SGJ	SEA GREEN JUNIPER
DECIDUOUS SHRUBS		
	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
	KFG	KARL FOERSTER FEATHER REED GRASS
	OCT	RED OCTOBER BIG BLUESTEM
	PDS	PRAIRIE DROPSEED
	RBY	RUBY RIBBONS® SWITCH GRASS

NOTE:
SEE SHEET 200 FOR FULL PLANT SCHEDULE

No.	Date	Revisions	App.

DRAWING NAME
CHANKAHDA_PH3_Landscape.dwg

DESIGNED BY:	JWB
DRAWN BY:	RGS
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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 ENLARGEMENT

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

SHEET NO. 199 / 348

PLANT SCHEDULE

SYMBOL	CODE	QTY	COMMON NAME	BOTANICAL NAME	CONTAINER	CAL.	MATURE HEIGHT X WIDTH
CONIFEROUS TREE							
	ARB	6	TECHNY ARBORVITAE	THUJA OCCIDENTALIS 'TECHNY'	B & B	6` HT.	H:12-15' W:6-10'
ORNAMENTAL TREE							
	DAK	11	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							
	SGJ	10	SEA GREEN JUNIPER	JUNIPERUS CHINENSIS `SEA GREEN`	#5 CONT.	5` O.C.	H:48-60" W:48-60"
DECIDUOUS SHRUBS							
	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	21	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"
	KFG	42	KARL FOERSTER FEATHER REED GRASS	CALAMAGROSTIS X ACUTIFLORA 'KARL FOERSTER'	#1 CONT	30" O.C.	H:36-48" W:24-36"
	OCT	48	RED OCTOBER BIG BLUESTEM	ANDROPOGON GERARDII 'RED OCTOBER'	#1 CONT.	30" O.C.	H:60-72" W:18-24"
	PDS	77	PRAIRIE DROPSEED	SPOROBOLUS HETEROLEPIS	#1 CONT.	30" O.C.	H:16-20" W:18-24"
	RBY	45	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.

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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.
200
348

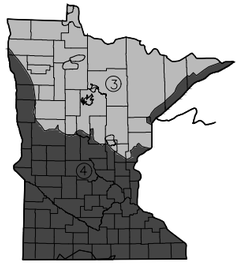
GENERAL NOTES

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.

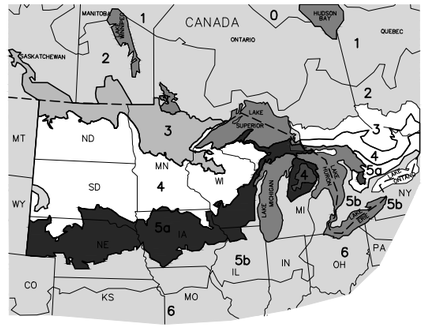


1. BARE ROOT PERENNIALS MUST BE PLACED IN THE SPRING NO LATER THAN JUNE 1ST OR FOLLOW THE FALL DECIDUOUS PLANTING DATES.
2. ACTUAL DATES MAY CHANGE DEPENDING UPON SEASONAL CONDITIONS, AS DETERMINED BY THE ENGINEER.
3. FALL PLANTING IS NOT ALLOWED FOR BARE ROOT FORM OF THE FOLLOWING SPECIES: HAWTHORN, 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:

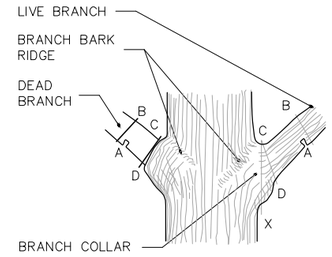
A. PLANT STOCK CONTINUOUSLY GROWN FOR AT LEAST THE LAST TWO YEARS WITHIN THE ACCEPTABLE LIMITS SHOWN.

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)



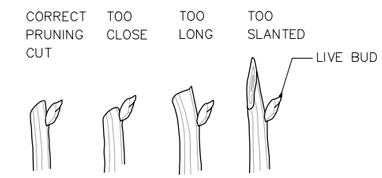
BRANCHES PRUNED AT TRUNK (SHIGO METHOD)

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.



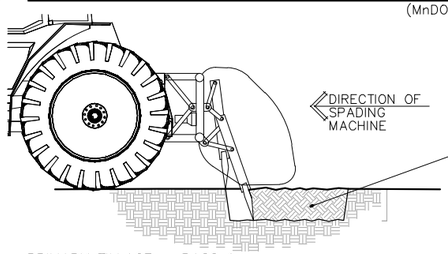
BRANCHES PRUNED TO LIVE BUD

PRUNING NOTES:

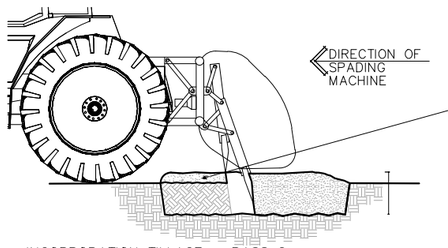
1. PRUNE USING CLEAN AND SHARP SCISSOR–TYPE PRUNER OR PRUNING SAW.
2. THE BEST TIME TO PRUNE IS LATE DORMANT SEASON OR EARLY SPRING.
3. AVOID PRUNING OAKS IN APRIL, MAY, JUNE OR JULY.
4. IF PRUNING IS NECESSARY OR IF WOUNDS OCCUR TO OAK TREES IN APRIL, MAY, JUNE OR JULY, IMMEDIATELY PAINT CUT SURFACE 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:	11/04/2024
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

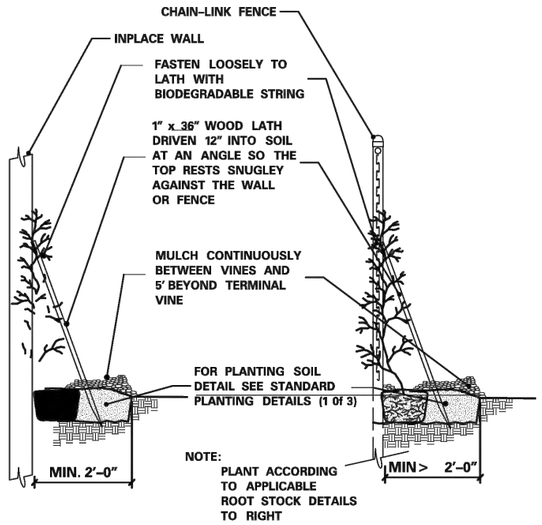
CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155–210–003
S.A.P.	

SHEET NO. 201 / 230

PLANTING HOLE DIMENSIONS

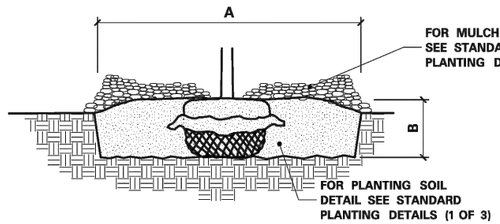
HOLE DEPTH FOR B&B AND CONTAINER PLANTS SHALL NOT EXCEED MEASUREMENT FROM ROOT FLARE TO BOTTOM OF SOIL BALL.

PLANT TYPE	PLANT SIZE UP TO AND INCLUDING	(A) MINIMUM HOLE WIDTH	(B) APPROXIMATE HOLE DEPTH
DECIDUOUS & ORNAMENTAL TREES	3" B.R.	46"	13"
	4" B.R	46"	14"
	5" B.R.	48"	14"
	6" B.R.	54"	15"
	7" B.R	60"	16"
	8" B.R.	66"	19"
	0.75" B.R.	48'	12"
	1" B.R.	54"	14"
	1.25" B.R.	60"	14"
	1.5 B.R.	66"	15"
	1.75" B.R	72"	16"
	2" B.R.	84"	19"
	4' B.B.	42"	11"
	5' B.B.	48"	12"
	6' B.B.	52"	14"
	8' B.B.	66"	16"
	10' B.B.	66"	16"
	12' B.B.	48"	16"
	1" B.B.	54"	14"
	1.25" B.B.	56"	15"
	1.5" B.B.	61"	15"
	1.75" B.B.	66"	16"
	2" B.B.	72"	16"
	2.5" B.B.	84"	19"
	3" B.B.	96"	20"
	3.5" B.B.	114"	23"
	4" B.B.	126"	25"
DECIDUOUS SHRUBS, ROSES AND PERENNIALS 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"



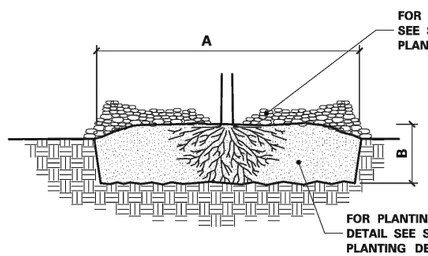
WALL INSTALLATION **FENCE INSTALLATION**

INSTALLATION OF VINES



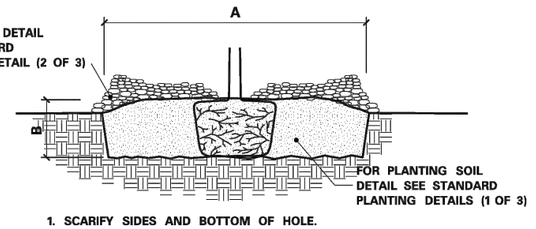
1. SCARIFY SIDES AND BOTTOM OF HOLE.
2. PROCEED WITH CORRECTIVE PRUNING.
3. SET PLANT ON UNDISTURBED NATIVE SOIL OR THOROUGHLY COMPACTED PLANTING SOIL. PLACE PLANT SO THE ROOT FLARE IS AT OR UP TO 2" ABOVE THE FINISHED GRADE WITH BURLAP AND WIRE BASKET, (IF USED), INTACT.
4. SLIT REMAINING TREATED BURLAP 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



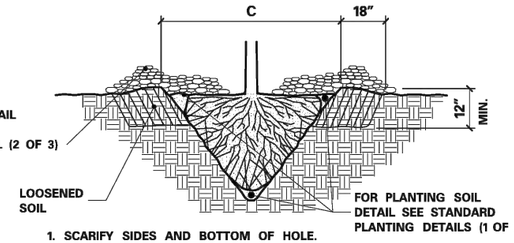
1. SOAK ROOTS IN WATER FOR AT LEAST ONE HOUR BUT NOT MORE THAN 24 HOURS PRIOR TO PLANTING.
2. SCARIFY SIDES AND BOTTOM OF HOLE.
3. PROCEED WITH CORRECTIVE PRUNING OF THE TOP AND ROOTS.
4. TRANSFER PLANT DIRECTLY FROM WATER TO HOLE. SET PLANT SO THE ROOT FLARE IS AT THE FINISHED SOIL ELEVATION. SPREAD 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



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.

MACHINE MOVED STOCK

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'

INSTALLATION OF PLANTS

(MnDOT 2571.3F)

PLANTING HOLE DIMENSIONS

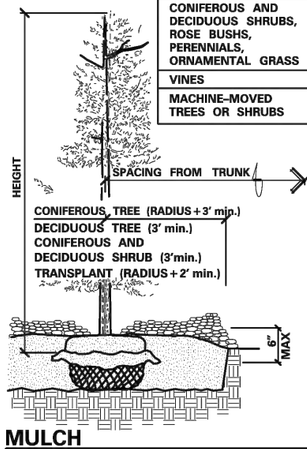
HOLE DEPTH FOR B&B AND CONTAINER PLANTS SHALL NOT EXCEED MEASUREMENT FROM ROOT FLARE TO BOTTOM OF SOIL BALL.

PLANT TYPE	PLANT SIZE UP TO AND INCLUDING	(A) MINIMUM HOLE WIDTH	(B) APPROXIMATE HOLE DEPTH
CONIFEROUS TREES AT LEAST 2/3 OF ALL CONIFER BRANCHES WILL CONTAIN TERMINAL BUDS	2' B.B	36"	10"
	3' B.B	42"	11"
	4' B.B	51"	13"
	5' B.B	60"	13"
	6' B.B	66"	15"
	7' B.B	72"	16"
	8' B.B	81"	18"
	9' B.B	90"	20"
	10' B.B	102"	21"
	12' B.B	114"	24"
CONIFEROUS SHRUBS (UPRIGHT)	18" B.B.	24"	7"
	3' B.B.	48"	12"
CONIFEROUS SHRUBS (SPREADING)	18" SPR B.B.	30"	8"
	2' SPR B.B.	36"	9"
CONTAINER GROWN PLANTS	CELLPACKS / PLUGS	6"	2.5"
	2.25" CONT.	7"	3"
	3.5" CONT.	10"	3"
	4" CONT.	11"	4"
	4.5" CONT.	13"	4"
	6"/1 QT CONT.	15"	5.5"
	1# CONT.	18"	6"
	2# CONT.	23"	7.5"
	3# CONT.	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 2571.3H)

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:	11/04/2024
PROJECT NO.	160662010

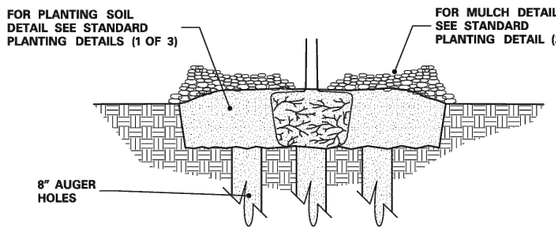
Kimley»Horn
767 EUSTIS STREET, SUITE 100, ST, PAUL, MN 55114
PHONE: 651-645-4197
WWW.KIMLEY-HORN.COM

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

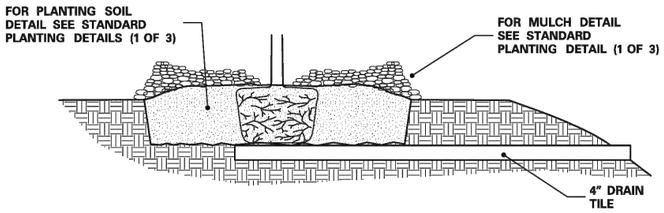
City of Plymouth
CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
LANDSCAPE DETAILS

CITY PROJECT	ST240002	SHEET NO. 203
COUNTY PROJECT		230
S.A.P.	155-210-003	
S.A.P.		



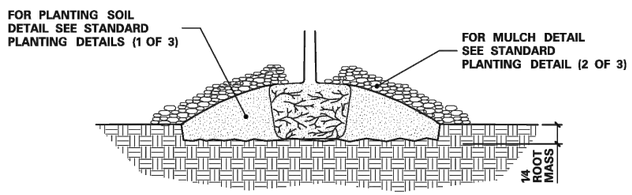
1. EXCAVATE HOLE OR BED TO ALLOW PLACING THE TOP OF ROOT MASS 1"–3" HIGHER THAN FINISHED GRADE.
2. AUGER 8" DIAMETER HOLES ENTIRELY THROUGH IMPERVIOUS OR POORLY DRAINED HARD PAN SOIL LAYER TO ADEQUATELY DRAIN SUBSOIL.
3. TEST FOR POSITIVE DRAINAGE. RE–AUGER AN ADDITIONAL 8" IF NECESSARY FOR POSITIVE 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



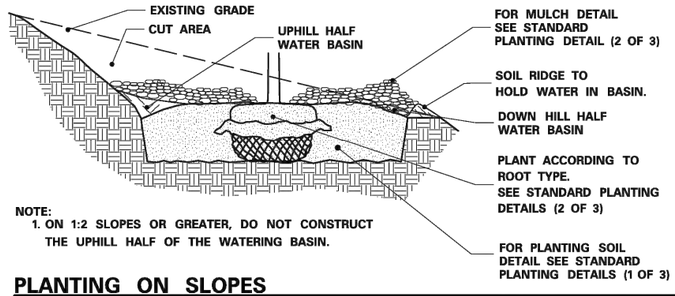
1. EXCAVATE HOLE OR BED 1/4 THE DEPTH OF THE ROOT MASS.
2. SET ROOT MASS IN HOLE.
3. CONSTRUCT BERM WITH PLANTING SOIL. EXTEND THE BERM BASE TO A WIDTH OF 3 TIMES THE BERM HEIGHT.
4. COMPLETE PLANTING ACCORDING ROOT TYPE. SEE STANDARD PLANTING DETAILS (2 OF 3).

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.

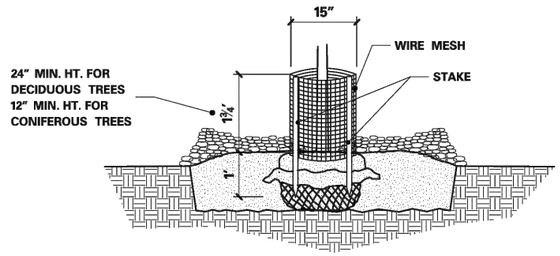
PLANTING DETAIL FOR POORLY DRAINED SOILS

(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

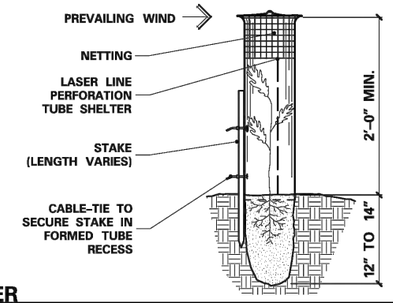


1. FORM A DOUBLE–LAYERED CYLINDER USING 0.25" GRID GALVANIZED WELDED WIRE MESH (HARDWARE CLOTH). OVERLAP THE CUT END 2".
2. DRIVE TWO 1" x 1" OPPOSING HEARTWOOD WHITE OAK STAKES INTO THE GROUND, 7" FROM THE CENTER OF THE TREE STEM.
3. SECURE THE MESH CYLINDER TO THE OUTSIDE OF THE STAKES USING EITHER, 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

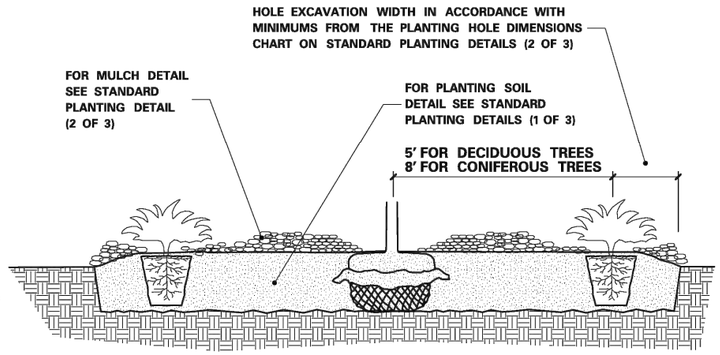
(MnDOT 2571.3I.2)

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.

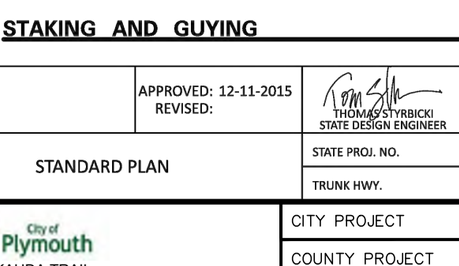


SEEDLING TREE SHELTER

(MnDOT 2571.3I.4)



PLANT SPACING IN MASS BEDS



16" LONG POLYPROPYLENE OR POLYETHYLENE, 40 MIL. THICK AND 1.5" WIDE STRAPS. ATTACH WITH 10 ga WIRE.

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

STEEL POST SIZING					
CALIPER	STEEL POST TYPE	A	B	C	D
LESS THAN 4 INCHES	HOT–ROLLED STEEL FENCE POST (MnDOT 3403) OR APPROVED EQUAL.	7'–0"	3'–0" MIN.	4'–0"	3'–0"
GREATER THAN 4 INCHES	10', 2.2 LB. FLANGED 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.	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:	11/04/2024
PROJECT NO.	160662010

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

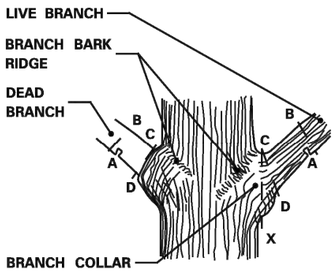
I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL LANDSCAPE ARCHITECT UNDER THE LAWS OF THE STATE OF MINNESOTA.

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. 202 / 230



BRANCHES PRUNED AT TRUNK

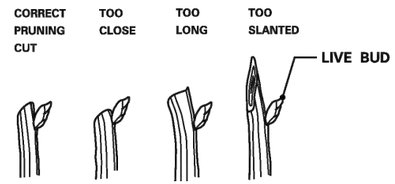
(SHIGO METHOD)

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

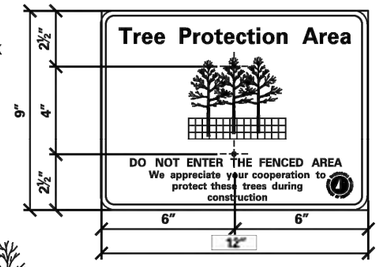
PRUNING NOTES:

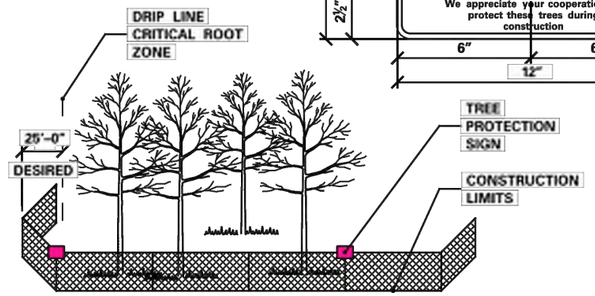
1. PRUNE USING CLEAN AND SHARP SCISSOR-TYPE PRUNER OR PRUNING SAW.
2. THE BEST TIME TO PRUNE IS LATE DORMANT SEASON OR EARLY SPRING.
3. AVOID PRUNING OAKS IN APRIL, MAY, JUNE OR JULY.
4. IF PRUNING IS NECESSARY OR IF WOUNDS OCCUR TO OAK TREES IN APRIL, MAY, JUNE OR JULY, IMMEDIATELY PAINT CUT SURFACE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

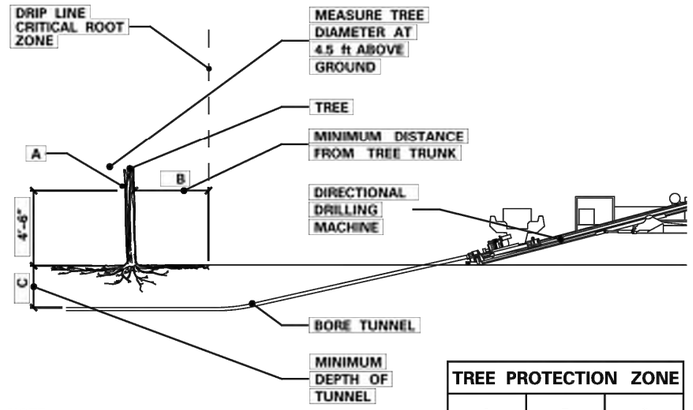




1. FURNISH AND INSTALL TEMPORARY FENCE AT THE TREE'S DRIPLINE OR CONSTRUCTION LIMITS AS SPECIFIED, PRIOR TO ANY CONSTRUCTION.
2. WHEN POSSIBLE PLACE FENCE 25 FEET BEYOND THE DRIP LINE.
3. PLACE TREE PROTECTION SIGNS ALONG FENCE AT 50' INTERVALS.

TEMPORARY FENCE

(MnDOT 2572.3A1)



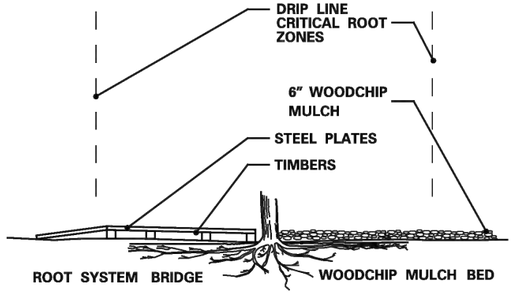
NOTE:

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:

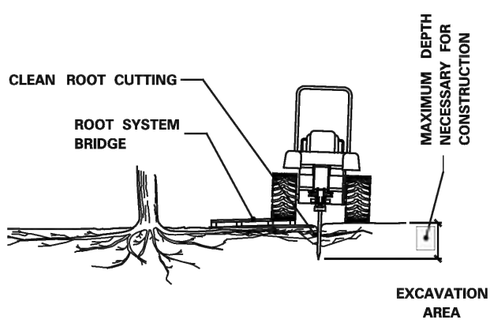
1. CONSTRUCT ROOT SYSTEM BRIDGES WITH STEEL PLATE SUPPORTED ON WOOD TIMBERS PLACED RADIALLY TO THE TREE TRUNK.

OR

2.PLACE A 6 INCH LAYER OF WOODCHIP MULCH OVER A TYPE III GEOTEXTILE (MnDOT 3733).

OTHER VEGETATION PROTECTION MEASURES

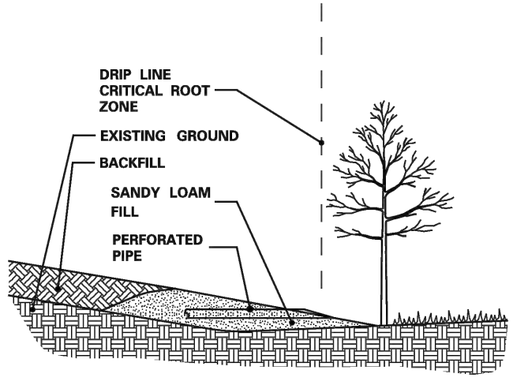
(MnDOT 2572.3A12)



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

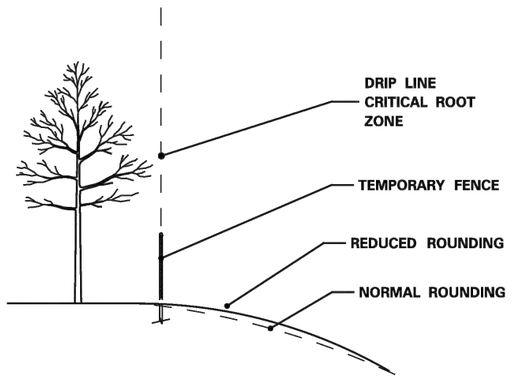
(MnDOT 2572.3A2)



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.

DRAWING NAME	CHANKAHDA_PH3_LANDSCDET.dwg
DESIGNED BY:	CFK
DRAWN BY:	CFK
CHECKED BY:	RAH
DATE:	11/04/2024
PROJECT NO.	160662010

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

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

SHEET NO. 204 / 230

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	528

PERMANENT PAVEMENT MARKING TABULATION		PM	
ITEM	UNIT	TOTAL MARKING QUANTITIES	
PAVEMENT MARKING REMOVAL	SQ FT	820	
4" SOLID LINE PAINT	LIN FT	18,785	(1)
6" SOLID LINE PAINT	LIN FT	195	(2)
8" DOTTED LINE PAINT	LIN FT	81	(2)
24" SOLID LINE PAINT	LIN FT	1,770	(3)
4" DOUBLE SOLID LINE PAINT	LIN FT	13,940	(4)
PAVEMENT MESSAGE PAINT	SQ FT	575	(5)
CROSSWALK PAINT	SQ FT	1,840	(6)
CROSSWALK PREFORM THERMOPLASTIC GROUND IN ESR	SQ FT	1,350	(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 (250 SQ FT)
17 LEFT ARROWS (265 SQ FT)
1 THRU RIGHT ARROWS (30 SQ FT)
1 THRU LEFT ARROWS (30 SQ FT)
(6) 1840 SQ FT WHITE (2.5' X 8' BLOCK)
(7) 1350 SQ FT WHITE (3' X 10' BLOCK)

SIGNING AND PAVEMENT MARKING PLAN INDEX

205	TITLE SHEET
206 – 209	TABULATIONS
210 – 212	PAVEMENT MARKING DETAILS
213	SIGNING DETAILS
215 – 230	SIGNING & PAVEMENT MARKING PLAN
214	SIGN PANEL LAYOUTS

SYMBOLS & MATERIALS LEGEND

CROSSWALK BLOCK

PAVEMENT MESSAGE (LEFT ARROW)

PAVEMENT MESSAGE (RIGHT ARROW)

STRIPING KEY

TRIANGLE–PAINT

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: 11/04/2024
PROJECT NO. 160662010

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BRIAN K. VILLA, PE
DATE: 11/04/2024 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. 205 / 348

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	7	U-SOIL	1	1								
	R2-1	SPEED LIMIT 40	24 x 30					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	7	U-SOIL	1	1								
	R2-1	SPEED LIMIT 45	24 x 30					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	R-CONC	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	7	U-SOIL	2	1	11.25							
S-30	R4-7	KEEP RIGHT	24 x 30	7	R-CONC	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	7	U-SOIL	1	1								
	R2-1	SPEED LIMIT 40	24 x 30					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							
(1)(2) S-39		MEDICINE LAKE REGIONAL TRAIL	12 x 18	7	U-SOIL	1									
		THROUGH ARROW	12 x 12							1					
		MEDICINE LAKE REGIONAL TRAIL	12 x 18												
		LEFT ARROW	12 x 12												
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							

No.	Date	Revisions	App.

DRAWING NAME: CHANKAHDA_PH3_SgnStrpDtl.dwg

DESIGNED BY:	BWS
DRAWN BY:	RCH
CHECKED BY:	BKV
DATE:	11/04/2024
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: 11/04/2024 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.	

SHEET NO. 206 / 348

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-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-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	7	U-SOIL	2		11.25							
	S-50	X4-1	GUIDE DELINEATOR	8 x 24											1	
	S-51	R3-8ACA	L-T-R	54 x 30	7	U-SOIL	2		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	7	U-SOIL	2		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	7	U-SOIL	1	1								
		R2-1	SPEED LIMIT 40	24 x 30					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	U-SOIL	2		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	
	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								

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SIGNING AND PAVEMENT MARKING PLAN
TABULATIONS

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

SHEET NO. 207 / 348

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-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	25 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	R6-4a	ROUNDABOUT DIRECTIONAL (3 ARROWS)	48 x 24	7	U-SOIL	2		8.00							
	R6-1R	ONE WAY RIGHT	36 x 12					3.00							
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	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	25 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	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	25 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	25 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							
S-111	DESIGN	CHANKAHDA TR	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							

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DATE: 11/04/2024 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-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	R3-8AERA	L-TR-R	48 x 30	7	U-SOIL	2	1	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-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	7	U-SOIL	1	1								
	R8-3	NO PARKING	24 x 24												
	R2-1	SPEED LIMIT 40	24 x 30					5.00							
						TOTAL	63	528	2	5	2	1	1	16	6

(1) MOUNT BACK TO BACK.
(2) PANELS TO BE PROVIDED TO THE CONTRACTOR.

SIGN SPECIAL

ST-B

	SIGN NUMBER	PANEL				SUPPORT		REMOVE SIGN PANEL SPECIAL	SALVAGE SIGN PANEL SPECIAL	INSTALL SIGN PANEL SPECIAL
		PANEL CODE	LEGEND	SIZE (W x H)	MOUNTING HEIGHT	TYPE	NUMBER OF POSTS			
				INCH	FEET			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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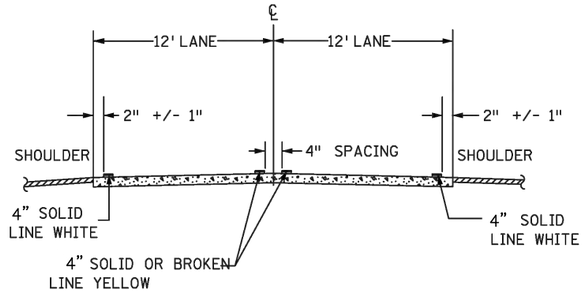
BRIAN K. VILLA, PE
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City of Plymouth

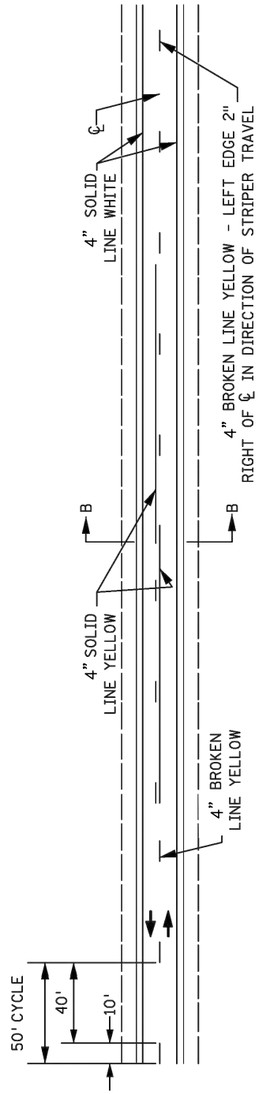
CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
SIGNING AND PAVEMENT MARKING PLAN
TABULATIONS

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

TWO-LANE, TWO-WAY



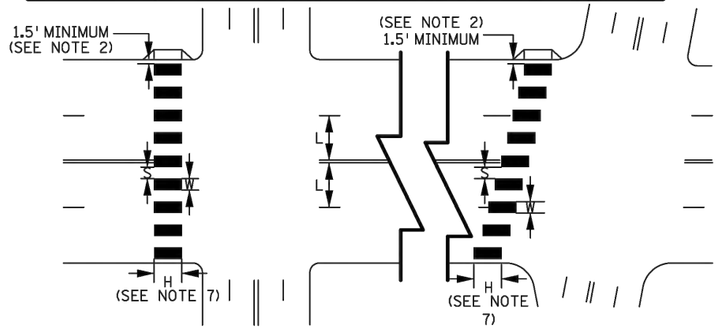
SECTION B-B



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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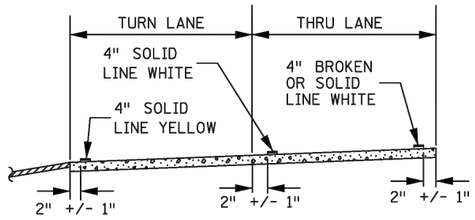
CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
SIGNING AND PAVEMENT MARKING PLAN
PAVEMENT MARKING DETAILS

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

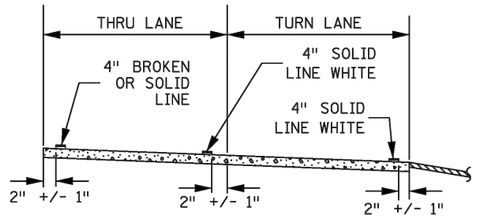
SHEET NO. 210 / 348

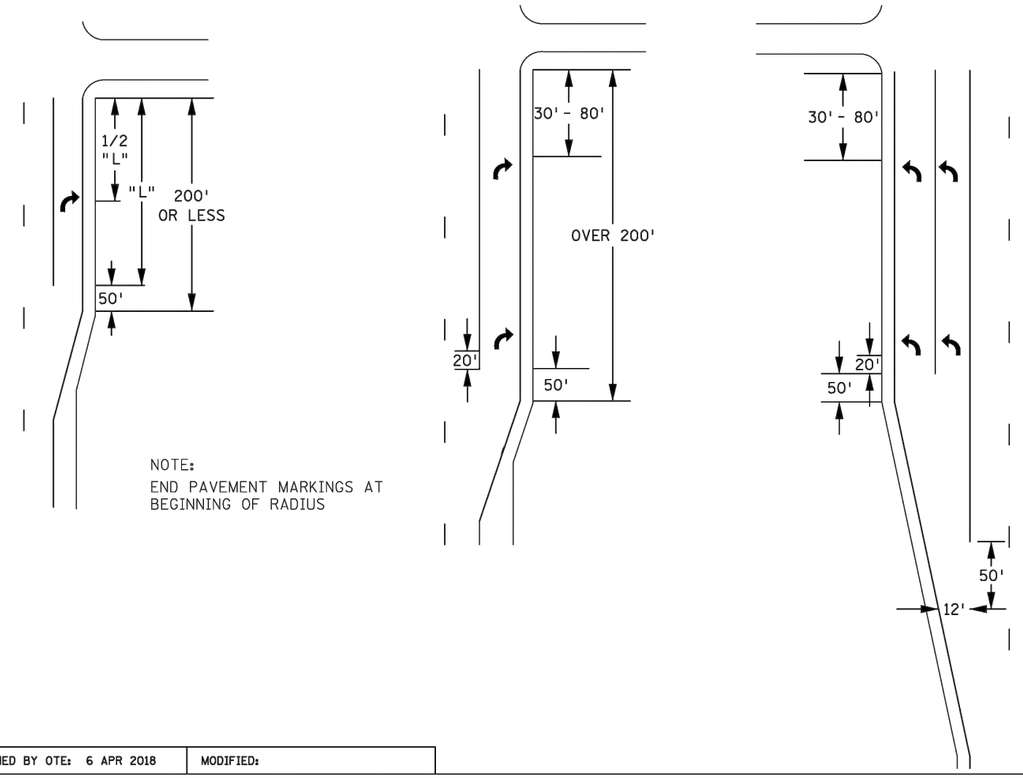
TURN LANE WITH ARROW MESSAGE

LEFT TURN LANE



RIGHT TURN LANE

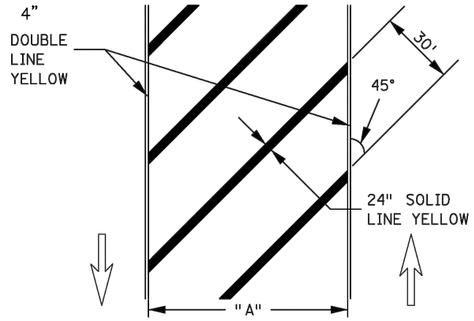


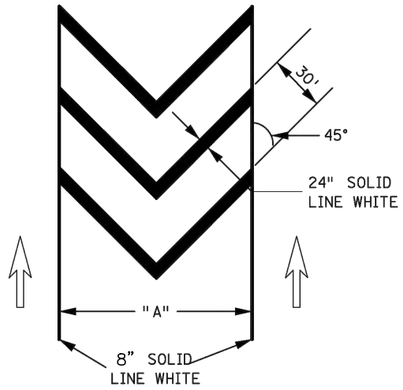


NOTE:
END PAVEMENT MARKINGS AT BEGINNING OF RADIUS

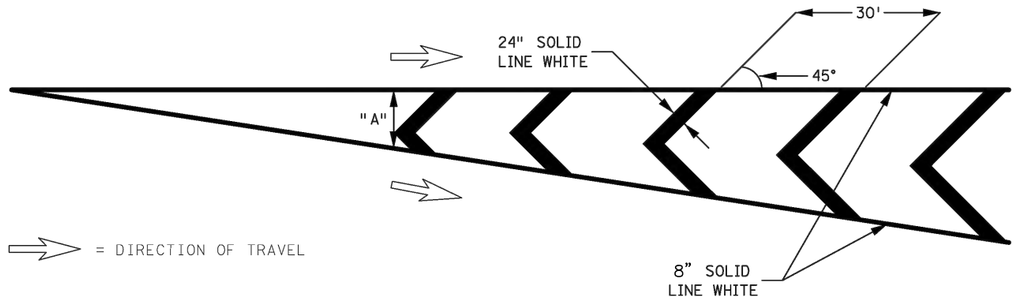
PUBLISHED BY OTE: 6 APR 2018 | MODIFIED:

CROSSHATCHING





WHEN "A" IS LESS THAN 4' NO CROSSHATCHING REQUIRED.



PUBLISHED BY OTE: 16 NOV 2021 | MODIFIED:

No.	Date	Revisions	App.

DRAWING NAME	CHANKAHDA_PH3_SgnStrpDtl.dwg
DESIGNED BY:	BWS
DRAWN BY:	RCH
CHECKED BY:	BKV
DATE:	11/04/2024
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: 11/04/2024 MN LIC. NO. 56090

City of Plymouth

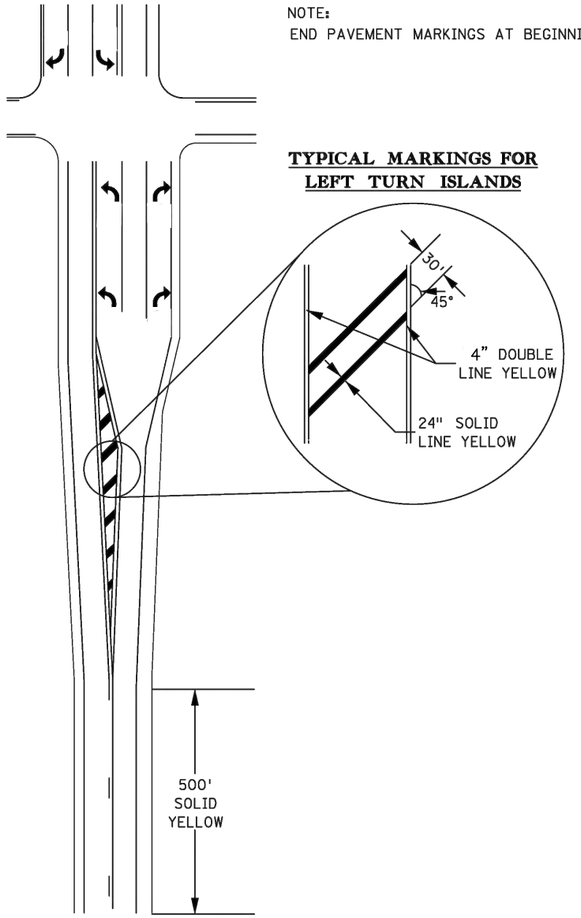
CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
SIGNING AND PAVEMENT MARKING PLAN
PAVEMENT MARKING DETAILS

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

SHEET NO. 211 / 348

LEFT TURN LANE ISLAND

NOTE:
END PAVEMENT MARKINGS AT BEGINNING OF RADIUS



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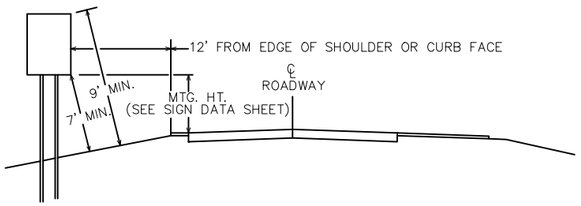
CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
SIGNING AND PAVEMENT MARKING PLAN
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CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 212 / 348

TYPICAL SIGN PLACEMENT

ROADSIDE PLACEMENT



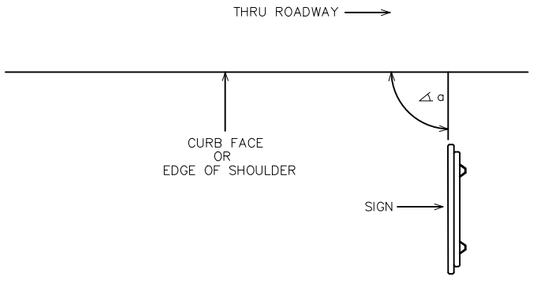
ROUTE MARKER, REGULATORY & WARNING SIGNS – TYPE C
MINOR GUIDE SIGNS – TYPE D

NOTES:

1. IF A SECONDARY SIGN IS MOUNTED BELOW A MAJOR SIGN, THE MAJOR SIGN SHALL BE AT LEAST 8' ABOVE THE PAVEMENT EDGE AND THE SECONDARY SIGN AT LEAST 5'.
2. ALL ROUTE MARKERS, WARNING AND REGULATORY SIGNS SHALL BE AT LEAST 6' ABOVE PAVEMENT EDGE EXCEPT WHERE HEAVY PEDESTRIAN TRAFFIC IS ENCOUNTERED THEY SHALL BE 7'.
3. SIGN FACES SHALL BE VERTICAL.
4. OVERHEAD SIGNS SHALL BE POSITIONED AT RIGHT ANGLES TO THE THRU ROADWAY UNLESS OTHERWISE NOTED.
5. TO AVOID SPECULAR GLARE, ∡ a SHALL BE APPROXIMATELY 93° FOR SIGNS LOCATED LESS THAN 30' FROM THE EDGE OF PAVEMENT AND APPROXIMATELY 92° FOR SIGNS LOCATED 30' OR MORE FROM EDGE OF PAVEMENT. THIS APPLIES TO SIGNS TYPE A, C, & D AND INCLUDES SIGNS IN THE GORE.
6. LATERAL CLEARANCES GIVEN APPLY TO RIGHT AND OR LEFT SIDE INSTALLATION.

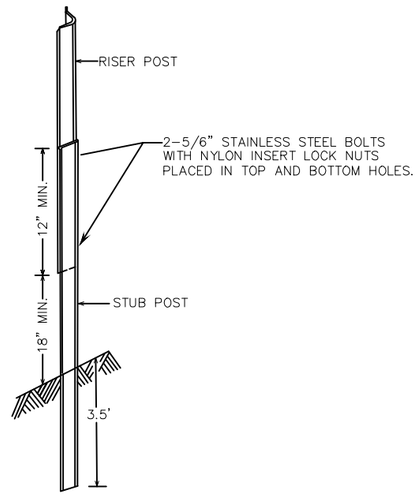
SIGN PLACEMENT
DETAIL

SEE NOTE 5.

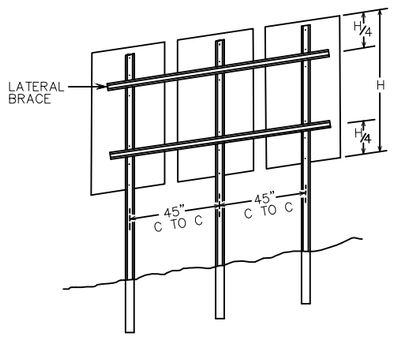


TYPE "C" AND "D" SIGN STRUCTURAL DETAILS

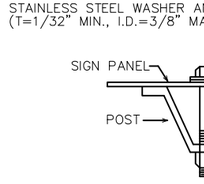
TYPE "C" & "D" POST



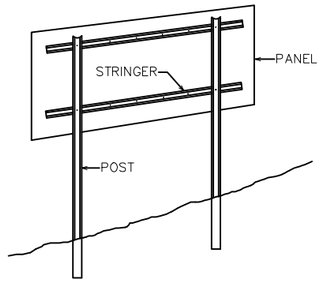
"U POST" SPLICE



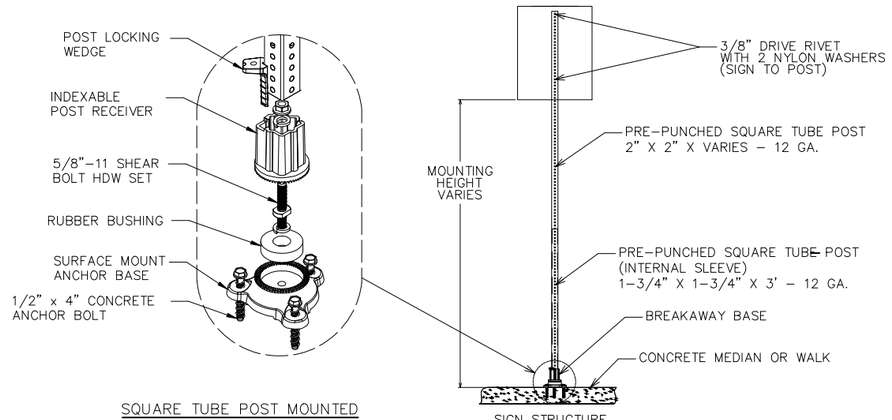
TYPICAL TYPE "C" INSTALLATIONS



"U POST" MOUNTING
TYPE "C" SIGNS

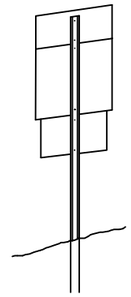


TYPICAL TYPE "D" INSTALLATION



SQUARE TUBE POST MOUNTED
ON SURFACED MEDIAN OR SIDEWALK

SIGN STRUCTURE
ELEVATION VIEW



TYPICAL TYPE "D" INSTALLATION

TRAFFIC SIGN INSTALLATION NOTES:

1) FLANGED CHANNEL SIGN POSTS SHALL CONFORM TO MNDOT 3401.
2) ALL SIGN POSTS SHALL BE SPLICED. DRIVEN STUB POSTS SHALL BE AT LEAST 7' LONG, 3 LBS/FT, WITH 3.5' MINIMUM EMBEDMENT.
3) SIGN POST EXTENSIONS SHALL BE 2.5 LBS/FT. THE CONTRACTOR SHALL DETERMINE THE REQUIRED POST LENGTH FOR VERTICAL CLEARANCE AT EACH LOCATION.
4) MINIMUM VERTICAL CLEARANCE OF 7' IS REQUIRED. SEE MNDOT ENGINEERING MANUAL FOR DETAILS.
5) SIGNS 30" AND SMALLER – SINGLE POSTED
   SIGNS 36" AND LARGER – DOUBLE POSTED,
6) OVERLAP OF STUB POST WITH EXTENSION POST SHALL BE MIN 12". EXTENSION POST SHALL BE MINIMUM 18" ABOVE GROUND. USE 2 – 3/8" BOLTS WITH NYLON INSERT LOCK NUTS.
7) BOLTS, NUTS AND WASHERS SHALL BE STAINLESS STEEL.
8) MOUNTING FOR SIGN PANELS SHALL BE AS INDICATED IN THE MNDOT ENGINEERING MANUAL. SIGN PANELS SHALL BE MOUNTED TO POSTS WITH 5/16" BOLTS, STAINLESS STEEL AND NYLON WASHERS, AND NYLON INSERT LOCK NUTS.
9) A STAINLESS STEEL WASHER SHALL BE PROVIDED BETWEEN NYLON WASHERS AND BOLT HEADS.
10) SIGNS 24" AND LARGER – 0.10 ALUMINUM
    SIGNS SMALLER THAN 24" – 0.08 ALUMINUM
11) NEW SIGN PANELS SHALL USE DG3 PRISMATIC SHEETING. SEE TRAFFIC ENGINEERING MANUAL.
12) SIGNS INSTALLED ON 2 OR 3 POSTS SHALL BE REINFORCED WITH AT LEAST ONE LATERAL BRACE. INSTALLATIONS WHERE TOTAL PANEL HEIGHT IS 60" OR MORE SHALL HAVE TWO LATERAL BRACES LOCATED APPROXIMATELY AT THE QUARTER POINTS.
13) WHERE 2 OR MORE SINGLE POST SIGNS ARE MOUNTED SIDE BY SIDE, THEY SHALL BE REINFORCED LATERALLY BY ONE POST SECTION BOLTED AT EACH POST.

TYPICAL SIGN PLACEMENT
TYPE "C' AND "D" SIGN
STRUCTURAL DETAILS

No.	Date	Revisions	App.

DRAWING NAME	CHANKAHDA_PH3_SgnStrpDtl.dwg
DESIGNED BY:	BWS
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CHECKED BY:	BKV
DATE:	11/04/2024
PROJECT NO.	160662010

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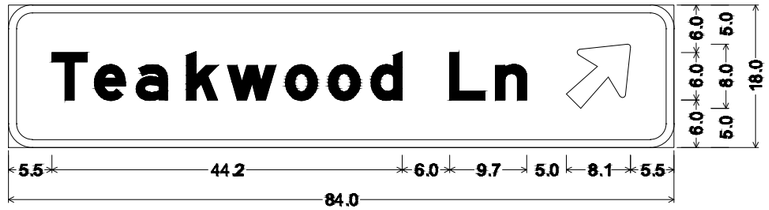
City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
SIGNING AND PAVEMENT MARKING PLAN
SIGNING DETAILS

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

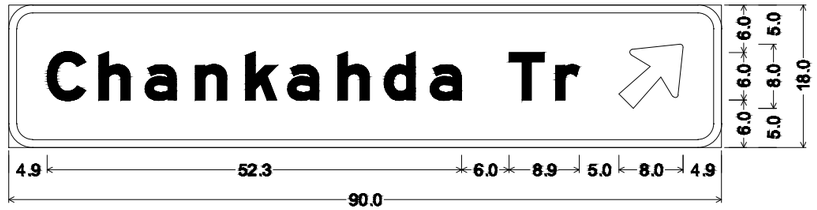
SHEET NO. 213 / 348

S-92



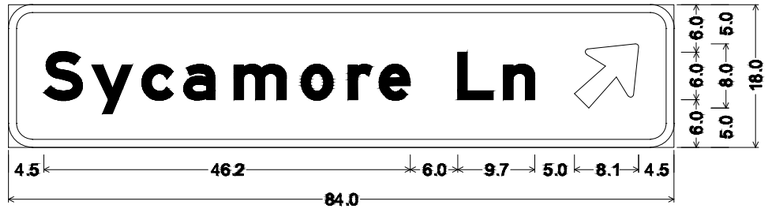
3.0" Radius, 1.0" Border, White on Green;
"Teakwood Ln", E Mod 2K; Arrow 3 - 10.0" 45°;

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°;

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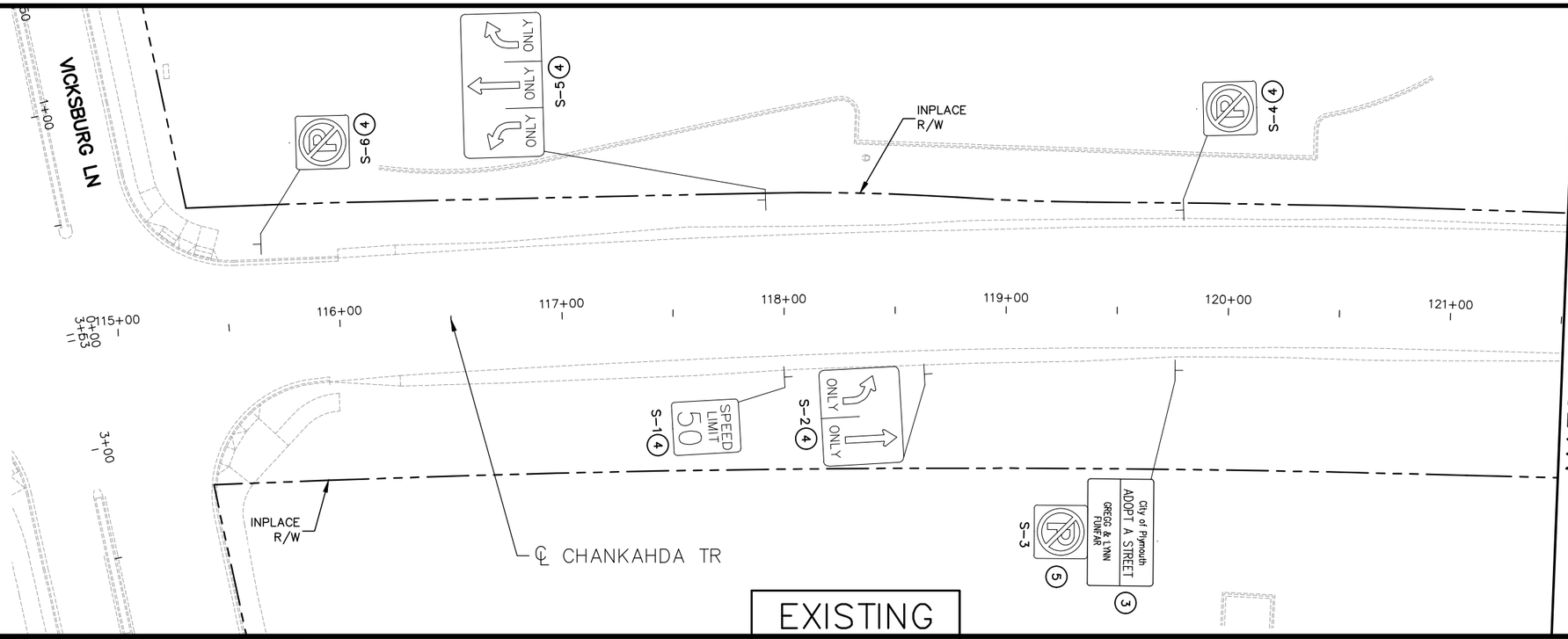
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BRIAN K. VILLA, PE
DATE: 11/04/2024 MN LIC. NO. 56090

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.	

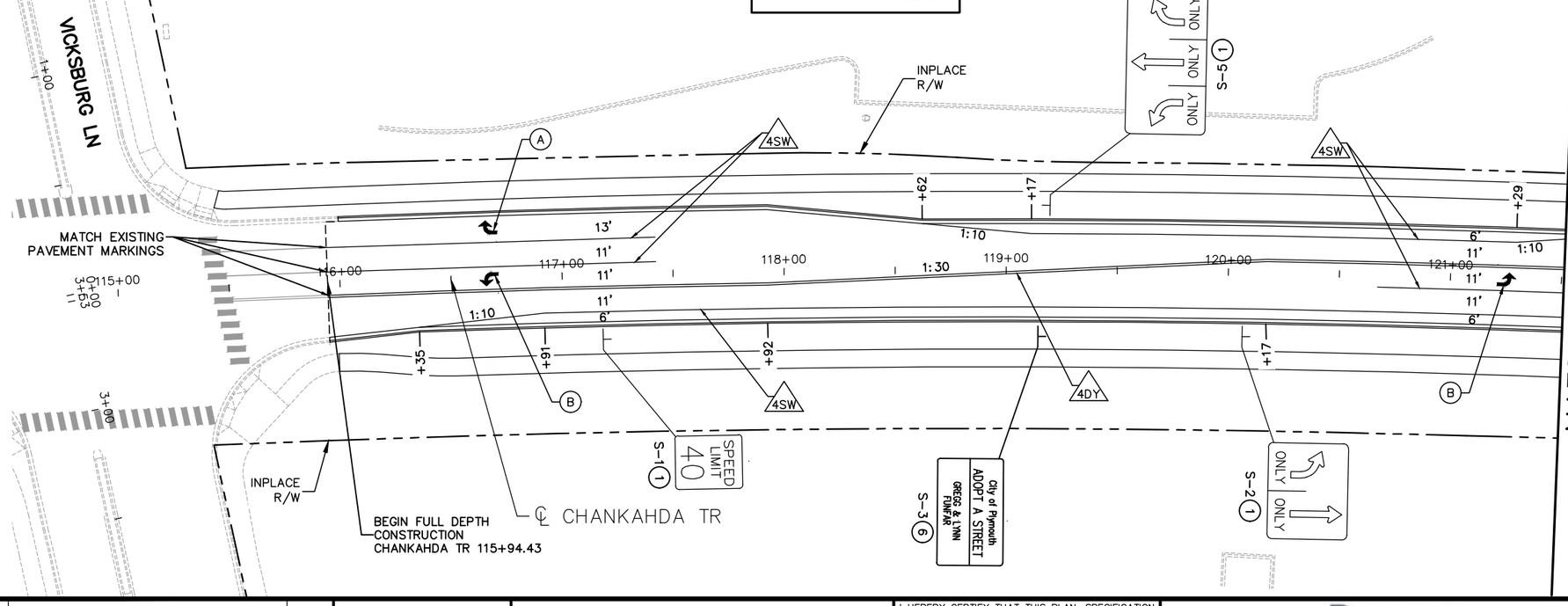


SPECIFIC NOTES:

(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.

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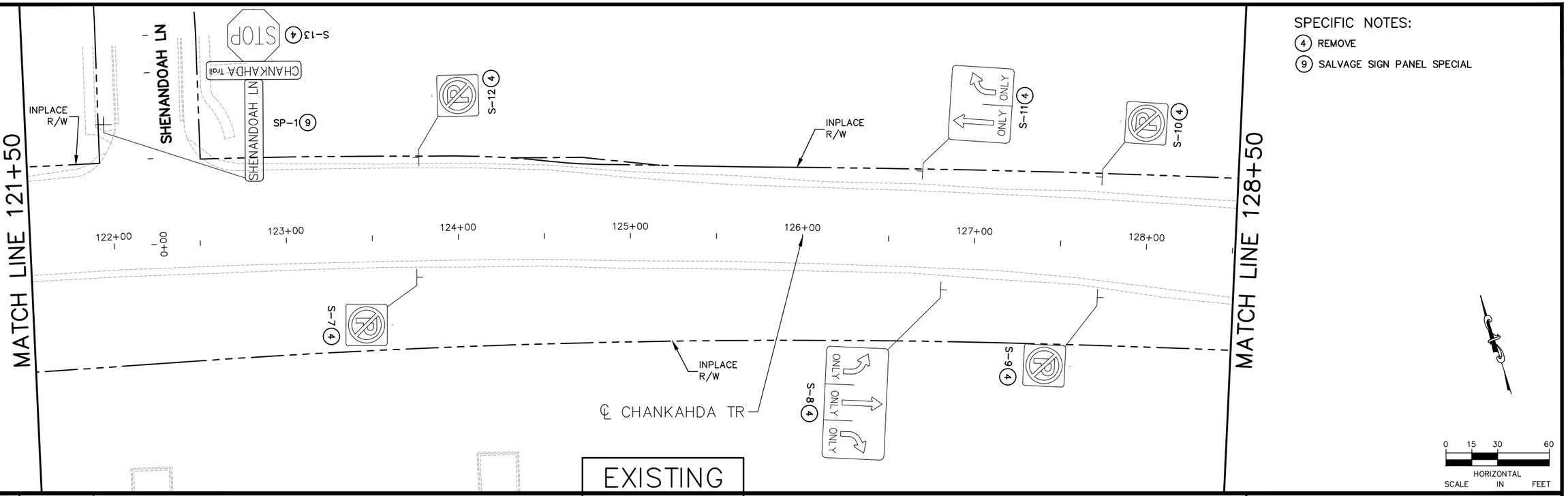
City of Plymouth

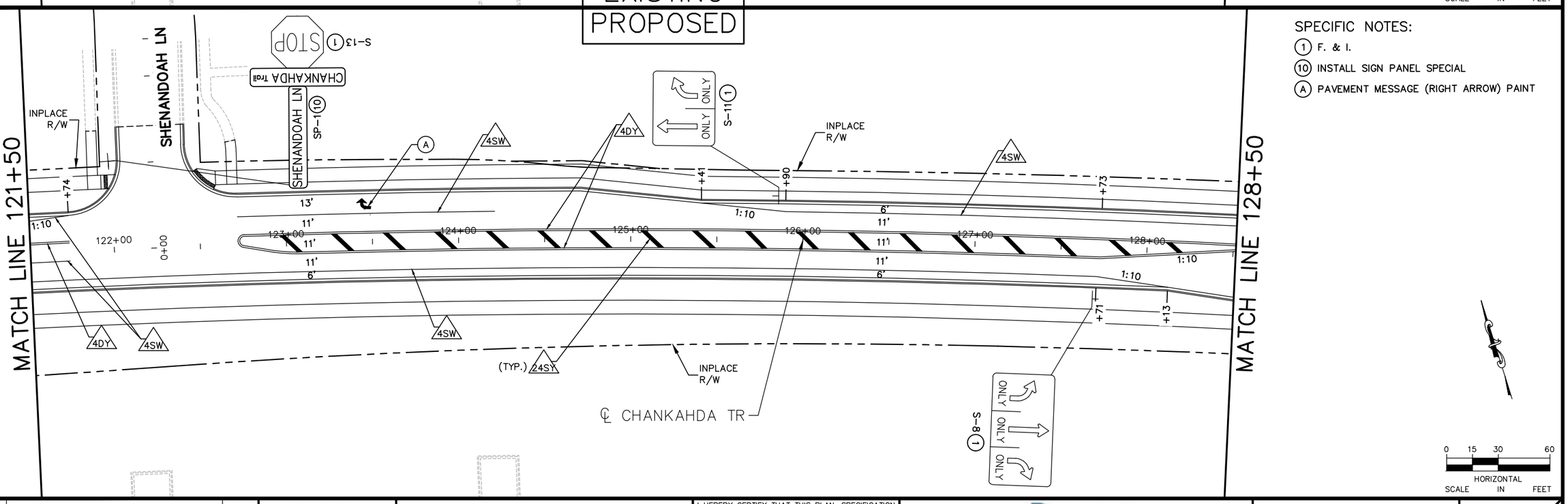
CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3

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. 215 / 348





No.	Date	Revisions	App.

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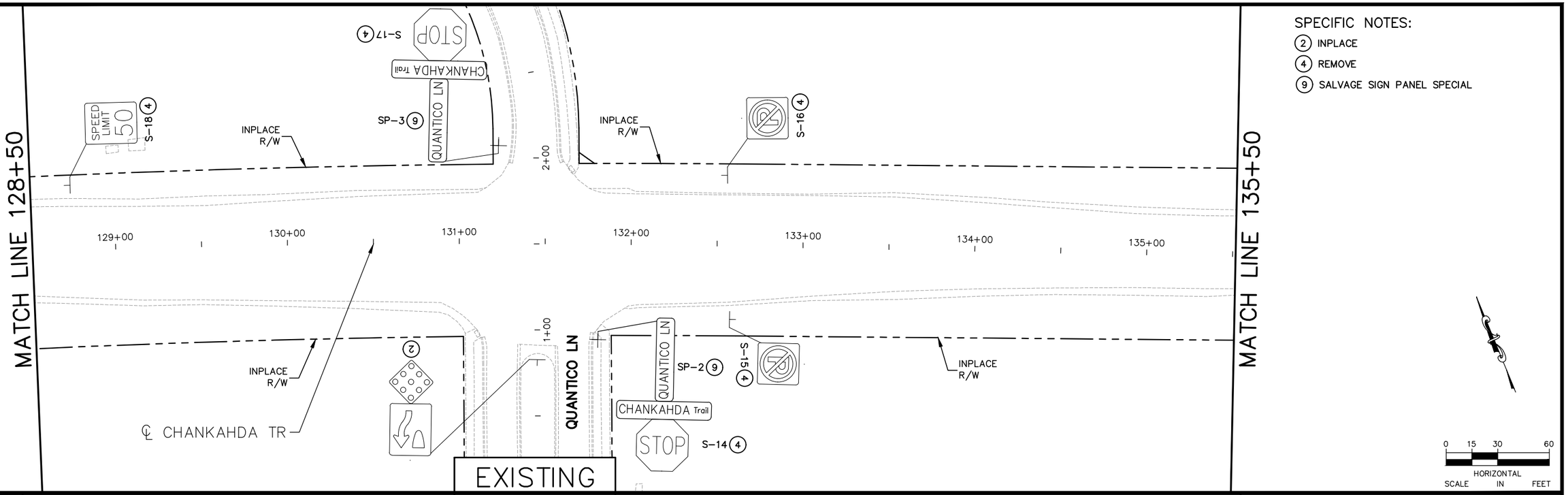
City of Plymouth

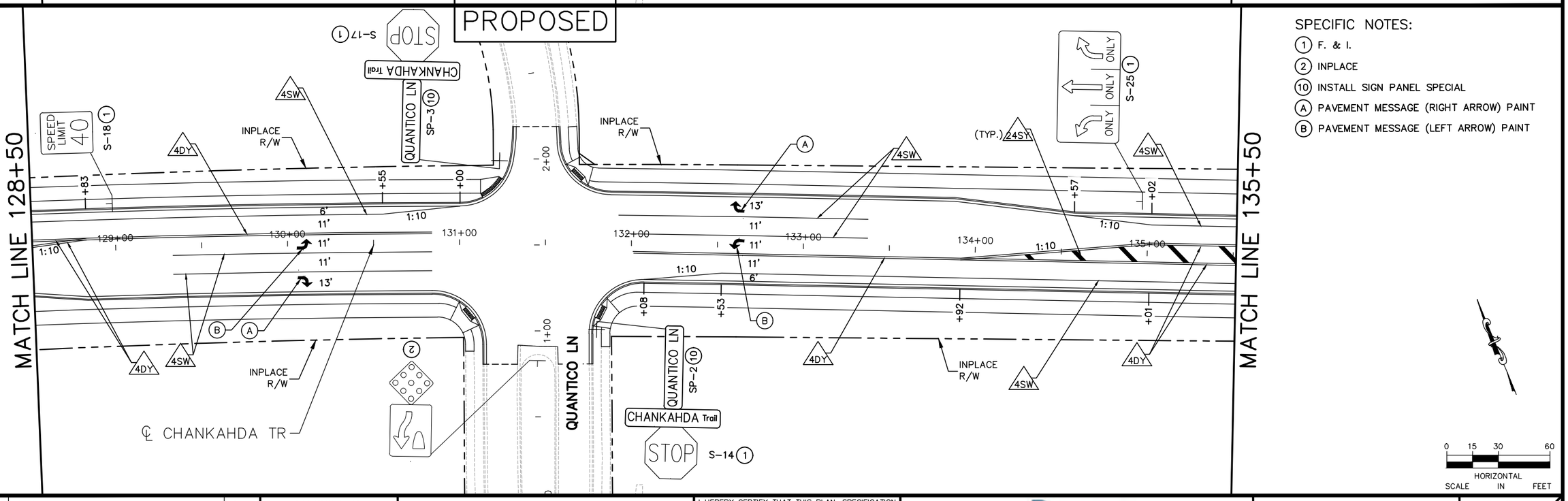
CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3

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. 216 / 348





No.	Date	Revisions	App.

DRAWING NAME	CHANKAHDA_PH3_SgnStrp.dwg
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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. 217 / 348

EXISTING

PROPOSED

MATCH LINE 135+50

MATCH LINE 142+50

NIAGARA LN

CHANKAHDA TR

CHANKAHDA Trail

INPLACE R/W

S-19 (4)

S-20 (4)

S-20.1 (4)

S-21 (4)

S-22 (4)

S-23 (4)

S-24 (4)

S-25 (4)

SP-4 (9)

SP-5 (9)

136+00 137+00 138+00 139+00 140+00 141+00 142+00

SPECIFIC NOTES:

(2) INPLACE

(4) REMOVE

(9) SALVAGE SIGN PANEL SPECIAL

0 15 30 60

HORIZONTAL SCALE IN FEET

(1) F. & I.

(2) INPLACE

(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

24SY (TYP.)

4SW

4DY

24SW

6' 11' 11' 11' 6'

11' 11' 13'

1:10

+14 +59 +19 +29 +71 +20 +46 +92

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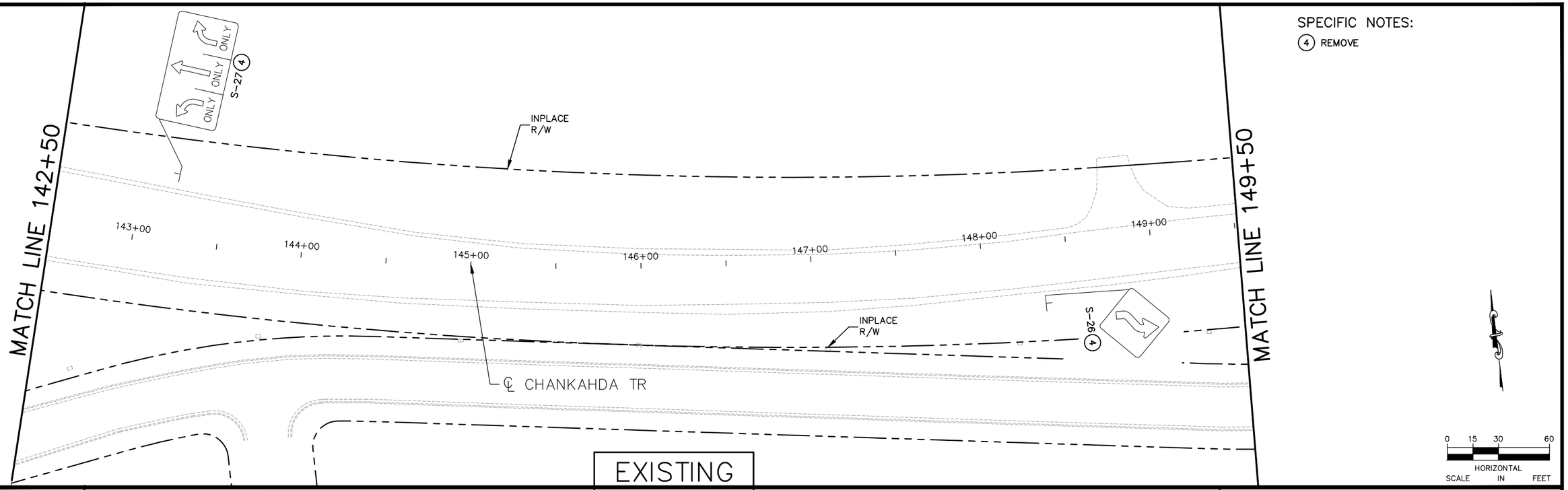
City of Plymouth

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
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SHEET NO. 218 / 348



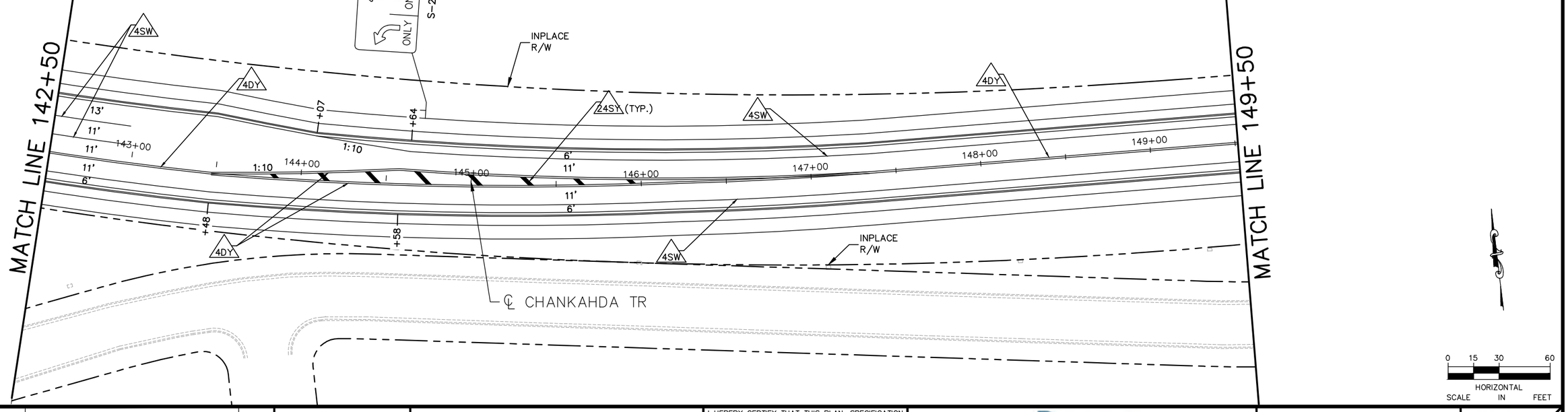
SPECIFIC NOTES:

(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

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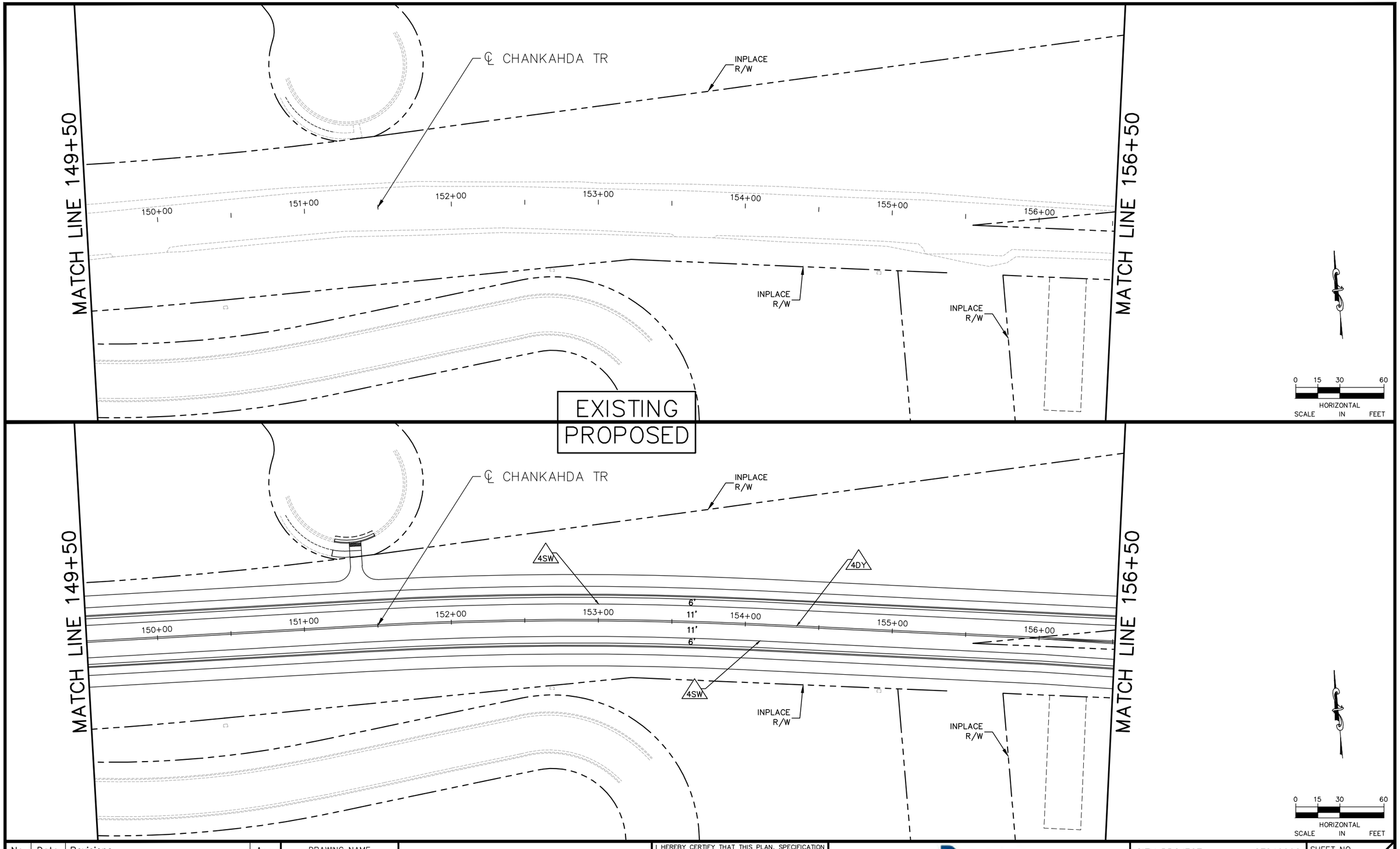
City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3

SIGNING AND PAVEMENT MARKING PLAN
STA. 142+50 TO STA. 149+50

CITY PROJECT	ST240002
COUNTY PROJECT	
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SHEET NO. 219 / 348



No.	Date	Revisions	App.

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BRIAN K. VILLA, PE

DATE: 11/04/2024 MN LIC. NO. 56090

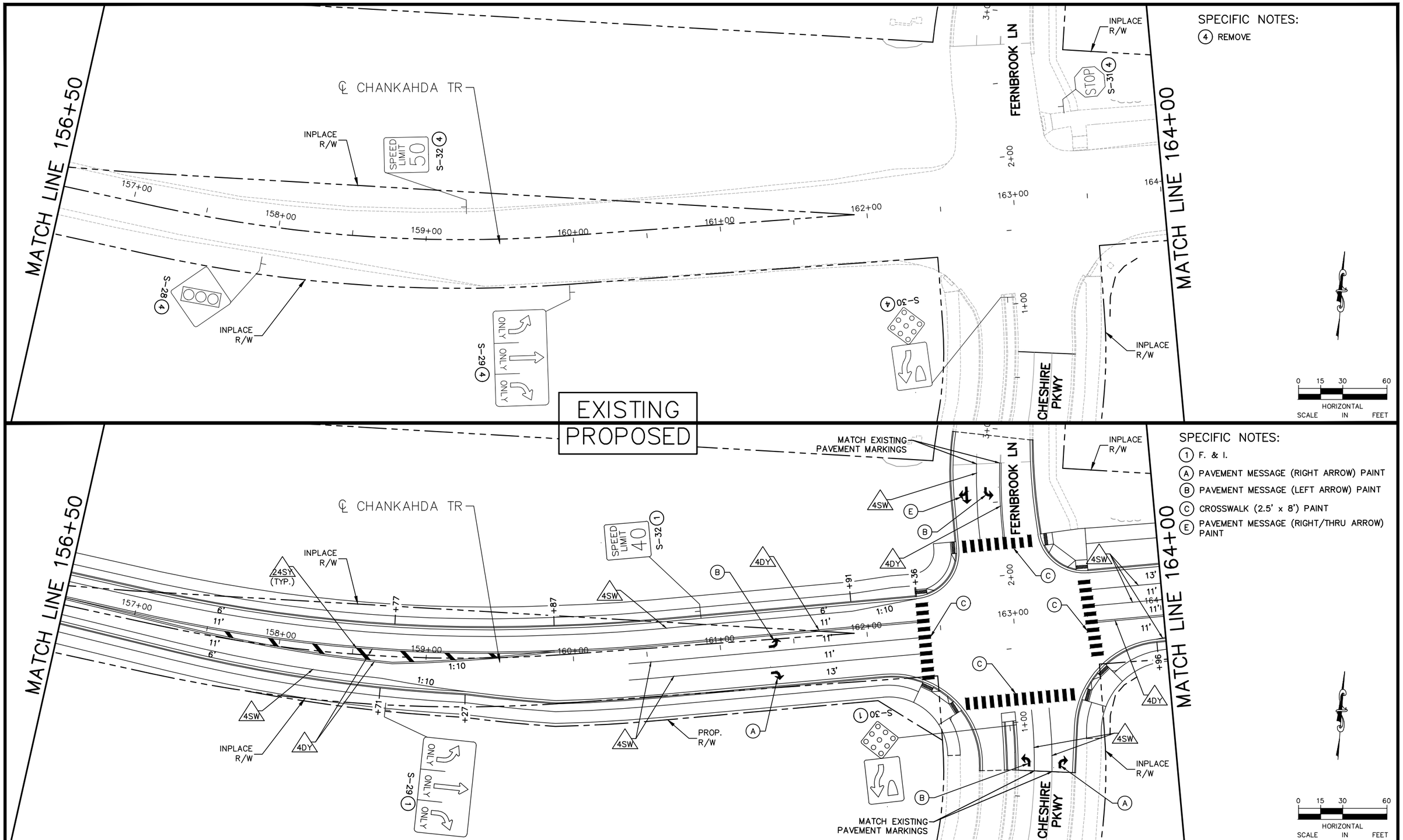
City of Plymouth

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. 220 / 348



No.	Date	Revisions	App.

DRAWING NAME	CHANKAHDA_PH3_SgnStrp.dwg
DESIGNED BY:	BWS
DRAWN BY:	MBG
CHECKED BY:	BKV
DATE:	11/04/2024
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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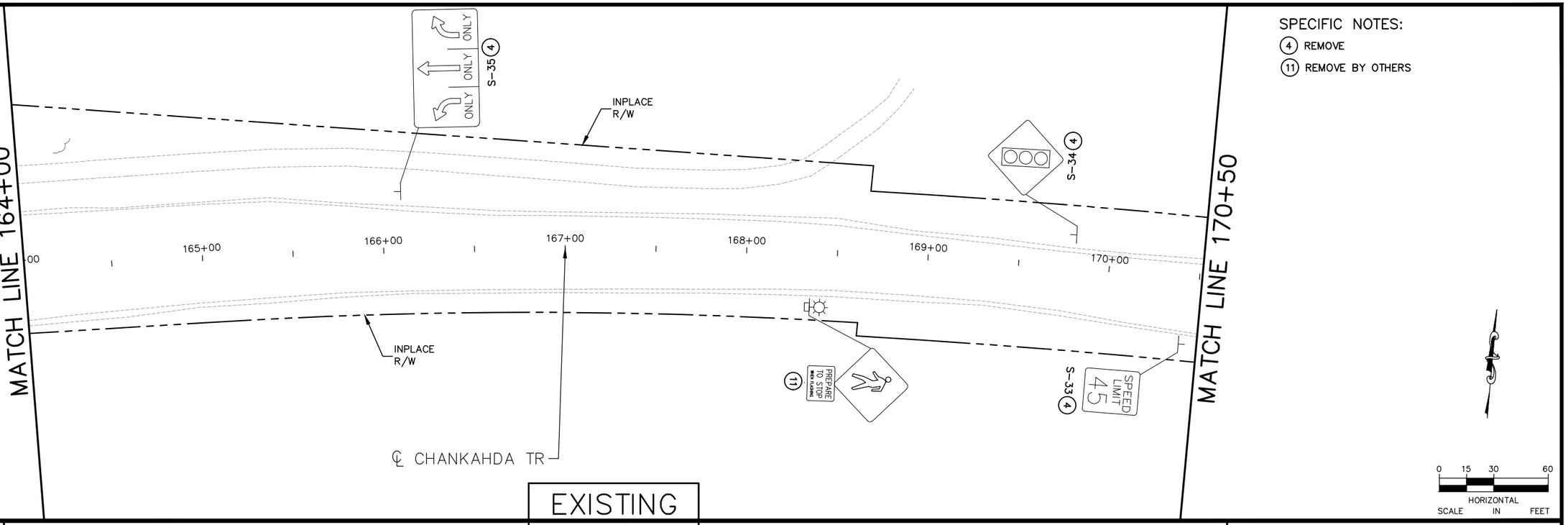
City of Plymouth

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. 221 / 348

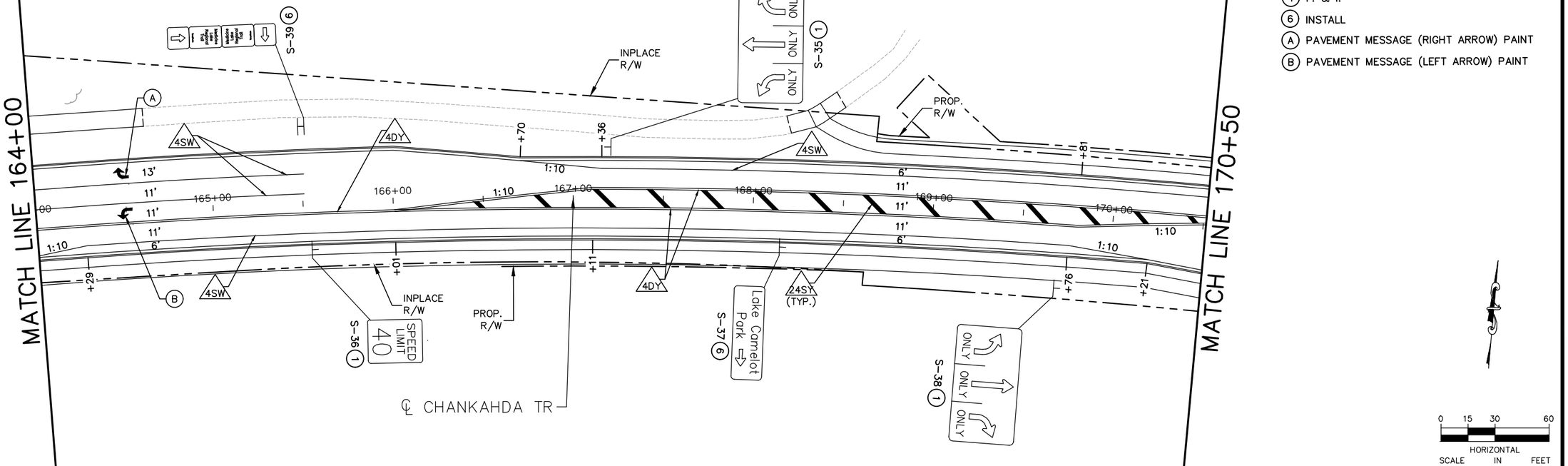


SPECIFIC NOTES:

(4) REMOVE

(11) REMOVE BY OTHERS

EXISTING
PROPOSED



SPECIFIC NOTES:

(1) F. & I.

(6) INSTALL

(A) PAVEMENT MESSAGE (RIGHT ARROW) PAINT

(B) PAVEMENT MESSAGE (LEFT ARROW) PAINT

No.	Date	Revisions	App.

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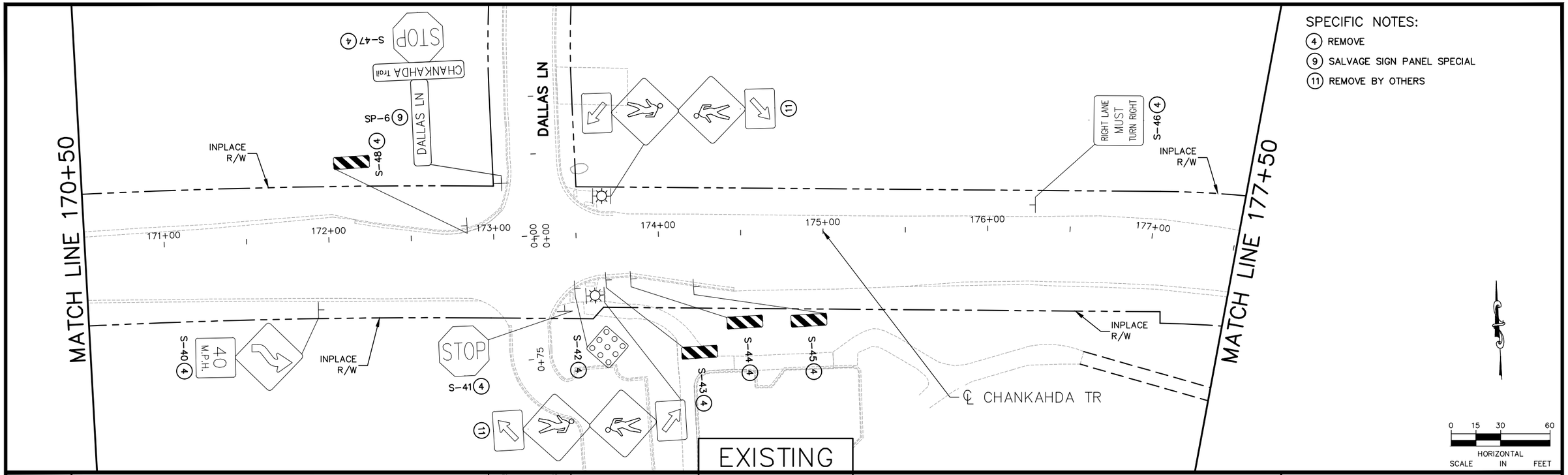
City of Plymouth

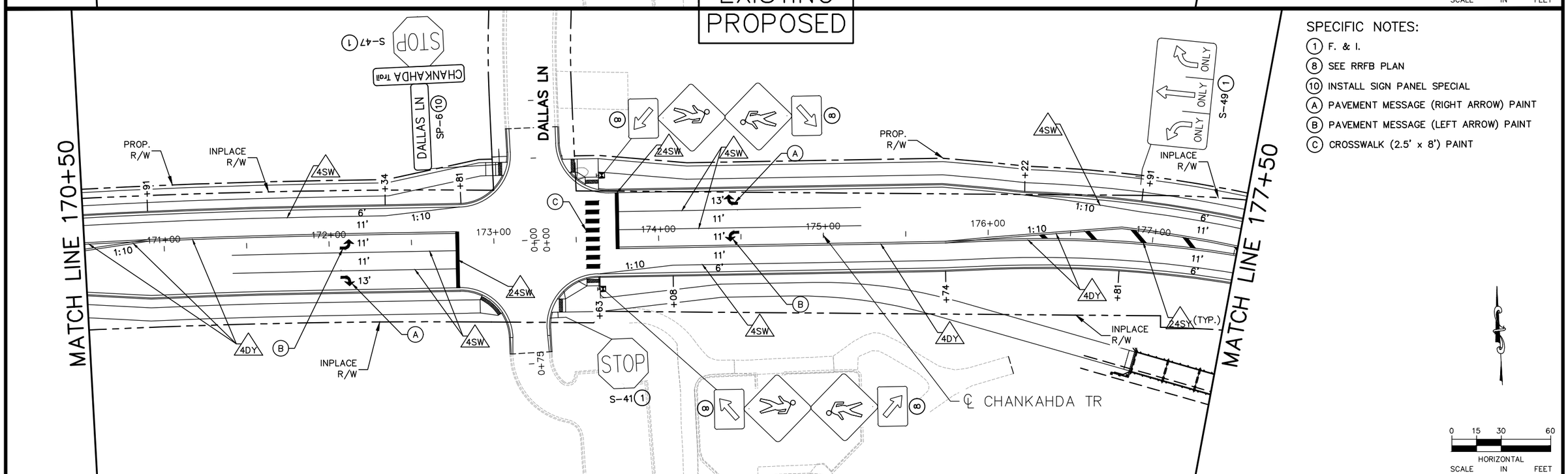
CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3

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. 222 / 348





No.	Date	Revisions	App.

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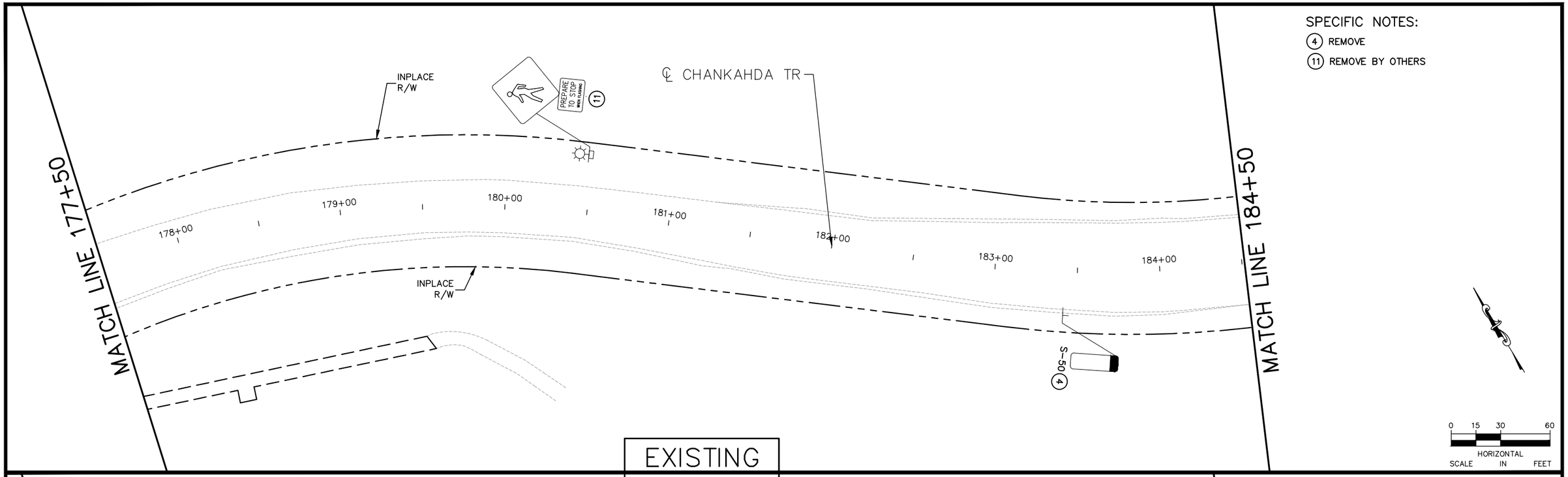
City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3

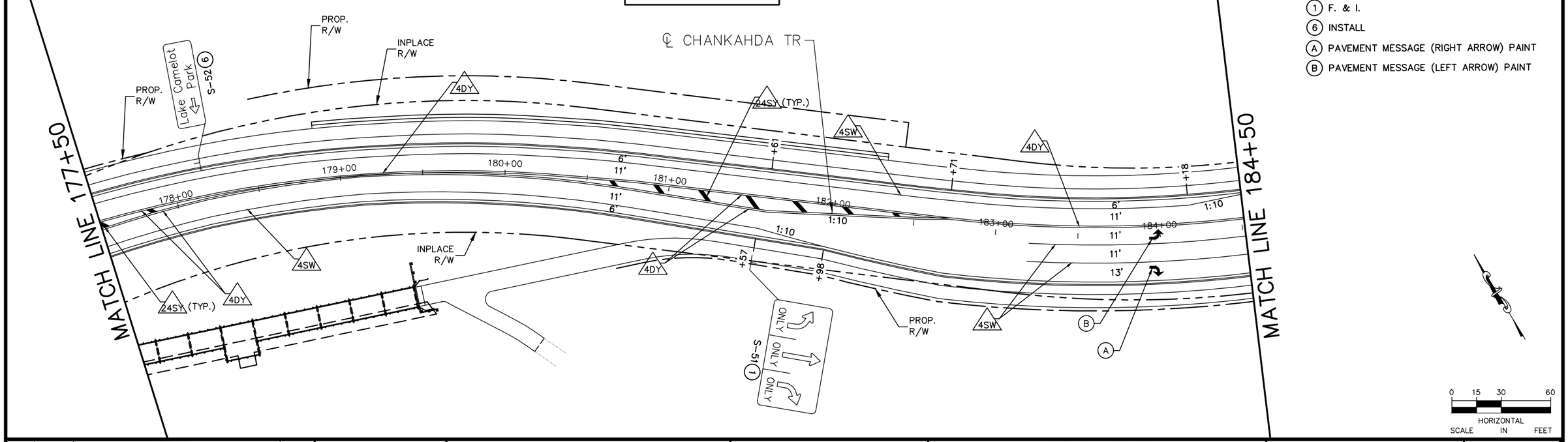
SIGNING AND PAVEMENT MARKING PLAN
STA. 170+50 TO STA. 177+50

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

SHEET NO. 223 / 348



EXISTING
PROPOSED



No.	Date	Revisions	App.

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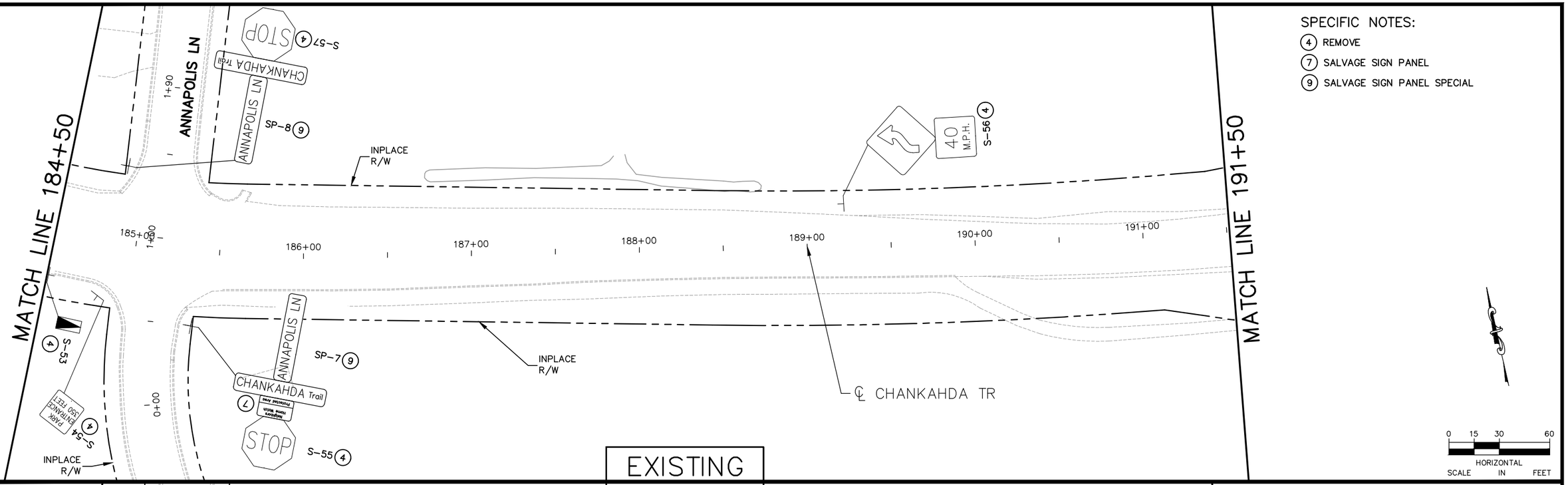
City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3

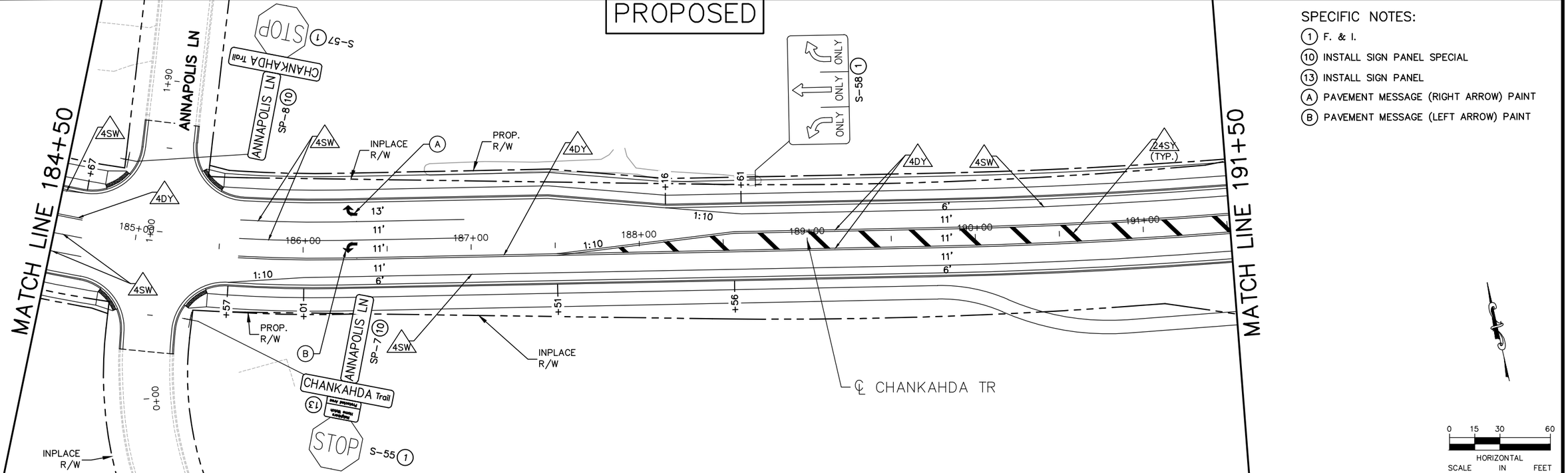
SIGNING AND PAVEMENT MARKING PLAN
STA. 177+50 TO STA. 184+50

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

SHEET NO. 224 / 348



EXISTING
PROPOSED



No.	Date	Revisions	App.

DRAWING NAME	CHANKAHDA_PH3_SgnStrp.dwg
DESIGNED BY:	BWS
DRAWN BY:	MBG
CHECKED BY:	BKV
DATE:	11/04/2024
PROJECT NO.	160662010

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City of Plymouth

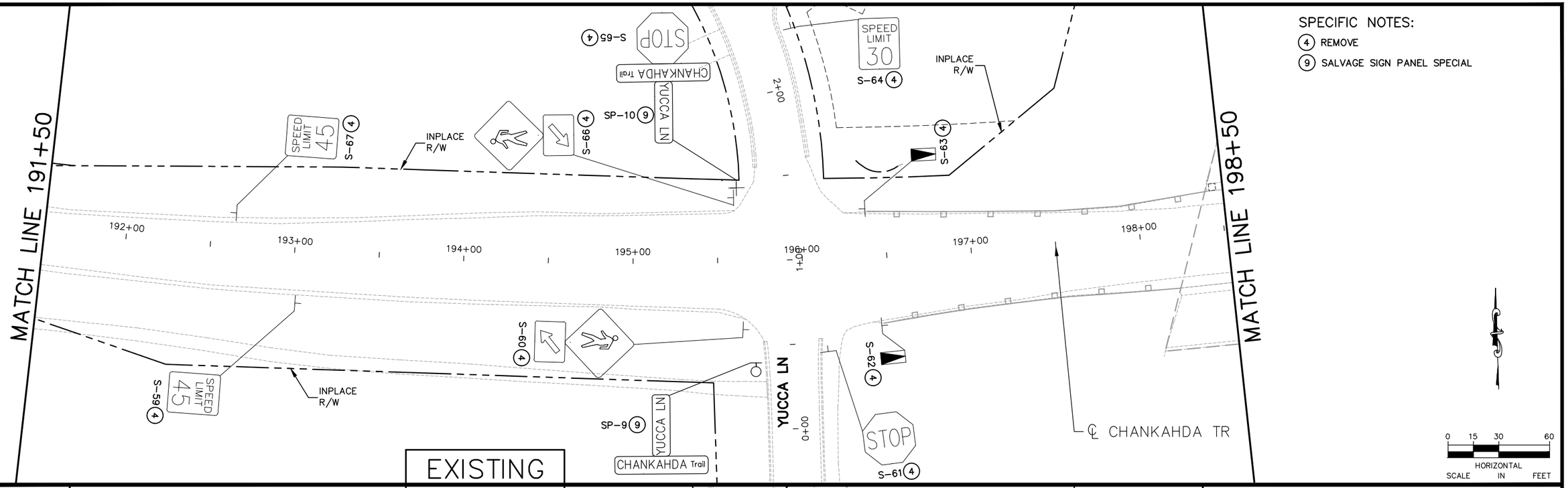
CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3

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. 225 / 348

EXISTING

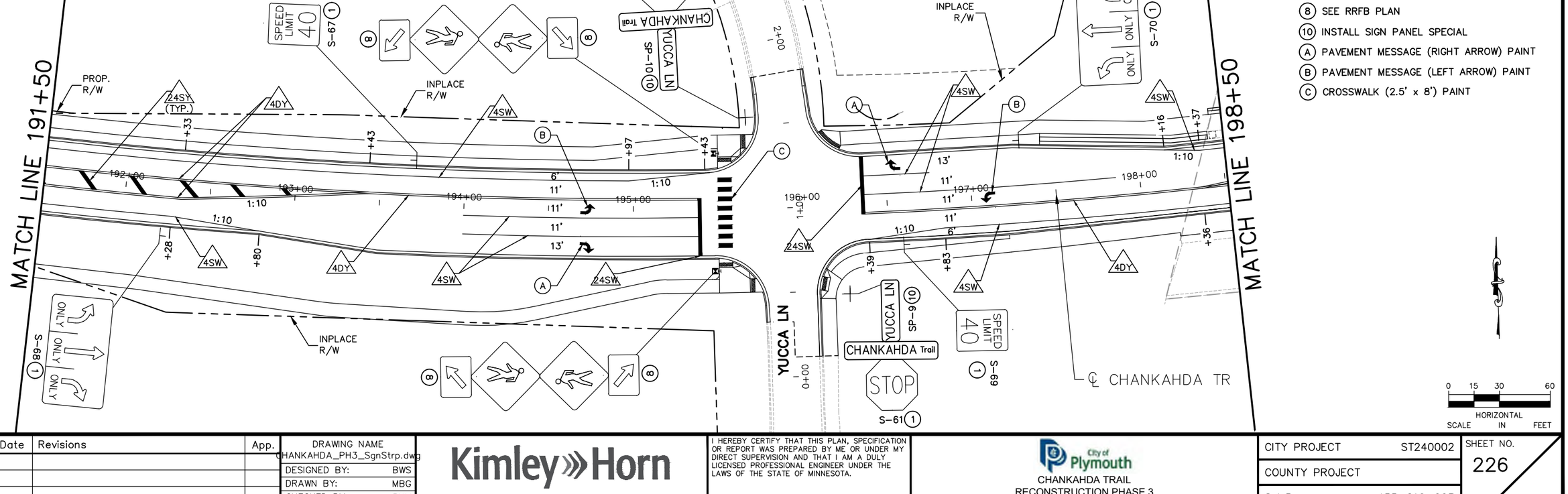


SPECIFIC NOTES:

(4) REMOVE

(9) SALVAGE SIGN PANEL SPECIAL

PROPOSED



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.

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City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3

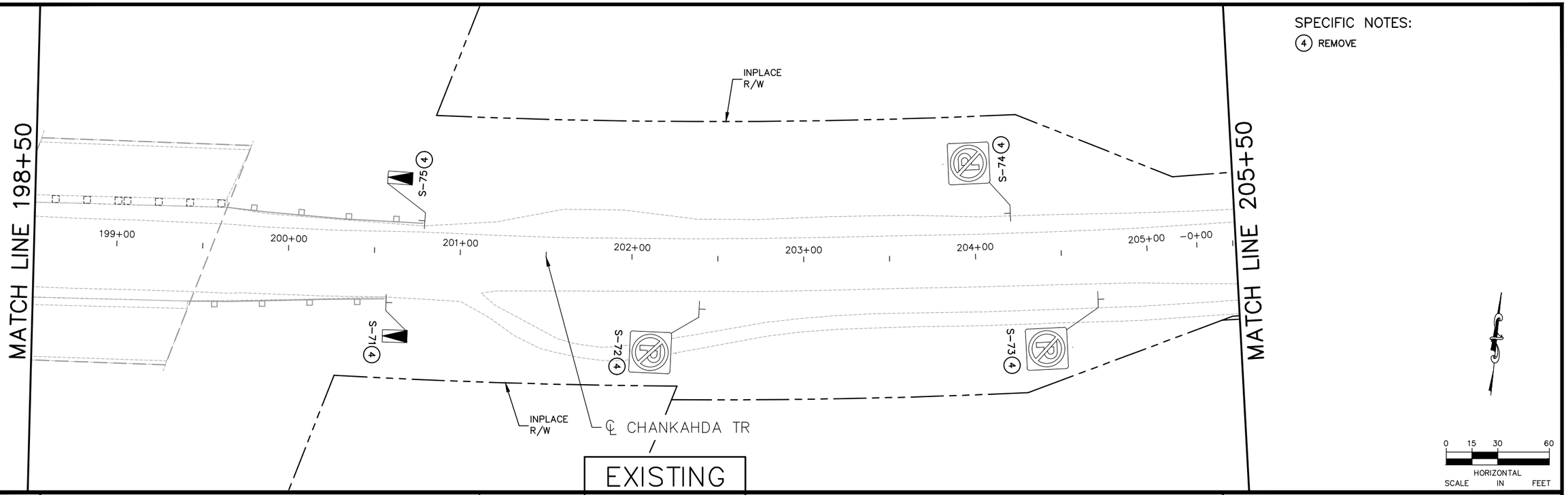
SIGNING AND PAVEMENT MARKING PLAN
STA. 191+50 TO STA. 198+50

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

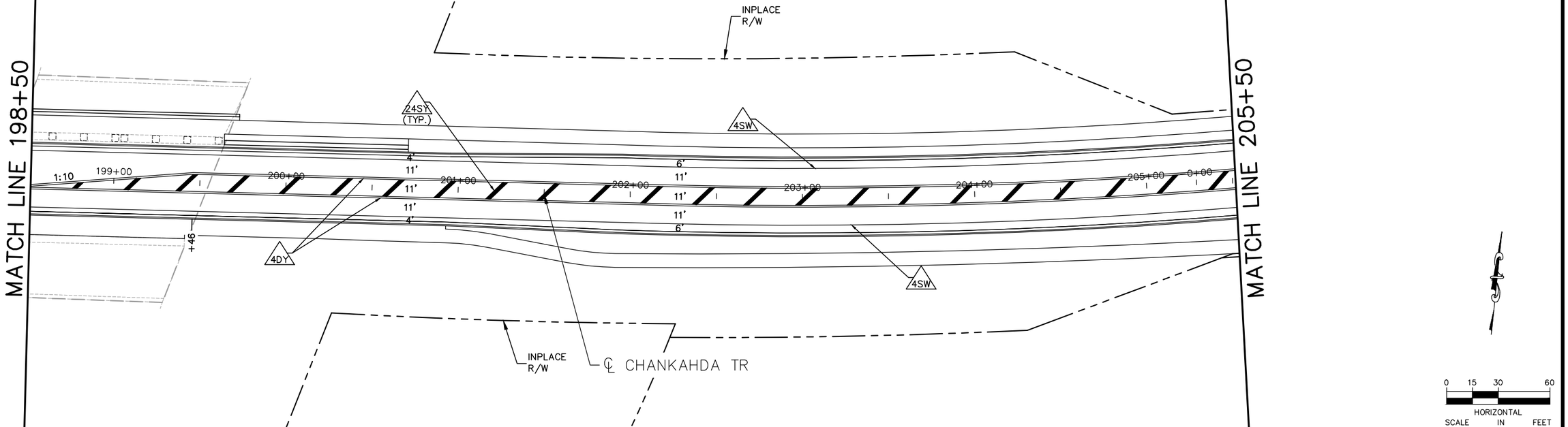
SHEET NO. 226 / 348

SPECIFIC NOTES:

(4) REMOVE



EXISTING
PROPOSED



No.	Date	Revisions	App.

DRAWING NAME	CHANKAHDA_PH3_SgnStrp.dwg
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DRAWN BY:	MBG
CHECKED BY:	BKV
DATE:	11/04/2024
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DATE: 11/04/2024 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. 227 / 348

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

S-76 (4)

S-77 (4) RIGHT LANE MUST TURN RIGHT

S-78 (4) 40 M.P.H.

3+00 3009+00

TEAKWOOD LN

1+00 3+00 4+00 2+00

S-83 (4)

S-82 (4) INPLACE R/W

5+00 211+00 6+00 212+00 7+00

210+00

1+00 TEAKWOOD LN

SP-11 (12)

CHANKAHDA Trail

STOP

S-79 (4)

S-80 (4)

S-81 (4)

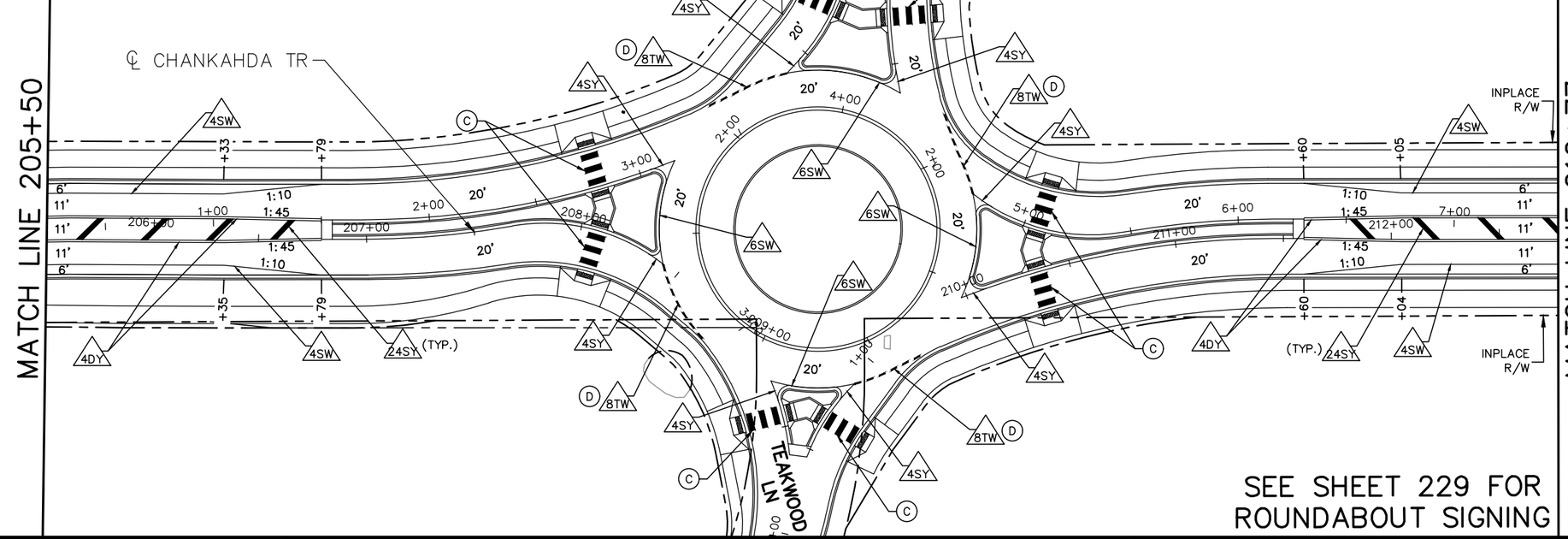
INPLACE R/W

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 229 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.

DRAWING NAME: CHANKAHDA_PH3_SgnStrp.dwg

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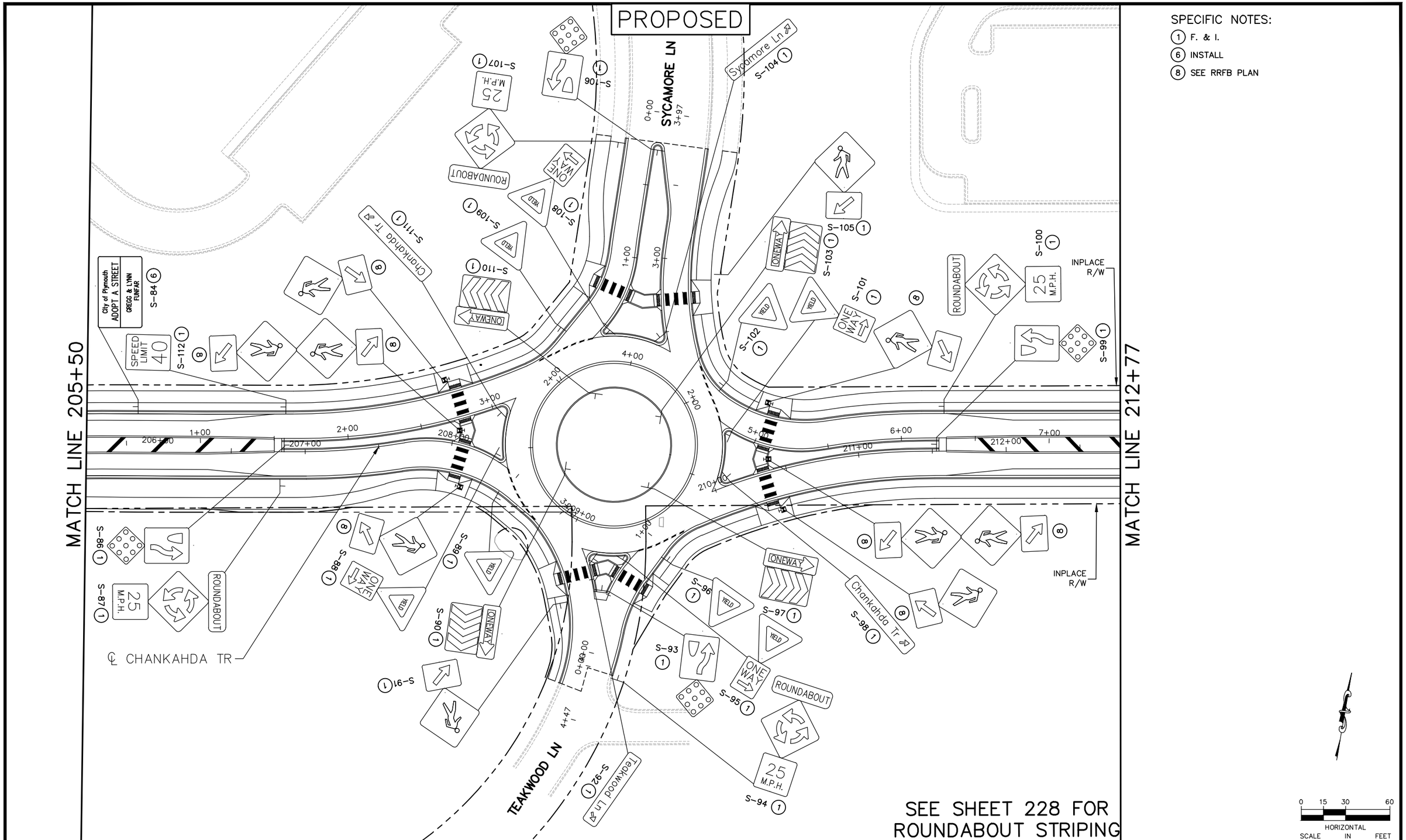
City of Plymouth

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. 228 / 348



SPECIFIC NOTES:

(1) F. & I.

(6) INSTALL

(8) SEE RRFB PLAN

No.	Date	Revisions	App.

DRAWING NAME	CHANKAHDA_PH3_SgnStrp.dwg
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City of Plymouth

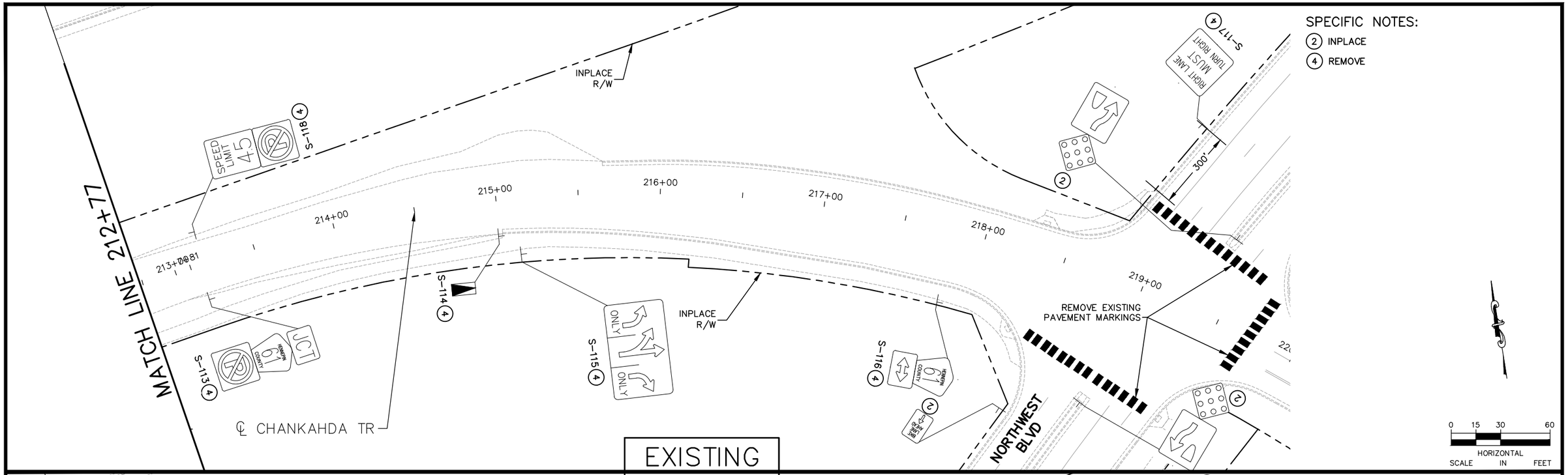
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SIGNING AND PAVEMENT MARKING PLAN
STA. 205+50 TO STA. 212+77

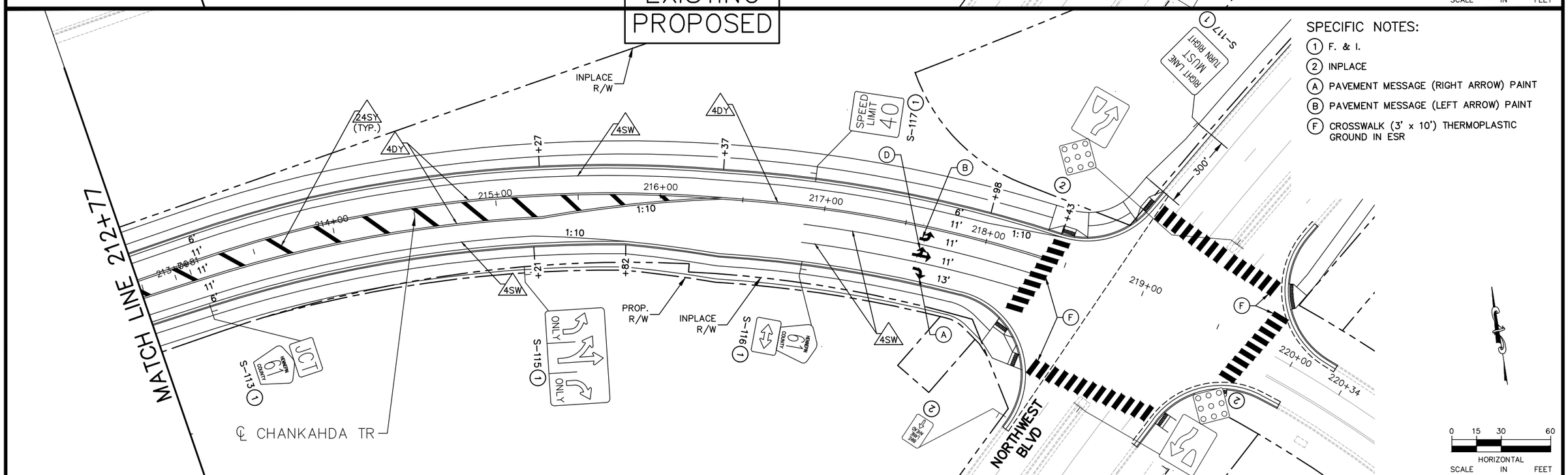
CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 229 / 348

EXISTING



PROPOSED



No.	Date	Revisions	App.

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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. 230 / 348

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

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)	TRAFFIC CONTROL SIGNAL SYSTEM B	SYS	1
(8)	TEMPORARY SIGNAL SYSTEM A	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)
(8) CHANKAHDA TR AND NORTHWEST BLVD (CSAH 61)

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.

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
———	NEUTRAL CONDUCTOR
– – –	INPLACE STRUCTURE
—— ——	INPLACE CONDUCTOR OR CONDUIT

SIGNAL PLAN LAYOUT LEGEND

SC / CAC — CONTROLLER CABINET AND SERVICE CABINET WITH METER AND DISCONNECT ON ONE CONCRETE PAD

SOP — SOURCE OF POWER
PAD MOUNTED
POLE MOUNTED

HH — PVC HANDHOLE WITH METAL COVER

MA — MAST ARM SIGNAL POLE WITH OPTIONAL LUMINAIRE SHAFT EXTENSION AS NOTED

MAST ARM SIGNAL POLE UPRIGHT ONLY (NO MAST ARM) WITH OPTIONAL LUMINAIRE SHAFT EXTENSION AS NOTED

SA — SIGNAL ASSEMBLY PEDESTAL MOUNT

PBS — APS PUSH BUTTON STATION

SV — SIGNAL INTERCONNECT SPLICE VAULT

CAC — INPLACE CONTROLLER CABINET

SC — INPLACE SERVICE CABINET WITH METER AND DISCONNECT

SOP — INPLACE SOURCE OF POWER
PAD MOUNTED
POLE MOUNTED

HH — INPLACE HANDHOLE

MA / SA — INPLACE MAST ARM SIGNAL POLE OR INPLACE SIGNAL ASSEMBLY PEDESTAL MOUNT

VIDEO DETECTION CAMERA AND TRAFFIC MANAGEMENT CAMERA

LUMINAIRE

EMERGENCY VEHICLE PREEMPTION (EVP) ONE-WAY

SIGNAL FACE WITH BACKGROUND SHIELD

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

No.	Date	Revisions	App.

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DESIGNED BY:	BWS
DRAWN BY:	MBG
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DATE:	11/04/2024
PROJECT NO.	160662010

Kimley»Horn
767 EUSTIS STREET, SUITE 100, ST. PAUL, MN 55114
PHONE: 651-645-4197
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DATE: 11/04/2024 MN LIC. NO. 56090

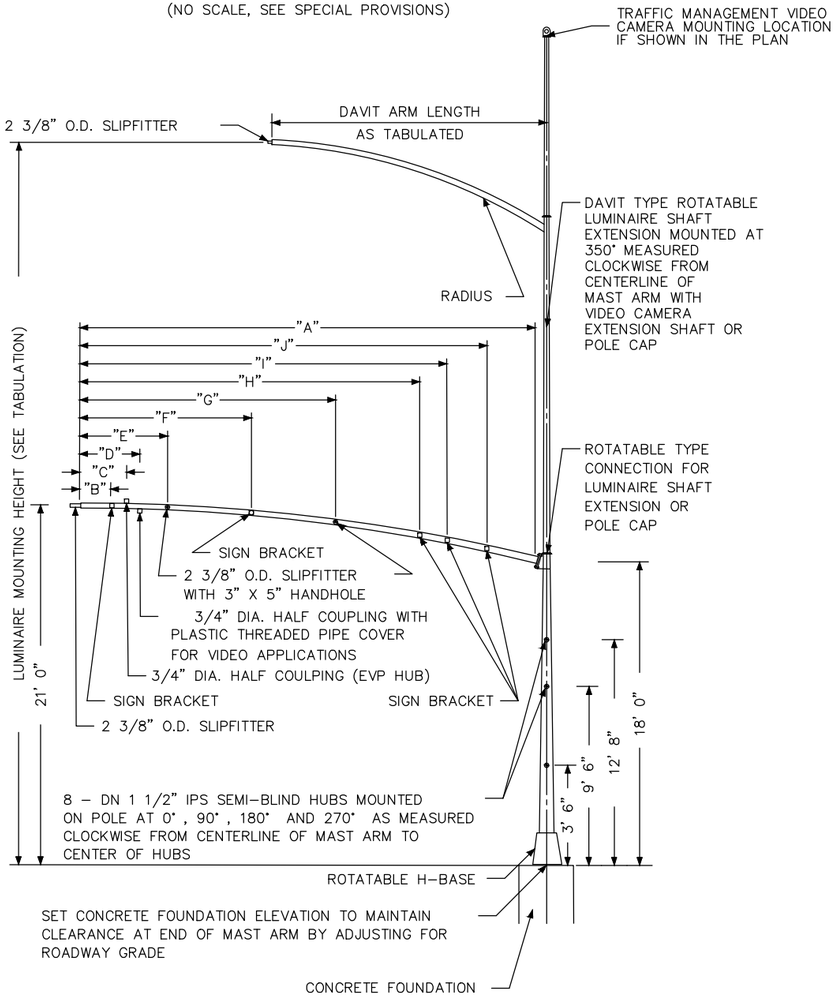
City of Plymouth
CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3

TRAFFIC SIGNAL PLANS
ABBREVIATIONS, SYMBOLS, STANDARD PLATES

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

SHEET NO. 231 / 348

CLASSIC HEAVY MAST ARM SIGNAL POLE AND
ROTATABLE LUMINAIRE SHAFT EXTENSION
(NO SCALE, SEE SPECIAL PROVISIONS)



NOTES:

1.) POLE SHAFT SHALL BE BACK RAKED TO SET PLUMB UNDER NORMAL LOAD.

2.) SEE SPECIAL PROVISIONS FOR PAINTING AND GALVANIZING REQUIREMENTS OF MAST ARM SIGNAL POLES.

MAST ARM POLE MOUNTING DETAILS

POLE	MAST ARM DIMENSIONS										LUMINAIRE MOUNTING HEIGHT	DAVIT ARM LENGTH	VIDEO SHAFT MOUNTING HEIGHT
	"A" MAST ARM	"B" SIGN BRACKET	"C" EVP HUB	"D" VIDEO HUB	"E" SIG. HEAD	"F" SIGN BRACKET	"G" SIG. HEAD	"H" SIGN BRACKET	"I" SIGN BRACKET	"J" SIGN BRACKET			
MA–1	INPLACE	INPLACE	INPLACE		INPLACE			INPLACE	INPLACE	INPLACE	INPLACE	INPLACE	
MA–2	INPLACE	INPLACE	INPLACE		INPLACE			INPLACE	INPLACE	INPLACE	INPLACE	INPLACE	
MA–3	INPLACE	INPLACE	INPLACE		INPLACE			INPLACE	INPLACE	INPLACE	INPLACE	INPLACE	
MA–4	INPLACE	INPLACE	INPLACE		INPLACE			INPLACE	INPLACE	INPLACE	INPLACE	INPLACE	
MA–1	50.0'		24.0'	6.0'	20.0'	32.0'		34.0'	37.0'	40.0'	35.0'	8.0'	40.0'
MA–2	35.0'		9.0'	6.0'	12.0'			15.0'	18.0'	21.0'	40.0'	8.0'	
MA–3	50.0'		14.5'	3.5'	10.0'	21.0'		24.0'	27.0'	30.0'	40.0'	8.0'	
MA–4	30.0'		8.0'	5.0'	12.0'			15.0'	18.0'	21.0'	40.0'	8.0'	

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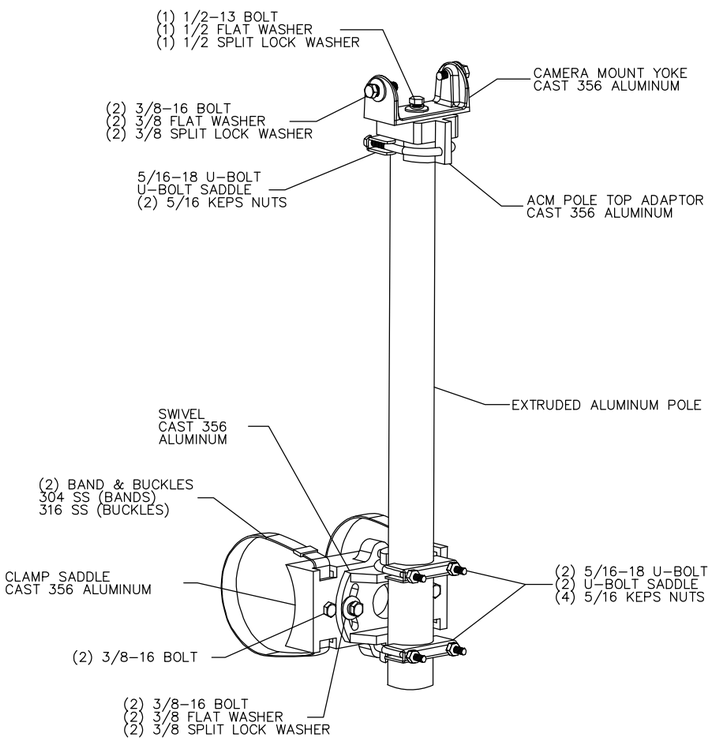
City of Plymouth
CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3

TRAFFIC SIGNAL PLANS
SIGNAL MAST ARM DETAILS

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

SHEET NO. 232 / 348

ADJUSTABLE CAMERA MOUNTING DETAIL
(NO SCALE)



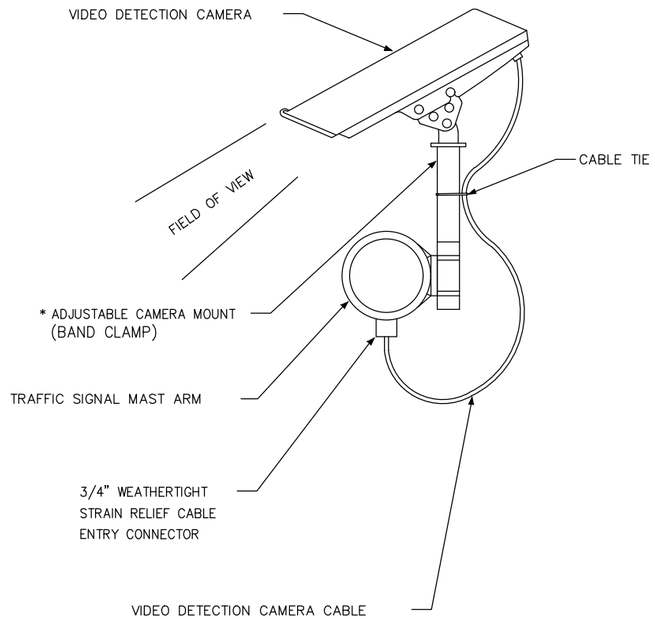
POLE LENGTHS AVAILABLE
18", 24", 37", 46", 60", 74", 96", 120"

BAND LENGTH	MAST ARM DIA.
29"	2" – 7"
42"	8" – 11"
59"	12" – 17"

NOTES:
1. YELLOW ZINC DICHROMATE PLATED FASTENERS, STAINLESS STEEL HARDWARE AVAILABLE.
2. AVAILABLE WITH CABLE STYLE CLAMP.

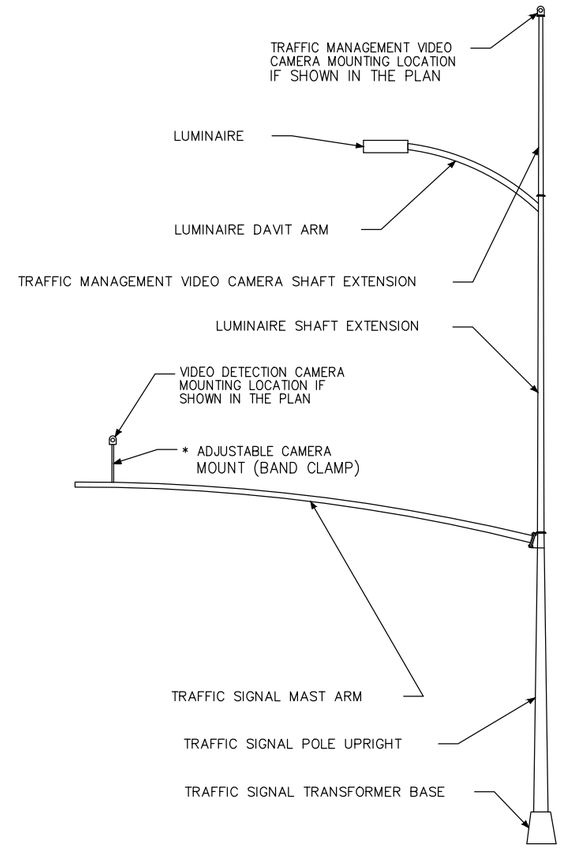
* MAST ARM MOUNTING POLE LENGTH SHALL BE 74", ALL HARDWARE SHALL BE STAINLESS STEEL,

VIDEO DETECTION CAMERA MOUNTING DETAIL
(NO SCALE)



* HEIGHT OF MOUNTING BRACKET SHALL FACILITATE A CLEAR LINE OF SIGHT TO THE INTENDED FIELD OF VIEW AND ALLOW FOR FREE MOVEMENT OF THE VIDEO CAMERA. IF REQUIRED ALL COSTS TO PROVIDE AND INSTALL ADJUSTABLE CAMERA MOUNT SHALL BE INCLUDED IN THE UNIT PRICE BID FOR TRAFFIC CONTROL SIGNAL SYSTEM (SYSTEM).

VIDEO CAMERA LOCATIONS DETAIL
(NO SCALE)



* HEIGHT OF MOUNTING BRACKET SHALL FACILITATE A CLEAR LINE OF SIGHT TO THE INTENDED FIELD OF VIEW AND ALLOW FOR FREE MOVEMENT OF THE VIDEO CAMERA. IF REQUIRED ALL COSTS TO PROVIDE AND INSTALL ADJUSTABLE CAMERA MOUNT SHALL BE INCLUDED IN THE UNIT PRICE BID FOR TRAFFIC CONTROL SIGNAL SYSTEM (SYSTEM).

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City of Plymouth

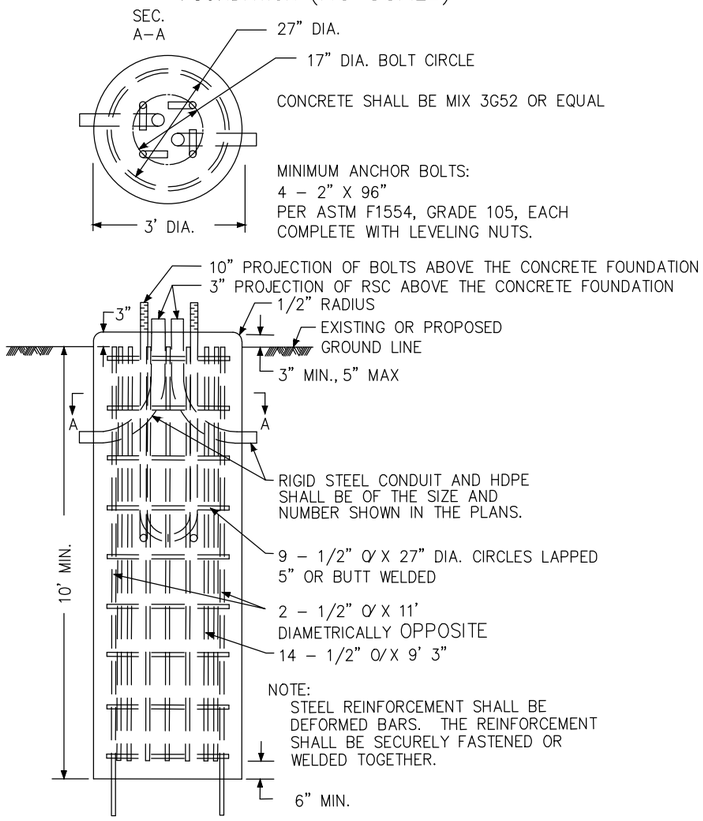
CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3

TRAFFIC SIGNAL PLANS
CAMERA MOUNTING DETAILS

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

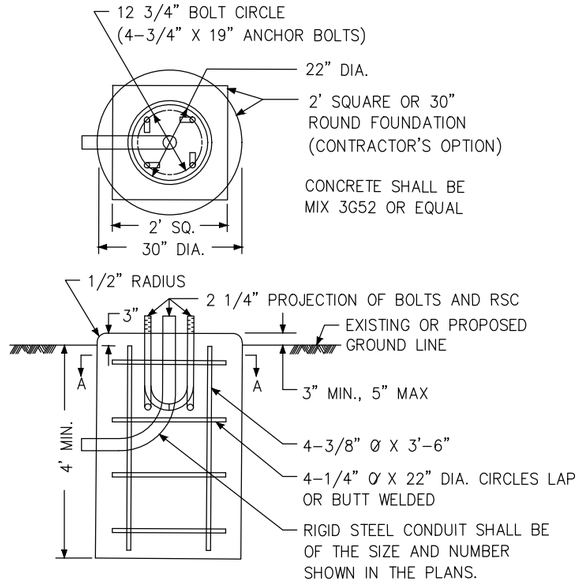
SHEET NO. 233 / 348

MAST ARM SIGNAL POLE FOUNDATION (NO SCALE)



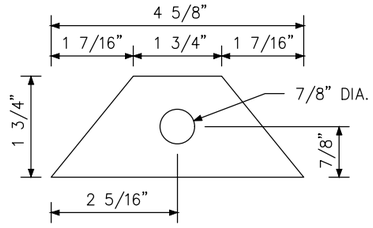
SIGNAL ASSEMBLY PEDESTAL MOUNT FOUNDATION (NO SCALE)

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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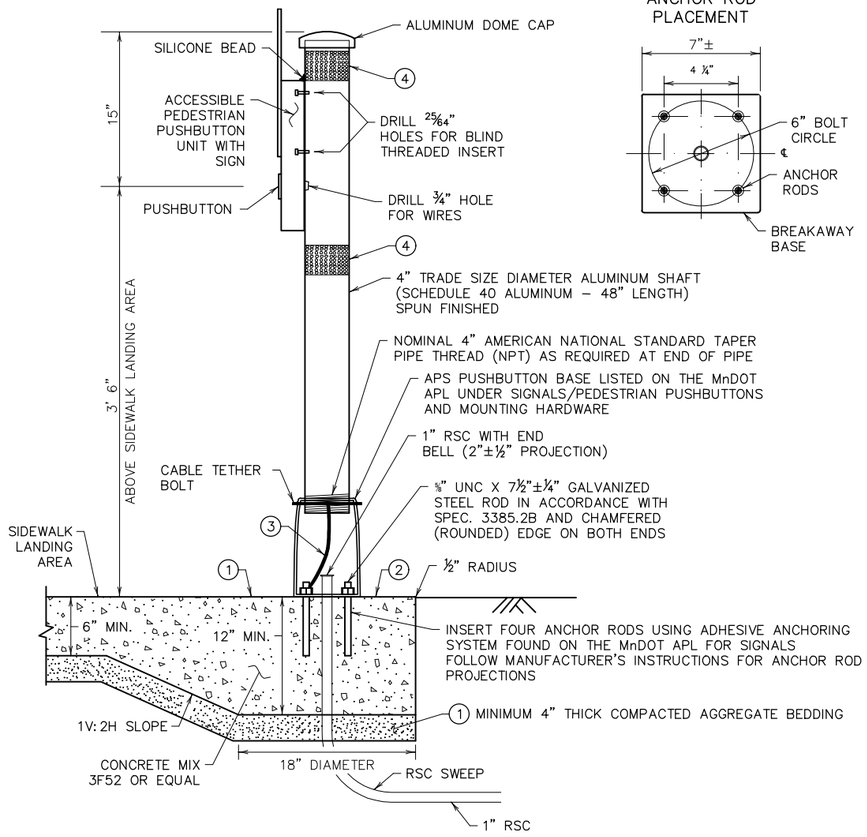
CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3

TRAFFIC SIGNAL PLANS
SIGNAL SYSTEM FOUNDATION DETAILS

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

SHEET NO. 234 / 348

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.

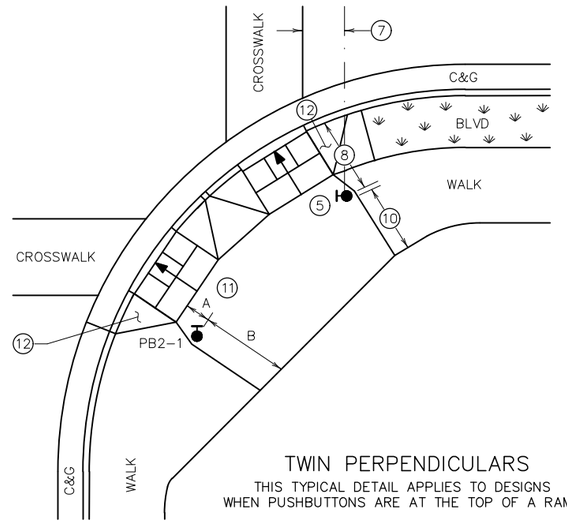
SAMPLE TABLE				
SIGNAL CONTROL POINTS			DISTANCE TO FRONT OF LANDING (FT)	DISTANCE TO BACK OF LANDING (FT)
SIGNAL NO.	X	Y		
PB2–1	–	–	A	B
PB4–2	–	–	C	D

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

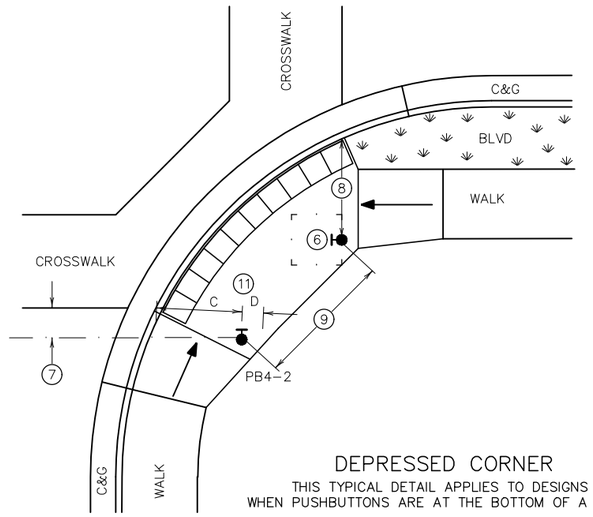
C – DISTANCE MEASURED FROM THE PUSHBUTTON TO THE OUTSIDE EDGE OF DOMES IN THE DIRECTION OF TRAVEL

D – CLEAR DISTANCE FROM THE PUSHBUTTON TO THE BACK OF LANDING MEASURED IN THE OPPOSITE DIRECTION OF TRAVEL



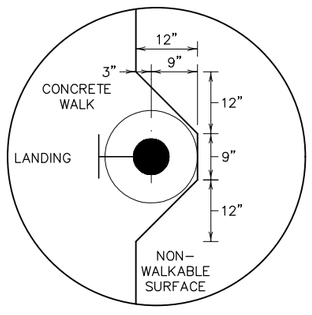
TWIN PERPENDICULARS

THIS TYPICAL DETAIL APPLIES TO DESIGNS WHEN PUSHBUTTONS ARE AT THE TOP OF A RAMP

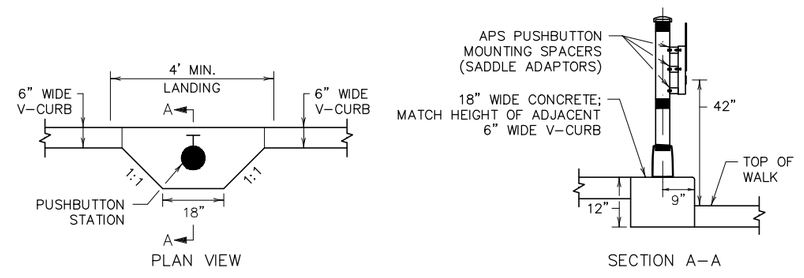


DEPRESSED CORNER

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

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CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3

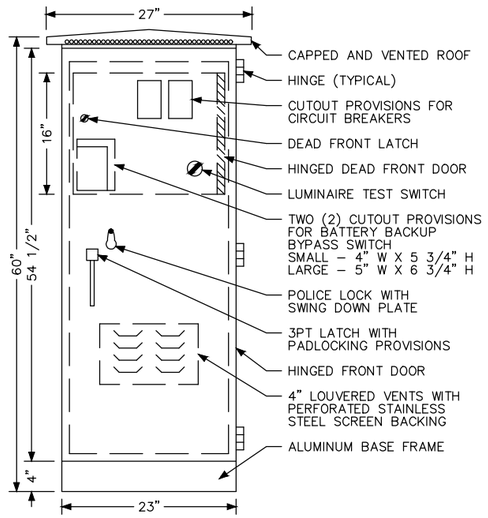
TRAFFIC SIGNAL PLANS
APS PUSHBUTTON STATION DETAILS

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

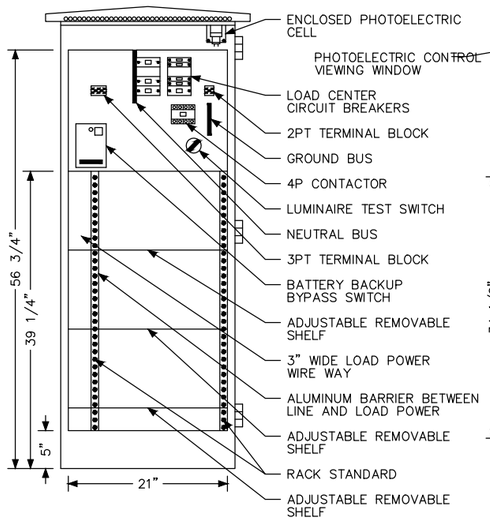
SHEET NO. 235 / 348

TYPICAL SERVICE CABINET DETAILS FULL BATTERY BACKUP

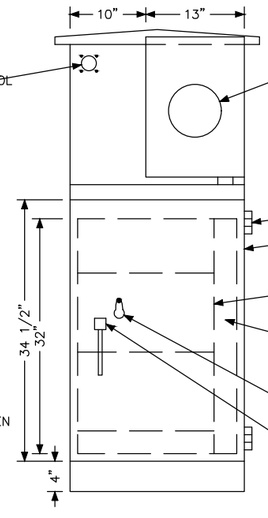
FRONT ELEVATION



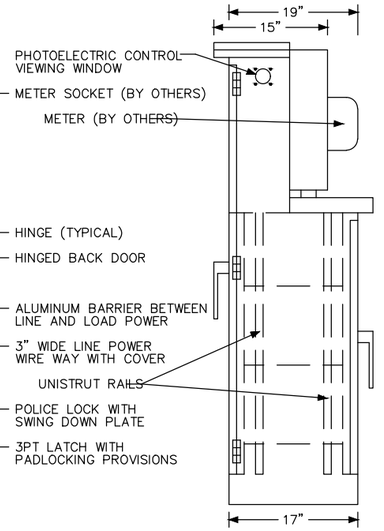
FRONT ELEVATION (DOOR REMOVED)



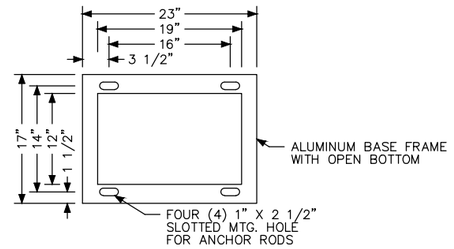
BACK ELEVATION



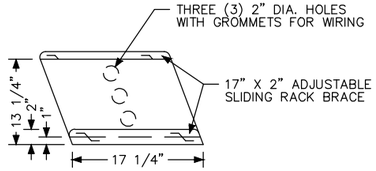
RIGHT SIDE ELEVATION



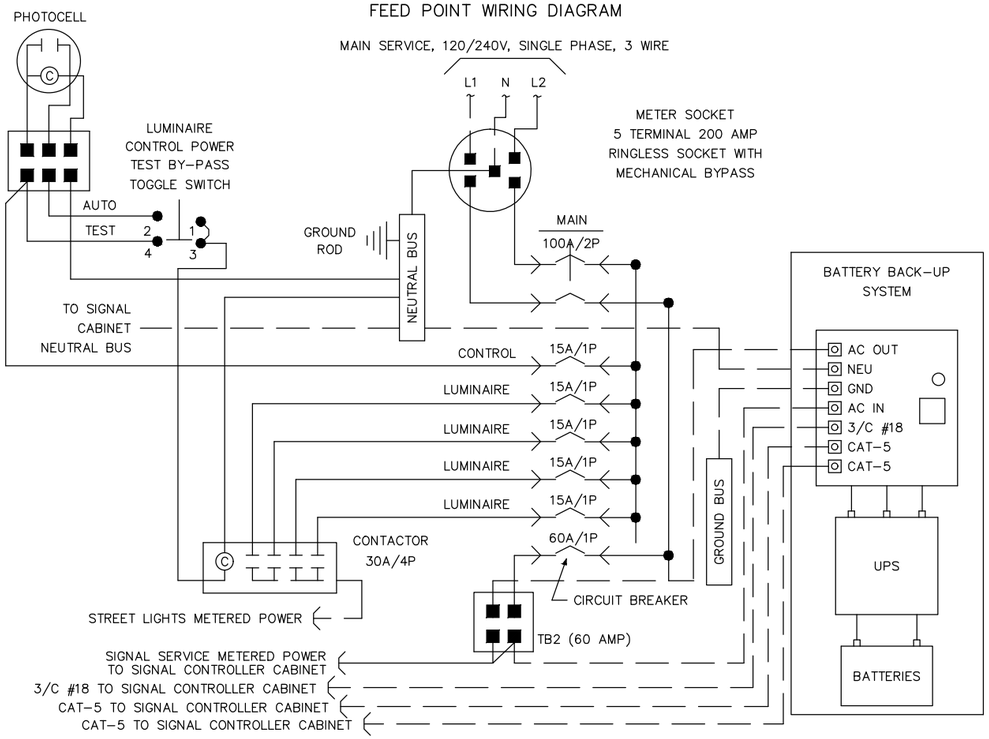
SERVICE CABINET BASE DETAILS



SERVICE CABINET SHELF DETAILS



FEED POINT WIRING DIAGRAM



CONSTRUCTION NOTES

1. EACH SERVICE CABINET SHALL BE FABRICATED FROM 1/8" ALUMINUM FOR OUTDOOR WEATHERPROOF SERVICE. AFTER FABRICATION, THE SERVICE CABINET, BOTH INSIDE AND OUTSIDE, SHALL BE PROTECTED WITH AN EXTERNAL THIRTY (30) MINUTE CLEAR ANODIZED FINISH.
2. ALL HINGES, HINGE PINS AND LOCKS SHALL BE OF NON-CORRODING CONSTRUCTION.
3. THE SERVICE CABINET DOORS SHALL BE ATTACHED TO THE ENCLOSURE WITH NON-CORRODING TAMPERPROOF CARRIAGE BOLTS AND SECURED WITH A STANDARD POLICE LOCK COMPLETE WITH A NUMBER 2 KEY AND SWING DOWN PLATE. PROVIDE ONE (1) KEY.
4. BOTH DOOR OPENINGS SHALL BE PROVIDED WITH A NEOPRENE GASKET TO FORM A COMPLETE SEAL WITH THE ENCLOSURE.
5. PROVIDE A 2" DIA. WEATHERPROOF AND VANDAL RESISTANT CLEAR PLASTIC PHOTOELECTRIC CONTROL VIEWING WINDOW. LOCATED IN THE TOP SECTION OF THE CABINET AND ON THE LEFT OR RIGHT SIDE OF THE CABINET, ORIENTED TO ELIMINATE INTERFERENCE BY MANMADE LIGHT SOURCES AND SHALL NORMALLY FACE NORTH OR EAST.
6. THE CIRCUIT BREAKERS SHALL BE 120/240 VOLT AC, 60 HZ, AND SHALL BE CLEARLY MARKED WITH THE "ON" AND "OFF" POSITIONS AND IDENTIFIED WITH THE LOAD WHICH IT IS CARRYING (E.G. "SIGNALS", "LUMINAIRE WITH NUMBER" OR "FUTURE"). ALL CIRCUIT BREAKERS SHALL BE CLEARLY MARKED IN A MANNER THAT WILL NOT DETERIORATE WITH MOISTURE OR AGE.
7. SHORT CIRCUIT RATING – 10,000 AIC SYMMETRICAL.
8. PROVIDE A PHOTOELECTRIC CONTROL CELL AND LUMINAIRE TEST SWITCH WITHIN THE CABINET.
9. PROVIDE CLEARANCE TO INSTALL OR REMOVE THE PHOTOELECTRIC CONTROL CELL.
10. ALL CONDUIT ENTERING THE FOUNDATION SHALL BE SEALED WITH AN APPROVED DUCT SEAL.
11. EACH SERVICE CABINET SHALL BE U.L. LISTED AND LABELED AS "SUITABLE FOR USE AS SERVICE ENTRANCE EQUIPMENT" AND APPROVED FOR OUTDOOR USE.
12. EACH SERVICE CABINET SHALL BE WELDED TO THE BASE IN ACCORDANCE WITH U.L. STANDARDS.
13. SEE THE INTERSECTION LAYOUT FOR THE REQUIRED NUMBER OF LUMINAIRES AT EACH INTERSECTION.
14. A 1/2" THICK SOLID BUTYL RUBBER GASKET SHALL BE PROVIDED BETWEEN THE CONCRETE FOUNDATION AND THE SERVICE CABINET. THE GASKET SHALL CONSIST OF FOUR (4) STRIPS, SIZED TO FIT THE BASE INCLUDING CORNER HOLE/SLOTS TO ACCOMMODATE THE ANCHOR RODS. PROVIDE A 1/2" GAP FOR DRAINAGE.
15. UNISTRUT RAILS (#A400EA OR EQUIVALENT) USED FOR SHELF SUPPORTS FOR THREE (3) ADJUSTABLE AND REMOVABLE SHELVES SHALL BE MOUNTED TO THE SIDES OF THE SERVICE CABINET.
16. THE 19" RACK IN THE BASE OF THE CABINET SHALL BE CONSTRUCTED TO TIA/EIA 3100 STANDARDS.
17. SEE THE EQUIPMENT PAD DETAIL SHEET FOR TYPICAL ANCHOR ROD DETAILS.
18. ONE (1) SERVICE CABINET SHALL BE INSTALLED ON EACH EQUIPMENT PAD, SEE THE EQUIPMENT PAD DETAIL SHEETS FOR ADDITIONAL DETAILS.
19. THE SERVICE CABINET SHALL BE SUPPLIED AND INSTALLED WITH BATTERY BACK-UP EQUIPMENT.

No.	Date	Revisions	App.

DRAWING NAME	CHANKAHDA_PH3_SignalDtl.dwg
DESIGNED BY:	BWS
DRAWN BY:	MBG
CHECKED BY:	BKV
DATE:	11/04/2024
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: 11/04/2024 MN LIC. NO. 56090

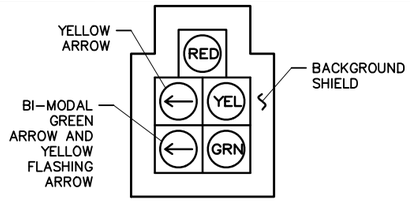
City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3

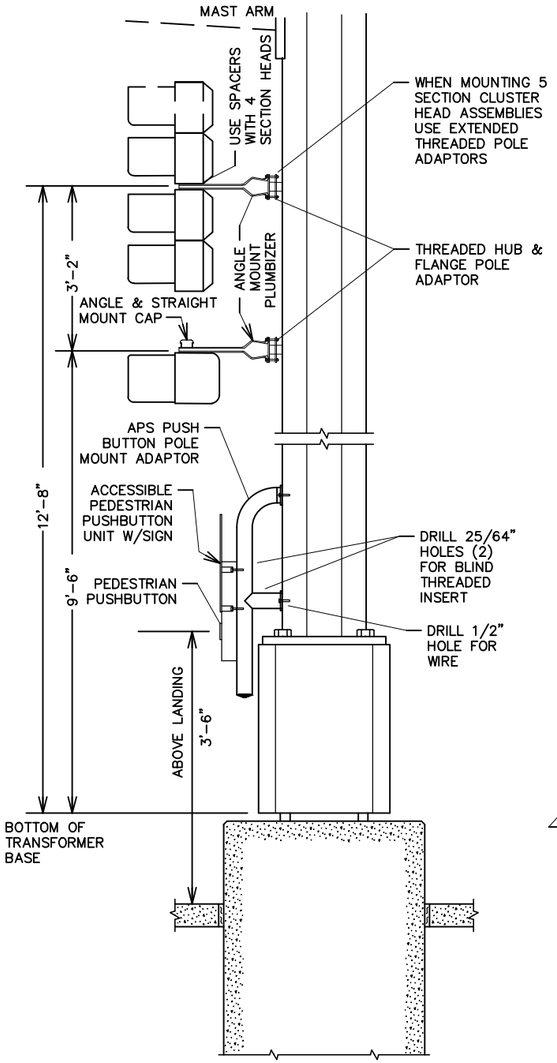
TRAFFIC SIGNAL PLANS
SIGNAL SYSTEM SERVICE CABINET DETAIL

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

SHEET NO. 236 / 348

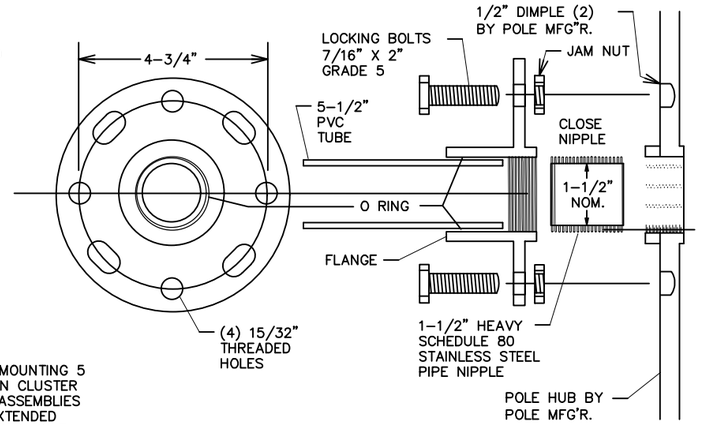


5 SECTION FYA CLUSTER HEAD DETAIL



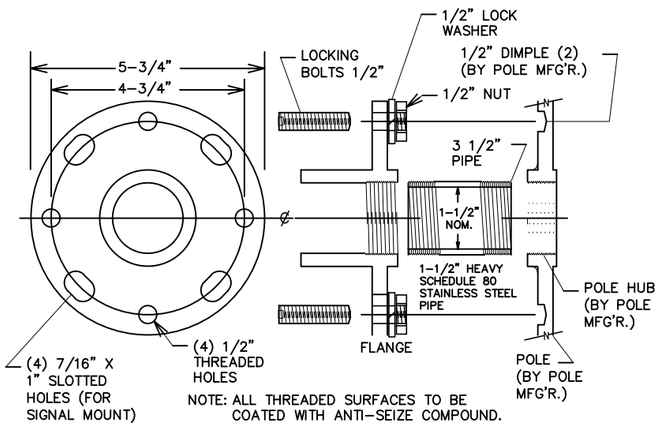
TYPICAL SIGNAL POLE MOUNTING

NOT TO SCALE



THREADED HUB AND FLANGE POLE ADAPTOR



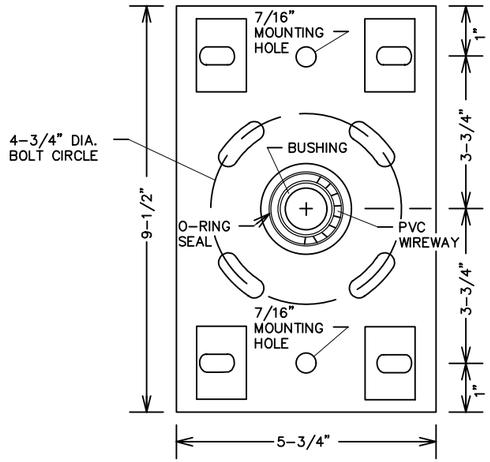


NOTE: ALL THREADED SURFACES TO BE COATED WITH ANTI-SEIZE COMPOUND.

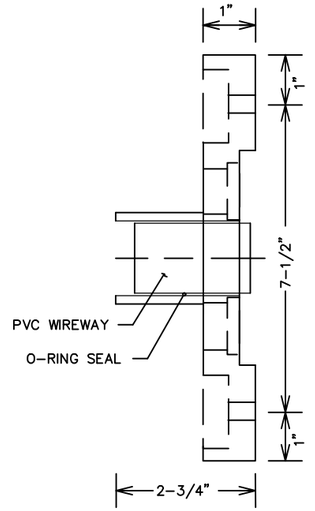
EXTENDED THREADED POLE ADAPTER

NOTES:

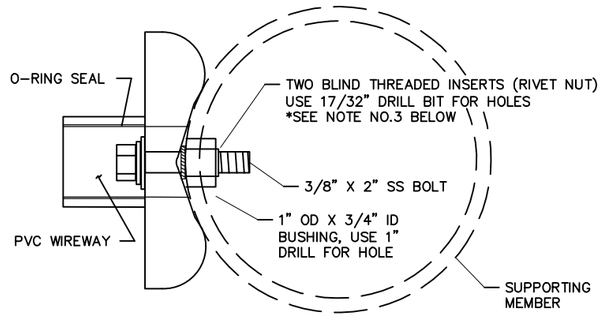
1. ALL THREADED SURFACES TO BE COATED WITH ANTI-SEIZE COMPOUND.
2. USE SIGNAL HEAD MOUNTED SPACERS FOR 4 SECTION POLY HEADS.
3. SEE STANDARD PLATE NUMBER 8123 FOR ADDITIONAL SIGNAL POLE DETAILS.
4. EXTENDED THREADED POLE ADAPTOR ONLY USED WITH 5 SECTION CLUSTER HEADS.



BOLT ON HUB & FLANGE



SIDE VIEW

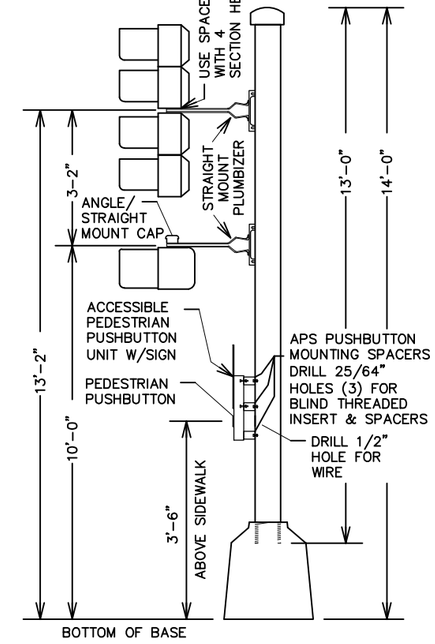


TOP VIEW



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.

DRAWING NAME: CHANKAHDA_PH3_SignalDtl.dwg

DESIGNED BY:	BWS
DRAWN BY:	MBG
CHECKED BY:	BKV
DATE:	11/04/2024
PROJECT NO.	160662010

Kimley»Horn
767 EUSTIS STREET, SUITE 100, ST. PAUL, MN 55114
PHONE: 651-645-4197
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BRIAN K. VILLA, PE

DATE: 11/04/2024 MN LIC. NO. 56090

City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3

TRAFFIC SIGNAL PLANS
SIGNAL POLE MOUNT DETAIL

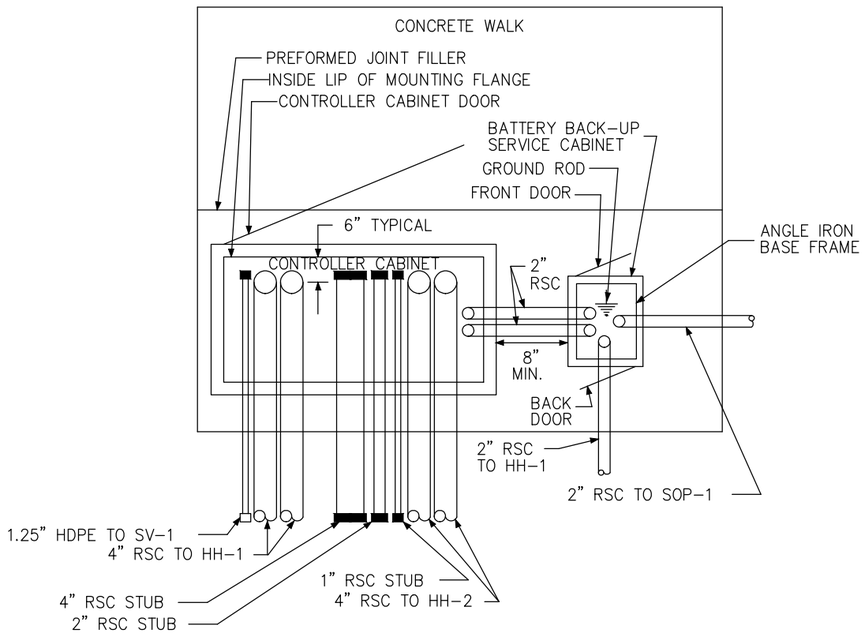
CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 237 / 348

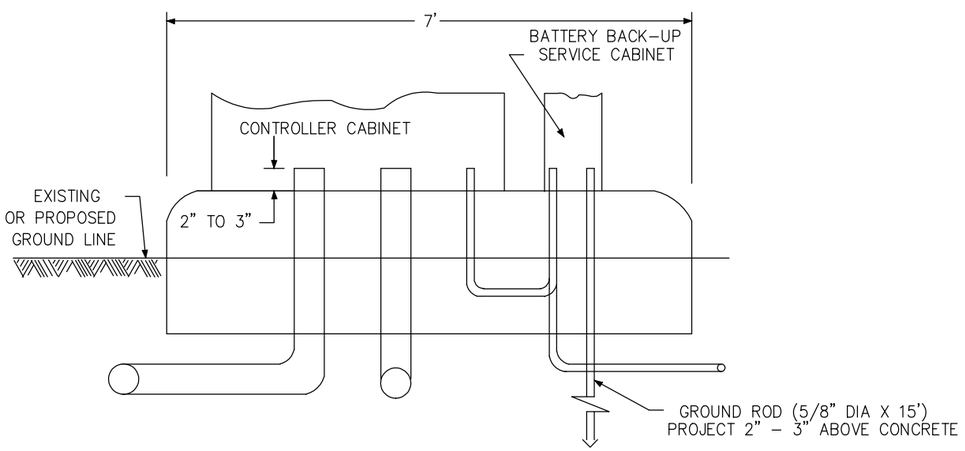
TYPICAL PAD WITH CONTROLLER CABINET AND SERVICE CABINET

NOT TO SCALE FOR ILLUSTRATION ONLY
SEE SIGNAL PLAN LAYOUT FOR ADDITIONAL INFORMATION

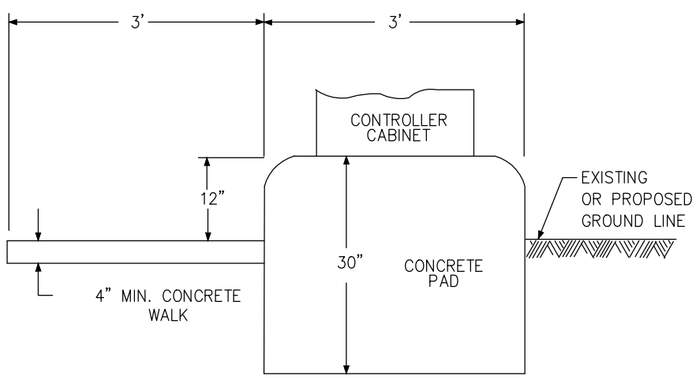
PLAN VIEW



FRONT VIEW



SIDE VIEW

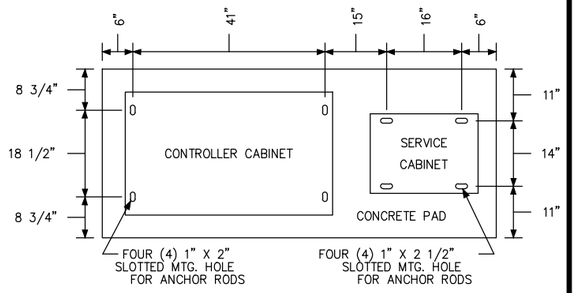


NOTES:

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.

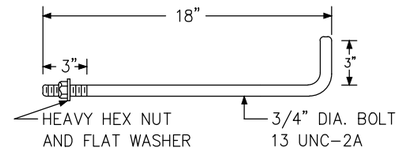
TPYICAL ANCHOR ROD LOCATION CONTROLLER CABINET AND SERVICE CABINET

(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	
DESIGNED BY:	BWS
DRAWN BY:	MBG
CHECKED BY:	BKV
DATE:	11/04/2024
PROJECT NO.	160662010

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BRIAN K. VILLA, PE
DATE: 11/04/2024 MN LIC. NO. 56090

City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3

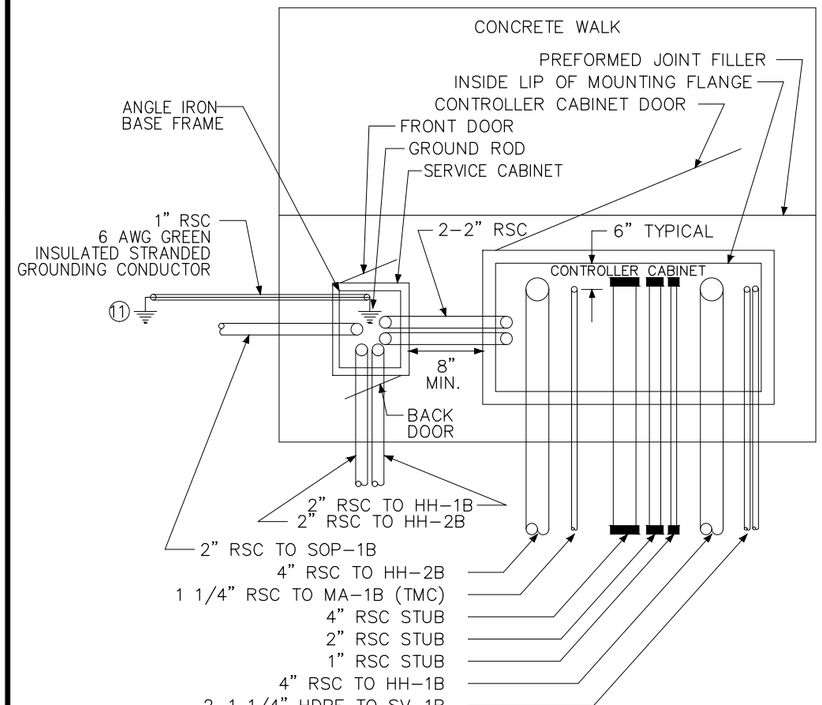
TRAFFIC SIGNAL PLANS
REVISE SIGNAL SYSTEM A EQUIPMENT PAD DETAIL

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

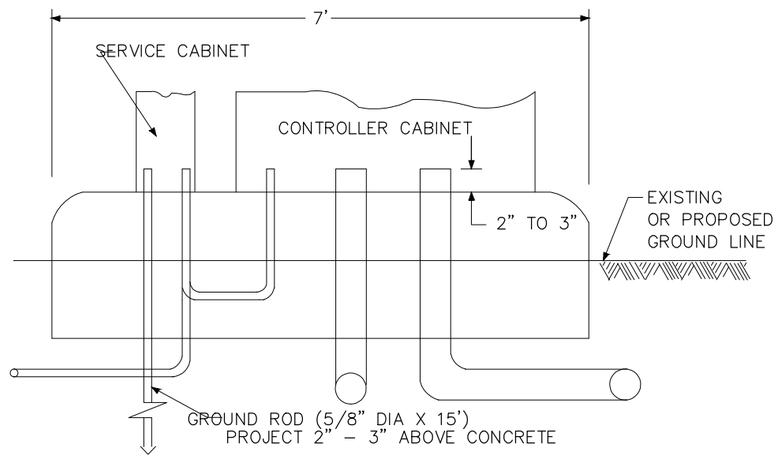
SHEET NO. 238 / 348

TYPICAL PAD WITH CONTROLLER CABINET AND SERVICE CABINET

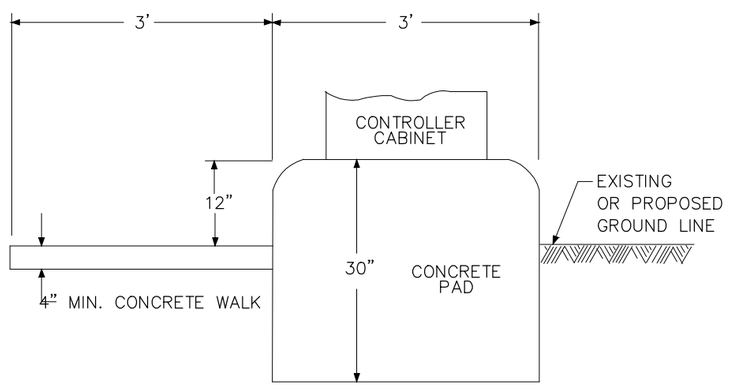
NOT TO SCALE FOR ILLUSTRATION ONLY
SEE SIGNAL PLAN LAYOUT FOR ADDITIONAL INFORMATION
PLAN VIEW



FRONT VIEW



SIDE VIEW

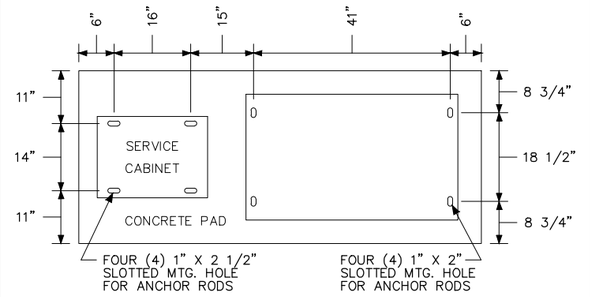


NOTES:

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 AND SEALED AFTER 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 THE CONCRETE WALK WHERE THE TECHNICIAN WILL STAND WITH THE CABINET OPEN OR 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.
11. PLACE A GROUNDING ELECTRODE SYSTEM IN ACCORDANCE WITH THE GROUNDING ELECTRODE SYSTEM DETAIL ON STANDARD PLATE 8106 SHEET 3 EXCEPT FURNISH AND INSTALL 10' GROUND ROD ELECTRODES, 6 AWG GREEN INSULATED COPPER CONDUCTOR, AND EXOTHERMIC WELDED CONNECTIONS. IF A COUNTY TRAFFIC SIGNAL SYSTEM HAND HOLE IS LOCATED AT LEAST 6' APART AND NO MORE THAN 10' APART FROM THE GROUND ROD LOCATED IN THE EQUIPMENT PAD, THE SUPPLEMENTAL GROUND ROD MAY BE PLACED IN THAT HANDHOLE. USE A 12' GROUND ROD IN THE HAND HOLE INSTEAD OF A 10' GROUND ROD AND PULL A GREEN INSULATED 6 AWG CONDUCTOR IN THE CONDUIT GOING TO THAT HAND HOLE. IF THE REQUIRED TRAFFIC SIGNAL POLE HANDHOLE GROUND ROD IS LOCATED WITHIN THE SPECIFIED DISTANCE MENTIONED, BOND THE GREEN INSULATED 6 AWG CONDUCTOR TO THAT GROUND ROD.

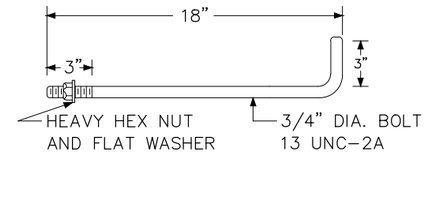
TYPICAL ANCHOR ROD LOCATION CONTROLLER CABINET AND SERVICE CABINET

(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.

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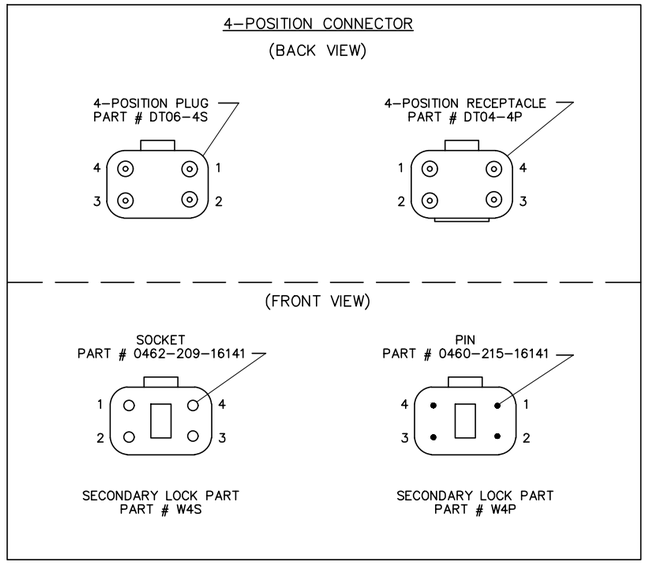
City of Plymouth

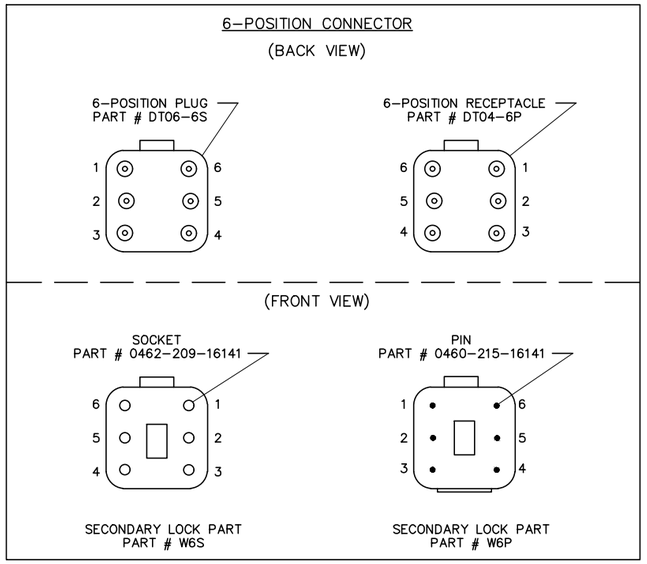
CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3

TRAFFIC SIGNAL PLANS
TRAFFIC CONTROL SIGNAL SYSTEM B EQUIPMENT PAD DETAIL

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

SHEET NO. 239 / 348





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:	11/04/2024
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: 11/04/2024 MN LIC. NO. 56090

City of Plymouth
CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3

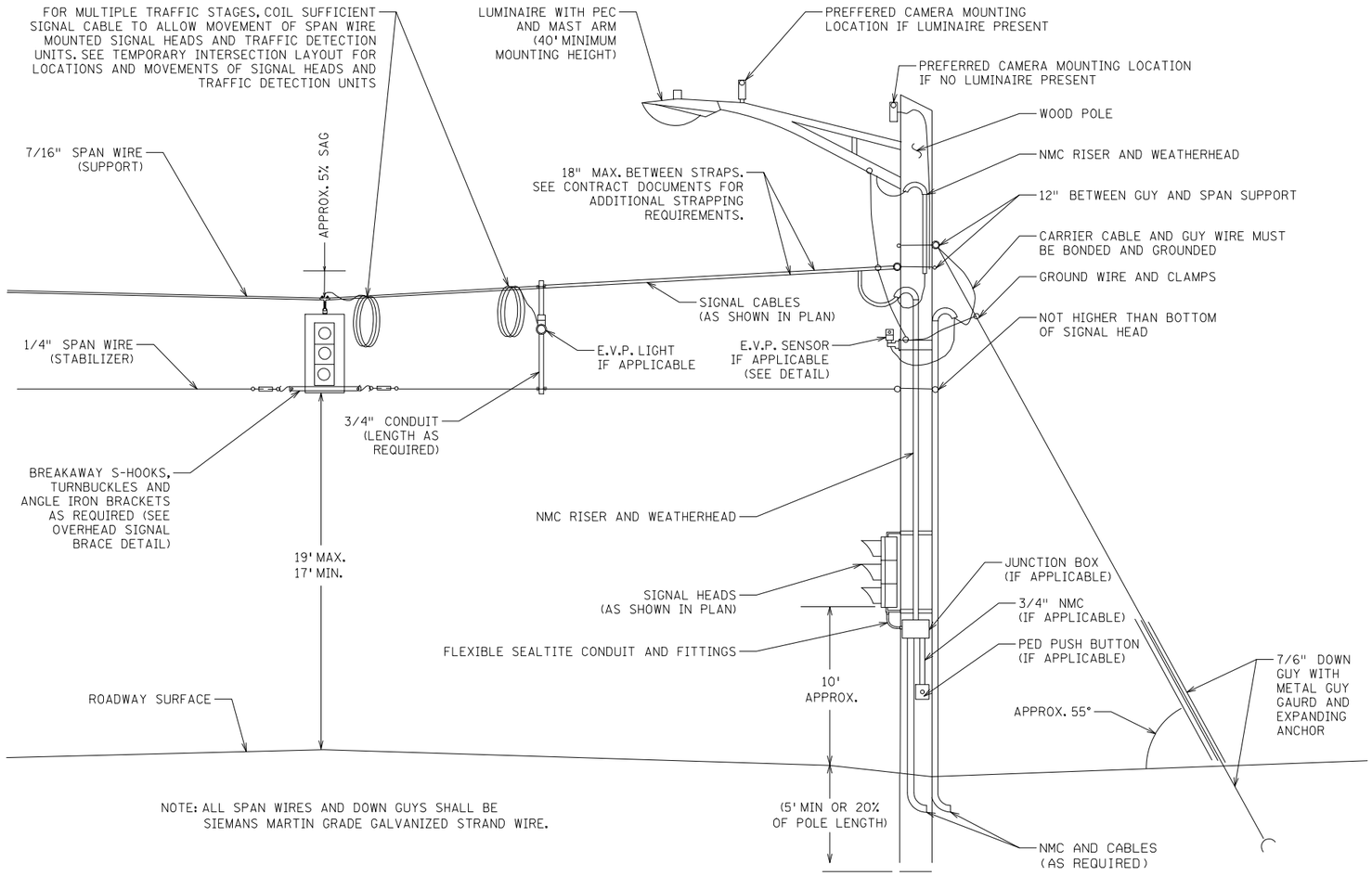
TRAFFIC SIGNAL PLANS
REVISE SIGNAL SYSTEM A WIRING DIAGRAM DETAIL

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

SHEET NO. 240 / 348

TYPICAL WOOD POLE AND SPAN WIRE MOUNTED TRAFFIC SIGNALS

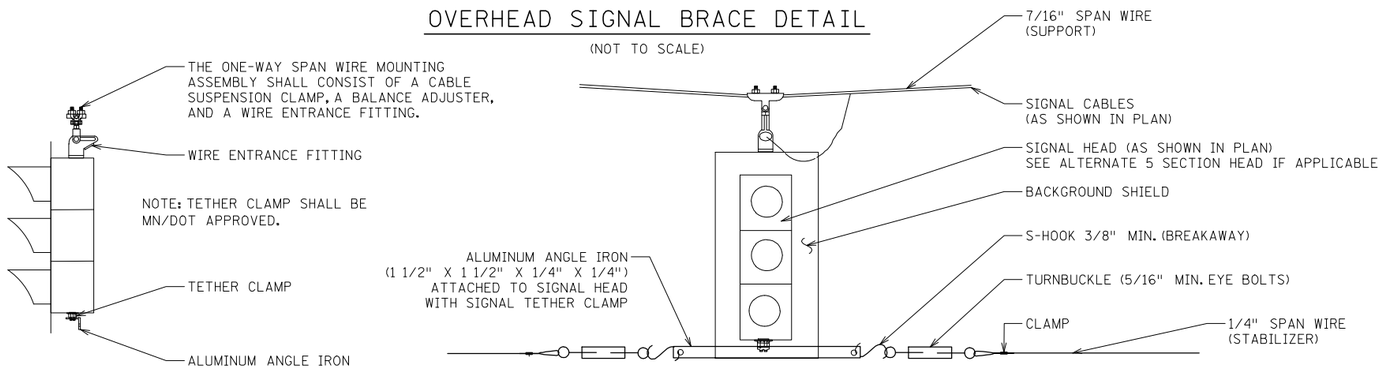
(NOT TO SCALE)



NOTE: ALL SPAN WIRES AND DOWN GUYS SHALL BE SIEMANS MARTIN GRADE GALVANIZED STRAND WIRE.

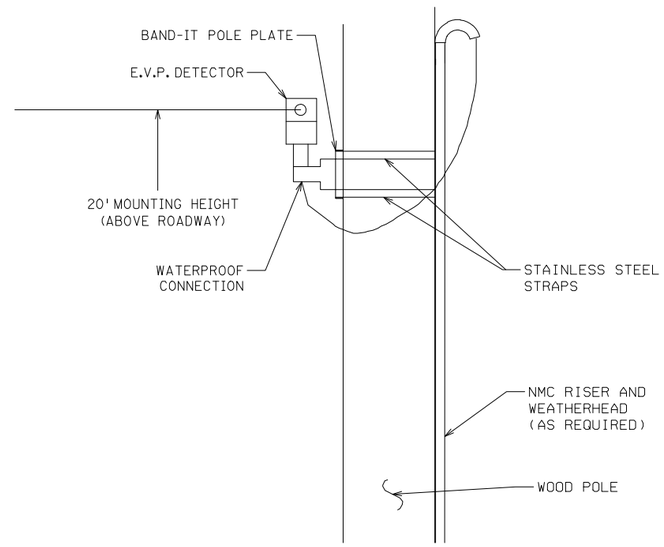
OVERHEAD SIGNAL BRACE DETAIL

(NOT TO SCALE)



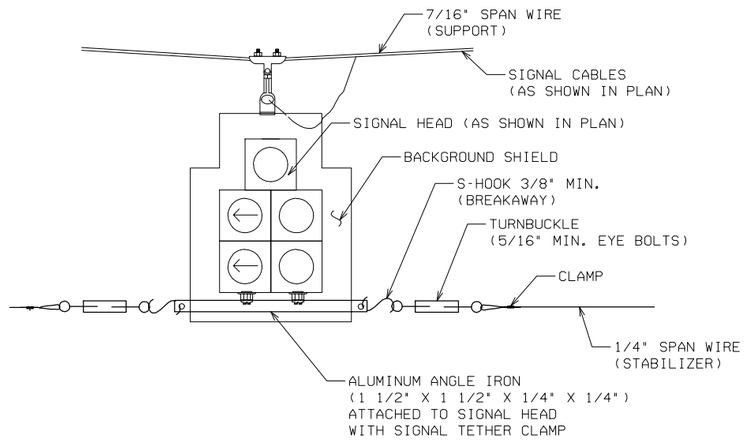
E.V.P. OR TRAFFIC DETECTOR WOOD POLE MOUNT

(NOT TO SCALE)



5 SECTION HEAD OVERHEAD SIGNAL BRACE DETAIL

(NOT TO SCALE)



No.	Date	Revisions	App.

DRAWING NAME	CHANKAHDA_PH3_TempSignalDTL.dwg
DESIGNED BY:	BWS
DRAWN BY:	MBG
CHECKED BY:	BKV
DATE:	11/04/2024
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: 11/04/2024 MN LIC. NO. 56090

City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
TYPICAL WOOD POLE/SPAN WIRE
SIGNAL SYSTEM DETAIL
INTERSECTION LAYOUT

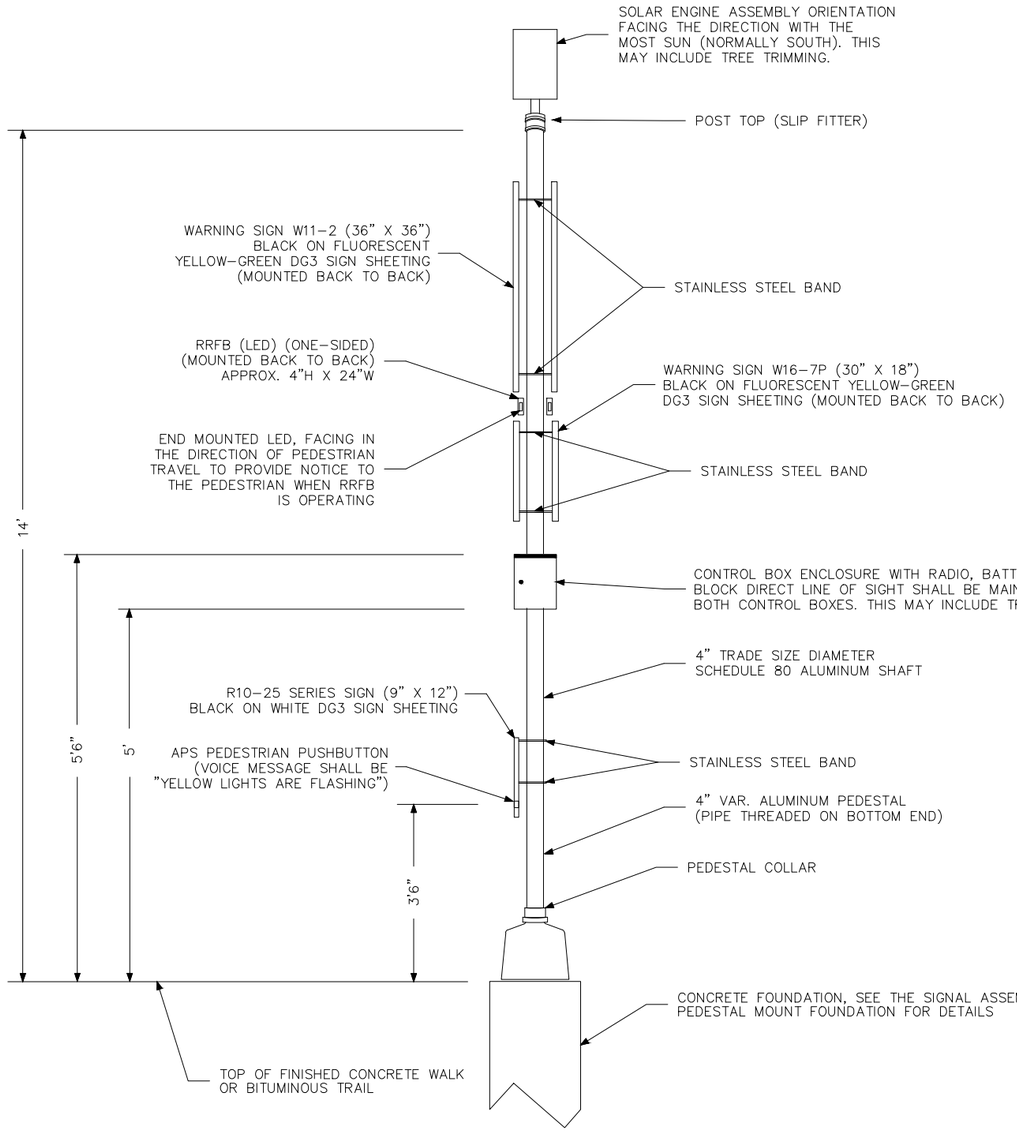
CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 241 / 348

SA 1 SA 2

PEDESTRIAN FLASHER ASSEMBLY PEDESTAL MOUNT
RECTANGULAR RAPID FLASHING BEACON LED (RRFB) SOLAR POWERED

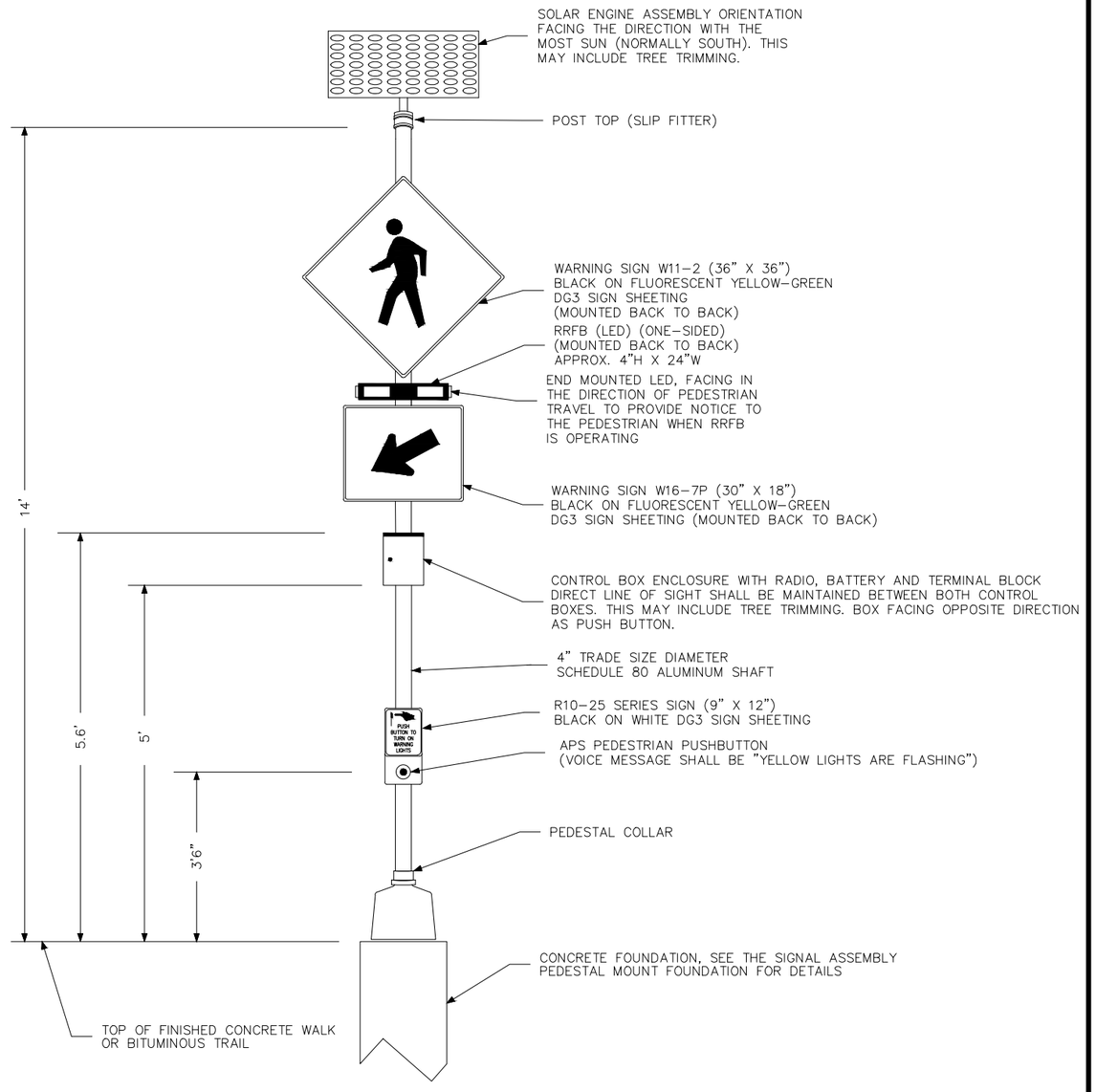
(NO SCALE)



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
DRAWN BY:	MBG
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DATE:	11/04/2024
PROJECT NO.	160662010

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BRIAN K. VILLA, PE

DATE: 11/04/2024 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

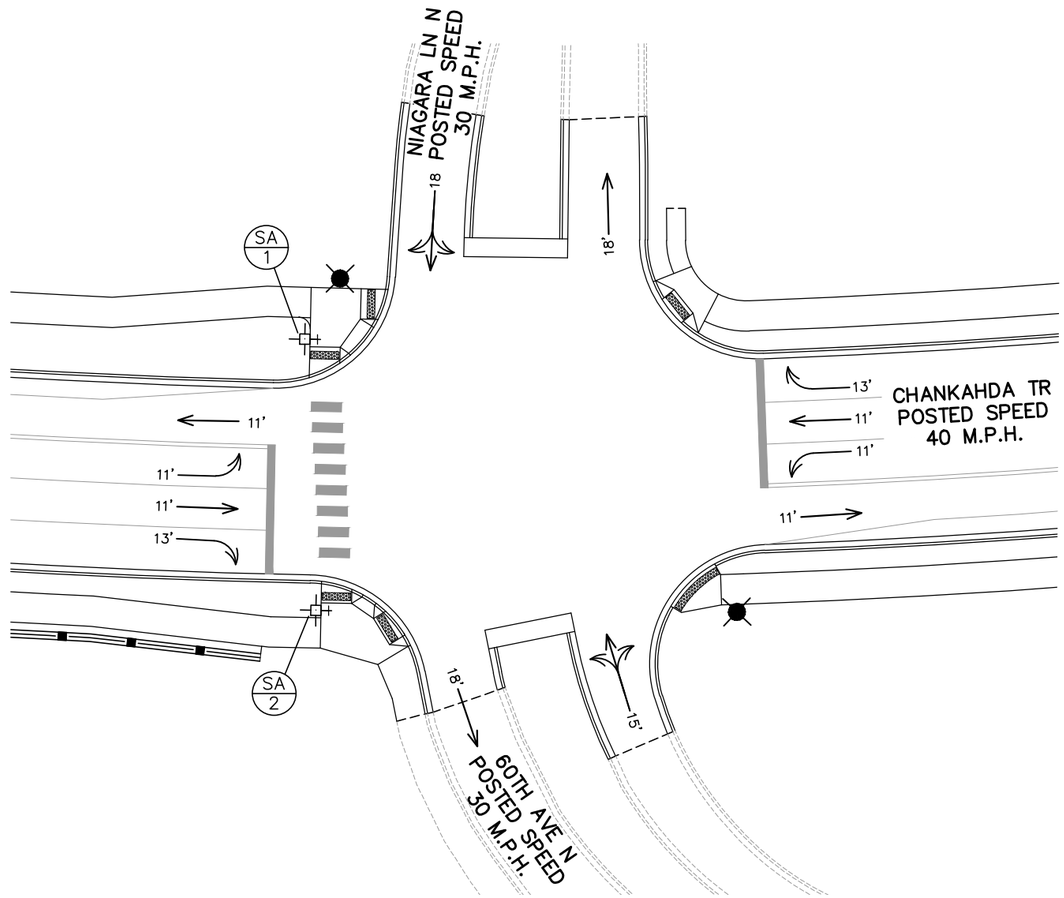
CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 242 / 348

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:	11/04/2024
PROJECT NO.	160662010

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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: 11/04/2024 MN LIC. NO. 56090

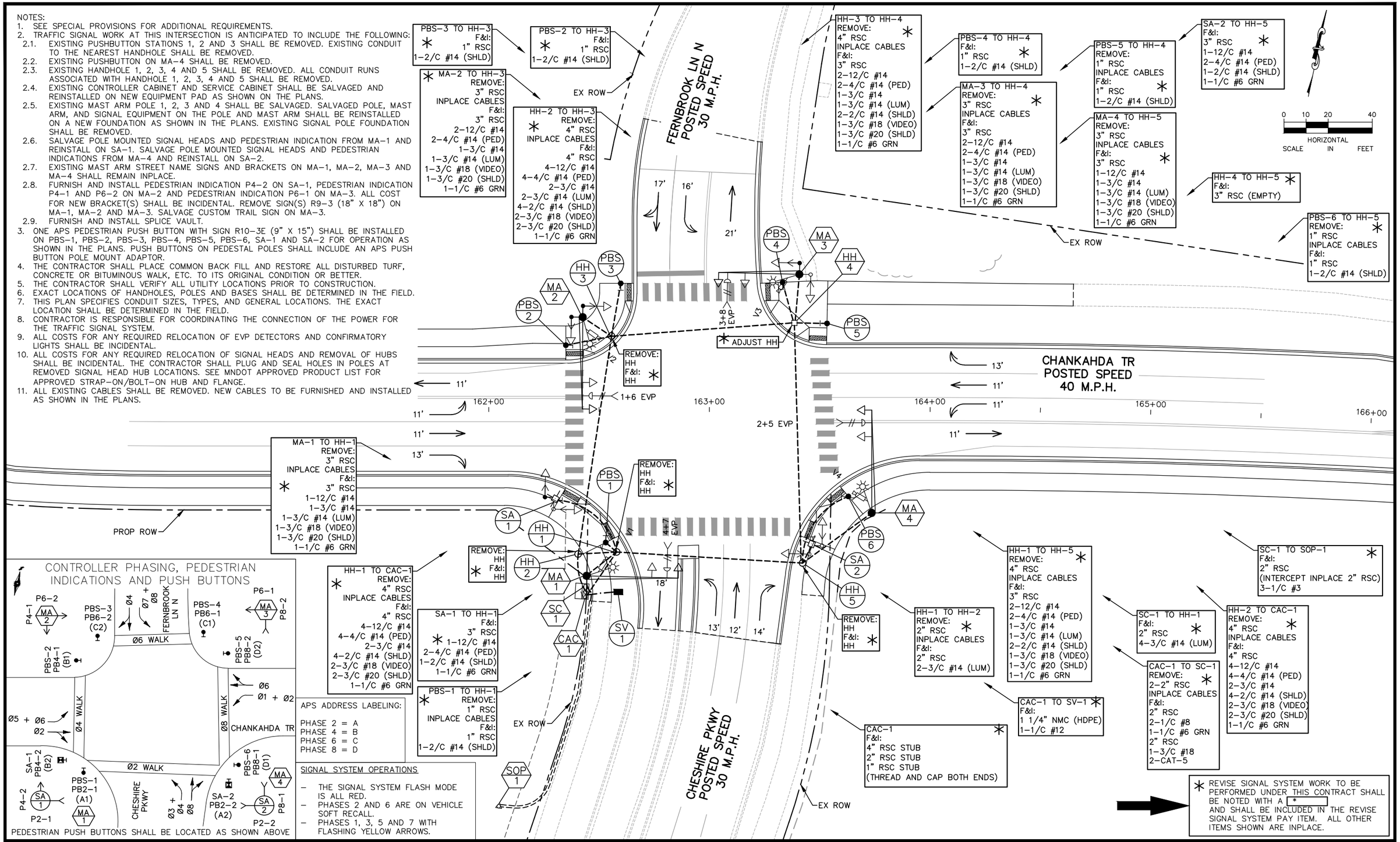
City of Plymouth

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. 243 / 348

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.
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.



No.	Date	Revisions	App.

DRAWING NAME: CHANKAHDA_PH3_Signal.dwg

DESIGNED BY:	BWS
DRAWN BY:	MBG
CHECKED BY:	BKV
DATE:	11/04/2024
PROJECT NO.	160662010

Kimley»Horn
767 EUSTIS STREET, SUITE 100, ST, PAUL, MN 55114
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BRIAN K. VILLA, PE
DATE: 11/04/2024 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. 244 / 348

SIGNAL STRUCTURE LOCATIONS

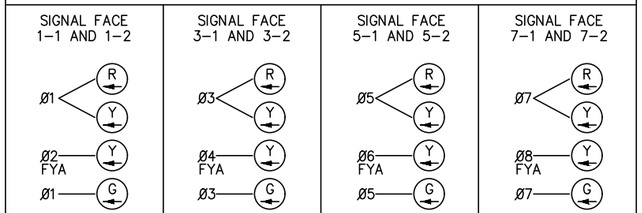
NO.	LOCATION (1)	NO.	LOCATION (1)
HH–1	X: 479213.1081, Y: 198592.8936	PBS–3	X: 479193.9121, Y: 198713.1730
HH–2	X: 479196.1999, Y: 198588.8566	PBS–4	X: 479266.0783, Y: 198726.2606
HH–3	X: 479193.8494, Y: 198688.9155	PBS–5	X: 479289.1584, Y: 198711.4081
HH–4	INPLACE	PBS–6	X: 479312.1972, Y: 198635.8261
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)	1	←	←		←		INPLACE
			2			←			
	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.

* 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:	11/04/2024
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Kimley»Horn
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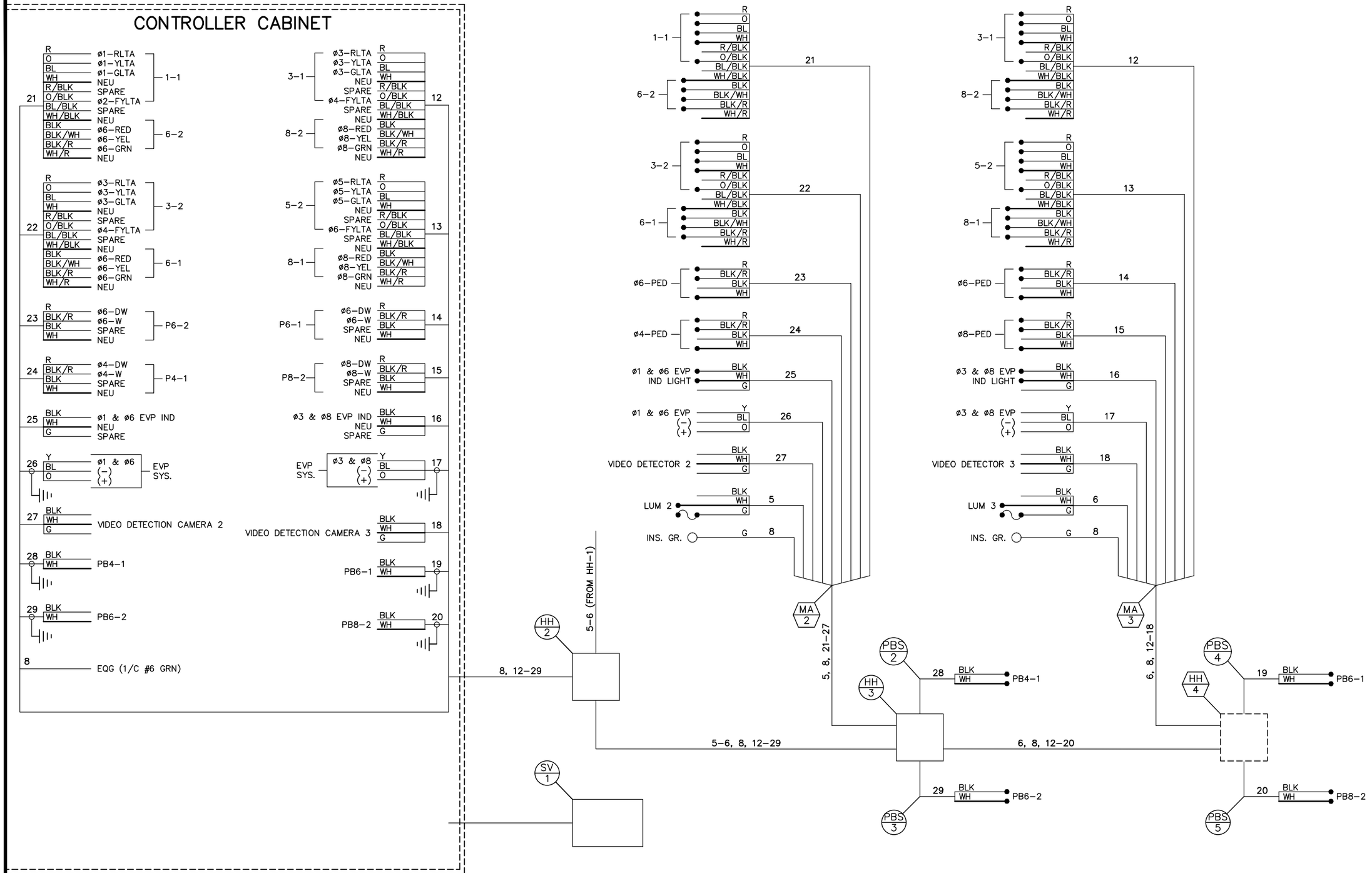
BRIAN K. VILLA, PE
DATE: 11/04/2024 MN LIC. NO. 56090

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. 245 / 348



No.	Date	Revisions	App.

DRAWING NAME: CHANKAHDA_PH3_Signal.dwg

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BRIAN K. VILLA, PE

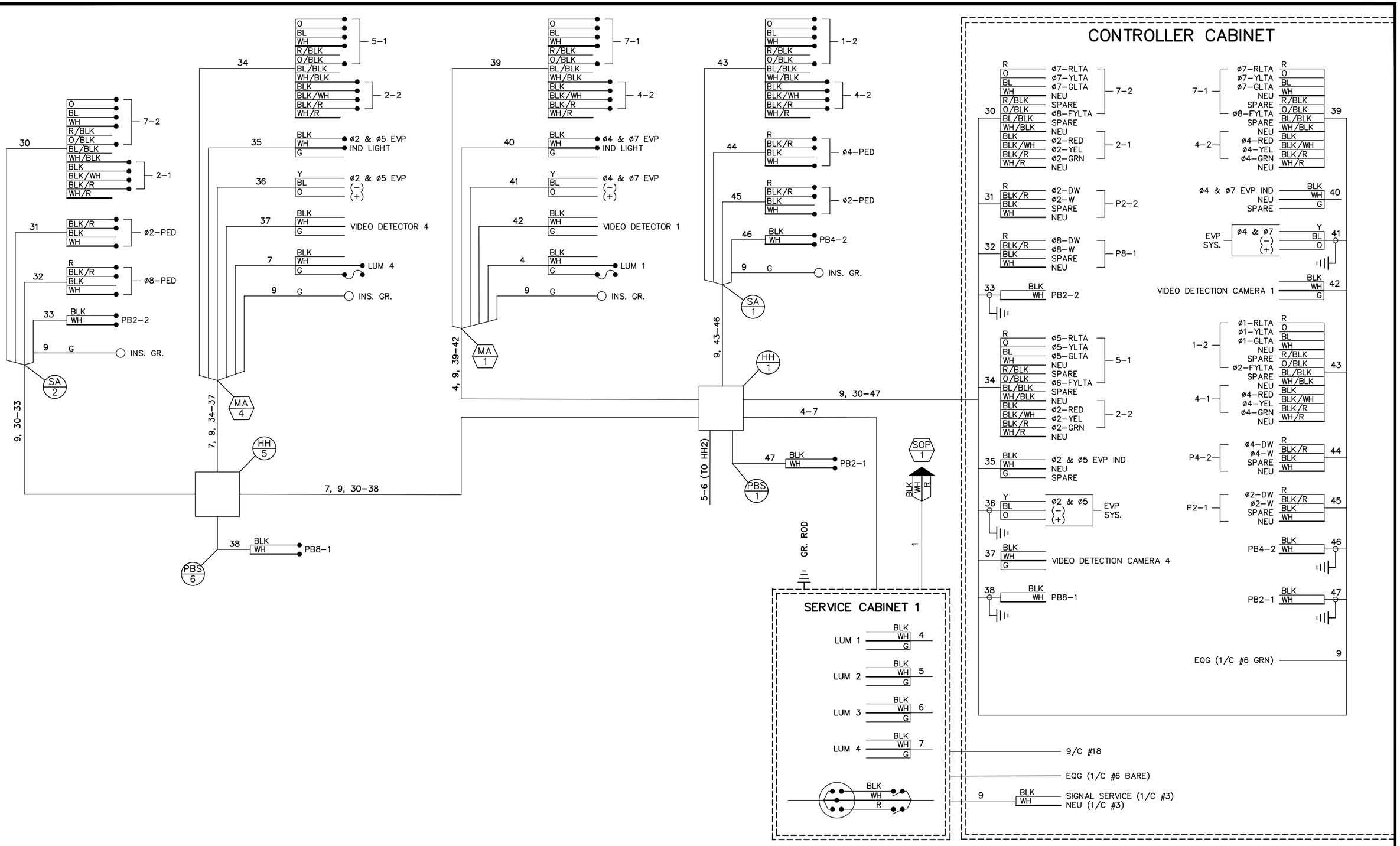
DATE: 11/04/2024 MN LIC. NO. 56090

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. 246 / 348



No.	Date	Revisions	App.

DRAWING NAME	CHANKAHDA_PH3_Signal.dwg
DESIGNED BY:	BWS
DRAWN BY:	MBG
CHECKED BY:	BKV
DATE:	11/04/2024
PROJECT NO.	160662010

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BRIAN K. VILLA, PE

DATE: 11/04/2024 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.	

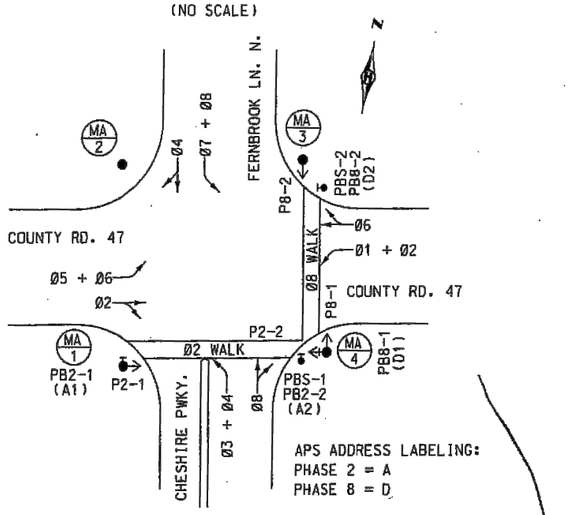
SHEET NO. 247 / 348

4- CAMERAS

FOR INFORMATION ONLY

CONTROLLER PHASING LAYOUT

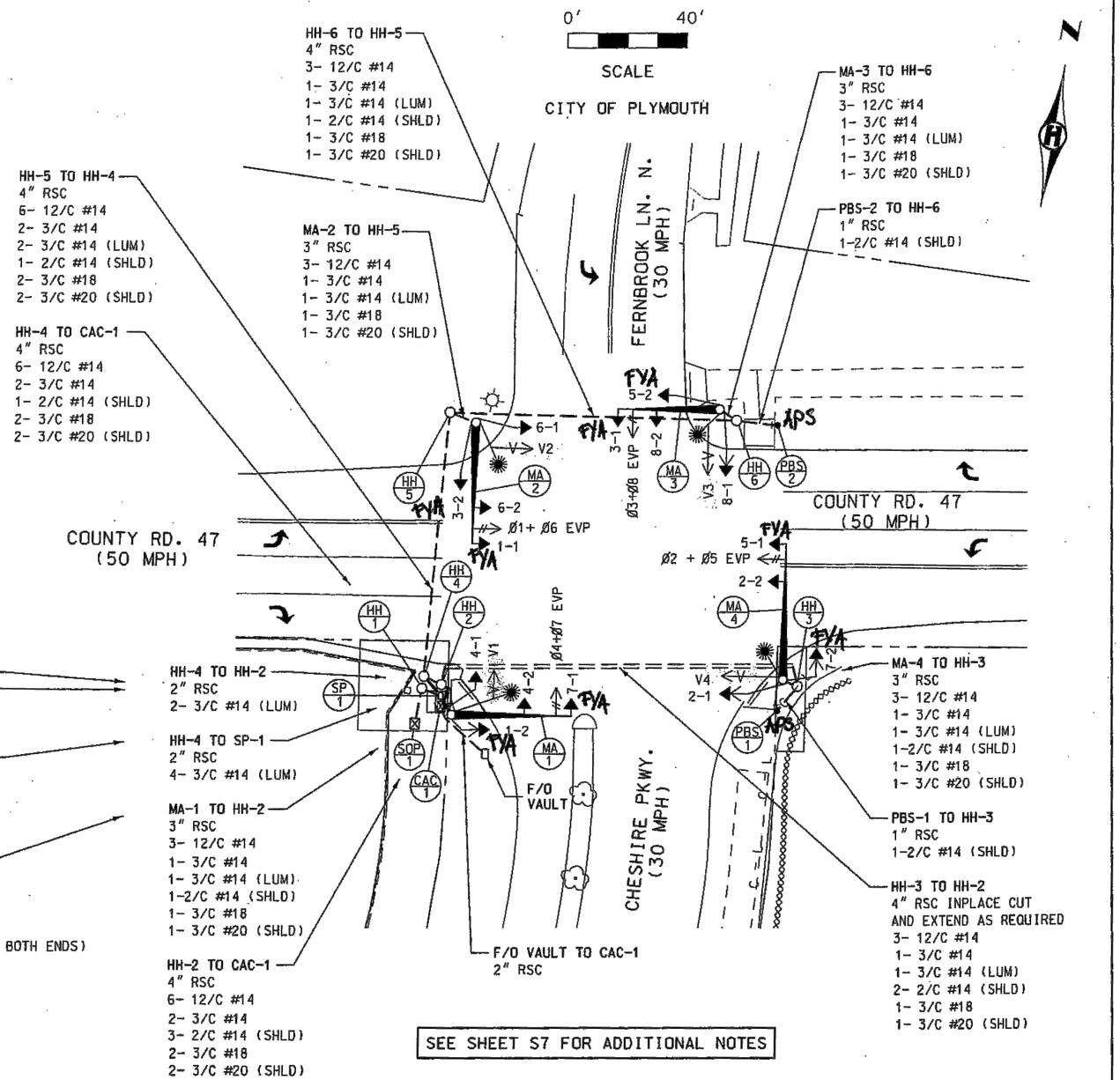
(NO SCALE)



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.



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:	11/04/2024
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 - INTERSECTION LAYOUT

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

SHEET NO. 248 / 348

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.

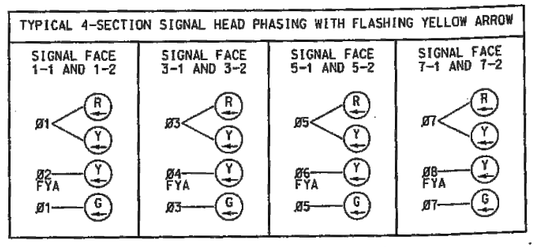
3-SECT. BALL = 8
4-SECT. ARROW = 8 (FYA)
4 = COUNTDOWN TIMERS
4 = FYA SIGNS
4 = 10-B BRACKET
4 = 10-A BRACKET
1 = EVP SYSTEM
2 = APS-P.B. STATION
4 - LED LUMINAIRE
1 - VIDEO DETECTION SYSTEM
1 - BATTERY BACKUP

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:	11/04/2024
PROJECT NO.	160662010

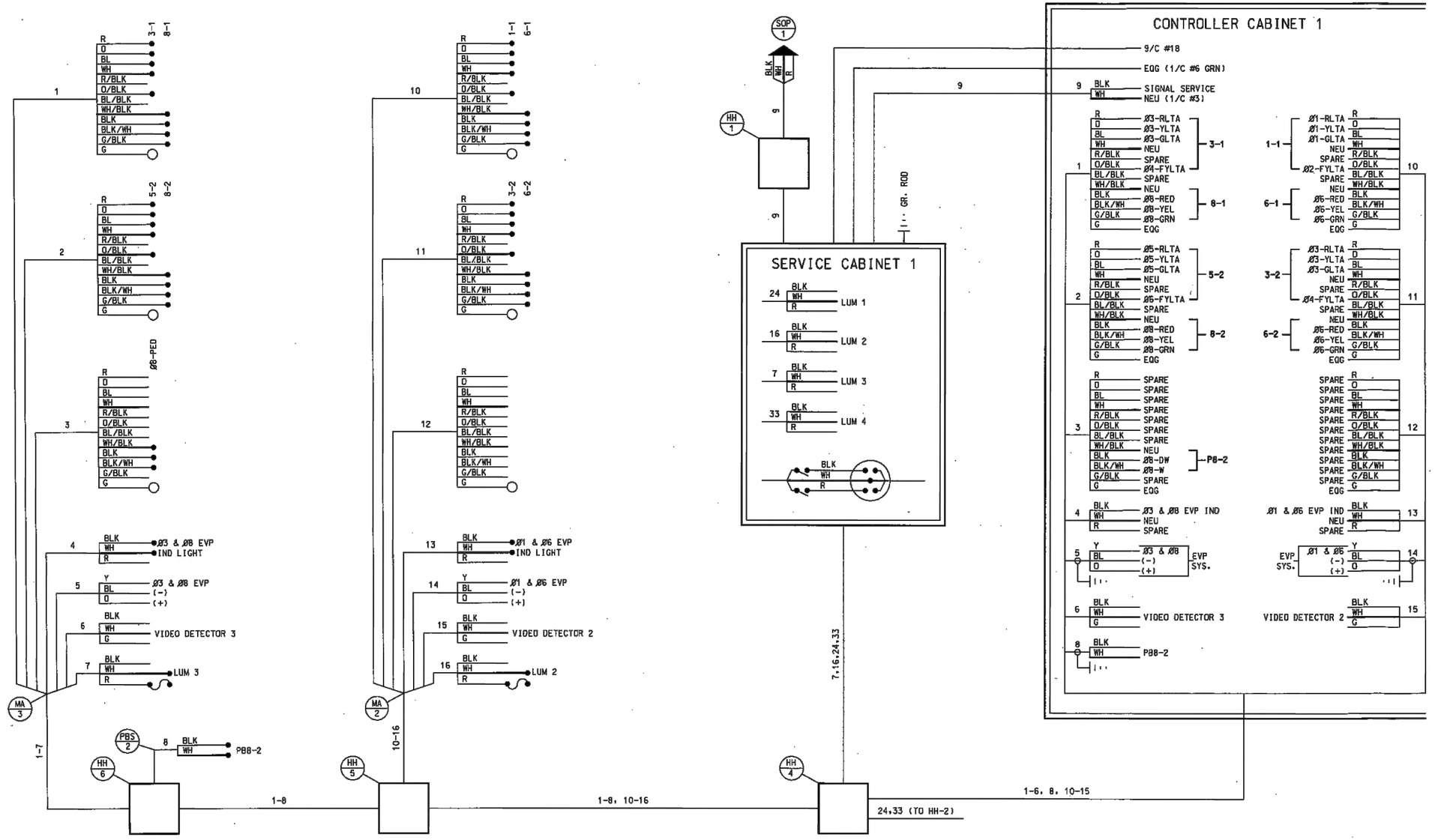
Kimley»Horn
767 EUSTIS STREET, SUITE 100, ST. PAUL, MN 55114
PHONE: 651-645-4197
WWW.KIMLEY-HORN.COM

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. 249 / 348



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

Hennepin

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:	11/04/2024
PROJECT NO.	160662010

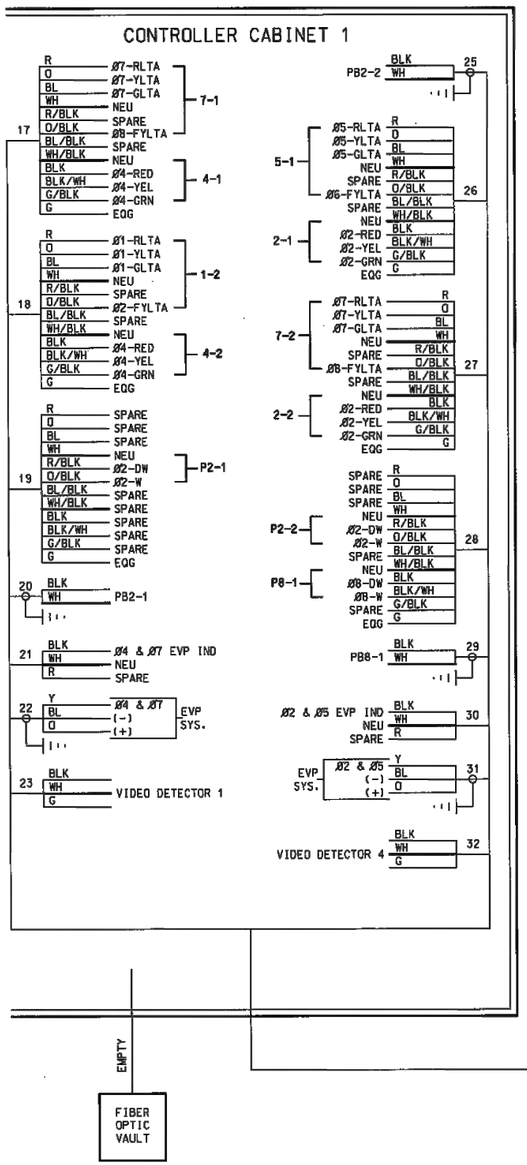
Kimley»Horn
767 EUSTIS STREET, SUITE 100, ST, PAUL, MN 55114
PHONE: 651-645-4197
WWW.KIMLEY-HORN.COM

City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
TRAFFIC SIGNAL PLANS
REVISE SIGNAL SYSTEM A
FOR INFORMATION ONLY - FIELD WIRING DIAGRAM (1 OF 2)

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

SHEET NO. 250 / 348



FOR INFORMATION ONLY

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

No.	Date	Revisions	App.

DRAWING NAME: CHANKAHDA_PH3_Signal.dwg

DESIGNED BY:	BWS
DRAWN BY:	MBG
CHECKED BY:	BKV
DATE:	11/04/2024
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 - FIELD WIRING DIAGRAM (2 OF 2)

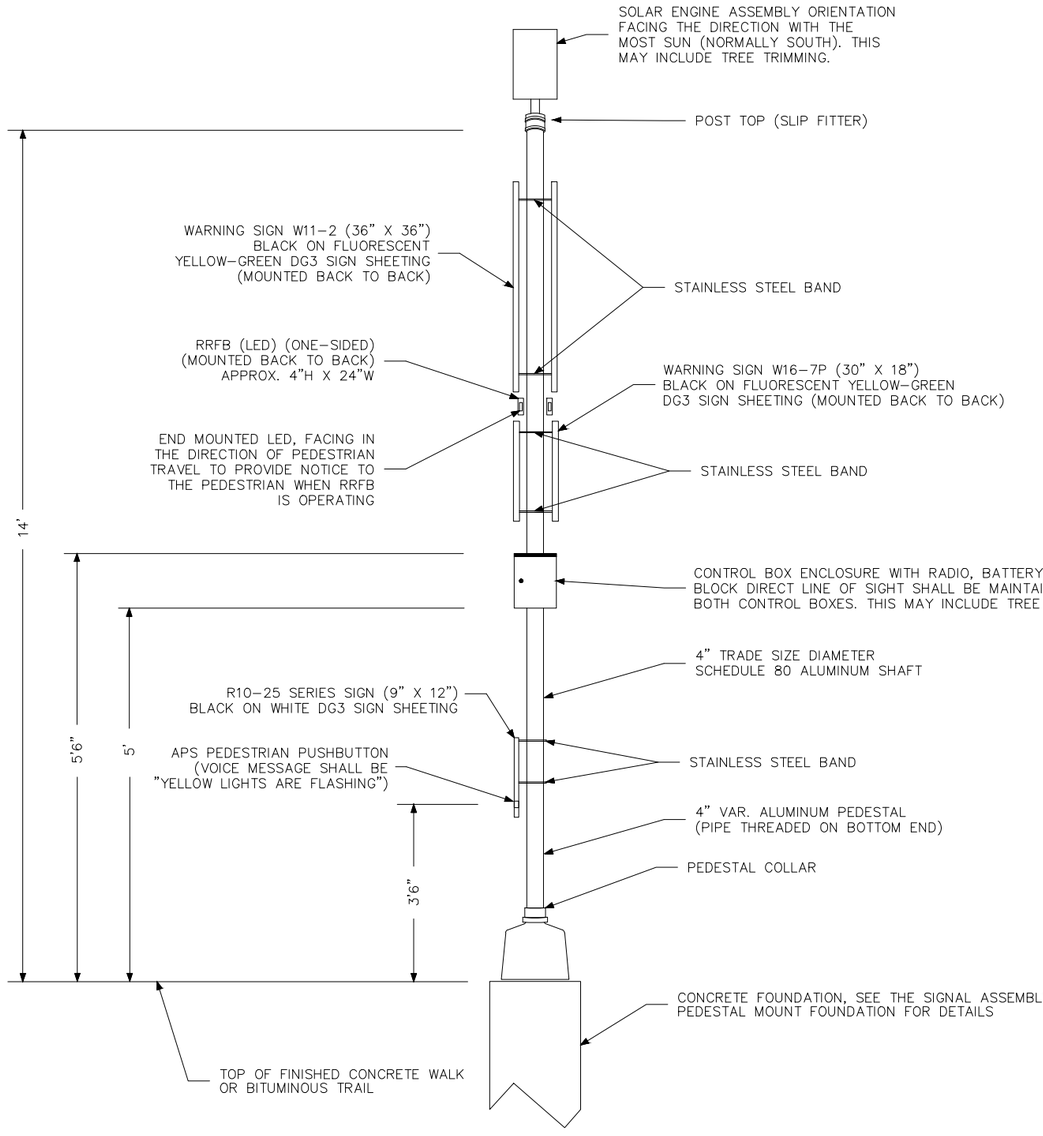
CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 251 / 348

SA 1 SA 2

PEDESTRIAN FLASHER ASSEMBLY PEDESTAL MOUNT
RECTANGULAR RAPID FLASHING BEACON LED (RRFB) SOLAR POWERED

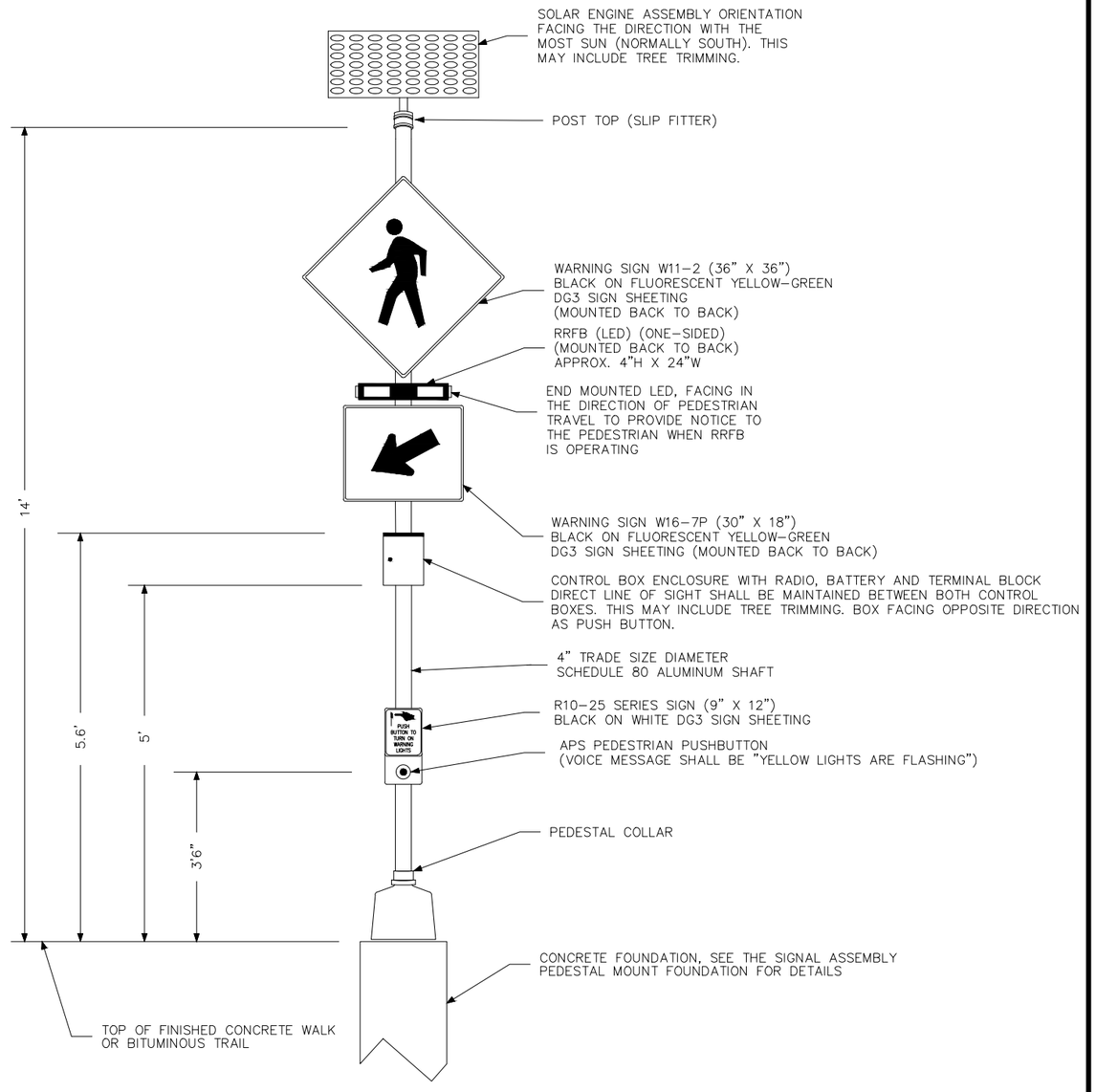
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SA 1 SA 2

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
CHECKED BY:	BKV
DATE:	11/04/2024
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: 11/04/2024 MN LIC. NO. 56090

City of Plymouth

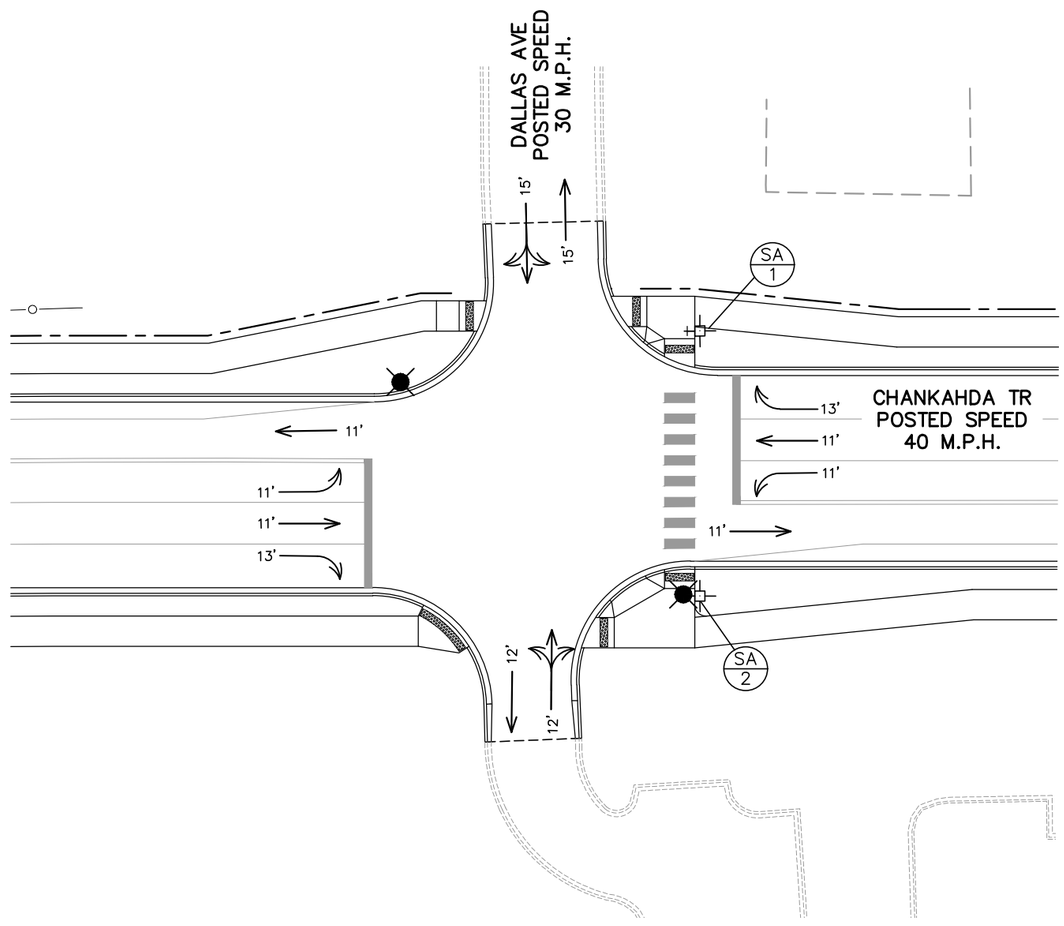
CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
TRAFFIC SIGNAL PLANS
PEDESTRIAN CROSSWALK FLASHER SYSTEM B
PEDESTRIAN FLASHER ASSEMBLY PEDESTAL DETAILS

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

SHEET NO. 252 / 348

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:	11/04/2024
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: 11/04/2024 MN LIC. NO. 56090

City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
TRAFFIC SIGNAL PLANS
PEDESTRIAN CROSSWALK FLASHER SYSTEM B
INTERSECTION LAYOUT

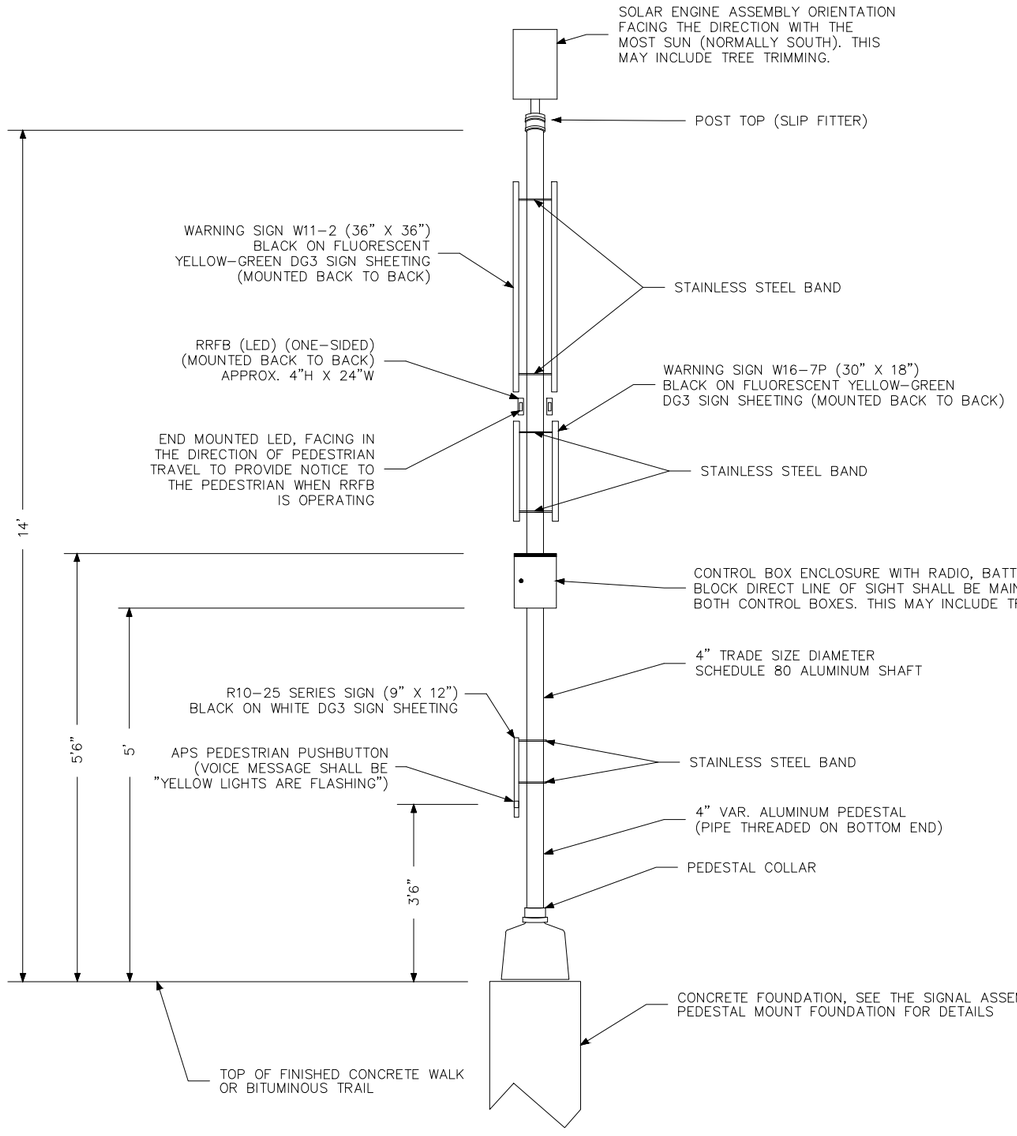
CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 253 / 348

SA 1 SA 2

PEDESTRIAN FLASHER ASSEMBLY PEDESTAL MOUNT
RECTANGULAR RAPID FLASHING BEACON LED (RRFB) SOLAR POWERED

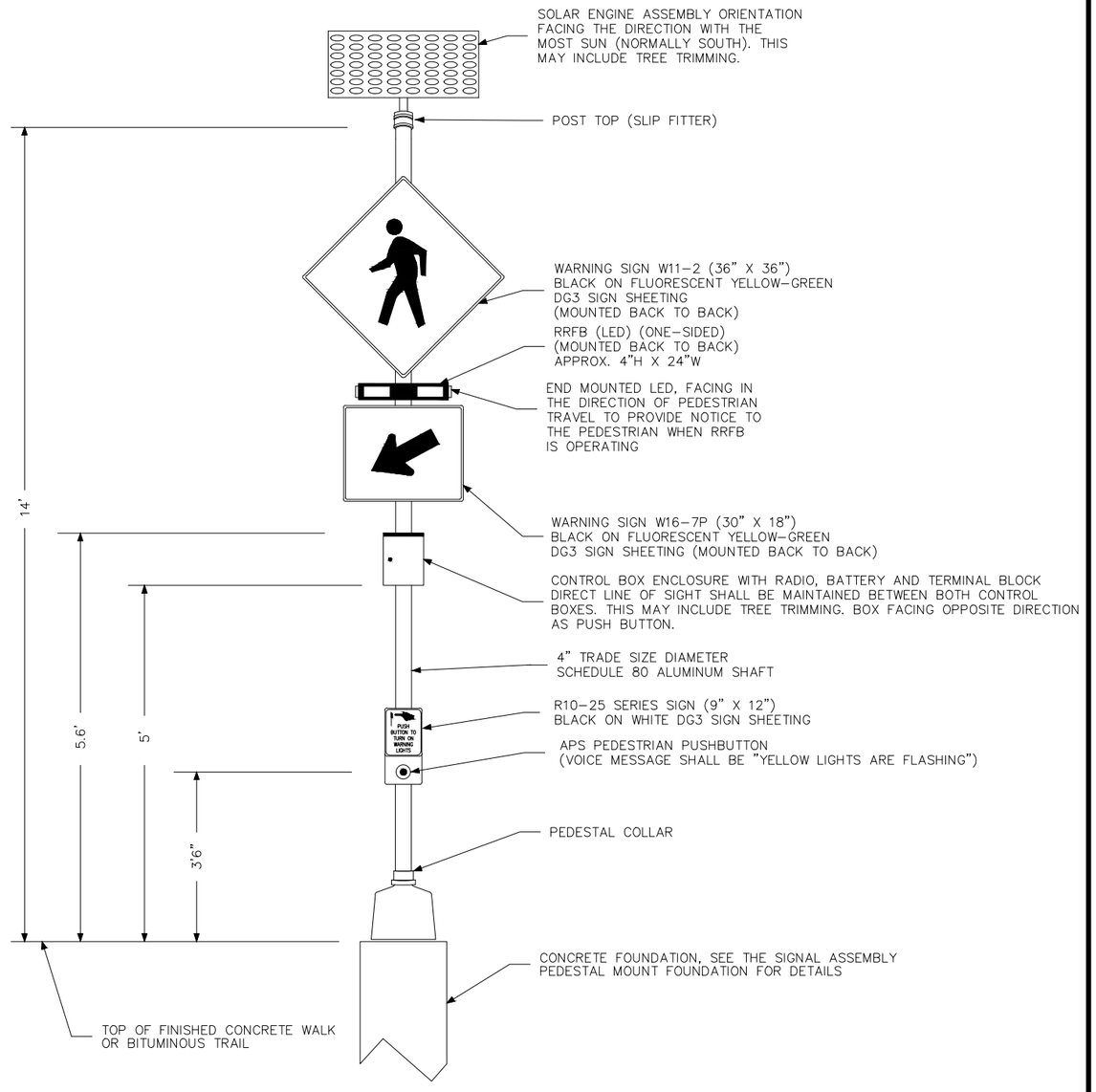
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SA 1 SA 2

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
CHECKED BY:	BKV
DATE:	11/04/2024
PROJECT NO.	160662010

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BRIAN K. VILLA, PE
DATE: 11/04/2024 MN LIC. NO. 56090

City of Plymouth

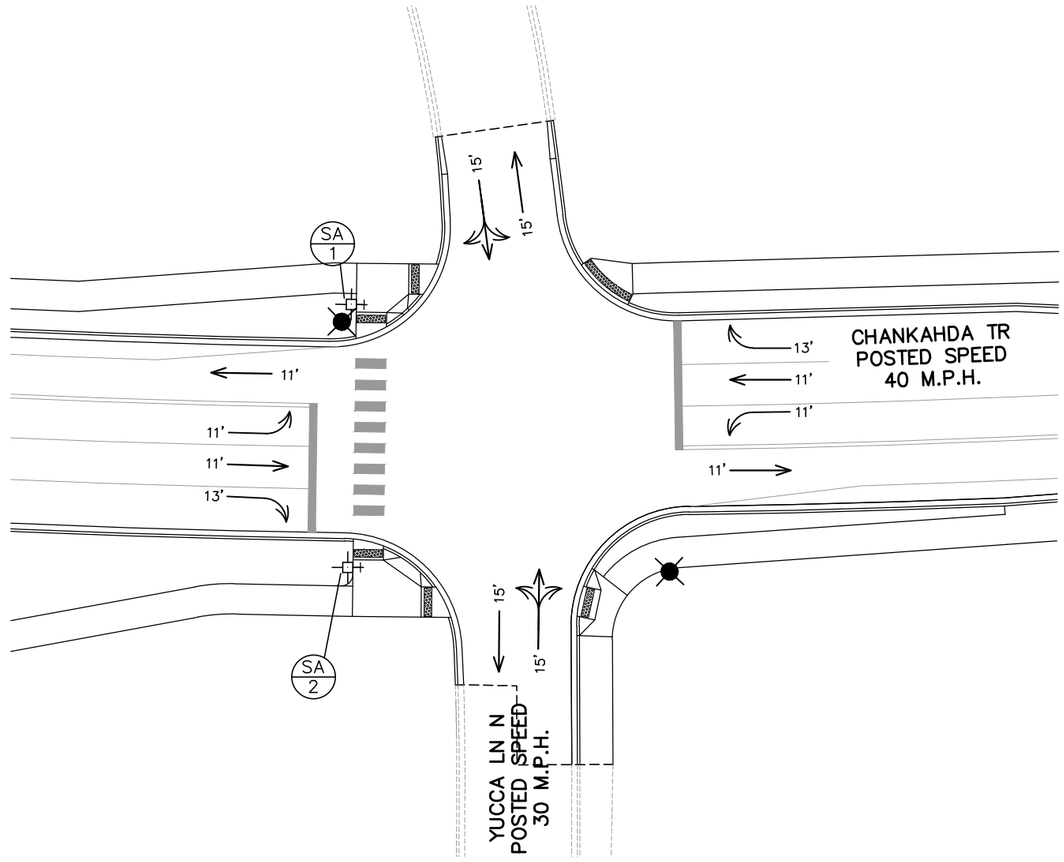
CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
TRAFFIC SIGNAL PLANS
PEDESTRIAN CROSSWALK FLASHER SYSTEM C
PEDESTRIAN FLASHER ASSEMBLY PEDESTAL DETAILS

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

SHEET NO. 254 / 348

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: 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:	11/04/2024
PROJECT NO.	160662010

Kimley»Horn
767 EUSTIS STREET, SUITE 100, ST, PAUL, MN 55114
PHONE: 651-645-4197
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BRIAN K. VILLA, PE
DATE: 11/04/2024 MN LIC. NO. 56090

City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
TRAFFIC SIGNAL PLANS
PEDESTRIAN CROSSWALK FLASHER SYSTEM C
INTERSECTION LAYOUT

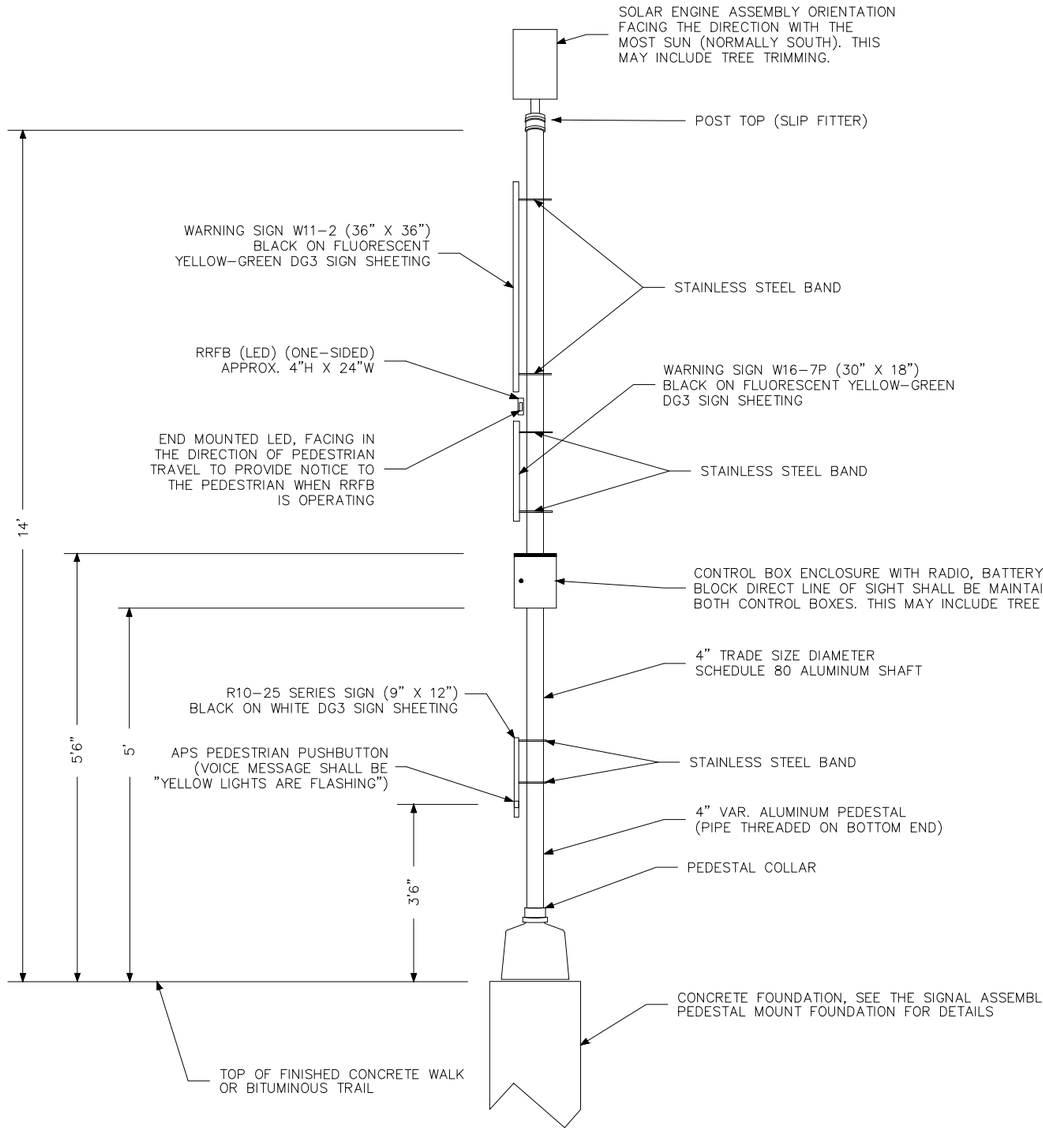
CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 255 / 348

SA 1 SA 3

PEDESTRIAN FLASHER ASSEMBLY PEDESTAL MOUNT
RECTANGULAR RAPID FLASHING BEACON LED (RRFB) SOLAR POWERED

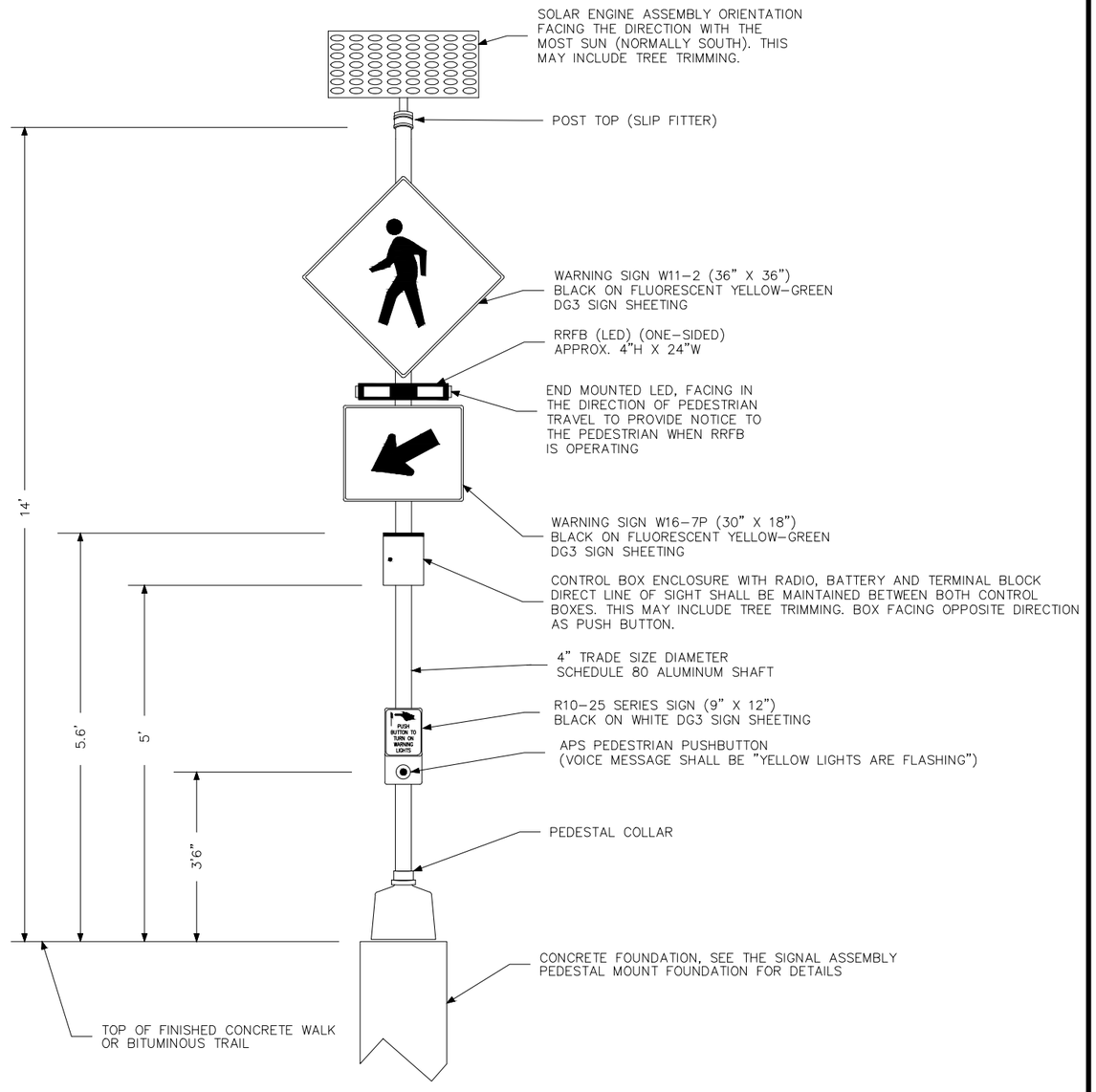
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SA 1 SA 3

PEDESTRIAN FLASHER ASSEMBLY PEDESTAL MOUNT
RECTANGULAR RAPID FLASHING BEACON LED (RRFB) SOLAR POWERED

(NO SCALE)



No.	Date	Revisions	App.

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BRIAN K. VILLA, PE
DATE: 11/04/2024 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

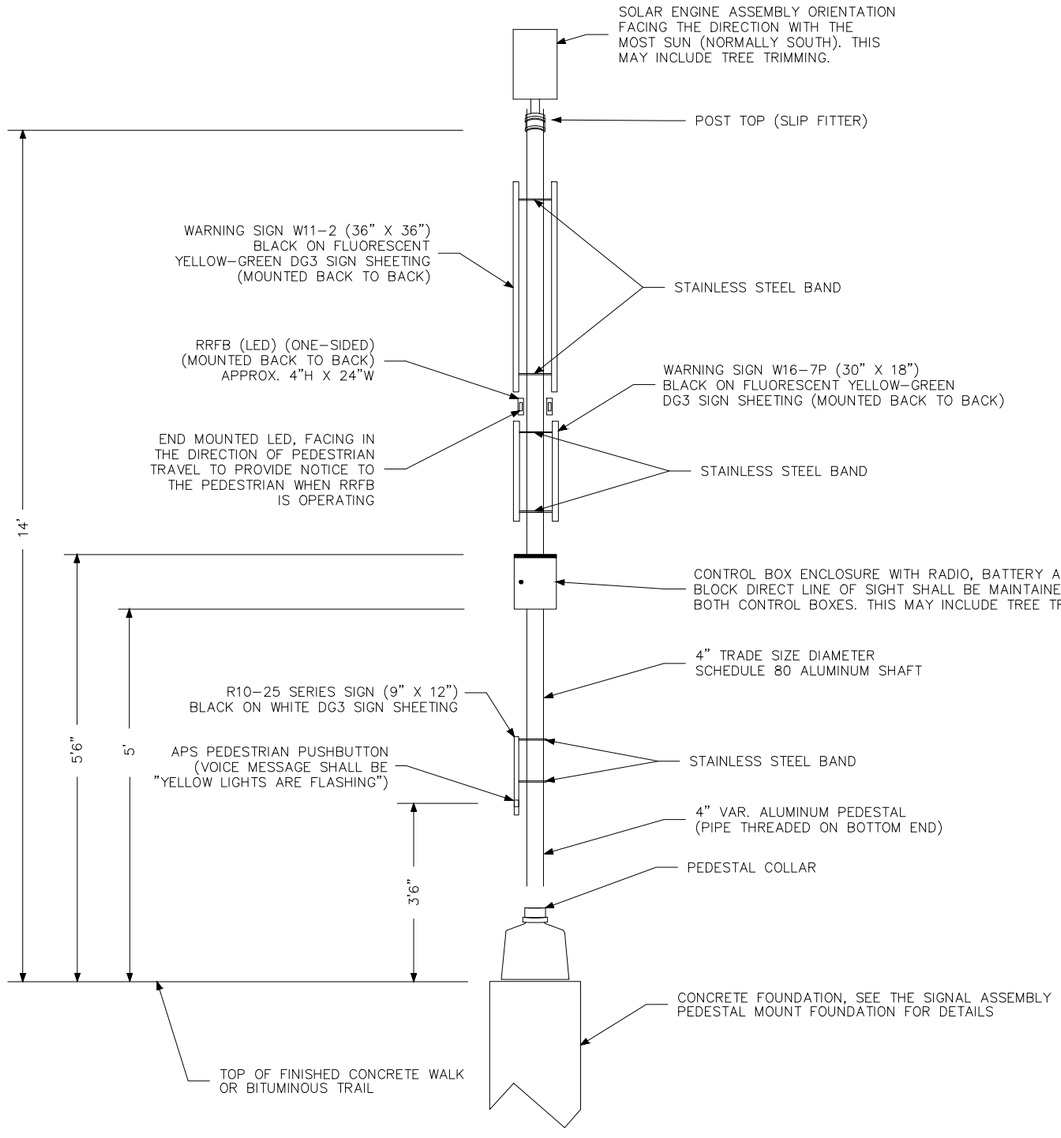
CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 256 / 348

SA
2

PEDESTRIAN FLASHER ASSEMBLY PEDESTAL MOUNT
RECTANGULAR RAPID FLASHING BEACON LED (RRFB) SOLAR POWERED

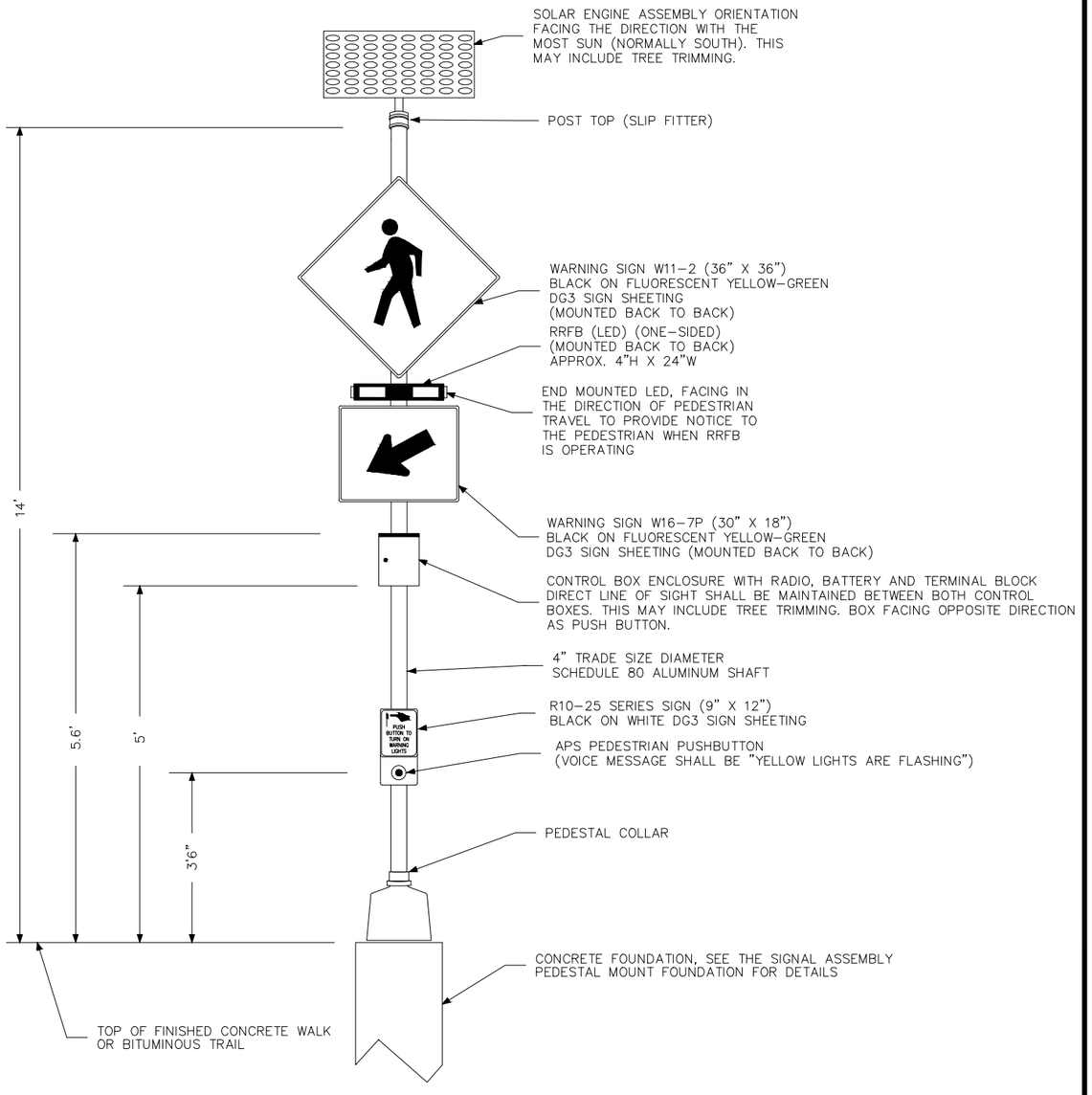
(NO SCALE)



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:	11/04/2024
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: 11/04/2024 MN LIC. NO. 56090

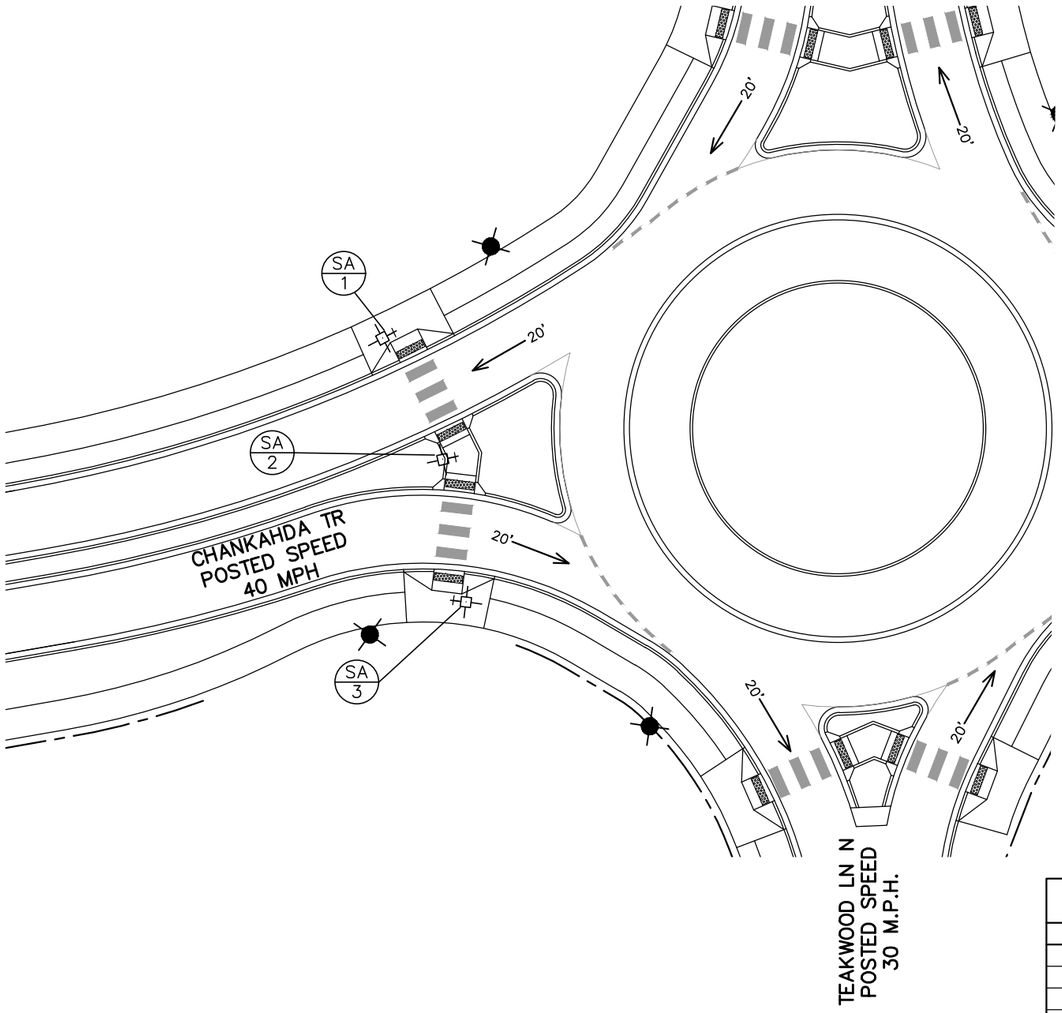
City of Plymouth

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. 257 / 348

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: 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.

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:	11/04/2024
PROJECT NO.	160662010

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City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
TRAFFIC SIGNAL PLANS
PEDESTRIAN CROSSWALK FLASHER SYSTEM D
INTERSECTION LAYOUT

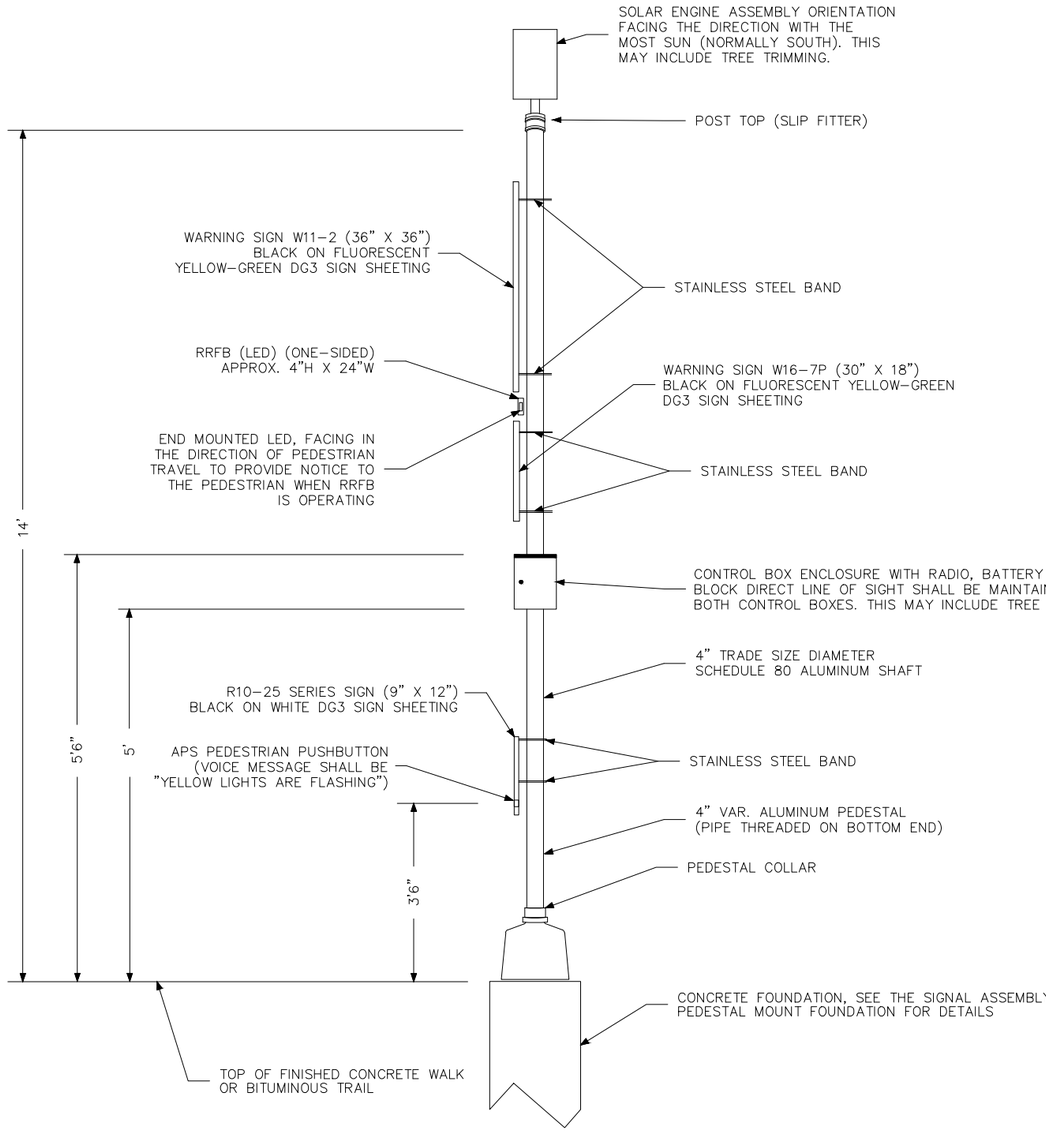
CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 258 / 348

SA 1 SA 3

PEDESTRIAN FLASHER ASSEMBLY PEDESTAL MOUNT
RECTANGULAR RAPID FLASHING BEACON LED (RRFB) SOLAR POWERED

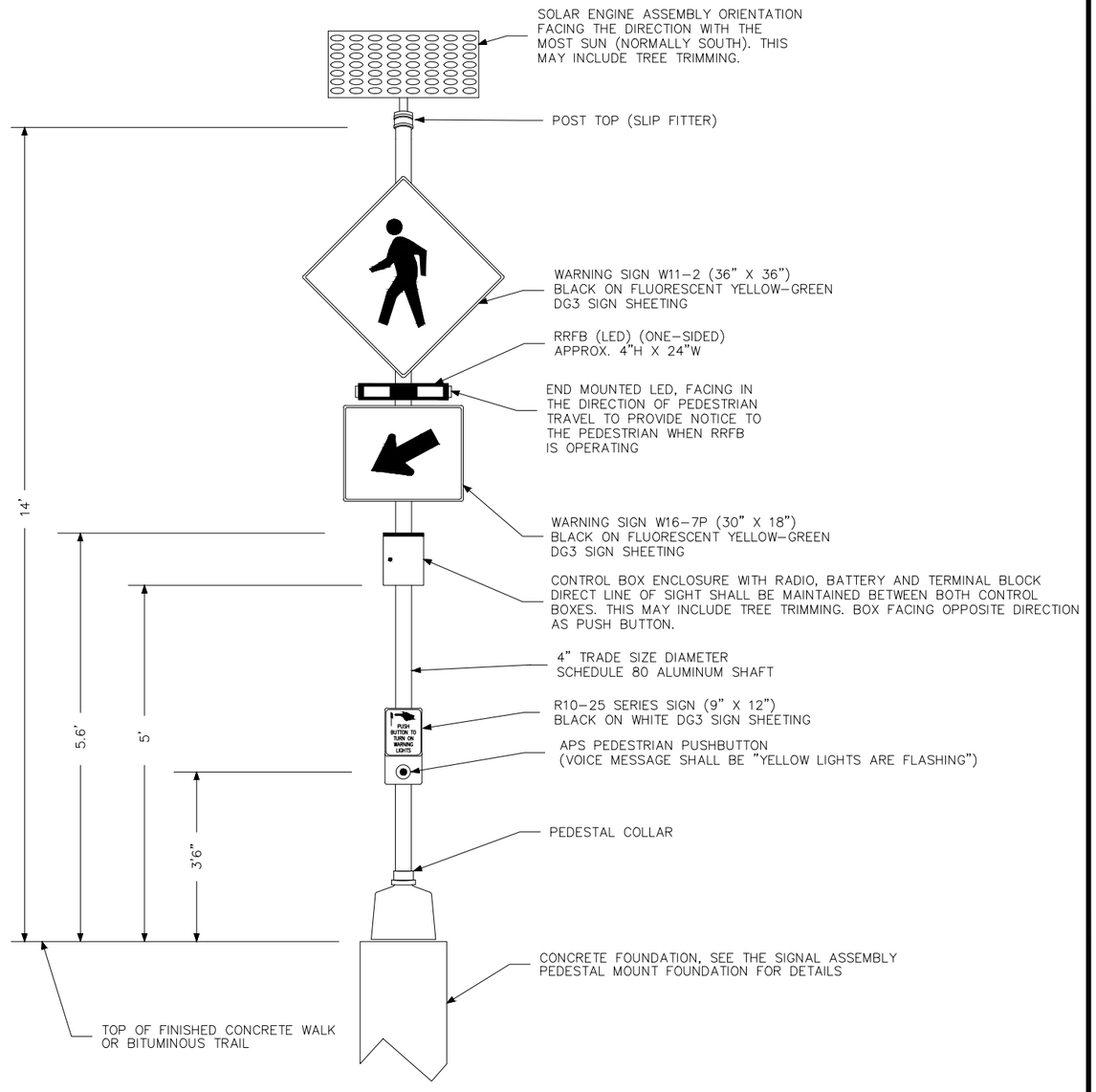
(NO SCALE)



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

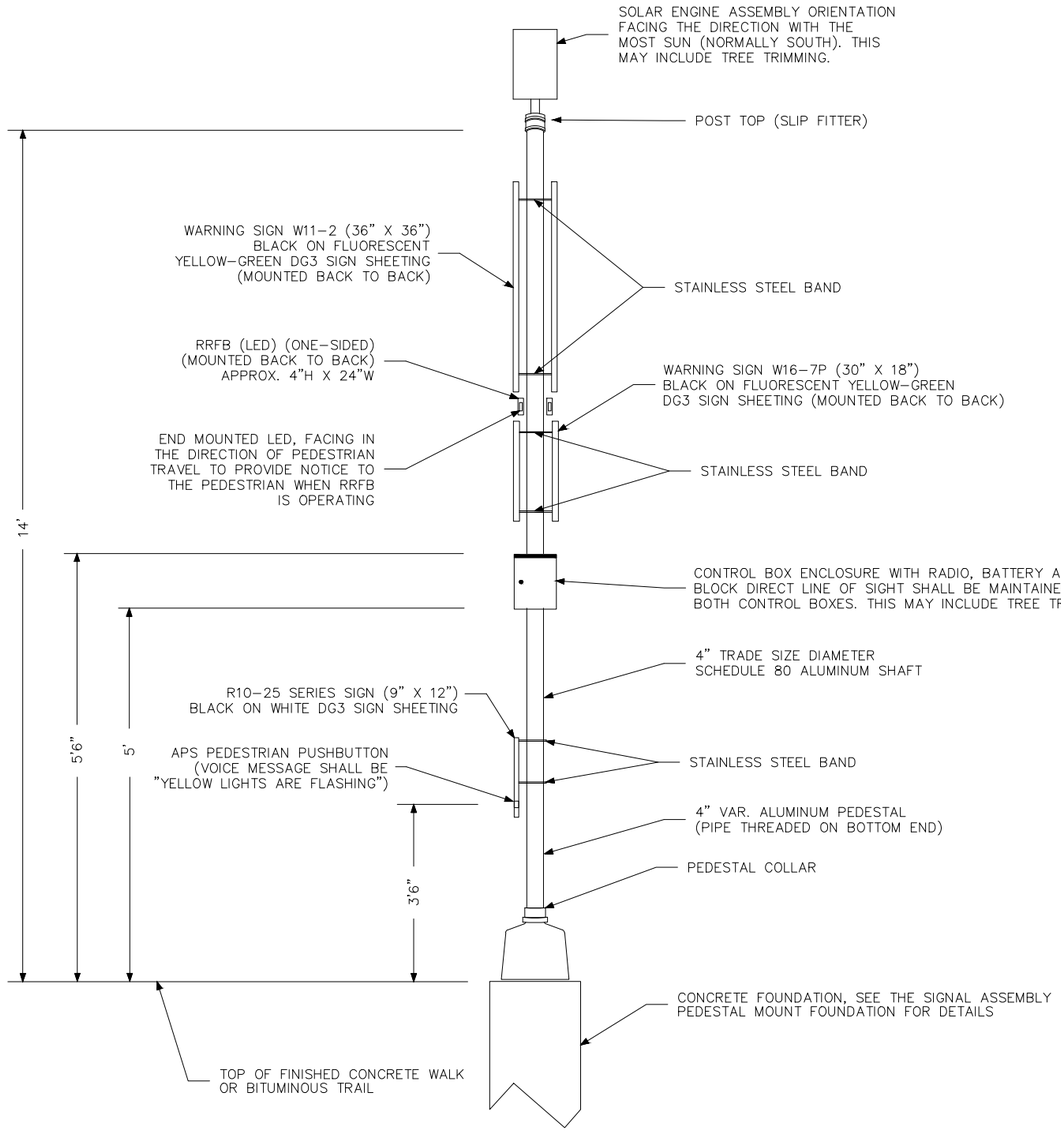
CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 259 / 348

SA
2

PEDESTRIAN FLASHER ASSEMBLY PEDESTAL MOUNT
RECTANGULAR RAPID FLASHING BEACON LED (RRFB) SOLAR POWERED

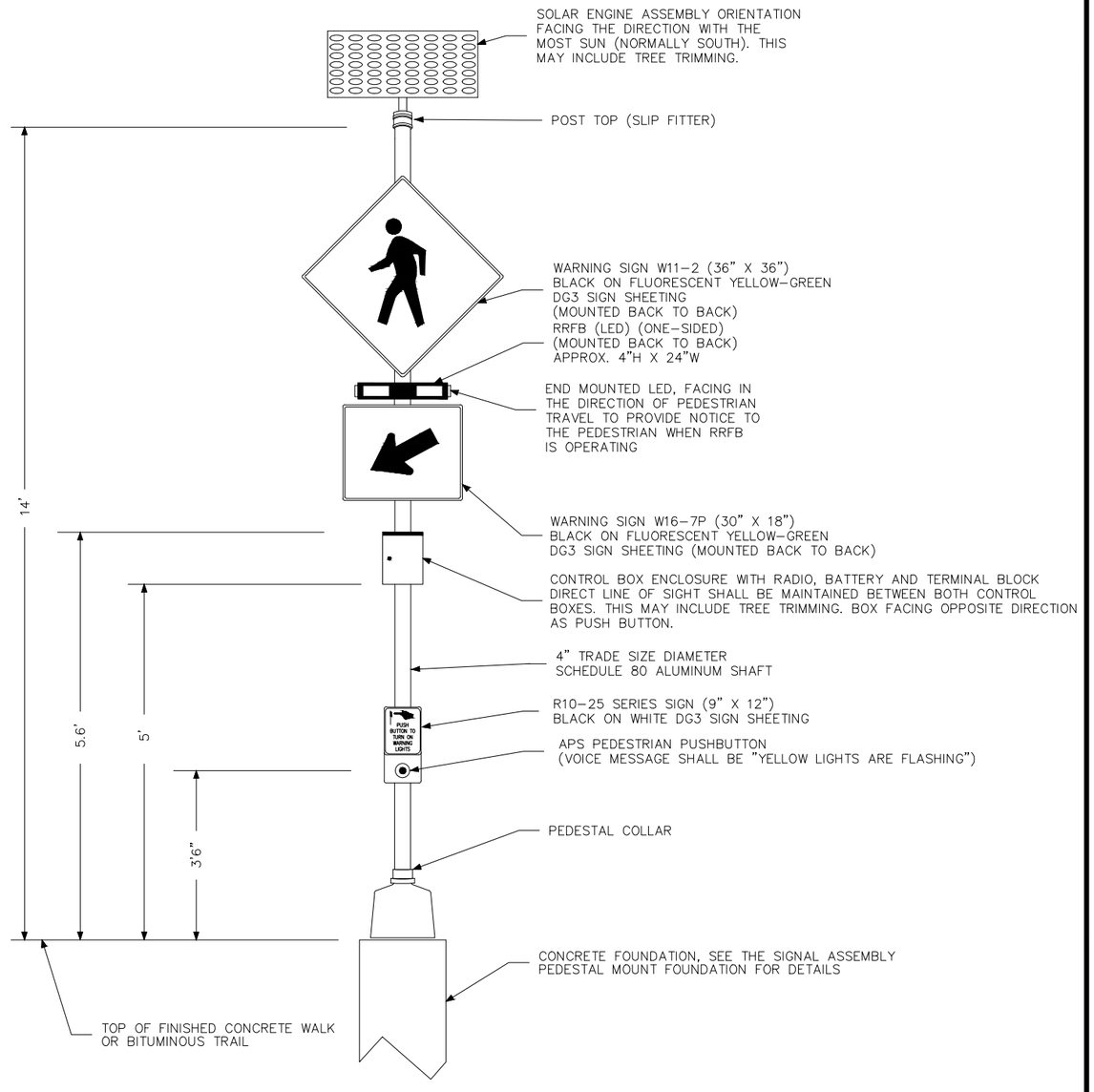
(NO SCALE)



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

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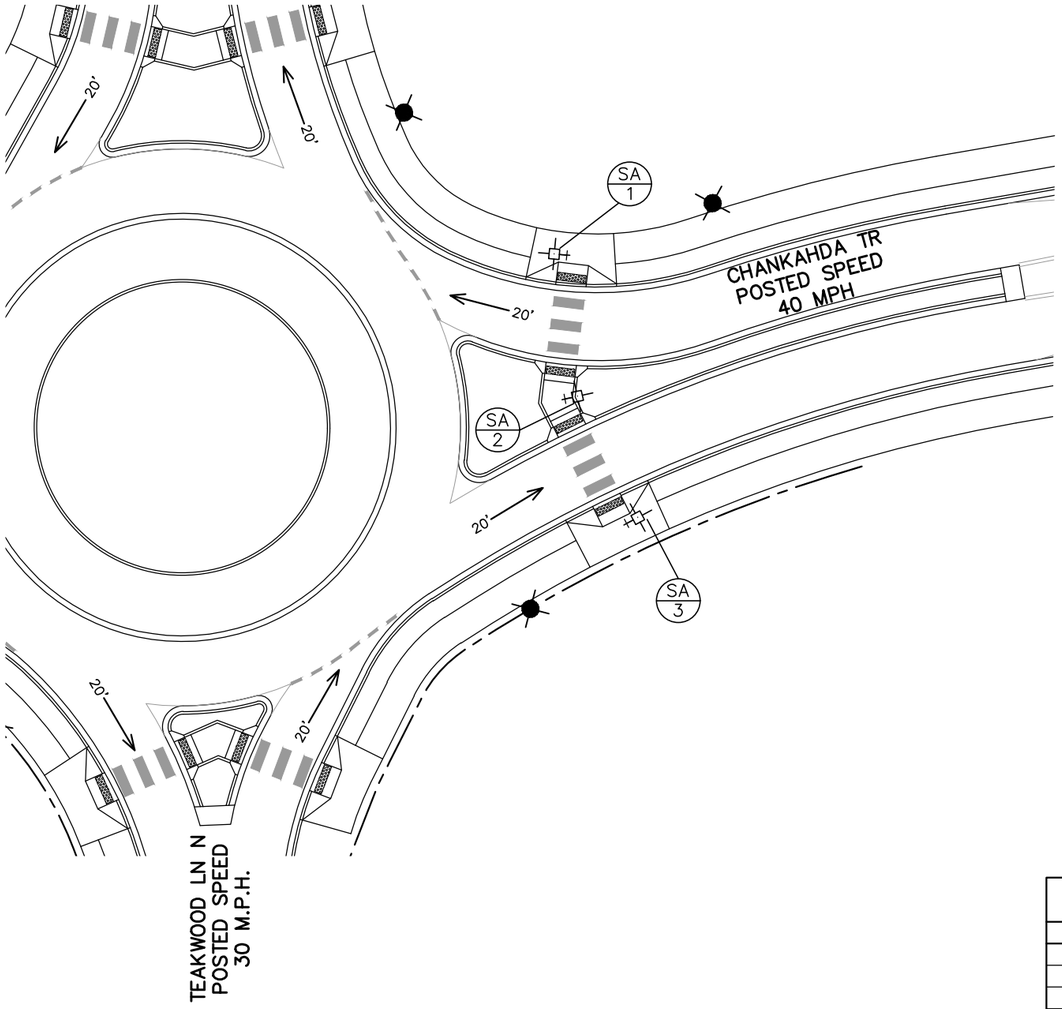
City of Plymouth

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. 260 / 348

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.

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No.	Date	Revisions	App.

DRAWING NAME: CHANKAHDA_PH3_SignalRRFB.dwg

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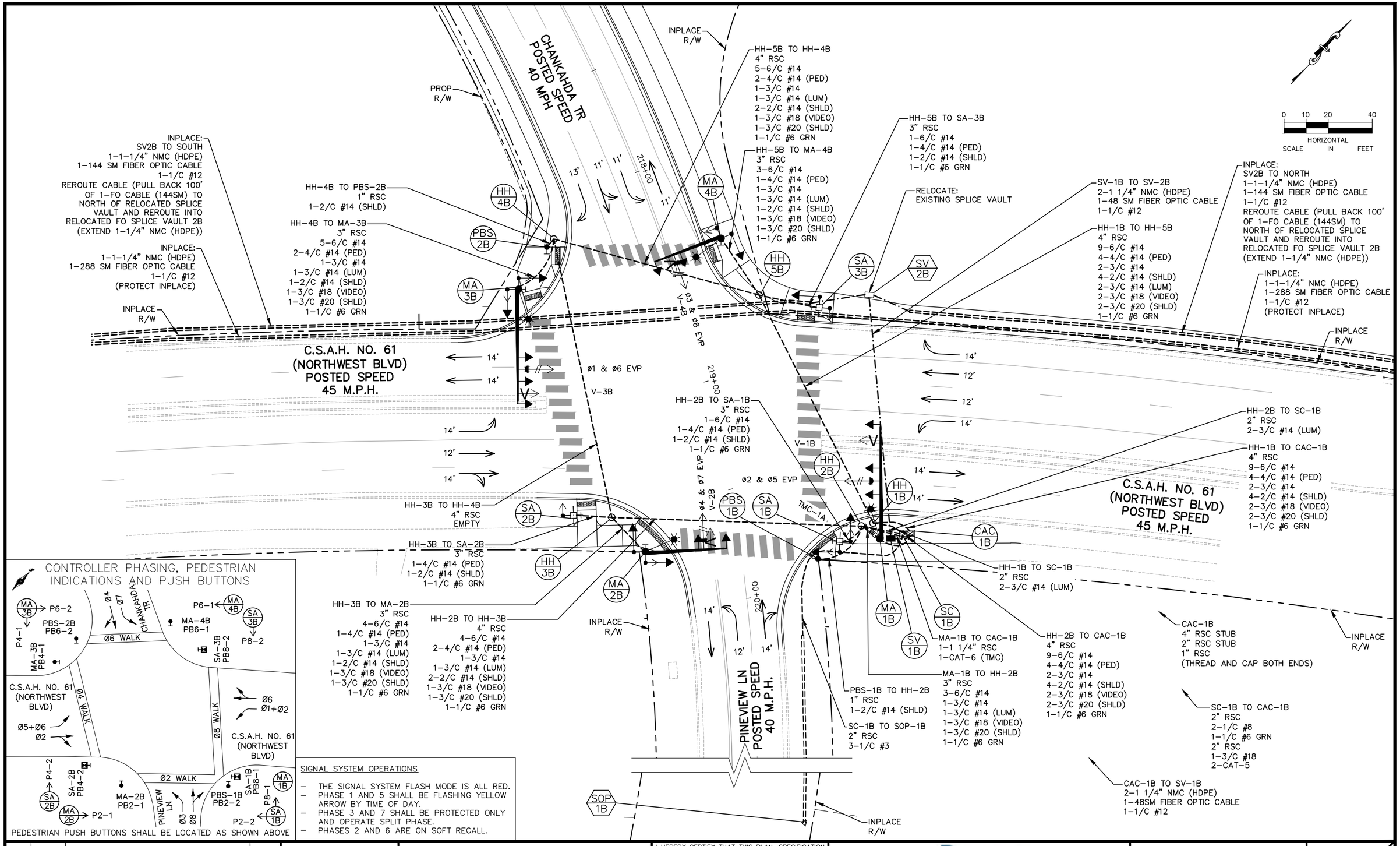
BRIAN K. VILLA, PE
DATE: 11/04/2024 MN LIC. NO. 56090

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. 261 / 348



SIGNAL SYSTEM OPERATIONS

- THE SIGNAL SYSTEM FLASH MODE IS ALL RED.
- PHASE 1 AND 5 SHALL BE FLASHING YELLOW ARROW BY TIME OF DAY.
- PHASE 3 AND 7 SHALL BE PROTECTED ONLY AND OPERATE SPLIT PHASE.
- PHASES 2 AND 6 ARE ON SOFT RECALL.

No.	Date	Revisions	App.

DRAWING NAME	CHANKAHDA_PH3_Signal.dwg
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BRIAN K. VILLA, PE
DATE: 11/04/2024 MN LIC. NO. 56090

City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
TRAFFIC SIGNAL PLANS
TRAFFIC CONTROL SIGNAL SYSTEM B
INTERSECTION LAYOUT

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

SHEET NO. 262 / 348

SIGNAL STRUCTURE LOCATIONS

NO.	LOCATION (1)	NO.	LOCATION (1)
HH–1B	X: 484749.6911, Y: 198294.1328	PBS–2B	X: 484556.5892, Y: 198279.2382
HH–2B	X: 484746.8650, Y: 198289.4984	SC–1B	X: 484764.9105, Y: 198300.4956
HH–3B	X: 484663.6523, Y: 198212.8448	CAC–1B	
HH–4B	X: 484556.3293, Y: 198283.9338	SOP–1B	INPLACE
HH–5B	X: 484556.3411, Y: 198283.9461	SV–1B	X: 484760.2660, Y: 198294.7659
PBS–1B	X: 484743.2850, Y: 198265.0337	SV–2B	X: 484675.8670, Y: 198366.4723

NO.	LOCATION		MAST ARM
	FOUNDATION (1)	AIM ARM TO	
MA–1B	X: 484756.9272, Y: 198291.1609	X: 484720.6430, Y: 198328.2179	50'
MA–2B	X: 484685.2029, Y: 198212.3984	X: 484710.4192, Y: 198239.2876	35'
MA–3B	X: 484560.9559, Y: 198256.5479	X: 484597.1491, Y: 198219.4019	50'
MA–4B	X: 484610.0255, Y: 198337.5212	X: 484596.0749, Y: 198308.8743	30'
SA–1B	X: 484743.9112, Y: 198276.9360	–	–
SA–2B	X: 484651.3604, Y: 198202.0153	–	–
SA–3B	X: 484662.8863, Y: 198345.7102	–	–

(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).

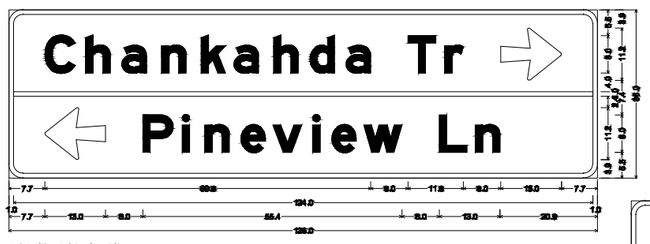
NOTES:
1. SEE DIVISION "SS" OF SPECIAL PROVISIONS FOR MATERIALS PROVIDED BY OR SALVAGED TO HENNEPIN COUNTY.
2. ONE APS PEDESTRIAN PUSH BUTTON WITH SIGN R10–3E (9" X 15") SHALL BE INSTALLED ON PBS–1B, PBS–2B, SA–1B, SA–2B, SA–3B, MA–2B, MA–3B, AND MA–4B FOR OPERATION AS SHOWN IN THE PLANS. POLE MOUNTED PUSH BUTTONS SHALL INCLUDE A POLE MOUNT ADAPTOR AND SIGNAL ASSEMBLY PEDESTAL MOUNTED PUSH BUTTONS SHALL INCLUDE SPACERS.
3. ONE LED LUMINAIRE SHALL BE FURNISHED AND INSTALLED ON MA–1B, MA–2B, MA–3B, AND MA–4B LUMINAIRE SHAFT EXTENSION.
4. THE CONTRACTOR SHALL FURNISH AND INSTALL ONE VIDEO DETECTION CAMERA ON THE MAST ARM OF MA–1B, MA–2B, MA–3B AND MA–4B. THE CONTRACTOR SHALL FURNISH AND INSTALL ONE TRAFFIC MANAGEMENT CAMERA ON THE DAVIT ARM OF MA–1B.
5. THE CONTRACTOR SHALL PLACE COMMON BACK FILL AND RESTORE ALL DISTURBED TURF, CONCRETE OR BITUMINOUS WALK, ETC. TO ITS ORIGINAL CONDITION OR BETTER.
6. THE CONTRACTOR SHALL IF REQUIRED RELOCATE THE VIDEO OR EVP DETECTORS.
7. THE CONTRACTOR SHALL ADJUST THE SIGNAL HEAD ANGLE ON THE MAST ARM TO OPTIMIZE SIGNAL VISIBILITY DUE TO ROADWAY GEOMETRICS.
8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING THE CONNECTION OF THE POWER FOR THE TRAFFIC SIGNAL WITH THE POWER COMPANY. THE CONTRACTOR SHALL FURNISH AND INSTALL ALL NECESSARY EQUIPMENT TO SUPPLY POWER TO THE TRAFFIC SIGNAL.
9. THE CITY WILL BE BILLED FOR ALL TRAFFIC SIGNAL SYSTEM POWER COSTS AND WHICH THE CITY WILL PAY THOSE COSTS DIRECTLY TO THE POWER COMPANY. HENNEPIN COUNTY SHALL NO BE BILLED. THE CONTRACTOR SHALL BE WORK WITH THE CITY AND THE POWER COMPANY TO ESTABLISH METER ADDRESS AND BILLING INFORMATION.
10. THE CONTRACTOR SHALL VERIFY ALL UTILITY LOCATIONS PRIOR TO CONSTRUCTION.
11. THE CONTRACTOR SHALL INSTALL ONE EVP DETECTOR AND FURNISH AND INSTALL A CONFIRMATION LIGHT ON THE MAST ARM OF MA–1B, MA–2B, MA–3B, AND MA–4B WITH PHASING AS SHOWN IN THE PLANS.
12. ALL CONDUIT RUNS ACROSS EXISTING ROADWAYS SHALL BE DIRECTIONAL BORED. NO OPEN CUTTING IS ALLOWED ON EXISTING PAVEMENT. SIGNAL CONDUIT SHALL BE BURIED 24 INCHES TO 36 INCHES UNDER EXISTING SURFACES.
13. ALL WORK AS DETAILED IN NOTES 1 – 12 SHALL BE AS DIRECTED BY AND TO THE SATISFACTION OF THE ENGINEER AND ALL COSTS SHALL BE INCLUDED IN THE UNIT PRICE BID FOR TRAFFIC CONTROL SIGNAL SYSTEM B (SYSTEM).

SIGNAL INDICATIONS AND MOUNTING

SIG. POLE NO.	FACE NO.	SIGNAL FACE MOUNT	SIG. Ø	LED INDICATIONS 12" INDICATIONS RED	YEL	FYEL	GRN	YEL	GRN	PED	PLUMBIZER MOUNTING ANGLE.
MA–1B	5–1	MAST ARM (END)	5	←	←		←				ANGLE MOUNT PLUMBIZER
			6			←					
	2–3	MAST ARM (MID)	2	●	●		●				STRAIGHT MOUNT PLUMBIZER
	2–2	MAST ARM (MID)	2	●	●		●				STRAIGHT MOUNT PLUMBIZER
MA–2B	7–2	MAST ARM (END)	7	←	←		←				ANGLE MOUNT PLUMBIZER
	7–1	MAST ARM (MID)	7						←		STRAIGHT MOUNT PLUMBIZER
			8	●	●		●				
	4–1	POLE MOUNT	4	●	●		●				180° ANGLE MOUNT PLUMBIZER
	1–2	POLE MOUNT	1	←	←		←				90° ANGLE MOUNT PLUMBIZER
			2			←					
	P2–1	POLE MOUNT	2							***	90° ANGLE MOUNT PLUMBIZER
MA–3B	1–1	MAST ARM (END)	1	←	←		←				ANGLE MOUNT PLUMBIZER
			2			←					
	6–3	MAST ARM (MID)	6	●	●		●				STRAIGHT MOUNT PLUMBIZER
	6–2	MAST ARM (MID)	6	●	●		●				STRAIGHT MOUNT PLUMBIZER
	6–1	POLE MOUNT	6	●	●		●				180° ANGLE MOUNT PLUMBIZER
	P6–2	POLE MOUNT	6							***	180° ANGLE MOUNT PLUMBIZER
	3–2	POLE MOUNT	3	←	←		←				90° ANGLE MOUNT PLUMBIZER
	P4–1	POLE MOUNT	4							***	90° ANGLE MOUNT PLUMBIZER
MA–4B	3–1	MAST ARM (END)	3	←	←		←				ANGLE MOUNT PLUMBIZER
	8–2	MAST ARM (MID)	8	●	●		●				STRAIGHT MOUNT PLUMBIZER
	8–1	POLE MOUNT	8	●	●		●				180° ANGLE MOUNT PLUMBIZER
	P6–1	POLE MOUNT	6							***	90° ANGLE MOUNT PLUMBIZER
SA–1B	2–1	POLE MOUNT	2	●	●		●				STRAIGHT MOUNT PLUMBIZER
	P2–2	POLE MOUNT	2							***	STRAIGHT MOUNT PLUMBIZER
	7–3	POLE MOUNT	7	←	←		←				STRAIGHT MOUNT PLUMBIZER
	P8–1	POLE MOUNT	8							***	STRAIGHT MOUNT PLUMBIZER
SA–2B	P4–2	POLE MOUNT	4							***	STRAIGHT MOUNT PLUMBIZER
SA–3B	P8–2	POLE MOUNT	8							***	STRAIGHT MOUNT PLUMBIZER
	5–2	POLE MOUNT	5	←	←		←				90° ANGLE MOUNT PLUMBIZER
			6			←					

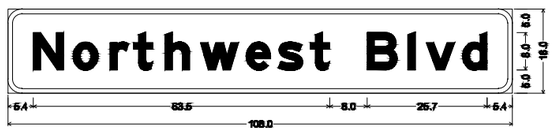
*** INTERNATIONAL SYMBOLS IN A DUAL FACE SIGNAL HOUSING WITH PEDESTRIAN COUNTDOWN TIMER.

SIGN PANEL FOR MA–3B



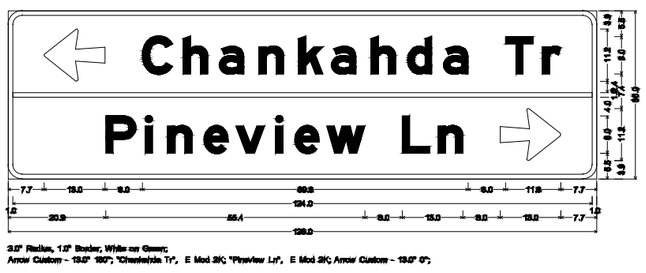
3.0" Radius, 1.0" Border, White on Green;
"Chankahda Tr", E Mod 2K; Arrow Custom - 13.0" 0°; Arrow Custom - 13.0" 180"; "Pineview Ln", E Mod 2K;

SIGN PANEL FOR MA–2B AND MA–4B



3.0" Radius, 1.0" Border, White on Green;
"Northwest Blvd", E Mod 2K;

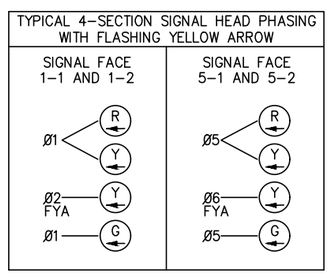
SIGN PANEL FOR MA–1B



3.0" Radius, 1.0" Border, White on Green;
Arrow Custom - 13.0" 180"; "Chankahda Tr", E Mod 2K; "Pineview Ln", E Mod 2K; Arrow Custom - 13.0" 0";

NOTES:
1. SEE SIGNAL MAST ARM DETAIL SHEET FOR SIGN MOUNTING PLATE LOCATIONS.
2. COLOR – WHITE LEGEND AND BORDER ON GREEN BACKGROUND. ALL SIGNING SHALL USE DG3 SIGN SHEETING.
3. ALL COSTS TO PROVIDE AND INSTALL MAST ARM MOUNTED SIGN PANELS SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THE PAY ITEM TRAFFIC CONTROL SIGNAL SYSTEM (SYS.).
4. ALL DIMENSIONS SHOWN ARE IN INCHES.

TYPICAL 4–SECTION SIGNAL HEAD PHASING WITH FLASHING YELLOW ARROW



FYA OVERLAPS:
OLE = PHASE 1 PROTECTED, PHASE 2 PERMISSIVE
OLG = PHASE 5 PROTECTED, PHASE 6 PERMISSIVE

No.	Date	Revisions	App.

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DESIGNED BY:	BWS
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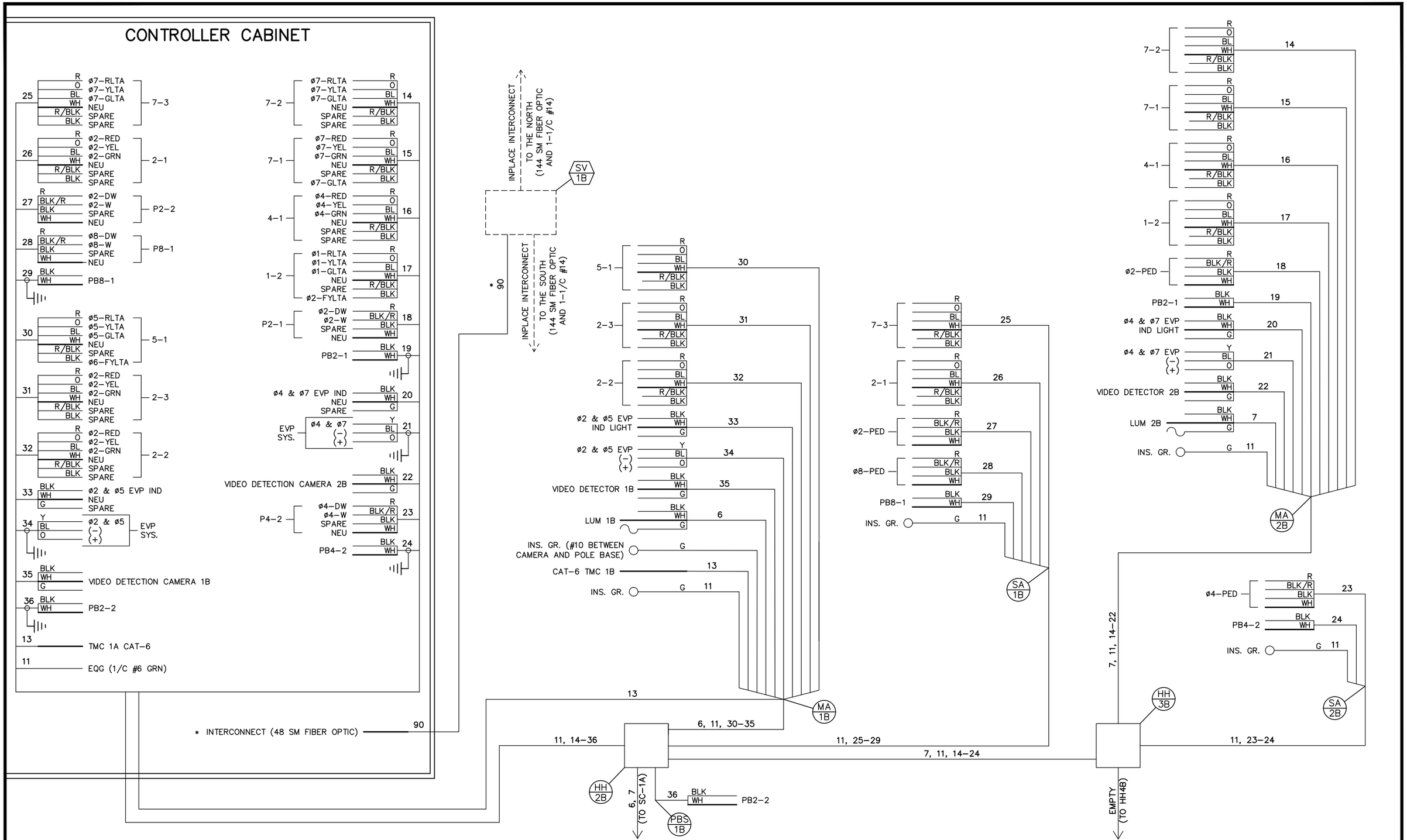
BRIAN K. VILLA, PE
DATE: 11/04/2024 MN LIC. NO. 56090

City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
TRAFFIC SIGNAL PLANS
TRAFFIC CONTROL SIGNAL SYSTEM B
TABULATIONS

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

SHEET NO. 263 / 348



No.	Date	Revisions	App.

DRAWING NAME: CHANKAHDA_PH3_Signal.dwg

DESIGNED BY:	BWS
DRAWN BY:	MBG
CHECKED BY:	BKV
DATE:	11/04/2024
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.

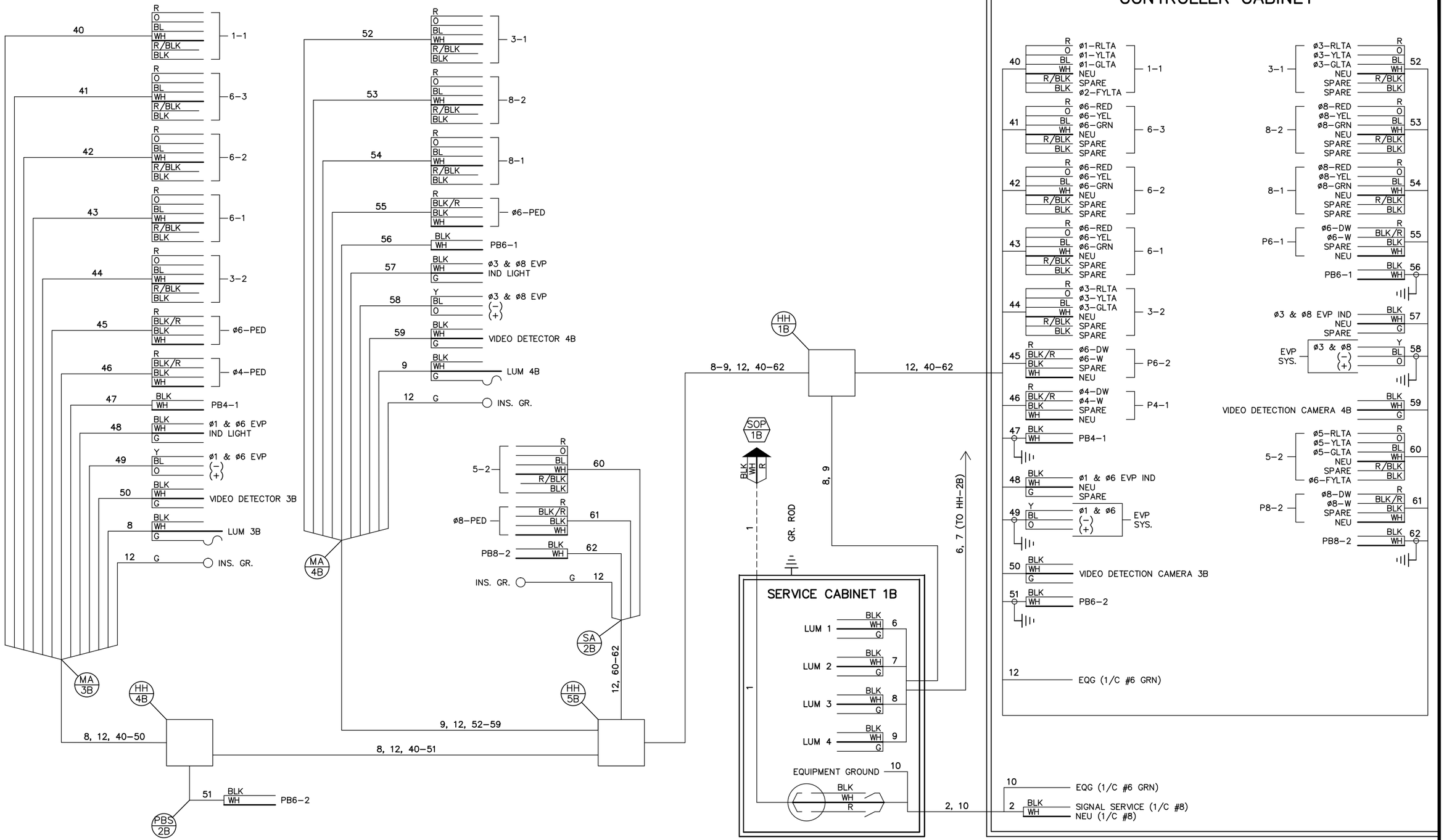
BRIAN K. VILLA, PE
DATE: 11/04/2024 MN LIC. NO. 56090

City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
TRAFFIC SIGNAL PLANS
TRAFFIC CONTROL SIGNAL SYSTEM B
FIELD WIRING DIAGRAM (1 OF 2)

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

SHEET NO. 264 / 348



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BRIAN K. VILLA, PE

DATE: 11/04/2024 MN LIC. NO. 56090

City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
TRAFFIC SIGNAL PLANS
TRAFFIC CONTROL SIGNAL SYSTEM B
FIELD WIRING DIAGRAM (2 OF 2)

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

SHEET NO. 265 / 348

SIGNAL INDICATIONS AND BRACKETING

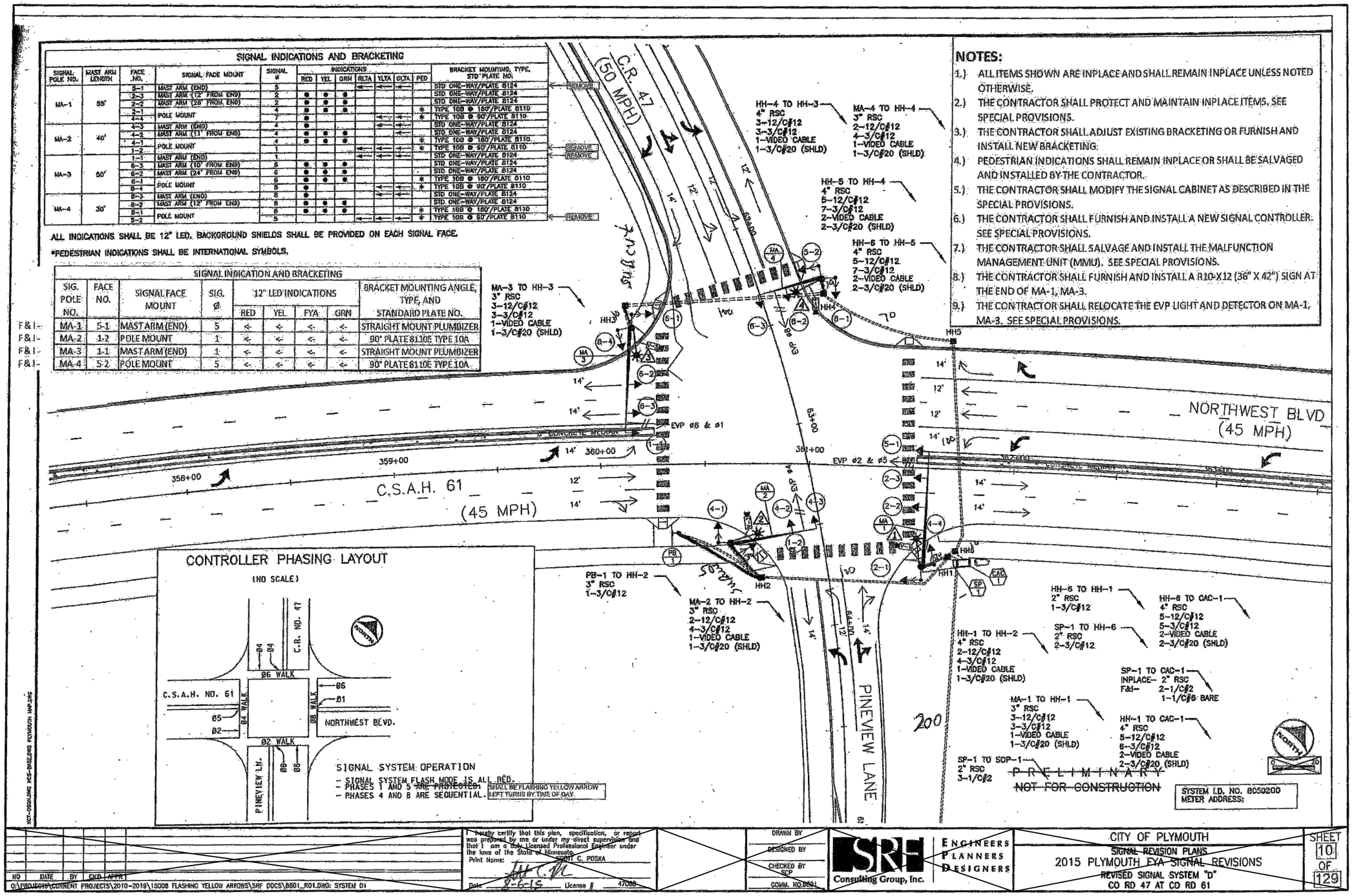
SIGNAL POLE NO.	MAST ARM LENGTH	FACE NO.	SIGNAL FACE MOUNT	SIGNAL Ø	INDICATIONS RED	YEL.	GRN	RLTA	YLTA	GLTA	PED	BRACKET MOUNTING, TYPE, STD PLATE NO.	
MA-1	55'	5-1	MAST ARM (END)	5				←	←	←		STD ONE-WAY/PLATE 8124	REMOVE
		2-3	MAST ARM (12' FROM END)	2	●	●	●					STD ONE-WAY/PLATE 8124	
		2-2	MAST ARM (28' FROM END)	2	●	●	●					STD ONE-WAY/PLATE 8124	
		2-1	POLE MOUNT	4	●	●	●				*	TYPE 10B @ 180°/PLATE 8110	
		4-4		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
MA-3	50'	1-1	MAST ARM (END)	1				←	←	←		STD ONE-WAY/PLATE 8124	REMOVE
		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



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.

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 TURNS BY TIME OF DAY.
- PHASES 4 AND 8 ARE SEQUENTIAL.

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: 8-6-15 License # 47088

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	APPR

O:\PROJECTS\CURRENT PROJECTS\2010-2019\15008 FLASHING YELLOW ARROWS\SRF DOCS\8801_R01.DWG: SYSTEM D1

FOR INFORMATION ONLY

No.	Date	Revisions	App.

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PROJECT NO.	160662010

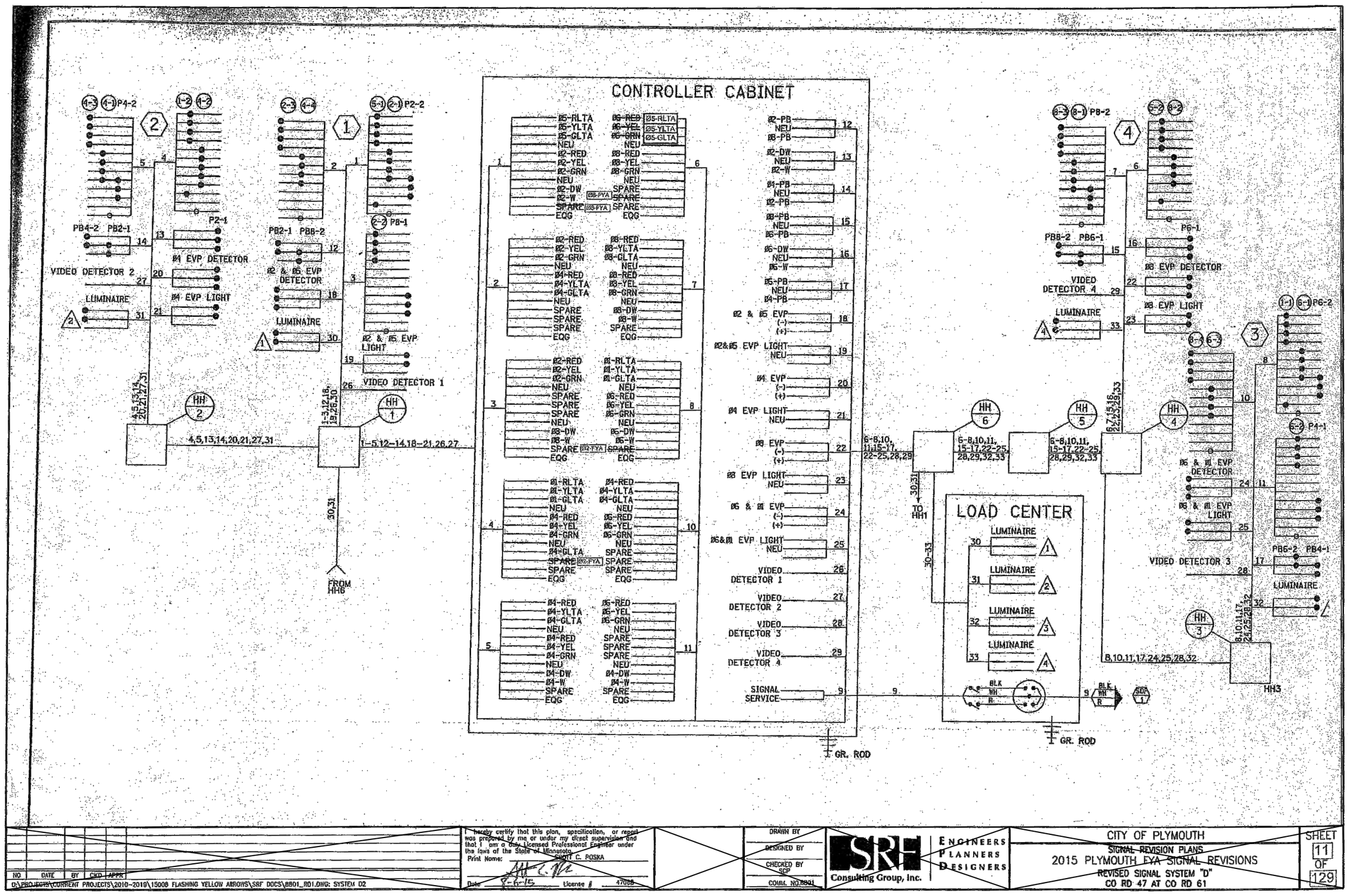
Kimley»Horn
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City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
TRAFFIC SIGNAL PLANS
TRAFFIC CONTROL SIGNAL SYSTEM B
FOR INFORMATION ONLY - INTERSECTION LAYOUT

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

SHEET NO. 266 / 348



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: 8-6-15 License #: 47028

NO. | DATE | BY | CKD | APPR

D:\PROJECTS\CURRENT PROJECTS\2010-2019\15008 FLASHING YELLOW ARROWS\SRF DOCS\8801_R01.DWG: SYSTEM D2

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 EYA SIGNAL REVISIONS
REVISED SIGNAL SYSTEM "D"
CO RD 47 AT CO RD 61

SHEET 11 OF 129

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City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
TRAFFIC SIGNAL PLANS
TRAFFIC CONTROL 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. 267 / 348

VIDEO DETECTION

NUMBER	MOUNTING TYPE	PHASE
V–1	POLE 1	2+5
V–2	POLE 2	4+7
V–3	POLE 3	1+6
V–4	POLE 5	3+8

NOTE: THIS PLAN IS INTENDED TO SHOW WOOD POLE LOCATIONS AND EQUIPMENT THAT IS TO BE USED AS PART OF THE TEMPORARY SIGNAL SYSTEM INSTALLATION. SPECIFIC ROADWAY ELEMENTS MAY OR MAY NOT BE INPLACE AT THE TIME THE TEMPORARY SIGNAL IS IN OPERATION. THE LOCATION OF OVERHEAD SIGNALS AND DETECTORS FOR EACH STAGE OR PHASE WILL NEED TO BE ADJUSTED ACCORDINGLY.

CONSTRUCTION AREA

SIGNAL HEAD CHART

FACE	R	Y	FYA	G	Y	G
1–1, 1–2	◀	◀	◀	◀		
2–1, 2–2, 2–3	●	●		●		
3–1, 3–2	◀	◀		◀		
4–1	●	●		●		
5–1, 5–2	◀	◀	◀	◀		
6–1, 6–2, 6–3	●	●		●		
7–1	●	●		●		◀
7–2, 7–3	◀	◀		◀		
8–1, 8–2	●	●		●		

– ALL SIGNAL INDICATIONS SHALL BE 12" LED
– ALL SIGNAL HEADS SHALL BE BLACK POLYCARBONATE WITH BACKGROUND SHIELDS

SCALE IN HORIZONTAL FEET: 0 10 20 40

CHANKAHDA TR POSTED SPEED 40 MPH

PROP R/W

INPLACE R/W

1–7/16" SPAN WIRE
1–1/4" SPAN WIRE
4–4/C 14
1–3/C 14 (LUM)
1–3/C 18
1–3/C 20
2–2/C 14

1–7/16" SPAN WIRE
1–1/4" SPAN WIRE
6–4/C 14
1–3/C 14
1–3/C 14 (LUM)
1–3/C 18
1–3/C 20
2–2/C 14

1–7/16" SPAN WIRE
1–1/4" SPAN WIRE
1–6/C 14
9–4/C 14
1–3/C 14
2–3/C 14 (LUM)
2–3/C 18
2–3/C 20
4–2/C 14

WP 1, WP 2, WP 3, WP 4

V–1 ø2 & ø5 EVP DETECTOR
V–2 ø4 & ø7 EVP DETECTOR
V–3 ø1 & ø6 EVP DETECTOR
V–4 ø3 & ø8 EVP DETECTOR

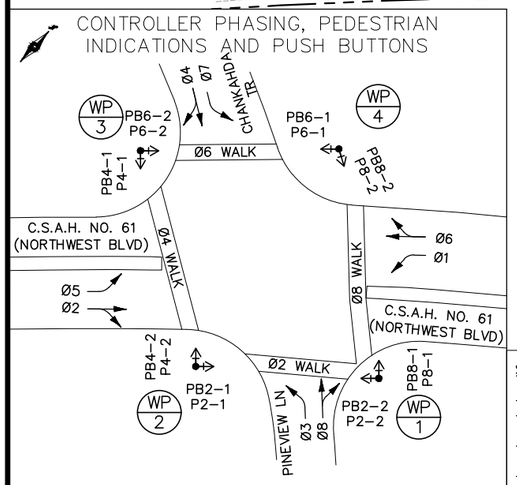
ø1 & ø6 EVP LIGHT
ø2 & ø5 EVP LIGHT
ø3 & ø8 EVP LIGHT
ø4 & ø7 EVP LIGHT

C.S.A.H. NO. 61
(NORTHWEST BLVD)
POSTED SPEED
45 M.P.H.

PINEVIEW LN
POSTED SPEED
40 M.P.H.

HH 1, HH 2, CAC 1, SC 1, SOP 1

CONTROLLER PHASING, PEDESTRIAN INDICATIONS AND PUSH BUTTONS



SIGNAL SYSTEM OPERATIONS

– THE SIGNAL SYSTEM FLASH MODE IS ALL RED.
– PHASE 1 AND 5 SHALL BE FLASHING YELLOW ARROW BY TIME OF DAY.
– PHASE 3 AND 7 SHALL BE PROTECTED ONLY AND OPERATE SPLIT PHASE.
– PHASES 2 AND 6 ARE ON SOFT RECALL.

NOTES:
1. CONDUIT SHALL BE SCHEDULE 80 PVC OR SCHEDULE 80 HDPE.
2. SEE THE SPECIAL PROVISIONS FOR COUNTY FURNISHED MATERIALS, VEHICLE HEADS AND EMERGENCY VEHICLE PREEMPTION (EVP.)
3. ENSURE THE EXACT LOCATION OF THE HANDHOLES AND POLES ARE VERIFIED IN THE FIELD BY COUNTY PERSONNEL.
4. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING THE CONNECTION OF THE POWER FOR THE TRAFFIC SIGNAL SYSTEM.
5. THE CONTRACTOR SHALL LOCATE AND VERIFY INPLACE UTILITIES PRIOR TO COMMENTING WORK.
6. SEE THE CONSTRUCTION PLAN FOR STAGING. MOVEMENT OF HEADS AND DETECTORS FOR EACH STAGE OR PHASE OF CONSTRUCTION SHALL BE COMPLETED BE THE CONTRACTOR.
7. COIL A SUFFICIENT LENGTH OF CABLE AT ALL SPAN WIRE MOUNTED SIGNAL FACES, EVP DETECTORS AND INDICATOR LIGHTS, AND CAMERA DETECTORS TO COORDINATE STAGING SHIFTS.
8. SEE DETAIL SHEET FOR WOOD POLE AND SPAN WIRE MOUNTING DETAILS.
9. ALL WIRES LISTED ARE AWG (AMERICAN WIRE GAUGE)
10. CONDUIT SIZES ARE NOMINAL DIAMETER.
11. THE CONTRACTOR SHALL INSTALL SALVAGED PTZ CAMERA ON WOOD POLE 1. THE PTZ CAMERA SHALL BE MOUNTED TO THE WOOD POLE USING BANDED BRACKETING. THE X6–350/CAM 400 EXTENSION SHOWN ON SHEET 233 IS NOT TO BE FURNISHED AND INSTALLED TO THE WOOD POLE. CONTRACTOR SHALL SUBMIT A SHOP DRAWING SHOWING THE PROPOSED BANDED BRACKETING CONNECTION FOR REVIEW AND APPROVAL. SEE SPECIAL PROVISIONS.

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City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
TRAFFIC SIGNAL PLANS
TEMPORARY SIGNAL SYSTEM A
FIELD WIRING DIAGRAM

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

SHEET NO. 268 / 348

WP 3

45' WOOD POLE
2-DOWN GUYS, GUARDS AND ANCHORS
1-CAMERA V-3
2-TYPE 10B-WOOD POLE MOUNTED AT 90° AND 180°
1-ONE WAY EVP DETECTOR
(PHASES 1+6) POLE MOUNTED
15' MAST ARM AND LUMINAIRE (250W HPS) WITH PEC.
2-PEDESTRIAN PUSH BUTTONS AND SIGNS
(R10-4b)(1EA. LEFT AND RIGHT)
METAL JUNCTION BOX WITH TERMINAL BLOCK

3" CONDUIT ABOVE JUNCTION BOX TO SPAN WIRES WITH:
4-4/C 14
1-3/C 18
1-3/C 20
2-2/C 14

1" CONDUIT RISER AND WEATHERHEAD ABOVE SPAN WIRES WITH:
1-3/C 14 (LUM)

WP 4

45' WOOD POLE
2-DOWN GUYS, GUARDS AND ANCHORS
1-CAMERA V-4
2-TYPE 10B-WOOD POLE MOUNTED AT 90° AND 180°
1-ONE WAY EVP DETECTOR
(PHASES 3+8) POLE MOUNTED
15' MAST ARM AND LUMINAIRE (250W HPS) WITH PEC.
2-PEDESTRIAN PUSH BUTTONS AND SIGNS
(R10-4b)(1EA. LEFT AND RIGHT)
METAL JUNCTION BOX WITH TERMINAL BLOCK

3" CONDUIT ABOVE JUNCTION BOX TO SPAN WIRES WITH:
1-6/C 14
3-4/C 14
1-3/C 18
1-3/C 20
2-2/C 14

1" CONDUIT RISER AND WEATHERHEAD ABOVE SPAN WIRES WITH:
1-3/C 14 (LUM)

WP 2

45' WOOD POLE
2-DOWN GUYS, GUARDS AND ANCHORS
1-CAMERA V-2
2-TYPE 10B-WOOD POLE MOUNTED AT 90° AND 180°
1-ONE WAY EVP DETECTOR
(PHASES 4+7) POLE MOUNTED
15' MAST ARM AND LUMINAIRE (250W HPS) WITH PEC.
2-PEDESTRIAN PUSH BUTTONS AND SIGNS
(R10-4b)(1EA. LEFT AND RIGHT)
METAL JUNCTION BOX WITH TERMINAL BLOCK

3" CONDUIT ABOVE JUNCTION BOX TO SPAN WIRES WITH:
1-6/C 14
3-4/C 14
1-3/C 18
1-3/C 20
2-2/C 14

1" CONDUIT RISER AND WEATHERHEAD ABOVE SPAN WIRES WITH:
1-3/C 14 (LUM)

WP 1

45' WOOD POLE
2-DOWN GUYS, GUARDS AND ANCHORS
1-CAMERA V-1
1-PTZ CAMERA
2-TYPE 10B-WOOD POLE MOUNTED AT 90° AND 180°
1-ONE WAY EVP DETECTOR
(PHASES 2+5) POLE MOUNTED
15' MAST ARM AND LUMINAIRE (250W HPS) WITH PEC.
2-PEDESTRIAN PUSH BUTTONS AND SIGNS
(R10-4b)(1EA. LEFT AND RIGHT)
METAL JUNCTION BOX WITH TERMINAL BLOCK

3" CONDUIT RISER AND WEATHERHEAD FROM HH 1 TO SPAN WIRES WITH:

2-6/C 14	2-6/C 14
11-4/C 14	11-4/C 14
2-3/C 14	2-3/C 14
2-3/C 18	2-3/C 18
2-3/C 20	2-3/C 20
4-2/C 14	4-2/C 14
1-1/C 6 INS. GR.	1-CAT 6 CABLE
	1-1/C 6 INS. GR.

3" CONDUIT ABOVE JUNCTION BOX TO SPAN WIRES WITH:
4-4/C 14
1-3/C 18
1-3/C 20
2-2/C 14

1" CONDUIT RISER AND WEATHERHEAD ABOVE SPAN WIRES WITH:
1-3/C 14 (LUM)

CAC 1 SC 1

INPLACE:
SIGNAL CABINET AND SERVICE CABINET
F&I:
CONTROLLER CABINET TO HH-1:

3" CONDUIT	3" CONDUIT
4-6/C 14	4-6/C 14
9-4/C 14	9-4/C 14
2-3/C 14	2-3/C 14
2-3/C 14 (LUM)	2-3/C 14 (LUM)
2-3/C 18	2-3/C 18
2-3/C 20	2-3/C 20
4-2/C 14	4-2/C 14
1-1/C 6 INS. GR.	1-CAT 6 CABLE
	1-1/C 6 INS. GR.

INPLACE:
CONTROLLER CABINET
TO SERVICE CABINET:
2" CONDUIT
3-1/C 6

F&I:
2" CONDUIT, RISER AND WEATHERHEAD
FROM SERVICE CABINET TO HH-2:
4-3/C #14 (LUM)
FROM HH-2 TO ABOVE SPAN WIRE ON POLE 1
2" CONDUIT
4-3/C #14 (LUM)

INPLACE:
SERVICE CABINET TO POLE MOUNTED TRANSFORMER:
2" CONDUIT
2-1/C #2
SERVICE CABINET TO EXTERNAL GR. RD.
1" CONDUIT
1-1/C 6 INS. GR.

SOP 1

INPLACE: 45' WOOD POLE
WITH POLE MOUNTED TRANSFORMER
2" CONDUIT FROM POLE MOUNTED
TRANSFORMER TO SERVICE CABINET
3-1/C #2

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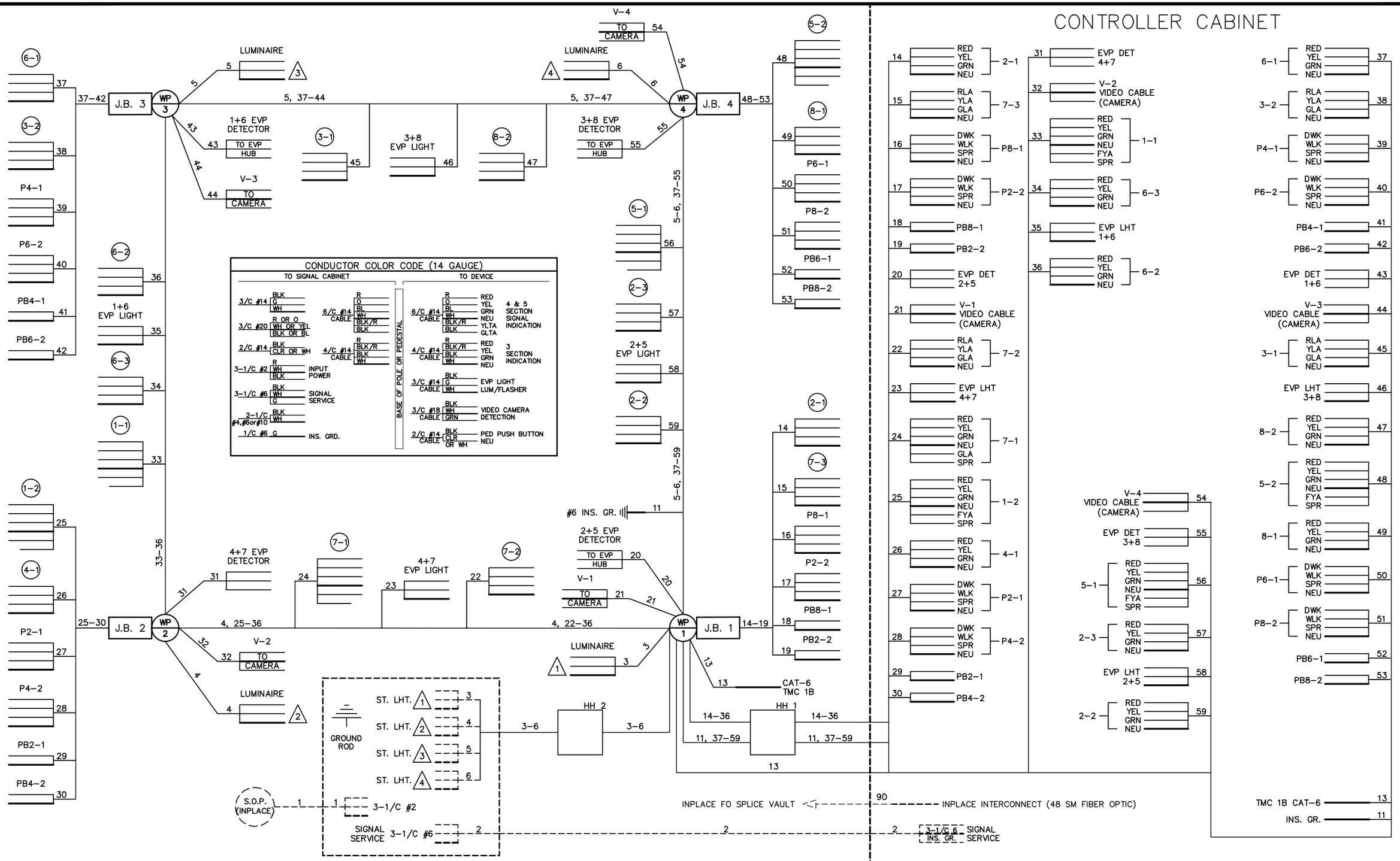
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City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
TRAFFIC SIGNAL PLANS
TEMPORARY SIGNAL SYSTEM A
FIELD WIRING DIAGRAM

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

SHEET NO.
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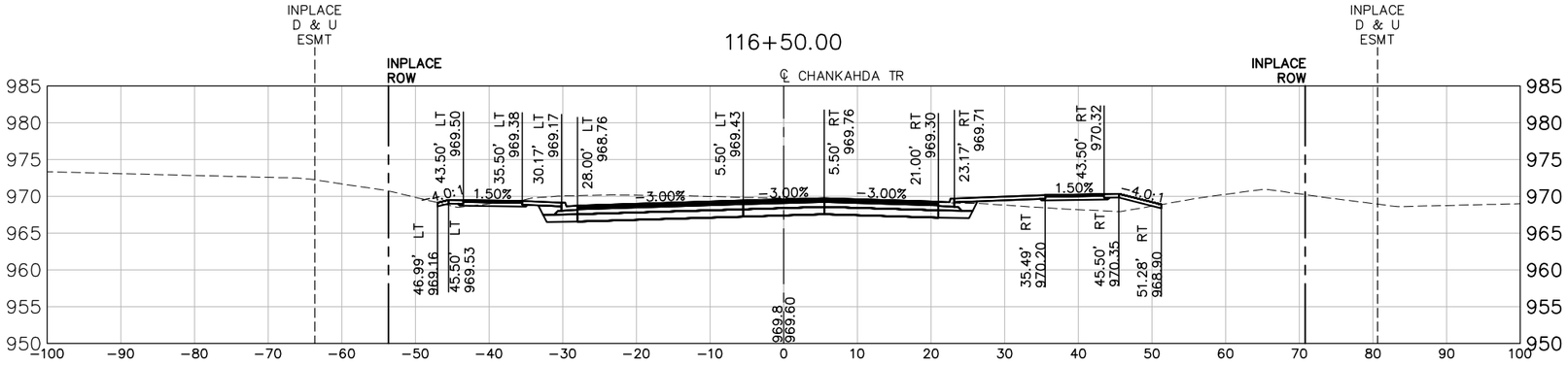
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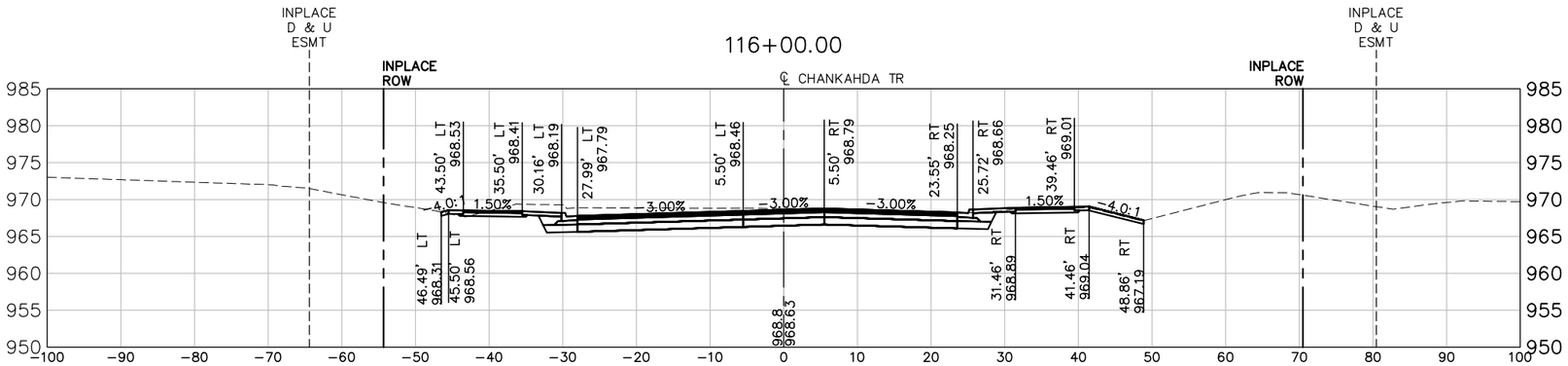
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S.A.P.	155-210-003
S.A.P.	

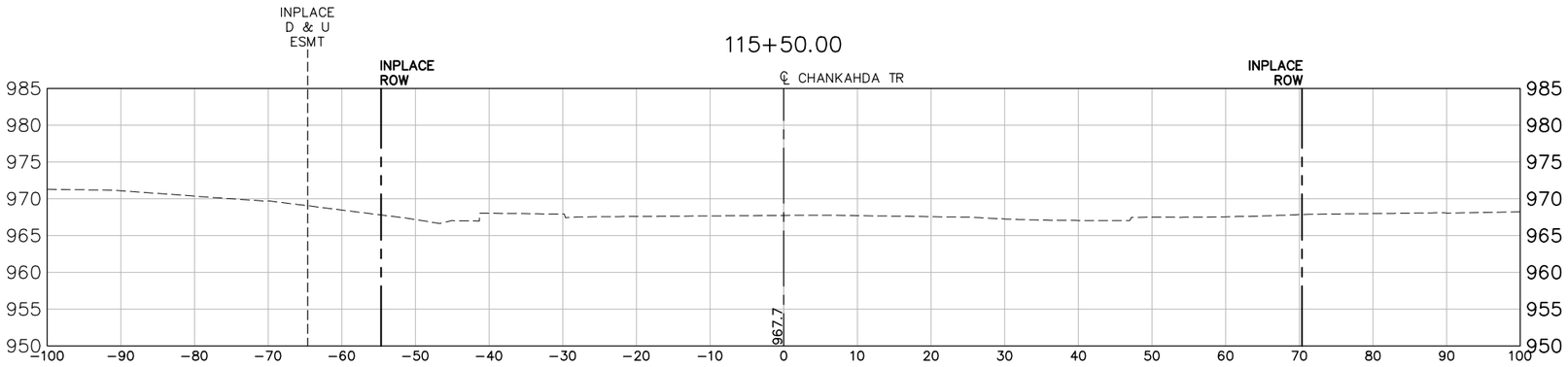
SHEET NO. 270 / 348

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:	11/04/2024
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: 11/04/2024 MN LIC. NO. 41864

City of Plymouth

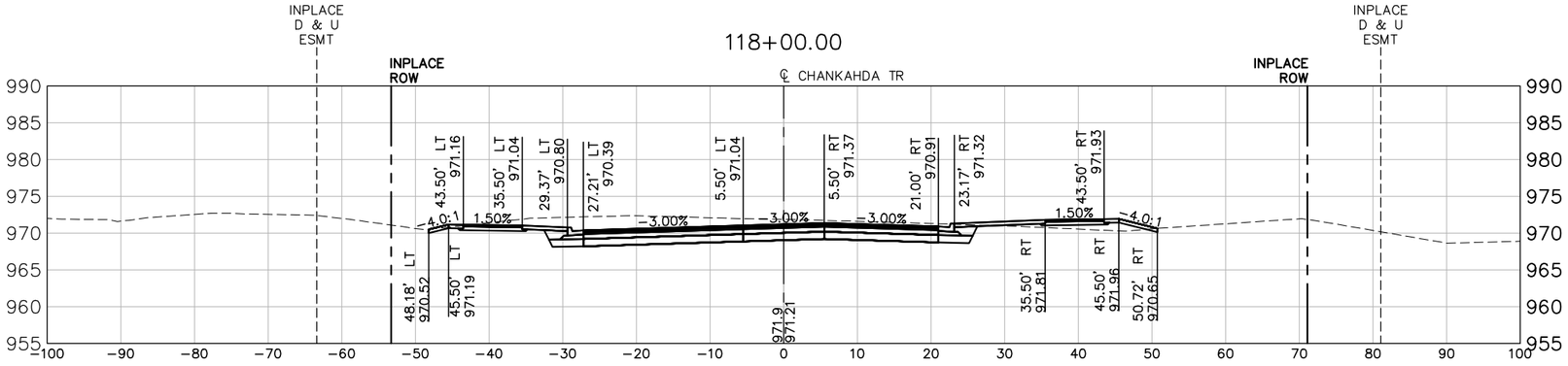
CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
CROSS SECTIONS
STA. 115+50 TO STA. 116+50

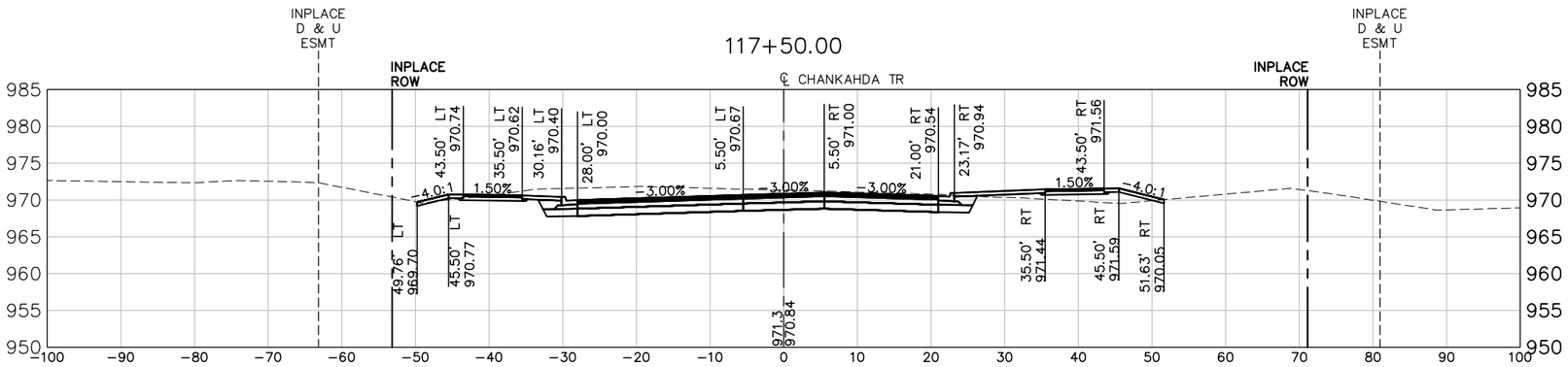
CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

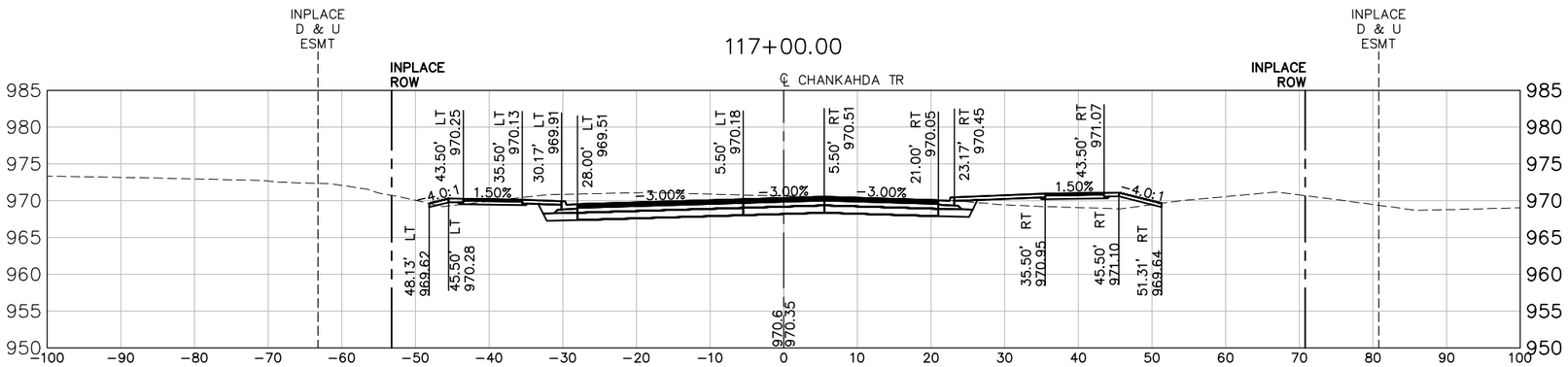
SHEET NO. 271 / 348

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:	11/04/2024
PROJECT NO.	160662010

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CHADD B. LARSON, PE

DATE: 11/04/2024 MN LIC. NO. 41864

City of Plymouth

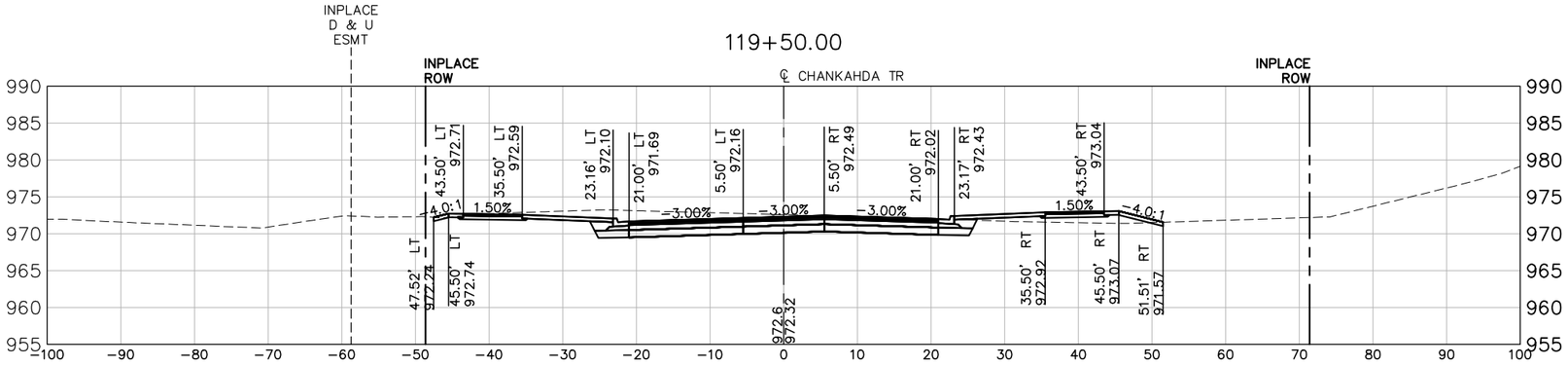
CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
CROSS SECTIONS
STA. 117+00 TO STA. 118+00

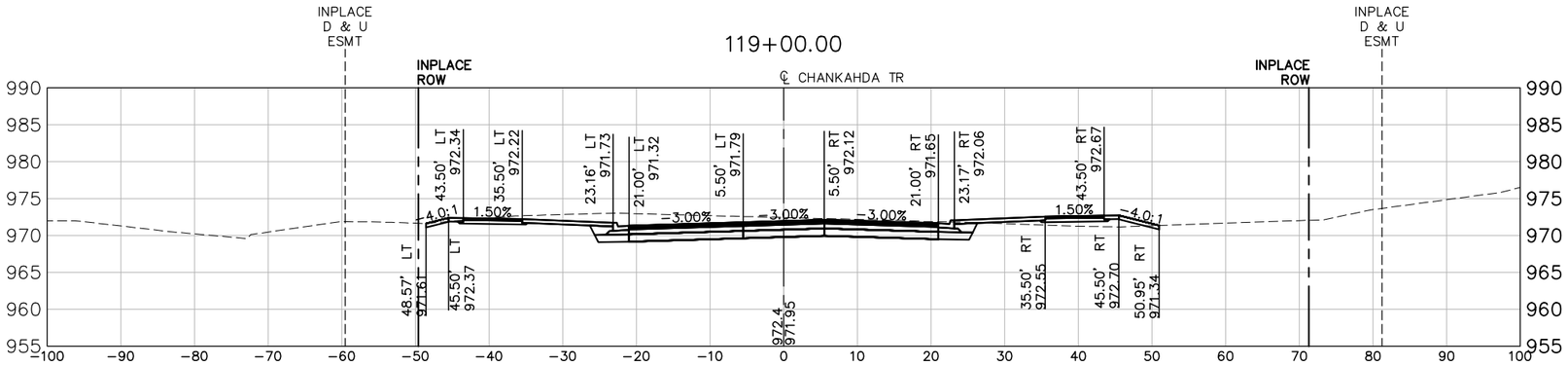
CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

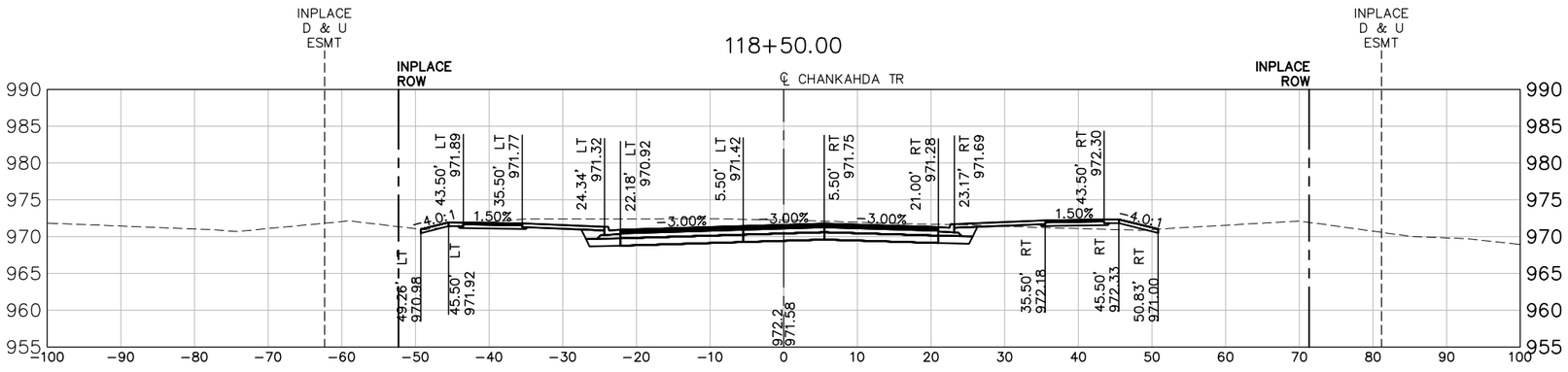
SHEET NO. 272 / 348

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:	11/04/2024
PROJECT NO.	160662010

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CHADD B. LARSON, PE

DATE: 11/04/2024 MN LIC. NO. 41864

City of Plymouth

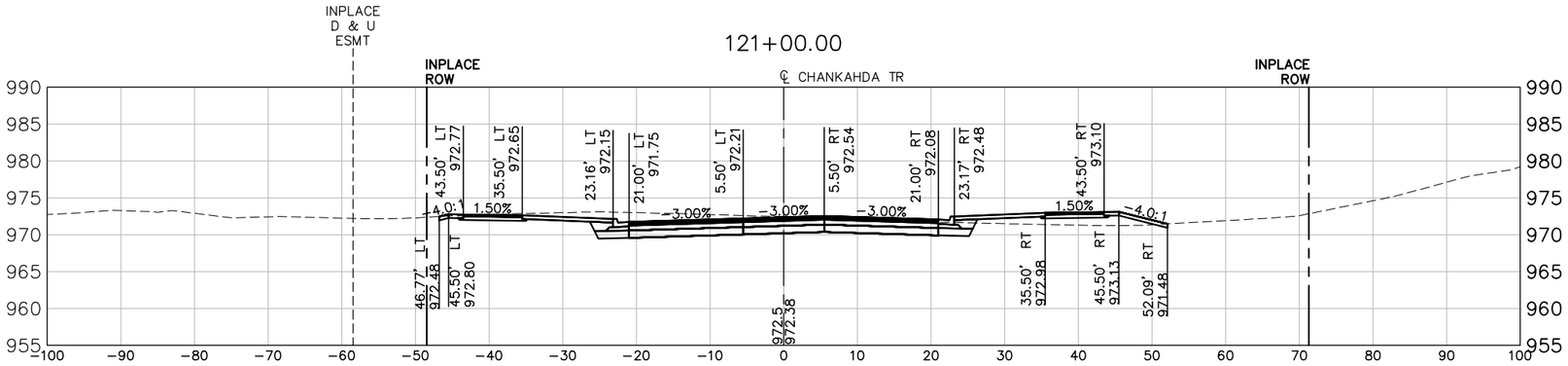
CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
CROSS SECTIONS
STA. 118+50 TO STA. 119+50

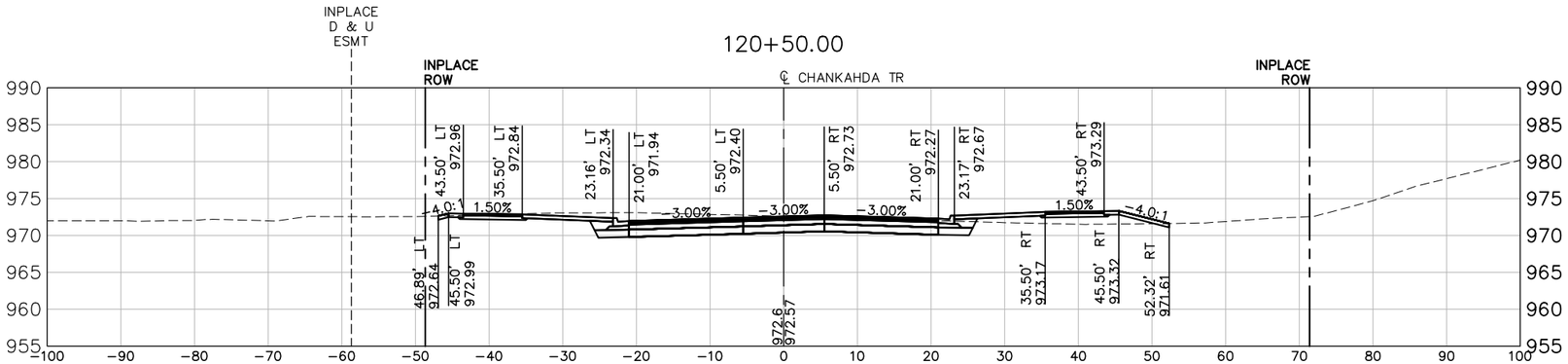
CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

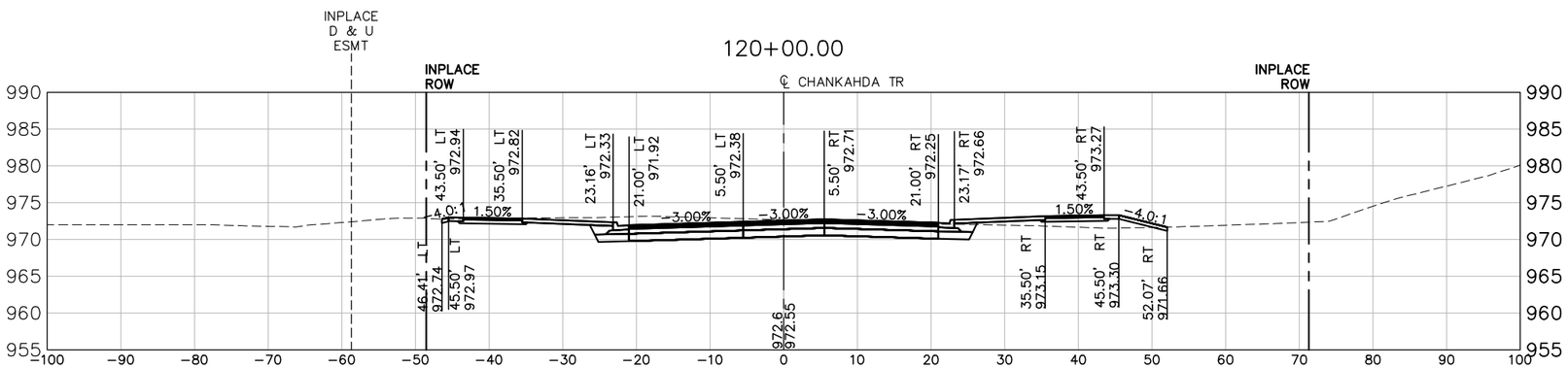
SHEET NO. 273 / 348

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:	11/04/2024
PROJECT NO.	160662010

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CHADD B. LARSON, PE

DATE: 11/04/2024 MN LIC. NO. 41864

City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
CROSS SECTIONS
STA. 120+00 TO STA. 121+00

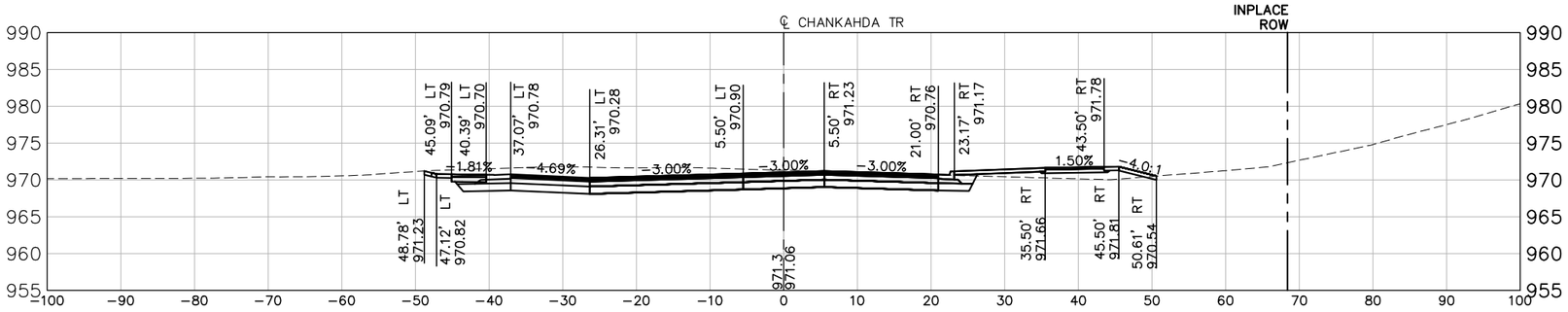
CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 274 / 348

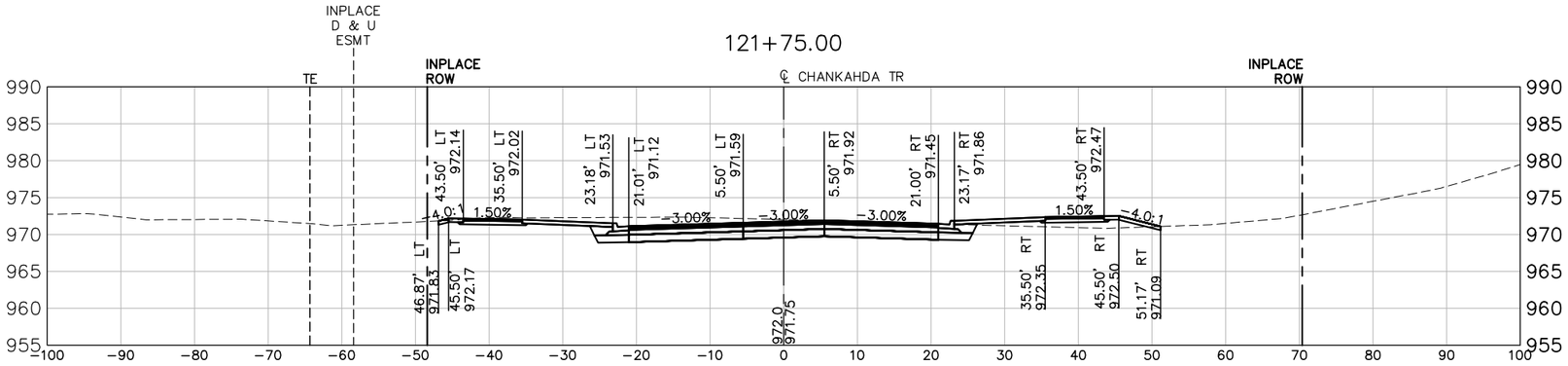
0 5 10 20 VERTICAL

0 5 10 20 HORIZONTAL SCALE IN FEET

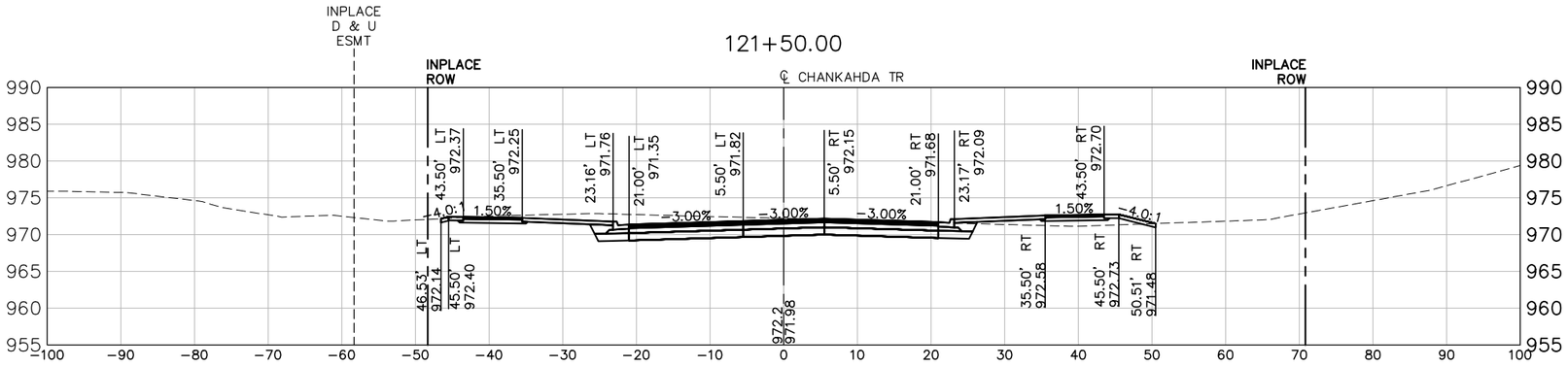
122+50.00



121+75.00



121+50.00



No.	Date	Revisions	App.

DRAWING NAME: CHANKAHDA_PH3_Sections.dwg

DESIGNED BY:	JWB
DRAWN BY:	JWB
CHECKED BY:	CBL
DATE:	11/04/2024
PROJECT NO.	160662010

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CHADD B. LARSON, PE

DATE: 11/04/2024 MN LIC. NO. 41864

City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
CROSS SECTIONS
STA. 121+50 TO STA. 122+50

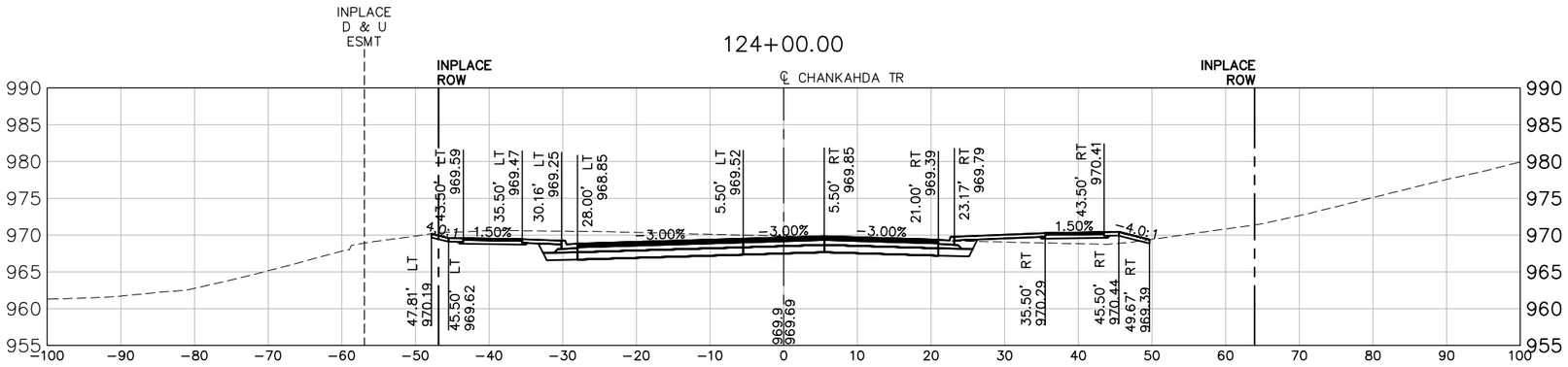
CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 275 / 348

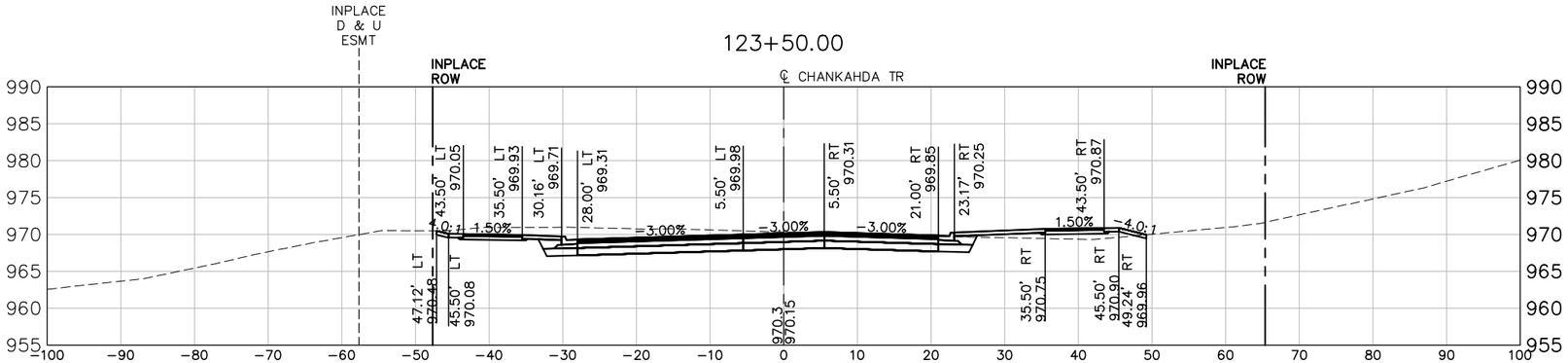
0 5 10 20 VERTICAL

0 5 10 20 HORIZONTAL SCALE IN FEET

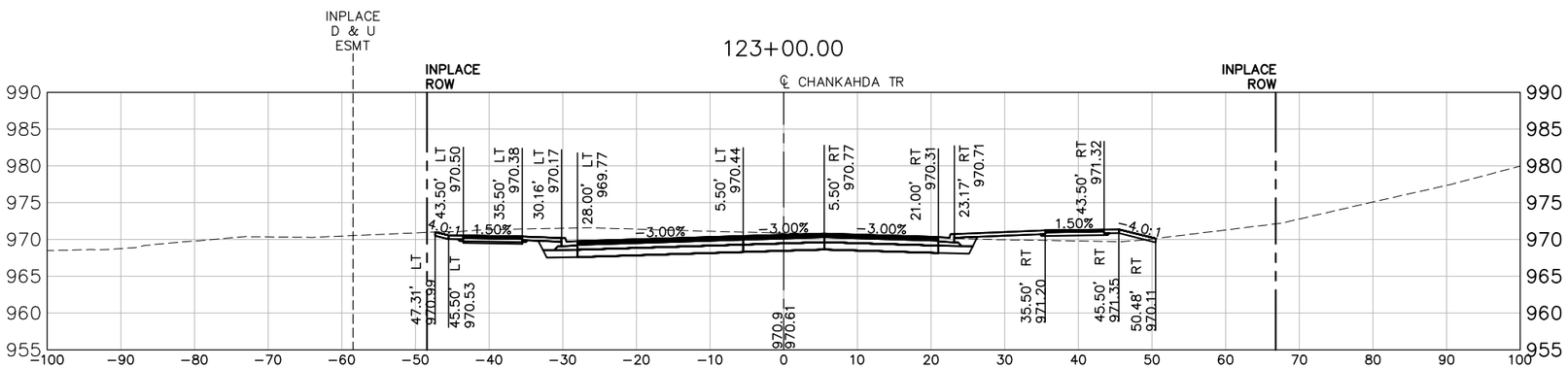
124+00.00



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:	11/04/2024
PROJECT NO.	160662010

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CHADD B. LARSON, PE

DATE: 11/04/2024 MN LIC. NO. 41864

City of Plymouth

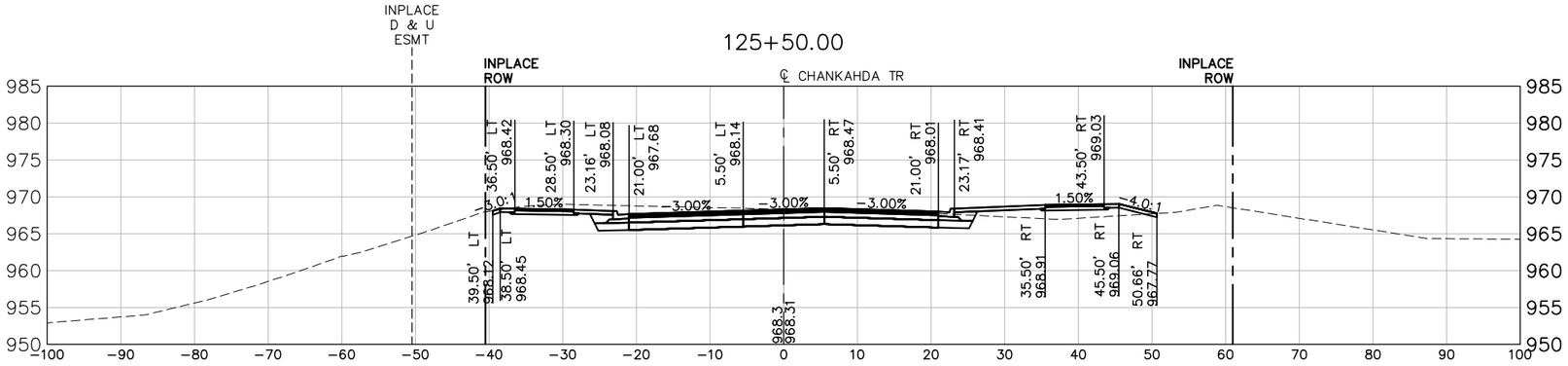
CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
CROSS SECTIONS
STA. 123+00 TO STA. 124+00

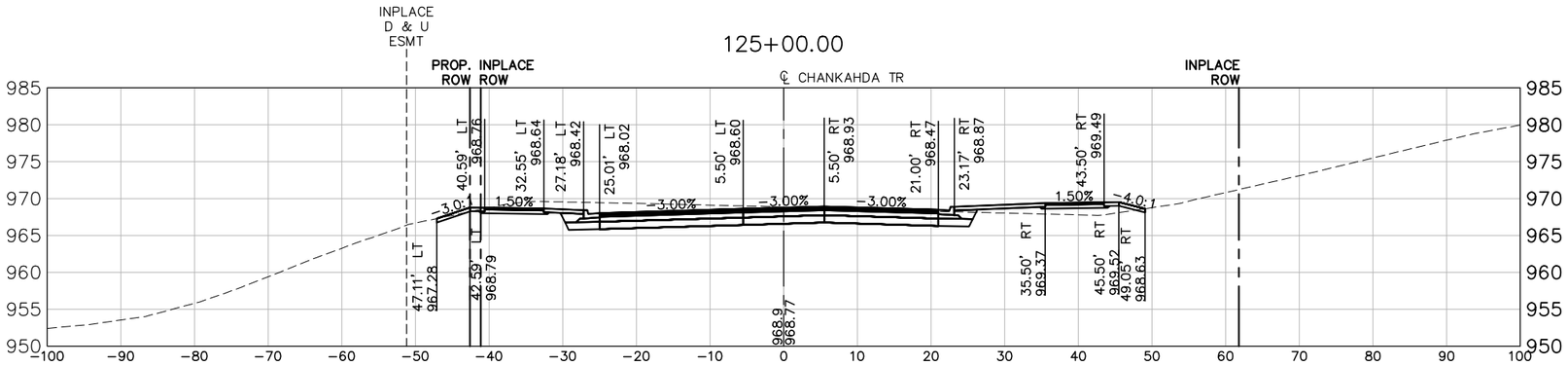
CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

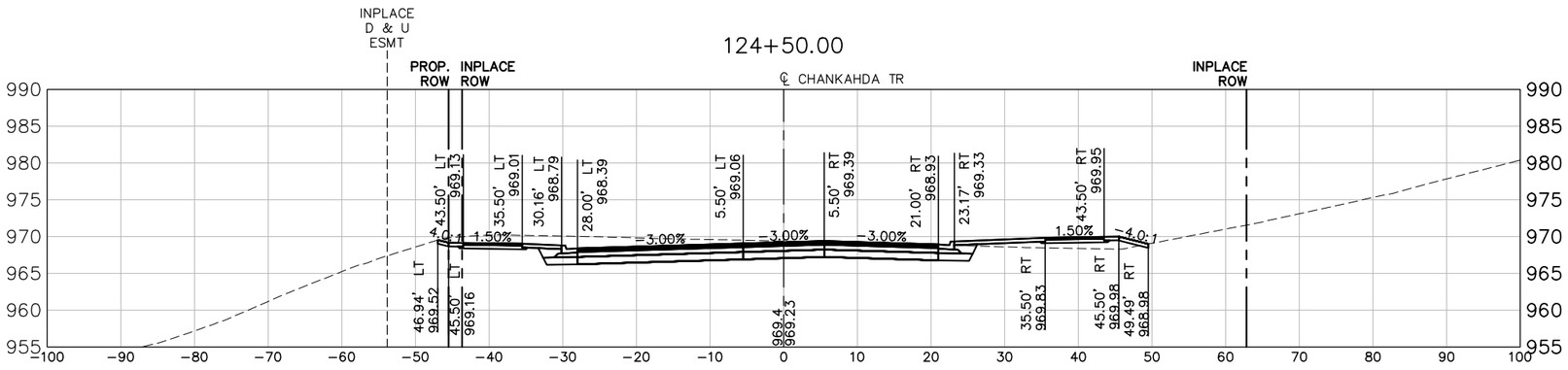
SHEET NO. 276 / 348

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:	11/04/2024
PROJECT NO.	160662010

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CHADD B. LARSON, PE
DATE: 11/04/2024 MN LIC. NO. 41864

City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
CROSS SECTIONS
STA. 124+50 TO STA. 125+50

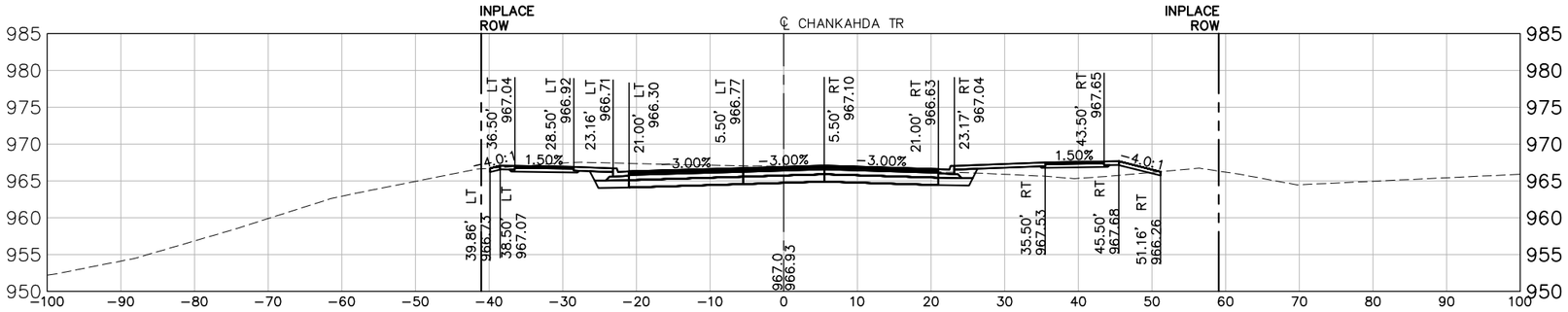
CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO.
277
348

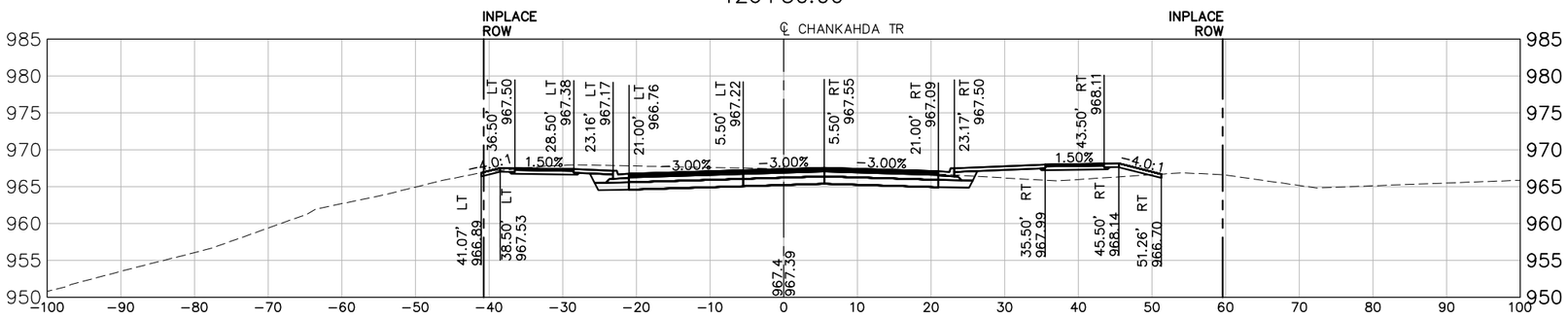
VERTICAL 0 5 10 20

HORIZONTAL SCALE IN FEET 0 5 10 20

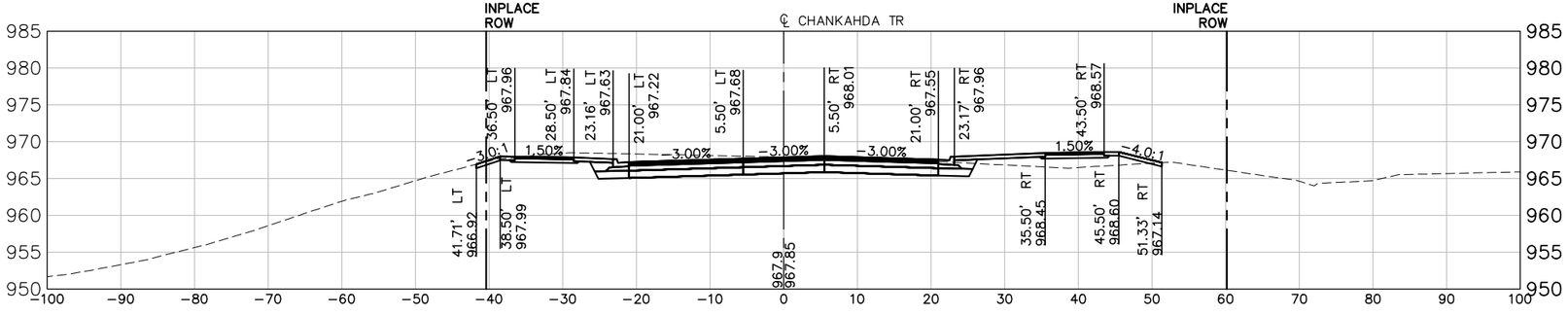
127+00.00



126+50.00



126+00.00



No.	Date	Revisions	App.

DRAWING NAME	CHANKAHDA_PH3_Sections.dwg
DESIGNED BY:	JWB
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DATE:	11/04/2024
PROJECT NO.	160662010

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CHADD B. LARSON, PE

DATE: 11/04/2024 MN LIC. NO. 41864

City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
CROSS SECTIONS
STA. 126+00 TO STA. 127+00

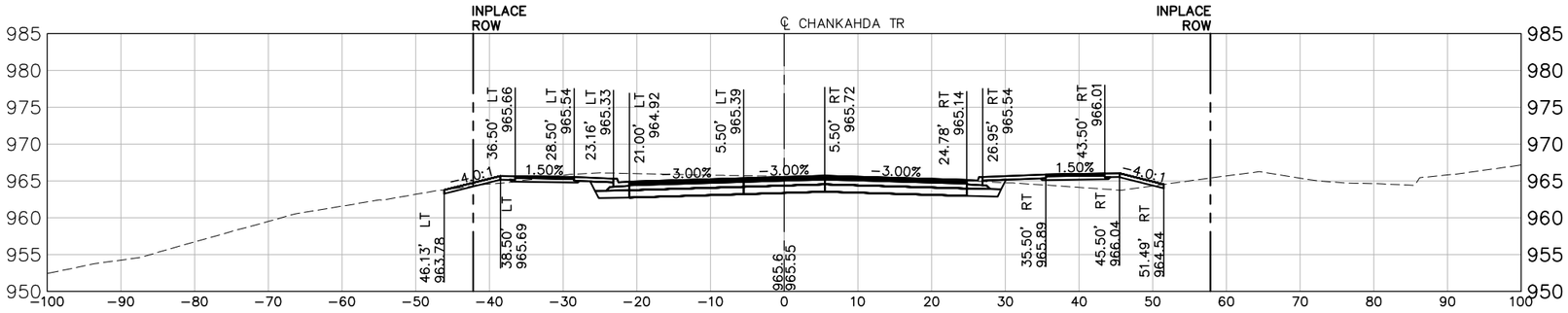
CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 278 / 348

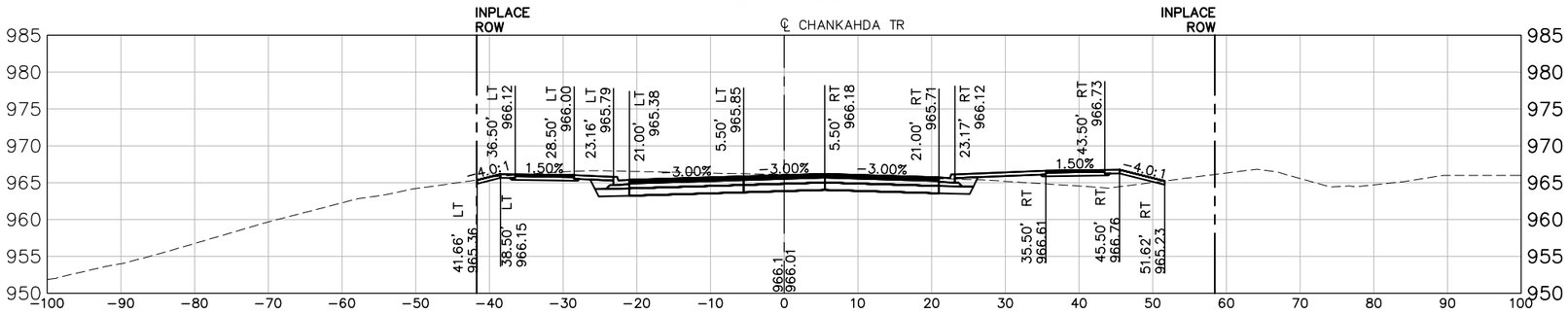
0 5 10 20 VERTICAL

0 5 10 20 HORIZONTAL SCALE IN FEET

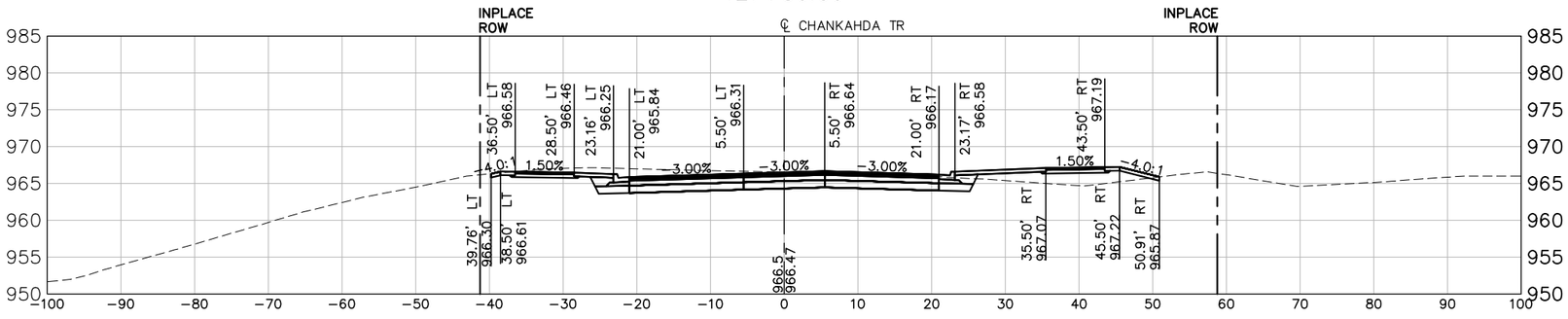
128+50.00



128+00.00



127+50.00



No.	Date	Revisions	App.

DRAWING NAME	CHANKAHDA_PH3_Sections.dwg
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City of Plymouth

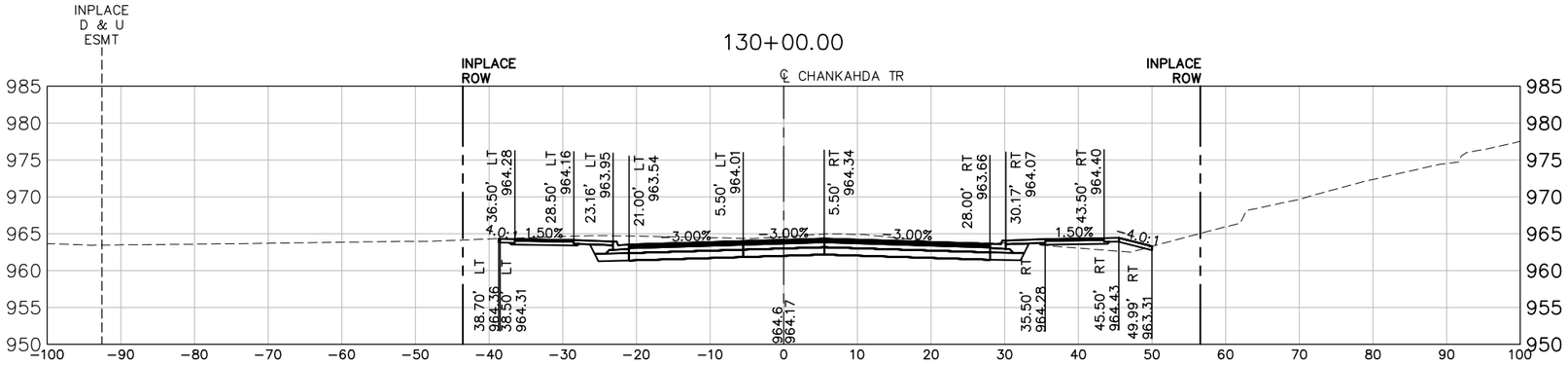
CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
CROSS SECTIONS
STA. 127+50 TO STA. 128+50

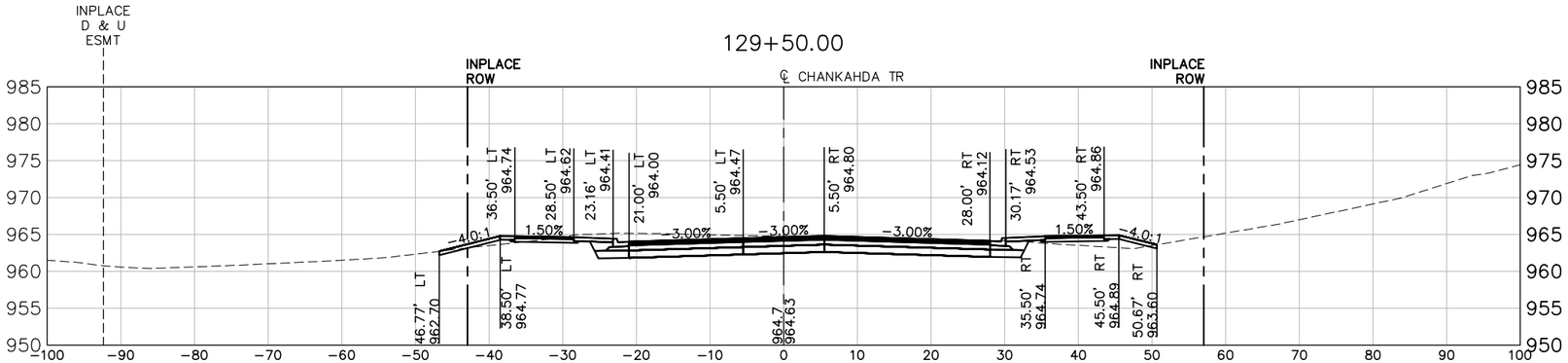
CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

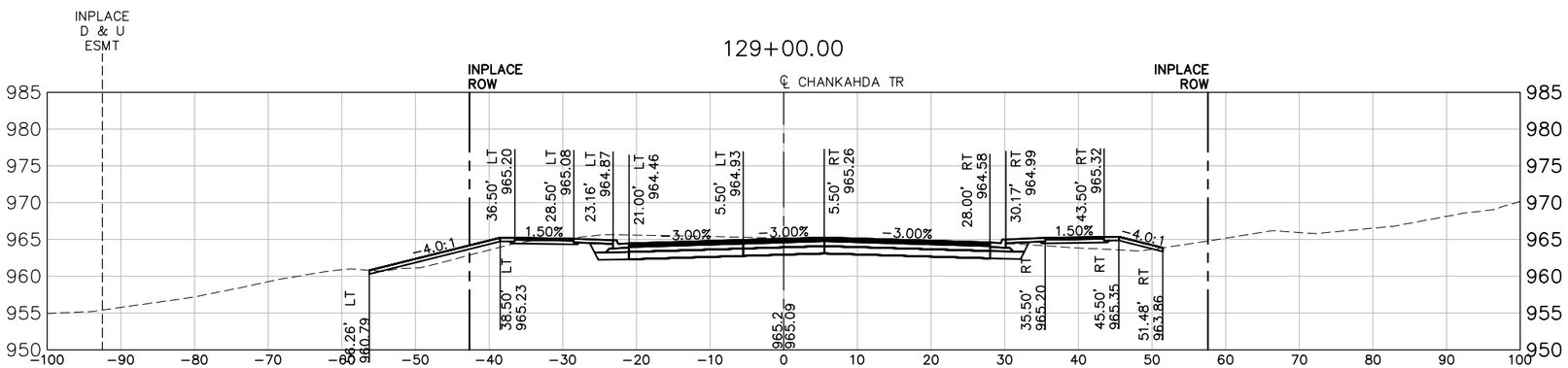
SHEET NO. 279 / 348

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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DRAWN BY:	JWB
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DATE:	11/04/2024
PROJECT NO.	160662010

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CHADD B. LARSON, PE

DATE: 11/04/2024 MN LIC. NO. 41864

City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
CROSS SECTIONS
STA. 129+00 TO STA. 130+00

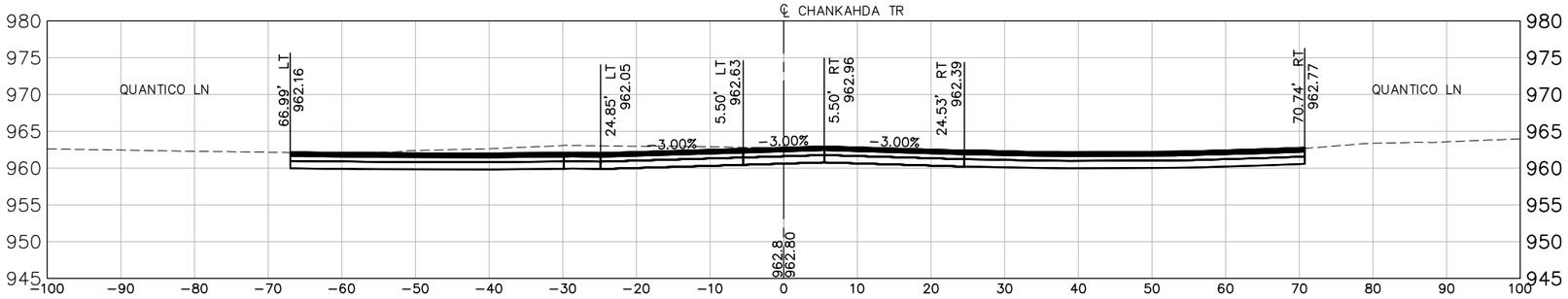
CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 280 / 348

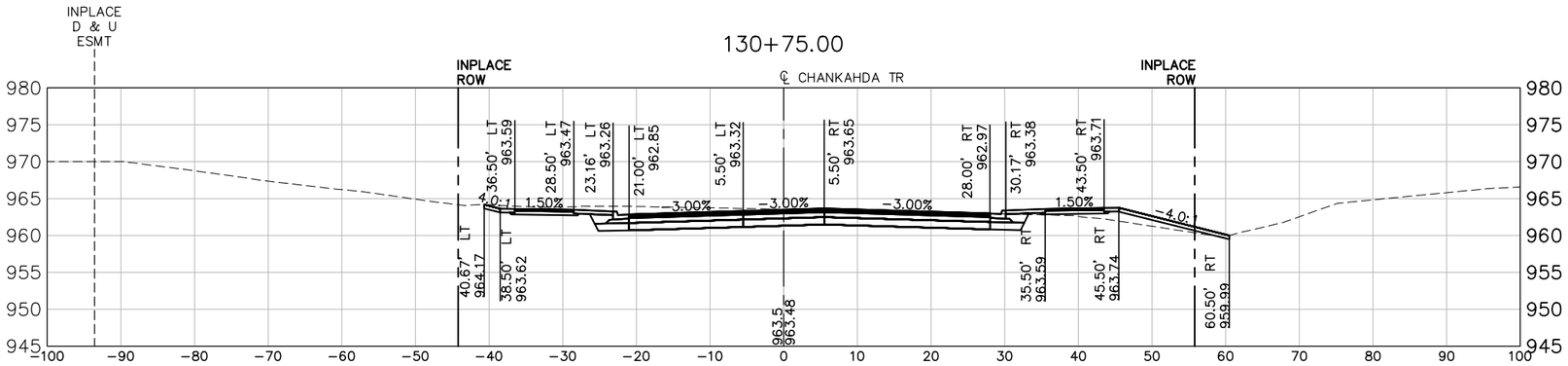
VERTICAL 0 5 10 20

HORIZONTAL SCALE IN FEET 0 5 10 20

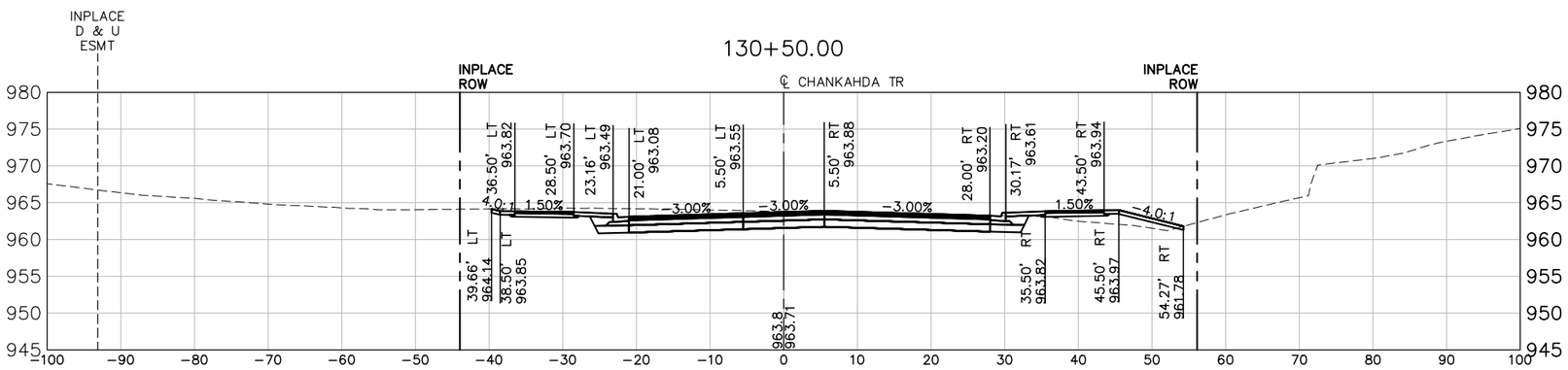
131+50.00



130+75.00



130+50.00



No.	Date	Revisions	App.

DRAWING NAME	CHANKAHDA_PH3_Sections.dwg
DESIGNED BY:	JWB
DRAWN BY:	JWB
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DATE:	11/04/2024
PROJECT NO.	160662010

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CHADD B. LARSON, PE

DATE: 11/04/2024 MN LIC. NO. 41864

City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
CROSS SECTIONS
STA. 130+50 TO STA. 131+50

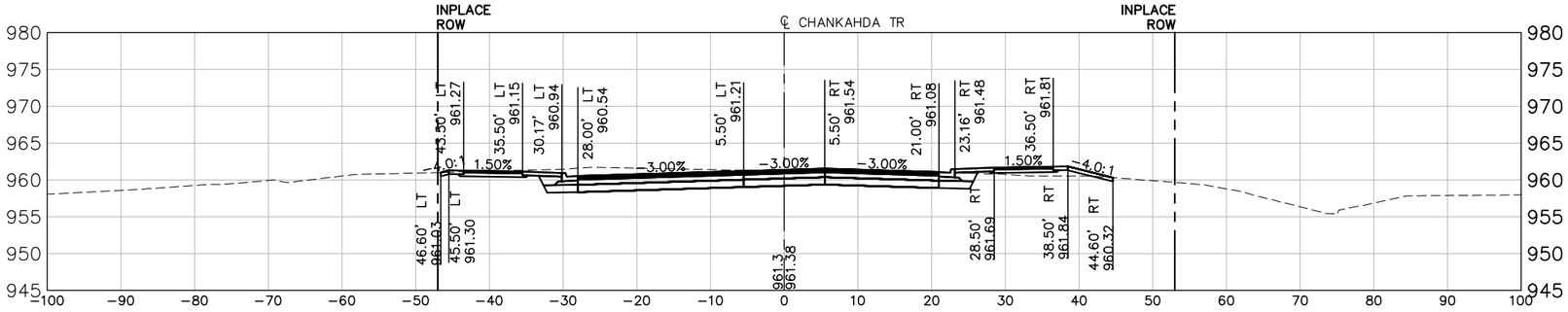
CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 281 / 348

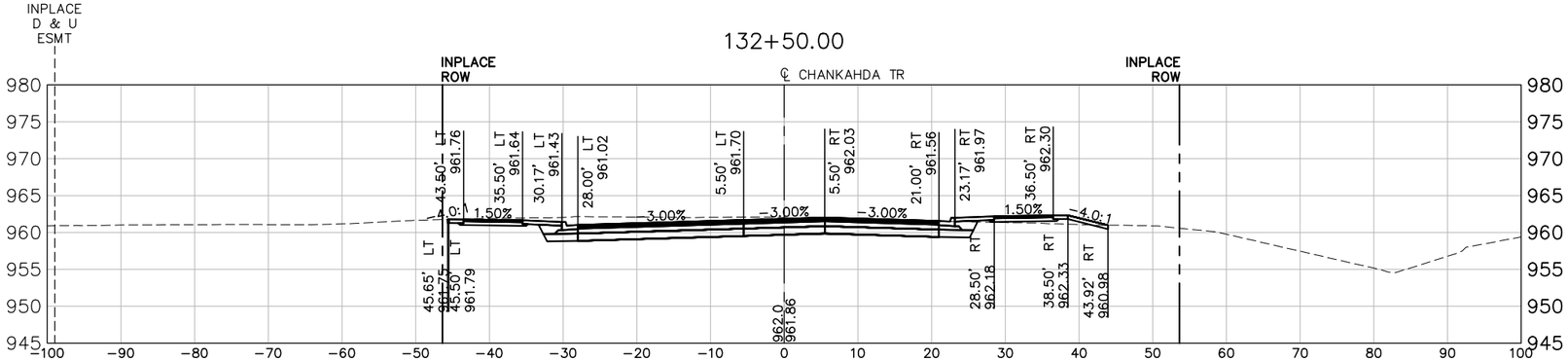
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0 5 10 20 HORIZONTAL SCALE IN FEET

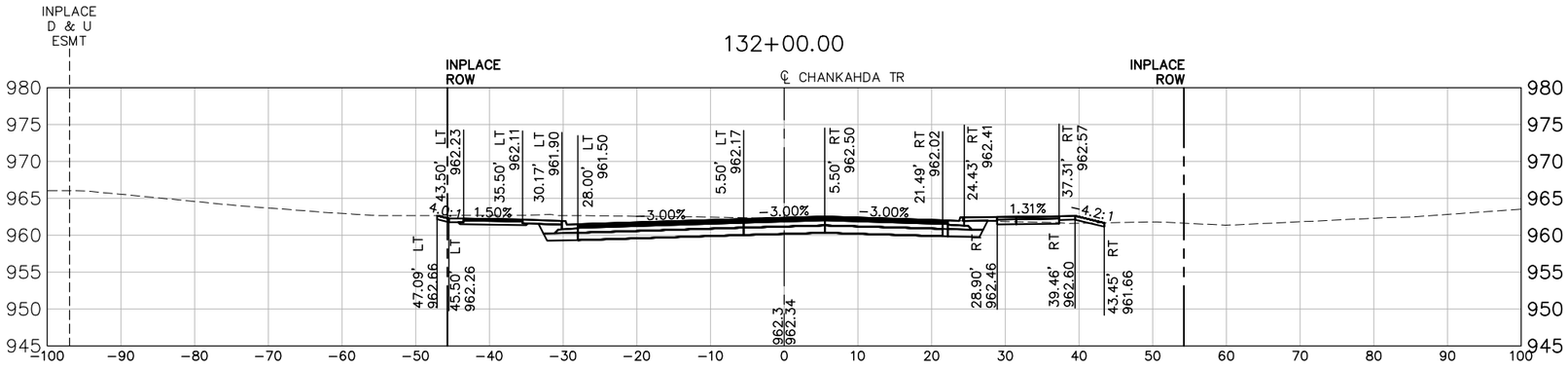
133+00.00



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:	11/04/2024
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: 11/04/2024 MN LIC. NO. 41864

City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
CROSS SECTIONS
STA. 132+00 TO STA. 133+00

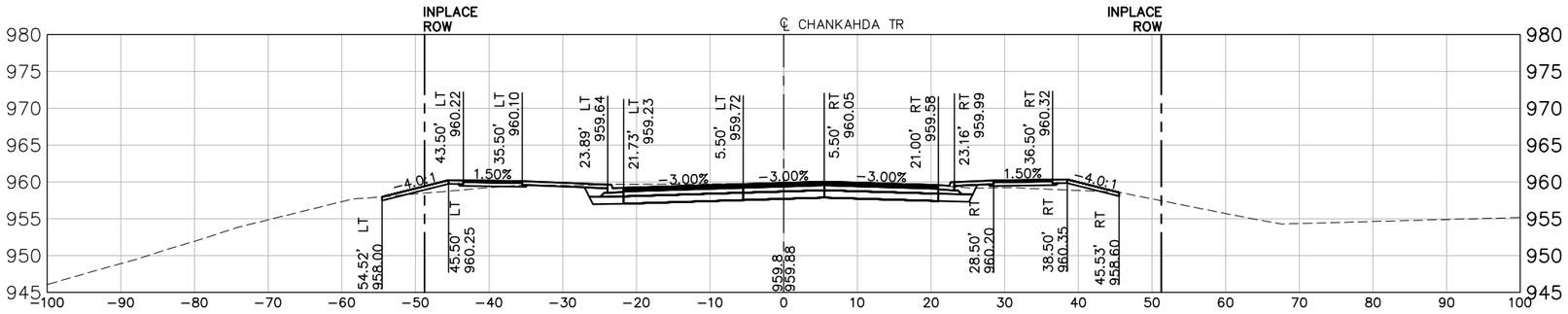
CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 282 / 348

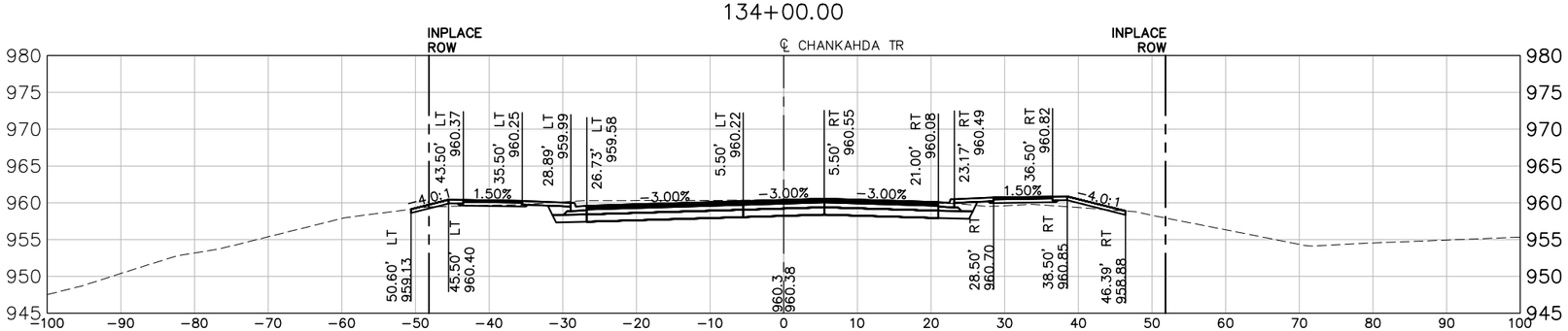
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0 5 10 20 HORIZONTAL SCALE IN FEET

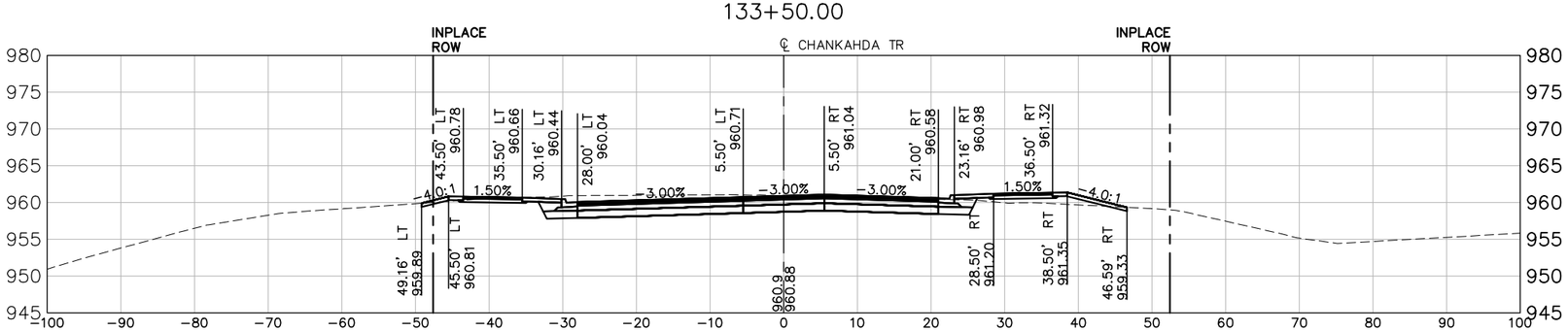
134+50.00



134+00.00



133+50.00



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RECONSTRUCTION PHASE 3
CHANKAHDA TR
CROSS SECTIONS
STA. 133+50 TO STA. 134+50

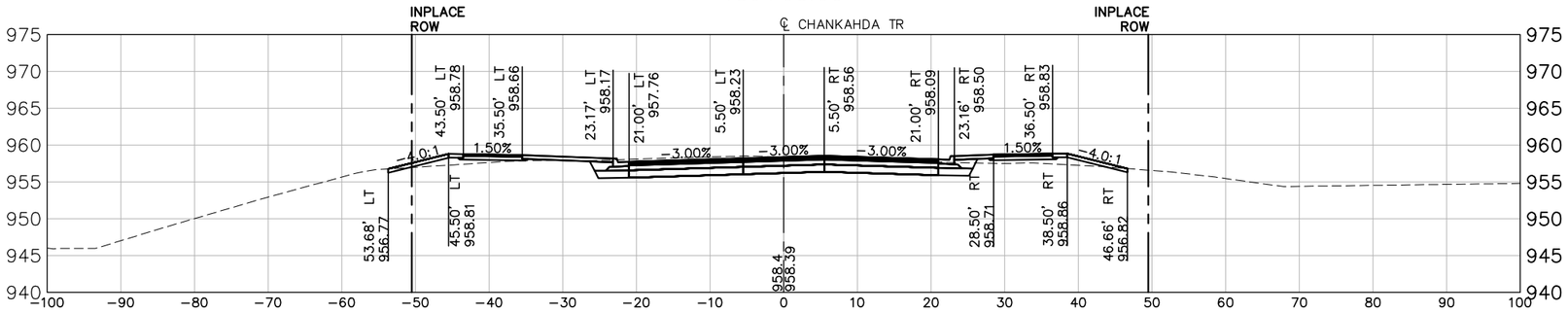
CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 283 / 348

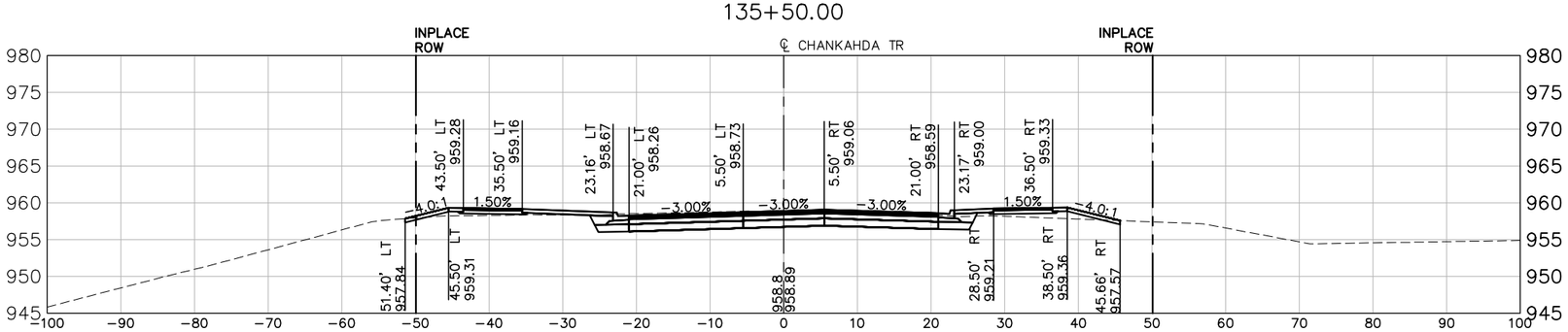
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0 5 10 20 HORIZONTAL SCALE IN FEET

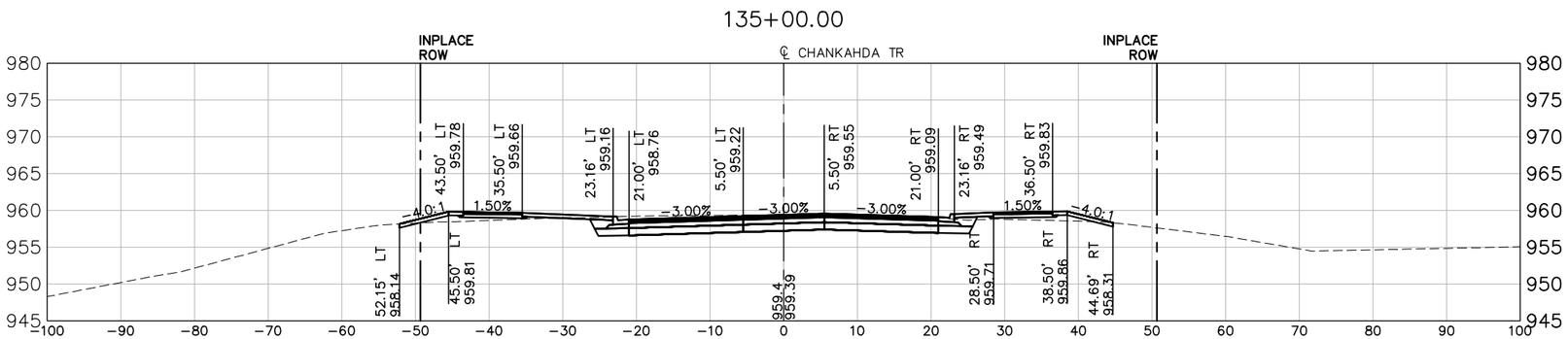
136+00.00



135+50.00



135+00.00



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RECONSTRUCTION PHASE 3
CHANKAHDA TR
CROSS SECTIONS
STA. 135+00 TO STA. 136+00

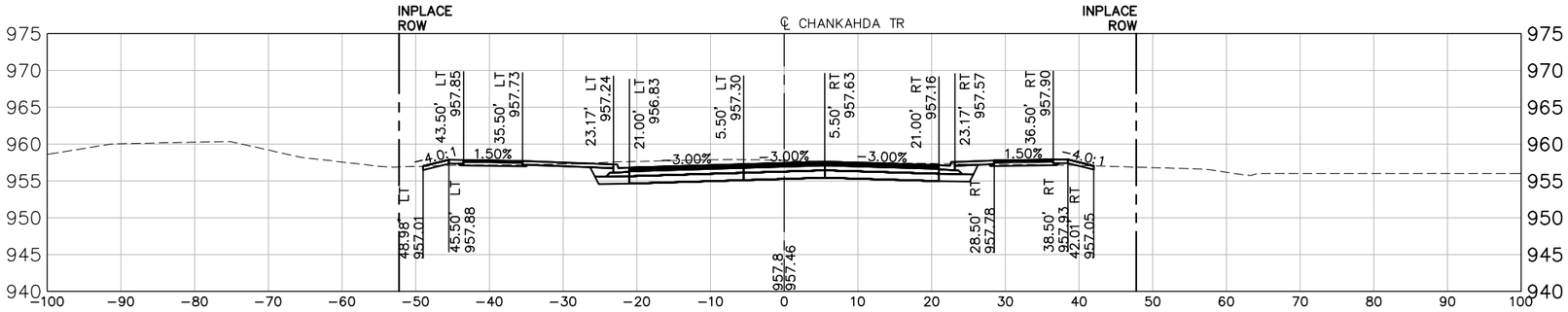
CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 284 / 348

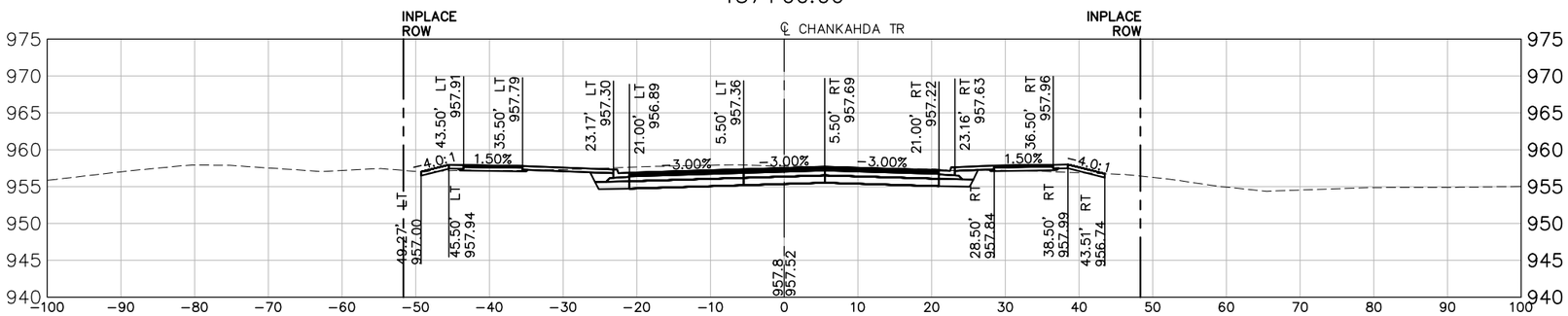
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0 5 10 20 HORIZONTAL SCALE IN FEET

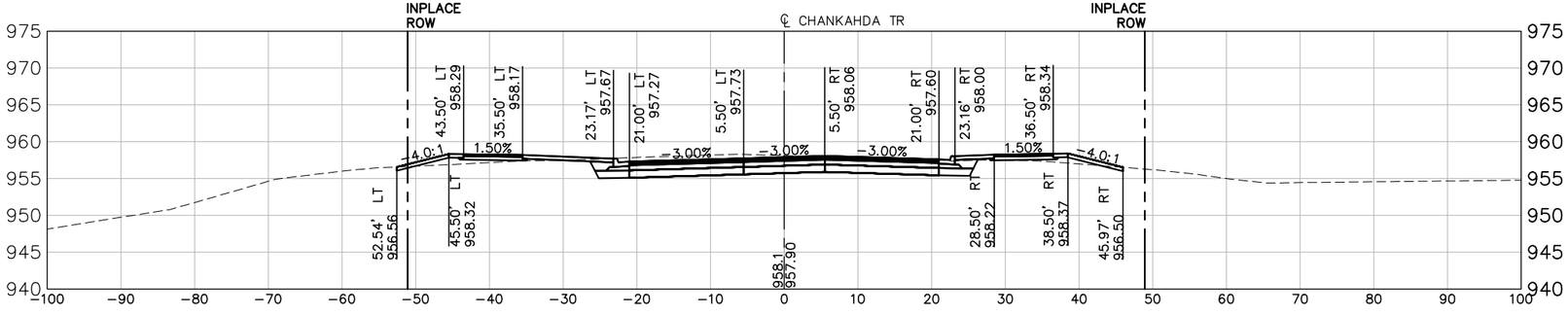
137+50.00



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

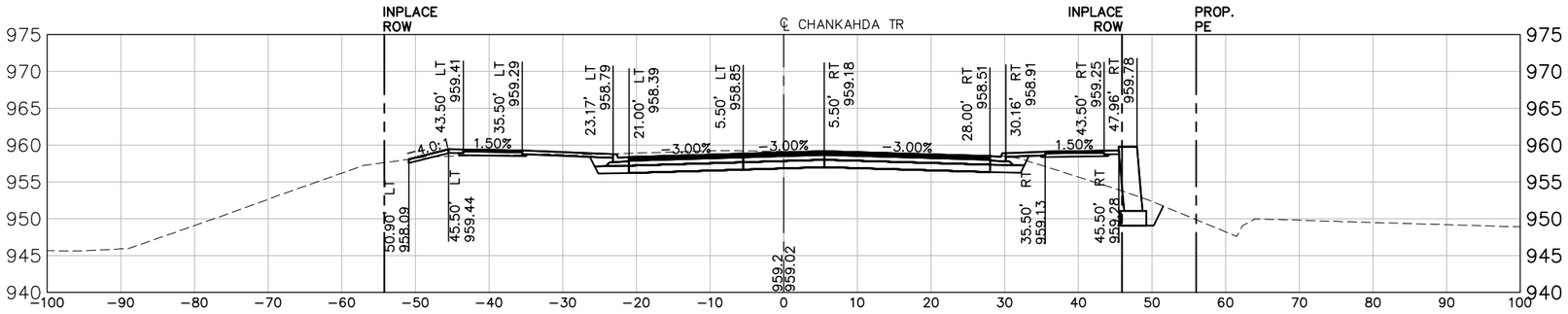
CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 285 / 348

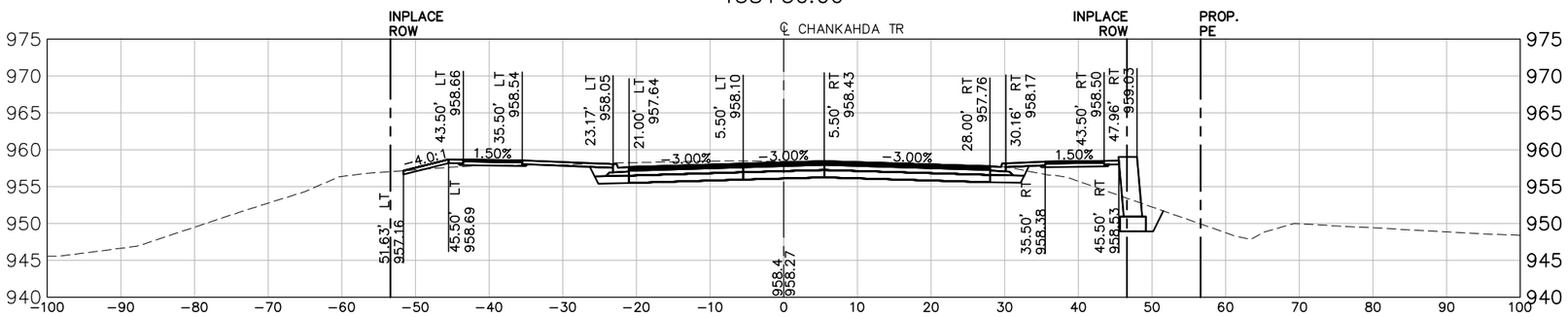
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0 5 10 20 HORIZONTAL SCALE IN FEET

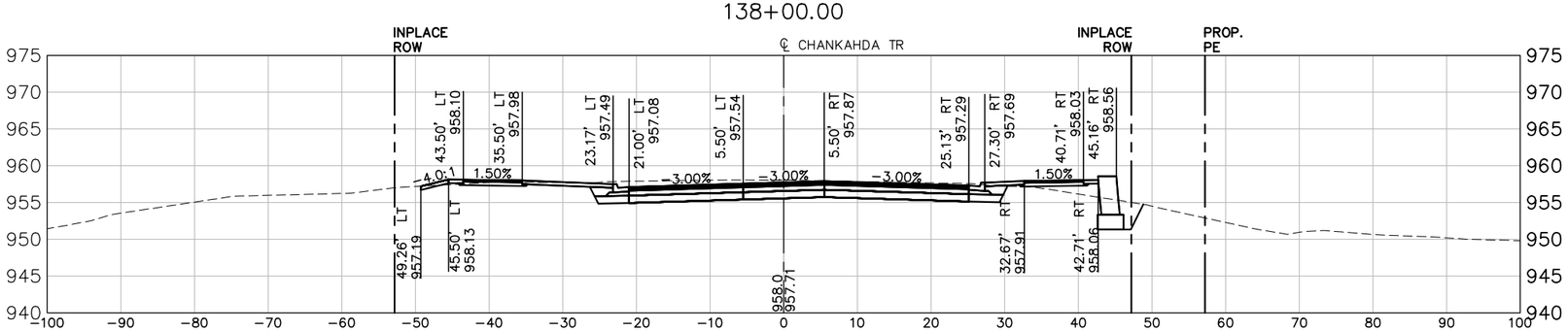
139+00.00



138+50.00



138+00.00



No.	Date	Revisions	App.

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City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
CROSS SECTIONS
STA. 138+00 TO STA. 139+00

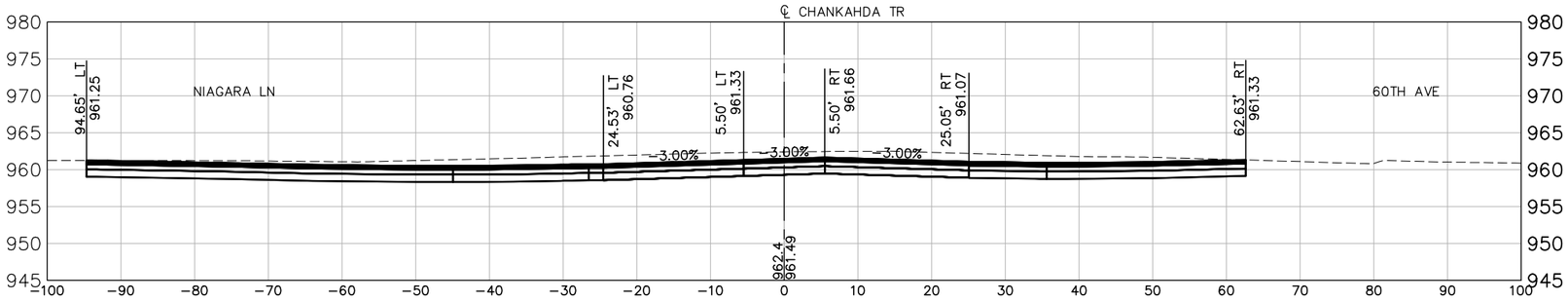
CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 286 / 348

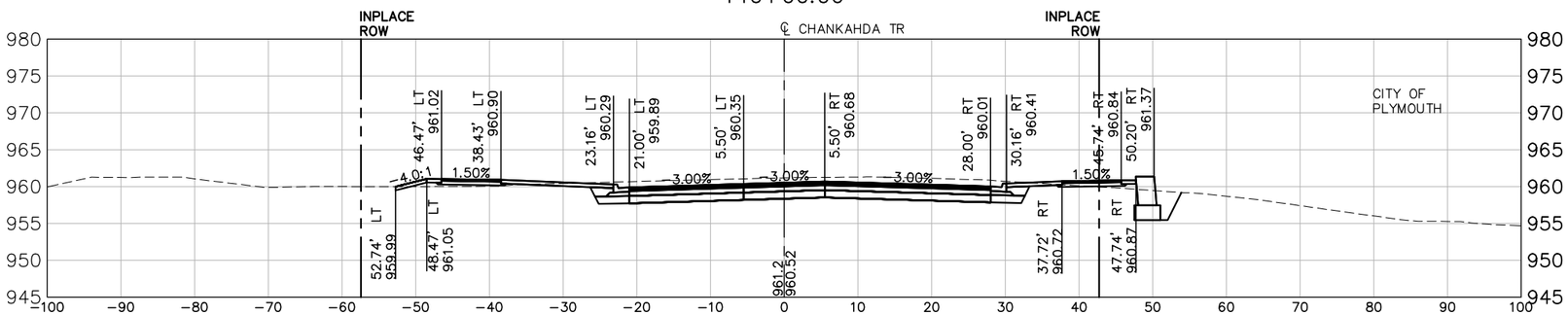
VERTICAL 0 5 10 20

HORIZONTAL SCALE IN FEET 0 5 10 20

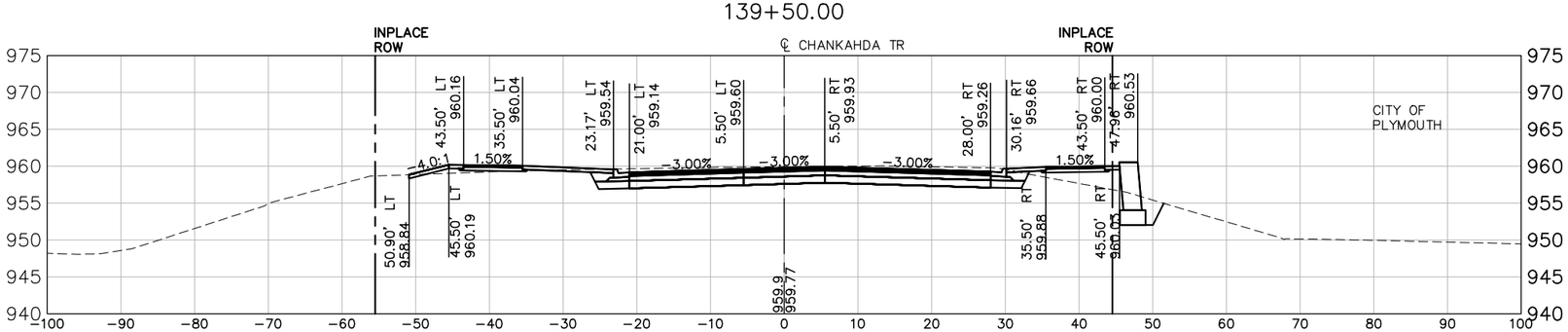
140+65.00



140+00.00



139+50.00



No.	Date	Revisions	App.

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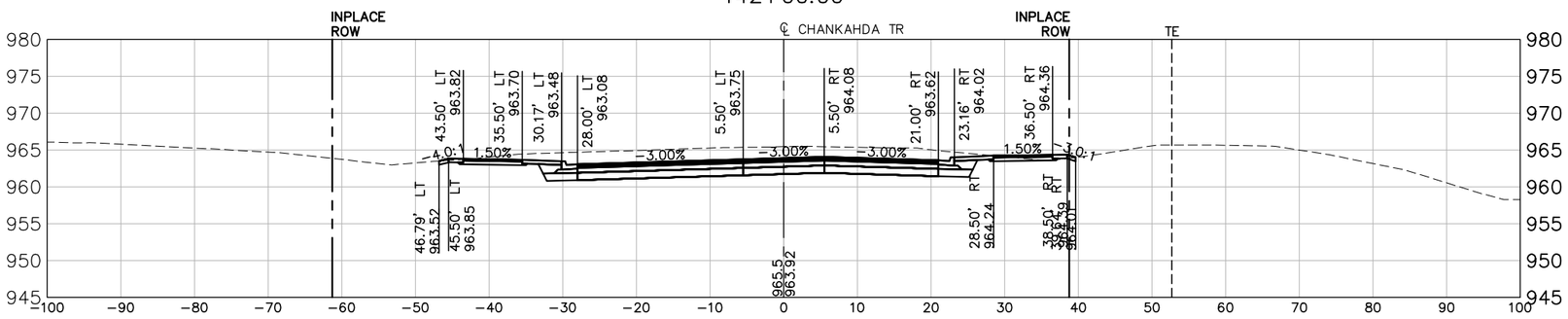
City of Plymouth

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

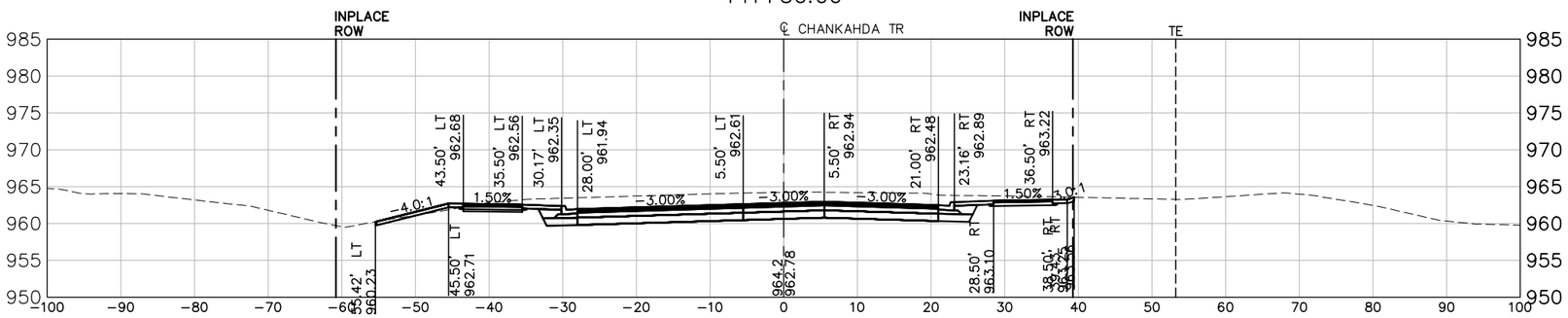
VERTICAL 0 5 10 20

HORIZONTAL SCALE IN FEET 0 5 10 20

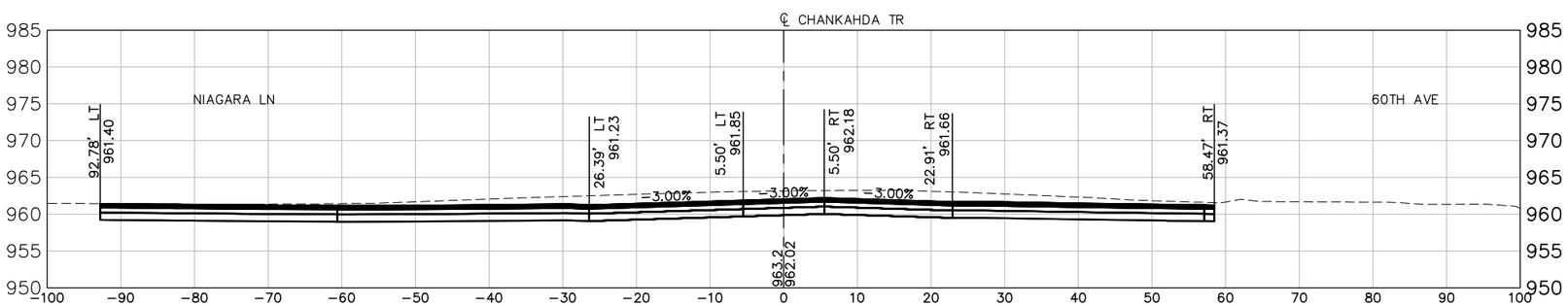
142+00.00



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:	11/04/2024
PROJECT NO.	160662010

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CHADD B. LARSON, PE

DATE: 11/04/2024 MN LIC. NO. 41864

City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
CROSS SECTIONS
STA. 141+00 TO STA. 142+00

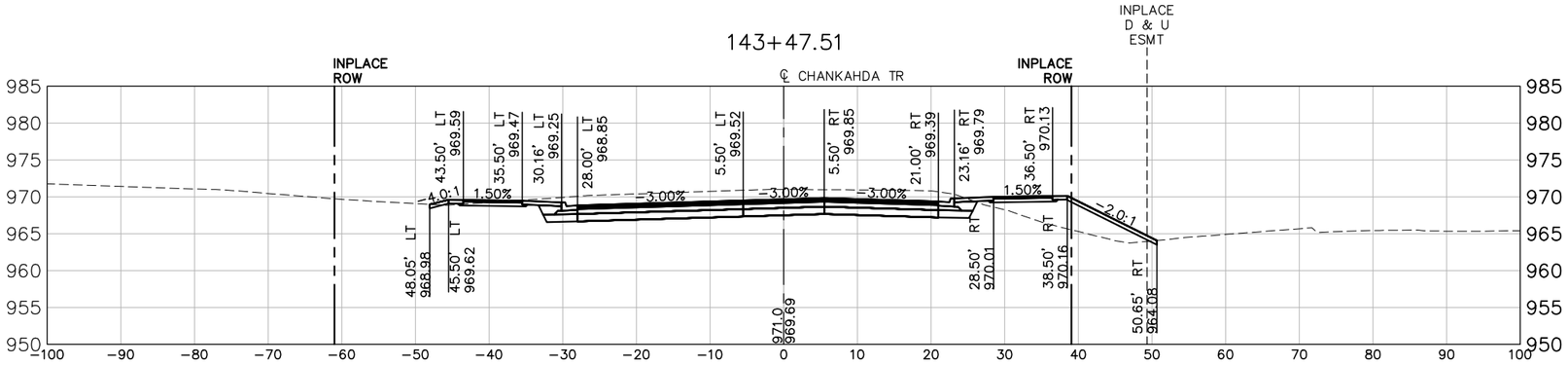
CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 288 / 348

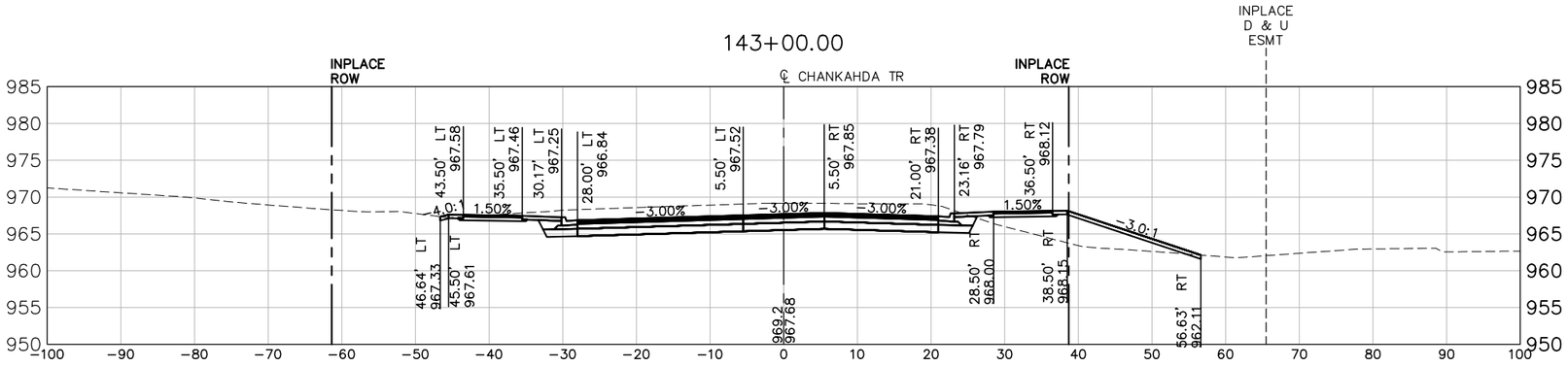
0 5 10 20 VERTICAL

0 5 10 20 HORIZONTAL SCALE IN FEET

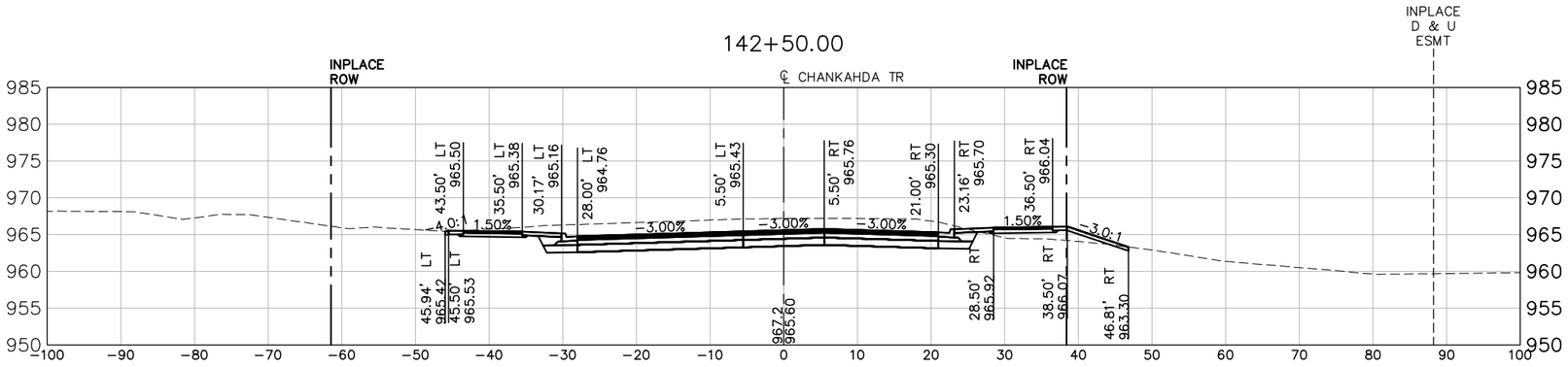
143+47.51



143+00.00



142+50.00



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City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
CROSS SECTIONS
STA. 142+50 TO STA. 143+47

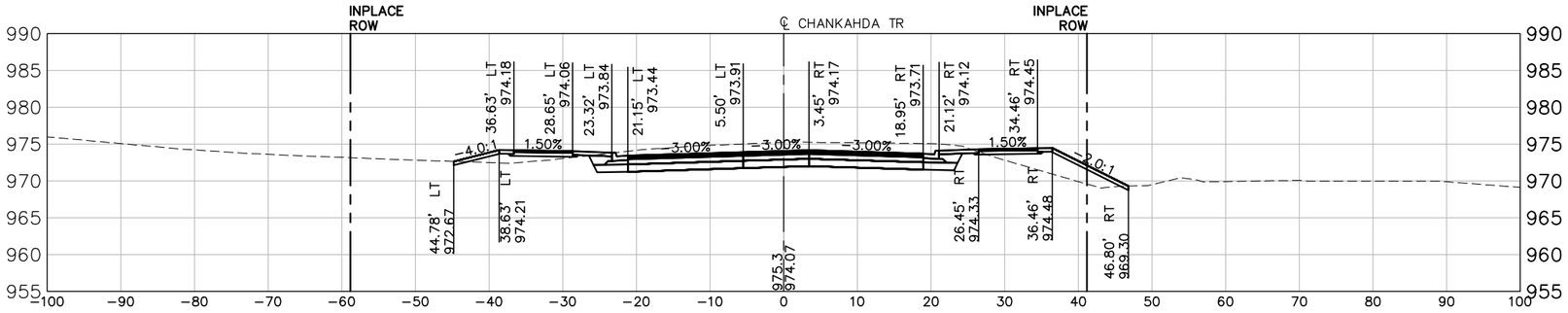
CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 289 / 348

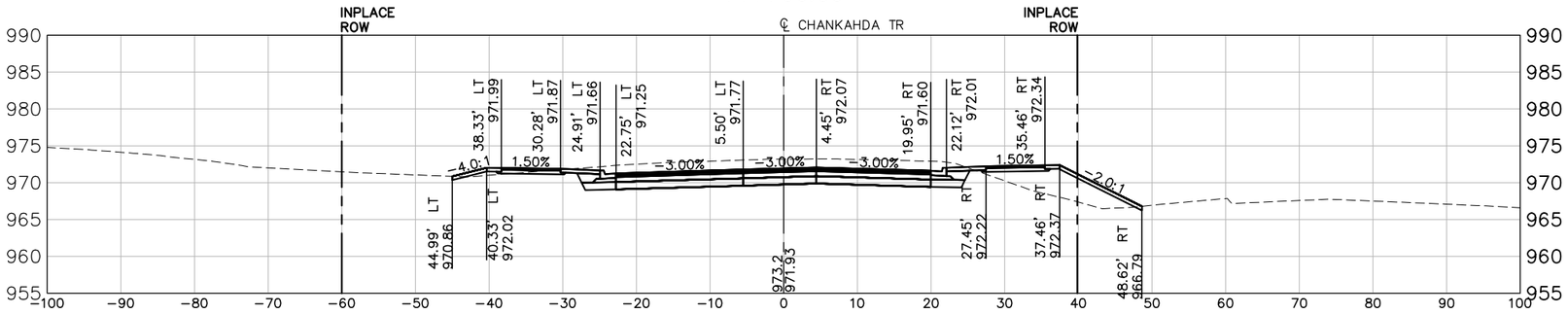
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0 5 10 20 HORIZONTAL SCALE IN FEET

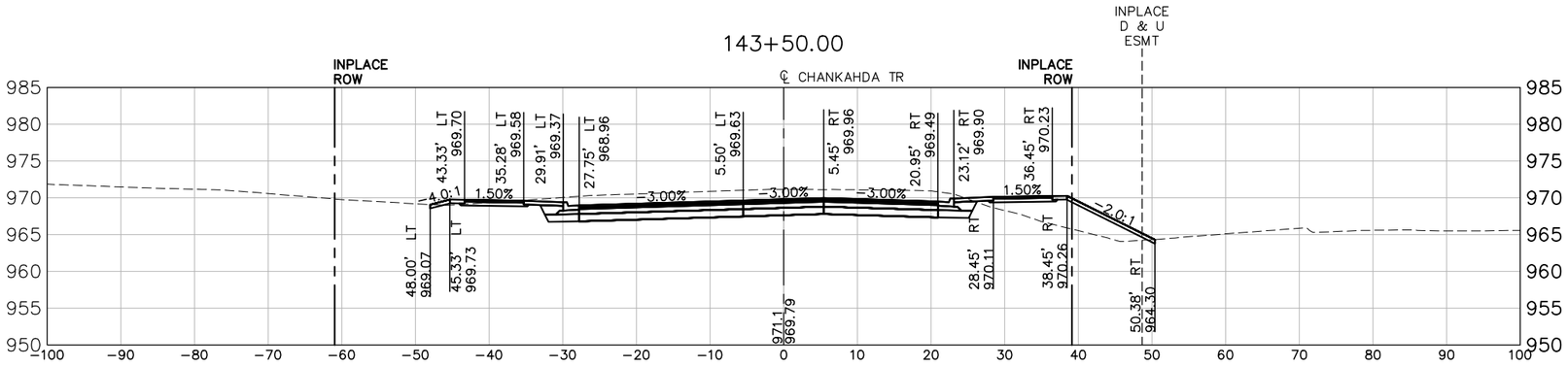
144+50.00



144+00.00



143+50.00



No.	Date	Revisions	App.

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CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
CROSS SECTIONS
STA. 143+50 TO STA. 144+50

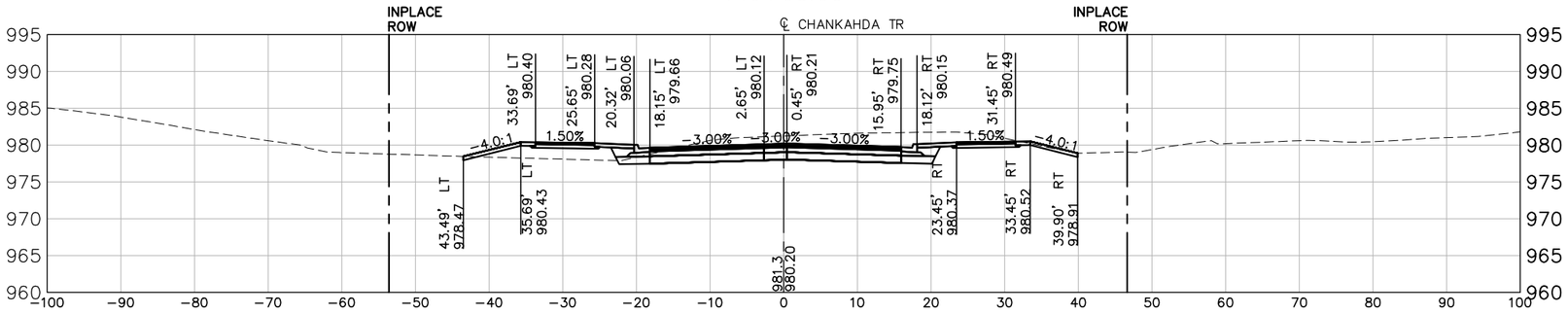
CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 290 / 348

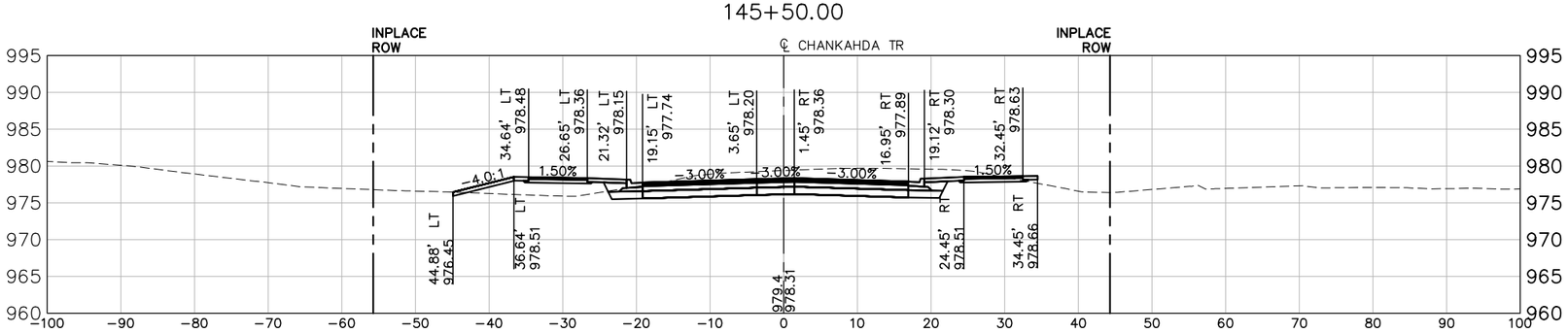
0 5 10 20 VERTICAL

0 5 10 20 HORIZONTAL SCALE IN FEET

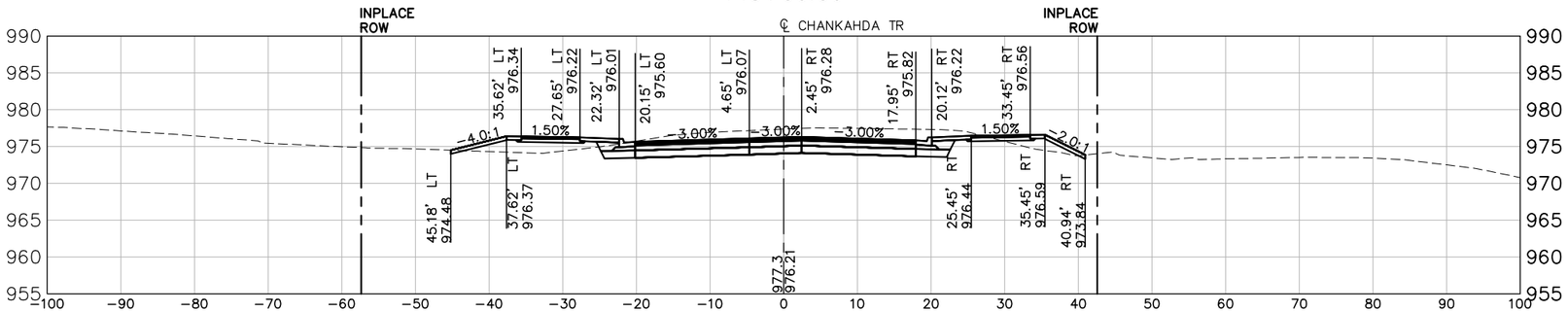
146+00.00



145+50.00



145+00.00



No.	Date	Revisions	App.

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City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
CROSS SECTIONS
STA. 145+00 TO STA. 146+00

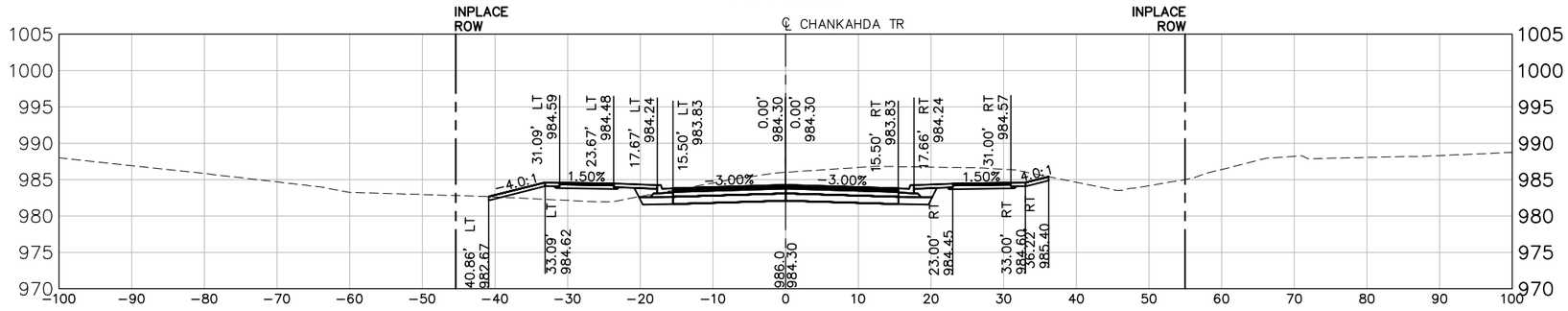
CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 291 / 348

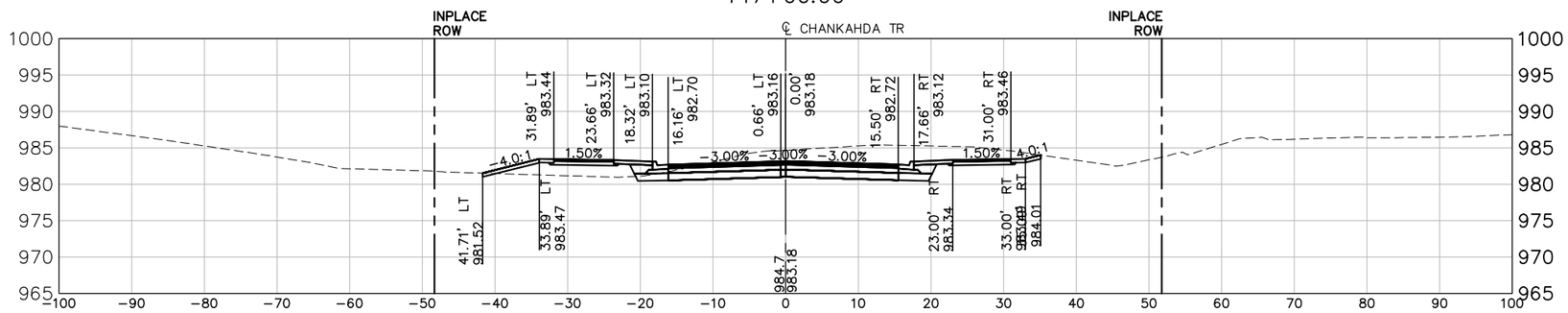
VERTICAL 0 5 10 20

HORIZONTAL SCALE IN FEET 0 5 10 20

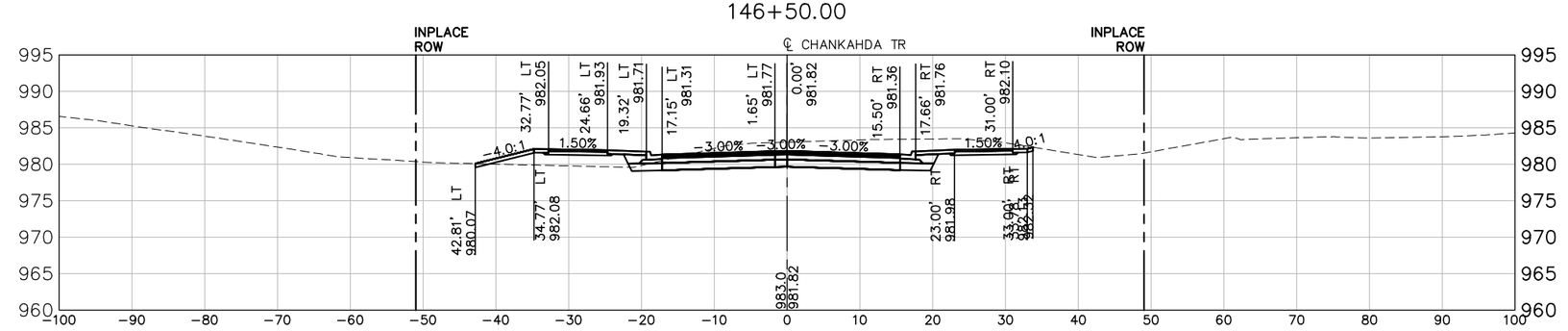
147+50.00



147+00.00



146+50.00



No.	Date	Revisions	App.

DRAWING NAME	CHANKAHDA_PH3_Sections.dwg
DESIGNED BY:	JWB
DRAWN BY:	JWB
CHECKED BY:	CBL
DATE:	11/04/2024
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: 11/04/2024 MN LIC. NO. 41864

City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
CROSS SECTIONS
STA. 146+50 TO STA. 147+50

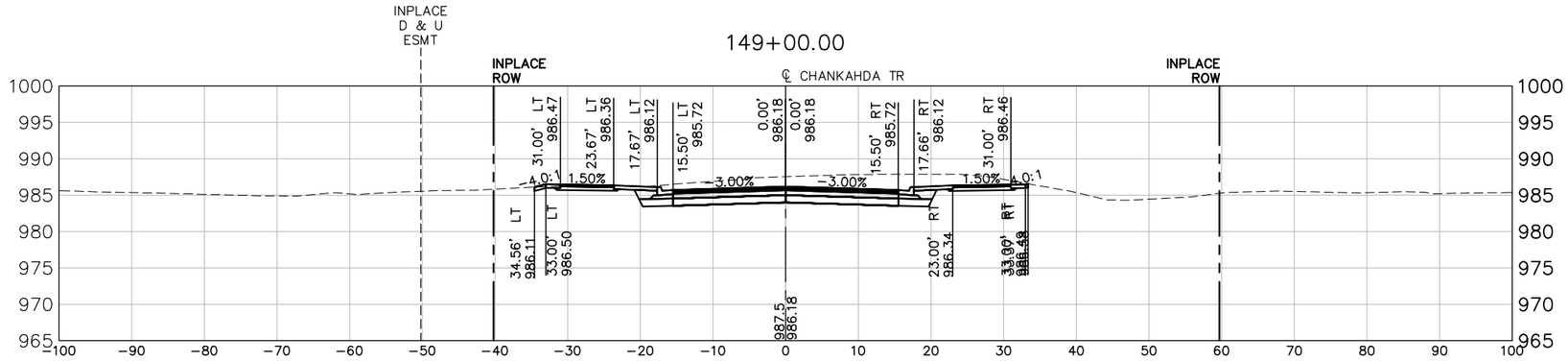
CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 292 / 348

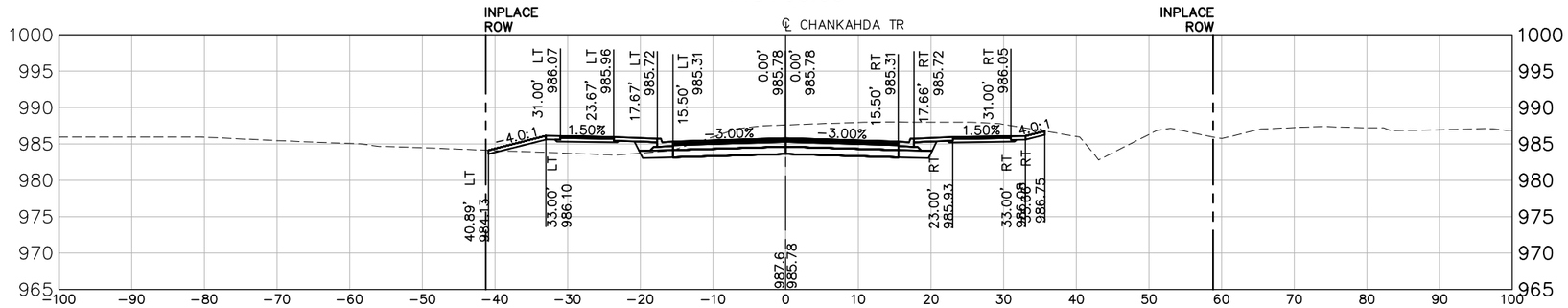
VERTICAL 0 5 10 20

HORIZONTAL SCALE IN FEET 0 5 10 20

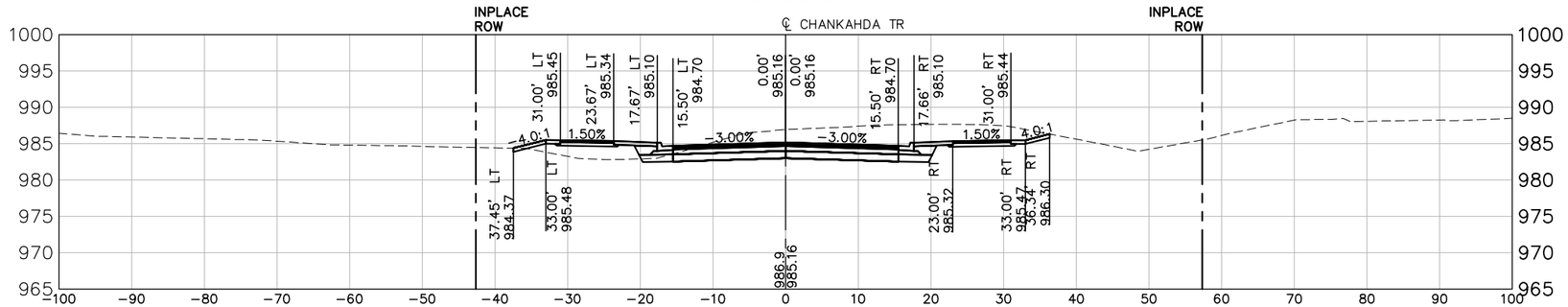
149+00.00



148+50.00



148+00.00



No.	Date	Revisions	App.

DRAWING NAME: CHANKAHDA_PH3_Sections.dwg

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City of Plymouth

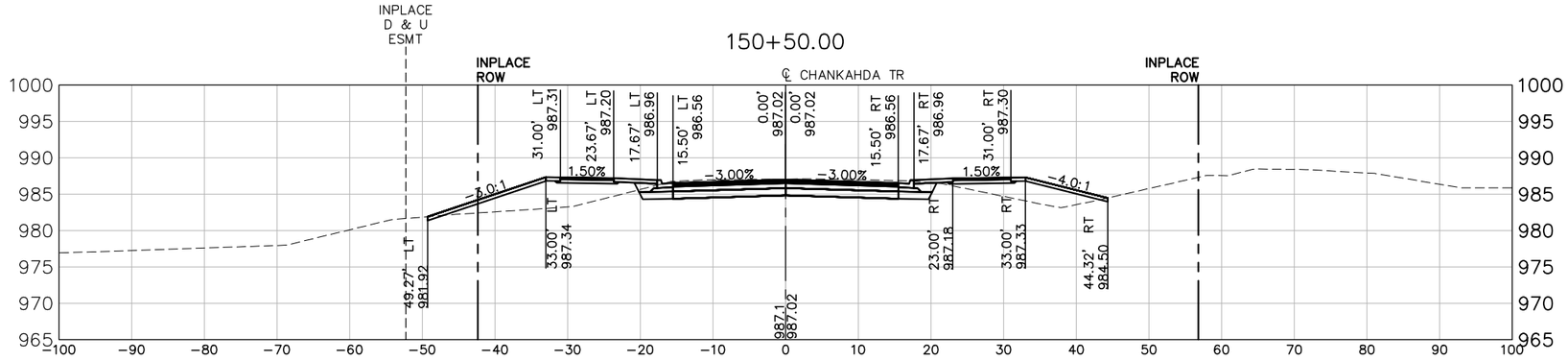
CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
CROSS SECTIONS
STA. 148+00 TO STA. 149+00

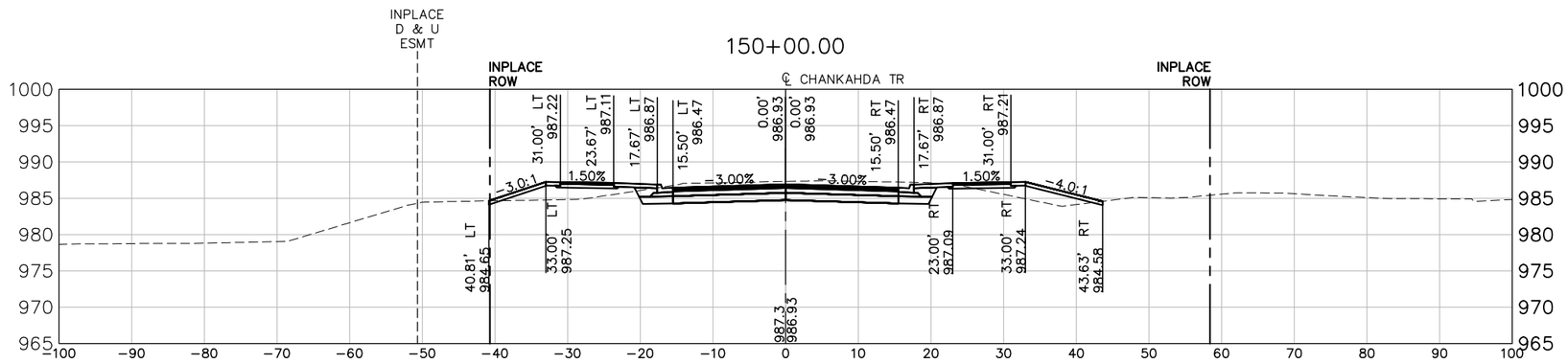
CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

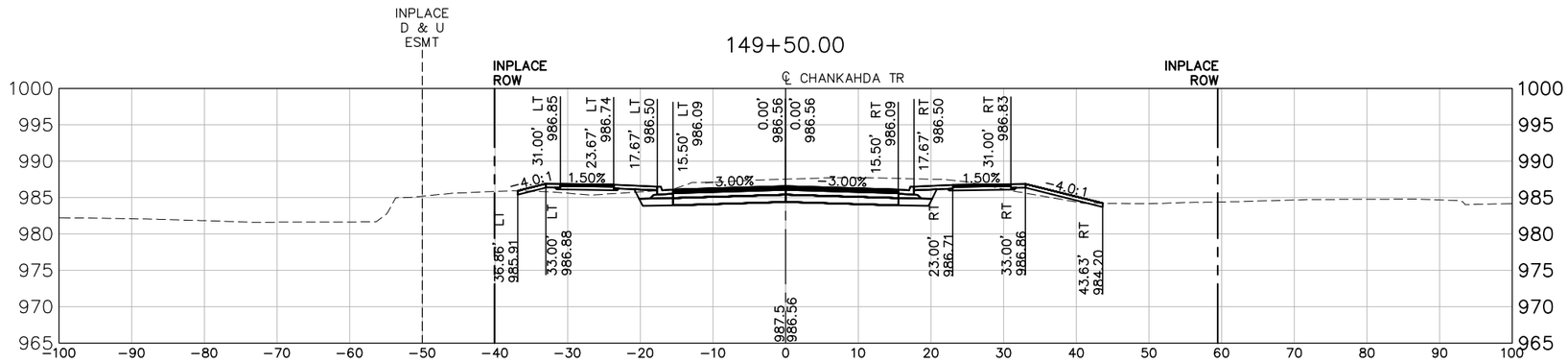
SHEET NO. 293 / 348

VERTICAL 0 5 10 20

HORIZONTAL SCALE IN FEET 0 5 10 20







No.	Date	Revisions	App.

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DATE: 11/04/2024 MN LIC. NO. 41864

City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
CROSS SECTIONS
STA. 149+50 TO STA. 150+50

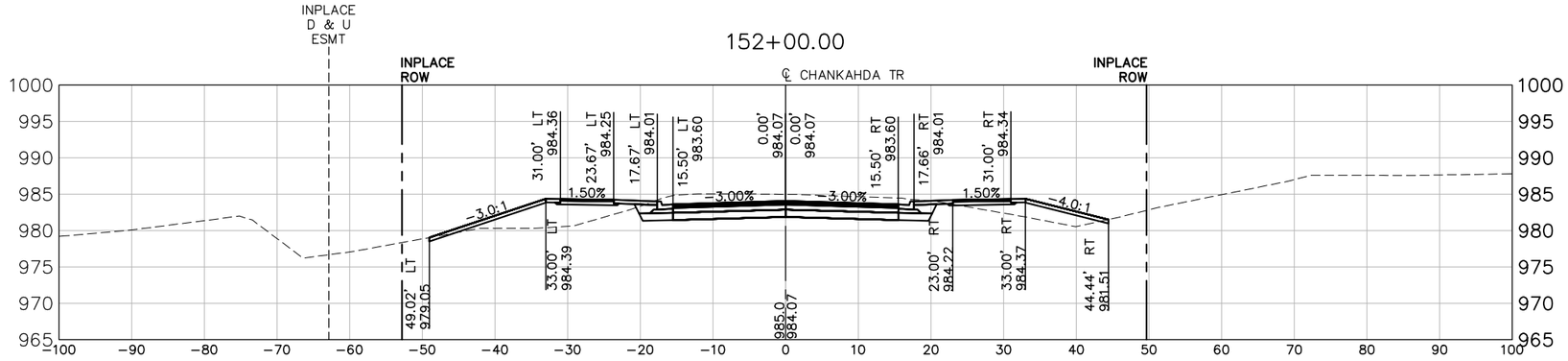
CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 294 / 348

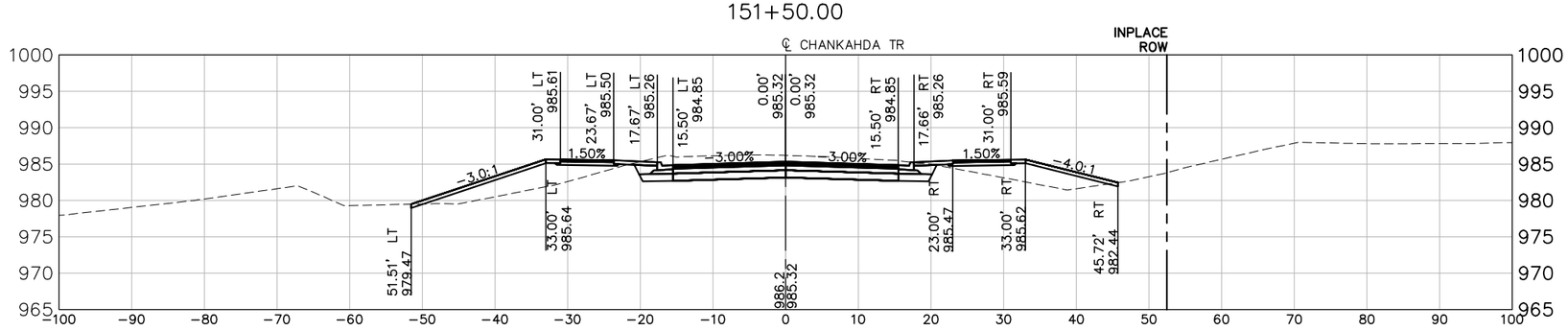
0 5 10 20 VERTICAL

0 5 10 20 HORIZONTAL SCALE IN FEET

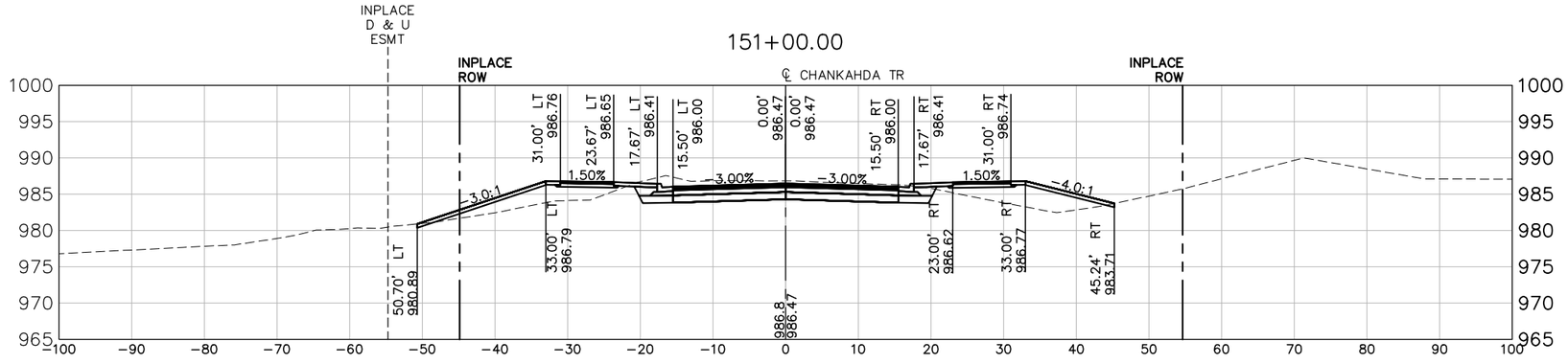
152+00.00



151+50.00



151+00.00



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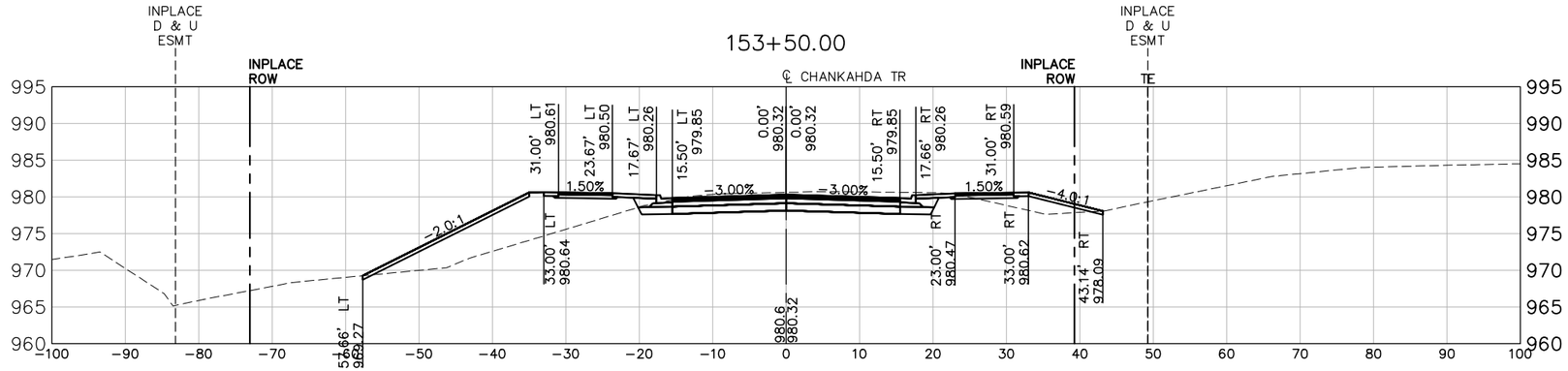
CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
CROSS SECTIONS
STA. 151+00 TO STA. 152+00

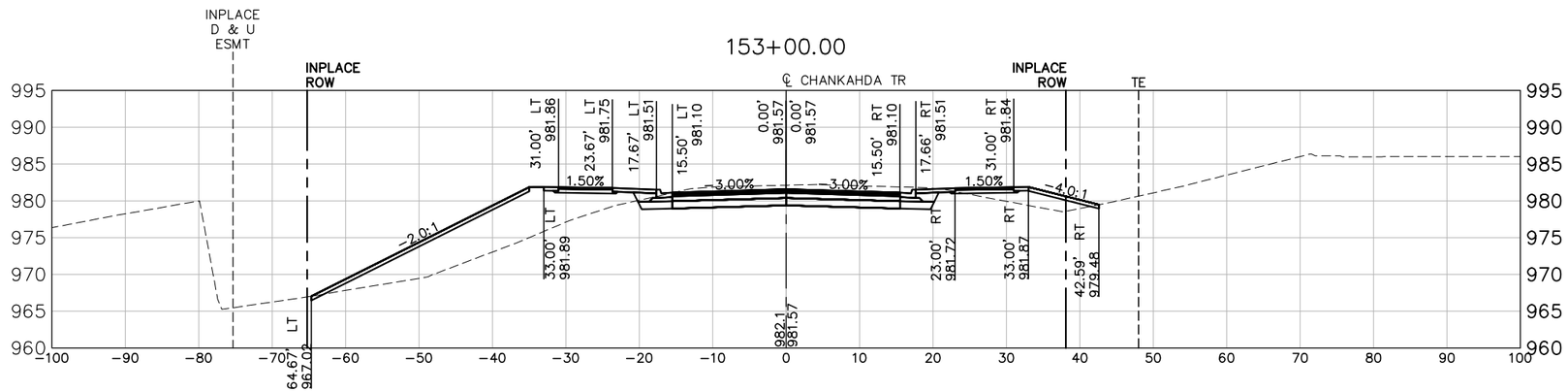
CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

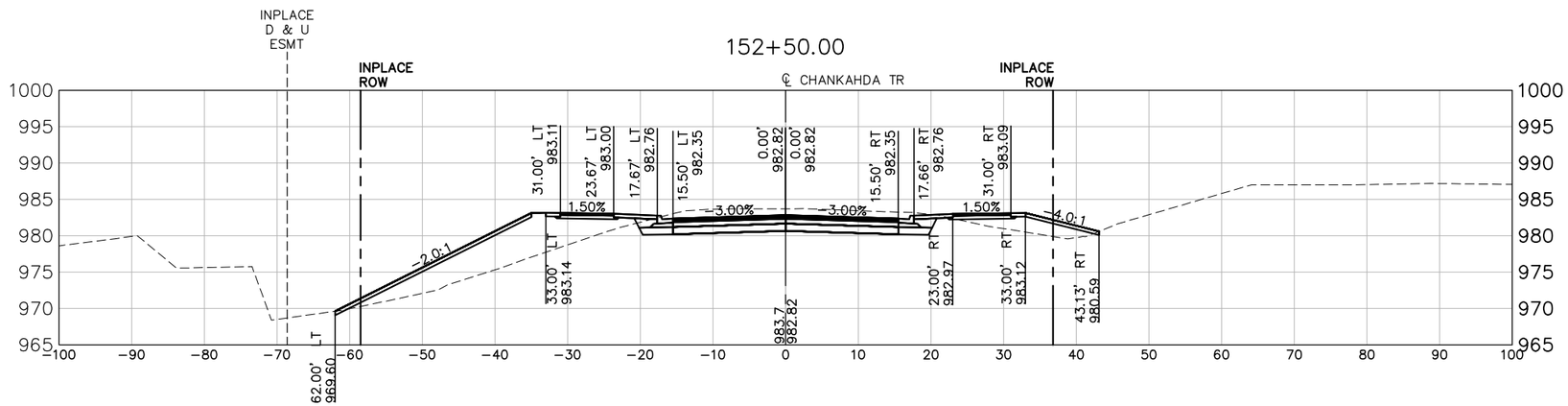
SHEET NO. 295 / 348

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:	11/04/2024
PROJECT NO.	160662010

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CHADD B. LARSON, PE

DATE: 11/04/2024 MN LIC. NO. 41864

City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
CROSS SECTIONS
STA. 152+50 TO STA. 153+50

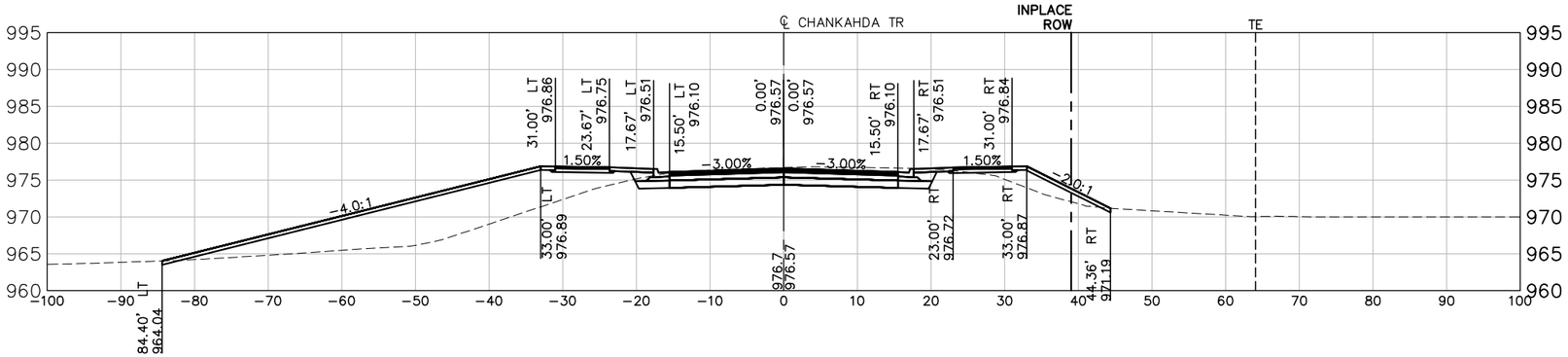
CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 296 / 348

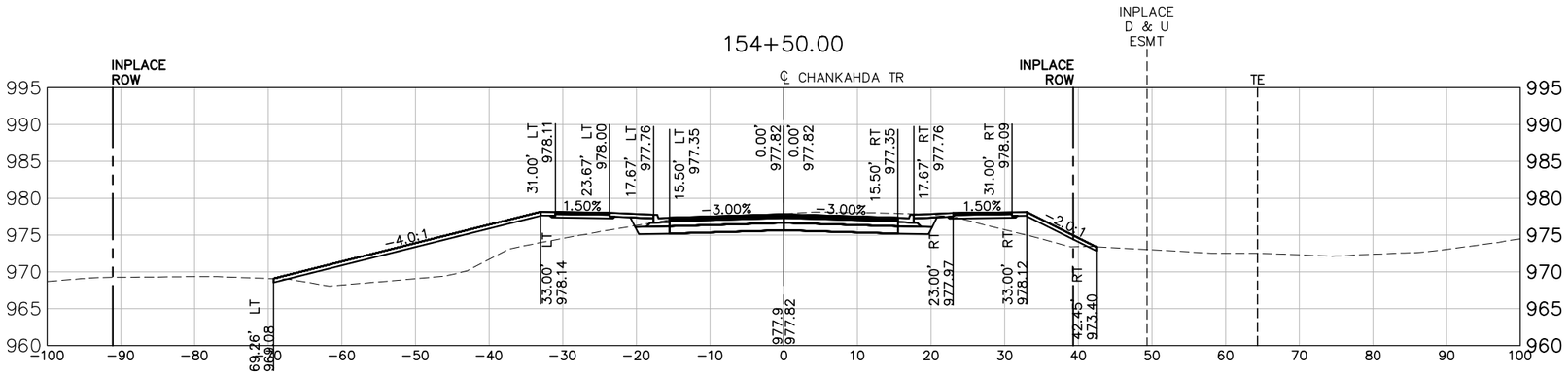
0 5 10 20 VERTICAL

0 5 10 20 HORIZONTAL SCALE IN FEET

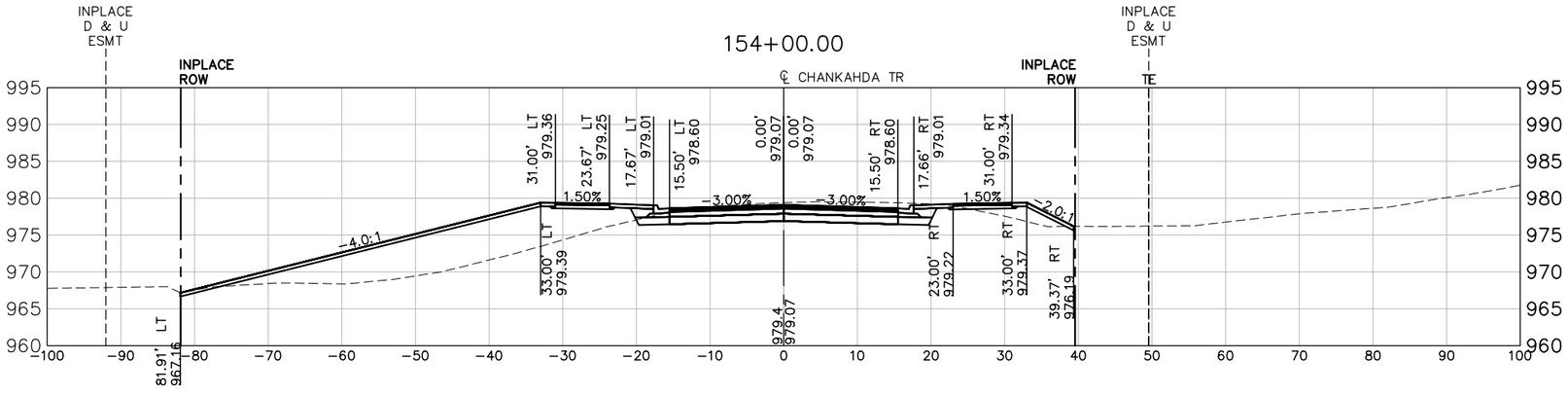
155+00.00



154+50.00



154+00.00



No.	Date	Revisions	App.

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DATE: 11/04/2024 MN LIC. NO. 41864

City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
CROSS SECTIONS
STA. 154+00 TO STA. 155+00

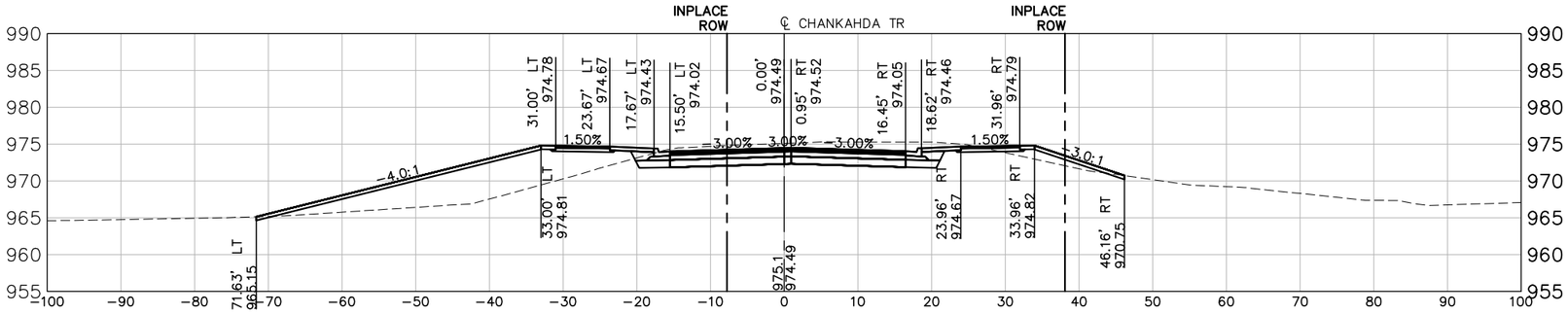
CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 297 / 348

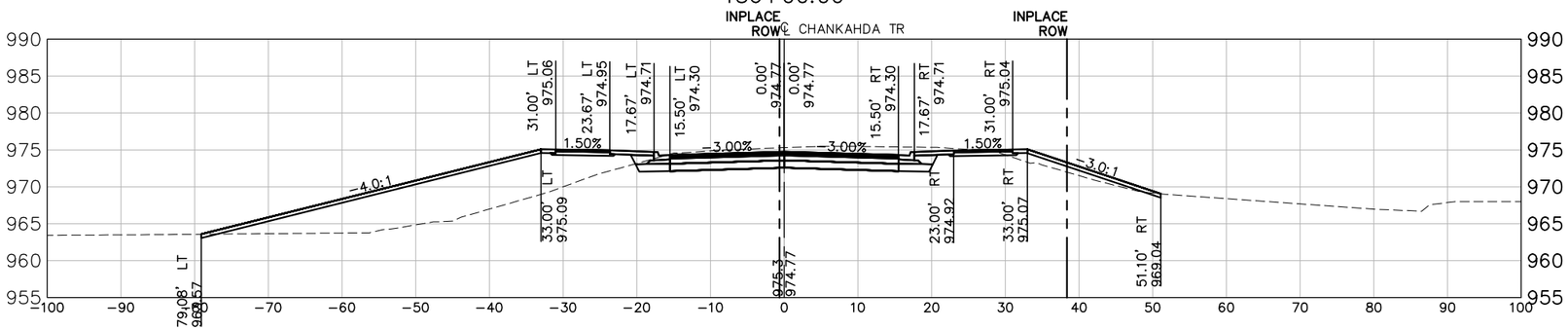
VERTICAL 0 5 10 20

HORIZONTAL SCALE IN FEET 0 5 10 20

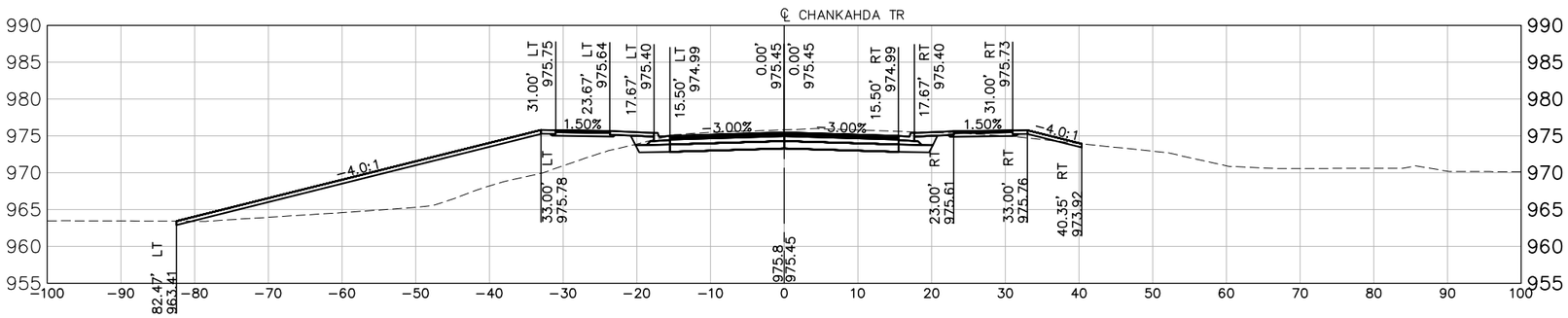
156+50.00



156+00.00



155+50.00



No.	Date	Revisions	App.

DRAWING NAME: CHANKAHDA_PH3_Sections.dwg

DESIGNED BY:	JWB
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DATE: 11/04/2024 MN LIC. NO. 41864

City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
CROSS SECTIONS
STA. 155+50 TO STA. 156+50

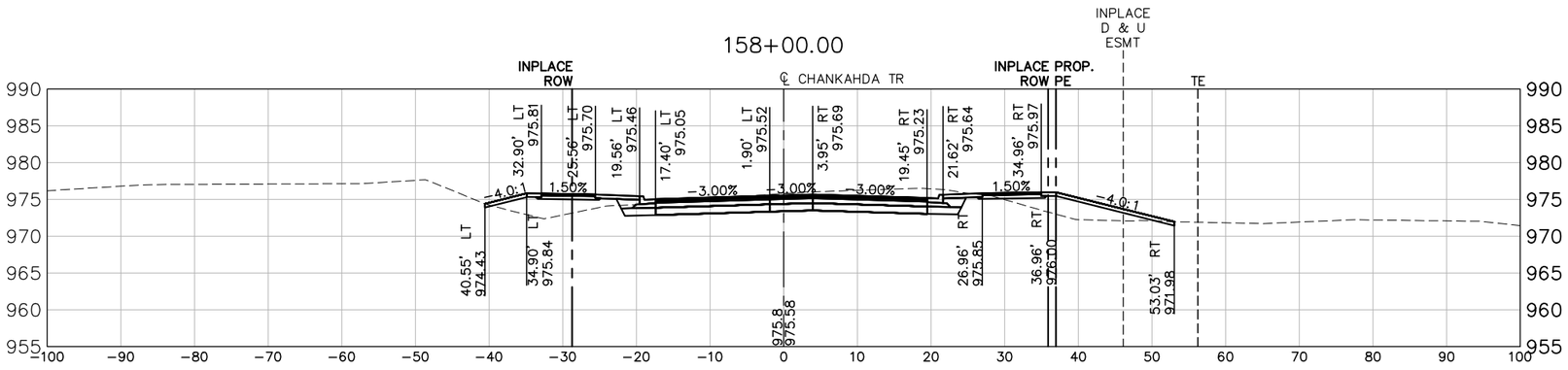
CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 298 / 348

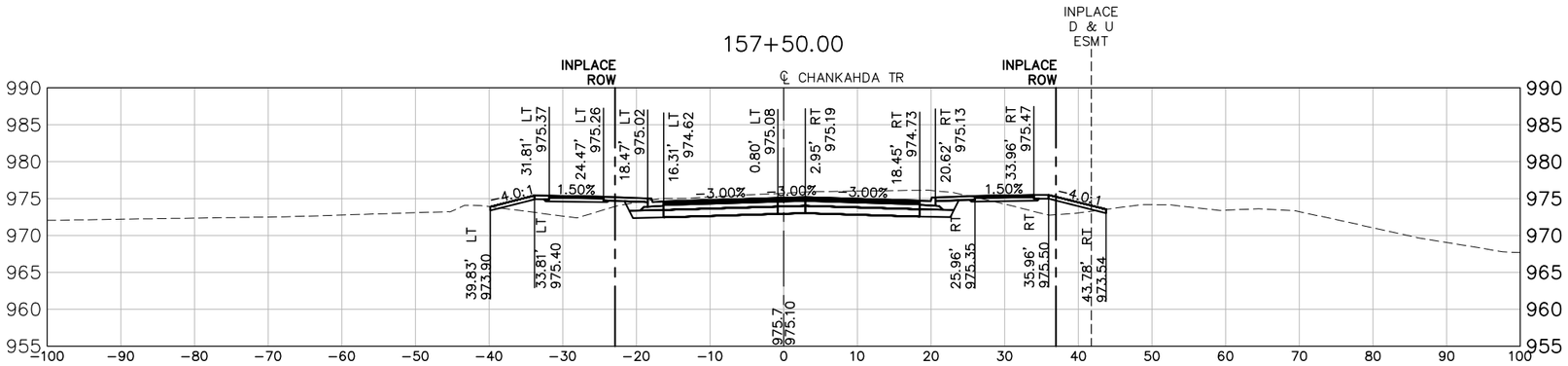
0 5 10 20 VERTICAL

0 5 10 20 HORIZONTAL SCALE IN FEET

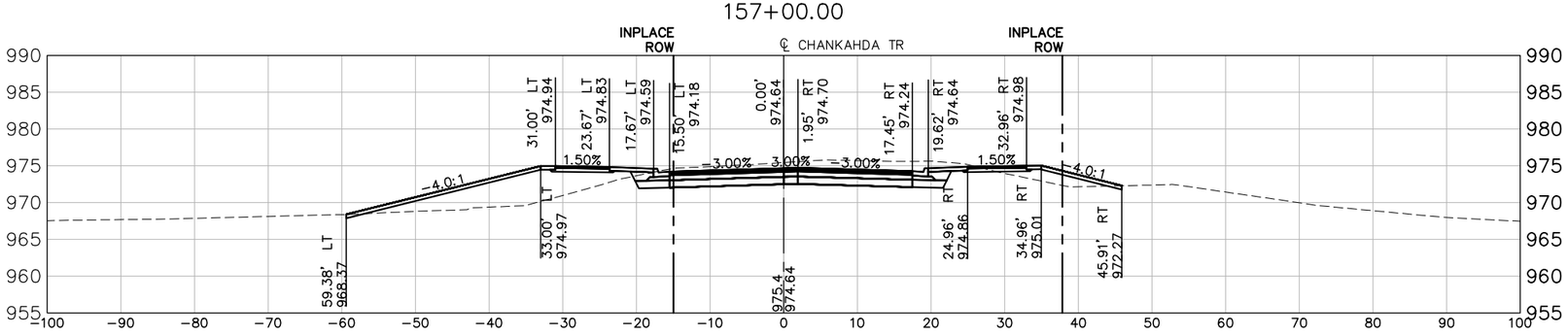
158+00.00



157+50.00



157+00.00



No.	Date	Revisions	App.

DRAWING NAME: CHANKAHDA_PH3_Sections.dwg
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City of Plymouth

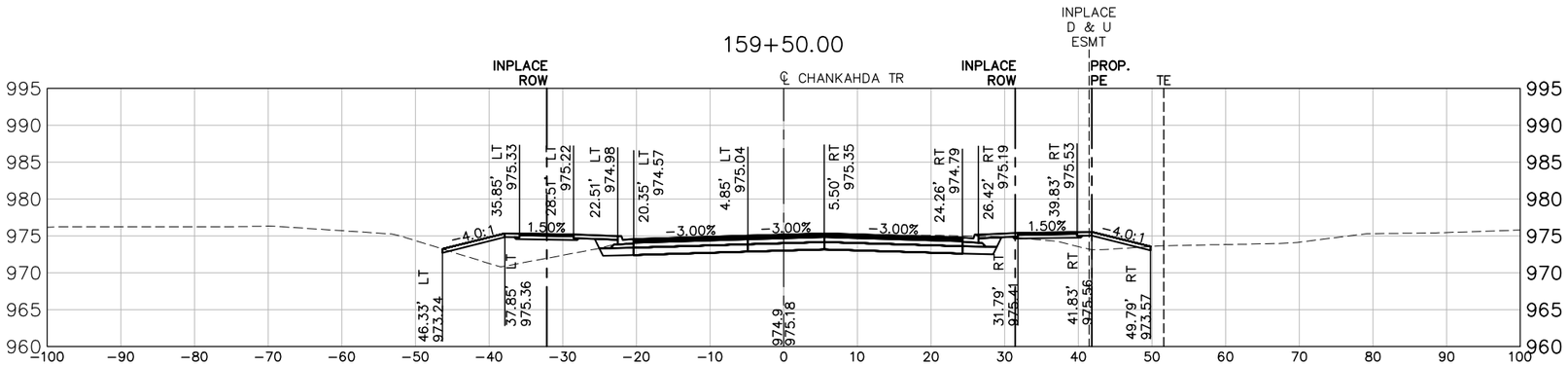
CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
CROSS SECTIONS
STA. 157+00 TO STA. 158+00

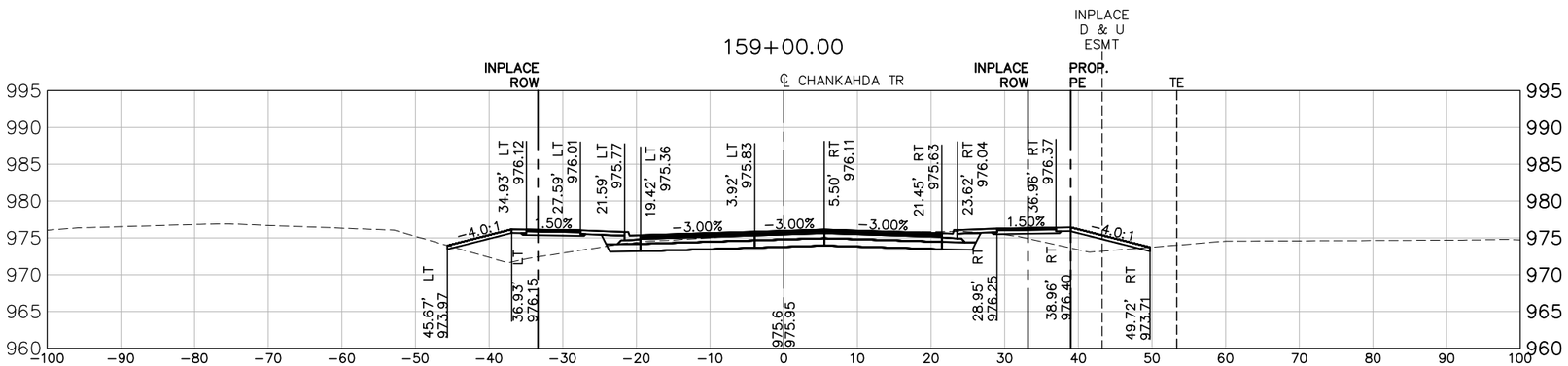
CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

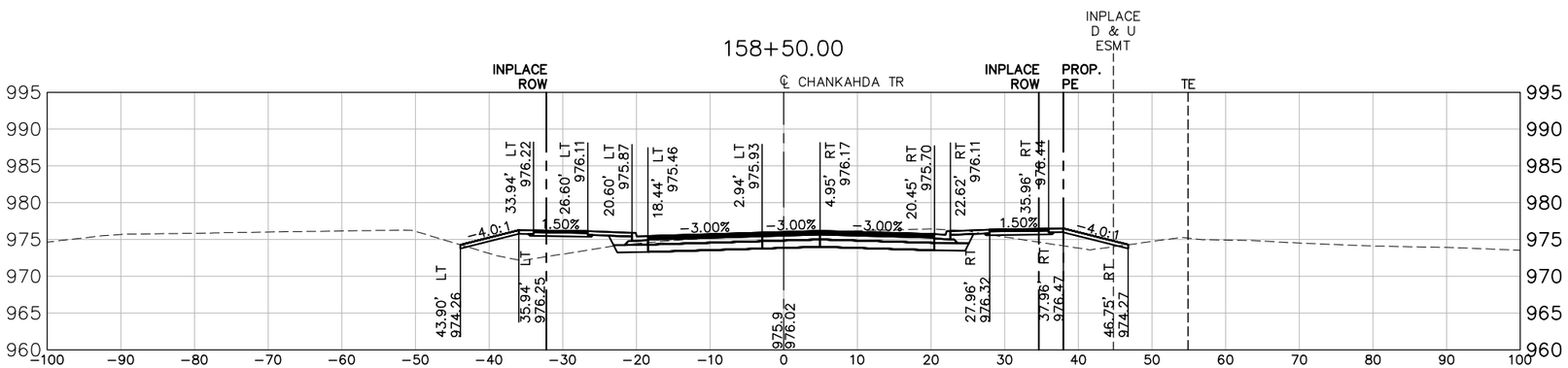
SHEET NO. 299 / 348

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:	11/04/2024
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DATE: 11/04/2024 MN LIC. NO. 41864

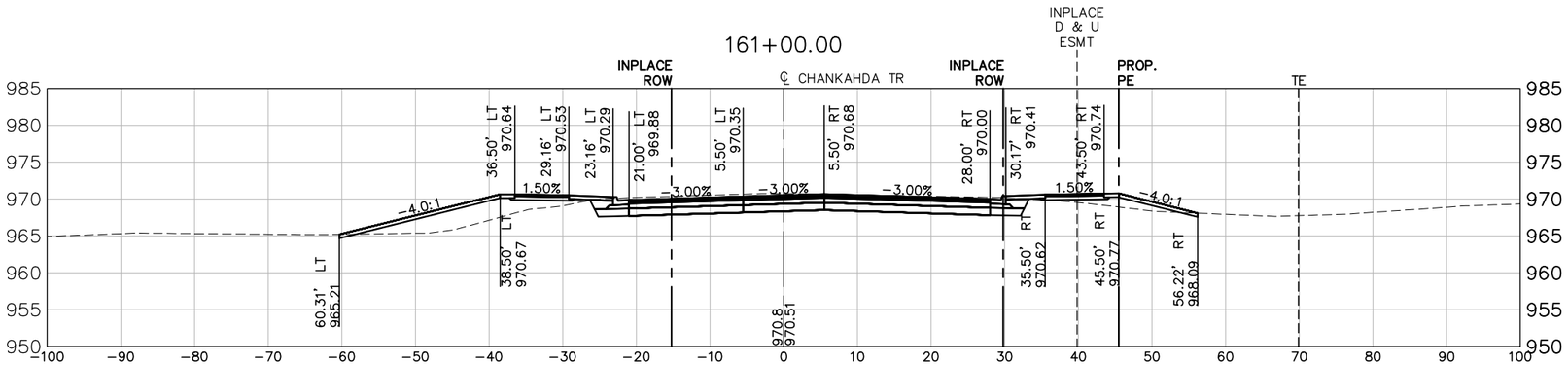
City of Plymouth

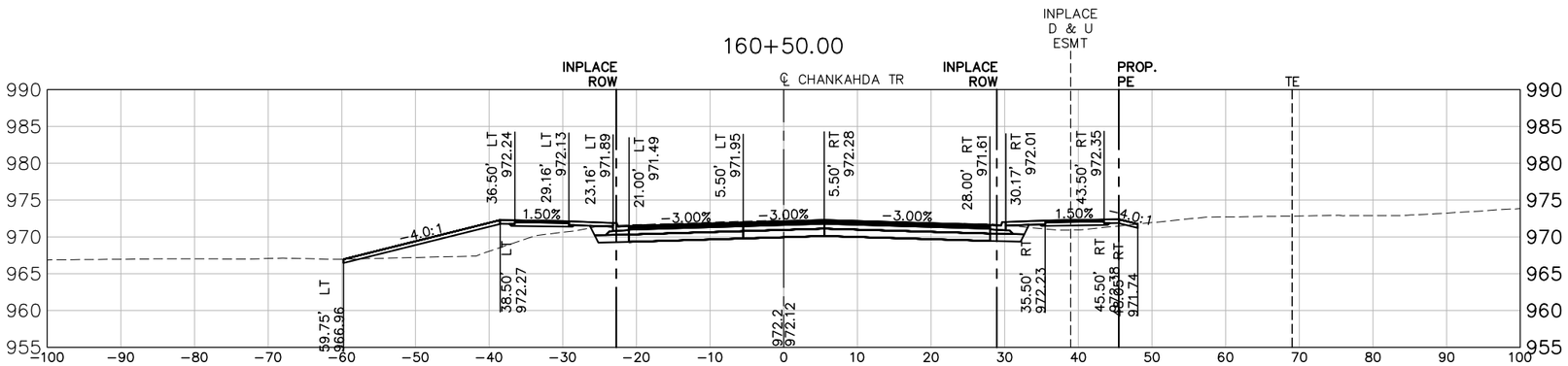
CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
CROSS SECTIONS
STA. 158+50 TO STA. 159+50

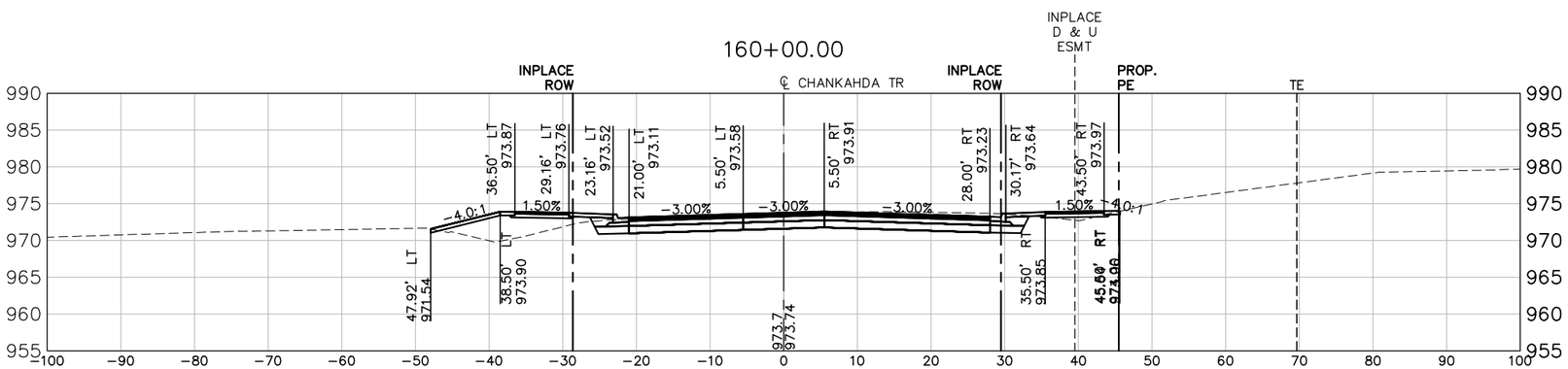
CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 300 / 348

VERTICAL 0 5 10 20 — HORIZONTAL SCALE IN FEET 0 5 10 20







No.	Date	Revisions	App.

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City of Plymouth

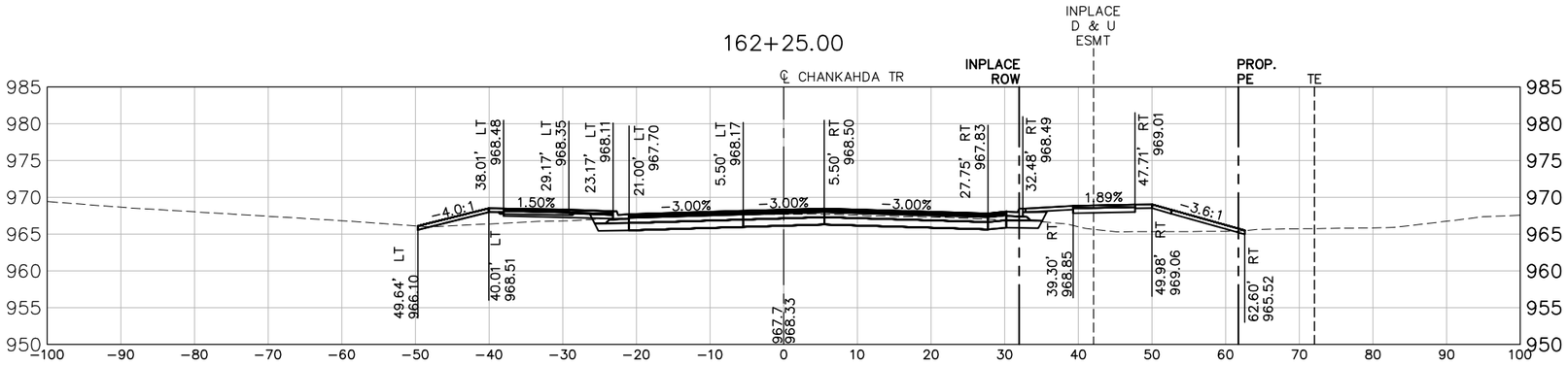
CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
CROSS SECTIONS
STA. 160+00 TO STA. 161+00

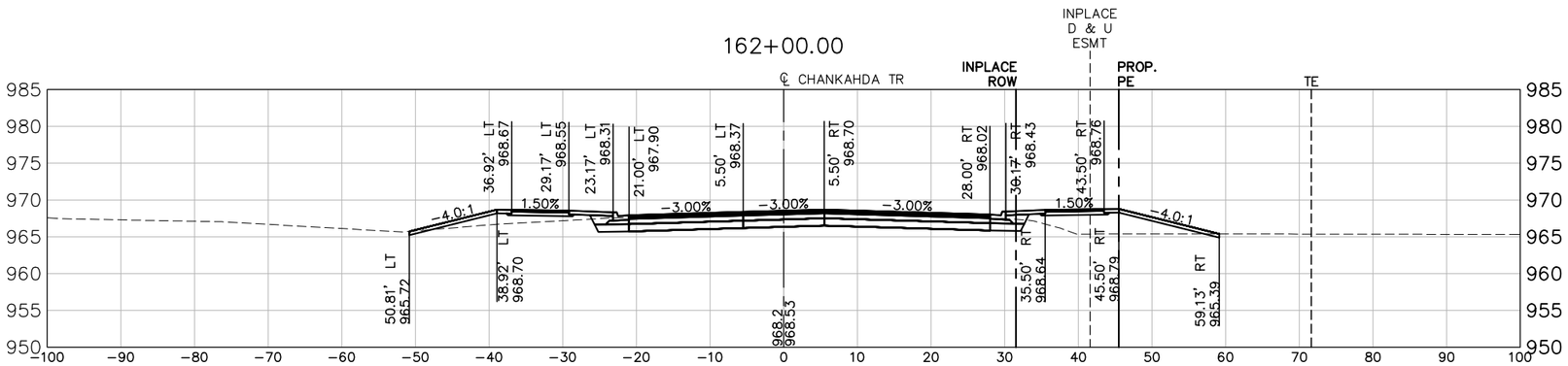
CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

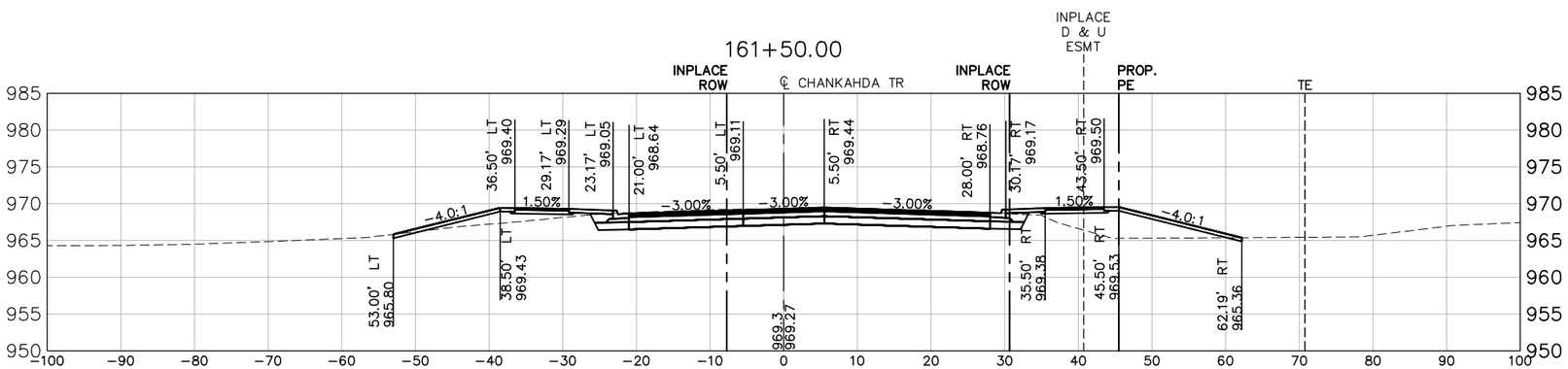
SHEET NO. 301 / 348

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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City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
CROSS SECTIONS
STA. 161+50 TO STA. 162+25

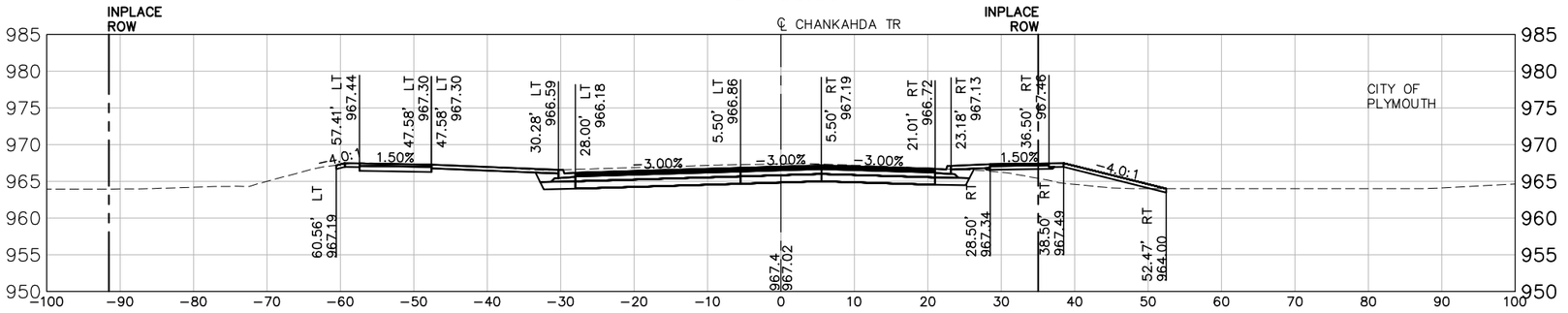
CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 302 / 348

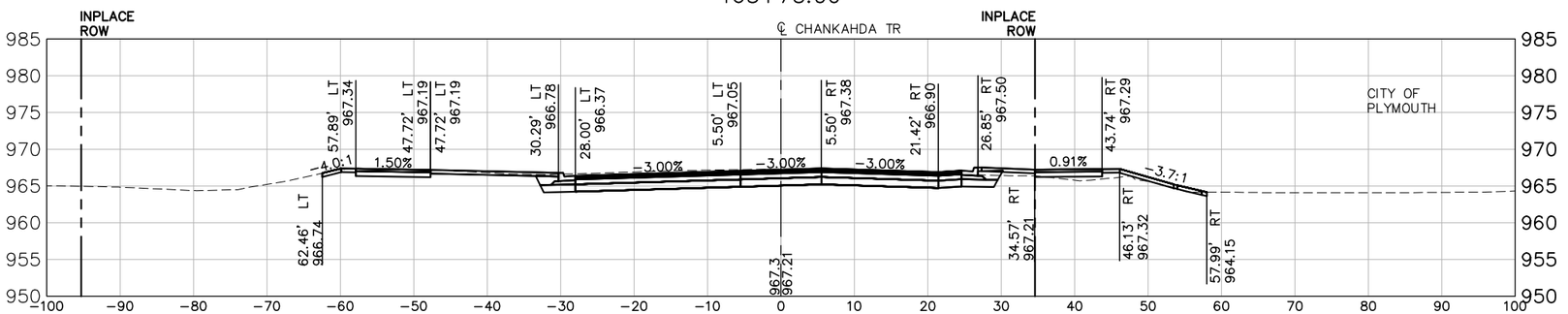
0 5 10 20 VERTICAL

0 5 10 20 HORIZONTAL SCALE IN FEET

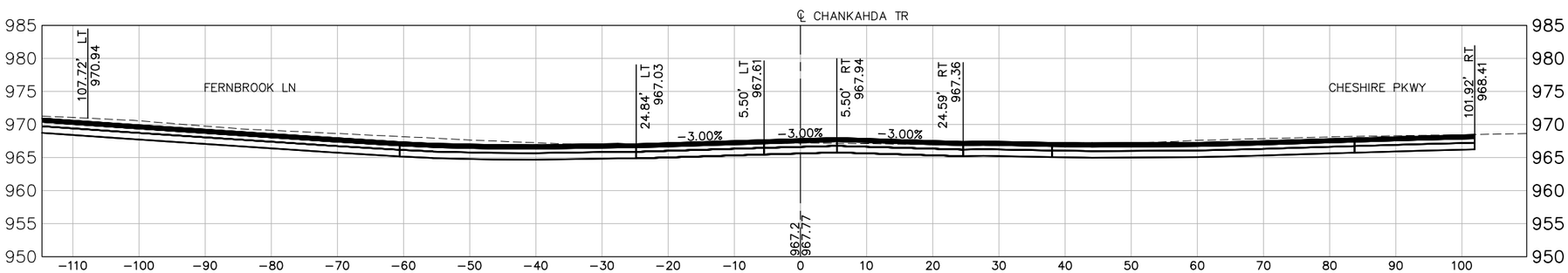
164+00.00



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:	11/04/2024
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: 11/04/2024 MN LIC. NO. 41864

City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
CROSS SECTIONS
STA. 163+00 TO STA. 164+00

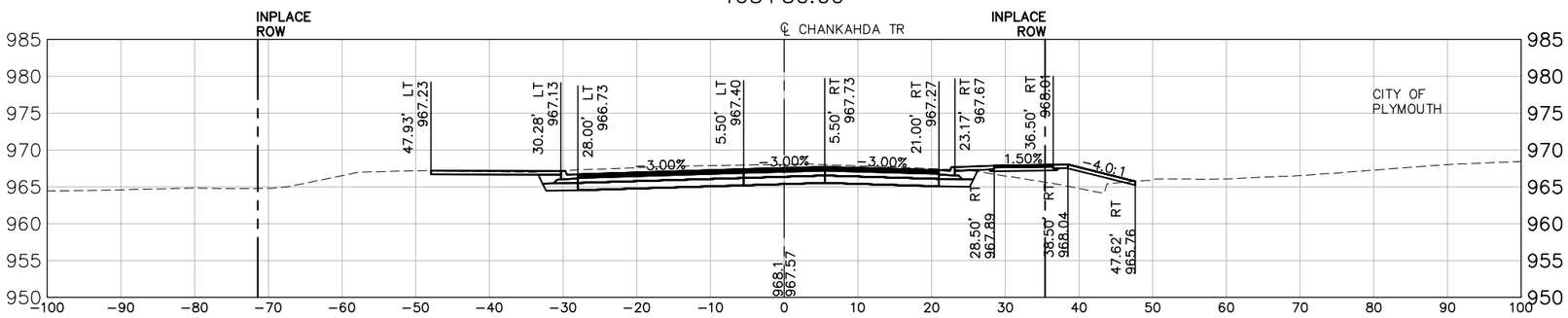
CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 303 / 348

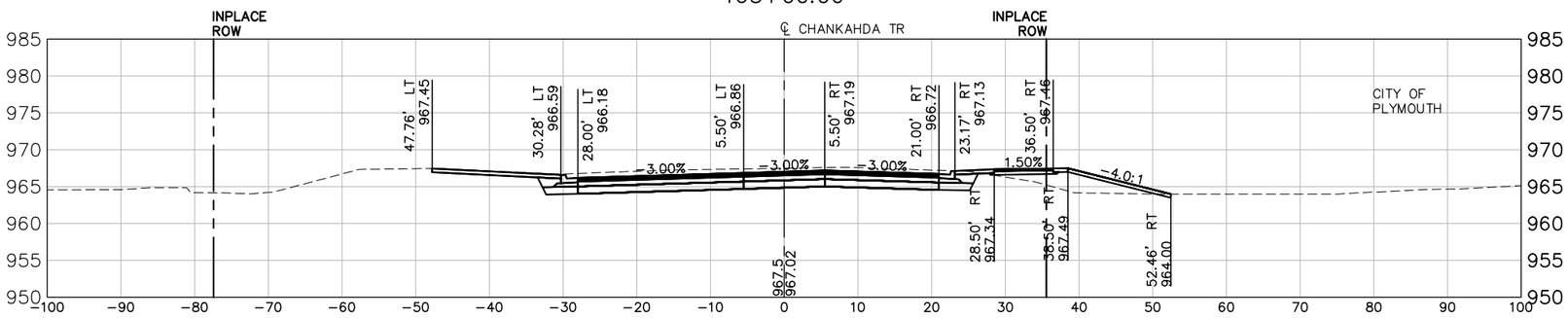
0 5 10 20 VERTICAL

0 5 10 20 HORIZONTAL SCALE IN FEET

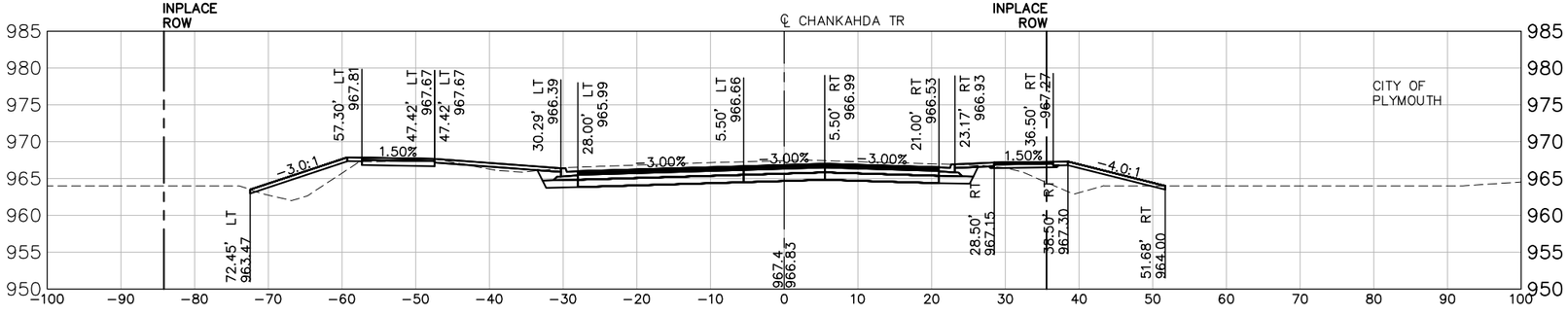
165+50.00



165+00.00



164+50.00



No.	Date	Revisions	App.

DRAWING NAME	CHANKAHDA_PH3_Sections.dwg
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City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
CROSS SECTIONS
STA. 164+50 TO STA. 165+50

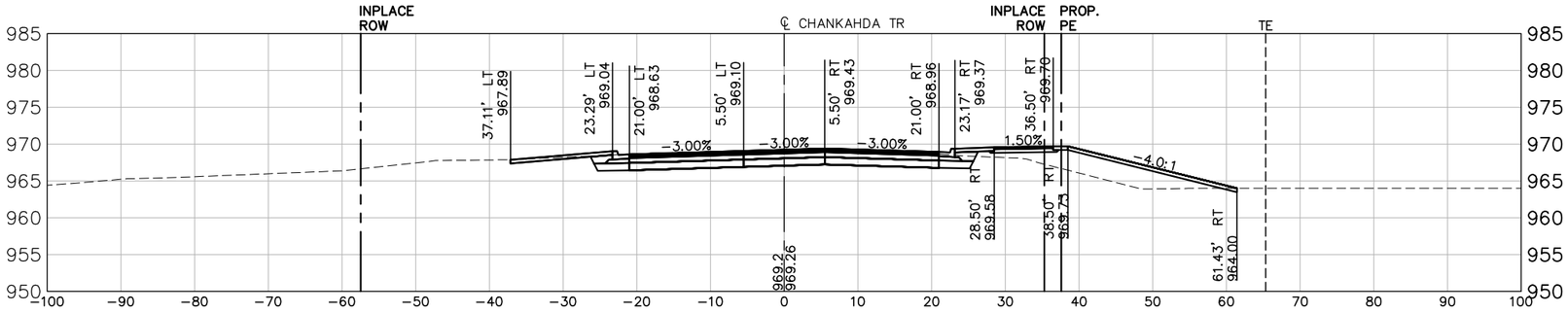
CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 304 / 348

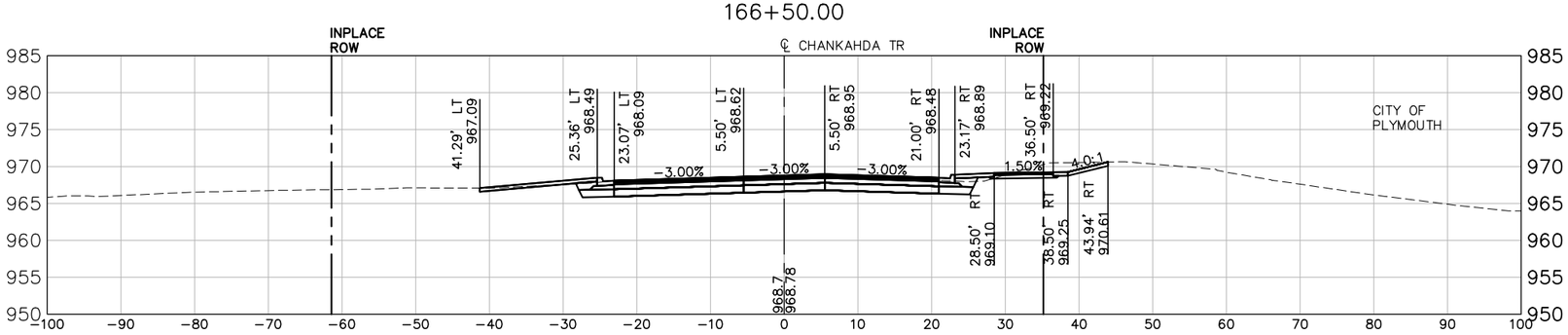
0 5 10 20 VERTICAL

0 5 10 20 HORIZONTAL SCALE IN FEET

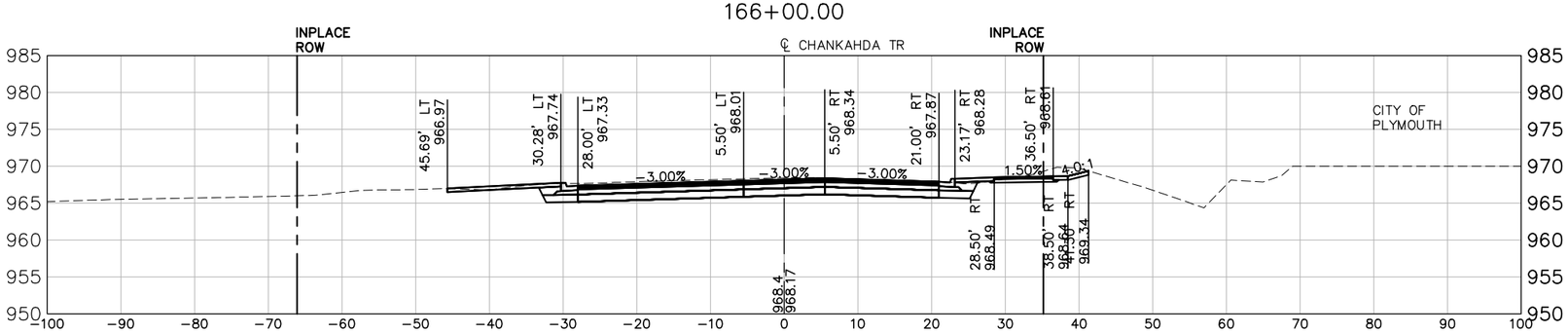
167+00.00



166+50.00



166+00.00



No.	Date	Revisions	App.

DRAWING NAME: CHANKAHDA_PH3_Sections.dwg

DESIGNED BY:	JWB
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DATE: 11/04/2024 MN LIC. NO. 41864

City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
CROSS SECTIONS
STA. 166+00 TO STA. 167+00

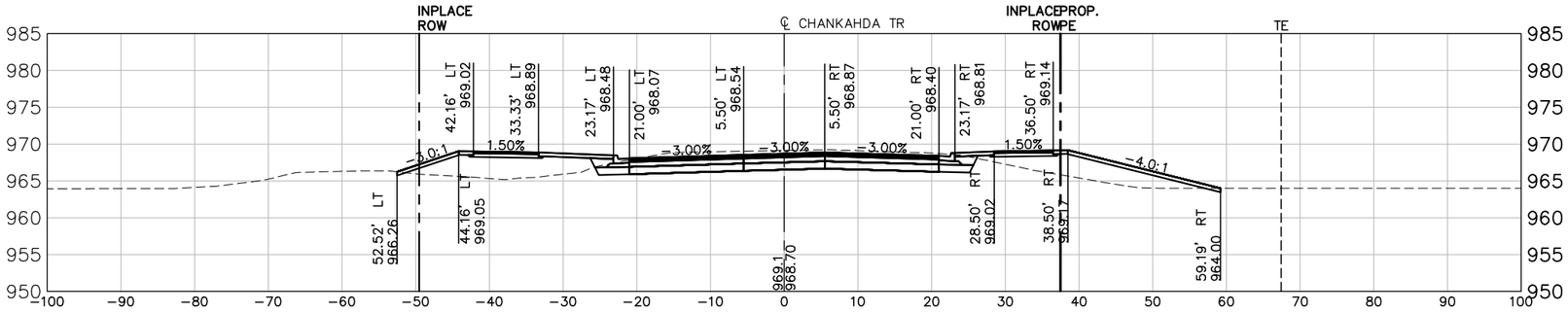
CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 305 / 348

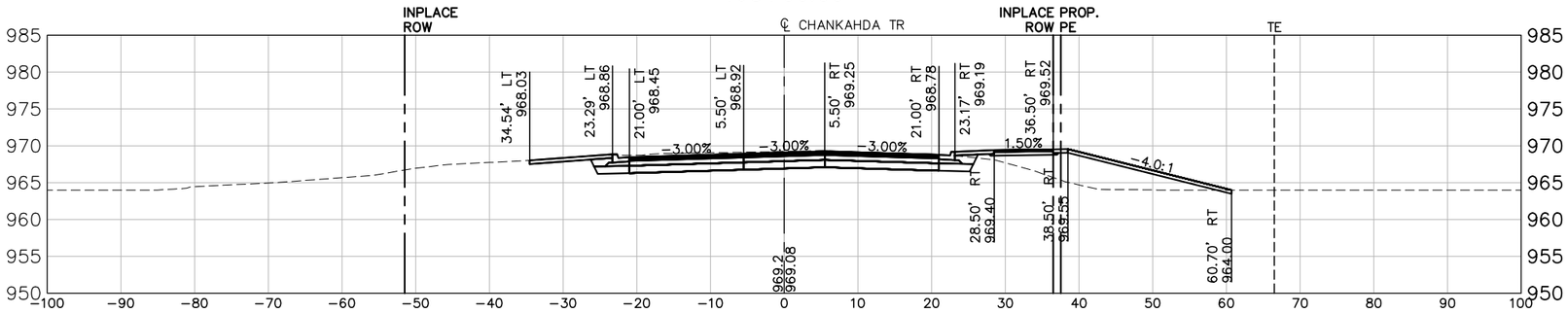
0 5 10 20 VERTICAL

0 5 10 20 HORIZONTAL SCALE IN FEET

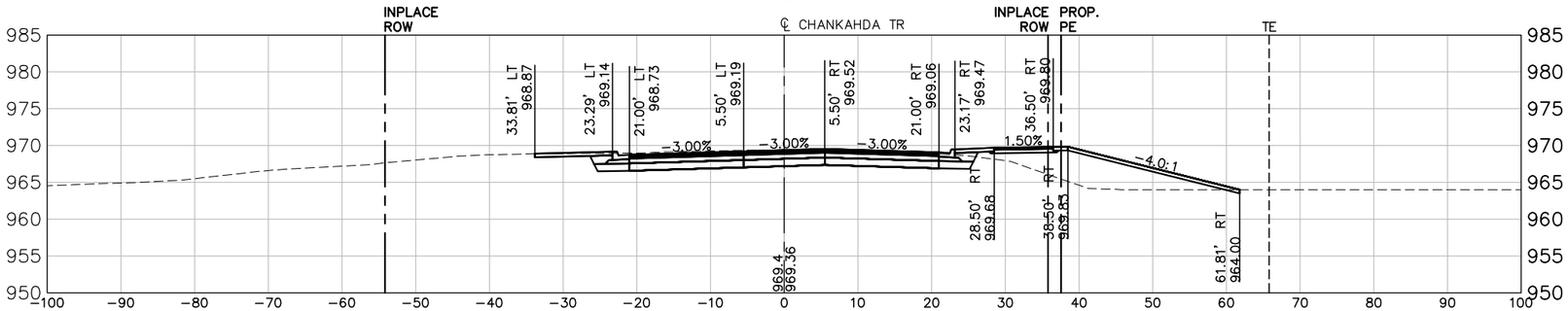
168+50.00



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

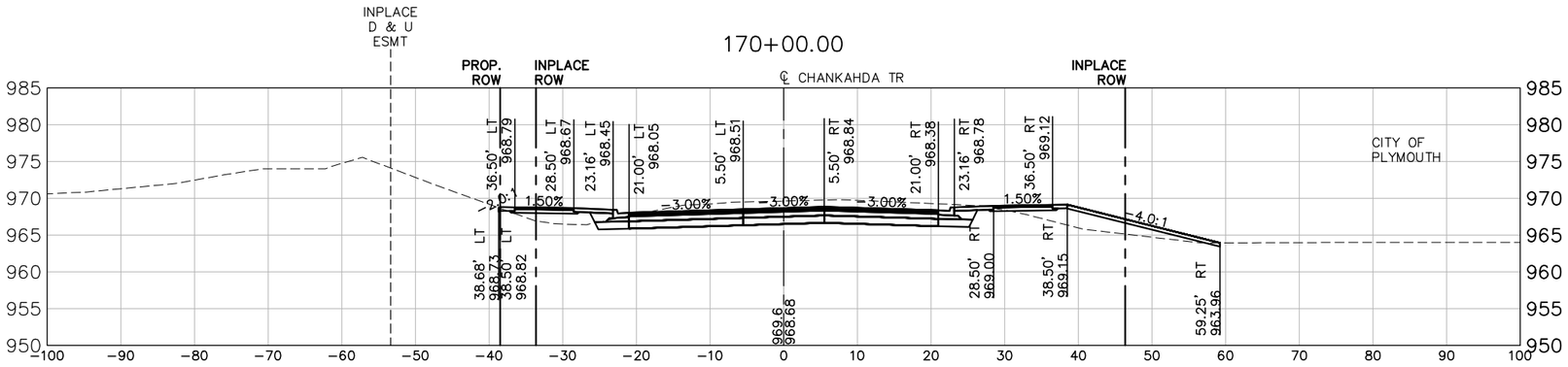
CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 306 / 348

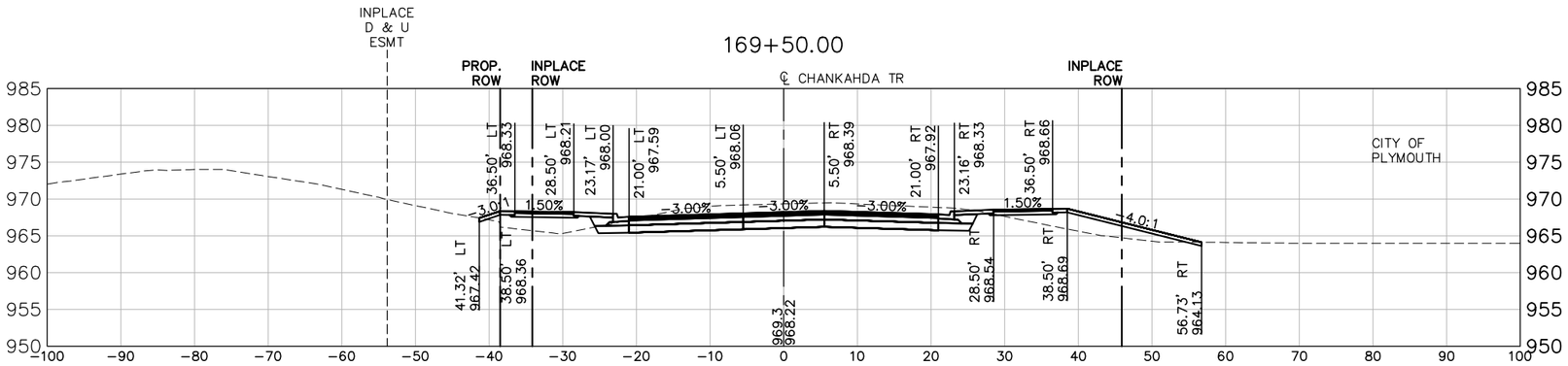
VERTICAL 0 5 10 20

HORIZONTAL SCALE IN FEET 0 5 10 20

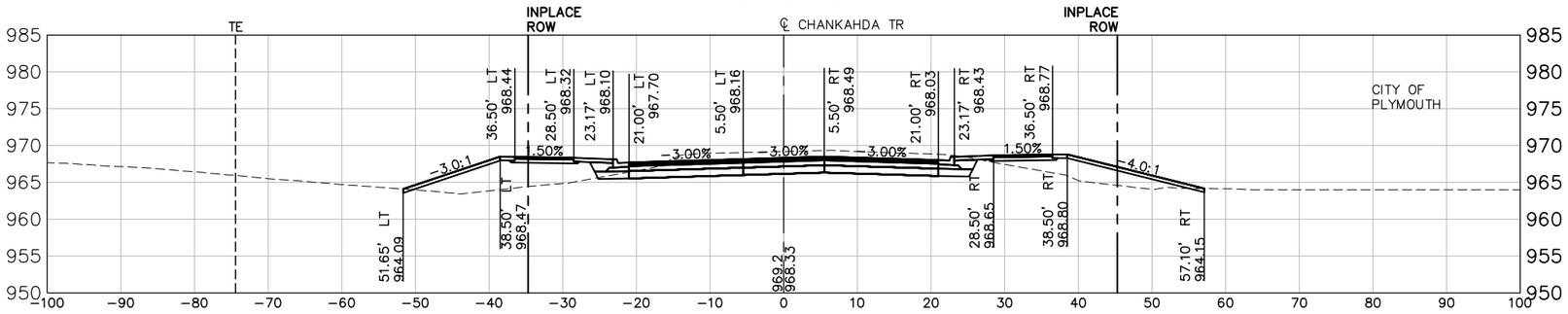
170+00.00



169+50.00



169+00.00



No.	Date	Revisions	App.

DRAWING NAME: CHANKAHDA_PH3_Sections.dwg

DESIGNED BY:	JWB
DRAWN BY:	JWB
CHECKED BY:	CBL
DATE:	11/04/2024
PROJECT NO.	160662010

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CHADD B. LARSON, PE

DATE: 11/04/2024 MN LIC. NO. 41864

City of Plymouth

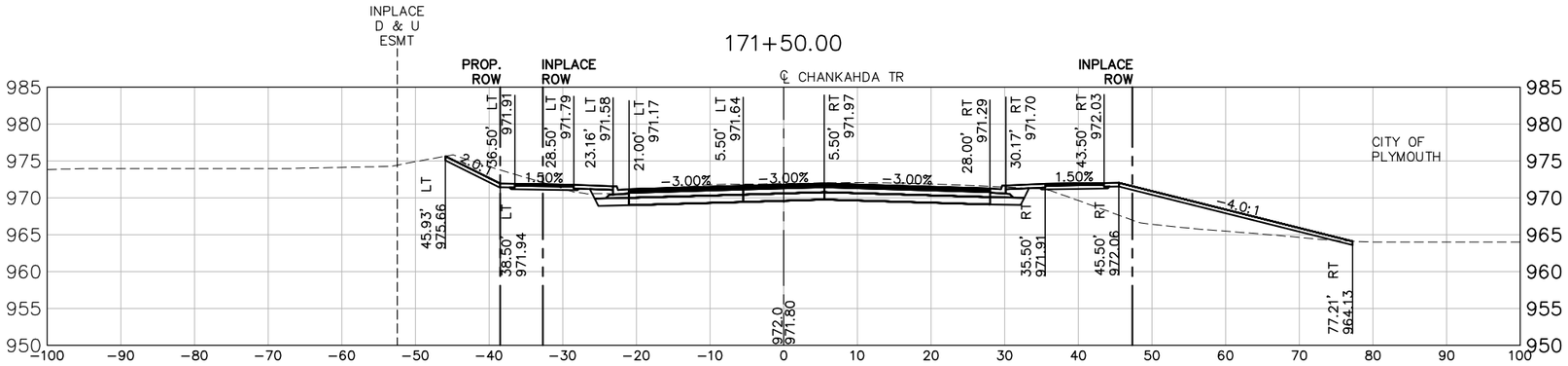
CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
CROSS SECTIONS
STA. 169+00 TO STA. 170+00

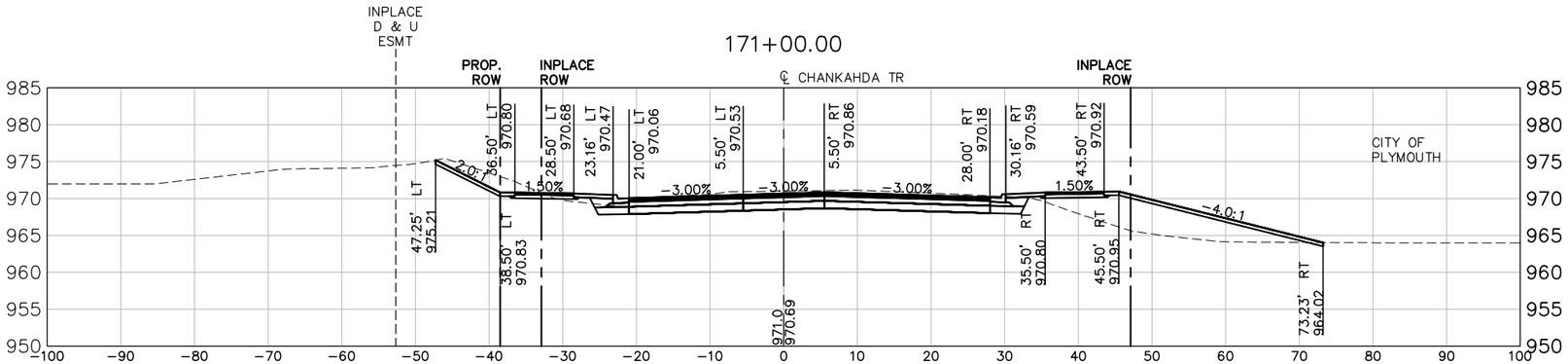
CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

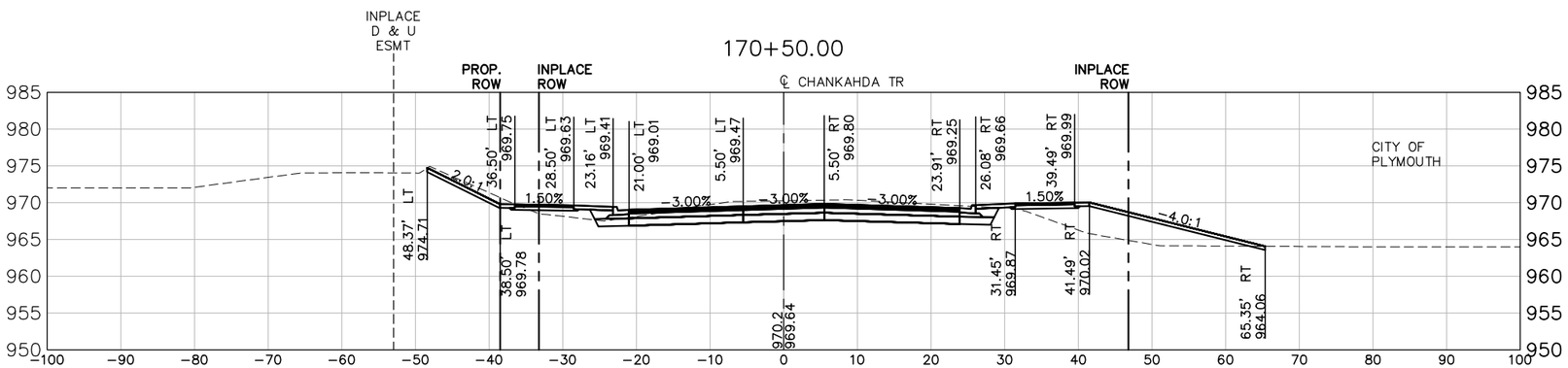
SHEET NO. 307 / 348

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:	11/04/2024
PROJECT NO.	160662010

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CHADD B. LARSON, PE

DATE: 11/04/2024 MN LIC. NO. 41864

City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
CROSS SECTIONS
STA. 170+50 TO STA. 171+50

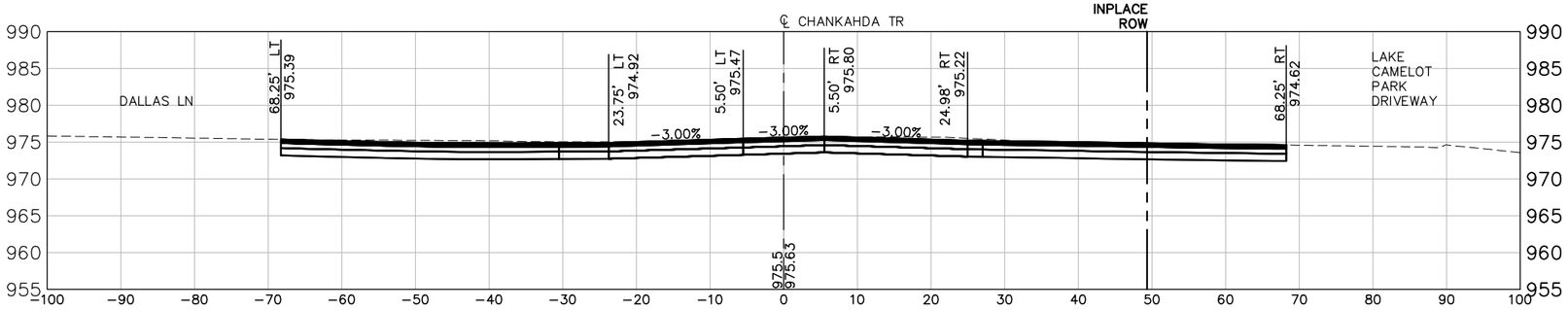
CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 308 / 348

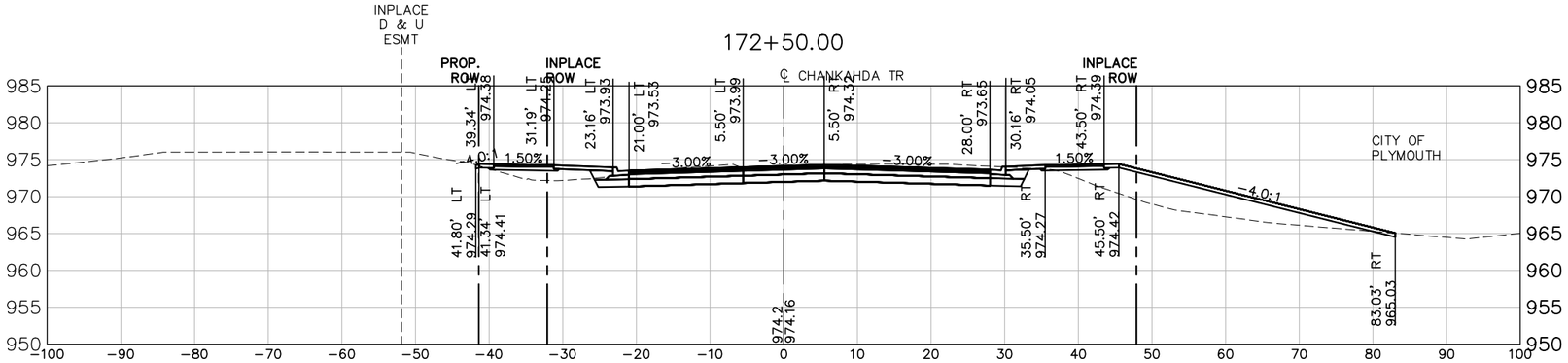
VERTICAL 0 5 10 20

HORIZONTAL SCALE IN FEET 0 5 10 20

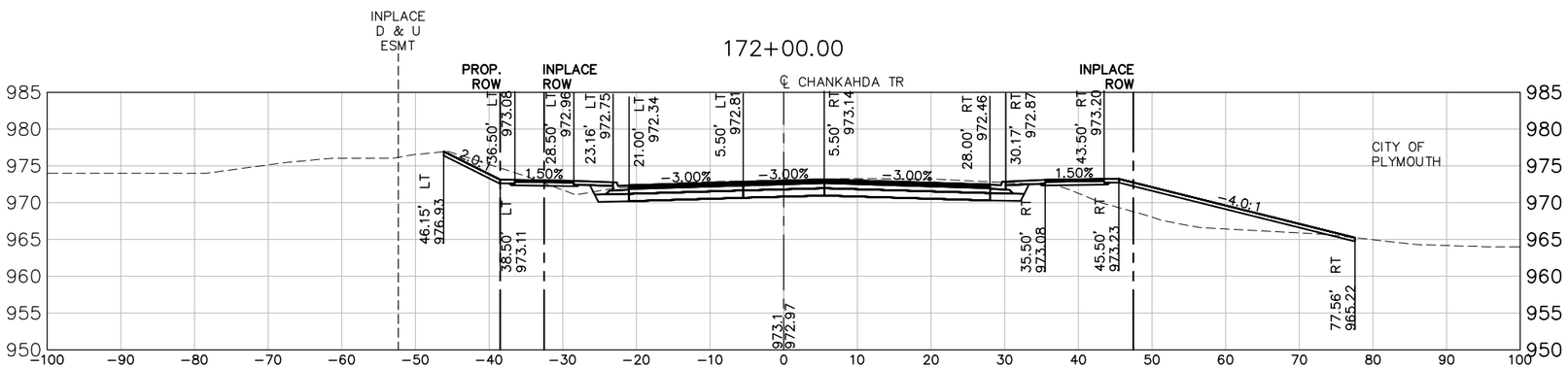
173+15.00



172+50.00



172+00.00



No.	Date	Revisions	App.

DRAWING NAME	CHANKAHDA_PH3_Sections.dwg
DESIGNED BY:	JWB
DRAWN BY:	JWB
CHECKED BY:	CBL
DATE:	11/04/2024
PROJECT NO.	160662010

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CHADD B. LARSON, PE

DATE: 11/04/2024 MN LIC. NO. 41864

City of Plymouth

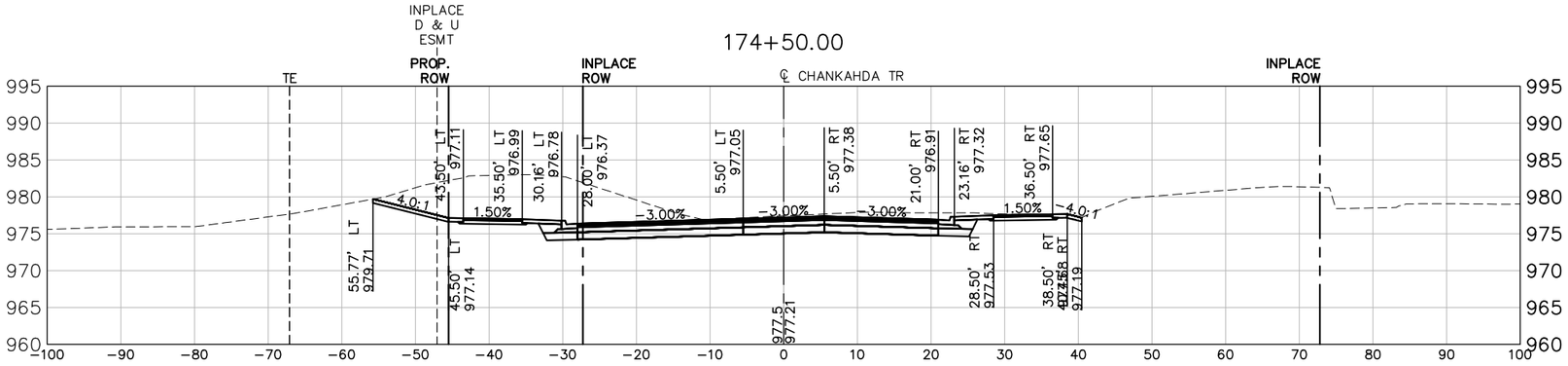
CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
CROSS SECTIONS
STA. 172+00 TO STA. 173+15

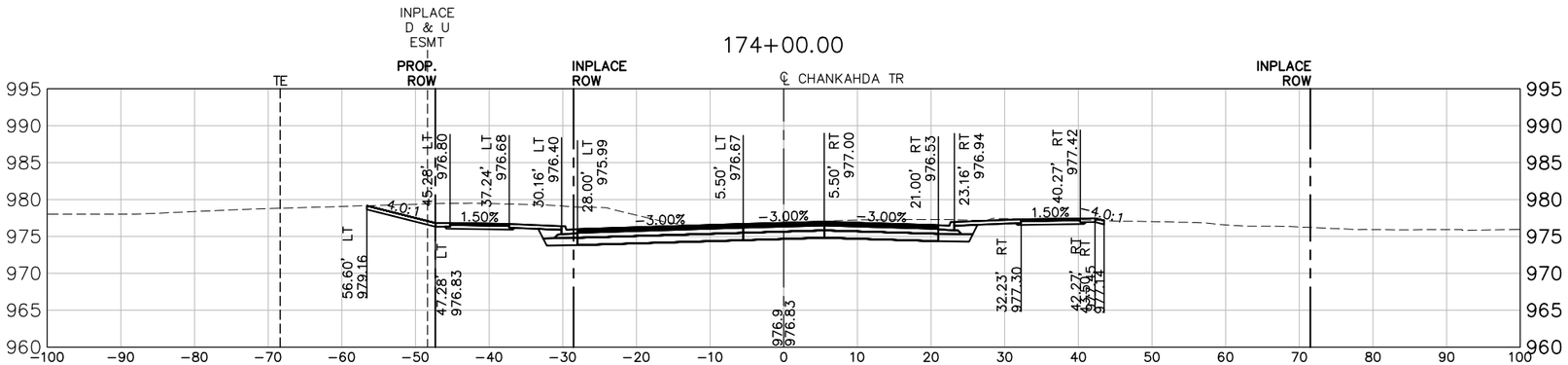
CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

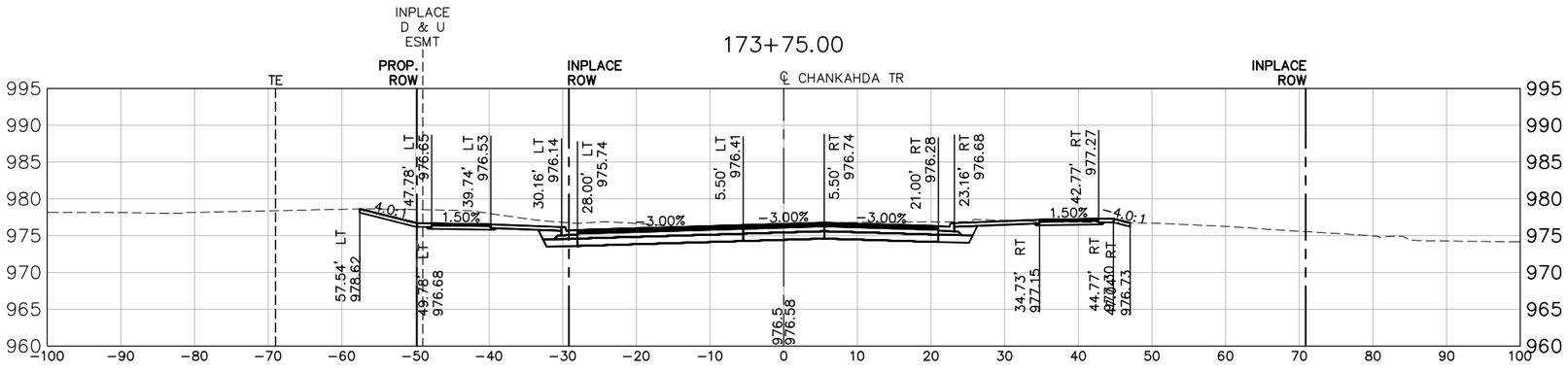
SHEET NO. 309 / 348

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:	11/04/2024
PROJECT NO.	160662010

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CHADD B. LARSON, PE

DATE: 11/04/2024 MN LIC. NO. 41864

City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
CROSS SECTIONS
STA. 173+75 TO STA. 174+50

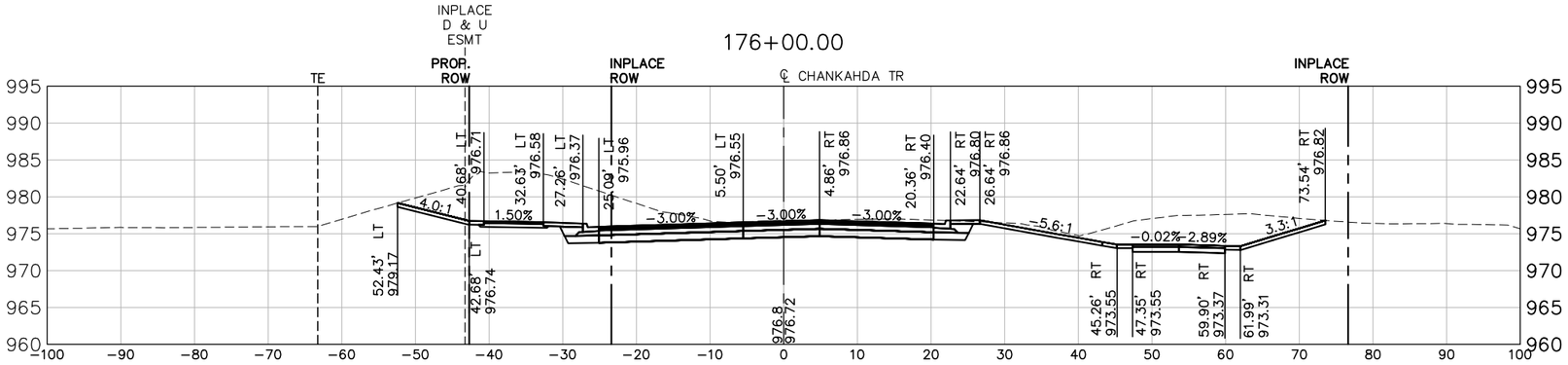
CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 310 / 348

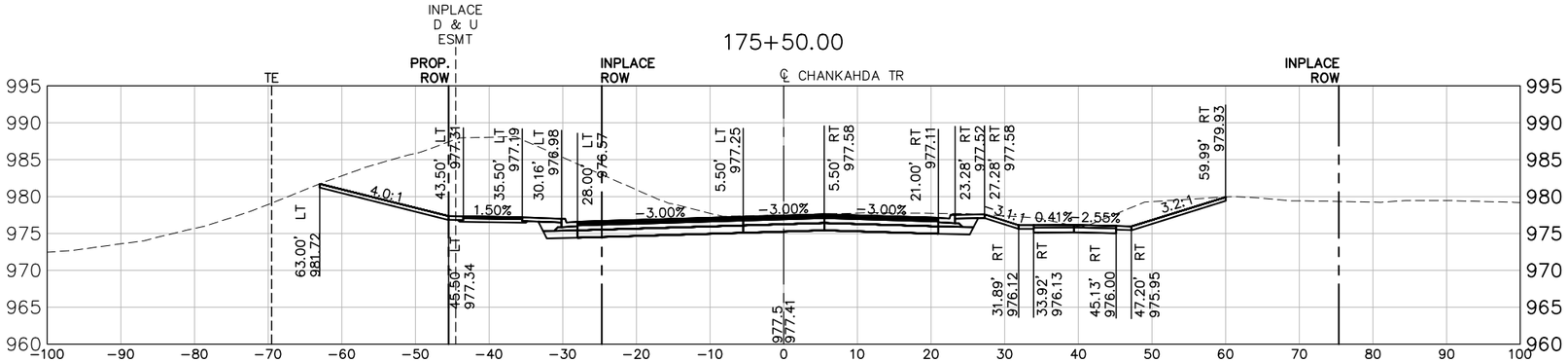
0 5 10 20 VERTICAL

0 5 10 20 HORIZONTAL SCALE IN FEET

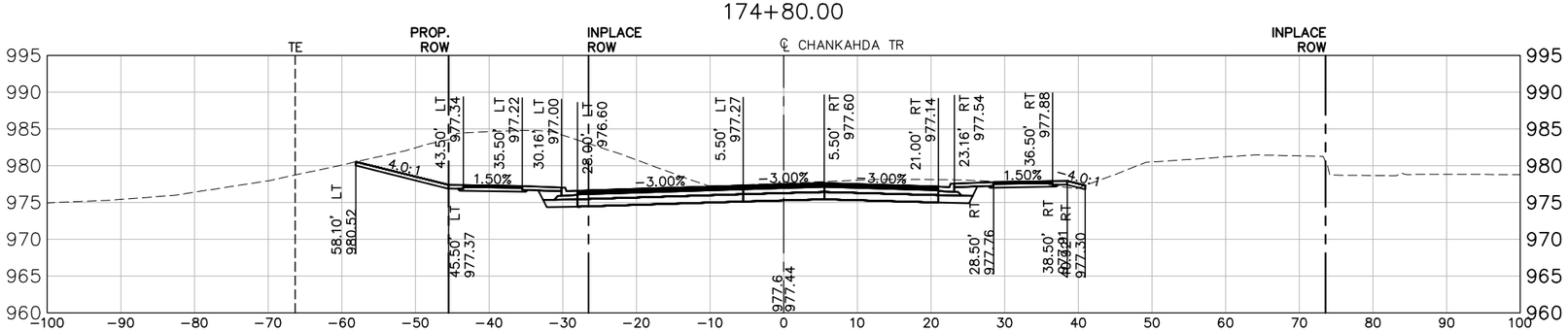
176+00.00



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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DATE:	11/04/2024
PROJECT NO.	160662010

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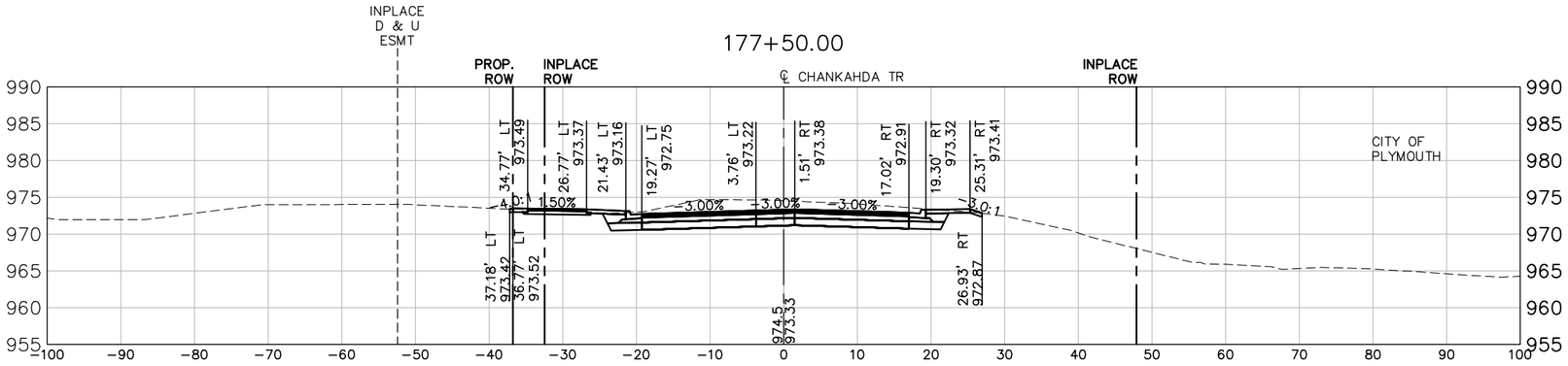
CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
CROSS SECTIONS
STA. 175+00 TO STA. 176+00

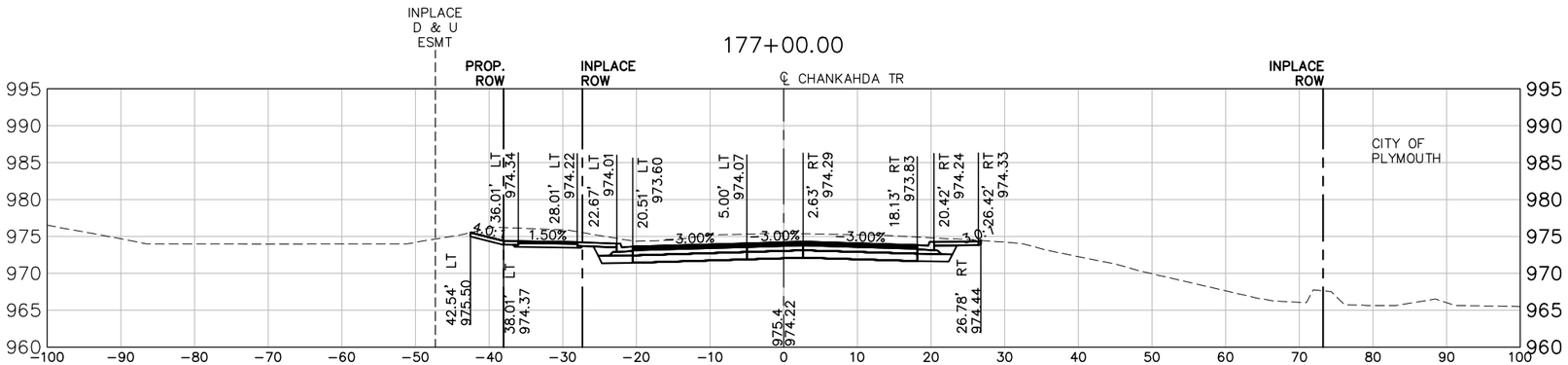
CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

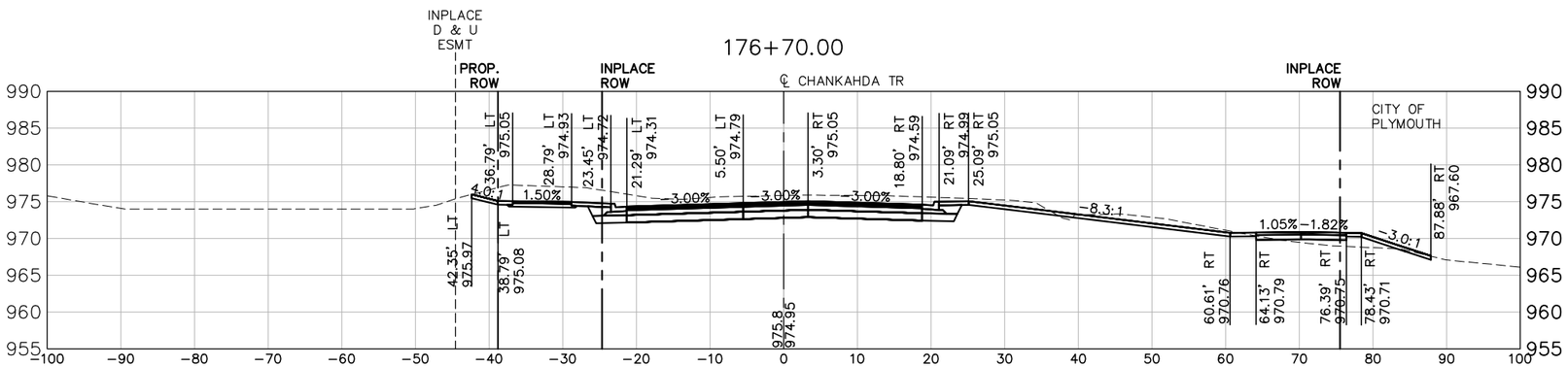
SHEET NO. 311 / 348

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:	11/04/2024
PROJECT NO.	160662010

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City of Plymouth

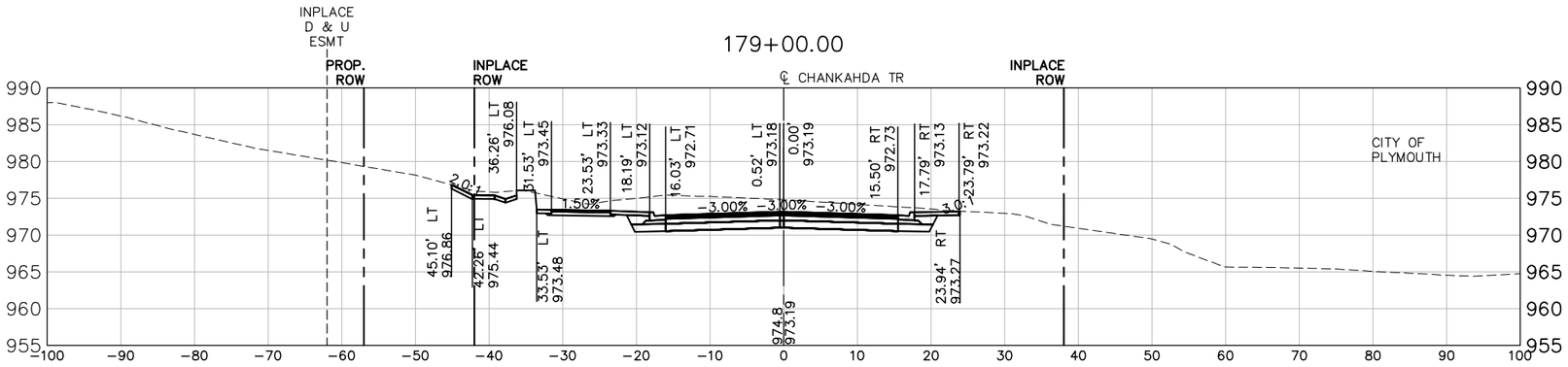
CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
CROSS SECTIONS
STA. 176+50 TO STA. 177+50

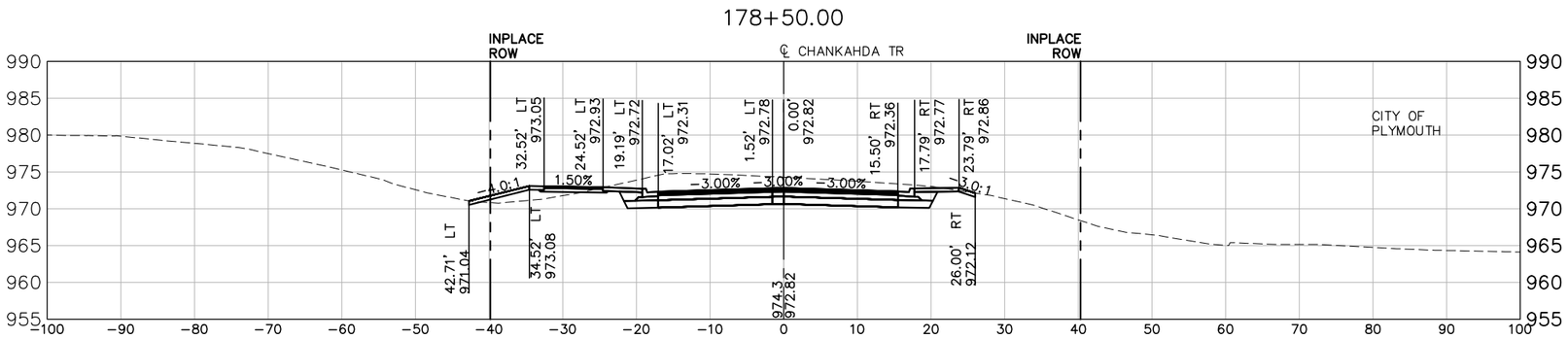
CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

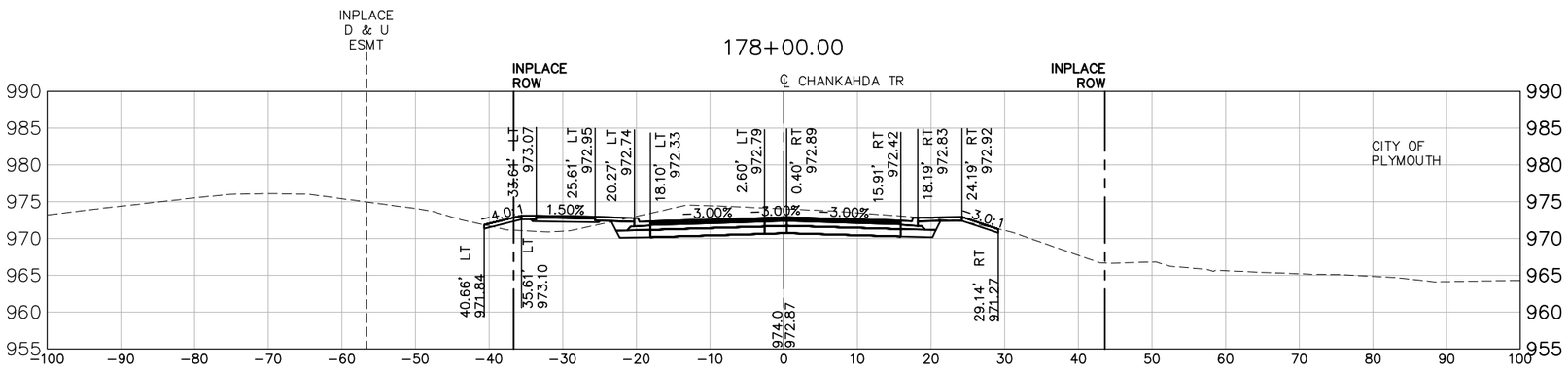
SHEET NO. 312 / 348

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:	11/04/2024
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: 11/04/2024 MN LIC. NO. 41864

City of Plymouth

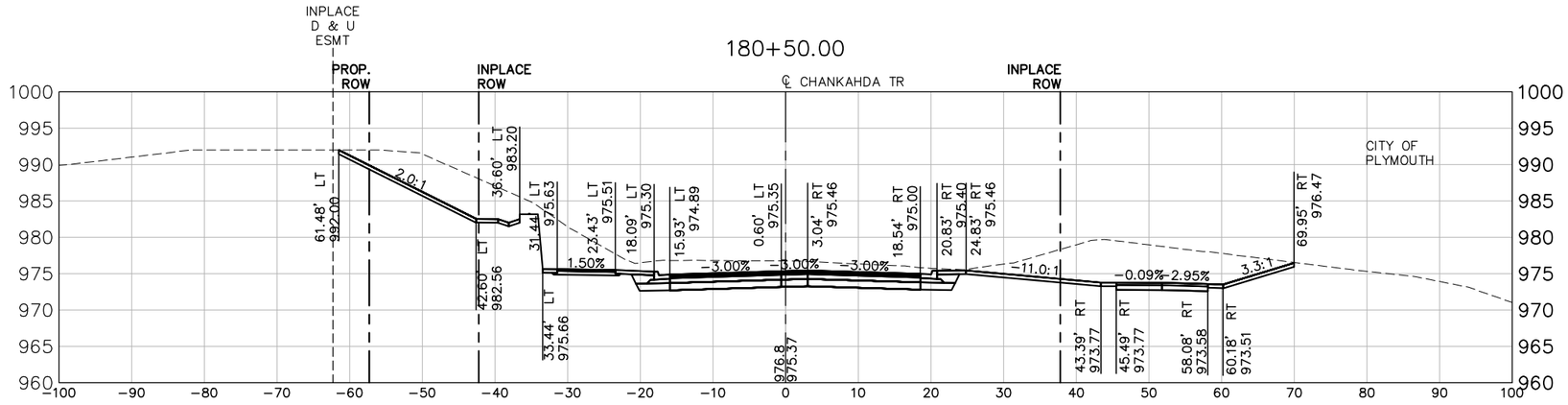
CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
CROSS SECTIONS
STA. 178+00 TO STA. 179+00

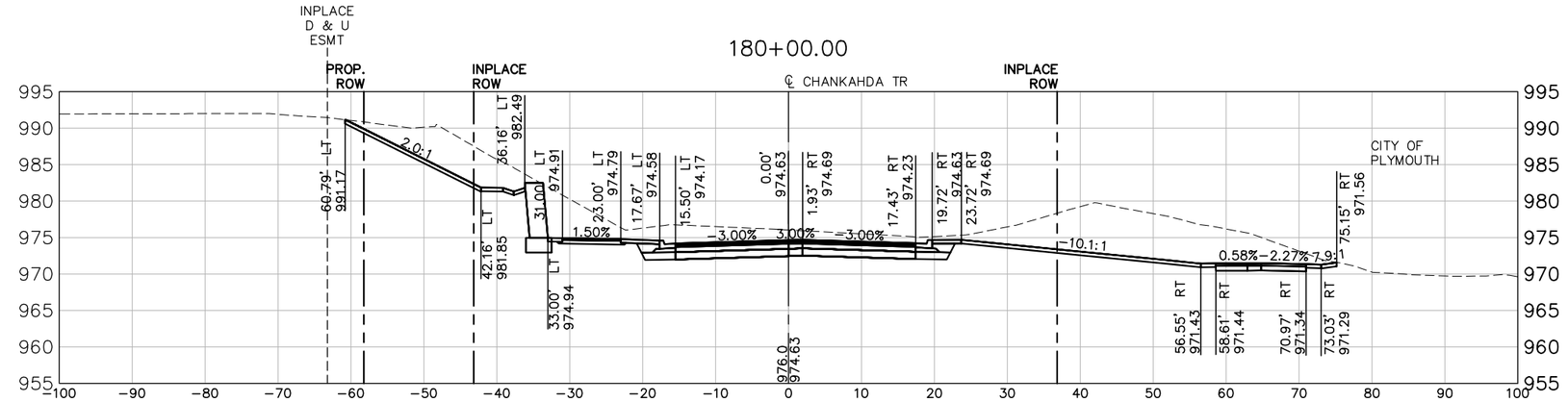
CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

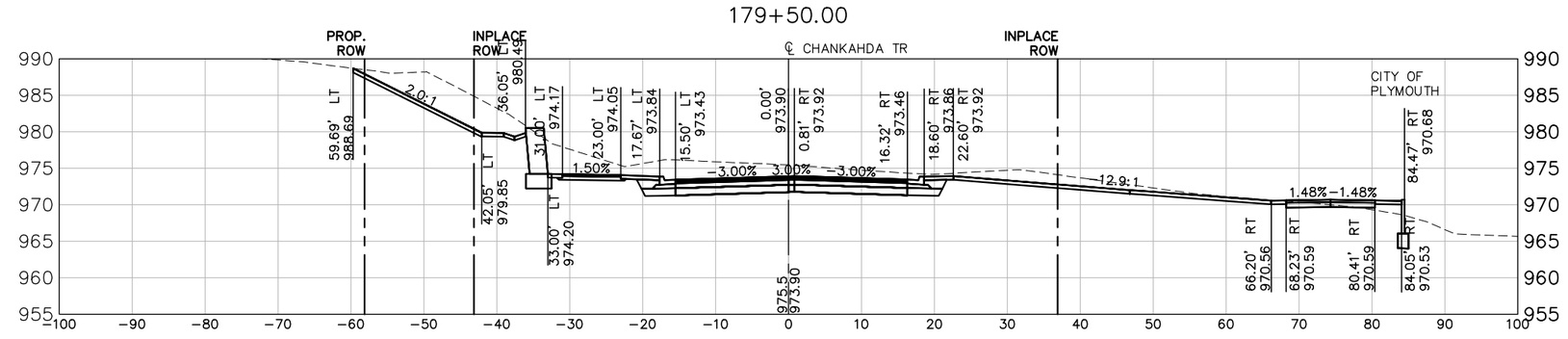
SHEET NO. 313 / 348

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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City of Plymouth

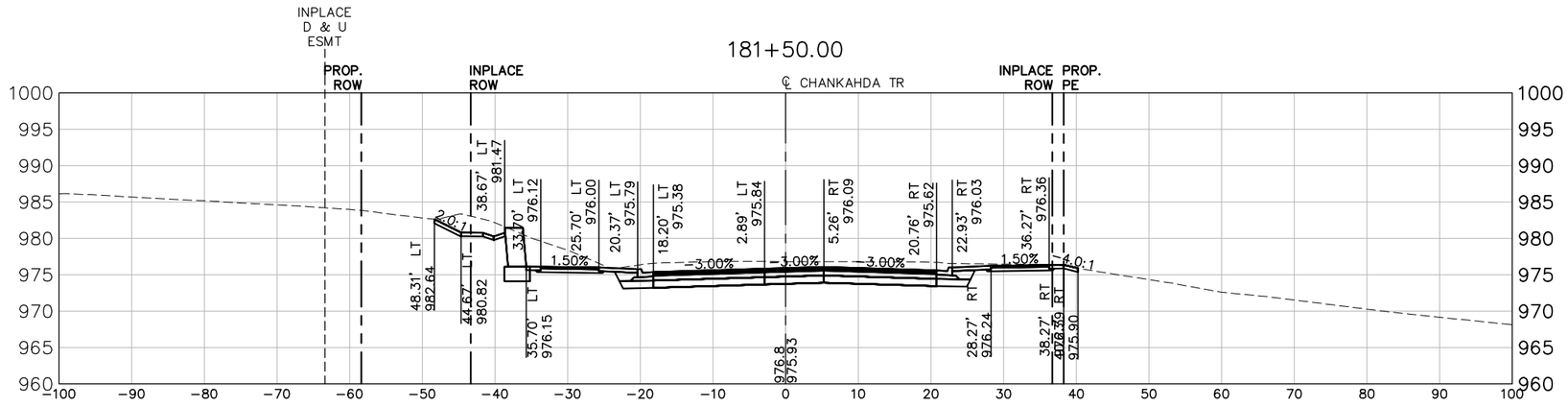
CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
CROSS SECTIONS
STA. 179+50 TO STA. 180+50

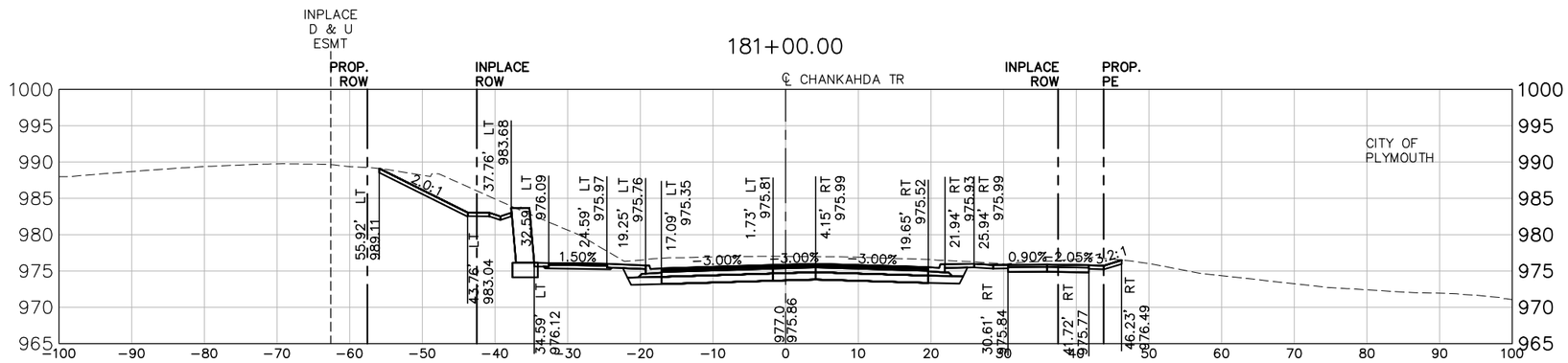
CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

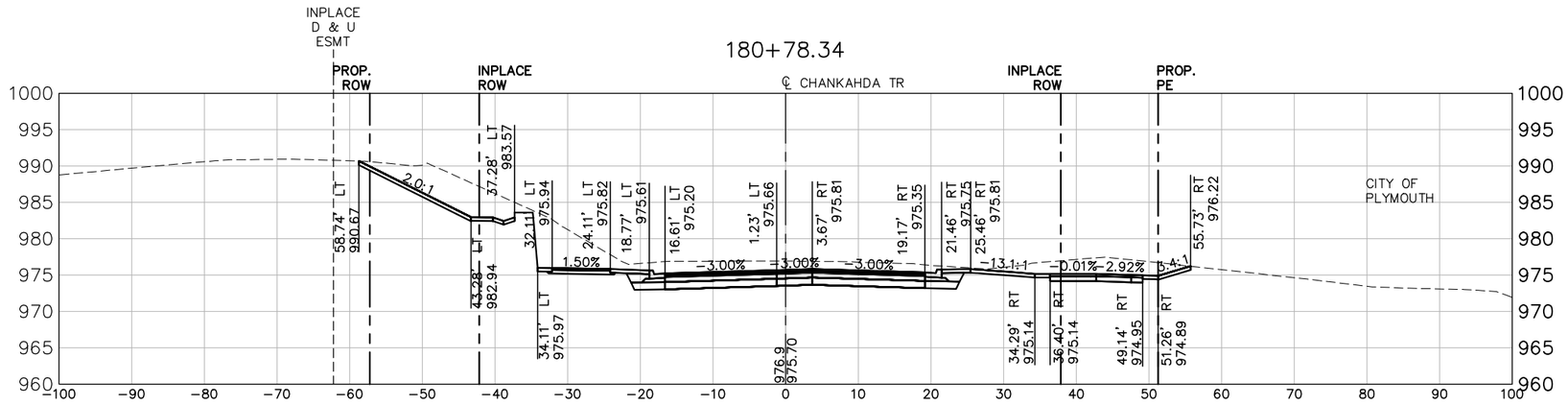
SHEET NO. 314 / 348

0 5 10 20 VERTICAL

0 5 10 20 HORIZONTAL SCALE IN FEET







No.	Date	Revisions	App.

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City of Plymouth

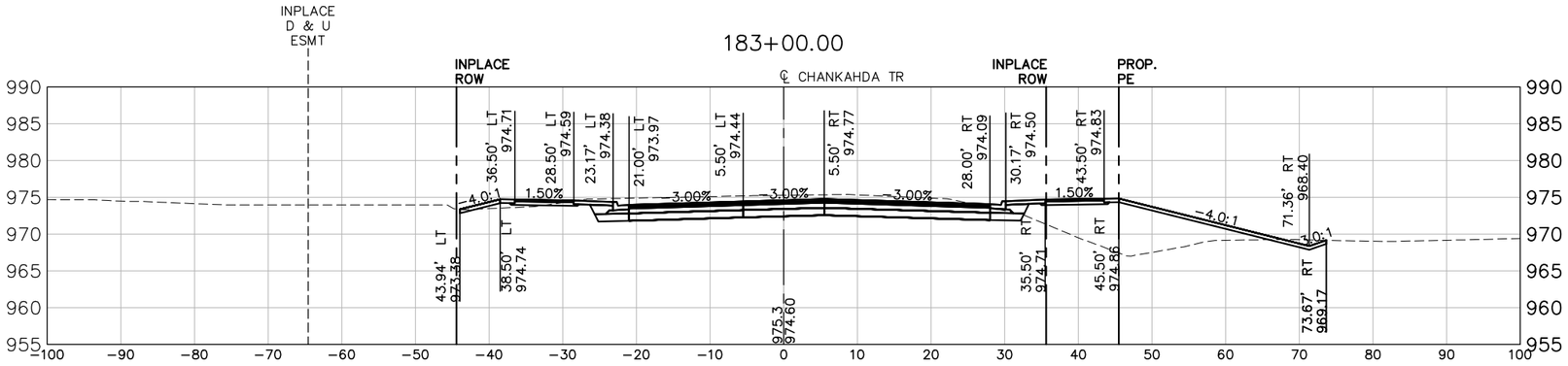
CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
CROSS SECTIONS
STA. 180+78 TO STA. 181+50

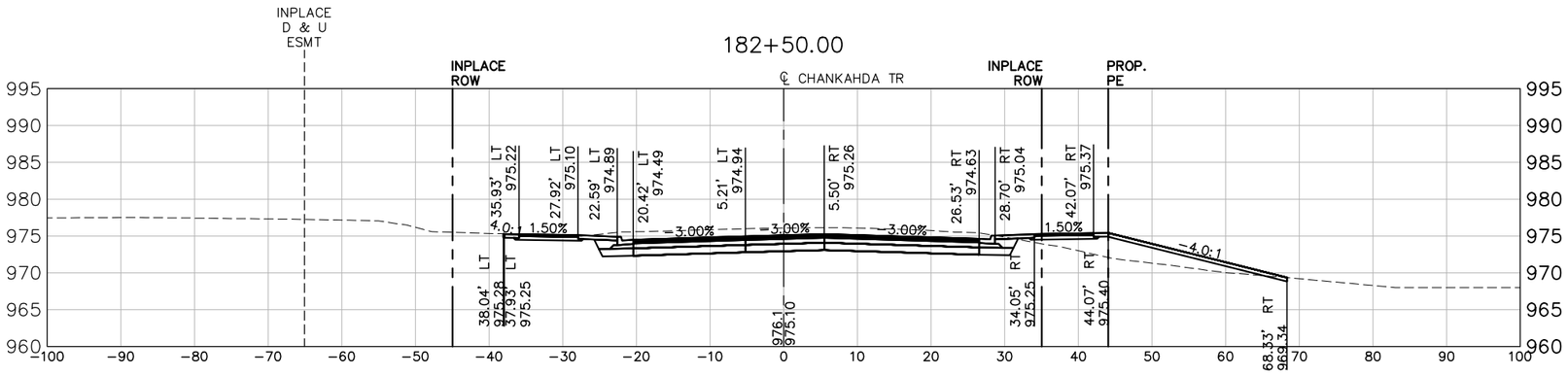
CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

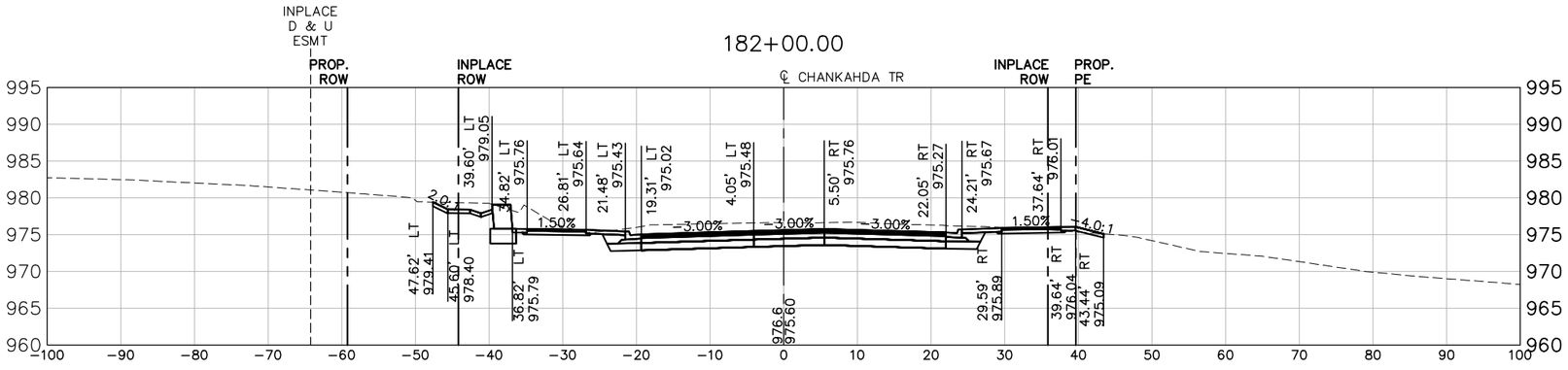
SHEET NO. 315 / 348

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: 11/04/2024 MN LIC. NO. 41864

City of Plymouth

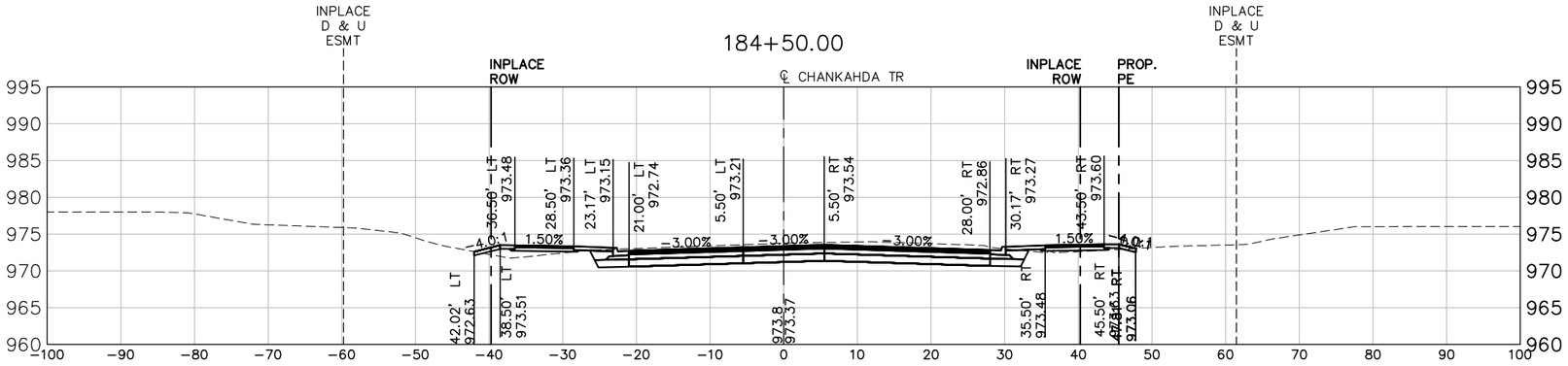
CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
CROSS SECTIONS
STA. 182+00 TO STA. 183+00

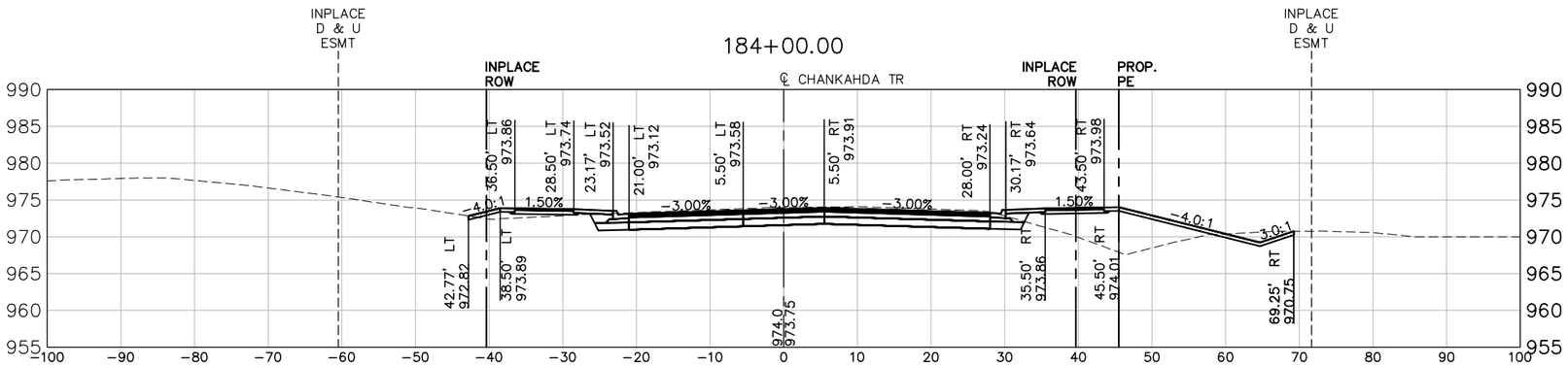
CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

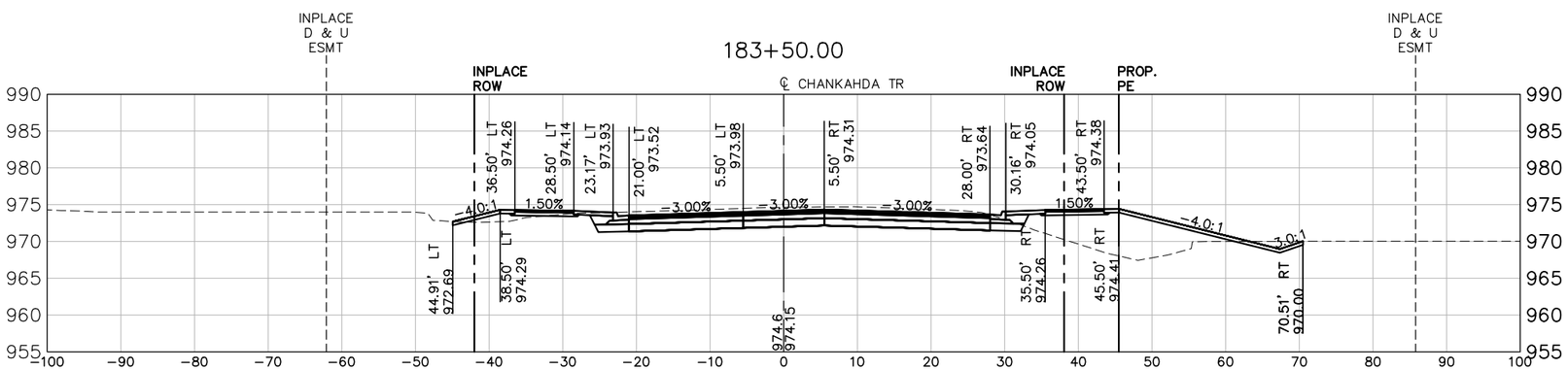
SHEET NO. 316 / 348

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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PROJECT NO.	160662010

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CHADD B. LARSON, PE

DATE: 11/04/2024 MN LIC. NO. 41864

City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
CROSS SECTIONS
STA. 183+50 TO STA. 184+50

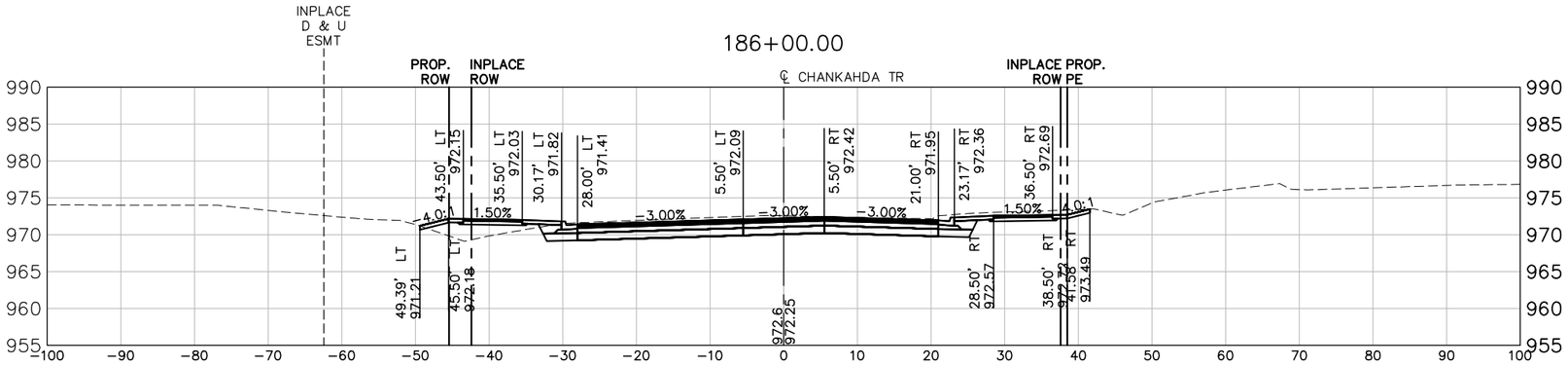
CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 317 / 348

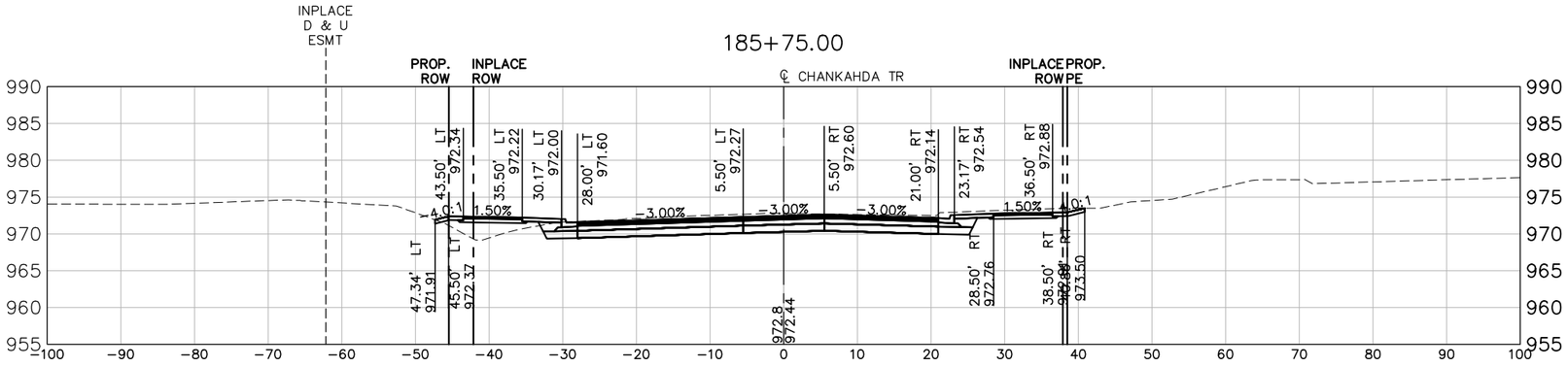
VERTICAL 0 5 10 20

HORIZONTAL SCALE IN FEET 0 5 10 20

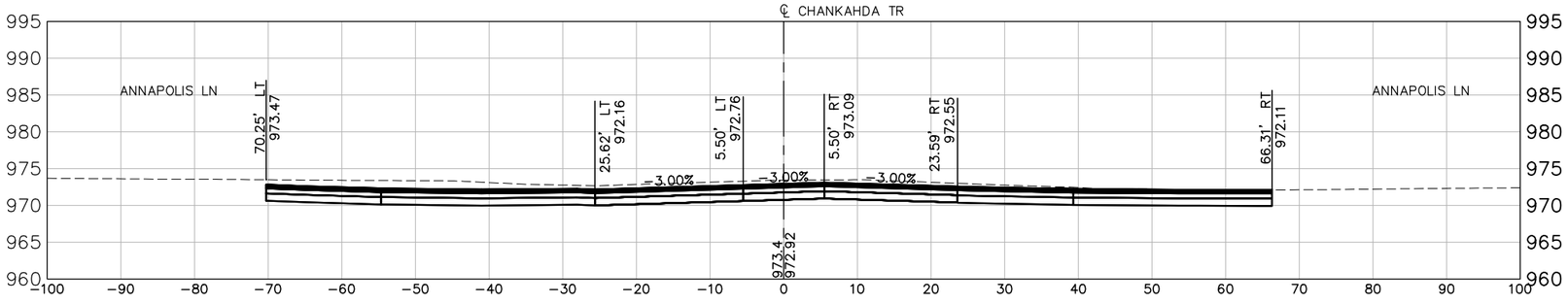
186+00.00



185+75.00



185+10.00



No.	Date	Revisions	App.

DRAWING NAME	CHANKAHDA_PH3_Sections.dwg
DESIGNED BY:	JWB
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City of Plymouth

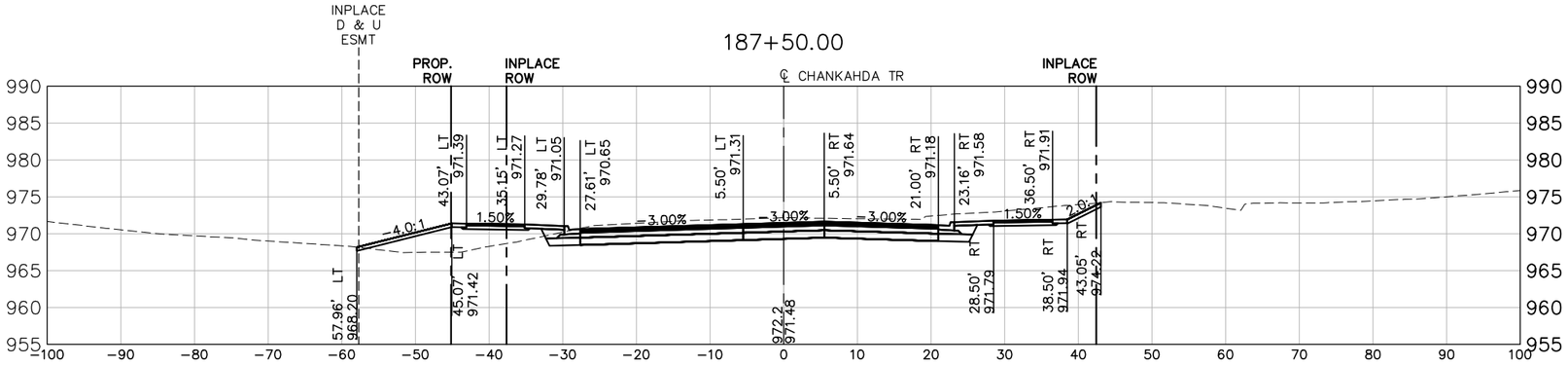
CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
CROSS SECTIONS
STA. 185+10 TO STA. 186+00

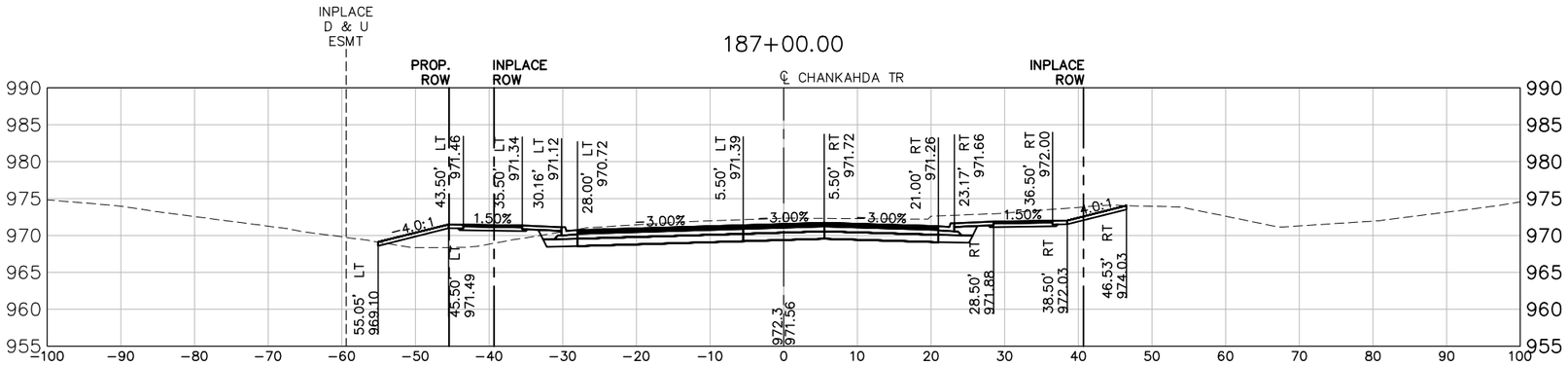
CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

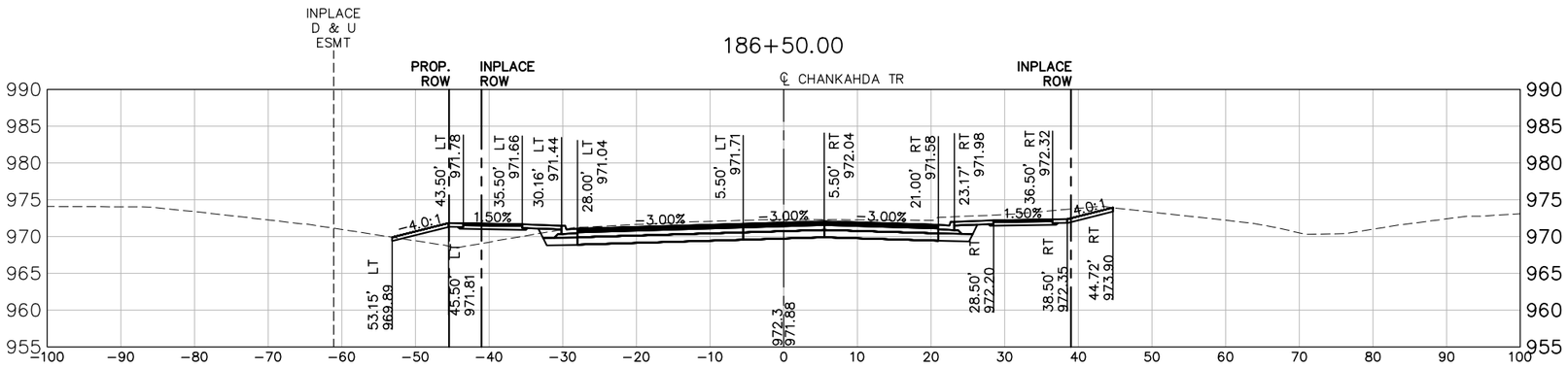
SHEET NO. 318 / 348

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:	11/04/2024
PROJECT NO.	160662010

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CHADD B. LARSON, PE

DATE: 11/04/2024 MN LIC. NO. 41864

City of Plymouth

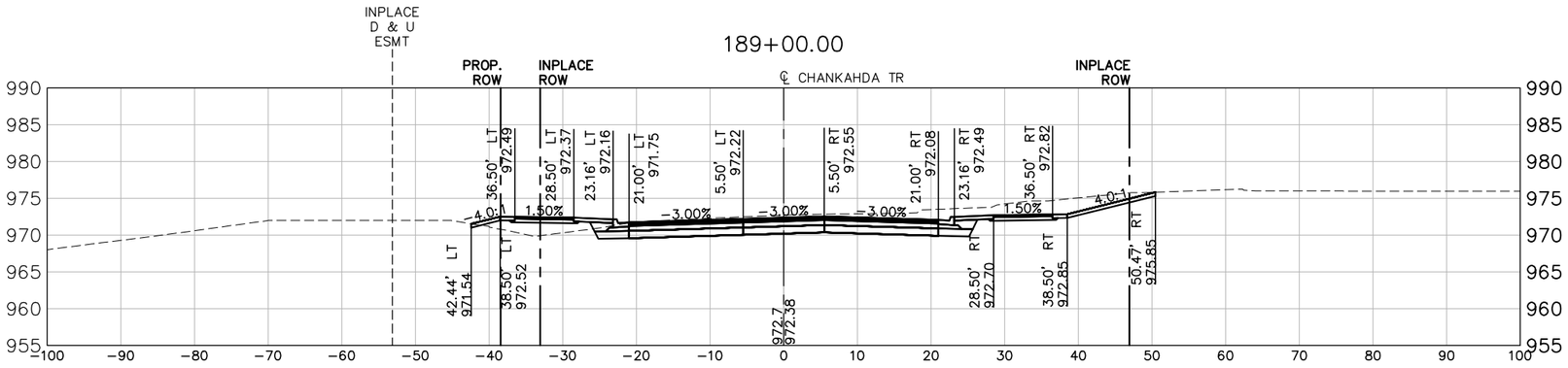
CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
CROSS SECTIONS
STA. 186+50 TO STA. 187+50

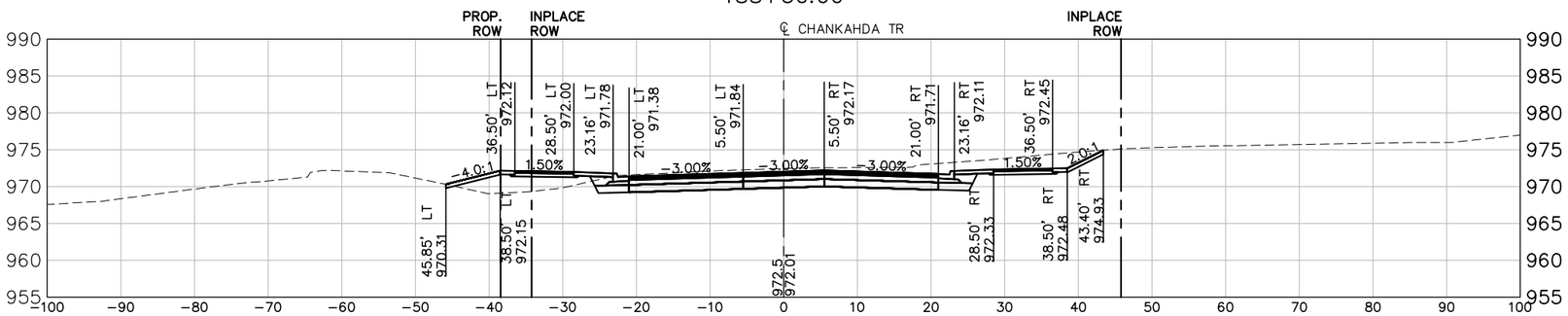
CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

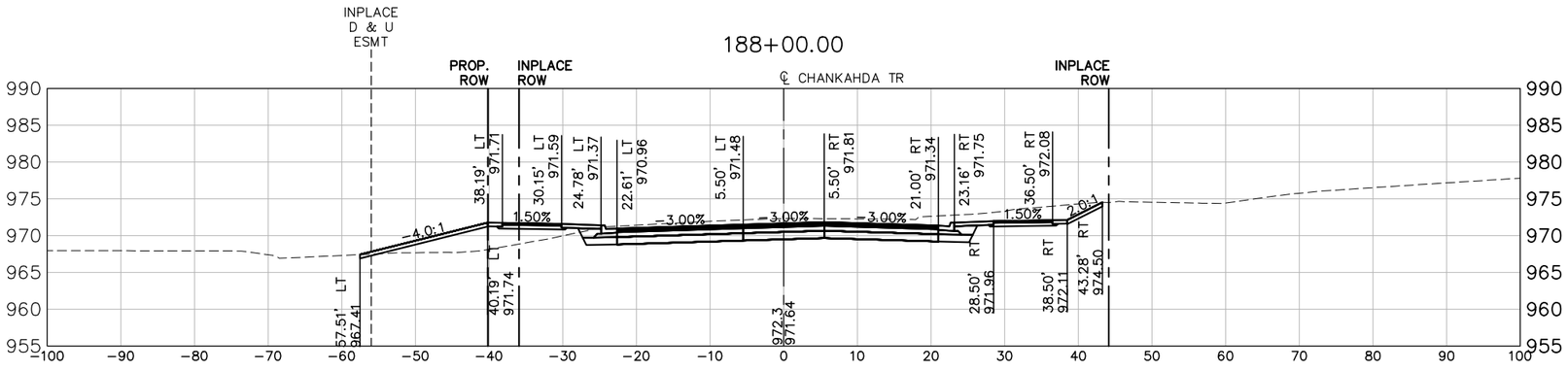
SHEET NO. 319 / 348

VERTICAL 0 5 10 20

HORIZONTAL SCALE IN FEET 0 5 10 20







No.	Date	Revisions	App.

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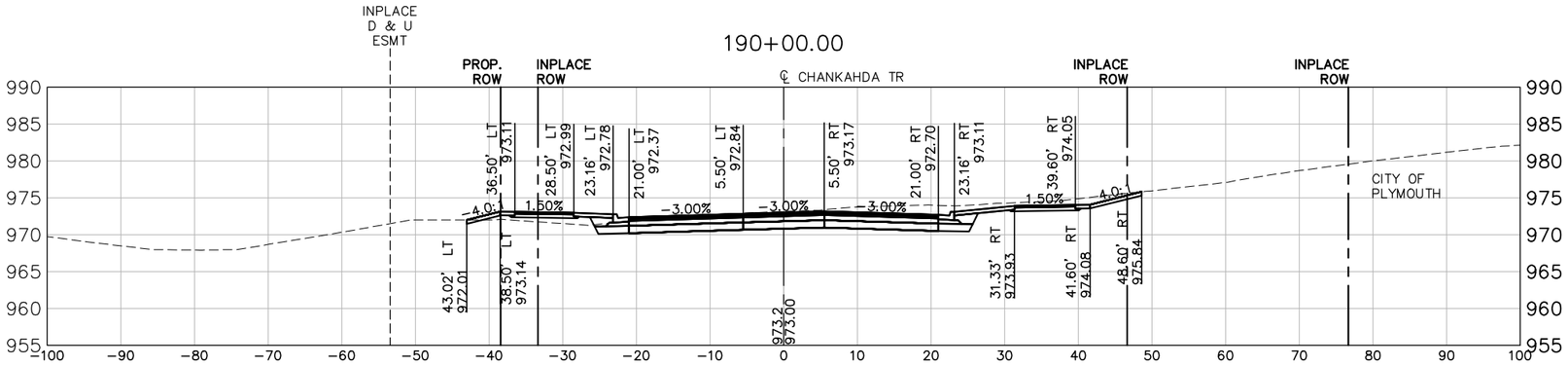
CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
CROSS SECTIONS
STA. 188+00 TO STA. 189+00

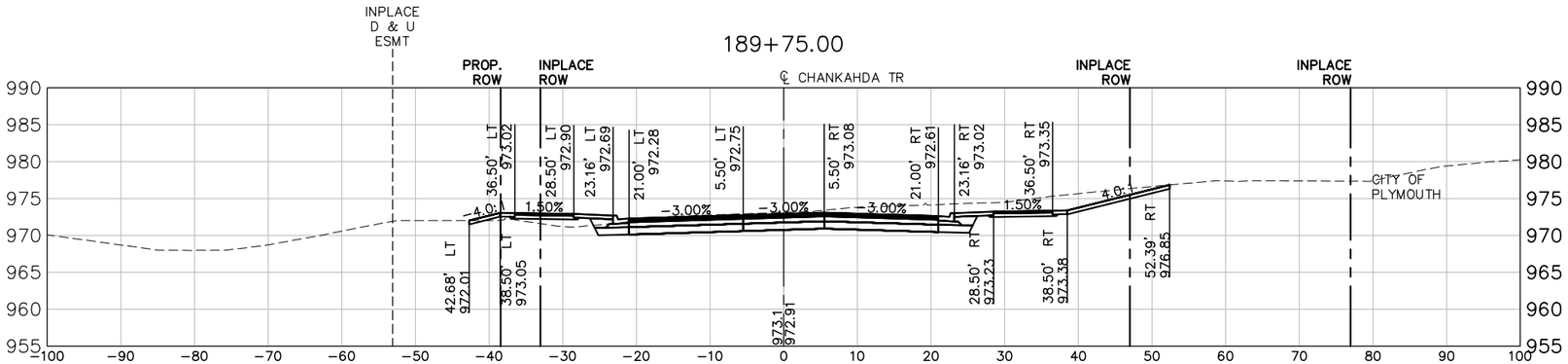
CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

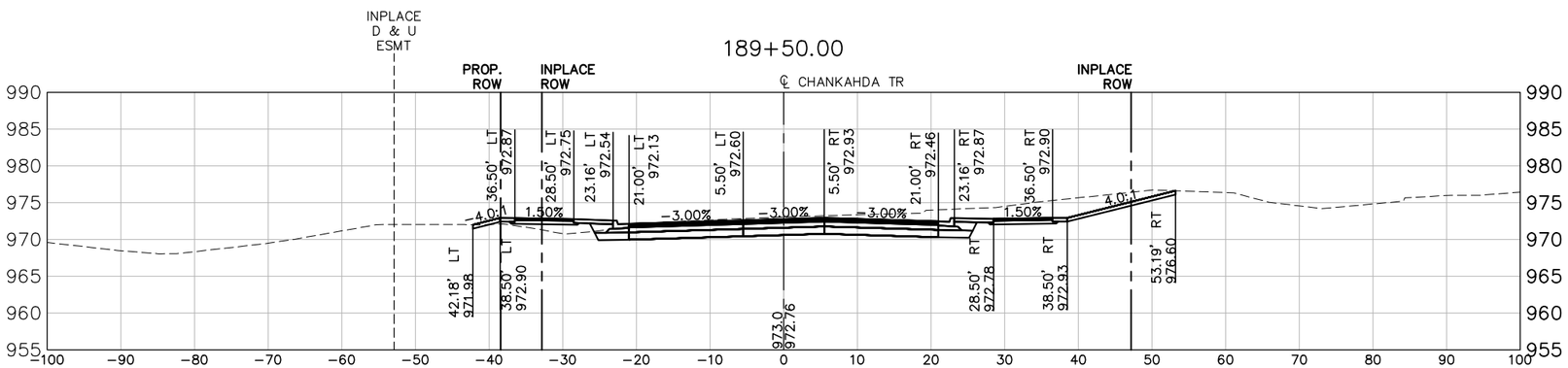
SHEET NO. 320 / 348

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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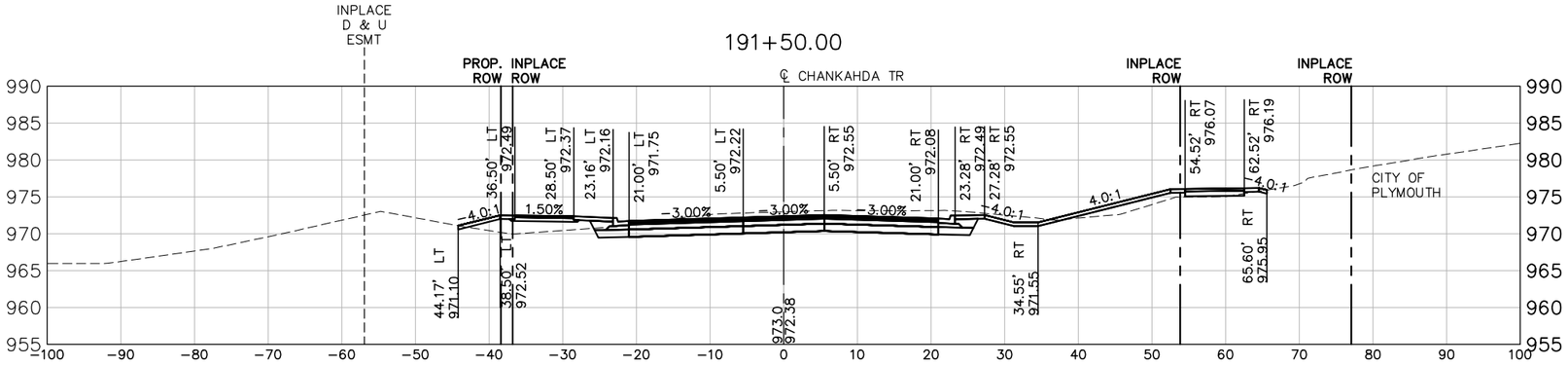
CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
CROSS SECTIONS
STA. 189+50 TO STA. 190+00

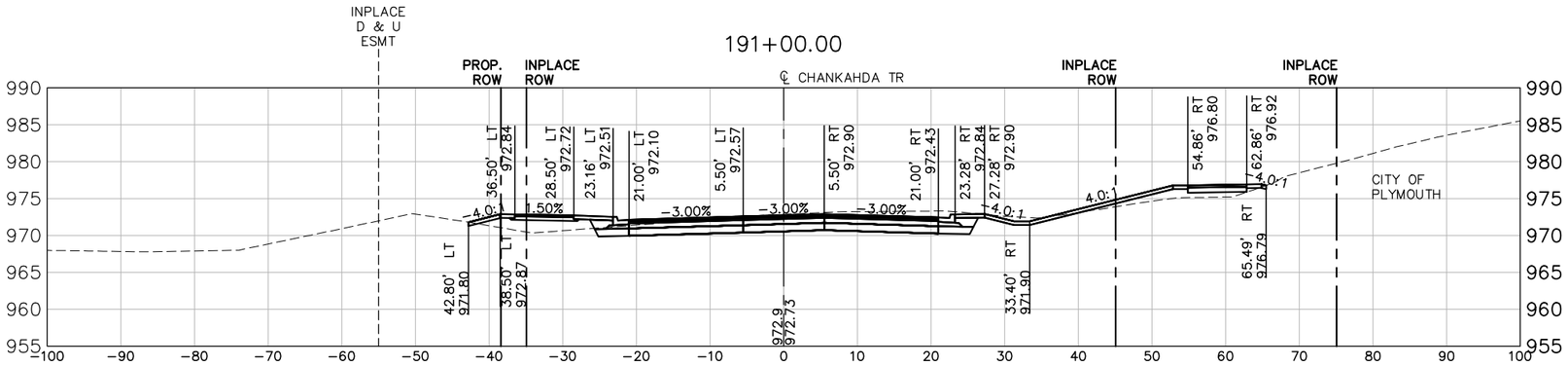
CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
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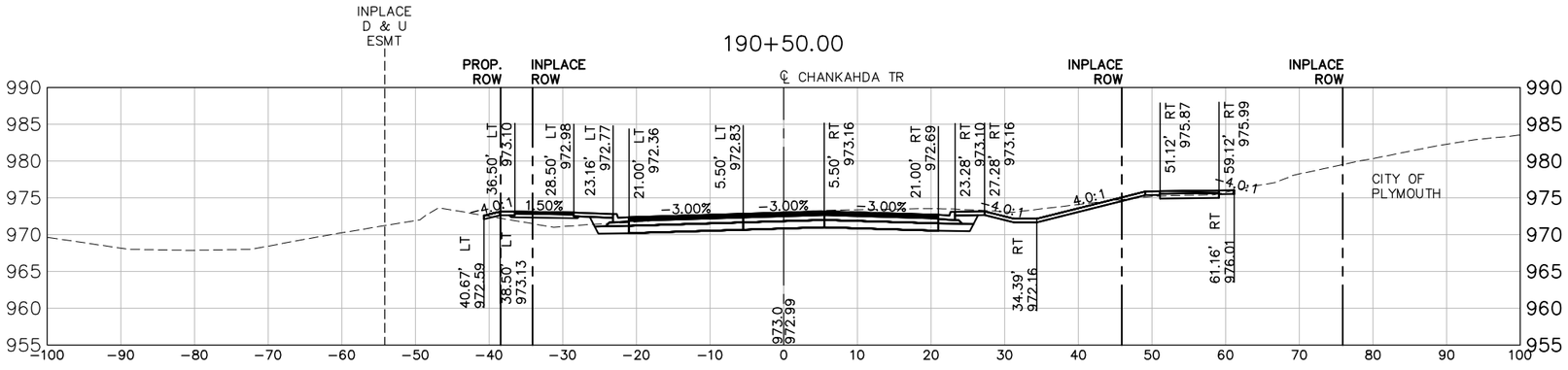
SHEET NO. 321 / 348

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City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
CROSS SECTIONS
STA. 190+50 TO STA. 191+50

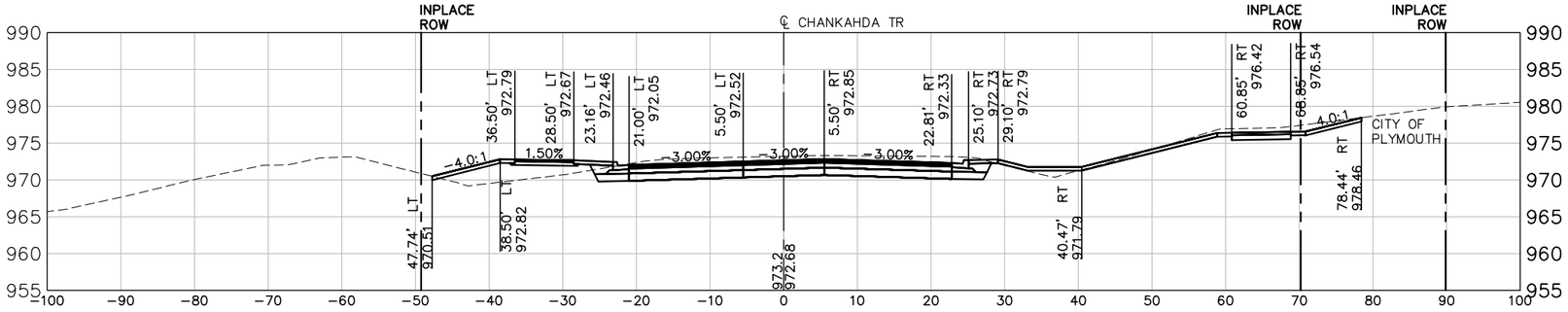
CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 322 / 348

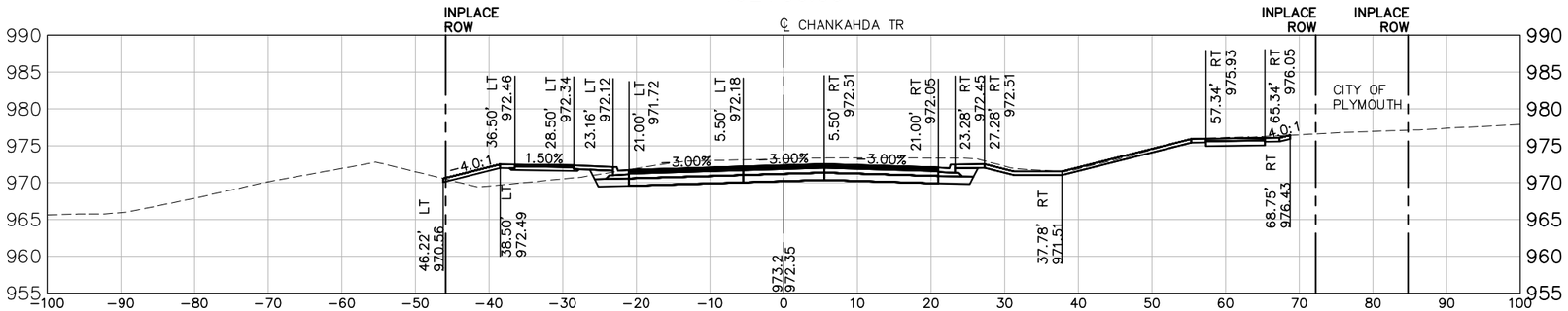
0 5 10 20 VERTICAL

0 5 10 20 HORIZONTAL SCALE IN FEET

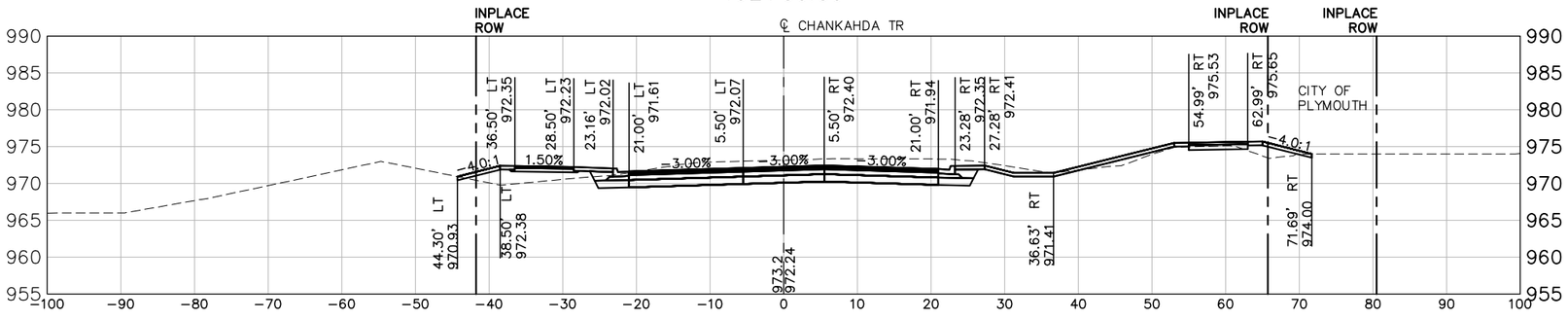
193+00.00



192+50.00



192+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. 192+00 TO STA. 193+00

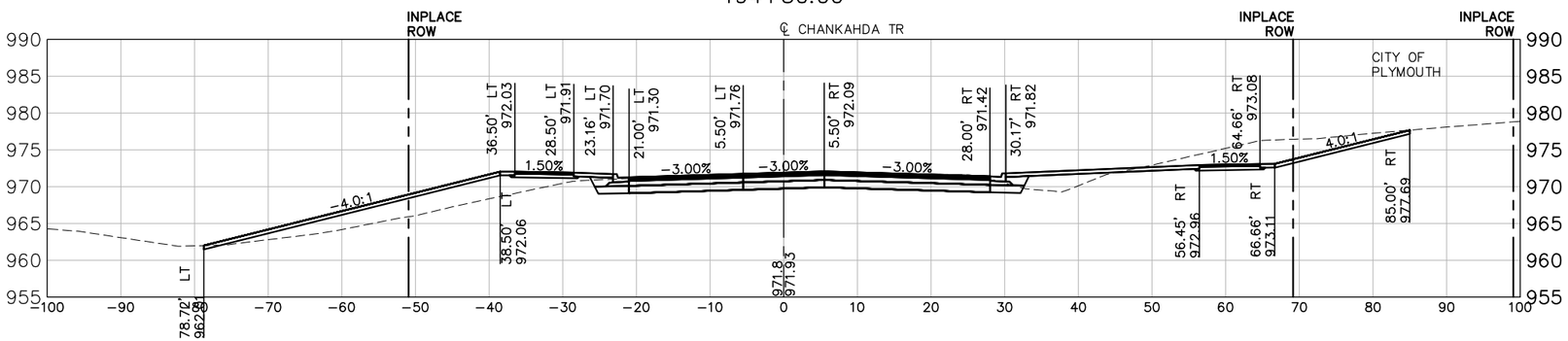
CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 323 / 348

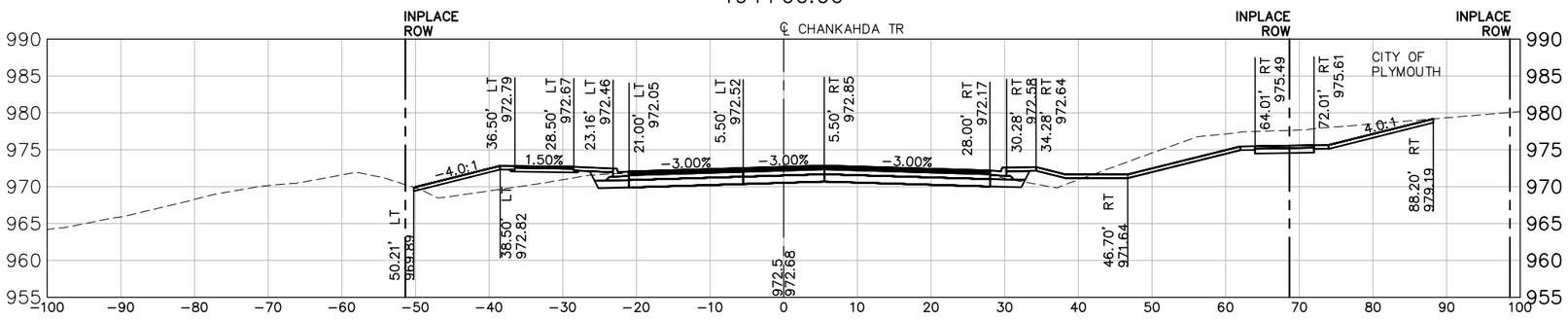
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HORIZONTAL SCALE IN FEET 0 5 10 20

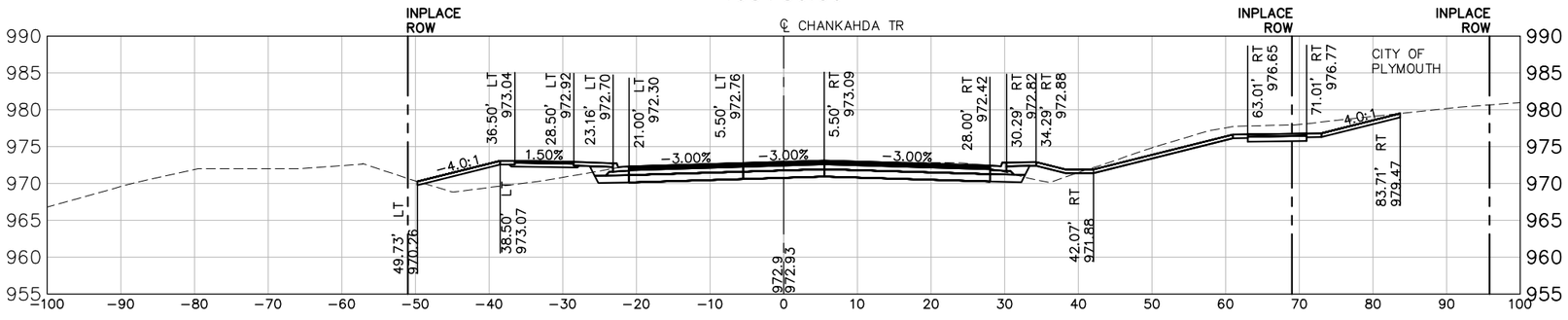
194+50.00



194+00.00



193+50.00



No.	Date	Revisions	App.

DRAWING NAME	CHANKAHDA_PH3_Sections.dwg
DESIGNED BY:	JWB
DRAWN BY:	JWB
CHECKED BY:	CBL
DATE:	11/04/2024
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: 11/04/2024 MN LIC. NO. 41864

City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
CROSS SECTIONS
STA. 193+50 TO STA. 194+50

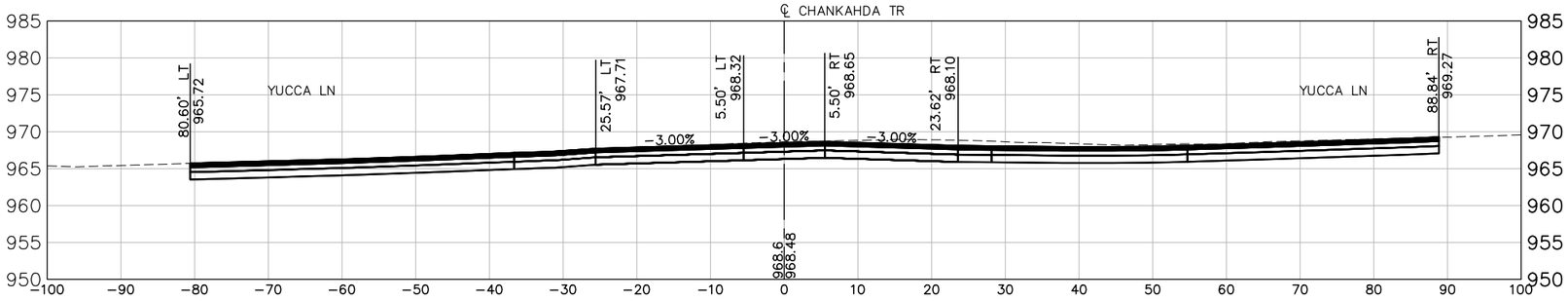
CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 324 / 348

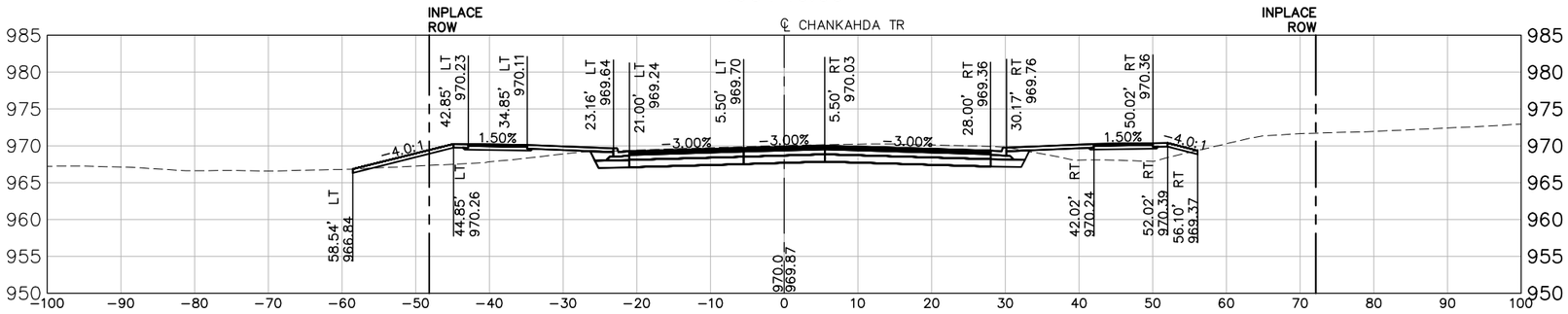
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0 5 10 20 HORIZONTAL SCALE IN FEET

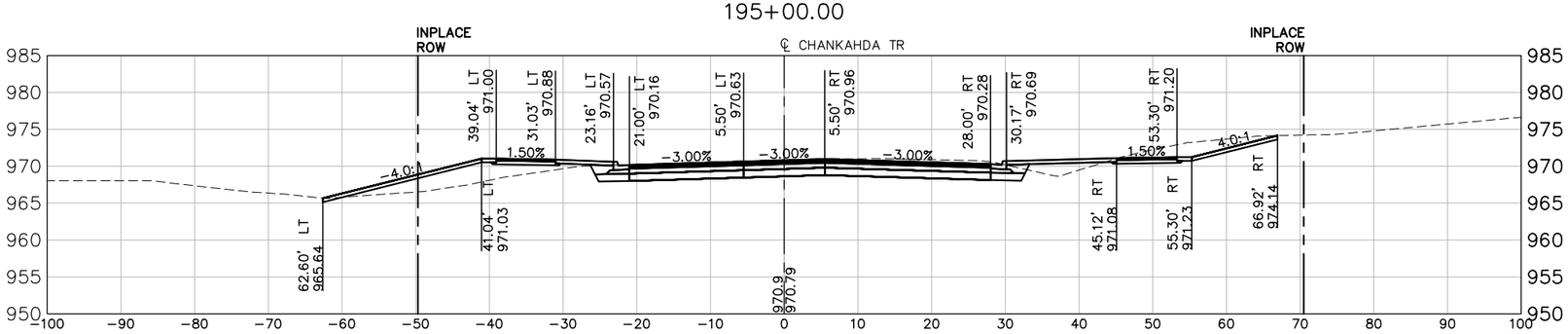
196+00.00



195+40.00



195+00.00



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City of Plymouth

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RECONSTRUCTION PHASE 3
CHANKAHDA TR
CROSS SECTIONS
STA. 195+00 TO STA. 196+00

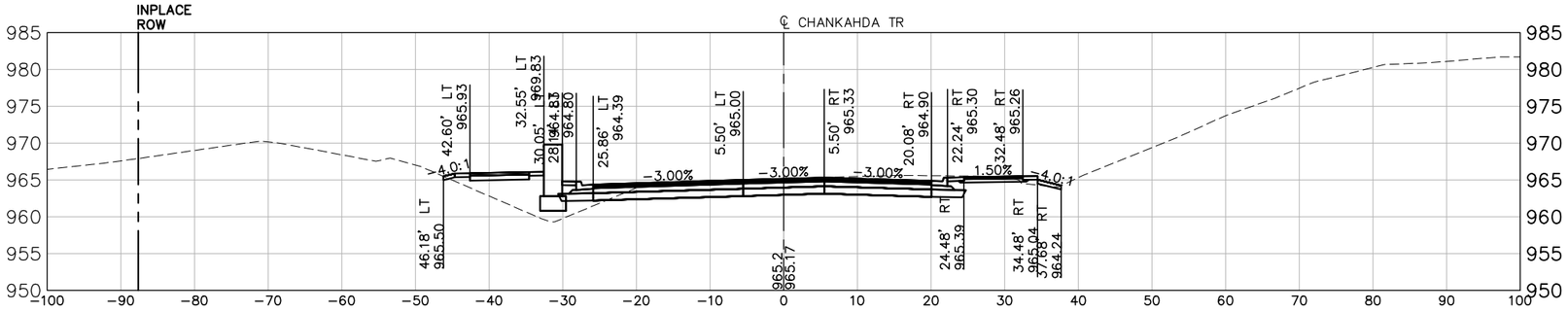
CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 325 / 348

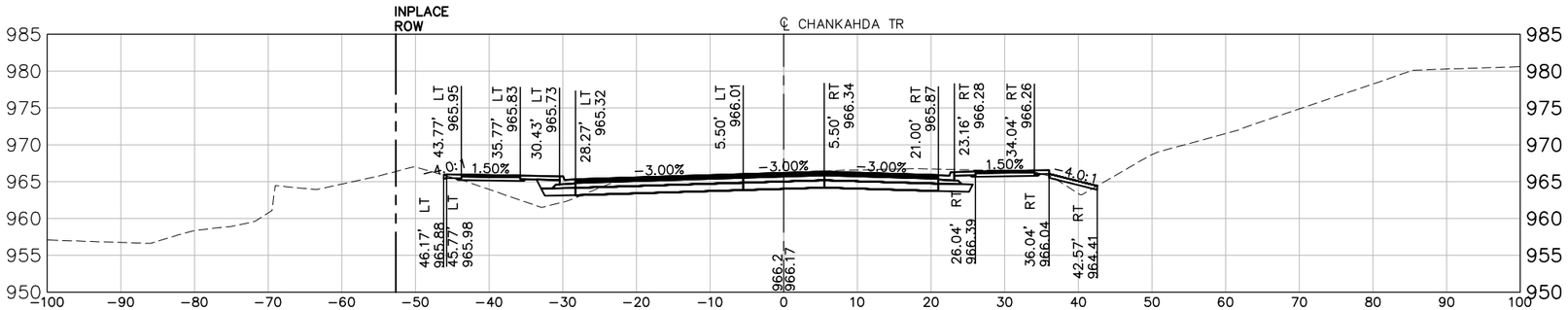
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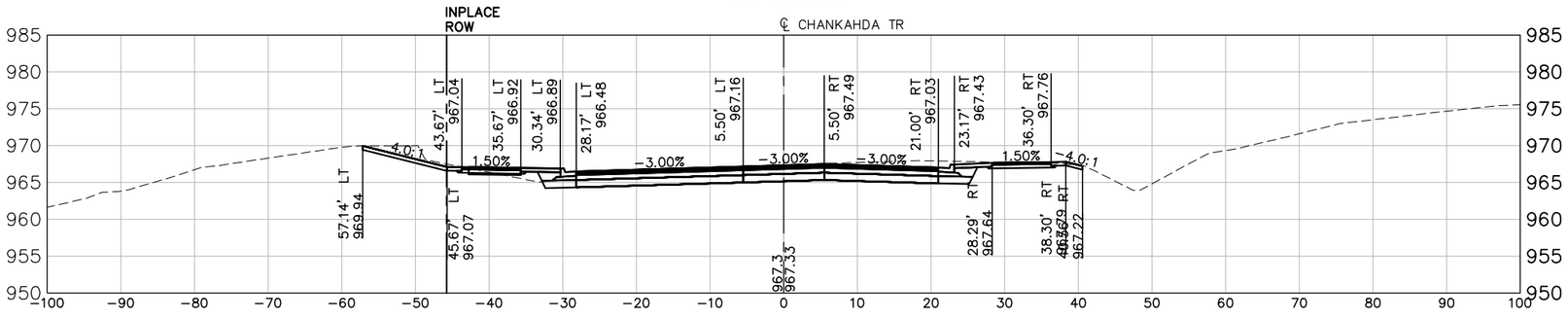
197+50.00



197+00.00



196+50.00



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City of Plymouth

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RECONSTRUCTION PHASE 3
CHANKAHDA TR
CROSS SECTIONS
STA. 196+50 TO STA. 197+50

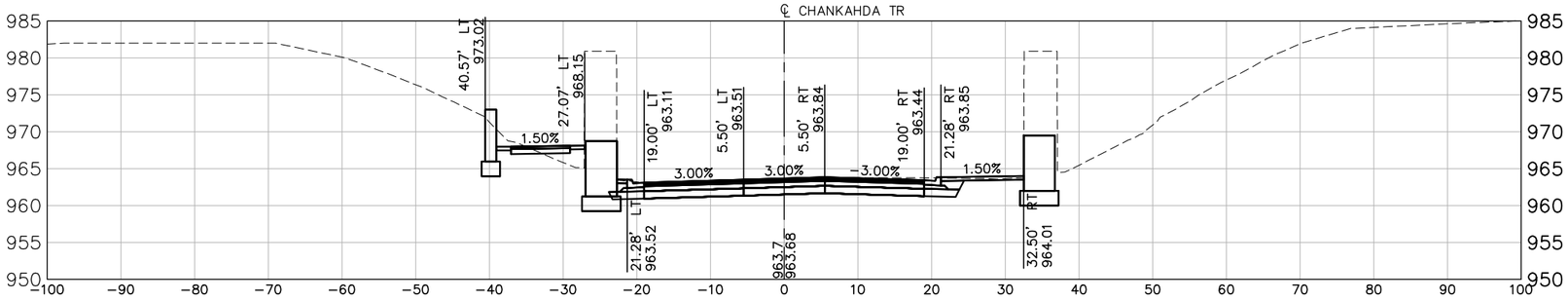
CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 326 / 348

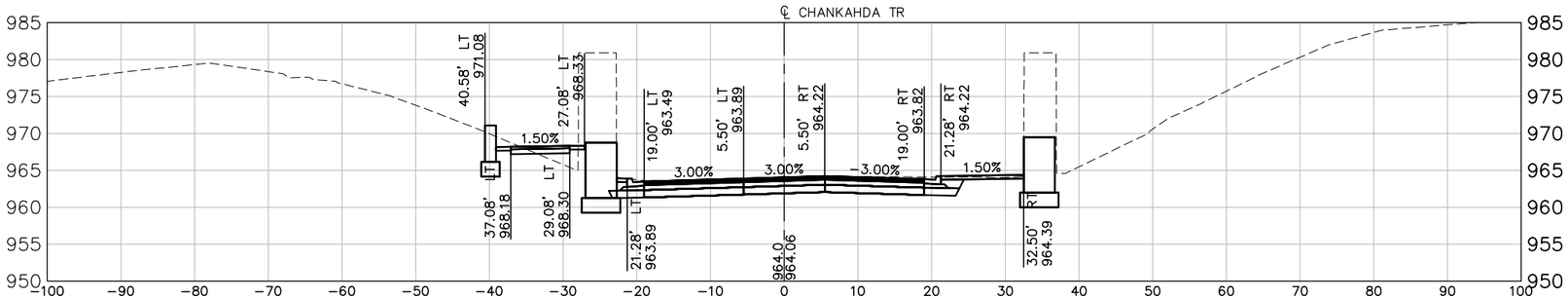
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0 5 10 20 HORIZONTAL SCALE IN FEET

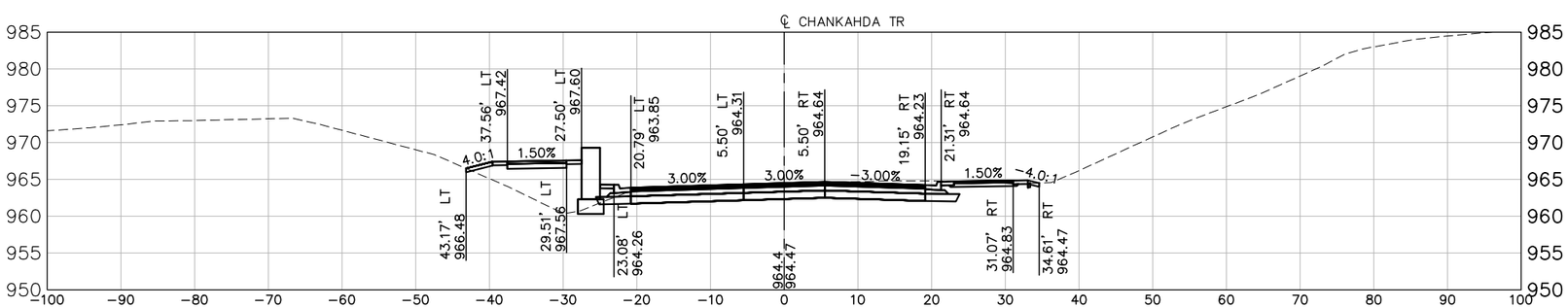
199+00.00



198+50.00



198+00.00



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City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
CROSS SECTIONS
STA. 198+00 TO STA. 199+00

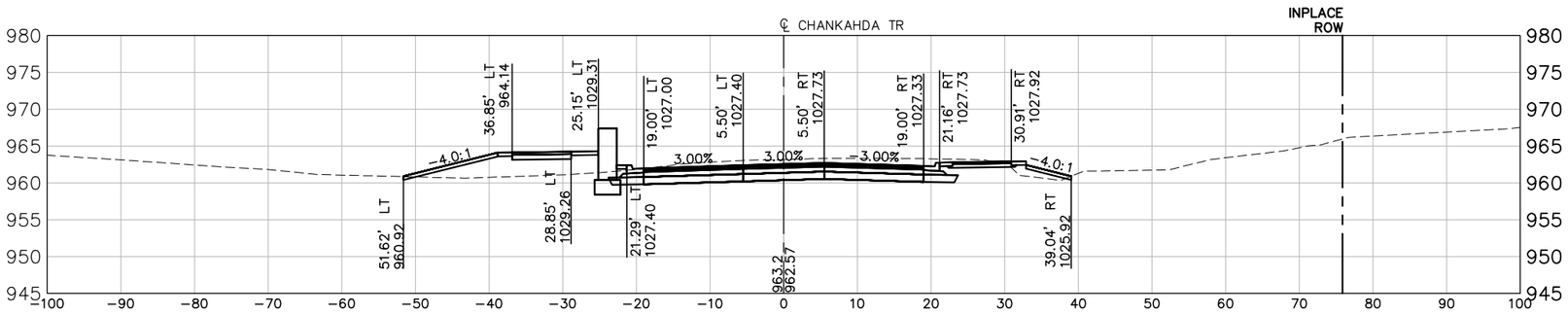
CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 327 / 348

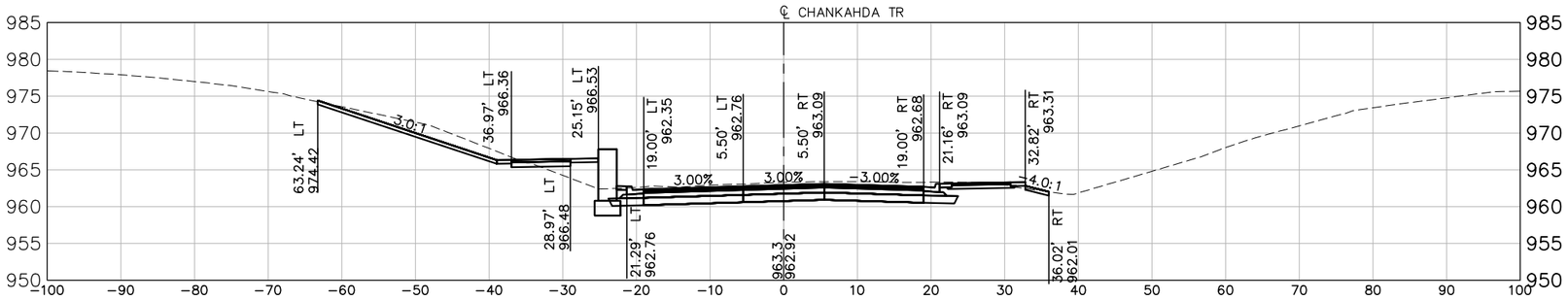
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0 5 10 20 HORIZONTAL SCALE IN FEET

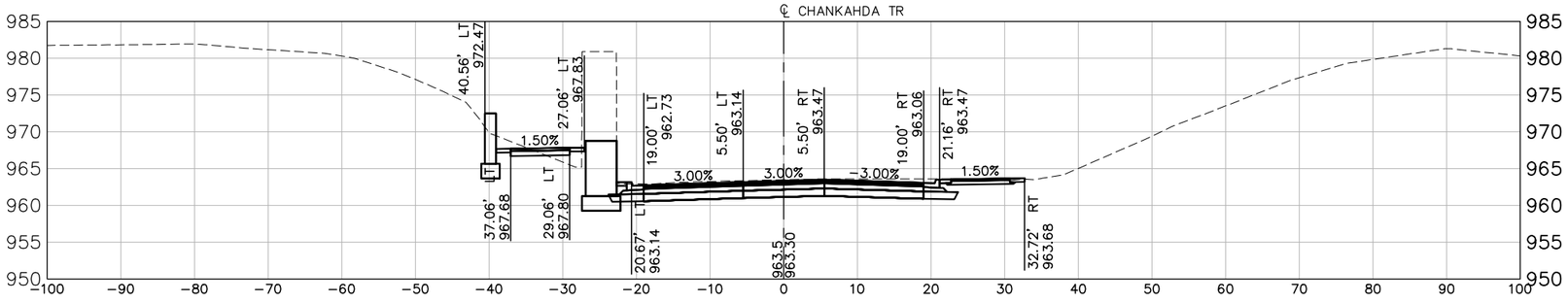
200+50.00



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

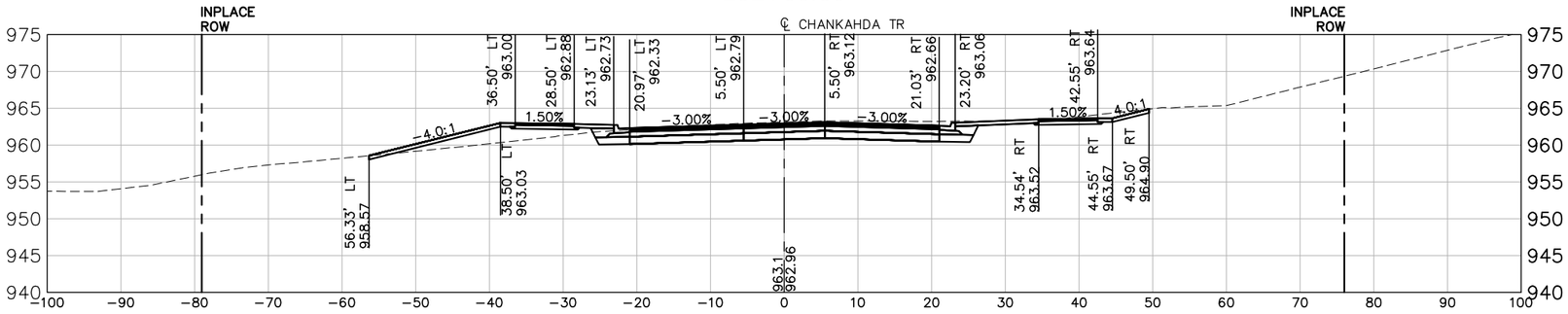
CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 328 / 348

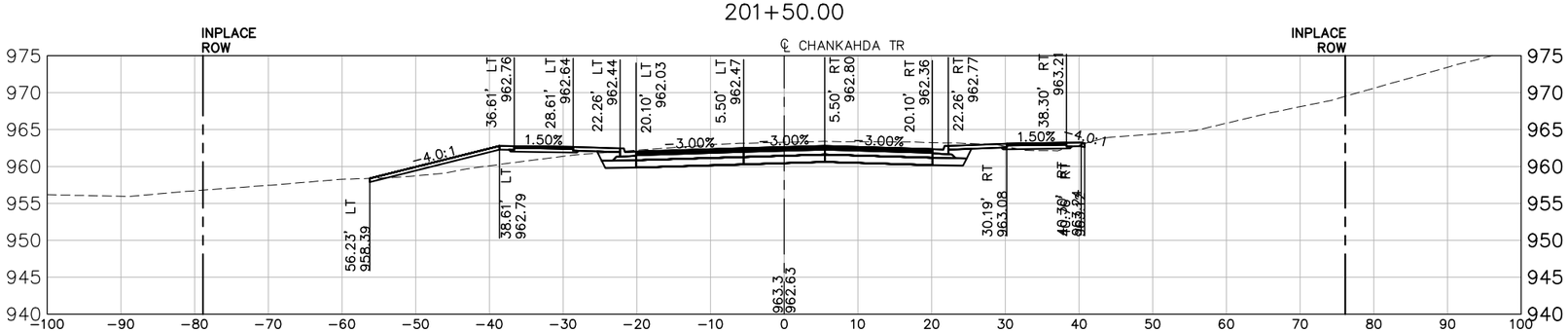
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0 5 10 20 HORIZONTAL SCALE IN FEET

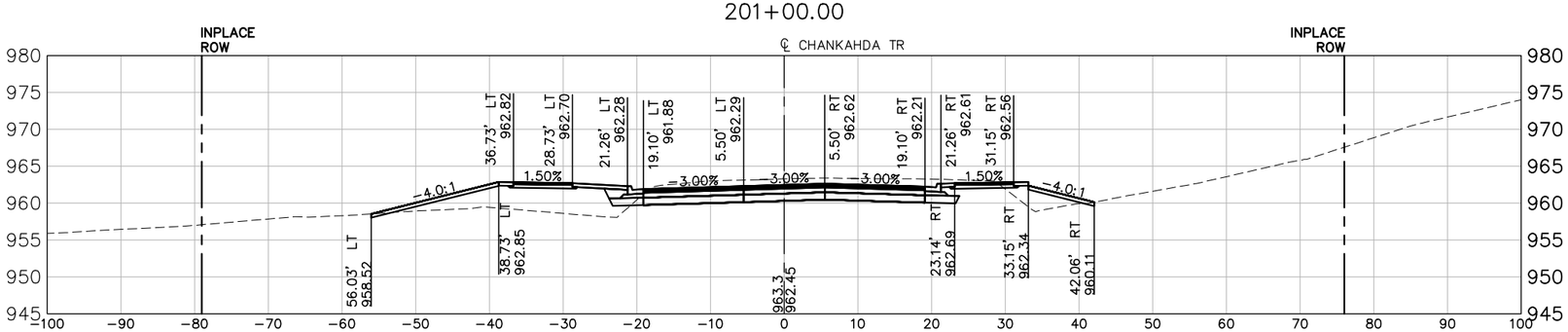
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201+50.00



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

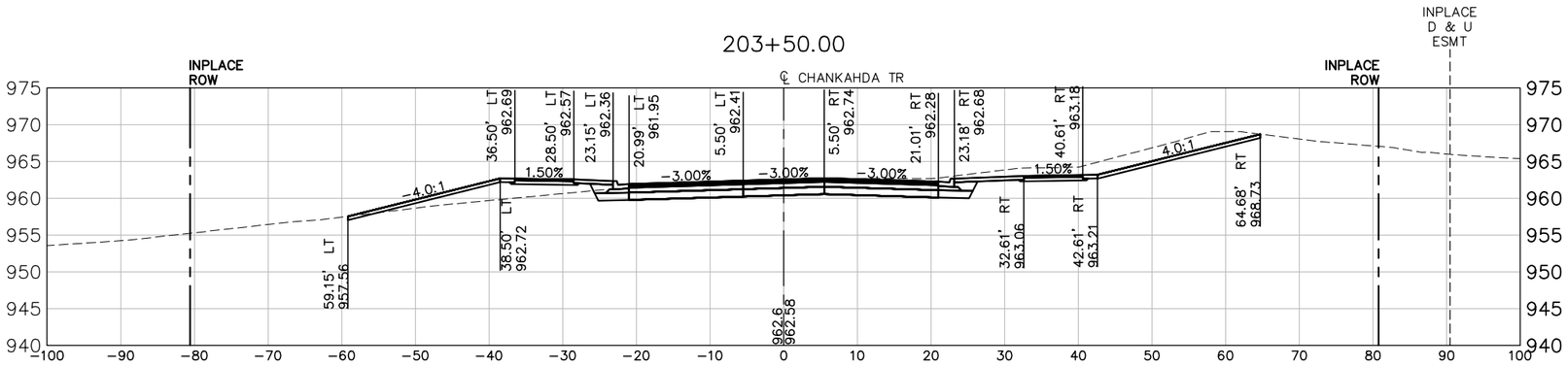
CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 329 / 348

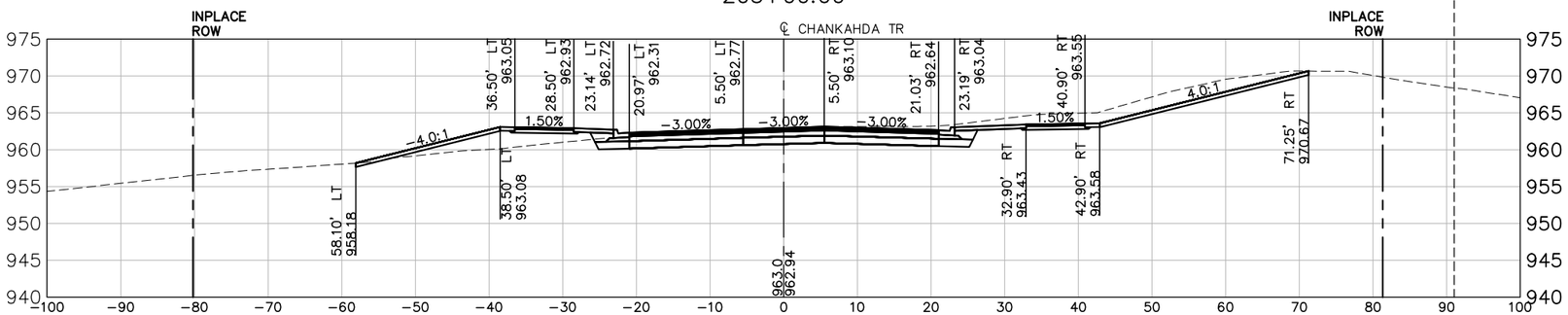
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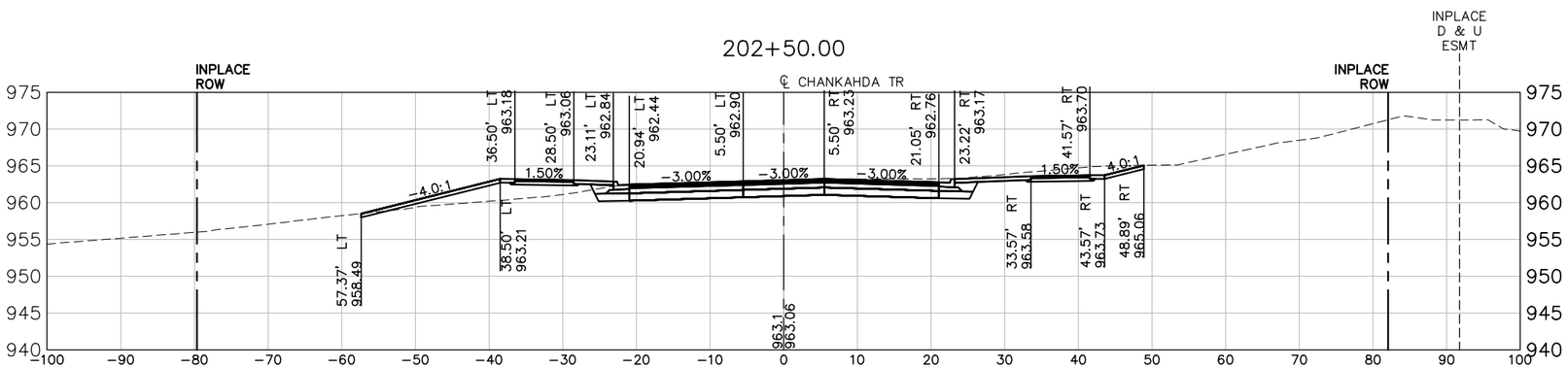
203+50.00



203+00.00



202+50.00



No.	Date	Revisions	App.

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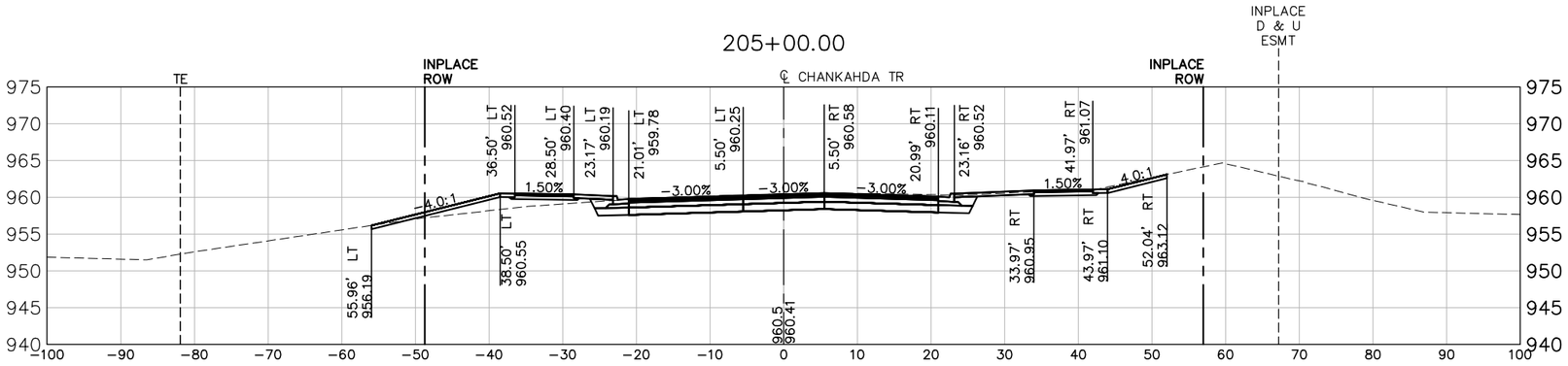
CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
CROSS SECTIONS
STA. 202+50 TO STA. 203+50

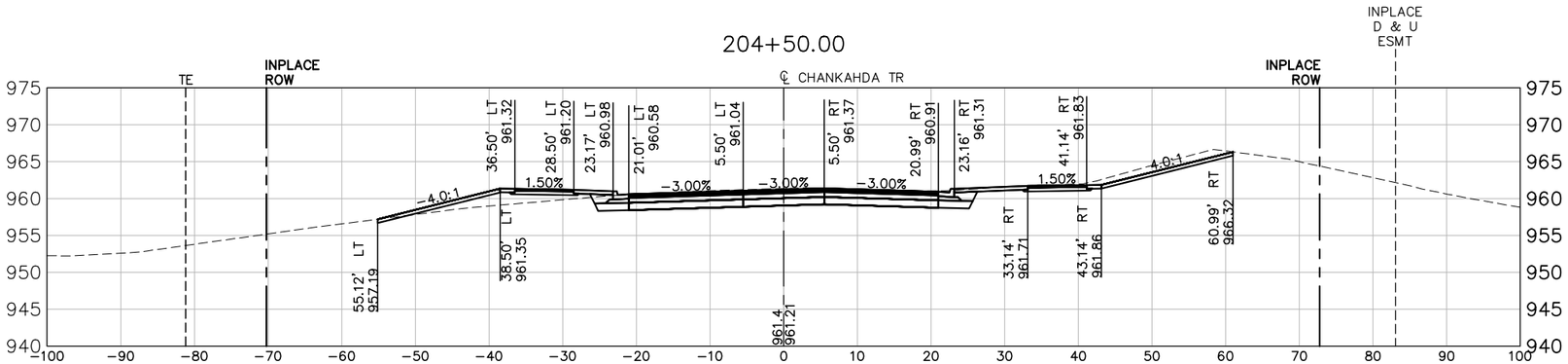
CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

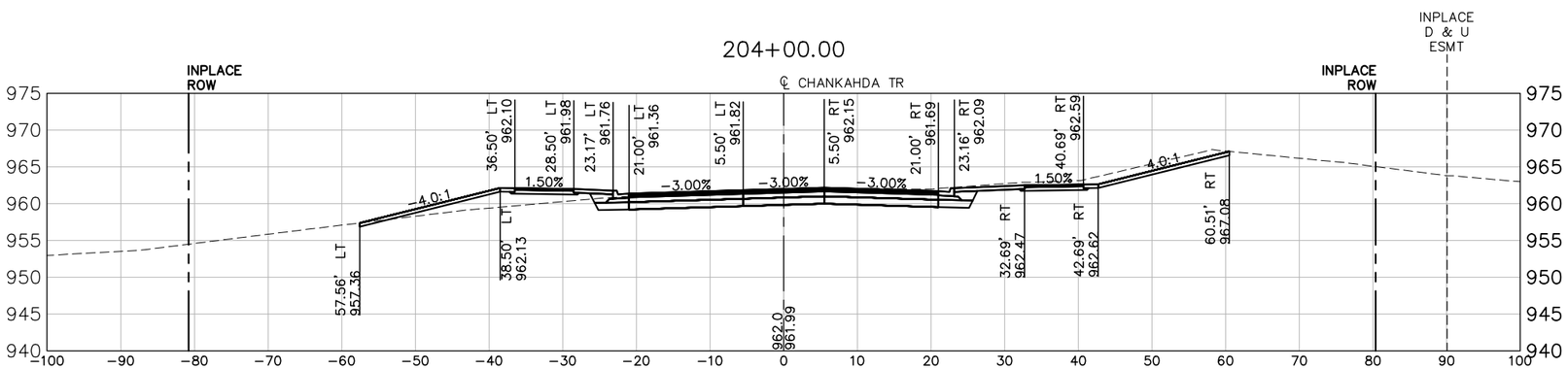
SHEET NO. 330 / 348

0 5 10 20 VERTICAL

0 5 10 20 HORIZONTAL SCALE IN FEET







No.	Date	Revisions	App.

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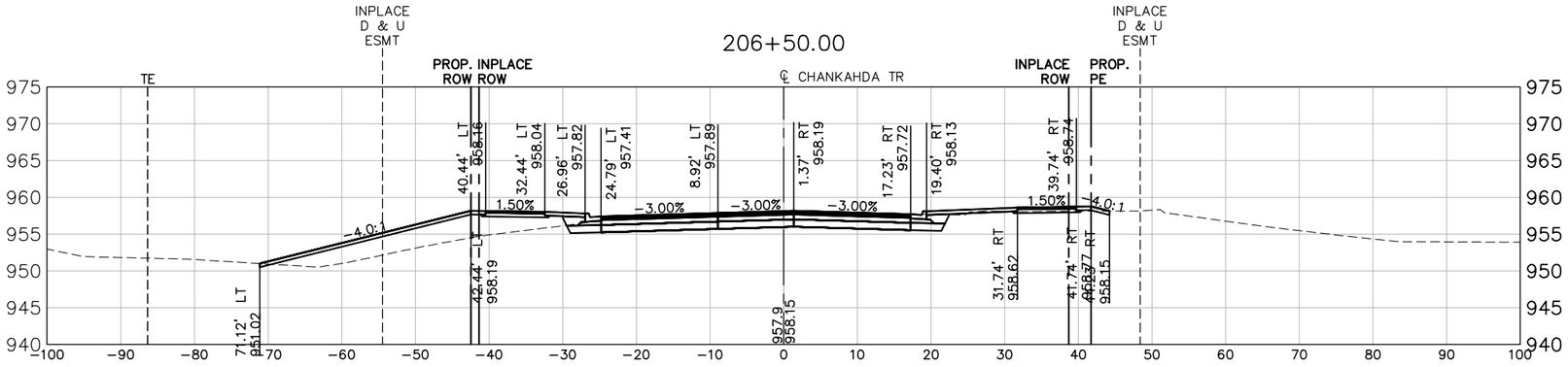
CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
CROSS SECTIONS
STA. 204+00 TO STA. 205+00

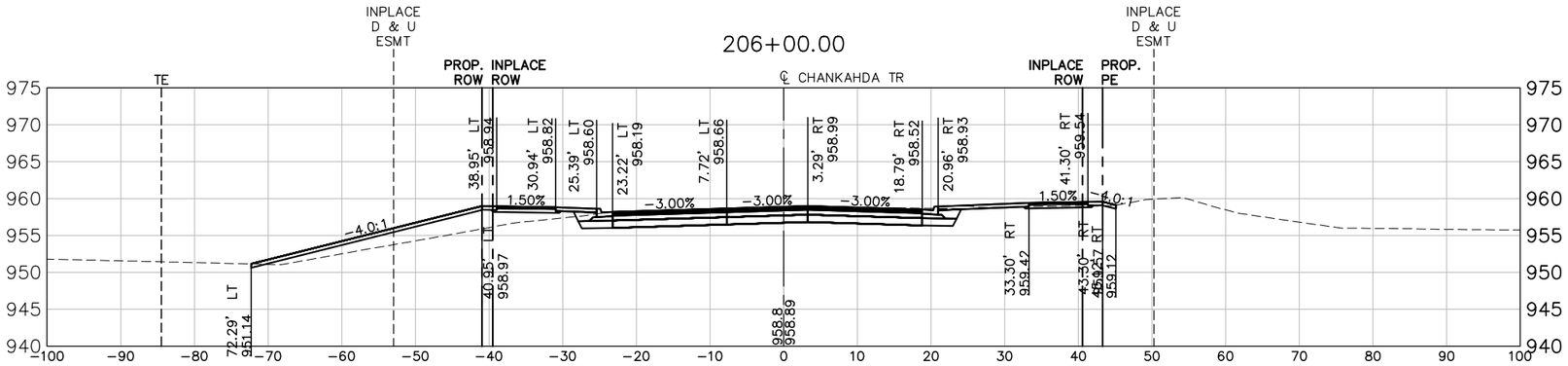
CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

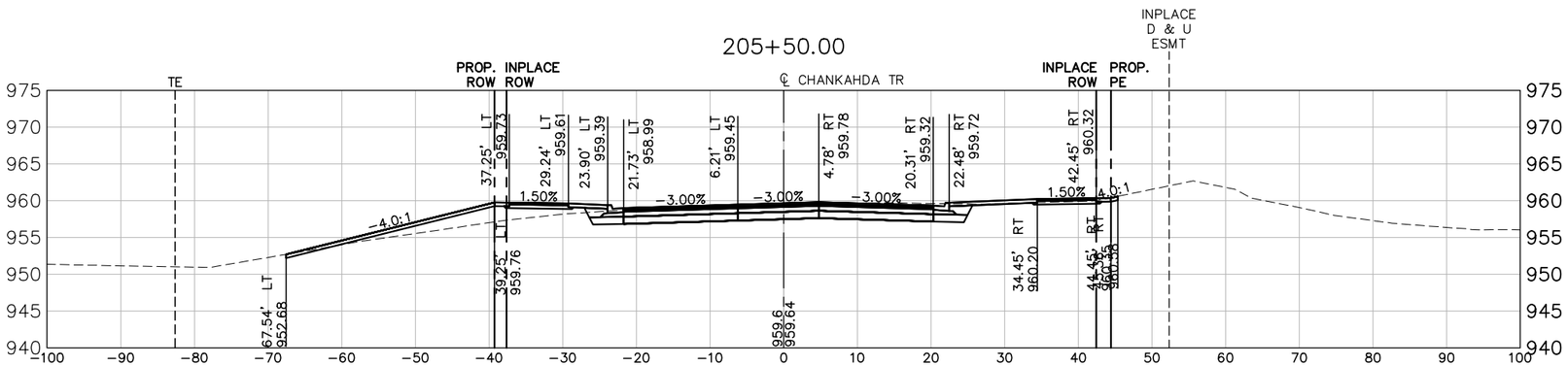
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0 5 10 20 VERTICAL

0 5 10 20 HORIZONTAL SCALE IN FEET







No.	Date	Revisions	App.

DRAWING NAME	CHANKAHDA_PH3_Sections.dwg
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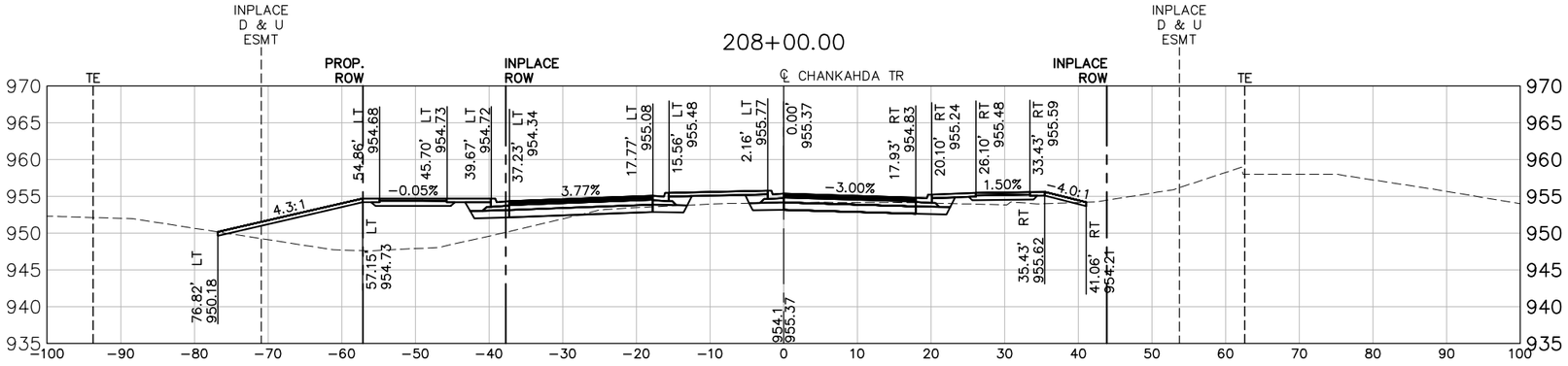
CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
CROSS SECTIONS
STA. 205+50 TO STA. 206+50

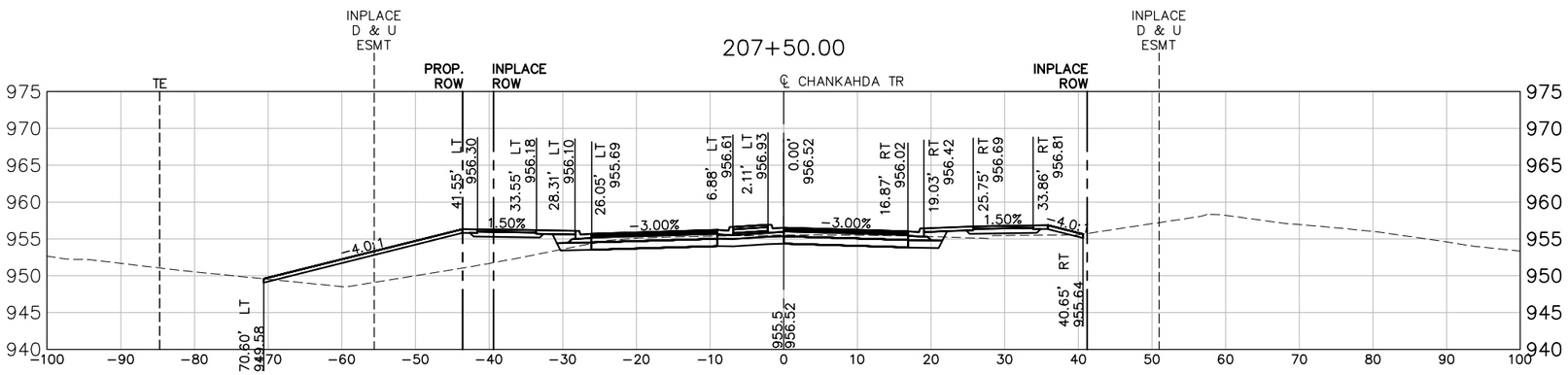
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COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

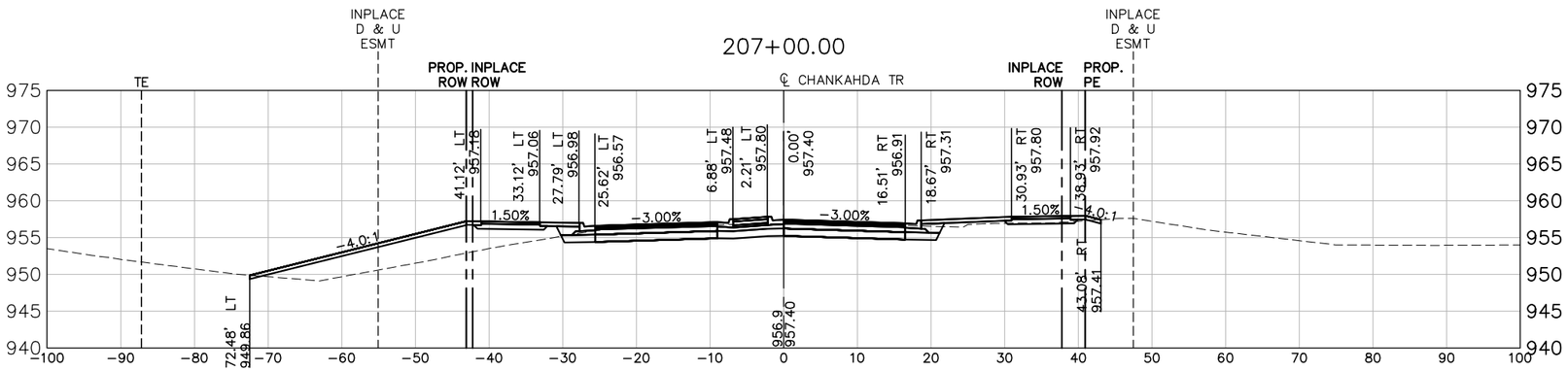
SHEET NO. 332 / 348

0 5 10 20 VERTICAL

0 5 10 20 HORIZONTAL SCALE IN FEET







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DRAWING NAME	CHANKAHDA_PH3_Sections.dwg
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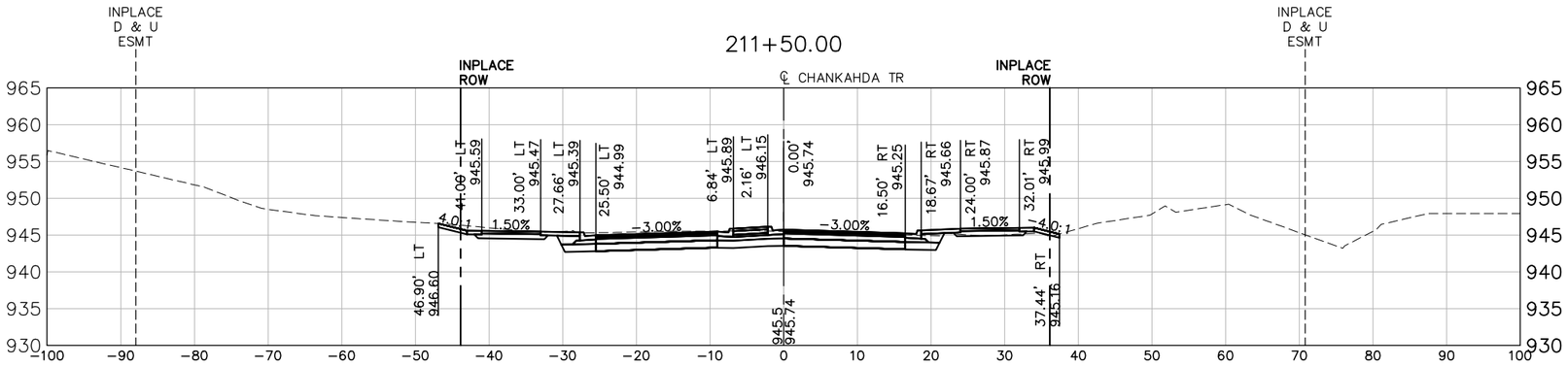
CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
CROSS SECTIONS
STA. 207+00 TO STA. 208+00

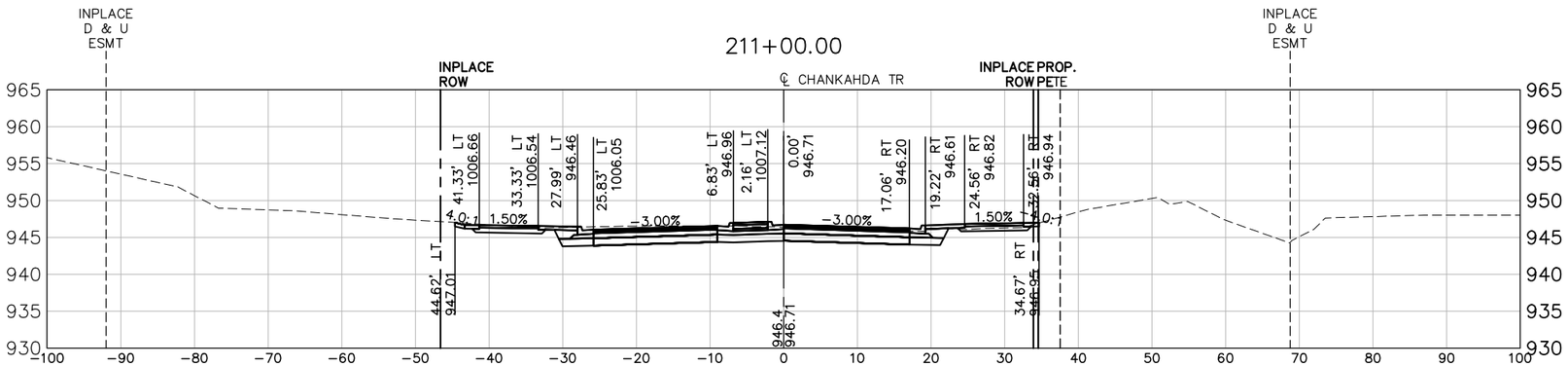
CITY PROJECT	ST240002
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S.A.P.	155-210-003
S.A.P.	

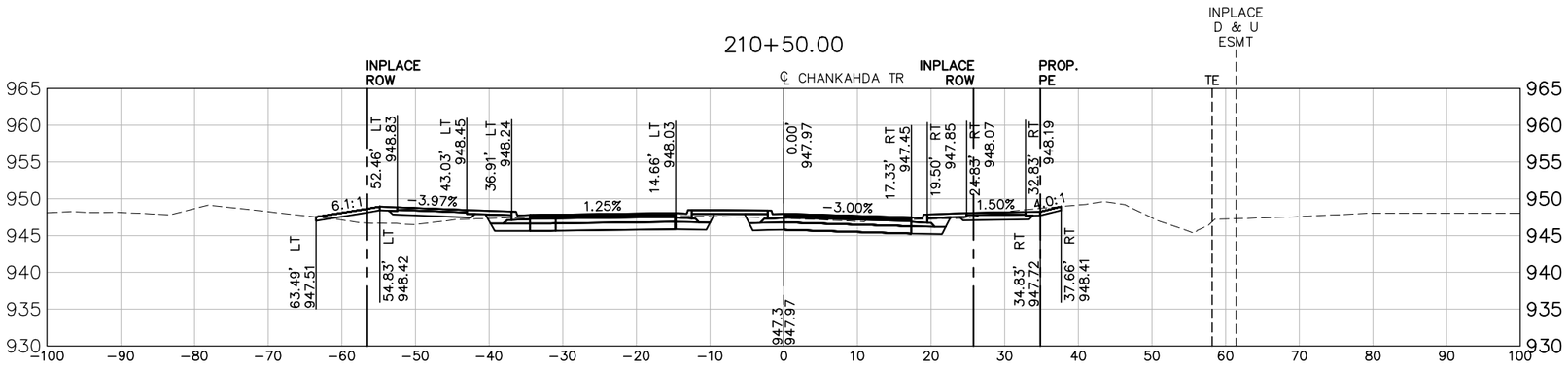
SHEET NO. 333 / 348

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:	11/04/2024
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: 11/04/2024 MN LIC. NO. 41864

City of Plymouth

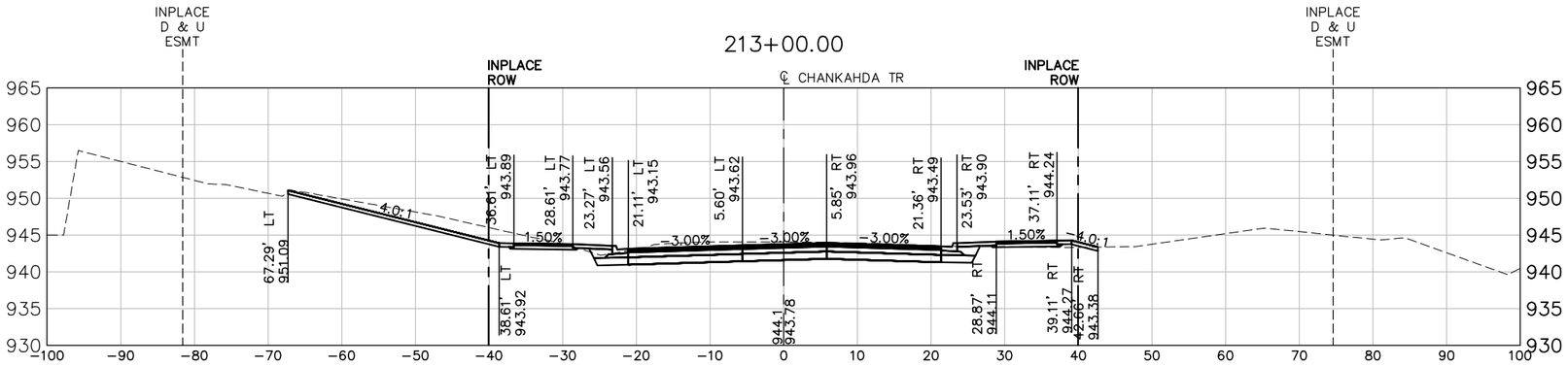
CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
CROSS SECTIONS
STA. 210+50 TO STA. 211+50

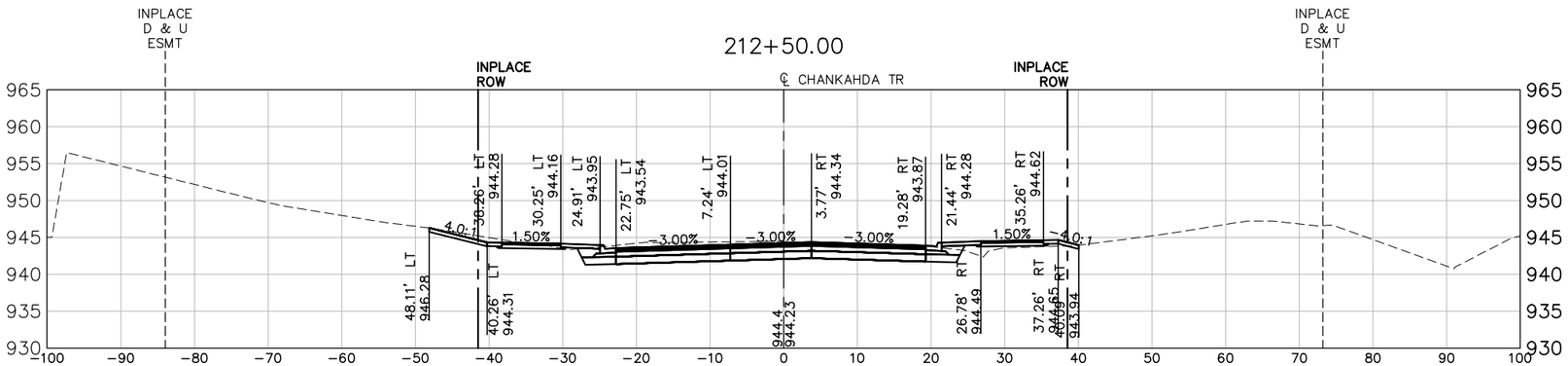
CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

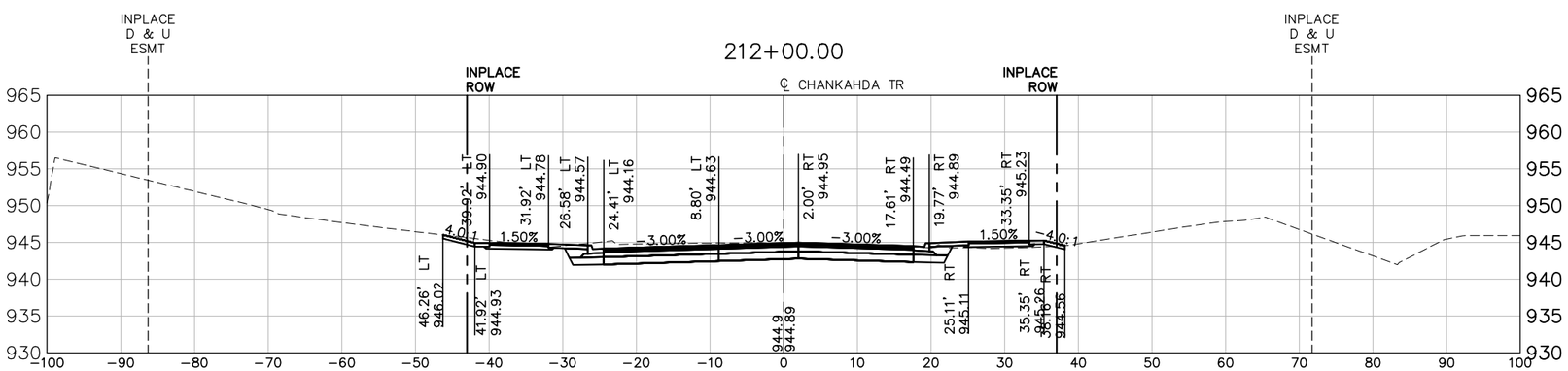
SHEET NO. 334 / 348

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:	11/04/2024
PROJECT NO.	160662010

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CHADD B. LARSON, PE

DATE: 11/04/2024 MN LIC. NO. 41864

City of Plymouth

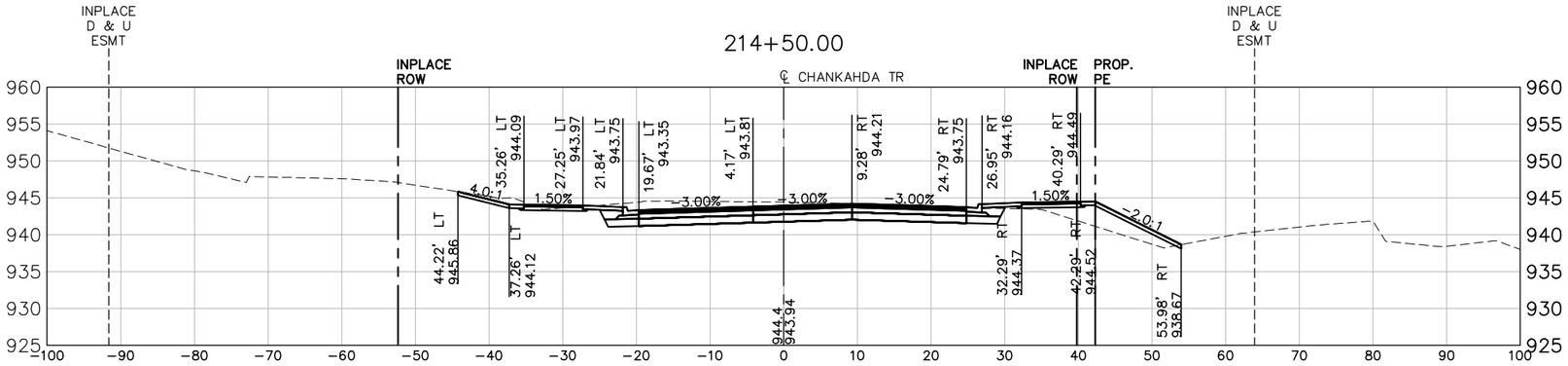
CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
CROSS SECTIONS
STA. 212+00 TO STA. 213+00

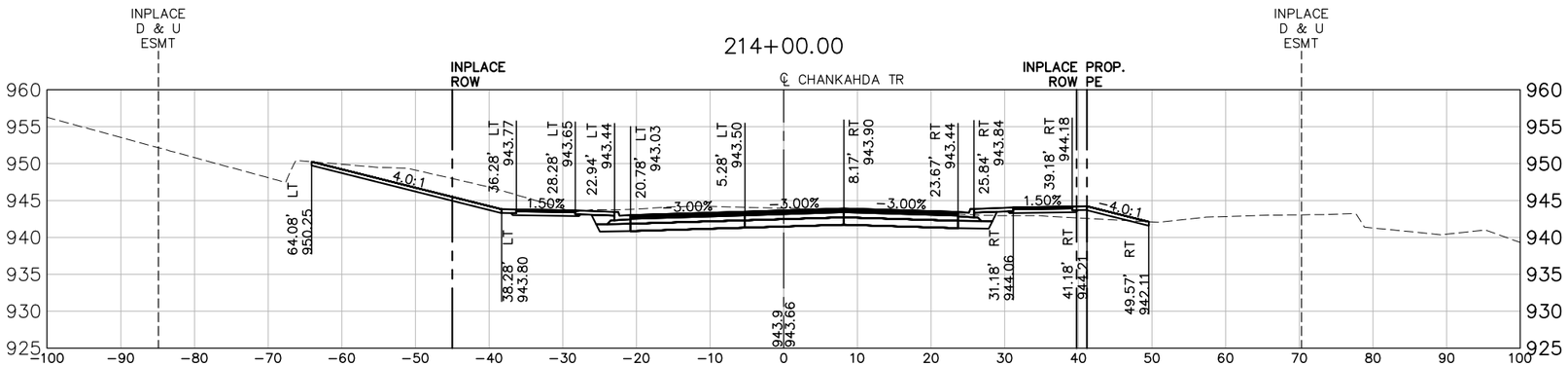
CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

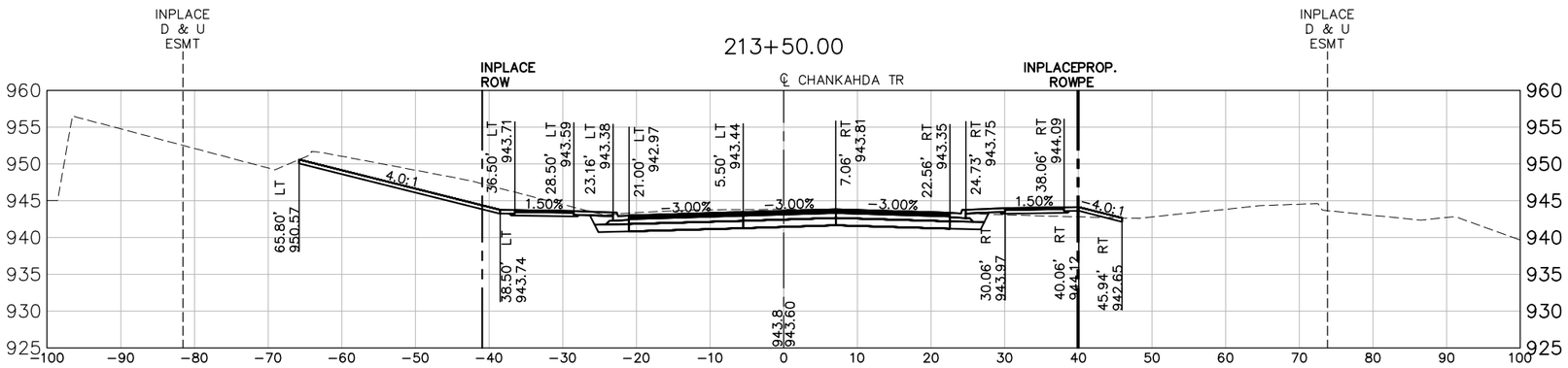
SHEET NO. 335 / 348

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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CHECKED BY:	CBL
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PROJECT NO.	160662010

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CHADD B. LARSON, PE

DATE: 11/04/2024 MN LIC. NO. 41864

City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
CROSS SECTIONS
STA. 213+50 TO STA. 214+50

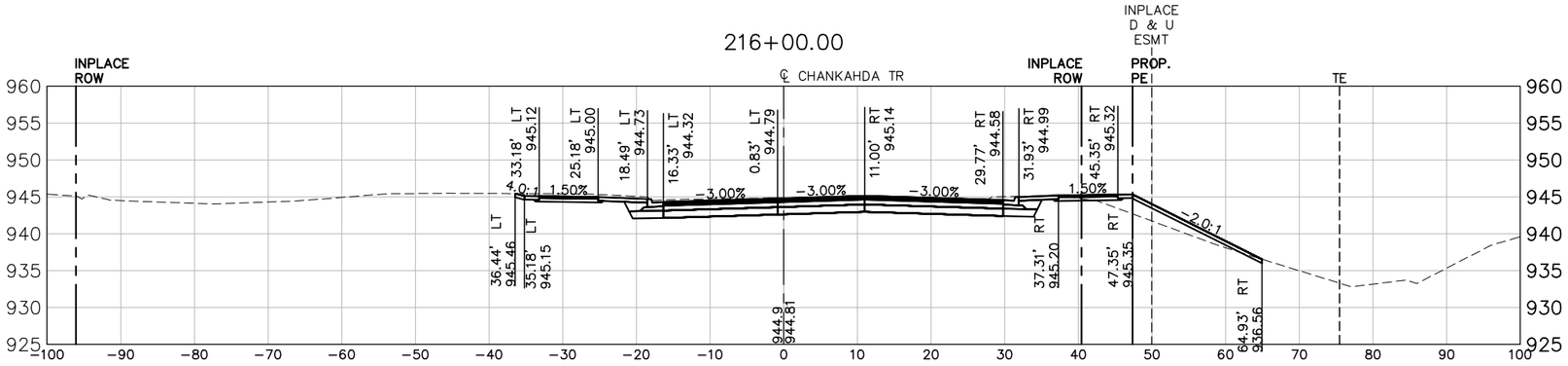
CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 336 / 348

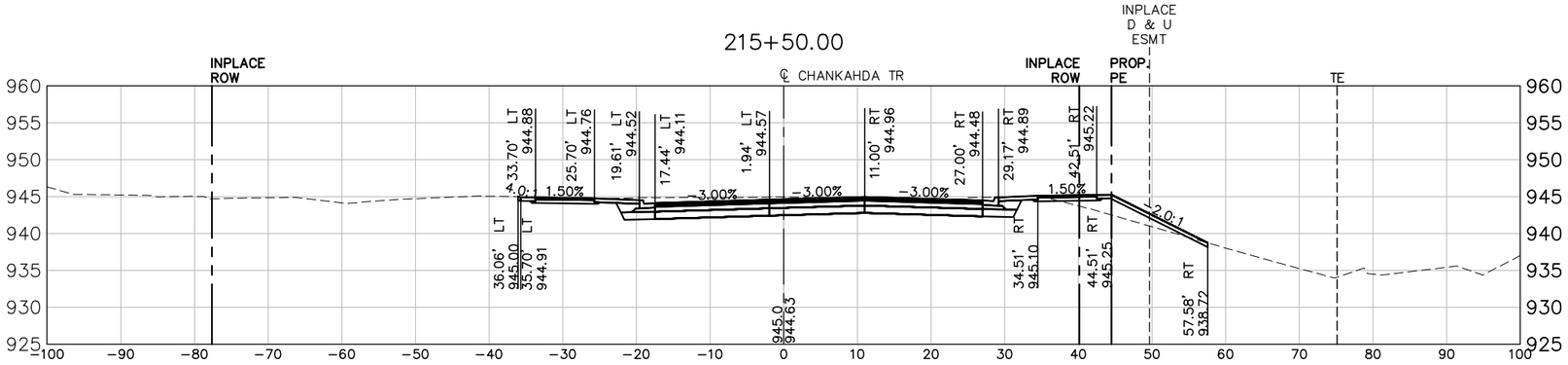
VERTICAL 0 5 10 20

HORIZONTAL SCALE IN FEET 0 5 10 20

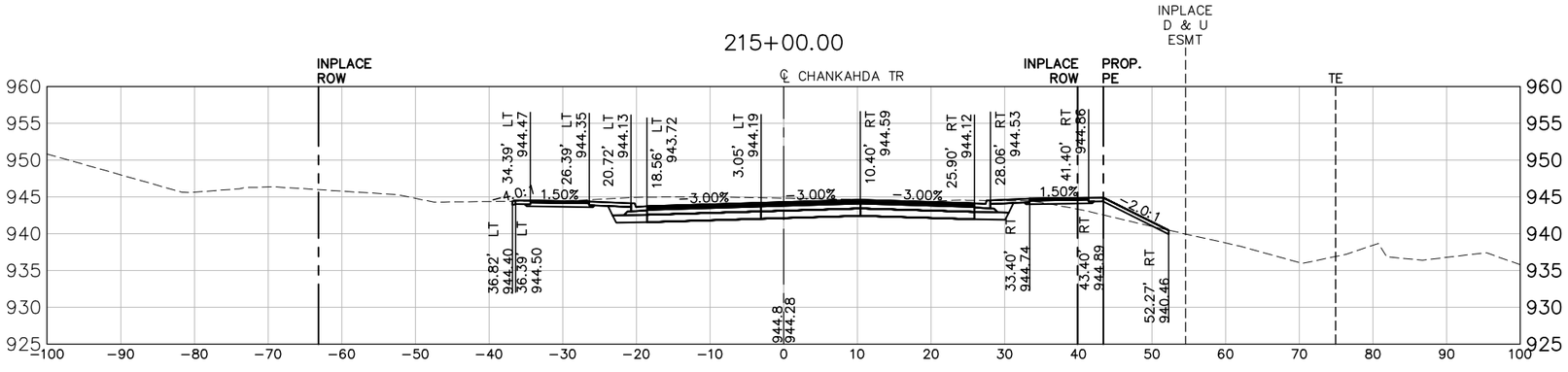
216+00.00



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: 11/04/2024 MN LIC. NO. 41864

City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
CROSS SECTIONS
STA. 215+00 TO STA. 216+00

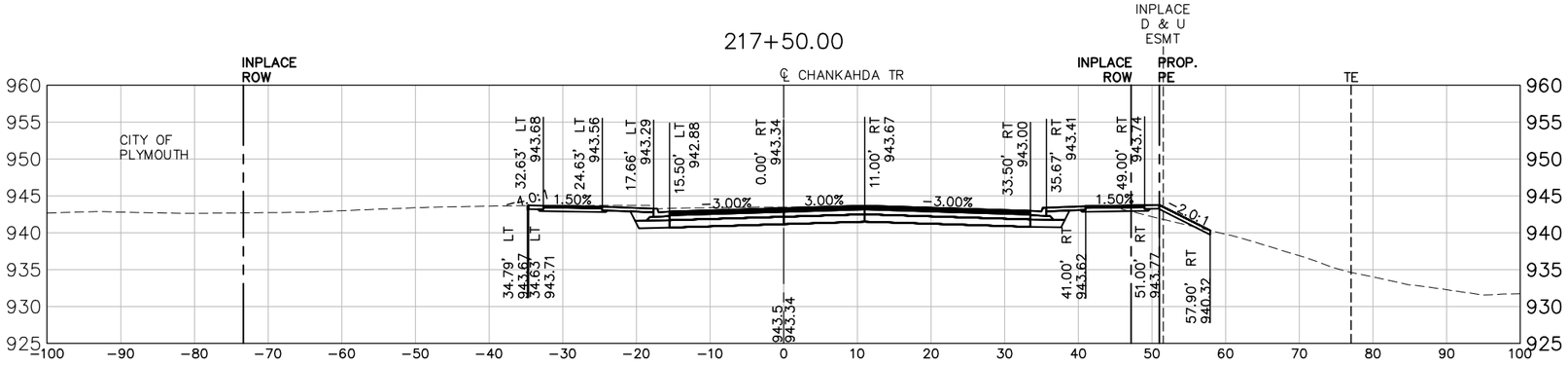
CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 337 / 348

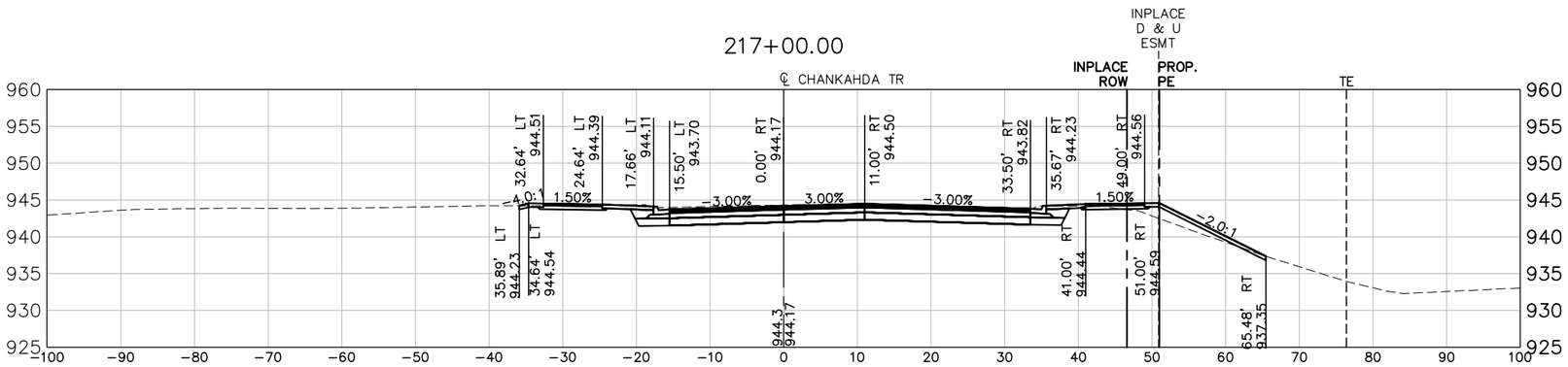
0 5 10 20 VERTICAL

0 5 10 20 HORIZONTAL SCALE IN FEET

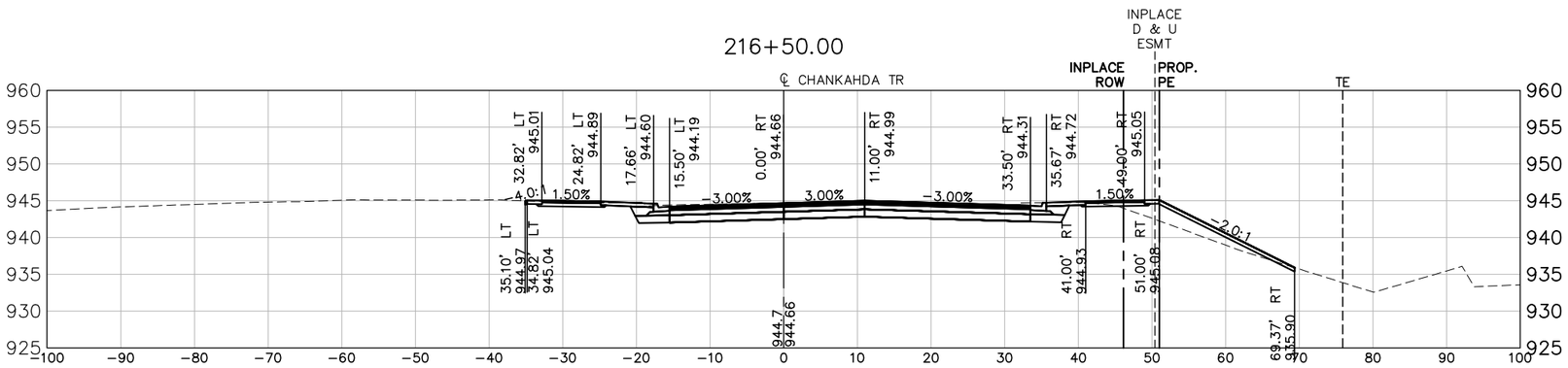
217+50.00



217+00.00



216+50.00



No.	Date	Revisions	App.

DRAWING NAME: CHANKAHDA_PH3_Sections.dwg

DESIGNED BY:	JWB
DRAWN BY:	JWB
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DATE:	11/04/2024
PROJECT NO.	160662010

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CHADD B. LARSON, PE

DATE: 11/04/2024 MN LIC. NO. 41864

City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
CROSS SECTIONS
STA. 216+50 TO STA. 217+50

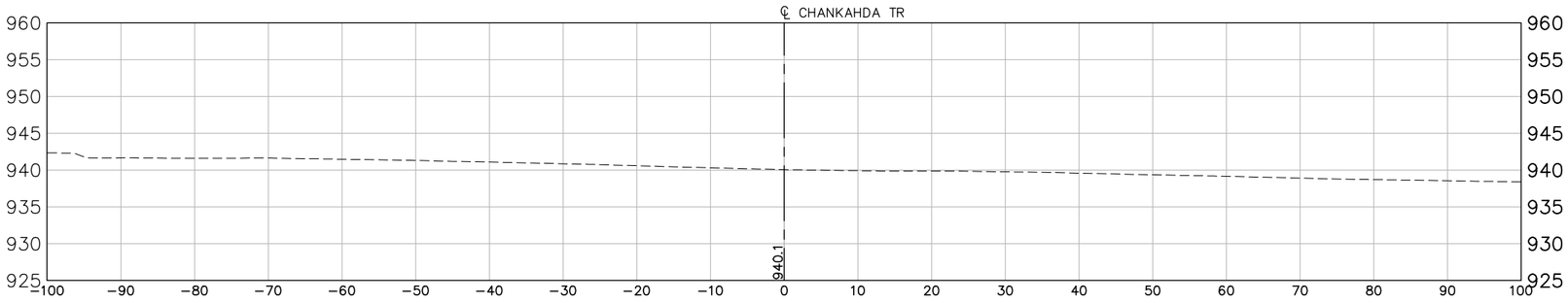
CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 338 / 348

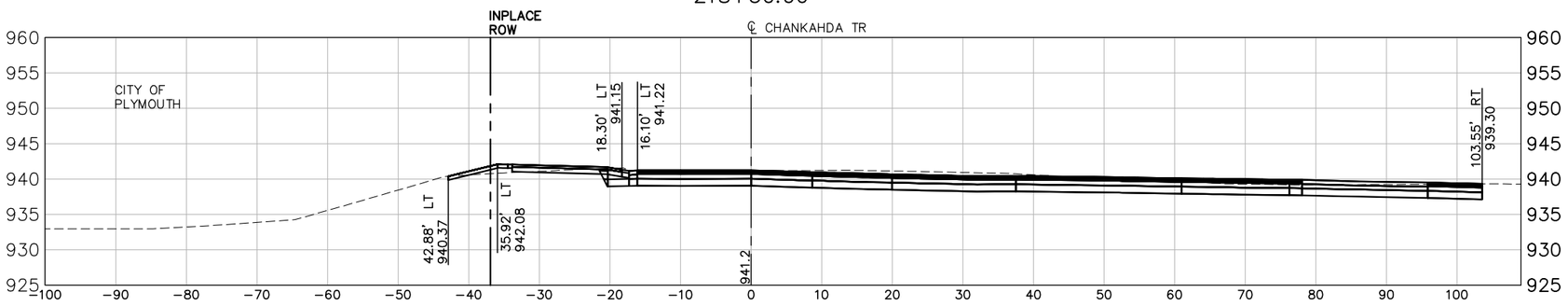
VERTICAL 0 5 10 20

HORIZONTAL SCALE IN FEET 0 5 10 20

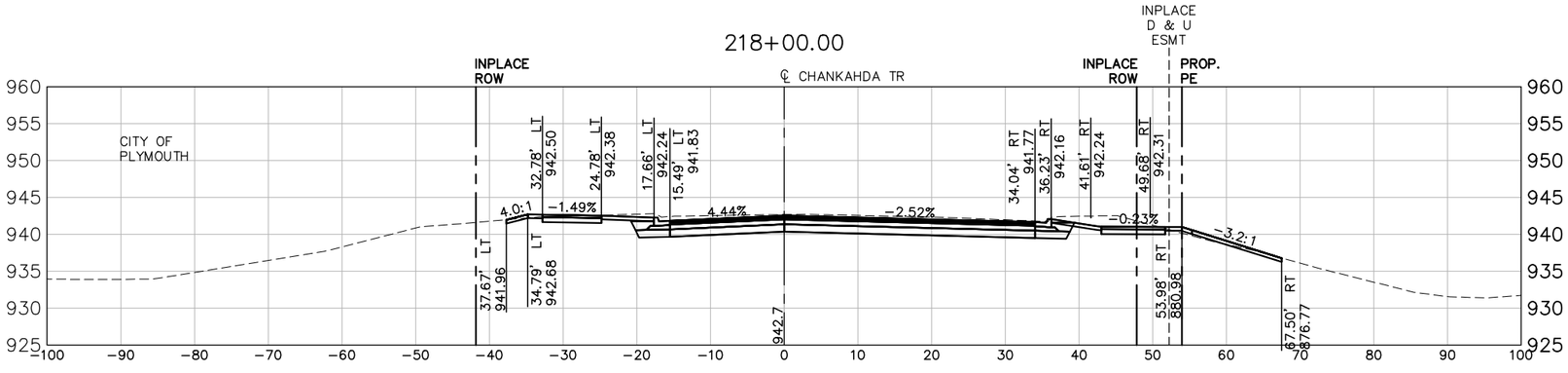
219+00.00



218+50.00



218+00.00



No.	Date	Revisions	App.

DRAWING NAME	CHANKAHDA_PH3_Sections.dwg
DESIGNED BY:	JWB
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CHADD B. LARSON, PE

DATE: 11/04/2024 MN LIC. NO. 41864

City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR
CROSS SECTIONS
STA. 218+00 TO STA. 219+00

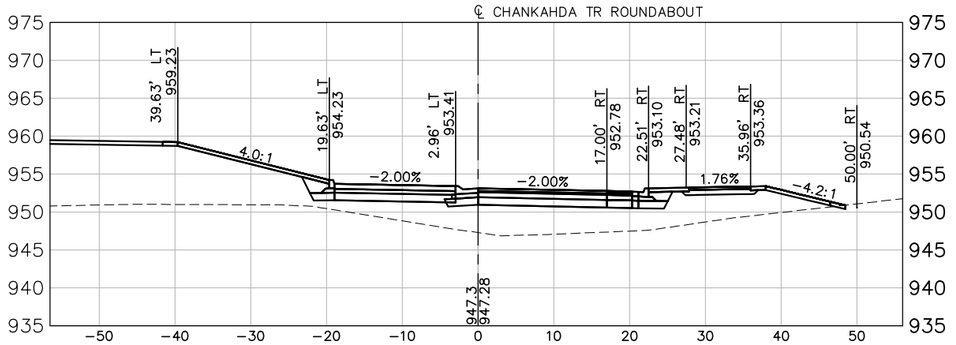
CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 339 / 348

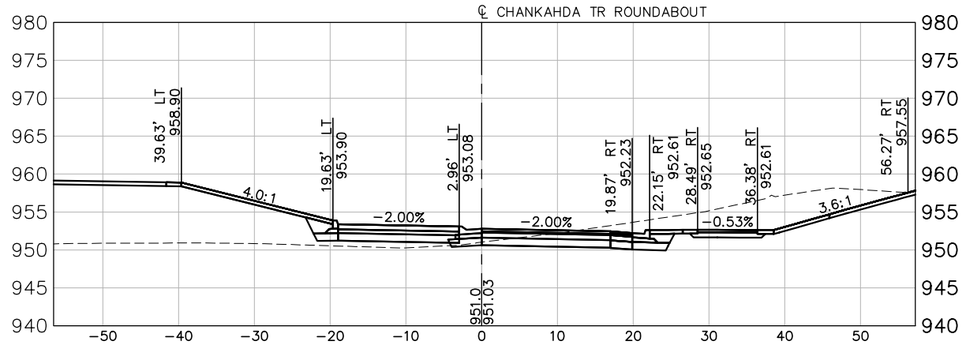
0 5 10 20
VERTICAL

0 5 10 20
HORIZONTAL SCALE IN FEET

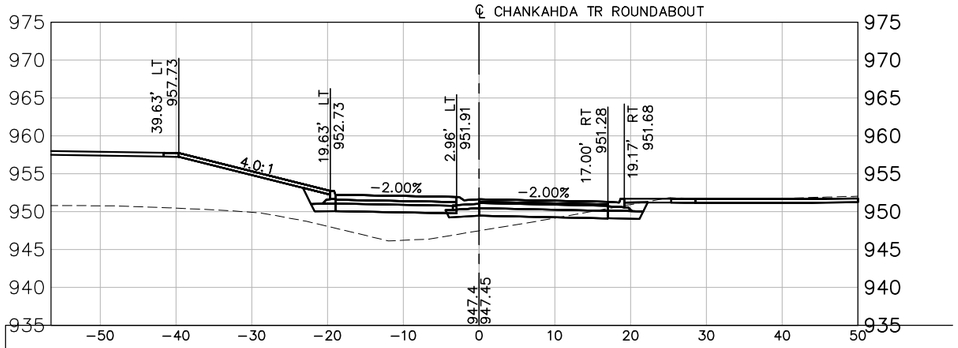
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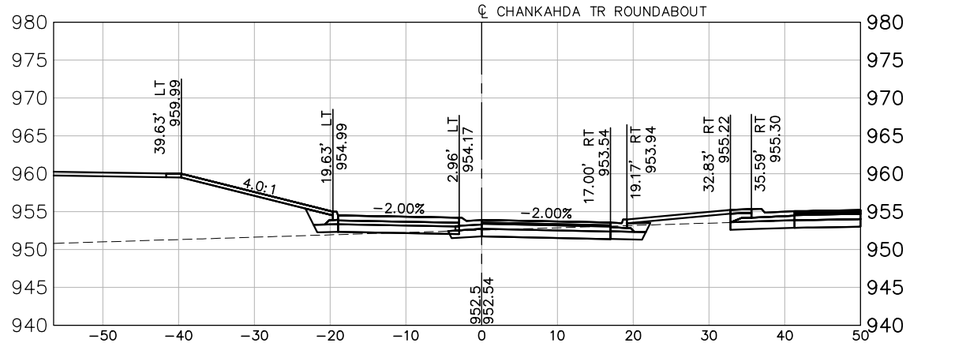
1+50.00



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:	11/04/2024
PROJECT NO.	160662010

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

DATE: 11/04/2024 MN LIC. NO. 41864

City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR ROUNDABOUT
CROSS SECTIONS
STA. 0+00 TO STA. 1+50

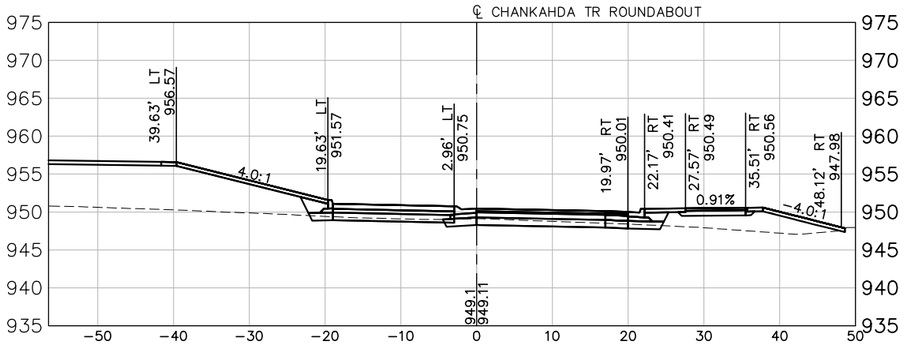
CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 340 / 348

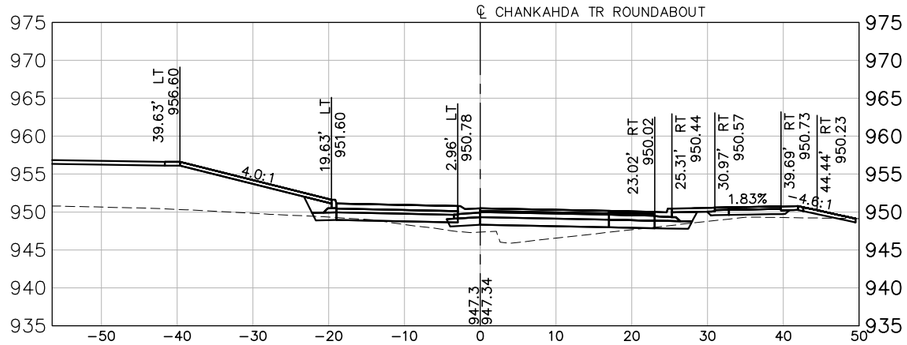
0 5 10 20
VERTICAL

0 5 10 20
HORIZONTAL SCALE IN FEET

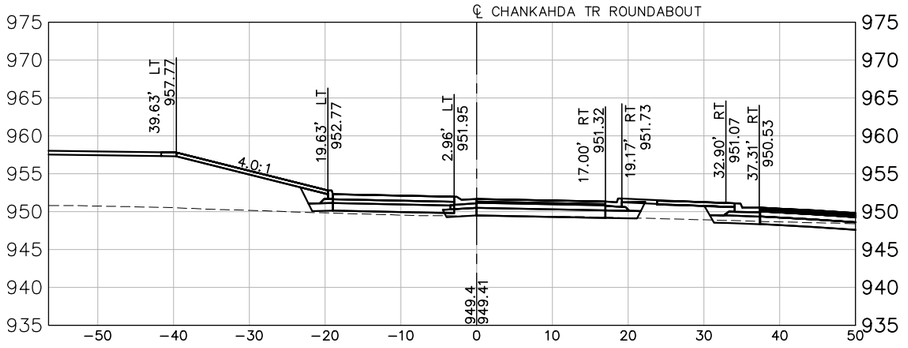
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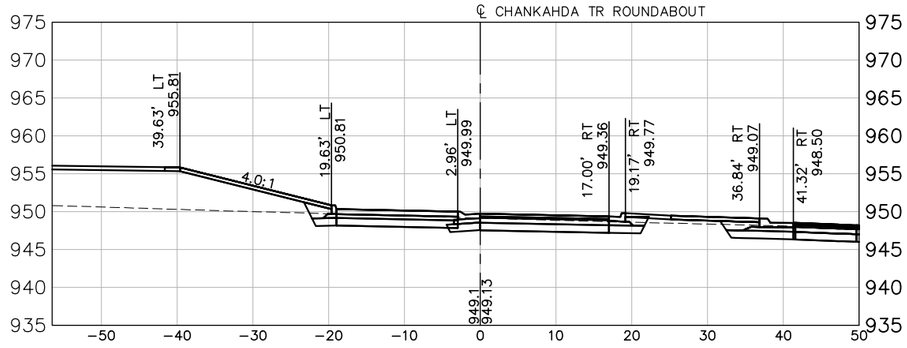
1+40.00



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:	11/04/2024
PROJECT NO.	160662010

Kimley»Horn
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CHADD B. LARSON, PE
DATE: 11/04/2024 MN LIC. NO. 41864

City of Plymouth

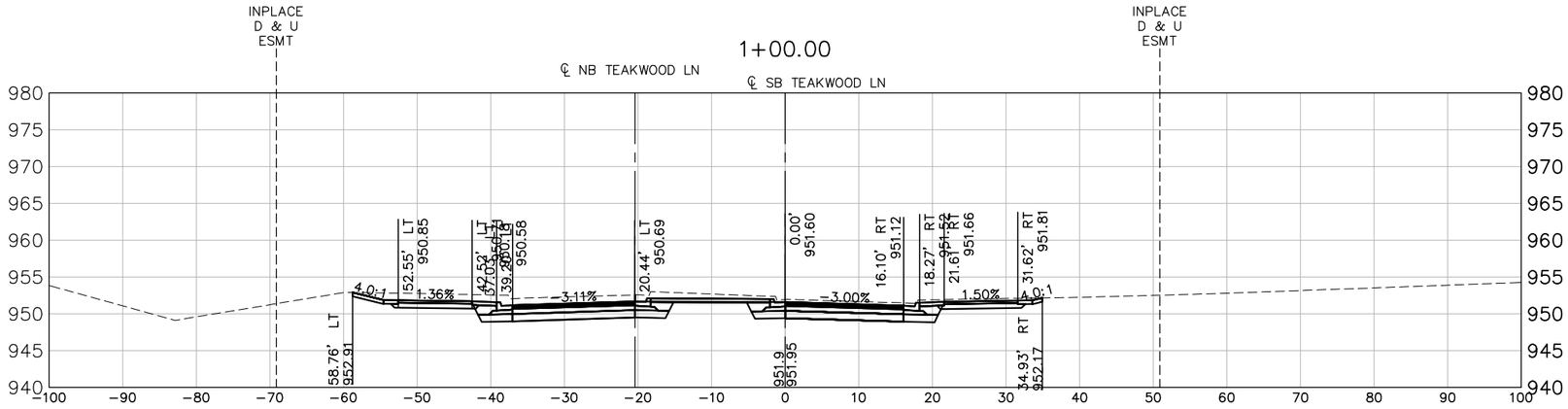
CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
CHANKAHDA TR ROUNDABOUT
CROSS SECTIONS
STA. 0+00 TO STA. 1+40

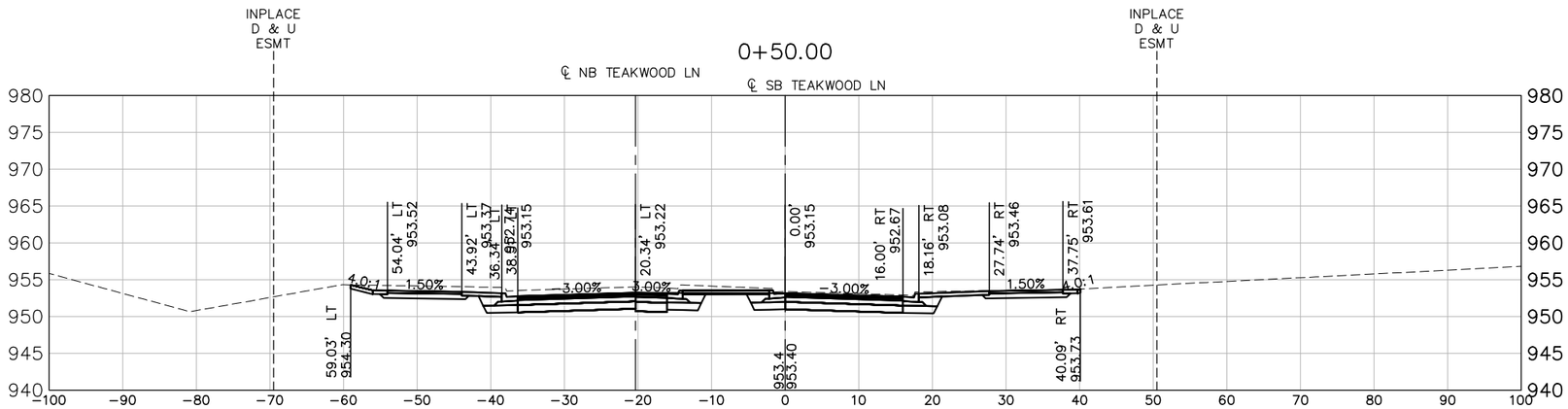
CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

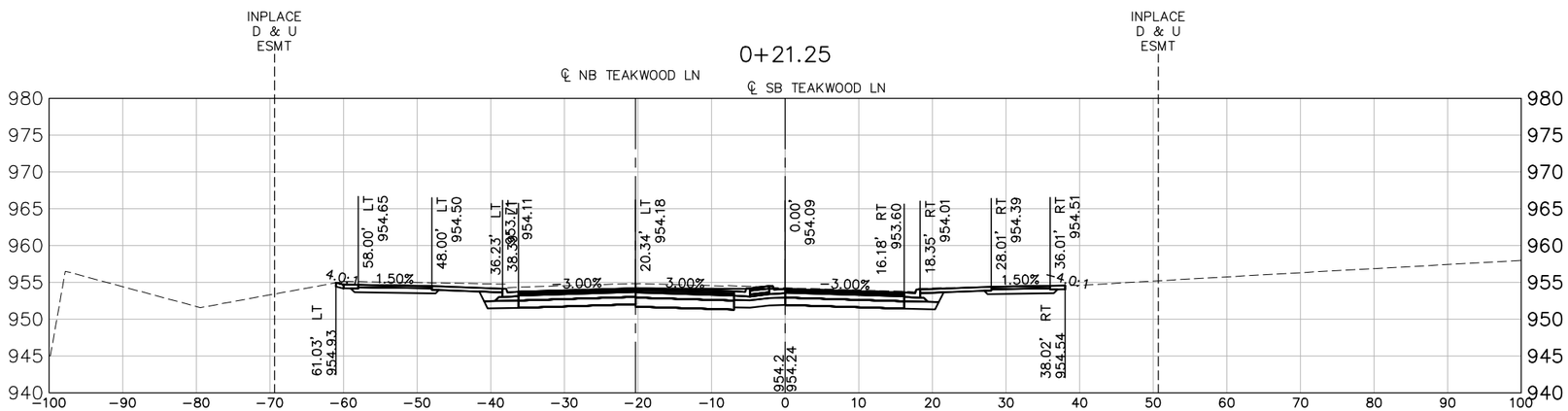
SHEET NO. 341 / 348

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:	11/04/2024
PROJECT NO.	160662010

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CHADD B. LARSON, PE

DATE: 11/04/2024 MN LIC. NO. 41864

City of Plymouth

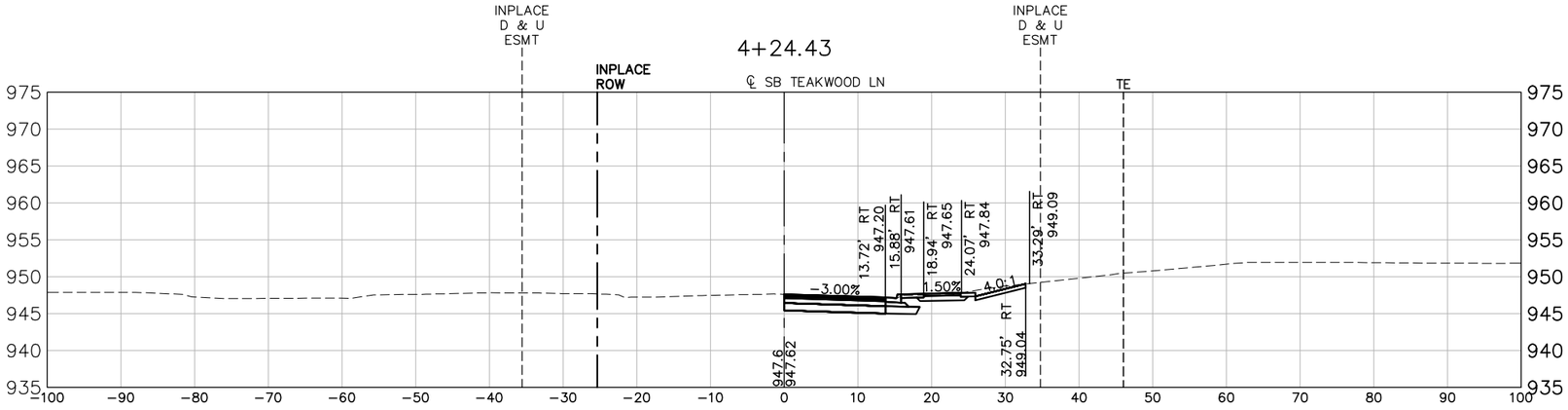
CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
TEAKWOOD LN
CROSS SECTIONS
STA. 0+21 TO STA. 1+00

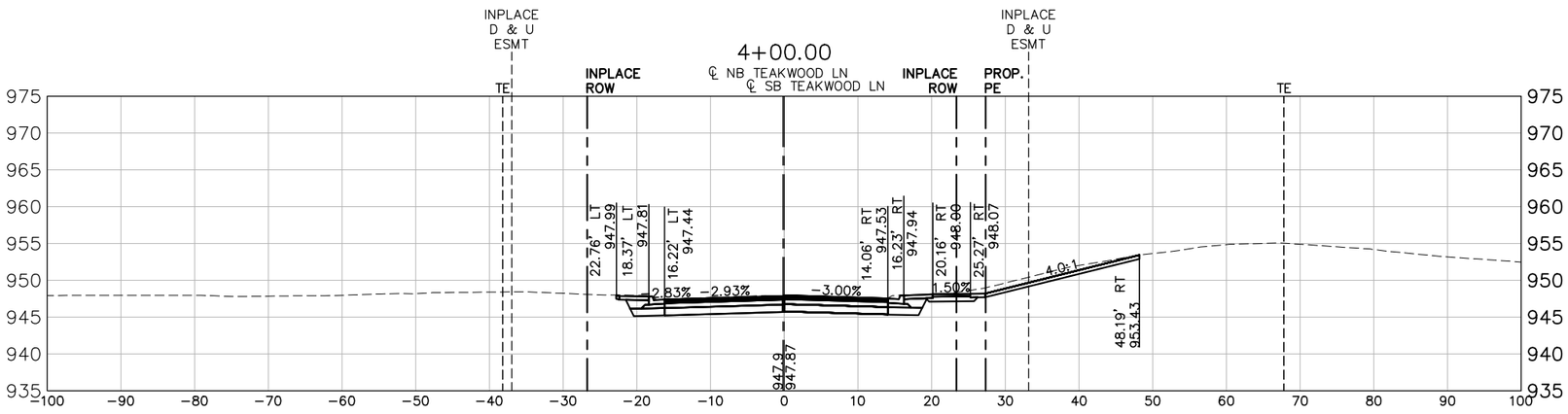
CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

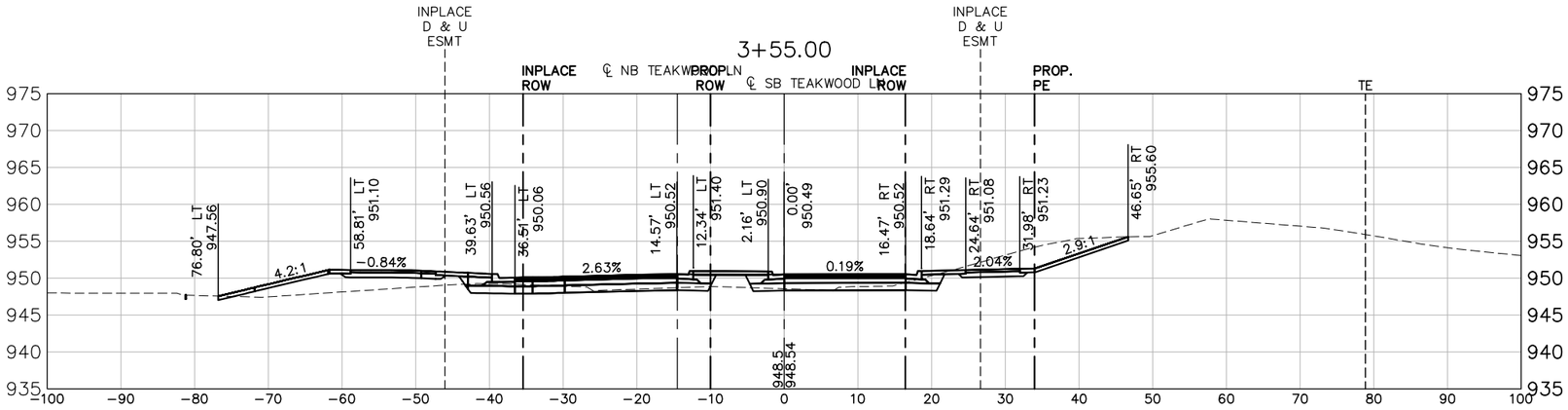
SHEET NO. 342 / 348

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:	11/04/2024
PROJECT NO.	160662010

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CHADD B. LARSON, PE

DATE: 11/04/2024 MN LIC. NO. 41864

City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
TEAKWOOD LN
CROSS SECTIONS
STA. 3+60 TO STA. 4+24

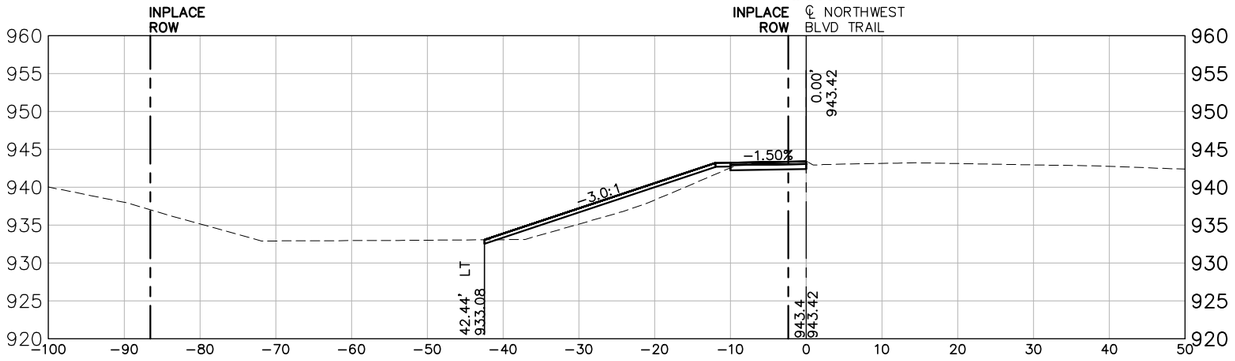
CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 343 / 348

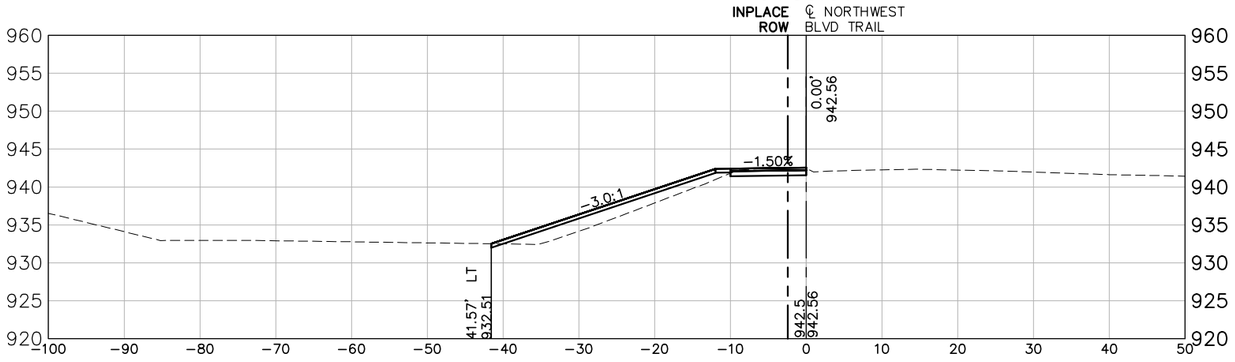
0 5 10 20 VERTICAL

0 5 10 20 HORIZONTAL SCALE IN FEET

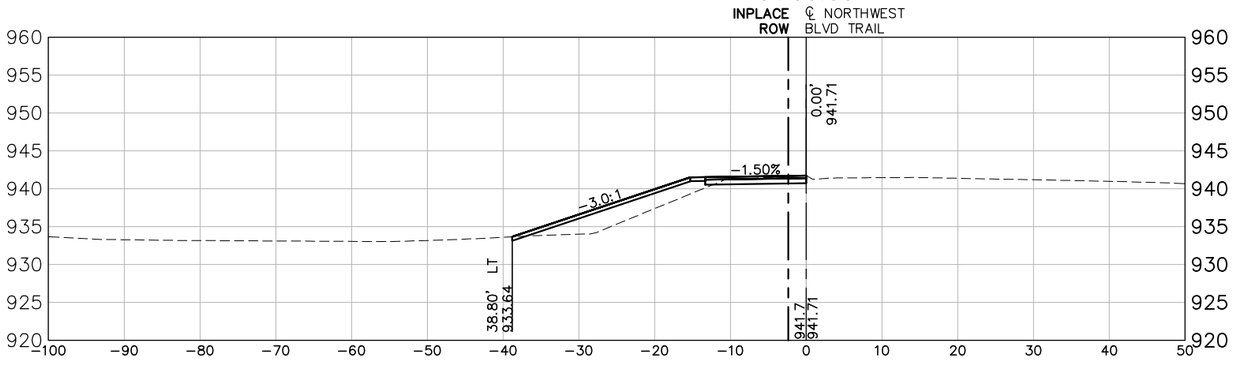
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No.	Date	Revisions	App.

DRAWING NAME	CHANKAHDA_PH3_Sections.dwg
DESIGNED BY:	JWB
DRAWN BY:	JWB
CHECKED BY:	CBL
DATE:	11/04/2024
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: 11/04/2024 MN LIC. NO. 41864

City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
NORTHWEST BLVD TRAIL
CROSS SECTIONS
STA. 0+00 TO STA. 1+00

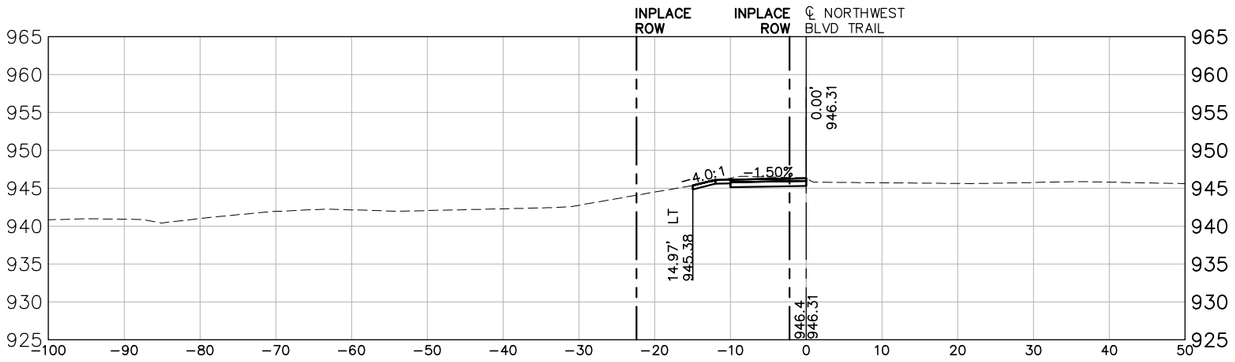
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COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 344 / 348

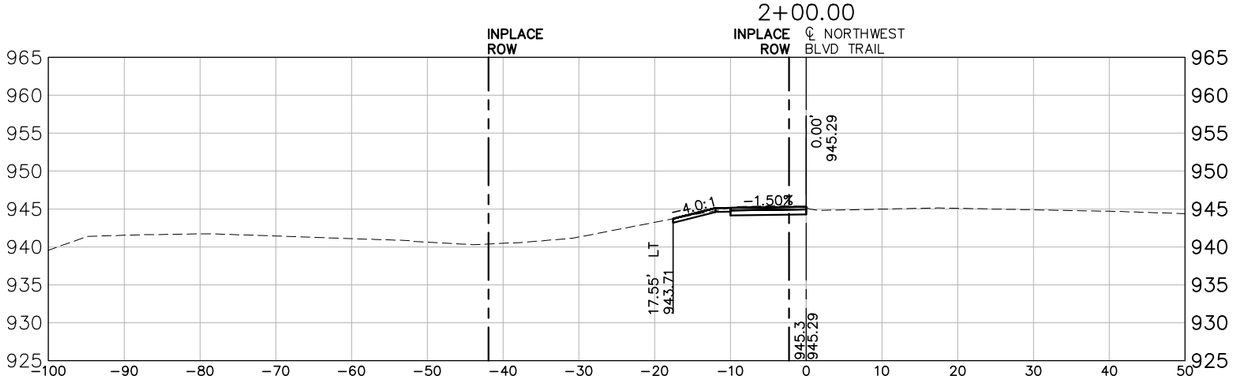
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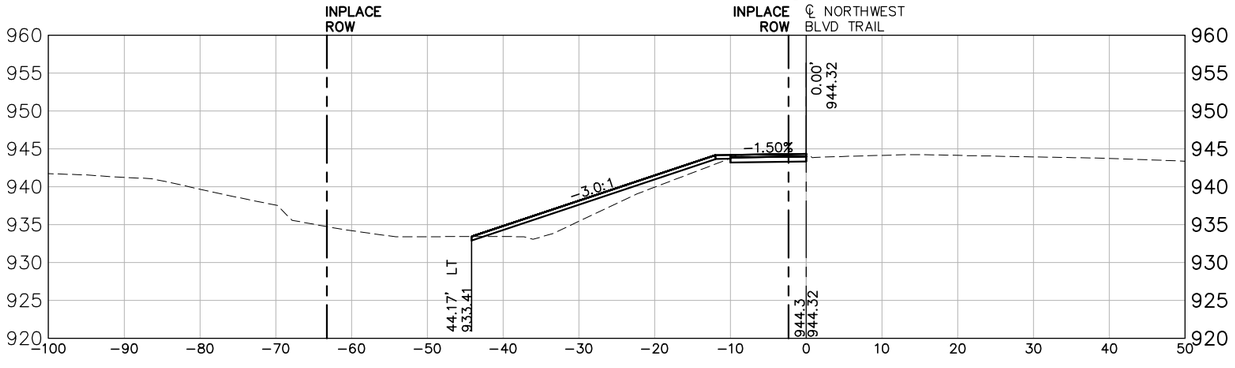
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City of Plymouth

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RECONSTRUCTION PHASE 3
NORTHWEST BLVD TRAIL
CROSS SECTIONS
STA. 1+50 TO STA. 2+50

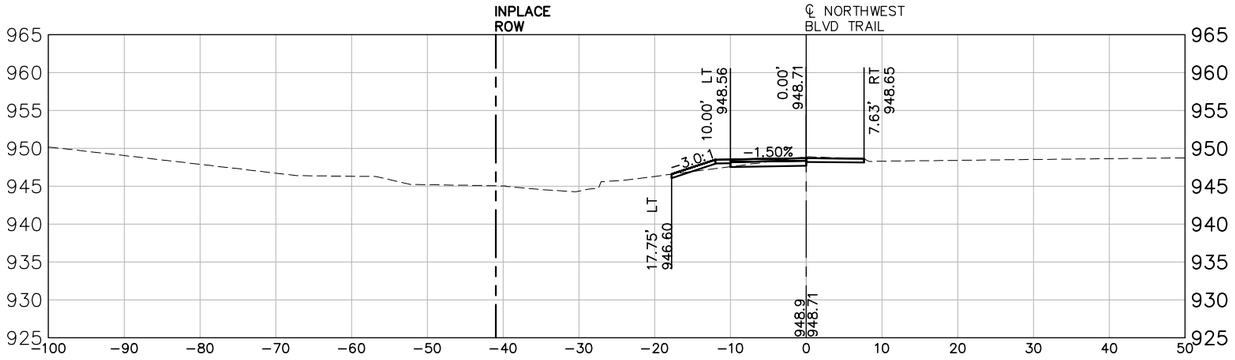
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COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

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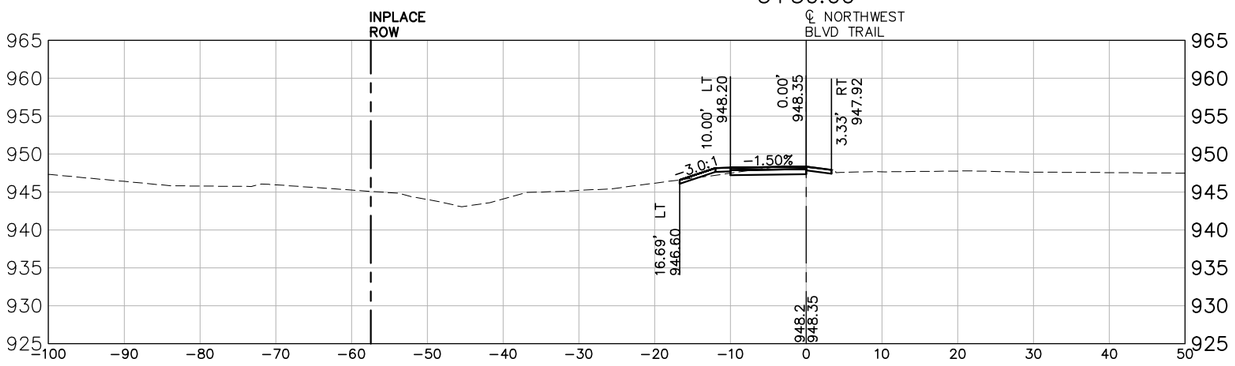
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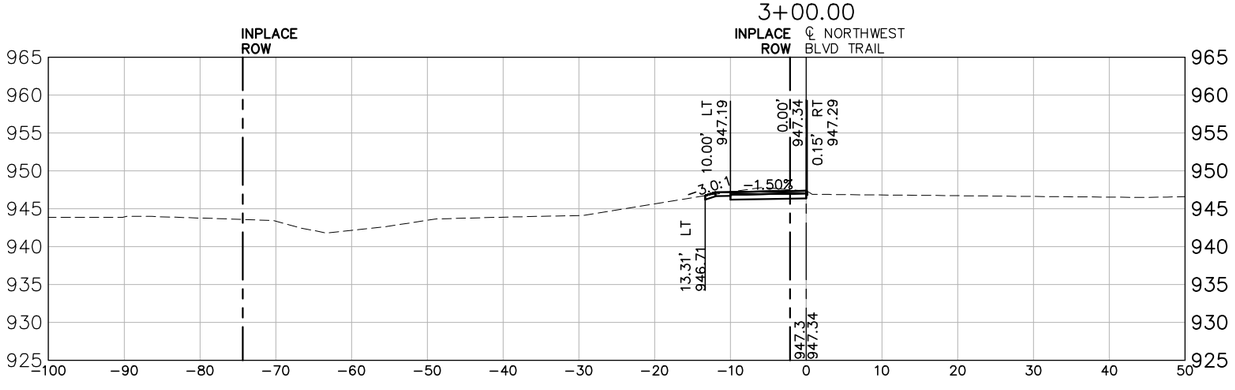
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RECONSTRUCTION PHASE 3
NORTHWEST BLVD TRAIL
CROSS SECTIONS
STA. 3+00 TO STA. 4+00

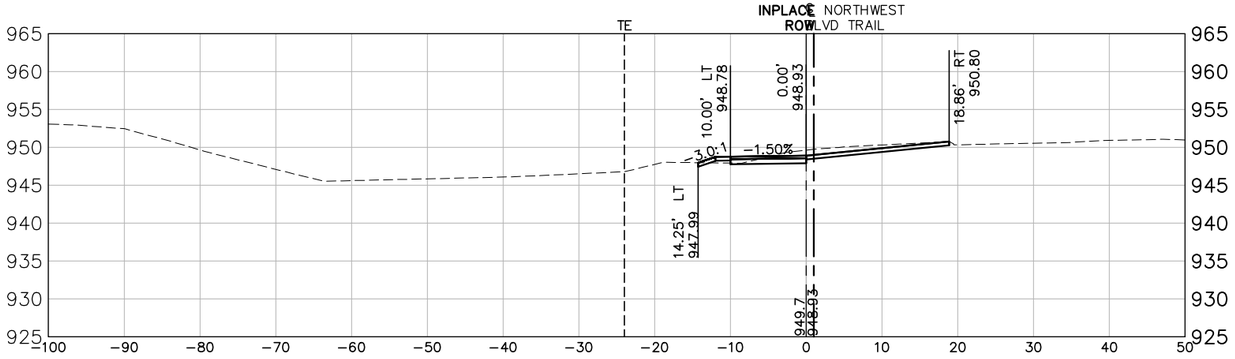
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COUNTY PROJECT	
S.A.P.	155-210-003
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SHEET NO. 346 / 348

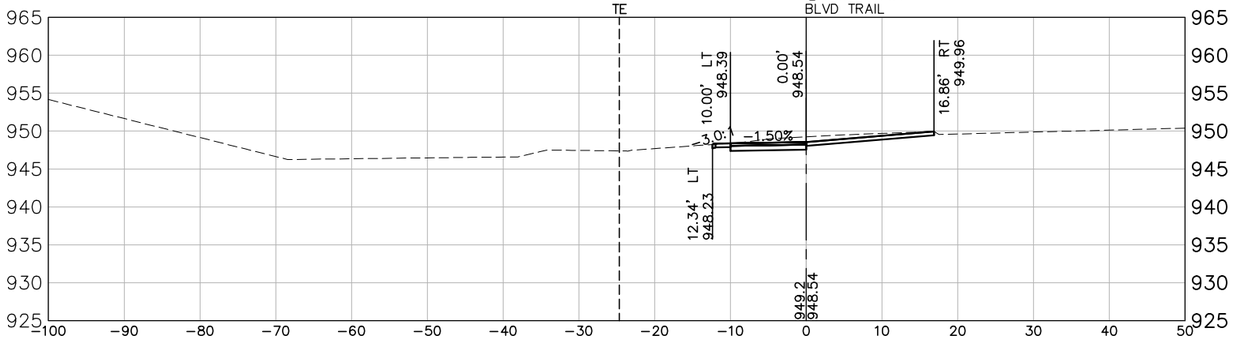
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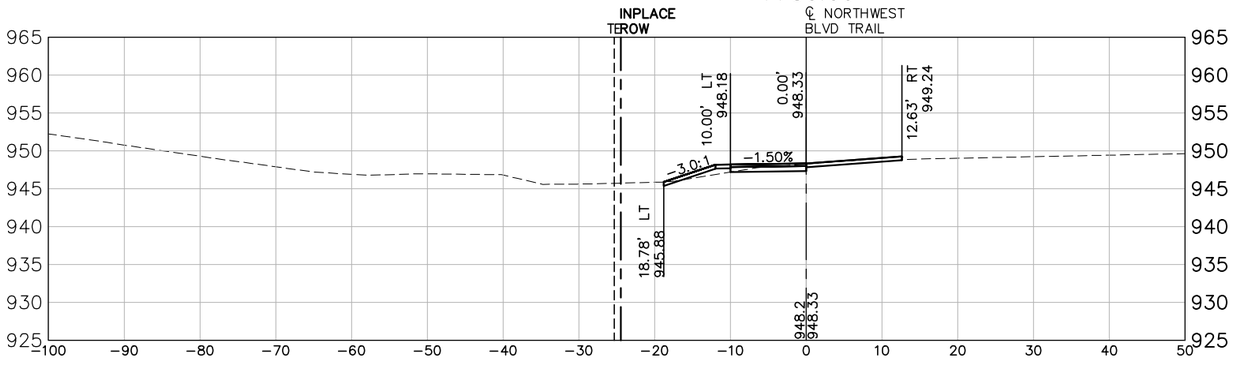
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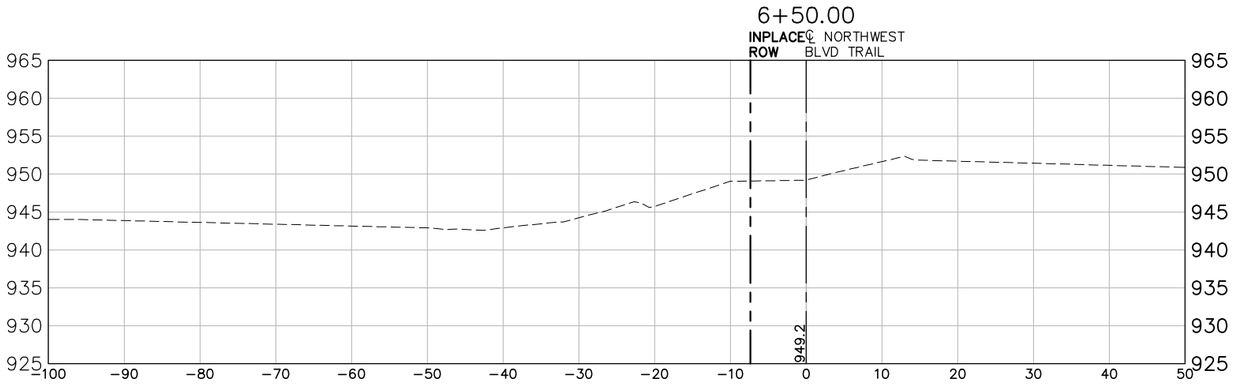
CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
NORTHWEST BLVD TRAIL
CROSS SECTIONS
STA. 4+50 TO STA. 5+50

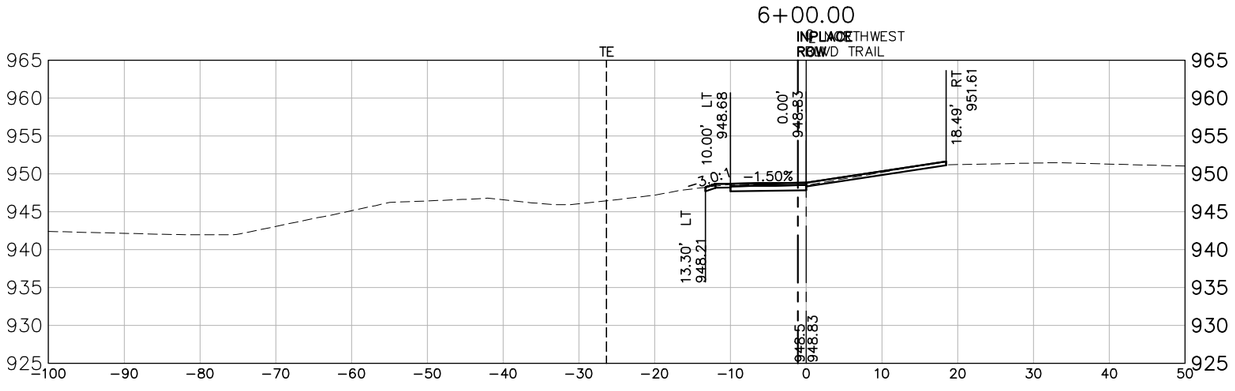
CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. 347 / 348

0 5 10 20 VERTICAL

0 5 10 20 HORIZONTAL SCALE IN FEET





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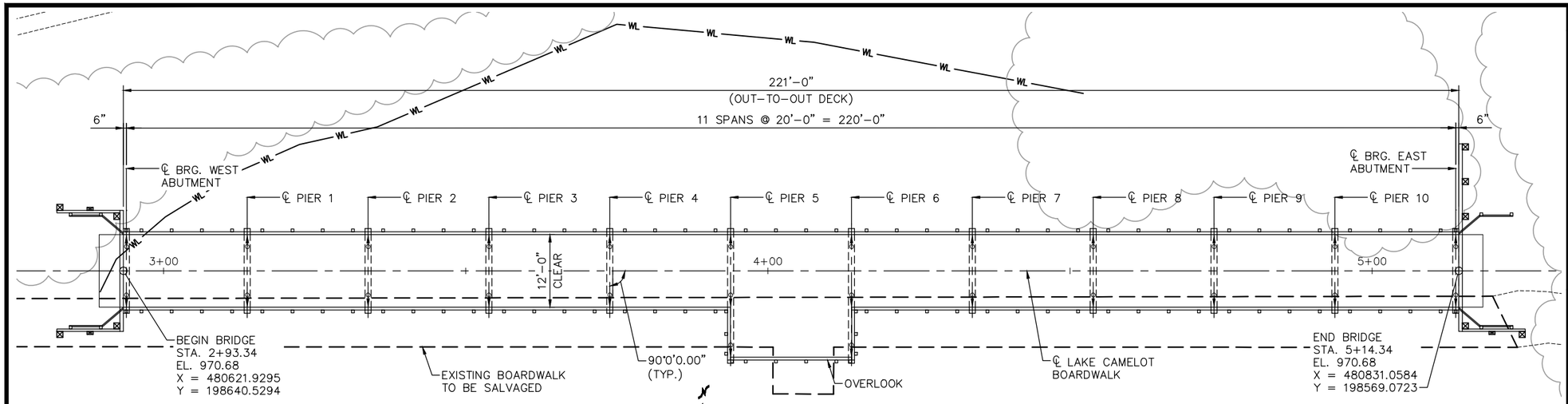
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City of Plymouth

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CROSS SECTIONS
STA. 6+00 TO STA. 6+50

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

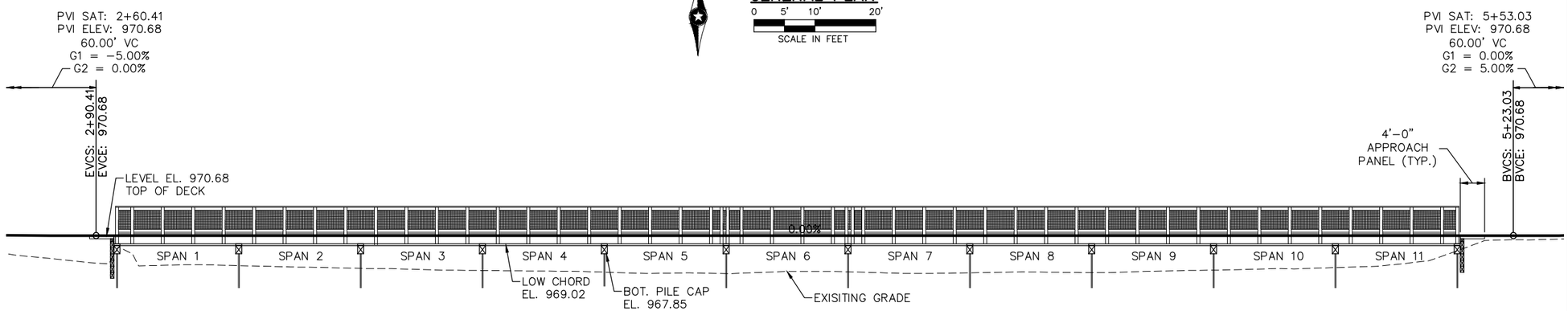
SHEET NO. 348 / 348



GENERAL PLAN

0 5' 10' 20'

SCALE IN FEET



GENERAL ELEVATION

0 5' 10' 20'

SCALE IN FEET

SCHEDULE OF QUANTITIES FOR BOARDWALK				
	ITEM NO.	ITEM	UNIT	QUANTITY
(1)	2106.507	SELECT GRANULAR EMANKMENT MOD 10% (CV)	CU YD	85
	2108.504	GEOTEXTILE FABRIC TYPE 1	SQ YD	55
(2)	2411.507	STRUCTURAL CONCRETE (3G52)	CU YD	2
(1)	2411.601	STRUCTURE EXCAVATION	LUMP SUM	1
(3)	2403.522	TREATED WOOD	MBM	22.6
(4)	2403.603	TIMBER RAILING	LIN FT	500
(5)	2521.618	TIMBER WALK	SQ FT	2800
	2452.602	ANCHOR PILING	EACH	26

SCHEDULE OF QUANTITIES NOTES:

(1) SELECT GRANULAR EMBANKMENT MOD 10% AND 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.

(4) PRICE BID FOR "TIMBER RAILING" INCLUDES ALL WORK AND MATERIALS TO CONSTRUCT TIMBER RAILING INCLUDING TIMBER MATERIALS FOR (RAIL CAPS, RAILS, CLEATS, 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.

(5) TIMBER WALK SHALL BE MEASURED BETWEEN CURBS AND ALONG CENTERLINE FROM BEGIN STATION TO END END STATION OF BRIDGE.

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:	SOUTHERN PINE, NO. 2 OR BETTER, S4S, Fb=850 P.S.I.
CURB & SCUPPER BLOCK:	SOUTHERN PINE, NO. 2 OR BETTER, S4S, Fb=850 P.S.I.
ABUTMENT 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. 3492, EXCEPT 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, AND 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.

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".

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
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BRIAN FLEMING, PE

DATE: 11/04/2024 MN LIC. NO. 49486

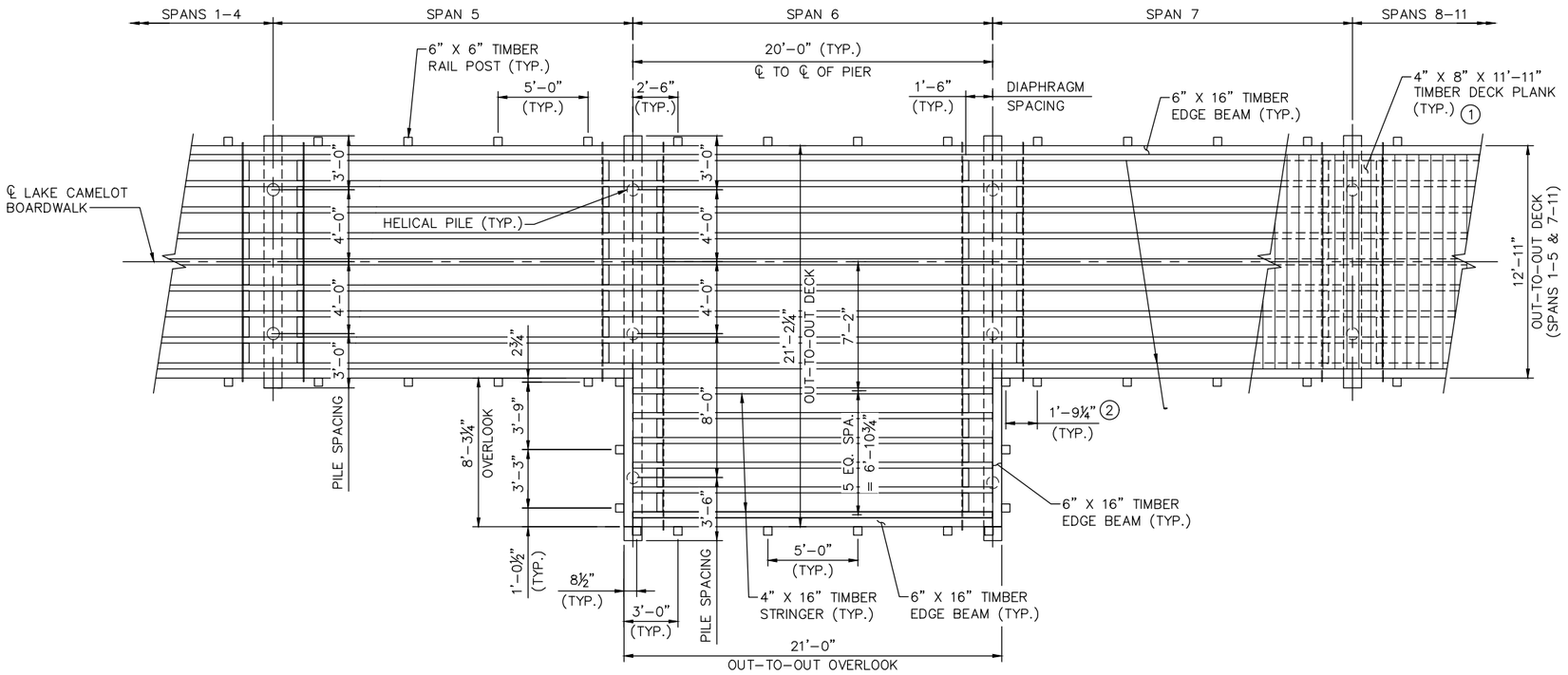
City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
LAKE CAMELOT BOARDWALK
GENERAL PLAN AND ELEVATION

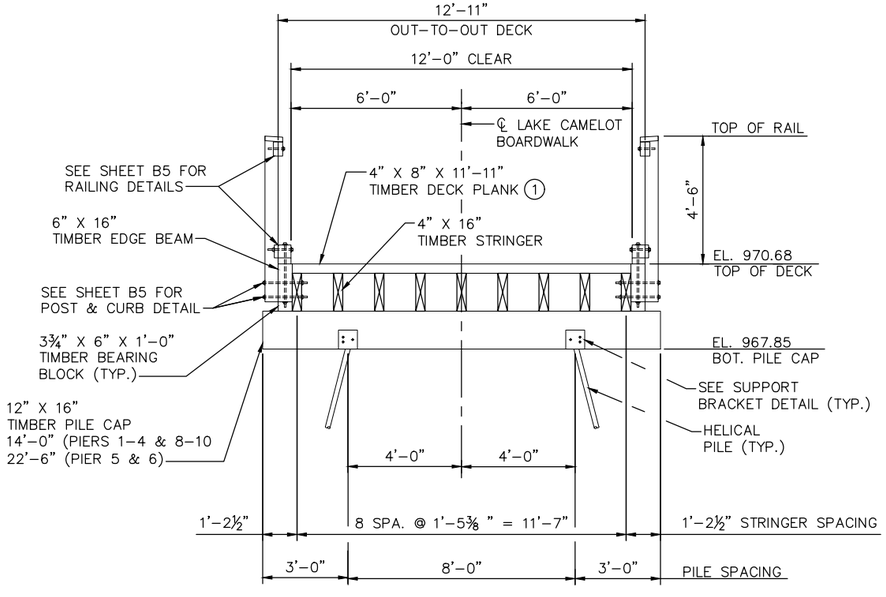
CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO. B1 / B6

Nov, 04 2024 06:14 pm K:\TWC_Civil\City\PLYMOUTH\CHANKAHDA TRL PH3\CAD\Plan Sheets\Bridge\CHKDA_PH3_BR_GPE.dwg By: Jared.Buchanan

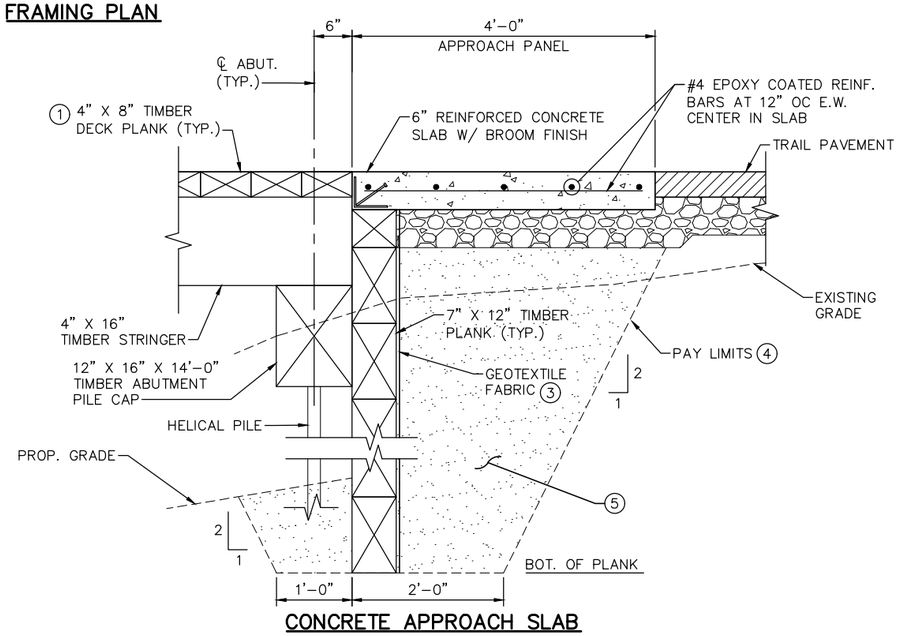


FRAMING PLAN



TYPICAL SECTION

(ABUTMENTS & PIERS 1–4 & 7–10)



CONCRETE APPROACH SLAB

COMPUTED VERTICAL HELICAL PILE LOAD – KIPS /PILE	
DEAD LOAD	10
LIVE LOAD	12
DESIGN LOAD = PILE BEARING RESISTANCE	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 ALIGHTMENT.

* SEE GEOTECHNICAL REPORT IN SPECIAL PROVISIONS FOR TESTING REQUIREMENTS.

NOTES:

① PLACE DECK PLANKING ROUGH SIDE UP WITH NO GAPS BETWEEN BOARDS. FASTEN TO STRINGERS W/ 2–¼"ø X 6" COUNTERSUNK COATED 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, AND PAYMENT IS BASED ON THIS QUANTITY. SEE PLAN FOR QUANTITY. 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.

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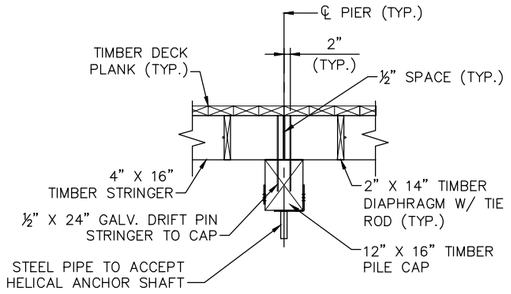
City of Plymouth

CHANKAHDA TRAIL
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LAKE CAMELOT BOARDWALK
SUPERSTRUCTURE DETAILS

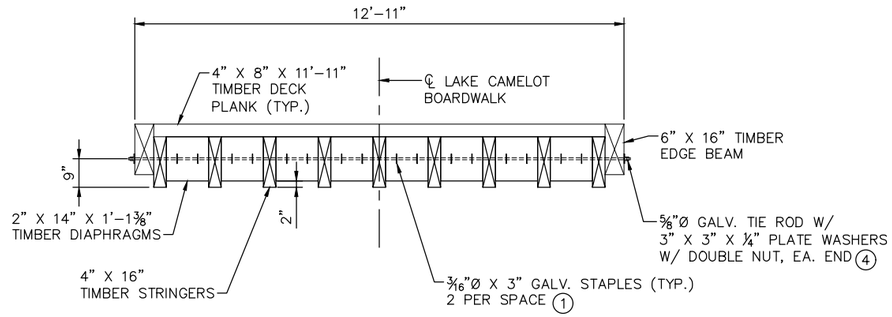
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COUNTY PROJECT	
S.A.P.	155–210–003
S.A.P.	

SHEET NO. B2 / B6

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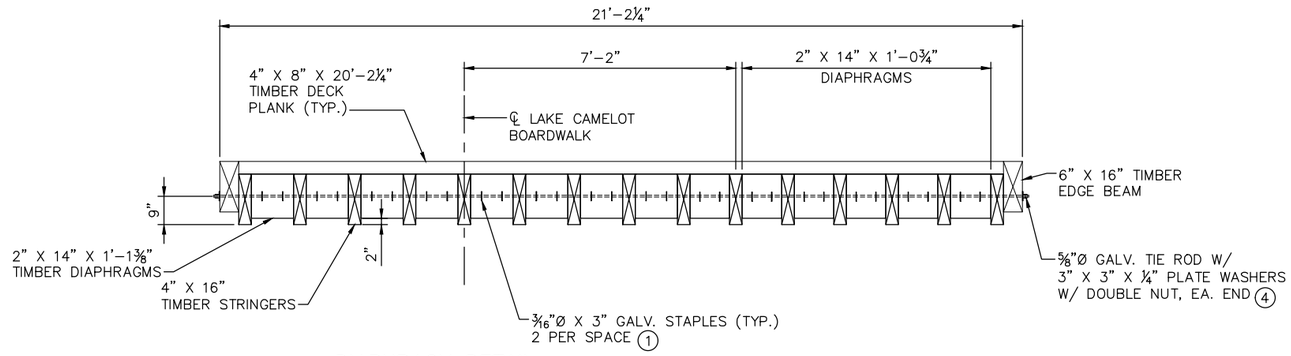


PIER DETAIL



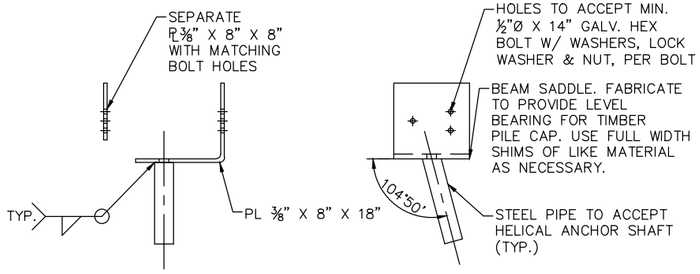
DIAPHRAGM DETAIL

(SPANS 1-5 & 7-11)



DIAPHRAGM DETAIL

(SPAN 6)



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.

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 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 ¼" 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.

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PHONE: 651-645-4197
WWW.KIMLEY-HORN.COM

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BRIAN FLEMING, PE

DATE: 11/04/2024 MN LIC. NO. 49486

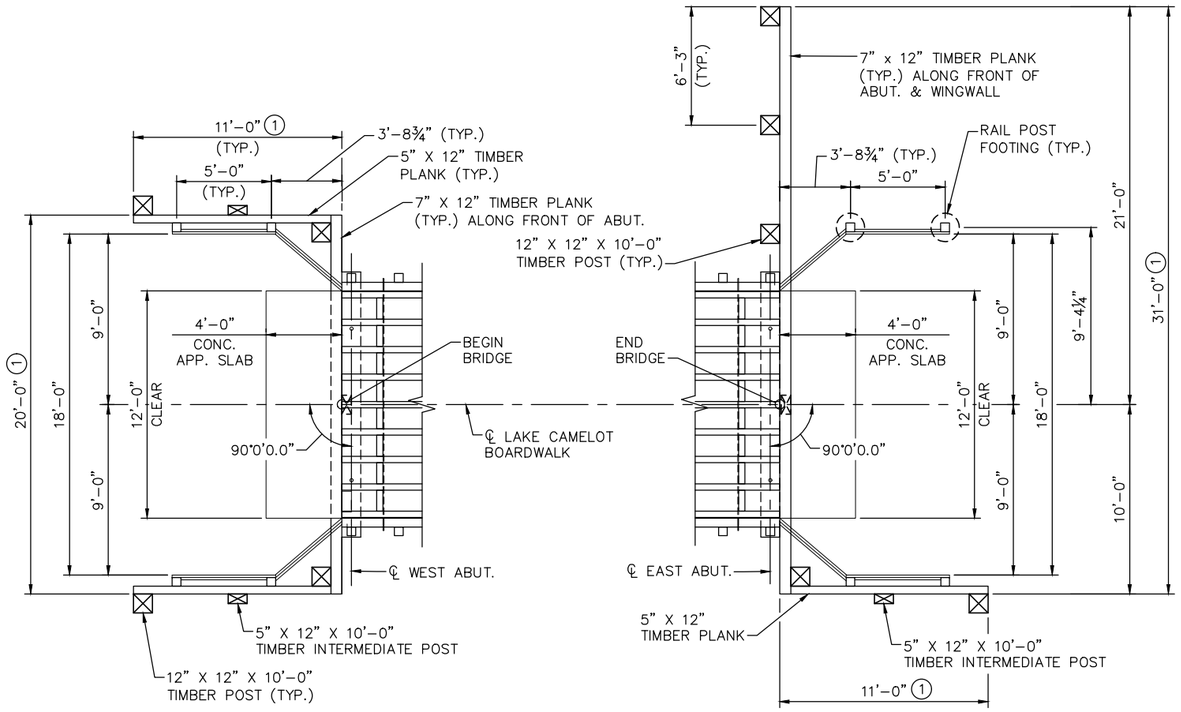
City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
LAKE CAMELOT BOARDWALK
SUBSTRUCTURE DETAILS

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

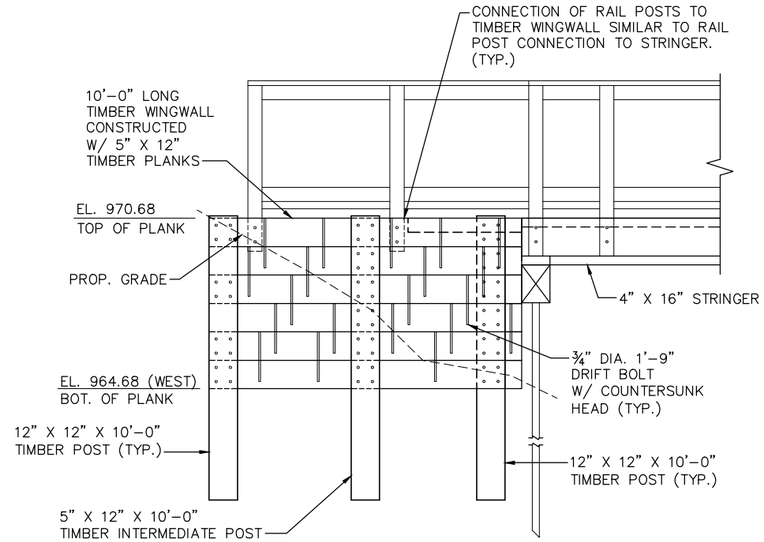
SHEET NO. B3 / B6

Nov. 04 2024 06:15 pm K:\TWC_Civil\City\PLYMOUTH\CHANKAHDA TRL PH3\CAD\Plan Sheets\Bridge\CHKDA_PH3_BR_SUP.dwg By: Jared.Buchanan



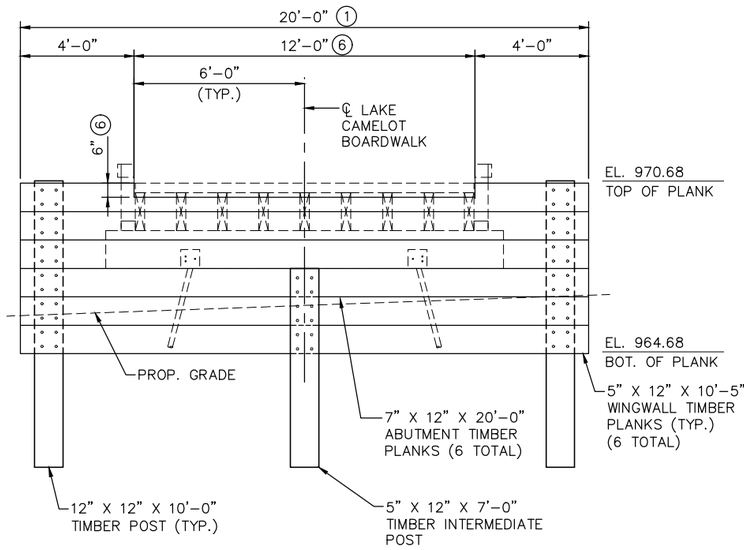
WEST ABUTMENT PLAN

EAST ABUTMENT PLAN



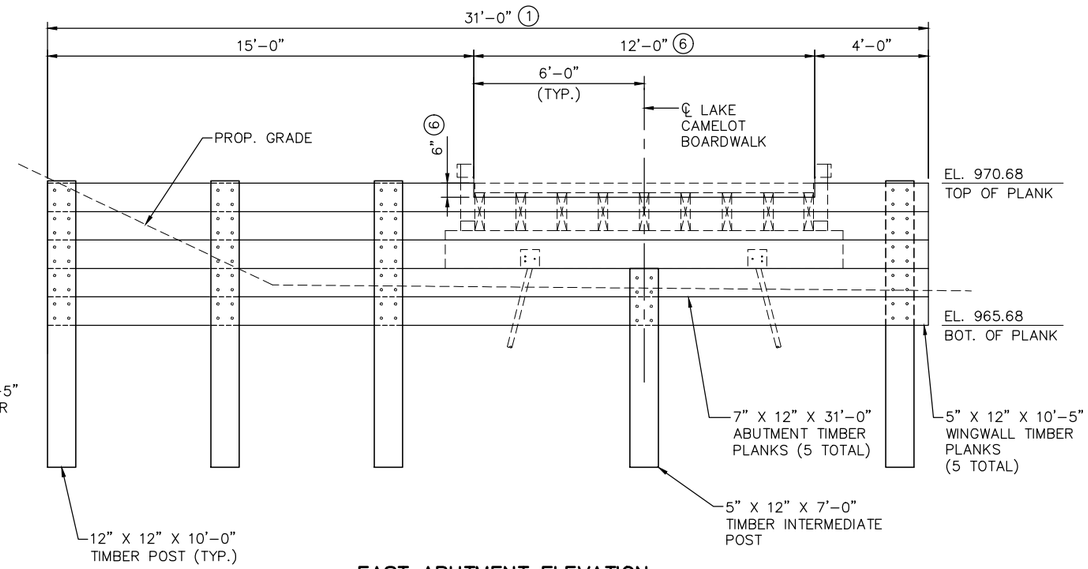
WINGWALL ELEVATION

(TYP. FOR NW & SW)
(SE WINGWALL SIMLAR)



WEST ABUTMENT ELEVATION

(LOOKING WEST)



EAST ABUTMENT ELEVATION

(LOOKING EAST)

NOTES:

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 (4) 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:	JWB
DRAWN BY:	PHH
CHECKED BY:	BLF
DATE:	11/04/2024
PROJECT NO.	160662010

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PHONE: 651-645-4197
WWW.KIMLEY-HORN.COM

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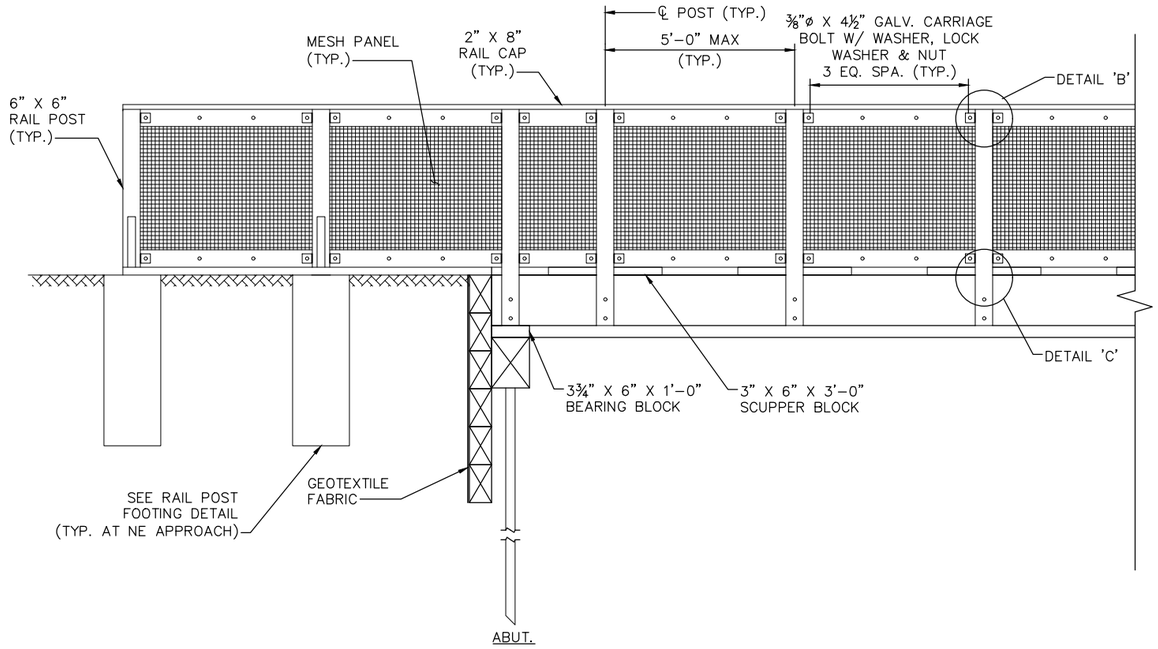
City of Plymouth

CHANKAHDA TRAIL
RECONSTRUCTION PHASE 3
LAKE CAMELOT BOARDWALK
SUBSTRUCTURE DETAILS

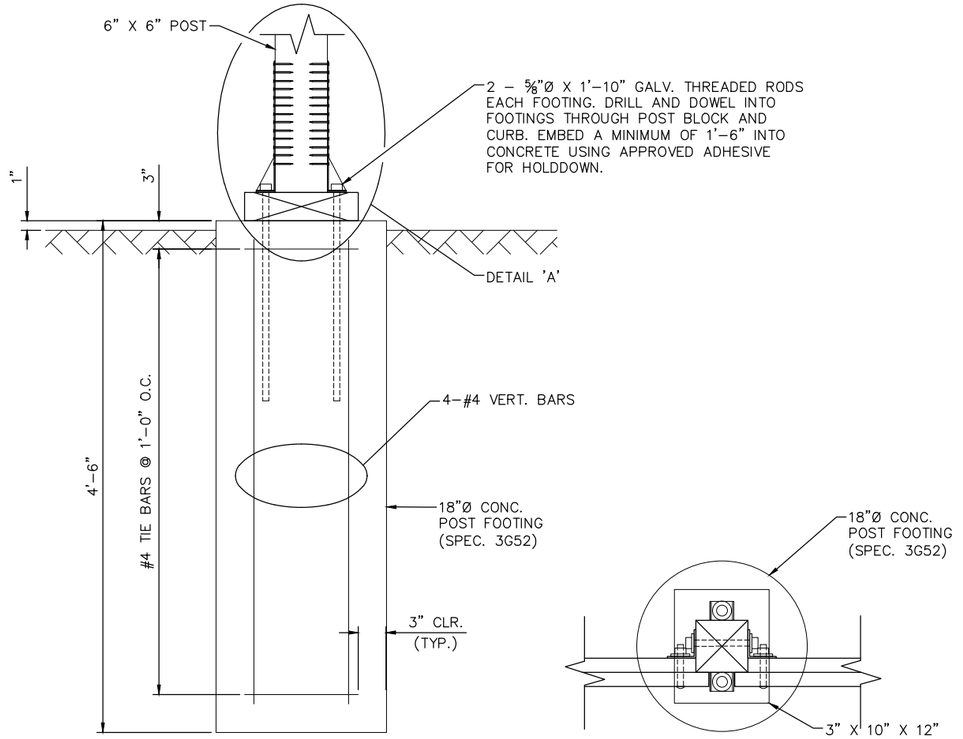
CITY PROJECT	ST240002
COUNTY PROJECT	
S.A.P.	155-210-003
S.A.P.	

SHEET NO.
B4
B6

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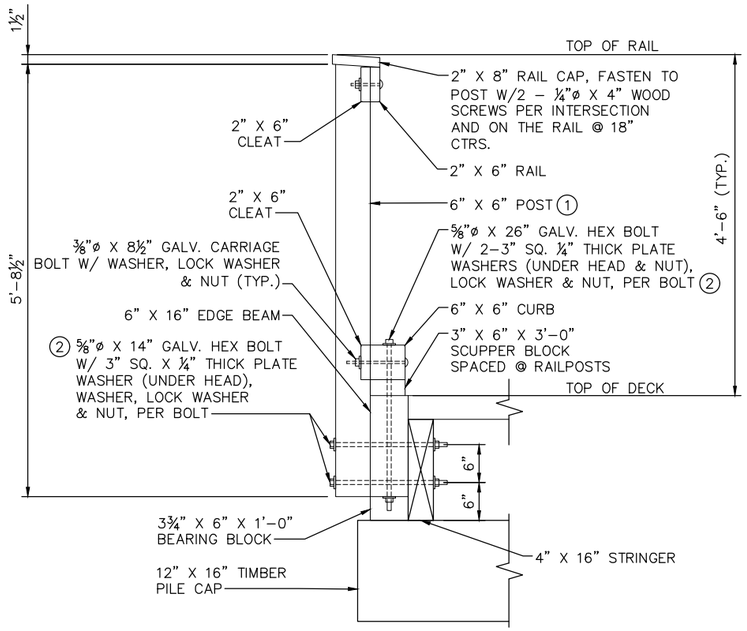


OUTSIDE RAILING ELEVATION

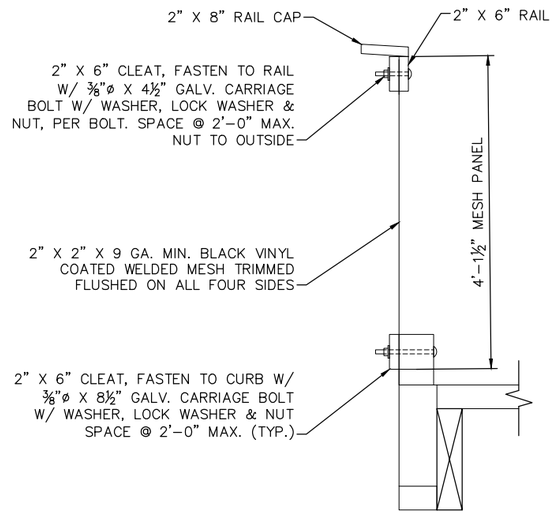


ELEVATION

PLAN



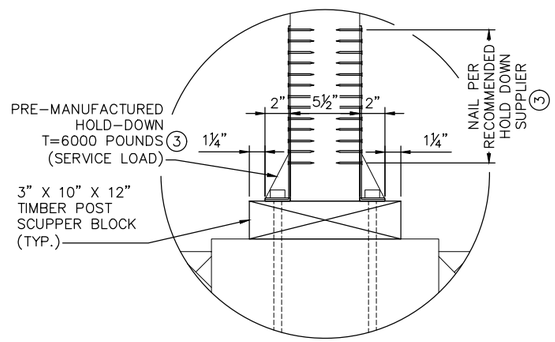
POST AND CURB DETAIL



RAIL SECTION AT MESH PANEL

RAIL POST FOOTING DETAIL

AT NORTHEAST APPROACH (2 TOTAL)



DETAIL 'A'

NOTES:

SEE NEXT SHEET FOR DETAILS "B" THROUGH "H".

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:	PHH
CHECKED BY:	BLF
DATE:	11/04/2024
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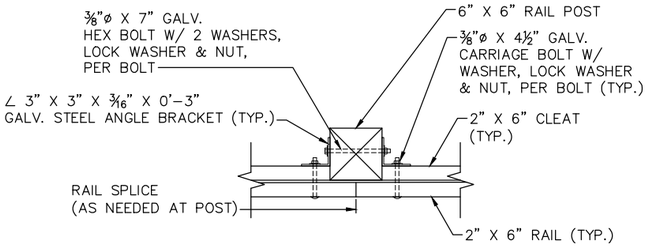
BRIAN FLEMING, PE
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City of Plymouth
CHANKAHDA TRAIL
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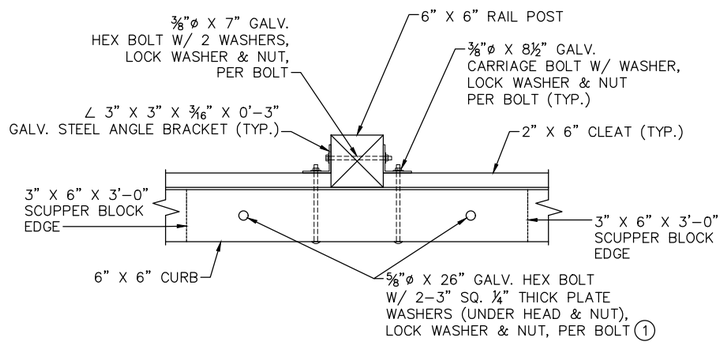
SHEET NO. B5 / B6

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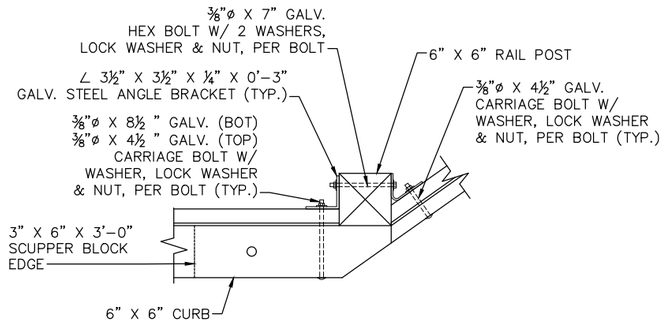
DETAIL 'B'

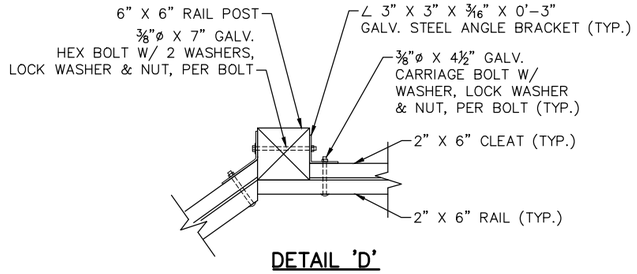
TYPICAL PLAN VIEW
TOP RAIL POST CONNECTION



DETAIL 'C'

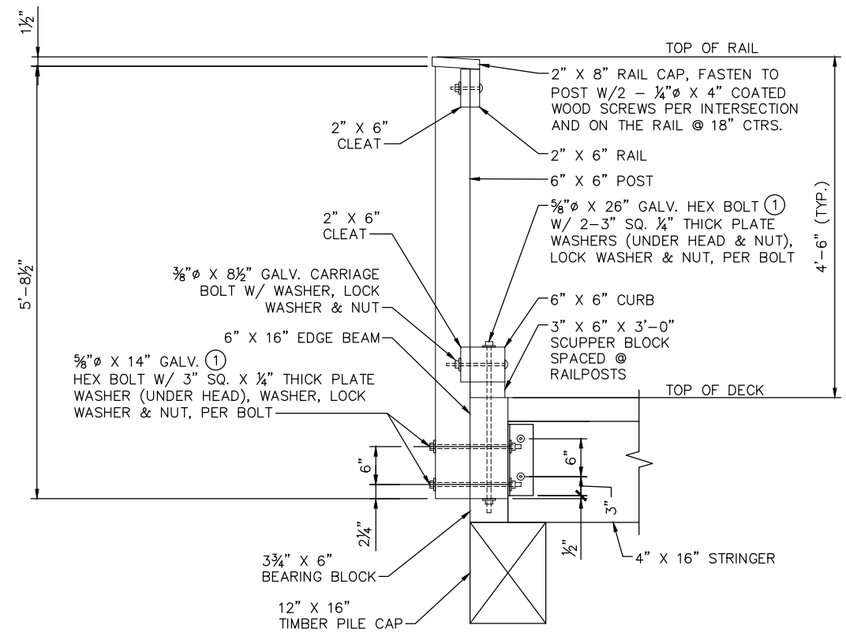
TYPICAL PLAN VIEW
BOTTOM RAIL POST CONNECTION





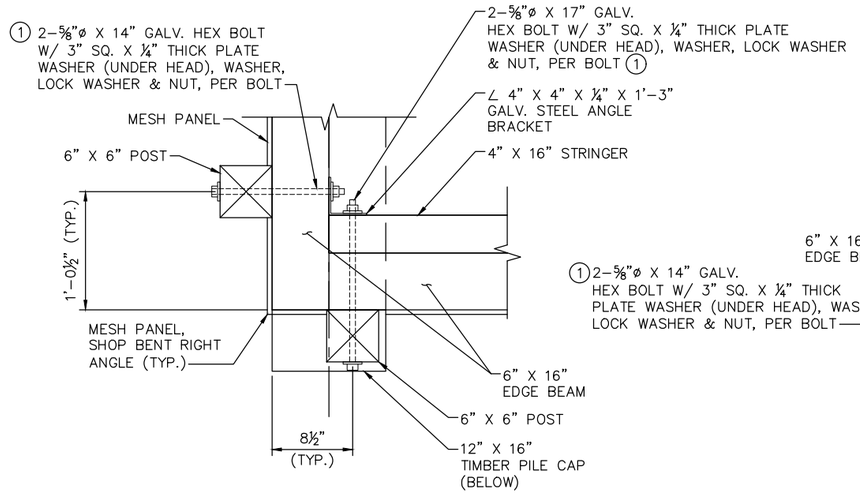
DETAIL 'D'

PLAN VIEW BOTTOM
RAIL POST CONNECTION
APPROACH TO BRIDGE
(TOP RAIL SIMILAR)



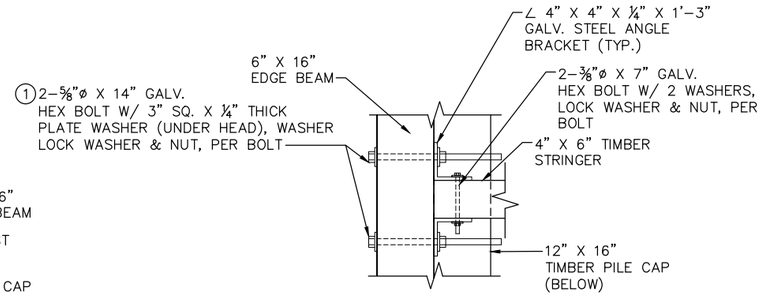
DETAIL 'E'

RAILING TO END BLOCK
CONNECTION DETAIL ON OVERLOOK



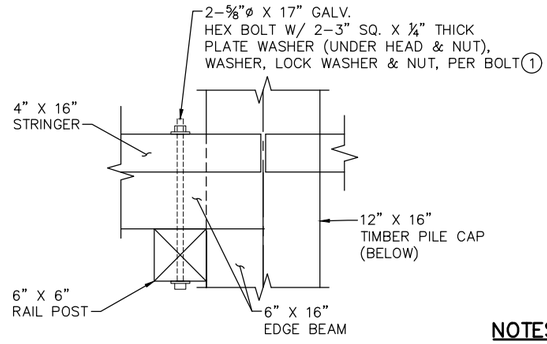
DETAIL 'F'

OVERLOOK POST TO STRINGER CONNECTION
(OVERLOOK EXTERIOR CORNER)



DETAIL 'G'

OVERLOOK STRINGER TO EDGE
BEAM CONNECTION



DETAIL 'H'

TYPICAL RAILING TO STRINGER
CONNECTION DETAIL

NOTES:

(1) PLATE WASHERS TO BE ORIENTED PARALLEL TO TIMBER MEMBER.

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