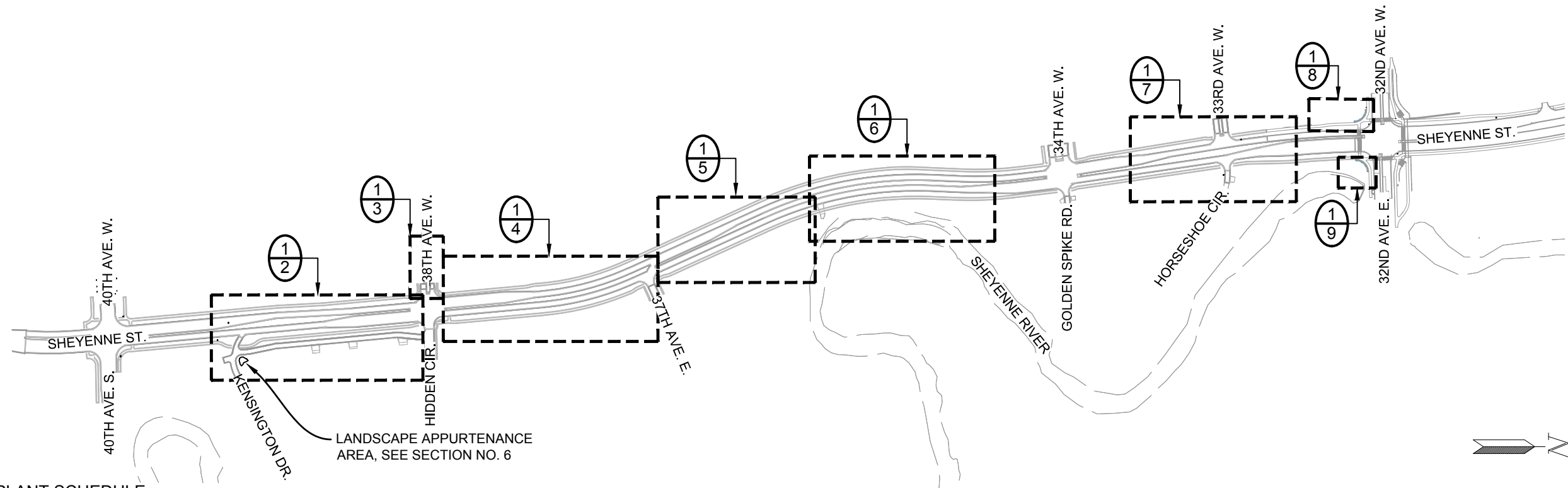


	STATE	PROJECT NO.	PCN	SECTION NO.	SHEET NO.
	ND	SU-8-992(040)041	21569	85	1



OVERALL PLANT SCHEDULE

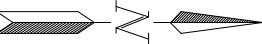
DECIDUOUS TREES		QTY	BOTANICAL NAME / COMMON NAME	TYPE	CAL	HEIGHT
AM		9	Acer ginnala 'Embers' / Embers Amur Maple (Tree Form)	B&B or Cont.	1.5" Cal.	-
CH		22	Celtis occidentalis / Common Hackberry	B&B or Cont.	2" Cal.	12'-14'
HL		23	Gleditsia triacanthos inermis 'Harve' TM / Northern Acclaim Thornless Honeylocust	B&B or Cont.	2" Cal.	12'-14'
KC		21	Gymnocladus dioica 'Espresso' / Kentucky Coffeetree	B&B or Cont.	2" Cal.	12'-14'
GC		17	Malus x adstringens 'Durpleo' / First Editions® Gladiator™ Crabapple	B&B or Cont.	1.5" Cal.	-
PS		18	Malus x 'Pink Spires' / Pink Spires Crab Apple	B&B or Cont.	1.5" Cal.	-
PF		8	Malus x 'Prairifire' / Prairifire Crab Apple	B&B or Cont.	1.5" Cal.	-
PN		6	Prunus nigra 'Princess Kay' / Princess Kay Plum	B&B or Cont.	1.5" Cal.	-
PG		33	Pyrus ussuriensis 'Prairie Gem' TM / Prairie Gem Pear	B&B or Cont.	1.5" Cal.	-
IS		36	Syringa reticulata 'Ivory Silk' / Ivory Silk Japanese Tree Lilac	B&B or Cont.	1.5" Cal.	7'-10'
HG		13	Tilia mongolica 'Harvest Gold' / Harvest Gold Linden	B&B or Cont.	2" Cal.	8'-12'
DE		22	Ulmus davidiana 'Discovery' / Discovery Elm	B&B or Cont.	2" Cal.	12'-14'
DECIDUOUS SHRUBS		QTY	BOTANICAL NAME / COMMON NAME	CONT		
CP		24	Berberis thunbergii 'Crimson Pygmy' / Crimson Pygmy Barberry	#2		
MF		26	Forsythia x 'Meadowlark' / Meadowlark Forsythia	#5		
DN		26	Physocarpus opulifolius 'Diablo' / Diablo Ninebark	#5		
DS		36	Potentilla fruticosa 'Fargo' / Dakota Sunspot® Potentilla	#2		
PERENNIALS		QTY	BOTANICAL NAME / COMMON NAME	CONT	SPACING	
CF		256	Calamagrostis x acutiflora 'Karl Foerster' / Feather Reed Grass	#1	36" o.c.	
HR		199	Hemerocallis x 'Happy Returns' / Happy Returns Daylily	#1	24" o.c.	
HP		21	Hemerocallis x 'Pardon Me' / Pardon Me Daylily	#1	24" o.c.	
FG		53	Miscanthus sinensis 'Purpurescens' / Flame Grass	#1	42" o.c.	
RS		57	Perovskia atriplicifolia / Russian Sage	#1	48" o.c.	
BH		268	Schizachyrium scoparium 'Blue Heaven' / Blue Heaven Bluestem	#1	36" o.c.	

NOTES:

1. IF DISCREPANCIES ARISE BETWEEN THE QUANTITIES OF PLANT MATERIAL INDICATED ON THE PLANT SCHEDULE AND SYMBOLS ON PLAN SHEETS, CONTRACTOR WILL BE REQUIRED TO PROVIDE THE QUANTITY SHOWN BY SYMBOLS ON PLAN SHEETS.
2. AT TIME OF PLAN PREPARATION, FRANCHISE UTILITY (CENTURY LINK CABLE, XCEL ENERGY, MID-CONTINENT CABLE, GAS LINE, ETC.) LINE RELOCATION AND CONSOLIDATION INTO ONE TRENCH IS BEING CONSIDERED AND COORDINATED BY OTHERS. THE RESULT OF POTENTIAL RELOCATION OF UTILITIES WILL IMPACT THE FINAL LOCATION, QUANTITY, AND SCOPE OF WORK AS SHOWN ON THE PLANS. CONTRACTOR SHALL BE ADVISED THAT IF UNDERGROUND UTILITIES ARE NOT RELOCATED AND CONSOLIDATED FROM THE EAST SIDE OF SHEYENNE STREET TO THE WEST SIDE OF THE STREET, THE CITY RESERVES THE RIGHT TO OMIT ANY PLANTS IN CONFLICT WITH UTILITY LOCATION(S) FROM THE CONTRACT AT THE BID UNIT PRICE FOR EACH PLANT OMITTED, WITHOUT ADJUSTMENT TO ANY OTHER BID PRICE. THE CONTRACTOR MUST CONFIRM THE RELOCATION OF UTILITIES OUT OF THE WORK ZONE PRIOR TO ORDERING OF PLANT MATERIAL.

NOTE:

1. PENDING UTILITY CONSOLIDATION, SEE NOTE #2 BELOW. VERIFY FINAL TREE QUANTITIES PRIOR TO ORDERING PLANT MATERIAL.



LEGEND

SYMBOL	DESCRIPTION
	DETAIL #
	SHEET #, SECTION 85

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Sheyenne Street

Landscape Plan

Sheet Index & Overall Plant Schedule

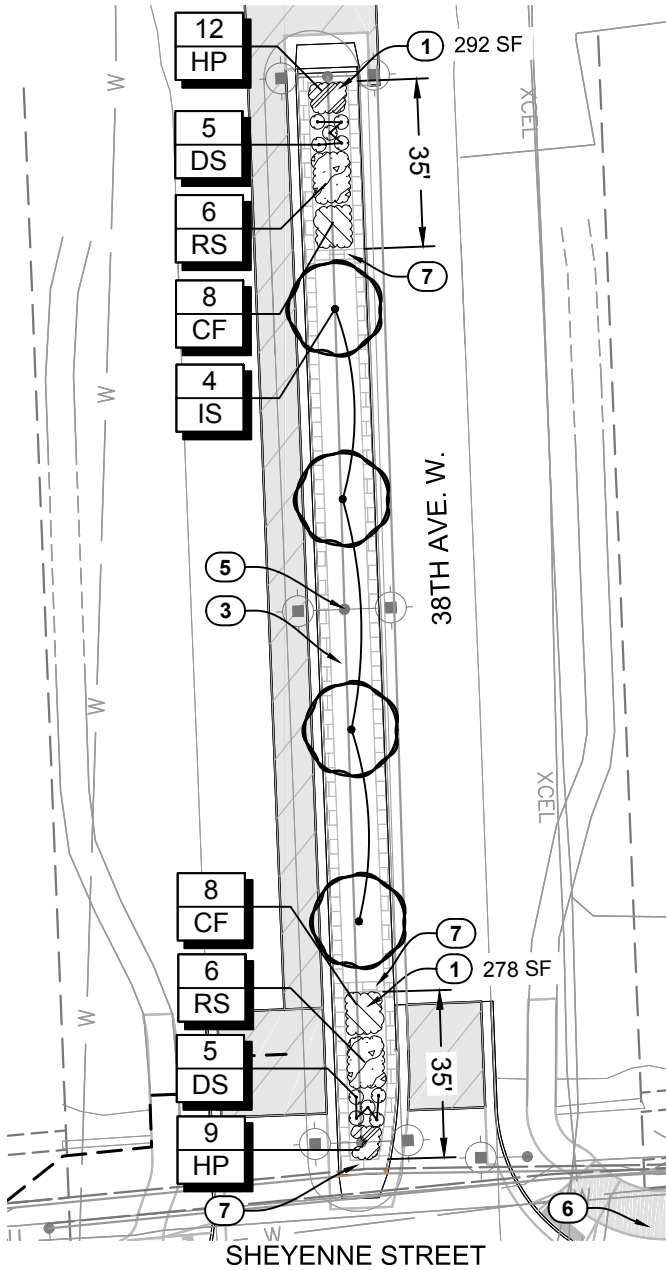
CONTRACTOR IS RESPONSIBLE FOR LOCATING UTILITIES (EXISTING, PLANNED, AND NEWLY INSTALLED) PRIOR TO EXCAVATION.







	STATE	PROJECT NO.	PCN	SECTION NO.	SHEET NO.
	ND	SU-8-992(040)041	21569	85	3



1/3 PLANTING - 38TH AVE. W. MEDIAN

LANDSCAPE PLAN KEY NOTES

- 1. INSTALL TOPSOIL TO 12-INCH DEPTH AND WOOD MULCH TO 3-INCH DEPTH; HOLD MULCH 2-INCHES BELOW TOP OF MEDIAN PAVEMENT, SIDEWALK, AND EDGING
- 2. NOT USED, THIS SHEET
- 3. SEED ALL AREAS DISTURBED BY CONSTRUCTION ACTIVITIES, REFER TO SECTION 77
- 4. NOT USED, THIS SHEET
- 5. LIGHT POLE, REFER TO SECTION 140
- 6. SHARED-USE PATH, REFER TO SECTION 90
- 7. MEDIAN PAVEMENT, REFER TO SECTION 20

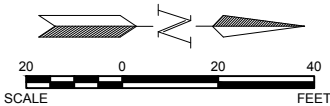
2-4  
10

LEGEND

SYMBOL	DESCRIPTION
	TREE & SHRUB SYMBOLS VARY, REFER TO SPECIES CODE IN PLANT SCHEDULE - SECTION 85, SHEET 1
	PERENNIAL MASS PLANTING HATCHES VARY, REFER TO SPECIES CODE IN PLANT SCHEDULE - SECTION 85, SHEET 1
	PLANT QUANTITY
	SPECIES CODE, SEE PLANT SCHEDULE - SECTION 85, SHEET 1

CONTRACTOR IS RESPONSIBLE FOR LOCATING UTILITIES (EXISTING, PLANNED, AND NEWLY INSTALLED) PRIOR TO EXCAVATION.

ONE CALL  
BEFORE DIGGING  
1-800-795-0555



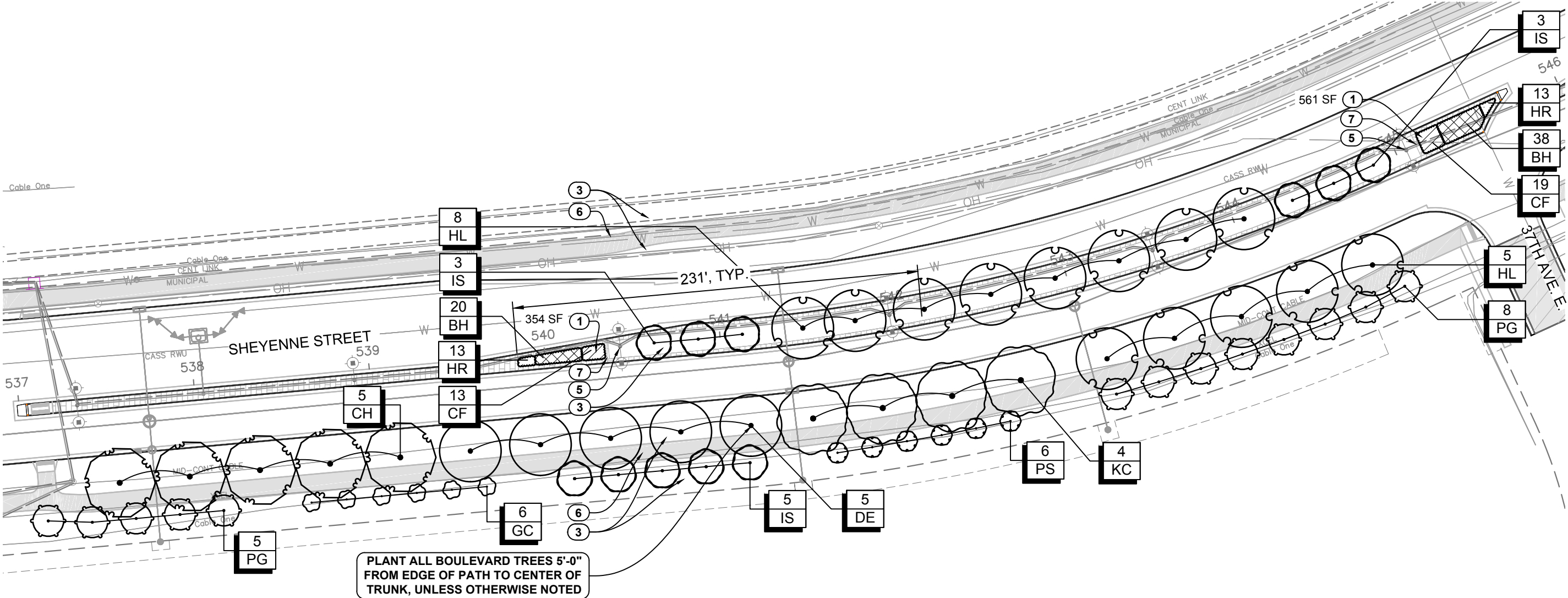
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Sheyenne Street

Landscape Plan

38th Ave. W. Median

	STATE	PROJECT NO.	PCN	SECTION NO.	SHEET NO.
	ND	SU-8-992(040)041	21569	85	4



1/4 PLANTING - 537+00 TO 546+00

LANDSCAPE PLAN KEY NOTES

- 1 INSTALL TOPSOIL TO 12-INCH DEPTH AND WOOD MULCH TO 3-INCH DEPTH; HOLD MULCH 2-INCHES BELOW TOP OF MEDIAN PAVEMENT, SIDEWALK, AND EDGING
- 2 NOT USED, THIS SHEET
- 3 SEED ALL AREAS DISTURBED BY CONSTRUCTION ACTIVITIES, REFER TO SECTION 77
- 4 NOT USED, THIS SHEET
- 5 LIGHT POLE, REFER TO SECTION 140
- 6 SHARED-USE PATH, REFER TO SECTION 90
- 7 MEDIAN PAVEMENT, REFER TO SECTION 20

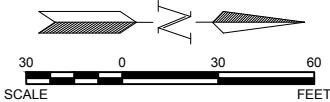
2-4/10

LEGEND

SYMBOL	DESCRIPTION
	TREE & SHRUB SYMBOLS VARY, REFER TO SPECIES CODE IN PLANT SCHEDULE - SECTION 85, SHEET 1
	PERENNIAL MASS PLANTING HATCHES VARY, REFER TO SPECIES CODE IN PLANT SCHEDULE - SECTION 85, SHEET 1
#	PLANT QUANTITY
XX	SPECIES CODE, SEE PLANT SCHEDULE - SECTION 85, SHEET 1

CONTRACTOR IS RESPONSIBLE FOR LOCATING UTILITIES (EXISTING, PLANNED, AND NEWLY INSTALLED) PRIOR TO EXCAVATION.

ONE CALL BEFORE DIGGING  
1-800-795-0555



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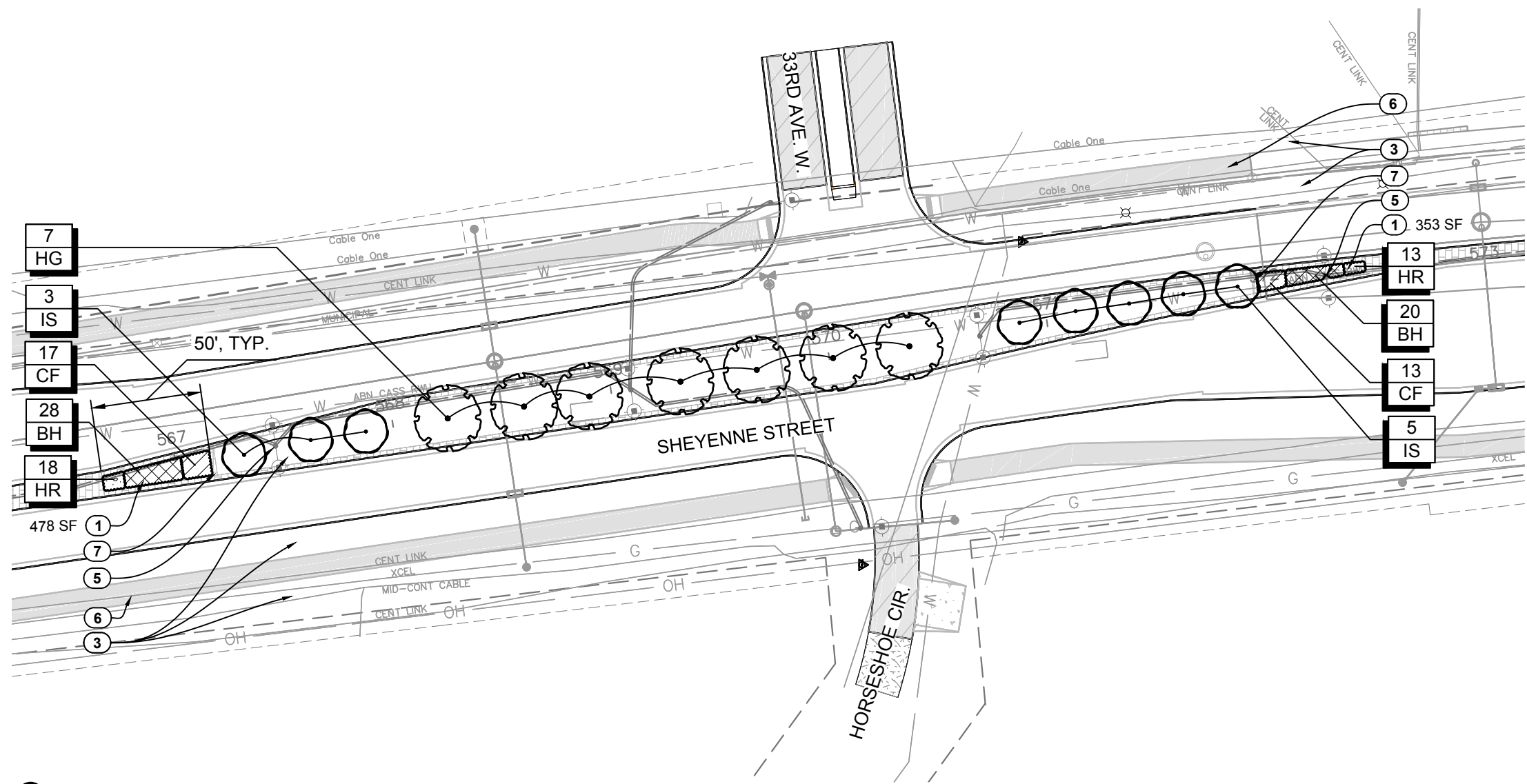
Sheyenne Street  
Landscape Plan  
546+00 to 553+00







	STATE	PROJECT NO.	PCN	SECTION NO.	SHEET NO.
	ND	SU-8-992(040)041	21569	85	7



1/7 PLANTING - 566+50 TO 573+00

### LANDSCAPE PLAN KEY NOTES

- 1 INSTALL TOPSOIL TO 12-INCH DEPTH AND WOOD MULCH TO 3-INCH DEPTH; HOLD MULCH 2-INCHES BELOW TOP OF MEDIAN PAVEMENT, SIDEWALK, AND EDGING
- 2 NOT USED, THIS SHEET
- 3 SEED ALL AREAS DISTURBED BY CONSTRUCTION ACTIVITIES, REFER TO SECTION 77
- 4 NOT USED, THIS SHEET,
- 5 LIGHT POLE, REFER TO SECTION 140
- 6 SHARED-USE PATH, REFER TO SECTION 90
- 7 MEDIAN PAVEMENT, REFER TO SECTION 20

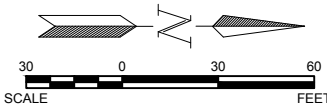
2-4/10

### LEGEND

SYMBOL	DESCRIPTION
	TREE & SHRUB SYMBOLS VARY, REFER TO SPECIES CODE IN PLANT SCHEDULE - SECTION 85, SHEET 1
	PERENNIAL MASS PLANTING HATCHES VARY, REFER TO SPECIES CODE IN PLANT SCHEDULE - SECTION 85, SHEET 1
	# PLANT QUANTITY
	XX SPECIES CODE, SEE PLANT SCHEDULE - SECTION 85, SHEET 1

CONTRACTOR IS RESPONSIBLE FOR LOCATING UTILITIES (EXISTING, PLANNED, AND NEWLY INSTALLED) PRIOR TO EXCAVATION.

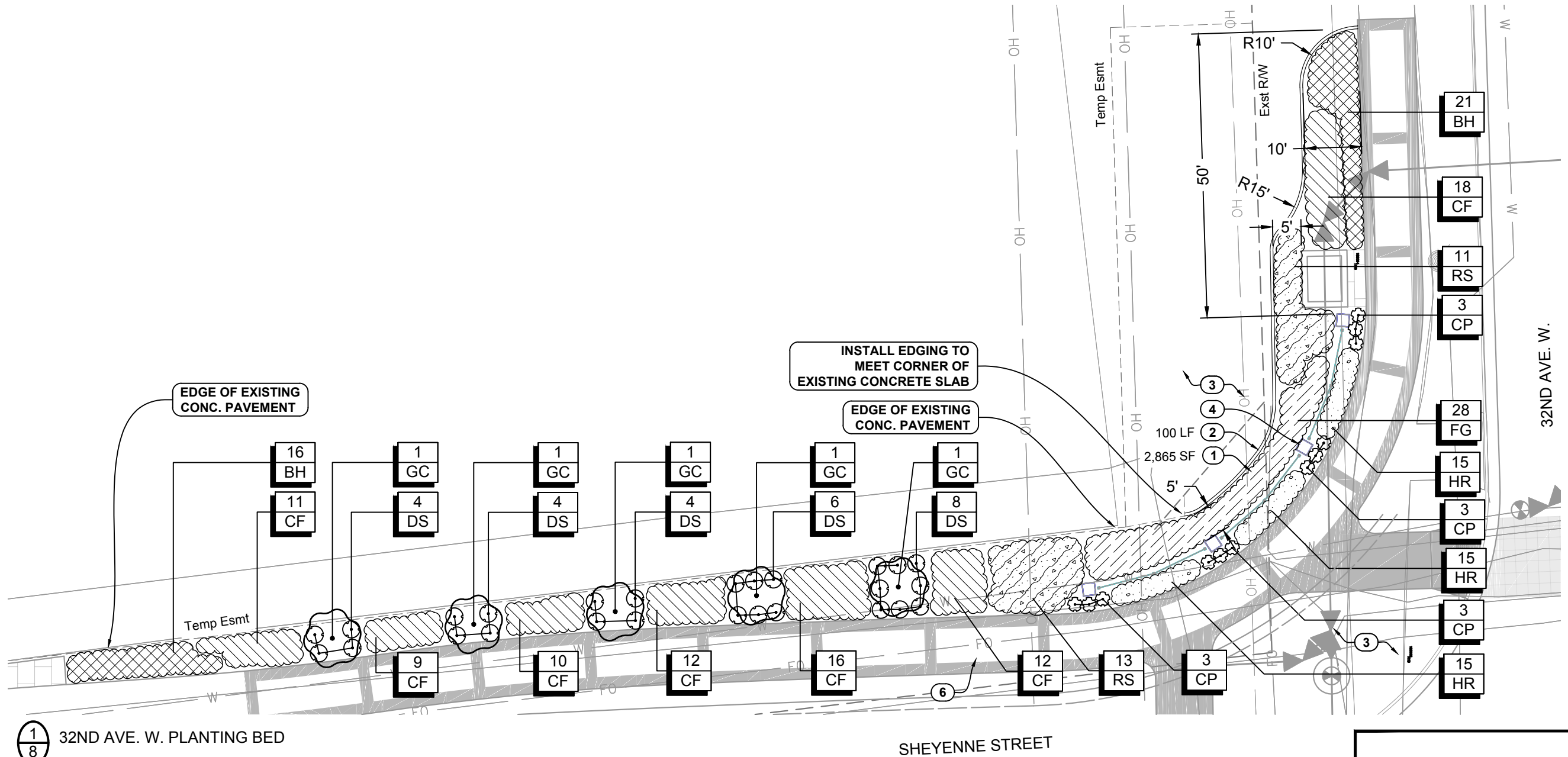
ONE CALL BEFORE DIGGING  
1-800-795-0555



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Sheyenne Street  
Landscape Plan  
566+50 to 573+00

	STATE	PROJECT NO.	PCN	SECTION NO.	SHEET NO.
	ND	SU-8-992(040)041	21569	85	8



1/8 32ND AVE. W. PLANTING BED

LANDSCAPE PLAN KEY NOTES

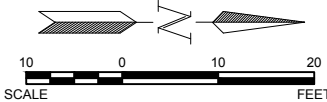
- 1 INSTALL TOPSOIL TO 12-INCH DEPTH AND WOOD MULCH TO 3-INCH DEPTH; HOLD MULCH 2-INCHES BELOW TOP OF MEDIAN PAVEMENT, SIDEWALK, AND EDGING
- 2 INSTALL CONCRETE LANDSCAPE EDGING
- 3 SEED ALL AREAS DISTURBED BY CONSTRUCTION ACTIVITIES, REFER TO SECTION 77
- 4 DECORATIVE FENCE & PILLARS, REFER TO SECTION 170
- 5 NOT USED, THIS SHEET
- 6 SHARED-USE PATH, REFER TO SECTION 90
- 7 NOT USED, THIS SHEET

LEGEND

SYMBOL	DESCRIPTION
	TREE & SHRUB SYMBOLS VARY, REFER TO SPECIES CODE IN PLANT SCHEDULE - SECTION 85, SHEET 1
	PERENNIAL MASS PLANTING HATCHES VARY, REFER TO SPECIES CODE IN PLANT SCHEDULE - SECTION 85, SHEET 1
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ONE CALL BEFORE DIGGING 1-800-795-0555

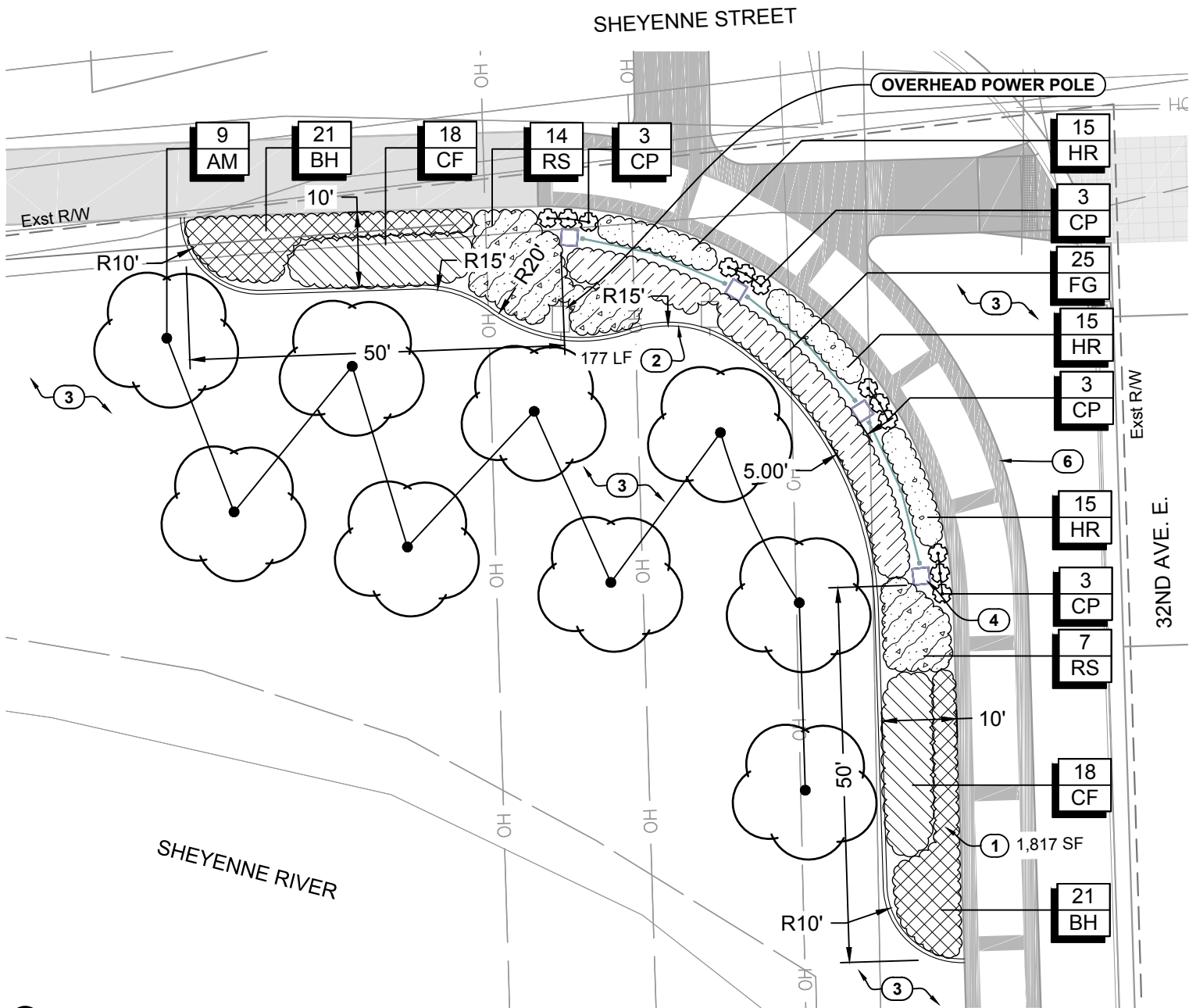


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Sheyenne Street  
Landscape Plan  
32ND AVE. W.



	STATE	PROJECT NO.	PCN	SECTION NO.	SHEET NO.
	ND	SU-8-992(040)041	21569	85	9



1 32ND AVE. E. PLANTING BED

LANDSCAPE PLAN KEY NOTES

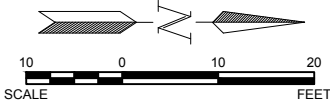
- 1 INSTALL TOPSOIL TO 12-INCH DEPTH AND WOOD MULCH TO 3-INCH DEPTH; HOLD MULCH 2-INCHES BELOW TOP OF MEDIAN PAVEMENT, SIDEWALK, AND EDGING
- 2 INSTALL CONCRETE LANDSCAPE EDGING
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- 4 DECORATIVE FENCE & PILLARS, REFER TO SECTION 170
- 5 NOT USED, THIS SHEET
- 6 SHARED-USE PATH, REFER TO SECTION 90
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LEGEND

SYMBOL	DESCRIPTION
	TREE & SHRUB SYMBOLS VARY, REFER TO SPECIES CODE IN PLANT SCHEDULE - SECTION 85, SHEET 1
	PERENNIAL MASS PLANTING HATCHES VARY, REFER TO SPECIES CODE IN PLANT SCHEDULE - SECTION 85, SHEET 1
	PLANT QUANTITY
	SPECIES CODE, SEE PLANT SCHEDULE - SECTION 85, SHEET 1

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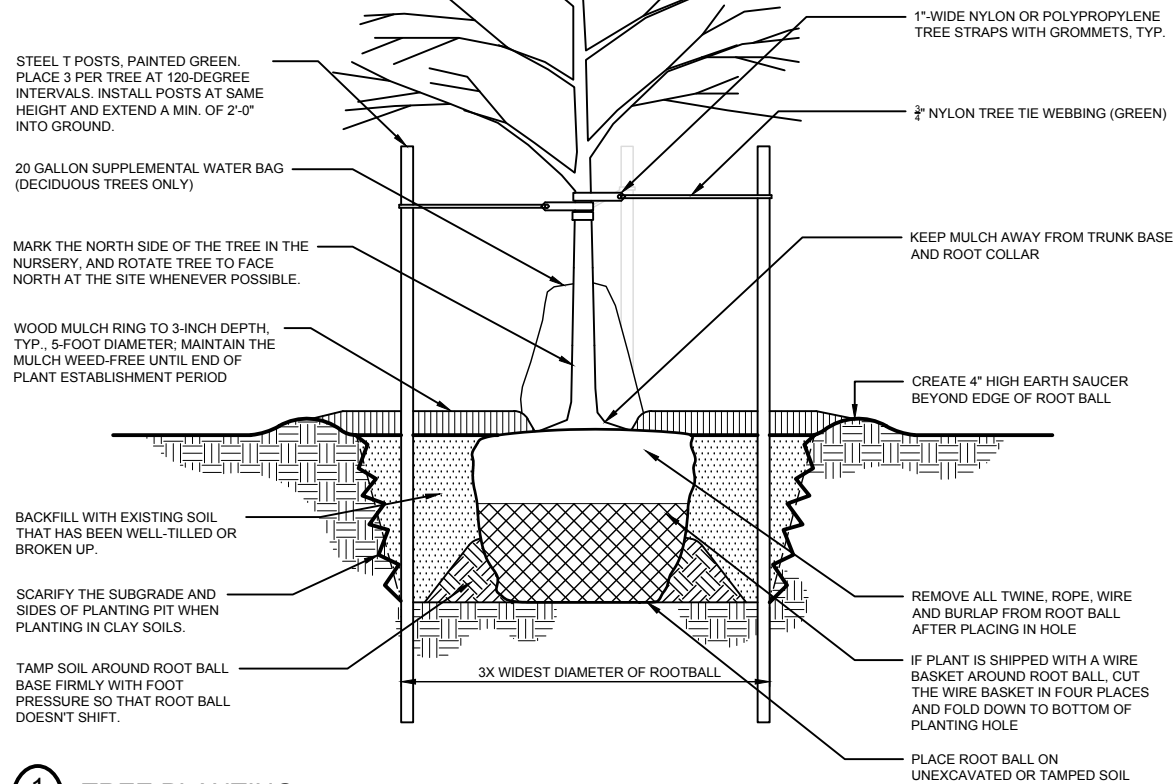


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Sheyenne Street  
Landscape Plan  
32ND AVE. E.

	STATE	PROJECT NO.	PCN	SECTION NO.	SHEET NO.
	ND	SU-8-992(040)041	21569	85	10

DECIDUOUS TREES: DO NOT HEAVILY PRUNE THE TREE AT PLANTING. PRUNE ONLY CROSSOVER LIMBS, CO-DOMINANT LEADERS, AND BROKEN OR DEAD BRANCHES. SOME INTERIOR TWIGS AND LATERAL BRANCHES MAY BE PRUNED; HOWEVER, DO NOT REMOVE THE TERMINAL BUDS OF BRANCHES THAT EXTEND TO THE EDGE OF THE CROWN. PRUNE IN ACCORDANCE WITH ANSI A300 SPECIFICATIONS.

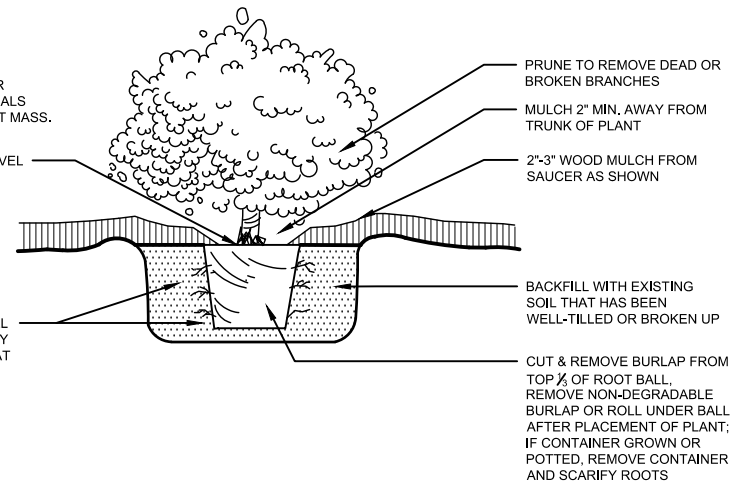


1  
10 TREE PLANTING  
NO SCALE

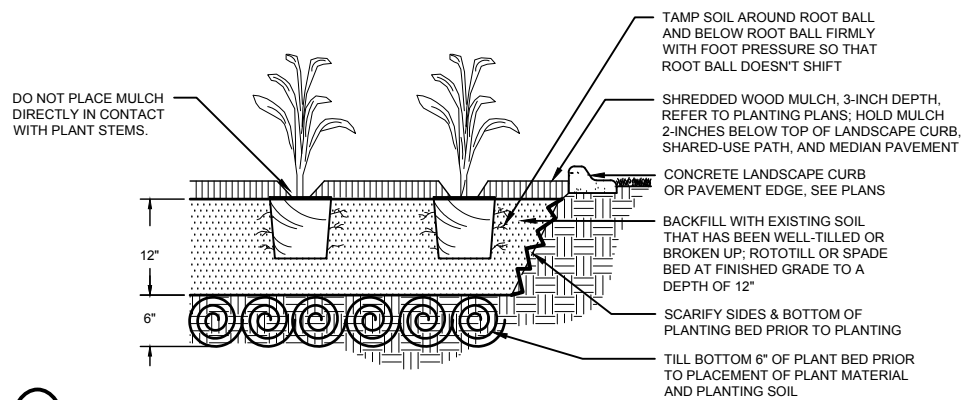
NOTE:  
REMOVE ALL TWINE OR OTHER  
NON-BIODEGRADABLE MATERIALS  
ATTACHED TO PLANT OR ROOT MASS.

PLANT TOP OF ROOT BALL LEVEL  
WITH FINISHED GRADE

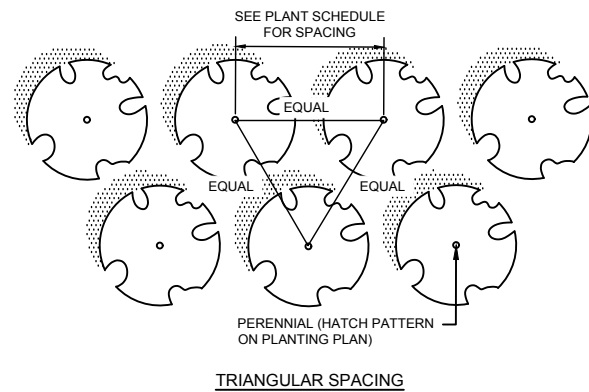
TAMP SOIL AROUND ROOT BALL  
AND BELOW ROOT BALL FIRMLY  
WITH FOOT PRESSURE SO THAT  
ROOT BALL DOESN'T SHIFT



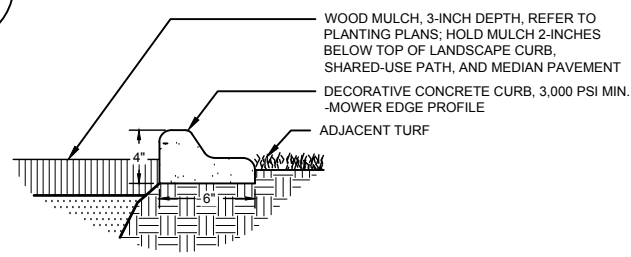
2  
10 SHRUB/PERENNIAL PLANTING  
NO SCALE



3  
10 PERENNIAL/GROUNDCOVER PLANTING  
NO SCALE



4  
10 PERENNIAL SPACING  
NO SCALE



5  
10 CONCRETE LANDSCAPE EDGING  
NO SCALE

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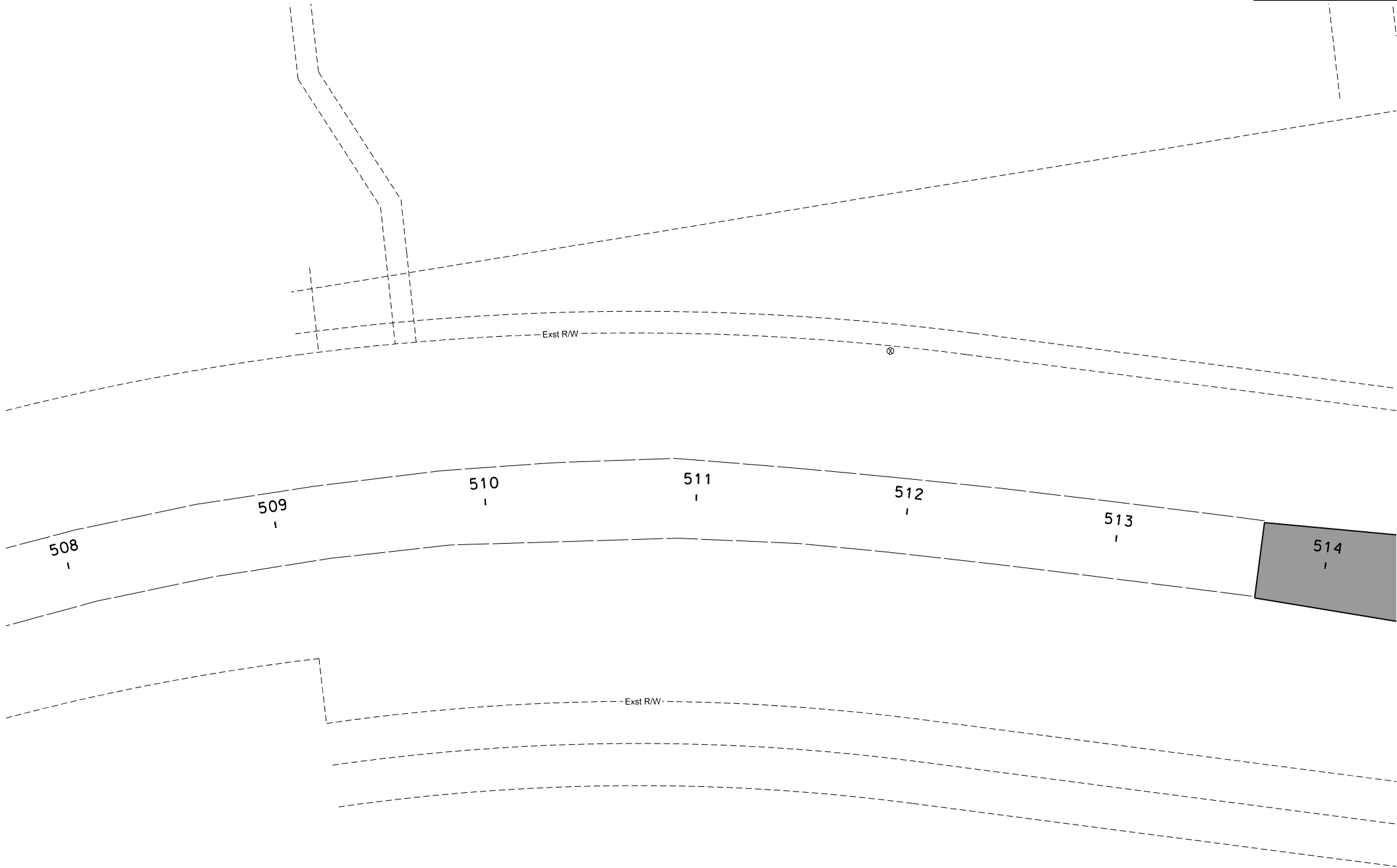
Sheyenne Street

Landscape Plan

Landscape Details

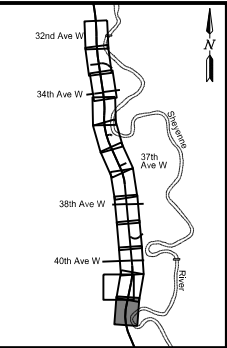
	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SU-8-992(040)041	90	1

SPEC CODE	BID ITEM	QTY	UNIT
302 121	AGGREGATE BASE COURSE CL 5 Sta. 508+00 to 514+00	44	CY
430 43	SUPERPAVE FAA 43 Sta. 508+00 to 514+00	81	TON
709 151	GEOSYNTHETIC MATERIAL TYPE R1 Sta. 508+00 to 514+00	191	SY



LEGEND

UNTIED JOINT	SUPERPAVE FAA 43
DOWELED JOINT	SIDEWALK CONCRETE 5IN REINF (SHARED USE PATH)
TIED JOINT W/ HOT POUR SEAL	SIDEWALK CONCRETE REINF (4IN)
PAVEMENT REINFORCEMENT	CONCRETE DRIVEWAY 6IN
10IN PCC PAVEMENT	PIGMENTED IMPRINTED CONCRETE
COMMERCIAL GRADE HOT MIX ASPHALT	AGGREGATE SURFACE COURSE CL 13

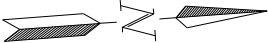


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Sheyenne Street

Paving Layouts

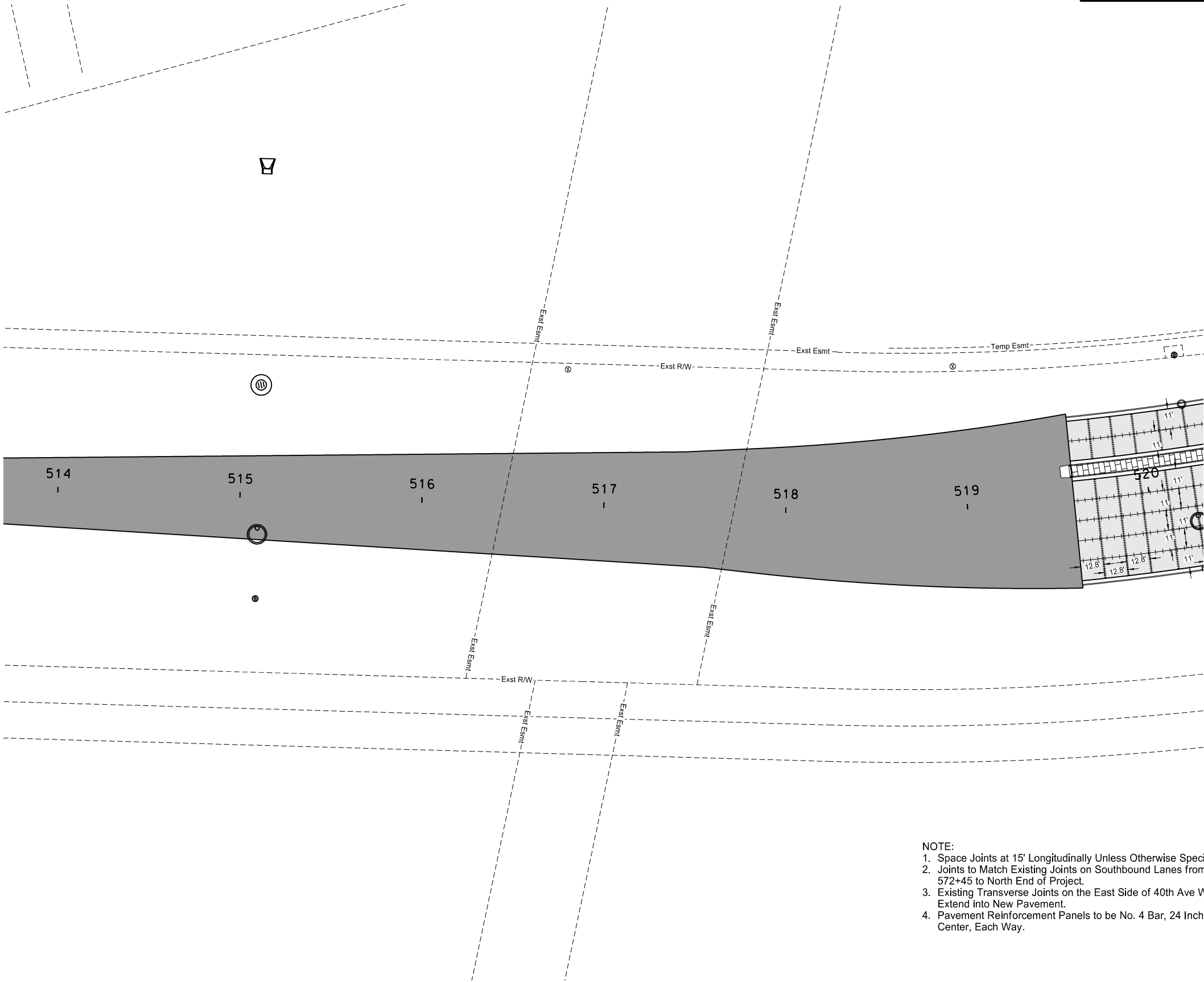
Sta 508+00 to Sta 514+00 (PR17)





	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SU-8-992(040)041	90	2

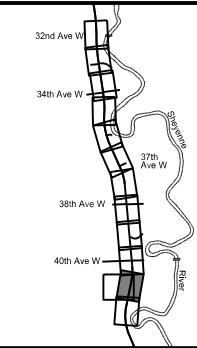
SPEC CODE BID ITEM			QTY UNIT
302	121	AGGREGATE BASE COURSE CL 5 Sta. 514+00 to 520+00	1,265 CY
430	43	SUPERPAVE FAA 43 Sta. 514+00 to 520+00	2,258 TON
550	310	10IN NON REINF CONCRETE PVMT CL AE-DOWELED Sta. 514+00 to 520+00	354 SY
709	151	GEOSYNTHETIC MATERIAL TYPE R1 Sta. 514+00 to 520+00	5,262 SY
748	190	CURB & GUTTER-TYPE I 30IN Sta. 514+00 to 520+00	165 LF
750	30	PIGMENTED IMPRINTED CONCRETE Sta. 514+00 to 520+00	28 SY
750	210	CONCRETE MEDIAN NOSE PAVING Sta. 514+00 to 520+00	10 SY



LEGEND

—	UNTIED JOINT		SUPERPAVE FAA 43
=====	DOWELED JOINT		SIDEWALK CONCRETE 5IN REINF (SHARED USE PATH)
---+---+---	TIED JOINT W/ HOT POUR SEAL		SIDEWALK CONCRETE REINF (4IN)
	PAVEMENT REINFORCEMENT		CONCRETE DRIVEWAY 6IN
	10IN PCC PAVEMENT		PIGMENTED IMPRINTED CONCRETE
	COMMERCIAL GRADE HOT MIX ASPHALT		AGGREGATE SURFACE COURSE CL 13

- NOTE:
1. Space Joints at 15' Longitudinally Unless Otherwise Specified.
  2. Joints to Match Existing Joints on Southbound Lanes from Station 572+45 to North End of Project.
  3. Existing Transverse Joints on the East Side of 40th Ave W are to Extend into New Pavement.
  4. Pavement Reinforcement Panels to be No. 4 Bar, 24 Inch On Center, Each Way.



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Sheyenne Street

Paving Layouts

Sta 514+00 to Sta 520+00 (PR17)

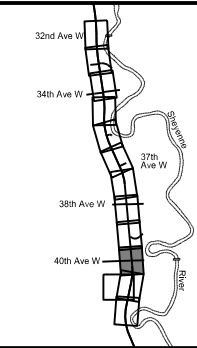
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SU-8-992(040)041	90	3

SPEC CODE	BID ITEM	QTY	UNIT
302 121	AGGREGATE BASE COURSE CL 5 Sta. 520+00 to 526+00 Sidewalk	2,157 143	CY CY
550 310	10IN NON REINF CONCRETE PVMT CL AE-DOWELED Sta. 520+00 to 526+00	6,758	SY
748 190	CURB & GUTTER-TYPE I 30IN Sta. 520+00 to 526+00	2,344	LF
709 151	GEOSYNTHETIC MATERIAL TYPE R1 Sta. 520+00 to 526+00	8,390	SY
750 30	PIGMENTED IMPRINTED CONCRETE Sta. 520+00 to 526+00	273	SY
750 120	SIDEWALK CONCRETE 5IN REINF Sta. 520+00 to 526+00	1,244	SY
750 210	CONCRETE MEDIAN NOSE PAVING Sta. 520+00 to 526+00	27	SY
750 2115	DETECTABLE WARNING PANELS Sta. 520+00 to 526+00	240	SF

LEGEND

UNTIED JOINT	SUPERPAVE FAA 43
DOWELED JOINT	SIDEWALK CONCRETE 5IN REINF (SHARED USE PATH)
TIED JOINT W/ HOT POUR SEAL	SIDEWALK CONCRETE REINF (4IN)
PAVEMENT REINFORCEMENT	CONCRETE DRIVEWAY 6IN
10IN PCC PAVEMENT	PIGMENTED IMPRINTED CONCRETE
COMMERCIAL GRADE HOT MIX ASPHALT	AGGREGATE SURFACE COURSE CL 13

- NOTE:
1. Space Joints at 15' Longitudinally Unless Otherwise Specified.
  2. Joints to Match Existing Joints on Southbound Lanes from Station 572+45 to North End of Project.
  3. Existing Transverse Joints on the East Side of 40th Ave W are to Extend into New Pavement.
  4. Pavement Reinforcement Panels to be No. 4 Bar, 24 Inch On Center, Each Way.



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Sheyenne Street

Paving Layouts

Sta 520+00 to Sta 526+00 (PR17)

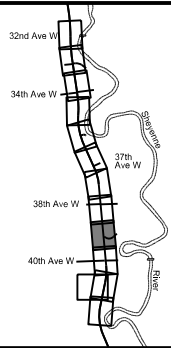
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SU-8-992(040)041	90	4

SPEC CODE	BID ITEM	QTY	UNIT
302 121	AGGREGATE BASE COURSE CL 5		
	Sta. 526+00 to 532+00	1,902	CY
	Sidewalk	144	CY
	Driveway	13	CY
430 500	COMMERCIAL GRADE HOT MIX ASPHALT		
	Kensington / Frontage Road	439	TON
550 310	10IN NON REINF CONCRETE PVMT CL AE-DOWELED		
	Sta. 526+00 to 532+00	3,628	SY
709 151	GEOSYNTHETIC MATERIAL TYPE R1		
	Sta. 526+00 to 532+00	7,449	SY
748 190	CURB & GUTTER-TYPE I 30IN		
	Sta. 526+00 to 532+00	2,879	LF
750 30	PIGMENTED IMPRINTED CONCRETE		
	Sta. 526+00 to 532+00	340	SY
750 120	SIDEWALK CONCRETE 5IN REINF		
	Sta. 526+00 to 532+00	1,300	SY
750 1016	DRIVEWAY CONCRETE 6IN REINFORCED		
	Sta. 526+00 to 532+00	117	SY
750 2115	DETECTABLE WARNING PANELS		
	Sta. 526+00 to 532+00	40	SF

LEGEND

UNTIED JOINT	SUPERPAVE FAA 43
DOWELED JOINT	SIDEWALK CONCRETE 5IN REINF (SHARED USE PATH)
TIED JOINT W/ HOT POUR SEAL	SIDEWALK CONCRETE REINF (4IN)
PAVEMENT REINFORCEMENT	CONCRETE DRIVEWAY 6IN
10IN PCC PAVEMENT	PIGMENTED IMPRINTED CONCRETE
COMMERCIAL GRADE HOT MIX ASPHALT	AGGREGATE SURFACE COURSE CL 13

- NOTE:
1. Space Joints at 15' Longitudinally Unless Otherwise Specified.
  2. Joints to Match Existing Joints on Southbound Lanes from Station 572+45 to North End of Project.
  3. Existing Transverse Joints on the East Side of 40th Ave W are to Extend into New Pavement.
  4. Pavement Reinforcement Panels to be No. 4 Bar, 24 Inch On Center, Each Way.



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Sheyenne Street

Paving Layouts

Sta 526+00 to Sta 532+00 (PR17)



	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SU-8-992(040)041	90	5

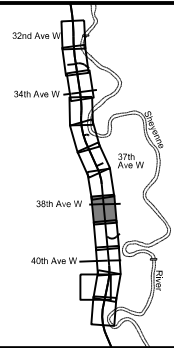
SPEC CODE BID ITEM QTY UNIT

302	121	AGGREGATE BASE COURSE CL 5	
		Sta. 532+00 to 538+00	2,314 CY
		Sidewalk	148 CY
		Driveway	24 CY
430	500	COMMERCIAL GRADE HOT MIX ASPHALT	
		Hidden Circle / Frontage Road	505 TON
550	310	10IN NON REINF CONCRETE PVMT CL AE-DOWELED	
		Sta. 532+00 to 538+00	4,985 SY
709	151	GEOSYNTHETIC MATERIAL TYPE R1	
		Sta. 532+00 to 538+00	9,050 SY
748	190	CURB & GUTTER-TYPE I 30IN	
		Sta. 532+00 to 538+00	3,076 LF
750	30	PIGMENTED IMPRINTED CONCRETE	
		Sta. 532+00 to 538+00	403 SY
750	101	SIDEWALK CONCRETE REINF	
		Sta. 532+00 to 538+00	123 SY
750	120	SIDEWALK CONCRETE 5IN REINF	
		Sta. 532+00 to 538+00	1,180 SY
750	210	CONCRETE MEDIAN NOSE PAVING	
		Sta. 532+00 to 538+00	47 SY
750	1016	DRIVEWAY CONCRETE 6IN REINFORCED	
		Sta. 532+00 to 538+00	220 SY
750	2115	DETECTABLE WARNING PANELS	
		Sta. 532+00 to 538+00	160 SF

LEGEND

UNTIED JOINT	SUPERPAVE FAA 43
DOWELED JOINT	SIDEWALK CONCRETE 5IN REINF (SHARED USE PATH)
TIED JOINT W/ HOT POUR SEAL	SIDEWALK CONCRETE REINF (4IN)
PAVEMENT REINFORCEMENT	CONCRETE DRIVEWAY 6IN
10IN PCC PAVEMENT	PIGMENTED IMPRINTED CONCRETE
COMMERCIAL GRADE HOT MIX ASPHALT	AGGREGATE SURFACE COURSE CL 13

- NOTE:
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  2. Joints to Match Existing Joints on Southbound Lanes from Station 572+45 to North End of Project.
  3. Existing Transverse Joints on the East Side of 40th Ave W are to Extend into New Pavement.
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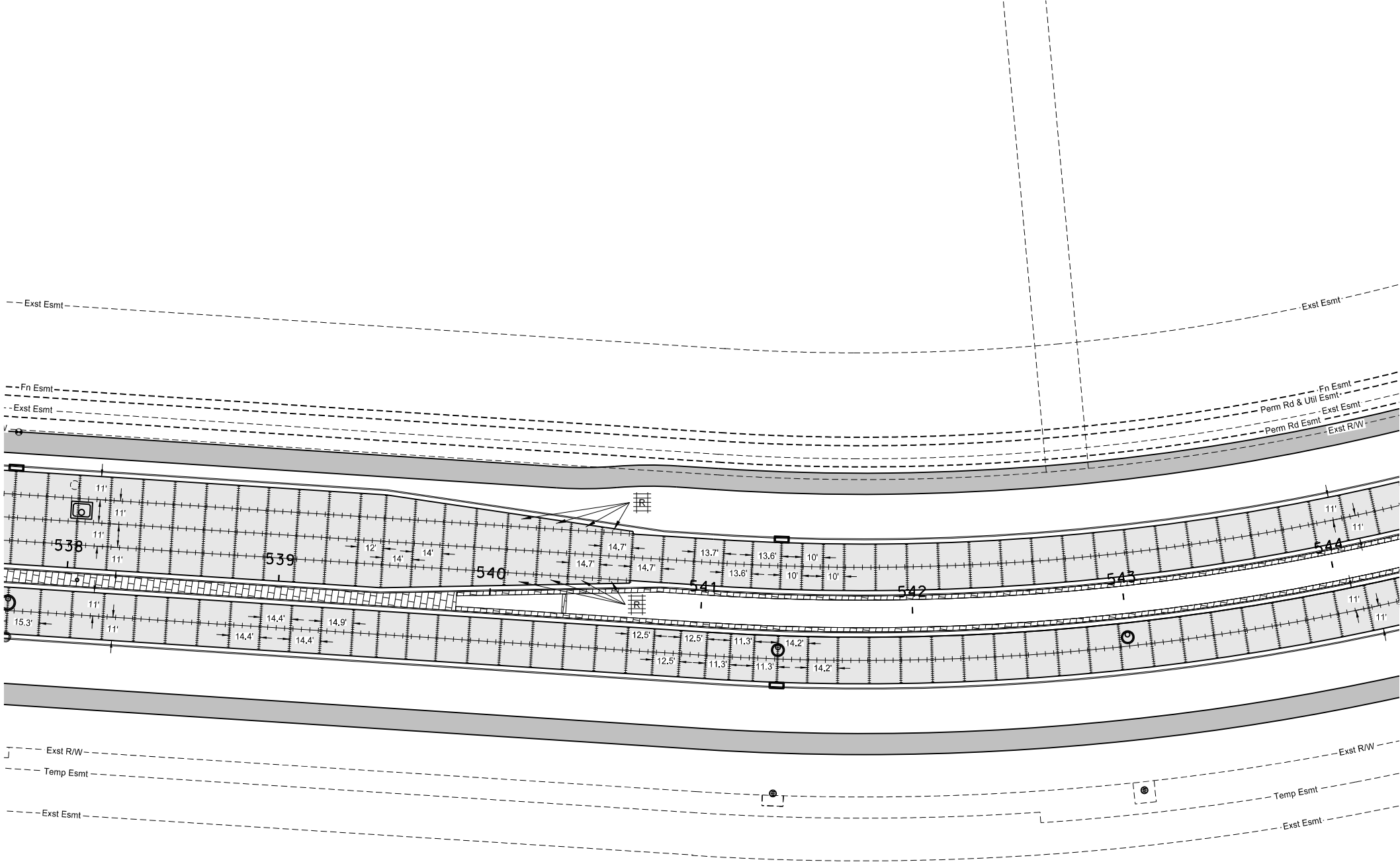
Sheyenne Street

Paving Layouts

Sta 532+00 to Sta 538+00 (PR17)

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SU-8-992(040)041	90	6

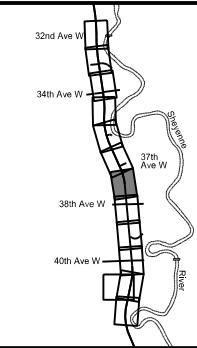
SPEC CODE	BID ITEM	QTY	UNIT
302 121	AGGREGATE BASE COURSE CL 5		
	Sta. 538+00 to 544+00	1,372	CY
	Sidewalk	148	CY
550 310	10IN NON REINF CONCRETE PVMT CL AE-DOWELED		
	Sta. 538+00 to 544+00	3,457	SY
709 151	GEOSYNTHETIC MATERIAL TYPE R1		
	Sta. 538+00 to 544+00	5,249	SY
748 190	CURB & GUTTER-TYPE I 30IN		
	Sta. 538+00 to 544+00	2,401	LF
750 30	PIGMENTED IMPRINTED CONCRETE		
	Sta. 538+00 to 544+00	316	SY
750 120	SIDEWALK CONCRETE 5IN REINF		
	Sta. 538+00 to 544+00	1,334	SY



LEGEND

UNTIED JOINT	SUPERPAVE FAA 43
DOWELED JOINT	SIDEWALK CONCRETE 5IN REINF (SHARED USE PATH)
TIED JOINT W/ HOT POUR SEAL	SIDEWALK CONCRETE REINF (4IN)
PAVEMENT REINFORCEMENT	CONCRETE DRIVEWAY 6IN
10IN PCC PAVEMENT	PIGMENTED IMPRINTED CONCRETE
COMMERCIAL GRADE HOT MIX ASPHALT	AGGREGATE SURFACE COURSE CL 13

- NOTE:
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  2. Joints to Match Existing Joints on Southbound Lanes from Station 572+45 to North End of Project.
  3. Existing Transverse Joints on the East Side of 40th Ave W are to Extend into New Pavement.
  4. Pavement Reinforcement Panels to be No. 4 Bar, 24 Inch On Center, Each Way.



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Sheyenne Street

Paving Layouts

Sta 538+00 to Sta 544+00 (PR17)

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SU-8-992(040)041	90	7

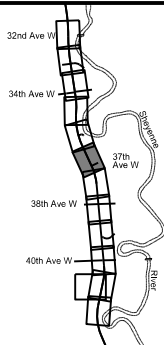
SPEC CODE BID ITEM QTY UNIT

302	121	AGGREGATE BASE COURSE CL 5	
		Sta. 544+00 to 550+00	1,447 CY
		Sidewalk	147 CY
430	500	COMMERCIAL GRADE HOT MIX ASPHALT	
		37th Avenue W	52 TON
550	310	10IN NON REINF CONCRETE PVMT CL AE-DOWELED	
		Sta. 544+00 to 550+00	3,633 SY
709	151	GEOSYNTHETIC MATERIAL TYPE R1	
		Sta. 544+00 to 550+00	5,548 SY
748	190	CURB & GUTTER-TYPE I 30IN	
		Sta. 544+00 to 550+00	2,461 LF
750	30	PIGMENTED IMPRINTED CONCRETE	
		Sta. 544+00 to 550+00	327 SY
750	101	SIDEWALK CONCRETE REINF	
		Sta. 544+00 to 550+00	55 SY
750	120	SIDEWALK CONCRETE 5IN REINF	
		Sta. 544+00 to 550+00	1,273 SY
750	210	CONCRETE MEDIAN NOSE PAVING	
		Sta. 544+00 to 550+00	14 SY
750	2115	DETECTABLE WARNING PANELS	
		Sta. 544+00 to 550+00	40 SF

LEGEND

UNTIED JOINT	SUPERPAVE FAA 43
DOWELED JOINT	SIDEWALK CONCRETE 5IN REINF (SHARED USE PATH)
TIED JOINT W/ HOT POUR SEAL	SIDEWALK CONCRETE REINF (4IN)
PAVEMENT REINFORCEMENT	CONCRETE DRIVEWAY 6IN
10IN PCC PAVEMENT	PIGMENTED IMPRINTED CONCRETE
COMMERCIAL GRADE HOT MIX ASPHALT	AGGREGATE SURFACE COURSE CL 13

- NOTE:
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  2. Joints to Match Existing Joints on Southbound Lanes from Station 572+45 to North End of Project.
  3. Existing Transverse Joints on the East Side of 40th Ave W are to Extend into New Pavement.
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Paving Layouts

Sta 544+00 to Sta 550+00 (PR17)

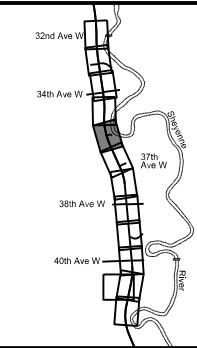
	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SU-8-992(040)041	90	8

SPEC CODE BID ITEM			QTY UNIT
302	121	AGGREGATE BASE COURSE CL 5	
		Sta. 550+00 to 556+00	1,236 CY
		Sidewalk	146 CY
		Driveway	11 CY
		Surface	5 CY
550	310	10IN NON REINF CONCRETE PVMT CL AE-DOWELED	
		Sta. 550+00 to 556+00	2,933 SY
709	151	GEOSYNTHETIC MATERIAL TYPE R1	
		Sta. 550+00 to 556+00	4,832 SY
748	190	CURB & GUTTER-TYPE I 30IN	
		Sta. 550+00 to 556+00	2,400 LF
750	30	PIGMENTED IMPRINTED CONCRETE	
		Sta. 550+00 to 556+00	267 SY
750	120	SIDEWALK CONCRETE 5IN REINF	
		Sta. 550+00 to 556+00	1,311 SY
750	1016	DRIVEWAY CONCRETE 6IN REINFORCED	
		Sta. 550+00 to 556+00	103 SY

LEGEND

UNTIED JOINT	SUPERPAVE FAA 43
DOWELED JOINT	SIDEWALK CONCRETE 5IN REINF (SHARED USE PATH)
TIED JOINT W/ HOT POUR SEAL	SIDEWALK CONCRETE REINF (4IN)
PAVEMENT REINFORCEMENT	CONCRETE DRIVEWAY 6IN
10IN PCC PAVEMENT	PIGMENTED IMPRINTED CONCRETE
COMMERCIAL GRADE HOT MIX ASPHALT	AGGREGATE SURFACE COURSE CL 13

- NOTE:
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  2. Joints to Match Existing Joints on Southbound Lanes from Station 572+45 to North End of Project.
  3. Existing Transverse Joints on the East Side of 40th Ave W are to Extend into New Pavement.
  4. Pavement Reinforcement Panels to be No. 4 Bar, 24 Inch On Center, Each Way.



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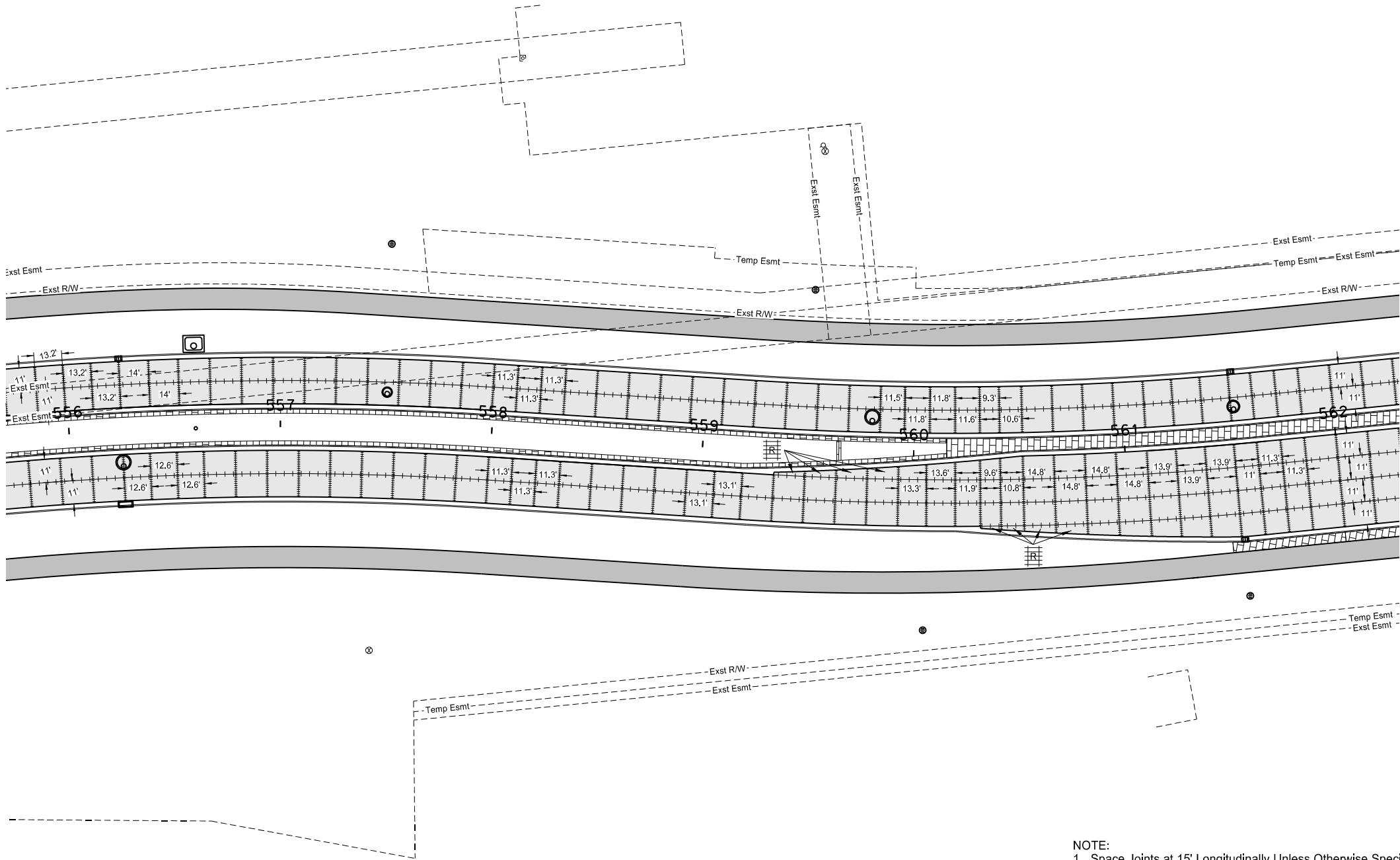
Paving Layouts

Sta 550+00 to Sta 556+00 (PR17)



	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SU-8-992(040)041	90	9

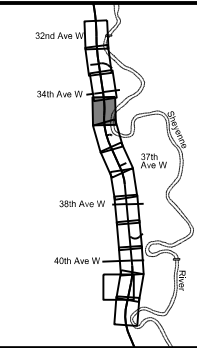
SPEC CODE BID ITEM			QTY UNIT
302	121	AGGREGATE BASE COURSE CL 5	
		Sta. 556+00 to 562+00	1,352 CY
		Sidewalk	148 CY
550	310	10IN NON REINF CONCRETE PVMT CL AE-DOWELED	
		Sta. 556+00 to 562+00	3,339 SY
709	151	GEOSYNTHETIC MATERIAL TYPE R1	
		Sta. 556+00 to 562+00	5,133 SY
748	190	CURB & GUTTER-TYPE I 30IN	
		Sta. 556+00 to 562+00	2,400 LF
750	30	PIGMENTED IMPRINTED CONCRETE	
		Sta. 556+00 to 562+00	342 SY
750	120	SIDEWALK CONCRETE 5IN REINF	
		Sta. 556+00 to 562+00	1,334 SY



LEGEND

—	UNTIED JOINT		SUPERPAVE FAA 43
- - -	DOWELED JOINT		SIDEWALK CONCRETE 5IN REINF (SHARED USE PATH)
- + - + -	TIED JOINT W/ HOT POUR SEAL		SIDEWALK CONCRETE REINF (4IN)
	PAVEMENT REINFORCEMENT		CONCRETE DRIVEWAY 6IN
	10IN PCC PAVEMENT		PIGMENTED IMPRINTED CONCRETE
	COMMERCIAL GRADE HOT MIX ASPHALT		AGGREGATE SURFACE COURSE CL 13

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Paving Layouts

Sta 556+00 to Sta 562+00 (PR17)

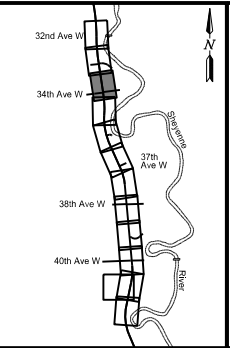
	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SU-8-992(040)041	90	10

SPEC CODE BID ITEM			QTY UNIT
302	121	AGGREGATE BASE COURSE CL 5	
		Sta. 562+00 to 568+00	1,937 CY
		Sidewalk	140 CY
		Driveway	6 CY
		Surface	10 CY
430	500	COMMERCIAL GRADE HOT MIX ASPHALT	
		34rd Avenue W / Golden Spike Road	117 TON
550	310	10IN NON REINF CONCRETE PVMT CL AE-DOWELED	
		Sta. 562+00 to 568+00	4,843 SY
709	151	GEOSYNTHETIC MATERIAL TYPE R1	
		Sta. 562+00 to 568+00	7,255 SY
748	190	CURB & GUTTER-TYPE I 30IN	
		Sta. 562+00 to 568+00	2,354 LF
750	30	PIGMENTED IMPRINTED CONCRETE	
		Sta. 562+00 to 568+00	558 SY
750	101	SIDEWALK CONCRETE REINF	
		Sta. 562+00 to 568+00	46 SY
750	120	SIDEWALK CONCRETE 5IN REINF	
		Sta. 562+00 to 568+00	1,214 SY
750	210	CONCRETE MEDIAN NOSE PAVING	
		Sta. 562+00 to 568+00	96 SY
750	1016	DRIVEWAY CONCRETE 6IN REINFORCED	
		Sta. 562+00 to 568+00	50 SY
750	2115	DETECTABLE WARNING PANELS	
		Sta. 562+00 to 568+00	80 SF

LEGEND

UNTIED JOINT	SUPERPAVE FAA 43
DOWELED JOINT	SIDEWALK CONCRETE 5IN REINF (SHARED USE PATH)
TIED JOINT W/ HOT POUR SEAL	SIDEWALK CONCRETE REINF (4IN)
PAVEMENT REINFORCEMENT	CONCRETE DRIVEWAY 6IN
10IN PCC PAVEMENT	PIGMENTED IMPRINTED CONCRETE
COMMERCIAL GRADE HOT MIX ASPHALT	AGGREGATE SURFACE COURSE CL 13

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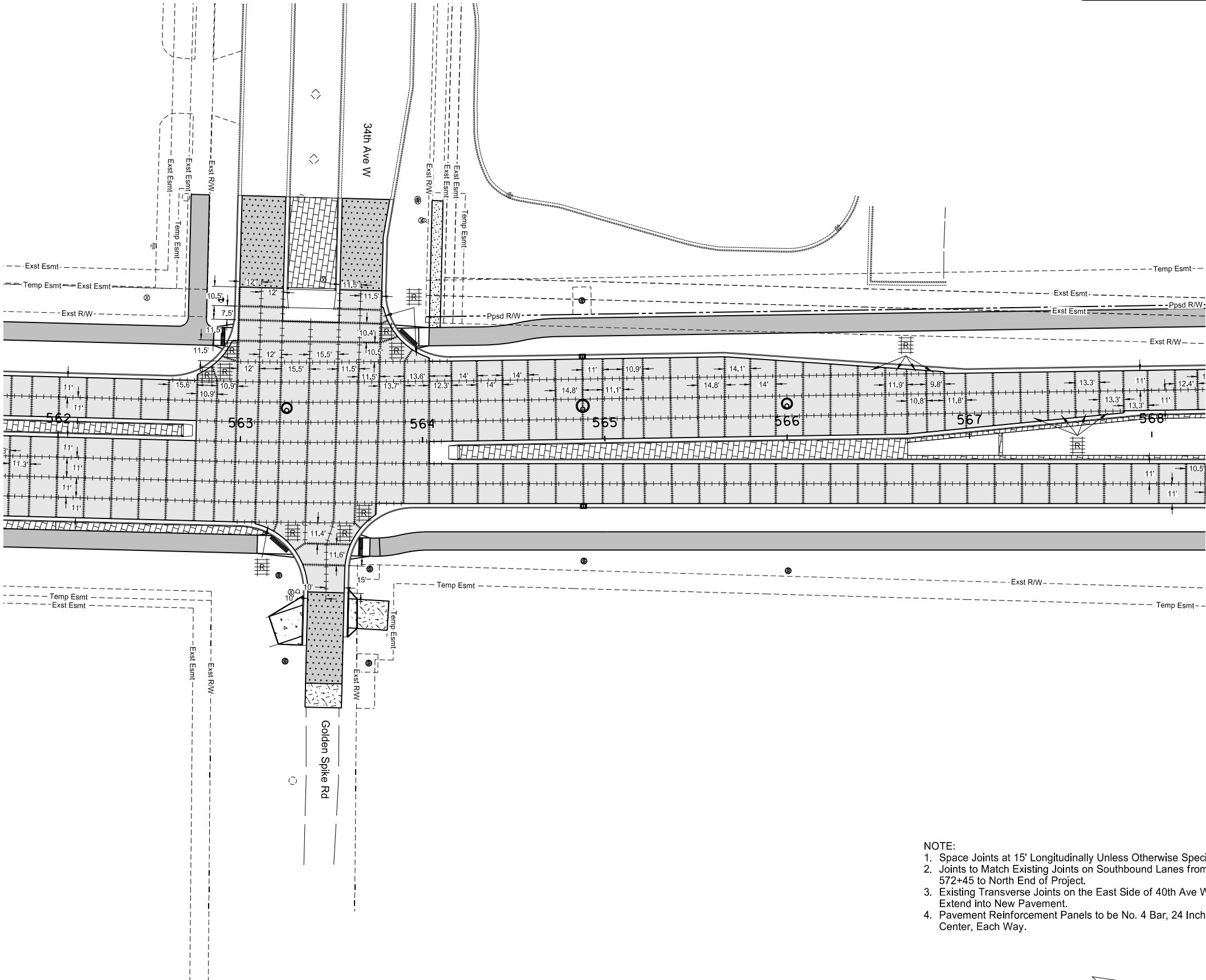
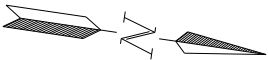


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Sheyenne Street

Paving Layouts

Sta 562+00 to Sta 568+00 (PR17)



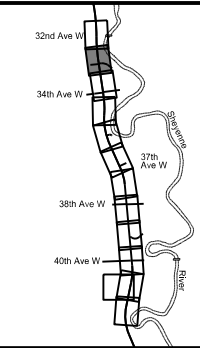
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SU-8-992(040)041	90	11

SPEC CODE	BID ITEM	QTY	UNIT
302 121	AGGREGATE BASE COURSE CL 5		
	Sta. 568+00 to 574+00	1,546	CY
	Sidewalk	106	CY
	Driveway	6	CY
	Surface	10	CY
430 500	COMMERCIAL GRADE HOT MIX ASPHALT		
	33rd Avenue W	120	TON
550 310	10IN NON REINF CONCRETE PVMT CL AE-DOWELED		
	Sta. 568+00 to 574+00	3,718	SY
709 151	GEOSYNTHETIC MATERIAL TYPE R1		
	Sta. 568+00 to 574+00	6,079	SY
748 190	CURB & GUTTER-TYPE I 30IN		
	Sta. 568+00 to 574+00	2,455	LF
750 30	PIGMENTED IMPRINTED CONCRETE		
	Sta. 568+00 to 574+00	309	SY
750 120	SIDEWALK CONCRETE 5IN REINF		
	Sta. 568+00 to 574+00	952	SY
750 1016	DRIVEWAY CONCRETE 6IN REINFORCED		
	Sta. 568+00 to 574+00	55	SY
750 2115	DETECTABLE WARNING PANELS		
	Sta. 568+00 to 574+00	80	SF

LEGEND

UNTIED JOINT	SUPERPAVE FAA 43
DOWELED JOINT	SIDEWALK CONCRETE 5IN REINF (SHARED USE PATH)
TIED JOINT W/ HOT POUR SEAL	SIDEWALK CONCRETE REINF (4IN)
PAVEMENT REINFORCEMENT	CONCRETE DRIVEWAY 6IN
10IN PCC PAVEMENT	PIGMENTED IMPRINTED CONCRETE
COMMERCIAL GRADE HOT MIX ASPHALT	AGGREGATE SURFACE COURSE CL 13
NDDOT PROJECT SU-8-992(039)040 (2018)	

- NOTE:
- Space Joints at 15' Longitudinally Unless Otherwise Specified.
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Sta 568+00 to Sta 574+00 (PR17)

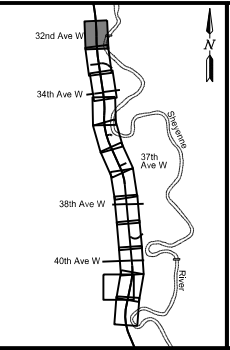
	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SU-8-992(040)041	90	12

SPEC CODE	BID ITEM	QTY	UNIT
302 121	AGGREGATE BASE COURSE CL 5		
	Sta. 574+00 to 580+00	362	CY
	Sidewalk	23	CY
550 310	10IN NON REINF CONCRETE PVMT CL AE-DOWELED		
	Sta. 574+00 to 580+00	972	SY
709 151	GEOSYNTHETIC MATERIAL TYPE R1		
	Sta. 574+00 to 580+00	1,333	SY
748 190	CURB & GUTTER-TYPE I 30IN		
	Sta. 574+00 to 580+00	530	LF
750 30	PIGMENTED IMPRINTED CONCRETE		
	Sta. 574+00 to 580+00	115	SY
750 120	SIDEWALK CONCRETE 5IN REINF		
	Sta. 574+00 to 580+00	185	SY

LEGEND

UNTIED JOINT	SUPERPAVE FAA 43
DOWELED JOINT	SIDEWALK CONCRETE 5IN REINF (SHARED USE PATH)
TIED JOINT W/ HOT POUR SEAL	SIDEWALK CONCRETE REINF (4IN)
PAVEMENT REINFORCEMENT	CONCRETE DRIVEWAY 6IN
10IN PCC PAVEMENT	PIGMENTED IMPRINTED CONCRETE
COMMERCIAL GRADE HOT MIX ASPHALT	AGGREGATE SURFACE COURSE CL 13
NDDOT PROJECT SU-8-992(039)040 (2018)	

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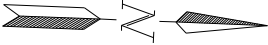


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Paving Layouts

Sta 574+00 to Sta 580+00 (PR17)



STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SU-8-992(040)041	100	1

SIGN NUMBER	SIGN SIZE	DESCRIPTION	AMOUNT REQUIRED		TOTAL AMOUNT REQUIRED	UNITS PER AMOUNT	UNITS SUB TOTAL
			BY PHASE NO.				
			1	2			
D3-36	36"x6"	STREET NAME SIGN (Sign and installation only)				6	
G20-1-60	60"x24"	ROAD WORK NEXT ____ MILES				34	
G20-1b-60	60"x24"	WORK IN PROGRESS/ NO WORK IN PROGRESS (Sign and installation only)				26	
G20-2-48	48"x24"	END ROAD WORK				19	
G20-4-36	36"x18"	PILOT CAR FOLLOW ME (Mounted to back of pilot car)				18	
G20-10-108	108"x48"	CONTRACTOR SIGN				64	
G20-50a-72	72"x36"	ROAD WORK NEXT ____ MILES RT & LT ARROWS				37	
G20-52a-72	72"x24"	ROAD WORK NEXT ____ MILES RT or LT ARROW				30	
G20-55-96	96"x48"	SPEED LIMIT ENFORCED - MINIMUM FEE \$80 WHEN WORKERS PRESENT				59	
M1-1-36	36"x36"	INTERSTATE ROUTE MARKER (Post and installation only)				10	
M1-4-24	24"x24"	U.S. ROUTE MARKER (Post and installation only)				10	
M1-5-24	24"x24"	STATE ROUTE MARKER (Post and installation only)				10	
M3-1-24	24"x12"	NORTH (Mounted on route marker post)	37	26	37	7	259
M3-2-24	24"x12"	EAST (Mounted on route marker post)	20		20	7	140
M3-3-24	24"x12"	SOUTH (Mounted on route marker post)	39	24	39	7	273
M3-4-24	24"x12"	WEST (Mounted on route marker post)	17		17	7	119
M4-8-24	24"x12"	DETOUR (Mounted on route marker post)	99	83	99	7	693
M4-8a-24	24"x18"	END DETOUR	5	4	5	8	40
M4-9-30	30"x24"	DETOUR ARROW RIGHT or LEFT/AHD AND RT or LT				15	
M4-10-48	48"x18"	DETOUR ARROW RIGHT or LEFT	4	6	6	23	138
M5-1-21	21"x15"	ARROW AHD AND RT or LT(Mounted on route marker post)				7	
M5-2-21	21"x15"	ARROW AHD UP & RT or LT (Mounted on route marker post)				7	
M5-3-24	24"x18"	ADVANCE TURN ARROW	6	4	6	8	48
M6-1-21	21"x15"	ARROW RT or LT (Mounted on route marker post)				7	
M6-2-21	21"x15"	ARROW UP & RT or LT (Mounted on route marker post)				7	
M6-2R-24	24"x18"	DIRECTIONAL ARROW	3	2	3	8	24
M6-3-21	21"x15"	ARROW AHD (Mounted on route marker post)				7	
R1-1-48	48"x48"	STOP	2		2	32	64
R1-1a-18	18"x18"	STOP and SLOW PADDLE Back to Back	4	4	4	5	20
R1-2-60	60"x60"	YIELD				29	
R1-2aP-24	24"x18"	TO ON COMING TRAFFIC				7	
R2-1-48	48"x60"	SPEED LIMIT ____	1	1	1	39	39
R2-1a-24	24"x18"	MINIMUM FEE \$80 (Mounted on Speed Limit post)		1	1	10	10
R3-1-24	24"x24"	RIGHT TURN PROHIB	1	2	2	14	28
R3-2-24	24"x24"	LEFT TURN PROHIB	1	2	2	14	28
R3-4-24	24"x24"	U TURN PROHIBITED				14	
R3-5-30	30"x36"	RIGHT or LEFT TURN ONLY	7	5	7	15	105
R3-5a-30	30"x36"	STRAIGHT AHEAD	42	12	42	9	378
R3-6a-30	30"x36"	THRU LANE				15	
R3-6R-24	30"x36"	THRU WITH RIGHT TURN				15	
R3-7-48	48"x48"	LEFT or RIGHT LANE MUST TURN LEFT or RIGHT				35	
R4-1-48	48"x60"	DO NOT PASS				39	
R4-7-48	48"x60"	KEEP RIGHT SYMBOL				39	
R5-1-48	48"x48"	DO NOT ENTER				35	
R6-1-36	36"x12"	ONE WAY RIGHT or LEFT				13	
R7-1-12	12"x18"	NO PARKING				11	
R8-3-12	12"x12"	NO PARKING				10	
R9-9-24	24"x12"	SIDEWALK CLOSED	9	19	19	10	190
R9-11a-24	24"X12"	SIDEWALK CLOSED, CROSS HERE	4	4	4	7	28
R10-6-24	24"x36"	STOP HERE ON RED				16	
R11-2-48	48"x30"	ROAD CLOSED	12	10	12	28	336
R11-2a-48	48"x30"	STREET CLOSED				28	
R11-3a-60	60"x30"	ROAD CLOSED ____ MILES AHEAD LOCAL TRAFFIC ONLY				31	
R11-3c-60	60"x30"	STREET CLOSED ____ MILES AHEAD LOCAL TRAFFIC ONLY				31	
R11-4a-60	60"x30"	STREET CLOSED TO THRU TRAFFIC	5		5	31	155
W1-3-48	48"x48"	RIGHT or LEFT SHARP REVERSE CURVE ARROW				35	
W1-4-48	48"x48"	RIGHT or LEFT REVERSE CURVE ARROW				35	
W1-4b-48	48"x48"	DOUBLE RIGHT or LEFT REVERSE CURVE ARROW				35	
W1-6-48	48"x24"	LARGE ARROW				26	
W3-1-48	48"x48"	STOP AHEAD SYMBOL	1		1	35	35
W3-3-48	48"x48"	SIGNAL AHEAD SYMBOL				35	
W3-4-48	48"x48"	BE PREPARED TO STOP				35	
W3-5-48	48"x48"	SPEED REDUCTION AHEAD				35	
W4-2-48	48"x48"	RIGHT or LEFT LANE TRANSITION SYMBOL	1	1	1	35	35
W5-1-48	48"x48"	ROAD NARROWS				35	
W5-8-48	48"x48"	THRU TRAFFIC RIGHT LANE				35	
W5-9-48	48"x48"	ROAD WORK TRAFFIC ONLY DOWN & LT or RT ARROW				35	
W6-3-48	48"x48"	TWO WAY TRAFFIC SYMBOL				35	
W8-1-48	48"x48"	BUMP	6	6	6	35	210
W8-3-48	48"x48"	PAVEMENT ENDS	6	6	6	35	210
W8-7-48	48"x48"	LOOSE GRAVEL				35	
W8-9a-48	48"x48"	SHOULDER DROP-OFF				35	
W8-11-48	48"x48"	UNEVEN LANES				35	
W8-12-48	48"x48"	NO CENTER STRIPE				35	
W8-53-48	48"x48"	TRUCKS ENTERING HIGHWAY				35	
W8-54-48	48"x48"	TRUCKS ENTERING AHEAD or ____ FT.				35	
W8-55-48	48"x48"	TRUCKS CROSSING AHEAD or ____ FT.				35	
W8-56-48	48"x48"	TRUCKS EXITING HIGHWAY				35	
W9-3a-48	48"x48"	CENTER LANE CLOSED SYMBOL				35	
W12-1-18	48"x48	DOUBLE ARROW	1	2	2	3	6
W12-2-48	48"x48"	LOW CLEARANCE SYMBOL				35	
W13-1-24	24"x24"	____ MPH ADVISORY SPEED PLATE (Mounted on warning sign post)				11	

SIGN NUMBER	SIGN SIZE	DESCRIPTION	AMOUNT REQUIRED		TOTAL AMOUNT REQUIRED	UNITS PER AMOUNT	UNITS SUB TOTAL
			BY PHASE NO.				
			1	2			
W13-4-48	48"x60"	RAMP ARROW				39	
W14-3-48	48"x36"	NO PASSING ZONE				23	
W16-5p-24	24"x18"	LEFT or RIGHT	27	24	27	7	189
W16-6p-24	24"x18"	LEFT or RIGHT AHEAD	27	24	27	7	189
W16-7p-24	24"x12"	RIGHT or LEFT DOWNWARD DIAGINAL ARROW				7	
W20-1-48	48"x48"	ROAD WORK AHEAD or ___ FT or ___ MILE		1	1	35	35
W20-2-48	48"x48"	DETOUR AHEAD or ___ FT	8	4	8	35	280
W20-3-48	48"x48"	ROAD or STREET CLOSED AHEAD or ___ FT.	9	4	9	35	315
W20-4-48	48"x48"	ONE LANE ROAD AHEAD or ___ FT.				35	
W20-5-48	48"x48"	RIGHT or LEFT LANE CLOSED AHEAD or ___ FT.	1	1	1	35	35
W20-7a-48	48"x48"	FLAGGING SYMBOL				35	
W20-7k-24	24"x18"	___ FEET (Mounted on warning sign post)				10	
W20-8-48	48"x48"	STREET CLOSED				35	
W20-51-48	48"x48"	EQUIPMENT WORKING				35	
W20-52-54	54"x12"	NEXT ___ MILES (Mounted on warning sign post)				12	
W21-1a-48	48"x48"	WORKERS SYMBOL				35	
W21-2-48	48"x48"	FRESH OIL				35	
W21-3-48	48"x48"	ROAD MACHINERY AHEAD or ___ FT				35	
W21-5-48	48"x48"	SHOULDER WORK				35	
W21-5a-48	48"x48"	RIGHT or LEFT SHOULDER CLOSED				35	
W21-5b-48	48"x48"	RIGHT or LEFT SHOULDER CLOSED AHEAD or ___ FT.				35	
W21-6a-48	48"x48"	SURVEY CREW AHEAD				35	
W21-50-48	48"x48"	BRIDGE PAINTING AHEAD or ___ FT.				35	
W21-51-48	48"x48"	MATERIAL ON ROADWAY				35	
W22-8-48	48"x48"	FRESH OIL LOOSE ROCK				35	
	24"x24"	TAKE TURNS (6" D letters) (Mounted on stop sign post)				11	

SPECIAL SIGNS							
CONSIGN 1	42"x9"	SHEYENNE ST	63	56		63	7 441
CONSIGN 2	42"x9"	34TH AVE W	24	21		24	7 168
CONSIGN 3	42"x9"	38TH AVE W	23	20		23	7 161
CONSIGN 4	42"x9"	40TH AVE W	26			26	7 182
CONSIGN 5	36"x24"	TOWN & COUNTRY (LEFT)	2	2		2	16 32
CONSIGN 6	36"x24"	EAGLE RUN PLAZA (LEFT)	2	2		2	16 32
CONSIGN 7	36"x24"	TESORO DAIRY QUEEN (LEFT)	2	2		2	16 32
CONSIGN 8	36"x24"	TOWN & COUNTRY (RIGHT)	2	2		2	16 32
CONSIGN 9	36"x24"	EAGLE RUN PLAZA (RIGHT)	2	2		2	16 32
CONSIGN 10	36"x24"	TESORO DAIRY QUEEN (RIGHT)	2	2		2	16 32

SPEC & CODE		TOTAL UNITS				
704-1000	TRAFFIC CONTROL SIGNS	5798				

SPEC & CODE	DESCRIPTION	UNIT	QUANTITY		TOTAL QUANTITY
			BY PHASE NO.		
			1	2	
302-0314	TRAFFIC SERVICE AGGREGATE	TON	66		66
430-0500	COMMERCIAL GRADE HOT MIX ASPHALT	TON	70		70
704-0100	FLAGGING	MHR	800	800	1600
704-1041	ATTENUATION DEVICE-TYPE B-55	EACH			
704-1043	ATTENUATION DEVICE-TYPE B-65	EACH			
704-1044	ATTENUATION DEVICE-TYPE B-70	EACH			
704-1050	TYPE I BARRICADES	EACH			
704-1051	TYPE II BARRICADES	EACH			
704-1052	TYPE III BARRICADES	EACH	55	40	55
704-1054	SIDEWALK BARRICADE	EACH	13	23	23
704-1060	DELINEATOR DRUMS	EACH	29	47	47
704-1065	TRAFFIC CONES	EACH			
704-1067	TUBULAR MARKERS	EACH	58	100	100
704-1070	DELINEATOR	EACH			
704-1072	FLEXIBLE DELINEATORS	EACH			
704-1081	VERTICAL PANELS - BACK TO BACK	EACH			
704-1085	SEQUENCING ARROW PANEL - TYPE A	EACH			
704-1086	SEQUENCING ARROW PANEL - TYPE B	EACH			
704-1087	SEQUENCING ARROW PANEL - TYPE C	EACH			
704-1088	SEQUENCING ARROW PANEL - TYPE C - CROSSOVER	EACH			
704-1095	TYPE B FLASHERS	EACH			
704-1500	OBLITERATION OF PVMT MK	SF			
704-3501	PORTABLE PRECAST CONCRETE MED BARRIER	LF	160		160
704-3510	PRECAST CONCRETE MED BARRIER - STATE FURNISHED	EACH			
750-2155	DETECTABLE WARNING PANELS	SF	40		40
752-0911	TEMPORARY SAFETY FENCE	LF	635		635
762-0200	RAISED PAVEMENT MARKERS	EACH			
762-0420	SHORT TERM 4IN LINE - TYPE R	LF			
762-0430	SHORT TERM 4IN LINE - TYPE NR	LF			
772-2110	FLASHING BEACON - POST MOUNTED	EACH			

NOTE:  
If additional signs are required, units will be calculated using the formula from Section III-19.06 of the Design Manual.  
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This document was originally issued and sealed by Kevin J. Knott, Registration Number PE-5679, on 8/12/18 and the original document is stored at the City of West Fargo.

Traffic Control Devices List  
Sheyenne Street



SIGN NUMBER	SIGN SIZE	DESCRIPTION	AMOUNT REQUIRED		TOTAL AMOUNT REQUIRED	UNITS PER AMOUNT	UNITS SUB TOTAL
			BY PHASE NO.				
			1	2			
D3-36	36"x6"	STREET NAME SIGN (Sign and installation only)				6	
G20-1-60	60"x24"	ROAD WORK NEXT __ MILES				34	
G20-1b-60	60"x24"	WORK IN PROGRESS/ NO WORK IN PROGRESS (Sign and installation only)				26	
G20-2-48	48"x24"	END ROAD WORK				19	
G20-4-36	36"x18"	PILOT CAR FOLLOW ME (Mounted to back of pilot car)				18	
G20-10-108	108"x48"	CONTRACTOR SIGN				64	
G20-50a-72	72"x36"	ROAD WORK NEXT __ MILES RT & LT ARROWS				37	
G20-52a-72	72"x24"	ROAD WORK NEXT __ MILES RT or LT ARROW				30	
G20-55-96	96"x48"	SPEED LIMIT ENFORCED - MINIMUM FEE \$80 WHEN WORKERS PRESENT				59	
M1-1-36	36"x36"	INTERSTATE ROUTE MARKER (Post and installation only)				10	
M1-4-24	24"x24"	U.S. ROUTE MARKER (Post and installation only)				10	
M1-5-24	24"x24"	STATE ROUTE MARKER (Post and installation only)				10	
M3-1-24	24"x12"	NORTH (Mounted on route marker post)				7	
M3-2-24	24"x12"	EAST (Mounted on route marker post)				7	
M3-3-24	24"x12"	SOUTH (Mounted on route marker post)				7	
M3-4-24	24"x12"	WEST (Mounted on route marker post)				7	
M4-8-24	24"x12"	DETOUR (Mounted on route marker post)	9		9	7	63
M4-8a-24	24"x18"	END DETOUR				8	
M4-9-30	30"x24"	DETOUR ARROW RIGHT or LEFT/AHD AND RT or LT				15	
M4-10-48	48"x18"	DETOUR ARROW RIGHT or LEFT				23	
M5-1-21	21"x15"	ARROW AHD AND RT or LT(Mounted on route marker post)				7	
M5-2-21	21"x15"	ARROW AHD UP & RT or LT (Mounted on route marker post)				7	
M5-3-24	24"x18"	ADVANCE TURN ARROW				8	
M6-1-21	21"x15"	ARROW RT or LT (Mounted on route marker post)				7	
M6-2-21	21"x15"	ARROW UP & RT or LT (Mounted on route marker post)				7	
M6-2R-24	24"x18"	DIRECTIONAL ARROW				8	
M6-3-21	21"x15"	ARROW AHD (Mounted on route marker post)				7	
R1-1-48	48"x48"	STOP				32	
R1-1a-18	18"x18"	STOP and SLOW PADDLE Back to Back				5	
R1-2-60	60"x60"	YIELD				29	
R1-2aP-24	24"x18"	TO ON COMING TRAFFIC				7	
R2-1-48	48"x60"	SPEED LIMIT __				39	
R2-1a-24	24"x18"	MINIMUM FEE \$80 (Mounted on Speed Limit post)				10	
R3-2-24	24"x24"	LEFT TURN PROHIB				14	
R3-4-24	24"x24"	U TURN PROHIBITED				14	
R3-5-30	30"x36"	RIGHT or LEFT TURN ONLY				15	
R3-5a-30	30"x36"	STRAIGHT AHEAD				9	
R3-6a-30	30"x36"	THRU LANE				15	
R3-6R-24	30"x36"	THRU WITH RIGHT TURN				15	
R3-7-48	48"x48"	LEFT or RIGHT LANE MUST TURN LEFT or RIGHT				35	
R4-1-48	48"x60"	DO NOT PASS				39	
R4-7-48	48"x60"	KEEP RIGHT SYMBOL				39	
R5-1-48	48"x48"	DO NOT ENTER				35	
R6-1-36	36"x12"	ONE WAY RIGHT or LEFT				13	
R7-1-12	12"x18"	NO PARKING				11	
R8-3-12	12"x12"	NO PARKING				10	
R9-9-24	24"x12"	SIDEWALK CLOSED				10	
R9-11a-24	24"x12"	SIDEWALK CLOSED, CROSS HERE				7	
R10-6-24	24"x36"	STOP HERE ON RED				16	
R11-2-48	48"x30"	ROAD CLOSED				28	
R11-2a-48	48"x30"	STREET CLOSED				28	
R11-3a-60	60"x30"	ROAD CLOSED __ MILES AHEAD LOCAL TRAFFIC ONLY				31	
R11-3c-60	60"x30"	STREET CLOSED __ MILES AHEAD LOCAL TRAFFIC ONLY				31	
R11-4a-60	60"x30"	STREET CLOSED TO THRU TRAFFIC				31	
W1-3-48	48"x48"	RIGHT or LEFT SHARP REVERSE CURVE ARROW				35	
W1-4-48	48"x48"	RIGHT or LEFT REVERSE CURVE ARROW				35	
W1-4b-48	48"x48"	DOUBLE RIGHT or LEFT REVERSE CURVE ARROW				35	
W1-6-48	48"x24"	LARGE ARROW				26	
W3-1-48	48"x48"	STOP AHEAD SYMBOL				35	
W3-3-48	48"x48"	SIGNAL AHEAD SYMBOL				35	
W3-4-48	48"x48"	BE PREPARED TO STOP				35	
W3-5-48	48"x48"	SPEED REDUCTION AHEAD				35	
W4-2-48	48"x48"	RIGHT or LEFT LANE TRANSITION SYMBOL				35	
W5-1-48	48"x48"	ROAD NARROWS				35	
W5-8-48	48"x48"	THRU TRAFFIC RIGHT LANE				35	
W5-9-48	48"x48"	ROAD WORK TRAFFIC ONLY DOWN & LT or RT ARROW				35	
W6-3-48	48"x48"	TWO WAY TRAFFIC SYMBOL				35	
W8-1-48	48"x48"	BUMP				35	
W8-3-48	48"x48"	PAVEMENT ENDS				35	
W8-7-48	48"x48"	LOOSE GRAVEL				35	
W8-9a-48	48"x48"	SHOULDER DROP-OFF				35	
W8-11-48	48"x48"	UNEVEN LANES				35	
W8-12-48	48"x48"	NO CENTER STRIPE				35	
W8-53-48	48"x48"	TRUCKS ENTERING HIGHWAY				35	
W8-54-48	48"x48"	TRUCKS ENTERING AHEAD or __ FT.				35	
W8-55-48	48"x48"	TRUCKS CROSSING AHEAD or __ FT.				35	
W8-56-48	48"x48"	TRUCKS EXITING HIGHWAY				35	
W9-3a-48	48"x48"	CENTER LANE CLOSED SYMBOL				35	
W12-1-48	48"x48"	DOUBLE ARROW				35	
W12-2-48	48"x48"	LOW CLEARANCE SYMBOL				35	
W13-1-24	24"x24"	__ MPH ADVISORY SPEED PLATE (Mounted on warning sign post)				11	
W13-4-48	48"x60"	RAMP ARROW				39	

SIGN NUMBER	SIGN SIZE	DESCRIPTION	AMOUNT REQUIRED		TOTAL AMOUNT REQUIRED	UNITS PER AMOUNT	UNITS SUB TOTAL
			BY PHASE NO.				
			1	2			
W14-3-48	48"x36"	NO PASSING ZONE				23	
W16-5p-24	24"x18"	LEFT or RIGHT				7	
W16-6p-24	24"x18"	LEFT or RIGHT AHEAD				7	
W16-7p-24	24"x12"	RIGHT or LEFT DOWNWARD DIAGINAL ARROW				7	
W20-1-48	48"x48"	ROAD WORK AHEAD or ___ FT or ___ MILE				35	
W20-2-48	48"x48"	DETOUR AHEAD or ___ FT				35	
W20-3-48	48"x48"	ROAD or STREET CLOSED AHEAD or ___ FT.				35	
W20-4-48	48"x48"	ONE LANE ROAD AHEAD or ___ FT.				35	
W20-5-48	48"x48"	RIGHT or LEFT LANE CLOSED AHEAD or ___ FT.				35	
W20-7a-48	48"x48"	FLAGGING SYMBOL				35	
W20-7k-24	24"x18"	___ FEET (Mounted on warning sign post)				10	
W20-8-48	48"x48"	STREET CLOSED				35	
W20-51-48	48"x48"	EQUIPMENT WORKING				35	
W20-52-54	54"x12"	NEXT ___ MILES (Mounted on warning sign post)				12	
W21-1a-48	48"x48"	WORKERS SYMBOL				35	
W21-2-48	48"x48"	FRESH OIL				35	
W21-3-48	48"x48"	ROAD MACHINERY AHEAD or ___ FT				35	
W21-5-48	48"x48"	SHOULDER WORK				35	
W21-5a-48	48"x48"	RIGHT or LEFT SHOULDER CLOSED				35	
W21-5b-48	48"x48"	RIGHT or LEFT SHOULDER CLOSED AHEAD or ___ FT.				35	
W21-6a-48	48"x48"	SURVEY CREW AHEAD				35	
W21-50-48	48"x48"	BRIDGE PAINTING AHEAD or ___ FT.				35	
W21-51-48	48"x48"	MATERIAL ON ROADWAY				35	
W22-8-48	48"x48"	FRESH OIL LOOSE ROCK				35	
	24"x24"	TAKE TURNS (6" D letters) (Mounted on stop sign post)				11	

SPECIAL SIGNS

CONSIGN 1	42"x9"	SHEYENNE ST					7	
CONSIGN 2	42"x9"	34TH AVE W					7	
CONSIGN 3	42"x9"	38TH AVE W					7	
CONSIGN 4	42"x9"	40TH AVE W					7	

SPEC & CODE

704-1000	TRAFFIC CONTROL SIGNS	TOTAL UNITS	63
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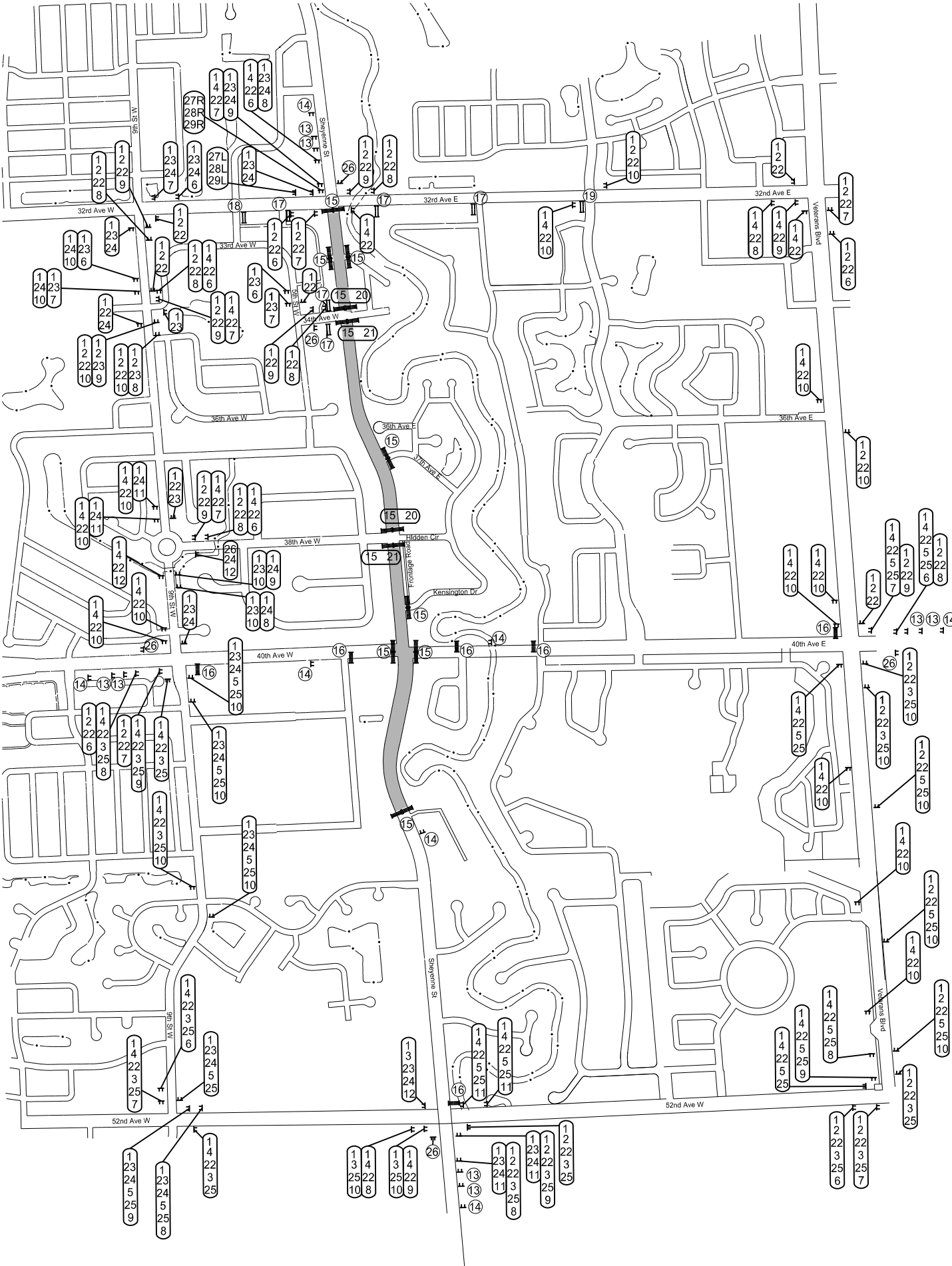
SPEC & CODE	DESCRIPTION	UNIT	QUANTITY			TOTAL QUANTITY
			BY PHASE NO.			
			1	2		
302-0550	TRAFFIC SERVICE AGGREGATE	TON	455			455
704-0100	FLAGGING	MHR				
704-1041	ATTENUATION DEVICE-TYPE B-55	EACH				
704-1043	ATTENUATION DEVICE-TYPE B-65	EACH				
704-1044	ATTENUATION DEVICE-TYPE B-70	EACH				
704-1050	TYPE I BARRICADES	EACH				
704-1051	TYPE II BARRICADES	EACH				
704-1052	TYPE III BARRICADES	EACH				
704-1060	DELINEATOR DRUMS	EACH				
704-1065	TRAFFIC CONES	EACH				
704-1067	TUBULAR MARKERS	EACH				
704-1070	DELINEATOR	EACH				
704-1072	FLEXIBLE DELINEATORS	EACH				
704-1080	STACKABLE VERTICAL PANELS	EACH		5		5
704-1081	VERTICAL PANELS - BACK TO BACK	EACH				
704-1085	SEQUENCING ARROW PANEL - TYPE A	EACH				
704-1086	SEQUENCING ARROW PANEL - TYPE B	EACH				
704-1087	SEQUENCING ARROW PANEL - TYPE C	EACH				
704-1088	SEQUENCING ARROW PANEL - TYPE C - CROSSOVER	EACH				
704-1095	TYPE B FLASHERS	EACH				
704-1500	OBLITERATION OF PVMT MK	SF				
704-3501	PORTABLE PRECAST CONCRETE MED BARRIER	LF				
704-3510	PRECAST CONCRETE MED BARRIER - STATE FURNISHED	EACH				
762-0200	RAISED PAVEMENT MARKERS	EACH				
762-0420	SHORT TERM 4IN LINE - TYPE R	LF				
762-0426	SHORT TERM 24IN LINE-TYPE R	LF		108		108
762-0430	SHORT TERM 4IN LINE - TYPE NR	LF				
762-0436	SHORT TERM 24IN LINE-TYPE NR	LF	70			70
772-2110	FLASHING BEACON - POST MOUNTED	EACH				
774-2810	TEMPORARY TRAFFIC SIGNAL	EACH	2			2

NOTE:  
If additional signs are required, units will be calculated using the formula from Section III-19.06 of the Design Manual.  
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This document was originally issued and sealed by Kevin J. Knott, Registration Number PE-5679, on 9/06/18 and the original document is stored at the City of West Fargo.

Traffic Control Devices List  
Sheyenne Street

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SU-8-992(040)041	100	3



LEGEND

- ①

DETOUR

M-4-8-24
- ②

NORTH

M3-1-24
- ③

EAST

M3-2-24
- ④

SOUTH

M3-3-24
- ⑤

WEST

M3-4-24
- ⑥

←

W16-6P-24
- ⑦

←

W16-5P-24
- ⑧

↶

W16-6P-24
- ⑨

→

W16-5P-24
- ⑩

↑

R3-5a-30
- ⑪

↷

M5-3-24
- ⑫

↗

M6-2R-24
- ⑬

DETOUR  
XXXX FT

W20-2-48
- ⑭

ROAD  
CLOSED  
AHEAD

W20-3-48
- ⑮

ROAD  
CLOSED

R11-2-48
- ⑯

STREET CLOSED  
TO  
THRU TRAFFIC

R11-4-60
- ⑰

SIDEWALK  
CLOSED

R9-9-24
- ⑱

SIDEWALK CLOSED  
CROSS HERE

R9-11a(L)-24
- ⑲

SIDEWALK CLOSED  
CROSS HERE

R9-11a(R)-24
- ⑳

DETOUR

M4-10(L)-48
- ㉑

DETOUR

M4-10(R)-48
- ㉒

SHEYENNE ST

CONSIGN 1
- ㉓

34TH AVE W

CONSIGN 2
- ㉔

38TH AVE W

CONSIGN 3
- ㉕

40TH AVE W

CONSIGN 4
- ㉖

END  
DETOUR

M4-8a-24
- 27L/27R

TOWN  
&  
COUNTRY

CONSIGN 5  
CONSIGN 8
- 28L/28R

EAGLE RUN  
PLAZA

CONSIGN 6  
CONSIGN 9
- 29L/29R

TESORO  
DAIRY QUEEN

CONSIGN 7  
CONSIGN 10



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① 2 20 STACK ASSEMBLY TT SIGN

TYPE 3 BARRICADE

SIDEWALK BARRICADE

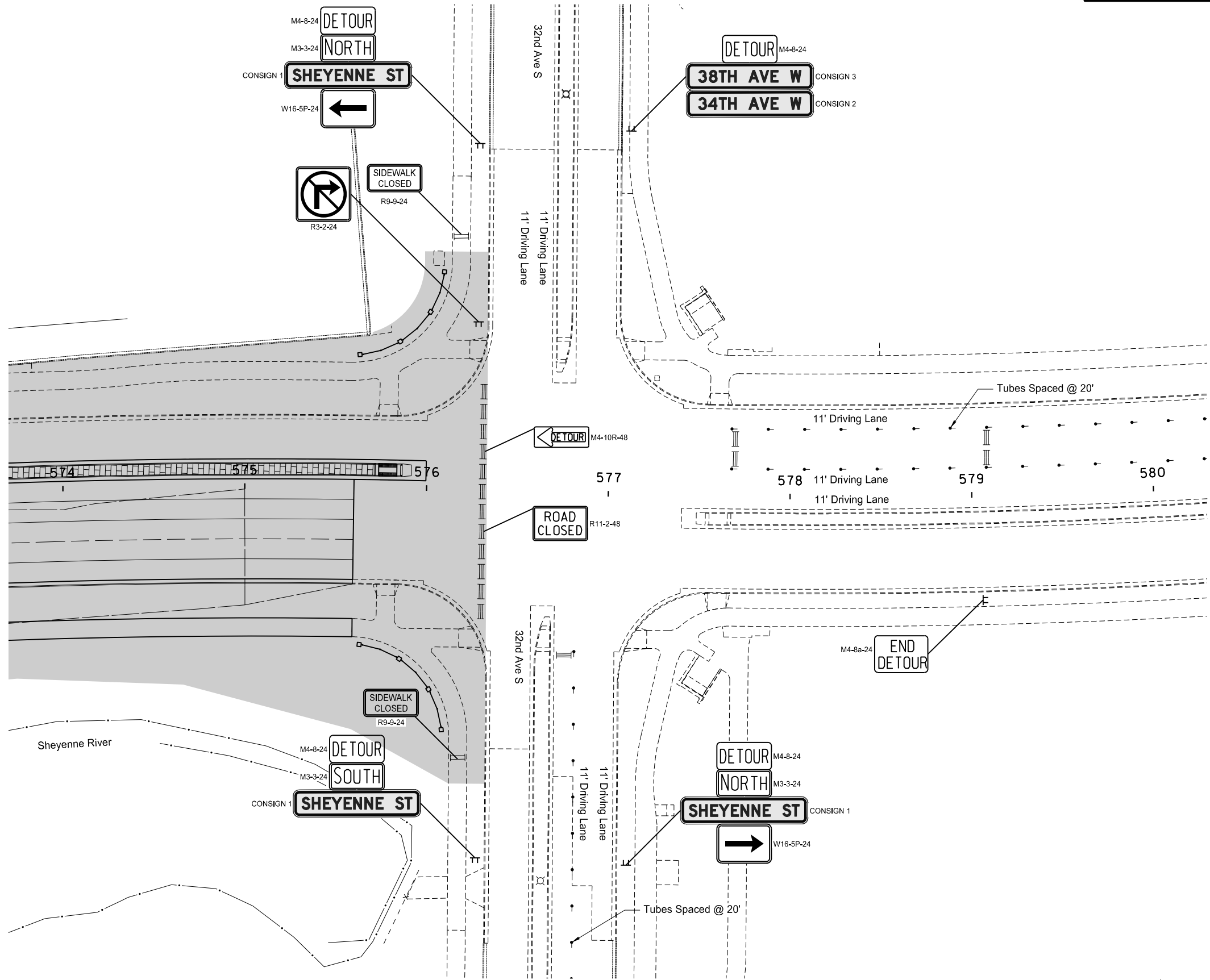
Sheyenne Street

Work Zone Traffic Control

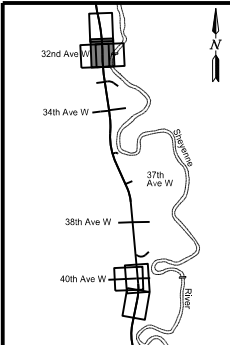
Traffic Control Detour Phase 1



	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SU-8-992(040)041	100	5



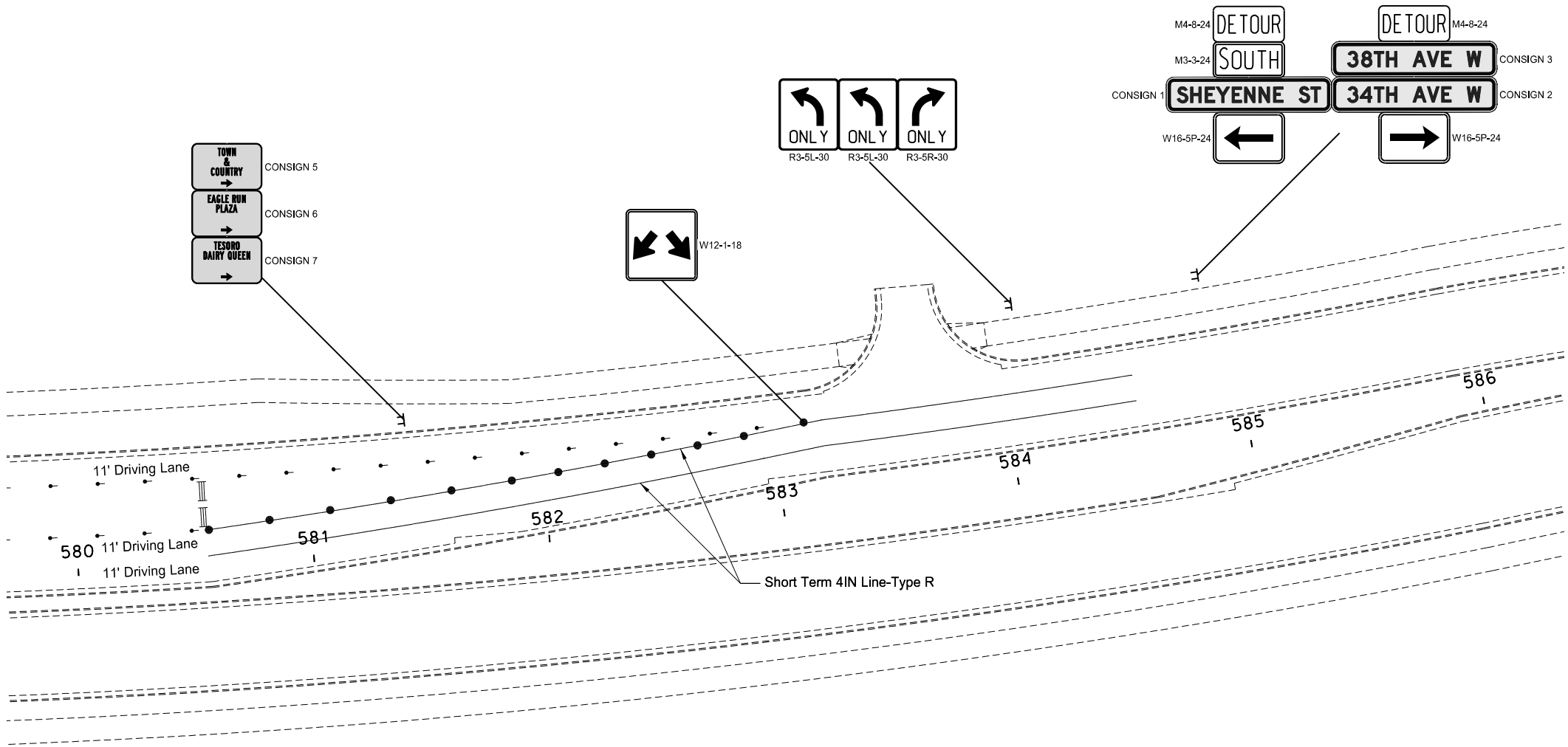
LEGEND	
	WORK ZONE AREA
	DELINEATOR DRUM
	TUBULAR MARKER
	TYPE III BARRICADE
	SIGN
	SIDEWALK BARRICADE



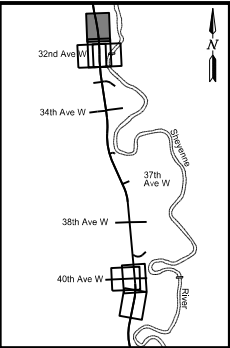
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Sheyenne Street  
Work Zone Traffic Control  
Phase 1 & Phase 2  
Sta 574+00 to Sta 580+00 (PR17)

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SU-8-992(040)041	100	6



LEGEND	
	WORK ZONE AREA
	TYPE III BARRICADE
	DELINEATOR DRUM
	TUBULAR MARKER
	SIGN
	SIDEWALK BARRICADE

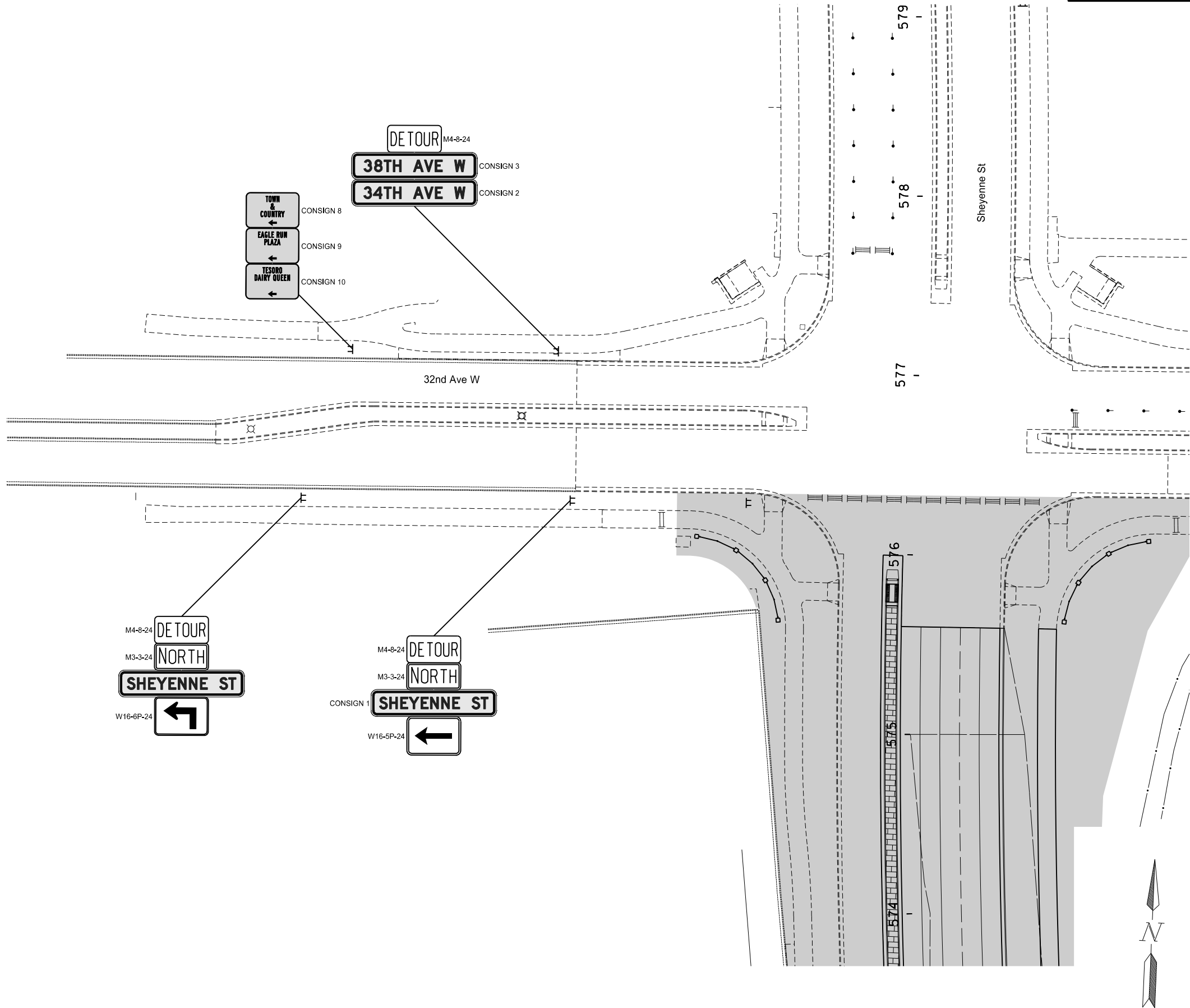


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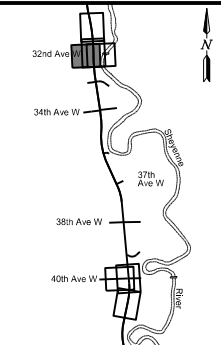
Sheyenne Street  
Work Zone Traffic Control  
Phase 1 & Phase 2  
Sta 580+00 to Sta 586+00 (PR17)



	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SU-8-992(040)041	100	7



LEGEND	
	WORK ZONE AREA
	DELINEATOR DRUM
	TUBULAR MARKER
	TYPE III BARRICADE
	SIGN
	SIDEWALK BARRICADE

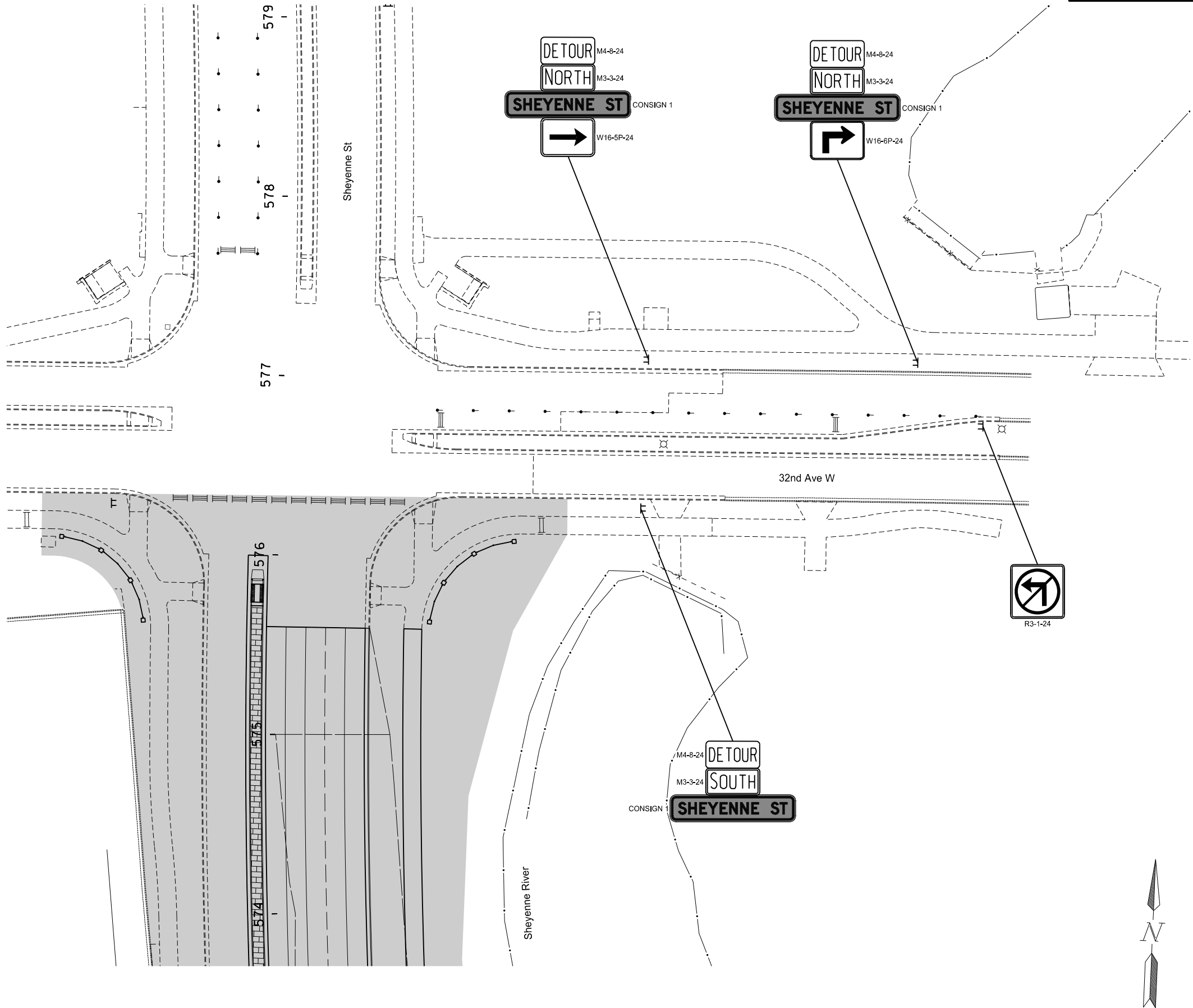


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Sheyenne Street

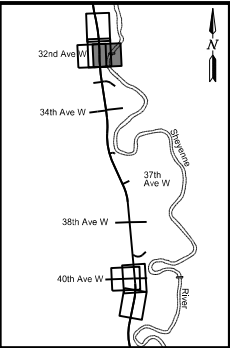
Work Zone Traffic Control  
Phase 1 & Phase 2  
32nd Ave

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SU-8-992(040)041	100	8



LEGEND

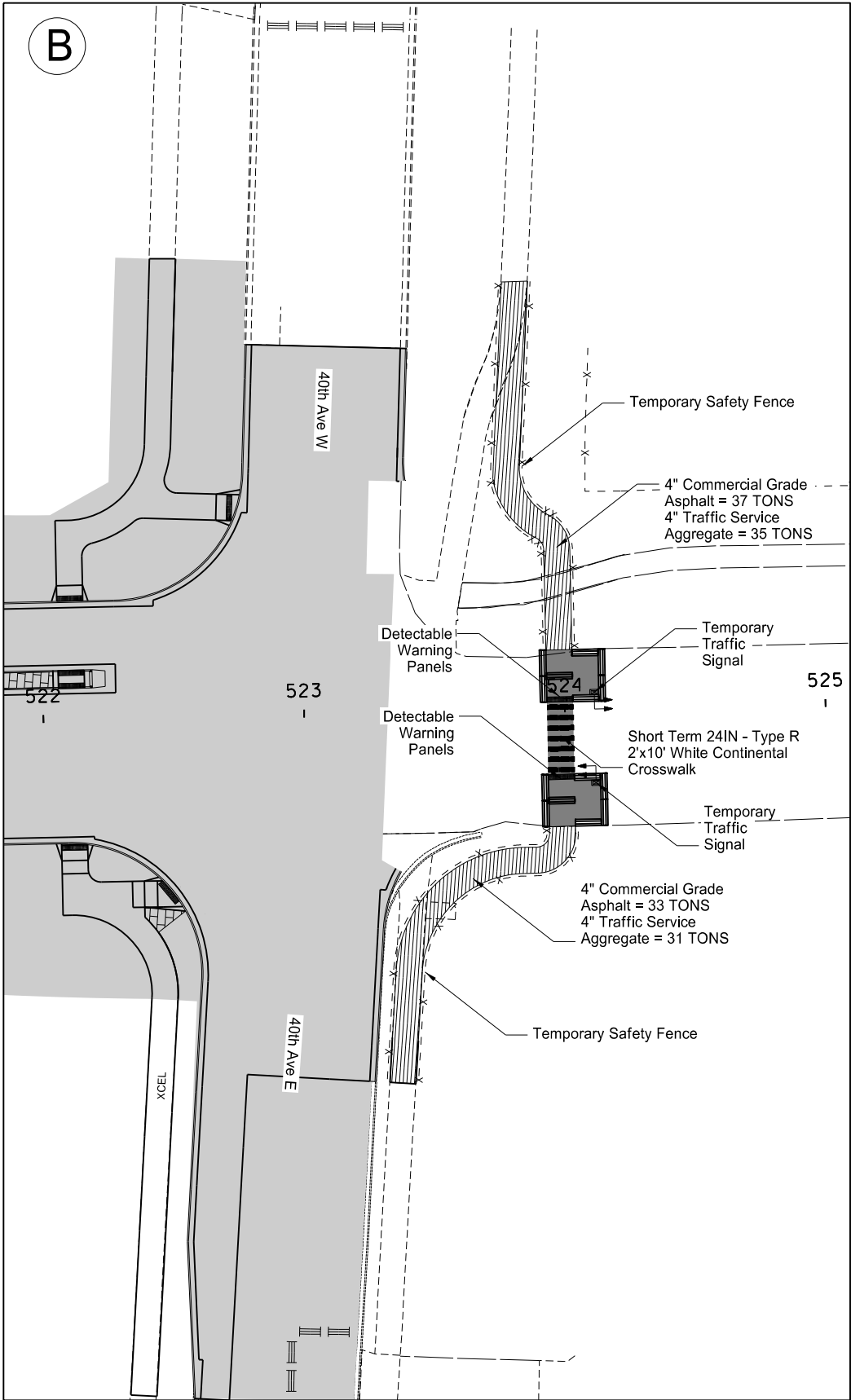
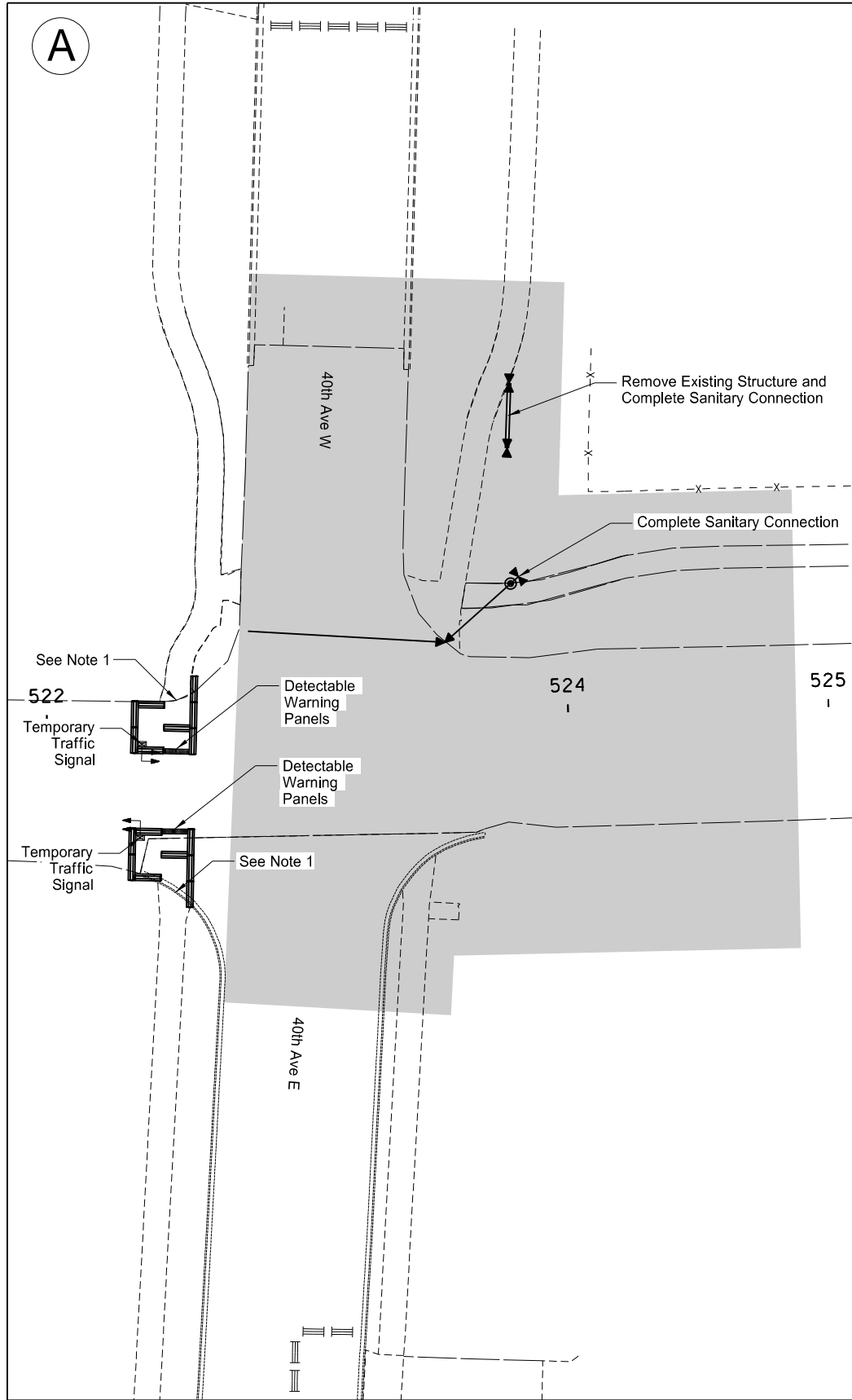
- |                 |                    |
|-----------------|--------------------|
| WORK ZONE AREA  | TYPE III BARRICADE |
| DELINEATOR DRUM | SIGN               |
| TUBULAR MARKER  | SIDEWALK BARRICADE |



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Sheyenne Street

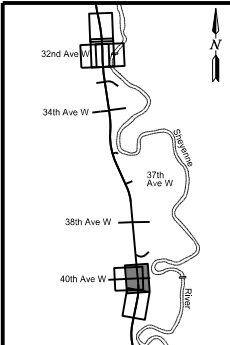
Work Zone Traffic Control  
Phase 1 & Phase 2  
32nd Ave



NOTE:  
1. Use Existing Sidewalk as South Temporary Pedestrian Crossing.  
2. Construct Utility Connections as shown.  
3. Construct Temporary Pedestrian Crossing Asphalt Path.

**LEGEND**

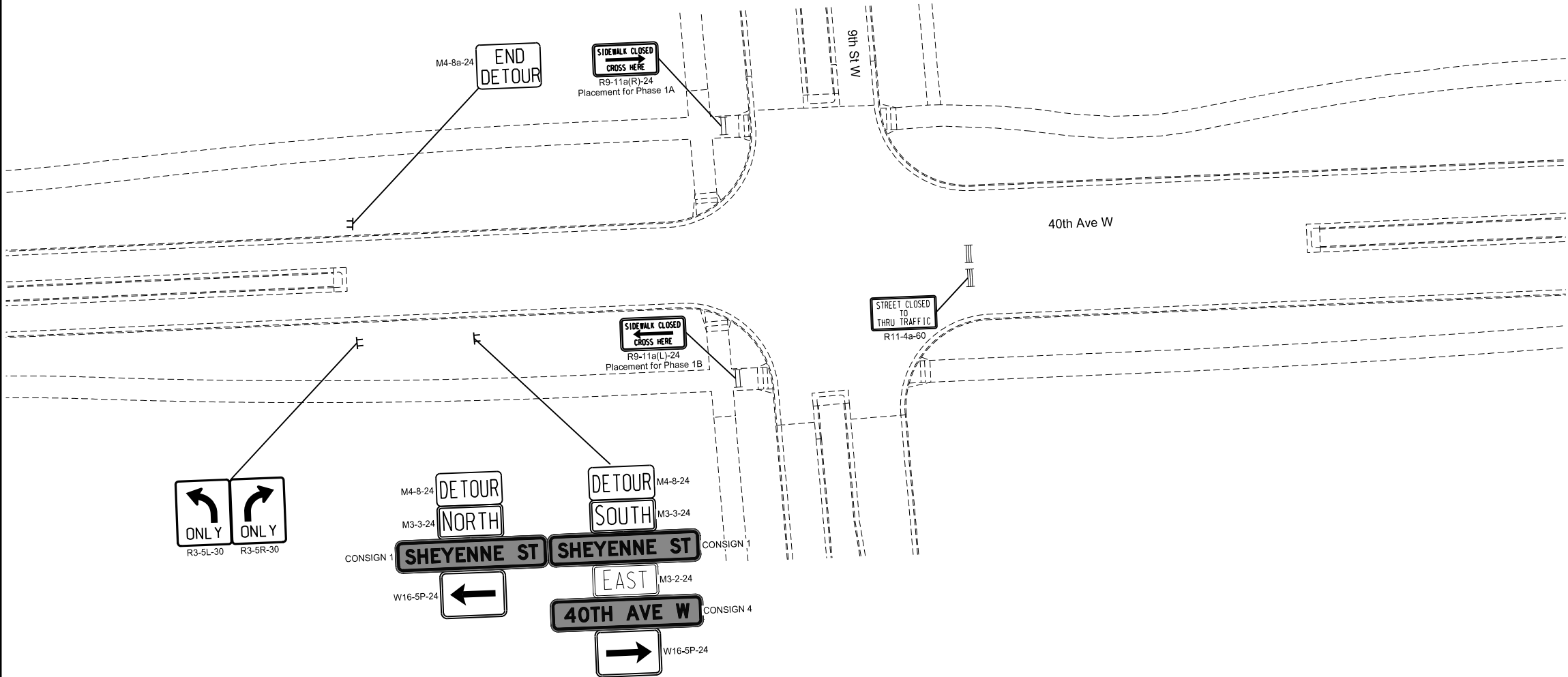
EXISTING ROADWAY	TEMPORARY PEDESTRIAN CROSSING: COMMERCIAL GRADE HOT MIX ASPHALT
WORK ZONE AREA	TYPE III BARRICADE
DELINEATOR DRUM	SIGN
TUBULAR MARKER	TEMPORARY SAFETY FENCE
PRECAST CONCRETE MED BARRIER	SIDEWALK BARRICADE



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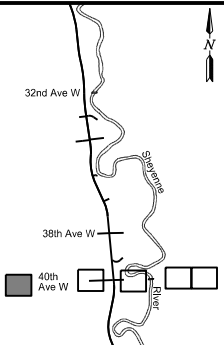
Sheyenne Street  
Work Zone Traffic Control  
Phase 1  
Sta 522+00 to Sta 525+00 (PR17)

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SU-8-992(040)041	100	10



#### LEGEND

- |                 |                    |
|-----------------|--------------------|
| WORK ZONE AREA  | TYPE III BARRICADE |
| DELINEATOR DRUM | SIGN               |
| TUBULAR MARKER  | SIDEWALK BARRICADE |

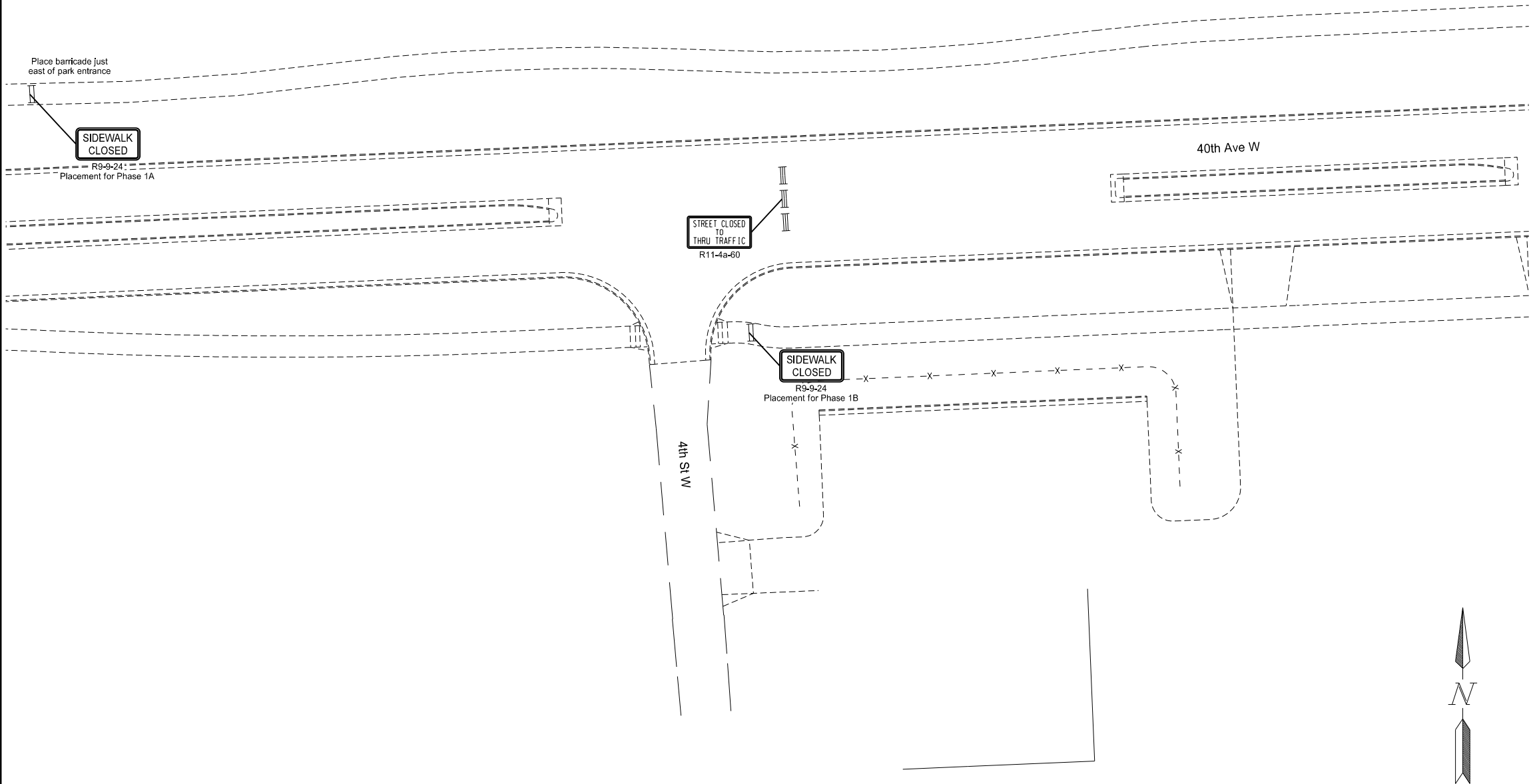


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Sheyene Street

Work Zone Traffic Control  
Phase 1  
40th Ave

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SU-8-992(040)041	100	11



**LEGEND**

WORK ZONE AREA	TYPE III BARRICADE
DELINEATOR DRUM	SIGN
TUBULAR MARKER	SIDEWALK BARRICADE

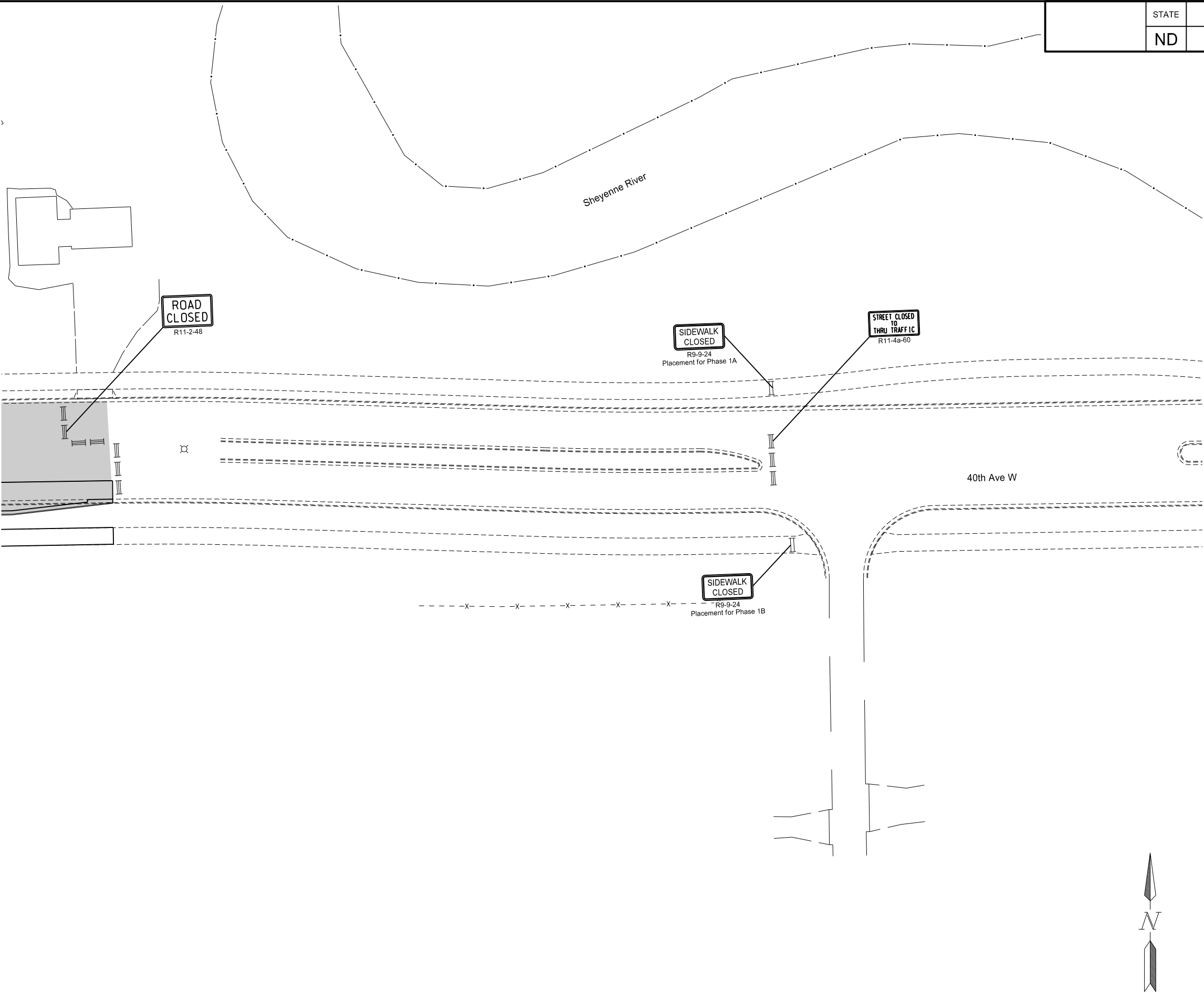
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Sheyene Street

Work Zone Traffic Control  
Phase 1  
40th Ave



	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SU-8-992(040)041	100	12



**LEGEND**

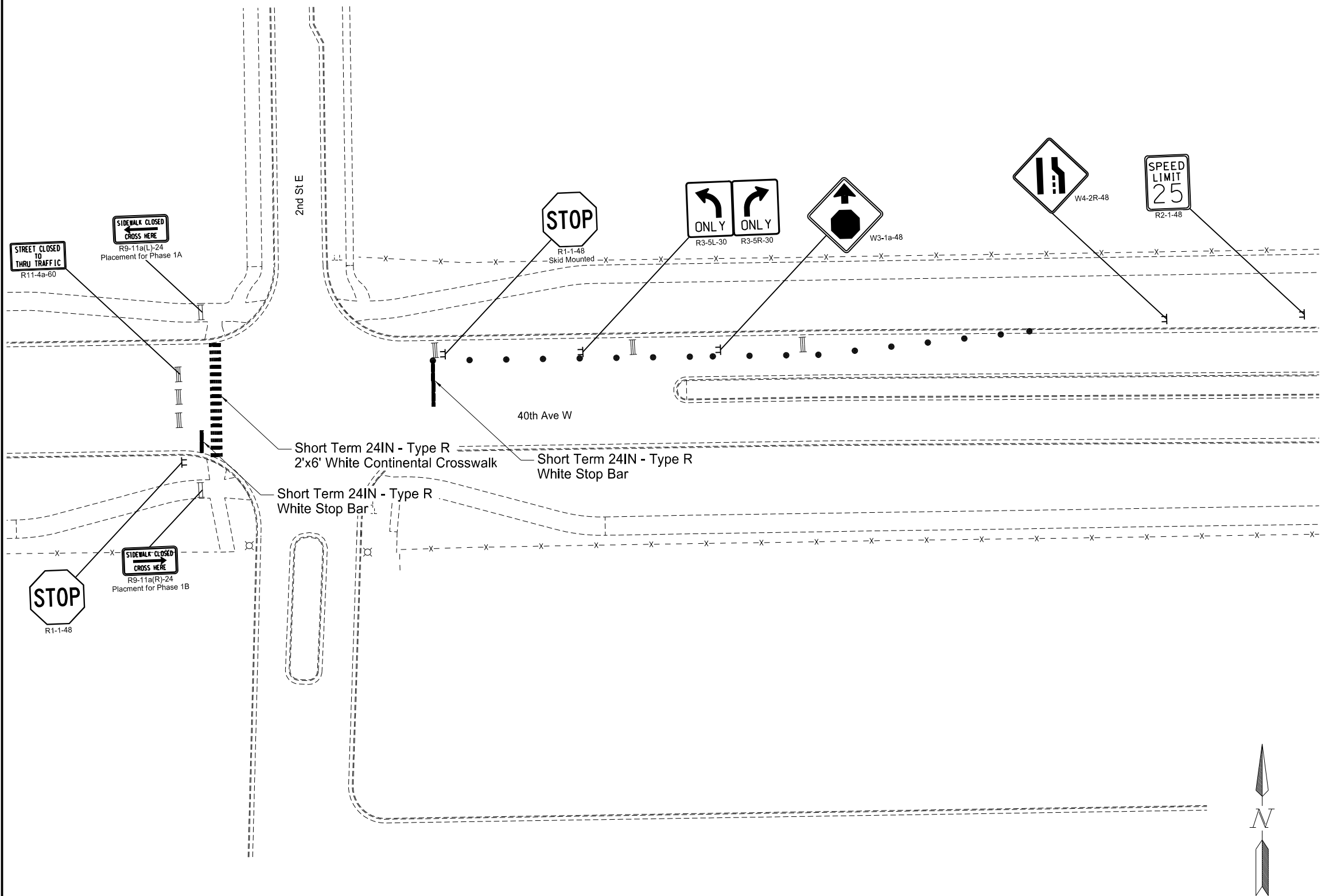
WORK ZONE AREA	TYPE III BARRICADE
DELINEATOR DRUM	SIGN
TUBULAR MARKER	SIDEWALK BARRICADE

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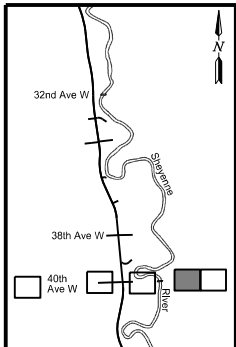
Sheyene Street

Work Zone Traffic Control  
Phase 1  
40th Ave

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SU-8-992(040)041	100	13



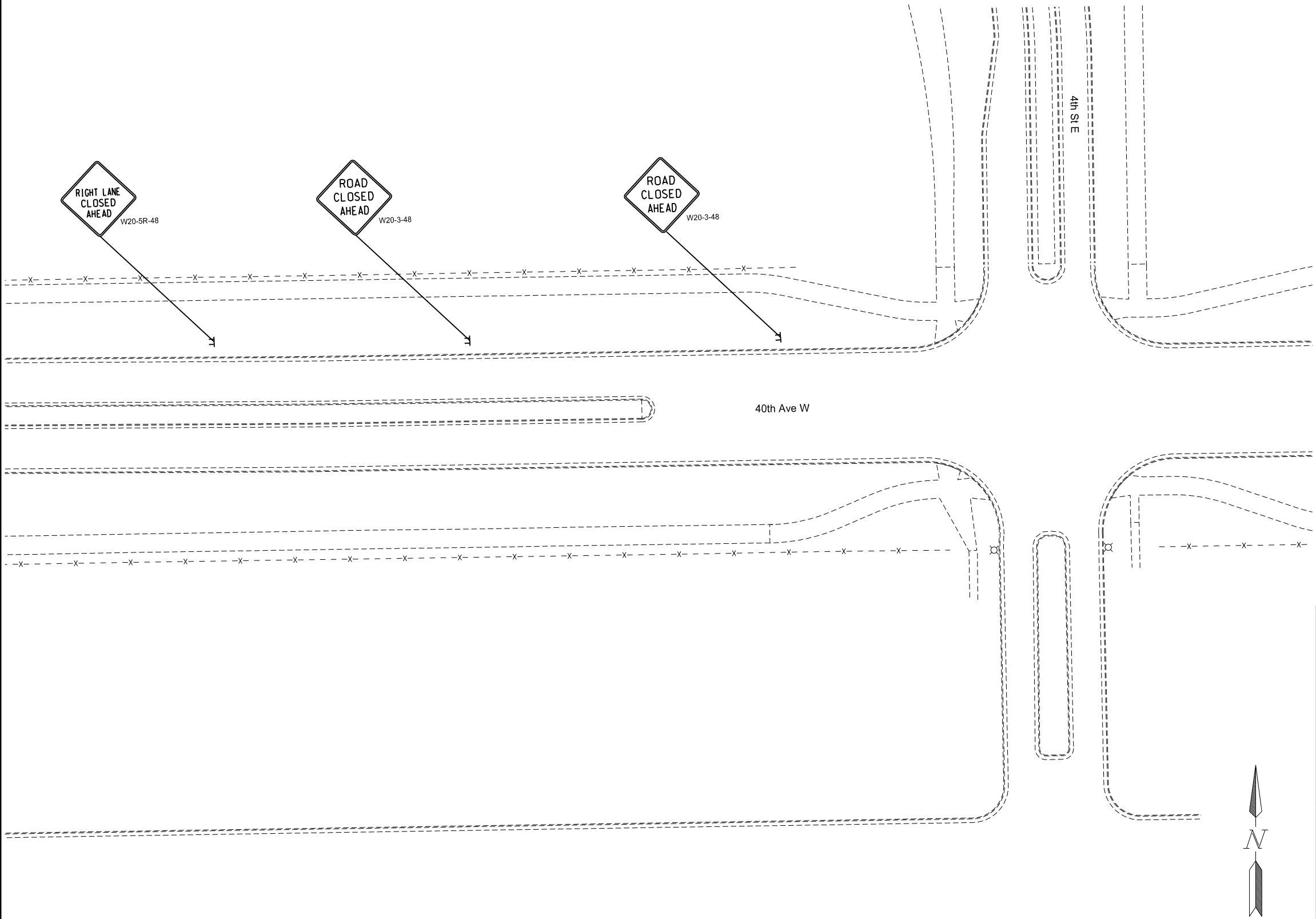
LEGEND	
	WORK ZONE AREA
	DELINEATOR DRUM
	TUBULAR MARKER
	TYPE III BARRICADE
	SIGN
	SIDEWALK BARRICADE



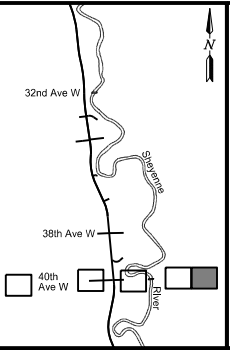
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Sheyene Street  
Work Zone Traffic Control  
Phase 1  
40th Ave

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SU-8-992(040)041	100	14



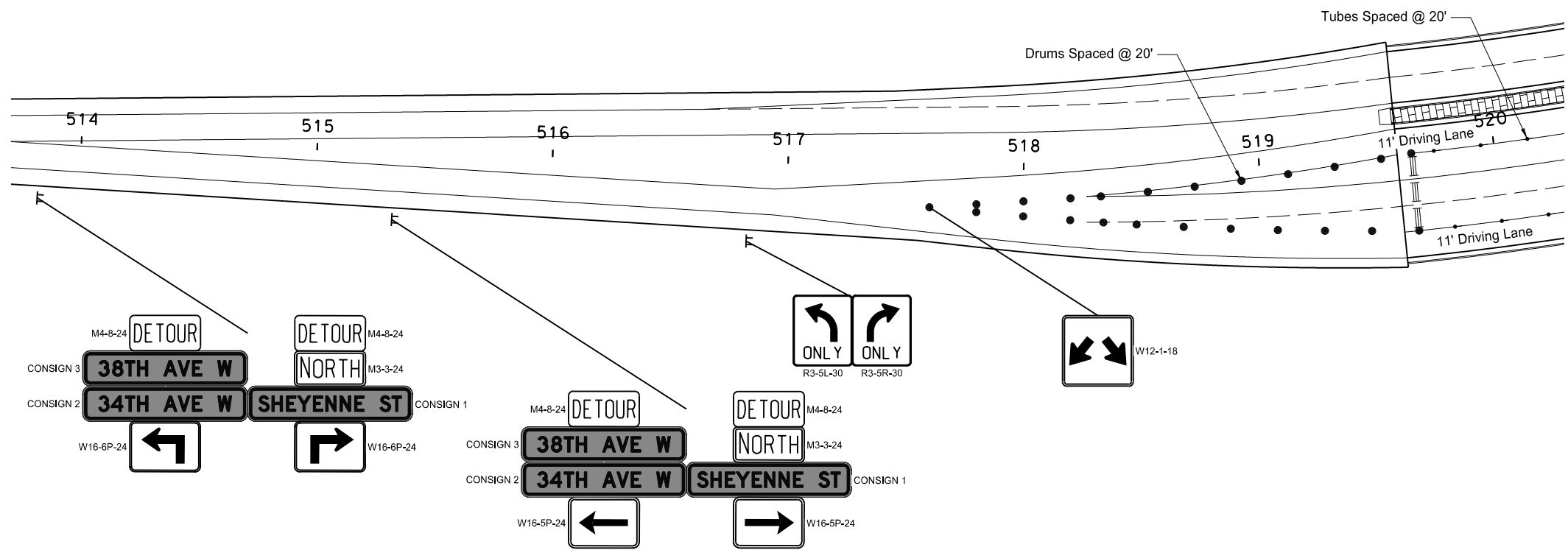
LEGEND	
	WORK ZONE AREA
	TYPE III BARRICADE
	DELINEATOR DRUM
	SIGN
	TUBULAR MARKER
	SIDEWALK BARRICADE



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Sheyene Street  
Work Zone Traffic Control  
Phase 1  
40th Ave

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SU-8-992(040)041	100	15



**LEGEND**

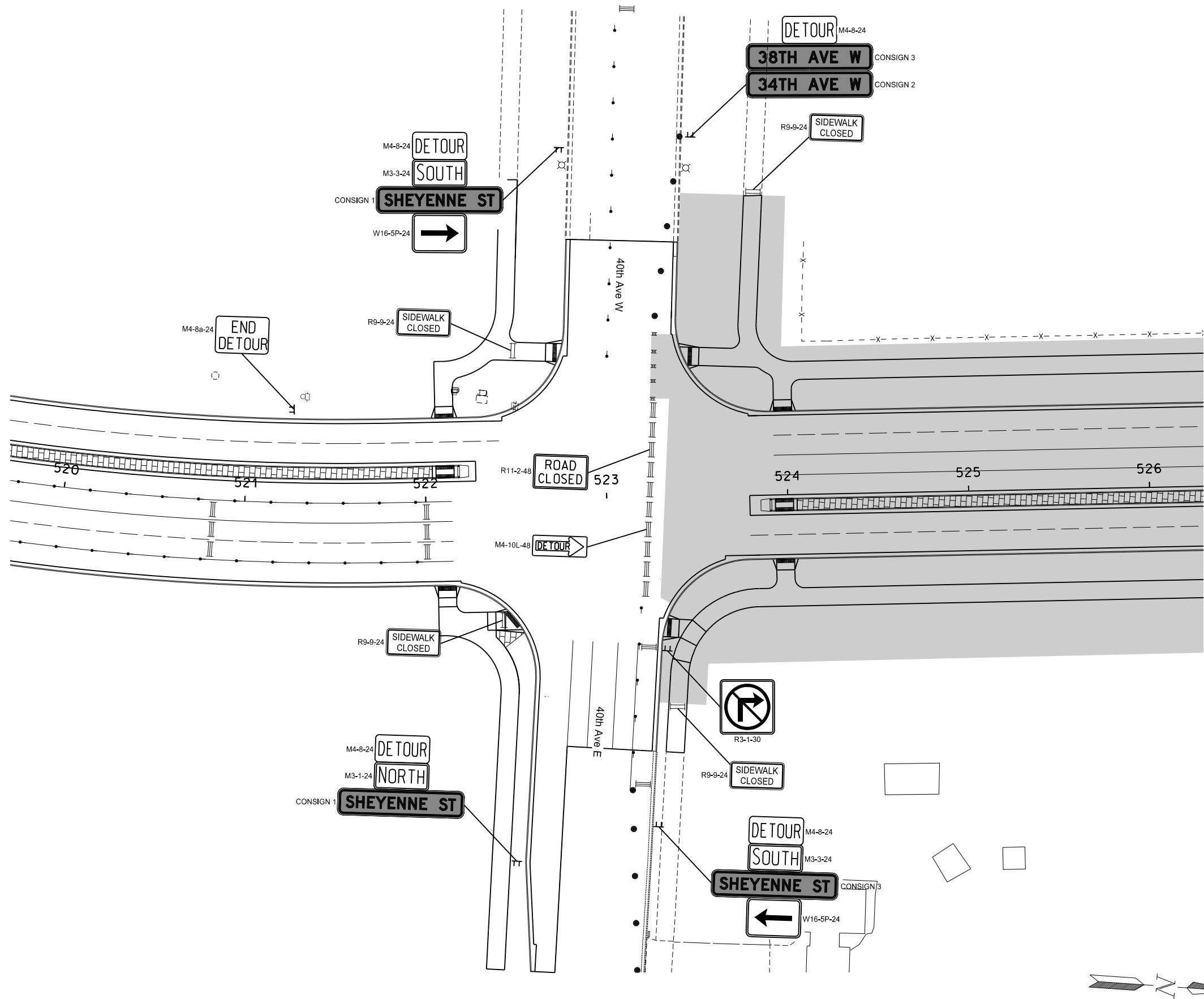
	WORK ZONE AREA		TYPE III BARRICADE
	DELINEATOR DRUM		SIGN
	TUBULAR MARKER		SIDEWALK BARRICADE

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Sheyenne Street

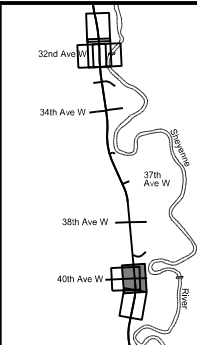
Work Zone Traffic Control  
Phase 2  
Sta 514+00 to Sta 520+00 (PR17)

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SU-8-992(040)041	100	16



LEGEND

- |  |                 |  |                    |
|--|-----------------|--|--------------------|
|  | WORK ZONE AREA  |  | TYPE III BARRICADE |
|  | DELINEATOR DRUM |  | SIGN               |
|  | TUBULAR MARKER  |  | SIDEWALK BARRICADE |

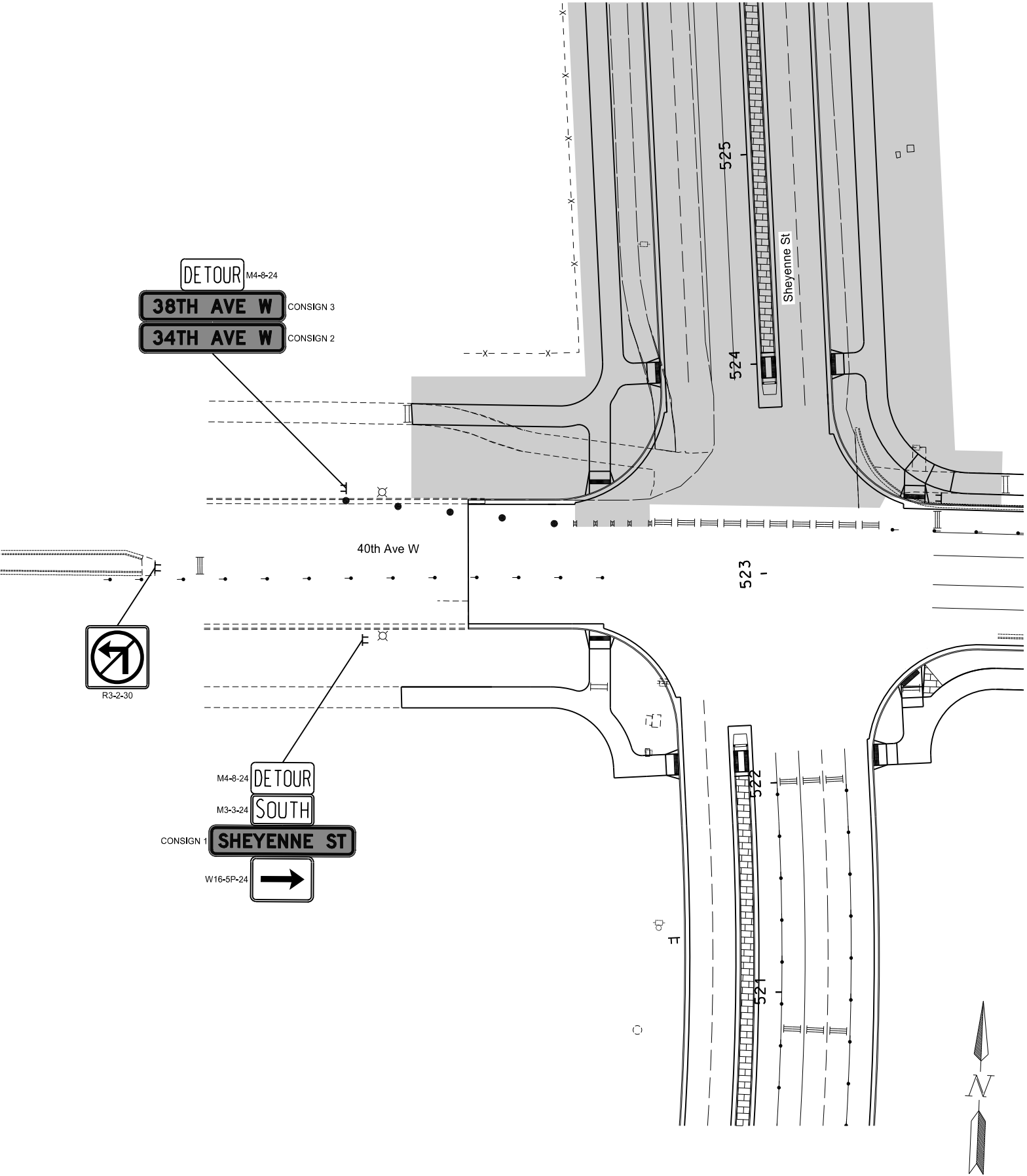


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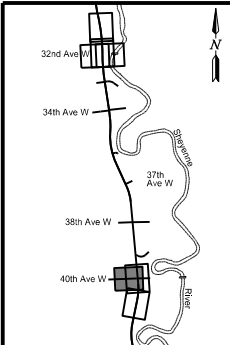
Sheyenne Street

Work Zone Traffic Control  
Phase 2  
Sta 520+00 to Sta 526+00 (PR17)

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SU-8-992(040)041	100	17



LEGEND	
	WORK ZONE AREA
	TYPE III BARRICADE
	DELINEATOR DRUM
	TUBULAR MARKER
	SIGN
	SIDEWALK BARRICADE

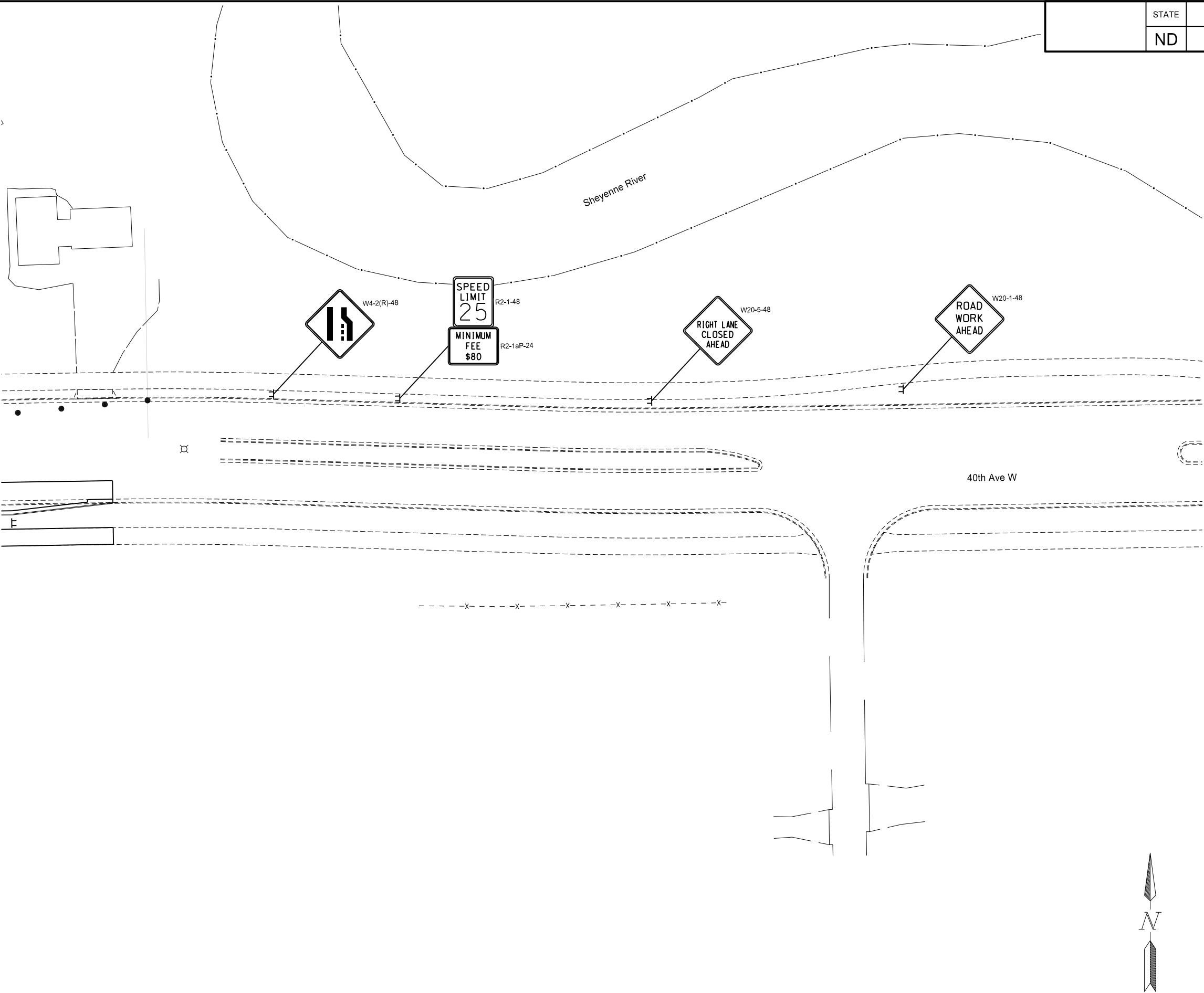


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Sheyenne Street  
Work Zone Traffic Control  
Phase 2  
40th Ave



	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SU-8-992(040)041	100	18



### LEGEND

	WORK ZONE AREA		TYPE III BARRICADE
	DELINEATOR DRUM		SIGN
	TUBULAR MARKER		SIDEWALK BARRICADE

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Sheyene Street

Work Zone Traffic Control  
Phase 2  
40th Ave

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SU-8-992(040)041	100	19

SYMBOL	X	Y	WID	HT	ANGL

[illegible]

SYMBOL	X	Y	WID	HT	ANGL

[illegible]

SYMBOL	X	Y	WID	HT	ANGL

[illegible]

SYMBOL	X	Y	WID	HT	ANGL

[illegible]

Sheyenne Street

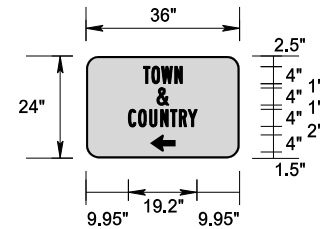
Work Zone Traffic Control

Detour Sign

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SU-8-992(040)041	100	20

SIGN NUMBER	Sign 5
WIDTH x HEIGHT	3'-0" x 2'-0"
BORDER WIDTH	0.5" (Inset 0")
CORNER RADIUS	1.5"
MOUNTING	Ground
BACKGROUND	TYPE: IV Reflective
	COLOR: Blue
LEGEND/BORDER	TYPE: IV Reflective
	COLOR: White

SYMBOL	X	Y	WID	HT	ANGL
ND_4IN_TYPE D	15	18.45	4	6	90



AREA: 6.00 Sq.Ft.

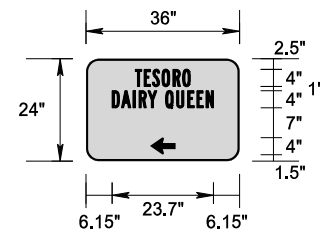
Dimensions are in inches.tenths

Letter locations are panel edge to lower left corner

[illegible]

SIGN NUMBER	Sign 7
WIDTH x HEIGHT	3'-0" x 2'-0"
BORDER WIDTH	0.5" (inset 0")
CORNER RADIUS	1.5"
MOUNTING	Ground
BACKGROUND	TYPE: IV Reflective
	COLOR: Blue
LEGEND/BORDER	TYPE: IV Reflective
	COLOR: White

SYMBOL	X	Y	WID	HT	ANGL
ND_4IN_TYPE D	15	18.45	4	6	90



AREA: 6.00 Sq.Ft.

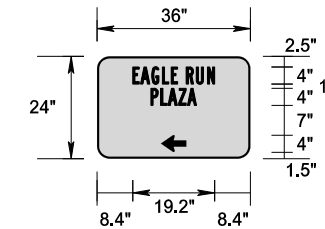
Dimensions are in inches.tenths

Letter locations are panel edge to lower left corner

[illegible]

SIGN NUMBER	Sign 6
WIDTH x HEIGHT	3'-0" x 2'-0"
BORDER WIDTH	0.5" (inset 0")
CORNER RADIUS	1.5"
MOUNTING	Ground
BACKGROUND	TYPE: IV Reflective COLOR: Blue
LEGEND/BORDER	TYPE: IV Reflective COLOR: White

SYMBOL	X	Y	WID	HT	ANGL
ND_4IN_TYPE D	15	18.45	4	6	90



AREA: 6.00 Sq.Ft.

Dimensions are in inches.tenths

Letter locations are panel edge to lower left corner

LETTER POSITION (X)																	LENGTH	SIZE	SERIES
E	A	G	L	E		R	U	N									19.2	4	B 2000
8.40	10.24	12.84	15.32	17.40	18.92	20.92	23.28	25.88											
P	L	A	Z	A													10.7	4	B 2000
12.65	14.63	16.68	19.16	21.20															
		</																	

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Sheyenne Street

Work Zone Traffic Control

Business Sign Details

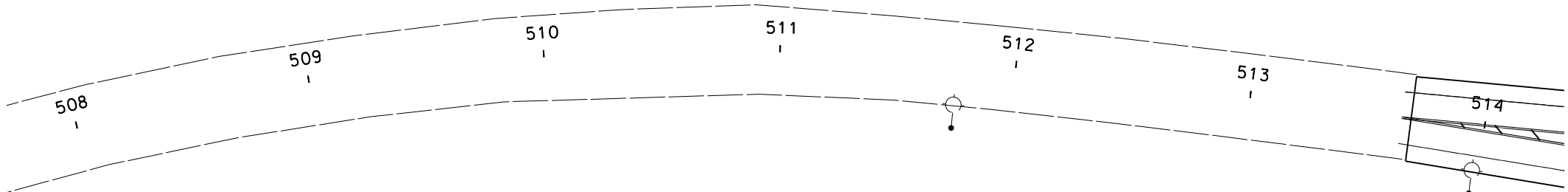


																					STATE	PROJECT NO.	SECTION NO.	SHEET NO.	
																				N.D.	SU-8-992(040)041			110	1
Station / RP	Sign No.	Assembly No.	Flat Sheet For Signs		Sign Support Length				Vert Clear- ance FT	Support Size	Max Post Len LF	Sleeve Length				Sleeve Size	Anchor EA	Anchor LF	Anchor Size	Reset Sign Panel EA	Reset Sign Support EA	Break-Away EA	Comments		
			IV SF	XI SF	1st LF	2nd LF	3rd LF	4th LF				1st LF	2nd LF	3rd LF	4th LF										
5+39 Rt	R1-1	1		5.2					7.0													Mount on Light Standard			
10+49 Lt	SA A			8.3	10.7				7.0	2.5 x 2.5 12 ga	11.6	3.4				2.25 x 2.25 12 ga	1	4	3 x 3 7 ga			1			
11+54 Rt	R2-1	10		7.5	10.2				7.0	2.25 x 2.25 12 ga	10.6						1	4	2.5 x 2.5 12 ga						
12+50 Lt	SA A			8.3	11.2				7.0	2.5 x 2.5 12 ga	12.4						1	4	3 x 3 7 ga						
12+85 Rt	R1-1	1		5.2	9.7				7.0	2 x 2 12 ga	10.5						1	4	2.25 x 2.25 12 ga						
513+97 Rt	R2-1	10		7.5	10.2				7.0	2.25 x 2.25 12 ga	10.6						1	4	2.5 x 2.5 12 ga						
515+04 Rt	SN 23			21.0	9.2	9.2			7.0	2.5 x 2.5 10 ga	10.6						2	8	3 x 3 7 ga			2			
518+24 Rt	W3-3	19		6.3					7.0														Mount on Light Standard		
518+48 Lt	SN 26	7		1.5	8.7				7.0	2 x 2 12 ga	25.5						1	4	2.25 x 2.25 12 ga						
520+21 Lt	R2-1	10		7.5	10.2				7.0	2.25 x 2.25 12 ga	10.6						1	4	2.5 x 2.5 12 ga						
520+90 Lt	W4-2R	20		9.0	10.4				7.0	2.5 x 2.5 10 ga	12.9						1	4	3 x 3 7 ga			1			
522+03 Lt mdn	R4-7	9		5.0	9.7				7.0	2 x 2 12 ga	11.5						1	4	2.25 x 2.25 12 ga						
522+40 Lt	SN 11			16.0					7.0														Mount on Mast Arm		
522+44 Rt	SN 8			24.0					7.0																
523+58 Lt	SN 7			24.0					7.0														Mount on Light Standard		
523+78 Rt	SN 12			16.0					7.0														Mount on Mast Arm		
524+12 Rt mdn	R4-7	9		5.0					7.0														Mount on Light Standard		
524+79 Rt	SN 26	7		1.5	8.7				7.0	2 x 2 12 ga	25.5						1	4	2.25 x 2.25 12 ga						
525+79 Rt	R2-1	10		7.5	10.2				7.0	2.25 x 2.25 12 ga	10.6						1	4	2.5 x 2.5 12 ga						
528+30 Rt	R5-1	15		6.3	9.7				7.0	2.25 x 2.25 12 ga	11.6						1	4	2.5 x 2.5 12 ga						
528+57 Rt	SA 2E		21.0	5.2	9.2				7.0	2.5 x 2.5 10 ga	10.6						1	4	3 x 3 7 ga			1			
528+68 Rt mdn	R6-1R	27		3.0	8.2				7.0	2 x 2 12 ga	13.2						1	4	2.25 x 2.25 12 ga						
528+82 Rt	R5-1	15		6.3	9.7				7.0	2.25 x 2.25 12 ga	11.6						1	4	2.5 x 2.5 12 ga						
535+45 Lt mdn	R4-7	9		5.0	9.7				7.0	2 x 2 12 ga	11.5						1	4	2.25 x 2.25 12 ga						
535+68 Lt	SN 10			36.8					7.0																
535+97 Rt	SN 6			24.0					7.0																
536+03 Lt	SN 25	40		12.0	9.4				7.0	2.25 x 2.25 12 ga	10.6	2.8				2 x 2 12 ga	1	4	3 x 3 7 ga			1			
536+68 Rt	SN 9			36.8					7.0																
536+69 Lt	SN 5			24.0					7.0																
537+20 Rt mdn	R4-7	9		5.0	9.7				7.0	2 x 2 12 ga	11.5						1	4	2.25 x 2.25 12 ga						
545+46 Rt mdn	SA B			12.0	10.7				7.0	2.25 x 2.25 12 ga	12.0	3.0				2 x 2 12 ga	1	4	3 x 3 7 ga			1			
545+65 Rt mdn	R4-7	9		5.0	9.7				7.0	2 x 2 12 ga	11.5						1	4	2.25 x 2.25 12 ga						
545+66 Rt	SA 2E		17.0	5.2	9.2				7.0	2.5 x 2.5 10 ga	10.9	2.7				2.19 x 2.19 10 ga	1	4	3 x 3 7 ga			1			
545+97 Rt mdn	R4-7	9		5.0	9.7				7.0	2 x 2 12 ga	11.5						1	4	2.25 x 2.25 12 ga						
551+00 Lt	R2-1	10		7.5	10.2				7.0	2.25 x 2.25 12 ga	10.6						1	4	2.5 x 2.5 12 ga						
551+00 Rt	R2-1	10		7.5	10.2				7.0	2.25 x 2.25 12 ga	10.6						1	4	2.5 x 2.5 12 ga						
553+23 Rt mdn	R6-1R	27		3.0	8.2				7.0	2 x 2 12 ga	13.2						1	4	2.25 x 2.25 12 ga						
562+58 Rt mdn	R4-7	9		5.0					7.0																
562+89 Lt	SA 2E		17.0	5.2	9.2				7.0	2.5 x 2.5 10 ga	10.6						1	4	3 x 3 7 ga			1			
562+90 Lt	SN 25	40		12.0	9.4				7.0	2.25 x 2.25 12 ga	10.6	2.8				2 x 2 12 ga	1	4	3 x 3 7 ga			1			
563+64 Rt	SA 2E		22.0	5.2	9.2				7.0	2.5 x 2.5 10 ga	10.6						1	4	3 x 3 7 ga			1			
563+86 Lt									7.0											2					
																	This document was originally issued and sealed by Kevin J. Knott, Registration Number 5679, on 9/6/2018 and is stored at City of West Fargo.					Sign Summary Perforated Tube  Sheyenne Street			
9/5/2018 8:40:50AM																									
Page 1 of 2																									

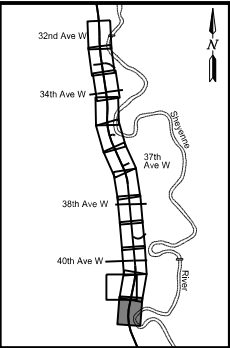




	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SU-8-992(040)041	110	3



**SPEED  
LIMIT  
35**  
Sta. 513+97 Rt.  
R2-1-30  
Assembly No. 10

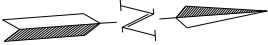


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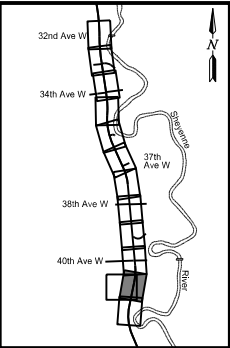
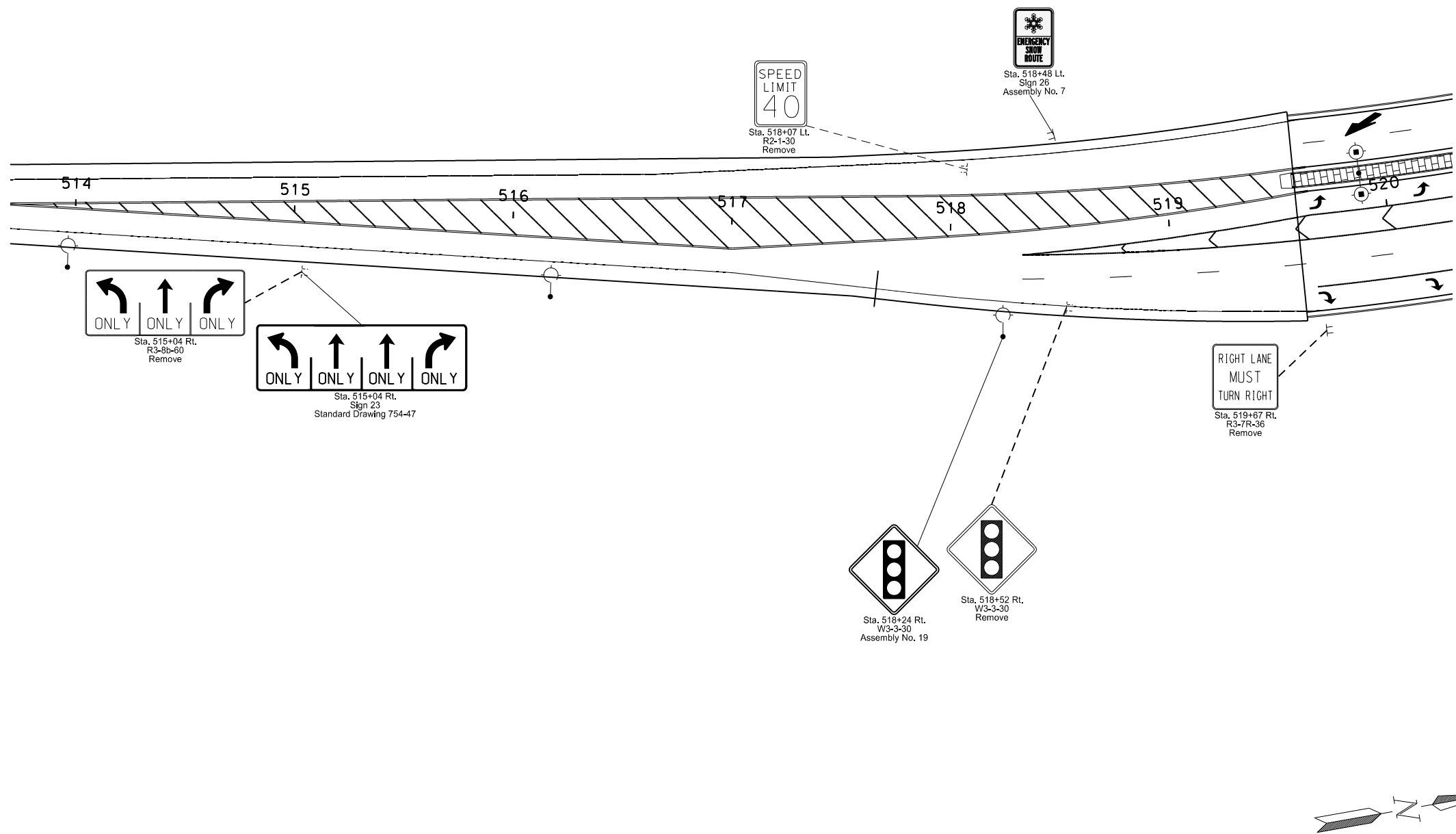
Sheyenne Street

Signing

Sta 508+00 to Sta 514+00 (PR17)



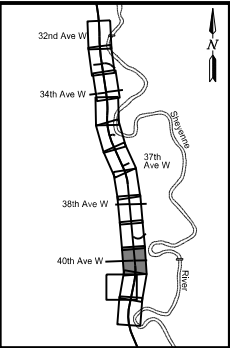
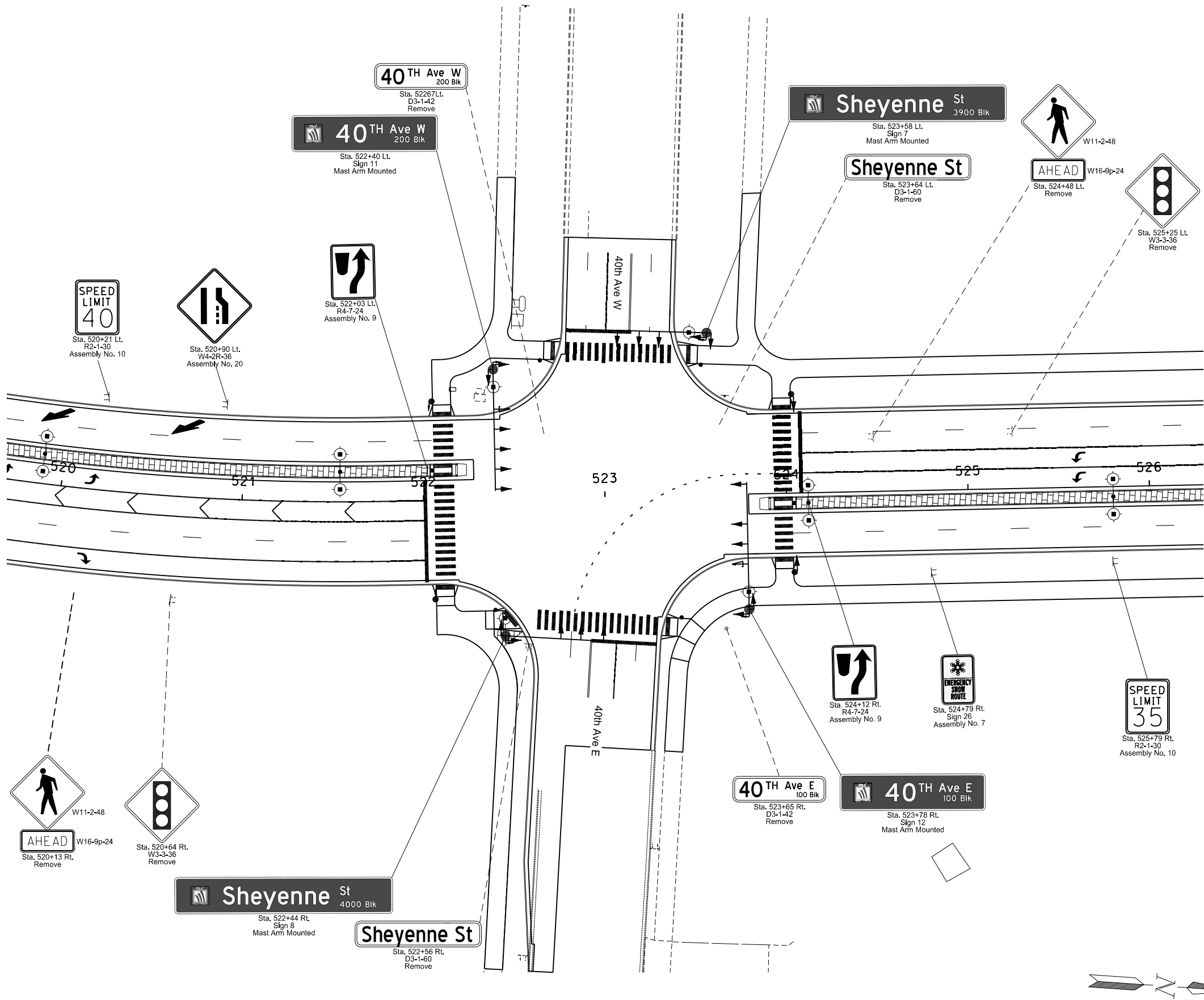
	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SU-8-992(040)041	110	4



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Sheyenne Street  
Signing  
Sta 514+00 to Sta 520+00 (PR17)

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SU-8-992(040)041	110	5



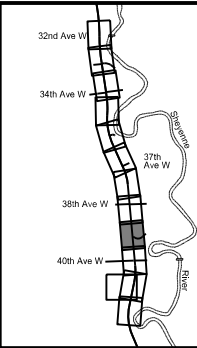
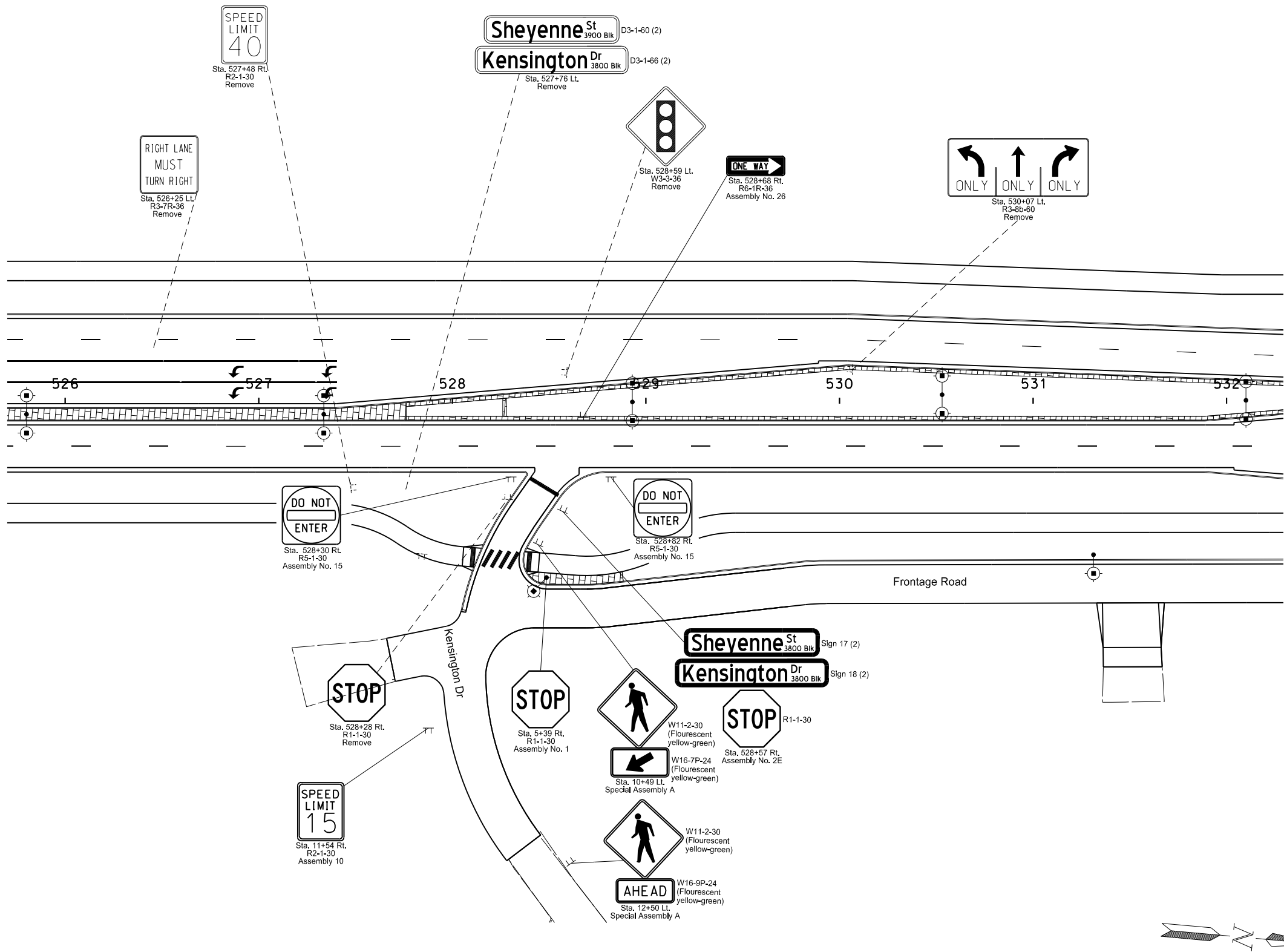
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Sheyenne Street

Signing

Sta 520+00 to Sta 526+00 (PR17)

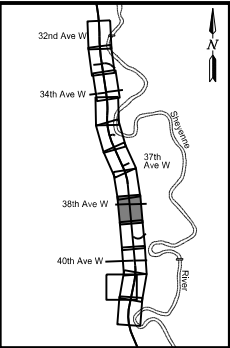
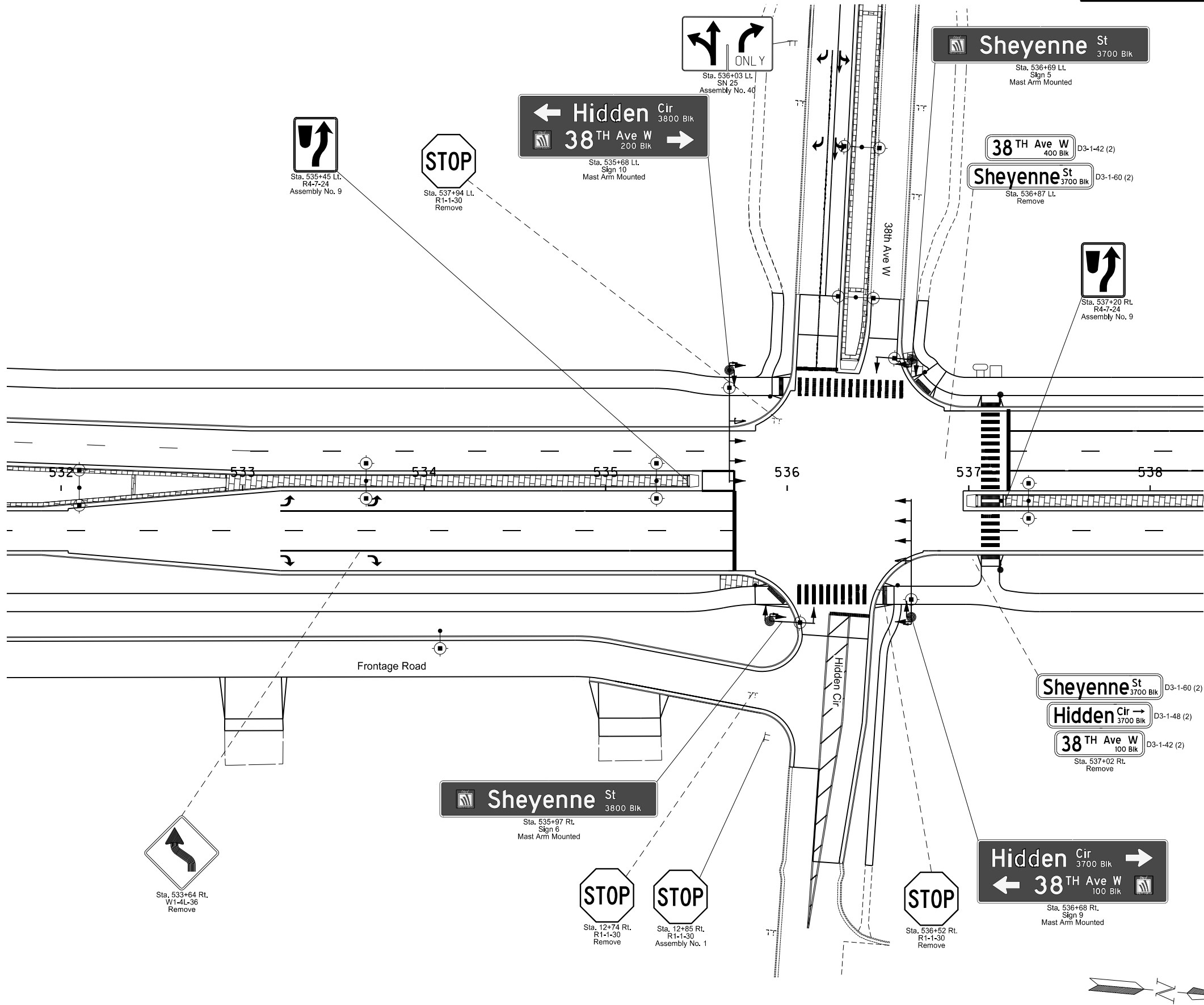
	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SU-8-992(040)041	110	6



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Sheyenne Street  
Signing  
Sta 526+00 to Sta 532+00 (PR17)

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SU-8-992(040)041	110	7



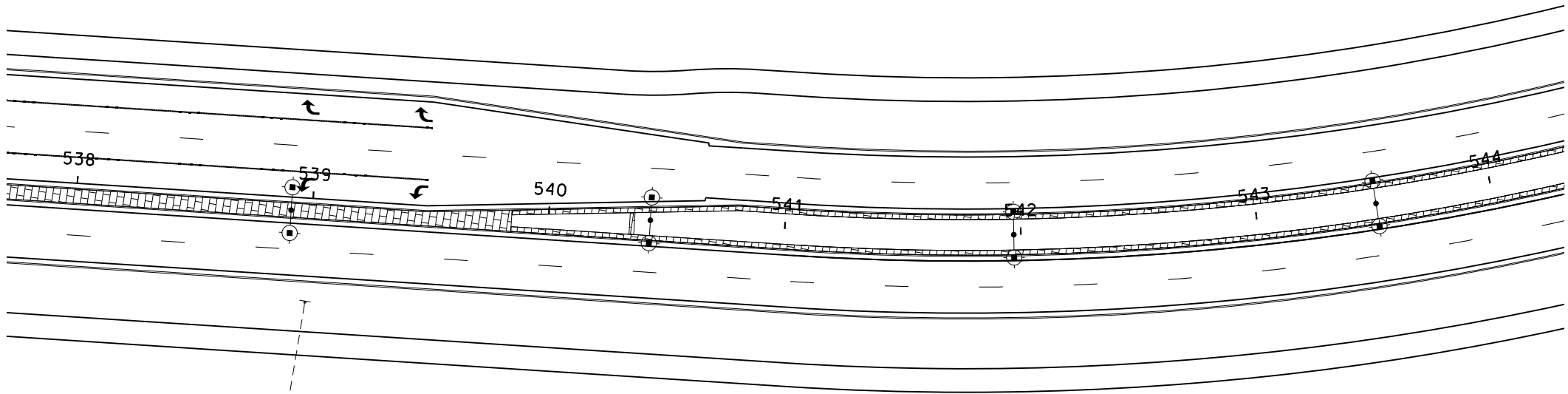
This document was originally issued and sealed by  
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Sheyenne Street

Signing

Sta 532+00 to Sta 538+00 (PR17)

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SU-8-992(040)041	110	8



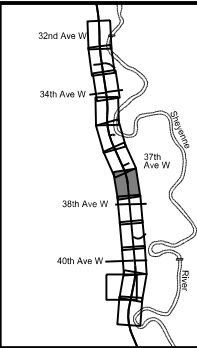
DO NOT PASS

R4-1-24

SPEED LIMIT 40

R2-1-30

Sta. 538+00 Rt. Remove

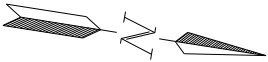


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Signing

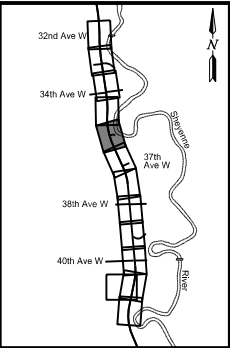
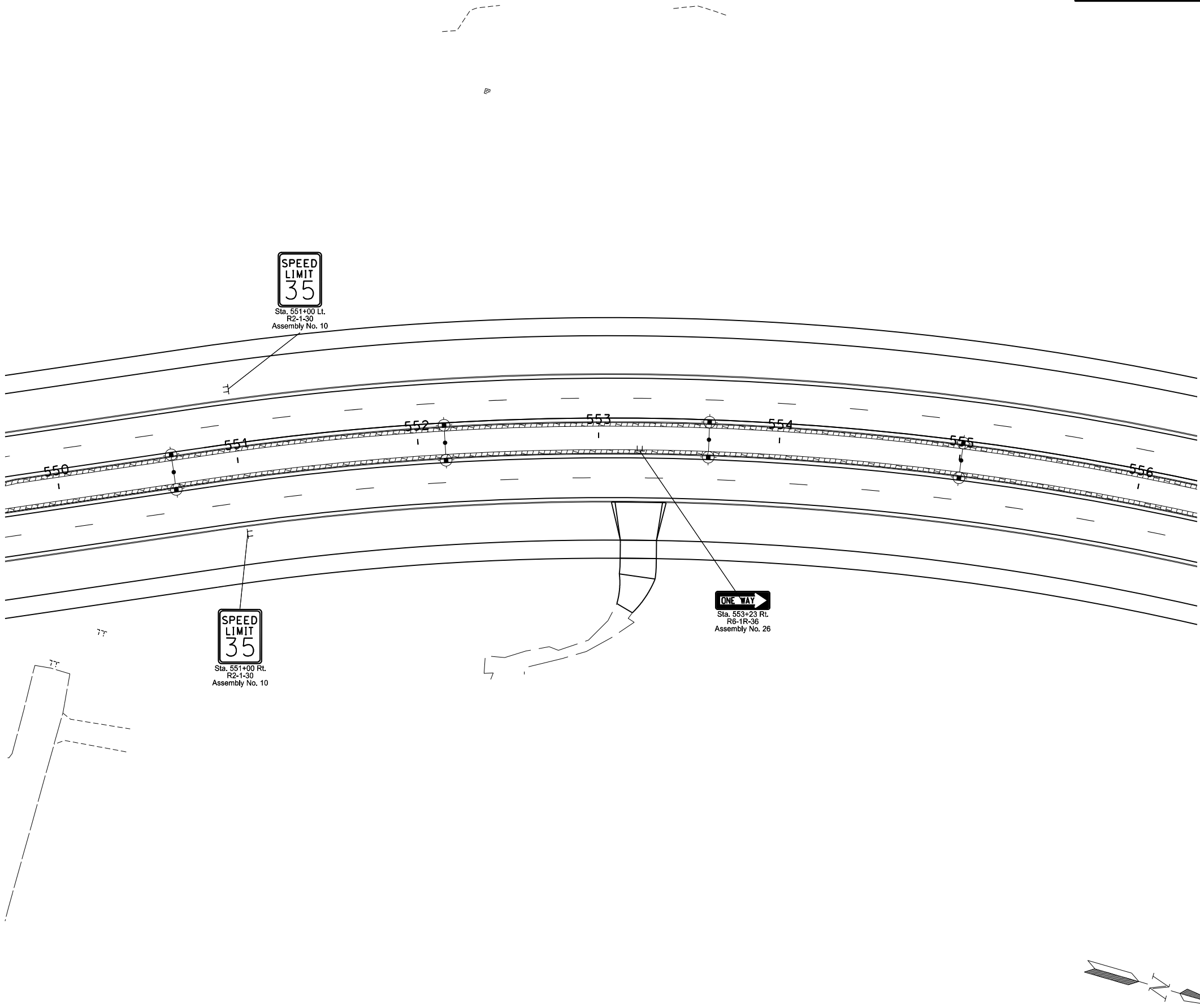
Sta 538+00 to Sta 544+00 (PR17)







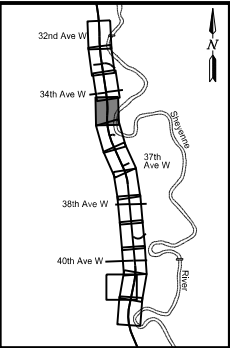
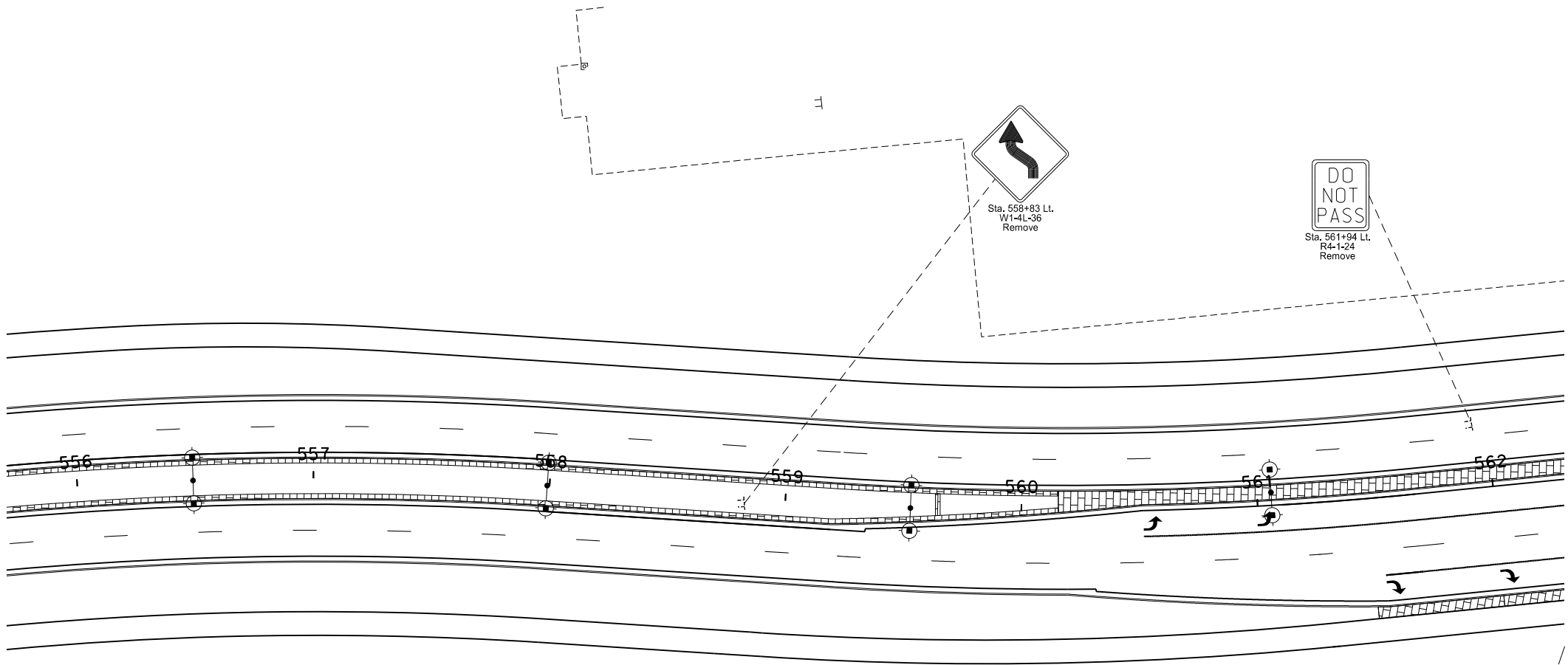
	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SU-8-992(040)041	110	10



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Sheyenne Street  
Signing  
Sta 550+00 to Sta 556+00 (PR17)

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SU-8-992(040)041	110	11

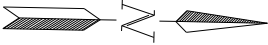


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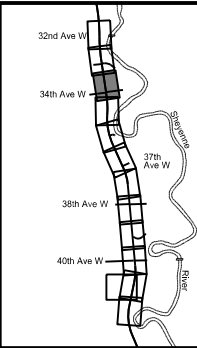
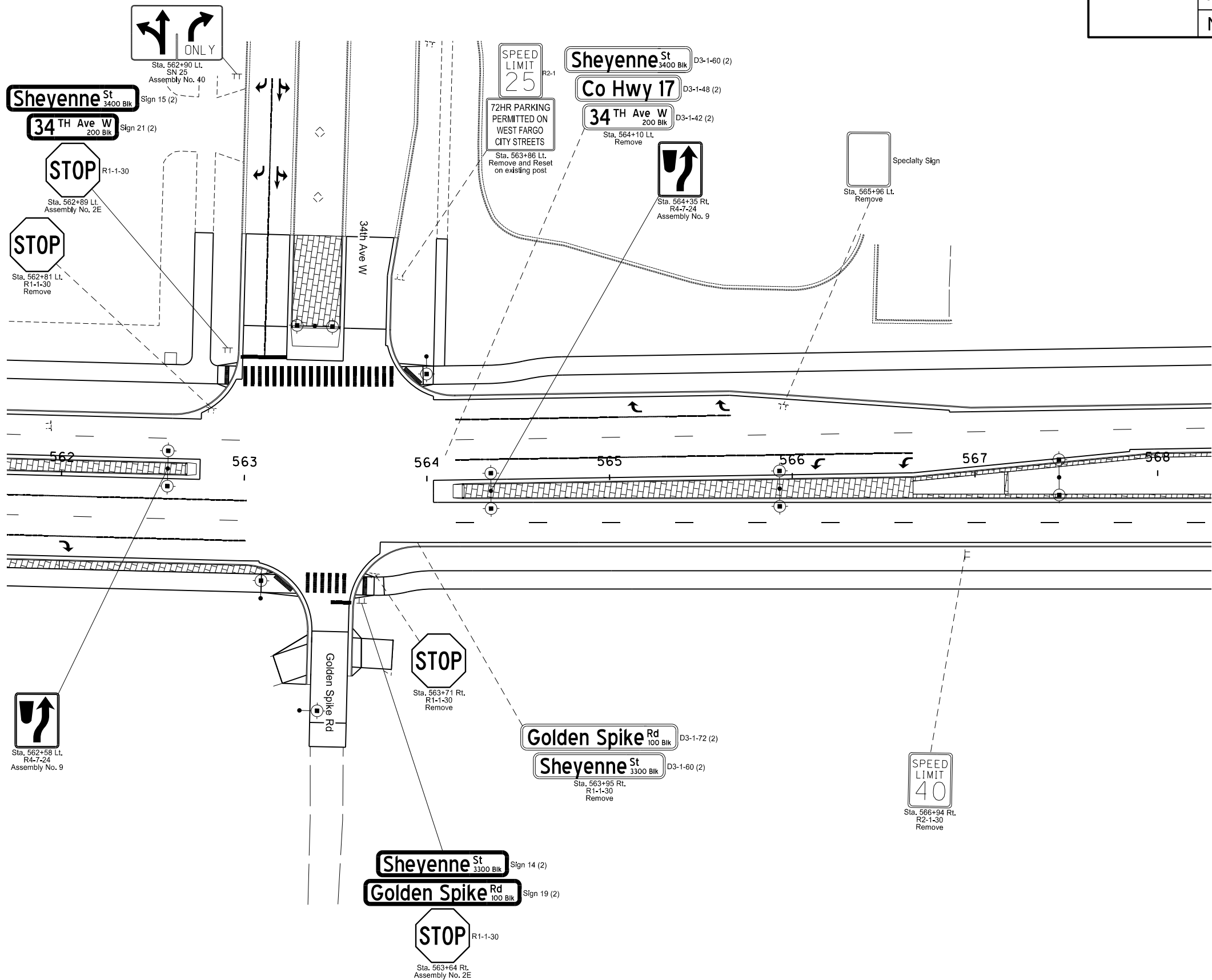
Sheyenne Street

Signing

Sta 556+00 to Sta 562+00 (PR17)



STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SU-8-992(040)041	110	12



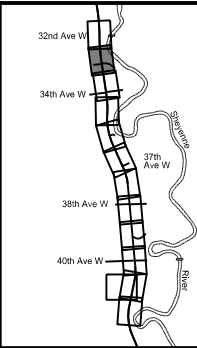
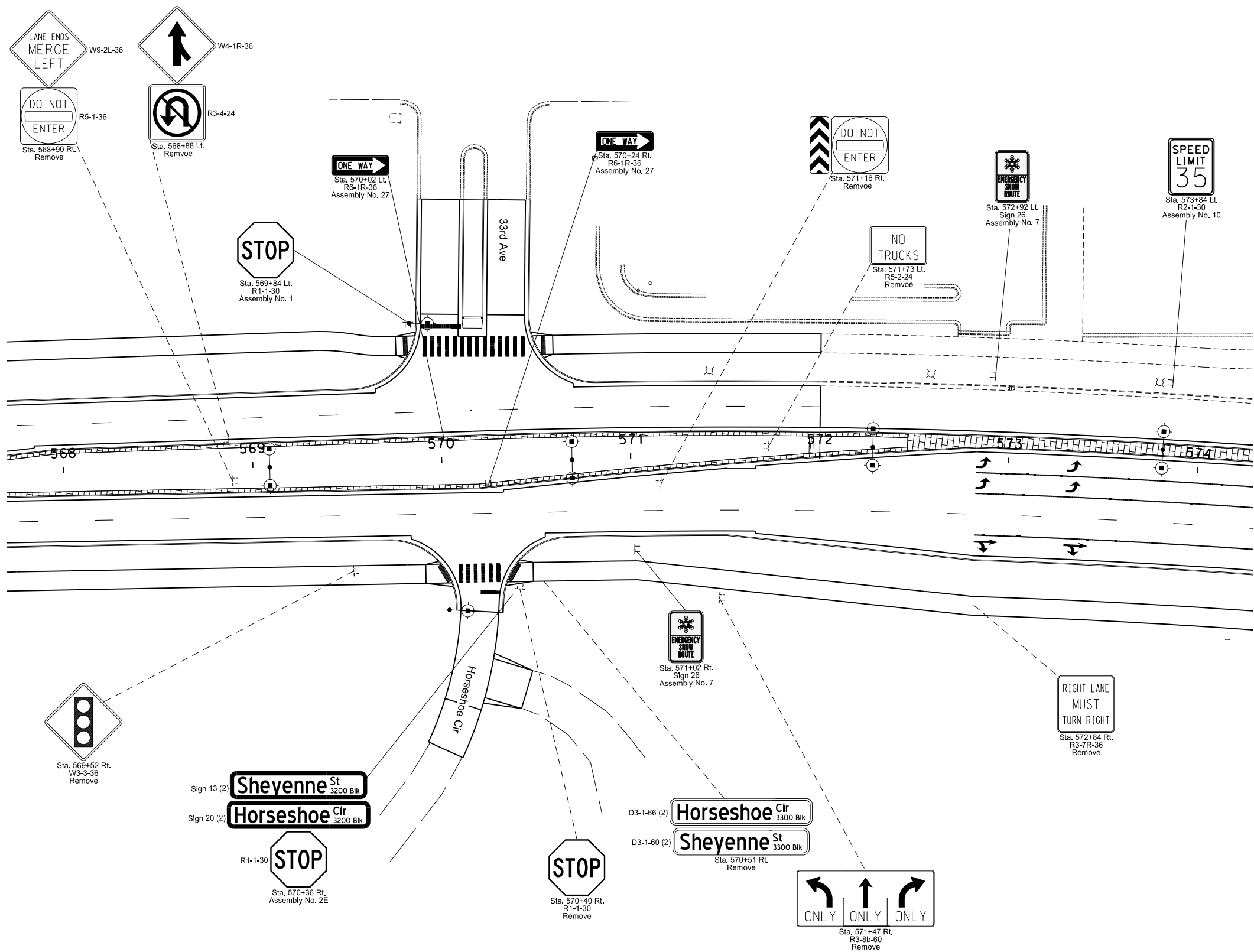
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Signing

Sta 562+00 to Sta 568+00 (PR17)

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SU-8-992(040)041	110	13



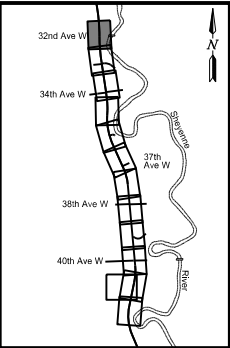
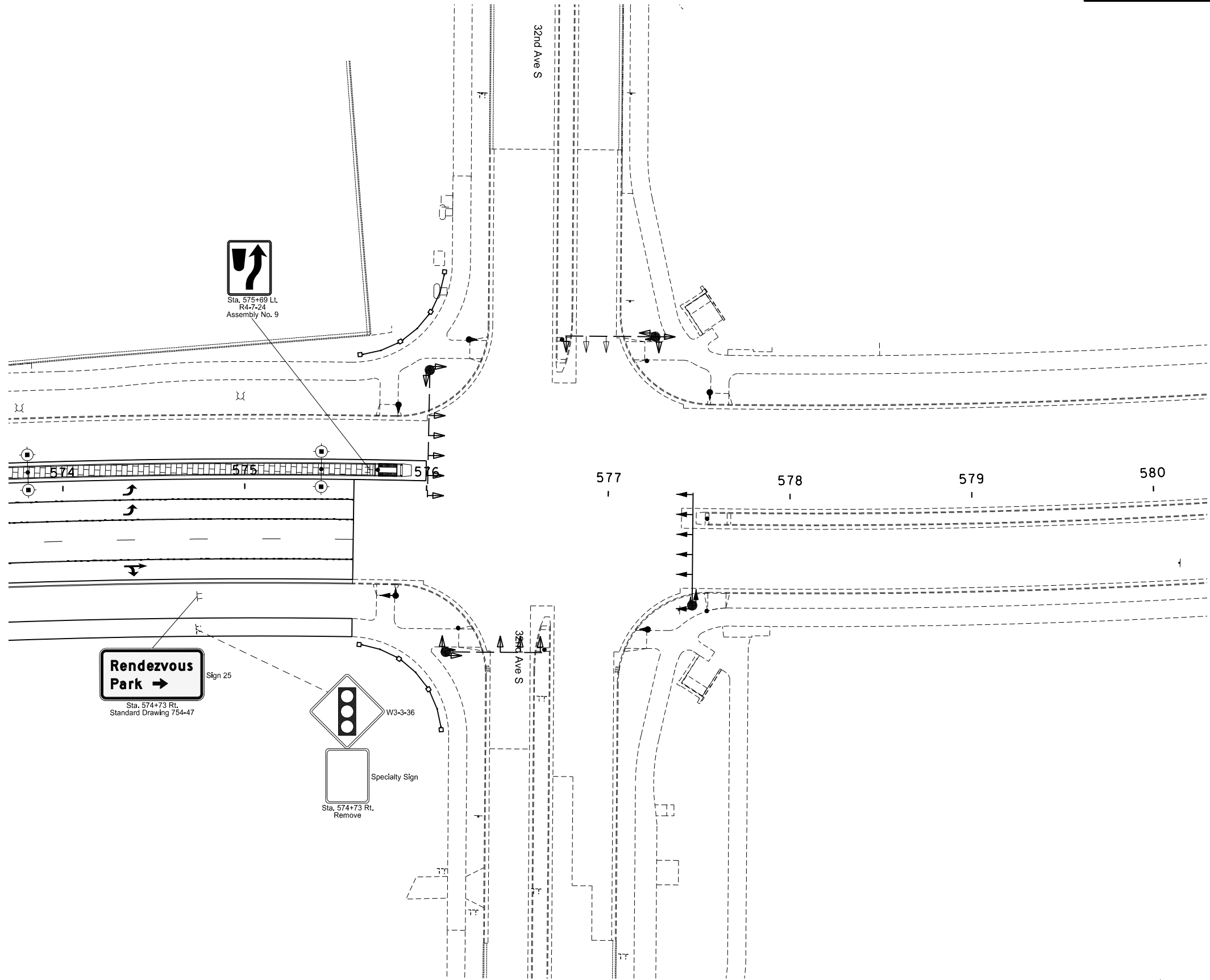
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Sheyenne Street

Signing

Sta 568+00 to Sta 574+00 (PR17)

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SU-8-992(040)041	110	14



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Sheyenne Street  
Signing  
Sta 574+00 to Sta 580+00 (PR17)



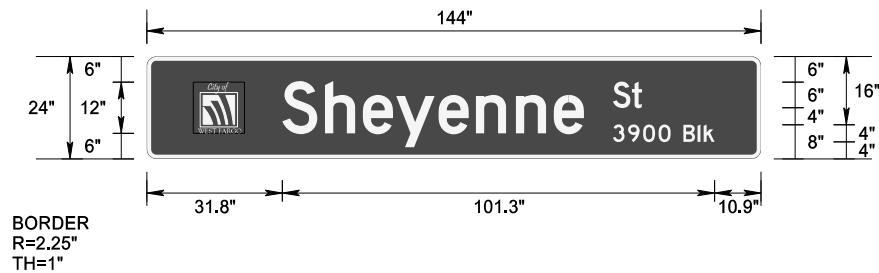
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SU-8-992(040)041	110	16

SIGN NUMBER	Sign 7
WIDTH x HEIGHT	12'-0" x 2'-0"
BORDER WIDTH	1" (inset 0")
CORNER RADIUS	2.25"
MOUNTING	Overhead
BACKGROUND	TYPE: IV Reflective
	COLOR: Green
LEGEND/BORDER	TYPE: IV Reflective
	COLOR: White

SYMBOL	X	Y	WID	HT	ANGLE
WFLOGO	10.9	6	12	12	0

STATION(S)  
523+58 LT

AREA: 24.00 Sq.Ft.



BORDER  
R=2.25"  
TH=1"

Dimensions are in inches.tenths

Letter locations are panel edge to lower left corner

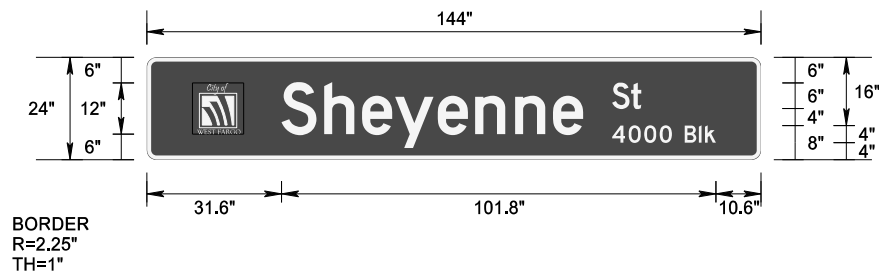
[illegible]

SIGN NUMBER	Sign 8
WIDTH x HEIGHT	12'-0" x 2'-0"
BORDER WIDTH	1" (Inset 0")
CORNER RADIUS	2.25"
MOUNTING	Overhead
BACKGROUND	TYPE: IV Reflective
	COLOR: Green
LEGEND/BORDER	TYPE: IV Reflective
	COLOR: White

SYMBOL	X	Y	WID	HT	ANGLE
WFLOGO	10.7	6	12	12	0

STATION(S)  
522+44 RT

AREA: 24.00 Sq.Ft.



BORDER  
R=2.25"  
TH=1"

Dimensions are in inches.tenths

Letter locations are panel edge to lower left corner

[illegible]

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## Signing

## Mast Arm Mounted Signs



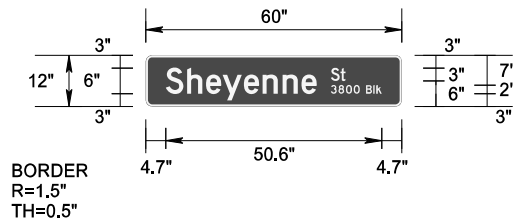






SYMBOL	X	Y	WID	HT	ANGLE

AREA: 5.00 Sq.Ft.



Letter locations are panel edge to lower left corner

[illegible][illegible][illegible]

SIGN NUMBER	Sign 19	STATION(S) 563+64 RT	AREA: 6.00 Sq.Ft.
WIDTH x HEIGHT	6'-0" x 1'-0"		
BORDER WIDTH	0.5" (max 0.5")		

BACKGROUND	TYPE: IV Reflective	
	COLOR: Green	
LEGEND/BORDER	TYPE: IV Reflective	

BORDER  
R=1.5"

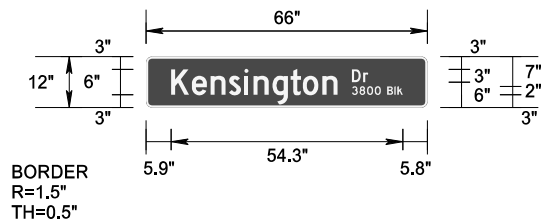
					Dimensions are in inches.tenths		Letter locations are panel edge to lower left corner	
PANEL STYLE:								
LETTER POSITION (X)					LENGTH SIZE SERIES			

[illegible][illegible][illegible]

U:\PROJECTS\18978D\Design\Plan\110SN\_020\_DSIGNDET.dgn

SYMBOL	X	Y	WID	HT	ANGLE

AREA: 5.50 Sq.Ft.



Letter locations are panel edge to lower left corner

[illegible]

BORDER WIDTH	0.5" (Inset 0")
CORNER RADIUS	1.5"
CORNER RADIUS	

LEGEND/BORDER	TYPE: IV Reflective			
	COLOR: White			

					R=1.5"
					TH=0.5"

LETTER POSITION (X)																	LENGTH	SIZE	SERIES	
H	o	r	e	s	e	s	h	o	e		C	i	r					48.2	6/4.5	D 2000

[illegible]

## Post Mounted Signs

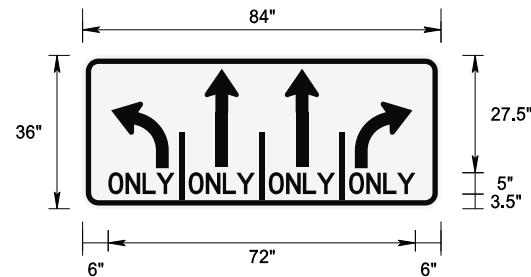


	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SU-8-992(040)041	110	22

SIGN NUMBER	Sign 23
WIDTH x HEIGHT	7'-0" x 3'-0"
BORDER WIDTH	1.25" (inset 0.75")
CORNER RADIUS	3"
MOUNTING	Ground
BACKGROUND	TYPE: IV Reflective
	COLOR: White
LEGEND/BORDER	TYPE: IV Reflective
	COLOR: Black

SYMBOL	X	Y	WID	HT	ANGL
	6	10.87	13.52	15.63	0
	28.60	3.13	8.03	23.05	0
	47.40	3.13	8.03	23.05	0
	63.81	10.87	13.52	15.63	0

STATION(S) 515+04 RT	AREA: 21.00 Sq.Ft.
-------------------------	--------------------



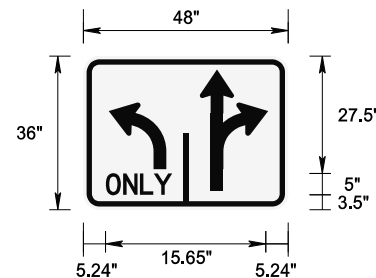
Dimensions are in inches.tenths      Letter locations are panel edge to lower left corner

[illegible]

SIGN NUMBER	Sign 25
WIDTH x HEIGHT	4'-0" x 3'-0"
BORDER WIDTH	1.25" (Inset 0.75")
CORNER RADIUS	3"
MOUNTING	Ground
BACKGROUND	TYPE: IV Reflective
	COLOR: White
LEGEND/BORDER	TYPE: IV Reflective
	COLOR: Black

SYMBOL	X	Y	WID	HT	ANGL
	5,91	10,87	13,52	15,63	0
	29,79	3,13	14,02	28,50	0

STATION(S)	AREA: 12.00 Sq.Ft.
536+03 LT	
562+90 LT	



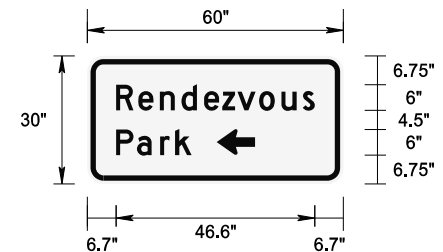
Dimensions are in inches.tenths      Letter locations are panel edge to lower left corner

[illegible]

SIGN NUMBER	Sign 24
WIDTH x HEIGHT	5'-0" x 2'-6"
BORDER WIDTH	1.25" (inset 0.75")
CORNER RADIUS	3"
MOUNTING	Ground
BACKGROUND	TYPE: IV Reflective COLOR: Brown
LEGEND/BORDER	TYPE: IV Reflective COLOR: White

SYMBOL	X	Y	WID	HT	ANGL
ND_6IN_TYPE D	30.4	6.8	6	9	90

STATION(S) 574+73 RT	AREA: 12.50 Sq.Ft.
-------------------------	--------------------



Dimensions are in inches.tenths      Letter locations are panel edge to lower left corner

[illegible]

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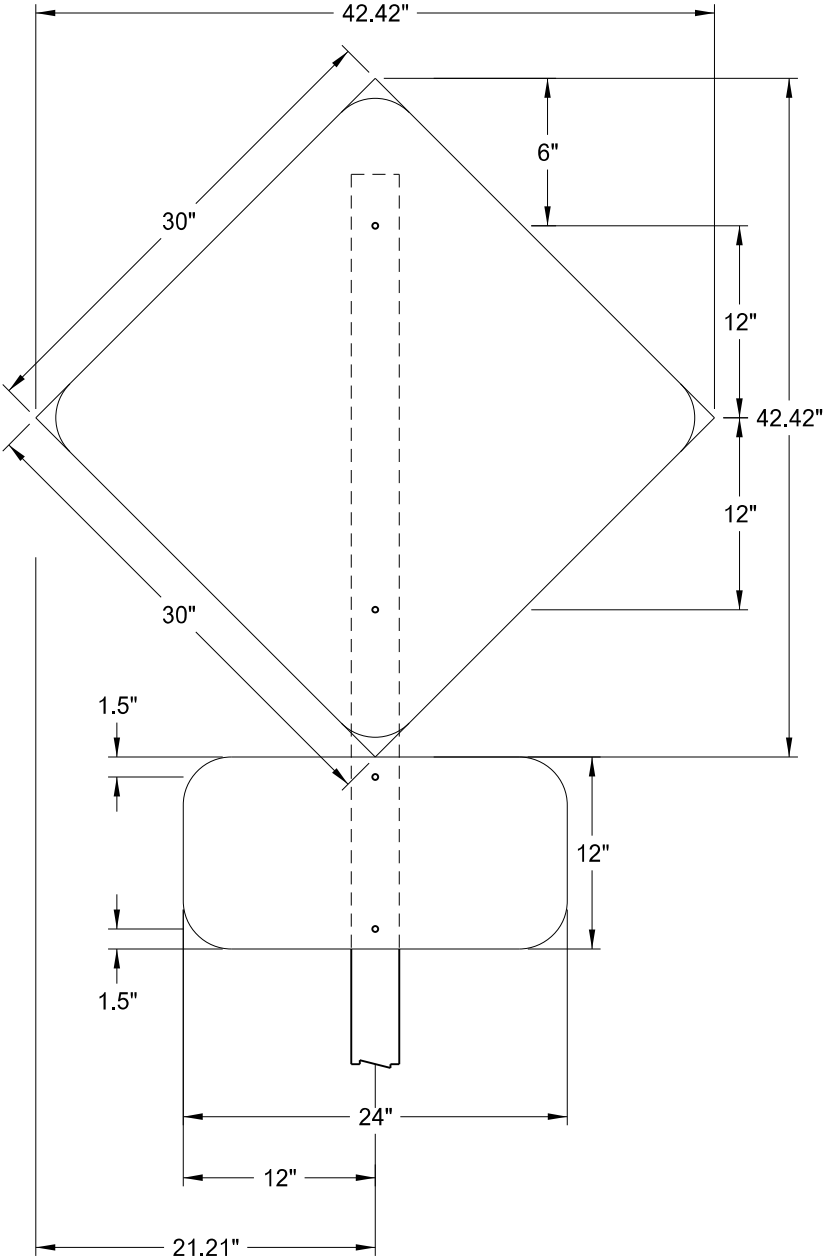
Sheyenne Street

## Signing

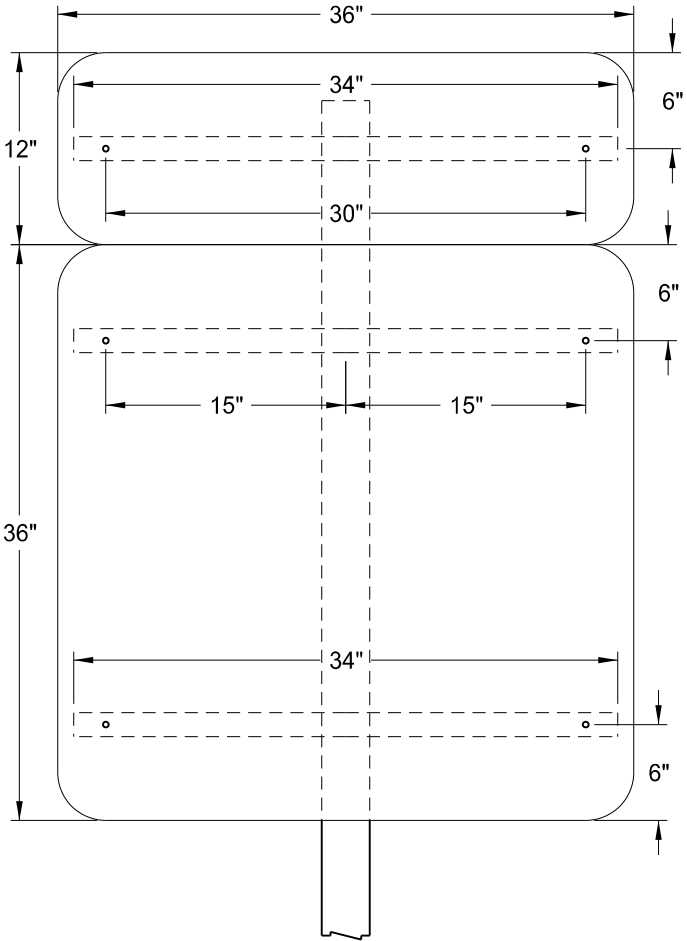
## Post Mounted Signs



	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SU-8-992(040)041	110	24



**SPECIAL ASSEMBLY A**  
NO SCALE  
10+49 Lt.  
12+50 Lt.  
NOTES:  
Design Area: 8.25 SF  
Pay Area: 8.25 SF



**SPECIAL ASSEMBLY B**  
NO SCALE  
545+49 Rt.  
NOTES:  
Design Area: 12 SF  
Pay Area: 12 SF

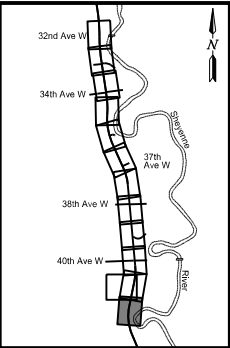
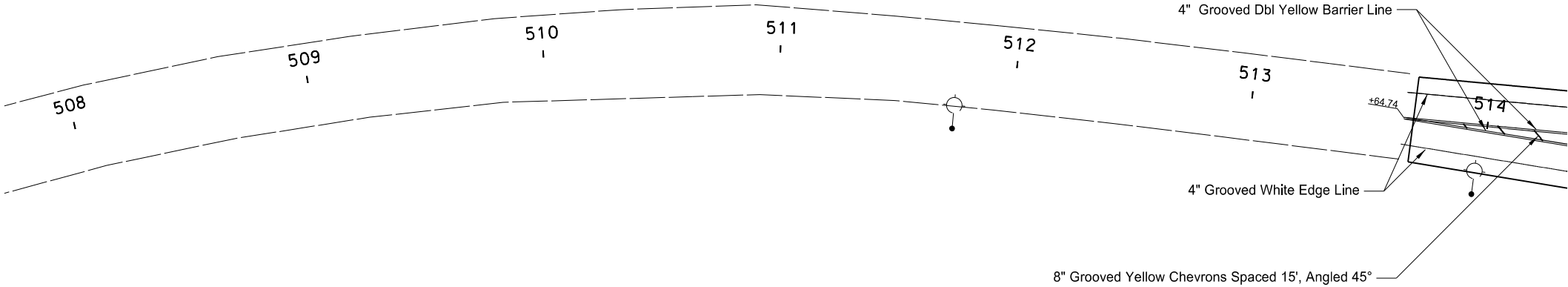
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Sheyenne Street  
Signing  
Special Assemblies



	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SU-8-992(040)041	120	1

SPEC CODE BID ITEM			QTY UNIT
762	1305	PREFORMED PATTERNED PVMT MK 4IN LINE-GROOVED	
		Yellow Dbl Barrier	70 LF
		White Edge Line	35 LF
		White Edge Line	35 LF
762	1309	PREFORMED PATTERNED PVMT MK 8IN LINE-GROOVED	
		Yellow Chevron	13 LF

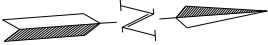


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Sheyenne Street

Pavement Marking

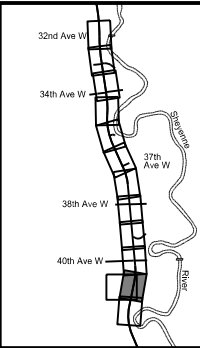
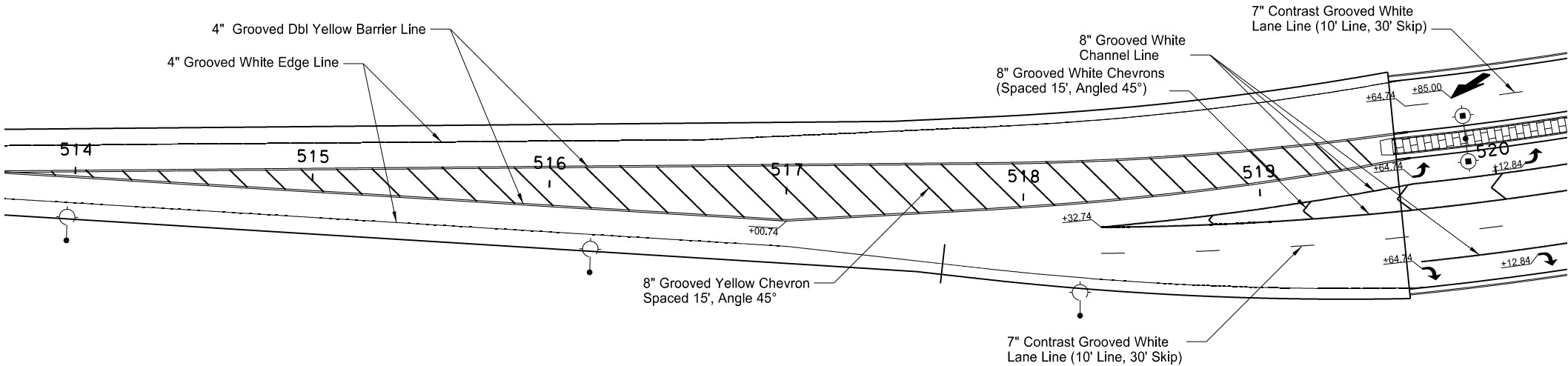
Sta 508+00 to Sta 514+00 (PR17)



STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SU-8-992(040)041	120	2

SPEC CODE BID ITEM QTY UNIT

762	0122	PREFORMED PATTERNED PVMT MK-MESSAGE(GROOVED)	
		Merge Arrow	41 SF
		Left Turn Arrow	16 SF
		Right Turn Arrow	16 SF
762	1305	PREFORMED PATTERNED PVMT MK 4IN LINE-GROOVED	
		White Edge Line	841 LF
		White Edge Line	561 LF
		Yellow Dbl Barrier	2258 LF
762	1309	PREFORMED PATTERNED PVMT MK 8IN LINE-GROOVED	
		White Channel Line	337 LF
		White Channel Line	36 LF
		White Chevron	47 LF
		Yellow Chevron	766 LF
762	1334	PREF PATT PVMT MK 7IN LINE CONTRAST-GROOVED	
		White Lane Line (10' Line, 30' Skip)	43 LF
		White Lane Line (10' Line, 30' Skip)	9 LF



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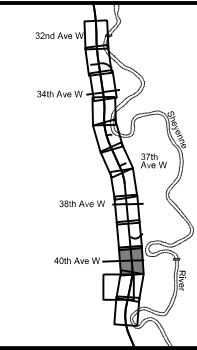
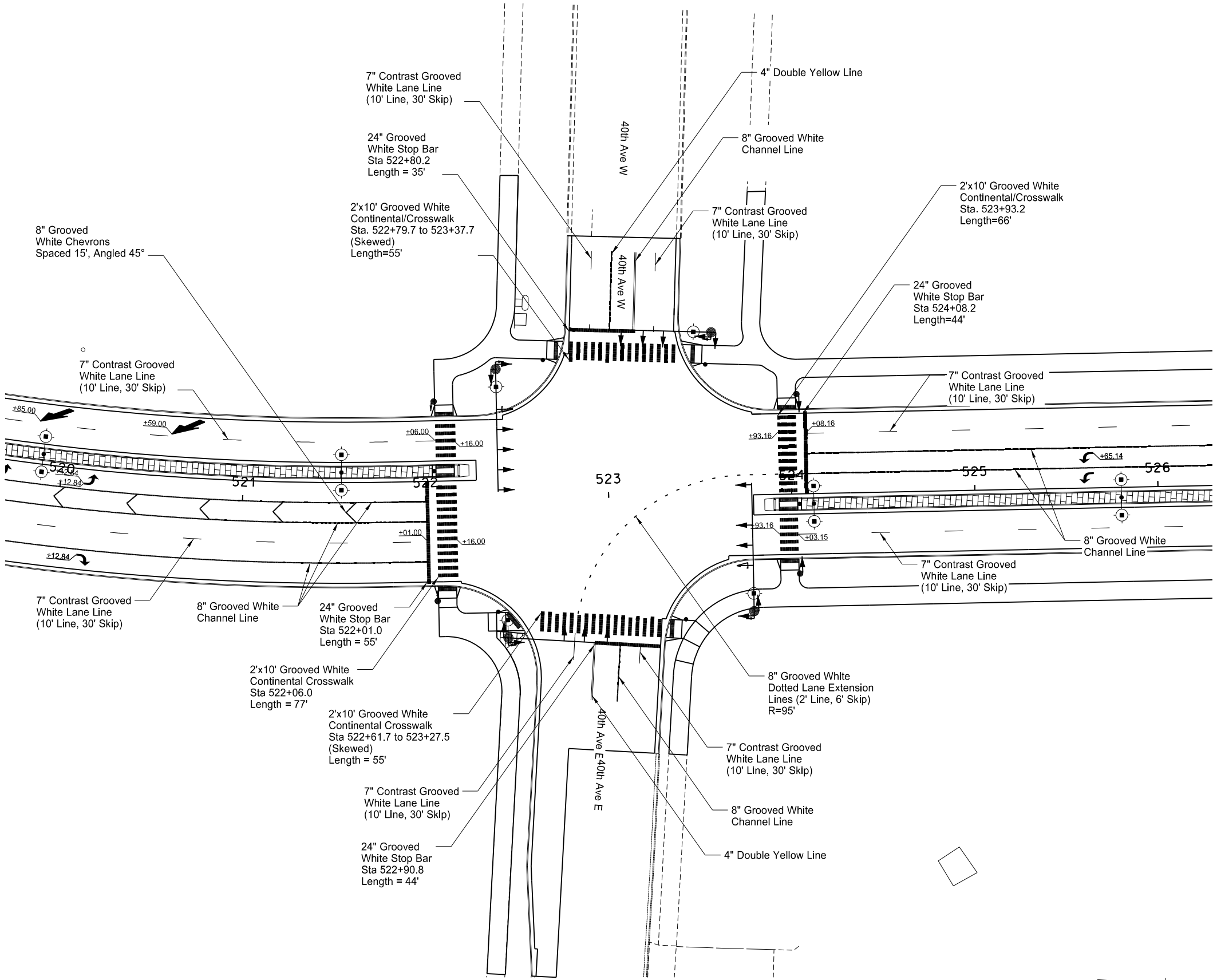
Pavement Marking

Sta 514+00 to Sta 520+00 (PR17)

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SU-8-992(040)041	120	3

SPEC CODE BID ITEM QTY UNIT

762	0122	PREFORMED PATTERNED PVMT MK-MESSAGE(GROOVED)	
		Left Turn Arrow (3)	48 SF
		Right Turn Arrow	16 SF
		Merge Arrow	41 SF
762	1309	PREFORMED PATTERNED PVMT MK 8IN LINE-GROOVED	
		White Channel Line	648 LF
		White Chevron	62 LF
		White Dotted Extension Line (2' Line, 6' Skip)	39 LF
762	1325	PREFORMED PATTERNED PVMT MK 24IN LINE-GROOVED	
		Stop Bar	170 LF
		Crosswalk	660 LF
762	1334	PREF PATT PVMT MK 7IN LINE CONTRAST-GROOVED	
		White Lane Line (10' Line, 30 Skip)	239 LF



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Sheyenne Street

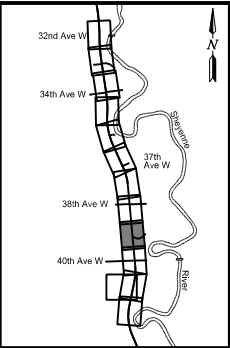
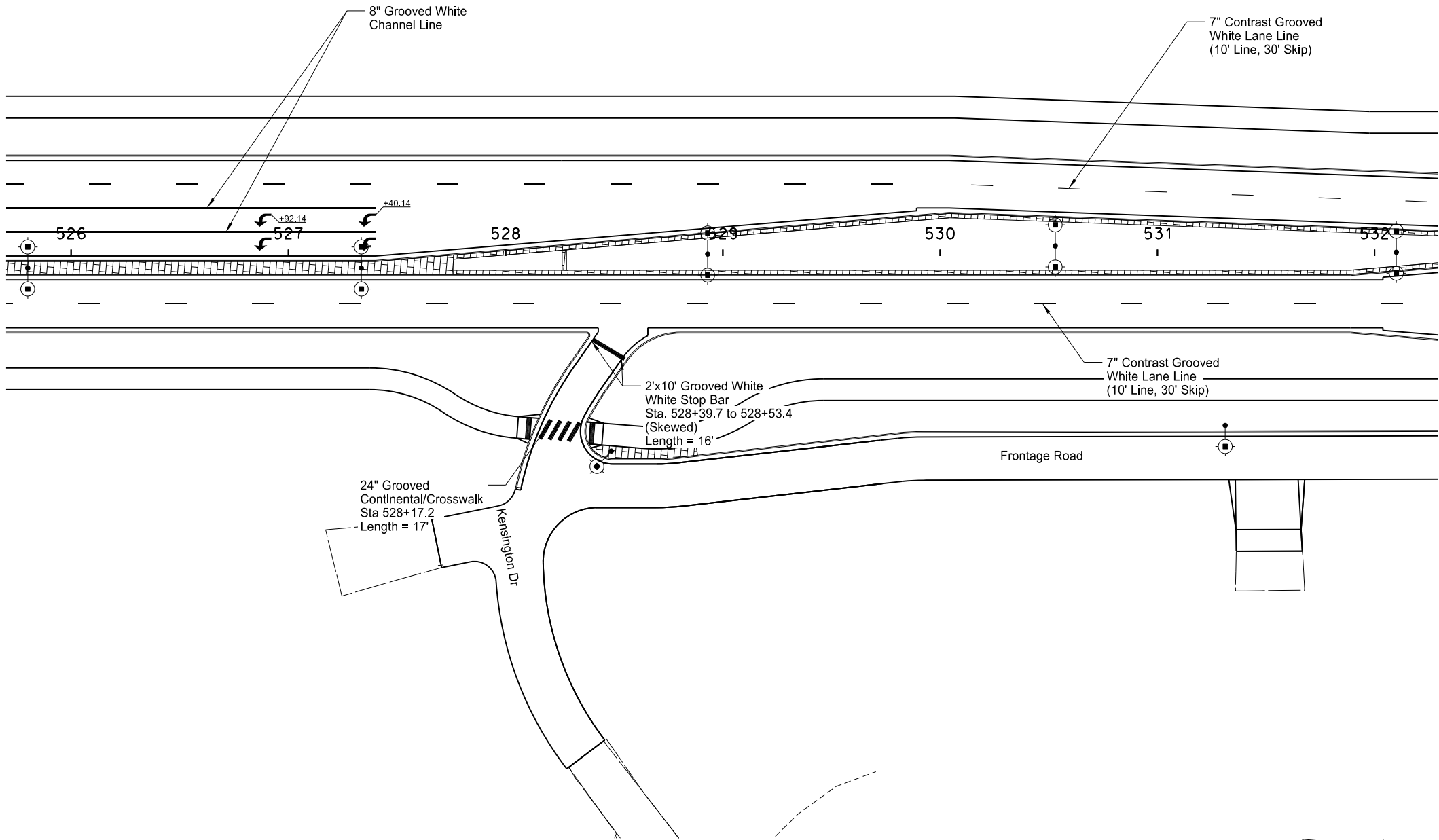
Pavement Marking

Sta 520+00 to Sta 526+00 (PR17)

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SU-8-992(040)041	120	4

SPEC CODE BID ITEM QTY UNIT

762	0122	PREFORMED PATTERNED PVMT MK-MESSAGE(GROOVED) Left Turn Arrow (4)	64 SF
762	1309	PREFORMED PATTERNED PVMT MK 8IN LINE-GROOVED White Channel Line	280 LF
762	1325	PREFORMED PATTERNED PVMT MK 24IN LINE-GROOVED Stop Bar Crosswalk	16 LF 40 LF
762	1334	PREF PATT PVMT MK 7IN LINE White Lane Line (10' Line, 30' Skip)	150 LF



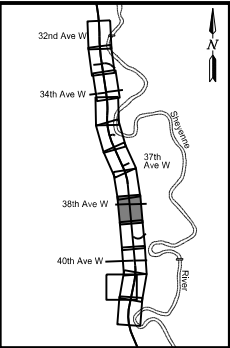
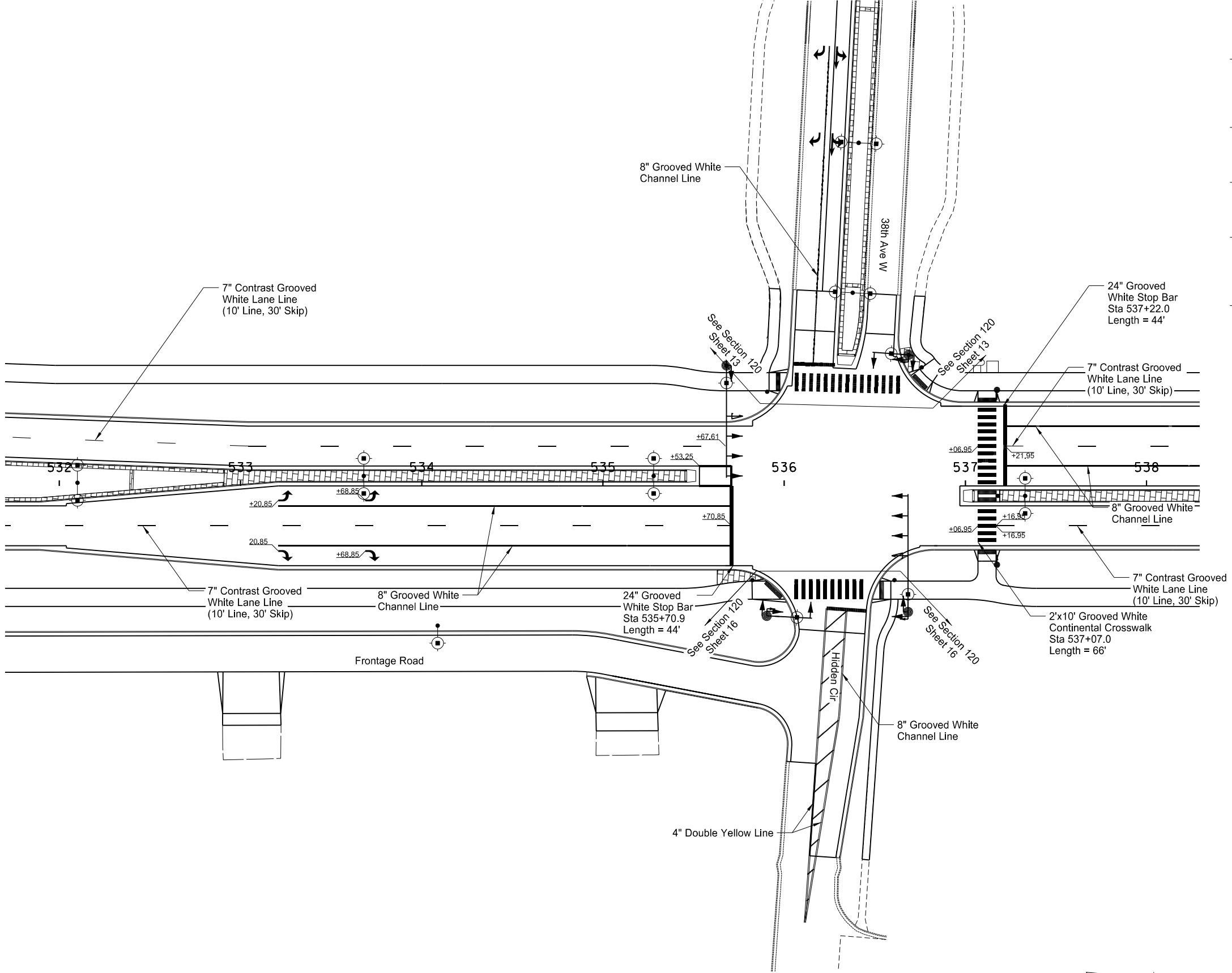
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Sheyenne Street  
Pavement Marking  
Sta 526+00 to Sta 532+00 (PR17)

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SU-8-992(040)041	120	5

SPEC CODE BID ITEM QTY UNIT

762	0122	PREFORMED PATTERNED PVMT MK-MESSAGE(GROOVED)	
		Left Turn Arrow (2)	32 SF
		Right Turn Arrow (2)	32 SF
762	1305	PREFORMED PATTERNED PVMT MK 4IN LINE-GROOVED	
		Yellow Dib	92 LF
762	1309	PREFORMED PATTERNED PVMT MK 8IN LINE-GROOVED	
		White Channel Line	500 LF
762	1325	PREFORMED PATTERNED PVMT MK 24IN LINE-GROOVED	
		Stop Bar	88 LF
		Crosswalk	160 LF
762	1334	PREF PATT PVMT MK 7IN LINE CONTRAST-GROOVED	
		White Lane Line (10' Line, 30' Skip)	225 LF



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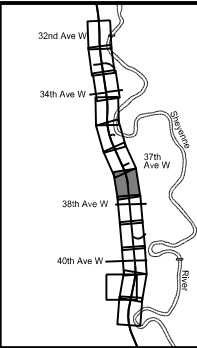
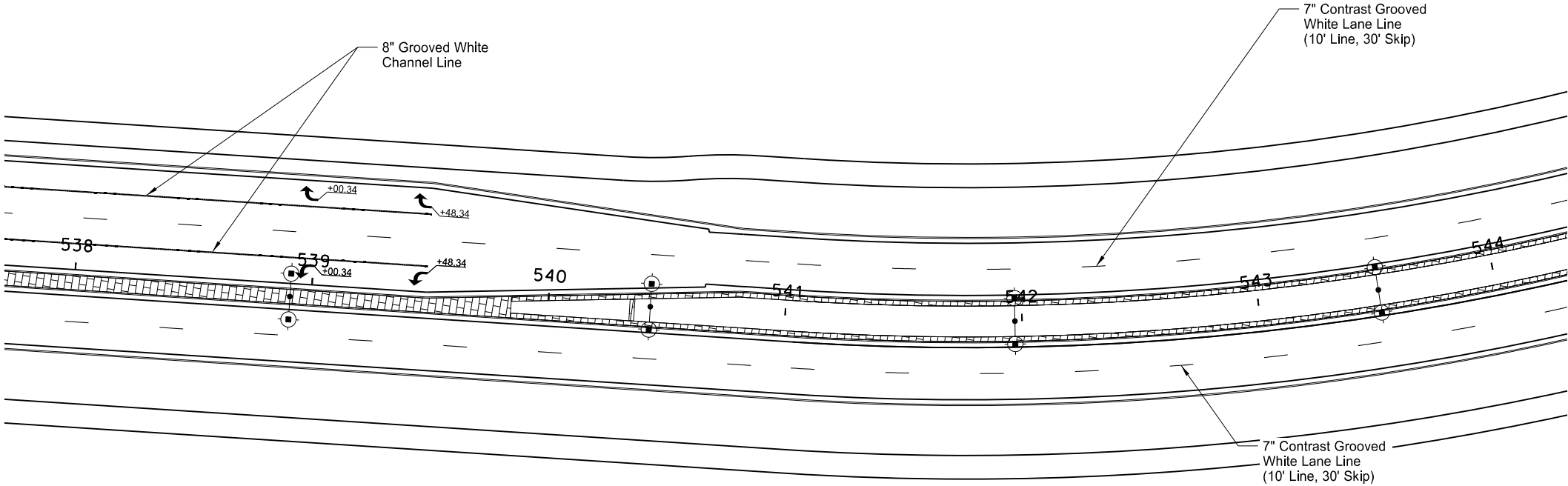
Pavement Marking

Sta 532+00 to Sta 538+00 (PR17)

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SU-8-992(040)041	120	6

SPEC CODE	BID ITEM	QTY	UNIT
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762	0122	PREFORMED PATTERNED PVMT MK-MESSAGE(GROOVED)	
		Left Turn Arrow (2)	32 SF
		Right Turn Arrow	16 SF
762	1309	PREFORMED PATTERNED PVMT MK 8IN LINE-GROOVED	
		White Channel Line	296 LF
762	1334	PREF PATT PVMT MK 7IN LINE CONTRAST-GROOVED	
		White Lane Line (10' Line, 30' Skip)	300 LF

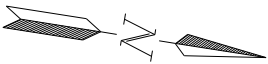


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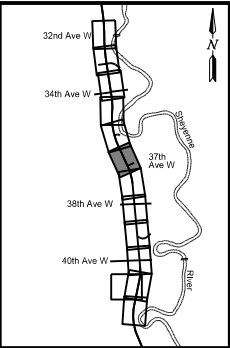
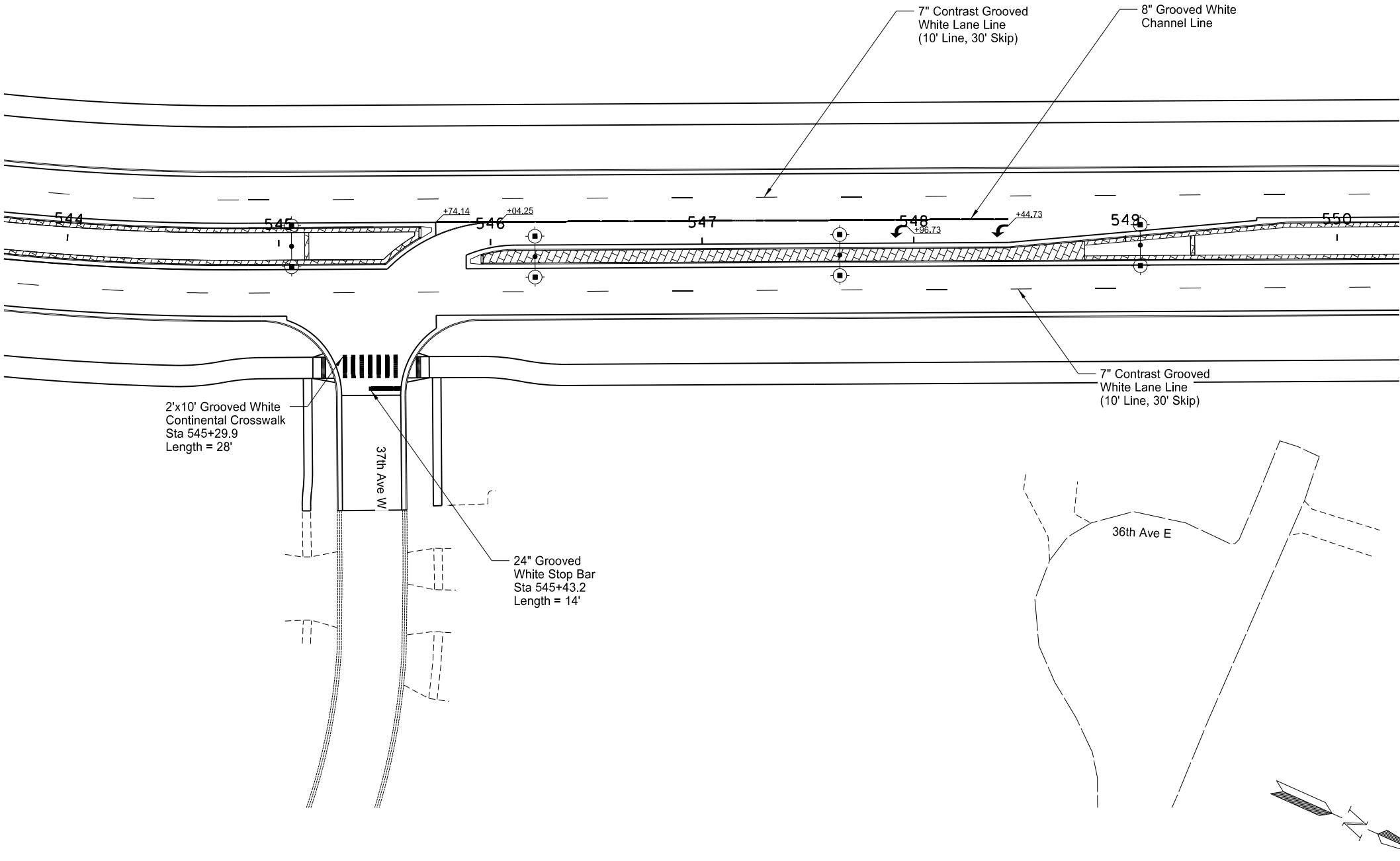
Sta 538+00 to Sta 544+00 (PR17)



STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SU-8-992(040)041	120	7

SPEC CODE BID ITEM QTY UNIT

762	0122	PREFORMED PATTERNED PVMT MK-MESSAGE(GROOVED) Left Turn Arrow (2)	32 SF
762	1309	PREFORMED PATTERNED PVMT MK 8IN LINE-GROOVED White Channel Line	325 LF
762	1325	PREFORMED PATTERNED PVMT MK 24IN LINE-GROOVED Stop Bar Crosswalk	14 LF 70 LF
762	1334	PREF PATT PVMT MK 7IN LINE CONTRAST-GROOVED White Lane Line (10' Line, 30' Skip)	300 LF



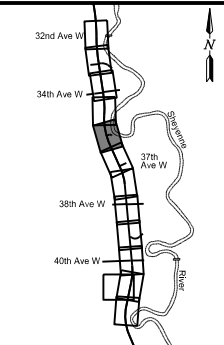
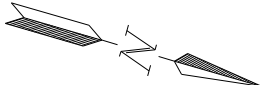
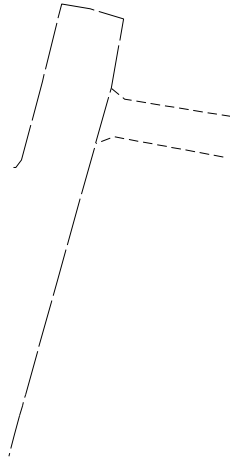
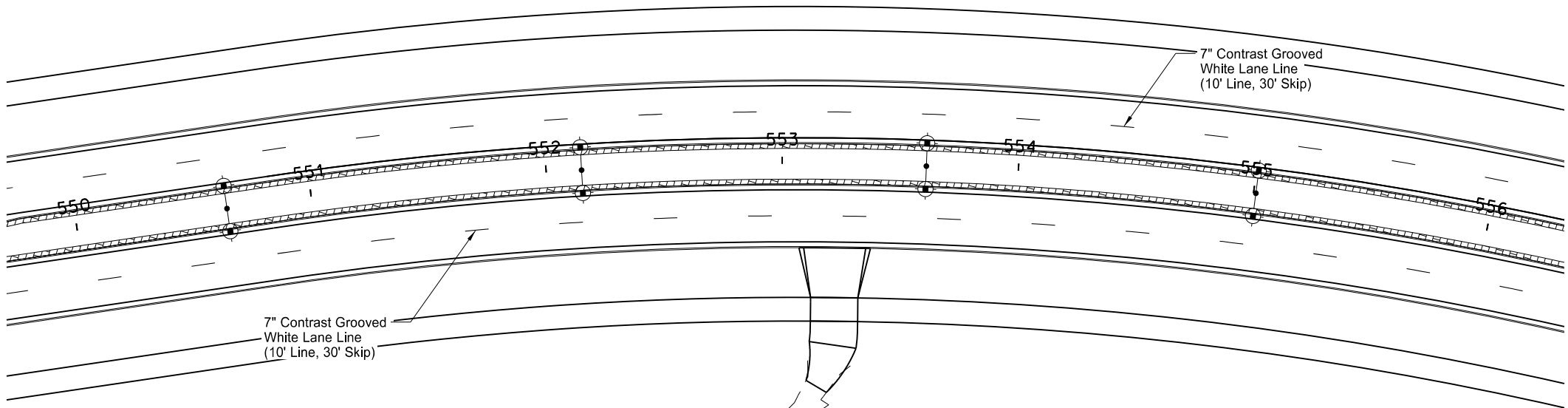
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Sta 544+00 to Sta 550+00 (PR17)

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SU-8-992(040)041	120	8

SPEC CODE BID ITEM QTY UNIT

762	1334	PREF PATT PVMT MK 7IN LINE CONTRAST-GROOVED	
		White Lane Line (10' Line, 30' Skip)	300 LF



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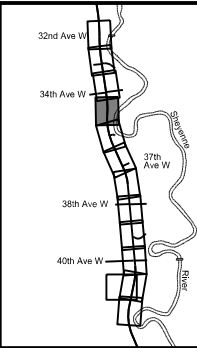
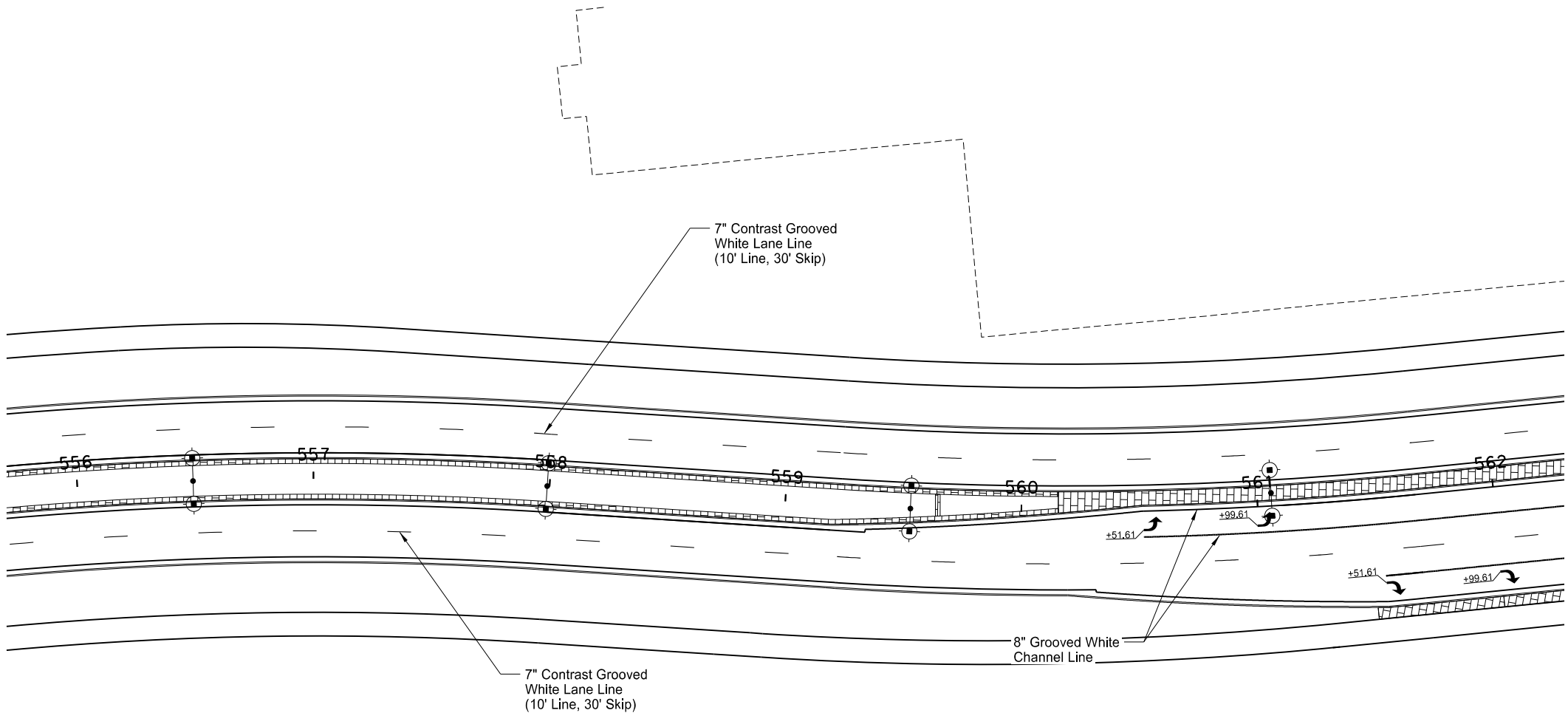
Sta 550+00 to Sta 556+00 (PR17)



STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SU-8-992(040)041	120	9

SPEC CODE BID ITEM QTY UNIT

762	0122	PREFORMED PATTERNED PVMT MK-MESSAGE(GROOVED)	
		Left Turn Arrow (2)	32 SF
		Right Turn Arrow	16 SF
762	1309	PREFORMED PATTERNED PVMT MK 8IN LINE-GROOVED	
		White Channel Line	196 LF
762	1334	PREF PATT PVMT MK 7IN LINE CONTRAST-GROOVED	
		White Lane Line (10' Line, 30' Skip)	300 LF

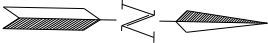


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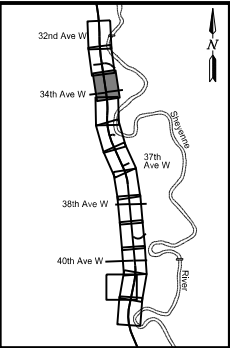
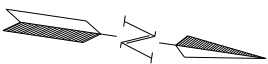
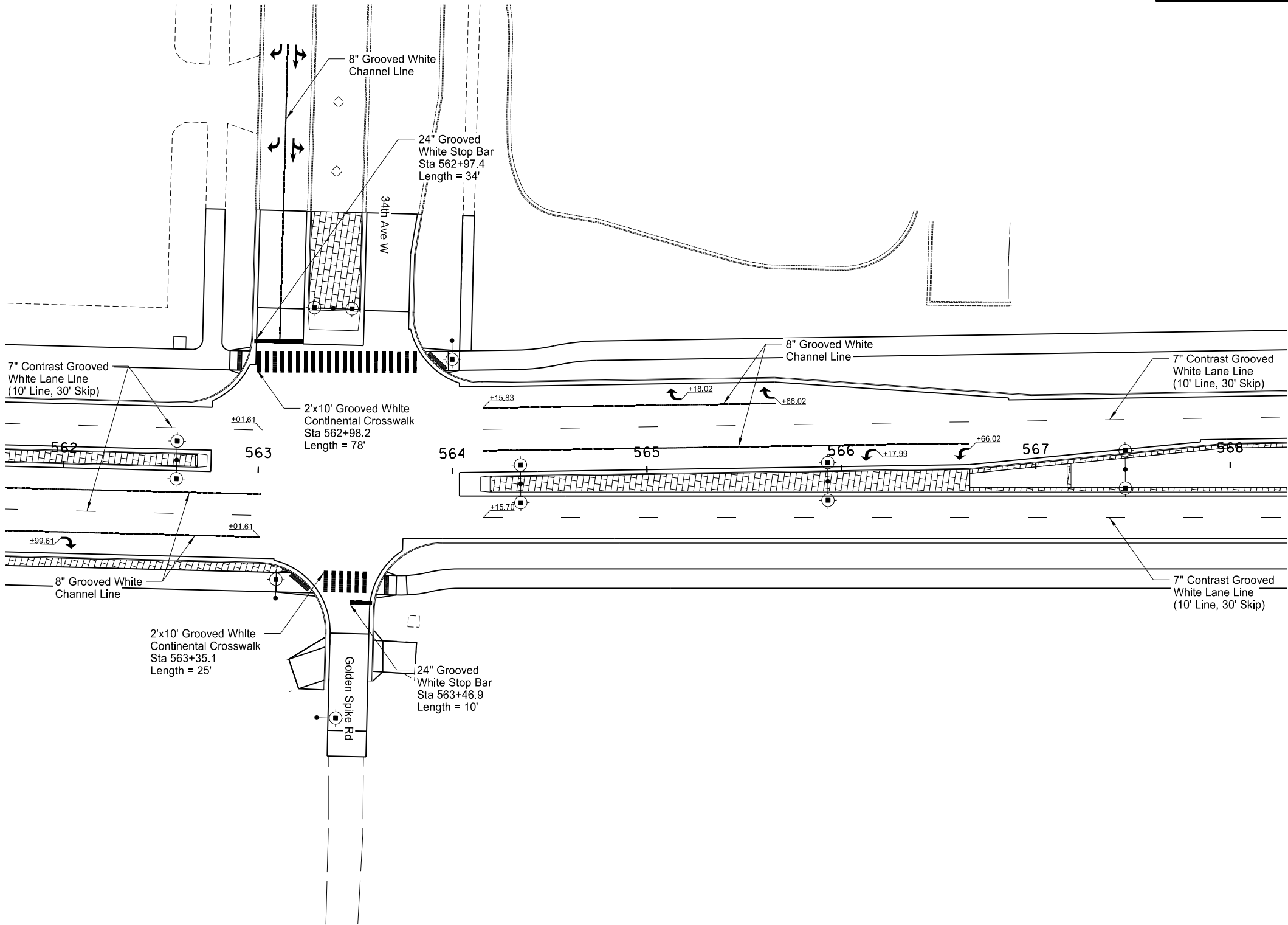
Sta 556+00 to Sta 562+00 (PR17)



STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SU-8-992(040)041	120	10

SPEC CODE BID ITEM QTY UNIT

762	0122	PREFORMED PATTERNED PVMT MK-MESSAGE(GROOVED)	
		Left Turn Arrow (2)	32 SF
		Right Turn Arrow (5)	80 SF
		Through/Right Left Turn Arrow (2)	54 SF
762	1309	PREFORMED PATTERNED PVMT MK 8IN LINE-GROOVED	
		White Channel Line	757 LF
762	1325	PREFORMED PATTERNED PVMT MK 24IN LINE-GROOVED	
		Stop Bar	44 LF
		Crosswalk	270 LF
762	1334	PREF PATT PVMT MK 7IN LINE CONTRAST-GROOVED	
		White Lane Line (10' Line, 30' Skip)	243 LF



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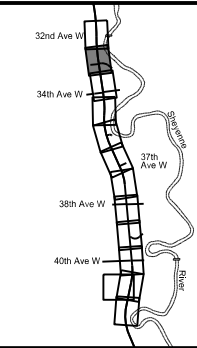
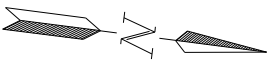
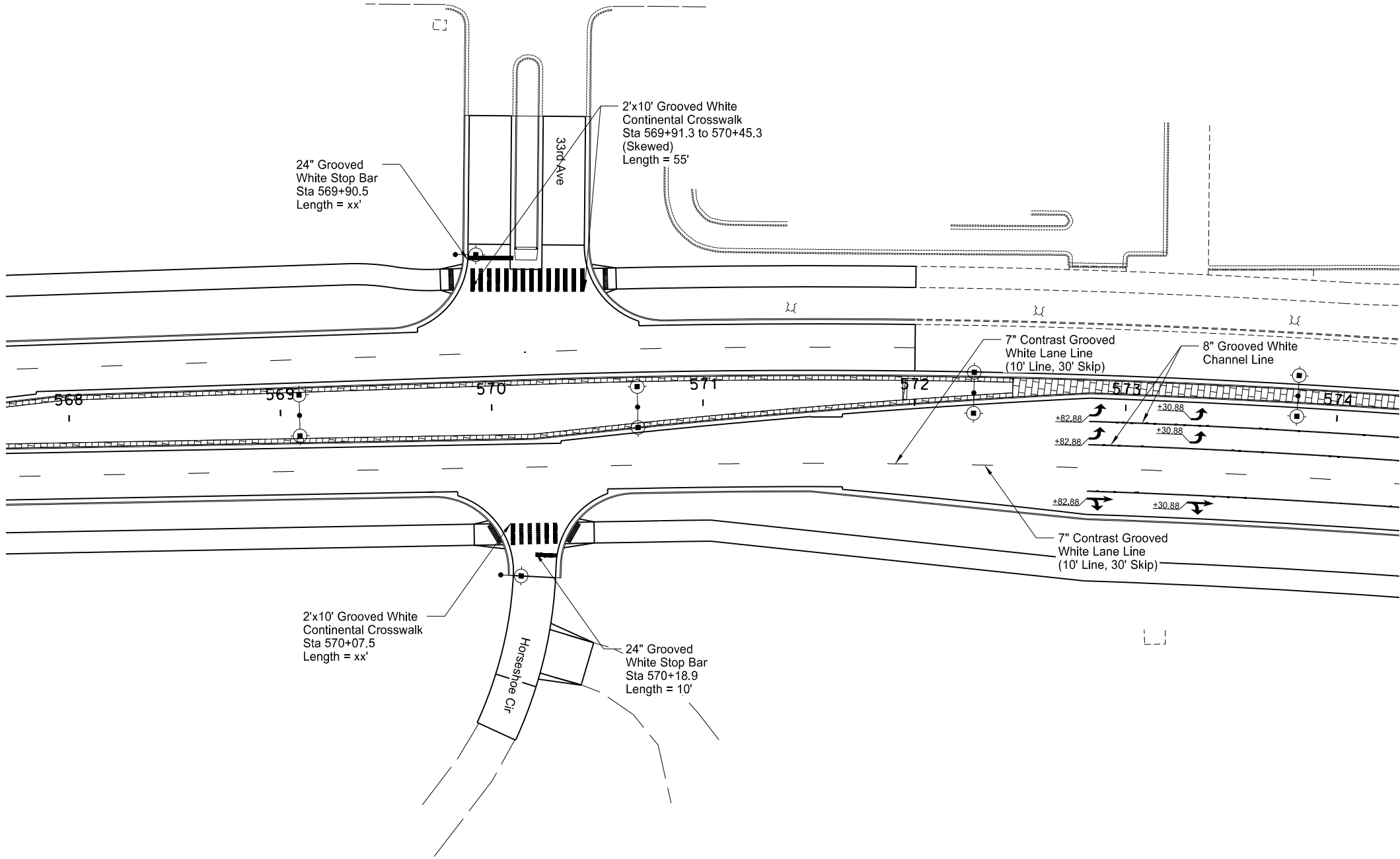
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Sta 562+00 to Sta 568+00 (PR17)

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SU-8-992(040)041	120	11

SPEC CODE BID ITEM QTY UNIT

762	0122	PREFORMED PATTERNED PVMT MK-MESSAGE(GROOVED)	
		Left Turn Arrow (4)	64 SF
		Through Right (2)	54 SF
762	1309	PREFORMED PATTERNED PVMT MK 8IN LINE-GROOVED	
		White Channel Line	234 LF
762	1325	PREFORMED PATTERNED PVMT MK 24IN LINE-GROOVED	
		Stop Bar	24 LF
		Crosswalk	200 LF
762	1334	PREF PATT PVMT MK 7IN LINE CONTRAST-GROOVED	
		White Lane Line (10' Line, 30' Skip)	250 LF



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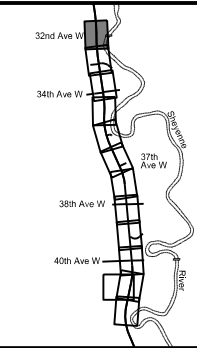
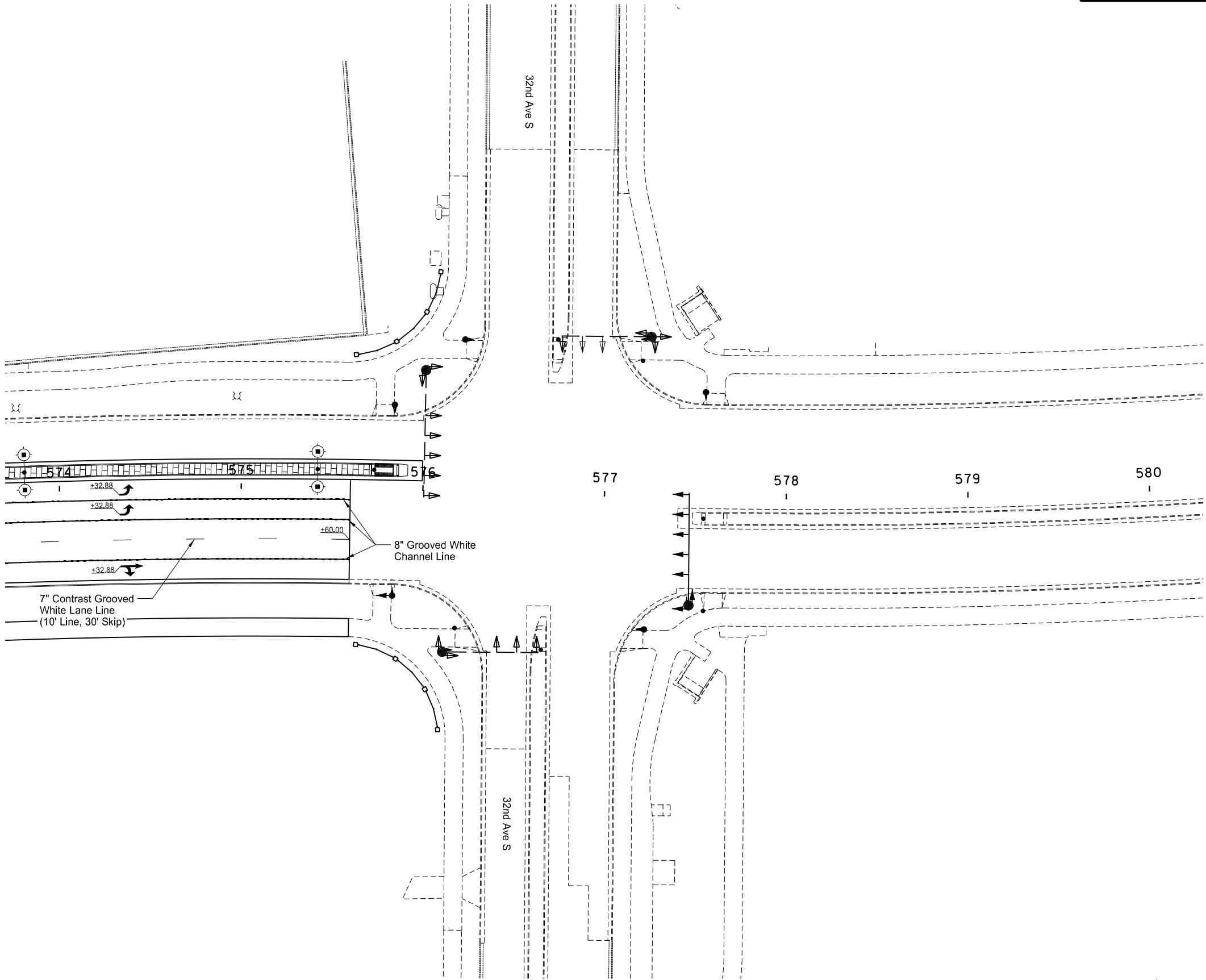
Pavement Marking

Sta 568+00 to Sta 574+00 (PR17)

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SU-8-992(040)041	120	12

SPEC CODE BID ITEM QTY UNIT

762	0122	PREFORMED PATTERNED PVMT MK-MESSAGE(GROOVED)	
		Left Turn Arrow (2)	32 SF
		Through Right	27 SF
762	1309	PREFORMED PATTERNED PVMT MK 8IN LINE-GROOVED	
		White Channel Line	351 LF
762	1334	PREF PATT PVMT MK 7IN LINE CONTRAST-GROOVED	
		White Lane Line (10' Line, 30' Skip)	40 LF

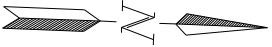


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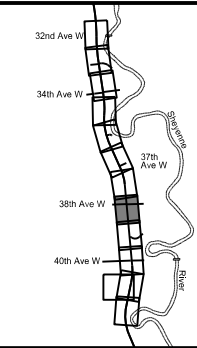
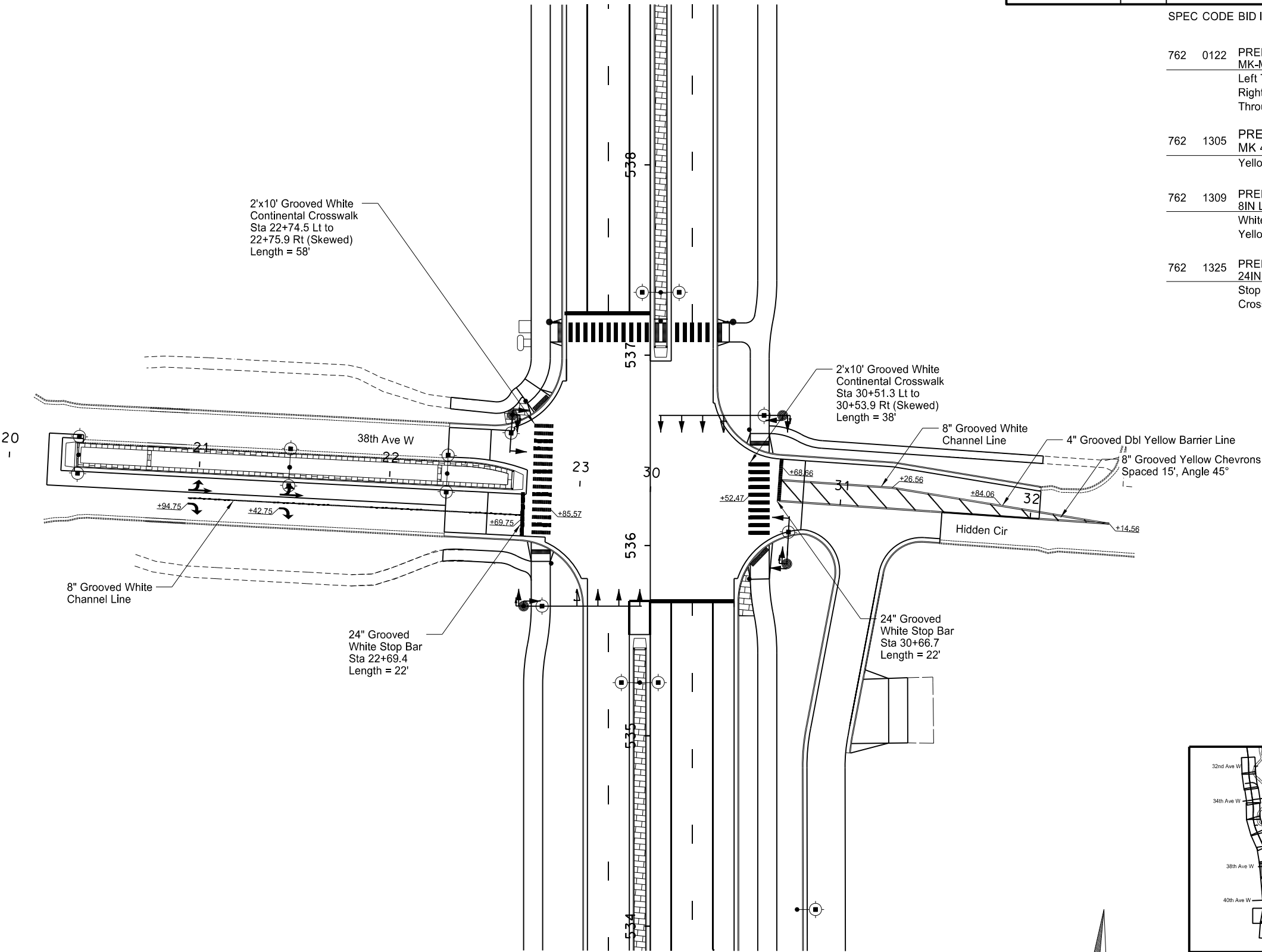
Sta 574+00 to Sta 580+00 (PR17)



STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SU-8-992(040)041	120	13

SPEC CODE BID ITEM QTY UNIT

762	0122	PREFORMED PATTERNED PVMT MK-MESSAGE(GROOVED)	
		Left Turn Arrow (2)	32 SF
		Right Turn Arrow (2)	32 SF
		Through/Right Turn Arrow (2)	54 SF
762	1305	PREFORMED PATTERNED PVMT MK 4IN LINE-GROOVED	
		Yellow Dbl Barrier	696 LF
762	1309	PREFORMED PATTERNED PVMT MK 8IN LINE-GROOVED	
		White Channel Line	234 LF
		Yellow Chevron	111 LF
762	1325	PREFORMED PATTERNED PVMT MK 24IN LINE-GROOVED	
		Stop Bar	44 LF
		Crosswalk	250 LF



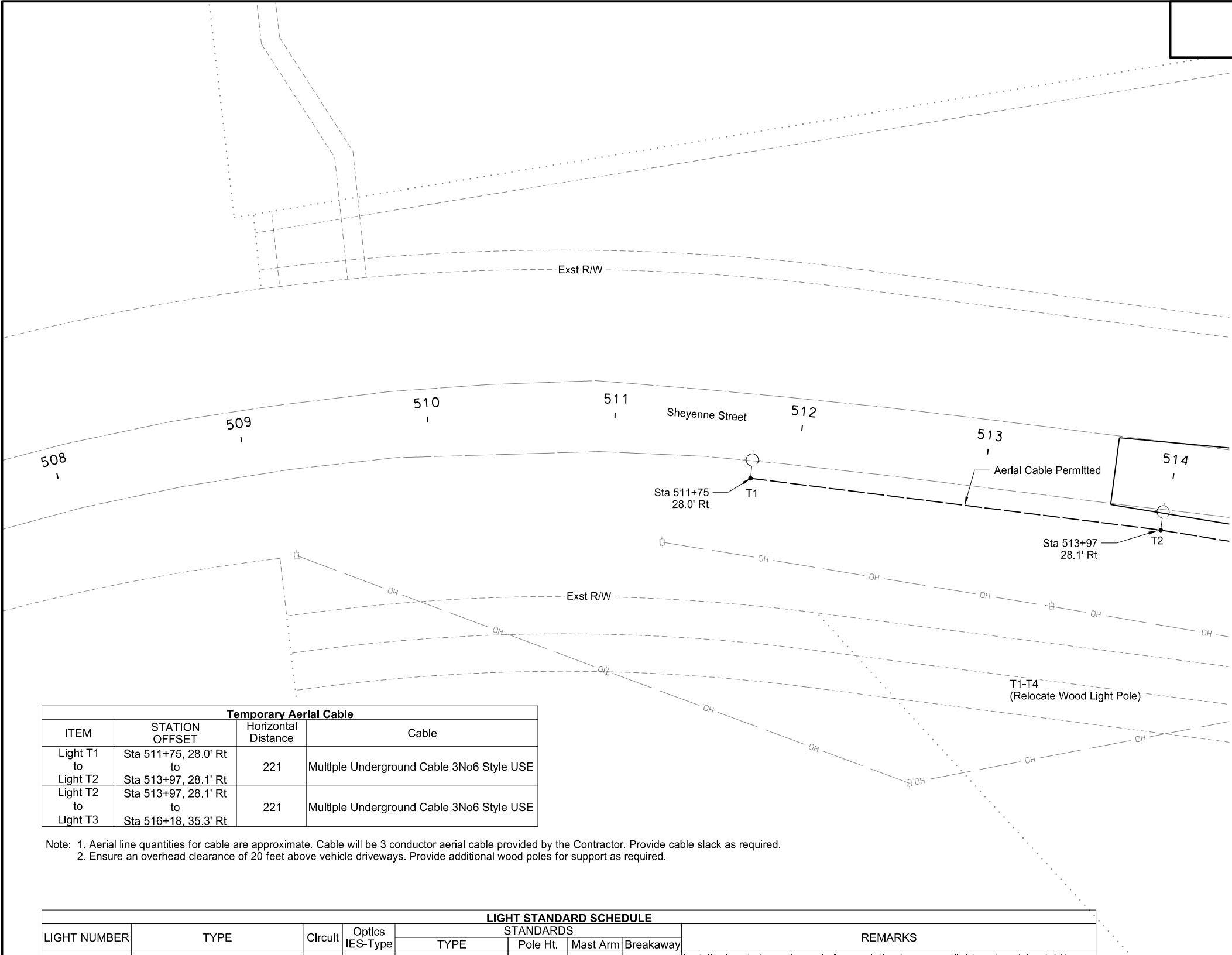
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Pavement Marking

Sta 20+00 to Sta 23+00 (PR38AVEW)  
Sta 30+00 to Sta 33+00 (PRHIDDEN)

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SU-8-992(040)041	140	1



Temporary Aerial Cable			
ITEM	STATION OFFSET	Horizontal Distance	Cable
Light T1 to Light T2	Sta 511+75, 28.0' Rt to Sta 513+97, 28.1' Rt	221	Multiple Underground Cable 3No6 Style USE
Light T2 to Light T3	Sta 513+97, 28.1' Rt to Sta 516+18, 35.3' Rt	221	Multiple Underground Cable 3No6 Style USE

Note: 1. Aerial line quantities for cable are approximate. Cable will be 3 conductor aerial cable provided by the Contractor. Provide cable slack as required.  
2. Ensure an overhead clearance of 20 feet above vehicle driveways. Provide additional wood poles for support as required.

LIGHT STANDARD SCHEDULE								
LIGHT NUMBER	TYPE	Circuit	Optics IES-Type	STANDARDS				REMARKS
				TYPE	Pole Ht.	Mast Arm	Breakaway	
T1	Temporary LED	P1	III	Wooden Pole	40'	6'	No	Install relocated wooden pole from existing temporary light system (sheet 14). Luminaire to have mounting height as shown. Reuse existing conventional LED luminaire operated at 240V, tilted at 0°. No festoon. Reuse mast arm.
T2	Temporary LED	P1	III	Wooden Pole	40'	6'	No	Install relocated wooden pole from existing temporary light system (sheet 14). Luminaire to have mounting height as shown. Reuse existing conventional LED luminaire operated at 240V, tilted at 0°. No festoon. Reuse mast arm.

Legend

Light direction of luminaire optics and pole mast arm (if any)

Feed Point Cabinet

Pull Box

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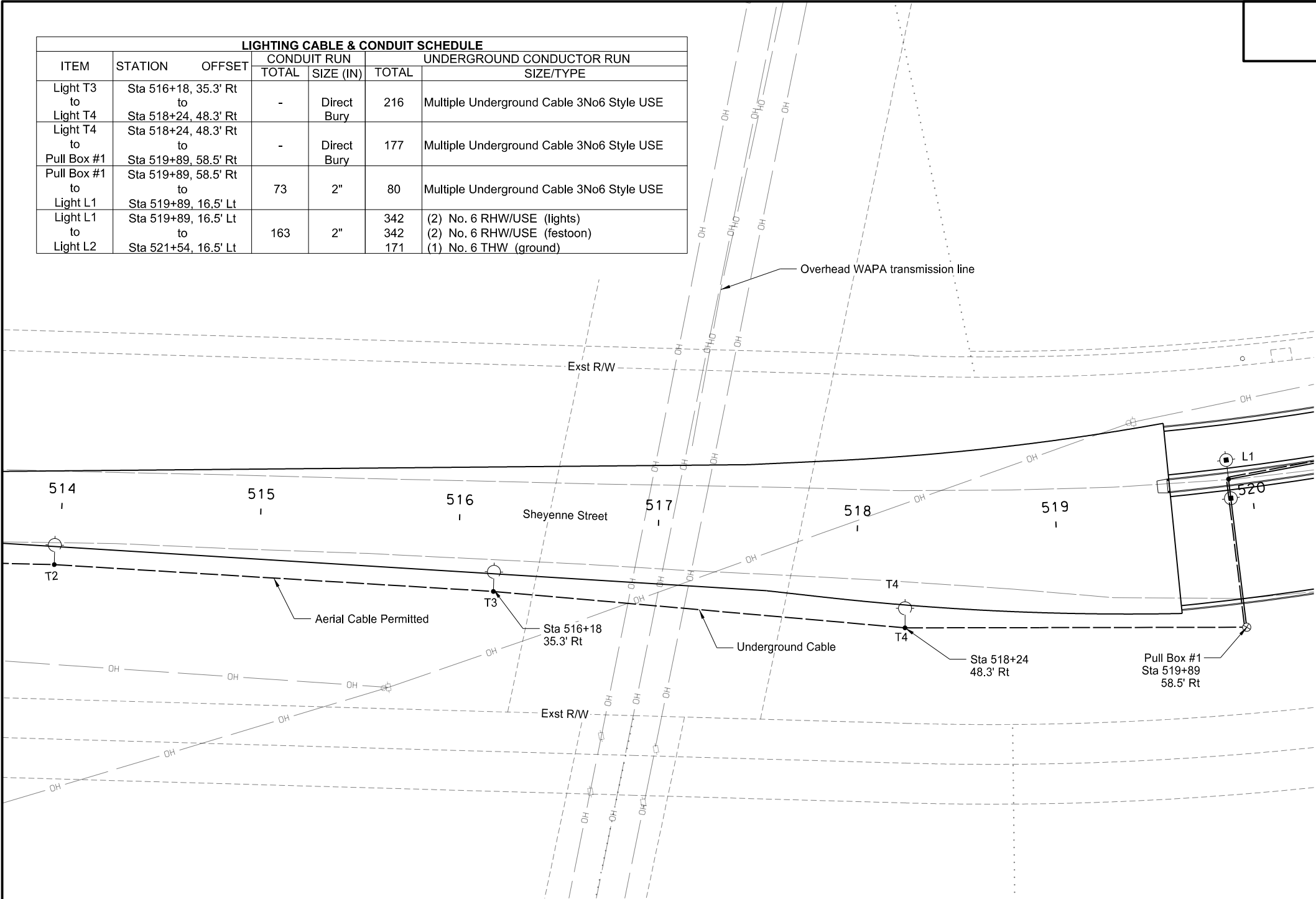
Sheyenne Street

Lighting Layout & Tables

Sta 508+00 to Sta 514+00 (PR17)

LIGHTING CABLE & CONDUIT SCHEDULE						
ITEM	STATION	OFFSET	CONDUIT RUN		UNDERGROUND CONDUCTOR RUN	
			TOTAL	SIZE (IN)	TOTAL	SIZE/TYPE
Light T3 to Light T4	Sta 516+18, 35.3' Rt to Sta 518+24, 48.3' Rt		-	Direct Bury	216	Multiple Underground Cable 3No6 Style USE
Light T4 to Pull Box #1	Sta 518+24, 48.3' Rt to Sta 519+89, 58.5' Rt		-	Direct Bury	177	Multiple Underground Cable 3No6 Style USE
Pull Box #1 to Light L1	Sta 519+89, 58.5' Rt to Sta 519+89, 16.5' Lt		73	2"	80	Multiple Underground Cable 3No6 Style USE
Light L1 to Light L2	Sta 519+89, 16.5' Lt to Sta 521+54, 16.5' Lt		163	2"	342	(2) No. 6 RHW/USE (lights)
					342	(2) No. 6 RHW/USE (festoon)
					171	(1) No. 6 THW (ground)

Note: Provide cable, conduit, mounting equipment, and junction boxes going up the temporary wooden light poles as required (incidental). Provide fusing for each light.



LIGHT STANDARD SCHEDULE								
LIGHT NUMBER	TYPE	Circuit	Optics IES-Type	STANDARDS				REMARKS
				TYPE	Pole Ht.	Mast Arm	Breakaway	
T3	Temporary LED	P1	III	Wooden Pole	40'	6'	No	Install relocated wooden pole from existing temporary light system (sheet 14). Luminaire to have mounting height as shown. Reuse existing conventional LED luminaire operated at 240V, tilted at 0°. No festoon. Reuse mast arm.
T4	Temporary LED	P1	III	Wooden Pole	40'	6'	No	Install relocated wooden pole from existing temporary light system (sheet 15). Luminaire to have mounting height as shown. Reuse existing conventional LED luminaire operated at 240V, tilted at 0°. No festoon. Reuse mast arm.

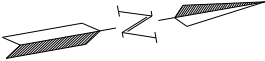
Legend

Light direction of luminaire optics and pole mast arm (if any)

Feed Point Cabinet

Pull Box

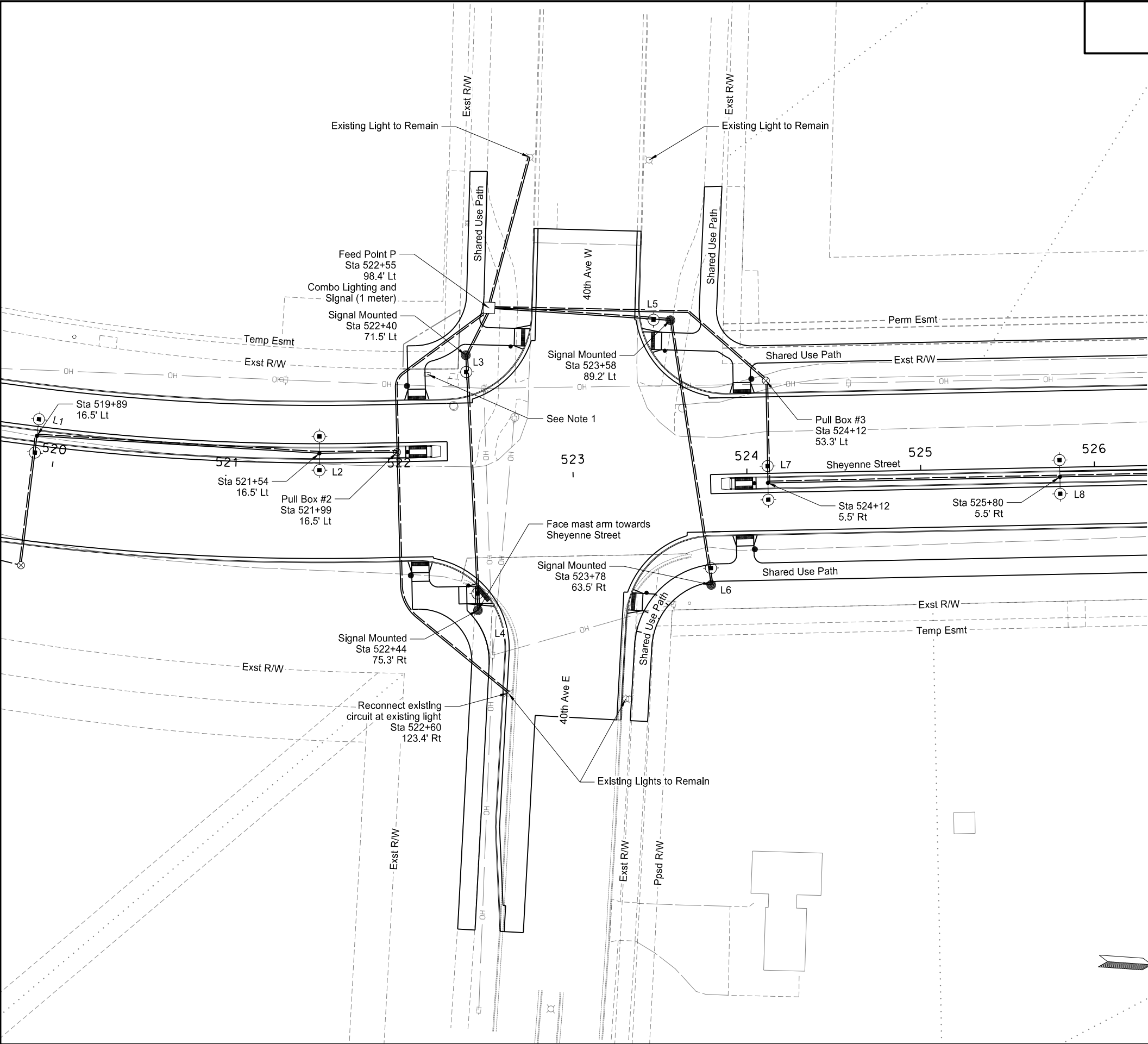
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Sheyenne Street  
Lighting Layout & Tables  
Sta 514+00 to Sta 520+00 (PR17)

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SU-8-992(040)041	140	3

- Notes
- Remove existing feed point cabinet servicing existing traffic signals and 40th Ave E street lights. Salvage cabinet to the City. Dispose of concrete foundation. Contractor is responsible for maintaining power for the existing traffic control signals as required. Lights along 40th Ave E must remain operational at all times. Contractor to provide all temporary cable and conduit (underground) as required to maintain lights in operation (incidental).



**Legend**

- Light direction of luminaire optics and pole mast arm (if any)
- Feed Point Cabinet
- Pull Box

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Sheyenne Street  
Lighting Layout  
Sta 520+00 to Sta 526+00 (PR17)



LIGHT STANDARD SCHEDULE								
LIGHT NUMBER	TYPE	Circuit	Optics IES-Type	STANDARDS				REMARKS
				TYPE	Pole Ht.	Mast Arm	Breakaway	
L1	Detail EE. (2) - Decorative LED luminaires.	P1	III	Decorative	30'	Twin 8'	Yes	Install (2) Teardrop luminaires. Install light standard on concrete foundation. Luminaire operated at 240V. 120V Festoon (receptacle) on pole.
L2	Detail EE. (2) - Decorative LED luminaires.	P1	III	Decorative	30'	Twin 8'	Yes	Install (2) Teardrop luminaires. Install light standard on concrete foundation. Luminaire operated at 240V. 120V Festoon (receptacle) on pole.
L3	Detail DD & sheet 150-7. (3) - Decorative LED luminaires.	P3	III	Decorative Signal Std Extension	30' (teardrop)	8' (teardrop)	No	Install (1) Teardrop luminaire on combination signal standard light standard extension (decorative). Refer to Section 150. Luminaires operated at 240V. No Festoon. Install (2) Post-Top luminaires on signal pole per detail.
L4	Detail DD & sheet 150-6. (3) - Decorative LED luminaires.	P3	III	Decorative Signal Std Extension	30' (teardrop)	8' (teardrop)	No	Install (1) Teardrop luminaire on combination signal standard light standard extension (decorative). Refer to Section 150. Luminaires operated at 240V. No Festoon. Install (2) Post-Top luminaires on signal pole per detail.
L5	Detail DD & sheet 150-5. (3) - Decorative LED luminaires.	P3	III	Decorative Signal Std Extension	30' (teardrop)	8' (teardrop)	No	Install (1) Teardrop luminaire on combination signal standard light standard extension (decorative). Refer to Section 150. Luminaires operated at 240V. No Festoon. Install (2) Post-Top luminaires on signal pole per detail.
L6	Detail DD & sheet 150-4. (3) - Decorative LED luminaires.	P3	III	Decorative Signal Std Extension	30' (teardrop)	8' (teardrop)	No	Install (1) Teardrop luminaire on combination signal standard light standard extension (decorative). Refer to Section 150. Luminaires operated at 240V. No Festoon. Install (2) Post-Top luminaires on signal pole per detail.
L7	Detail EE. (2) - Decorative LED luminaires.	P2	III	Decorative	30'	Twin 8'	Yes	Install (2) Teardrop luminaires. Install light standard on concrete foundation. Luminaire operated at 240V. 120V Festoon (receptacle) on pole.
L8	Detail EE. (2) - Decorative LED luminaires.	P2	III	Decorative	30'	Twin 8'	Yes	Install (2) Teardrop luminaires. Install light standard on concrete foundation. Luminaire operated at 240V. 120V Festoon (receptacle) on pole.

LIGHTING CABLE & CONDUIT SCHEDULE						
ITEM	STATION	OFFSET	CONDUIT RUN		UNDERGROUND CONDUCTOR RUN	
			TOTAL	SIZE (IN)	TOTAL	SIZE/TYPE
Light L2 to Pull Box #2	Sta 521+54, 16.5' Lt to Sta 521+99, 16.5' Lt		45	2"	104 104 52	(2) No. 6 RHW/USE (lights) (2) No. 6 RHW/USE (festoon) (1) No. 6 THW (ground)
Pull Box #2 to Feed Point P	Sta 521+99, 16.5' Lt to Sta 522+55, 98.4' Lt		109	2"	488 244 122	(4) No. 6 RHW/USE (lights-P1,P4) (2) No. 6 RHW/USE (festoon) (1) No. 6 THW (ground)
Feed Point P to Light L3	Sta 522+55, 98.4' Lt to Sta 522+40, 71.5' Lt		30	2"	88 44	(2) No. 10 RHW/USE (lights) (1) No. 6 THW (ground)
Light L3 to Light L4	Sta 522+40, 71.5' Lt to Sta 522+44, 75.3' Rt		147	2"	310 155	(2) No. 10 RHW/USE (lights) (1) No. 6 THW (ground)
Feed Point P to Light L5	Sta 522+55, 98.4' Lt to Sta 523+58, 89.2' Lt		104	2"	236 118	(2) No. 10 RHW/USE (lights) (1) No. 6 THW (ground)
Light L5 to Light L6	Sta 523+58, 89.2' Lt to Sta 523+78, 63.5' Rt		154	2"	324 162	(2) No. 10 RHW/USE (lights) (1) No. 6 THW (ground)
Feed Point P to Pull Box #3	Sta 522+55, 98.4' Lt to Sta 524+12, 53.3' Lt		172	2"	370 370 185	(2) No. 6 RHW/USE (lights) (2) No. 6 RHW/USE (festoon) (1) No. 6 THW (ground)
Pull Box #3 to Light L7	Sta 524+12, 53.3' Lt to Sta 524+12, 5.5' Rt		57	2"	128 128 64	(2) No. 6 RHW/USE (lights) (2) No. 6 RHW/USE (festoon) (1) No. 6 THW (ground)
Light L7 to Light L8	Sta 524+12, 5.5' Rt to Sta 525+80, 5.5' Rt		168	2"	352 352 176	(2) No. 6 RHW/USE (lights) (2) No. 6 RHW/USE (festoon) (1) No. 6 THW (ground)
Pull Box #2 to existing light	Sta 521+99, 16.5' Lt to		163	2"	340 170	(2) No. 6 RHW/USE (lights) (1) No. 6 THW (ground)
Feed Point P to existing light	Sta 522+55, 98.4' Lt to		90	2"		

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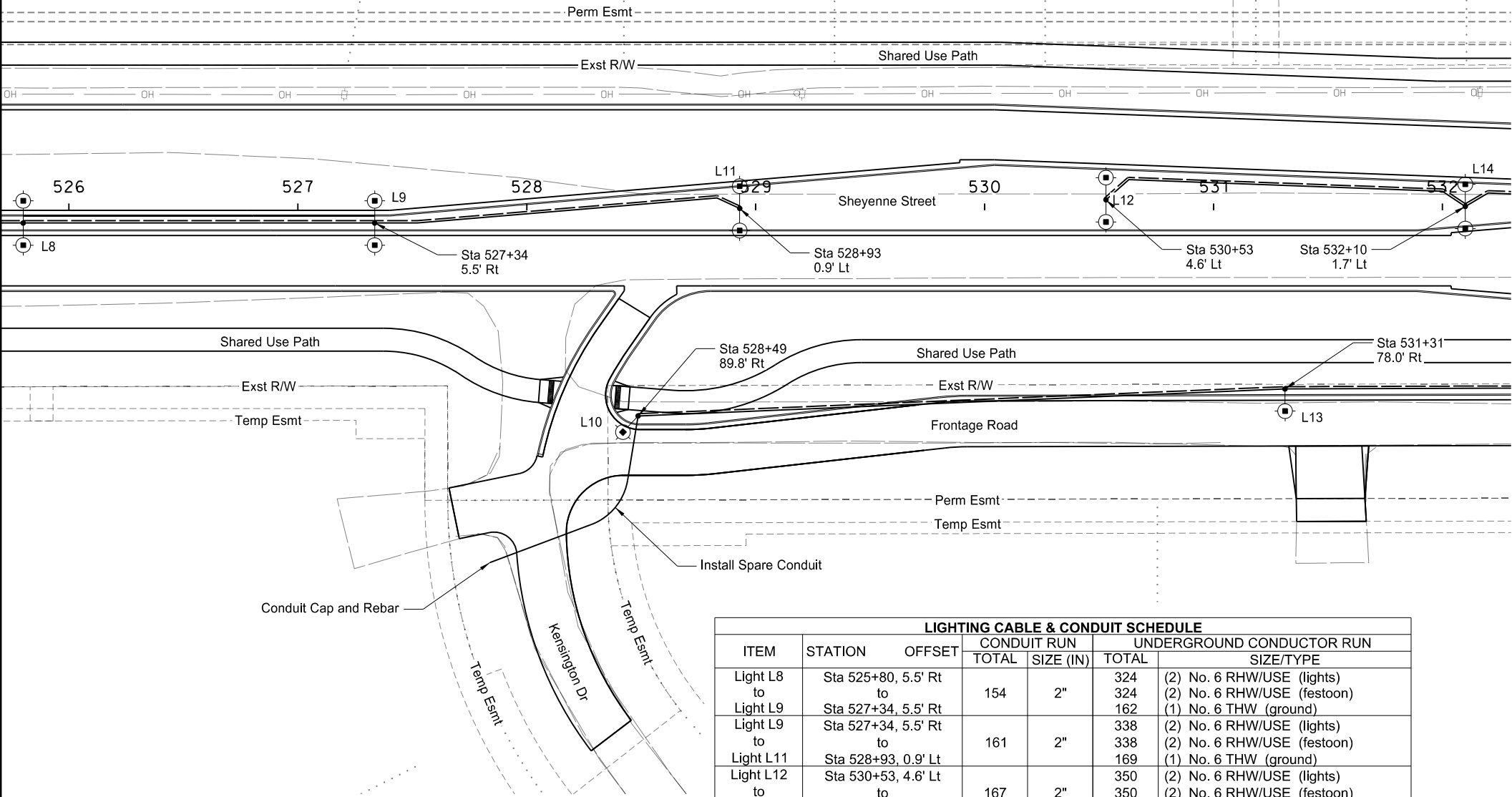
Sheyenne Street

Lighting Tables

Sta 520+00 to Sta 526+00 (PR17)

Note: Do not install conduit directly under where trees are shown to be planted. Refer to Section 85. Route conduit around tree roots and install no more than 360 degrees worth of conduit bends per NEC.

LIGHT STANDARD SCHEDULE								
LIGHT NUMBER	TYPE	Circuit	Optics IES-Type	STANDARDS				REMARKS
				TYPE	Pole Ht.	Mast Arm	Breakaway	
L9	Detail EE. (2) - Decorative LED lumlnalres.	P2	III	Decorative	30'	Twin 8'	Yes	Install (2) Teardrop luminaires. Install light standard on concrete foundation. Luminaire operated at 240V. 120V Festoon (receptacle) on pole.
L10	Detail CC. (1) - Decorative LED luminaire.	N4	III	Decorative	14'	none	No	Install (1) Post-Top luminaire. Install light standard on concrete foundation. Luminaire operated at 240V. No festoon.
L11	Detail EE. (2) - Decorative LED luminaires.	P2	III	Decorative	30'	Twin 8'	Yes	Install (2) Teardrop luminaires. Install light standard on concrete foundation. Luminaire operated at 240V. 120V Festoon (receptacle) on pole.
L12	Detail EE. (2) - Decorative LED luminaires.	N1	III	Decorative	30'	Twin 8'	Yes	Install (2) Teardrop luminaires. Install light standard on concrete foundation. Luminaire operated at 240V. 120V Festoon (receptacle) on pole.
L13	Detail CC. (1) - Decorative LED luminaire.	N4	III	Decorative	14'	none	No	Install (1) Post-Top luminaire. Install light standard on concrete foundation. Luminaire operated at 240V. No festoon.
L14	Detail EE. (2) - Decorative LED luminaires.	N1	III	Decorative	30'	Twin 8'	Yes	Install (2) Teardrop luminaires. Install light standard on concrete foundation. Luminaire operated at 240V. 120V Festoon (receptacle) on pole.



LIGHTING CABLE & CONDUIT SCHEDULE					
ITEM	STATION	OFFSET	CONDUIT RUN		UNDERGROUND CONDUCTOR RUN
			TOTAL	SIZE (IN)	
Light L8 to Light L9	Sta 525+80, 5.5' Rt to Sta 527+34, 5.5' Rt		154	2"	324 (2) No. 6 RHW/USE (lights)
					324 (2) No. 6 RHW/USE (festoon)
Light L9 to Light L11	Sta 527+34, 5.5' Rt to Sta 528+93, 0.9' Lt		161	2"	162 (1) No. 6 THW (ground)
					338 (2) No. 6 RHW/USE (lights)
Light L12 to Light L14	Sta 530+53, 4.6' Lt to Sta 532+10, 1.7' Lt		167	2"	338 (2) No. 6 RHW/USE (festoon)
					169 (1) No. 6 THW (ground)
Light L10 to Light L13	Sta 528+49, 89.8' Rt to Sta 531+31, 78.0' Rt		283	1.5"	350 (2) No. 6 RHW/USE (lights)
					350 (2) No. 6 RHW/USE (festoon)
Light L16 to Light L10 (end of conduit)	Sta 534+09, 77.1' Rt to Sta 528+49, 89.8' Rt		102	1.5"	175 (1) No. 6 THW (ground)
					582 (2) No. 10 RHW/USE (lights)
Light L10 to Light L13	Sta 531+31, 78.0' Rt to Sta 534+09, 77.1' Rt		278	1.5"	291 (1) No. 10 THW (ground)
					572 (2) No. 10 RHW/USE (lights)
Light L10 to Light L16	Sta 528+49, 89.8' Rt to Sta 534+09, 77.1' Rt		102	1.5"	286 (1) No. 10 THW (ground)
					102 Provide tracer wire (incidental)

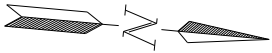
Legend

Light direction of luminaire optics and pole mast arm (if any)

Feed Point Cabinet

Pull Box

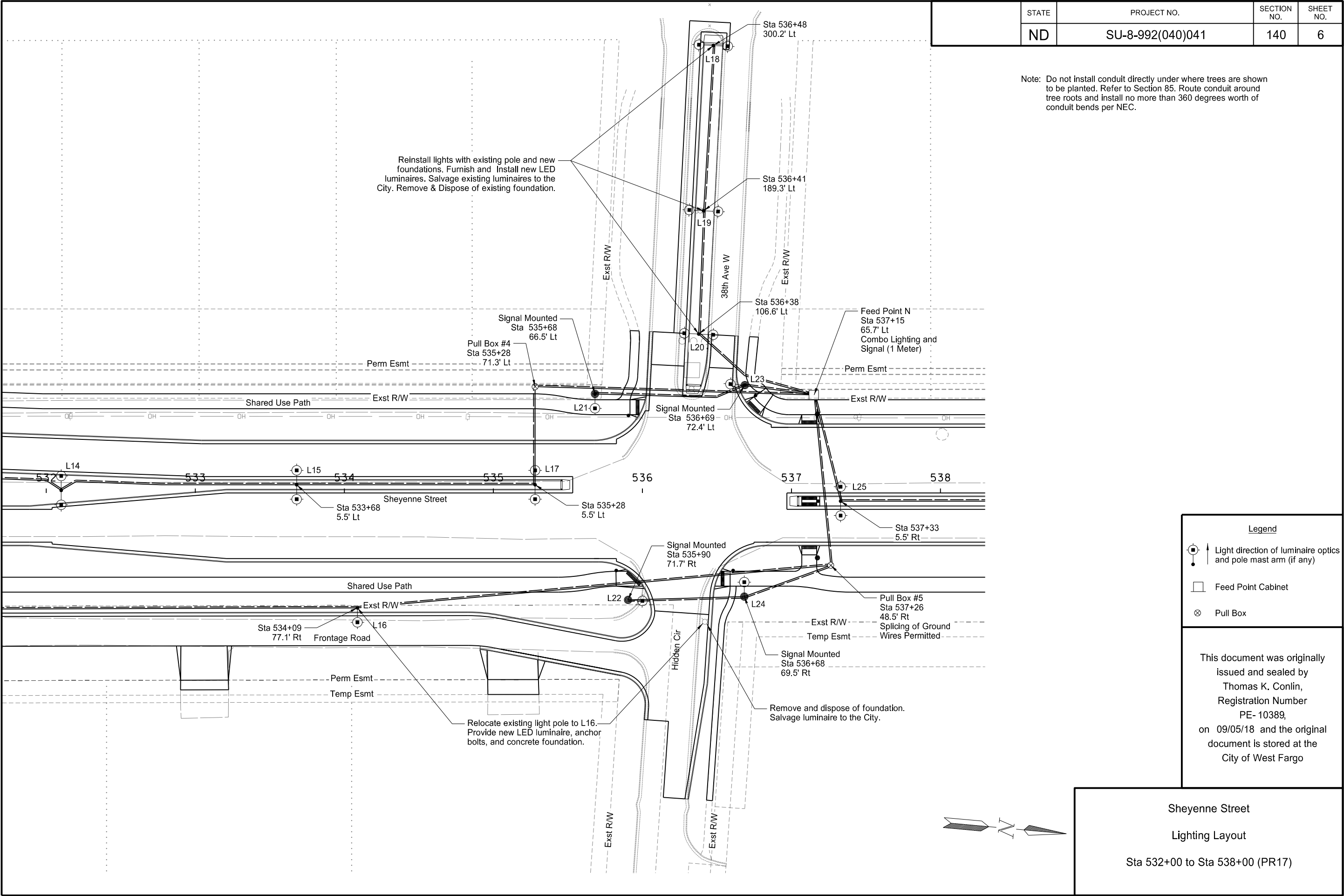
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Sheyenne Street

Lighting Layout & Tables

Sta 526+00 to Sta 532+00 (PR17)



LIGHT STANDARD SCHEDULE								
LIGHT NUMBER	TYPE	Circuit	Optics IES-Type	STANDARDS			REMARKS	
				TYPE	Pole Ht.	Mast Arm		Breakaway
L15	Detail EE. (2) - Decorative LED luminaires.	N1	III	Decorative	30'	Twin 8'	Yes	Install (2) Teardrop luminaires. Install light standard on concrete foundation. Luminaire operated at 240V. 120V Festoon (receptacle) on pole.
L16	Detail CC. (1) - Decorative LED luminaire.	N4	III	Existing Decorative	14'	none	No	Install (1) Post-Top luminaire. Reuse existing relocated pole from nearby. Install light standard on concrete foundation. Luminaire operated at 240V.
L17	Detail EE. (2) - Decorative LED luminaires.	N1	III	Decorative	30'	Twin 8'	Yes	Install (2) Teardrop luminaires. Install light standard on concrete foundation. Luminaire operated at 240V. 120V Festoon (receptacle) on pole.
L18	Relocate existing (see detail NN)	N5	-	Existing Decorative Post-Top	16'	Twin 1.5'	-	Relocate existing light standard to new location. Provide new concrete foundation. Install new post-top type luminaires. Each pole has 2
L19	Relocate existing (see detail NN)	N5	-	Existing Decorative Post-Top	16'	Twin 1.5'	-	Relocate existing light standard to new location. Provide new concrete foundation. Install new post-top type luminaires. Each pole has 2
L20	Relocate existing (see detail NN)	N5	-	Existing Decorative Post-Top	16'	Twin 1.5'	-	Relocate existing light standard to new location. Provide new concrete foundation. Install new post-top type luminaires. Each pole has 2
L21	Detail DD & sheet 150-17. (3) - Decorative LED luminaires.	N3	III	Decorative Signal Std Extension	30' (teardrop)	8' (teardrop)	No	Install (1) Teardrop luminaire on combination signal standard light standard extension (decorative). Refer to Section 150. Luminaires operated at 240V. No Festoon. Install (2) Post-Top luminaires on signal pole per detail.
L22	Detail DD & sheet 150-17. (3) - Decorative LED luminaires.	N3	III	Decorative Signal Std Extension	30' (teardrop)	8' (teardrop)	No	Install (1) Teardrop luminaire on combination signal standard light standard extension (decorative). Refer to Section 150. Luminaires operated at 240V. No Festoon. Install (2) Post-Top luminaires on signal pole per detail.
L23	Detail DD & sheet 150-16. (3) - Decorative LED luminaires.	N3	III	Decorative Signal Std Extension	30' (teardrop)	8' (teardrop)	No	Install (1) Teardrop luminaire on combination signal standard light standard extension (decorative). Refer to Section 150. Luminaires operated at 240V. No Festoon. Install (2) Post-Top luminaires on signal pole per detail.
L24	Detail DD & sheet 150-15. (3) - Decorative LED luminaires.	N3	III	Decorative Signal Std Extension	30' (teardrop)	8' (teardrop)	No	Install (1) Teardrop luminaire on combination signal standard light standard extension (decorative). Refer to Section 150. Luminaires operated at 240V. No Festoon. Install (2) Post-Top luminaires on signal pole per detail.
L25	Detail EE. (2) - Decorative LED luminaires.	N2	III	Decorative	30'	Twin 8'	Yes	Install (2) Teardrop luminaires. Install light standard on concrete foundation. Luminaire operated at 240V. 120V Festoon (receptacle) on pole.

LIGHTING CABLE & CONDUIT SCHEDULE					
ITEM	STATION	OFFSET	CONDUIT RUN		UNDERGROUND CONDUCTOR RUN
			TOTAL	SIZE (IN)	
Feed Point N to Pull Box #5	Sta 537+15, 65.7' Lt to Sta 537+26, 48.5' Rt		113	2"	252 (2) No. 10 RHW/USE (lights on signals) 252 (2) No. 10 RHW/USE (Frontage Rd Lts) 126 (1) No. 6 THW (ground)
Pull Box #5 to Light L16	Sta 537+26, 48.5' Rt to Sta 534+09, 77.1' Rt		317	1.5"	648 (2) No. 10 RHW/USE (lights) 324 (1) No. 10 THW (ground)
Pull Box #5 to Light L24	Sta 537+26, 48.5' Rt to Sta 536+68, 69.5' Rt		60	2"	134 (2) No. 10 RHW/USE (lights) 67 (1) No. 6 THW (ground)
Light L24 to Light L22	Sta 536+68, 69.5' Rt to Sta 535+90, 71.7' Rt		78	2"	172 (2) No. 10 RHW/USE (lights) 86 (1) No. 6 THW (ground)
Feed Point N to Light L23	Sta 537+15, 65.7' Lt to Sta 536+69, 72.4' Lt		43	2"	114 (2) No. 10 RHW/USE (lights) 57 (1) No. 6 THW (ground)
Light L23 to Light L21	Sta 536+69, 72.4' Lt to Sta 535+68, 66.5' Lt		103	2"	222 (2) No. 10 RHW/USE (lights) 111 (1) No. 6 THW (ground)
Feed Point N to Light L20	Sta 537+15, 65.7' Lt to Sta 536+38, 106.6' Lt		86	1.5"	200 (2) No. 10 RHW/USE (lights) 100 (1) No. 10 THW (ground)
Light L20 to Light L19	Sta 536+38, 106.6' Lt to Sta 536+41, 189.3' Lt		83	1.5"	182 (2) No. 10 RHW/USE (lights) 91 (1) No. 10 THW (ground)
Light L19 to Light L18	Sta 536+41, 189.3' Lt to Sta 536+48, 300.2' Lt		111	1.5"	238 (2) No. 10 RHW/USE (lights) 119 (1) No. 10 THW (ground)

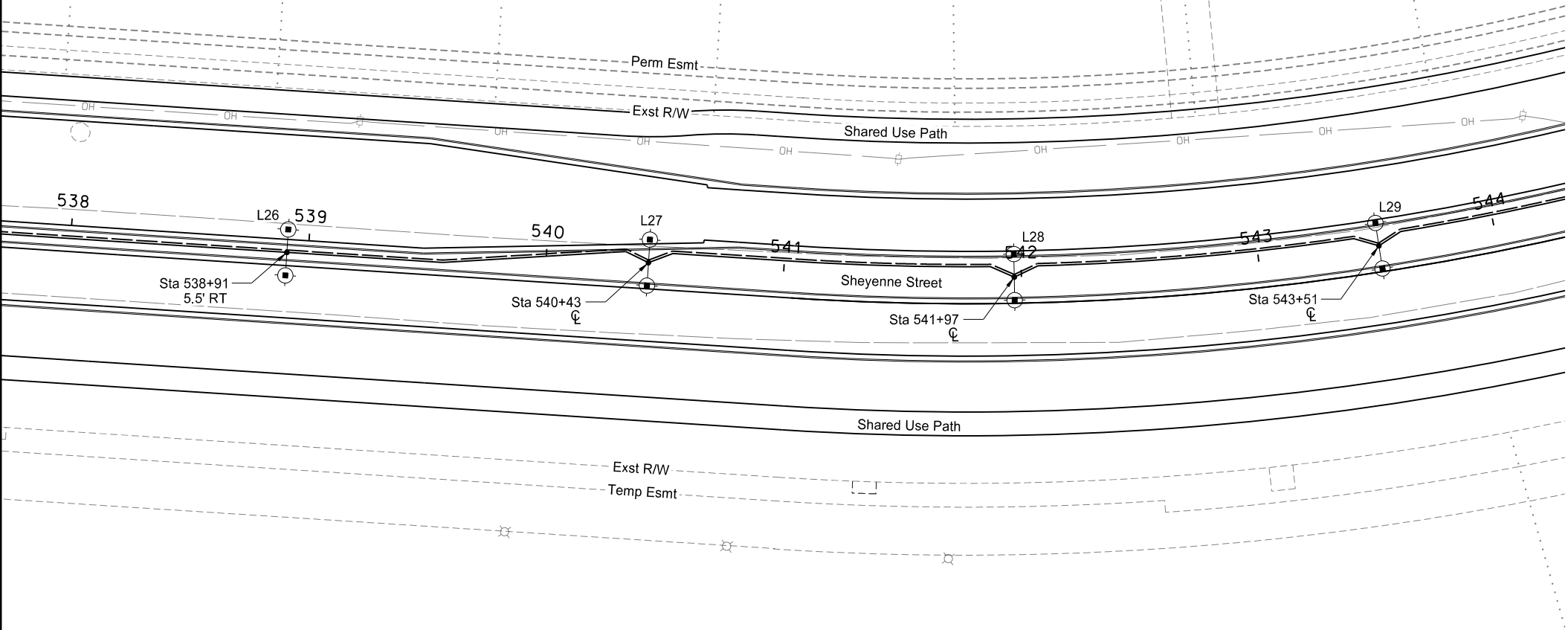
LIGHTING CABLE & CONDUIT SCHEDULE					
ITEM	STATION	OFFSET	CONDUIT RUN		UNDERGROUND CONDUCTOR RUN
			TOTAL	SIZE (IN)	
Light L14 to Light L15	Sta 532+10, 1.7' Lt to Sta 533+68, 5.5' Lt		160	2"	336 (2) No. 6 RHW/USE (lights) 336 (2) No. 6 RHW/USE (festoon) 168 (1) No. 6 THW (ground)
Light L15 to Light L17	Sta 533+68, 5.5' Lt to Sta 535+28, 5.5' Lt		160	2"	336 (2) No. 6 RHW/USE (lights) 336 (2) No. 6 RHW/USE (festoon) 168 (1) No. 6 THW (ground)
Light L17 to Pull Box #4	Sta 535+28, 5.5' Lt to Sta 535+28, 71.3' Lt		64	2"	142 (2) No. 6 RHW/USE (lights) 142 (2) No. 6 RHW/USE (festoon) 71 (1) No. 6 THW (ground)
Pull Box #4 to Feed Point N	Sta 535+28, 71.3' Lt to Sta 537+15, 65.7' Lt		182	2"	390 (2) No. 6 RHW/USE (lights) 390 (2) No. 6 RHW/USE (festoon) 195 (1) No. 6 THW (ground)
Feed Point N to Light L25	Sta 537+15, 65.7' Lt to Sta 537+33, 5.5' Rt		74	2"	176 (2) No. 6 RHW/USE (lights) 176 (2) No. 2 RHW/USE (festoon) 88 (1) No. 2 THW (ground)

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Sheyenne Street  
  
Lighting Tables  
  
Sta 532+00 to Sta 538+00 (PR17)

LIGHTING CABLE & CONDUIT SCHEDULE						
ITEM	STATION	OFFSET	CONDUIT RUN		UNDERGROUND CONDUCTOR RUN	
			TOTAL	SIZE (IN)	TOTAL	SIZE/TYPE
Light L25 to Light L26	Sta 537+33, 5.5' Rt to Sta 538+91, 5.5' Rt		158	2"	332	(2) No. 6 RHW/USE (lights) (2) No. 2 RHW/USE (festoon)
Light L26 to Light L27	Sta 538+91, 5.5' Rt to Sta 540+43, CL		153	2"	322	(2) No. 6 RHW/USE (lights) (2) No. 2 RHW/USE (festoon)
Light L27 to Light L28	Sta 540+43, CL to Sta 541+97, CL		156	2"	328	(2) No. 6 RHW/USE (lights) (2) No. 2 RHW/USE (festoon)
Light L28 to Light L29	Sta 541+97, CL to Sta 543+51, CL		155	2"	326	(2) No. 6 RHW/USE (lights) (2) No. 2 RHW/USE (festoon)
Light L29 to Light L30	Sta 543+51, CL to Sta 545+06, CL		156	2"	328	(2) No. 6 RHW/USE (lights) (2) No. 2 RHW/USE (festoon)
					164	(1) No. 2 THW (ground)

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Legend

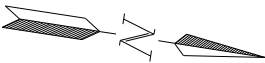
Light direction of luminaire optics and pole mast arm (if any)

Feed Point Cabinet

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LIGHT STANDARD SCHEDULE								
LIGHT NUMBER	TYPE	Circuit	Optics IES-Type	STANDARDS			REMARKS	
				TYPE	Pole Ht.	Mast Arm		Breakaway
L26	Detail EE. (2) - Decorative LED luminaires.	N2	III	Decorative	30'	Twin 8'	Yes	Install (2) Teardrop luminaires. Install light standard on concrete foundation. Luminaire operated at 240V. 120V Festoon (receptacle) on pole.
L27	Detail EE. (2) - Decorative LED luminaires.	N2	III	Decorative	30'	Twin 8'	Yes	Install (2) Teardrop luminaires. Install light standard on concrete foundation. Luminaire operated at 240V. 120V Festoon (receptacle) on pole.
L28	Detail EE. (2) - Decorative LED luminaires.	N2	III	Decorative	30'	Twin 8'	Yes	Install (2) Teardrop luminaires. Install light standard on concrete foundation. Luminaire operated at 240V. 120V Festoon (receptacle) on pole.
L29	Detail EE. (2) - Decorative LED luminaires.	N2	III	Decorative	30'	Twin 8'	Yes	Install (2) Teardrop luminaires. Install light standard on concrete foundation. Luminaire operated at 240V. 120V Festoon (receptacle) on pole.



Sheyenne Street

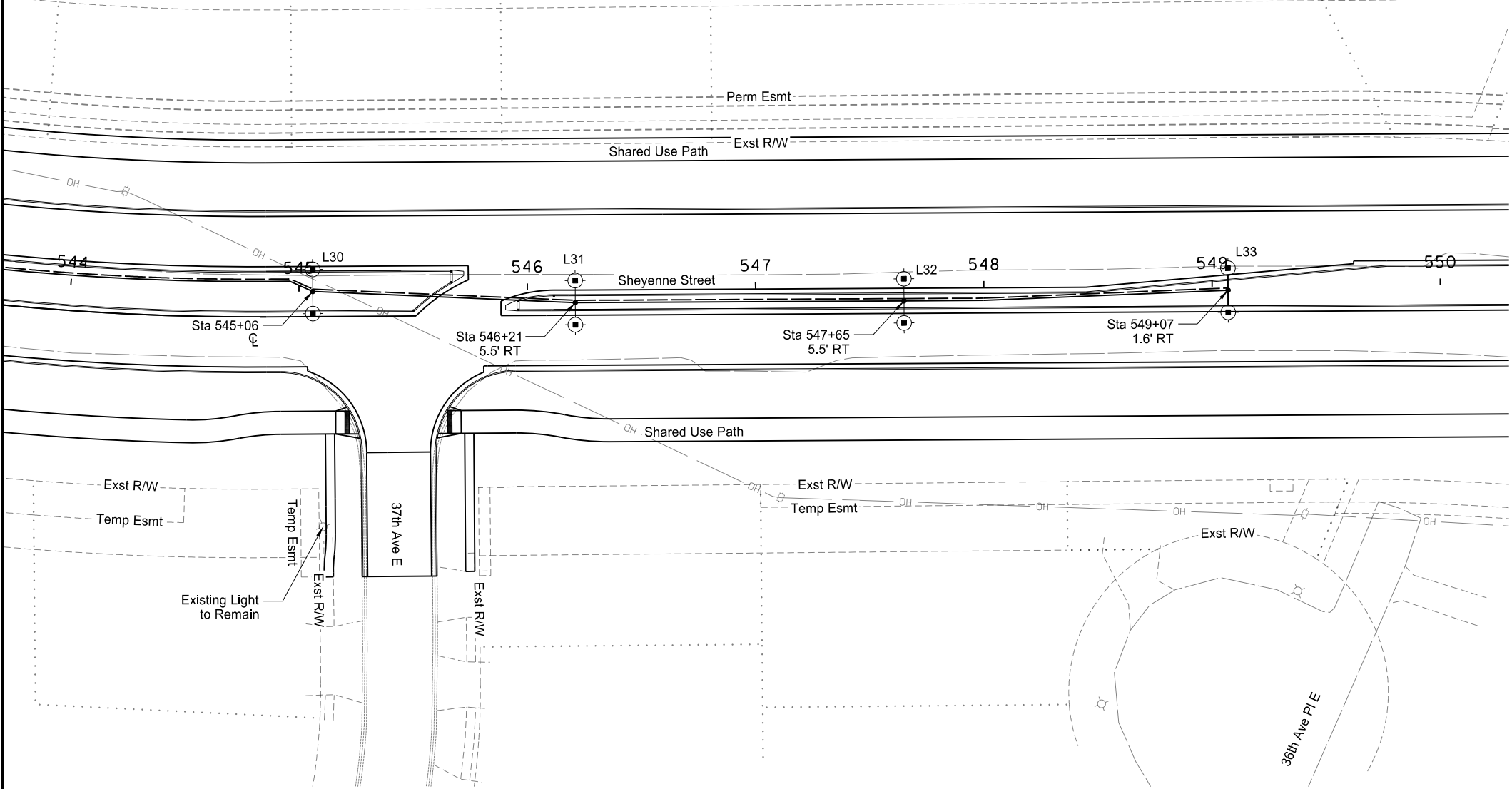
Lighting Layout & Tables

Sta 538+00 to Sta 544+00 (PR17)

LIGHTING CABLE & CONDUIT SCHEDULE						
ITEM	STATION	OFFSET	CONDUIT RUN		UNDERGROUND CONDUCTOR RUN	
			TOTAL	SIZE (IN)	TOTAL	SIZE/TYPE
Light L30 to Light L31	Sta 545+06, CL to Sta 546+21, 5.5' Rt		115	2"	246	(2) No. 6 RHW/USE (lights)
Light L31 to Light L32	Sta 546+21, 5.5' Rt to Sta 547+65, 5.5' Rt		144	2"	246	(2) No. 2 RHW/USE (festoon)
Light L32 to Light L33	Sta 547+65, 5.5' Rt to Sta 549+07, 1.6' Rt		107	2"	123	(1) No. 2 THW (ground)
					304	(2) No. 6 RHW/USE (lights)
					304	(2) No. 2 RHW/USE (festoon)
					152	(1) No. 2 THW (ground)
					230	(2) No. 6 RHW/USE (lights)
					230	(2) No. 2 RHW/USE (festoon)
					115	(1) No. 2 THW (ground)

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SU-8-992(040)041	140	9

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LIGHT NUMBER	TYPE	Circuit	Optics IES-Type	STANDARDS				REMARKS
				TYPE	Pole Ht.	Mast Arm	Breakaway	
L30	Detail EE. (2) - Decorative LED luminaires.	N2	III	Decorative	30'	Twin 8'	Yes	Install (2) Teardrop luminaires. Install light standard on concrete foundation. Luminaire operated at 240V. 120V Festoon (receptacle) on pole.
L31	Detail EE. (2) - Decorative LED luminaires.	N2	III	Decorative	30'	Twin 8'	Yes	Install (2) Teardrop luminaires. Install light standard on concrete foundation. Luminaire operated at 240V. 120V Festoon (receptacle) on pole.
L32	Detail EE. (2) - Decorative LED luminaires.	N2	III	Decorative	30'	Twin 8'	Yes	Install (2) Teardrop luminaires. Install light standard on concrete foundation. Luminaire operated at 240V. 120V Festoon (receptacle) on pole.
L33	Detail EE. (2) - Decorative LED luminaires.	N2	III	Decorative	30'	Twin 8'	Yes	Install (2) Teardrop luminaires. Install light standard on concrete foundation. Luminaire operated at 240V. 120V Festoon (receptacle) on pole.

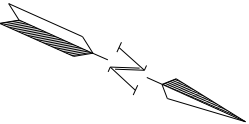
Legend

Light direction of luminaire optics and pole mast arm (if any)

Feed Point Cabinet

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Sheyenne Street

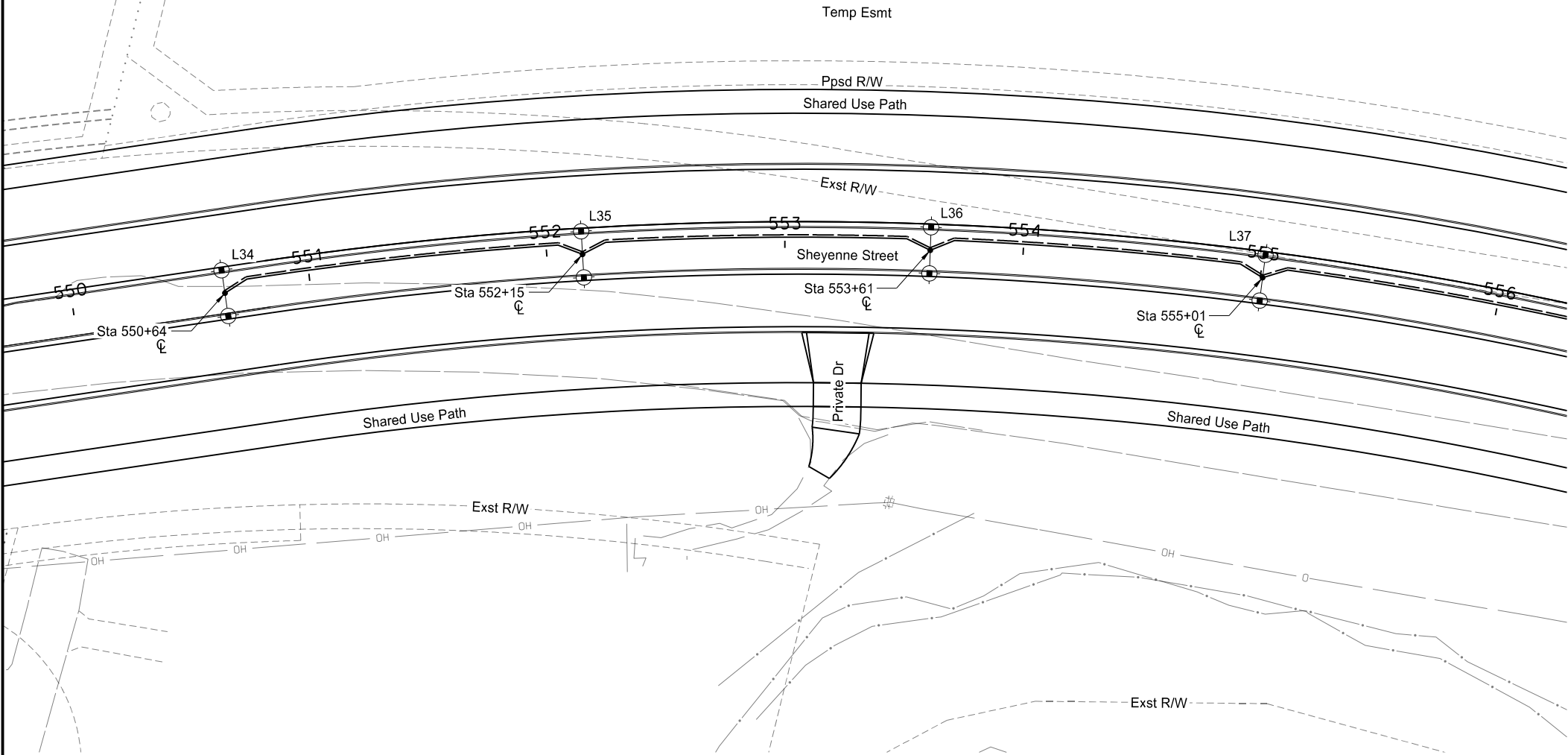
Lighting Layout & Tables

Sta 544+00 to Sta 550+00 (PR17)

LIGHTING CABLE & CONDUIT SCHEDULE						
ITEM	STATION	OFFSET	CONDUIT RUN		UNDERGROUND CONDUCTOR RUN	
			TOTAL	SIZE (IN)	TOTAL	SIZE/TYPE
Light L34 to Light L35	Sta 550+64, CL to Sta 552+15, CL		153	2"	322	(2) No. 6 RHW/USE (lights) (2) No. 2 RHW/USE (festoon) (1) No. 2 THW (ground)
Light L35 to Light L36	Sta 552+15, CL to Sta 553+61, CL		148	2"	312	(2) No. 6 RHW/USE (lights) (2) No. 2 RHW/USE (festoon) (1) No. 2 THW (ground)
Light L36 to Light L37	Sta 553+61, CL to Sta 555+01, CL		142	2"	300	(2) No. 6 RHW/USE (lights) (2) No. 2 RHW/USE (festoon) (1) No. 2 THW (ground)
Light L37 to Light L38	Sta 555+01, CL to Sta 556+49, CL		150	2"	316	(2) No. 6 RHW/USE (lights) (2) No. 2 RHW/USE (festoon) (1) No. 2 THW (ground)

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SU-8-992(040)041	140	10

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LIGHT STANDARD SCHEDULE								
LIGHT NUMBER	TYPE	Circuit	Optics IES-Type	STANDARDS				REMARKS
				TYPE	Pole Ht.	Mast Arm	Breakaway	
L34	Detail EE. (2) - Decorative LED luminaires.	K1	III	Decorative	30'	Twin 8'	Yes	Install (2) Teardrop luminaires. Install light standard on concrete foundation. Luminaire operated at 240V. 120V Festoon (receptacle) on pole.
L35	Detail EE. (2) - Decorative LED luminaires.	K1	III	Decorative	30'	Twin 8'	Yes	Install (2) Teardrop luminaires. Install light standard on concrete foundation. Luminaire operated at 240V. 120V Festoon (receptacle) on pole.
L36	Detail EE. (2) - Decorative LED luminaires.	K1	III	Decorative	30'	Twin 8'	Yes	Install (2) Teardrop luminaires. Install light standard on concrete foundation. Luminaire operated at 240V. 120V Festoon (receptacle) on pole.
L37	Detail EE. (2) - Decorative LED luminaires.	K1	III	Decorative	30'	Twin 8'	Yes	Install (2) Teardrop luminaires. Install light standard on concrete foundation. Luminaire operated at 240V. 120V Festoon (receptacle) on pole.

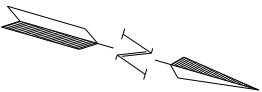
Legend

Light direction of luminaire optics and pole mast arm (if any)

Feed Point Cabinet

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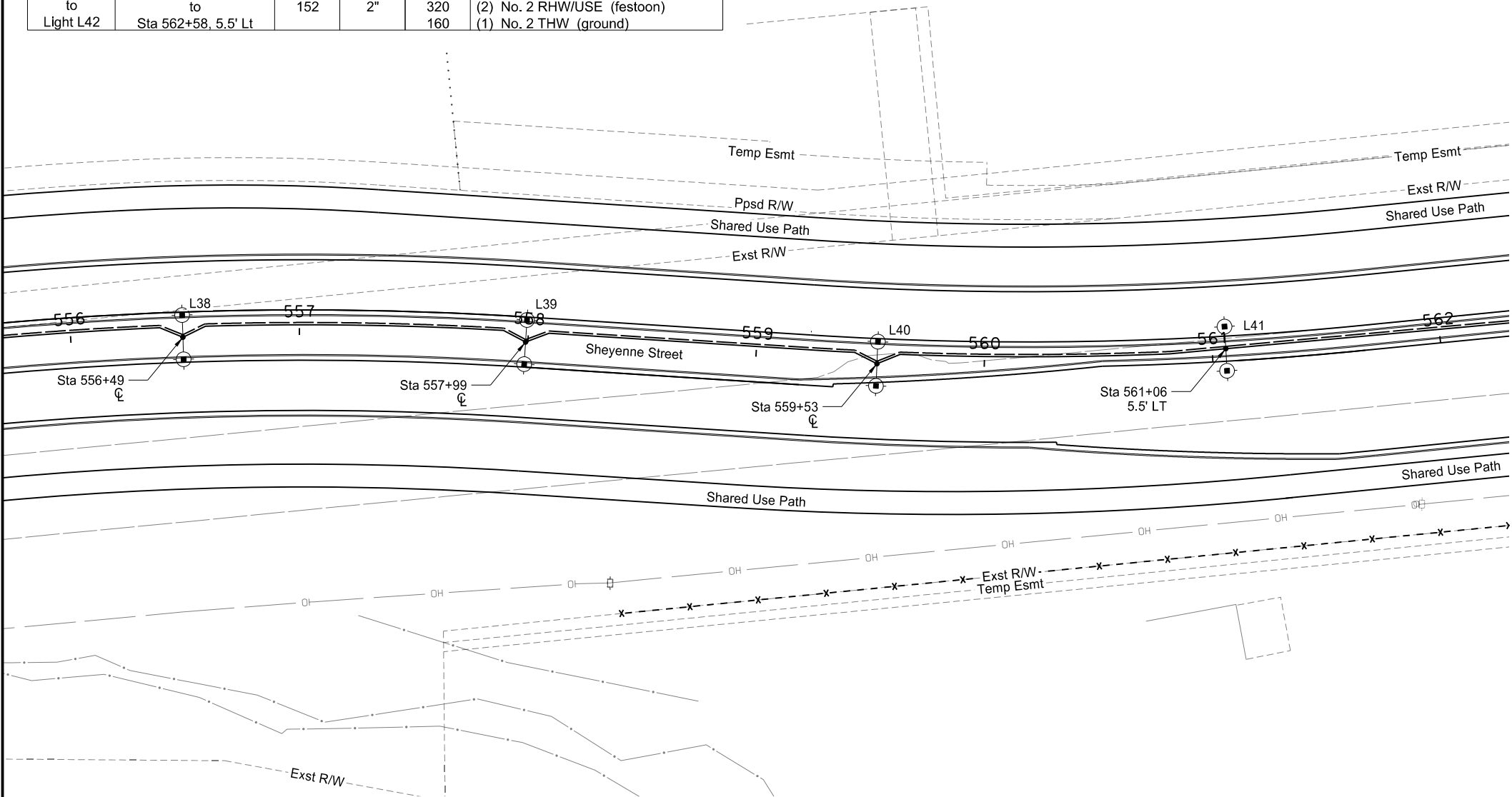
Sheyenne Street

Lighting Layout & Tables

Sta 550+00 to Sta 556+00 (PR17)

LIGHTING CABLE & CONDUIT SCHEDULE						
ITEM	STATION	OFFSET	CONDUIT RUN		UNDERGROUND CONDUCTOR RUN	
			TOTAL	SIZE (IN)	TOTAL	SIZE/TYPE
Light L38 to Light L39	Sta 556+49, CL to Sta 557+99, CL		152	2"	320	(2) No. 6 RHW/USE (lights)
					320	(2) No. 2 RHW/USE (festoon)
					160	(1) No. 2 THW (ground)
Light L39 to Light L40	Sta 557+99, CL to Sta 559+53, CL		156	2"	328	(2) No. 6 RHW/USE (lights)
					328	(2) No. 2 RHW/USE (festoon)
					164	(1) No. 2 THW (ground)
Light L40 to Light L41	Sta 559+53, CL to Sta 561+06, 5.5' Lt		154	2"	324	(2) No. 6 RHW/USE (lights)
					324	(2) No. 2 RHW/USE (festoon)
					162	(1) No. 2 THW (ground)
Light L41 to Light L42	Sta 561+06, 5.5' Lt to Sta 562+58, 5.5' Lt		152	2"	320	(2) No. 6 RHW/USE (lights)
					320	(2) No. 2 RHW/USE (festoon)
					160	(1) No. 2 THW (ground)

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LIGHT STANDARD SCHEDULE								
LIGHT NUMBER	TYPE	Circuit	Optics IES-Type	STANDARDS				REMARKS
				TYPE	Pole Ht.	Mast Arm	Breakaway	
L38	Detail EE. (2) - Decorative LED luminaires.	K1	III	Decorative	30'	Twin 8'	Yes	Install (2) Teardrop luminaires. Install light standard on concrete foundation. Luminaire operated at 240V. 120V Festoon (receptacle) on pole.
L39	Detail EE. (2) - Decorative LED luminaires.	K1	III	Decorative	30'	Twin 8'	Yes	Install (2) Teardrop luminaires. Install light standard on concrete foundation. Luminaire operated at 240V. 120V Festoon (receptacle) on pole.
L40	Detail EE. (2) - Decorative LED luminaires.	K1	III	Decorative	30'	Twin 8'	Yes	Install (2) Teardrop luminaires. Install light standard on concrete foundation. Luminaire operated at 240V. 120V Festoon (receptacle) on pole.
L41	Detail EE. (2) - Decorative LED luminaires.	K1	III	Decorative	30'	Twin 8'	Yes	Install (2) Teardrop luminaires. Install light standard on concrete foundation. Luminaire operated at 240V. 120V Festoon (receptacle) on pole.

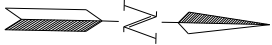
Legend

Light direction of luminaire optics and pole mast arm (if any)

Feed Point Cabinet

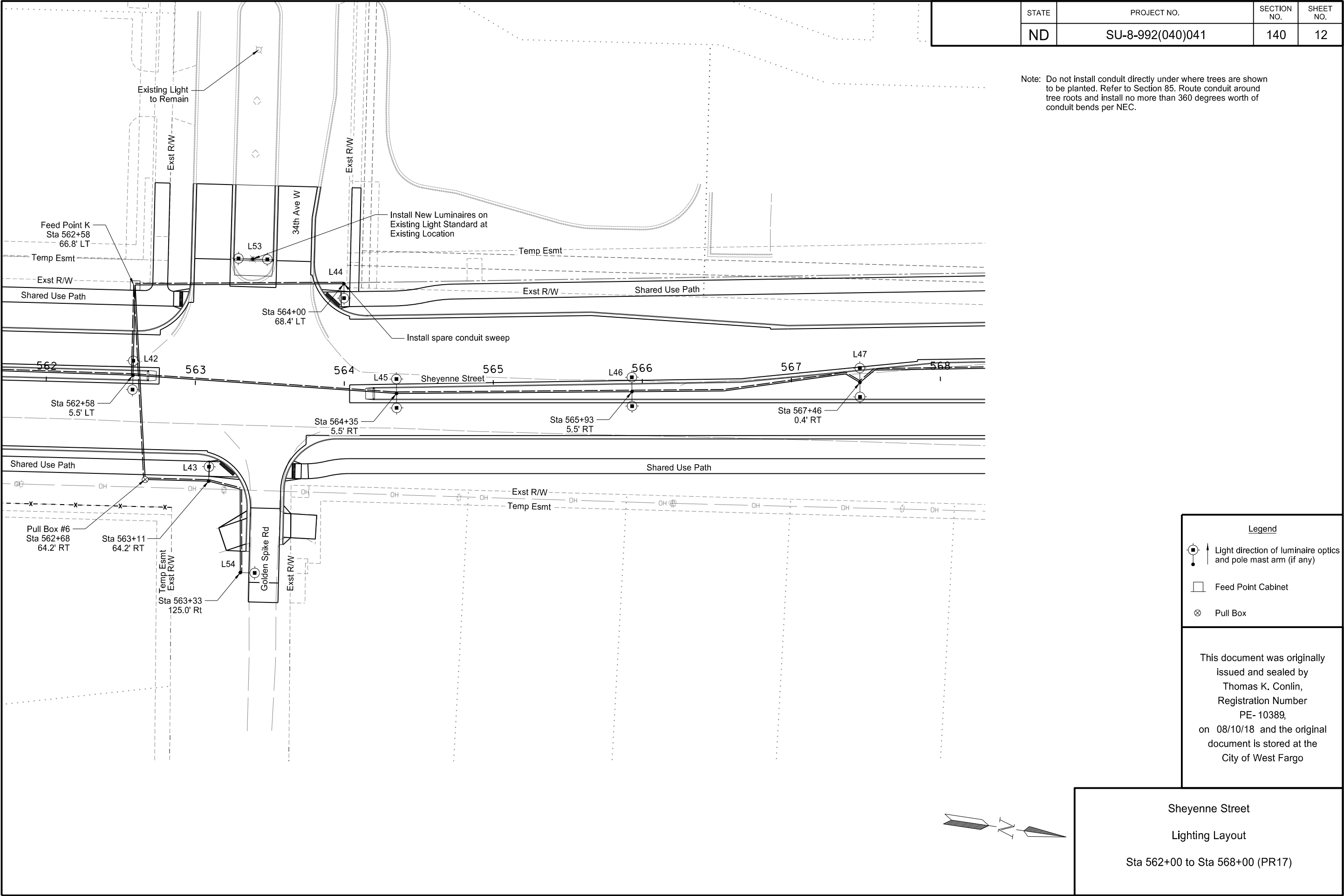
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Sheyenne Street  
Lighting Layout & Tables  
Sta 556+00 to Sta 562+00 (PR17)





LIGHTING CABLE & CONDUIT SCHEDULE						
ITEM	STATION	OFFSET	CONDUIT RUN		UNDERGROUND CONDUCTOR RUN	
			TOTAL	SIZE (IN)	TOTAL	SIZE/TYPE
Feed Point K	Sta 562+58, 66.8' Lt				150	(2) No. 6 RHW/USE (lights - K2)
to	to		61	2"	150	(2) No. 6 RHW/USE (festoon - K2)
					150	(2) No. 6 RHW/USE (lights - K1)
Light L42	Sta 562+58, 5.5' Lt				150	(2) No. 2 RHW/USE (festoon - K1)
					75	(1) No. 2 THW (ground)
Light L42	Sta 562+58, 5.5' Lt		177	2"	370	(2) No. 6 RHW/USE (lights)
to	to				370	(2) No. 6 RHW/USE (festoon)
Light L45	Sta 564+35, 5.5' Rt				185	(1) No. 6 THW (ground)
Light L45	Sta 564+35, 5.5' Rt		158	2"	332	(2) No. 6 RHW/USE (lights)
to	to				332	(2) No. 6 RHW/USE (festoon)
Light L46	Sta 565+93, 5.5' Rt				166	(1) No. 6 THW (ground)
Light L46	Sta 565+93, 5.5' Rt		155	2"	326	(2) No. 6 RHW/USE (lights)
to	to				326	(2) No. 6 RHW/USE (festoon)
Light L47	Sta 567+46, 0.4' Rt				163	(1) No. 6 THW (ground)
Feed Point K	Sta 562+58, 66.8' Lt		129	2"	284	(2) No. 10 RHW/USE (lights)
to	to				284	(2) No. 10 RHW/USE (festoon)
Pull Box #6	Sta 562+68, 64.2' Rt				142	(1) No. 10 THW (ground)
Pull Box #6	Sta 562+68, 64.2' Rt		41	2"	96	(2) No. 10 RHW/USE (lights)
to	to				96	(2) No. 10 RHW/USE (festoon)
Light L43	Sta 563+11, 64.2' Rt				48	(1) No. 10 THW (ground)
Light L43	Sta 563+11, 64.2' Rt		78	2"	172	(2) No. 10 RHW/USE (lights)
to	to				86	(1) No. 10 THW (ground)
Light L54	Sta 563+33, 125.0' Rt					
Feed Point K	Sta 562+58, 66.8' Lt		141	2"	310	(2) No. 10 RHW/USE (lights)
to	to				310	(2) No. 10 RHW/USE (festoon)
Light L44	Sta 564+00, 68.4' Lt				155	(1) No. 10 THW (ground)

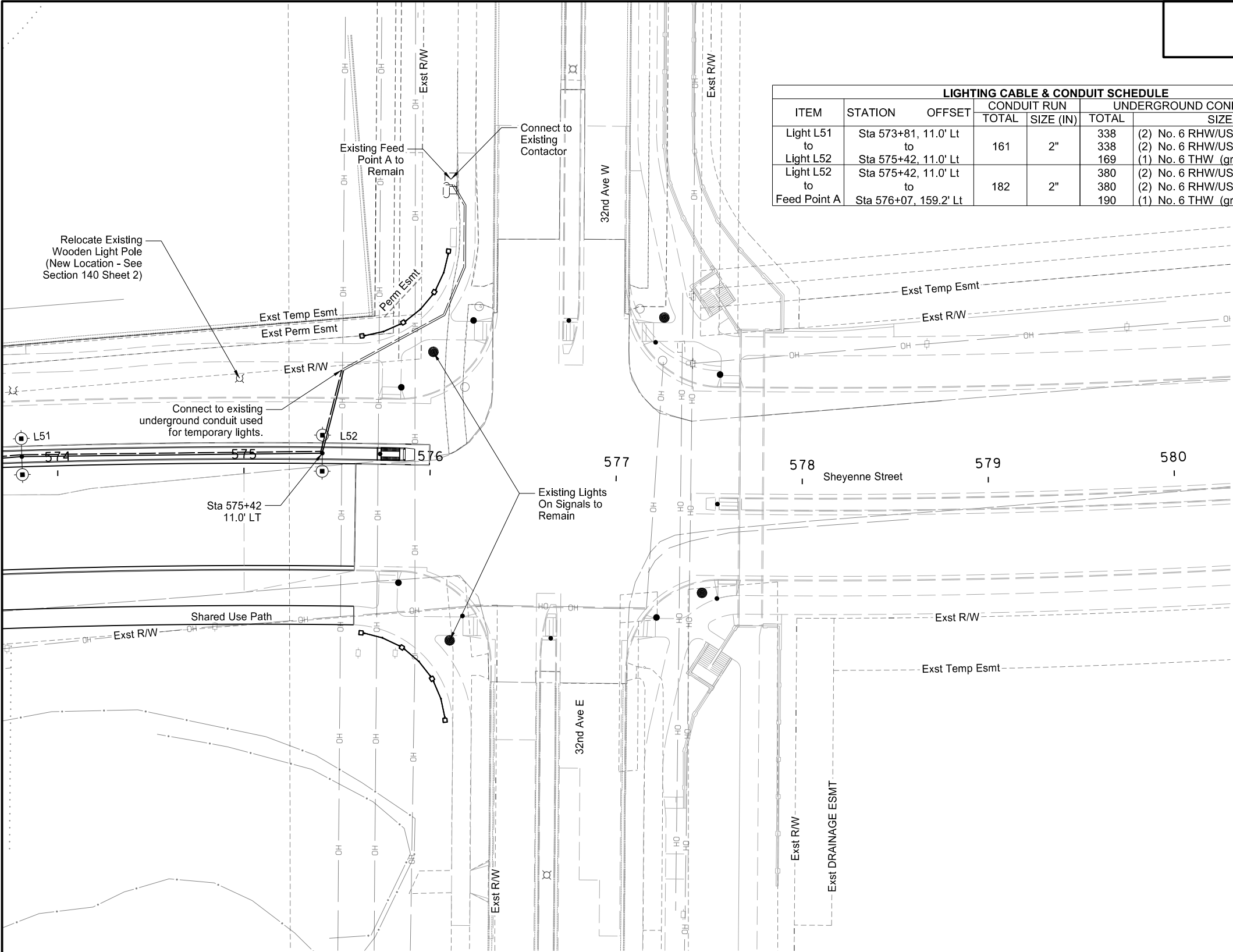
LIGHT STANDARD SCHEDULE								
LIGHT NUMBER	TYPE	Circuit	Optics IES-Type	STANDARDS				REMARKS
				TYPE	Pole Ht.	Mast Arm	Breakaway	
L42	Detail EE. (2) - Decorative LED luminaires.	K2	III	Decorative	30'	Twin 8'	Yes	Install (2) Teardrop luminalres. Install light standard on concrete foundation. Luminaire operated at 240V. 120V Festoon (receptacle) on pole.
L43	Detail AA. (1) - Decorative LED luminaire.	K4	III	Decorative	30'	8'	Yes	Install (1) Teardrop luminaire. Install light standard on concrete foundation. Luminaire operated at 240V. 120V Festoon (receptacle) on pole.
L44	Detail AA. (1) - Decorative LED luminaire.	K3	III	Decorative	30'	8'	Yes	Install (1) Teardrop luminaire. Install light standard on concrete foundation. Luminaire operated at 240V. 120V Festoon (receptacle) on pole.
L45	Detail EE. (2) - Decorative LED luminaires.	K2	III	Decorative	30'	Twin 8'	Yes	Install (2) Teardrop luminaires. Install light standard on concrete foundation. Luminaire operated at 240V. 120V Festoon (receptacle) on pole.
L46	Detail EE. (2) - Decorative LED luminaires.	K2	III	Decorative	30'	Twin 8'	Yes	Install (2) Teardrop luminaires. Install light standard on concrete foundation. Luminaire operated at 240V. 120V Festoon (receptacle) on pole.
L47	Detail EE. (2) - Decorative LED luminaires.	K2	III	Decorative	30'	Twin 8'	Yes	Install (2) Teardrop luminaires. Install light standard on concrete foundation. Luminaire operated at 240V. 120V Festoon (receptacle) on pole.
L53	Existing Pole (see Detail NN) with New LED Luminaires	Existing	-	Existing Decorative Post-Top	16'	Twin 1.5'	-	Existing light standard and concrete foundation to remain. Replace existing lumianires with new LED type CC post-top luminaires (quantity 2). Reuse existing wiring.
L54	Detail CC. (1) - Decorative LED luminaire.	K4	III	Decorative	14'	none	No	Install (1) Post-Top luminaire. Install light standard on concrete foundation. Luminaire operated at 240V. No festoon.

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Sheyenne Street  
  
Lighting Tables  
  
Sta 562+00 to Sta 568+00 (PR17)



LIGHTING CABLE & CONDUIT SCHEDULE						
ITEM	STATION	OFFSET	CONDUIT RUN		UNDERGROUND CONDUCTOR RUN	
			TOTAL	SIZE (IN)	TOTAL	SIZE/TYPE
Light L51 to Light L52	Sta 573+81, 11.0' Lt to Sta 575+42, 11.0' Lt		161	2"	338	(2) No. 6 RHW/USE (lights)
					338	(2) No. 6 RHW/USE (festoon)
Light L52 to Feed Point A	Sta 575+42, 11.0' Lt to Sta 576+07, 159.2' Lt		182	2"	169	(1) No. 6 THW (ground)
					380	(2) No. 6 RHW/USE (lights)
					380	(2) No. 6 RHW/USE (festoon)
					190	(1) No. 6 THW (ground)



**Legend**

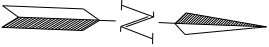
Light direction of luminaire optics and pole mast arm (if any)

Feed Point Cabinet

Pull Box

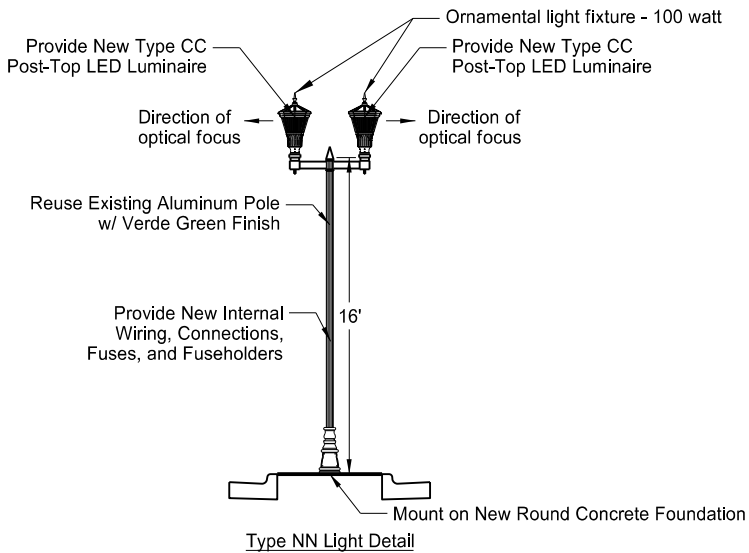
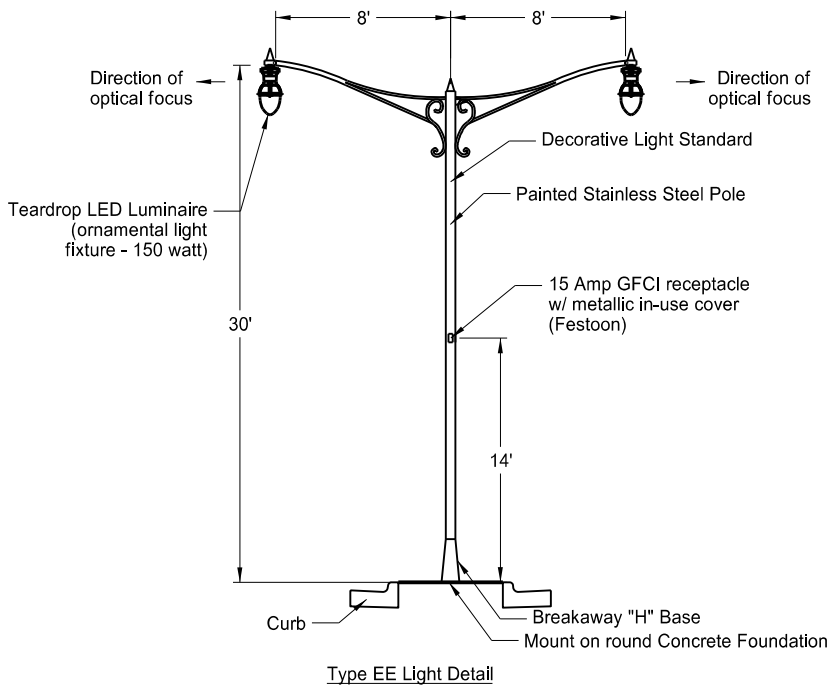
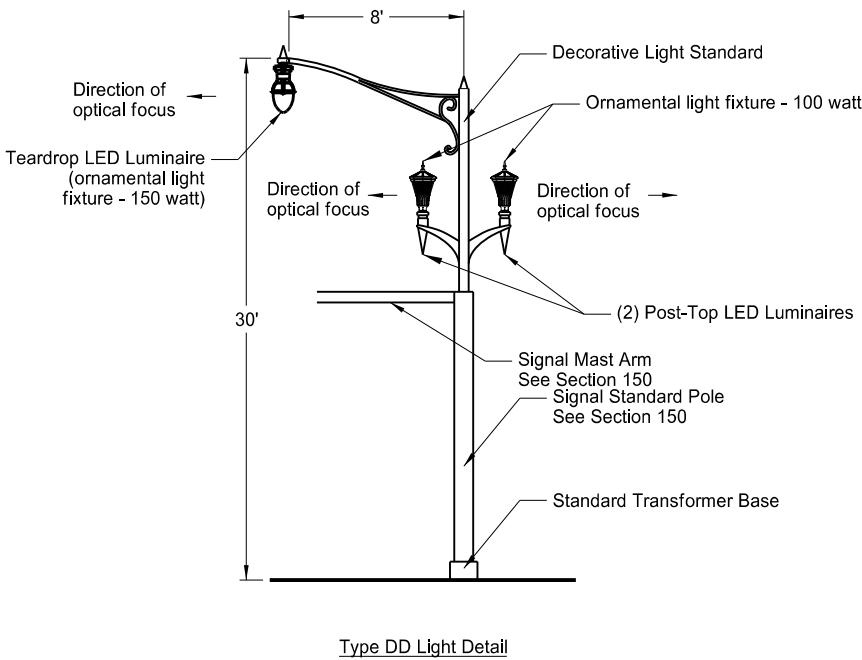
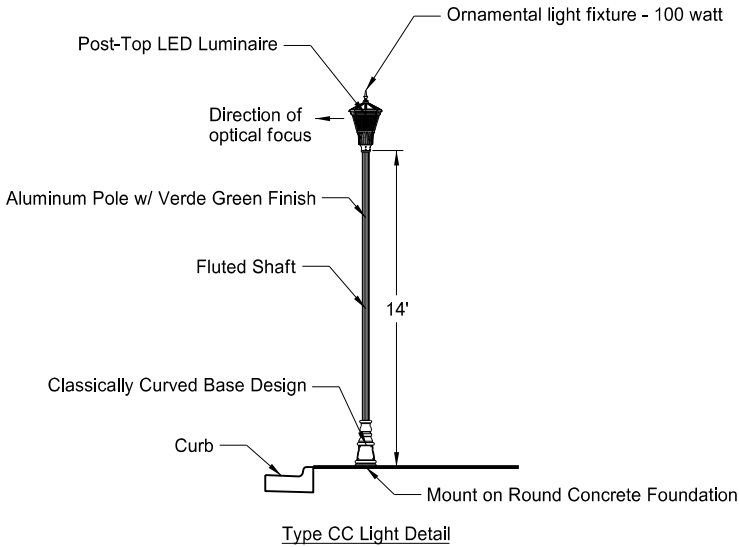
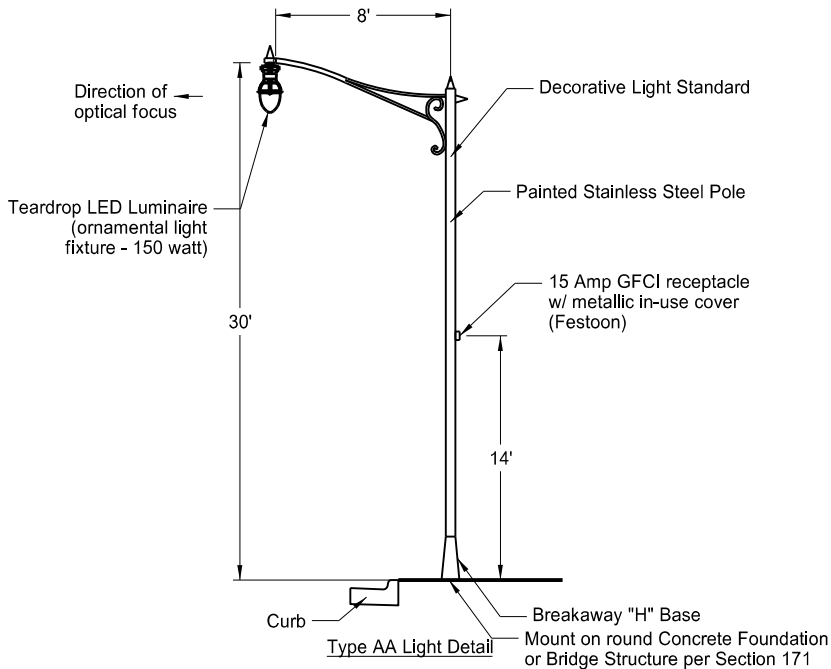
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LIGHT NUMBER	TYPE	Circuit	Optics IES-Type	STANDARDS				REMARKS
				TYPE	Pole Ht.	Mast Arm	Breakaway	
L52	Detail EE. (2) - Decorative LED luminaires.	A1	III	Decorative	30'	Twin 8'	Yes	Install (2) Teardrop luminaires. Install light standard on concrete foundation. Luminaire operated at 240V. 120V Festoon (receptacle) on pole.



Sheyenne Street  
Lighting Layout & Tables  
Sta 574+00 to Sta 580+00 (PR17)

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SU-8-992(040)041	140	16



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Sheyenne Street  
 Lighting Details

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SU-8-992(040)041	140	17

SPEC CODE BID ITEM

QTY UNIT

770 0003 LIGHTING SYSTEM A

SU-8-992(040)0411 EA

SU-8-992(040)041		Sheyenne Street
Item Description	Unit	Segment 3
CONCRETE FOUNDATION-HIGHWAY LIGHTING	EA	47
CONCRETE FOUNDATION-FEED POINT-TYPE B	EA	1
PULL BOX	EA	6
1.5IN DIAMETER RIGID CONDUIT	LF	1,260
2IN DIAMETER RIGID CONDUIT	LF	7,382
MULTIPLE UNDERGROUND CABLE 3NO6 STYLE USE	LF	915
UNDERGROUND CONDUCTOR NO2-TYPE RHW	LF	5,284
UNDERGROUND CONDUCTOR NO6-TYPE RHW	LF	19,696
UNDERGROUND CONDUCTOR NO10-TYPE RHW	LF	6,078
UNDERGROUND CONDUCTOR NO2-TYPE THW	LF	2,642
UNDERGROUND CONDUCTOR NO6-TYPE THW	LF	4,641
UNDERGROUND CONDUCTOR NO10-TYPE THW	LF	1,642
FEED POINT-TYPE IV-PAD MOUNTED	EA	1
ORNAMENTAL LT STD 14FT MT HT (CC)	EA	5
ORNAMENTAL LT STD 8FT MA 30FT MT HT (AA)	EA	2
ORNAMENTAL LT STD TWIN 8FT MA 30FT MT HT (EE)	EA	36
ORNAMENTAL LIGHT FIXTURE-100 WATT	EA	30
ORNAMENTAL LIGHT FIXTURE-150 WATT	EA	82
RELOCATE LIGHT STANDARD	EA	4
RELOCATE WOOD LIGHT POLE	EA	4
REMOVE CONCRETE FOUNDATION	EA	4
REMOVE FEED POINT	EA	1
LIGHTING SYSTEM A	EA	1
Items shown are for informational purposes, contractor shall provide all labor and equipment required for each lighting system to be fully operational as shown in the plans. Items shall be included in the corresponding price bid "LIGHTING SYSTEM A"		

Note: Refer to Section 150 for Feed Points P and N quantities.

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Sheyenne Street

Quantities

LIGHT STANDARD FOUNDATION SELECTION TABLE		
Description	Footing Depth "D" 24" & 30" Diameter	Footing Depth "D" 36" & 42" Diameter
<u>Light Standard</u> Type AA, EE Lights	8', 8'	7', 7'
<u>Light Standard</u> Type CC	6', 6'	6', 6'
<u>Light Standard</u> Type NN	7', 7'	7', 7'

NOTES FOR LIGHT STANDARD FOUNDATIONS:

1.

For Light Standard foundations, choose a diameter that is at a minimum the largest of the following scenarios:

- Anchor bolt cage circle diameter plus 12"

- Base plus 6"

- 24"

It is the Contractor's responsibility to select the appropriate foundation diameter from the Selection Table above and include the corresponding costs for the actual diameter in the corresponding unit price bid "CONCRETE FOUNDATION-HIGHWAY LIGHTING".
2.

Provide Class AAE-3 Portland Cement Concrete mixed and proportioned as specified in Section 802.
3.

Provide Grade 60 reinforcing steel.
4.

The Contractor may use temporary casing to maintain the opening prior to placement of concrete. The casing will be removed prior to curing of the concrete. If casing is used, it will be of sufficient strength to withstand handling and installation procedures. The Contractor will submit a casing material proposal to the Engineer for review two weeks prior to ordering casing material. Include all costs associated with the temporary casing in the corresponding unit price bid "CONCRETE FOUNDATION-HIGHWAY LIGHTING". Permanent casing of the foundation will not be used.
5.

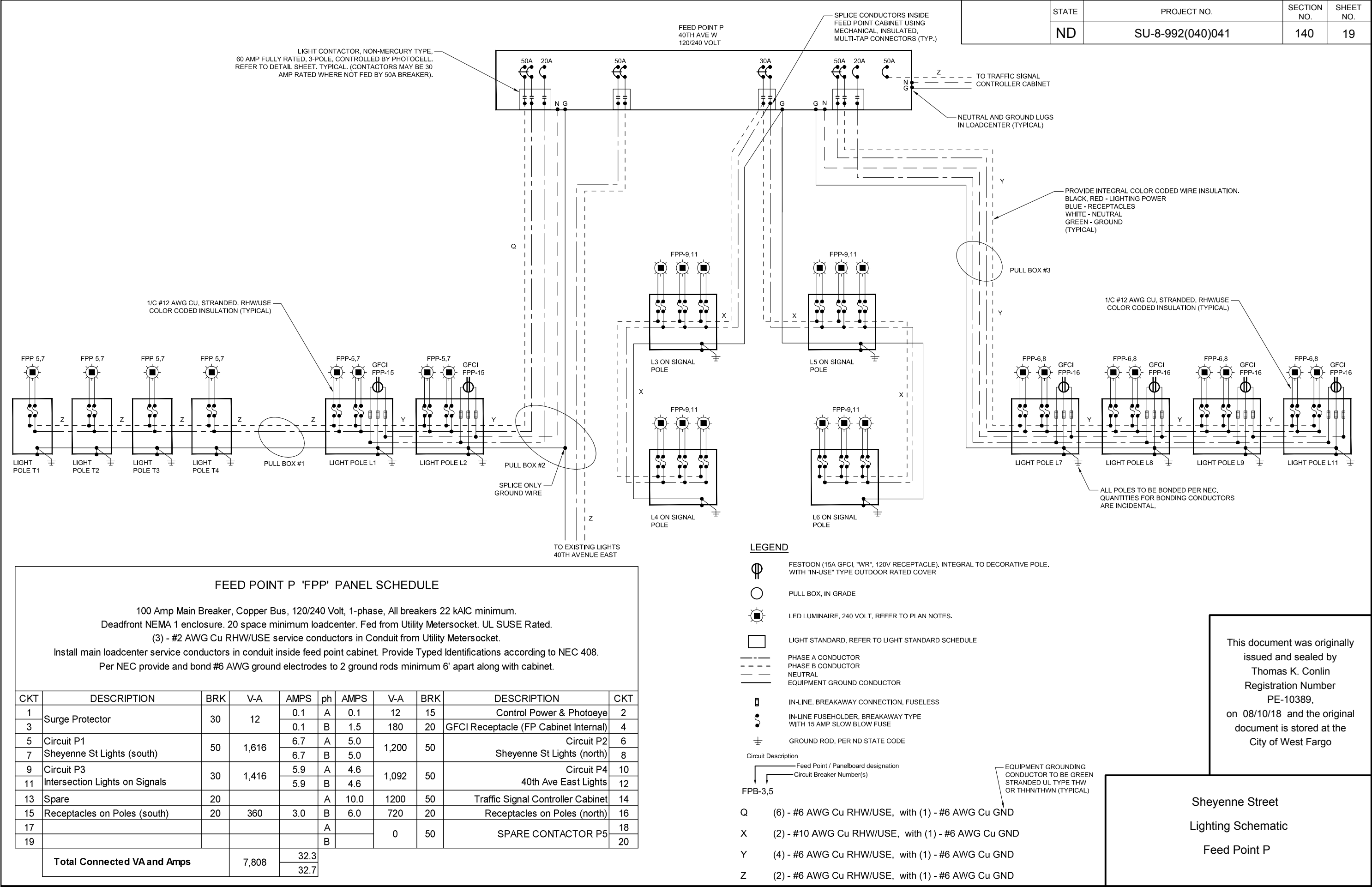
Include all costs associated with the construction of the foundation in the corresponding unit price bid "CONCRETE FOUNDATION-HIGHWAY LIGHTING". This includes but is not limited to excavation, concrete, reinforcing steel, anchor bolts and ground rod.
6.

See Standard Drawing D-770-1 for additional foundation information.
7.

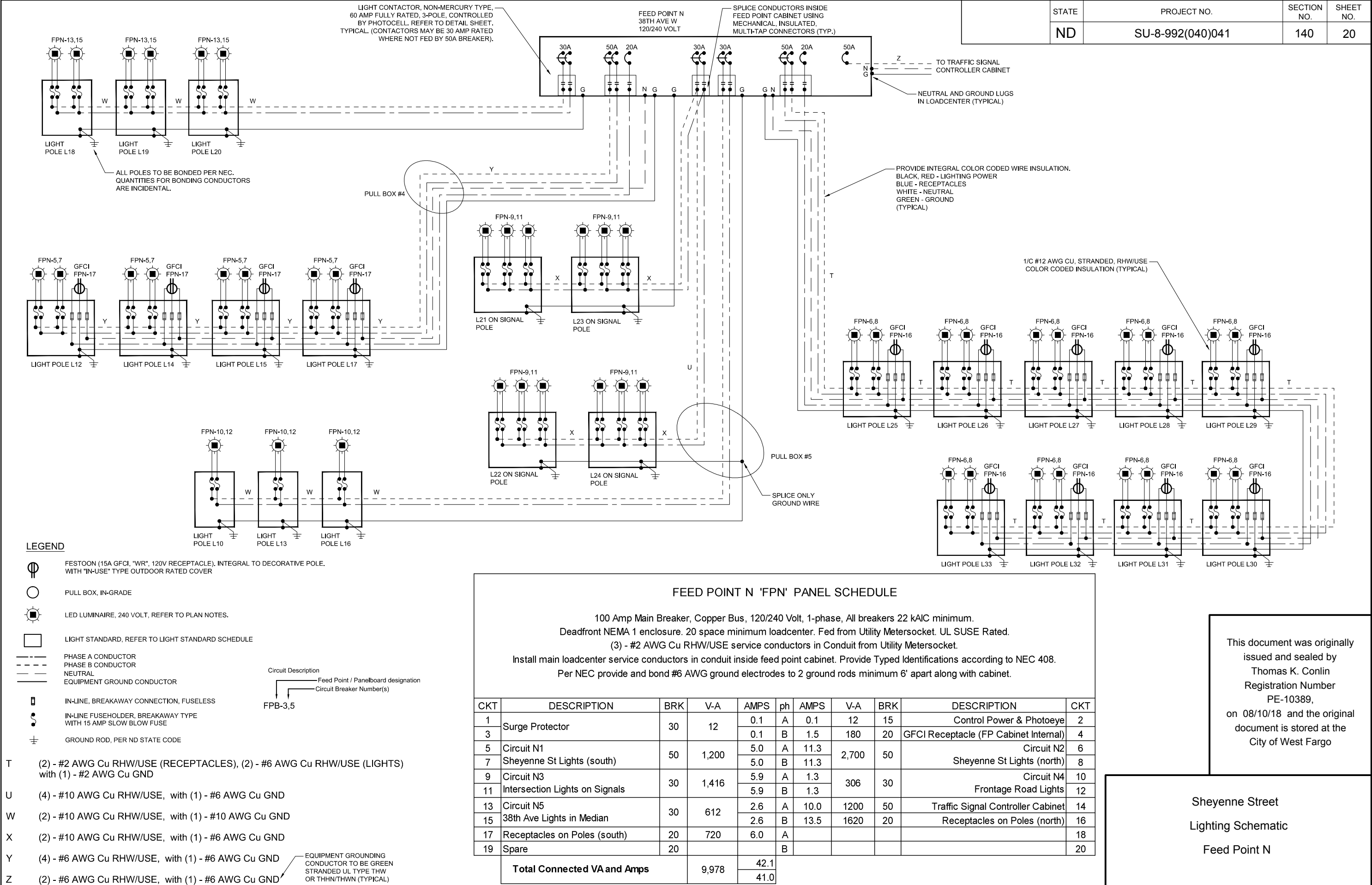
Light Standards will have a minimum of 4 anchor bolts.

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Sheyenne Street  
Light Concrete Foundations





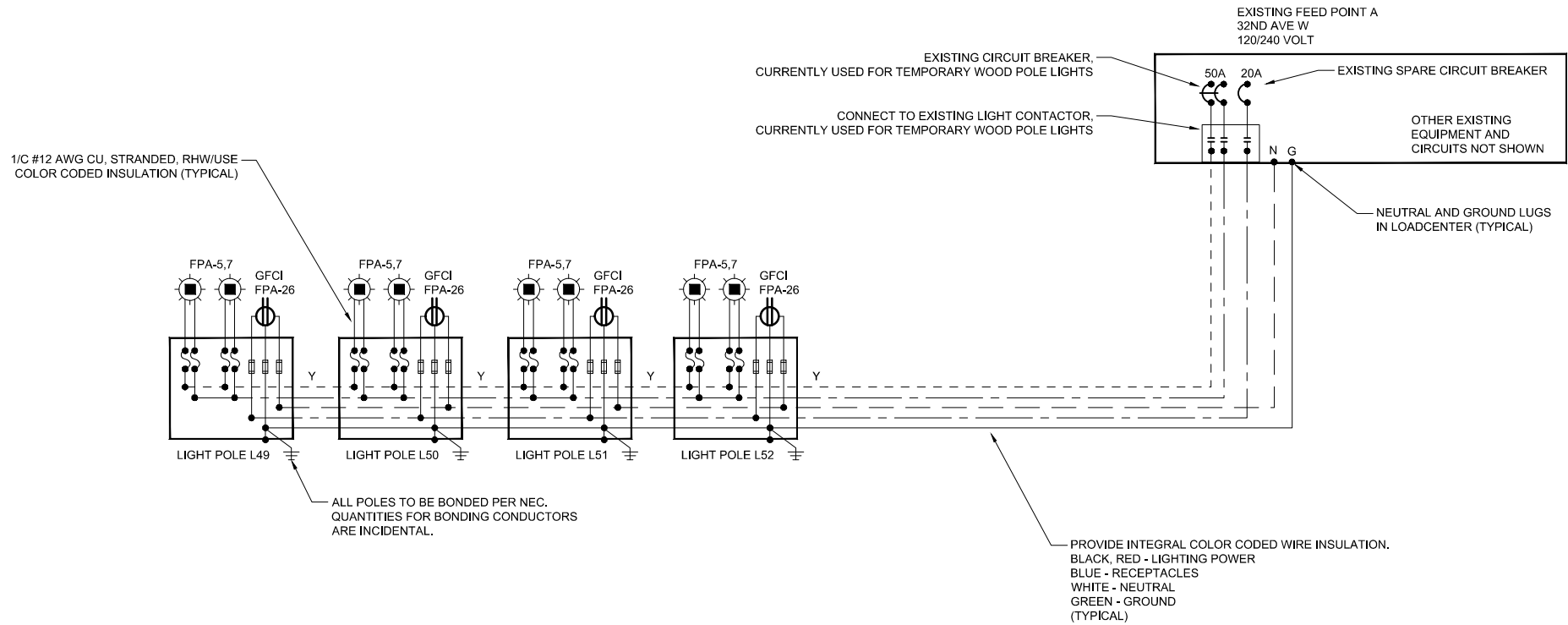


Lighting Schematic

Feed Point N

Aug 10, 2018 - 9:42am - C:\Users\stomconlin\appdata\local\temp\AcPublish\_6080\WiringSchematic-14416104.dwg





LEGEND

- FESTOON (15A GFCI, "WR", 120V RECEPTACLE). INTEGRAL TO DECORATIVE POLE.  
WITH "IN-USE" TYPE OUTDOOR RATED COVER
- PULL BOX, IN-GRADE
- LED LUMINAIRE, 240 VOLT, REFER TO PLAN NOTES.
- LIGHT STANDARD, REFER TO LIGHT STANDARD SCHEDULE
- PHASE A CONDUCTOR
- PHASE B CONDUCTOR
- NEUTRAL
- EQUIPMENT GROUND CONDUCTOR
- IN-LINE, BREAKAWAY CONNECTION, FUSELESS
- IN-LINE FUSEHOLDER, BREAKAWAY TYPE  
WITH 15 AMP SLOW BLOW FUSE
- GROUND ROD, PER ND STATE CODE

Circuit Description  
Feed Point / Panelboard designation  
Circuit Breaker Number(s)

FPB-3,5

EQUIPMENT GROUNDING  
CONDUCTOR TO BE GREEN  
STRANDED UL TYPE THW  
OR THHN/THWN (TYPICAL)

Y (4) - #6 AWG Cu RHW/USE, with (1) - #6 AWG Cu GND

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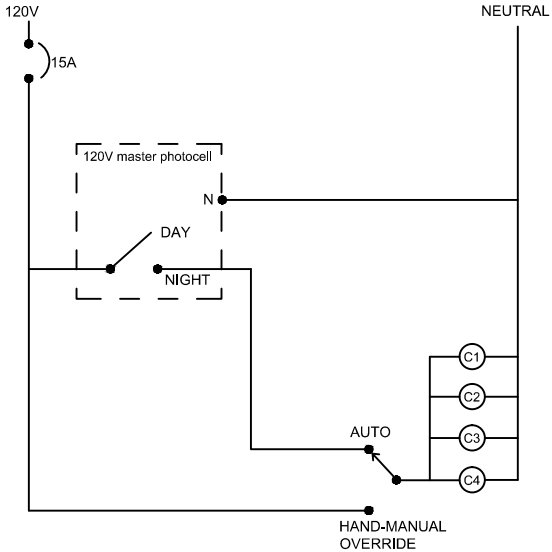
Sheyenne Street  
Lighting Schematic  
Existing Feed Point A

NOTES FOR FEED POINT CABINET DETAIL:

1. PROVIDE PRE-FABRICATED CABINET, FACTORY ASSEMBLED BY STATES MANUFACTURING, POVOLNY, MILBANK, OR EQUAL.
2. SEE PANEL SCHEDULES FOR SITE SPECIFIC REQUIREMENTS.
3. CONTACTORS TO BE NON-MERCURY TYPE. PROVIDE ABB ESB63 SERIES, WEG CWM32 SERIES, OR EQUAL.
4. PROVIDE A 20 AMP, "WR" TYPE, GFCI RECEPTACLE INTERNAL TO THE FEED POINT CABINET.
5. PROVIDE A SURGE PROTECTOR EQUAL TO ADVANCED PROTECTION TECHNOLOGIES SPDEE, UL 1449 LISTED, 50kA PER PHASE SURGE CURRENT RATING, 1000V L-L AND L-G, 200kA SCCR.
6. PROVIDE PROTECTION FROM ACCIDENTAL CONTACT (WHEN DOOR IS OPEN) TO LIVE PARTS USING A DEAD FRONT OR LEXAN CLEAR COVERS. RECEPTACLE, CIRCUIT BREAKERS, AND TEST SWITCH TO BE ACCESSIBLE WHEN DEADFRONT IS CLOSED.
7. GROUND AND BOND CABINET AS REQUIRED BY CODE (NEC 250). PROVIDE SUSE (SERVICE ENTRANCE RATED) CABINET AND/OR LOADCENTER.
8. PHOTOCELL TO BE INTERMATIC ELC SERIES OR EQUAL, 120 VOLT, 1000W, -40°F RATED, UL TYPE, 1.5 FOOT-CANDLES ON; 2.25 FOOT-CANDLES OFF; 5 SECOND DELAY. FAIL MODE ON. PROVIDE WITH LOCKING TYPE RECEPTACLE. FACE PHOTOCELL NORTH (EAST IS ALSO PERMITTED WHERE ALLOWED BY FIELD ENGINEER).
9. PROVIDE ARC FLASH LABELING PER NEC AND NFPA 70E.
10. PROVIDE EXTRA SPACE, RAIL MOUNTS, AND HEATER (IF REQUIRED) FOR DMX COLOR CHANGING CONTROL EQUIPMENT AND EXTRA CIRCUITS AS REQUIRED.

LIGHTING CONTROL WIRING DIAGRAM

NO SCALE



LIGHTING CONTROL REQUIREMENTS

- SEQUENCE OF OPERATIONS:
1. MASTER PHOTOCELL SHALL CLOSE AT DUSK AND OPEN AT DAWN. LIGHTS SHALL TURN ON AT NIGHT AND TURN OFF IN THE MORNING.
2. THE TEST SWITCH SHALL PROVIDE A MEANS FOR OVERRIDING THE PHOTOCELL CONTROL.

- DIAGRAM NOTES:
1. PROVIDE TYPED ETCHED LABELING FOR CONTACTORS, TEST SWITCH, AND CIRCUIT BREAKERS.
2. PROVIDE EQUIPMENT GROUNDING NOT SHOWN, PER NEC.
3. PROVIDE TERMINAL BLOCKS FOR CONTROL WIRING CONNECTIONS.
4. NEATLY TRAIN AND LACE ALL WIRING. PROVIDE COLOR CODED WIRE INSULATION MEETING NEC.
5. PROVIDE LAMINATED WIRING DIAGRAM IN FEED POINT INTERIOR. CLARIFY THE LOADS FOR EACH CONTACTOR.

LEGEND

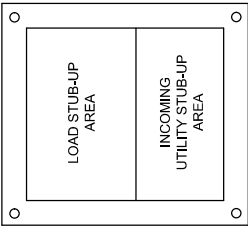
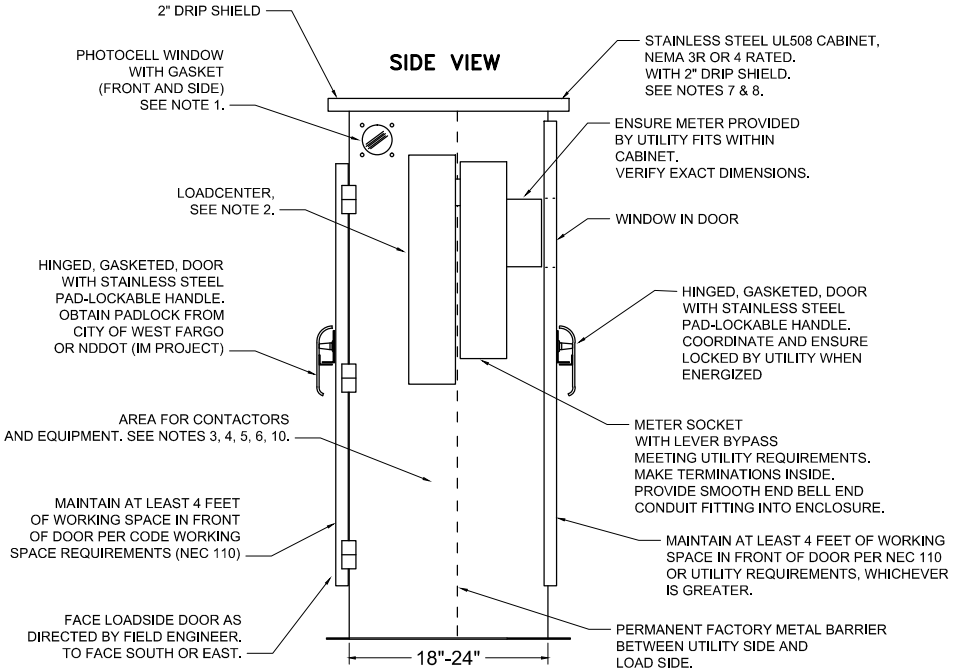
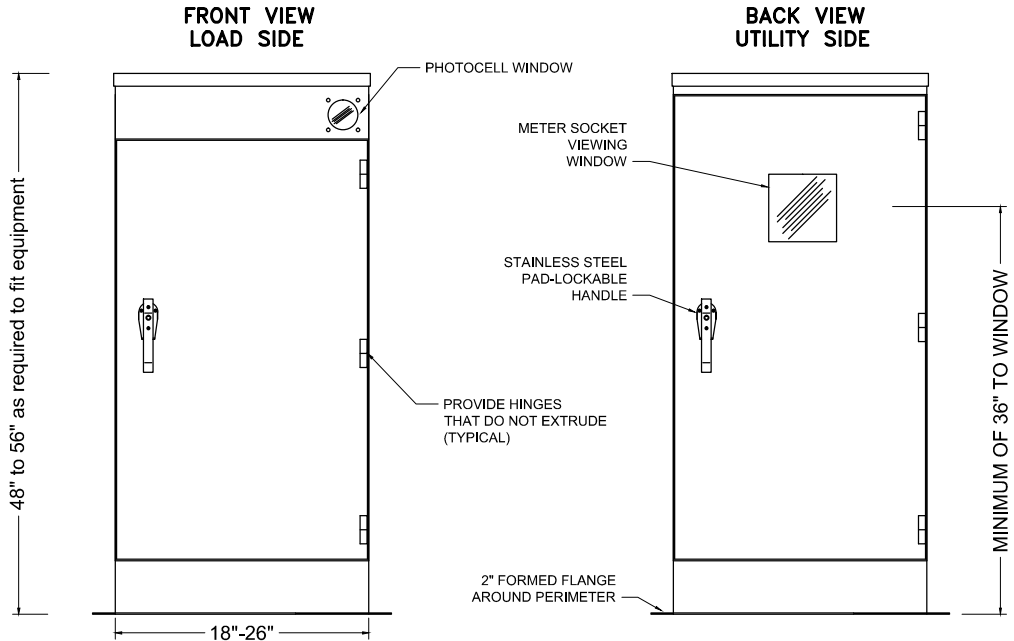
- Circuit breaker as shown on respective Panel Schedule.
- Test switch. 15 amp, 600V rated, 3-way toggle switch. Inside cabinet.

Normally open contactor. 120 volt, 60 Hz control coil. Each contactor unit to have 3 poles, 30 Amp rated (AC-3 / AC-7b utilization) for capacitive LED lighting in-rush load, 500 µF minimum. 400 Volt AC, NON-mercury type. UL Rated for -25°C to +55°C ambient operating temperatures. ABB Inc., ESB63 series, WEG CWM32, or approved equal. Provide WEG Group CWM65 series (60 Amp AC-3, 3-pole) or equal where 60 Amp contactors are required.

← TYPICAL, CONTINUED FOR ADDITIONAL CIRCUITS, CONTACTORS C3 AND C4 NOT SHOWN.

FEED POINT CABINET DETAIL

NO SCALE

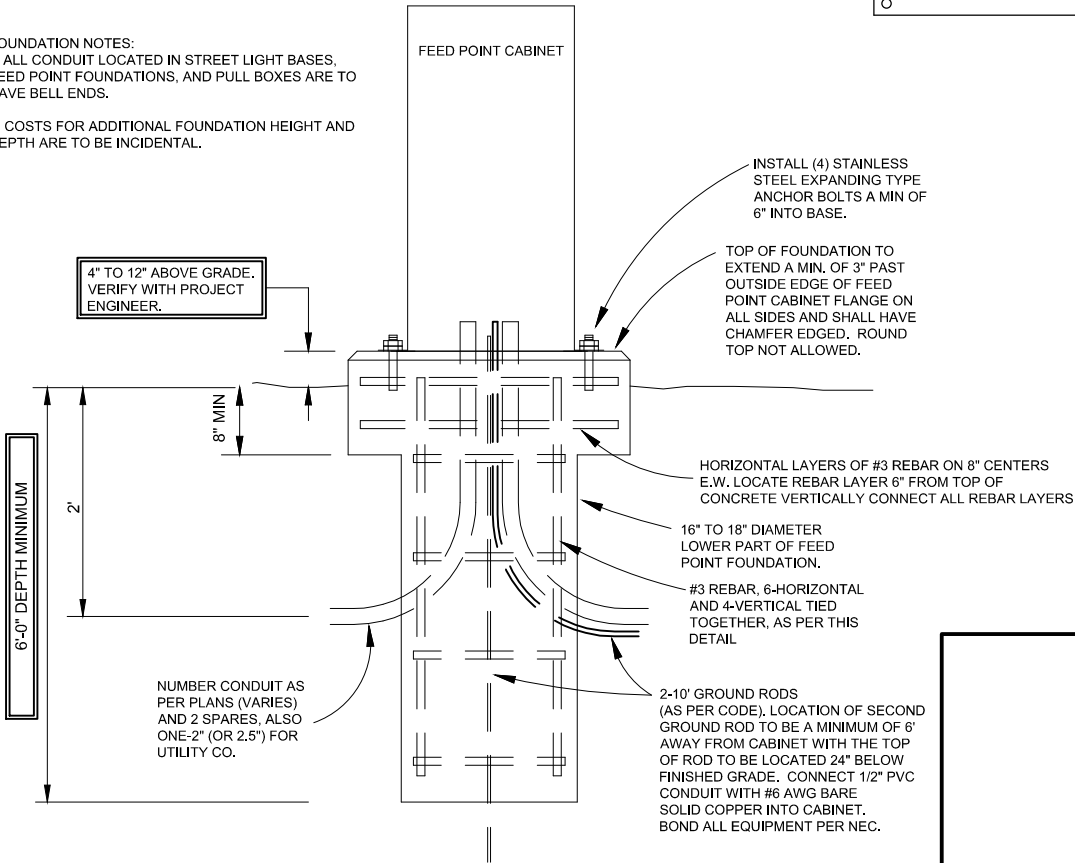


BASE VIEW

FEED POINT CABINET FOUNDATION DETAIL

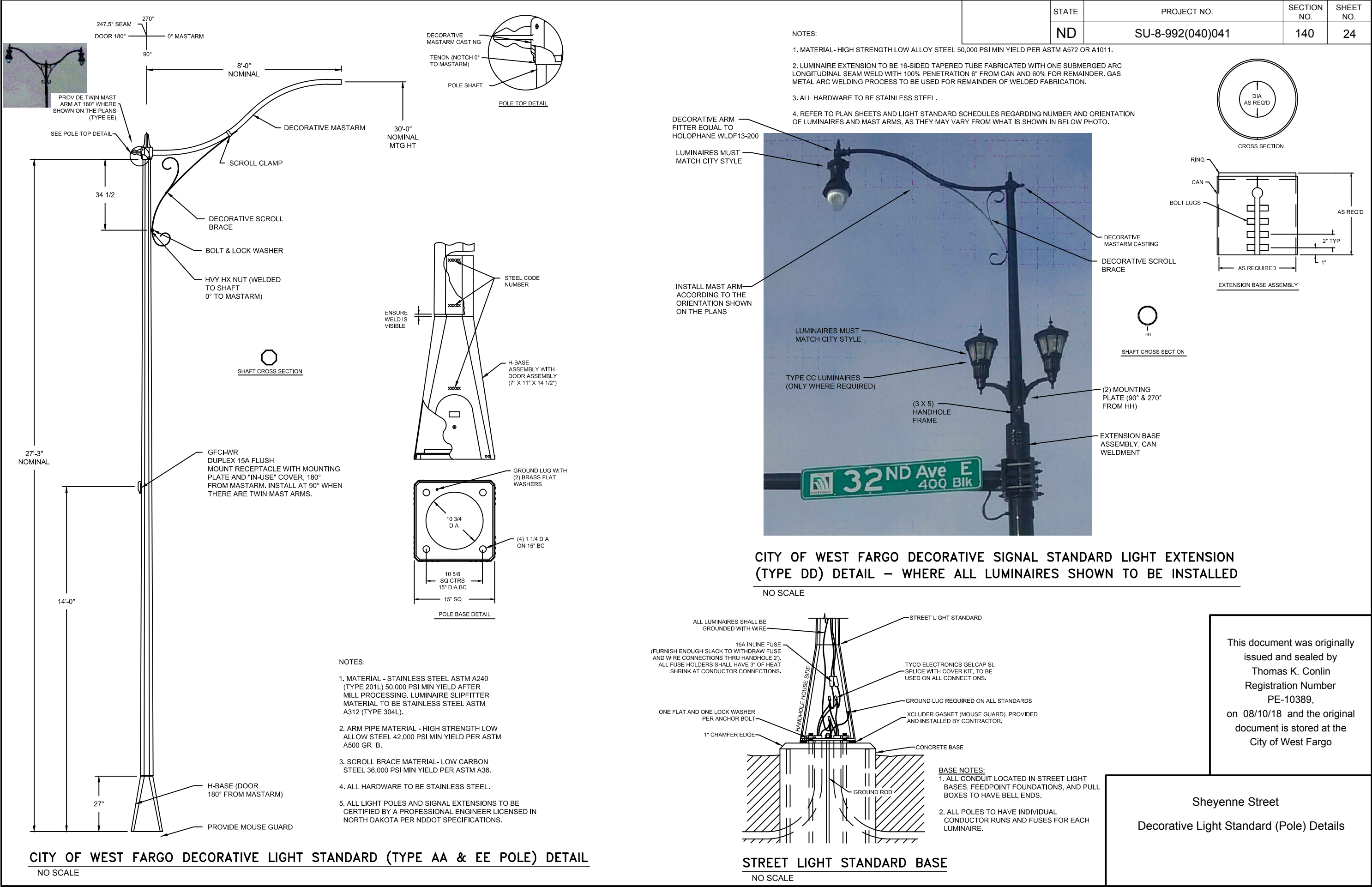
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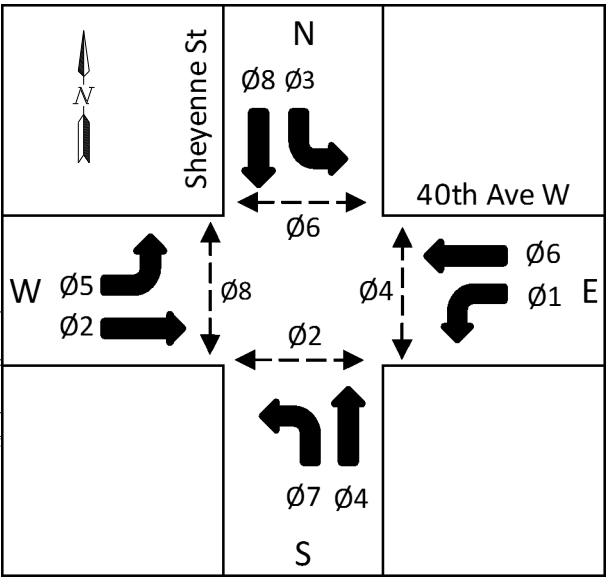
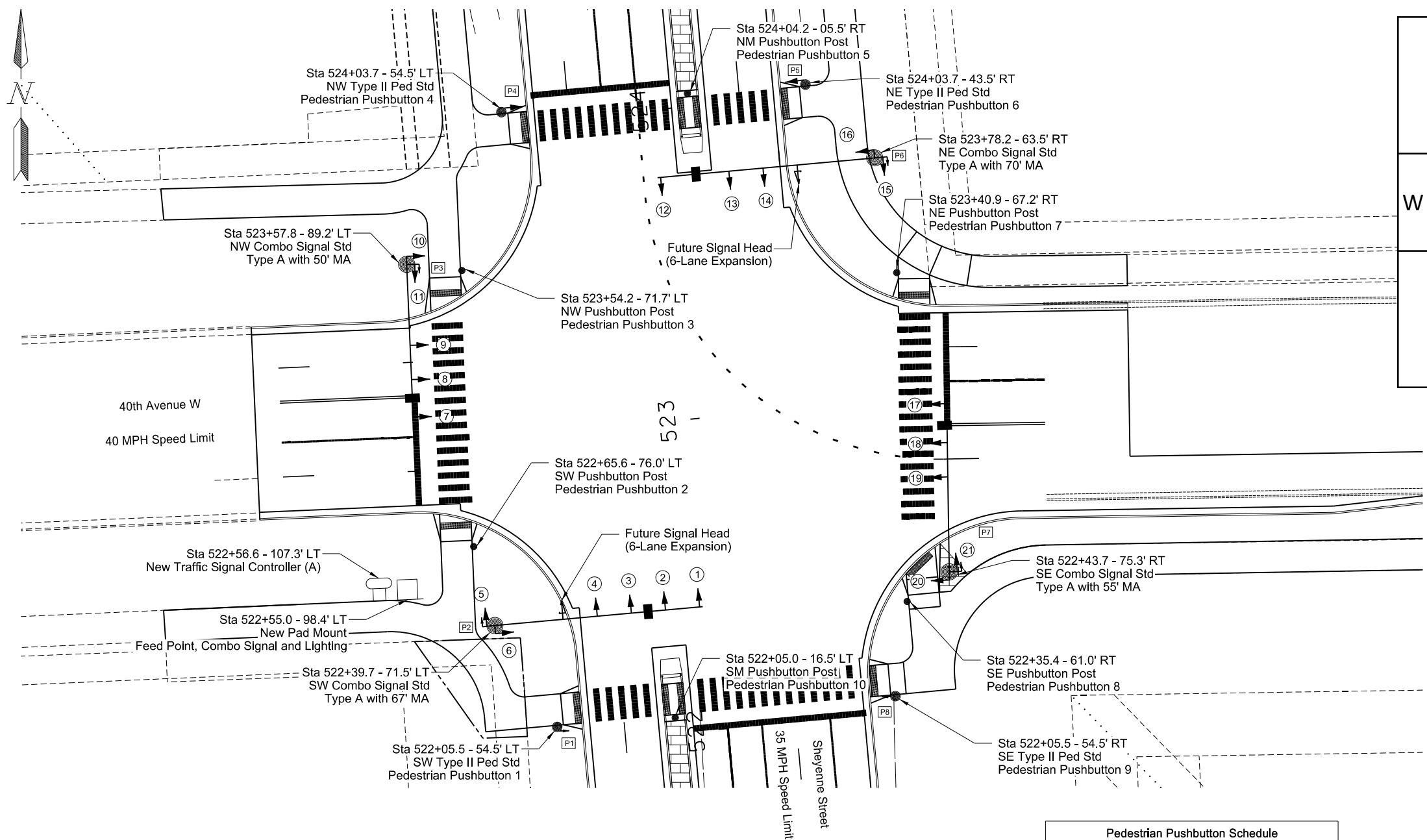
- FOUNDATION NOTES:
1. ALL CONDUIT LOCATED IN STREET LIGHT BASES, FEED POINT FOUNDATIONS, AND PULL BOXES ARE TO HAVE BELL ENDS.
2. COSTS FOR ADDITIONAL FOUNDATION HEIGHT AND DEPTH ARE TO BE INCIDENTAL.



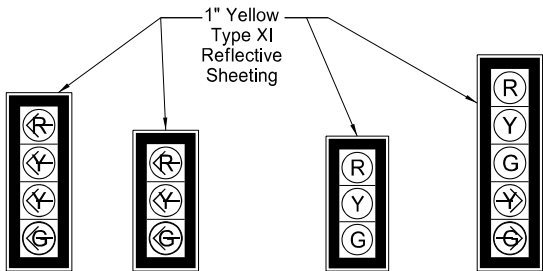
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Sheyenne Street  
Feed Point Details





(A) Face cabinet door South with hinges to the West.



Heads 6, 7, 16, 17  
Heads 1, 2, 11, 12, 21  
Heads 3, 4, 5, 8, 9, 10, 13, 14, 18, 19, 20  
Head 15

All Signal Heads:  
12" LED Lenses &  
5" Louvered Backplates



Countdown Pedestrian Heads  
P1, P2, P3, P4, P5, P6, P7, P8

Legend

- Signal Controller
- Signal Head
- Feed Point
- Video Detection Unit
- Signal Standard
- Pushbutton Post
- Pedestrian Head

Sign R10-3e



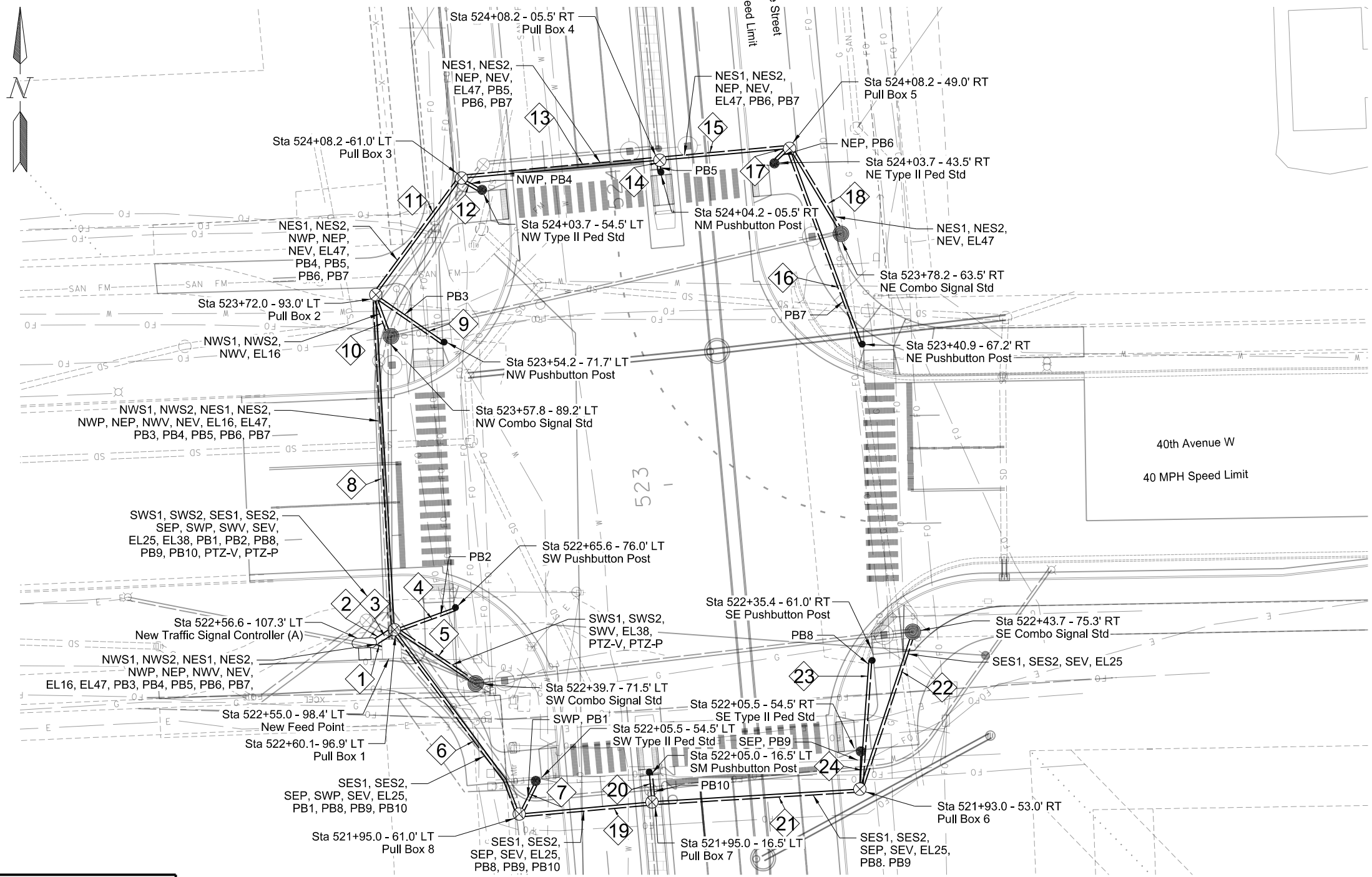
Pedestrian Pushbutton Schedule		
Location	Pushbutton & Sign Location on Pole	Direction of Arrow on Sign
Pushbutton 1	North	Left
Pushbutton 2	West	Left
Pushbutton 3	West	Right
Pushbutton 4	South	Right
Pushbutton 5	South	Double
Pushbutton 6	South	Left
Pushbutton 7	East	Left
Pushbutton 8	East	Right
Pushbutton 9	North	Right
Pushbutton 10	North	Double

Note:  
1. Stationing based on Chain PR17

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Sheyenne Street  
Signal Layout  
Traffic Signal System - Site 1  
40th Avenue W

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SU-8-992(040)041	150	2



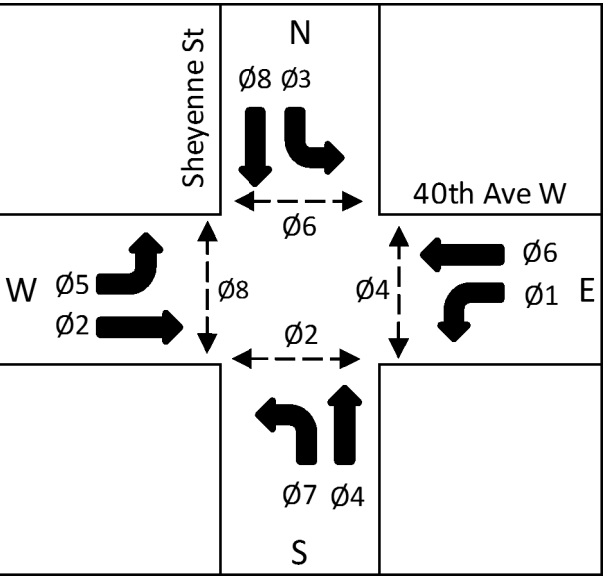
SWS1 = Southwest Combo Signal Standard 1  
SWS2 = Southwest Combo Signal Standard 2  
NWS1 = Northwest Combo Signal Standard 1  
NWS2 = Northwest Combo Signal Standard 2  
NES1 = Northeast Combo Signal Standard 1  
NES2 = Northeast Combo Signal Standard 2  
SES1 = Southeast Combo Signal Standard 1  
SES2 = Southeast Combo Signal Standard 2  
SEP = Southeast Type II Ped Signal Standard  
SWP = Southwest Type II Ped Signal Standard  
NEP = Northeast Type II Ped Signal Standard  
SWV = Southwest Video Detection Unit  
NWV = Northwest Video Detection Unit  
NEV = Northeast Video Detection Unit  
SEV = Southeast Video Detection Unit  
EL16 = Ø1 + Ø6 EVP Light  
EL25 = Ø2 + Ø5 EVP Light  
EL38 = Ø3 + Ø8 EVP Light  
EL47 = Ø4 + Ø7 EVP Light  
PB1 = Pedestrian Pushbutton 1  
PB2 = Pedestrian Pushbutton 2  
PB3 = Pedestrian Pushbutton 3  
PB4 = Pedestrian Pushbutton 4  
PB5 = Pedestrian Pushbutton 5  
PB6 = Pedestrian Pushbutton 6  
PB7 = Pedestrian Pushbutton 7  
PB8 = Pedestrian Pushbutton 8  
PB9 = Pedestrian Pushbutton 9  
PB10 = Pedestrian Pushbutton 10  
PTZ-P = Pan Tilt Zoom Power  
PTZ-V = Pan Tilt Zoom Video

- Legend
- New Signal Controller
  - Cable & Conduit Run
  - Pull Box
  - Feed Point
  - Signal Pole

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Sheyenne Street  
Conduit and Conductor Layout  
Traffic Signal System - Site 1  
40th Avenue W

Note:  
1. Stationing based on Chain PR17



DETECTION ZONE SCHEDULE						
Phase-Number	Distance From Stop Bar (feet)	Length (feet)	Presence/Counting	Passage/Counting	Queue/Counting	Locking Memory Non-Locking Memory
1-1	0	40	X			X
2-1	0	20		X		X
2-2	0	20		X		X
2-3	295	20	X		X	
2-4	295	20	X		X	
2-5	0	20	X			X
3-1	20	40	X			X
3-2	20	40	X			X
4-1	0	20		X		X
4-2	0	20		X		X
4-3	255	20	X	X		X
4-4	255	20	X	X		X
4-5	0	60	X			X
4-6	0	20	X			X
4-7	0	20	X			X
5-1	0	40	X			X
6-1	0	20		X		X
6-2	0	20		X		X
6-3	295	20	X	X		
6-4	295	20	X	X		
6-5	0	20	X			X
7-1	20	40	X			X
8-1	0	20		X		X
8-2	0	20		X		X
8-3	255	20	X	X		
8-4	255	20	X	X		
8-5	0	20	X			X

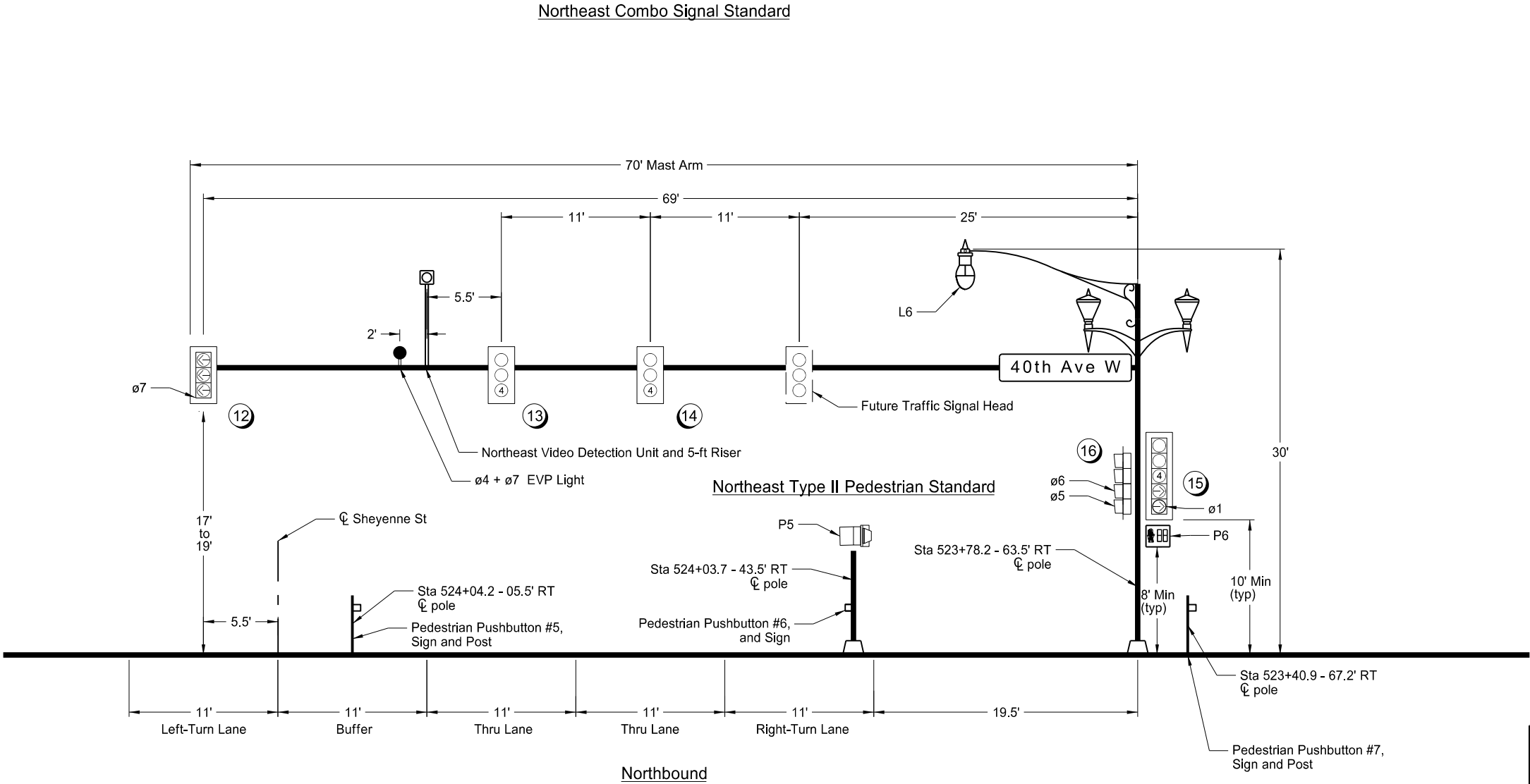
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Sheyenne Street  
Video Detection Zone Layout  
Traffic Signal System - Site 1  
40th Avenue W

Notes:  
1. The final size of all detection zones shall be as recommended by the video detection manufacturer.



	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SU-8-992(040)041	150	4



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Sheyenne Street  
 Signal Standards and Head Locations  
 Traffic Signal System - Site 1  
 40th Avenue W

Legend

Video Detection Camera

Traffic Signal Head w/ Associated Phase

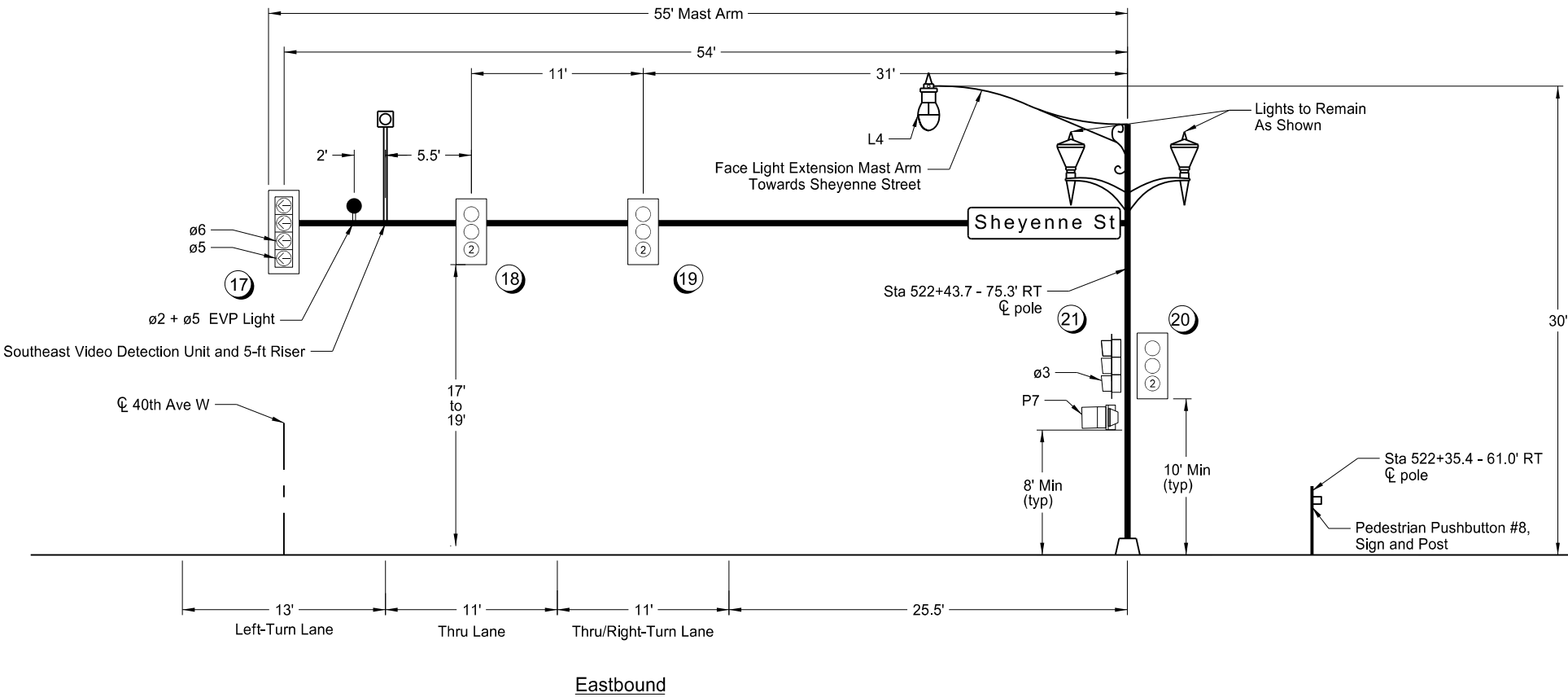
Signal Head Number

EVP Light

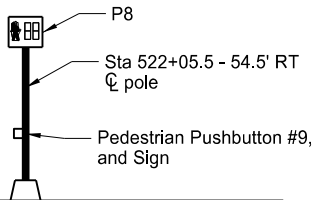


	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SU-8-992(040)041	150	6

Southeast Combo Signal Standard



Southeast Type II Pedestrian Standard



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Sheyenne Street

Signal Standards and Head Locations  
Traffic Signal System - Site 1

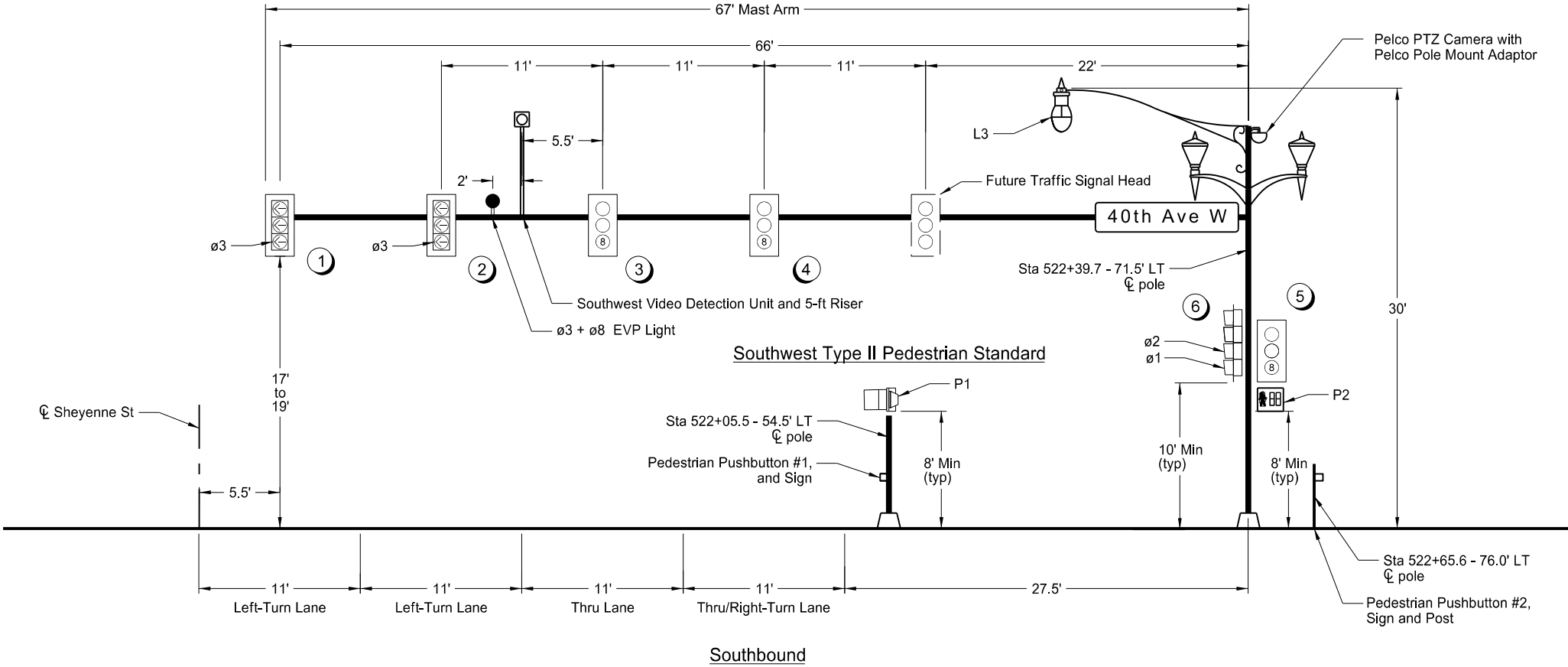
40th Avenue W

Legend

- Video Detection Camera
- Traffic Signal Head w/ Associated Phase
- Signal Head Number
- EVP Light

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SU-8-992(040)041	150	7

Southwest Combo Signal Standard



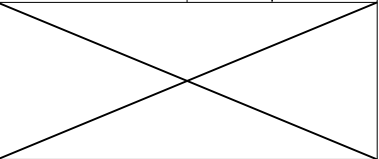
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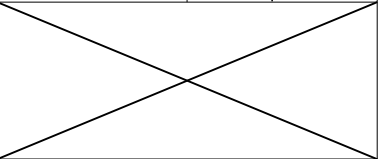
Sheyenne Street  
Signal Standards and Head Locations  
Traffic Signal System - Site 1  
40th Avenue W

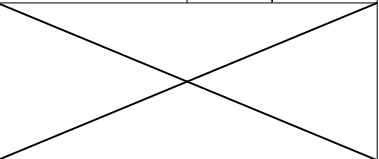
Legend

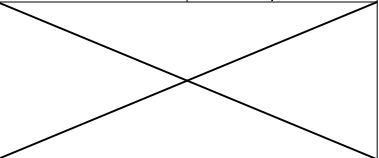
- Video Detection Camera
- Traffic Signal Head w/ Associated Phase
- Signal Head Number
- EVP Light
- PTZ Camera



Conductor		Cable SWS 1 (Southwest Combo Signal) (12 No. 14 AWG)		Cable SWS 2 (Southwest Combo Signal) (12 No. 14 AWG)		Cable SWP (Southwest Type II Ped Signal) (5 No. 14 AWG)	
Base	Tracer	Head	Indication	Head	Indication	Head	Indication
1	Black		Spare	P2	Ø8 Walk	P1	Ø2 Walk
2	White		Neutral		Neutral		Neutral
3	Red	3, 4, 5	Ø8 Red	P2	Ø8 Don't Walk	P1	Ø2 Don't Walk
4	Green		Ground		Ground		Ground
5	Orange	3, 4, 5	Ø8 Yellow		Spare		Spare
6	Blue	3, 4, 5	Ø8 Green		Spare		
7	White	Black	Spare	6	Ø2 FYA ←		
8	Red	Black	1, 2	6	Ø1 Red ←		
9	Green	Black	Spare		Spare		
10	Orange	Black	1, 2	6	Ø1 Yellow ←		
11	Blue	Black	1, 2	6	Ø1 Green ←		
12	Black	White	Spare		Spare		

Conductor		Cable NWS 1 (Northwest Combo Signal) (12 No. 14 AWG)		Cable NWS 2 (Northwest Combo Signal) (12 No. 14 AWG)		Cable NWP (Northwest Type II Ped Signal) (5 No. 14 AWG)	
Base	Tracer	Head	Indication	Head	Indication	Head	Indication
1	Black		Spare	P3	Ø8 Walk	P4	Ø6 Walk
2	White		Neutral		Neutral		Neutral
3	Red	8, 9, 10	Ø6 Red	P3	Ø8 Don't Walk	P4	Ø6 Don't Walk
4	Green		Ground		Ground		Ground
5	Orange	8, 9, 10	Ø6 Yellow		Spare		Spare
6	Blue	8, 9, 10	Ø6 Green				
7	White	Black	7		Spare		
8	Red	Black	7	11	Ø7 Red ←		
9	Green	Black	Spare		Spare		
10	Orange	Black	7	11	Ø7 Yellow ←		
11	Blue	Black	7	11	Ø7 Green ←		
12	Black	White	Spare		Spare		

Conductor		Cable NES 1 (Northeast Combo Signal) (12 No. 14 AWG)		Cable NES 2 (Northeast Combo Signal) (12 No. 14 AWG)		Cable NEP (Northeast Type II Ped Signal) (5 No. 14 AWG)	
Base	Tracer	Head	Indication	Head	Indication	Head	Indication
1	Black		Spare	P6	Ø4 Walk	P5	Ø6 Walk
2	White		Neutral		Neutral		Neutral
3	Red	13, 14, 15	Ø4 Red	P6	Ø4 Don't Walk	P5	Ø6 Don't Walk
4	Green		Ground		Ground		Ground
5	Orange	13, 14, 15	Ø4 Yellow		Spare		Spare
6	Blue	13, 14, 15	Ø4 Green		Spare		
7	White	Black	Spare	16	Ø6 FYA ←		
8	Red	Black	12	16	Ø5 Red ←		
9	Green	Black	15	16	Spare		
10	Orange	Black	12	16	Ø5 Yellow ←		
11	Blue	Black	12	6	Ø5 Green ←		
12	Black	White	15		Spare		

Conductor		Cable SES 1 (Southeast Combo Signal) (12 No. 14 AWG)		Cable SES 2 (Southeast Combo Signal) (12 No. 14 AWG)		Cable SEP (Southeast Type II Ped Signal) (5 No. 14 AWG)	
Base	Tracer	Head	Indication	Head	Indication	Head	Indication
1	Black		Spare	P7	Ø4 Walk	P8	Ø2 Walk
2	White		Spare		Neutral		Neutral
3	Red	18, 19, 20	Ø2 Red	P7	Ø4 Don't Walk	P8	Ø2 Don't Walk
4	Green		Spare		Ground		Ground
5	Orange	18, 19, 20	Ø2 Yellow		Spare		Spare
6	Blue	18, 19, 20	Ø2 Green		Spare		
7	White	Black	17		Spare		
8	Red	Black	17	21	Ø3 Red ←		
9	Green	Black	Spare		Spare		
10	Orange	Black	17	21	Ø3 Yellow ←		
11	Blue	Black	17	21	Ø3 Green ←		
12	Black	White	Spare		Spare		

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Sheyenne Street  
  
Signal Heads and Conductors  
Traffic Signal System - Site 1  
  
40th Avenue W

													STATE	PROJECT NO.	SECTION NO.	SHEET NO.
													ND	SU-8-992(040)041	150	10
SIGNAL CABLE & CONDUIT SCHEDULE																
RUN				CONDUIT		CABLE										
#	ITEM		STATION, OFFSET	SIZE (IN)	LF	Origin	Destination	# of Cables	SIZE/TYPE	Total LF	TITLE					
1	<i>Origin</i> <i>Destination</i>	Feed Point Traffic Signal Controller	Sta 522+55.0, 98.4' LT Sta 522+56.6, 107.3' LT		10	Feed Point Feed Point	Traffic Signal Controller Traffic Signal Controller	2 1	UNDERGROUND CONDUCTOR NO6-TYPE RHW UNDERGROUND CONDUCTOR NO6-TYPE THW	58 29						
2	<i>Origin</i> <i>Destination</i>	Traffic Signal Controller Pull Box 1	Sta 522+56.6, 107.3' LT Sta 522+60.1, 96.9' LT	4	11	Traffic Signal Controller Traffic Signal Controller Traffic Signal Controller Traffic Signal Controller Traffic Signal Controller Traffic Signal Controller Traffic Signal Controller	Pull Box 1 Pull Box 1 Pull Box 1 Pull Box 1 Pull Box 1 Pull Box 1 Pull Box 1	4 1 2 2 5 1 1	14 AWG 12 CONDUCTOR CABLE 14 AWG 7 CONDUCTOR CABLE VIDEO DETECTION CABLE 14 AWG 2 CONDUCTOR CABLE 16 AWG 2 CONDUCTOR CABLE CAT 6 CABLE 16 AWG 3 CONDUCTOR CABLE	104 26 52 52 130 26 26	SWS1, SWS2,SES1, SES2 SWP, SEP SWV, SEV EL25, EL38 PB1, PB2, PB8, PB9, PB10 PTZ-V PTZ-P					
3	<i>Origin</i> <i>Destination</i>	Traffic Signal Controller Pull Box 1	Sta 522+56.6, 107.3' LT Sta 522+60.1, 96.9' LT	4	11	Traffic Signal Controller Traffic Signal Controller Traffic Signal Controller Traffic Signal Controller Traffic Signal Controller	Pull Box 1 Pull Box 1 Pull Box 1 Pull Box 1 Pull Box 1	4 2 2 2 5	14 AWG 12 CONDUCTOR CABLE 14 AWG 5 CONDUCTOR CABLE VIDEO DETECTION CABLE 14 AWG 2 CONDUCTOR CABLE 16 AWG 2 CONDUCTOR CABLE	104 52 52 52 130	NWS1, NWS2, NES1, NES2 NWP, NEP NWW, NEV EL16, EL47 PB3, PB4, PB5, PB6, PB7					
4	<i>Origin</i> <i>Destination</i>	Pull Box 1 Southwest Pushbutton Post	Sta 522+60.1, 96.9' LT Sta 522+65.6, 76.0' RT	2	22	Pull Box 1	Pushbutton 2	1	16 AWG 2 CONDUCTOR CABLE	36	PB2					
5	<i>Origin</i> <i>Destination</i>	Pull Box 1 Southwest Combo Signal Std	Sta 522+60.1, 96.9' LT Sta 522+39.7, 71.5' LT	2	33	Pull Box 1 Pull Box 1 Pull Box 1 Pull Box 1 Pull Box 1	Southwest Combo Signal Std Transformer Base Southwest Video Detection Unit Southwest Emergency Preemption Lamp Pan Tilt Zoom Camera Unit Pan Tilt Zoom Camera Unit	2 1 1 1 1	14 AWG 12 CONDUCTOR CABLE VIDEO DETECTION CABLE 14 AWG 2 CONDUCTOR CABLE CAT 6 CABLE 16 AWG 3 CONDUCTOR CABLE	88 117 114 74 74	SWS1, SWS2 SWV EL38 PTZ-V PTZ-P					
6	<i>Origin</i> <i>Destination</i>	Pull Box 1 Pull Box 8	Sta 522+60.1, 96.9' LT Sta 521+95.0, 61.0' LT	3	75	Pull Box 1 Pull Box 1 Pull Box 1 Pull Box 1 Pull Box 1	Pull Box 8 Pull Box 8 Pull Box 8 Pull Box 8 Pull Box 8	2 2 1 1 4	14 AWG 12 CONDUCTOR CABLE 14 AWG 7 CONDUCTOR CABLE VIDEO DETECTION CABLE 14 AWG 2 CONDUCTOR CABLE 16 AWG 2 CONDUCTOR CABLE	174 174 87 87 348	SES1, SES2 SEP, SWP SEV EL25 PB1, PB8, PB9, PB10					
7	<i>Origin</i> <i>Destination</i>	Pull Box 8 Southwest Type II Ped Std	Sta 521+95.0, 61.0' LT Sta 522+05.5, 54.5' LT	2	13	Pull Box 8 Pull Box 8	Southwest Type II Pedestrian Std Transformer Base Pushbutton 1	1 1	14 AWG 5 CONDUCTOR CABLE 16 AWG 2 CONDUCTOR CABLE	24 27	SWP PB1					
8	<i>Origin</i> <i>Destination</i>	Pull Box 1 Pull Box 2	Sta 522+60.1, 96.9' LT Sta 523+72.0, 93.0' LT	4	113	Pull Box 1 Pull Box 1 Pull Box 1 Pull Box 1 Pull Box 1	Pull Box 2 Pull Box 2 Pull Box 2 Pull Box 2 Pull Box 2	4 2 2 2 5	14 AWG 12 CONDUCTOR CABLE 14 AWG 5 CONDUCTOR CABLE VIDEO DETECTION CABLE 14 AWG 2 CONDUCTOR CABLE 16 AWG 2 CONDUCTOR CABLE	500 250 250 250 625	NWS1, NWS2, NES1, NES2 NWP, NEP NWW, NEV EL16, EL47 PB3, PB4, PB5, PB6, PB7					
9	<i>Origin</i> <i>Destination</i>	Pull Box 2 Northwest Pushbutton Post	Sta 523+72.0, 93.0' LT Sta 523+54.2, 71.7' LT	2	28	Pull Box 2	Pushbutton 3	1	16 AWG 2 CONDUCTOR CABLE	42	PB3					
10	<i>Origin</i> <i>Destination</i>	Pull Box 2 Northwest Combo Signal Std	Sta 523+72.0, 93.0' LT Sta 523+57.8, 89.2' LT	2	15	Pull Box 2 Pull Box 2 Pull Box 2 Pull Box 2	Northwest Combo Signal Std Transformer Base Northwest Combo Signal Std Transformer Base Northwest Video Detection Unit Northwest Emergency Preemption Lamp	2 1 1 1	14 AWG 12 CONDUCTOR CABLE 14 AWG 5 CONDUCTOR CABLE VIDEO DETECTION CABLE 14 AWG 2 CONDUCTOR CABLE	52 26 91 88	NWS1, NWS2 NWS3 NWW EL16					
11	<i>Origin</i> <i>Destination</i>	Pull Box 2 Pull Box 3	Sta 523+72.0, 93.0' LT Sta 524+08.2, 61.0' LT	3	49	Pull Box 2 Pull Box 2 Pull Box 2 Pull Box 2 Pull Box 2	Pull Box 3 Pull Box 3 Pull Box 3 Pull Box 3 Pull Box 3	2 2 1 1 4	14 AWG 12 CONDUCTOR CABLE 14 AWG 5 CONDUCTOR CABLE VIDEO DETECTION CABLE 14 AWG 2 CONDUCTOR CABLE 16 AWG 2 CONDUCTOR CABLE	122 122 61 61 244	NES1, NES2 NWP, NEP NEV EL47 PB4, PB5, PB6, PB7					
12	<i>Origin</i> <i>Destination</i>	Pull Box 3 Northwest Type II Ped Std	Sta 524+08.2, 61.0' LT Sta 524+03.7, 54.5' LT	2	8	Pull Box 3 Pull Box 3	Northwest Type II Pedestrian Std Transformer Base Pushbutton 4	1 1	14 AWG 5 CONDUCTOR CABLE 16 AWG 2 CONDUCTOR CABLE	19 22	NWP PB4					
13	<i>Origin</i> <i>Destination</i>	Pull Box 3 Pull Box 4	Sta 524+08.2, 61.0' LT Sta 524+08.2, 05.5' RT	4	67	Pull Box 3 Pull Box 3 Pull Box 3 Pull Box 3 Pull Box 3	Pull Box 4 Pull Box 4 Pull Box 4 Pull Box 4 Pull Box 4	2 1 1 1 3	14 AWG 12 CONDUCTOR CABLE 14 AWG 5 CONDUCTOR CABLE VIDEO DETECTION CABLE 14 AWG 2 CONDUCTOR CABLE 16 AWG 2 CONDUCTOR CABLE	158 79 79 79 237	NES1, NES2 NEP NEV EL47 PB5, PB6, PB7					
14	<i>Origin</i> <i>Destination</i>	Pull Box 4 North Median Pushbutton Post	Sta 524+08.2, 05.5' RT Sta 524+04.2, 05.5' RT	2	4	Pull Box 4	Pushbutton 5	1	16 AWG 2 CONDUCTOR CABLE	18	PB5					
15	<i>Origin</i> <i>Destination</i>	Pull Box 4 Pull Box 5	Sta 524+08.2, 05.5' RT Sta 524+08.2, 49.0' RT	4	44	Pull Box 4 Pull Box 4 Pull Box 4 Pull Box 4 Pull Box 4	Pull Box 5 Pull Box 5 Pull Box 5 Pull Box 5 Pull Box 5	2 1 1 1 2	14 AWG 12 CONDUCTOR CABLE 14 AWG 5 CONDUCTOR CABLE VIDEO DETECTION CABLE 14 AWG 2 CONDUCTOR CABLE 16 AWG 2 CONDUCTOR CABLE	112 56 56 56 112	NES1, NES2 NEP NEV EL47 PB6, PB7					

SWS1 = Southwest Combo Signal Standard 1  
SWS2 = Southwest Combo Signal Standard 2  
NWS1 = Northwest Combo Signal Standard 1  
NWS2 = Northwest Combo Signal Standard 2  
NES1 = Northeast Combo Signal Standard 1  
NES2 = Northeast Combo Signal Standard 2  
SES1 = Southeast Combo Signal Standard 1  
SES2 = Southeast Combo Signal Standard 2  
SEP = Southeast Type II Ped Signal Standard  
SWP = Southwest Type II Ped Signal Standard  
NEP = Northeast Type II Ped Signal Standard  
SWV = Southwest Video Detection Unit  
NWW = Northwest Video Detection Unit  
NEV = Northeast Video Detection Unit  
SEV = Southeast Video Detection Unit  
EL16 = Ø1 + Ø6 EVP Light  
EL25 = Ø2 + Ø5 EVP Light  
EL38 = Ø3 + Ø8 EVP Light  
EL47 = Ø4 + Ø7 EVP Light  
PB1 = Pedestrian Pushbutton 1  
PB2 = Pedestrian Pushbutton 2  
PB3 = Pedestrian Pushbutton 3  
PB4 = Pedestrian Pushbutton 4  
PB5 = Pedestrian Pushbutton 5  
PB6 = Pedestrian Pushbutton 6  
PB7 = Pedestrian Pushbutton 7  
PB8 = Pedestrian Pushbutton 8  
PB9 = Pedestrian Pushbutton 9  
PB10 = Pedestrian Pushbutton 10  
PTZ-P = Pan Tilt Zoom Power  
PTZ-V = Pan Tilt Zoom Video

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Sheyenne Street

Cable and Conduit Schedule  
Traffic Signal System - Site 1

40th Avenue W

											STATE	PROJECT NO.	SECTION NO.	SHEET NO.
										ND		SU-8-992(040)041	150	11

#	ITEM		STATION, OFFSET	SIZE (IN)	LF	Origin	Destination	# of Cables	SIZE/TYPE	Total LF	TITLE
16	Origin Destination	Pull Box 5 Northeast Pushbutton Post	Sta 524+08.2, 49.0' RT Sta 523+40.9, 67.2' RT	2	70	Pull Box 5	Pushbutton 7	1	16 AWG 2 CONDUCTOR CABLE	84	PB7
17	Origin Destination	Pull Box 5 Northeast Type II Ped Std	Sta 524+08.2, 49.0' RT Sta 524+03.7, 43.5' RT	2	8	Pull Box 5 Pull Box 5	Northeast Type II Pedestrian Std Transformer Base Pushbutton 6	1 1	14 AWG 5 CONDUCTOR CABLE 16 AWG 2 CONDUCTOR CABLE	19 22	NEP PB6
18	Origin Destination	Pull Box 5 Northeast Combo Signal Std	Sta 524+08.2, 49.0' RT Sta 523+78.2, 63.5' RT	2	34	Pull Box 5 Pull Box 5 Pull Box 5	Northeast Combo Signal Std Transformer Base Northeast Video Detection Unit Northeast Emergency Preemption Lamp	2 1 1	14 AWG 12 CONDUCTOR CABLE VIDEO DETECTION CABLE 14 AWG 2 CONDUCTOR CABLE	90 121 118	NES1, NES2 NEV EL47
19	Origin Destination	Pull Box 8 Pull Box 7	Sta 521+95.0, 61.0' LT Sta 521+95.0, 16.5' LT	4	45	Pull Box 8 Pull Box 8 Pull Box 8 Pull Box 8 Pull Box 8	Pull Box 7 Pull Box 7 Pull Box 7 Pull Box 7 Pull Box 7	2 1 1 1 3	14 AWG 12 CONDUCTOR CABLE 14 AWG 7 CONDUCTOR CABLE VIDEO DETECTION CABLE 14 AWG 2 CONDUCTOR CABLE 16 AWG 2 CONDUCTOR CABLE	114 57 57 57 171	SES1, SES2 SEP SEV EL25 PB8, PB9, PB10
20	Origin Destination	Pull Box 7 South Median Pushbutton Post	Sta 521+95.0, 16.5' LT Sta 522+05.0, 16.5' LT	2	11	Pull Box 7	Pushbutton 10	1	16 AWG 2 CONDUCTOR CABLE	25	PB10
21	Origin Destination	Pull Box 7 Pull Box 6	Sta 521+95.0, 16.5' LT Sta 521+93.0, 53.0' RT	4	70	Pull Box 7 Pull Box 7 Pull Box 7 Pull Box 7 Pull Box 7	Pull Box 6 Pull Box 6 Pull Box 6 Pull Box 6 Pull Box 6	2 1 1 1 2	14 AWG 12 CONDUCTOR CABLE 14 AWG 7 CONDUCTOR CABLE VIDEO DETECTION CABLE 14 AWG 2 CONDUCTOR CABLE 16 AWG 2 CONDUCTOR CABLE	164 82 82 82 164	SES1, SES2 SEP SEV EL25 PB8, PB9
22	Origin Destination	Pull Box 6 Southeast Combo Signal Std	Sta 521+93.0, 53.0' RT Sta 522+43.7, 75.3' RT	2	56	Pull Box 6 Pull Box 6 Pull Box 6	Southeast Combo Signal Std Transformer Base Southeast Video Detection Unit Southeast Emergency Preemption Lamp	2 1 1	14 AWG 12 CONDUCTOR CABLE VIDEO DETECTION CABLE 14 AWG 2 CONDUCTOR CABLE	134 138 135	SES1, SES2 SEV EL25
23	Origin Destination	Pull Box 6 Southeast Pushbutton Post	Sta 521+93.0, 53.0' RT Sta 522+35.4, 61.0' RT	2	43	Pull Box 6	Pushbutton 8	1	16 AWG 2 CONDUCTOR CABLE	57	PB8
24	Origin Destination	Pull Box 6 Southeast Type II Ped Std	Sta 521+93.0, 53.0' RT Sta 522+05.5, 54.5' RT	2	13	Pull Box 6 Pull Box 6	Southeast Type II Pedestrian Std Transformer Base Pushbutton 9	1 1	14 AWG 7 CONDUCTOR CABLE 16 AWG 2 CONDUCTOR CABLE	24 27	SEP PB9

SWS1 = Southwest Combo Signal Standard 1  
SWS2 = Southwest Combo Signal Standard 2  
NWS1 = Northwest Combo Signal Standard 1  
NWS2 = Northwest Combo Signal Standard 2  
NES1 = Northeast Combo Signal Standard 1  
NES2 = Northeast Combo Signal Standard 2  
SES1 = Southeast Combo Signal Standard 1  
SES2 = Southeast Combo Signal Standard 2  
SEP = Southeast Type II Ped Signal Standard  
SWP = Southwest Type II Ped Signal Standard  
NEP = Northeast Type II Ped Signal Standard  
SWV = Southwest Video Detection Unit  
NWV = Northwest Video Detection Unit  
NEV = Northeast Video Detection Unit  
SEV = Southeast Video Detection Unit  
EL16 = Ø1 + Ø6 EVP Light  
EL25 = Ø2 + Ø5 EVP Light  
EL38 = Ø3 + Ø8 EVP Light  
EL47 = Ø4 + Ø7 EVP Light  
PB1 = Pedestrian Pushbutton 1  
PB2 = Pedestrian Pushbutton 2  
PB3 = Pedestrian Pushbutton 3  
PB4 = Pedestrian Pushbutton 4  
PB5 = Pedestrian Pushbutton 5  
PB6 = Pedestrian Pushbutton 6  
PB7 = Pedestrian Pushbutton 7  
PB8 = Pedestrian Pushbutton 8  
PB9 = Pedestrian Pushbutton 9  
PB10 = Pedestrian Pushbutton 10  
PTZ-P = Pan Tilt Zoom Power  
PTZ-V = Pan Tilt Zoom Video

INTERNAL MAST ARM/STANDARD SIGNAL HEAD CABLE									
Origin	Destination	# of Cables	SIZE/TYPE	Total LF	Origin	Destination	# of Cables	SIZE/TYPE	Total LF
Southwest Type II Pedestrian Std Transformer Base	Pedestrian Head 1	1	14 AWG 3 CONDUCTOR CABLE	17	Northeast Type II Pedestrian Std Transformer Base	Pedestrian Head 5	1	14 AWG 3 CONDUCTOR CABLE	17
Southwest Combo Signal Std Transformer Base	Vehicle Head 1	1	14 AWG 5 CONDUCTOR CABLE	94	Northeast Combo Signal Std Transformer Base	Vehicle Head 12	1	14 AWG 5 CONDUCTOR CABLE	97
	Vehicle Head 2	1	14 AWG 5 CONDUCTOR CABLE	83		Vehicle Head 13	1	14 AWG 5 CONDUCTOR CABLE	75
	Vehicle Head 3	1	14 AWG 5 CONDUCTOR CABLE	50		Vehicle Head 14	1	14 AWG 5 CONDUCTOR CABLE	64
	Vehicle Head 4	1	14 AWG 5 CONDUCTOR CABLE	61		Vehicle Head 15	1	14 AWG 7 CONDUCTOR CABLE	20
	Vehicle Head 5	1	14 AWG 5 CONDUCTOR CABLE	20		Vehicle Head 16	1	14 AWG 7 CONDUCTOR CABLE	20
	Vehicle Head 6	1	14 AWG 7 CONDUCTOR CABLE	20		Pedestrian Head 6	1	14 AWG 3 CONDUCTOR CABLE	17
Northwest Combo Signal Std Transformer Base	Pedestrian Head 2	1	14 AWG 3 CONDUCTOR CABLE	17	Southeast Combo Signal Std Transformer Base	Vehicle Head 17	1	14 AWG 7 CONDUCTOR CABLE	82
	Vehicle Head 7	1	14 AWG 7 CONDUCTOR CABLE	77		Vehicle Head 18	1	14 AWG 5 CONDUCTOR CABLE	70
	Vehicle Head 8	1	14 AWG 5 CONDUCTOR CABLE	65		Vehicle Head 19	1	14 AWG 5 CONDUCTOR CABLE	59
	Vehicle Head 9	1	14 AWG 5 CONDUCTOR CABLE	54		Vehicle Head 20	1	14 AWG 5 CONDUCTOR CABLE	20
	Vehicle Head 10	1	14 AWG 5 CONDUCTOR CABLE	20		Vehicle Head 21	1	14 AWG 5 CONDUCTOR CABLE	20
	Vehicle Head 11	1	14 AWG 5 CONDUCTOR CABLE	20		Pedestrian Head 7	1	14 AWG 3 CONDUCTOR CABLE	17
Northwest Type II Pedestrian Std Transformer Base	Pedestrian Head 3	1	14 AWG 3 CONDUCTOR CABLE	17	Southeast Type II Pedestrian Std Transformer Base	Pedestrian Head 8	1	14 AWG 3 CONDUCTOR CABLE	17
	Pedestrian Head 4	1	14 AWG 3 CONDUCTOR CABLE	17					

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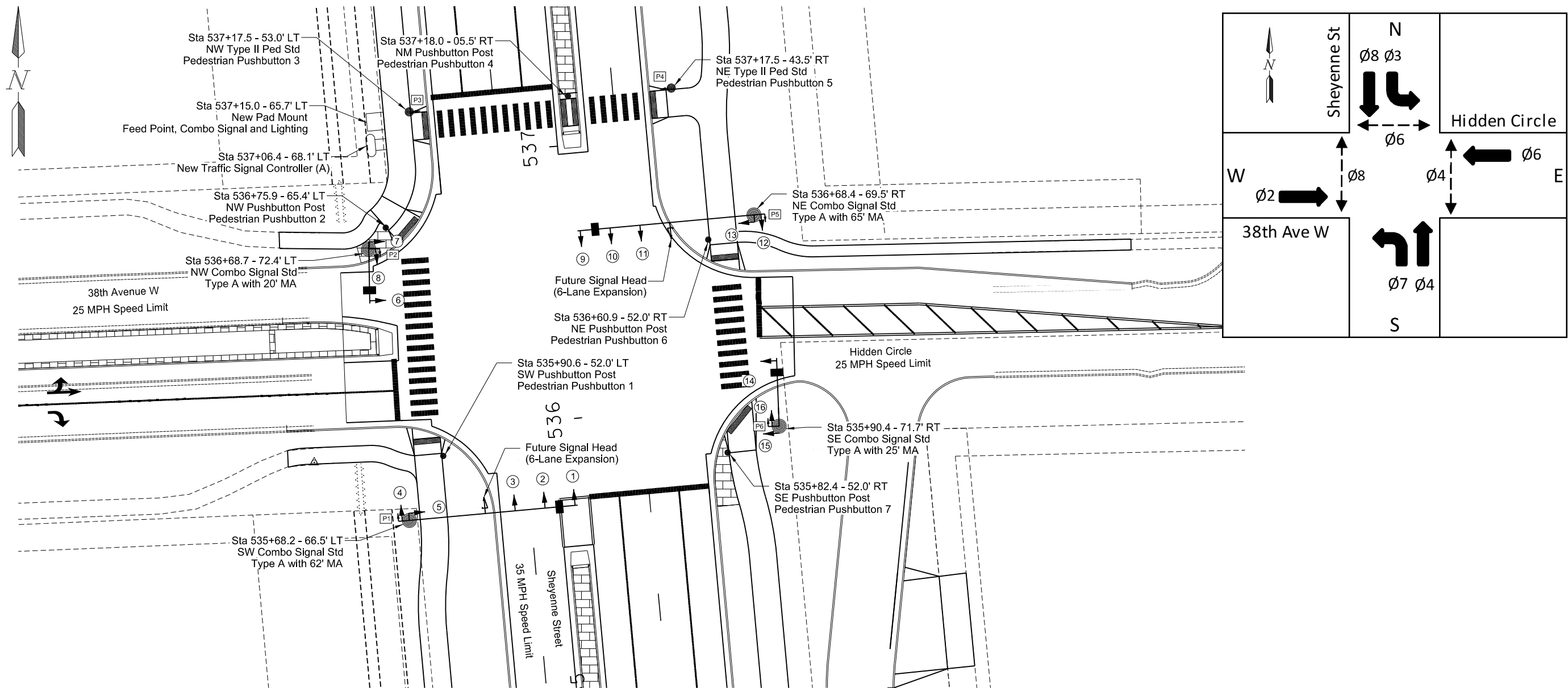
Sheyenne Street

Cable and Conduit Schedule  
Traffic Signal System - Site 1

40th Avenue W

SWS1 = Southwest Combo Signal Standard 1  
SWS2 = Southwest Combo Signal Standard 2  
NWS1 = Northwest Combo Signal Standard 1  
NWS2 = Northwest Combo Signal Standard 2  
NES1 = Northeast Combo Signal Standard 1  
NES2 = Northeast Combo Signal Standard 2  
SES1 = Southeast Combo Signal Standard 1  
SES2 = Southeast Combo Signal Standard 2  
SEP = Southeast Type II Ped Signal Standard  
SWP = Southwest Type II Ped Signal Standard  
NEP = Northeast Type II Ped Signal Standard  
SWV = Southwest Video Detection Unit  
NWV = Northwest Video Detection Unit  
NEV = Northeast Video Detection Unit  
SEV = Southeast Video Detection Unit  
EL16 = Ø1 + Ø6 EVP Light  
EL25 = Ø2 + Ø5 EVP Light  
EL38 = Ø3 + Ø8 EVP Light  
EL47 = Ø4 + Ø7 EVP Light  
PB1 = Pedestrian Pushbutton 1  
PB2 = Pedestrian Pushbutton 2  
PB3 = Pedestrian Pushbutton 3  
PB4 = Pedestrian Pushbutton 4  
PB5 = Pedestrian Pushbutton 5  
PB6 = Pedestrian Pushbutton 6  
PB7 = Pedestrian Pushbutton 7  
PB8 = Pedestrian Pushbutton 8  
PB9 = Pedestrian Pushbutton 9  
PB10 = Pedestrian Pushbutton 10  
PTZ-P = Pan Tilt Zoom Power  
PTZ-V = Pan Tilt Zoom Video





(A) Face cabinet door East with hinges to the North.

1" Yellow  
Type XI  
Reflective  
Sheeting

Heads 1, 8, 9, 16

Heads 2, 3, 4,  
5, 6, 7, 10, 11,  
12, 13, 14

Head 15

All Signal Heads:  
12" LED Lenses &  
5" Louvered Backplates

Countdown Pedestrian Heads  
P1, P2, P3, P4, P5, P6

Signal Controller

Signal Head

Feed Point

Video Detection Unit

Signal Standard

Pushbutton Post

Pedestrian Head

Sign R10-3e

Pedestrian Pushbutton Schedule		
Location	Pushbutton & Sign Location on Pole	Direction of Arrow on Sign
Pushbutton 1	West	Left
Pushbutton 2	East	Left
Pushbutton 3	South	Right
Pushbutton 4	South	Double
Pushbutton 5	South	Left
Pushbutton 6	East	Left
Pushbutton 7	East	Right

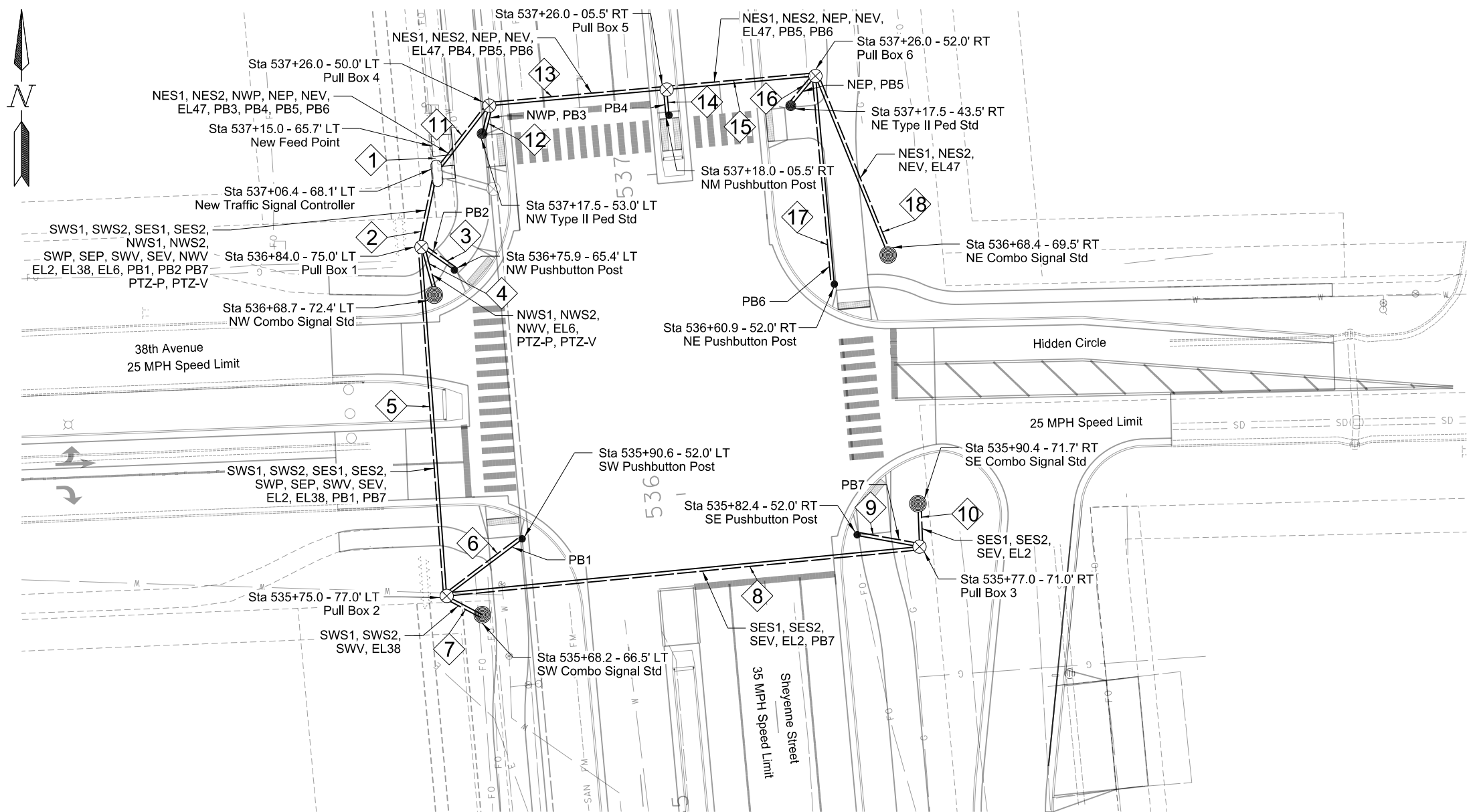
Note:  
1. Stationing based on Chain PR17

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Sheyenne Street  
Signal Layout  
Traffic Signal System - Site 2  
38th Avenue W / Hidden Circle

9/5/2018 4:53:08 PM tracisletmoe P:\City\ND\WestFargo\14416104\CAD\80992041.040\Design\Plans\150\150SL\_012\_38Ave\_LSGNL.dgn

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SU-8-992(040)041	150	13

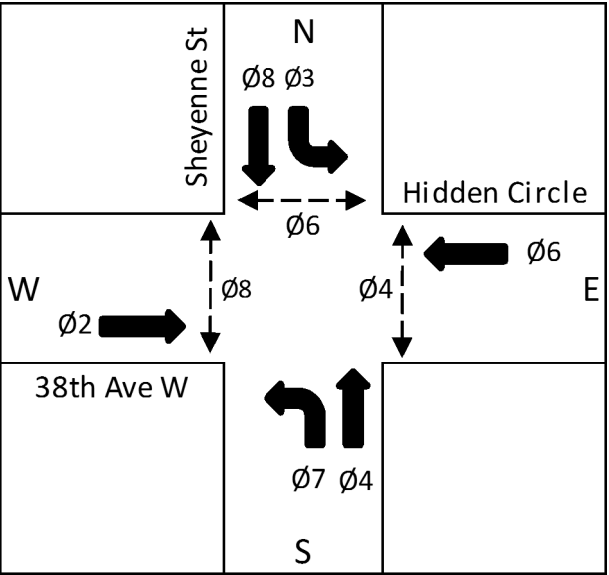
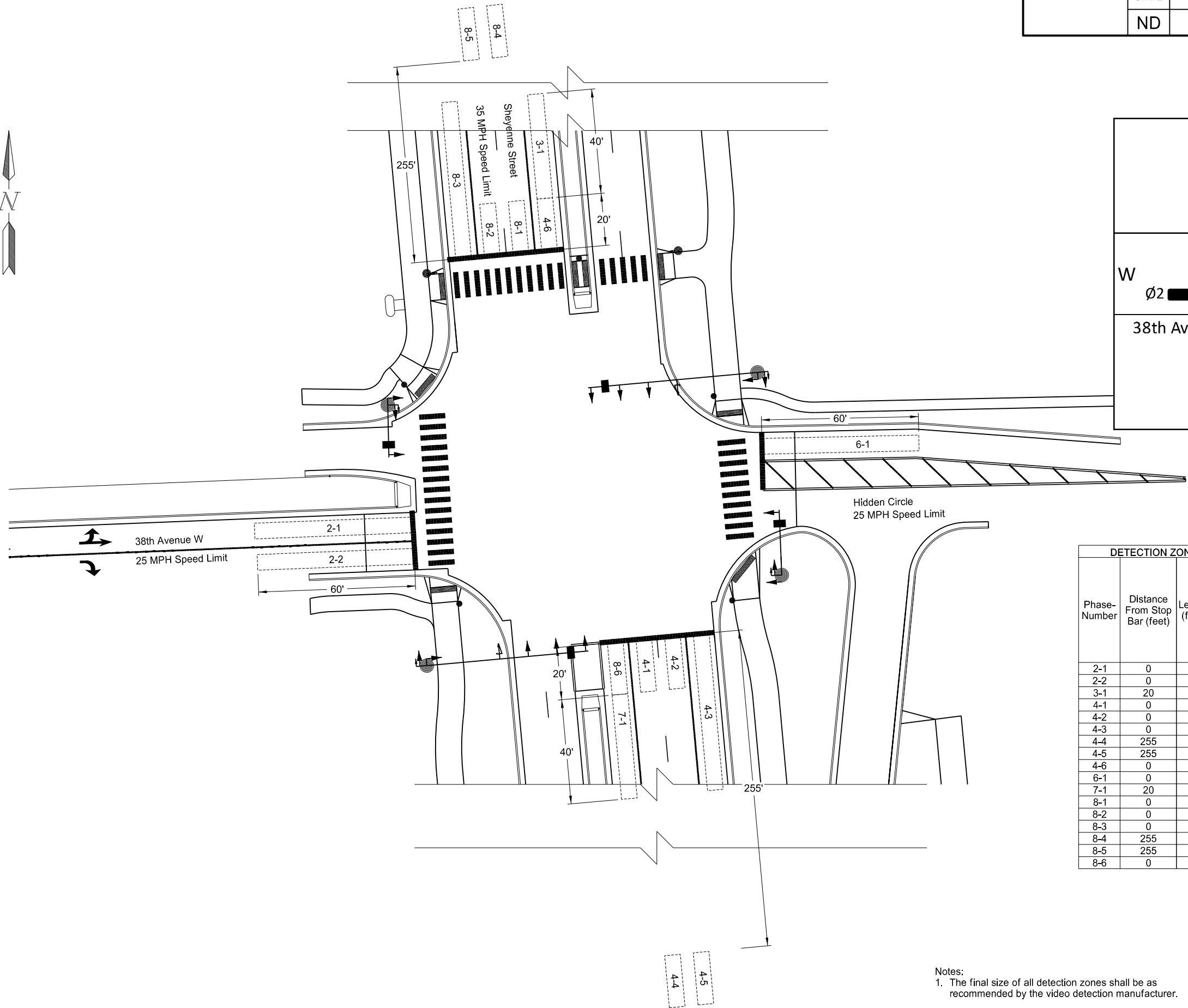


SWS1 = Southwest Combo Signal Standard 1  
SWS2 = Southwest Combo Signal Standard 2  
NWS1 = Northwest Combo Signal Standard 1  
NWS2 = Northwest Combo Signal Standard 2  
NES1 = Northeast Combo Signal Standard 1  
NES2 = Northeast Combo Signal Standard 2  
SES1 = Southeast Combo Signal Standard 1  
SES2 = Southeast Combo Signal Standard 2  
SWV = Southwest Video Detection Unit  
NWV = Northwest Video Detection Unit  
NEV = Northeast Video Detection Unit  
SEV = Southeast Video Detection Unit  
EL2 = Ø2 EVP Light  
EL38 = Ø3 + Ø8 EVP Light  
EL47 = Ø4 + Ø7 EVP Light  
EL6 = Ø6 EVP Light  
PB1 = Pedestrian Pushbutton 1  
PB2 = Pedestrian Pushbutton 2  
PB3 = Pedestrian Pushbutton 3  
PB4 = Pedestrian Pushbutton 4  
PB5 = Pedestrian Pushbutton 5  
PB6 = Pedestrian Pushbutton 6  
PB7 = Pedestrian Pushbutton 7  
PTZ-P = Pan Tilt Zoom Power  
PTZ-V = Pan Tilt Zoom Video

- Legend
- New Signal Controller
  - Cable & Conduit Run
  - Pull Box
  - Feed Point
  - Signal Pole

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Sheyenne Street  
Conduit and Conductor Layout  
Traffic Signal System - Site 2  
38th Avenue W / Hidden Circle



DETECTION ZONE SCHEDULE						
Phase-Number	Distance From Stop Bar (feet)	Length (feet)	Presence/Counting	Passage/Counting	Queue/Counting	Locking Memory
2-1	0	60	X			X
2-2	0	60	X			X
3-1	20	40	X			X
4-1	0	20			X	X
4-2	0	20			X	X
4-3	0	60			X	X
4-4	255	20		X	X	
4-5	255	20		X	X	
4-6	0	20	X			X
6-1	0	60	X			X
7-1	20	40	X			X
8-1	0	20			X	X
8-2	0	20			X	X
8-3	0	60			X	X
8-4	255	20		X	X	
8-5	255	20		X	X	
8-6	0	20	X			X

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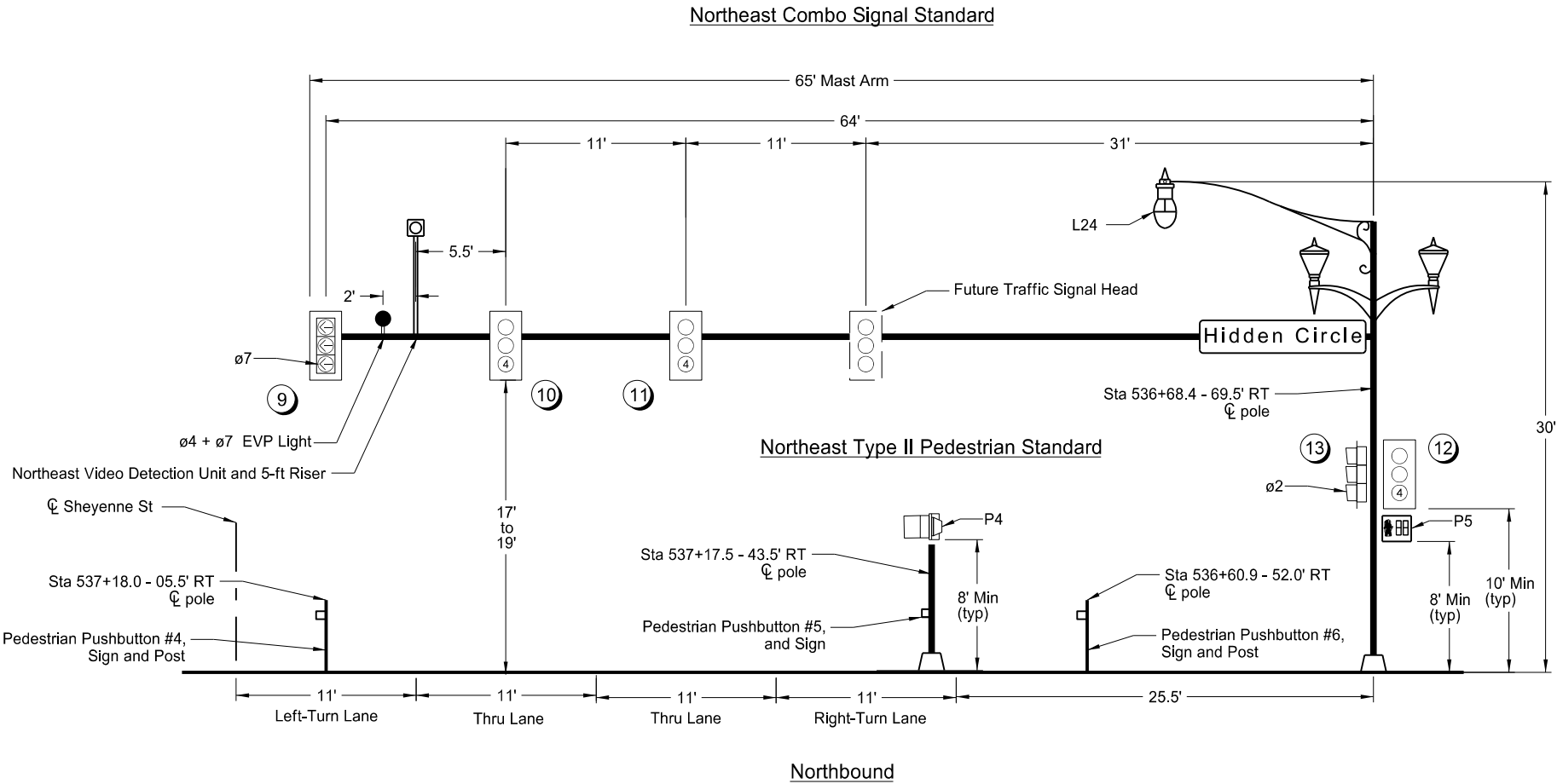
Notes:  
1. The final size of all detection zones shall be as recommended by the video detection manufacturer.

Sheyenne Street

Video Detection Zone Layout  
Traffic Signal System - Site 2

38th Avenue W / Hidden Circle

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	ND	SU-8-992(040)041	150	15



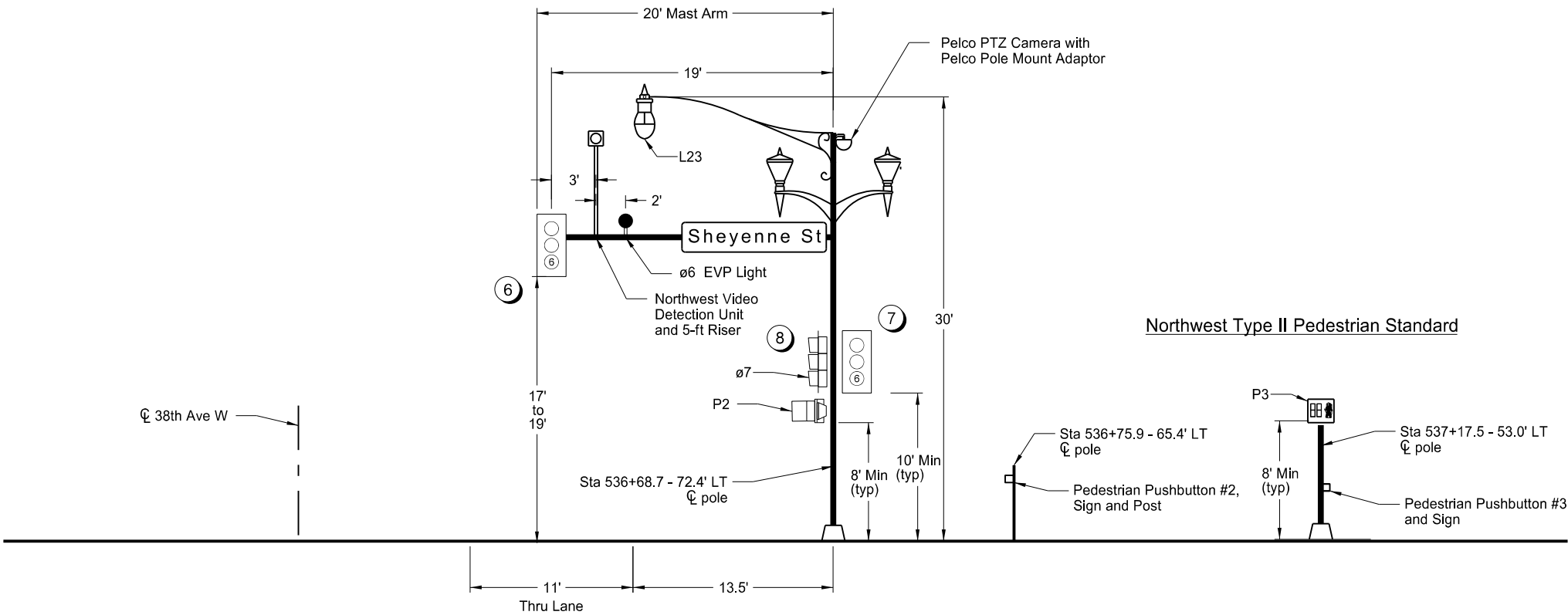
- Legend
- Video Detection Camera
  - Traffic Signal Head w/ Associated Phase
  - Signal Head Number
  - EVP Light
  - PTZ Camera

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Sheyenne Street  
 Signal Standards and Head Locations  
 Traffic Signal System - Site 2  
 38th Avenue W / Hidden Circle

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SU-8-992(040)041	150	16

Northwest Combo Signal Standard



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Sheyenne Street

Signal Standards and Head Locations  
 Traffic Signal System - Site 2

38th Avenue W / Hidden Circle



	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SU-8-992(040)041	150	18

[illegible]

Blank spaces denote a "Red" indication  
G= Green Ball Indication  
Y= Yellow Ball Indication  
GL= Green Left Arrow Indication  
YL= Yellow Left Arrow Indication  
FYA = Flashing Yellow Arrow Indication  
GR=Green Right Arrow Indication  
YR=Yellow Right Arrow Indication

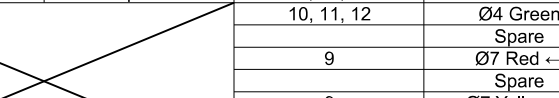
N= Continue to display right of way indication. When any phase is on alone, any non-conflicting phase may start timing without a clearance interval. See Chart A.

Do not operate Flashing Yellow Arrow during Preemption.

Preemption Controller Settings																																
		Phase 2							Phase 4							Phase 6							Phase 8									
		Eastbound							Northbound							Westbound							Southbound									
Head		Clear to Phase							Clear to Phase							Clear to Phase							Clear to Phase									
Number	RW	3	4	5	6	7	8	1	RW	5	6	7	8	1	2	3	RW	7	8	1	2	3	4	5	RW	1	2	3	4	5	6	7
1																									GL	YL	YL	YL		YL	YL	
2																									G	Y	Y	Y		Y	Y	
3																									G	Y	Y	Y		Y	Y	
4																									G	Y	Y	Y		Y	Y	
5																	G	Y	Y		Y	Y	Y									
6																	G	Y	Y		Y	Y	Y									
7																	G	Y	Y		Y	Y	Y									
8								GL		YL	YL	YL		YL	YL																	
9								GL		YL	YL	YL		YL	YL																	
10								G		Y	Y	Y		Y	Y																	
11								G		Y	Y	Y		Y	Y																	
12								G		Y	Y	Y		Y	Y																	
13	G	Y	Y		Y	Y	Y																									
14	G	Y	Y		Y	Y	Y																									
15	G	Y	Y		Y	Y	Y																									
16																									GL	YL	YL	YL		YL	YL	

Chart A	
Phase	Non-conflicting Phase allowed to time concurrently
1	N/A
2	6
3	7, 8
4	7, 8
5	N/A
6	1, 2
7	3, 4
8	3, 4

Conductor			Cable SWS 1 (Southwest Combo Signal) (12 No. 14 AWG)		Cable SWS 2 (Southwest Combo Signal) (12 No. 14 AWG)		Cable NWS 1 (Northwest Combo Signal) (12 No. 14 AWG)		Cable NWS 2 (Northwest Combo Signal) (12 No. 14 AWG)		Cable NWP (Northwest Type II Ped Signal) (5 No. 14 AWG)	
Base	Tracer	Head	Indication	Head	Indication	Head	Indication	Head	Indication	Head	Indication	
1	Black		Spare		Spare		Spare	P2	Ø8 Walk	P3	Ø6 Walk	
2	White		Neutral		Neutral		Neutral		Spare		Neutral	
3	Red	2, 3, 4	Ø8 Red	5	Ø6 Red	6, 7	Ø6 Red	P2	Ø8 Don't Walk	P3	Ø6 Don't Walk	
4	Green		Ground		Ground		Ground		Spare		Ground	
5	Orange	2, 3, 4	Ø8 Yellow	5	Ø6 Yellow	6, 7	Ø6 Yellow		Spare			
6	Blue	2, 3, 4	Ø8 Green	5	Ø6 Green	6, 7	Ø6 Green		Spare			
7	White	Black	Spare		Spare		Spare		Spare			
8	Red	Black	Ø3 Red ←	P1	Ø8 Don't Walk	8	Ø7 Red ←		Spare			
9	Green	Black	Spare		Spare		Spare		Spare			
10	Orange	Black	Ø3 Yellow ←		Spare	8	Ø7 Yellow ←		Spare			
11	Blue	Black	Ø3 Green ←		Spare	8	Ø7 Green ←		Spare			
12	Black	White	Spare	P1	Ø8 Walk		Spare		Spare			

Conductor			Cable NEP (Northeast Type II Ped Signal) (5 No. 14 AWG)		Cable NES 1 (Northeast Combo Signal) (12 No. 14 AWG)		Cable NES 2 (Northeast Combo Signal) (12 No. 14 AWG)		Cable SES 1 (Southeast Combo Signal) (12 No. 14 AWG)		Cable SES 2 (Southeast Combo Signal) (5 No. 14 AWG)		
Base	Tracer		Head	Indication	Head	Indication	Head	Indication	Head	Indication	Head	Indication	
1	Black		P4	Ø6 Walk		Spare		Spare		Spare	P6	Ø4 Walk	
2	White			Neutral		Neutral		Spare		Neutral		Neutral	
3	Red		P4	Ø6 Don't Walk	10, 11, 12	Ø4 Red	13	Ø2 Red	14, 15	Ø2 Red	P6	Ø4 Don't Walk	
4	Green			Ground		Ground		Spare		Ground		Ground	
5	Orange			Spare	10, 11, 12	Ø4 Yellow	13	Ø2 Yellow	14, 15	Ø2 Yellow		Spare	
6	Blue				10, 11, 12	Ø4 Green	13	Ø2 Green	14, 15	Ø2 Green			
7	White	Black				Spare		Spare		Spare			
8	Red	Black			9	Ø7 Red ←	P5	Ø4 Don't Walk	16	Ø3 Red ←			
9	Green	Black				Spare		Spare	15	Ø7 Yellow →			
10	Orange	Black			9	Ø7 Yellow ←		Spare	16	Ø3 Yellow ←			
11	Blue	Black			9	Ø7 Green ←		Spare	16	Ø3 Green ←			
12	Black	White				Spare		P5	Ø4 Walk	15	Ø7 Green →		

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Sheyenne Street

Controller Phasing &  
Signal Heads and Conductors  
Traffic Signal System - Site 2  
38th Avenue W / Hidden Circle

												STATE	PROJECT NO.	SECTION NO.	SHEET NO.
											ND		SU-8-992(040)041	150	19
SIGNAL CABLE & CONDUIT SCHEDULE															
RUN				CONDUIT		CABLE									
#	ITEM		STATION, OFFSET	SIZE (IN)	LF	Origin	Destination	# of Cables	SIZE/TYPE	Total LF	TITLE				
1	<i>Origin</i>	Feed Point	Sta 537+15.0, 65.7' LT	2	9	Feed Point	Traffic Signal Controller	2	UNDERGROUND CONDUCTOR NO6-TYPE RHW	56					
	<i>Destination</i>	Traffic Signal Controller	Sta 537+06.4, 68.1' LT			Feed Point	Traffic Signal Controller	1	UNDERGROUND CONDUCTOR NO6-TYPE THW	28					
2	<i>Origin</i>	Traffic Signal Controller	Sta 537+06.4, 68.1' LT	4	24	Traffic Signal Controller	Pull Box 1	6	14 AWG 12 CONDUCTOR CABLE	234	SWS1, SWS2, SES1, SES2, NWS1, NWS2 SWP, SEP SWV, SEV, NWV EL2, EL38, EL6 PB1, PB2, PB7 PTZ-P PTZ-V				
	<i>Destination</i>	Pull Box 1	Sta 536+84.0, 75.0' LT			Traffic Signal Controller	Pull Box 1	2	14 AWG 5 CONDUCTOR CABLE	78					
						Traffic Signal Controller	Pull Box 1	3	VIDEO DETECTION CABLE	117					
						Traffic Signal Controller	Pull Box 1	3	14 AWG 2 CONDUCTOR CABLE	117					
						Traffic Signal Controller	Pull Box 1	3	16 AWG 2 CONDUCTOR CABLE	117					
						Traffic Signal Controller	Pull Box 1	1	CAT 6 CABLE	39					
						Traffic Signal Controller	Pull Box 1	1	16 AWG 3 CONDUCTOR CABLE	39					
3	<i>Origin</i>	Pull Box 1	Sta 536+84.0, 75.0' LT	2	13	Pull Box 1	Pushbutton Post 2	1	16 AWG 2 CONDUCTOR CABLE	19	PB2				
	<i>Destination</i>	Northwest Pushbutton Post	Sta 536+75.9, 65.4' LT												
4	<i>Origin</i>	Pull Box 1	Sta 536+84.0, 75.0' LT	2	16	Pull Box 1	Northwest Combo Signal Std Transformer Base	2	14 AWG 12 CONDUCTOR CABLE	54	NWS1, NWS2 NWV EL61 PTZ-P PTZ-V				
	<i>Destination</i>	Northwest Combo Signal Std	Sta 536+68.7, 72.4' LT			Pull Box 1	Northwest Video Detection Unit	1	VIDEO DETECTION CABLE	75					
						Pull Box 1	Northwest Emergency Preemption Lamp	1	14 AWG 2 CONDUCTOR CABLE	22					
						Pull Box 1	Pan Tilt Zoom Camera Unit	1	CAT 6 CABLE	57					
						Pull Box 1	Pan Tilt Zoom Camera Unit	1	16 AWG 3 CONDUCTOR CABLE	57					
5	<i>Origin</i>	Pull Box 1	Sta 536+84.0, 75.0' LT	4	110	Pull Box 1	Pull Box 2	4	14 AWG 12 CONDUCTOR CABLE	488	SWS1, SWS2, SES1, SES2 SWP, SEP SWV, SEV EL2, EL38 PB1, PB7				
	<i>Destination</i>	Pull Box 2	Sta 535+75.0, 77.0' LT			Pull Box 1	Pull Box 2	2	14 AWG 5 CONDUCTOR CABLE	244					
						Pull Box 1	Pull Box 2	2	VIDEO DETECTION CABLE	244					
						Pull Box 1	Pull Box 2	2	14 AWG 2 CONDUCTOR CABLE	244					
						Pull Box 1	Pull Box 2	2	16 AWG 2 CONDUCTOR CABLE	244					
						Pull Box 1	Pull Box 2	2							
6	<i>Origin</i>	Pull Box 2	Sta 535+75.0, 77.0' LT	2	30	Pull Box 2	Pushbutton Post 1	1	16 AWG 2 CONDUCTOR CABLE	36	PB1				
	<i>Destination</i>	Southwest Pushbutton Post	Sta 535+90.6, 52.0' LT												
7	<i>Origin</i>	Pull Box 2	Sta 535+75.0, 77.0' LT	2	13	Pull Box 2	Southwest Combo Signal Std Transformer Base	2	14 AWG 12 CONDUCTOR CABLE	48	SWS1, SWS2 SWV EL38				
	<i>Destination</i>	Southwest Combo Signal Std	Sta 535+68.2, 66.5' LT			Pull Box 2	Southwest Video Detection Unit	1	VIDEO DETECTION CABLE	103					
						Pull Box 2	Southwest Emergency Preemption Lamp	1	14 AWG 2 CONDUCTOR CABLE	19					
8	<i>Origin</i>	Pull Box 2	Sta 535+75.0, 77.0' LT	4	149	Pull Box 2	Pull Box 3	1	14 AWG 12 CONDUCTOR CABLE	161	SES1 SES2 SEV EL2 PB7				
	<i>Destination</i>	Pull Box 3	Sta 535+77.0, 71.0' RT			Pull Box 2	Pull Box 3	1	14 AWG 5 CONDUCTOR CABLE	161					
						Pull Box 2	Pull Box 3	1	VIDEO DETECTION CABLE	161					
						Pull Box 2	Pull Box 3	1	14 AWG 2 CONDUCTOR CABLE	161					
						Pull Box 2	Pull Box 3	1	16 AWG 2 CONDUCTOR CABLE	161					
9	<i>Origin</i>	Pull Box 3	Sta 535+77.0, 71.0' RT	2	20	Pull Box 3	Pushbutton 7	1	16 AWG 2 CONDUCTOR CABLE	34	PB7				
	<i>Destination</i>	Southeast Pushbutton Post	Sta 535+82.4, 52.0' RT												
10	<i>Origin</i>	Pull Box 3	Sta 535+77.0, 71.0' RT	2	14	Pull Box 3	Southeast Combo Signal Std Transformer Base	1	14 AWG 12 CONDUCTOR CABLE	25	SES1 SES2 SEV EL2				
	<i>Destination</i>	Southeast Combo Signal Std	Sta 535+90.4, 71.7' RT			Pull Box 3	Southeast Combo Signal Std Transformer Base	1	14 AWG 5 CONDUCTOR CABLE	25					
						Pull Box 3	Southeast Video Detection Unit	1	VIDEO DETECTION CABLE	60					
						Pull Box 3	Southeast Emergency Preemption Lamp	1	14 AWG 2 CONDUCTOR CABLE	20					
11	<i>Origin</i>	Traffic Signal Controller	Sta 537+06.4, 68.1' LT	4	27	Traffic Signal Controller	Pull Box 4	2	14 AWG 12 CONDUCTOR CABLE	84	NES1, NES2 NWP, NEP NEV EL47 PB3, PB4, PB5, PB6				
	<i>Destination</i>	Pull Box 4	Sta 537+26.0, 50.0' LT			Traffic Signal Controller	Pull Box 4	2	14 AWG 5 CONDUCTOR CABLE	84					
						Traffic Signal Controller	Pull Box 4	1	VIDEO DETECTION CABLE	42					
						Traffic Signal Controller	Pull Box 4	1	14 AWG 2 CONDUCTOR CABLE	42					
						Traffic Signal Controller	Pull Box 4	4	16 AWG 2 CONDUCTOR CABLE	168					
12	<i>Origin</i>	Pull Box 4	Sta 537+26.0, 50.0' LT	2	10	Pull Box 4	Northwest Type II Pedestrian Std Transformer Base	1	14 AWG 5 CONDUCTOR CABLE	21	NWP PB3				
	<i>Destination</i>	Northwest Type II Ped Std	Sta 537+17.5, 53.0' LT			Pull Box 4	Pushbutton Post 3	1	16 AWG 2 CONDUCTOR CABLE	16					
13	<i>Origin</i>	Pull Box 4	Sta 537+26.0, 50.0' LT	4	56	Pull Box 4	Pull Box 5	2	14 AWG 12 CONDUCTOR CABLE	136	NES1, NES2 NEP NEV EL47 PB4, PB5, PB6				
	<i>Destination</i>	Pull Box 5	Sta 537+26.0, 05.5' RT			Pull Box 4	Pull Box 5	1	14 AWG 5 CONDUCTOR CABLE	68					
						Pull Box 4	Pull Box 5	1	VIDEO DETECTION CABLE	68					
						Pull Box 4	Pull Box 5	1	14 AWG 2 CONDUCTOR CABLE	68					
						Pull Box 4	Pull Box 5	3	16 AWG 2 CONDUCTOR CABLE	204					
						Pull Box 4	Pull Box 5								
14	<i>Origin</i>	Pull Box 5	Sta 537+26.0, 05.5' RT	2	8	Pull Box 5	Pushbutton Post 4	1	16 AWG 2 CONDUCTOR CABLE	14	PB4				
	<i>Destination</i>	North Median Pushbutton Post	Sta 537+18.0, 05.5' RT					1							
15	<i>Origin</i>	Pull Box 5	Sta 537+26.0, 05.5' RT	4	47	Pull Box 5	Pull Box 6	2	14 AWG 12 CONDUCTOR CABLE	118	NES1, NES2 NEP NEV EL47 PB5, PB6				
	<i>Destination</i>	Pull Box 6	Sta 537+26.0, 52.0' RT			Pull Box 5	Pull Box 6	1	14 AWG 5 CONDUCTOR CABLE	59					
						Pull Box 5	Pull Box 6	1	VIDEO DETECTION CABLE	59					
						Pull Box 5	Pull Box 6	1	14 AWG 2 CONDUCTOR CABLE	59					
						Pull Box 5	Pull Box 6	2	16 AWG 2 CONDUCTOR CABLE	118					
16	<i>Origin</i>	Pull Box 6	Sta 537+26.0, 52.0' RT	2	12	Pull Box 6	Northeast Type II Pedestrian Std Transformer Base	1	14 AWG 5 CONDUCTOR CABLE	23	NEP PB5				
	<i>Destination</i>	Northeast Type II Ped Std	Sta 537+17.5, 43.5' RT			Pull Box 6	Pushbutton Post 5	1	16 AWG 2 CONDUCTOR CABLE	18					
17	<i>Origin</i>	Pull Box 6	Sta 537+26.0, 52.0' RT	2	66	Pull Box 6	Pushbutton Post 6	1	16 AWG 2 CONDUCTOR CABLE	72	PB6				
	<i>Destination</i>	Northeast Pushbutton post	Sta 536+60.9, 52.0' RT												
18	<i>Origin</i>	Pull Box 6	Sta 537+26.0, 52.0' RT	2	61	Pull Box 6	Northeast Combo Signal Std Transformer Base	2	14 AWG 12 CONDUCTOR CABLE	144	NES1, NES2 NEV EL47				
	<i>Destination</i>	Northeast Combo Signal Std	Sta 536+68.4, 69.5' RT			Pull Box 6	Northeast Video Detection Unit	1	VIDEO DETECTION CABLE	154					
						Pull Box 6	Northeast Emergency Preemption Lamp	1	14 AWG 2 CONDUCTOR CABLE	67					

SWS1 = Southwest Combo Signal Standard 1  
SWS2 = Southwest Combo Signal Standard 2  
NWS1 = Northwest Combo Signal Standard 1  
NWS2 = Northwest Combo Signal Standard 2  
NES1 = Northeast Combo Signal Standard 1  
NES2 = Northeast Combo Signal Standard 2  
SES1 = Southeast Combo Signal Standard 1  
NWP = Northwest Type II Ped Signal Standard  
NEP = Northeast Type II Ped Signal Standard  
SES2 = Southeast Combo Signal Standard 2  
SWV = Southwest Video Detection Unit  
NWV = Northwest Video Detection Unit  
NEV = Northeast Video Detection Unit  
SEV = Southeast Video Detection Unit  
EL2 = Ø2 EVP Light  
EL38 = Ø3 + Ø8 EVP Light  
EL47 = Ø4 + Ø7 EVP Light  
EL6 = Ø6 EVP Light  
PB1 = Pedestrian Pushbutton 1  
PB2 = Pedestrian Pushbutton 2  
PB3 = Pedestrian Pushbutton 3  
PB4 = Pedestrian Pushbutton 4  
PB5 = Pedestrian Pushbutton 5  
PB6 = Pedestrian Pushbutton 6  
PB7 = Pedestrian Pushbutton 7  
PTZ-P = Pan Tilt Zoom Power  
PTZ-V = Pan Tilt Zoom Video

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Sheyenne Street

Cable and Conduit Schedule  
Traffic Signal System - Site 2

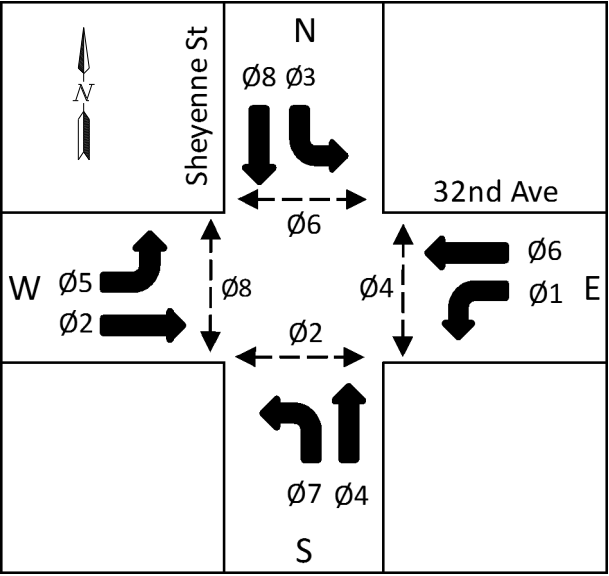
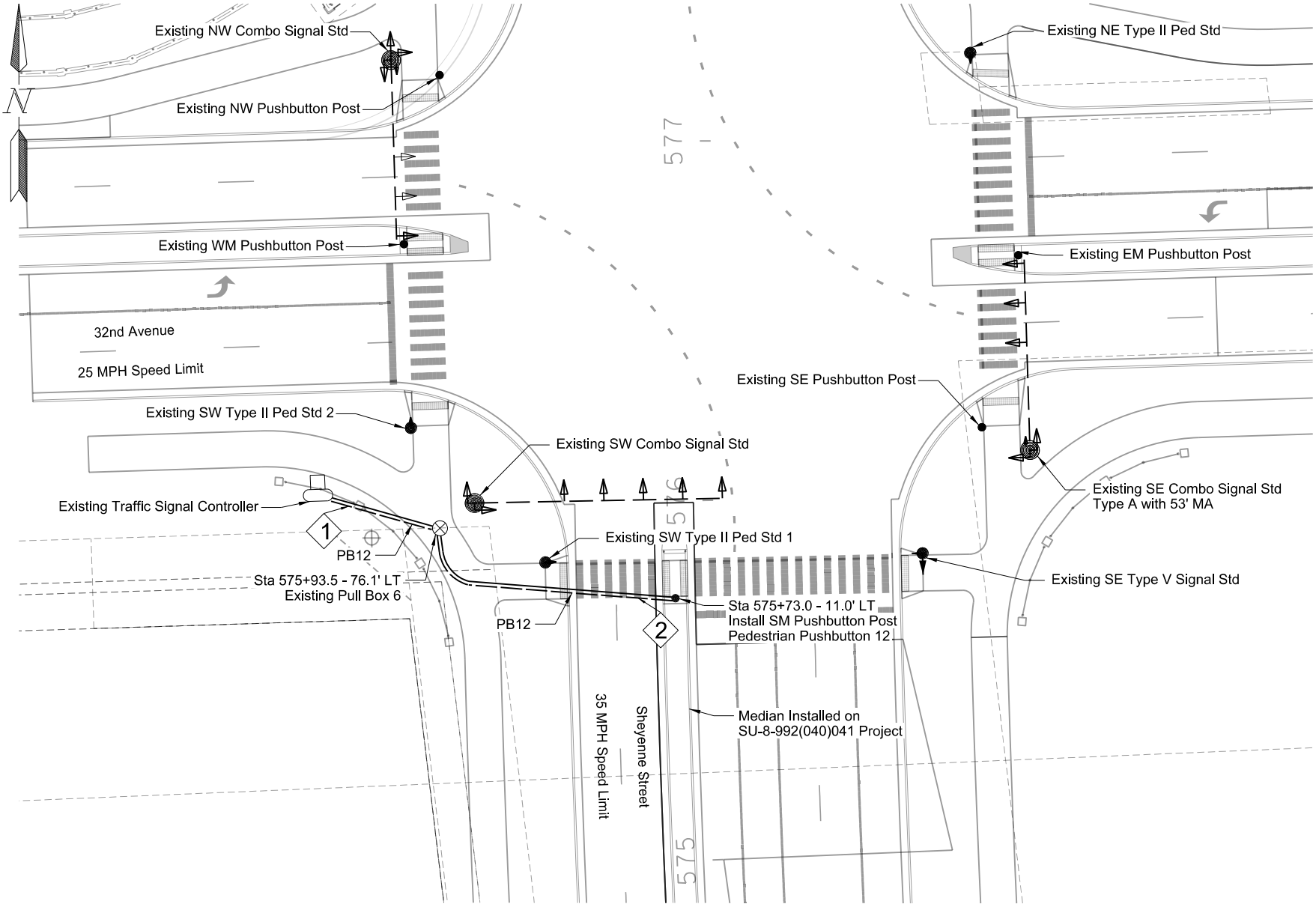
38th Avenue W / Hidden Circle



INTERNAL MAST ARM/STANDARD SIGNAL HEAD CABLE									
Origin	Destination	# of Cables	SIZE/TYPE	Total LF	Origin	Destination	# of Cables	SIZE/TYPE	Total LF
Southwest Combo Signal Std Transformer Base	Vehicle Head 1	1	14 AWG 5 CONDUCTOR CABLE	89	Northeast Type II Pedestrian Std Transformer Base	Pedestrian Head 4	1	14 AWG 3 CONDUCTOR CABLE	17
	Vehicle Head 2	1	14 AWG 5 CONDUCTOR CABLE	78					
	Vehicle Head 3	1	14 AWG 5 CONDUCTOR CABLE	67	Northeast Combo Signal Std Transformer Base	Vehicle Head 9	1	14 AWG 5 CONDUCTOR CABLE	92
	Vehicle Head 4	1	14 AWG 5 CONDUCTOR CABLE	20		Vehicle Head 10	1	14 AWG 5 CONDUCTOR CABLE	81
	Vehicle Head 5	1	14 AWG 5 CONDUCTOR CABLE	20		Vehicle Head 11	1	14 AWG 5 CONDUCTOR CABLE	70
	Pedestrian Head 1	1	14 AWG 3 CONDUCTOR CABLE	17		Vehicle Head 12	1	14 AWG 5 CONDUCTOR CABLE	20
Northwest Combo Signal Std Transformer Base	Vehicle Head 6	1	14 AWG 5 CONDUCTOR CABLE	47		Vehicle Head 13	1	14 AWG 5 CONDUCTOR CABLE	20
	Vehicle Head 7	1	14 AWG 5 CONDUCTOR CABLE	20		Pedestrian Head 5	1	14 AWG 3 CONDUCTOR CABLE	17
	Vehicle Head 8	1	14 AWG 5 CONDUCTOR CABLE	20	Southeast Combo Signal Std Transformer Base	Vehicle Head 14	1	14 AWG 5 CONDUCTOR CABLE	52
	Pedestrian Head 2	1	14 AWG 3 CONDUCTOR CABLE	17		Vehicle Head 15	1	14 AWG 7 CONDUCTOR CABLE	20
Northwest Type II Pedestrian Std Transformer Base						Vehicle Head 16	1	14 AWG 5 CONDUCTOR CABLE	20
	Pedestrian Head 3	1	14 AWG 3 CONDUCTOR CABLE	17		Pedestrian Head 6	1	14 AWG 3 CONDUCTOR CABLE	17

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Sheyenne Street  
  
Cable and Conduit Schedule  
Traffic Signal System - Site 2  
  
38th Avenue W / Hidden Circle



Sign R10-3e



Pedestrian Pushbutton Schedule		
Location	Pushbutton & Sign Location on Pole	Direction of Arrow on Sign
Pushbutton 12	North	Double

- Legend**
- Signal Controller
  - Signal Head
  - Feed Point
  - Video Detection Unit
  - Signal Standard
  - Pushbutton Post
  - Pedestrian Head

SIGNAL CABLE & CONDUIT SCHEDULE										
RUN				CONDUIT		CABLE				
#	ITEM	STATION, OFFSET	SIZE (IN)	LF	Origin	Destination	# of Cables	SIZE/TYPE	Total LF	TITLE
1	<i>Origin</i> Existing Traffic Signal Controller <i>Destination</i> Existing Pull Box 6	576+03.0, 109.9' LT 575+93.5, 76.1' LT	4*	35	Existing Traffic Signal Controller	Existing Pull Box 6	1	16 AWG 2 CONDUCTOR CABLE	50	PB12
2	<i>Origin</i> Existing Pull Box 6 <i>Destination</i> South Median Pushbutton Post	575+93.5, 76.1' LT 575+73.0, 11.0' LT	2*	76	Existing Pull Box 6	Pushbutton 12	1	16 AWG 2 CONDUCTOR CABLE	90	PB12
*all conduit in place										
PB12 = Pedestrian Pushbutton 12										

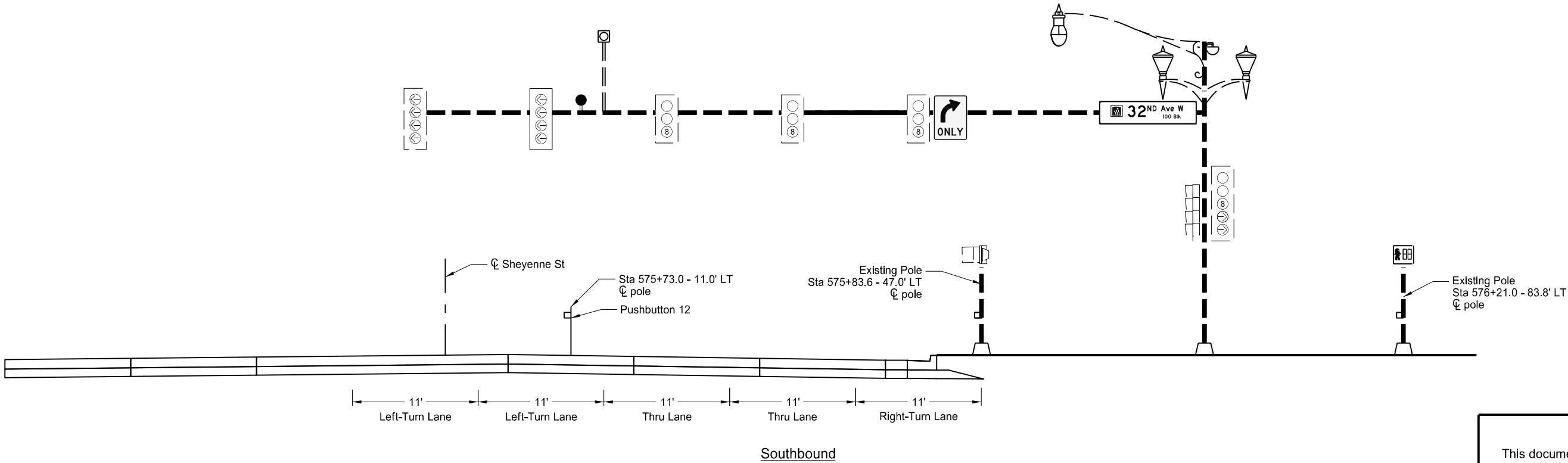
Note:  
1. Stationing based on Chain PR17

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Sheyenne Street  
Signal Layout  
Traffic Signal System - Site 3  
32nd Avenue W

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SU-8-992(040)041	150	22

Southwest Combo Signal Standard



Legend

Video Detection Camera

Traffic Signal Head  
w/ Associated Phase

Signal Head Number

EVP Light

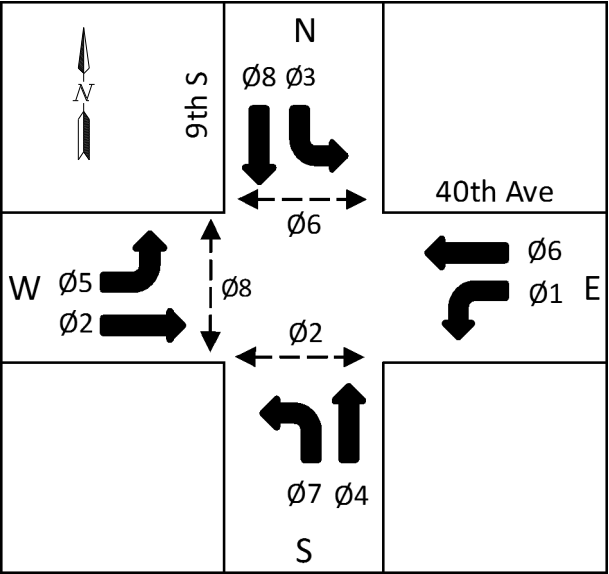
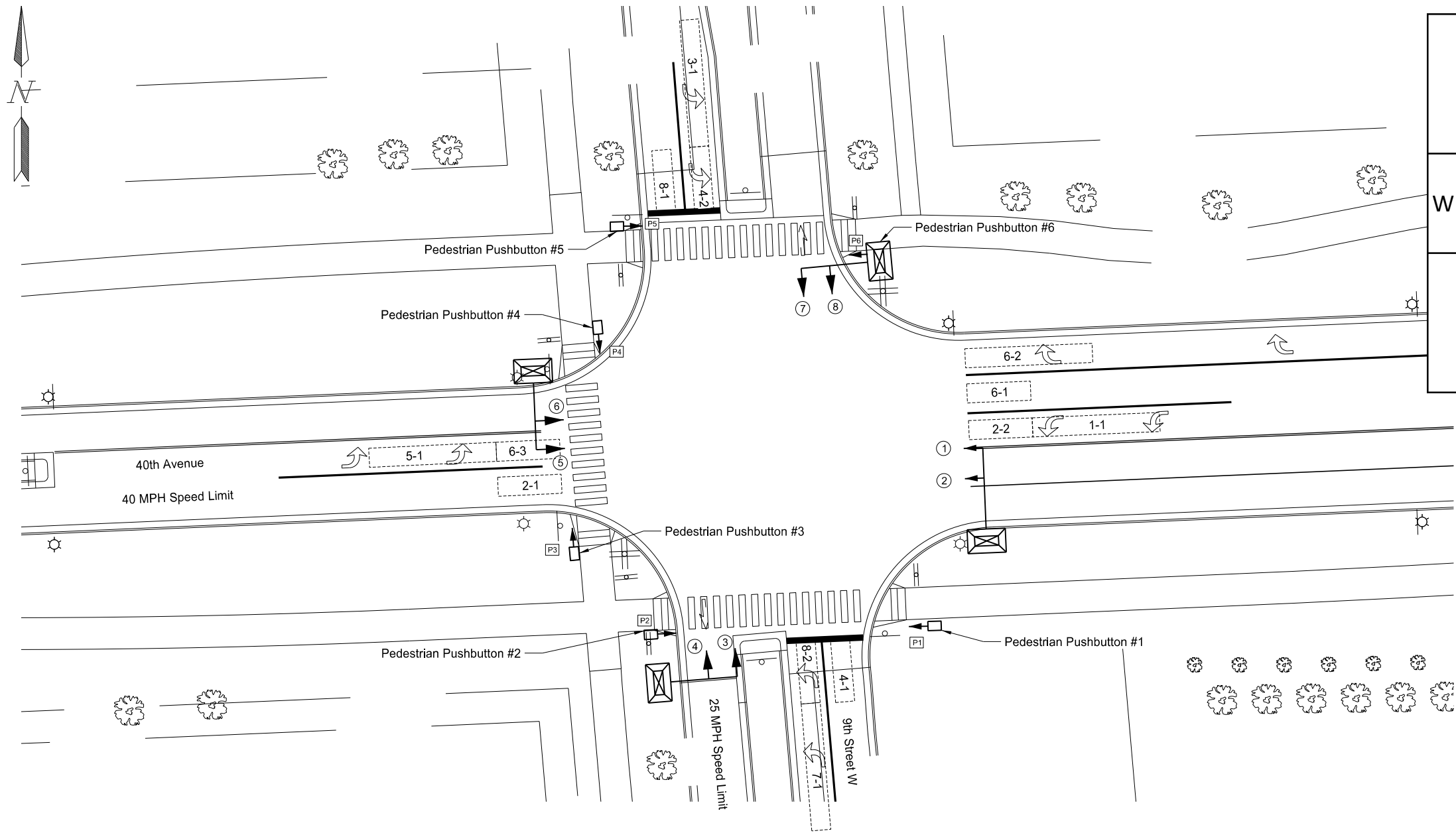
PTZ Camera

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Sheyenne Street

Signal Standards and Head Locations  
Traffic Signal System - Site 3

32nd Avenue W

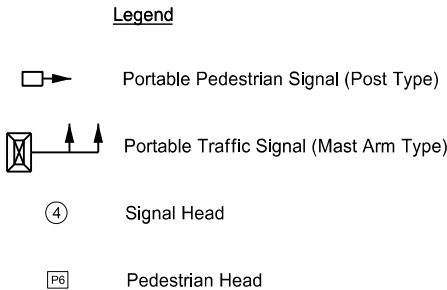
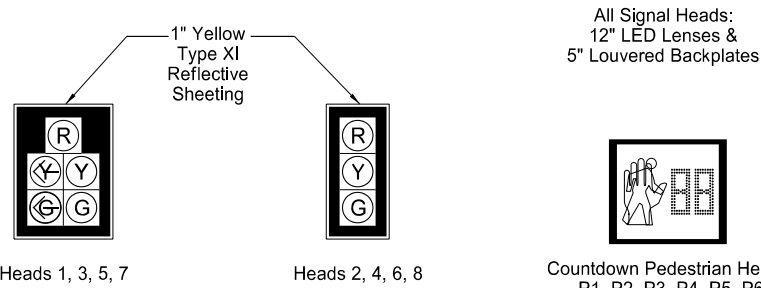


DETECTION ZONE SCHEDULE

Phase-Number	Distance From Stop Bar (feet)	Length (feet)	Presence/Counting	Queue/Counting	Non-Locking Memory
1-1	20	40	X		X
2-1	0	20		X	X
2-2	0	20		X	X
3-1	20	40	X		X
4-1	0	20		X	X
4-2	0	20		X	X
5-1	20	40	X		X
6-1	0	20		X	X
6-2	0	40		X	X
6-3	0	20		X	X
7-1	20	40	X		X
8-1	0	20		X	X
8-2	0	20		X	X

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Sheyenne Street  
Portable Signal Layout  
Interim Traffic Signal  
40th Avenue W / 9th Street W

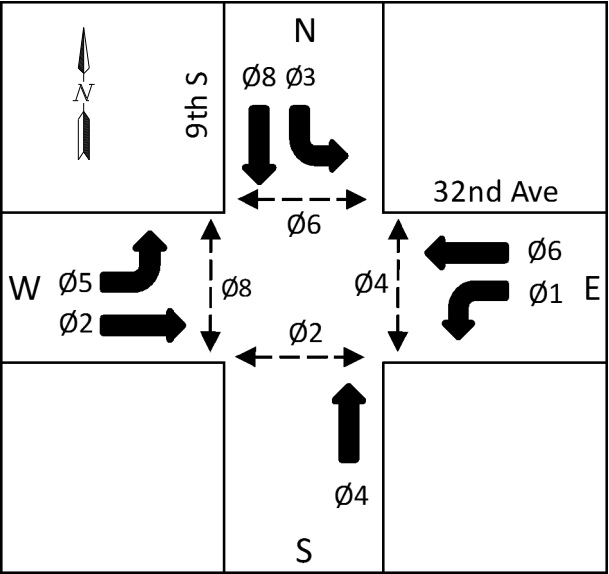
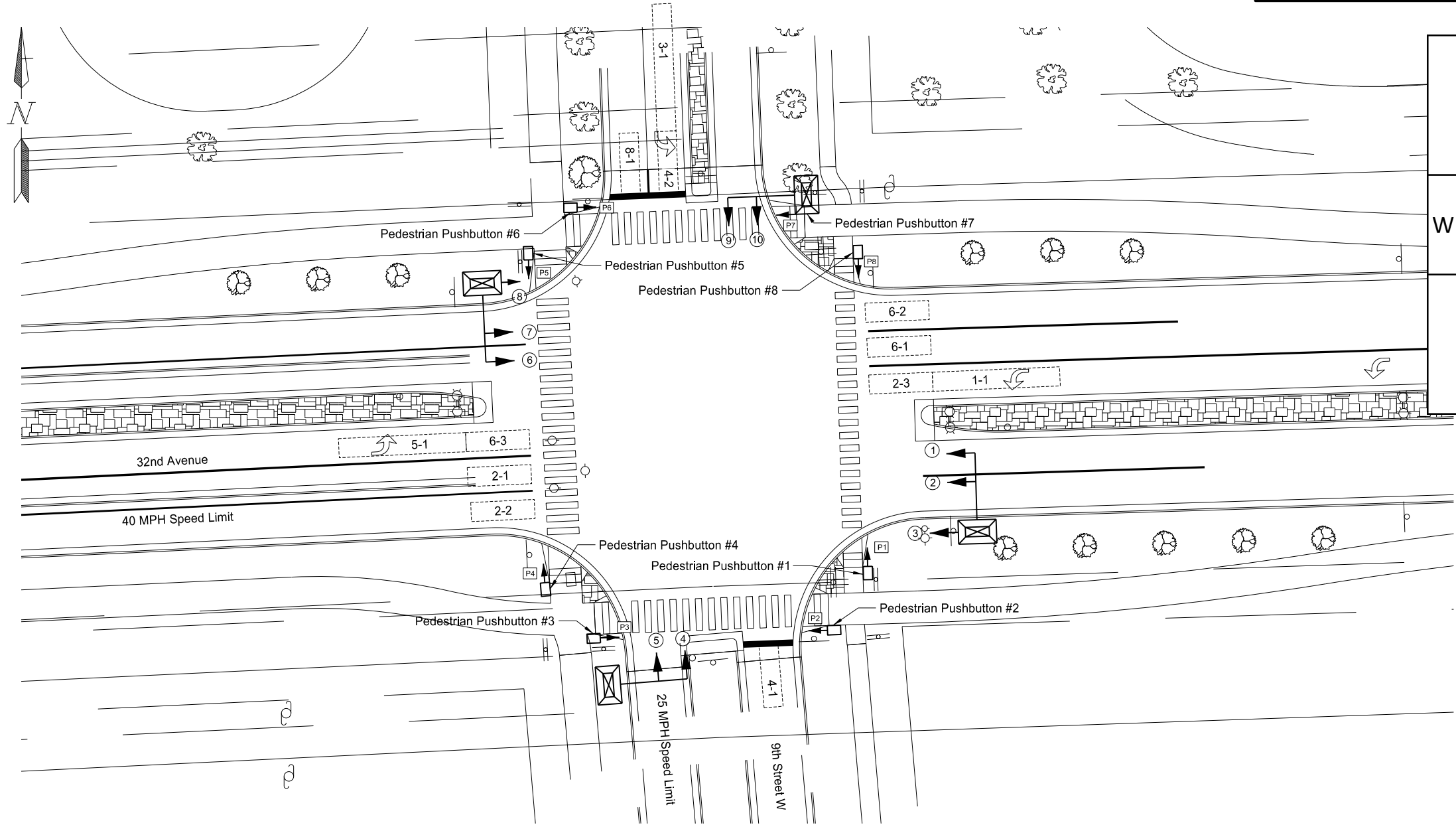


Sign R10-3e



Pedestrian Pushbutton Schedule

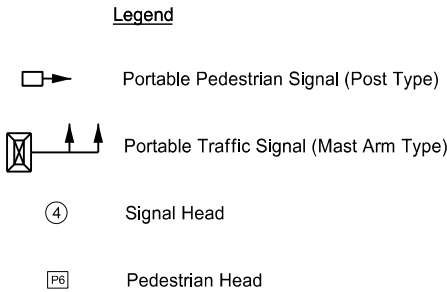
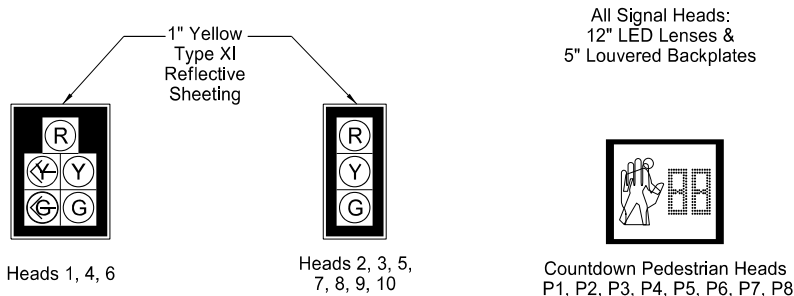
Location	Pushbutton & Sign Location on Signal	Direction of Arrow on Sign
Pushbutton 1	North	Right
Pushbutton 2	North	Left
Pushbutton 3	East	Right
Pushbutton 4	West	Right
Pushbutton 5	South	Right
Pushbutton 6	North	Right



DETECTION ZONE SCHEDULE					
Phase-Number	Distance From Stop Bar (feet)	Length (feet)	Presence/Counting Queue/Counting	Non-Locking	Memory
1-1	20	40	X		X
2-1	0	20		X	X
2-2	0	20		X	X
2-3	0	20		X	X
3-1	20	40	X		X
4-1	0	20		X	X
4-2	0	20		X	X
5-1	20	40	X		X
6-1	0	20		X	X
6-2	0	40		X	X
6-3	0	20		X	X
8-1	0	20		X	X

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Sheyenne Street  
Portable Signal Layout  
Interim Traffic Signal  
32nd Avenue W / 9th Street W



Sign R10-3e



Pedestrian Pushbutton Schedule		
Location	Pushbutton & Sign Location on Signal	Direction of Arrow on Sign
Pushbutton 1	West	Left
Pushbutton 2	North	Right
Pushbutton 3	North	Left
Pushbutton 4	East	Right
Pushbutton 5	East	Left
Pushbutton 6	South	Right
Pushbutton 7	South	Left
Pushbutton 8	West	Right

		SITE 1 40th Ave W	SITE 2 38th Ave S	SITE 3 32nd Ave W	Interim Traffic Signal 40th Ave W & 9th St W	Interim Traffic Signal 32nd Ave W & 9th St W
CONCRETE FOUNDATION-TRAFFIC SIGNALS	EA	8	6	-	-	-
CONCRETE FOUNDATION-FEED POINT-TYPE B	EA	1	1	-	-	-
FEED POINT-COMBO LIGHTING & SIGNAL-PAD MOUNT	EA	1	1	-	-	-
PULLBOX	EA	8	6	-	-	-
2IN DIAMETER RIGID CONDUIT	LF	358	272	-	-	-
3IN DIAMETER RIGID CONDUIT	LF	124	0	-	-	-
4IN DIAMETER RIGID CONDUIT	LF	361	413	-	-	-
UNDERGROUND CONDUCTOR NO6-TYPE RHW	LF	58	56	-	-	-
UNDERGROUND CONDUCTOR NO6-TYPE THW	LF	29	28	-	-	-
NO16 AWG 2 CONDUCTOR CABLE	LF	2,521	1,221	140	-	-
NO14 AWG 2 CONDUCTOR CABLE	LF	1,231	819	-	-	-
NO14 AWG 3 CONDUCTOR CABLE	LF	68	85	-	-	-
NO14 AWG 5 CONDUCTOR CABLE	LF	974	1,387	-	-	-
NO14 AWG 7 CONDUCTOR CABLE	LF	522	20	-	-	-
NO14 AWG 12 CONDUCTOR CABLE	LF	1,916	1,492	-	-	-
NO16 AWG 3 CONDUCTOR CABLE	LF	100	96	-	-	-
CAT 6 CABLE	LF	100	96	-	-	-
TYPE II SIGNAL STANDARD	EA	4	2	-	-	-
COMBO 20FT MA SIG & LT STD-TYPE A	EA	-	1	-	-	-
COMBO 25FT MA SIG & LT STD-TYPE A	EA	-	1	-	-	-
COMBO 50FT MA SIG & LT STD-TYPE A	EA	1	-	-	-	-
COMBO 55FT MA SIG & LT STD-TYPE A	EA	1	-	-	-	-
COMBO 62FT MA SIG & LT STD-TYPE A	EA	-	1	-	-	-
COMBO 65FT MA SIG & LT STD-TYPE A	EA	-	1	-	-	-
COMBO 67FT MA SIG & LT STD-TYPE A	EA	1	-	-	-	-
COMBO 70FT MA SIG & LT STD-TYPE A	EA	1	-	-	-	-
PORTABLE PEDESTRIAN SIGNAL (POST TYPE)	EA	-	-	-	5	7
PORTABLE TRAFFIC SIGNAL (MAST ARM TYPE)	EA	-	-	-	4	4
1-WAY 3 SEC HEAD W/12IN LENS-POST MTD	EA	5	7	-	4	7
1-WAY 3 SEC HEAD W/12IN LENS-MA MTD	EA	11	8	-	-	-
1-WAY 4 SEC HEAD W/12IN LENS-POST MTD	EA	2	0	-	-	-
1-WAY 4 SEC HEAD W/12IN LENS-MA MTD	EA	2	0	-	-	-
1-WAY 5 SEC HEAD W/12IN LENS-POST MTD	EA	1	1	-	-	-
1-WAY 5 SEC HEAD W/12IN LENS-MA MTD	EA	-	-	-	4	3
PEDESTRIAN COUNTDOWN SIGNAL HEAD-POST MTD	EA	4	4	-	6	8
PEDESTRIAN COUNTDOWN SIGNAL HEAD-PEDESTAL MTD	EA	4	2	-	-	-
PEDESTRIAN PUSHBUTTON POST	EA	6	5	1	-	-
PEDESTRIAN PUSHBUTTON & SIGN	EA	10	7	1	-	-
VIDEO DETECTION CABLE	LF	1,243	1,081	-	-	-
VIDEO DETECTION SYSTEM (A)	EA	1	1	-	1	1
PTZ CAMERA SYSTEM	EA	1	1	-	-	-
CONTROLLER TYPE 1 (B)	EA	1	1	-	-	-
BATTERY BACKUP SYSTEM	EA	1	1	-	-	-
EMERGENCY VEHICLE PRE-EMPTION UNIT (C)	EA	1	1	-	-	-

- (A) Includes cameras, video monitor, access point and all other equipment required for a fully operational video detection system.
- (B) Includes cabinet, working slab, conflict monitor, load switches, flashers, bus interface units and all other equipment required for a fully operational traffic signal controller.
- (C) Includes detectors, lights and all other equipment required for a fully operation preemption system.

Items shown above are for informational purposes, contractor shall provide all labor and equipment necessary for the signal system to be fully operational as shown in the plans.

772 2800 INTERIM TRAFFIC SIGNAL	2 EA
772 9811 TRAFFIC SIGNAL SYSTEM - SITE 1	1 EA
772 9812 TRAFFIC SIGNAL SYSTEM - SITE 2	1 EA
772 9813 TRAFFIC SIGNAL SYSTEM - SITE 3	1 EA

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Sheyenne Street  
Traffic Signal Quantities

SIGNAL STANDARD FOUNDATION SELECTION TABLE		
Description	Footing Depth "D" 24" & 30" Diameter	Footing Depth "D" 36" & 42" Diameter
<u>Combination 30' Mounting Height</u>		
16' - 20' Signal Mast Arm	12', 12'	12', 12'
21' - 25' Signal Mast Arm	13', 13'	13', 13'
30' - 35' Signal Mast Arm	14', 13'	13', 13'
50' - 55' Signal Mast Arm	20', 17'	17', 16'
60' - 65' Signal Mast Arm	NA, NA	19', 18'
66' - 70' Signal Mast Arm	NA, NA	19', 19'

NOTES FOR SIGNAL STANDARD FOUNDATIONS:

1. For Signal Standard foundations, choose a diameter that is at a minimum the largest of the following scenarios:

- Anchor bolt cage circle diameter plus 12"

- Base plus 6"

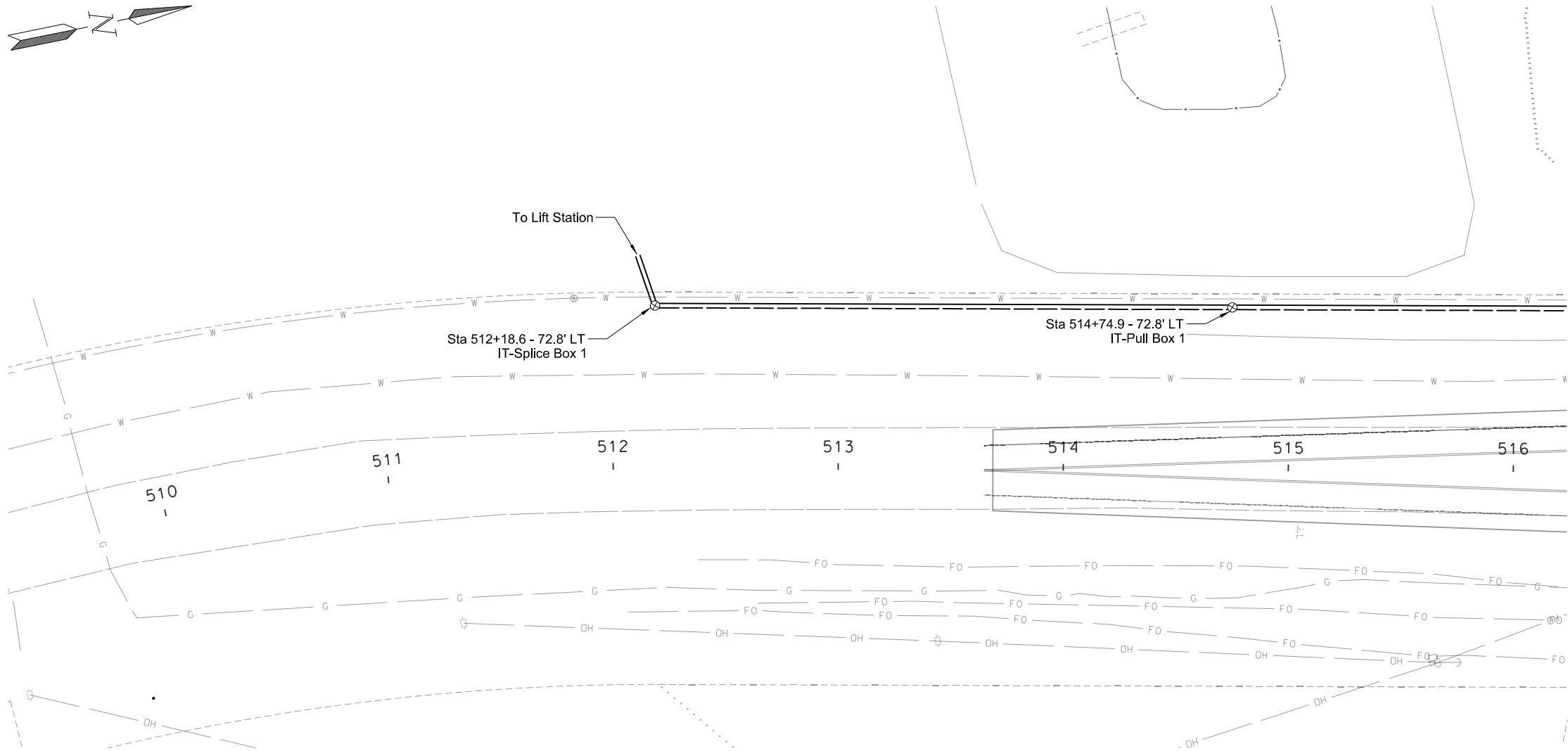
- 24"

It is the Contractor's responsibility to select the appropriate foundation diameter from the Selection Table above and include the corresponding costs for the actual diameter in the corresponding unit price bid "CONCRETE FOUNDATION-TRAFFIC SIGNALS".
2. Provide Class AAE-3 Portland Cement Concrete mixed and proportioned as specified in Section 802.
3. Provide Grade 60 reinforcing steel.
4. The Contractor may use temporary casing to maintain the opening prior to placement of concrete. The casing will be removed prior to curing of the concrete. If casing is used, it will be of sufficient strength to withstand handling and installation procedures. The Contractor will submit a casing material proposal to the Engineer for review two weeks prior to ordering casing material. Include all costs associated with the temporary casing in the corresponding unit price bid "CONCRETE FOUNDATION-TRAFFIC SIGNALS". Permanent casing of the foundation will not be used.
5. Include all costs associated with the construction of the foundation in the corresponding unit price bid "CONCRETE FOUNDATION-TRAFFIC SIGNALS". This includes but is not limited to excavation, concrete, reinforcing steel, anchor bolts and ground rod.
6. See Standard Drawing D-770-1 for additional foundation information.
7. Signal Standards will have a minimum of 6 anchor bolts.

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SHEYENNE STREET

SIGNAL CONCRETE FOUNDATIONS



RUN		CONDUIT		CABLE		
ITEM	STATION, OFFSET	SIZE (IN)	LF	# of Cables	SIZE/TYPE	Total LF
Lift Station IT-Splice Box 1	Verify Sta 512+18.6, 72.8' LT	2 HDPE	10	1	12-SM Fiber Breakout Cable	205
IT-Splice Box 1 IT-Pull Box 1	Sta 512+18.6, 72.8' LT Sta 514+74.9, 72.8' LT	2 HDPE	260	1	48-SM Fiber	455

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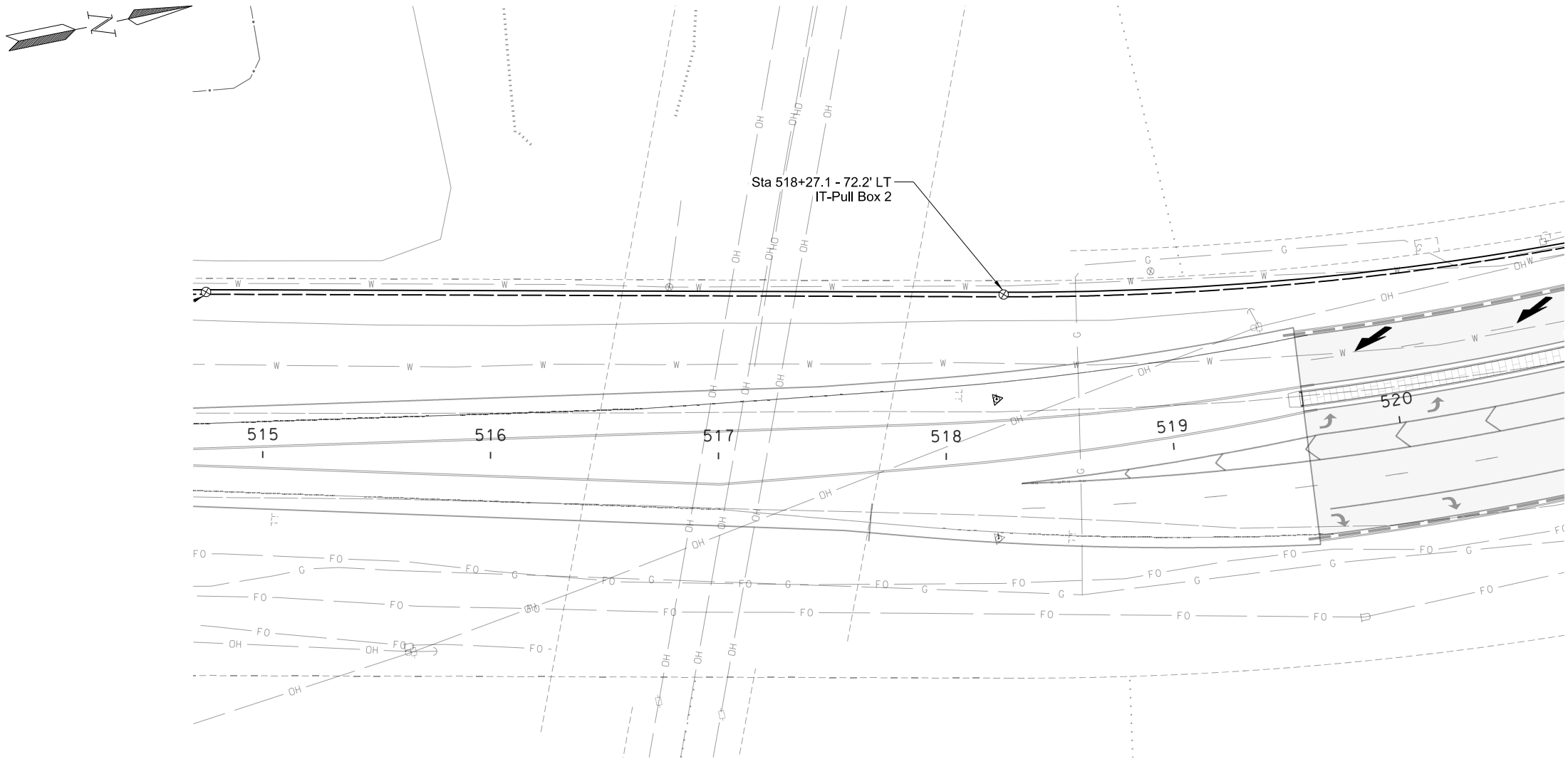
Note: Station Based on Chain PR17

Sheyenne Street

Fiber Layout

510+00 to 515+00



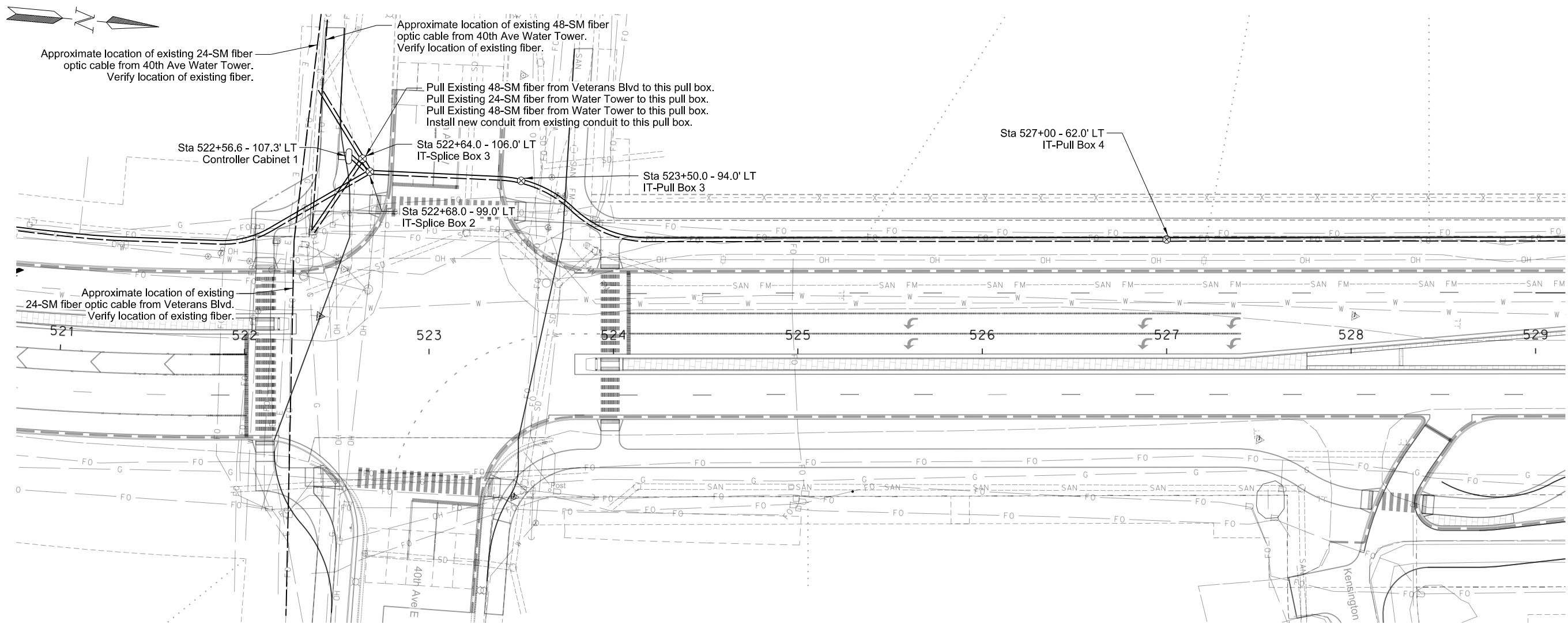


RUN		CONDUIT		CABLE		
ITEM	STATION, OFFSET	SIZE (IN)	LF	# of Cables	SIZE/TYPE	Total LF
IT-Pull Box 1	Sta 514+74.9, 72.8' LT	2	350	1	48-SM Fiber	510
IT-Pull Box 2	Sta 518+27.1, 72.2' LT	HDPE				

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Note: Station Based on Chain PR17

Sheyenne Street  
Fiber Layout  
515+00 to 520+50



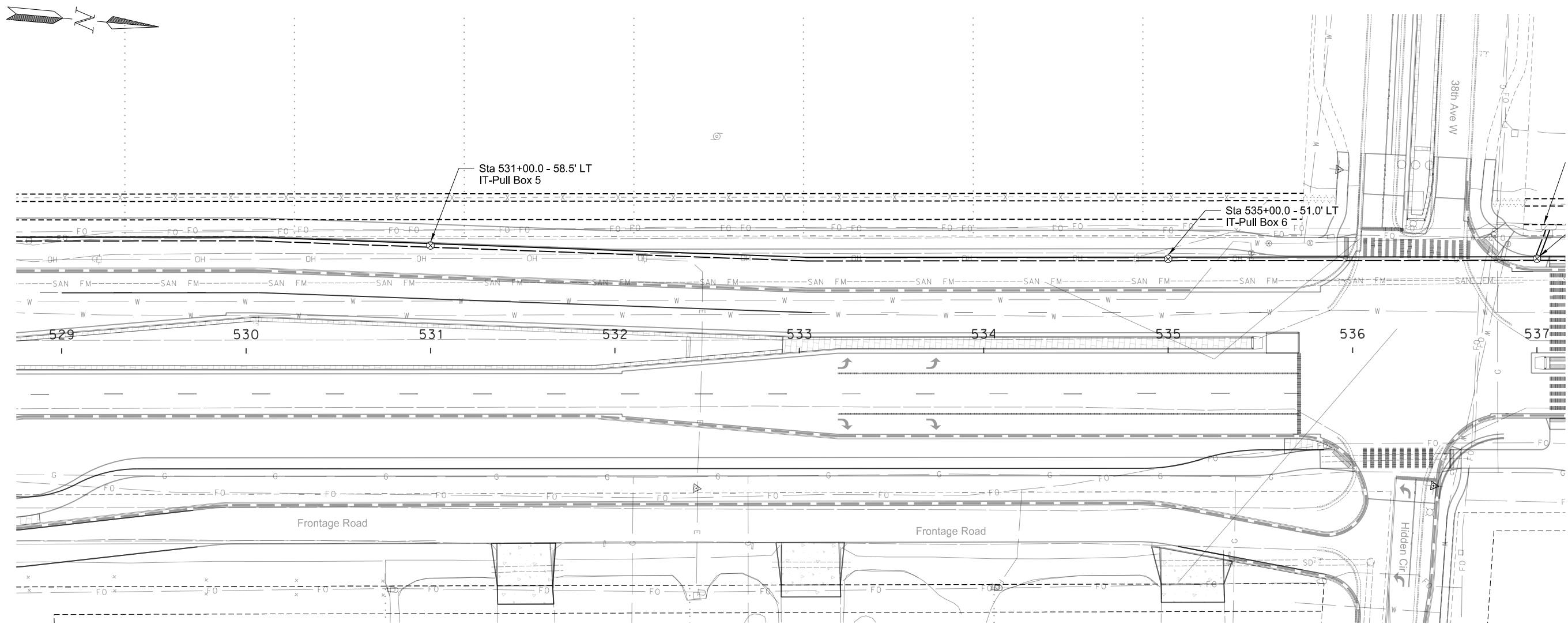
RUN		CONDUIT		CABLE		
ITEM	STATION, OFFSET	SIZE (IN)	LF	# of Cables	SIZE/TYPE	Total LF
IT-Pull Box 2 IT-Splice Box 2	Sta 518+27.1, 72.2' LT Sta 522+68.0, 99.0' LT	2 HDPE	435	1	48-SM Fiber	595
IT-Splice Box 2 Controller Cabinet 1	Sta 522+68.0, 99.0' LT Sta 522+56.6, 107.3' LT	2 HDPE	20	1	12-SM Fiber Breakout Cable	140
IT-Splice Box 2 IT-Splice Box 3	Sta 522+68.0, 99.0' LT Sta 522+64.0, 106.0' LT	2 HDPE	10	1	12-SM Fiber Breakout Cable	170
IT-Splice Box 2 IT-Pull Box 3	Sta 522+68.0, 99.0' LT Sta 523+50.0, 94.0' LT	2 HDPE	85	1	48-SM Fiber	245
IT-Pull Box 3 IT-Pull Box 4	Sta 523+50.0, 94.0' LT Sta 527+00.0, 62.0' LT	2 HDPE	360	1	48-SM Fiber	520

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Sheyenne Street  
Fiber Layout  
520+50 to 529+00

Note: Station Based on Chain PR17

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SU-8-992(040)041	160	4



RUN		CONDUIT		CABLE		
ITEM	STATION, OFFSET	SIZE (IN)	LF	# of Cables	SIZE/TYPE	Total LF
IT-Pull Box 4 IT-Pull Box 5	Sta 527+00.0, 62.0' LT Sta 531+00.0, 58.5' LT	2 HDPE	400	1	48-SM Fiber	560
IT-Pull Box 5 IT-Pull Box 6	Sta 531+00.0, 58.5' LT Sta 535+00.0, 51.0' LT	2 HDPE	400	1	48-SM Fiber	560

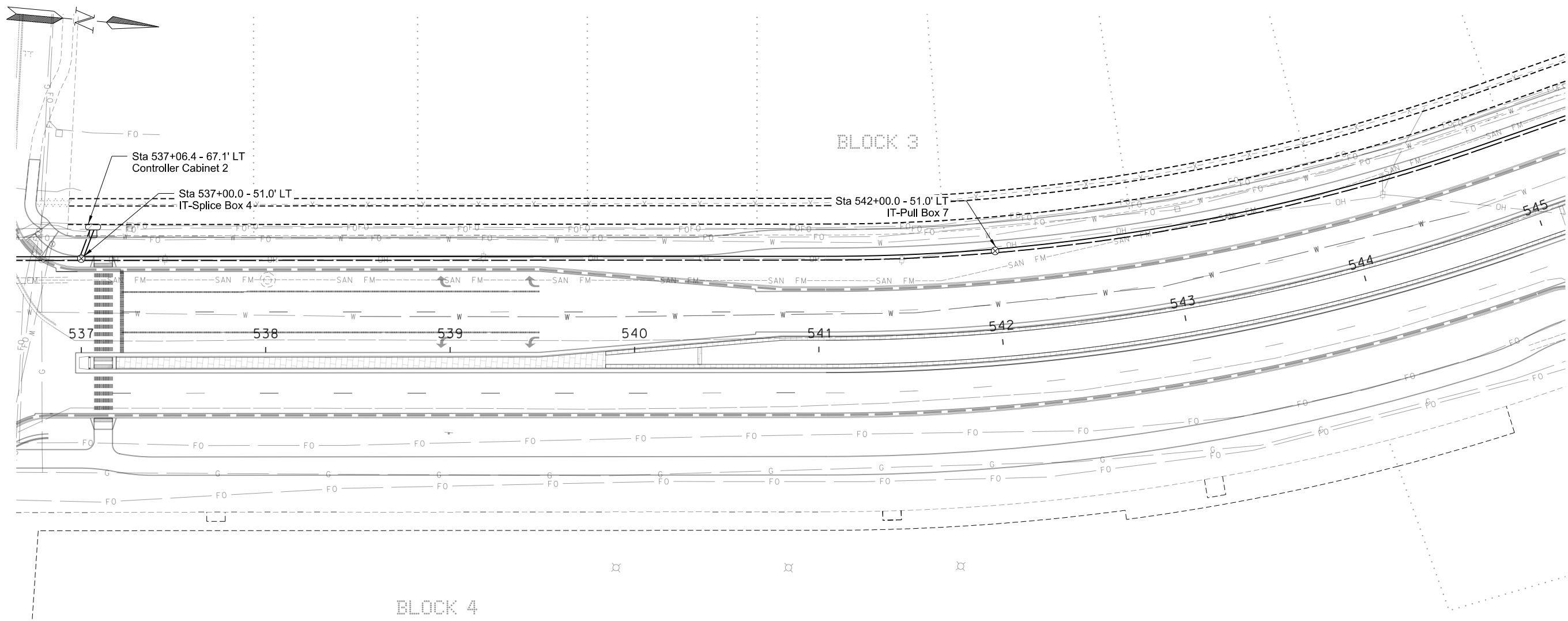
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Sheyenne Street

Fiber Layout

529+00 to 537+00

Note: Station Based on Chain PR17



RUN		CONDUIT		CABLE		
ITEM	STATION, OFFSET	SIZE (IN)	LF	# of Cables	SIZE/TYPE	Total LF
IT-Pull Box 6 IT-Splice Box 4	Sta 535+00.0, 51.0' LT Sta 537+00.0, 51.0' LT	2 HDPE	200	1	48-SM Fiber	360
IT-Splice Box 4 Controller Cabinet 2	Sta 537+00.0, 51.0' LT Sta 537+06.4, 67.1' LT	2 HDPE	20	1	12-SM Fiber Breakout Cable	140
IT-Splice Box 4 IT-Pull Box 7	Sta 537+00.0, 51.0' LT Sta 542+00.0, 51.0' LT	2 HDPE	500	1	48-SM Fiber	660

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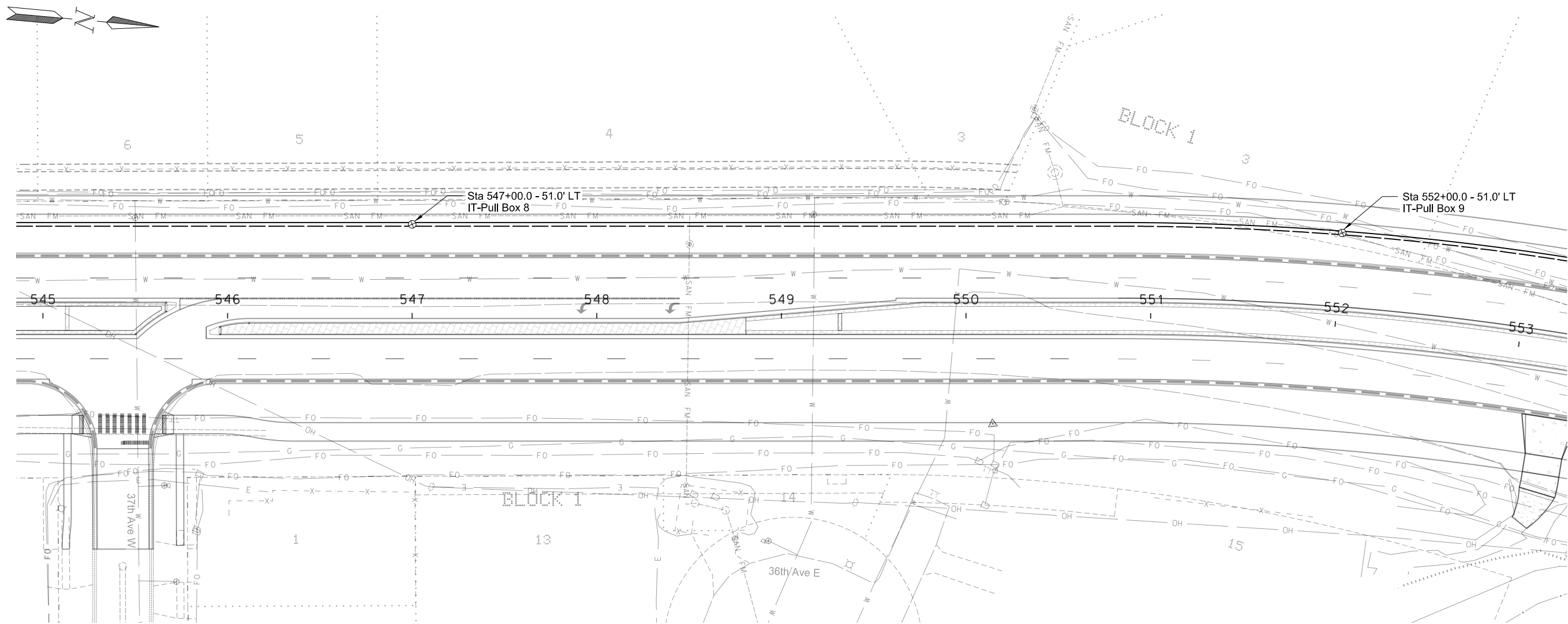
Sheyenne Street

Fiber Layout

537+00 to 545+00

Note: Station Based on Chain PR17

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SU-8-992(040)041	160	6



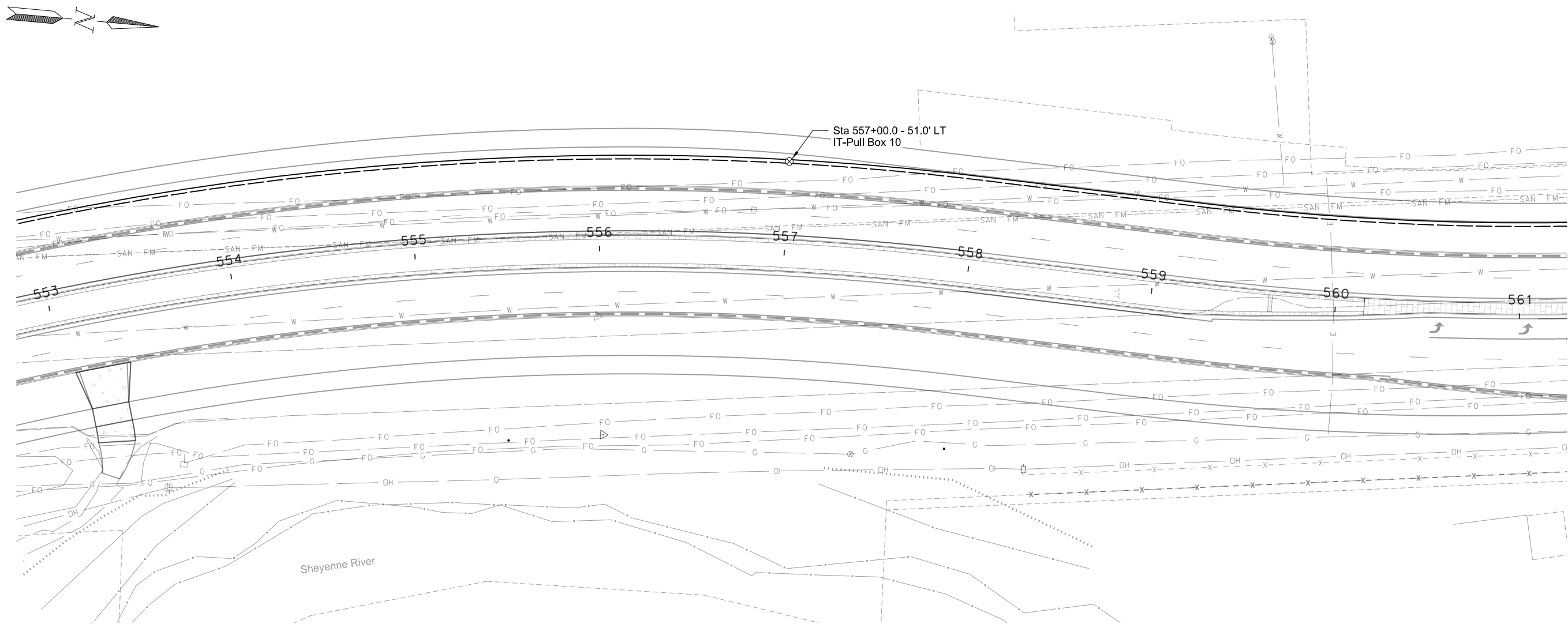
RUN		CONDUIT		CABLE		
ITEM	STATION, OFFSET	SIZE (IN)	LF	# of Cables	SIZE/TYPE	Total LF
IT-Pull Box 7 IT-Pull Box 8	Sta 542+00.0, 51.0' LT Sta 547+00.0, 51.0' LT	2 HDPE	500	1	48-SM Fiber	660
IT-Pull Box 8 IT-Pull Box 9	Sta 547+00.0, 51.0' LT Sta 552+00.0, 51.0' LT	2 HDPE	500	1	48-SM Fiber	660

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Note: Station Based on Chain PR17

Sheyenne Street  
Fiber Layout  
545+00 to 553+00

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SU-8-992(040)041	160	7

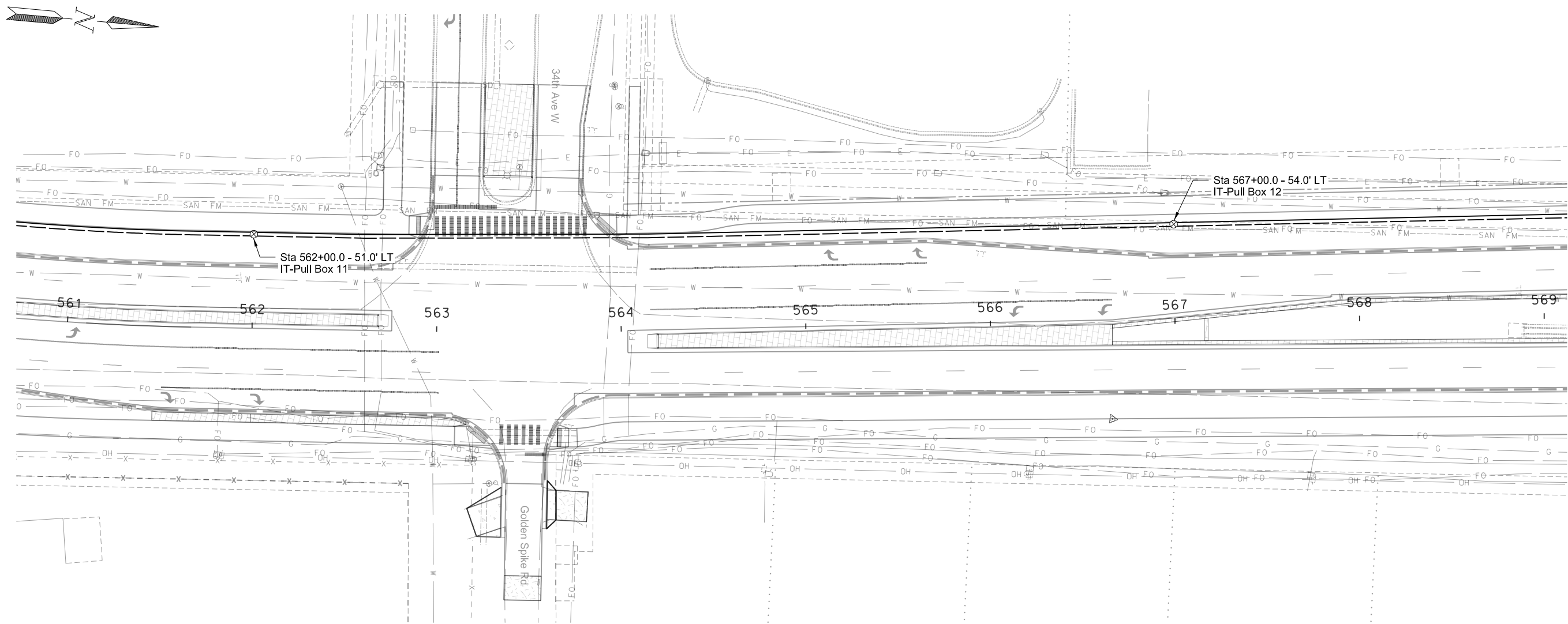


RUN		CONDUIT		CABLE		
ITEM	STATION, OFFSET	SIZE (IN)	LF	# of Cables	SIZE/TYPE	Total LF
IT-Pull Box 9 IT-Pull Box 10	Sta 552+00.0, 51.0' LT Sta 557+00.0, 51.0' LT	2 HDPE	500	1	48-SM Fiber	660

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Sheyenne Street  
Fiber Layout  
553+00 to 561+00

Note: Station Based on Chain PR17

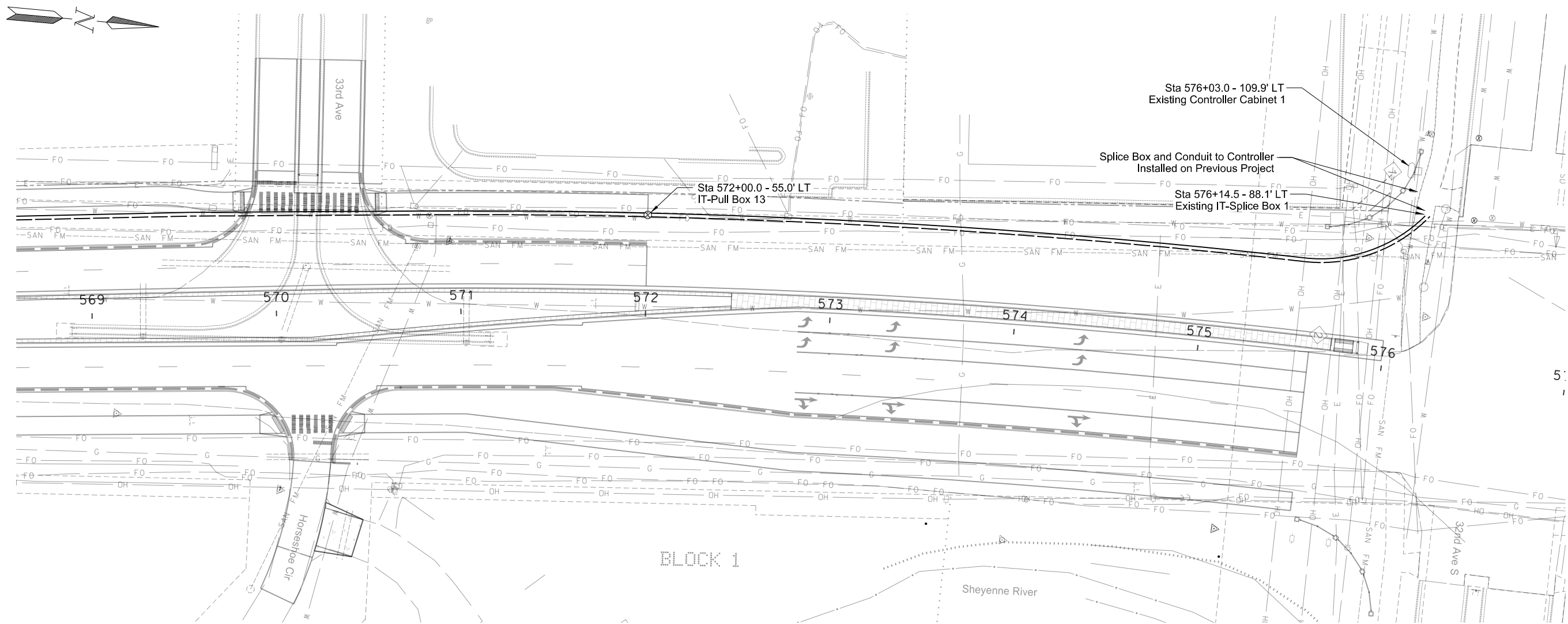


RUN		CONDUIT		CABLE		
ITEM	STATION, OFFSET	SIZE (IN)	LF	# of Cables	SIZE/TYPE	Total LF
IT-Pull Box 10 IT-Pull Box 11	Sta 557+00.0, 51.0' LT Sta 562+00.0, 51.0' LT	2 HDPE	500	1	48-SM Fiber	660
IT-Pull Box 11 IT-Pull Box 12	Sta 562+00.0, 51.0' LT Sta 567+00.0, 54.0' LT	2 HDPE	500	1	48-SM Fiber	660

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Sheyenne Street  
Fiber Layout  
561+00 to 569+00

Note: Station Based on Chain PR17



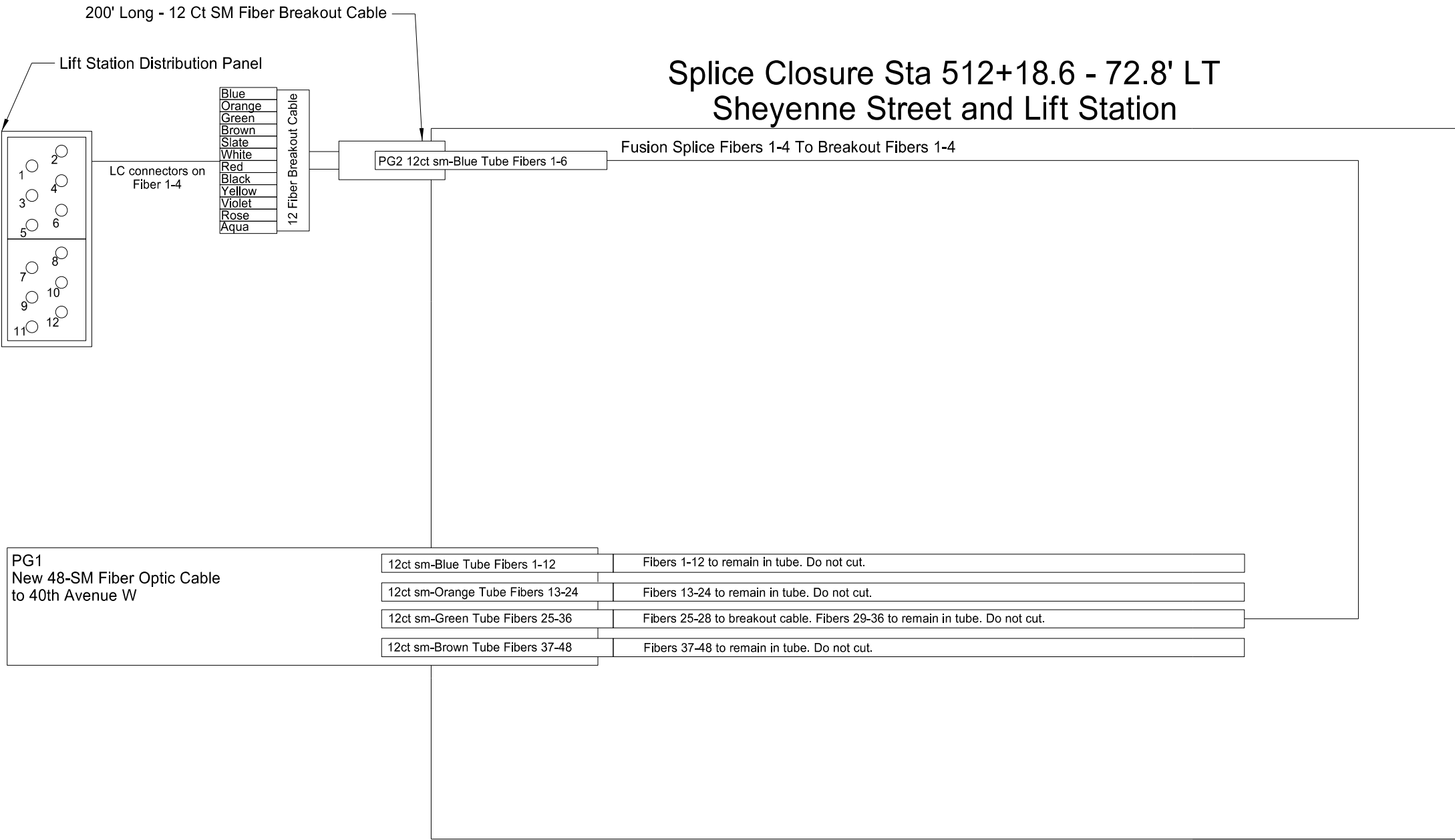
RUN		CONDUIT		CABLE		
ITEM	STATION, OFFSET	SIZE (IN)	LF	# of Cables	SIZE/TYPE	Total LF
IT-Pull Box 12 IT-Pull Box 13	Sta 567+00.0, 54.0' LT Sta 572+00.0, 55.0' LT	2 HDPE	505	1	48-SM Fiber	660
IT-Pull Box 13 Existing IT-Splice Box 1	Sta 572+00.0, 55.0' LT Sta 576+14.5, 88.1' LT	2 HDPE	430	1	48-SM Fiber	660
Existing IT-Splice Box 1 Existing Controller Cabinet 1	Sta 576+14.5, 88.1' LT Sta 576+03.0, 109.9' LT	2 HDPE	30	1	12-SM Fiber Breakout Cable	620

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Sheyenne Street  
Fiber Layout  
569+00 to 577+00

Note: Station Based on Chain PR17



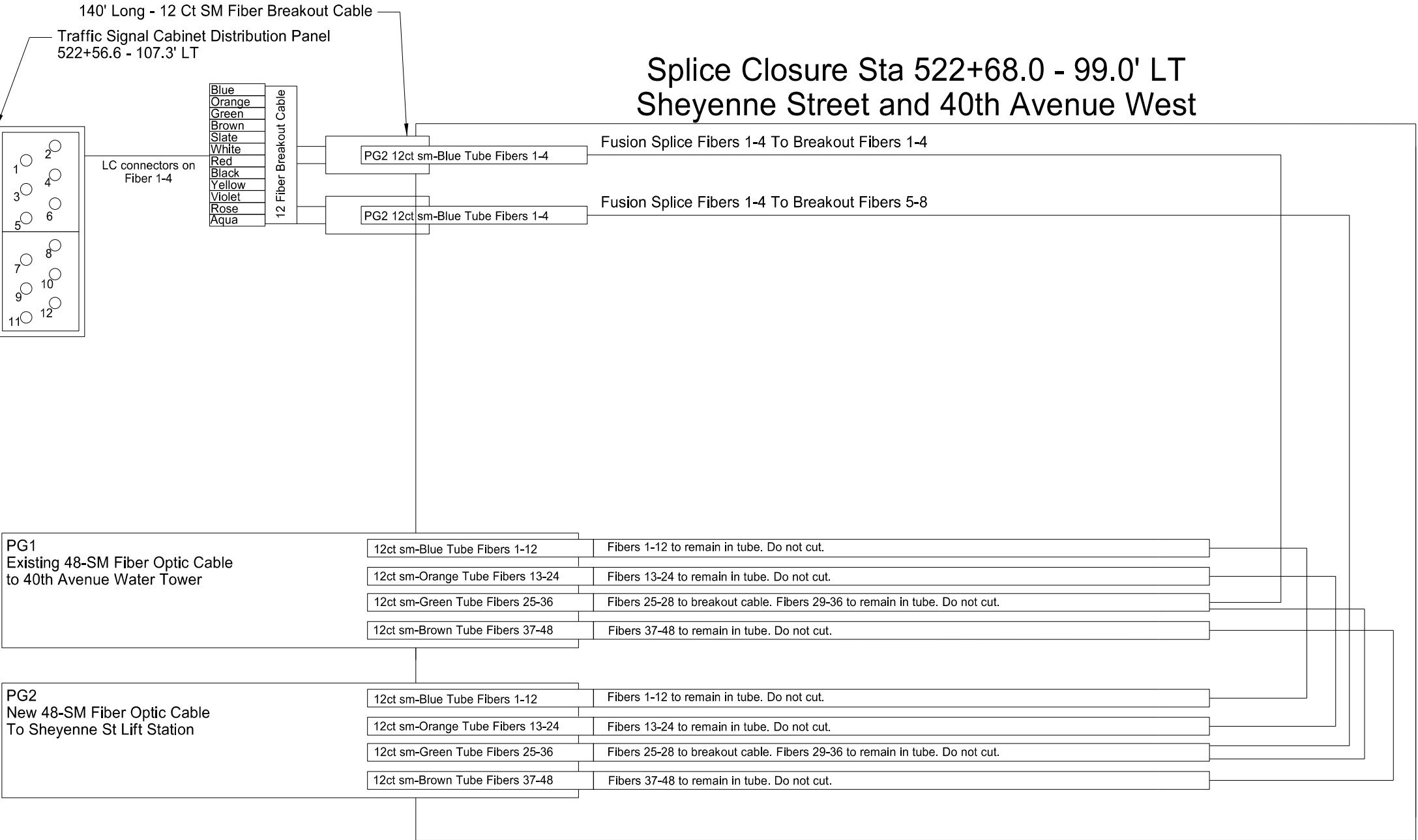


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Sheyenne Street

Fiber Splice Closure Detail  
Sta 512+18.6 - 72.8' LT  
West Fargo Fiber Network

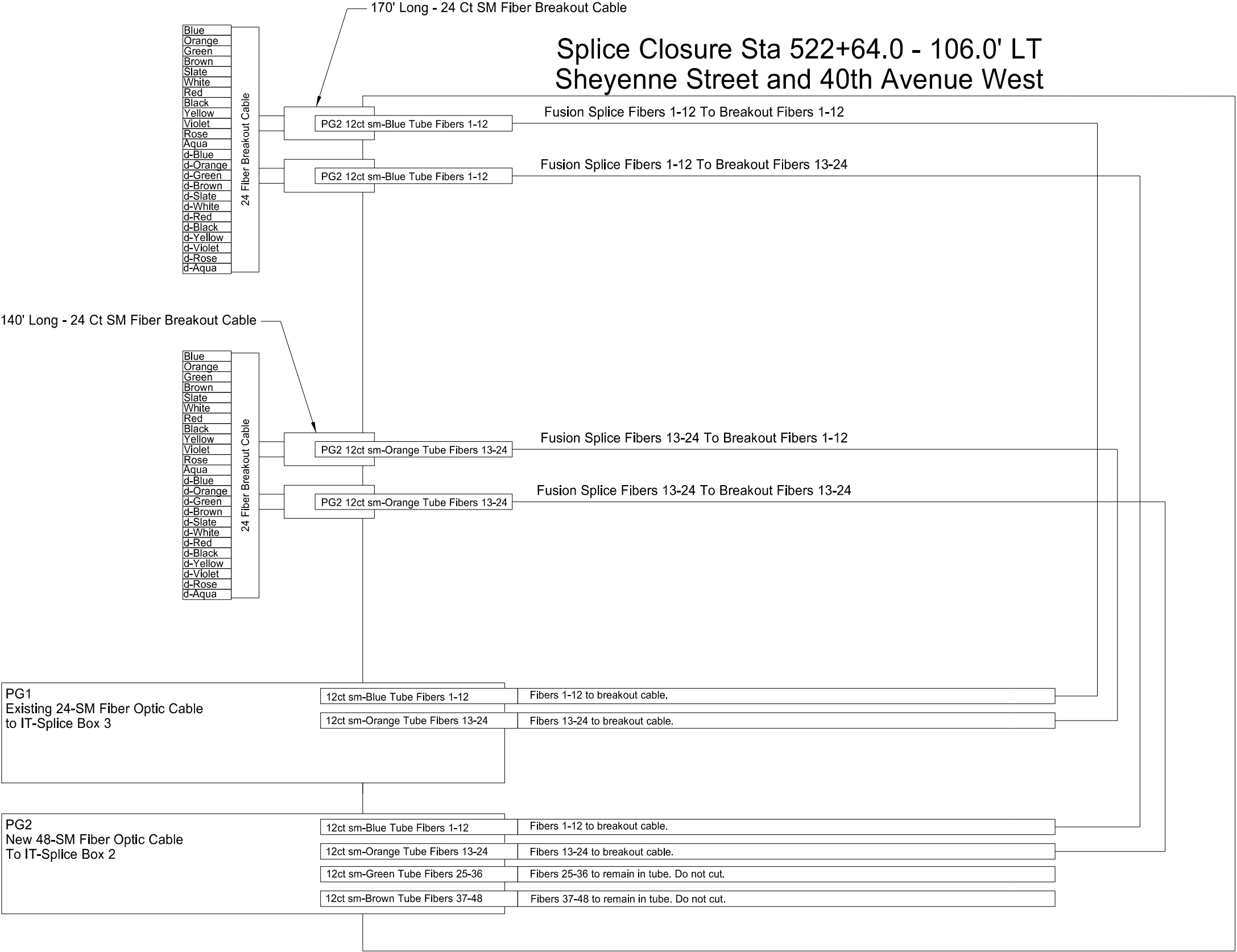
	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SU-8-992(040)041	160	11



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Sheyenne Street

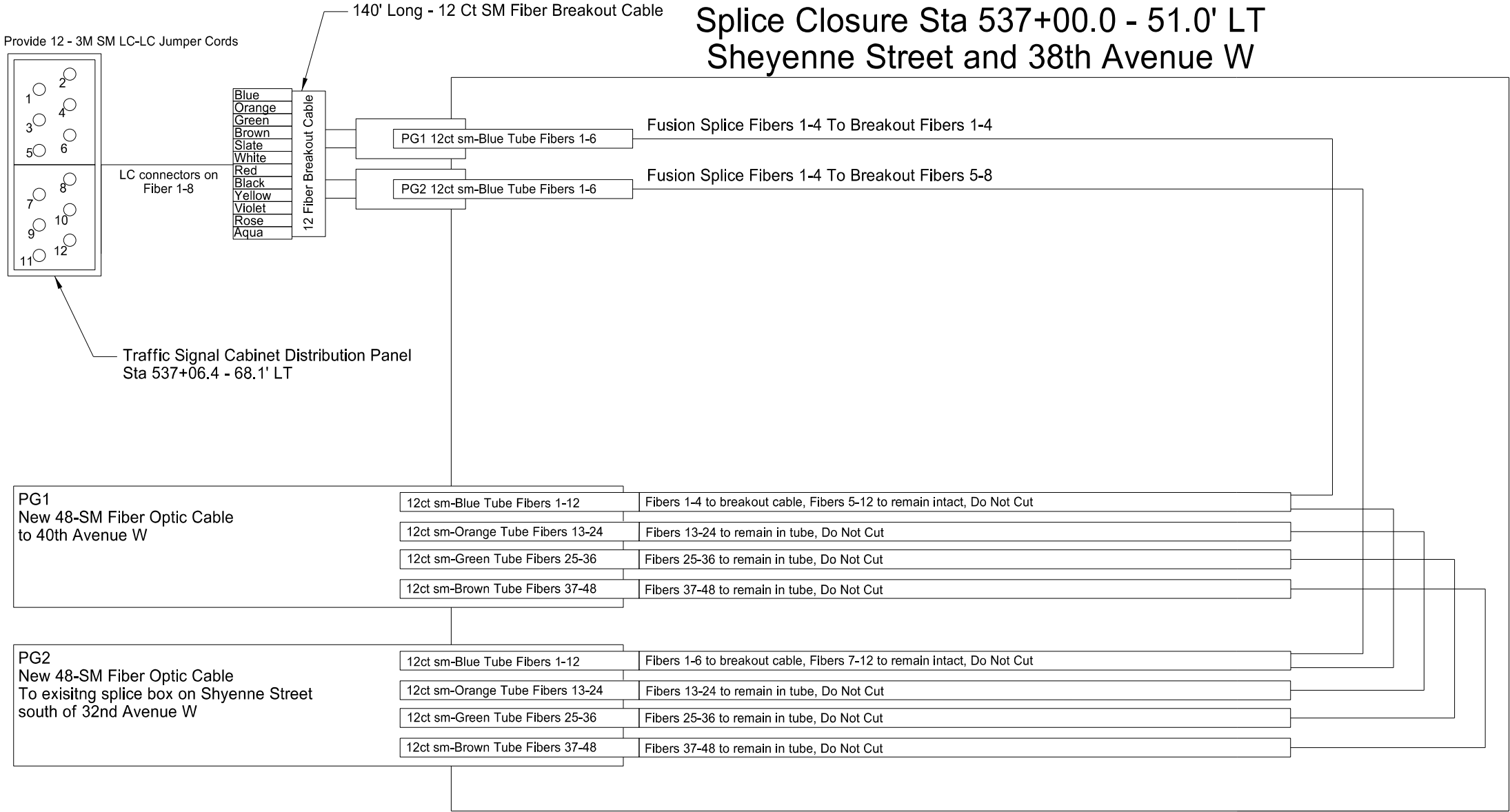
Fiber Splice Closure Detail  
Sta 522+68.0 - 99.0' LT  
West Fargo Fiber Network



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Sheyenne Street

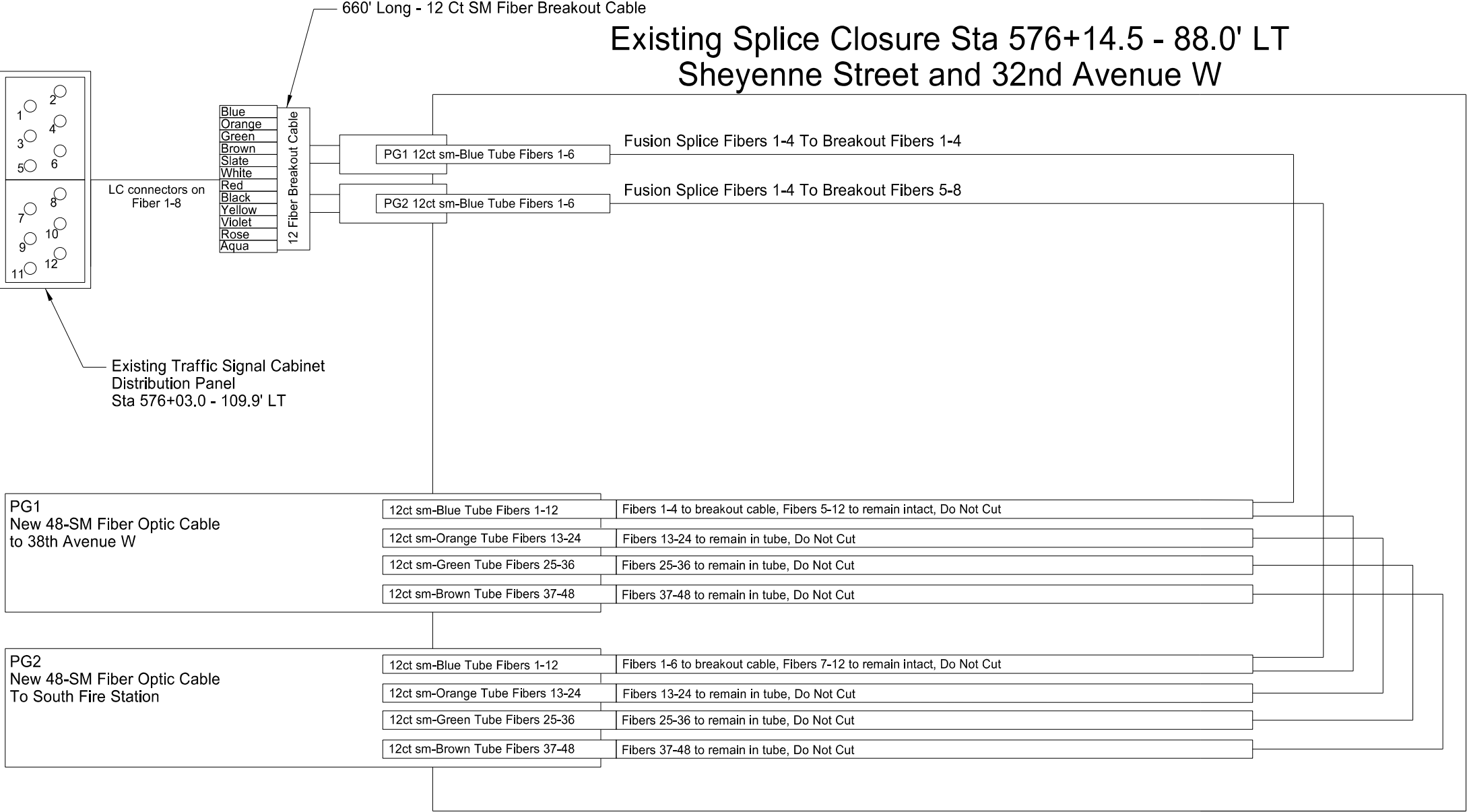
Fiber Splice Closure Detail  
Sta 522+64.0 - 106.0' LT  
West Fargo Fiber Network



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Sheyenne Street

Fiber Splice Closure Detail  
Sta 537+00.0 - 51.0' LT  
West Fargo Fiber Network



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Sheyenne Street

Fiber Splice Closure Detail  
Sta 590+90.0 - 51.0' LT  
West Fargo Fiber Network

772 9200 IT SYSTEM  
1 EA

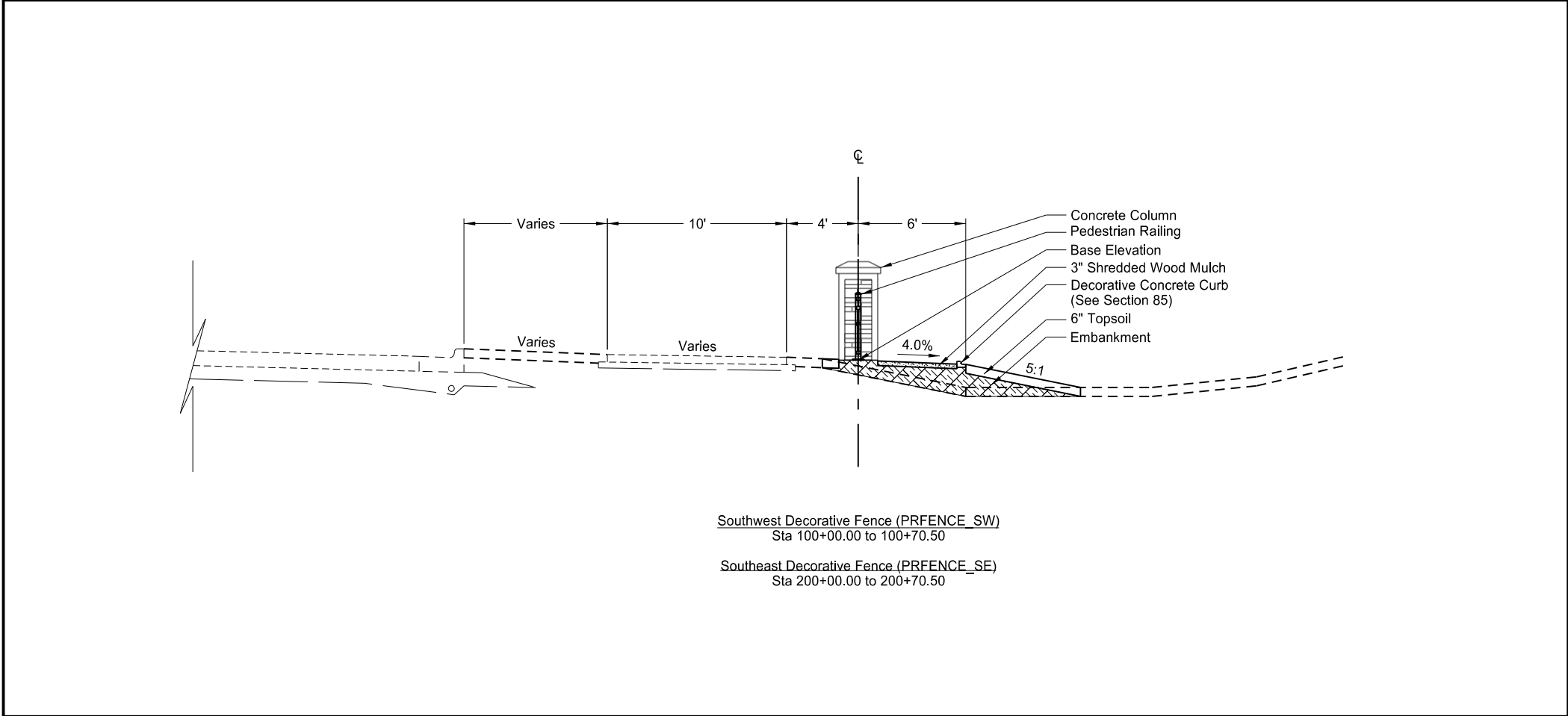
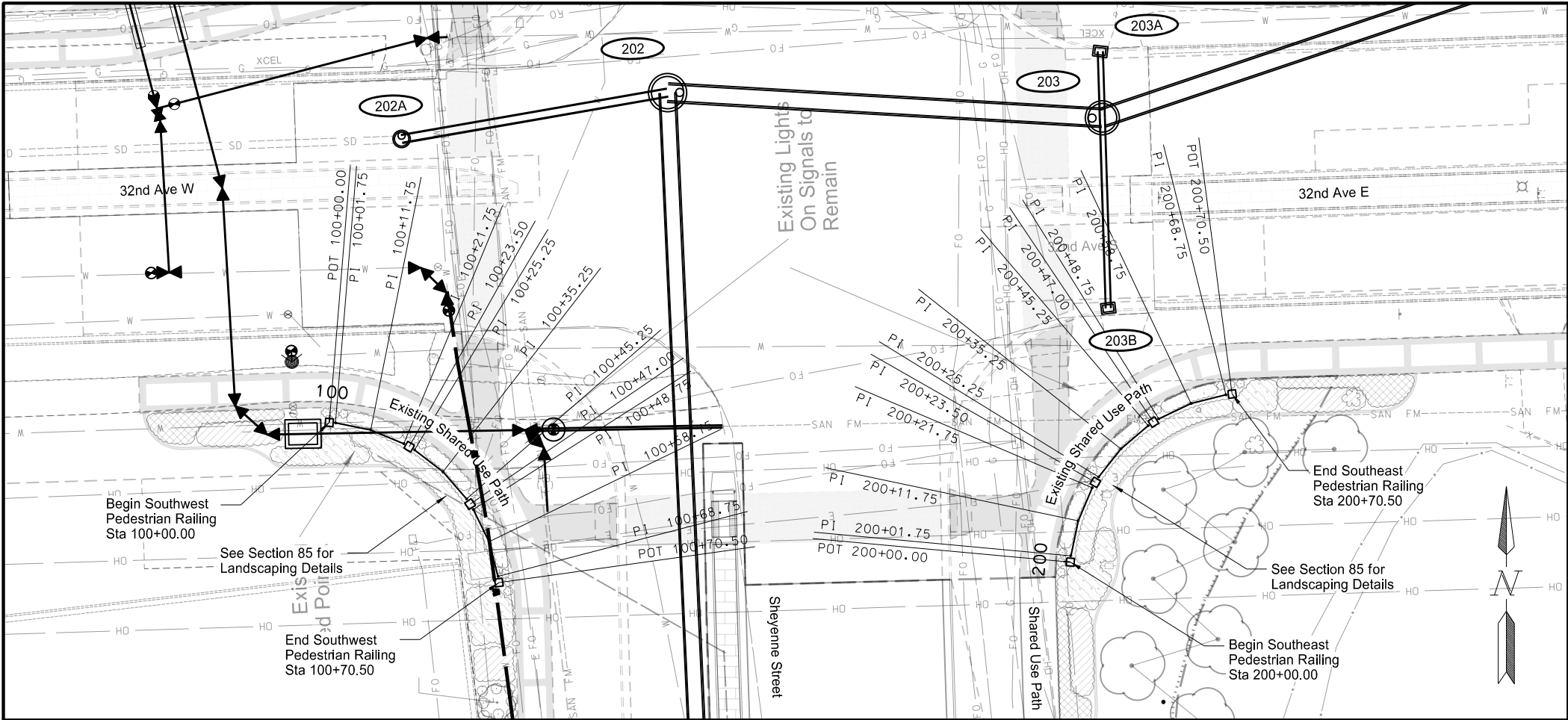
IT SYSTEM		
ITEM DESCRIPTION	UNIT	TOTAL
2IN DIAMETER RIGID CONDUIT	LF	6,515
FIBER OPTIC SPLICE CLOSURE	EA	4
IT-PULL BOX	EA	13
12-SM FIBER BREAKOUT CABLE	LF	1,275
48-SM FIBER OPTIC CABLE	LF	9,085
12 PORT TERMINATION PANEL	EA	2
MOXA EDS-P510 ETHERNET SWITCH	EA	2

Quantities shown above are for informational purposes only.

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Sheyenne Street

IT System Quantities



STATE	PROJECT NUMBER	SECTION NO.	SHEET NO.
ND	SU-992(040)041	170	1

SPEC CODE	BID ITEM	QTY	UNIT
624	0123 PEDESTRIAN RAILING		
	Sta 100+00.00 to 100+70.50	70.5	LF
	Sta 200+00.00 to 200+70.50	70.5	LF

Concrete Column Footing Elevation	
Station	Base Elevation
100+00.00	904.66
100+23.50	905.07
100+47.00	905.16
100+70.50	905.06
200+00.00	905.71
200+23.50	906.08
200+47.00	905.60
200+70.50	905.02

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SHEYENNE STREET

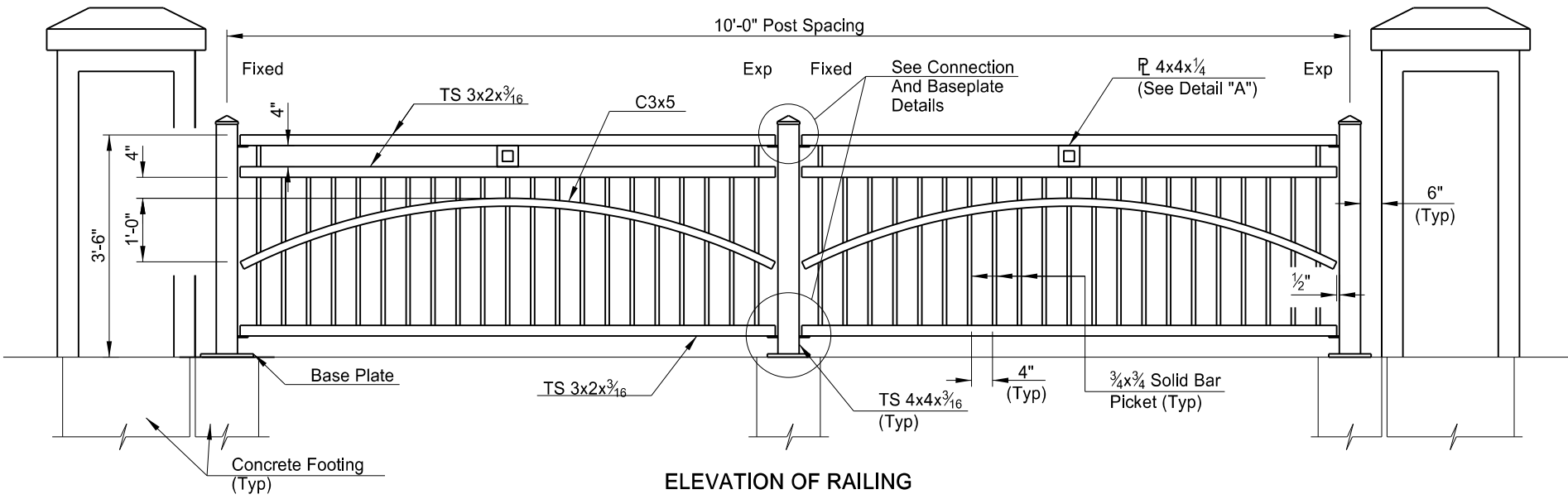
PEDESTRIAN RAILING

COLUMN AND RAILING LAYOUT

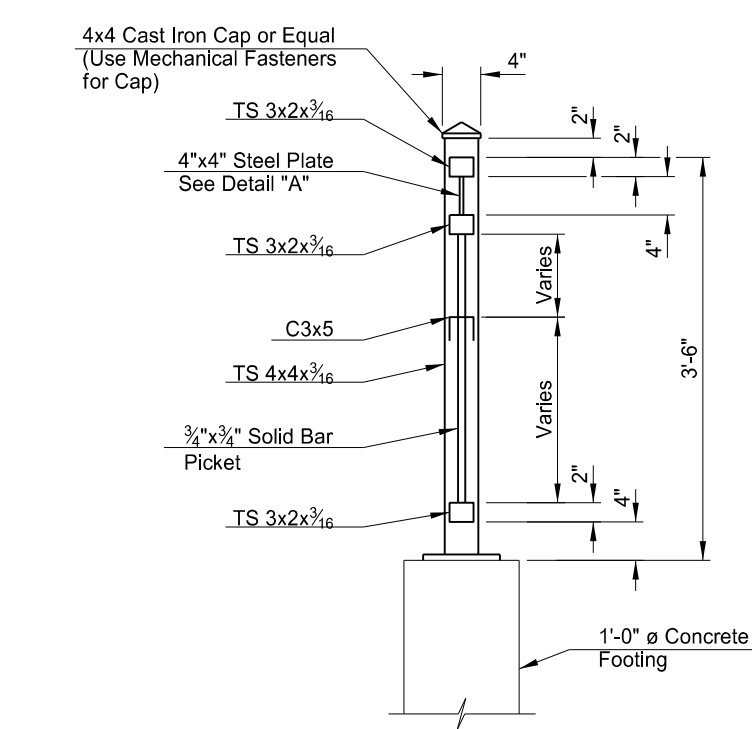




	STATE	PROJECT NUMBER	SECTION NO.	SHEET NO.
	ND	SU-8-992(040)041	170	3

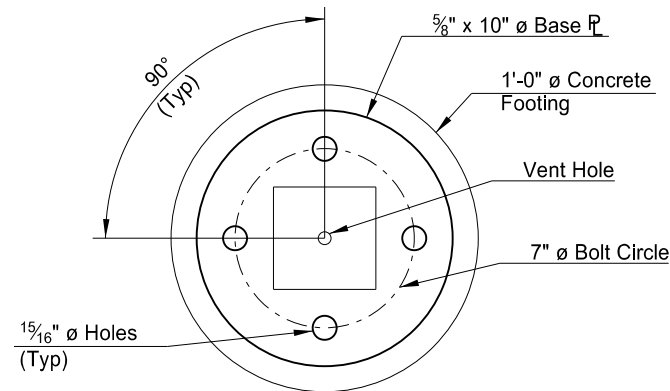


ELEVATION OF RAILING  
(Showing Typical Dimensions)

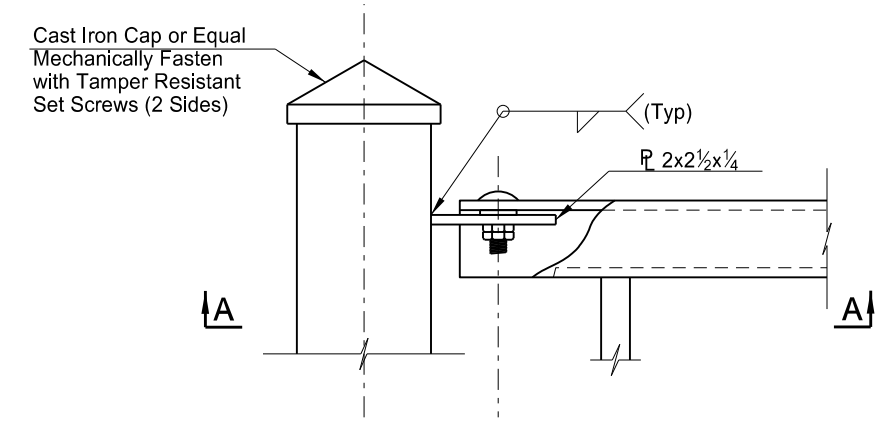


SECTION THROUGH RAILING

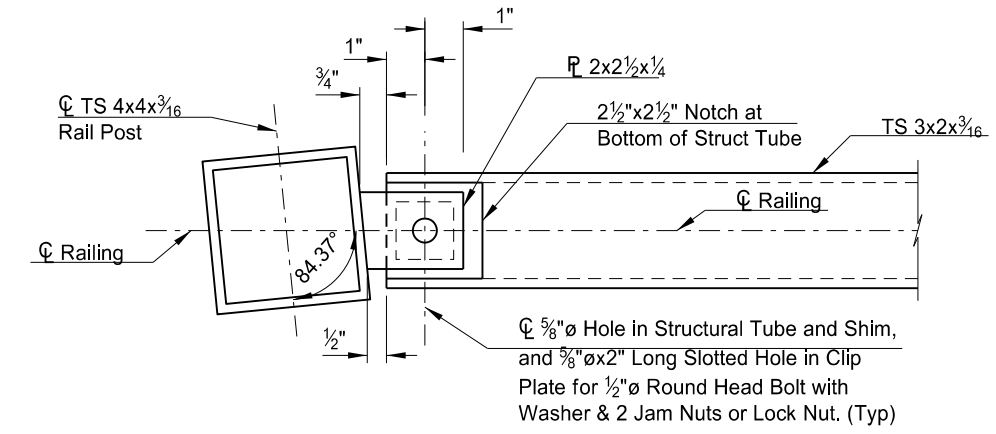
- NOTES:
- See Section 170, Sheet 1 for pedestrian railing location.
  - Included all pieces required for the fabrication or connection of the railing in the unit price bid item, "Pedestrian Railing".
  - Design railing anchor bolts to resist a tensile force of 9000 lbs.



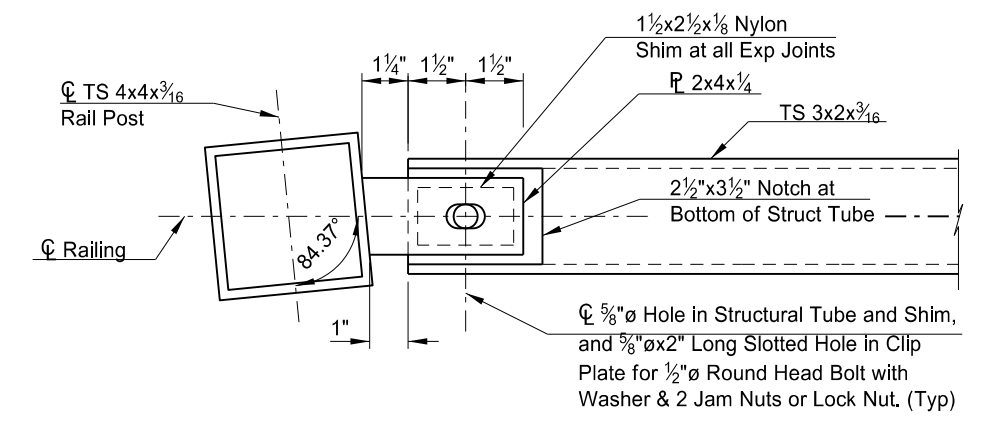
BASE PLATE PLAN



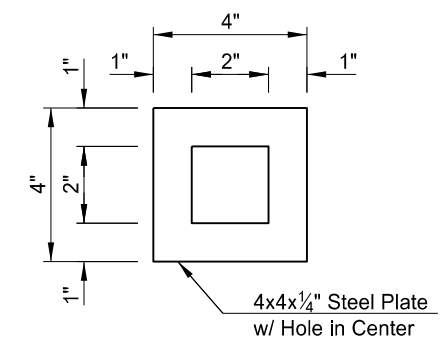
TYPICAL CONNECTION DETAIL



A-A  
(Fixed)



A-A  
(Expansion)



DETAIL "A"

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SHEYENNE STREET  
PEDESTRIAN RAILING  
RAILING DETAILS

