

## TECHNICAL MEMORANDUM

**DATE:** November 15, 2022  
**TO:** Garrett Sabourin and City of Bend staff  
**FROM:** Jessie Rykels-Wilson, Seth Rankin, Curt Vanderzanden, Brian Nigg  
**SUBJECT:** Addendum to Franklin Avenue Concept 1, Midtown Crossing Feasibility Study

The intent of this memorandum is to provide supplemental information to the Final Report of the Bend Midtown Pedestrian and Bicycle Crossings Feasibility Study. The project team has reviewed an additional option to modify the Franklin Avenue Concept 1 to include bikes lanes in the “uphill travel” direction (westbound on the west side of the undercrossing, and eastbound on the east side of the undercrossing). This effort was focused on determining the feasibility of the additional bike lanes and identifying the additional costs associated with the roadway widening.

The design includes an 8.5-foot wide buffered bike lane for eastbound and westbound travelers. Additional factors to be considered in the design phase to provide additional separation between the bicyclists, vehicles, and the vertical face of the walls, include:

- Consulting EMS on the access needs of the shared-use path in the northwest quadrant, as there could be potential to reduce the 19-ft width.
- The AASHTO Green Book supports a reduction in travel lane width from 12-ft to as narrow as 10-ft, with approval from City Engineer

The Franklin Concept 1 included the construction of a new wall on the southeastern quadrant. This modified concept will include an additional 6.5-ft of pavement width to accommodate the 8.5-foot eastbound bike lane and a retaining wall. Costs for the pavement widening are included in the modified cost estimate, but no additional costs have been calculated for the modified concept wall in this quadrant, as it was assumed that the 40% contingency would account for a variation in wall height.

A new retaining wall will be required on the northwestern quadrant, varying in height between 3 and 9-feet, in addition to the 8.5-ft of pavement widening to accommodate the westbound bike lane and the reconstruction of a shared use path between the wall and right of way. To accommodate the uphill bike lane, modifications to the existing ramp up to the HWY 97 sidewalk and associated retaining walls, varying in height between 0 and 10-feet, will also be required. The project costs are noted in the table below.

### Cost Estimates for Frankline Avenue Concept 1: Widen and Level East Access Plaza

Project Element	Concept 1 Estimate	Cost	Modified Concept 1 Cost Estimate
Construction total with contingency	\$5,452,000		\$6,280,100
Soft costs (design, permitting, construction services)	\$1,347,000		\$1,520,000
<b>Total Project Cost</b>	<b>\$6,799,000</b>		<b>\$7,800,100</b>
Stormwater Improvements	\$1,750,000		\$1,750,000

Allowance for stormwater improvements, based on City of Bend estimates from 2023–2027 CIP  
 Federal funding would require additional costs associated with administrative and environmental documentation.

ITEM NUMBER	ITEM DESCRIPTION	QUANTITY		UNIT PRICE	ITEM COST
<b>PART 00200 - TEMPORARY FEATURES AND APPURTENANCES</b>					\$ 939,400.00
0210-010000A	MOBILIZATION (12%)	1	LS	\$ 417,600.00	\$ 417,600.00
0000-0000000	UTILITY CONFLICT RESOLUTION	1	LS	\$ 100,000.00	\$ 100,000.00
0221-0101000A	TEMPORARY WORK ZONE TRAFFIC CONTROL, COMPLETE (10%)	1	LS	\$ 348,000.00	\$ 348,000.00
0223-0170000E	RAILROAD FLAGGER SERVICES	24	DAY	\$ 1,200.00	\$ 28,800.00
0000-0000000	TEMPORARY ASPHALT PAVEMENT	0	TON	\$ -	\$ -
0240-0100000A	TEMPORARY DRAINAGE FACILITIES	1	LS	\$ 10,000.00	\$ 10,000.00
0280-0100000A	EROSION CONTROL	1	LS	\$ 35,000.00	\$ 35,000.00
<b>PART 00300 - ROADWORK</b>					\$ 249,400.00
0305-0100000A	CONSTRUCTION SURVEY WORK (2%)	1	LS	\$ 69,600.00	\$ 69,600.00
0310-0106000A	REMOVAL OF SURFACING AND OBSTRUCTIONS (1%)	1	LS	\$ 34,800.00	\$ 34,800.00
0320-0100000A	CLEARING AND GRUBBING	1	LS	\$ 1,000.00	\$ 1,000.00
0330-0105000K	GENERAL EXCAVATION	1,800	CUYD	\$ 80.00	\$ 144,000.00
<b>PART 00500 - BRIDGES</b>					\$ 2,547,400.00
0510-0101000A	STRUCTURE EXCAVATION	1	LS	\$ 195,000.00	\$ 195,000.00
0501-0100000A	BRIDGE REMOVAL WORK (US 97 BRIDGE)	0	SF	\$ -	\$ -
0501-0100000A	BRIDGE REMOVAL WORK (TEMPORARY WIDENING)	0	SF	\$ -	\$ -
0501-0100000A	BRIDGE REMOVAL WORK (RAISED MEDIAN AND SIDEWALK ON 97)	0	SF	\$ -	\$ -
0501-0100000A	BRIDGE REMOVAL WORK (RAIL BRIDGE)	0	SF	\$ -	\$ -
0510-0100000A	SHORING, CRIBBING, AND COFFERDAMS	0	SF	\$ -	\$ -
0530-0104000A	REINFORCEMENT, GRADE 60	0	LBS	\$ -	\$ -
0540-0102000A	FOUNDATION CONCRETE, CLASS 4000 (US 97 BRIDGE)	0	CUYD	\$ -	\$ -
0540-0102000A	FOUNDATION CONCRETE, CLASS 4000 (RAIL BRIDGE)	0	CUYD	\$ -	\$ -
0540-0302000A	GENERAL STRUCTURAL CONCRETE, CLASS 4000 (US 97 BRIDGE)	0	CUYD	\$ -	\$ -
0540-0302000A	GENERAL STRUCTURAL CONCRETE, CLASS 4000 (RAIL BRIDGE)	0	CUYD	\$ -	\$ -
0545-0100100J	REINFORCED CONCRETE BRIDGE APPROACH SLABS	0	SQYD	\$ -	\$ -
0550-0139000F	30 INCH PRECAST PRESTRESSED SLABS	0	FOOT	\$ -	\$ -
0560-0108000A	STEEL ROLLED BEAM	0	LBS	\$ -	\$ -
0582-0010000E	BEARING DEVICES, _____	0	EACH	\$ -	\$ -
0587-0127000A	3-TUBE CURB MOUNT RAIL	0	FOOT	\$ -	\$ -
0587-0134000A	2-TUBE CURB MOUNT RAIL	0	FOOT	\$ -	\$ -
0587-0127000A	PEDESTRIAN RAIL	956	FOOT	\$ 400.00	\$ 382,400.00
0596-C003000A	RETAINING WALL, CAST-IN-PLACE CONCRETE SEMI-GRAVITY CANTILEVER	8,000	SQFT	\$ 175.00	\$ 1,400,000.00
0596-C003000A	RETAINING WALL, SOLDIER PILE-TYPE	1,900	SQFT	\$ 300.00	\$ 570,000.00
0592-0101000J	ROLLED WATERPROOF MEMBRANE	0	SQFT	\$ -	\$ -
<b>PART 00600 - BASES</b>					\$ 72,000.00
0641-0102000M	AGGREGATE BASE	1,800	TON	\$ 40.00	\$ 72,000.00
<b>PART 00700 - WEARING SURFACES</b>					\$ 263,600.00
0744-0100000M	8" OF LEVEL 4 ACP MIXTURE	1,400	TON	\$ 80.00	\$ 112,000.00
0759-0100000F	CONCRETE CURBS	50	FOOT	\$ 50.00	\$ 2,500.00
0759-0128000J	CONCRETE WALKS	11,200	SQFT	\$ 12.00	\$ 134,400.00
0759-0122000J	CONCRETE ISLANDS	0	SQFT	\$ -	\$ -
0759-0154100E	EXTRA FOR NEW CURB RAMPS	4	EACH	\$ 2,800.00	\$ 11,200.00
0759-0510000J	TRUNCATED DOMES ON NEW SURFACES	70	SQFT	\$ 50.00	\$ 3,500.00
<b>PART 00800 - PERMANENT TRAFFIC SAFETY AND GUIDANCE DEVICES</b>					\$ 32,000.00
0810-00000001	GUARDRAIL (US97)	0	LF	\$ -	\$ -
0870-0000000A	ALLOWANCE FOR STRIPING	1	LS	\$ 32,000.00	\$ 32,000.00
<b>PART 00900 - PERMANENT TRAFFIC CONTROL AND ILLUMINATION SYSTEMS</b>					\$ 269,600.00
0945-0000000A	ALLOWANCE FOR SIGNS AND SUPPORTS (1%)	1	LS	\$ 34,800.00	\$ 34,800.00
0975-0000000A	ALLOWANCE FOR LIGHTING (1%)	1	LS	\$ 34,800.00	\$ 34,800.00
0975-0000000A	ALLOWANCE FOR ARCHITECTURAL LIGHTING SYSTEM	1	LS	\$ 200,000.00	\$ 200,000.00
<b>PART 01000 - RIGHT OF WAY DEVELOPMENT AND CONTROL</b>					\$ 64,000.00
1040-0000000A	ALLOWANCE FOR LANDSCAPING AND IRRIGATION	1	LS	\$ 52,000.00	\$ 52,000.00
1040-0000000A	ALLOWANCE FOR STREET TREES	1	LS	\$ 12,000.00	\$ 12,000.00

ITEM NUMBER	ITEM DESCRIPTION	QUANTITY		UNIT PRICE	ITEM COST
<b>PART 01100 -WATER SUPPLY SYSTEMS</b>					\$ 48,400.00
1140-050000F	DUCTILE IRON PIPE WITH RESTRAINED JOINTS AND CLASS A BACKFILL	220	FOOT	\$ 220.00	\$ 48,400.00
1160-010200E	MOVING EXISTING HYDRANTS	0	EACH	\$ -	\$ -
1170-010500E	RECONNECTING EXISTING WATER SERVICES, 1 INCH	0	EACH	\$ -	\$ -
1170-011100E	RELOCATE _____ INCH WATER METER ASSEMBLY	0	EACH	\$ -	\$ -
<b>CONSTRUCTION SUBTOTAL</b>					\$ 4,485,800.00
<b>CONTINGENCY (40.0%)</b>					\$ 1,794,300.00
<b>CONSTRUCTION TOTAL</b>					\$ 6,280,100.00
ESCALATION (2.0 YEARS)					
ESCALATION PERCENTAGE (0.0 %)					\$ -
<b>CONSTRUCTION ESTIMATE TOTAL WITH ESCALATION</b>					\$ 6,280,100.00
<b>ANTICIPATED ITEMS</b>					\$ 200,000.00
9400-0010300A	RAILROAD COSTS	1	LS	\$ 200,000.00	\$ 200,000.00
0000-00000000	ALLOWANCE FOR UTILITY REIMBURSEMENT	1	LS	\$ -	\$ -
0000-00000000	ALLOWANCE FOR RIGHT OF WAY ACQUISITION (To be Determined)	1	LS	\$ -	\$ -
<b>SOFT COSTS - PROJECT DESIGN</b>					\$ 1,194,000.00
	ENGINEERING & PERMITTING (12% OF CONSTRUCTION)	1	LS	\$ 754,000.00	\$ 754,000.00
	CA/CEI (7% OF CONSTRUCTION)	1	LS	\$ 440,000.00	\$ 440,000.00
<b>SOFT COSTS - PERMIT FEES</b>					\$ 126,000.00
	ODOT (2% of Construction)	1	LS	\$ 126,000.00	\$ 126,000.00
<b>ANTICIPATED ITEMS AND SOFT COSTS SUBTOTAL</b>					\$ 1,520,000.00
<b>TOTAL PROJECT COST</b>					\$ 7,800,100.00
<b>RELATED CIP PROJECTS</b>					\$ 1,750,000.00
	Stormwater Improvements from 2023-2027 CIP	1	LS	\$ 1,750,000.00	\$ 1,750,000.00
<b>Notes:</b>					
1. Estimate based on standard measurement and payment practices as specified in the 2021 Oregon Standard Specifications for Construction.					
2. Unit prices based on ODOT Weighted Average Item Prices - Calendar Year 2021 dated March 3, 2022 and data collected from local projects.					
3. Agency administration costs are not included in this estimate.					
4. Allowance for stormwater improvements, based on City of Bend estimates from 2023-2027 CIP.					



PRELIMINARY  
NOT FOR  
CONSTRUCTION

MIDTOWN PEDESTRIAN AND  
BICYCLE CROSSINGS  
FRANKLIN ALT 1.1 - CIVIL  
DESCHUTES COUNTY, OREGON



CITY OF BEND

REVISIONS:

1	
2	
3	

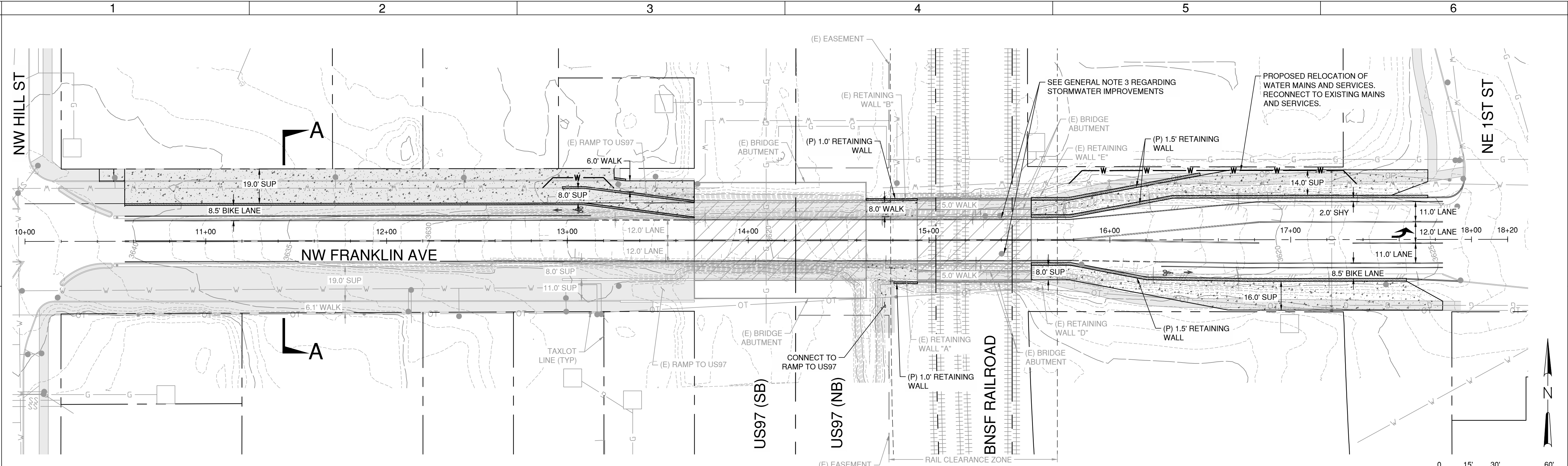
**Parametrix**  
ENGINEERING PLANNING ENVIRONMENTAL SCIENCES  
150 NW PACIFIC PARK LANE, SUITE 110 | BEND, OR 97701  
P 541.508.7710  
WWW.PARAMETRIX.COM

DESIGNED BY: JRW  
DRAWN BY: SPR  
SCALE: AS SHOWN  
FILE: 20230801-10-10  
DATE: 11/3/2022

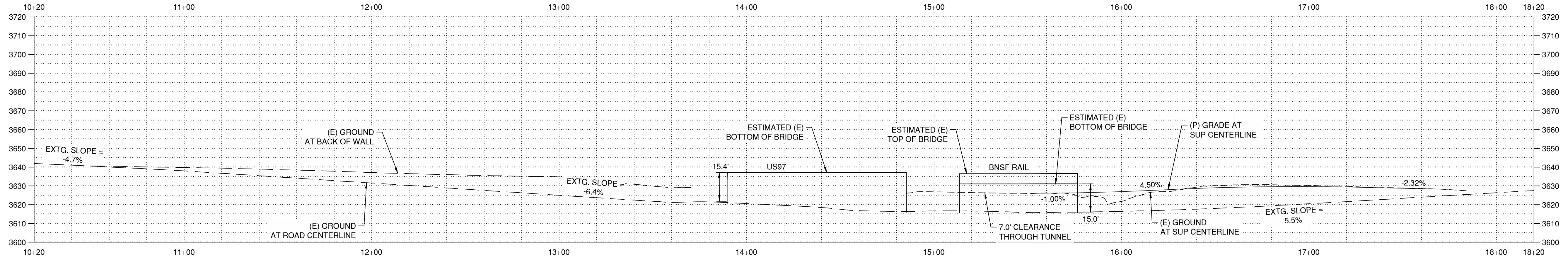
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ON ORIGINAL DRAWING

SHEET:  
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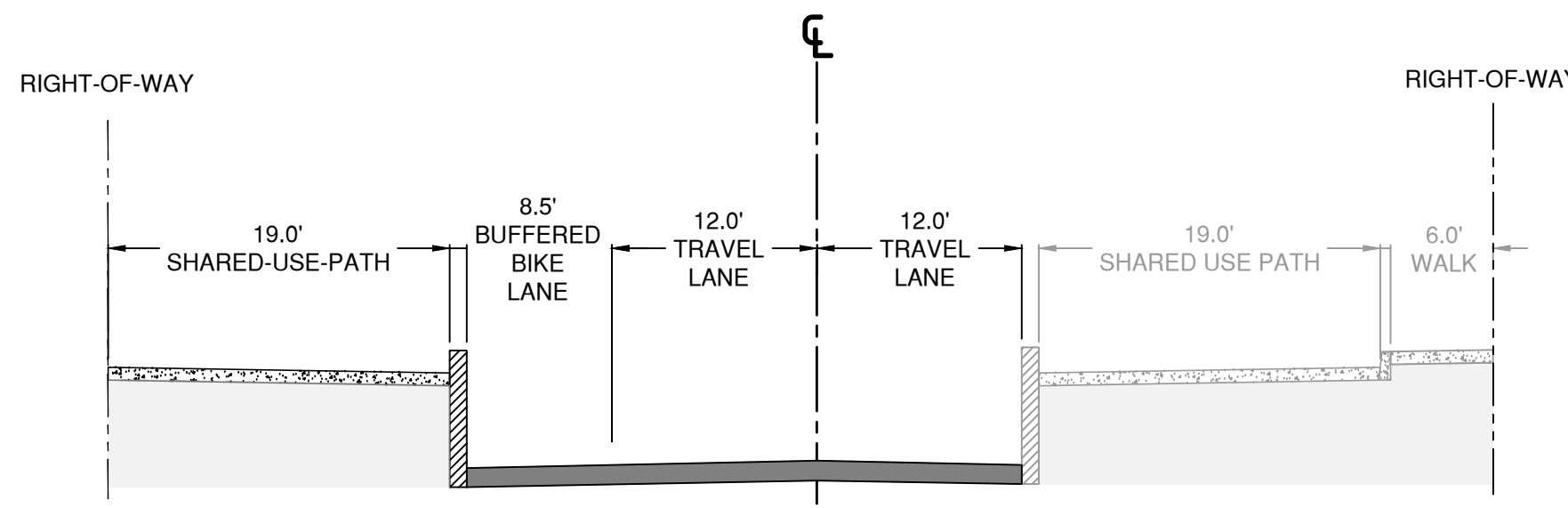
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NW FRANKLIN AVE - ALTERNATIVE 1  
PLAN VIEW



NW FRANKLIN AVE - ALTERNATIVE 1  
PROFILE VIEW



SECTION A-A  
NTS

**ABBREVIATIONS**

(E) OR EXTG.	EXISTING
ELEV	ELEVATION
(P)	PROPOSED
PT.	POINT
ROW	RIGHT-OF-WAY

**LEGEND:**

	(E) OVERCROSSING
	(P) CONCRETE

**GENERAL NOTES:**

- NO BOUNDARY OR TOPOGRAPHIC SURVEY HAS BEEN COMPLETED AS PART OF THE PROJECT.
- INFORMATION SHOWN IS BEST-FIT BASED ON AVAILABLE DATA FROM GIS AND RECORD DRAWINGS. GAS LINE SHOWN IS APPROXIMATED FROM CASCADE NATURAL GAS (CNG) RECORD DRAWINGS. NO FIELD VERIFICATION HAS OCCURRED. INFORMATION SHOWN IS NOT INTENDED FOR CONSTRUCTION USE.
- STORMWATER RELATED IMPROVEMENTS WERE NOT INCLUDED IN THESE PLANS AS CONCEPTUAL DESIGNS AND COSTS HAVE BEEN PREPARED BY THE CITY THROUGH CIP PROJECT NUMBER 1RF6U.
- POTENTIAL UTILITY CONFLICTS AND RELOCATIONS TO BE RESOLVED THROUGH THE DESIGN PHASE.

File: U:\Bent\Projects\Clients\3131-KPFF\2023-11-023-Midtown Ped&Bike Xing\GIS\Drawings\CADD\DWG\SHEETS\2023-11-023-FKLN\_ALT\_1-P&P.dwg TAB:F1-1-UBL1  
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