

DESIGNED BY  
CHECKED BY  
DRAFTED BY

SCALE  
N/A

DATE  
4/27/2022

TIME  
12:40 PM

DRAWING LOCATION  
J:\JOBS\DATA\20403.02 SHOTGUN COVE ROAD\00 CADD\01 WORKING SET\01 CIVIL\02 DESIGN\20403.02 COVER SHEET.DWG

CITY OF WHITTIER

GATEWAY TO THE WESTERN  
PRINCE WILLIAM SOUND

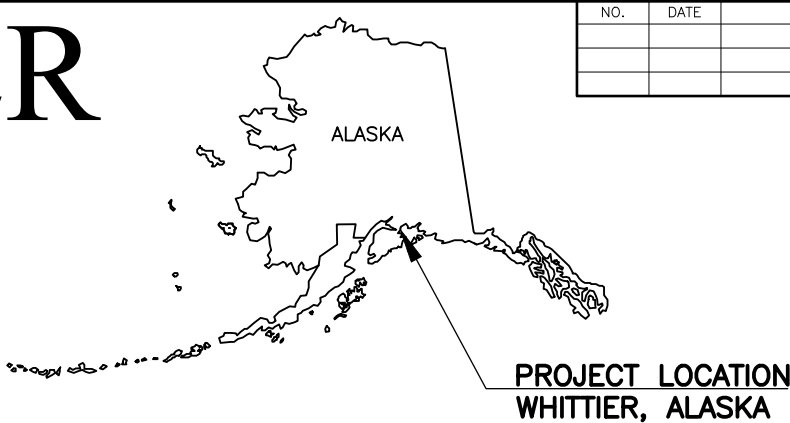
PROPOSED HIGHWAY PROJECT

SHOTGUN COVE ROAD EXTENSION

MILE 2.0 TO 4.5

PROJECT NO. XXXX(XXX)/ XXXXXXXXXXXXX

ROCK CUT, GRADING, DRAINAGE, FISH PASSAGE, RETAINING  
WALLS, SIGNING

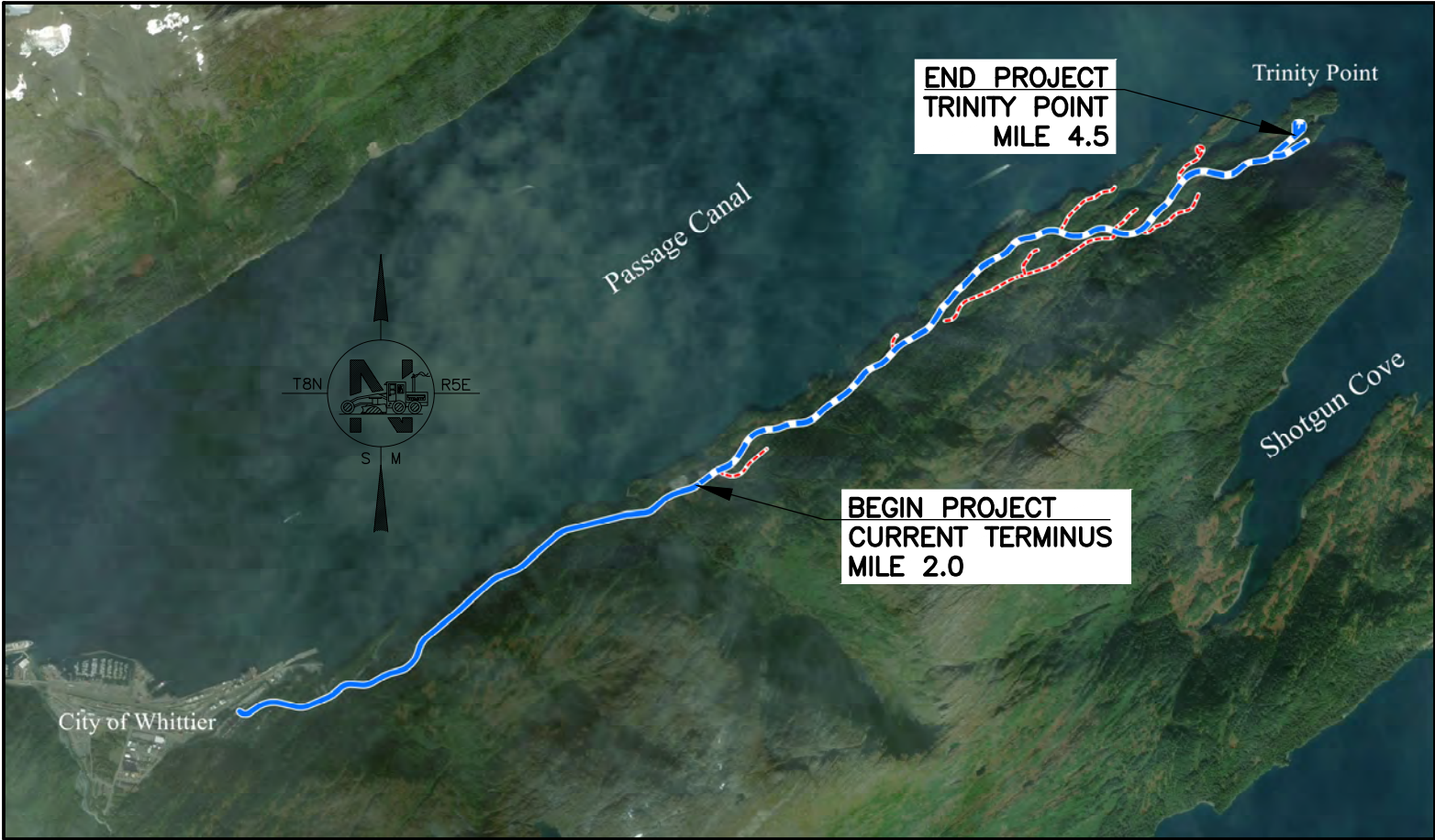


NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	XXXX(XXX)/ XXXXXXXXXXXXX	2022	A1	A16

PROJECT SUMMARY		
SEGMENT	WIDTH	LENGTH
MAINLINE	30 FT	2.83 MILES
102+50 ACCESS ROAD	18 FT	0.22 MILES
144+50 ACCESS ROAD	18 FT	0.06 MILES
184+25 ACCESS ROAD	18 FT	0.29 MILES
195+00 ACCESS ROAD	18 FT	0.11 MILES
195+50 ACCESS ROAD	18 FT	0.73 MILES
200+50 ACCESS ROAD	18 FT	0.26 MILES
212+65 ACCESS ROAD	18 FT	0.21 MILES

DESIGN DESIGNATIONS	
	SHOTGUN COVE ROAD
FUNCTIONAL CLASS	COLLECTOR ROAD
AADT (2022)	<100 VPD
AADT (2042)	700 VPD
DESIGN SPEED (V)	30 MPH
POSTED SPEED	25 MPH
MIN. HORIZONTAL CURVE RADIUS	375 FT
STOPPING SIGHT DISTANCE (LEVEL ROADWAY)	200 FT
PASSING SIGHT DISTANCE	500 FT
MAX. GRADE	10%
MAX. SUPER	.06

DESIGN DESIGNATIONS	
	ACCESS ROADS
FUNCTIONAL CLASS	LOCAL ROAD
AADT (2022)	<100 VPD
AADT (2042)	<250 VPD
DESIGN SPEED (V)	20 MPH
POSTED SPEED	20 MPH
MIN. HORIZONTAL CURVE RADIUS	160 FT
STOPPING SIGHT DISTANCE (LEVEL ROADWAY)	115 FT
PASSING SIGHT DISTANCE	400 FT
MAX. GRADE	16%
MAX. SUPER	.06



PLANS DEVELOPED BY: CRW ENGINEERING GROUP, LLC

CITY OF WHITTIER  
P.O. BOX 608  
WHITTIER, ALASKA 99693  
(907)472-2327

APPROVED:

CITY OF WHITTIER DATE

CONCUR:

USDA FOREST SERVICE DATE

CONCUR:

FHWA, WESTERN FEDERAL LANDS, HIGHWAY DIVISION DATE

DESIGNED BY  
CHECKED BY  
DRAFTED BY  
SCALE  
N/A  
DATE  
7/26/2022  
TIME  
1:18 PM  
DRAWING LOCATION  
J:\JOBS\DATA\20403.02 SHOTGUN COVE ROAD\00 CADD\01 WORKING SET\01 CIVIL\02 DESIGN\20403.02 TYPICAL SECTIONS.DWG

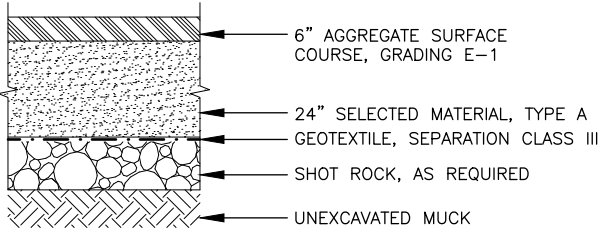
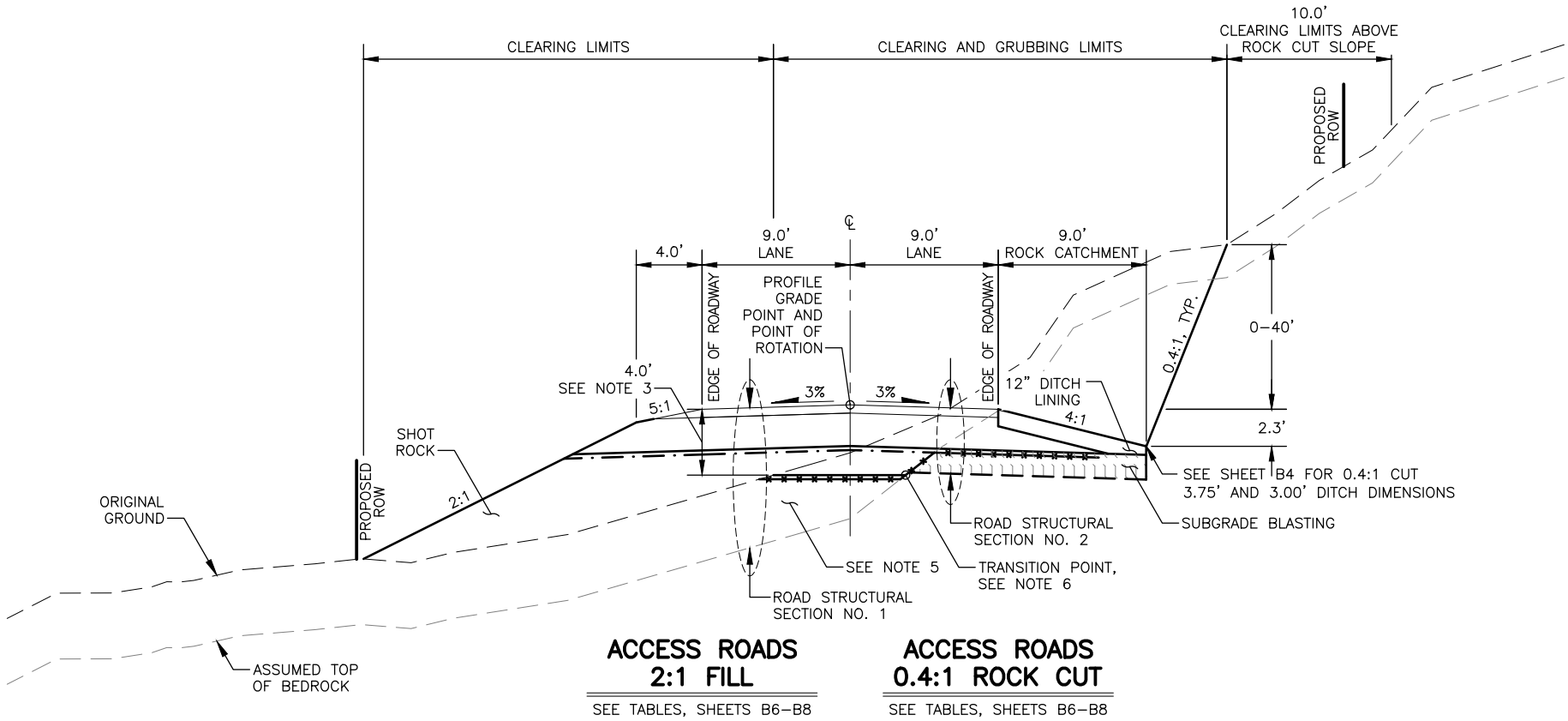
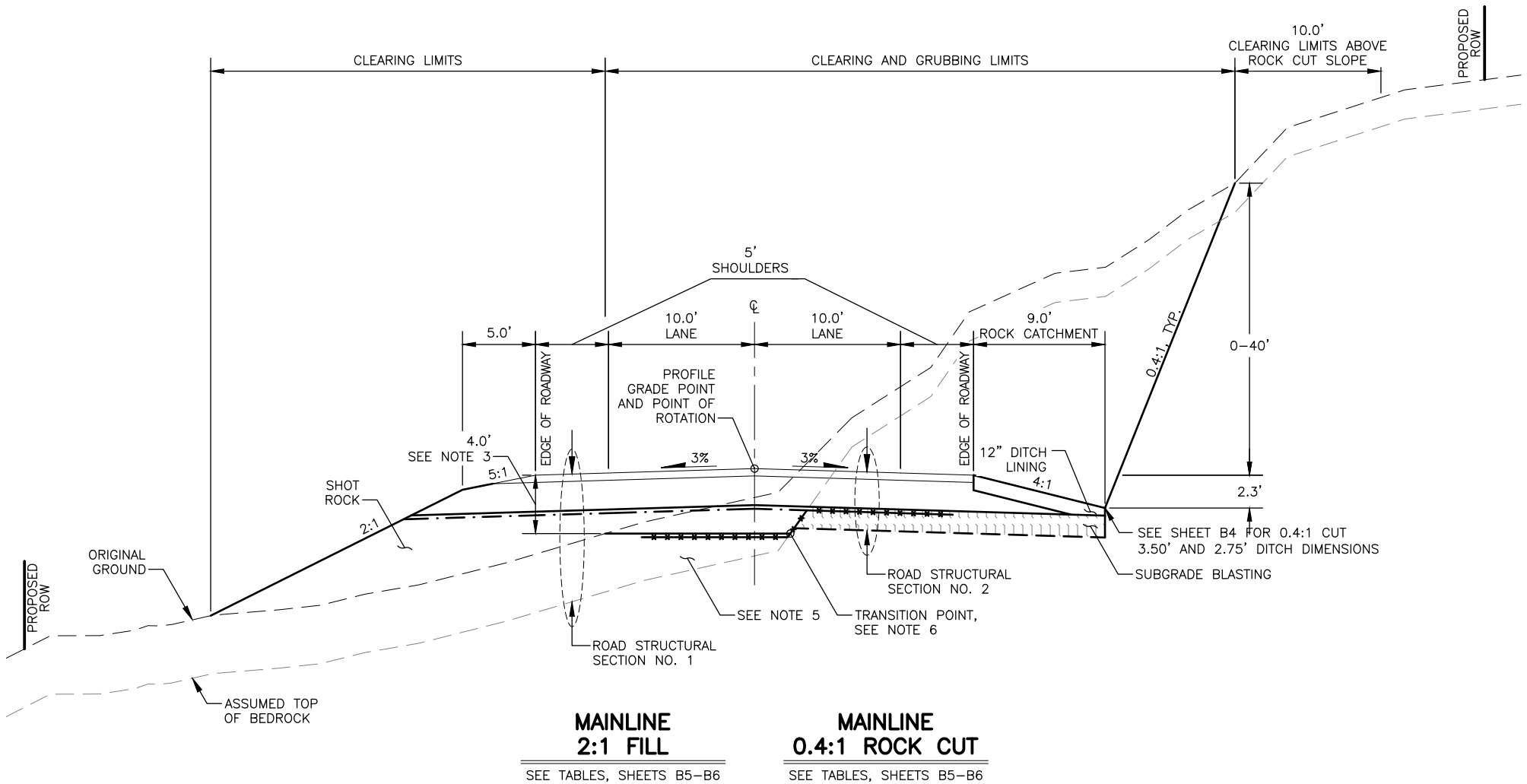
NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	XXXX(XXX)/ XXXXXXXXXXXX	2022	B1	B9

NOTES:

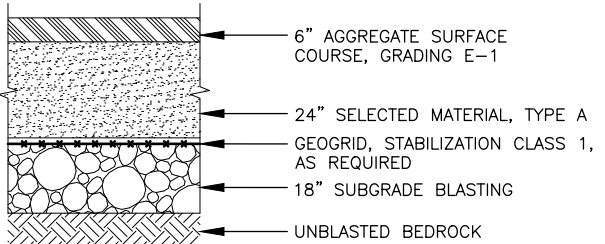
- SEE SHEET B9 FOR SUPERELEVATION SLOPES AND TRANSITIONS.
- AVERAGE DEPTH OF IN SITU MUCK, DEPICTED ON THE PLANS AS THE DISTANCE BETWEEN ORIGINAL GROUND AND ASSUMED TOP OF BEDROCK, IS APPROXIMATELY 1.5' IN FORESTED AREAS AND 3' IN WETLAND AREAS.
- A. GRUB AND EXCAVATE MUCK LESS THAN 4' BELOW THE FINISHED GRADE ELEVATION AS SHOWN.  
B. FOR MSE WALLS, GRUB AND EXCAVATE ALL MUCK BETWEEN EXCAVATION LIMITS SHOWN AND ROAD CENTERLINE.  
C. GRUB AND EXCAVATE MUCK BETWEEN CUT AND FILL LIMITS FO THE FOLLOWING STATIONS:  

STA 145+25 TO 146+75 LT & RT  
STA 148+75 TO 154+25 LT & RT  
STA 170+25 TO 172+75 LT & RT  
STA 175+75 TO 176+75 LT & RT  
STA 179+75 TO 180+75 LT & RT  
STA 188+25 TO 189+75 LT & RT  
STA 462+75 TO 468+75 LT & RT  
STA 468+75 TO 469+25 LT  
STA 481+25 TO 485+00 LT & RT  
STA 493+75 TO 494+25 LT & RT  
STA 505+25 TO 505+85 LT & RT

  
D. THE ENGINEER SHALL MAKE ALL FINAL DETERMINATIONS REGARDING MUCK EXCAVATION AND DISPOSAL. MUCK EXCAVATION TO BE PAID AS UNCLASSIFIED EXCAVATION.
- WHERE MUCK EXCAVATION EXTENDS BELOW SUBGRADE BLASTING, BENCH EXISTING SLOPES STEEPER THAN 4:1 PRIOR TO CONSTRUCTING EMBANKMENTS, AS REQUIRED PER SPECIFICATIONS.
- WHERE MUCK EXCAVATION LIMITS REQUIRE CUTTING THROUGH VEGETATION MAT, BACKFILL EXPOSED PORTIONS OF MUCK WITH SHOT ROCK IN CONTACT WITH BEDROCK TO ESTABLISH UNYIELDING BASE PRIOR TO INSTALLING GEOGRID.
- GEOGRID SHALL EXTEND MINIMUM 10' LEFT AND RIGHT OF TRANSITION POINT SHOWN ON PLANS. WHEN BENCHED EXISTING SLOPES ARE WITHIN 10' OF TRANSITION POINT, ONLY EXTEND GEOGRID TO FACE OF FIRST BENCH.
- CUT SLOPES THROUGH OR CONSISTING OF MUCK, OR MINERAL SOILS SHALL BE SEEDED. SEE G SHEETS FOR SLOPE STABILIZATION AND SEEDING REQUIREMENTS FOR FILL SLOPES.



ROAD STRUCTURAL SECTION NO. 1



ROAD STRUCTURAL SECTION NO. 2

STATE OF ALASKA

49TH

Colin M. Singleton

CE-124820

REGISTERED PROFESSIONAL ENGINEER

CRW ENGINEERING GROUP, LLC

3940 ARCTIC BLVD, SUITE 300

ANCHORAGE, ALASKA 99503

(907) 562-3252

#AEC1882-AK

CITY OF WHITTIER

SHOTGUN COVE ROAD EXTENSION  
MILE 2.0 TO 4.5

TYPICAL SECTIONS

DESIGNED BY  
CHECKED BY  
DRAFTED BY

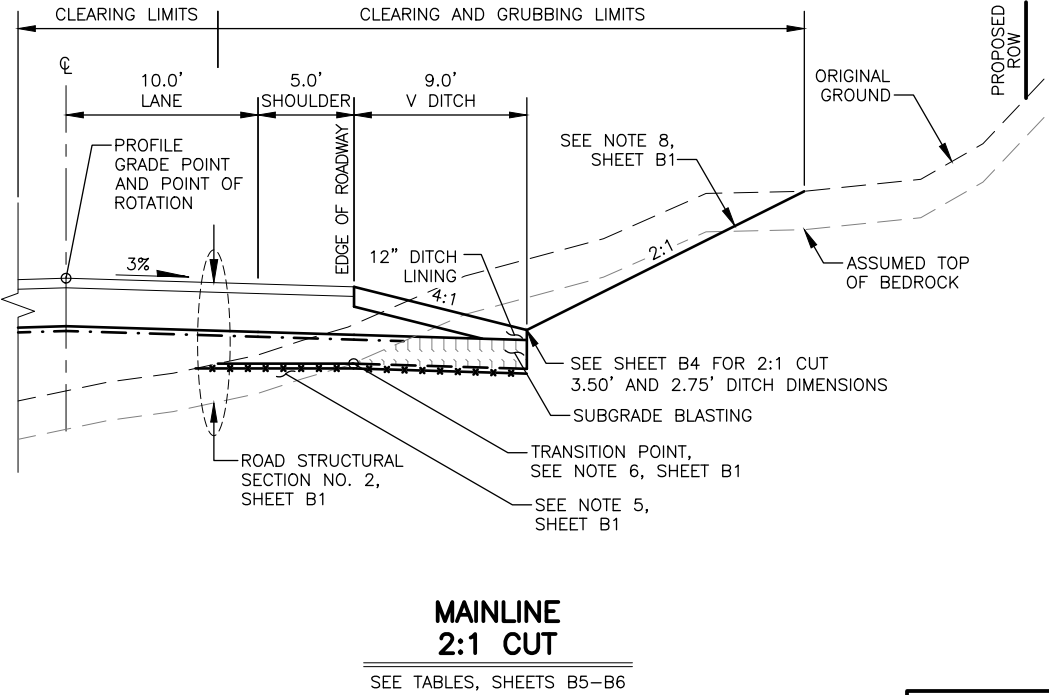
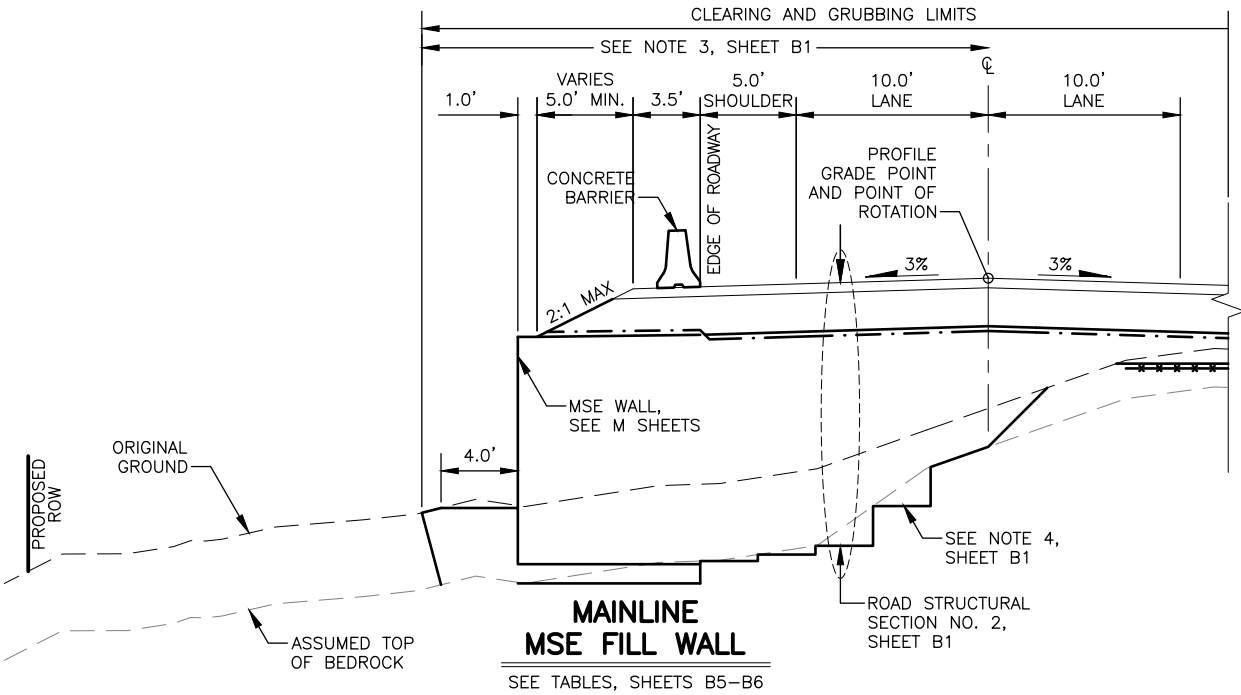
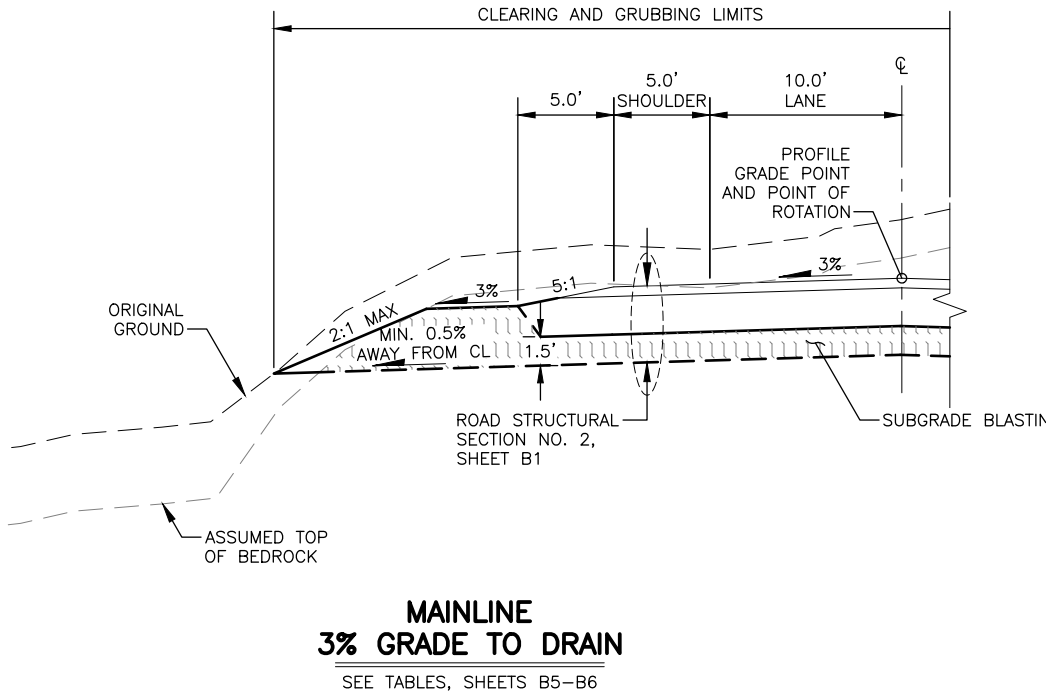
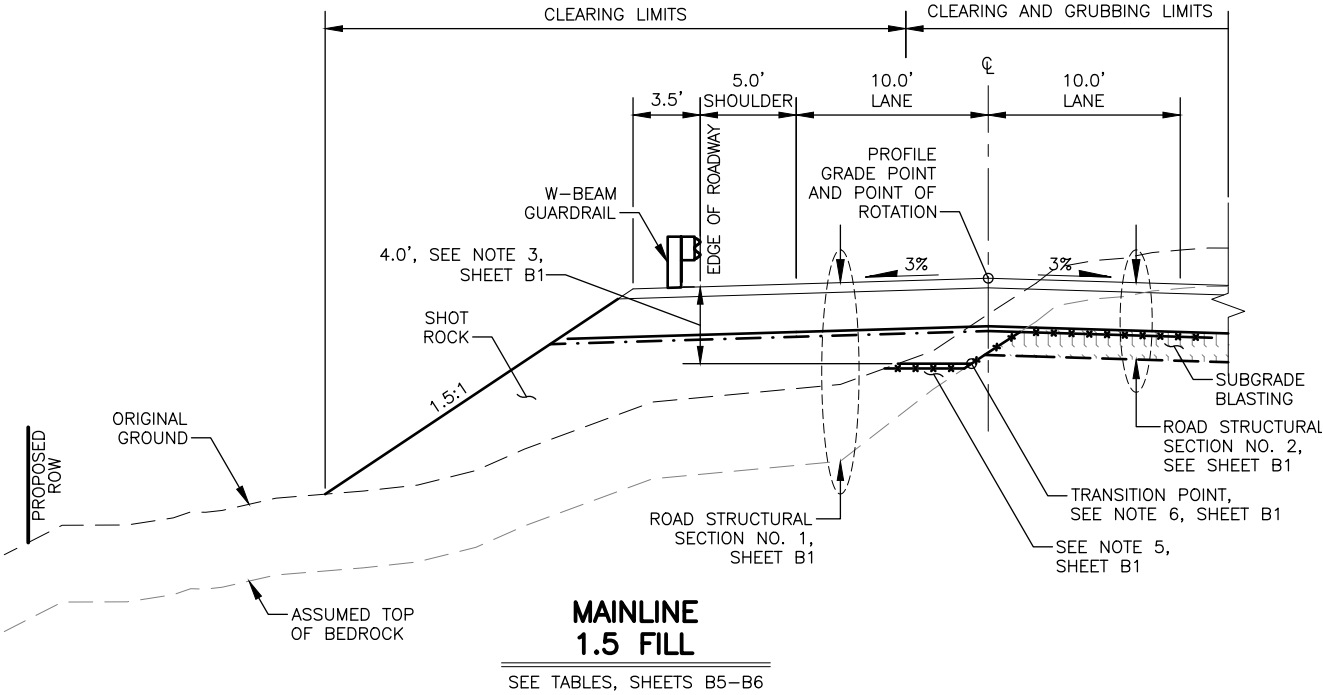
SCALE  
N/A

DATE  
7/26/2022

TIME  
1:18 PM

DRAWING LOCATION  
J:\JOBS\DATA\20403.02 SHOTGUN COVE ROAD\00 CADD\01 WORKING SET\01 CIVIL\02 DESIGN\20403.02 TYPICAL SECTIONS.DWG

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	XXXX(XXX)/ XXXXXXXXXXXX	2022	B2	B9



CRW ENGINEERING GROUP, LLC  
3940 ARCTIC BLVD., SUITE 300  
ANCHORAGE, ALASKA 99503  
(907) 562-3252  
#AECL882-AK

CITY OF WHITTIER

**SHOTGUN COVE ROAD EXTENSION  
MILE 2.0 TO 4.5**

**TYPICAL SECTIONS**

DESIGNED BY  
CHECKED BY  
DRAFTED BY

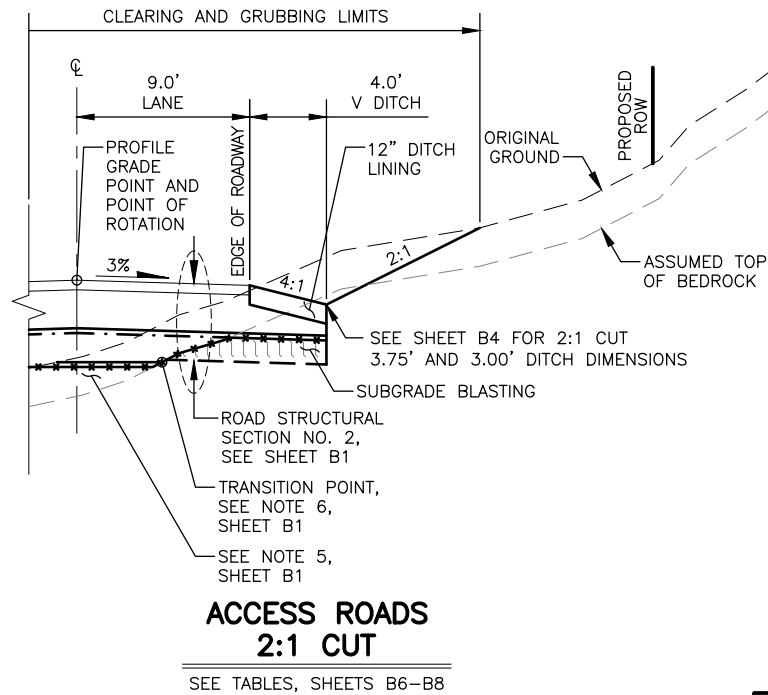
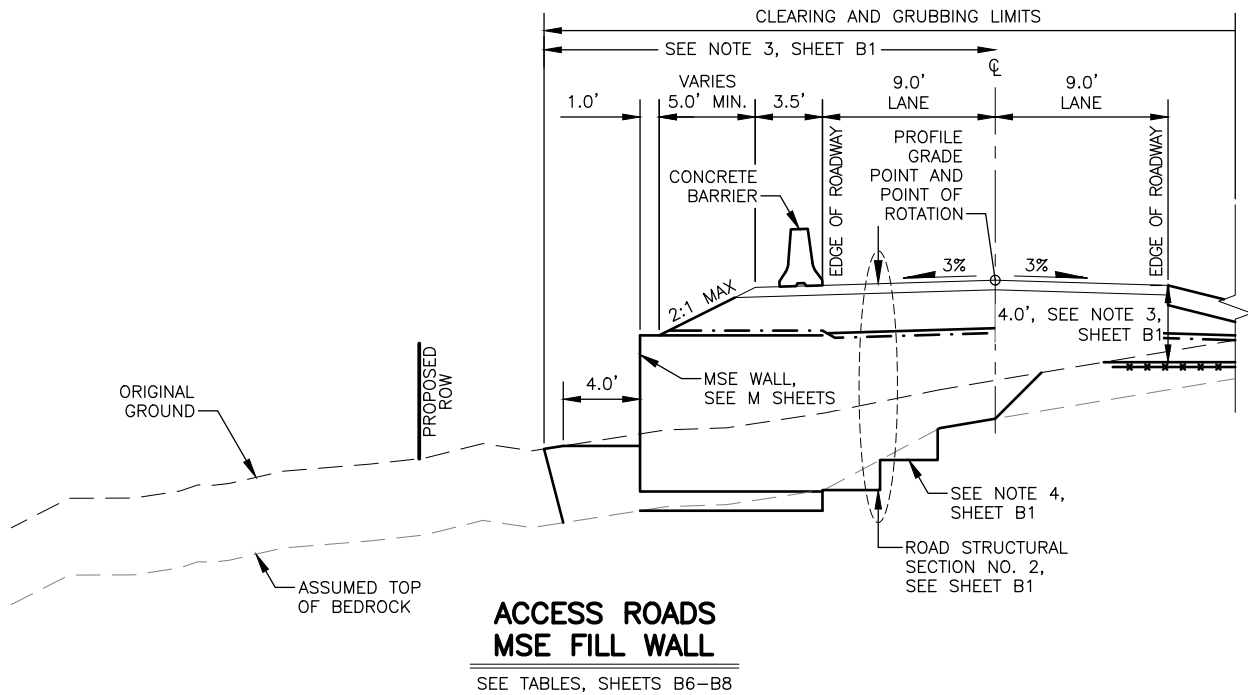
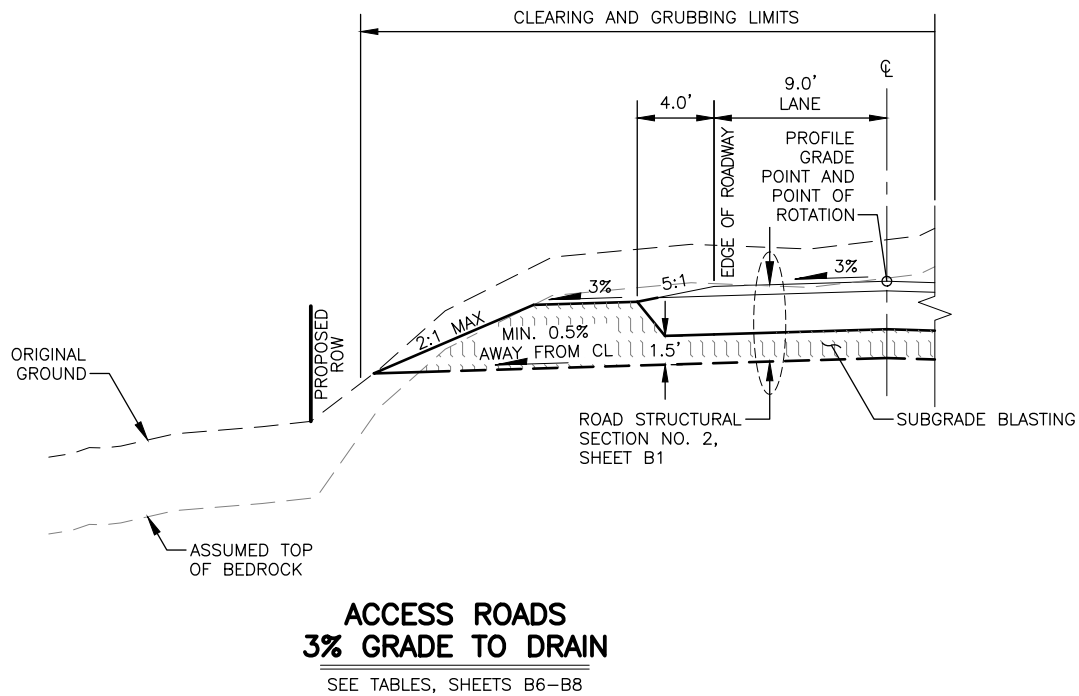
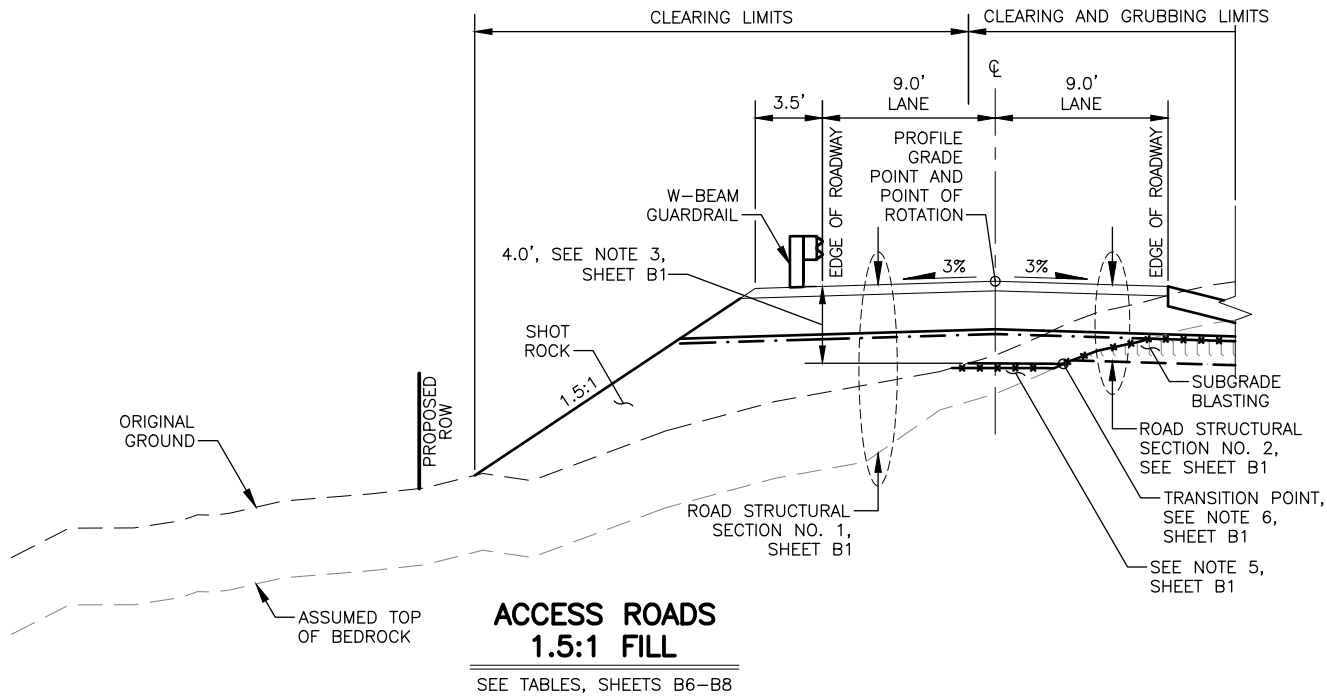
SCALE  
N/A

DATE  
7/26/2022

TIME  
1:18 PM

DRAWING LOCATION  
J:\JOBS\DATA\20403.02 SHOTGUN COVE ROAD\00 CADD\01 WORKING SET\01 CIVIL\02 DESIGN\20403.02 TYPICAL SECTIONS.DWG

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	XXXX(XXX)/ XXXXXXXXXXXXX	2022	B3	B9



CITY OF WHITTIER

**SHOTGUN COVE ROAD EXTENSION  
MILE 2.0 TO 4.5**

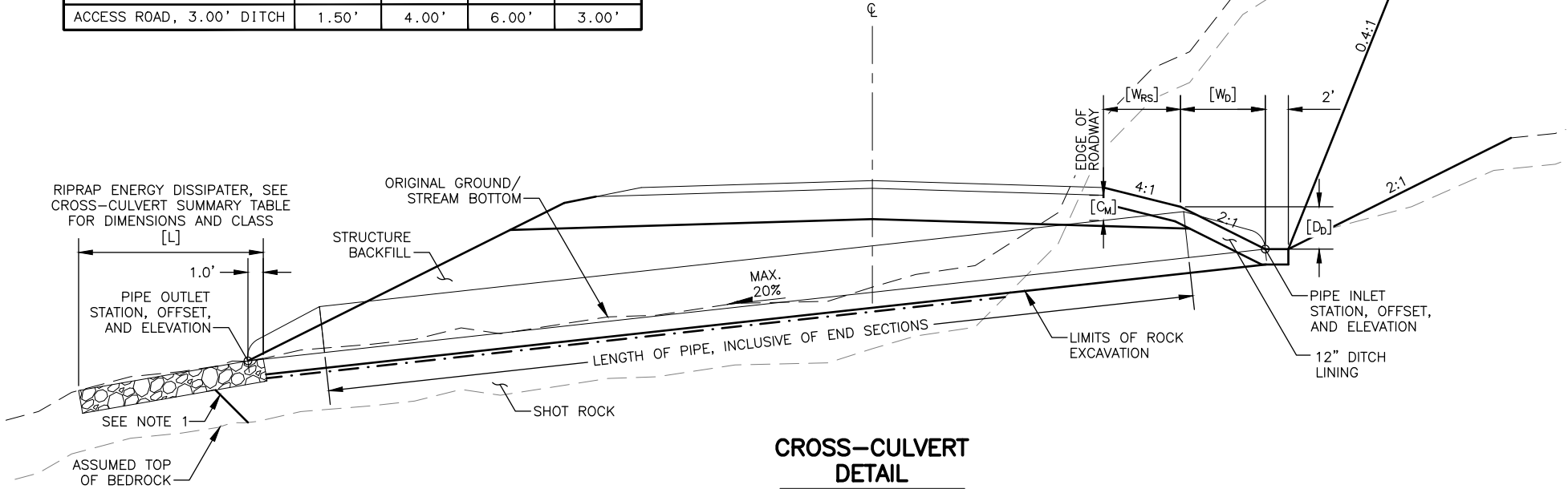
**TYPICAL SECTIONS**



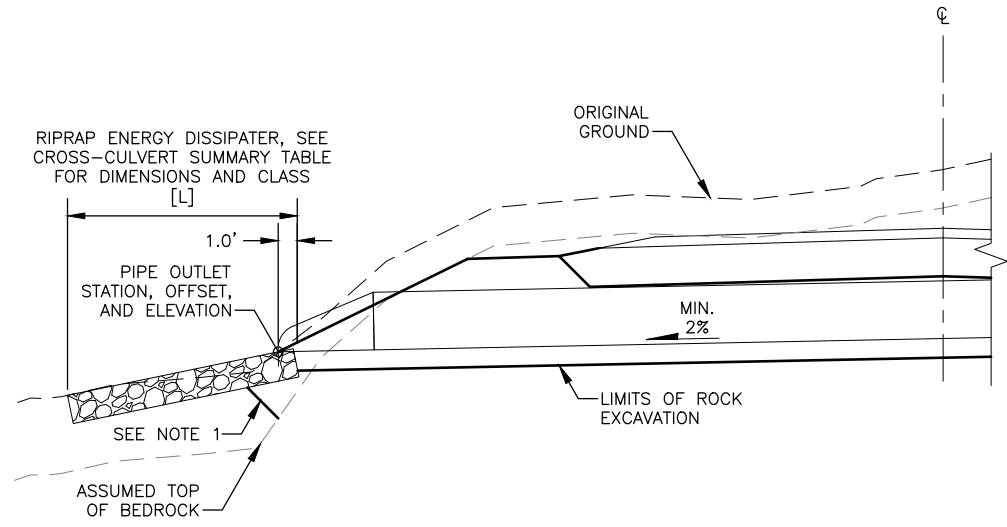
DESIGNED BY  
CHECKED BY  
DRAFTED BY  
SCALE  
N/A  
DATE  
7/26/2022 1:18 PM  
DRAWING LOCATION  
J:\JOBS\DATA\20403.02 SHOTGUN COVE ROAD\00 CADD\01 WORKING SET\01 CIVIL\02 DESIGN\20403.02 TYPICAL SECTIONS.DWG

NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
			ALASKA	XXXX(XXX)/ XXXXXXXXXXXXX	2022	B4	B9

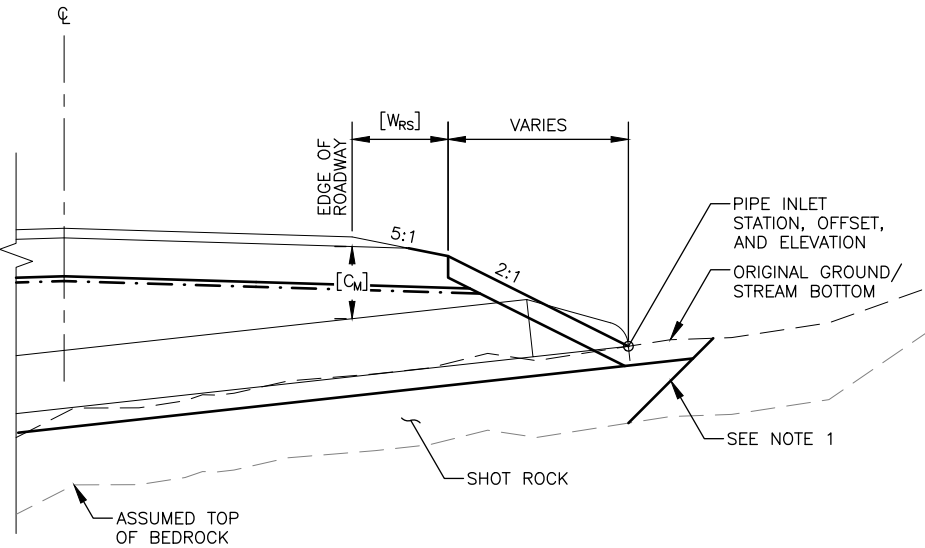
DITCH DIMENSIONS TABLE				
DITCH SECTION	MIN. COVER [C <sub>w</sub> ]	SLOPE WIDTH [W <sub>rs</sub> ]	DITCH WIDTH [W <sub>b</sub> ]	DITCH DEPTH [D <sub>b</sub> ]
MAINLINE, 3.50' DITCH	1.50'	5.00'	7.00'	3.50'
MAINLINE, 2.75' DITCH	1.50'	5.00'	5.50'	2.75'
ACCESS ROAD, 3.75' DITCH	1.50'	4.00'	7.50'	3.75'
ACCESS ROAD, 3.00' DITCH	1.50'	4.00'	6.00'	3.00'



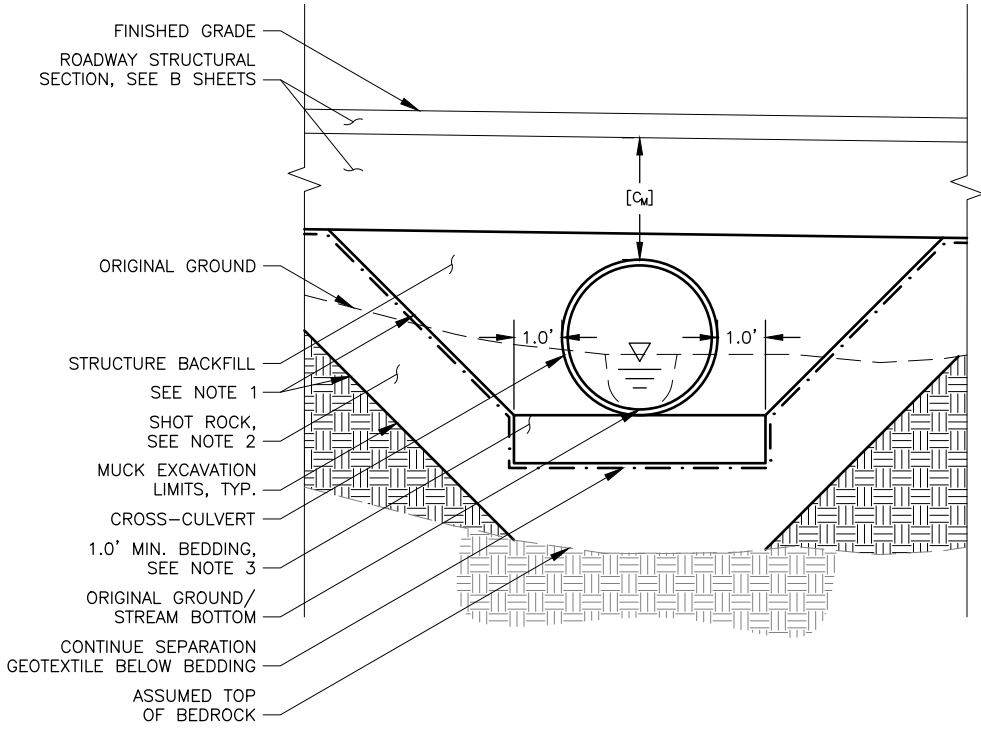
CROSS-CULVERT  
DETAIL



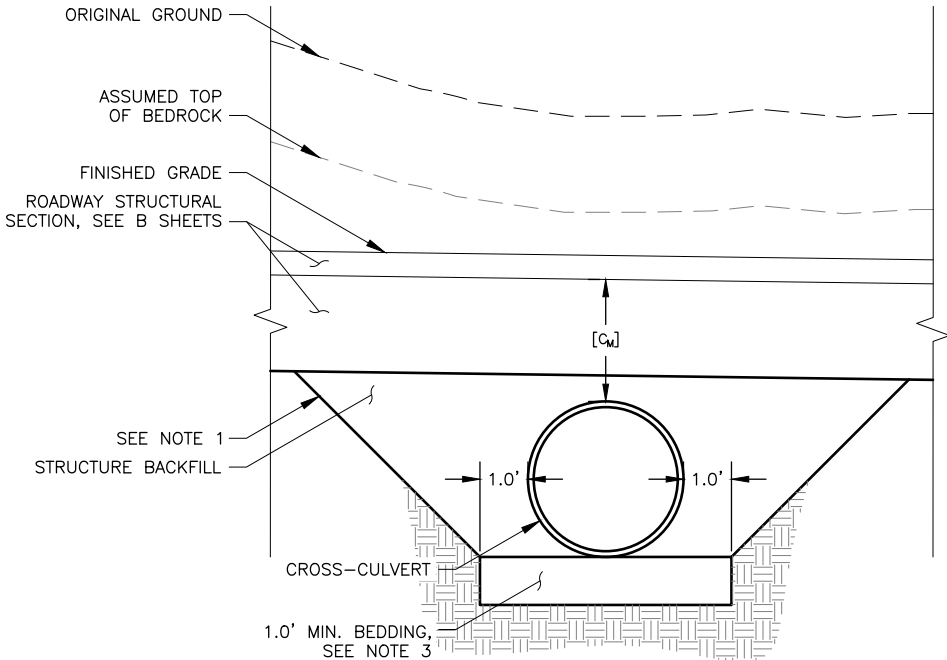
CROSS-CULVERT  
MIN. GRADE TO DRAIN



CROSS-CULVERT  
2:1 FILL



CROSS-CULVERT TRENCH DETAIL  
FILL CONDITION



CROSS-CULVERT TRENCH DETAIL  
CUT CONDITION

CROSS-CULVERT NOTES:

- SLOPE TRENCH WALLS ACCORDING TO SOIL CONDITIONS AND OSHA SAFETY STANDARDS.
- EXCAVATE ALL UNSUITABLE FOUNDATION MATERIAL BELOW CULVERT INCLUDING MUCK AND ORGANIC MATTER. REPLACE WITH SHOT ROCK AND COMPACT AS NECESSARY TO CREATE UNIFORM TRENCH BOTTOM WITH CONSTANT SLOPE PRIOR TO PLACEMENT OF GEOTEXTILE AND 1.0' BEDDING.
- EXCAVATE ROCK AS NECESSARY TO CREATE UNIFORM TRENCH BOTTOM WITH CONSTANT SLOPE PRIOR TO PLACEMENT OF 1.0' BEDDING.



CITY OF WHITTIER

SHOTGUN COVE ROAD EXTENSION  
MILE 2.0 TO 4.5

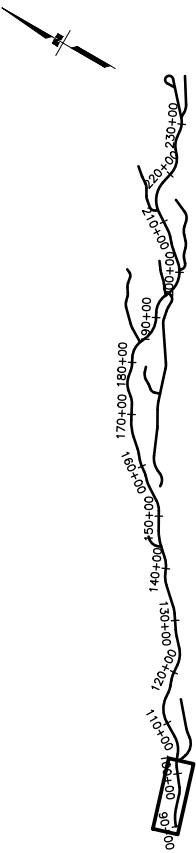
TYPICAL SECTIONS

SHEET NO.	TOTAL SHEETS
<b>F1</b>	<b>F27</b>
STATE	YEAR
<b>ALASKA</b>	<b>2022</b>

PROJECT DESIGNATION

XXXX(XXX)/  
XXXXXXXXXXXX

NO.	REVISION
DATE	
NO.	REVISION
DATE	
NO.	REVISION
DATE	

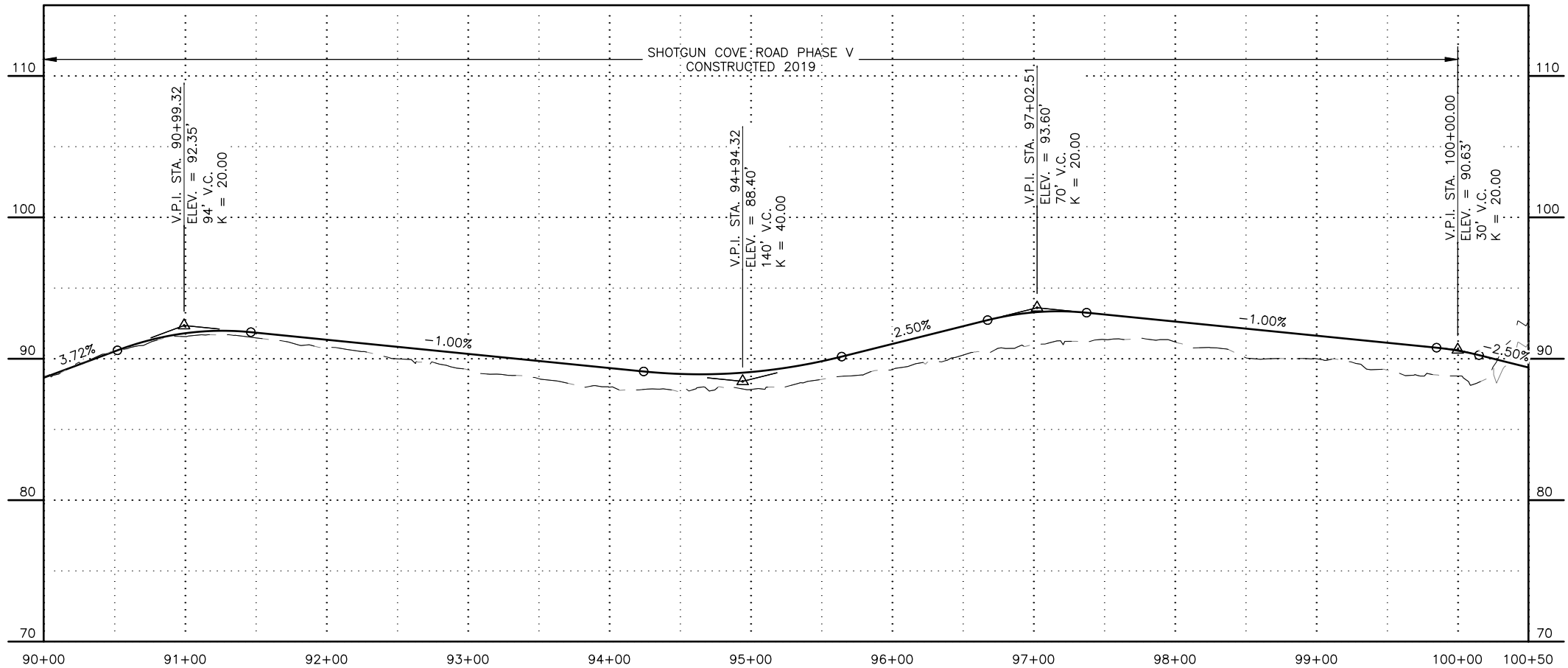
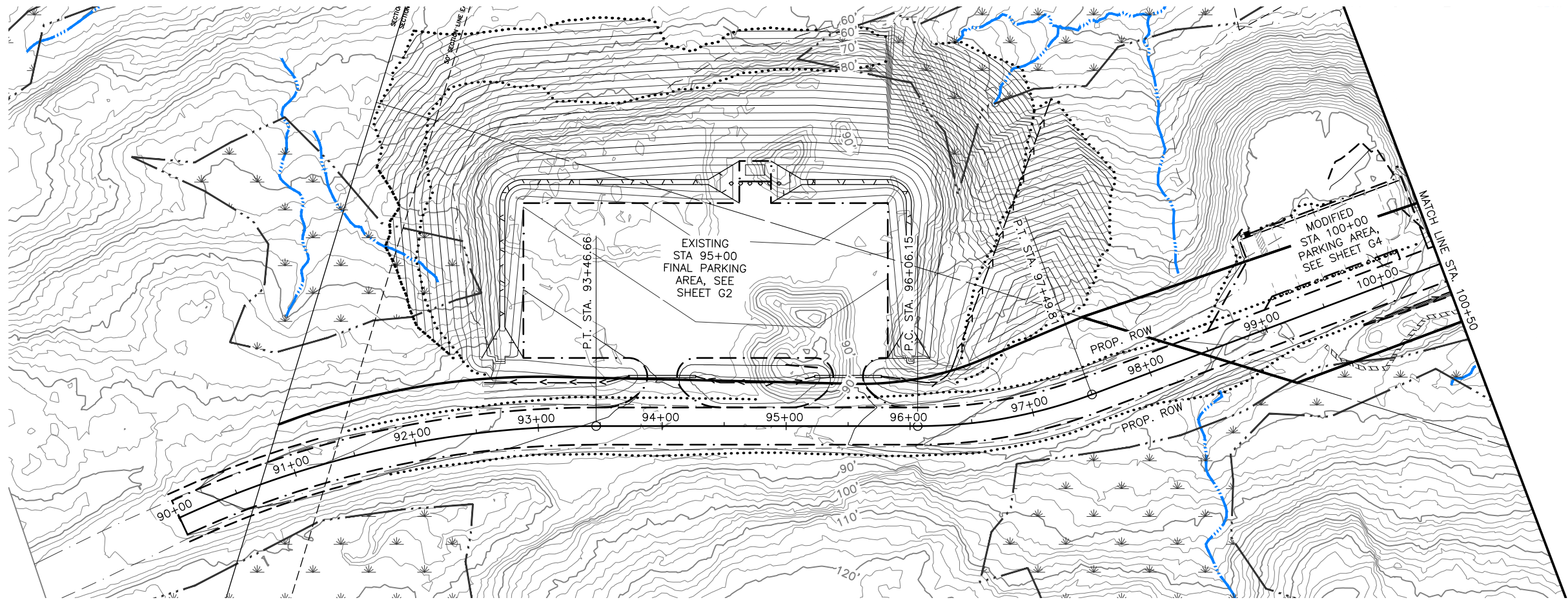


CRW ENGINEERING GROUP, LLC  
3940 ARCTIC BLVD. SUITE 300  
ANCHORAGE, ALASKA 99503  
(907) 562-3252  
#AECL882-AK

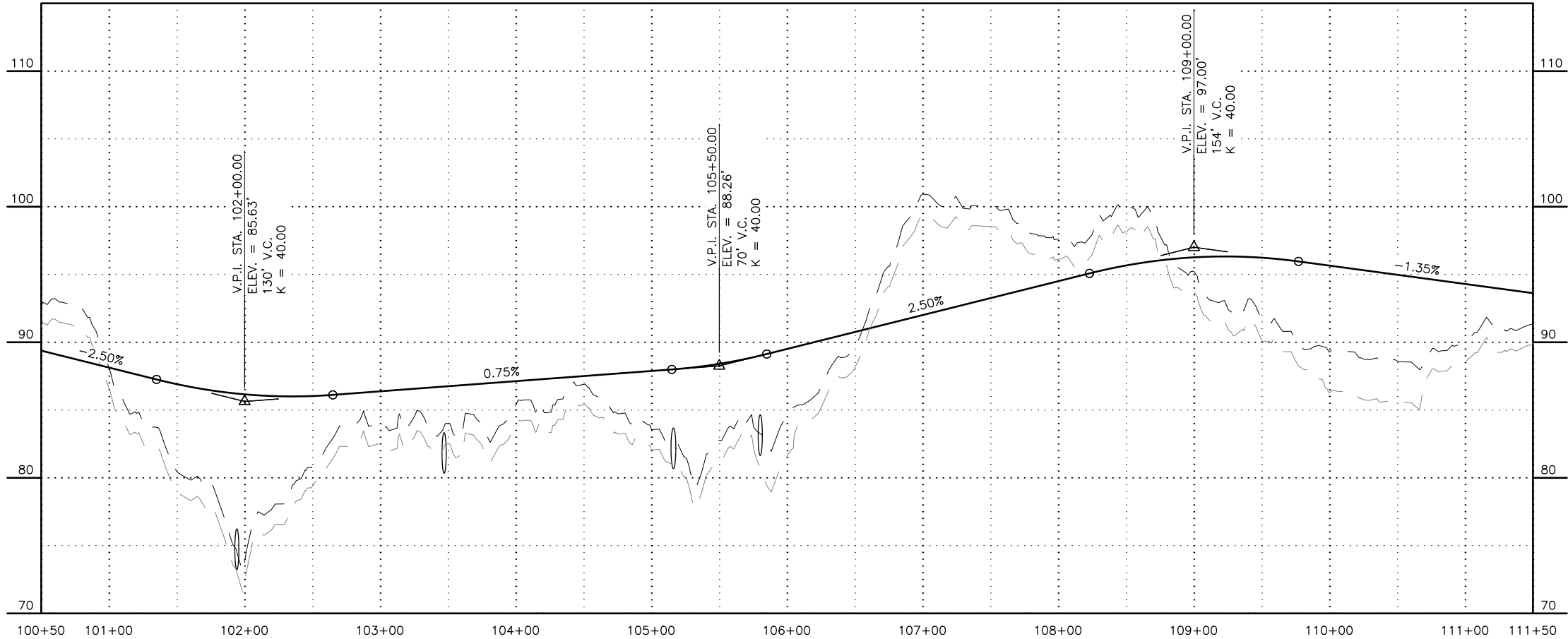
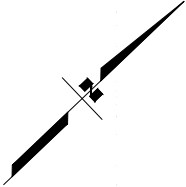
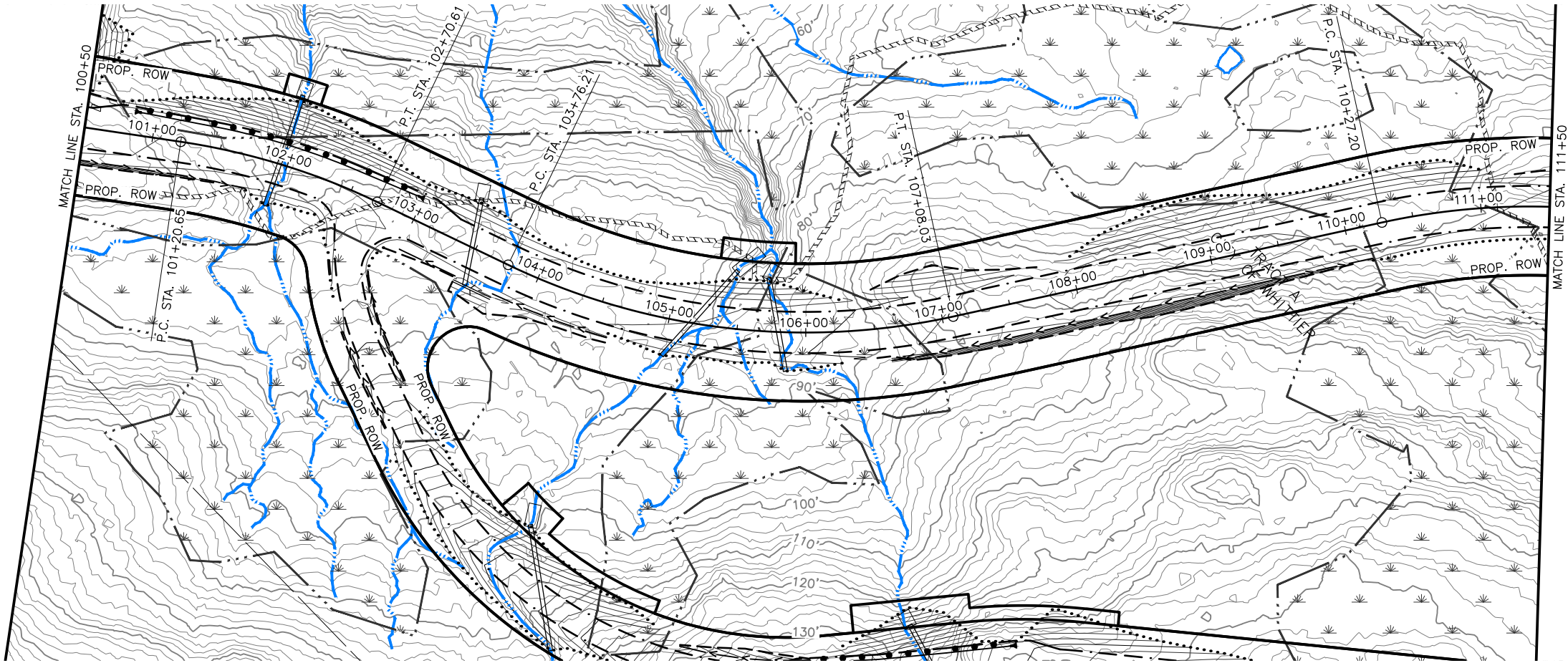
CITY OF WHITTIER  
SHOTGUN COVE ROAD  
EXTENSION  
MILE 2.0 TO 4.5

## PLAN AND PROFILE

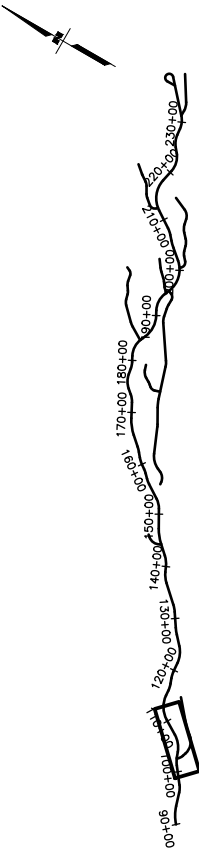
MAINLINE  
BOP TO STA 100+50







SHEET NO.	TOTAL SHEETS
F2	F27
STATE	YEAR
ALASKA	2022
PROJECT DESIGNATION	
XXXX(XXX)/XXXXXXXXXX	
NO.	REVISION
DATE	
NO.	REVISION
DATE	
NO.	REVISION
DATE	



CRW ENGINEERING GROUP, LLC  
3940 ARCTIC BLVD, SUITE 300  
ANCHORAGE, ALASKA 99503  
(907) 562-3252  
#AEC1882-AK

CITY OF WHITTIER  
SHOTGUN COVE ROAD  
EXTENSION  
MILE 2.0 TO 4.5

PLAN AND PROFILE

MAINLINE  
STA 100+50 TO 111+50

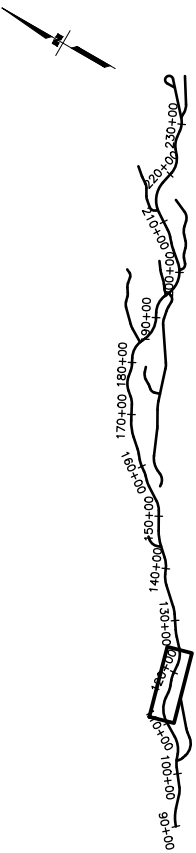


SHEET NO.	TOTAL SHEETS
<b>F3</b>	<b>F27</b>
STATE	YEAR
<b>ALASKA</b>	<b>2022</b>

PROJECT DESIGNATION

XXXX(XXX)/  
XXXXXXXXXX

NO.	REVISION
DATE	
NO.	REVISION
DATE	
NO.	REVISION
DATE	

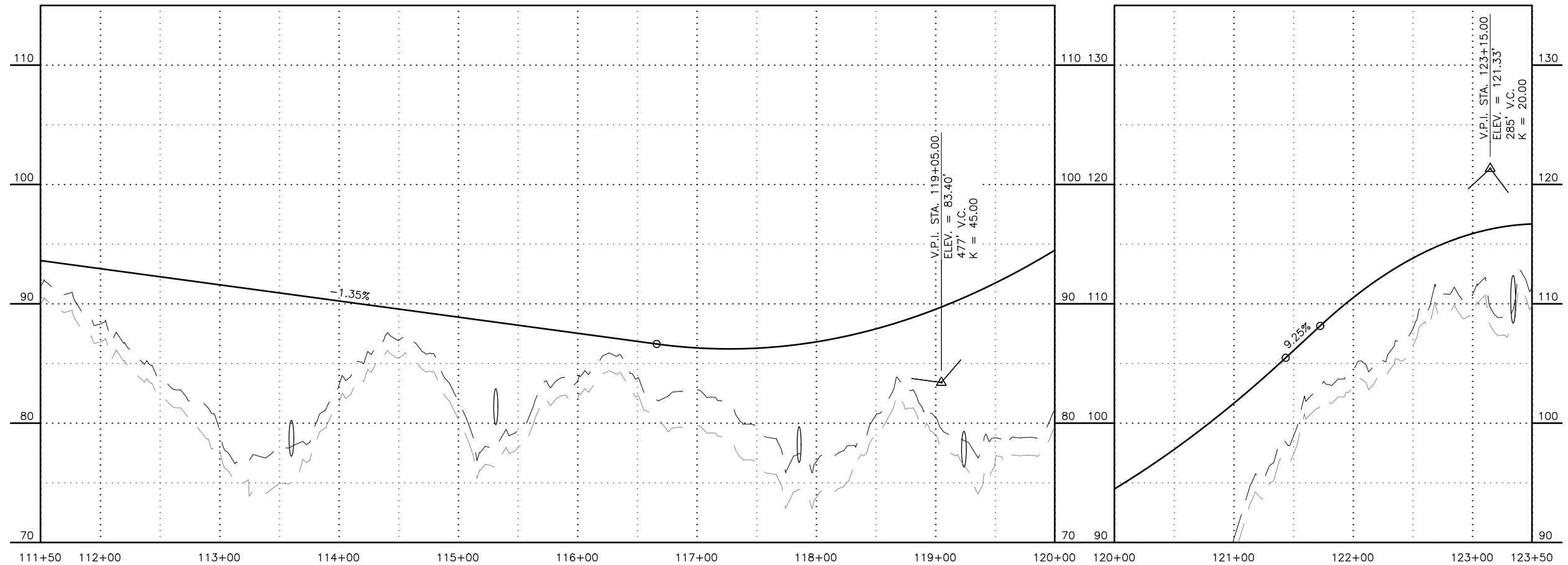
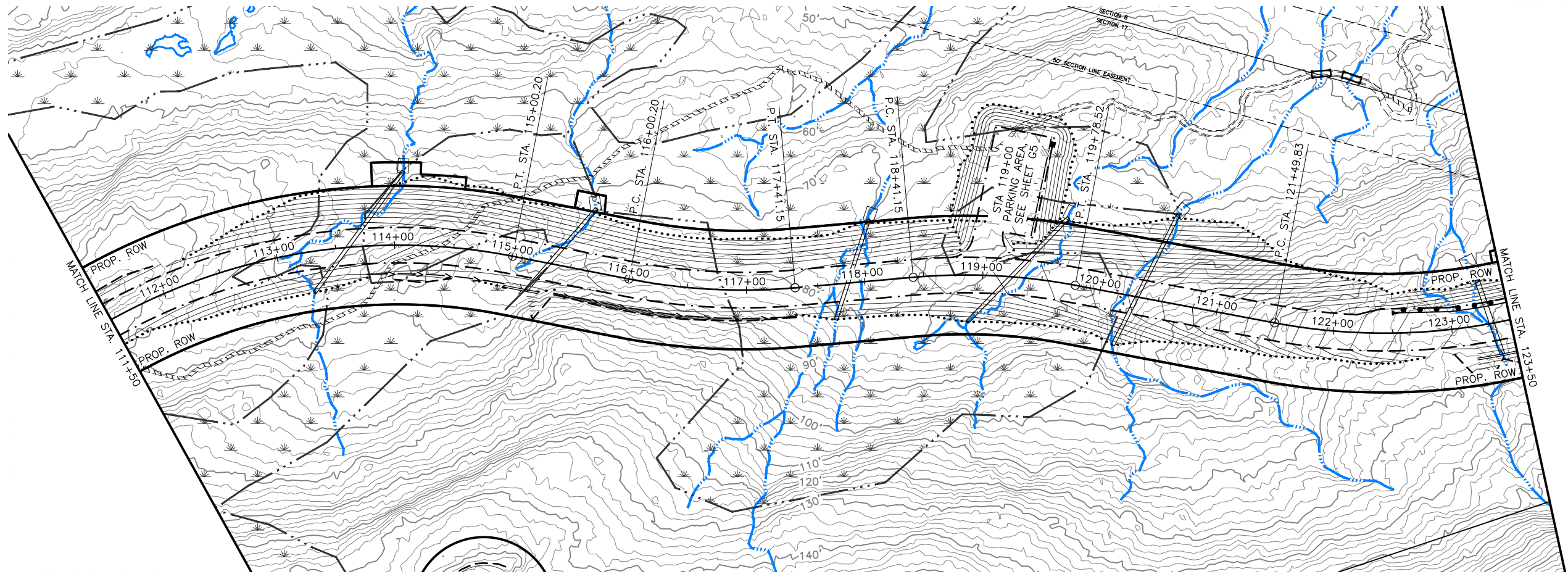


CRW ENGINEERING GROUP, LLC  
3940 ARCTIC BLVD. SUITE 300  
ANCHORAGE, ALASKA 99503  
(907) 562-3252  
#AECL882-AK

CITY OF WHITTIER  
SHOTGUN COVE ROAD  
EXTENSION  
MILE 2.0 TO 4.5

PLAN AND PROFILE

MAINLINE  
STA 111+50 TO 123+50



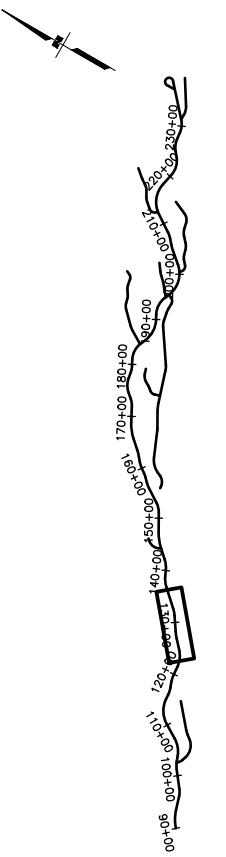


SHEET NO.	TOTAL SHEETS
<b>F4</b>	<b>F27</b>
STATE	YEAR
<b>ALASKA</b>	<b>2022</b>

PROJECT DESIGNATION

XXXX(XXX)/  
XXXXXXXXXXXX

NO.	REVISION
DATE	
NO.	REVISION
DATE	
NO.	REVISION
DATE	

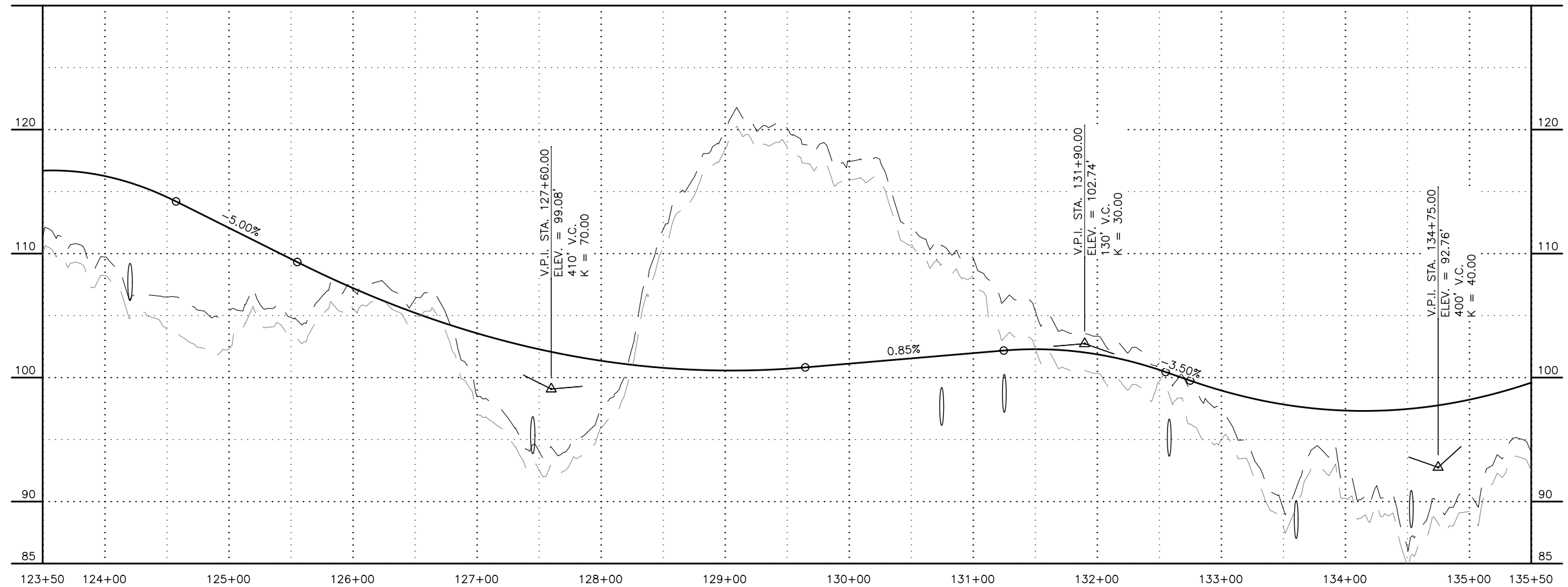
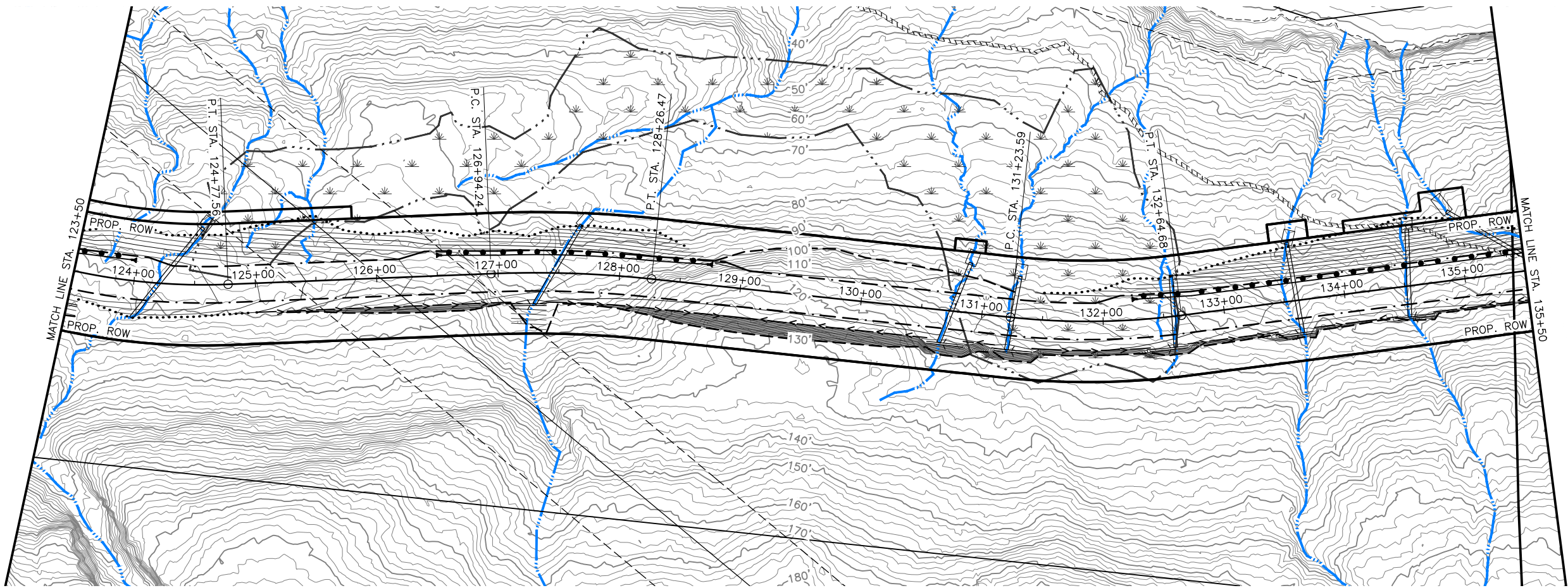


CRW ENGINEERING GROUP, LLC  
3940 ARCTIC BLVD. SUITE 300  
ANCHORAGE, ALASKA 99503  
(907) 562-3252  
#AECL882-AK

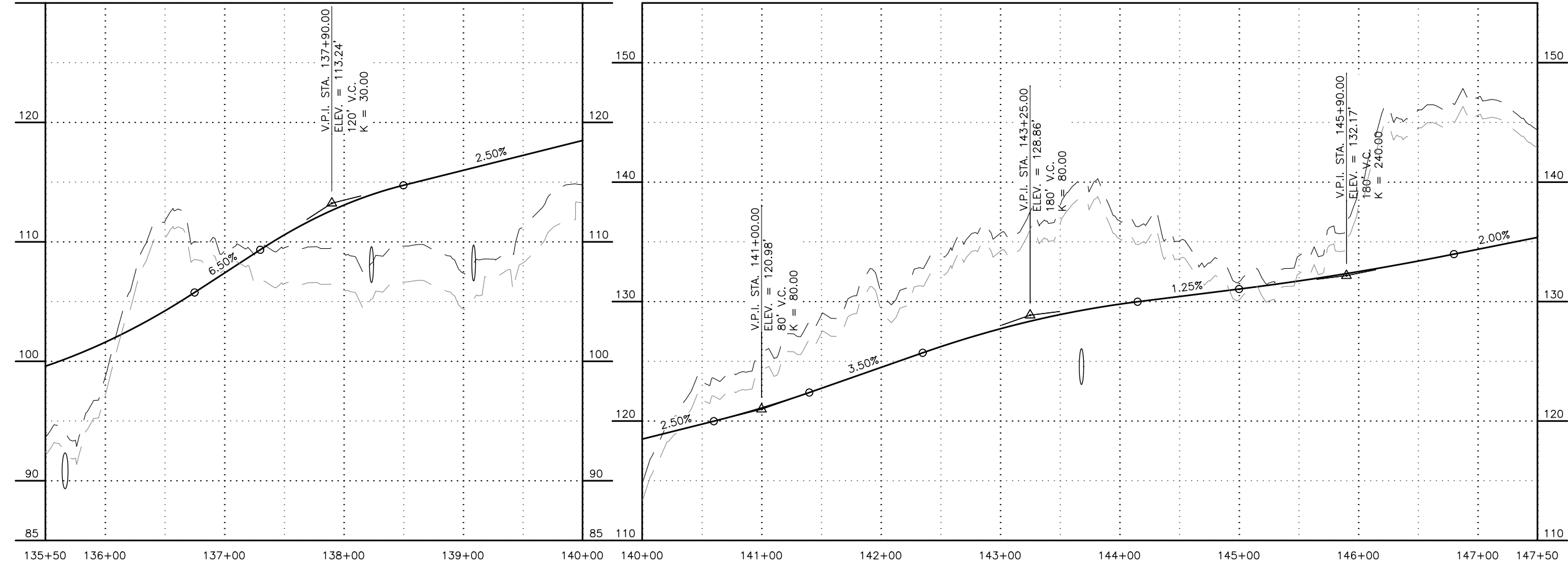
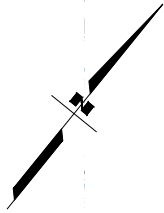
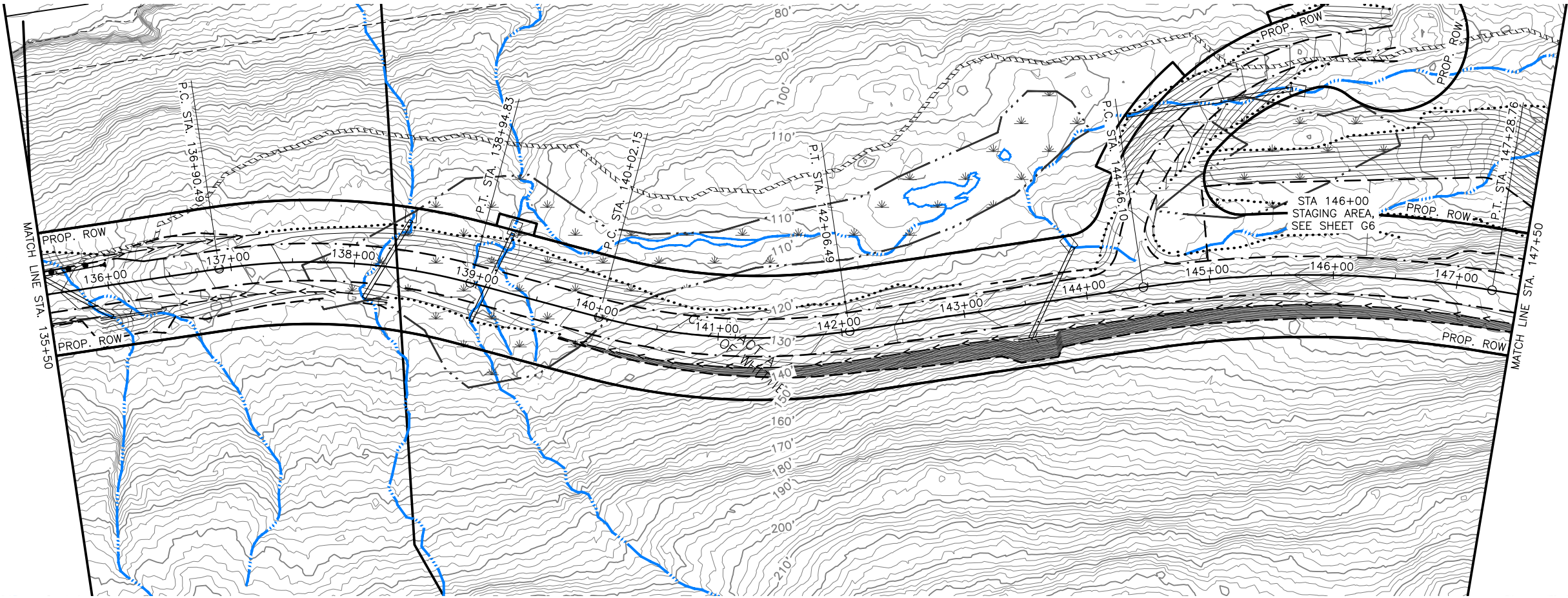
CITY OF WHITTIER  
SHOTGUN COVE ROAD  
EXTENSION  
MILE 2.0 TO 4.5

PLAN AND PROFILE

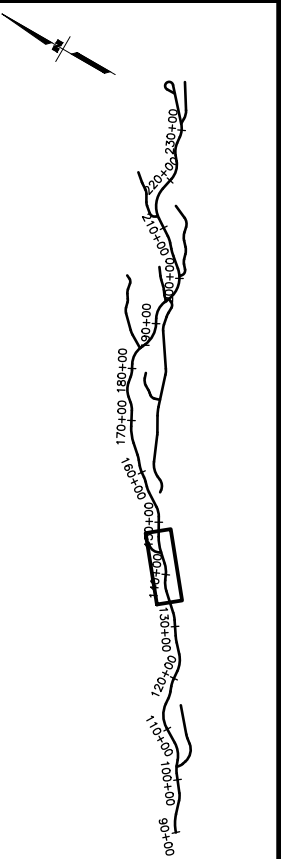
MAINLINE  
STA 123+50 TO 135+50







SHEET NO.	TOTAL SHEETS
F5	F27
STATE	YEAR
ALASKA	2022
PROJECT DESIGNATION	
XXXX(XXX)/XXXXXXXXXX	
NO.	REVISION
DATE	
NO.	REVISION
DATE	
NO.	REVISION
DATE	



STATE OF ALASKA

49TH

Colin M. Singleton  
CE-124820

REGISTERED PROFESSIONAL ENGINEER

CRW ENGINEERING GROUP, LLC  
3940 ARCTIC BLVD., SUITE 300  
ANCHORAGE, ALASKA 99503  
(907) 562-3252  
#AECL882-AK

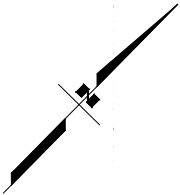
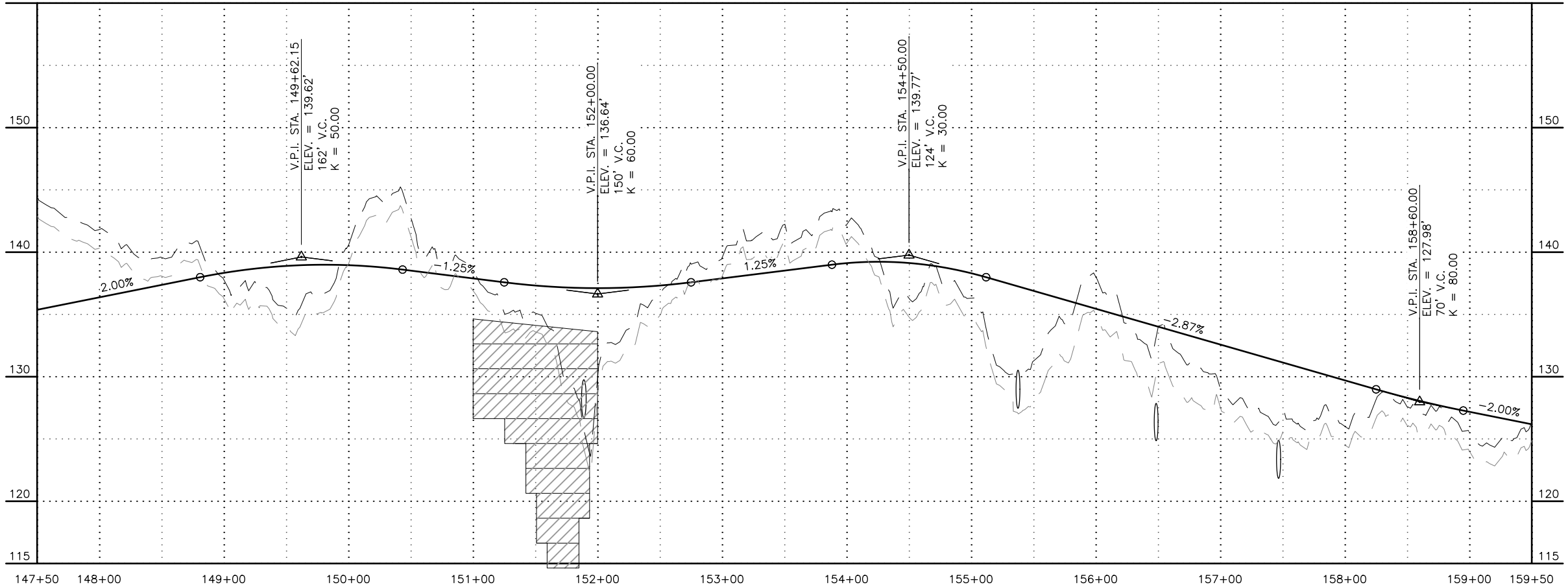
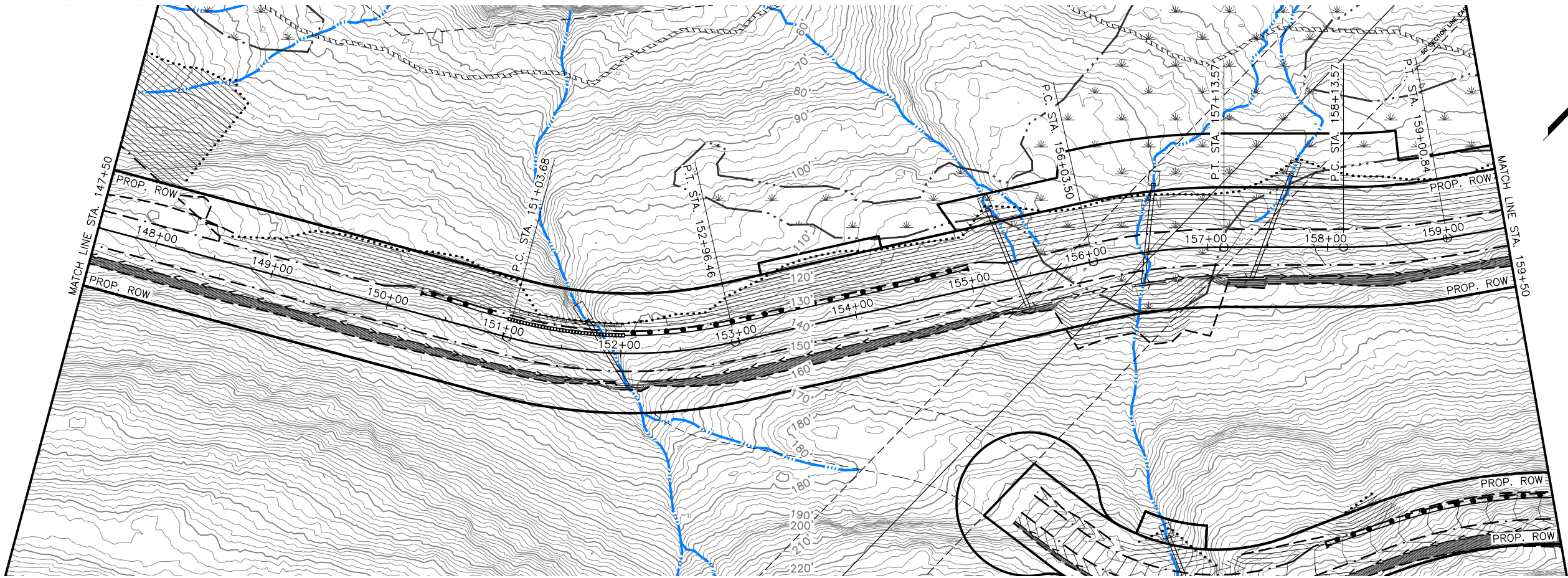
CITY OF WHITTIER

SHOTGUN COVE ROAD  
EXTENSION  
MILE 2.0 TO 4.5

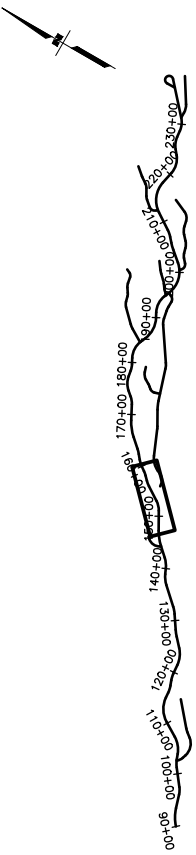
PLAN AND PROFILE

MAINLINE  
STA 135+50 TO 147+50





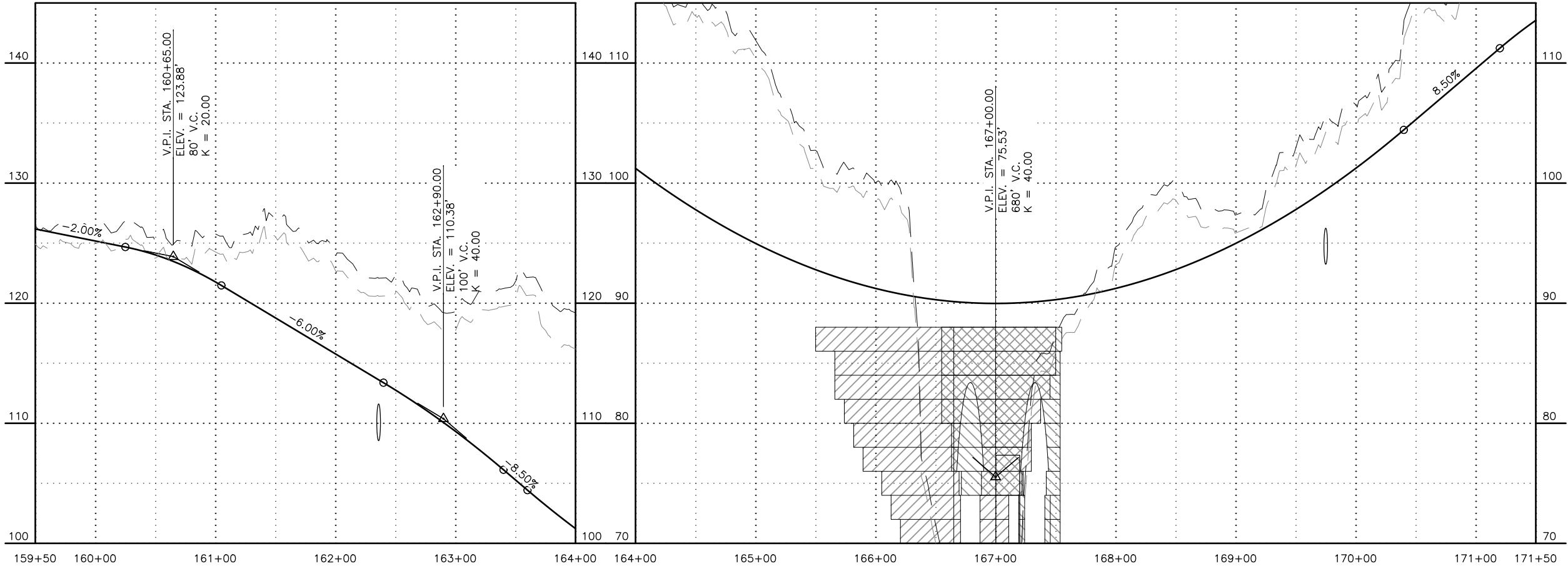
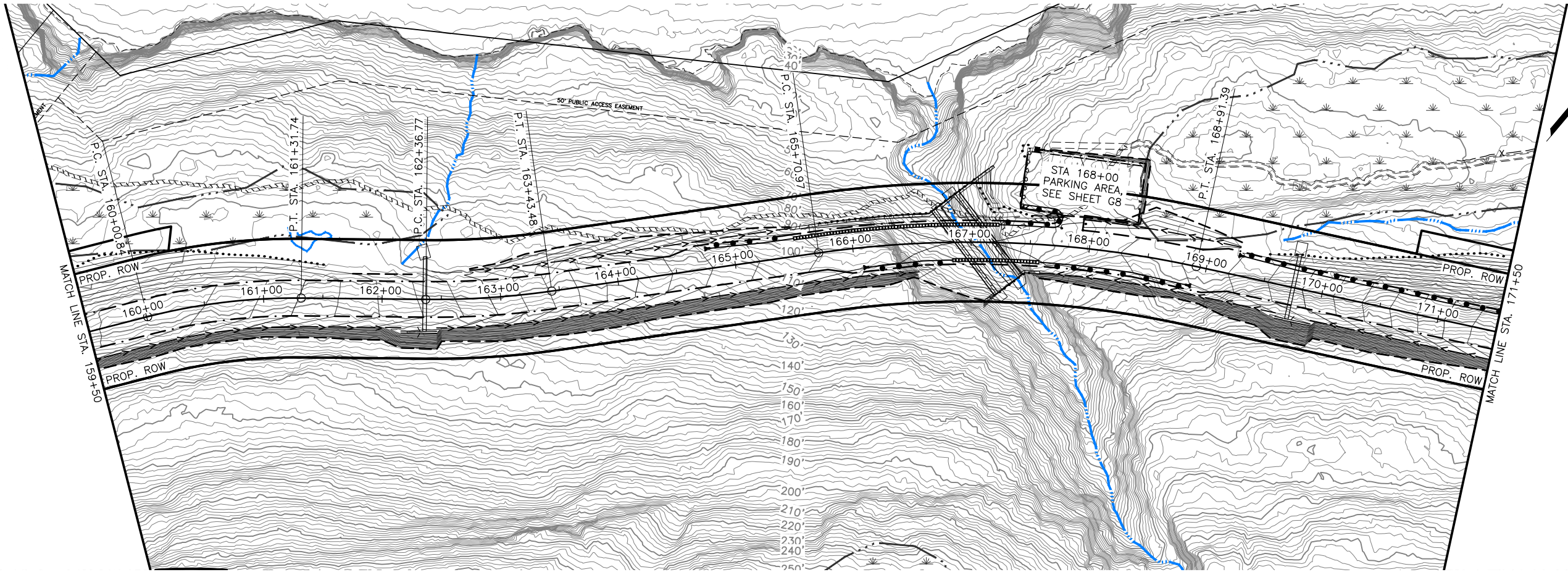
SHEET NO.	TOTAL SHEETS
F6	F27
STATE	YEAR
ALASKA	2022
PROJECT DESIGNATION	
XXXX(XXX)/XXXXXXXXXX	
NO.	REVISION
DATE	
NO.	REVISION
DATE	
NO.	REVISION
DATE	



CRW ENGINEERING GROUP, LLC  
3940 ARCTIC BLVD., SUITE 300  
ANCHORAGE, ALASKA 99503  
(907) 562-3252  
#AEC1882-AK

CITY OF WHITTIER  
SHOTGUN COVE ROAD  
EXTENSION  
MILE 2.0 TO 4.5  
PLAN AND PROFILE  
MAINLINE  
STA 147+50 TO 159+50



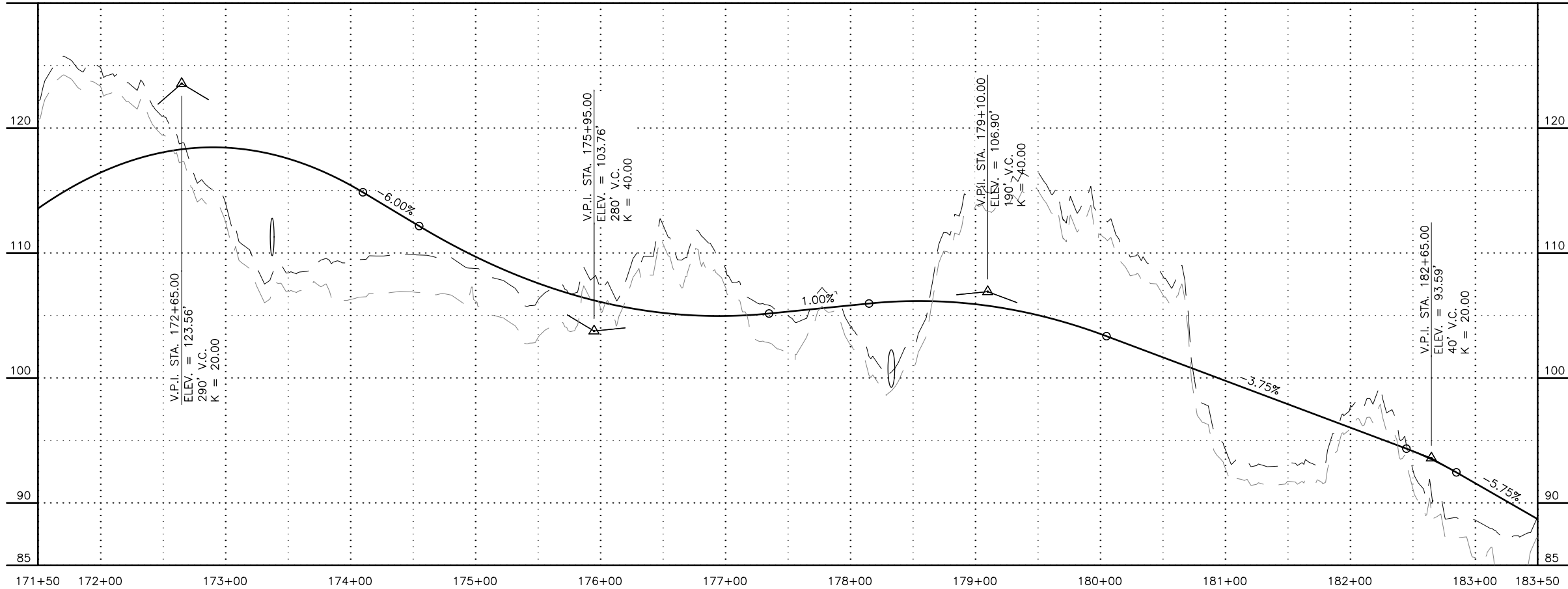
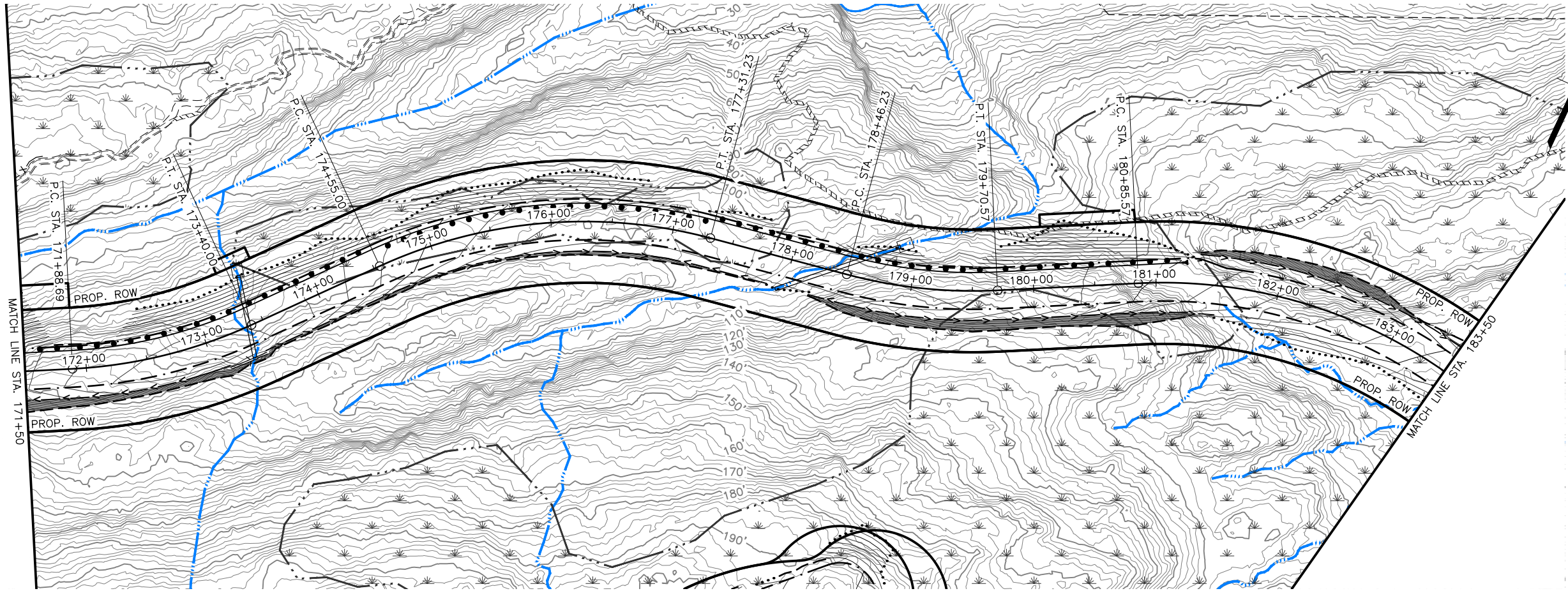


SHEET NO.	TOTAL SHEETS
F7	F27
STATE	YEAR
ALASKA	2022
PROJECT DESIGNATION	
XXXX(XXX)/XXXXXXXXXX	
NO.	REVISION
DATE	
NO.	REVISION
DATE	
NO.	REVISION
DATE	

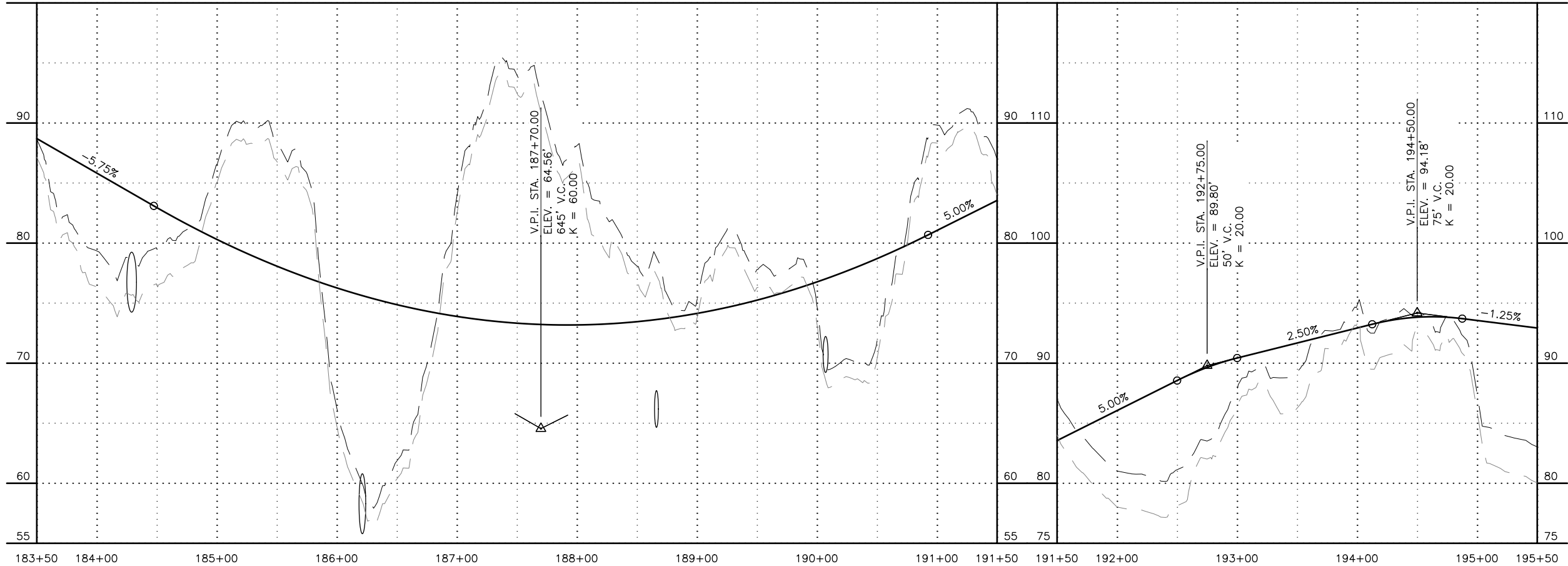
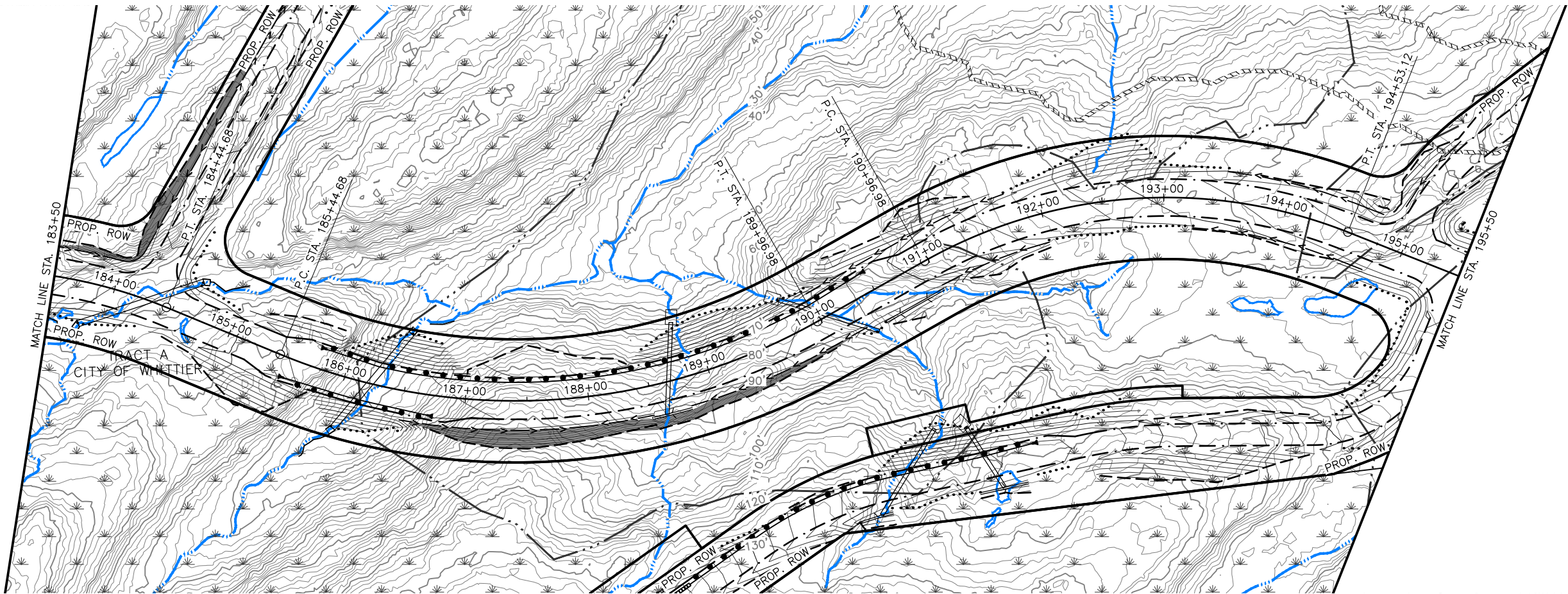
CRW ENGINEERING GROUP, LLC  
3940 ARCTIC BLVD., SUITE 300  
ANCHORAGE, ALASKA 99503  
(907) 562-3252  
#AECL882-AK

CITY OF WHITTIER  
SHOTGUN COVE ROAD  
EXTENSION  
MILE 2.0 TO 4.5  
PLAN AND PROFILE  
MAINLINE  
STA 159+50 TO 171+50

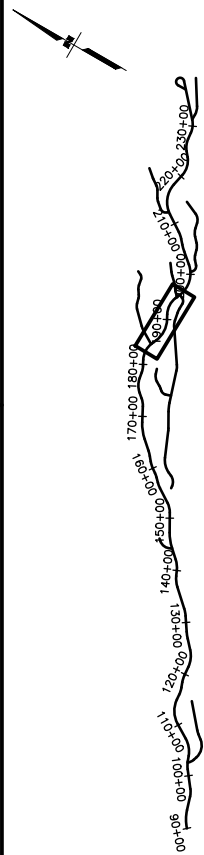








SHEET NO.	TOTAL SHEETS
F9	F27
STATE	YEAR
ALASKA	2022
PROJECT DESIGNATION	
XXXX(XXX)/XXXXXXXXXX	
NO.	REVISION
DATE	
NO.	REVISION
DATE	
NO.	REVISION
DATE	



CRW ENGINEERING GROUP, LLC  
3940 ARCTIC BLVD., SUITE 300  
ANCHORAGE, ALASKA 99503  
(907) 562-3252  
#AECL882-AK

CITY OF WHITTIER  
SHOTGUN COVE ROAD  
EXTENSION  
MILE 2.0 TO 4.5

PLAN AND PROFILE

MAINLINE  
STA 183+50 TO 195+50



