

LOCATION MAP

LATITUDE: N 39°07'43.01" LONGITUDE: W 83°15'36.29"



PORTION TO BE IMPROVED	
INTERSTATE HIGHWAY	
FEDERAL ROUTES	
STATE ROUTES	
COUNTY & TOWNSHIP ROADS	
OTHER ROADS	

DESIGN DESIGNATION

DESIGN SPEED	25
LEGAL SPEED	25
DESIGN FUNCTIONAL CLASSIFICATION:	
07 LOCAL RURAL	
NHS PROJECT	NO

DESIGN EXCEPTIONS

NONE REQUIRED

UNDERGROUND UTILITIES

CONTACT BOTH SERVICES
CALL TWO WORKING DAYS
BEFORE YOU DIG

CALL

1-800-362-2764
(TOLL FREE)

OHIO UTILITIES PROTECTION SERVICE
NON-MEMBERS
MUST BE CALLED DIRECTLY

OIL & GAS PRODUCERS UNDERGROUND
PROTECTION SERVICE CALL: 1-800-925-0988

PLAN PREPARED BY:

MCCARTY
ASSOCIATES, LLC.

ARCHITECTS/ENGINEERS/SURVEYORS
213 N. High St. Hillside, OH 45135
937.285.8800 FAX 937.285.8800
MCCARTYASSOCIATES.COM

PIK-CR2-0.67

(GREEN RIDGE ROAD)

MIFFLIN TOWNSHIP

PIKE COUNTY

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PROJECT DESCRIPTION

THE PURPOSE OF THIS PROJECT IS THE STABILIZATION OF FAILED NORTH SLOPE EMBANKMENT ALONG GREEN RIDGE ROAD. THE STABILIZATION INCLUDES THE RECONSTRUCTION OF 360 FEET OF THE NORTH SLOPE EMBANKMENT WITH DRILLED SHAFT SOLDIER PILE, AND PLUG PILE. INCIDENTAL WORK INCLUDES RECONSTRUCTION OF PAVEMENT, SHOULDER, AND GUARDRAIL.

PROJECT CONSTRUCTION LIMITS: 0.28 ACRES

PROJECT EARTH DISTURBED AREA: 0.41 ACRES

ESTIMATED CONTRACTOR EARTH DISTURBED AREA: 0.10 ACRES

NOTICE OF INTENT EARTH DISTURBED AREA: N/A

NOI-NOT REQUIRED

2023 SPECIFICATIONS

THE STANDARD SPECIFICATIONS OF THE STATE OF OHIO, DEPARTMENT OF TRANSPORTATION, INCLUDING CHANGES AND SUPPLEMENTAL SPECIFICATIONS LISTED IN THE PROPOSAL SHALL GOVERN THIS IMPROVEMENT.

ENGINEERS SEAL	STANDARD CONSTRUCTION DRAWINGS		SUPPLEMENTAL SPECIFICATIONS	
<div><div>STATE OF OHIO CODY W. BEUGLER 81760 REGISTERED PROFESSIONAL ENGINEER</div><div>SIGNED: <i>Cody W. Beugler</i> DATE: 11/12/2025</div></div>	MGS-2.1	7/18/2025	800	7/18/2025
	MGS-4.2	7/18/2025	832	7/18/2025
	DM-1.1	1/17/2025		
	HW-2.1	7/15/2022		
	MT-101.60	1/17/2025		

I HEREBY APPROVE THESE PLANS AND DECLARE THAT THE MAKING OF THE IMPROVEMENT WILL REQUIRE THE CLOSING TO TRAFFIC OF THE HIGHWAY AND THAT DETOURS WILL BE PROVIDED AS INDICATED ON SHEET 6.

APPROVED *John C. Slone*
DATE 12/17/2025 JOHN C. SLONE, P.E., P.S.
PIKE COUNTY ENGINEER

FEDERAL PROJECT NO.
NONE

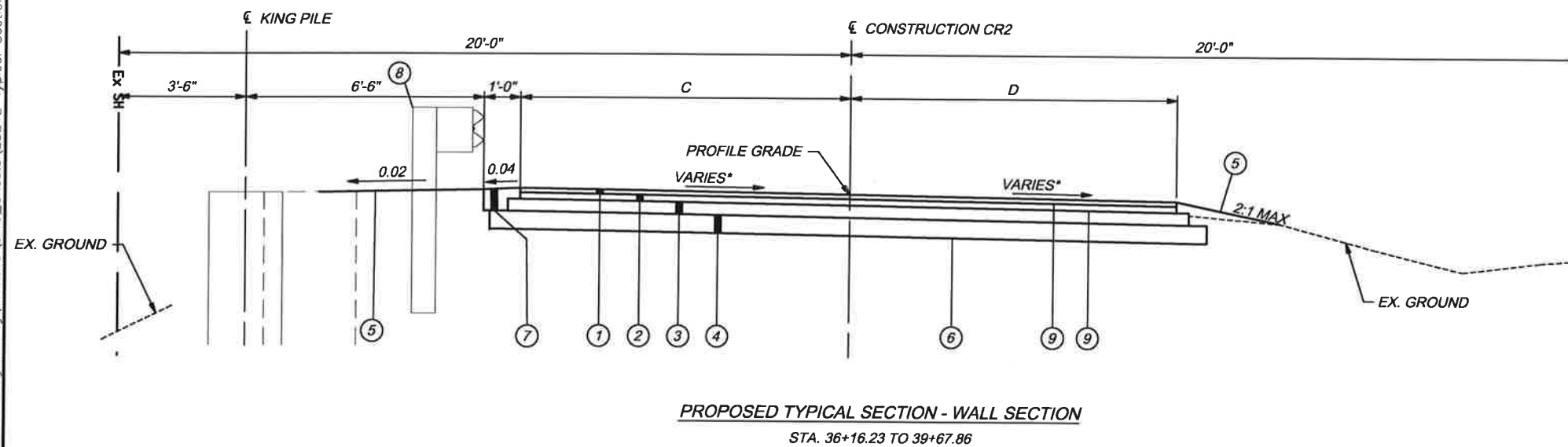
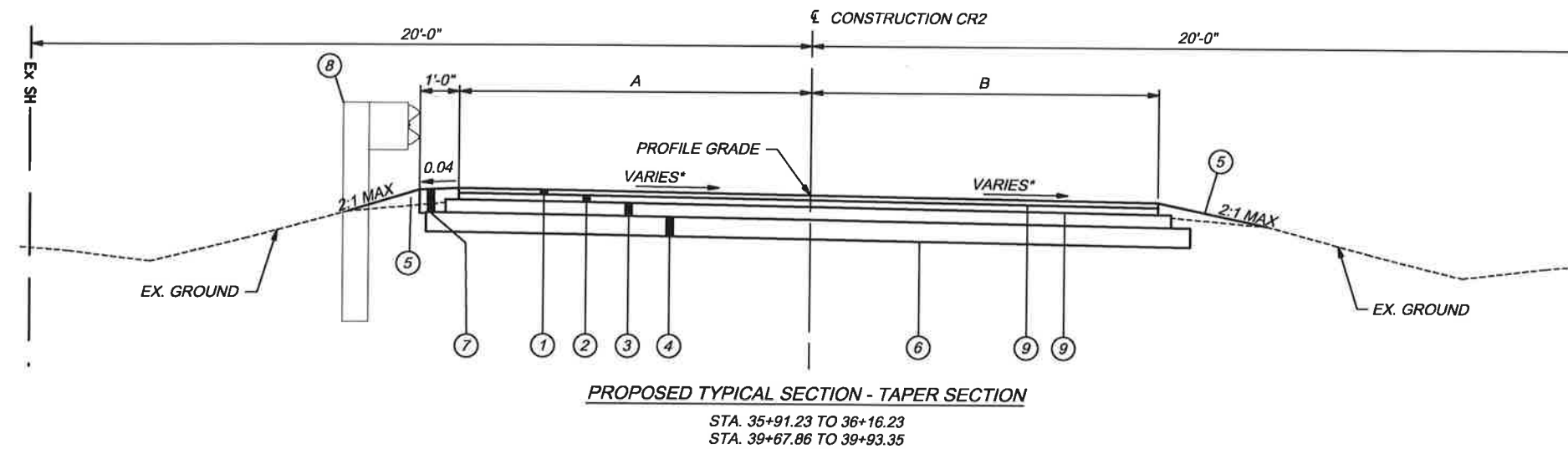
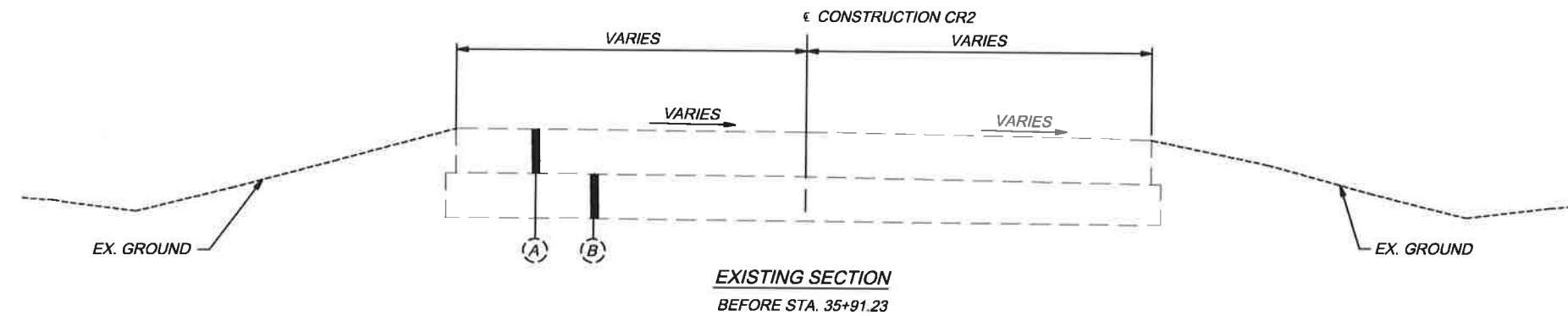
PID NO.
NONE

CONSTRUCTION PROJECT NO.
NONE

PIK-CR2-0.67

1
32

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LEGEND:

- (A) EX. ASPHALT PAVEMENT
- (B) EX. AGGREGATE BASE
- (1) ITEM 441 1 1/2" ASPHALT CONCRETE, SURFACE COURSE, TYPE 1, (448), PG64-22
- (2) ITEM 441 1 3/4" ASPHALT CONCRETE, INTERMEDIATE COURSE, TYPE 2, (448)
- (3) ITEM 301 4" ASPHALT CONCRETE BASE, PG64-22
- (4) ITEM 304 6" AGGREGATE BASE
- (5) ITEM 659 SEEDING AND MULCHING, CLASS 3C
- (6) ITEM 204 SUBGRADE COMPACTION
- (7) ITEM 411 8" STABILIZED CRUSHED AGGREGATE
- (8) ITEM 606 GUARDRAIL, TYPE MGS, HALF POST SPACING WITH LONG POSTS
- (9) ITEM 407 TACK COAT APPLIED @ 0.06 GAL./SQ. YD.

A	VARIES (7.1' TO 8.0')	STA. 35+91.23 TO 36+16.23
	VARIES (10.11' TO 11.22')	STA. 39+68.35 TO 39+93.35
B	VARIES (10.2' TO 9.6')	STA. 35+91.23 TO 36+16.23
	VARIES (8.64' TO 8.27')	STA. 39+68.35 TO 39+93.35

C	VARIES (8.0' TO 9.0')	STA. 36+16.23 TO 36+41.23
	VARIES (9.0' TO 10.11')	STA. 39+43.35 TO 39+68.35
D	VARIES (9.6' TO 9.0')	STA. 36+16.23 TO 36+41.23
	VARIES (9.0' TO 8.64')	STA. 39+43.35 TO 39+68.35

* SEE SUPERELEVATION TABLE FOR CROSS SLOPES

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ROUNDING

THE ROUNDING AT SLOPE BREAKPOINTS SHOWN ON THE TYPICAL SECTIONS APPLIES TO ALL CROSS-SECTIONS, EVEN THOUGH OTHERWISE SHOWN.

UTILITIES

LISTED BELOW ARE ALL UTILITIES LOCATED WITHIN THE PROJECT CONSTRUCTION LIMITS TOGETHER WITH THEIR RESPECTIVE OWNERS:

WATER	PIKE WATER INC. 2277 BOSEWELL RUN ROAD PIKETON, OH 45661 (740) 947-2524
ELECTRIC	AEP 701 HARDIN DRIVE CHILLICOTHE, OH 45601 (614) 716-1000

THE LOCATION OF THE UNDERGROUND UTILITIES SHOWN ON THE PLANS ARE AS OBTAINED FROM THE OWNERS AS REQUIRED BY SECTION 153.64 O.R.C.

ELEVATION DATUM

ALL ELEVATIONS ARE OHIO STATE PLANE SOUTH ZONE, NAD83.

CONTROL POINTS				
NAME	NORTHING	EASTING	ELEVATION	DESCRIPTION
CP2001	412,029.517	1,752,777.907	923.960	5/8" IRON PIN (SET) WITH PLASTIC CAP STAMPED "McCARTY TRAVERSE"
CP2002	411,960.987	1,752,468.328	889.070	MAG NAIL (SET)
CP2010	412,010.665	1,753,029.750	939.690	MAG NAIL (SET)

WORK LIMITS

THE WORK LIMITS SHOWN ON THESE PLANS ARE FOR PHYSICAL CONSTRUCTION ONLY. PROVIDE THE INSTALLATION AND OPERATION OF ALL WORK ZONE TRAFFIC CONTROL AND WORK ZONE TRAFFIC CONTROL DEVICES REQUIRED BY THESE PLANS WHETHER INSIDE OR OUTSIDE THESE WORK LIMITS.

CLEARING AND GRUBBING

ALTHOUGH THERE ARE TREES OR STUMPS SPECIFICALLY MARKED FOR REMOVAL WITHIN THE LIMITS OF THE PROJECT, A LUMP SUM QUANTITY IS INCLUDED IN THE GENERAL SUMMARY FOR ITEM 201, CLEARING AND GRUBBING. ALL PROVISIONS AS SET FORTH IN THE SPECIFICATIONS UNDER THIS ITEM ARE INCLUDED IN THE LUMP SUM PRICE BID FOR ITEM 201, CLEARING AND GRUBBING.

EXISTING GRAVEL FILL

THE COUNTY PLACED GRAVEL FILL IN AN EFFORT TO SLOW THE EXISTING SLIP. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL REMOVE THE GRAVEL FILL BETWEEN THE PROPOSED RETAINING WALL LOCATION AND THE ROADWAY. ESTIMATE 381 CY OF STONE TO BE REMOVED, BASED ON ESTIMATED 2.25 FT DEPTH, 12 FT WIDTH OFF PROPOSED EDGE OF PAVEMENT AND 381 FT LENGTH. THIS WORK IS TO BE COVERED UNDER ITEM 203, EXCAVATION.

A TOTAL OF 381 CY TO BE CARRIED TO THE GENERAL SUMMARY.

ITEM 204 - SUBGRADE COMPACTION AND PROOF ROLLING

THE FOLLOWING QUANTITY IS PROVIDED IN THE GENERAL SUMMARIES TO ADDRESS LOCATIONS REQUIRING PROOF ROLLING

ITEM 204 - PROOF ROLLING 1 HOUR

ITEM 448 - ASPHALT CONCRETE PAVEMENTS

PAVEMENT DAMAGED BY LANDSLIDE ACTIVITY AND CONSTRUCTION ACTIVITY SHALL BE REPAIRED, AS PER PLAN.

ITEM 659 - SEEDING AND MULCHING, AS PER PLAN

SEEDING AND MULCHING SHALL BE APPLIED TO ALL AREAS OF EXPOSED SOIL BETWEEN THE CONSTRUCTION WORK LIMITS. QUANTITY CALCULATIONS FOR SEEDING AND MULCHING ARE BASED ON THESE LIMITS.

ITEM 614 - MAINTAINING TRAFFIC

THE CONTRACTOR SHALL PROVIDE, ERECT, AND MAINTAIN "ROAD CLOSED" SIGNS, SIGN SUPPORTS, BARRICADES, GATES, AND LIGHTS, AS DETAILED IN STANDARD CONSTRUCTION DRAWING MT-101.60 AND TRAFFIC DETOUR PLAN IN THESE PLANS AT LOCATIONS NEAR THE SLIPS DURING PERIODS IN WHICH THE AFFECTED ROADS ARE CLOSED TO TRAFFIC.

ALL WORK AND TRAFFIC CONTROL DEVICES SHALL BE IN ACCORDANCE WITH C&MS 614 AND OTHER APPLICABLE PORTIONS OF THE SPECIFICATIONS, AS WELL AS THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES. PAYMENT FOR ALL LABOR, EQUIPMENT AND MATERIALS SHALL BE INCLUDED IN THE LUMP SUM CONTRACT PRICE FOR ITEM 614, MAINTAINING TRAFFIC, UNLESS SEPARATELY ITEMIZED IN THE PLAN.

ENDANGERED BAT HABITAT REMOVAL

THIS PROJECT IS LOCATED WITHIN THE KNOWN HABITAT RANGES OF THE FEDERALLY LISTED AND PROTECTED INDIANA BAT, AND NORTHERN LONG-EARED BAT. NO TREES SHALL BE REMOVED UNDER THIS PROJECT FROM APRIL 1 THROUGH SEPTEMBER 30. ALL NECESSARY TREE REMOVAL SHALL OCCUR FROM OCTOBER 1 THROUGH MARCH 31. THIS REQUIREMENT IS NECESSARY TO AVOID AND MINIMIZE IMPACTS TO THESE SPECIES AS REQUIRED BY THE ENDANGERED SPECIES ACT (ESA). FOR THE PURPOSES OF THIS NOTE, A TREE IS DEFINED AS: A LIVE, DYING, OR DEAD WOODY PLANT, WITH A TRUNK 3 INCHES OR GREATER IN DIAMETER AT A HEIGHT OF 4.5 FEET ABOVE THE GROUND SURFACE, AND WITH A MINIMUM HEIGHT OF 13 FEET.

FIELD VERIFICATION OF QUANTITIES

DUE TO THE NATURE OF THE PROJECT BEING A SLIDE REPAIR, THE CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFICATION OF QUANTITIES PRIOR TO BIDDING AND THEN PRIOR TO CONSTRUCTION. THE ACTUAL WORK LOCATIONS AND QUANTITIES PERFORMED SHALL BE INCORPORATED INTO THE FINAL CHANGE ORDER GOVERNING COMPLETION OF THIS PROJECT.

GENERAL SUMMARY

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ITEM 202 - FULL DEPTH PAVEMENT SAWING

STA. 35+91.23 = 18 FT
STA. 39+93.35 = 20 FT

A TOTAL OF 38 FT TO BE CARRIED TO THE GENERAL SUMMARY.

ITEM 301 - ASPHALT CONCRETE BASE, PG64-28, (449)

STA. 35+91.23 TO STA. 39+93.35
(402.12 FT X AVG. 18.67 FT X (4 IN DEPTH/12))/27 = 92.7 CY

A TOTAL OF 93 CY TO BE CARRIED TO THE GENERAL SUMMARY.

ITEM 304 - AGGREGATE BASE

STA. 35+91.23 TO STA. 39+93.35
(402.12 FT X AVG. 20.00 FT X (6 IN DEPTH/12))/27 = 148.9 CY

A TOTAL OF 149 CY TO BE CARRIED TO THE GENERAL SUMMARY.

ITEM 407 - TACK COAT

STA. 35+91.23 TO STA. 39+93.35
(402.12 FT X AVG. 18.00 FT)/9 X (0.06 GAL/SY) = 48.3 GAL

A TOTAL OF 49 GAL TO BE CARRIED TO THE GENERAL SUMMARY.

ITEM 411 - STABILIZED CRUSHED AGGREGATE

STA. 35+91.23 TO STA. 39+93.35
(402.12 FT X AVG. 1.00 FT X (8 IN DEPTH/12))/27 = 9.9 CY

A TOTAL OF 10 CY TO BE CARRIED TO THE GENERAL SUMMARY.

ITEM 441 - ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (448), PG64-22

STA. 35+91.23 TO STA. 39+93.35
(402.12 FT X AVG. 18.00 FT X (1.5 IN DEPTH/12))/27 = 33.5 CY

A TOTAL OF 34 CY TO BE CARRIED TO THE GENERAL SUMMARY.

ITEM 441 - ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, (448)

STA. 35+91.23 TO STA. 39+93.35
(402.12 FT X AVG. 18.00 FT X (1.75 IN DEPTH/12))/27 = 39.1 CY

A TOTAL OF 40 CY TO BE CARRIED TO THE GENERAL SUMMARY.

SEEDING AND MULCHING

659 - SEEDING AND MULCHING = 827 SY

659 - COMMERCIAL FERTILIZER (827 SY X 9 SF/SY) X 20 LBS/1000 SF = 0.074 TON = 0.1 TON

659 - LIME 827 SY X 9 / 43560 ACRE = 0.171 ACRES

TOTALS TO BE CARRIED TO THE GENERAL SUMMARY.

ITEM 204 - PROOF ROLLING

THE FOLLOWING QUANTITY IS PROVIDED IN THE GENERAL SUMMARIES TO ADDRESS LOCATIONS REQUIRING PROOF ROLLING

ITEM 204 - PROOF ROLLING 1 HOUR

ITEM 204 - SUBGRADE COMPACTION

STA. 35+91.23 TO STA. 39+93.35
(402.12 FT X AVG. 20.00 FT)/9 = 893.6 SY

A TOTAL OF 894 SY TO BE CARRIED TO THE GENERAL SUMMARY.

ITEM 606 - GUARDRAIL, TYPE MGS HALF POST SPACING WITH LONG POSTS

STA. 35+91.23 TO STA. 39+93.35 = 402.12 FT

A TOTAL OF 408 FT TO BE CARRIED TO THE GENERAL SUMMARY.

ITEM 606 - ANCHOR ASSEMBLY, MGS TYPE T

STA. 35+91.23 = 1 EACH
STA. 39+93.35 = 1 EACH

A TOTAL OF 2 EACH TO BE CARRIED TO THE GENERAL SUMMARY.

ITEM 626 - BARRIER REFLECTOR, TYPE 2

STA. 35+91.23 TO STA. 39+93.35
(402.12 FT / 50 FT SPACING) = 8.04 EACH = 9 EACH

A TOTAL OF 9 EACH TO BE CARRIED TO THE GENERAL SUMMARY.

ITEM 614, MAINTAINING TRAFFIC

GREEN RIDGE ROAD SHALL BE CLOSED TO THROUGH TRAFFIC WITHIN THE PROJECT WORK LIMITS STATED FOR A PERIOD NOT TO EXCEED 60 CONSECUTIVE CALENDAR DAYS. LOCAL TRAFFIC WILL BE DETOURED AS SHOWN IN THE PLANS.

BEFORE THE WORK BEGINS, THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER THE NAMES AND TELEPHONE NUMBERS OF THE CONTACT PERSON OR PERSONS WHO CAN BE CONTACTED TWENTY FOUR (24) HOURS PER DAY BY THE PIKE COUNTY ENGINEER, AND ALL INTERESTED LAW ENFORCEMENT AGENCIES. THIS PERSON OR PERSONS SHALL BE RESPONSIBLE FOR PLACING OR REPLACING NECESSARY TRAFFIC CONTROL DEVICES IN ACCORDANCE WITH THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES.

THE CONTRACTOR WILL ADVISE THE PIKE COUNTY ENGINEER SEVEN (7) DAYS PRIOR TO THE START OF CONSTRUCTION ACTIVITIES. THE PROJECT ENGINEER WILL PROVIDE ASSISTANCE/CLARIFICATION FOR ANY QUESTIONS.

NOTICE OF CLOSURE SIGNS, AS DETAILED IN THESE PLANS, SHALL BE ERECTED BY THE CONTRACTOR AT LEAST ONE WEEK IN ADVANCE OF THE SCHEDULED ROAD CLOSURE. THE SIGNS SHALL BE ERECTED ON THE RIGHT-HAND SIDE OF THE ROAD FACING TRAFFIC. THEY SHALL BE PLACED SO AS NOT TO INTERFERE WITH THE VISIBILITY OF ANY OTHER TRAFFIC CONTROL SIGNS. ON ROADWAYS, THEY SHOULD BE ERECTED AT THE POINT OF CLOSURE.

THE CONTRACTOR SHALL PROVIDE, ERECT AND MAINTAIN STANDARD 48 X 30 INCH ROAD CLOSED SIGNS, SIGN SUPPORTS, BARRICADES, AND LIGHTS, AS DETAILED IN SCD MT-101.60 AT THE FOLLOWING LOCATIONS DURING PERIODS IN WHICH THE AFFECTED ROADS ARE CLOSED TO TRAFFIC.

ON GREEN RIDGE ROAD AT STA. 35+50.00
ON GREEN RIDGE ROAD AT STA. 40+50.00

THE CONTRACTOR SHALL PROVIDE, ERECT AND MAINTAIN GREEN RIDGE ROAD DETOUR SIGNS AND SIGN SUPPORTS AS DETAILED IN THE PLANS.

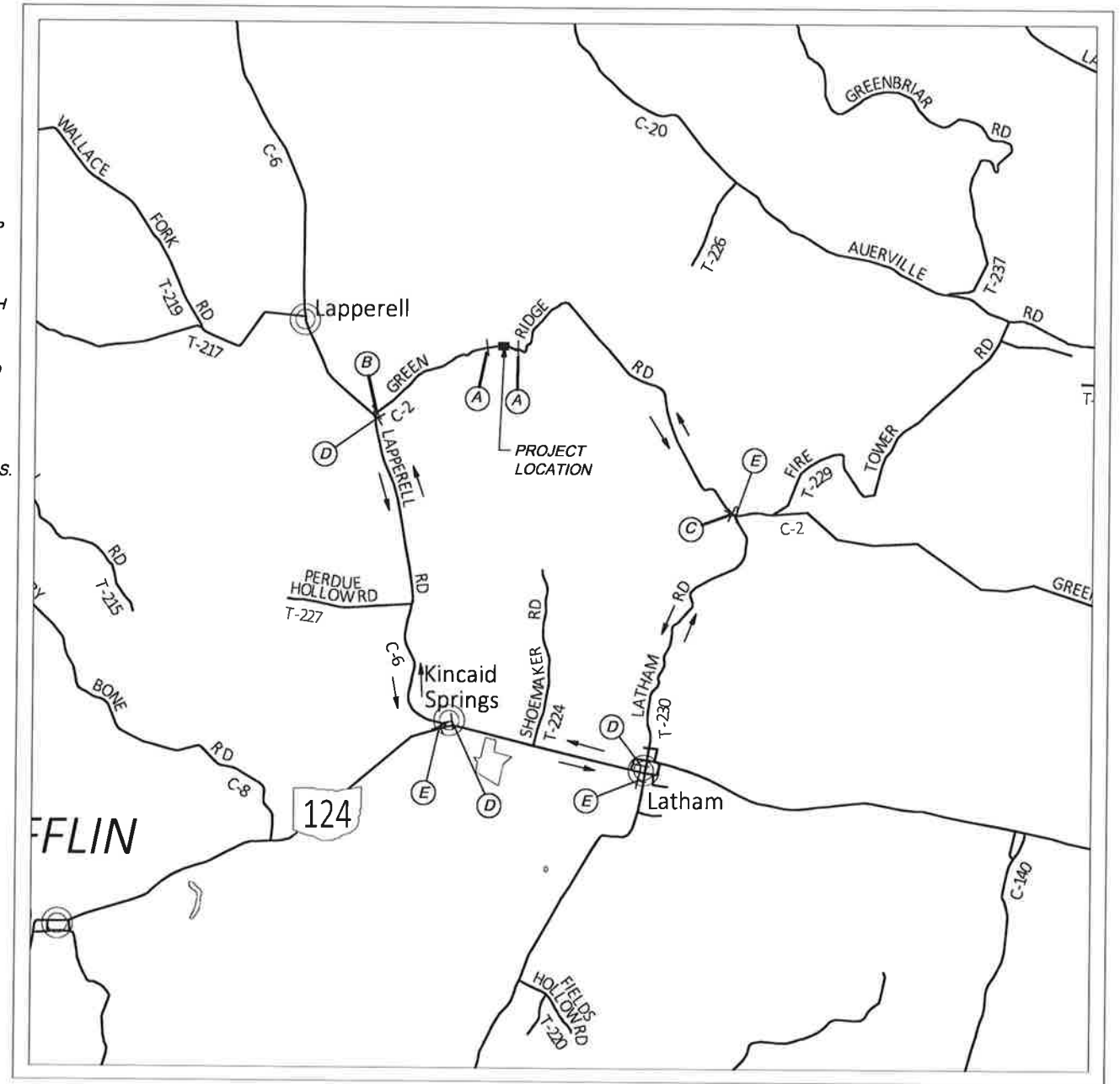
THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN INCLUDED IN THE GENERAL SUMMARY FOR USE AS DETERMINED BY THE ENGINEER FOR THE MAINTENANCE OF TRAFFIC.

ITEM 614 - MAINTAINING TRAFFIC

LUMP

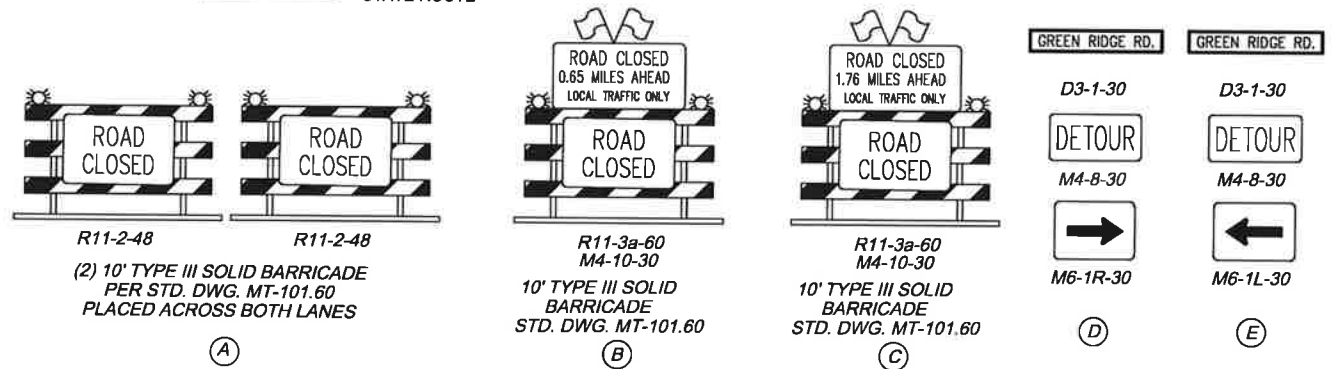
ALL WORK AND TRAFFIC CONTROL DEVICES SHALL BE IN ACCORDANCE WITH C&MS 614 AND OTHER APPLICABLE PORTIONS OF THE SPECIFICATIONS, AS WELL AS THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES. PAYMENT FOR ALL LABOR, EQUIPMENT AND MATERIALS SHALL BE INCLUDED IN THE LUMP SUM CONTRACT PRICE FOR ITEM 614, MAINTAINING TRAFFIC, UNLESS SEPARATELY ITEMIZED IN THE PLAN.

ACCESS TO ALL ADJOINING PROPERTIES SHALL BE MAINTAINED AT ALL TIMES.







LEGEND:

- TOWNSHIP ROUTE
- COUNTY ROUTE
- STATE ROUTE

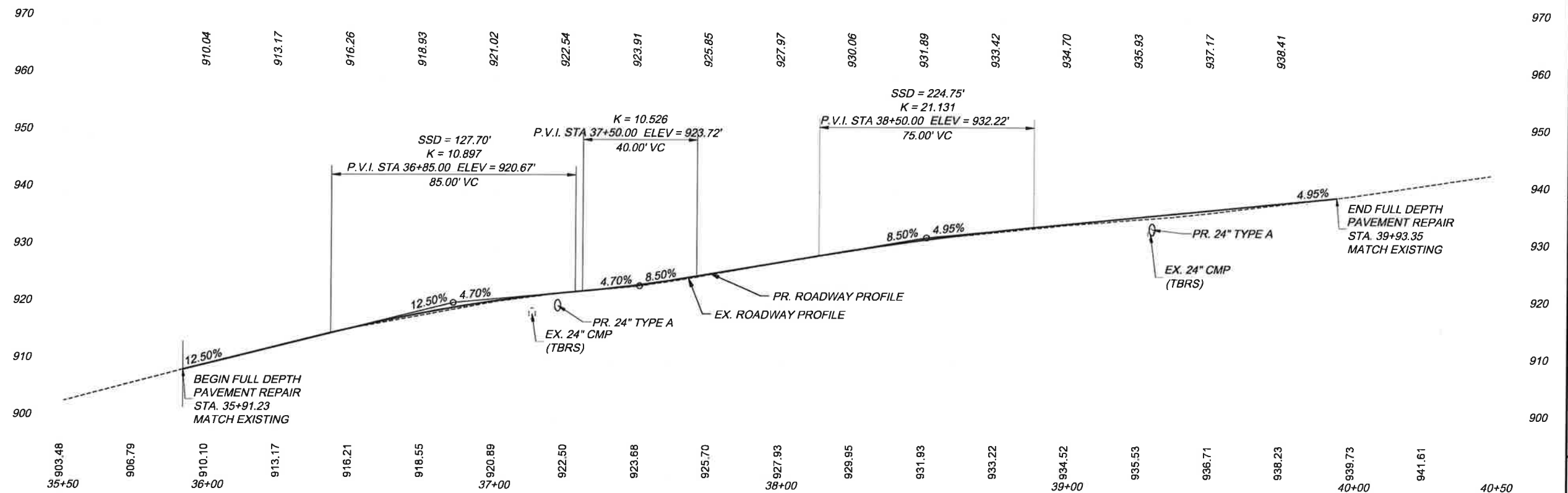
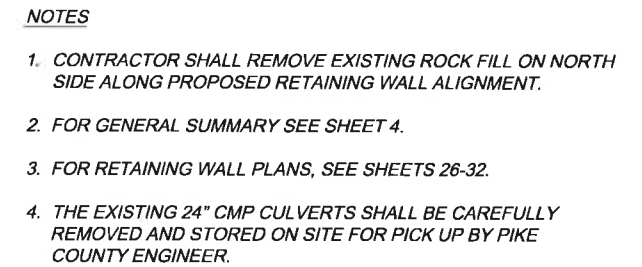


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LEGEND

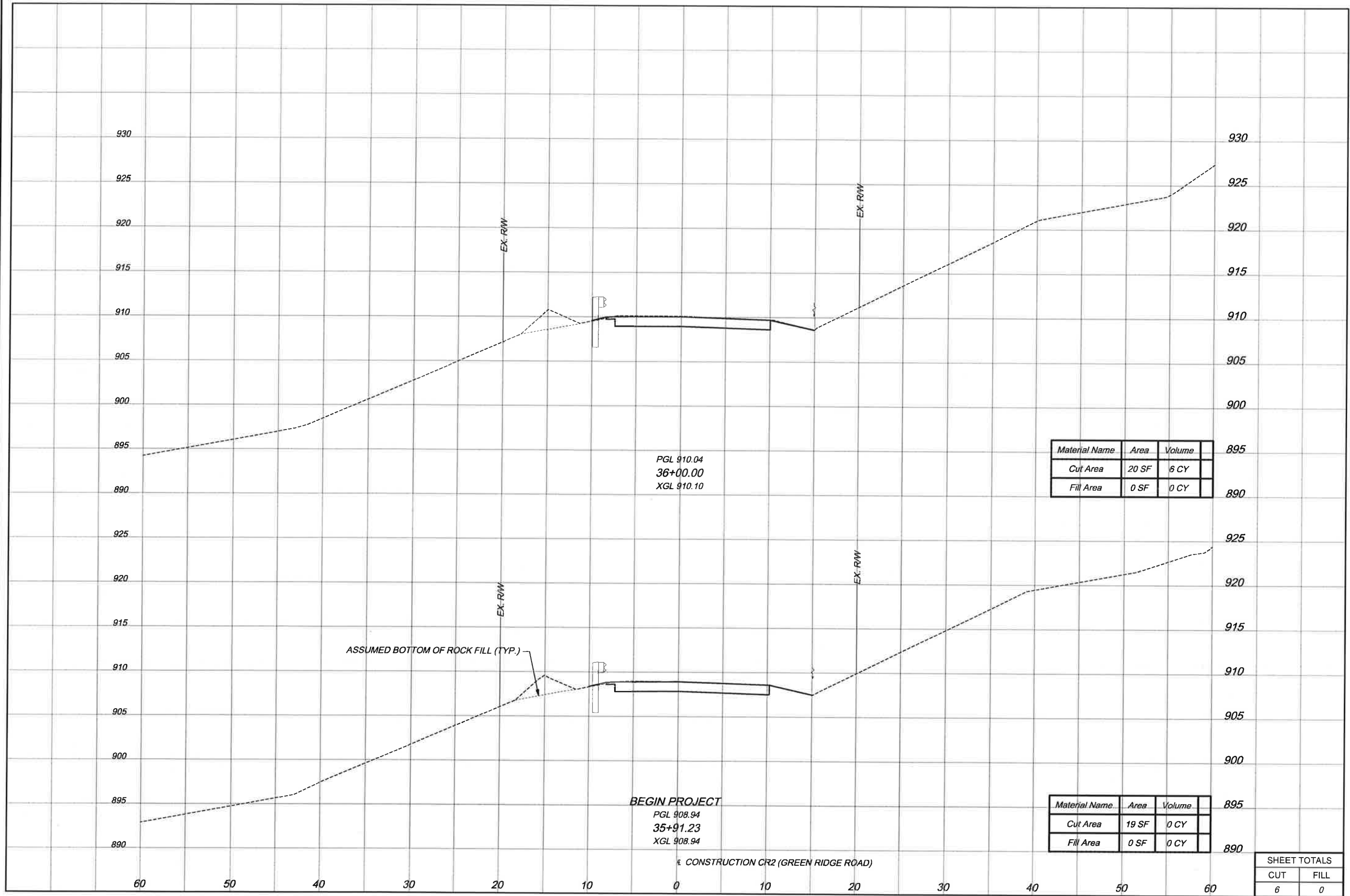
	SOIL BORING
	CURVE NUMBER
	PR. GUARDRAIL (TYPE MGS HALF POST SPACING WITH LONG POSTS)
	FULL DEPTH PAVEMENT REPLACEMENT

CURVE C2 DATA
P.I. = Sta. 39+20.54
D = 17° 53' 20"
Dc = 14° 19' 26"
R = 400.000
T = 62.96'
L = 124.89'
E = 4.92
C = 124.38
C.B. = S 80° 37' 37" E



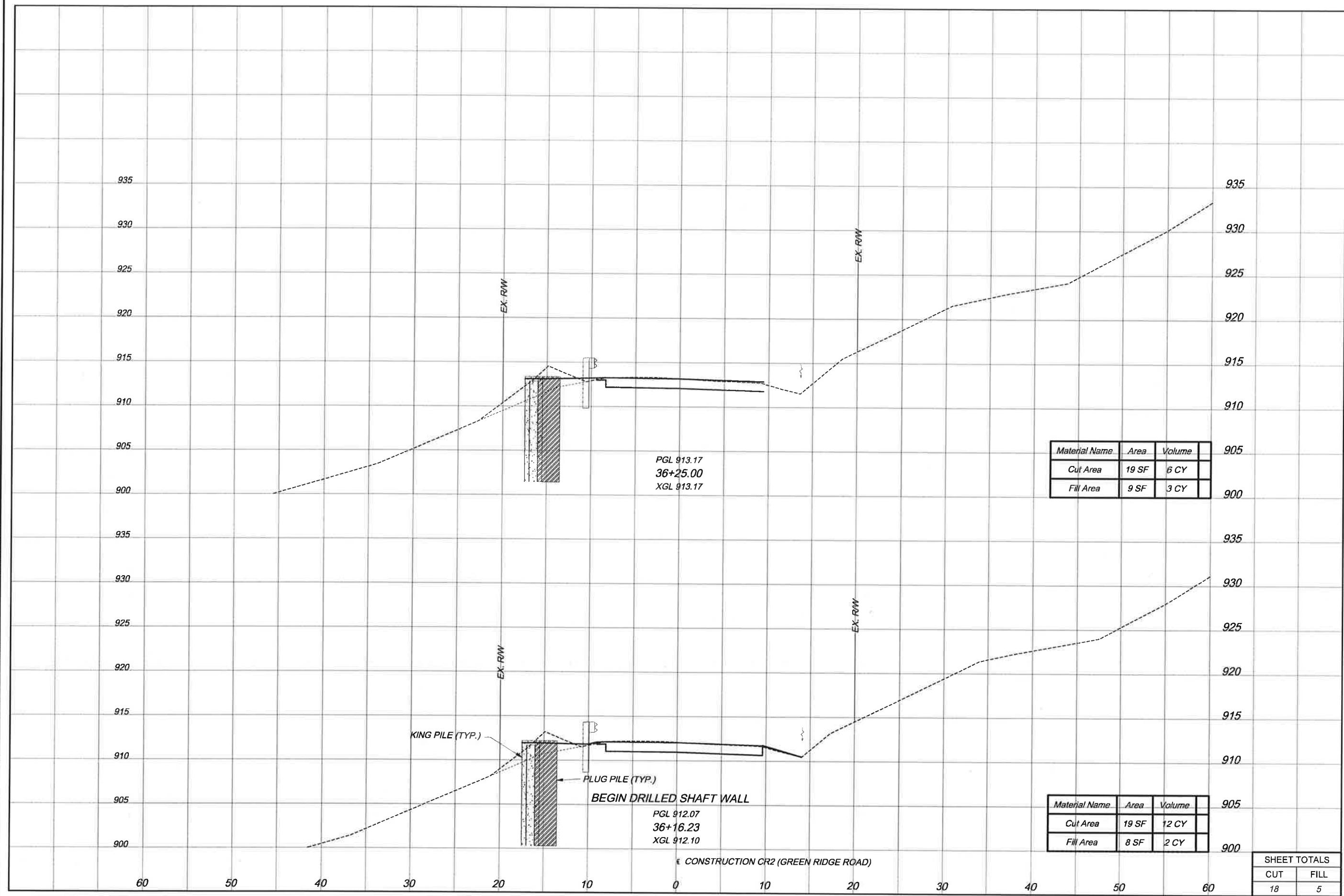
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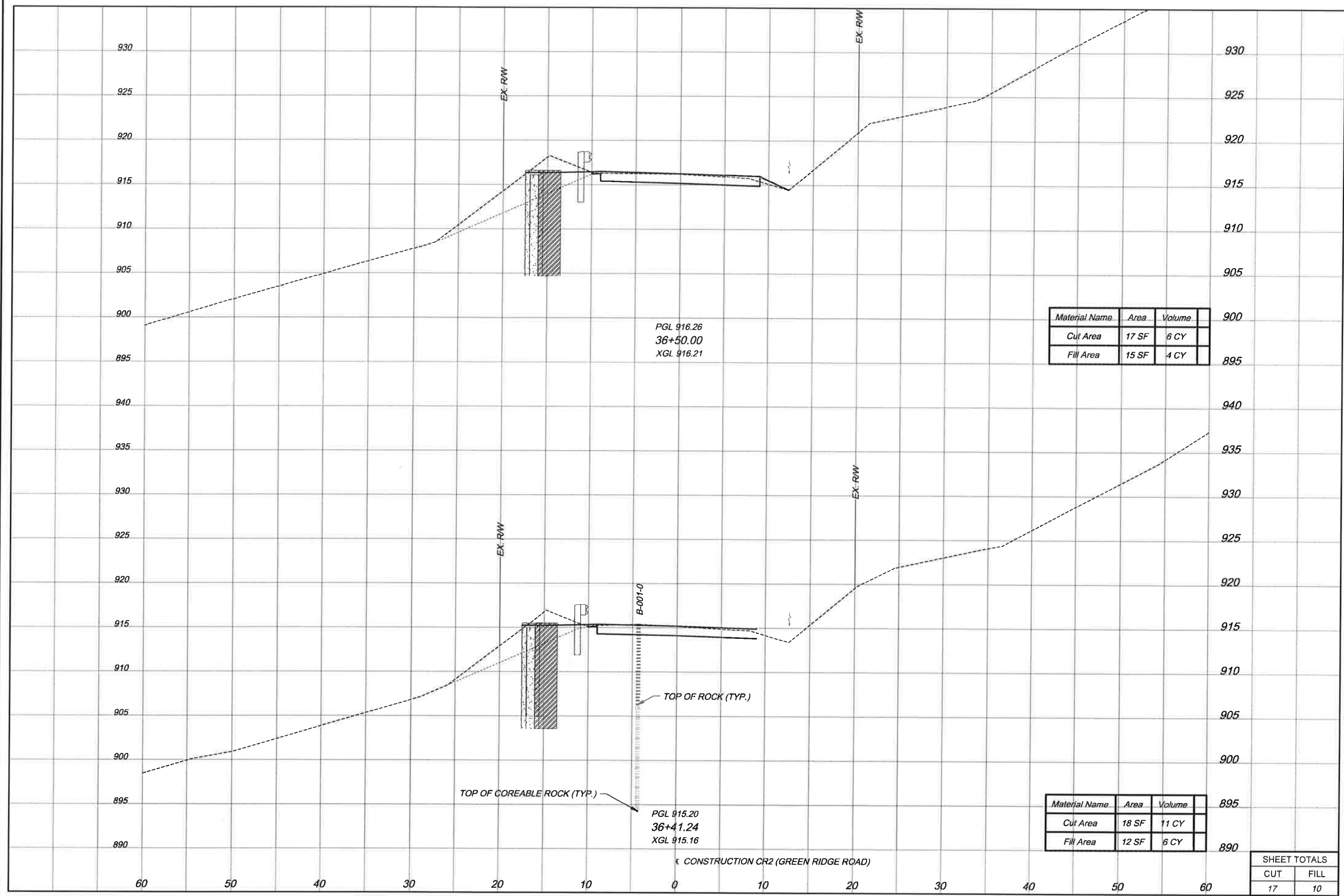
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SHEET TOTALS	
CUT	FILL
18	5

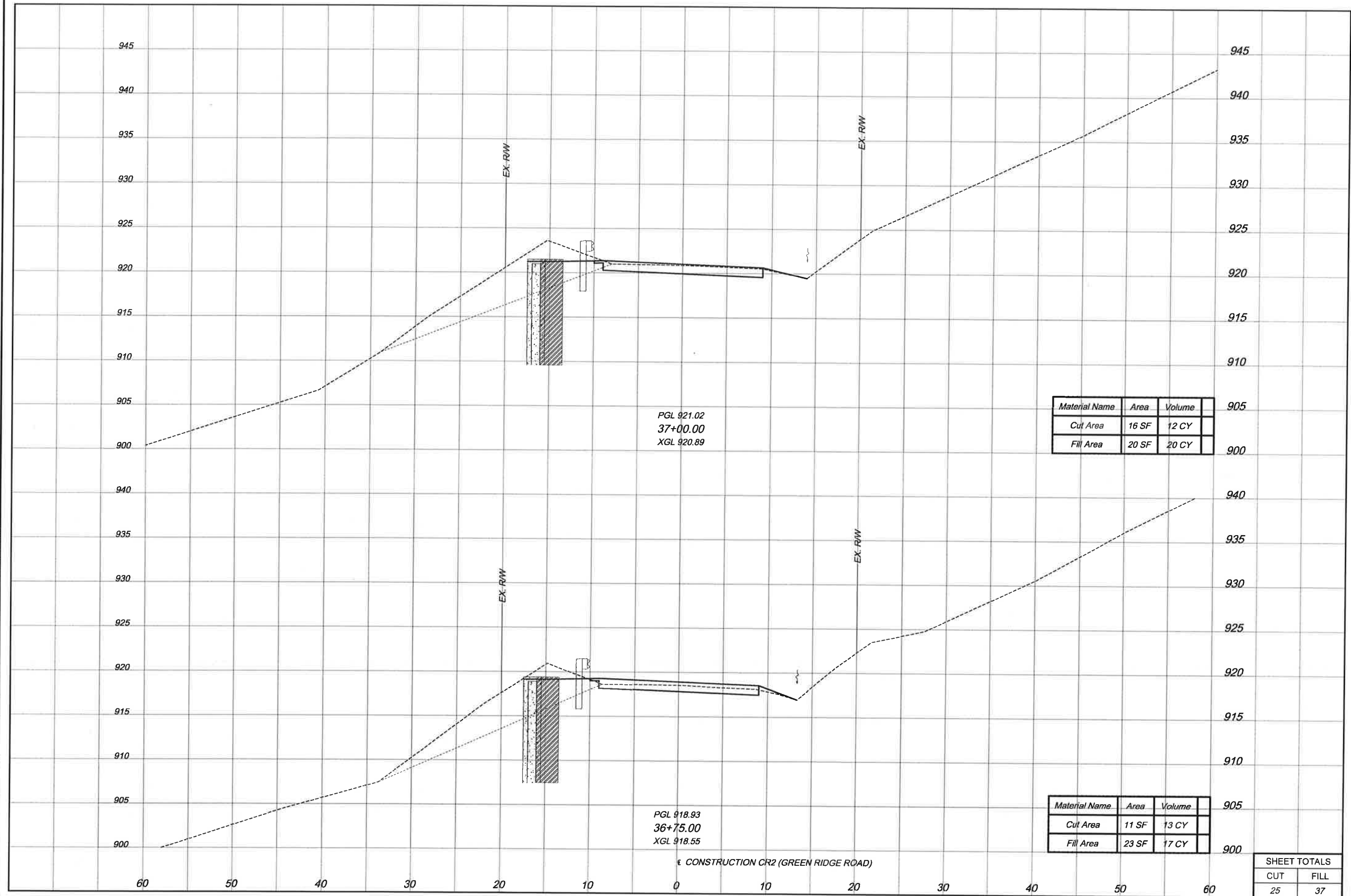
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SHEET TOTALS	
CUT	FILL
17	10

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SHEET TOTALS	
CUT	FILL
25	37

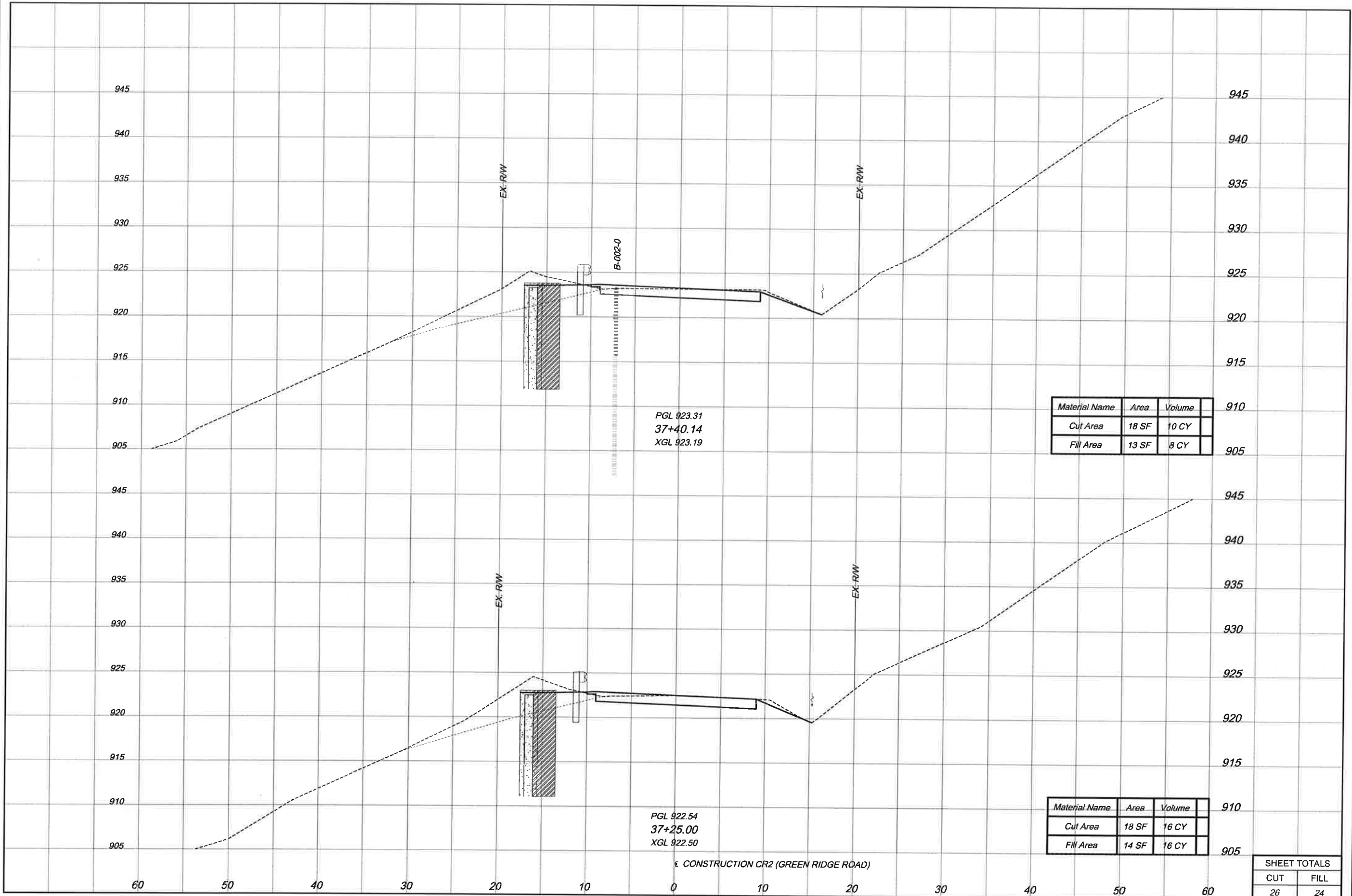
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CROSS SECTIONS
STA. 36+75.00 TO 37+00.00

DRAWN
JEL
CHECKED
CWB

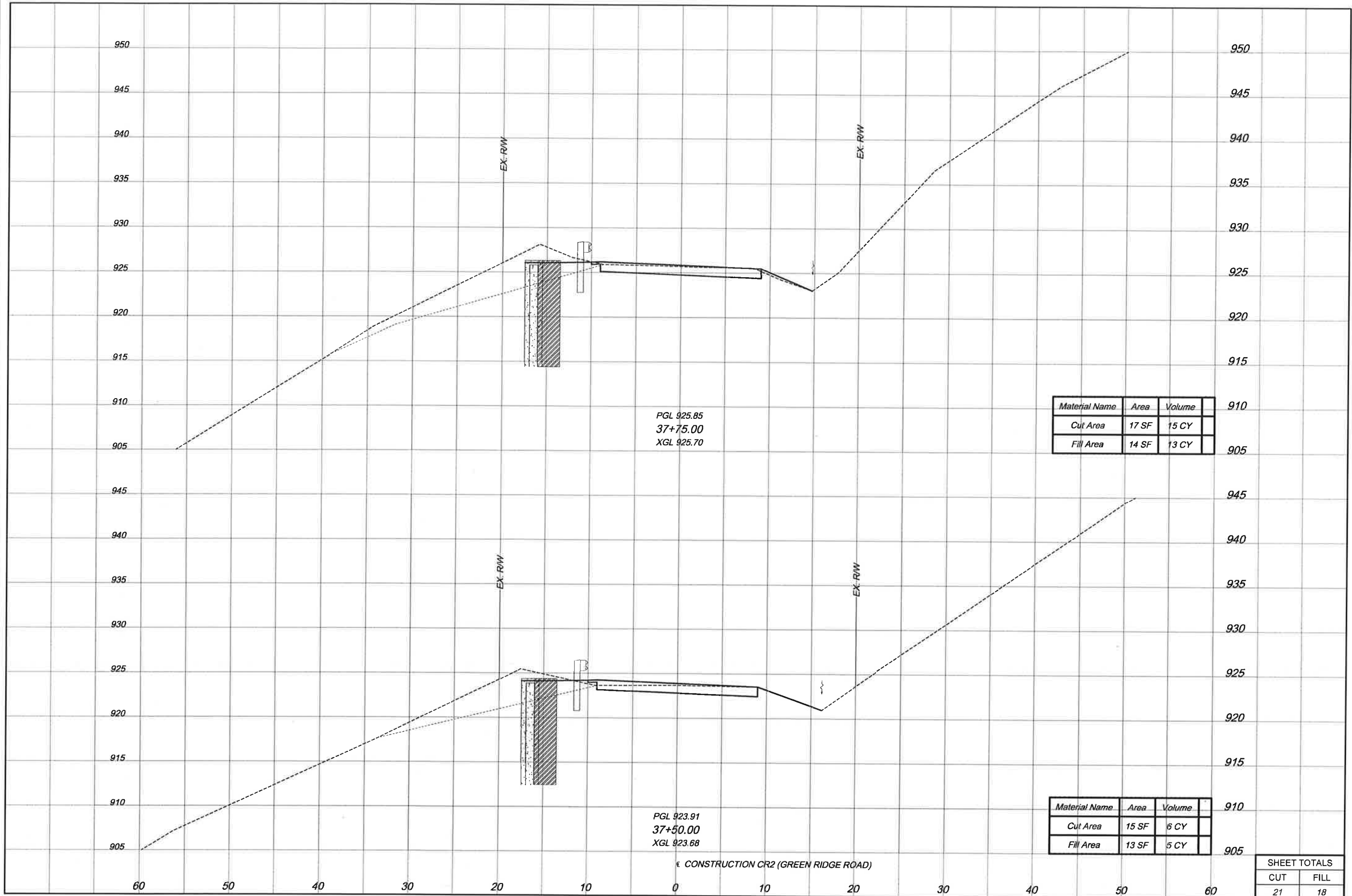
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SHEET TOTALS	
CUT	FILL
21	18

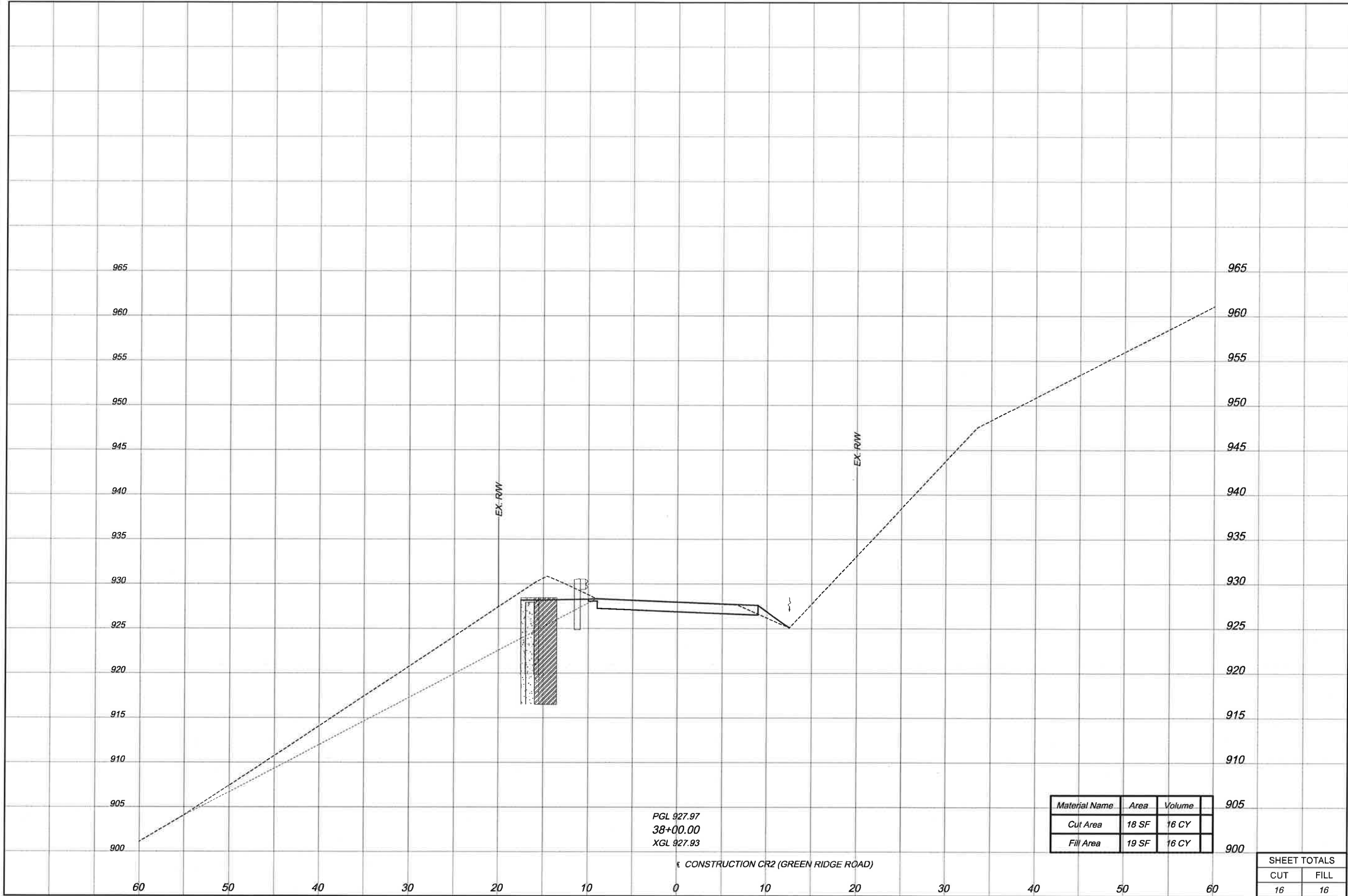
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CROSS SECTIONS
STA. 37+50.00 TO 37+75.00

DRAWN	CHECKED
JEI	CWB

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CROSS SECTIONS
STA. 38+00.00

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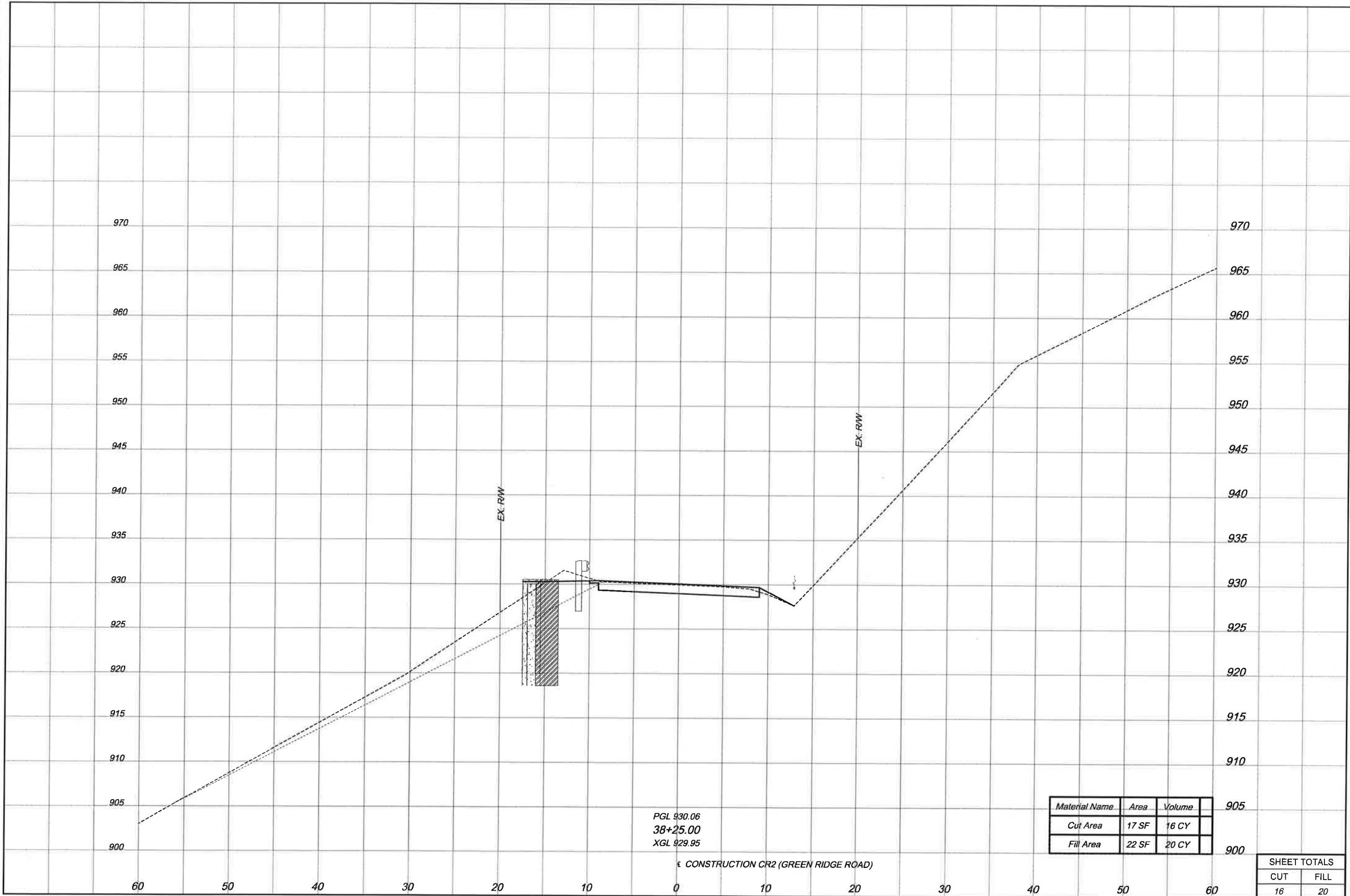
14
32

DRAWN
JEI
CHECKED
CWB

SHEET TOTALS	
CUT	FILL
16	16

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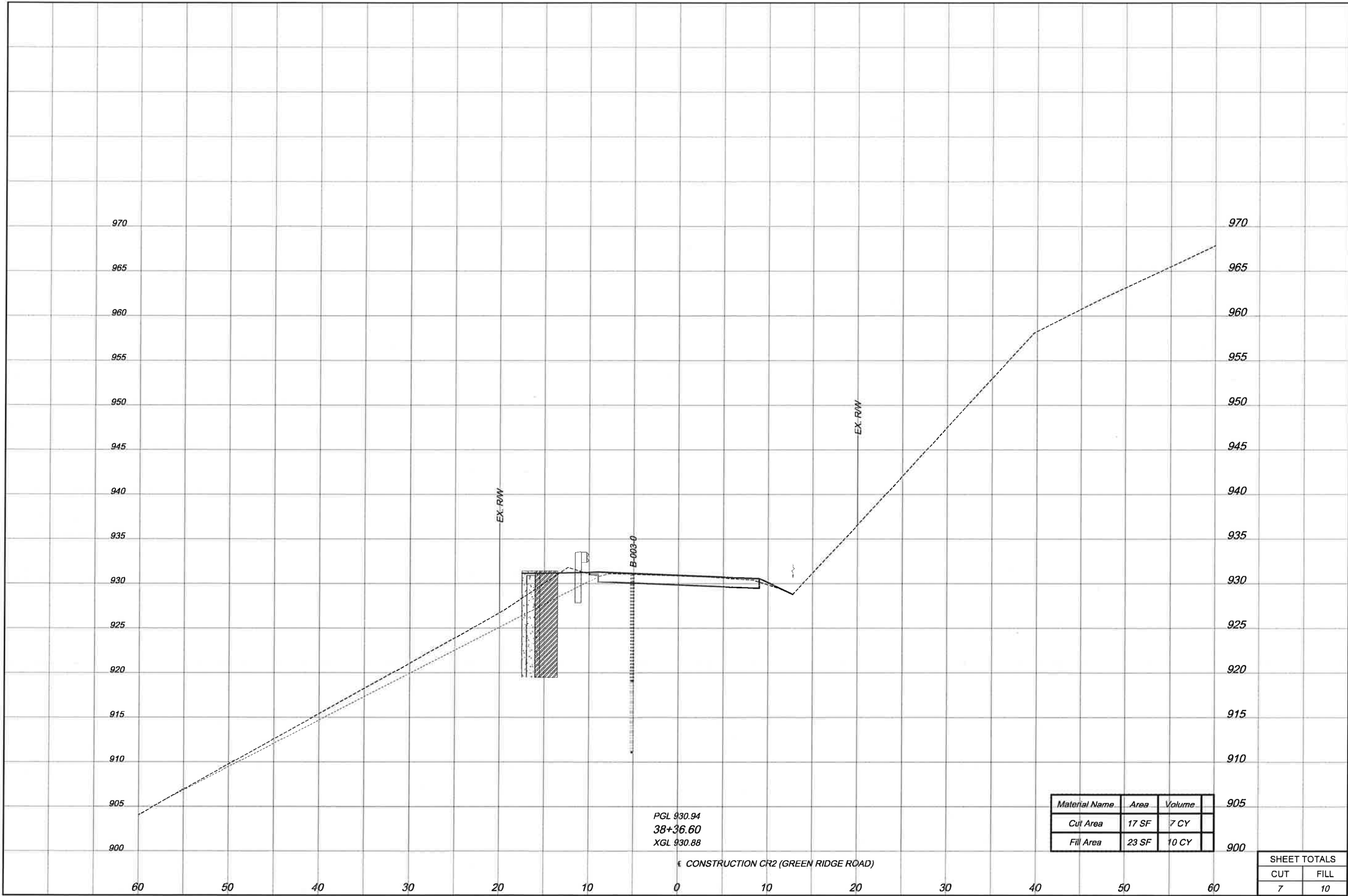
CROSS SECTIONS
STA. 38+25.00

PIK-CR2-0.67

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32

DRAWN
JEL
CHECKED
CWB

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PGL 930.94
38+36.60
XGL 930.88

Material Name	Area	Volume
Cut Area	17 SF	7 CY
Fill Area	23 SF	10 CY

SHEET TOTALS	
CUT	FILL
7	10

CROSS SECTIONS
STA. 38+36.60

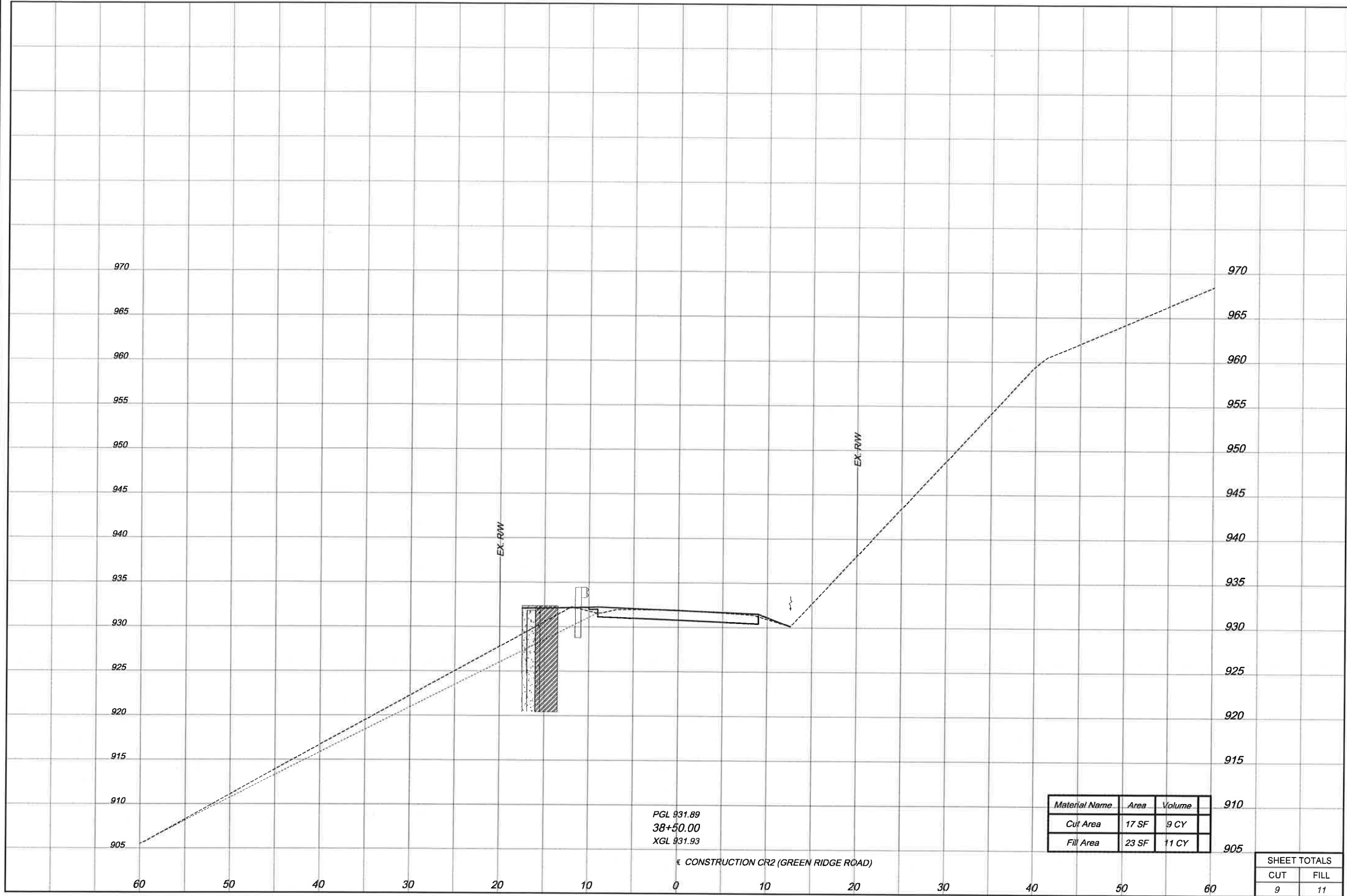
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32

DRAWN
JEL
CHECKED
CWB

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CROSS SECTIONS
STA. 38+50.00

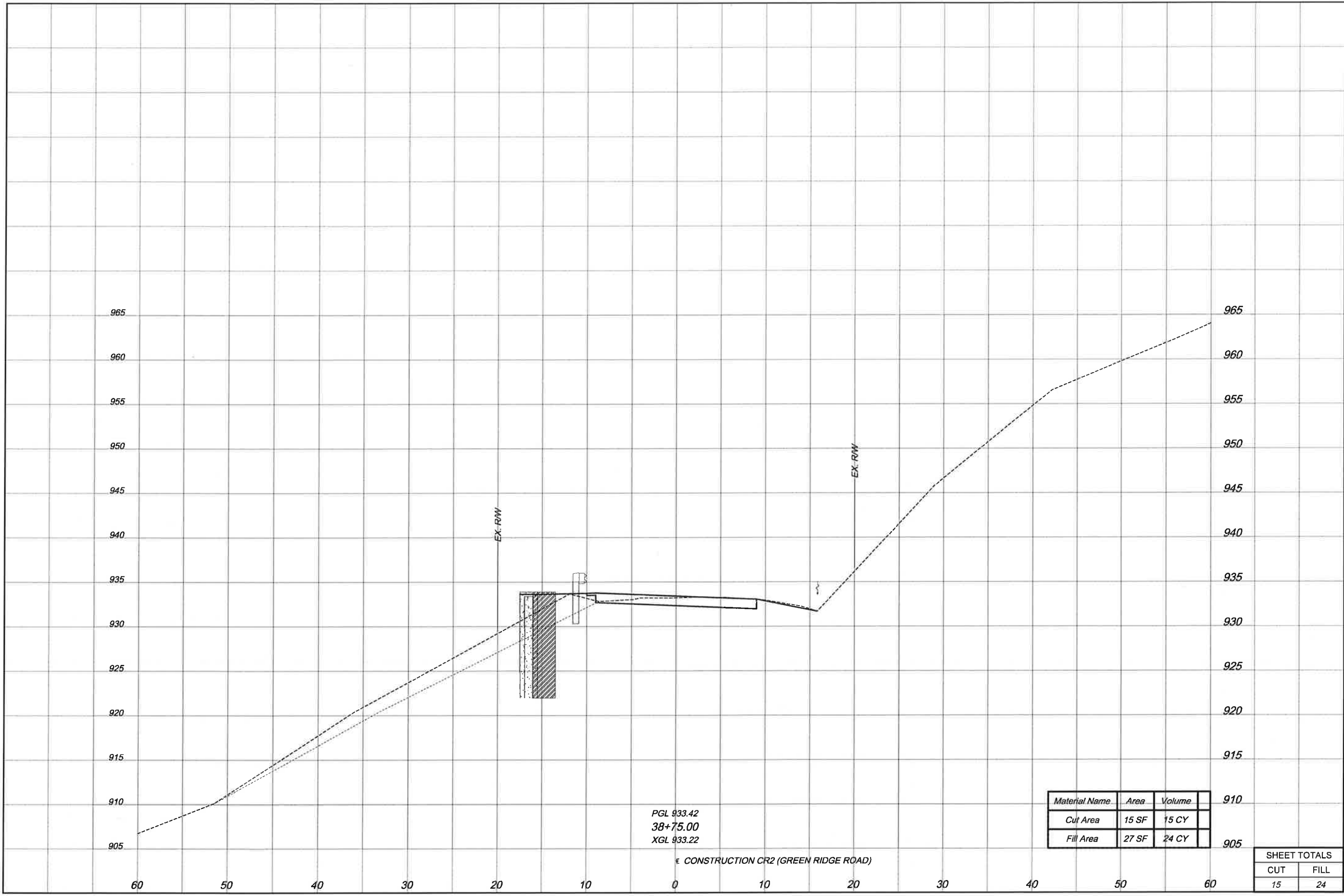
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17
32

DRAWN
JEL
CHECKED
CWB

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Material Name	Area	Volume
Cut Area	15 SF	15 CY
Fill Area	27 SF	24 CY

SHEET TOTALS	
CUT	FILL
15	24

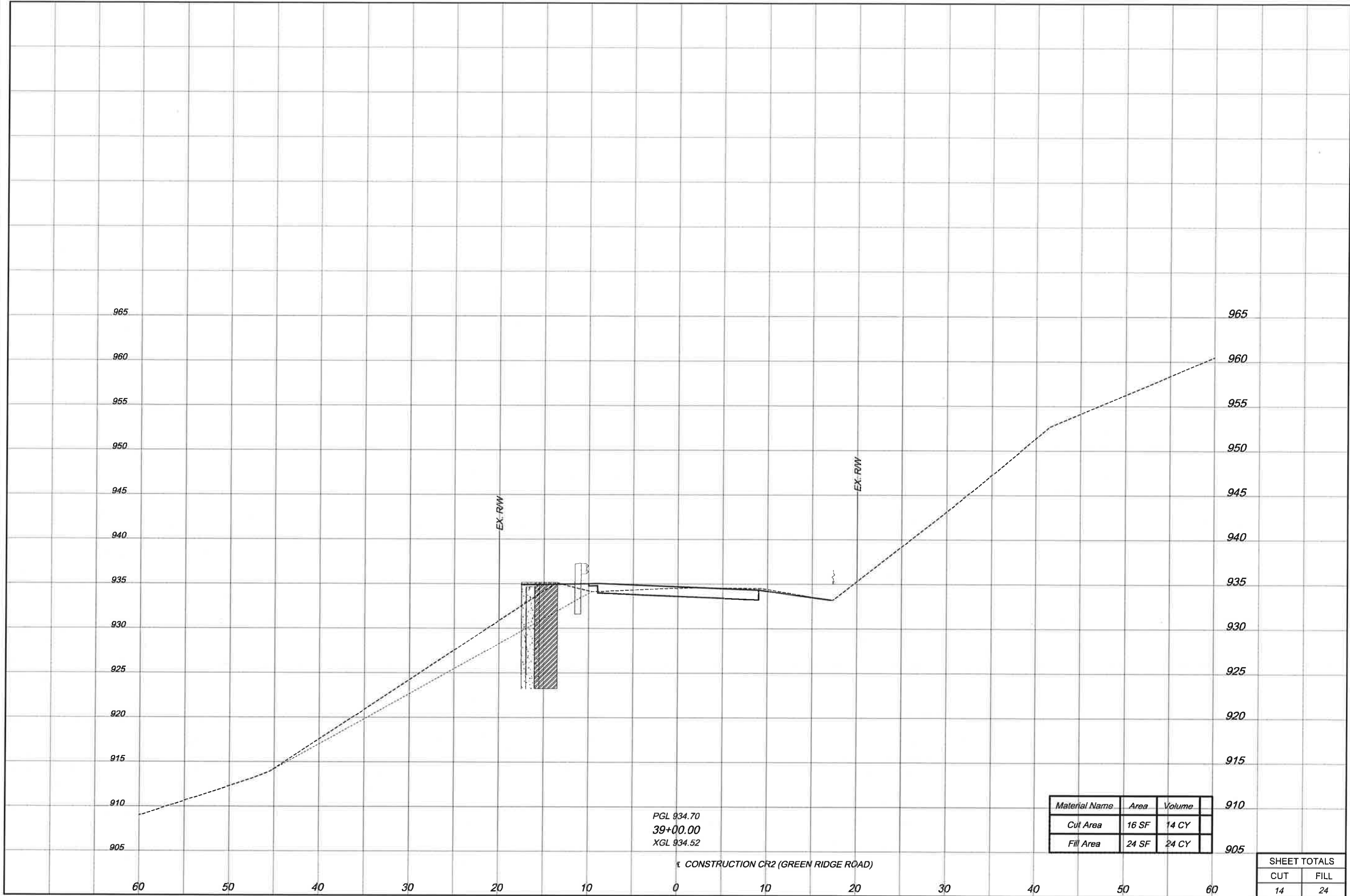
CROSS SECTIONS
STA. 38+75.00

PIK-CR2-0.67

DRAWN
JEL
CHECKED
CWB

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CROSS SECTIONS
STA. 39+00.00

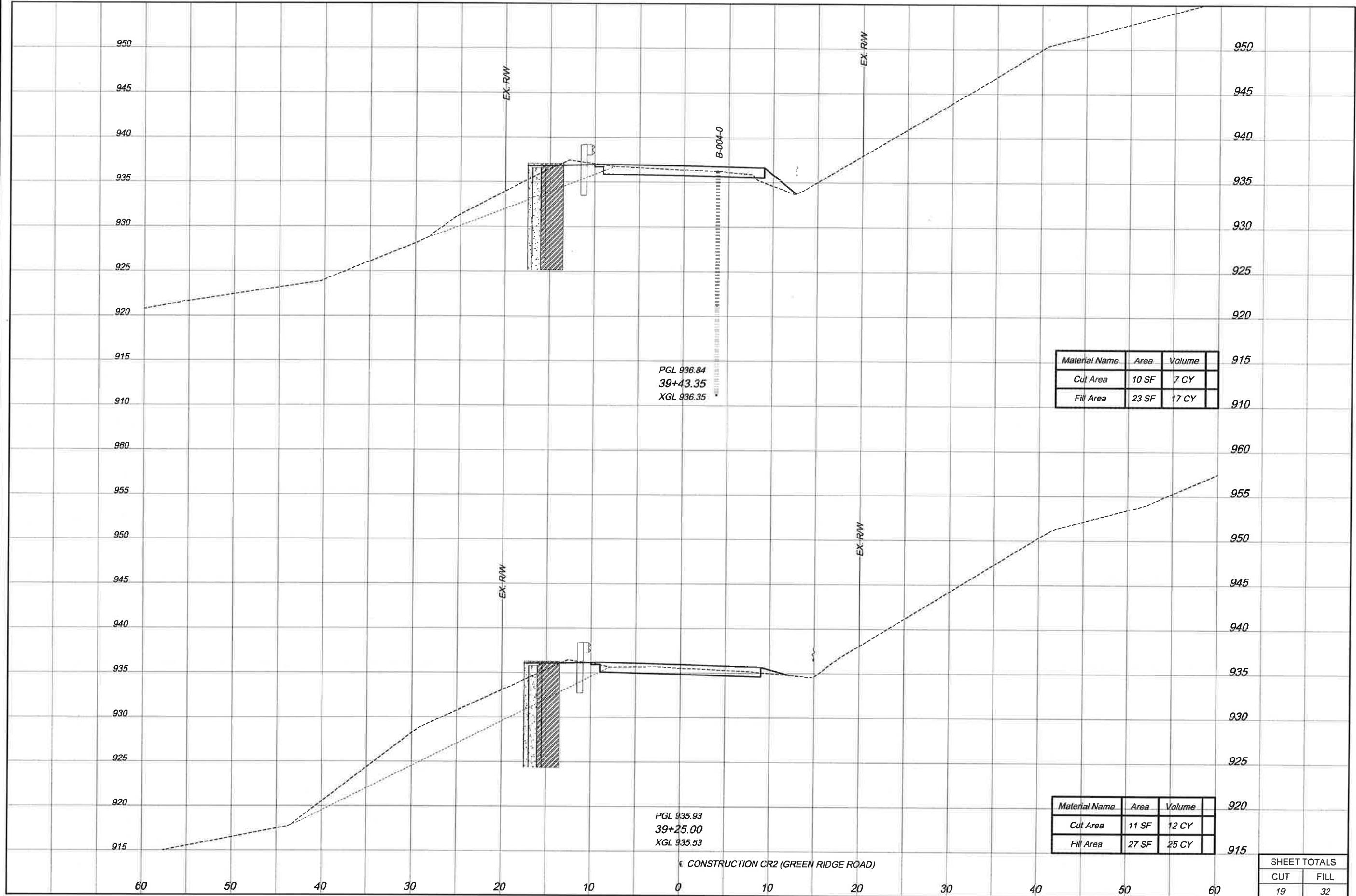
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19
32

DRAWN
JEI
CHECKED
CWB

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SHEET TOTALS	
CUT	FILL
19	32

PIK-CR2-0.67

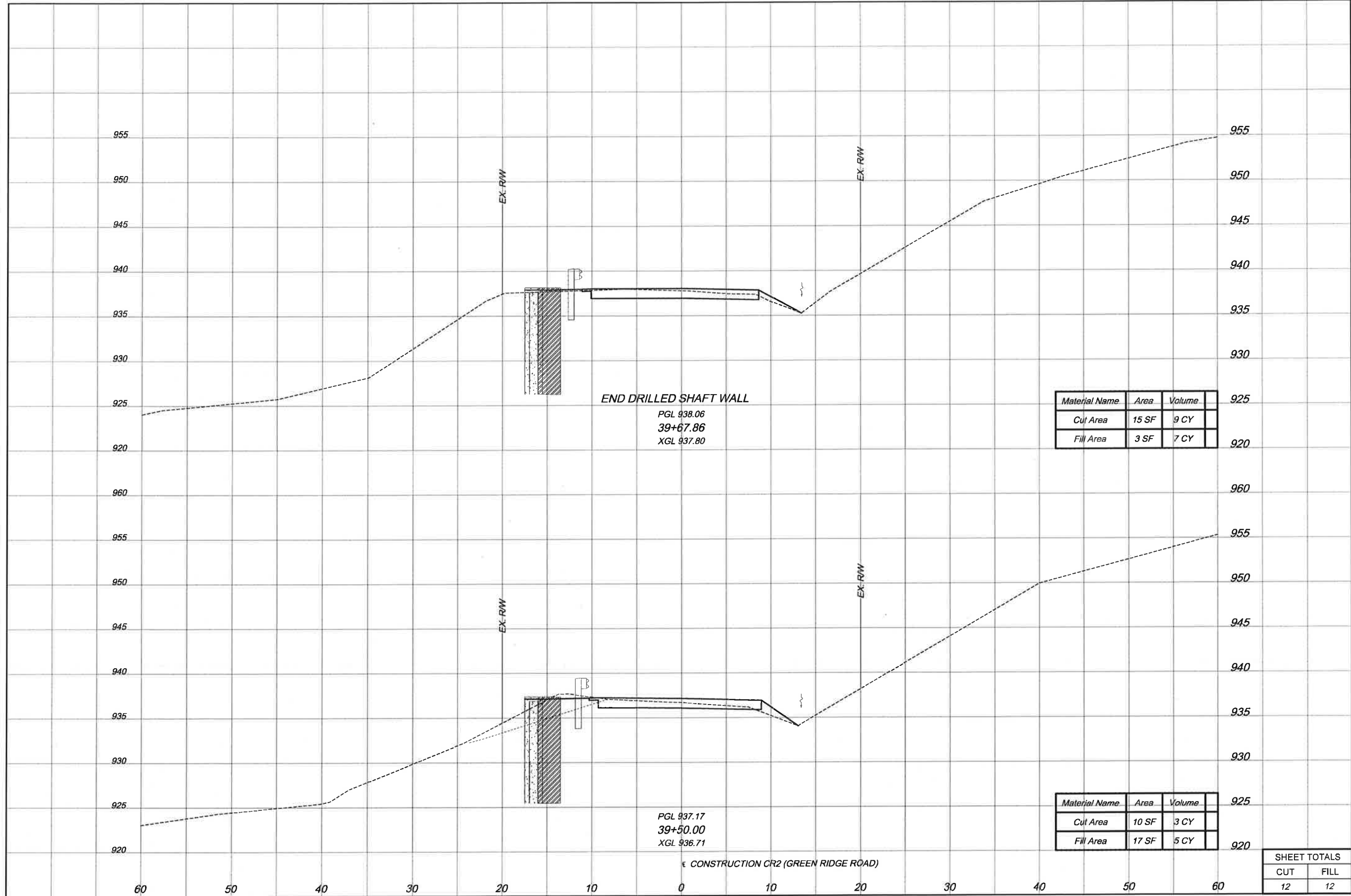
CROSS SECTIONS
STA. 39+25.00 TO 39+43.45

DRAWN
JEI
CHECKED
CWB

20
32

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SHEET TOTALS	
CUT	FILL
12	12

CROSS SECTIONS
STA. 39+50.00 TO 39+68.35

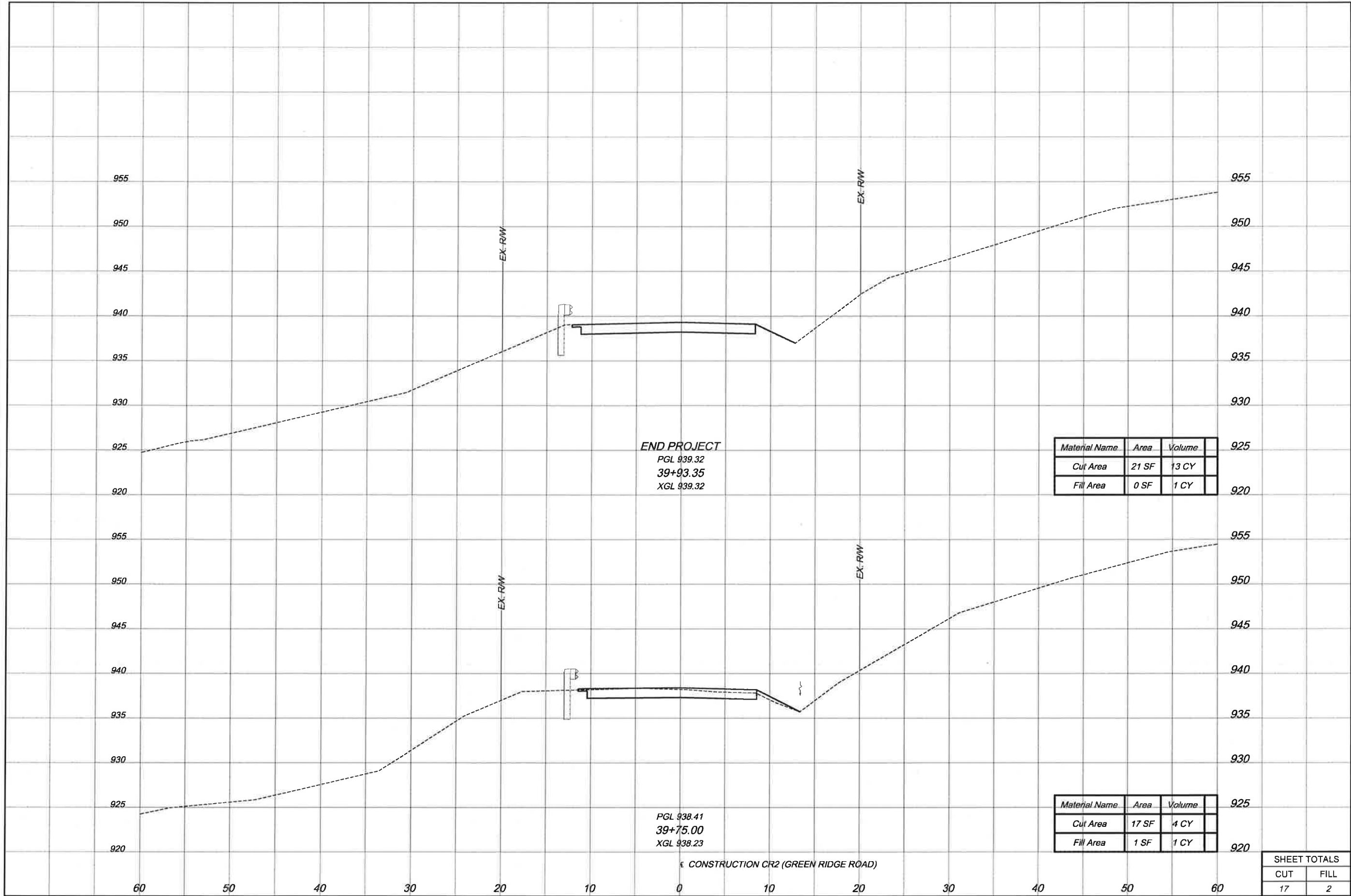
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21
32

DRAWN
JEL
CHECKED
CWB

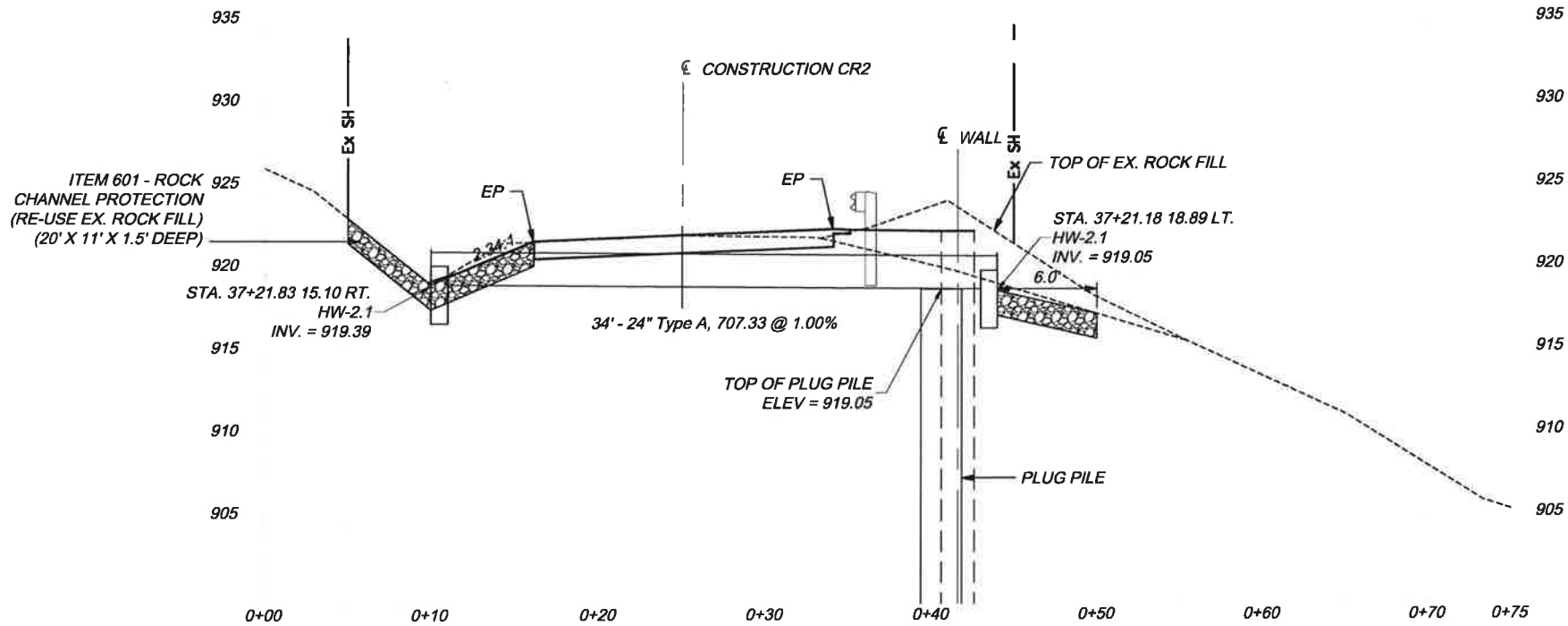
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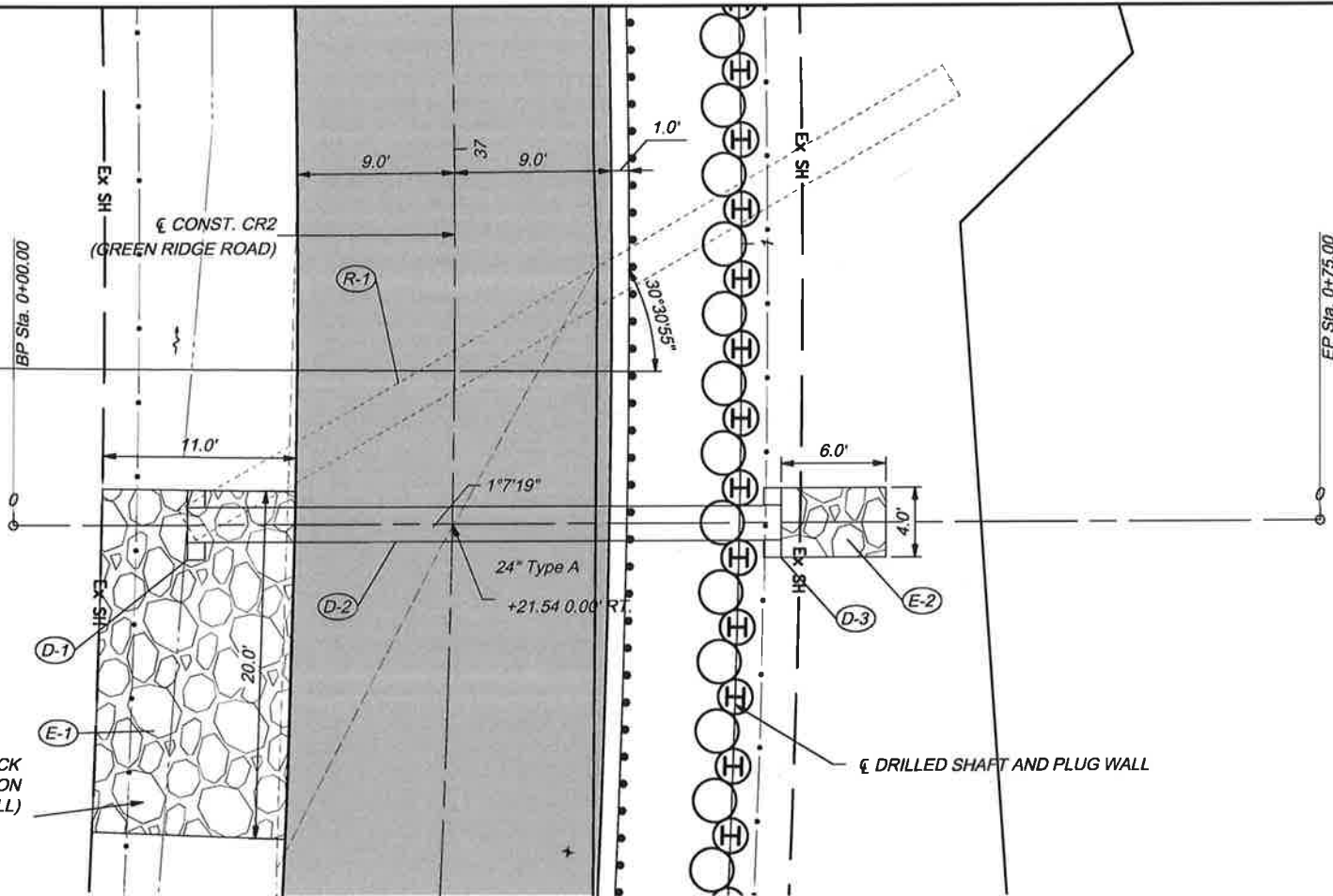


SUPERELEVATION TABLE												
P.I. STATION 39+20.54							DC = 14°19'26"					
LEFT SIDE					CENTERLINE CONTROL		RIGHT SIDE					REMARKS
EDGE ELEVATION		ELEVATION CORRECTION	CROSS SLOPE	WIDTH	STATION	PROFILE GRADE	WIDTH	CROSS SLOPE	ELEVATION CORRECTION		EDGE ELEVATION	
932.74		0.36	0.0400	9.00	38 + 57.58	932.38	9.00	-0.0400	-0.36		932.02	PCC
933.78		0.36	0.0400	9.00	38 + 75.00	933.42	9.00	-0.0400	-0.36		933.06	-
935.06		0.36	0.0400	9.00	39 + 00.00	934.70	9.00	-0.0400	-0.36		934.34	-
935.52		0.36	0.0400	9.00	39 + 09.35	935.16	9.00	-0.0400	-0.36		934.80	FULL SUPER
936.19		0.26	0.0285	9.00	39 + 25.00	935.93	9.00	-0.0285	-0.26		935.68	-
936.50		0.21	0.0233	9.00	39 + 32.12	936.29	9.00	-0.0233	-0.21		936.08	NO CROWN
936.98		0.14	0.0151	9.00	39 + 43.35	936.84	9.00	-0.0233	-0.21		936.63	BEGIN TAPER
937.27		0.09	0.0102	9.29	39 + 50.00	937.17	8.90	-0.0233	-0.21		936.96	-
937.86		0.00	0.0000	9.90	39 + 63.90	937.86	8.70	-0.0233	-0.20		937.66	HALF FLAT
938.03		-0.03	-0.0029	10.09	39 + 67.86	938.06	8.64	-0.0233	-0.20		937.86	END WALL
938.32		-0.08	-0.0081	10.41	39 + 75.00	938.41	8.54	-0.0233	-0.20		938.21	-
938.63		-0.15	-0.0136	10.74	39 + 82.47	938.78	8.43	-0.0233	-0.20		938.58	PT
939.08		-0.24	-0.0216	11.22	39 + 93.35	939.32	8.27	-0.0233	-0.19		939.13	MATCH EX.

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ITEM 601 - ROCK CHANNEL PROTECTION (RE-USE EX. ROCK FILL)



R-1	D-1	D-2	D-3	E-1	E-2	ITEM	UNITS	TOTAL	DESCRIPTION
51						202	FT	51	PIPE REMOVED FOR STORAGE, 24" AND UNDER
	0.46		0.46			511	FT	1	CLASS QC1 CONCRETE, HEADWALL
		34				611	FT	34	24" CONDUIT, TYPE A
				12	2	601	CY	14	ROCK CHANNEL PROTECTION (RE-USE EX. ROCK FILL)

LEGEND

 - ROCK CHANNEL PROTECTION

HYDRAULIC DATA

DRAINAGE AREA = 1.02 ACRES
Q₁₀ 2.03 CFS V₁₀ 3.36 FT/S HW₁₀ 920.13 FT
Q₁₀₀ 4.14 CFS V₁₀₀ 4.11 FT/S HW₁₀₀ 920.48 FT
DESIGN SERVICE LIFE = 75 YEARS
ABRASION LEVEL = 1
PH = 7

EXISTING STRUCTURE

TYPE: CORRUGATED METAL PIPE
SIZE: 24"
SKEW: 30° 30' 55" L.F.
ALIGNMENT: ON CURVE
CONDITION: GOOD CONDITION AND HYDRAULICALLY ADEQUATE
DATE BUILT: UNKNOWN
CFN: N/A

PROPOSED STRUCTURE

TYPE: 34' - 24" CONDUIT, TYPE A, 707.33 @ 1.00%
SIZE: 24"
SKEW: 01° 07' 19" R.F.
ALIGNMENT: ON CURVE
CFN: N/A

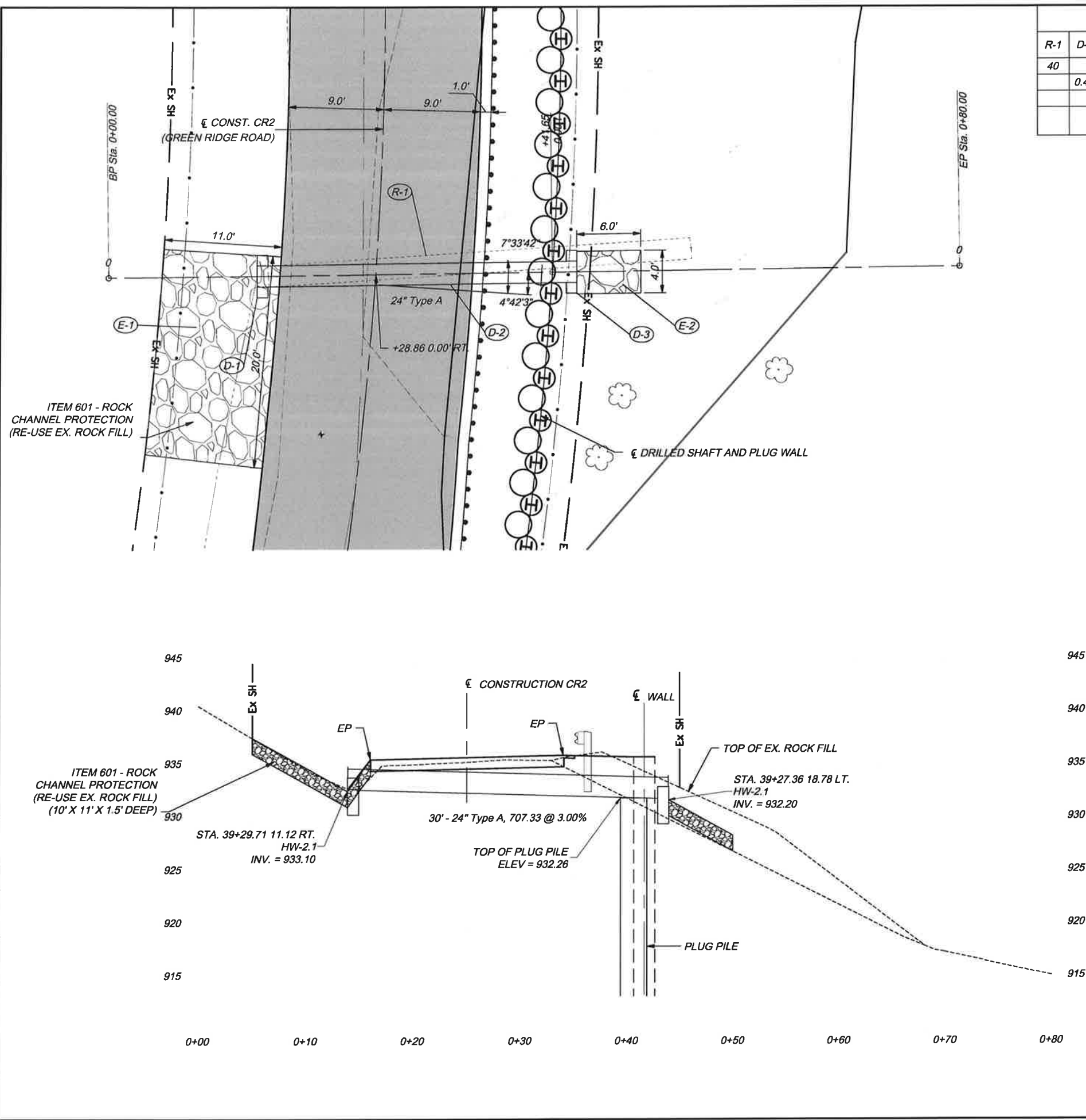
CULVERT DETAILS
STA. 37+21.54

PIK-CR2-0.67

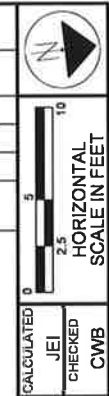
24
32

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R-1	D-1	D-2	D-3	E-1	E-2	ITEM	UNITS	TOTAL	DESCRIPTION
40						202	FT	40	PIPE REMOVED FOR STORAGE, 24" AND UNDER
	0.46		0.46			511	FT	1	CLASS QC1 CONCRETE, HEADWALL
		30				611	FT	30	24" CONDUIT, TYPE A
				12	2	601	CY	14	ROCK CHANNEL PROTECTION (RE-USE EX. ROCK FILL)



LEGEND

ROCK CHANNEL PROTECTION

HYDRAULIC DATA

DRAINAGE AREA = 12.49 ACRES
Q₁₀ 6.05 CFS V₁₀ 9.49 FT/S HW₁₀ 934.32 FT
Q₁₀₀ 12.99 CFS V₁₀₀ 9.85 FT/S HW₁₀₀ 935.10 FT
DESIGN SERVICE LIFE = 75 YEARS
ABRASION LEVEL = 1
PH = 7

EXISTING STRUCTURE

TYPE: CORRUGATED METAL PIPE
SIZE: 24"
SKEW: 07° 33' 42" L.F.
ALIGNMENT: ON CURVE
CONDITION: GOOD CONDITION AND HYDRAULICALLY ADEQUATE
DATE BUILT: UNKNOWN
CFN: N/A

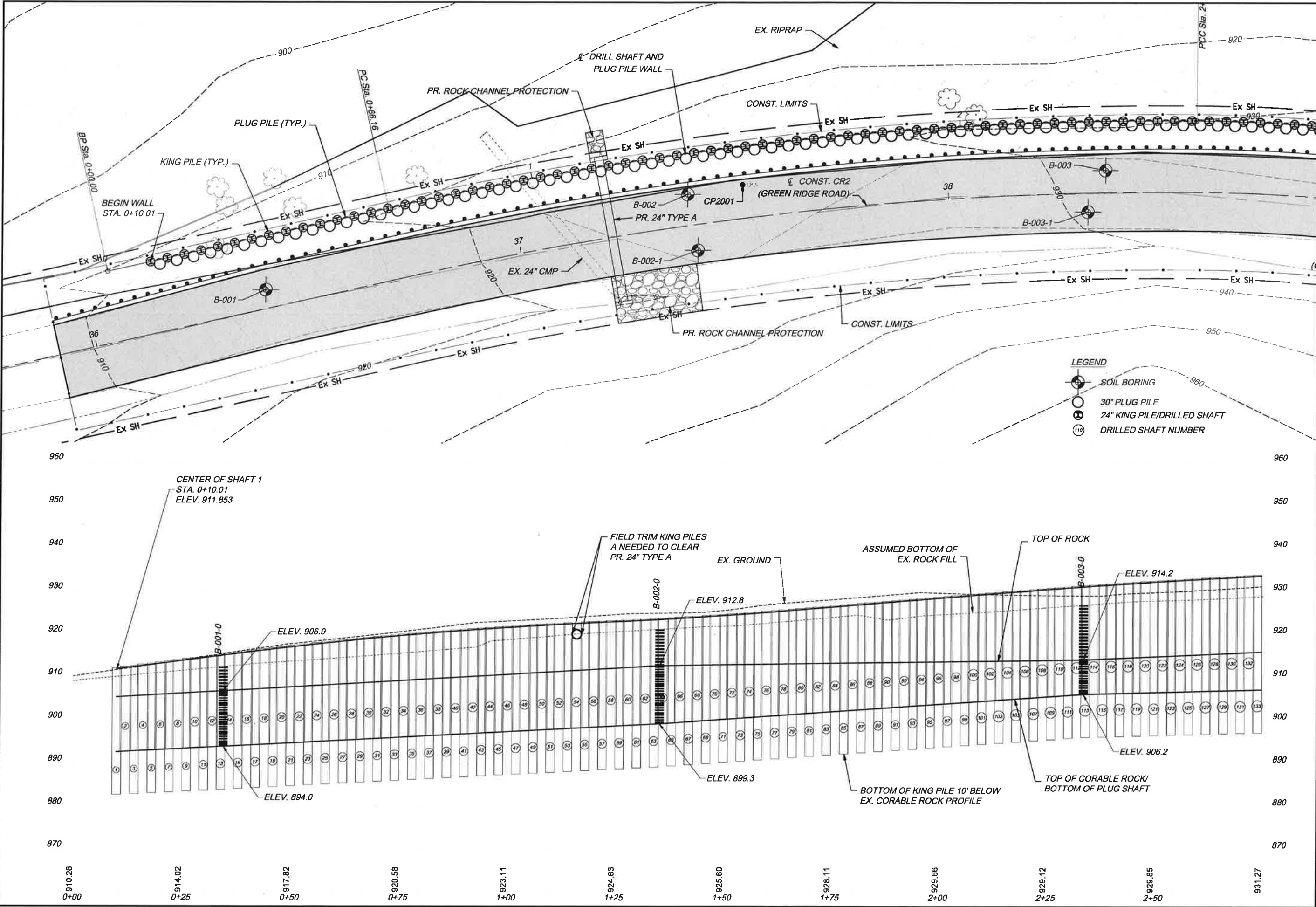
PROPOSED STRUCTURE

TYPE: 30' - 24" TYPE A, 707.33 @ 3.00%
SIZE: 24"
SKEW: 04° 42' 03" L.F.
ALIGNMENT: ON CURVE
CFN: N/A

CULVERT DETAILS
STA. 39+28.86

PIK-CR2-0.67

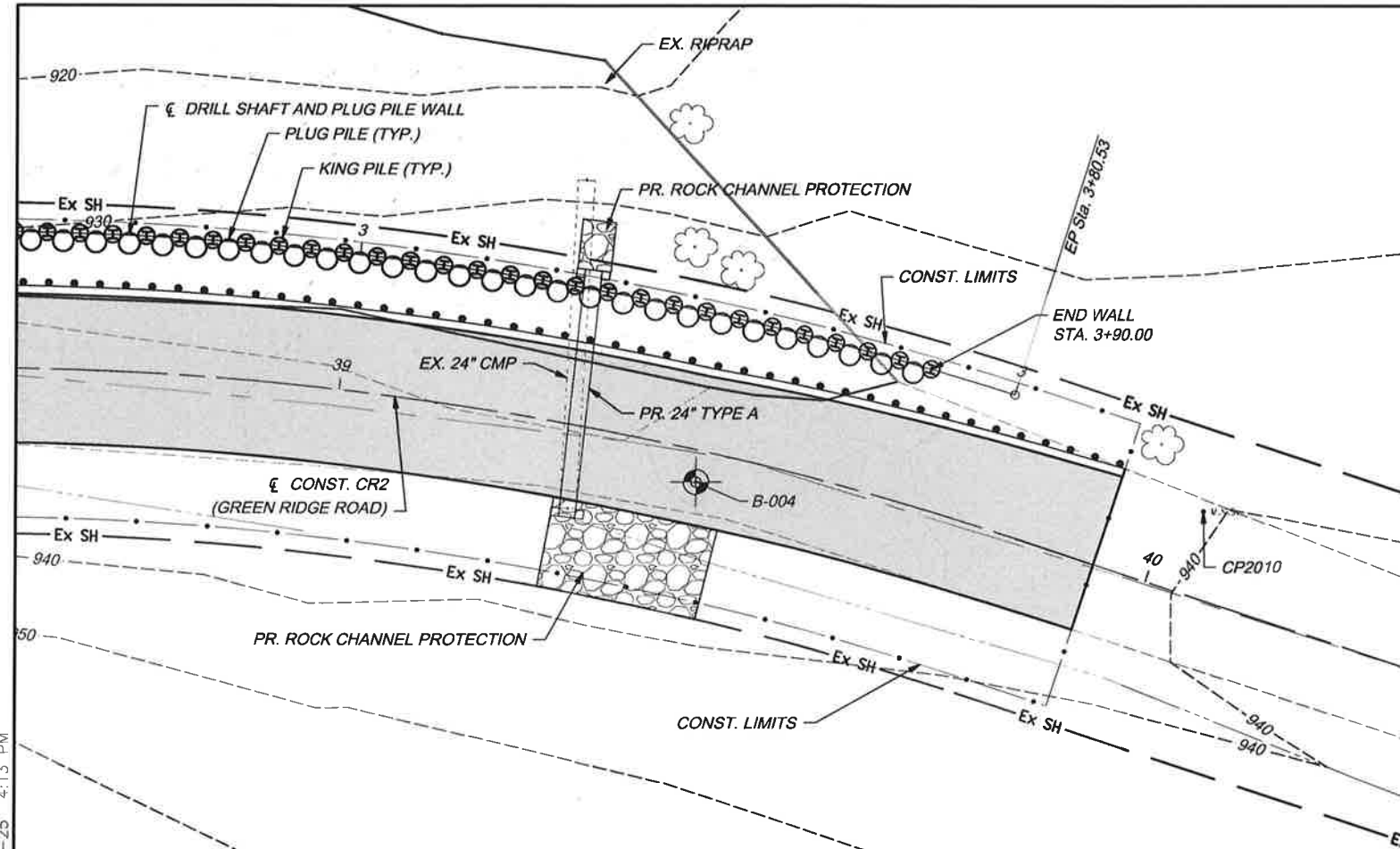
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PLAN AND PROFILE
RETAINING WALL

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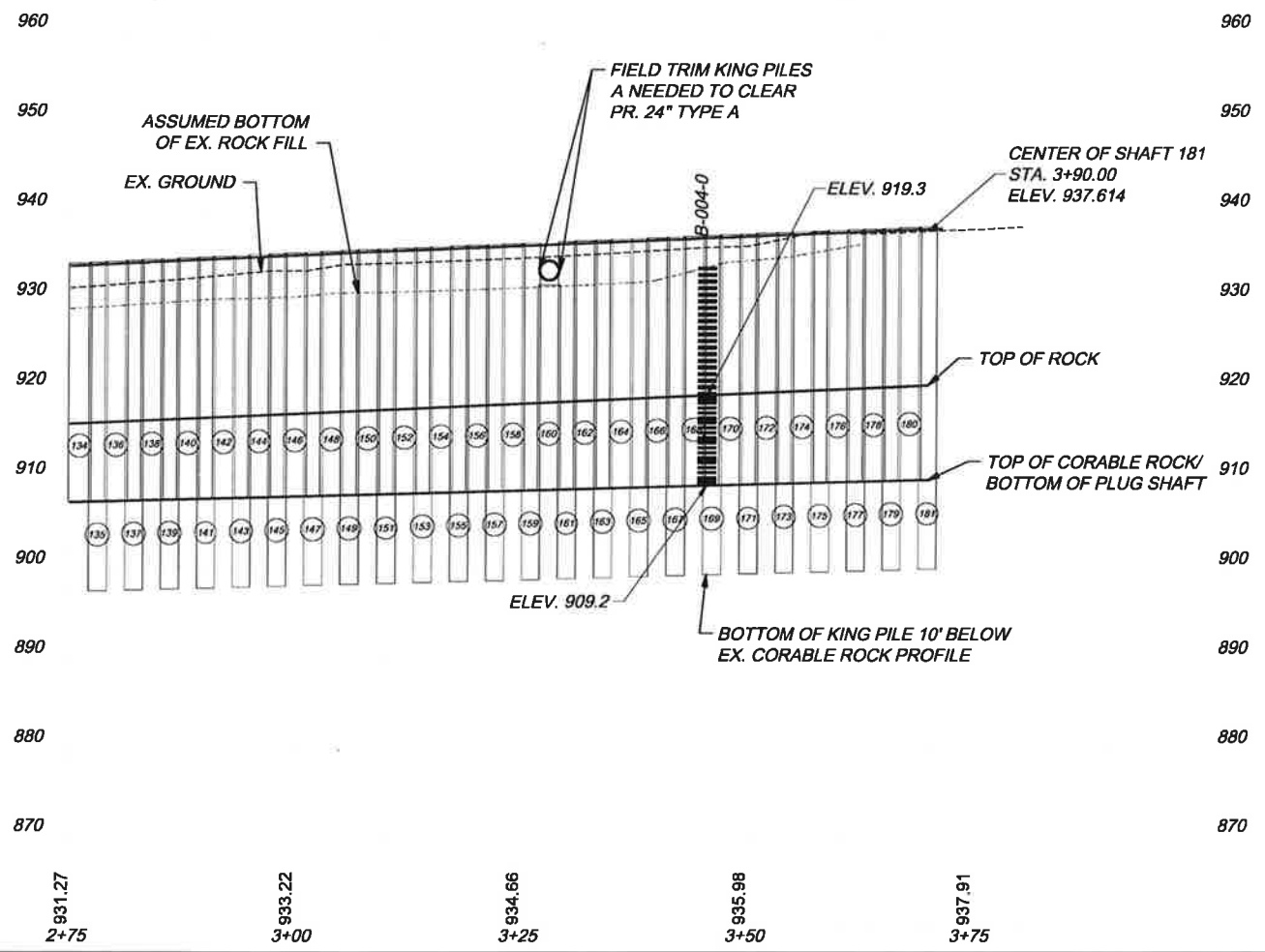
- LEGEND**
- SOIL BORING
 - 30" PLUG PILE
 - 24" KING PILE/DRILLED SHAFT
 - DRILLED SHAFT NUMBER



PLAN AND PROFILE
RETAINING WALL

PIK-CR2-0.67

27
32



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DESIGN DATA:

CONCRETE CLASS QC5 - COMPRESSIVE STRENGTH 4500 P.S.I.
(DRILLED SHAFTS)

REINFORCING STEEL - EPOXY COATED REINFORCING STEEL. ASTM A615, A616, OR A617.
GRADE 60 MINIMUM YIELD STRENGTH 60 KSI

STRUCTURAL STEEL - ASTM A709
GRADE 50 MINIMUM YIELD STRENGTH 50 KSI.

ITEM 507 - STEEL PILES, MISC.: SOLDIER PILES HP 12x53

FURNISH STEEL BEAMS CONSISTING OF STRUCTURAL STEEL MEMBERS THAT MEET THE PLAN REQUIREMENTS AND CONFORM TO ASTM A572, GRADE 50 AND CMS 711.01.

MEASUREMENTS FOR PAYMENT WILL BE LIMITED TO THE TOP OF BEAM ELEVATION AND THE BOTTOM OF THE DRILLED SHAFT, AS DETERMINED BY THE ENGINEER. ANY COST FOR LABOR, EQUIPMENT, MATERIALS, AND FABRICATION OF ADDITIONAL PLATE SHALL BE INCLUDED IN THIS ITEM. THE COUNTY WILL PAY FOR SOLIDER PILES AT THE CONTRACT UNIT PRICE PER FOOT OF THE ITEM 507 - STEEL PILES, MISC.: HP 12x53 STEEL BEAMS FURNISHED, AS PER PLAN.

IF THE FURNISHED BEAM LENGTHS ARE NOT ADEQUATE TO OBTAIN THE REQUIRED ROCK SOCKET LENGTH, SPLICE ADDITIONAL LENGTH WITH A FULL PENETRATION BUTT WELD IN ACCORDANCE WITH CMS 513.21. ANY SPLICES SHALL BE MADE NEAR THE TOP OF THE PILE, NOT NEAR THE MIDDLE OR THE BOTTOM.

THE COUNTY WILL PAY FOR ACCEPTED QUANTITIES AT THE CONTRACT UNIT PRICE FOR EACH SPLICE OF ITEM 507, STEEL PILES MISC.: HP 12x53 STEEL BEAM SPLICE.

THE FOLLOWING QUANTITIES SHALL BE INCLUDED FOR USE AS DETERMINED BY THE ENGINEER FOR BEAM SPLICING.

ITEM 507, STEEL PILES MISC.: HP 12x53 STEEL BEAM SPLICE
2 EACH

ITEM 524 - DRILLED SHAFTS, 24" DIAMETER, ABOVE BEDROCK, AS PER PLAN

ITEM 524 - DRILLED SHAFTS, 24" DIAMETER, "INTO BEDROCK," AS PER PLAN

THIS WORK CONSISTS OF FURNISHING AND INSTALLING DRILLED SHAFTS FOR DRILLED SHAFT RETAINING WALLS. THE DRILLED SHAFTS ARE REINFORCED WITH SOLDIER PILES INSTEAD OF REINFORCING STEEL CAGES. ALL ASSOCIATED TEMPORARY CASING, TEMPORARY GRADING, AND EXCAVATION SHALL BE INCLUDED IN THE BID PRICE FOR THE DRILLED SHAFTS. NO SEPARATE PAYMENT WILL BE MADE. FURNISH AND INSTALL DRILLED SHAFTS IN ACCORDANCE WITH CMS 524 EXCEPT AS MODIFIED AND SUPPLEMENT BELOW.

ALL EXISTING PIPES PASSING THROUGH OR NEAR THE PROPOSED DRILLED SHAFT WALL SHALL NOT BE DISTURBED UNLESS NOTED OTHERWISE. DRILLED SHAFTS SHALL BE INSTALLED NO CLOSER THAN 1 FT (CLEAR DISTANCE) TO THE EXISTING PIPES. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR LOCATING AND PROTECTING ALL EXISTING PIPES, SHOWN OR NOT SHOWN ON THESE DRAWINGS, DURING THE WORK AND PROVIDING THE REQUIRED CLEAR DISTANCE TO THE DRILLED SHAFTS.

EXCAVATE THE HOLE FOR THE DRILLED SHAFTS WITHIN 3 INCHES OF THE PLAN LOCATION IN THE HORIZONTAL PLANE. IF FIELD CONDITIONS INDICATE GREATER DEPTH TO BEDROCK THAN THAT WHICH IS ESTIMATED IN THE PLANS, NOTIFY THE ENGINEER FOR FURTHER EVALUATION. PLACE THE SOLDIER PILE VERTICALLY WITHIN THE HOLE SO IT IS NOT INCLINED MORE THAN 1" BETWEEN THE TOP AND BOTTOM.

PLACE THE SOLDIER PILE SO THAT THE FLANGES ARE PARALLEL TO THE CENTERLINE OF CONSTRUCTION. DO NOT ALLOW THE ORIENTATION OF THE FLANGES TO VARY BY MORE THAN 10 DEGREES. SUPPORT THE SOLDIER PILE SO THAT IT DOES NOT MOVE DURING CONCRETE PLACEMENT. DO NOT ALLOW THE VERTICAL ALIGNMENT OF THE STEEL PILE TO VARY BY MORE THAN 0.1 INCH PER FOOT OF DEPTH.

ITEM 524 - DRILLED SHAFTS, 24" DIAMETER, ABOVE BEDROCK, AS PER PLAN (CONTINUED)

ITEM 524 - DRILLED SHAFTS, 24" DIAMETER, "INTO BEDROCK," AS PER PLAN (CONTINUED)

CHECK THE POSITION, THE VERTICAL ALIGNMENT AND ORIENTATION OF THE SOLDIER PILE IMMEDIATELY AFTER CONCRETE PLACEMENT. MAKE CORRECTIONS AS NECESSARY TO MEET THE ABOVE TOLERANCES.

USE CLASS QC5 CONCRETE ACCORDING TO CMS 524. PLACE CONCRETE TO THE ELEVATION FOR THE TOP OF DRILLED SHAFT. THE CONTRACTOR MAY PLACE CONCRETE USING FREE FALL METHOD PROVIDED THE DEPTH OF WATER IS LESS THAN 6 INCHES AND THE CONCRETE FALLS WITHOUT STRIKING THE SIDES OF THE HOLE. POURING CONCRETE ALONG THE WEB OF THE STEEL PILE IS ACCEPTABLE.

SEQUENCE OF INSTALLATION:
THE INSTALLATION SEQUENCE SHALL BE SUCH THAT NO DRILLED SHAFT IS INSTALLED ADJACENT TO EITHER AN OPEN DRILLED SHAFT EXCAVATION OR A DRILLED SHAFT IN WHICH THE CONCRETE HAS LESS THAN A 48 HOUR CURE. INSTALLING THE SHAFTS IN AN ALTERNATING SEQUENCE OR ANY OTHER SEQUENCE THAT MEETS THIS CRITERIA IS PERMISSIBLE.

RETAINING WALL SHALL NOT BE LOADED BY CONSTRUCTION EMBANKMENT BEHIND THE WALL UNTIL 14 DAYS AFTER PLACING THE CONCRETE.

PROTECTION OF UNATTENDED OPEN SHAFTS:
CARE SHALL BE EXERCISED AS TO COVER UNATTENDED OPEN SHAFTS. TEMPORARY COVERS SHALL BE ADEQUATE STRENGTH TO PREVENT A PERSON OR ANIMAL FROM FALLING IN.

ACCESS:
ANY TEMPORARY GRADING, AGGREGATE, DRAINAGE, ETC. NEEDED FOR ACCESS TO THE WORK AREA SHALL BE INCLUDED IN THE BID PRICE FOR THE DRILLED SHAFTS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE MEANS AND METHODS USED TO CONSTRUCT THE DRILLED SHAFTS.

EXISTING ROADWAY DRAINAGE:
PRIOR TO BEGINNING ANY DRILLED SHAFT WORK, IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY, LOCATE, AND PROTECT ALL EXISTING LATERAL DRAINAGE PIPES FOR THE ROADWAY THAT MAY CROSS THE DRILLED SHAFT WALL ALIGNMENT. IF IT IS DETERMINE THAT THE DRILLED SHAFT LOCATIONS INTERFERE WITH ANY EXISTING DRAINAGE PIPES, THE CONTRACTOR SHALL INFORM THE ENGINEER TO DETERMINE THE CORRECTIVE ACTION.

VARIABLE ROCK ELEVATIONS:
TOP OF ROCK ELEVATIONS ARE APPROXIMATE BASED UPON SOIL BORINGS PERFORMED. QUANTITIES PROVIDED ARE BASED ON ELEVATIONS SHOWN IN THE PROFILE VIEWS OF THE WALLS ON SHEETS 26 AND 27. THE CONTRACTOR SHALL INFORM THE ENGINEER IF THE ACTUAL TOP OF THE BEDROCK ELEVATIONS ARE DEEPER, BY ONE FOOT OR GREATER, THAN THOSE SHOWN IN THE PROFILES PROVIDED BEFORE CONCRETE OR THE STEEL SECTION IS PLACED.

OBSTRUCTIONS-THE BORINGS DRILLED AT THE SITE DID NOT ENCOUNTER AUGER REFUSAL ON BOULDERS OR COBBLES WITHIN THE OVERBURDEN SOILS. HOWEVER, INDIVIDUAL TEST BORINGS ARE REPRESENTATIVE OF THE SUBSURFACE CONDITIONS AT THE BORING LOCATIONS ON THE DATES DRILLED, THEY ARE NOT NECESSARILY REPRESENTATIVE OF THE SUBSURFACE CONDITIONS BETWEEN BORING LOCATIONS OR SUBSURFACE CONDITIONS DURING OTHER SEASONS OF THE YEAR. THE CONTRACTOR SHOULD REVIEW THE RESULTS OF THE SUBSURFACE EXPLORATION DRAWINGS FOR ADDITIONAL INFORMATION ON GROUND AND GROUNDWATER CONDITIONS.

MEASUREMENT FOR PAYMENT FOR ITEM 524 - DRILLED SHAFTS, ABOVE BEDROCK, AS PER PLAN, WILL BE MEASURED ALONG THE AXIS OF THE DRILLED SHAFT FROM TOP OF SHAFT TO THE TOP OF BEDROCK, AS DETERMINED BY THE ENGINEER. MEASUREMENT FOR PAYMENT FOR DRILLED SHAFTS INTO BEDROCK, AS PER PLAN, WILL BE LIMITED TO THE DISTANCE BETWEEN THE TOP OF BEDROCK AND THE BOTTOM OF THE DRILLED SHAFT, AS DETERMINED BY THE ENGINEER.

ITEM 524 - PLUG PILES, 30" DIAMETER

THESE DRILLED SHAFTS SHALL BE NON-STRUCTURAL "PLUG PILES" SERVING THE PURPOSE OF LAGGING.

THIS WORK SHALL BE PER ITEM 524 EXCEPT REINFORCING WILL NOT BE USED IN THE SHAFT. EACH PLUG PILE SHALL BE CENTERED BETWEEN EACH REINFORCED 24" DIAMETER DRILLED SHAFT AND BACKFILLED WITH UNREINFORCED CLASS QC5 CONCRETE. PLUG PILES SHALL EXTEND TO TOP OF BEDROCK.

WHERE PLUG SHAFT EXTENDS ABOVE THE GROUND ELEVATION, EXTEND SONOTUBE OR SIMILAR FORM WORK ABOVE GROUND TO TOP OF PLUG SHAFT ELEVATION.

PAYMENT FOR LABOR, EQUIPMENT, AND MATERIALS FOR THE ABOVE SHALL BE INCLUDED IN THE PER FOOT CONTRACT PRICE FOR ITEM 524, DRILLED SHAFTS, 30" DIAMETER, ABOVE BEDROCK, AS PER PLAN.

RETAINING WALL ESTIMATED QUANTITIES - CARRIED TO GENERAL SUMMARY			
ITEM	DESCRIPTION	TOTAL	UNITS
524	DRILLED SHAFTS, 24" DIAMETER, ABOVE BEDROCK, AS PER PLAN	2278	FT
524	DRILLED SHAFTS, 24" DIAMETER, INTO BEDROCK, AS PER PLAN	910	FT
524	DRILLED SHAFTS, 30" DIAMETER, ABOVE BEDROCK, AS PER PLAN	2246	FT
507	STEEL PILES, MISC.:HP12X53 STEEL BEAM	3142	FT
507	STEEL PILES, MISC.:HP12X53 STEEL BEAM SPLICE	2	EACH

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DRILLED SHAFT SUMMARY PIK-CR2-0.67																
SHAFT NUMBER	CENTERLINE CR2 STA.	CENTERLINE CR2 OFFSET	CENTERLINE DRILLED SHAFT STA.	CENTERLINE DRILLED SHAFT OFFSET	SHAFT DIAMETER		APPROX. EX. GROUND ELEVATION	TOP ELEVATION OF SHAFT	BOTTOM ELEVATION OF SHAFT	TOTAL SHAFT LENGTH	DRILLED SHAFT LENGTH INTO BEDROCK	DRILLED SHAFT LENGTH ABOVE BEDROCK	PLUG SHAFT LENGTH	BEAM SIZE	APPROX. LENGTH OF PILE	
					IN.	FT.										
1	36+16.23	16.5 LT.	0+10.00	0.0 RT.	24	2	910.18	912.20	882.71	29.50	10.00	19.50		HP12x53	29.00	
2	36+18.23	15.5 LT.	0+12.00	1.0 RT.	30	2	910.80	912.47	892.81	19.65			19.65			
3	36+20.23	16.5 LT.	0+14.00	0.0 RT.	24	2	910.56	912.73	882.92	29.81	10.00	19.81		HP12x53	29.31	
4	36+22.23	15.5 LT.	0+16.00	1.0 RT.	30	2	911.18	912.99	893.02	19.97			19.97			
5	36+24.23	16.5 LT.	0+18.00	0.0 RT.	24	2	910.93	913.25	883.13	30.12	10.00	20.12		HP12x53	29.62	
6	36+26.23	15.5 LT.	0+20.00	1.0 RT.	30	2	911.56	913.51	893.23	20.28			20.28			
7	36+28.23	16.5 LT.	0+22.00	0.0 RT.	24	2	911.31	913.77	883.34	30.44	10.00	20.44		HP12x53	29.94	
8	36+30.23	15.5 LT.	0+24.00	1.0 RT.	30	2	911.94	914.04	893.44	20.59			20.59			
9	36+32.23	16.5 LT.	0+26.00	0.0 RT.	24	2	911.69	914.30	883.55	30.75	10.00	20.75		HP12x53	30.25	
10	36+34.23	15.5 LT.	0+28.00	1.0 RT.	30	2	912.32	914.56	893.65	20.91			20.91			
11	36+36.23	16.5 LT.	0+30.00	0.0 RT.	24	2	912.07	914.82	883.76	31.06	10.00	21.06		HP12x53	30.56	
12	36+38.23	15.5 LT.	0+32.00	1.0 RT.	30	2	912.70	915.09	893.87	21.22			21.22			
13	36+40.23	16.5 LT.	0+34.00	0.0 RT.	24	2	912.45	915.35	883.97	31.38	10.00	21.38		HP12x53	30.88	
14	36+42.23	15.5 LT.	0+36.00	1.0 RT.	30	2	913.08	915.61	894.08	21.54			21.54			
15	36+44.23	16.5 LT.	0+38.00	0.0 RT.	24	2	912.83	915.87	884.18	31.69	10.00	21.69		HP12x53	31.19	
16	36+46.23	15.5 LT.	0+40.00	1.0 RT.	30	2	913.46	916.13	894.29	21.84			21.84			
17	36+48.23	16.5 LT.	0+42.00	0.0 RT.	24	2	913.21	916.38	884.39	31.99	10.00	21.99		HP12x53	31.49	
18	36+50.23	15.5 LT.	0+44.00	1.0 RT.	30	2	913.80	916.63	894.50	22.13			22.13			
19	36+52.23	16.5 LT.	0+46.00	0.0 RT.	24	2	913.50	916.87	884.60	32.27	10.00	22.27		HP12x53	31.77	
20	36+54.23	15.5 LT.	0+48.00	1.0 RT.	30	2	914.08	917.11	894.71	22.40			22.40			
21	36+56.23	16.5 LT.	0+50.00	0.0 RT.	24	2	913.77	917.35	884.81	32.53	10.00	22.53		HP12x53	32.03	
22	36+58.23	15.5 LT.	0+52.00	1.0 RT.	30	2	914.35	917.58	894.92	22.66			22.66			
23	36+60.23	16.5 LT.	0+54.00	0.0 RT.	24	2	914.05	917.81	885.02	32.79	10.00	22.79		HP12x53	32.29	
24	36+62.23	15.5 LT.	0+56.00	1.0 RT.	30	2	914.64	918.03	895.13	22.91			22.91			
25	36+64.23	16.5 LT.	0+58.00	0.0 RT.	24	2	914.34	918.26	885.23	33.02	10.00	23.02		HP12x53	32.52	
26	36+66.23	15.5 LT.	0+60.00	1.0 RT.	30	2	914.93	918.48	895.34	23.14			23.14			
27	36+68.23	16.5 LT.	0+62.00	0.0 RT.	24	2	914.63	918.69	885.44	33.25	10.00	23.25		HP12x53	32.75	
28	36+70.23	15.5 LT.	0+64.00	1.0 RT.	30	2	915.23	918.90	895.55	23.35			23.35			
29	36+72.23	16.5 LT.	0+66.00	0.0 RT.	24	2	914.92	919.11	885.65	33.46	10.00	23.46		HP12x53	32.96	
30	36+74.20	15.5 LT.	0+68.00	1.0 RT.	30	2	915.52	919.31	895.76	23.55			23.55			
31	36+76.15	16.5 LT.	0+70.00	0.0 RT.	24	2	915.22	919.50	885.86	33.64	10.00	23.64		HP12x53	33.14	
32	36+78.12	15.5 LT.	0+72.00	1.0 RT.	30	2	915.82	919.68	895.97	23.71			23.71			
33	36+80.07	16.5 LT.	0+74.00	0.0 RT.	24	2	915.53	919.86	886.07	33.79	10.00	23.79		HP12x53	33.29	
34	36+82.04	15.5 LT.	0+76.00	1.0 RT.	30	2	916.13	920.04	896.18	23.86			23.86			
35	36+83.99	16.5 LT.	0+78.00	0.0 RT.	24	2	915.84	920.21	886.29	33.92	10.00	23.92		HP12x53	33.42	
36	36+85.95	15.5 LT.	0+80.00	1.0 RT.	30	2	916.45	920.38	896.39	23.99			23.99			
37	36+87.91	16.5 LT.	0+82.00	0.0 RT.	24	2	916.17	920.54	886.50	34.05	10.00	24.05		HP12x53	33.55	
38	36+89.87	15.5 LT.	0+84.00	1.0 RT.	30	2	916.78	920.71	896.60	24.10			24.10			
39	36+91.83	16.5 LT.	0+86.00	0.0 RT.	24	2	916.50	920.86	886.71	34.15	10.00	24.15		HP12x53	33.65	
40	36+93.79	15.5 LT.	0+88.00	1.0 RT.	30	2	917.11	921.02	896.81	24.20			24.20			
41	36+95.75	16.5 LT.	0+90.00	0.0 RT.	24	2	916.84	921.17	886.92	34.25	10.00	24.25		HP12x53	33.75	
42	36+97.71	15.5 LT.	0+92.00	1.0 RT.	30	2	917.46	921.32	897.02	24.30			24.30			
43	36+99.67	16.5 LT.	0+94.00	0.0 RT.	24	2	917.55	921.46	887.13	34.33	10.00	24.33		HP12x53	33.83	
44	37+01.63	15.5 LT.	0+96.00	1.0 RT.	30	2	918.81	921.60	897.23	24.37			24.37			
45	37+03.59	16.5 LT.	0+98.00	0.0 RT.	24	2	918.64	921.74	887.34	34.40	10.00	24.40		HP12x53	33.90	
46	37+05.55	15.5 LT.	1+00.00	1.0 RT.	30	2	919.09	921.87	897.44	24.43			24.43			
47	37+07.51	16.5 LT.	1+02.00	0.0 RT.	24	2	918.95	922.00	887.55	34.45	10.00	24.45		HP12x53	33.95	
48	37+09.47	15.5 LT.	1+04.00	1.0 RT.	30	2	919.42	922.13	897.65	24.47			24.47			
49	37+11.43	16.5 LT.	1+06.00	0.0 RT.	24	2	919.28	922.25	887.76	34.49	10.00	24.49		HP12x53	33.99	
50	37+13.39	15.5 LT.	1+08.00	1.0 RT.	30	2	919.75	922.37	897.86	24.50			24.50			
51	37+15.35	16.5 LT.	1+10.00	0.0 RT.	24	2	919.61	922.48	887.97	34.52	10.00	24.52		HP12x53	34.02	
52	37+17.31	15.5 LT.	1+12.00	1.0 RT.	30	2	920.09	922.60	898.07	24.52			24.52			
53	37+19.27	16.5 LT.	1+14.00	0.0 RT.	24	2	919.95	922.71	888.18	34.53	10.00	24.53		HP12x53	34.03	
54	37+21.23	15.5 LT.	1+16.00	1.0 RT.	30	2	920.38	919.05	898.28	20.77			20.77			
55	37+23.18	16.5 LT.	1+18.00	0.0 RT.	24	2	920.24	922.91	888.39	34.52	10.00	24.52		HP12x53	34.02	
56	37+25.15	15.5 LT.	1+20.00	1.0 RT.	30	2	920.59	923.01	898.50	24.52			24.52			
57	37+27.10	16.5 LT.	1+22.00	0.0 RT.	24	2	920.46	923.10	888.60	34.50	10.00	24.50		HP12x53	34.00	
58	37+29.07	15.5 LT.	1+24.00	1.0 RT.	30	2	920.81	923.20	898.71	24.49			24.49			
59	37+31.02	16.5 LT.	1+26.00	0.0 RT.	24	2	920.68	923.29	888.81	34.48	10.00	24.48		HP12x53	33.98	
60	37+32.98	15.5 LT.	1+28.00	1.0 RT.	30	2	921.04	923.39	898.92	24.47			24.47			
61	37+34.94	16.5 LT.	1+30.00	0.0 RT.	24	2	920.91	923.49	889.02	34.46	10.00	24.46		HP12x53	33.96	
62	37+36.90	15.5 LT.	1+32.00	1.0 RT.	30	2	921.27	923.59	899.13	24.46			24.46			
63	37+38.86	16.5 LT.	1+34.00	0.0 RT.	24	2	921.14	923.70	889.23	34.47	10.00	24.47		HP12x53	33.97	
64	37+40.82	15.5 LT.	1+36.00	1.0 RT.	30	2	921.50	923.81	899.35	24.46			24.46			
65	37+42.78	16.5 LT.	1+38.00	0.0 RT.	24	2	921.38	923.92	889.49	34.43	10.00	24.43		HP12x53	33.93	
66	37+44.74	15.5 LT.	1+40.00	1.0 RT.	30	2	921.74	924.04	899.63	24.41			24.41			
67	37+46.70	16.5 LT.	1+42.00	0.0 RT.	24	2	921.62	924.16	889.77	34.39	10.00	24.39		HP12x53	33.89	
68	37+48.66	15.5 LT.	1+44.00	1.0 RT.	30	2	921.98	924.28	899.91	24.37			24.37			
69	37+50.62	16.5 LT.	1+46.00	0.0 RT.	24	2	921.86	924.41	890.05	34.36	10.00	24.36		HP12x53	33.86	
70	37+52.58	15.5 LT.	1+48.00	1.0 RT.	30	2	922.14	924.54	900.19	24.35			24.35			
71	37+54.54	16.5 LT.	1+50.00	0.0 RT.	24	2	921.94	924.68	890.33	34.35	10.00	24.35		HP12x53	33.85	
SUBTOTAL TO SHEET 30											360.00	834.53	808.88		1176.53	

DRILLED SHAFT SCHEDULE WITH PLUGS SHAFT

PIK-CR2-0.67

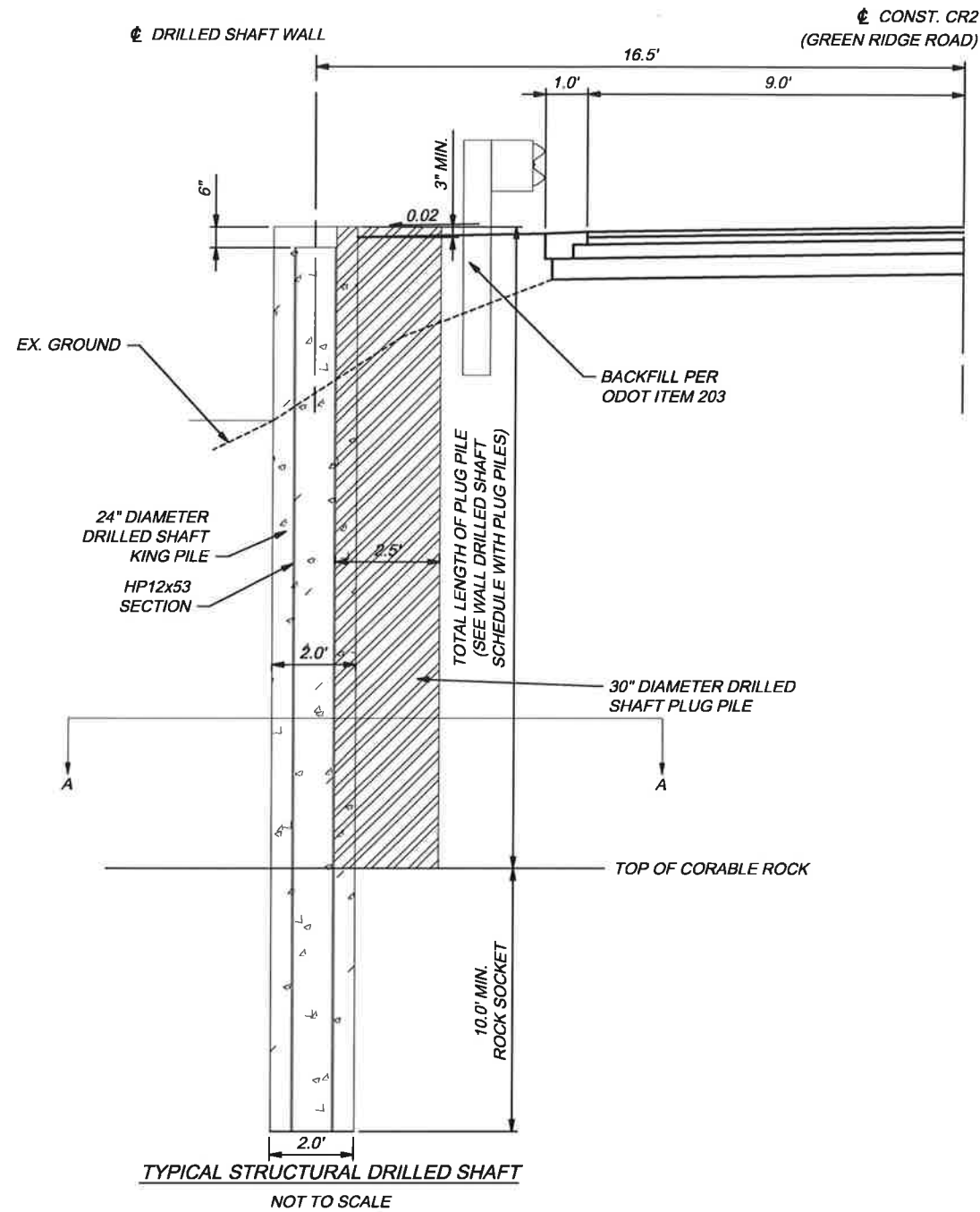
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DRILLED SHAFT SUMMARY PIK-CR2-0.67																
SHAFT NUMBER	CENTERLINE CR2 STA.	CENTERLINE CR2 OFFSET	CENTERLINE DRILLED SHAFT STA.	CENTERLINE DRILLED SHAFT OFFSET	SHAFT DIAMETER	SHAFT SPACING	APPROX. EX. GROUND ELEVATION	TOP ELEVATION OF SHAFT	BOTTOM ELEVATION OF SHAFT	TOTAL SHAFT LENGTH	DRILLED SHAFT LENGTH INTO BEDROCK	DRILLED SHAFT LENGTH ABOVE BEDROCK	PLUG SHAFT LENGTH	BEAM SIZE	APPROX. LENGTH OF PILE	
					IN.	FT.					FT.	FT.				
72	37+56.50	15.5 LT.	1+52.00	1.0 RT.	30	2	922.26	924.82	900.47	24.35			24.35			
73	37+58.46	16.5 LT.	1+54.00	0.0 RT.	24	2	922.13	924.96	890.61	34.35	10.00	24.35		HP12x53	33.85	
74	37+60.42	15.5 LT.	1+56.00	1.0 RT.	30	2	922.59	925.11	900.75	24.36			24.36			
75	37+62.38	16.5 LT.	1+58.00	0.0 RT.	24	2	922.47	925.26	890.89	34.37	10.00	24.37		HP12x53	33.87	
76	37+64.34	15.5 LT.	1+60.00	1.0 RT.	30	2	922.94	925.42	901.03	24.38			24.38			
77	37+66.30	16.5 LT.	1+62.00	0.0 RT.	24	2	922.82	925.57	891.18	34.40	10.00	24.40		HP12x53	33.90	
78	37+68.26	15.5 LT.	1+64.00	1.0 RT.	30	2	923.28	925.74	901.32	24.42			24.42			
79	37+70.21	16.5 LT.	1+66.00	0.0 RT.	24	2	923.17	925.90	891.46	34.44	10.00	24.44		HP12x53	33.94	
80	37+72.18	15.5 LT.	1+68.00	1.0 RT.	30	2	923.64	926.07	901.60	24.47			24.47			
81	37+74.13	16.5 LT.	1+70.00	0.0 RT.	24	2	923.53	926.23	891.74	34.50	10.00	24.50		HP12x53	34.00	
82	37+76.10	15.5 LT.	1+72.00	1.0 RT.	30	2	924.00	926.40	901.88	24.52			24.52			
83	37+78.05	16.5 LT.	1+74.00	0.0 RT.	24	2	923.89	926.57	892.02	34.55	10.00	24.55		HP12x53	34.05	
84	37+80.01	15.5 LT.	1+76.00	1.0 RT.	30	2	924.37	926.73	902.16	24.57			24.57			
85	37+81.97	16.5 LT.	1+78.00	0.0 RT.	24	2	924.26	926.90	892.30	34.60	10.00	24.60		HP12x53	34.10	
86	37+83.93	15.5 LT.	1+80.00	1.0 RT.	30	2	924.74	927.07	902.44	24.63			24.63			
87	37+85.89	16.5 LT.	1+82.00	0.0 RT.	24	2	924.42	927.23	892.58	34.65	10.00	24.65		HP12x53	34.15	
88	37+87.85	15.5 LT.	1+84.00	1.0 RT.	30	2	924.55	927.40	902.72	24.68			24.68			
89	37+89.81	16.5 LT.	1+86.00	0.0 RT.	24	2	923.76	927.57	892.86	34.71	10.00	24.71		HP12x53	34.21	
90	37+91.77	15.5 LT.	1+88.00	1.0 RT.	30	2	923.90	927.73	903.00	24.73			24.73			
91	37+93.73	16.5 LT.	1+90.00	0.0 RT.	24	2	923.62	927.90	893.14	34.76	10.00	24.76		HP12x53	34.26	
92	37+95.69	15.5 LT.	1+92.00	1.0 RT.	30	2	924.39	928.06	903.28	24.78			24.78			
93	37+97.65	16.5 LT.	1+94.00	0.0 RT.	24	2	924.12	928.23	893.42	34.81	10.00	24.81		HP12x53	34.31	
94	37+99.61	15.5 LT.	1+96.00	1.0 RT.	30	2	924.90	928.40	903.56	24.84			24.84			
95	38+01.57	16.5 LT.	1+98.00	0.0 RT.	24	2	924.51	928.56	893.70	34.86	10.00	24.86		HP12x53	34.36	
96	38+03.53	15.5 LT.	2+00.00	1.0 RT.	30	2	925.15	928.73	903.84	24.89			24.89			
97	38+05.49	16.5 LT.	2+02.00	0.0 RT.	24	2	924.74	928.90	893.98	34.91	10.00	24.91		HP12x53	34.41	
98	38+07.45	15.5 LT.	2+04.00	1.0 RT.	30	2	925.39	929.06	904.13	24.94			24.94			
99	38+09.41	16.5 LT.	2+06.00	0.0 RT.	24	2	924.98	929.23	894.27	34.97	10.00	24.97		HP12x53	34.47	
100	38+11.37	15.5 LT.	2+08.00	1.0 RT.	30	2	925.63	929.40	904.41	24.99			24.99			
101	38+13.33	16.5 LT.	2+10.00	0.0 RT.	24	2	925.23	929.56	894.55	35.02	10.00	25.02		HP12x53	34.52	
102	38+15.29	15.5 LT.	2+12.00	1.0 RT.	30	2	925.88	929.73	904.69	25.04			25.04			
103	38+17.24	16.5 LT.	2+14.00	0.0 RT.	24	2	925.49	929.89	894.83	35.06	10.00	25.06		HP12x53	34.56	
104	38+19.21	15.5 LT.	2+16.00	1.0 RT.	30	2	926.15	930.05	904.97	25.09			25.09			
105	38+21.16	16.5 LT.	2+18.00	0.0 RT.	24	2	925.77	930.21	895.11	35.10	10.00	25.10		HP12x53	34.60	
106	38+23.13	15.5 LT.	2+20.00	1.0 RT.	30	2	926.44	930.37	905.25	25.12			25.12			
107	38+25.08	16.5 LT.	2+22.00	0.0 RT.	24	2	926.07	930.53	895.39	35.14	10.00	25.14		HP12x53	34.64	
108	38+27.04	15.5 LT.	2+24.00	1.0 RT.	30	2	926.75	930.68	905.53	25.15			25.15			
109	38+29.00	16.5 LT.	2+26.00	0.0 RT.	24	2	926.37	930.83	895.67	35.16	10.00	25.16		HP12x53	34.66	
110	38+30.96	15.5 LT.	2+28.00	1.0 RT.	30	2	927.03	930.98	905.81	25.17			25.17			
111	38+32.92	16.5 LT.	2+30.00	0.0 RT.	24	2	926.65	931.13	895.95	35.18	10.00	25.18		HP12x53	34.68	
112	38+34.88	15.5 LT.	2+32.00	1.0 RT.	30	2	927.31	931.28	906.09	25.19			25.19			
113	38+36.84	16.5 LT.	2+34.00	0.0 RT.	24	2	926.93	931.42	896.21	35.21	10.00	25.21		HP12x53	34.71	
114	38+38.80	15.5 LT.	2+36.00	1.0 RT.	30	2	927.60	931.56	906.27	25.30			25.30			
115	38+40.76	16.5 LT.	2+38.00	0.0 RT.	24	2	927.23	931.71	896.32	35.39	10.00	25.39		HP12x53	34.89	
116	38+42.72	15.5 LT.	2+40.00	1.0 RT.	30	2	927.90	931.85	906.37	25.47			25.47			
117	38+44.68	16.5 LT.	2+42.00	0.0 RT.	24	2	927.53	931.98	896.43	35.56	10.00	25.56		HP12x53	35.06	
118	38+46.64	15.5 LT.	2+44.00	1.0 RT.	30	2	928.20	932.12	906.48	25.64			25.64			
119	38+48.60	16.5 LT.	2+46.00	0.0 RT.	24	2	927.75	932.25	896.53	35.72	10.00	25.72		HP12x53	35.22	
120	38+50.56	15.5 LT.	2+48.00	1.0 RT.	30	2	928.32	932.39	906.59	25.80			25.80			
121	38+52.52	16.5 LT.	2+50.00	0.0 RT.	24	2	927.87	932.52	896.64	35.88	10.00	25.88		HP12x53	35.38	
122	38+54.48	15.5 LT.	2+52.00	1.0 RT.	30	2	928.44	932.64	906.70	25.95			25.95			
123	38+56.44	16.5 LT.	2+54.00	0.0 RT.	24	2	928.00	932.77	896.75	36.02	10.00	26.02		HP12x53	35.52	
124	38+58.38	15.5 LT.	2+56.00	1.0 RT.	30	2	928.57	932.90	906.80	26.09			26.09			
125	38+60.30	16.5 LT.	2+58.00	0.0 RT.	24	2	928.14	933.02	896.86	36.16	10.00	26.16		HP12x53	35.66	
126	38+62.23	15.5 LT.	2+60.00	1.0 RT.	30	2	928.72	933.13	906.91	26.22			26.22			
127	38+64.14	16.5 LT.	2+62.00	0.0 RT.	24	2	928.30	933.25	896.96	36.29	10.00	26.29		HP12x53	35.79	
128	38+66.07	15.5 LT.	2+64.00	1.0 RT.	30	2	928.89	933.37	907.02	26.35			26.35			
129	38+67.98	16.5 LT.	2+66.00	0.0 RT.	24	2	928.48	933.48	897.07	36.41	10.00	26.41		HP12x53	35.91	
130	38+69.91	15.5 LT.	2+68.00	1.0 RT.	30	2	929.08	933.59	907.12	26.47			26.47			
131	38+71.83	16.5 LT.	2+70.00	0.0 RT.	24	2	928.68	933.70	897.18	36.53	10.00	26.53		HP12x53	36.03	
132	38+73.75	15.5 LT.	2+72.00	1.0 RT.	30	2	929.29	933.81	907.23	26.58			26.58			
133	38+75.67	16.5 LT.	2+74.00	0.0 RT.	24	2	928.90	933.92	897.28	36.63	10.00	26.63		HP12x53	36.13	
134	38+77.59	15.5 LT.	2+76.00	1.0 RT.	30	2	929.52	934.02	907.34	26.69			26.69			
135	38+79.51	16.5 LT.	2+78.00	0.0 RT.	24	2	929.14	934.13	897.39	36.73	10.00	26.73		HP12x53	36.23	
136	38+81.43	15.5 LT.	2+80.00	1.0 RT.	30	2	929.77	934.23	907.45	26.78			26.78			
137	38+83.35	16.5 LT.	2+82.00	0.0 RT.	24	2	929.40	934.33	897.50	36.83	10.00	26.83		HP12x53	36.33	
138	38+85.28	15.5 LT.	2+84.00	1.0 RT.	30	2	930.04	934.43	907.55	26.87			26.87			
139	38+87.19	16.5 LT.	2+86.00	0.0 RT.	24	2	929.68	934.52	897.61	36.92	10.00	26.92		HP12x53	36.42	
140	38+89.12	15.5 LT.	2+88.00	1.0 RT.	30	2	930.32	934.62	907.66	26.96			26.96			
141	38+91.03	16.5 LT.	2+90.00	0.0 RT.	24	2	929.97	934.71	897.71	37.00	10.00	27.00		HP12x53	36.50	
142	38+92.96	15.5 LT.	2+92.00	1.0 RT.	30	2	930.61	934.81	907.77	27.04			27.04			
SUBTOTAL SHEET 30											350.00	888.79	914.51		1221.29	
SUBTOTAL FROM SHEET 29											360.00	834.53	808.88		1176.53	
SUBTOTAL TO SHEET 31											710.00	1723.31	1723.39		2397.81	

DRILLED SHAFT SCHEDULE WITH PLUGS SHAFT

PIK-CR2-0.67





REQUIREMENTS	
ITEMS	REQUIREMENT
CENTER-TO-CENTER DRILLED SHAFT/PLUG PILE SPACING	4 FEET
MINIMUM DRILLED SHAFT DIAMETER ₃	24 INCHES
MINIMUM EMBEDMENT INTO BEDROCK	10 FEET
MINIMUM 28-DAY UNCONFINED COMPRESSIVE STRENGTH OF CONCRETE ₁	4,500 PSI
MINIMUM DIAMETER OF PLUG PILES ₂	30 INCHES

1. FOR APPROXIMATE DEPTH OF BEDROCK ENCOUNTERED IN BORINGS, REFER TO GEOTECHNICAL EXPLORATION PAGES, APPENDIX B
2. UNREINFORCED CONCRETE "PLUG PILES" SERVE THE PURPOSE OF LAGGING.
3. THE STRONG AXIS OF THE STEEL BEAM SHALL BE CENTRALLY PLACED ALONG THE ENTIRE LENGTH OF THE DRILLED SHAFT EXCAVATION, AND ORIENTED PARALLEL TO THE LENGTH OF THE RETAINING WALL IN ORDER TO RESIST THE LATERAL EARTH PRESSURE WHICH WILL ACT IN AN UPSLOPE TO DOWNSLOPE DIRECTION. REINFORCED WITH HP12x53, GRADE 50 STEEL SECTION. STEEL SECTION SHALL BE PLACED IN THE CENTER OF THE SHAFT FOR THE FULL LENGTH OF THE SHAFT. THE STEEL SECTIONS SHALL BE PAINTED OR GALVANIZED FOR CORROSION PROTECTION PRIOR TO PLACEMENT.

