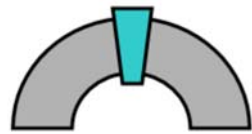


Appendix: I

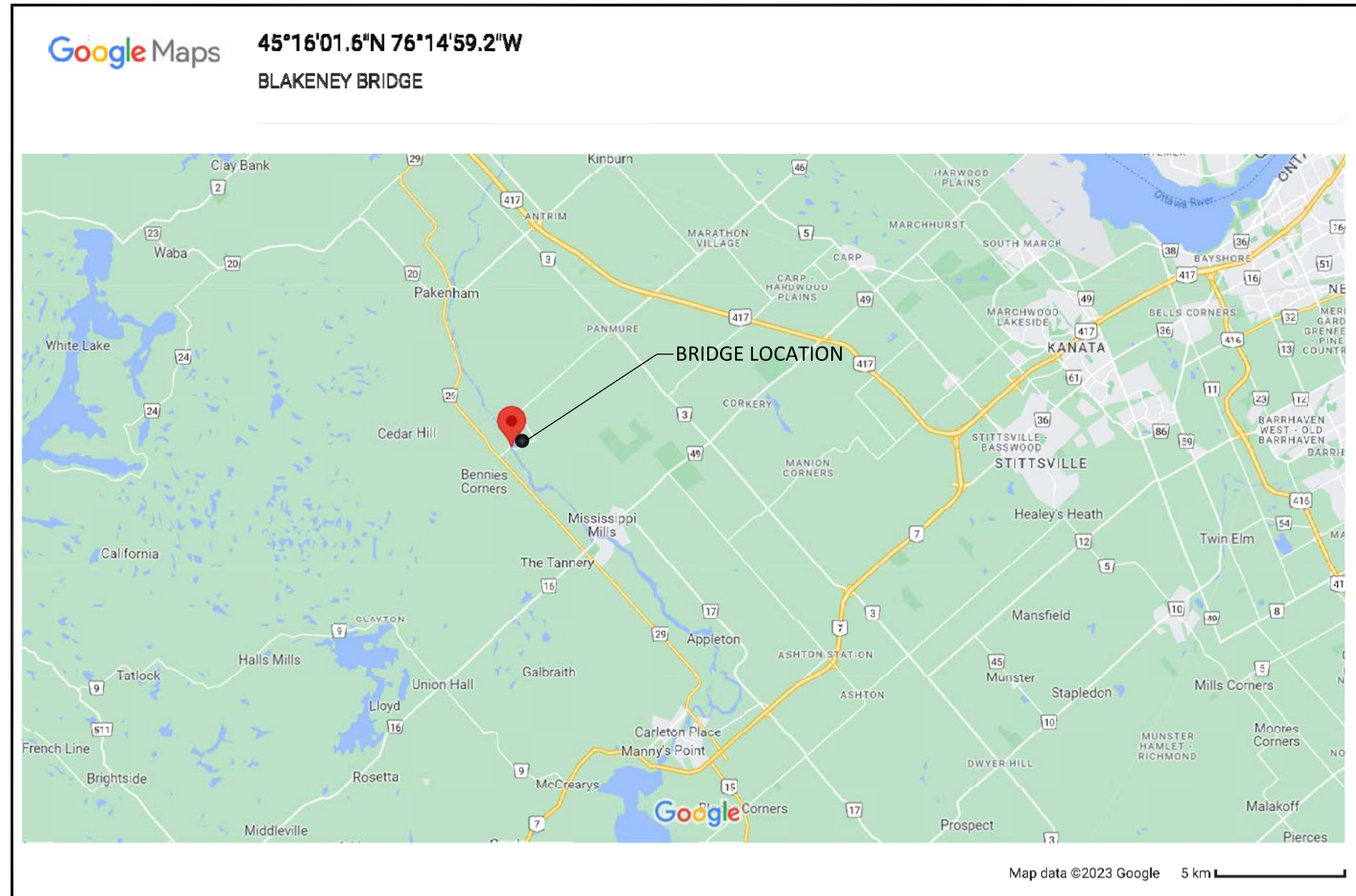
Blakeney Bridge Replacement Design Drawings

March 2024

COUNTY OF LANARK TRANSPORTATION AND PLANNING SERVICES

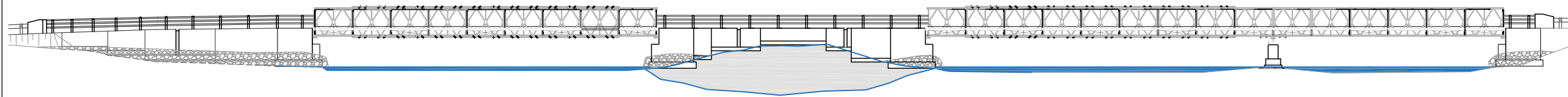
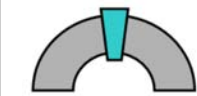


Keystone Bridge Management Corp.
714 Unit B Front Rd
Kingston, ON K7M 4L5

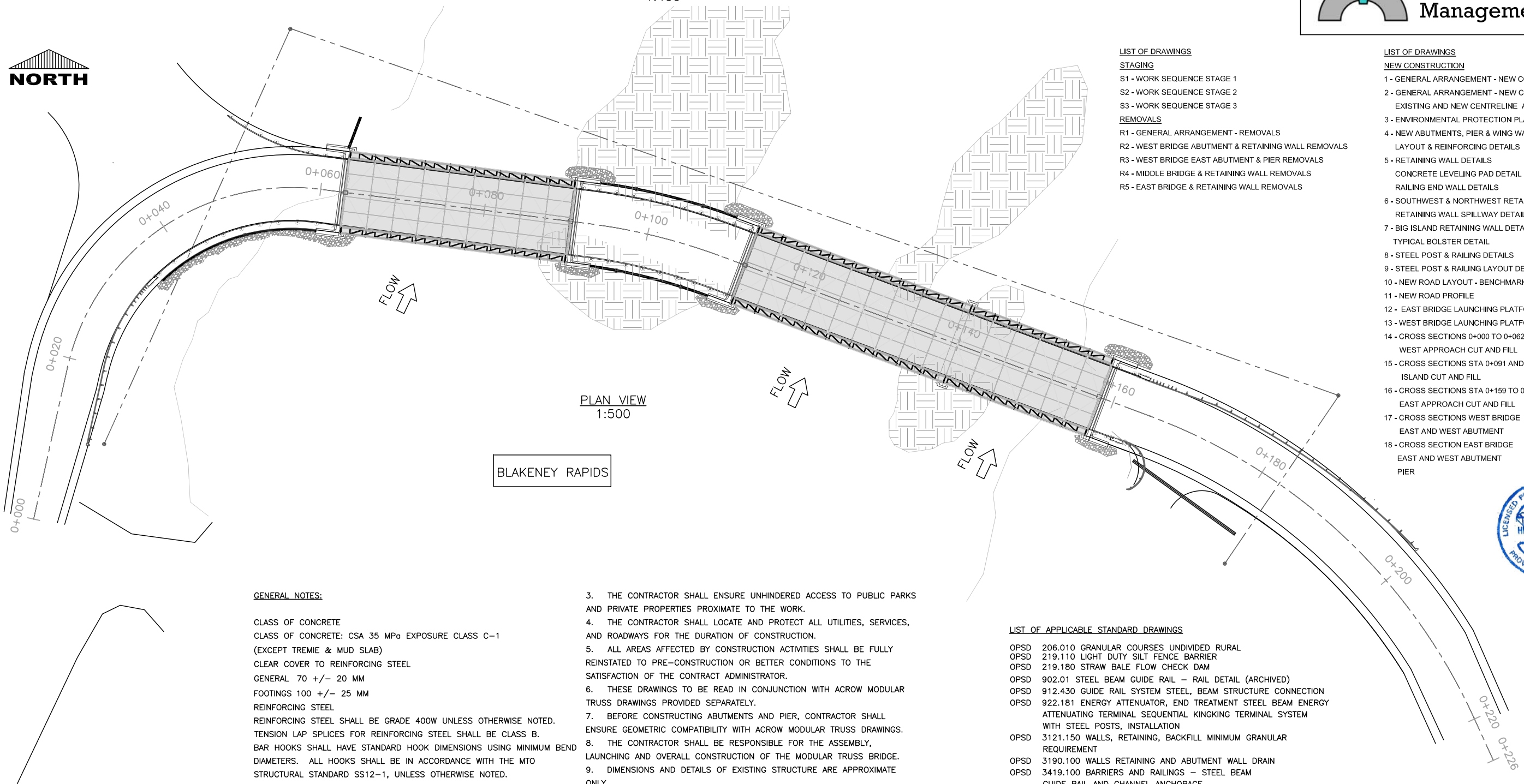


Tender Closing
Thursday April 25th at 12:00pm

BLAKENEY BRIDGE REPLACEMENT
STRUCTURE No. B41
CONTRACT No. PW-C-17-2024-24-EO



ELEVATION VIEW
(SOUTH)
1:400



PLAN VIEW
1:500

BLAKENEY RAPIDS

LIST OF DRAWINGS

STAGING

- S1 - WORK SEQUENCE STAGE 1
- S2 - WORK SEQUENCE STAGE 2
- S3 - WORK SEQUENCE STAGE 3

REMOVALS

- R1 - GENERAL ARRANGEMENT - REMOVALS
- R2 - WEST BRIDGE ABUTMENT & RETAINING WALL REMOVALS
- R3 - WEST BRIDGE EAST ABUTMENT & PIER REMOVALS
- R4 - MIDDLE BRIDGE & RETAINING WALL REMOVALS
- R5 - EAST BRIDGE & RETAINING WALL REMOVALS

LIST OF DRAWINGS

NEW CONSTRUCTION

- 1 - GENERAL ARRANGEMENT - NEW CONSTRUCTION
- 2 - GENERAL ARRANGEMENT - NEW CONSTRUCTION EXISTING AND NEW CENTRELINE ALIGNMENTS
- 3 - ENVIRONMENTAL PROTECTION PLAN - ROADWORKS
- 4 - NEW ABUTMENTS, PIER & WING WALLS LAYOUT & REINFORCING DETAILS
- 5 - RETAINING WALL DETAILS
CONCRETE LEVELING PAD DETAIL
RAILING END WALL DETAILS
- 6 - SOUTHWEST & NORTHWEST RETAINING WALL DETAILS
RETAINING WALL SPILLWAY DETAIL
- 7 - BIG ISLAND RETAINING WALL DETAILS
TYPICAL BOLSTER DETAIL
- 8 - STEEL POST & RAILING DETAILS
- 9 - STEEL POST & RAILING LAYOUT DETAILS
- 10 - NEW ROAD LAYOUT - BENCHMARKS
- 11 - NEW ROAD PROFILE
- 12 - EAST BRIDGE LAUNCHING PLATFORM
- 13 - WEST BRIDGE LAUNCHING PLATFORM
- 14 - CROSS SECTIONS 0+000 TO 0+062
WEST APPROACH CUT AND FILL
- 15 - CROSS SECTIONS STA 0+091 AND 0+112
ISLAND CUT AND FILL
- 16 - CROSS SECTIONS STA 0+159 TO 0+226
EAST APPROACH CUT AND FILL
- 17 - CROSS SECTIONS WEST BRIDGE
EAST AND WEST ABUTMENT
- 18 - CROSS SECTION EAST BRIDGE
EAST AND WEST ABUTMENT
PIER

GENERAL NOTES:

- CLASS OF CONCRETE
CLASS OF CONCRETE: CSA 35 MPa EXPOSURE CLASS C-1
(EXCEPT TREMIE & MUD SLAB)
CLEAR COVER TO REINFORCING STEEL
GENERAL 70 +/- 20 MM
FOOTINGS 100 +/- 25 MM
REINFORCING STEEL
REINFORCING STEEL SHALL BE GRADE 40W UNLESS OTHERWISE NOTED.
TENSION LAP SPLICES FOR REINFORCING STEEL SHALL BE CLASS B.
BAR HOOKS SHALL HAVE STANDARD HOOK DIMENSIONS USING MINIMUM BEND DIAMETERS. ALL HOOKS SHALL BE IN ACCORDANCE WITH THE MTO STRUCTURAL STANDARD SS12-1, UNLESS OTHERWISE NOTED.
- GENERAL NOTES
1. THE CONTRACTOR SHALL ENSURE THAT NO DELETERIOUS MATERIALS RESULTING FROM CONSTRUCTION ENTERS THE WATERCOURSE.
 2. THE CONTRACTOR SHALL INSTALL SEDIMENT AND EROSION CONTROL MEASURES PRIOR TO COMMENCING CONSTRUCTION.

3. THE CONTRACTOR SHALL ENSURE UNHINDERED ACCESS TO PUBLIC PARKS AND PRIVATE PROPERTIES PROXIMATE TO THE WORK.
4. THE CONTRACTOR SHALL LOCATE AND PROTECT ALL UTILITIES, SERVICES, AND ROADWAYS FOR THE DURATION OF CONSTRUCTION.
5. ALL AREAS AFFECTED BY CONSTRUCTION ACTIVITIES SHALL BE FULLY REINSTATED TO PRE-CONSTRUCTION OR BETTER CONDITIONS TO THE SATISFACTION OF THE CONTRACT ADMINISTRATOR.
6. THESE DRAWINGS TO BE READ IN CONJUNCTION WITH ACROW MODULAR TRUSS DRAWINGS PROVIDED SEPARATELY.
7. BEFORE CONSTRUCTING ABUTMENTS AND PIER, CONTRACTOR SHALL ENSURE GEOMETRIC COMPATIBILITY WITH ACROW MODULAR TRUSS DRAWINGS.
8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE ASSEMBLY, LAUNCHING AND OVERALL CONSTRUCTION OF THE MODULAR TRUSS BRIDGE.
9. DIMENSIONS AND DETAILS OF EXISTING STRUCTURE ARE APPROXIMATE ONLY.
10. STABILITY AND INTEGRITY OF THE STRUCTURE SHALL BE MAINTAINED AT ALL STAGES OF CONSTRUCTION.
11. ALL EXPOSED CONCRETE EDGES EXCEPT FOOTINGS SHALL HAVE 20 MM X 20 MM CHAMFERS.

LIST OF APPLICABLE STANDARD DRAWINGS

- OPSD 206.010 GRANULAR COURSES UNDIVIDED RURAL
- OPSD 219.110 LIGHT DUTY SILT FENCE BARRIER
- OPSD 219.180 STRAW BALE FLOW CHECK DAM
- OPSD 902.01 STEEL BEAM GUIDE RAIL - RAIL DETAIL (ARCHIVED)
- OPSD 912.430 GUIDE RAIL SYSTEM STEEL, BEAM STRUCTURE CONNECTION
- OPSD 922.181 ENERGY ATTENUATOR, END TREATMENT STEEL BEAM ENERGY ATTENUATING TERMINAL SEQUENTIAL KINGKING TERMINAL SYSTEM WITH STEEL POSTS, INSTALLATION
- OPSD 3121.150 WALLS, RETAINING, BACKFILL MINIMUM GRANULAR REQUIREMENT
- OPSD 3190.100 WALLS RETAINING AND ABUTMENT WALL DRAIN
- OPSD 3419.100 BARRIERS AND RAILINGS - STEEL BEAM GUIDE RAIL AND CHANNEL ANCHORAGE



REVISIONS	NO.	DESCRIPTION
	1	ISSUED FOR TENDER APRIL 25 2024

DESIGN HK	CHK	CODE	DATE
DRAWN SR	CHK HK	SITE B41	FEB 2024
			DWG 1



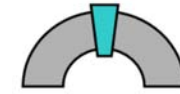
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AND/OR MILLIMETRES
UNLESS OTHERWISE SHOWN

**LANARK
COUNTY**

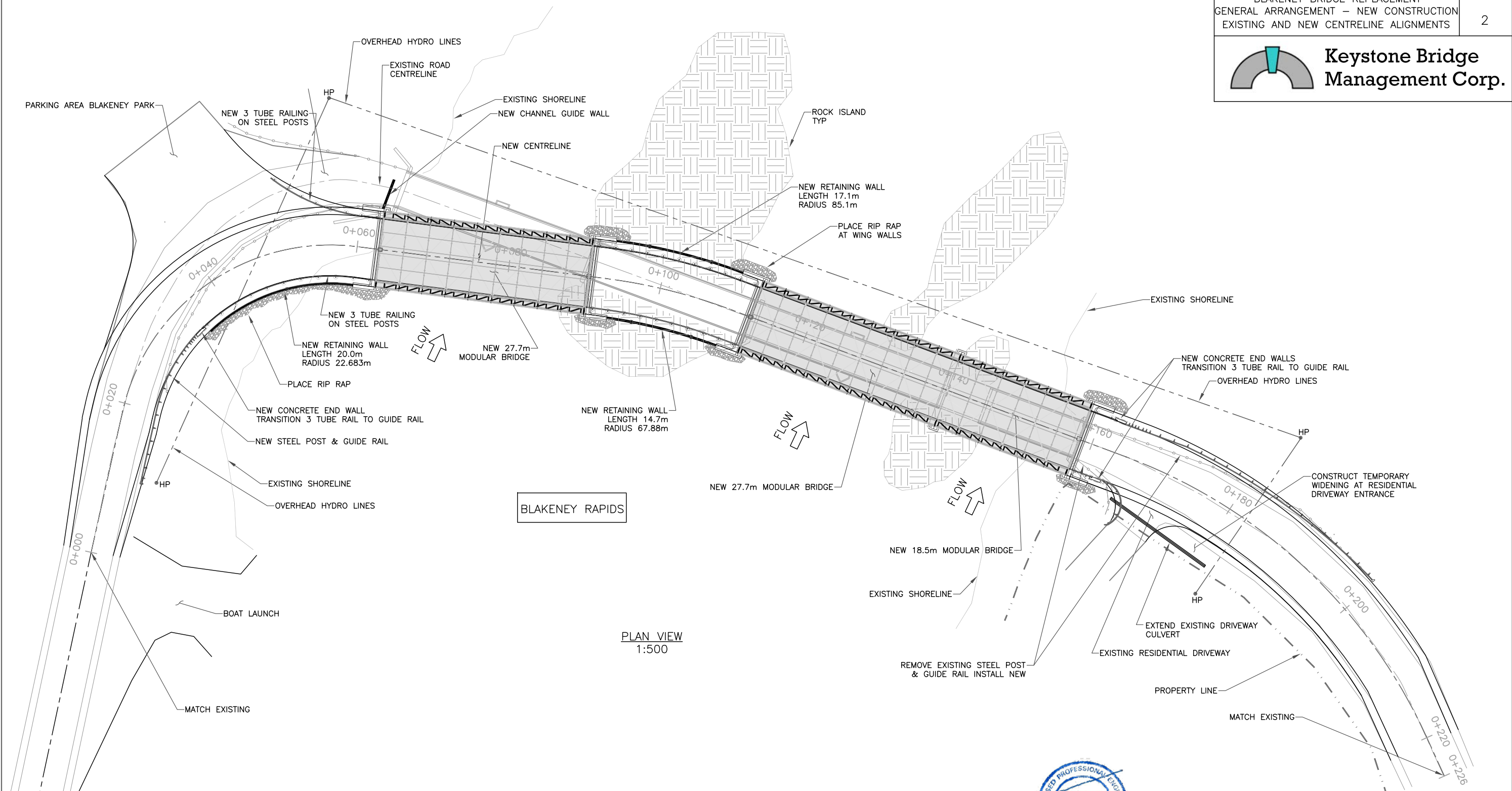
CONTRACT NO. PW-C-17-2024-24-EO

BLAKENEY BRIDGE REPLACEMENT
GENERAL ARRANGEMENT - NEW CONSTRUCTION
EXISTING AND NEW CENTRELINE ALIGNMENTS

2



**Keystone Bridge
Management Corp.**



PLAN VIEW
1:500



REVISIONS		DESCRIPTION
1	ISSUED FOR TENDER APRIL 25 2024	

DESIGN	CHK	CODE	DATE
HK	CHK	B41	FEB 2024
DRAWN	CHK	SITE	DWG
SR	HK	B41	2



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AND/OR MILLIMETRES
UNLESS OTHERWISE SHOWN

LANARK COUNTY

CONTRACT NO. PW-C-17-2024-24-EO

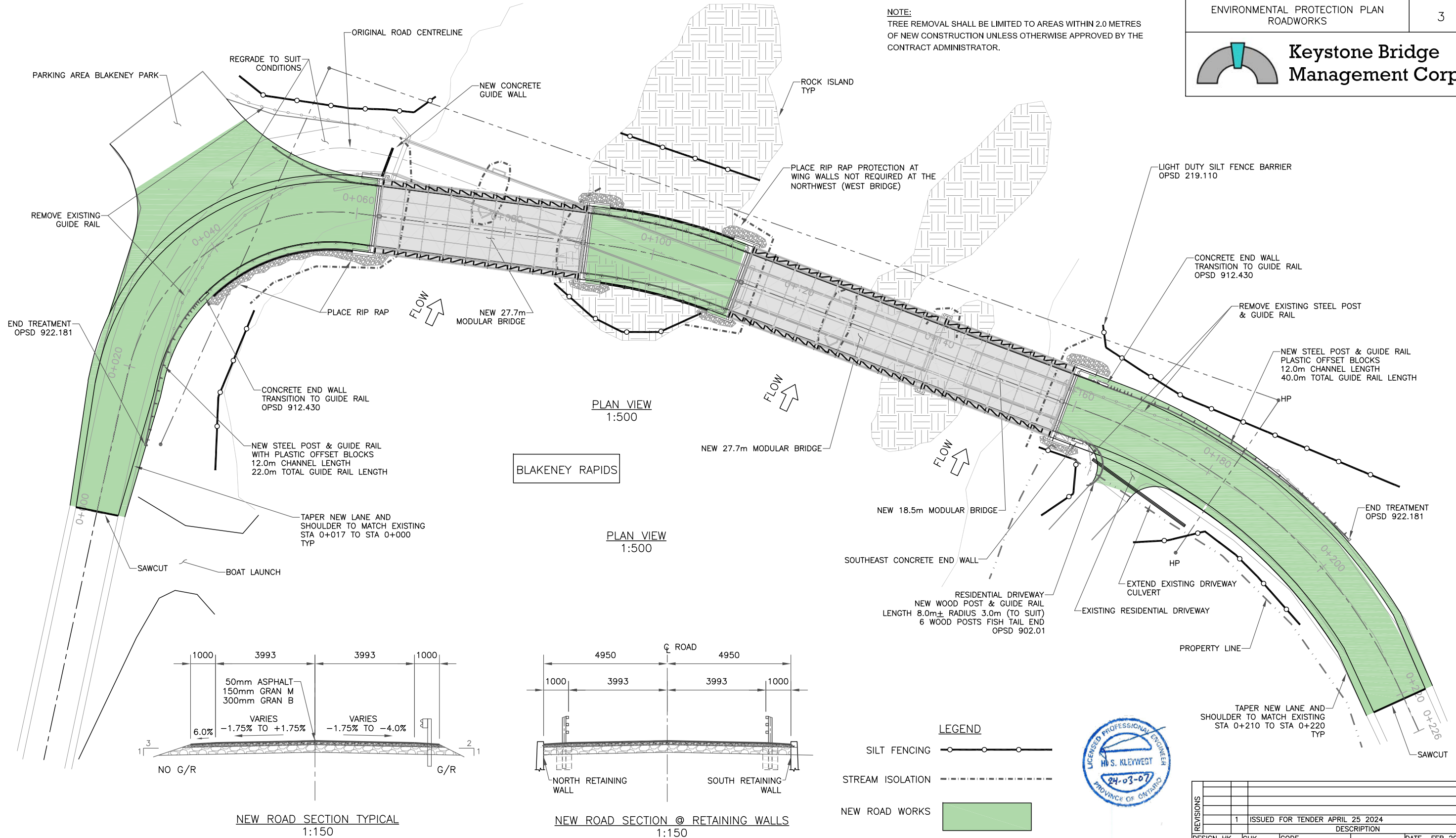
BLAKENEY BRIDGE REPLACEMENT
ENVIRONMENTAL PROTECTION PLAN
ROADWORKS

3



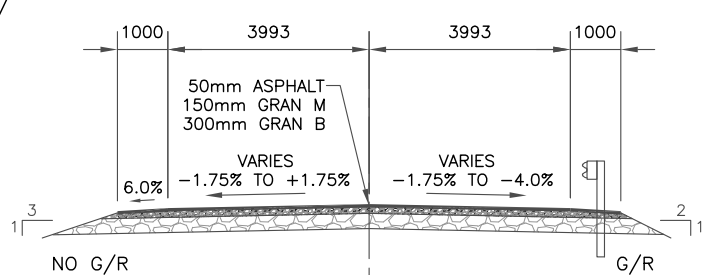
Keystone Bridge Management Corp.

NOTE:
TREE REMOVAL SHALL BE LIMITED TO AREAS WITHIN 2.0 METRES
OF NEW CONSTRUCTION UNLESS OTHERWISE APPROVED BY THE
CONTRACT ADMINISTRATOR.

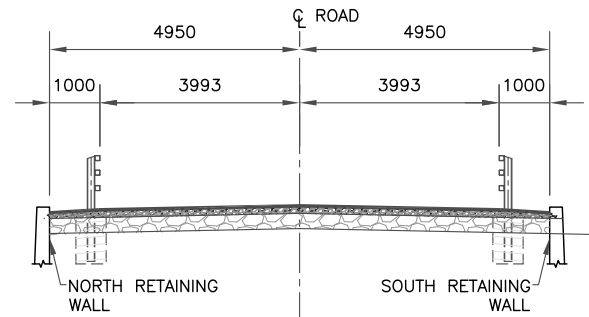


PLAN VIEW
1:500

PLAN VIEW
1:500



NEW ROAD SECTION TYPICAL
1:150



NEW ROAD SECTION @ RETAINING WALLS
1:150

- LEGEND**
- SILT FENCING
 - STREAM ISOLATION
 - NEW ROAD WORKS



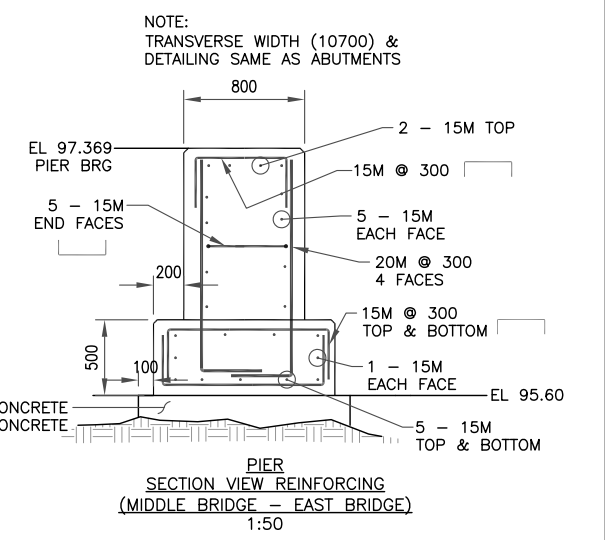
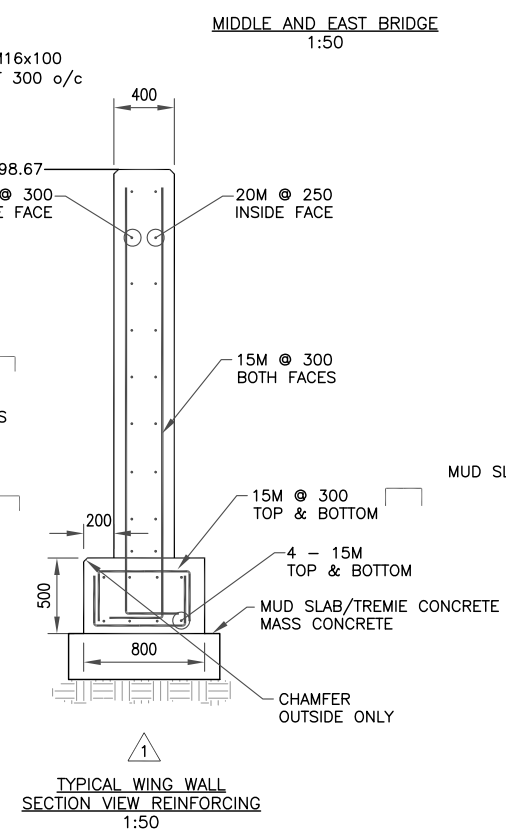
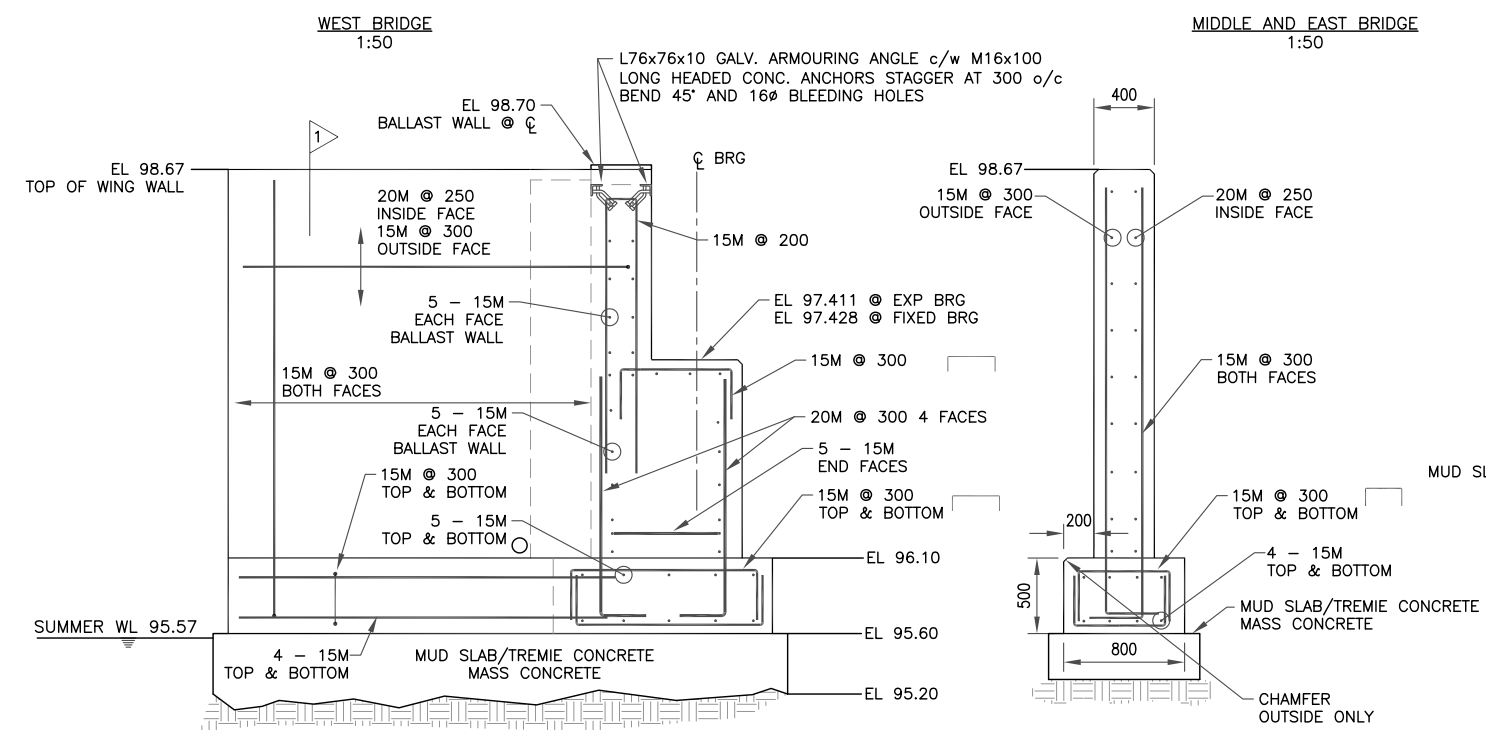
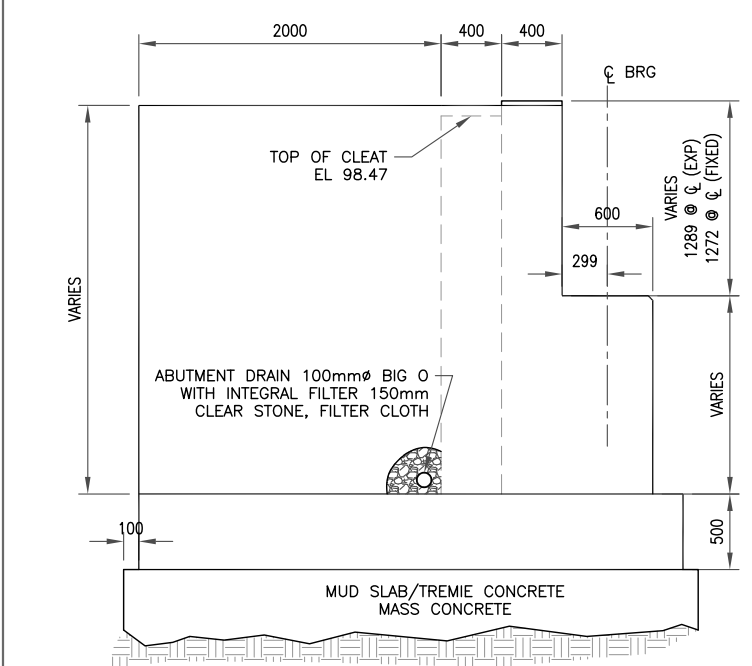
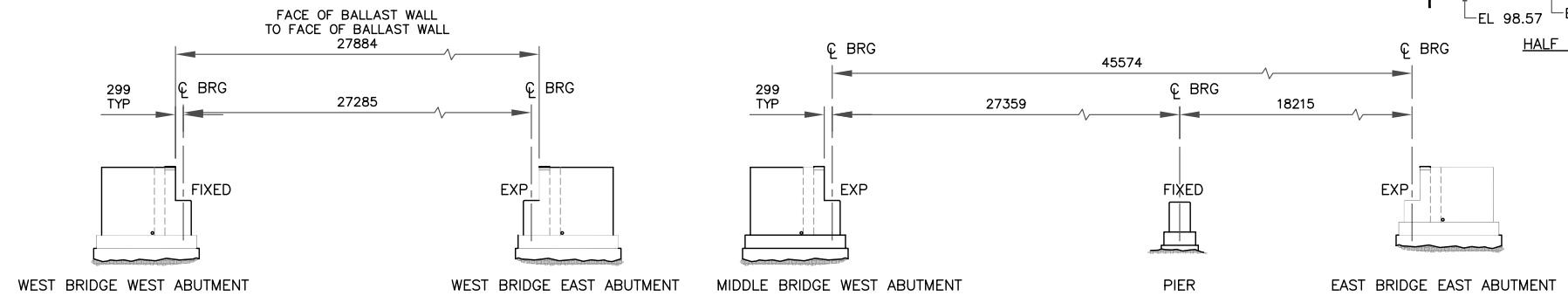
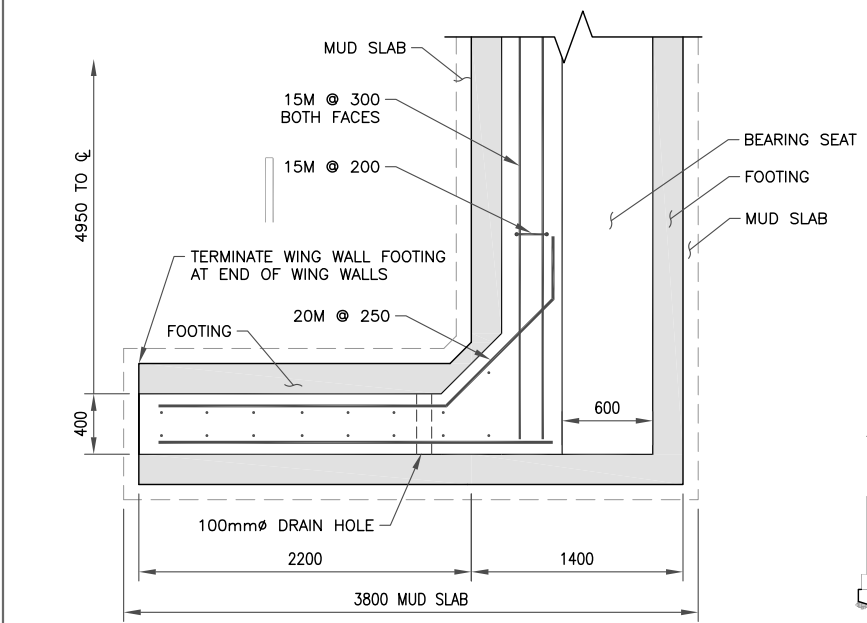
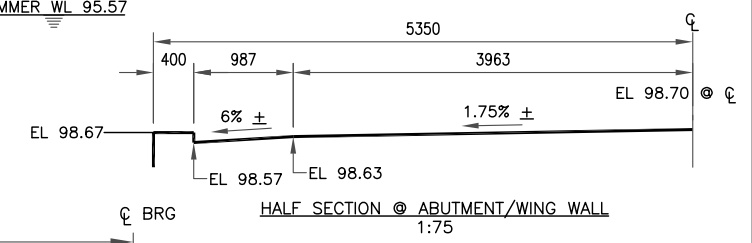
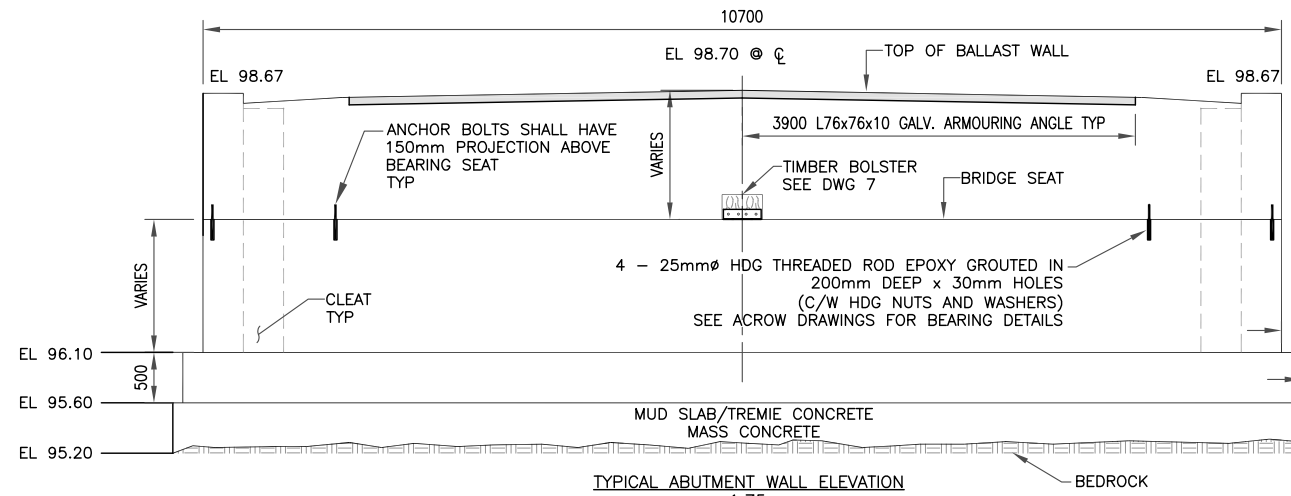
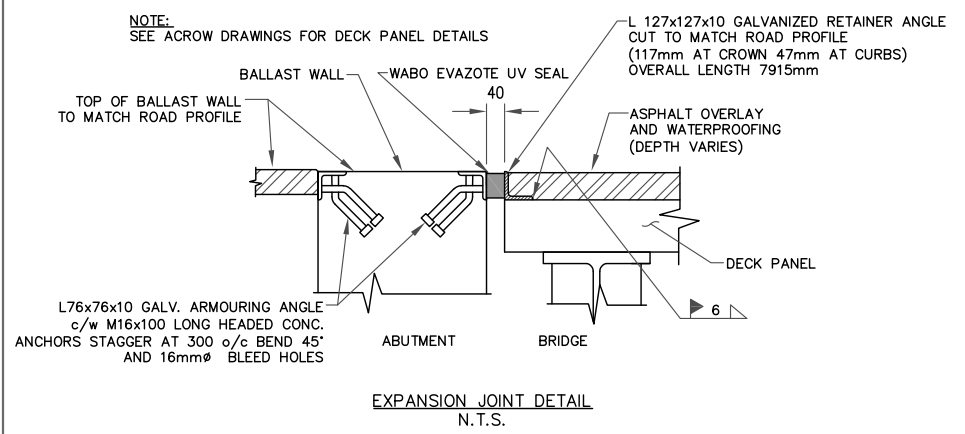
REVISIONS	NO.	DESCRIPTION	DATE
	1	ISSUED FOR TENDER APRIL 25 2024	FEB 2024

DESIGN HK	CHK	CODE	DATE
DRAWN SR	CHK HK	SITE B41	DWG 3

BRIDGE BEARING ELEVATION TABLE

COMPONENT	BASE ELEVATION	BRIDGE SEAT	BEARING TYPE
WEST BRIDGE WEST ABUTMENT	95.60	97.428	FIXED
WEST BRIDGE EAST ABUTMENT	95.60	97.411	EXPANSION
MIDDLE BRIDGE WEST ABUTMENT	95.60	97.411	EXPANSION
COMMON PIER	95.60	97.369	FIXED
EAST BRIDGE EAST ABUTMENT	96.10	97.411	EXPANSION

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REVISIONS	DESCRIPTION	DATE
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DESIGN HK CHK CODE CHBDC-14 DATE FEB 2024
DRAWN SR CHK HK SITE B41 DWG 4

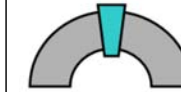
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CONTRACT NO. PW-C-17-2024-24-EO

BLAKENEY BRIDGE REPLACEMENT
RETAINING WALL DETAILS
CONCRETE LEVELING PAD DETAIL
RAILING END WALL DETAILS

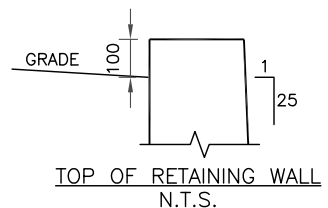
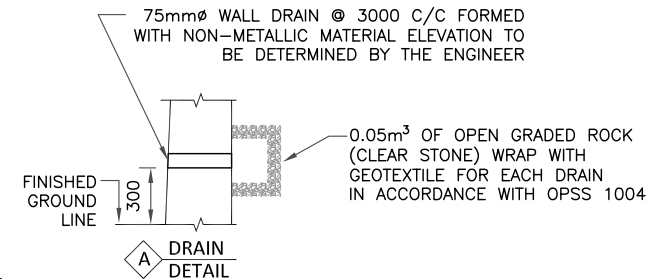
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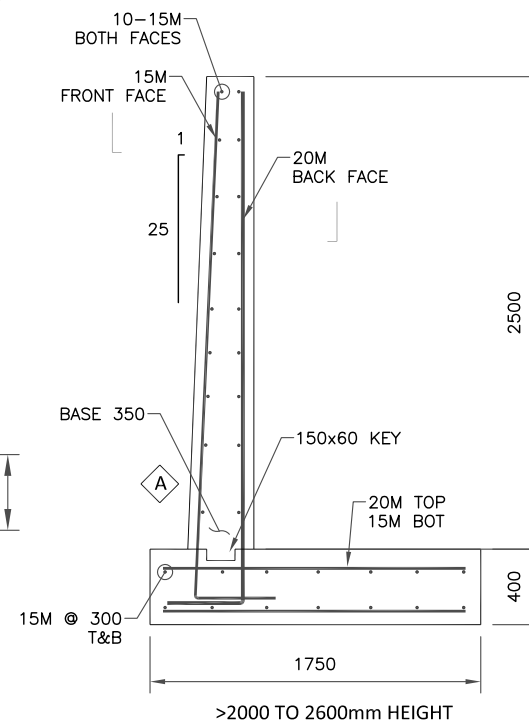
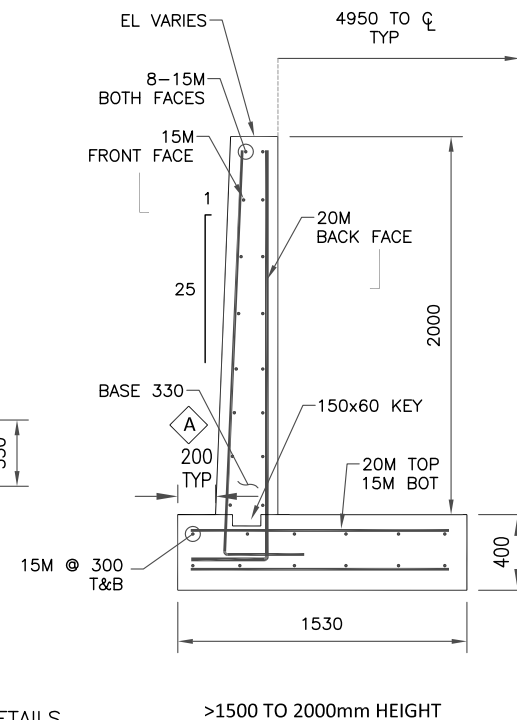
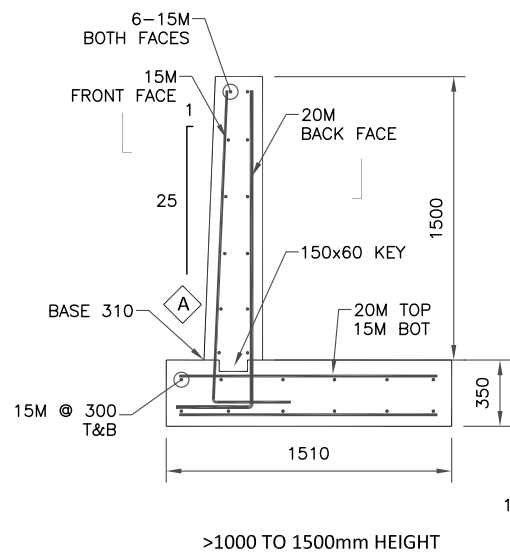
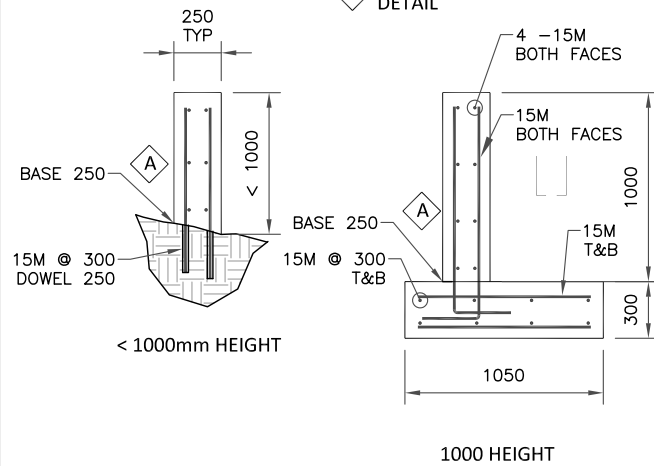
Keystone Bridge
Management Corp.

RETAINING WALL NOTES

- NOTES:
- CLASS OF CONCRETE 35MPa.
 - CLEAR COVER TO REINFORCING STEEL:
BOTTOM OF FOOTING OVER ROCK 100 +/- 25
BOTTOM OF FOOTING OVER CONCRETE LEVELING SLAB 70 +/- 25
REMAINDER 70 +/- 20 UNLESS OTHERWISE SPECIFIED
 - REINFORCING STEEL SHALL BE BLACK - GRADE 400W.
 - MAXIMUM REBAR SPACING 300mm EACH WAY. ADJUST SPACING TO SUIT.
 - TRIM VERTICAL BARS TO SUIT.
 - LAP HORIZONTAL BARS 300.
 - CURVATURE OF WALLS TO BE OBTAINED BY CHORDING THE CURVE AT MAXIMUM 2.4m INTERVALS. CHORDS SHALL HAVE A UNIFORM LENGTH THROUGHOUT.
 - FOOTINGS SHALL BE CONSTRUCTED ON COMPETENT ROCK OR LEVELING SLAB MASS CONCRETE PLACED ON COMPETENT ROCK.
 - STEP FOOTINGS AND VARY RETAINING WALL HEIGHTS TO SUIT COMPETENT ROCK ELEVATION.
 - INSTALL ROCK DOWELS INTO SLOPING ROCK AS INDICATED IN TABLE THIS DRAWING.
 - INSTALL 12mm FIBRE BOARD BOND BREAKER ON VERTICAL FACES BETWEEN ENDS OF ABUTMENT WING WALLS AND RETAINING WALLS.
 - SET WALL DRAIN ELEVATIONS AS RESTING ON TOP OF FOOTINGS.
 - ADJUST WALL BASE THICKNESS TO SUIT ACTUAL WALL HEIGHT. TOP OF WALL IS UNIFORM THICKNESS OF 250.



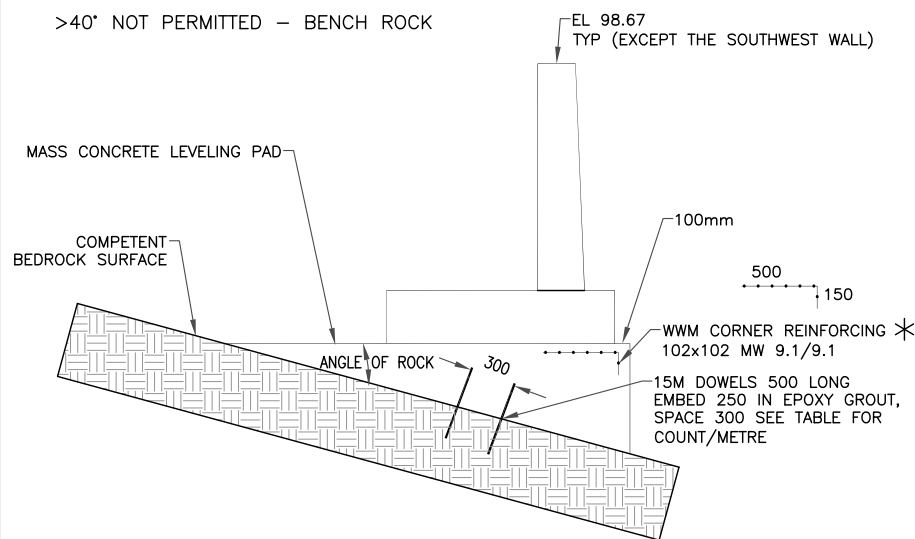
NOTE:
BACKFILLING OF RETAINING WALLS REFER TO
OPSD 3121.150



ROCK DOWELS INSTALLATION TABLE

ROCK ANGLE	H (HEIGHT)			
	2.5	2.0	1.5	1.0
0-5°	0	0	0	0
5-10°	1	1	1	1
10-20°	2	1	1	1
20-30°	3	2	1	1
30-40°	3	3	2	1

>40° NOT PERMITTED - BENCH ROCK

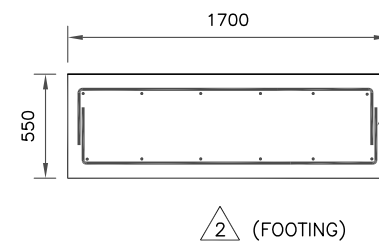


* ONLY WHERE FACE OF MASS CONCRETE > 250

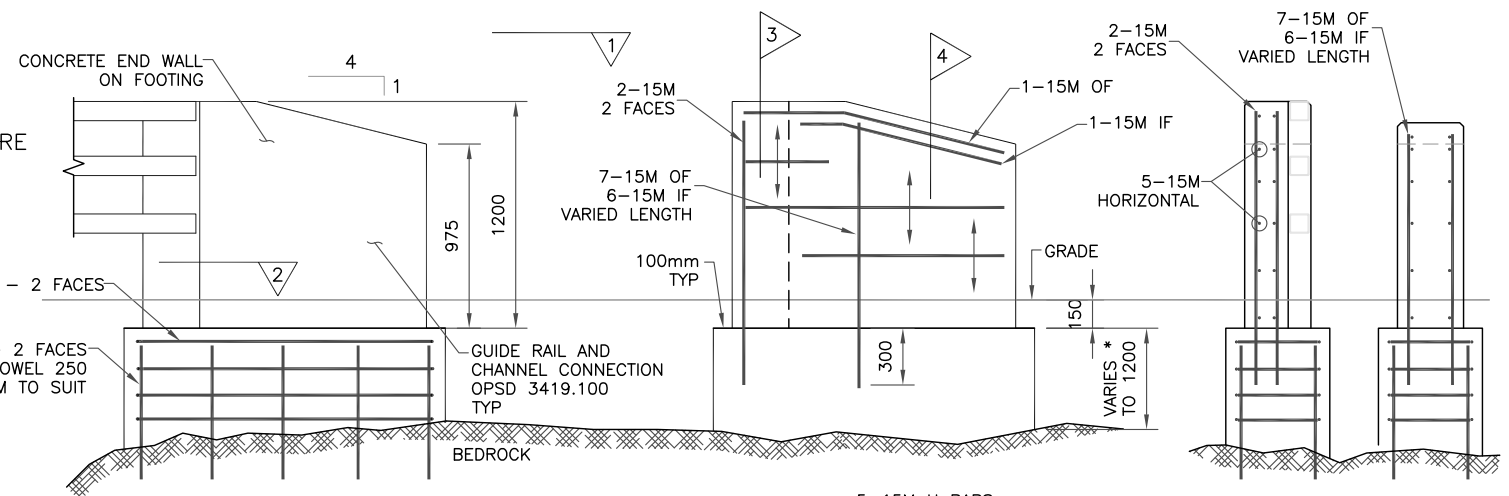
MASS CONCRETE LEVELING PAD DETAIL
1:50

RETAINING WALL DETAILS
1:50

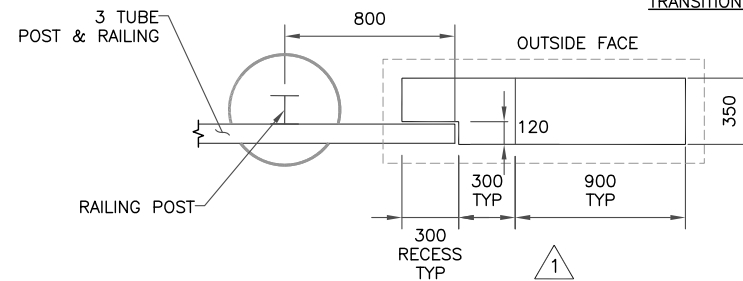
NOTE:
ORIENT WALLS TO SUIT ROAD CURVATURE



(2) (FOOTING)



ELEVATION CONCRETE END WALL ON FOOTING
TRANSITION 3 TUBE RAILING TO GUIDE RAIL
1:40



END WALL DETAILS
1:40

* IN ABSENCE OF ROCK
DEPTH = 1200mm



REVISIONS	NO.	DESCRIPTION
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DESIGN HK	CHK	CODE CHBDC-14	DATE FEB 2024
DRAWN SR	CHK HK	SITE B41	DWG 5

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**LANARK
COUNTY**

CONTRACT NO. PW-C-17-2024-24-EO

BLAKENEY BRIDGE REPLACEMENT
SOUTHWEST & NORTHWEST
RETAINING WALL DETAILS
RETAINING WALL SPILLWAY DETAIL

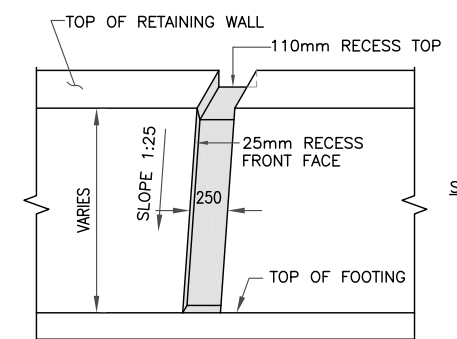
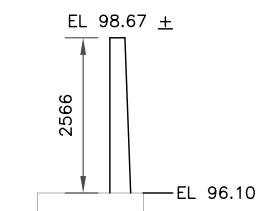
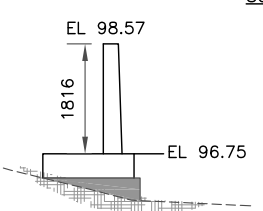
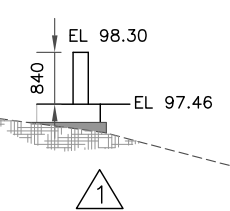
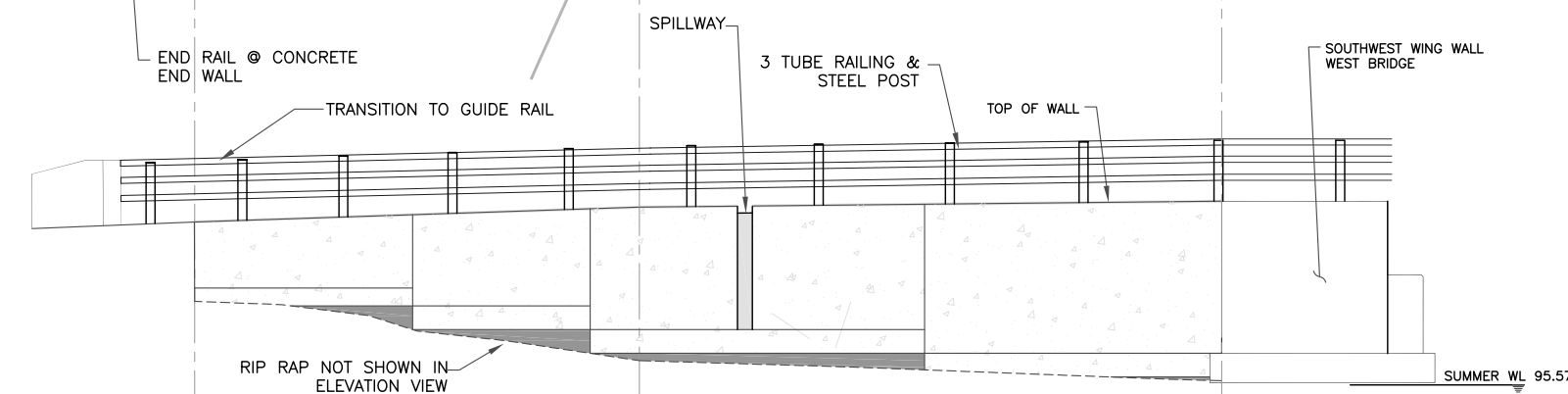
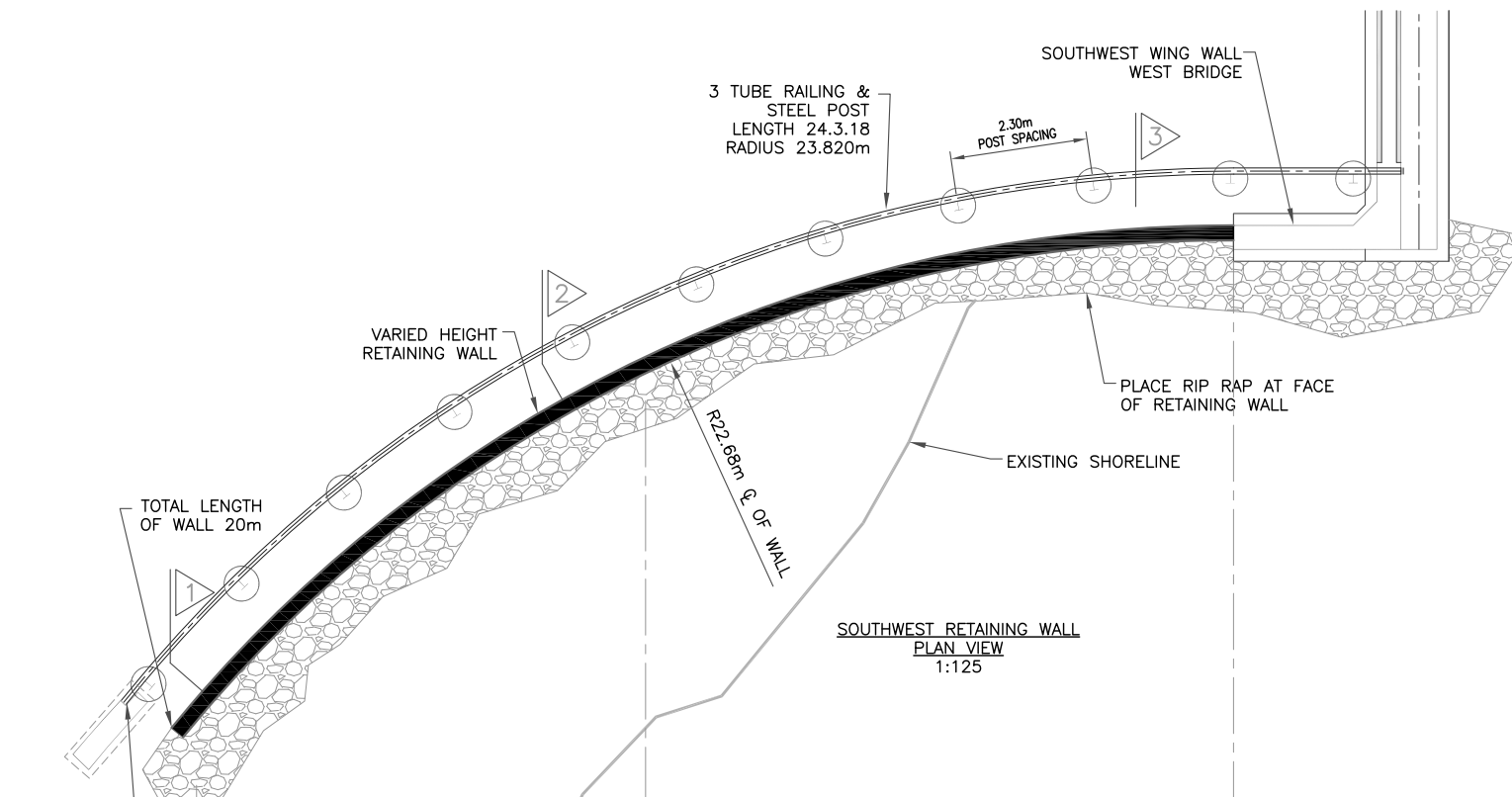
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Management Corp.**

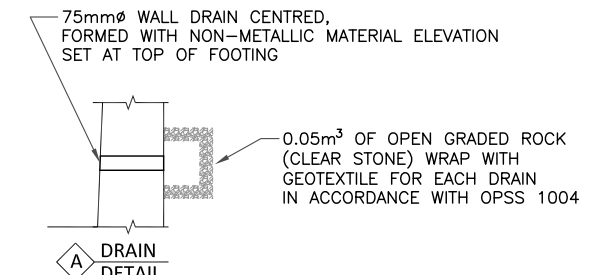
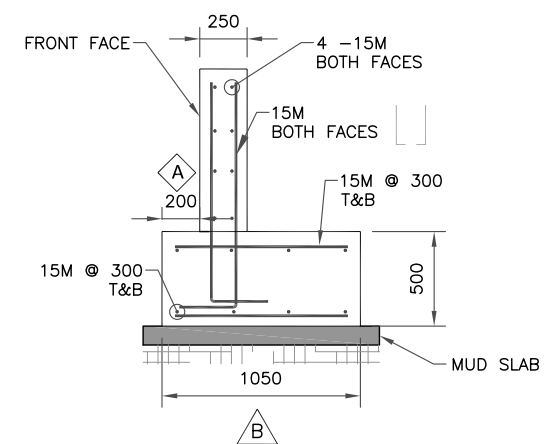
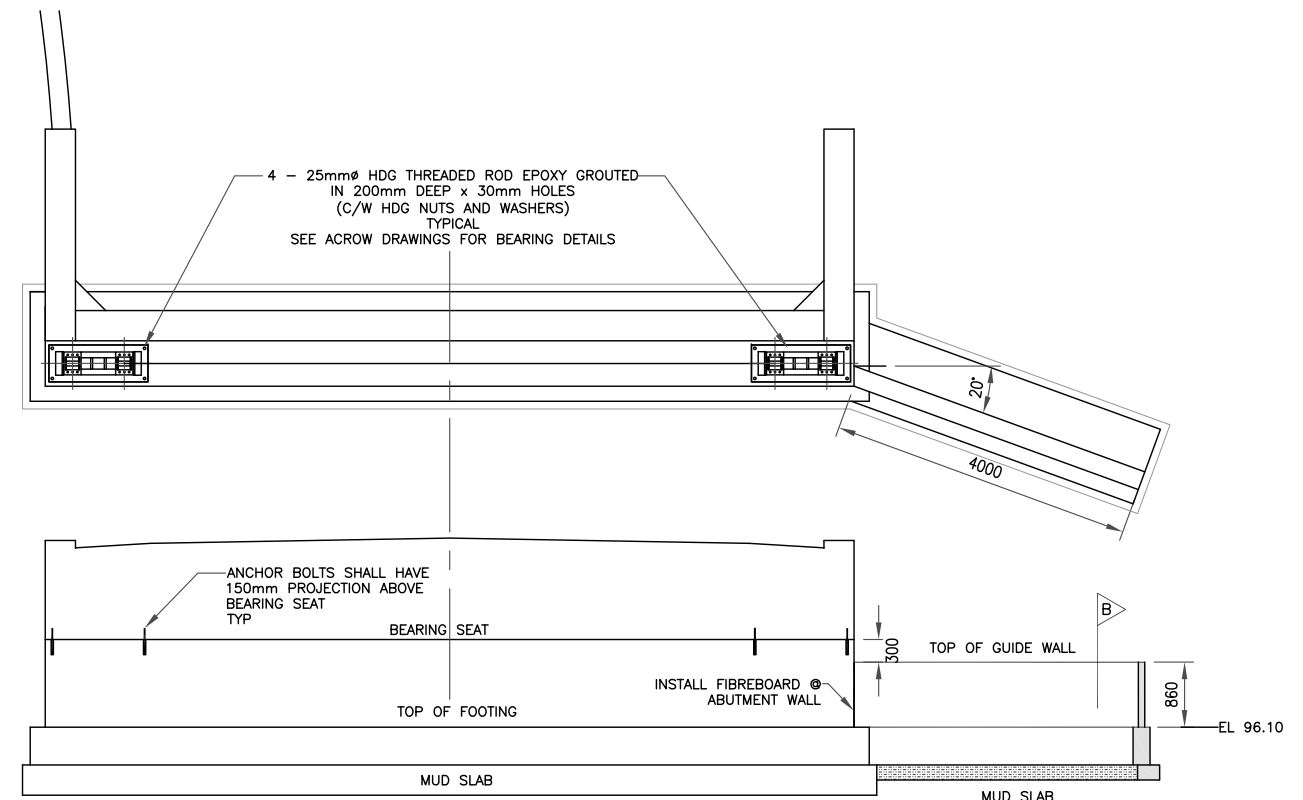
NOTES FOR SW & NW RETAINING WALLS

1. SEE DWG 5 FOR RETAINING WALL DESIGN DETAILS.
2. RETAINING WALL STEP LOCATIONS ARE APPROXIMATE ONLY. CONTRACTOR SHALL DETERMINE MOST SUITABLE STEP LOCATIONS.



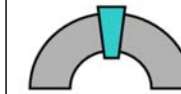
RETAINING WALL CURB
SPILLWAY DETAIL
1:50

- SPILLWAY NOTES:**
1. TRIM ADJUST REBAR TO SUIT
 2. MINIMUM REBAR COVER 50mm
 3. SEE DRAWING 6 & 7 FOR LOCATIONS



REVISIONS	DESCRIPTION	DATE
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DESIGN HK	CHK	CODE CHBDC-14	DATE FEB 2024
DRAWN SR	CHK HK	SITE B41	DWG 6

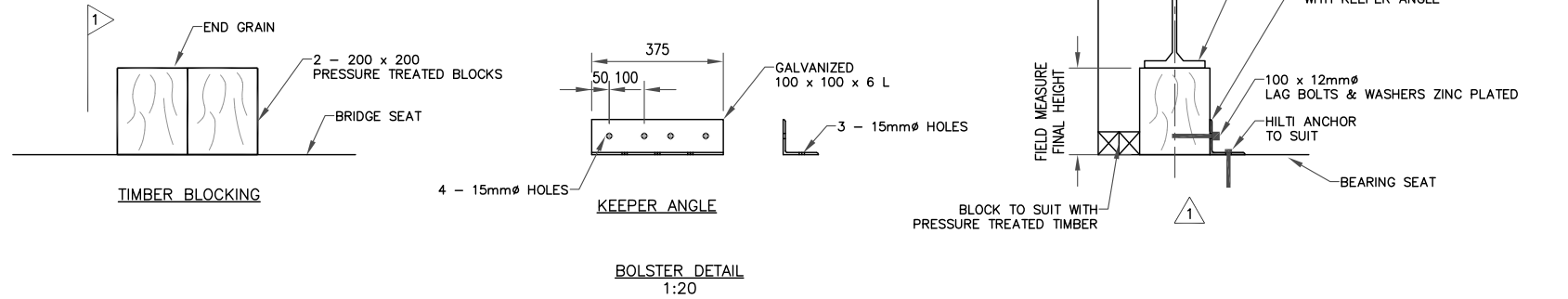


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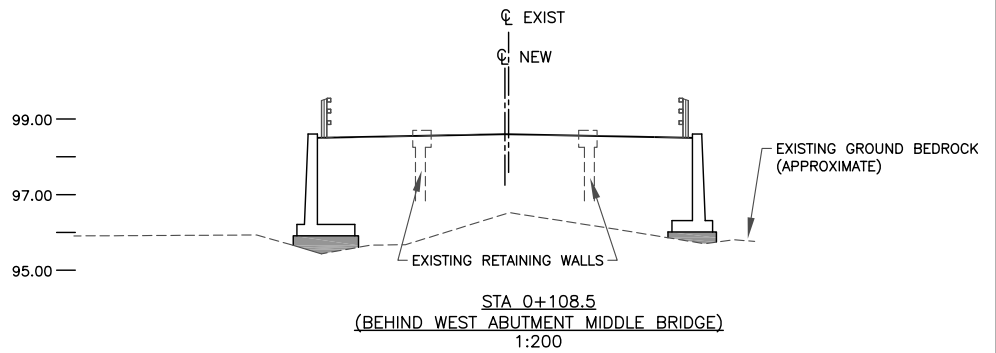
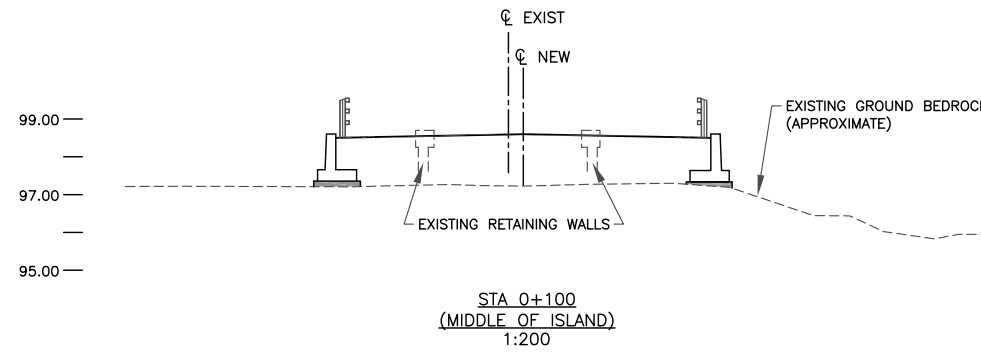
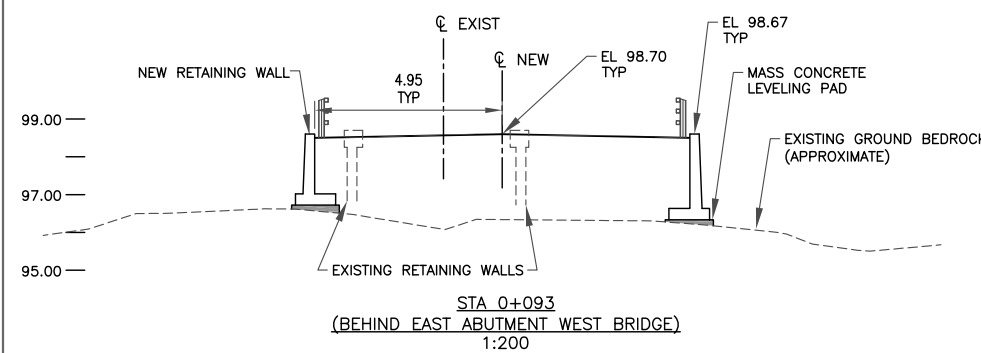
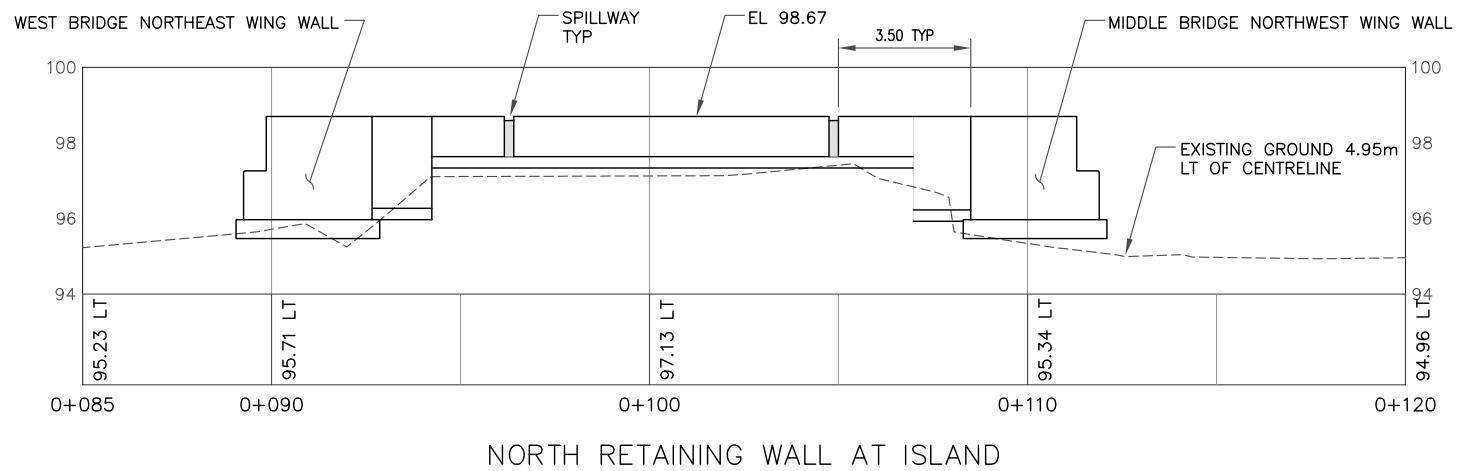
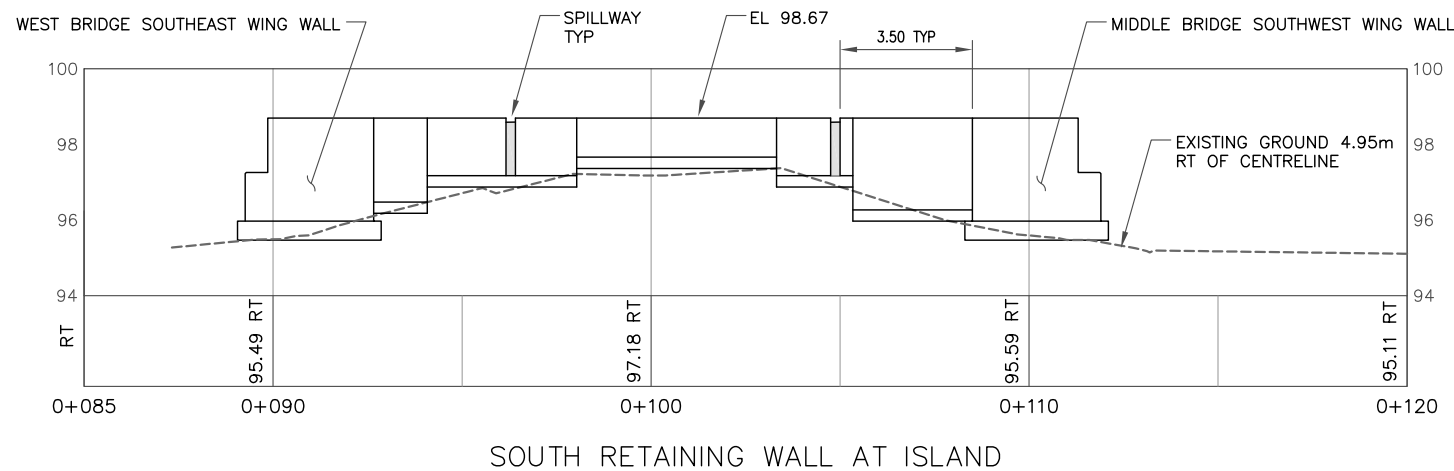
BOLSTER NOTES:

1. INSTALL BOLSTERS AFTER BRIDGE DECK HAS BEEN PAVED AND BEFORE TRAFFIC ALLOWED
2. CUT TIMBER BLOCKS TO ACHIEVE SNUG FIT
3. CENTRE BLOCKS UNDER TRANSOM
4. APPLY 2 COATS OF END CUT SURFACE TREATMENT TO CUT SURFACES
5. INSTALL CEDAR WEDGES AS NEEDED AND SECURE IN PLACE



NOTES FOR BIG ISLAND RETAINING WALLS

1. SEE DWG 4 FOR RETAINING WALL DESIGN DETAILS.
2. RETAINING WALL STEP LOCATIONS ARE APPROXIMATE ONLY. CONTRACTOR SHALL DETERMINE MOST SUITABLE STEP LOCATIONS.

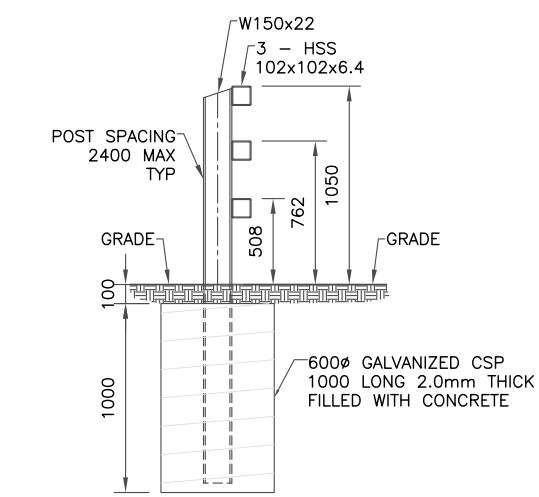


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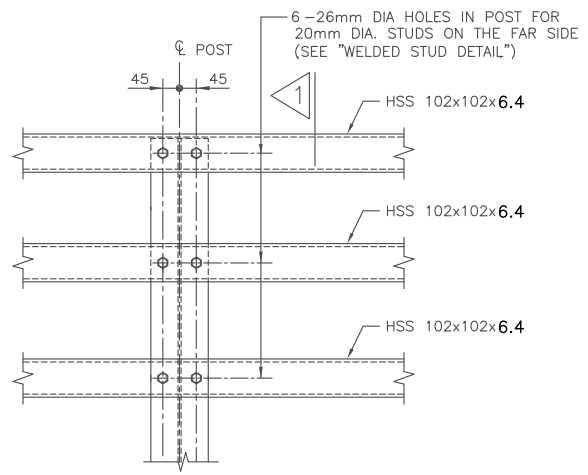
DESIGN HK	CHK	CODE	DATE
DRAWN SR	CHK HK	SITE B41	DWG 7



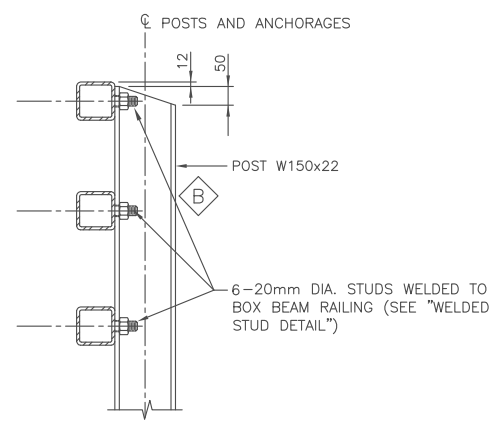
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AND/OR MILLIMETRES
UNLESS OTHERWISE SHOWN



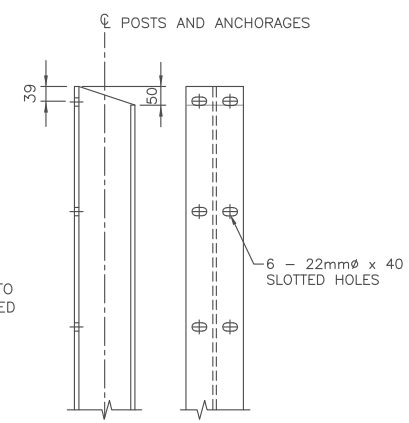
TYPICAL RAILING POST DETAIL
1:40



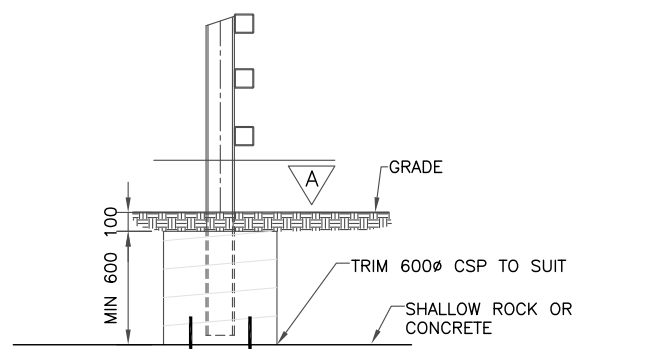
RAIL POST ELEVATION
(INSIDE FACE SHOWN)
N.T.S.



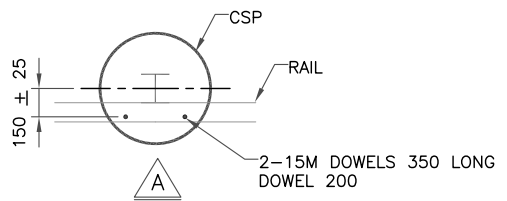
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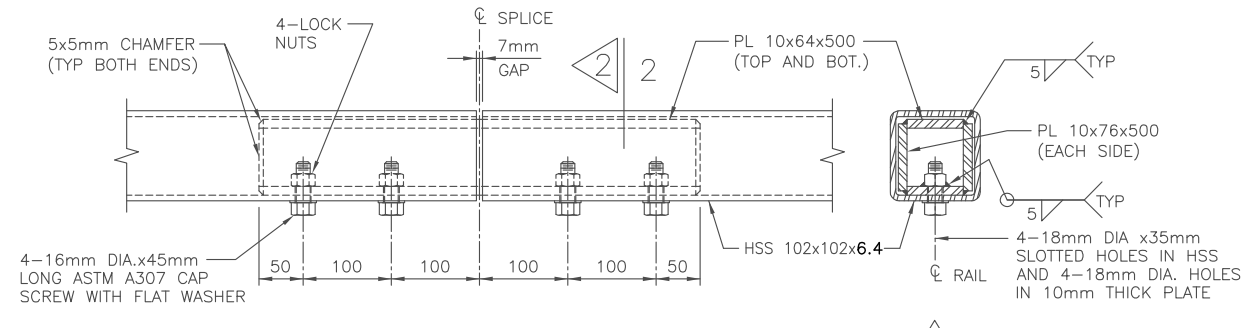
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RAILING POST FOUNDATION FOR
SHALLOW CONDITION
1:40

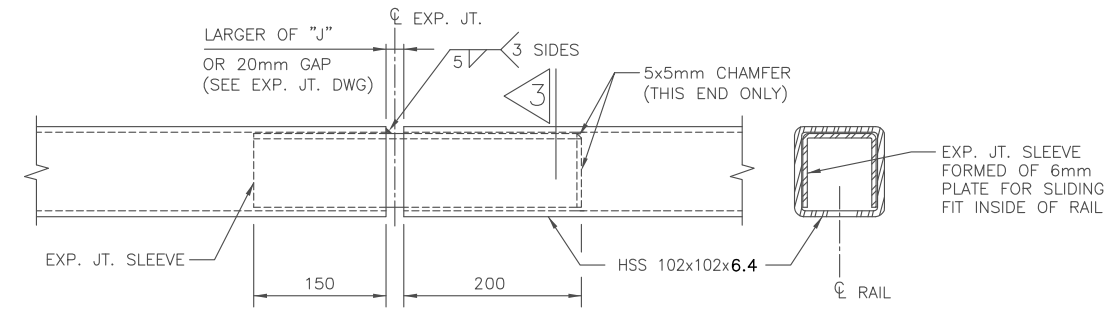


A



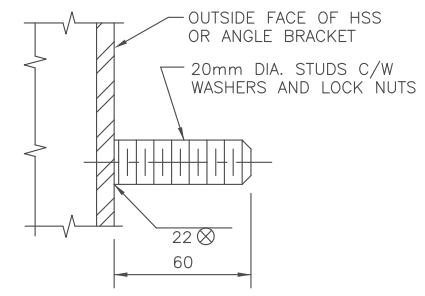
RAIL SPLICE DETAIL
(HSS 102x102x6.4)
N.T.S.

2

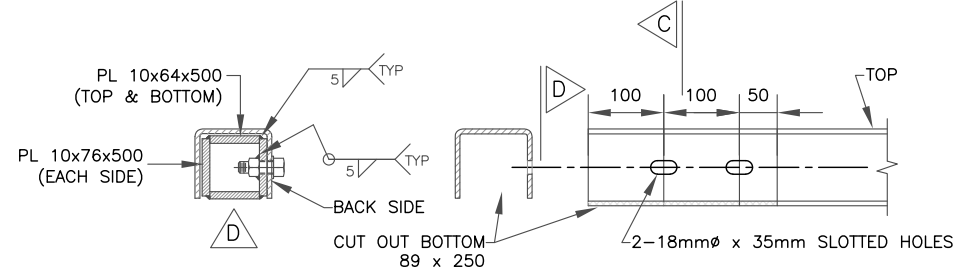


CONNECTION DETAIL AT EXP. JT.
(HSS 102x102x6.4)
N.T.S.

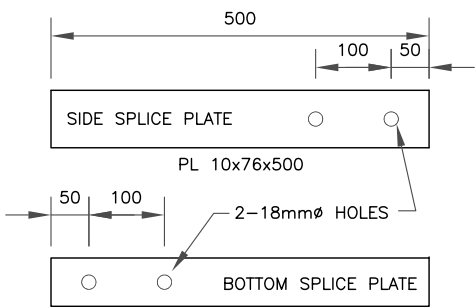
3



WELDED STUD DETAIL
FULL-THREAD WELDED STUD
N.T.S.



RAIL CLOSURE DETAIL
N.T.S.



SPlice SIDE CLOSURE SIDE

NOTES:

- RAIL ELEMENTS SHALL BE HOLLOW STRUCTURAL SECTIONS GRADE 350WT, CLASS C, RAIL ELEMENT SHALL MEET THE LONGITUDINAL CHARPY V-NOTCH IMPACT TEST REQUIREMENTS OF 27 JOULES AT TEMPERATURE OF -32°C. (ASTM A500 GRADE B OR C STEEL MAY BE SUBSTITUTED FOR GRADE 350WT PROVIDED THAT THE CHARPY V-NOTCH IMPACT TEST REQUIREMENTS ARE VERIFIED BY THE SUBMISSION OF TEST DOCUMENTATION.
- POSTS AND PLATES SHALL BE GRADE 350WT.
- THE NOTCH TOUGHNESS REQUIREMENTS FOR POSTS AND PLATES SHALL BE THE SAME AS THOSE SPECIFIED IN NOTE 1.
- ANCHOR STUDS, WASHERS AND NUTS SHALL CONFORM TO ASTM A449.
- FULL THREAD STUDS, WASHERS AND NUTS FOR FASTENING GUIDE RAILS TO POSTS SHALL CONFORM TO ASTM A108.
- RAILS SHALL BE SUPPLIED IN LENGTHS TO BE ATTACHED TO A MINIMUM OF THREE (3) POSTS EXCEPT WHEN THE WING WALL LENGTH OF A BRIDGE WITH EXPANSION JOINTS DOES NOT PERMIT. IN THIS CASE, THE RAIL LENGTH SHALL BE ATTACHED TO TWO (2) POSTS.
- GALVANIZING ON MATING SURFACES OF RAILS TO UNIFORM THICKNESS NOT EXCEEDING 0.15mm TO ENSURE SLIDING FIT.
- RAILS, POSTS, RAIL SPLICES AND END CAPS SHALL BE HOT-DIPPED GALVANIZED AFTER FABRICATION.
- BOLTS, ANCHOR STUDS, PLATES, WASHERS AND NUTS SHALL BE HOT-DIPPED GALVANIZED. LOCK NUTS SHALL BE ZINC PLATED ACCORDING TO ASTM-B695.
- RAILS SHALL BE PREBENT TO FOLLOW ROAD CURVATURE. WHERE RADIUS IS LESS THAN 150 METRES.
- RAIL POSTS SHALL BE SET PERPENDICULAR TO GRADE.
- RAILS MAY BE CUT AS REQUIRED IN THE FIELD, CUT TO BE SURFACE TREATED WITH A ZINC TOUCH-UP SOLDER, GALVAGUARD OR AN APPROVED EQUIVALENT.
- WHEN CONNECTING TO EXISTING RAILING, RAILS MUST BE MADE CONTINUOUS AND POST SPACINGS TO BE DETERMINED WITH REFERENCE TO EXISTING POSTS.
- BOLTS IN RAIL SPLICES SHALL BE TIGHTENED TO A CONDITION THAT WILL ALLOW FOR RAIL MOVEMENT.
- REFER TO ACROW SHOP DRAWING DETAILS FOR CONNECTION TO PANEL BRIDGE.



REVISIONS	DESCRIPTION
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DESIGN HK	CHK	CODE CHBDC-14	DATE FEB 2024
DRAWN SR	CHK HK	SITE B41	DWG 8

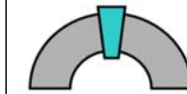
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DIMENSIONS ARE IN METRES
AND/OR MILLIMETRES
UNLESS OTHERWISE SHOWN

**LANARK
COUNTY**

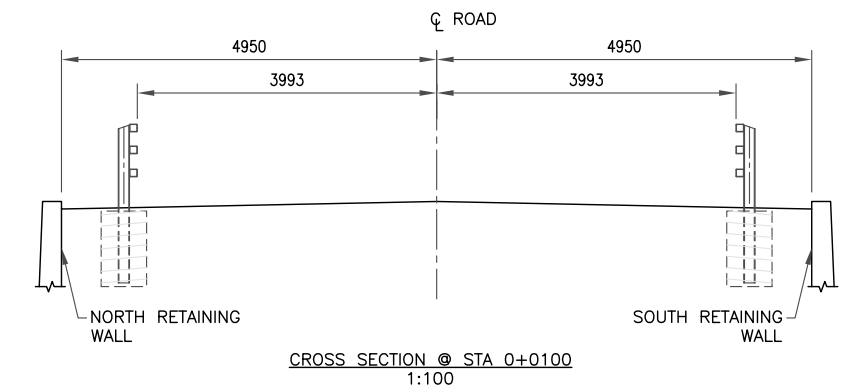
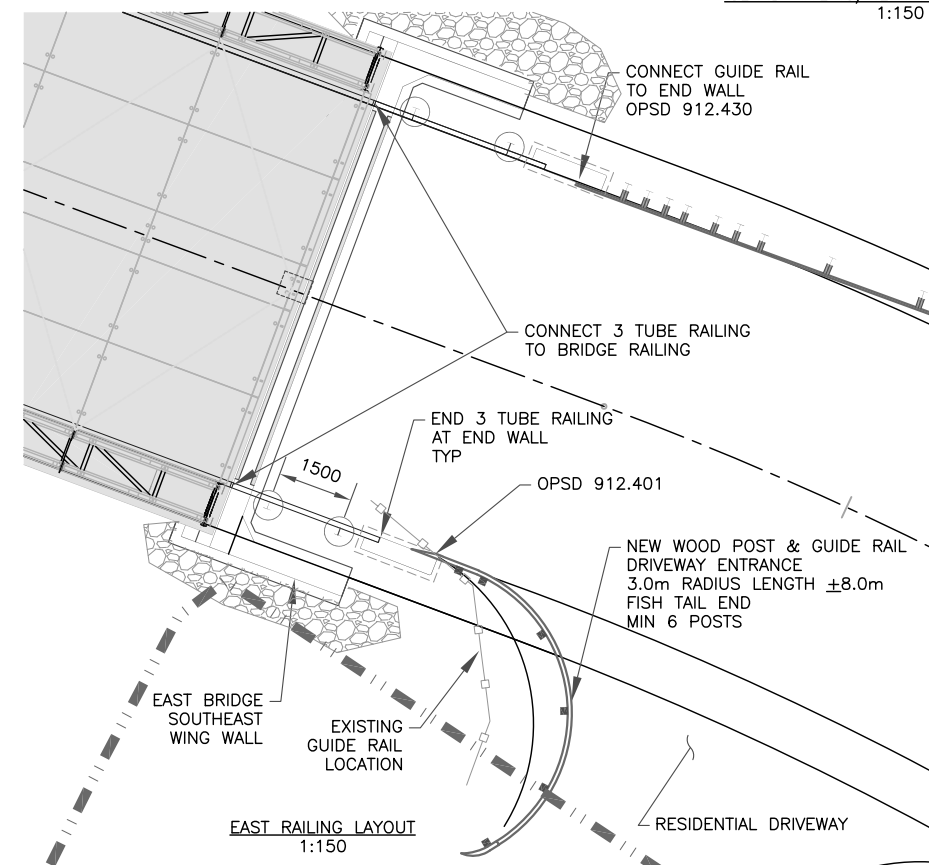
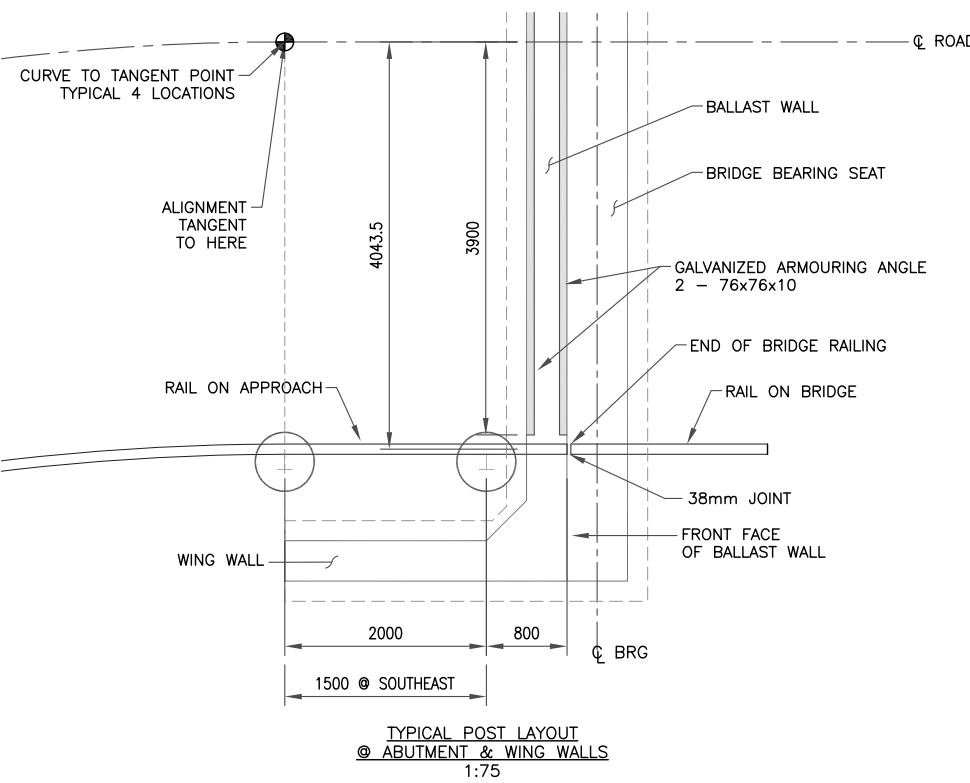
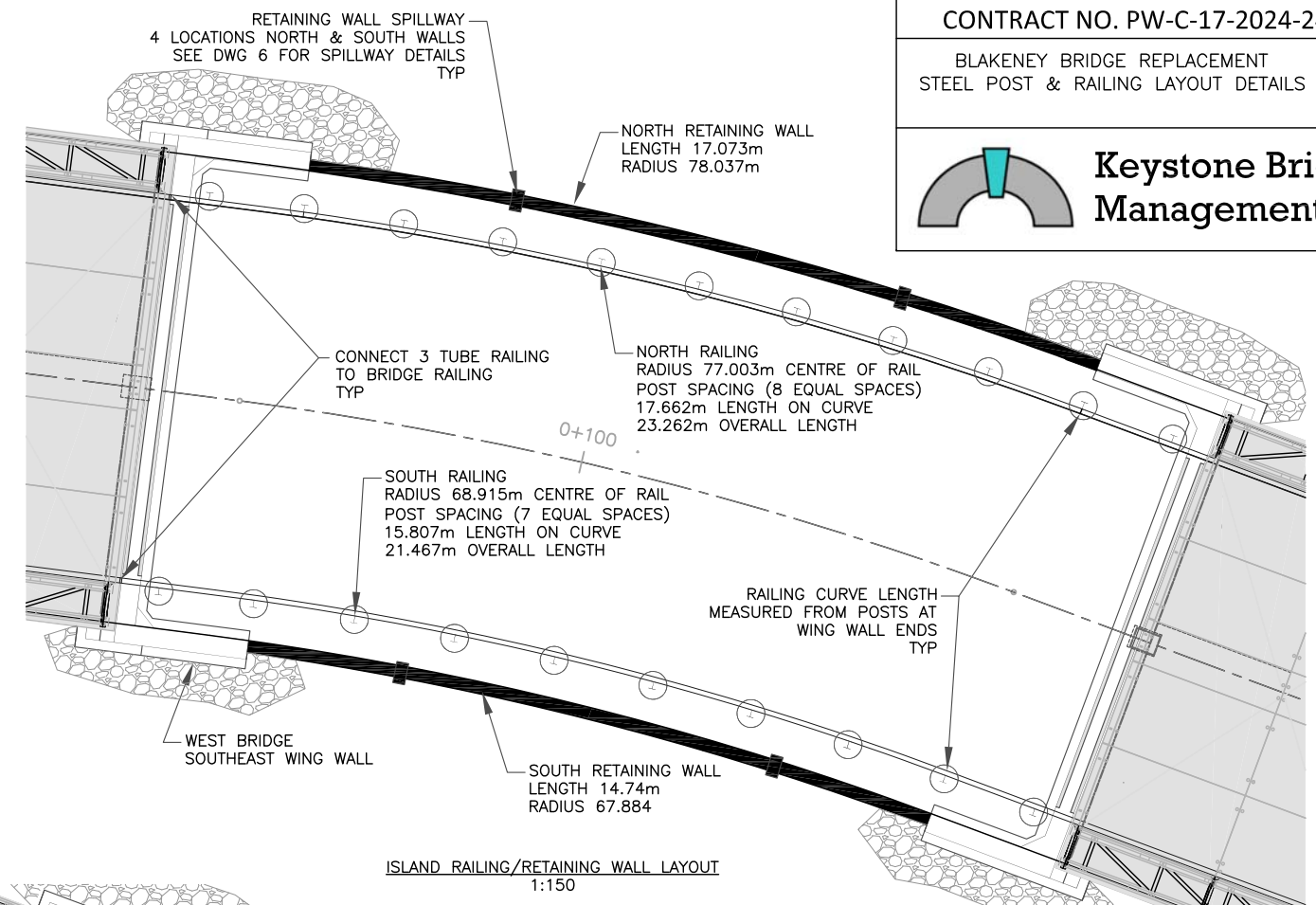
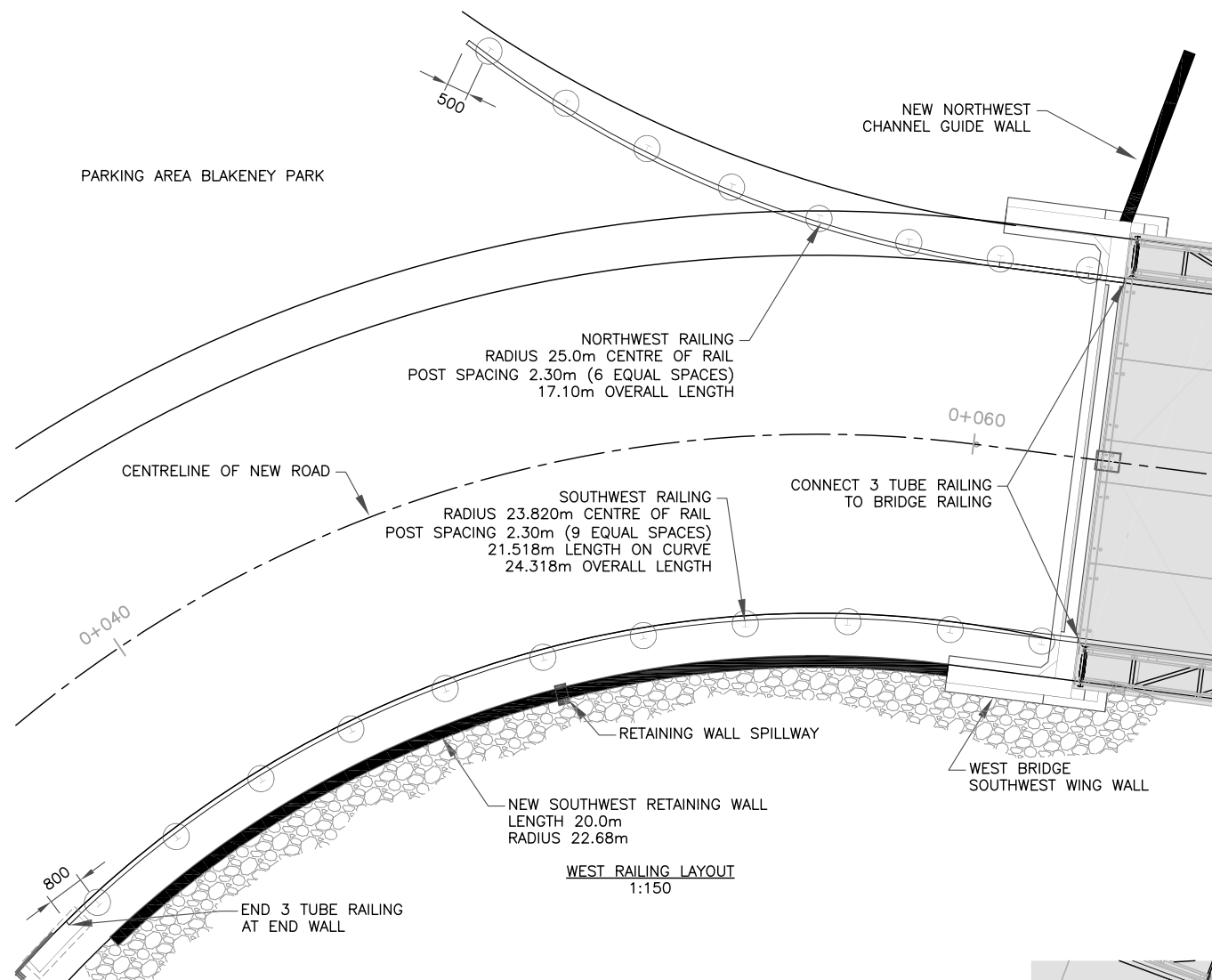
CONTRACT NO. PW-C-17-2024-24-EO

BLAKENEY BRIDGE REPLACEMENT
STEEL POST & RAILING LAYOUT DETAILS

9



**Keystone Bridge
Management Corp.**



REVISIONS	DESCRIPTION	DATE
1	ISSUED FOR TENDER APRIL 25 2024	FEB 2024

DESIGN	CHK	CODE	DATE
HK	HK	B41	FEB 2024
DRAWN	SR		DWG 9



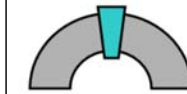
METRIC
DIMENSIONS ARE IN METRES
AND/OR MILLIMETRES
UNLESS OTHERWISE SHOWN

**LANARK
COUNTY**

CONTRACT NO. PW-C-17-2024-24-EO

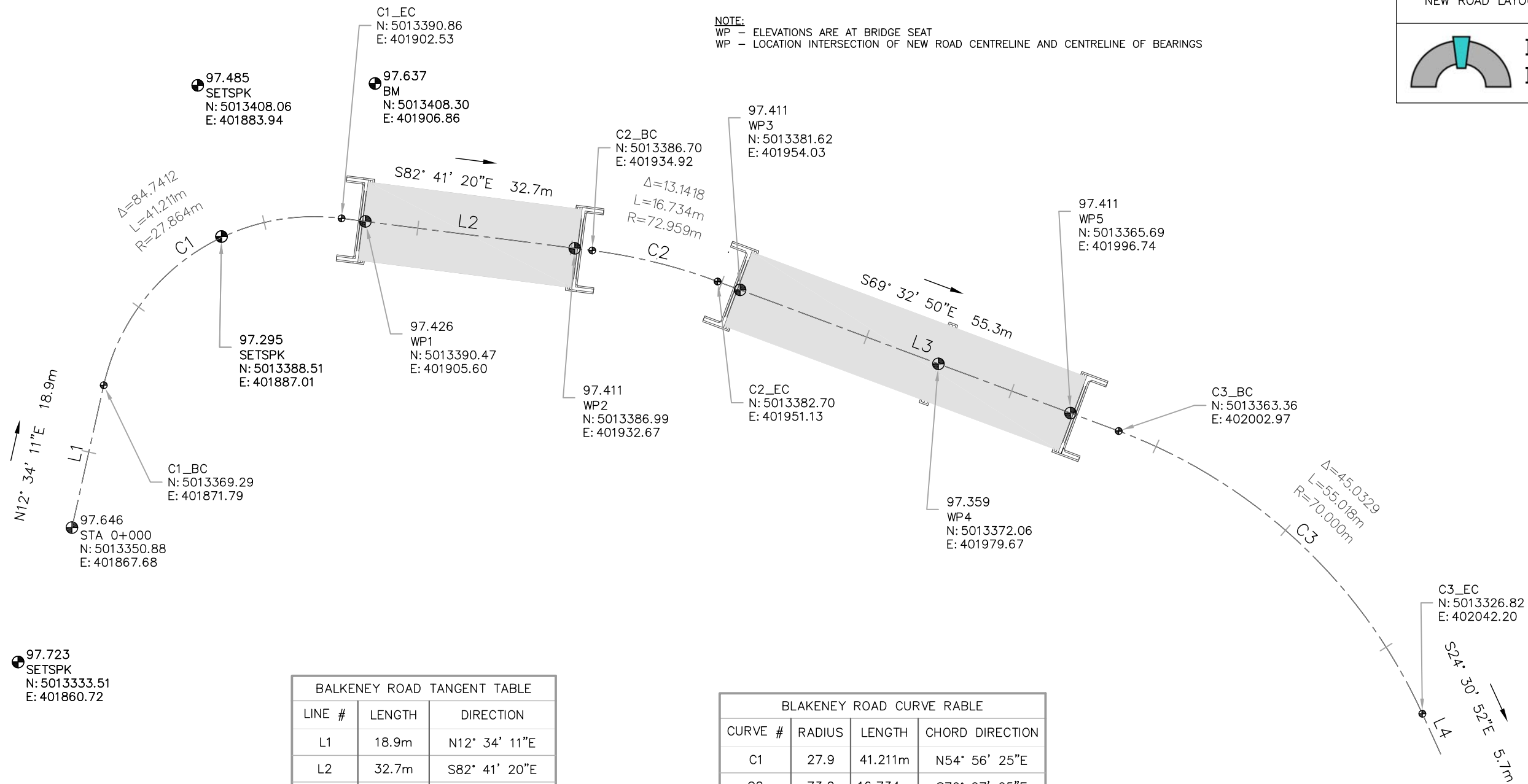
BLAKENEY BRIDGE REPLACEMENT
NEW ROAD LAYOUT - BENCHMARKS

10



**Keystone Bridge
Management Corp.**

NOTE:
WP - ELEVATIONS ARE AT BRIDGE SEAT
WP - LOCATION INTERSECTION OF NEW ROAD CENTRELINE AND CENTRELINE OF BEARINGS



LINE #	LENGTH	DIRECTION
L1	18.9m	N12° 34' 11"E
L2	32.7m	S82° 41' 20"E
L3	55.3m	S69° 32' 50"E
L4	5.7m	S24° 30' 52"E

CURVE #	RADIUS	LENGTH	CHORD DIRECTION
C1	27.9	41.211m	N54° 56' 25"E
C2	73.0	16.734m	S76° 07' 05"E
C3	70.0	55.018m	S47° 01' 51"E

97.723
SETSPK
N: 5013333.51
E: 401860.72



REVISIONS	DESCRIPTION	DATE
1	ISSUED FOR TENDER APRIL 25 2024	FEB 2024

DESIGN	CHK	CODE	DATE
HK	SR	B41	FEB 2024

DRAWN	CHK	SITE	DWG
SR	HK	B41	10

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UNLESS OTHERWISE SHOWN



CONTRACT NO. PW-C-17-2024-24-EO

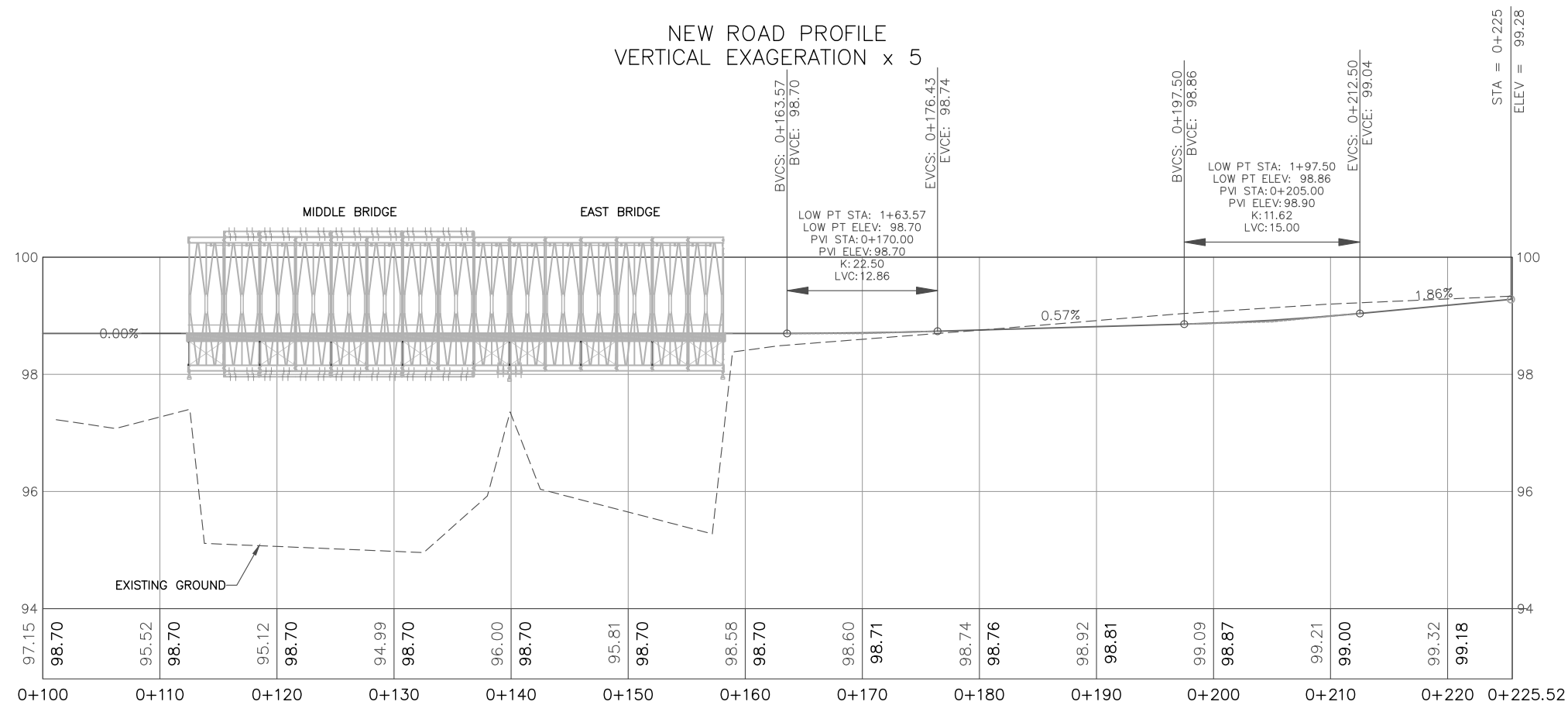
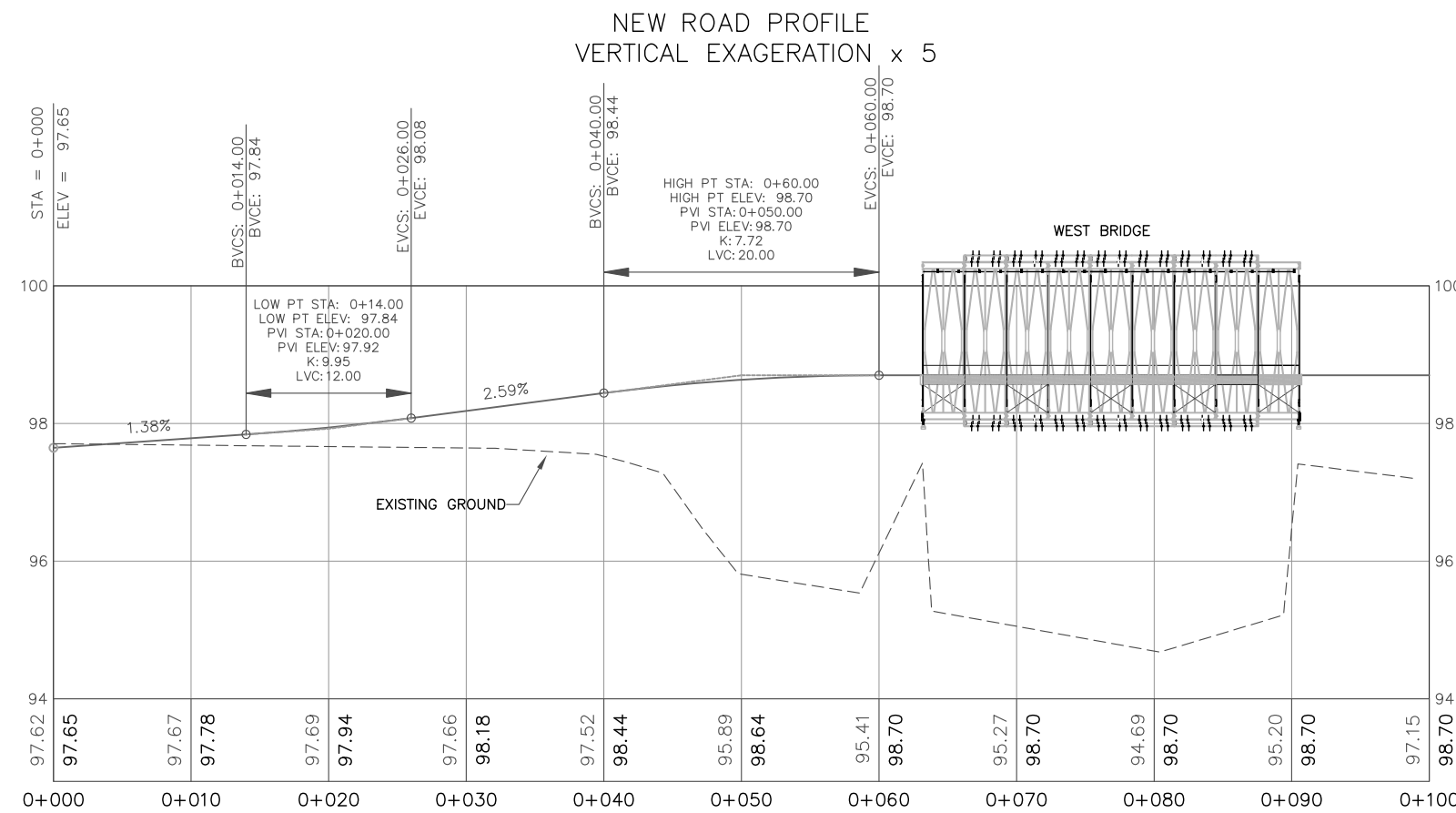
BLAKENEY BRIDGE REPLACEMENT
NEW ROAD PROFILE

SHEET

11



**Keystone Bridge
Management Corp.**



REVISIONS	NO.	DESCRIPTION
	1	ISSUED FOR TENDER APRIL 25 2024

DESIGN HK	CHK	CODE	DATE FEB 2024
DRAWN SR	CHK HK	SITE B41	DWG 11



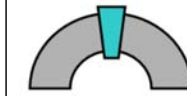
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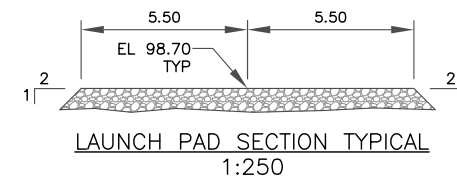
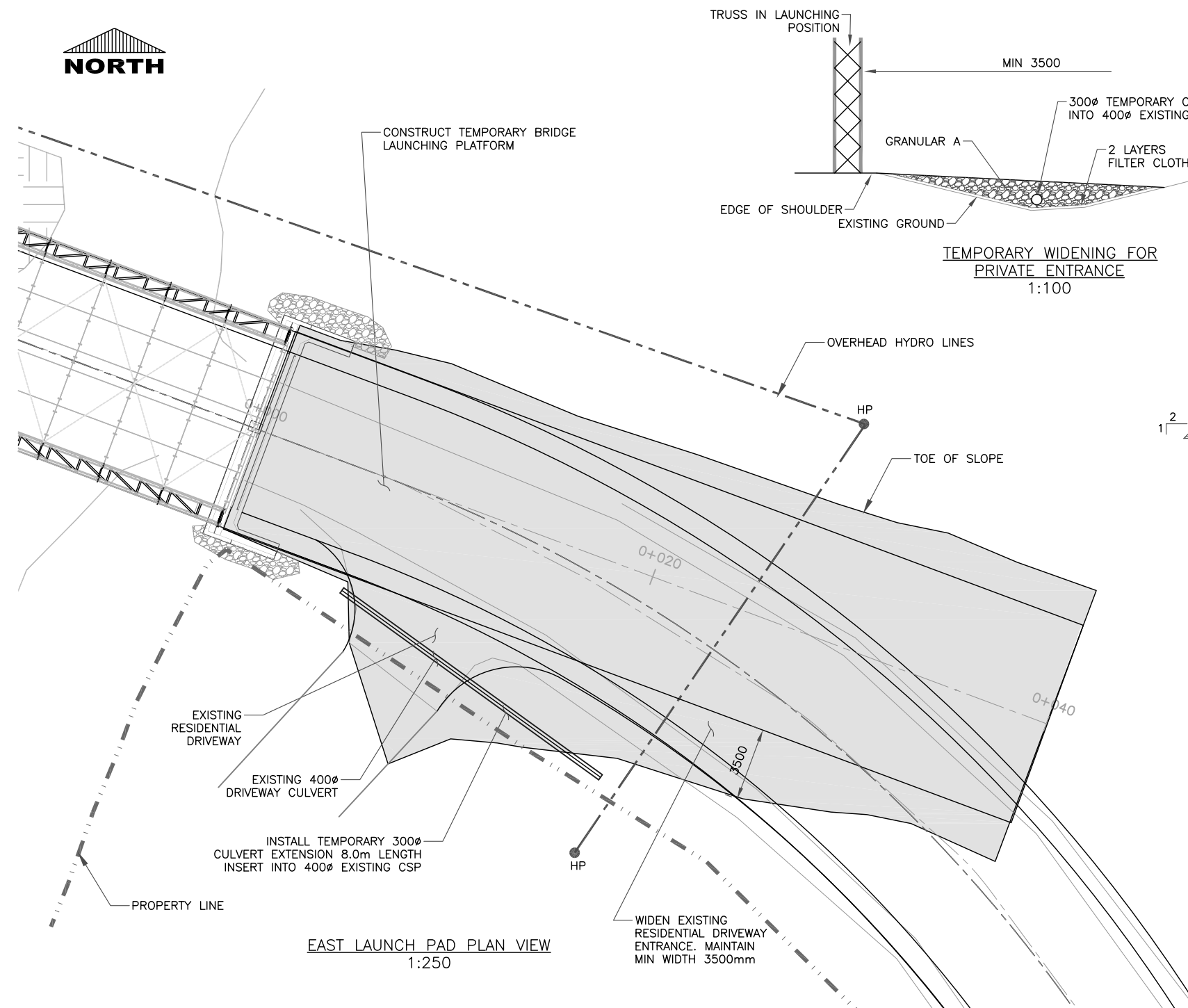
CONTRACT NO. PW-C-17-2024-24-EO

BLAKENEY BRIDGE REPLACEMENT
EAST BRIDGE LAUNCHING PLATFORM

12



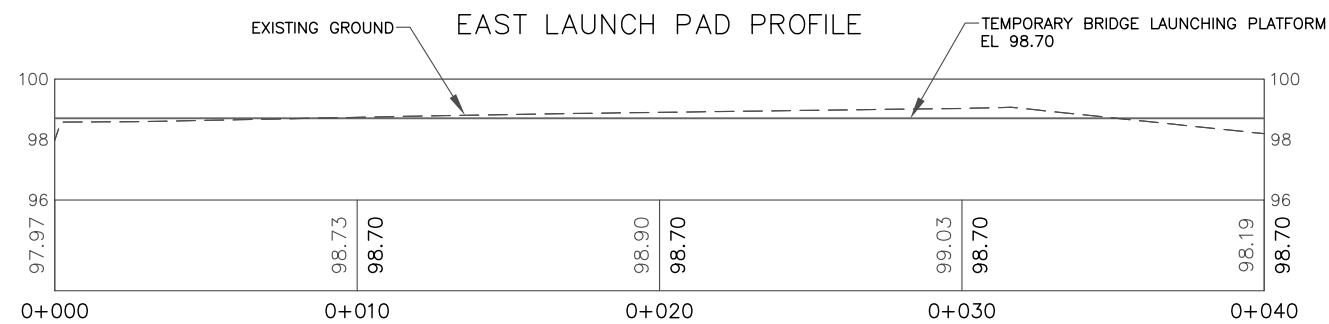
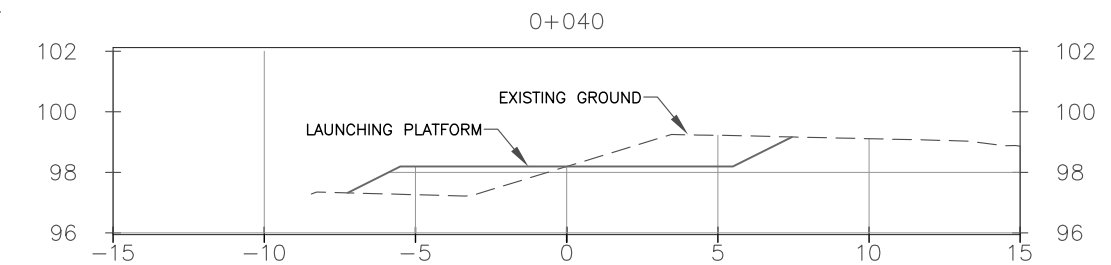
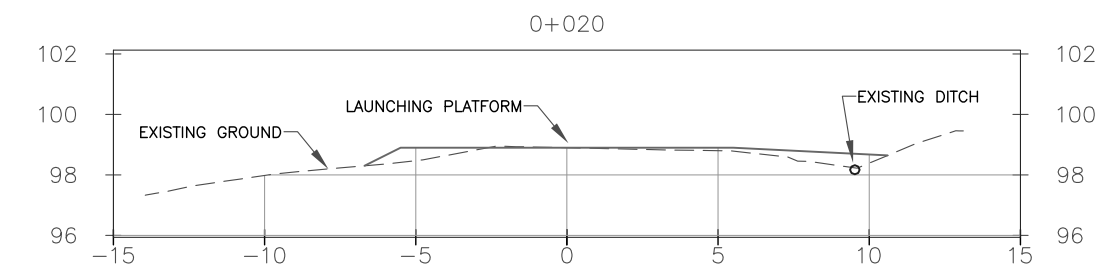
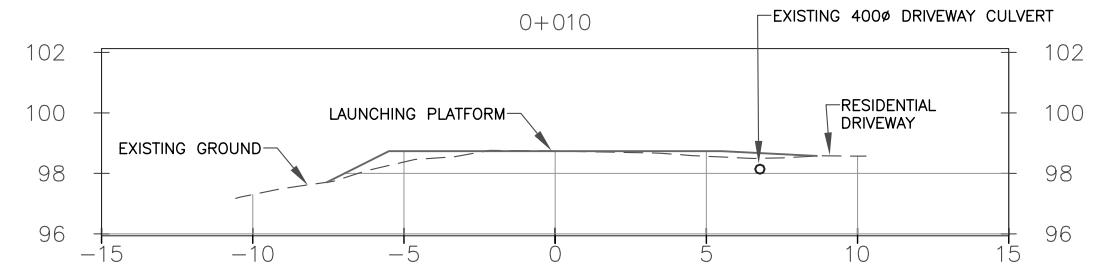
**Keystone Bridge
Management Corp.**



TEMPORARY ENTRANCE & LAUNCHING PAD NOTES
NOTES

1. EXCAVATE AND GRADE LAUNCHING PAD MAXIMUM 40m LENGTH
2. CONSTRUCT PRIVATE ENTRANCE WIDENING AS DETAILED.
3. TEMPORARILY RELOCATE CIVIC ADDRESS SIGN TO SUIT
4. ASSEMBLE & LAUNCH TRUSS
5. RESTORE PRIVATE ENTRANCE & CIVIC ADDRESS SIGN TO AS FOUND CONDITION IMMEDIATELY FOLLOWING LAUNCHING.
6. TRIM & GRADE LAUNCHING PAD OUTSIDE OF ROADWAY AS DIRECTED BY CONTRACT ADMINISTRATOR
7. RESTORE ROAD GRADE

SECTIONS AT EAST LAUNCH PAD



REVISIONS	DESCRIPTION	DATE
1	ISSUED FOR TENDER APRIL 25 2024	

DESIGN	CHK	CODE	DATE
HK	CHK	B41	FEB 2024
DRAWN	CHK	SITE	DWG
SR	HK	B41	12



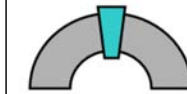
METRIC
DIMENSIONS ARE IN METRES
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CONTRACT NO. PW-C-17-2024-24-EO

BLAKENEY BRIDGE REPLACEMENT
WEST BRIDGE LAUNCHING PLATFORM

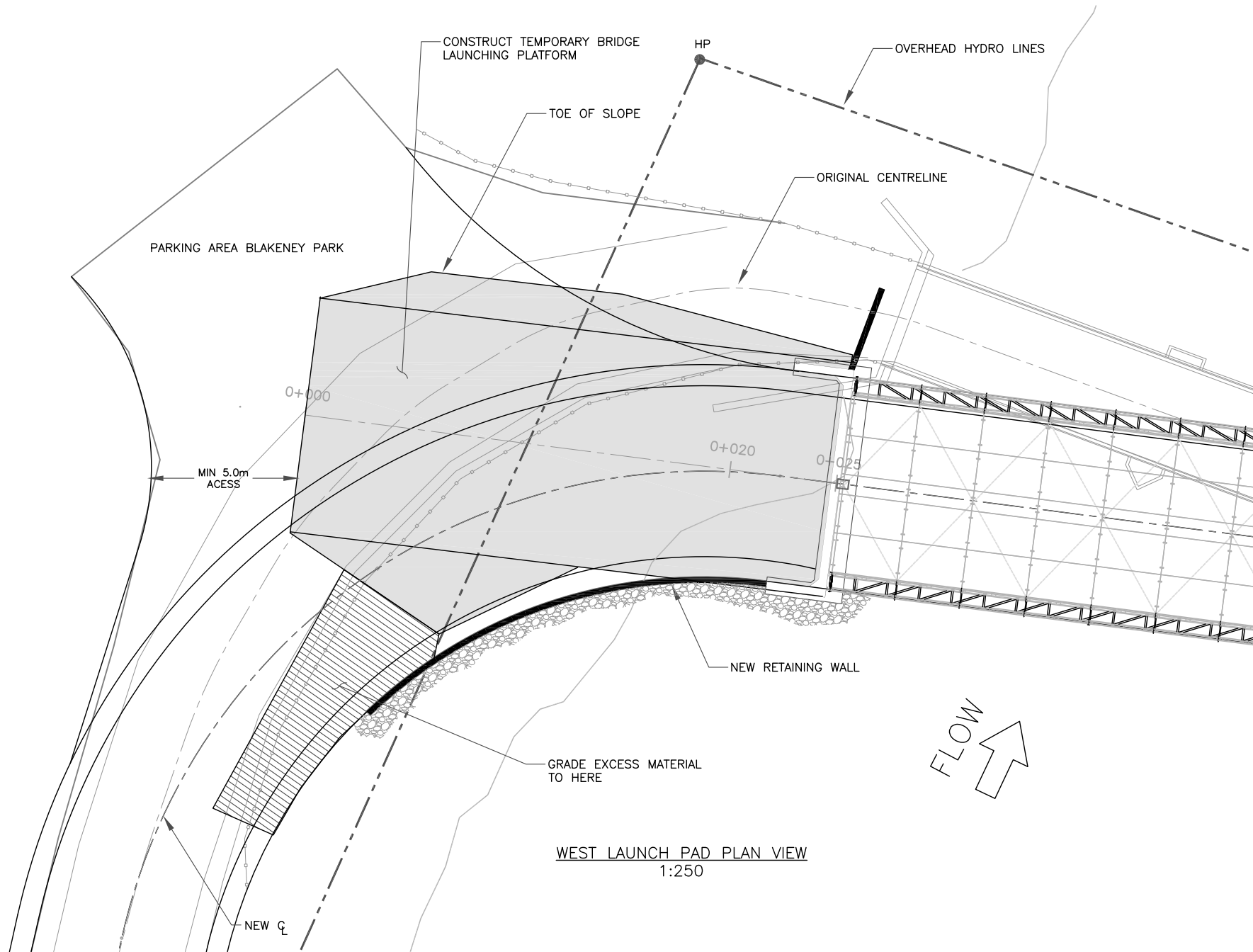
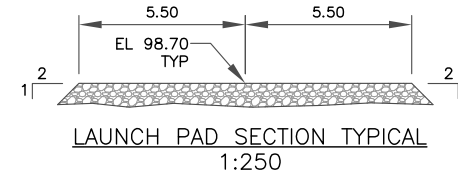
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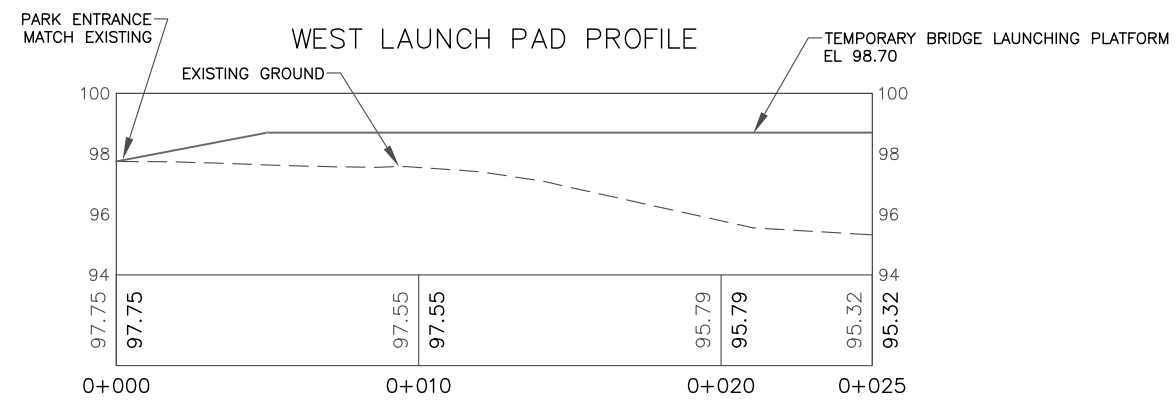
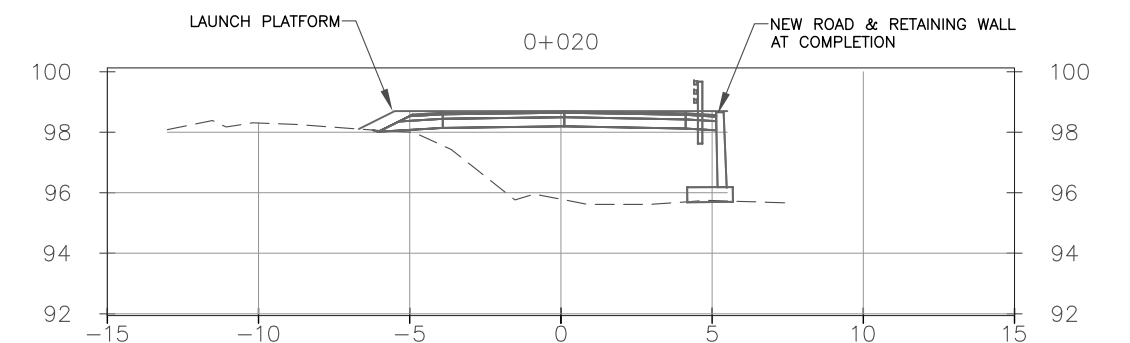
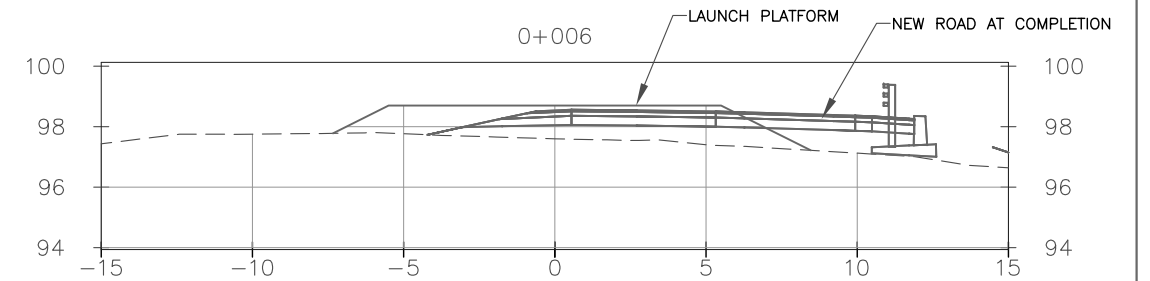
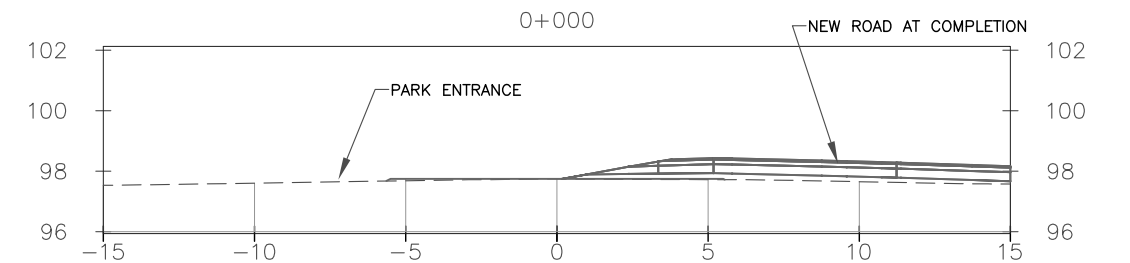
**Keystone Bridge
Management Corp.**

TEMPORARY ENTRANCE & LAUNCHING PAD NOTES
NOTES

1. GRADE LAUNCHING PAD MAXIMUM 25m LENGTH
2. MAINTAIN 5.0m WIDE PUBLIC ACCESS TO PARKING AREA
3. ASSEMBLE & LAUNCH TRUSS INCREMENTALLY TO SUIT
4. TRIM & GRADE LAUNCHING PAD OUTSIDE OF ROADWAY AS DIRECTED BY CONTRACT ADMINISTRATOR
5. RESTORE ROAD GRADE
6. LAUNCH PAD ELEV OF 98.7 IS FOR ILLUSTRATIVE PURPOSES AND MAY BE REDUCED



SECTIONS AT WEST LAUNCH PAD



REVISIONS	DESCRIPTION	DATE
1	ISSUED FOR TENDER APRIL 25 2024	FEB 2024

DESIGN	CHK	CODE	DATE
HK	HK	B41	FEB 2024
DRAWN	CHK	SITE	DWG
SR	HK	B41	13

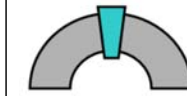
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DIMENSIONS ARE IN METRES
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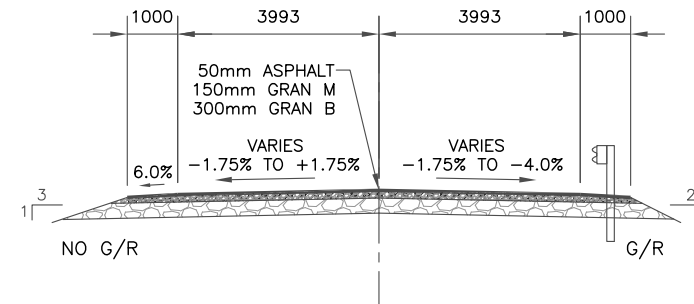
BLAKENEY BRIDGE REPLACEMENT
CROSS SECTIONS 0+000 TO 0+062
WEST APPROACH CUT AND FILL

14



**Keystone Bridge
Management Corp.**

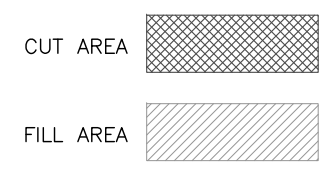
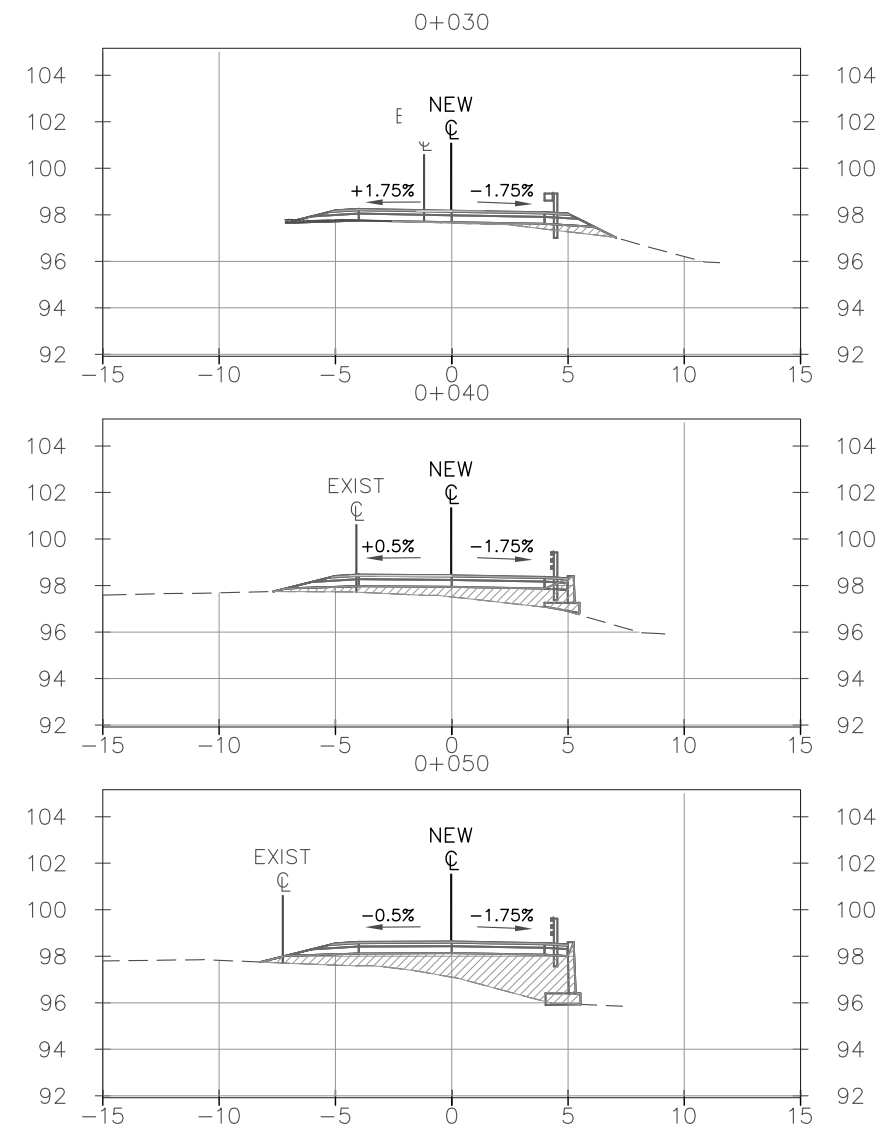
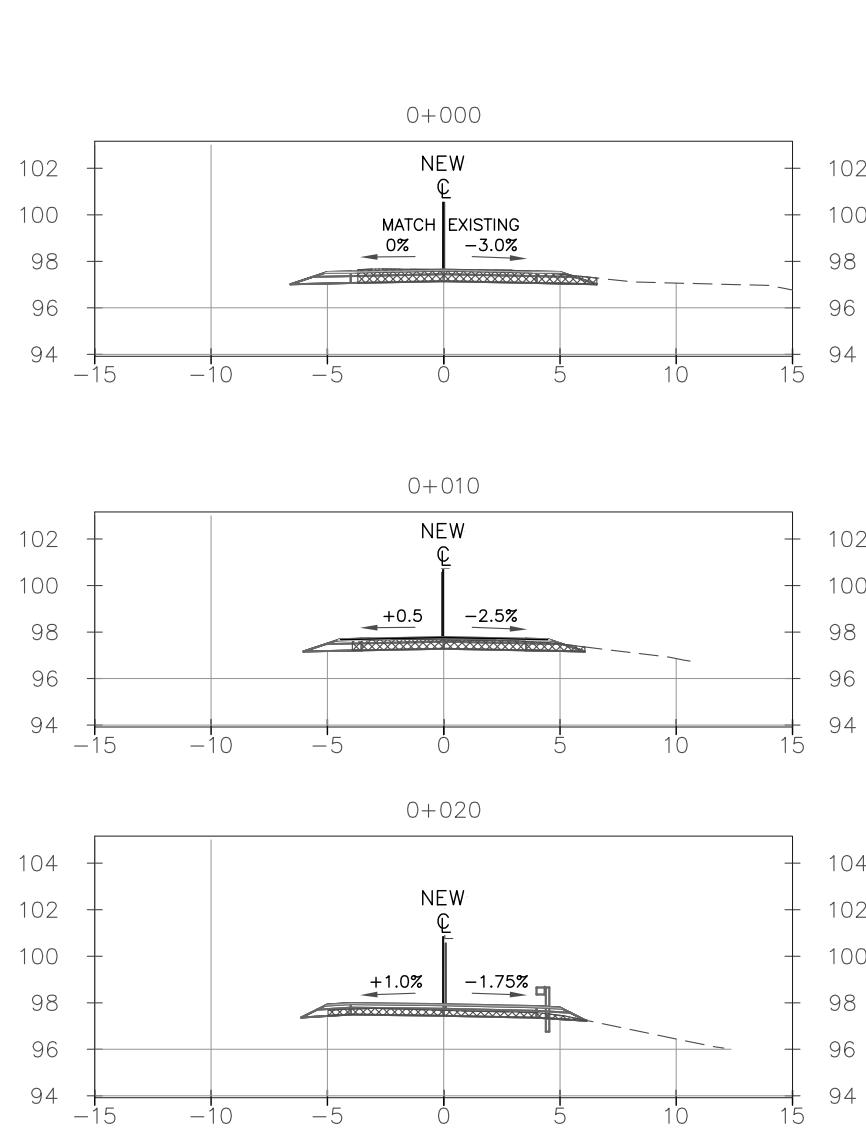
Total Volume Table						
Station	Fill Area	Cut Area	Fill Volume	Cut Volume	Cumulative Fill Vol	Cumulative Cut Vol
0+000.00	0.00	5.07	0.00	0.00	0.00	0.00
0+010.00	0.00	3.91	0.00	44.91	0.00	44.91
0+020.00	0.00	2.46	0.00	31.83	0.00	76.74
0+030.00	1.16	0.24	4.89	13.77	4.89	90.51
0+040.00	6.06	0.00	33.94	1.46	38.82	91.97
0+050.00	13.29	0.00	93.14	0.00	131.97	91.97
0+060.00	22.19	0.26	170.96	1.56	302.93	93.54
0+062.00	26.67	0.00	48.85	0.26	351.78	93.79



NEW ROAD SECTION TYPICAL
1:150

NOTE:

- FILL VOLUME DOES NOT CONSIDER CONCRETE AND SELECT MATERIALS
- ACTUAL REQUIRED EARTH BORROW VOLUME IS APPROXIMATELY 240m³



REVISIONS	DESCRIPTION	DATE
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SR	HK	B41	14

METRIC
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CONTRACT NO. PW-C-17-2024-24-EO

BLAKENEY BRIDGE REPLACEMENT
CROSS SECTIONS 0+091 TO 0+112
ISLAND CUT AND FILL

15

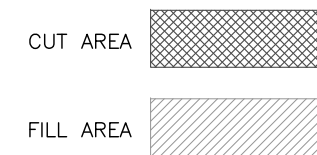
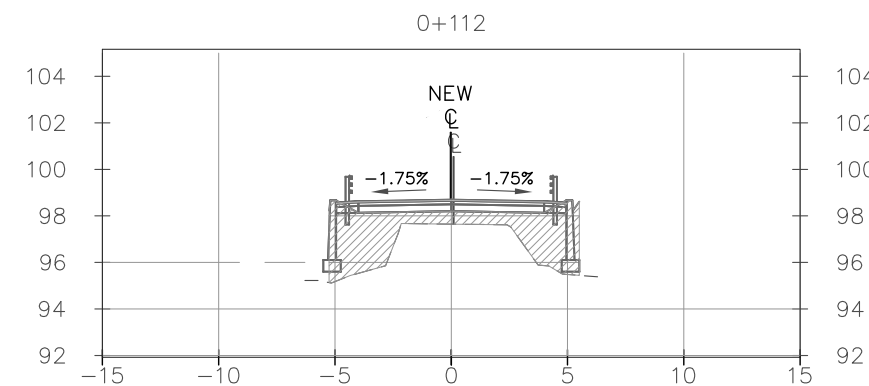
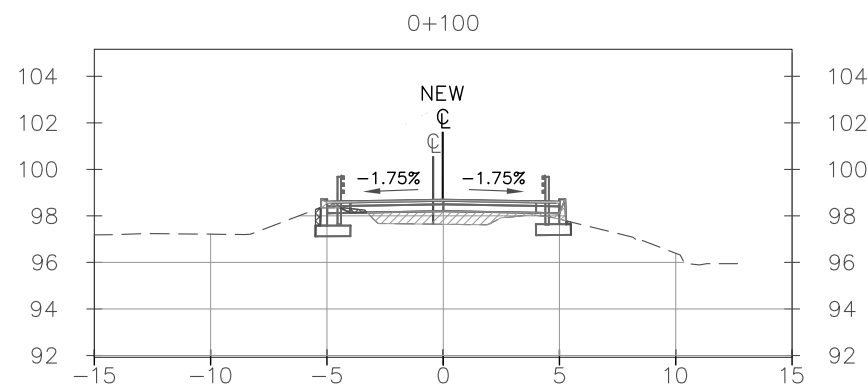
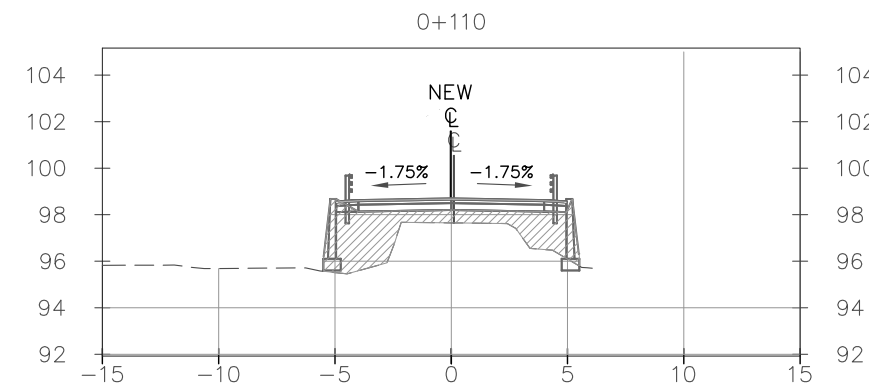
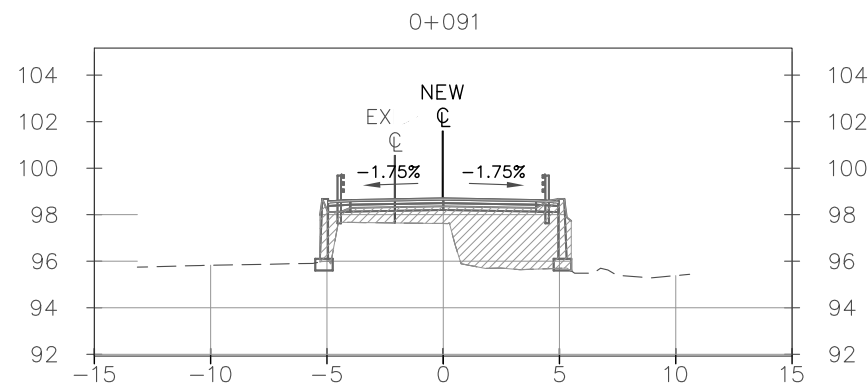


**Keystone Bridge
Management Corp.**

Total Volume Table						
Station	Fill Area	Cut Area	Fill Volume	Cut Volume	Cumulative Fill Vol	Cumulative Cut Vol
0+091.16	18.10	0.00	0.00	0.00	0.00	0.00
0+100.00	3.57	0.33	94.49	1.52	94.49	1.52
0+110.00	14.97	0.00	93.39	1.73	187.88	3.26
0+111.86	16.86	0.00	29.56	0.00	217.44	3.26

NOTE:

1. FILL VOLUME DOES NOT CONSIDER CONCRETE AND SELECT MATERIALS
2. ACTUAL REQUIRED EARTH BORROW VOLUME IS APPROXIMATELY 50m³



REVISIONS	DESCRIPTION
1	ISSUED FOR TENDER APRIL 25 2024

DESIGN HK	CHK	CODE	DATE
DRAWN SR	CHK HK	SITE B41	FEB 2024

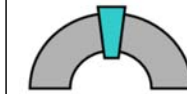
METRIC
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CONTRACT NO. PW-C-17-2024-24-EO

BLAKENEY BRIDGE REPLACEMENT
CROSS SECTIONS 0+159 TO 0+226
EAST APPROACH CUT AND FILL

16

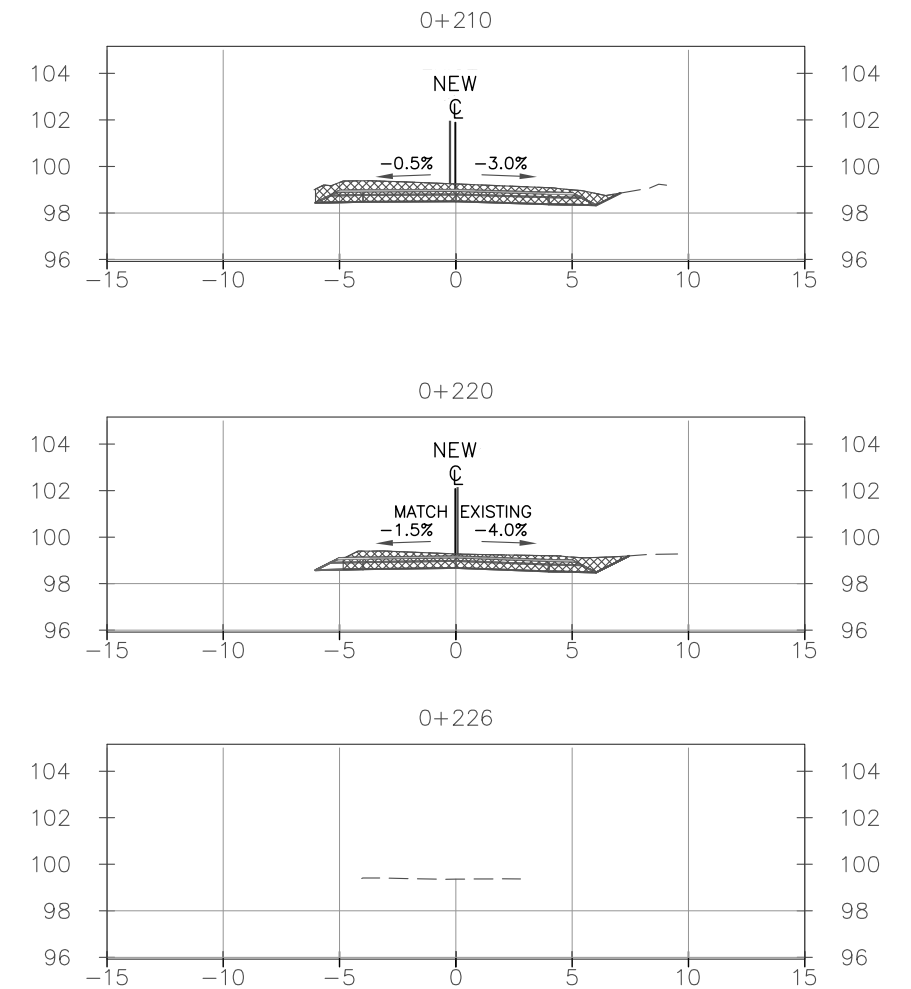
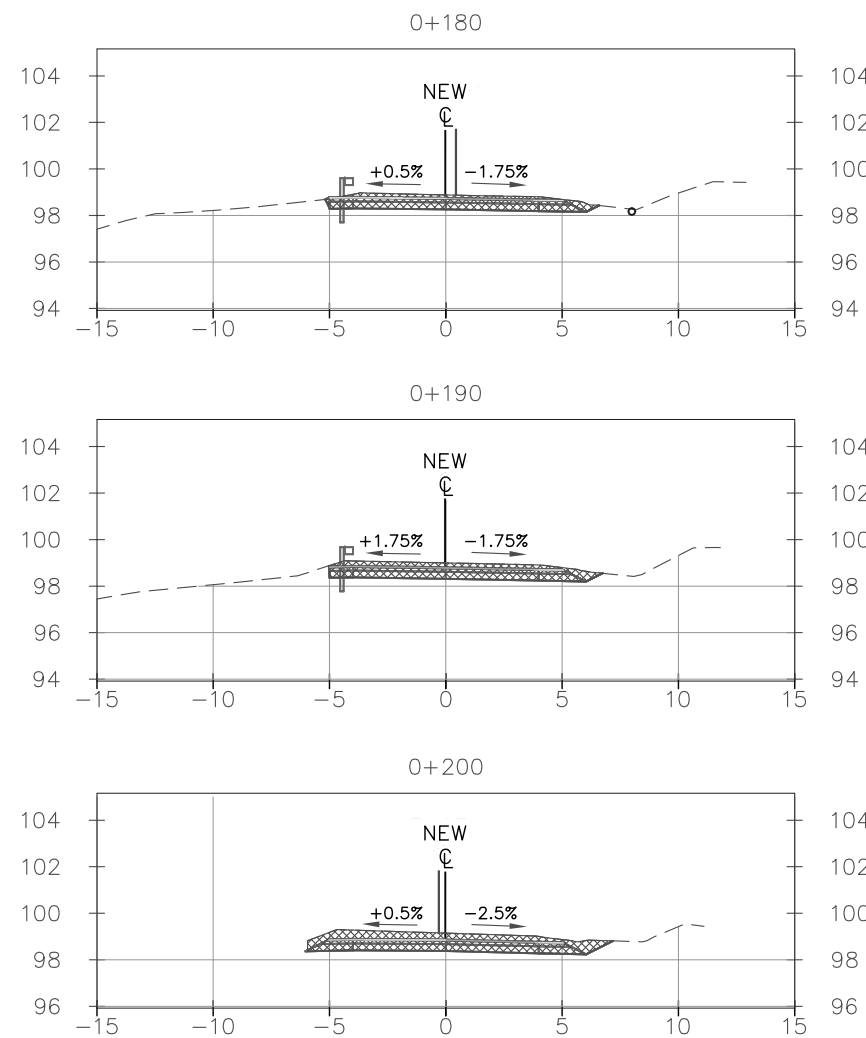
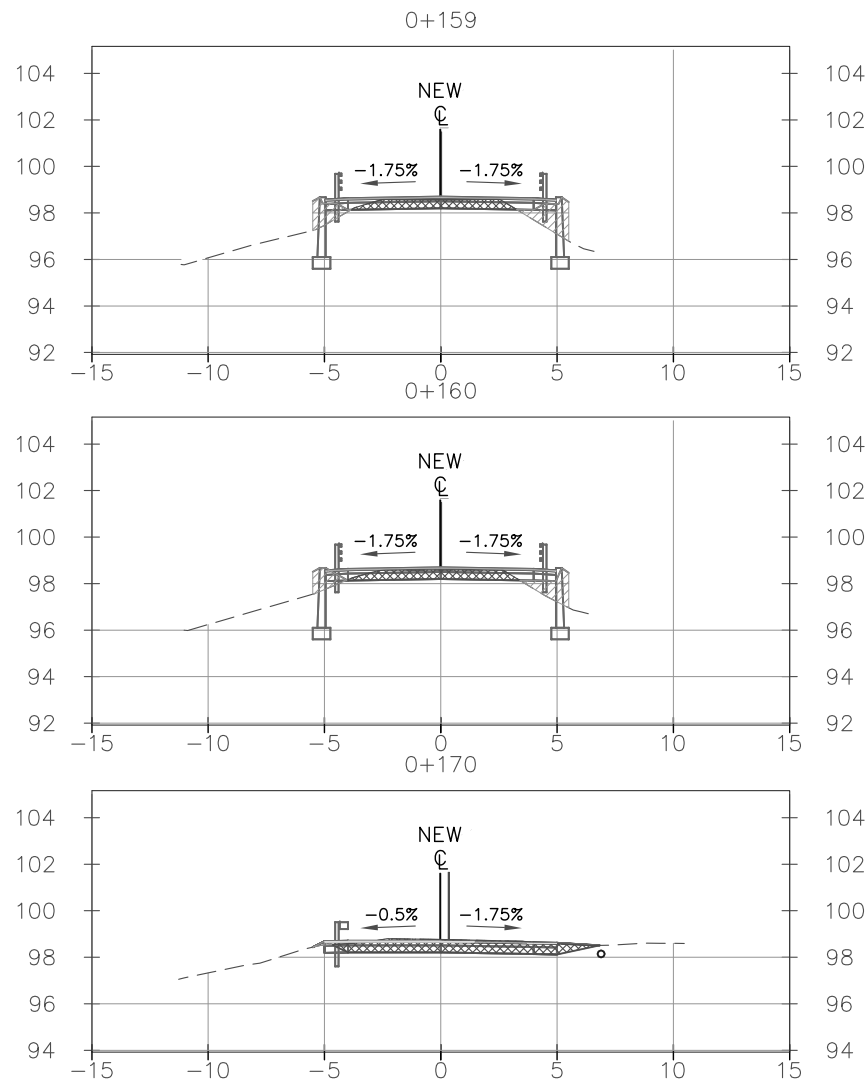
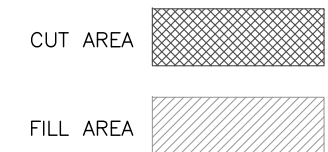


**Keystone Bridge
Management Corp.**

Total Volume Table						
Station	Fill Area	Cut Area	Fill Volume	Cut Volume	Cumulative Fill Vol	Cumulative Cut Vol
0+159.03	3.09	2.48	0.00	0.00	0.00	0.00
0+160.00	2.42	2.65	2.68	2.50	2.68	2.50
0+170.00	0.06	5.26	12.34	39.43	15.02	41.92
0+180.00	0.00	6.75	0.34	59.54	15.35	101.46
0+190.00	0.00	7.49	0.00	70.72	15.35	172.17
0+200.00	0.00	9.39	0.00	84.06	15.35	256.23
0+210.00	0.00	9.43	0.00	94.18	15.35	350.41
0+220.00	0.00	7.69	0.00	85.29	15.35	435.69
0+225.51	0.00	0.00	0.00	21.18	15.35	456.87

NOTE:

- ADDITIONAL EXCAVATION REQUIRED IN VICINITY OF STA 0+159, 0+160 PAID UNDER EARTH EXCAVATION FOR STRUCTURE AND ROCK EXCAVATION.
- EXCESS CUT MATERIAL TO BE UTILIZED AS EARTH BORROW FOR COMMON FILL AREAS ON WEST APPROACH, ISLAND AND LAUNCHING PADS.



REVISIONS	DESCRIPTION	DATE
1	ISSUED FOR TENDER APRIL 25 2024	FEB 2024

DESIGN	CHK	CODE	DATE
HK	CHK	B41	FEB 2024

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SR	CHK	B41	16

METRIC
DIMENSIONS ARE IN METRES
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CONTRACT NO. PW-C-17-2024-24-EO

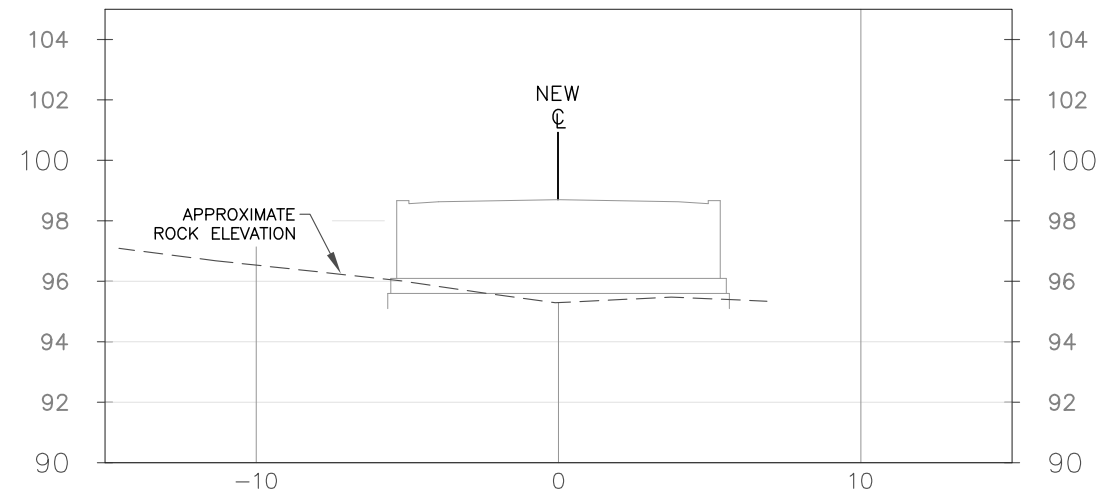
BLAKENEY BRIDGE REPLACEMENT
CROSS SECTIONS WEST BRIDGE
EAST AND WEST ABUTMENT

17

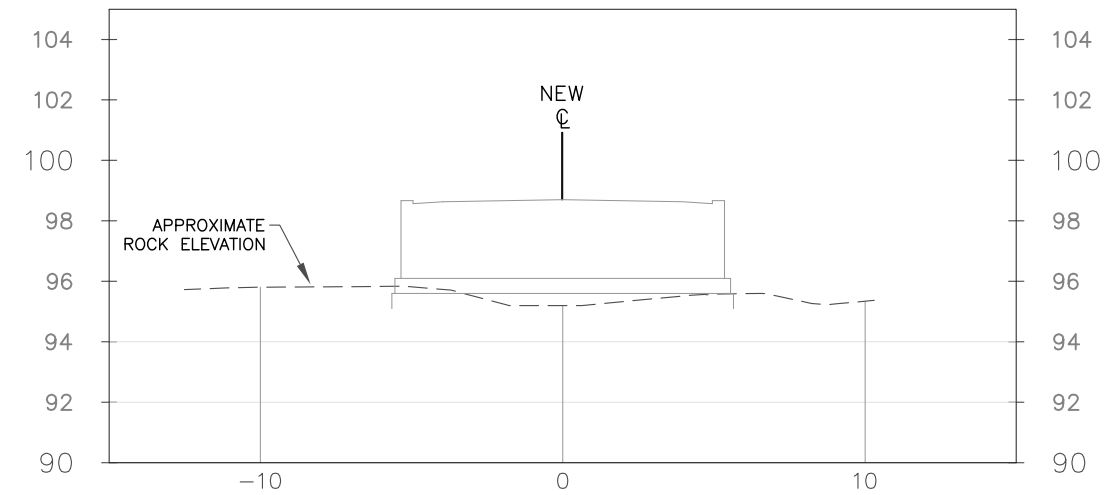


**Keystone Bridge
Management Corp.**

WEST BRIDGE WEST ABUTMENT
STA 0+063



WEST BRIDGE EAST ABUTMENT



REVISIONS				
NO.	DATE	DESCRIPTION	BY	CHK
1		ISSUED FOR TENDER APRIL 25 2024		
DESIGN HK				
DRAWN SR				
CHK	CODE	DATE	FEB 2024	
CHK HK	SITE B41	DWG	17	

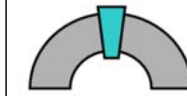
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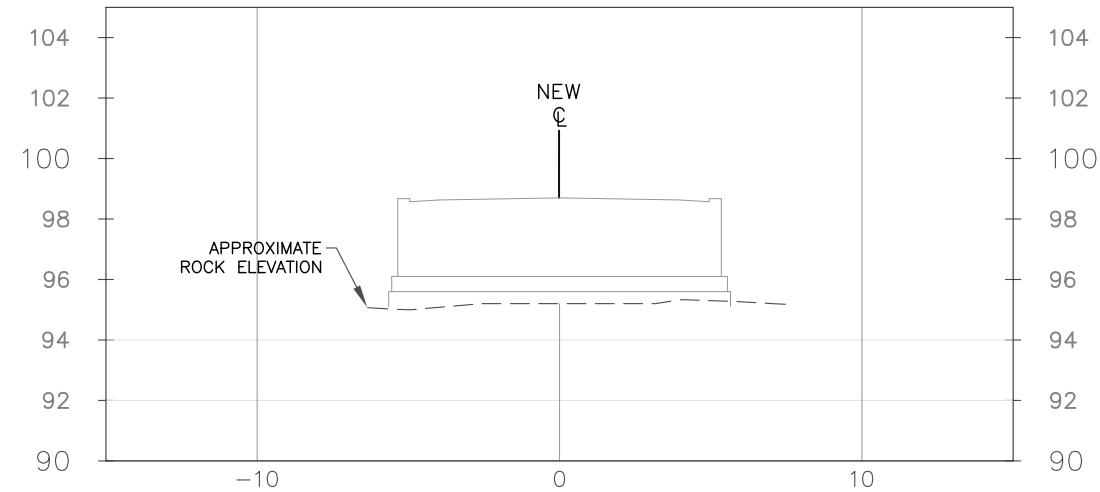
BLAKENEY BRIDGE REPLACEMENT
CROSS SECTIONS MIDDLE/EAST BRIDGE
EAST AND WEST ABUTMENT
PIER

18

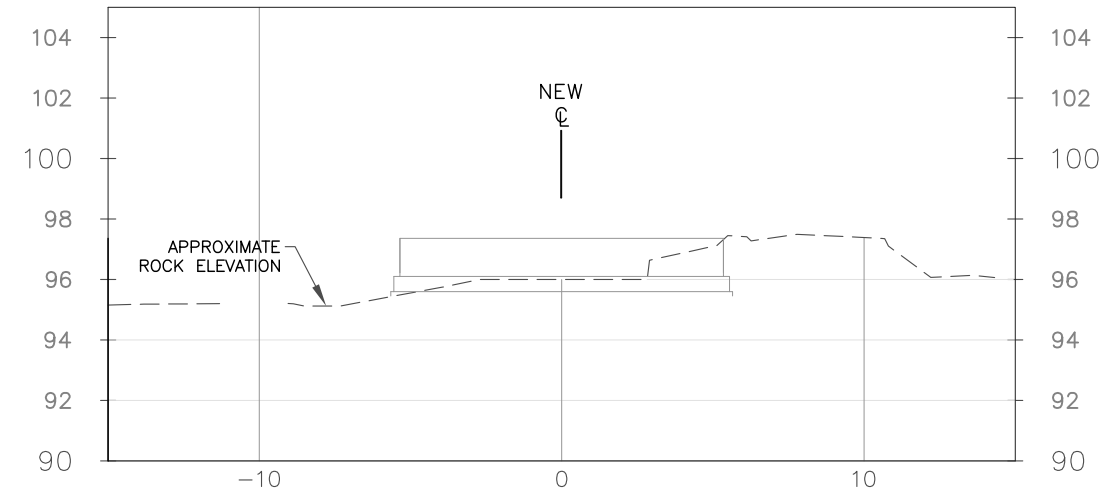


**Keystone Bridge
Management Corp.**

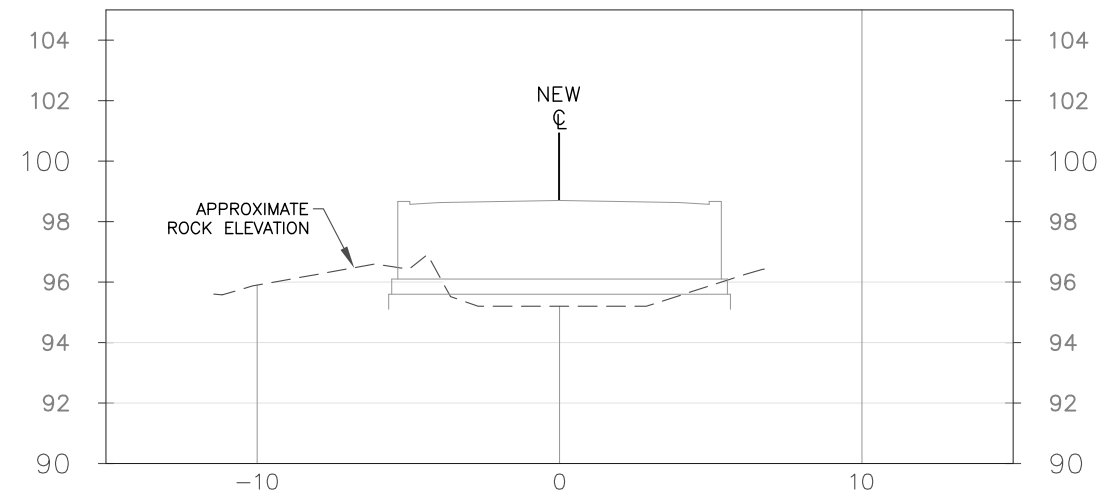
EAST BRIDGE WEST ABUTMENT



PIER EAST BRIDGE



EAST BRIDGE EAST ABUTMENT



REVISIONS				
NO.	DATE	DESCRIPTION	BY	CHK

DESIGN HK	CHK	CODE	DATE FEB 2024
DRAWN SR	CHK HK	SITE B41	DWG 18

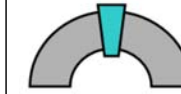


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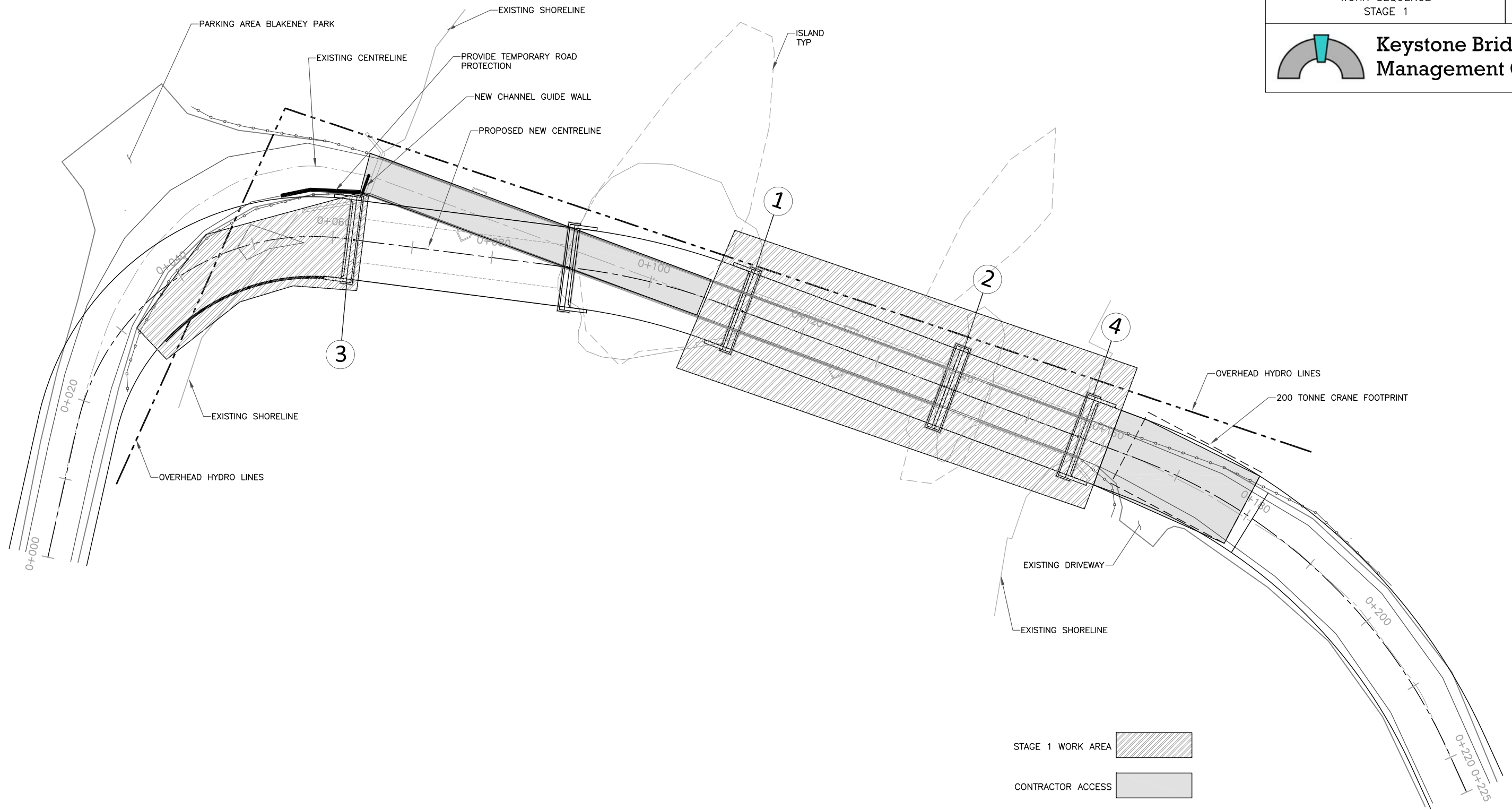
**LANARK
COUNTY**

BLAKENEY BRIDGE REPLACEMENT
WORK SEQUENCE
STAGE 1

S1



**Keystone Bridge
Management Corp.**



SEQUENCE OF SUBSTRUCTURE CONSTRUCTION — 

REVISIONS			
NO.	DATE	DESCRIPTION	BY
1	ISSUED FOR TENDER APRIL 25 2024		
DESIGN HK			
CHK	CODE	DATE	JAN 2024
DRAWN SR	CHK HK	SITE B41	DWG S1

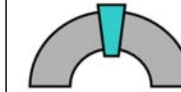


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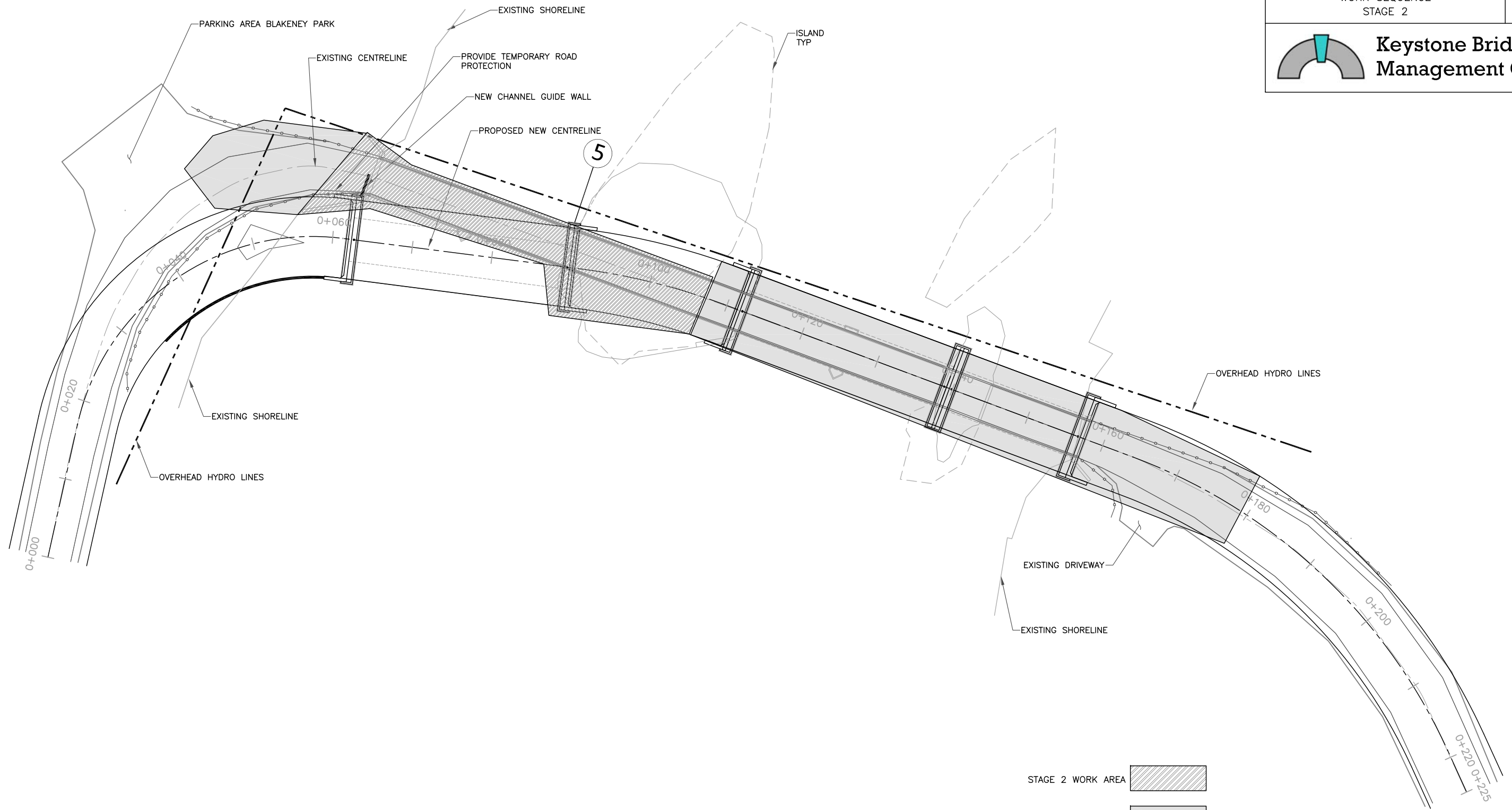
**LANARK
COUNTY**

BLAKENEY BRIDGE REPLACEMENT
WORK SEQUENCE
STAGE 2

S2



**Keystone Bridge
Management Corp.**



STAGE 2 WORK AREA

CONTRACTOR ACCESS

SEQUENCE OF SUBSTRUCTURE CONSTRUCTION

REVISIONS	NO.	DESCRIPTION	DATE
	1	ISSUED FOR TENDER APRIL 25 2024	FEB 2024

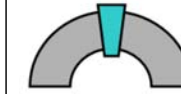
DESIGN HK	CHK	CODE	DATE
DRAWN SR	CHK HK	SITE B41	DWG S2

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BLAKENEY BRIDGE REPLACEMENT
WORK SEQUENCE
STAGE 3

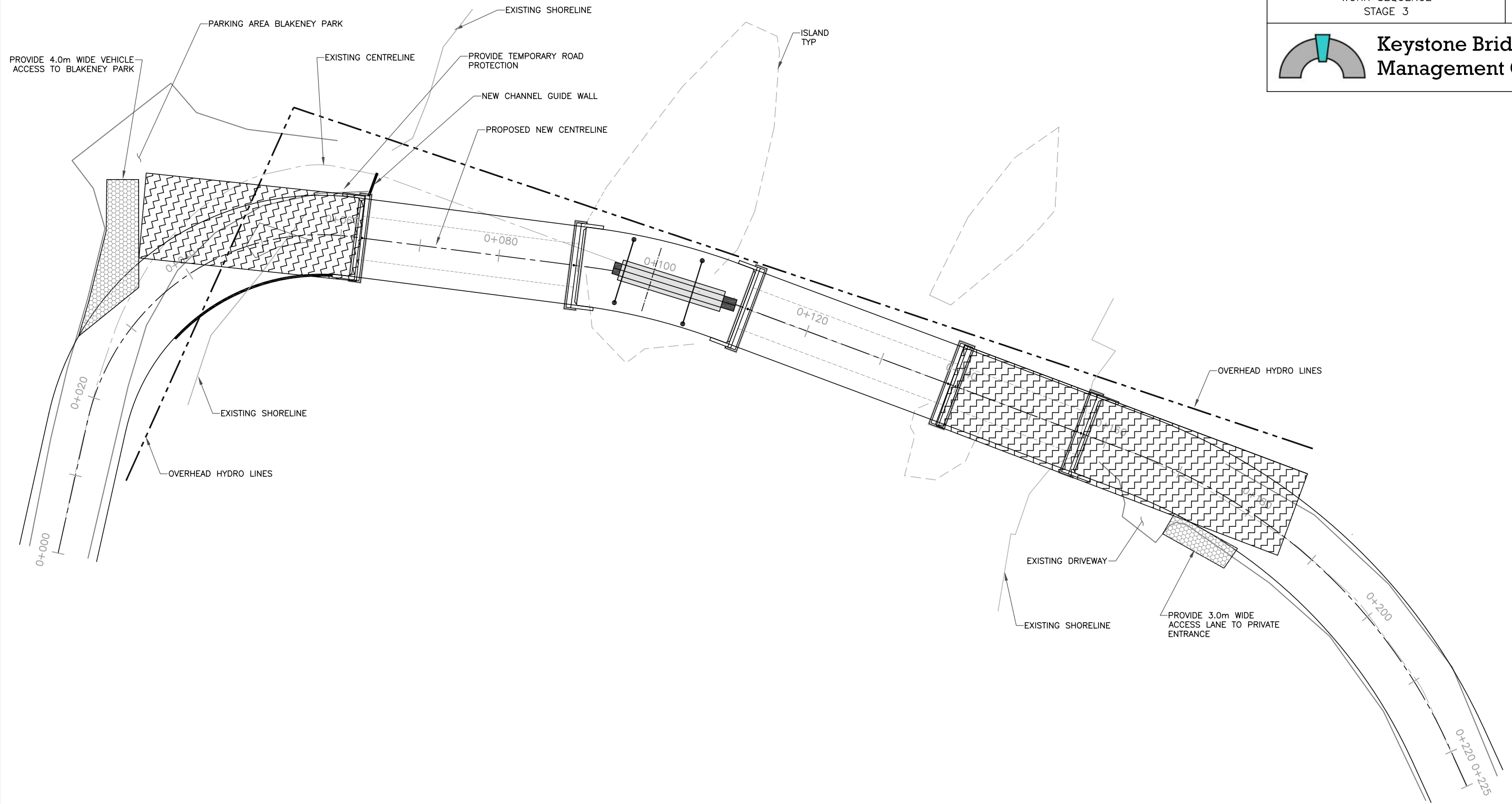
S3

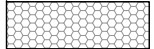


**Keystone Bridge
Management Corp.**



NORTH



TEMPORARY ACCESS 

BRIDGE LAUNCHING FOOTPRINT 

REVISIONS	NO.	DESCRIPTION	DATE
	1	ISSUED FOR TENDER APRIL 25 2024	FEB 2024

DESIGN HK	CHK	CODE	DATE
DRAWN SR	CHK HK	SITE B41	DWG S3



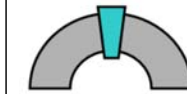
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DIMENSIONS ARE IN METRES
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**LANARK
COUNTY**

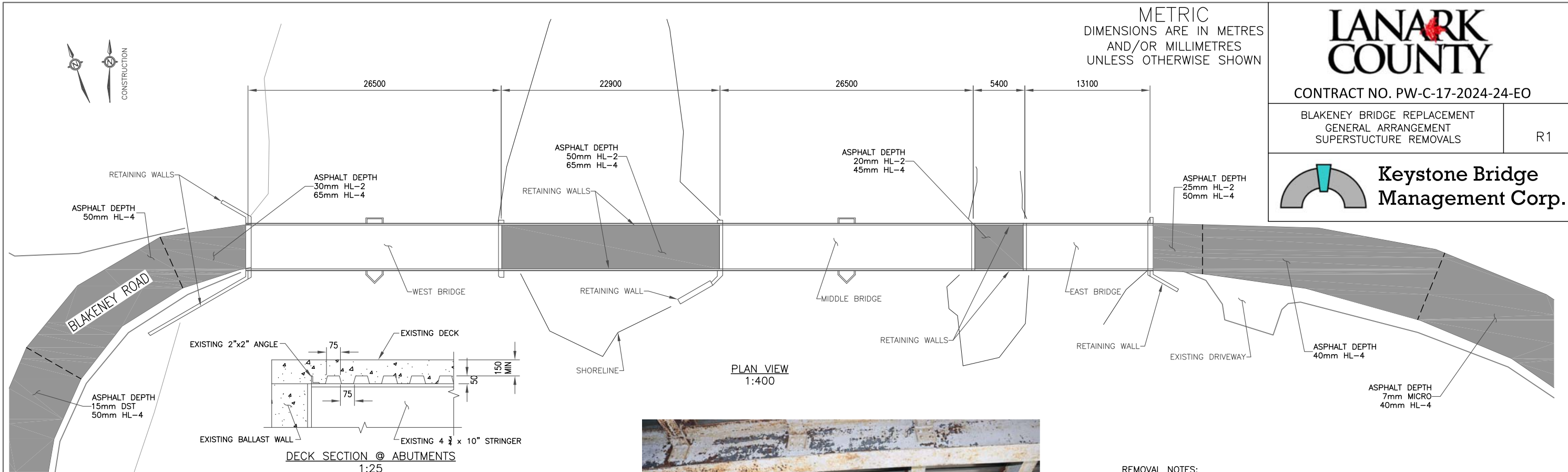
CONTRACT NO. PW-C-17-2024-24-EO

BLAKENEY BRIDGE REPLACEMENT
GENERAL ARRANGEMENT
SUPERSTRUCTURE REMOVALS

R1



**Keystone Bridge
Management Corp.**



REMOVAL NOTES:

1. THESE NOTES APPLY TO DRAWINGS R1 THROUGH R5.
2. CONCRETE DECKS SHALL ONLY BE REMOVED BY SAW CUTTING AND LIFTING.
3. BARE WEIGHT OF STRUCTURAL STEEL PER SPAN ESTIMATED AS 7.3 TONNES EXCLUDING RAILINGS.
4. MASS CONCRETE WHERE SHOWN MAY CONTAIN STEEL FORM TIES AND DOWELS FROM ATTACHED REINFORCED CONCRETE.
5. REINFORCED CONCRETE WHERE SHOWN MAY BE UNREINFORCED PATCHES OR CONVENTIONALLY REINFORCED CONCRETE.
6. DIMENSIONS ARE APPROXIMATE AND MAY VARY +/- 10%.
7. SUBSTRUCTURE CONCRETE SHALL BE COMPLETELY REMOVED TO BEDROCK. ALL CONCRETE DEMOLITION RUBBLE MUST BE REMOVED FROM THE RIVER BOTTOM.
8. RETAINING WALLS REQUIRE A MIXTURE OF FULL AND PARTIAL REMOVALS AS SHOWN HEREIN.

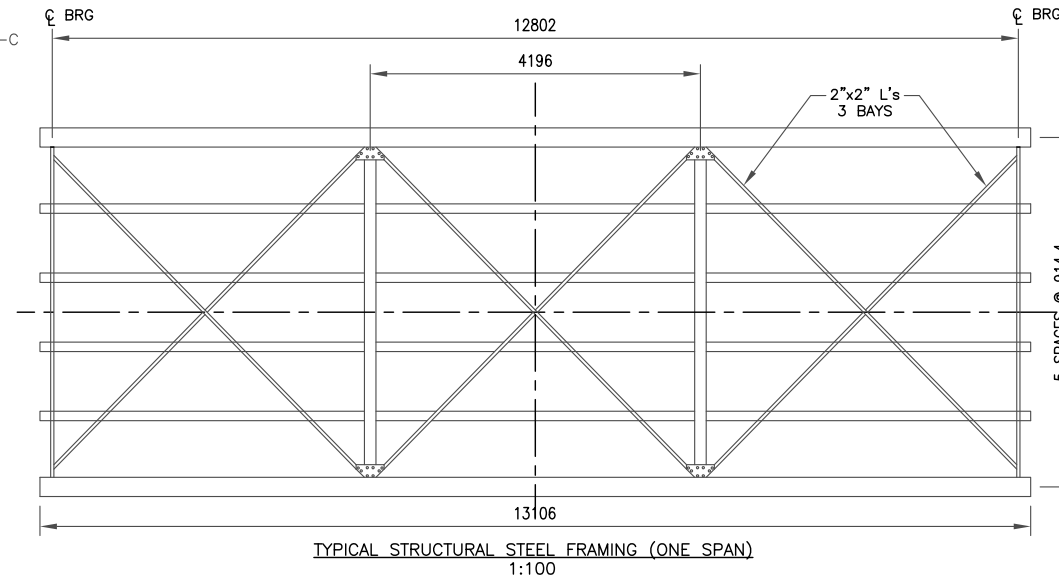
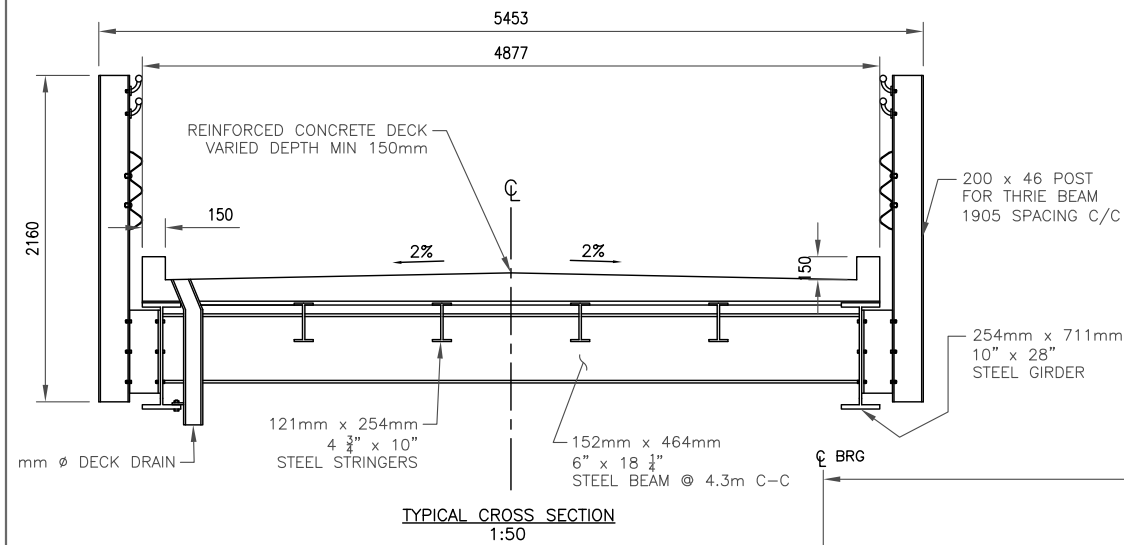
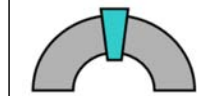


Table 1 Original Superstructure Presumed Section Properties Based on Measurement and Historical Tables

Section	Imp Designation	Mill	Weight per foot	Area	Depth d	Width b	Web t	Ix	Sx	r
			Pounds	Inches^2	inches	Inches	inches	in^4	in^3	in
Girder	B28 28 x 10		104	30.66	28.12	10.03	.5	4003.3	284.7	11.43
Floor Beam	18 x 6	Carnegie	46 to 65?		18.25	6				
Stringer	10 x 4.75	Carnegie	29.8	8.78	10	4.75	.35	141.44	28.29	4.01



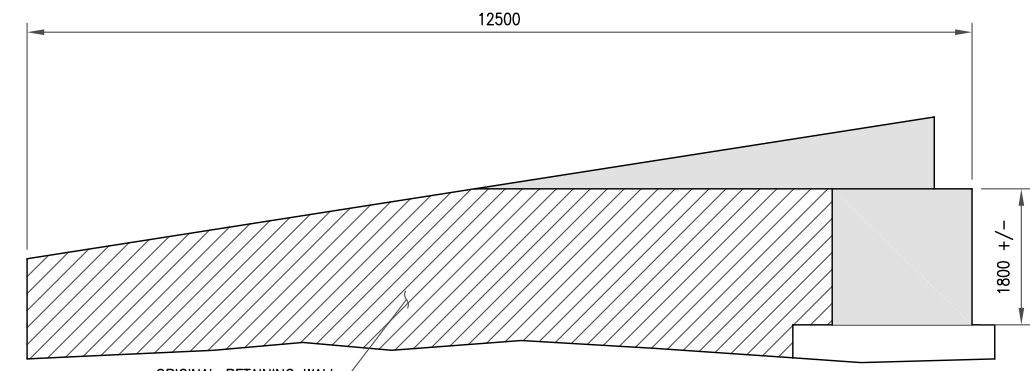
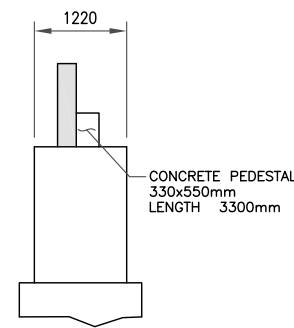
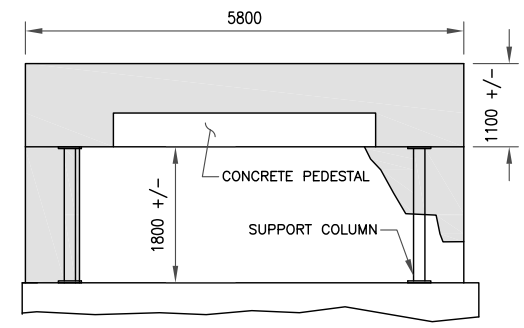
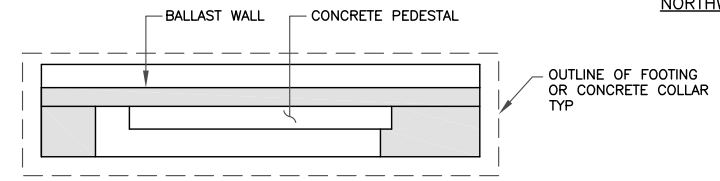
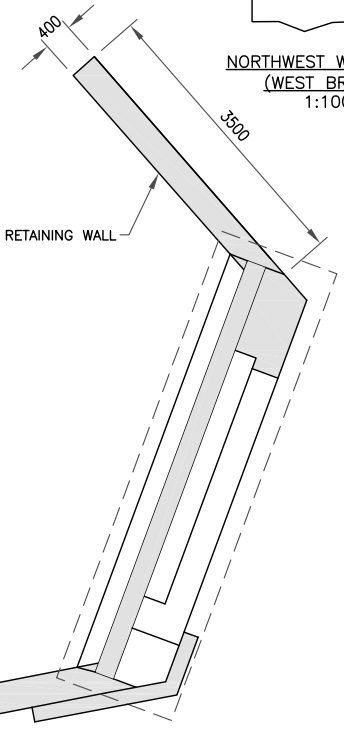
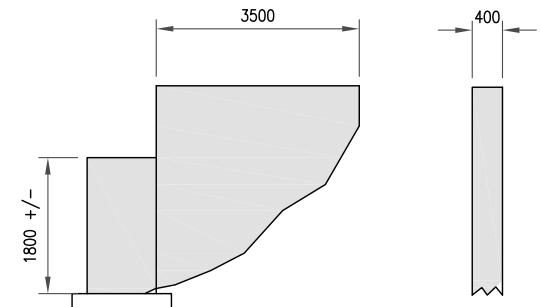
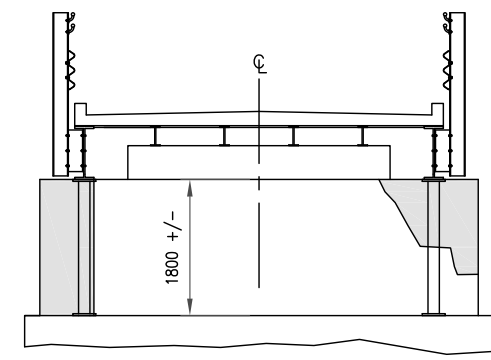
REVISIONS		DESCRIPTION			
DESIGN	HK	CHK	CODE		DATE FEB 2024
DRAWN	SR	CHK	HK	SITE B41	DWG R1



Keystone Bridge Management Corp.

METRIC
DIMENSIONS ARE IN METRES
AND/OR MILLIMETRES
UNLESS OTHERWISE SHOWN

NOTE:
DIMENSIONS SHOWN ARE APPROXIMATE



LEGEND

- REINFORCED CONCRETE
- MASS CONCRETE
- TO REMAIN

REVISIONS	NO.	DESCRIPTION	DATE
	1	ISSUED FOR TENDER APRIL 25 2024	FEB 2024

DESIGN HK	CHK	CODE	DATE
DRAWN SR	CHK HK	SITE B41	DWG R2

LANARK COUNTY

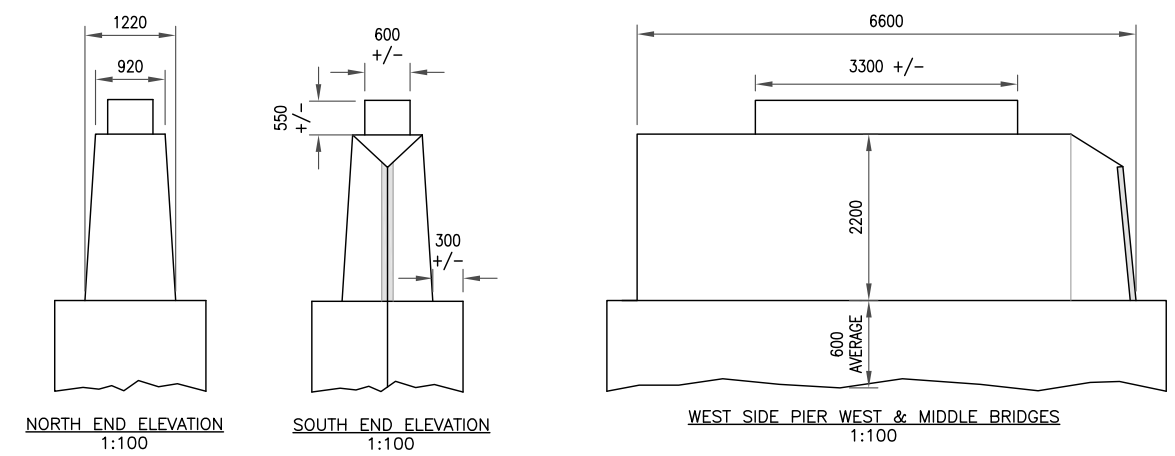
CONTRACT NO. PW-C-17-2024-24-EO

BLAKENEY BRIDGE REPLACEMENT
WEST BRIDGE EAST ABUTMENT &
PIER REMOVALS

R3

Keystone Bridge Management Corp.

METRIC
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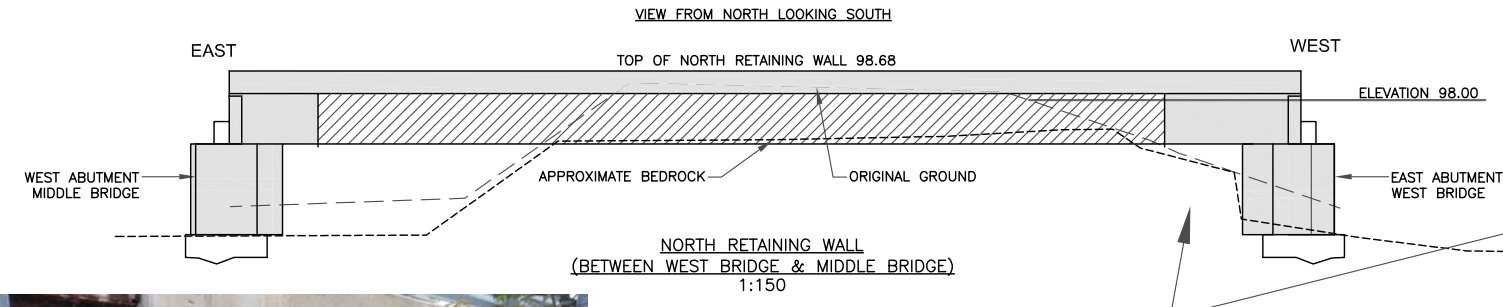
NOTE: PIER AT MIDDLE BRIDGE IS SIMILAR



WEST SIDE PIER (WEST BRIDGE)



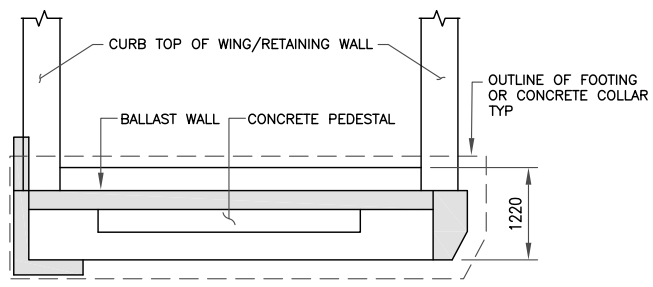
WEST SIDE PIER (MIDDLE BRIDGE)



NORTH RETAINING WALL
(BETWEEN WEST BRIDGE & MIDDLE BRIDGE)
1:150



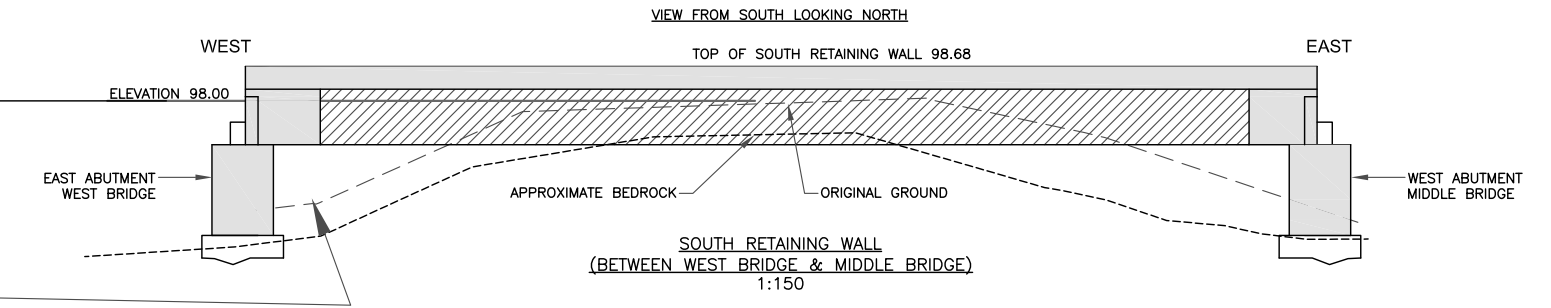
NORTH RETAINING WALL EAST ABUTMENT WEST BRIDGE
BETWEEN WEST & MIDDLE BRIDGE



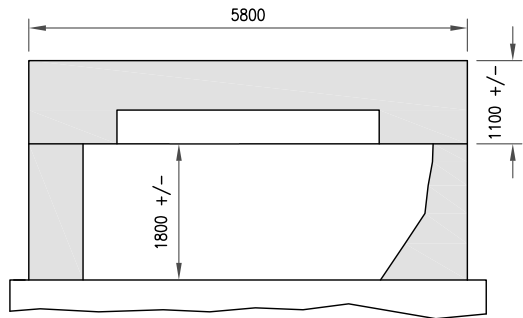
EAST ABUTMENT WALL PLAN VIEW
(WEST BRIDGE)
1:100



SOUTH RETAINING WALL BETWEEN WEST & MIDDLE BRIDGE



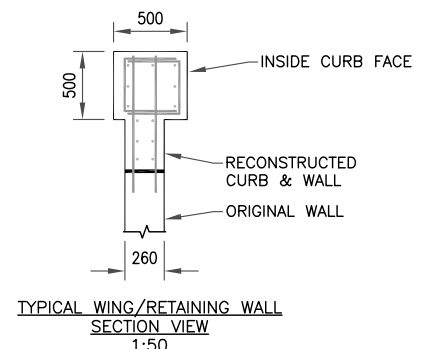
SOUTH RETAINING WALL
(BETWEEN WEST BRIDGE & MIDDLE BRIDGE)
1:150



EAST ABUTMENT WALL EAST FACE
(WEST BRIDGE)
1:100



EAST ABUTMENT WALL (WEST BRIDGE)



TYPICAL WING/RETAINING WALL
SECTION VIEW
1:50

LEGEND

- REINFORCED CONCRETE
- MASS CONCRETE
- TO REMAIN

REVISIONS		DESCRIPTION		DATE	BY

DESIGN HK	CHK	CODE	DATE	FEB 2024
DRAWN SR	CHK HK	SITE B41	DWG	R3

METRIC
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**LANARK
COUNTY**

CONTRACT NO. PW-C-17-2024-24-EO

BLAKENEY BRIDGE REPLACEMENT
MIDDLE BRIDGE ABUTMENT & RETAINING
WALL REMOVALS

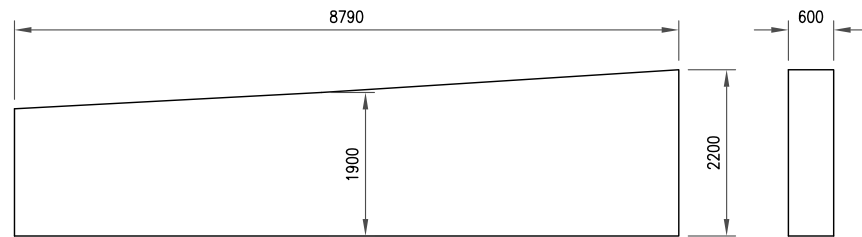
R4



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Management Corp.**

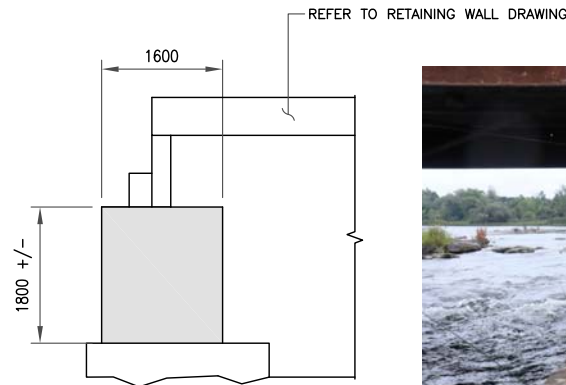


SOUTHWEST RETAINING WALL MIDDLE BRIDGE SOUTH ELEVATION



SOUTHWEST RETAINING WALL SOUTH ELEVATION
(MIDDLE BRIDGE)
1:100

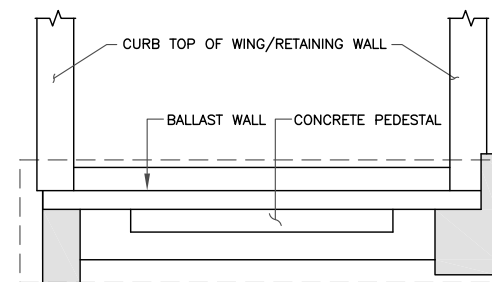
SECTION VIEW
1:100



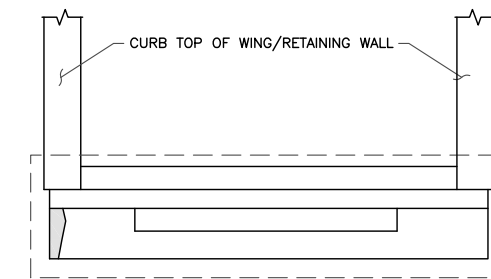
NORTHWEST ABUTMENT WALL
(MIDDLE BRIDGE)
1:100



NORTHWEST ABUTMENT/WING WALL MIDDLE BRIDGE

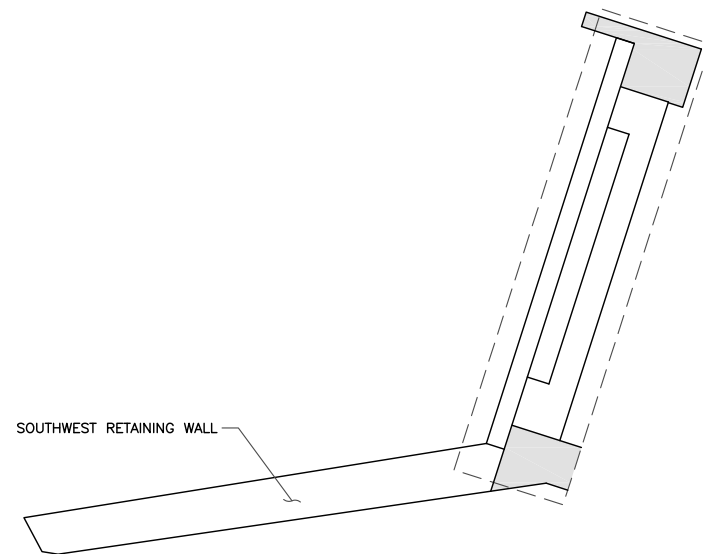


WEST ABUTMENT WALL PLAN VIEW
(MIDDLE BRIDGE)
1:100

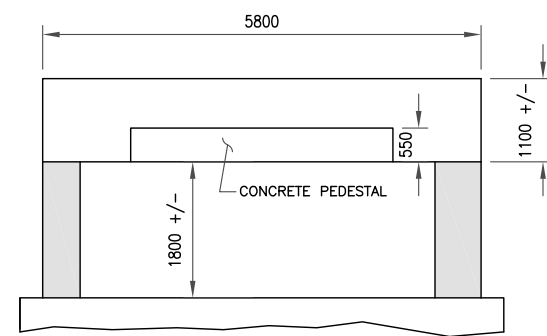


EAST ABUTMENT WALL PLAN VIEW
(MIDDLE BRIDGE)
1:100

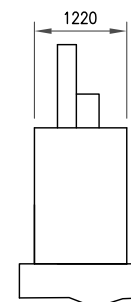
OUTLINE OF FOOTING
OR CONCRETE COLLAR
TYP



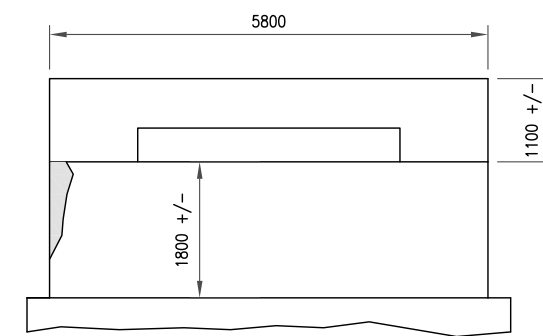
PLAN WEST ABUTMENT & SOUTHWEST RETAINING WALL
(MIDDLE BRIDGE)
1:100



WEST ABUTMENT WALL WEST FACE
(MIDDLE BRIDGE)
1:100



TYPICAL ABUTMENT WALL SECTION VIEW
(MIDDLE BRIDGE)
1:100



EAST ABUTMENT WALL EAST FACE
(MIDDLE BRIDGE)
1:100


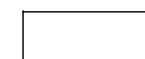



WEST ABUTMENT WALL MIDDLE BRIDGE



EAST ABUTMENT WALL MIDDLE BRIDGE

LEGEND

-  REINFORCED CONCRETE
-  MASS CONCRETE
-  TO REMAIN

REVISIONS		DESCRIPTION		DATE	BY

DESIGN HK	CHK	CODE	DATE
DRAWN SR	CHK HK	SITE OSIM202	FEB 2024
			DWG R4

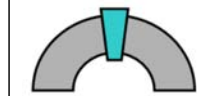
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CONTRACT NO. PW-C-17-2024-24-EO

BLAKENEY BRIDGE REPLACEMENT
EAST BRIDGE ABUTMENT & RETAINING
WALL REMOVALS

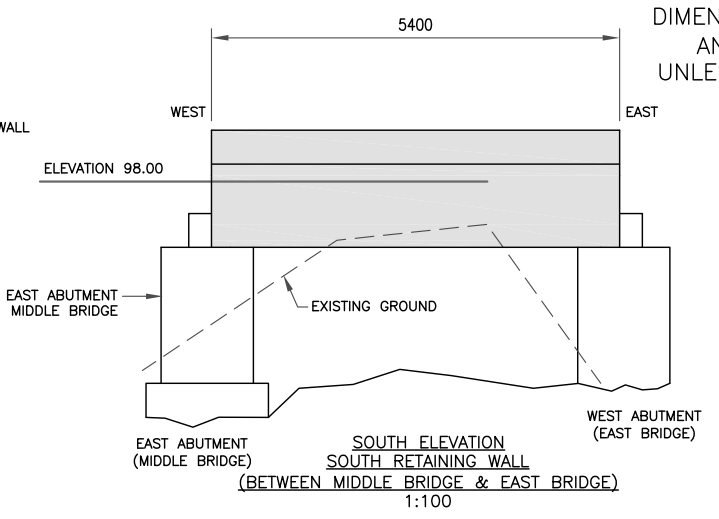
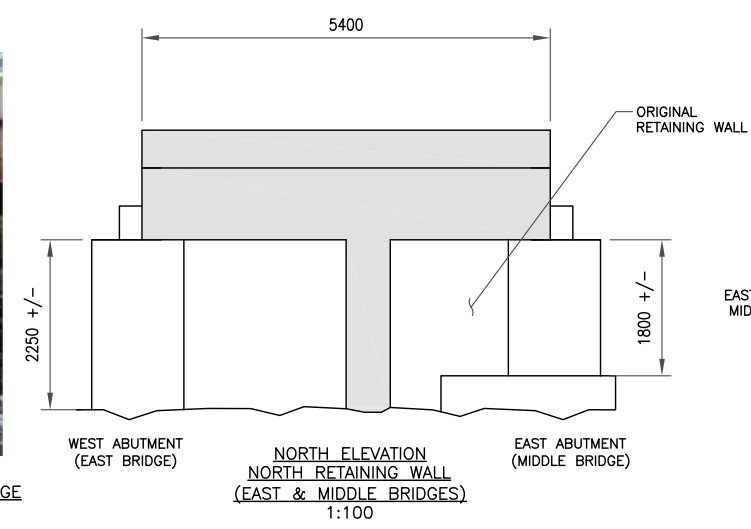
R5



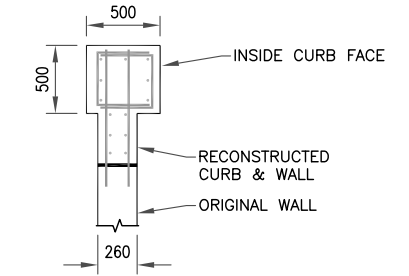
**Keystone Bridge
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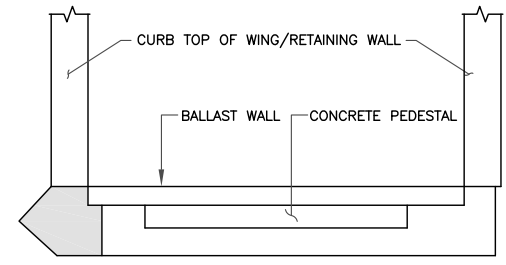
**NORTH RETAINING WALL
BETWEEN EAST ABUTMENT MIDDLE BRIDGE & WEST ABUTMENT EAST BRIDGE**



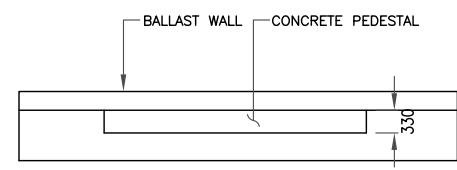
**SOUTH RETAINING WALL
BETWEEN EAST ABUTMENT MIDDLE BRIDGE & WEST ABUTMENT EAST BRIDGE**



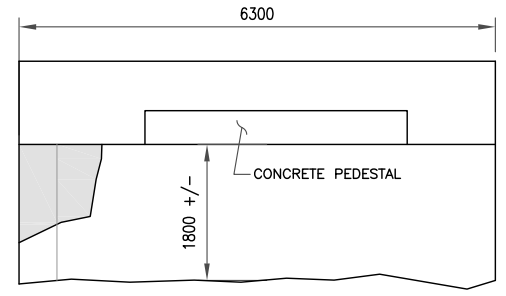
**TYPICAL WING/RETAINING WALL
SECTION VIEW
1:50**



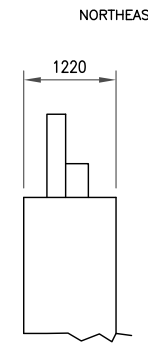
**WEST ABUTMENT WALL PLAN VIEW
(EAST BRIDGE)
1:100**



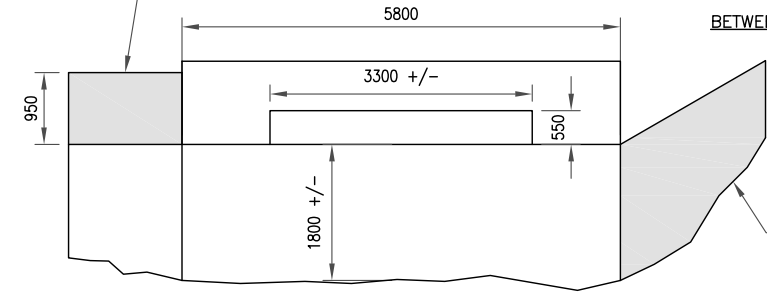
**EAST ABUTMENT WALL PLAN VIEW
(EAST BRIDGE)
1:100**



**WEST ABUTMENT WALL WEST FACE
(EAST BRIDGE)
1:100**

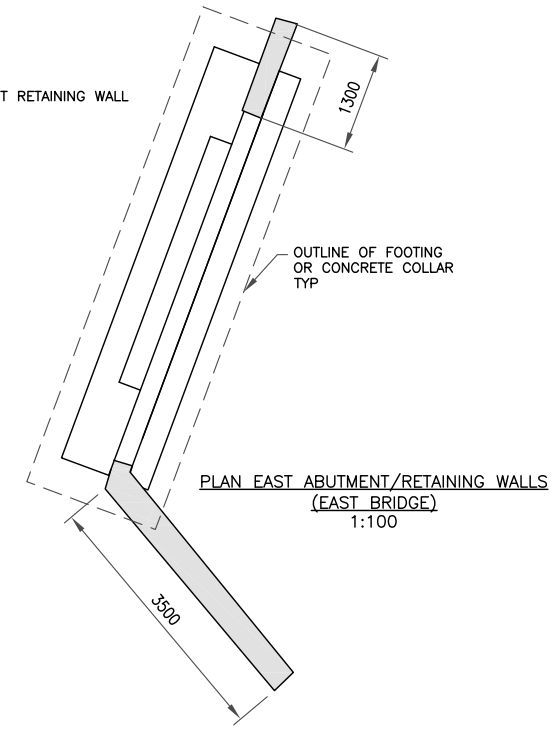


**TYPICAL ABUTMENT WALL SECTION VIEW
(EAST BRIDGE)
1:100**



**EAST ABUTMENT WALL EAST FACE
(EAST BRIDGE)
1:100**

SOUTHEAST RETAINING WALL



SOUTHEAST WING/RETAINING WALL

LEGEND

- REINFORCED CONCRETE
- MASS CONCRETE
- TO REMAIN



WEST ABUTMENT WALL EAST BRIDGE



EAST ABUTMENT WALL EAST BRIDGE

REVISIONS		DESCRIPTION		
NO.	DATE	BY	CHK	DESCRIPTION

DESIGN HK	CHK	CODE	DATE FEB 2024
DRAWN SR	CHK HK	SITE B41	DWG R5