SYSTRA Employer Consultant	Electric Express Train - HSR From El Ain El Sokhna City To El Alamein	الهيئة القومية للأنفاق	Request No. 57
	Section 3: From West of the River Nile To Wadi El Natroun From Station 121+562.467 To Station 248+158.745	EnTrans CONSULTING GARB Consultant	Date 03/12/2024

Request for Inspection

A request your attendance to inspect the following works :

Discipline : ☑ Civil/Slope Protection ☐ Structure ☐ Drainage ☐ Survey

Inspection time		Date 03/12/2024		
Location	Contractor Zone	From Station	To Station	QN
	From 190+000 To 195+000	194+760	194+800	Q T
	HSR-SEC03-PLN-PR-REV14 (22-02-2022)		Specification:	

Inspection : ◉ First ○ Second ○ Third

Purpose of the inspection :

2-Civil Works
- ☐ Open channels
- ☐ Box culvert
- ☐ Pipe culvert
- ☑ Slope protection
- ☐ Kerb
- ☐ Switches
- ☐ Other

3-Drainage
- ☐ Formation
- ☐ Sides of Excavation
- ☐ Backfilling Layers
- ☐ Slope protection

4. Surveying
- ☐ Setting out
- ☑ Levels
- ☐ Verticality

5. Structure
- ☑ Formwork
- ☐ Reinforcement
- ☐ Concreteing
- ☐ Earthing

Description of work(s) : Shaping & Formwork & Pouring concrete for slope protection L.S(Left Side)

Remarks / Detail :

Name : Eng. adel ahmed Signature :

Inspection Report : **EnTrans Consulting** Signature

Civil Eng:

Approved

تم استلام البجارة , وهو فى للعمل

Resident Engineer

The work have fount to be :

Satisfactory ☐ Approved (A) ☐ Approved as Noted (B) ☐ Revise& Resubmit (C) ☐ Rejected (D) Date : / /

Engineer's Representative " SYSTRA " comments :

Date : / /

Refer to relevant test forms

Acceptance of this does not relieve the Contractor of his liabilities under the Contract or constitute authorization of any change to Contract Documents.

CHAINAGE 194+760

POINT	E	N	Z	STRING CUT
1	581386.75	833737.95	98.93	P2
2	581388.01	833739.50	98.93	P2
3	581388.45	833740.04	98.23	P2
4	581389.09	833740.82	98.23	P2
5	581389.53	833741.36	98.93	P2
6	581390.16	833742.14	98.93	Daylight
7	581391.70	833744.03	100.56	Hinge_Fill

CHAINAGE 194+770

POINT	E	N	Z	STRING CUT	
1	581378.96	833744.22	98.89 3,16	P2	+1
2	581380.22	833745.78	98.89	P2	+2
3	581380.70	833746.36	98.13 3,92	P2	+1
4	581381.33	833747.13	98.13	P2	✓
5	581381.81	833747.72	98.89	P2	✓
6	581382.44	833748.49	98.89	Daylight	+1
7	581383.94	833750.34	100.47 1,58	Hinge_Fill	+1,5

CHAINAGE 194+780

POINT	E	N	Z	STRING CUT	
1	581371.17	833750.50	98.84 3,21	P2	-1
2	581372.44	833752.05	98.84	P2	+1
3	581372.95	833752.67	98.04 4,01	P2	-1
4	581373.58	833753.45	98.04	P2	✓
5	581374.09	833754.08	98.84	P2	+1
6	581374.72	833754.85	98.84	Daylight	+1,5
7	581376.19	833756.66	100.39 1,66	Hinge_Fill	✓

CHAINAGE 194+790

POINT	E	N	Z	STRING CUT	
1	581363.42	833756.81	98.69 3,36	P2	+1
2	581364.69	833758.37	98.69	P2	-1
3	581365.16	833758.94	97.94 4,11	P2	+1,5
4	581365.79	833759.72	97.94	P2	-1
5	581366.26	833760.30	98.69	P2	+1
6	581366.89	833761.07	98.69	Daylight	+1
7	581368.43	833762.97	100.31 1,74	Hinge_Fill	✓

CHAINAGE 194+800				
POINT	E	N	Z	STRING CUT
1	581355.67	833763.13	98.53 3.52	P2 ✓
2	581356.93	833764.68	98.53	P2 +1
3	581357.37	833765.21	97.84 4.21	P2 +1,5
4	581358.00	833765.99	97.84	P2 −1
5	581358.43	833766.52	98.53	P2 ✓
6	581359.06	833767.30	98.53	Daylight +1
7	581360.67	833769.28	100.23 1,82	Hinge_Fill +1

100,60
1,45
102,05

ولد الجارحى للمقاولات العمومية والتوريدات والخرسانة الجاهزة

DETERMINATION OF COMPRESSIVE STRENGTH OF CONCRETE CUBES
Test Standard BS 1881 - Part 116:1983 EGP 203-2007 (7-2)

CLIENT	:	شركة الأخوة العرب	SAMPLED BY	:	ولد الجارحى
PROJECT	:	مشروع القطار الكهربائي السريع	SAMPLING METHOD	:	BS 1881
CONSULTANT	:	Entrance / Systra	Cement Conten/Type	:	310 O.P.C
DATE OF CASTING	:	3-Dec-2024	STRUCTURE TYPE	:	
Elemnt	:	ميول	SPECIFIED STRENGTH	:	250 Kg/cm2
TARGET SLUMP	:	10 Cm	CONCRETE TEMP (°C)	:	29

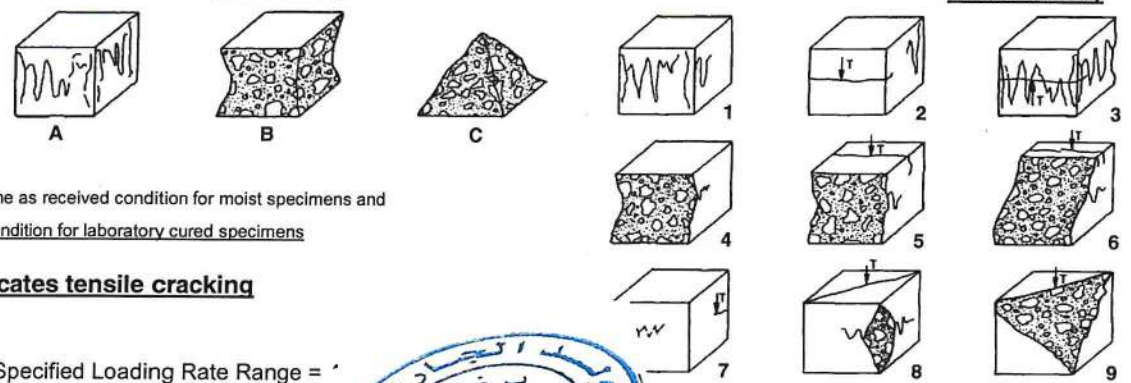
Results :

Specimen Reference	1	2	3	4	5	6
Date of Test	10-Dec-24					
Age of Test (Days)	7					
Moist. Condition at Testing.	Cube					
Average Dimension (mm)	150					
Weight (g)	8156	8184	8171			
Density (kg/m³)	2417	2425	2421			
Failure Load (kN)	502	487	520			
Comp. Strength Kg/cm²	227	221	236			
Mode of Failure						

AVERAGE Comp. Strength Kg/cm²	228

MODES OF FAILURE AS PER BS 1881 : Part 116 : 1983

Satisfactory **Unsatisfactory**



Remarks :

1881:Part 114 in the as received condition for moist specimens and

in the saturated condition for laboratory cured specimens

Note : T indicates tensile cracking

Remarks : Specified Loading Rate Range =

quality control : mohamed mostafa

Mahmoud Said

ولد الجارحى للمقاولات العمومية والتوريدات والخرسانة الجاهزة

DETERMINATION OF COMPRESSIVE STRENGTH OF CONCRETE CUBES
Test Standard BS 1881 - Part 116:1983 EGP 203-2007 (7-2)

CLIENT	:	شركة الأخوة العرب	SAMPLED BY	:	ولد الجارحى
PROJECT	:	مشروع القطار الكهربائي السريع	SAMPLING METHOD	:	BS 1881
CONSULTANT	:	Entrance / Systra	Cement Conten/Type	:	310 O.P.C
DATE OF CASTING	:	3-Dec-2024	STRUCTURE TYPE	:	
Elemnt	:	ميول	SPECIFIED STRENGTH	:	250 Kg/cm2
TARGET SLUMP	:	10 Cm	CONCRETE TEMP (°C)	:	29

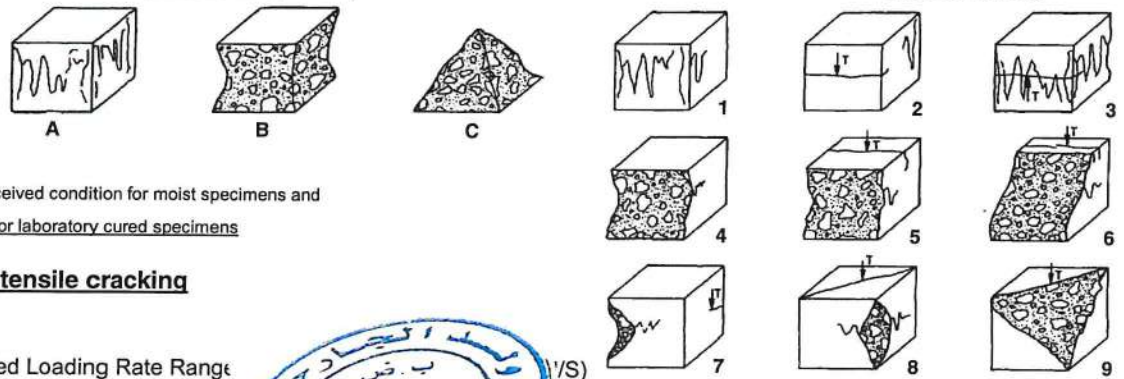
Results :

Specimen Reference	1	2	3	4	5	6
Date of Test	31-Dec-24					
Age of Test (Days)	28					
Moist. Condition at Testing.	Cube					
Average Dimension (mm)	150					
Weight (g)	8181	8219	8211			
Density (kg/m³)	2424	2435	2433			
Failure Load (kN)	571	563	592			
Comp. Strength Kg/cm²	259	255	268			
Mode of Failure						

AVERAGE Comp. Strength Kg/cm²	261

MODES OF FAILURE AS PER BS 1881 : Part 116 : 1983

Satisfactory **Unsatisfactory**



Remarks :

1881:Part 114 in the as received condition for moist specimens and in the saturated condition for laboratory cured specimens

Note : T indicates tensile cracking

Remarks : Specified Loading Rate Range (N/S)

quality control : mohamed mostafa

Mahmoud Said

SYSTRA Employer Consultant	Electric Express Train - HSR From El Ain El Sokhna City To El Alamein		Request No. 58
Contractor	Section 3: From West of the River Nile To Wadi El Natroun From Station 121+562.467 To Station 248+158.745	EnTrans CONSULTING GARB Consultant	Date 04/12/2024

Request for Inspection

We request your attendance to inspect the following works :

Discipline : ☑ Civil/Slope Protection ☐ Structure ☐ Drainage ☐ Survey

Inspection time : Date 04/12/2024

Location :	Contractor Zone	From Station	To Station	QN
	From 190+000 To 195+000	194+800	194+820	Q T

References HSR-SEC03-PL&PR-REV14 (22-02-2022) **Specification:**

Inspection : ◉ First ○ Second ○ Third

Purpose of the inspection :

1. Earthworks
- ☐ Stripping
- ☐ Natural Sub Grade
- ☐ Upper Embankment
- ☐ excavation
- ☐ Sub Grade
- ☐ Sub Ballast
- ☐ Ballast
- ☐ Empankment

2.Civil Work
- ☐ Open Channels
- ☐ Box Culvert
- ☐ Pipe Culvert
- ☐ Slope protection
- ☐ Gabion
- ☐ Side Ditches
- ☐ Other

3-Drainage
- ☐ Formation
- ☐ Sides of Excavation
- ☐ Backfilling Layers
- ☐ Slope protection

4. Surveying
- ☐ Setting out
- ☑ Levels
- ☐ Verticality

5. Structure
- ☑ Formwork
- ☐ Reinforcement
- ☐ Concreteing
- ☐ Earthing

Others (specify) Sheaping & Formwork & Pouring concrete for slope protection L.S(Left Side)

Particular Details

Submitted by : Eng .adel ahmed Signature :

Inspection Report :	EnTrans Consulting	Signature
Civil Eng.		
Surveyor	Approved	
E/M Eng.		
Structural Eng.		
Arch. Eng.		

Resident Engineer

The work have fount to be :

Signature _____ ☐ Approved (A) ☐ Approved as Noted (B) ☐ Revise& Resubmit (C) ☐ Rejected (D) Date : / /

Engineer's Representative " SYSTRA " comments :

Signature : Date : / /

Attach all relevant particular test forms

Approval shall not relieve Contractor of his liabilities under the Contract or constitute authorization of any change to Contract Documents.

CHAINAGE 194+800				
POINT	E	N	Z	STRING CUT
1	581365.67	833763.13	98.53	P2
2	581366.93	833764.68	98.53	P2
3	581367.37	833765.21	97.84	P2
4	581368.00	833765.99	97.84	P2
5	581368.43	833766.52	98.53	P2
6	581369.06	833767.30	98.53	Daylight
7	581360.67	833769.28	100.23	Hinge_Fill

CHAINAGE 194+810				
POINT	E	N	Z	STRING CUT
1	581347.92	833769.45	98.38 3,74	P2 +1
2	581349.18	833771.00	98.38	P2 ✓
3	581349.58	833771.49	97.75 4,37	P2 ✓
4	581350.21	833772.26	97.75	P2 +1
5	581350.60	833772.75	98.38	P2 +1,5
6	581351.24	833773.52	98.38	Daylight +1
7	581352.92	833775.59	100.15 1,97	Hinge_Fill +2

CHAINAGE 194+820				
POINT	E	N	Z	STRING CUT
1	581340.16	833775.76	98.22 3,90	P2 -1
2	581341.43	833777.31	98.22	P2 +1
3	581341.79	833777.76	97.65 4,47	P2 ✓
4	581342.42	833778.53	97.65	P2 ✓
5	581342.78	833778.98	98.22	P2 +1
6	581343.41	833779.75	98.22	Daylight -1
7	581345.16	833781.90	100.07 2,05	Hinge_Fill +1

100,60
1,52
102,12

ولد الجارحى للمقاولات العمومية والتوريدات والخرسانة الجاهزة

DETERMINATION OF COMPRESSIVE STRENGTH OF CONCRETE CUBES
Test Standard BS 1881 - Part 116:1983 EGP 203-2007 (7-2)

CLIENT	:	شركة الأخوة العرب	SAMPLED BY	:	ولد الجارحى
PROJECT	:	مشروع القطار الكهربائي السريع	SAMPLING METHOD	:	BS 1881
CONSULTANT	:	Entrance / Systra	Cement Conten/Type	:	310 O.P.C
DATE OF CASTING	:	4-Dec-2024	STRUCTURE TYPE	:	
Elemnt	:	ميول	SPECIFIED STRENGTH	:	250 Kg/cm2
TARGET SLUMP	:	11 Cm	CONCRETE TEMP (°C)	:	29

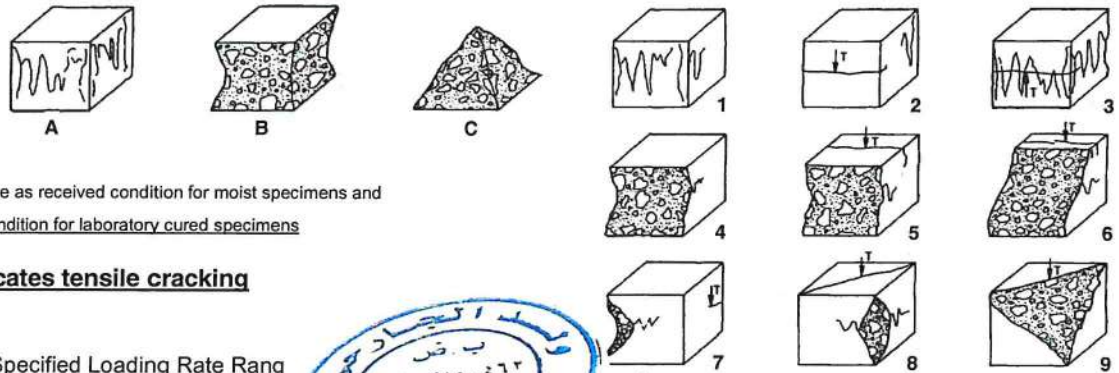
Results :

Specimen Reference	1	2	3	4	5	6
Date of Test	11-Dec-24					
Age of Test (Days)	7					
Moist. Condition at Testing.	Cube					
Average Dimension (mm)	150					
Weight (g)	8170	8165	8145			
Density (kg/m³)	2421	2419	2413			
Failure Load (kN)	518	492	478			
Comp. Strength Kg/cm²	235	223	217			
Mode of Failure						

AVERAGE Comp. Strength Kg/cm²	225

MODES OF FAILURE AS PER BS 1881 : Part 116 : 1983

Satisfactory **Unsatisfactory**



Remarks :

1881:Part 114 in the as received condition for moist specimens and in the saturated condition for laboratory cured specimens

Note : T indicates tensile cracking

Remarks : Specified Loading Rate Rang

quality control : mohamed mostafa

Mahmoud Said

ولد الجارحى للمقاولات العمومية والتوريدات والخرسانة الجاهزة

شركة الجارحى
للخرسانة الجاهزة

DETERMINATION OF COMPRESSIVE STRENGTH OF CONCRETE CUBES
Test Standard BS 1881 - Part 116:1983 EGP 203-2007 (7-2)

CLIENT	:	شركة الأخوة العرب	SAMPLED BY	:	ولد الجارحى
PROJECT	:	مشروع القطار الكهرباني السريع	SAMPLING METHOD	:	BS 1881
CONSULTANT	:	Entrance / Systra	Cement Conten/Type	:	310 O.P.C
DATE OF CASTING	:	4-Dec-2024	STRUCTURE TYPE	:	
Elemnt	:	ميول	SPECIFIED STRENGTH	:	250 Kg/cm2
TARGET SLUMP	:	11 Cm	CONCRETE TEMP (°C)	:	29

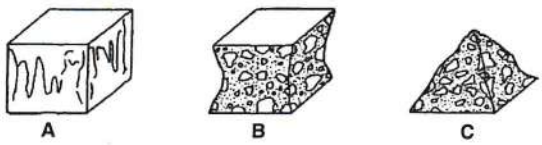
Results :

Specimen Reference	1	2	3	4	5	6
Date of Test	1-Jan-25					
Age of Test (Days)	28					
Moist. Condition at Testing.	Cube					
Average Dimension (mm)	150					
Weight (g)	8195	8200	8185			
Density (kg/m³)	2428	2430	2425			
Failure Load (kN)	587	567	559			
Comp. Strength Kg/cm²	266	257	253			
Mode of Failure						

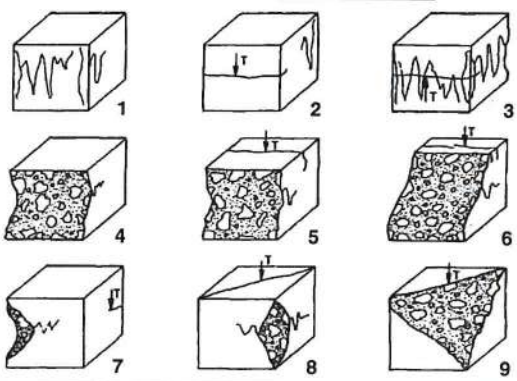
AVERAGE Comp. Strength Kg/cm²	259

MODES OF FAILURE AS PER BS 1881 : Part 116 : 1983

Satisfactory



Unsatisfactory



Remarks :

1881:Part 114 in the as received condition for moist specimens and

in the saturated condition for laboratory cured specimens

Note : T indicates tensile cracking

Remarks : Specified Loading Rate Range)'S)

quality control : mohamed mostafa

ولد الجارحى للمقاولات العمومية
ب.ض ٣٦٢-٢٨٠-٣١
س.ت ٥٥١٦٢

Mahmoud Said

SYSTRA Employer Consultant	Electric Express Train - HSR From El Ain El Sokhna City To El Alamein	الهيئة القومية للأنفاق	Request No. 55
Contractor	Section 3: From West of the River Nile To Wadi El Natroun From Station 121+562.467 To Station 248+158.745	EnTrans CONSULTING GARB Consultant	Date 30/11/2024

Request for Inspection

We request your attendance to inspect the following works :

Discipline : ☑ Civil/Slope Protection ☐ Structure ☐ Drainage ☐ Survey

Inspection time : Date 30/11/2024

Location	Contractor Zone	From Station	To Station	QN
	From 190+000 To 195+000	194+660	194+700	Q T

References: HSR-SEC03-PL&PR-REV14 (22-02-2022) Specification:

Inspection: ◉ First ○ Second ○ Third

Purpose of the inspection :

1. Earthworks
- ☐ Stripping
- ☐ Natural Sub Grade
- ☐ Upper Embankment
- ☐ excavation
- ☐ Sub Grade
- ☐ Sub Ballast
- ☐ Ballast
- ☐ Embankment

2.Civil Wor
- ☐ Open Channels
- ☐ Box Culvert
- ☐ Pipe Culvert
- ☑ Slope protection
- ☐ Gabion
- ☐ Side Ditches
- ☐ Other

3-Drainage
- ☐ Formation
- ☐ Sides of Excavation
- ☐ Backfilling Layers
- ☐ Slope protection

4. Surveying
- ☐ Setting out
- ☑ Levels
- ☐ Verticality

5. Structure
- ☑ Formwork
- ☐ Reinforcement
- ☐ Concreteing
- ☐ Earthing

Others (specify) Sheaping & Formwork & Pouring concrete for slope protection L.S(Left Side)

Attached Details

Submitted by Eng .adel ahmed Signature :

Inspection Report : EnTrans Consulting Signature

Civil Eng. تم الاستلام لبناءة وجاهزة للصب

Surveyor

E/M Eng. Approved

Structural Eng.

Arch. Eng.

Resident Engineer

The work have fount to be :

Signature ☐ Approved (A) ☐ Approved as Noted (B) ☐ Revise& Resubmit (C) ☐ Rejected (D) Date : / /

Engineer's Representative " SYSTRA " comments :

Signature Date : / /

The relevant particular test forms

... not relieve the contractor of his liabilities under the Contract or constitute authorization of any change to Contract Documents.

CHAINAGE 194+660

POINT	E	N	Z	STRING CUT
1	581464.65	833675.24	99.29	P2
2	581465.91	833676.80	99.29	P2
3	581465.98	833676.87	99.19	P2
4	581466.61	833677.65	99.19	P2
5	581466.67	833677.73	99.29	P2
6	581467.30	833678.50	99.29	Daylight
7	581469.26	833680.91	101.36	Hinge_Fill

CHAINAGE 194+670

POINT	E	N	Z	STRING CUT
1	581456.87	833681.52	99.23 3,74	P2 +1
2	581458.13	833683.08	99.23 3,88	P2 ✓
3	581458.22	833683.18	99.09	P2 +1
4	581458.85	833683.96	99.09	P2 +1
5	581458.93	833684.06	99.23	P2 −1
6	581459.56	833684.84	99.23	Daylight +1,5
7	581461.50	833687.22	101.28 1,69	Hinge_Fill ✓

CHAINAGE 194+680

POINT	E	N	Z	STRING CUT
1	581449.08	833687.80	99.17 3,80	P2 +1,5
2	581450.35	833689.36	99.17	P2 −1
3	581450.46	833689.49	99.00 3,97	P2 +1
4	581451.09	833690.26	99.00	P2 ✓
5	581451.19	833690.40	99.17	P2 ✓
6	581451.83	833691.17	99.17	Daylight +1
7	581453.75	833693.54	101.20 1,77	Hinge_Fill ✓

CHAINAGE 194+690

POINT	E	N	Z	STRING CUT
1	581441.31	833694.10	99.08 3,89	P2 +1
2	581442.57	833695.65	99.08	P2 +2
3	581442.69	833695.79	98.90 4,07	P2 +1
4	581443.32	833696.56	98.90	P2 +1,5
5	581444.43	833696.70	99.08	P2 +2
6	581444.06	833697.48	99.08	Daylight +1
7	581445.99	833699.85	101.12 1,85	Hinge_Fill +1

CHAINAGE 194+700				
POINT	E	N	Z	STRING CUT
1	581433.54	833700.39	99.00 3,97	P2
2	581434.80	833701.94	99.00	P2
3	581434.92	833702.08	98.81 4,16	P2
4	581435.55	833702.86	98.81	P2
5	581435.67	833703.01	99.00	P2
6	581436.30	833703.78	99.00	Daylight
7	581438.24	833706.16	101.04 1,93	Hinge_Fill

100,60
2,37
102,97

ولد الجارحى للمقاولات العمومية والتوريدات والخرسانة الجاهزة

DETERMINATION OF COMPRESSIVE STRENGTH OF CONCRETE CUBES
Test Standard BS 1881 - Part 116:1983 EGP 203-2007 (7-2)

CLIENT	:	شركة الأخوة العرب	SAMPLED BY	:	ولد الجارحى
PROJECT	:	مشروع القطار الكهربائي السريع	SAMPLING METHOD	:	BS 1881
CONSULTANT	:	Entrance / Systra	Cement Conten/Type	:	310 O.P.C
DATE OF CASTING	:	5-Dec-2024	STRUCTURE TYPE	:	
Elemnt	:	ميول	SPECIFIED STRENGTH	:	250 Kg/cm2
TARGET SLUMP	:	11 Cm	CONCRETE TEMP (°C)	:	29

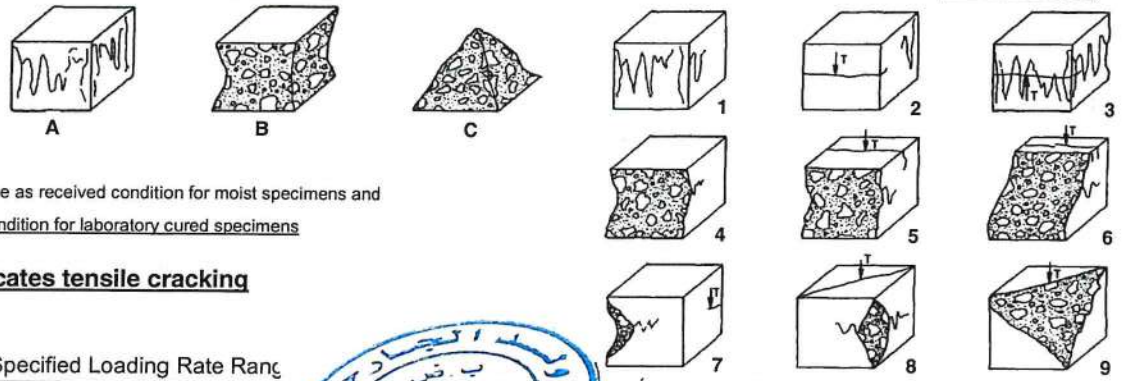
Results :

Specimen Reference	1	2	3	4	5	6
Date of Test	12-Dec-24					
Age of Test (Days)	7					
Moist. Condition at Testing.	Cube					
Average Dimension (mm)	150					
Weight (g)	8140	8150	8170			
Density (kg/m³)	2412	2415	2421			
Failure Load (kN)	483	495	506			
Comp. Strength Kg/cm²	219	224	229			
Mode of Failure						

AVERAGE Comp. Strength Kg/cm²	224

MODES OF FAILURE AS PER BS 1881 : Part 116 : 1983

Satisfactory **Unsatisfactory**



Remarks :

1881:Part 114 in the as received condition for moist specimens and in the saturated condition for laboratory cured specimens

Note : T indicates tensile cracking

Remarks : Specified Loading Rate Rang

quality control : mohamed mostafa

Mahmoud Said

ولد الجارحى للمقاولات العمومية والتوريدات والخرسانة الجاهزة

شركة الجارحى
للخرسانة الجاهزة

DETERMINATION OF COMPRESSIVE STRENGTH OF CONCRETE CUBES
Test Standard BS 1881 - Part 116:1983 EGP 203-2007 (7-2)

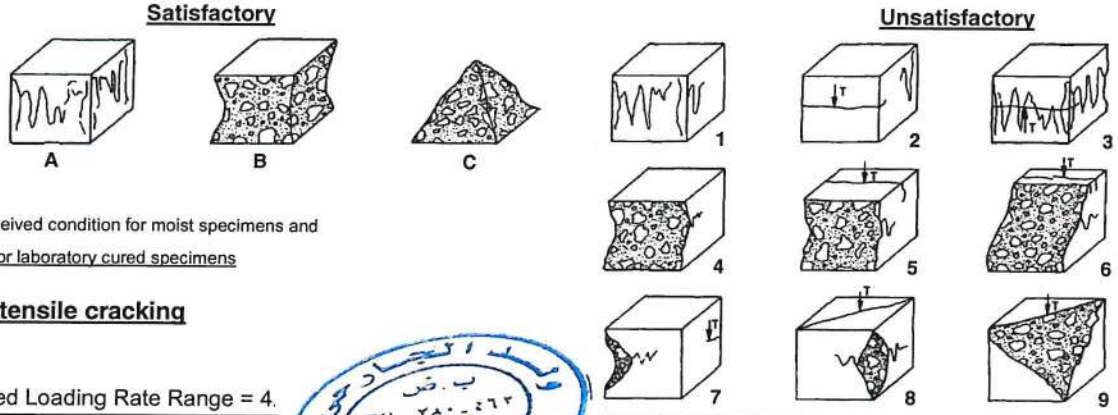
CLIENT	:	شركة الأخوة العرب	SAMPLED BY	:	ولد الجارحى
PROJECT	:	مشروع القطار الكهربائي السريع	SAMPLING METHOD	:	BS 1881
CONSULTANT	:	Entrance / Systra	Cement Conten/Type	:	310 O.P.C
DATE OF CASTING	:	5-Dec-2024	STRUCTURE TYPE	:	
Elemnt	:	ميول	SPECIFIED STRENGTH	:	250 Kg/cm2
TARGET SLUMP	:	11 Cm	CONCRETE TEMP (°C)	:	29

Results :

Specimen Reference	1	2	3	4	5	6
Date of Test	2-Jan-25					
Age of Test (Days)	28					
Moist. Condition at Testing.	Cube					
Average Dimension (mm)	150					
Weight (g)	8165	8185	8210			
Density (kg/m³)	2419	2425	2433			
Failure Load (kN)	570	570	586			
Comp. Strength Kg/cm²	258	258	265			
Mode of Failure						

AVERAGE Comp. Strength Kg/cm²	261

MODES OF FAILURE AS PER BS 1881 : Part 116 : 1983



Remarks :

1881:Part 114 in the as received condition for moist specimens and in the saturated condition for laboratory cured specimens

Note : T indicates tensile cracking

Remarks : Specified Loading Rate Range = 4.

quality control : mohamed mostafa

ولد الجارحى للمقاولات العمومية ب.ض ٢٦٢-٢٨٠-٣٢١ س.ت ٥٥١٦٢

Mahmoud Said

SYSTRA Employer Consultant	Electric Express Train - HSR From El Ain El Sokhna City To El Alamein	الهيئة القومية للأنفاق	Request No. 59
Contractor	Section 3: From West of the River Nile To Wadi El Natroun From Station 121+562.467 To Station 248+158.745	EnTrans CONSULTING GARB Consultant	Date 07/12/2024

Request for Inspection

We request your attendance to inspect the following works :

Discipline : ☑ Civil/Slope Protection ☐ Structure ☐ Drainage ☐ Survey

Inspection time : Date 07/12/2024

Location :	Contractor Zone	From Station	To Station	QN
	From 190+000 To 195+000	194+820	194+920	Q T

References: HSR-SEC03-PL&PR-REV14 (22-02-2022) Specification:

Inspection : ◉ First ○ Second ○ Third

Purpose of the inspection :

1. Earthworks
- ☐ Stripping
- ☐ Natural Sub Grade
- ☐ Upper Embankment
- ☐ excavation
- ☐ Sub Grade
- ☐ Sub Ballast
- ☐ Ballast
- ☐ Empankment

2.Civil Work
- ☐ Open Channels
- ☐ Box Culvert
- ☐ Pipe Culvert
- ☑ Slope protection
- ☐ Gabion
- ☐ Side Ditches
- ☐ Other

3-Drainage
- ☐ Formation
- ☐ Sides of Excavation
- ☐ Backfilling Layers
- ☐ Slope protection

4. Surveying
- ☐ Setting out
- ☑ Levels
- ☐ Verticality

5. Structure
- ☑ Formwork
- ☐ Reinforcement
- ☐ Concreteing
- ☐ Earthing

Others (specify): Sheaping & Formwork & Pouring concrete for slope protection L.S(Left Side)

Particular Details:

Submitted by : Eng .adel ahmed Signature :

Inspection Report :	EnTrans Consulting	Signature
Civil Eng.		
Surveyor	Approved	
E/M Eng.		
Structural Eng.		
Arch. Eng.		
Resident Engineer		

The work have fount to be :

Signature _____ ☐ Approved (A) ☐ Approved as Noted (B) ☐ Revise& Resubmit (C) ☐ Rejected (D) Date : / /

Engineer's Representative " SYSTRA " comments :

Signature : Date : / /

Attach all relevant particular test forms

Approval shall not relieve Contractor of his liabilities under the Contract or constitute authorization of any change to Contract Documents.

CHAINAGE 194+820				
POINT	E	N	Z	STRING CUT
1	581340.16	833775.76	98.22	P2
2	581341.43	833777.31	98.22	P2
3	581341.79	833777.76	97.65	P2
4	581342.42	833778.53	97.65	P2
5	581342.78	833778.98	98.22	P2
6	581343.41	833779.75	98.22	Daylight
7	581345.16	833781.90	100.07	Hinge_Fill

CHAINAGE 194+830				
POINT	E	N	Z	STRING CUT
1	581332.44	833782.11	97.98 3,34	P2 +1
2	581333.70	833783.66	97.98	P2 +2
3	581333.97	833784.00	97.55 3,77	P2 +1
4	581334.60	833784.77	97.55	P2 ✓
5	581334.87	833785.10	97.98	P2 +1
6	581335.50	833785.88	97.98	Daylight -1
7	581337.41	833788.22	99.99 1,33	Hinge_Fill -1

CHAINAGE 194+840				
POINT	E	N	Z	STRING CUT
1	581324.71	833788.46	97.74 3,58	P2 ✓
2	581325.98	833790.02	97.74	P2 ✓
3	581326.15	833790.23	97.46 3,86	P2 +1
4	581326.78	833791.01	97.46	P2 -1
5	581326.96	833791.23	97.74	P2 +2
6	581327.59	833792.00	97.74	Daylight +1
7	581329.65	833794.53	99.91	Hinge_Fill -1

CHAINAGE 194+850				
POINT	E	N	Z	STRING CUT
1	581316.93	833794.74	97.68 3,64	P2 +1
2	581318.19	833796.30	97.68	P2 ✓
3	581318.39	833796.54	97.36 3,96	P2 +1,5
4	581319.03	833797.32	97.36	P2 -1
5	581319.23	833797.56	97.68	P2 +1
6	581319.86	833798.34	97.68	Daylight ✓

CHAINAGE 194+860				
POINT	E	N	Z	STRING CUT
1	581309.15	833801.02	97.62 3,70	P2 +1
2	581310.41	833802.57	97.62	P2 ✓
3	581310.64	833802.85	97.27 4,05	P2 +1
4	581311.27	833803.62	97.27	P2 +1
5	581311.49	833803.90	97.62	P2 +1
6	581312.12	833804.67	97.62	Daylight ✓
7	581314.14	833807.15	99.75 1,57	Hinge_Fill ✓

CHAINAGE 194+870				
POINT	E	N	Z	STRING CUT
1	581301.42	833807.36	97.41 3,91	P2 +1,5
2	581302.68	833808.91	97.41	P2 +2
3	581302.83	833809.10	97.17 4,15	P2 +1
4	581303.46	833809.87	97.17	P2 +1
5	581303.61	833810.06	97.41	P2 ✓
6	581304.24	833810.83	97.41	Daylight ✓
7	581306.38	833813.46	99.67 1,65	Hinge_Fill +1

CHAINAGE 194+880				
POINT	E	N	Z	STRING CUT
1	581293.68	833813.70	97.20 4,12	P2 +1
2	581294.94	833815.25	97.20	P2 -1
3	581295.02	833815.35	97.07 4,25	P2 +1
4	581295.65	833816.12	97.07	P2 +2
5	581295.73	833816.22	97.20	P2 +1
6	581296.36	833816.99	97.20	Daylight -1
7	581298.63	833819.78	99.59 1,73	Hinge_Fill +1

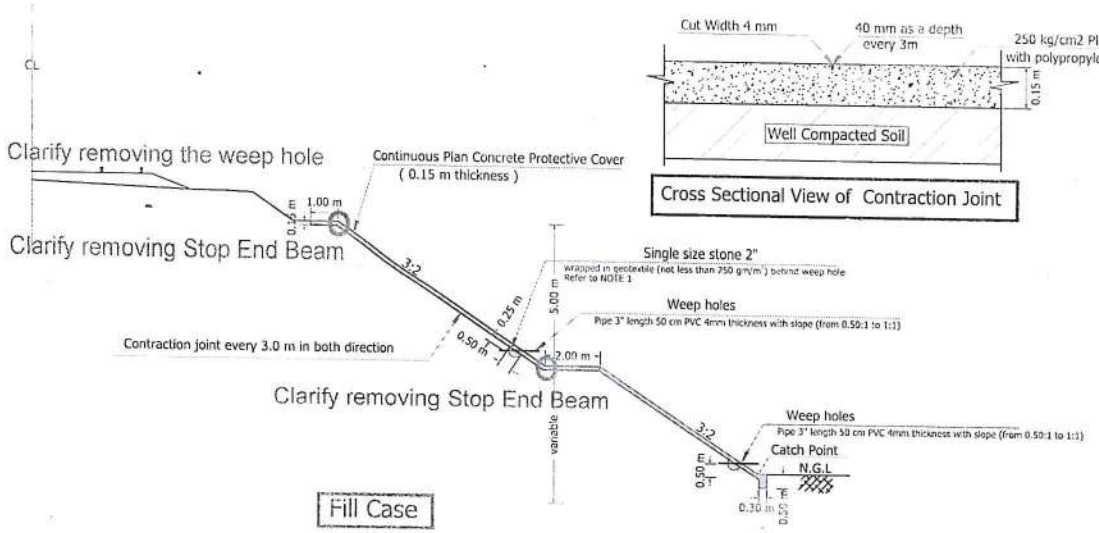
CHAINAGE 194+890				
POINT	E	N	Z	STRING CUT
1	581285.93	833820.02	97.03 4,29	P2 +1
2	581287.19	833821.57	97.03	P2 ✓
3	581287.23	833821.61	96.98 4,34	P2 +1
4	581287.86	833822.39	96.98	P2 -1
5	581287.89	833822.43	97.03	P2 +1
6	581288.52	833823.21	97.03	Daylight ✓

CHAINAGE 194+900				
POINT	E	N	Z	STRING CUT
1	581278.14	833826.30	96.87 4,45	P2 -1
2	581279.41	833827.85	96.87	P2 ✓
3	581279.42	833827.86	96.88 4,44	P2 +1
4	581280.05	833828.63	96.88	P2 -1
5	581280.06	833828.65	96.87	P2 +1
6	581280.69	833829.42	96.87	Daylight ✓
7	581283.11	833832.40	99.43 1,89	Hinge_Fill +1

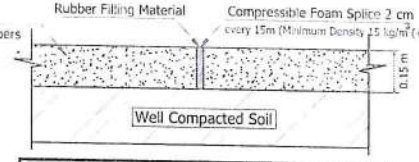
CHAINAGE 194+910				
POINT	E	N	Z	STRING CUT
1	581270.33	833832.54	96.75 4,57	P2 +1
2	581271.59	833834.09	96.75	P2 -1
3	581271.62	833834.12	96.78 4,54	P2 +1
4	581272.25	833834.89	96.78	P2 +1
5	581272.27	833834.92	96.75	P2 ✓
6	581272.90	833835.69	96.75	Daylight +1
7	581275.36	833838.71	99.35 1,97	Hinge_Fill ✓

CHAINAGE 194+920				
POINT	E	N	Z	STRING CUT
1	581262.52	833838.78	96.64 4,68	P2 +1,5
2	581263.78	833840.33	96.64	P2 +1,5
3	581263.82	833840.37	96.69 4,63	P2 +1
4	581264.45	833841.15	96.69	P2 +1
5	581264.48	833841.19	96.64	P2 +1
6	581265.11	833841.96	96.64	Daylight ✓
7	581267.60	833845.02	99.27 2,05	Hinge_Fill +1

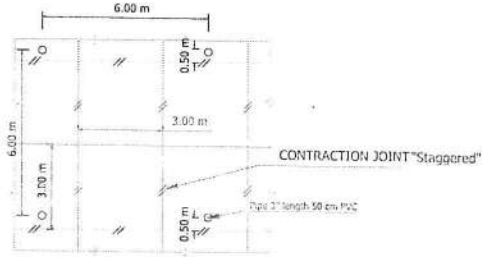
100.68
+72
101.32



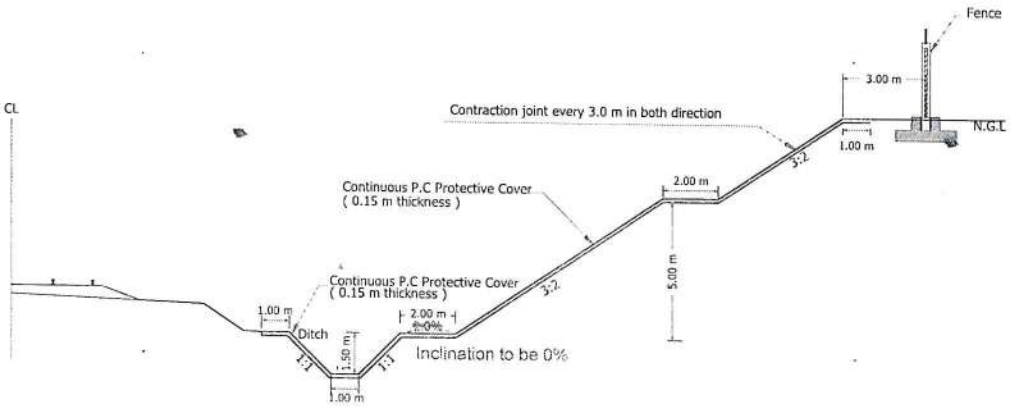
Cross Sectional View of Contraction Joint



Cross Sectional View of Expansion Joint



APPROVED AS NOTED



Cut Case

Check report No. as it was in the Previous revisions CG21-11.1

NOTES ACCORDING TO REPORT ~~CG21-110.~~1 (CIVECON GROUP) :

17. Cut slopes in soil formations and embankment fills shall be covered with a plain concrete layer for stabilization and erosion protection according to the following recommendations:

17.1. The plain concrete protection layer shall be at least 15 cm in thickness, and shall have benches at 5.0 m height intervals, and maximum side slope of 3 (H) : 2 (V). The concrete slope protection shall have contraction joints every 3.0 meters in the longitudinal direction. A joint sealant shall be placed at the joints.

17.2. Ordinary Portland cement may be used in mixing the concrete cover with a cement content not less than 280 kg/m3 , maximum aggregate size of 20 mm, and water to cement ratio not exceeding 0.55. It is recommended to use fiber reinforcement in the concrete mix. Concrete shall be cast at a temperatures not exceeding 32 °C. Thus it is preferred to cast concrete early in the morning or in the evening.

17.3. Water used in mixing the concrete cover shall be a fresh water satisfying the specifications of the Egyptian code for soil mechanics and design and construction of foundations (202-2001).

17.4. The concrete shall have a min mum compressive strength of 25 MPa (250 kg/cm2) after 28 days.

17.5. The concrete surface shall be floated and troweled as necessary to produce a smooth surface. The surface shall not vary more than 6 mm under a 3 m long straightedge.

17.6. The concrete slabs shall be water cured for at least 7 days or a using an alternative acceptable curing method.

17.7. The concrete slab shall be placed on freely draining granular fill. If low draining soil exist below the layer, a granular drainage filter shall be needed behind the weep holes with a suitable non-woven geotextile. Weep holes are recommended at 3 to 5 m spacing at the toe of the slopes.

Owner
Ministry of Transportation
National Authority for Tunnels (NAT)

Owner
General Authority for Roads, Bridges & Land Transport

Project Name
ELECTRIC EXPRESS TRAIN (HIGH SPEED RAIL)
SECTION THREE (FROM WEST OF NILE TO WADI EL-NATROUN)
STATION 121+562.407 - STATION 247+000

KEY PLAN

No	Date	Drawing Name	Engineer
5	09-JAN-2022	Typical detail of slope protections	Mahmoud Ezzat
4	10-NOV-2021	Typical detail of slope protections	Rawan Hafez
3	14-SEP-2021	Typical detail of slope protections	Rawan Hafez
2	14-SEP-2021	Typical detail of slope protections	Rawan Hafez
1	14-SEP-2021	Typical detail of slope protections	Rawan Hafez
0	14-SEP-2021	Typical detail of slope protections	Rawan Hafez

Please Review the Issued Revisions and dates

* All dimensions are in meters unless otherwise mentioned.
* Dimensions should be based on detailed structure design of system.

NOTES:
1-The geotextile shall be 250 g/m/m of minimum grab tensile strength of 200 N, puncture resistance 250 N, tear resistance 250 N, and burst strength 250 kPa.
2- As instructed by the client (GARBLT Rev05 of slope protection this drawing) matching with East Nile Section

Please rectify the Statement in the General Notes Section

Owner Consultants

GARBLT Consultant

EnTrans Consulting
Environmental & Transportation Solutions

Drawing Name
HSR-STC-03-TYPICAL DETAILS OF SLOPE PROTECTION

Drawing Scale
N. T. S.

Drawing No
HSR-SEC-03-TYES-[illegible]

Approval	Revision	Designer	Date
Dr. Dalia Said	Eng/ Fatma Ahmed	Eng/Karam Adel	Sept. 2021

ولد الجارحى للمقاولات العمومية والتوريدات والخرسانة الجاهزة

شركة الجارحى
للخرسانة الجاهزة

DETERMINATION OF COMPRESSIVE STRENGTH OF CONCRETE CUBES
Test Standard BS 1881 - Part 116:1983 EGP 203-2007 (7-2)

CLIENT	:	شركة الأخوة العرب	SAMPLED BY	:	ولد الجارحى
PROJECT	:	مشروع القطار الكهربائي السريع	SAMPLING METHOD	:	BS 1881
CONSULTANT	:	Entrance / Systra	Cement Conten/Type	:	310 O.P.C
DATE OF CASTING	:	7-Dec-2024	STRUCTURE TYPE	:	
Elemnt	:	ميول	SPECIFIED STRENGTH	:	250 Kg/cm2
TARGET SLUMP	:	11 Cm	CONCRETE TEMP (°C)	:	29

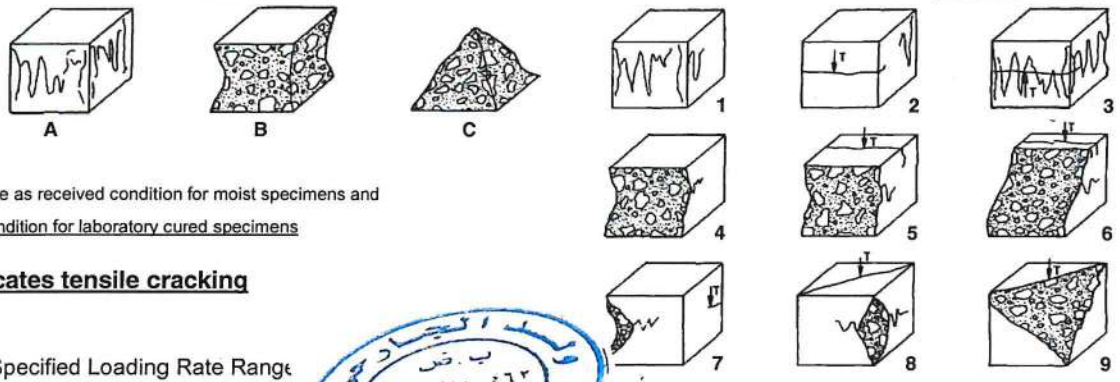
Results :

Specimen Reference	1	2	3	4	5	6
Date of Test	14-Dec-24					
Age of Test (Days)	7					
Moist. Condition at Testing.	Cube					
Average Dimension (mm)	150					
Weight (g)	8135	8150	8160			
Density (kg/m³)	2410	2415	2418			
Failure Load (kN)	484	513	499			
Comp. Strength Kg/cm²	219	232	226			
Mode of Failure						

AVERAGE Comp. Strength Kg/cm²	226

MODES OF FAILURE AS PER BS 1881 : Part 116 : 1983

Satisfactory **Unsatisfactory**



Remarks :

1881:Part 114 in the as received condition for moist specimens and in the saturated condition for laboratory cured specimens

Note : T indicates tensile cracking

Remarks : Specified Loading Rate Range

quality control : mohamed mostafa

Mahmoud Said

ولد الجارحى للمقاولات العمومية والتوريدات والخرسانة الجاهزة

DETERMINATION OF COMPRESSIVE STRENGTH OF CONCRETE CUBES
Test Standard BS 1881 - Part 116:1983 EGP 203-2007 (7-2)

CLIENT	:	شركة الأخوة العرب	SAMPLED BY	:	ولد الجارحى
PROJECT	:	مشروع القطار الكهربائي السريع	SAMPLING METHOD	:	BS 1881
CONSULTANT	:	Entrance / Systra	Cement Conten/Type	:	310 O.P.C
DATE OF CASTING	:	7-Dec-2024	STRUCTURE TYPE	:	
Elemnt	:	ميول	SPECIFIED STRENGTH	:	250 Kg/cm2
TARGET SLUMP	:	11 Cm	CONCRETE TEMP (°C)	:	29

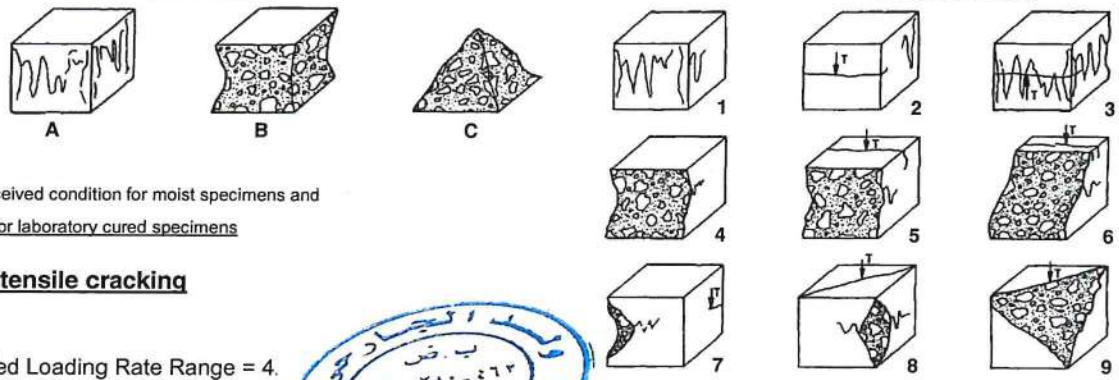
Results :

Specimen Reference	1	2	3	4	5	6
Date of Test	4-Jan-25					
Age of Test (Days)	28					
Moist. Condition at Testing.	Cube					
Average Dimension (mm)	150					
Weight (g)	8160	8185	8200			
Density (kg/m³)	2418	2425	2430			
Failure Load (kN)	577	588	579			
Comp. Strength Kg/cm²	261	266	262			
Mode of Failure						

AVERAGE Comp. Strength Kg/cm²	263

MODES OF FAILURE AS PER BS 1881 : Part 116 : 1983

Satisfactory **Unsatisfactory**



Remarks :

1881:Part 114 in the as received condition for moist specimens and in the saturated condition for laboratory cured specimens

Note : T indicates tensile cracking

Remarks : Specified Loading Rate Range = 4.

quality control : mohamed mostafa

Mahmoud Said

SYSTRA Employer Consultant	Electric Express Train - HSR From El Ain El Sokhna City To El Alamein	الهيئة القومية للأنفاق / وزارة النقل	Request No. 73
Contractor	Section 3: From West of the River Nile To Wadi El Natroun From Station 121+562.467 To Station 248+158.745	EnTrans CONSULTING GARB Consultant	Date 15/01/2025

Request for Inspection

We request your attendance to inspect the following works :

Discipline : ☑ Civil/Slope Protection ☐ Structure ☐ Drainage ☐ Survey

Inspection time :		**Date** 19/01/2025		
Location :	**Contractor Zone**	**From Station**	**To Station**	**QN**
	From 190+000 To 195+000	**193+760**	**193+800**	**Q T**
References	**HSR-SEC03-PL&PR-REV14 (22-02-2022)**		Specification:	

Inspection : ◉ First ○ Second ○ Third

Purpose of the inspection :

1. Earthworks
- ☐ Stripping
- ☐ Natural Sub Grade
- ☐ Upper Embankment
- ☐ excavation
- ☐ Sub Grade
- ☐ Sub Ballast
- ☐ Ballast
- ☐ Empankment

2.Civil Work
- ☐ Open Channels
- ☐ Box Culvert
- ☐ Pipe Culvert
- ☑ Slope protection
- ☐ Gabion
- ☐ Side Ditches
- ☐ Other

3-Drainage
- ☐ Formation
- ☐ Sides of Excavation
- ☐ Backfilling Layers
- ☐ Slope protection

4. Surveying
- ☐ Setting out
- ☑ Levels
- ☐ Verticality

5. Structure
- ☑ Formwork
- ☐ Reinforcement
- ☐ Concreteing
- ☐ Earthing

Others (specify) sheaping&formwork&pouring concrete for slop protection and ditch L.S

Particular Details

Submitted by : Eng .adel ahmed Signature :

Inspection Report :	**EnTrans Consulting**	**Signature**
Civil Eng.		
Surveyor	Approved	
E/M Eng.		
Structural Eng.		
Arch. Eng.		

Resident Engineer

The work have fount to be :

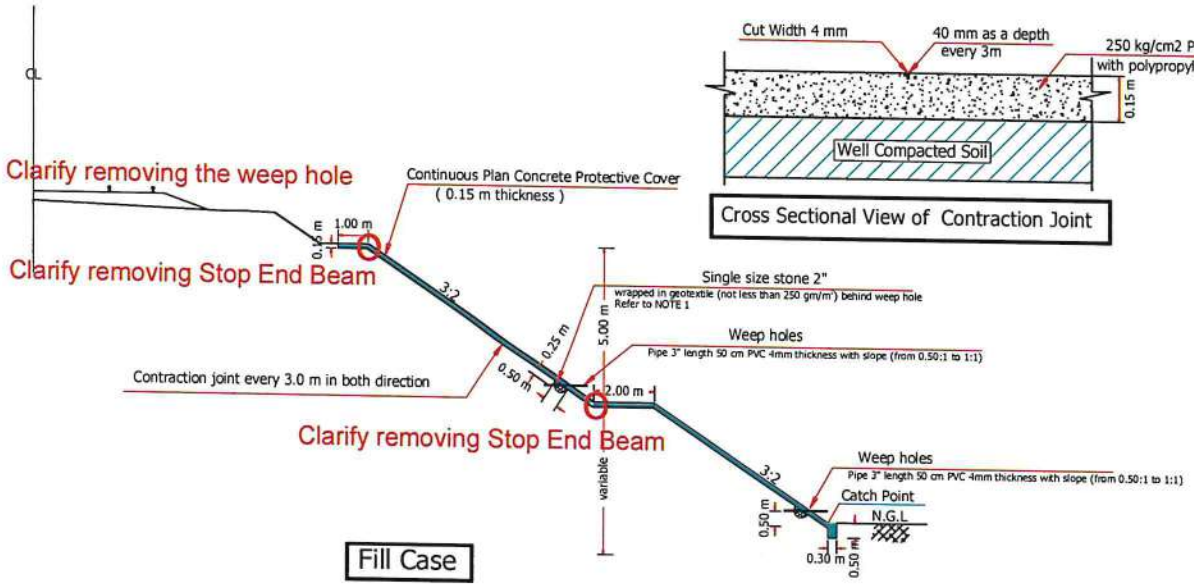
Signature ☐ Approved (A) ☐ Approved as Noted (B) ☐ Revise& Resubmit (C) ☐ Rejected (D) Date : / /

Engineer's Representative " SYSTRA " comments :

Signature : Date : / /

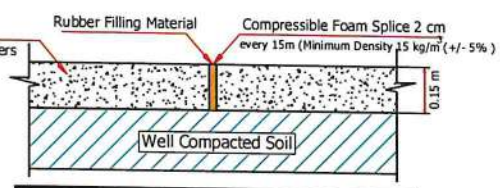
Attach all relevant particular test forms

Approval shall not relieve Contractor of his liabilities under the Contract or constitute authorization of any change to Contract Documents.

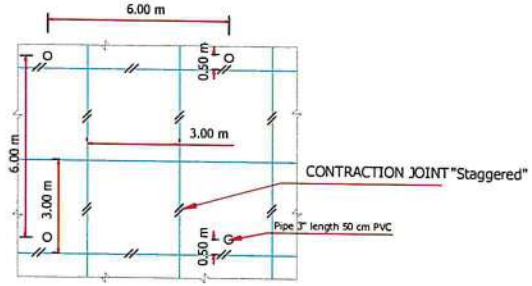


Fill Case

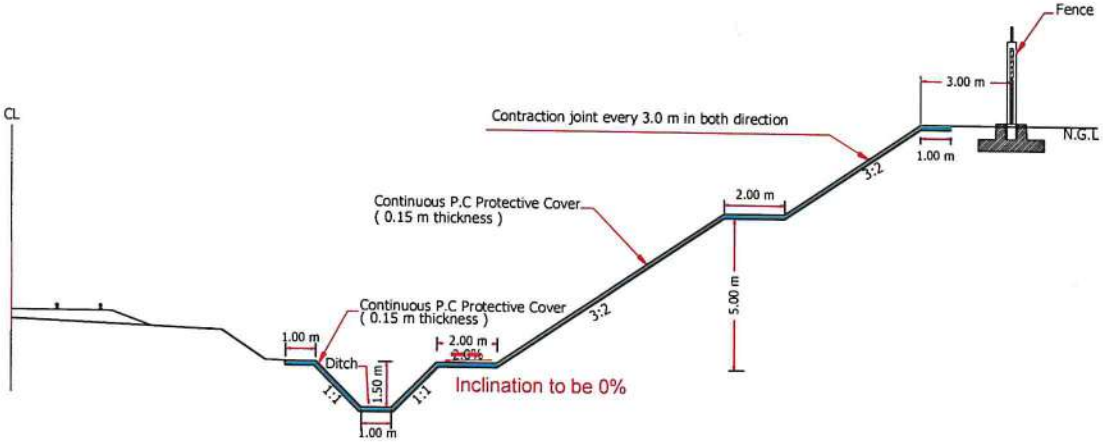
Cross Sectional View of Contraction Joint



Cross Sectional View of Expansion Joint



APPROVED AS NOTED



Cut Case

Check report No. as it was in the Previous revisions CG21-

NOTES ACCORDING TO REPORT CG~~21-118~~1 (CIVECON GROUP) :

17. Cut slopes in soil formations and embankment fills shall be covered with a plain concrete layer for stabilization and erosion protection according to the following recommendations:

17.1. The plain concrete protection layer shall be at least 15 cm in thickness, and shall have benches at 5.0 m height intervals, and maximum side slope of 3 (H) : 2 (V). The concrete slope protection shall have contraction joints every 3.0 meters in the longitudinal direction. A joint sealant shall be placed at the joints.

17.2. Ordinary Portland cement may be used in mixing the concrete cover with a cement content not less than 280 kg/m3 , maximum aggregate size of 20 mm, and water to cement ratio not exceeding 0.55. It is recommended to use fiber reinforcement in the concrete mix. Concrete shall be cast at a temperatures not exceeding 32 °C, thus it is preferred to cast concrete early in the morning or in the evening.

17.3. Water used in mixing the concrete cover shall be a fresh water satisfying the specifications of the Egyptian code for soil mechanics and design and construction of foundations (202-2001).

17.4. The concrete shall have a minimum compressive strength of 25 MPa (250 kg/cm2) after 28 days.

17.5. The concrete surface shall be floated and trowelled as necessary to produce a smooth surface. The surface shall not vary more than 6 mm under a 3 m long straightedge.

17.6. The concrete slabs shall be water cured for at least 7 days or a using an alternative acceptable curing method.

17.7. The concrete slab shall be placed on freely draining granular fill. If low draining soil exist below the layer, a granular drainage filter shall be needed behind the weep holes with a suitable non-woven geotextile. Weep holes are recommended at 3 to 5 m spacing at the toe of the slopes.

Ministry of Transportation
National Authority for Tunnels (NAT)

Owner
General Authority for Roads, Bridges & Land Transport

Project Name
ELECTRIC EXPRESS TRAIN (HIGH SPEED RAIL)
SECTION THREE (FROM WEST OF NILE TO WADI EL-NATRO
STATION 121+562.467 - STATION 247+000

KEY PLAN

No.	Date	Drawing Name	Engineer
5	08-09-2022	Typical detail of slope protection	Mahmoud Ezza
4	16-08-2022	Typical detail of slope protection	Rawan Hafez
3	31-07-2022	Typical detail of slope protection	Rawan Hafez
2	25-07-2022	Typical detail of slope protection	Rawan Hafez
1	05-07-2022	Typical detail of slope protection	Rawan Hafez
0	03-07-2022	Typical detail of slope protection	Rawan Hafez

Please Review the Issued Revisions and dates

* All dimensions are in meters unless otherwise mentioned
* Dimensions should be based on detailed structure design of syst

NOTES:

1-The geotextile shall be 250 gm/m of minimum grab tensile str of 200 N; puncture resistance 250 N; tear resistance 250 N, and burst strength 250 kPa.

2- ~~As instructed by the client (GARD), Rev05 of slope protection~~ (this drawing) matching with East Nile Sector.

Please rectify the Statement in the General Notes section

Owner Consultants

GARBLT Consultant

EnTrans CONSULTING Entrans Consulting Environmental & Transportation Solutio

Drawing Name
HSR-SE?-08-TYPICAL DETAILS OF SLOPE PROTECTION

Drawing Scale
N . T . S

Drawing No
HSR-SE?-08-TYP ST-001

Approval	Revision	Designer	Date

CHAINAGE 193+760				
POINT	E	N	Z	STRING CUT
1	582190.08	833077.42	111.40	Daylight
2	582194.55	833082.93	106.67	Hinge_Cut
3	582195.82	833084.48	106.67	P2
4	582196.76	833085.64	105.17	P2
5	582197.39	833086.42	105.17	P2
6	582198.34	833087.58	106.67	END_EMB_LT

CHAINAGE 193+770				
POINT	E	N	Z	STRING CUT
1	582153.03	833111.12	109.82	Daylight
2	582155.77	833114.49	106.93	Hinge_Cut
3	582157.04	833116.04	106.93	P2
4	582157.98	833117.20	105.43	P2
5	582158.61	833117.98	105.43	P2
6	582159.56	833119.14	106.93	END_EMB_LT

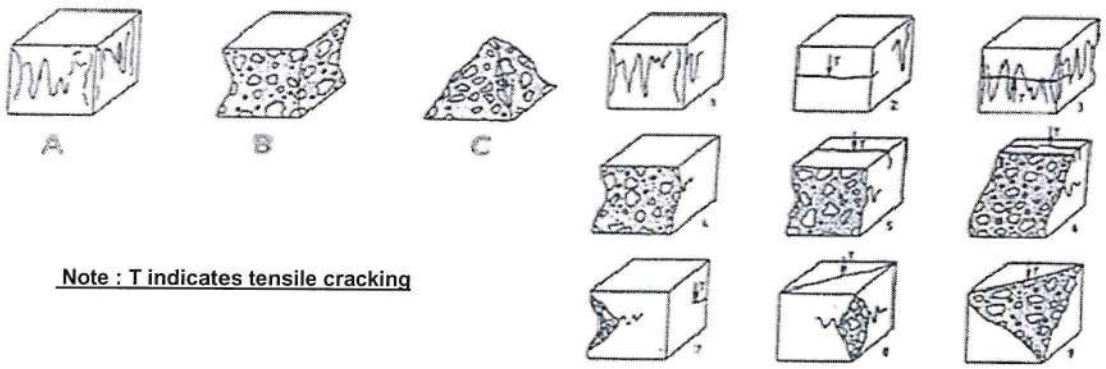
CHAINAGE 193+780				
POINT	E	N	Z	STRING CUT
1	582145.39	833117.58	109.73	Daylight
2	582148.02	833120.80	106.96	Hinge_Cut
3	582149.28	833122.35	106.96	P2
4	582150.23	833123.51	105.46	P2
5	582150.86	833124.29	105.46	P2
6	582151.80	833125.45	106.96	END_EMB_LT

CHAINAGE 193+790				
POINT	E	N	Z	STRING CUT
1	582137.76	833124.03	109.64	Daylight
2	582140.26	833127.11	107.00	Hinge_Cut
3	582141.52	833128.66	107.00	P2
4	582142.47	833129.83	105.50	P2
5	582143.10	833130.60	105.50	P2
6	582144.05	833131.76	107.00	END_EMB_LT

CHAINAGE 193+800				
POINT	E	N	Z	STRING CUT
1	582130.05	833130.41	109.61	Daylight
2	582132.50	833133.42	107.03	Hinge_Cut
3	582133.77	833134.97	107.03	P2
4	582134.71	833136.14	105.53	P2
5	582135.34	833136.91	105.53	P2
6	582136.29	833138.08	107.03	END_EMB_LT

CONTRACTOR	الاخوه العرب	CEMENT TYPE	OPC 42.5
		CEMENT CONTENT	310kg/ m^3
PATCH PLANT		SPECIFIED STRENGTH	250 kg/ cm^2
PROJECT		NO.OF CUBES MADE	3
DATE OF CASTING	15-Jan-25	STRUCTURE TYPE	

	1	2	3						
Date OF Testing	22-Jan-25								
	7 DAY								
Av.Dimension(mm)	150x150	150x150	150x150						
Weight(g)	7541	8012	7521						
Density (Kg/m3)	2.23	2.37	2.23						
Load(KN)	490	500	480						
Comp.Strength(Kg/cm2)	222.0	226.5	217.4						
Av.Comp.Strength(kg/cm2)	222.0								



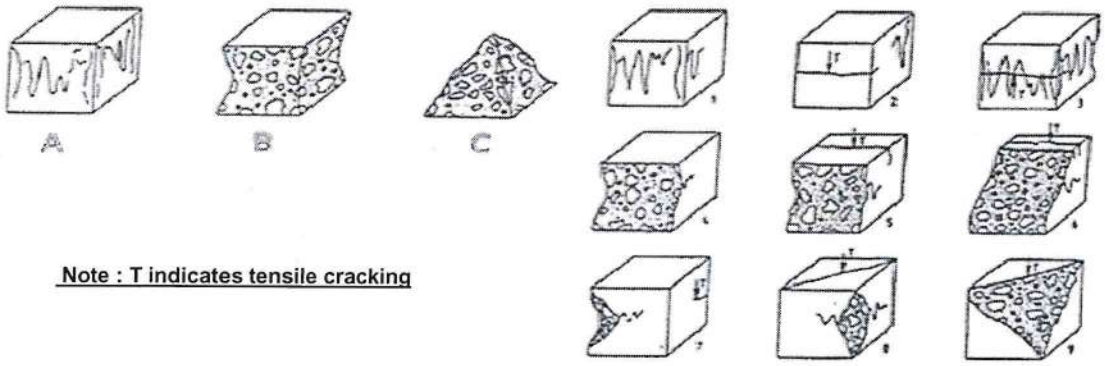
Note : T indicates tensile cracking

Contractor QalityEng.

QC CONS. Engineer

CONTRACTOR	الاخوه العرب	CEMENT TYPE	OPC 42.5
		CEMENT CONTENT	310kg/ m^3
PATCH PLANT		SPECIFIED STRENGTH	250 kg/ cm^2
PROJECT		NO.OF CUBES MADE	3
DATE OF CASTING	15-Jan-25	STRUCTURE TYPE	

	1	2	3						
Date OF Testing	12-Feb-25								
	28 DAY								
Av.Dimension(mm)	150x150	150x150	150x150						
Weight(g)	8036	7850	8014						
Density (Kg/m3)	2.38	2.33	2.37						
Load(KN)	644	625	620						
Comp.Strength(Kg/cm2)	291.7	283.1	280.9						
Av.Comp.Strength(kg/cm2)	285.2								



Note : T indicates tensile cracking

Contractor QalityEng.

QC CONS. Engineer

SYSTRA Employer Consultant	**Electric Express Train - HSR** **From El Ain El Sokhna City To El Alamein**	الهيئة القومية للأنفاق وزارة النقل	**Request No.** **69**
Contractor	**Section 3: From West of the River Nile To Wadi El Natroun** **From Station 121+562.467** **To Station 248+158.745**	EnTrans CONSULTING **GARB Consultant**	**Date** **06/01/2025**

Request for Inspection

We request your attendance to inspect the following works :

Discipline : ☑ Civil/Slope Protection ☐ Structure ☐ Drainage ☐ Survey

Inspection time :		**Date** 06/01/2025		
Location :	**Contractor Zone**	**From Station**	**To Station**	**QN**
	From 190+000 To 195+000	**193+600**	**193+640**	**Q T**
References	**HSR-SEC03-PL&PR-REV14 (22-02-2022)**		Specification:	

Inspection : ◉ First ○ Second ○ Third

Purpose of the inspection :

1. Earthworks
- ☐ Stripping
- ☐ Natural Sub Grade
- ☐ Upper Embankment
- ☐ excavation
- ☐ Sub Grade
- ☐ Sub Ballast
- ☐ Ballast
- ☐ Empankment

2.Civil Work
- ☐ Open Channels
- ☐ Box Culvert
- ☐ Pipe Culvert
- ☑ Slope protection
- ☐ Gabion
- ☐ Side Ditches
- ☐ Other

3-Drainage
- ☐ Formation
- ☐ Sides of Excavation
- ☐ Backfilling Layers
- ☐ Slope protection

4. Surveying
- ☐ Setting out
- ☑ Levels
- ☐ Verticality

5. Structure
- ☑ Formwork
- ☐ Reinforcement
- ☐ Concreteing
- ☐ Earthing

Others (specify) **sheaping&formwork&pouring concrete for slop protection and ditch L.S(Left Side)**

Particular Details

Submitted by : **Eng .adel ahmed** Signature :

Inspection Report :	**EnTrans Consulting**	**Signature**
Civil Eng.		
Surveyor	Approved	
E/M Eng.		
Structural Eng.		
Arch. Eng.		

Resident Engineer

The work have fount to be :

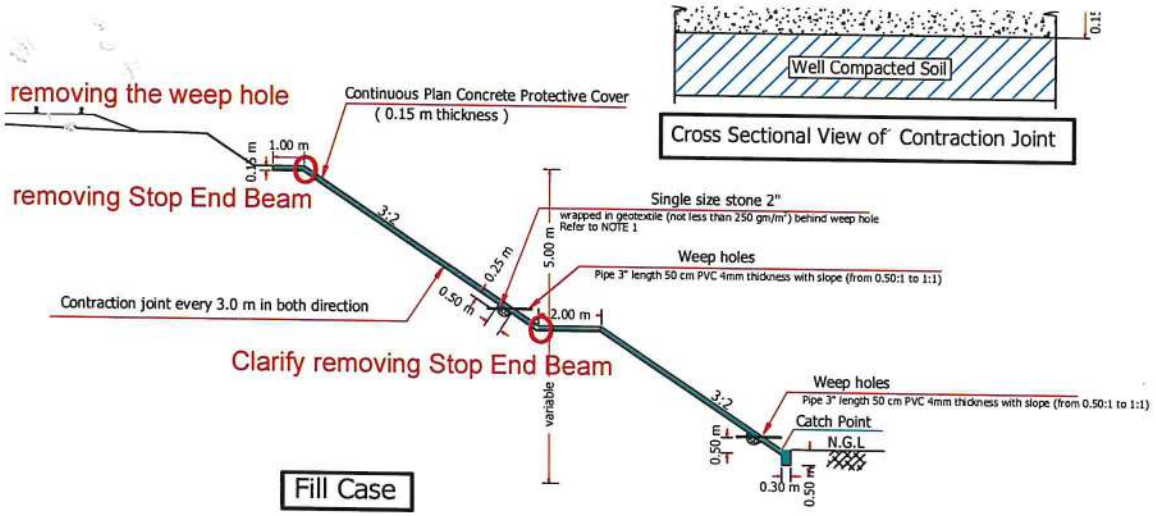
Signature ☐ Approved (A) ☐ Approved as Noted (B) ☐ Revise& Resubmit (C) ☐ Rejected (D) Date : / /

Engineer's Representative " SYSTRA " comments :

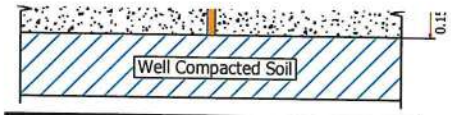
Signature : Date : / /

Attach all relevant particular test forms

Approval shall not relieve Contractor of his liabilities under the Contract or constitute authorization of any change to Contract Documents.

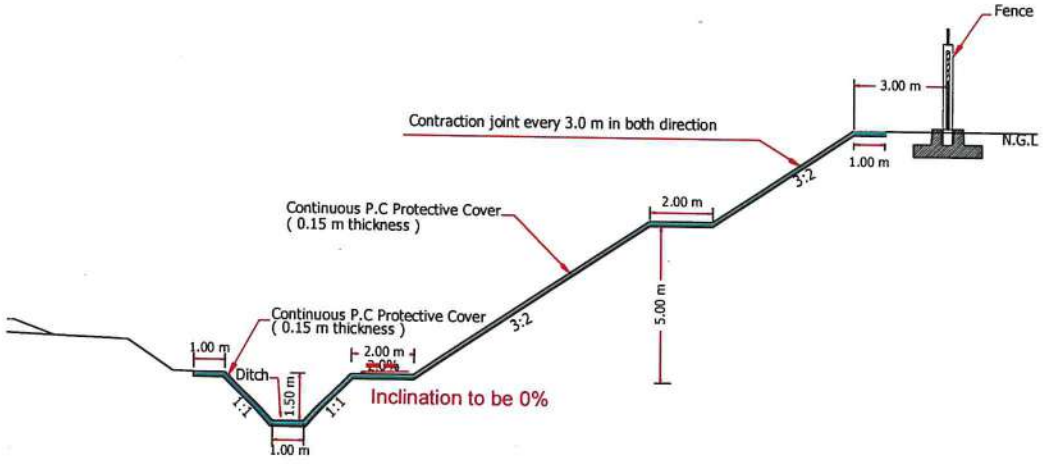


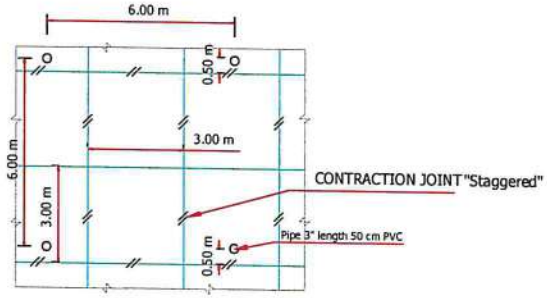
Cross Sectional View of Contraction Joint



Cross Sectional View of Expansion Joint

APPROVED AS NOTED





Check report No. as it was in the Previous revisions CG21-

NOTES ACCORDING TO REPORT CG~~21-118~~1 (CIVECON GROUP) :

17. Cut slopes in soil formations and embankment fills shall be covered with a plain concrete layer for stabilization and erosion protection according to the following recommendations:

17.1. The plain concrete protection layer shall be at least 15 cm in thickness, and shall have benches at 5.0 m height intervals, and maximum side slope of 3 (H) : 2 (V). The concrete slope protection shall have contraction joints every 3.0 meters in the longitudinal direction. A joint sealant shall be placed at the joints.

17.2. Ordinary Portland cement may be used in mixing the concrete cover with a cement content not less than 280 kg/m3 , maximum aggregate size of 20 mm, and water to cement ratio not exceeding 0.55. It is recommended to use fiber reinforcement in the concrete mix. Concrete shall be cast at a temperatures not exceeding 32 °C, thus it is preferred to cast concrete early in the morning or in the evening.

17.3. Water used in mixing the concrete cover shall be a fresh water satisfying the specifications of the Egyptian code for soil mechanics and design and construction of foundations (202-2001).

17.4. The concrete shall have a minimum compressive strength of 25 MPa (250 kg/cm2) after 28 days.

17.5. The concrete surface shall be floated and trowelled as necessary to produce a smooth surface. The surface shall not vary more than 6 mm under a 3 m long straightedge.

17.6. The concrete slabs shall be water cured for at least 7 days or a using an alternative acceptable curing method.

17.7. The concrete slab shall be placed on freely draining granular fill. If low draining soil exist below the layer, a granular drainage filter shall be needed behind the weep holes with a suitable non-woven geotextile. Weep holes are recommended at 3 to 5 m spacing at the toe of the slopes.

STATION 121+562.467 - STATION 247+000

KEY PLAN

No	Date	Drawing Name	Engineer
5	08-09-2022	Typical detail of slope protections	Mahmoud Ezzat
4	16-08-2022	Typical detail of slope protections	Rawan Hafez
3	31-07-2022	Typical detail of slope protections	Rawan Hafez
2	24-07-2022	Typical detail of slope protections	Rawan Hafez
1	05-01-2022	Typical detail of slope protections	Rawan Hafez
0	03-12-2021	Typical detail of slope protections	Rawan Hafez

Please Review the Issued Revisions and dates

* All dimensions are in meters unless otherwise mentioned
* Dimensions should be based on detailed structure design of system.

NOTES:

1-The geotextile shall be 250 gm/m of minimum grab tensile strengt of 200 N; puncture resistance 250 N; tear resistance 250 N, and burst strength 250 kPa.

2- As instructed by the client (GARB), Rev05 of slope protection (this drawing) matching with East Nile Sector

Please rectify the Statement in the General Notes section

Owner Consultants	
GARBLT Consultant	Entrans Consulting Environmental & Transportation Solutions

Drawing Name: HSR-SEC 03-TYPICAL DETAILS OF SLOPE PROTECTION

Drawing Scale	Drawing No
N . T . S	HSR-SEC 03-TYP S.P-001

Approval	Revision	Designer	Date
Dr/ Dalia Said	Eng/ Fatma Ahmed	Eng/Kareem Adel	Sept. 2022

CHAINAGE 193+600				
POINT	E	N	Z	STRING CUT
1	582282.89	833001.36	110.62	Bench_In
2	582287.63	833007.18	105.62	Hinge_Cut
3	582288.89	833008.73	105.62	P2
4	582289.84	833009.90	104.12	P2
5	582290.47	833010.67	104.12	P2
6	582291.42	833011.84	105.62	END_EMB_LT

CHAINAGE 193+610				
POINT	E	N	Z	STRING CUT
1	582275.14	833007.68	110.72	Bench_In
2	582279.87	833013.49	105.72	Hinge_Cut
3	582281.13	833015.05	105.72	P2
4	582282.08	833016.21	104.22	P2
5	582282.71	833016.98	104.22	P2
6	582283.66	833018.15	105.72	END_EMB_LT

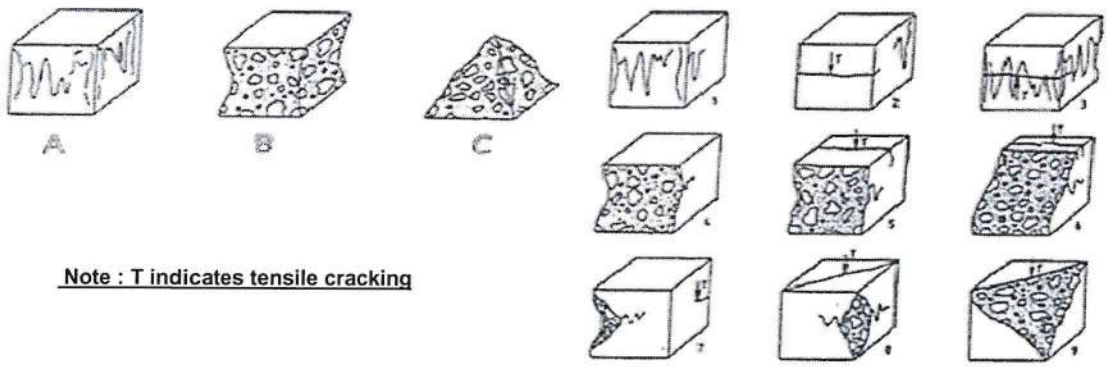
CHAINAGE 193+620				
POINT	E	N	Z	STRING CUT
1	582267.38	833013.99	110.82	Bench_In
2	582272.12	833019.81	105.82	Hinge_Cut
3	582273.38	833021.36	105.82	P2
4	582274.32	833022.52	104.32	P2
5	582274.96	833023.30	104.32	P2
6	582275.90	833024.46	105.82	END_EMB_LT

CHAINAGE 193+630				
POINT	E	N	Z	STRING CUT
1	582259.63	833020.30	110.92	Bench_In
2	582264.36	833026.12	105.92	Hinge_Cut
3	582265.62	833027.67	105.92	P2
4	582266.57	833028.83	104.42	P2
5	582267.20	833029.61	104.42	P2
6	582268.15	833030.77	105.92	END_EMB_LT

CHAINAGE 193+640				
POINT	E	N	Z	STRING CUT
1	582251.87	833026.61	111.02	Bench_In
2	582256.60	833032.43	106.02	Hinge_Cut
3	582257.87	833033.98	106.02	P2
4	582258.81	833035.14	104.52	P2
5	582259.44	833035.92	104.52	P2
6	582260.39	833037.08	106.02	END_EMB_LT

CONTRACTOR	الاخوه العرب	CEMENT TYPE	**OPC 42.5**
		CEMENT CONTENT	**310kg/ m^3**
PATCH PLANT		SPECIFIED STRENGTH	**250 kg/ cm^2**
PROJECT		NO.OF CUBES MADE	**3**
DATE OF CASTING	**6-Jan-25**	STRUCTURE TYPE	

	1	2	3						
Date OF Testing	**13-Jan-25**								
	7 DAY								
Av.Dimension(mm)	**150x150**	**150x150**	**150x150**						
Weight(g)	**8015**	**8145**	**8017**						
Density (Kg/m3)	**2.37**	**2.41**	**2.38**						
Load(KN)	**479**	**498**	**499**						
Comp.Strength(Kg/cm2)	**217.0**	**225.6**	**226.0**						
Av.Comp.Strength(kg/cm2)	**222.9**								



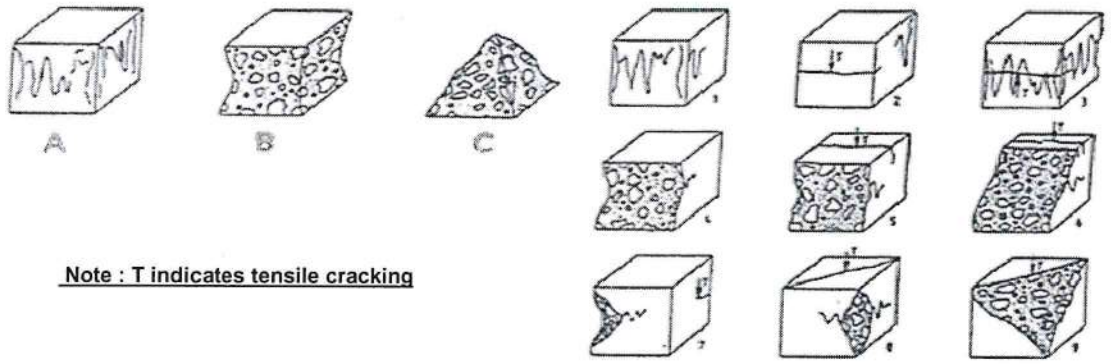
Note : T indicates tensile cracking

Contractor QalityEng

QC CONS. Engineer

CONTRACTOR	الاخوه العرب	CEMENT TYPE	OPC 42.5
		CEMENT CONTENT	310kg/ m^3
PATCH PLANT		SPECIFIED STRENGTH	250 kg/ cm^2
PROJECT		NO.OF CUBES MADE	3
DATE OF CASTING	7-Jan-25	STRUCTURE TYPE	

	1	2	3						
Date OF Testing	14-Jan-25								
	7 DAY								
Av.Dimension(mm)	150x150	150x150	150x150						
Weight(g)	7652	7856	8017						
Density (Kg/m3)	2.27	2.33	2.38						
Load(KN)	466	489	501						
Comp.Strength(Kg/cm2)	211.1	221.5	227.0						
Av.Comp.Strength(kg/cm2)	219.9								



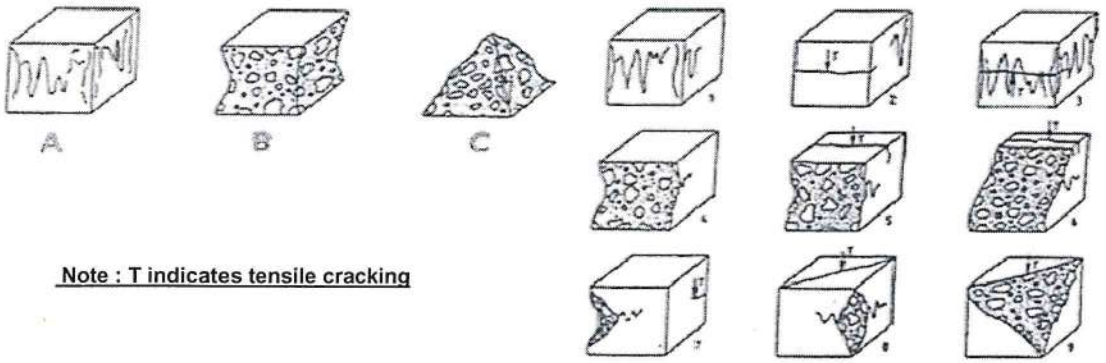
Note : T indicates tensile cracking

Contractor QalityEng.

QC CONS. Engineer

CONTRACTOR	الاخوه العرب	CEMENT TYPE	OPC 42.5
		CEMENT CONTENT	310kg/ m^3
PATCH PLANT		SPECIFIED STRENGTH	250 kg/ cm^2
PROJECT		NO.OF CUBES MADE	3
DATE OF CASTING	6-Jan-25	STRUCTURE TYPE	

	1	2	3						
Date OF Testing	3-Feb-25								
	28 DAY								
Av.Dimension(mm)	150x150	150x150	150x150						
Weight(g)	8012	7954	8124						
Density (Kg/m3)	2.37	2.36	2.41						
Load(KN)	644	625	617						
Comp.Strength(Kg/cm2)	291.7	283.1	279.5						
Av.Comp.Strength(kg/cm2)	284.8								



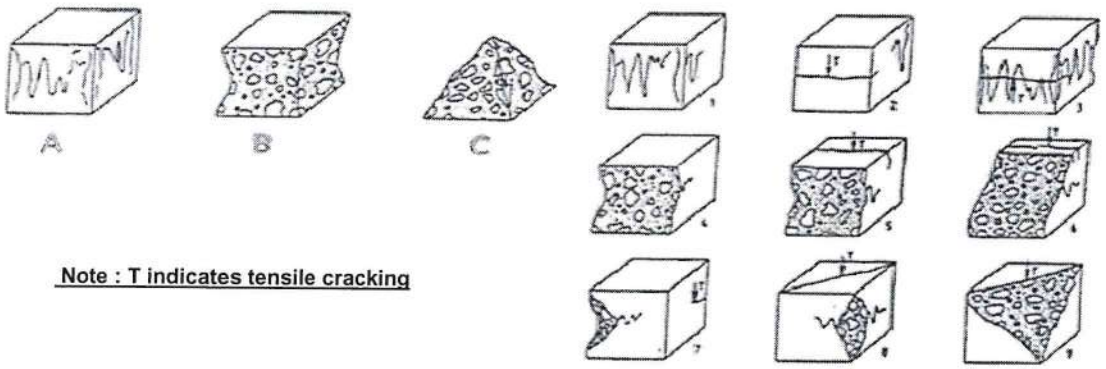
Note : T indicates tensile cracking

Contractor QalityEng.

QC CONS. Engineer

CONTRACTOR	الاخوه العرب	CEMENT TYPE	OPC 42.5
		CEMENT CONTENT	310kg/ m^3
PATCH PLANT		SPECIFIED STRENGTH	250 kg/ cm^2
PROJECT		NO.OF CUBES MADE	3
DATE OF CASTING	7-Jan-25	STRUCTURE TYPE	

	1	2	3						
Date OF Testing	4-Feb-25								
	28 DAY								
Av.Dimension(mm)	150x150	150x150	150x150						
Weight(g)	8124	7963	8124						
Density (Kg/m3)	2.41	2.36	2.41						
Load(KN)	630	625	647						
Comp.Strength(Kg/cm2)	285.4	283.1	293.1						
Av.Comp.Strength(kg/cm2)	287.2								



Note : T indicates tensile cracking

Contractor QalityEng.

QC CONS. Engineer

SYSTRA Employer Consultant	Electric Express Train - HSR From El Ain El Sokhna City To El Alamein		Request No. 41
Contractor	Section 3: From West of the River Nile To Wadi El Natroun From Station 121+562.467 To Station 248+158.745	EnTrans CONSULTING GARB Consultant	Date 05/11/2024

Request for Inspection

We request your attendance to inspect the following works :

Discipline : ☑ Civil/Slope Protection ☐ Structure ☐ Drainage ☐ Survey

Inspection time : Date 05/11/2024

Location	Contractor Zone	From Station	To Station	QN
	From 190+000 To 195+000	193+180	193+220	Q T

References : HSR-SEC03-PLN-PR-REV14 (22-02-2022) Specification:

Inspection : ◉ First ○ Second ○ Third

Purpose of the inspection :

1. Earthworks
- ☐ Stripping
- ☐ Natural Soil Grade
- ☐ Upper Embankment
- ☐ Excavation
- ☐ Sub Grade
- ☐ Sub Ballast
- ☐ Ballast
- ☐ Embankment

2.Civil Work
- ☐ Open Channels
- ☐ Box Culvert
- ☐ Pipe Culvert
- ☑ Slope protection
- ☐ Gabion
- ☐ Side Ditches
- ☐ Other

3-Drainage
- ☐ Formation
- ☐ Sides of Excavation
- ☐ Backfilling Layers
- ☑ Slope protection

4. Surveying
- ☐ Setting out
- ☑ Levels
- ☐ Verticality

5. Structure
- ☑ Formwork
- ☐ Reinforcement
- ☐ Concreteing
- ☐ Earthing

Other (specify) : Sheaping & Formwork & Pouring concrete for slope protection R.S(Right Side)

Particular Details :

Submitted by : Eng .adel ahmed Signature :

Inspection Report :	EnTrans Consulting	Signature
Civil Eng.	Approved	
Surveyor	Approved	
E. M Eng.		
Structural Eng.		
Arch. Eng.		
Resident Engineer		

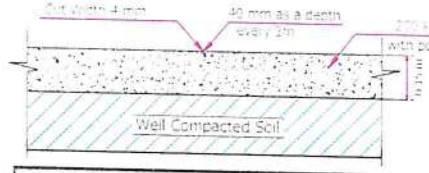
The work have fount to be :

Signature : ☐ Approved (A) ☐ Approved as Noted (B) ☐ Revise& Resubmit (C) ☐ Rejected (D) Date : / /

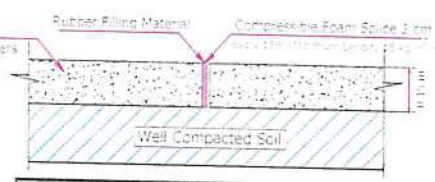
Engineer's Representative " SYSTRA " comments :

Signature : Date : / /

Attach all relevant particular test forms



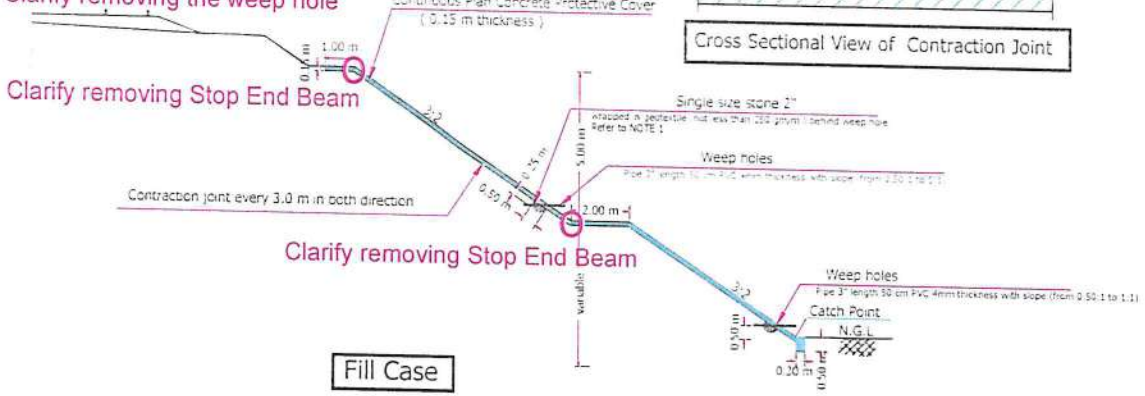
Cross Sectional View of Contraction Joint



Cross Sectional View of Expansion Joint

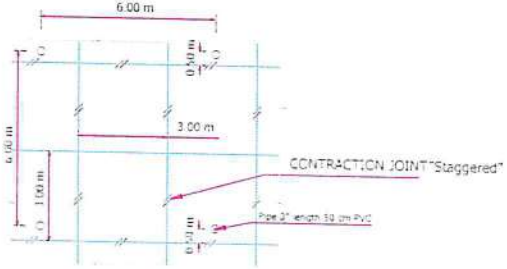
Clarify removing the weep hole

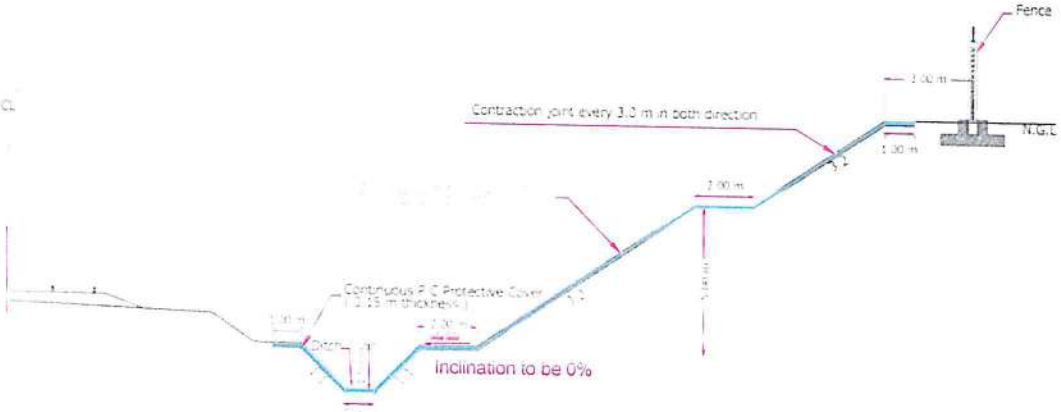
Clarify removing Stop End Beam



Fill Case

APPROVED AS NOTED





Cut Case

Check report No. as it was in the Previous revisions CG21-11.1

NOTES ACCORDING TO REPORT CG~~21-11~~.1 (CIVECON GROUP) :

17. Cut slopes in soil formations and embankment fills shall be covered with a plain concrete layer for stabilization and erosion protection according to the following recommendations:

17.1. The plain concrete protection layer shall be, at least 15 cm in thickness, and shall have benches at 5.0 m height intervals, and maximum side slope of 3 (H) : 2 (V). The concrete slope protection shall have contraction joints every 3.0 meters in the longitudinal direction. A joint sealant shall be placed at the joints.

17.2. Ordinary Portland cement may be used in making the concrete cover with a cement content not less than 260 kg/m3 , maximum aggregate size of 20 mm, and water to cement ratio not exceeding 0.55. It is recommended to use fiber reinforcement in the concrete mix. Concrete shall be cast at a temperature not exceeding 32 °C, thus it is preferred to cast concrete early in the morning or in the evening.

17.3. Water used in mixing the concrete cover shall be a fresh water satisfying the specifications of the Egyptian code for soils mechanics and design and construction of foundations (ECP 202-2001).

17.4. The concrete shall have a minimum cube compressive strength of 25 MPa (250 kg/cm2) after 28 days.

17.5. The concrete surface shall be floated and trowelled as necessary to produce a smooth surface. The surface shall not vary more than 6 mm under a 3 m long straightedge.

17.6. The concrete slabs shall be water cured for at least 7 days or a curing all alternative less reliable curing method.

17.7. The concrete slab shall be placed on freely draining granular fill. If the draining soil layer below the layer, a granular drainage filter shall be provided behind the weep holes with a suitable non-woven geotextile. Weep holes are recommended at 3 to 5 m spacing at the toe of the slopes.

Please Review the issued Revisions and dates

Date	Drawing Name	Engineer
	Typical detail of slope protections	Mahmoud Essat
	Typical detail of slope protections	Mahmoud Essat
	Typical detail of slope protections	Rawan Hafez
	Typical detail of slope protections	Rawan Hafez

* All dimensions are in meters unless otherwise mentioned.
* Dimensions should be taken on site and structure design of system works.
* The geotextile shall be 250 gm/m2 of minimum grab tensile strength of 200 N, puncture resistance 250 N, tear resistance 250 N, and burst strength 250 kPa.
* All instructions of the General Specifications and the drawings must comply with Egyptian Codes.

Please rectify the Statement in the General Notes section

CHAINAGE 193+180				
POINT	E	N	Z	STRING CUT
1	582631.93	832764.86	101.45	Hinge_Fill
2	582636.66	832770.68	96.45	Bench_In
3	582637.92	832772.23	96.45	Bench_Out
4	582638.69	832773.16	95.65	Daylight

CHAINAGE 193+190				
POINT	E	N	Z	STRING CUT
1	582624.17	832771.17	101.55 1,22	Hinge_Fill
2	582628.91	832776.99	96.55 1,46	Bench_In +1
3	582630.17	832778.54	96.55	Bench_Out
4	582630.77	832779.28	95.91 2,10	Daylight +1,5

CHAINAGE 193+200				
POINT	E	N	Z	STRING CUT
1	582616.41	832777.48	101.66 1,11	Hinge_Fill
2	582621.15	832783.30	96.66 1,35	Bench_In -1
3	582622.41	832784.85	96.66	Bench_Out -1
4	582622.81	832785.34	96.23 1,78	Daylight +1

CHAINAGE 193+210				
POINT	E	N	Z	STRING CUT
1	582608.66	832783.79	101.76 1,01	Hinge_Fill +1
2	582613.39	832789.61	96.76 1,25	Daylight +2

CHAINAGE 193+220				
POINT	E	N	Z	STRING CUT
1	582600.90	832790.11	101.86 .91	Hinge_Fill
4	582605.58	832795.85	96.92 1,09	Daylight +1

95,81 100,82
2,20 1,95
98,01 102,77

ولد الجارحى للمقاولات العمومية والتوريدات والخرسانة الجاهزة

شركة الجارحى
للخرسانة الجاهزة

DETERMINATION OF COMPRESSIVE STRENGTH OF CONCRETE CUBES
Test Standard BS 1881 - Part 116:1983 EGP 203-2007 (7-2)

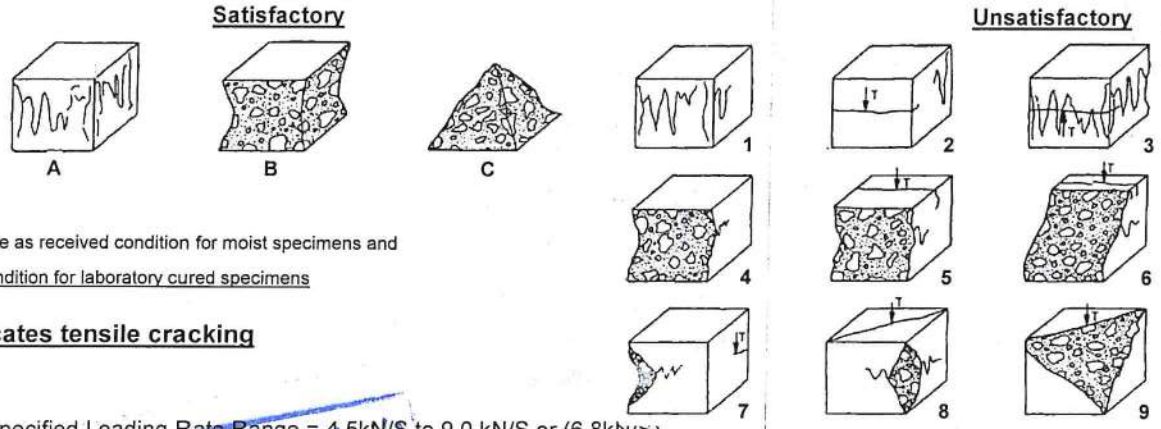
CLIENT :	شركة الأخوة العرب	SAMPLED BY :	ولد الجارحى
PROJECT :	مشروع القطار الكهربائي السريع	SAMPLING METHOD :	BS 1881
CONSULTANT :	Entrance / Systra	Cement Conten/Type :	310 O.P.C
DATE OF CASTING :	5-Nov-2024	STRUCTURE TYPE :	
Elemnt :	ميول	SPECIFIED STRENGTH :	250 Kg/cm2
TARGET SLUMP :	10 Cm	CONCRETE TEMP (°C) :	29

Results :

Specimen Reference	1	2	3	4	5	6
Date of Test	12-Nov-24					
Age of Test (Days)	7					
Moist. Condition at Testing.	Cube					
Average Dimension (mm)	150					
Weight (g)	8159	8192	8173			
Density (kg/m³)	2417	2427	2422			
Failure Load (kN)	503	483	520			
Comp. Strength Kg/cm²	228	219	236			
Mode of Failure						

AVERAGE Comp. Strength Kg/cm²	227

MODES OF FAILURE AS PER BS 1881 : Part 116 : 1983



Remarks :

1881:Part 114 in the as received condition for moist specimens and in the saturated condition for laboratory cured specimens

Note : T indicates tensile cracking

Remarks : Specified Loading Rate Range = 4.5kN/S to 9.0 kN/S or (6.8kN/S)

quality control : mohamed mostafa

ولد الجارحى للمقاولات العمومية والتوريدات والخرسانة الجاهزة
سجل تجارى : ٥٥١٦٢

Mahmoud Said

ولد الجارحى للمقاولات العمومية والتوريدات والخرسانة الجاهزة

شركة الجارحى
للخرسانة الجاهزة

DETERMINATION OF COMPRESSIVE STRENGTH OF CONCRETE CUBES
Test Standard BS 1881 - Part 116:1983 EGP 203-2007 (7-2)

CLIENT	:	شركة الأخوة العرب	SAMPLED BY	:	ولد الجارحى
PROJECT	:	مشروع القطار الكهربائي السريع	SAMPLING METHOD	:	BS 1881
CONSULTANT	:	Entrance / Systra	Cement Conten/Type	:	310 O.P.C
DATE OF CASTING	:	6-Nov-2024	STRUCTURE TYPE	:	
Elemnt	:	ميول	SPECIFIED STRENGTH	:	250 Kg/cm2
TARGET SLUMP	:	11 Cm	CONCRETE TEMP (°C)	:	29

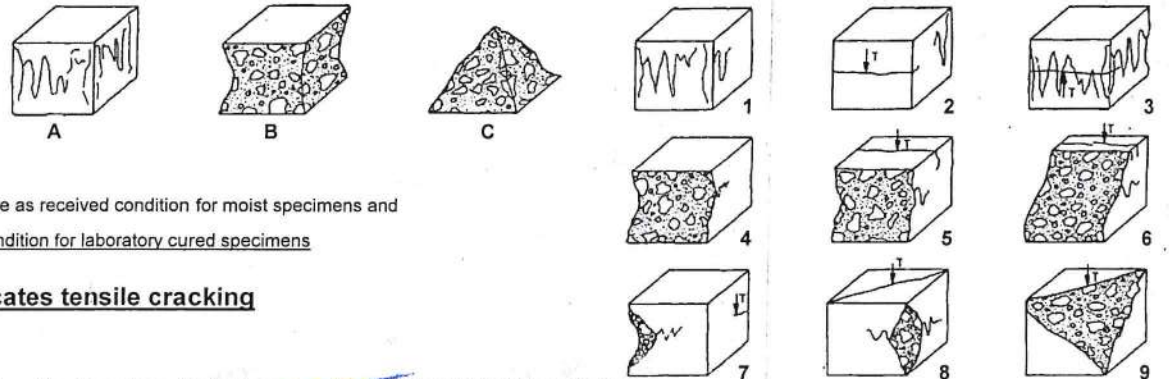
Results :

Specimen Reference	1	2	3	4	5	6
Date of Test	13-Nov-24					
Age of Test (Days)	7					
Moist. Condition at Testing.	Cube					
Average Dimension (mm)	150					
Weight (g)	8174	8161	8140			
Density (kg/m³)	2422	2418	2412			
Failure Load (kN)	517	492	477			
Comp. Strength Kg/cm²	234	223	216			
Mode of Failure						

AVERAGE Comp. Strength Kg/cm²	224

MODES OF FAILURE AS PER BS 1881 : Part 116 : 1983

Satisfactory **Unsatisfactory**



Remarks :

1881:Part 114 in the as received condition for moist specimens and in the saturated condition for laboratory cured specimens

Note : T indicates tensile cracking

Remarks : Specified Loading Rate Range = 4.5kN/S to 9.0 kN/S or (6.8kN/S)

quality control : mohamed mostafa

ولد الجارحي للمقاولات العمومية والتوريدات والخرسانة الجاهزة
سجل تجاري : ١٦٢٠٠

Mahmoud Said

SYSTRA Employer Consultant	Electric Express Train - HSR From El Ain El Sokhna City To El Alamein	الهيئة القومية للأنفاق / وزارة النقل	Request No. 68
Contractor	Section 3: From West of the River Nile To Wadi El Natroun From Station 121+562.467 To Station 248+158.745	EnTrans CONSULTING GARB Consultant	Date 05/01/2025

Request for Inspection

We request your attendance to inspect the following works :

Discipline : ☑ Civil/Slope Protection ☐ Structure ☐ Drainage ☐ Survey

Inspection time : **Date** 05/01/2025

Location :	Contractor Zone	From Station	To Station	QN
	From 190+000 To 195+000	193+560	193+600	Q T

References HSR-SEC03-PL&PR-REV14 (22-02-2022) Specification:

Inspection : ◉ First ○ Second ○ Third

Purpose of the inspection :

1. Earthworks
- ☐ Stripping
- ☐ Natural Sub Grade
- ☐ Upper Embankment
- ☐ excavation
- ☐ Sub Grade
- ☐ Sub Ballast
- ☐ Ballast
- ☐ Empankment

2.Civil Work
- ☐ Open Channels
- ☐ Box Culvert
- ☐ Pipe Culvert
- ☑ Slope protection
- ☐ Gabion
- ☐ Side Ditches
- ☐ Other

3-Drainage
- ☐ Formation
- ☐ Sides of Excavation
- ☐ Backfilling Layers
- ☐ Slope protection

4. Surveying
- ☐ Setting out
- ☑ Levels
- ☐ Verticality

5. Structure
- ☑ Formwork
- ☐ Reinforcement
- ☐ Concreteing
- ☐ Earthing

Others (specify) **sheaping&formwork&pouring concrete for slop protection and ditch L.S(Left Side)**

Particular Details

Submitted by : **Eng .adel ahmed** Signature :

Inspection Report :	EnTrans Consulting	Signature
Civil Eng.		
Surveyor	Approved	
E/M Eng.		
Structural Eng.		
Arch. Eng.		

Resident Engineer

The work have fount to be :

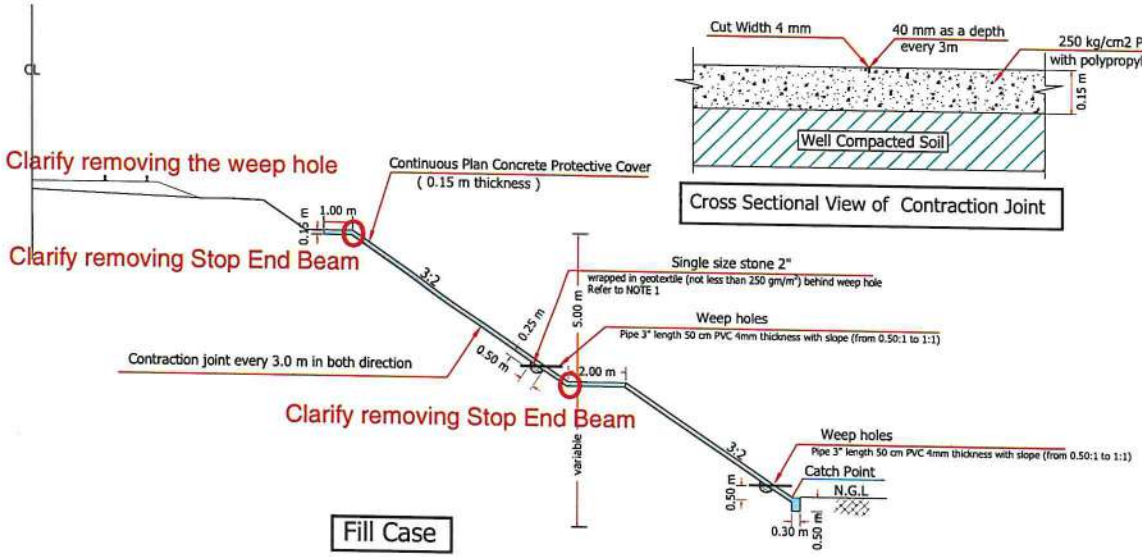
Signature ☐ Approved (A) ☐ Approved as Noted (B) ☐ Revise& Resubmit (C) ☐ Rejected (D) Date : / /

Engineer's Representative " SYSTRA " comments :

Signature : Date : / /

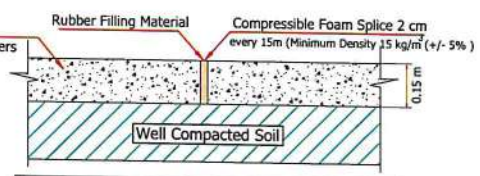
Attach all relevant particular test forms

Approval shall not relieve Contractor of his liabilities under the Contract or constitute authorization of any change to Contract Documents.

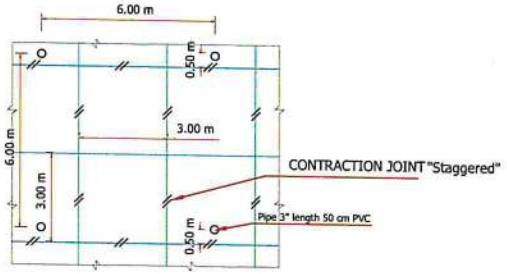


Fill Case

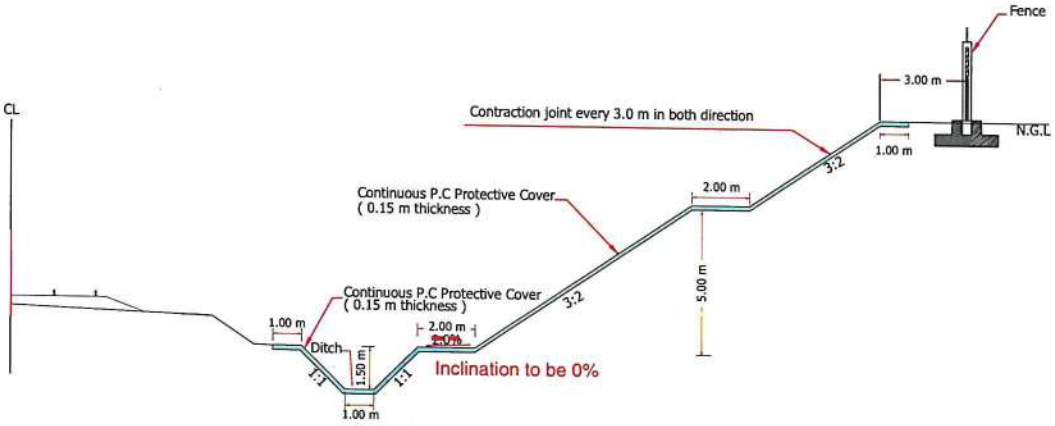
Cross Sectional View of Contraction Joint



Cross Sectional View of Expansion Joint



APPROVED AS NOTED



Cut Case

Check report No. as it was in the Previous revisions CG21-

NOTES ACCORDING TO REPORT CG~~21-10~~1 (CIVECON GROUP) :

17. Cut slopes in soil formations and embankment fills shall be covered with a plain concrete layer for stabilization and erosion protection according to the following recommendations:

17.1. The plain concrete protection layer shall be at least 15 cm in thickness, and shall have benches at 5.0 m height intervals, and maximum side slope of 3 (H) : 2 (V). The concrete slope protection shall have contraction joints every 3.0 meters in the longitudinal direction. A joint sealant shall be placed at the joints.

17.2. Ordinary Portland cement may be used in mixing the concrete cover with a cement content not less than 280 kg/m3 , maximum aggregate size of 20 mm, and water to cement ratio not exceeding 0.55. It is recommended to use fiber reinforcement in the concrete mix. Concrete shall be cast at a temperatures not exceeding 32 °C, thus it is preferred to cast concrete early in the morning or in the evening.

17.3. Water used in mixing the concrete cover shall be a fresh water satisfying the specifications of the Egyptian code for soil mechanics and design and construction of foundations (202-2001).

17.4. The concrete shall have a minimum compressive strength of 25 MPa (250 kg/cm2) after 28 days.

17.5. The concrete surface shall be floated and trowelled as necessary to produce a smooth surface. The surface shall not vary more than 6 mm under a 3 m long straightedge.

17.6. The concrete slabs shall be water cured for at least 7 days or a using an alternative acceptable curing method.

17.7. The concrete slab shall be placed on freely draining granular fill. If low draining soil exist below the layer, a granular drainage filter shall be needed behind the weep holes with a suitable non-woven geotextile. Weep holes are recommended at 3 to 5 m spacing at the toe of the slopes.

Owner
Ministry of Transportation
National Authority for Tunnels (NAT)

Owner
General Authority for Roads, Bridges & Land Transport

Project Name
ELECTRIC EXPRESS TRAIN (HIGH SPEED RAIL) -
SECTION THREE (FROM WEST OF NILE TO WADI EL-NATROUN)
STATION 121+562.467 - STATION 247+000

KEY PLAN

No	Date	Drawing Name	Engineer
5	08-09-2022	Typical detail of slope protections	Mahmoud Ezzat
4	16-08-2022	Typical detail of slope protections	Rawan Hafez
3	31-07-2022	Typical detail of slope protections	Rawan Hafez
2	24-07-2022	Typical detail of slope protections	Rawan Hafez
1	05-01-2022	Typical detail of slope protections	Rawan Hafez
0	01-01-2021	Typical detail of slope protections	Rawan Hafez

Please Review the issued Revisions and dates

* All dimensions are in meters unless otherwise mentioned
* Dimensions should be based on detailed structure design of system.

NOTES:

1-The geotextile shall be 250 gm/m of minimum grab tensile strength of 200 N; puncture resistance 250 N; tear resistance 250 N, and burst strength 250 kPa.

2- ~~As instructed by the client (GARB); Rev05 of slope protection (this drawing) matching with East Nile Sector.~~

Please rectify the Statement in the General Notes section

Owner Consultants

GARBLT Consultant

EnTrans CONSULTING Entrans Consulting
Environmental & Transportation Solutions

Drawing Name
HSR-SEC 03-TYPICAL DETAILS OF SLOPE PROTECTION

Drawing Scale	Drawing No
N.T.S	HSR-SEC 03-TYP S.P-001

Approval	Revision	Designer	Date
Dr/ Dalia Said	Eng/ Fatma Ahmed	Eng/Kareem Adel	Sept. 2022

CHAINAGE 193+560				
POINT	E	N	Z	STRING CUT
1	582313.92	832976.12	110.21	Bench_In
2	582318.65	832981.93	105.21	Hinge_Cut
3	582319.92	832983.49	105.21	P2
4	582320.86	832984.65	103.71	P2
5	582321.49	832985.42	103.71	P2
6	582322.44	832986.59	105.21	END_EMB_LT

CHAINAGE 193+570				
POINT	E	N	Z	STRING CUT
1	582306.16	832982.43	110.31	Bench_In
2	582310.90	832988.25	105.31	Hinge_Cut
3	582312.16	832989.80	105.31	P2
4	582313.11	832990.96	103.81	P2
5	582313.74	832991.74	103.81	P2
6	582314.68	832992.90	105.31	END_EMB_LT

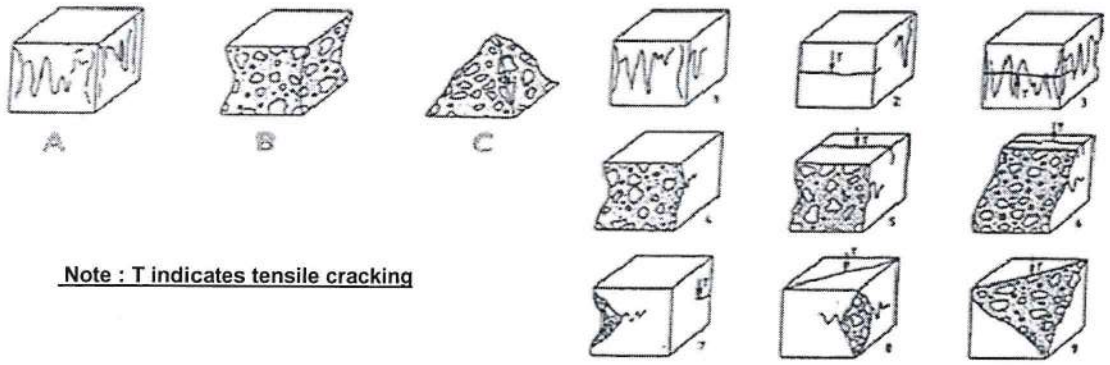
CHAINAGE 193+580				
POINT	E	N	Z	STRING CUT
1	582298.41	832988.74	110.41	Bench_In
2	582303.14	832994.56	105.41	Hinge_Cut
3	582304.40	832996.11	105.41	P2
4	582305.35	832997.27	103.91	P2
5	582305.98	832998.05	103.91	P2
6	582306.93	832999.21	105.41	END_EMB_LT

CHAINAGE 193+590				
POINT	E	N	Z	STRING CUT
1	582290.65	832995.05	110.51	Bench_In
2	582295.38	833000.87	105.51	Hinge_Cut
3	582296.65	833002.42	105.51	P2
4	582297.59	833003.58	104.01	P2
5	582298.22	833004.36	104.01	P2
6	582299.17	833005.52	105.51	END_EMB_LT

CHAINAGE 193+600				
POINT	E	N	Z	STRING CUT
1	582282.89	833001.36	110.62	Bench_In
2	582287.63	833007.18	105.62	Hinge_Cut
3	582288.89	833008.73	105.62	P2
4	582289.84	833009.90	104.12	P2
5	582290.47	833010.67	104.12	P2
6	582291.42	833011.84	105.62	END_EMB_LT

CONTRACTOR	الاخوه العرب	CEMENT TYPE	**OPC 42.5**
		CEMENT CONTENT	**310kg/ m^3**
PATCH PLANT		SPECIFIED STRENGTH	**250 kg/ cm^2**
PROJECT		NO.OF CUBES MADE	**3**
DATE OF CASTING	**4-Jan-25**	STRUCTURE TYPE	

	1	2	3						
Date OF Testing	**11-Jan-25**								
	7 DAY								
Av.Dimension(mm)	**150x150**	**150x150**	**150x150**						
Weight(g)	**8046**	**8023**	**8147**						
Density (Kg/m3)	**2.38**	**2.38**	**2.41**						
Load(KN)	**501**	**468**	**489**						
Comp.Strength(Kg/cm2)	**227.0**	**212.0**	**221.5**						
Av.Comp.Strength(kg/cm2)	**220.2**								



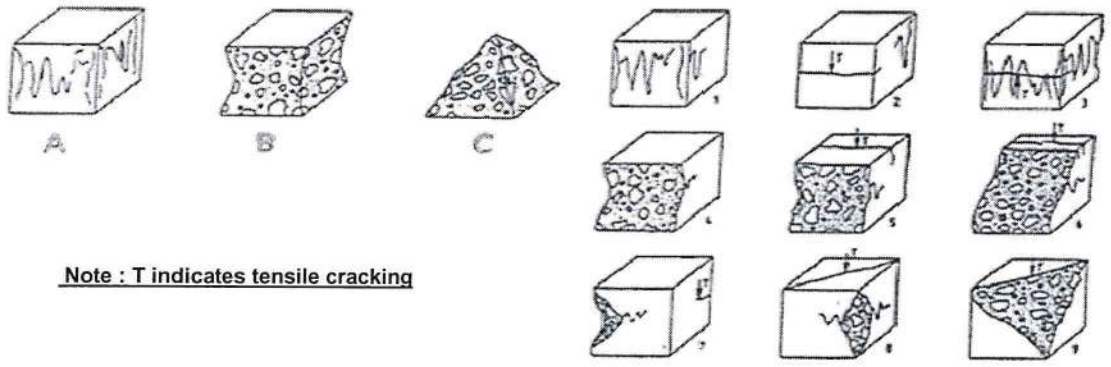
Note : T indicates tensile cracking

Contractor QalityEng.

QC CONS. Engineer

CONTRACTOR	الاخوه العرب	CEMENT TYPE	OPC 42.5
		CEMENT CONTENT	310kg/ m^3
PATCH PLANT		SPECIFIED STRENGTH	250 kg/ cm^2
PROJECT		NO.OF CUBES MADE	3
DATE OF CASTING	5-Jan-25	STRUCTURE TYPE	

	1	2	3						
Date OF Testing	12-Jan-25								
	7 DAY								
Av.Dimension(mm)	150x150	150x150	150x150						
Weight(g)	7652	7864	8017						
Density (Kg/m3)	2.27	2.33	2.38						
Load(KN)	469	478	496						
Comp.Strength(Kg/cm2)	212.5	216.5	224.7						
Av.Comp.Strength(kg/cm2)	217.9								



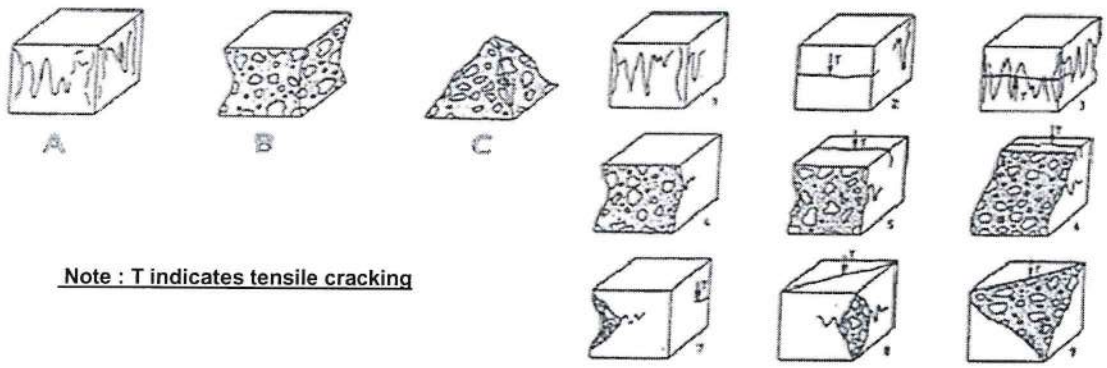
Note : T indicates tensile cracking

Contractor QalityEng.

QC CONS. Engineer

CONTRACTOR	الاخوه العرب	CEMENT TYPE	OPC 42.5
		CEMENT CONTENT	310kg/ m^3
PATCH PLANT		SPECIFIED STRENGTH	250 kg/ cm^2
PROJECT		NO.OF CUBES MADE	3
DATE OF CASTING	4-Jan-25	STRUCTURE TYPE	

	1	2	3						
Date OF Testing	1-Feb-25								
	28 DAY								
Av.Dimension(mm)	150x150	150x150	150x150						
Weight(g)	8045	7654	8012						
Density (Kg/m3)	2.38	2.27	2.37						
Load(KN)	601	620	645						
Comp.Strength(Kg/cm2)	272.3	280.9	292.2						
Av.Comp.Strength(kg/cm2)	281.8								



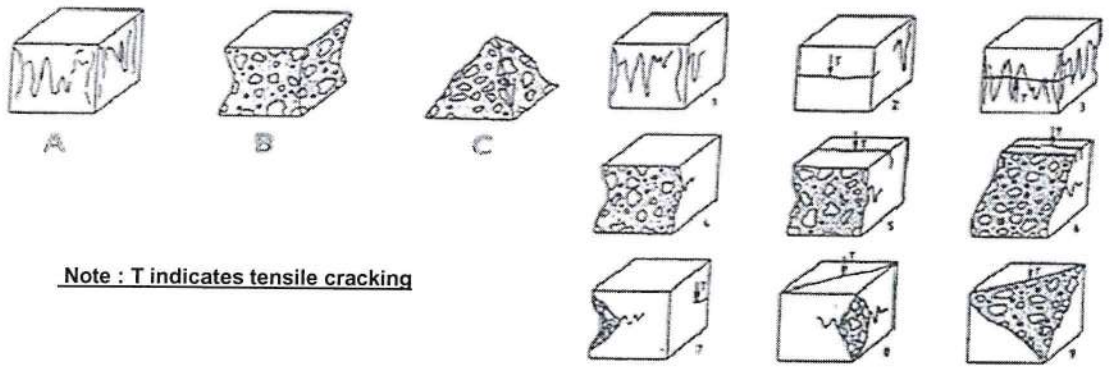
Note : T indicates tensile cracking

Contractor QalityEng.

QC CONS. Engineer

CONTRACTOR	الاخوه العرب	CEMENT TYPE	OPC 42.5
		CEMENT CONTENT	310kg/ m^3
PATCH PLANT		SPECIFIED STRENGTH	250 kg/ cm^2
PROJECT		NO.OF CUBES MADE	3
DATE OF CASTING	5-Jan-25	STRUCTURE TYPE	

	1	2	3						
Date OF Testing	2-Feb-25								
	28 DAY								
Av.Dimension(mm)	150x150	150x150	150x150						
Weight(g)	8023	7852	8012						
Density (Kg/m3)	2.38	2.33	2.37						
Load(KN)	631	647	633						
Comp.Strength(Kg/cm2)	285.8	293.1	286.7						
Av.Comp.Strength(kg/cm2)	288.6								



Note : T indicates tensile cracking

Contractor QalityEng.

QC CONS. Engineer

SYSTRA Employer Consultant	Electric Express Train - HSR From El Ain El Sokhna City To El Alamein	الهيئة القومية للأنفاق	Request No. 42
Contractor	Section 3: From West of the River Nile To Wadi El Natroun From Station 121+562.467 To Station 248+158.745	EnTrans CONSULTING GARB Consultant	Date 09/11/2024

Request for Inspection

We request your attendance to inspect the following works :

Discipline : ☑ Civil/Slope Protection ☐ Structure ☐ Drainage ☐ Survey

Inspection time : **Date** 09/11/2024

Location :	Contractor Zone	From Station	To Station	QN
	From 190+000 To 195+000	191+660	191+680	Q T

References HSR-SEC03-PL&PR-REV14 (22-02-2022) **Specification:**

Inspection : ◉ First ○ Second ○ Third

Purpose of the inspection :

1. Earthworks
- ☐ Stripping
- ☐ Natural Sub Grade
- ☐ Upper Embankment
- ☐ excavation
- ☐ Sub Grade
- ☐ Sub Ballast
- ☐ Ballast
- ☐ Empankment

2.Civil Work
- ☐ Open Channels
- ☐ Box Culvert
- ☐ Pipe Culvert
- ☑ Slope protection
- ☐ Gabion
- ☐ Side Ditches
- ☐ Other

3-Drainage
- ☐ Formation
- ☐ Sides of Excavation
- ☐ Backfilling Layers
- ☐ Slope protection

4. Surveying
- ☐ Setting out
- ☑ Levels
- ☐ Verticality

5. Structure
- ☑ Formwork
- ☐ Reinforcement
- ☐ Concreteing
- ☐ Earthing

Others (specify) sheaping&formwork&pouring concrete for slop protection and ditch L.S(Left Side)

Particular Details

Submitted by : Eng .adel ahmed Signature :

Inspection Report :	EnTrans Consulting	Signature
Civil Eng.	Approved	
Surveyor		
E/M Eng.	Approved	
Structural Eng.		
Arch. Eng.		
Resident Engineer		

The work have fount to be :

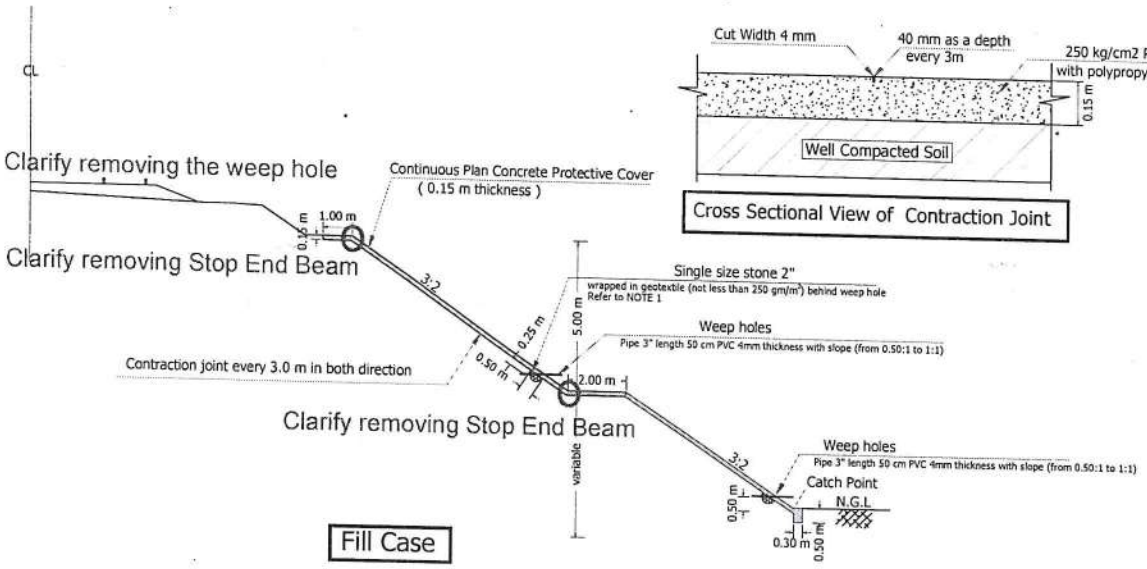
Signature _____ ☐ Approved (A) ☐ Approved as Noted (B) ☐ Revise& Resubmit (C) ☐ Rejected (D) Date : / /

Engineer's Representative " SYSTRA " comments :

Signature : Date : / /

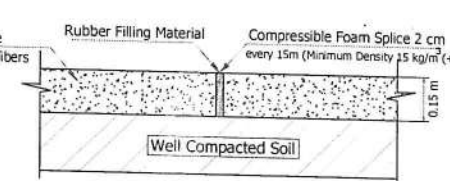
Attach all relevant particular test forms

Approval shall not relieve Contractor of his liabilities under the Contract or constitute authorization of any change to Contract Documents.

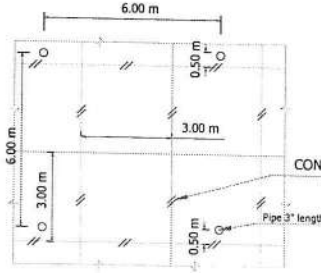


Fill Case

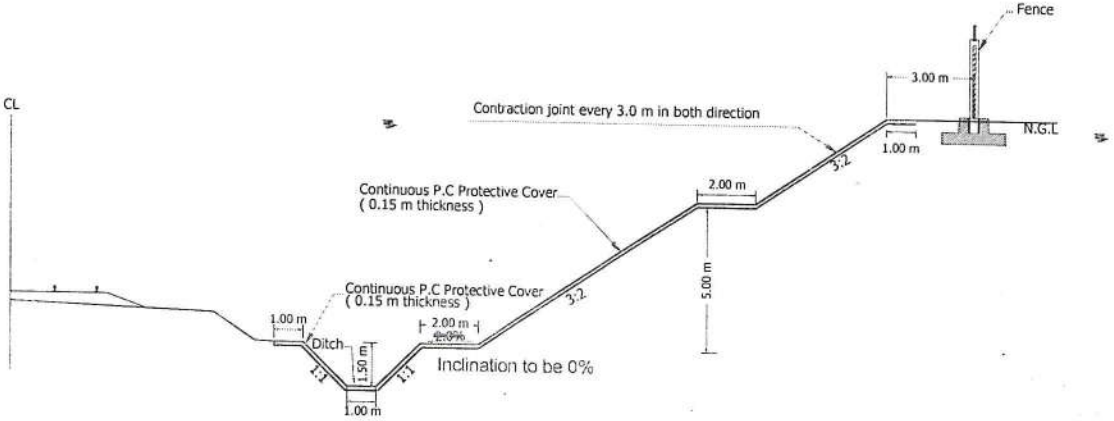
Cross Sectional View of Contraction Joint



Cross Sectional View of Expansion Joint



APPROVED AS NOTED



Cut Case

Check report No. as it was in the Previous revisions CG21-11.1

NOTES ACCORDING TO REPORT CG~~21-110~~.1 (CIVECON GROUP) :

17. Cut slopes in soil formations and embankment fills shall be covered with a plain concrete layer for stabilization and erosion protection according to the following recommendations:

17.1. The plain concrete protection layer shall be at least 15 cm in thickness, and shall have benches at 5.0 m height intervals, and maximum side slope of 3 (H) : 2 (V). The concrete slope protection shall have contraction joints every 3.0 meters in the longitudinal direction. A joint sealant shall be placed at the joints.

17.2. Ordinary Portland cement may be used in mixing the concrete cover with a cement content not less than 280 kg/m3 , maximum aggregate size of 20 mm, and water to cement ratio not exceeding 0.55. It is recommended to use fiber reinforcement in the concrete mix. Concrete shall be cast at a temperatures not exceeding 32 °C, thus it is preferred to cast concrete early in the morning or in the evening.

17.3. Water used in mixing the concrete cover shall be a fresh water satisfying the specifications of the Egyptian code for soil mechanics and design and construction of foundations [202-2001]

17.4. The concrete shall have a minimum compressive strength of 25 MPa (250 kg/cm2) after 28 days.

17.5. The concrete surface shall be floated and trowelled as necessary to produce a smooth surface. The surface shall not vary more than 6 mm under a 3 m long straightedge.

17.6. The concrete slabs shall be water cured for at least 7 days or a using an alternative acceptable curing method.

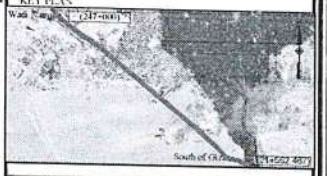
17.7. The concrete slab shall be placed on freely draining granular fill. If low draining soil exist below the layer, a granular drainage filter shall be needed behind the weep holes with a suitable non-woven geotextile. Weep holes are recommended at 3 to 5 m spacing at the toe of the slopes.

Owner
Ministry of Transportation
National Authority for Tunnels (NAT)

Owner
General Authority for Roads, Bridges & Land Transport

Project Name
ELECTRIC EXPRESS TRAIN (HIGH SPEED RAIL)
SECTION THREE (FROM WEST OF NILE TO WADI EL-NATROUN)
STATION 121+562.467 - STATION 247+000

KEY PLAN



No.	Date	Drawing Name	Engineer
5	08-09-2022	Typical detail of slope protections	Mahmoud Ezzat
4	16-08-2022	Typical detail of slope protections	Mahmoud Ezzat
3	31-07-2022	Typical detail of slope protections	Rawan Hafez
2	21-07-2022	Typical detail of slope protections	Rawan Hafez
1	05-01-2022	Typical detail of slope protections	Rawan Hafez
0	31-12-2021	Typical detail of slope protections	Rawan Hafez

Please Review the Issued Revisions and dates

* All dimensions are in meters unless otherwise mentioned
* Dimensions should be based on detailed structure design of system.

NOTES:

1-The geotextile shall be 250 gm/m of minimum grab tensile strength of 200 N, puncture resistance 250 N, tear resistance 250 N, and burst strength 250 kPa.

2- As instructed by the client (GARB), ~~five~~05 of slope protection (this drawing) matching with East Nile Sector.

Please rectify the Statement in the General Notes section

Owner Consultants	
GARBLT Consultant	EnTrans Consulting — Environmental & Transportation Solutions

Drawing Name
HSR/SEC03/TYPICAL DETAILS OF SLOPE PROTECTION

Drawing Scale	Drawing No.
N. T. S	HSR/SEC03-TYP-S Rev0

Approval	Revision	Designer	Date
Dr/ Dalia Said	Eng/ Fatma Ahmed	Eng/Kareem Adel	Sept 2022

CHAINAGE 191+660				
POINT	E	N	Z	STRING CUT
1	583792.24	831782.55	86.58	Hinge_Cut
2	583793.51	831784.10	86.58	P2
3	583794.46	831785.27	84.96	P2
4	583795.09	831786.04	84.96	P2
5	583796.11	831787.30	86.58	END_EMB_LT
6	583804.59	831797.72	87.12	Ferma

CHAINAGE 191+670				
POINT	E	N	Z	STRING CUT
1	583784.48	831788.85	86.60	Hinge_Cut
			2,93	✓
2	583785.75	831790.40	86.60	P2
				+1
3	583786.68	831791.55	84.94	P2
			4,59	+1,5
4	583787.31	831792.32	84.94	P2
				+2
5	583788.36	831793.61	86.60	END_EMB_LT
				+1
6	583796.84	831804.03	87.14	Ferma
			2,39	✓

CHAINAGE 191+680				
POINT	E	N	Z	STRING CUT
1	583776.72	831795.16	86.62	Hinge_Cut
			2,91	-1
2	583777.98	831796.71	86.62	P2
				✓
3	583778.89	831797.83	84.91	P2
			4,62	+1
4	583779.52	831798.60	84.91	P2
				✓
5	583780.60	831799.93	86.62	END_EMB_LT
			2,91	+1
6	583789.08	831810.35	87.16	Ferma
			2,37	+1,5

87.19
2,34
89.53

ولد الجارحى للمقاولات العمومية والتوريدات والخرسانة الجاهزة

شركة الجارحى
للخرسانة الجاهزة

DETERMINATION OF COMPRESSIVE STRENGTH OF CONCRETE CUBES
Test Standard BS 1881 - Part 116:1983 EGP 203-2007 (7-2)

CLIENT	:	شركة الأخوة العرب	SAMPLED BY	:	ولد الجارحى
PROJECT	:	مشروع القطار الكهربائي السريع	SAMPLING METHOD	:	BS 1881
CONSULTANT	:	Entrance / Systra	Cement Conten/Type	:	310 O.P.C
DATE OF CASTING	:	7-Nov-2024	STRUCTURE TYPE	:	
Elemnt	:	ميول	SPECIFIED STRENGTH	:	250 Kg/cm2
TARGET SLUMP	:	10 Cm	CONCRETE TEMP (°C)	:	30

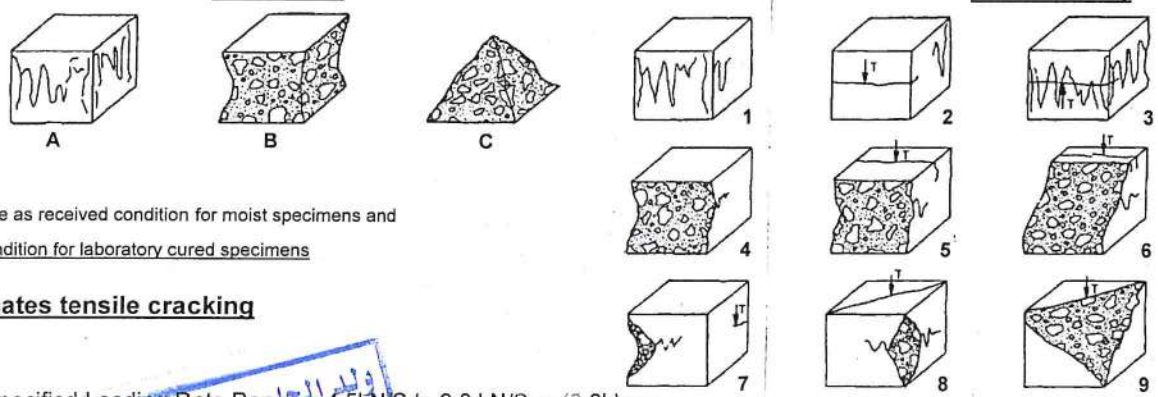
Results :

Specimen Reference	1	2	3	4	5	6
Date of Test	14-Nov-24					
Age of Test (Days)	7					
Moist. Condition at Testing.	Cube					
Average Dimension (mm)	150					
Weight (g)	8166	8135	8149			
Density (kg/m³)	2420	2410	2415			
Failure Load (kN)	475	485	511			
Comp. Strength Kg/cm²	215	220	231			
Mode of Failure						

AVERAGE Comp. Strength Kg/cm²	222

MODES OF FAILURE AS PER BS 1881 : Part 116 : 1983

Satisfactory **Unsatisfactory**



Remarks :

1881:Part 114 in the as received condition for moist specimens and in the saturated condition for laboratory cured specimens

Note : T indicates tensile cracking

Remarks : Specified Loading Rate Range = 4.5kN/S to 9.0 kN/S or (6.8kN/S)

quality control : mohamed mostafa

ولد الجارحى للمقاولات العمومية والتوريدات والخرسانة الجاهزة
سجل تجارى : ٤٠١٦٣

Mahmoud Said

ولد الجارحى للمقاولات العمومية والتوريدات والخرسانة الجاهزة

شركة الجارحى
للخرسانة الجاهزة

DETERMINATION OF COMPRESSIVE STRENGTH OF CONCRETE CUBES
Test Standard BS 1881 - Part 116:1983 EGP 203-2007 (7-2)

CLIENT	:	شركة الأخوة العرب	SAMPLED BY	:	ولد الجارحى
PROJECT	:	مشروع القطار الكهربائي السريع	SAMPLING METHOD	:	BS 1881
CONSULTANT	:	Entrance / Systra	Cement Conten/Type	:	310 O.P.C
DATE OF CASTING	:	14-Nov-2024	STRUCTURE TYPE	:	
Elemnt	:	ميول	SPECIFIED STRENGTH	:	250 Kg/cm2
TARGET SLUMP	:	10 Cm	CONCRETE TEMP (°C)	:	30

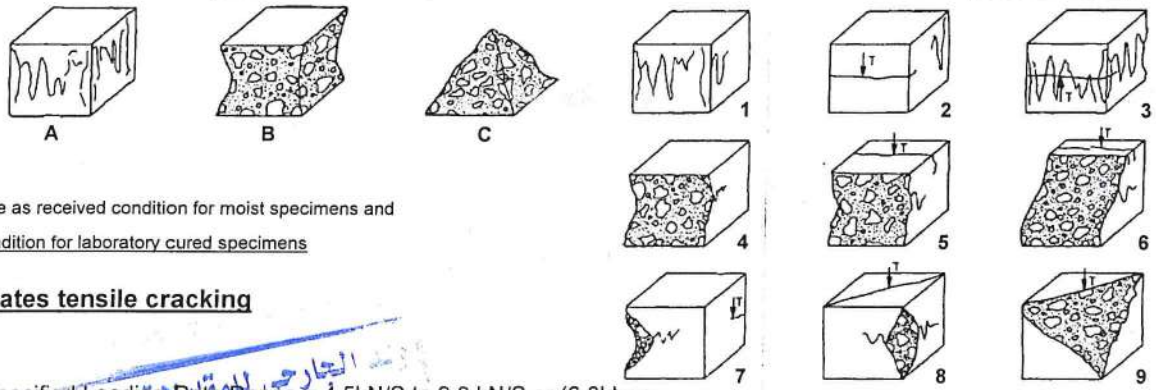
Results :

Specimen Reference	1	2	3	4	5	6
Date of Test	21-Nov-24					
Age of Test (Days)	7					
Moist. Condition at Testing.	Cube					
Average Dimension (mm)	150					
Weight (g)	8145	8167	8181			
Density (kg/m³)	2413	2420	2424			
Failure Load (kN)	476	493	510			
Comp. Strength Kg/cm²	216	223	231			
Mode of Failure						

AVERAGE Comp. Strength Kg/cm²	223

MODES OF FAILURE AS PER BS 1881 : Part 116 : 1983

Satisfactory **Unsatisfactory**



Remarks :

1881:Part 114 in the as received condition for moist specimens and in the saturated condition for laboratory cured specimens

Note : T indicates tensile cracking

Remarks : Specified Loading Rate Range = 4.5kN/S to 9.0 kN/S or (6.8kN/S)

quality control : mohamed mostafa

Mahmoud Said

Employer Consultant	Electric Express Train - HSR From El Ain El Sokhna City To El Alamein		Request No. 64
Contractor	Section 3: From West of the River Nile To Wadi El Natroun From Station 121+662.467 To Station 248+158.745	GARB Consultant	Date 14/12/2024

Request for Inspection

We request your attendance to inspect the following works :

Discipline : ☑ Civil/Slope Protection ☐ Structure ☐ Drainage ☐ Survey

Inspection time :		Date 14/12/2024		
Location :	Contractor Zone	From Station	To Station	QN
	From 190+000 To 195+000	193+440	193+480	Q T
References	HSR-SEC03-PL&PR-REV14 (22-02-2022)		Specification:	

Inspection : ◉ First ○ Second ○ Third

Purpose of the inspection :

1. Earthworks
- ☐ Stripping
- ☐ Natural Sub Grade
- ☐ Upper Embankment
- ☐ excavation
- ☐ Sub Grade
- ☐ Sub Ballast
- ☐ Ballast
- ☐ Embankment

2.Civil Work
- ☐ Open Channels
- ☐ Box Culvert
- ☐ Pipe Culvert
- ☑ Slope protection
- ☐ Gabion
- ☐ Side Ditches
- ☐ Other

3-Drainage
- ☐ Formation
- ☐ Sides of Excavation
- ☐ Backfilling Layers
- ☐ Slope protection

4. Surveying
- ☐ Setting out
- ☑ Levels
- ☐ Verticality

5. Structure
- ☑ Formwork
- ☐ Reinforcement
- ☐ Concreteing
- ☐ Earthing

Others (specify) sheaping&formwork&pouring concrete for slop protection and ditch L.S(Left Side)

Particular Details

Submitted by : Eng .adel ahmed Signature :

Inspection Report :	EnTrans Consulting	Signature
Civil Eng.	Approved	
Surveyor		
E/M Eng.		
Structural Eng.		
Arch. Eng.		
Resident Engineer		

The work have fount to be :

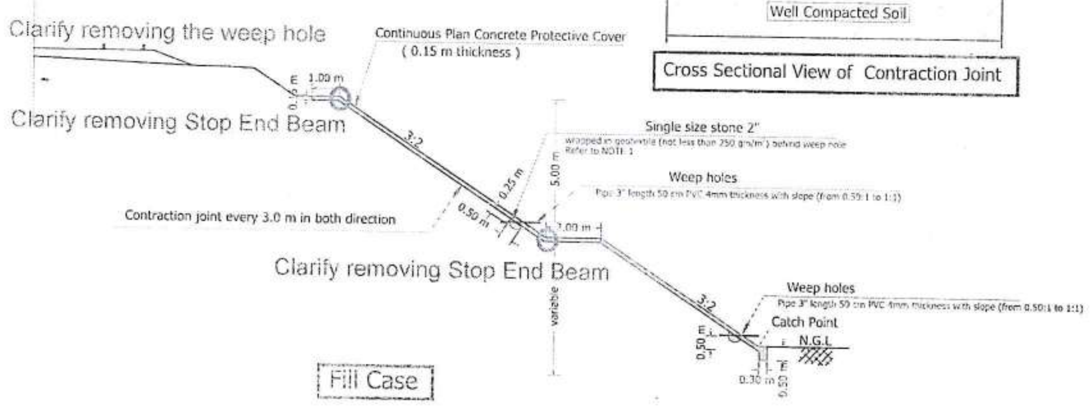
Signature : ☐ Approved (A) ☐ Approved as Noted (B) ☐ Revise& Resubmit (C) ☐ Rejected (D) Date : / /

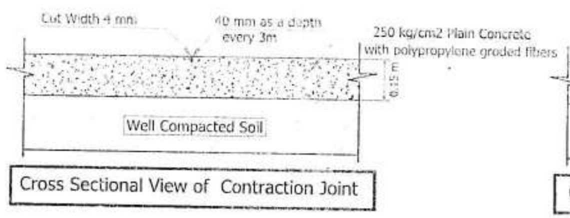
Engineer's Representative " SYSTRA " comments :

Signature : Date : / /

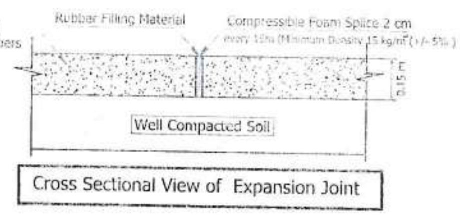
Attach all relevant particular test forms

Approval shall not relieve Contractor of his liabilities under the Contract or constitute authorization of any change to Contract Documents

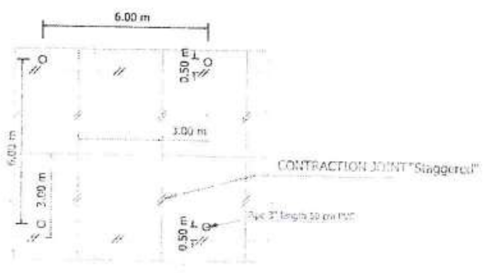




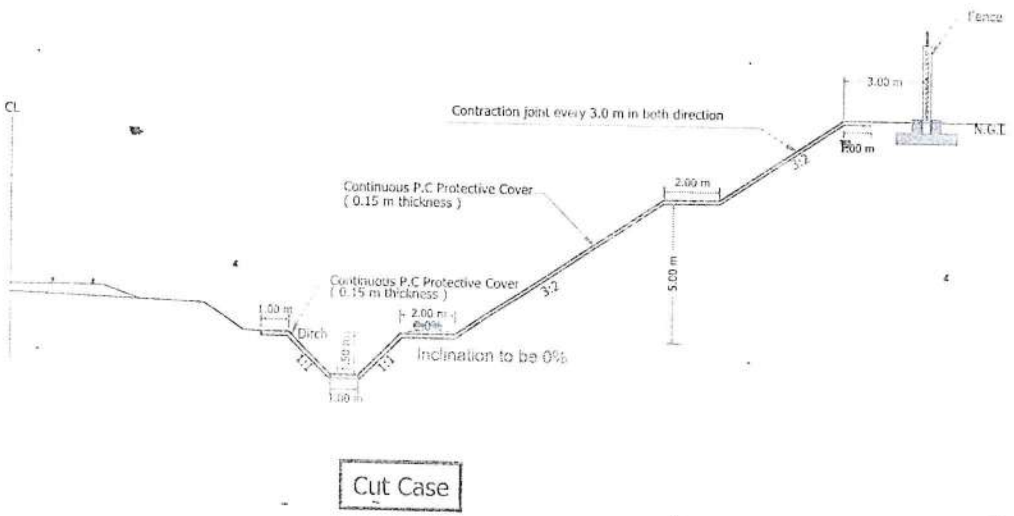
Cross Sectional View of Contraction Joint



Cross Sectional View of Expansion Joint



APPROVED AS NOTED



Check report No. as it was in the Previous revisions CG21-11.1

NOTES ACCORDING TO REPORT ~~CG21-110~~.1 (CIVECON GROUP) :

17. Cut slopes in soil formations and embankment fills shall be covered with a plain concrete layer for stabilization and erosion protection according to the following recommendations:

17.1. The plain concrete protection layer shall be at least 15 cm in thickness, and shall have benches at 5.0 m height intervals, and maximum side slope of 3 (H) : 2 (V). The concrete slope protection shall have contraction joints every 3.0 meters in the longitudinal direction. A joint sealant shall be placed at the joints.

17.2. Ordinary Portland cement may be used in mixing the concrete cover with a cement content not less than 280 kg/m3, maximum aggregate size of 20 mm, and water to cement ratio not exceeding 0.55. It is recommended to use fiber reinforcement in the concrete mix. Concrete shall be cast at a temperature not exceeding 32 °C, thus it is preferred to cast concrete early in the morning or in the evening.

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17.6. The concrete slabs shall be water cured for at least 7 days or a using an alternative acceptable curing method.

17.7. The concrete slab shall be placed on freely draining granular fill. If low draining soil exist below the layer, a granular drainage filter shall be needed behind the weep holes with a suitable non-woven geotextile. Weep holes are recommended at 3 to 5 m spacing at the top of the slopes.

Owner
Ministry of Transportation
National Authority for Tunnels (NAT)

Owner
General Authority for Roads, Bridges & Land Transport

Project Name
ELECTRIC EXPRESS TRAIN (HIGH SPEED RAIL)
SECTION THREE (FROM WEST OF NILE TO WADI EL-NATROUN)
STATION 121+582.467 - STATION 247+000

KEY PLAN

No.	Date	Drawing Name	Engineer
4	[illegible]-2022	Typical detail of slope protections	Mahmoud Ezzat
4	[illegible]	Typical detail of slope protections	Rawan Hafez
3	01-07-202[illegible]	Typical detail of slope protections	Rawan Hafez
2	[illegible]	Typical detail of slope protections	Rawan Hafez
1	[illegible]-01-202[illegible]	Typical detail of slope protections	Rawan Hafez
0	[illegible]	Typical detail of slope protections	Rawan Hafez

Please Review the issued Revisions and dates

* All dimensions are in meters unless otherwise mentioned
* Dimensions should be based on detailed structure design of system

NOTES:
1-The geotextile shall be 250 g/m² of minimum grab tensile strength of 200 N, puncture resistance 250 N, tear resistance 250 N, and burst strength 250 kPa

Please rectify the Statement in the General Notes section

Owner Consultants

GARBLT Consultant — Trans Consulting, Environmental & Transportation Solutions

Drawing Name
TYPICAL DETAILS OF SLOPE PROTECTION

Drawing Scale: N.T.S

Drawing No: [illegible]

Approved | Revision | Designer | Date

CHAINAGE 193+440				
POINT	E	N	Z	STRING CUT
1	582415.51	832910.84	103.98	DAYLIGHT
2	582411.73	832906.19	103.98	Hinge_Cut
3	582412.99	832907.74	103.98	P2
4	582413.94	832908.90	102.48	P2
5	582414.57	832909.68	102.48	P2
6	582415.51	832910.84	103.98	END_EMB_LT

CHAINAGE 193+450				
POINT	E	N	Z	STRING CUT
1	582402.84	832911.11	105.27	DAYLIGHT
2	582403.97	832912.50	104.08	Hinge_Cut
3	582405.23	832914.05	104.08	P2
4	582406.18	832915.22	102.58	P2
5	582406.81	832915.99	102.58	P2
6	582407.76	832917.16	104.08	END_EMB_LT

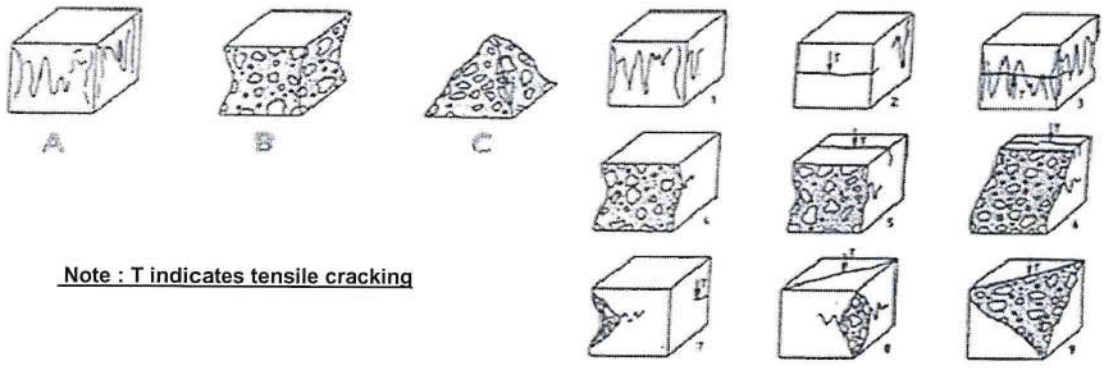
CHAINAGE 193+460				
POINT	E	N	Z	STRING CUT
1	582394.74	832917.00	105.74	DAYLIGHT
2	582396.21	832918.81	104.18	Hinge_Cut
3	582397.48	832920.36	104.18	P2
4	582398.42	832921.53	102.68	P2
5	582399.05	832922.30	102.68	P2
6	582400.00	832923.47	104.18	END_EMB_LT

CHAINAGE 193+470				
POINT	E	N	Z	STRING CUT
1	582386.56	832922.80	106.29	DAYLIGHT
2	582388.46	832925.13	104.28	Hinge_Cut
3	582389.72	832926.68	104.28	P2
4	582390.67	832927.84	102.78	P2
5	582391.30	832928.62	102.78	P2
6	582392.25	832929.78	104.28	END_EMB_LT

CHAINAGE 193+480				
POINT	E	N	Z	STRING CUT
1	582378.34	832928.54	106.88	DAYLIGHT
2	582380.70	832931.44	104.39	Hinge_Cut
3	582381.96	832932.99	104.39	P2
4	582382.91	832934.15	102.89	P2
5	582383.54	832934.93	102.89	P2
6	582384.49	832936.09	104.39	END_EMB_LT

CONTRACTOR	الاخوه العرب	CEMENT TYPE	OPC 42.5
		CEMENT CONTENT	310kg/ m^3
PATCH PLANT		SPECIFIED STRENGTH	250 kg/ cm^2
PROJECT		NO.OF CUBES MADE	3
DATE OF CASTING	16-Dec-24	STRUCTURE TYPE	

	1	2	3						
Date OF Testing	23-Dec-24								
	7 DAY								
Av.Dimension(mm)	150x150	150x150	150x150						
Weight(g)	7963	7852	7668						
Density (Kg/m3)	2.36	2.33	2.27						
Load(KN)	496	494	500						
Comp.Strength(Kg/cm2)	224.7	223.8	226.5						
Av.Comp.Strength(kg/cm2)	225.0								



Note : T indicates tensile cracking

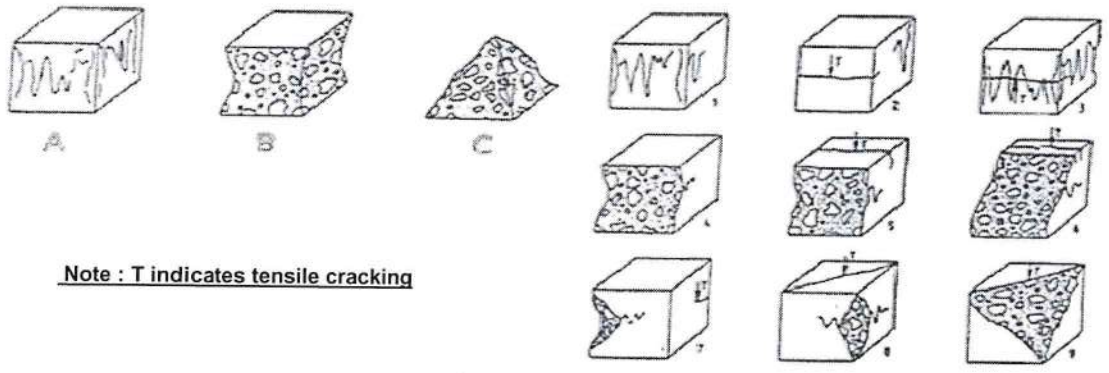
Contractor QalityEng.

QC CONS. Engineer

BMC BEST MIX CONCRETE بيست ميكس كونكريت للخرسانة الجاهزة و المنتجات الأسمنتية

CONTRACTOR	الاخوه العرب	CEMENT TYPE	OPC 42.5
		CEMENT CONTENT	310kg/ m^3
PATCH PLANT		SPECIFIED STRENGTH	250 kg/ cm^2
PROJECT		NO.OF CUBES MADE	3
DATE OF CASTING	16-Dec-24	STRUCTURE TYPE	

	1	2	3						
Date OF Testing	13-Jan-25								
	28 DAY								
Av.Dimension(mm)	150x150	150x150	150x150						
Weight(g)	7963	7821	8034						
Density (Kg/m3)	2.36	2.32	2.38						
Load(KN)	648	655	624						
Comp.Strength(Kg/cm2)	293.5	296.7	282.7						
Av.Comp.Strength(kg/cm2)	291.0								



Note : T indicates tensile cracking

Contractor QalityEng.

QC CONS. Engineer