

कायार्यालय कार्यपालन यंत्री, लोक निर्माण विभाग रा0रा0 संभाग सागर (म0प्र0)

पत्र क्र0 2131 / कार्य / 2025-26

सागर दिनांक 30/10/25

प्रति,

क्षेत्रसंचालक,
पन्ना टाईगर रिजर्व
पन्ना (म0प्र0)

विषय:-

पन्ना जिले में पन्ना टाईगर रिजर्व के बफर जोन से गुजरने वाले राष्ट्रीय राजमार्ग क्रमांक-43 गुलगंज-अमानगंज-पवई-कटनी मार्ग के निर्माण/चौड़ीकरण (Falling in the southern & Western portion of Panna Tiger Reserve) हेतु 44.05 (12.15 ha. Of existing carriageway) संरक्षित वनभूमि कार्यपालन यंत्री, लोक निर्माण विभाग राष्ट्रीय राजमार्ग संभाग, सागर को उपयोग पर देने बावत् । (ऑनलाईन प्रकरण क्रमांक/FP/MP/ROAD/121709/2021)

सन्दर्भ:-

- 1-भारत सरकार, पर्यावरण, वन एवं जलवायु परिवर्तन मंत्रालय, क्षेत्रीय कार्यालय भोपाल का पत्र क्र0-06-MPR 011/2023-BHO दिनांक 23.09.2025
- 2- प्रधान मुख्य वन संरक्षक (भू-प्रबंध) मध्यप्रदेश भोपाल का पत्र क्र0-एफ-5/1215/2023/10-11/2418 दिनांक 24.09.2025
- 3- आपका पत्र क्र0-तकनीकी/2025/2276 पन्ना दिनांक 13.10.2025 एवं पत्र क्र. -तकनीकी/2025/2351 दिनांक 24.10.2025
- 4- अनुविभागीय अधिकारी लो0नि0वि0रा0रा0 उपसंभाग छतरपुर का पत्र क्र0-710 /तक0/2025-26 दिनांक 30.10.2025

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उपरोक्त विषयान्तर्गत लेख है कि संदर्भित पत्र क्र0-1 एवं 2 के द्वारा विषयांकित कार्य के प्रथम चरण की सैद्धांतिक स्वीकृति शासवत प्रदान की गई है । संदर्भित पत्रों के माध्यम से सैद्धांतिक स्वीकृति में अधिरोपित समस्त शर्तों का शर्तवार पालन प्रतिवेदन प्रस्तुत करने का लेख किया गया है ।

अतः समस्त शर्तों का शर्तवार पालन प्रतिवेदन निम्नानुसार प्रस्तुत है:-

Compliance	User Agency Reply
A. Conditions which need to be complied prior to handing over of forest land by the State Forest Department	
1. The cost of compensatory afforestation on the CA land 70.00 ha degraded-forest land at the prevailing wage rates as per compensatory afforestation scheme (including the cost of survey, demarcation and erection of permanent pillars etc. as required for securing the land against encroachment) shall be deposited in advance with the State Forest Department by the project authority. The CA	Agreed & complied The User Agency has deposited an amount of Rs. 22671812.00 against CA Amount in CAMPA wide UTR No. CNRBR52025101868156285 (The copy of Deposited Receipt enclosed.)

will be maintained for 10 years. The scheme may include appropriate provision for anticipated cost increase for works scheduled for subsequent years.	
2. The State Government shall charge the Net Present Value (NPV) for the 31.90 Ha, forest area to be diverted under this proposal from the User Agency as per the orders of the Hon'ble Supreme Court of India dated 30/10/2002, 01/08/2003, 28/03 / 2008, 24/04/2008 and 09/05/2008 in IA No. 566 in WP (C) No. 202/1995 and as per the guidelines issued by the Ministry vide letters No. 5-1/1998-FC (Pt.U) dated 18/09/2003, as well as letter No. 5-2/2006-FC dated 03/10/2006, 5-3/2007-FC dated 05/02/2009 & 5-3/2011-FC(vol-1) dated 06/10/2022 in this regard.	Agreed & complied The User Agency has deposited an amount of Rs. 30553182 against NPV Amount in CAMPA wide UTR No. CNRBR52025101868156285 <i>(The copy of Deposited Receipt enclosed.)</i>
3. All the funds received from the user agency under the project shall be transferred/ deposited to CAMPA fund only through e-portal (https://parivesh.nic.in/).	Agreed & complied The User Agency has deposited the same amount in CAMPA wide UTR No. CNRBR52025101868156285 <i>(The copy of Deposited Receipt enclosed.)</i>
4. Complete compliance of the FRA, 2006 shall be ensured by way of prescribed certificate from the concerned District Collector.	Agreed & complied <i>(The copy of FRA - 2006 enclosed.)</i>
5. The User Agency shall ensure strict compliance with all conditions stipulated in the National Board for wildlife (NBWL) approval dated 03.09.2025 and as per the specification and suggestions given in the WII report for "Eco-friendly measure to mitigate impacts of Linear Infrastructure on Wildlife" shall be incorporated after consultation with the concerned DFO during the construction at the cost of project by the project proponent.	Agreed The User Agency is agreed to ensure strict compliance with all conditions stipulated in the National Board for wildlife (NBWL) approval dated 03.09.2025
6. The left-out portions where green field alignment and curve improvement is being proposed in the alignment shall be reinstated to its original form and reclaimed at the cost of the project by the project proponent under the supervision of Forest Department. The same shall be surrendered to the supervision of Forest Department. The same shall be surrendered to the Forest Department after completion of the project. The detailed site improvement plan shall be submitted before submitting proposal for Stage-II approval.	Agreed
7. The acoustic noise barrier system/ crash barrier system may be installed/ executed as	Agreed As per the JMS of suggested site in

per specification of IRC SP130-2022 and IRC-2015 wherever required during the construction of proposed road in consultation with the concern DFO.	consultation with the concern DFO or by the Team of Forest Department for "The acoustic noise barrier system/crash barrier system should be installed/excited as per specification of IRC SP130-2022 and IRC 2015 during the construction of proposed road" The KML of suggested locations in JMS with Forest team is enclosed.
8. The User Agency shall submit a detailed layout plan for the construction of major bridges, minor bridges and culverts in this project, prior to the grant of Stage-II approval.	Agreed Required layout plans enclosed.
9. The road side plantation shall be carried out by the State Forest Department as per Scheme submitted and the requisite fund shall be deposited in CAMPA by the Project Proponent.	Agreed & complied The User Agency has deposited an amount of Rs. 8276167.00 in CAMPA wide UTR No. CNRBR52025101868156285 <i>(The copy of Deposited Receipt enclosed.)</i>
10. The User Agency shall submit an undertaking that no muck shall be disposed of in forest land.	Agreed Undertaking enclosed.
11. The KML files of Diverted and CA area shall be uploaded on the e.Green watch portal with all requisite details prior to Stage-II Approval.	The condition is related to Forest Department.
12. Violation of any these Condition will amount to violation of Forest (Conservation) Act, 1980 and action would be taken as prescribed in para 1.21 of Chapter 1 of the Handbook of Comprehensive Guidelines of Forest (Conservation) Act, 1980 as issued by this Ministry's letter No. 5-2/2017-FC dated 28.03.2019.	Agreed The User Agency has ensure that the violation of Forest (Conservation) Act, 1980 will never occurred in any Protected or Forest Areas.
13. The compliance report shall be uploaded on e-portal (https://parivesh.nic.in/).	Agreed The User Agency has ensure that The compliance report will be uploaded on e-portal (https://parivesh.nic.in/)
14. In case working permission in granted by the State Forest Department, a copy of the same shall be submitted with compliance report of Stage-I approval.	Agreed
B. Conditions which need to be strictly complied on field after handing over of forest land to the User Agency by the State Forest Department but the compliance in form of undertaking shall be submitted prior to Stage-II approvals:	
1. Legal Stats of the forest land shall remain unchanged.	Agreed
2. Compensatory afforestation shall be taken up by the Forest Department over 70.00 Ha degraded Forest Land, Compartment No. P-480, Forest Beat – Biharpara, Forest Range –	Agreed

Kishangarh (Buffer), Tehsil – Bijawar, District – Chhatarpur at the cost of the user agency. As far as possible, a mixture of local native species shall be planted and monoculture of any species, especially non-native species should be avoided.	
3. Additional amount of the NPV of the diverted Forest land, if any, becoming due after finalization of the same by the same by the Hon'ble Supreme Court of India on receipt of the report from the Expert Committee, shall also be charged by the State Government from the User Agency. The User Agency shall furnish an undertaking to this effect.	Agreed Undertaking enclosed.
4. The User Agency shall restrict felling of trees to the enumerated 8066 numbers/minimum number in the diverted forest land and the trees shall be felled under the strict supervision of the State Forest Department or the cost of felling of trees shall be deposited by the User Agency with the State Forest Department and State Forest Department shall undertake the fellings.	Agreed The User Agency has agreed to felling of Trees inside the Protect and Forest Area will be minimum or as per the minimum requirement of Project.
5. Boundary of the diverted forest land shall be suitably demarcated on ground at the project cost.	Agreed The User Agency has agreed to Boundary of the diverted forest land shall be suitably demarcated on ground at the project cost
6. Speed regulating signages will be erected all along the road at regular intervals in the Protected Areas/ Forest Areas.	Agreed
7. Layout plan of the proposal shall not be changes without prior approval of Central Government.	Agreed
8. No Labour camp shall be established on the forest land.	Agreed
9. The User Agency shall provide alternate fuels preferably LPG to the labourers and staff working at the site so as to prevent any damage and pressure on the nearby forests.	Agreed
10. No additional or new path will be constructed inside the forest area for transportation of construction materials for execution of the project work.	Agreed
11. The period of diversion under this approval shall be co-terminus with the project life.	Agreed
12. The Forest land shall not be used for any purpose other than that specified in the project proposal.	Agreed
13. The User Agency and the State Government shall ensure compliance to provisions of all	Agreed

the Acts, Rules, Regulations, Guidelines, Hon'ble Court Order(s) and National Green Tribunal Order(s) pertaining to this project, if any for the time being in force, as applicable to the project.	
14. The forest land proposed to be diverted shall under no circumstance be transferred to any other agencies, department or person without prior approval of central Government.	Agreed
15. Any other condition that the Ministry of Environment, Forest & Climate Change may stipulate from time to time in the interest of conservation, protection and development of forest & wildlife.	Agreed

End:- As above

Executive Engineer,
P.W.D. National Highway
Division Sagar (M.P.)

पृ०क्र० 2132 / कार्य / 2025-2026
प्रतिलिपि:-

सागर दिनांक 30/10/25

- 1- मुख्य अभियंता लो.नि.वि.रा.रा. परिक्षेत्र, निर्माण भवन भोपाल की ओर उक्त शर्तों के परिपालन में आने वाली संभावित लागत में वृद्धि के संबंध में सूचनार्थ एवं आवश्यक कार्यवाही हेतु संप्रेषित।
- 2- क्षेत्रीय अधिकारी एम.ओ.आर.टी.एण्ड.एच. भोपाल की ओर सूचनार्थ संप्रेषित।
- 3- अनुविभागीय अधिकारी लो०नि०वि०रा०रा० उपसंभाग छतरपुर की ओर कडाई से पालनार्थ प्रेषित।

Executive Engineer,
P.W.D. National Highway
Division Sagar (M.P.)

कायोलय कायंपालन यंत्रो लोक निमोण विभाग राष्ट्रीय राजमार्ग संभाग, सागर

दूरभाष 07582-222206

E mail eepwdnhsagar768@gmail.com

ज्ञाप क०/ 2089 / व.ले.लि. / 2025-26
प्रति,

सागर दिनांक 17/10/25

उपसंचालक

पन्ना टाइगर रिजर्व पन्ना

विषय:-

पन्ना जिले में पन्ना टाइगर रिजर्व के बफर जोन से गुजरने वाले राष्ट्रीय राजमार्ग क्रमांक-43 गुलगंज-अमानगंज-पवई-कटनी मार्ग के निर्माण/चौड़ीकरण (Falling in the southern & Western portion of Panna Tiger Reserve) हेतु 44.05 (12.15 ha. Of existing carriageway) संरक्षित वनभूमि कायंपालन यंत्रो, लोक निर्माण विभाग राष्ट्रीय राजमार्ग संभाग, सागर को उपयोग पर देने बावत् । (ऑनलाईन प्रकरण क्रमांक/FP/MP/ROAD/121709/2021)
क्षतिपूर्ति वैकल्पिक वृक्षारोपण एवं एन.पी.व्ही की राशि मार्ग किनारे रोपण योजना की राशि जमा करने बावत् ।

संदर्भ :-

- 1-भारत सरकार, पर्यावरण, वन एवं जलवायु परिवर्तन मंत्रालय, क्षेत्रीय कार्यालय भोपाल का पत्र क्र०-06-MPR 011/2023-BHO दिनांक 23.09.2025
- 2- प्रधान मुख्य वन संरक्षक (भू-प्रबंध) मध्यप्रदेश भोपाल का पत्र क्र०-एफ-5/1215/2023/10-11/2418 दिनांक 24.09.2025
- 3- आपका पत्र क्र०-तकनीकी/2025/2276 पन्ना दिनांक 13.10.2025

उपरोक्त विषयांतर्गत लेख है कि यह मार्ग इस कार्यालय के कार्यक्षेत्र में प्रस्तावित है। संदर्भित पत्र क्र. 1 एवं 2 के द्वारा विषयांकित कार्य प्रथम चरण की सैद्धांतिक स्वीकृति सशर्त प्रदान की गई है। संदर्भित पत्र क्र. 2 में वर्णित अनुसार क्षतिपूर्ति वैकल्पिक वृक्षारोपण राशि रु. 22671812.00 एवं एन.पी.व्ही की राशि रु. 30553182.00 एवं मार्ग किनारे रोपण योजना की कुल वयय की राशि 8276167.00 इस प्रकार वनभूमि की नेट प्रजेन्ट वैल्यू की कुल राशि रु. 61501161.00 इस कार्यालय द्वारा जमा की गई CAMPA fund राशि का विवरण निम्नानुसार है:-

CAMPa fund में Challan द्वारा भेजी गई राशि	क्षतिपूर्ति वैकल्पिक वृक्षारोपण राशि	22671812.00
	एन.पी.व्ही की राशि	30553182.00
	मार्ग किनारे रोपण योजना की कुल वयय की राशि	8276167.00
Total		61501161.00
Challan date - 14-10-2025 Application No. 61121709314 Beneficiary Branch and code: Proposal No. WL/MP/ROAD/121709/2021 MoEF/SG file No. 6-MPR011/2023-BHO Agency Name:- Beneficiary A/C No. 1507661121709314 UTR No.:- CNRBR52025101868156285		

अतः आपसे निवेदन है कि मार्ग के कार्य में वन भूमि के व्यपवर्तन हेतु द्वितीय स्टेज की अनुमति प्रदान करने हेतु आवश्यक कार्यवाही करने का कष्ट करे।
सहपत्र:- CAMPa fund में किए गए भुगतान की प्रति

पृ० क०/ 2090 / व.ले.लि. / 2025-26
प्रतिलिपि:-

कायंपालन यंत्रो
लो.नि.वि.रा.संभाग सागर
सागर दिनांक 17/10/25

1. प्रधान मुख्य वन संरक्षक (वन्य जीव) एवं मुख्य वन्यजीव अभिरक्षक भोपाल की ओर संदर्भित पत्र क्र. 1 के संदर्भ में सूचनार्थ संप्रेषित।
2. मुख्य अभियंता लो.नि.वि.रा.सं. परिक्षेत्र, निर्माण भवन भोपाल की ओर सूचनार्थ संप्रेषित।
3. क्षेत्रीय अधिकारी एम.ओ.आर.टी.एण्ड.एच. भोपाल की ओर सूचनार्थ संप्रेषित।
4. कलेक्टर जिला पन्ना/छतरपुर की ओर सूचनार्थ संप्रेषित।
5. अनुविभागीय अधिकारी लो.नि.वि.रा.सं. उपसंभाग छतरपुर की ओर सूचनार्थ एवं आवश्यक कार्यवाही हेतु प्रेषित।

सहपत्र:- शून्य

कायंपालन यंत्रो
लो.नि.वि.रा.संभाग सागर

कार्यालय कार्यपालन यंत्री, लोक निर्माण विभाग रा0रा0 संभाग सागर (म0प्र0)

पत्र क्र0 2133 / कार्य / 2025-26

सागर दिनांक 30/10/25

Undertakings

विषय:- पन्ना जिले में पन्ना टाईगर रिजर्व के बफर जोन से गुजरने वाले राष्ट्रीय राजमार्ग क्रमांक-43 गुलगंज-अमानगंज-पवाई-कटनी मार्ग के निर्माण/चौड़ीकरण(Falling in the southern & Western portion of Panna Tiger Reserve) हेतु 44.05 (12.15 ha. Of existing carriageway) संरक्षित वनभूमि कार्यपालन यंत्री, लोक निर्माण विभाग राष्ट्रीय राजमार्ग संभाग, सागर को उपयोग पर देने बावत् ।

(ऑनलाईन प्रकरण क्रमांक/FP/MP/ROAD/121709/2021)

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उपरोक्त विषयान्तर्गत लेख है कि विषयांकित कार्य के लिये प्रथम चरण की सैद्धांतिक स्वीकृति प्रदान की गई है। सैद्धांतिक स्वीकृति में लगाई गई शर्तों के पालन का वचन पत्र निम्नानुसार प्रस्तुत है:-

- 1- सैद्धांतिक स्वीकृति की शर्त क्र0-(A-10) का पालन किया जाता है:-
प्रभावित वन क्षेत्र में किसी भी प्रकार का कूड़ा-कंकट (MUCK) इकट्ठा नहीं किया जायेगा जिसके पालन हेतु आवेदक संस्थान वचनबद्ध रहेगा ।
- 2- सैद्धांतिक स्वीकृति में लगाई गई शर्त क्रमांक (B-3) का पालन किया जाता है:-
सैद्धांतिक स्वीकृति में एक वचन पत्र के लिये लेख किया गया है कि एक्सपर्ट कमेटी से रिपोर्ट मिलने और मातृतीय सुप्रीम कोर्ट द्वारा उसे फाइनल करने के बाद, अगर डायवर्टेड फॉरेस्ट लैंड के नुकसान के लिए कोई एक्स्ट्रा रकम देनी होगी, तो यूजर एजेंसी वह रकम भी राज्य सरकार के CAMPA अकाउंट में जमा करेगी। यूजर एजेंसी इसके लिए वचन बद्ध है।
- 3- योजना में प्रभावित वन भूमि के बदले क्षतिपूर्ति वृक्षारोपण कार्य के अवधि में अतिरिक्त राशि की मांग किये जाने पर अंतर की राशि जमा करने हेतु आवेदक संस्थान वचन बद्ध रहेगा ।

उपयंत्री,
लो0नि0वि0रा0रा0
उपसंभाग छतरपुर

अनुविभागीय अधिकारी,
लो0नि0वि0रा0रा0
उपसंभाग छतरपुर

कार्यपालन यंत्री,
लो0नि0वि0रा0रा0
संभाग सागर (म0प्र0)

FORM -I
(For projects linear projects)

Government of M.P.
Office of the District Collector, Chhatarpur

No.FRA/Tribal/2022-23/ 11844

Chhatarpur Date 26/01/23

TO WHOMSOEVER IT MAY CONCERN

In compliance of the Ministry of Environment and Forests (MOEF) Government of India's letter No.11-9/98-FC(pt.) dated 3rd August 2009 wherein the MOEF issued guidelines on submission of evidences for having initiated and completed the process of settlement of rights under the Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act 2006 ('FRA' for short) on the forest land proposed to be diverted For Non Forest purpose read with MOEF's letter dated 5th February 2013 wherein MOEF issued certain relaxation in respect of linear projects, it is certified that total area 25.500 hec. Hectares in Compartment No P-519,520,521,458,459,479,475, 454,514 Forest Land and in favour of MPPWD Sagar (MP) for a part of Gulganj-Amanganj-Pawai-Katni Road NH-43 Ext.Details are given below.

It is further certified that :

- The complete process for identification and settlement of rights under the FRA has been carried out for the entire 25.500 Hec. in Compartment No P-519,520,521,458,459,479,475, 454,514 of forest land A copy of records of all consultation and meetings of the Forest Rights Committee (s), Gram Sabha (s), Sub-Division Level Committee (s) and the District Level Committee are enclosed as Annexure ---to-- Annexure.
- The diversion of forest land and Revenue forest for facilities managed by the Government as required under section 3 (2) of the FRA have been completed and the Gram Sabhas have given their consent to it.
- The proposal does not involve recognized rights of Primitive Tribal Groups and pre-agricultural communities.

Encl: As above

जिला संयोजक
वन जातीय कार्य विभाग
छतापुर (म.प्र.)

Collector
Distt. Chhatarpur
जिला छतापुर (म.प्र.)

मौजूदा पंचनामा

हम अधोहस्ताक्षर कर्ता पंचनामा इस बात कि सही सही तरदीबुद्ध करते हैं कि आज दिनांक 08/10/2025 को श्रीमान महीश्वर महोदय जेन हॉटेल अग्रवाल अग्रवाल रवपुराहो जे पत्र जमांक 2025/6065 दिनांक 29/09/2025 जे परिपालन मे श्रीमान जे. सी. जैन उपयंत्री लोड निर्माण विभाग (रा.रा.) छतरपुर, श्रीमान वन परि. अधिकारी किशनगढ़ बड़, परिक्षेत्र सहायक किशनगढ़ पीट गडि किशनगढ़ व पी. पी. अनिल कुमार रूखचर इंजीनियर स्पे. स्प. गुरु स्वामी (उत्ति निधि संपिदाकार की स्टोन) जेद्वारा रोड जे दोनो तरफ धूम धिर कर देखा गया तथा जेत जमांक (A) 7 जे परिपालन मे निम्न लिखित स्थानो पर noise barrier system crash barrier system लगाना आवश्यक हैं जिन्हे Lt. P.S. Coordinators निम्न लिखित हैं।

- (1) N-24.505874' E-79.679845'
- (2) N-24.498648' E-79.683901'
- (3) N-24.497845' E-79.688772'
- (4) N-24.452659' E-79.749930'

-जाद मौजूदा पंचनामा लिखा पत्र पढ़कर सुनाया सुनकर सही पाये जाने पर हस्ताक्षर किये।

गवाह/हस्ताक्षर

(1) श्रीमान जे. सी. जैन

उपयंत्री लोड निर्माण विभाग (रा.रा.) छतरपुर

(2) श्रीमान प्रदीप अग्रवाल
प.प. अ. किशनगढ़ (क)

(3) " रामजी शरण दोगी
प.स. किशनगढ़

(4) " पी. पी. अनिल कुमार

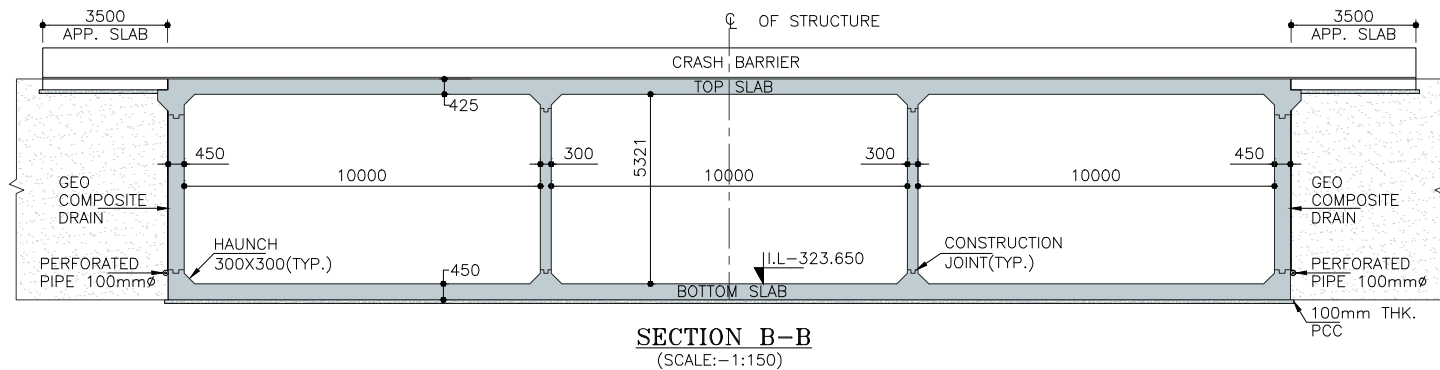
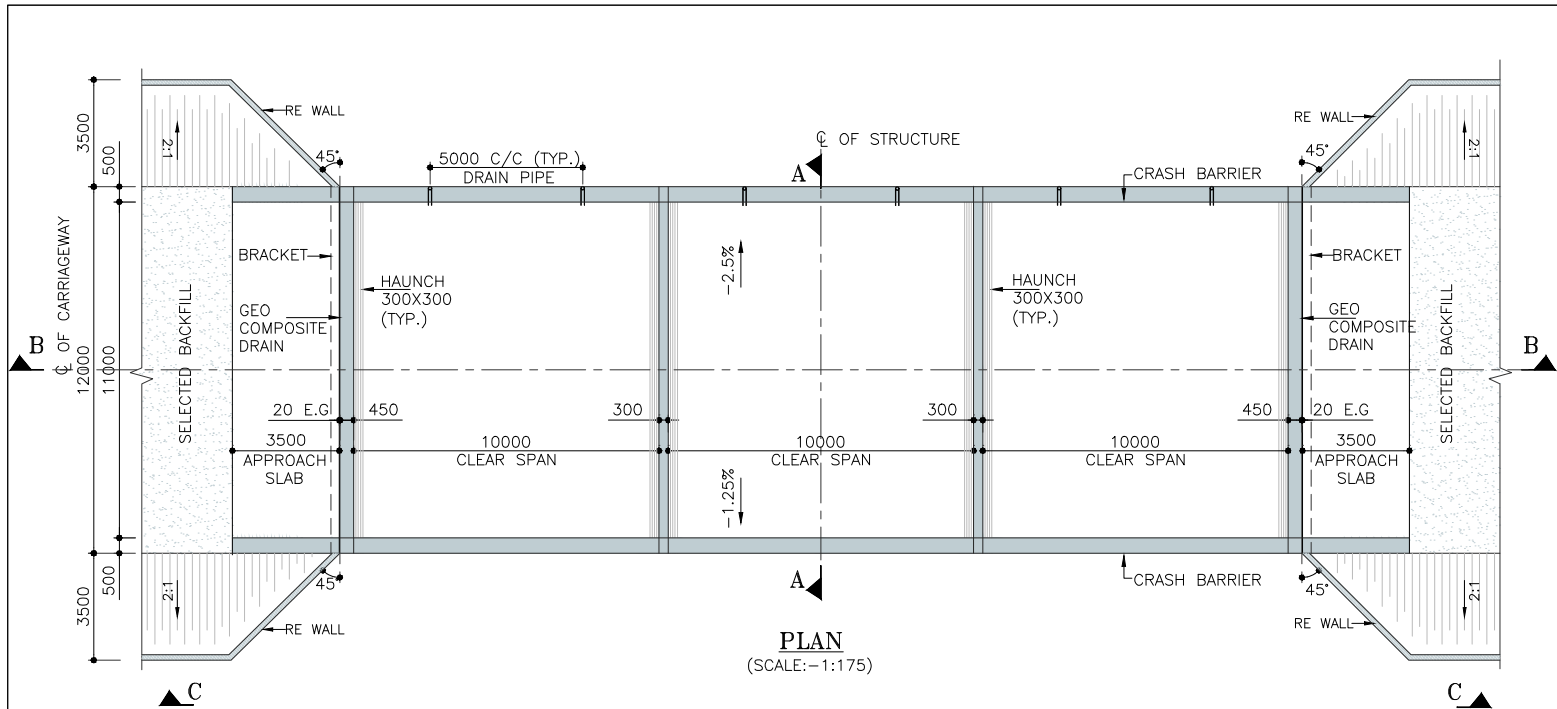
(5) " स्पे. स्प. गुरु स्वामी

V.V. Anil Kumar

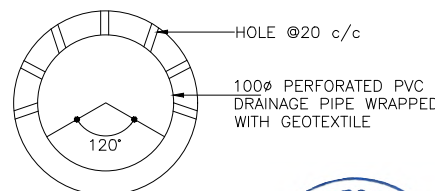
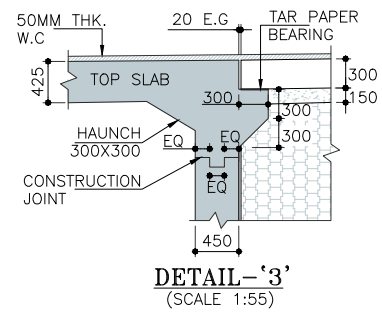
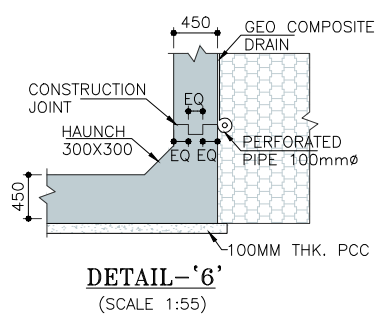
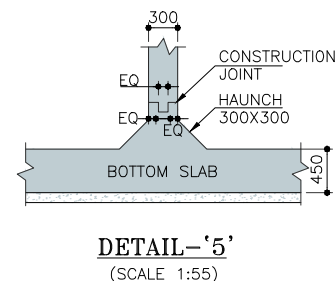
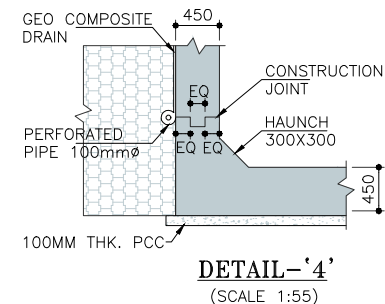
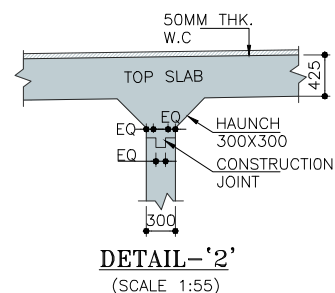
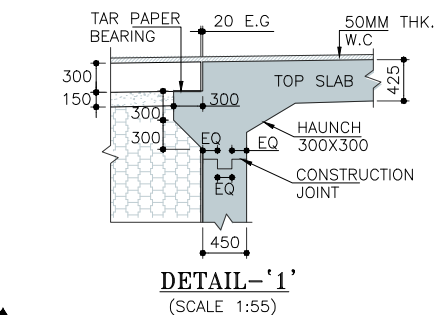
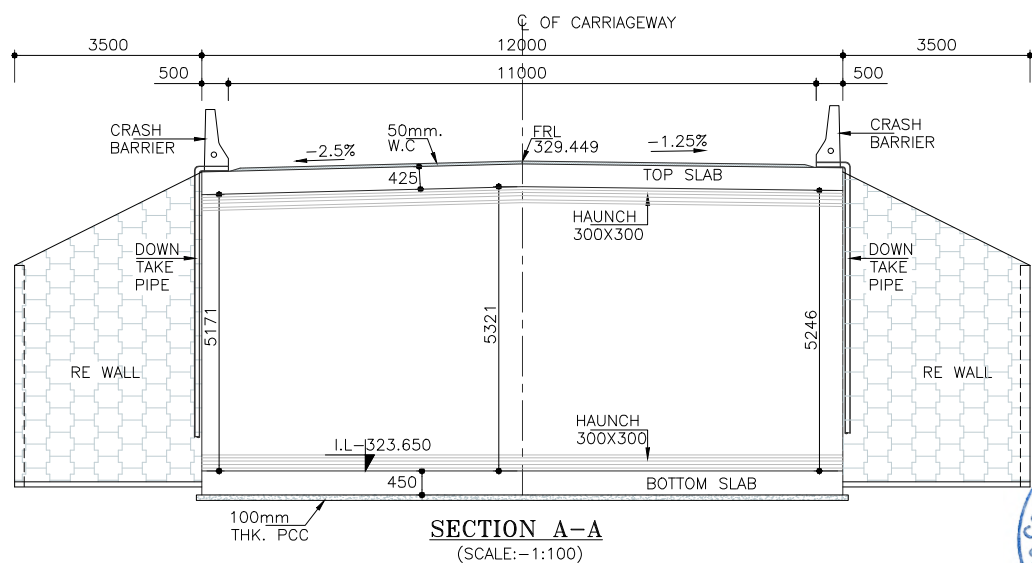
पंचनामा मेरे द्वारा लेख
किया गया

चंद्रभागा सिंह ठाकुर

वी.पी. - किशनगढ़/विला

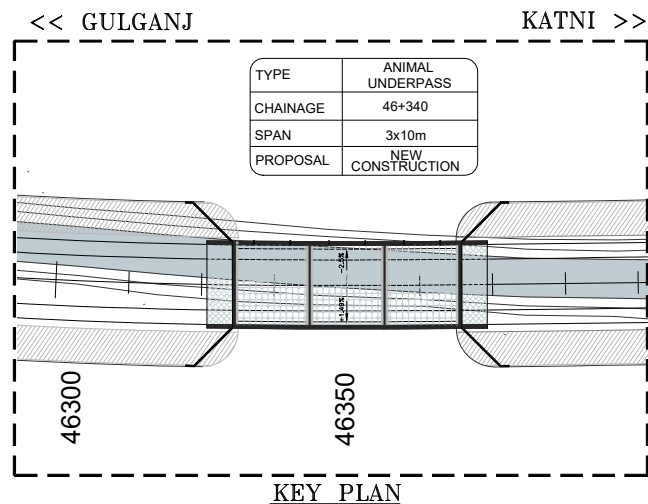
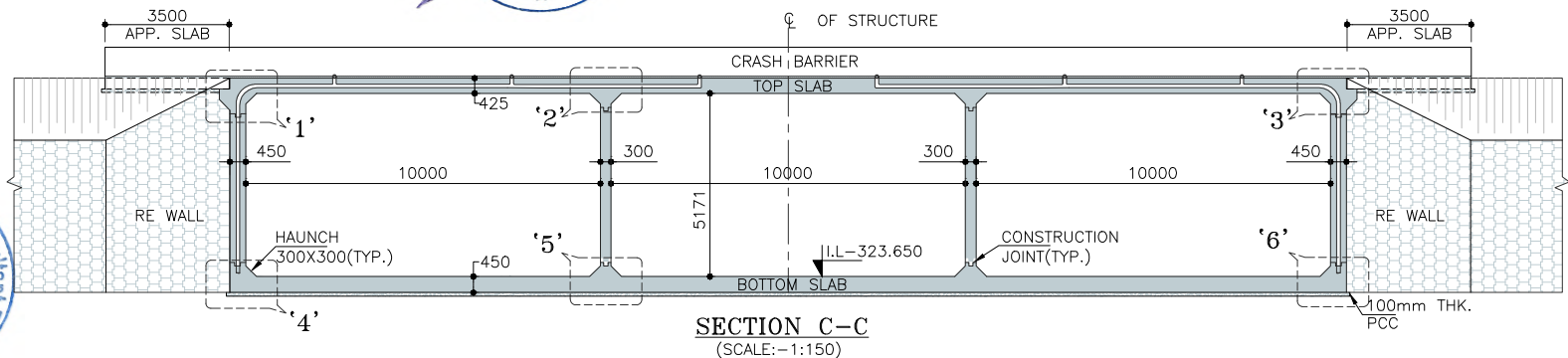


FRL	329.374	329.428	329.449	329.465	329.484
G.L	323.308	323.253	323.388	323.364	323.403
CHAINAGE	45+324.47	45+334.85	46+340	45+345.15	45+355.52



LEGEND:-

FRL	- FINISHED ROAD LEVEL
PCC	- PLAIN CEMENT CONCRETE
C/C	- CENTER TO CENTER
W.C	- WEARING COAT
APP.	- APPROACH
TYP.	- TYPICAL
THK.	- THICKNESS
E.G	- EXPANSION GAP
G.L	- GROUND LEVEL
EQ	- EQUAL
I.L	- INVERT LEVEL
CL	- CENTER LINE



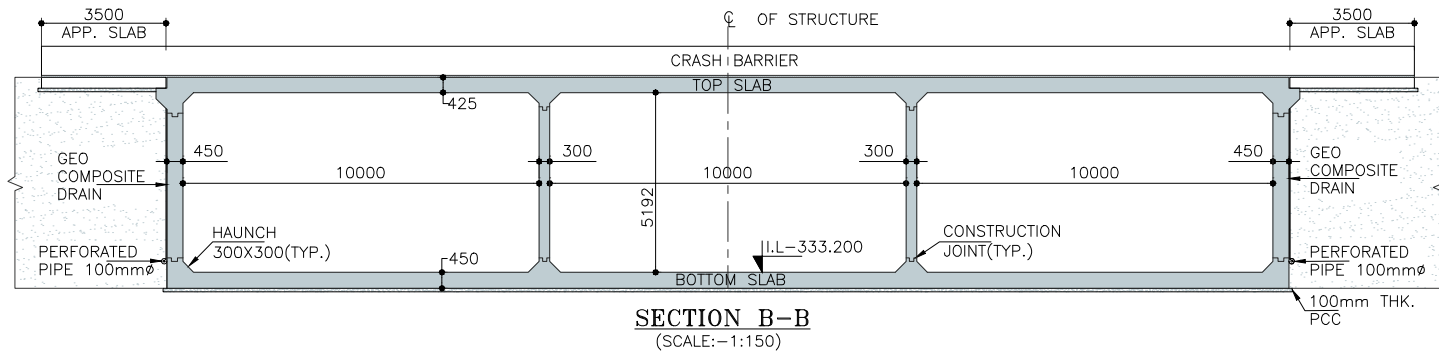
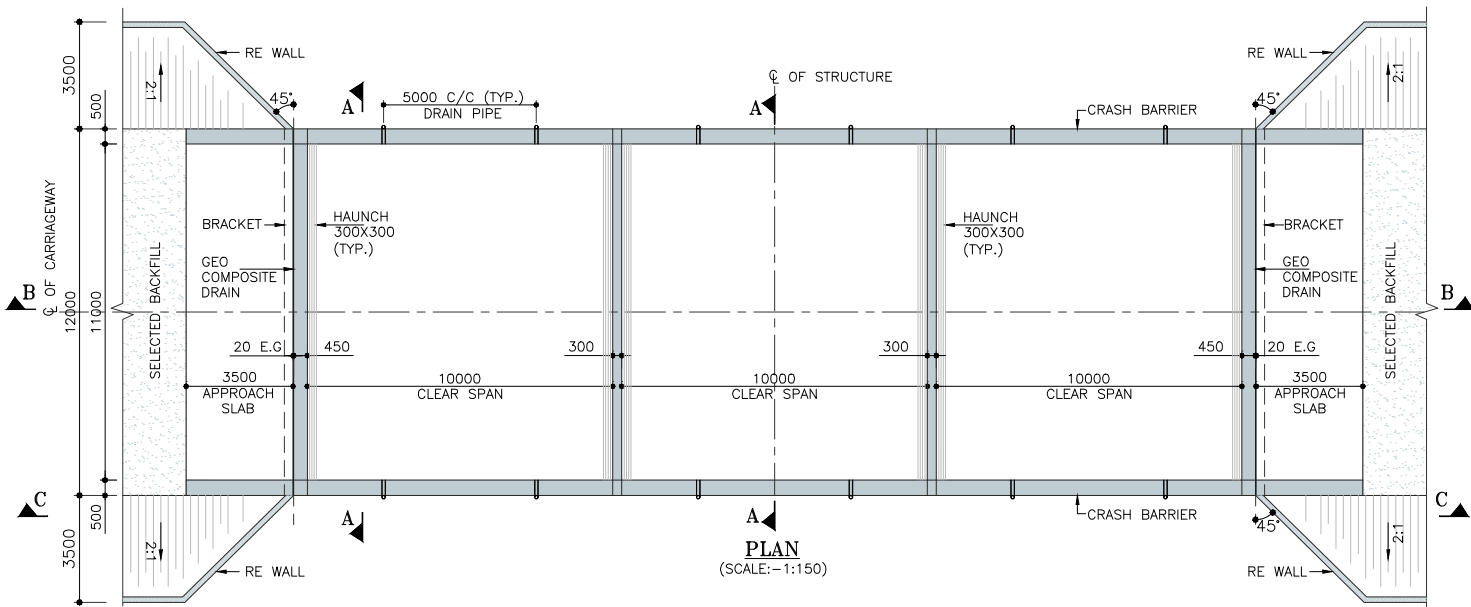
NOTES:-

- ALL DIMENSIONS ARE IN MILLIMETERS, LEVELS IN METERS UNLESS OTHERWISE MENTIONED. ONLY WRITTEN DIMENSIONS ARE TO BE FOLLOWED.
- CONCRETE SHALL BE DESIGN MIX WITH A MINIMUM 28 DAYS CHARACTERISTIC STRENGTH OF 150mm CUBES FOR ALL ELEMENTS OF STRUCTURES AS INDICATED BELOW:-
BOX STRUCTURE - M35
CRASH BARRIER - M40
APPROACH SLAB - M30
LEVELLING COURSE - M15
LEVELLING COURSE BELOW APPROACH SLAB - M15
- WEARING COAT SHALL BE 50MM.
- ALL REINFORCEMENT BARS SHALL BE H.Y.S.D BARS HAVING SPECIFIED MINIMUM 0.2% PROOF STRESS OF Fe 550D CONFORMING TO IS:1786.
- CLEAR COVER TO OUTERMOST STEEL SHALL BE AS BELOW:-
OTHER FACE - 45mm
EARTH FACE - 75mm
- BACK FILLING BEHIND BOX'S VERTICAL WALL SHALL CONSIST OF SELECTED EARTH CONFORMING TO APPENDIX 6 OF IRC 78:2014 HAVING PROPERTIES $C = 0$, $\phi \geq 30^\circ$ AND $\gamma_d = 2.0 \text{ t/m}^3$.
- BACKFILLING BEHIND THE BOX SHALL BE DONE SIMULTANEOUSLY.
- COMPACTION AND EXTENT OF BACK FILL BEHIND BOX'S VERTICAL WALL SHALL CONFIRM TO SPECIFICATIONS IN APPENDIX: 6 OF IRC: 78-2014.
- PROPOSED CHAINAGE/FORMATION LEVEL SHALL BE CHECKED AND CONFIRMED AS PER APPROVED PLAN & PROFILE.
- THE PROJECT ROAD FALLS WITHIN SEISMIC ZONE-II.
- THIS DRAWING SHALL BE READ IN CONJUNCTION WITH RELEVANT APPROVED HIGHWAY DRAWINGS FOR STRUCTURE ORIENTATION, SKEW FRL & CAMBER/SUPER ELEVATION, ETC IF ANY DISCREPANCY FOUND, IT SHALL BE BROUGHT TO THE NOTICE OF DESIGN CONSULTANT/ PROOF CHECKING CONSULTANT.
- SBC AT FOUNDING LEVEL IS CONSIDERED AS 120 kN/m². THE SAME SHALL BE CONFIRMED BEFORE LAYING OF FOUNDATION/PCC BEFORE EXECUTION OF WORK AT SITE.
- PROPOSED STRUCTURE IS DESIGNED FOR LIVE LOAD AS PER LATEST IRC:6
- STRUCTURE HAS BEEN DESIGNED FOR
i) 3 LANE OF CLASS A
ii) 1 LANE OF 70R + 1 LANE OF CLASS A
iii) SV AS PER IRC6:2017
- EXPOSURE CONDITION IS SEVERE..
- POLYMER BASED FILLER BOARD SHALL BE USE TO FILL GAP. THE JOINT SHALL BE WATER TIGHT.
- CRASH BARRIERS SHALL BE PROVIDED FOR PROTECTION OF VEHICLES FROM COLLIDING WITH THE SIDE WALLS AND TOP SLAB OF THE STRUCTURES.

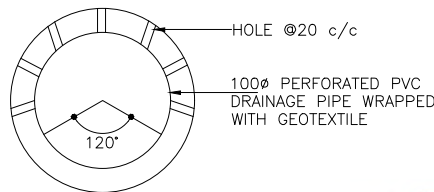
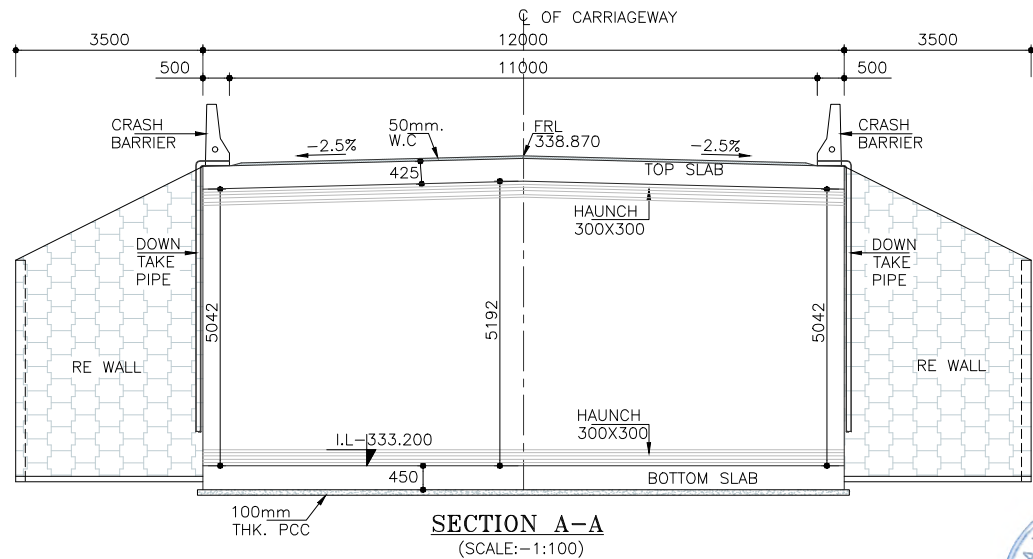
SPECIAL NOTE:-

HEIGHT OF BOX SHOWN IS AS PER CENTERLINE CHAINAGE AND HEIGHT OF ALL BOX CORNERS SHALL BE WORKED OUT BY USING CROSS CAMBER AND LEVELS MENTIONED BELOW SECTION B-B.

			 CLIENT: PUBLIC WORK DEPARTMENT MADHYA PRADESH	 PROOF CHECK CONSULTANT : HIGHRAISE CONSTRUCTION AND CONSULTANT PRIVATE LIMITED	 DESIGN CONSULTANT : CIVIL MANTRA INFRACON PVT. LTD. 3rd FLOOR TOWER 3A, DLF CORPORATE GREEN, SECTOR 74A, GURUGRAM - 122004	APPROVED:- SM	PROJECT:- UPGRADATION AND RECONSTRUCTION OF EXISTING INTERMEDIATE LANE TO 2-LANE WITH PAVED SHOULDERS CONFIGURATION FROM KM 43.000 (BARNA RIVER) TO KM 77.000 (KEN RIVER), LENGTH 34.000 KM ON GULGANJ- AMANGANJ- PAWAI-KATNI NH-43 EXT. ALONG WITH ONE TIME IMPROVEMENT IN 01 NO OF BYPASSED BUILT-UP AREA IN A TOTAL LENGTH OF 1.55 KM IN THE STATE OF MADHYA PRADESH ON EPC MODE.
						CHECKED:- RK	
						DESIGNED:- ST	
						DRAWN:- AK	
R0	NOV-2024	FOR APPROVAL	 SAFETY CONSULTANT : EARL TECHNO CONSULTANTS PVT. LTD.	 EPC CONTRACTOR : KEYSTONE INFRA PVT. LTD.	TITLE:- GENERAL ARRANGEMENT DRAWING OF AUP AT CH. 46+340		DATE NOV-2024
							SCALE AS SHOWN
							SHEET NO. 01 OF 01
							FORMAT A3 (420X297)
REV	DATE	DESCRIPTION				DRAWING NO :- CIPL-D1190-46+340-AUP-101-01 of 01-R0-GAD	REV R0



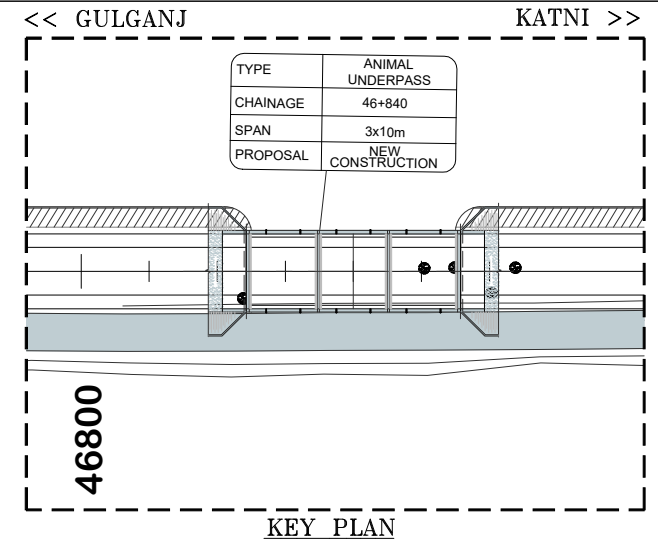
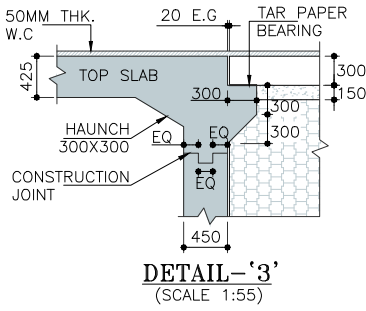
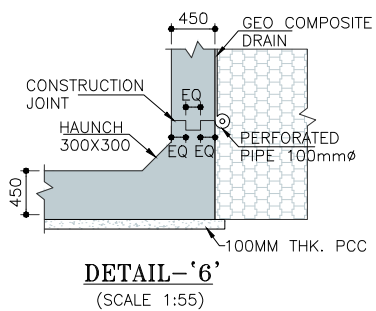
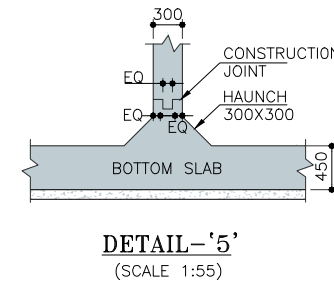
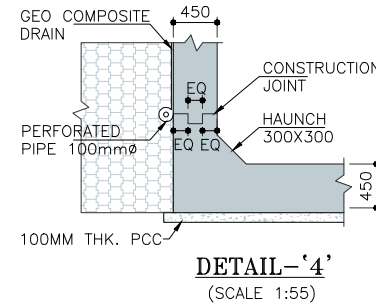
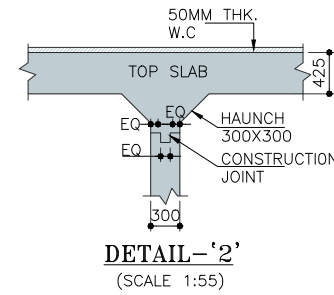
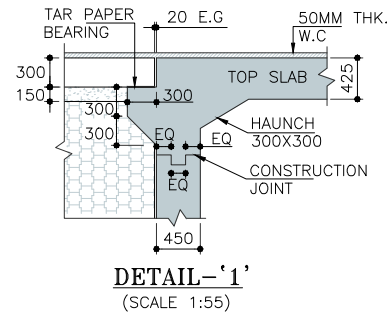
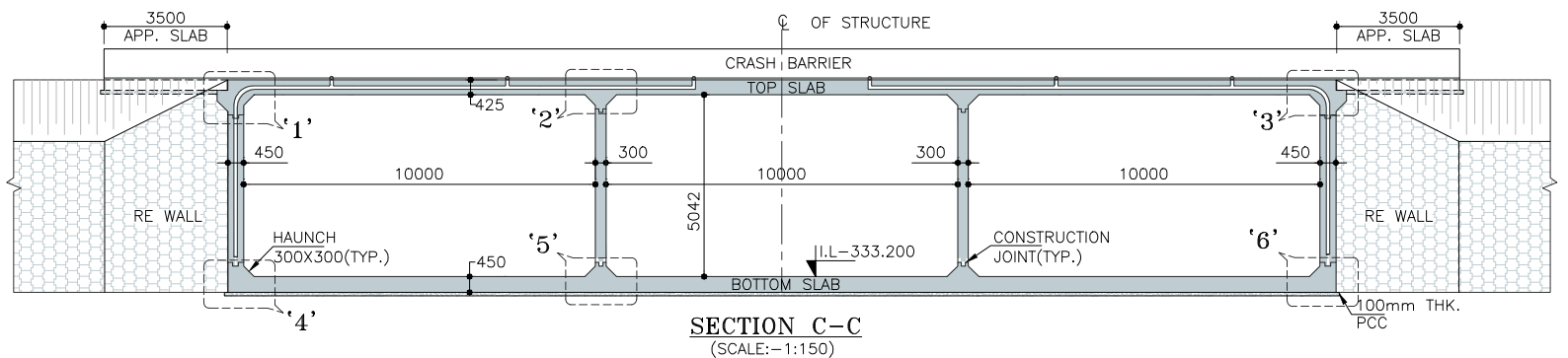
FRL	338.832	338.860	338.870	338.873	338.870
G.L	332.670	332.826	332.926	332.870	333.033
CHAINAGE	45+824.47	45+834.85	46+840	45+845.15	45+855.52



DETAIL FOR 100 Ø
PERFORATED PIPE
(SCALE 1:40)

LEGEND:-

FRL - FINISHED ROAD LEVEL
PCC - PLAIN CEMENT CONCRETE
C/C - CENTER TO CENTER
W.C - WEARING COAT
APP. - APPROACH
TYP. - TYPICAL
THK. - THICKNESS
E.G - EXPANSION GAP
G.L - GROUND LEVEL
EQ - EQUAL
I.L - INVERT LEVEL
CL - CENTER LINE

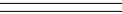
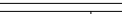
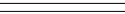


NOTES:-

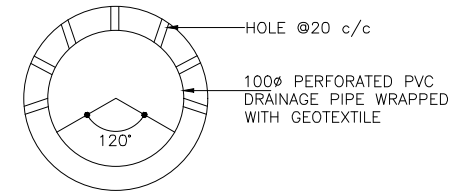
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i) 3 LANE OF CLASS A
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			 CLIENT: PUBLIC WORK DEPARTMENT MADHYA PRADESH	 PROOF CHECK CONSULTANT : HIGHRAISE CONSTRUCTION AND CONSULTANT PRIVATE LIMITED	 DESIGN CONSULTANT : CIVIL MANTRA INFRACON PVT. LTD. 3rd FLOOR TOWER 3A, DLF CORPORATE GREEN, SECTOR 74A, GURUGRAM - 122004	APPROVED:- SM	PROJECT:- UPGRADATION AND RECONSTRUCTION OF EXISTING INTERMEDIATE LANE TO 2-LANE WITH PAVED SHOULDERS CONFIGURATION FROM KM 43.000 (BARNA RIVER) TO KM 77.000 (KEN RIVER), LENGTH 34.000 KM ON GULGANJ- AMANGANJ- PAWAI-KATNI NH-43 EXT. ALONG WITH ONE TIME IMPROVEMENT IN 01 NO OF BYPASSED BUILT-UP AREA IN A TOTAL LENGTH OF 1.55 KM IN THE STATE OF MADHYA PRADESH ON EPC MODE.
						CHECKED:- RK	
						DESIGNED:- ST	
						DRAWN:- AK	
			AUTHORITY ENGINEER :	SAFETY CONSULTANT :  EARL TECHNO CONSULTANTS PVT. LTD.	EPC CONTRACTOR :  KEYSTONE INFRA PVT. LTD.	DRAWING NO :- CIPL-D1190-46+840-AUP-101-01 of 01-R0-GAD	
R0	NOV-2024	FOR APPROVAL					
REV	DATE	DESCRIPTION					

DATE	NOV-2024
SCALE	AS SHOWN
SHEET NO.	01 OF 01
FORMAT	A3 (420X297)
REV.	00



<< GULGANJ **KATNI >>**

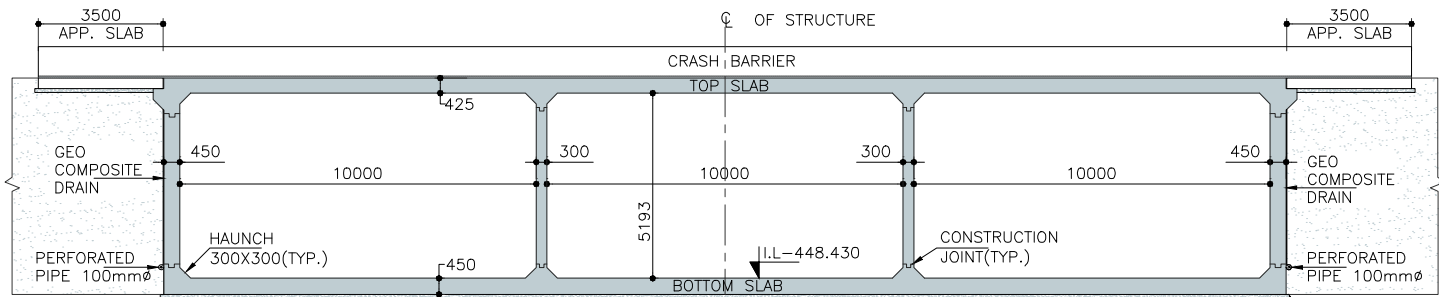
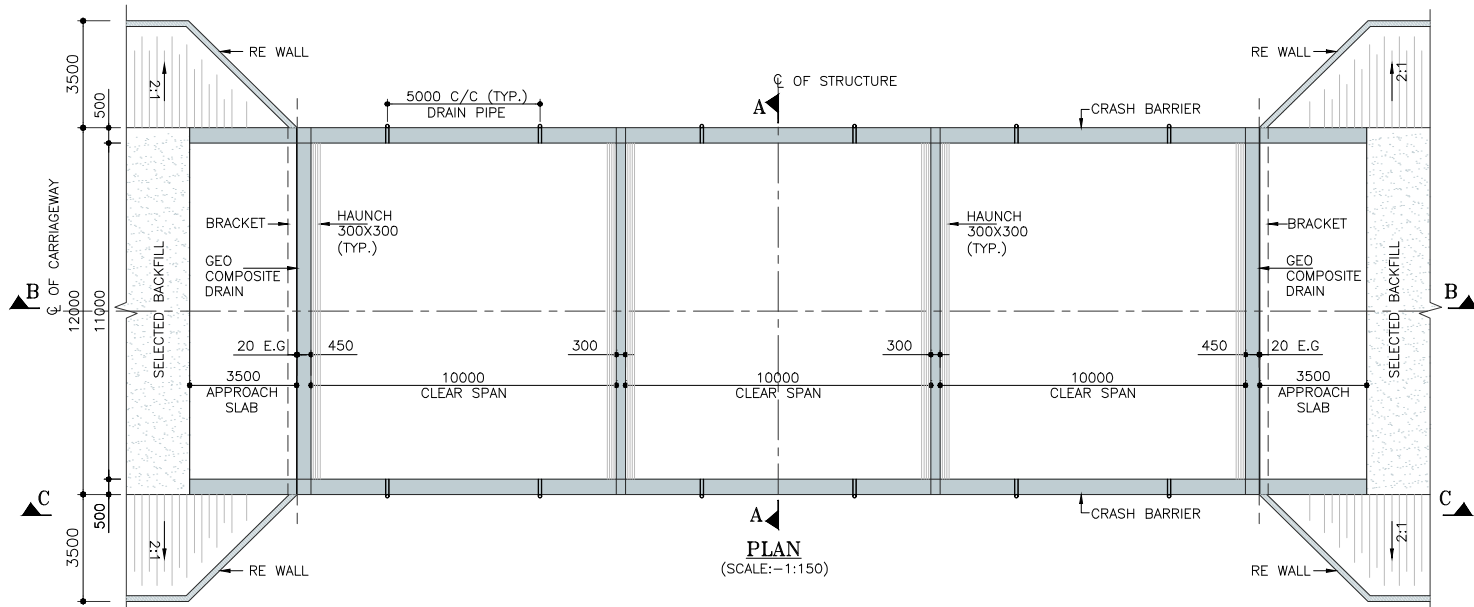
TYPE	ANIMAL UNDERPASS
CHAINAGE	55+567
SPAN	3x10m
PROPOSAL	NEW CONSTRUCTION

PROW ——— PROW ——— PROW ——— PROW ———

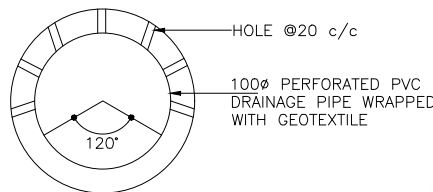
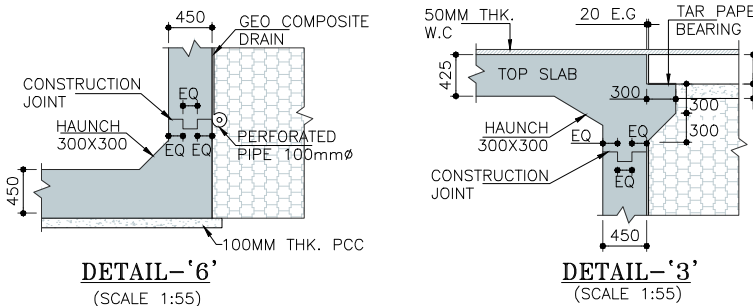
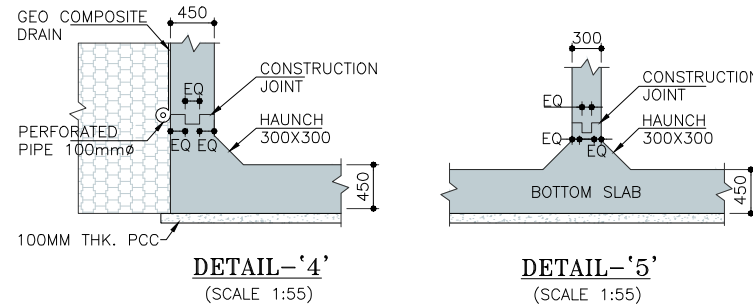
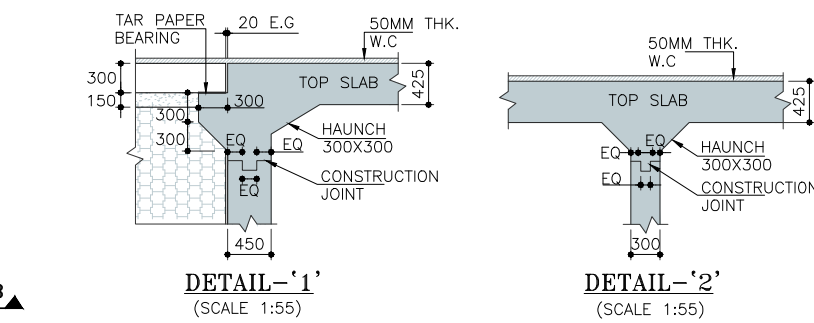
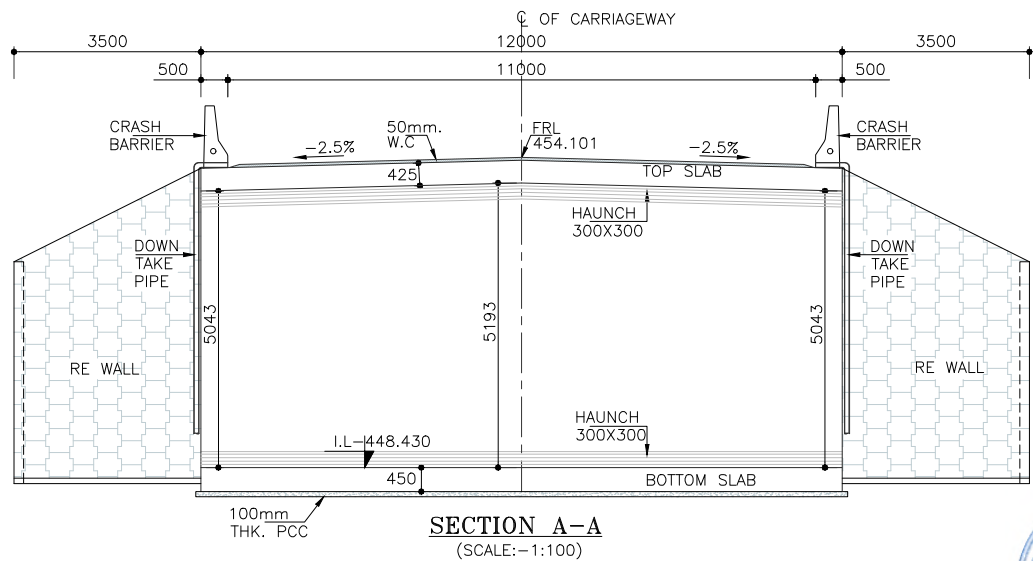
55600

KEY PLAN

 PUBLIC WORK DEPARTMENT MADHYA PRADESH			CLIENT :		PROOF CHECK CONSULTANT :		DESIGN CONSULTANT :		APPROVED:- SM		PROJECT:- UPGRADEATION AND RECONSTRUCTION OF EXISTING INTERMEDIATE LANE TO 2-LANE WITH PAVED SHOULDERS CONFIGURATION (KEMHWA RIVER) TO KM 77.000 (KEN RIVER), LENGTH 34.000 KM ON GULGANJ- AMANGANJ- PAWAI-KATNI NH-43 EXT. ALONG WITH ONE TIME IMPROVEMENT IN 01 NO OF BYPASSED BUILT-UP AREA IN A TOTAL LENGTH OF 1.55 KM IN THE STATE OF MADHYA PRADESH ON EPC MODE.	
			 HIGHRAISE CONSTRUCTION AND CONSULTANT PRIVATE LIMITED		 CIVIL MANTRA INFRACON PVT. LTD. 3rd FLOOR TOWER 3A, DLF CORPORATE GREEN, SECTOR 74A, GURUGRAM - 122004		APPROVED:- SM CHECKED:- RK					
R0 SEP-2024 FOR APPROVAL REV DATE DESCRIPTION			AUTHORITY ENGINEER :		SAFETY CONSULTANT :		EPC CONTRACTOR :		DESIGNED:- ST		TITLE:- GENERAL ARRANGEMENT DRAWING OF AUP AT CA CH. 55+550 & DESIGN CH. 55+567	
			 EARL TECHNO CONSULTANTS PVT. LTD.		 KEYSTONE INFRA PVT. LTD.		DESIGNED:- ST DRAWN:- AK		DRAWING NO :- CIPL-D1190-55+567-AUP-101-01 of 01-R0-GAD			

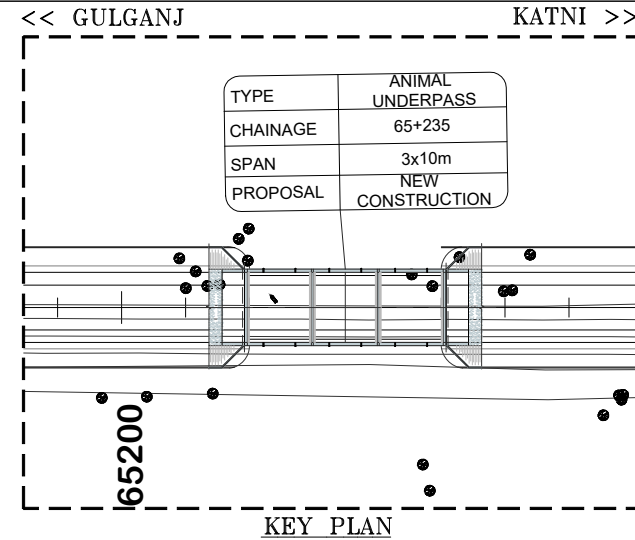
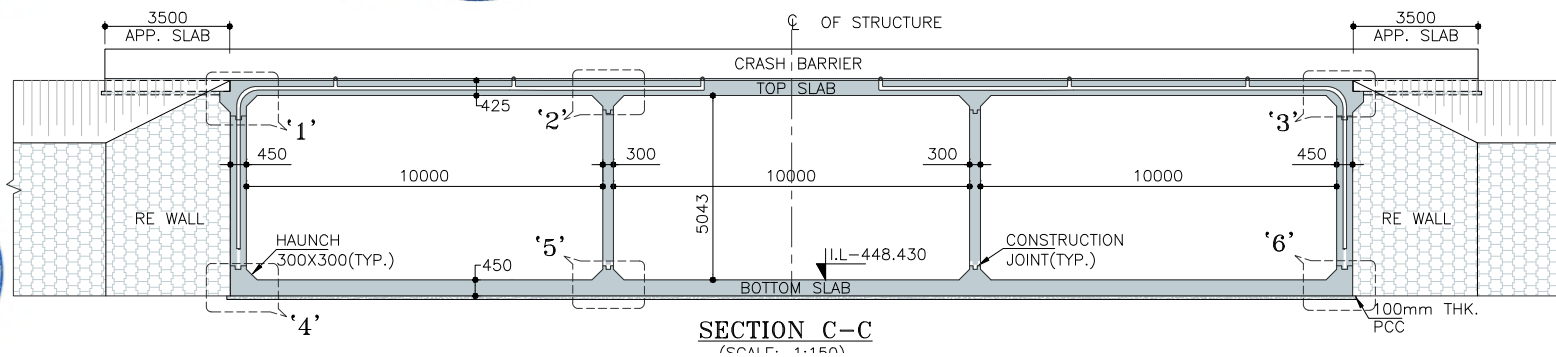


FRL	454.101	454.101	454.101	454.101	454.101
G.L	448.076	448.011	448.098	448.180	447.844
CHAINAGE	65+219.47	65+229.85	65+235	65+240.15	65+250.52



LEGEND:-

FRL	- FINISHED ROAD LEVEL
PCC	- PLAIN CEMENT CONCRETE
C/C	- CENTER TO CENTER
W.C	- WEARING COAT
APP.	- APPROACH
TYP.	- TYPICAL
THK.	- THICKNESS
E.G	- EXPANSION GAP
G.L	- GROUND LEVEL
EQ	- EQUAL
I.L	- INVERT LEVEL
CL	- CENTER LINE



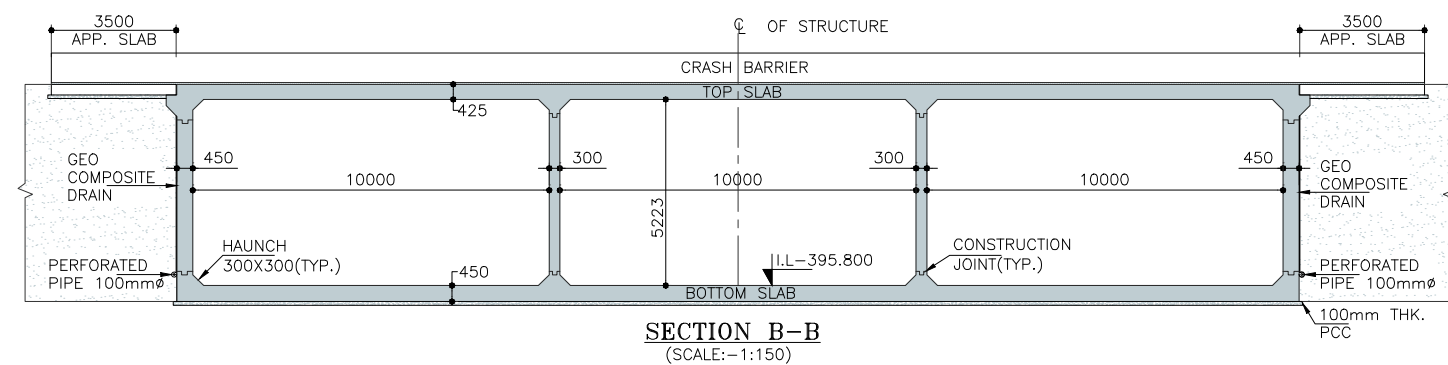
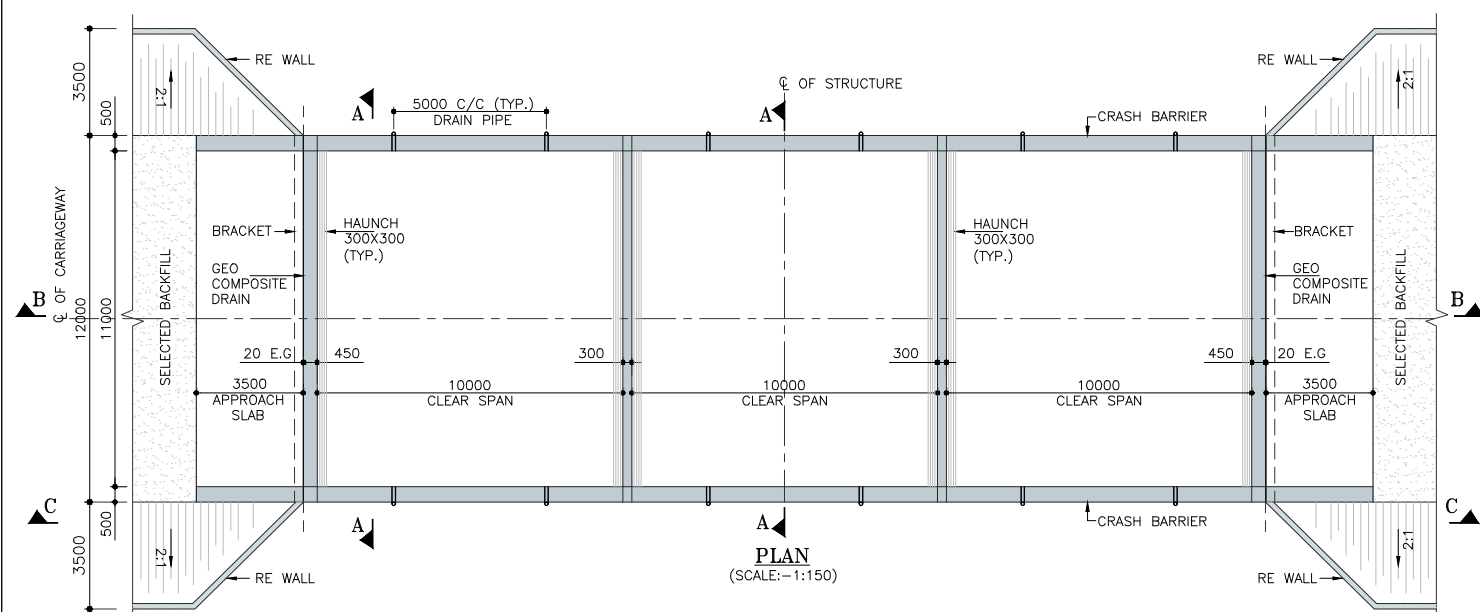
NOTES:-

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- CONCRETE SHALL BE DESIGN MIX WITH A MINIMUM 28 DAYS CHARACTERISTIC STRENGTH OF 150mm CUBES FOR ALL ELEMENTS OF STRUCTURES AS INDICATED BELOW:-
BOX STRUCTURE - M35
CRASH BARRIER - M40
APPROACH SLAB - M30
LEVELLING COURSE - M15
LEVELLING COURSE BELOW APPROACH SLAB - M15
- WEARING COAT SHALL BE 50MM.
- ALL REINFORCEMENT BARS SHALL BE H.Y.S.D BARS HAVING SPECIFIED MINIMUM 0.2% PROOF STRESS OF Fe 550D CONFORMING TO IS:1786.
- CLEAR COVER TO OUTERMOST STEEL SHALL BE AS BELOW:-
OTHER FACE - 45mm
EARTH FACE - 75mm
- BACK FILLING BEHIND BOX'S VERTICAL WALL SHALL CONSIST OF SELECTED EARTH CONFORMING TO APPENDIX 6 OF IRC 78:2014 HAVING PROPERTIES $C = 0$, $\phi \geq 30^\circ$ AND $\gamma_d = 2.0 \text{ t/m}^3$.
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- THE PROJECT ROAD FALLS WITHIN SEISMIC ZONE-II.
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- SBC AT FOUNDING LEVEL IS CONSIDERED AS 120 kN/m^2 . THE SAME SHALL BE CONFIRMED BEFORE LAYING OF FOUNDATION/PCC BEFORE EXECUTION OF WORK AT SITE.
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- STRUCTURE HAS BEEN DESIGNED FOR
i) 3 LANE OF CLASS A
ii) 1 LANE OF 70R + 1 LANE OF CLASS A
iii) SV AS PER IRC6:2017
- EXPOSURE CONDITION IS SEVERE..
- POLYMER BASED FILLER BOARD SHALL BE USE TO FILL GAP. THE JOINT SHALL BE WATER TIGHT.
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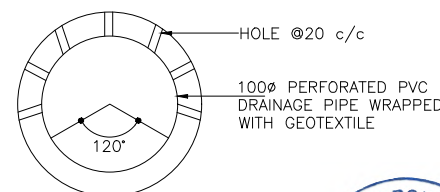
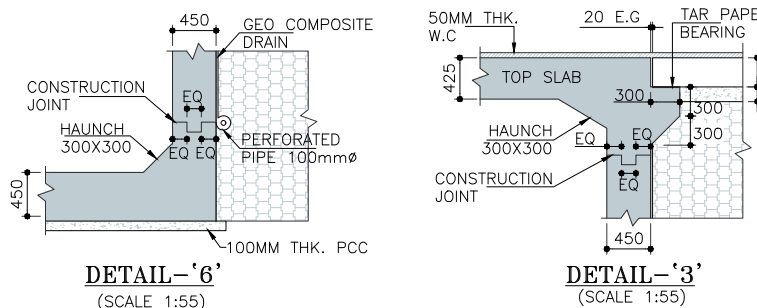
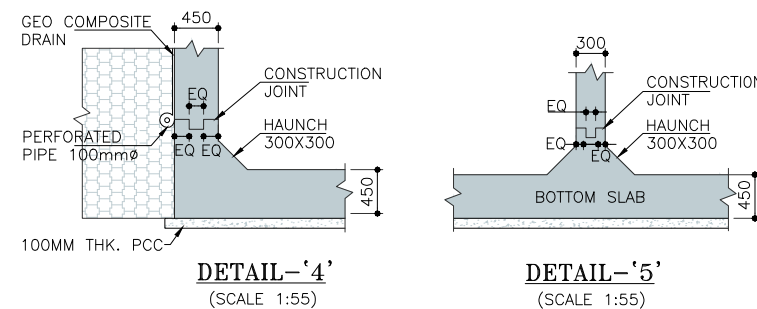
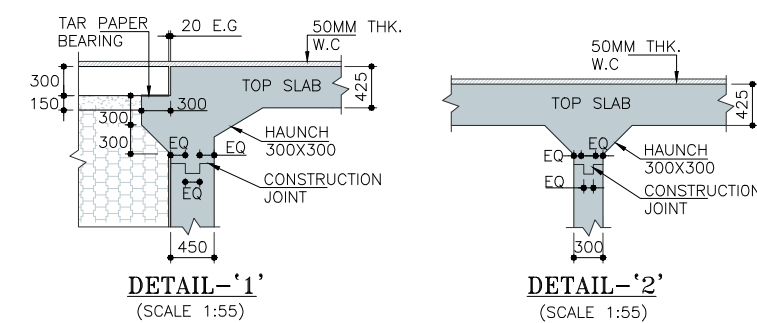
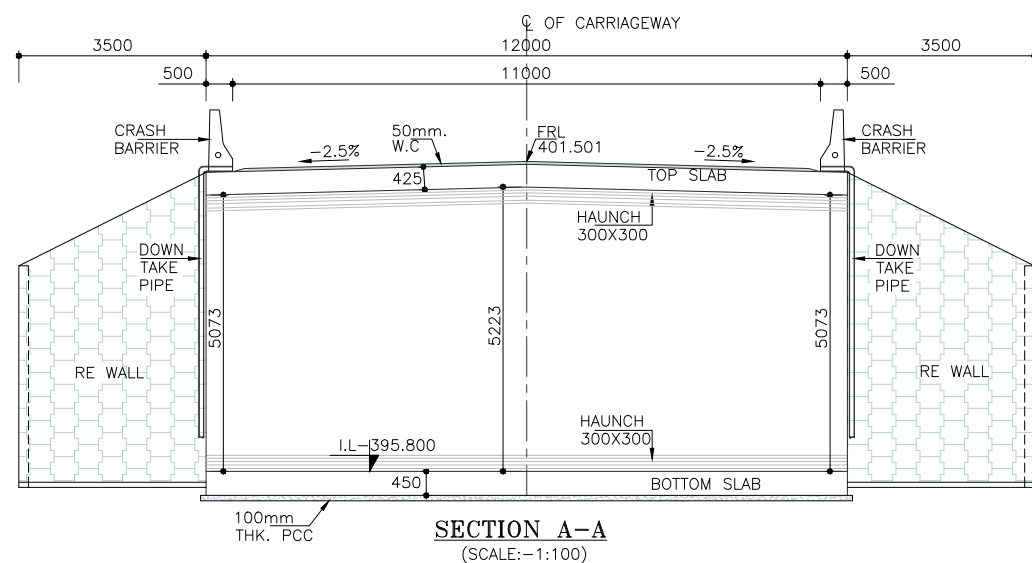
SPECIAL NOTE:-

HEIGHT OF BOX SHOWN IS AS PER CENTERLINE CHAINAGE AND HEIGHT OF ALL BOX CORNERS SHALL BE WORKED OUT BY USING CROSS CAMBER AND LEVELS MENTIONED BELOW SECTION B-B.

			CLIENT:  PUBLIC WORK DEPARTMENT MADHYA PRADESH		PROOF CHECK CONSULTANT :  HIGHRAISE CONSTRUCTION AND CONSULTANT PRIVATE LIMITED		DESIGN CONSULTANT :  CIVIL MANTRA INFRACON PVT. LTD. 3rd FLOOR TOWER 3A, DLF CORPORATE GREEN, SECTOR 74A, GURUGRAM - 122004		APPROVED:- SM		PROJECT:- UPGRADEATION AND RECONSTRUCTION OF EXISTING INTERMEDIATE LANE TO 2-LANE WITH PAVED SHOULDERS CONFIGURATION FROM KM 43.000 (BARNA RIVER) TO KM 77.000 (KEN RIVER), LENGTH 34.000 KM ON GULGANJ- AMANGANJ- PAWAI-KATNI NH-43 EXT. ALONG WITH ONE TIME IMPROVEMENT IN 01 NO OF BYPASSED BUILT-UP AREA IN A TOTAL LENGTH OF 1.55 KM IN THE STATE OF MADHYA PRADESH ON EPC MODE.												
			AUTHORITY ENGINEER :		SAFETY CONSULTANT :  EARL TECHNO CONSULTANTS PVT. LTD.		EPC CONTRACTOR :  KEYSTONE INFRA PVT. LTD.		CHECKED:- RK														
R0			NOV-2024		FOR APPROVAL				DESIGNED:- ST														
REV			DATE		DESCRIPTION				DRAWN:- AK														
DRAWING NO :- CIPL-D1190-65+235-AUP-101-01 of 01-R0-GAD												<table><tr><td>DATE</td><td>NOV-2024</td></tr><tr><td>SCALE</td><td>AS SHOWN</td></tr><tr><td>SHEET NO.</td><td>01 OF 01</td></tr><tr><td>FORMAT</td><td>A3 (420X297)</td></tr><tr><td>REV.</td><td>R0</td></tr></table>		DATE	NOV-2024	SCALE	AS SHOWN	SHEET NO.	01 OF 01	FORMAT	A3 (420X297)	REV.	R0
DATE	NOV-2024																						
SCALE	AS SHOWN																						
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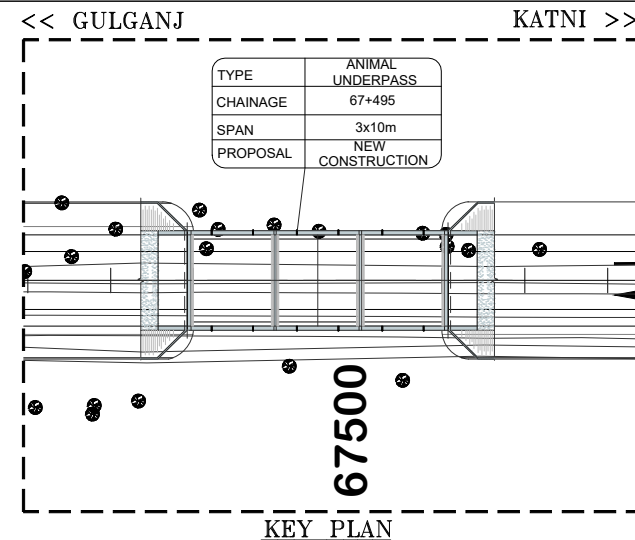
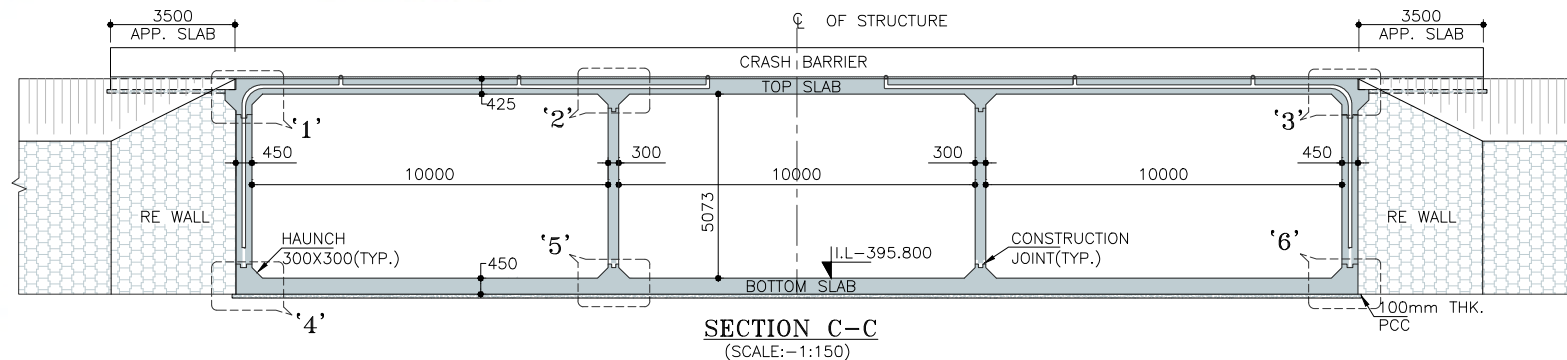


FRL	401.446	401.486	401.501	401.509	401.515
G.L	395.389	395.604	395.480	395.350	395.150
CHAINAGE	67+479.47	67+489.85	67+495	67+500.15	67+510.52



LEGEND:-

FRL	- FINISHED ROAD LEVEL
PCC	- PLAIN CEMENT CONCRETE
C/C	- CENTER TO CENTER
W.C	- WEARING COAT
APP.	- APPROACH
TYP.	- TYPICAL
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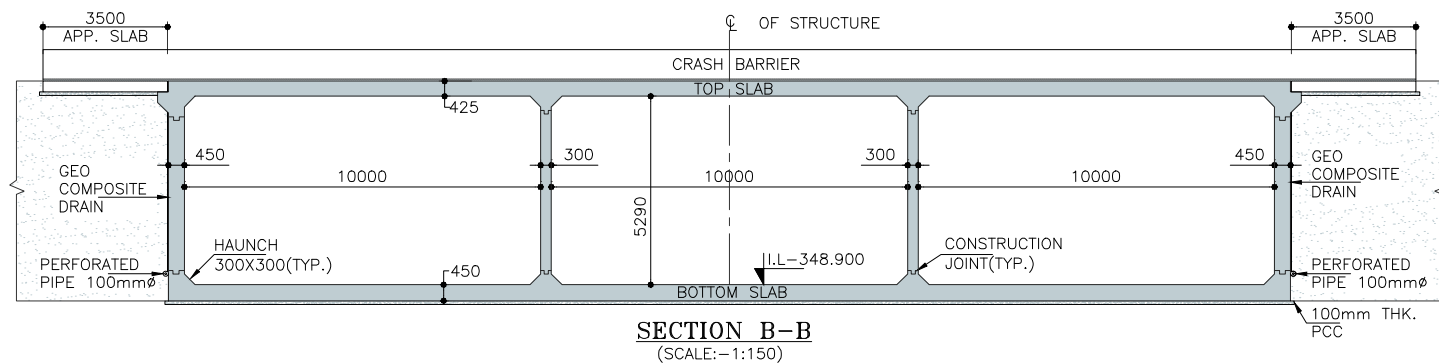
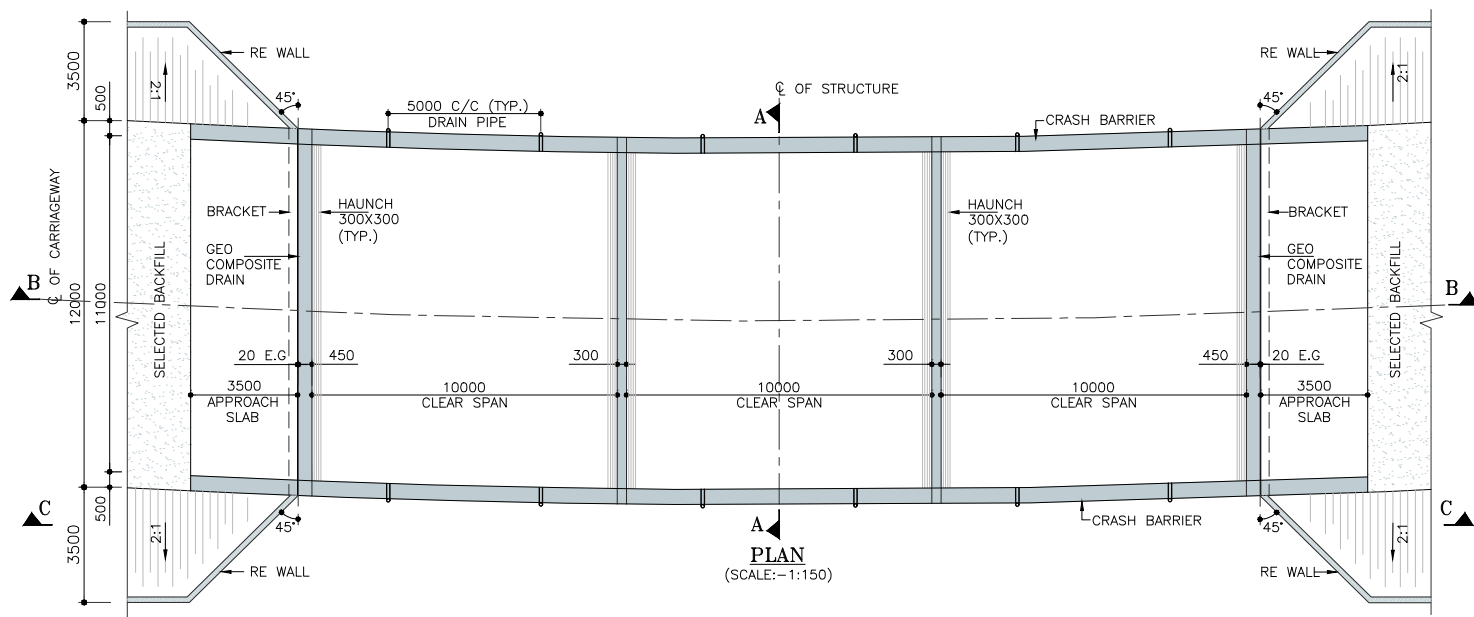
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CRASH BARRIER - M40
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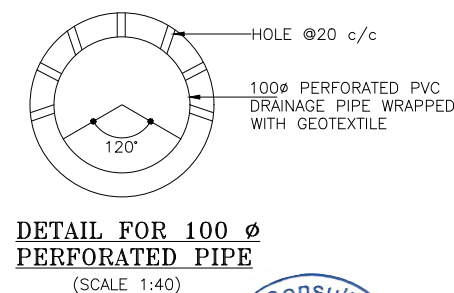
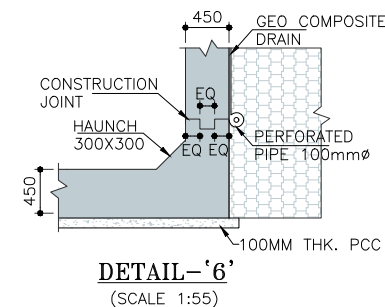
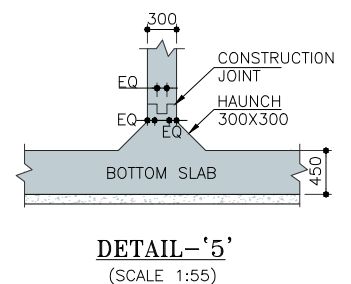
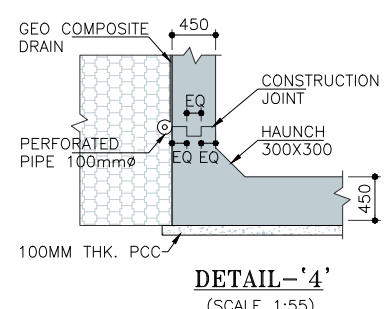
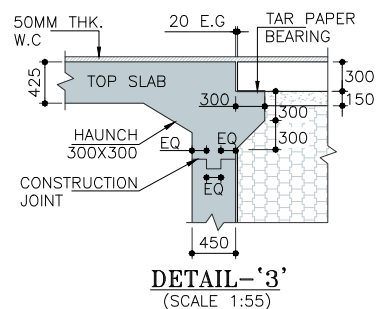
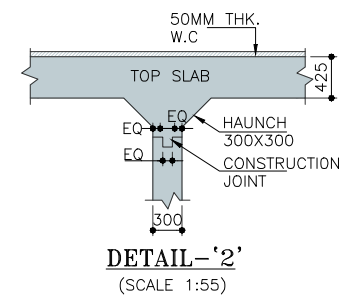
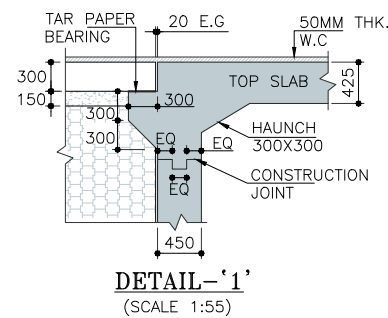
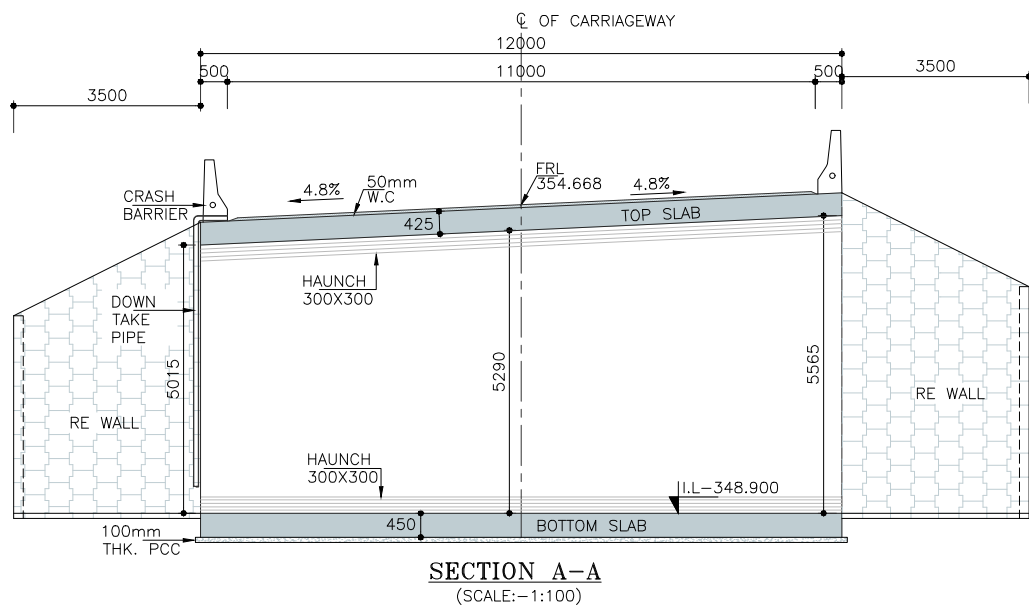
SPECIAL NOTE:-

HEIGHT OF BOX SHOWN IS AS PER CENTERLINE CHAINAGE AND HEIGHT OF ALL BOX CORNERS SHALL BE WORKED OUT BY USING CROSS CAMBER AND LEVELS MENTIONED BELOW SECTION B-B.

			 CLIENT: PUBLIC WORK DEPARTMENT MADHYA PRADESH	 PROOF CHECK CONSULTANT : HIGHRAISE CONSTRUCTION AND CONSULTANT PRIVATE LIMITED	 DESIGN CONSULTANT : CIVIL MANTRA INFRACON PVT. LTD. 3rd FLOOR TOWER 3A, DLF CORPORATE GREEN, SECTOR 74A, GURUGRAM - 122004	APPROVED:- SM	PROJECT:- UPGRADATION AND RECONSTRUCTION OF EXISTING INTERMEDIATE LANE TO 2-LANE WITH PAVED SHOULDERS CONFIGURATION FROM KM 43.000 (BARNA RIVER) TO KM 77.000 (KEN RIVER), LENGTH 34.000 KM ON GULGANJ- AMANGANJ- PAWAI-KATNI NH-43 EXT. ALONG WITH ONE TIME IMPROVEMENT IN 01 NO OF BYPASSED BUILT-UP AREA IN A TOTAL LENGTH OF 1.55 KM IN THE STATE OF MADHYA PRADESH ON EPC MODE.		
									CHECKED:- RK
									DESIGNED:- ST
R0	NOV-2024	FOR APPROVAL	 SAFETY CONSULTANT : EARL TECHNO CONSULTANTS PVT. LTD.	 EPC CONTRACTOR : KEYSTONE INFRA PVT. LTD.	DRAWN:- AK	TITLE:- GENERAL ARRANGEMENT DRAWING OF AUP AT CH. 67+495		DATE: NOV-2024	
REV	DATE	DESCRIPTION				DRAWING NO :- CIPL-D1190-67+495-AUP-101-01 of 01-R0-GAD		SCALE: AS SHOWN	
								SHEET NO: 01 OF 01	
								FORMAT: A3 (420X297)	
								REV: R0	

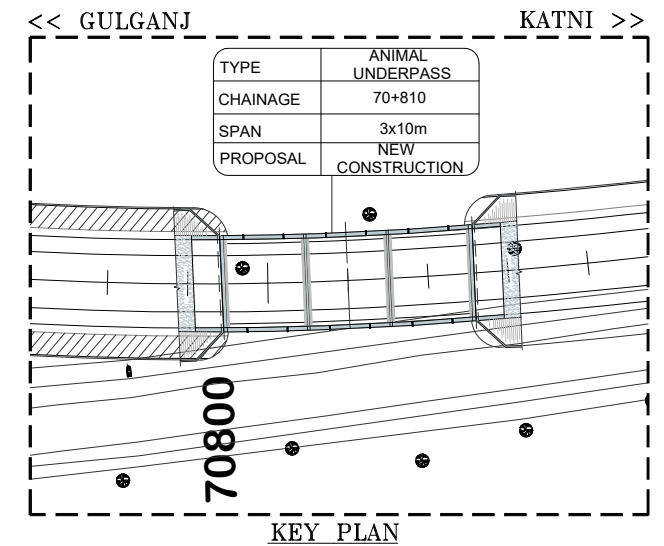


FRL	354.629	354.654	354.668	354.678	354.690
G.L	348.676	348.750	348.874	348.754	348.688
CHAINAGE	70+994.47	70+804.85	70+810	70+815.15	70+825.52



LEGEND:-

FRL	- FINISHED ROAD LEVEL
PCC	- PLAIN CEMENT CONCRETE
C/C	- CENTER TO CENTER
W.C	- WEARING COAT
APP.	- APPROACH
TYP.	- TYPICAL
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NOTES:-

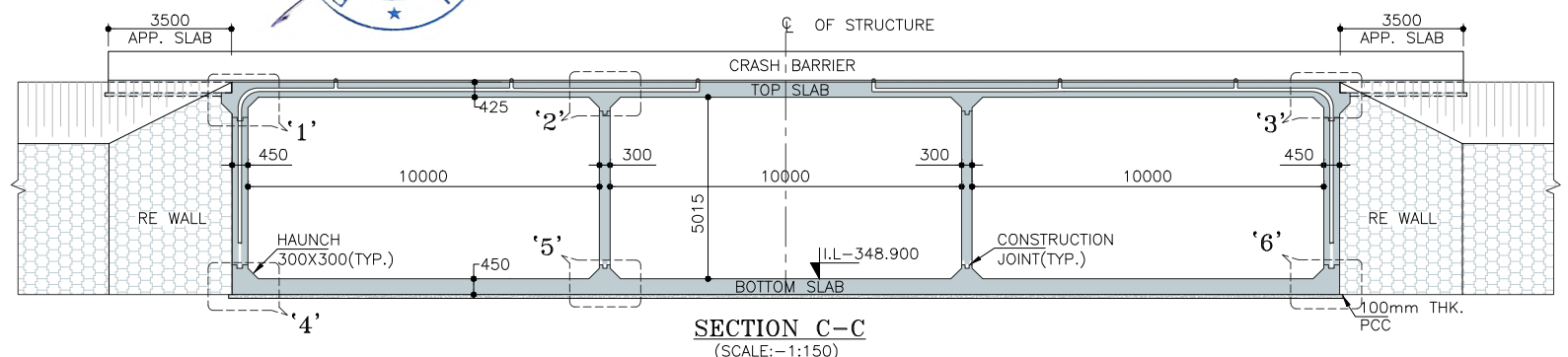
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LEVELLING COURSE BELOW APPROACH SLAB	- M15
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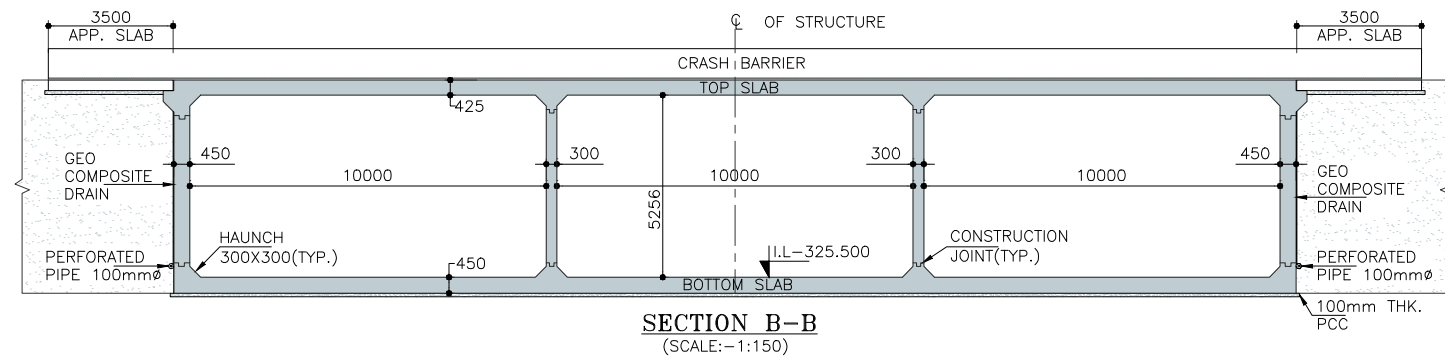
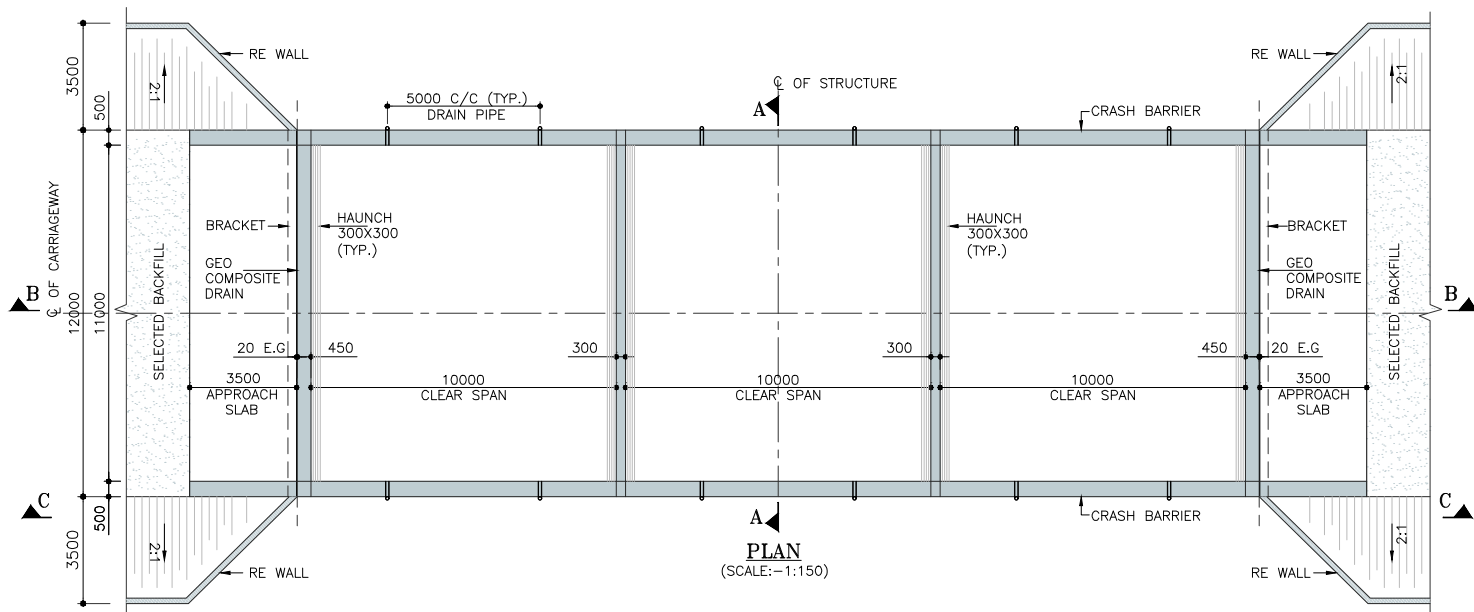
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SPECIAL NOTE:-

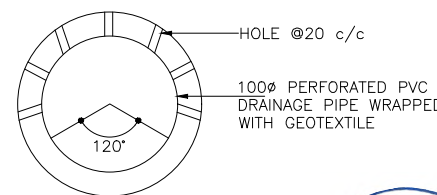
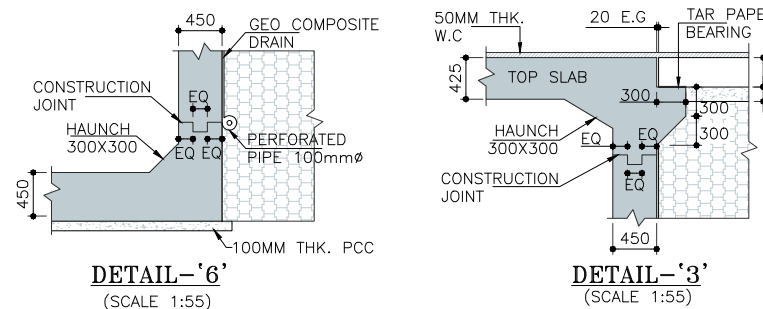
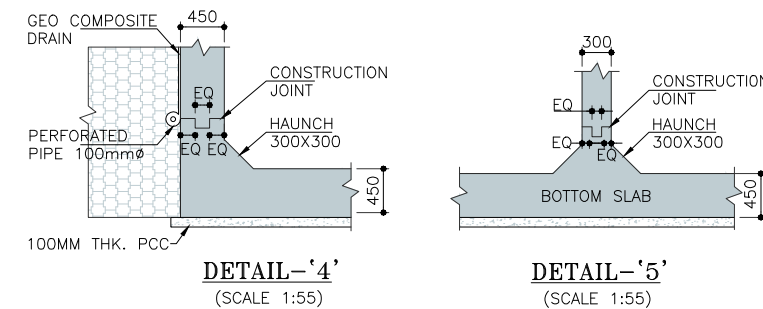
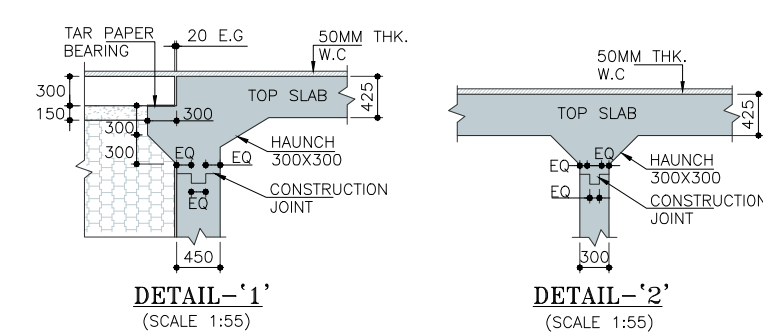
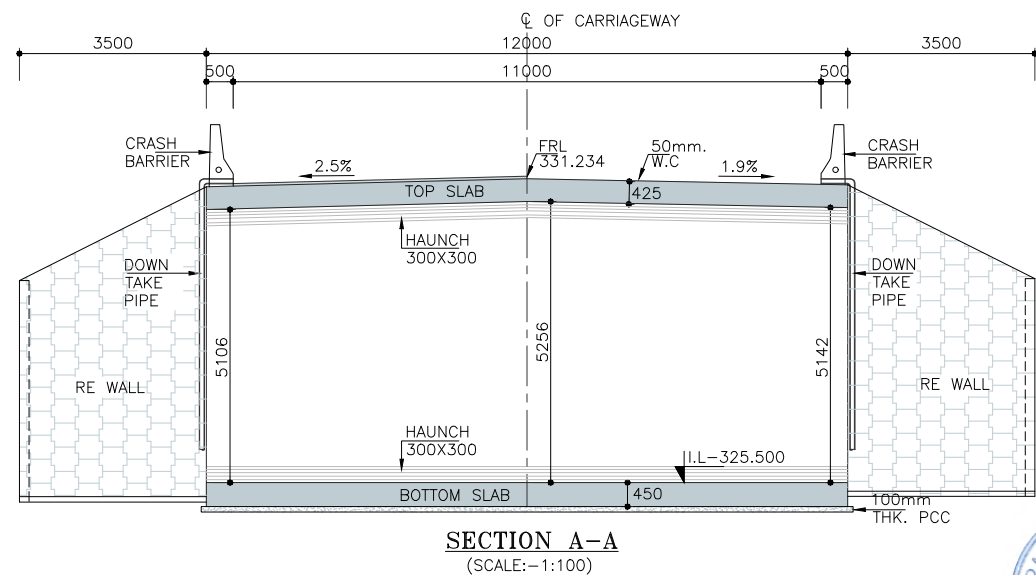
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CLIENT:			PROOF CHECK CONSULTANT:			DESIGN CONSULTANT:			APPROVED:- SM			PROJECT:- UPGRADATION AND RECONSTRUCTION OF EXISTING INTERMEDIATE LANE TO 2-LANE WITH PAVED SHOULDERS CONFIGURATION FROM KM 43.000 (BARNA RIVER) TO KM 77.000 (KEN RIVER), LENGTH 34.000 KM ON GULGANJ-AMANGANJ-PAWAI-KATNI NH-43 EXT. ALONG WITH ONE TIME IMPROVEMENT IN 01 NO OF BYPASSED BUILT-UP AREA IN A TOTAL LENGTH OF 1.55 KM IN THE STATE OF MADHYA PRADESH ON EPC MODE.		
PUBLIC WORK DEPARTMENT MADHYA PRADESH			HIGHRAISE CONSTRUCTION AND CONSULTANT PRIVATE LIMITED			CIVIL MANTRA INFRACON PVT. LTD. 3rd FLOOR TOWER 3A, DLF CORPORATE GREEN, SECTOR 74A, GURUGRAM - 122004			CHECKED:- RK			TITLE:- GENERAL ARRANGEMENT DRAWING OF AUP AT CH. 70+810		
AUTHORITY ENGINEER:			SAFETY CONSULTANT:			EPC CONTRACTOR:			DESIGNED:- ST			DRAWING NO :- CIPL-D1190-70+810-AUP-101-01 of 01-R0-GAD		
EARL TECHNO CONSULTANTS PVT. LTD.			KEYSTONE INFRA PVT. LTD.			DRAWN:- AK								
R0	NOV-2024	FOR APPROVAL												
REV	DATE	DESCRIPTION												

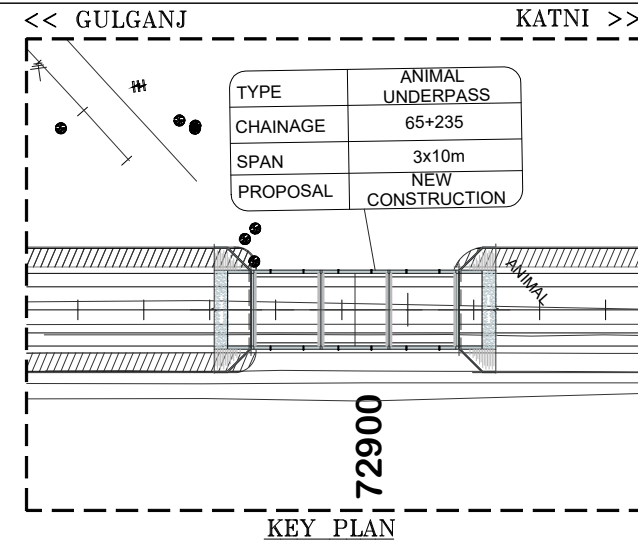
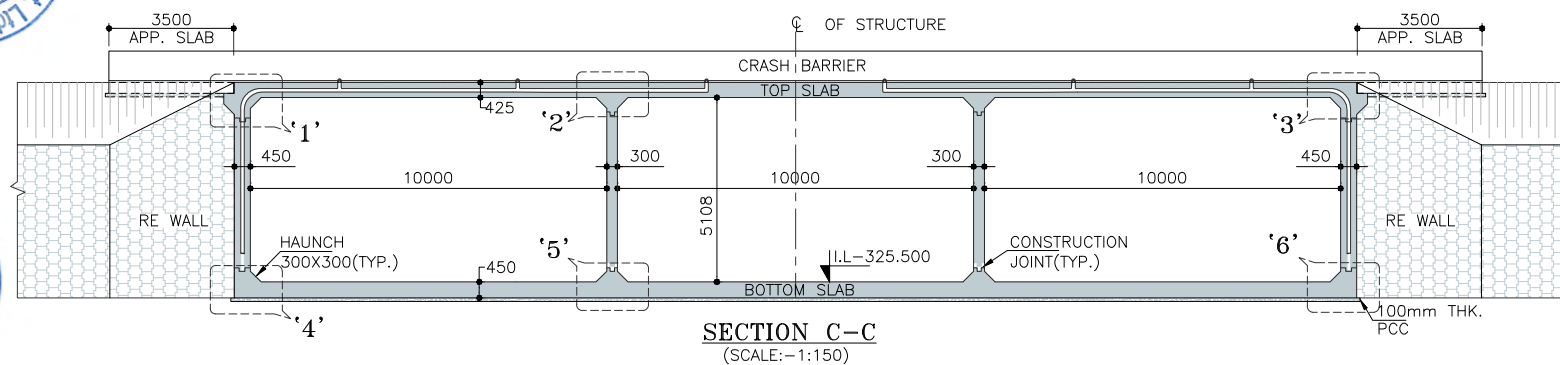


FRL	331.237	331.235	331.234	331.233	331.233
G.L	325.043	325.081	325.125	325.093	324.911
CHAINAGE	72+876.47	72+886.85	72+892	72+897.15	72+907.52



LEGEND:-

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C/C	- CENTER TO CENTER
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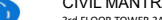


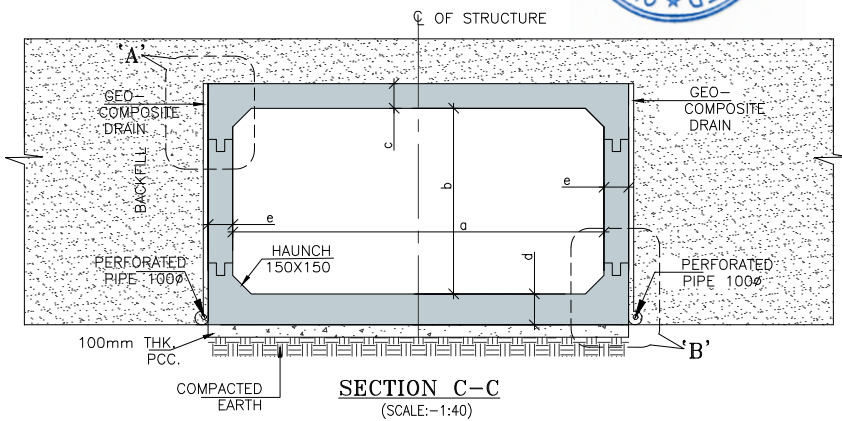
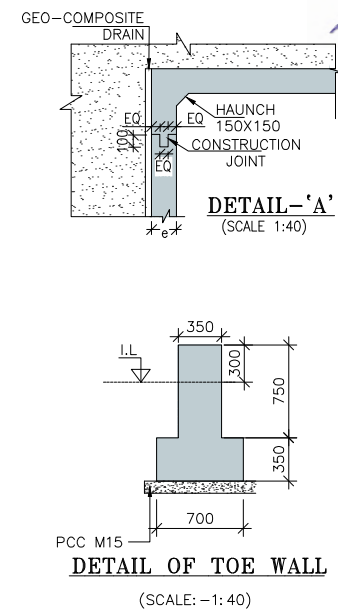
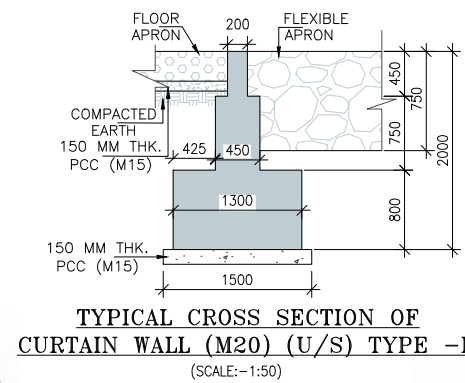
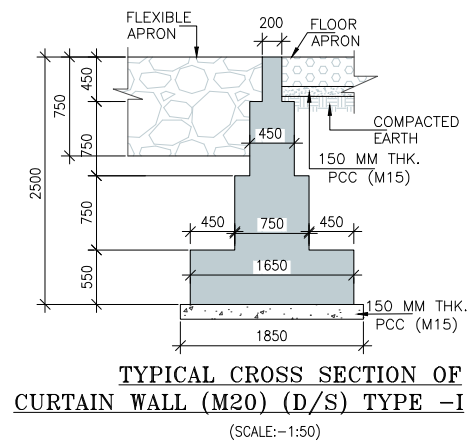
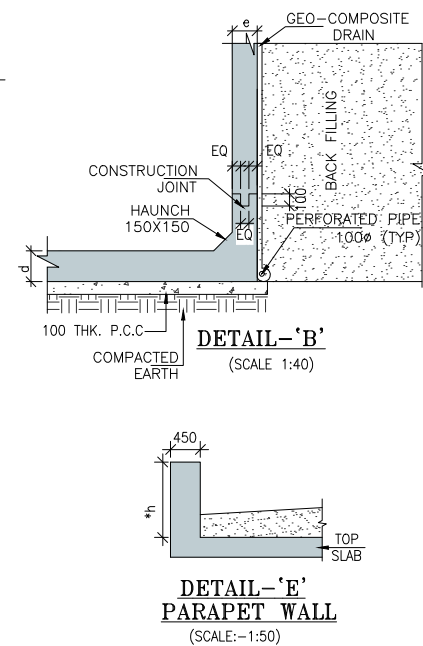
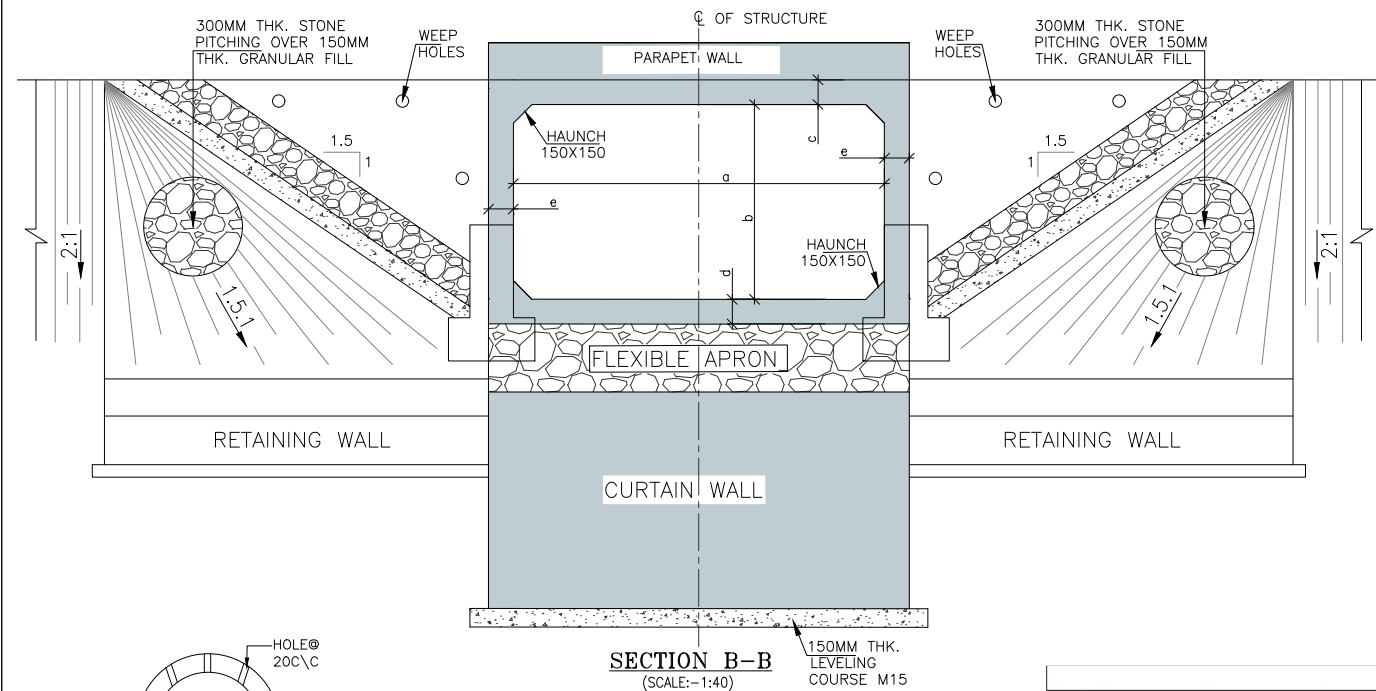
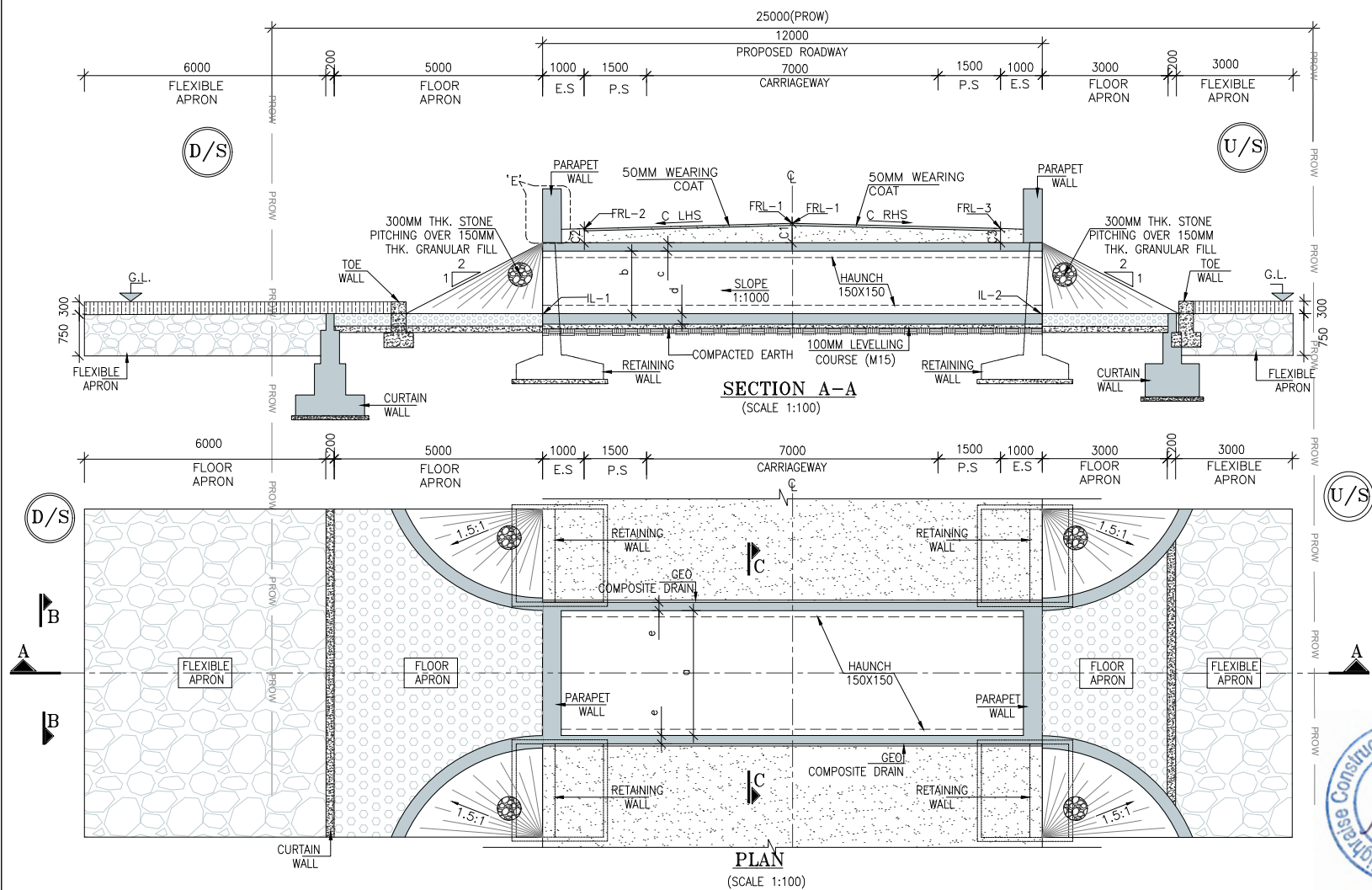
NOTES:-

- ALL DIMENSIONS ARE IN MILLIMETERS, LEVELS IN METERS UNLESS OTHERWISE MENTIONED. ONLY WRITTEN DIMENSIONS ARE TO BE FOLLOWED.
- CONCRETE SHALL BE DESIGN MIX WITH A MINIMUM 28 DAYS CHARACTERISTIC STRENGTH OF 150mm CUBES FOR ALL ELEMENTS OF STRUCTURES AS INDICATED BELOW:-
BOX STRUCTURE - M35
CRASH BARRIER - M40
APPROACH SLAB - M30
LEVELLING COURSE - M15
LEVELLING COURSE BELOW APPROACH SLAB - M15
- WEARING COAT SHALL BE 50MM.
- ALL REINFORCEMENT BARS SHALL BE H.Y.S.D BARS HAVING SPECIFIED MINIMUM 0.2% PROOF STRESS OF Fe 550D CONFORMING TO IS:1786.
- CLEAR COVER TO OUTERMOST STEEL SHALL BE AS BELOW:-
OTHER FACE - 45mm
EARTH FACE - 75mm
- BACK FILLING BEHIND BOX'S VERTICAL WALL SHALL CONSIST OF SELECTED EARTH CONFORMING TO APPENDIX 6 OF IRC 78:2014 HAVING PROPERTIES $C = 0$, $\phi \geq 30^\circ$ AND $\gamma_d = 2.0 \text{ t/m}^3$.
- BACKFILLING BEHIND THE BOX SHALL BE DONE SIMULTANEOUSLY.
- COMPACTION AND EXTENT OF BACK FILL BEHIND BOX'S VERTICAL WALL SHALL CONFIRM TO SPECIFICATIONS IN APPENDIX: 6 OF IRC: 78-2014.
- PROPOSED CHAINAGE/FORMATION LEVEL SHALL BE CHECKED AND CONFIRMED AS PER APPROVED PLAN & PROFILE.
- THE PROJECT ROAD FALLS WITHIN SEISMIC ZONE-II.
- THIS DRAWING SHALL BE READ IN CONJUNCTION WITH RELEVANT APPROVED HIGHWAY DRAWINGS FOR STRUCTURE ORIENTATION, SKEW FRL & CAMBER/SUPER ELEVATION, ETC IF ANY DISCREPANCY FOUND, IT SHALL BE BROUGHT TO THE NOTICE OF DESIGN CONSULTANT/ PROOF CHECKING CONSULTANT.
- SBC AT FOUNDING LEVEL IS CONSIDERED AS 120 kN/m^2 . THE SAME SHALL BE CONFIRMED BEFORE LAYING OF FOUNDATION/PCC BEFORE EXECUTION OF WORK AT SITE.
- PROPOSED STRUCTURE IS DESIGNED FOR LIVE LOAD AS PER LATEST IRC:6
- STRUCTURE HAS BEEN DESIGNED FOR
i) 3 LANE OF CLASS A
ii) 1 LANE OF 70R + 1 LANE OF CLASS A
iii) SV AS PER IRC6:2017
- EXPOSURE CONDITION IS SEVERE..
- POLYMER BASED FILLER BOARD SHALL BE USE TO FILL GAP. THE JOINT SHALL BE WATER TIGHT.
- CRASH BARRIERS SHALL BE PROVIDED FOR PROTECTION OF VEHICLES FROM COLLIDING WITH THE SIDE WALLS AND TOP SLAB OF THE STRUCTURES.

SPECIAL NOTE:-

HEIGHT OF BOX SHOWN IS AS PER CENTERLINE CHAINAGE AND HEIGHT OF ALL BOX CORNERS SHALL BE WORKED OUT BY USING CROSS CAMBER AND LEVELS MENTIONED BELOW SECTION B-B.

			CLIENT:  PUBLIC WORK DEPARTMENT MADHYA PRADESH	PROOF CHECK CONSULTANT :  HIGHRAISE CONSTRUCTION AND CONSULTANT PRIVATE LIMITED	DESIGN CONSULTANT :  CIVIL MANTRA INFRACON PVT. LTD. 3rd FLOOR TOWER 3A, DLF CORPORATE GREEN, SECTOR 74A, GURUGRAM - 122004	APPROVED:- SM	PROJECT:- UPGRADATION AND RECONSTRUCTION OF EXISTING INTERMEDIATE LANE TO 2-LANE WITH PAVED SHOULDERS CONFIGURATION FROM KM 43.000 (BARNA RIVER) TO KM 77.000 (KEN RIVER), LENGTH 34.000 KM ON GULGANJ- AMANGANJ- PAWAI-KATNI NH-43 EXT. ALONG WITH ONE TIME IMPROVEMENT IN 01 NO OF BYPASSED BUILT-UP AREA IN A TOTAL LENGTH OF 1.55 KM IN THE STATE OF MADHYA PRADESH ON EPC MODE.	
			AUTHORITY ENGINEER :	SAFETY CONSULTANT :  EARL TECHNO CONSULTANTS PVT. LTD.	EPC CONTRACTOR :  KEYSTONE INFRA PVT. LTD.	CHECKED:- RK		
						DESIGNED:- ST		TITLE:- GENERAL ARRANGEMENT DRAWING OF AUP AT CH. 72+892
R0	NOV-2024	FOR APPROVAL				DRAWN:- AK		DRAWING NO :- CIPL-D1190-72+892-AUP-101-01 of 01-R0-GAD
REV	DATE	DESCRIPTION						



NOTES:-

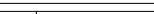
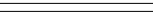
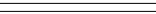
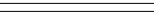
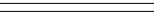
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- CHAINAGES SHOWN HERE ARE ALONG THE CENTER LINE.
- ONLY WRITTEN DIMENSIONS ARE TO BE FOLLOWED, DO NOT SCALE THE DRAWING SLOPE/CAMBER(E%). LAYOUT, SETTING OUT DETAILS, GEOMETRIC DETAIL, PROPOSED CHAINAGE AND ALL LEVELS GIVEN IN THIS DRAWINGS ARE BASED ON HIGHWAY DRAWING.
- BACK FILLING SHALL BE CARRIED OUT WITH SOIL PROPERTIES, $C=0\%$ & $\phi > 30^\circ$. THE SOIL SHALL BE COMPACTED AT OPTIMUM MOISTURE CONTENT TO 98% PROCTOR DENSITY, SHALL BE CONFIRMED AS PER C:710.1.4 OF IRC 78 AND NORTH SPECIFICATIONS.
- THE WORK IS TO BE CARRIED OUT AS PER APPROVED RELEVANT DETAILED DRAWINGS FOR DIFFERENT COMPONENTS OF THE STRUCTURE AND AS PER APPROVED HIGHWAY DRAWING.
- LAYOUT OF STRUCTURE SHALL BE CHECKED AT SITE WITH RESPECT TO FORMATION LEVEL EXISTING GROUND LEVEL AVAILABLE CLEARANCE ETC. AND ANY DISCREPANCY AMBIGUITY FOUND IN DRAWING OR AT SITE SHALL BE BROUGHT TO THE NOTICE OF DESIGN CONSULTANT PRIOR TO EXECUTION OF WORK.
- GRADES CONSIDERED:
BOX : M30
LEVELING COURSE : M15
HYSD STEEL : 550D
- CLEAR COVER:
BOTTOM SLAB & WALL (EARTH FACE) : 75 MM.
WALL (INNER FACE) & TOP SLAB : 45 MM.
- WEARING COAT SHOULD BE PROVIDED AS PER HIGHWAY CRUST.
- SEISMIC ZONE:- II.
- SOIL DENSITY ON THE BACKFILL AND EARTH CUSHION SHOULD CONFORM TO CLAUSE 305 2.1.5 OF MORTH SPECIFICATION FOR ROAD & BRIDGE WORKS (FIFTH REVISION).
- FLEXIBLE APRON 1000 MM THICK COMPRISING OF LOOSE STONE BOULDERS SHOULD BE PROVIDED BEYOND CURTAIN WALL AS PER IRC-SP-13.
- STRUCTURES EXCEEDING 45 M IN LENGTH SHOULD BE PROVIDED WITH ONE OR MORE EXPANSION JOINT.
- PROPOSED STRUCTURE IS DESIGNED FOR LIVE LOAD AS PER IRC-6
CASE 1- 3 LANE OF CLASS A
CASE 2- 1 LANE OF CLASS A + 1 LANE OF 70R
CASE 3- SV
- EXPOSURE CONDITION-SEVERE
- ANY LOOSE/UNSUITABLE MATERIAL FOUND BELOW THE BOX SHALL BE REPLACED WITH GRANULAR MATERIAL LIKE SANDY MURUM OR STONE DUST AS PER IRC:SP:13-2004 CL NO.23.3
- THE MAXIMUM BASE PRESSURE SHALL BE CONSIDERED AS PER DESIGN GIVEN IN TABLE & SHALL BE ENSURED SITE BY DOING PLATE LOAD TEST IF NOT ACHIEVED, SOIL OF 1000mm BELOW G.L. SHALL BE REPLACED WITH GRANULAR MATERIAL LIKE SANDY MURUM OR STONE DUST OR GSB AS PER MATERIAL AVAILABLE AT SITE
- PROTECTION WORK ON U/S AND D/S SIDE SHALL BE AS PER AVAILABILITY OF PROW
- GEO COMPOSITE DRAINAGE LAYER SHALL BE PROVIDED UP TO FOUNDATION LEVEL BETWEEN RW AND RETAINED BACKFILL THE GEO-COMPOSITE LAYER SHALL BE COMBINATION OF A LAYER OF GEO-NET IN BETWEEN 02 LAYERS OF GEOTEXTILE CONFORMING TO SECTION 700 OF MORTH SPECIFICATIONS.
- REFER SEPARATE DRAWING FOR RETAINING WALL & PARAPET WALL.

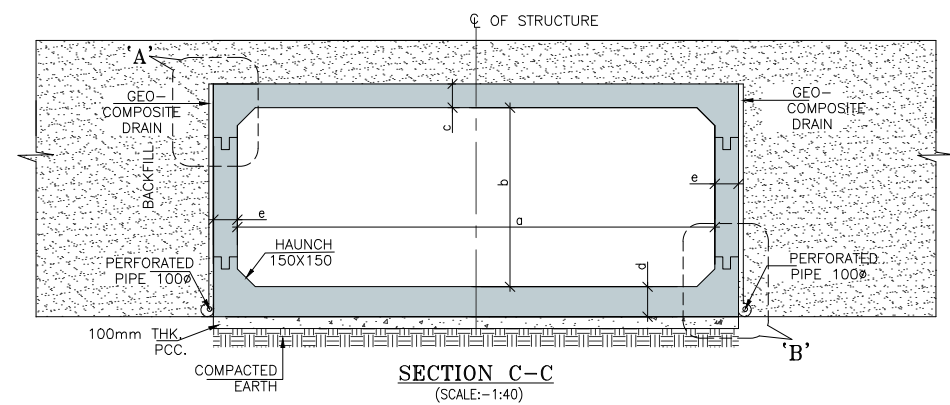
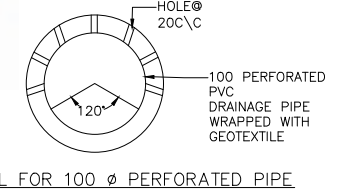
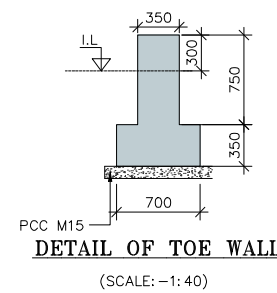
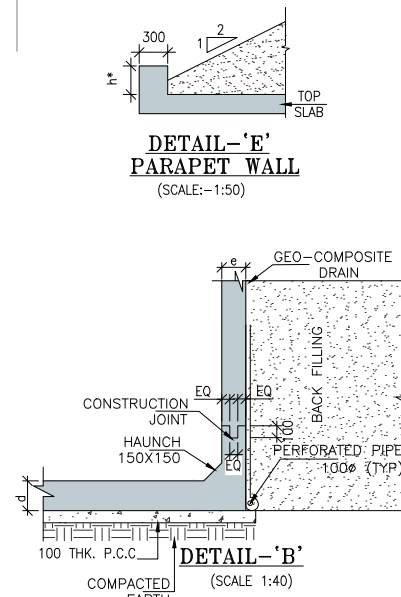
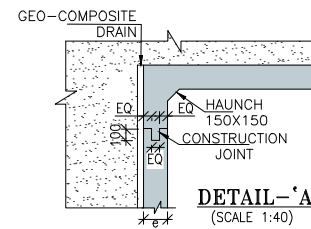
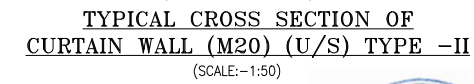
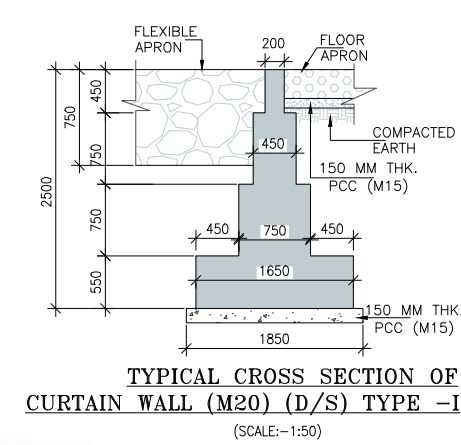
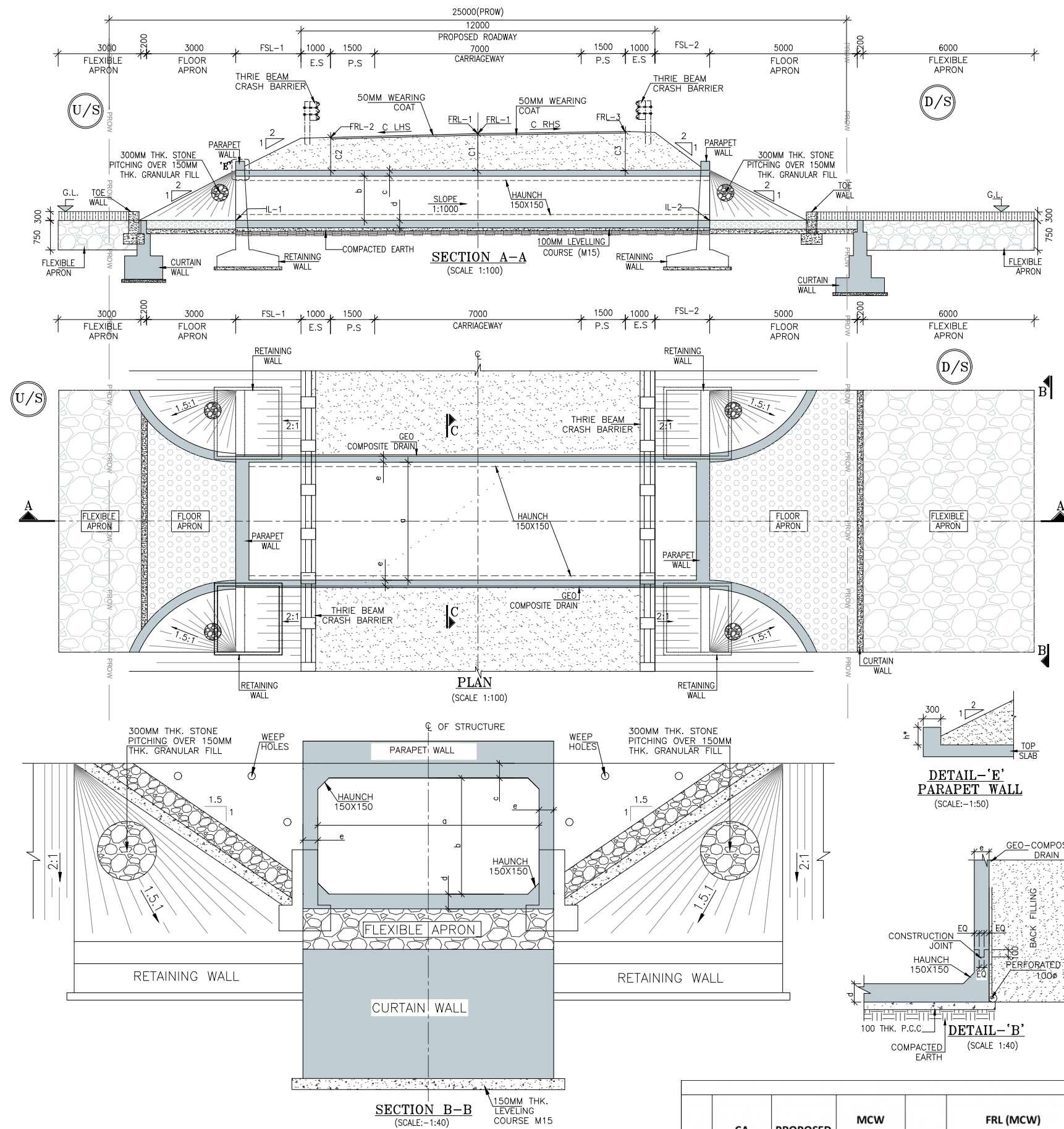
LEGEND:-

- FRL - FINISHED ROAD LEVEL
IL - INVERT LEVEL
GL - GROUND LEVEL
EXP. - EXPANSION

SCHEDULE OF DIMENSION FOR BOX CULVERT

SCHEDULE OF DIMENSION FOR BOX CULVERT																								
S.NO.	CA CHAINAGE	PROPOSED CHAINAGE	MCW CAMBER		TCS	FRL (MCW) (M)			INVERT LEVEL (M)		No. of cells	BOX SIZE		BOX DIMENSION			CUSHION MCW (mm)			BOX Length (mm)	PARAPET HEIGHT (mm)	PARAPET HEIGHT (mm)	REINF. GROUP	SBC REQUIRED (T/SQM)
			LHS	RHS		FRL-1	FRL-2	FRL-3	IL-1	IL-2		SPAN (SQ.) (M)	HEIGHT (M)	TOP SLAB (mm)	BOTT. SLAB (mm)	SIDE WALL (mm)					LHS	RHS		
			a	b		c	d	e	C1	C2		C3	h*	h*										
1	43+935	43+948	-2.50	-2.50	TCS-II-B	298.773	298.648	298.648	296.602	296.614	1	3	1.5	250	300	250	415	296	284	12000	1246	1234	G10	13

			 CLIENT: PUBLIC WORK DEPARTMENT MADHYA PRADESH	 PROOF CHECK CONSULTANT : HIGHRAISE CONSTRUCTION AND CONSULTANT PRIVATE LIMITED	 DESIGN CONSULTANT : CIVIL MANTRA INFRACON PVT. LTD. 3rd FLOOR TOWER 3A, DLF CORPORATE GREEN, SECTOR 74A, GURUGRAM - 122004	APPROVED:- SM	PROJECT:- UPGRADATION AND RECONSTRUCTION OF EXISTING INTERMEDIATE LANE TO 2-LANE WITH PAVED SHOULDERS CONFIGURATION FROM KM 43.000 (KEN RIVER) TO KM 77.000 (BARNIA RIVER), LENGTH 34.000 KM ON GULGANJ- AMANGANJ- PAWAI-KATNI NH-43 EXT. ALONG WITH ONE TIME IMPROVEMENT IN 01 NO OF BYPASSED BUILT-UP AREA IN A TOTAL LENGTH OF 1.55 KM IN THE STATE OF MADHYA PRADESH ON EPC MODE.			
	CHECKED:- RK									
R1	JAN-2025	REVISED AS PER LATEST P&P				AUTHORITY ENGINEER :  EARL TECHNO CONSULTANTS PVT. LTD.		SAFETY CONSULTANT : EARL TECHNO CONSULTANTS PVT. LTD.	EPC CONTRACTOR :  KEYSTONE INFRA PVT. LTD.	DESIGNED:- ST
R0	NOV-2024	FOR APPROVAL								DATE
REV	DATE	DESCRIPTION	SCALE	AS SHOWN	SHEET NO.		01 OF 01			FORMAT



NOTES:-

- DIMENSIONS ARE IN MILLIMETERS, CHAINAGES & LEVELS ARE IN METER, UNLESS NOTED OTHERWISE.
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- BACK FILLING SHALL BE CARRIED OUT WITH SOIL PROPERTIES, $C=0\%$ & $\phi > 30^\circ$. THE SOIL SHALL BE COMPACTED AT OPTIMUM MOISTURE CONTENT TO 98% PROCTOR DENSITY, SHALL BE CONFIRMED AS PER C-710.1.4 OF IRC 78 AND MORTH SPECIFICATIONS.
- THE WORK IS TO BE CARRIED OUT AS PER APPROVED RELEVANT DETAILED DRAWINGS FOR DIFFERENT COMPONENTS OF THE STRUCTURE AND AS PER APPROVED HIGHWAY DRAWING.
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- GRADES CONSIDERED:
BOX :M30
LEVELING COURSE :M15
HYSD STEEL :550D
- CLEAR COVER:
BOTTOM SLAB & WALL(EARTH FACE) 75 MM.
WALL (INNER FACE) & TOP SLAB 45 MM.
- WEARING COAT SHOULD BE PROVIDED AS PER HIGHWAY CRUST.
- SEISMIC ZONE:- II.
- SOIL DENSITY ON THE BACKFILL AND EARTH CUSHION SHOULD CONFORM TO CLAUSE 305 2.1.5 OF MORTH SPECIFICATION FOR ROAD & BRIDGE WORKS (FIFTH REVISION).
- FLEXIBLE APRON 1000 MM THICK COMPRISING OF LOOSE STONE. BOULDERS SHOULD BE PROVIDED BEYOND CURTAIN WALL AS PER IRC-SP-13.
- STRUCTURES EXCEEDING 45 M IN LENGTH SHOULD BE PROVIDED WITH ONE OR MORE EXPANSION JOINT.
- PROPOSED STRUCTURE IS DESIGNED FOR LIVE LOAD AS PER IRC-6
CASE 1- 3 LANE OF CLASS A
CASE 2- 1 LANE OF CLASS A + 1 LANE OF 70R
CASE 3- SV
- EXPOSURE CONDITION-SEVERE
- ANY LOOSE/UNSUITABLE MATERIAL FOUND BELOW THE BOX SHALL BE REPLACED WITH GRANULAR MATERIAL LIKE SANDY MURUM OR STONE DUST AS PER IRC:SP-13-2004 CL NO.23.3
- THE MAXIMUM BASE PRESSURE SHALL BE CONSIDERED AS PER DESIGN GIVEN IN TABLE & SHALL BE ENSURED SITE BY DOING PLATE LOAD TEST IF NOT ACHIEVED. SOIL OF 1000mm BELOW G.L. SHALL BE REPLACED WITH GRANULAR MATERIAL LIKE SANDY MURUM OR STONE DUST OR GSB AS PER MATERIAL AVAILABLE AT SITE
- PROTECTION WORK ON U/S AND D/S SIDE SHALL BE AS PER AVAILABILITY OF PROW
- GEO COMPOSITE DRAINAGE LAYER SHALL BE PROVIDED UP TO FOUNDATION LEVEL BETWEEN RW AND RETAINED BACKFILL. THE GEO-COMPOSITE LAYER SHALL BE COMBINATION OF A LAYER OF GEO-NET IN BETWEEN 02 LAYERS OF GEOTEXTILE CONFORMING TO SECTION 700 OF MORTH SPECIFICATIONS.
- REFER SEPARATE DRAWING FOR RETAINING WALL & PARAPET WALL.

LEGEND:-

FRL - FINISHED ROAD LEVEL
IL - INVERT LEVEL
GL - GROUND LEVEL
EXP. - EXPANSION

SCHEDULE OF DIMENSION FOR BOX CULVERT

S.NO.	CA CHAINAGE	PROPOSED CHAINAGE	MCW CAMBER		TCS	FRL (MCW) (M)			INVERT LEVEL (M)		No. of cells	BOX SIZE			BOX DIMENSION			CUSHION MCW (mm)			Extended Length		BOX Length (mm)	PARAPET HEIGHT (mm)	REINF. GROUP	SBC REQUIRED (T/SQM)
			C LHS	C RHS		FRL-1	FRL-2	FRL-3	IL-1	IL-2		SPAN (SQ.) (M)	SPAN (SK.) (mm)	HEIGHT (M)	TOP SLAB (mm)	BOTT. SLAB (mm)	SIDE WALL (mm)				FS1 (mm)	FS2 (mm)				
			a	b		c	d	e	C1	C2		C3														
1	44+225	44+240	-5.00	5.00	TCS-II-B	299.719	299.469	299.969	296.109	296.097	1	5	5	2.0	350	400	350	1266	1010	1522	1960	2984	16944	300	G29	12

CLIENT:
PUBLIC WORK DEPARTMENT MADHYA PRADESH
AUTHORITY ENGINEER:

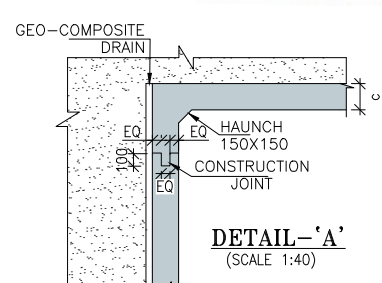
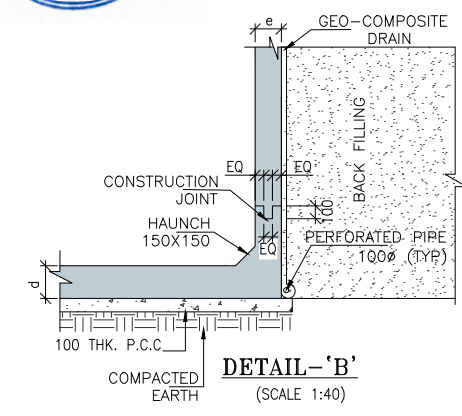
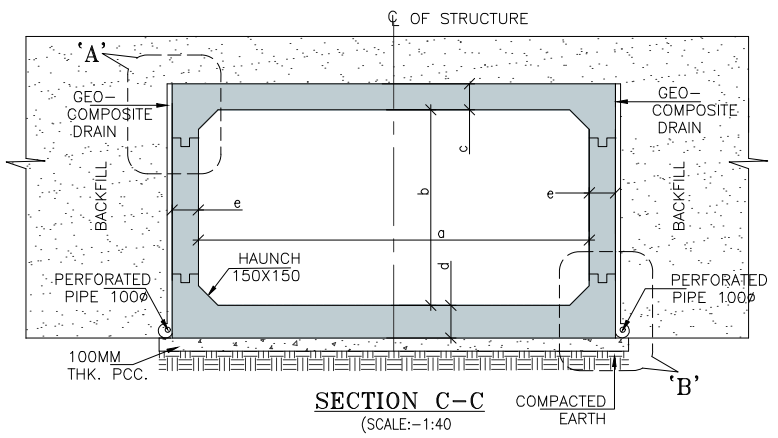
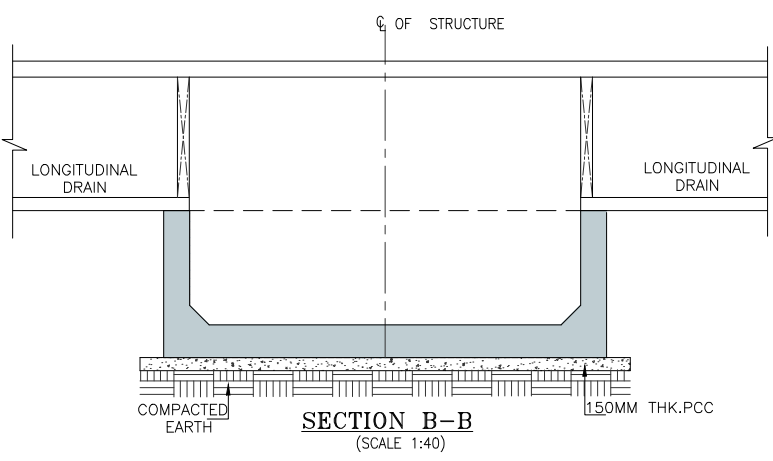
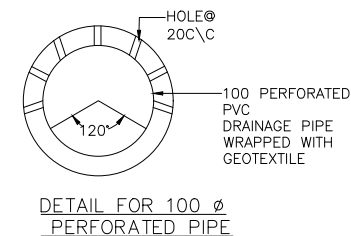
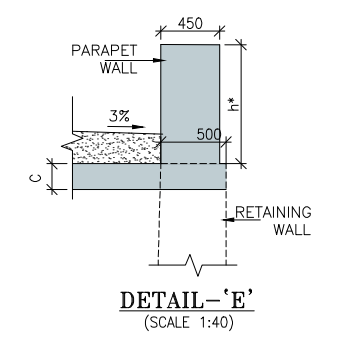
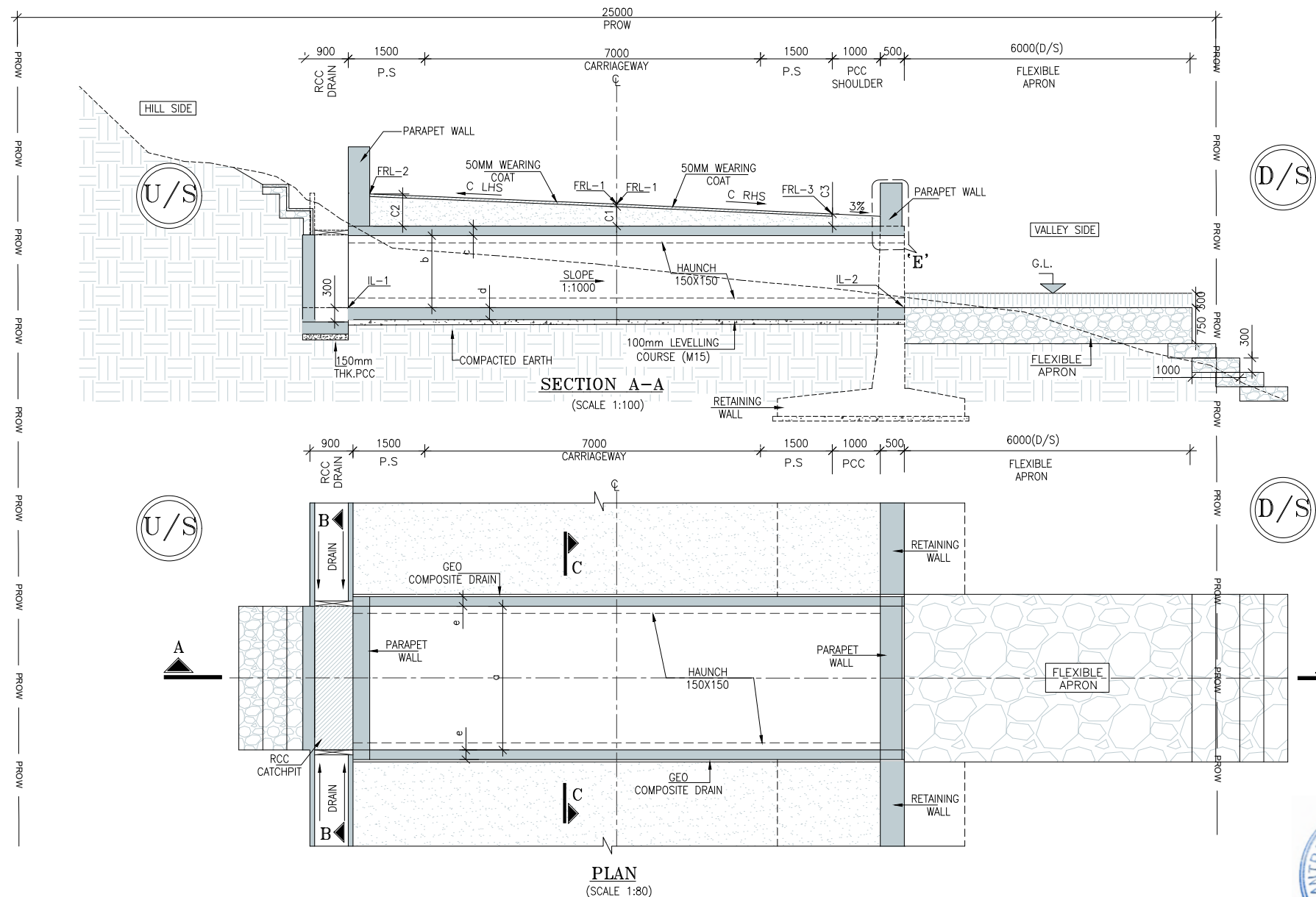
PROOF CHECK CONSULTANT:
HIGHRAISE CONSTRUCTION AND CONSULTANT PRIVATE LIMITED
SAFETY CONSULTANT:
EARL TECHNO CONSULTANTS PVT. LTD.

DESIGN CONSULTANT:
CIVIL MANTRA INFRACON PVT. LTD.
3rd FLOOR TOWER 3A, DLF CORPORATE GREEN, SECTOR 74A, GURUGRAM - 122004
EPC CONTRACTOR:
KEYSTONE INFRA PVT. LTD.

APPROVED:- SM
CHECKED:- RK
DESIGNED:- ST
DRAWN:- SY

PROJECT:- UPGRADE AND RECONSTRUCTION OF EXISTING INTERMEDIATE LANE TO 2-LANE WITH PAVED SHOULDERS CONFIGURATION FROM KM 43.000 (BARNA RIVER) TO KM 77.000 (KEN RIVER), LENGTH 34.000 KM ON GULGANJ- AMANGANJ- PAWAI-KATNI NH-43 EXT. ALONG WITH ONE TIME IMPROVEMENT IN 01 NO OF BYPASSED BUILT-UP AREA IN A TOTAL LENGTH OF 1.55 KM IN THE STATE OF MADHYA PRADESH ON EPC MODE.
TITLE:- GENERAL ARRANGEMENT DRAWING OF BOX CULVERT AT CH-44+240
DRAWING NO :- CIPL-D1190-44+240-BC-101-01 OF 01-R1-GAD

DATE: JAN-2025
SCALE: AS SHOWN
SHEET NO: 01 OF 01
FORMAT: A3 (420X297)
REV: R1



- NOTES:-**
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 - ONLY WRITTEN DIMENSIONS ARE TO BE FOLLOWED, DO NOT SCALE THE DRAWING SLOPE/CAMBER(E%). LAYOUT, SETTING OUT DETAILS, GEOMETRIC DETAIL, PROPOSED CHAINAGE AND ALL LEVELS GIVEN IN THIS DRAWINGS ARE BASED ON HIGHWAY DRAWING.
 - BACK FILLING SHALL BE CARRIED OUT WITH SOIL PROPERTIES, $C=0\%$ & $\phi > 30^\circ$. THE SOIL SHALL BE COMPACTED AT OPTIMUM MOISTURE CONTENT TO 98% PROCTOR DENSITY, SHALL BE CONFIRMED AS PER C:710.1.4 OF IRC 78 AND MORTH SPECIFICATIONS.
 - THE WORK IS TO BE CARRIED OUT AS PER APPROVED RELEVANT DETAILED DRAWINGS FOR DIFFERENT COMPONENTS OF THE STRUCTURE AND AS PER APPROVED HIGHWAY DRAWING.
 - LAYOUT OF STRUCTURE SHALL BE CHECKED AT SITE WITH RESPECT TO FORMATION LEVEL EXISTING GROUND LEVEL AVAILABLE CLEARANCE ETC. AND ANY DISCREPANCY AMBIGUITY FOUND IN DRAWING OR AT SITE SHALL BE BROUGHT TO THE NOTICE OF DESIGN CONSULTANT PRIOR TO EXECUTION OF WORK.
 - GRADES CONSIDERED:
BOX :M30
LEVELING COURSE :M15
HYSD STEEL :550D
 - CLEAR COVER:
BOTTOM SLAB & WALL(EARTH FACE) 75 MM.
WALL (INNER FACE) & TOP SLAB 45 MM.
 - WEARING COAT SHOULD BE PROVIDED AS PER HIGHWAY CRUST.
 - SEISMIC ZONE:- II.
 - SOIL DENSITY ON THE BACKFILL AND EARTH CUSHION SHOULD CONFORM TO CLAUSE 305 2.1.5 OF MORTH SPECIFICATION FOR ROAD & BRIDGE WORKS (FIFTH REVISION).
 - FLEXIBLE APRON 1000 MM THICK COMPRISING OF LOOSE STONE BOULDERS SHOULD BE PROVIDED BEYOND CURTAIN WALL AS PER IRC-SP-13.
 - STRUCTURES EXCEEDING 45 M IN LENGTH SHOULD BE PROVIDED WITH ONE OR MORE EXPANSION JOINT.
 - PROPOSED STRUCTURE IS DESIGNED FOR LIVE LOAD AS PER IRC-6
CASE 1- 3 LANE OF CLASS A
CASE 2- 1 LANE OF CLASS A + 1 LANE OF 70R
CASE 3- SV
 - EXPOSURE CONDITION-SEVERE
 - ANY LOOSE/UNSUITABLE MATERIAL FOUND BELOW THE BOX SHALL BE REPLACED WITH GRANULAR MATERIAL LIKE SANDY MURUM OR STONE DUST AS PER IRC:SP:13-2004 CL NO.23.3
 - THE MAXIMUM BASE PRESSURE SHALL BE CONSIDERED AS PER DESIGN GIVEN IN TABLE & SHALL BE ENSURED SITE BY DOING PLATE LOAD TEST IF NOT ACHIEVED, SOIL OF 1000mm BELOW G.L SHALL BE REPLACED WITH GRANULAR MATERIAL LIKE SANDY MURUM OR STONE DUST OR GSB AS PER MATERIAL AVAILABLE AT SITE
 - PROTECTION WORK ON U/S AND D/S SIDE SHALL BE AS PER AVAILABILITY OF PROW
 - REFERS SEPERATE DRAWING FOR RCC CATCHPIT PARAPET WALL RETAINING WALL & REINFORCEMENT.
 - GEO COMPOSITE DRAINAGE LAYER SHALL BE PROVIDED UP TO FOUNDATION LEVEL BETWEEN RW AND RETAINED BACKFILL THE GEO-COMPOSITE LAYER SHALL BE COMBINATION OF A LAYER OF GEO-NET IN BETWEEN 02 LAYERS OF GEOTEXTILE CONFORMING TO SECTION 700 OF MORTH SPECIFICATIONS.

LEGEND:-

- FRL - FINISHED ROAD LEVEL
IL - INVERT LEVEL
GL - GROUND LEVEL
P.S - PAVED SHOULDER
EXP. - EXPANSION

SCHEDULE OF DIMENSION FOR BOX CULVERT

S.NO.	CA CHAINAGE	PROPOSED CHAINAGE	MCW CAMBER		TCS	FRL (MCW) (M)			INVERT LEVEL (M)		No. of cells	BOX SIZE		BOX DIMENSION			CUSHION MCW (mm)			BOX Length (mm)	PARAPET HEIGHT LHS(mm)	PARAPET HEIGHT RHS(mm)	REINF. GROUP	SBC REQUIRED (T/SQM)
												SPAN (SQ.) (M)	HEIGHT (M)	TOP SLAB (mm)	BOT. SLAB (mm)	SIDE WALL (mm)								
			C LHS	C RHS		FRL-1	FRL-2	FRL-3	IL-1	IL-2							a	b	c					
1	44+930	44+951	2.58	-2.58	TCS-III-A	306.015	306.144	305.886	303.801	303.790	1	3	1.5	250	300	250	469	593	346	11500	1543	1296	G10	12

CLIENT: PUBLIC WORK DEPARTMENT MADHYA PRADESH
AUTHORITY ENGINEER:

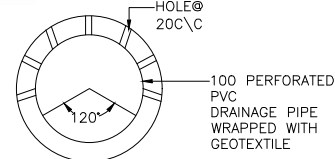
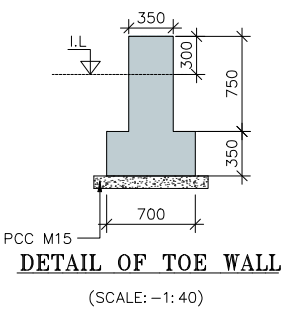
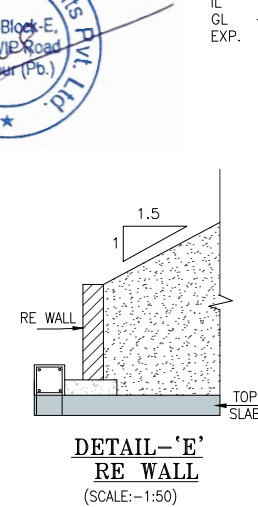
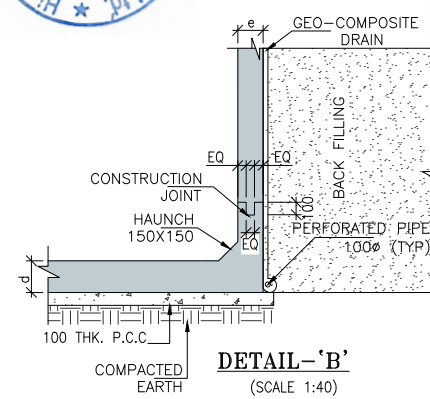
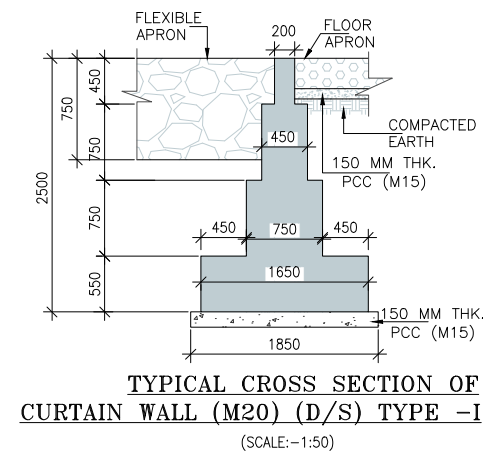
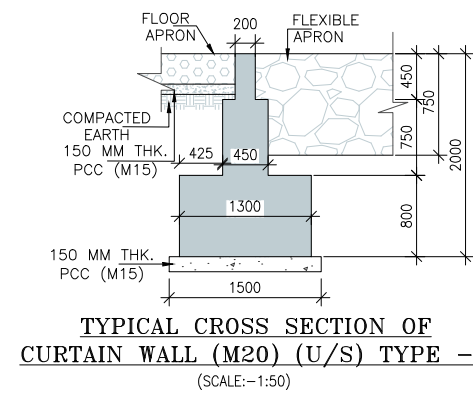
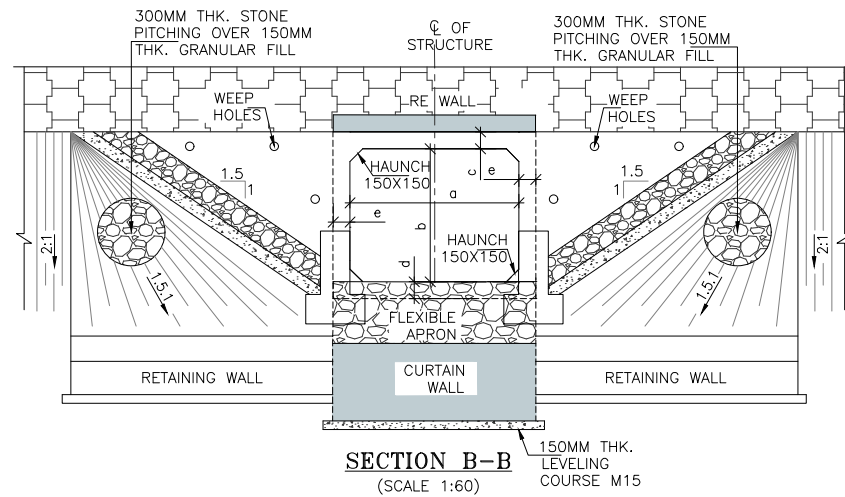
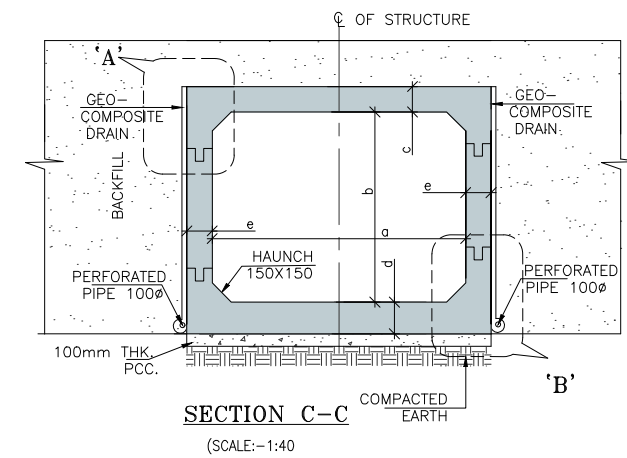
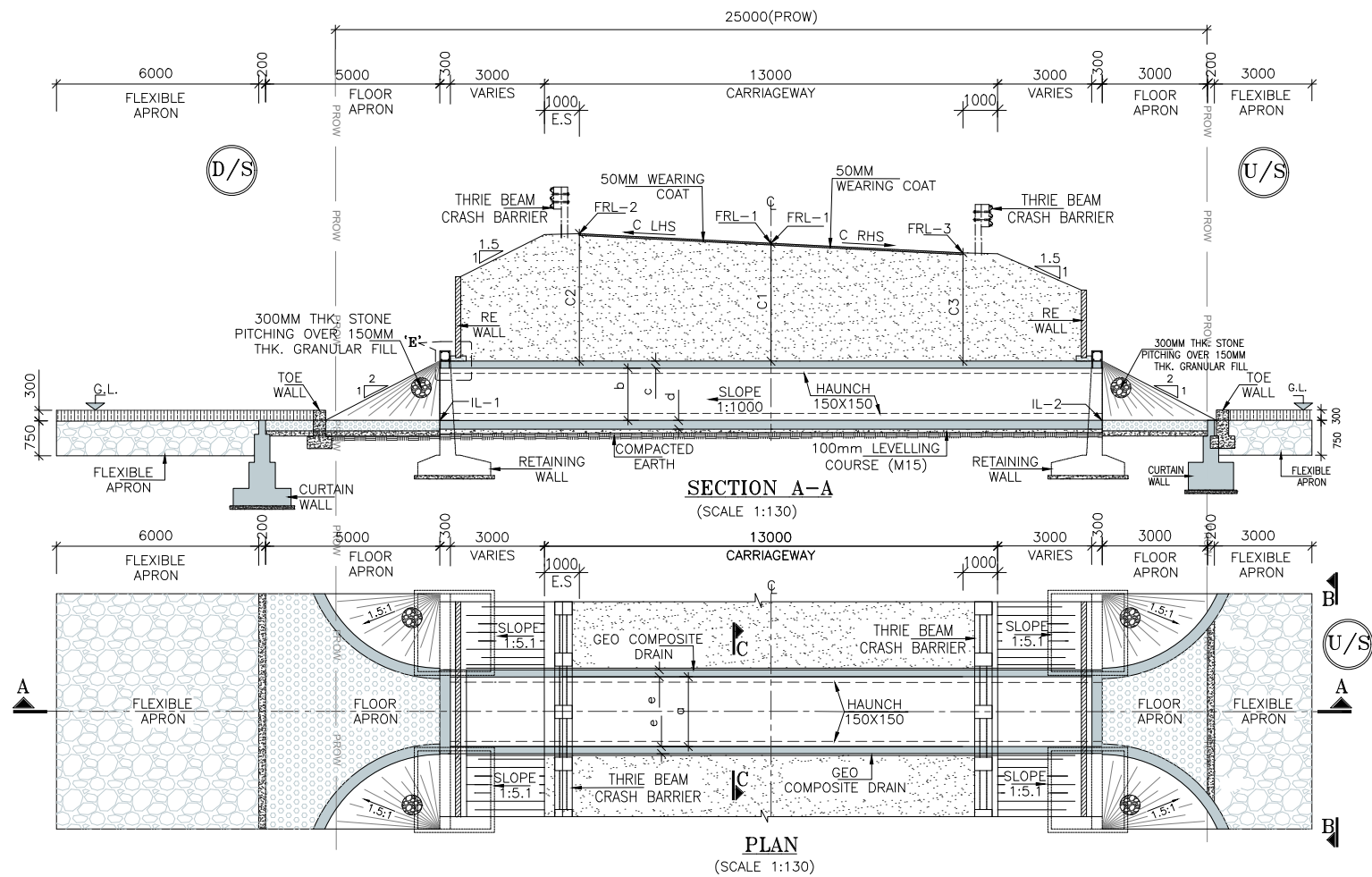
PROOF CHECK CONSULTANT: HIGHRAISE CONSTRUCTION AND CONSULTANT PRIVATE LIMITED
SAFETY CONSULTANT: EARL TECHNO CONSULTANTS PVT. LTD.

DESIGN CONSULTANT: CIVIL MANTRA INFRACON PVT. LTD.
EPC CONTRACTOR: KEYSTONE INFRA PVT. LTD.

APPROVED:- SM
CHECKED:- RK
DESIGNED:- ST
DRAWN:- SY

PROJECT:- UPGRADEATION AND RECONSTRUCTION OF EXISTING INTERMEDIATE LANE TO 2-LANE WITH PAVED SHOULDERS CONFIGURATION FROM KM 43.000 (BARNA RIVER) TO KM 77.000 (KEN RIVER), LENGTH 34.000 KM ON GULGANJ- AMANGANJ- PAWAI-KATNI NH-43 EXT. ALONG WITH ONE TIME IMPROVEMENT IN 01 NO OF BYPASSED BUILT-UP AREA IN A TOTAL LENGTH OF 1.55 KM IN THE STATE OF MADHYA PRADESH ON EPC MODE.
TITLE:- GENERAL ARRANGEMENT DRAWING OF BOX CULVERT AT CH. 44+951
DRAWING NO :- CIPL-D1190-44+951-BC-101-01 OF 01-R1-GAD

DATE	JAN-2025
SCALE	AS SHOWN
SHEET NO.	01 OF 01
FORMAT	A3 (420X297)
REV.	RT



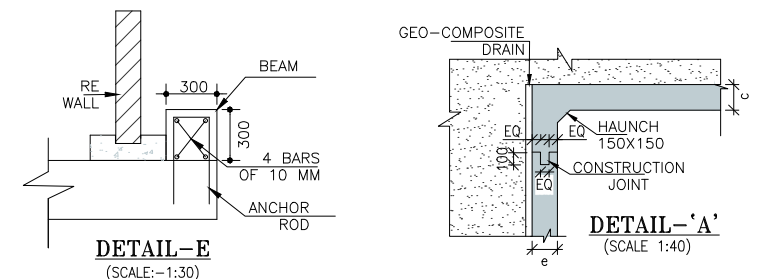
- NOTES:-**
- DIMENSIONS ARE IN MILLIMETERS, CHAINAGES & LEVELS ARE IN METER, UNLESS NOTED OTHERWISE.
 - CHAINAGES SHOWN HERE ARE ALONG THE CENTER LINE.
 - ONLY WRITTEN DIMENSIONS ARE TO BE FOLLOWED, DO NOT SCALE THE DRAWING SLOPE/CAMBER(E%). LAYOUT, SETTING OUT DETAILS, GEOMETRIC DETAIL, PROPOSED CHAINAGE AND ALL LEVELS GIVEN IN THIS DRAWINGS ARE BASED ON HIGHWAY DRAWING.
 - BACK FILLING SHALL BE CARRIED OUT WITH SOIL PROPERTIES, C=0 % & $\phi > 30^\circ$. THE SOIL SHALL BE COMPACTED AT OPTIMUM MOISTURE CONTENT TO 98% PROCTOR DENSITY, SHALL BE CONFIRMED AS PER C:710.1.4 OF IRC 78 AND MORTH SPECIFICATIONS.
 - THE WORK IS TO BE CARRIED OUT AS PER APPROVED RELEVANT DETAILED DRAWINGS FOR DIFFERENT COMPONENTS OF THE STRUCTURE AND AS PER APPROVED HIGHWAY DRAWING.
 - LAYOUT OF STRUCTURE SHALL BE CHECKED AT SITE WITH RESPECT TO FORMATION LEVEL EXISTING GROUND LEVEL AVAILABLE CLEARANCE ETC. AND ANY DISCREPANCY AMBIGUITY FOUND IN DRAWING OR AT SITE SHALL BE BROUGHT TO THE NOTICE OF DESIGN CONSULTANT PRIOR TO EXECUTION OF WORK.
 - GRADES CONSIDERED:
BOX :M30
LEVELING COURSE :M15
HYSD STEEL :550D
 - CLEAR COVER:
BOTTOM SLAB & WALL(EARTH FACE) 75 MM.
WALL (INNER FACE) & TOP SLAB 45 MM.
 - WEARING COAT SHOULD BE PROVIDED AS PER HIGHWAY CRUST.
 - SEISMIC ZONE:- II.
 - SOIL DENSITY ON THE BACKFILL AND EARTH CUSHION SHOULD CONFORM TO CLAUSE 305 2.1.5 OF MORTH SPECIFICATION FOR ROAD & BRIDGE WORKS (FIFTH REVISION).
 - FLEXIBLE APRON 1000 MM THICK COMPRISING OF LOOSE STONE BOULDERS SHOULD BE PROVIDED BEYOND CURTAIN WALL AS PER IRC-SP-13.
 - STRUCTURES EXCEEDING 45 M IN LENGTH SHOULD BE PROVIDED WITH ONE OR MORE EXPANSION JOINT.
 - PROPOSED STRUCTURE IS DESIGNED FOR LIVE LOAD AS PER IRC-6
CASE 1- 3 LANE OF CLASS A
CASE 2- 1 LANE OF CLASS A + 1 LANE OF 70R
CASE 3- SV
 - EXPOSURE CONDITION-SEVERE
 - ANY LOOSE/UNSUITABLE MATERIAL FOUND BELOW THE BOX SHALL BE REPLACED WITH GRANULAR MATERIAL LIKE SANDY MURUM OR STONE DUST AS PER IRC:SP-13-2004 CL NO.23.3
 - THE MAXIMUM BASE PRESSURE SHALL BE CONSIDERED AS PER DESIGN GIVEN IN TABLE & SHALL BE ENSURED SITE BY DOING PLATE LOAD TEST IF NOT ACHIEVED SOIL OF 1000mm BELOW G.L. SHALL BE REPLACED WITH GRANULAR MATERIAL LIKE SANDY MURUM OR STONE DUST OR GSB AS PER MATERIAL AVAILABLE AT SITE
 - PROTECTION WORK ON U/S AND D/S SIDE SHALL BE AS PER AVAILABILITY OF PROW
 - GEO COMPOSITE DRAINAGE LAYER SHALL BE PROVIDED UP TO FOUNDATION LEVEL BETWEEN RW AND RETAINED BACKFILL THE GEO-COMPOSITE LAYER SHALL BE COMBINATION OF A LAYER OF GEO-NET IN BETWEEN 02 LAYERS OF GEOTEXTILE CONFORMING TO SECTION 700 OF MORTH SPECIFICATIONS.
 - REFER SEPARATE DRAWING FOR RETAINING WALL & PARAPET WALL.

LEGEND:-

- FRL - FINISHED ROAD LEVEL
IL - INVERT LEVEL
GL - GROUND LEVEL
EXP. - EXPANSION

SCHEDULE OF DIMENSION FOR BOX CULVERT

S.NO.	CA CHAINAGE	PROPOSED CHAINAGE	MCW CAMBER		TCS	FRL (MCW) (M)			INVERT LEVEL (M)		No. of cells	BOX SIZE		BOX DIMENSION (MCW)			CUSHION MCW (mm)			VARIES (mm)		BOX Length (mm)	REINF. GROUP	SBC REQUIRED (T/SQM)
			C LHS	C RHS		FRL-1	FRL-2	FRL-3	IL-1	IL-2		SPAN (SQ.) (M)	HEIGHT (M)	TOP SLAB (mm)	BOTT. SLAB (mm)	SIDE WALL (mm)	C1	C2	C3	LHS	RHS			
1	45+150	45+160	5.00	-5.00	TCS-IX	310.942	311.217	310.667	306.333	306.352	1	2	1.5	200	250	200	2899	3184	2615	3000	3000	19600	G4	15



DETAIL-E
(SCALE:-1:30)

CLIENT:
PUBLIC WORK DEPARTMENT MADHYA PRADESH

AUTHORITY ENGINEER:

PROOF CHECK CONSULTANT:
HIGHRAISE CONSTRUCTION AND CONSULTANT PRIVATE LIMITED

SAFETY CONSULTANT:
EARL TECHNO CONSULTANTS PVT. LTD.

DESIGN CONSULTANT:
CIVIL MANTRA INFRACON PVT. LTD.
3rd FLOOR TOWER 3A, DLF CORPORATE GREEN, SECTOR 74A, GURUGRAM - 122004

EPC CONTRACTOR:
KEYSTONE INFRA PVT. LTD.

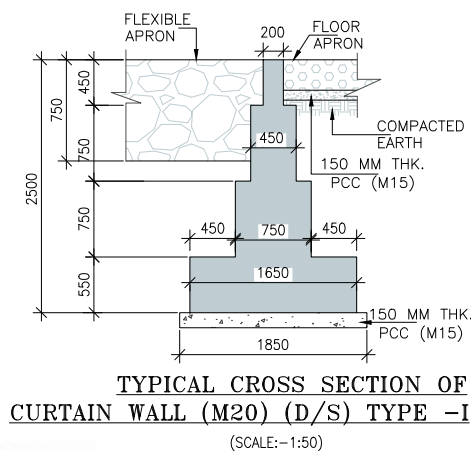
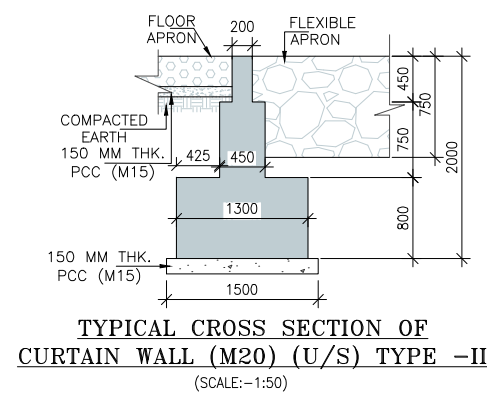
APPROVED:- SM
CHECKED:- RK
DESIGNED:- ST
DRAWN:- SY

PROJECT:- UPGRADE AND RECONSTRUCTION OF EXISTING INTERMEDIATE LANE TO 2-LANE WITH PAVED SHOULDERS CONFIGURATION FROM KM 43.000 (BARNA RIVER) TO KM 77.000 (KEN RIVER), LENGTH 34.000 KM ON GULGANJ- AMANGANJ- PAWAI-KATNI NH-43 EXT. ALONG WITH ONE TIME IMPROVEMENT IN 01 NO OF BYPASSED BUILT-UP AREA IN A TOTAL LENGTH OF 1.55 KM IN THE STATE OF MADHYA PRADESH ON EPC MODE.

TITLE:- GENERAL ARRANGEMENT DRAWING OF BOX CULVERT AT CH-45+160

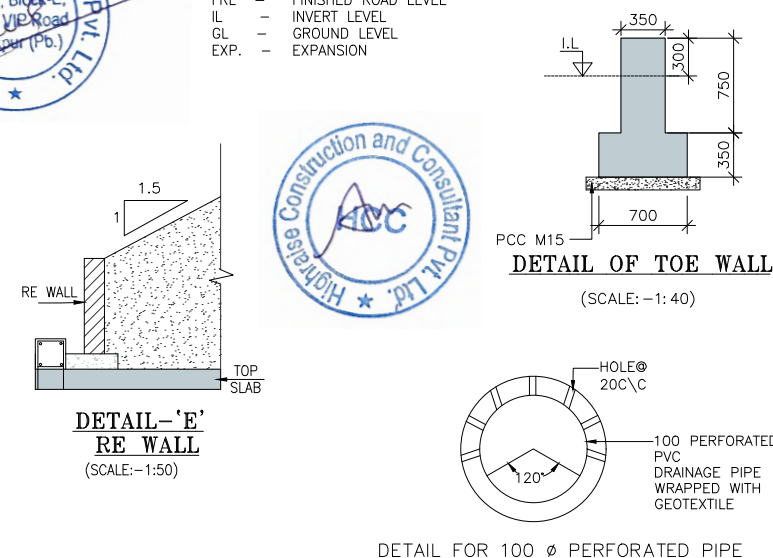
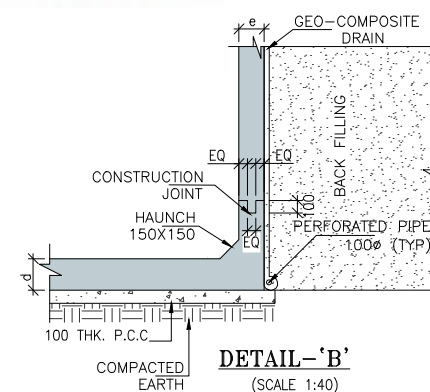
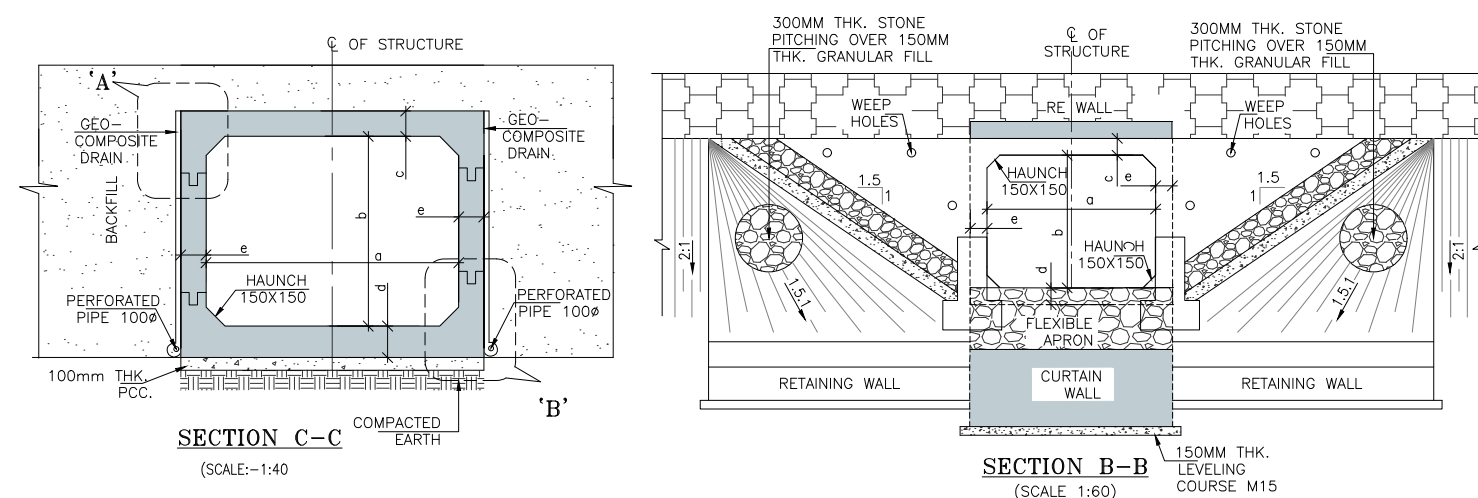
DRAWING NO :- CIPL-D1190-45+160-BC-101-01 OF 01-R1-GAD

REV	DATE	DESCRIPTION
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R0	NOV-2024	FOR APPROVAL

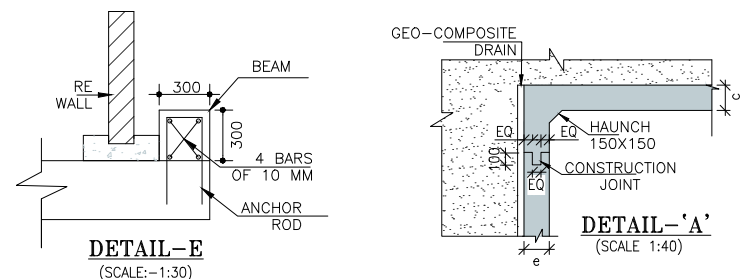


1. DIMENSIONS ARE IN MILLIMETERS, CHAINAGES & LEVELS ARE IN METER, UNLESS NOTED OTHERWISE.
2. CHAINAGES SHOWN HERE ARE ALONG THE CENTER LINE.
3. ONLY WRITTEN DIMENSIONS ARE TO BE FOLLOWED, DO NOT SCALE THE DRAWING SLOPE/CAMBER(%) . LAYOUT, SETTING OUT DETAILS, GEOMETRIC DETAIL, PROPOSED CHAINAGE AND ALL LEVELS GIVEN IN THIS DRAWINGS ARE BASED ON HIGHWAY DRAWING.
4. BACK FILLING SHALL BE CARRIED OUT WITH SOIL PROPERTIES, $C=0\%$ & $\phi > 30^\circ$. THE SOIL SHALL BE COMPACTED AT OPTIMUM MOISTURE CONTENT TO 98% PROCTOR DENSITY. SHALL BE CONFIRMED AS PER C-710.1.4 OF IRC 78 AND MORTH SPECIFICATIONS.
5. THE WORK IS TO BE CARRIED OUT AS PER APPROVED RELEVANT DETAILED DRAWINGS FOR DIFFERENT COMPONENTS OF THE STRUCTURE AND AS PER APPROVED HIGHWAY DRAWING.
6. LAYOUT OF STRUCTURE SHALL BE CHECKED AT SITE WITH RESPECT TO FORMATION LEVEL EXISTING GROUND LEVEL AVAILABLE CLEARANCE ETC. AND ANY DISCREPANCY AMBIGUITY FOUND IN DRAWING OR AT SITE SHALL BE BROUGHT TO THE NOTICE OF DESIGN CONSULTANT PRIOR TO EXECUTION OF WORK.
7. GRADES CONSIDERED:
BOX :M30
LEVELLING COURSE :M15
HYSD STEEL :550D
8. CLEAR COVER:
BOTTOM SLAB & WALL(EARTH FACE) 75 MM.
WALL (INNER FACE) & TOP SLAB 45 MM.
9. WEARING COAT SHOULD BE PROVIDED AS PER HIGHWAY CRUST.
10. SEISMIC ZONE:- II.
11. SOIL DENSITY ON THE BACKFILL AND EARTH CUSHION SHOULD CONFORM TO CLAUSE 305 2.1.5 OF MORTH SPECIFICATION FOR ROAD & BRIDGE WORKS (FIFTH REVISION).
12. FLEXIBLE APRON 1000 MM THICK COMPRISING OF LOOSE STONE BOULDERS SHOULD BE PROVIDED BEYOND CURTAIN WALL AS PER IRC-SP-13.
13. STRUCTURES EXCEEDING 45 M IN LENGTH SHOULD BE PROVIDED WITH ONE OR MORE EXPANSION JOINT.
14. PROPOSED STRUCTURE IS DESIGNED FOR LIVE LOAD AS PER IRC-6
CASE 1 - 3 LANE OF CLASS A
CASE 2 - 1 LANE OF CLASS A + 1 LANE OF 70R
CASE 3 - SV
15. EXPOSURE CONDITION-SEVERE
16. ANY LOOSE/UNSUITABLE MATERIAL FOUND BELOW THE BOX SHALL BE REPLACED WITH GRANULAR MATERIAL LIKE SANDY MURUM OR STONE DUST AS PER IRC:SP:13-2004 CL NO.23.3
17. THE MAXIMUM BASE PRESSURE SHALL BE CONSIDERED AS PER DESIGN GIVEN IN TABLE & SHALL BE ENSURED SITE BY DOING PLATE LOAD TEST IF NOT ACHIEVED ,SOIL OF 1000mm BELOW G.L SHALL BE REPLACED WITH GRANULAR MATERIAL LIKE SANDY MURRUM OR STONE DUST OR GSB AS PER MATERIAL AVAILABLE AT SITE
18. PROTECTION WORK ON U/S AND D/S SIDE SHALL BE AS PER AVAILABILITY OF PROW
19. GEO COMPOSITE DRAINAGE LAYER SHALL BE PROVIDED UP TO FOUNDATION LEVEL BETWEEN RW AND RETAINED BACKFILL THE GEO-COMPOSITE LAYER SHALL BE COMBINATION OF A LAYER OF GEO-NET IN BETWEEN 02 LAYERS OF GEOTEXTILE CONFORMING TO SECTION 700 OF MORTH SPECIFICATIONS.
20. REFER SEPARATE DRAWING FOR RETAINING WALL& PARAPET WALL.

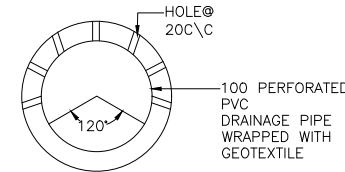
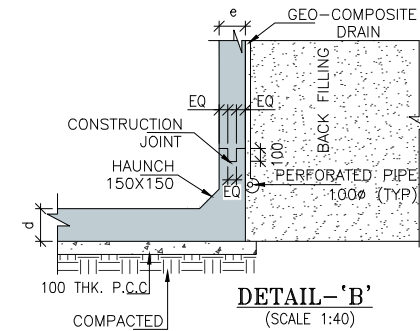
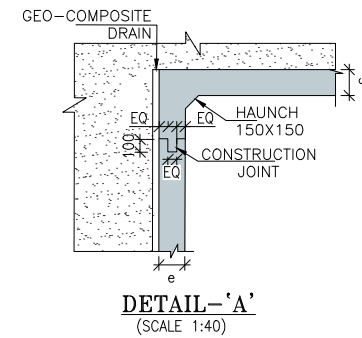
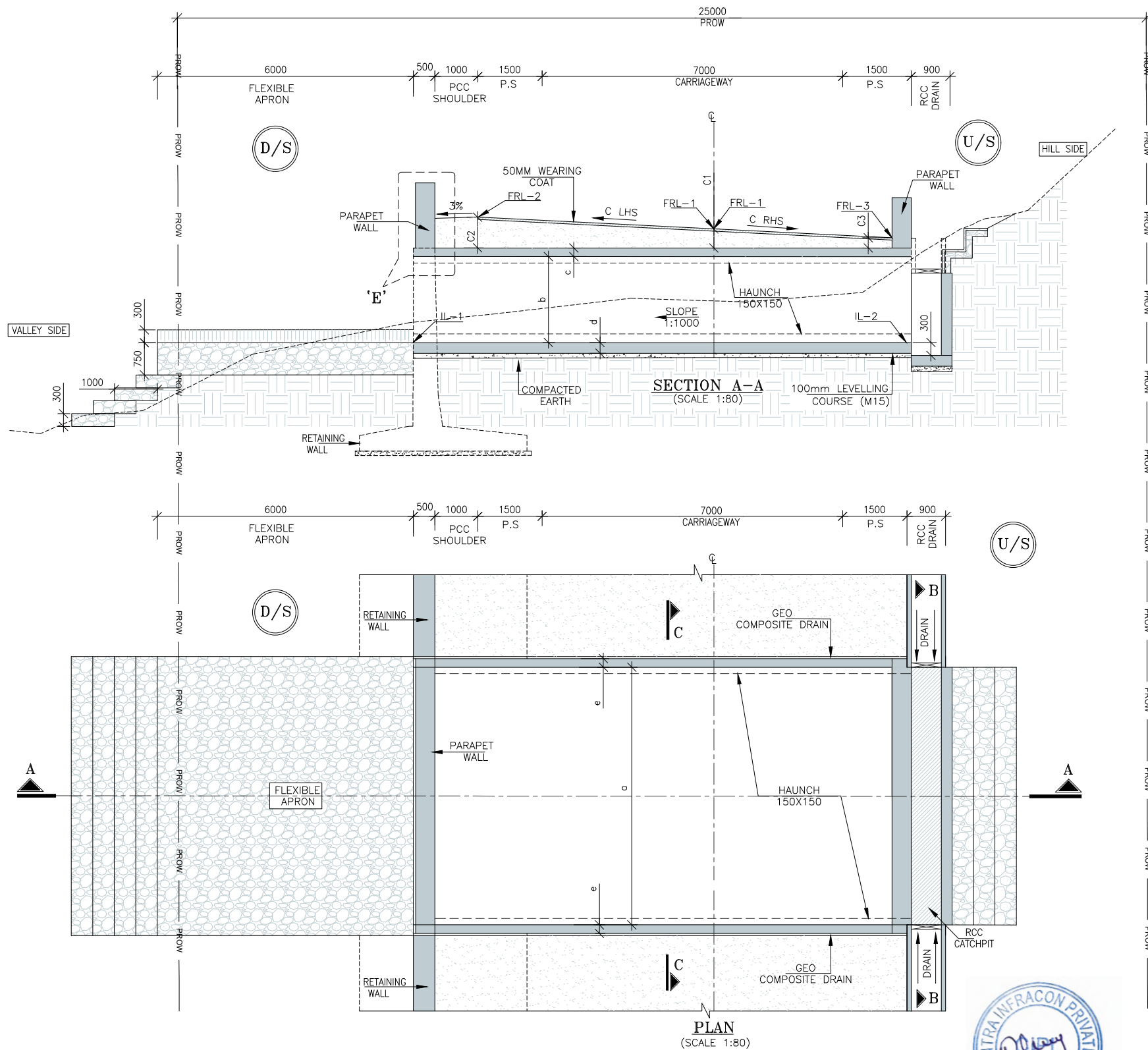
FRL - FINISHED ROAD LEVEL
IL - INVERT LEVEL
GL - GROUND LEVEL
EXP. - EXPANSION



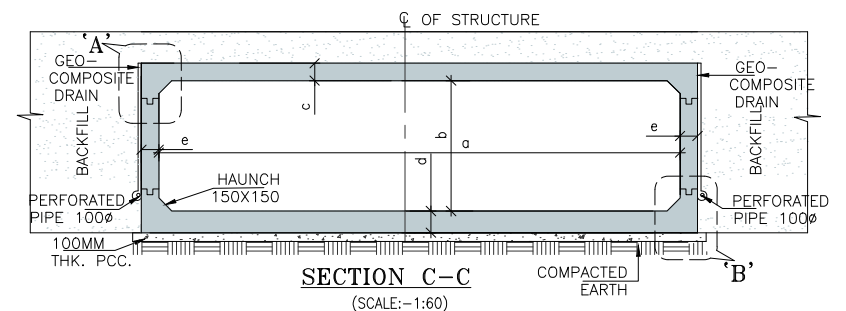
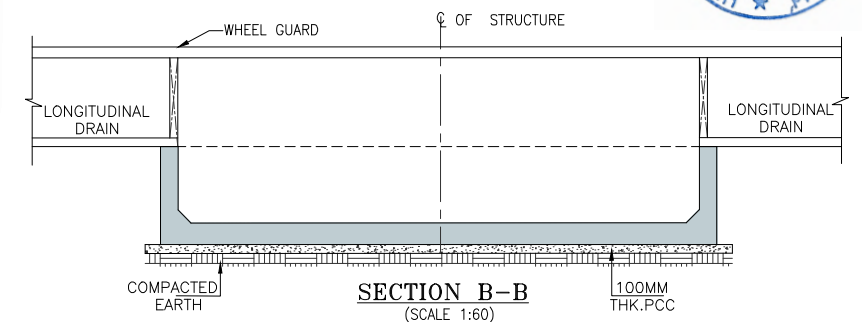
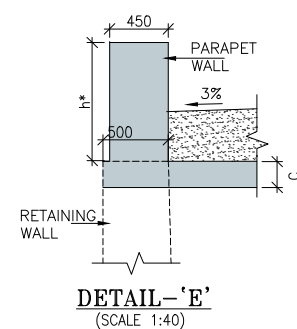
SCHEDULE OF DIMENSION FOR BOX CULVERT																								
S.NO.	CA CHAINAGE	PROPOSED CHAINAGE	MCW CAMBER		TCS	FRL (MCW) (M)			INVERT LEVEL (M)		No. of cells	BOX SIZE		BOX DIMENSION (MCW)			CUSHION MCW (mm)			VARIES (mm)		BOX Length (mm)	REINF. GROUP	SBC REQUIRED (T/SQM)
			C LHS	C RHS		FRL-1	FRL-2	FRL-3	IL-1	IL-2		SPAN (SQ.) (M)	HEIGHT (M)	TOP SLAB (mm)	BOTT. SLAB (mm)	SIDE WALL (mm)								
			C1	C2		C3	LHS	RHS																
1	45+250	45+269	3.42	-3.42	TCS-IX	312.416	312.604	312.228	306.538	306.519	1	2	1.5	200	300	200	4187	4366	4009	3000	3000	19600	G5	15



			CLIENT:  PUBLIC WORK DEPARTMENT MADHYA PRADESH	PROOF CHECK CONSULTANT :  HIGHRAISE CONSTRUCTION AND CONSULTANT PRIVATE LIMITED	DESIGN CONSULTANT :  CIVIL MANTRA INFRACON PVT. LTD. 3rd FLOOR TOWER 3A, DLF CORPORATE GREEN, SECTOR 74A, GURUGRAM - 122004	APPROVED:- SM	PROJECT:- UPGRADATION AND RECONSTRUCTION OF EXISTING INTERMEDIATE LANE TO 2-LANE WITH PAVED SHOULDERS CONFIGURATION (KEN RIVER) TO KM 77.000 (KEN RIVER), LENGTH 34.000 KM ON GULGANJ- AMANGANJ- PAWAI-KATNI NH-43 EXT. ALONG WITH ONE TIME IMPROVEMENT IN 01 NO OF BYPASSED BUILT-UP AREA IN A TOTAL LENGTH OF 1.55 KM IN THE STATE OF MADHYA PRADESH ON EPC MODE.			
R1	JAN-2025	REVISED AS PER LATEST P&P	AUTHORITY ENGINEER :  EARL TECHNO CONSULTANTS PVT. LTD.	SAFETY CONSULTANT :  EARL TECHNO CONSULTANTS PVT. LTD.	EPC CONTRACTOR :  KEYSTONE INFRA PVT. LTD.	CHECKED:- RK	DESIGNED:- ST	TITLE:- GENERAL ARRANGEMENT DRAWING OF BOX CULVERT AT CH-45+269	DATE	JAN-2025
RO	NOV-2024	FOR APPROVAL				SCALE			AS SHOWN	
REV	DATE	DESCRIPTION				SHEET NO.			01 OF 01	
						DRAWN:- SY	DRAWING NO :- CIPL-D1190-45+269-BC-101-01 OF 01-R1-GAD	FORMAT	A3 (420X297)	
								REV	01	



DETAIL FOR 100 Ø PERFORATED PIPE



NOTES:-

- DIMENSIONS ARE IN MILLIMETERS, CHAINAGES & LEVELS ARE IN METER, UNLESS NOTED OTHERWISE.
- CHAINAGES SHOWN HERE ARE ALONG THE CENTER LINE.
- ONLY WRITTEN DIMENSIONS ARE TO BE FOLLOWED, DO NOT SCALE THE DRAWING SLOPE/CAMBER(E%). LAYOUT, SETTING OUT DETAILS, GEOMETRIC DETAIL, PROPOSED CHAINAGE AND ALL LEVELS GIVEN IN THIS DRAWINGS ARE BASED ON HIGHWAY DRAWING.
- BACK FILLING SHALL BE CARRIED OUT WITH SOIL PROPERTIES, $C=0\%$ & $\phi > 30^\circ$. THE SOIL SHALL BE COMPACTED AT OPTIMUM MOISTURE CONTENT TO 98% PROCTOR DENSITY, SHALL BE CONFIRMED AS PER C:710.1.4 OF IRC 78 AND MORTH SPECIFICATIONS.
- THE WORK IS TO BE CARRIED OUT AS PER APPROVED RELEVANT DETAILED DRAWINGS FOR DIFFERENT COMPONENTS OF THE STRUCTURE AND AS PER APPROVED HIGHWAY DRAWING.
- LAYOUT OF STRUCTURE SHALL BE CHECKED AT SITE WITH RESPECT TO FORMATION LEVEL EXISTING GROUND LEVEL AVAILABLE CLEARANCE ETC. AND ANY DISCREPANCY AMBIGUITY FOUND IN DRAWING OR AT SITE SHALL BE BROUGHT TO THE NOTICE OF DESIGN CONSULTANT PRIOR TO EXECUTION OF WORK.
- GRADES CONSIDERED:
BOX :M30
LEVELING COURSE :M15
HYSD STEEL :550D
- CLEAR COVER:
BOTTOM SLAB & WALL(EARTH FACE) 75 MM.
WALL (INNER FACE) & TOP SLAB 45 MM.
- WEARING COAT SHOULD BE PROVIDED AS PER HIGHWAY CRUST.
- SEISMIC ZONE:- II.
- SOIL DENSITY ON THE BACKFILL AND EARTH CUSHION SHOULD CONFORM TO CLAUSE 305 2.1.5 OF MORTH SPECIFICATION FOR ROAD & BRIDGE WORKS (FIFTH REVISION).
- FLEXIBLE APRON 1000 MM THICK COMPRISING OF LOOSE STONE BOULDERS SHOULD BE PROVIDED BEYOND CURTAIN WALL AS PER IRC-SP-13.
- STRUCTURES EXCEEDING 45 M IN LENGTH SHOULD BE PROVIDED WITH ONE OR MORE EXPANSION JOINT.
- PROPOSED STRUCTURE IS DESIGNED FOR LIVE LOAD AS PER IRC-6
CASE 1- 3 LANE OF CLASS A
CASE 2- 1 LANE OF CLASS A + 1 LANE OF 70R
CASE 3- SV
- EXPOSURE CONDITION-SEVERE
- ANY LOOSE/UNSUITABLE MATERIAL FOUND BELOW THE BOX SHALL BE REPLACED WITH GRANULAR MATERIAL LIKE SANDY MURUM OR STONE DUST AS PER IRC:SP:13-2004 CL NO.23.3
- THE MAXIMUM BASE PRESSURE SHALL BE CONSIDERED AS PER DESIGN GIVEN IN TABLE & SHALL BE ENSURED SITE BY DOING PLATE LOAD TEST IF NOT ACHIEVED, SOIL OF 1000mm BELOW G.L SHALL BE REPLACED WITH GRANULAR MATERIAL LIKE SANDY MURUM OR STONE DUST OR GSB AS PER MATERIAL AVAILABLE AT SITE
- PROTECTION WORK ON U/S AND D/S SIDE SHALL BE AS PER AVAILABILITY OF PROW
- REFERS SEPERATE DRAWING FOR RCC CATCHPIT PARAPET WALL RETAINING WALL & REINFORCEMENT.
- GEO COMPOSITE DRAINAGE LAYER SHALL BE PROVIDED UP TO FOUNDATION LEVEL BETWEEN RW AND RETAINED BACKFILL THE GEO-COMPOSITE LAYER SHALL BE COMBINATION OF A LAYER OF GEO-NET IN BETWEEN 02 LAYERS OF GEOTEXTILE CONFORMING TO SECTION 700 OF MORTH SPECIFICATIONS.

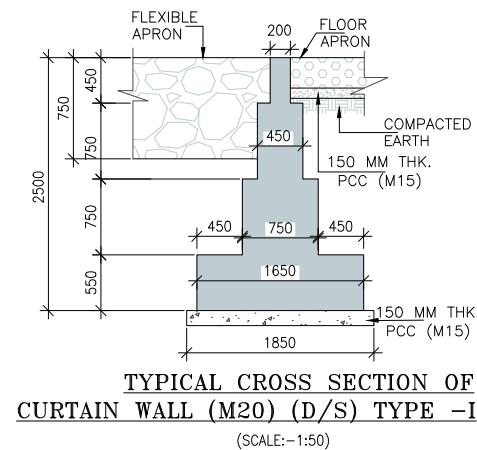
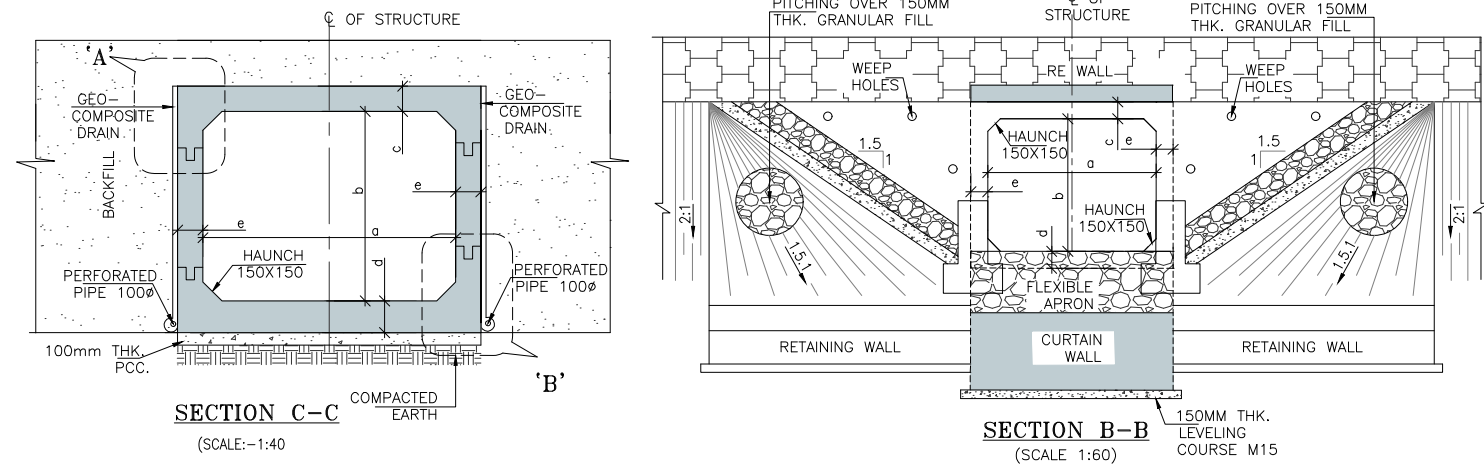
LEGEND:-

- FRL - FINISHED ROAD LEVEL
IL - INVERT LEVEL
GL - GROUND LEVEL
P.S - PAVED SHOULDER
EXP. - EXPANSION



SCHEDULE OF DIMENSION FOR BOX CULVERT																								
S.NO.	CA CHAINAGE	PROPOSED CHAINAGE	MCW CAMBER		TCS	FRL (MCW) (M)			INVERT LEVEL (M)		No. of cells	BOX SIZE		BOX DIMENSION			CUSHION MCW (mm)			BOX Length (mm)	PARAPET HEIGHT LHS(mm)	PARAPET HEIGHT RHS(mm)	REINF. GROUP	SBC REQUIRED (T/SQM)
			C LHS	C RHS		FRL-1	FRL-2	FRL-3	IL-1	IL-2		SPAN (SQ.) (M)	HEIGHT (M)	TOP SLAB (mm)	BOTT. SLAB (mm)	SIDE WALL (mm)								
			1	49+300		49+324	5.00	-2.15	TCS-III-B	426.210		426.460	426.102	423.491	423.502	1	6	2.0	400		450	400		

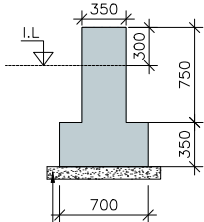
CLIENT: PUBLIC WORK DEPARTMENT MADHYA PRADESH			PROOF CHECK CONSULTANT: HIGHRAISE CONSTRUCTION AND CONSULTANT PRIVATE LIMITED			DESIGN CONSULTANT: CIVIL MANTRA INFRACON PVT. LTD. 3rd FLOOR TOWER 3A, DLF CORPORATE GREEN, SECTOR 74A, GURUGRAM - 122004			APPROVED:- SM			PROJECT:- UPGRADATION AND RECONSTRUCTION OF EXISTING INTERMEDIATE LANE TO 2-LANE WITH PAVED SHOULDERS CONFIGURATION FROM KM 43.000 (BARNA RIVER) TO KM 77.000 (KEN RIVER), LENGTH 34.000 KM ON GULGANJ-AMANGANJ-PAWAI-KATNI NH-43 EXT. ALONG WITH ONE TIME IMPROVEMENT IN 01 NO OF BYPASSED BUILT-UP AREA IN A TOTAL LENGTH OF 1.55 KM IN THE STATE OF MADHYA PRADESH ON EPC MODE.		
AUTHORITY ENGINEER:			SAFETY CONSULTANT: EARL TECHNO CONSULTANTS PVT. LTD.			EPC CONTRACTOR: KEYSTONE INFRA PVT. LTD.			CHECKED:- RK			TITLE:- GENERAL ARRANGEMENT DRAWING OF BOX CULVERT AT CH-49+324		
REVISED AS PER LATEST P&P			FOR APPROVAL			DRAWN:- SY			DRAWING NO :- CIPL-D1190-CH-49+324-BC-101-01 OF 01-R1-GAD			DATE: JAN-2025		
JAN-2025			NOV-2024			SCALE: AS SHOWN			SHEET NO: 01 OF 01			FORMAT: A3 (420X297)		
DATE			DESCRIPTION			REV: R1								



LEGEND:-

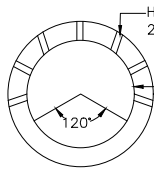
FRL	—	FINISHED ROAD LEVEL
IL	—	INVERT LEVEL
GL	—	GROUND LEVEL
EXP.	—	EXPANSION





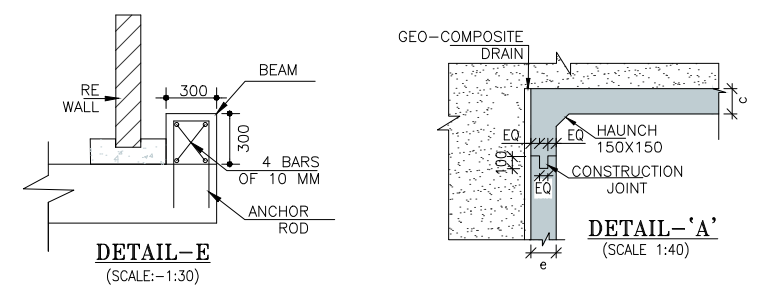
DETAIL OF TOE WALL

(SCALE: -1: 40)

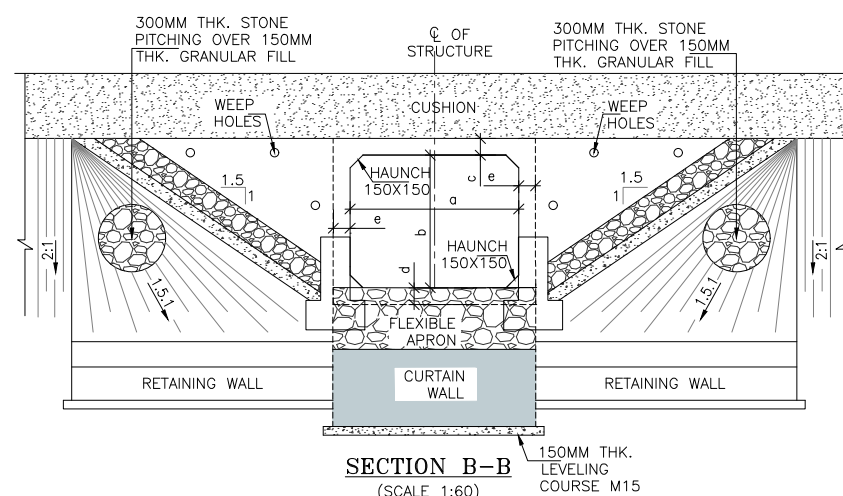
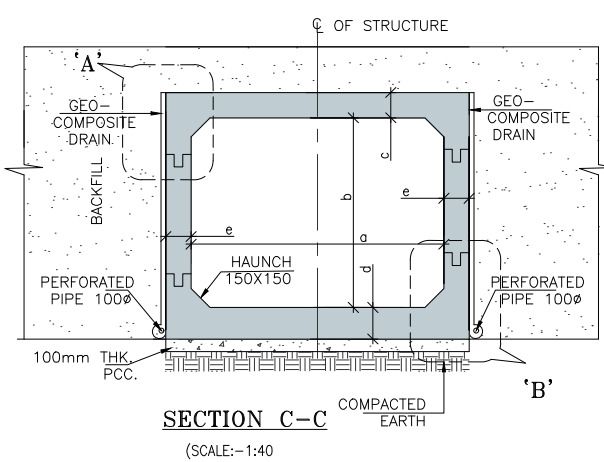
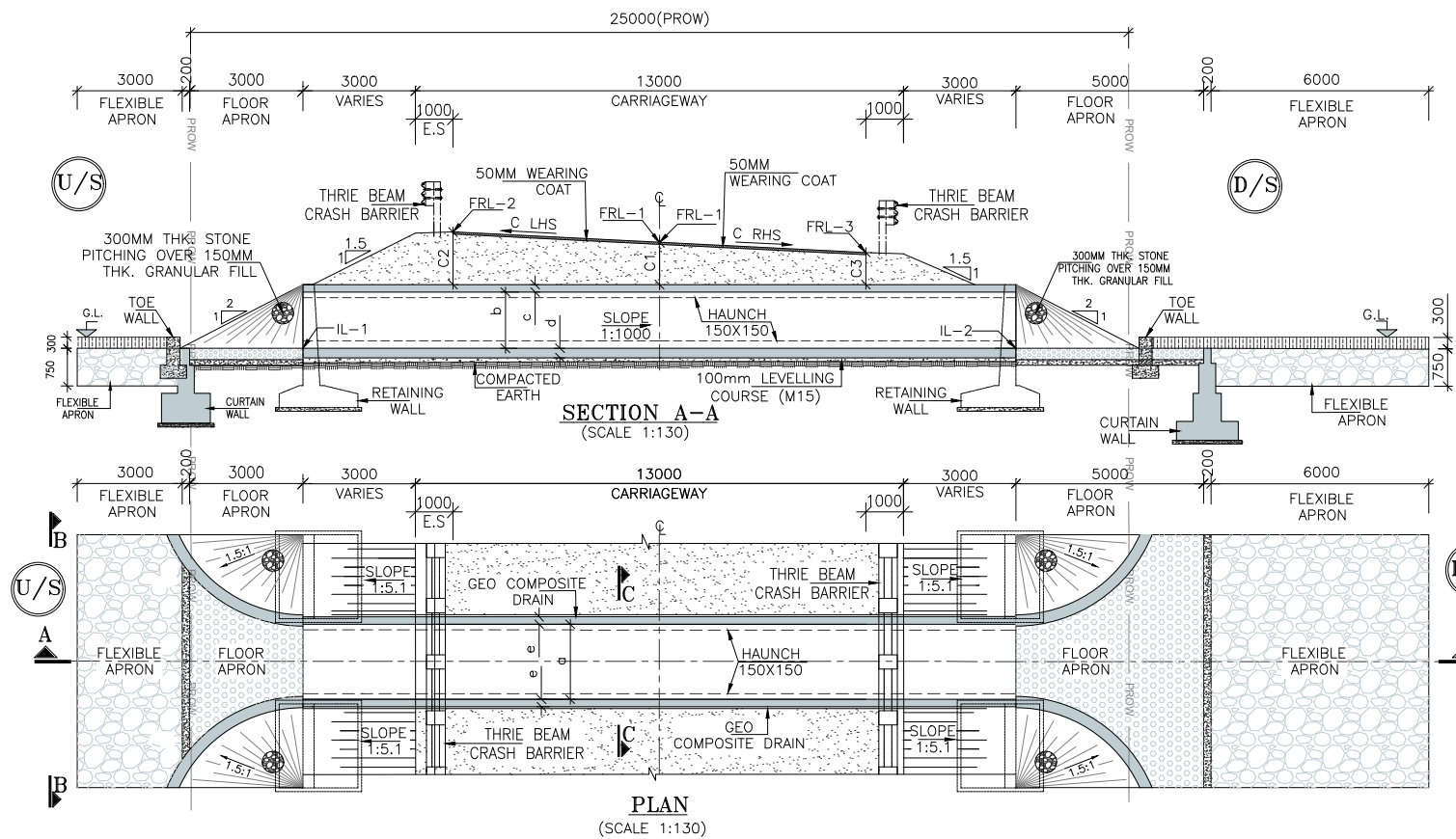


DETAIL FOR 100 Ø PERFORATED PIPE

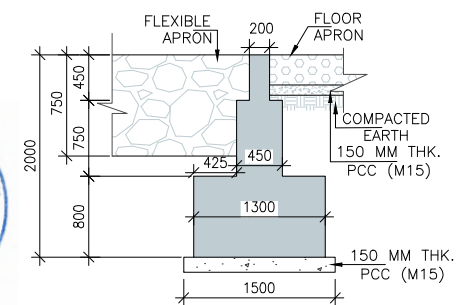
SCHEDULE OF DIMENSION FOR BOX CULVERT																								
S.NO.	CA CHAINAGE	PROPOSED CHAINAGE	MCW CAMBER		TCS	FRL (MCW) (M)			INVERT LEVEL (M)		BOX SIZE			BOX DIMENSION (MCW)			CUSHION MCW (mm)			VARIES (mm)		BOX Length (mm)	REINF. GROUP	SBC REQUIRED (T/SQM)
											No. of cells	SPAN (M)	HEIGHT (M)	TOP SLAB (mm)	BOTT. SLAB (mm)	SIDE WALL (mm)								
			C LHS	C RHS		FRL-1	FRL-2	FRL-3	IL-1	IL-2							a	b	c	d	e			
1	55100	55100	4.70	-4.70	TCS-IX	431.639	431.898	431.381	425.345	425.326	1	2	1.5	200	300	200	4604	4853	4355	3000	3000	19600	G5	15



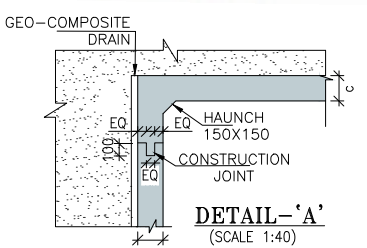
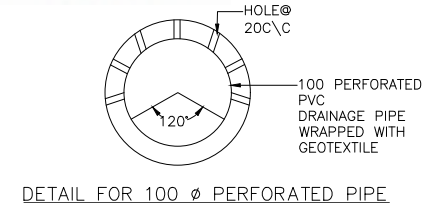
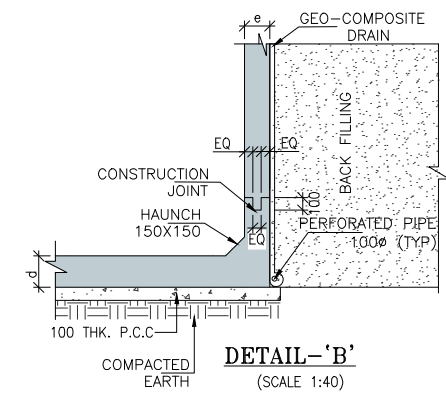
			CLIENT: PUBLIC WORK DEPARTMENT MADHYA PRADESH	PROOF CHECK CONSULTANT : HIGHRAISE CONSTRUCTION AND CONSULTANT PRIVATE LIMITED	DESIGN CONSULTANT : CIVIL MANTRA INFRACON PVT. LTD. 3rd FLOOR TOWER 3A, DLF CORPORATE GREEN, SECTOR 74A, GURUGRAM - 122004	APPROVED:- SM	PROJECT:- UPGRADEATION AND RECONSTRUCTION OF EXISTING INTERMEDIATE LANE TO 2-LANE WITH PAVED SHOULDERS (CONFIGURATION FROM KM 43.000 (KEN RIVER) TO KM 77.000 (KEN RIVER). LENGTH 34.000 KM ON GULGANJ- AMANGANJ- PAWAI-KATNI NH-43 EXT. ALONG WITH ONE TIME IMPROVEMENT IN 01 NO OF BYPASSED BUILT-UP AREA IN A TOTAL LENGTH OF 1.55 KM IN THE STATE OF MADHYA PRADESH ON EPC MODE.			
R1	JAN-2025	REVISED AS PER LATEST P&P	AUTHORITY ENGINEER :  EARL TECHNO CONSULTANTS PVT. LTD.	SAFETY CONSULTANT :  EARL TECHNO CONSULTANTS PVT. LTD.	EPC CONTRACTOR :  KEYSTONE INFRA PVT. LTD.	CHECKED:- RK		DESIGNED:- ST	TITLE:- GENERAL ARRANGEMENT DRAWING OF BOX CULVERT AT CH-55+100	
R0	NOV-2024	FOR APPROVAL				DATE		SCALE	SHEET NO.	FORMAT
REV	DATE	DESCRIPTION				REV		AS SHOWN	01 OF 01	A3 (420X297)
							DRAWN:- SY	DRAWING NO :- CIPL-D1190-55+100-BC-101-01 OF 01-R1-GAD		



TYPICAL CROSS SECTION OF CURTAIN WALL (M20) (D/S) TYPE -I
(SCALE:-1:50)



TYPICAL CROSS SECTION OF CURTAIN WALL (M20) (U/S) TYPE -II
(SCALE:-1:50)

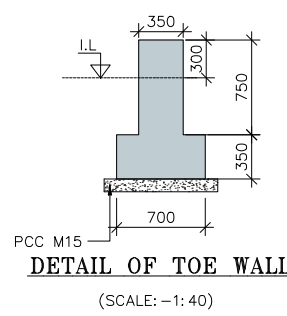


- NOTES:-**
- DIMENSIONS ARE IN MILLIMETERS, CHAINAGES & LEVELS ARE IN METER, UNLESS NOTED OTHERWISE.
 - CHAINAGES SHOWN HERE ARE ALONG THE CENTER LINE.
 - ONLY WRITTEN DIMENSIONS ARE TO BE FOLLOWED, DO NOT SCALE THE DRAWING SLOPE/CAMBER(E%). LAYOUT, SETTING OUT DETAILS, GEOMETRIC DETAIL, PROPOSED CHAINAGE AND ALL LEVELS GIVEN IN THIS DRAWINGS ARE BASED ON HIGHWAY DRAWING.
 - BACK FILLING SHALL BE CARRIED OUT WITH SOIL PROPERTIES, $C=0\%$ & $\phi > 30^\circ$. THE SOIL SHALL BE COMPACTED AT OPTIMUM MOISTURE CONTENT TO 98% PROCTOR DENSITY, SHALL BE CONFIRMED AS PER C:710.1.4 OF IRC 78 AND MORTH SPECIFICATIONS.
 - THE WORK IS TO BE CARRIED OUT AS PER APPROVED RELEVANT DETAILED DRAWINGS FOR DIFFERENT COMPONENTS OF THE STRUCTURE AND AS PER APPROVED HIGHWAY DRAWING.
 - LAYOUT OF STRUCTURE SHALL BE CHECKED AT SITE WITH RESPECT TO FORMATION LEVEL EXISTING GROUND LEVEL AVAILABLE CLEARANCE ETC. AND ANY DISCREPANCY AMBIGUITY FOUND IN DRAWING OR AT SITE SHALL BE BROUGHT TO THE NOTICE OF DESIGN CONSULTANT PRIOR TO EXECUTION OF WORK.
 - GRADES CONSIDERED:
BOX : M30
LEVELING COURSE : M15
HYSD STEEL : 550D
 - CLEAR COVER:
BOTTOM SLAB & WALL (EARTH FACE) 75 MM.
WALL (INNER FACE) & TOP SLAB 45 MM.
WEARING COAT SHOULD BE PROVIDED AS PER HIGHWAY CRUST.
 - SEISMIC ZONE:- II
 - SOIL DENSITY ON THE BACKFILL AND EARTH CUSHION SHOULD CONFORM TO CLAUSE 305 2.1.5 OF MORTH SPECIFICATION FOR ROAD & BRIDGE WORKS (FIFTH REVISION)
 - FLEXIBLE APRON 1000 MM THICK COMPRISING OF LOOSE STONE BOULDERS SHOULD BE PROVIDED BEYOND CURTAIN WALL AS PER IRC-SP-13.
 - STRUCTURES EXCEEDING 45 M IN LENGTH SHOULD BE PROVIDED WITH ONE OR MORE EXPANSION JOINT.
 - PROPOSED STRUCTURE IS DESIGNED FOR LIVE LOAD AS PER IRC-6
CASE 1- 3 LANE OF CLASS A
CASE 2- 1 LANE OF CLASS A + 1 LANE OF 70R
CASE 3- SV
 - EXPOSURE CONDITION- SEVERE
 - ANY LOOSE/UNSUITABLE MATERIAL FOUND BELOW THE BOX SHALL BE REPLACED WITH GRANULAR MATERIAL LIKE SANDY MURUM OR STONE DUST AS PER IRC:SP-13-2004 CL NO.23.3
 - THE MAXIMUM BASE PRESSURE SHALL BE CONSIDERED AS PER DESIGN GIVEN IN TABLE & SHALL BE ENSURED SITE BY DOING PLATE LOAD TEST IF NOT ACHIEVED. SOIL OF 1000mm BELOW G.L SHALL BE REPLACED WITH GRANULAR MATERIAL LIKE SANDY MURUM OR STONE DUST OR GSB AS PER MATERIAL AVAILABLE AT SITE
 - PROTECTION WORK ON U/S AND D/S SIDE SHALL BE AS PER AVAILABILITY OF PROW
 - GEO COMPOSITE DRAINAGE LAYER SHALL BE PROVIDED UP TO FOUNDATION LEVEL BETWEEN RW AND RETAINED BACKFILL THE GEO-COMPOSITE LAYER SHALL BE COMBINATION OF A LAYER OF GEO-NET IN BETWEEN 02 LAYERS OF GEOTEXTILE CONFORMING TO SECTION 700 OF MORTH SPECIFICATIONS.
 - REFER SEPARATE DRAWING FOR RETAINING WALL.

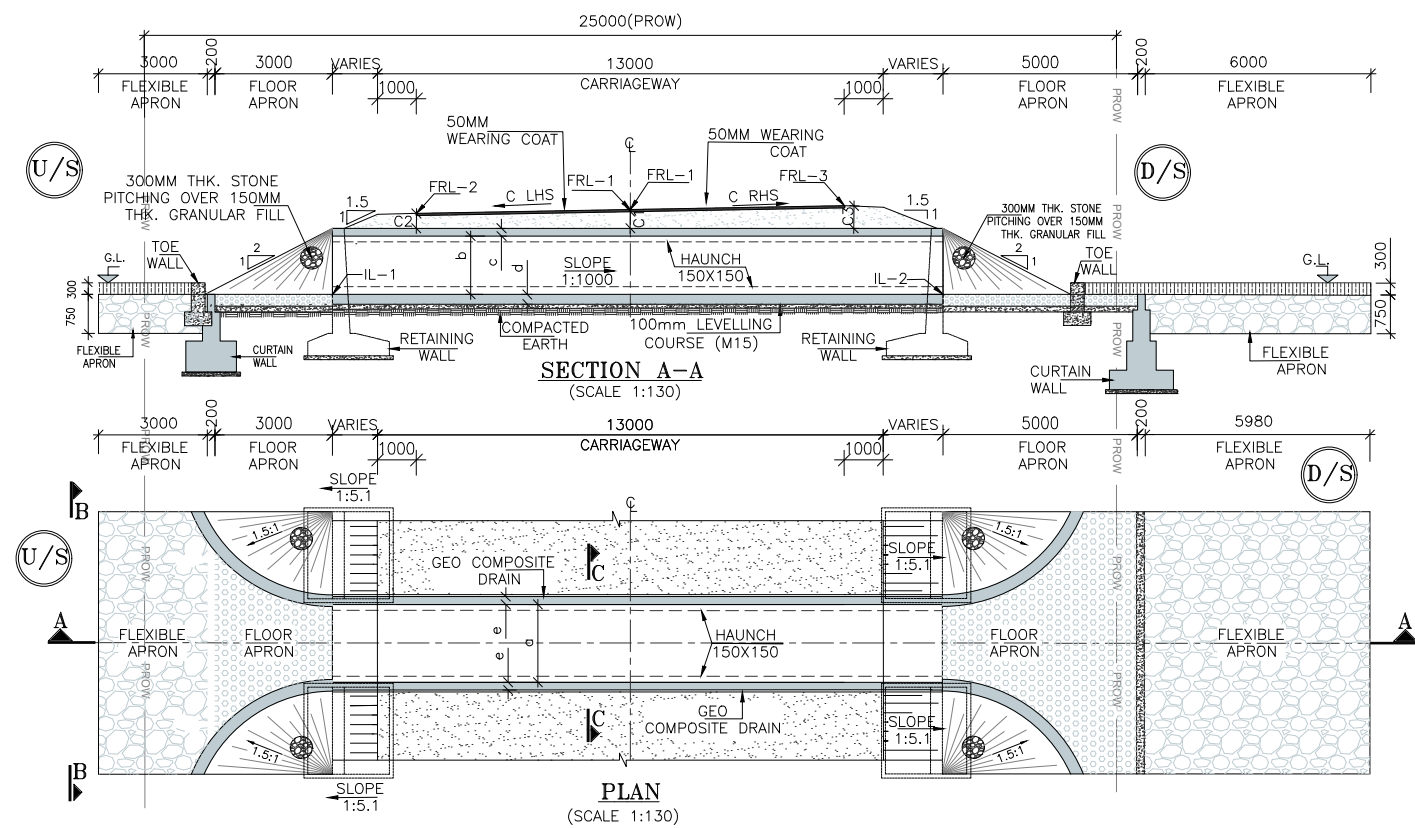
- LEGEND:-**
- FRL - FINISHED ROAD LEVEL
 - IL - INVERT LEVEL
 - GL - GROUND LEVEL
 - EXP. - EXPANSION

SCHEDULE OF DIMENSION FOR BOX CULVERT

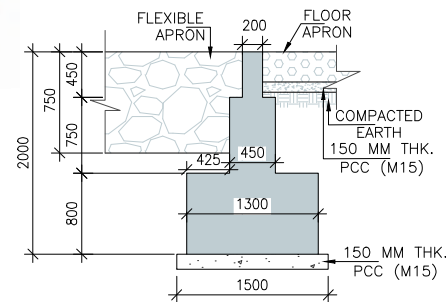
S.NO.	CA CHAINAGE	PROPOSED CHAINAGE	MCW CAMBER		TCS	FRL (MCW) (M)			INVERT LEVEL (M)		No. of cells	BOX SIZE		BOX DIMENSION (MCW)			CUSHION MCW (mm)			VARIES (mm)		BOX Length (mm)	REINF. GROUP	SBC REQUIRED (T/SQM)
			C LHS	C RHS		FRL-1	FRL-2	FRL-3	IL-1	IL-2		SPAN (SQ.) (M)	HEIGHT (M)	TOP SLAB (mm)	BOTT. SLAB (mm)	SIDE WALL (mm)	C1	C2	C3	LHS	RHS			
1	55+950	55+972	4.73	-0.24	TCS-IX	456.720	456.980	456.707	454.826	454.807	1	a	b	c	d	e	203	454	200	3000	3000	19000	G1	12



			CLIENT:  PUBLIC WORK DEPARTMENT MADHYA PRADESH			PROOF CHECK CONSULTANT :  HIGHRAISE CONSTRUCTION AND CONSULTANT PRIVATE LIMITED			DESIGN CONSULTANT :  CIVIL MANTRA INFRACON PVT. LTD. 3rd FLOOR TOWER 3A, DLF CORPORATE GREEN, SECTOR 74A, GURUGRAM - 122004			APPROVED:- SM		PROJECT:- UPGRADATION AND RECONSTRUCTION OF EXISTING INTERMEDIATE LANE TO 2-LANE WITH PAVED SHOULDERS CONFIGURATION FROM KM 43.000 (BARNA RIVER) TO KM 77.000 (KEN RIVER), LENGTH 34.000 KM ON GULGANJ- AMANGANJ- PAWAI-KATNI NH-43 EXT. ALONG WITH ONE TIME IMPROVEMENT IN 01 NO OF BYPASSED BUILT-UP AREA IN A TOTAL LENGTH OF 1.55 KM IN THE STATE OF MADHYA PRADESH ON EPC MODE.															
			AUTHORITY ENGINEER :			SAFETY CONSULTANT :  EARL TECHNO CONSULTANTS PVT. LTD.			EPC CONTRACTOR :  KEYSTONE INFRA PVT. LTD.		CHECKED:- RK																		
R1			JAN-2025			REVISED AS PER LATEST P&P			DESIGNED:- ST			DRAWN:- SY																	
R0			NOV-2024			FOR APPROVAL			TITLE:- GENERAL ARRANGEMENT DRAWING OF BOX CULVERT AT CH-55+972			DRAWING NO :- CIPL-D1190-55+972-BC-101-01 OF 01-R1-GAD																	
REV			DATE			DESCRIPTION								<table><tr><td>DATE</td><td>JAN-2025</td></tr><tr><td>SCALE</td><td>AS SHOWN</td></tr><tr><td>SHEET NO.</td><td>01 OF 01</td></tr><tr><td>FORMAT</td><td>A3 (420X297)</td></tr><tr><td>REV.</td><td>BT</td></tr></table>						DATE	JAN-2025	SCALE	AS SHOWN	SHEET NO.	01 OF 01	FORMAT	A3 (420X297)	REV.	BT
DATE	JAN-2025																												
SCALE	AS SHOWN																												
SHEET NO.	01 OF 01																												
FORMAT	A3 (420X297)																												
REV.	BT																												



TYPICAL CROSS SECTION OF CURTAIN WALL (M20) (D/S) TYPE -I
(SCALE:-1:50)



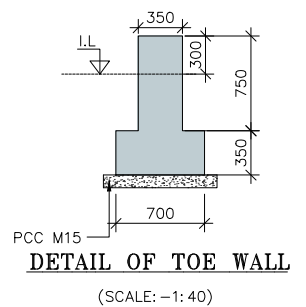
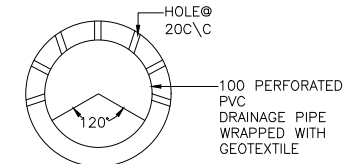
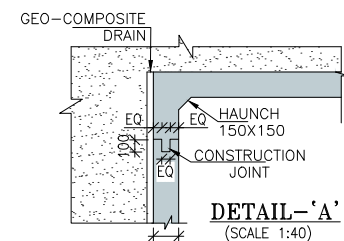
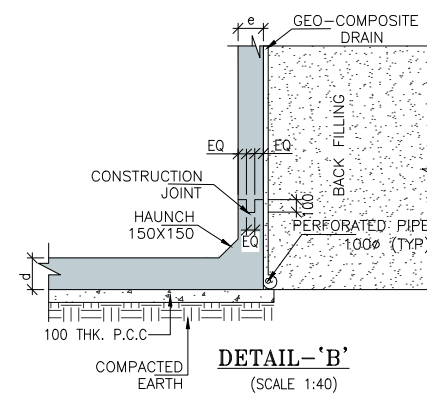
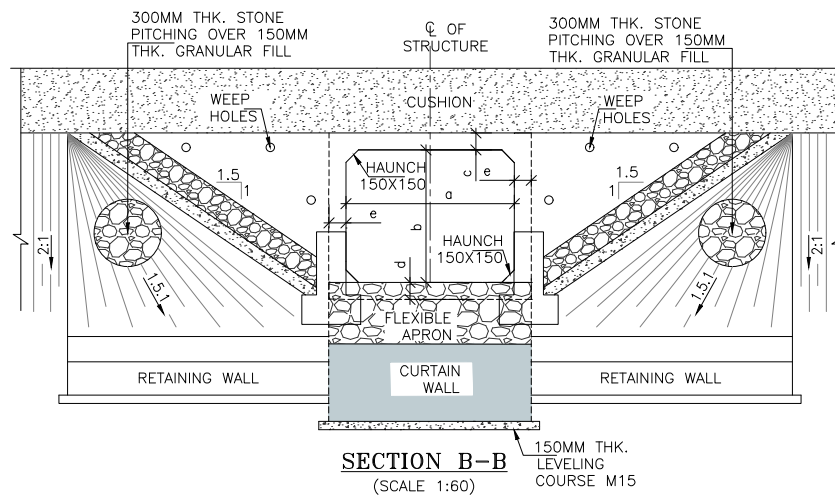
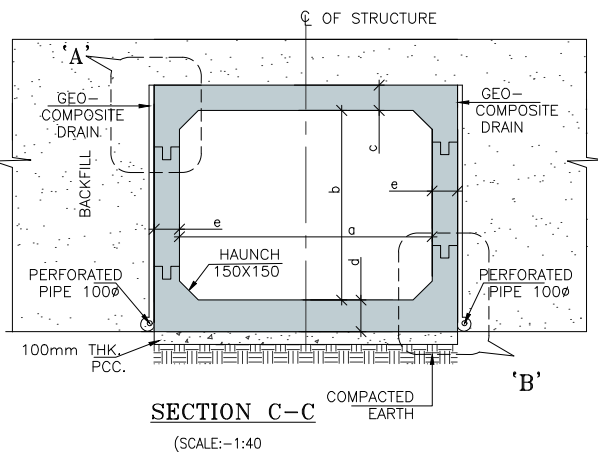
TYPICAL CROSS SECTION OF CURTAIN WALL (M20) (U/S) TYPE -II
(SCALE:-1:50)

NOTES:-

- DIMENSIONS ARE IN MILLIMETERS, CHAINAGES & LEVELS ARE IN METER, UNLESS NOTED OTHERWISE.
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- BACK FILLING SHALL BE CARRIED OUT WITH SOIL PROPERTIES, $C=0\%$ & $\phi > 30^\circ$. THE SOIL SHALL BE COMPACTED AT OPTIMUM MOISTURE CONTENT TO 98% PROCTOR DENSITY, SHALL BE CONFIRMED AS PER C:710.1.4 OF IRC 78 AND MORTH SPECIFICATIONS.
- THE WORK IS TO BE CARRIED OUT AS PER APPROVED RELEVANT DETAILED DRAWINGS FOR DIFFERENT COMPONENTS OF THE STRUCTURE AND AS PER APPROVED HIGHWAY DRAWING.
- LAYOUT OF STRUCTURE SHALL BE CHECKED AT SITE WITH RESPECT TO FORMATION LEVEL EXISTING GROUND LEVEL AVAILABLE CLEARANCE ETC. AND ANY DISCREPANCY AMBIGUITY FOUND IN DRAWING OR AT SITE SHALL BE BROUGHT TO THE NOTICE OF DESIGN CONSULTANT PRIOR TO EXECUTION OF WORK.
- GRADES CONSIDERED:
BOX :M30
LEVELING COURSE :M15
HYSD STEEL :550D
- CLEAR COVER:
BOTTOM SLAB & WALL(EARTH FACE) 75 MM.
WALL (INNER FACE) & TOP SLAB 45 MM.
WEARING COAT SHOULD BE PROVIDED AS PER HIGHWAY CRUST.
- SEISMIC ZONE:- II.
- SOIL DENSITY ON THE BACKFILL AND EARTH CUSHION SHOULD CONFORM TO CLAUSE 305 2.1.5 OF MORTH SPECIFICATION FOR ROAD & BRIDGE WORKS (FIFTH REVISION)
- FLEXIBLE APRON 1000 MM THICK COMPRISING OF LOOSE STONE BOULDERS SHOULD BE PROVIDED BEYOND CURTAIN WALL AS PER IRC-SP-13.
- STRUCTURES EXCEEDING 45 M IN LENGTH SHOULD BE PROVIDED WITH ONE OR MORE EXPANSION JOINT.
- PROPOSED STRUCTURE IS DESIGNED FOR LIVE LOAD AS PER IRC-6
CASE 1 - 3 LANE OF CLASS A
CASE 2 - 1 LANE OF CLASS A + 1 LANE OF 70R
CASE 3 - SV
- EXPOSURE CONDITION-SEVERE
- ANY LOOSE/UNSUITABLE MATERIAL FOUND BELOW THE BOX SHALL BE REPLACED WITH GRANULAR MATERIAL LIKE SANDY MURUM OR STONE DUST AS PER IRC:SP-13-2004 CL NO.23.3
- THE MAXIMUM BASE PRESSURE SHALL BE CONSIDERED AS PER DESIGN GIVEN IN TABLE & SHALL BE ENSURED SITE BY DOING PLATE LOAD TEST IF NOT ACHIEVED. SOIL OF 1000mm BELOW G.L SHALL BE REPLACED WITH GRANULAR MATERIAL LIKE SANDY MURUM OR STONE DUST OR GSB AS PER MATERIAL AVAILABLE AT SITE
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- REFER SEPARATE DRAWING FOR RETAINING WALL.

LEGEND:-

FRL - FINISHED ROAD LEVEL
IL - INVERT LEVEL
GL - GROUND LEVEL
EXP. - EXPANSION



SCHEDULE OF DIMENSION FOR BOX CULVERT

SCHEDULE OF DIMENSION FOR BOX CULVERT																								
S.NO.	CA CHAINAGE	PROPOSED CHAINAGE	MCW CAMBER		TCS	FRL (MCW) (M)			INVERT LEVEL (M)		BOX SIZE			BOX DIMENSION (MCW)			CUSHION MCW (mm)			VARIES (mm)		BOX Length (mm)	REINF. GROUP	SBC REQUIRED (T/SQM)
											No. of cells	SPAN (SQ.) (M)	HEIGHT (M)	TOP SLAB (mm)	BOTT. SLAB (mm)	SIDE WALL (mm)								
			C LHS	C RHS		FRL-1	FRL-2	FRL-3	IL-1	IL-2							a	b	c	d	e			
1	56+015	56+033	-1.95	0.04	TCS-IX	459.358	459.251	459.360	457.351	457.337	1	2	1.5	200	250	200	314	200	323	300	200	13500	G1	12

CLIENT:
PUBLIC WORK DEPARTMENT MADHYA PRADESH

AUTHORITY ENGINEER :

PROOF CHECK CONSULTANT :
HIGHRAISE CONSTRUCTION AND CONSULTANT PRIVATE LIMITED

SAFETY CONSULTANT :
EARL TECHNO CONSULTANTS PVT. LTD.

DESIGN CONSULTANT :
CIVIL MANTRA INFRACON PVT. LTD.

EPC CONTRACTOR :
KEYSTONE INFRA PVT. LTD.

APPROVED:- SM

CHECKED:- RK

DESIGNED:- ST

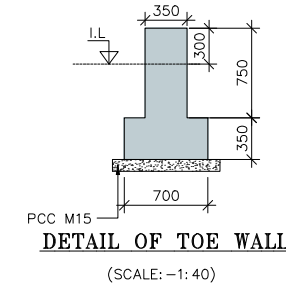
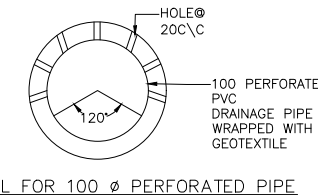
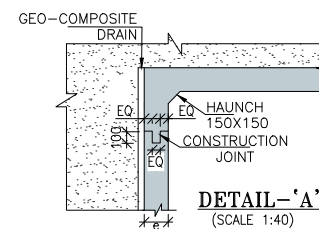
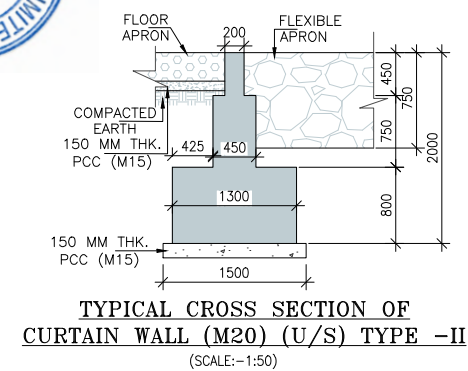
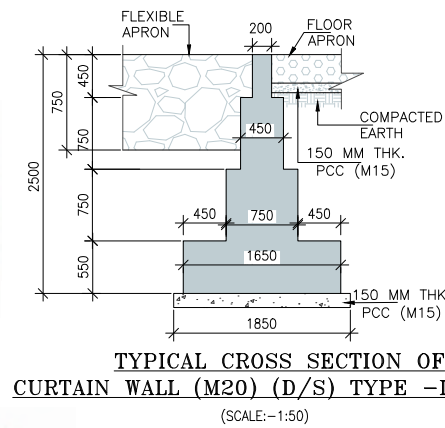
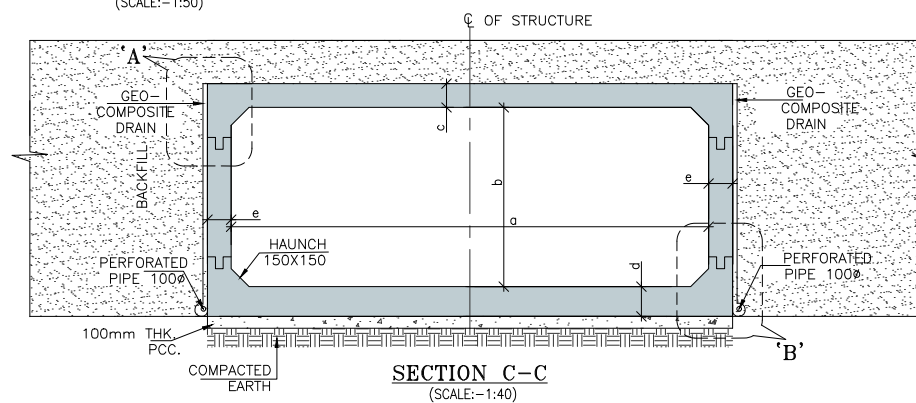
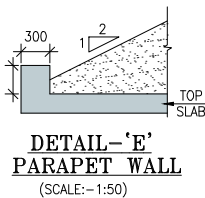
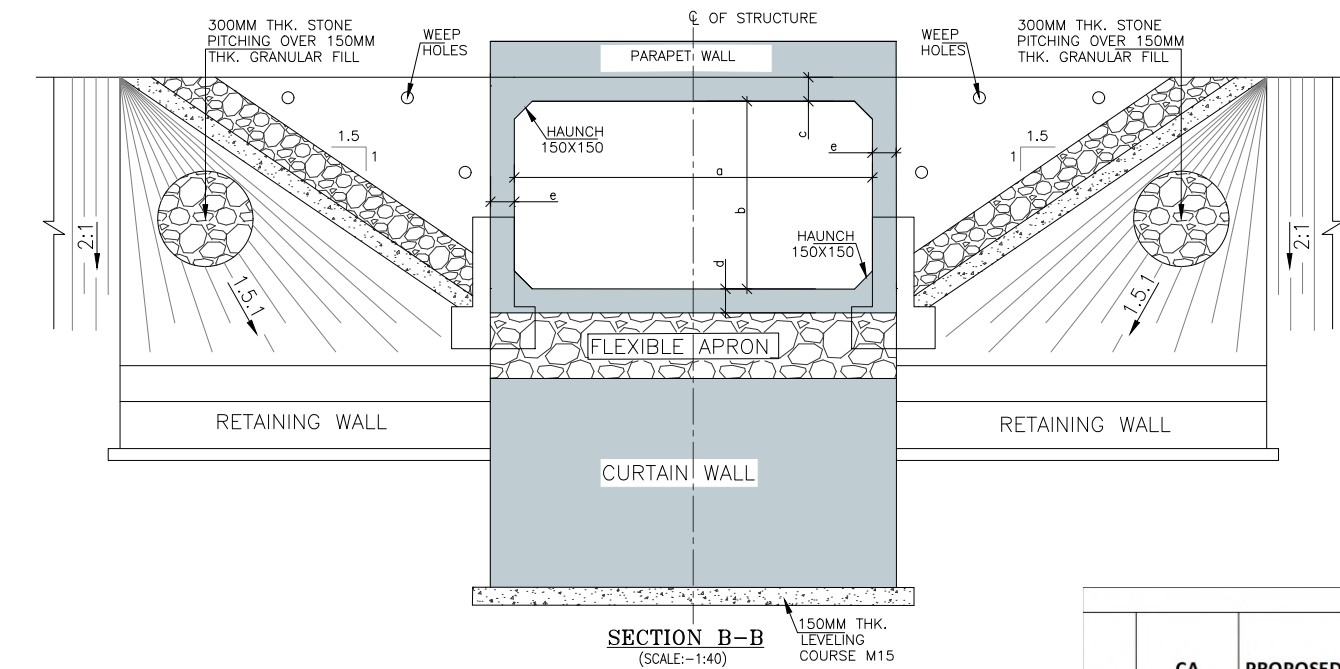
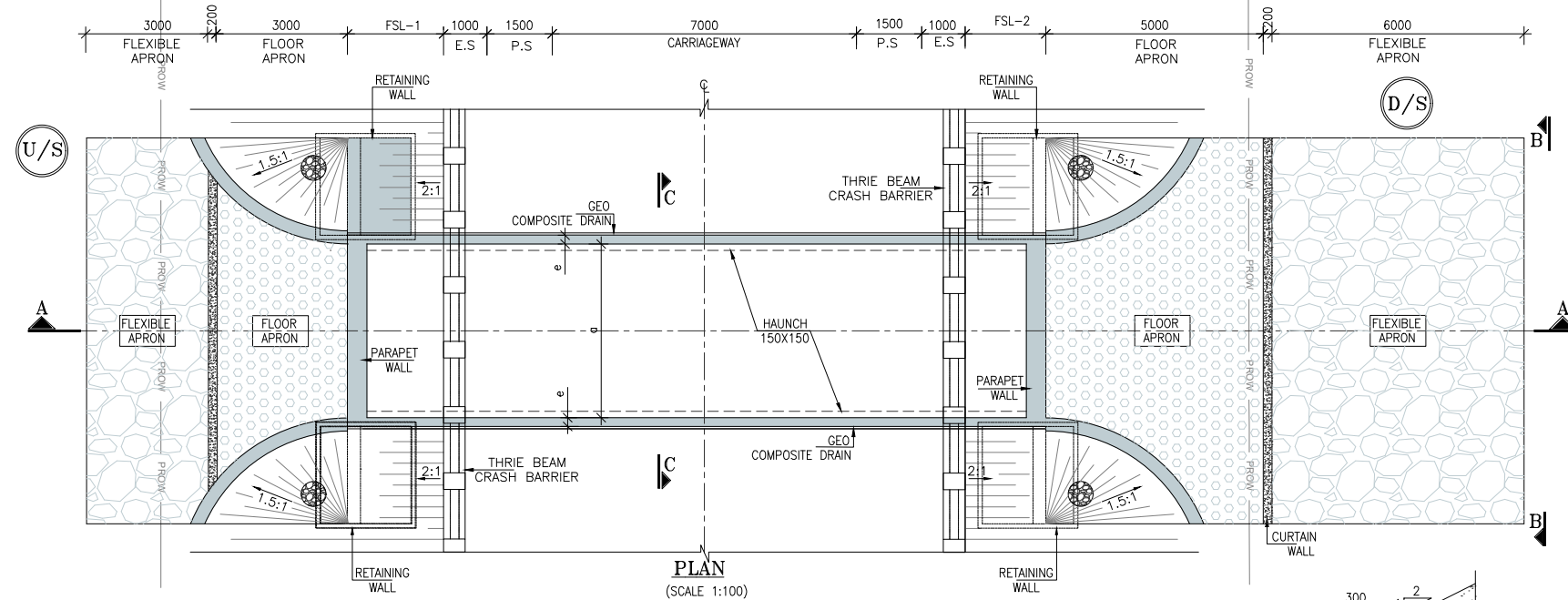
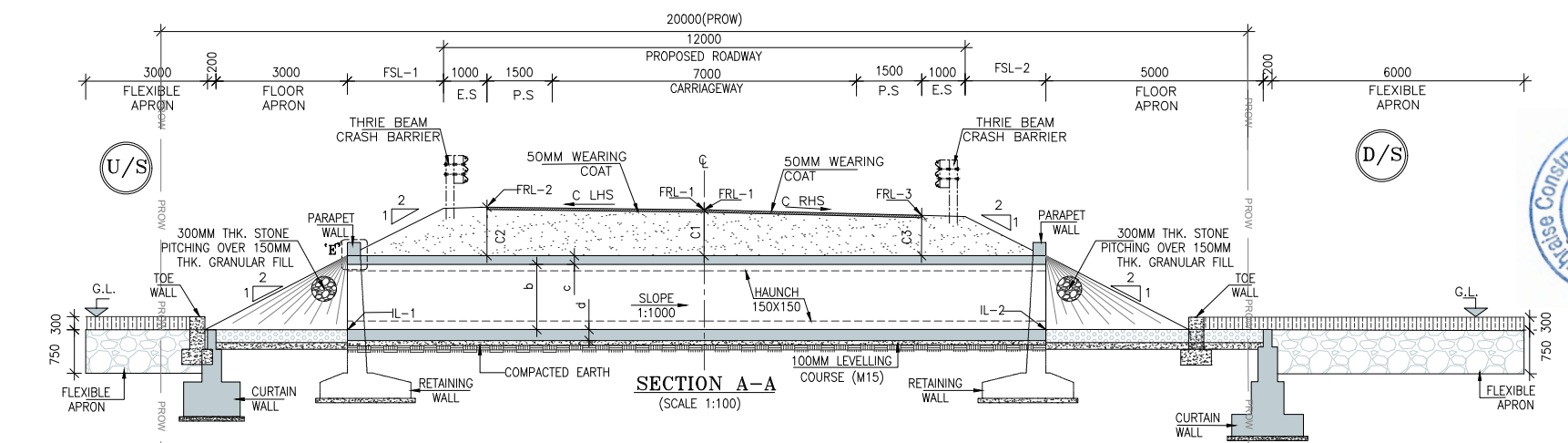
DRAWN:- SY

PROJECT:- UPGRADATION AND RECONSTRUCTION OF EXISTING INTERMEDIATE LANE TO 2-LANE WITH PAVED SHOULDERS CONFIGURATION FROM KM 43.000 (BARNA RIVER) TO KM 77.000 (KEN RIVER), LENGTH 34.000 KM ON GULGANJ- AMANGANJ- PAWAI-KATNI NH-43 EXT. ALONG WITH ONE TIME IMPROVEMENT IN 01 NO OF BYPASSED BUILT-UP AREA IN A TOTAL LENGTH OF 1.55 KM IN THE STATE OF MADHYA PRADESH ON EPC MODE.

TITLE:- GENERAL ARRANGEMENT DRAWING OF BOX CULVERT AT CH-56+033

DRAWING NO :- CIPL-D1190-56+033-BC-101-01 OF 01-R1-GAD

DATE: JAN-2025
SCALE: AS SHOWN
SHEET NO: 01 OF 01
FORMAT: A3 (420X297)
REV: R1



NOTES:-

- DIMENSIONS ARE IN MILLIMETERS, CHAINAGES & LEVELS ARE IN METER, UNLESS NOTED OTHERWISE.
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- GRADES CONSIDERED:
BOX :M30
LEVELLING COURSE :M15
HYSD STEEL :S500
- CLEAR COVER:
BOTTOM SLAB & WALL(EARTH FACE) 75 MM.
WALL (INNER FACE) & TOP SLAB 45 MM.
- WEARING COAT SHOULD BE PROVIDED AS PER HIGHWAY CRUST.
- SEISMIC ZONE:- II.
- SOIL DENSITY ON THE BACKFILL AND EARTH CUSHION SHOULD CONFORM TO CLAUSE 305 2.1.5 OF MORTH SPECIFICATION FOR ROAD & BRIDGE WORKS (FIFTH REVISION).
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- REFER SEPARATE DRAWING FOR RETAINING WALL & PARAPET WALL.

LEGEND:-

FRL - FINISHED ROAD LEVEL
IL - INVERT LEVEL
GL - GROUND LEVEL
EXP. - EXPANSION

SCHEDULE OF DIMENSION FOR BOX CULVERT

SCHEDULE OF DIMENSION FOR BOX CULVERT																									
S.NO.	CA CHAINAGE	PROPOSED CHAINAGE	MCW CAMBER		TCS	FRL (MCW) (M)			INVERT LEVEL (M)		No. of cells	BOX SIZE		BOX DIMENSION			CUSHION MCW (mm)			Extended Length		BOX Length (mm)	PARAPET HEIGHT (mm)	REINF. GROUP	SBC REQUIRED (T/SQM)
			LHS	RHS		FRL-1	FRL-2	FRL-3	IL-1	IL-2		SPAN (M)	HEIGHT (M)	TOP SLAB (mm)	BOTT. SLAB (mm)	SIDE WALL (mm)	C1	C2	C3	FS1 (mm)	FS2 (mm)				
1	57+875	57+910	5.00	-5.00	TCS-II-B	495.697	495.947	495.447	492.344	492.332	1	5	2.0	350	400	350	1009	1253	765	2446	1470	15520	300	G29	12

CLIENT:
PUBLIC WORK DEPARTMENT MADHYA PRADESH
AUTHORITY ENGINEER:

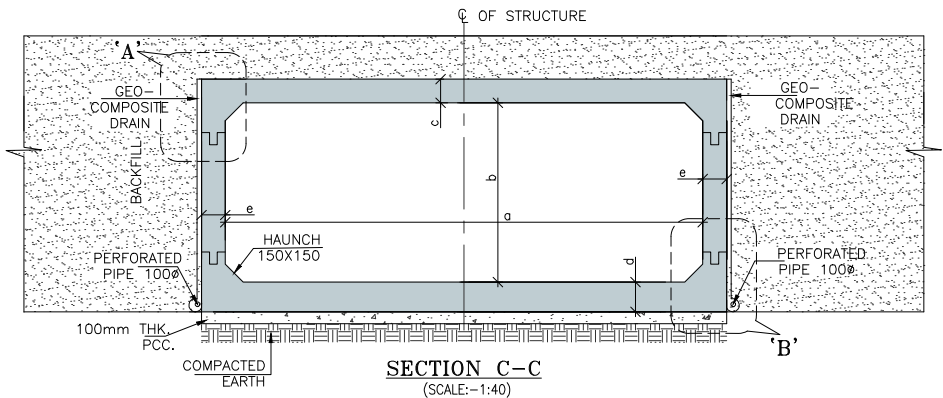
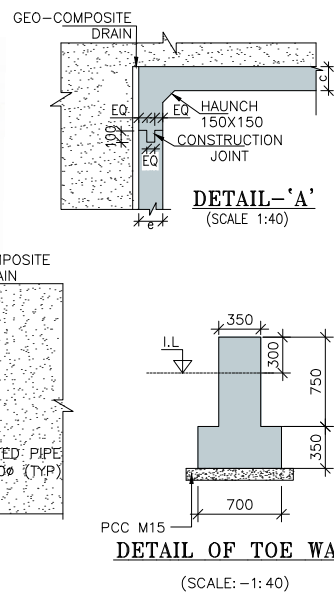
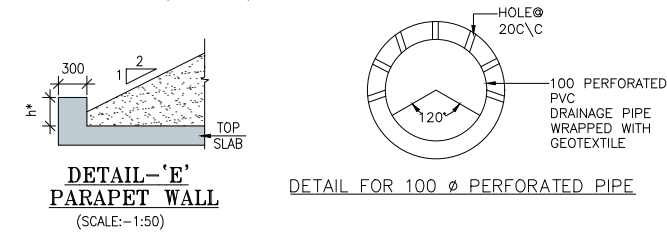
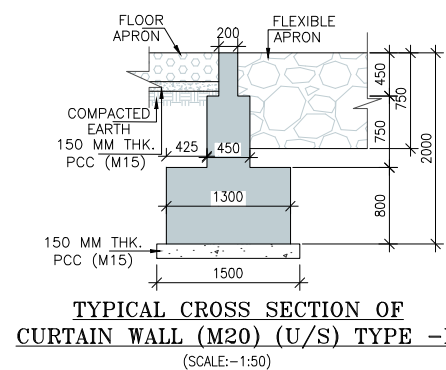
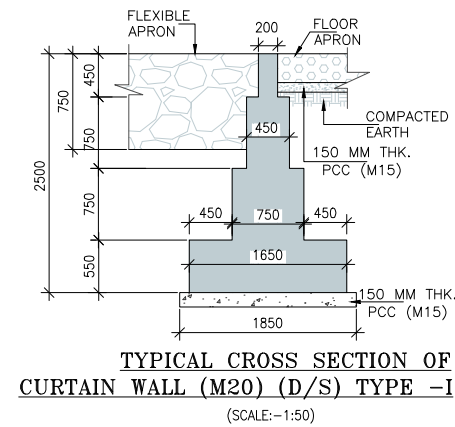
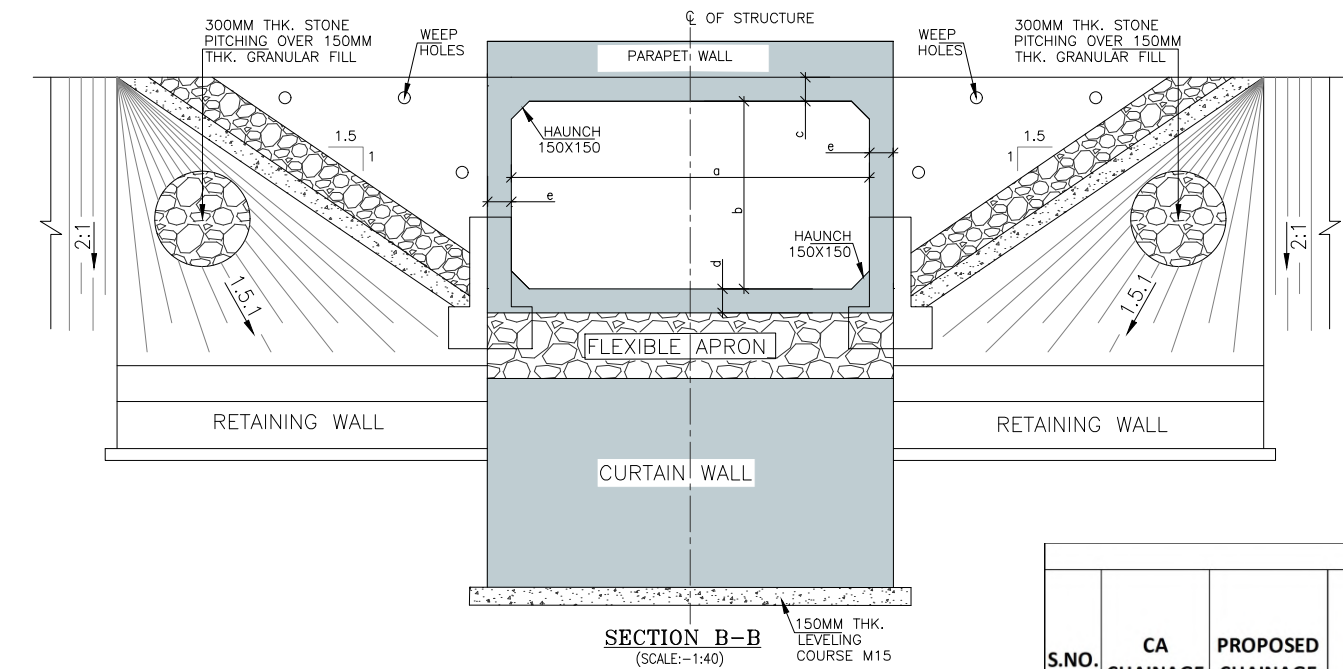
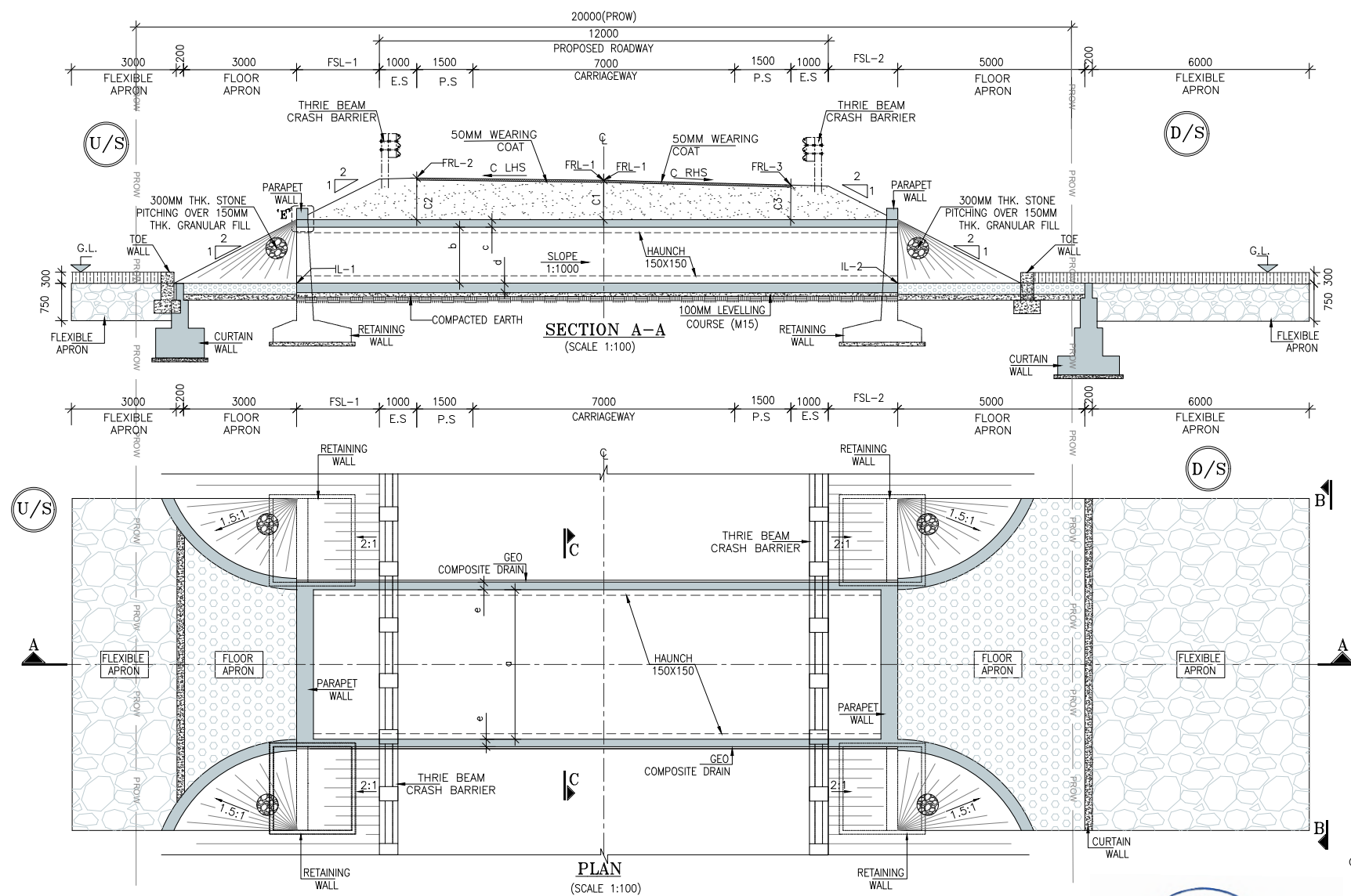
PROOF CHECK CONSULTANT:
HIGRAISE CONSTRUCTION AND CONSULTANT PRIVATE LIMITED
SAFETY CONSULTANT:
EARL TECHNO CONSULTANTS PVT. LTD.

DESIGN CONSULTANT:
CIVIL MANTRA INFRACON PVT. LTD.
3rd FLOOR TOWER 3A, DLF CORPORATE GREEN, SECTOR 74A, GURUGRAM - 122004
EPC CONTRACTOR:
KEYSTONE INFRA PVT. LTD.

APPROVED:- SM
CHECKED:- RK
DESIGNED:- ST
DRAWN:- SY

PROJECT:- UPGRADATION AND RECONSTRUCTION OF EXISTING INTERMEDIATE LANE TO 2-LANE WITH PAVED SHOULDERS CONFIGURATION FROM KM 43.000 (BARNA RIVER) TO KM 77.000 (KEN RIVER), LENGTH 34.000 KM ON GULGANJ- AMANGANJ- PAWAI-KATNI NH-43 EXT. ALONG WITH ONE TIME IMPROVEMENT IN 01 NO OF BYPASSED BUILT-UP AREA IN A TOTAL LENGTH OF 1.55 KM IN THE STATE OF MADHYA PRADESH ON EPC MODE.
TITLE:-GENERAL ARRANGEMENT DRAWING OF BOX CULVERT AT CH-57+910
DRAWING NO :-CIPL-D1190-57+910-BC-101-01 OF 01-R1-GAD

DATE: JAN/2025
SCALE: AS SHOWN
SHEET NO: 01 OF 01
FORMAT: A3 (420X297)
REV: R1



NOTES:-

- DIMENSIONS ARE IN MILLIMETERS, CHAINAGES & LEVELS ARE IN METER, UNLESS NOTED OTHERWISE.
- CHAINAGES SHOWN HERE ARE ALONG THE CENTER LINE.
- ONLY WRITTEN DIMENSIONS ARE TO BE FOLLOWED, DO NOT SCALE THE DRAWING SLOPE/CAMBER(E%). LAYOUT, SETTING OUT DETAILS, GEOMETRIC DETAIL, PROPOSED CHAINAGE AND ALL LEVELS GIVEN IN THIS DRAWINGS ARE BASED ON HIGHWAY DRAWING.
- BACK FILLING SHALL BE CARRIED OUT WITH SOIL PROPERTIES, C=0 % & $\phi > 30^\circ$. THE SOIL SHALL BE COMPACTED AT OPTIMUM MOISTURE CONTENT TO 98% PROCTOR DENSITY, SHALL BE CONFIRMED AS PER C-710.1.4 OF IRC 78 AND MORTH SPECIFICATIONS.
- THE WORK IS TO BE CARRIED OUT AS PER APPROVED RELEVANT DETAILED DRAWINGS FOR DIFFERENT COMPONENTS OF THE STRUCTURE AND AS PER APPROVED HIGHWAY DRAWING.
- LAYOUT OF STRUCTURE SHALL BE CHECKED AT SITE WITH RESPECT TO FORMATION LEVEL EXISTING GROUND LEVEL AVAILABLE CLEARANCE ETC. AND ANY DISCREPANCY AMBIGUITY FOUND IN DRAWING OR AT SITE SHALL BE BROUGHT TO THE NOTICE OF DESIGN CONSULTANT PRIOR TO EXECUTION OF WORK.
- GRADES CONSIDERED:
BOX : M30
LEVELLING COURSE : M15
HYSD STEEL : S500
- CLEAR COVER:
BOTTOM SLAB & WALL (EARTH FACE) : 75 MM.
WALL (INNER FACE) & TOP SLAB : 45 MM.
- WEARING COAT SHOULD BE PROVIDED AS PER HIGHWAY CRUST.
- SEISMIC ZONE: II.
- SOIL DENSITY ON THE BACKFILL AND EARTH CUSHION SHOULD CONFORM TO CLAUSE 305 2.1.5 OF MORTH SPECIFICATION FOR ROAD & BRIDGE WORKS (FIFTH REVISION).
- FLEXIBLE APRON 1000 MM THICK COMPRISING OF LOOSE STONE BOULDERS SHOULD BE PROVIDED BEYOND CURTAIN WALL AS PER IRC-SP-13.
- STRUCTURES EXCEEDING 45 M IN LENGTH SHOULD BE PROVIDED WITH ONE OR MORE EXPANSION JOINT.
- PROPOSED STRUCTURE IS DESIGNED FOR LIVE LOAD AS PER IRC-6
CASE 1- 3 LANE OF CLASS A
CASE 2- 1 LANE OF CLASS A + 1 LANE OF 70R
CASE 3- SV
- EXPOSURE CONDITION-SEVERE
- ANY LOOSE/UNSUITABLE MATERIAL FOUND BELOW THE BOX SHALL BE REPLACED WITH GRANULAR MATERIAL LIKE SANDY MURUM OR STONE DUST AS PER IRC:SP-13-2004 CL NO.23.3
- THE MAXIMUM BASE PRESSURE SHALL BE CONSIDERED AS PER DESIGN GIVEN IN TABLE & SHALL BE ENSURED SITE BY DOING PLATE LOAD TEST IF NOT ACHIEVED, SOIL OF 1000mm BELOW G.L. SHALL BE REPLACED WITH GRANULAR MATERIAL LIKE SANDY MURUM OR STONE DUST OR GSB AS PER MATERIAL AVAILABLE AT SITE
- PROTECTION WORK ON U/S AND D/S SIDE SHALL BE AS PER AVAILABILITY OF PROW
- GEO COMPOSITE DRAINAGE LAYER SHALL BE PROVIDED UP TO FOUNDATION LEVEL BETWEEN RW AND RETAINED BACKFILL. THE GEO-COMPOSITE LAYER SHALL BE COMBINATION OF A LAYER OF GEO-NET IN BETWEEN 02 LAYERS OF GEOTEXTILE CONFORMING TO SECTION 700 OF MORTH SPECIFICATIONS.
- REFER SEPARATE DRAWING FOR RETAINING WALL & PARAPET WALL.

LEGEND:-

- FRL - FINISHED ROAD LEVEL
IL - INVERT LEVEL
GL - GROUND LEVEL
EXP. - EXPANSION

SCHEDULE OF DIMENSION FOR BOX CULVERT

S.NO.	CA CHAINAGE	PROPOSED CHAINAGE	MCW CAMBER		TCS	FRL (MCW) (M)			INVERT LEVEL (M)		BOX SIZE			BOX DIMENSION (MCW)			CUSHION MCW (mm)			Extended Length		BOX Length (mm)	PARAPET HEIGHT (mm)	REINF. GROUP	SBC REQUIRED (T/SQM)
			LHS	RHS		FRL-1	FRL-2	FRL-3	IL-1	IL-2	No. of cells	SPAN (M)	HEIGHT (M)	TOP SLAB (mm)	BOTT. SLAB (mm)	SIDE WALL (mm)	C1	C2	C3	FS1 (mm)	FS2 (mm)				
1	58+200	58+224	-2.50	-2.50	TCS-I-A	496.502	496.377	496.377	493.097	493.085	1	4	2.0	300	350	300	1111	980	992	1900	1924	15825	300	G20	12

CLIENT:
PUBLIC WORK DEPARTMENT MADHYA PRADESH
AUTHORITY ENGINEER:

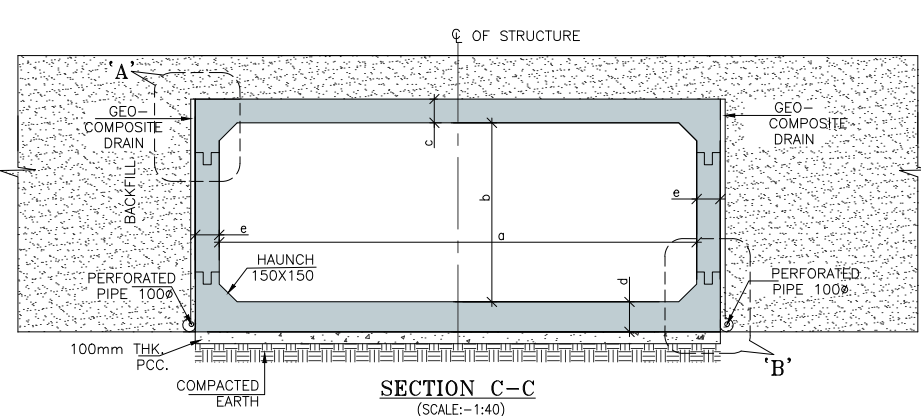
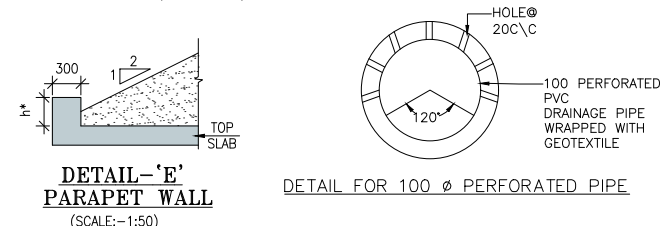
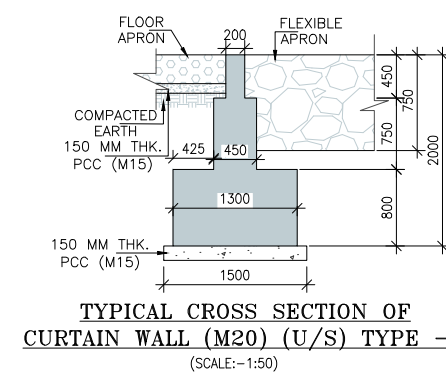
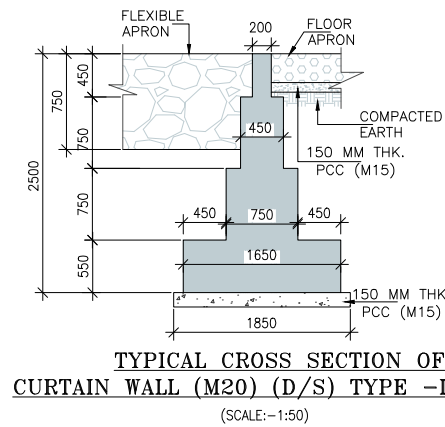
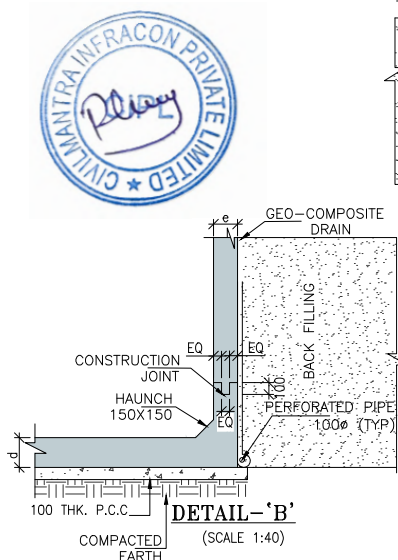
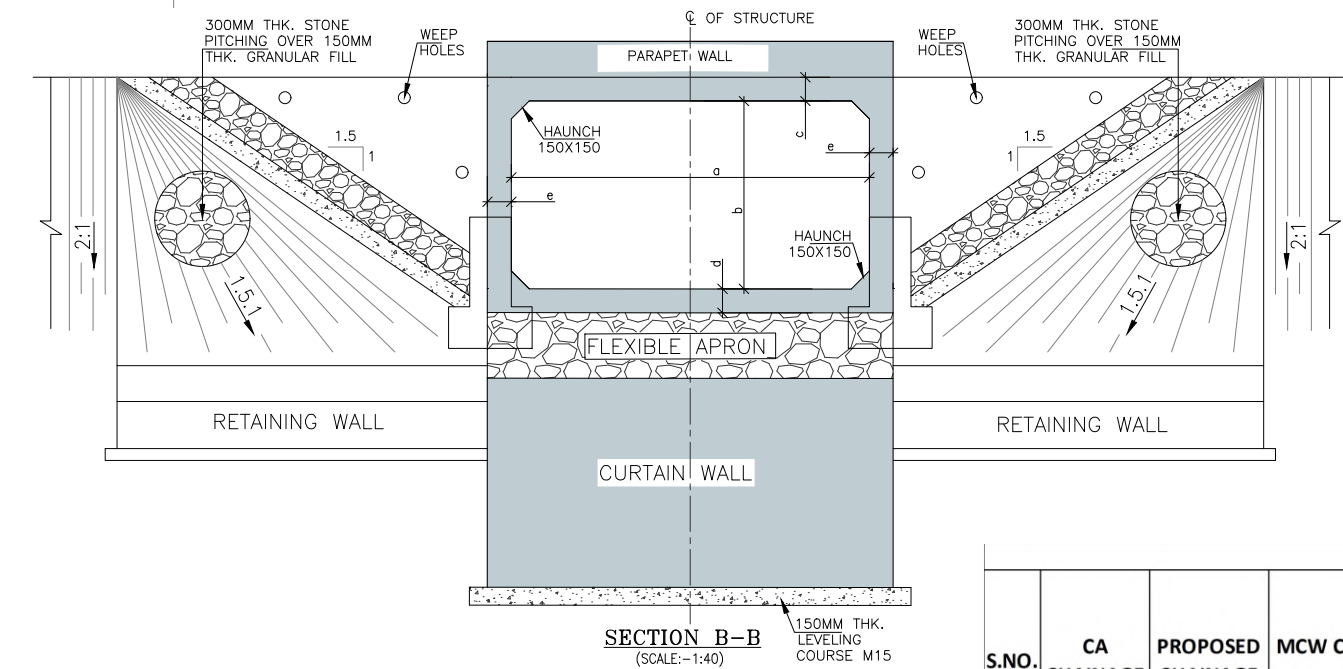
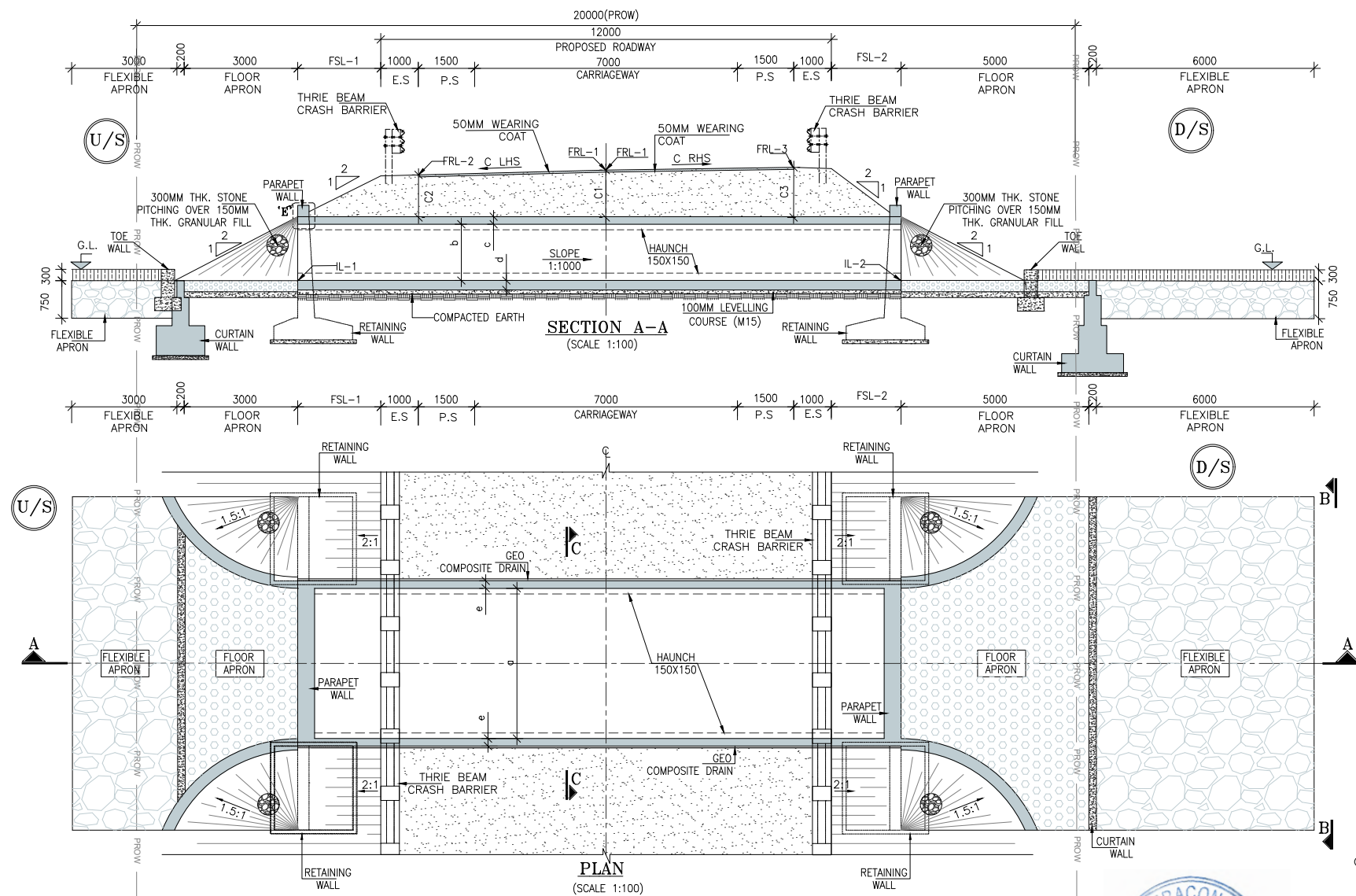
PROOF CHECK CONSULTANT:
HIGHRAISE CONSTRUCTION AND CONSULTANT PRIVATE LIMITED
SAFETY CONSULTANT:
EARL TECHNO CONSULTANTS PVT. LTD.

DESIGN CONSULTANT:
CIVIL MANTRA INFRACON PVT. LTD.
3rd FLOOR TOWER 3A, DLF CORPORATE GREEN, SECTOR 74A, GURUGRAM - 122004
EPC CONTRACTOR:
KEYSTONE INFRA PVT. LTD.

APPROVED:- SM
CHECKED:- RK
DESIGNED:- ST
DRAWN:- SY

PROJECT:- UPGRADEATION AND RECONSTRUCTION OF EXISTING INTERMEDIATE LANE TO 2-LANE WITH PAVED SHOULDERS CONFIGURATION FROM KM 43.000 (BARNA RIVER) TO KM 77.000 (KEN RIVER), LENGTH 34.000 KM ON GULGANJ- AMANGANJ- PAWAI-KATNI NH-43 EXT. ALONG WITH ONE TIME IMPROVEMENT IN 01 NO OF BYPASSED BUILT-UP AREA IN A TOTAL LENGTH OF 1.55 KM IN THE STATE OF MADHYA PRADESH ON EPC MODE.
TITLE:-GENERAL ARRANGEMENT DRAWING OF BOX CULVERT AT CH-58+224
DRAWING NO :- CIPL-D1190-58+224-BC-101-01 OF 01-R1-GAD

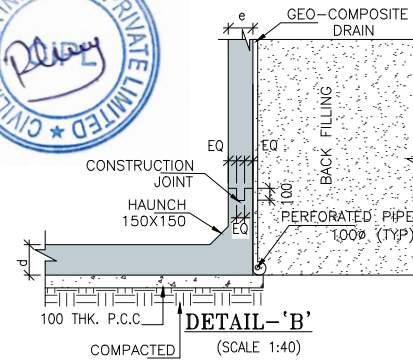
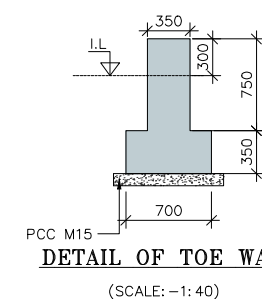
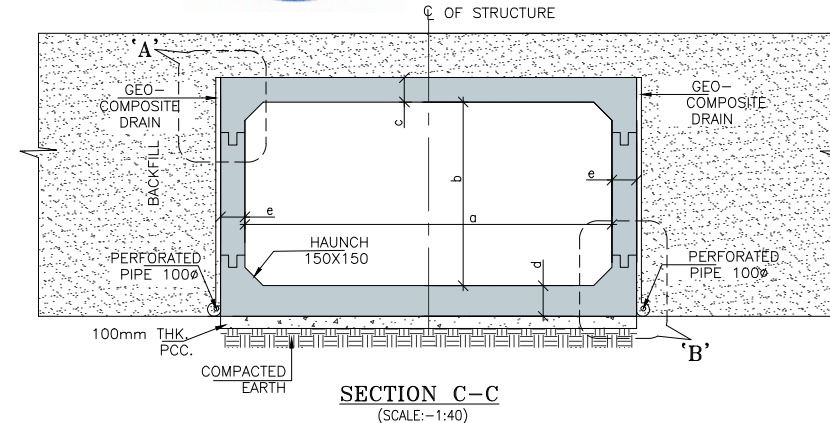
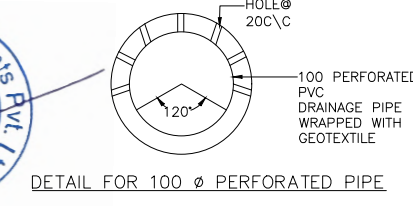
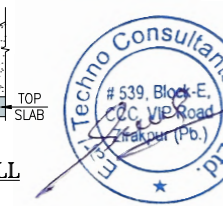
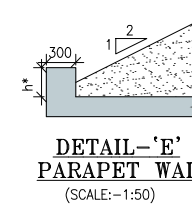
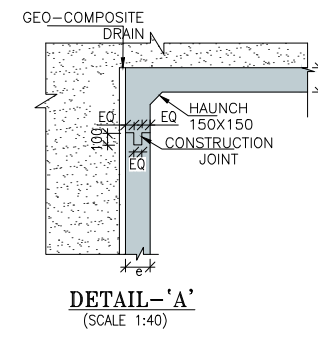
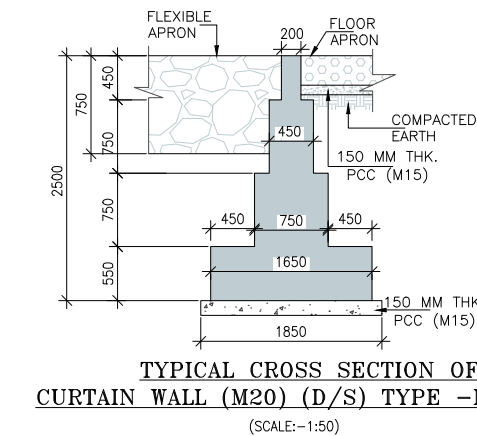
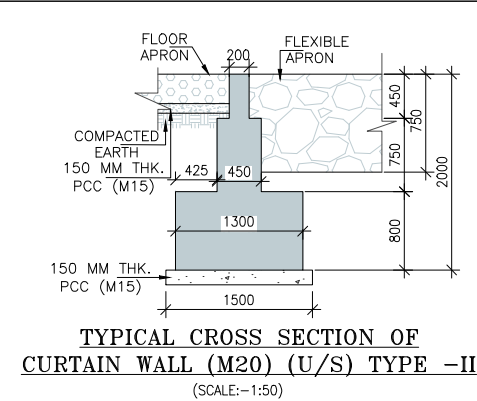
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SHEET NO: 01 OF 01
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REV: RT

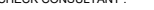
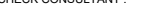


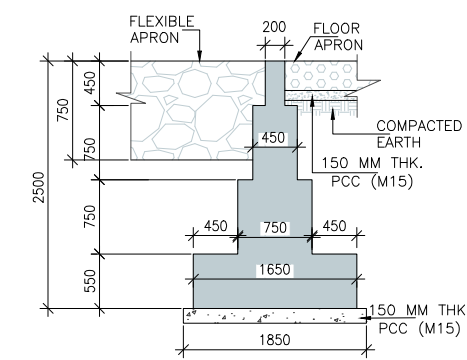
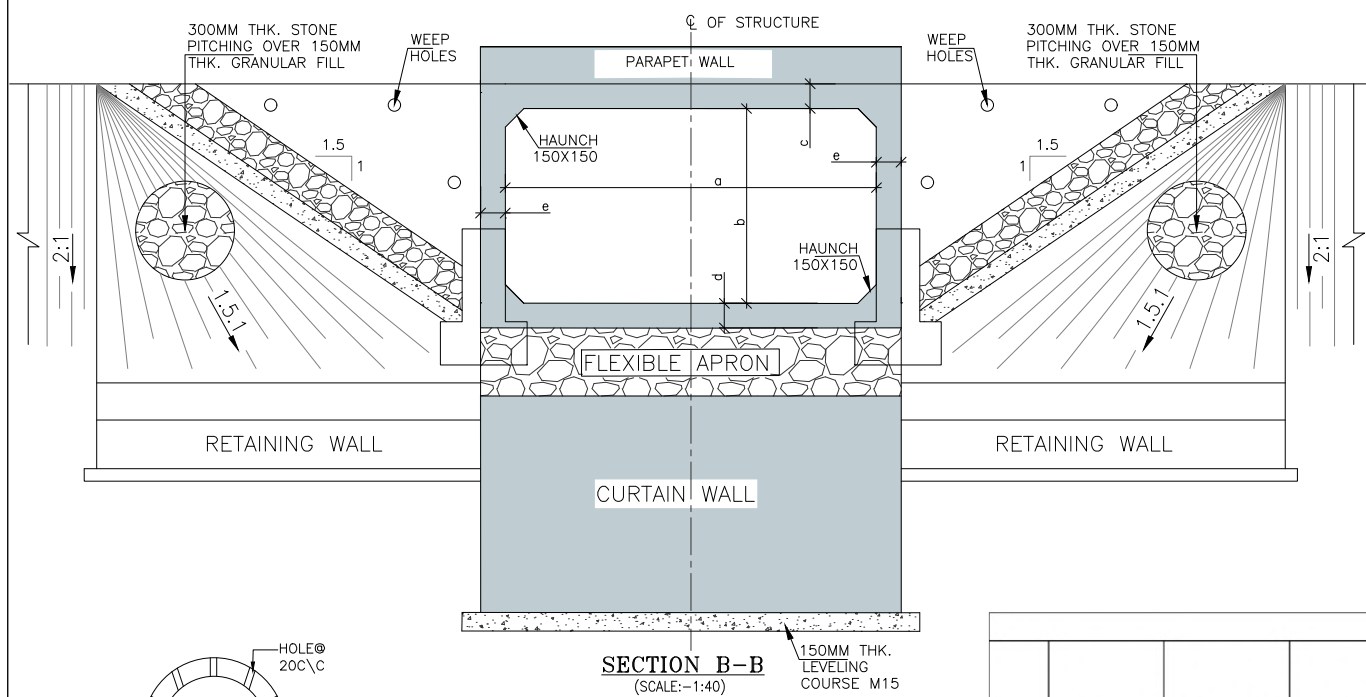
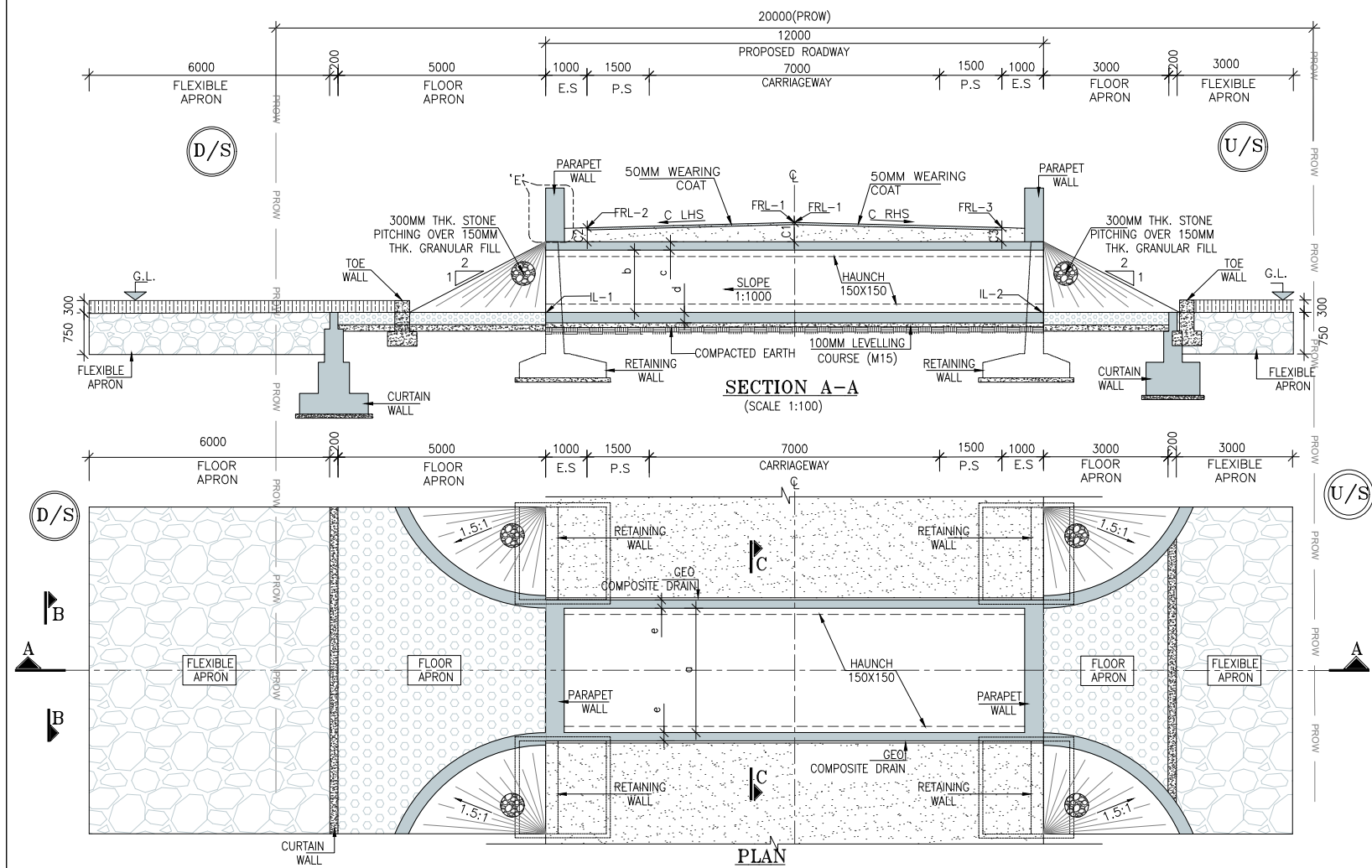
SCHEDULE OF DIMENSION FOR BOX CULVERT

S.NO.	CA CHAINAGE	PROPOSED CHAINAGE	MCW CAMBER		TCS	FRL (MCW) (M)			INVERT LEVEL (M)		BOX SIZE			BOX DIMENSION (MCW)			CUSHION MCW (mm)			Extended Length		BOX Length (mm)	PARAPET HEIGHT (mm)	REINF. GROUP	SBC REQUIRED (T/SQM)
											No. of cells	SPAN (SQ.) (M)	HEIGHT (M)	TOP SLAB (mm)	BOTT. SLAB (mm)	SIDE WALL (mm)				FS1 (mm)	FS2 (mm)				
			C LHS	C RHS		FRL-1	FRL-2	FRL-3	IL-1	IL-2							a	b	c						
1	59+615	59+635	-4.53	2.46	TCS-I-A	489.107	488.880	489.230	485.592	485.580	1	4	2.0	300	350	300	1221	988	1350	1917	2640	16557	300	G20	12

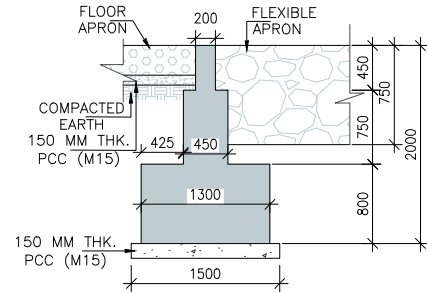
			CLIENT:  PUBLIC WORK DEPARTMENT MADHYA PRADESH	PROOF CHECK CONSULTANT :  HIGHRAISE CONSTRUCTION AND CONSULTANT PRIVATE LIMITED	DESIGN CONSULTANT :  CIVIL MANTRA INFRACON PVT. LTD. 3rd FLOOR TOWER 3A, DLF CORPORATE GREEN, SECTOR 74A, GURUGRAM - 122004	APPROVED:- SM	PROJECT:- UPGRADEATION AND RECONSTRUCTION OF EXISTING INTERMEDIATE LANE TO 2-LANE WITH PAVED SHOULDERS CONFIGURATION FROM KM 43.000 (BARNA RIVER) TO KM 77.000 (KEN RIVER), LENGTH 34.000 KM ON GULGANJ- AMANGANJ- PAWAI-KATNI NH-43 EXT. ALONG WITH ONE TIME IMPROVEMENT IN 01 NO OF BYPASSED BUILT-UP AREA IN A TOTAL LENGTH OF 1.55 KM IN THE STATE OF MADHYA PRADESH ON EPC MODE.								
						CHECKED:- RK									
R1	JAN-2025	REVISED AS PER LATEST P&P	AUTHORITY ENGINEER :	SAFETY CONSULTANT :  EARL TECHNO CONSULTANTS PVT. LTD.	EPC CONTRACTOR :  KEYSTONE INFRA PVT. LTD.	DESIGNED:- ST	<table><tr><td>DATE</td><td>JAN-2025</td></tr><tr><td>SCALE</td><td>AS SHOWN</td></tr><tr><td>SHEET NO.</td><td>01 OF 01</td></tr><tr><td>FORMAT</td><td>A3 (420X297)</td></tr></table>	DATE	JAN-2025	SCALE	AS SHOWN	SHEET NO.	01 OF 01	FORMAT	A3 (420X297)
DATE	JAN-2025														
SCALE	AS SHOWN														
SHEET NO.	01 OF 01														
FORMAT	A3 (420X297)														
R0	NOV-2024	FOR APPROVAL				DRAWN:- SY	TITLE:- GENERAL ARRANGEMENT DRAWING OF BOX CULVERT AT CH-59+635								
REV	DATE	DESCRIPTION					DRAWING NO :- CIPL-D1190-59+635-BC-101-01 OF 01-R1-GAD								



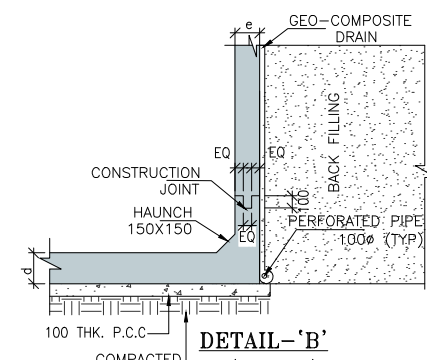
			 PUBLIC WORK DEPARTMENT MADHYA PRADESH		 HIGHRAISE CONSTRUCTION AND CONSULTANT PRIVATE LIMITED		 CIVIL MANTRA INFRACON PVT. LTD. 3rd FLOOR TOWER 3A, DLF CORPORATE GREEN, SECTOR 74A, GURUGRAM - 122004		APPROVED:- SM CHECKED:- RK		PROJECT:- UPGRADEATION AND RECONSTRUCTION OF EXISTING INTERMEDIATE LANE TO 2-LANE WITH PAVED SHOULDERS CONFIGURATION (KEN RIJAT) TO KM 77.000 (KEN RIJAT) LENGTH 34.000 KM ON GULGANJ- AMANGANJ- PAWAL-KATNI NH-43 ECT. ALONG WITH ONE TIME IMPROVEMENT IN 01 NO BYPASSED BUILT-UP AREA IN A TOTAL LENGTH OF 1.55 KM IN THE STATE OF MADHYA PRADESH ON EPC MODE.									
R1	JAN-2025	REVISED AS PER LATEST P&P	AUTHORITY ENGINEER :  EARL TECHNO CONSULTANTS PVT. LTD.		SAFETY CONSULTANT :  EARL TECHNO CONSULTANTS PVT. LTD.		EPC CONTRACTOR :  KEYSTONE INFRA PVT. LTD.		DESIGNED:- ST DRAWN:- SY		TITLE:- GENERAL ARRANGEMENT DRAWING OF BOX CULVERT AT CH-59+830 DRAWING NO :- CPLD-D1190-59+830-BC-101-01 OF 01 R1-GAD <table><tr><td>DATE</td><td>JAN-2025</td></tr><tr><td>SCALE</td><td>AS SHOWN</td></tr><tr><td>SHEET NO.</td><td>01 OF 01</td></tr><tr><td>FORMAT</td><td>A3 (420X594)</td></tr></table>		DATE	JAN-2025	SCALE	AS SHOWN	SHEET NO.	01 OF 01	FORMAT	A3 (420X594)
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FORMAT	A3 (420X594)																			
R0	NOV-2024	FOR APPROVAL																		
REV	DATE	DESCRIPTION																		



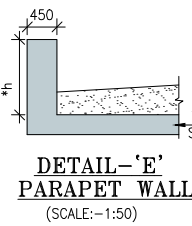
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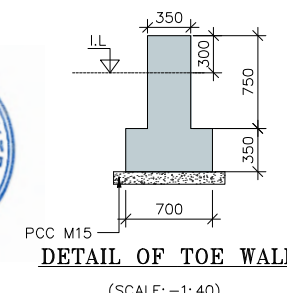
TYPICAL CROSS SECTION OF CURTAIN WALL (M20) (U/S) TYPE -II (SCALE:-1:50)



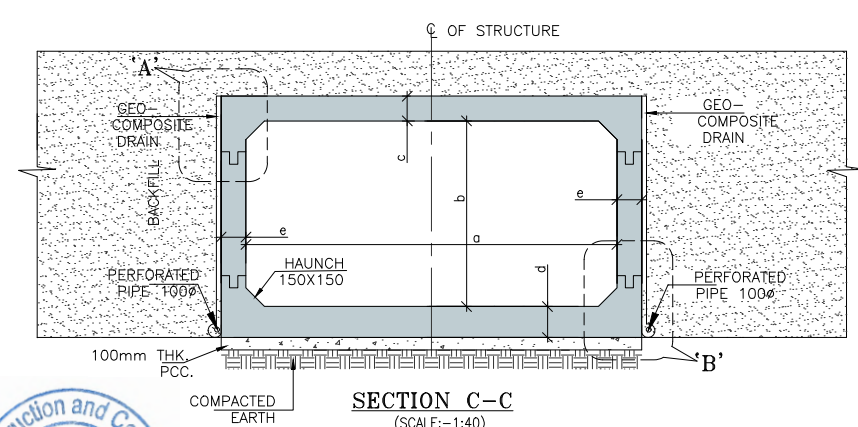
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DETAIL - 'E' PARAPET WALL (SCALE:-1:50)



DETAIL OF TOE WALL (SCALE:-1:40)



SECTION C-C (SCALE:-1:40)

NOTES:-

- DIMENSIONS ARE IN MILLIMETERS, CHAINAGES & LEVELS ARE IN METER, UNLESS NOTED OTHERWISE.
- CHAINAGES SHOWN HERE ARE ALONG THE CENTER LINE.
- ONLY WRITTEN DIMENSIONS ARE TO BE FOLLOWED, DO NOT SCALE THE DRAWING SLOPE/CAMBER(E%). LAYOUT, SETTING OUT DETAILS, GEOMETRIC DETAIL, PROPOSED CHAINAGE AND ALL LEVELS GIVEN IN THIS DRAWINGS ARE BASED ON HIGHWAY DRAWING.
- BACK FILLING SHALL BE CARRIED OUT WITH SOIL PROPERTIES, C=0 % & $\phi > 30^\circ$. THE SOIL SHALL BE COMPACTED AT OPTIMUM MOISTURE CONTENT TO 98% PROCTOR DENSITY, SHALL BE CONFIRMED AS PER C:710.1.4 OF IRC 78 AND NORTH SPECIFICATIONS.
- THE WORK IS TO BE CARRIED OUT AS PER APPROVED RELEVANT DETAILED DRAWINGS FOR DIFFERENT COMPONENTS OF THE STRUCTURE AND AS PER APPROVED HIGHWAY DRAWING.
- LAYOUT OF STRUCTURE SHALL BE CHECKED AT SITE WITH RESPECT TO FORMATION LEVEL EXISTING GROUND LEVEL AVAILABLE CLEARANCE ETC. AND ANY DISCREPANCY AMBIGUITY FOUND IN DRAWING OR AT SITE SHALL BE BROUGHT TO THE NOTICE OF DESIGN CONSULTANT PRIOR TO EXECUTION OF WORK.
- GRADES CONSIDERED:
BOX :M30
LEVELING COURSE :M15
HYSD STEEL :550D
- CLEAR COVER:
BOTTOM SLAB & WALL (EARTH FACE) 75 MM.
WALL (INNER FACE) & TOP SLAB 45 MM.
- WEARING COAT SHOULD BE PROVIDED AS PER HIGHWAY CRUST.
- SEISMIC ZONE:- II.
- SOIL DENSITY ON THE BACKFILL AND EARTH CUSHION SHOULD CONFORM TO CLAUSE 305 2.1.5 OF MORTH SPECIFICATION FOR ROAD & BRIDGE WORKS (FIFTH REVISION).
- FLEXIBLE APRON 1000 MM THICK COMPRISING OF LOOSE STONE BOULDERS SHOULD BE PROVIDED BEYOND CURTAIN WALL AS PER IRC-SP-13.
- STRUCTURES EXCEEDING 45 M IN LENGTH SHOULD BE PROVIDED WITH ONE OR MORE EXPANSION JOINT.
- PROPOSED STRUCTURE IS DESIGNED FOR LIVE LOAD AS PER IRC-6 CASE 1- 3 LANE OF CLASS A CASE 2- 1 LANE OF CLASS A + 1 LANE OF 70R CASE 3- SV
- EXPOSURE CONDITION-SEVERE
- ANY LOOSE/UNSUITABLE MATERIAL FOUND BELOW THE BOX SHALL BE REPLACED WITH GRANULAR MATERIAL LIKE SANDY MURUM OR STONE DUST AS PER IRC:SP:13-2004 CL NO.23.3
- THE MAXIMUM BASE PRESSURE SHALL BE CONSIDERED AS PER DESIGN GIVEN IN TABLE & SHALL BE ENSURED SITE BY DOING PLATE LOAD TEST IF NOT ACHIEVED, SOIL OF 1000mm BELOW G.L. SHALL BE REPLACED WITH GRANULAR MATERIAL LIKE SANDY MURUM OR STONE DUST OR GSB AS PER MATERIAL AVAILABLE AT SITE
- PROTECTION WORK ON U/S AND D/S SIDE SHALL BE AS PER AVAILABILITY OF PROW
- GEO COMPOSITE DRAINAGE LAYER SHALL BE PROVIDED UP TO FOUNDATION LEVEL BETWEEN RW AND RETAINED BACKFILL THE GEO-COMPOSITE LAYER SHALL BE COMBINATION OF A LAYER OF GEO-NET IN BETWEEN 02 LAYERS OF GEOTEXTILE CONFORMING TO SECTION 700 OF MORTH SPECIFICATIONS.
- REFER SEPARATE DRAWING FOR RETAINING WALL & PARAPET WALL.

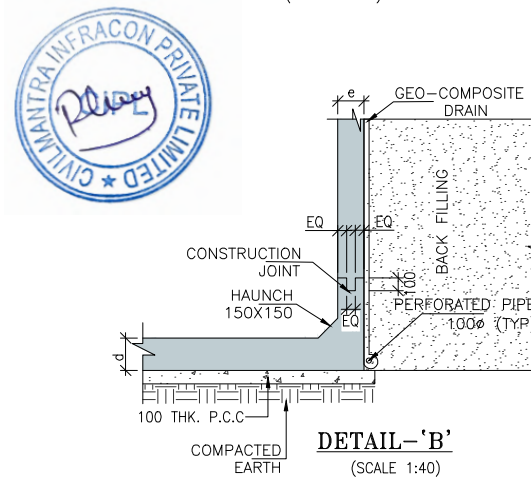
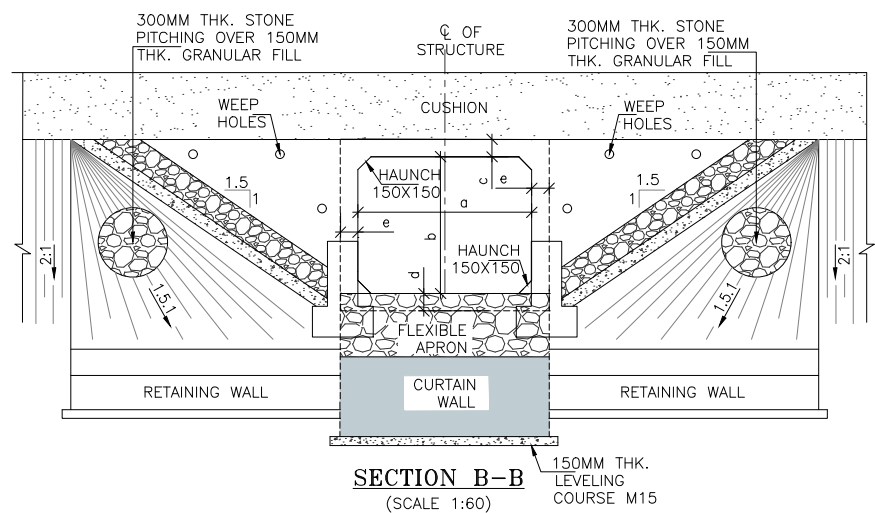
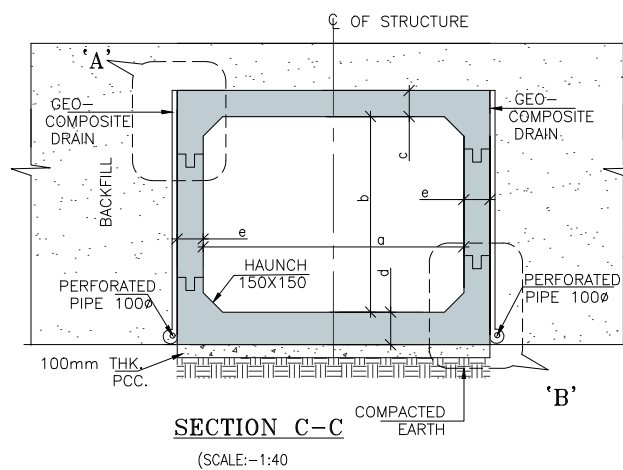
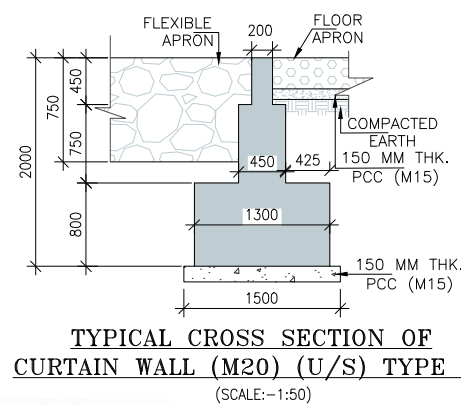
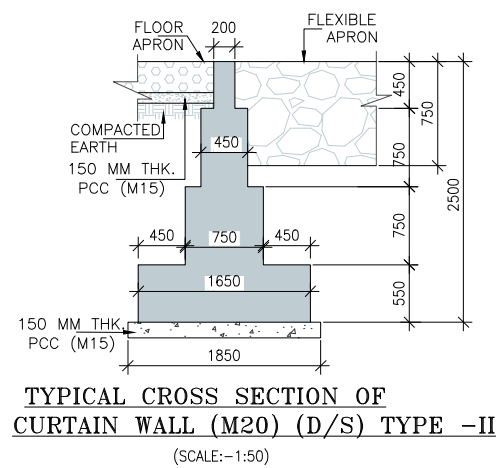
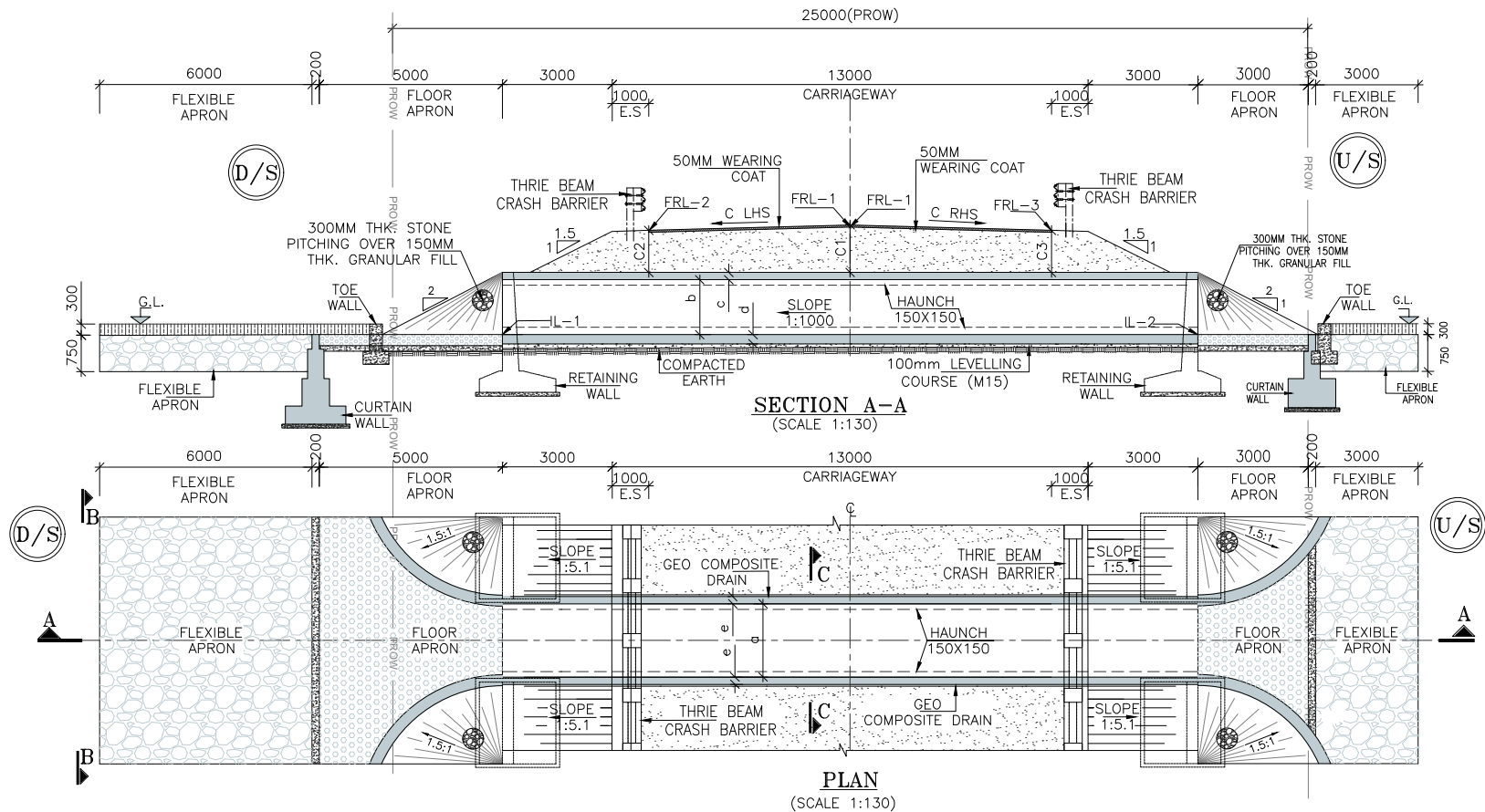
LEGEND:-

- FRL - FINISHED ROAD LEVEL
- IL - INVERT LEVEL
- GL - GROUND LEVEL
- EXP. - EXPANSION

SCHEDULE OF DIMENSION FOR BOX CULVERT

SCHEDULE OF DIMENSION FOR BOX CULVERT																								
S.NO.	CA CHAINAGE	PROPOSED CHAINAGE	MCW CAMBER		TCS	FRL (MCW) (M)			INVERT LEVEL (M)		BOX SIZE			BOX DIMENSION (MCW)			CUSHION MCW (mm)			BOX Length (mm)	PARAPET HEIGHT (mm) LHS	PARAPET HEIGHT (mm) RHS	REINF. GROUP	SBC REQUIRED (T/SQM)
											No. of cells	SPAN (SQ.) (M)	HEIGHT (M)	TOP SLAB (mm)	BOTT. SLAB (mm)	SIDE WALL (mm)								
			C LHS	C RHS		FRL-1	FRL-2	FRL-3	IL-1	IL-2							a	b	c					
1	61+670	61+678	-2.50	-2.50	TCS-I-A	461.676	461.551	461.551	459.495	459.507	1	3	1.5	250	300	250	425	306	294	12000	1256	1244	G10	12

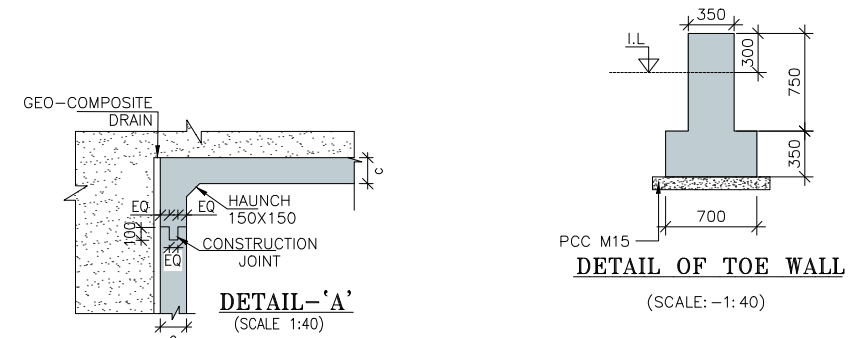
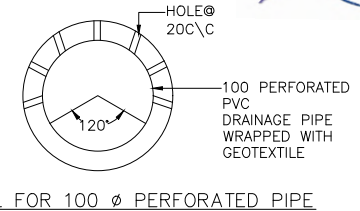
CLIENT: PUBLIC WORK DEPARTMENT MADHYA PRADESH			PROOF CHECK CONSULTANT: HIGHRAISE CONSTRUCTION AND CONSULTANT PRIVATE LIMITED			DESIGN CONSULTANT: CIVIL MANTRA INFRACON PVT. LTD.			APPROVED:- SM			PROJECT:- UPGRADEATION AND RECONSTRUCTION OF EXISTING INTERMEDIATE LANE TO 2-LANE WITH PAVED SHOULDERS CONFIGURATION FROM KM 43.000 (BARNA RIVER) TO KM 77.000 (KEN RIVER), LENGTH 34.000 KM ON GULGANJ- AMANGANJ- PAWAI-KATNI NH-43 EXT. ALONG WITH ONE TIME IMPROVEMENT IN 01 NO OF BYPASSED BUILT-UP AREA IN A TOTAL LENGTH OF 1.55 KM IN THE STATE OF MADHYA PRADESH ON EPC MODE.		
AUTHORITY ENGINEER:			SAFETY CONSULTANT: EARL TECHNO CONSULTANTS PVT. LTD.			EPC CONTRACTOR: KEYSTONE INFRA PVT. LTD.			CHECKED:- RK			DESIGNED:- ST		
REVISED AS PER LATEST P&P			FOR APPROVAL			DRAWN:- SY			TITLE:-GENERAL ARRANGEMENT DRAWING OF BOX CULVERT AT CH-61+678			DRAWING NO :- CIPL-D1190-61+678-BC-101-01 OF 01-R1-GAD		
R1	JAN-2025	REVISED AS PER LATEST P&P	FOR APPROVAL			DATE: JAN-2025			SCALE: AS SHOWN			SHEET NO: 01 OF 01		
R0	NOV-2024	FOR APPROVAL				FORMAT: A3 (420X297)			REV: R1					



- NOTES:-**
- DIMENSIONS ARE IN MILLIMETERS, CHAINAGES & LEVELS ARE IN METER, UNLESS NOTED OTHERWISE.
 - CHAINAGES SHOWN HERE ARE ALONG THE CENTER LINE.
 - ONLY WRITTEN DIMENSIONS ARE TO BE FOLLOWED, DO NOT SCALE THE DRAWING SLOPE/CAMBER(E%). LAYOUT, SETTING OUT DETAILS, GEOMETRIC DETAIL, PROPOSED CHAINAGE AND ALL LEVELS GIVEN IN THIS DRAWINGS ARE BASED ON HIGHWAY DRAWING.
 - BACK FILLING SHALL BE CARRIED OUT WITH SOIL PROPERTIES, $C=0\%$ & $\phi > 30^\circ$. THE SOIL SHALL BE COMPACTED AT OPTIMUM MOISTURE CONTENT TO 98% PROCTOR DENSITY, SHALL BE CONFIRMED AS PER C:710.1.4 OF IRC 78 AND MORTH SPECIFICATIONS.
 - THE WORK IS TO BE CARRIED OUT AS PER APPROVED RELEVANT DETAILED DRAWINGS FOR DIFFERENT COMPONENTS OF THE STRUCTURE AND AS PER APPROVED HIGHWAY DRAWING.
 - LAYOUT OF STRUCTURE SHALL BE CHECKED AT SITE WITH RESPECT TO FORMATION LEVEL EXISTING GROUND LEVEL AVAILABLE CLEARANCE ETC. AND ANY DISCREPANCY AMBIGUITY FOUND IN DRAWING OR AT SITE SHALL BE BROUGHT TO THE NOTICE OF DESIGN CONSULTANT PRIOR TO EXECUTION OF WORK.
 - GRADES CONSIDERED:
BOX :M30
LEVELING COURSE :M15
HYSD STEEL :S50D
 - CLEAR COVER:
BOTTOM SLAB & WALL(EARTH FACE) 75 MM.
WALL (INNER FACE) & TOP SLAB 45 MM.
 - WEARING COAT SHOULD BE PROVIDED AS PER HIGHWAY CRUST.
 - SEISMIC ZONE:- II.
 - SOIL DENSITY ON THE BACKFILL AND EARTH CUSHION SHOULD CONFORM TO CLAUSE 305 2.1.5 OF MORTH SPECIFICATION FOR ROAD & BRIDGE WORKS (FIFTH REVISION).
 - FLEXIBLE APRON 1000 MM THICK COMPRISING OF LOOSE STONE BOULDERS SHOULD BE PROVIDED BEYOND CURTAIN WALL AS PER IRC-SP-13.
 - STRUCTURES EXCEEDING 45 M IN LENGTH SHOULD BE PROVIDED WITH ONE OR MORE EXPANSION JOINT.
 - PROPOSED STRUCTURE IS DESIGNED FOR LIVE LOAD AS PER IRC-6
CASE 1- 3 LANE OF CLASS A
CASE 2- 1 LANE OF CLASS A + 1 LANE OF 70R
CASE 3- SV
 - EXPOSURE CONDITION-SEVERE
 - ANY LOOSE/UNSUITABLE MATERIAL FOUND BELOW THE BOX SHALL BE REPLACED WITH GRANULAR MATERIAL LIKE SANDY MURUM OR STONE DUST AS PER IRC:SP:13-2004 CL NO.23.3
 - THE MAXIMUM BASE PRESSURE SHALL BE CONSIDERED AS PER DESIGN GIVEN IN TABLE & SHALL BE ENSURED SITE BY DOING PLATE LOAD TEST IF NOT ACHIEVED, SOIL OF 1000mm BELOW G.L SHALL BE REPLACED WITH GRANULAR MATERIAL LIKE SANDY MURUM OR STONE DUST OR GSB AS PER MATERIAL AVAILABLE AT SITE
 - PROTECTION WORK ON U/S AND D/S SIDE SHALL BE AS PER AVAILABILITY OF PROW
 - GEO COMPOSITE DRAINAGE LAYER SHALL BE PROVIDED UP TO FOUNDATION LEVEL BETWEEN RW AND RETAINED BACKFILL THE GEO-COMPOSITE LAYER SHALL BE COMBINATION OF A LAYER OF GEO-NET IN BETWEEN 02 LAYERS OF GEOTEXTILE CONFORMING TO SECTION 700 OF MORTH SPECIFICATIONS.
 - REFER SEPARATE DRAWING FOR RETAINING WALL.

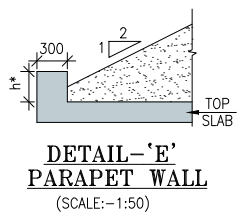
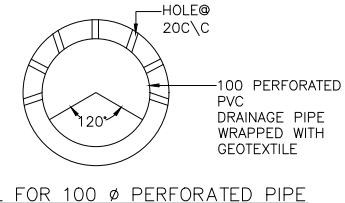
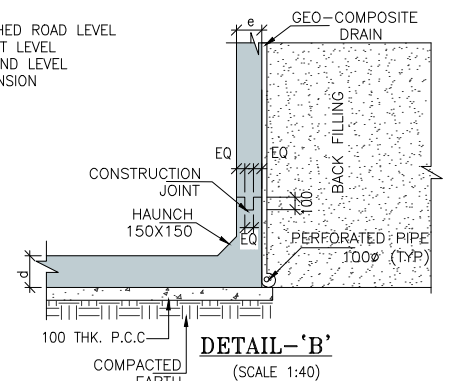
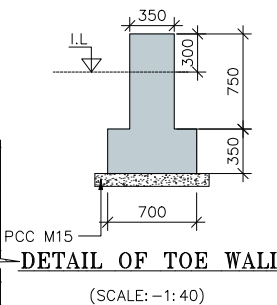
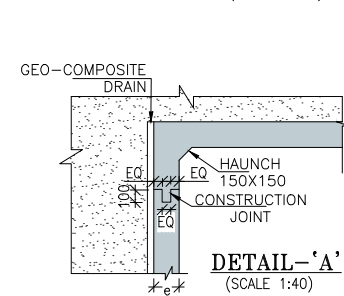
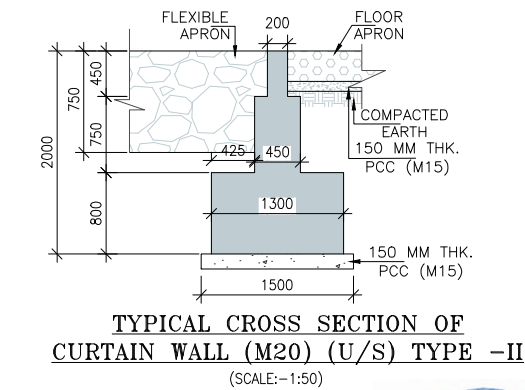
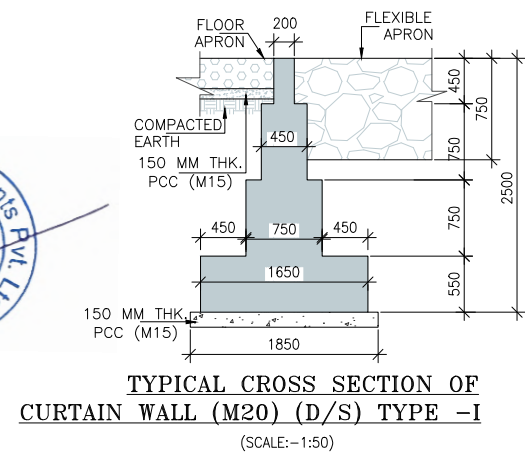
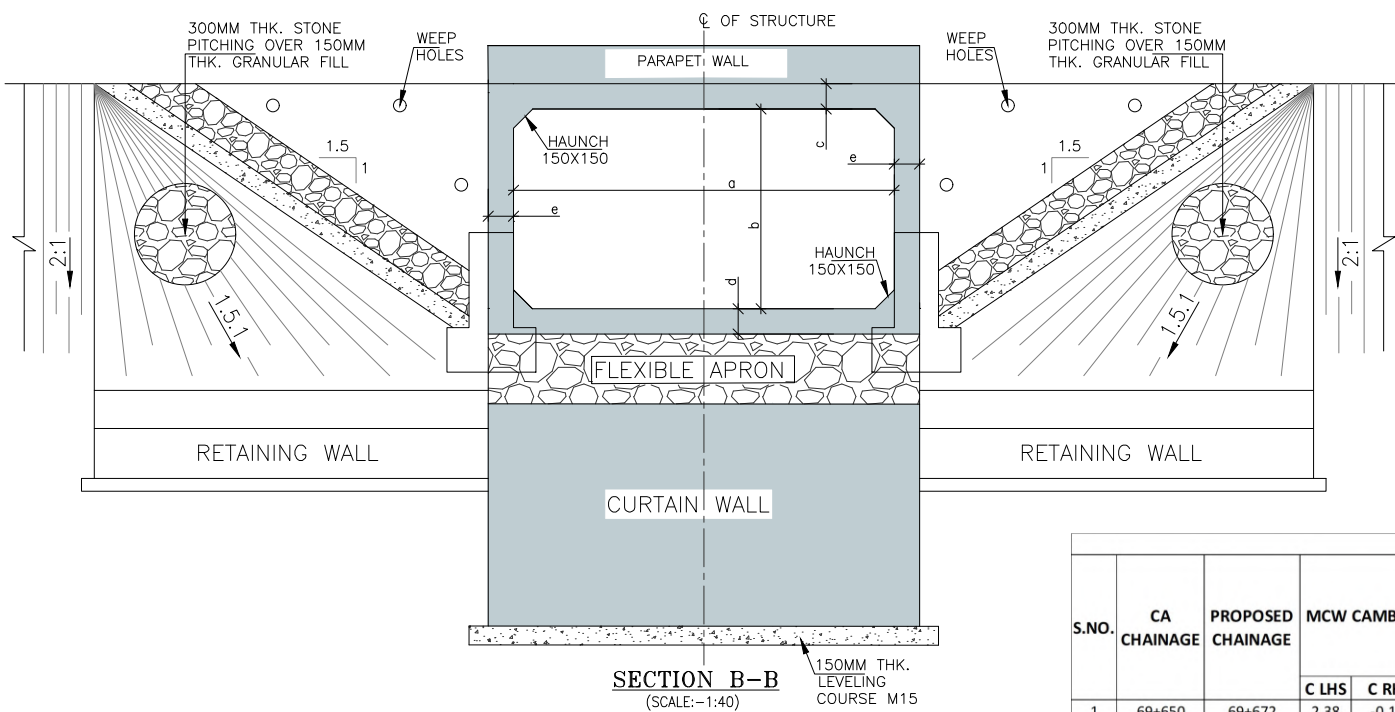
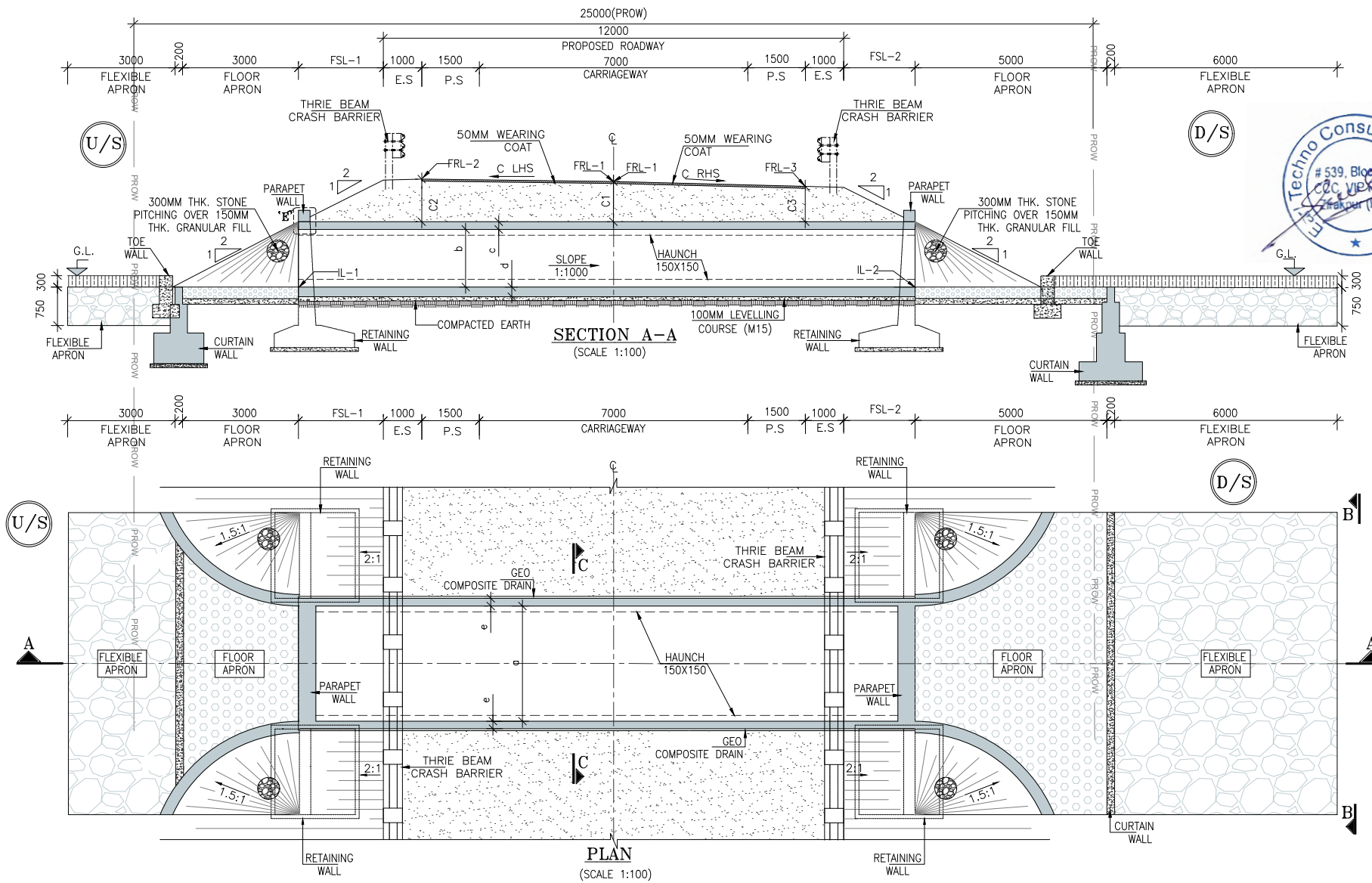
LEGEND:-

- FRL - FINISHED ROAD LEVEL
IL - INVERT LEVEL
GL - GROUND LEVEL
EXP. - EXPANSION



SCHEDULE OF DIMENSION FOR BOX CULVERT																					
S.NO.	CA CHAINAGE	PROPOSED CHAINAGE	MCW CAMBER		TCS	FRL (MCW) (M)			INVERT LEVEL (M)		No. of cells	BOX SIZE			BOX DIMENSION (MCW)			CUSHION MCW (mm)			VARIES (mm)
			C LHS	C RHS		FRL-1	FRL-2	FRL-3	IL-1	IL-2		SPAN (M)	HEIGHT (M)		TOP SLAB (mm)	BOTT. SLAB (mm)	SIDE WALL (mm)	C1	C2	C3	
1	67230	67245	-2.50	-2.50	TCS-IX	401.250	401.113	401.113	398.489	398.508	1	a	b		c	d	e	1051	923	904	3000
												2	1.5		200	250	200				3000

CLIENT: PUBLIC WORK DEPARTMENT MADHYA PRADESH			PROOF CHECK CONSULTANT: HIGHRAISE CONSTRUCTION AND CONSULTANT PRIVATE LIMITED			DESIGN CONSULTANT: CIVIL MANTRA INFRACON PVT. LTD.			APPROVED:- SM			PROJECT:- UPGADATION AND RECONSTRUCTION OF EXISTING INTERMEDIATE LANE TO 2-LANE WITH PAVED SHOULDERS CONFIGURATION FROM KM 43.000 (BARNA RIVER) TO KM 77.000 (KEN RIVER), LENGTH 34.000 KM ON GULGANJ-AMANGANJ-PAWAI-KATNI NH-43 EXT. ALONG WITH ONE TIME IMPROVEMENT IN 01 NO OF BYPASSED BUILT-UP AREA IN A TOTAL LENGTH OF 1.55 KM IN THE STATE OF MADHYA PRADESH ON EPC MODE.		
AUTHORITY ENGINEER:			SAFETY CONSULTANT: EARL TECHNO CONSULTANTS PVT. LTD.			EPC CONTRACTOR: KEYSTONE INFRA PVT. LTD.			CHECKED:- RK			TITLE:- GENERAL ARRANGEMENT DRAWING OF BOX CULVERT AT CH-67+245		
REVISED AS PER LATEST P&P			FOR APPROVAL			DRAWN:- SY			DRAWING NO :- CIPL-D1190-467+245-BC-101-01 OF 01-R1-GAD			DATE: JAN-2025		
NOV-2024												SCALE: AS SHOWN		
												SHEET NO: 01 OF 01		
												FORMAT: A3 (420X297)		
												REV: R1		



- NOTES:-**
- DIMENSIONS ARE IN MILLIMETERS, CHAINAGES & LEVELS ARE IN METER, UNLESS NOTED OTHERWISE.
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 - ONLY WRITTEN DIMENSIONS ARE TO BE FOLLOWED, DO NOT SCALE THE DRAWING SLOPE/CAMBER(%). LAYOUT, SETTING OUT DETAILS, GEOMETRIC DETAIL, PROPOSED CHAINAGE AND ALL LEVELS GIVEN IN THIS DRAWINGS ARE BASED ON HIGHWAY DRAWING.
 - BACK FILLING SHALL BE CARRIED OUT WITH SOIL PROPERTIES, $C=0\%$ & $\phi > 30^\circ$. THE SOIL SHALL BE COMPACTED AT OPTIMUM MOISTURE CONTENT TO 98% PROCTOR DENSITY, SHALL BE CONFIRMED AS PER C:710.1.4 OF IRC 78 AND MORTH SPECIFICATIONS.
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 - GRADES CONSIDERED:
BOX : M30
LEVELING COURSE : M15
HYSD STEEL : 550D
 - CLEAR COVER:
BOTTOM SLAB & WALL (EARTH FACE) : 75 MM.
WALL (INNER FACE) & TOP SLAB : 45 MM.
 - WEARING COAT SHOULD BE PROVIDED AS PER HIGHWAY CRUST.
 - SEISMIC ZONE:- II.
 - SOIL DENSITY ON THE BACKFILL AND EARTH CUSHION SHOULD CONFORM TO CLAUSE 305 2.1.5 OF MORTH SPECIFICATION FOR ROAD & BRIDGE WORKS (FIFTH REVISION).
 - FLEXIBLE APRON 1000 MM THICK COMPRISING OF LOOSE STONE BOULDERS SHOULD BE PROVIDED BEYOND CURTAIN WALL AS PER IRC-SP-13.
 - STRUCTURES EXCEEDING 45 M IN LENGTH SHOULD BE PROVIDED WITH ONE OR MORE EXPANSION JOINT.
 - PROPOSED STRUCTURE IS DESIGNED FOR LIVE LOAD AS PER IRC-6
CASE 1- 3 LANE OF CLASS A
CASE 2- 1 LANE OF CLASS A + 1 LANE OF 70R
CASE 3- SV
 - EXPOSURE CONDITION-SEVERE
 - ANY LOOSE/UNSUITABLE MATERIAL FOUND BELOW THE BOX SHALL BE REPLACED WITH GRANULAR MATERIAL LIKE SANDY MURUM OR STONE DUST AS PER IRC:SP:13-2004 CL NO.23.3
 - THE MAXIMUM BASE PRESSURE SHALL BE CONSIDERED AS PER DESIGN GIVEN IN TABLE & SHALL BE ENSURED SITE BY DOING PLATE LOAD TEST IF NOT ACHIEVED, SOIL OF 1000mm BELOW G.L SHALL BE REPLACED WITH GRANULAR MATERIAL LIKE SANDY MURUM OR STONE DUST OR GSB AS PER MATERIAL AVAILABLE AT SITE
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 - REFER SEPARATE DRAWING FOR RETAINING WALL & PARAPET WALL.

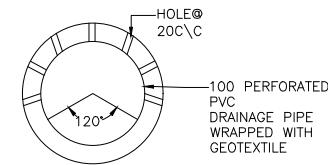
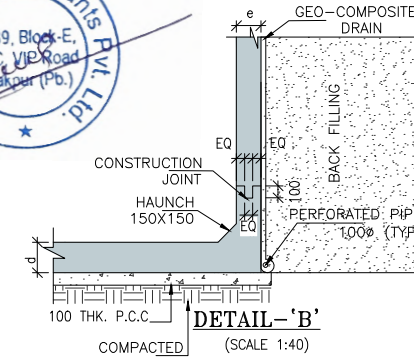
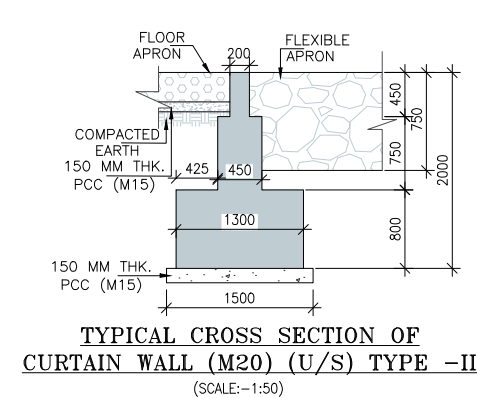
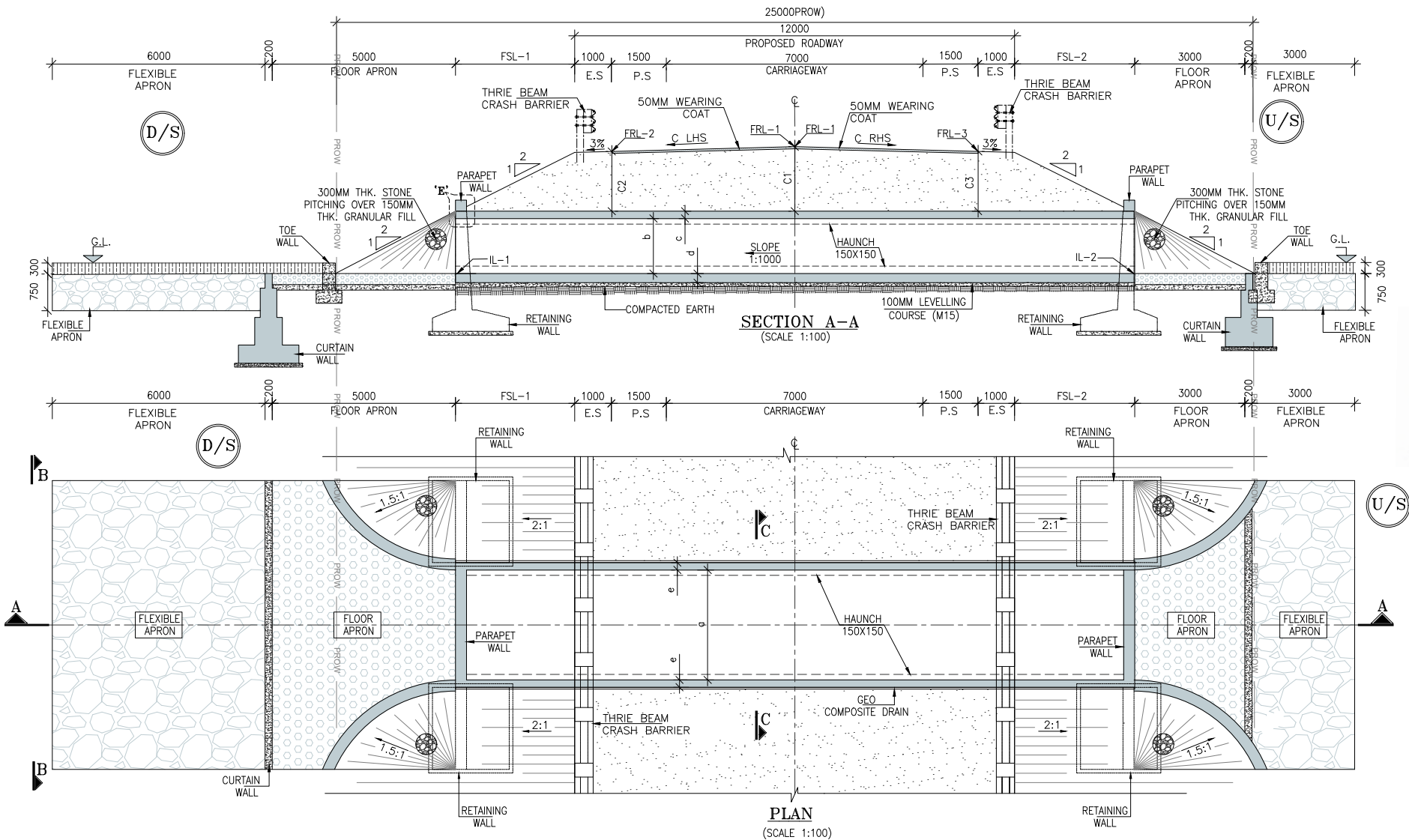
LEGEND:-

- FRL - FINISHED ROAD LEVEL
IL - INVERT LEVEL
GL - GROUND LEVEL
EXP. - EXPANSION

SCHEDULE OF DIMENSION FOR BOX CULVERT

S.NO.	CA CHAINAGE	PROPOSED CHAINAGE	MCW CAMBER		TCS	FRL (MCW) (M)			INVERT LEVEL (M)		BOX SIZE			BOX DIMENSION (MCW)			CUSHION MCW (mm)			Extended Length		BOX Length (mm)	PARAPET HEIGHT (mm)	REINF. GROUP	SBC REQUIRED (T/SQM)
											No. of cells	SPAN (SQ.) (M)	HEIGHT (M)	TOP SLAB (mm)	BOTT. SLAB (mm)	SIDE WALL (mm)				FS1 (mm)	FS2 (mm)				
			C LHS	C RHS		FRL-1	FRL-2	FRL-3	IL-1	IL-2							a	b	c						
1	69+650	69+672	2.38	-0.13	TCS-I-A	367.156	367.275	367.150	364.397	364.385	1	3	1.5	250	300	250	1015	1128	1015	2197	1969	16166	300	G11	12

CLIENT: PUBLIC WORK DEPARTMENT MADHYA PRADESH			PROOF CHECK CONSULTANT: HIGHRAISE CONSTRUCTION AND CONSULTANT PRIVATE LIMITED			DESIGN CONSULTANT: CIVIL MANTRA INFRACON PVT. LTD. 3rd FLOOR TOWER 3A, DLF CORPORATE GREEN, SECTOR 74A, GURUGRAM - 122004			APPROVED:- SM CHECKED:- RK DESIGNED:- ST DRAWN:- SY			PROJECT:- UPGRADEATION AND RECONSTRUCTION OF EXISTING INTERMEDIATE LANE TO 2-LANE WITH PAVED SHOULDERS CONFIGURATION FROM KM 43.000 (BARNA RIVER) TO KM 77.000 (KEN RIVER), LENGTH 34.000 KM ON GULGANJ- AMANGANJ- PAWAI-KATNI NH-43 EXT. ALONG WITH ONE TIME IMPROVEMENT IN 01 NO OF BYPASSED BUILT-UP AREA IN A TOTAL LENGTH OF 1.55 KM IN THE STATE OF MADHYA PRADESH ON EPC MODE. TITLE:- GENERAL ARRANGEMENT DRAWING OF BOX CULVERT AT CH-69+672 DRAWING NO :- CIPL-D1190-69+672 -BC-101-01 OF 01-R1-GAD		
SAFETY CONSULTANT: EARL TECHNO CONSULTANTS PVT. LTD.			EPC CONTRACTOR: KEYSTONE INFRA PVT. LTD.			DATE: JAN-2025 SCALE: AS SHOWN SHEET NO: 01 OF 01 FORMAT: A3 (420X297) REV: R1								



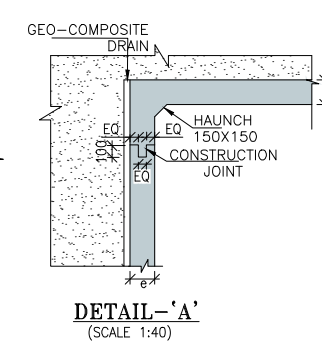
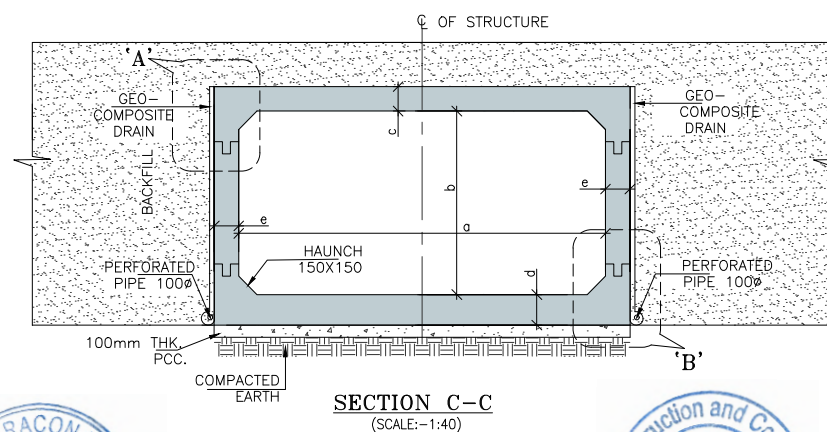
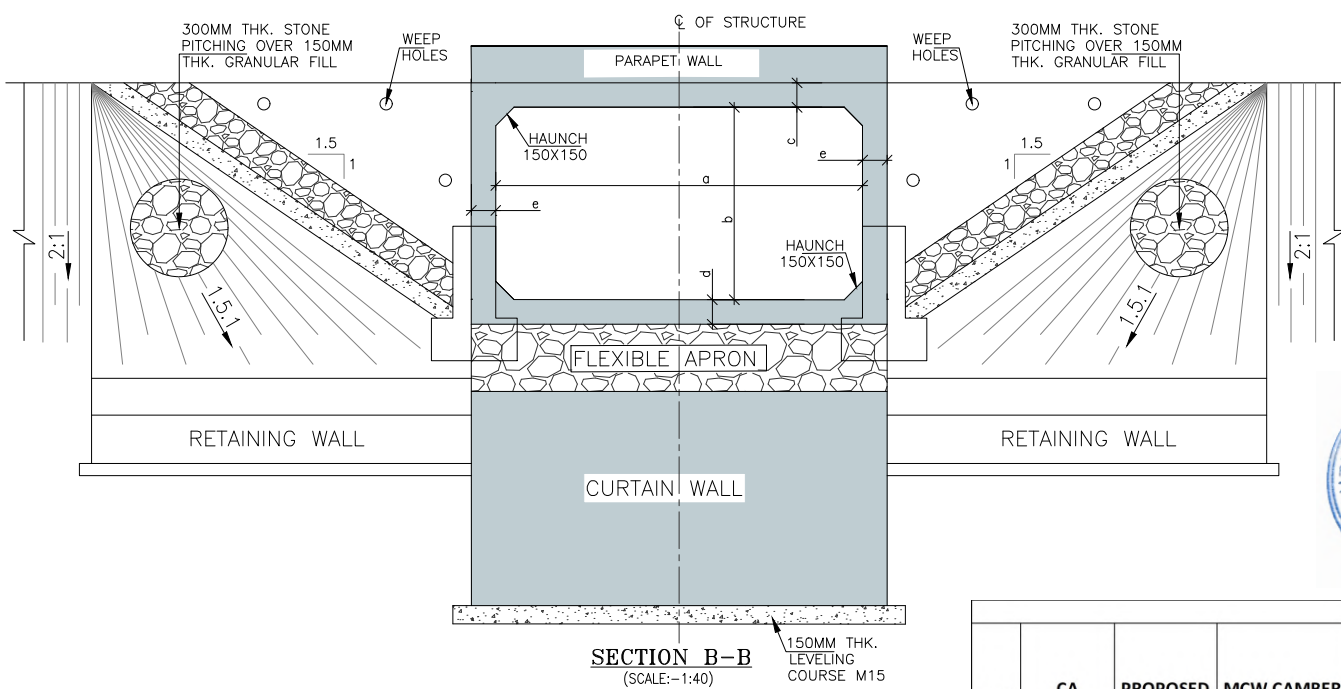
DETAIL FOR 100 Ø PERFORATED PIPE

NOTES:-

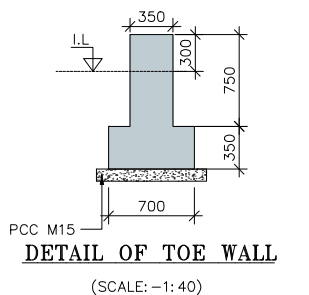
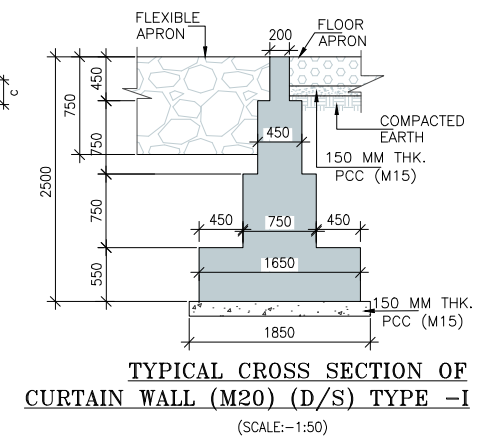
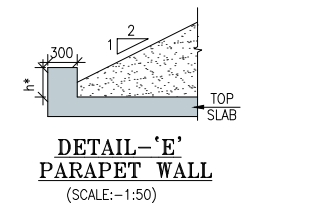
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 - HYSD STEEL : 550D
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 - CASE 2 - 1 LANE OF CLASS A + 1 LANE OF 70R
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LEGEND:-

- FRL - FINISHED ROAD LEVEL
- IL - INVERT LEVEL
- GL - GROUND LEVEL
- EXP. - EXPANSION



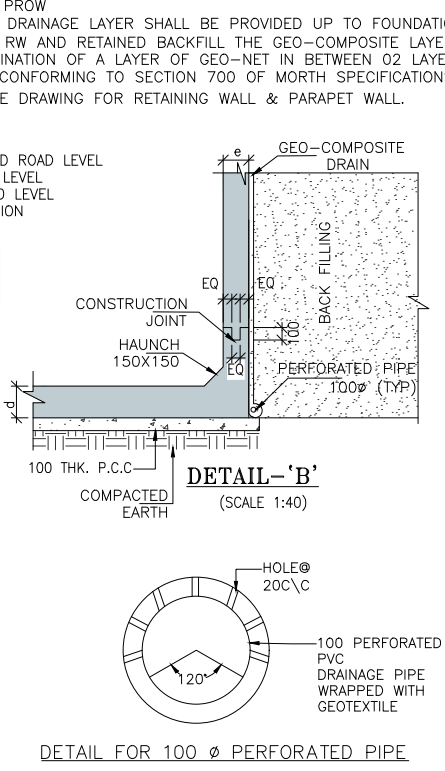
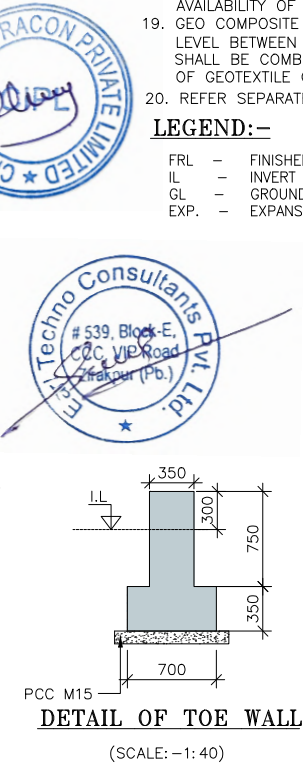
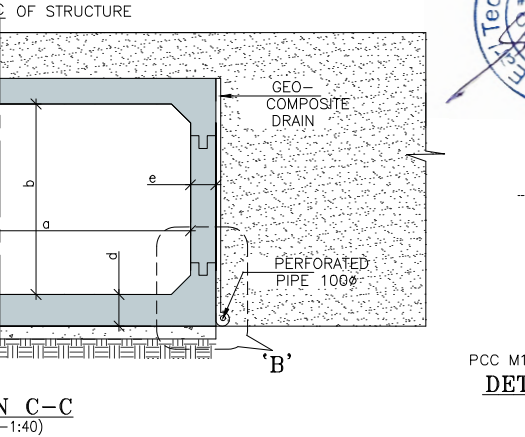
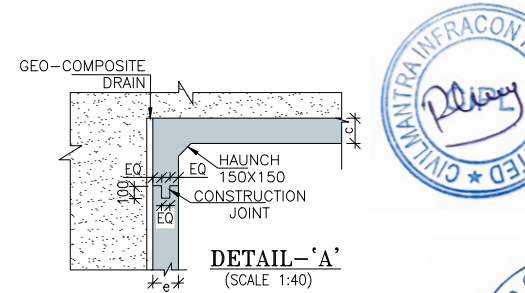
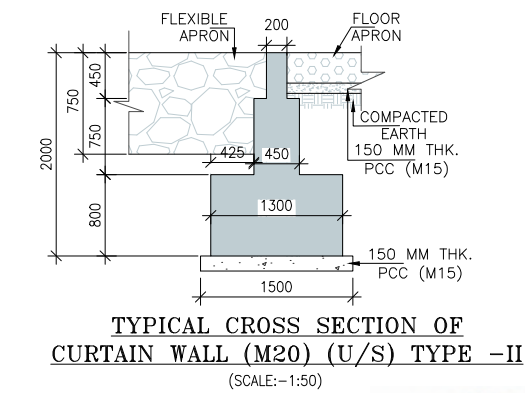
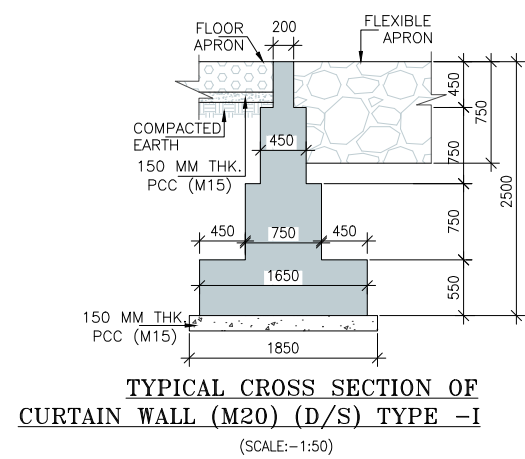
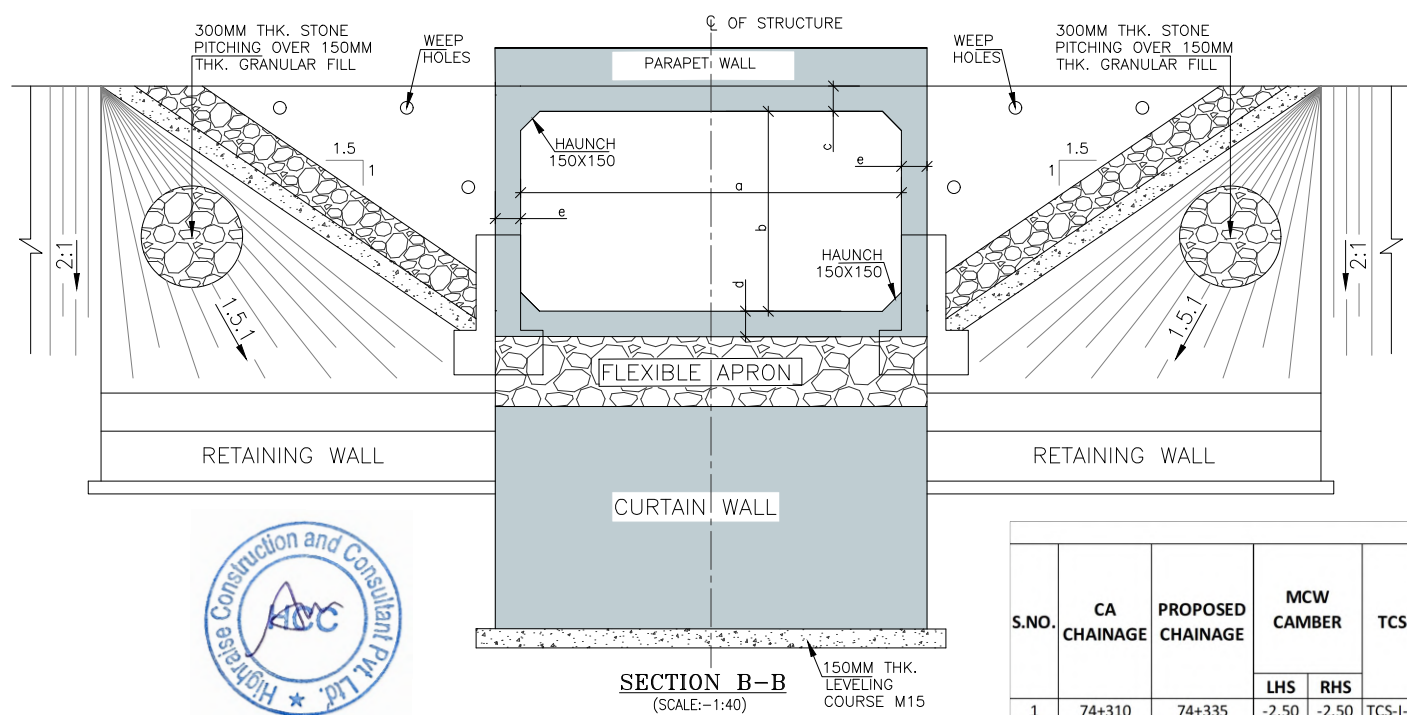
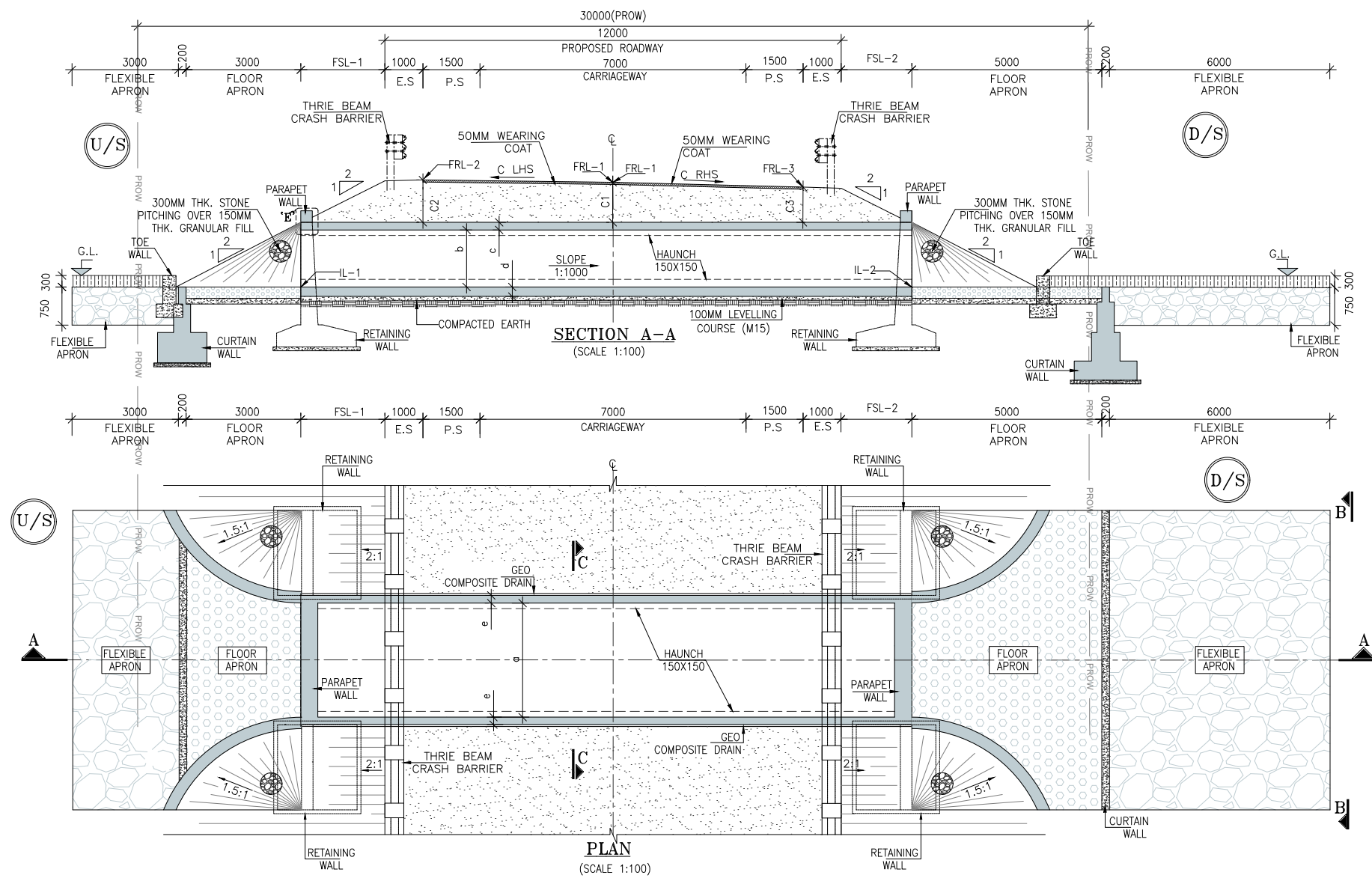
DETAIL - 'A' (SCALE 1:40)



SCHEDULE OF DIMENSION FOR BOX CULVERT

SCHEDULE OF DIMENSION FOR BOX CULVERT																									
S.NO.	CA CHAINAGE	PROPOSED CHAINAGE	MCW CAMBER		TCS	FRL (MCW) (M)			INVERT LEVEL (M)		BOX SIZE			BOX DIMENSION (MCW)			CUSHION MCW (mm)			Extended Length		BOX Length (mm)	PARAPET HEIGHT (mm)	REINF. GROUP	SBC REQUIRED (T/SQM)
											No. of cells	SPAN (SQ.) (M)	HEIGHT (M)	TOP SLAB (mm)	BOTT. SLAB (mm)	SIDE WALL (mm)				FS1 (mm)	FS2 (mm)				
			C LHS	C RHS		FRL-1	FRL-2	FRL-3	IL-1	IL-2							a	b	c						
1	71+600	71+605	-1.27	-0.13	TCS-I-A	335.884	335.820	335.878	331.255	331.267	1	3	1.5	250	300	250	2873	2815	2861	5571	5661	23232	300	G12	12

			 PUBLIC WORK DEPARTMENT MADHYA PRADESH	CLIENT:		 PROOF CHECK CONSULTANT : HIGHRAISE CONSTRUCTION AND CONSULTANT PRIVATE LIMITED		 DESIGN CONSULTANT : CIVIL MANTRA INFRACON PVT. LTD. 3rd FLOOR TOWER 3A, DLF CORPORATE GREEN, SECTOR 74A, GURUGRAM - 122004		APPROVED:- SM		PROJECT:- UPGRADEATION AND RECONSTRUCTION OF EXISTING INTERMEDIATE LANE TO 2-LANE WITH PAVED SHOULDERS CONFIGURATION FROM KM 43.000 (BARNA RIVER) TO KM 77.000 (KEN RIVER), LENGTH 34.000 KM ON GULGANJ- AMANGANJ- PAWAI-KATNI NH-43 EXT. ALONG WITH ONE TIME IMPROVEMENT IN 01 NO OF BYPASSED BUILT-UP AREA IN A TOTAL LENGTH OF 1.55 KM IN THE STATE OF MADHYA PRADESH ON EPC MODE.				
				AUTHORITY ENGINEER :		 SAFETY CONSULTANT : EARL TECHNO CONSULTANTS PVT. LTD.		 EPC CONTRACTOR : KEYSTONE INFRA PVT. LTD.		CHECKED:- RK						
R1	JAN-2025			REVISED AS PER LATEST P&P						DESIGNED:- ST						
R0	NOV-2024			FOR APPROVAL						DRAWN:- SY						
REV	DATE		DESCRIPTION										TITLE:- GENERAL ARRANGEMENT DRAWING OF BOX CULVERT AT CH-71+605			
												SCALE: AS SHOWN		DATE: JAN-2025		
												SHEET NO: 01 OF 01		DATE: JAN-2025		
												FORMAT: A3 (420X297)		DATE: JAN-2025		
												REV:		DATE: JAN-2025		



NOTES:-

- DIMENSIONS ARE IN MILLIMETERS, CHAINAGES & LEVELS ARE IN METER, UNLESS NOTED OTHERWISE.
- CHAINAGES SHOWN HERE ARE ALONG THE CENTER LINE.
- ONLY WRITTEN DIMENSIONS ARE TO BE FOLLOWED, DO NOT SCALE THE DRAWING SLOPE/CAMBER(E%). LAYOUT, SETTING OUT DETAILS, GEOMETRIC DETAIL, PROPOSED CHAINAGE AND ALL LEVELS GIVEN IN THIS DRAWINGS ARE BASED ON HIGHWAY DRAWING.
- BACK FILLING SHALL BE CARRIED OUT WITH SOIL PROPERTIES, C=0 % & $\phi > 30^\circ$. THE SOIL SHALL BE COMPACTED AT OPTIMUM MOISTURE CONTENT TO 98% PROCTOR DENSITY, SHALL BE CONFIRMED AS PER C:710.1.4 OF IRC 78 AND MORTH SPECIFICATIONS.
- THE WORK IS TO BE CARRIED OUT AS PER APPROVED RELEVANT DETAILED DRAWINGS FOR DIFFERENT COMPONENTS OF THE STRUCTURE AND AS PER APPROVED HIGHWAY DRAWING.
- LAYOUT OF STRUCTURE SHALL BE CHECKED AT SITE WITH RESPECT TO FORMATION LEVEL EXISTING GROUND LEVEL AVAILABLE CLEARANCE ETC. AND ANY DISCREPANCY AMBIGUITY FOUND IN DRAWING OR AT SITE SHALL BE BROUGHT TO THE NOTICE OF DESIGN CONSULTANT PRIOR TO EXECUTION OF WORK.
- GRADES CONSIDERED:
BOX :M30
LEVELING COURSE :M15
HYSD STEEL :550D
- CLEAR COVER:
BOTTOM SLAB & WALL(EARTH FACE) 75 MM.
WALL (INNER FACE) & TOP SLAB 45 MM.
- WEARING COAT SHOULD BE PROVIDED AS PER HIGHWAY CRUST.
- SEISMIC ZONE:- II.
- SOIL DENSITY ON THE BACKFILL AND EARTH CUSHION SHOULD CONFORM TO CLAUSE 305 2.1.5 OF MORTH SPECIFICATION FOR ROAD & BRIDGE WORKS (FIFTH REVISION).
- STRUCTURES EXCEEDING 45 M IN LENGTH SHOULD BE PROVIDED WITH ONE OR MORE EXPANSION JOINT.
- PROPOSED STRUCTURE IS DESIGNED FOR LIVE LOAD AS PER IRC-6
CASE 1- 3 LANE OF CLASS A
CASE 2- 1 LANE OF CLASS A + 1 LANE OF 70R
CASE 3- SV
- EXPOSURE CONDITION-SEVERE
- ANY LOOSE/UNSUITABLE MATERIAL FOUND BELOW THE BOX SHALL BE REPLACED WITH GRANULAR MATERIAL LIKE SANDY MURUM OR STONE DUST AS PER IRC:SP:13-2004 CL NO.23.3
- THE MAXIMUM BASE PRESSURE SHALL BE CONSIDERED AS PER DESIGN GIVEN IN TABLE & SHALL BE ENSURED SITE BY DOING PLATE LOAD TEST IF NOT ACHIEVED, SOIL OF 1000mm BELOW G.L SHALL BE REPLACED WITH GRANULAR MATERIAL LIKE SANDY MURUM OR STONE DUST OR GSB AS PER MATERIAL AVAILABLE AT SITE
- PROTECTION WORK ON U/S AND D/S SIDE SHALL BE AS PER AVAILABILITY OF PROW
- GEO COMPOSITE DRAINAGE LAYER SHALL BE PROVIDED UP TO FOUNDATION LEVEL BETWEEN RW AND RETAINED BACKFILL THE GEO-COMPOSITE LAYER SHALL BE COMBINATION OF A LAYER OF GEO-NET IN BETWEEN 02 LAYERS OF GEOTEXTILE CONFORMING TO SECTION 700 OF MORTH SPECIFICATIONS.
- REFER SEPARATE DRAWING FOR RETAINING WALL & PARAPET WALL.

LEGEND:-

- FRL - FINISHED ROAD LEVEL
IL - INVERT LEVEL
GL - GROUND LEVEL
EXP. - EXPANSION

SCHEDULE OF DIMENSION FOR BOX CULVERT

S.NO.	CA CHAINAGE	PROPOSED CHAINAGE	MCW CAMBER		TCS	FRL (MCW) (M)			INVERT LEVEL (M)		BOX SIZE			BOX DIMENSION (MCW)			CUSHION MCW (mm)			Extended Length		BOX Length (mm)	PARAPET HEIGHT (mm)	REINF. GROUP	SBC REQUIRED (T/SQM)
			LHS	RHS		FRL-1	FRL-2	FRL-3	IL-1	IL-2	No. of cells	SPAN (M)	HEIGHT (M)	TOP SLAB (mm)	BOTT. SLAB (mm)	SIDE WALL (mm)	C1	C2	C3	FS1 (mm)	FS2 (mm)				
1	74+310	74+335	-2.50	-2.50	TCS-I-A	311.311	311.186	311.186	308.364	308.352	1	3	1.5	250	300	250	1203	1072	1084	2084	2108	16192	h* 300	G11	12

CLIENT:
PUBLIC WORK DEPARTMENT MADHYA PRADESH
AUTHORITY ENGINEER:

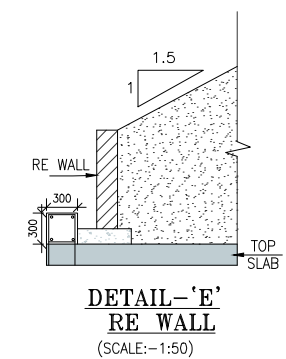
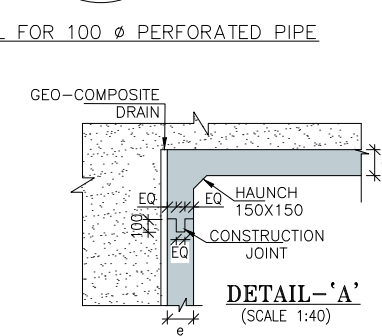
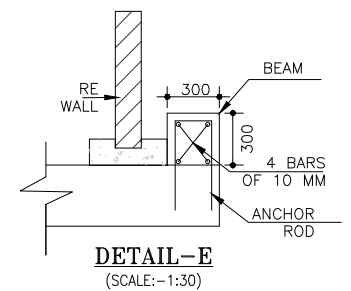
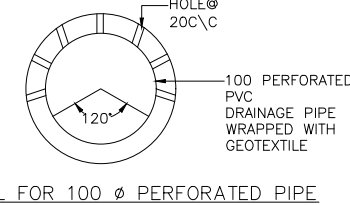
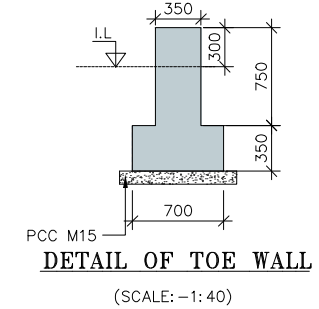
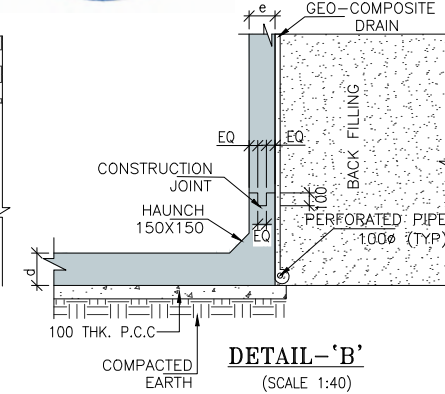
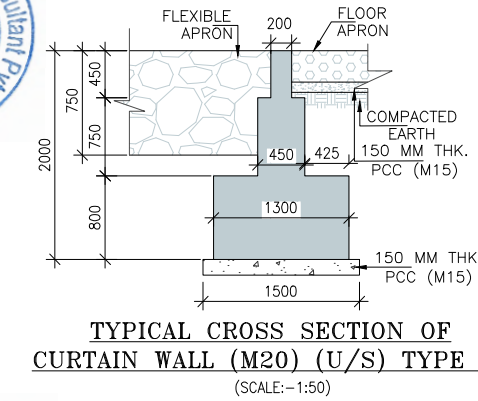
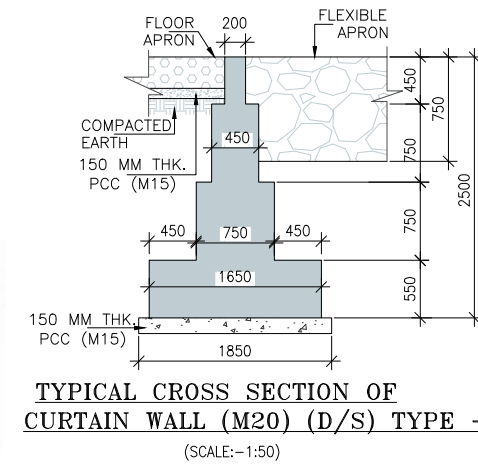
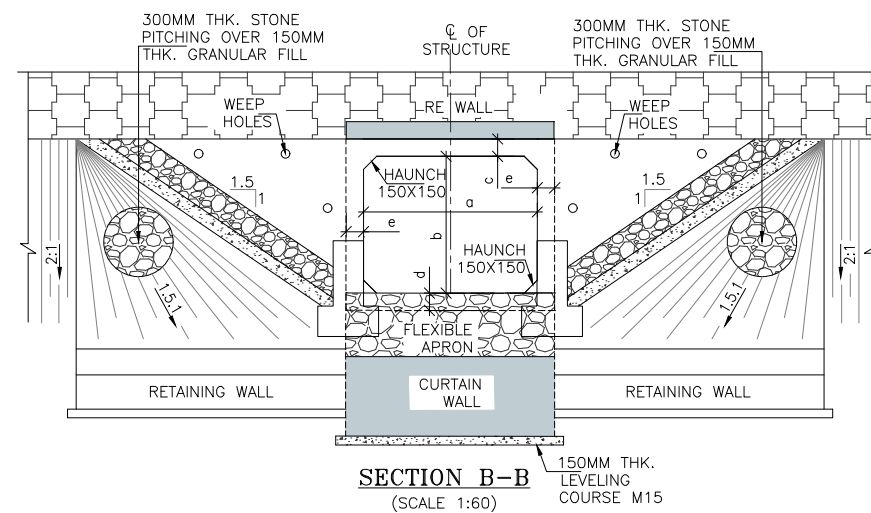
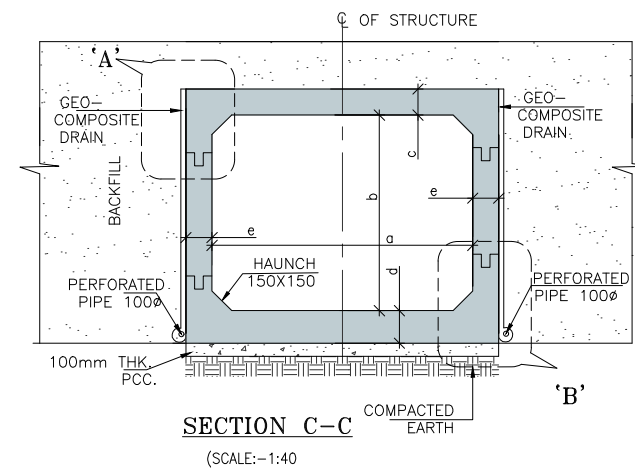
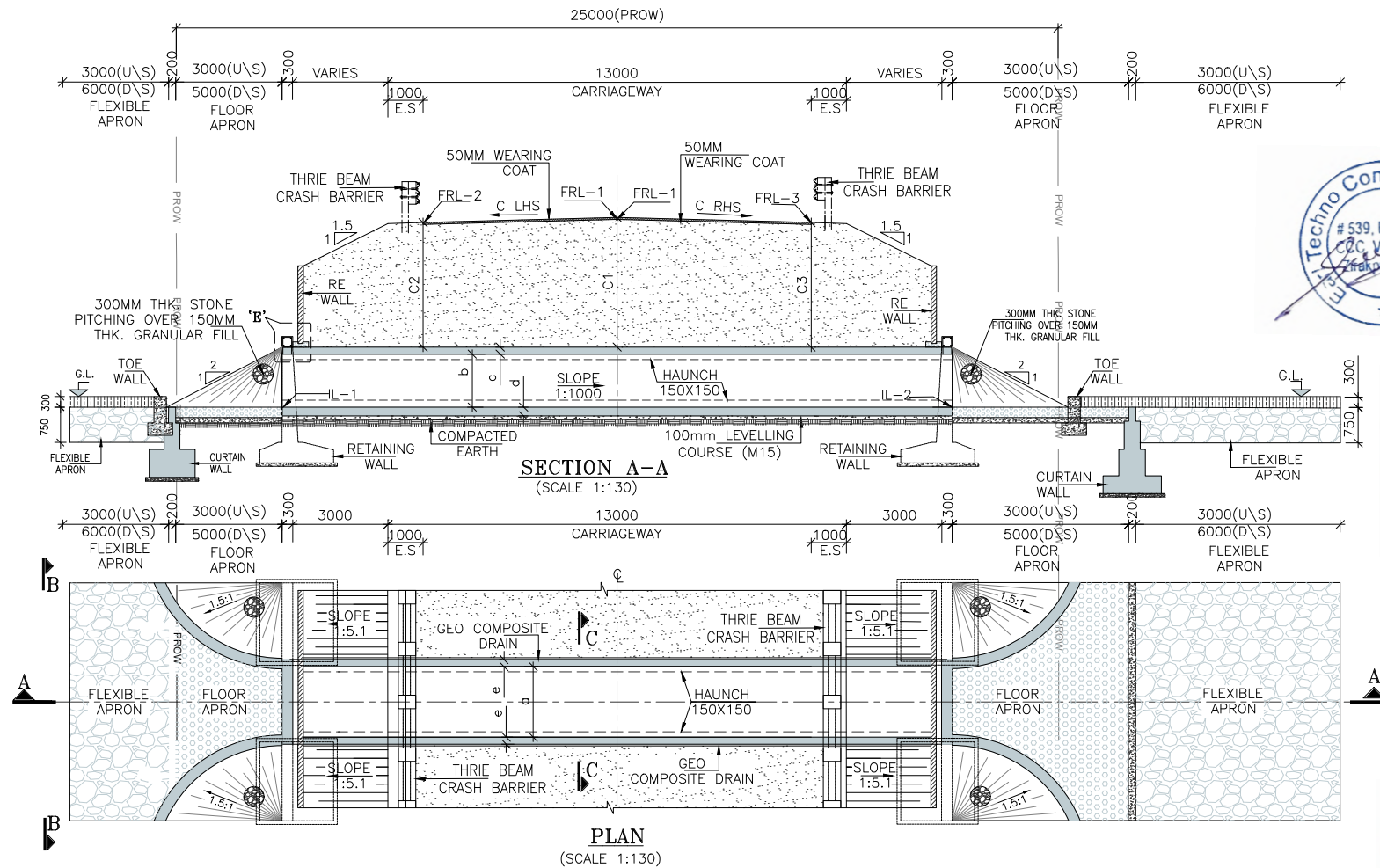
PROOF CHECK CONSULTANT:
HIGHRAISE CONSTRUCTION AND CONSULTANT PRIVATE LIMITED
SAFETY CONSULTANT:
EARL TECHNO CONSULTANTS PVT. LTD.

DESIGN CONSULTANT:
CIVIL MANTRA INFRACON PVT. LTD.
3rd FLOOR TOWER 3A, DLF CORPORATE GREEN, SECTOR 74A, GURUGRAM - 122004
EPC CONTRACTOR:
KEYSTONE INFRA PVT. LTD.

APPROVED:- SM
CHECKED:- RK
DESIGNED:- ST
DRAWN:- SY

PROJECT:- UPGRADATION AND RECONSTRUCTION OF EXISTING INTERMEDIATE LANE TO 2-LANE WITH PAVED SHOULDERS CONFIGURATION FROM KM 43.000 (BARNA RIVER) TO KM 77.000 (KEN RIVER), LENGTH 34.000 KM ON GULGANJ- AMANGANJ- PAWAI-KATNI NH-43 EXT. ALONG WITH ONE TIME IMPROVEMENT IN 01 NO OF BYPASSED BUILT-UP AREA IN A TOTAL LENGTH OF 1.55 KM IN THE STATE OF MADHYA PRADESH ON EPC MODE.
TITLE:-GENERAL ARRANGEMENT DRAWING OF BOX CULVERT AT CH-74+335
DRAWING NO :- CIPL-D1190-74+335-BC-101-01 OF 01-R1-GAD

DATE	JAN/2025
SCALE	AS SHOWN
SHEET NO.	01 OF 01
FORMAT	A3 (420X297)
REV.	RT



- NOTES:-**
- DIMENSIONS ARE IN MILLIMETERS, CHAINAGES & LEVELS ARE IN METER, UNLESS NOTED OTHERWISE.
 - CHAINAGES SHOWN HERE ARE ALONG THE CENTER LINE.
 - ONLY WRITTEN DIMENSIONS ARE TO BE FOLLOWED, DO NOT SCALE THE DRAWING SLOPE/CAMBER(E%). LAYOUT, SETTING OUT DETAILS, GEOMETRIC DETAIL, PROPOSED CHAINAGE AND ALL LEVELS GIVEN IN THIS DRAWINGS ARE BASED ON HIGHWAY DRAWING.
 - BACK FILLING SHALL BE CARRIED OUT WITH SOIL PROPERTIES, $C=0\%$ & $\phi > 30^\circ$. THE SOIL SHALL BE COMPACTED AT OPTIMUM MOISTURE CONTENT TO 98% PROCTOR DENSITY, SHALL BE CONFIRMED AS PER C:710.1.4 OF IRC 78 AND MORTH SPECIFICATIONS.
 - THE WORK IS TO BE CARRIED OUT AS PER APPROVED RELEVANT DETAILED DRAWINGS FOR DIFFERENT COMPONENTS OF THE STRUCTURE AND AS PER APPROVED HIGHWAY DRAWING.
 - LAYOUT OF STRUCTURE SHALL BE CHECKED AT SITE WITH RESPECT TO FORMATION LEVEL EXISTING GROUND LEVEL AVAILABLE CLEARANCE ETC. AND ANY DISCREPANCY AMBIGUITY FOUND IN DRAWING OR AT SITE SHALL BE BROUGHT TO THE NOTICE OF DESIGN CONSULTANT PRIOR TO EXECUTION OF WORK.
 - GRADES CONSIDERED:
BOX :M30
LEVELING COURSE :M15
HYSD STEEL :550D
 - CLEAR COVER:
BOTTOM SLAB & WALL (EARTH FACE) 75 MM.
WALL (INNER FACE) & TOP SLAB 45 MM.
 - WEARING COAT SHOULD BE PROVIDED AS PER HIGHWAY CRUST.
 - SEISMIC ZONE:- II.
 - SOIL DENSITY ON THE BACKFILL AND EARTH CUSHION SHOULD CONFORM TO CLAUSE 305 2.1.5 OF MORTH SPECIFICATION FOR ROAD & BRIDGE WORKS (FIFTH REVISION).
 - FLEXIBLE APRON 1000 MM THICK COMPRISING OF LOOSE STONE BOULDERS SHOULD BE PROVIDED BEYOND CURTAIN WALL AS PER IRC-SP-13.
 - STRUCTURES EXCEEDING 45 M IN LENGTH SHOULD BE PROVIDED WITH ONE OR MORE EXPANSION JOINT.
 - PROPOSED STRUCTURE IS DESIGNED FOR LIVE LOAD AS PER IRC-6
CASE 1- 3 LANE OF CLASS A
CASE 2- 1 LANE OF CLASS A + 1 LANE OF 70R
CASE 3- SV
 - EXPOSURE CONDITION-SEVERE
 - ANY LOOSE/UNSUITABLE MATERIAL FOUND BELOW THE BOX SHALL BE REPLACED WITH GRANULAR MATERIAL LIKE SANDY MURUM OR STONE DUST AS PER IRC:SP-13-2004 CL NO.23.3
 - THE MAXIMUM BASE PRESSURE SHALL BE CONSIDERED AS PER DESIGN GIVEN IN TABLE & SHALL BE ENSURED SITE BY DOING PLATE LOAD TEST IF NOT ACHIEVED. SOIL OF 1000mm BELOW G.L. SHALL BE REPLACED WITH GRANULAR MATERIAL LIKE SANDY MURUM OR STONE DUST OR GSB AS PER MATERIAL AVAILABLE AT SITE
 - PROTECTION WORK ON U/S AND D/S SIDE SHALL BE AS PER AVAILABILITY OF PROW
 - GEO COMPOSITE DRAINAGE LAYER SHALL BE PROVIDED UP TO FOUNDATION LEVEL BETWEEN RW AND RETAINED BACKFILL THE GEO-COMPOSITE LAYER SHALL BE COMBINATION OF A LAYER OF GEO-NET IN BETWEEN 02 LAYERS OF GEOTEXTILE CONFORMING TO SECTION 700 OF MORTH SPECIFICATIONS.
 - REFER SEPARATE DRAWING FOR RETAINING WALL.

LEGEND:-

- FRL - FINISHED ROAD LEVEL
IL - INVERT LEVEL
GL - GROUND LEVEL
EXP. - EXPANSION

SCHEDULE OF DIMENSION FOR BOX CULVERT

S.NO.	CA CHAINAGE	PROPOSED CHAINAGE	MCW CAMBER		TCS	FRL (MCW) (M)			INVERT LEVEL (M)		No. of cells	BOX SIZE		BOX DIMENSION (MCW)			CUSHION MCW (mm)			VARIES (mm)		BOX Length (mm)	REINF. GROUP	SBC REQUIRED (T/SQM)
			C LHS	C RHS		FRL-1	FRL-2	FRL-3	IL-1	IL-2		SPAN (SQ.) (M)	HEIGHT (M)	TOP SLAB (mm)	BOTT. SLAB (mm)	SIDE WALL (mm)	C1	C2	C3	LHS	RHS			
1	55+350	55+373	-2.50	-2.50	TCS-IX	440.536	440.398	440.398	429.958	429.977	1	2	1.5	300	350	300	8768	8640	8621	3000	3000	19600	G9	24
1	65+720	65+727	-2.50	-2.50	TCS-IX	442.359	442.222	442.222	435.327	435.346	1	2	1.5	250	300	250	5272	5144	5125	3000	3000	19600	G6	17

CLIENT:
PUBLIC WORK DEPARTMENT MADHYA PRADESH

AUTHORITY ENGINEER:

PROOF CHECK CONSULTANT:
EARL TECHNO CONSULTANTS PVT. LTD.

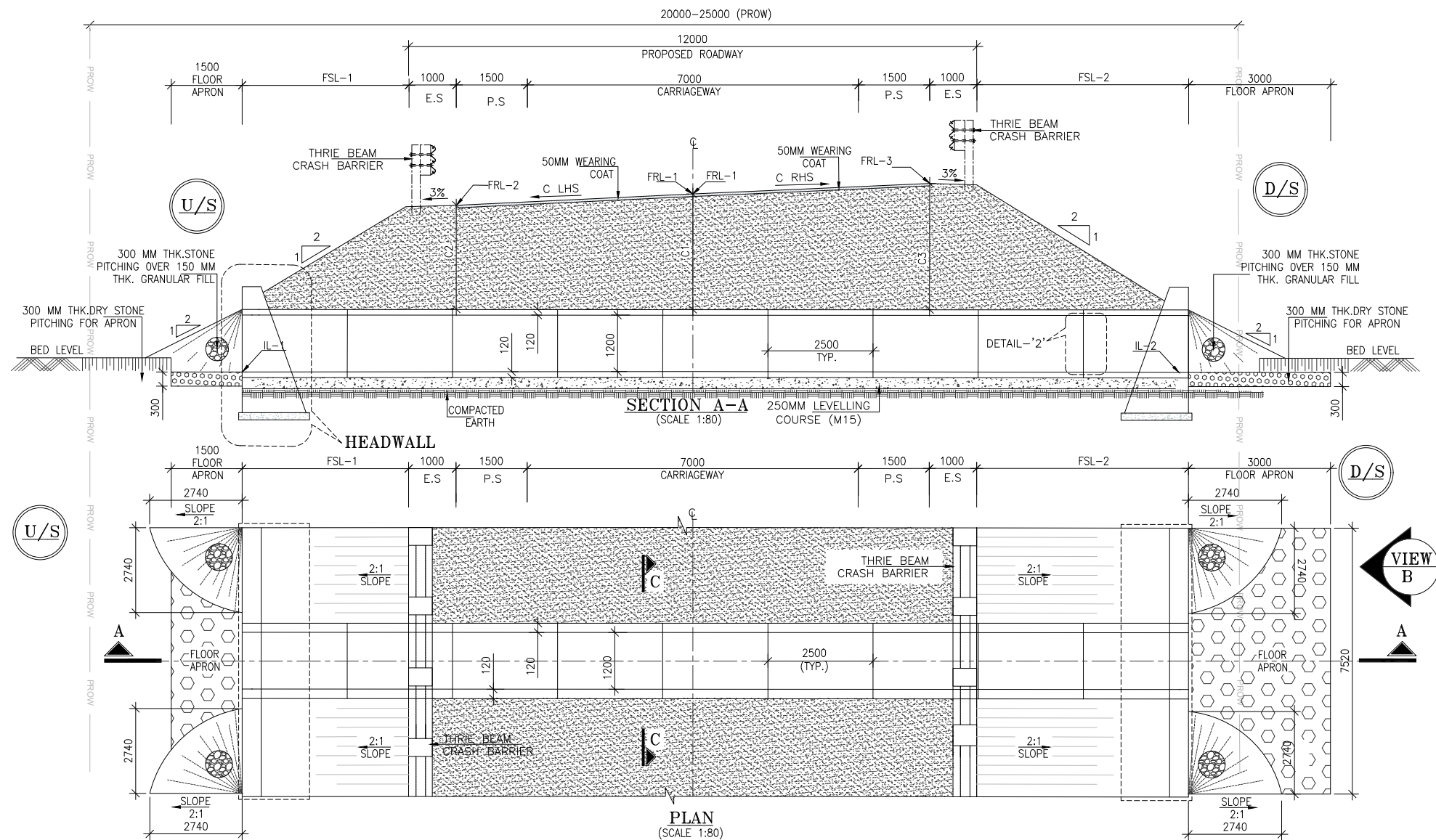
DESIGN CONSULTANT:
CIVIL MANTRA INFRACON PVT. LTD.

APPROVED:- SM
CHECKED:- RK
DESIGNED:- ST
DRAWN:- SY

PROJECT:- UPGRADATION AND RECONSTRUCTION OF EXISTING INTERMEDIATE LANE TO 2-LANE WITH PAVED SHOULDERS CONFIGURATION FROM KM 43.000 (BARNA RIVER) TO KM 77.000 (KEN RIVER), LENGTH 34.000 KM ON GULGANJ-AMANGANJ-PAWAI-KATNI NH-43 EXT. ALONG WITH ONE TIME IMPROVEMENT IN 01 NO OF BYPASSED BUILT-UP AREA IN A TOTAL LENGTH OF 1.55 KM IN THE STATE OF MADHYA PRADESH ON EPC MODE.

TITLE:- GENERAL ARRANGEMENT DRAWING OF BOX CULVERT TCS-9

DRAWING NO :- CIPL-D1190-TYP.-BC-101-01 OF 01-R1-GAD

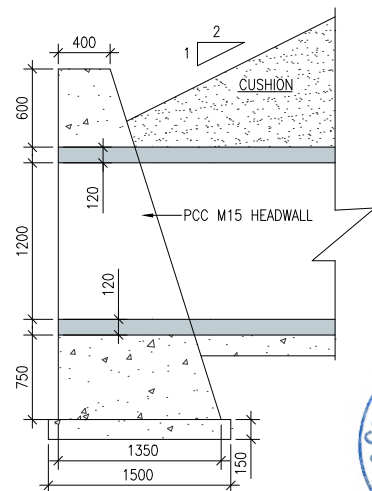


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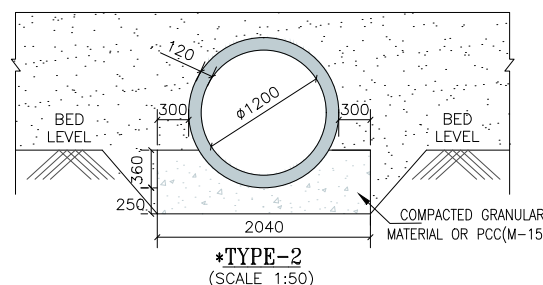
- DRAWING SHALL NOT BE SCALED. ONLY WRITTEN DIMENSION TO BE FOLLOWED.
- ALL DIMENSION ARE IN MM LEVELS ARE IN METER. UNLESS OTHERWISE SPECIFIED.
- LONGITUDINAL SLOPE OF PIPE SHOULD BE MIN. OF 1 IN 1000.
- ALL R.C.C PIPES OF NP4 TYPE SHALL BE CONFORM TP I.S 458.
- D= INNER DIA OF NP4 CLASS PIPE
- t= THICKNESS OF PIPE
- FOR SETTING OUT DETAILS & GEOMETRIC DETAILS, REFER SEPERATE HIGHWAY DRAWING.
- IN CASE FOUNDATION IS SLUSHY OR MARSHY AND WORKING CONDITION ARE NOT SUITABLE, IN SITU OF GRANULAR BEDDING OR PCC M-15 CAN BE USED WITH SAME DIMENSION.
- ALL DIMENSION AND LEVEL SHALL BE VERIFIED ON SITE PRIOR TO COMMENCING WORK.
- IF ANY AMBIGUITY FOUND IN DRAWING OR AT SITE, BRING IT TO DESIGNER NOTICE BEFORE EXECUTION OF WORK.
- IN CASE OF EXPOSED ROCK/NON SCOURABLE STRATE FOUND IN BED, FLOOR APRON SHALL BE REMOVED DULY APPROVED BY IE/AE.
- IN CASE WHERE INVERT LEVEL IS HIGHER THAN GROUND LEVEL AT ENDS OF CULVERT OR WHERE THERE IS UNSUITABLE SOIL PROVIDE ADEQUATE CUTOFF WALLS AT END OF CULVERT TO PREVENT SCOUR/EROSION.
- THE CARRIAGEWAY DIMENSIONS AS SHOWN SHALL CONFIRM WITH ROAD CROSS SECTION AT PARTICULAR LOCATION BEFORE START OF WORK.
- CHAINAGE/FORMATION LEVEL/CAMBER ETC. SHALL BE VERIFIED FROM APPROVED PLAN & PROFILE DRAWING BEFORE START OF WORKS.
- GRADE OF CONCRETE SHALL BE AS FOLLOWS :-
i) HEAD WALL - M15
- FOR HEADWALL REINFORCEMENT REFER SEPERATE DRAWING.
- ENCASING DETAIL SHOULD BE REFERED FOR PIPE HAVING CUSHION <600MM FOR NEW/RECONSTRUCTION AND <600MM FOR WIDENING.

LEGEND :-

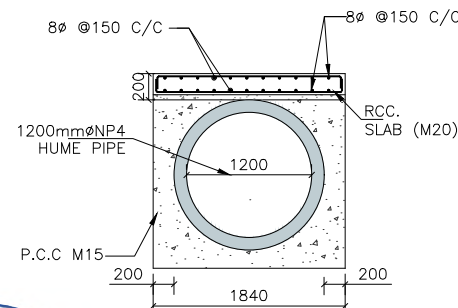
- b) FRL. = FINISHED ROAD LEVEL
- c) THK. = THICKNESS
- d) P.S. = PAVED SHOULDER
- e) F.S.L. = FREE SLOPE
- f) T.B.C.B. = THRIE BEAM CRASH BARRIER
- g) E.S. = EARTHEN SHOULDER



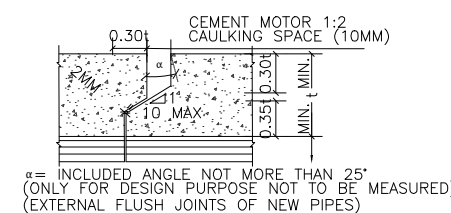
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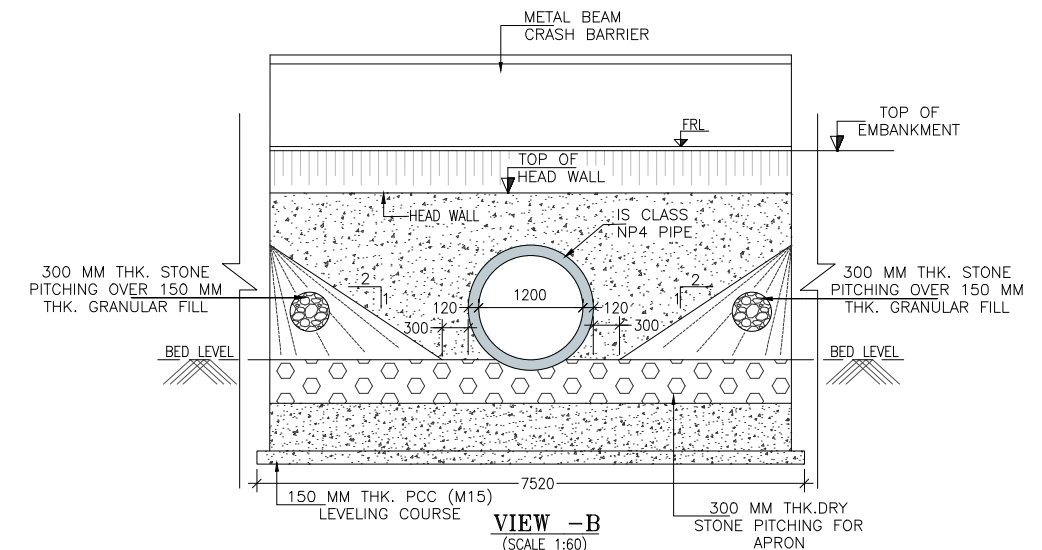
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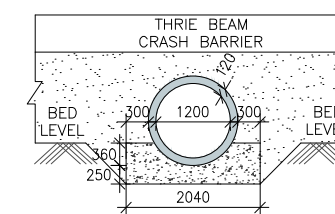
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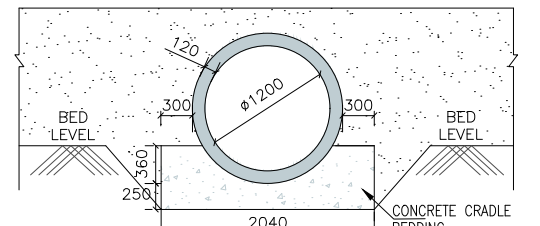
DETAIL-2
(SCALE 1:70)



VIEW -B
(SCALE 1:60)



SECTION C-C
(SCALE 1:70)



*TYPE-3
(SCALE 1:50)

SR NO.	CA CHAINAGE	PROPOSED CHAINAGE	TCS	DIA OF PIPE (m)	MCW CAMBER		FRL MCW			INVERT LEVEL		DEPTH OF FILL (m)			FREE SLOPE (m)		TOTAL LENGTH (m)
					C LHS	C RHS	FRL-1	FRL-2	FRL-3	I.L -1	I.L -2	C1	C2	C3	FSL-1	FSL-2	
1	44+670	44+685	TCS-I-A	1.2	-4.18	4.36	304.732	304.523	304.950	300.891	300.879	2.527	2.312	2.751	4.811	5.689	22.500

CLIENT:
PUBLIC WORK DEPARTMENT MADHYA PRADESH

AUTHORITY ENGINEER:

PROOF CHECK CONSULTANT:
HIGHRAISE CONSTRUCTION AND CONSULTANT PRIVATE LIMITED

SAFETY CONSULTANT:
EARL TECHNO CONSULTANTS PVT. LTD.

DESIGN CONSULTANT:
CIVIL MANTRA INFRACON PVT. LTD.
3rd FLOOR TOWER 3A, DLF CORPORATE GREEN, SECTOR 74A, GURUGRAM - 122004

EPC CONTRACTOR:
KEYSTONE INFRA PVT. LTD.

APPROVED:- SM

CHECKED:- RK

DESIGNED:- ST

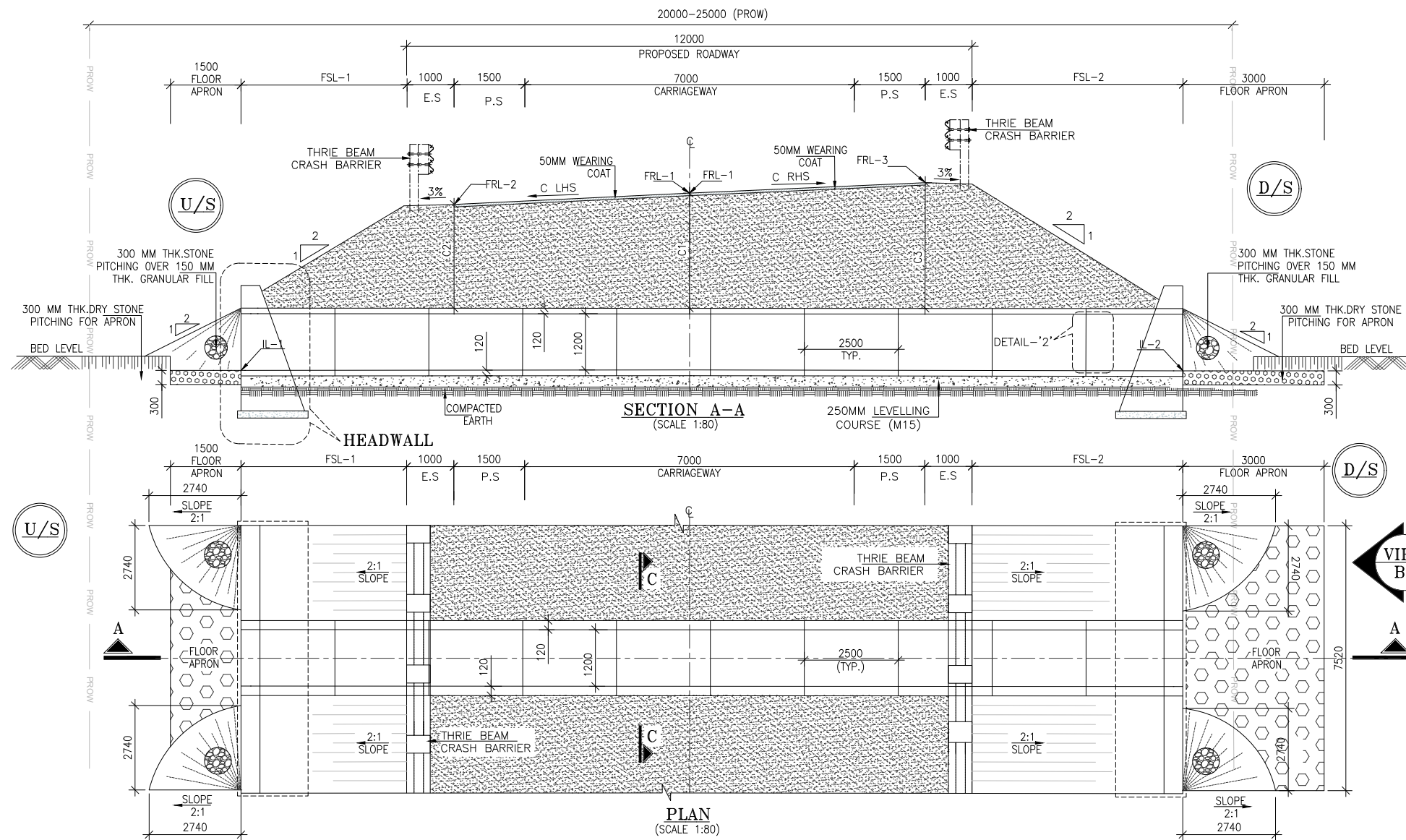
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PROJECT:- UPGRADATION AND RECONSTRUCTION OF EXISTING INTERMEDIATE LANE TO 2-LANE WITH PAVED SHOULDERS CONFIGURATION FROM KM 43.000 (BARNA RIVER) TO KM 77.000 (KEN RIVER), LENGTH 34.000 KM ON GULGANJ- AMANGANJ- PAWAI-KATNI NH-43 EXT. ALONG WITH ONE TIME IMPROVEMENT IN 01 NO OF BYPASSED BUILT-UP AREA IN A TOTAL LENGTH OF 1.55 KM IN THE STATE OF MADHYA PRADESH ON EPC MODE.

TITLE:- GENERAL ARRANGEMENT DRAWING OF PIPE CULVERT AT CH. 44+685 TCS -1A

DRAWING NO :- CIPL-D1190-44+685-PC-101-01 OF 01-R1-GAD

DATE: JAN/2025
SCALE: AS SHOWN
SHEET NO: 01 OF 01
FORMAT: A3 (420X297)
REV: RT

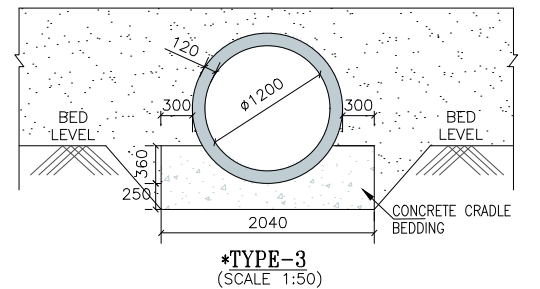
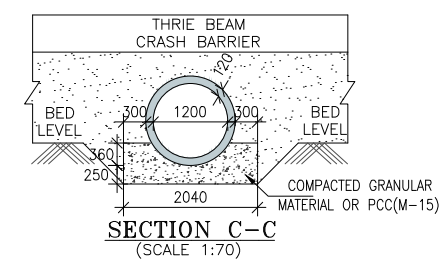
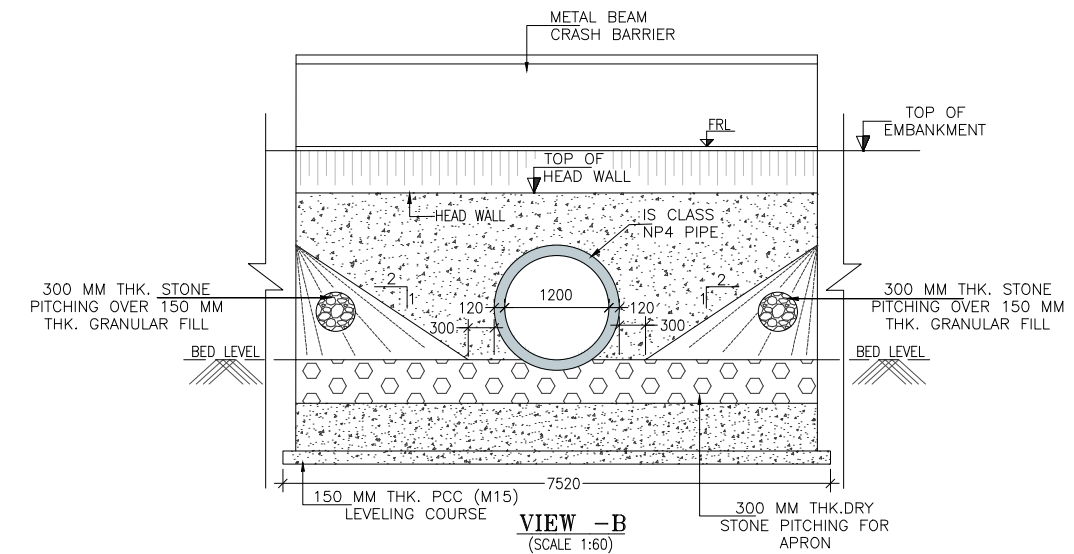
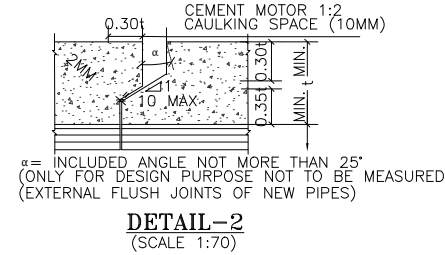
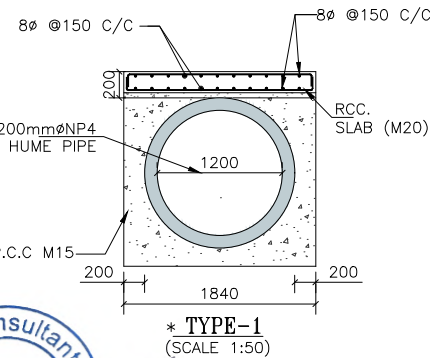
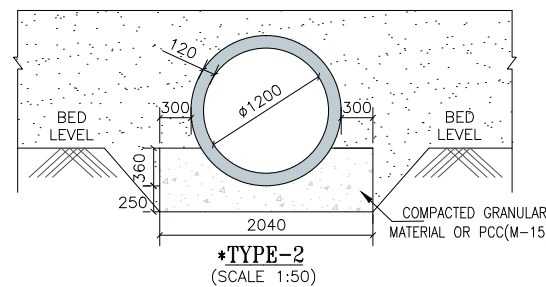
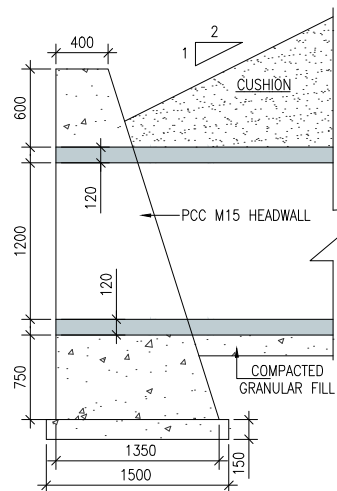


NOTES:-

- DRAWING SHALL NOT BE SCALED. ONLY WRITTEN DIMENSION TO BE FOLLOWED.
- ALL DIMENSION ARE IN MM LEVELS ARE IN METER. UNLESS OTHERWISE SPECIFIED.
- LONGITUDINAL SLOPE OF PIPE SHOULD BE MIN. OF 1 IN 1000.
- ALL R.C.C PIPES OF NP4 TYPE SHALL BE CONFORM TP I.S 458.
- D= INNER DIA OF NP4 CLASS PIPE
- t= THICKNESS OF PIPE
- FOR SETTING OUT DETAILS & GEOMETRIC DETAILS, REFER SEPERATE HIGHWAY DRAWING.
- IN CASE FOUNDATION IS SLUSHY OR MARSHY AND WORKING CONDITION ARE NOT SUITABLE, IN SITU OF GRANULAR BEDDING OR PCC M-15 CAN BE USED WITH SAME DIMENSION.
- ALL DIMENSION AND LEVEL SHALL BE VERIFIED ON SITE PRIOR TO COMMENCING WORK.
- IF ANY AMBIGUITY FOUND IN DRAWING OR AT SITE, BRING IT TO DESIGNER NOTICE BEFORE EXECUTION OF WORK.
- IN CASE OF EXPOSED ROCK/NON SCOURABLE STRATE FOUND IN BED, FLOOR APRON SHALL BE REMOVED DULY APPROVED BY IE/AE.
- IN CASE WHERE INVERT LEVEL IS HIGHER THAN GROUND LEVEL AT ENDS OF CULVERT OR WHERE THERE IS UNSUITABLE SOIL PROVIDE ADEQUATE CUTOFF WALLS AT END OF CULVERT TO PREVENT SCOUR/EROSION.
- THE CARRIAGEWAY DIMENSIONS AS SHOWN SHALL CONFIRM WITH ROAD CROSS SECTION AT PARTICULAR LOCATION BEFORE START OF WORK.
- CHAINAGE/FORMATION LEVEL/CAMBER ETC. SHALL BE VERIFIED FROM APPROVED PLAN & PROFILE DRAWING BEFORE START OF WORKS.
- GRADE OF CONCRETE SHALL BE AS FOLLOWS :-
i) HEAD WALL - M15
- FOR HEADWALL REINFORCEMENT REFER SEPERATE DRAWING.
- ENCASING DETAIL SHOULD BE REFERRED FOR PIPE HAVING CUSHION <600MM FOR NEW/RECONSTRUCTION AND <600MM FOR WIDENING.

LEGEND :-

- b) FRL. = FINISHED ROAD LEVEL
- c) THK. = THICKNESS
- d) P.S. = PAVED SHOULDER
- e) F.S.L. = FREE SLOPE
- f) T.B.C.B. = THRIE BEAM CRASH BARRIER
- g) E.S. = EARTHEN SHOULDER



SR NO.	CA CHAINAGE	PROPOSED CHAINAGE	TCS	DIA OF PIPE (m)	MCW CAMBER		FRL MCW			INVERT LEVEL		DEPTH OF FILL (m)			FREE SLOPE (m)		TOTAL LENGTH (m)
					C LHS	C RHS	FRL-1	FRL-2	FRL-3	I.L -1	I.L -2	C1	C2	C3	FSL-1	FSL-2	
1	44+730	44+741	TCS-I-A	1.2	-5.00	5.00	305.002	304.752	305.252	300.581	300.569	3.107	2.851	3.363	5.988	7.012	25.000

CLIENT:

PUBLIC WORK DEPARTMENT MADHYA PRADESH

AUTHORITY ENGINEER :

PROOF CHECK CONSULTANT :

HIGHRAISE CONSTRUCTION AND CONSULTANT PRIVATE LIMITED

SAFETY CONSULTANT :

EARL TECHNO CONSULTANTS PVT. LTD.

DESIGN CONSULTANT :

CIVIL MANTRA INFRACON PVT. LTD.
3rd FLOOR TOWER 3A, DLF CORPORATE GREEN, SECTOR 74A, GURUGRAM - 122004

EPC CONTRACTOR :

KEYSTONE INFRA PVT. LTD.

APPROVED:- SM

CHECKED:- RK

DESIGNED:- ST

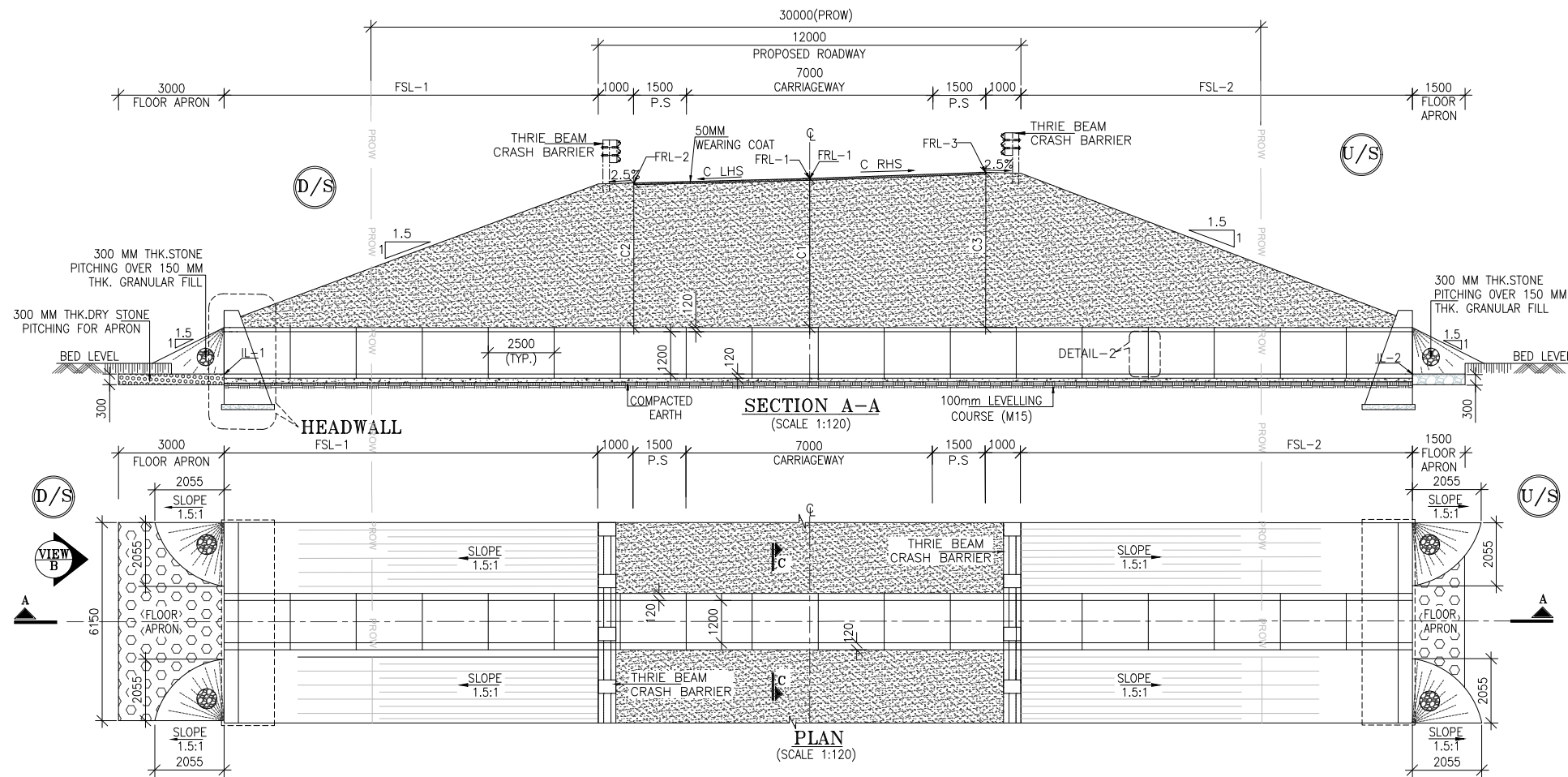
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PROJECT:- UPGRADATION AND RECONSTRUCTION OF EXISTING INTERMEDIATE LANE TO 2-LANE WITH PAVED SHOULDERS CONFIGURATION FROM KM 43.000 (BARNA RIVER) TO KM 77.000 (KEN RIVER), LENGTH 34.000 KM ON GULGANJ-AMANGANJ-PAWAI-KATNI NH-43 EXT. ALONG WITH ONE TIME IMPROVEMENT IN 01 NO OF BYPASSED BUILT-UP AREA IN A TOTAL LENGTH OF 1.55 KM IN THE STATE OF MADHYA PRADESH ON EPC MODE.

TITLE:- GENERAL ARRANGEMENT DRAWING OF PIPE CULVERT AT CH.44+741 TCS -1A

DRAWING NO :- CIPL-D1190-44+741-PC-101-01 OF 01-R1-GAD

DATE: JAN/2025
SCALE: AS SHOWN
SHEET NO: 01 OF 01
FORMAT: A3 (420X297)
REV: RT

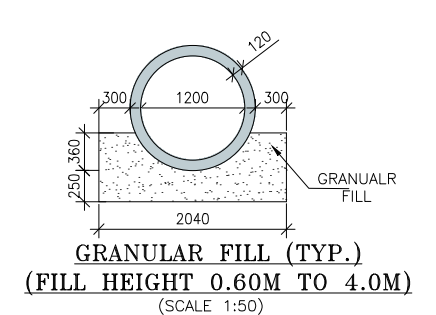
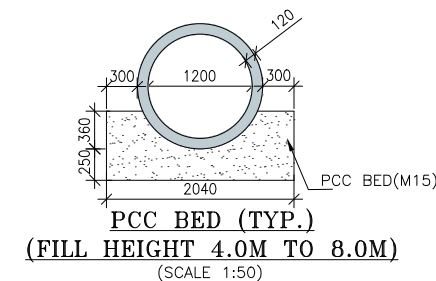
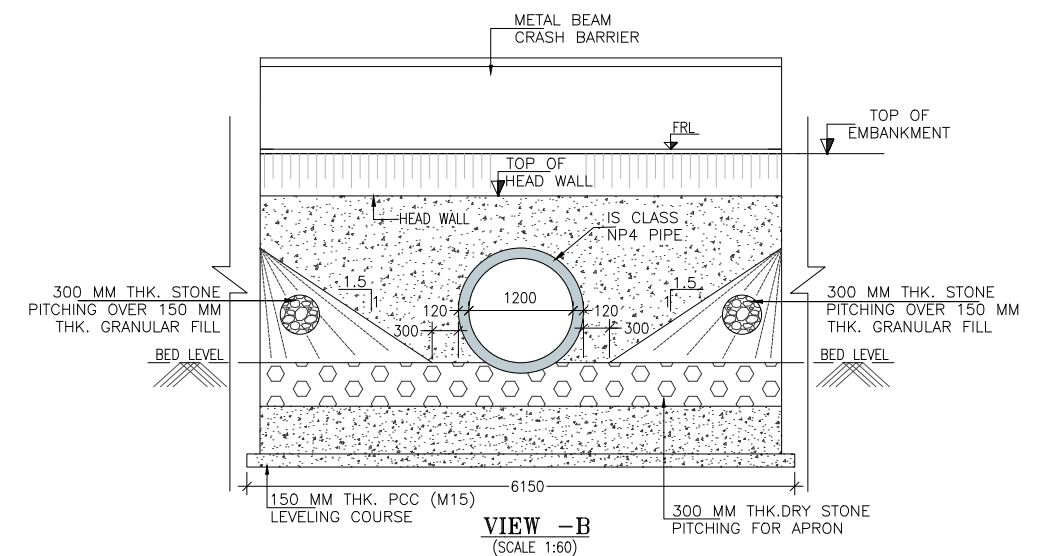
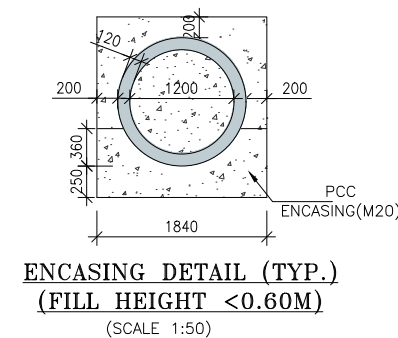
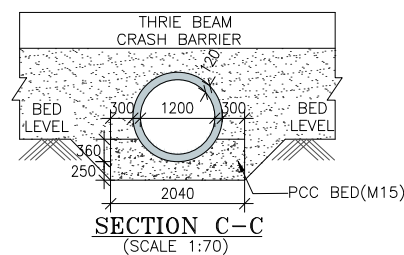
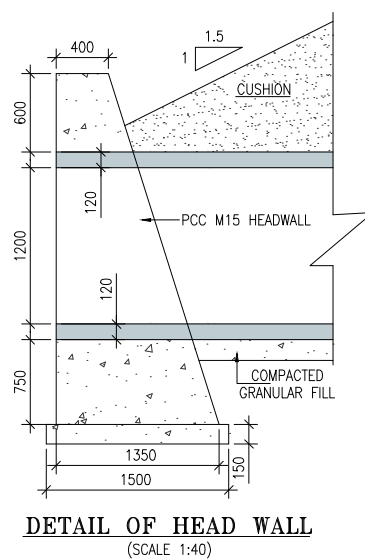
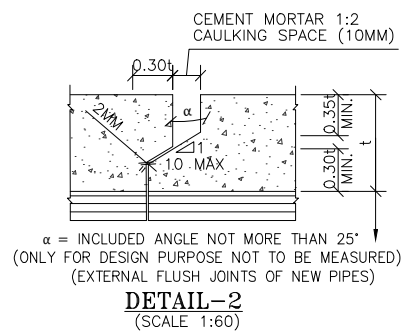


NOTES:-

- DRAWING SHALL NOT BE SCALED. ONLY WRITTEN DIMENSION TO BE FOLLOWED.
- ALL DIMENSION ARE IN MM LEVELS ARE IN METER. UNLESS OTHERWISE SPECIFIED.
- LONGITUDINAL SLOPE OF PIPE SHOULD BE MIN. OF 1 IN 1000.
- ALL R.C.C PIPES OF NP4 TYPE SHALL BE CONFORM TP I.S 458.
- D= INNER DIA OF NP4 CLASS PIPE
- t= THICKNESS OF PIPE
- FOR SETTING OUT DETAILS & GEOMETRIC DETAILS, REFER SEPERATE HIGHWAY DRAWING.
- IN CASE FOUNDATION IS SLUSHY OR MARSHY AND WORKING CONDITION ARE NOT SUITABLE, IN SITU OF GRANULAR BEDDING OR PCC M-15 CAN BE USED WITH SAME DIMENSION.
- ALL DIMENSION AND LEVEL SHALL BE VERIFIED ON SITE PRIOR TO COMMENCING WORK.
- IF ANY AMBIGUITY FOUND IN DRAWING OR AT SITE, BRING IT TO DESIGNER NOTICE BEFORE EXECUTION OF WORK.
- IN CASE OF EXPOSED ROCK/NON SCOURABLE STRATE FOUND IN BED, FLOOR APRON SHALL BE REMOVED DULY APPROVED BY IE/AE.
- IN CASE WHERE INVERT LEVEL IS HIGHER THAN GROUND LEVEL AT ENDS OF CULVERT OR WHERE THERE IS UNSUITABLE SOIL PROVIDE ADEQUATE CUTOFF WALLS AT END OF CULVERT TO PREVENT SCOUR/EROSION.
- THE CARRIAGEWAY DIMENSIONS AS SHOWN SHALL CONFIRM WITH ROAD CROSS SECTION AT PARTICULAR LOCATION BEFORE START OF WORK.
- CHAINAGE/FORMATION LEVEL/CAMBER ETC. SHALL BE VERIFIED FROM APPROVED PLAN & PROFILE DRAWING BEFORE START OF WORKS.
- GRADE OF CONCRETE SHALL BE AS FOLLOWS :-
i) HEAD WALL - M15
- FOR HEADWALL REINFORCEMENT REFER SEPERATE DRAWING.
- ENCASING DETAIL SHOULD BE REFERED FOR PIPE HAVING CUSHION <600MM FOR NEW/RECONSTRUCTION AND <600MM FOR WIDENING.
- CLEAR COVER:
RCC SLAB- 25MM

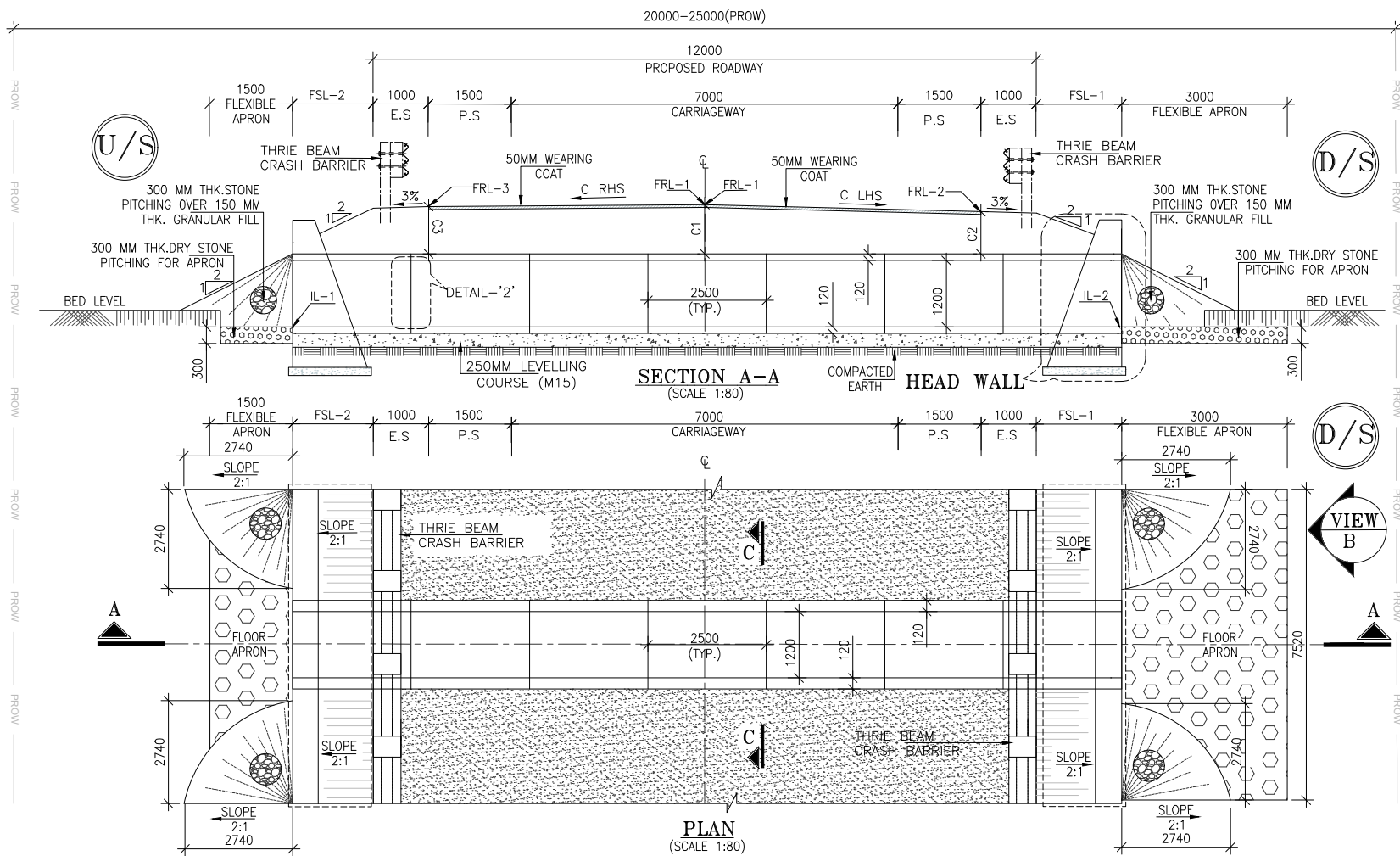
LEGEND :-

- b) FRL. = FINISHED ROAD LEVEL
c) THK. = THICKNESS
d) P.S. = PAVED SHOULDER
e) F.S.L. = FREE SLOPE
f) WBCB = W- BEAM CRASH BARRIER



SR NO.	CA CHAINAGE	PROPOSED CHAINAGE	TCS	DIA OF PIPE (m)	MCW CAMBER		FRL MCW			INVERT LEVEL		DEPTH OF FILL (m)			FREE SLOPE (m)		TOTAL LENGTH (m)
					C LHS	C RHS	FRL-1	FRL-2	FRL-3	I.L-1	I.L-2	C1	C2	C3	FSL-1	FSL-2	
1	47+820	47+833	TCS-IV	1.2	-2.500	2.252	362.199	362.074	362.312	349.671	349.683	11.202	11.083	11.309	16.331	16.669	45.000

			CLIENT:		PROOF CHECK CONSULTANT:		DESIGN CONSULTANT:		APPROVED:- SM		PROJECT:- UPGRADATION AND RECONSTRUCTION OF EXISTING INTERMEDIATE LANE TO 2-LANE WITH PAVED SHOULDERS CONFIGURATION FROM KM 43.000 (BARNA RIVER) TO KM 77.000 (KEN RIVER), LENGTH 34.000 KM ON GULGANJ- AMANGANJ- PAWAI-KATNI NH-43 EXT. ALONG WITH ONE TIME IMPROVEMENT IN 01 NO OF BYPASSED BUILT-UP AREA IN A TOTAL LENGTH OF 1.55 KM IN THE STATE OF MADHYA PRADESH ON EPC MODE.	
			PUBLIC WORK DEPARTMENT MADHYA PRADESH		HIGHRAISE CONSTRUCTION AND CONSULTANT PRIVATE LIMITED		CIVIL MANTRA INFRACON PVT. LTD. 3rd FLOOR TOWER 3A, DLF CORPORATE GREEN, SECTOR 74A, GURUGRAM - 122004		CHECKED:- RK		TITLE:- GENERAL ARRANGEMENT DRAWING OF PIPE CULVERT AT CH-47+833 TCS -IV	
			AUTHORITY ENGINEER:		SAFETY CONSULTANT:		EPC CONTRACTOR:		DESIGNED:- ST		DRAWING NO :- CIPL-D1190-47+833-HPC-101-01 OF 01-R1-GAD	
					EARL TECHNO CONSULTANTS PVT. LTD.		KEYSTONE INFRA PVT. LTD.		DRAWN:- SY			
R1	JAN-2025	REVISED AS PER LATEST P&P										
R0	NOV-2024	FOR APPROVAL										
REV	DATE	DESCRIPTION										



NOTES:-

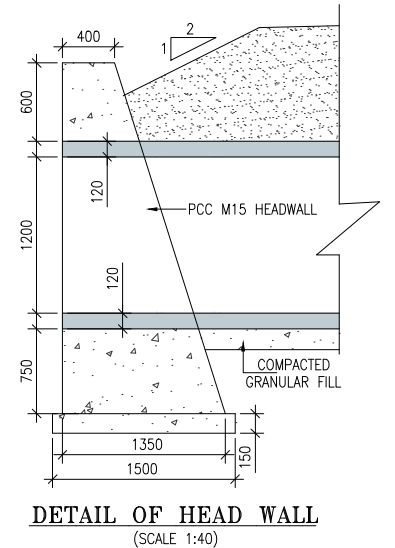
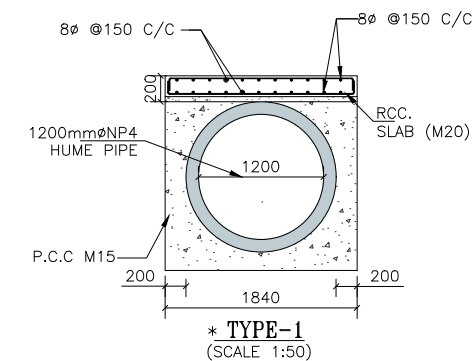
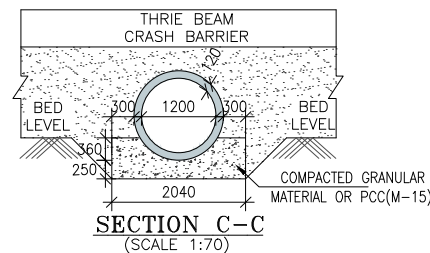
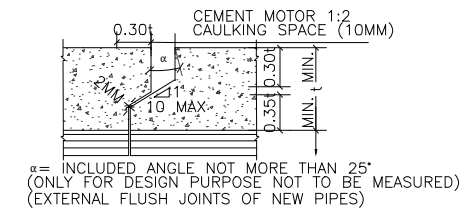
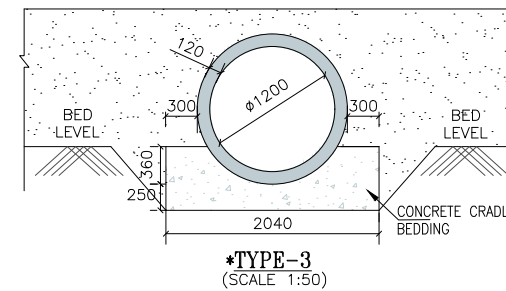
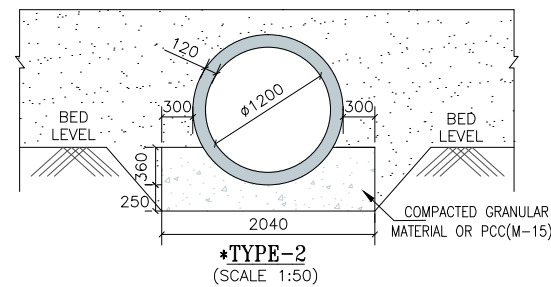
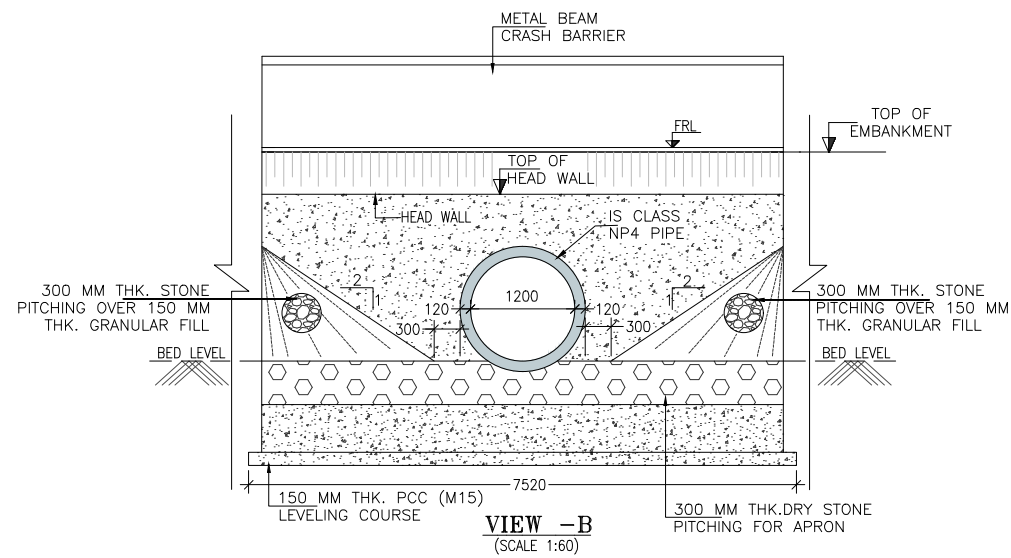
- DRAWING SHALL NOT BE SCALED. ONLY WRITTEN DIMENSION TO BE FOLLOWED.
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- LONGITUDINAL SLOPE OF PIPE SHOULD BE MIN. OF 1 IN 1000.
- ALL R.C.C PIPES OF NP4 TYPE SHALL BE CONFORM TP I.S 458.
- D= INNER DIA OF NP4 CLASS PIPE
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- IN CASE FOUNDATION IS SLUSHY OR MARSHY AND WORKING CONDITION ARE NOT SUITABLE, IN SITU OF GRANULAR BEDDING OR PCC M-15 CAN BE USED WITH SAME DIMENSION.
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- GRADE OF CONCRETE SHALL BE AS FOLLOWS :-
i) HEAD WALL - M15
16. FOR HEADWALL REINFORCEMENT REFER SEPERATE DRAWING.
- ENCASING DETAIL SHOULD BE REFERED FOR PIPE HAVING CUSHION <600MM FOR NEW/RECONSTRUCTION AND <600MM FOR WIDENING.

LEGEND :-

- b) FRL = FINISHED ROAD LEVEL
- c) THK. = THICKNESS
- d) P.S = PAVED SHOULDER
- e) F.S.L = FREE SLOPE
- f) T.B.C.B = THRIE BEAM CRASH BARRIER
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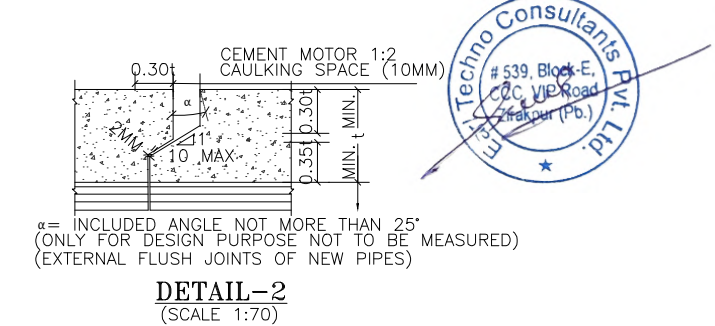
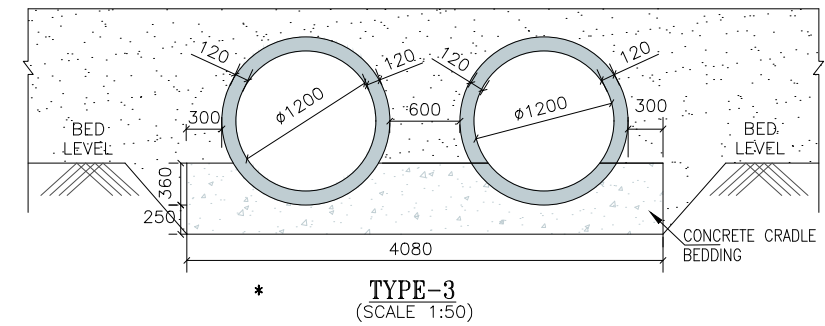
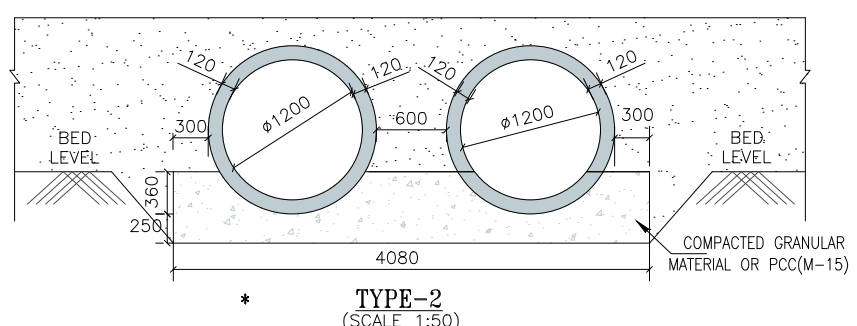
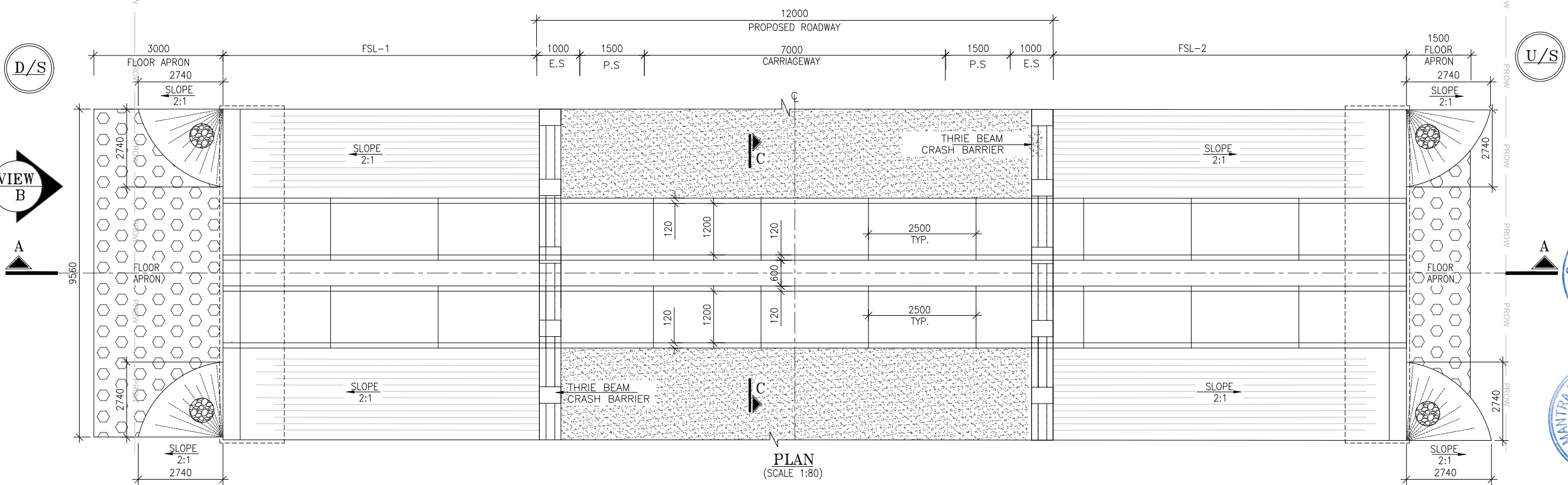
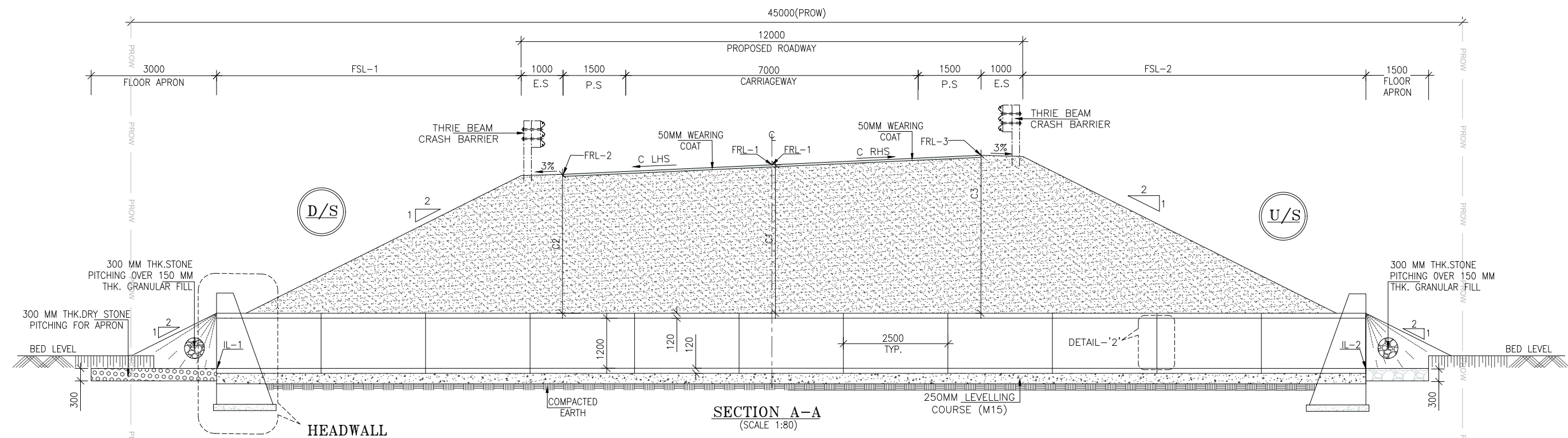
*SPECIAL NOTES-

- REFER FOLLOWING CONDITIONS FOR LAYING OF PIPES
- i) IF DEPTH OF FILL UP TO 0.6M THEN REFER TYPE-1
- ii) IF DEPTH OF FILL FROM 0.6M TO 4M THEN REFER TYPE-2
- iii) IF DEPTH OF FILL FROM 4M TO 8M THEN REFER TYPE-3

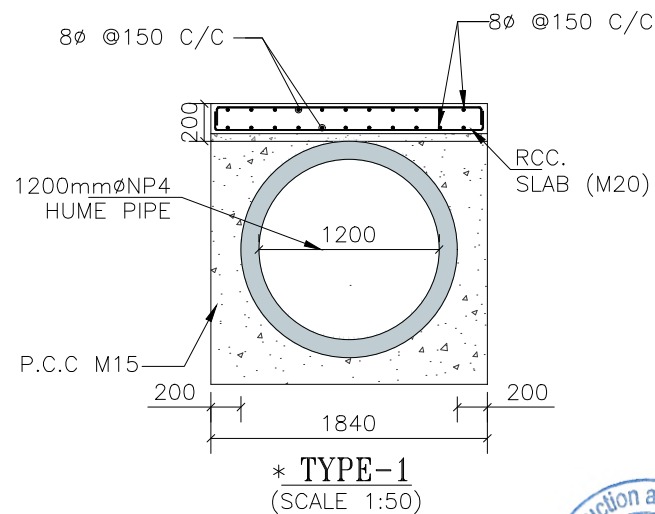
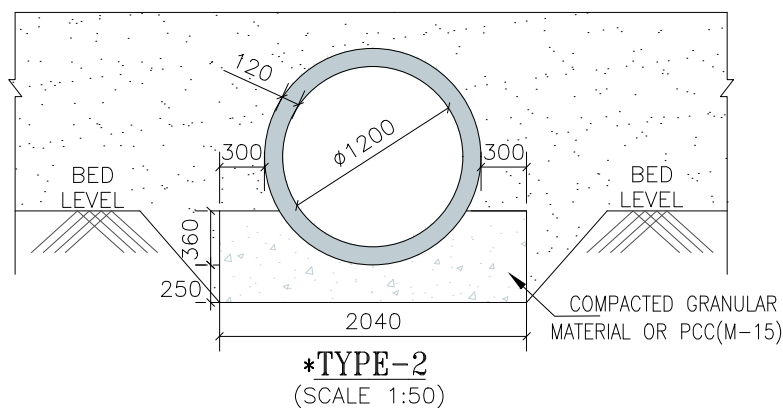
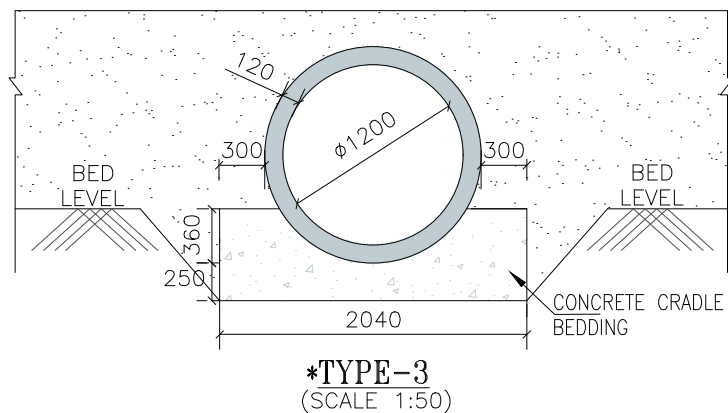
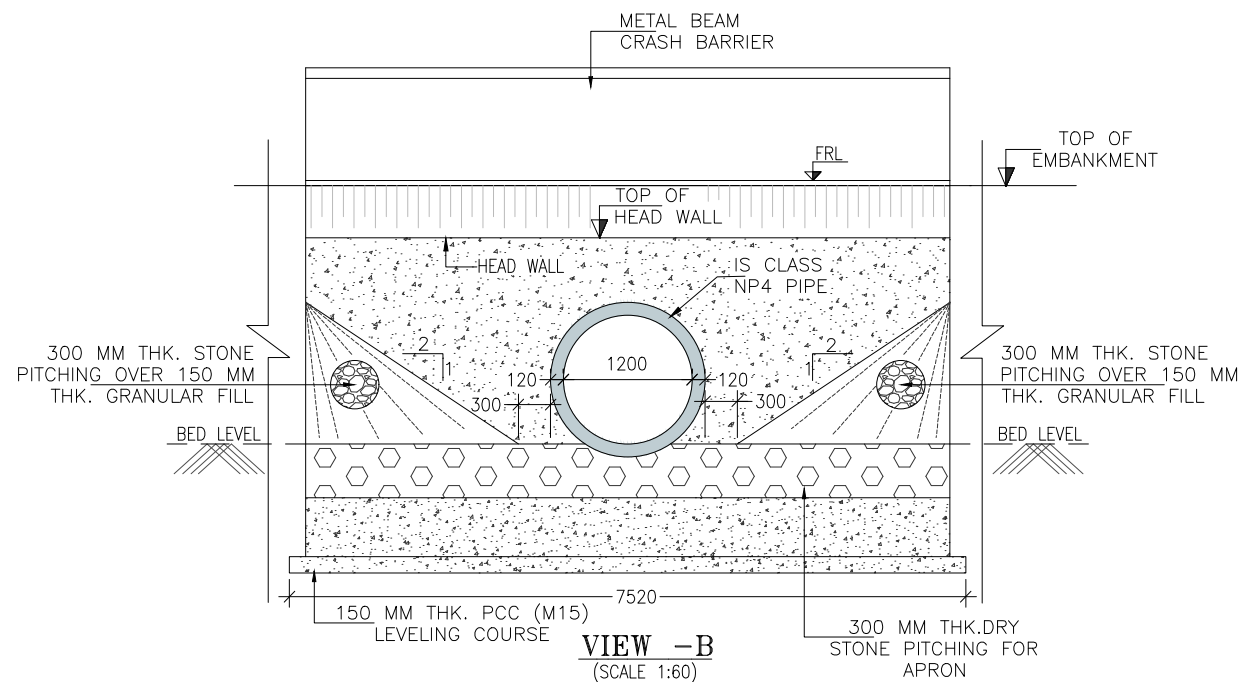


SR NO.	CA CHAINAGE	PROPOSED CHAINAGE	TCS	SKEW ANGLE	DIA OF PIPE (m)	MCW CAMBER		FRL MCW			INVERT LEVEL		DEPTH OF FILL (m)			FREE SLOPE (m)		TOTAL LENGTH (m)
						LHS	RHS	FRL-1	FRL-2	FRL-3	I.L -1	I.L -2	C1	C2	C3	FSL-1	FSL	
1	48+475	48+530	TCS-VI	0 Deg.	1.2	-2.500	0.909	388.967	388.842	389.012	386.506	386.494	1.147	1.016	1.198	2.568	2.932	17.500

			 PUBLIC WORK DEPARTMENT MADHYA PRADESH	 HIGHRAISE CONSTRUCTION AND CONSULTANT PRIVATE LIMITED	 CIVIL MANTRA INFRACON PVT. LTD. 3rd FLOOR TOWER 3A, DLF CORPORATE GREEN, SECTOR 74A, GURUGRAM - 122004	APPROVED:- SM	PROJECT:- UPGRADATION AND RECONSTRUCTION OF EXISTING INTERMEDIATE LANE TO 2-LANE WITH PAVED SHOULDERS CONFIGURATION FROM KM 43.000 (BARNA RIVER) TO KM 77.000 (KEN RIVER), LENGTH 34.000 KM ON GULGANJ- AMANGANJ- PAWAI-KATNI NH-43 EXT. ALONG WITH ONE TIME IMPROVEMENT IN 01 NO OF BYPASSED BUILT-UP AREA IN A TOTAL LENGTH OF 1.55 KM IN THE STATE OF MADHYA PRADESH ON EPC MODE.											
R1	JAN-2025	REVISED AS PER LATEST P & P	AUTHORITY ENGINEER :	 EARL TECHNO CONSULTANTS PVT. LTD.	 KEYSTONE INFRA PVT. LTD.	DESIGNED:- ST	TITLE:- GENERAL ARRANGEMENT DRAWING OF PIPE CULVERT AT CH.-48+530 TCS -VI DRAWING NO :- CIPL-D1190-48+530-HPC-101-01 OF 01-R1-GAD											
R0	NOV-2024	FOR APPROVAL				DRAWN:- SY												
REV	DATE	DESCRIPTION						<table><tr><td>DATE</td><td>JAN-2025</td></tr><tr><td>SCALE</td><td>AS SHOWN</td></tr><tr><td>SHEET NO.</td><td>01 OF 01</td></tr><tr><td>FORMAT</td><td>A3 (420X297)</td></tr><tr><td>REV</td><td>RT</td></tr></table>	DATE	JAN-2025	SCALE	AS SHOWN	SHEET NO.	01 OF 01	FORMAT	A3 (420X297)	REV	RT
DATE	JAN-2025																	
SCALE	AS SHOWN																	
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FORMAT	A3 (420X297)																	
REV	RT																	



			CLIENT:  PUBLIC WORK DEPARTMENT MADHYA PRADESH		PROOF CHECK CONSULTANT:  HIGHRAISE CONSTRUCTION AND CONSULTANT PRIVATE LIMITED		DESIGN CONSULTANT:  CIVIL MANTRA INFRACON PVT. LTD. 3rd FLOOR TOWER 3A, DLF CORPORATE GREEN, SECTOR 74A, GURUGRAM - 122004		APPROVED:- SM CHECKED:- RK DESIGNED:- ST DRAWN:- SY		PROJECT:- UPGADATION AND RECONSTRUCTION OF EXISTING INTERMEDIATE LANE TO 2-LANE WITH PAVED SHOULDERS CONFIGURATION FROM KM 43.000 (BARNA RIVER) TO KM 77.000 (KEN RIVER), LENGTH 34.000 KM ON GULGANJ- AMANGANJ- PAWAI-KATNI NH-43 EXT. ALONG WITH ONE TIME IMPROVEMENT IN 01 NO OF BYPASSED BUILT-UP AREA IN A TOTAL LENGTH OF 1.55 KM IN THE STATE OF MADHYA PRADESH ON EPC MODE.		
			AUTHORITY ENGINEER: 		SAFETY CONSULTANT:  EARL TECHNO CONSULTANTS PVT. LTD.		EPC CONTRACTOR:  KEYSTONE INFRA PVT. LTD.				TITLE:- GENERAL ARRANGEMENT DRAWING OF PIPE CULVERT AT CH.54+430 TCS -IIB DRAWING NO :- CIPL-D1190-54+430-HPC-101 -01 OF 02-R1-GAD		
R1	JAN-2025	REVISED AS PER LATEST P & P											
R0	NOV-2024	FOR APPROVAL											
REV	DATE	DESCRIPTION											



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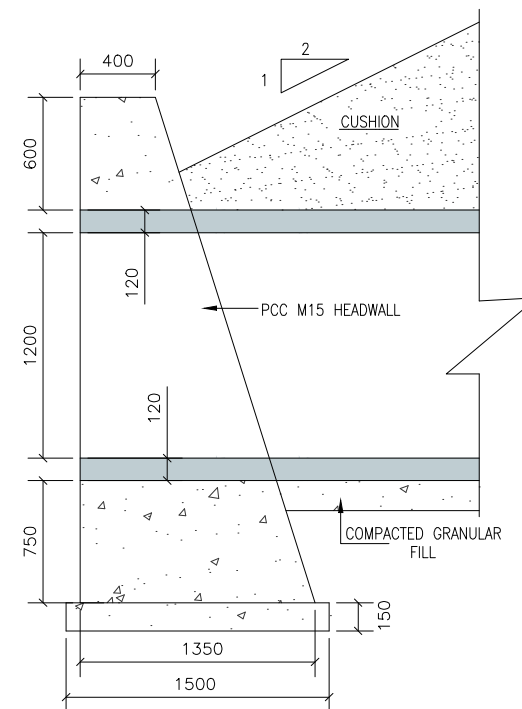
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- FOR SETTING OUT DETAILS & GEOMETRIC DETAILS, REFER SEPERATE HIGHWAY DRAWING.
- IN CASE FOUNDATION IS SLUSHY OR MARSHY AND WORKING CONDITION ARE NOT SUITABLE, IN SITU OF GRANULAR BEDDING OR PCC M-15 CAN BE USED WITH SAME DIMENSION.
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- GRADE OF CONCRETE SHALL BE AS FOLLOWS :-
i) HEAD WALL - M15
- FOR HEADWALL REINFORCEMENT REFER SEPERATE DRAWING.
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LEGEND :-

- b) FRL. = FINISHED ROAD LEVEL
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g) E.S. = EARTHEN SHOULDER

*SPECIAL NOTES-

- REFER FOLLOWING CONDITIONS FOR LAYING OF PIPES
i) IF DEPTH OF FILL UP TO 0.6M THEN REFER TYPE-1
ii) IF DEPTH OF FILL FROM 0.6M TO 4M THEN REFER TYPE-2
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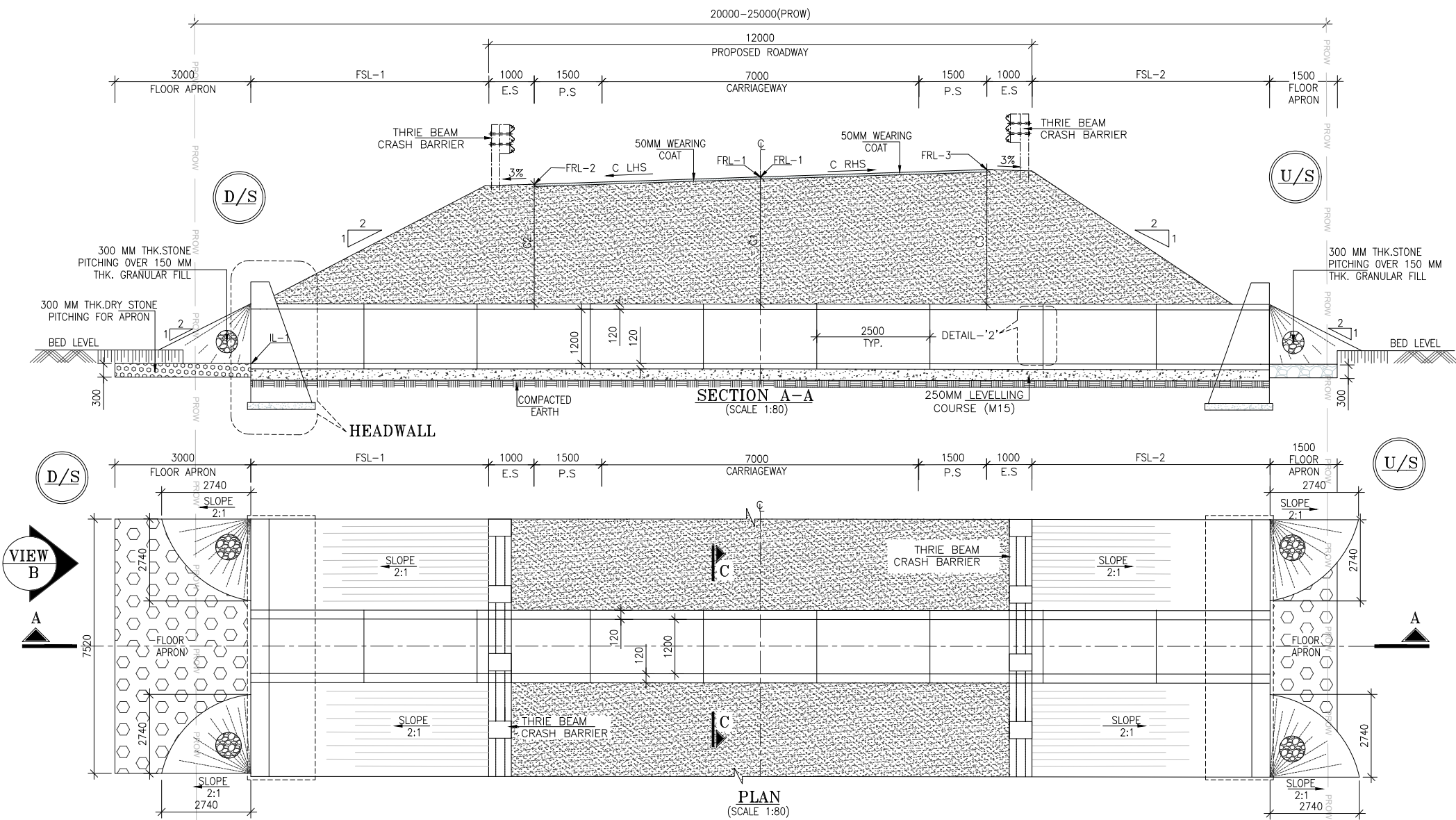


DETAIL OF HEAD WALL

(SCALE 1:40)

SR NO.	CA CHAINAGE	PROPOSED CHAINAGE	TCS	DIA OF PIPE (m)	MCW CAMBER		FRL MCW			INVERT LEVEL		DEPTH OF FILL (m)			FREE SLOPE (m)		TOTAL LENGTH (m)
					C LHS	C RHS	FRL-1	FRL-2	FRL-3	I.L -1	I.L -2	C1	C2	C3	FSL-1	FSL-2	
1	54+750	54+750	TCS-II-B	1.2	-2.50	-2.50	428.037	427.912	427.912	422.712	422.724	3.999	3.880	3.868	7.762	7.738	27.500

			 CLIENT: PUBLIC WORK DEPARTMENT MADHYA PRADESH	 PROOF CHECK CONSULTANT : HIGHRAISE CONSTRUCTION AND CONSULTANT PRIVATE LIMITED	 DESIGN CONSULTANT : CIVIL MANTRA INFRACON PVT. LTD. 3rd FLOOR TOWER 3A, DLF CORPORATE GREEN, SECTOR 74A, GURUGRAM - 122004	APPROVED:- SM CHECKED:- RK	PROJECT:- UPGRADATION AND RECONSTRUCTION OF EXISTING INTERMEDIATE LANE TO 2-LANE WITH PAVED SHOULDERS CONFIGURATION FROM KM 43.000 (BARNA RIVER) TO KM 77.000 (KEN RIVER), LENGTH 34.000 KM ON GULGANJ- AMANGANJ- PAWAI-KATNI NH-43 EXT. ALONG WITH ONE TIME IMPROVEMENT IN 01 NO OF BYPASSED BUILT-UP AREA IN A TOTAL LENGTH OF 1.55 KM IN THE STATE OF MADHYA PRADESH ON EPC MODE.
R1	JAN-2025	REVISED AS PER LATEST P & P	AUTHORITY ENGINEER :  SAFETY CONSULTANT : EARL TECHNO CONSULTANTS PVT. LTD.	EARL TECHNO CONSULTANTS PVT. LTD.	EPC CONTRACTOR :  KEYSTONE INFRA PVT. LTD.	DESIGNED:- ST	TITLE:- GENERAL ARRANGEMENT DRAWING OF PIPE CULVERT AT CH.54+430 TCS -IIB
R0	NOV-2024	FOR APPROVAL				DRAWN:- SY	DRAWING NO :- CIPL-D1190-54+430-HPC-101 -02 OF 02-R1-GAD
REV	DATE	DESCRIPTION					
							DATE JAN-2025 SCALE AS SHOWN SHEET NO 02 OF 02 FORMAT A3 (420X297) REV R1



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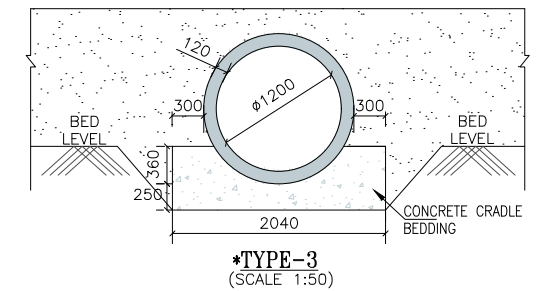
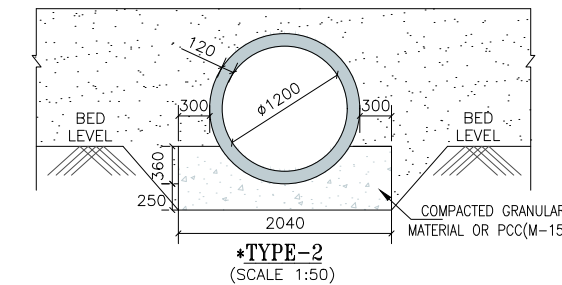
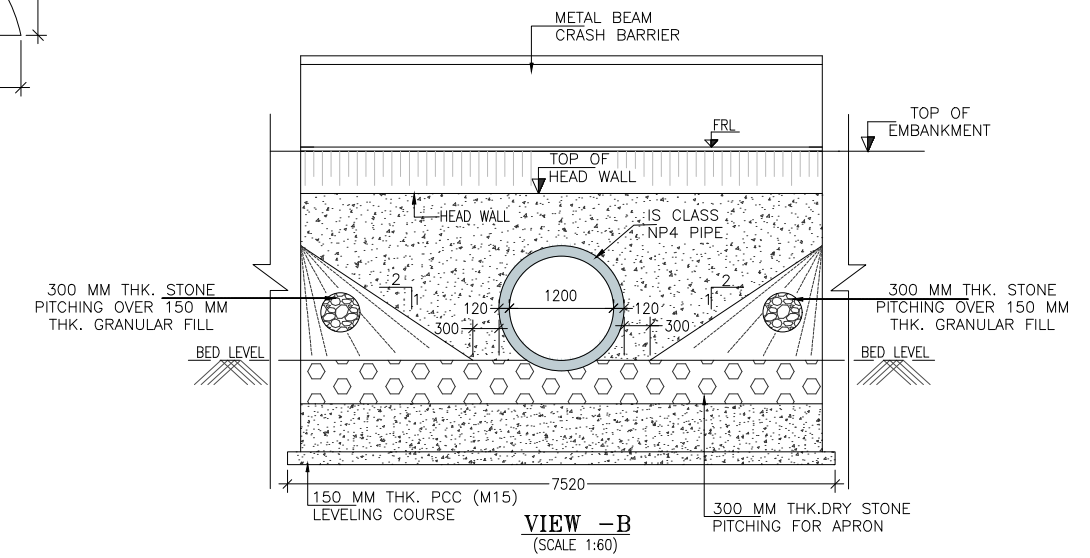
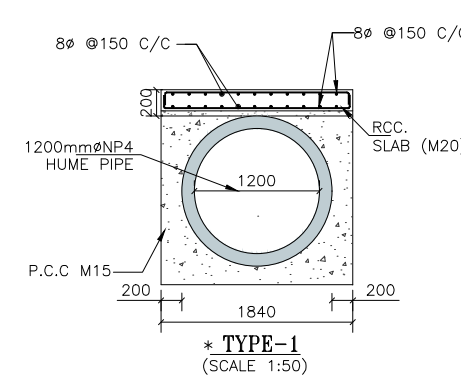
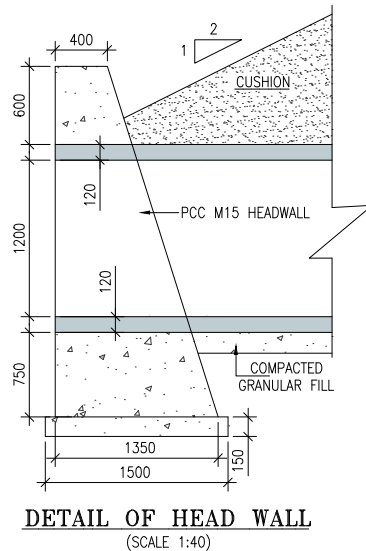
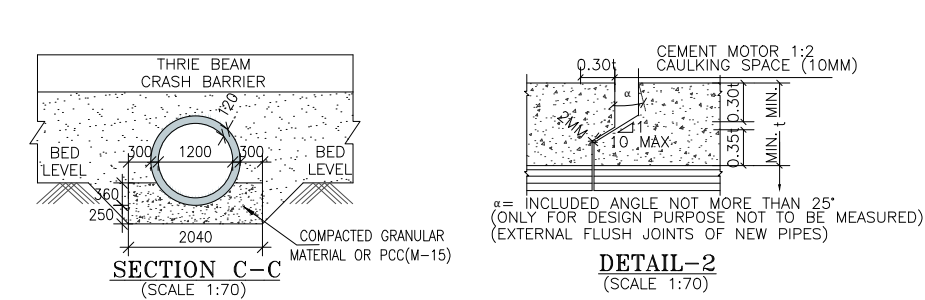
- DRAWING SHALL NOT BE SCALED. ONLY WRITTEN DIMENSION TO BE FOLLOWED.
- ALL DIMENSION ARE IN MM LEVELS ARE IN METER. UNLESS OTHERWISE SPECIFIED.
- LONGITUDINAL SLOPE OF PIPE SHOULD BE MIN. OF 1 IN 1000.
- ALL R.C.C PIPES OF NP4 TYPE SHALL BE CONFORM TP I.S 458.
- D= INNER DIA OF NP4 CLASS PIPE
- t= THICKNESS OF PIPE
- FOR SETTING OUT DETAILS & GEOMETRIC DETAILS, REFER SEPERATE HIGHWAY DRAWING.
- IN CASE FOUNDATION IS SLUSHY OR MARSHY AND WORKING CONDITION ARE NOT SUITABLE, IN SITU OF GRANULAR BEDDING OR PCC M-15 CAN BE USED WITH SAME DIMENSION.
- ALL DIMENSION AND LEVEL SHALL BE VERIFIED ON SITE PRIOR TO COMMENCING WORK.
- IF ANY AMBIGUITY FOUND IN DRAWING OR AT SITE, BRING IT TO DESIGNER NOTICE BEFORE EXECUTION OF WORK.
- IN CASE OF EXPOSED ROCK/NON SCOURABLE STRATE FOUND IN BED, FLOOR APRON SHALL BE REMOVED DULY APPROVED BY IE/AE.
- IN CASE WHERE INVERT LEVEL IS HIGHER THAN GROUND LEVEL AT ENDS OF CULVERT OR WHERE THERE IS UNSUITABLE SOIL PROVIDE ADEQUATE CUTOFF WALLS AT END OF CULVERT TO PREVENT SCOUR/EROSION.
- THE CARRIAGEWAY DIMENSIONS AS SHOWN SHALL CONFIRM WITH ROAD CROSS SECTION AT PARTICULAR LOCATION BEFORE START OF WORK.
- CHAINAGE/FORMATION LEVEL/CAMBER ETC. SHALL BE VERIFIED FROM APPROVED PLAN & PROFILE DRAWING BEFORE START OF WORKS.
- GRADE OF CONCRETE SHALL BE AS FOLLOWS :-
i) HEAD WALL - M15
- FOR HEADWALL REINFORCEMENT REFER SEPERATE DRAWING.
- ENCASING DETAIL SHOULD BE REFERED FOR PIPE HAVING CUSHION <600MM FOR NEW/RECONSTRUCTION AND <600MM FOR WIDENING.

LEGEND :-

- b) FRL. = FINISHED ROAD LEVEL
c) THK. = THICKNESS
d) P.S. = PAVED SHOULDER
e) F.S.L. = FREE SLOPE
f) T.B.C.B. = THRIE BEAM CRASH BARRIER
g) E.S. = EARTHEN SHOULDER

*SPECIAL NOTES-

- REFER FOLLOWING CONDITIONS FOR LAYING OF PIPES
i) IF DEPTH OF FILL UP TO 0.6M THEN REFER TYPE-1
ii) IF DEPTH OF FILL FROM 0.6M TO 4M THEN REFER TYPE-2
iii) IF DEPTH OF FILL FROM 4M TO 8M THEN REFER TYPE-3



SR NO.	CA CHAINAGE	PROPOSED CHAINAGE	TCS	DIA OF PIPE (m)	MCW CAMBER		FRL MCW			INVERT LEVEL		DEPTH OF FILL (m)			FREE SLOPE (m)		TOTAL LENGTH (m)
					C LHS	C RHS	FRL-1	FRL-2	FRL-3	I.L -1	I.L -2	C1	C2	C3	FSL-1	FSL-2	
1	56+600	56+620	TCS-I-A	1.2	-5.00	5.00	481.285	481.035	481.535	477.771	477.759	2.200	1.944	2.456	4.738	5.762	22.500

CLIENT:



PUBLIC WORK DEPARTMENT MADHYA PRADESH

AUTHORITY ENGINEER :

PROOF CHECK CONSULTANT :



HIGHRAISE CONSTRUCTION AND CONSULTANT PRIVATE LIMITED

SAFETY CONSULTANT :



EARLE TECHNO CONSULTANTS PVT. LTD.

DESIGN CONSULTANT :



CIVIL MANTRA INFRACON PVT. LTD.
3rd FLOOR TOWER 3A, DLF CORPORATE GREEN, SECTOR 74A, GURUGRAM - 122004

EPC CONTRACTOR :



KEYSTONE INFRA PVT. LTD.

APPROVED:- SM

CHECKED:- RK

DESIGNED:- ST

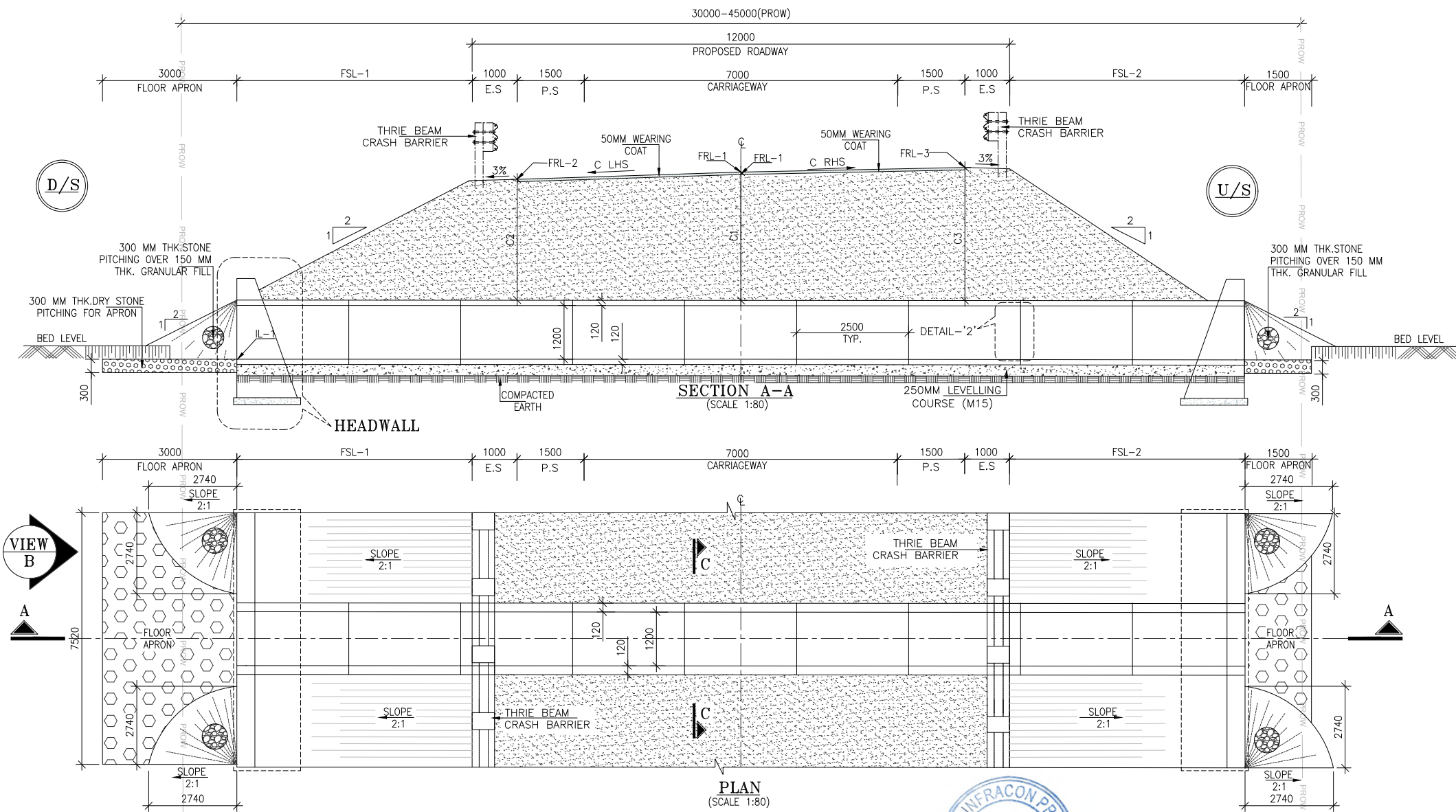
DRAWN:- KS

PROJECT:- UPGRADATION AND RECONSTRUCTION OF EXISTING INTERMEDIATE LANE TO 2-LANE WITH PAVED SHOULDERS CONFIGURATION FROM KM 43.000 (BARNA RIVER) TO KM 77.000 (KEN RIVER), LENGTH 34.000 KM ON GULGANJ-AMANGANJ-PAWAI-KATNI NH-43 EXT. ALONG WITH ONE TIME IMPROVEMENT IN 01 NO OF BYPASSED BUILT-UP AREA IN A TOTAL LENGTH OF 1.55 KM IN THE STATE OF MADHYA PRADESH ON EPC MODE.

TITLE:- GENERAL ARRANGEMENT DRAWING OF PIPE CULVERT AT CH-56+620 TCS -1A

DRAWING NO :- CIPL-D1190-56+620-HPC-101 -01 OF 01-R1-GAD

DATE	JAN-2025
SCALE	AS SHOWN
SHEET NO.	01 OF 01
FORMAT	A3 (420X297)
REV.	RT



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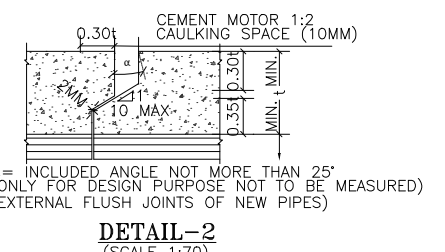
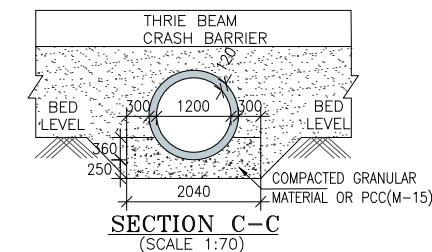
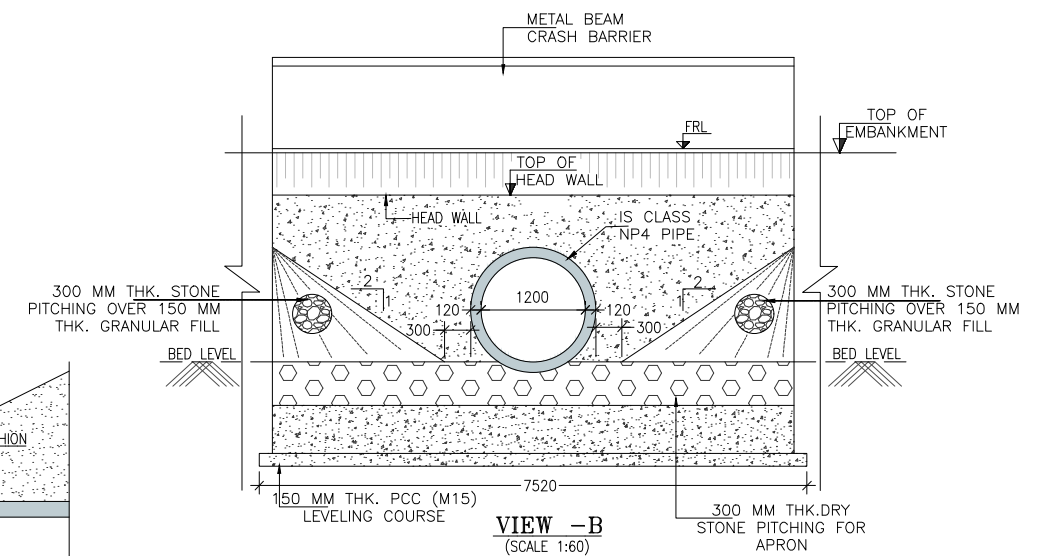
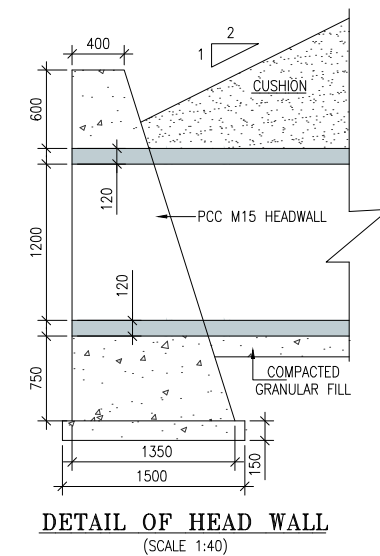
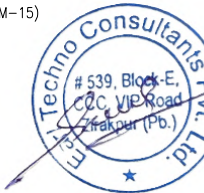
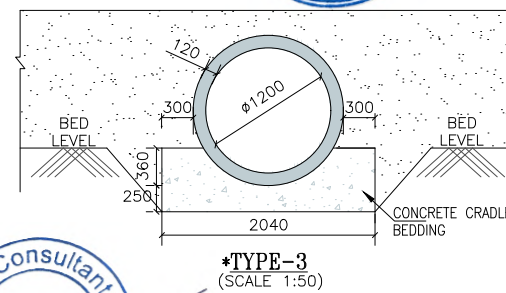
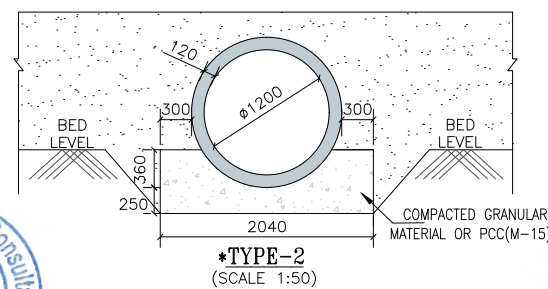
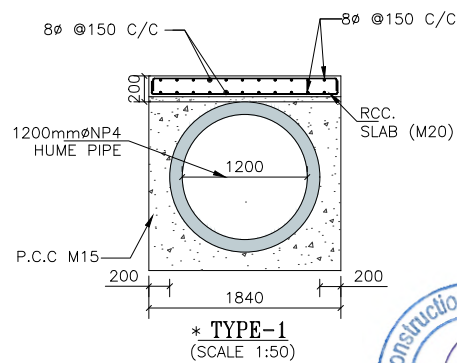
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- ALL R.C.C PIPES OF NP4 TYPE SHALL BE CONFORM TP I.S 458.
- D= INNER DIA OF NP4 CLASS PIPE
- t= THICKNESS OF PIPE
- FOR SETTING OUT DETAILS & GEOMETRIC DETAILS, REFER SEPERATE HIGHWAY DRAWING.
- IN CASE FOUNDATION IS SLUSHY OR MARSHY AND WORKING CONDITION ARE NOT SUITABLE, IN SITU OF GRANULAR BEDDING OR PCC M-15 CAN BE USED WITH SAME DIMENSION.
- ALL DIMENSION AND LEVEL SHALL BE VERIFIED ON SITE PRIOR TO COMMENCING WORK.
- IF ANY AMBIGUITY FOUND IN DRAWING OR AT SITE, BRING IT TO DESIGNER NOTICE BEFORE EXECUTION OF WORK.
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- CHAINAGE/FORMATION LEVEL/CAMBER ETC. SHALL BE VERIFIED FROM APPROVED PLAN & PROFILE DRAWING BEFORE START OF WORKS.
- GRADE OF CONCRETE SHALL BE AS FOLLOWS :-
i) HEAD WALL - M15
16. FOR HEADWALL REINFORCEMENT REFER SEPERATE DRAWING.
- ENCASING DETAIL SHOULD BE REFERED FOR PIPE HAVING CUSHION <600MM FOR NEW/RECONSTRUCTION AND <600MM FOR WIDENING.

LEGEND :-

- b) FRL. = FINISHED ROAD LEVEL
c) THK. = THICKNESS
d) P.S. = PAVED SHOULDER
e) F.S.L. = FREE SLOPE
f) T.B.C.B. = THRIE BEAM CRASH BARRIER
g) E.S. = EARTHEN SHOULDER

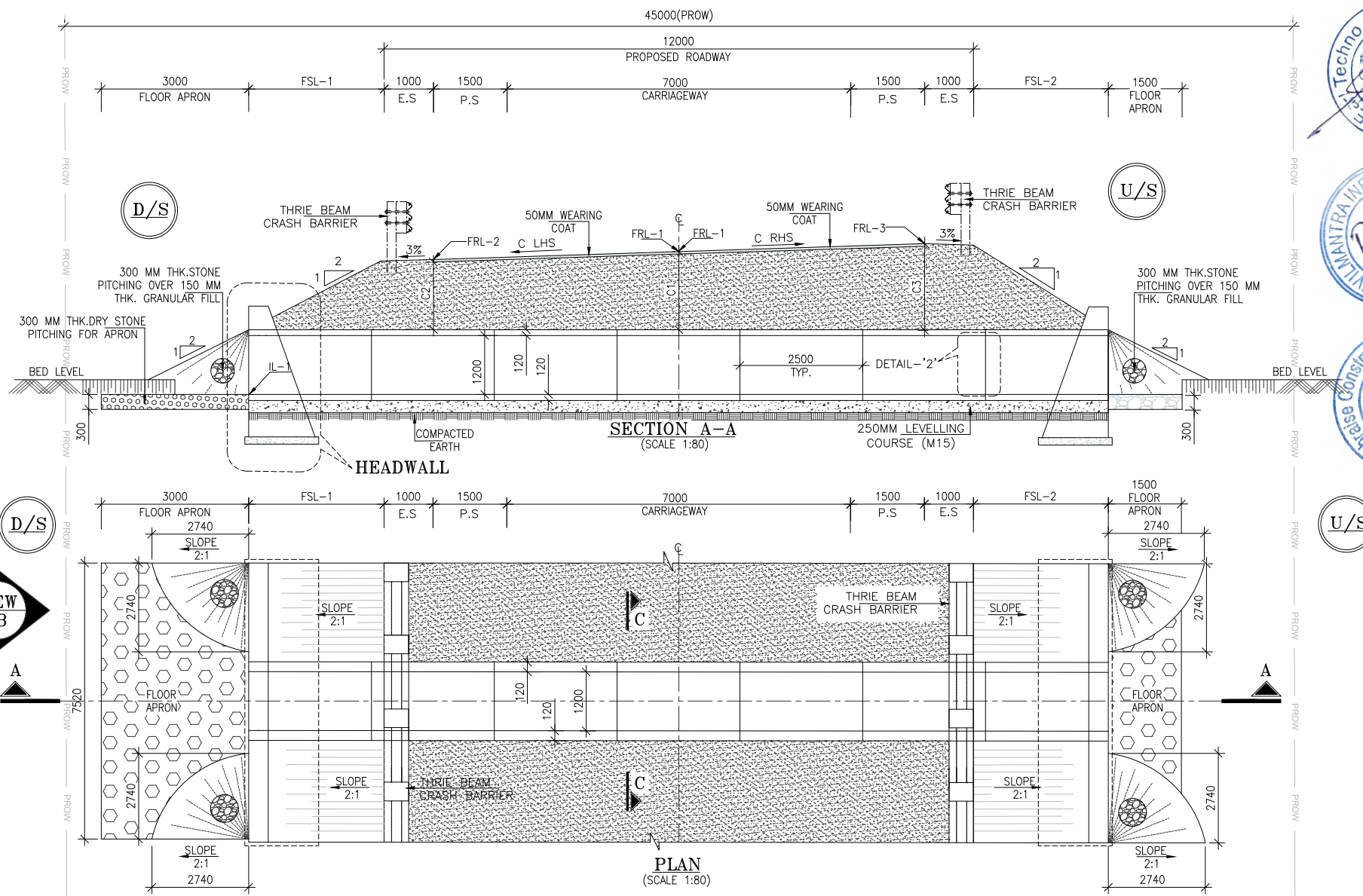
*SPECIAL NOTES:-

- REFER FOLLOWING CONDITIONS FOR LAYING OF PIPES
i) IF DEPTH OF FILL UP TO 0.6M THEN REFER TYPE-1
ii) IF DEPTH OF FILL FROM 0.6M TO 4M THEN REFER TYPE-2
iii) IF DEPTH OF FILL FROM 4M TO 8M THEN REFER TYPE-3



SR NO.	CA CHAINAGE	PROPOSED CHAINAGE	TCS	DIA OF PIPE (m)	MCW CAMBER		FRL MCW			INVERT LEVEL		DEPTH OF FILL (m)			FREE SLOPE (m)		TOTAL LENGTH (m)
					C LHS	C RHS	FRL-1	FRL-2	FRL-3	I.L -1	I.L -2	C1	C2	C3	FSL-1	FSL-2	
1	56+755	56+770	TCS-II-B	1.2	-5.00	5.00	484.115	483.865	484.785	480.451	480.471	2.334	2.094	2.994	4.350	6.150	22.500

CLIENT: PUBLIC WORK DEPARTMENT MADHYA PRADESH			PROOF CHECK CONSULTANT: HIGHRAISE CONSTRUCTION AND CONSULTANT PRIVATE LIMITED			DESIGN CONSULTANT: CIVIL MANTRA INFRACON PVT. LTD.			APPROVED:- SM			PROJECT:- UPGRADATION AND RECONSTRUCTION OF EXISTING INTERMEDIATE LANE TO 2-LANE WITH PAVED SHOULDERS CONFIGURATION FROM KM 43.000 (BARNA RIVER) TO KM 77.000 (KEN RIVER), LENGTH 34.000 KM ON GULGANJ-AMANGANJ-PAWAI-KATNI NH-43 EXT. ALONG WITH ONE TIME IMPROVEMENT IN 01 NO OF BYPASSED BUILT-UP AREA IN A TOTAL LENGTH OF 1.55 KM IN THE STATE OF MADHYA PRADESH ON EPC MODE.		
AUTHORITY ENGINEER:			SAFETY CONSULTANT: EARL TECHNO CONSULTANTS PVT. LTD.			EPC CONTRACTOR: KEYSTONE INFRA PVT. LTD.			CHECKED:- RK			TITLE:- GENERAL ARRANGEMENT DRAWING OF PIPE CULVERT AT CH.56+770 TCS -IIB		
DESIGNED:- ST			DRAWN:- SY			DRAWING NO :- CIPL-D1190-56+770-HPC-101-01 OF 01-R1-GAD			DATE: JAN-2025			SCALE: AS SHOWN		
REV: DATE DESCRIPTION			REV: DATE DESCRIPTION			REV: DATE DESCRIPTION			SHEET NO: 01 OF 01			FORMAT: A3 (420X297)		



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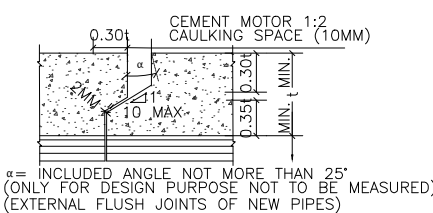
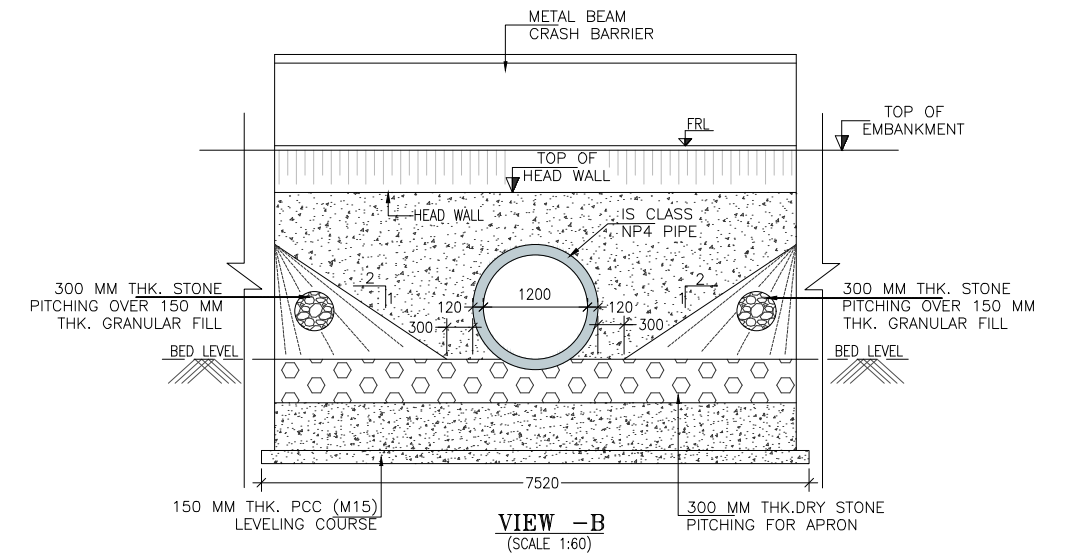
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LEGEND :-

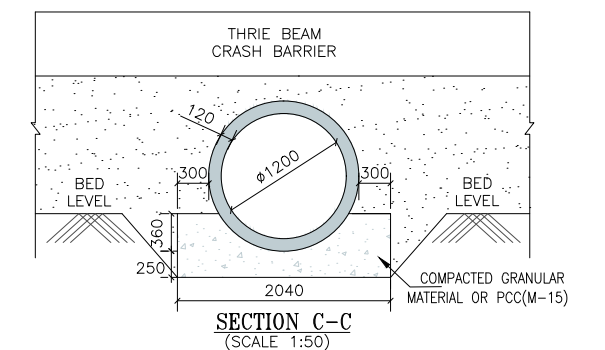
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*SPECIAL NOTES-

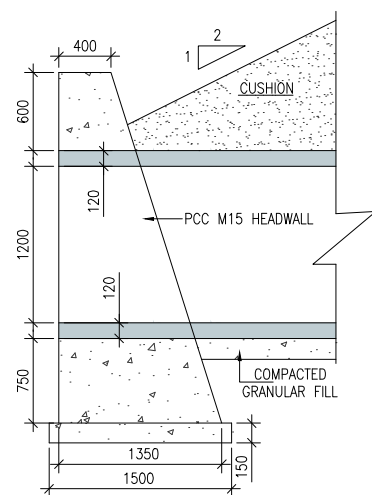
- REFER FOLLOWING CONDITIONS FOR LAYING OF PIPES
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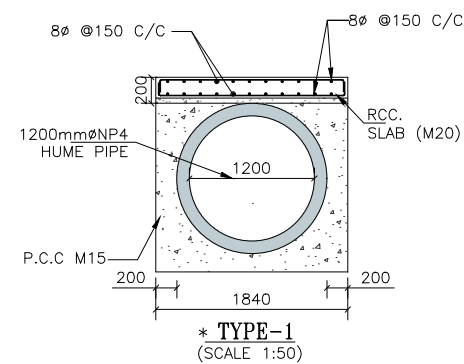
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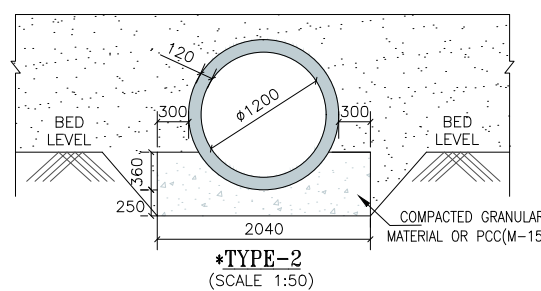
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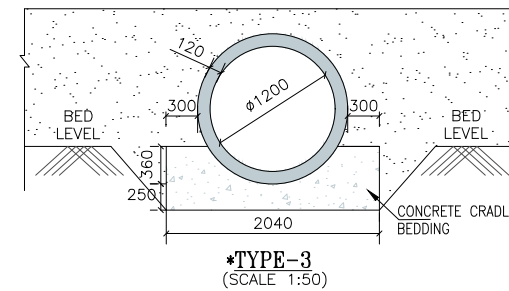
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* TYPE-1
(SCALE 1:50)

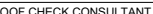
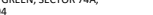


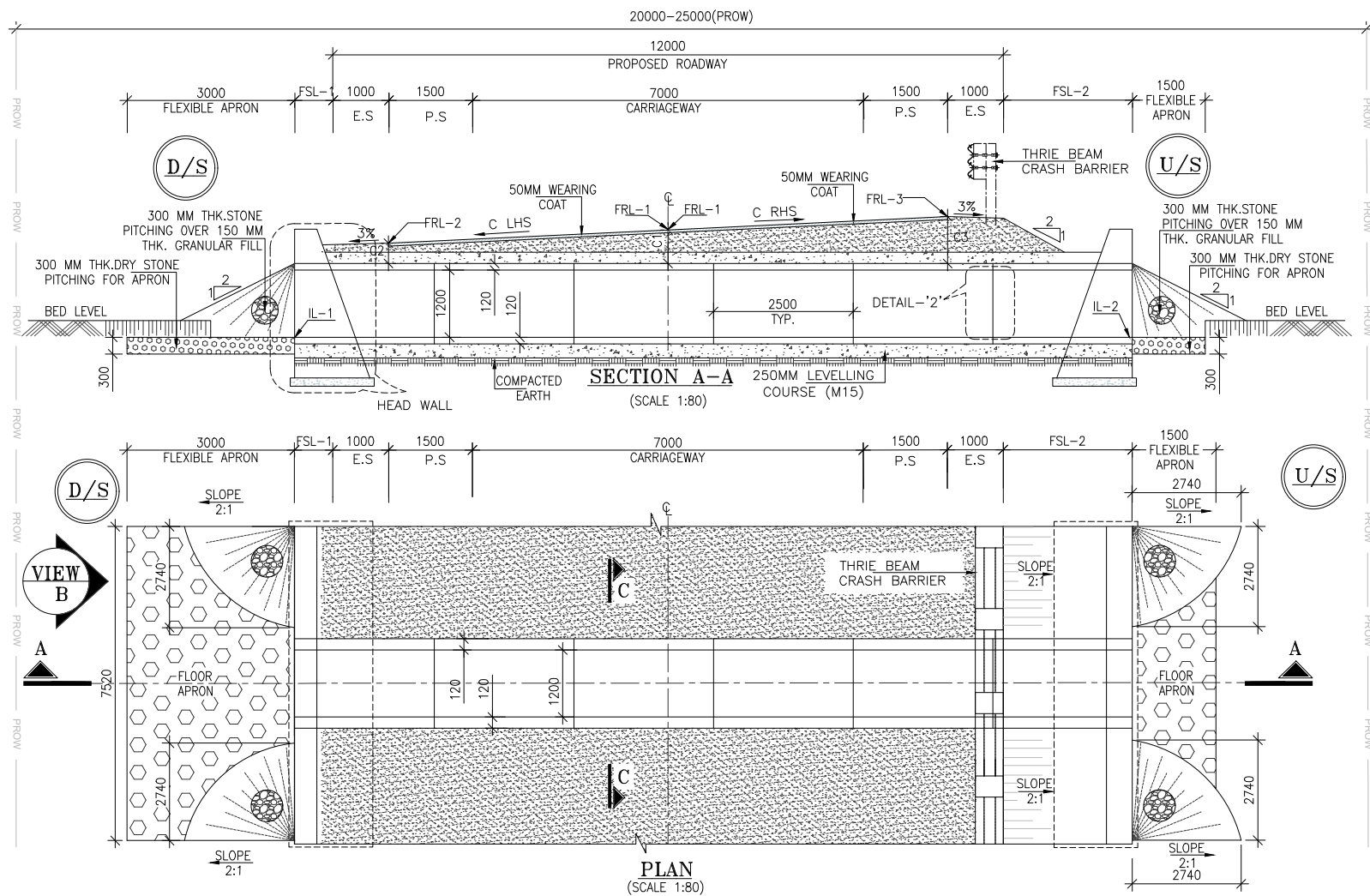
*TYPE-2
(SCALE 1:50)



*TYPE-3
(SCALE 1:50)

SR NO.	CA CHAINAGE	PROPOSED CHAINAGE	TCS	DIA OF PIPE (m)	MCW CAMBER		FRL MCW			INVERT LEVEL		DEPTH OF FILL (m)			FREE SLOPE (m)		TOTAL LENGTH (m)
					C LHS	C RHS	FRL-1	FRL-2	FRL-3	I.L -1	I.L -2	C1	C2	C3	FSL-1	FSL-2	
1	56+950	56+950	TCS-II-B	1.2	-5.00	5.00	490.055	489.805	490.305	487.760	487.772	0.969	0.725	1.213	2.262	3.238	17.500

			 CLIENT: PUBLIC WORK DEPARTMENT MADHYA PRADESH	 PROOF CHECK CONSULTANT : HIGHRAISE CONSTRUCTION AND CONSULTANT PRIVATE LIMITED	 DESIGN CONSULTANT : CIVIL MANTRA INFRACON PVT. LTD. 3rd FLOOR TOWER 3A, DLF CORPORATE GREEN, SECTOR 74A, GURUGRAM - 122004	APPROVED:- SM	PROJECT:- UPGRADATION AND RECONSTRUCTION OF EXISTING INTERMEDIATE LANE TO 2-LANE WITH PAVED SHOULDERS CONFIGURATION FROM KM 43.000 (BARNA RIVER) TO KM 77.000 (KEN RIVER), LENGTH 34.000 KM ON GULGANJ- AMANGANJ- PAWAI-KATNI NH-43 EXT. ALONG WITH ONE TIME IMPROVEMENT IN 01 NO OF BYPASSED BUILT-UP AREA IN A TOTAL LENGTH OF 1.55 KM IN THE STATE OF MADHYA PRADESH ON EPC MODE.									
						CHECKED:- RK										
R1	JAN-2025	REVISED AS PER LATEST P & P				AUTHORITY ENGINEER :		 SAFETY CONSULTANT : EARL TECHNO CONSULTANTS PVT. LTD.	 EPC CONTRACTOR : KEYSTONE INFRA PVT. LTD.	DESIGNED:- ST	TITLE:- GENERAL ARRANGEMENT DRAWING OF PIPE CULVERT AT CH.56+950 TCS -IIB <table><tr><td>DATE</td><td>JAN-2025</td></tr><tr><td>SCALE</td><td>AS SHOWN</td></tr><tr><td>SHEET NO.</td><td>01 OF 01</td></tr><tr><td>FORMAT</td><td>A3 (420X297)</td></tr></table>	DATE	JAN-2025	SCALE	AS SHOWN	SHEET NO.
DATE	JAN-2025															
SCALE	AS SHOWN															
SHEET NO.	01 OF 01															
FORMAT	A3 (420X297)															
R0	NOV-2024	FOR APPROVAL														
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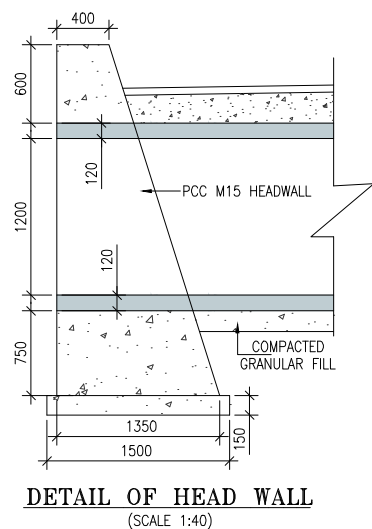
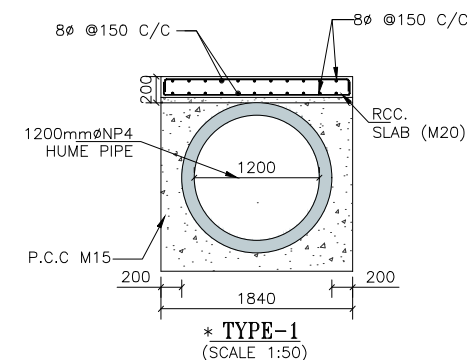
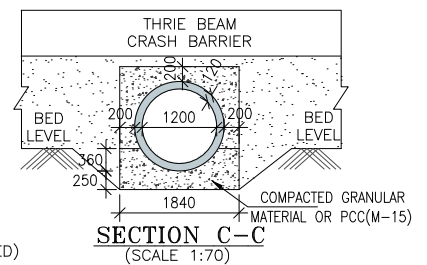
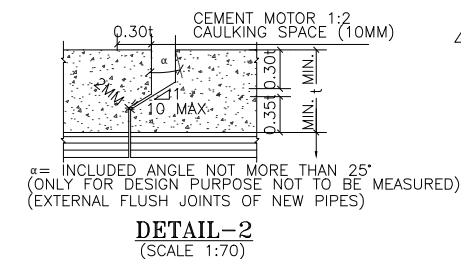
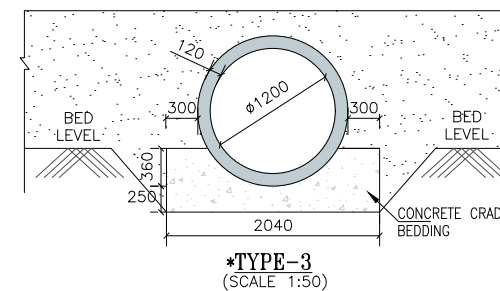
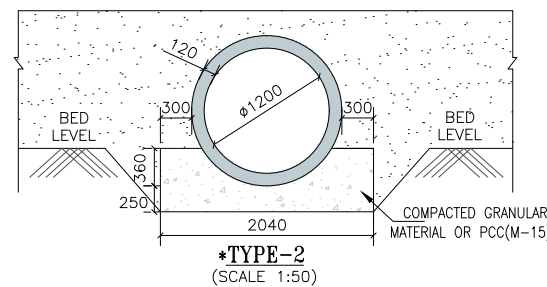
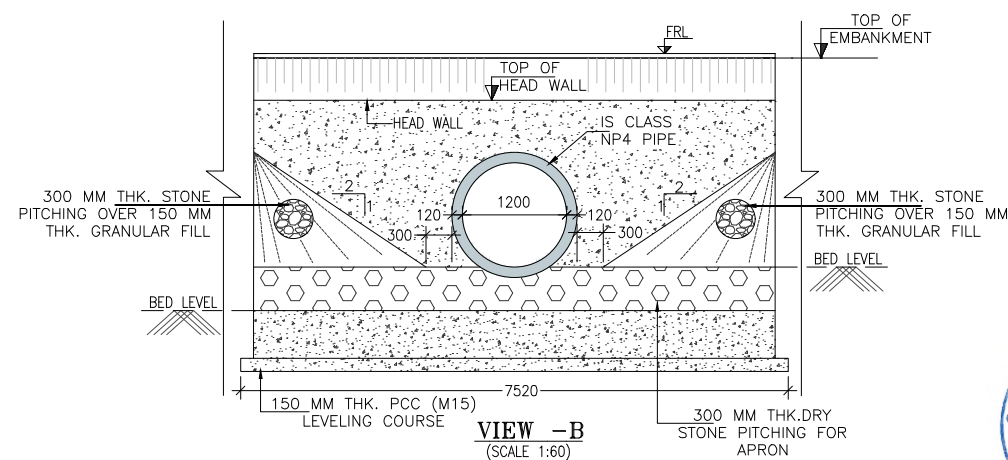
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- THE CARRIAGEWAY DIMENSIONS AS SHOWN SHALL CONFIRM WITH ROAD CROSS SECTION AT PARTICULAR LOCATION BEFORE START OF WORK.
- CHAINAGE/FORMATION LEVEL/CAMBER ETC. SHALL BE VERIFIED FROM APPROVED PLAN & PROFILE DRAWING BEFORE START OF WORKS.
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- ENCASING DETAIL SHOULD BE REFERED FOR PIPE HAVING CUSHION <600MM FOR NEW/RECONSTRUCTION AND <600MM FOR WIDENING.

LEGEND :-

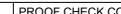
- FRL. = FINISHED ROAD LEVEL
- THK. = THICKNESS
- P.S. = PAVED SHOULDER
- F.S.L. = FREE SLOPE
- T.B.C.B. = THRIE BEAM CRASH BARRIER
- E.S. = EARTHEN SHOULDER

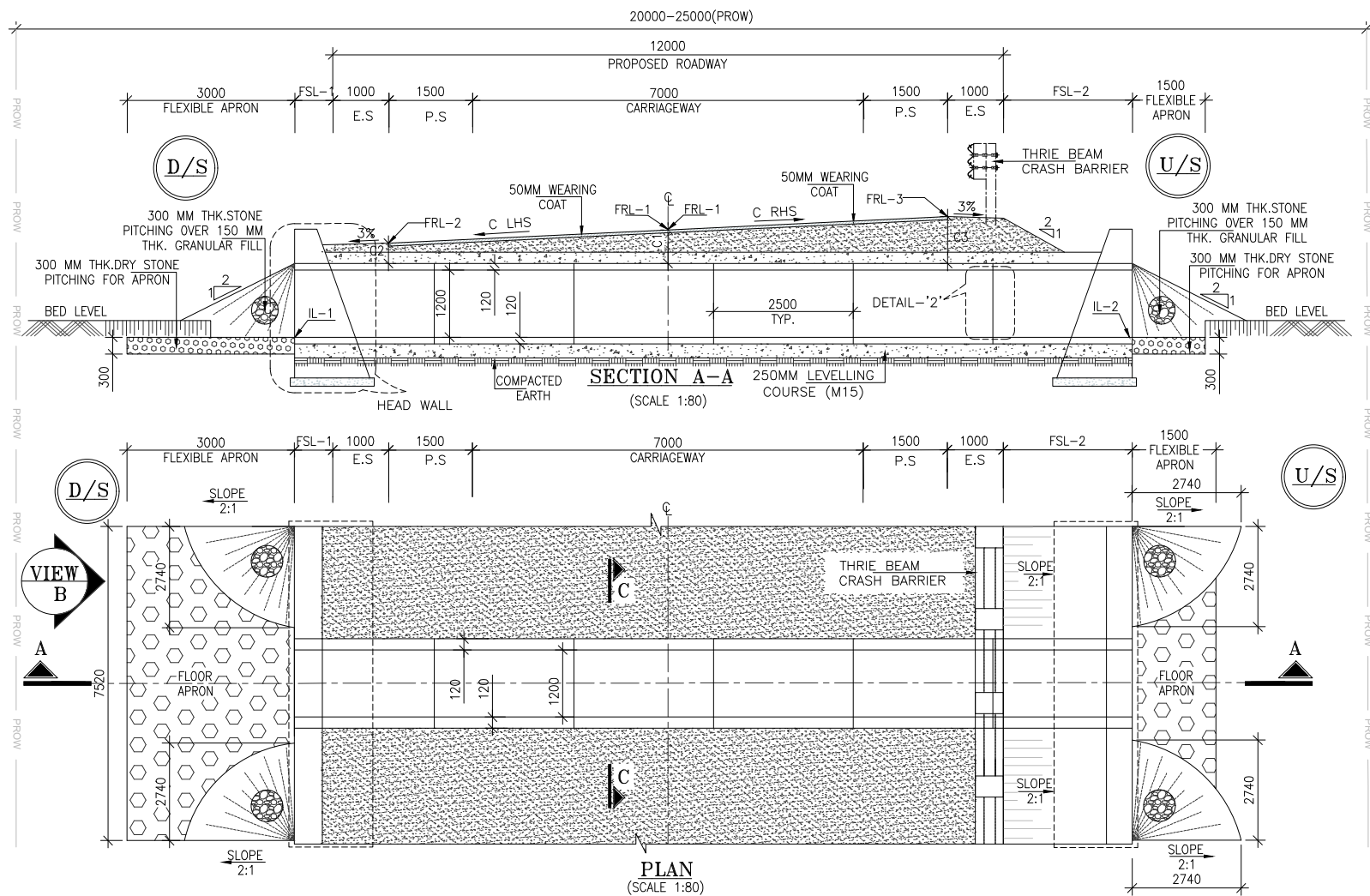
*SPECIAL NOTES-

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SR NO.	CA CHAINAGE	PROPOSED CHAINAGE	TCS	DIA OF PIPE (m)	MCW CAMBER		FRL MCW			INVERT LEVEL		DEPTH OF FILL (m)			FREE SLOPE (m)		TOTAL LENGTH (m)
					C LHS	C RHS	FRL-1	FRL-2	FRL-3	I.L -1	I.L -2	C1	C2	C3	FSL-1	FSL-2	
1	64+200	64+223	TCS-I-A	1.2	-4.70	4.70	467.394	467.159	467.629	465.372	465.360	0.708	0.467	0.949	1.018	1.982	15.000

			 CLIENT: PUBLIC WORK DEPARTMENT MADHYA PRADESH	 PROOF CHECK CONSULTANT : HIGHRAISE CONSTRUCTION AND CONSULTANT PRIVATE LIMITED	 DESIGN CONSULTANT : CIVIL MANTRA INFRACON PVT. LTD. 3rd FLOOR TOWER 3A, DLF CORPORATE GREEN, SECTOR 74A, GURUGRAM - 122004	APPROVED:- SM	PROJECT:- UPGRADATION AND RECONSTRUCTION OF EXISTING INTERMEDIATE LANE TO 2-LANE WITH PAVED SHOULDERS CONFIGURATION FROM KM 43.000 (BARNA RIVER) TO KM 77.000 (KEN RIVER), LENGTH 34.000 KM ON GULGANJ- AMANGANJ- PAWAI-KATNI NH-43 EXT. ALONG WITH ONE TIME IMPROVEMENT IN 01 NO OF BYPASSED BUILT-UP AREA IN A TOTAL LENGTH OF 1.55 KM IN THE STATE OF MADHYA PRADESH ON EPC MODE.	
						CHECKED:- RK		
R1	JAN-2025	REVISED AS PER LATEST P & P						
R0	NOV-2024	FOR APPROVAL						
REV	DATE	DESCRIPTION	AUTHORITY ENGINEER :	SAFETY CONSULTANT :  EARL TECHNO CONSULTANTS PVT. LTD.	EPC CONTRACTOR :  KEYSTONE INFRA PVT. LTD.	DESIGNED:- ST	TITLE:-GENERAL ARRANGEMENT DRAWING OF PIPE CULVERT AT CH -64+223 TCS -1A	DATE JAN-2025
						DRAWN:- SY	DRAWING NO :- CIPL-D1190-64+223-HPC-101 -01 OF 01-R1-GAD	SHEET NO. 01 OF 01
								FORMAT A3 (420X297)



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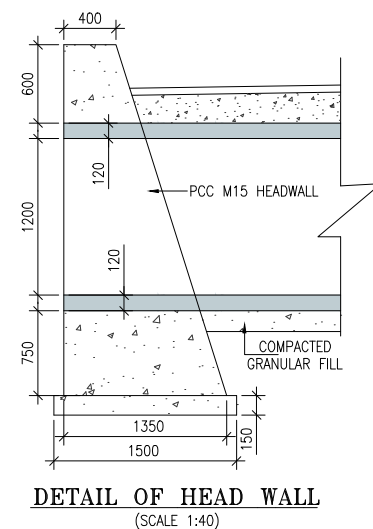
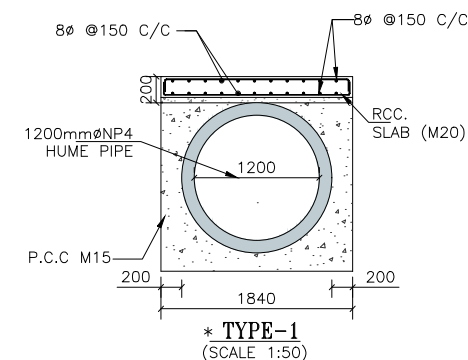
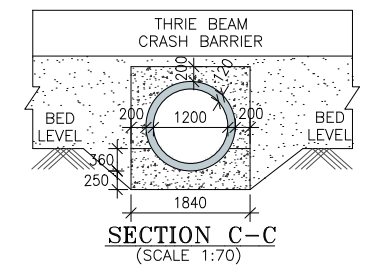
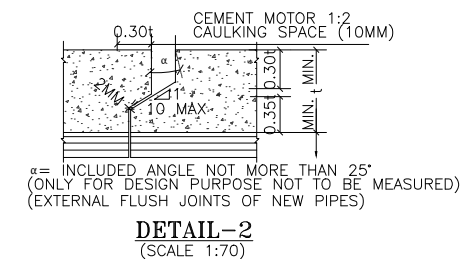
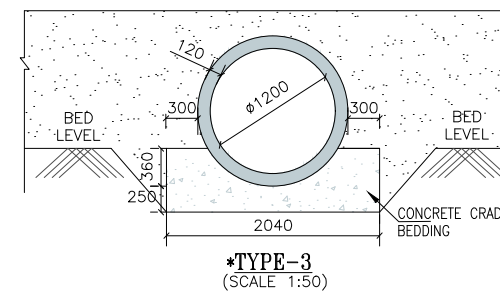
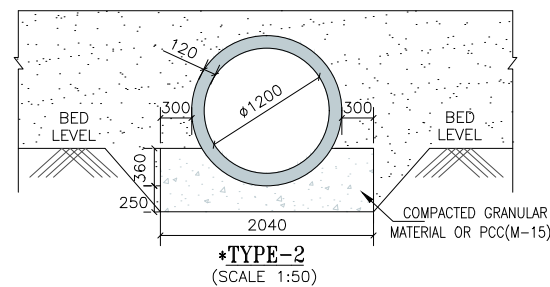
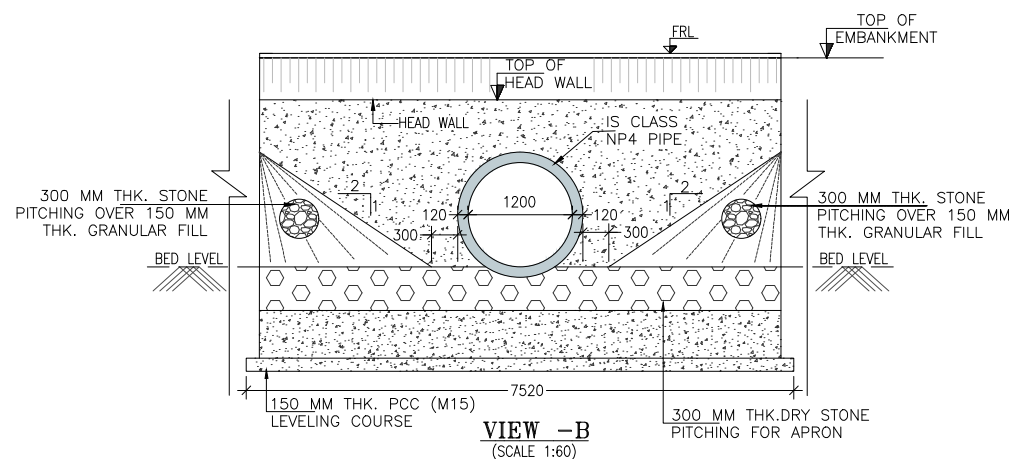
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- ALL R.C.C PIPES OF NP4 TYPE SHALL BE CONFORM TP I.S 458.
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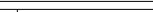
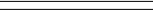
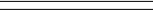
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SR NO.	CA CHAINAGE	PROPOSED CHAINAGE	TCS	DIA OF PIPE (m)	MCW CAMBER		FRL MCW			INVERT LEVEL		DEPTH OF FILL (m)			FREE SLOPE (m)		TOTAL LENGTH (m)
					C LHS	C RHS	FRL-1	FRL-2	FRL-3	I.L -1	I.L -2	C1	C2	C3	FSL-1	FSL-2	
1	68+085	68+105	TCS-I-A	1.2	-3.60	3.60	386.038	385.858	386.218	384.219	384.231	0.493	0.319	0.667	0.863	2.137	15.000

			 CLIENT: PUBLIC WORK DEPARTMENT MADHYA PRADESH	 PROOF CHECK CONSULTANT : HIGHRAISE CONSTRUCTION AND CONSULTANT PRIVATE LIMITED	 DESIGN CONSULTANT : CIVIL MANTRA INFRACON PVT. LTD. 3rd FLOOR TOWER 3A, DLF CORPORATE GREEN, SECTOR 74A, GURUGRAM - 122004	APPROVED:- SM	PROJECT:- UPGRADATION AND RECONSTRUCTION OF EXISTING INTERMEDIATE LANE TO 2-LANE WITH PAVED SHOULDERS CONFIGURATION FROM KM 43.000 (BARNA RIVER) TO KM 77.000 (KEN RIVER), LENGTH 34.000 KM ON GULGANJ- AMANGANJ- PAWAI-KATNI NH-43 EXT. ALONG WITH ONE TIME IMPROVEMENT IN 01 NO OF BYPASSED BUILT-UP AREA IN A TOTAL LENGTH OF 1.55 KM IN THE STATE OF MADHYA PRADESH ON EPC MODE.										
			AUTHORITY ENGINEER :	 SAFETY CONSULTANT : EARL TECHNO CONSULTANTS PVT. LTD.	 EPC CONTRACTOR : KEYSTONE INFRA PVT. LTD.	CHECKED:- RK											
R1	JAN-2025	REVISED AS PER LATEST P & P				DESIGNED:- ST											
R0	NOV-2024	FOR APPROVAL				DRAWN:- SY											
REV	DATE	DESCRIPTION					DRAWING NO :- CIPL-D1190-68+105-HPC-101 -01 OF 01-R1-GAD <table><tr><td>DATE</td><td>JAN-2025</td></tr><tr><td>SCALE</td><td>AS SHOWN</td></tr><tr><td>SHEET NO</td><td>01 OF 01</td></tr><tr><td>FORMAT</td><td>A3 (420X297)</td></tr><tr><td>REV</td><td>R1</td></tr></table>	DATE	JAN-2025	SCALE	AS SHOWN	SHEET NO	01 OF 01	FORMAT	A3 (420X297)	REV	R1
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NOTES:-

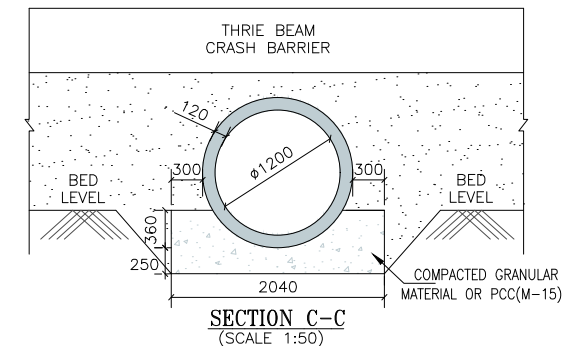
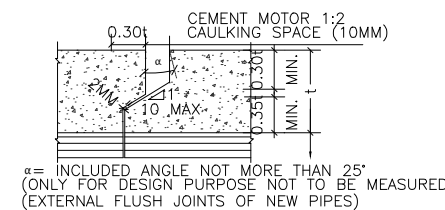
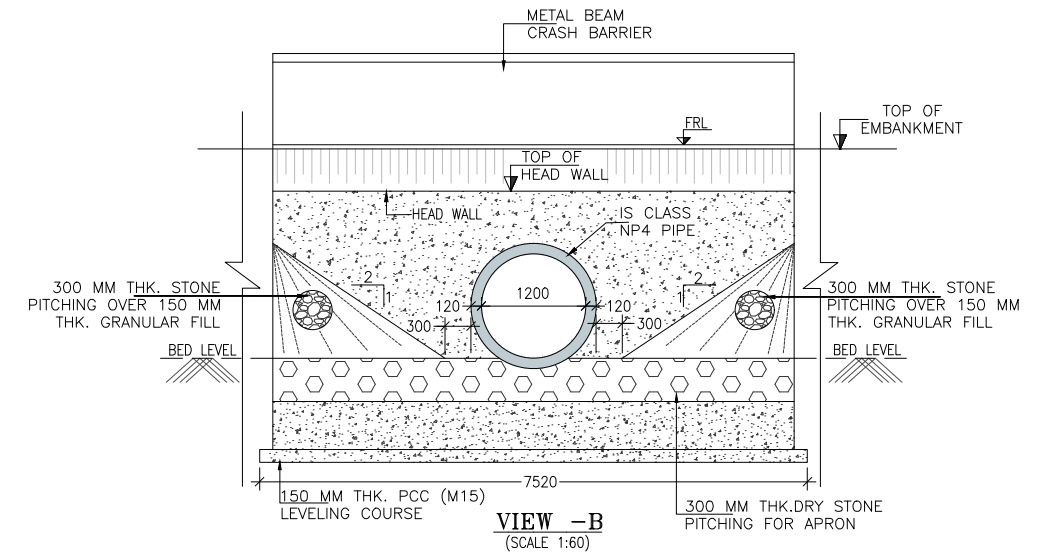
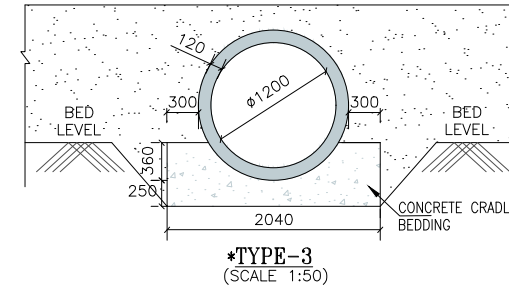
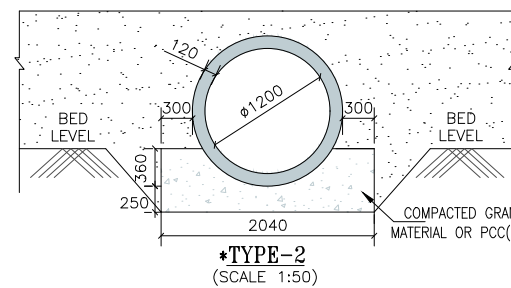
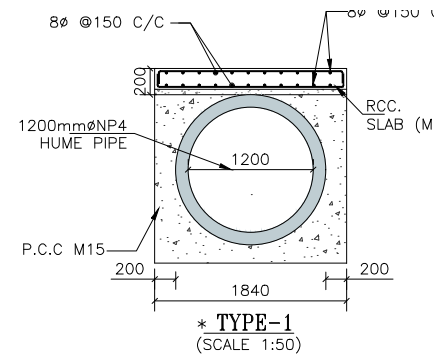
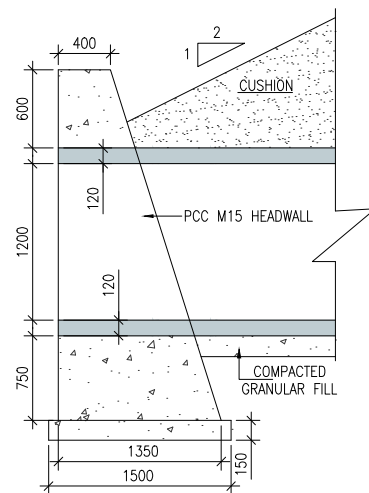
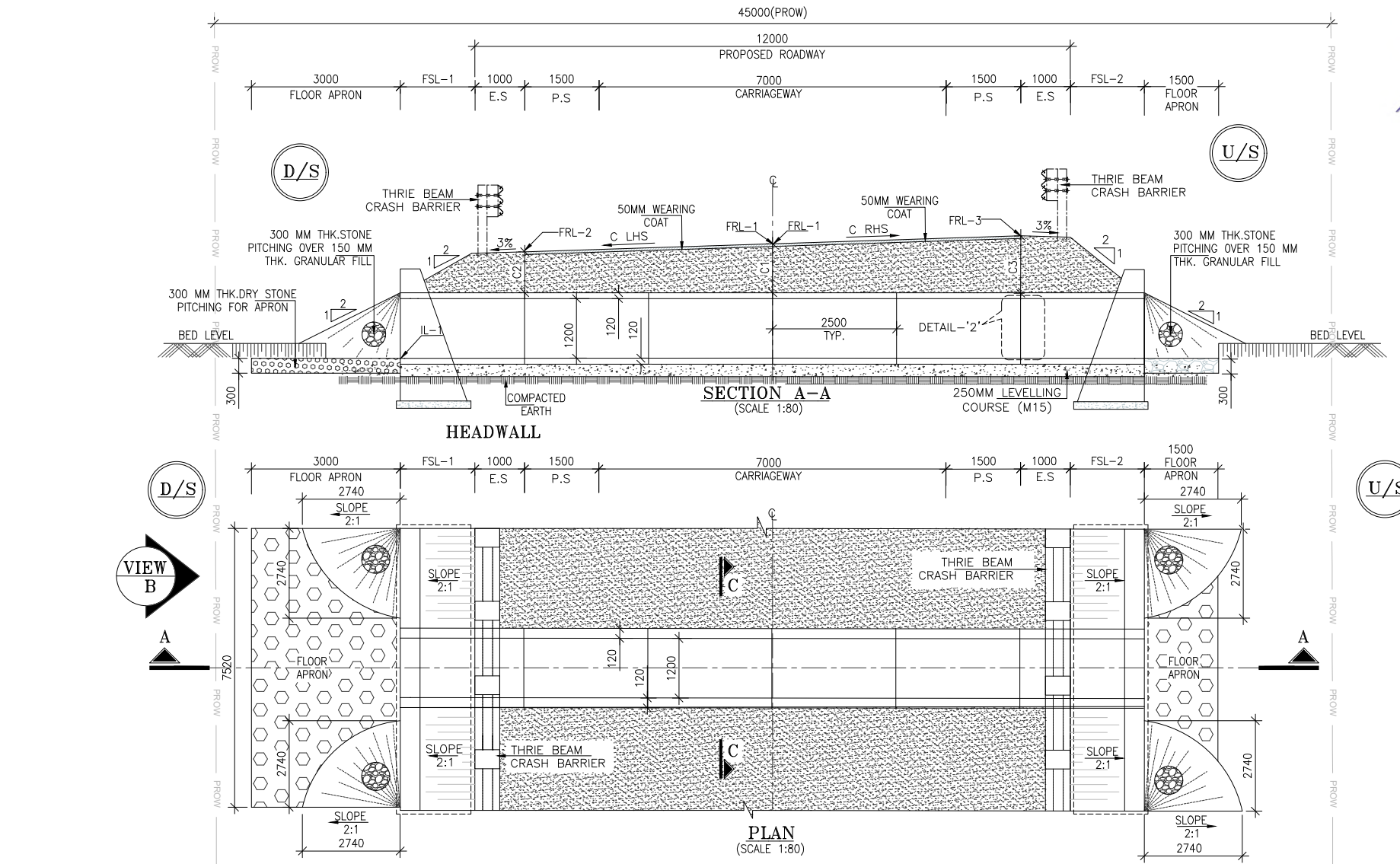
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SR NO.	CA CHAINAGE	PROPOSED CHAINAGE	TCS	DIA OF PIPE (m)	MCW CAMBER		FRL MCW			INVERT LEVEL		DEPTH OF FILL (m)			FREE SLOPE (m)		TOTAL LENGTH (m)
					C LHS	C RHS	FRL-1	FRL-2	FRL-3	I.L -1	I.L -2	C1	C2	C3	FSL-1	FSL-2	
1	74+600	74+615	TCS-II-B	1.2	-2.74	1.28	309.610	309.473	309.674	307.408	307.420	0.876	0.745	0.934	1.311	1.689	15.000

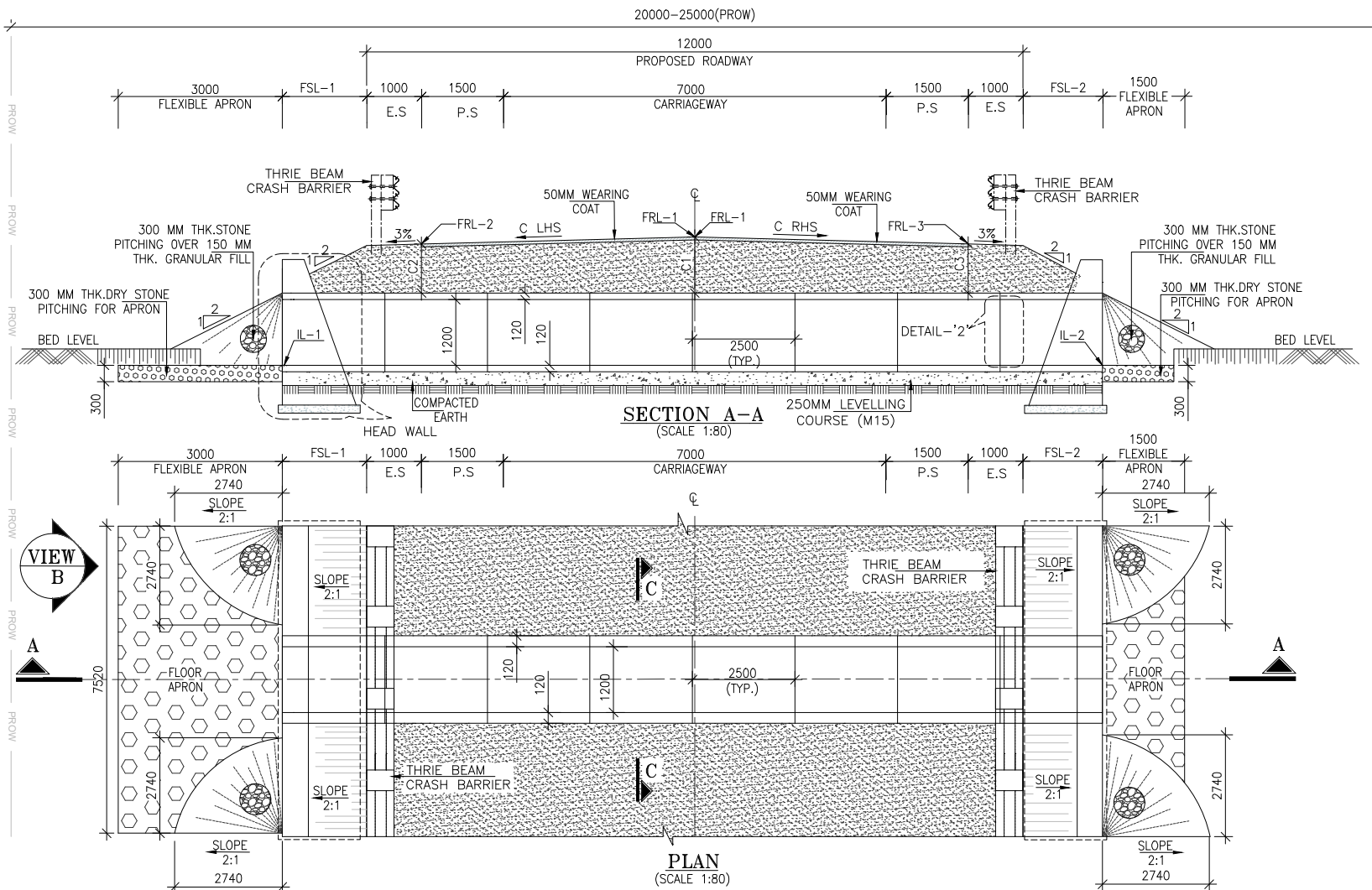
CLIENT:		
PUBLIC WORK DEPARTMENT MADHYA PRADESH		
AUTHORITY ENGINEER :		
R1	JAN-2025	REVISED AS PER LATEST P & P
R0	NOV-2024	FOR APPROVAL
REV	DATE	DESCRIPTION

PROOF CHECK CONSULTANT :		
HIGHRAISE CONSTRUCTION AND CONSULTANT PRIVATE LIMITED		
SAFETY CONSULTANT :		
EARL TECHNO CONSULTANTS PVT. LTD.		

DESIGN CONSULTANT :		
CIVIL MANTRA INFRACON PVT. LTD.		
EPC CONTRACTOR :		
KEYSTONE INFRA PVT. LTD.		

APPROVED:-	SM
CHECKED:-	RK
DESIGNED:-	ST
DRAWN:-	SY

PROJECT:- UPGRADATION AND RECONSTRUCTION OF EXISTING INTERMEDIATE LANE TO 2-LANE WITH PAVED SHOULDERS CONFIGURATION FROM KM 43.000 (BARNA RIVER) TO KM 77.000 (KEN RIVER), LENGTH 34.000 KM ON GULGANJ-AMANGANJ-PAWAI-KATNI NH-43 EXT. ALONG WITH ONE TIME IMPROVEMENT IN O1 NO OF BYPASSED BUILT-UP AREA IN A TOTAL LENGTH OF 1.55 KM IN THE STATE OF MADHYA PRADESH ON EPC MODE.		
TITLE:- GENERAL ARRANGEMENT DRAWING OF PIPE CULVERT AT CH.74+615 TCS-IIB		
DRAWING NO :- CIPL-D1190-74+615-HPC-101-01 OF 01-R1-GAD		



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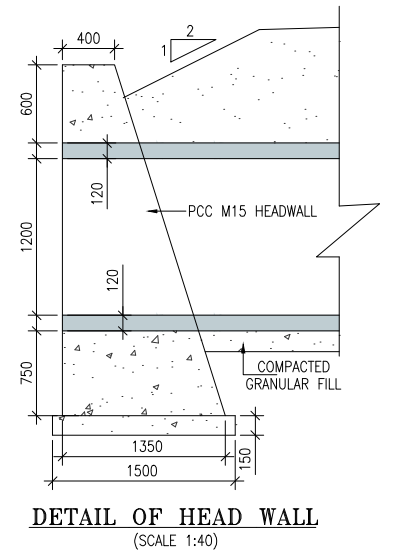
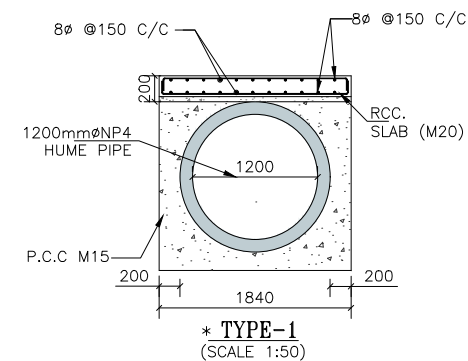
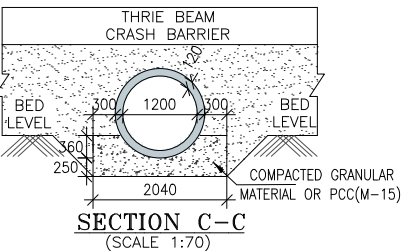
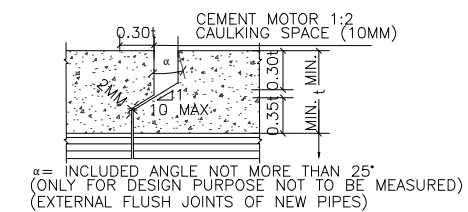
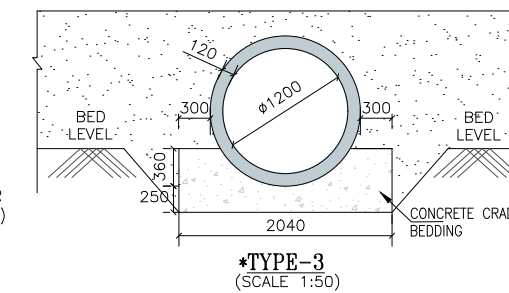
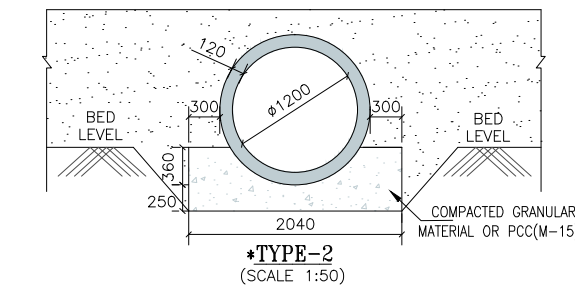
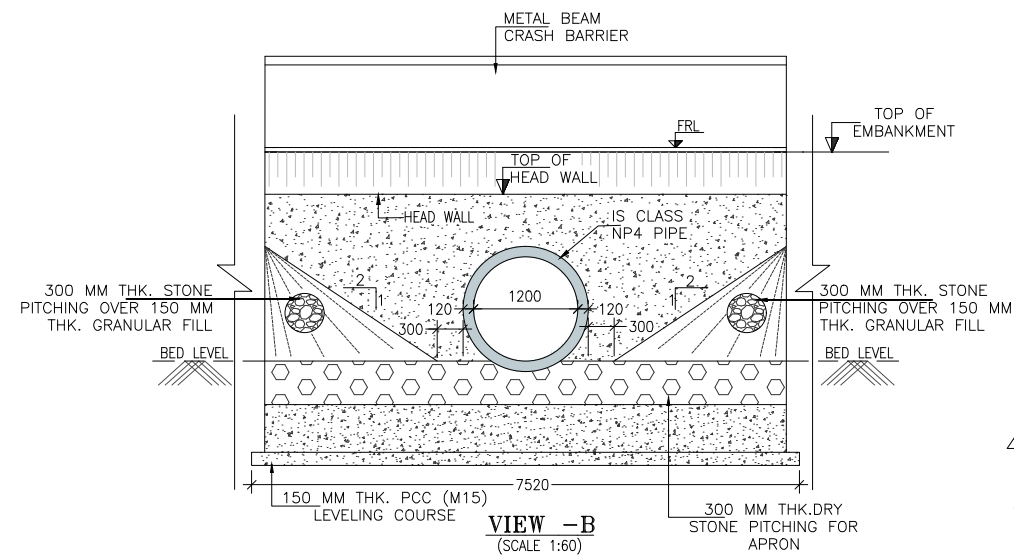
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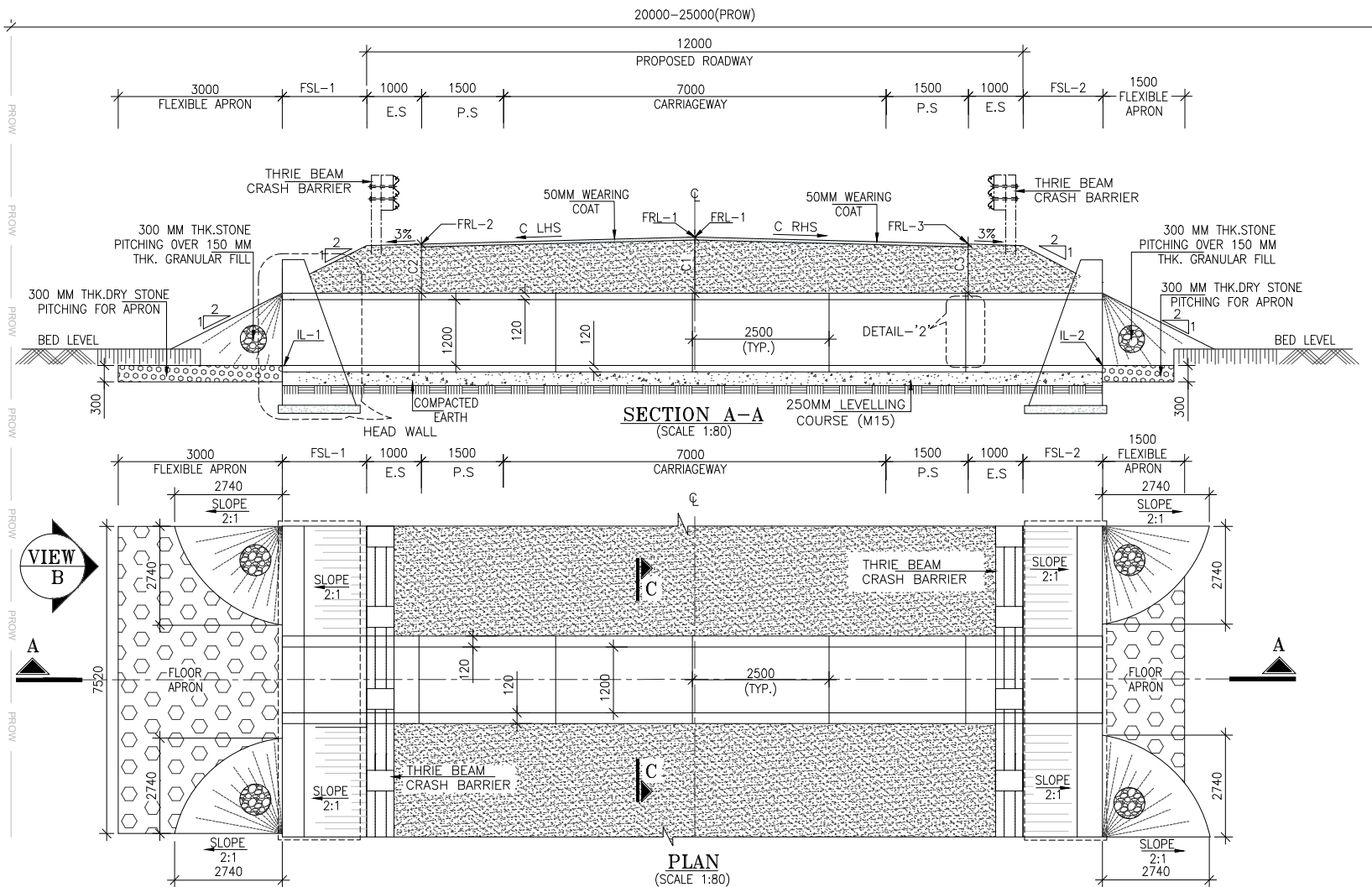
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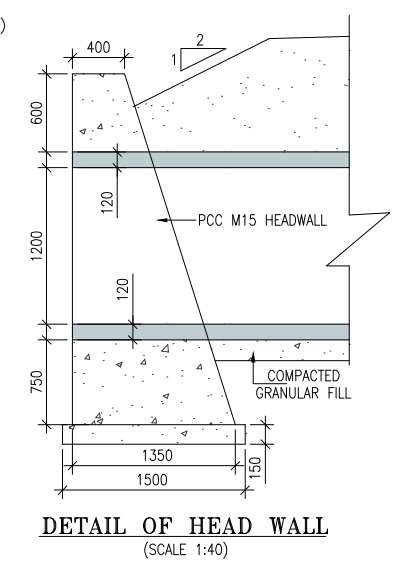
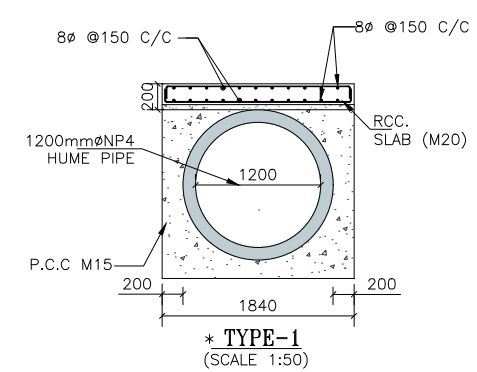
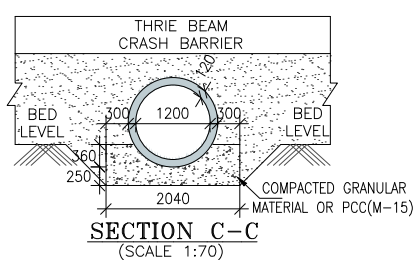
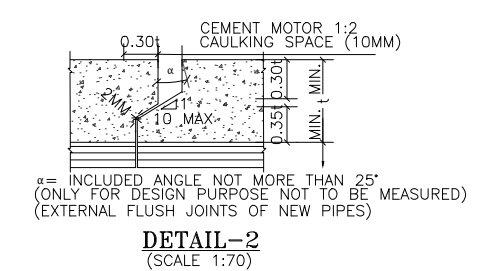
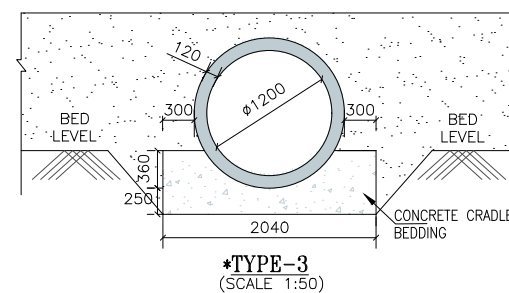
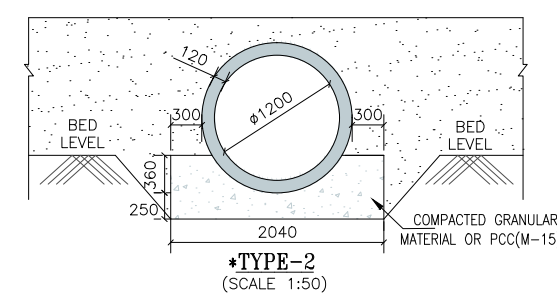
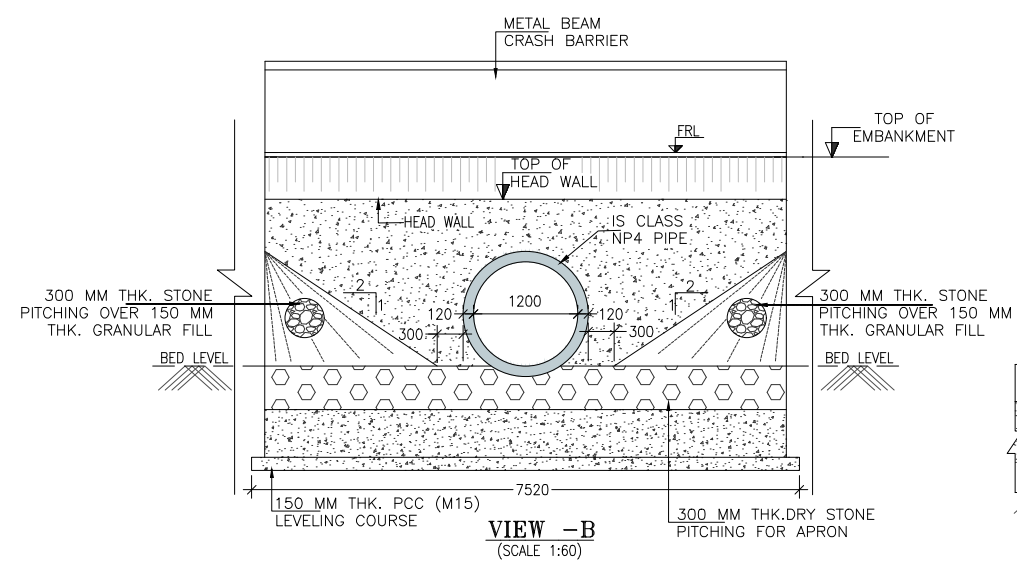
SR NO.	CA CHAINAGE	PROPOSED CHAINAGE	TCS	DIA OF PIPE (m)	MCW CAMBER		FRL MCW			INVERT LEVEL		DEPTH OF FILL (m)			FREE SLOPE (m)		TOTAL LENGTH (m)
					C LHS	C RHS	FRL-1	FRL-2	FRL-3	I.L -1	I.L -2	C1	C2	C3	FSL-1	FSL-2	
1	61+680	61+687	TCS-I-A	1.2	-2.50	-2.50	461.644	461.519	461.519	458.164	458.176	2.154	2.035	2.023	4.012	3.988	20.000
1	69+515	69+537	TCS-I-A	1.2	-2.50	-2.50	370.202	370.077	370.077	367.170	367.158	1.718	1.587	1.599	3.988	4.012	20.000

			CLIENT: PUBLIC WORK DEPARTMENT MADHYA PRADESH			PROOF CHECK CONSULTANT: HIGHRAISE CONSTRUCTION AND CONSULTANT PRIVATE LIMITED			DESIGN CONSULTANT: CIVIL MANTRA INFRACON PVT. LTD. 3rd FLOOR TOWER 3A, DLF CORPORATE GREEN, SECTOR 74A, GURUGRAM - 122004			APPROVED:- SM		PROJECT:- UPGRADATION AND RECONSTRUCTION OF EXISTING INTERMEDIATE LANE TO 2-LANE WITH PAVED SHOULDERS CONFIGURATION FROM KM 43.000 (BARNA RIVER) TO KM 77.000 (KEN RIVER), LENGTH 34.000 KM ON GULGANJ- AMANGANJ- PAWAI-KATNI NH-43 EXT. ALONG WITH ONE TIME IMPROVEMENT IN 01 NO OF BYPASSED BUILT-UP AREA IN A TOTAL LENGTH OF 1.55 KM IN THE STATE OF MADHYA PRADESH ON EPC MODE.				
			AUTHORITY ENGINEER:			SAFETY CONSULTANT: EARL TECHNO CONSULTANTS PVT. LTD.			EPC CONTRACTOR: KEYSTONE INFRA PVT. LTD.		CHECKED:- RK							
R1	JAN-2025	REVISED AS PER LATEST P & P							DESIGNED:- ST									
R0	NOV-2024	FOR APPROVAL							DRAWN:- SY									
REV	DATE	DESCRIPTION										DRAWING NO :- CIPL-D1190-TYP-HPC-101-01 OF 01-R1-GAD						
												DATE: JAN-2025						
												SCALE: AS SHOWN						
												SHEET NO: 01 OF 01						
												FORMAT: A3 (420X297)						
												REV: R1						



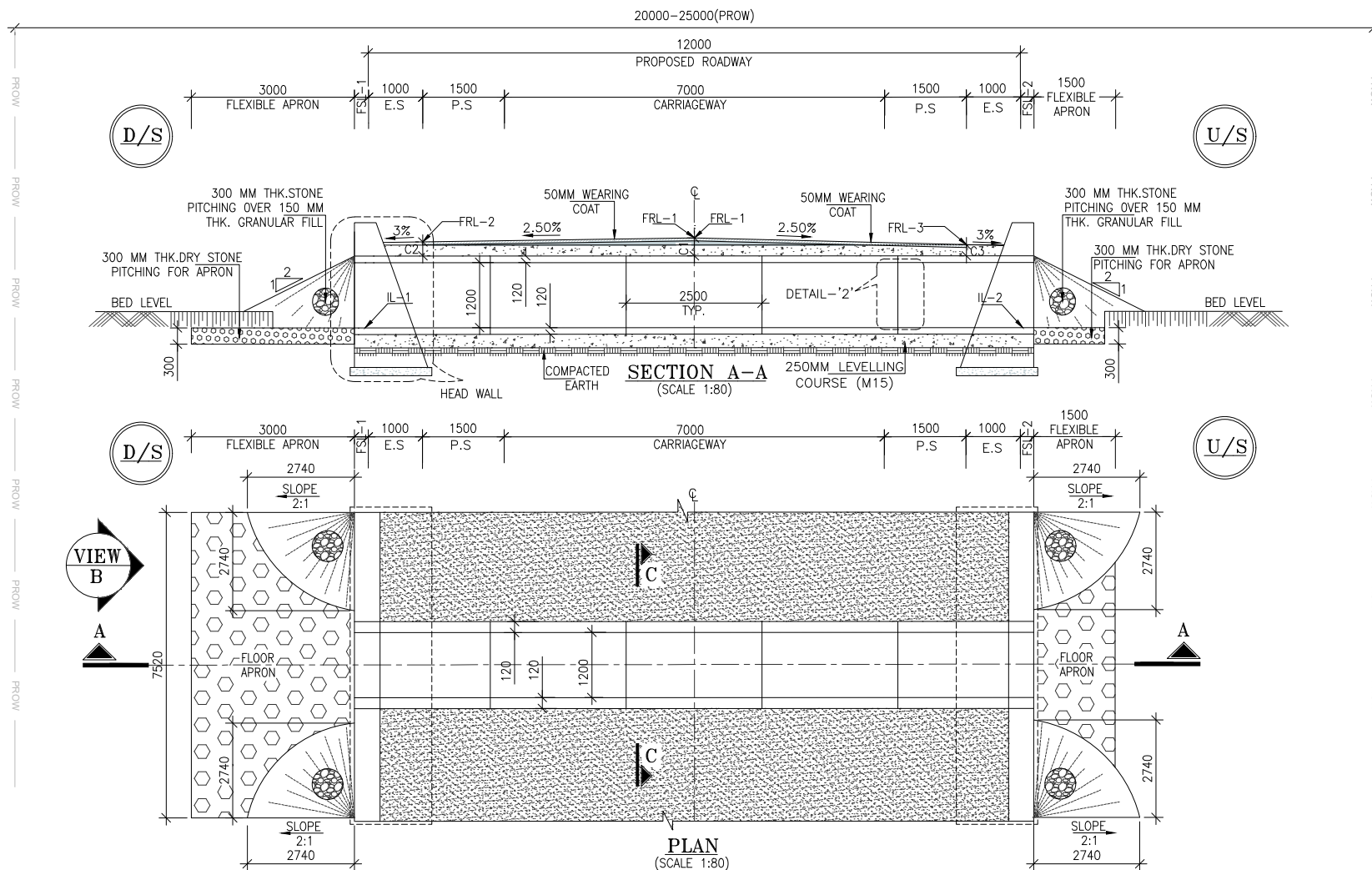
- NOTES:-**
- DRAWING SHALL NOT BE SCALED. ONLY WRITTEN DIMENSION TO BE FOLLOWED.
 - ALL DIMENSION ARE IN MM LEVELS ARE IN METER. UNLESS OTHERWISE SPECIFIED.
 - LONGITUDINAL SLOPE OF PIPE SHOULD BE MIN. OF 1 IN 1000.
 - ALL R.C.C PIPES OF NP4 TYPE SHALL BE CONFORM TP I.S 458.
 - D= INNER DIA OF NP4 CLASS PIPE
 - t= THICKNESS OF PIPE
 - FOR SETTING OUT DETAILS & GEOMETRIC DETAILS, REFER SEPERATE HIGHWAY DRAWING.
 - IN CASE FOUNDATION IS SLUSHY OR MARSHY AND WORKING CONDITION ARE NOT SUITABLE, IN SITU OF GRANULAR BEDDING OR PCC M-15 CAN BE USED WITH SAME DIMENSION.
 - ALL DIMENSION AND LEVEL SHALL BE VERIFIED ON SITE PRIOR TO COMMENCING WORK.
 - IF ANY AMBIGUITY FOUND IN DRAWING OR AT SITE, BRING IT TO DESIGNER NOTICE BEFORE EXECUTION OF WORK.
 - INCASE OF EXPOSED ROCK/NON SCOURABLE STRATE FOUND IN BED, FLOOR APRON SHALL BE REMOVED DULY APPROVED BY IE/AE.
 - IN CASE WHERE INVERT LEVEL IS HIGHER THAN GROUND LEVEL AT ENDS OF CULVERT OR WHERE THERE IS UNSUITABLE SOIL PROVIDE ADEQUATE CUTOFF WALLS AT END OF CULVERT TO PREVENT SCOUR/EROSION.
 - THE CARRIAGEWAY DIMENSIONS AS SHOWN SHALL CONFIRM WITH ROAD CROSS SECTION AT PARTICULAR LOCATION BEFORE START OF WORK.
 - CHAINAGE/FORMATION LEVEL/CAMBER ETC. SHALL BE VERIFIED FROM APPROVED PLAN & PROFILE DRAWING BEFORE START OF WORKS.
 - GRADE OF CONCRETE SHALL BE AS FOLLOWS :-
i) HEAD WALL - M15
 - FOR HEADWALL REINFORCEMENT REFER SEPERATE DRAWING.
 - ENCASING DETAIL SHOULD BE REFERED FOR PIPE HAVING CUSHION <600MM FOR NEW/RECONSTRUCTION AND <600MM FOR WIDENING.
- LEGEND :-**
- b) FRL = FINISHED ROAD LEVEL
 - c) THK. = THICKNESS
 - d) P.S = PAVED SHOULDER
 - e) F.S.L = FREE SLOPE
 - f) T.B.C.B = THRIE BEAM CRASH BARRIER
 - g) E.S = EARTHEN SHOULDER

***SPECIAL NOTES-**
REFER FOLLOWING CONDITIONS FOR LAYING OF PIPES
i) IF DEPTH OF FILL UP TO 0.6M THEN REFER TYPE-1
ii) IF DEPTH OF FILL FROM 0.6M TO 4M THEN REFER TYPE-2
iii) IF DEPTH OF FILL FROM 4M TO 8M THEN REFER TYPE-3



SR NO.	CA CHAINAGE	PROPOSED CHAINAGE	TCS	DIA OF PIPE (m)	MCW CAMBER		FRL MCW			INVERT LEVEL		DEPTH OF FILL (m)			FREE SLOPE (m)		TOTAL LENGTH (m)
					C LHS	C RHS	FRL-1	FRL-2	FRL-3	I.L -1	I.L -2	C1	C2	C3	FSL-1	FSL-2	
1	68+240	68+257	TCS-I-A	1.2	-2.50	-2.50	385.198	385.073	385.073	382.977	382.989	0.895	0.776	0.764	1.512	1.488	15.000
2	70+420	70+405	TCS-I-A	1.2	-2.50	-2.50	358.270	358.145	358.145	356.027	356.015	0.929	0.798	0.810	1.488	1.512	15.000
3	74+300	74+324	TCS-I-A	1.2	-2.50	-2.50	311.406	311.281	311.281	309.058	309.070	1.022	0.903	0.891	1.512	1.488	15.000

CLIENT: PUBLIC WORK DEPARTMENT MADHYA PRADESH			PROOF CHECK CONSULTANT: HIGHRAISE CONSTRUCTION AND CONSULTANT PRIVATE LIMITED		DESIGN CONSULTANT: CIVIL MANTRA INFRACON PVT. LTD. 3rd FLOOR TOWER 3A, DLF CORPORATE GREEN, SECTOR 74A, GURUGRAM - 122004		APPROVED:- SM CHECKED:- RK DESIGNED:- ST DRAWN:- SY		PROJECT:- UPGRADATION AND RECONSTRUCTION OF EXISTING INTERMEDIATE LANE TO 2-LANE WITH PAVED SHOULDERS CONFIGURATION FROM KM 43.000 (BARNA RIVER) TO KM 77.000 (KEN RIVER), LENGTH 34.000 KM ON GULGANJ-AMANGANJ-PAWAI-KATNI NH-43 EXT. ALONG WITH ONE TIME IMPROVEMENT IN 01 NO OF BYPASSED BUILT-UP AREA IN A TOTAL LENGTH OF 1.55 KM IN THE STATE OF MADHYA PRADESH ON EPC MODE. TITLE:- GENERAL ARRANGEMENT DRAWING OF PIPE CULVERT AT FOR TCS -IA DRAWING NO.:- CIPL-D1190-TYP-HPC-102-01 OF 01-R1-GAD	
SAFETY CONSULTANT: EARL TECHNO CONSULTANTS PVT. LTD.			EPIC CONTRACTOR: KEYSTONE INFRA PVT. LTD.						DATE: JAN-2025 SCALE: AS SHOWN SHEET NO: 01 OF 01 FORMAT: A3 (420X297) REV: RT	



NOTES:-

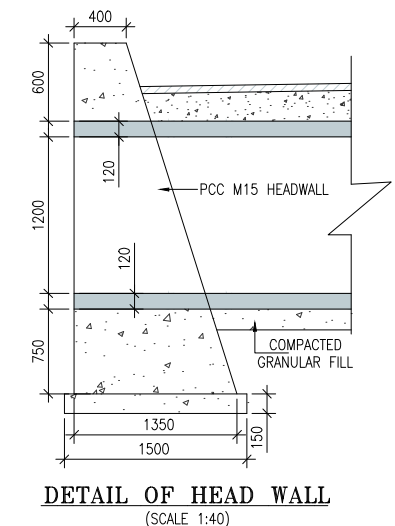
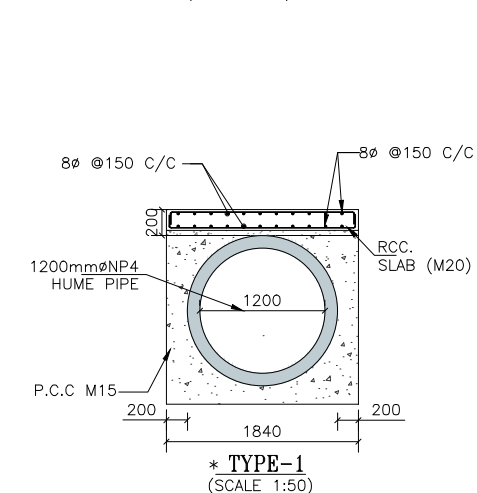
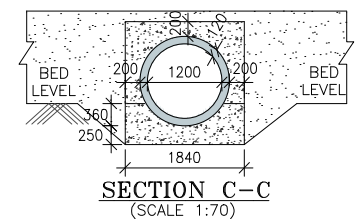
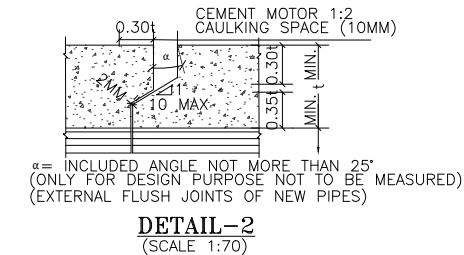
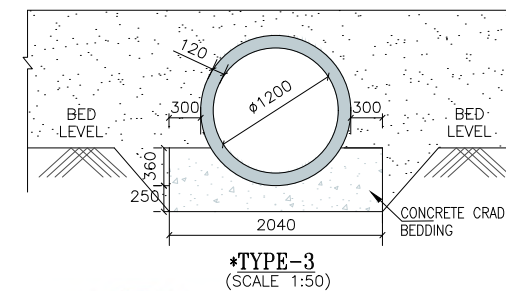
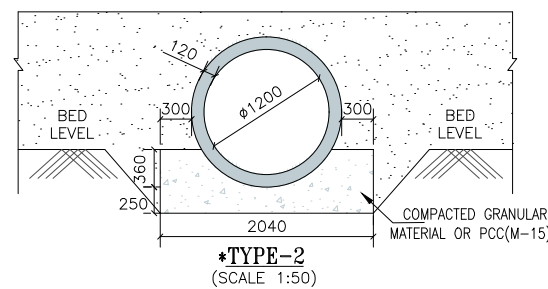
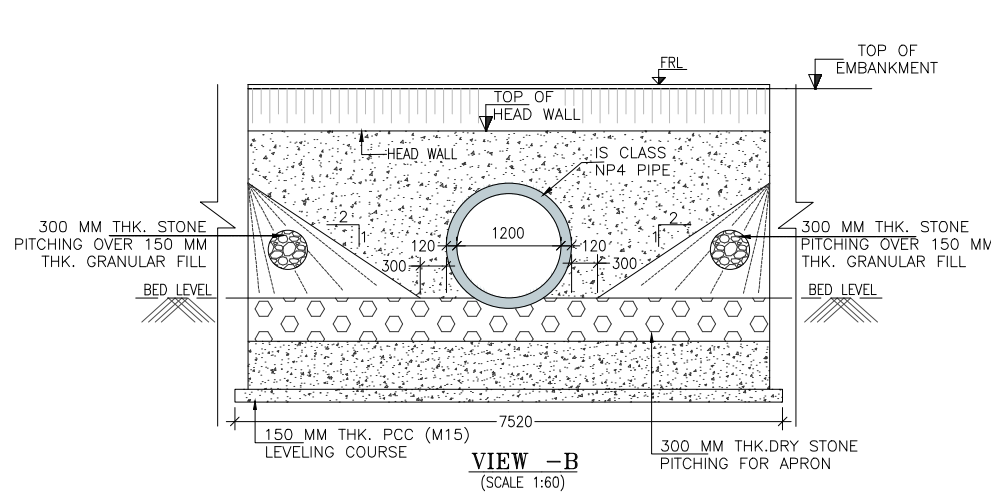
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- IN CASE FOUNDATION IS SLUSHY OR MARSHY AND WORKING CONDITION ARE NOT SUITABLE, IN SITU OF GRANULAR BEDDING OR PCC M-15 CAN BE USED WITH SAME DIMENSION.
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- IF ANY AMBIGUITY FOUND IN DRAWING OR AT SITE, BRING IT TO DESIGNER NOTICE BEFORE EXECUTION OF WORK.
- IN CASE OF EXPOSED ROCK/NON SCOURABLE STRATE FOUND IN BED, FLOOR APRON SHALL BE REMOVED DULY APPROVED BY IE/AE.
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- CHAINAGE/FORMATION LEVEL/CAMBER ETC. SHALL BE VERIFIED FROM APPROVED PLAN & PROFILE DRAWING BEFORE START OF WORKS.
- GRADE OF CONCRETE SHALL BE AS FOLLOWS :-
i) HEAD WALL - M15
ii) FLOOR APRON - M15
- FOR HEADWALL REINFORCEMENT REFER SEPERATE DRAWING.
- ENCASING DETAIL SHOULD BE REFERED FOR PIPE HAVING CUSHION <600MM FOR NEW/RECONSTRUCTION AND <600MM FOR WIDENING.

LEGEND :-

- b) FRL = FINISHED ROAD LEVEL
- c) THK. = THICKNESS
- d) P.S = PAVED SHOULDER
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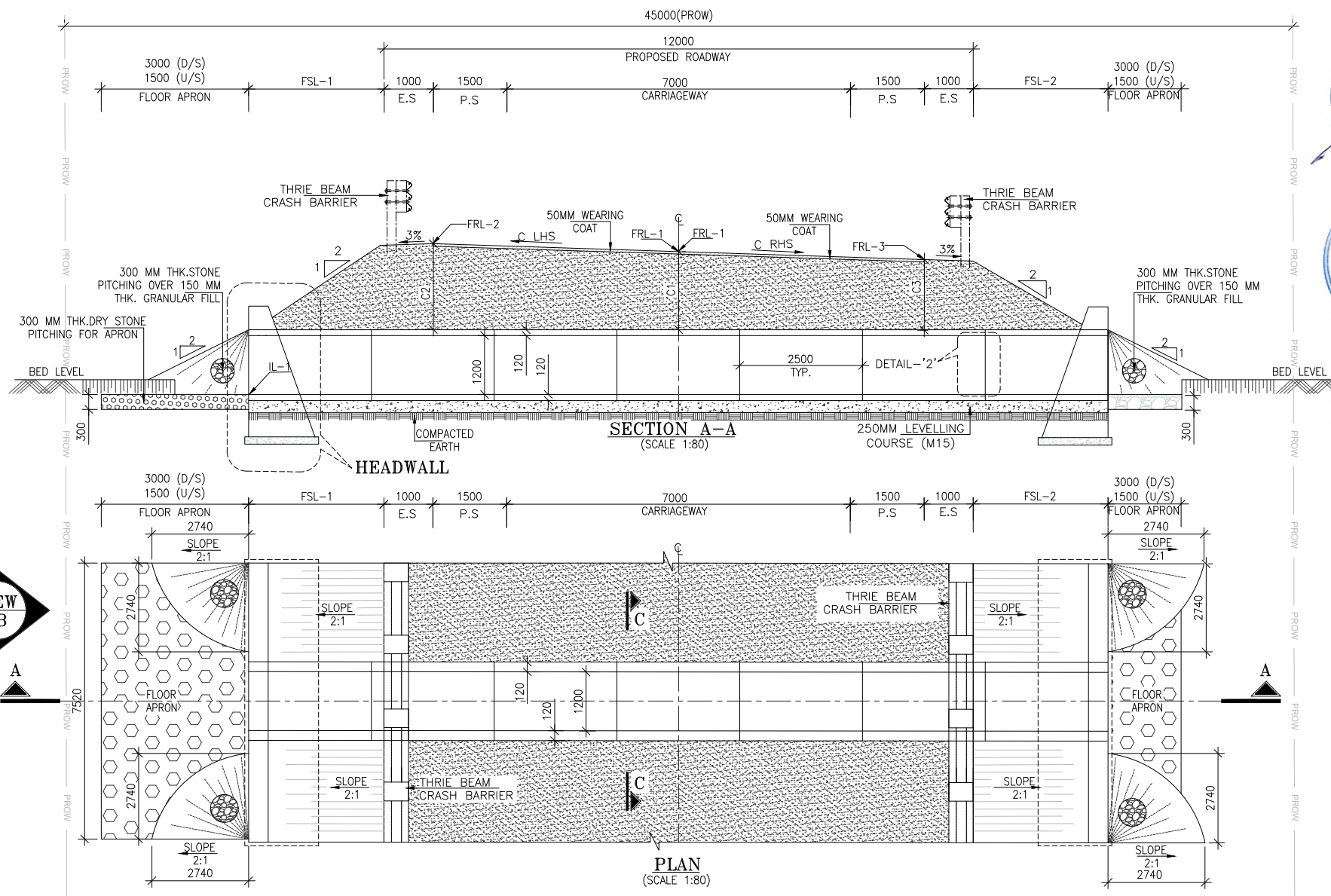
*SPECIAL NOTES:-

- REFER FOLLOWING CONDITIONS FOR LAYING OF PIPES
- i) IF DEPTH OF FILL UP TO 0.6M THEN REFER TYPE-1
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SR NO.	CA CHAINAGE	PROPOSED CHAINAGE	TCS	DIA OF PIPE (m)	MCW CAMBER		FRL MCW			INVERT LEVEL		DEPTH OF FILL (m)			FREE SLOPE (m)		TOTAL LENGTH (m)
					CLHS	CRHS	FRL-1	FRL-2	FRL-3	I.L -1	I.L -2	C1	C2	C3	FSL-1	FSL-2	
1	52+160	52+175	TCS-I-A	1.2	-2.50	-2.50	428.417	428.292	428.292	426.726	426.738	0.364	0.245	0.233	0.250	0.250	12.500
2	68+400	68+425	TCS-I-A	1.2	-2.50	-2.50	384.848	384.723	384.723	383.163	383.175	0.358	0.239	0.227	0.250	0.250	12.500
3	62+780	62+780	TCS-I-A	1.2	-2.50	-2.50	478.134	478.009	478.009	476.392	476.404	0.416	0.297	0.285	0.250	0.250	12.500

			CLIENT:  PUBLIC WORK DEPARTMENT MADHYA PRADESH		PROOF CHECK CONSULTANT :  HIGHRAISE CONSTRUCTION AND CONSULTANT PRIVATE LIMITED		DESIGN CONSULTANT :  CIVIL MANTRA INFRACON PVT. LTD. 3rd FLOOR TOWER 3A, DLF CORPORATE GREEN, SECTOR 74A, GURUGRAM - 122004		APPROVED:- SM		PROJECT:- UPGRADATION AND RECONSTRUCTION OF EXISTING INTERMEDIATE LANE TO 2-LANE WITH PAVED SHOULDERS CONFIGURATION (KEN RIVER), LENGTH 34.000 KM ON GULGANJ- AMANGANJ- PAWAI-KATNI NH-43 EXT. ALONG WITH ONE TIME IMPROVEMENT IN 01 NO OF BYPASSED BUILT-UP AREA IN A TOTAL LENGTH OF 1.55 KM IN THE STATE OF MADHYA PRADESH ON EPC MODE.			
			AUTHORITY ENGINEER :		SAFETY CONSULTANT :  EARL TECHNO CONSULTANTS PVT. LTD.		EPC CONTRACTOR :  KEYSTONE INFRA PVT. LTD.		CHECKED:- RK					
R1	JAN-2025	REVISED AS PER LATEST P & P							DRAWN:- SY		TITLE:- GENERAL ARRANGEMENT DRAWING OF PIPE CULVERT AT FOR TCS -IA		DATE : JAN-2025	
RO	NOV-2024	FOR APPROVAL									SCALE : AS SHOWN		SHEET NO. : 01 OF 01	
REV	DATE	DESCRIPTION									DRAWING NO :- CIPL-D1190-TYP.-HPC-103-01 OF 01-R1-GAD		FORMAT : A3 (420x297)	



NOTES:-

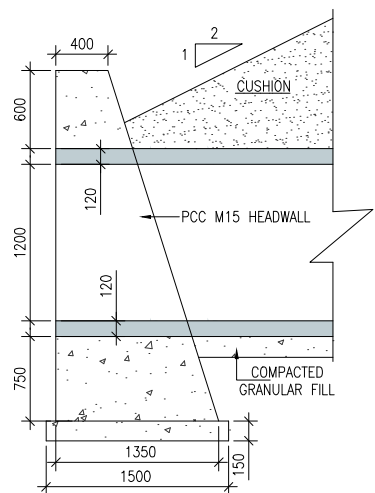
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LEGEND :-

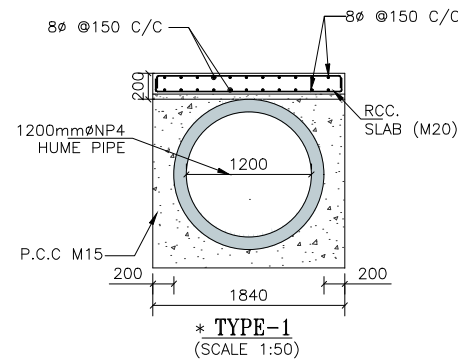
- b) FRL. = FINISHED ROAD LEVEL
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*SPECIAL NOTES-

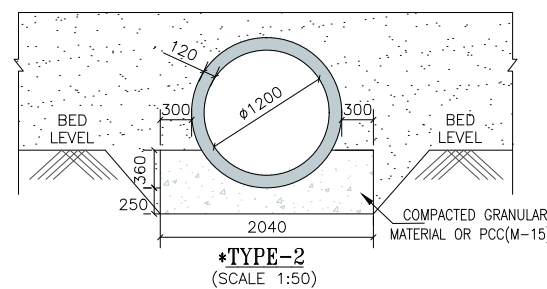
- REFER FOLLOWING CONDITIONS FOR LAYING OF PIPES
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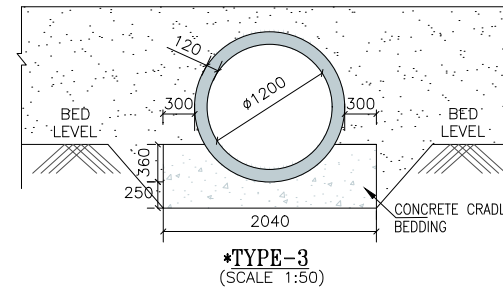
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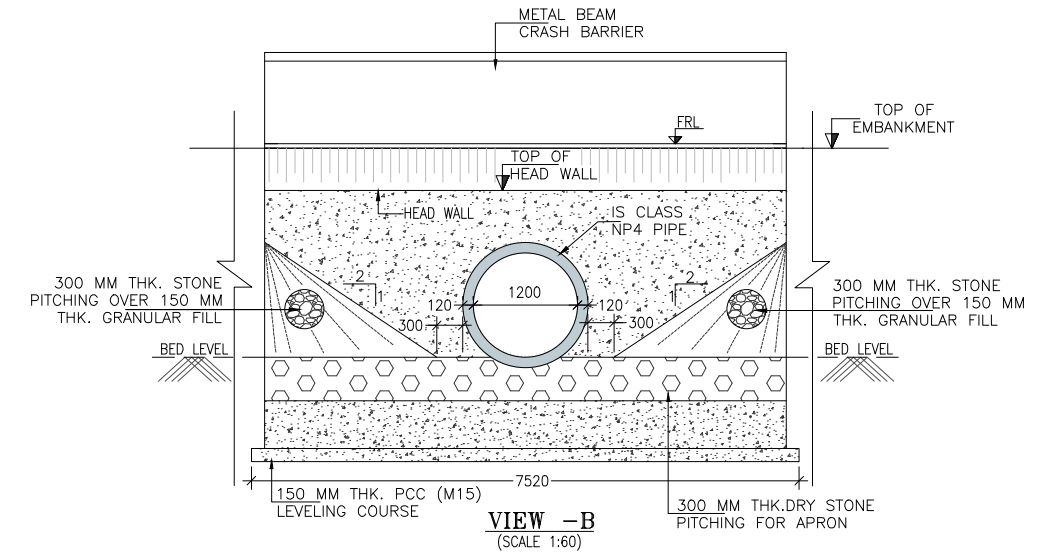
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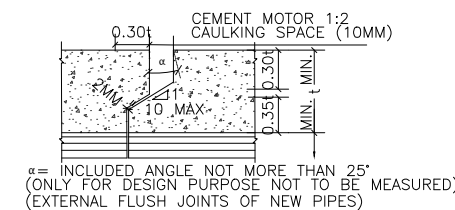
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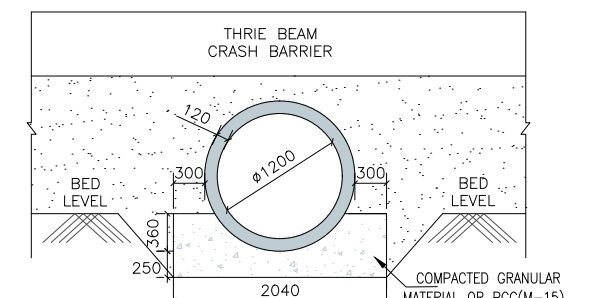
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VIEW -B
(SCALE 1:60)



DETAIL-2
(SCALE 1:70)



SECTION C-C
(SCALE 1:50)

SR NO.	CA CHAINAGE	PROPOSED CHAINAGE	TCS	DIA OF PIPE (m)	MCW CAMBER		FRL MCW			INVERT LEVEL		DEPTH OF FILL (m)			FREE SLOPE (m)		TOTAL LENGTH (m)
					C LHS	C RHS	FRL-1	FRL-2	FRL-3	I.L -1	I.L -2	C1	C2	C3	FSL-1	FSL-2	
1	52+750	52+745	TCS-II-B	1.2	4.70	-4.70	422.616	422.851	422.381	420.255	420.267	1.035	1.276	0.794	3.232	2.268	17.500
2	72+050	72+080	TCS-II-B	1.2	5.00	-5.00	330.393	330.643	330.143	327.680	327.668	1.399	1.643	1.155	3.238	2.262	17.500

CLIENT:		
PUBLIC WORK DEPARTMENT MADHYA PRADESH		
AUTHORITY ENGINEER:		

PROOF CHECK CONSULTANT:		
HIGHRAISE CONSTRUCTION AND CONSULTANT PRIVATE LIMITED		
SAFETY CONSULTANT:		
EARL TECHNO CONSULTANTS PVT. LTD.		

DESIGN CONSULTANT:		
CIVIL MANTRA INFRACON PVT. LTD.		
EPC CONTRACTOR:		
KEYSTONE INFRA PVT. LTD.		

APPROVED:-	SM
CHECKED:-	RK
DESIGNED:-	ST
DRAWN:-	SY

PROJECT:-		UPGRADATION AND RECONSTRUCTION OF EXISTING INTERMEDIATE LANE TO 2-LANE WITH PAVED SHOULDERS CONFIGURATION FROM KM 43.000 (BARNA RIVER) TO KM 77.000 (KEN RIVER), LENGTH 34.000 KM ON GULGANJ-AMANGANJ-PAWAI-KATNI NH-43 EXT. ALONG WITH ONE TIME IMPROVEMENT IN O1 NO OF BYPASSED BUILT-UP AREA IN A TOTAL LENGTH OF 1.55 KM IN THE STATE OF MADHYA PRADESH ON EPC MODE.	
TITLE:-		GENERAL ARRANGEMENT DRAWING OF PIPE CULVERT FOR TCS -IIB (TYPICAL)	
DRAWING NO. :-		CIPL-D1190-TYP.-HPC-104-01 OF 01-R1-GAD	

DATE	JAN/2025
SCALE	AS SHOWN
SHEET NO.	01 OF 01
FORMAT	A3 (420X297)
REV.	R1