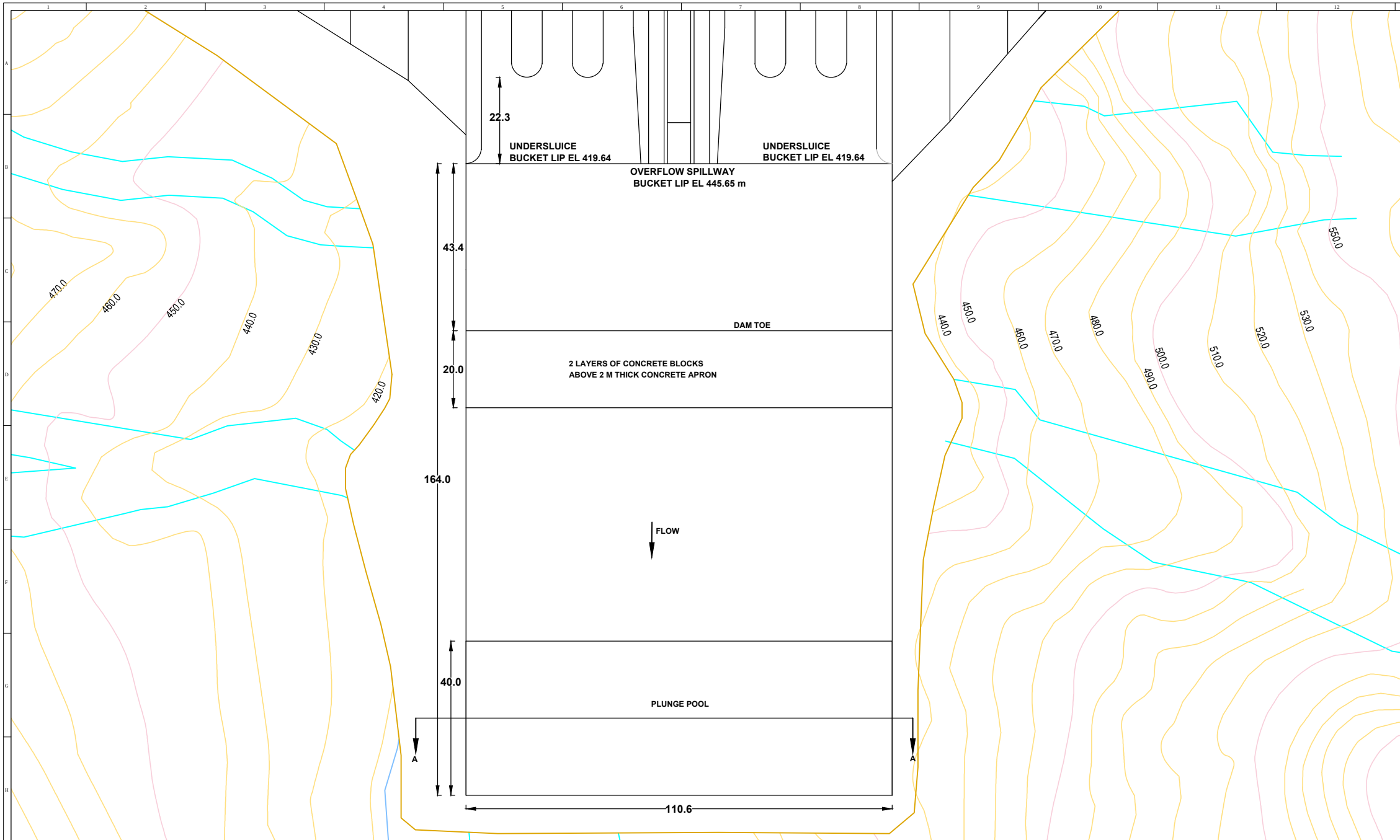




NOTES :-

1. ALL DIMENSIONS AND ELEVATIONS ARE IN METERS.
2. NO DIMENSIONS SHALL BE SCALED OUT. ONLY WRITTEN DIMENSIONS ARE TO BE TAKEN.

FOR DETAILED PROJECT REPORT ONLY

CONNECTED DRAWINGS :

DRG. NO.	TITLE
DM-WP-DPR02/R1	DAM COMPLEX - CONCRETE GRAVITY DAM- SECTION ALONG DAM AXIS
DM-WP-DPR-07/R1	DAM COMPLEX - CONCRETE GRAVITY DAM- OVERFLOW SECTION 7,8 & 10
DM-WP-DPR08/R1	DAM COMPLEX - CONCRETE GRAVITY DAM- OVERFLOW SECTION I/C SPILLWAY -BLOCK 9

SCALE
0 10 20 30 40 50 m



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वांगचू जल विद्युत परियोजना भूटान
WANGCHU HYDRO ELECTRIC PROJECT BHUTAN

DAM COMPLEX
CONCRETE GRAVITY DAM
PLUNGE POOL DETAIL

अभिकल्पित
DSGN. Er. ASHOK KAPIL

समीक्षित
CHKD. Er.KULDIP GARG

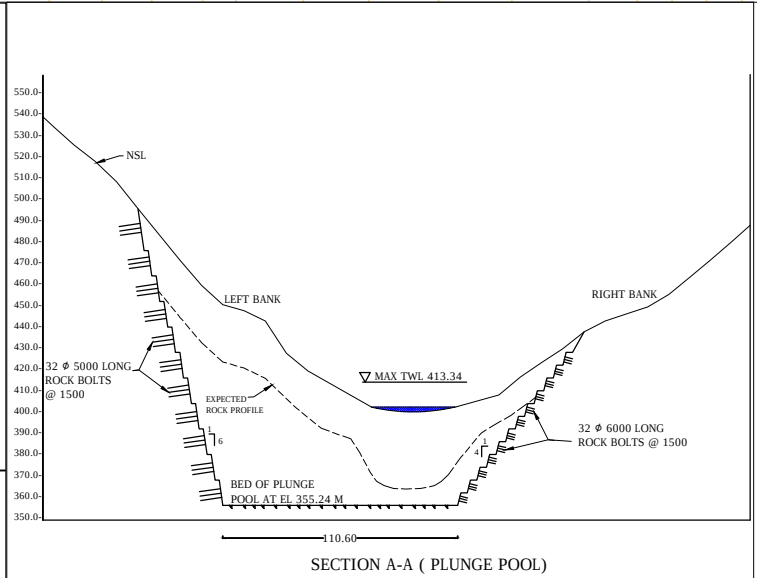
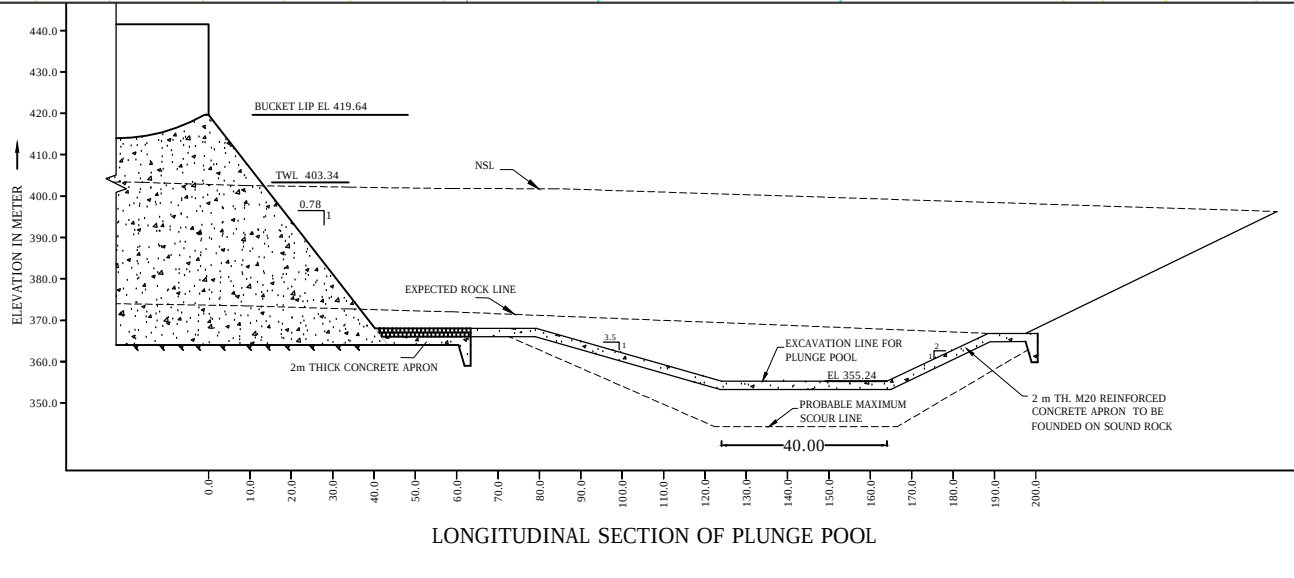
अनुमोदित
APPD. Er. L.M. VERMA

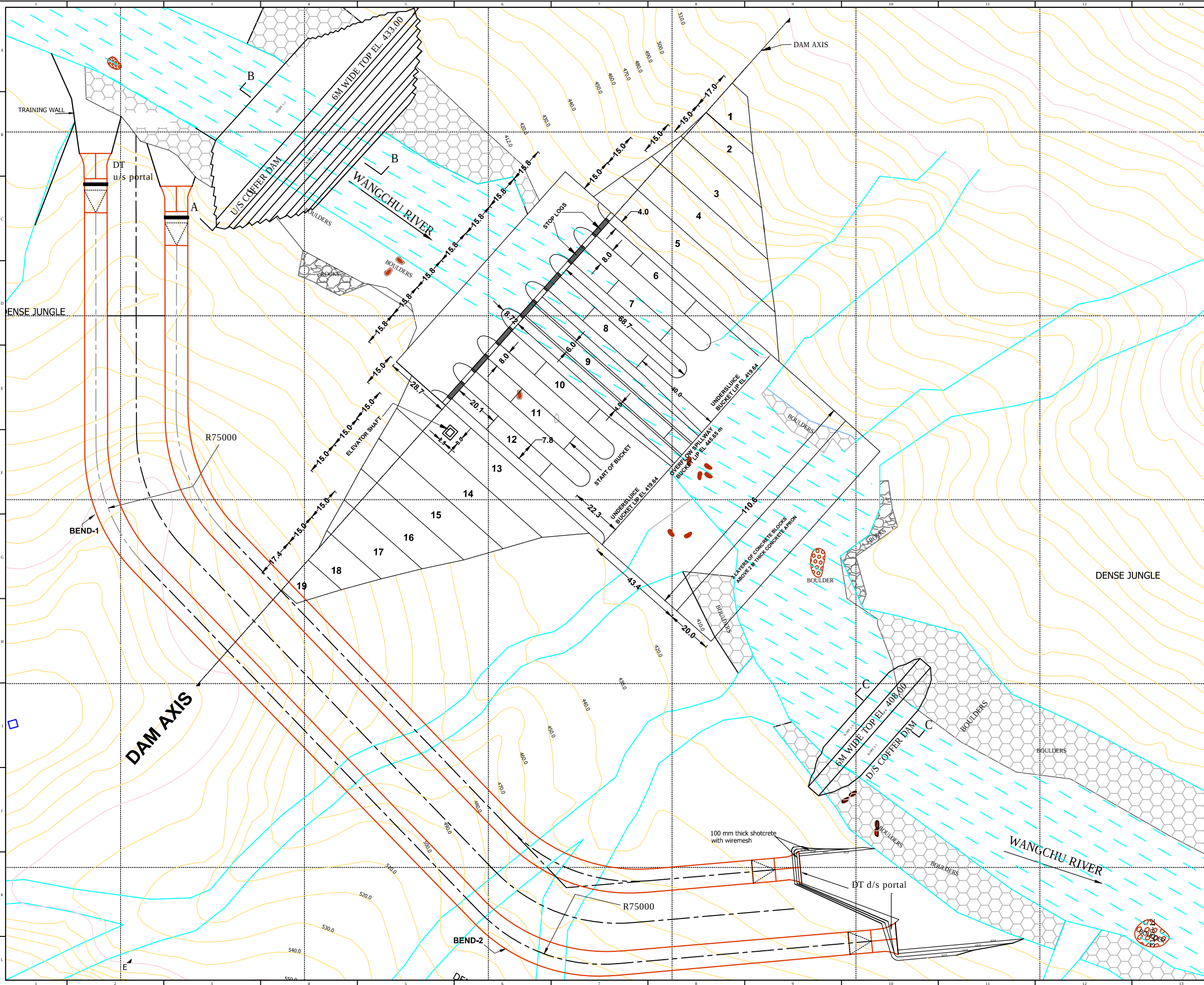
रेखांकित
DRWN. DEVI CHAND

परामर्श
SUBM. Er. M.S.THAKUR

DESIGN FOREIGN PROJECTS

DRG. No. DM- WP-DPR 24 A | FEB., 2014 | CD





- NOTES :-
1. ALL DIMENSIONS ARE IN MM AND ELEVATIONS ARE IN METERS. UNLESS OTHERWISE SPECIFIED.
 2. THE DIMENSIONS SHALL NOT BE SCALED. THE DESIGNER SHALL BE CONSULTED IN CASE OF ANY MISSING DETAILS IN THE DRAWING.

FOR DETAILED PROJECT REPORT ONLY

REFERENCE DRAWING	
DRG. NO.	TITLE
DM-WP-DPR26/R1	DAM COMPLEX RIVER DIVERSION ARRANGEMENT L-SECTION



एसजेवीएन लिमिटेड
SJVN Limited

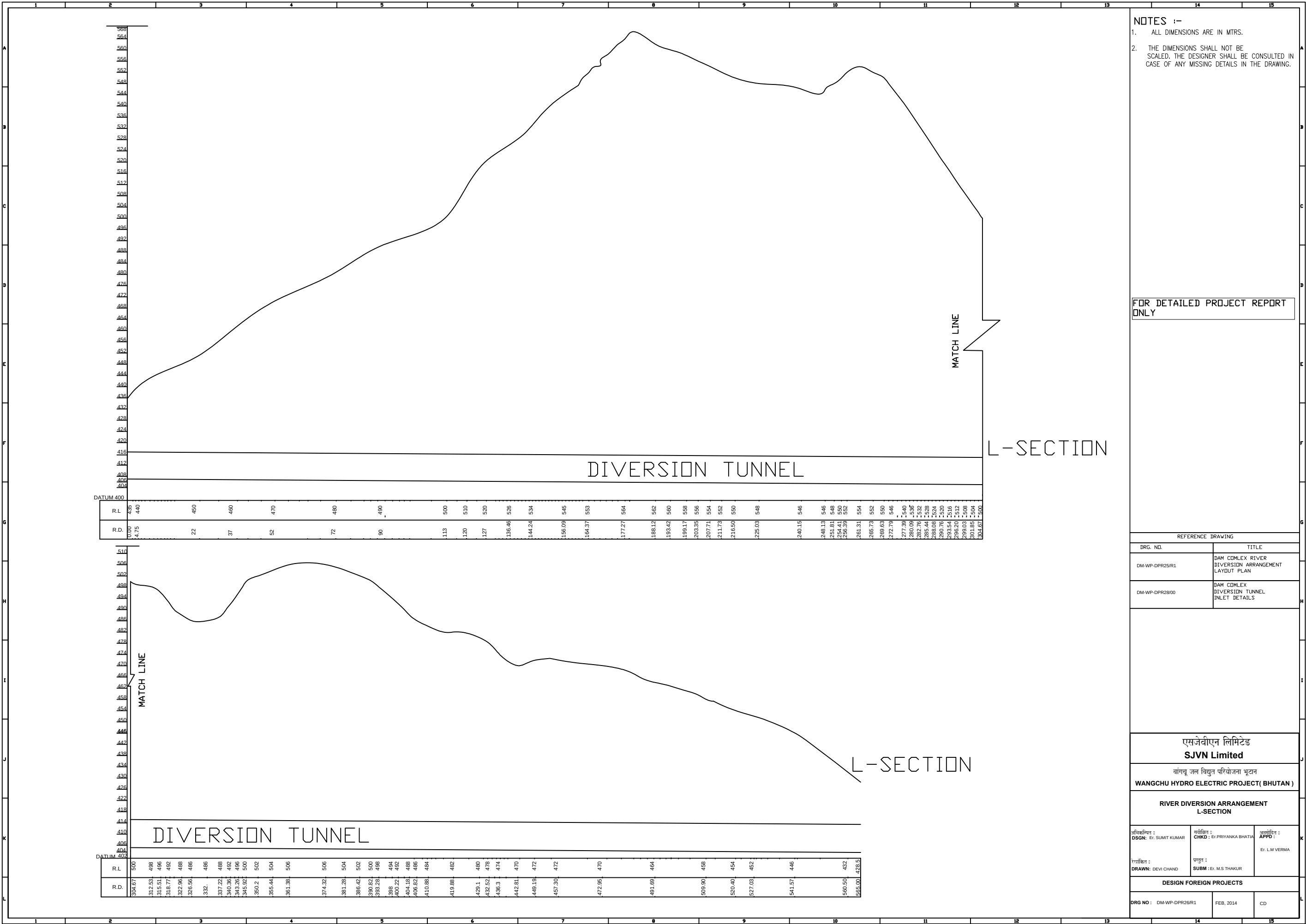
वांगचू जल विद्युत परियोजना भूटान
WANGCHU HYDRO ELECTRIC PROJECT (BHUTAN)

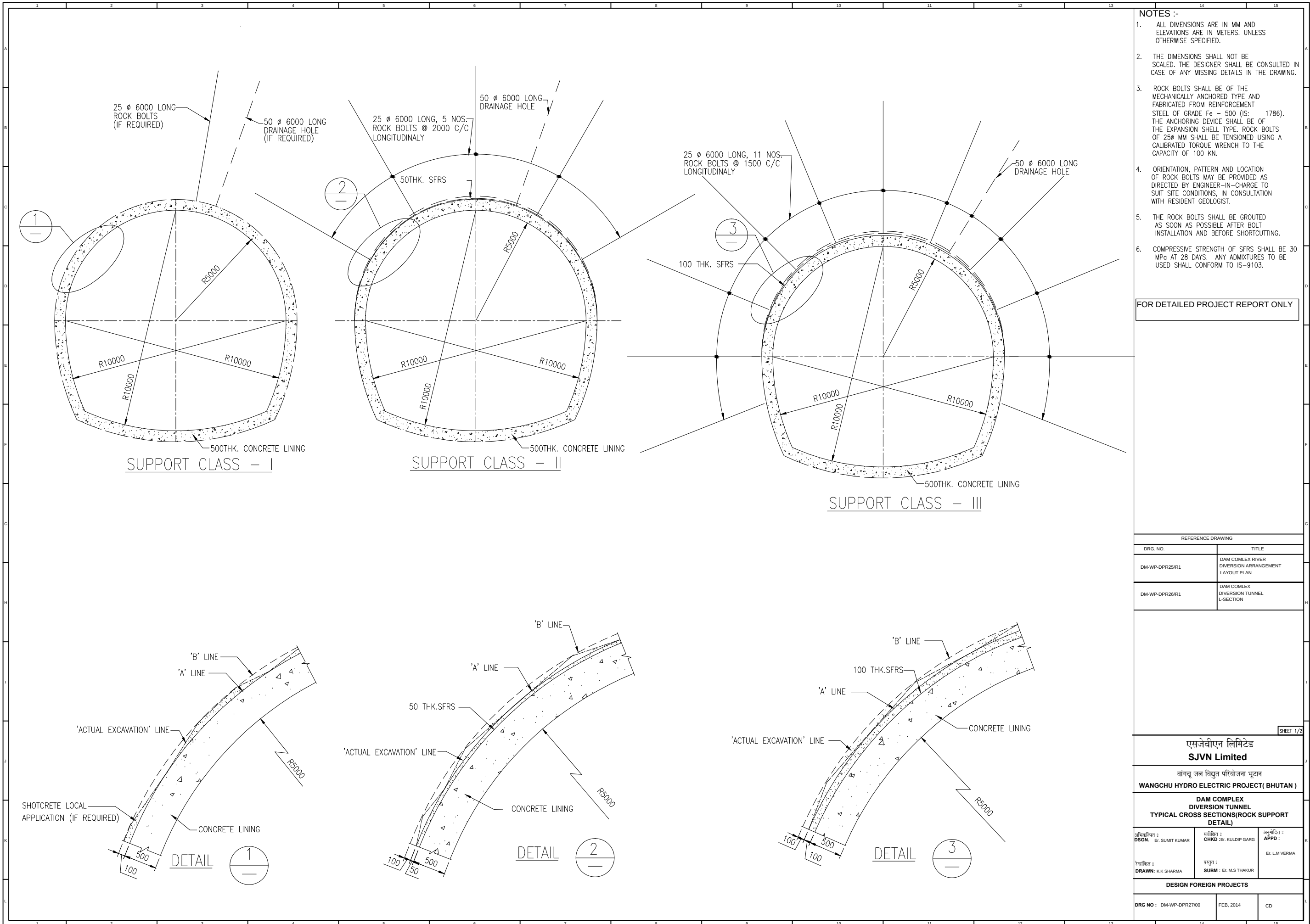
DAM COMPLEX RIVER DIVERSION ARRANGEMENT LAYOUT PLAN

अधिकृत : DSGN. : Er. SUMIT KUMAR	समीक्षित : CHKD: Er. ASHOK KUMAR	अनुमोदित : APPD : Er. L.M. VERMA
रचयिता : DRAWN: B. S. BANYAL	प्रस्तुत : SUBM : Er. M.S. THAKUR	

DESIGN FOREIGN PROJECTS

DRG NO : DM-WP-DPR25/R2	FEB. 2014	CD
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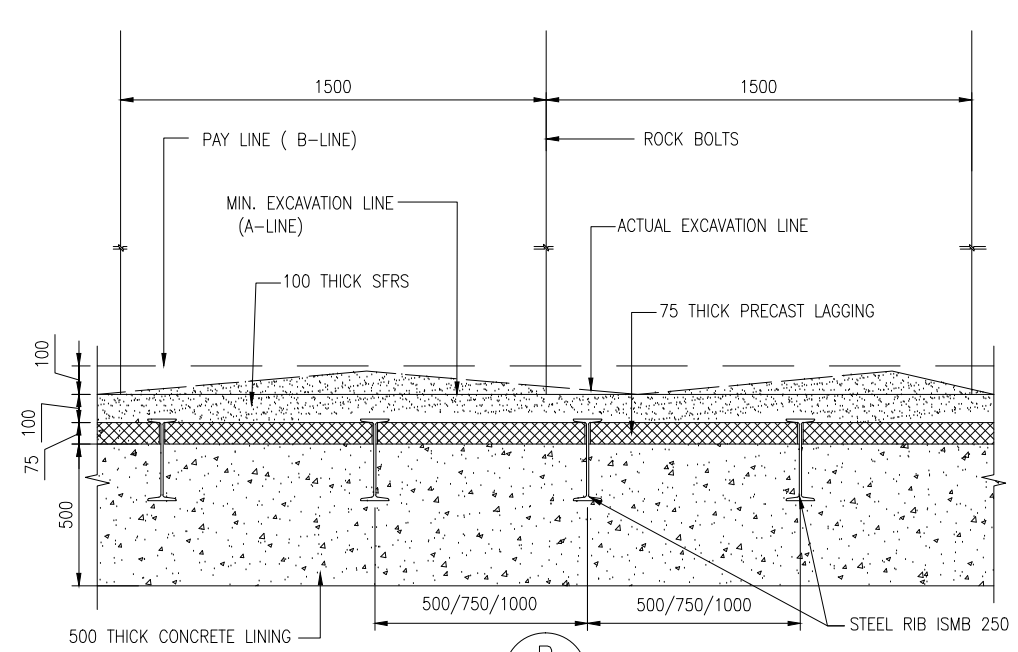
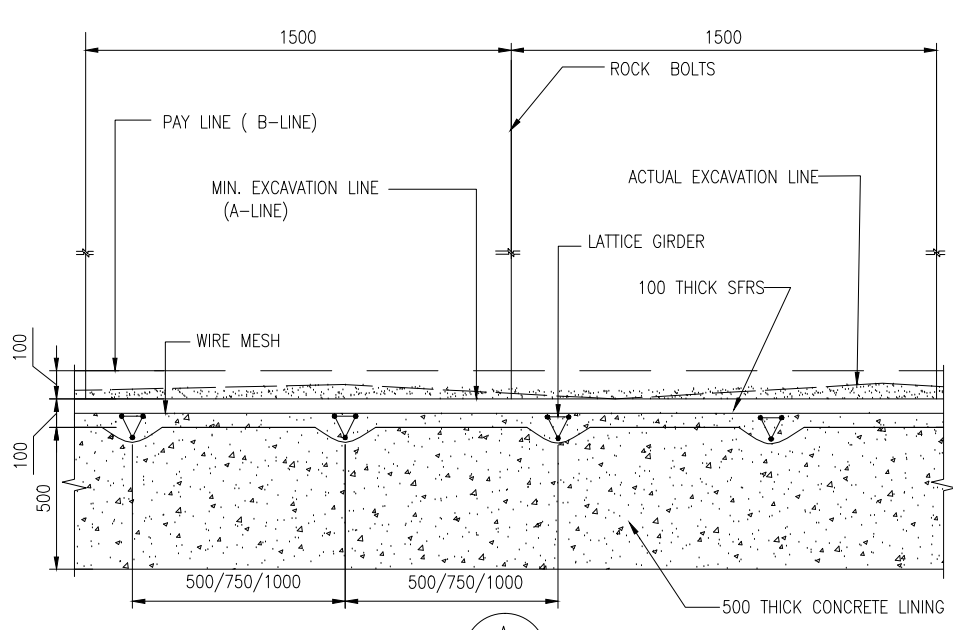
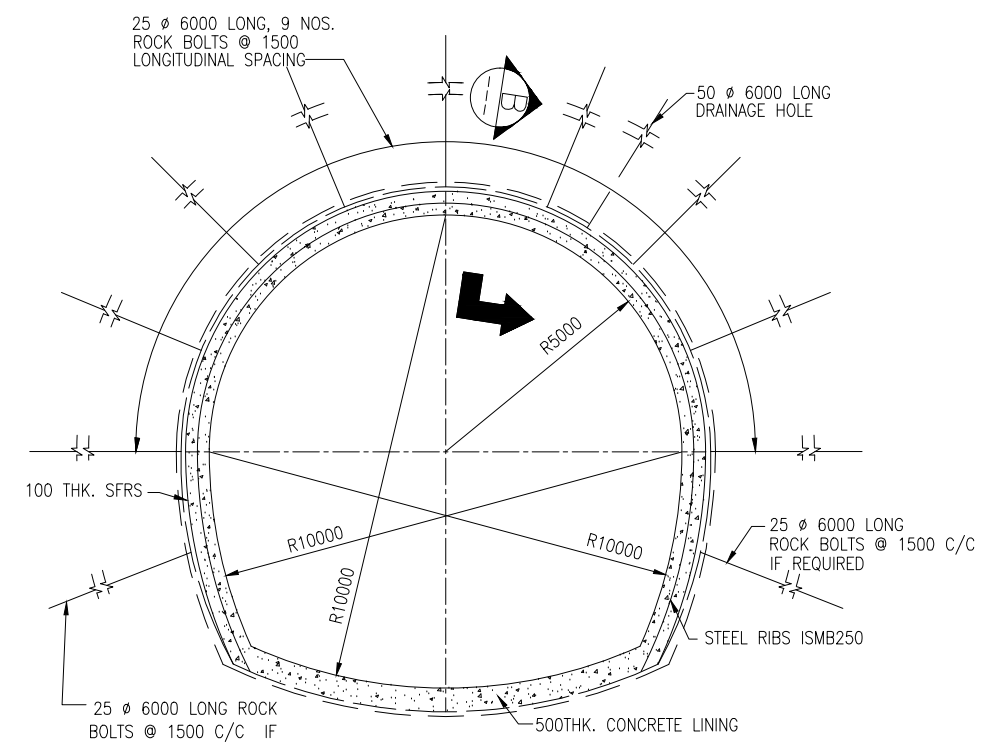
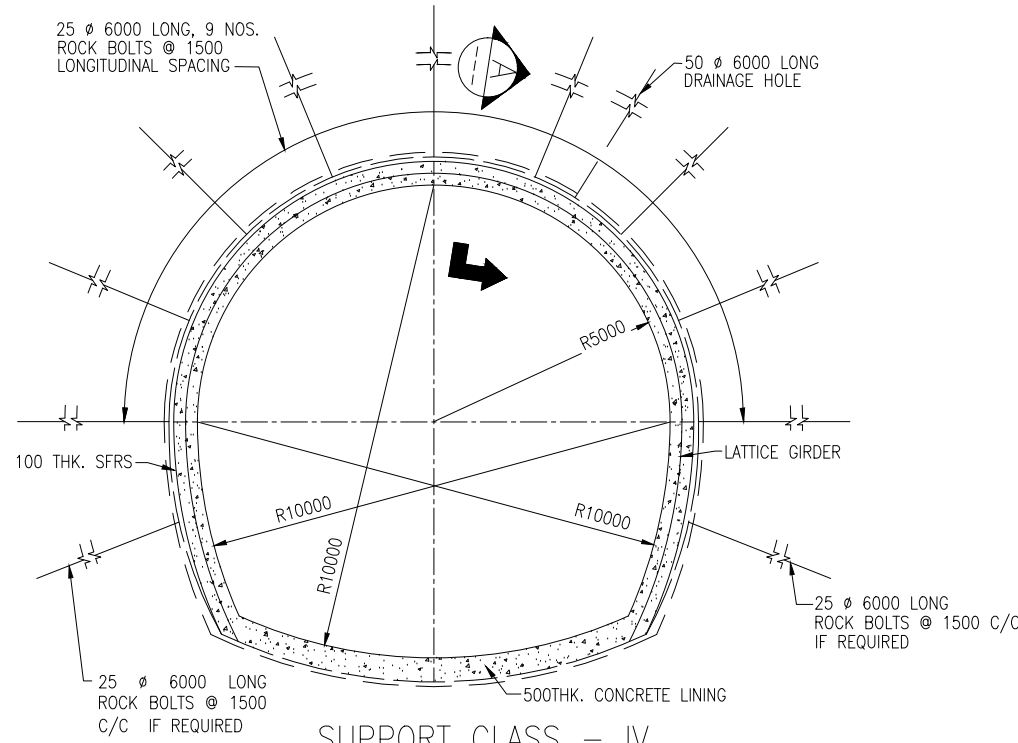


- NOTES :-
- ALL DIMENSIONS ARE IN MM AND ELEVATIONS ARE IN METERS, UNLESS OTHERWISE SPECIFIED.
 - THE DIMENSIONS SHALL NOT BE SCALED. THE DESIGNER SHALL BE CONSULTED IN CASE OF ANY MISSING DETAILS IN THE DRAWING.
 - ROCK BOLTS SHALL BE OF THE MECHANICALLY ANCHORED TYPE AND FABRICATED FROM REINFORCEMENT STEEL OF GRADE Fe - 500 (IS: 1786). THE ANCHORING DEVICE SHALL BE OF THE EXPANSION SHELL TYPE. ROCK BOLTS OF 25 ϕ MM SHALL BE TENSIONED USING A CALIBRATED TORQUE WRENCH TO THE CAPACITY OF 100 KN.
 - ORIENTATION, PATTERN AND LOCATION OF ROCK BOLTS MAY BE PROVIDED AS DIRECTED BY ENGINEER-IN-CHARGE TO SUIT SITE CONDITIONS, IN CONSULTATION WITH RESIDENT GEOLOGIST.
 - THE ROCK BOLTS SHALL BE GROUTED AS SOON AS POSSIBLE AFTER BOLT INSTALLATION AND BEFORE SHORTCUTTING.
 - COMPRESSIVE STRENGTH OF SFRS SHALL BE 30 MPa AT 28 DAYS. ANY ADMIXTURES TO BE USED SHALL CONFORM TO IS-9103.

FOR DETAILED PROJECT REPORT ONLY

REFERENCE DRAWING	
DRG. NO.	TITLE
DM-WP-DPR25/R1	DAM COMPLEX RIVER DIVERSION ARRANGEMENT LAYOUT PLAN
DM-WP-DPR26/R1	DAM COMPLEX DIVERSION TUNNEL L-SECTION

SHEET 1/2		
एसजेवीएन लिमिटेड SJVN Limited		
वांगचू जल विद्युत परियोजना भूटान WANGCHU HYDRO ELECTRIC PROJECT (BHUTAN)		
DAM COMPLEX DIVERSION TUNNEL TYPICAL CROSS SECTIONS (ROCK SUPPORT DETAIL)		
अभिधिकृत : DSGN. : Er. SUMIT KUMAR	समीक्षा : CHKD : Er. KULDIP GARG	अनुमोदित : APPD : Er. L.M VERMA
प्रयोजित : DRAWN : K.K SHARMA	प्रस्तुत : SUBM : Er. M.S THAKUR	
DESIGN FOREIGN PROJECTS		
DRG NO : DM-WP-DPR27/00	FEB, 2014	CD

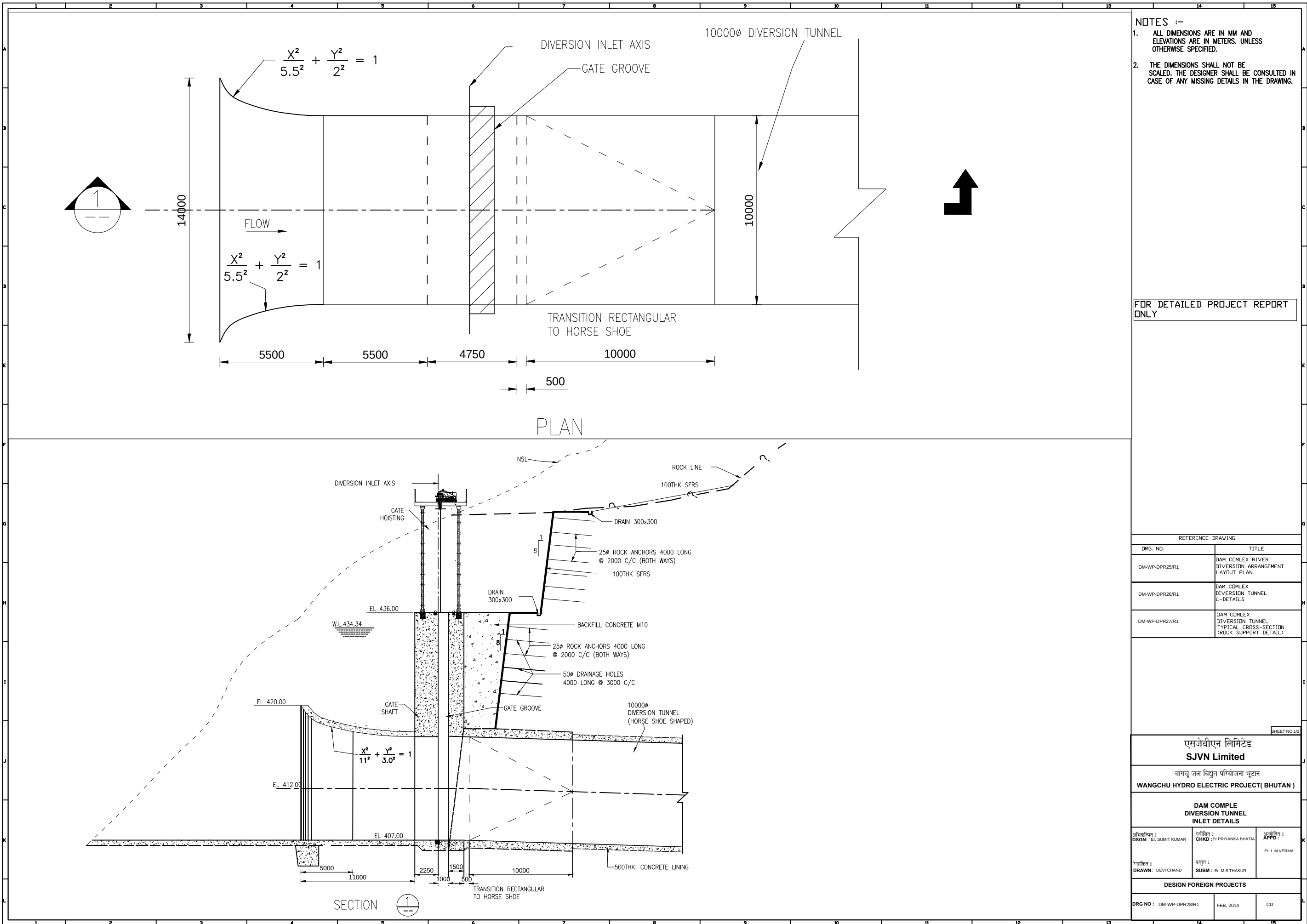


- NOTES :-**
- ALL DIMENSIONS ARE IN MM AND ELEVATIONS ARE IN METERS. UNLESS OTHERWISE SPECIFIED.
 - THE DIMENSIONS SHALL NOT BE SCALED. THE DESIGNER SHALL BE CONSULTED IN CASE OF ANY MISSING DETAILS IN THE DRAWING.
 - ROCK BOLTS SHALL BE OF THE MECHANICALLY ANCHORED TYPE AND FABRICATED FROM REINFORCEMENT STEEL OF GRADE Fe – 500 (IS: 1786). THE ANCHORING DEVICE SHALL BE OF THE EXPANSION SHELL TYPE. ROCK BOLTS OF 25Ø MM SHALL BE TENSIONED USING A CALIBRATED TORQUE WRENCH TO THE CAPACITY OF 100 KN.
 - ORIENTATION, PATTERN AND LOCATION OF ROCK BOLTS MAY BE PROVIDED AS DIRECTED BY ENGINEER-IN-CHARGE TO SUIT SITE CONDITIONS, IN CONSULTATION WITH RESIDENT GEOLOGIST.
 - THE ROCK BOLTS SHALL BE GROUTED AS SOON AS POSSIBLE AFTER BOLT INSTALLATION AND BEFORE SHORTCUTTING.
 - COMPRESSIVE STRENGTH OF SFRS SHALL BE 30 MPa AT 28 DAYS. ANY ADMIXTURES TO BE USED SHALL CONFORM TO IS-9103.

FOR DETAILED PROJECT REPORT ONLY

REFERENCE DRAWING	
DRG. NO.	TITLE
DM-WP-DPR25R1	DAM COMPLEX RIVER DIVERSION ARRANGEMENT LAYOUT PLAN
DM-WP-DPR26R1	DAM COMPLEX DIVERSION TUNNEL L-SECTION

एसजेवीएन लिमिटेड SJVN Limited वांगचू जल विद्युत परियोजना भूटान WANGCHU HYDRO ELECTRIC PROJECT(BHUTAN)		
DAM COMPLEX DIVERSION TUNNEL TYPICAL CROSS SECTIONS(ROCK SUPPORT DETAIL)		
अभिजातकृत : DSGN. EY. SUMIT KUMAR	समीक्षा : CHKD : EY. KULDIP GARG	अनुमोदित : APPD : EY. L.M. VERMA
किसीकिसी : DRAWN: K.K. SHARMA	प्रस्तुत : SUBM : EY. M.S. THAKUR	
DESIGN FOREIGN PROJECTS		
DRG NO : DM-WP-DPR27/00	FEB. 2014	CD

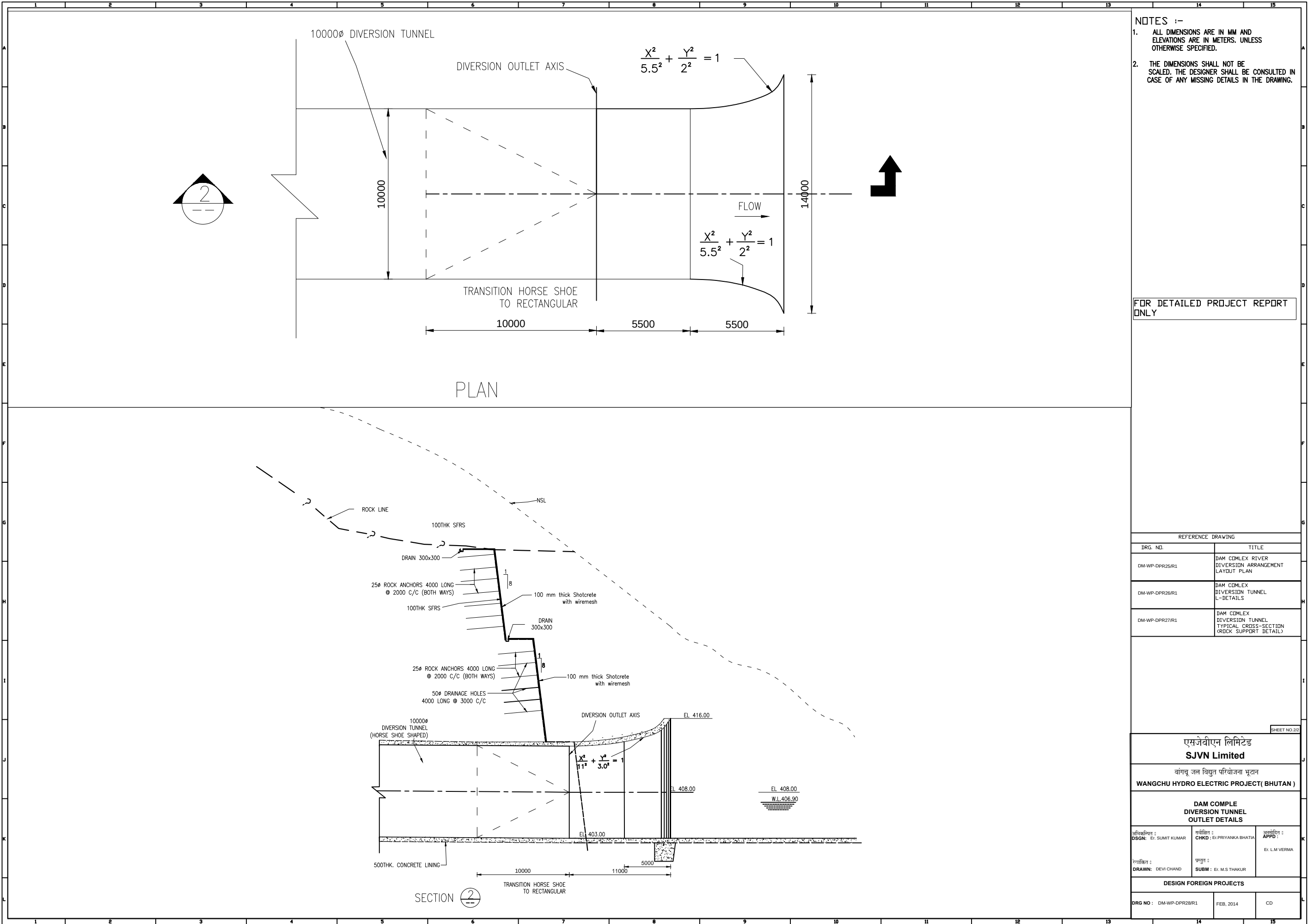


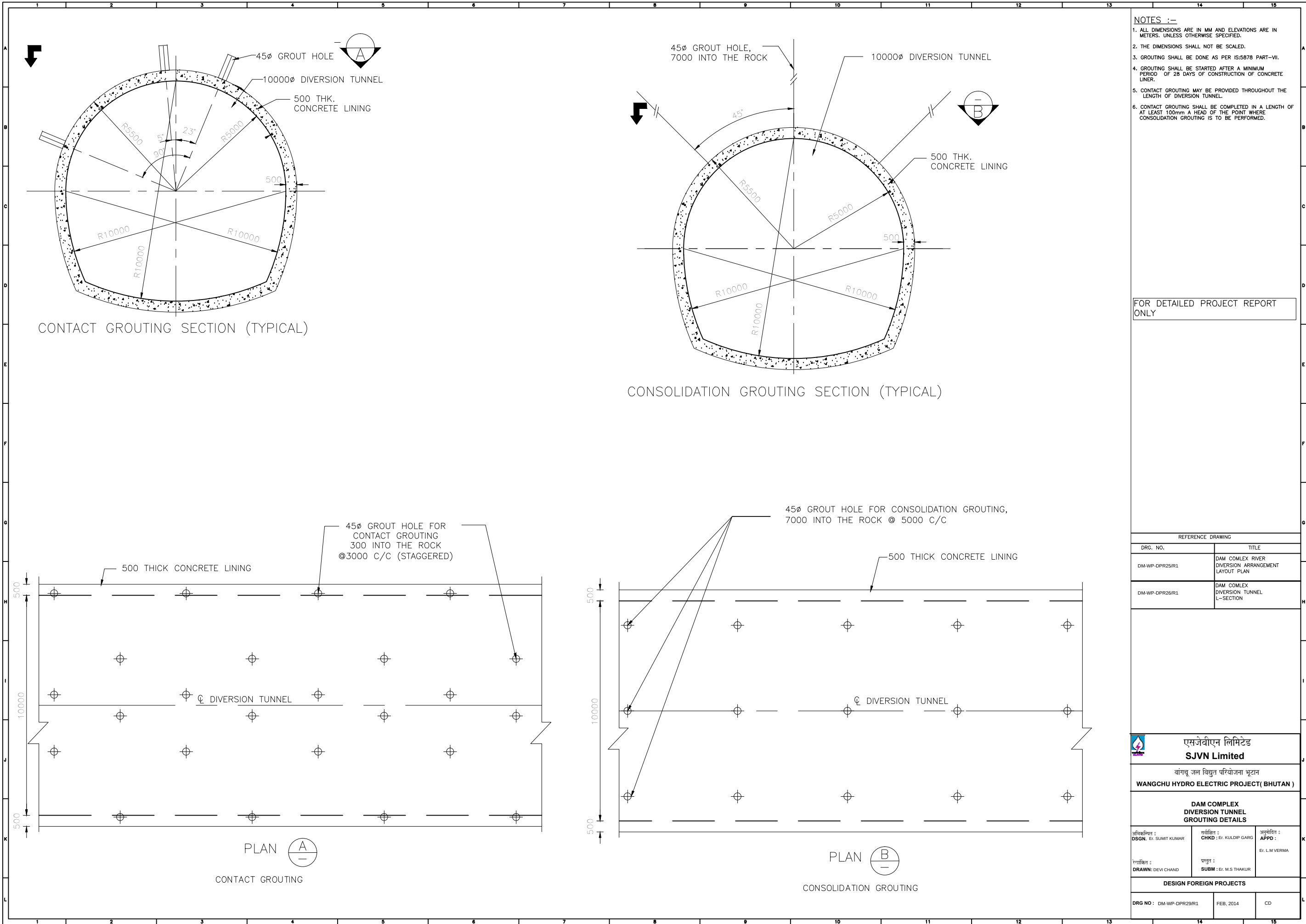
- NOTES :-
- ALL DIMENSIONS ARE IN MM AND ELEVATIONS ARE IN METERS. UNLESS OTHERWISE SPECIFIED.
 - THE DIMENSIONS SHALL NOT BE SCALED. THE DESIGNER SHALL BE CONSULTED IN CASE OF ANY MISSING DETAILS IN THE DRAWING.

FOR DETAILED PROJECT REPORT ONLY

REFERENCE DRAWING	
DRG. NO.	TITLE
DM-WP-DPR25/R1	DAM COMLEX RIVER DIVERSION ARRANGEMENT LAYOUT PLAN
DM-WP-DPR26/R1	DAM COMLEX DIVERSION TUNNEL L-DETAILS
DM-WP-DPR27/R1	DAM COMLEX DIVERSION TUNNEL TYPICAL CROSS-SECTION (ROCK SUPPORT DETAIL)

SHEET NO.12		
एसजेवीएन लिमिटेड SJVN Limited		
वांगचू जल विद्युत परियोजना प्रकल्प WANGCHU HYDRO ELECTRIC PROJECT (BHUTAN)		
DAM COMPLE DIVERSION TUNNEL INLET DETAILS		
अधिकृतितः DSGN: Er. SUMIT KUMAR	समीक्षितः CHKD: Er. PRIYANKA BHATIA	अनुमोदितः APPD: Er. L.M VERMA
निर्माकृतः DRAWN: DEVI CHAND	प्रस्तुतः SUBM: Er. M.S THAKUR	
DESIGN FOREIGN PROJECTS		
DRG NO : DM-WP-DPR28/R1	FEB, 2014	CD





- NOTES :-
1. ALL DIMENSIONS ARE IN MM AND ELEVATIONS ARE IN METERS. UNLESS OTHERWISE SPECIFIED.
 2. THE DIMENSIONS SHALL NOT BE SCALED.
 3. GROUTING SHALL BE DONE AS PER IS:5878 PART-VII.
 4. GROUTING SHALL BE STARTED AFTER A MINIMUM PERIOD OF 28 DAYS OF CONSTRUCTION OF CONCRETE LINER.
 5. CONTACT GROUTING MAY BE PROVIDED THROUGHOUT THE LENGTH OF DIVERSION TUNNEL.
 6. CONTACT GROUTING SHALL BE COMPLETED IN A LENGTH OF AT LEAST 100mm A HEAD OF THE POINT WHERE CONSOLIDATION GROUTING IS TO BE PERFORMED.

FOR DETAILED PROJECT REPORT ONLY

REFERENCE DRAWING	
DRG. NO.	TITLE
DM-WP-DPR25/R1	DAM COMPLEX RIVER DIVERSION ARRANGEMENT LAYOUT PLAN
DM-WP-DPR26/R1	DAM COMPLEX DIVERSION TUNNEL L-SECTION



एसजेवीएन लिमिटेड
SJVN Limited

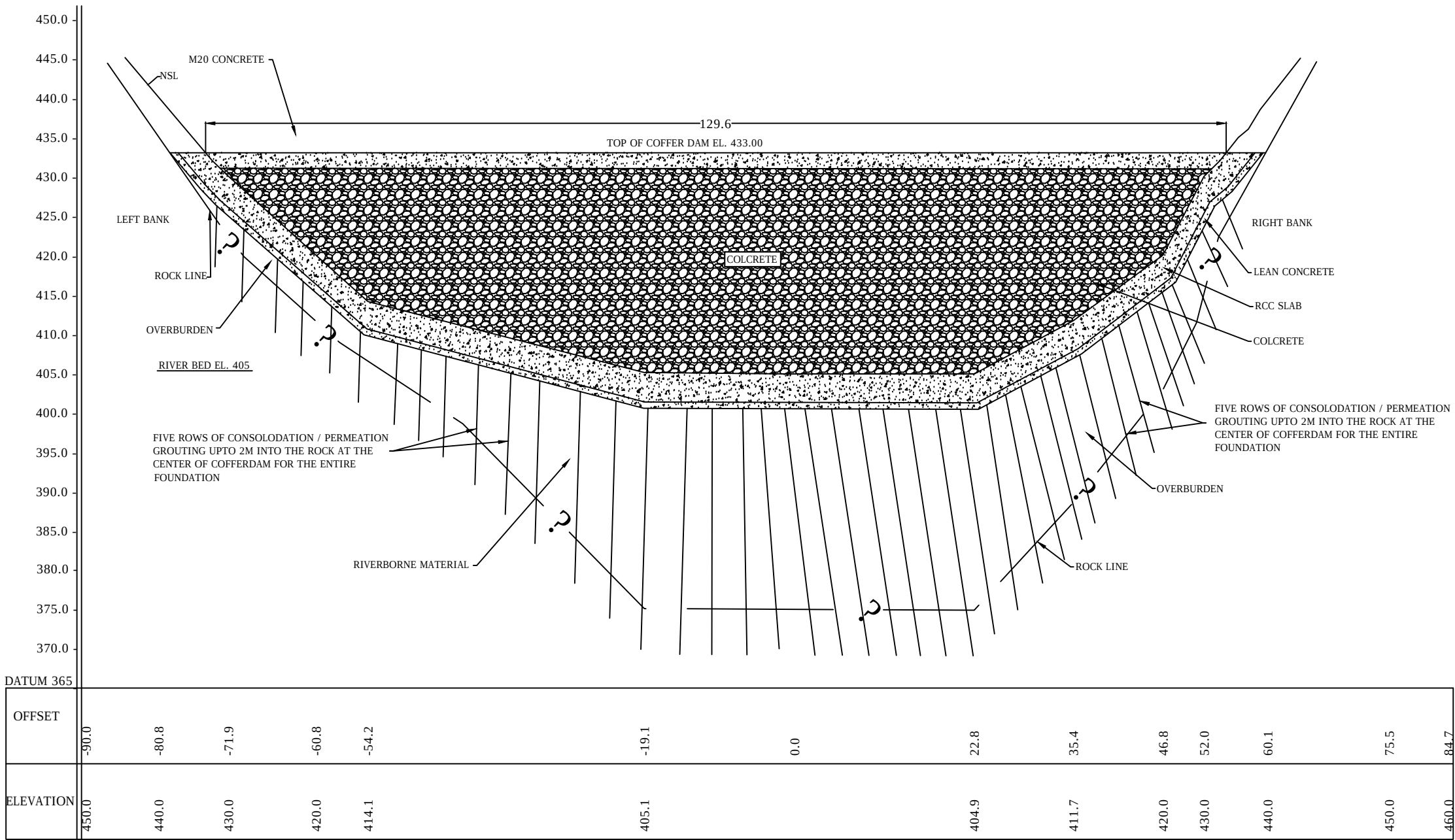
वांगचू जल विद्युत परियोजना भूटान
WANGCHU HYDRO ELECTRIC PROJECT (BHUTAN)

DAM COMPLEX
DIVERSION TUNNEL
GROUTING DETAILS

अधिकृतित : DSGN. : ER. SUMIT KUMAR	महोदयित : CHKD. : ER. KULDIP GARG	अनुमोदित : APPD. : ER. L.M. VERMA
रेखांकित : DRAWN: DEVI CHAND	समस्तित : SUBM. : ER. M.S. THAKUR	

DESIGN FOREIGN PROJECTS

DRG NO. : DM-WP-DPR29/R1	FEB, 2014	CD
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SECTION A

- NOTES :-
- ALL DIMENSIONS ARE IN MTRS.
 - THE DIMENSIONS SHALL NOT BE SCALED. THE DESIGNER SHALL BE CONSULTED IN CASE OF ANY MISSING DETAILS IN THE DRAWING.

FOR DETAILED PROJECT REPORT ONLY

REFERENCE DRAWING	
DRG. NO.	TITLE
DM-WP-DPR25/R1	DAM COMLEX RIVER DIVERSION ARRANGEMENT LAYOUT PLAN



एसजेवीएन लिमिटेड
SJVN Limited

वांगचू जल विद्युत परियोजना भूटान
WANGCHU HYDRO ELECTRIC PROJECT(BHUTAN)

**DAM COMPLEX
U/S COFFER DAM
L-SECTION**

अभिजातकृत :
DSGN. Er. SUMIT KUMAR

संशोधित :
CHKD. Er. ASHOK KUMAR

अनुमोदित :
APPD. Er. L.M VERMA

रेखांकित :
DRAWN: B S BANYAL

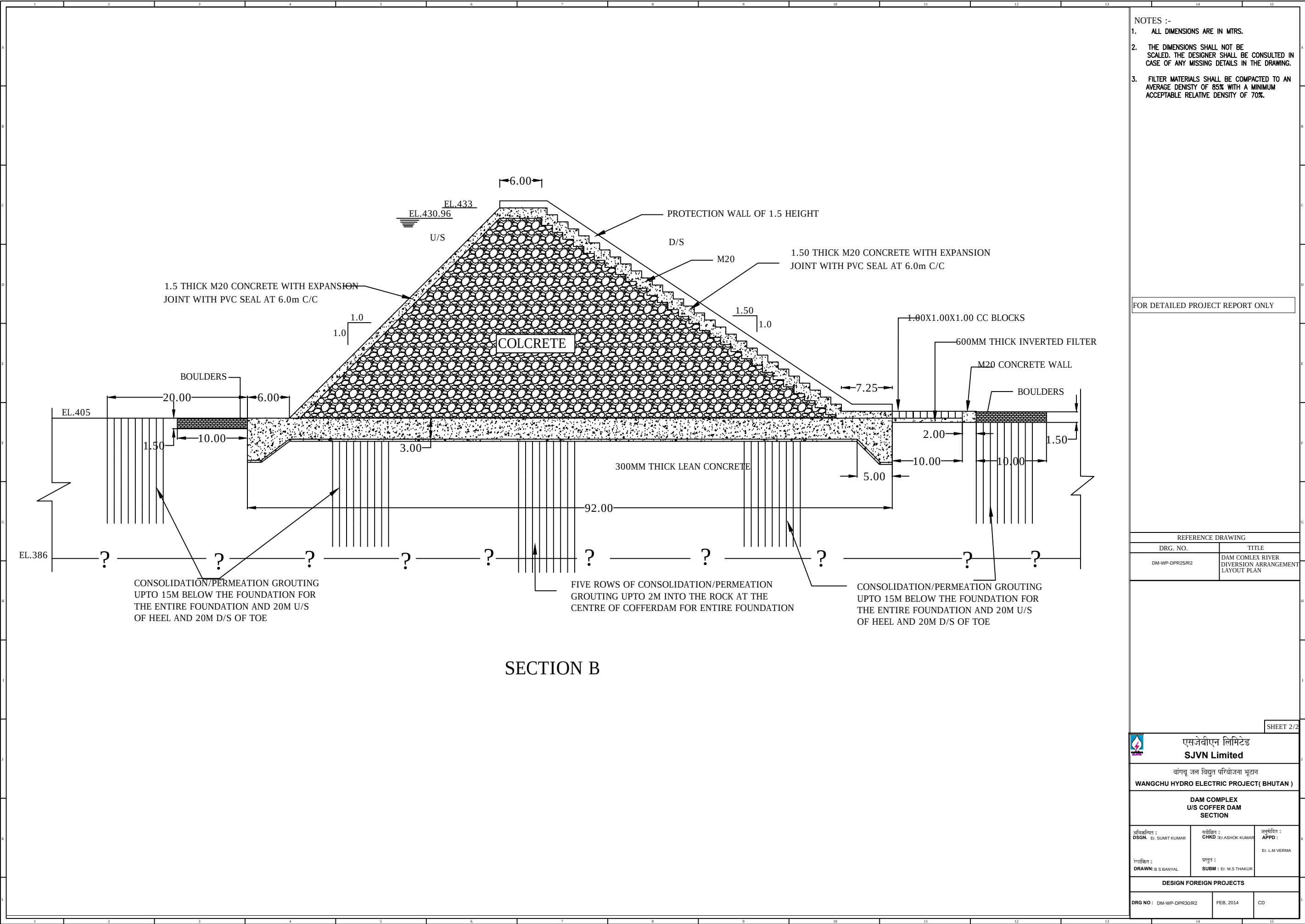
प्रस्तुत :
SUBM: Er. M.S THAKUR

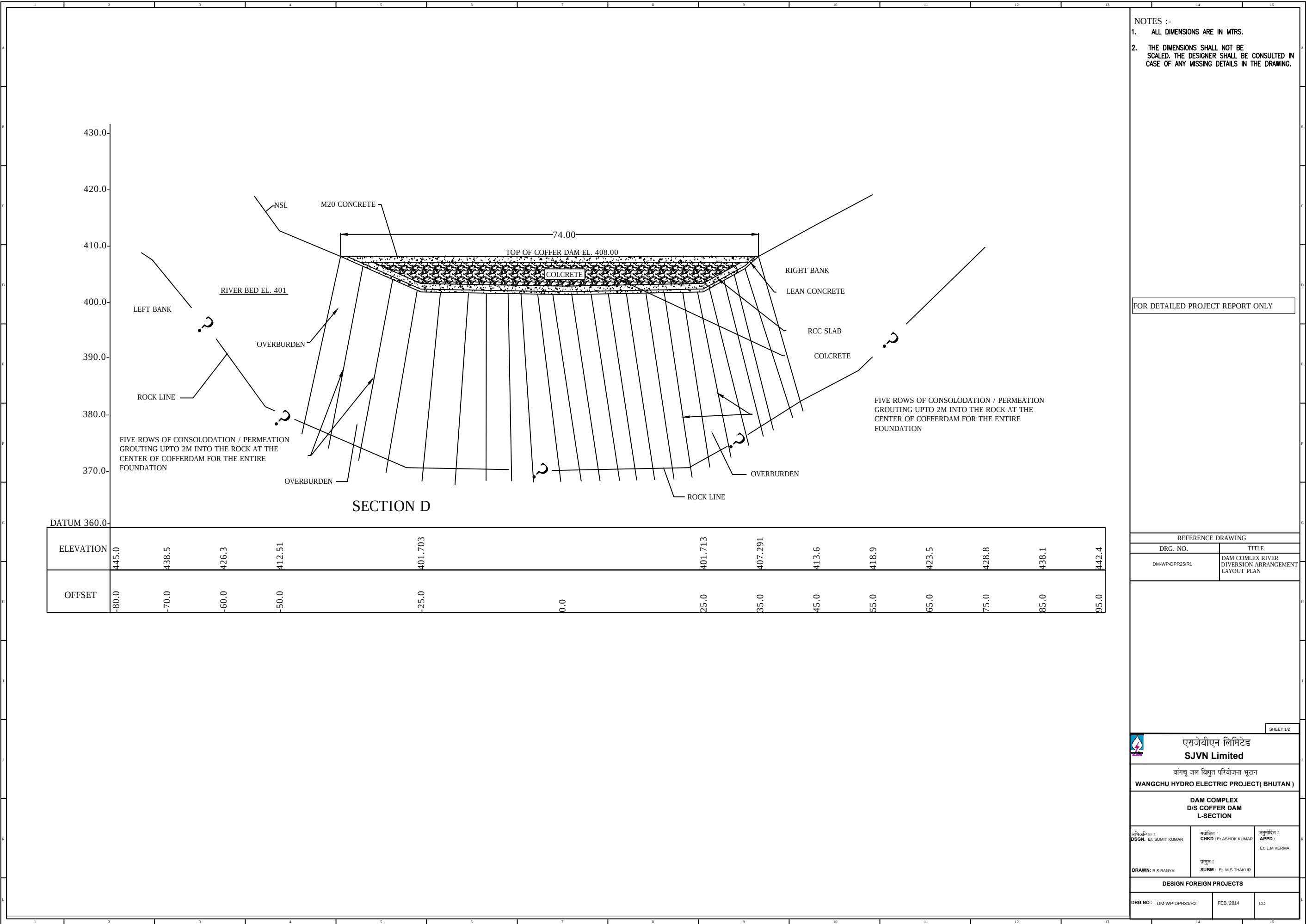
DESIGN FOREIGN PROJECTS

DRG NO : DM-WP-DPR30/R2

FEB, 2014

CD





- NOTES :-
1. ALL DIMENSIONS ARE IN MTRS.
 2. THE DIMENSIONS SHALL NOT BE SCALED. THE DESIGNER SHALL BE CONSULTED IN CASE OF ANY MISSING DETAILS IN THE DRAWING.

FOR DETAILED PROJECT REPORT ONLY

REFERENCE DRAWING	
DRG. NO.	TITLE
DM-WP-DPR25/R1	DAM COMLEX RIVER DIVERSION ARRANGEMENT LAYOUT PLAN



एसजेवीएन लिमिटेड

SJVN Limited

वांगचू जल विद्युत परियोजना भूटान

WANGCHU HYDRO ELECTRIC PROJECT(BHUTAN)

DAM COMPLEX

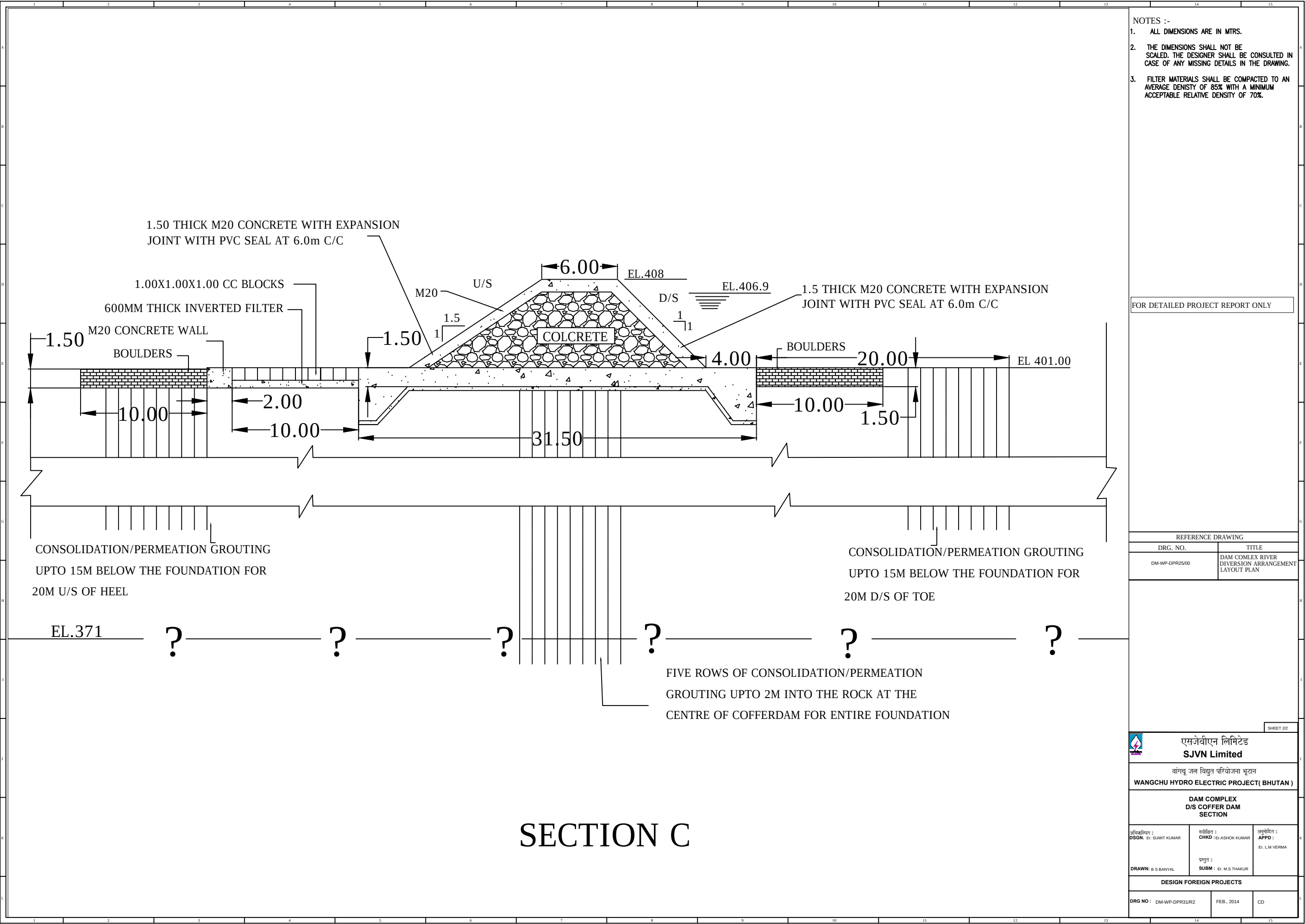
D/S COFFER DAM

L-SECTION

प्रियंकशिर्मा : DSGN. : Er. SUMIT KUMAR	मनीष : CHKD : Er. ASHOK KUMAR	अनुमोदित : APPD : Er. L.M VERMA
DRAWN: B S BANYAL SUBM : Er. M.S THAKUR		

DESIGN FOREIGN PROJECTS

DRG NO : DM-WP-DPR31/R2	FEB. 2014	CD
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- NOTES :-
1. ALL DIMENSIONS ARE IN MTRS.
 2. THE DIMENSIONS SHALL NOT BE SCALED. THE DESIGNER SHALL BE CONSULTED IN CASE OF ANY MISSING DETAILS IN THE DRAWING.
 3. FILTER MATERIALS SHALL BE COMPACTED TO AN AVERAGE DENSITY OF 85% WITH A MINIMUM ACCEPTABLE RELATIVE DENSITY OF 70%.

FOR DETAILED PROJECT REPORT ONLY

REFERENCE DRAWING	
DRG. NO.	TITLE
DM-WP-DPR25/00	DAM COMLEX RIVER DIVERSION ARRANGEMENT LAYOUT PLAN

 एसजेवीएन लिमिटेड SJVN Limited		
वांगचू जल विद्युत परियोजना भूटान WANGCHU HYDRO ELECTRIC PROJECT(BHUTAN)		
DAM COMPLEX D/S COFFER DAM SECTION		
अभिज्ञानित : DSGN. Er. SUMIT KUMAR	समीक्षा : CHKD : Er. ASHOK KUMAR	अनुमोदित : APPD : Er. L.M. VERMA
DRAWN: B. S. BANYAL	प्रस्तुत : SUBM : Er. M.S. THAKUR	
DESIGN FOREIGN PROJECTS		
DRG NO : DM-WP-DPR31/R2	FEB., 2014	CD