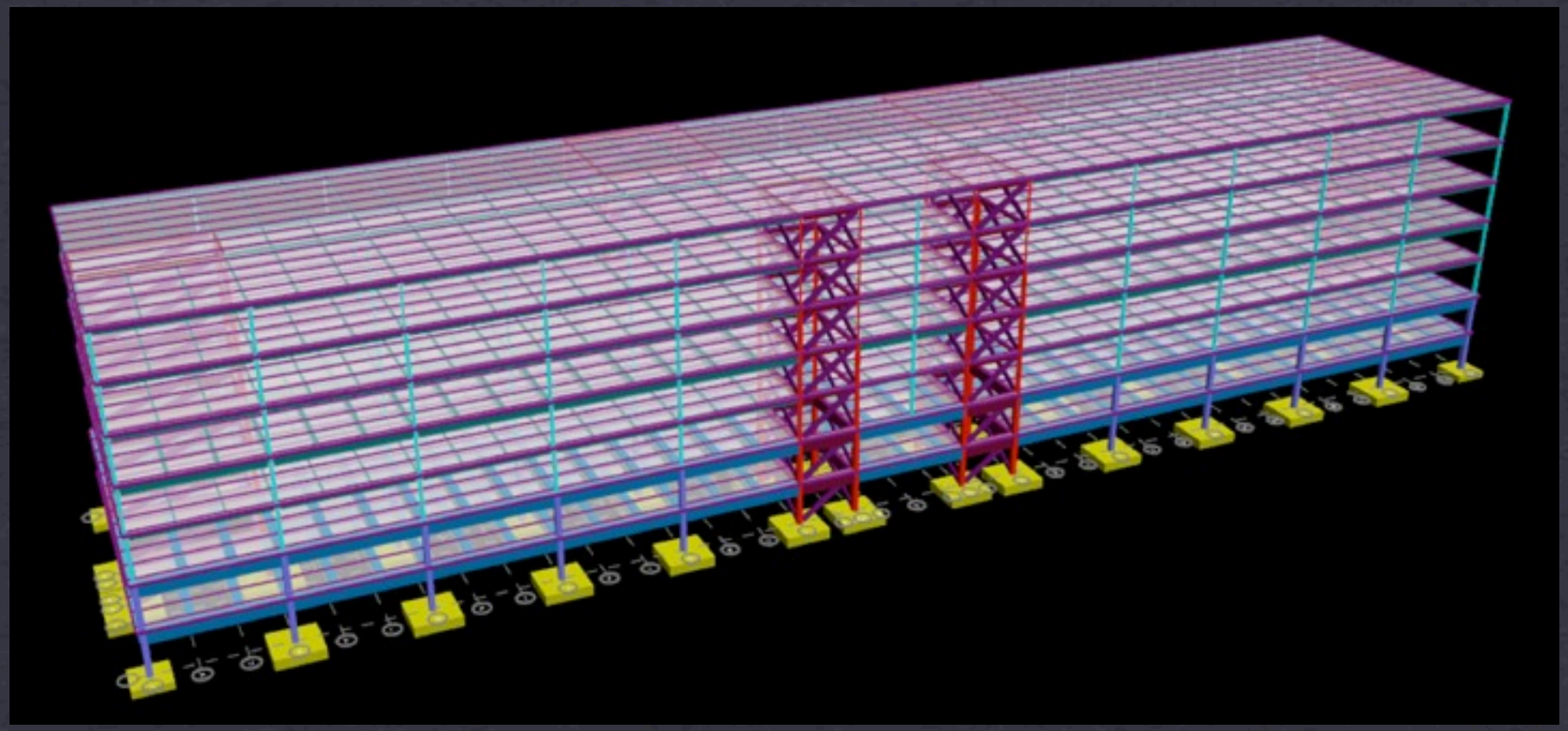
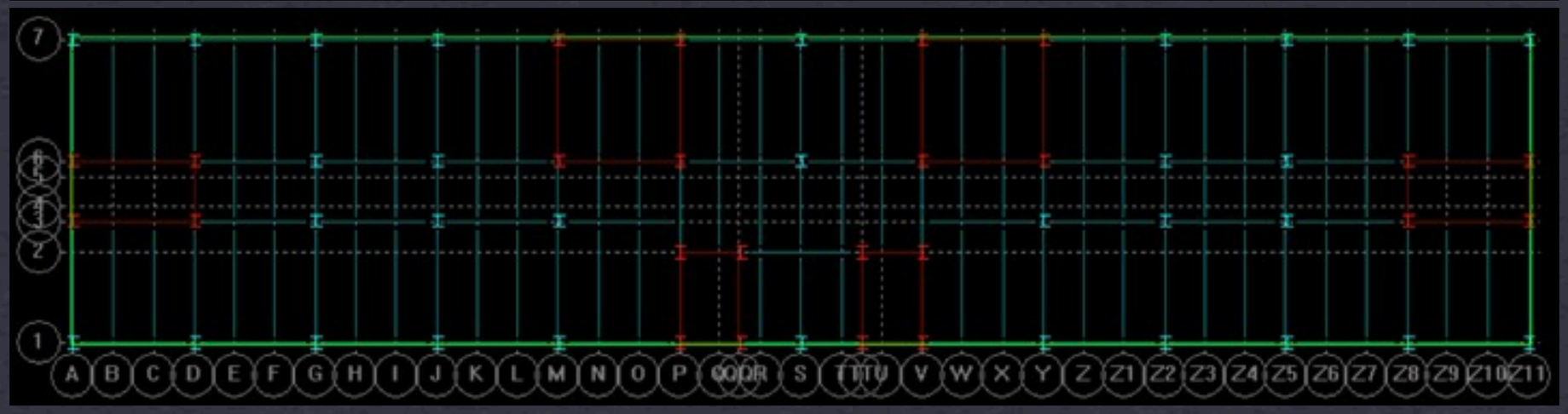




Pikanstruction

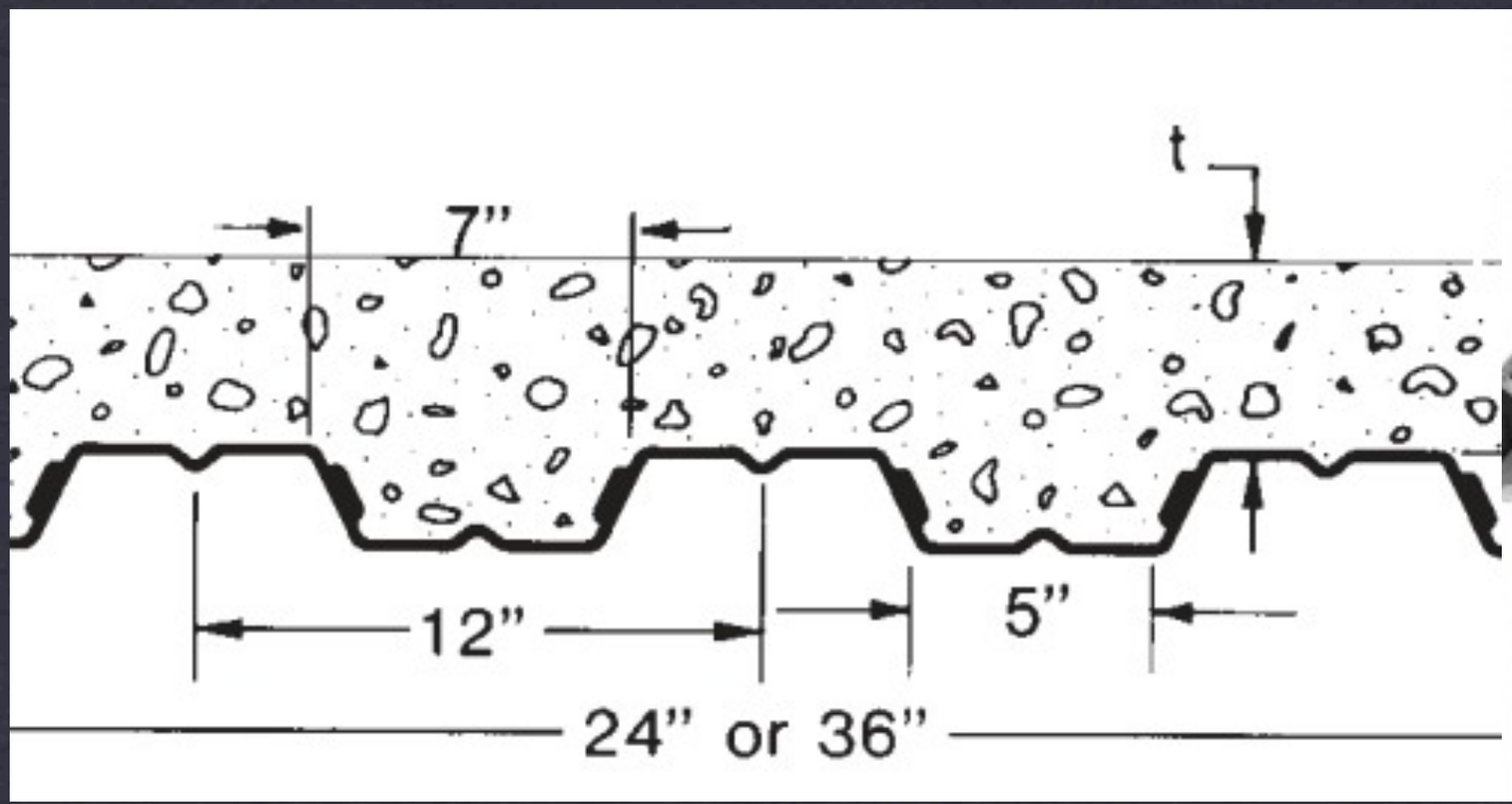
PROJECT

INDIGO PLATEAU RESIDENCE HALL

KNOWLEDGE DISTRICT CAMPUS

DATE **16 DECEMBER 2013**

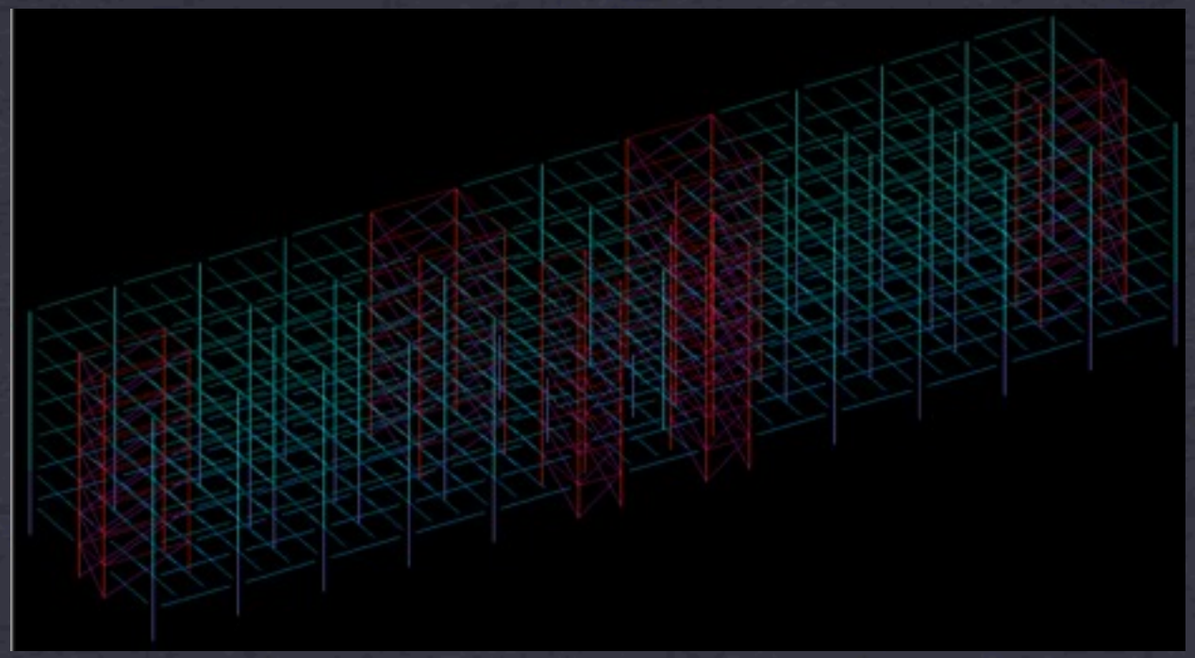
CLIENT **BROWN UNIVERSITY**

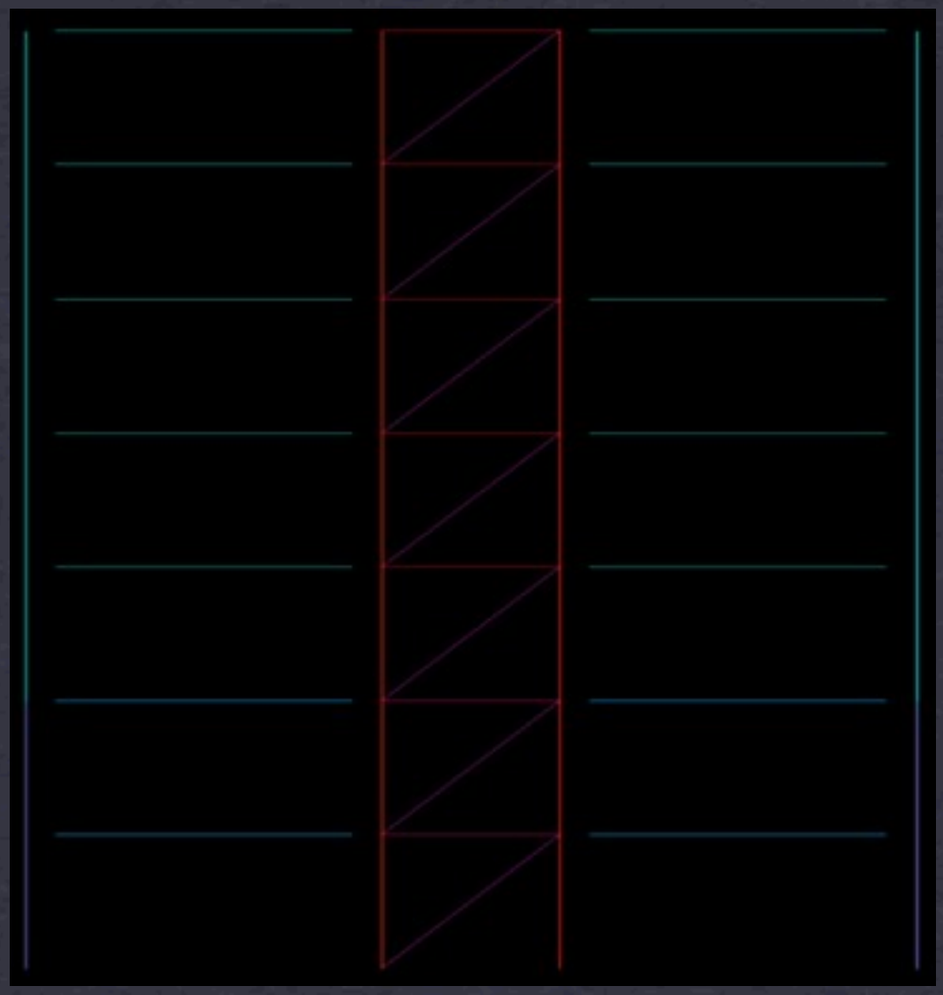


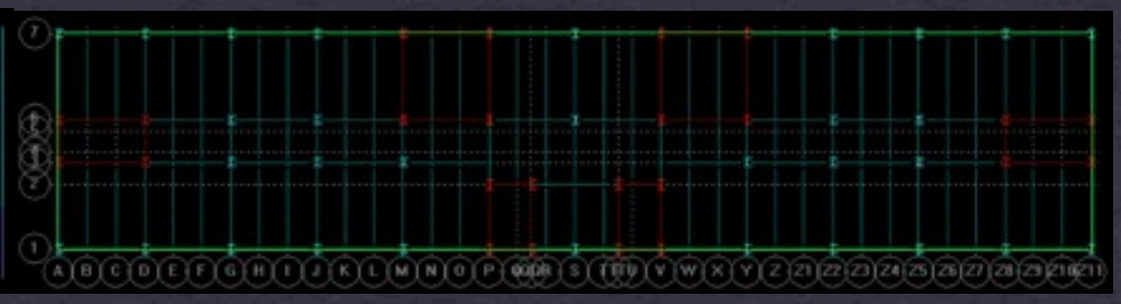
Pikanstruction

GRAVITY LOAD CARRYING SYSTEM

ONE-WAY COMPOSITE SLAB ON BEAM





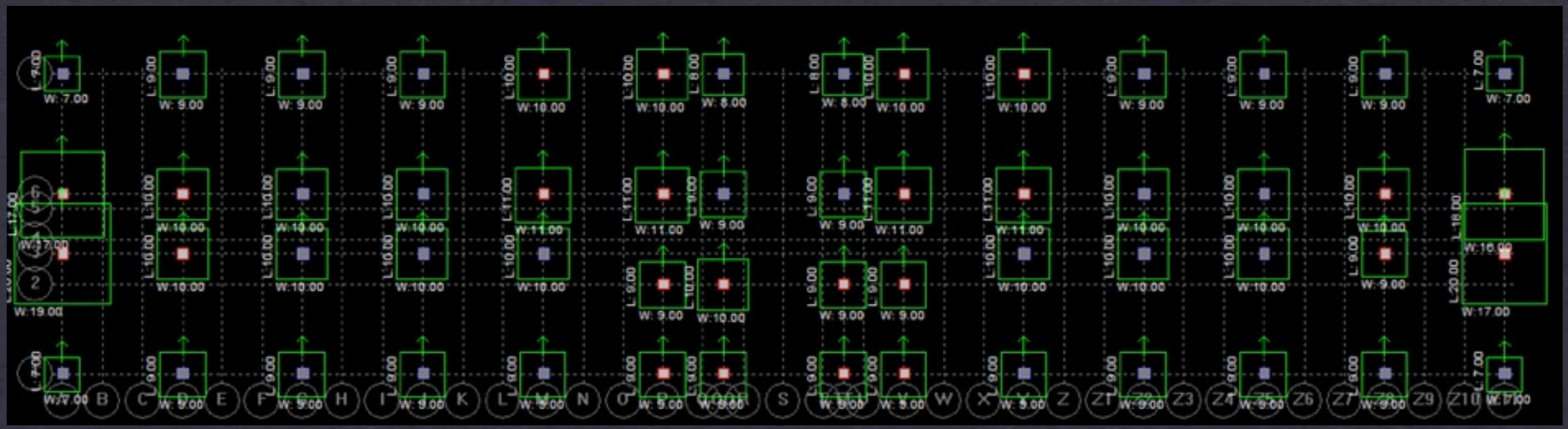


Pikanstruction

LATERAL FORCE RESISTING SYSTEM

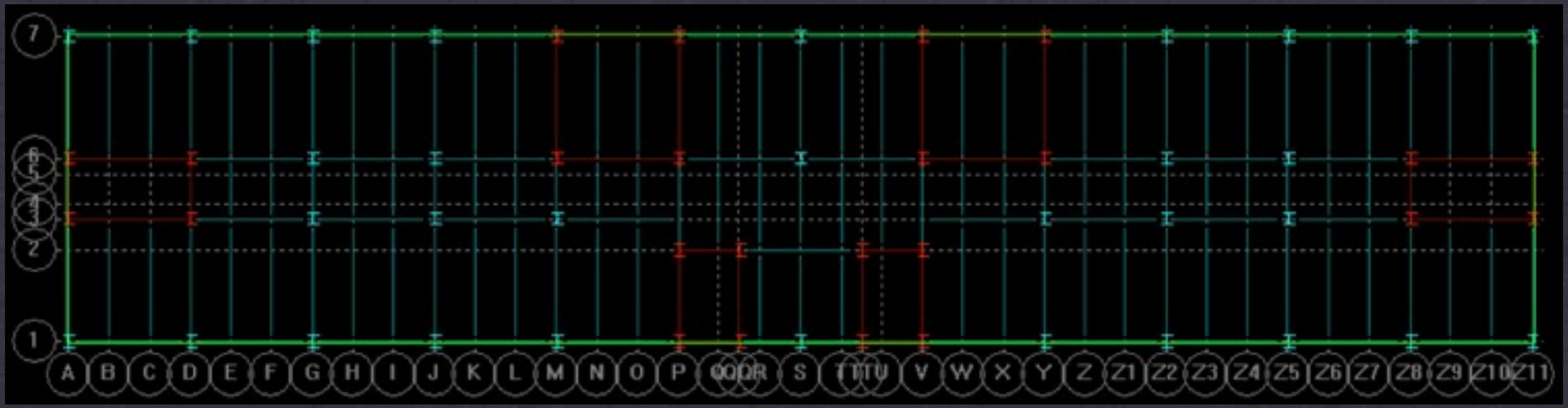
SINGLE DIAGONAL STEEL BRACED FRAMES

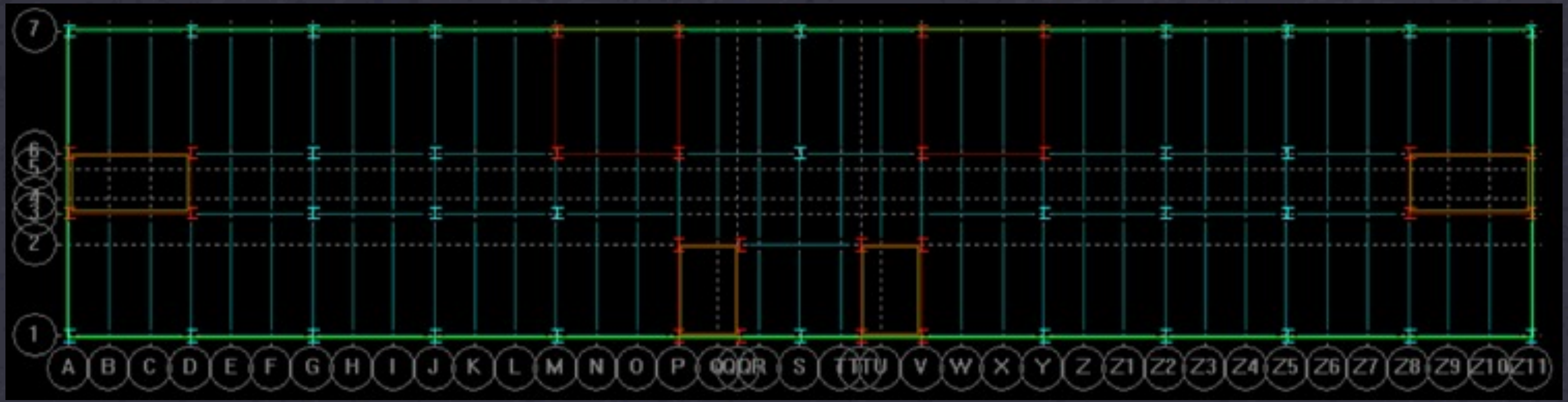
Pikanstruction

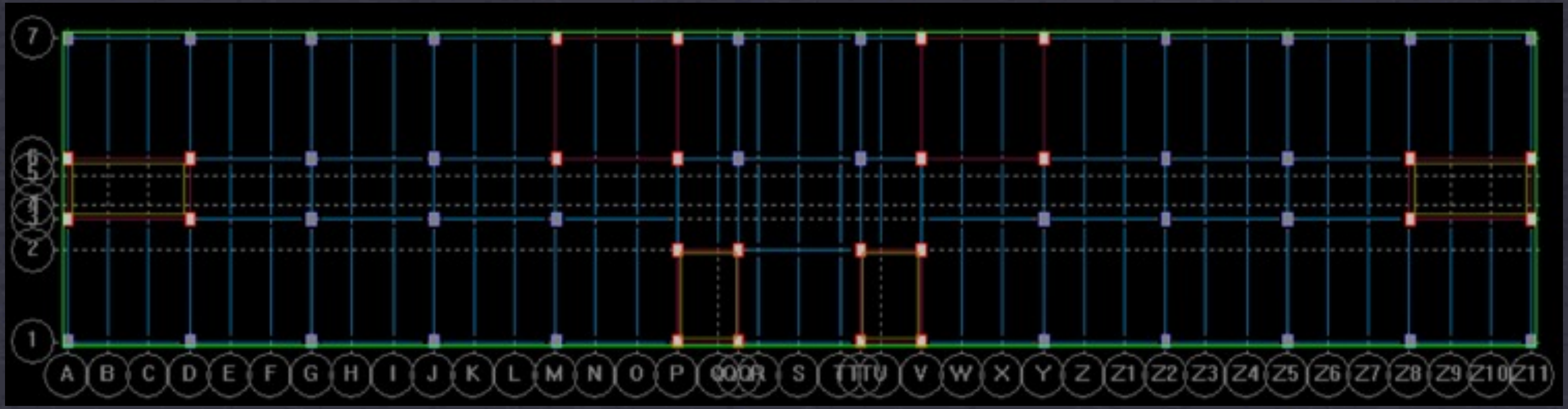


FOUNDATION SYSTEM

SHALLOW ISOLATED SPREAD FOOTINGS





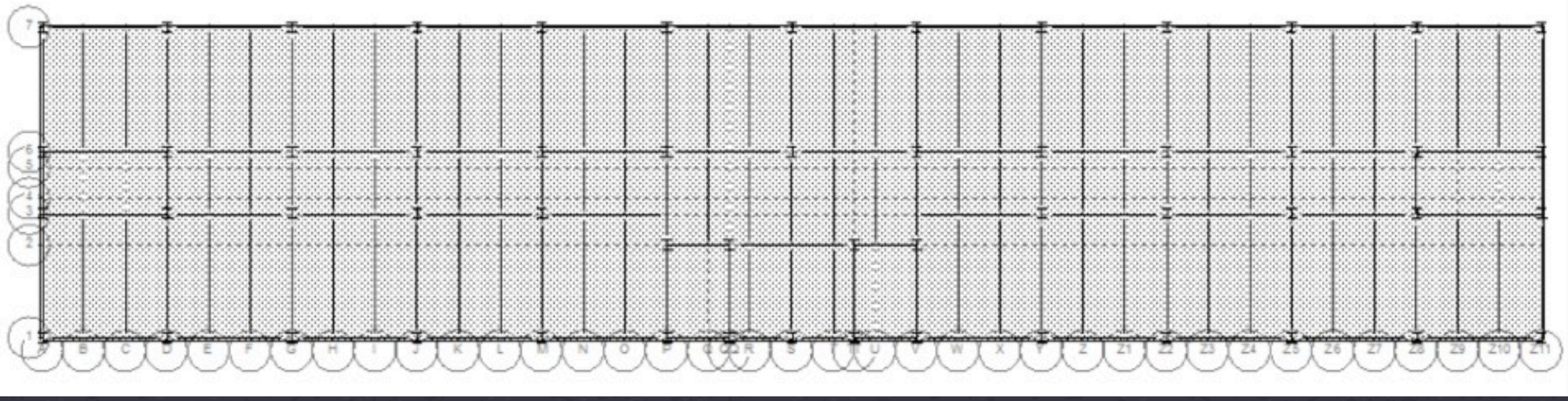


Pikanstruction

FLOOR PLAN

STEEL STRUCTURE - STORY 3-7. CONCRETE STRUCTURE - STORY 1-2.

Pikanstruction

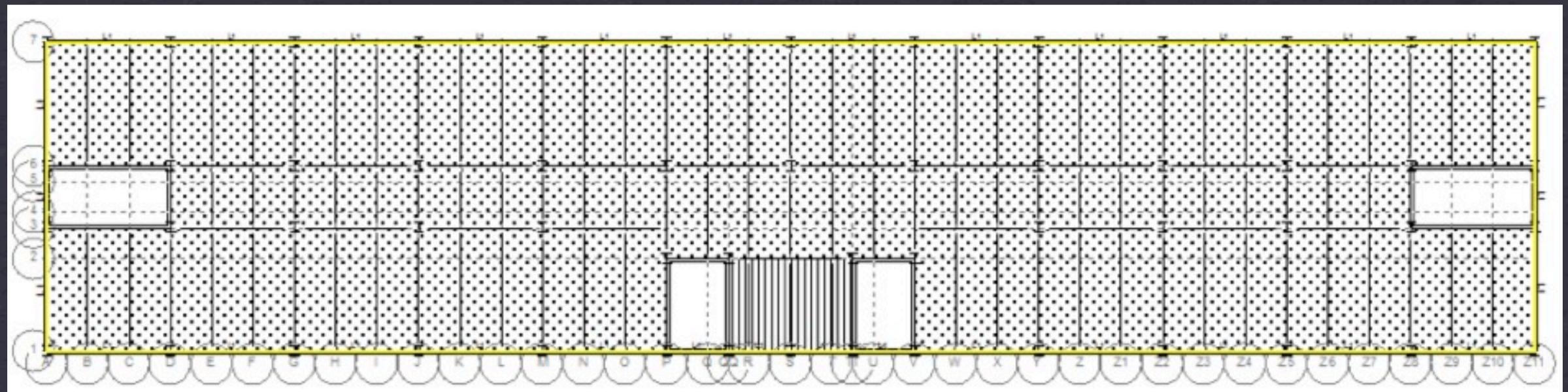


DEAD LOAD - DECKING
SNOW LOAD
WIND LOAD

LOADING PLAN

ROOF

Pikanstruction

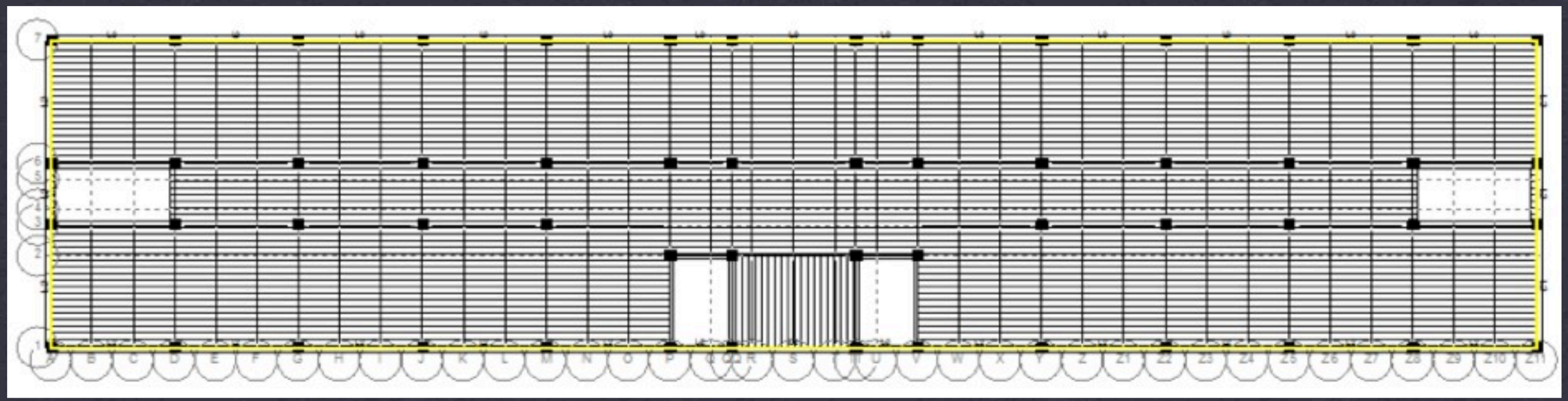


DEAD LOAD - DECKING, BRICK VENEER
LIVE LOAD - RESIDENTIAL, LOBBY
WIND LOAD

LOADING PLAN

STORY 3 TO STORY 7 - 1ST TO 5TH SUITES FLOOR

Pikanstruction

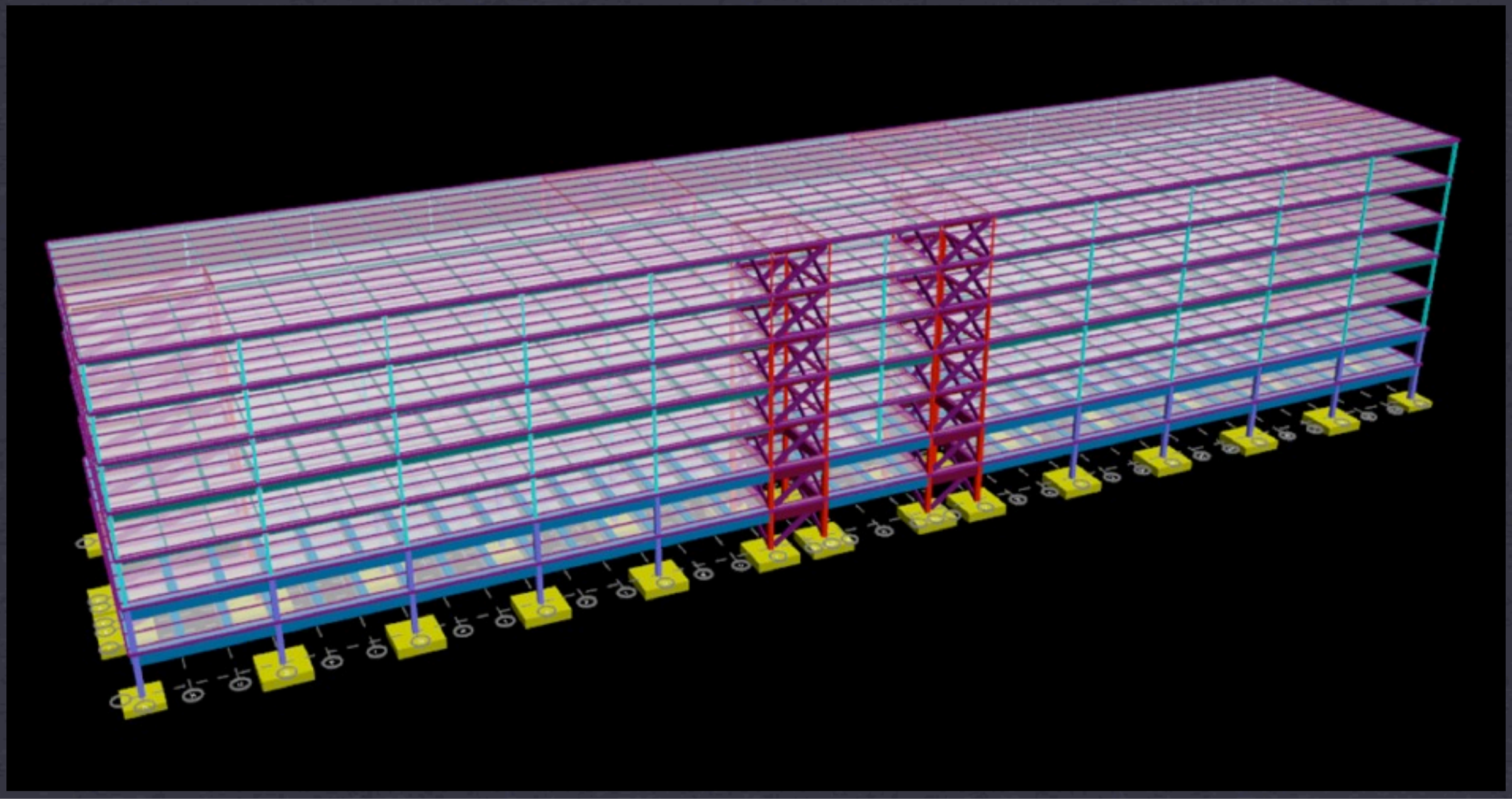


DEAD LOAD - DECKING, BRICK VENEER
LIVE LOAD - CAR PARKING, LOBBY
WIND LOAD

LOADING PLAN

STORY 1 TO STORY 2 - 1ST PARKING TO 2ND PARKING FLOOR

Pikanstruction



CALCULATIONS AND ANALYSIS

3D RAM MODEL

Pikanstruction

STEEL COLUMNS
SMALLEST: W4X13
BIGGEST: W8X28
NO. OF PIECES: 155
STEEL WEIGHT: 31,354 LB

STEEL BEAMS
SMALLEST: W8X10
BIGGEST: W21X55
NO. OF PIECES: 670
STEEL WEIGHT: 323,541 LB
TOTAL NUMBER OF STUDS: 6,078

STEEL STRUCTURE

Pikanstruction

CONCRETE COLUMNS
SMALLEST: C13X13
BIGGEST: C28X28
CONCRETE WEIGHT: 201,496 LB
REINFORCEMENT: 14,743 LB

CONCRETE BEAMS
B18X35
CONCRETE WEIGHT: 1,695,730 LB
REINFORCEMENT: 29,032 LB

CONCRETE STRUCTURE

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Cost Analysis

ANALYSED ITEMS	COST - USD
Steel	$867,410
Concrete	$1,378,614
Total Cost	$2,246,025

Pikanstruction

Design Comments

ENVIRONMENT AND GEOTECHNICAL FACTORS
CONSTRUCTION SEQUENCE
SEASONAL CONCERNS
STEEL BRACING ON CONCRETE
TRANSFER GIRDERS
ROOM FOR ERROR
SPLICING
SAFETY

Pikanstruction

Special thanks to:

ODEH ENGINEERS INC.

ODEH & ALVANTOSA ENGINEERING CONSULTING INC.

DAVID J. ODEH, POKEMON MASTER

KARINA ALVANTOSA, POKEMON TRAINER