





THP Limited 221 East Fourth Street Suite 1150 Cincinnati, Ohio 45202	PROJECT CLEVELAND HOPKINS INTERNATIONAL AIRPORT TITLE JET BRIDGE FOUNDATIONS CRITERIA DESIGI ISSUE 100% DRAFT	^{THP #} 24046.00 N	DRAWING NUMBER
THPLTD.com	ву САН	^{DATE} 1/31/2025	•

NOTES:

- 1. REFER TO SKS-05 THROUGH SKS-10 FOR STRUCTURAL GENERAL NOTES, INCLUDING CRITERIA DESIGN LOADS.
- 2. RECONFIRM ALL DESIGN LOADS AND PROVIDE FINAL DESIGN AND DETAILS MODIFIED OR REVISED AS APPROPRIATE, STAMPED BY AN ENGINEER LICENSED IN THE STATE OF OHIO.



 THD Limited	PROJECT CLEVELAND HOPKINS INTERNATIONAL AIRPORT	THP # 24046.00	DRAWING NUMBER		
221 East Fourth Street Suite 1150	TITLE JET BRIDGE FOUNDATIONS CRITERIA DESIGI	N	SKS		
Cincinnati, Ohio 45202 513.241.3222	ISSUE 100% DRAFT		05		
THPLTD.com	вү САН	date 1/31/2025			

STRUCTURAL GENERAL NOTES:

- A. <u>CODES AND SPECIFICATIONS</u>
- 1. 2024 OHIO BUILDING CODE.
- 2. ASCE/SEI 7-16 WITH SUPPLEMENT 1, MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHER STRUCTURES.
- 3. ACI 301-20, SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS AS MODIFIED BY THE CONSTRUCTION DOCUMENTS.
- 4. ANSI/AISC 303-22, CODE OF STANDARD PRACTICE FOR STEEL BUILDINGS AND BRIDGES AS MODIFIED BY THE CONSTRUCTION DOCUMENTS.
- 5. ANSI/AWS D1.1, STRUCTURAL WELDING CODE STEEL.
- 6. ADDITIONAL TECHNICAL SPECIFICATIONS IN THE PROJECT MANUAL.
- B. FOUNDATIONS
- 1. FOUNDATION ELEVATIONS SHOWN ARE ESTIMATED AND ARE FOR BIDDING ONLY. ACTUAL ELEVATIONS MAY VARY TO SUIT SUBSURFACE SOIL CONDITIONS.
- 2. ALL BEARING SURFACES SHALL BE UNDISTURBED, LEVEL (WITHIN 1 IN 12), AND APPROVED BY THE GEOTECHNICAL ENGINEER PRIOR TO PLACING CONCRETE.
- 3. ALL FOOTINGS, CAPS AND GRADE BEAMS ARE TO BE POURED NEAT AGAINST EARTH BANKS (WITHOUT SIDE FORMS) UNLESS APPROVED OTHERWISE BY BOTH THE GEOTECHNICAL AND STRUCTURAL ENGINEERS. WHERE EARTH CUTS WILL NOT STAND, SIDES SHALL BE FORMED AND BACKFILLED WITH COMPACTED MATERIAL, SUBJECT TO ENGINEERS' APPROVAL.
- 4. PILE FOUNDATIONS ARE DESIGNED FOR 18" DIAMETER, 40 TON COMPRESSION AND 10 TON TENSION ALLOWABLE CAPACITY, AUGERED, CAST-IN-PLACE GROUTED PILES. UNLESS NOTED OTHERWISE, REINFORCE ALL PILES PER DETAIL 2/S2. APPROXIMATE PILE LENGTH = 35'-0" ±. FINAL PILE DESIGN AND PILE LENGTH TO BE DETERMINED PER THE PILE CONTRACTOR'S PROFESSIONAL ENGINEER. PRIOR TO PILE INSTALLATION, CONTRACTOR TO SUBMIT COMPLETE DESIGN CALCULATIONS AND ALL WORKING DRAWINGS SIGNED AND SEALED BY THE PILE CONTRACTOR'S PROFESSIONAL ENGINEER. REFER TO SPECIFICATION SECTION 31 63 10 FOR ADDITIONAL INFORMATION. VERIFY PILE LENGTH/TIP ELEVATION OF EACH PILE WITH THE GEOTECHNICAL ENGINEER PRIOR TO GROUTING.
- 5. SET COLUMN DOWELS AND ANCHOR RODS WITH A TEMPLATE PRIOR TO PLACING CONCRETE.



STRUCTURAL GENERAL NOTES:

C. CONCRETE

- 1. CONCRETE STRENGTHS:
 - a. EXTERIOR CONCRETE EXPOSED TO WEATHER: 5000 PSI AIR ENTRAINED (6% ±1%).
 - b. BACKFILL (LEAN) CONCRETE: 1500 PSI.
- 2. PROVIDE 3/4" BEVELS AT EDGES OF EXPOSED SLABS AND TOP EDGES AND CORNERS OF EXPOSED PILE CAPS.
- JOINTS NOT INDICATED ON STRUCTURAL DRAWINGS ARE NOT PERMITTED UNLESS APPROVED BY THE STRUCTURAL ENGINEER.
- 4. CONCRETE CONSTRUCTION TOLERANCES SHALL BE PER ACI.
- D. REINFORCING STEEL
- 1. ALL REINFORCING BARS: 60 KSI YIELD.
- 2. REINFORCE ALL SLABS PER DRAWINGS.
- 3. PROVIDE TENSION SPLICES UNLESS NOTED OTHERWISE.
- 4. PLACE WITH MINIMUM CLEAR COVER BETWEEN REINFORCING STEEL AND CONCRETE SURFACES AS SHOWN. IF NOT SHOWN, PROVIDE CLEAR COVER PER ACI. ALL REINFORCING SHALL BE PLACED AS SHOWN AND DETAILED, AND WITHIN ACI TOLERANCE.
- 5. EPOXY COAT REINFORCING WHERE INDICATED.
- Ε. STRUCTURAL STEEL
- 1. ALL WORK SHALL CONFORM TO AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC) STANDARDS AND THE PROJECT SPECIFICATIONS.
- 2. MATERIAL:
 - a. PLATES: ASTM A572 GRADE 50 (Fy 50 KSI).
 - b. ANCHOR RODS: ASTM F1554 (Fy 55 KSI), U.N.O.
- 3. ALL WELDING MATERIALS, WELDING PROCEDURES AND OPERATORS PERFORMING WELDING TO BE QUALIFIED PER AWS D1.1.
- 4. ANCHOR BOLTS AND PLATES SHALL BE HOT DIPPED GALVANIZED.



DATE 1/31/2025

STRUCTURAL GENERAL NOTES:

F. <u>COORDINATION AND CONSTRUCTION</u>

1. THE CONTRACTOR SHALL COMPLETE ALL WORK REQUIRED AND NECESSARY FOR THE PROJECT IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS, DRAWINGS, AND REFERENCED STANDARDS. THE SPECIFICATIONS AND DRAWINGS COMPLEMENT EACH OTHER, THE CONTRACTOR SHALL THOROUGHLY REVIEW BOTH BEFORE PROCEEDING WITH ANY WORK.

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- 2. UNLESS OTHERWISE NOTED, DETAILS, SECTIONS AND NOTES ON THE STRUCTURAL DRAWINGS ARE INTENDED TO APPLY TO SIMILAR SITUATIONS ELSEWHERE.
- 3. SHOP DRAWINGS AND INSTALLATION DRAWINGS SHALL BE PREPARED AND SUBMITTED FOR REVIEW. SUBMITTALS PREPARED BY SUPPLIERS AND SUBCONTRACTORS SHALL BE REVIEWED BY THE TRADE CONTRACTOR AND GENERAL CONTRACTOR OR CONSTRUCTION MANAGER PRIOR TO SUBMITTING TO ARCHITECT/ENGINEER.
 - a. FIELD VERIFY ALL EXISTING DIMENSIONS, ELEVATIONS AND CONDITIONS WHICH AFFECT FABRICATION AND SHOW ON SHOP DRAWINGS.
 - b. SUBMIT COMPLETE SHOP DRAWINGS WITH MANUFACTURERS' DATA, ETC. SHOW ALL CONNECTIONS AND DETAILS NECESSARY TO FULLY DESCRIBE AND PROPERLY INSTALL THE WORK.
 - c. STRUCTURAL ENGINEER'S REVIEW SHALL BE FOR GENERAL ARRANGEMENT AND CONFORMANCE WITH THE STRUCTURAL INTENT ONLY.
- 4. THE SPECIFICATIONS AND STRUCTURAL DRAWINGS TYPICALLY REFER TO THE FINISHED STRUCTURE. UNLESS NOTED OTHERWISE, THEY DO NOT PRESCRIBE THE METHOD OF CONSTRUCTION.
- 5. IN ACCORDANCE WITH GENERALLY ACCEPTED CONSTRUCTION PRACTICES, CONTRACTOR SHALL BE SOLELY AND COMPLETELY RESPONSIBLE FOR CONDITIONS OF THE JOB SITE, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY DURING PERFORMANCE OF THE WORK. THIS REQUIREMENT SHALL APPLY CONTINUOUSLY AND NOT BE LIMITED TO WORKING HOURS.
- 6. THE ARCHITECT'S AND ENGINEER'S OBSERVATION AND REVIEW OF CONTRACTORS' PERFORMANCE DOES NOT INCLUDE REVIEW OF ADEQUACY OF CONTRACTOR'S SAFETY MEASURES IN, ON, OR NEAR THE CONSTRUCTION SITE.

G. <u>UTILITIES</u>

- 1. PRIOR TO EXCAVATION AND EARTHWORK, VERIFY LOCATIONS OF UNDERGROUND UTILITIES WITH THE UTILITY COMPANIES, CONSTRUCTION MANAGER, AND THE OWNER. EXCAVATE OR SURVEY TO ESTABLISH EXACT UTILITY LOCATIONS. UTILITY LOCATIONS IF SHOWN ON THE CONTRACT DRAWINGS ARE ONLY APPROXIMATE AND CANNOT BE USED TO ASSURE THE CONTRACTOR OF ADEQUATE CLEARANCE.
- 2. ALL UTILITIES SHALL BE ADEQUATELY PROTECTED FROM DAMAGE. WHERE UTILITIES ARE ENCOUNTERED, CONTRACTOR SHALL IMMEDIATELY NOTIFY THE UTILITY COMPANY, CONSTRUCTION MANAGER, AND THE OWNER BEFORE PROCEEDING. ACTIVE UTILITIES ENCOUNTERED SHALL BE PROTECTED, SUPPORTED, OR RELOCATED AS DIRECTED. INACTIVE AND ABANDONED UTILITIES SHALL BE REMOVED, PLUGGED, OR CAPPED AS DIRECTED.
- 3. CALL THE OHIO UTILITIES PROTECTION SERVICE TOLL FREE 1-800-362-2764 AT LEAST TWO (2) WORKING DAYS BEFORE DIGGING OR OTHER EARTHWORK OPERATION.



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STRUCTURAL GENERAL NOTES:

H. QUALITY CONTROL AND ASSURANCE

- 1. THE CONTRACTOR SHALL PERFORM QUALITY CONTROL, TESTING AND INSPECTION OF ALL WORK AS REQUIRED BY THE CONTRACT DOCUMENTS, INCLUDING REFERENCED CODES, SPECIFICATIONS AND STANDARDS.
- 2. THE OWNER WILL EMPLOY A TESTING AND INSPECTION AGENCY TO PERFORM SERVICES INDICATED TO BE BY THE OWNER IN THE PROJECT SPECIFICATIONS.
- 3. THE OWNER WILL ALSO EMPLOY QUALIFIED SPECIAL INSPECTORS TO PERFORM INSPECTIONS IN ACCORDANCE WITH CHAPTER 17 OF THE BUILDING CODE. THE CONTRACTOR IS RESPONSIBLE FOR SCHEDULING ALL INSPECTIONS AND TESTS. ITEMS REQUIRING SPECIAL INSPECTION ON THIS PROJECT INCLUDE:
 - a. SOILS: ALL PILE INSTALLATION WORK.
 - b. CONCRETE: ALL CONCRETE WORK.
 - c. REINFORCING STEEL: ALL REINFORCING STEEL.

THE STRUCTURAL ENGINEER MAY GENERALLY OBSERVE THE PROGRESS OF THE WORK, BUT THEIR OBSERVATION SHALL NOT BE CONSTRUED AS INSPECTION.



CLEVELAND HOPKINS INTERNATIONAL AIRPORT 24046.00

JET BRIDGE FOUNDATIONS

100% DRAFT

CAH

DRAWING NUMBER

SKS 09

DATE 1/31/2025

ALL DESIGN LOAD INFORMATION ON SKS-09 AND SKS-10 PROVIDED BY TK AIRPORT SOLUTIONS FOR GATE A3, AND SHOULD NOT BE ASSUMED APPLICABLE FOR OTHER LOCATIONS. VERIFY ALL LOADS FOR NEW FOUNDATIONS AS APPROPRIATE AT ALL NEW LOCATIONS.

Inputs:							
Enter Fields Below For the Largest							
Bridge in the Customers Contract		Wind Load Calculation		Seismic Information	Walkway Information		
Gate No.:	A3	Wind Speed, Operational:	65 mph	Spectral Response Accel (SS):	0.015	Is There A Walkway Attached?	Ν
Bridge Model:	TB 43/2	Wind Speed, Stowed:	115 mph	Site Class (info from GC/client):	С		
Live Load:	40.0 psf	Building Category:	II	Site Coefficient (FA):	1.2	If Yes, Then Enter the Fields Be	low:
Roof Load:	25.0 psf	Exposure:	С	Seismic Use Group:	I		
Finished Floor Height:	12.1 ft			Design Spectral Response (SDS):	0.018	Walkway Length:	0 ft
Wind Load, Operational:	12.5 psf			Inverted Pendulum Structure:			
Wind Load, Stowed:	28.4 psf			Equivalent Lateral Force Procedure	e :	See Note 4.	

Use LRFD Factored Loads?

Y

Outputs:															
Bridge Model:		TB 4	43/25.5-2	Steel											
	FORCE IN Z DIRECTION KIPS		Moment about y Kip-Ft			MOMENT ABOUT X KIP-FT			MOMENT ABOUT Z KIP-FT			FORCE IN Y DIRECTION KIPS			
Operational:															
1.4D]	26.1]	[52.3]]	11.3]						
1.2D+1.6L+0.5R]	37.6]	[98.9]]	55.8]						
1.2D+1.6R+.5W	[32.7]	[82.9]	[132.6]	[9.0]	[2.5]
1.2D+1.0W+1.0L+.5R	[33.1]	[83.1]	[284.3]	[18.1]	[5.1]
0.9D+1.0W	[16.8]	[33.6]	[253.1]	[18.1]	[5.1]
0.9D+1.0E	[16.8]	[33.7]]	7.7]	[0.1]	[0.0]
Stowed:															
1.4D	[9.0]	[-32.0]	[11.3]						
1.2D+0.5R	[7.8]	[-30.7]	[9.7]						
1.2D+1.6R+.5W]	8.2]	[-37.7]	[193.2]	[-0.2]	[1.5]
1.2D+1.0W+.5R	[7.8]	[-30.7]	[376.8]	[-0.4]	[3.1]
0.9D+1.0W]	5.8]	[-20.6]]	374.4]	[-0.4]	[3.1]
0.9D+1.0E] [5.8]	[-20.5]	[7.6]] [0.1]] [0.0]

Notes:

1. Calculations for reaction loads per International Building Code and the AISC LRFD.

2. Rotunda column reactions vary more with design conditions than bridge model.

3. Actual foundation design is by others. Appropriate safety factors should be applied to these loads.

4. Walkway calculation is for a walkway that is supported on the terminal end by a column or support, and on the bridge end by a haunch. The WW is in-line with the bridge centerline.

5. Reactions include auxiliary equipment (PCA, 400Hz) that may be on the bridge.

6. Refer to SKS-10 for associated Rotunda Column Diagram to be utilized with load tables.

