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December 6, 2022

RESPONSE LETTER NO. 1 TO REQUEST FOR INFORMATION

Project Title: Car Cleaner Platform Replacement Project

Project No.: IRP234 / RPQ #412223 R1

E-mail from Mr. Joseph Papitto, Kiewit Infrastructure South Co; dated Thursday, November 10, 2022, 3:01 P.M. (attached)

QUESTION: 1) Please confirm that both the Inspector General Audit Fee of ¼% and the User Access Program Fee of 2% apply to this project

RESPONSE: 1) Confirmed, both fees will apply.

QUESTION: 2) The platform end stairways have different details on plan sheet A2.0 – 5 treads, versus plan sheet S-1.1 – 7 treads, which detail is correct?

RESPONSE: 2) Use Drawing A2.0 as a basis for treads. Refer to the structural plan call out for shop drawings submittal for guardrails and stairs.

QUESTION 3) Plan sheet A1.0 shows reusing the concrete slab at the south end of the new platform, plan sheet S-1.0, foundation plan, shows replacing the slab, which detail is correct?

RESPONSE: 3) Mentioned slab is new. Existing slab at the south end is to be removed.

QUESTION 4) The plans do not show any platform slab joint spacing, are contraction joints required, if so at what spacing?

RESPONSE: 4) Control joints should be at every gridline, every 20 ft.

QUESTION 5) Please confirm that column base anchor bolts are galvanized and not stainless steel.

RESPONSE: 5) Anchor bolts are to be galvanized.

QUESTION 6) Are there any as-built plans for the existing platform available?

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RESPONSE: 6) As built plans are not available.

QUESTION 7) If no as-built plans are available, what size should we assume the buried concrete footings to be removed are for bidding purposes?

RESPONSE: 7) Please assume 3 feet embedded in concrete.

QUESTION 8) Spec section 01 50 00, 4.01: Project Sign, says the sign is to be provided by DTPW, spec section 01 58 13, Project Construction Signs, says the contractor is to provide 2 construction signs, which spec is correct?

RESPONSE: 8) Two signs will be provided by DTPW. Both signs will be installed and maintained throughout the project by the contractor. This includes removing and reinstalling in the event of a hurricane warning is declared during the Hurricane Season.

QUESTION 9) Is the contractor responsible for paying for a Project building permit, if so, what is the fee?

RESPONSE: 9) Miscellaneous Construction Contracts (MCC) required the contractor to be responsible for permit fees. Permits are not reimbursable, please factor the cost into the bid price.

Please refer to MCC 7360, section: 2.19 PERMITS/INSPECTIONS, FEES and TAXES:

"CONTRACTORS shall obtain all permits, certificates, inspections and licenses, pay all charges, taxes, royalties and fees and give all notices necessary and incidental to the lawful performance of the Work. The County will not pay nor reimburse the CONTRACTOR for any permits, fees. Etc. or any penalties as a result of the CONTRACTOR'S failure to obtain all permits, inspections and approvals in a timely manner."

QUESTION 10) Are special inspections to be paid for by the Contractor or by the County? Special Inspections Note 4 on plan sheet S-0.0, indicates the special inspector is hired by the County.

RESPONSE: 10) The special inspector is the CE&I (Construction, Engineering, and Inspection staff) hired by DTPW.

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E-mail from Mr. Luis Pasos, J.R.T. Construction, Co.; dated Thursday, November 10, 2022, 3:16 P.M. (attached)

QUESTION: 1) Invitation to Bid document does provide your contact info to send RFI's and Bid questions but does not mention a deadline for submitting such questions. Please provide us with a final day for submitting Pre-Bid questions

RESPONSE: 1) Deadline for questions is 72 hours before bid opening.

QUESTION: 2) Special Provision to the Contract does mention in Article 20.0 the User Access Program. Please clarify and confirm if UAP 2% fees apply to this project.

RESPONSE: 2) UAP fees applies to this project.

QUESTION 3) Please clarify if Inspector General Audit Service Deduction of 0.25% apply to this project.

RESPONSE: 3) Inspector General Audit Service applies to this project.

QUESTION 4) The General Conditions of the Contract, Item 7-E-1 regarding Permit fees states that "For payment of Permits, see Special Provisions", but Special Provisions do not mention if Permit Fees will be reimbursed to the Contractor or not. Please clarify if ALL Permit Fees are to be included in the Base Bid or if they will be reimbursed by Owner to Contractor.

RESPONSE: 4) Miscellaneous Construction Contracts (MCC) required the contractor to be responsible for permit fees. Permits are not reimbursable, please factor the cost into the bid price.

Please refer to MCC 7360, section: 2.19 PERMITS/INSPECTIONS, FEES and TAXES:

"CONTRACTORS shall obtain all permits, certificates, inspections and licenses, pay all charges, taxes, royalties and fees and give all notices necessary and incidental to the lawful performance of the Work. The County will not pay nor reimburse the CONTRACTOR for any permits, fees. Etc. or any penalties as a result of the CONTRACTOR'S failure to obtain all permits, inspections and approvals in a timely manner."

QUESTION 5) Specification section 011100 Summary of Work, Article 1.4-D calls for a Contractors Field Office trailer to hold meetings (conference table with 8 chairs) as required. Please confirm Field Office with meeting conference table

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capabilities is a requirement. Please provide a Proposed Staging Location for the temporary field office trailer.

RESPONSE: 5) Contractor staging area for office trailer/container is being coordinated with FPL to be outside of the Yard at the west easement. Contractor is responsible to fence and restore the area once turnover back to FPL.

QUESTION 6) Specifications Section 014523 regarding Testing Laboratory Services, Article 1.01 states that "All Testing shall be made at the expense of the Contractor" so it is the responsibility of the Contractor to pay for MDC Independent Testing Laboratory Services. This Article conflicts with several Articles of the General Conditions of the Contract in which they call for the Owner to hire an Independent Testing Lab, especially Article 7-C-1 which states that testing "will be made at the expense of the Owner by the project testing laboratory" . Please clarify if the Contractor is to include ALL testing, including Concrete Testing and Soil Testing (Proctors, densities, etc.) Services as part of the Base Bid.

RESPONSE: 6) The County will pay for the first test. Any fail test will be the responsibility of the Contractor. See contract Language below:

"When Contractor informs Engineer that the Work is ready for inspection and testing, Engineer may request, from a County approved laboratory, the tests necessary to confirm that the required material, compaction, or work specifications are met. If the results of the tests reveal that the applicable specifications have not been met, Contractor, without additional compensation, must perform, to the satisfaction of Engineer, all work necessary to meet the applicable specifications and is responsible for the costs of all re-testing required by Engineer and the Contract Documents.

The Department will pay the laboratory for the first test (pass or fail); any re-testing will be the responsibility of Contractor. The Department will only pay for re-testing when authorized, in writing, by Engineer.

Contractor must comply with the conditions of the agreement between Miami-Dade County and Laboratory."

QUESTION 7) Specification Section 01500 regarding Project Sign, Article 4.01 states that the Project Sign is to be supplied by DTPW and installed by the Contractor, but conflicts with Specification Section 015813, Article 1.1, which states that the Project Signs will be provided by the Contractor. Please clarify which instruction prevails.

RESPONSE: 7) Two (2) signs will be provided by DTPW and installed and maintained throughout the project by the contractor. This includes removing and reinstalling when required during the Hurricane Season.

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QUESTION 8) Construction Safety Manual includes the MDT Security Requirements and mentions that all Contractors and personnel working at the site must be in possession of a photo ID card issued by MDT. If payment for ID is required, please provide the cost for the background checks and badge for each employee and subcontractors.

RESPONSE: 8) New badging process is being finalized and pending final approval. The cost is $37.50 per person (subject to change).

QUESTION 9) Plan and Documents do not provide the Proposed location (or locations) for the Staging area that will be required by the Contractor, where we can place trash dumpsters for debris removal, and temporary piles of removed/excavated materials for loading and hauling off-site, as this will greatly impact the Demolition operations required. Please provide a proposed location for a staging area(s) that would be acceptable for the continued operations of the Yard.

RESPONSE: 9) Contractor will have its own staging area outside the yard. Contractor must remove all construction debris every day to allow for train movement every night. The yard is in operation 7 days a week, 24 hours a day. Please refer to site restrictions.

QUESTION 10) Plan Sheet D1.0 includes General Removal Note #2 and calls for the demolition and removal of the existing steel columns and concrete footings of the wood platform, but documents contain no information on the quantity of columns, quantity, size, and depth of footings. Are there individual concrete pads for each column? Please provide As-Built Plans for the existing wood platform showing quantities, the size and depth of all concrete footings to be removed.

RESPONSE: 10) As-Built plans are not available. All existing platform elements shall be removed.

QUESTION: 11) Plan Sheet D1.0 includes pictures showing the existing steel columns are in close proximity to the existing rail wood sleepers to remain, and the existing concrete footings will be even closer and may extend partially under a portio.n of the existing wood sleepers. Has this possibility been explored at the time of design? Please provide results of any exploratory findings and existing dimensions regarding the locations of the existing footings to be removed and the proximity to the rail wood sleepers to remain.

RESPONSE: 11) Existing wood sleepers shall remain in place. Demolition means and methods from the Contractor shall preserve existing sleepers.

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QUESTION: 12) Demolition plan Sheet D1.0 does not mention any existing electrical, plumbing, water or sewer lines serving or crossing the existing wood platform area. Please confirm there are no existing electrical, plumbing, water, or sewer, that needs relocations, demolition, or removals. If there are, please provide As-Built plans of all utilities within the proposed demolition areas.

RESPONSE: 12) As-Built plans are not available. Assume possibility of relocation of unforeseen MEP components.

QUESTION: 13) Demolition plan Sheet D1.0 does show three existing drains/waste connections that are to remain under the platform but fails to show the underground pipes/lines routes serving such drains. Please provide As-Built plans of ALL existing utility lines crossing or serving the affected proposed Work Area.

RESPONSE: 13) As-Built plans are not available. Assume possibility of relocation of unforeseen utilities.

QUESTION: 14) Plan Sheet D1.0 includes pictures showing the existing wood platform to be made of Pressure Treated (PT) wood, which in some cases may have been treated with Arsenic or other hazardous materials and may require special handling and disposal procedures. Has the existing PT wood been tested for such materials? Please provide results of any testing on the PT wood to be removed.

RESPONSE: 14) Demolition is part of means and methods from the Contractor, which shall consider handling and disposal of existing PT wood and shall be included in the submitted price.

QUESTION 15) If no testing has been done on the PT wood, will the Owner be providing testing before the start of the Contract? And if it turns out that the wood does require special handling or abatement, will this be considered an “unforeseen condition” and be subject to a change order for the added removal expenses? Please clarify how do you want us to proceed and define what should be included in the Base Bid.

RESPONSE: 15) Demolition is part of means and methods from the Contractor shall consider handling and disposal of existing PT wood. DTPW will not perform any testing, price for abatement and disposal shall be included in the proposal.

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QUESTION 16) Plan Sheet C2.0 includes section A/C2.0 and shows a 6" deep composite concrete slab for the new proposed platform, but Structural plan S-1.1 in sections A/S-1.0 and in Detail #1 calls for the proposed composite slab to be a 4" slab. Please clarify if Structural Plans instructions prevails.

RESPONSE: 16) Please follow structural plans.

QUESTION 17) Plan Sheet C-2.0 includes section A/C2.0 and shows the platform slab with a continuous steel angle running from column to column to support the slab, but Structural Plan S-1.1 calls for using a HSS 6"x6" steel tube to support the slab. Please clarify if Structural Plans instructions prevails.

RESPONSE: 17) Please follow structural plans.

QUESTION 18) Plan Sheet C2.0 includes Architectural Note C regarding the Metal Roofing, and it proposes to use a 22 ga metal roofing by American Buildings with a NOA #17-0501.05. Unfortunately, the referenced NOA has expired, and one of our roofing subs mentioned the manufacturer seems to NOT be working in extending this NOA for the 22 ga. structural roofing panels. Please provide Alternate manufacturer and Model for the required structural metal roofing panels, with a current NOA.

RESPONSE: 18) Contractor to provide an equivalent alternate product for review and approval with a current NOA.

QUESTION 19) Plan Sheet C3.0 General Note #4 calls for the Contractor to obtain all permits "and pay all fees connected to his work". Please clarify if Owner will reimburse the Contractor for all Permit Fees, or if all fees should be included in the Base Bid.

RESPONSE: 19) Per mentioned note #4, Contractor shall pay all fees connected to the work.

QUESTION 20) Plan Sheet A1.0 and A2.0 include notes calling for "all steel surfaces to be painted", but Plan S-0.0 Structural Steel note #3 calls for all structural steel exposed to weather "Shall be Hot Dipped Galvanized". Having Hot Dipped Galvanized steel members being attached using field welding will destroy the galvanized protection around the welded areas and will require extensive galvanized paint touch-ups, field applied. Please clarify which instruction is to prevail and indicate final finish on all exposed structural steel members.

RESPONSE: 20) All field welds shall follow AWS specifications, including Hot Dipped Galvanized members. All steel members shall be painted using products described as per note D, sheet A2.0.

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QUESTION 21) Plan Sheet S-0.0 includes Concrete Note #6 and calls for the Owner to contract an Independent Testing Lab to perform all required concrete testing. Please confirm Owner will provide all concrete testing services, as mentioned in the General Conditions of the Contract, under Article 7-C-1.

RESPONSE: 21) See response to question 6 above .

QUESTION 22) Plan Sheet S-0.0 includes Foundation Note #7, and Earthwork Note #7 and #8, all calling for a Geotechnical Engineer to verify the Soil Conditions before installing any rebars or pouring any concrete, and to inspect the Soil Compaction during the earthwork. Please clarify if Owner will provide and pay for the services of the Geotechnical Engineer for all observations and Soil Certifications required.

RESPONSE: 22) CE&I will inspect the area prior pouring the concrete, contractor must submit the copies of the certified testing reports.

QUESTION: 23) Please confirm if Owner will also provide and pay for all Soil Testing for the earthwork, such as required Proctors, Densities, soil classifications, etc.

RESPONSE: 23) Please, refer to Response 6.

QUESTION: 24) Plan Sheet S-1.1 showing the Typical Foundation Plan for each proposed spread footing to be an 8’ wide by 8’ long pad and section A/S-1.0 above, shows the depth of excavation required to be 4’-6” deep from the existing grade. The Specific Purpose Survey by J. Bonfill & Associates provided shows the distance between the existing rails to remain, to be 10.1’ wide to what seems to be the steel tracks, and not considering that the wood sleepers encroach into the 10.1’ distance from both sides. The footing design shown in plans will require an excavation to within inches (or extending under the rails due to angle of repose of the fill/soil material) from the existing steel tracks and to be 4’-6” deep and it may leave a portion the existing wood sleepers resting on air, above the excavation.

We are concerned that the proposed 8’ wide excavation width is intruding into the zone of influence of the load carried by the wood sleepers and that because the existing soil strata is made of fill (not rock) it may also cause cave-in of the existing fill layer under the wood sleepers to remain. Please advise if footing design can be revised to a lesser width and less depth or advise on how to re-design the proposed footings to prevent the excavations from encroaching into the existing wood sleepers’ areas.

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RESPONSE: 24) An alternate footing design can be proposed by the contractor which limits the width but will require a greater depth considering the various load factors on the structure. Contractor assumes all responsibilities and costs associated with the alternate footing design, subject to approval by DFTPW.

The design loads are included in this RFI as requested. ` Attachment C and reactions

Please note that the adjacent tracks must be back in service at the end of each day to allow train movement. No exceptions to this requirement, tracks will be reenergized.

E-mail from Mr. Joseph Papitto, Kiewit Infrastructure South Co; dated Monday, November 14, 2022, 2:54 P.M. (attached)

QUESTION: 1) Plan sheet S-1.0 shows 34 platform gridlines, the civil and architectural plans show 32 gridlines, please clarify.

RESPONSE: 1) There are 32 gridlines which define the limits of the platform. Please refer to the Civil/Architectural for the correct layout and spacing of the gridlines. The plan views on Sheet S-1.0 should show gridlines 30, 31, and 32 to the right of the break lines.

QUESTION: 2) Will the Contractor be provided a staging area within the Lehman Yard or at a site nearby?

RESPONSE: 2) Contractor will have its own staging area outside the yard. Contractor must remove all construction debris every day to allow for train movement every night. The yard is in operation 7 days a week, 24 hours a day. Please refer to site restrictions.

QUESTION 3) Please identify what the actual damages may be and the maximum cost per day of such damages referenced in Section 8 detailed below?

RPQ No.: 412223-R1 Solicitation Documents (Page 209 of 516) – Section 8. Contract Time – F Liquidated Damages and Liquidated Indirect Costs 4) In the event the Contractor fails to perform any other covenant or condition (other than time-related) of this Contract relating to the Work, the Contractor shall become liable to the Owner for any actual damages which the Owner may sustain as a result of such failure on the part of the Contractor. The Owner reserves the right to retain these amounts from monies due the Contractor.

RESPONSE: 3) Liquidated damages apply to contractor's failure to complete the project by the contractual due date. Liquidated damages are $1,950.93/day. Actual

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damages are not time related, and we will not know the nature of the damages until such event happens.

QUESTION 4) If someone is unable to make it to scheduled site visit, can they make arrangements to visit the site at a later date?

RESPONSE: 4) Site visit is mandatory and a one-time event. No additional site visits will be allowed. Refer to Addendum No. 1

E-mail from Ms. Chantel Mirecki, Kiewit Infrastructure South Co; dated Tuesday, November 22, 2022, 1:54 P.M. (attached)

QUESTION 1) Electrical Legend on Sheet E1.0 details NEMA 3R Junction Box (6”x6”x4) where Typical Electrical Detail D on Sheet E2.0 details (8”x8”x6”) – please clarify.

RESPONSE: 1) All identified NEMA 3R Junction Box (6”x6”x4), should be sized to 8”x8”x6”, per the typical Electrical Detail D on Sheet E2.0.

E-mail from Mr. David Moran, Epic Consultants; dated Wednesday, November 23, 2022, 3:21 P.M. (attached)

QUESTION 1) Please specify the construction working hours. It was stated during the prebid meeting that construction working hours would be from 8:00 AM to 4:00 PM. Please confirm.

RESPONSE: 1) Contractor needs to provide a schedule with the proposed work hours. The facility is open 7 days a week/24 hours a day. Work hours could be shifts of: 8 hours, 10 hours, 12 hours or 20 hours.

QUESTION 2) Please confirm if the quality control manager can be the safety manager.

RESPONSE: 2) Quality Control Manager may have a dual role if he/she doesn’t report to the superintendent or Project manager. As mentioned at the Prebid meeting, the proposed person must be experienced in both fields and will be interviewed before approval for the dual role as Quality Control/Safety manager.

QUESTION 3) During excavation, dirt will be placed on the outside but next to the tracks. What distance should be keep from the tracks?

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RESPONSE: 3) The excavated material may be stored on the proposed stage area at the south end of the road. Contractor must review if the material will be reused as backfill, if not, please remove from the site as it is excavated.

QUESTION 4) During the execution of new work, are we going to be permitted to leave material next the track if so what distance should we keep from the track or do we have to take all material on a daily basis back to the lay down area.

RESPONSE: 4) The area must be clear from the tracks to allow for train and site operation movement. Please refer to the site restrictions.

E-mail from Mr. Luis Pasos, J.R.T. Construction, Co.; dated Tuesday, November 29, 2022, 4:55 P.M. (attached)

QUESTION: 1) Plan Sheet C1.0 and plan Sheet A1.0 (including the proposed Site Plan) both show the proposed new car cleaner platform to be built between Gridlines #1 thru #32, with a distance of 20' for each bay, but Structural plan S-1.0 shows the gridlines extending further to Gridline #34. Also, plan Sheet D1.0 has a note calling for phasing the project and mentions Phase 2 extending thru Gridline #38. Please clarify and confirm the gridline number that should be the end of the proposed scope of work for this project including the new car cleaner platform.

RESPONSE: 1) There are 32 gridlines which define the limits of the platform. Please refer to the Civil/Architectural for the correct layout and spacing of the gridlines. The plan views on Sheet S-1.0 should show gridlines 30, 31, and 32 to the right of the break lines.

QUESTION: 2) Plan Sheet A2.0 contains Section A/A2.0 and shows a distance of 11'-0" between the existing steel rails (adjacent to the platform on both sides), but such dimension is in conflict with Specific Purpose Survey prepared by J. Bonfill & Associates that shows the same dimension as 10.1'; almost an entire foot less. Please clarify which dimension is correct.

RESPONSE: 2) The survey plans govern the dimension in question.

QUESTION 3) We would like the record to reflect that during the Site Visit after the Pre-Bid Meeting held on 10/17/2022, Contractors were not allowed to be within close proximity to the existing racks/rails for safety reasons. Therefore, Contractors were not able to take their own field measurements and perform their own field verifications. Consequently, Contractors will be required to rely on the dimensions and measurements provided to us in the Bid Documents and one

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the written responses to any Pre-bid Questions or RFI's that will be issued via Addendum.

RESPONSE: 3) Contactors are responsible to field verify all dimensions before proceeding with any work and notify the Owner immediately of any discrepancies.

QUESTION 4) Please provide distance the sleepers (or ties) extend from the steel track to the end of the ties. This dimension is not found on the plans.

RESPONSE: 4) The existing distances that the sleepers (ties) extend beyond the track (rail) vary based on the type of sleeper (ties). Per the field visit held after the Pre-Bid meeting on November 17, the composite ties extended approximately 18" beyond the rail.

QUESTION 5) Please provide the clear distance between the ends of ties on both sides of the platform. This dimension is not found on the plans.

RESPONSE: 5) Since the tie lengths vary, per question 4 above, the clear distances vary from the end of the tie to the platform.

QUESTION 6) The proposed civil plans seem to identify a proposed new drain sewer line. However, plan Sheet D1.0 (including the existing Site Plan) includes a note that states "waste connectors under platform are to remain. Protect during removal". Please clarify if the intent is to protect an existing drain line? If so, please note that any waste connector drain lines running underground below the proposed new car platform will be interrupted and cut at the location of each new footing being excavated and built. Please clarify the intent of this note and what needs protection.

RESPONSE: 6) The intent of the note on Sheet D1.0 is to protect the existing drain line until the proposed drain and associated piping is installed. Please follow the civil plan details for the proposed piping that in portions of the platform is being suspended below the platform. The portion of the proposed piping that runs underground shall be integrated into the proposed foundations.

QUESTION 7) Plan Sheet S-1.1, Detail A/S1.0, shows an excavation depth for the proposed new footings of 4.5' deep. As a result of this and due to the narrow work area and extreme proximity to the existing railway ties and tracks to remain, we are considering using sheet piling to maintain the existing soil under the existing tracks from caving in at the new footing locations. The Geotechnical Report included in the Bid Documents does NOT contain a Sheet Pile recommendation for the type and depth of Sheet Pile required to retain the existing soil under the existing tracks. Given the existing soil conditions identified in the Geotechnical Report, please have a Geotechnical Engineer

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provide recommendations for the Sheet pile type and depth required to retain the existing soil under the tracks (at the footing locations) as an Addendum to the existing Geotechnical Report.

RESPONSE: 7) The Contractor has the ability to develop an alternate design or approach for construction of the current platform footing design, which shall be required to be submitted to DTPW for review/approval prior to construction. The alternate design or approach for construction shall follow the required maintenance of train operations and phasing of the work.

QUESTION 8) As a follow up to the previous question, please advise if the Owner will approve and allow leaving any installed Sheet Pile (used to retain the existing earth under the existing tracks) in situ (or in place) after construction of the new footings for the new car cleaner platform is complete.

RESPONSE: 8) See response to previous question.

QUESTION 9) Please confirm the Contractor has wide discretion to use any means and methods the Contractor deems necessary for design and construction of the car platform footings in order to ensure the existing soil under the existing tracks does not cave in.

RESPONSE: 9) The Contractor has the ability to develop an alternate design for the platform footings, which shall be required to be submitted to DTPW for review/approval prior to construction. The alternate design shall follow the required maintenance of train operations and phasing of the work. Contractor assumes all responsibilities to coordinate the design.

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END OF REQUEST FOR INFORMATION No. 1

Sincerely,

Alfredo E. Muñoz, P.E.
Chief, Capital Improvements Division
Department of Transportation and Public Works (DTPW)

AM:er

c:

Elva Reyes, DTPW
Malka Rodriguez, DTPW
Project File
Marcia Martin, ISD
Clerk of the Board

ATTACHMENT C:
ASDIP Foundation Output

Cueto Engineering | Project: Railcar Platform | Page # ___
Engineer: NAC | 8/18/2017
Descrip: 2017-STR-0010_R0_A211B211

ASDIP Foundation 3.2.2 **COMBINED FOOTING DESIGN** *www.asdipsoft.com*

GEOMETRY

	Exterior	Interior		
Column to Column Distance		4.50	ft	
Column Length (X)	24.0	24.0	in	
Column Width (Z)	24.0	24.0	in	
Edge Distance (X)	1.75	1.75	ft	OK
Footing Width (Z)	8.00	8.00	ft	
Footing Thickness		36.0	in	OK
Soil Cover		1.00	ft	
Pedestal Height		1.00	ft	

SOIL PRESSURES (Comb: Service)

Gross Allow. Soil Pressure			3.00	ksf
Overburden Pressure			0.57	ksf
Reaction Force			74.9	kip
Reaction Eccentricity			1.87	ft
Ftg. Area in Contact with Soil			80.0	%
	Exterior	Interior		
Bearing Pressure	2.93	0.00	ksf	
Bearing Ratio	0.98	0.00	OK	

APPLIED LOADS

- Exterior Col.	Service	Factored	
Axial Force P	37.5	0.7	kip
Moment about Z Mz	8.8	8.7	k-ft
Shear Force Vx	5.0	4.9	kip
- Interior Col.	**Service**	**Factored**	
Axial Force P	0.7	37.5	kip
Moment about Z Mz	8.7	8.8	k-ft
Shear Force Vx	4.9	5.0	kip

SOIL BEARING PRESSURES (Comb: Service)

- Exterior column

Vertical P = 37.5 kip

Moment Mz = 8.8 k-ft

Shear Vx = 5.0 kip

Arm = 1.00 + 36.0 / 12 = 4.00 ft Moment = 5.0 * 4.00 = 20.0 k-ft

Overturning moment Z-Z = 8.8 + 20.0 = 28.8 k-ft

Pedestal weight = *A * L * H * Density* = 24.0 / 12 * 24.0 / 12 * 1.0 * 0.15 = 0.6 kip

Interior column

Vertical P = 0.7 kip

Moment Mz = 8.7 k-ft

Shear Vx = 4.9 kip

Arm = 1.00 + 36.0 / 12 = 4.00 ft Moment = 4.9 * 4.00 = 19.6 k-ft

Overturning moment Z-Z = 8.7 + 19.6 = 28.3 k-ft

Pedestal weight = *A * L * H * Density* = 24.0 / 12 * 24.0 / 12 * 1.0 * 0.15 = 0.6 kip

Footing SW = *(Wa + Wb) / 2 * L * Thick * Density* = (8.00 + 8.00) / 2 * 8.00 * 36.0 / 12 * 0.15 = 28.8 kip

Soil cover = *((Wa + Wb) / 2 * L - Ac - Ap) * SC * Density*

= ((8.00 + 8.00) / 2 * 8.00 - 24.0 / 12 * 24.0 / 12 - 24.0 / 12 * 24.0 / 12) * 1.00 * 120 = 6.7 kip

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- Properties

Ftg Area = (Wa + Wb) / 2 * L = (8.00 + 8.00) / 2 * 8.00 = 64.0 ft²

Ftg Centroid = (Wa + 2 * Wb) / (3 * (Wa + Wb)) * L =(8.00 + 2 * 8.00) / (3 * (8.00 + 8.00)) * 8.00 = 4.00 ft

Ftg Iz = (Wa + 3 * Wb) / 12 * L³ - Area * Centroid² -(8.00 + 3 * 8.00) / 12 * 8.00³ - 64.0 * 4.00² = 341 ft⁴

Ftg Sza = Iz / Centroid = 341 / 4.00 = 85.3 ft³

Ftg Szb = Iz / (L - Centroid) = 341 / (8.00 - 4.00) = 85.3 ft³

Overburden = (Pedestals + Footing SW + Soil cover) / Area = (0.6 + 0.6 + 28.8 + 6.7) / 64.0 = 0.6 ksf

Reaction R = P + Pedestals + Footing SW + Soil cover - Hydrostatic

= 37.5 + 0.7 + 0.6 + 0.6 + 28.8 + 6.7 - 0.0 = 74.9 kip

Arm = (DPe + Fed) * Edge + (Ftg SW + Soil cover) * Centroid - OTMe - OTMr + (Pi + Fed) * (L - Edge) / Reaction

= [(37.5 + 0.6) * 1.75 + (28.8 + 6.7 - 0.0) * 4.00 - 28.8 - 28.3 + (0.7 + 0.6) * (8.00 - 1.75)] / 74.9 = 2.13 ft

Eccentricity = Centroid - Arm = 4.00 - 2.13 = 1.87 ft

a = (Wa - Wb) / (12 * L) = (8.00 - 8.00) / (12 * 8.00 = 0.00

b = Wa / 6 - (Wa - Wb) / (6 * L) * Arm = 8.00 / 6 - (8.00 - 8.00) / (6 * 8.00 * 2.13) = 1.33

c = -Wa / 2 * Arm = -8.00 / 2 * 2.13 = -8.53

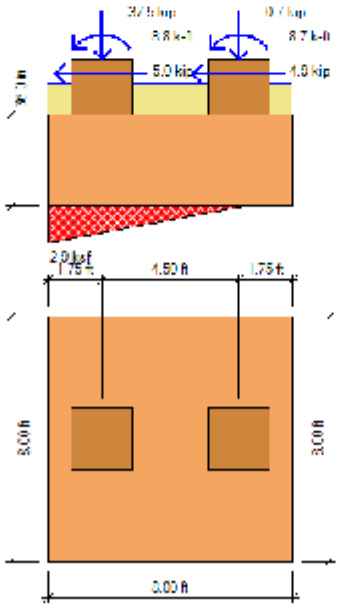
ak³ + bk + c = 0 solving, bearing length k = = 6.40 ft

Ext. gross bearing = Max(0, S * (Wa - Wb) / (6 * L) * k² + Wa / 2 * k)

Int. gross bearing = (8.00 / 8.00) / (6 * 8.00) * 6.40² + 8.00 / 2 * 6.40)) = 2.9 ksf

Bearing area % = (((Wa - Wb) / 2 * k + Wb) + Wb) / 2 * k / Area * 100

= (((8.00 - 8.00) / 8.00 * 6.40 + 8.00) / 2 * 6.40 / 64.0 * 100 = 80 %



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OVERTURNING CALCULATIONS (Comb. Service)

- Overturning about Z-Z
Ext Moment Mz = 8.8 k-ft
Ext Shear Vx = 5.0 kip
Arm = 1.00 + 36.0 / 12 = 4.00 ft Moment = 5.0 * 4.00 = 20.0 k-ft
Ext Overturning moment = 8.8 + 20.0 = 28.8 k-ft
Int Moment Mz = 8.7 k-ft
Int Shear Vx = 4.9 kip
Arm = 1.00 + 36.0 / 12 = 4.00 ft Moment = 4.9 * 4.00 = 19.6 k-ft
Int Overturning moment = 8.7 + 19.6 = 28.3 k-ft
- Passive Force = 0.0 kip Arm = 1.20 ft Moment = 0.0 * 1.20 = 0.0 k-ft
Overturning moment Z-Z= 28.8 + 28.3 - Min (0, 37.5) * 1.8 - Min (0, 0.7) * (8.0 - 1.8) = 57.1 k-ft
- Resisting about Z-Z
Ext Vertical P = 37.5 kip
Arm = Edge = 1.75 ft Moment = 37.5 * 1.75 = 65.6 k-ft
Ext Pedestal = W * L * H * Density = 24.0 / 12 * 24.0 / 12 * 1.0 * 0.15 = 0.6 kip
Arm = Edge = 1.75 ft Moment = 0.6 * 1.75 = 1.1 k-ft
Int Vertical P = 0.7 kip
Arm = L - Edge - 8.00 - 1.75 = 6.25 ft Moment = 0.7 * 6.25 = 4.4 k-ft
Int Pedestal = W * L * H * Density = 24.0 / 12 * 24.0 / 12 * 1.0 * 0.15 = 0.6 kip
Arm = L - Edge = 8.00 - 1.75 = 6.25 ft Moment = 0.6 * 6.25 = 3.8 k-ft
Footing SW = (Wa + Wb) / 2 * L * Thick * Density = (8.00 + 8.00) / 2 * 8.00 * 36.0 / 12 * 0.15 = 28.8 kip
Arm = Centroid = 4.00 ft Moment = 28.8 * 4.00 = 115.2 k-ft
Soil cover = ((Wa + Wb) / 2 * L - Aa - Ab) * Soil * Density =
= ((8.00 + 8.00) / 2 * 8.00 - 24.0 / 12 * 24.0 / 12 - 24.0 / 12 * 24.0 / 12) * 1.00 * 120 = 6.7 kip
Arm = Centroid = 4.00 ft Moment = 6.7 * 4.00 = 26.9 k-ft
- Resisting moment Z-Z = 65.6 + 1.1 + 4.4 + 3.8 + 115.2 + 26.9 = 216.9 k-ft
- Overturning safety factor Z-Z = $\frac{\text{Resisting moment}}{\text{Overturning moment}} = \frac{216.9}{57.1} = 3.80 > 1.5$ OK

SLIDING CALCULATIONS (Comb. Service)

private friction angle = 28 deg (assumed) Active coefficient ka = 0.36
Passive coefficient kp = 1 / ka = 1 / 0.36 = 2.77
Pressure at mid-depth = kp * Density * (Cover + Thick / 2) = 2.77 * 120 / 1000 * (1.00 + 36.0 / 12 / 2) = 0.83 ksf
Passive force = Pressure * Thick * Width = 0.83 * 36.0 / 12 * 8.00 = 19.9 kip
Friction force = Resisting force * Friction coeff. = Max (0, 74.9 * 0.45) = 33.7 kip
Use 100% of Passive + 100% of Friction for sliding resistance
Sliding safety factor = $\frac{\text{Passive force + Friction}}{\text{Horizontal load}} = \frac{1.00 * 19.9 + 1.00 * 33.7}{5.0 + 4.9} = 5.42 > 1.50$ OK

UPLIFT CALCULATIONS (Comb. Service)

Uplift safety factor = $\frac{\text{Pedestal + Footing + Cover - Buoyancy}}{\text{Uplift load}} = \frac{0.6 + 0.6 + 28.8 + 6.7 - 0.0}{0.0 + 0.0} = 99.99 > 1.00$ OK

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ONE-WAY SHEAR CALCULATIONS (Comb. Factored)

Concrete f'c = 5.0 ksi Steel fy = 60.0 ksi Soil density = 120 pcf

d Top X-dir = Thick - Cover - X-diameter / 2 = 36.0 - 3.0 - 0.8 / 2 = 32.6 in

d Bot X-dir = Thick - Cover - X-diameter / 2 = 36.0 - 3.0 - 0.8 / 2 = 32.6 in

d Top Z-dir = Thick - Cover - X-diameter - Z-diameter / 2 = 36.0 - 3.0 - 0.8 - 0.8 / 2 = 31.9 in

d Bot Z-dir = Thick - Cover - X-diameter - Z-diameter / 2 = 36.0 - 3.0 - 0.8 - 0.8 / 2 = 31.9 in

- At exterior column

-ϕVcx = 2 * φ * √(f'c) * Width * d / 1000 = 2 * 0.75 * √(5000) * 8.00 * 12 * 32.3 / 1000 = 328.4 kip ACI Eq. (11-3)

+ϕVcx = 2 * φ * √(f'c) * Width * d / 1000 = 2 * 0.75 * √(5000) * 8.00 * 12 * 32.3 / 1000 = 328.4 kip

Vux (- Side) = Bearing reaction under critical area = 0.0 kip < 328.4 kip OK

Vux (+ Side) = Bearing reaction under critical area = 35.3 kip < 328.4 kip OK

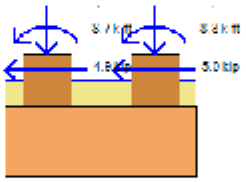
- At interior column

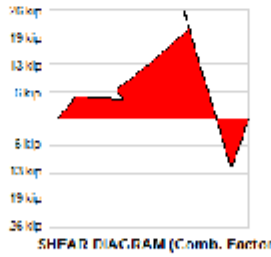
-ϕVcx = 2 * φ * √(f'c) * Width * d / 1000 = 2 * 0.75 * √(5000) * 8.00 * 12 * 32.3 / 1000 = 328.4 kip ACI Eq. (11-3)

+ϕVcx = 2 * φ * √(f'c) * Width * d / 1000 = 2 * 0.75 * √(5000) * 8.00 * 12 * 32.3 / 1000 = 328.4 kip

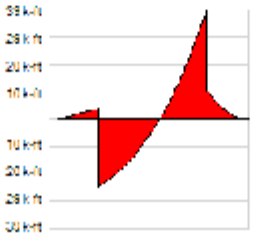
Vux (- Side) = Bearing reaction under critical area = 7.3 kip < 328.4 kip OK

Vux (+ Side) = Bearing reaction under critical area = 15.1 kip < 328.4 kip OK





SHEAR DIAGRAM (Comb. Factored)



MOMENT DIAGRAM (Comb. Factored)

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FLEXURE CALCULATIONS (Comb. Factored)

- At exterior column

Eff. Length = Lp = Lpd + c + Min (c, Edge) = 24.0 + 31.9 + Min (31.9, 1.75 * 12) = 76.9 in

Footing width = (Ae - Wwall / 2 * Edge) / Ae = (8.00 - 8.00) / 8.00 * 1.75 + 8.00 = 8.00 ft

Eff. width Wz = Wz / 2 - Wwall / 2 = Max (0, 8.00 / 2 - 24.0 / 12 / 2) = 3.00 ft

Plain ϕMnx = ϕ * ϕ * √(f'c) * Le * fr / 6 = 5 * 0.55 * √(5000) * 76.9 / 12 * 36.0² / 6 / 1000 = 269.1 k-ft — ACI Eq. (22-2)

Use 12.5.3.3 Bars (T) — ρ = As / Le / d = 5.3 / (76.9 * 31.9) = 0.0022 — q = 0.0022 * 60 / 5.0 = 0.026

Bending strength ϕMn = ϕ * f'c * d² * fy * q * (1 - 0.59 * q) — ACI 10.2.7

ϕMnx top = 0.90 * 76.9 * 31.9² * 5.0 * 0.026 * (1 - 0.59 * 0.026) = 745.8 k-ft

Mux top = (DS Reg) * Wz² / 2 * f'c = Max (0, 0.7 - 1.1) * 3.00² / 2 * 76.9 / 12 = 0.0 k-ft < 745.8 k-ft OK

Z-As min = 0.0018 * Le * Thick = 0.0018 * 76.88 * 36.0 = 5.0 in² < 5.3 in² OK

Z-Cover factor = Min (2.5, (Cover + db / 2 Spacing / 2) / db) = Min (2.5, (3.0 + 0.75 / 2, 7.0 / 2) / 0.75) = 2.5

Straight Z-Ld top = Max (12.0, 3 / 40 * fy / (f'c)½ * Bars * Location / Cover * db * ratio) — ACI Eq. (12-1)

Z-Ld top = Max (12.0, 3 / 40 * 60.0 * 1000 / (5000)½ * 0.8 * 1.3 / 2.5 * 0.75 * 0.00) = 12.0 in

Z / db top = 0.02 * fy / (f'c)½ * db * 0.7 = Max (6, 0.02 * 60.0 * 1000 / (5000)½ * 0.75 * 0.7 * 0.00) = 6.0 in — ACI 12.5

+Z Ld provided = (Width - Col) / 2 - Cover = 8.00 * 12 / 2 - 24.0 / 2 - 3.0 = 33.0 in > 12.0 in OK

Use 12.5.3.3 Bars (C) — ρ = As / Le / d = 5.3 / (76.9 * 31.9) = 0.0022 — q = 0.0022 * 60 / 5.0 = 0.026

Bending strength ϕMn = ϕ * f'c * d² * fy * q * (1 - 0.59 * q) — ACI 10.2.7

ϕMnx bot = 0.90 * 76.9 * 31.9² * 5.0 * 0.026 * (1 - 0.59 * 0.026) = 745.8 k-ft

Mux bot = (DS Reg) * Wz² / 2 * f'c = Max (0, 0.7 - 1.1) * 3.00² / 2 * 76.9 / 12 = 12.9 k-ft < 745.8 k-ft OK

Z-As min = 0.0018 * Le * Thick = 0.0018 * 76.88 * 36.0 = 5.0 in² < 5.3 in² OK

Z-Cover factor = Min (2.5, (Cover + db / 2 Spacing / 2) / db) = Min (2.5, (3.0 + 0.75 / 2, 7.0 / 2) / 0.75) = 2.5

Straight Z-Ld bot = Max (12.0, 3 / 40 * fy / (f'c)½ * Bars * Location / Cover * db * ratio) — ACI Eq. (12-1)

Z-Ld bot = Max (12.0, 3 / 40 * 60.0 * 1000 / (5000)½ * 0.8 * 0.0 / 2.5 * 0.75 * 0.02) = 12.0 in

Z / db bot = 0.02 * fy / (f'c)½ * db * 0.7 = Max (6, 0.02 * 60.0 * 1000 / (5000)½ * 0.75 * 0.7 * 0.02) = 6.0 in — ACI 12.5

+Z Ld provided = (Width - Col) / 2 - Cover = 8.00 * 12 / 2 - 24.0 / 2 - 3.0 = 33.0 in > 12.0 in OK

- At interior column

Eff. Length = Lp = Lpd + c + Min (c, Edge) = 24.0 + 31.9 + Min (31.9, 1.75 * 12) = 76.9 in

Footing width = (Ae - Wwall / 2 * Edge) / Ae = (8.00 - 8.00) / 8.00 * 1.75 + 8.00 = 8.00 ft

Eff. width Wz = Wz / 2 - Wwall / 2 = Max (0, 8.00 / 2 - 24.0 / 12 / 2) = 3.00 ft

Plain ϕMnx = ϕ * ϕ * √(f'c) * Le * fr / 6 = 5 * 0.55 * √(5000) * 76.9 / 12 * 36.0² / 6 / 1000 = 269.1 k-ft — ACI Eq. (22-2)

Use 12.5.3.3 Bars (T) — ρ = As / Le / d = 5.3 / (76.9 * 31.9) = 0.0022 — q = 0.0022 * 60 / 5.0 = 0.026

Bending strength ϕMn = ϕ * f'c * d² * fy * q * (1 - 0.59 * q) — ACI 10.2.7

ϕMnx top = 0.90 * 76.9 * 31.9² * 5.0 * 0.026 * (1 - 0.59 * 0.026) = 745.8 k-ft

Mux top = (DS Reg) * Wz² / 2 * f'c = Max (0, 0.7 - 1.1) * 3.00² / 2 * 76.9 / 12 = 0.0 k-ft < 745.8 k-ft OK

Z-As min = 0.0018 * Le * Thick = 0.0018 * 76.88 * 36.0 = 5.0 in² < 5.3 in² OK

Z-Cover factor = Min (2.5, (Cover + db / 2 Spacing / 2) / db) = Min (2.5, (3.0 + 0.75 / 2, 7.0 / 2) / 0.75) = 2.5

Straight Z-Ld top = Max (12.0, 3 / 40 * fy / (f'c)½ * Bars * Location / Cover * db * ratio) — ACI Eq. (12-1)

Z-Ld top = Max (12.0, 3 / 40 * 60.0 * 1000 / (5000)½ * 0.8 * 1.3 / 2.5 * 0.75 * 0.00) = 12.0 in

Z / db top = 0.02 * fy / (f'c)½ * db * 0.7 = Max (6, 0.02 * 60.0 * 1000 / (5000)½ * 0.75 * 0.7 * 0.00) = 6.0 in — ACI 12.5

+Z Ld provided = (Width - Col) / 2 - Cover = 8.00 * 12 / 2 - 24.0 / 2 - 3.0 = 33.0 in > 12.0 in OK

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Use 12 #8 Z Bars (C) ρ = As / Le / d = 5.3 / (76.9 * 31.9) = 0.0022 q = 0.0022 * 60 / 5.0 = 0.026

Bending strength $\phi Mn = \phi * f'c * a' * By * a * (1 - 0.59 * a)$ ACI 10.2.7

ϕMnx bot = 0.90 * 76.9 * 31.9² * 5.0 * 0.026 * (1 - 0.59 * 0.026) = 745.8 k-ft

Mux bot = (DS Reg)² * Wc² / 2 * Lc = Max (0, 0.7 - 1.1) * 3.00² / 2 * 76.9 / 12 = 21.5 k-ft < 745.8 k-ft OK

Z-As min = 0.0018 * Le * Thick = 0.0018 * 76.88 * 36.0 = 5.0 in² < 5.3 in² OK

Z-Cover factor = Min (2.5, #Conn + db / 2 Spacing / 2, / db) = Min (2.5, (3.0 + 0.75 / 2, 7.0 / 2) / 0.75) = 2.5

Straight Z-Ld bot = Max (12.0, fy / 40 * (psi / sqrt(f'c)) * Bar Location / Cover * db * ratio) ACI Eq. (12-1)

Z-Ld bot = Max (12.0, 3 / 40 * 60.0 * 1000 / (5000)½ * 0.8 * 0.0 / 2.5 * 0.75 * 0.03) = 12.0 in

Z Hook bot = 0.02 * fy / sqrt(f'c) * db * 0.7 Max (6, 0.02 * 60.0 * 1000 / (5000)½ * 0.75 * 0.7 * 0.03) = 6.0 in ACI 12.5

+Z Ld provided = (Width - Col) / 2 - Cover = 8.00 * 12 / 2 - 24.0 / 2 - 3.0 = 33.0 in > 12.0 in OK

- X-reinf

Use 12 #8 Top Bars ρ = As / b / d = 5.3 / (8.00 * 12 * 32.6) = 0.0017 q = 0.0017 * 60 / 5.0 = 0.020

Use 12 #8 Bot Bars ρ = As / b / d = 5.3 / (8.00 * 12 * 32.6) = 0.0017 q = 0.0017 * 60 / 5.0 = 0.020

Bending strength $\phi Mn = \phi * b * d^2 * f'c * q * (1 - 0.59 * q)$ ACI 10.2.7

ϕMn Top = 0.90 * 8.00 * 12 * 32.6² * 5.0 * 0.020 * (1 - 0.59 * 0.020) = -765.9 k-ft

ϕMn Bot = 0.90 * 8.00 * 12 * 32.6² * 5.0 * 0.020 * (1 - 0.59 * 0.020) = 765.9 k-ft

- From the moment diagram,

Max. Negative Mu = -24.1 k-ft < -765.9 k-ft OK

Max. Positive Mu = 39.3 k-ft < 765.9 k-ft OK

As min = Min (4/3 * As req, Max (0.2, 0.003 * f'c / fy * b * d)) ACI 10.3

As min Top = Min (4/3 * 0.2, Max (0.2, 0.003 * √5000) / 60 * 8.00 * 12 * 32.6) = 0.2 in² < 5.3 in² OK

As min Bot = Min (4/3 * 0.3, Max (0.2, 0.003 * √5000) / 60 * 8.00 * 12 * 32.6) = 0.4 in² < 5.3 in² OK

PUNCHING SHEAR CALCULATIONS (Comb. Factored)

- At exterior column

X-Edge = Edge / 2 Offset Col / 2 = 1.75 * 12 - 24.0 / 2 = 9.0 in αsx = 10

Z-Edge = d / 2 = 32.3 / 2 = 16.1 in αsz = 20

αs = αsx / αsz = 10 + 20 = 30 Col type = Edge β = L / W = 24.0 / 24.0 = 1.00 ACI 11.11.2.1

Perimeter bo = αsx / 10 * (L + d / 2 + X Edge) + αsz / 10 * (W + d / 2 + Z Edge) ACI 11.11.1.2

bo = 20 / 10 * (24.0 + 32.3 / 2 + 9.0) + 20 / 10 * (24.0 + 32.3 / 2 + 16.1) = 154.5 in

Area Ao = (L + d / 2 + X Edge) * (W + d / 2 + Z Edge) (24.0 + 32.3 / 2 + 9.0) * (24.0 + 32.3 / 2 + 16.1) = 2763.3 in²

$\phi Vc = \phi * Min (2 + 4 / \beta, \alpha s * d / bo + 2, 4) * \sqrt{f'c}$ ACI 11.11.2.1

ϕVc = 0.75 * Min (2 + 4 / 1.00, 30 * 32.3 / 154.5 + 2, 4) * √(5000) = 212.1 psi

Punching force F = P + Pedestal + Area * Thick * Density Reqmt

F = 0.7 + 0.7 + 0 * 2763.3 / 144 * 36.0 / 12 * 0.15 - 18.9 = -5.0 kip

b1 = L + d / 2 + X Edge = 24.0 + 32.3 / 2 + 9.0 = 49.1 in b2 = W + d / 2 + Z Edge = 24.0 + 32.3 / 2 + 16.1 = 56.3 in

$\gamma vx \text{ factor} = 1 - \frac{1}{1 + (2/3)\sqrt{(b2 / b1)}} = 1 - \frac{1}{1 + (2/3)\sqrt{(56.3 / 49.1)}} = 0.42$ ACI Eq. (11-37)

$\gamma vz \text{ factor} = 1 - \frac{1}{1 + (2/3)\sqrt{(b1 / b2)}} = 1 - \frac{1}{1 + (2/3)\sqrt{(49.1 / 56.3)}} = 0.38$ ACI Eq. (13-1)

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X2z = b1^2 / (2 * b1 + b2) = 49.1² / (2 * 49.1 + 56.3) = 15.6 in X2x = b2 / 2 = 56.3 / 2 = 28.1 in

Jcz = b1 * d³ / 6 + b1³ * d / 6 + 2 * b1 * d * (b1 / 2 - X2z)² + b2 * d * X2z² ACI R11.11.7.2

Jcz = 49.1 * 32.3³ / 6 + 49.1³ * 32.3 / 6 + 2 * 49.1 * 32.3 * (49.1 / 2 * 15.6)² + 56.3 * 32.3 * 15.6² = 1607828 in⁴

Jcx = b2 * d³ / 12 + b2³ * d / 12 + 2 * b1 * d * (b2 / 2)² ACI R11.11.7.2

Jcx = 56.3 * 32.3³ / 12 + 2 * 49.1 * 32.3 * (56.3 / 2)² = 3141928 in⁴

Stress due to P = P / (bo * d) * 1000 = -5.0 / (154.5 * 32.3) * 1000 = 1.0 psi

Stress due to Mz = γvz * (1 - AT) * M * X2z / Jcz = 0.42 * 28.3 * 12 * 15.6 / 1607828 * 1000 = 0.4 psi

Punching stress = P-stress + Mz-stress = 1.0 + 0.4 = 1.4 psi < 212.1 psi OK

At interior column

X-Edge = Edge / 2 - Offset - Col / 2 = 1.75 * 12 - 24.0 / 2 = 9.0 in αsx = 10

Z-Edge = d / 2 = 32.3 / 2 = 16.1 in αsz = 20

αs = αsx + αsz = 10 + 20 = 30 Col type = Edge β = L / W = 24.0 / 24.0 = 1.00 ACI 11.11.2.1

Perimeter bo = αsz / 10 * (L + d / 2 + X-Edge) + αsx / 10 * (W + d / 2 + Z-Edge) ACI 11.11.1.2

bo = 20 / 10 * (24.0 + 32.3 / 2 + 9.0) + 20 / 10 * (24.0 + 32.3 / 2 + 16.1) = 154.5 in

Area Aco = (L + d / 2 + X-Edge) * (W + d / 2 + Z-Edge) = (24.0 + 32.3 / 2 + 9.0) * (24.0 + 32.3 / 2 + 16.1) = 2763.3 in²

ϕVc = ϕ * Min(2 + 4 / β, αs * d / bo + 2, 4) * √(f'c) ACI 11.11.2.1

ϕVc = 0.75 * Min (2 + 4 / 1.00, 30 * 32.3 / 154.5 + 2, 4) * √(5000) = 212.1 psi

Punching force F = P + Pedestal + Area * Thick * Density - Bearing

F = 37.5 + 0.7 + 0 * 2763.3 / 144 * 36.0 / 12 * 0.15 - 30.4 = 20.3 kip

b1 = L + d / 2 + X-Edge = 24.0 + 32.3 / 2 + 9.0 = 49.1 in b2 = W + d / 2 + Z-Edge = 24.0 + 32.3 / 2 + 16.1 = 56.3 in

$\gamma vx \text{ factor} = 1 - \frac{1}{1 + (2/3)\sqrt{(b2 / b1)}} = 1 - \frac{1}{1 + (2/3)\sqrt{(56.3 / 49.1)}} = 0.42$ ACI Eq. (11-37)

$\gamma vz \text{ factor} = 1 - \frac{1}{1 + (2/3)\sqrt{(b1 / b2)}} = 1 - \frac{1}{1 + (2/3)\sqrt{(49.1 / 56.3)}} = 0.38$ ACI Eq. (13-1)

X2z = b1^2 / (2 * b1 + b2) = 49.1² / (2 * 49.1 + 56.3) = 15.6 in X2x = b2 / 2 = 56.3 / 2 = 28.1 in

Jcz = b1 * d³ / 6 + b1³ * d / 6 + 2 * b1 * d * (b1 / 2 - X2z)² + b2 * d * X2z² ACI R11.11.7.2

Jcz = 49.1 * 32.3³ / 6 + 49.1³ * 32.3 / 6 + 2 * 49.1 * 32.3 * (49.1 / 2 * 15.6)² + 56.3 * 32.3 * 15.6² = 1607828 in⁴

Jcx = b2 * d³ / 12 + b2³ * d / 12 + 2 * b1 * d * (b2 / 2)² ACI R11.11.7.2

Jcx = 56.3 * 32.3³ / 12 + 2 * 49.1 * 32.3 * (56.3 / 2)² = 3141928 in⁴

Stress due to P = P / (bo * d) * 1000 = 20.3 / (154.5 * 32.3) * 1000 = 4.1 psi

Stress due to Mz = γvz * (1 - AT) * M * X2z / Jcz = 0.42 * 28.8 * 12 * 15.6 / 1607828 * 1000 = 0.4 psi

Punching stress = P-stress + Mz-stress = 4.1 + 0.4 = 4.5 psi < 212.1 psi OK

DESIGN CODES

Concrete Design	ACI 318-11
Load Combinations	User-defined

MATERIALS

	Columns	Footing	
Concrete f'c	5.0	5.0	ksi
Reinf. Steel fy	60.0	60.0	ksi
Soil Cover Density		120.0	pcf

Cueto Engineering Project: Railcar Platform Page # ___
Engineer: NAC 8/18/2017
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ASDIP Foundation 3.2.2 **COMBINED FOOTING DESIGN** *www.asdipsoft.com*

LOAD TRANSFER CALCULATIONS (Comb. Factored)

- At exterior column

Area $A1 = col\ L * col\ W$ = 24.0 * 24.0 = 576.0 in²

Sx = $col\ W * col\ L^2 / 6$ = 24.0 * 24.0² / 6 = 2304.0 in³

Bearing $Pbu = P / A1 + Mz / Sx$ = 0.1 / 576.0 + 28.3 * 12 / 2304.0 = 0.1 ksi

Min edge = Min (Edge - col L / 2, W / 2 - col W / 2)

Min edge = Min (1.75 * 12 - 24.0 / 2, 8.00 * 12 / 2 - 24.0 / 2) = 9.0 in

Area $A2 = (col\ L + 2 * Min\ edge) * (col\ W + 2 * Min\ edge)$ ACI R10.14.1

A2 = (24.0 + 2 * 9.0) * (24.0 + 2 * 9.0) = 1764.0 in²

Footing $\phi Pnc = \phi * 0.85 * fc * Min[2, \sqrt{(A2 / A1)}]$ =0.65 * 0.85 * 5.0 * Min [2, √(1764.0 / 576.0)] = 4.8 ksi

Footing $\phi Pns = \phi * As * Fy / A1$ = 0.65 * 3.52 * 60.0 / 576.0 = 0.2 ksi ACI 10.14.1

Footing bearing $\phi Pn = \phi Pnc + \phi Pns$ = 4.8 + 0.2 = 5.1 ksi > 0.1 psi OK

Column $\phi Pnc = \phi * 0.85 * fc$ = 0.65 * 0.85 * 5.0 = 2.8 ksi

Column $\phi Pns = \phi * As * Fy / A1$ = 0.65 * 3.52 * 60.0 / 576.0 = 0.2 ksi ACI 10.14.1

Column bearing $\phi Pn = \phi Pnc + \phi Pns$ = 2.8 + 0.2 = 3.0 ksi > 0.1 psi OK

Shear friction $\phi Vn = \phi * As * Fy * \mu$ =0.75 * 3.52 * 60.0 * 0.6 = 95.0 kip ACI Eq (11-25)

Shear Vu = 0.0 kip < 95.0 kip OK

Straight $Ld = Max(12.0, 3 / 40 * fy / (fc)^{½} * Size / (Cover + c_s * ratio)$ ACI Eq. (12-1)

Ld = Max (12.0, 3 / 40 * 60.0 * 1000 / (5000)^½ * 0.8 / 2.5 * 0.75 * 0.08) = 12.0 in

Hooked $Ldh = 0.02 * fy / (fc)^{½} * db * 0.7$ = 0.02 * 60.0 * 1000 / (5000)^½ * 0.75 * 0.7 * 0.08 = 6.0 in ACI 12.5

Ld provided = Pedestal height - Cover = 1.00 * 12 - 3.0 = 24.0 in > 12.0 in OK

Ldh provided = Footing thickness - Cover = 36.00 - 3.0 = 33.0 in > 6.0 in OK

- At interior column

Area $A1 = col\ L * col\ W$ = 24.0 * 24.0 = 576.0 in²

Sx = $col\ W * col\ L^2 / 6$ =24.0 * 24.0² / 6 = 2304.0 in³

Bearing $Pbu = P / A1 + Mz / Sx$ = 0.1 / 576.0 + 28.8 * 12 / 2304.0 = 0.1 ksi

Min edge = Min (Edge - col L / 2, W / 2 - col W / 2)

Min edge = Min (1.75 * 12 - 24.0 / 2, 8.00 * 12 / 2 - 24.0 / 2) = 9.0 in

Area $A2 = (col\ L + 2 * Min\ edge) * (col\ W + 2 * Min\ edge)$ ACI R10.14.1

A2 = (24.0 + 2 * 9.0) * (24.0 + 2 * 9.0) = 1764.0 in²

Footing $\phi Pnc = \phi * 0.85 * fc * Min[2, \sqrt{(A2 / A1)}]$ =0.65 * 0.85 * 5.0 * Min [2, √(1764.0 / 576.0)] = 4.8 ksi

Footing $\phi Pns = \phi * As * Fy / A1$ = 0.65 * 3.52 * 60.0 / 576.0 = 0.2 ksi ACI 10.14.1

Footing bearing $\phi Pn = \phi Pnc + \phi Pns$ = 4.8 + 0.2 = 5.1 ksi > 0.1 psi OK

Column $\phi Pnc = \phi * 0.85 * fc$ = 0.65 * 0.85 * 5.0 = 2.8 ksi

Column $\phi Pns = \phi * As * Fy / A1$ = 0.65 * 3.52 * 60.0 / 576.0 = 0.2 ksi ACI 10.14.1

Column bearing $\phi Pn = \phi Pnc + \phi Pns$ = 2.8 + 0.2 = 3.0 ksi > 0.1 psi OK

Shear friction $\phi Vn = \phi * As * Fy * \mu$ =0.75 * 3.52 * 60.0 * 0.6 = 95.0 kip ACI Eq (11-25)

Shear Vu = 0.0 kip < 95.0 kip OK

Straight $Ld = Max(12.0, 3 / 40 * fy / (fc)^{½} * Size / (Cover + c_s * ratio)$ ACI Eq. (12-1)

Ld = Max (12.0, 3 / 40 * 60.0 * 1000 / (5000)^½ * 0.8 / 2.5 * 0.75 * 0.07) = 12.0 in

Hooked $Ldh = 0.02 * fy / (fc)^{½} * db * 0.7$ = 0.02 * 60.0 * 1000 / (5000)^½ * 0.75 * 0.7 * 0.07 = 6.0 in ACI 12.5

Ld provided = Pedestal height - Cover = 1.00 * 12 - 3.0 = 24.0 in > 12.0 in OK

Ldh provided = Footing thickness - Cover = 36.00 - 3.0 = 33.0 in > 6.0 in OK

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ASDIP Foundation 3.2.2 **COMBINED FOOTING DESIGN** *www.asdipsoft.com*

COLUMN CALCULATIONS (Comb: Factored)

Concrete f'c = 5.0 ksi Max. strain = 0.0030
Young's Modulus Ec = 57 * (f'c * 1000)^½ = 57 * (5000)^½ = 4031 ksi ACI 8.5.1
Rupture fr = 7.5 * (f'c * 1000)^½ / 1000 = 7.5 * (5000)^½ / 1000 = 0.53 ksi ACI Eq. (9-10)
Steel fy = 60.0 ksi Es = 29000 ksi ACI 8.5.2

- Exterior column

Use 8 #8 Longitudinal Bars , As = 3.52 in², ρ = 0.006 Use Ties #3 d' = 3.8 in
As min = 0.005 * L * W = 0.005 * 24.0 * 24.0 = 2.88 in² < 3.52 in² OK ACI 15.8.2.1
Pedestal weight = 1.20 * W * L * H * Density = 1.20 * 24.0 / 12 * 24.0 / 12 * 1.0 * 0.15 = 0.7 kip
Axial Pu = 0.7 + 0.7 = 1.4 kip
Shear Vux = 4.9 k-ft
Moment Muz = 8.7 + 4.9 * 1.00 = 13.6 k-ft
By trial and error, neutral axis depth k = c / d = 0.11
Conc. force Fc = C = Sum (Fs) - Sum (fs * As) = -195.8 kip
Conc. moment Mc = Sum (Ms) = Sum (Fs * (h / 2 - di)) = 180.2 k-ft
Nominal flexural strength Mn = Ms + Mc = 0.0 + 180.2 = 180.2 k-ft
ϕ-factor slope = (0.65 - 0.90) / (0.65 * Pn (balanced) - 0.9 * Pn (Es = 0.005))
ϕ-factor slope = (0.65 - 0.90) / (0.65 * 1144.6 - 0.9 * 663.3) = -0.0017 ACI 9.3.2.2
ϕ-factor = Min (0.9, Max (0.65, slope * (Pu - 0.9 * Pn (Es = 0.005)) + 0.9))
ϕ-factor = Min (0.9, Max (0.65, -0.0017 * (1.4 - 0.9 * 663.3) + 0.9)) = 0.90
Axial strength Pn = 0.8 * 0.85 * f'c * (Ag - As) + fy * As = 0.8 * 0.85 * 5.0 * (576 - 3.5) + 60 * 3.5 = 2113.3 kip
Design flexural strength ϕMn = 0.90 * 180.2 = 162.2 k-ft ACI 9.3.2.1
Strength ratio = Max (Pu / ϕPn, Mu / ϕMn) = Max (1.4 / (0.65 * 2113.3), 13.6 / 162.2) = 0.08 < 1.0 OK

- Interior column

Use 8 #8 Longitudinal Bars , As = 3.52 in², ρ = 0.006 Use Ties #3 d' = 3.8 in
As min = 0.005 * L * W = 0.005 * 24.0 * 24.0 = 2.88 in² < 3.52 in² OK ACI 15.8.2.1
Pedestal weight = 1.20 * W * L * H * Density = 1.20 * 24.0 / 12 * 24.0 / 12 * 1.0 * 0.15 = 0.7 kip
Axial Pu = 37.5 + 0.7 = 38.2 kip
Shear Vux = 5.0 k-ft
Moment Muz = 8.8 + 5.0 * 1.00 = 13.8 k-ft
By trial and error, neutral axis depth k = c / d = 0.12
Conc. force Fc = C = Sum (Fs) - Sum (fs * As) = -220.3 kip
Conc. moment Mc = Sum (Ms) = Sum (Fs * (h / 2 - di)) = 200.5 k-ft
Nominal flexural strength Mn = Ms + Mc = 10.3 + 200.5 = 210.8 k-ft
ϕ-factor slope = (0.65 - 0.90) / (0.65 * Pn (balanced) - 0.9 * Pn (Es = 0.005))
ϕ-factor slope = (0.65 - 0.90) / (0.65 * 1144.6 - 0.9 * 663.3) = -0.0017 ACI 9.3.2.2
ϕ-factor = Min (0.9, Max (0.65, slope * (Pu - 0.9 * Pn (Es = 0.005)) + 0.9))
ϕ-factor = Min (0.9, Max (0.65, -0.0017 * (38.2 - 0.9 * 663.3) + 0.9)) = 0.90
Axial strength Pn = 0.8 * 0.85 * f'c * (Ag - As) + fy * As = 0.8 * 0.85 * 5.0 * (576 - 3.5) + 60 * 3.5 = 2113.3 kip
Design flexural strength ϕMn = 0.90 * 210.8 = 189.7 k-ft ACI 9.3.2.1
Strength ratio = Max (Pu / ϕPn, Mu / ϕMn) = Max (38.2 / (0.65 * 2113.3), 13.8 / 189.7) = 0.07 < 1.0 OK

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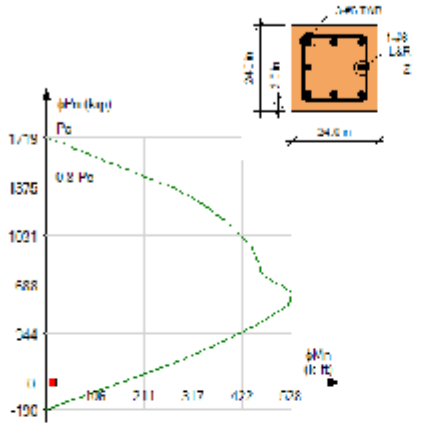
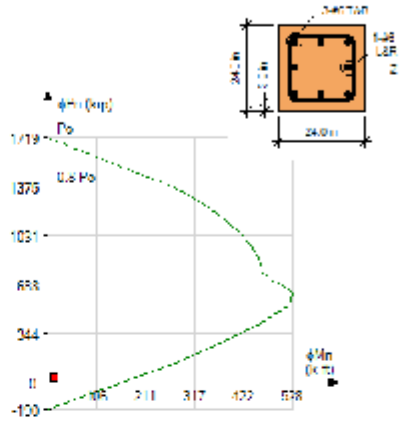
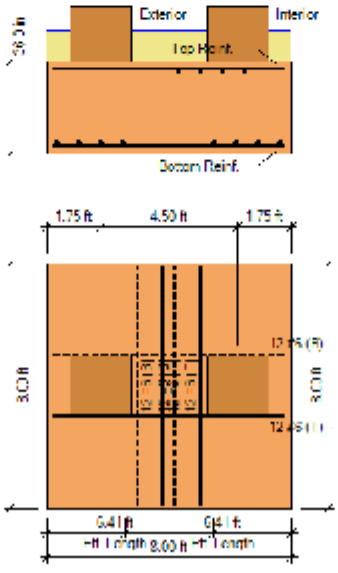
ASDIP Foundation 3.2.2 **COMBINED FOOTING DESIGN** *www.asdipsoft.com*

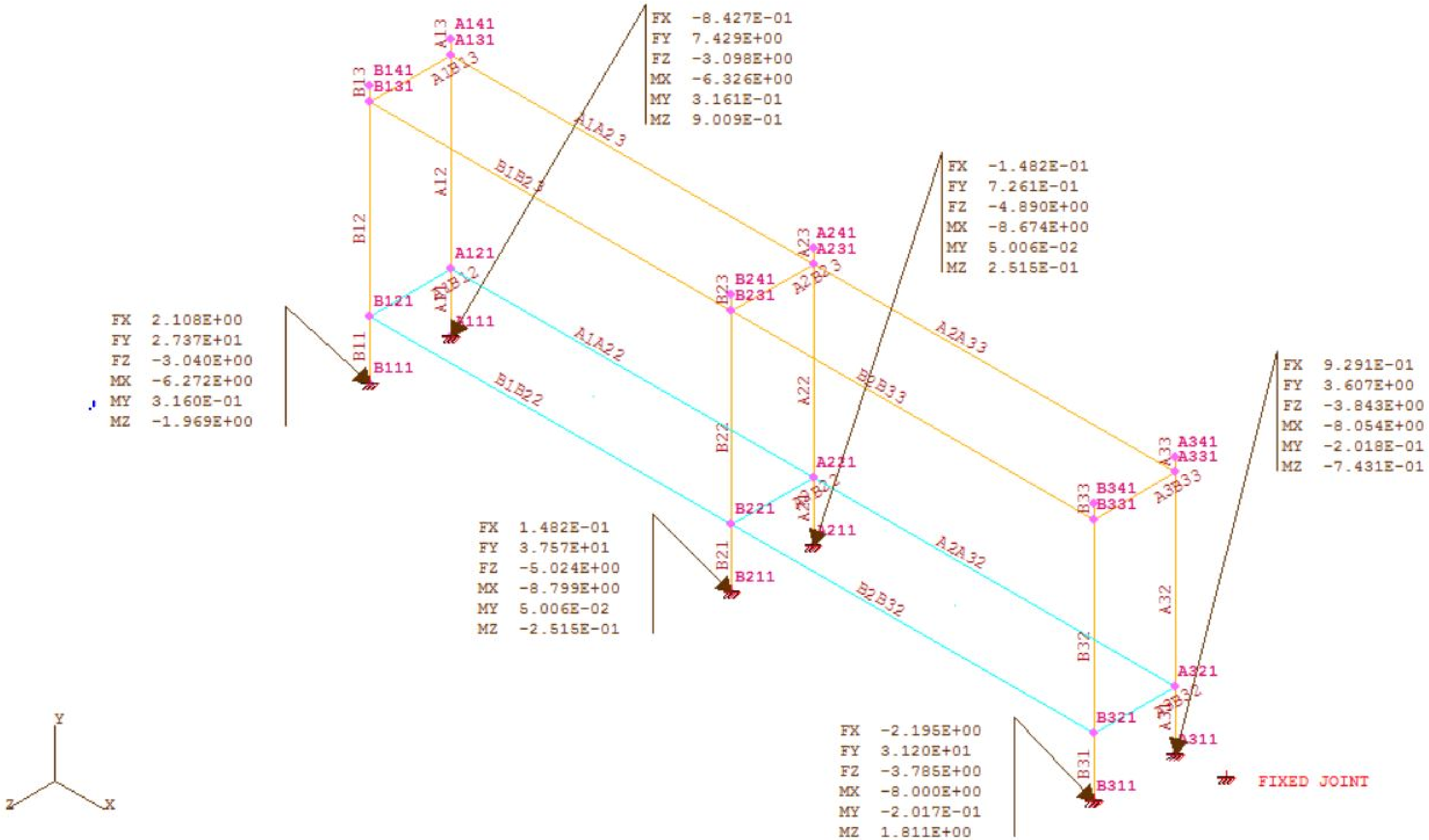


EXT. INTERACTION DIAGRAM
Controlling Load Comb: Factored



INT. INTERACTION DIAGRAM
Controlling Load Comb: Factored





FX -8.427E-01
FY 7.429E+00
FZ -3.098E+00
MX -6.326E+00
MY 3.161E-01
MZ 9.009E-01
FX -1.482E-01
FY 7.261E-01
FZ -4.890E+00
MX -8.674E+00
MY 5.006E-02
MZ 2.515E-01
FX 2.108E+00
FY 2.737E+01
FZ -3.040E+00
MX -6.272E+00
MY 3.160E-01
MZ -1.969E+00
FX 9.291E-01
FY 3.607E+00
FZ -3.843E+00
MX -8.054E+00
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FX 1.482E-01
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FZ -5.024E+00
MX -8.799E+00
MY 5.006E-02
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FX -2.195E+00
FY 3.120E+01
FZ -3.785E+00
MX -8.000E+00
MY -2.017E-01
MZ 1.811E+00
FIXED JOINT
Y
Z
X

From: Joseph.Papitto <joseph.papitto@kiewit.com>
Sent: Thursday, November 10, 2022 3:01 PM
To: Reyes, Elva (DTPW)
Cc: Clerk of the Board (COC); Ricardo.Cummings; Travis.Brilliant; Chantel.Mirecki
Subject: 412223-R1: Car Cleaner Platform Replacement - RFI

EMAIL RECEIVED FROM EXTERNAL SOURCE

Please review and respond to the following RFI's for Project 412223-R1: Car Cleaner Platform Replacement project:

1. Please confirm that both the Inspector General Audit Fee of ¼% and the User Access Program Fee of 2% apply to
2. This platform end stairways have different details on plan sheet A2.0 – 5 treads, versus plan sheet S-1.1 – 7 treads, which detail is correct?
3. Plan sheet A1.0 shows reusing the concrete slab at the south end of the new platform, plan sheet S-1.0, foundation plan, shows replacing the slab, which detail is correct?
4. The plans do not show any platform slab joint spacing, are contraction joints required, if so at what spacing?
5. Please confirm that column base anchor bolts are galvanized and not stainless steel.
6. Are there any as-built plans for the existing platform available?
7. If no as-built plans are available, what size should we assume the buried concrete footings to be removed are for bidding purposes?
8. Spec section 01 50 00, 4.01: Project Sign, says the sign is to be provided by DTPW, spec section 01 58 13, Project Construction Signs, says the contractor is to provide 2 construction signs, which spec is correct?
9. Is the contractor responsible for paying for a Project building permit, if so, what is the fee ?
10. Are special inspections to be paid for by the Contractor or by the County? Special Inspections Note 4 on plan sheet S-0.0, indicates the special inspector is hired by the County.

Please let me know if you need any further information regarding the above. Thank you.

Joe Papitto
Sr. Estimator
Kiewit Infrastucture South Co.
1580 Sawgrass Corporate Pkwy., Ste 300
Sunrise, FL 33323
954-835-2228, Cell: 954-205-4108

From: Luis Pasos <lpasos@tarafaconstruction.com>
Sent: Thursday, November 10, 2022 3:16 PM
To: Reyes, Elva (DTPW)
Cc: Clerk of the Board (COC); Jeovanni Tarafa
Subject: Car Cleaner Platform Replacement Pre-Bid Questions & Clarification No. 01
Attachments: Car Cleaner Platform Replacement - Questions & Clarifications No. 1.doc; Car Cleaner Platform Replacement - Questions & Clarifications No. 1.pdf

EMAIL RECEIVED FROM EXTERNAL SOURCE

Ref: Car Cleaner Platform Replacement
RPQ No.: 412223-R1

Attn: Ms. Elva Reyes,

Good afternoon. Attached to this email please find J.R.T.'s Bid Questions & Clarifications No. 01 for the Car Cleaner Platform Replacement project in both PDF and MS Word format.

Please provide us with responses to our questions. Thank you.

If you have any questions for us, please do not hesitate to contact our team at any time.

Regards,

Luis B. Pasos
Sr. Estimator

Luis B. Pasos
Sr. Estimator
J.R.T. Construction, Co.
3050 NW 77th Ct., Doral, FL 33122
O. 305.557.9911, Ext. 1009
F. 305.557.9922

J.R.T. CONSTRUCTION, CO.
GENERAL CONTRACTOR
3050 N.W. 77 Court, Doral, FL 33122 • Tel: 305-557-9911 • Fax: 305-557-9922

November 10, 2022

Miami Dade - Department of Transportation and Public Works
Capital Improvements Division
111 NW 1st Street, Suite 1410
Miami, FL 33128

SENT VIA E-MAIL
(4) Page(s) Total

Attn: Ms. Elva Reyes – Engineer 2 – reyesel@miamidade.gov

Re: Car Cleaner Platform Replacement
Project RPQ: No. 412223-R1
Project Location: 6601 N.W. 72nd Avenue, Miami

Subj: **Pre- Bid Questions & Clarifications No. 01**

Dear Ms. Reyes,

Herein below please find J.R.T. Construction, Co.'s Bid Questions & Clarifications for the above-referenced project.

1) Invitation to Bid document does provide your contact info to send RFI's and Bid questions but does not mention a deadline for submitting such questions. Please provide us with a final day for submitting Pre-Bid questions.

2) Special Provision to the Contract does mention in Article 20.0 the User Access Program. Please clarify and confirm if UAP 2% fees apply to this project.

3) Please clarify if Inspector General Audit Service Deduction of 0.25% apply to this project.

4) The General Conditions of the Contract, Item 7-E-1 regarding Permit fees states that "For payment of Permits, see Special Provisions", but Special Provisions do not mention if Permit Fees will be reimbursed to the Contractor or not. Please clarify if ALL Permit Fees are to be included in the Base Bid or if they will be reimbursed by Owner to Contractor.

5) Specification section 011100 Summary of Work, Article 1.4-D calls for a Contractors Field Office trailer to hold meetings (conference table with 8 chairs) as required. Please confirm Field Office with meeting conference table capabilities is a requirement. Please provide a Proposed Staging Location for the temporary field office trailer.

6) Specifications Section 014523 regarding Testing Laboratory Services, Article 1.01 states that "All Testing shall be made at the expense of the Contractor" so it is the responsibility of the Contractor to pay for MDC Independent Testing Laboratory Services. This Article conflicts with several Articles of the General Conditions of the Contract in which they call for the Owner to hire

an Independent Testing Lab, especially Article 7-C-1 which states that testing "will be made at the expense of the Owner by the project testing laboratory" . Please clarify if the Contractor is to include ALL testing, including Concrete Testing and Soil Testing (Proctors, densities, etc.) Services as part of the Base Bid.

7) Specification Section 01500 regarding Project Sign, Article 4.01 states that the Project Sign is to be supplied by DTPW and installed by the Contractor, but conflicts with Specification Section 015813, Article 1.1, which states that the Project Signs will be provided by the Contractor. Please clarify which instruction prevails.

8) Construction Safety Manual includes the MDT Security Requirements and mentions that all Contractors and personnel working at the site must be in possession of a photo ID card issued by MDT. If payment for ID is required, please provide the cost for the background checks and badge for each employee and subcontractors.

9) Plan and Documents do not provide the Proposed location (or locations) for the Staging area that will be required by the Contractor, where we can place trash dumpsters for debris removal, and temporary piles of removed/excavated materials for loading and hauling off-site, as this will greatly impact the Demolition operations required. Please provide a proposed location for a staging area(s) that would be acceptable for the continued operations of the Yard.

10) Plan Sheet D1.0 includes General Removal Note #2 and calls for the demolition and removal of the existing steel columns and concrete footings of the wood platform, but documents contain no information on the quantity of columns, quantity, size, and depth of footings. Are there individual concrete pads for each column? Please provide As-Built Plans for the existing wood platform showing quantities, the size and depth of all concrete footings to be removed.

11) Plan Sheet D1.0 includes pictures showing the existing steel columns are in close proximity to the existing rail wood sleepers to remain, and the existing concrete footings will be even closer and may extend partially under a portion of the existing wood sleepers. Has this possibility been explored at the time of design? Please provide results of any exploratory findings and existing dimensions regarding the locations of the existing footings to be removed and the proximity to the rail wood sleepers to remain.

12) Demolition plan Sheet D1.0 does not mention any existing electrical, plumbing, water or sewer lines serving or crossing the existing wood platform area. Please confirm there are no existing electrical, plumbing, water, or sewer, that needs relocations, demolition, or removals. If there are, please provide As-Built plans of all utilities within the proposed demolition areas.

13) Demolition plan Sheet D1.0 does show three existing drains/waste connections that are to remain under the platform but fails to show the underground pipes/lines routes serving such drains. Please provide As-Built plans of ALL existing utility lines crossing or serving the affected proposed Work Area.

14) Plan Sheet D1.0 includes pictures showing the existing wood platform to be made of Pressure Treated (PT) wood, which in some cases may have been treated with Arsenic or other hazardous materials and may require special handling and disposal procedures. Has the existing PT wood been tested for such materials? Please provide results of any testing on the PT wood to be removed.

15) If no testing has been done on the PT wood, will the Owner be providing testing before the start of the Contract? And if it turns out that the wood does require special handling or abatement, will this be considered an “unforeseen condition” and be subject to a change order for the added removal expenses? Please clarify how do you want us to proceed and define what should be included in the Base Bid.

16) Plan Sheet C2.0 includes section A/C2.0 and shows a 6” deep composite concrete slab for the new proposed platform, but Structural plan S-1.1 in sections A/S-1.0 and in Detail #1 calls for the proposed composite slab to be a 4” slab. Please clarify if Structural Plans instructions prevails.

17) Plan Sheet C-2.0 includes section A/C2.0 and shows the platform slab with a continuous steel angle running from column to column to support the slab, but Structural Plan S-1.1 calls for using a HSS 6”x6” steel tube to support the slab. Please clarify if Structural Plans instructions prevails.

18) Plan Sheet C2.0 includes Architectural Note C regarding the Metal Roofing, and it proposes to use a 22 ga metal roofing by American Buildings with a NOA #17-0501.05. Unfortunately, the referenced NOA has expired, and one of our roofing subs mentioned the manufacturer seems to NOT be working in extending this NOA for the 22 ga. structural roofing panels. Please provide Alternate manufacturer and Model for the required structural metal roofing panels, with a current NOA.

19) Plan Sheet C3.0 General Note #4 calls for the Contractor to obtain all permits “and pay all fees connected to his work”. Please clarify if Owner will reimburse the Contractor for all Permit Fees, or if all fees should be included in the Base Bid.

20) Plan Sheet A1.0 and A2.0 include notes calling for “all steel surfaces to be painted”, but Plan S-0.0 Structural Steel note #3 calls for all structural steel exposed to weather “Shall be Hot Dipped Galvanized”. Having Hot Dipped Galvanized steel members being attached using field welding will destroy the galvanized protection around the welded areas and will require extensive galvanized paint touch-ups, field applied. Please clarify which instruction is to prevail and indicate final finish on all exposed structural steel members.

21) Plan Sheet S-0.0 includes Concrete Note #6 and calls for the Owner to contract an Independent Testing Lab to perform all required concrete testing. Please confirm Owner will provide all concrete testing services, as mentioned in the General Conditions of he Contract, under Article 7-C-1.

22) Plan Sheet S-0.0 includes Foundation Note #7, and Earthwork Note #7 and #8, all calling for a Geotechnical Engineer to verify the Soil Conditions before installing any rebars or pouring any concrete, and to inspect the Soil Compaction during the earthwork. Please clarify if Owner will provide and pay for the services of the Geotechnical Engineer for all observations and Soil Certifications required.

23) Please confirm if Owner will also provide and pay for all Soil Testing for the earthwork, such as required Proctors, Densities, soil classifications, etc.

24) Plan Sheet S-1.1 showing the Typical Foundation Plan for each proposed spread footing to be an 8' wide by 8' long pad and section A/S-1.0 above, shows the depth of excavation required to be 4'-6" deep from the existing grade. The Specific Purpose Survey by J. Bonfill & Associates provided shows the distance between the existing rails to remain, to be 10.1' wide to what seems to be the steel tracks, and not considering that the wood sleepers encroach into the 10.1' distance from both sides. The footing design shown in plans will require an excavation to within inches (or extending under the rails due to angle of repose of the fill/soil material) from the existing steel tracks and to be 4'-6" deep and it may leave a portion the existing wood sleepers resting on air, above the excavation.

    We are concerned that the proposed 8' wide excavation width is intruding into the zone of influence of the load carried by the wood sleepers and that because the existing soil strata is made of fill (not rock) it may also cause cave-in of the existing fill layer under the wood sleepers to remain. Please advise if footing design can be revised to a lesser width and less depth or advise on how to re-design the proposed footings to prevent the excavations from encroaching into the existing wood sleepers' areas.

Your response to these issues will be greatly appreciated.

If you have any questions, please don't hesitate to contact me at any time.

Sincerely yours,
J.R.T. Construction, Co.

Luis B. Pasos
Chief Estimator

cc: Clerk of the Board: clerkbcc@miamidade.gov
cc: Jeovanni Tarafa: jtarafa@tarafaconstruction.com

From: Joseph.Papitto <joseph.papitto@kiewit.com>
Sent: Monday, November 14, 2022 2:54 PM
To: Reyes, Elva (DTPW)
Cc: Clerk of the Board (COC); Ricardo.Cummings; Travis.Brilliant; Chantel.Mirecki
Subject: 412223-R1: Car Cleaner Platform Replacement - RFI

EMAIL RECEIVED FROM EXTERNAL SOURCE

Please review and respond to the following RFI's for Project 412223-R1: Car Cleaner Platform Replacement project:

1. Plan sheet S-1.0 shows 34 platform gridlines, the civil and architectural plans show 32 gridlines, please clarify.
2. Will the Contractor be provided a staging area within the Lehman Yard or at a site nearby?
3. Please identify what the actual damages may be and the maximum cost per day of such damages referenced in Section 8 detailed below?
   RPQ No.: 412223-R1 Solicitation Documents (Page 209 of 516) – Section 8. Contract Time – F Liquidated Damages and Liquidated Indirect Costs 4) In the event the Contractor fails to perform any other covenant or condition (other than time-related) of this Contract relating to the Work, the Contractor shall become liable to the Owner for **any actual damages** which the Owner may sustain as a result of such failure on the part of the Contractor. The Owner reserves the right to retain these amounts from monies due the Contractor.
4. If someone is unable to make it to scheduled site visit, can they make arrangements to visit the site at a later date ?

Please let me know if you need any further information regarding the above. Thank you.

Joe Papitto
Sr. Estimator
Kiewit Infrastucture South Co.
1580 Sawgrass Corporate Pkwy., Ste 300
Sunrise, FL 33323
954-835-2228, Cell: 954-205-4108

From: Chantel.Mirecki <Chantel.Mirecki@kiewit.com>
Sent: Tuesday, November 22, 2022 1:54 PM
To: Reyes, Elva (DTPW)
Cc: Clerk of the Board (COC); Ricardo.Cummings; Travis.Brilliant; Joseph.Papitto
Subject: 412223-R1: Car Cleaner Platform Replacement - RFI

EMAIL RECEIVED FROM EXTERNAL SOURCE

Please review and respond to the following RFI for Project 412223-R1: Car Cleaner Platform Replacement Project:

Electrical Legend on Sheet E1.0 details NEMA 3R Junction Box (6”x6”x4) where Typical Electrical Detail D on Sheet E2.0 details (8”x8”x6”) – please clarify.

Thank you,

Chantel Mirecki, EIT
Estimator

Kiewit Infrastructure South Co.
1580 Sawgrass Corporate Parkway
Suite 300, Sunrise, FL 33323
Office: (954) 233-1023
Cell: (770) 371-3023

From: David Moran <dmoran@epic-consultants.com>
Sent: Wednesday, November 23, 2022 3:21 PM
To: Reyes, Elva (DTPW); Clerk of the Board (COC)
Cc: Marila Fernandez
Subject: 412223-R1

EMAIL RECEIVED FROM EXTERNAL SOURCE

Please respond:

1. Please specify the construction working hours. It was stated during the prebid meeting that construction working hours would be from 8:00 AM to 4:00 PM. Please confirm
2. Please confirm if the quality control manager can be the safety manager.
3. During excavation, dirt will be placed on the outside but next to the tracks. What distance should be keep from the tracks?
4. During the execution of new work, are we going to be permitted to leave material next the track if so what distance should we keep from the track or do we have to take all material on a daily basis back to the lay down area.

Thank you,

David Moran, P.E.

Principal

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From: Luis Pasos <lpasos@tarafaconstruction.com>
Sent: Tuesday, November 29, 2022 4:55 PM
To: Reyes, Elva (DTPW)
Cc: Clerk of the Board (COC); Jeovanni Tarafa
Subject: Car Cleaner Platform Replacement - Pre Bid Questions & Clarifications No. 02
Attachments: Car Cleaner Platform Replacement - Questions Clarifications No. 2.doc; Car Cleaner Platform Replacement - Questions Clarifications No. 2.pdf

Ref: Car Cleaner Platform Replacement
RPQ No.: 412223-R1

Attn: Ms. Elva Reyes,

Good afternoon. Attached to this email please find J.R.T.'s Bid Questions & Clarifications No. 02 for the Car Cleaner Platform Replacement project in both PDF and MS Word format.

Please provide us with responses to our questions. Thank you.

If you have any questions for us, please do not hesitate to contact our team at any time.

Regards,

Luis B. Pasos
Sr. Estimator

Luis B. Pasos
Sr. Estimator
J.R.T. Construction, Co.
3050 NW 77th Ct., Doral, FL 33122
O. 305.557.9911, Ext. 1009
F. 305.557.9922

J.R.T. CONSTRUCTION, CO.
GENERAL CONTRACTOR
3050 N.W. 77 Court, Doral, FL 33122 • Tel: 305-557-9911 • Fax: 305-557-9922

November 29, 2022

Miami Dade County
Department of Transportation and Public Works
Capital Improvements Division
111 NW 1st Street, Suite 1410
Miami, FL 33128

SENT VIA E-MAIL
(2) Page(s) Total

Attn: Ms. Elva Reyes – Engineer 2 – reyesel@miamidade.gov

Re: Car Cleaner Platform Replacement
Project RPQ: No. 412223-R1
Project Location: 6601 N.W. 72nd Avenue, Miami

Subj: **Pre- Bid Questions & Clarifications No. 02**

Dear Ms. Reyes,

Herein below please find J.R.T. Construction, Co.'s added Bid Questions & Clarifications for the above-referenced project.

1) Plan Sheet C1.0 and plan Sheet A1.0 (including the proposed Site Plan) both show the proposed new car cleaner platform to be built between Gridlines #1 thru #32, with a distance of 20' for each bay, but Structural plan S-1.0 shows the gridlines extending further to Gridline #34. Also, plan Sheet D1.0 has a note calling for phasing the project and mentions Phase 2 extending thru Gridline #38. Please clarify and confirm the gridline number that should be the end of the proposed scope of work for this project including the new car cleaner platform.

2) Plan Sheet A2.0 contains Section A/A2.0 and shows a distance of 11'-0" between the existing steel rails (adjacent to the platform on both sides), but such dimension is in conflict with Specific Purpose Survey prepared by J. Bonfill & Associates that shows the same dimension as 10.1'; almost an entire foot less. Please clarify which dimension is correct.

3) We would like the record to reflect that during the Site Visit after the Pre-Bid Meeting held on 10/17/2022, Contractors were not allowed to be within close proximity to the existing racks/rails for safety reasons. Therefore, Contractors were not able to take their own field measurements and perform their own field verifications. Consequently, Contractors will be required to rely on the dimensions and measurements provided to us in the Bid Documents and one the written responses to any Pre-bid Questions or RFI's that will be issued via Addendum.

4) Please provide distance the sleepers (or ties) extend from the steel track to the end of the ties. This dimension is not found on the plans.

5) Please provide the clear distance between the ends of ties on both sides of the platform. This dimension is not found on the plans.

6) The proposed civil plans seem to identify a proposed new drain sewer line. However, plan Sheet D1.0 (including the existing Site Plan) includes a note that states “waste connectors under platform are to remain. Protect during removal”. Please clarify if the intent is to protect an existing drain line? If so, please note that any waste connector drain lines running underground below the proposed new car platform will be interrupted and cut at the location of each new footing being excavated and built. Please clarify the intent of this note and what needs protection.

7) Plan Sheet S-1.1, Detail A/S1.0, shows an excavation depth for the proposed new footings of 4.5’ deep. As a result of this and due to the narrow work area and extreme proximity to the existing railway ties and tracks to remain, we are considering using sheet piling to maintain the existing soil under the existing tracks from caving in at the new footing locations. The Geotechnical Report included in the Bid Documents does NOT contain a Sheet Pile recommendation for the type and depth of Sheet Pile required to retain the existing soil under the existing tracks. Given the existing soil conditions identified in the Geotechnical Report, please have a Geotechnical Engineer provide recommendations for the Sheet pile type and depth required to retain the existing soil under the tracks (at the footing locations) as an Addendum to the existing Geotechnical Report.

8) As a follow up to the previous question, please advise if the Owner will approve and allow leaving any installed Sheet Pile (used to retain the existing earth under the existing tracks) in situ (or in place) after construction of the new footings for the new car cleaner platform is complete.

9) Please confirm the Contractor has wide discretion to use any means and methods the Contractor deems necessary for design and construction of the car platform footings in order to ensure the existing soil under the existing tracks does not cave in.

Your response to these issues will be greatly appreciated.

If you have any questions, please don’t hesitate to contact me at any time.

Sincerely yours,
J.R.T. Construction, Co.

Luis B. Pasos
Chief Estimator

cc: Clerk of the Board: clerkbcc@miamidade.gov
Jeovanni Tarafa: jtarafa@tarafaconstruction.com