Bridge Factors Factual Report Attachment 45 – FDOT Structures Design Office (SDO) electronic review and email comments on submittal phases for the signature pedestrian bridge

Miami, FL

HWY18MH009

(141 pages)

CO Structures Office Electronic Review Timeline			
Phase	**Component**	**ERC Submittal Create Date**	**Comments**
I (30%)	Preliminary Concept Drawings	3/8/16	
II (60%)	Foundations	5/10/16	Insufficient Submittal – Resubmittal Required
III (90%)	Substructure	6/15/16	Insufficient Submittal – Resubmittal Required
III (90%)	Walls	6/29/16	
III (90%)	Foundations	7/15/16	Resubmittal
III (90%)	Substructure	8/3/16	Resubmittal
IV (Final)	Foundation	9/15/16	
Review Meeting	Foundation, Substructure, Superstructure	9/15/16	
Review Meeting Follow-up Email and Attachments	Foundation, Substructure, Superstructure	9/16/16	
III (90%)	Superstructure	9/28/16	
IV (Final)	Substructure	10/17/16	
IV (Final)	Superstructure	2/14/17	

Submitta eport

Financial Projec	434688-1-58-01	Submital Type:	PLANS
Submittal Phase:	PHASE I	Submital Staff Type:	CONSULTANT
Recieved Date:	3/8/2016	Response Due Date:	3/25/2016
Grace Period:	0	District:	SIXTH
Status:	CLOSED	Create Date:	3/8/2016
Create User Id:	PD601MI	Last Update:	8/31/2016
		Last Update User Id:	KNKSARA

Description:

434688-1: FIU UNIVERSITY CITY PROSPERITY PROJ. ALONG SW 109 AVE & SR 90/SW 8 ST

Group: PRELIMINARY ENGINEERING
Phase Review Type: LAP Project
Status: Submitted
Phase Initiation Date: 2/29/2016
Comments Due Date: 3/14/2016
Days Allowed for Review: 15
Review Meeting: 3/25/2016 10:00 AM to 12:00 PM @ TBD If needed-Coordinate with FIU
Plans Format: Electronic
Comments: External Project Manager: Dwight Dempsey
E-mail: [redacted]
Section: Phase: 30% preliminary Design
Review Meeting will be schedule if needed
Design Criteria is FDOT
Work Program Construction Budget: $11,875,092
Production Date: DESIGN-BUILD

Threads:

No	Statu	Current Holder	Reference	Categories
-107	RESI	ACCEPTED	General and Shts L B-3:	STRUCTURES

Created By	Created On	Version	Delegate For
Thomas Andres	3/25/2016	1	

Comments 1 thru 22 below are for information only. No response is required. The comments are intended to assist in providing general feedback to the DBF.

1. General:
a. See CADD Manual, pg. 4-41 thru 4-47 for structures plans naming and numbering convention and sheet order.

http://www.dot.state.fl.us/ecso/downloads/publications/manual/CADDManual2015/Files/10.1.15/CADDManual2015.pdf

b. Include bridge geotechnical report and borings in next submittal.
c. Include Traffic Control Plans for SW 8th Street in next submittal.
d. Is the C/L Structure & PGL baseline tied-in via survey? Include project survey control sheets in next submittal.
e. Locate and show all existing utilities within the project limits in next submittal.

2. Sheet B-2:
a. Include a note for lightning protection design criteria. fib Bulletin No. 30 "Acceptance of Stay Cable Systems using Prestressing Steels", NFPA 70 (National Electric code) and NFPA 780 (Standard for the Installation of Lightning Protection Systems).
b. Expand "Screeding Deck Slab Note" to say: ...TO ENSURE A UNIFORM TEXTURE OF THE FINAL COMPLETED STRUCTURE." to ensure that the CIP and precast deck interfacing surfaces also meet finish requirements.
c. Rename "Deck Planing and Profilographing" note title to "Deck Finishing" since the short-bridge criteria will be used.
d. Note 4: If SIP Forms are permitted, the designer needs to include the dead load (forms and the weight of the concrete to fill the flutes) which were assumed in the design.
e. Future Bearing Replacement: Include a step to unbolt the bottom stay pipe connection (Detail B, Sheet B-16) prior to jacking span or incorporate Comment 11.c below.

f. Per, SDG 2.4.1.E, since bridge is higher than 75 ft. Evaluate gust factor per ASCE/SEI 7-05. Show gust factor G that was used in General Notes.

3. Sheet B-3:
a. See SDM Chapter 7 for PLAN AND ELEVATION DRAWING requirements.
b. Call-out the existing overhead utility. Is it to remain? Can it be shut down? Is this an electric line? If so, include voltage. Is the clearance the minimum distance or the vertical distance? Clarify.
c. Review strain-compatibility implications created by part of the continuous (for LL) structure being founded on deep foundations and part founded on spread footings. A

MANUEL FELICIANO 4/22/2016 1

(1) It is our understanding that these comments were provided for information only and no response is required at this time. These comments are intended to assist in progressing the DBF's concept to 90% plans.
(2) It is our understanding that these comments were provided for information only and no response is required at this time. These comments are intended to assist in progressing the DBF's concept to 90% plans.
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Thomas Andres 4/25/2016 1

Response Accepted & Comment Closed

No	Status	Current Holder	Reference	Categories
-108	RESPONSE ACCEPTED		Shts B-4 thru B-7:	STRUCTURES

Created By	Created On	Version	Delegate For
Thomas Andres	3/25/2016	1	

4. Sheet B-4:
a. Show cross slope on both sides of the section.
b. Gradual drainage pipe slopes will be difficult to maintain. Greater slopes would be self-cleaning. Also design-in sufficient longitudinal slope of canopy to avoid ponding water. Provide pipe cleanout details during final design and verify that 8 inch diameter pipe is sufficient.
c. Consider the following cross section shape related issues:
i. Add a large 2'-0" chamfer at canopy-web interfaces and at walkway-web interfaces to reduce the likelihood of cracking at the 90 degree corners.
ii. Review section for buckling of the unbraced compression flange (canopy).
iii. Review the shape of the canopy at the outer fibers– high compression will occur at the top two corners.
iv. The inset pipe in the bottom center of the walkway will likely create a weak point which will be a crack initiation point due to transverse post tensioning stresses. This is also an issue at the locations where the live end of the PT bar is at the bottom of the truss - if a recess anchor is used. See B-17, Detail 'A'. Also all diagonal Type B member anchors appear to conflict with the drainage pipe.
v. There is insufficient details of the walkway deck web interface and the canopy web interface where there is significant interfacing shear between the elements.

5. Sheet B-5:
a. Spread footing layouts do not match B-19 thru B-21.
b. See SDG 3.8 for spread footing requirements.
c. See SDM, Chapter 11 for foundation layout sheet requirements.
d. Show critical temporary walls which are required to construct pylon footing alongside SW 8th Street.
e. Include Roadway Plan Set which includes requirements for traffic control and pavement and striping restoration of SW 8th Street required to facilitate the Pylon footing construction under existing roadway.

6. Sheets B-6 and B-7: Bury top of footing a minimum of 3'-0" below finished ground per SDG 3.11.2.C.

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(4) It is our understanding that these comments were provided for information only and no response is required at this time. These comments are intended to assist in progressing the DBF's concept to 90% plans.
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Thomas Andres 4/25/2016 1

Response Accepted & Comment Closed

No	Status	Current Holder	Reference	Categories
109	RESPONSE ACCEPTED		B-8:	STRUCTURES

Created By	Created On	Version	Delegate For
Thomas Andres	3/25/2016	1	

7. Sheet B-8:
a. It is unclear why the 3" CIP vertical closure joint is required. Recommend maintaining a 2 ft. closure pour throughout. Issues with the 3" CIP vertical closure joint include:
i. Ability to consolidate grout/concrete in the 3" vertical gap.
ii. Ability to splice PT bar duct.
iii. Ability to accommodate fit-up with hauling defection (SPMTs) shape versus in-place self-weight deflection shape during element placement.
b. The vertical PT. ducts located in the precast truss elements (both spans) need to be oversized to facilitate fit-up.
c. It is unclear how pylon pier is connected from the underlying pier element-up thru the bottom walkway around the web element and thru the canopy.
d. Show duct for the continuity tendon in Section A-A.
e. Experience has shown that full-continuous-for-LL behavior which is assumed in design may not be achieved in the structure because of camber growth over time. Consider adding additional continuity bars/tendons in the bottom walkway element and sequence construction as follows: Pour walkway closure, stress walkway continuity bars/tendons, pour remaining closure, and then stress canopy continuity tendons. That way the bottom is pre-compressed in the vent of camber growth.

MANUEL FELICIANO 4/22/2016 1

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Thomas Andres 4/25/2016 1

Response Accepted & Comment Closed

No	Stati	Current Holder	Reference	Categories
-110	RESI ACCEPTED		Shts. B-9 and B-10	STRUCTURES

Created By	Created On	Version	Delegate For
Thomas Andres	3/25/2016	1	

8. Sheets B-9 and B-10:

a. Care needs to be taken to avoid issues associated with elastic shortening of the elements during stressing of longitudinal tendons. For instance the form has to be designed to be compressible or removable (region 1), and embedded skid plates need to be embedded in such a way that the heel does not spall or crack as the element cambers up and drags on its heel (region 2).

b. The plans need to clearly show the sequence of all stressing. Maintaining stress limits throughout all intermittent phases to avoid cracking of the members will be extremely tricky and will likely necessitate stressing all web members along with some transverse/longitudinal stressing in increments such that members stay in compression. Also predicting where the PT stressing actually goes will be tricky. For instance any forces imposed on web joints affect all members framing into the joint. Longitudinal stressing of the canopy/walkway will tend to go into the stiff web element and not in the canopy/walkway. Also the design needs to pay particular shear lag affects and member interface shear (horizontal shear) through all phases of stressing.

c. There is a concern with tension behind the compression zone due to longitudinal PT of the walkway at the member ends as the top of the web and canopy element gets dragged along (shear lag in region 3).

d. There appears to be significant shear lag issues in both the canopy and walkway as the stiff web element is being dragged behind the compression zone. The designer needs to pay particular attention in these areas. Moving the canopy continuity tendon to the middle tendon spot may improve the issue. Consider adding additional longitudinal tendons in the added 2 ft. corner chamfers (Comment 4.c.i).

e. The concrete mix design needs to be flowable concrete or SCC to minimize potential for honeycombing of the element especially in areas where the concrete is cast under overlying formed surfaces (such as diagonals).

MANUEL FELICIANO 4/22/2016 1

(8) It is our understanding that these comments were provided for information only and no response is required at this time. These comments are intended to assist in progressing the DBF's concept to 90% plans.

Thomas Andres 4/25/2016 1

Response Accepted & Comment Closed

No	Status	Current Holder	Reference	Categories
111	RESPONSE ACCEPTED		Shts B-11 thru B-16:	STRUCTURES

Created By	Created On	Version	Delegate For
Thomas Andres	3/25/2016	1	

9. Sheets B-11, B-12, B-14, and B-15: Duct radii are less than the minimum radii required by SDG Table 1.11.4-2. Also provide a tangent of 5'-0" at all anchorages - industry practice.

10. Sheet B-13:

a. Verify stability of the structure during fabrication as the outer two ends of the walkway support beams are cambered upward due to the transverse PT in the deck.

b. The 3 ¾" distance to the flat duct is insufficient when accounting for an outer duct diameter of 1.54". See SDG Table 1.11.4-1.

11. Sheet B-16:

a. The longest pipe (145'-9") will deflect 2.44 inches under its own dead load. This assumes a standard pipe wall thickness. Even thicker walled 16 inch pipes appear to be unacceptable solutions. Consider a 20 inch or 24 inch O.D. with an X-Heavy wall thickness for the longest pipe and a standard pipe thickness for the rest.

b. Are the anchor bolts to be embedded in the members? Avoid drill and epoxy options if possible. See suggested detail below in item C to facilitate fit-up.

c. The pipes will be a maintenance issue long term. Will they be galvanized and then painted. How will inside of pipe be maintained if it is not galvanized? Pipes will attract live loads, thermal loads, and wind loads. See suggested detail (tight fitting inner slide pipe) below to avoid stressing of the pipes. Require pipes to be completely sealed against rain intrusion.

d. Given the sharply acute angles - How is quality welded insured? Also it is nearly impossible to inspect / perform NDT.

MANUEL FELICIANO 4/22/2016 1

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Thomas Andres 4/25/2016 1

Response Accepted & Comment Closed

No	Stat	Current Holder	Reference	Categories
112	RES	ACCEPTED	Shts B-17 and B-2	STRUCTURES

Created By	Created On	Version	Delegate For
Thomas Andres	3/25/2016	1	

12. Sheet B-17:
a. See comment 8 above regarding providing a detailed stressing sequence. All web members may have to be stressed (even members 1, 9, 11 thru 14 and 24) to avoid cracking. See Comment 8.c above.
b. The PT bars at the bottom joint intersection member 7 and 8 conflict (the bars are in the same vertical plane).
c. In the case where the bars are stressed from the bottom, how is stressing accessed? Also if an anchor recess is provided at this location, the recess will weaken the member.
d. Include reinforcing and bursting steel details in the next submittal.
e. Recommend showing section views for members without PT bars.
f. The web truss will be very difficult to form without shrinkage cracking of the geometrically constrained members. Concrete placed around rigid inner forms are prone to shrinkage cracking and difficult to strip without damaging the member. See sketch below. Also over the length of the web element how will shrinkage be facilitated-- will the inner forms be allowed to float or will the element be cast in stages? Recommend a shrinkage reducing admixture, a staged construction process and possibly call-for all of the inner forms to be lined with thin compressible rubber liners.

13. Sheet B-26:
a. Expand SPMT support beam details including dimensions from the end of the precast truss and analyze/design the precast truss system for the hauling support stresses consistent with the plan details and assumed support conditions.
b. Outside of the roadway pavement limits, the SPMTs will have to roll on steel plates or mats. Show on this sheet or B-27.
c. Require shop drawings for the SPMT move in final plans – give requirements related to maximum twist and differential boundary conditions during the move to avoid cracking of the element.

MANUEL FELICIANO 4/22/2016 1

(12) It is our understanding that these comments were provided for information only and no response is required at this time. These comments are intended to assist in progressing the DBF's concept to 90% plans.
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Thomas Andres 4/25/2016 1

Response Accepted & Comment Closed

No	Status	Current Holder	Reference	Categories
113	RESPONSE ACCEPTED		Shts B-17, B-27 and B-28,	STRUCTURES

Created By	Created On	Version	Delegate For
Thomas Andres	3/25/2016	1	

14. Sheet B-27 and B-17: For the CIP truss span, it is unclear how the bottom live-end PT bar for member 23 can be stressed with the support/abutment in the way. Also see Comment 12.c above regarding stressing access with the forming system in the way.

15. Sheets B-27 and B-28: Expand to include member fabrication forming and stressing, and continuity stressing steps in sufficient detail.

16. Sheet B-28, Step 5: Include continuity stressing steps. See Comment 7.e above.

MANUEL FELICIANO 4/22/2016 1

(14) It is our understanding that these comments were provided for information only and no response is required at this time. These comments are intended to assist in progressing the DBF's concept to 90% plans.
(15) It is our understanding that these comments were provided for information only and no response is required at this time. These comments are intended to assist in progressing the DBF's concept to 90% plans.
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Thomas Andres 4/25/2016 1

Response Accepted & Comment Closed

No	Stat	Current Holder	Reference	Categories
114	RES	ACCEPTED	General:	STRUCTURES

Created By	Created On	Version	Delegate For
Thomas Andres	3/25/2016	1	

17. Sheet 10 of 106: Lighting should meet IESNA and CPTED (crime prevention strategies thru environmental design).
18. Sheet 15 of 106: Flat area included curb element will attract skate boarders.
19. Sheet 16 of 106: Follow CPTED standards: Keep tree branches > 6' above ground, and ground cover/shubs below 2' tall to eliminate hiding places.
20. Sheet 17 of 106: Benches should have center arm rest or similar to keep people from sleeping on them.
21. Sheet 55 of 106: Panels create an opportunity for local artwork – creates ownership and reduces vandalism.
22. Sheet 92 of 106: Follow CPTED Guidelines – cut off fixture, reduced glare, etc.

ERIKA HANGO 4/1/2016 1

(17) The project will be designed to the relevant standards and guidelines of the Illuminating Engineering Society (IES) and the Crime Prevention Through Environmental Design Association (CPTED). This would include: illuminance levels, lighting uniformity, glare control, light source color, impact of lighting on perceived safety/security and light's use to enhance wayfinding and orientation.
(19) Understood, the design will follow CPTED standards and will be further detailed in the 90% landscaping submittal.
(22)Understood. These details will be further developed and provided in the 90% submittal.

Thomas Andres 4/14/2016 1

Response Accepted & Comment Closed

Comments 1 thru 22 below are for information only. No response is required. The comments are intended to assist in progressing the DBF's concept to 90%.

1. General:
    a. See CADD Manual, pg. 4-41 thru 4-47 for structures plans naming and numbering convention and sheet order.

    http://www.dot.state.fl.us/ecso/downloads/publications/manual/CADDManual2015/Files/10.1.15/CADDManual2015.pdf

    b. Include bridge geotechnical report and borings in next submittal.
    c. Include Traffic Control Plans for SW 8th Street in next submittal.
    d. Is the C/L Structure & PGL baseline tied-in via survey? Include project survey control sheets in next submittal.
    e. Locate and show all existing utilities within the project limits in next submittal.
2. Sheet B-2:
    a. Include a note for lightning protection design criteria. fib Bulletin No. 30 "Acceptance of Stay Cable Systems using Prestressing Steels", NFPA 70 (National Electric code) and NFPA 780 (Standard for the Installation of Lightning Protection Systems).
    b. Expand "Screeding Deck Slab Note" to say: ...TO ENSURE A UNIFORM TEXTURE OF THE FINAL COMPLETED STRUCTURE." to ensure that the CIP and precast deck interfacing surfaces also meet finish requirements.
    c. Rename "Deck Planing and Profilographing" note title to "Deck Finishing" since the short-bridge criteria will be used.
    d. Note 4: If SIP Forms are permitted, the designer needs to include the dead load (forms and the weight of the concrete to fill the flutes) which were assumed in the design.
    e. Future Bearing Replacement: Include a step to unbolt the bottom stay pipe connection (Detail B, Sheet B-16) prior to jacking span or incorporate Comment 11.c below.
    f. Per, SDG 2.4.1.E, since bridge is higher than 75 ft. Evaluate gust factor per ASCE/SEI 7-05. Show gust factor G that was used in General Notes.
3. Sheet B-3:
    a. See SDM Chapter 7 for PLAN AND ELEVATION DRAWING requirements.
    b. Call-out the existing overhead utility. Is it to remain? Can it be shut down? Is this an electric line? If so, include voltage. Is the clearance the minimum distance or the vertical distance? Clarify.
    c. Review strain-compatibility implications created by part of the continuous (for LL) structure being founded on deep foundations and part founded on spread footings. Although there is likely surface rock at the site, any settlement of the abutments relative to the pylon need to be accounted for in the design.
4. Sheet B-4:
    a. Show cross slope on both sides of the section.
    b. Gradual drainage pipe slopes will be difficult to maintain. Greater slopes would be self-cleaning. Also design-in sufficient longitudinal slope of canopy to avoid ponding water.

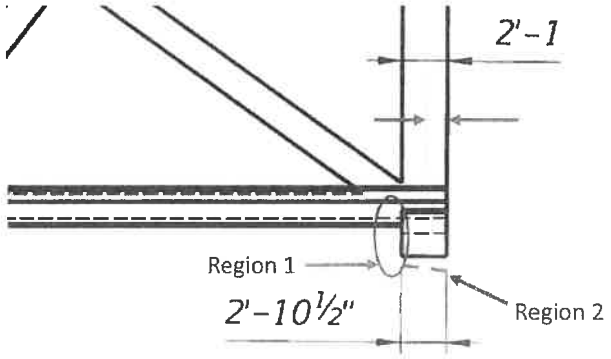
Provide pipe cleanout details during final design and verify that 8 inch diameter pipe is sufficient.

c. Consider the following cross section shape related issues:
    i. Add a large 2'-0" chamfer at canopy-web interfaces and at walkway-web interfaces to reduce the likelihood of cracking at the 90 degree corners.
    ii. Review section for buckling of the unbraced compression flange (canopy).
    iii. Review the shape of the canopy at the outer fibers– high compression will occur at the top two corners.
    iv. The inset pipe in the bottom center of the walkway will likely create a weak point which will be a crack initiation point due to transverse post tensioning stresses. This is also an issue at the locations where the live end of the PT bar is at the bottom of the truss - if a recess anchor is used. See B-17, Detail 'A'. Also all diagonal Type B member anchors appear to conflict with the drainage pipe.
    v. There is insufficient details of the walkway deck web interface and the canopy web interface where there is significant interfacing shear between the elements.

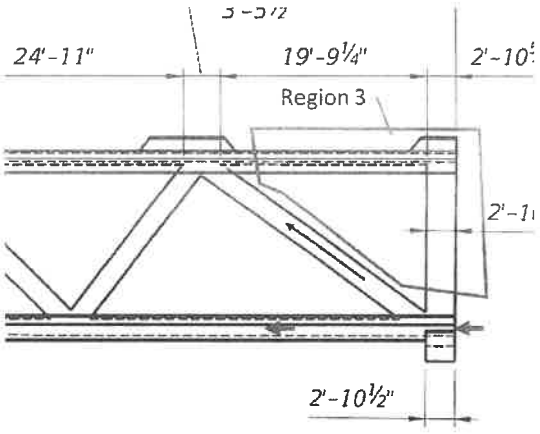
5. Sheet B-5:
    a. Spread footing layouts do not match B-19 thru B-21.
    b. See SDG 3.8 for spread footing requirements.
    c. See SDM, Chapter 11 for foundation layout sheet requirements.
    d. Show critical temporary walls which are required to construct pylon footing alongside SW 8th Street.
    e. Include Roadway Plan Set which includes requirements for traffic control and pavement and striping restoration of SW 8th Street required to facilitate the Pylon footing construction under existing roadway.
6. Sheets B-6 and B-7: Bury top of footing a minimum of 3'-0" below finished ground per SDG 3.11.2.C.
7. Sheet B-8:
    a. It is unclear why the 3" CIP vertical closure joint is required. Recommend maintaining a 2 ft. closure pour throughout. Issues with the 3" CIP vertical closure joint include:
        i. Ability to consolidate grout/concrete in the 3" vertical gap.
        ii. Ability to splice PT bar duct.
        iii. Ability to accommodate fit-up with hauling defection (SPMTs) shape versus in-place self-weight deflection shape during element placement.
    b. The vertical PT. ducts located in the precast truss elements (both spans) need to be oversized to facilitate fit-up.
    c. It is unclear how pylon pier is connected from the underlying pier element-up thru the bottom walkway around the web element and thru the canopy.
    d. Show duct for the continuity tendon in Section A-A.
    e. Experience has shown that full-continuous-for-LL behavior which is assumed in design may not be achieved in the structure because of camber growth over time. Consider adding additional continuity bars/tendons in the bottom walkway element and sequence construction as follows: Pour walkway closure, stress walkway continuity

bars/tendons, pour remaining closure, and then stress canopy continuity tendons. That way the bottom is pre-compressed in the vent of camber growth.

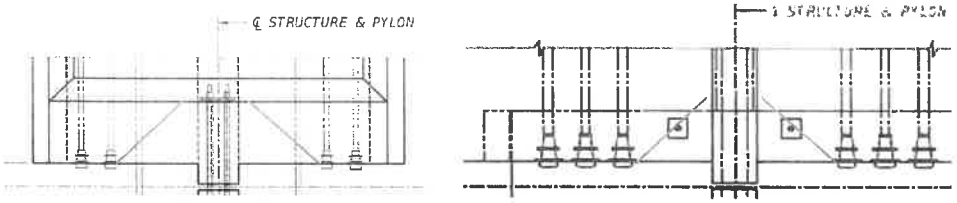
8. Sheets B-9 and B-10:
    a. Care needs to be taken to avoid issues associated with elastic shortening of the elements during stressing of longitudinal tendons. For instance the form has to be designed to be compressible or removable (region 1), and embedded skid plates need to be embedded in such a way that the heel does not spall or crack as the element cambers up and drags on its heel (region 2).



    b. The plans need to clearly show the sequence of all stressing. Maintaining stress limits throughout all intermittent phases to avoid cracking of the members will be extremely tricky and will likely necessitate stressing all web members along with some transverse/longitudinal stressing in increments such that members stay in compression. Also predicting where the PT stressing actually goes will be tricky. For instance any forces imposed on web joints affect all members framing into the joint. Longitudinal stressing of the canopy/walkway will tend to go into the stiff web element and not in the canopy/walkway. Also the design needs to pay particular shear lag affects and member interface shear (horizontal shear) through all phases of stressing.
    c. There is a concern with tension behind the compression zone due to longitudinal PT of the walkway at the member ends as the top of the web and canopy element gets dragged along (shear lag in region 3).



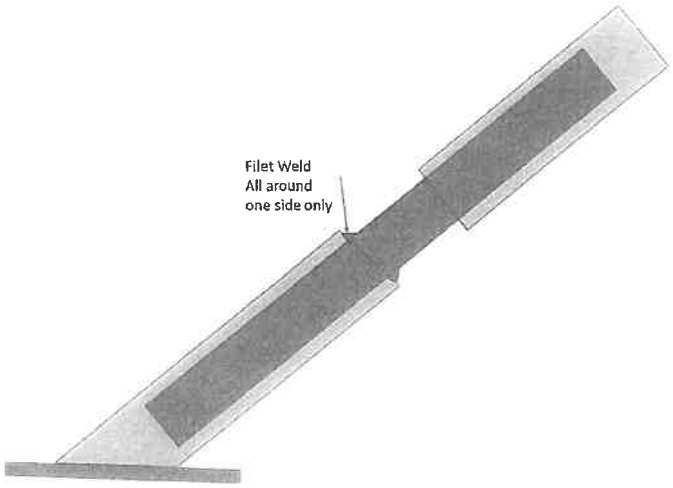
d. There appears to be significant shear lag issues in both the canopy and walkway as the stiff web element is being dragged behind the compression zone. The designer needs to pay particular attention in these areas. Moving the canopy continuity tendon to the middle tendon spot may improve the issue. Consider adding addional longitudinal tendons in the added 2 ft. corner chamfers (Comment 4.c.i).



e. The concrete mix design needs to be flowable concrete or SCC to minimize potential for honeycombing of the element especially in areas where the concrete is cast under overlying formed surfaces (such as diagonals).

9. Sheets B-11, B-12, B-14, and B-15: Duct radii are less than the minimum radii required by SDG Table 1.11.4-2. Also provide a tangent of 5'-0" at all anchorages - industry practice.
10. Sheet B-13:
    a. Verify stability of the structure during fabrication as the outer two ends of the walkway support beams are cambered upward due to the transverse PT in the deck.
    b. The 3 ¾" distance to the flat duct is insufficient when accounting for an outer duct diameter of 1.54". See SDG Table 1.11.4-1.
11. Sheet B-16:
    a. The longest pipe (145'-9") will deflect 2.44 inches under its own dead load. This assumes a standard pipe wall thickness. Even thicker walled 16 inch pipes appear to be unacceptable solutions. Consider a 20 inch or 24 inch O.D. with an X-Heavy wall thickness for the longest pipe and a standard pipe thickness for the rest.
    b. Are the anchor bolts to be embedded in the members? Avoid drill and epoxy options if possible. See suggested detail below in item C to facilitate fit-up.

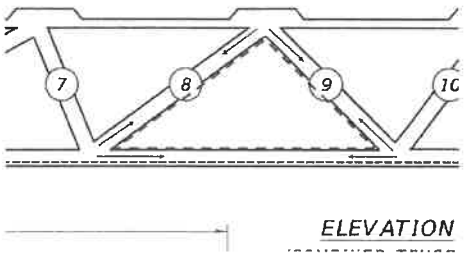
c. The pipes will be a maintenance issue long term. Will they be galvanized and then painted. How will inside of pipe be maintained if it is not galvanized? Pipes will attract live loads, thermal loads, and wind loads. See suggested detail (tight fitting inner slide pipe) below to avoid stressing of the pipes. Require pipes to be completely sealed against rain intrusion.



d. Given the sharply acute angles - How is quality welded insured? Also it is nearly impossible to inspect / perform NDT.

12. Sheet B-17:
    a. See comment 8 above regarding providing a detailed stressing sequence. All web members may have to be stressed (even members 1, 9, 11 thru 14 and 24) to avoid cracking. See Comment 8.c above.
    b. The PT bars at the bottom joint intersection member 7 and 8 conflict (the bars are in the same vertical plane).
    c. In the case where the bars are stressed from the bottom, how is stressing accessed? Also if an anchor recess is provided at this location, the recess will weaken the member.
    d. Include reinforcing and bursting steel details in the next submittal.
    e. Recommend showing section views for members without PT bars.

f. The web truss will be very difficult to form without shrinkage cracking of the geometrically constrained members. Concrete placed around rigid inner forms are prone to shrinkage cracking and difficult to strip without damaging the member. See sketch below. Also over the length of the web element how will shrinkage be facilitated – will the inner forms be allowed to float or will the element be cast in stages? Recommend a shrinkage reducing admixture, a staged construction process and possibly call-for all of the inner forms to be lined with thin compressible rubber liners.



13. Sheet B-26:
    a. Expand SPMT support beam details including dimensions from the end of the precast truss and analyze/design the precast truss system for the hauling support stresses consistent with the plan details and assumed support conditions.
    b. Outside of the roadway pavement limits, the SPMTs will have to roll on steel plates or mats. Show on this sheet or B-27.
    c. Require shop drawings for the SPMT move in final plans – give requirements related to maximum twist and differential boundary conditions during the move to avoid cracking of the element.
14. Sheet B-27 and B-17: For the CIP truss span, it is unclear how the bottom live-end PT bar for member 23 can be stressed with the support/abutment in the way. Also see Comment 12.c above regarding stressing access with the forming system in the way.
15. Sheets B-27 and B-28: Expand to include member fabrication forming and stressing, and continuity stressing steps in sufficient detail.
16. Sheet B-28, Step 5: Include continuity stressing steps. See Comment 7.e above.
17. Sheet 10 of 106: Lighting should meet IESNA and CPTED (crime prevention strategies thru environmental design).
18. Sheet 15 of 106: Flat area included curb element will attract skate boarders.
19. Sheet 16 of 106: Follow CPTED standards: Keep tree branches > 6' above ground, and ground cover/shubs below 2' tall to eliminate hiding places.
20. Sheet 17 of 106: Benches should have center arm rest or similar to keep people from sleeping on them.
21. Sheet 55 of 106: Panels create an opportunity for local artwork – creates ownership and reduces vandalism.
22. Sheet 92 of 106: Follow CPTED Guidelines – cut off fixture, reduced glare, etc.

Submitta[illegible]eport

Financial Projec[illegible]	434688-1-58-01	Submital Type:	PLANS
Submittal Phase:	PHASE II	Submital Staff Type:	CONSULTANT
Recieved Date:	5/10/2016	Response Due Date:	6/16/2016
Grace Period:	0	District:	SIXTH
Status:	CLOSED	Create Date:	5/10/2016
Create User Id:	PD601MI	Last Update:	5/10/2016
		Last Update User Id:	PD601MI

Description:

434688-1: Foundation Design for FIU UNIVERSITY CITY PROSPERITY PROJ. ALONG SW 109 AVE & SR 90/SW 8 ST

Group: PRELIMINARY ENGINEERING
Phase Review Type: LAP Project
Status: Submitted
Phase Initiation Date: 5/10/2016
Comments Due Date: 5/23/2016
Days Allowed for Review: 14
Review Meeting: 6/16/2016 2:00 PM to 4:00 PM @ TBD if needed
Plans Format: Electronic
Comments: External Project Manager: Manuel Feliciano, P.E.
E-mail: [redacted]
Phone #[redacted]
Section: Phase: 90% Foundation Design
Review Meeting will be schedule if needed
Design Criteria is Florida Green Book
Work Program Construction Budget:
Production Date: DESIGN- BUILD

Threads:

No	Statu	Current Holder	Reference	Categories
15	COM... AGREED WITH		Sheet B-5 and Calculations:	STRUCTURES

Created By	Created On	Version	Delegate For
Thomas Andres	6/6/2016	1	

PPM Exhibit 26-DD requires that all 90% Foundation Component Submittals include additional details and backup information necessary to substantiate the loading on the foundations. This information was not included in the 90% Foundation Component Submittal Package. In addition, the previous 30% comments questioned many of the design assumptions related to the bridge superstructure and cross section. See the highlighted comments in attached pdf. For this reason, the 90% Foundation Component Submittal needs to be resubmitted with the necessary back-up information and comment responses to substantiate the loading on the foundations.

MANUEL FELICIANO 6/16/2016 1

The backup information (structural calculations) was submitted with the 90% foundation submittal. Please check the structural calculations that contain all the necessary information to substantiate the loading on the foundations.

The 30% comments/questions are related to the superstructure design. The responses to these comments will be provided with the 90% superstructure submittal. We are not expecting any significant change in the superstructure design that will affect the dimensional characteristics of the footings.

Thomas Andres 9/19/2016 1

It was agreed that the foundations would be designed with a small reserve so that the superstructure comments could be resolved at a future date.

MANUEL FELICIANO 9/19/2016 1

Comment Agreed & Closed

No	Status	Current Holder	Reference	Categories
16	RESPONSE ACCEPTED		Sheet B-9:	STRUCTURES

Created By	Created On	Version	Delegate For
Thomas Andres	6/6/2016	1	

Verify the 127 ton uplift resistance requirement. It is not clear why such a large up-lift resistance is required (simple span dead loads and continuous live loads).

MANUEL FELICIANO 6/16/2016 1

The uplift resistance requirement is to meet the wind loading demand in accordance with the project design criteria.

Thomas Andres 6/23/2016 1

Response Accepted & Comment Closed

No	Status	Current Holder	Reference	Categories
17	RESPONSE ACCEPTED		General	STRUCTURES

Created By	Created On	Version	Delegate For
Thomas Andres	6/8/2016	1	

The 90% Foundation Component Package did not include an independent peer review as required by PPM 26.3.2 and PPM 26.12. Although the structure is a fake cable stay, it is designed for simple span dead loads made continuous for live loads; it also is classified as unique bridge type with component-to-component configurations and details not normally used in Florida. We therefore request that the resubmitted 90% Foundation Component Package include a peer review.

MANUEL FELICIANO 6/29/2016 1

The Independent Review for the bridge component submittals is being performed by a separate FIGG office that acts independently, was not involved in the original design and does not have any other responsibilities on this project. The independent review is being performed with separately generated structural models, analysis methods and calculations. This process is consistent with the project specific Design Quality Management Plan and the MCM/FIGG technical proposal that were accepted by FIU as part of the design-build contract which is being administered by FIU through the FDOT Local Agency Program. This is the same Design Quality Management procedure that FIGG has successfully performed for all of our major bridges around the country. We will submit the tabulated list of all review comments from the independent review and responses from the originator of the design along with the signed independent review certification letter for the 90% Foundations Submittal.

Thomas Andres 9/19/2016 1

Response Accepted & Comment Closed

Comments 1 thru 22 below are for information only. No response is required. The comments are intended to assist in progressing the DBF's concept to 90%.

1. General:
    a. See CADD Manual, pg. 4-41 thru 4-47 for structures plans naming and numbering convention and sheet order.

    http://www.dot.state.fl.us/ecso/downloads/publications/manual/CADDManual2015/Files/10.1.15/CADDManual2015.pdf

    b. Include bridge geotechnical report and borings in next submittal.
    c. Include Traffic Control Plans for SW 8th Street in next submittal.
    d. Is the C/L Structure & PGL baseline tied-in via survey? Include project survey control sheets in next submittal.
    e. Locate and show all existing utilities within the project limits in next submittal.
2. Sheet B-2:
    a. Include a note for lightning protection design criteria. fib Bulletin No. 30 "Acceptance of Stay Cable Systems using Prestressing Steels", NFPA 70 (National Electric code) and NFPA 780 (Standard for the Installation of Lightning Protection Systems).
    b. Expand "Screeding Deck Slab Note" to say: ...TO ENSURE A UNIFORM TEXTURE OF THE FINAL COMPLETED STRUCTURE." to ensure that the CIP and precast deck interfacing surfaces also meet finish requirements.
    c. Rename "Deck Planing and Profilographing" note title to "Deck Finishing" since the short-bridge criteria will be used.
    d. Note 4: If SIP Forms are permitted, the designer needs to include the dead load (forms and the weight of the concrete to fill the flutes) which were assumed in the design.
    e. Future Bearing Replacement: Include a step to unbolt the bottom stay pipe connection (Detail B, Sheet B-16) prior to jacking span or incorporate Comment 11.c below.
    f. Per, SDG 2.4.1.E, since bridge is higher than 75 ft. Evaluate gust factor per ASCE/SEI 7-05. Show gust factor G that was used in General Notes.
3. Sheet B-3:
    a. See SDM Chapter 7 for PLAN AND ELEVATION DRAWING requirements.
    b. Call-out the existing overhead utility. Is it to remain? Can it be shut down? Is this an electric line? If so, include voltage. Is the clearance the minimum distance or the vertical distance? Clarify.
    c. Review strain-compatibility implications created by part of the continuous (for LL) structure being founded on deep foundations and part founded on spread footings. Although there is likely surface rock at the site, any settlement of the abutments relative to the pylon need to be accounted for in the design.
4. Sheet B-4:
    a. Show cross slope on both sides of the section.
    b. Gradual drainage pipe slopes will be difficult to maintain. Greater slopes would be self-cleaning. Also design-in sufficient longitudinal slope of canopy to avoid ponding water.

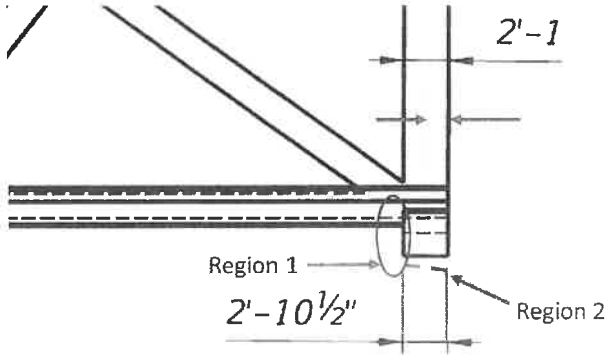
Provide pipe cleanout details during final design and verify that 8 inch diameter pipe is sufficient.

c. Consider the following cross section shape related issues:
    i. Add a large 2'-0" chamfer at canopy-web interfaces and at walkway-web interfaces to reduce the likelihood of cracking at the 90 degree corners.
    ii. Review section for buckling of the unbraced compression flange (canopy).
    iii. Review the shape of the canopy at the outer fibers– high compression will occur at the top two corners.
    iv. The inset pipe in the bottom center of the walkway will likely create a weak point which will be a crack initiation point due to transverse post tensioning stresses. This is also an issue at the locations where the live end of the PT bar is at the bottom of the truss - if a recess anchor is used. See B-17, Detail 'A'. Also all diagonal Type B member anchors appear to conflict with the drainage pipe.
    v. There is insufficient details of the walkway deck web interface and the canopy web interface where there is significant interfacing shear between the elements.

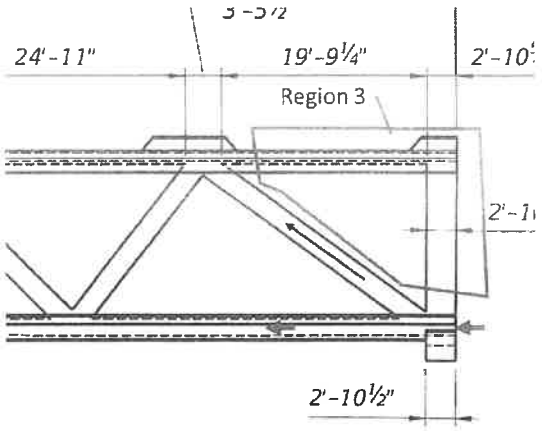
5. Sheet B-5:
    a. Spread footing layouts do not match B-19 thru B-21.
    b. See SDG 3.8 for spread footing requirements.
    c. See SDM, Chapter 11 for foundation layout sheet requirements.
    d. Show critical temporary walls which are required to construct pylon footing alongside SW 8th Street.
    e. Include Roadway Plan Set which includes requirements for traffic control and pavement and striping restoration of SW 8th Street required to facilitate the Pylon footing construction under existing roadway.
6. Sheets B-6 and B-7: Bury top of footing a minimum of 3'-0" below finished ground per SDG 3.11.2.C.
7. Sheet B-8:
    a. It is unclear why the 3" CIP vertical closure joint is required. Recommend maintaining a 2 ft. closure pour throughout. Issues with the 3" CIP vertical closure joint include:
        i. Ability to consolidate grout/concrete in the 3" vertical gap.
        ii. Ability to splice PT bar duct.
        iii. Ability to accommodate fit-up with hauling defection (SPMTs) shape versus in-place self-weight deflection shape during element placement.
    b. The vertical PT. ducts located in the precast truss elements (both spans) need to be oversized to facilitate fit-up.
    c. It is unclear how pylon pier is connected from the underlying pier element-up thru the bottom walkway around the web element and thru the canopy.
    d. Show duct for the continuity tendon in Section A-A.
    e. Experience has shown that full-continuous-for-LL behavior which is assumed in design may not be achieved in the structure because of camber growth over time. Consider adding additional continuity bars/tendons in the bottom walkway element and sequence construction as follows: Pour walkway closure, stress walkway continuity

bars/tendons, pour remaining closure, and then stress canopy continuity tendons. That way the bottom is pre-compressed in the vent of camber growth.

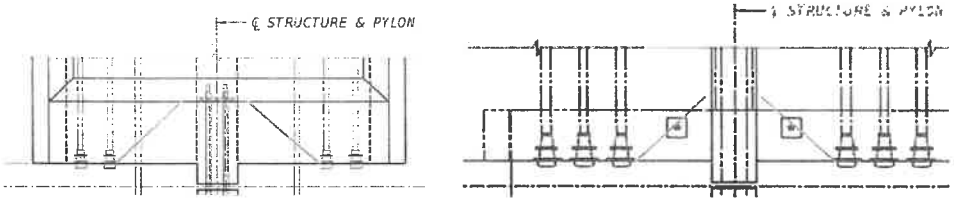
8. Sheets B-9 and B-10:
   a. Care needs to be taken to avoid issues associated with elastic shortening of the elements during stressing of longitudinal tendons. For instance the form has to be designed to be compressible or removable (region 1), and embedded skid plates need to be embedded in such a way that the heel does not spall or crack as the element cambers up and drags on its heel (region 2).



   b. The plans need to clearly show the sequence of all stressing. Maintaining stress limits throughout all intermittent phases to avoid cracking of the members will be extremely tricky and will likely necessitate stressing all web members along with some transverse/longitudinal stressing in increments such that members stay in compression. Also predicting where the PT stressing actually goes will be tricky. For instance any forces imposed on web joints affect all members framing into the joint. Longitudinal stressing of the canopy/walkway will tend to go into the stiff web element and not in the canopy/walkway. Also the design needs to pay particular shear lag affects and member interface shear (horizontal shear) through all phases of stressing.
   c. There is a concern with tension behind the compression zone due to longitudinal PT of the walkway at the member ends as the top of the web and canopy element gets dragged along (shear lag in region 3).



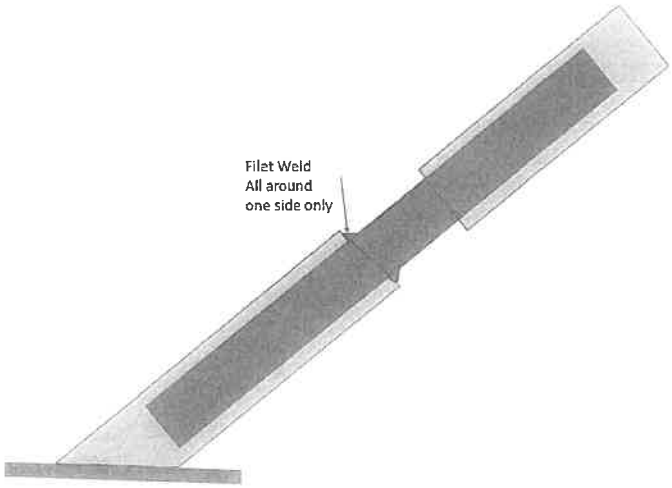
d. There appears to be significant shear lag issues in both the canopy and walkway as the stiff web element is being dragged behind the compression zone. The designer needs to pay particular attention in these areas. Moving the canopy continuity tendon to the middle tendon spot may improve the issue. Consider adding addional longitudinal tendons in the added 2 ft. corner chamfers (Comment 4.c.i).



e. The concrete mix design needs to be flowable concrete or SCC to minimize potential for honeycombing of the element especially in areas where the concrete is cast under overlying formed surfaces (such as diagonals).

9. Sheets B-11, B-12, B-14, and B-15: Duct radii are less than the minimum radii required by SDG Table 1.11.4-2. Also provide a tangent of 5'-0" at all anchorages - industry practice.
10. Sheet B-13:
    a. Verify stability of the structure during fabrication as the outer two ends of the walkway support beams are cambered upward due to the transverse PT in the deck.
    b. The 3 ¾" distance to the flat duct is insufficient when accounting for an outer duct diameter of 1.54". See SDG Table 1.11.4-1.
11. Sheet B-16:
    a. The longest pipe (145'-9") will deflect 2.44 inches under its own dead load. This assumes a standard pipe wall thickness. Even thicker walled 16 inch pipes appear to be unacceptable solutions. Consider a 20 inch or 24 inch O.D. with an X-Heavy wall thickness for the longest pipe and a standard pipe thickness for the rest.
    b. Are the anchor bolts to be embedded in the members? Avoid drill and epoxy options if possible. See suggested detail below in item C to facilitate fit-up.

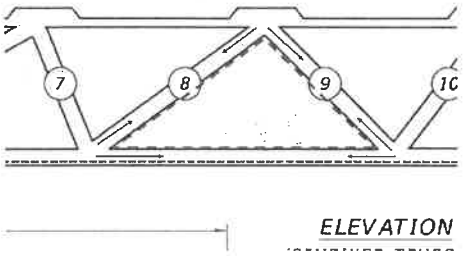
c. The pipes will be a maintenance issue long term. Will they be galvanized and then painted. How will inside of pipe be maintained if it is not galvanized? Pipes will attract live loads, thermal loads, and wind loads. See suggested detail (tight fitting inner slide pipe) below to avoid stressing of the pipes. Require pipes to be completely sealed against rain intrusion.



d. Given the sharply acute angles - How is quality welded insured? Also it is nearly impossible to inspect / perform NDT.

12. Sheet B-17:
    a. See comment 8 above regarding providing a detailed stressing sequence. All web members may have to be stressed (even members 1, 9, 11 thru 14 and 24) to avoid cracking. See Comment 8.c above.
    b. The PT bars at the bottom joint intersection member 7 and 8 conflict (the bars are in the same vertical plane).
    c. In the case where the bars are stressed from the bottom, how is stressing accessed? Also if an anchor recess is provided at this location, the recess will weaken the member.
    d. Include reinforcing and bursting steel details in the next submittal.
    e. Recommend showing section views for members without PT bars.

f. The web truss will be very difficult to form without shrinkage cracking of the geometrically constrained members. Concrete placed around rigid inner forms are prone to shrinkage cracking and difficult to strip without damaging the member. See sketch below. Also over the length of the web element how will shrinkage be facilitated – will the inner forms be allowed to float or will the element be cast in stages? Recommend a shrinkage reducing admixture, a staged construction process and possibly call-for all of the inner forms to be lined with thin compressible rubber liners.



ELEVATION

13. Sheet B-26:
    a. Expand SPMT support beam details including dimensions from the end of the precast truss and analyze/design the precast truss system for the hauling support stresses consistent with the plan details and assumed support conditions.
    b. Outside of the roadway pavement limits, the SPMTs will have to roll on steel plates or mats. Show on this sheet or B-27.
    c. Require shop drawings for the SPMT move in final plans – give requirements related to maximum twist and differential boundary conditions during the move to avoid cracking of the element.
14. Sheet B-27 and B-17: For the CIP truss span, it is unclear how the bottom live-end PT bar for member 23 can be stressed with the support/abutment in the way. Also see Comment 12.c above regarding stressing access with the forming system in the way.
15. Sheets B-27 and B-28: Expand to include member fabrication forming and stressing, and continuity stressing steps in sufficient detail.
16. Sheet B-28, Step 5: Include continuity stressing steps. See Comment 7.e above.
17. Sheet 10 of 106: Lighting should meet IESNA and CPTED (crime prevention strategies thru environmental design).
18. Sheet 15 of 106: Flat area included curb element will attract skate boarders.
19. Sheet 16 of 106: Follow CPTED standards: Keep tree branches > 6' above ground, and ground cover/shubs below 2' tall to eliminate hiding places.
20. Sheet 17 of 106: Benches should have center arm rest or similar to keep people from sleeping on them.
21. Sheet 55 of 106: Panels create an opportunity for local artwork – creates ownership and reduces vandalism.
22. Sheet 92 of 106: Follow CPTED Guidelines – cut off fixture, reduced glare, etc.

Submitta eport

Financial Projec	434688-1-58-01	Submital Type:	PLANS
Submittal Phase:	PHASE III	Submital Staff Type:	CONSULTANT
Recieved Date:	6/15/2016	Response Due Date:	7/13/2016
Grace Period:	0	District:	SIXTH
Status:	CLOSED	Create Date:	6/15/2016
Create User Id:	PD601MI	Last Update:	10/17/2016
		Last Update User Id:	PD601MI

Description:

434688-1: Structural Pylon & Landing Structures Design for FIU UNIVERSITY CITY PROSPERITY PROJ. ALONG SW 109 AVE & SR 90/SW 8 ST

Group: PRELIMINARY ENGINEERING
Phase Review Type: LAP Project
Status: Submitted
Phase Initiation Date: 6/16/2016
Comments Due Date: 7/1/2016
Days Allowed for Review: 16
Review Meeting: 7/13/2016 9:00 AM to 11:00 AM @ TBD no meeting schedule
Plans Format: Electronic
Comments: External Project Manager: Erika N. Hango, P.E.
E-mail: [redacted]
Phone [redacted]
Section: Phase: 90% Structural Pylon & landing structures Design
Review Meeting will be schedule if needed
Design Criteria is Florida Green Book, Bridge: FDOT
Work Program Construction Budget: $12,041,779
Production Date: DESIGN- BUILD

Threads:

No	Status	Current Holder	Reference	Categories
1	RESPONSE ACCEPTED		General:	STRUCTURES

Created By	Created On	Version	Delegate For
Thomas Andres	6/17/2016	1	

The RFP requires sufficient information in component submittals to allow for a complete review. As previously stated in the 90% Foundation Component Submittal,this submittal lacks sufficient backup information necessary to substantiate the loading on the elements supporting the superstructure. As previously stated, the previous 30% comments questioned many of the design assumptions related to the bridge superstructure and cross section. See the highlighted comments in attached pdf. For this reason, the 90% Substructure Component Submittal needs to be resubmitted with the necessary back-up information and comment responses to substantiate the loading on the substructure.

MANUEL FELICIANO	7/21/2016	1

As agreed at the meeting held on 6/30/2016 between FDOT Central Office, FIU, and FIGG, the 90% substructure submittal will be resubmitted including a summary of the C/D ratios for all the substructure components supporting the bridge.

Thomas Andres	7/28/2016	1

Response Accepted & Comment Closed

No	Stat	Current Holder	Reference	Categories
2	RES ACCEPTED		General:	STRUCTURES

Created By	Created On	Version	Delegate For
Thomas Andres	6/17/2016	1	

The 90% Substructure Component Package did not include an independent peer review as required by PPM 26.3.2 and PPM 26.12. Although the structure is a fake cable stay, it is designed for simple span dead load made continuous for live loads; it also is classified as unique bridge type with component-to-component configurations and details not normally used in Florida. We therefore request that the resubmitted 90% Foundation Component Package include a peer review.

MANUEL FELICIANO 7/21/2016 1

As agreed at the meeting held on 6/30/2016 between FDOT Central Office, FIU, and FIGG, the independent peer review for the substructure will be included prior to the RFC submittal.

Thomas Andres 7/28/2016 1

Response Accepted & Comment Closed

No	Status	Current Holder	Reference	Categories
3	RESPONSE ACCEPTED		Sheet B-1:	STRUCTURES

Created By	Created On	Version	Delegate For
Thomas Andres	6/17/2016	1	

The 90% Substructure Component Submittal is missing the pylon truss system connection details (Sheets B-36 and B-37). The 90% Substructure Component Submittal is missing the pylon diaphragm dimensions and reinforcing and the upper pylon dimensions and reinforcing (Sheets B-24 and B-25). The RFP requires sufficient information in component submittals to allow for a complete review. Also the FDOT Boilerplate states that partial submittals will not be allowed. (i.e. Further dividing the foundation, substructure, or superstructure into Pier 2, Abutment 1, Span 4, etc will not be accepted). It is important that the interfacing elements be provided so that a complete review can be performed.

MANUEL FELICIANO 7/21/2016 1

The upper and intermediate pylon will be included with the 90% substructure resubmittal.

Thomas Andres 7/28/2016 1

Response Accepted & Comment Closed

No	Status	Current Holder	Reference	Categories
4	RESPONSE ACCEPTED		Sheet B-23:	STRUCTURES

Created By	Created On	Version	Delegate For
Thomas Andres	6/17/2016	1	

a. Indicate that concrete for the pylon is to be mass concrete.

b. Section C-C: Contact splice at footing-pylon connection: The 2 x 13 inner 11P01 bars does not match the 2 x 11 Pylon dowels shown on Sheet B-10 (previous submittal).

c. Will there be any interfacing steel between the pylon and the CIP span? See General comment above. The concern is potential camber-growth over time and the effects on the grouted shim joint. See previous 30% comment related to continuous for LL designs.

MANUEL FELICIANO 7/21/2016 1

a) A note will be added indicating that the base of the pylon is a mass concrete pour.
b) The dowel detail has been further coordinated.
c) Yes, there will be interfacing steel between the pylon and the CIP span. The submittal will show the requested reinforcement details. The effect of the camber-growth has been analyzed and its effect on the grouted joint is not significant.

Thomas Andres 7/28/2016 1

Response Accepted & Comment Closed

No	Status	Current Holder	Reference	Categories
5	RESPONSE ACCEPTED		5. Sheets B-2, B-70 thru B-83:	STRUCTURES

Created By	Created On	Version	Delegate For
Thomas Andres	6/17/2016	1	

Verify that all concrete covers meet the requirements of SDG Table 1.4.2-1. See attached document for Department's interpretation of requirements.

MANUEL FELICIANO 7/21/2016 1

According to the RFP Design Criteria Section 2.4, structural elements for stairs, elevators, and ramps shall be designed in accordance with the Florida Building Code (Chapter 19) and ACI 318 (Section 7.7.1). The minimum cover for slabs and stairs is 1.5 in. We agree that for columns the concrete cover is equal to 3 inches.

Thomas Andres 7/28/2016 1

Response Accepted & Comment Closed

FIU 90% Substructure Component Plans Review

1. **General:** The RFP requires sufficient information in component submittals to allow for a complete review. As previously stated in the 90% Foundation Component Submittals review comments sufficient backup information necessary to substantiate the loading on the substructure elements was not included in the this 90% substructure Component Submittal Package. In addition, the previous 30% comments questioned many of the design assumptions related to the bridge superstructure and cross section. See the highlighted comments in attached pdf. **For this reason, the 90% Substructure Component Submittal needs to be resubmitted with the necessary back-up information and comment responses to substantiate the loading on the foundations**
2. **General:** The 90% Substructure Component Package did not include an independent peer review as required by PPM 26.3.2 and PPM 26.12. Although the structure is a fake cable stay, it is designed for simple span dead load made continuous for live loads; it also is classified as unique bridge type with component-to-component configurations and details not normally used in Florida. We therefore request that the resubmitted 90% Foundation Component Package include a peer review.
3. **Sheet B-1:** The 90% Substructure Component Submittal is missing the pylon truss system connection details (Sheets B-36 and B-37). The 90% Substructure Component Submittal is missing the pylon diaphragm dimensions and reinforcing and the upper pylon dimensions and reinforcing (Sheets B-24 and B-25). The RFP requires sufficient information in component submittals to allow for a complete review. Also the FDOT Boilerplate states that partial submittals will not be allowed. (i.e. Further dividing the foundation, substructure, or superstructure into Pier 2, Abutment 1, Span 4, etc will not be accepted). It is important that the interfacing elements be provided so that a complete review can be performed.
4. **Sheet B-23:**
    a. Indicate that concrete for the pylon is to be mass concrete.
    b. Section C-C: Contact splice at footing-pylon connection: The 2 x 13 inner 11P01 bars does not match the 2 x 11 Pylon dowels shown on Sheet B-10 (previous submittal).
    c. Will there be any interfacing steel between the pylon and the CIP span? See Comment 3 above. The concern is potential camber-growth over time and the effects on the grouted shim joint. See previous 30% comment related to continuous for LL designs.
5. **Sheets B-2, B-70 thru B-83:** Verify that all concrete covers meet the requirements of SDG Table 1.4.2-1. See table below for Department interpretation of requirements.

Sheet, Element Description	**Cover Based on Moderately Aggressive Substructure and Superstructure**
B-70, B-78: Landing Bent	3" , except for bearing pedestal 2"
B-71: Upper Landing	Columns (Section E-E) 3" , everything else 2"
B-72, B-75, B-76, B-80, B-83: Stairs	2"
B-73, B-74: Electrical Room	Columns (Section A-A and B-B) 3" , everything else 2"

B-78: Upper Landing	Columns (Section D-D) 3" , everything else 2"
B-81: Electrical Room	Columns (Section A-A) 3" , everything else 2"

Comments 1 thru 22 below are for information only. No response is required. The comments are intended to assist in progressing the DBF's concept to 90%.

1. General:
    a. See CADD Manual, pg. 4-41 thru 4-47 for structures plans naming and numbering convention and sheet order.

    http://www.dot.state.fl.us/ecso/downloads/publications/manual/CADDManual2015/Files/10.1.15/CADDManual2015.pdf

    b. Include bridge geotechnical report and borings in next submittal.
    c. Include Traffic Control Plans for SW 8th Street in next submittal.
    d. Is the C/L Structure & PGL baseline tied-in via survey? Include project survey control sheets in next submittal.
    e. Locate and show all existing utilities within the project limits in next submittal.
2. Sheet B-2:
    a. Include a note for lightning protection design criteria. fib Bulletin No. 30 "Acceptance of Stay Cable Systems using Prestressing Steels", NFPA 70 (National Electric code) and NFPA 780 (Standard for the Installation of Lightning Protection Systems).
    b. Expand "Screeding Deck Slab Note" to say: ...TO ENSURE A UNIFORM TEXTURE OF THE FINAL COMPLETED STRUCTURE." to ensure that the CIP and precast deck interfacing surfaces also meet finish requirements.
    c. Rename "Deck Planing and Profilographing" note title to "Deck Finishing" since the short-bridge criteria will be used.
    d. Note 4: If SIP Forms are permitted, the designer needs to include the dead load (forms and the weight of the concrete to fill the flutes) which were assumed in the design.
    e. Future Bearing Replacement: Include a step to unbolt the bottom stay pipe connection (Detail B, Sheet B-16) prior to jacking span or incorporate Comment 11.c below.
    f. Per, SDG 2.4.1.E, since bridge is higher than 75 ft. Evaluate gust factor per ASCE/SEI 7-05. Show gust factor G that was used in General Notes.
3. Sheet B-3:
    a. See SDM Chapter 7 for PLAN AND ELEVATION DRAWING requirements.
    b. Call-out the existing overhead utility. Is it to remain? Can it be shut down? Is this an electric line? If so, include voltage. Is the clearance the minimum distance or the vertical distance? Clarify.
    c. Review strain-compatibility implications created by part of the continuous (for LL) structure being founded on deep foundations and part founded on spread footings. Although there is likely surface rock at the site, any settlement of the abutments relative to the pylon need to be accounted for in the design.
4. Sheet B-4:
    a. Show cross slope on both sides of the section.
    b. Gradual drainage pipe slopes will be difficult to maintain. Greater slopes would be self-cleaning. Also design-in sufficient longitudinal slope of canopy to avoid ponding water.

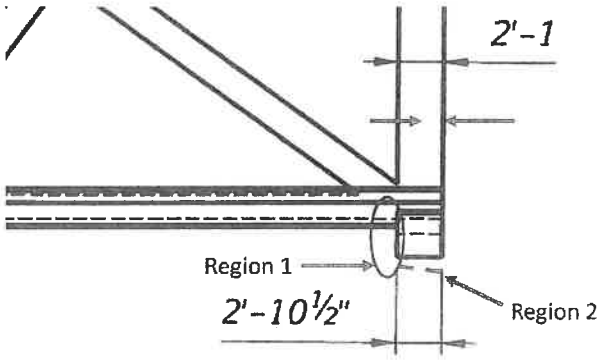
Provide pipe cleanout details during final design and verify that 8 inch diameter pipe is sufficient.

c. Consider the following cross section shape related issues:
    i. Add a large 2'-0" chamfer at canopy-web interfaces and at walkway-web interfaces to reduce the likelihood of cracking at the 90 degree corners.
    ii. Review section for buckling of the unbraced compression flange (canopy).
    iii. Review the shape of the canopy at the outer fibers– high compression will occur at the top two corners.
    iv. The inset pipe in the bottom center of the walkway will likely create a weak point which will be a crack initiation point due to transverse post tensioning stresses. This is also an issue at the locations where the live end of the PT bar is at the bottom of the truss - if a recess anchor is used. See B-17, Detail 'A'. Also all diagonal Type B member anchors appear to conflict with the drainage pipe.
    v. There is insufficient details of the walkway deck web interface and the canopy web interface where there is significant interfacing shear between the elements.

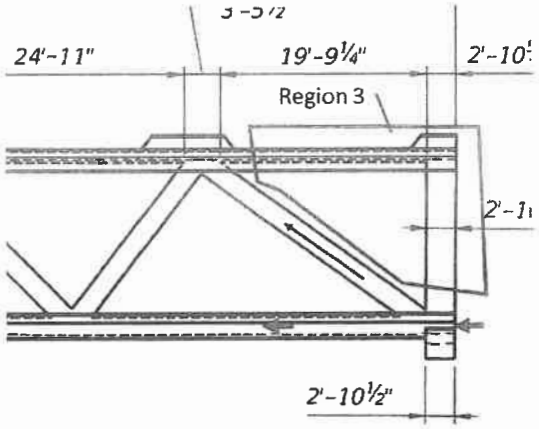
5. Sheet B-5:
    a. Spread footing layouts do not match B-19 thru B-21.
    b. See SDG 3.8 for spread footing requirements.
    c. See SDM, Chapter 11 for foundation layout sheet requirements.
    d. Show critical temporary walls which are required to construct pylon footing alongside SW 8th Street.
    e. Include Roadway Plan Set which includes requirements for traffic control and pavement and striping restoration of SW 8th Street required to facilitate the Pylon footing construction under existing roadway.
6. Sheets B-6 and B-7: Bury top of footing a minimum of 3'-0" below finished ground per SDG 3.11.2.C.
7. Sheet B-8:
    a. It is unclear why the 3" CIP vertical closure joint is required. Recommend maintaining a 2 ft. closure pour throughout. Issues with the 3" CIP vertical closure joint include:
        i. Ability to consolidate grout/concrete in the 3" vertical gap.
        ii. Ability to splice PT bar duct.
        iii. Ability to accommodate fit-up with hauling defection (SPMTs) shape versus in-place self-weight deflection shape during element placement.
    b. The vertical PT. ducts located in the precast truss elements (both spans) need to be oversized to facilitate fit-up.
    c. It is unclear how pylon pier is connected from the underlying pier element-up thru the bottom walkway around the web element and thru the canopy.
    d. Show duct for the continuity tendon in Section A-A.
    e. Experience has shown that full-continuous-for-LL behavior which is assumed in design may not be achieved in the structure because of camber growth over time. Consider adding additional continuity bars/tendons in the bottom walkway element and sequence construction as follows: Pour walkway closure, stress walkway continuity

bars/tendons, pour remaining closure, and then stress canopy continuity tendons. That way the bottom is pre-compressed in the vent of camber growth.

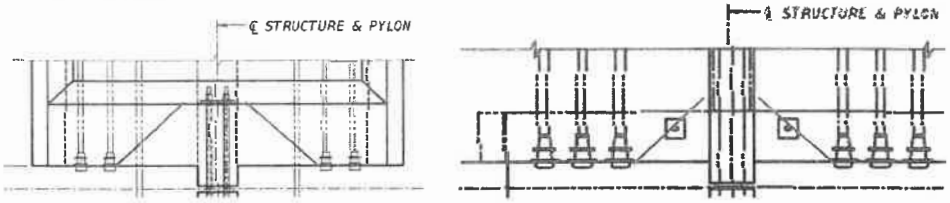
8. Sheets B-9 and B-10:
   a. Care needs to be taken to avoid issues associated with elastic shortening of the elements during stressing of longitudinal tendons. For instance the form has to be designed to be compressible or removable (region 1), and embedded skid plates need to be embedded in such a way that the heel does not spall or crack as the element cambers up and drags on its heel (region 2).



   b. The plans need to clearly show the sequence of all stressing. Maintaining stress limits throughout all intermittent phases to avoid cracking of the members will be extremely tricky and will likely necessitate stressing all web members along with some transverse/longitudinal stressing in increments such that members stay in compression. Also predicting where the PT stressing actually goes will be tricky. For instance any forces imposed on web joints affect all members framing into the joint. Longitudinal stressing of the canopy/walkway will tend to go into the stiff web element and not in the canopy/walkway. Also the design needs to pay particular shear lag affects and member interface shear (horizontal shear) through all phases of stressing.
   c. There is a concern with tension behind the compression zone due to longitudinal PT of the walkway at the member ends as the top of the web and canopy element gets dragged along (shear lag in region 3).



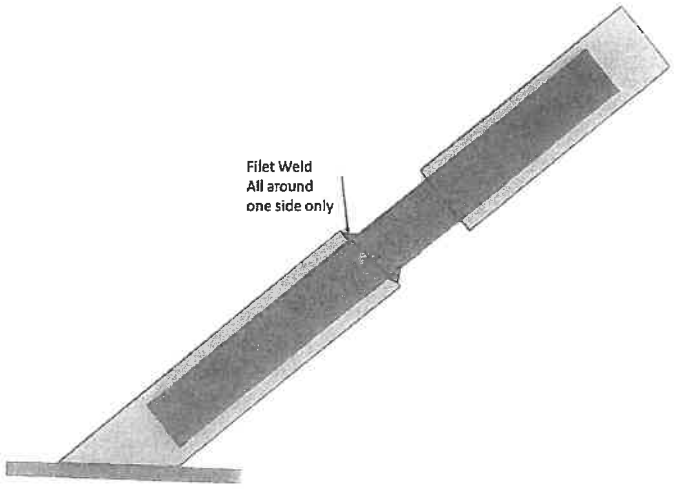
d. There appears to be significant shear lag issues in both the canopy and walkway as the stiff web element is being dragged behind the compression zone. The designer needs to pay particular attention in these areas. Moving the canopy continuity tendon to the middle tendon spot may improve the issue. Consider adding addional longitudinal tendons in the added 2 ft. corner chamfers (Comment 4.c.i).



e. The concrete mix design needs to be flowable concrete or SCC to minimize potential for honeycombing of the element especially in areas where the concrete is cast under overlying formed surfaces (such as diagonals).

9. Sheets B-11, B-12, B-14, and B-15: Duct radii are less than the minimum radii required by SDG Table 1.11.4-2. Also provide a tangent of 5'-0" at all anchorages - industry practice.
10. Sheet B-13:
    a. Verify stability of the structure during fabrication as the outer two ends of the walkway support beams are cambered upward due to the transverse PT in the deck.
    b. The 3 ¾" distance to the flat duct is insufficient when accounting for an outer duct diameter of 1.54". See SDG Table 1.11.4-1.
11. Sheet B-16:
    a. The longest pipe (145'-9") will deflect 2.44 inches under its own dead load. This assumes a standard pipe wall thickness. Even thicker walled 16 inch pipes appear to be unacceptable solutions. Consider a 20 inch or 24 inch O.D. with an X-Heavy wall thickness for the longest pipe and a standard pipe thickness for the rest.
    b. Are the anchor bolts to be embedded in the members? Avoid drill and epoxy options if possible. See suggested detail below in item C to facilitate fit-up.

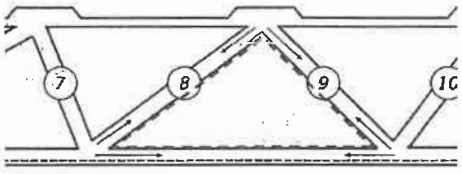
c. The pipes will be a maintenance issue long term. Will they be galvanized and then painted. How will inside of pipe be maintained if it is not galvanized? Pipes will attract live loads, thermal loads, and wind loads. See suggested detail (tight fitting inner slide pipe) below to avoid stressing of the pipes. Require pipes to be completely sealed against rain intrusion.



d. Given the sharply acute angles - How is quality welded insured? Also it is nearly impossible to inspect / perform NDT.

12. Sheet B-17:
    a. See comment 8 above regarding providing a detailed stressing sequence. All web members may have to be stressed (even members 1, 9, 11 thru 14 and 24) to avoid cracking. See Comment 8.c above.
    b. The PT bars at the bottom joint intersection member 7 and 8 conflict (the bars are in the same vertical plane).
    c. In the case where the bars are stressed from the bottom, how is stressing accessed? Also if an anchor recess is provided at this location, the recess will weaken the member.
    d. Include reinforcing and bursting steel details in the next submittal.
    e. Recommend showing section views for members without PT bars.

f. The web truss will be very difficult to form without shrinkage cracking of the geometrically constrained members. Concrete placed around rigid inner forms are prone to shrinkage cracking and difficult to strip without damaging the member. See sketch below. Also over the length of the web element how will shrinkage be facilitated – will the inner forms be allowed to float or will the element be cast in stages? Recommend a shrinkage reducing admixture, a staged construction process and possibly call-for all of the inner forms to be lined with thin compressible rubber liners.



ELEVATION

13. Sheet B-26:
    a. Expand SPMT support beam details including dimensions from the end of the precast truss and analyze/design the precast truss system for the hauling support stresses consistent with the plan details and assumed support conditions.
    b. Outside of the roadway pavement limits, the SPMTs will have to roll on steel plates or mats. Show on this sheet or B-27.
    c. Require shop drawings for the SPMT move in final plans – give requirements related to maximum twist and differential boundary conditions during the move to avoid cracking of the element.
14. Sheet B-27 and B-17: For the CIP truss span, it is unclear how the bottom live-end PT bar for member 23 can be stressed with the support/abutment in the way. Also see Comment 12.c above regarding stressing access with the forming system in the way.
15. Sheets B-27 and B-28: Expand to include member fabrication forming and stressing, and continuity stressing steps in sufficient detail.
16. Sheet B-28, Step 5: Include continuity stressing steps. See Comment 7.e above.
17. Sheet 10 of 106: Lighting should meet IESNA and CPTED (crime prevention strategies thru environmental design).
18. Sheet 15 of 106: Flat area included curb element will attract skate boarders.
19. Sheet 16 of 106: Follow CPTED standards: Keep tree branches > 6' above ground, and ground cover/shubs below 2' tall to eliminate hiding places.
20. Sheet 17 of 106: Benches should have center arm rest or similar to keep people from sleeping on them.
21. Sheet 55 of 106: Panels create an opportunity for local artwork – creates ownership and reduces vandalism.
22. Sheet 92 of 106: Follow CPTED Guidelines – cut off fixture, reduced glare, etc.

Submitta eport

Financial Projec	434688-1-58-01	Submital Type:	PLANS
Submittal Phase:	PHASE III	Submital Staff Type:	CONSULTANT
Recieved Date:	6/29/2016	Response Due Date:	7/29/2016
Grace Period:	0	District:	SIXTH
Status:	CLOSED	Create Date:	6/29/2016
Create User Id:	PD601MI	Last Update:	10/24/2016
		Last Update User Id:	PD601MI

Description:

434688-1: Bulkhead Wall at Tamiami Canal for FIU UNIVERSITY CITY PROSPERITY PROJ. ALONG SW 109 AVE & SR 90/SW 8 ST

Group: PRELIMINARY ENGINEERING
Phase Review Type: LAP Project
Status: Submitted
Phase Initiation Date: 6/28/2016
Comments Due Date: 7/13/2016
Days Allowed for Review: 16
Review Meeting: 7/29/2016 9:00 AM to 12:00 PM @ TBD, Schedule if needed
Plans Format: Electronic
Comments: External Project Manager: Erika N. Hango, P.E.
E-mail: [redacted]
Phone [redacted]
Section: Phase: 90% Bulkhead wall at Tamiami canal
Review Meeting will be schedule if needed
Design Criteria is Florida Green Book, Bridge: FDOT
Work Program Construction Budget: $12,041,779
Production Date: DESIGN- BUILD

Threads:

No	Stati	Current Holder	Reference	Categories
48.	RESI ACCEPTED		Sheet BW-1	TRUCTURES

Created By	Created On	Version	elegate For
Thomas Andres	7/13/2016	1	

a. Section A-A: Specification 455-5.15.3 allows for a batter tolerance of 1/4 inches per foot from vertical therefore the panels will not likely bear on both piles for their full length. The concern is that soil fines will migrate through the open joint. Require filter fabric to be attached to back-of-wall across panels via an approved mastic.
b. Filter Fabric Placement Detail: The bottom-of-panel elevation appears to be lower than top-of-rock in a few locations. Is it the EOR's intent that the toe be preformed? Are there any requirements for grouting the toe at these locations?

These comments require a written response.

MANUEL FELICIANO 8/16/2016 1

a) Filter fabric will be placed across panel joints via approved mastic.
b) All panels will be embedded a minimum of 2 ft below top of natural rock. The canal needs to be excavated to achieve the proposed cross section as shown on the drainage plans. A trench will be excavated to set the panels given the hard natural limestone. The purpose of setting the panels into the limestone is to avoid soil migration under the panels. There are not any requirements for grouting the toe at these locations.

Thomas Andres 8/18/2016 1

Response Accepted & Comment Closed

No	Status	Current Holder	Reference	Categories
49	RESPONSE ACCEPTED		Sheet BW-7:	STRUCTURES

Created By	Created On	Version	Delegate For
Thomas Andres	7/13/2016	1	

a. Note 5: Expand note for galvanizing to include nuts, bearing plates and couplers.

b. Section A-A: The anchor bars appear to go-through the proposed foundations. Please address the following:

I. Has the design of the retaining wall accounted for the influence of the spread footing surcharge loadings?
II. Clarify if the PVC pipe shown on Sheet BW-8 is to be embedded into the spread footings. If so, address how concrete cover will be maintained. If not, address impact of Spread Footing Settlement on possible anchor bar kinking.

These comments require a written response.

MANUEL FELICIANO 8/2/2016 1

a) Note will be expanded.
b) Yes, surcharge loading from adjacent foundations has been included in the design.
c) Yes, PVC pipe will be embedded into spread footing. We will coordinate with bridge designer to include appropriate notes with respect to cover.

Thomas Andres 8/18/2016 1

Response Accepted & Comment Closed

Submitta[illegible]eport

Financial Projec	434688-1-58-01	Submital Type:	PLANS
Submittal Phase:	PHASE III	Submital Staff Type:	CONSULTANT
Recieved Date:	7/14/2016	Response Due Date:	8/17/2016
Grace Period:	0	District:	SIXTH
Status:	CLOSED	Create Date:	7/14/2016
Create User Id:	PD601MI	Last Update:	7/14/2016
		Last Update User Id:	PD601MI

Description:

434688-1: Foundation Design for FIU UNIVERSITY CITY PROSPERITY PROJ. ALONG SW 109 AVE & SR 90/SW 8 ST

Group: PRELIMINARY ENGINEERING
Phase Review Type: LAP Project
Status: Submitted
Phase Initiation Date: 7/15/2016
Comments Due Date: 8/3/2016
Days Allowed for Review: 20
Review Meeting: 8/17/2016 9:30 AM to 11:00 AM @ Conference room B (If needed)
Plans Format: Electronic
Comments: External Project Manager: Manuel Feliciano, P.E.
E-mail: [redacted]
Phone #[redacted]
Section: Phase: 90% Foundation Design-Resubmittal
Review Meeting will be schedule if needed
Design Criteria is Florida Green Book
Work Program Construction Budget:
Production Date: DESIGN- BUILD

Threads:

No	Status	Current Holder	Reference	Categories
1	RESPONSE ACCEPTED		Calculations Gene	STRUCTURES

Created By	Created On	Version	Delegate For
Thomas Andres	7/15/2016	1	

The reserve capacity for the various spread footings appear to enough to account for any future design refinements to the superstructure (all C/Ds ≥ 1.12). However the calculations for the pylon pile compression C/D = 1.04, and the pile geotechnical capacity C/D ratio =1.00. See attached.

We are thinking that a 6-8% reserve would be a reasonable cushion in order to relax the project contract requirements which would allow superstructure design refinements to occur later so that we could move forward with the 90% foundation submittal package.

Either resolve the outstanding superstructure comments or resubmit the plans and calcs. for the pylon to give a larger C/D cushion.

MANUEL FELICIANO 7/19/2016 1

Per our telephone conversation on 7/18/16, please find attached the revised Pile Data Table drawing (Sheet B-9) showing the maximum "Required Nominal Bearing Resistance" of 450 tons. We agreed to show the required nominal bearing resistance (RNBR) in the "installation criteria" of the Pile Data Table instead of showing the factored design load divided by the resistance factor (phi). As I mentioned to you, the original design assumed a nominal bearing resistance of 450 tons despite the fact that the pile data table was presenting a lower value equal to the factored design load divided by the resistance factor. Also attached is a summary of the calculations showing the updated values for your review.

Thomas Andres 7/25/2016 1

Will base review on this response.

No	Status	Current Holder	Reference	Categories
8	COMMENT AGREED WITH		General:	STRUCTURES

Created By	Created On	Version	Delegate For
Thomas Andres	7/25/2016	1	

The submittal did not include an Independent Peer Review per the requirements of RFP pgs. 27 and 28 and PPM Chapter 26.
Per our discussions, we have agreed to relax the requirement for the peer review to be in the 90% submittal provided that the independent peer review (Engineer's comments, comment responses, resolution and signed and sealed cover letter) be submitted for all component plans prior to Releasing For Construction Plans for each component (foundation, substructure, superstructure).

MANUEL FELICIANO 8/17/2016 1

Comment Agreed & Closed

No	Status	Current Holder	Reference	Categories
9	RESPONSE ACCEPTED		Sheets B-11 and B-15:	STRUCTURES

Created By	Created On	Version	Delegate For
Thomas Andres	7/25/2016	1	

Add note that says: Construct shallow foundations in accordance with Specification 455.

MANUEL FELICIANO 8/17/2016 1

The suggested note will be added to all applicable drawings.

Thomas Andres 8/18/2016 1

Response Accepted & Comment Closed

Submitta eport

Financial Project:	434688-1-58-01	Submital Type:	PLANS
Submittal Phase:	PHASE III	Submital Staff Type:	CONSULTANT
Recieved Date:	8/3/2016	Response Due Date:	9/2/2016
Grace Period:	0	District:	SIXTH
Status:	CLOSED	Create Date:	8/3/2016
Create User Id:	PD601MI	Last Update:	8/3/2016
		Last Update User Id:	PD601MI

Description:

434688-1: RE-SUBMITTAL of Structural Pylon & Landing Structures Design for FIU UNIVERSITY CITY PROSPERITY PROJ. ALONG SW 109 AVE & SR 90/SW 8 ST

Group: PRELIMINARY ENGINEERING
Phase Review Type: LAP Project
Status: Submitted
Phase Initiation Date: 8/3/2016
Comments Due Date: 8/19/2016
Days Allowed for Review: 17
Review Meeting: 9/2/2016 10:00 AM to 11:00 AM @ TBD if needed
Plans Format: Electronic
Comments: External Project Manager: Erika N. Hango, P.E.
E-mail: [redacted]
Phone #[redacted]
Section: Phase: Re-submittal of 90% Structural Pylon & landing structures Design
Review Meeting will be schedule if needed
Design Criteria is Florida Green Book, Bridge: FDOT
Work Program Construction Budget: $12,041,779
Production Date: DESIGN- BUILD

Threads:

No	Status	Current Holder	Reference	Categories
2	COMMENT AGREED WITH		General:	STRUCTURES

Created By	Created On	Version	Delegate For
Thomas Andres	8/8/2016	1	

The RFP, page 27; PPM 26.3.2 and PPM 26.12 requires an independent peer review as part of the 90% Substructure Component Package. As discussed in our project meeting, we agree to wave the this specific requirement for this submittal however a completed independent peer review is required prior to RFC of the plans.

MANUEL FELICIANO	9/7/2016	1

Comment Agreed & Closed

No	Stat	Current Holder	Reference	Categories
3	RES	ACCEPTED	Sheet B-23:	STRUCTURES

Created By	Created On	Version	Delegate For
Thomas Andres	8/8/2016	1	

Are the 2-2"utility conduits to be cast into the pylon base? If so, include on sheet.

MANUEL FELICIANO 9/12/2016 1

No, there are no utility conduits in the pylon base.

Thomas Andres 9/15/2016 1

Response Accepted & Comment Closed

No	Status	Current Holder	Reference	Categories
4	RESPONSE ACCEPTED		Sheet B-24:	STRUCTURES

Created By	Created On	Version	Delegate For
Thomas Andres	8/8/2016	1	

a. The details on this sheet are not consistent with the calculations (simple span-for-DL, continuous-for-LL). The CIP back-span needs to be detailed independent of the pylon and the pylon concrete cannot be placed until closure pours are placed and continuity stressing has occurred. Revise pylon/walkway interfacing details consistent with design assumptions See attached sequence of construction steps.
b. The sheet is not legible due to the very small scale of the section views. See SDM 2.9. Separate this sheet into two or three sheets to better communicate to the Contractor what is intended.
c. The CIP pylon/precast walkway connections are extremely congested. Show larger scale 2D or 3D integrated drawings per SDM Chapter 20 to insure that there are no conflicts of embedded items (PT ducts, PT anchors, anchor caps, couplers, reinforcing steel, conduits, piping, etc.).
d. Section B-B: How will column concrete below the precast canopy surface be consolidated such that honeycombing is avoided (roughly 2'-0" x 6'-0" horizontal surface)? Consider casting-in bleed holes or pour holes in overlying portion of precast element.
e. Section D-D: The inner two PT anchor caps appear to conflict with the 11P03 rebar couplers.
f. Section D-D: It is not clear why the inner two PT anchor caps are not depicted in the Cross Section View.
g. Section A-A: Is the pipe cast in the precast walkway component? Is the pipe sections connected with bell and spigot joints and provide interfacing details. Clarify intent.

ERIKA HANGO 9/7/2016 1

a. The details on sheet B-24 show that the vertical member of the back span will be cast monolithically with the intermediate section of the pylon. The assumed back span and intermediate pylon construction sequence is attached for your review.
b. The drawing will be revised to show a bigger scale using more than one drawing.
c. An integrated 3-D drawing was developed to ensure the embedded items are not in conflict. This drawing will be used by the design build team during the planning phase for the construction of this section of the bridge.
d. The contractor is planning to cast the canopy section (2'x6') at the same time as the intermediate section of the pylon to avoid any possibility of imperfection in the pour.
e. We have verified that the 11P03 bars do not conflict with the anchor caps. It appears that the rebar couplers are in conflict with the anchor caps, but the couplers are located at a different elevation than the anchor caps.
f. The cross section (looking upstation) shows the back span tendons and Section D-D only shows the main span tendons because the plan view is not wide enough to show the back span tendons.
g. The pipe is not cast with the precast walkway component. A section of the drain pipe will be cast in the pylon CIP section and the embedded pipe will be connected to the exterior pipe under the deck.

Thomas Andres 9/16/2016 1

On Response a, if vertical member of the back span will is cast monolithically with the intermediate section of the pylon then the design assumptions of simple span for dead loads is not correct. As the forms deflect under concrete weight, continuity stresses will be developed between the pylons and the span.

ERIKA HANGO 9/22/2016 1

The simple span condition only occurs during the main span erection. The back span is designed to resist the continuity forces between the pylon and the truss. After the transverse closures are poured the continuity tendons are stressed creating a two span continuous structure.

Thomas Andres 9/26/2016 1

Okay, but the acceptability of this design approach depends on the Contractor's formwork stiffness - if he chooses a fairly stiff forming system then the design assumptions may be okay - if not then I would except cracking.

No	Status	Current Holder	Reference	Categories
5	RESPONSE ACCEPTED		Sheets B-70 and	STRUCTURES

Created By	Created On	Version	Delegate For
Thomas Andres	8/9/2016	1	

a. By inspection, the reinforcing for these framed piers does not appear to be balanced. If 48 #11 bars are required in the 5 ft. cap positive moment region, then significantly more than 7-#8 bars will be required in the negative moment regions of the frame (outer third of cap-around corners and along outer face of column into footings) especially factoring-in that the column is only 2 ft. wide. Also verify that the footings have been designed to resist the sliding forces of the frame pier and that the moments in the pier account for the soil springs of the spread footings. See attached sketch.
b. Include a call-out at the column plaza concrete slab interface. Require 3/4" premolded expansion material on all four sides of column. Typical comment on all sheets that have column/building elements that interface the plaza concrete slab.

MANUEL FELICIANO 9/7/2016 1

a. A sensitivity study was performed. The results indicated the columns are flexible and only a small amount of negative moment exists at the face of the columns; therefore, the design is adequate. Soil springs will increase the flexibility of the columns and result in a decrease in pier moments.
b. The call-out will be added to the drawings.

Thomas Andres 9/16/2016 1

For Comment a, the framed pier is not balanced. The moment at the center of the cap is a function of the moments that have to be carried around the corners into the column. Either the 48-#11s is excessive or the 7-#8s is too little. I suspect that less than 48#11 are required and more than 7-#8s are required.

ERIKA HANGO 9/22/2016 1

The moment in the negative region of the beam is equal to the moment at the top section of the column (see attachment). Therefore, the 7-#8 bars at the top of the beam are adequate to resist the beam moment demand. The same area of steel is placed at the outside face of the column. Note that the beam depth is 2.5 time the depth of the column. The 48-#11 bars are required to resist the positive moment demand. The moment distribution along the beam is directly related to the stiffness of the columns. A wider column will create more negative moment in the beam.

Thomas Andres 9/26/2016 1

Okay, but make sure that both the 24 ksi limit and the reinforcing steel fatigue has been checked.

No	Status	Current Holder	Reference	Categories
6	RESPONSE ACCEPTED		Sheet B-71:	STRUCTURES

Created By	Created On	Version	Delegate For
Thomas Andres	8/9/2016	1	

Separate into two sheets. Sheet is difficult to read because scale of details are too small. See SDM 2.9.

MANUEL FELICIANO 9/7/2016 1

The drawing will be revised to show a bigger scale using more than one drawing.

Thomas Andres 9/15/2016 1

Response Accepted & Comment Closed

Submittal Report

Financial Project:	434688-1-58-01	Submital Type:	PLANS
Submittal Phase:	PHASE IV	Submital Staff Type:	CONSULTANT
Recieved Date:	9/15/2016	Response Due Date:	10/19/2016
Grace Period:	0	District:	SIXTH
Status:	CLOSED	Create Date:	9/15/2016
Create User Id:	PD601MI	Last Update:	9/15/2016
		Last Update User Id:	PD601MI

Description:

434688-1: Foundation Design for FIU UNIVERSITY CITY PROSPERITY PROJ. ALONG SW 109 AVE & SR 90/SW 8 ST

Group: PRELIMINARY ENGINEERING
Phase Review Type: LAP Project
Status: Submitted
Phase Initiation Date: 9/15/2016
Comments Due Date: 10/6/2016
Days Allowed for Review: 22
Review Meeting: 10/19/2016 10:00 AM to 11:00 AM @ to be schedule if needed
Plans Format: Electronic
Comments: External Project Manager: Manuel Feliciano, P.E.
E-mail: [redacted]
Phone #: [redacted]
Section: Phase: 100% Foundation Design
Review Meeting will be schedule if needed
Design Criteria is Florida Green Book
Work Program Construction Budget:
Production Date: DESIGN- BUILD

Threads:

No	Stati	Current Holder	Reference	Categories
10	RESI ACCEPTED		Geotechnical Rep	STRUCTURES

Created By	Created On	Version	Delegate For
Thomas Andres	9/26/2016	1	

The following comment requires a written response: shallow foundation bearing capacity analysis appears to have assumed no influence of groundwater, and no horizontal forces. Both parameters can have a significant effect on the estimated bearing capacity. Please update the calculations and re-size the footings if necessary.

ERIKA HANGO 10/18/2016 1

The influence of groundwater was taken into consideration. However, shallow foundation bearing capacity analyses are conservative already as they assume footings bearing on granular soils (not rock) with a soil friction angle of 40 degrees, when in fact the footings will sit on competent natural limestone (which may also be treated as a cohesive mass with a relatively high cohesion value), in which case the resulting bearing capacity would have been even significantly higher. As suggested, we have made a slight revision to the calculations to incorporate the effect of groundwater while keeping the original conservative assumptions the same. The resulting bearing capacity is now more conservative and still much higher than the maximum recommended factored bearing resistance of 14 ksf. The attached revised report incorporated the revised calculations reflecting this consideration. We disagree that the bearing capacity analyses do not consider the effect of horizontal forces. The design loading information was provided by the bridge engineer, including axial, lateral, and applied moments. Hence, all external stability checks were performed for all external loads provided and eccentricity also checked for these loads. No re-sizing of the footings is necessary.

Thomas Andres 10/27/2016 1

Response Accepted & Comment Closed

No	Status	Current Holder	Reference	Categories
11	RESPONSE ACCEPTED		Sheet B-3:	STRUCTURES

Created By	Created On	Version	Delegate For
Thomas Andres	9/26/2016	1	

This comment is for information only (no response required) due to this being the Foundation Submittal however the General Notes do not address the corrosion protection of the stay -pipe (inner and outer). How is the inside of the pipe protected (primer, etc.)- can it be coated? Recommend a High Performance Painting System on the outside per Specification 560. It is not clear what an Architectural Coating is?

MANUEL FELICIANO 10/18/2016 1

Noted.

Thomas Andres 10/27/2016 1

Response Accepted & Comment Closed

No	Status	Current Holder	Reference	Categories
12	RESPONSE ACCEPTED		Sheets B-8 and B-11 thru B-17:	STRUCTURES

Created By	Created On	Version	Delegate For
Thomas Andres	9/26/2016	1	

This comment requires a written response: Label Footings (Type 1 thru Type 8) on Sheets B-11 thru B-17 per the naming convention given on B-8.

MANUEL FELICIANO 10/18/2016 1

The footing labels on drawing B-11 thru B-17 have been revised to match the labels on drawing B-8.

Thomas Andres 10/27/2016 1

Response Accepted & Comment Closed

MEMORANDUM

TO: The Files

FROM: Dwight D. Dempsey, P.E., S.E.

REFERENCE: UniversityCity Prosperity Project
Pedestrian Bridge Plans Discussion, 9/15/2016
FIGG Project No. 2262.03

DATE: January 21, 2016

A meeting on the referenced project was held from 9:00 to 10:00 a.m. on Thursday, September 15, 2016 at FDOT Central Office in Tallahassee, Florida to discuss the pedestrian bridge plans. Participants included:

FDOT Central Office:	Robert Robertson, Tom Andres, Teddy Theryo
FDOT District 6:	Alfredo Reyna (via phone)
FIU:	Alberto Delgado (via phone)
FIGG:	Denney Pate, Dwight Dempsey, Manuel Feliciano

A document containing the FIGG responses to FDOT comments was discussed during this meeting (copy attached). The following is a summary of key items from this meeting:

1. FIGG will list the gust effect factor considered for the bridge design in the General Notes (Item 2.f)
2. FDOT suggested increasing the size of the vertical PT bar duct for the vertical PT bars that are used to connect the superstructure to the pylon base. FIGG will check if FDOT suggestion is feasible.
3. FIGG to add a note to the bridge plans to require additional testing of the pipe welds to the base plate to ensure highest quality welds (e.g. ultrasonic or radiographic testing).
4. FIGG to investigate feasibility of adding a 9" chamfer where the truss members connect to the canopy and bridge deck at the end of the bridge span where the longitudinal PT terminates.
5. FIGG to ensure the PT bar anchor cap is utilized at the live and dead ends.
6. FIGG to investigate and work with MCM to implement flexible formwork systems to allow the bridge deck section to be minimally restrained after casting.
7. FDOT to further review superstructure status set plans that were provided during the meeting and provide comments back to FIGG by 9/21.

xc: All Attendees

Andres, Tom

m: Andres, Tom
t: Friday, September 16, 2016 11:57 AM
To: Dempsey, Dwight; Feliciano, Manuel; Robertson, Robert; Theryo, Teddy; Pate, Denney; Rodrigo Isaza [redacted]; Eugene Collings-Bonfill - P.E., PMP; Alberto Delgado [redacted]; Reyna, Alfredo
Subject: RE: FIU Pedestrian Bridge Superstructure - Draft Meeting Summary
Attachments: FIU Superstructure Feedback.pdf

Dwight,

I concur with your draft meeting summary. I performed a very quick cursory review of the superstructure status set. Instead of typing up the comments, I simply marked up the set (sorry for my poor handwriting). See attached. A lot of the comments were discussed in yesterday's meeting or are follow-ups to earlier 30% review comments.

Let me know if you have any questions.

Thomas A. Andres P.E.
Assistant State Structures Design Engineer
605 Suwannee St., MS 33
Tallahassee, FL 32399-0450
[redacted]

m: Dempsey, Dwight [redacted]
t: Friday, September 16, 2016 11:45 AM
To: Andres, Tom [redacted]; Feliciano, Manuel [redacted]; Robertson, Robert [redacted]; Theryo, Teddy [redacted]; Pate, Denney [redacted]; Rodrigo Isaza [redacted]; Eugene Collings-Bonfill - P.E., PMP [redacted]; Alberto Delgado [redacted]; Reyna, Alfredo [redacted]
Subject: FIU Pedestrian Bridge Superstructure - Draft Meeting Summary

Tom/All,

Please find the attached draft summary from our meeting with Central Office yesterday. Please review and provide me with your comments by COB Monday, 9/19 and I will send out the final summary on 9/20.

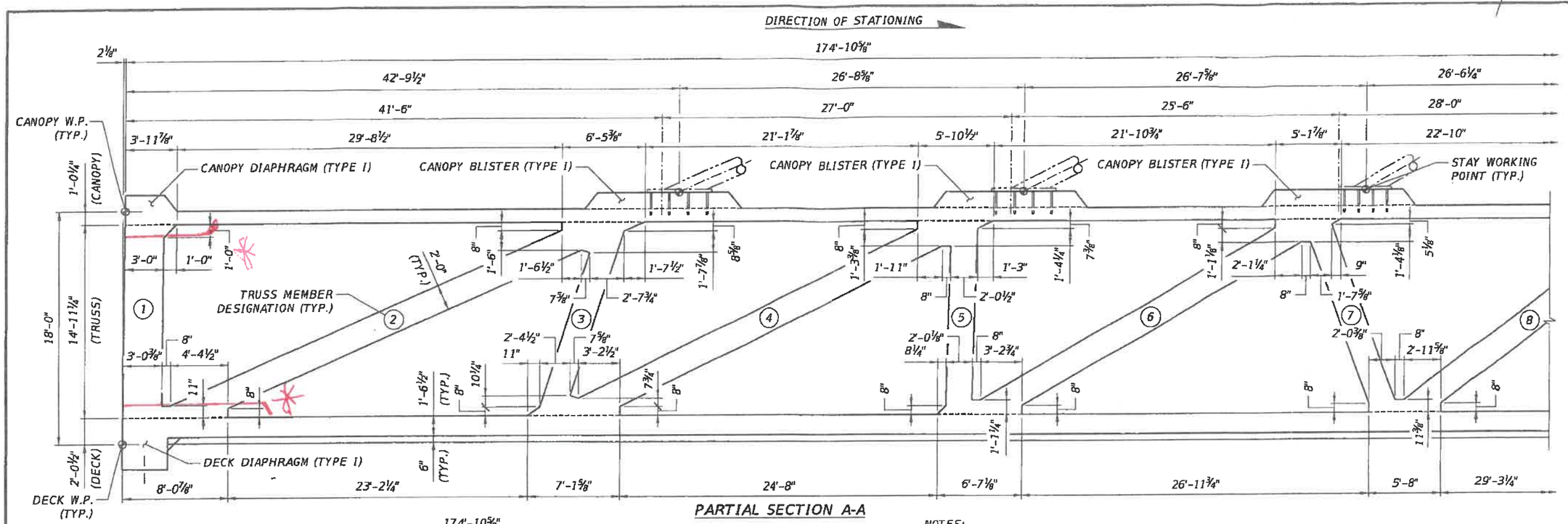
Thank you!

Dwight

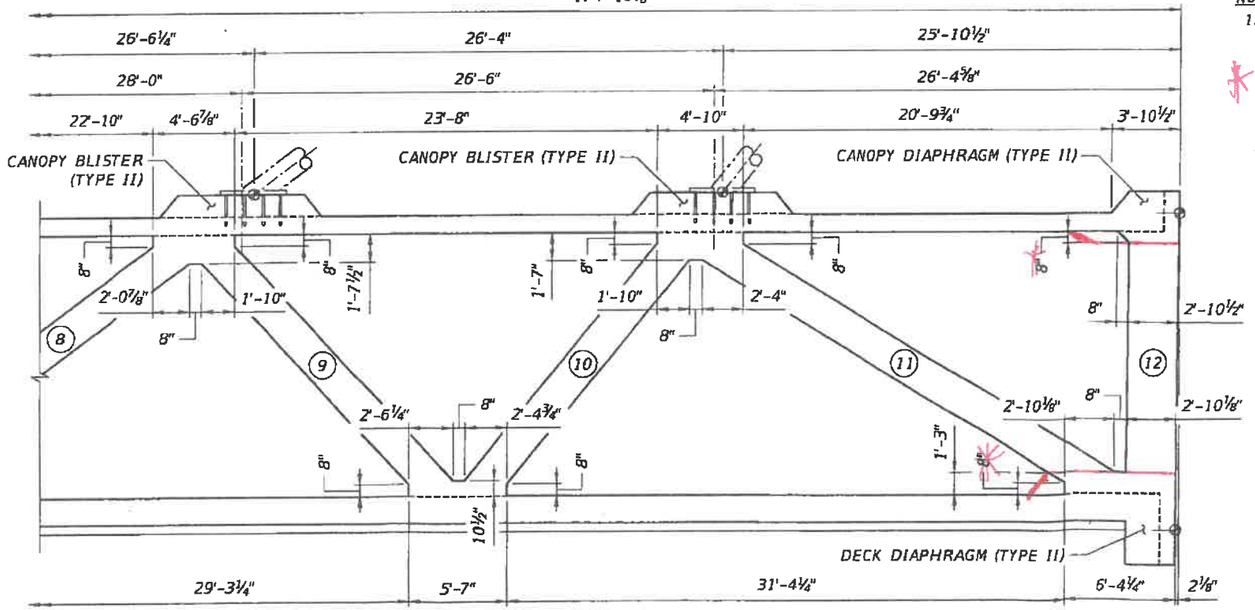
Dwight D. Dempsey, P.E., S.E.
Regional Director
Southeastern Regional Office
FIGG Bridge Engineers, Inc.
[redacted] N. Calhoun St.
Tallahassee, FL 32301

[redacted]

90 %



PARTIAL SECTION A-A

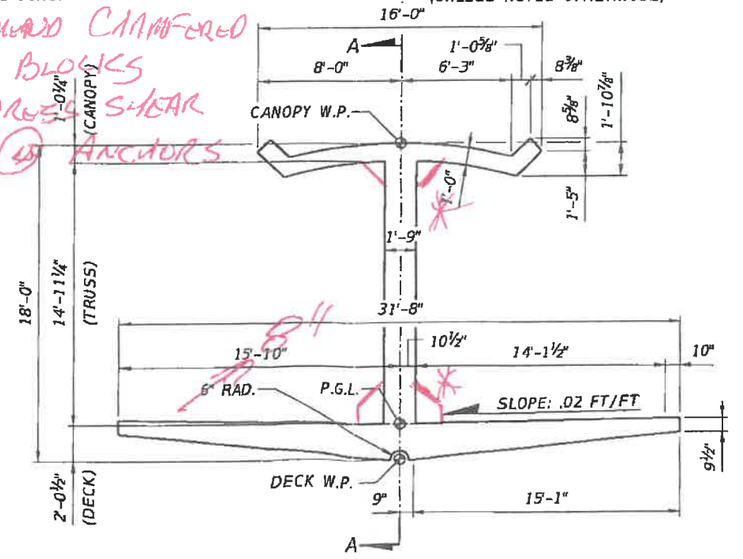


PARTIAL SECTION A-A

NOTES:

1. APPROXIMATE LIFTING WEIGHT OF TRUSS SYSTEM SYSTEM = 915 TONS.

* RECOMMEND CHAMFERED END BLOCKS TO ADDRESS SHEAR LAG @ ANCHORS



CROSS-SECTION

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

ENGINEER OF RECORD:
FIGG
424 North Calhoun Street
Tallahassee, Florida 32301
FLORIDA CERTIFICATE OF AUTHORIZATION NO. 5618
W. DENNEY PATE, P.E. - P.E. NO. 34332

DRAWN BY:	DCB
CHECKED BY:	MF
DESIGNED BY:	EDL
CHECKED BY:	MF

FIU FLORIDA INTERNATIONAL UNIVERSITY

ROAD NO.	COUNTY	PROJECT ID
	MIAMI-DADE	434688-1-58-01

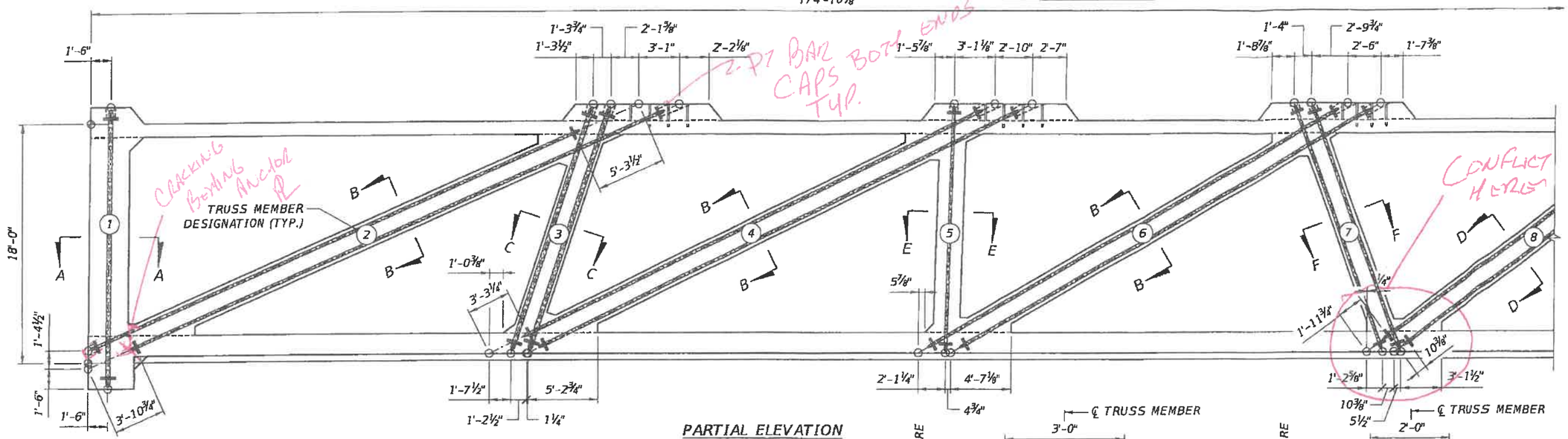
SHEET TITLE: MAIN SPAN TRUSS SYSTEM LAYOUT

PROJECT NAME: UNIVERSITYCITY PROSPERITY PROJECT

SHEET NO. B-36

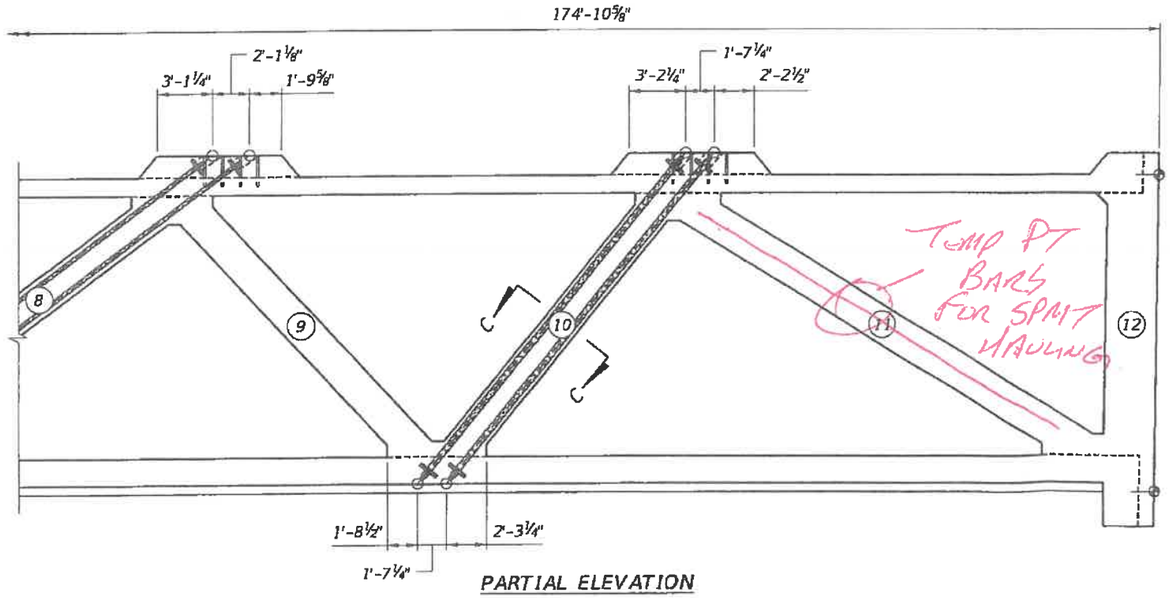
Plotted By: dbrewton 9/14/2016 7:24:48 PM G:\434688815801\struct\B1_36_M5_Truss_Layout.dgn

90% SUBMITTAL - NOT FOR CONSTRUCTION - SEPTEMBER 2016

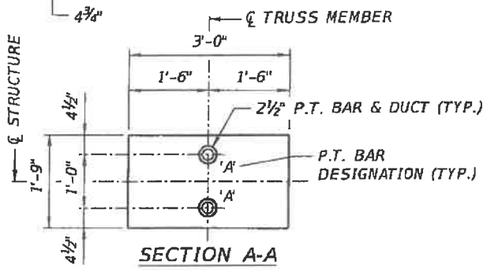


NOTES:

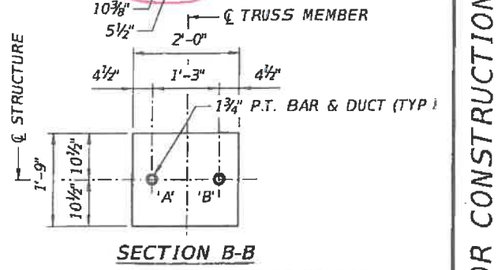
1. FOR ADDITIONAL DETAILS, SEE BACK SPAN TRUSS SYSTEM P.T. BAR DETAILS.



PARTIAL ELEVATION



SECTION A-A



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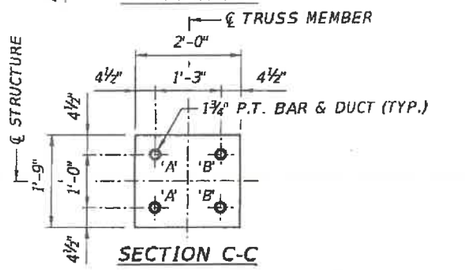

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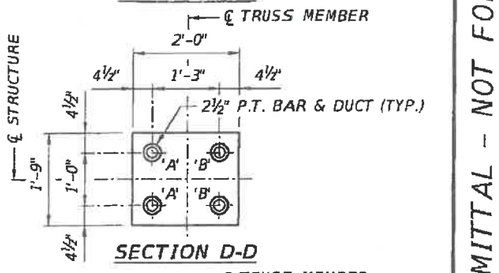

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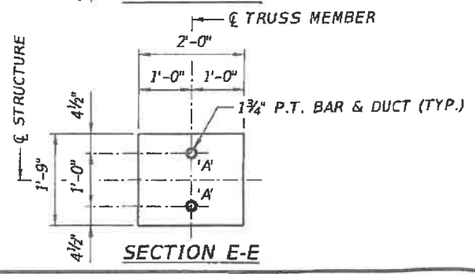

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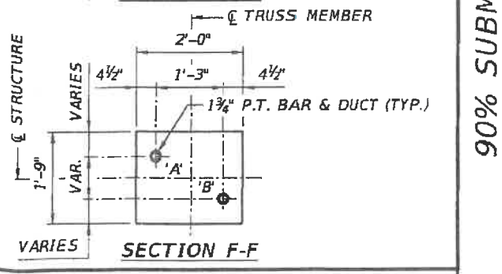


SECTION F-F

90% SUBMITTAL - NOT FOR CONSTRUCTION - SEPTEMBER 2016

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

ENGINEER OF RECORD:
FIGG
424 North Calhoun Street
Tallahassee, Florida 32301
FLORIDA CERTIFICATE OF AUTHORIZATION NO. 5618
W. DENNEY PATE, P.E. - P.E. NO. 34332

DRAWN BY:	DCB
CHECKED BY:	EDL
DESIGNED BY:	EDL
CHECKED BY:	MF

FIU FLORIDA INTERNATIONAL UNIVERSITY

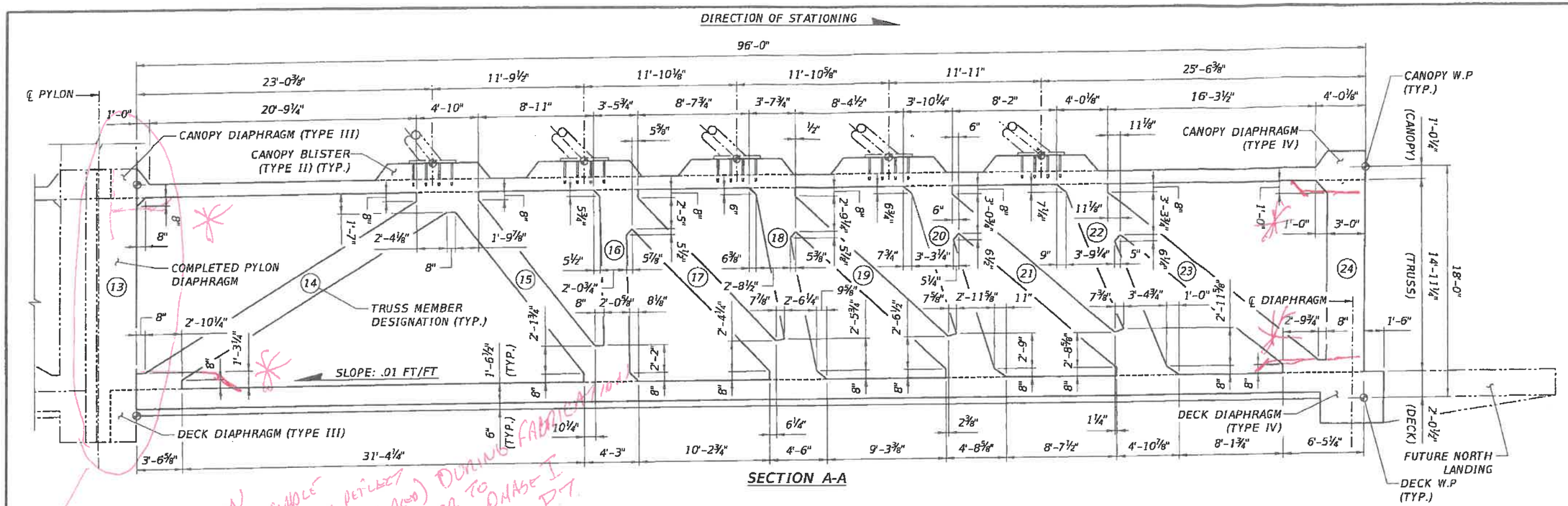
ROAD NO.	COUNTY	PROJECT ID
	MIAMI-DADE	434688-1-58-01

SHEET TITLE: MAIN SPAN TRUSS SYSTEM P.T. BAR DETAILS

PROJECT NAME: UNIVERSITYCITY PROSPERITY PROJECT

SHEET NO. B-38

Plotted By: dbrewton 9/14/2016 7:24:27 PM G:\434688158O1\struct\BT_37_M5_Truss_PT_Details.dgn



ISOLATE SPAN FROM PYLON SPAN CAN ACT SIMPLE SPAN (T-BEAMS REMOVED AS CONCRETE IS PLACED) DURING FABRICATION AND PRIOR TO PHASE I P.T.

* RECOMMEND CHAMFERED END BLOCKS TO ADDRESS SHEAR LAG @ ANCHORS.

NOTES:

1. APPROXIMATE LIFTING WEIGHT OF TRUSS SYSTEM SYSTEM = 915 TONS.

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REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

ENGINEER OF RECORD:
FIGG
424 North Cathoun Street
Tallahassee, Florida 32301
FLORIDA CERTIFICATE OF AUTHORIZATION NO. 5618
W. DENNEY PATE, P.E. - P.E. NO. 34332

DRAWN BY:	DCB
CHECKED BY:	MF
DESIGNED BY:	EDL
CHECKED BY:	MF

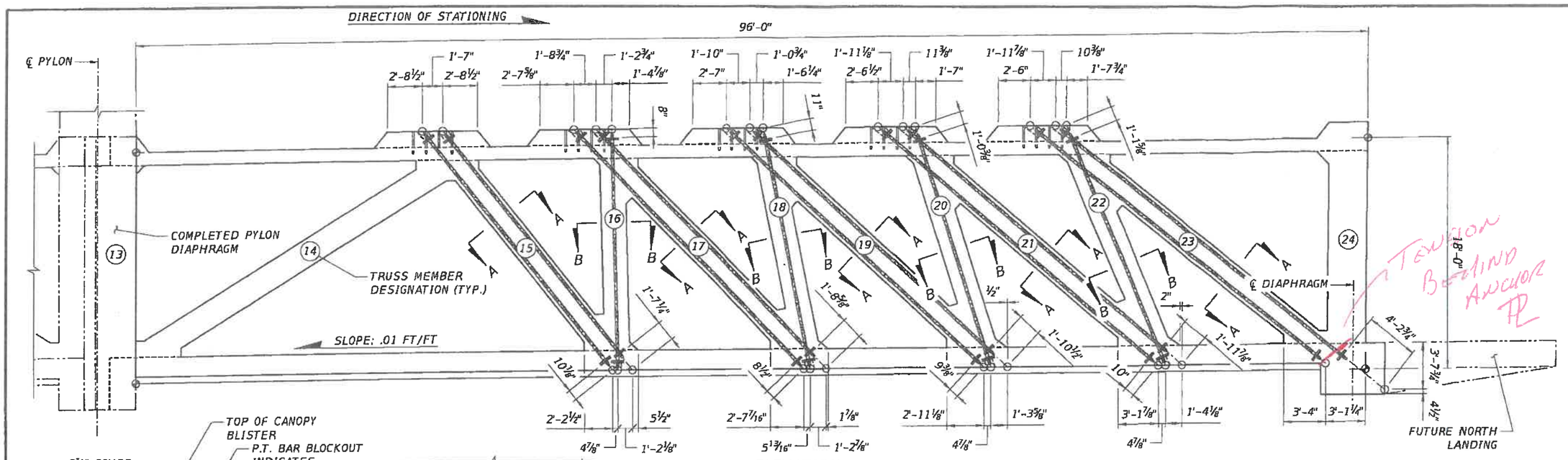
ROAD NO.	COUNTY	PROJECT ID
	MIAMI-DADE	434688-1-58-01

SHEET TITLE: BACK SPAN TRUSS SYSTEM LAYOUT

PROJECT NAME: UNIVERSITYCITY PROSPERITY PROJECT

SHEET NO. B-40

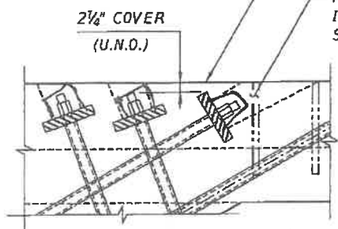
Plotted By: dbrewton 9/14/2016 7:25:11 PM G:\434688815801\struct\B1_40_BS_Truss_Layout.dgn



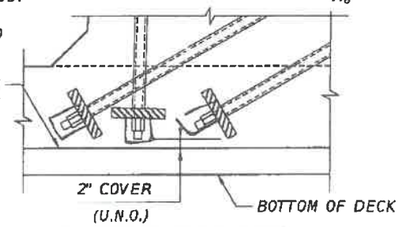
ELEVATION

LENGTH AND RELATED WEIGHT ARE SHOWN ON THE SCHEDULE

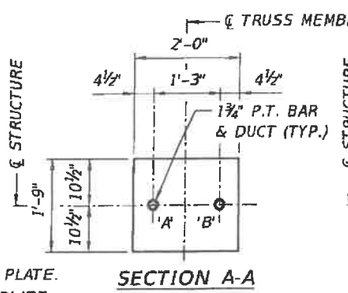
THIS LENGTH AND RELATED WEIGHT NOT INCLUDED IN THE SCHEDULE AND SHALL BE INCLUDED IN THE COST OF THE POST-TENSIONING



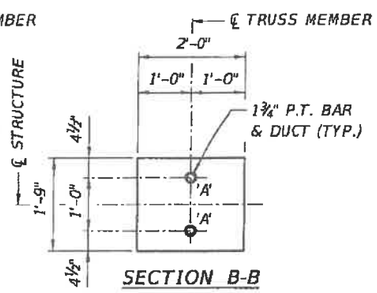
P.T. BAR ANCHOR DETAIL (TOP ANCHOR)



P.T. BAR ANCHOR DETAIL (BOTTOM ANCHOR)



SECTION A-A



SECTION B-B

NOTES:

1. MINIMUN CONCRETE STRENGTH REQUIRED PRIOR TO STRESSING P.T. BARS = 6000 PSI.
2. ALL 1¾" DIA. P.T. BARS WILL HAVE AN 8"x12" ANCHOR PLATE. ALL 2½ DIA. P.T. BARS WILL HAVE A 12"x14" ANCHOR PLATE.

P.T. BAR SCHEDULE

MEMBER	BAR	BAR SIZE	NO. OF BARS	BAR LENGTH	BAR WEIGHT	TOTAL WEIGHT	JACKING FORCE	BAR ELONGATION
1	'A'	2½"	2	19'-9"				
2	'A'	1¾"	1	39'-4¾"				
	'B'	1¾"	1	42'-11⅞"				
3	'A'	1¾"	2	18'-1⅞"				
	'B'	1¾"	2	18'-1⅞"				
4	'A'	1¾"	1	37'-8¼"				
	'B'	1¾"	1	39'-6⅞"				
5	'A'	1¾"	2	17'-7⅜"				
6	'A'	1¾"	1	35'-0¾"				
	'B'	1¾"	1	35'-0¾"				
7	'A'	1¾"	1	18'-9⅜"				
	'B'	1¾"	1	18'-9⅜"				
8	'A'	2½"	2	28'-4⅞"				
	'B'	2½"	2	29'-1⅞"				
10	'A'	2½"	2	22'-3¾"				
	'B'	2½"	2	22'-3¾"				

P.T. BAR SCHEDULE (CONT.)

MEMBER	BAR	BAR SIZE	NO. OF BARS	BAR LENGTH	BAR WEIGHT	TOTAL WEIGHT	JACKING FORCE	BAR ELONGATION
15	'A'	1¾"	1	22'-3⅜"				
	'B'	1¾"	1	21'-6⅜"				
16	'A'	1¾"	2	17'-6⅜"				
17	'A'	1¾"	1	24'-5⅜"				
	'B'	1¾"	1	23'-5¼"				
18	'A'	1¾"	2	17'-7⅜"				
19	'A'	1¾"	1	25'-11⅛"				
	'B'	1¾"	1	24'-10"				
20	'A'	1¾"	2	18'-0⅝"				
21	'A'	1¾"	1	27'-1¼"				
	'B'	1¾"	1	25'-11½"				
22	'A'	1¾"	2	18'-6½"				
23	'A'	1¾"	1	28'-0⅝"				
	'B'	1¾"	1	28'-0⅝"				

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

ENGINEER OF RECORD:
FIGG
424 North Calhoun Street
Tallahassee, Florida 32301
FLORIDA CERTIFICATE OF AUTHORIZATION NO. 5618
W. DENNEY PATE, P.E. - P.E. NO. 34332

DRAWN BY:	DCB
CHECKED BY:	MF
DESIGNED BY:	EDL
CHECKED BY:	MF

ROAD NO.	COUNTY	PROJECT ID
	MIAMI-DADE	434688-1-58-01

SHEET TITLE: BACK SPAN TRUSS SYSTEM P.T. BAR DETAILS

PROJECT NAME: UNIVERSITYCITY PROSPERITY PROJECT

SHEET NO. B-41

Plotted By: dbrewton 9/14/2016 7:25:28 PM G:\434688815801\struct\B1_41_BS_Truss_PT_Layout.dgn

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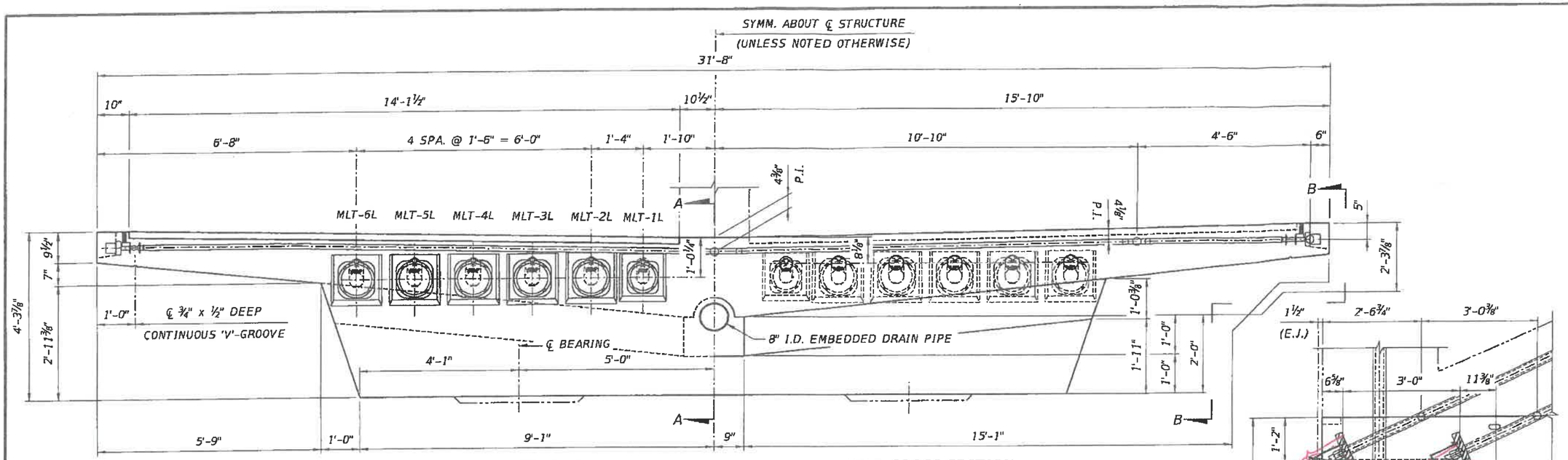
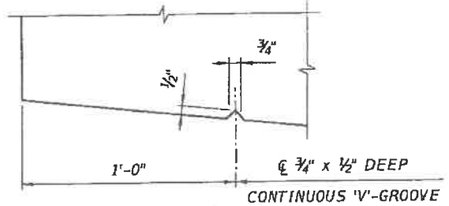
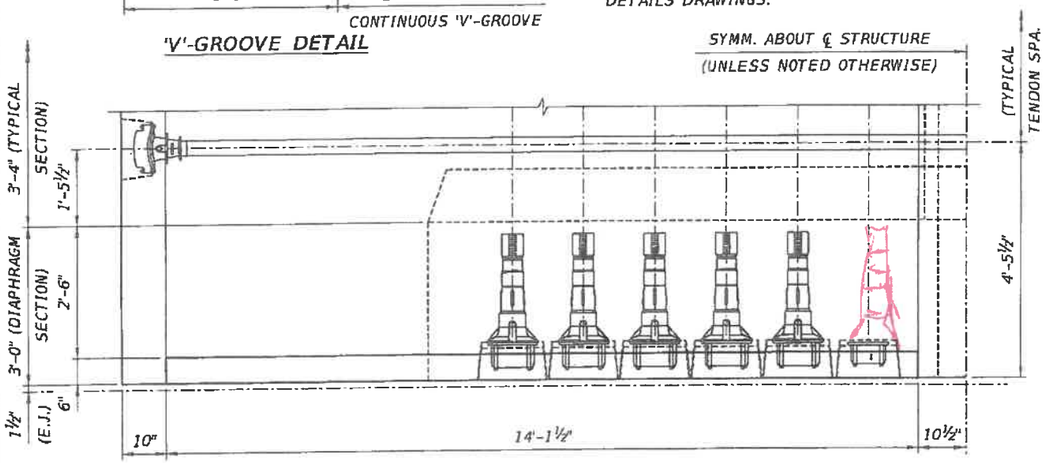


NOTES:

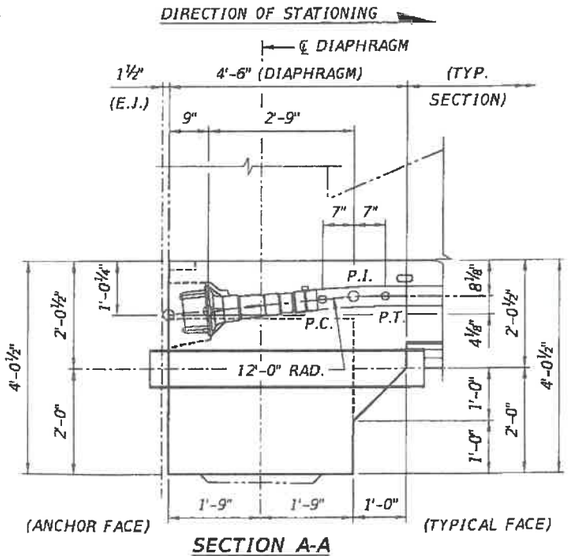
1. FOR ADDITIONAL MAINSPAN DETAILS, SEE MAINSPAN TRUSS SYSTEM LAYOUT DRAWING.
2. FOR DIAPHRAGM REINFORCEMENT, SEE DECK END DIAPHRAGM REINFORCEMENT - TYPE I DRAWING.
3. FOR ADDITIONAL TRANSVERSE TENDON DETAILS, SEE DECK TRANSVERSE REINFORCEMENT & P.T. MAINSPAN DRAWING.
4. FOR ADDITIONAL LONGITUDINAL TENDON DETAILS, SEE LONGITUDINAL POST-TENSIONING DETAILS - DECK DRAWINGS.
5. FOR BEARING DETAILS, SEE BEARING DETAILS DRAWING,
6. FOR ADDITIONAL DRAIN PIPE DETAILS, SEE DRAINAGE DETAILS DRAWINGS.



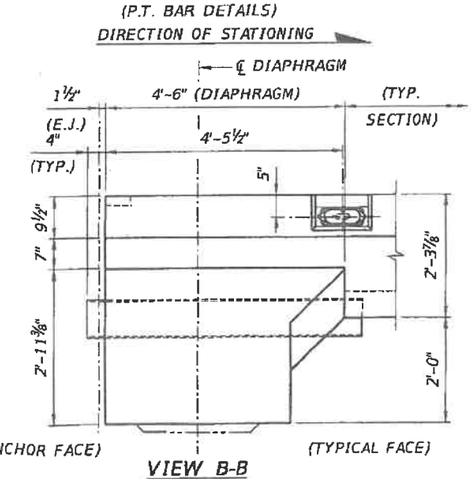
'V'-GROOVE DETAIL



HALF PLAN
(TOP SLAB)



SECTION A-A



VIEW B-B

90% SUBMITTAL - NOT FOR CONSTRUCTION - SEPTEMBER 2016

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

ENGINEER OF RECORD:
FIGG
424 North Calhoun Street
Tallahassee, Florida 32301
FLORIDA CERTIFICATE OF AUTHORIZATION NO. 5618
W. DENNEY PATE, P.E. - P.E. NO. 34332

DRAWN BY:	CHECKED BY:	DESIGNED BY:	CHECKED BY:
DCB	ENH	ENH	MF

FIU FLORIDA INTERNATIONAL UNIVERSITY

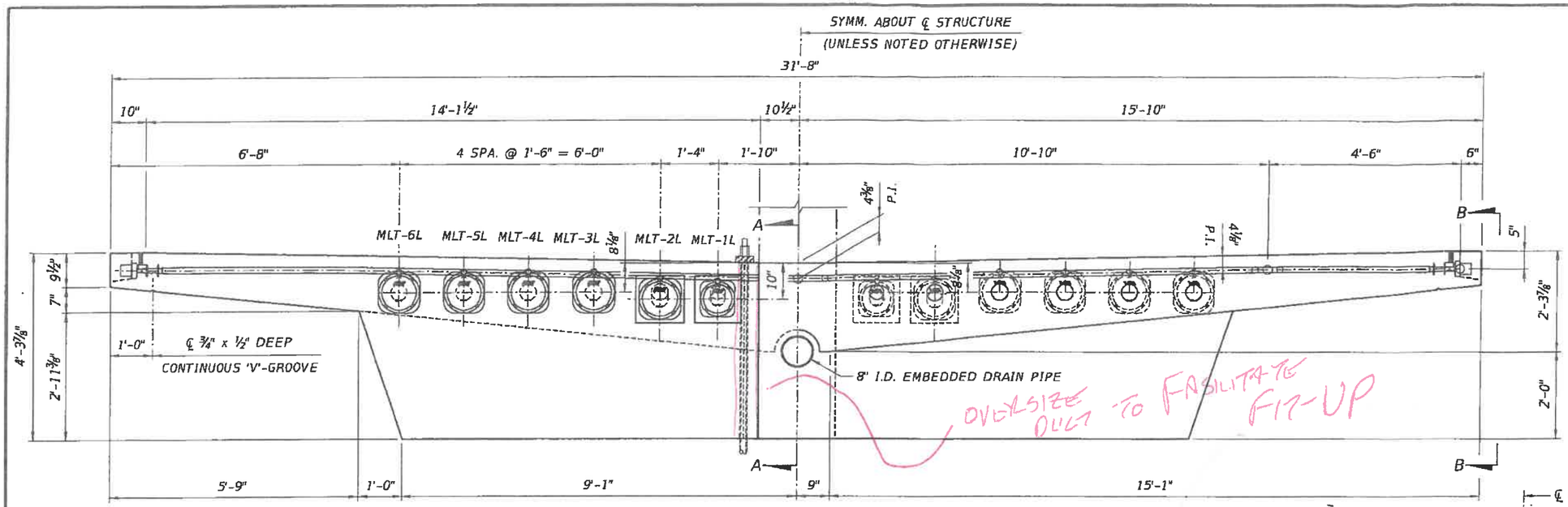
ROAD NO.	COUNTY	PROJECT ID
	MIAMI-DADE	434688-1-58-01

SHEET TITLE: DECK END DIAPHRAGM DIMENSIONS & P.T. - TYPE I

PROJECT NAME: UNIVERSITYCITY PROSPERITY PROJECT

SHEET NO. B-44

Plotted By: dbrewton 9/14/2016 7:25:51 PM G:\434688815801\struct\B1_46_N5_Type 1_Deck_Diaphragm_Dim&PT.dgn

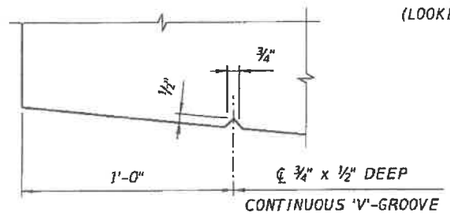


HALF CROSS-SECTION
(LOOKING DOWNSTATION - ANCHOR FACE)

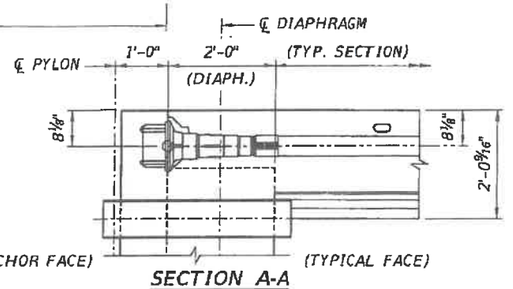
HALF CROSS-SECTION
(LOOKING UPSTATION - TYPICAL FACE)

NOTES:

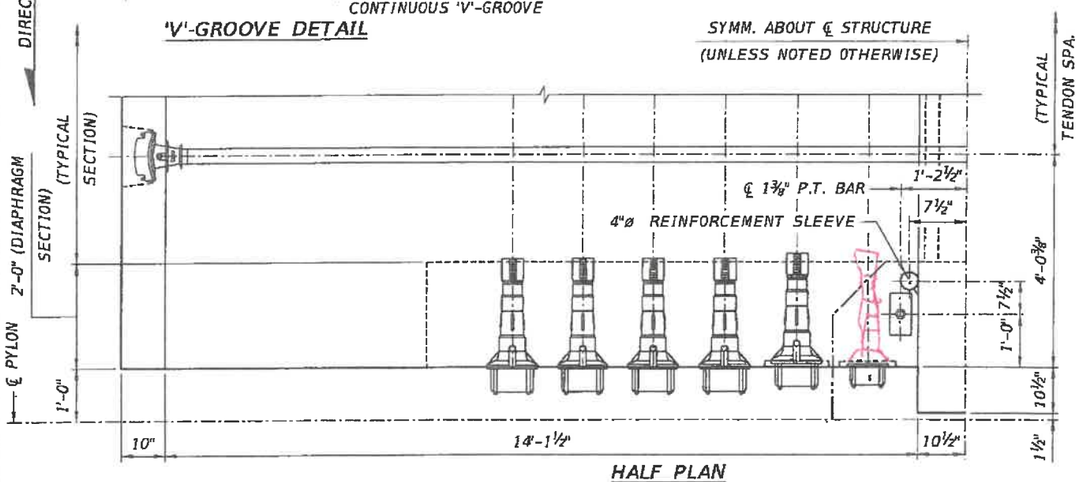
1. FOR ADDITIONAL MAINSPAN DETAILS, SEE MAINSPAN TRUSS SYSTEM LAYOUT DRAWING.
2. FOR DIAPHRAGM REINFORCEMENT, SEE DECK END DIAPHRAGM REINFORCEMENT - TYPE II DRAWING.
3. FOR ADDITIONAL TRANSVERSE TENDON DETAILS, SEE DECK TRANSVERSE REINFORCEMENT & P.T. MAINSPAN DRAWING.
4. FOR ADDITIONAL LONGITUDINAL TENDON DETAILS, SEE LONGITUDINAL POST-TENSIONING DETAILS - DECK DRAWINGS.
5. FOR ADDITIONAL DRAIN PIPE DETAILS, SEE DRAINAGE DETAILS DRAWINGS.



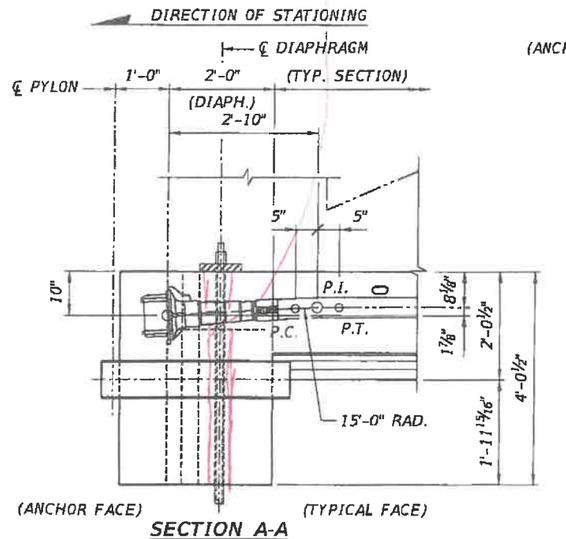
'V'-GROOVE DETAIL



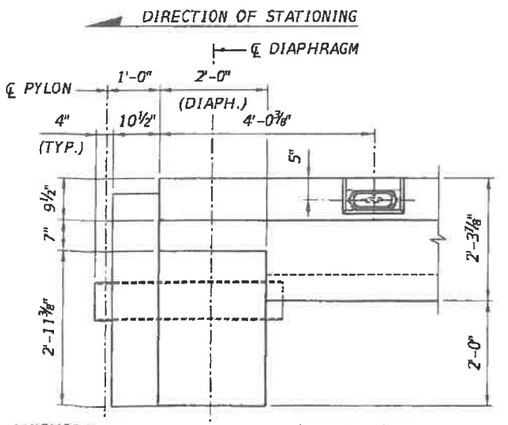
SECTION A-A
(TENDONS MLT-3 THRU MLT-6)



HALF PLAN
(TOP SLAB)



SECTION A-A
(TENDONS MLT-1 & MLT-2)



VIEW B-B

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

ENGINEER OF RECORD:
FIGG
424 North Calhoun Street
Tallahassee, Florida 32301
FLORIDA CERTIFICATE OF AUTHORIZATION NO. 5618
W. DENNEY PATE, P.E. - P.E. NO. 34332

DRAWN BY:	CHECKED BY:	DESIGNED BY:	CHECKED BY:
DCB	ENH	ENH	MF

FIU FLORIDA INTERNATIONAL UNIVERSITY

ROAD NO.	COUNTY	PROJECT ID
	MIAMI-DADE	434688-1-58-01

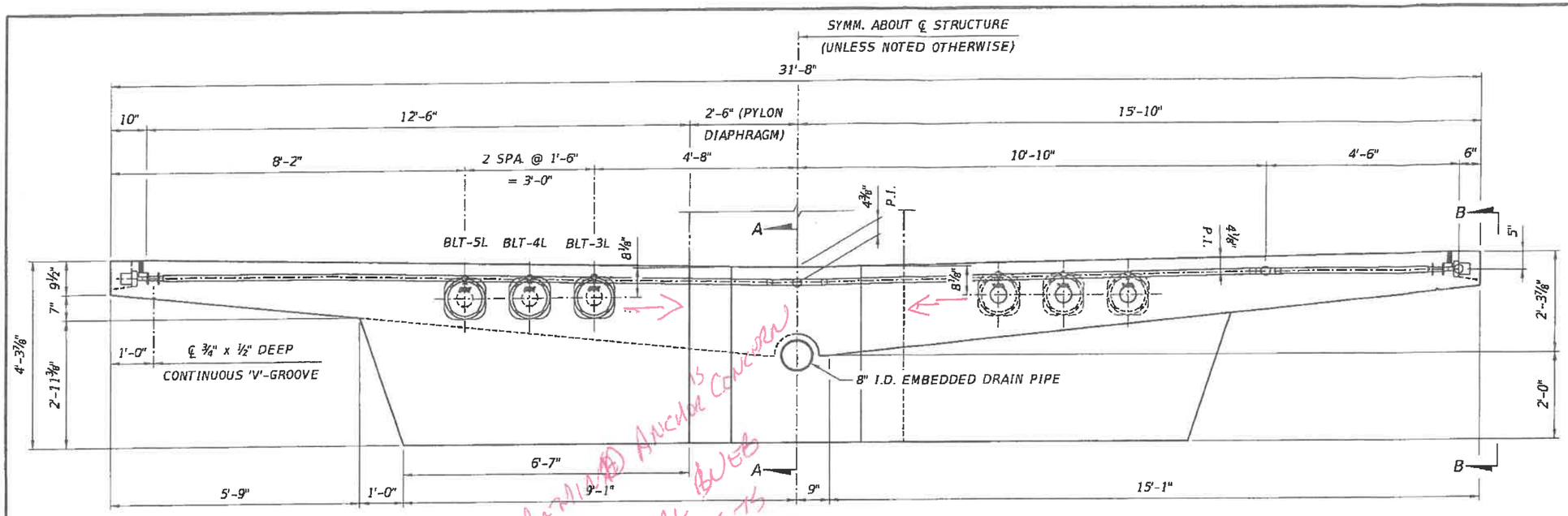
SHEET TITLE: DECK END DIAPHRAGM DIMENSIONS & P.T. - TYPE II

PROJECT NAME: UNIVERSITYCITY PROSPERITY PROJECT

SHEET NO.: B-46

Plotted By: dorewton 9/15/2016 7:14:05 AM G:\434688815801\struct\B1_49_M5_Type 2_Deck_Diaphragm_Dim&PT.dgn

90% SUBMITTAL - NOT FOR CONSTRUCTION - SEPTEMBER 2016

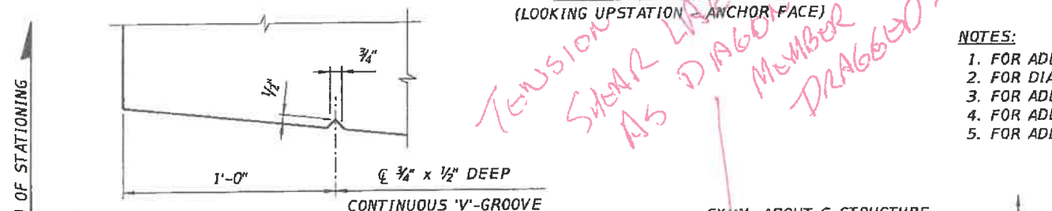


HALF CROSS-SECTION
(LOOKING UPSTATION - ANCHOR FACE)

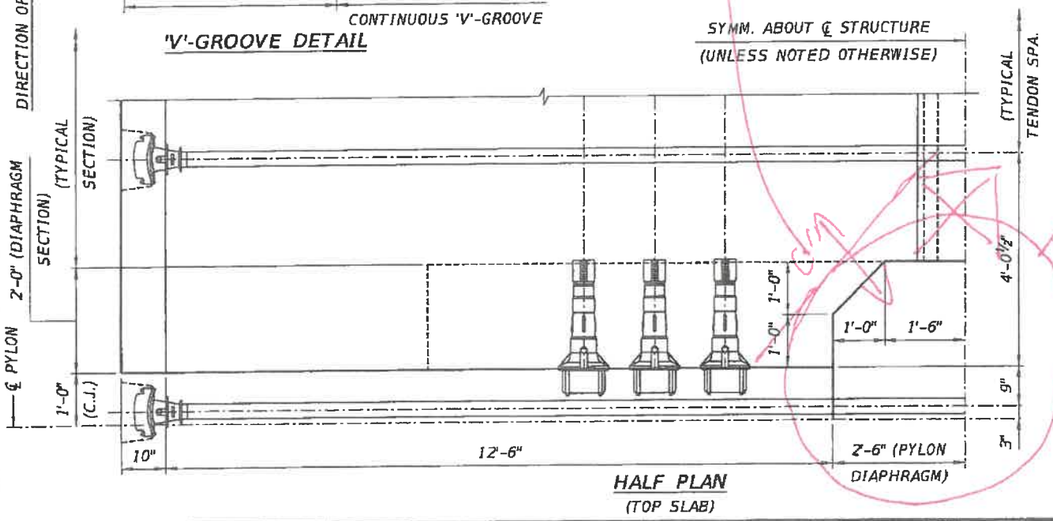
HALF CROSS-SECTION
(LOOKING DOWNSTATION - TYPICAL FACE)

NOTES:

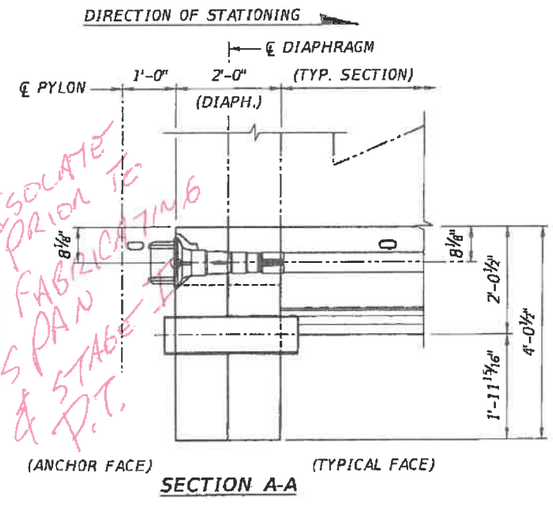
1. FOR ADDITIONAL MAINSPAN DETAILS, SEE MAINSPAN TRUSS SYSTEM LAYOUT DRAWING.
2. FOR DIAPHRAGM REINFORCEMENT, SEE DECK END DIAPHRAGM REINFORCEMENT - TYPE III DRAWING.
3. FOR ADDITIONAL TRANSVERSE TENDON DETAILS, SEE DECK TRANSVERSE REINFORCEMENT & P.T. MAINSPAN DRAWING.
4. FOR ADDITIONAL LONGITUDINAL TENDON DETAILS, SEE LONGITUDINAL POST-TENSIONING DETAILS - DECK DRAWINGS.
5. FOR ADDITIONAL DRAIN PIPE DETAILS, SEE DRAINAGE DETAILS DRAWINGS.



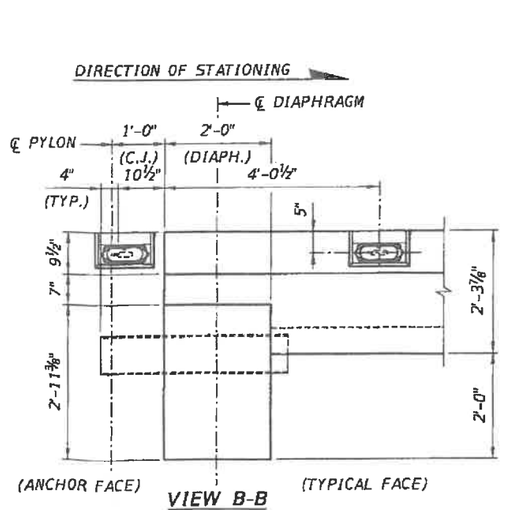
'V'-GROOVE DETAIL



HALF PLAN
(TOP SLAB)



SECTION A-A



VIEW B-B

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REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

ENGINEER OF RECORD:
FIGG
424 North Calhoun Street
Tallahassee, Florida 32301
FLORIDA CERTIFICATE OF AUTHORIZATION NO. 5618
W. DENNEY PATE, P.E. - P.E. NO. 34332

DRAWN BY:	CFR
CHECKED BY:	EDL
DESIGNED BY:	EDL
CHECKED BY:	MF

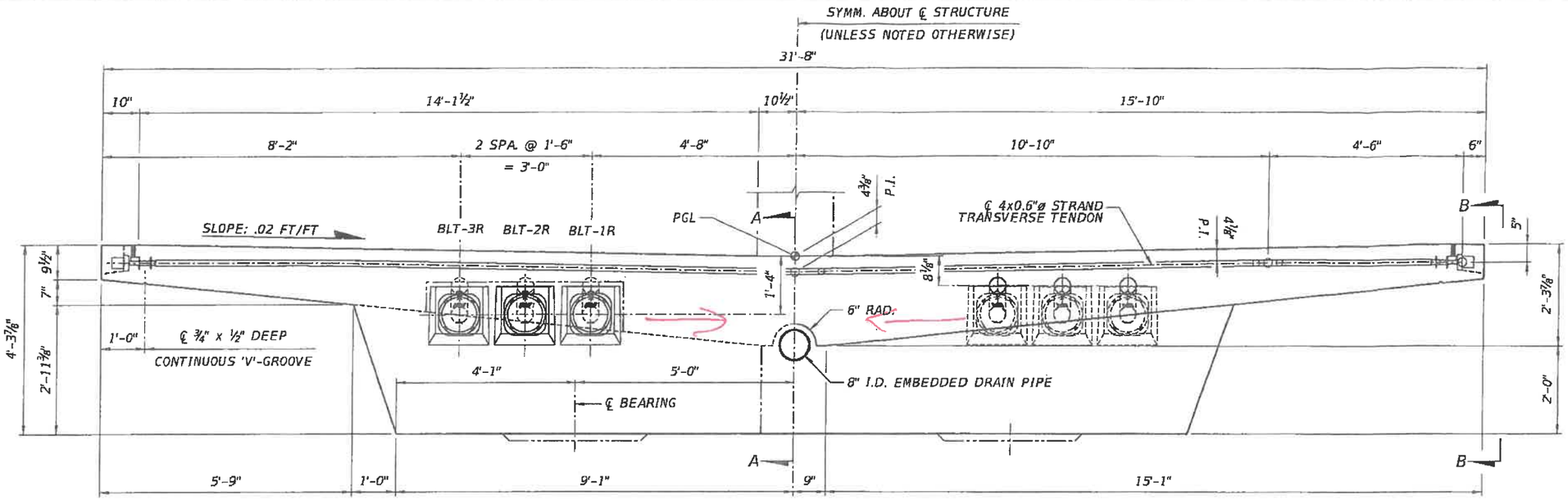
ROAD NO.	COUNTY	PROJECT ID
	MIAMI-DADE	434688-1-58-01

SHEET TITLE: DECK END DIAPHRAGM DIMENSIONS & P.T. - TYPE III

PROJECT NAME: UNIVERSITYCITY PROSPERITY PROJECT

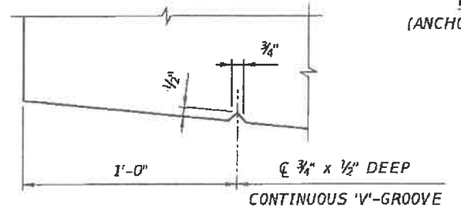
SHEET NO. B-46

Plotted By: dbrewton 9/15/2016 7:49:21 AM G:\434688715801\struct\B1_51_MS_Type 3_Deck_Diaphragm_Dim&PT.dgn



HALF CROSS-SECTION
(ANCHOR FACE - LOOKING DOWNSTATION)

HALF CROSS-SECTION
(TYPICAL FACE - LOOKING UPSTATION)

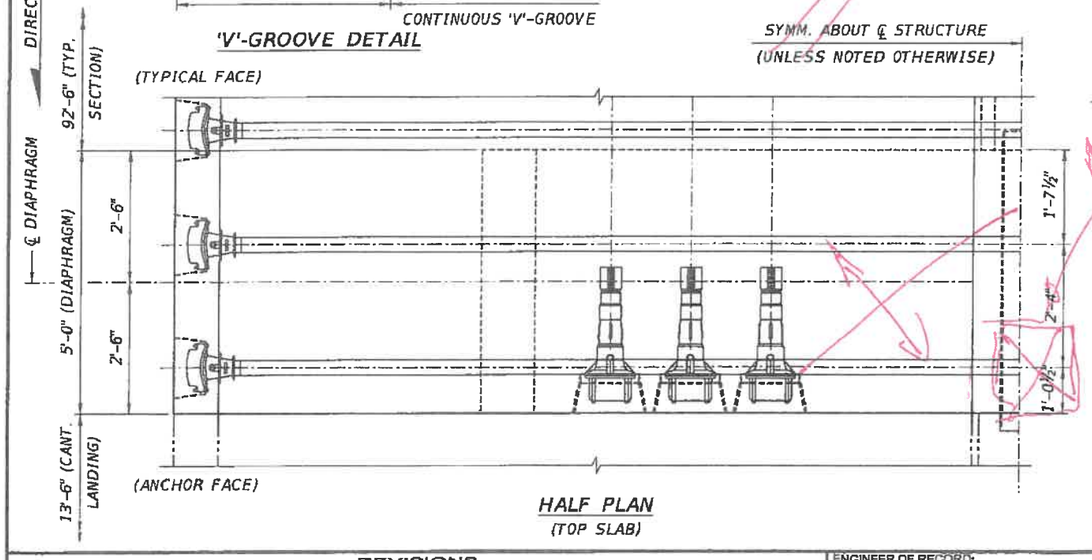


'V'-GROOVE DETAIL

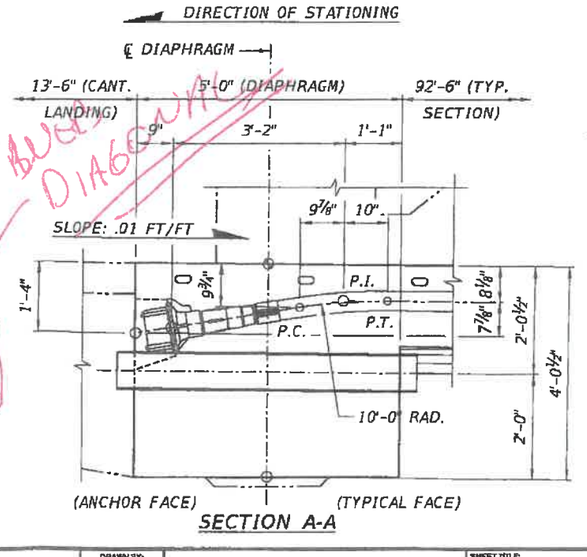
NOTES:
1. FOR ADDITIONAL BACKSPAN DETAILS, SEE BACKSPAN TRUSS SYSTEM LAYOUT DRAWING.
2. FOR DIAPHRAGM REINFORCEMENT, SEE DECK END DIAPHRAGM REINFORCEMENT - TYPE IV DRAWING.
3. FOR ADDITIONAL TRANSVERSE TENDON DETAILS, SEE DECK TRANSVERSE REINFORCEMENT & P.T. BACKSPAN DRAWING.
4. FOR ADDITIONAL LONGITUDINAL TENDON DETAILS, SEE LONGITUDINAL POST-TENSIONING DETAILS - DECK DRAWINGS.
5. FOR BEARING DETAILS, SEE BEARING DETAILS DRAWING.
6. FOR ADDITIONAL DRAIN PIPE DETAILS, SEE DRAINAGE DETAILS DRAWINGS.

DITTO.

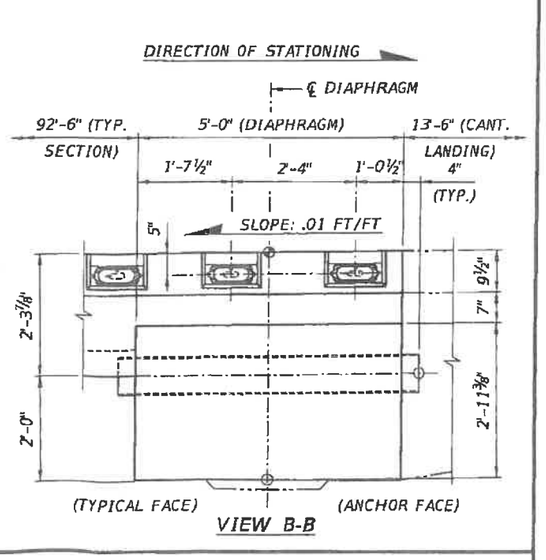
BUCK DIAGONAL



HALF PLAN
(TOP SLAB)



SECTION A-A



VIEW B-B

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DIRECTION OF STATIONING

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

ENGINEER OF RECORD:
FIGG
424 North Calhoun Street
Tallahassee, Florida 32301
FLORIDA CERTIFICATE OF AUTHORIZATION NO. 5618
W. DENNEY PATE, P.E. - P.E. NO. 34332

DRAWN BY:	DCB
CHECKED BY:	ENH
DESIGNED BY:	ENH
CHECKED BY:	MF

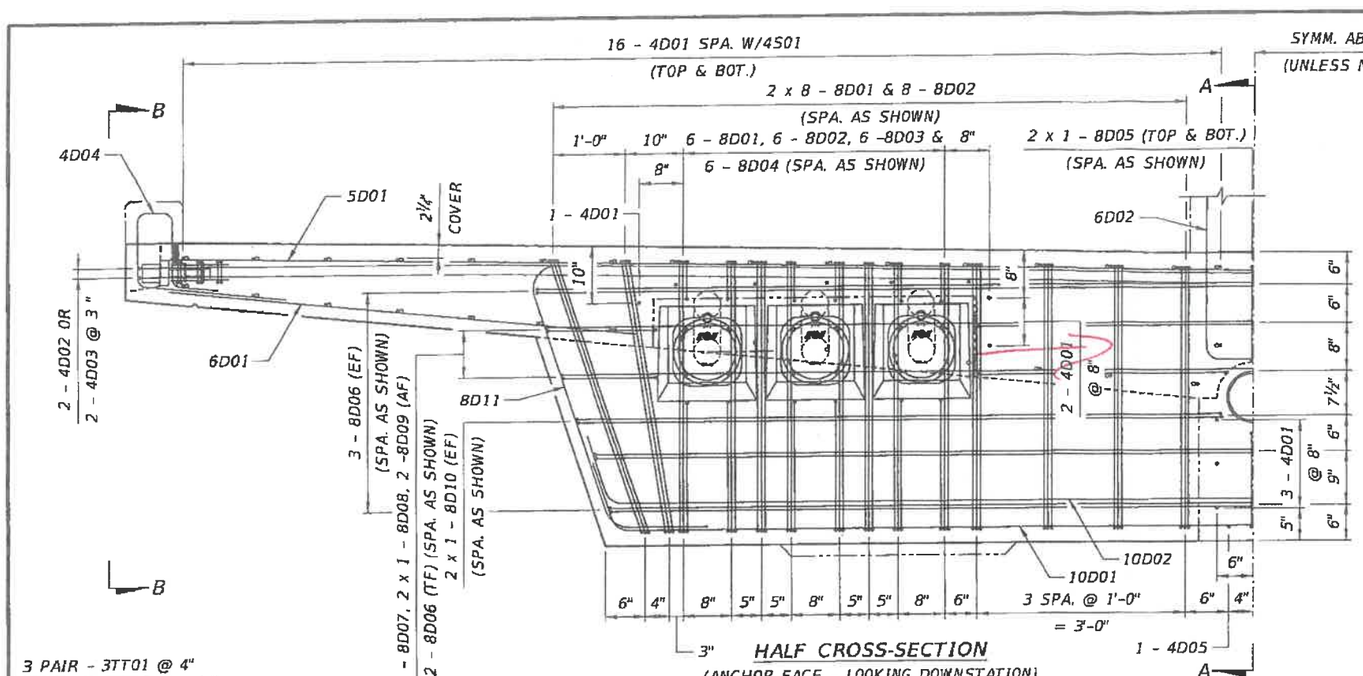
ROAD NO.	COUNTY	PROJECT ID
	MIAMI-DADE	434688-1-58-01

SHEET TITLE: DECK END DIAPHRAGM DIMENSIONS & P.T. - TYPE IV

PROJECT NAME: UNIVERSITYCITY PROSPERITY PROJECT

SHEET NO. B-50

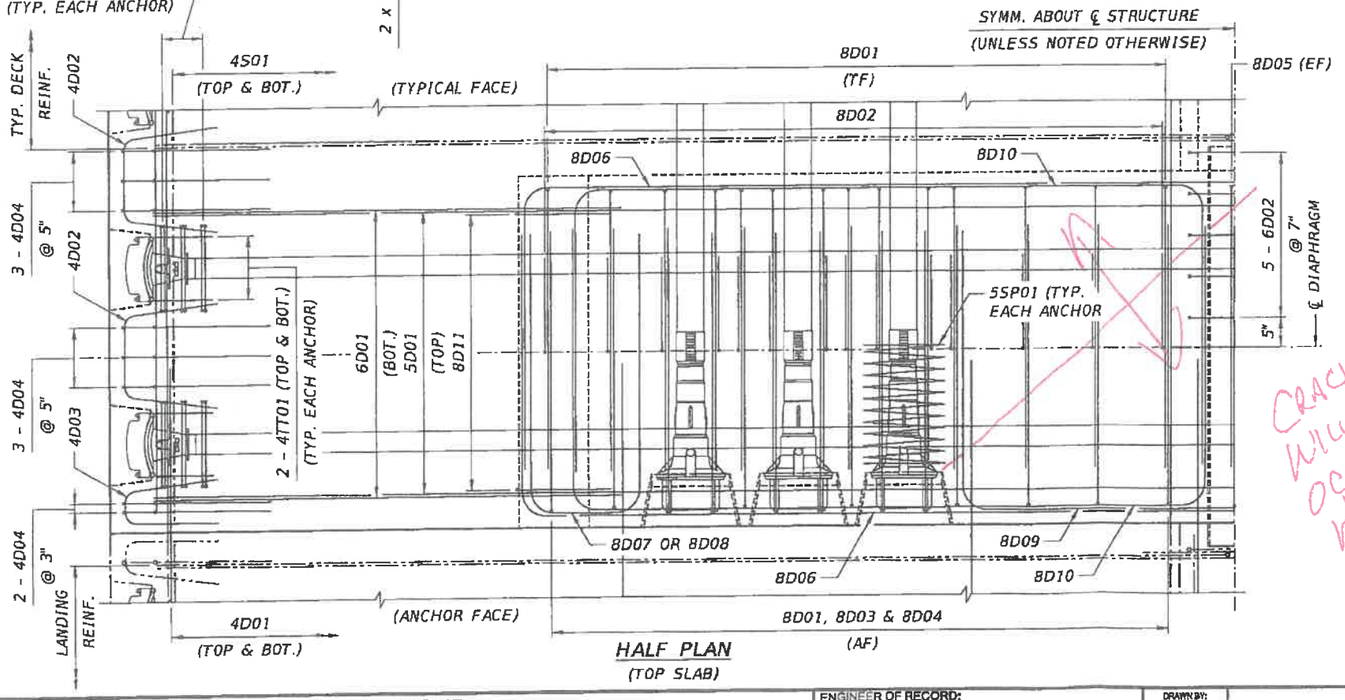
Plotted By: dbrewton 9/14/2016 7:26:35 PM G:\434688815801\struct\B1_53_M5_Type 4_Deck_Diaphragm_Dim&PT.dgn

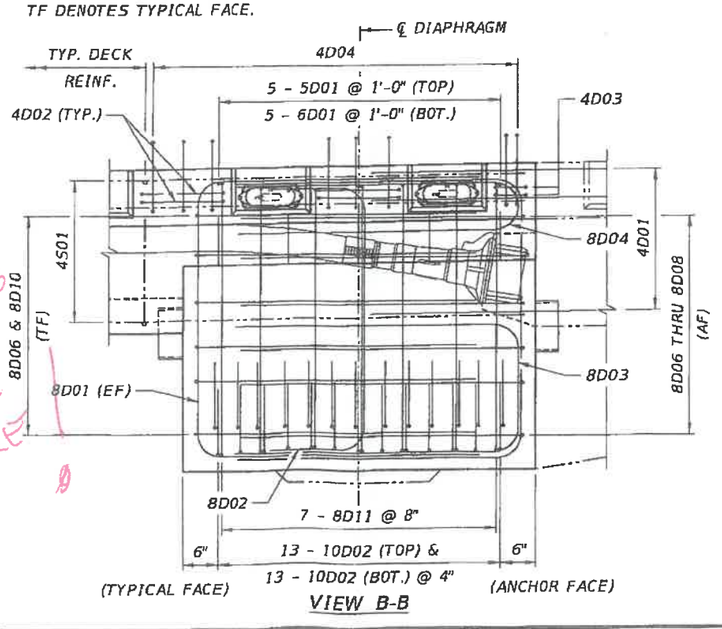


SECTION A-A

NOTES:

1. CONCRETE COVER IS 2" UNLESS OTHERWISE NOTED.
2. FOR BAR LIST, SEE SUPERSTRUCTURE REINFORCEMENT BAR LIST DRAWINGS.
3. FOR TYPICAL DECK REIFORCEMENT, SEE BACKSPAN DECK REINFORCEMENT DRAWING.
4. FOR LANDING REIFORCEMENT, SEE NORTH LANDING REINFORCEMENT DRAWING.
5. AF DENOTES ANCHOR FACE.
   EF DENOTES EACH FACE.
   TF DENOTES TYPICAL FACE.





CRACKING WILL OCCUR HERE

VIEW B-B

90% SUBMITTAL - NOT FOR CONSTRUCTION - SEPTEMBER 2016

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

ENGINEER OF RECORD:
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424 North Calhoun Street
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FLORIDA CERTIFICATE OF AUTHORIZATION NO. 5618
W. DENNEY PATE, P.E. - P.E. NO. 34332

DRAWN BY:	DCB
CHECKED BY:	ENH
DESIGNED BY:	ENH
CHECKED BY:	MF

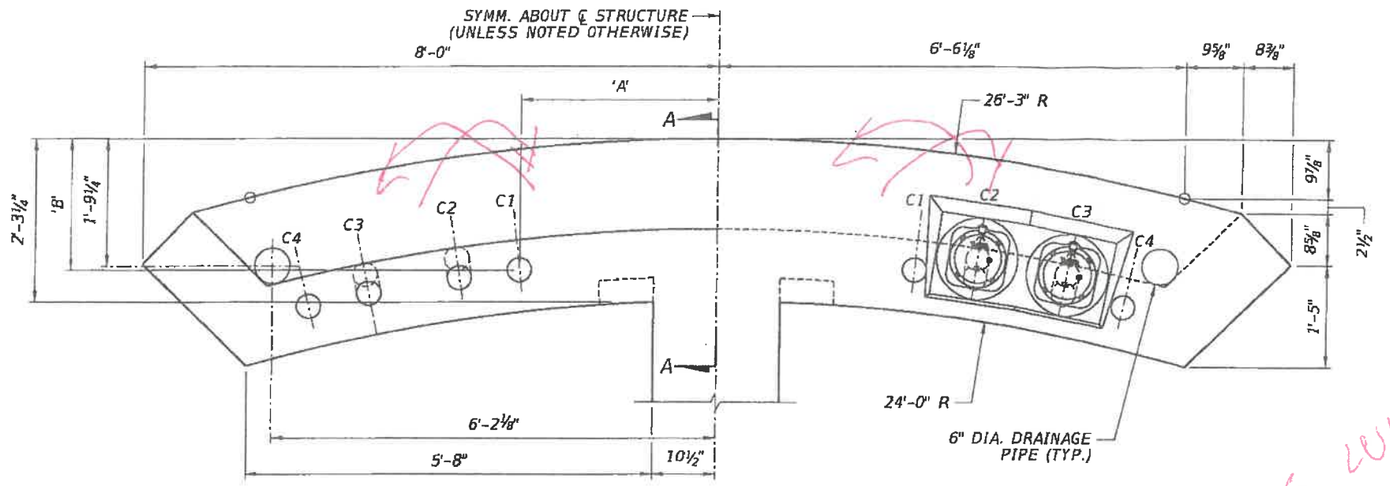
ROAD NO.	COUNTY	PROJECT ID
	MIAMI-DADE	434688-1-58-01

SHEET TITLE: MAIN SPAN END DIAPHRAGM REINFORCEMENT I - TYPE IV

PROJECT NAME: UNIVERSITYCITY PROSPERITY PROJECT

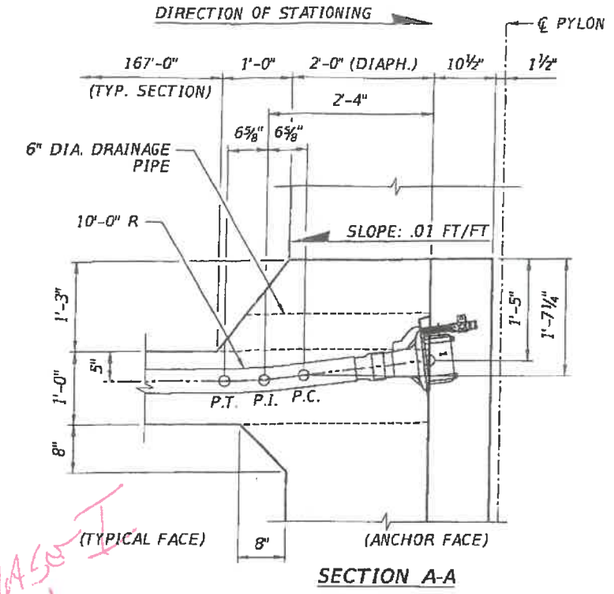
SHEET NO. 8-54

Plotted By: dbrenton 9/14/2016 1:26:54 PM G:\434688815801\struct\81_54_NS_Type 4_Deck_Diaphragm_Reinf.dgn

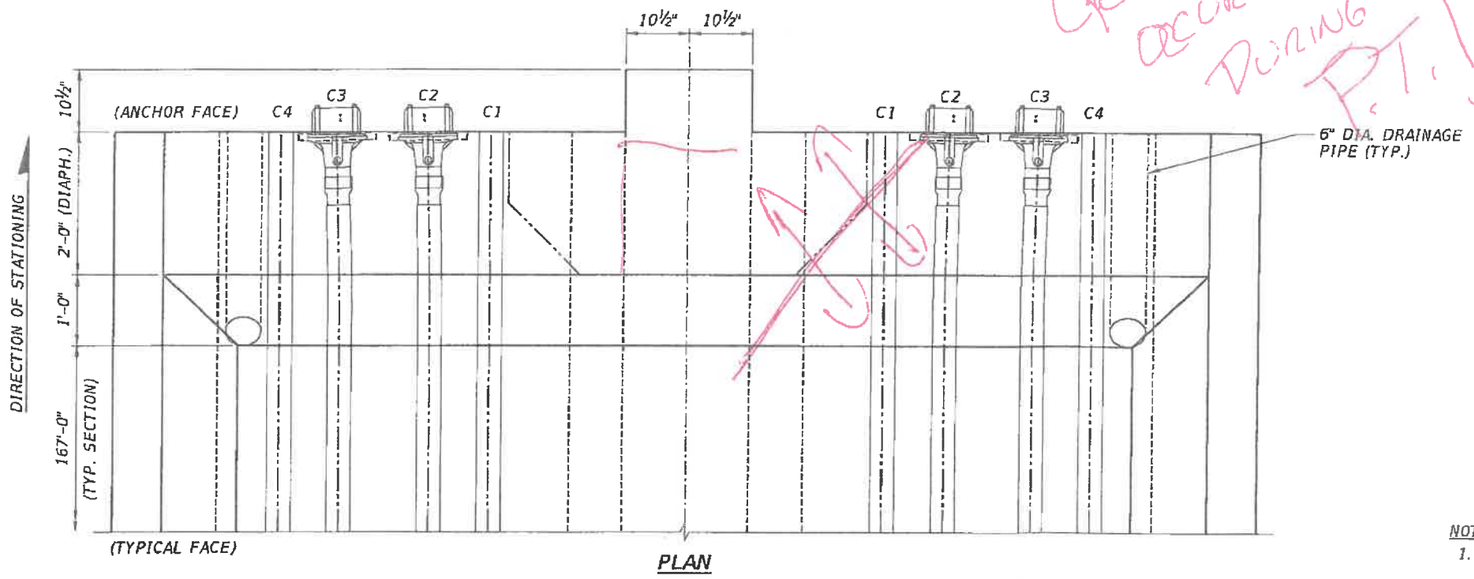


HALF CROSS-SECTION
(TYPICAL FACE - LOOKING UPSTATION)

HALF CROSS-SECTION
(ANCHOR FACE LOOKING DOWNSTATION)



SECTION A-A



PLAN

TENDON DIMENSIONS			
	TENDON	'A'	'B'
ANCHOR FACE	C1	2'-9"	1'-9⅞"
	C2	3'-7½"	1'-8"
	C3	4'-10⅝"	1'-10⅝"
	C4	5'-8"	2'-4"
TYPICAL FACE	C1	2'-9"	1'-9⅞"
	C2	3'-7"	1'-11⅛"
	C3	4'-10"	2'-1¾"
	C4	5'-8"	2'-4"

NOTES:
1. FOR ADDITIONAL MAIN SPAN DETAILS, SEE MAIN SPAN TRUSS SYSTEM LAYOUT DRAWINGS.
2. FOR DIAPHRAGM REINFORCEMENT, SEE CANOPY END DIAPHRAGM REINFORCEMENT - TYPE II DRAWING.
3. FOR ADDITIONAL LONGITUDINAL TENDON DETAILS, SEE LONGITUDINAL POST-TENSIONING DETAILS I DRAWING.
4. FOR ADDITIONAL DRAINAGE PIPE DETAILS, SEE DRAINAGE DETAILS DRAWING.

CRACKING WILL OCCUR HERE DURING PHASE I P.T.!!

90% SUBMITTAL - NOT FOR CONSTRUCTION - AUGUST 2016

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

ENGINEER OF RECORD:
FIGG
424 North Calhoun Street
Tallahassee, Florida 32301
FLORIDA CERTIFICATE OF AUTHORIZATION NO. 5818
W. DENNEY PATE, P.E. - P.E. NO. 34332

DRAWN BY:	CHECKED BY:	DESIGNED BY:	CHECKED BY:
KJM	ENH	ENH	MF

FIU FLORIDA INTERNATIONAL UNIVERSITY

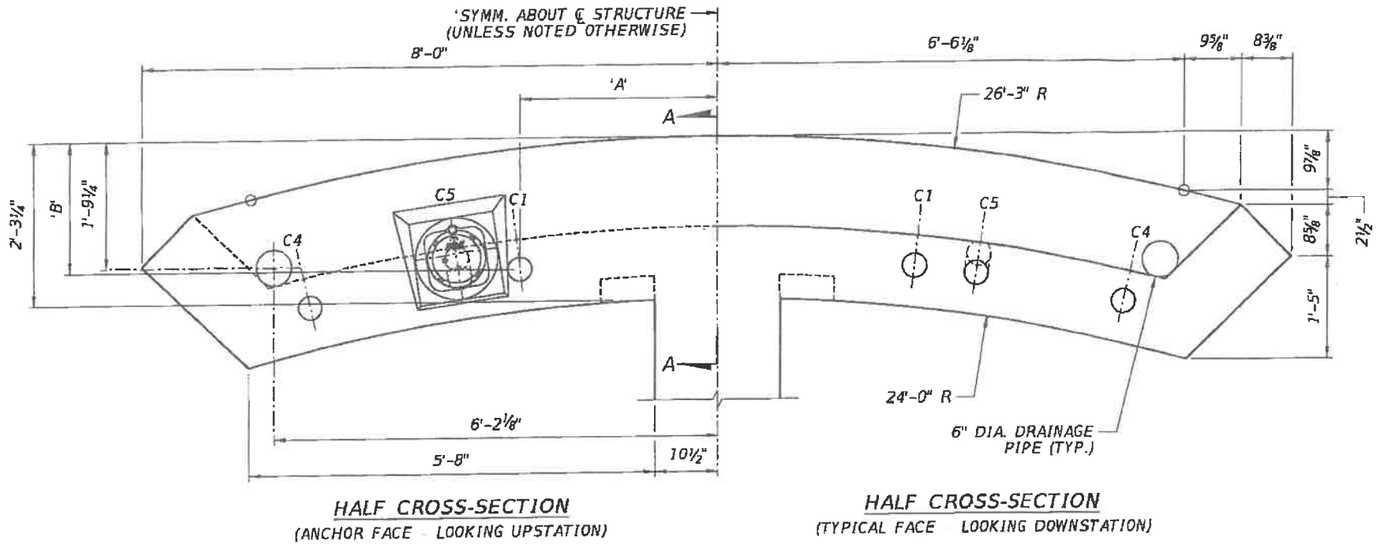
ROAD NO.	COUNTY	PROJECT ID
	MIAMI-DADE	434688-1-58-01

$USER$ $DATE$ $TIME$ $FILE$

SHEET TITLE: CANOPY END DIAPHRAGM DIMENSIONS & P.T. - TYPE II

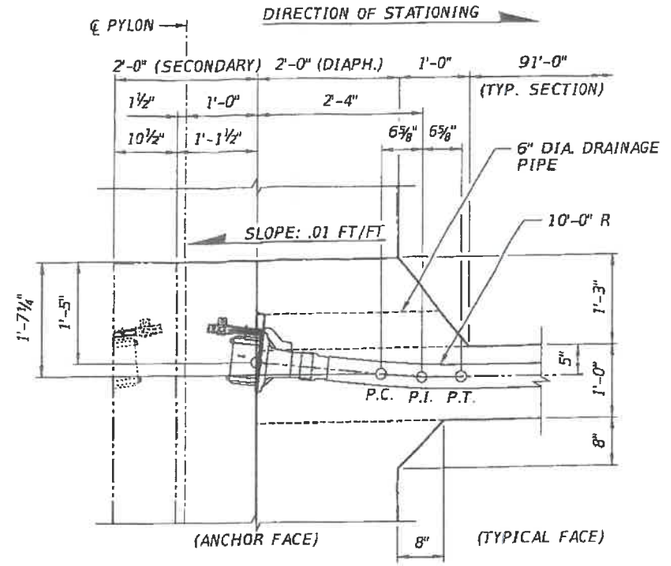
PROJECT NAME: UNIVERSITYCITY PROSPERITY PROJECT

SHEET NO. B-54

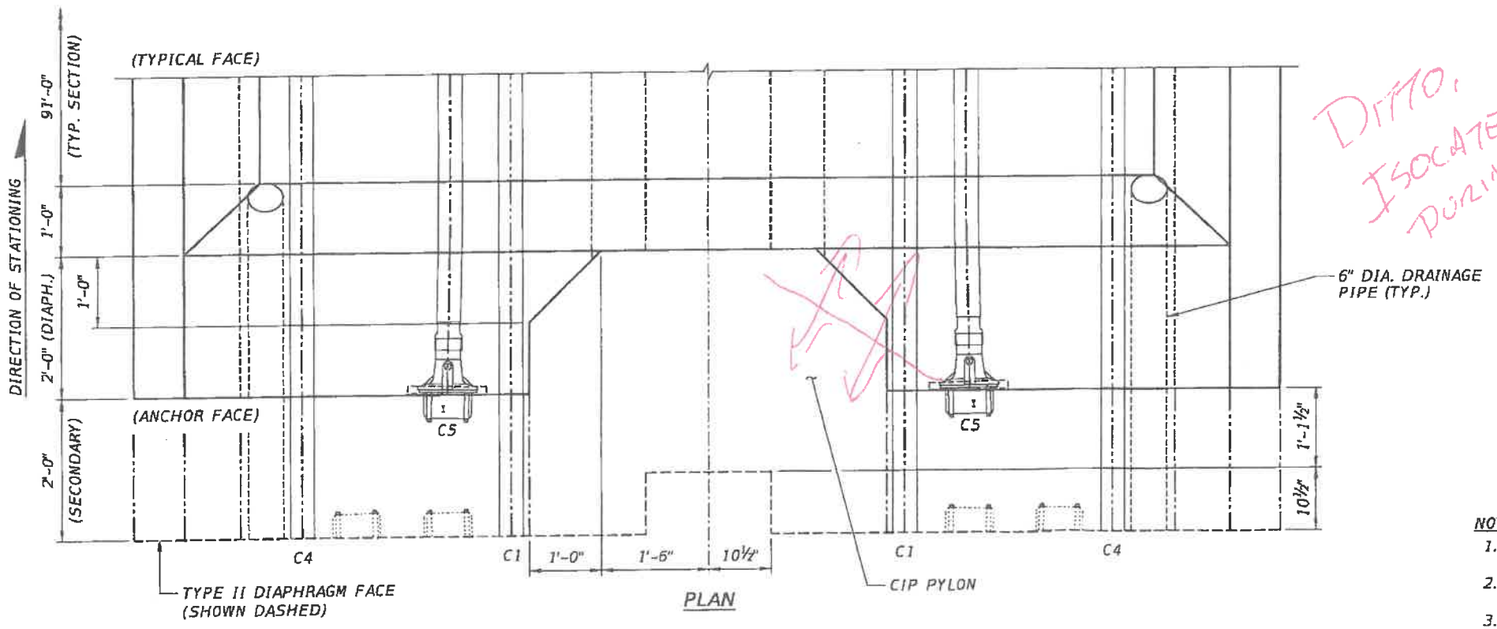


HALF CROSS-SECTION
(ANCHOR FACE - LOOKING UPSTATION)

HALF CROSS-SECTION
(TYPICAL FACE - LOOKING DOWNSTATION)



SECTION A-A



PLAN

DITTO, ISOLATE PYLON... DURING SPAN FABRICATION A STAGE I SESSION.

TENDON DIMENSIONS			
	TENDON	'A'	'B'
TYPICAL ANCHOR FACE	C1	2'-9"	1'-9⅞"
	C5	3'-7½"	1'-8"
	C4	5'-8"	2'-4"
TYPICAL FACE	C1	2'-9"	1'-9⅞"
	C5	3'-7"	1'-11⅛"
	C4	5'-8"	2'-4"

NOTES:
1. FOR ADDITIONAL BACK SPAN DETAILS, SEE BACK SPAN TRUSS SYSTEM LAYOUT DRAWINGS.
2. FOR DIAPHRAGM REINFORCEMENT, SEE CANOPY END DIAPHRAGM REINFORCEMENT - TYPE III DRAWING.
3. FOR ADDITIONAL LONGITUDINAL TENDON DETAILS, SEE LONGITUDINAL POST-TENSIONING DETAILS II DRAWING.
4. FOR ADDITIONAL DRAINAGE PIPE DETAILS, SEE DRAINAGE DETAILS DRAWING.

90% SUBMITTAL - NOT FOR CONSTRUCTION - AUGUST 2016

REVISIONS

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

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FIGG
424 North Calhoun Street
Tallahassee, Florida 32301
FLORIDA CERTIFICATE OF AUTHORIZATION NO. 5618
W. DENNEY PATE, P.E. - P.E. NO. 34332

DRAWN BY:	KJM
CHECKED BY:	ENH
DESIGNED BY:	ENH
CHECKED BY:	MF

FIU FLORIDA INTERNATIONAL UNIVERSITY

ROAD NO.	COUNTY	PROJECT ID
	MIAMI-DADE	434658-1-58-01

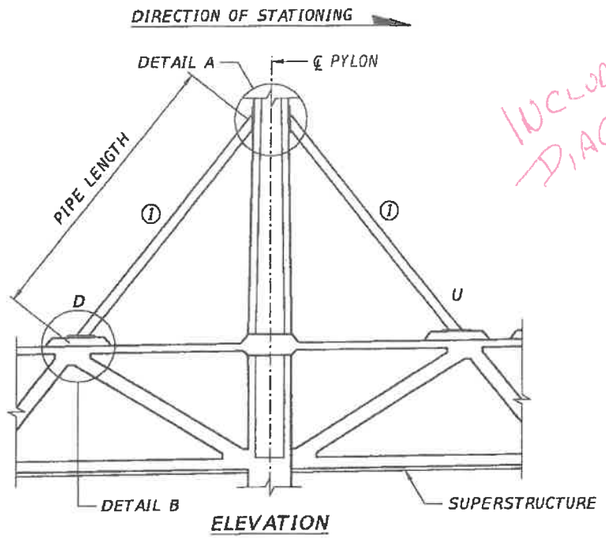
$USERS

SHEET TITLE: CANOPY END DIAPHRAGM DIMENSIONS & P.T. - TYPE III

PROJECT NAME: UNIVERSITYCITY PROSPERITY PROJECT

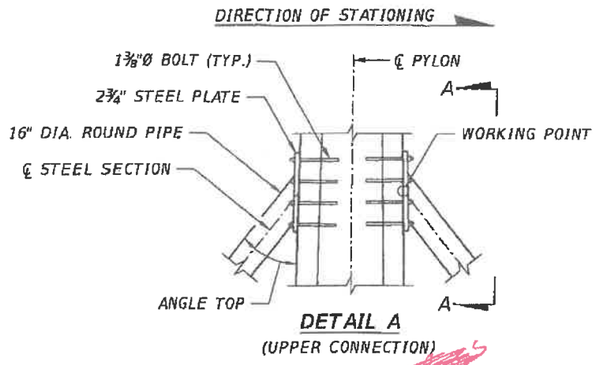
SHEET NO. B-56

$DATES $TIMES $FILES



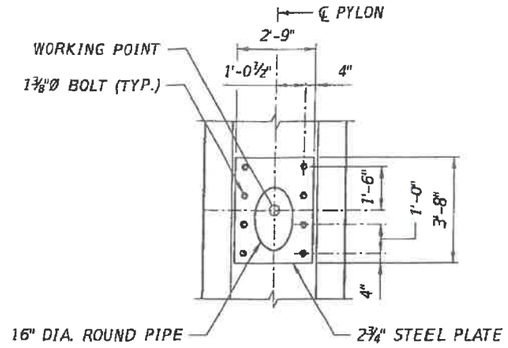
ELEVATION

INCLUDE CAMBER DIAGRAMS.

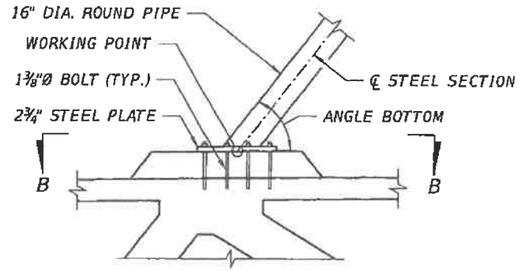


DETAIL A
(UPPER CONNECTION)

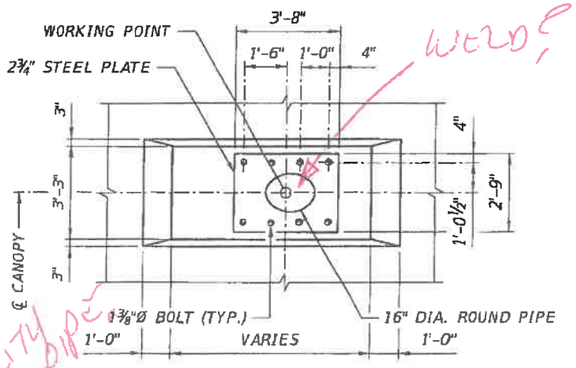
INCLUDE HIGH PERFORMANCE PAINTING SYSTEM GENERAL NOTE. — AASHTO



SECTION A-A

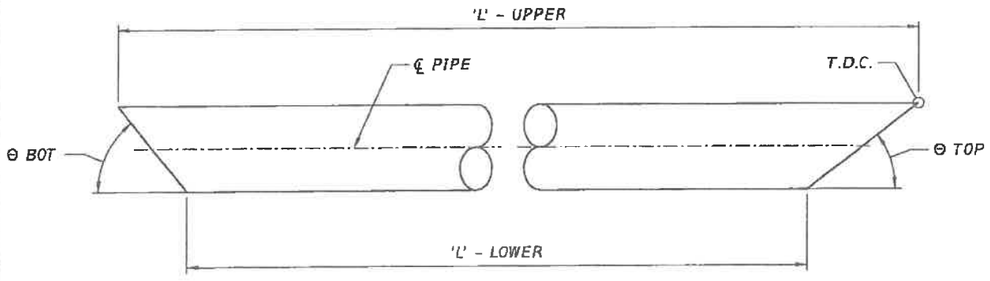


DETAIL B
(LOWER CONNECTION)

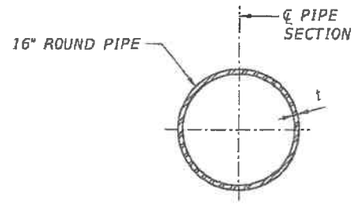


WELD?

SECTION B-B



PIPE SUPPORT GEOMETRY				
PIPE	LENGTH - UPPER	LENGTH - LOWER	ANGLE TOP	ANGLE BOTT.
1U	38'-3"	35'-5⅝"	37.53°	51.35°
2U	51'-4¾"	48'-8½"	43.05°	45.82°
3U	64'-8½"	62'-0⅛"	46.51°	42.37°
4U	78'-1½"	75'-4⅞"	48.86°	40.02°
5U	91'-7⅜"	88'-10⅜"	50.55°	38.32°
1D	38'-7½"	35'-9½"	37.09°	51.79°
2D	63'-3⅞"	60'-5⅞"	51.63°	37.25°
3D	89'-6½"	86'-5"	58.31°	30.56°
4D	116'-5½"	113'-0½"	62.06°	26.82°
5D	143'-8⅜"	140'-0½"	64.43°	24.45°



STEEL SECTION DETAIL

VERIFY AVAILABILITY OF PIPE

NOTES:

1. ALL PIPES ARE STEEL 16" DIAMETER WITH A 1.43" WALL THICKNESS.
2. STEEL PLATES ARE CENTERED ON EACH PLATE WORKING POINT.
3. GROUT SHALL BE PREPACKAGED AND BE COMPOSED OF PORTLAND CEMENT AND SILICA SAND. MINIMUM COMPRESSIVE STRENGTH SHALL BE 8,500 PSI.
4. USE TEMPLATE TO INSURE BOLT POSITIONS/ALIGNMENT DURING CONCRETE PLACEMENT.
5. ANCHOR BOLTS FOR SUPPORT PIPE CONNECTIONS SHALL BE ASTM F1554 GRADE 105 WITH ASTM A563 HEAVY-HEX NUTS AND PLATE WASHER, GALVANIZED NUTS, BOLTS AND WASHERS IN ACCORDANCE WITH ASTM F2329. LENGTH OF BOLT IS EQUAL TO 30".
6. PIPE SUPPORT STEEL PLATE SHALL BE GRADE 36.
7. DURING BEARING REPLACEMENT, UBBOLT THE BOTTOM STAY PIPE CONNECTION PRIOR TO JACKING THE SPAN.
8. T.D.C. - TOP DEAD CENTER REPRESENTS THE LONGEST LENGTH OF PIPE.

90% SUBMITTAL - NOT FOR CONSTRUCTION - SEPTEMBER 2016

REVISIONS

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DRAWN BY:	CHECKED BY:	DESIGNED BY:	CHECKED BY:
LTC	EDL	EDL	MF

FIU FLORIDA INTERNATIONAL UNIVERSITY

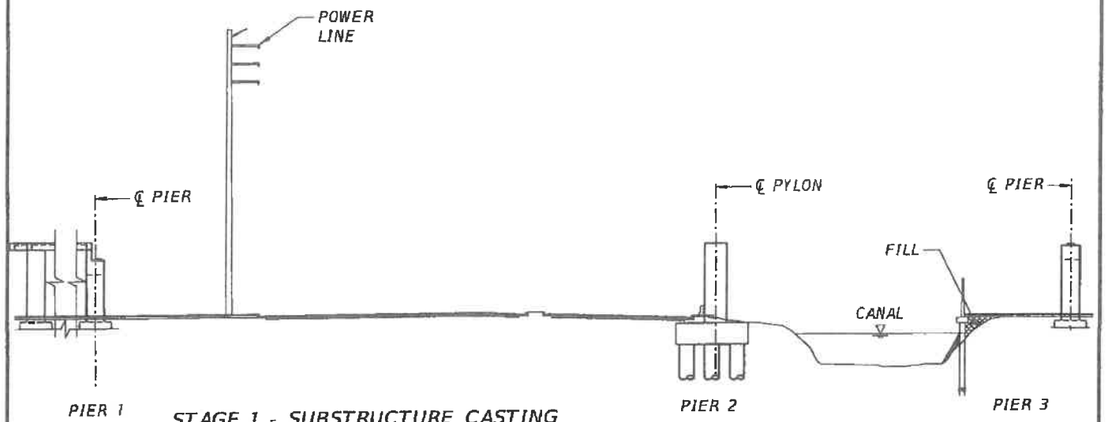
ROAD NO.	COUNTY	PROJECT ID
	MIAMI-DADE	434688-1-58-01

SHEET TITLE: PIPE SUPPORT DETAILS I

PROJECT NAME: UNIVERSITYCITY PROSPERITY PROJECT

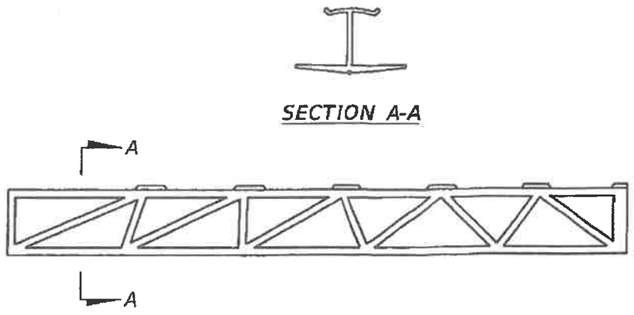
SHEET NO. B-67

Plotted By: dbrewton 9/14/2016 8:42:17 PM W:\Projects\FIU\struct\81_67_Stay_CableDetails_1.dgn



STAGE 1 - SUBSTRUCTURE CASTING

1. BUILD PIER 1 AND PIER 3 FOOTINGS AT THE SOUTH AND NORTH LANDINGS
2. BUILD PYLON FOOTING AND BASE OF PYLON
3. CAST THE END BENTS FOR BOTH LANDINGS.

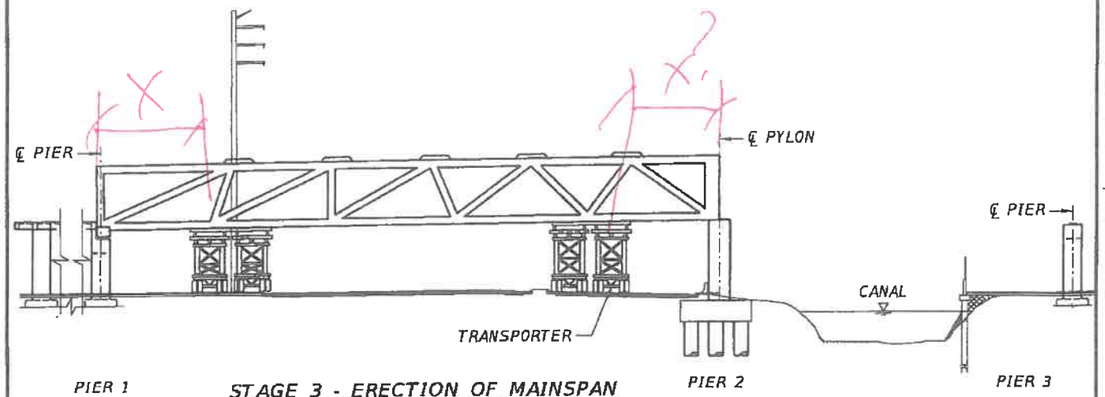


SECTION A-A

MAINSPAN

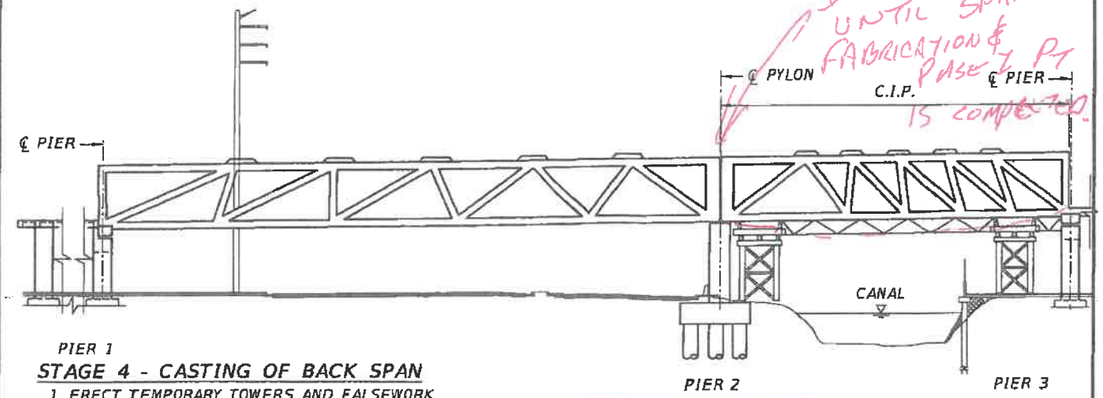
STAGE 2 - SUPERSTRUCTURE PRE-CASTING

1. CAST MAIN SPAN SUPERSTRUCTURE AS FOLLOWS:
   A) CAST DECK AND DIAPHRAGMS
   B) CAST DIAGONAL AND VERTICAL MEMBERS WITH PT BARS.
   C) CAST CANOPY AND TOP ANCHOR BLOCKS.
2. AFTER CONCRETE COMPRESSIVE STRENGTH HAS REACHED 6000 PSI, STRESS ALL PT BARS IN THE DIAGONAL AND VERTICAL MEMBERS.
3. STRESS BOTTOM SLAB TRANSVERSE POST-TENSIONING. ALTERNATED END STRESSING IS REQUIRED FOR THE TRANSVERSE TENDONS.
4. STRESS DECK LONGITUDINAL TENDONS IN THE FOLLOWING SEQUENCE: D1, D2, D3, D4, D5, & D6
5. STRESS CANOPY LONGITUDINAL TENDONS IN THE FOLLOWING SEQUENCE: C2 AND C3



STAGE 3 - ERECTION OF MAINSPAN

1. INSTALL BEARING PADS AT PIER 1 AND SHIM PLATE AT THE PYLON BASE.
2. MOVE MAIN SPAN FROM THE STAGING AREA TO FINAL POSITION.
3. GROUT SPACE BETWEEN PRECAST SECTION DIAPHRAGM AND PYLON BASE.
4. STRESS PYLON VERTICAL PT BARS.



STAGE 4 - CASTING OF BACK SPAN

1. ERECT TEMPORARY TOWERS AND FALSEWORK.
2. INSTALL BEARING PADS AT END BENT 3.
3. CAST INTERMEDIATE SECTION OF THE PYLON
4. CAST DECK, DIAGONAL MEMBER, VERTICAL MEMBERS, CANOPY AND TOP ANCHOR BLOCKS.
5. AFTER CONCRETE COMPRESSIVE STRENGTH HAS REACHED 6000 PSI, STRESS ALL PT BARS IN THE DIAGONAL AND VERTICAL MEMBERS.
6. STRESS BOTTOM SLAB TRANSVERSE POST-TENSIONING. ALTERNATED END STRESSING IS REQUIRED FOR THE TRANSVERSE TENDONS.
7. STRESS DECK LONGITUDINAL TENDONS IN THE FOLLOWING SEQUENCE: D7, D8, & D9
8. STRESS CANOPY LONGITUDINAL TENDON: C5
9. REMOVE FALSEWORK OVER THE CANAL.

90% SUBMITTAL - NOT FOR CONSTRUCTION - SEPTEMBER 2016

REVISIONS

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

ENGINEER OF RECORD:
FIGG
424 North Calhoun Street
Tallahassee, Florida 32301
FLORIDA CERTIFICATE OF AUTHORIZATION NO. 5618
W. DENNEY PATE, P.E. - P.E. NO. 34332

DRAWN BY:	CHECKED BY:	DESIGNED BY:	CHECKED BY:
LTC	MF	MF	WDP

ROAD NO.	COUNTY	PROJECT ID
	MIAMI-DADE	434688-1-58-01

SHEET TITLE: ERECTION SEQUENCE I

PROJECT NAME: UNIVERSITYCITY PROSPERITY PROJECT

SHEET NO. B-106

Plotted By: dbrewton 9/15/2016 8:23:56 AM G:\434688158D1\struct\BI_102_Constr_Seq_1.DGN

Submitta eport

Financial Project:	434688-1-58-01	Submital Type:	PLANS
Submittal Phase:	PHASE III	Submital Staff Type:	CONSULTANT
Recieved Date:	9/28/2016	Response Due Date:	10/28/2016
Grace Period:	0	District:	SIXTH
Status:	CLOSED	Create Date:	9/28/2016
Create User Id:	PD601MI	Last Update:	2/14/2017
		Last Update User Id:	PD601MI

Description:

434688-1: 90% Superstructure Design for FIU UNIVERSITY CITY PROSPERITY PROJ. ALONG SW 109 AVE & SR 90/SW 8 ST

Group: PRELIMINARY ENGINEERING
Phase Review Type: LAP Project
Status: Submitted
Phase Initiation Date: 9/28/2016
Comments Due Date: 10/14/2016
Days Allowed for Review: 17
Review Meeting: 10/28/2016 10:00 AM to 11:00 AM @ Will be schedule if needed
Plans Format: Electronic
Comments: External Project Manager: Manuel Feliciano, P.E.
E-mail: [redacted]
Phone #: [redacted]
Phase: 90% Superstructure Design
Review Meeting will be schedule if needed
Design Criteria is FDOT PPM
Work Program Construction Budget: $11,875,092
Production Date: DESIGN- BUILD

Threads:

No	Status	Current Holder	Reference	Categories
7	CO[illegible]T AGREED WITH		General:	STRUCTURES

Created By	Created On	Version	Delegate For
Thomas Andres	10/11/2016	1	

Include step by step fabrication sequence in the plans and include a TSP for the construction of the precast main-span and CIP back span. The TSP should require a more detailed step-by-step fabrication sequence to be submitted in an Erection Manual submitted by a Specialty Engineer.
The Erection Manual shall include the following:
- Positioning, use and sequencing of falsework, jacking and/or releasing of falsework, formwork, temporary towers, supports and the like.
- Step-by-step PT bar stressing and longitudinal tendon stressing sequence so that stresses during fabrication of both main span and back span stay below design code limits. Also include a step-by-step casting and form stripping sequence with clear delineation of required construction joints. Depict the support condition at the near-site casting yard at the time of stressing.
- Positioning, detailed step-by-step erection plan of the Self-Propelled-Modular-Transporter (SPMT) move of the precast main-span. Include drawings and calculations for the structural based on the support conditions of the precast main-span during the SPMT move.

MANUEL FELICIANO 10/28/2016 1

The general fabrication sequence for the construction of the precast main span and CIP back span has been provided as part of the plan set (see Erection Sequence drawings). The erection manual will provide the mentioned information showing more details of the stressing sequences, support conditions during casting, form stripping sequence, and location of temporary towers.
The step-by-step erection plan of the SPMT will be provided on a separate submittal by the Contractor's Specialty Engineer.

Thomas Andres 11/1/2016 1

This response is okay provided that the step-by-step information per response to Comment 10 is provided in the final plans.

MANUEL FELICIANO 11/8/2016 1

Comment Agreed & Closed

No	Status	Current Holder	Reference	Categories
8	RESPONSE ACCEPTED		General:	STRUCTURES

Created By	Created On	Version	Delegate For
Thomas Andres	10/11/2016	1	

Provide connection details between main span truss with the pylon.

MANUEL FELICIANO 10/28/2016 1

Connection details between the main span truss and pylon have been provided on the substructure drawings.

Thomas Andres 11/1/2016 1

Response Accepted & Comment Closed

No	Status	Current Holder	Reference	Categories
9	RESPONSE ACCEPTED		Sheets B-38 thru B-45 and B-61, B-63, and B-65:	STRUCTURES

Created By	Created On	Version	Delegate For
Thomas Andres	10/11/2016	1	

Add PT bar anchor caps (top and bottom) per SDG 1.11.2, Standard Index 21802 and Specification 462-1.2.a consistent with approved FDOT PT systems and resize element as required to fit caps.

MANUEL FELICIANO 10/28/2016 1

Permanent grout caps are provided at the top anchor of each PT bar (Anchorage Protection Type 9 per Standard Index No. 21802). Caps are not needed at the bottom anchor of each PT bar because exposure levels and the risk of corrosion are lower beneath the deck. Dead end anchors will be cast with the precast section with no block out and coated with a galvanizing compound (e.g. Zinc Clad III HS) for additional protection.

Thomas Andres 11/1/2016 1

Response Accepted & Comment Closed

No	Stat	Current Holder	Reference	Categories
10	RES E ACCEPTED		Sheets B-37 thru B-42, B-43, and B-[illegible]	STRUCTURES

Created By	Created On	Version	Delegate For
Thomas Andres	10/11/2016	1	

Include step-by-step PT bar stressing and longitudinal tendon stressing sequence so that stresses during fabrication of both main span and back span stay below design code limits. Also include a step-by-step casting and form stripping sequence with clear delineation of required construction joints. For the main span section (Sheets B-37 thru B-40) depict the support condition at the near-site casting yard at the time of stressing. Also check the temporary condition at the time of transport with a clear delineation of the SPMT support location on stage 3, Sheet B-108 (cantilever distance) consistent with the calculations.

MANUEL FELICIANO	10/28/2016	1

The PT bar stressing sequence will be provided with the Final submittal. The longitudinal tendon stressing sequence is shown on Sheet B-108 (Stage 2). Calculations showing stresses during stressing operations are below the allowable limits will be provided with the Final submittal.
A step-by-step casting and form stripping sequence will be provided with the Final submittal.
Support conditions for the main span during stressing operations will be shown on the Final submittal.
The temporary support conditions during transport shown on Sheet B-108 (Stage 3) have been revised.

Thomas Andres	11/1/2016	1

Response Accepted & Comment Closed

No	Status	Current Holder	Reference	Categories
11	RESPONSE ACCEPTED		Sheet B-37, Note 8:	STRUCTURES

Created By	Created On	Version	Delegate For
Thomas Andres	10/11/2016	1	

Clarify that the PT bars for members 2 and 11 will not be grouted at the near-site casting yard but will be de-tensioned prior to grouting after span is transported via SPMT to the site.

MANUEL FELICIANO	10/28/2016	1

Note 8 has been clarified.

Thomas Andres	11/1/2016	1

Response Accepted & Comment Closed

No	Status	Current Holder	Reference	Categories
12	RESPONSE ACCEPTED		Sheets B-48 and B-50:	STRUCTURES

Created By	Created On	Version	Delegate For
Thomas Andres	10/11/2016	1	

There is concern of potential cracking due to tension behind the inner PT tendon anchor as the compression zone drags the end web diagonal and pylon (Sheet B-48) behind it. This was an earlier comment.

MANUEL FELICIANO	10/28/2016	1

Reinforcement has been added to the Type III and Type IV Deck Diaphragms to address this comment.

Thomas Andres	11/1/2016	1

Response Accepted & Comment Closed

No	Status	Current Holder	Reference	Categories
13	RESPONSE ACCEPTED		Sheets B-53 (Section A-A), B-55 (Section A-A),	STRUCTURES

Created By	Created On	Version	Delegate For
Thomas Andres	10/11/2016	1	

Extend the tie down stirrup legs longer to be able to resist radial forces in the curved zones of the tendons.

MANUEL FELICIANO	10/28/2016	1

The tie down stirrup legs have been extended.

Thomas Andres	11/1/2016	1

Response Accepted & Comment Closed

No	Stat	Current Holder	Reference	Categories
14	RES E ACCEPTED		Sheets B-56:	STRUCTURES

Created By	Created On	Version	Delegate For
Thomas Andres	10/11/2016	1	

There is concern of potential cracking due to tension behind the inner (phase 1 C5) PT tendon anchor as the compression zone drags the pylon behind it. This was an earlier comment.

MANUEL FELICIANO	10/28/2016	1	

Reinforcement has been added to the Type III Canopy Diaphragm to address this comment.

Thomas Andres	11/1/2016	1	

Response Accepted & Comment Closed

No	Status	Current Holder	Reference	Categories
15	RESPONSE ACCEPTED		Sheets B-60, and B-108, Stage 3:	STRUCTURES

Created By	Created On	Version	Delegate For
Thomas Andres	10/11/2016	1	

The support conditions at the near site casting yard and during SPMT transport is critical (P.T. stressing through SPMT transport). The support needs to be provided at the ends through the end diaphragm at the element lifts off formwork during longitudinal/transverse stressing in the near site casting yard. Support needs to stay in the middle (specify distance) of the cross section during SPMT transport. Also the main span element needs to remain vertical during SPMT transport. Add the appropriate notes to both sheets consistent with the calculations.

MANUEL FELICIANO	10/28/2016	1	

Support condition notes have been added to Sheets B-60 and B-108 (Stage 3).

Thomas Andres	11/1/2016	1	

Response Accepted & Comment Closed

No	Status	Current Holder	Reference	Categories
16	RESPONSE ACCEPTED		Sheets B-65, B-66, and B-67:	STRUCTURES

Created By	Created On	Version	Delegate For
Thomas Andres	10/11/2016	1	

Check the canopy design where the longitudinal tendons are deviated in plan view resulted in transverse bending of the canopy, due to PT eccentricity.

MANUEL FELICIANO	10/28/2016	1	

The transverse local effect of the longitudinal tendons has been taking into account in the design of the canopy. Additional calculations will be provided with the Final submittal.

Thomas Andres	11/1/2016	1	

Response Accepted & Comment Closed

No	Status	Current Holder	Reference	Categories
17	RESPONSE ACCEPTED		Sheet B-69:	STRUCTURES

Created By	Created On	Version	Delegate For
Thomas Andres	10/11/2016	1	

Specify PT Anchorage Protection Type 8 for down STA (non-stressing end). Replace Anchorage Protection Type 3 to Type 2 for longitudinal multi-strand tendons in the deck and canopy. Note: Type 3 is for segmental match-cast joint.

MANUEL FELICIANO	10/28/2016	1	

Anchorage protection is not needed at the bottom anchor of each PT bar because exposure levels and the risk of corrosion are lower beneath the deck. Dead end anchors will be cast with the precast section with no block out and coated with a galvanizing compound (e.g. Zinc Clad III HS) for additional protection.
Type 3 Anchorage Protection has been revised to Type 2 Anchorage Protection.

Thomas Andres	11/1/2016	1	

Response Accepted & Comment Closed

No	Stat	Current Holder	Reference	Categories
18	RE[illegible]SE ACCEPTED		Sheet B-70:	STRUCTURES

Created By	Created On	Version	Delegate For
Thomas Andres	10/11/2016	1	

a. Provide pipe camber diagrams.
b. It is unclear how the bolts are fastened to the pylon. Show detail. If the nut is oriented outward how is simply removing the nut sufficient for allowing the necessary movement for jacking? Suggest that head of bolt be oriented outward with imbedded coupler inner shank, nut and plate washer.
c. How is inner surface of pipe protected against corrosion?
d. We have long-term concerns with cracking of the pipe at the welds. Consider an inner stiffener with a weld access hole to strengthen pipe/plate connection especially for the outer pipes. Sheet B-70: The stay pipe numbering system here is different from sheet B-109.
e. Pipe support geometry: it appears the pipe sagging and truss deformation have not been included in the Angle Top and Angle Bottom of the steel pipe.
f. Specify the 16" stay pipe ASTM spec.

MANUEL FELICIANO 11/11/2016 1

a. The camber diagrams will be provided with the erection manual.
b. Additional details will be provided to show how the bolts are fastened to the pylon on the final submittal.
c. Weep holes will be provided at the bottom of each pipe in order to drain any water due to condensation. This will reduce the possibility of corrosion at the bottom of the pipe.
d. Both the forces and variation in force in the steel pipe sections are low when compared to the cross section area. The cross section areas were selected to provide stiffness in order to meet specified vibration frequencies. The areas were not based upon needed force resistance (strength). While the Department's suggested detail would be possible, it would create additional non-uniformity due to the stiffeners and the access holes. Installation of the stiffeners and the repair of the access holes would create additional residual thermal stresses. The simpler weld detail is preferred by the Designer. The stay pipe numbering on Sheet B-109 has been revised.
e. The angle top and angle bottom were calculated based on the final pipe shape. The sagging of the pipe will be eliminated with the camber of the pipe and the effect of the superstructure deformations is not significant in the angle calculations. The maximum rotation is 0.0024 rad due to permanent loads.
f. The ASTM spec has been referenced.

Thomas Andres 12/6/2016 1

Regarding Item c, if the inner surface of the pipe is not primed or coated in any way, we suggest that the pipe be completely sealed prior to installation (including at the ends). This will reduce the likelihood of moisture condensation (corrosion) over time and potential staining. SDG 10.7.D.2 requires tubular members to be capped and sealed.

No	Status	Current Holder	Reference	Categories
19	RESPONSE ACCEPTED		Sheet B-103:	STRUCTURES

Created By	Created On	Version	Delegate For
Thomas Andres	10/11/2016	1	

a. Add cross reference note to Sheet B-70 for unbolting pipe supports.
b. Detail 1: The side and top elastomeric cover for the steel plates, show 1/8" thick. FDOT Standard Index No.20510 required ¼" thick. In elevation view End Bent 1 and End Bent 3, show the gap dimensions between the top surface of the end bent and underneath of the superstructure.

MANUEL FELICIANO 10/28/2016 1

a. A cross reference note has been added to Sheet B-103.
b. The side elastomeric cover for the steel plates has been revised to 1/4". The top elastomeric cover provided for the steel plates is 3/8". The gap dimensions have been added.

Thomas Andres 11/1/2016 1

Response Accepted & Comment Closed

No	Status	Current Holder	Reference	Categories
20	RESPONSE ACCEPTED		Sheet B-104, Stage 4, Step 3:	STRUCTURES

Created By	Created On	Version	Delegate For
Thomas Andres	10/11/2016	1	

There are concerns with connecting the back-span to the pylon prior fabricating span. Concerns include:
a. Stresses of connection due to flexibility of formwork.
b. Camber (rotational) stresses due to longitudinal P.T.
c. Local stresses (shear lag) at inner anchor as the compression zone drags the pylon.

MANUEL FELICIANO 10/28/2016 1

a. FIGG has evaluated the back span to pylon connection assuming that the falsework is a very flexible system in order to get an upper bound value for the design tension force between the back span canopy element and the pylon. The connection has been designed to resist construction loads. Please refer to pg. 477-478 of Pylon Substructure Final Design Calculations.
b. The rotational stresses due to post-tensioning have been evaluated. According to our model the maximum camber rotation at the pylon is less than 0.0008 rad. In addition, the maximum tensile and compressive stresses due to the longitudinal P.T. are within the allowable limits by the AASHTO code.
c. Additional reinforcement has been provided between the interface of the diaphragm and the pylon.

Thomas Andres 11/1/2016 1

Response Accepted & Comment Closed

FIU Superstructure 90% Comments

1. General: Include step by step fabrication sequence in the plans and include a TSP for the construction of the precast main-span and CIP back span. The TSP should require a more detailed step-by-step fabrication sequence to be submitted in an Erection Manual submitted by a Specialty Engineer.

   The Erection Manual shall include the following:
   - Positioning, use and sequencing of falsework, jacking and/or releasing of falsework, formwork, temporary towers, supports and the like.
   - Step-by-step PT bar stressing and longitudinal tendon stressing sequence so that stresses during fabrication of both main span and back span stay below design code limits. Also include a step-by-step casting and form stripping sequence with clear delineation of required construction joints. Depict the support condition at the near-site casting yard at the time of stressing.
   - Positioning, detailed step-by-step erection plan of the Self-Propelled-Modular-Transporter (SPMT) move of the precast main-span. Include drawings and calculations for the structural based on the support conditions of the precast main-span during the SPMT move.
2. General: Provide connection details between main span truss with the pylon.
3. Sheets B-38 thru B-45 and B-61, B-63, and B-65: Add PT bar anchor caps (top and bottom) per SDG 1.11.2, Standard Index 21802 and Specification 462-1.2.a consistent with approved FDOT PT systems and resize element as required to fit caps.
4. Sheets B-37 thru B-40, B-42, B-43, and B-69: Include step-by-step PT bar stressing and longitudinal tendon stressing sequence so that stresses during fabrication of both main span and back span stay below design code limits. Also include a step-by-step casting and form stripping sequence with clear delineation of required construction joints. For the main span section (Sheets B-37 thru B-40) depict the support condition at the near-site casting yard at the time of stressing. Also check the temporary condition at the time of transport with a clear delineation of the SPMT support location on stage 3, Sheet B-108 (cantilever distance) consistent with the calculations.
5. Sheet B-37, Note 8: Clarify that the PT bars for members 2 and 11 will not be grouted at the near-site casting yard but will be de-tensioned prior to grouting after span is transported via SPMT to the site.
6. Sheets B-48 and B-50: There is concern of potential cracking due to tension behind the inner PT tendon anchor as the compression zone drags the end web diagonal and pylon (Sheet B-48) behind it. This was an earlier comment.
7. Sheets B-53 (Section A-A), B-55 (Section A-A), B-57 (Section A-A), B-59 (Section A-A), B-51 (Section A-A and View B-B): Extend the tie down stirrup legs longer to be able to resist radial forces in the curved zones of the tendons.
8. Sheets B-56: There is concern of potential cracking due to tension behind the inner (phase 1 C5) PT tendon anchor as the compression zone drags the pylon behind it. This was an earlier comment.
9. Sheets B-60, and B-108, Stage 3: The support conditions at the near site casting yard and during SPMT transport is critical (P.T. stressing through SPMT transport). The support needs to be provided at the ends through the end diaphragm at the element lifts off formwork during

longitudinal/transverse stressing in the near site casting yard. Support needs to stay in the middle (specify distance) of the cross section during SPMT transport. Also the main span element needs to remain vertical during SPMT transport. Add the appropriate notes to both sheets consistent with the calculations.

10. Sheets B-65, B-66, and B-67: Check the canopy design where the longitudinal tendons are deviated in plan view resulted in transverse bending of the canopy, due to PT eccentricity.
11. Sheet B-69: Specify PT Anchorage Protection Type 8 for down STA (non-stressing end). Replace Anchorage Protection Type 3 to Type 2 for longitudinal multi-strand tendons in the deck and canopy. Note: Type 3 is for segmental match-cast joint.
12. Sheet B-70:
    a. Provide pipe camber diagrams.
    b. It is unclear how the bolts are fastened to the pylon. Show detail. If the nut is oriented outward how is simply removing the nut sufficient for allowing the necessary movement for jacking? Suggest that head of bolt be oriented outward with imbedded coupler inner shank, nut and plate washer.
    c. How is inner surface of pipe protected against corrosion?
    d. We have long-term concerns with cracking of the pipe at the welds. Consider an inner stiffener with a weld access hole to strengthen pipe/plate connection especially for the outer pipes. Sheet B-70: The stay pipe numbering system here is different from sheet B-109.
    e. Pipe support geometry: it appears the pipe sagging and truss deformation have not been included in the Angle Top and Angle Bottom of the steel pipe.
    f. Specify the 16" stay pipe ASTM spec.
13. Sheet B-103:
    a. Add cross reference note to Sheet B-70 for unbolting pipe supports.
    b. Detail 1: The side and top elastomeric cover for the steel plates, show 1/8" thick. FDOT Standard Index No.20510 required ¼" thick. In elevation view End Bent 1 and End Bent 3, show the gap dimensions between the top surface of the end bent and underneath of the superstructure.
14. Sheet B-104, Stage 4, Step 3: There is still a concern with connecting the back-span to the pylon prior fabricating span. Concerns include:
    a. Stresses of connection due to flexibility of formwork.
    b. Camber (rotational) stresses due to longitudinal P.T.
    c. Local stresses (shear lag) at inner anchor as the compression zone drags the pylon.

Submitt[illegible]Report

Financial Project:	434688-1-58-01	Submital Type:	PLANS
Submittal Phase:	PHASE IV	Submital Staff Type:	CONSULTANT
Recieved Date:	10/17/2016	Response Due Date:	11/14/2016
Grace Period:	0	District:	SIXTH
Status:	CLOSED	Create Date:	10/17/2016
Create User Id:	PD601MI	Last Update:	10/17/2016
		Last Update User Id:	PD601MI

Description:

434688-1: Structural Pylon & Landing Structures Design for FIU UNIVERSITY CITY PROSPERITY PROJ. ALONG SW 109 AVE & SR 90/SW 8 ST

Group: PRELIMINARY ENGINEERING Phase Review Type: LAP Project
Status: Submitted
Phase Initiation Date: 10/17/2016 Comments Due Date: 10/28/2016 Days Allowed for Review: 12
Review Meeting: 11/14/2016 10:00 AM to 11:00 AM @ To be schedule if required
Field Meeting:
Plans Format: Electronic
Comments: External Project Manager: Erika N. Hango, P.E.
E-mail: [redacted]
Phone #[redacted]
Section: Phase: 100% Structural Pylon & landing structures Design
Review Meeting will be schedule if needed
Design Criteria is Florida Green Book, Bridge: FDOT
Work Program Construction Budget: $12,041,779
Production Date: DESIGN- BUILD

Threads:

No	Status	Current Holder	Reference	Categories
12	RESPONSE ACCEPTED		Sheets B-24, Cross Section and Section A-A:	STRUCTURES

Created By	Created On	Version	Delegate For
Thomas Andres	10/28/2016	1	

The scale of the sections make it difficult to understand detailer's intent. Also showing all bars instead of first and last grouping of the bars would help reduce congestion and clarify intent.

MANUEL FELICIANO	11/14/2016	1

New details were previously developed using a bigger scale. The Contractor has reviewed this drawing and believes that these details are clear for construction.

Thomas Andres	12/6/2016	1

The details on Sheet B-24 violate the requirements of Structures Detailing Manual Sections 2.8 and 2.9.

No	Status	Current Holder	Reference	Categories
13	RESPONSE ACCEPTED		Sheets B-24 and	STRUCTURES

Created By	Created On	Version	Delegate For
Thomas Andres	10/28/2016	1	

The pouring sequence of the pylon column and CIP backspan and limits of the various construction joints is unclear.

MANUEL FELICIANO	11/14/2016	1	

The pouring sequence is shown on the Erection Sequence sheets submitted with the 90% Superstructure plans. The Contractor has reviewed these drawings and believes that these details are clear for construction.

Thomas Andres	12/6/2016	1	

We still feel that plans are not as clear as they should be.

No	Status	Current Holder	Reference	Categories
14	RESPONSE ACCEPTED		Sheet B-24, Section A-A and Detail 1:	STRUCTURES

Created By	Created On	Version	Delegate For
Thomas Andres	10/28/2016	1	

Clarify on the precast mainspan side of Section View that the Pylon Base / Precast Mainspan interface is to be grouted.

MANUEL FELICIANO	11/14/2016	1	

A note has been added to clarify the interface to be grouted.

Thomas Andres	12/6/2016	1	

Response Accepted & Comment Closed

No	Status	Current Holder	Reference	Categories
15	RESPONSE ACCEPTED		Sheets B-24, Detail1, and Sheet B-25, Section E	STRUCTURES

Created By	Created On	Version	Delegate For
Thomas Andres	10/28/2016	1	

Is the intent to embed a section of drainage pipe in the pour then couple the pipe either-side of pour? The structural plans need to be detailed accordingly and sections need to accommodate the pipe joints.

ERIKA HANGO	11/14/2016	1	

Yes, this is the intent. The concrete opening (6" radius) has been sized to accommodate the PVC coupling (<5" radius). Additional details are provided on the Superstructure plans.

Thomas Andres	12/6/2016	1	

Response Accepted & Comment Closed

No	Status	Current Holder	Reference	Categories
16	RESPONSE ACCEPTED		Sheet B-25:	STRUCTURES

Created By	Created On	Version	Delegate For
Thomas Andres	10/28/2016	1	

Include a Note 8 which states that the annulus between the 11P06 bars and the 4" I.D. reinforcement sleeve is to be grouted prior to concreting.

MANUEL FELICIANO	11/14/2016	1	

The suggested note has been added.

Thomas Andres	12/6/2016	1	

Response Accepted & Comment Closed

No	Stat	Current Holder	Reference	Categories
17	RES SE ACCEPTED		Sheet B-26, Secti C:	STRUCTURES

Created By	Created On	Version	Delegate For
Thomas Andres	10/28/2016	1	
Show the 11P06 bars.			
MANUEL FELICIANO	11/14/2016	1	
The 11P06 bars are shown on Sheet B-26 as hollow circles. The 11P06 bars are cast with the intermediate pylon and splice with the 11P01 bars in the upper pylon.			
Thomas Andres	12/6/2016	1	
Okay. Call-out the IIP06 hollow bars in Section C-C.			

Submittal Report

Financial Project:	434688-1-58-01	Submital Type:	PLANS
Submittal Phase:	PHASE IV	Submital Staff Type:	CONSULTANT
Recieved Date:	2/14/2017	Response Due Date:	3/23/2017
Grace Period:	0	District:	SIXTH
Status:	CLOSED	Create Date:	2/14/2017
Create User Id:	PD601MI	Last Update:	6/13/2017
		Last Update User Id:	KNKSARA

Description:

434688-1: 100% Superstructure Design for FIU UNIVERSITY CITY PROSPERITY PROJ. ALONG SW 109 AVE & SR 90/SW 8 ST

Group: PRELIMINARY ENGINEERING
Phase Review Type: LAP Project
Status: Submitted
Phase Initiation Date: 2/14/2017
Comments Due Date: 3/7/2017
Days Allowed for Review: 22
Review Meeting: 3/23/2017 10:00 AM to 11:00 AM @ To be schedule if required
Plans Format: Electronic
Comments: External Project Manager: Manuel Feliciano, P.E.
E-mail: [redacted]
Phone #: [redacted]
Phase: 100% Superstructure Design
Review Meeting will be schedule if needed
Design Criteria is FDOT PPM
Work Program Construction Budget: $11,875,092
Production Date: DESIGN- BUILD

Threads:

No	Status	Current Holder	Reference	Categories
3	RESPONSE ACCEPTED		B-39, B-40, B-43 and B-69:	STRUCTURES

Created By	Created On	Version	Delegate For
Thomas Andres	2/20/2017	1	

Corrosion protection is not in compliance with Design Index 21802.

This comment requires a written response.

MANUEL FELICIANO 3/30/2017 1

Permanent grout caps are provided at the live stressing end of each PT bar (Anchorage Protection Type 9 per Standard Index No. 21802) as shown on Sheet B-69. Dead end anchors will be cast within the precast section with no block out. The dead end anchor will be coated with a galvanizing compound (e.g. Zinc Clad III HS) for additional corrosion protection as the exposure levels and the risk of corrosion are lower beneath the deck.

Thomas Andres 4/3/2017 1

Response Accepted & Comment Closed

No	Status	Current Holder	Reference	Categories
4	RES[illegible]E ACCEPTED		B-39, B-40, and E	STRUCTURES

Created By	Created On	Version	Delegate For
Thomas Andres	2/20/2017	1	

Provide geometry control for both spans (deck elevations and camber diagrams). Include a plan note to require shop drawing for forming details including a step-by-step forming plan; including support conditions and forming design, camber details and calculations based on forming stiffness, etc.

This comment requires a written response.

MANUEL FELICIANO 3/30/2017 1

The erection manual will provide the requested information showing more details of the support conditions during casting, form stripping sequence, and location of temporary towers. In addition, a table of elevations has been added to Sheets B-37 & B-41.
The plan note related to the shop drawing requirements will be added to the listed drawings in the RFC package.

Thomas Andres 4/3/2017 1

Response Accepted & Comment Closed

No	Status	Current Holder	Reference	Categories
5	RESPONSE ACCEPTED		B-38 and B-109 Stage 2, Step 2:	STRUCTURES

Created By	Created On	Version	Delegate For
Thomas Andres	2/20/2017	1	

During the stressing of the PT bars in Stage 2, Step 2, there is a concern with cracking the adjacent members that are not yet stressed or adjacent members that are not post-tensioned. The temporary stress check needs to account for the rigidity of the joints.
a. B-109 Stage 2, Step 1.B: Are only vertical and diagonal members with PT bars to be cast? If so, when are the other members to be cast? Clarify intent.
b. B-109 Stage 2, Step 2:
i. Clarify what is intended for vertical versus diagonal members.
ii. Clarify what order to stress members to minimize cracking of adjacent members. Consider stressing members in the order from the most-vertical to the least-vertical.
iii. There is a concern with cracking in adjacent members prior to longitudinal PT that are not PT'ed. See sketches below:

This comment requires a written response.

MANUEL FELICIANO 3/30/2017 1

a. Sheet B-109, Stage 2, Steps 1.A through 1.C give the casting sequence of the main span superstructure elements. Labels have also been added to the cross section to further clarify.
b.i. The diagonals are members with PT bars while the vertical members are reinforced concrete members. A note has been added to Sheet B-109, Stage 2 to further clarify.
b-ii. A more detailed stressing sequence has been provided on Sheet B-109 (Stage 2) for clarification. This sequence has been added to the RFC Submittal plan sheet.
b-iii. The effect of the PT bars has been considered in the finite element model analysis (LUSAS Bridge plus) of the main span. PT bars are defined in the truss diagonal members. The stressing sequence of all PT has been checked with the finite element model to ensure the structure is within the allowable limits as each member is stresse

Thomas Andres 4/3/2017 1

Response Accepted & Comment Closed

No	Status	Current Holder	Reference	Categories
6	RESPONSE ACCEPTED		B-42, B-109 Stage 5, Step 5:	STRUCTURES

Created By	Created On	Version	Delegate For
Thomas Andres	2/20/2017	1	

During the stressing of the PT bars in Stage 5, Step 5, there is a concern with cracking the adjacent members that are not yet stressed or adjacent members that are not post-tensioned. The temporary stress check needs to account for the rigidity of the joints.
i. Clarify what order to stress members to minimize cracking of adjacent members. Consider stressing members in the order from the most-vertical to the least-vertical.
ii. There is a concern with cracking in adjacent members prior to longitudinal PT that are not PT'ed. See sketches below:

This comment requires a written response.

MANUEL FELICIANO 3/30/2017 1

i. A more detailed stressing sequence has been provided on Sheet B-109 (Stage 4) for clarification. The stressing sequence of the PT bars has been checked to ensure the structure is within the allowable limits as the bars in each diagonal are stressed.
ii. The stressing sequence of the longitudinal PT has been checked to ensure the structure is within the allowable limits as each tendon is stressed.

To clarify, this response applies to Sheets B-109 (Stage 4) and B-110 (Stage 5).

Thomas Andres 4/3/2017 1

Response Accepted & Comment Closed

No	Status	Current Holder	Reference	Categories
7	RESPONSE ACCEPTED		B54 thru B-59:	STRUCTURES

Created By	Created On	Version	Delegate For
Thomas Andres	2/20/2017	1	

There is a concern that without transverse PT of the canopy end diaphragms that cracking will develop during longitudinal PT stressing. The concern is that the web will get dragged behind the compression zone. See sketch below.

This comment requires a written response.

MANUEL FELICIANO 3/30/2017 1

The concrete tensile stress was checked and is less than 3sqrt(f'c). In addition, 6-#8 bars are provided at the face of the Type II canopy diaphragm and 3-#8 bars are provided at the face of the Type III canopy diaphragm based on our strut and tie analysis.

Thomas Andres 4/3/2017 1

Response Accepted & Comment Closed

No	Status	Current Holder	Reference	Categories
8	RESPONSE ACCEPTED		B-57, Section A-A; B-59, Section A-A:	STRUCTURES

Created By	Created On	Version	Delegate For
Thomas Andres	2/20/2017	1	

The 5S03 bars do not appear to be long enough to resist the radial tendon force.

This comment requires a written response.

MANUEL FELICIANO 4/4/2017 1

The 5S03 bars cannot be extended down per the provided sketch because the vertical member does not exist at the location of the tendon anchorages. The 5S03 bar legs tie into the reinforcement mat at the bottom of the canopy with a 90 degree standard hook. The 5S03 bars have been extended up to tie into the diagonal bar at the top face of the diaphragm for the RFC submittal.

Thomas Andres 4/11/2017 1

Response Accepted & Comment Closed

No	Status	Current Holder	Reference	Categories
9	RESPONSE ACCEPTED		B-70, Detail A:	STRUCTURES

Created By	Created On	Version	Delegate For
Thomas Andres	2/20/2017	1	

Suggest that 2 ½" grout pad be added to facilitate fit-up.

This comment requires a written response.

MANUEL FELICIANO 3/30/2017 1

A 1" thick grout pad will be added to the bearing plates at the end of the pipes near the pylon (Detail A).

Thomas Andres 4/3/2017 1

Response Accepted & Comment Closed

No	Status	Current Holder	Reference	Categories
10	RESPONSE ACCEPTED		B-109:	STRUCTURES

Created By	Created On	Version	Delegate For
Thomas Andres	2/20/2017	1	

a. Stage 2, Steps 4 and 5: Suggest that not all walkway tendons D1 thru D6 be stressed prior to stressing canopy tendons. Sequence stressing to reduce temporary stresses in the span (e.g. Stress Tendons D1 thru D4, Stress C2 and C3, Stress D5 and D6).
b. Stage 3: Show SPMT support locations consistent with the design calculations. Check span for temporary hauling boundary conditions.

This comment requires a written response.

MANUEL FELICIANO 3/30/2017 1

a. The erection manual will provide more details of the stressing sequence. A proposed stressing sequence has been provided on Sheet B-109, Stage 2 in the RFC submittal.
b. The design calculations are consistent with the current location of the SPMT supports shown on Sheet B-109. The span was checked to ensure stresses are within the allowable limits with the supports located at the first interior deck nodal zones. The distances to the centerline of the transporters have been added to Sheet B-109, Stage 3.

Thomas Andres 4/3/2017 1

Response Accepted & Comment Closed

No	Status	Current Holder	Reference	Categories
11	RES E ACCEPTED		B-109 and B-110. Stage 4, Step 3, and Stage 5, St	STRUCTURES

Created By	Created On	Version	Delegate For
Thomas Andres	2/20/2017	1	

These steps are not clear. It is not clear from the Substructure Pylon details the limits of intermediate pylon region to be cast and closure pour region to be cast. Add additional details to clarify intent.

This comment requires a written response.

MANUEL FELICIANO 3/30/2017 1

Once the precast main span unit is in place, the pylon intermediate section (Sheets B-24 thru B-25) will be cast with construction joints that will connect with the back span deck, diagonals, and canopy. Proposed construction joint lines have been labeled on Sheet B-24A to define the limits of the intermediate pylon region. Next, the back span deck, diagonals, and canopy will be cast in the order listed. Finally, the closure will be poured to connect the deck and canopy sections.

Thomas Andres 4/3/2017 1

Response Accepted & Comment Closed

ALL ERC STRUCTURES COMMENTS

Submittal Report

Financial Project:	434688-1-58-01	Submital Type:	PLANS
Submittal Phase:	PHASE I	Submital Staff Type:	CONSULTANT
Recieved Date:	3/8/2016	Response Due Date:	3/25/2016
Grace Period:	0	District:	SIXTH
Status:	CLOSED	Create Date:	3/8/2016
Create User Id:	PD601MI	Last Update:	8/31/2016
		Last Update User Id:	KNKSARA

Description:

434688-1: FIU UNIVERSITY CITY PROSPERITY PROJ. ALONG SW 109 AVE & SR 90/SW 8 ST

Group: PRELIMINARY ENGINEERING
Phase Review Type: LAP Project
Status: Submitted
Phase Initiation Date: 2/29/2016
Comments Due Date: 3/14/2016
Days Allowed for Review: 15
Review Meeting: 3/25/2016 10:00 AM to 12:00 PM @ TBD If needed-Coordinate with FIU
Plans Format: Electronic
Comments: External Project Manager: Dwight Dempsey
E-mail: [redacted]
Section: Phase: 30% preliminary Design
Review Meeting will be schedule if needed
Design Criteria is FDOT
Work Program Construction Budget: $11,875,092
Production Date: DESIGN-BUILD

Threads:

No	Status	Current Holder	Reference	Categories
43	COMMENT RESOLVED			STRUCTURES,TRANSIT

Created By	Created On	Version	Delegate For
	3/14/2016	1	

Coordinate design of AIMS Platform to be located east of the PG5 Garage with FIU Parking and Transportation.

	4/1/2016	1	

The design of the AIMS platform will be coordinated with FIU Parking and Transportation.

Alfredo Reyna	8/16/2016	1	

Comment Closed

No	Status	Current Holder	Reference	Categories
107	RESPONSE ACCEPTED		General and Sheet B-3:	STRUCTURES

Created By	Created On	Version	Delegate For
Thomas Andres	3/25/2016	1	

Comments 1 thru 22 below are for information only. No response is required. The comments are intended to assist in providing general feedback to the DBF.

1. General:
a. See CADD Manual, pg. 4-41 thru 4-47 for structures plans naming and numbering convention and sheet order.

http://www.dot.state.fl.us/ecso/downloads/publications/manual/CADDManual2015/Files/10.1.15/CADDManual2015.pdf

b. Include bridge geotechnical report and borings in next submittal.
c. Include Traffic Control Plans for SW 8th Street in next submittal.
d. Is the C/L Structure & PGL baseline tied-in via survey? Include project survey control sheets in next submittal.
e. Locate and show all existing utilities within the project limits in next submittal.

2. Sheet B-2:
a. Include a note for lightning protection design criteria. fib Bulletin No. 30 "Acceptance of Stay Cable Systems using Prestressing Steels", NFPA 70 (National Electric code) and NFPA 780 (Standard for the Installation of Lightning Protection Systems).
b. Expand "Screeding Deck Slab Note" to say: ...TO ENSURE A UNIFORM TEXTURE OF THE FINAL COMPLETED STRUCTURE." to ensure that the CIP and precast deck interfacing surfaces also meet finish requirements.
c. Rename "Deck Planing and Profilographing" note title to "Deck Finishing" since the short-bridge criteria will be used.
d. Note 4: If SIP Forms are permitted, the designer needs to include the dead load (forms and the weight of the concrete to fill the flutes) which were assumed in the design.
e. Future Bearing Replacement: Include a step to unbolt the bottom stay pipe connection (Detail B, Sheet B-16) prior to jacking span or incorporate Comment 11.c below.

f. Per, SDG 2.4.1.E, since bridge is higher than 75 ft. Evaluate gust factor per ASCE/SEI 7-05. Show gust factor G that was used in General Notes.

3. Sheet B-3:
a. See SDM Chapter 7 for PLAN AND ELEVATION DRAWING requirements.
b. Call-out the existing overhead utility. Is it to remain? Can it be shut down? Is this an electric line? If so, include voltage. Is the clearance the minimum distance or the vertical distance? Clarify.
c. Review strain-compatibility implications created by part of the continuous (for LL) structure being founded on deep foundations and part founded on spread footings. Although there is likely surface rock at the site, any settlement of the abutments relative to the pylon need to be accounted for in the design.

4/22/2016 1

(1) It is our understanding that these comments were provided for information only and no response is required at this time. These comments are intended to assist in progressing the DBF's concept to 90% plans.
(2) It is our understanding that these comments were provided for information only and no response is required at this time. These comments are intended to assist in progressing the DBF's concept to 90% plans.
(3) It is our understanding that these comments were provided for information only and no response is required at this time. These comments are intended to assist in progressing the DBF's concept to 90% plans.

Thomas Andres 4/25/2016 1

Response Accepted & Comment Closed

No	Status	Current Holder	Reference	Categories
108	RES[illegible]SE ACCEPTED		Shts B-4 thru B-7	STRUCTURES

Created By	Created On	Version	Delegate For
Thomas Andres	3/25/2016	1	

4. Sheet B-4:
a. Show cross slope on both sides of the section.
b. Gradual drainage pipe slopes will be difficult to maintain. Greater slopes would be self-cleaning. Also design-in sufficient longitudinal slope of canopy to avoid ponding water. Provide pipe cleanout details during final design and verify that 8 inch diameter pipe is sufficient.
c. Consider the following cross section shape related issues:
i. Add a large 2'-0" chamfer at canopy-web interfaces and at walkway-web interfaces to reduce the likelihood of cracking at the 90 degree corners.
ii. Review section for buckling of the unbraced compression flange (canopy).
iii. Review the shape of the canopy at the outer fibers– high compression will occur at the top two corners.
iv. The inset pipe in the bottom center of the walkway will likely create a weak point which will be a crack initiation point due to transverse post tensioning stresses. This is also an issue at the locations where the live end of the PT bar is at the bottom of the truss - if a recess anchor is used. See B-17, Detail 'A'. Also all diagonal Type B member anchors appear to conflict with the drainage pipe.
v. There is insufficient details of the walkway deck web interface and the canopy web interface where there is significant interfacing shear between the elements.

5. Sheet B-5:
a. Spread footing layouts do not match B-19 thru B-21.
b. See SDG 3.8 for spread footing requirements.
c. See SDM, Chapter 11 for foundation layout sheet requirements.
d. Show critical temporary walls which are required to construct pylon footing alongside SW 8th Street.
e. Include Roadway Plan Set which includes requirements for traffic control and pavement and striping restoration of SW 8th Street required to facilitate the Pylon footing construction under existing roadway.

6. Sheets B-6 and B-7: Bury top of footing a minimum of 3'-0" below finished ground per SDG 3.11.2.C.

4/22/2016 1

(4) It is our understanding that these comments were provided for information only and no response is required at this time. These comments are intended to assist in progressing the DBF's concept to 90% plans.
(5) It is our understanding that these comments were provided for information only and no response is required at this time. These comments are intended to assist in progressing the DBF's concept to 90% plans.
(6) It is our understanding that these comments were provided for information only and no response is required at this time. These comments are intended to assist in progressing the DBF's concept to 90% plans.

Thomas Andres 4/25/2016 1

Response Accepted & Comment Closed

No	Status	Current Holder	Reference	Categories
109	RESPONSE ACCEPTED		B-8:	STRUCTURES

Created By	Created On	Version	Delegate For
Thomas Andres	3/25/2016	1	

7. Sheet B-8:
a. It is unclear why the 3" CIP vertical closure joint is required. Recommend maintaining a 2 ft. closure pour throughout. Issues with the 3" CIP vertical closure joint include:
i. Ability to consolidate grout/concrete in the 3" vertical gap.
ii. Ability to splice PT bar duct.
iii. Ability to accommodate fit-up with hauling defection (SPMTs) shape versus in-place self-weight deflection shape during element placement.
b. The vertical PT. ducts located in the precast truss elements (both spans) need to be oversized to facilitate fit-up.
c. It is unclear how pylon pier is connected from the underlying pier element-up thru the bottom walkway around the web element and thru the canopy.
d. Show duct for the continuity tendon in Section A-A.
e. Experience has shown that full-continuous-for-LL behavior which is assumed in design may not be achieved in the structure because of camber growth over time. Consider adding additional continuity bars/tendons in the bottom walkway element and sequence construction as follows: Pour walkway closure, stress walkway continuity bars/tendons, pour remaining closure, and then stress canopy continuity tendons. That way the bottom is pre-compressed in the vent of camber growth.

4/22/2016 1

(7) It is our understanding that these comments were provided for information only and no response is required at this time. These comments are intended to assist in progressing the DBF's concept to 90% plans.

Thomas Andres 4/25/2016 1

Response Accepted & Comment Closed

No	Status	Current Holder	Reference	Categories
110	RES E ACCEPTED		Shts. B-9 and B-1	STRUCTURES

Created By	Created On	Version	Delegate For
Thomas Andres	3/25/2016	1	

8. Sheets B-9 and B-10:

a. Care needs to be taken to avoid issues associated with elastic shortening of the elements during stressing of longitudinal tendons. For instance the form has to be designed to be compressible or removable (region 1), and embedded skid plates need to be embedded in such a way that the heel does not spall or crack as the element cambers up and drags on its heel (region 2).

b. The plans need to clearly show the sequence of all stressing. Maintaining stress limits throughout all intermittent phases to avoid cracking of the members will be extremely tricky and will likely necessitate stressing all web members along with some transverse/longitudinal stressing in increments such that members stay in compression. Also predicting where the PT stressing actually goes will be tricky. For instance any forces imposed on web joints affect all members framing into the joint. Longitudinal stressing of the canopy/walkway will tend to go into the stiff web element and not in the canopy/walkway. Also the design needs to pay particular shear lag affects and member interface shear (horizontal shear) through all phases of stressing.

c. There is a concern with tension behind the compression zone due to longitudinal PT of the walkway at the member ends as the top of the web and canopy element gets dragged along (shear lag in region 3).

d. There appears to be significant shear lag issues in both the canopy and walkway as the stiff web element is being dragged behind the compression zone. The designer needs to pay particular attention in these areas. Moving the canopy continuity tendon to the middle tendon spot may improve the issue. Consider adding additional longitudinal tendons in the added 2 ft. corner chamfers (Comment 4.c.i).

e. The concrete mix design needs to be flowable concrete or SCC to minimize potential for honeycombing of the element especially in areas where the concrete is cast under overlying formed surfaces (such as diagonals).

4/22/2016 1

(8) It is our understanding that these comments were provided for information only and no response is required at this time. These comments are intended to assist in progressing the DBF's concept to 90% plans.

Thomas Andres 4/25/2016 1

Response Accepted & Comment Closed

No	Status	Current Holder	Reference	Categories
111	RESPONSE ACCEPTED		Shts B-11 thru B-16:	STRUCTURES

Created By	Created On	Version	Delegate For
Thomas Andres	3/25/2016	1	

9. Sheets B-11, B-12, B-14, and B-15: Duct radii are less than the minimum radii required by SDG Table 1.11.4-2. Also provide a tangent of 5'-0" at all anchorages - industry practice.

10. Sheet B-13:

a. Verify stability of the structure during fabrication as the outer two ends of the walkway support beams are cambered upward due to the transverse PT in the deck.

b. The 3 ¾" distance to the flat duct is insufficient when accounting for an outer duct diameter of 1.54". See SDG Table 1.11.4-1.

11. Sheet B-16:

a. The longest pipe (145'-9") will deflect 2.44 inches under its own dead load. This assumes a standard pipe wall thickness. Even thicker walled 16 inch pipes appear to be unacceptable solutions. Consider a 20 inch or 24 inch O.D. with an X-Heavy wall thickness for the longest pipe and a standard pipe thickness for the rest.

b. Are the anchor bolts to be embedded in the members? Avoid drill and epoxy options if possible. See suggested detail below in item C to facilitate fit-up.

c. The pipes will be a maintenance issue long term. Will they be galvanized and then painted. How will inside of pipe be maintained if it is not galvanized? Pipes will attract live loads, thermal loads, and wind loads. See suggested detail (tight fitting inner slide pipe) below to avoid stressing of the pipes. Require pipes to be completely sealed against rain intrusion.

d. Given the sharply acute angles - How is quality welded insured? Also it is nearly impossible to inspect / perform NDT.

4/22/2016 1

(9) It is our understanding that these comments were provided for information only and no response is required at this time. These comments are intended to assist in progressing the DBF's concept to 90% plans.

(10) It is our understanding that these comments were provided for information only and no response is required at this time. These comments are intended to assist in progressing the DBF's concept to 90% plans.

(11) It is our understanding that these comments were provided for information only and no response is required at this time. These comments are intended to assist in progressing the DBF's concept to 90% plans.

Thomas Andres 4/25/2016 1

Response Accepted & Comment Closed

No	Statu	Current Holder	Reference	Categories
112	RES E ACCEPTED		Shts B-17 and B-2	STRUCTURES

Created By	Created On	Version	Delegate For
Thomas Andres	3/25/2016	1	

12. Sheet B-17:
a. See comment 8 above regarding providing a detailed stressing sequence. All web members may have to be stressed (even members 1, 9, 11 thru 14 and 24) to avoid cracking. See Comment 8.c above.
b. The PT bars at the bottom joint intersection member 7 and 8 conflict (the bars are in the same vertical plane).
c. In the case where the bars are stressed from the bottom, how is stressing accessed? Also if an anchor recess is provided at this location, the recess will weaken the member.
d. Include reinforcing and bursting steel details in the next submittal.
e. Recommend showing section views for members without PT bars.
f. The web truss will be very difficult to form without shrinkage cracking of the geometrically constrained members. Concrete placed around rigid inner forms are prone to shrinkage cracking and difficult to strip without damaging the member. See sketch below. Also over the length of the web element how will shrinkage be facilitated– will the inner forms be allowed to float or will the element be cast in stages? Recommend a shrinkage reducing admixture, a staged construction process and possibly call-for all of the inner forms to be lined with thin compressible rubber liners.

13. Sheet B-26:
a. Expand SPMT support beam details including dimensions from the end of the precast truss and analyze/design the precast truss system for the hauling support stresses consistent with the plan details and assumed support conditions.
b. Outside of the roadway pavement limits, the SPMTs will have to roll on steel plates or mats. Show on this sheet or B-27.
c. Require shop drawings for the SPMT move in final plans – give requirements related to maximum twist and differential boundary conditions during the move to avoid cracking of the element.

4/22/2016 1

(12) It is our understanding that these comments were provided for information only and no response is required at this time. These comments are intended to assist in progressing the DBF's concept to 90% plans.
(13) It is our understanding that these comments were provided for information only and no response is required at this time. These comments are intended to assist in progressing the DBF's concept to 90% plans.

Thomas Andres 4/25/2016 1

Response Accepted & Comment Closed

No	Status	Current Holder	Reference	Categories
113	RESPONSE ACCEPTED		Shts B-17, B-27 and B-28,	STRUCTURES

Created By	Created On	Version	Delegate For
Thomas Andres	3/25/2016	1	

14. Sheet B-27 and B-17: For the CIP truss span, it is unclear how the bottom live-end PT bar for member 23 can be stressed with the support/abutment in the way. Also see Comment 12.c above regarding stressing access with the forming system in the way.

15. Sheets B-27 and B-28: Expand to include member fabrication forming and stressing, and continuity stressing steps in sufficient detail.

16. Sheet B-28, Step 5: Include continuity stressing steps. See Comment 7.e above.

4/22/2016 1

(14) It is our understanding that these comments were provided for information only and no response is required at this time. These comments are intended to assist in progressing the DBF's concept to 90% plans.
(15) It is our understanding that these comments were provided for information only and no response is required at this time. These comments are intended to assist in progressing the DBF's concept to 90% plans.
(16) It is our understanding that these comments were provided for information only and no response is required at this time. These comments are intended to assist in progressing the DBF's concept to 90% plans.

Thomas Andres 4/25/2016 1

Response Accepted & Comment Closed

No	Status	Current Holder	Reference	Categories
114	RESPONSE ACCEPTED		General:	STRUCTURES

Created By	Created On	Version	Delegate For
Thomas Andres	3/25/2016	1	

17. Sheet 10 of 106: Lighting should meet IESNA and CPTED (crime prevention strategies thru environmental design).
18. Sheet 15 of 106: Flat area included curb element will attract skate boarders.
19. Sheet 16 of 106: Follow CPTED standards: Keep tree branches > 6' above ground, and ground cover/shubs below 2' tall to eliminate hiding places.
20. Sheet 17 of 106: Benches should have center arm rest or similar to keep people from sleeping on them.
21. Sheet 55 of 106: Panels create an opportunity for local artwork – creates ownership and reduces vandalism.
22. Sheet 92 of 106: Follow CPTED Guidelines – cut off fixture, reduced glare, etc.

4/1/2016 1

(17) The project will be designed to the relevant standards and guidelines of the Illuminating Engineering Society (IES) and the Crime Prevention Through Environmental Design Association (CPTED). This would include: illuminance levels, lighting uniformity, glare control, light source color, impact of lighting on perceived safety/security and light's use to enhance wayfinding and orientation.
(19) Understood, the design will follow CPTED standards and will be further detailed in the 90% landscaping submittal.
(22)Understood. These details will be further developed and provided in the 90% submittal.

Thomas Andres 4/14/2016 1

Response Accepted & Comment Closed

Submittal Report

Financial Project:	434688-1-58-01	Submital Type:	PLANS
Submittal Phase:	PHASE II	Submital Staff Type:	CONSULTANT
Recieved Date:	5/10/2016	Response Due Date:	6/16/2016
Grace Period:	0	District:	SIXTH
Status:	CLOSED	Create Date:	5/10/2016
Create User Id:	PD601MI	Last Update:	5/10/2016
		Last Update User Id:	PD601MI

Description:

434688-1: Foundation Design for FIU UNIVERSITY CITY PROSPERITY PROJ. ALONG SW 109 AVE & SR 90/SW 8 ST

Group: PRELIMINARY ENGINEERING
Phase Review Type: LAP Project
Status: Submitted
Phase Initiation Date: 5/10/2016
Comments Due Date: 5/23/2016
Days Allowed for Review: 14
Review Meeting: 6/16/2016 2:00 PM to 4:00 PM @ TBD if needed
Plans Format: Electronic
Comments: External Project Manager: Manuel Feliciano, P.E.
E-mail: [redacted]
Phone #: [redacted]
Section: Phase: 90% Foundation Design
Review Meeting will be schedule if needed
Design Criteria is Florida Green Book
Work Program Construction Budget:
Production Date: DESIGN- BUILD

Threads:

No	Statu	Current Holder	Reference	Categories
15	CON[illegible]T AGREED WITH		Sheet B-5 and Calculations:	STRUCTURES

Created By	Created On	Version	Delegate For
Thomas Andres	6/6/2016	1	

PPM Exhibit 26-DD requires that all 90% Foundation Component Submittals include additional details and backup information necessary to substantiate the loading on the foundations. This information was not included in the 90% Foundation Component Submittal Package. In addition, the previous 30% comments questioned many of the design assumptions related to the bridge superstructure and cross section. See the highlighted comments in attached pdf. For this reason, the 90% Foundation Component Submittal needs to be resubmitted with the necessary back-up information and comment responses to substantiate the loading on the foundations.

6/16/2016 1

The backup information (structural calculations) was submitted with the 90% foundation submittal. Please check the structural calculations that contain all the necessary information to substantiate the loading on the foundations.

The 30% comments/questions are related to the superstructure design. The responses to these comments will be provided with the 90% superstructure submittal. We are not expecting any significant change in the superstructure design that will affect the dimensional characteristics of the footings.

Thomas Andres 9/19/2016 1

It was agreed that the foundations would be designed with a small reserve so that the superstructure comments could be resolved at a future date.

9/19/2016 1

Comment Agreed & Closed

No	Status	Current Holder	Reference	Categories
16	RESPONSE ACCEPTED		Sheet B-9:	STRUCTURES

Created By	Created On	Version	Delegate For
Thomas Andres	6/6/2016	1	

Verify the 127 ton uplift resistance requirement. It is not clear why such a large up-lift resistance is required (simple span dead loads and continuous live loads).

6/16/2016 1

The uplift resistance requirement is to meet the wind loading demand in accordance with the project design criteria.

Thomas Andres 6/23/2016 1

Response Accepted & Comment Closed

No	Status	Current Holder	Reference	Categories
17	RESPONSE ACCEPTED		General	STRUCTURES

Created By	Created On	Version	Delegate For
Thomas Andres	6/8/2016	1	

The 90% Foundation Component Package did not include an independent peer review as required by PPM 26.3.2 and PPM 26.12. Although the structure is a fake cable stay, it is designed for simple span dead loads made continuous for live loads; it also is classified as unique bridge type with component-to-component configurations and details not normally used in Florida. We therefore request that the resubmitted 90% Foundation Component Package include a peer review.

6/29/2016 1

The Independent Review for the bridge component submittals is being performed by a separate FIGG office that acts independently, was not involved in the original design and does not have any other responsibilities on this project. The independent review is being performed with separately generated structural models, analysis methods and calculations. This process is consistent with the project specific Design Quality Management Plan and the MCM/FIGG technical proposal that were accepted by FIU as part of the design-build contract which is being administered by FIU through the FDOT Local Agency Program. This is the same Design Quality Management procedure that FIGG has successfully performed for all of our major bridges around the country. We will submit the tabulated list of all review comments from the independent review and responses from the originator of the design along with the signed independent review certification letter for the 90% Foundations Submittal.

Thomas Andres 9/19/2016 1

Response Accepted & Comment Closed

Submittal Report

Financial Project:	434688-1-58-01	Submital Type:	PLANS
Submittal Phase:	PHASE III	Submital Staff Type:	CONSULTANT
Recieved Date:	6/15/2016	Response Due Date:	7/13/2016
Grace Period:	0	District:	SIXTH
Status:	CLOSED	Create Date:	6/15/2016
Create User Id:	PD601MI	Last Update:	10/17/2016
		Last Update User Id:	PD601MI

Description:

434688-1: Structural Pylon & Landing Structures Design for FIU UNIVERSITY CITY PROSPERITY PROJ. ALONG SW 109 AVE & SR 90/SW 8 ST

Group: PRELIMINARY ENGINEERING
Phase Review Type: LAP Project
Status: Submitted
Phase Initiation Date: 6/16/2016
Comments Due Date: 7/1/2016
Days Allowed for Review: 16
Review Meeting: 7/13/2016 9:00 AM to 11:00 AM @ TBD no meeting schedule
Plans Format: Electronic
Comments: External Project Manager: Erika N. Hango, P.E.
E-mail: [redacted]
Phone [redacted]
Section: Phase: 90% Structural Pylon & landing structures Design
Review Meeting will be schedule if needed
Design Criteria is Florida Green Book, Bridge: FDOT
Work Program Construction Budget: $12,041,779
Production Date: DESIGN- BUILD

Threads:

No	Status	Current Holder	Reference	Categories
1	RESPONSE ACCEPTED		General:	STRUCTURES

Created By	Created On	Version	Delegate For
Thomas Andres	6/17/2016	1	

The RFP requires sufficient information in component submittals to allow for a complete review. As previously stated in the 90% Foundation Component Submittal,this submittal lacks sufficient backup information necessary to substantiate the loading on the elements supporting the superstructure. As previously stated, the previous 30% comments questioned many of the design assumptions related to the bridge superstructure and cross section. See the highlighted comments in attached pdf. For this reason, the 90% Substructure Component Submittal needs to be resubmitted with the necessary back-up information and comment responses to substantiate the loading on the substructure.

	7/21/2016	1

As agreed at the meeting held on 6/30/2016 between FDOT Central Office, FIU, and FIGG, the 90% substructure submittal will be resubmitted including a summary of the C/D ratios for all the substructure components supporting the bridge.

Thomas Andres	7/28/2016	1

Response Accepted & Comment Closed

No	Status	Current Holder	Reference	Categories
2	RES[illegible]SE ACCEPTED		General:	STRUCTURES

Created By	Created On	Version	Delegate For
Thomas Andres	6/17/2016	1	

The 90% Substructure Component Package did not include an independent peer review as required by PPM 26.3.2 and PPM 26.12. Although the structure is a fake cable stay, it is designed for simple span dead load made continuous for live loads; it also is classified as unique bridge type with component-to-component configurations and details not normally used in Florida. We therefore request that the resubmitted 90% Foundation Component Package include a peer review.

7/21/2016 1

As agreed at the meeting held on 6/30/2016 between FDOT Central Office, FIU, and FIGG, the independent peer review for the substructure will be included prior to the RFC submittal.

Thomas Andres 7/28/2016 1

Response Accepted & Comment Closed

No	Status	Current Holder	Reference	Categories
3	RESPONSE ACCEPTED		Sheet B-1:	STRUCTURES

Created By	Created On	Version	Delegate For
Thomas Andres	6/17/2016	1	

The 90% Substructure Component Submittal is missing the pylon truss system connection details (Sheets B-36 and B-37). The 90% Substructure Component Submittal is missing the pylon diaphragm dimensions and reinforcing and the upper pylon dimensions and reinforcing (Sheets B-24 and B-25). The RFP requires sufficient information in component submittals to allow for a complete review. Also the FDOT Boilerplate states that partial submittals will not be allowed. (i.e. Further dividing the foundation, substructure, or superstructure into Pier 2, Abutment 1, Span 4, etc will not be accepted). It is important that the interfacing elements be provided so that a complete review can be performed.

7/21/2016 1

The upper and intermediate pylon will be included with the 90% substructure resubmittal.

Thomas Andres 7/28/2016 1

Response Accepted & Comment Closed

No	Status	Current Holder	Reference	Categories
4	RESPONSE ACCEPTED		Sheet B-23:	STRUCTURES

Created By	Created On	Version	Delegate For
Thomas Andres	6/17/2016	1	

a. Indicate that concrete for the pylon is to be mass concrete.

b. Section C-C: Contact splice at footing-pylon connection: The 2 x 13 inner 11P01 bars does not match the 2 x 11 Pylon dowels shown on Sheet B-10 (previous submittal).

c. Will there be any interfacing steel between the pylon and the CIP span? See General comment above. The concern is potential camber-growth over time and the effects on the grouted shim joint. See previous 30% comment related to continuous for LL designs.

7/21/2016 1

a) A note will be added indicating that the base of the pylon is a mass concrete pour.
b) The dowel detail has been further coordinated.
c) Yes, there will be interfacing steel between the pylon and the CIP span. The submittal will show the requested reinforcement details. The effect of the camber-growth has been analyzed and its effect on the grouted joint is not significant.

Thomas Andres 7/28/2016 1

Response Accepted & Comment Closed

No	Status	Current Holder	Reference	Categories
5	RESPONSE ACCEPTED		5. Sheets B-2, B-70 thru B-83:	STRUCTURES

Created By	Created On	Version	Delegate For
Thomas Andres	6/17/2016	1	

Verify that all concrete covers meet the requirements of SDG Table 1.4.2-1. See attached document for Department's interpretation of requirements.

7/21/2016 1

According to the RFP Design Criteria Section 2.4, structural elements for stairs, elevators, and ramps shall be designed in accordance with the Florida Building Code (Chapter 19) and ACI 318 (Section 7.7.1). The minimum cover for slabs and stairs is 1.5 in. We agree that for columns the concrete cover is equal to 3 inches.

Thomas Andres 7/28/2016 1

Response Accepted & Comment Closed

No	Statu	Current Holder	Reference	Categories
26	RES E ACCEPTED			STRUCTURES

Created By	Created On	Version	Delegate For
	7/1/2016	1	

90% Calculations Pylon Substructure Design, General: The information provided does not allow a complete review of the pylon design. For example, the design of the pylon for axial and flexural loads presents the governing load combinations for the design as well as the results of the nominal loads for the particular element being designed; however, information on how these loads were obtained are not included in the calculations. Please provide all the necessary backup information to substantiate the forces being used to design these elements. This information should include a detailed structural model of the structure indicating all the primary loads applied to the structure.

7/21/2016 1

All the required input information for the structural model can be found in the 90% foundation submittal. However, for future substructure submittals, a section in the calculation binder including the model will be added.

8/3/2016 1

Response Accepted & Comment Closed

No	Status	Current Holder	Reference	Categories
27	RESPONSE ACCEPTED			STRUCTURES

Created By	Created On	Version	Delegate For
	7/1/2016	1	

90% Calculations Pylon Substructure Design, Sheets 8 and 9: Based on the submitted preliminary drawings, the end vertical post of the superstructure truss system is embedded into the pylon column with the faces of the posts being flush with the face of the pylon column. As shown in the sketches and the calculations (see Sheet 92) the column longitudinal rebars are in conflict with the truss end post, additionally the column stirrups will also be conflicting. Please revise.

7/21/2016 1

An integrated 3-D drawing has been developed in order to evaluate potential conflict between the rebars, drainage system, post-tensioning anchorages, and PT bars. All the connection details will be shown in the 90% superstructure submittal. The sketch shown on sheet 92 depicts an irregular rebar spacing to avoid any conflict with the truss end post. In addition, the stirrups of the pylon will be detailed to have splices between rebar embedded in the end post and the pylon.

8/3/2016 1

Response Accepted & Comment Closed

No	Status	Current Holder	Reference	Categories
28	RESPONSE ACCEPTED			STRUCTURES

Created By	Created On	Version	Delegate For
	7/1/2016	1	

90% Calculations Pylon Substructure Design, Sheet 42: The FDOT requirement for crack control (SDG 3.1) has been implemented by a strain criteria in which the steel is allowed a limiting strain of 24ksi/E and a strain in the concrete of 0.003 in/in. The computations have been performed with the same software used to compute the strength capacity of the column. It is not clear to the reviewer if a strength capacity has been performed by allowing the rebars to yield at 24 ksi and the concrete to crush at 0.003 in/in. Please clarify.
Note that this is a serviceability criteria and the level of straining in the rebar and the concrete have to be found using equilibrium, strain compatibility and the stress-strain response of the concrete and the rebar that equilibrate the applied loads. Most probably at the service level the concrete section will be behaving as a crack member but the concrete and the steel will be in the elastic range. Please provide details of the computation or a copy of the program manual that indicates how this service condition computation is performed.
This comment is general and applicable for all the service computations presented in this submittal.

7/21/2016 1

This FIGG proprietary program calculates a service interaction diagram that represents the maximum stress of 24 ksi in the rebar. Therefore, if the applied loads do not exceed the boundaries of the interaction diagram, the requirements of crack control are met. This is a conservative way to show that the rebar stress is less than 24 ksi.

We have used other commercially available programs (e.g. XTRACT) to calculate the stress in the critical rebar due to applied loads and the stress in the rebar is less than 24 ksi.

8/3/2016 1

The reviewer disagrees with the methodology used by the designer. This is a service condition and as such the behavior of the concrete section should be considered as linearly-elastic but most probably cracked and the steel linearly-elastic. The methodology used by the designer is theoretically not correct and not necessarily conservative. The only reason why this comment is accepted is that an independent evaluation shows that service conditions are not controlling the design.

No	Status	Current Holder	Reference	Categories
29	RES[illegible]SE ACCEPTED			STRUCTURES

Created By	Created On	Version	Delegate For
	7/1/2016	1	

90% Calculations Pylon Substructure Design, Sheet 65: Important uplift forces are generated by TU+ Temp_diff (-458k) and uplift wind loads (-206k). These load conditions most probably will generate important forces at the junction between the two spans (compression at the top and tension at the bottom). Please verify that the proposed joint (unreinforced at the bottom) is able to handle these forces.

7/21/2016 1

The back span will be cast-in-place and it will be connected with mild reinforcing to the main span. Furthermore, the pylon intermediate section (deck level) will be cast around the main span and monolithic with a portion of the back span.

The load due to self-weight of the superstructure (+2,100 kips) exceeds the uplift forces that are generated by thermal effects and wind loading.

8/3/2016 1

Our main concern is bending tensile stresses generated by these loading conditions at the junction between the two spans. These forces should be evaluated and the connection should be appropriately reinforced.

No	Status	Current Holder	Reference	Categories
30	RESPONSE ACCEPTED			STRUCTURES

Created By	Created On	Version	Delegate For
	7/1/2016	1	

90% Calculations Pylon Substructure Design: provide calculations for the PT bar anchoring the main span truss system to the pylon.

7/21/2016 1

These calculations were provided on page 180 of the 90% pylon substructure calculations.

8/3/2016 1

The referred calculation shows the effect of the PT force at the top of pylon base (additional horizontal bars to take the tension field generated by the PT force). What is not clear to the reviewer is why these PT are bars needed and how they were sized. Note that the response to Comment 29 indicate that there are not uplift forces at the junction between the superstructure and the pylon base

No	Status	Current Holder	Reference	Categories
31	RESPONSE ACCEPTED			STRUCTURES

Created By	Created On	Version	Delegate For
	7/1/2016	1	

90% Substructure Plans: Reinforcement and dimensions of the upper portion of the pylon are missing in this submittal (Sheets B-24 and B-25). Also, since the pylon reinforcement is dependent upon the connection between the pylon and the truss system, these plans also need to be included in this submittal.

7/21/2016 1

FIGG is following the linear progression of how the components are built in the submittal process for this design-build project. As requested, the detail of pylon-superstructure connection will be included in the 90% resubmittal of the substructure.

8/3/2016 1

Response Accepted & Comment Closed

No	Status	Current Holder	Reference	Categories
32	RESPONSE ACCEPTED			STRUCTURES

Created By	Created On	Version	Delegate For
	7/1/2016	1	

90% Substructure Plans, Sheet B-23: Based on the truss system dimensions shown in the preliminary submittal some of the 11P03 rebars and the couplers will be in direct conflict with the truss system. Please verify.

7/22/2016 1

The 11P03 rebars and couplers are not in conflict with the superstructure elements. See the attached 3D drawings for details.

8/3/2016 1

Response Accepted & Comment Closed

No	Statu	Current Holder	Reference	Categories
33	RESI E ACCEPTED			STRUCTURES

Created By	Created On	Version	Delegate For
	7/1/2016	1	

90% Calculations_Landing Substructure Design, General: Bridge bearing reactions applied to the LARSA model have not been documented. Please provide backup information for these forces.

7/21/2016 1

The bearing reactions were documented in the 90% foundation submittal. However, the 90% substructure resubmittal will also include this information.

8/3/2016 1

Response Accepted & Comment Closed

No	Status	Current Holder	Reference	Categories
34	RESPONSE ACCEPTED			STRUCTURES

Created By	Created On	Version	Delegate For
	7/1/2016	1	

90% Calculations_Landing Substructure Design, Frame Pier Designs: Note that forces generated by uniform temperature expansion or contraction of the framed piers as well as effects of concrete shrinkage need to be accounted for in the design. Input data shown that bridge bearing reactions due to temperature effects has been considered but it is not clear if forces due to temperature and shrinkage within the frame pier have been accounted for. Please clarify.

7/21/2016 1

Per the AASHTO LRFD Section 3.12.2, the uniform temperature load case is applied to the deck. The effect of the deck movements and loads are applied to the substructure. Also, the shrinkage loading effect due to the superstructure movement has been applied to the design of the end bents.

The shrinkage effect of the reinforced concrete end bents and TU effect were checked as part of the substructure resubmittal and it was found that these effects are not significant.

8/3/2016 1

Response Accepted & Comment Closed

No	Status	Current Holder	Reference	Categories
35	RESPONSE ACCEPTED			STRUCTURES

Created By	Created On	Version	Delegate For
	7/1/2016	1	

90% Calculations_Landing Substructure Design, Sheet 101: Same as comment No. 2, i.e., clarify methodology used to check service conditions under flexo-compression.

7/21/2016 1

See response to comment no. 28.

8/3/2016 1

See remarks for Comment 28.

No	Status	Current Holder	Reference	Categories
36	RESPONSE ACCEPTED			STRUCTURES

Created By	Created On	Version	Delegate For
	7/1/2016	1	

90% Substructure Plans, Sheet B-2: Since some of the South and North landing structural components are designed following ACI 318 and the masonry walls shall be designed and detailed following TMS 402-13 code, these codes should be incorporated to the list of Design Specifications.

7/21/2016 1

The requested design codes will be included in the General Notes.

8/3/2016 1

Response Accepted & Comment Closed

No	Statu	Current Holder	Reference	Categories
37	RESI E ACCEPTED			STRUCTURES

Created By	Created On	Version	Delegate For
	7/1/2016	1	

Since the submitted calculations and plans are incomplete as indicated in some of the previous comments, this submittal package requires a resubmittal.

7/21/2016 1

The 90% substructure package will be resubmitted in order to provide additional information about the capacity/demand ratios for the substructure elements.

8/3/2016 1

Response Accepted & Comment Closed

No	Status	Current Holder	Reference	Categories
38	RESPONSE ACCEPTED			STRUCTURES

Created By	Created On	Version	Delegate For
	7/1/2016	1	

The submittal does not include calculations and plans for the foundation system for either the landing structures or the bridge piers. Please include these components in the new resubmittal package.

7/21/2016 1

The 90% foundation submittal was submitted on May 2, 2016. FDOT Central Office has requested a resubmittal of the 90% foundation in order to include capacity/demand ratios for all of the foundations.

8/3/2016 1

Response Accepted & Comment Closed

No	Status	Current Holder	Reference	Categories
39	RESPONSE ACCEPTED			STRUCTURES

Created By	Created On	Version	Delegate For
	7/1/2016	1	

In accordance with the FDOT PPM Section 26.3.2 this structure is classified as a Category 2 structure and as such PPM 26.12 requires an independent peer review. Please include this review with the resubmittal package.

7/21/2016 1

FDOT Central office has agreed to include the independent peer review prior to the RFC substructure submittal.

8/3/2016 1

Response Accepted & Comment Closed

No	Status	Current Holder	Reference	Categories
40	RESPONSE ACCEPTED			STRUCTURES

Created By	Created On	Version	Delegate For
	7/1/2016	1	

General:
A. Truss system section appears stiff for flexure about the horizontal axis but weak for torsion. The canopy which will be under compression is unrestrained for moving laterally (except at the pylon support). Global stability of the system needs to be investigated. The structure first buckling mode will most probably be lateral torsional bucking, i.e., the structure rotating about its shear center which is located close to the bottom slab. A buckling load analysis shall be performed to make sure that the structure has enough safety margins against instability.
B. Bridge vibration needs to be considered as indicated by the AASHTO Specifications for Pedestrian bridges, Section 6. Again, the weak torsional stiffness of the bridge will be the main concern and most probably the first mode of vibration may be rotation of the bridge about its longitudinal center of mass. This may induce important vertical displacement at the tips of the bottom slab which may produce discomfort of the users. A vibration analysis should be performed to assess this phenomenon.

7/21/2016 1

a) The buckling analysis of the canopy was performed and the canopy buckling load is much greater that the loading demand. The global stability calculations for the system will be included in the 90% superstructure submittal.
b) The natural frequency analysis was performed for the first mode of vibration in the vertical and horizontal directions. The analysis shows that the vertical natural frequency is greater than 3 hz and the horizontal frequency is greater than 1.3 hz. Therefore, the design of the structure meets this aspect of the RFP document requirements.

8/3/2016 1

Note that due to the relatively low torsional stiffness of this bridge (as compared to its vertical and horizontal bending stiffness); torsional vibration should also be evaluated. Most probably this should be the first mode of vibration with a frequency smaller than the horizontal and vertical frequencies. Although this mode is not indicated in the AASHTO Specifications for Pedestrian Bridges Section 6- Vibrations, we consider that this particular vibration mode needs to be evaluated.

Submittal Report

Financial Project:	434688-1-58-01	Submital Type:	PLANS
Submittal Phase:	PHASE III	Submital Staff Type:	CONSULTANT
Recieved Date:	6/29/2016	Response Due Date:	7/29/2016
Grace Period:	0	District:	SIXTH
Status:	CLOSED	Create Date:	6/29/2016
Create User Id:	PD601MI	Last Update:	10/24/2016
		Last Update User Id:	PD601MI

Description:

434688-1: Bulkhead Wall at Tamiami Canal for FIU UNIVERSITY CITY PROSPERITY PROJ. ALONG SW 109 AVE & SR 90/SW 8 ST

Group: PRELIMINARY ENGINEERING
Phase Review Type: LAP Project
Status: Submitted
Phase Initiation Date: 6/28/2016
Comments Due Date: 7/13/2016
Days Allowed for Review: 16
Review Meeting: 7/29/2016 9:00 AM to 12:00 PM @ TBD, Schedule if needed
Plans Format: Electronic
Comments: External Project Manager: Erika N. Hango, P.E.
E-mail: [redacted]
Phone #: [redacted]
Section: Phase: 90% Bulkhead wall at Tamiami canal
Review Meeting will be schedule if needed
Design Criteria is Florida Green Book, Bridge: FDOT
Work Program Construction Budget: $12,041,779
Production Date: DESIGN- BUILD

Threads:

No	Status	Current Holder	Reference	Categories
11	RESPONSE ACCEPTED			STRUCTURES

Created By	Created On	Version	Delegate For
	7/7/2016	1	

Calcs General: Show geotechnical recommendation or backup for soil parameters. Earth pressure loads cannot be verified.

	8/2/2016	1

Geotechnical Recommendation will be added to the calculations.

	8/17/2016	1

Response Accepted & Comment Closed

No	Status	Current Holder	Reference	Categories
12	RESPONSE ACCEPTED		writeup example	STRUCTURES

Created By	Created On	Version	Delegate For
	7/7/2016	1	

Calcs General: Provide write-up of design approach. See attached example for 15' high anchored wall. Describe design criteria and methods for Embedment, Deflection, and Strength check, including summary of Load Factors and Factors of Safety used.

8/2/2016 1

Design methodology write-up will be provided.

8/17/2016 1

Response Accepted & Comment Closed

No	Status	Current Holder	Reference	Categories
13	RESPONSE ACCEPTED			STRUCTURES

Created By	Created On	Version	Delegate For
	7/7/2016	1	

Calcs General: Provide calcs. for pick-up loop strands capacity and embedment.

8/2/2016 1

Loop Capacity Calculations will be provided.

8/17/2016 1

Response Accepted & Comment Closed

No	Status	Current Holder	Reference	Categories
14	RESPONSE ACCEPTED			STRUCTURES

Created By	Created On	Version	Delegate For
	7/7/2016	1	

Calcs General: Per SDG 3.1.F.1 Coatings "and/or" sacrificial thickness to be added per Table 3.1-1. Provide clarification if the epoxy mastic wrap and galvanization is enough for the 75 years service life, or if some sacrificial thickness of anchor rod is warranted per Table 3.1-1 based on environmental classification

8/2/2016 1

Sacrificial thickness of 0.18 in was considered as shown on page 147. The protection shown is based on SDM Fig. 19.5.1-2 which should be adequate for 75 years.

8/17/2016 1

Response Accepted & Comment Closed

No	Status	Current Holder	Reference	Categories
15	RESPONSE ACCEPTED			STRUCTURES

Created By	Created On	Version	Delegate For
	7/7/2016	1	

Calcs Page 8 to 14: DHW is shown as EL 7.87, where page 3 and plans has EL 8.0. Update accordingly for consistency.

8/2/2016 1

DHW EL 8.0 is the correct one. We will update as required.

8/17/2016 1

Response Accepted & Comment Closed

No	Status	Current Holder	Reference	Categories
16	RESPONSE ACCEPTED			STRUCTURES

Created By	Created On	Version	Delegate For
	7/7/2016	1	

Calcs Page 26: LRFD Section 3.11.6 – Clarify if the surcharge loads have already been factored, and ES can be 1.0 or if those are unfactored loads (from Figg) and use the load factor of 1.5

8/2/2016 1

These are unfactored loads from FIGG.

8/17/2016 1

Response Accepted & Comment Closed

No	Statu	Current Holder	Reference	Categories
17	RESI E ACCEPTED			STRUCTURES

Created By	Created On	Version	Delegate For
	7/7/2016	1	

Calcs, Page 28: Confirm Florida limerock properties were used for Ec

8/2/2016	1	

Concrete modulus will be verified and updated as required.

8/17/2016	1	

Response Accepted & Comment Closed

No	Status	Current Holder	Reference	Categories
18	RESPONSE ACCEPTED			STRUCTURES

Created By	Created On	Version	Delegate For
	7/7/2016	1	

Calcs, Page 78: The moments for the final condition (service and factored) do not match page 63 & 75. Please clarify.

8/2/2016	1	

Will update for consistency.

8/17/2016	1	

Response Accepted & Comment Closed

No	Status	Current Holder	Reference	Categories
19	RESPONSE ACCEPTED			STRUCTURES

Created By	Created On	Version	Delegate For
	7/7/2016	1	

Plans General: Use FY 2016-17 version FDOT Standards on cover page and elsewhere. See FDOT implementation memo.

8/2/2016	1	

Agree, will use FY 2016-17.

8/17/2016	1	

Response Accepted & Comment Closed

No	Status	Current Holder	Reference	Categories
20	RESPONSE ACCEPTED			STRUCTURES

Created By	Created On	Version	Delegate For
	7/7/2016	1	

Plans sheet BW-0: Show Certificate of Authorization (COA)# under Company Name.

8/2/2016	1	

Agree, CA will be added.

8/17/2016	1	

Response Accepted & Comment Closed

No	Status	Current Holder	Reference	Categories
21	RESPONSE ACCEPTED			STRUCTURES

Created By	Created On	Version	Delegate For
	7/7/2016	1	

Plans sheet BW-3: a.)The baseline shown and baseline referenced by the stationing are different. Only show the baseline and associated stationing that will be used for construction. b.)Show disposition of existing fence. c.)Verify minimum dimension from proposed structure to gas line is in compliance with utility requirements. d.)122'-2 ¾" dimension is not consistent with stationing of corners. e.) Show separate sheet with boring log for the boring that is shown in plan view.

8/2/2016 1

a) We are showing the US 41 baseline to tie in the wall and the canal baseline for information only.
b) Disposition will be shown (To be Removed).
c) Dimension has been verified and is in compliance.
d) Dimension will be verified and updated as required.
e) ROCB sheet will be added.

8/17/2016 1

Response Accepted & Comment Closed

No	Status	Current Holder	Reference	Categories
22	RESPONSE ACCEPTED			STRUCTURES

Created By	Created On	Version	Delegate For
	7/7/2016	1	

Plans sheet BW-2: State environmental classification.

8/2/2016 1

Environmental Classification will be added (Moderately Aggressive).

8/17/2016 1

Response Accepted & Comment Closed

No	Status	Current Holder	Reference	Categories
23	RESPONSE ACCEPTED			STRUCTURES

Created By	Created On	Version	Delegate For
	7/7/2016	1	

Plans sheet BW-7: a.)Remove anchorage symbol from face of pile for 5 piles in plan view that do not require anchors. b.)Verify anchors are constructible next to sanitary sewer man hole. c.)One anchor appears to be in clear cover area of footing, which may cause spalling. Can anchor be rotated or relocated? d.)If any proposed foundations have piles, show them here so any conflicts with anchors may be resolved. e.)Show legend to define DHW and OWC. f.) check word spacing format of coupler note 2. g.) Is direction of stationing needed if there are no stations or baseline shown on this sheet?

8/2/2016 1

a.) Agree, symbol will be removed.
b.) We have verified with contractor that this can be constructed as shown.
c.) Yes, we will consider rotating/relocating anchor.
d.) There are only spread footing foundations adjacent to the wall.
e.) This is already shown on BW-3.
f.) Format will be checked.
g.) No, will remove.

8/17/2016 1

Response Accepted & Comment Closed

No	Status	Current Holder	Reference	Categories
24	RESPONSE ACCEPTED			STRUCTURES

Created By	Created On	Version	Delegate For
	7/7/2016	1	

Plans sheet BW-8: Is it intended for the thread bar to be sole sourced? Can equivalent product be used?

8/2/2016 1

We will verify with the contractor, but in all likelihood it will be from Williams (or equal).

8/17/2016 1

Response Accepted & Comment Closed

No	Status	Current Holder	Reference	Categories
25	RE SE ACCEPTED			STRUCTURES

Created By	Created On	Version	Delegate For
	7/7/2016	1	

Plan sheet BW-9: Show Section B-B label in plan view.

8/2/2016 1

Agree, section B-B will be added to plan view.

8/17/2016 1

Response Accepted & Comment Closed

No	Status	Current Holder	Reference	Categories
48	RESPONSE ACCEPTED		Sheet BW-1	STRUCTURES

Created By	Created On	Version	Delegate For
Thomas Andres	7/13/2016	1	

a. Section A-A: Specification 455-5.15.3 allows for a batter tolerance of 1/4 inches per foot from vertical therefore the panels will not likely bear on both piles for their full length. The concern is that soil fines will migrate through the open joint. Require filter fabric to be attached to back-of-wall across panels via an approved mastic.
b. Filter Fabric Placement Detail: The bottom-of-panel elevation appears to be lower than top-of-rock in a few locations. Is it the EOR's intent that the toe be preformed? Are there any requirements for grouting the toe at these locations?

These comments require a written response.

8/16/2016 1

a) Filter fabric will be placed across panel joints via approved mastic.
b) All panels will be embedded a minimum of 2 ft below top of natural rock. The canal needs to be excavated to achieve the proposed cross section as shown on the drainage plans. A trench will be excavated to set the panels given the hard natural limestone. The purpose of setting the panels into the limestone is to avoid soil migration under the panels. There are not any requirements for grouting the toe at these locations.

Thomas Andres 8/18/2016 1

Response Accepted & Comment Closed

No	Status	Current Holder	Reference	Categories
49	RESPONSE ACCEPTED		Sheet BW-7:	STRUCTURES

Created By	Created On	Version	Delegate For
Thomas Andres	7/13/2016	1	

a. Note 5: Expand note for galvanizing to include nuts, bearing plates and couplers.

b. Section A-A: The anchor bars appear to go-through the proposed foundations. Please address the following:

I. Has the design of the retaining wall accounted for the influence of the spread footing surcharge loadings?
II. Clarify if the PVC pipe shown on Sheet BW-8 is to be embedded into the spread footings. If so, address how concrete cover will be maintained. If not, address impact of Spread Footing Settlement on possible anchor bar kinking.

These comments require a written response.

8/2/2016 1

a) Note will be expanded.
b) Yes, surcharge loading from adjacent foundations has been included in the design.
c) Yes, PVC pipe will be embedded into spread footing. We will coordinate with bridge designer to include appropriate notes with respect to cover.

Thomas Andres 8/18/2016 1

Response Accepted & Comment Closed

Submitt[illegible] eport

Financial Project:	434688-1-58-01	Submital Type:	PLANS
Submittal Phase:	PHASE III	Submital Staff Type:	CONSULTANT
Recieved Date:	8/3/2016	Response Due Date:	9/2/2016
Grace Period:	0	District:	SIXTH
Status:	CLOSED	Create Date:	8/3/2016
Create User Id:	PD601MI	Last Update:	8/3/2016
		Last Update User Id:	PD601MI

Description:

434688-1: RE-SUBMITTAL of Structural Pylon & Landing Structures Design for FIU UNIVERSITY CITY PROSPERITY PROJ. ALONG SW 109 AVE & SR 90/SW 8 ST

Group: PRELIMINARY ENGINEERING
Phase Review Type: LAP Project
Status: Submitted
Phase Initiation Date: 8/3/2016
Comments Due Date: 8/19/2016
Days Allowed for Review: 17
Review Meeting: 9/2/2016 10:00 AM to 11:00 AM @ TBD if needed
Plans Format: Electronic
Comments: External Project Manager: Erika N. Hango, P.E.
E-mail: [redacted]
Phone #: [redacted]
Section: Phase: Re-submittal of 90% Structural Pylon & landing structures Design
Review Meeting will be schedule if needed
Design Criteria is Florida Green Book, Bridge: FDOT
Work Program Construction Budget: $12,041,779
Production Date: DESIGN- BUILD

Threads:

No	Status	Current Holder	Reference	Categories
2	COMMENT AGREED WITH		General:	STRUCTURES

Created By	Created On	Version	Delegate For
Thomas Andres	8/8/2016	1	

The RFP, page 27; PPM 26.3.2 and PPM 26.12 requires an independent peer review as part of the 90% Substructure Component Package. As discussed in our project meeting, we agree to wave the this specific requirement for this submittal however a completed independent peer review is required prior to RFC of the plans.

9/7/2016 1

Comment Agreed & Closed

No	Statu	Current Holder	Reference	Categories
3	RES E ACCEPTED		Sheet B-23:	STRUCTURES

Created By	Created On	Version	Delegate For
Thomas Andres	8/8/2016	1	

Are the 2-2"utility conduits to be cast into the pylon base? If so, include on sheet.

9/12/2016 1

No, there are no utility conduits in the pylon base.

Thomas Andres 9/15/2016 1

Response Accepted & Comment Closed

No	Status	Current Holder	Reference	Categories
4	RESPONSE ACCEPTED		Sheet B-24:	STRUCTURES

Created By	Created On	Version	Delegate For
Thomas Andres	8/8/2016	1	

a. The details on this sheet are not consistent with the calculations (simple span-for-DL, continuous-for-LL). The CIP back-span needs to be detailed independent of the pylon and the pylon concrete cannot be placed until closure pours are placed and continuity stressing has occurred. Revise pylon/walkway interfacing details consistent with design assumptions See attached sequence of construction steps.
b. The sheet is not legible due to the very small scale of the section views. See SDM 2.9. Separate this sheet into two or three sheets to better communicate to the Contractor what is intended.
c. The CIP pylon/precast walkway connections are extremely congested. Show larger scale 2D or 3D integrated drawings per SDM Chapter 20 to insure that there are no conflicts of embedded items (PT ducts, PT anchors, anchor caps, couplers, reinforcing steel, conduits, piping, etc.).
d. Section B-B: How will column concrete below the precast canopy surface be consolidated such that honeycombing is avoided (roughly 2'-0" x 6'-0" horizontal surface)? Consider casting-in bleed holes or pour holes in overlying portion of precast element.
e. Section D-D: The inner two PT anchor caps appear to conflict with the 11P03 rebar couplers.
f. Section D-D: It is not clear why the inner two PT anchor caps are not depicted in the Cross Section View.
g. Section A-A: Is the pipe cast in the precast walkway component? Is the pipe sections connected with bell and spigot joints and provide interfacing details. Clarify intent.

9/7/2016 1

a. The details on sheet B-24 show that the vertical member of the back span will be cast monolithically with the intermediate section of the pylon. The assumed back span and intermediate pylon construction sequence is attached for your review.
b. The drawing will be revised to show a bigger scale using more than one drawing.
c. An integrated 3-D drawing was developed to ensure the embedded items are not in conflict. This drawing will be used by the design build team during the planning phase for the construction of this section of the bridge.
d. The contractor is planning to cast the canopy section (2'x6') at the same time as the intermediate section of the pylon to avoid any possibility of imperfection in the pour.
e. We have verified that the 11P03 bars do not conflict with the anchor caps. It appears that the rebar couplers are in conflict with the anchor caps, but the couplers are located at a different elevation than the anchor caps.
f. The cross section (looking upstation) shows the back span tendons and Section D-D only shows the main span tendons because the plan view is not wide enough to show the back span tendons.
g. The pipe is not cast with the precast walkway component. A section of the drain pipe will be cast in the pylon CIP section and the embedded pipe will be connected to the exterior pipe under the deck.

Thomas Andres 9/16/2016 1

On Response a, if vertical member of the back span will is cast monolithically with the intermediate section of the pylon then the design assumptions of simple span for dead loads is not correct. As the forms deflect under concrete weight, continuity stresses will be developed between the pylons and the span.

9/22/2016 1

The simple span condition only occurs during the main span erection. The back span is designed to resist the continuity forces between the pylon and the truss. After the transverse closures are poured the continuity tendons are stressed creating a two span continuous structure.

Thomas Andres 9/26/2016 1

Okay, but the acceptability of this design approach depends on the Contractor's formwork stiffness - if he chooses a fairly stiff forming system then the design assumptions may be okay - if not then I would except cracking.

No	Status	Current Holder	Reference	Categories
5	RESPONSE ACCEPTED		Sheets B-70 and	STRUCTURES

Created By	Created On	Version	Delegate For
Thomas Andres	8/9/2016	1	

a. By inspection, the reinforcing for these framed piers does not appear to be balanced. If 48 #11 bars are required in the 5 ft. cap positive moment region, then significantly more than 7-#8 bars will be required in the negative moment regions of the frame (outer third of cap-around corners and along outer face of column into footings) especially factoring-in that the column is only 2 ft. wide. Also verify that the footings have been designed to resist the sliding forces of the frame pier and that the moments in the pier account for the soil springs of the spread footings. See attached sketch.
b. Include a call-out at the column plaza concrete slab interface. Require 3/4" premolded expansion material on all four sides of column. Typical comment on all sheets that have column/building elements that interface the plaza concrete slab.

9/7/2016 1

a. A sensitivity study was performed. The results indicated the columns are flexible and only a small amount of negative moment exists at the face of the columns; therefore, the design is adequate. Soil springs will increase the flexibility of the columns and result in a decrease in pier moments.
b. The call-out will be added to the drawings.

Thomas Andres 9/16/2016 1

For Comment a, the framed pier is not balanced. The moment at the center of the cap is a function of the moments that have to be carried around the corners into the column. Either the 48-#11s is excessive or the 7-#8s is too little. I suspect that less than 48#11 are required and more than 7-#8s are required.

9/22/2016 1

The moment in the negative region of the beam is equal to the moment at the top section of the column (see attachment). Therefore, the 7-#8 bars at the top of the beam are adequate to resist the beam moment demand. The same area of steel is placed at the outside face of the column. Note that the beam depth is 2.5 time the depth of the column. The 48-#11 bars are required to resist the positive moment demand. The moment distribution along the beam is directly related to the stiffness of the columns. A wider column will create more negative moment in the beam.

Thomas Andres 9/26/2016 1

Okay, but make sure that both the 24 ksi limit and the reinforcing steel fatigue has been checked.

No	Status	Current Holder	Reference	Categories
6	RESPONSE ACCEPTED		Sheet B-71:	STRUCTURES

Created By	Created On	Version	Delegate For
Thomas Andres	8/9/2016	1	

Separate into two sheets. Sheet is difficult to read because scale of details are too small. See SDM 2.9.

9/7/2016 1

The drawing will be revised to show a bigger scale using more than one drawing.

Thomas Andres 9/15/2016 1

Response Accepted & Comment Closed

No	Status	Current Holder	Reference	Categories
15	RESPONSE ACCEPTED		B-23	STRUCTURES

Created By	Created On	Version	Delegate For
	8/19/2016	1	

Elevation View: FDOT SDG 3.11.2C requires a minimum of three feet from the finish grade elevation to the top of footing. Please revise.

9/7/2016 1

The elevation view will be revised to show the 3'-0" minimum cover.

9/26/2016 1

Response Accepted & Comment Closed

No	Status	Current Holder	Reference	Categories
16	RESPONSE ACCEPTED		B-24	STRUCTURES

Created By	Created On	Version	Delegate For
	8/19/2016	1	

The two-span truss structure has been designed to work as a continuous structure. Significant tensile forces can be generated at the top (canopy) and bottom chord (deck) of the junction between the two spans. Section C-C shows only a column stirrup bar sticking out of the precast section and lapped with the 5P01 CIP column stirrups. Please clarify if the proposed reinforcement is enough to transfer tensile stresses at the truss bottom chord (analysis shows significant forces due to temperature, temperature gradient and concrete shrinkage at this junction).

9/7/2016 1

According to our analysis, tension forces are generated at the top of the canopy. We have four (4) longitudinal internal tendons running in the canopy. The analysis shows that the tensile stresses are within the AASHTO LRFD allowable limits.

9/26/2016 1

Please verify if some particular load conditions may generate tensile forces in the bottom chord (temperature gradient) for example. The response is accepted since it seems that you checked that.

No	Status	Current Holder	Reference	Categories
17	RESPONSE ACCEPTED		B-24	STRUCTURES

Created By	Created On	Version	Delegate For
	8/19/2016	1	

This drawing is in general difficult to read. Please reevaluate items such as scale (Cross Section and Section A-A), additional details etc. for improving clarity. The same label has been used for the column rebars at the bottom the middle and the top portion of the column which may also create confusion.

9/7/2016 1

The drawing will be revised to show a bigger scale using more than one drawing.

The rebar designations at the top and the bottom of Section A-A are the same because they are the same type and size rebars.

9/26/2016 1

Response Accepted & Comment Closed

No	Status	Current Holder	Reference	Categories
18	RESPONSE ACCEPTED		340-342	STRUCTURES

Created By	Created On	Version	Delegate For
	8/19/2016	1	

Calculations Pylon Substructure Design, Pages 340-342: The designer has used an in-house program for designing the columns for biaxial flexo-compression. It is suggested that for the special case of the section at the Upper Pylon Base - Top of Lower Pylon an independent calculation be performed for the main reasons. These appears to be the critical section for the pylon design (a C/D of 1.05 is obtained) and the conditions are especial in the sense that the reinforcement is not symmetrically placed. In fact all the column reinforcing in the precast portion consist of 2 # 11 bars and 2-1.375" PT bars. The evaluation should be performed using one of commercially common software used for this purpose. Please explain the use of the voided section; is this trying to simulate the drain pipe?

9/7/2016 1

We are not aware of commercially available software that combines mild reinforcement with post-tensioning. The FIGG proprietary software has the capability of combining the mild reinforcement with post-tensioning bars. FIGG's software has been used in many projects with excellent results. The reported C/D ratio of 1.05 is for the strength load combination III, which includes 150 mph wind speed with an equivalent design pressure of 91 psf on the upper pylon. Therefore, the pylon design meets the code requirements.

According to AASHTO Section 5.7.4.2, a reduced effective area of the column member can be used when the cross-section is larger than that required to resist the applied loading. The voided section was used to meet the minimum area of reinforcement requirement for this member.

9/26/2016 1

The comment is accepted. The reviewer will independently review this section for the next submittal.

Submittal Report

Financial Project:	434688-1-58-01	Submital Type:	PLANS
Submittal Phase:	PHASE III	Submital Staff Type:	CONSULTANT
Recieved Date:	7/14/2016	Response Due Date:	8/17/2016
Grace Period:	0	District:	SIXTH
Status:	CLOSED	Create Date:	7/14/2016
Create User Id:	PD601MI	Last Update:	7/14/2016
		Last Update User Id:	PD601MI

Description:

434688-1: Foundation Design for FIU UNIVERSITY CITY PROSPERITY PROJ. ALONG SW 109 AVE & SR 90/SW 8 ST

Group: PRELIMINARY ENGINEERING
Phase Review Type: LAP Project
Status: Submitted
Phase Initiation Date: 7/15/2016
Comments Due Date: 8/3/2016
Days Allowed for Review: 20
Review Meeting: 8/17/2016 9:30 AM to 11:00 AM @ Conference room B (If needed)
Plans Format: Electronic
Comments: External Project Manager: Manuel Feliciano, P.E.
E-mail: [redacted]
Phone #: [redacted]
Section: Phase: 90% Foundation Design-Resubmittal
Review Meeting will be schedule if needed
Design Criteria is Florida Green Book
Work Program Construction Budget:
Production Date: DESIGN- BUILD

Threads:

No	Status	Current Holder	Reference	Categories
1	RESPONSE ACCEPTED		Calculations General:	STRUCTURES

Created By	Created On	Version	Delegate For
Thomas Andres	7/15/2016	1	

The reserve capacity for the various spread footings appear to enough to account for any future design refinements to the superstructure (all C/Ds ≥ 1.12). However the calculations for the pylon pile compression C/D = 1.04, and the pile geotechnical capacity C/D ratio =1.00. See attached.

We are thinking that a 6-8% reserve would be a reasonable cushion in order to relax the project contract requirements which would allow superstructure design refinements to occur later so that we could move forward with the 90% foundation submittal package.

Either resolve the outstanding superstructure comments or resubmit the plans and calcs. for the pylon to give a larger C/D cushion.

7/19/2016 1

Per our telephone conversation on 7/18/16, please find attached the revised Pile Data Table drawing (Sheet B-9) showing the maximum "Required Nominal Bearing Resistance" of 450 tons. We agreed to show the required nominal bearing resistance (RNBR) in the "installation criteria" of the Pile Data Table instead of showing the factored design load divided by the resistance factor (phi). As I mentioned to you, the original design assumed a nominal bearing resistance of 450 tons despite the fact that the pile data table was presenting a lower value equal to the factored design load divided by the resistance factor. Also attached is a summary of the calculations showing the updated values for your review.

Thomas Andres 7/25/2016 1

Will base review on this response.

No	Statu	Current Holder	Reference	Categories
8	COM AGREED WITH		General:	STRUCTURES

Created By	Created On	Version	Delegate For
Thomas Andres	7/25/2016	1	

The submittal did not include an Independent Peer Review per the requirements of RFP pgs. 27 and 28 and PPM Chapter 26.
Per our discussions, we have agreed to relax the requirement for the peer review to be in the 90% submittal provided that the independent peer review (Engineer's comments, comment responses, resolution and signed and sealed cover letter) be submitted for all component plans prior to Releasing For Construction Plans for each component (foundation, substructure, superstructure).

8/17/2016 1

Comment Agreed & Closed

No	Status	Current Holder	Reference	Categories
9	RESPONSE ACCEPTED		Sheets B-11 and B-15:	STRUCTURES

Created By	Created On	Version	Delegate For
Thomas Andres	7/25/2016	1	

Add note that says: Construct shallow foundations in accordance with Specification 455.

8/17/2016 1

The suggested note will be added to all applicable drawings.

Thomas Andres 8/18/2016 1

Response Accepted & Comment Closed

No	Status	Current Holder	Reference	Categories
20	RESPONSE ACCEPTED			STRUCTURES

Created By	Created On	Version	Delegate For
	8/3/2016	1	

90% Calculations Pylon Foundation and Footing Design, Page 378: The FDOT requirement for crack control (SDG 3.1) has been implemented by strain criteria in which the steel is allowed a limiting strain of 24ksi/E and a strain in the concrete of 0.003 in/in. The computations have been performed with the same software used to compute the strength capacity of the column. The reported nominal capacity of the section corresponds to the rebars yielding at 24 ksi and the concrete crushing at 0.003 in/in. The applied service moment is compared against this fictitious service moment capacity and assuming that if the applied moment does not exceed the boundaries of the interaction diagram the stresses in the rebars will be smaller than the 24 ksi required by FDOT SDG 3.1. This comment has been raised previously indicating that since this is a service condition the level of stresses in the rebars needs to be calculated considering the behavior of the section under service loads (concrete linear but most probably cracked and the reinforcement linear). The designer has argued that the procedure used is conservative but we disagree with the approach since it is not theoretically correct and not necessarily conservative. Note that once the first rebar reaches 24 ksi under service conditions, the procedure used will allow the section to continue deforming until the ultimate strain in the concrete is reached and several layers of rebars has yielded at 24 ksi and deformed beyond the 24ksi/E value.
Although service conditions are not expected to be the controlling factor in these designs the procedure used is from our point of view not appropriate. Please revise. This comment is general and applicable to all service computations presented in this submittal.

8/17/2016 1

The attached calculations, performed with a commercially available program (Xtract), show that the rebar stress at the base of the pylon (column dowels) is less than 24 ksi. Therefore, the design meets the requirements of crack control per SDG Section 3.10.

8/26/2016 1

Response Accepted & Comment Closed

No	Status	Current Holder	Reference	Categories
21	RESPONSE ACCEPTED			STRUCTURES

Created By	Created On	Version	Delegate For
	8/3/2016	1	

90% Calculations Pylon Foundation and Footing Design, Page 314 and Plans Sheet B-9: The preliminary geotechnical recommendations included in Page 14 of the North Plaza Foundation calculations indicate recommended 24" PC piles capacities of 405 Tons for compression and 80 Tons for tension. The calculated factored loads indicated in the calculation and drawings exceed these capacities x Strength reduction factor. Please confirm that the final geotechnical report recommends capacities compatible with the level of loads obtained in the design

8/17/2016 1

The final geotechnical report will show updated pile capacities.

8/26/2016 1

Response Accepted & Comment Closed

No	Status	Current Holder	Reference	Categories
22	RES E ACCEPTED			STRUCTURES

Created By	Created On	Version	Delegate For
	8/3/2016	1	

90% Foundation Plans, Sheet B-2: The note for Stay-In Place forms indicates that they are permitted. Due to the aesthetic requirements of this structure, shouldn't the note indicate that they are not permitted?

8/17/2016 1

According to the RFP documents (Design Criteria – Section 5.8), stay-in-place forms are permitted. However, the proposed structure does not have stay-in-place forms. The note will be modified to indicate that stay-in-place forms are not allowed.

8/26/2016 1

Response Accepted & Comment Closed

No	Status	Current Holder	Reference	Categories
23	RESPONSE ACCEPTED			STRUCTURES

Created By	Created On	Version	Delegate For
	8/3/2016	1	

90% Foundation Plans, Sheet B-10, View A-A: FDOT SDG 3.11.2C requires a minimum of three feet from the finish grade elevation to the top of footing. Please revise. This comment applies to all pier-column footings.

8/17/2016 1

The minimum 3'-0" cover dimension is the proposed cover for the pylon foundation. The 2'-0" minimum dimension shown on this drawing will be updated to 3'-0".
For the north and south plaza footings, FDOT Central office has agreed to maintain the 2'-0" cover for the main footings and 1'-0" cover for the stair footings. It is our understanding that the SDG 3'-0" cover requirement is applicable to areas where vegetation growth is desirable. For this specific project, the north and south plazas do not have this specific requirement around the columns.

8/26/2016 1

Response Accepted & Comment Closed

No	Status	Current Holder	Reference	Categories
24	RESPONSE ACCEPTED			STRUCTURES

Created By	Created On	Version	Delegate For
	8/3/2016	1	

90% Foundation Plans, Sheet B-10, Tension Pile Detail: Suggest to provide a note referring to Sheet B-8 for the location of the tension piles.

8/17/2016 1

The suggested note will be added to sheet B-10.

8/26/2016 1

Response Accepted & Comment Closed

No	Status	Current Holder	Reference	Categories
26	RESPONSE ACCEPTED		Page 378	STRUCTURES

Created By	Created On	Version	Delegate For
	8/3/2016	1	

(On behalf of Rafael Foinquinos)
90% Calculations Pylon Foundation and Footing Design, Page 378: The FDOT requirement for crack control (SDG 3.1) has been implemented by strain criteria in which the steel is allowed a limiting strain of 24ksi/E and a strain in the concrete of 0.003 in/in. The computations have been performed with the same software used to compute the strength capacity of the column. The reported nominal capacity of the section corresponds to the rebars yielding at 24 ksi and the concrete crushing at 0.003 in/in. The applied service moment is compared against this fictitious service moment capacity and assuming that if the applied moment does not exceed the boundaries of the interaction diagram the stresses in the rebars will be smaller than the 24 ksi required by FDOT SDG 3.1. This comment has been raised previously indicating that since this is a service condition the level of stresses in the rebars needs to be calculated considering the behavior of the section under service loads (concrete linear but most probably cracked and the reinforcement linear). The designer has argued that the procedure used is conservative but we disagree with the approach since it is not theoretically correct and not necessarily conservative. Note that once the first rebar reaches 24 ksi under service conditions, the procedure used will allow the section to continue deforming until the ultimate strain in the concrete is reached and several layers of rebars has yielded at 24 ksi and deformed beyond the 24ksi/E value.
Although service conditions are not expected to be the controlling factor in these designs the procedure used is from our point of view not appropriate. Please revise. This comment is general and applicable to all service computations presented in this submittal.

8/17/2016 1

The attached calculations, performed with a commercially available program (Xtract), show that the rebar stress at the base of the pylon (column dowels) is less than 24 ksi. Therefore, the design meets the requirements of crack control per SDG Section 3.10.

8/19/2016 1

Response Accepted & Comment Closed

No	Statu	Current Holder	Reference	Categories
27	RESI E ACCEPTED		Page 314 & Shee.	STRUCTURES

Created By	Created On	Version	Delegate For
	8/3/2016	1	

(On behalf of Rafael Foinquinos)
90% Calculations Pylon Foundation and Footing Design, Page 314 and Plans Sheet B-9: The preliminary geotechnical recommendations included in Page 14 of the North Plaza Foundation calculations indicate recommended 24" PC piles capacities of 405 Tons for compression and 80 Tons for tension. The calculated factored loads indicated in the calculation and drawings exceed these capacities x Strength reduction factor. Please confirm that the final geotechnical report recommends capacities compatible with the level of loads obtained in the design.

8/17/2016 1

The final geotechnical report will show updated pile capacities.

8/18/2016 1

Response Accepted & Comment Closed

No	Status	Current Holder	Reference	Categories
28	RESPONSE ACCEPTED		Sheet B-2	STRUCTURES

Created By	Created On	Version	Delegate For
	8/3/2016	1	

(On behalf of Rafael Foinquinos)
90% Foundation Plans: The note for Stay-In Place forms indicates that they are permitted. Due to the aesthetic requirements of this structure, shouldn't the note indicate that they are not permitted?

8/17/2016 1

According to the RFP documents (Design Criteria – Section 5.8), stay-in-place forms are permitted. However, the proposed structure does not have stay-in-place forms. The note will be modified to indicate that stay-in-place forms are not allowed.

8/18/2016 1

Response Accepted & Comment Closed

No	Status	Current Holder	Reference	Categories
29	RESPONSE ACCEPTED		Sheet B-10	STRUCTURES

Created By	Created On	Version	Delegate For
	8/3/2016	1	

(On behalf of Rafael Foinquinos)
90% Foundation Plans, Sheet B-10, View A-A: FDOT SDG 3.11.2C requires a minimum of three feet from the finish grade elevation to the top of footing. Please revise. This comment applies to all pier-column footings.

8/17/2016 1

The minimum 3'-0" cover dimension is the proposed cover for the pylon foundation. The 2'-0" minimum dimension shown on this drawing will be updated to 3'-0".
For the north and south plaza footings, FDOT Central office has agreed to maintain the 2'-0" cover for the main footings and 1'-0" cover for the stair footings. It is our understanding that the SDG 3'-0" cover requirement is applicable to areas where vegetation growth is desirable. For this specific project, the north and south plazas do not have this specific requirement around the columns.

8/18/2016 1

Response Accepted & Comment Closed

No	Status	Current Holder	Reference	Categories
30	RESPONSE ACCEPTED		Sheet B-10	STRUCTURES

Created By	Created On	Version	Delegate For
	8/3/2016	1	

(On behalf of Rafael Foinquinos)
90% Foundation Plans, Sheet B-10, Tension Pile Detail: Suggest to provide a note referring to Sheet B-8 for the location of the tension piles.

8/17/2016 1

The suggested note will be added to sheet B-10.

8/18/2016 1

Response Accepted & Comment Closed

Submittal Report

Financial Project:	434688-1-58-01	Submital Type:	PLANS
Submittal Phase:	PHASE III	Submital Staff Type:	CONSULTANT
Recieved Date:	9/28/2016	Response Due Date:	10/28/2016
Grace Period:	0	District:	SIXTH
Status:	CLOSED	Create Date:	9/28/2016
Create User Id:	PD601MI	Last Update:	2/14/2017
		Last Update User Id:	PD601MI

Description:

434688-1: 90% Superstructure Design for FIU UNIVERSITY CITY PROSPERITY PROJ. ALONG SW 109 AVE & SR 90/SW 8 ST

Group: PRELIMINARY ENGINEERING
Phase Review Type: LAP Project
Status: Submitted
Phase Initiation Date: 9/28/2016
Comments Due Date: 10/14/2016
Days Allowed for Review: 17
Review Meeting: 10/28/2016 10:00 AM to 11:00 AM @ Will be schedule if needed
Plans Format: Electronic
Comments: External Project Manager: Manuel Feliciano, P.E.
E-mail: [redacted]
Phone #: [redacted]
Phase: 90% Superstructure Design
Review Meeting will be schedule if needed
Design Criteria is FDOT PPM
Work Program Construction Budget: $11,875,092
Production Date: DESIGN- BUILD

Threads:

No	Status	Current Holder	Reference	Categories
6	RESOLVE ACCEPTED		STRUCTURES MAINTENANCE	STRUCTURES

Created By	Created On	Version	Delegate For
MARIA CARASA	10/11/2016	1	

B-2 Design Specs: LRFD Specs are not in AASHTO 17 Edition.
B-4 Plans & Elev. Call for End Bridge Deck as done for Begin Bridge Deck. (These 2 location should be the control for Geometry).
At End Bridge: Tie Center Line Elevator Tower and Center Line Landing Columns to End Bridge as done for Begin Bridge.

B-5 Sheet Tittle: Consider adding "Superstructure" (Typical Superstructure Cross-Section)
B-8 Not clear what is the control of geometry, specifically the columns supporting the Bridge.
Verify significance of tying columns to R/W at North End. CL of bearing for Begin and End Bridge should be the CL column. Tie CL Columns to Begin/End Bridge. Show Begin Bridge & End Bridge Stations.
Verify why East Column foundations (Type 1 & 7) is larger than West Column foundations (Type 3 & 6).

B-10 Show Direction of Sta or North Arrow
B-11 Verify no Bars @ Column Corners (Not usually done in detailing reinforcing for Bridge Columns) Apply to the 4 Columns supporting the Bridge Ends.

B-14 Verify using only 1 # 4 @ 24" for walls up to 15' ± high (wall 5 at high ends, has 2 #5 bars @ 12")

B-16 At view A-A confusing to show 2 different columns bars together

B-17 Verify sheet Tittle. Seems this is an Elevator Footing

B-19 Same Comment as in B-14 (1 # 4 @ 24")

B-20 & 21 Missing calling for view B-B in plan view

10/11/2016 1

Is this comment intended for the Final Foundation submittal?

MARIA CARASA 12/14/2016 1

Yes

No	Status	Current Holder	Reference	Categories
7	COMMENT AGREED WITH		General:	STRUCTURES

Created By	Created On	Version	Delegate For
Thomas Andres	10/11/2016	1	

Include step by step fabrication sequence in the plans and include a TSP for the construction of the precast main-span and CIP back span. The TSP should require a more detailed step-by-step fabrication sequence to be submitted in an Erection Manual submitted by a Specialty Engineer.
The Erection Manual shall include the following:
- Positioning, use and sequencing of falsework, jacking and/or releasing of falsework, formwork, temporary towers, supports and the like.
- Step-by-step PT bar stressing and longitudinal tendon stressing sequence so that stresses during fabrication of both main span and back span stay below design code limits. Also include a step-by-step casting and form stripping sequence with clear delineation of required construction joints. Depict the support condition at the near-site casting yard at the time of stressing.
- Positioning, detailed step-by-step erection plan of the Self-Propelled-Modular-Transporter (SPMT) move of the precast main-span. Include drawings and calculations for the structural based on the support conditions of the precast main-span during the SPMT move.

10/28/2016 1

The general fabrication sequence for the construction of the precast main span and CIP back span has been provided as part of the plan set (see Erection Sequence drawings). The erection manual will provide the mentioned information showing more details of the stressing sequences, support conditions during casting, form stripping sequence, and location of temporary towers.
The step-by-step erection plan of the SPMT will be provided on a separate submittal by the Contractor's Specialty Engineer.

Thomas Andres 11/1/2016 1

This response is okay provided that the step-by-step information per response to Comment 10 is provided in the final plans.

11/8/2016 1

Comment Agreed & Closed

No	Status	Current Holder	Reference	Categories
8	RESPONSE ACCEPTED		General:	STRUCTURES

Created By	Created On	Version	Delegate For
Thomas Andres	10/11/2016	1	

Provide connection details between main span truss with the pylon.

	10/28/2016	1

Connection details between the main span truss and pylon have been provided on the substructure drawings.

Thomas Andres	11/1/2016	1

Response Accepted & Comment Closed

No	Status	Current Holder	Reference	Categories
9	RESPONSE ACCEPTED		Sheets B-38 thru B-45 and B-61, B-63, and B-65:	STRUCTURES

Created By	Created On	Version	Delegate For
Thomas Andres	10/11/2016	1	

Add PT bar anchor caps (top and bottom) per SDG 1.11.2, Standard Index 21802 and Specification 462-1.2.a consistent with approved FDOT PT systems and resize element as required to fit caps.

	10/28/2016	1

Permanent grout caps are provided at the top anchor of each PT bar (Anchorage Protection Type 9 per Standard Index No. 21802). Caps are not needed at the bottom anchor of each PT bar because exposure levels and the risk of corrosion are lower beneath the deck. Dead end anchors will be cast with the precast section with no block out and coated with a galvanizing compound (e.g. Zinc Clad III HS) for additional protection.

Thomas Andres	11/1/2016	1

Response Accepted & Comment Closed

No	Status	Current Holder	Reference	Categories
10	RESPONSE ACCEPTED		Sheets B-37 thru B-40, B-42, B-43, and B-69:	STRUCTURES

Created By	Created On	Version	Delegate For
Thomas Andres	10/11/2016	1	

Include step-by-step PT bar stressing and longitudinal tendon stressing sequence so that stresses during fabrication of both main span and back span stay below design code limits. Also include a step-by-step casting and form stripping sequence with clear delineation of required construction joints. For the main span section (Sheets B-37 thru B-40) depict the support condition at the near-site casting yard at the time of stressing. Also check the temporary condition at the time of transport with a clear delineation of the SPMT support location on stage 3, Sheet B-108 (cantilever distance) consistent with the calculations.

	10/28/2016	1

The PT bar stressing sequence will be provided with the Final submittal. The longitudinal tendon stressing sequence is shown on Sheet B-108 (Stage 2). Calculations showing stresses during stressing operations are below the allowable limits will be provided with the Final submittal.
A step-by-step casting and form stripping sequence will be provided with the Final submittal.
Support conditions for the main span during stressing operations will be shown on the Final submittal.
The temporary support conditions during transport shown on Sheet B-108 (Stage 3) have been revised.

Thomas Andres	11/1/2016	1

Response Accepted & Comment Closed

No	Status	Current Holder	Reference	Categories
11	RESPONSE ACCEPTED		Sheet B-37, Note 8:	STRUCTURES

Created By	Created On	Version	Delegate For
Thomas Andres	10/11/2016	1	

Clarify that the PT bars for members 2 and 11 will not be grouted at the near-site casting yard but will be de-tensioned prior to grouting after span is transported via SPMT to the site.

	10/28/2016	1

Note 8 has been clarified.

Thomas Andres	11/1/2016	1

Response Accepted & Comment Closed

No	Status	Current Holder	Reference	Categories
12	RESPONSE ACCEPTED		Sheets B-48 and	STRUCTURES

Created By	Created On	Version	Delegate For
Thomas Andres	10/11/2016	1	

There is concern of potential cracking due to tension behind the inner PT tendon anchor as the compression zone drags the end web diagonal and pylon (Sheet B-48) behind it. This was an earlier comment.

10/28/2016 1

Reinforcement has been added to the Type III and Type IV Deck Diaphragms to address this comment.

Thomas Andres 11/1/2016 1

Response Accepted & Comment Closed

No	Status	Current Holder	Reference	Categories
13	RESPONSE ACCEPTED		Sheets B-53 (Section A-A), B-55 (Section A-A),	STRUCTURES

Created By	Created On	Version	Delegate For
Thomas Andres	10/11/2016	1	

Extend the tie down stirrup legs longer to be able to resist radial forces in the curved zones of the tendons.

10/28/2016 1

The tie down stirrup legs have been extended.

Thomas Andres 11/1/2016 1

Response Accepted & Comment Closed

No	Status	Current Holder	Reference	Categories
14	RESPONSE ACCEPTED		Sheets B-56:	STRUCTURES

Created By	Created On	Version	Delegate For
Thomas Andres	10/11/2016	1	

There is concern of potential cracking due to tension behind the inner (phase 1 C5) PT tendon anchor as the compression zone drags the pylon behind it. This was an earlier comment.

10/28/2016 1

Reinforcement has been added to the Type III Canopy Diaphragm to address this comment.

Thomas Andres 11/1/2016 1

Response Accepted & Comment Closed

No	Status	Current Holder	Reference	Categories
15	RESPONSE ACCEPTED		Sheets B-60, and B-108, Stage 3:	STRUCTURES

Created By	Created On	Version	Delegate for
Thomas Andres	10/11/2016	1	

The support conditions at the near site casting yard and during SPMT transport is critical (P.T. stressing through SPMT transport). The support needs to be provided at the ends through the end diaphragm at the element lifts off formwork during longitudinal/transverse stressing in the near site casting yard. Support needs to stay in the middle (specify distance) of the cross section during SPMT transport. Also the main span element needs to remain vertical during SPMT transport. Add the appropriate notes to both sheets consistent with the calculations.

10/28/2016 1

Support condition notes have been added to Sheets B-60 and B-108 (Stage 3).

Thomas Andres 11/1/2016 1

Response Accepted & Comment Closed

No	Status	Current Holder	Reference	Categories
16	RESPONSE ACCEPTED		Sheets B-65, B-66 B-67:	STRUCTURES

Created By	Created On	Version	Delegate For
Thomas Andres	10/11/2016	1	

Check the canopy design where the longitudinal tendons are deviated in plan view resulted in transverse bending of the canopy, due to PT eccentricity.

	10/28/2016	1

The transverse local effect of the longitudinal tendons has been taking into account in the design of the canopy. Additional calculations will be provided with the Final submittal.

Thomas Andres	11/1/2016	1

Response Accepted & Comment Closed

No	Status	Current Holder	Reference	Categories
17	RESPONSE ACCEPTED		Sheet B-69:	STRUCTURES

Created By	Created On	Version	Delegate For
Thomas Andres	10/11/2016	1	

Specify PT Anchorage Protection Type 8 for down STA (non-stressing end). Replace Anchorage Protection Type 3 to Type 2 for longitudinal multi-strand tendons in the deck and canopy. Note: Type 3 is for segmental match-cast joint.

	10/28/2016	1

Anchorage protection is not needed at the bottom anchor of each PT bar because exposure levels and the risk of corrosion are lower beneath the deck. Dead end anchors will be cast with the precast section with no block out and coated with a galvanizing compound (e.g. Zinc Clad III HS) for additional protection.
Type 3 Anchorage Protection has been revised to Type 2 Anchorage Protection.

Thomas Andres	11/1/2016	1

Response Accepted & Comment Closed

No	Status	Current Holder	Reference	Categories
18	RESPONSE ACCEPTED		Sheet B-70:	STRUCTURES

Created By	Created On	Version	Delegate For
Thomas Andres	10/11/2016	1	

a. Provide pipe camber diagrams.
b. It is unclear how the bolts are fastened to the pylon. Show detail. If the nut is oriented outward how is simply removing the nut sufficient for allowing the necessary movement for jacking? Suggest that head of bolt be oriented outward with imbedded coupler inner shank, nut and plate washer.
c. How is inner surface of pipe protected against corrosion?
d. We have long-term concerns with cracking of the pipe at the welds. Consider an inner stiffener with a weld access hole to strengthen pipe/plate connection especially for the outer pipes. Sheet B-70: The stay pipe numbering system here is different from sheet B-109.
e. Pipe support geometry: it appears the pipe sagging and truss deformation have not been included in the Angle Top and Angle Bottom of the steel pipe.
f. Specify the 16" stay pipe ASTM spec.

	11/11/2016	1

a. The camber diagrams will be provided with the erection manual.
b. Additional details will be provided to show how the bolts are fastened to the pylon on the final submittal.
c. Weep holes will be provided at the bottom of each pipe in order to drain any water due to condensation. This will reduce the possibility of corrosion at the bottom of the pipe.
d. Both the forces and variation in force in the steel pipe sections are low when compared to the cross section area. The cross section areas were selected to provide stiffness in order to meet specified vibration frequencies. The areas were not based upon needed force resistance (strength). While the Department's suggested detail would be possible, it would create additional non-uniformity due to the stiffeners and the access holes. Installation of the stiffeners and the repair of the access holes would create additional residual thermal stresses. The simpler weld detail is preferred by the Designer. The stay pipe numbering on Sheet B-109 has been revised.
e. The angle top and angle bottom were calculated based on the final pipe shape. The sagging of the pipe will be eliminated with the camber of the pipe and the effect of the superstructure deformations is not significant in the angle calculations. The maximum rotation is 0.0024 rad due to permanent loads.
f. The ASTM spec has been referenced.

Thomas Andres	12/6/2016	1

Regarding Item c, if the inner surface of the pipe is not primed or coated in any way, we suggest that the pipe be completely sealed prior to installation (including at the ends). This will reduce the likelihood of moisture condensation (corrosion) over time and potential staining. SDG 10.7.D.2 requires tubular members to be capped and sealed.

No	Status	Current Holder	Reference	Categories
19	RESPONSE ACCEPTED		Sheet B-103:	STRUCTURES

Created By	Created On	Version	Delegate For
Thomas Andres	10/11/2016	1	

a. Add cross reference note to Sheet B-70 for unbolting pipe supports.
b. Detail 1: The side and top elastomeric cover for the steel plates, show 1/8" thick. FDOT Standard Index No.20510 required ¼" thick. In elevation view End Bent 1 and End Bent 3, show the gap dimensions between the top surface of the end bent and underneath of the superstructure.

10/28/2016 1

a. A cross reference note has been added to Sheet B-103.
b. The side elastomeric cover for the steel plates has been revised to 1/4". The top elastomeric cover provided for the steel plates is 3/8". The gap dimensions have been added.

Thomas Andres 11/1/2016 1

Response Accepted & Comment Closed

No	Status	Current Holder	Reference	Categories
20	RESPONSE ACCEPTED		Sheet B-104, Stage 4, Step 3:	STRUCTURES

Created By	Created On	Version	Delegate For
Thomas Andres	10/11/2016	1	

There are concerns with connecting the back-span to the pylon prior fabricating span. Concerns include:
a. Stresses of connection due to flexibility of formwork.
b. Camber (rotational) stresses due to longitudinal P.T.
c. Local stresses (shear lag) at inner anchor as the compression zone drags the pylon.

10/28/2016 1

a. FIGG has evaluated the back span to pylon connection assuming that the falsework is a very flexible system in order to get an upper bound value for the design tension force between the back span canopy element and the pylon. The connection has been designed to resist construction loads. Please refer to pg. 477-478 of Pylon Substructure Final Design Calculations.
b. The rotational stresses due to post-tensioning have been evaluated. According to our model the maximum camber rotation at the pylon is less than 0.0008 rad. In addition, the maximum tensile and compressive stresses due to the longitudinal P.T. are within the allowable limits by the AASHTO code.
c. Additional reinforcement has been provided between the interface of the diaphragm and the pylon.

Thomas Andres 11/1/2016 1

Response Accepted & Comment Closed

No	Status	Current Holder	Reference	Categories
21	COMMENT AGREED WITH		Structure Maintenance	STRUCTURES

Created By	Created On	Version	Delegate For
MARIA CARASA	10/12/2016	1	

No Comment for the 90% Superstructure Design

10/28/2016 1

Comment Agreed & Closed

No	Status	Current Holder	Reference	Categories
25	RESPONSE ACCEPTED		Superstructure Design Calculations	STRUCTURES

Created By	Created On	Version	Delegate For
	10/17/2016	1	

(On behalf of Saul Perez)
Superstructure Longitudinal Model (Larsa Model): The effect of the longitudinal post-tensioning on the main deck and the canopy has been correctly incorporated into the structural model. However the effect of the PT bars on the truss diagonal members has not been considered. Since the truss connections are rigid connections, a portion of the PT force will be transferred to adjacent elements as axial forces, moments and shears, i.e., the PT will not be 100% effective and will also be subject to losses due to creep and shrinkage. Please address.

10/28/2016 1

The effect of the PT bars has been considered in the finite element model (LUSAS Bridge plus) of the main span. PT bars are defined in the truss diagonal members. The stressing sequence of the PT bars has been checked with the finite element model to ensure the structure is within the allowable limits as the bars in each diagonal are stressed.

10/31/2016 1

Response Accepted & Comment Closed

No	Status	Current Holder	Reference	Categories
26	RESPONSE ACCEPTED		Superstructure Design Calculations	STRUCTURES

Created By	Created On	Version	Delegate For
	10/17/2016	1	

(On behalf of Saul Perez)
Section V, Longitudinal Design: the main deck and the canopy stresses have been checked for different load combinations for service III at the end of construction and long term effects. Note, however, that the calculation does not include a check of these elements under strength conditions. Please provide.

10/28/2016 1

Ultimate moment checks for the deck and canopy will be provided with the Final submittal.

10/31/2016 1

Response Accepted & Comment Closed

No	Status	Current Holder	Reference	Categories
27	RESPONSE ACCEPTED		Superstructure Design Calculations	STRUCTURES

Created By	Created On	Version	Delegate For
	10/17/2016	1	

(On behalf of Saul Perez)
Section V, Longitudinal Design, Page 781, check bucking of top chord: The in-plane buckling capacity of the canopy (top chord) is checked. Since the full length of the canopy is unrestrained for moving laterally (except at the pylon support) and the section appears to be relatively weak in torsion a lateral-torsional buckling mode is expected. To capture this behavior a global stability analysis should be performed. The same LARSA model used for the longitudinal analysis can be utilized for this purpose. Conditions to be investigated are:
a) Permanent loads and live load acting in the main span (factored loads).
b) Same as a) but live loads acting on one side of the span, i.e., worst torsional effect for the structure (factored loads).

11/11/2016 1

The lateral stability of the canopy (top chord) has been verified for each of the LRFD strength load combinations, including both full and one sided live load cases. Even at the factored load levels, the incremental deflections (large displacement theory LRFD 4.5.3.2) between the last series of load steps remain linear.

11/16/2016 1

(On behalf of Saul Perez)
During the next submittal the additional calculations performed as result of these comments will be reviewed.

No	Status	Current Holder	Reference	Categories
28	RESPONSE ACCEPTED		Superstructure Design Calculations	STRUCTURES

Created By	Created On	Version	Delegate For
	10/17/2016	1	

(On behalf of Saul Perez)
Section V, Longitudinal Design, Page 840, design of diagonal members for service conditions: Note that the assumption is that the effect of the post-tensioning bars is 100% effective. As indicated in comment 1 due to the rigid joints, there will be a transfer of forces to contiguous elements and there will be losses in the PT due to elastic shortening, creep and shrinkage. The calculation shown can be taken as a preliminary design and they should be checked by including the post-tensioning forces in the diagonal members in the global longitudinal model. Please verify.

10/28/2016 1

The effect of the PT bars has been considered in the finite element model (LUSAS Bridge plus) of the main span. PT bars are defined in the truss diagonal members. The stressing sequence of the PT bars has been checked with the finite element model to ensure the structure is within the allowable limits as the bars in each diagonal are stressed.

10/31/2016 1

Response Accepted & Comment Closed

No	Stat	Current Holder	Reference	Categories
29	RES E ACCEPTED		Superstructure De Calculations	STRUCTURES

Created By	Created On	Version	Delegate For
	10/17/2016	1	

(On behalf of Saul Perez)
Section VI, transverse Design, Page 1120: The PT loss ratio used is 0.67 based on LARSA results at the eoc. This loss ratio appears high; the long term value should be used. Additionally, drawing B-69 shows a force of 140k or approximately 60% of GUT at the live end after anchor set. Please clarify and/or reevaluate as needed.

10/28/2016	1	

The table on Sheet B-69 has been revised for consistency with the calculations.

10/31/2016	1	

Response Accepted & Comment Closed

No	Status	Current Holder	Reference	Categories
30	RESPONSE ACCEPTED		Superstructure Design Calculations	STRUCTURES

Created By	Created On	Version	Delegate For
	10/17/2016	1	

(On behalf of Saul Perez)
Frequency Model, Page 1196: It appears that the 3D-Larsa model has been constrained to move only in the x-z plane (longitudinal-vertical plane) as indicated in the information for the joints given in Pages 1201 thru 1208 (Y displacement restrained and rotations about the x-z axes restrained). In this regard, the model will not provide the transverse frequency of vibration of the structure and will not consider that the flexural vibrations (vertical) may be strongly coupled with the rotational vibration about the longitudinal axes (torsion). This can be seen in the output for the frequency of vibrations given in Pages 1219 & 1220. The reported first frequency of 2Hz corresponds to the longitudinal vibration of the bridge, while the second mode (3.07 Hz) corresponds to the vertical vibration. Notice that, most probably, this frequency will be smaller once the bridge is allowed to vibrate in 3D. The fact that the bridge was constrained to vibrate only in the vertical plane can be seen from the mass participation factor in the Y direction which is reported as zero for all reported frequency modes. As commented in previous revisions, due to the relatively low torsional stiffness of this bridge (as compared to its vertical and horizontal bending stiffness); torsional vibration should also be evaluated. Although this mode is not indicated in the AASHTO Specifications for Pedestrian Bridges Section 6- Vibrations, this particular vibration mode needs to be investigated. The reason being that a common loading case is to have the live load applied only on one side of the bridge (traffic mostly in one direction) which most probably will activate this vibration mode.
Please reevaluate the frequencies using the 3-D model allowing the bridge to freely vibrate in any direction.

11/11/2016	1	

The original restraint condition of the model was done to simplify identifying the frequency of the desired vertical mode shape, knowing that vertical and lateral behaviors are essentially uncoupled. To address this comment, we have re-run the frequency evaluations, with the model free to vibrate in any direction, and confirmed that the vertical and lateral frequencies of the deck meet the requirements of the contract. The analysis includes a great number of mode shapes, including torsional ones. However, the contract does not specify any torsional frequency limits.

11/16/2016	1	

Response Accepted & Comment Closed

No	Status	Current Holder	Reference	Categories
31	RESPONSE ACCEPTED		Sheet B-38 and B-40	STRUCTURES

Created By	Created On	Version	Delegate For
	10/17/2016	1	

(On behalf of Saul Perez)
Please verify that there is no conflict between the post-tensioning bar duct and the section reinforcement as shown in Sheet B-40. The 4" or 4.5" distance between the PT bar centroid and the face of the element may not be sufficient when considering the concrete cover, the stirrups, the longitudinal rebar and the OD of the duct, especially at Section F-F in Sheet B-38(2.5" □ PT bar).

10/28/2016	1	

The location of the 2.5" diameter PT bars has been revised.

10/31/2016	1	

Response Accepted & Comment Closed

No	Status	Current Holder	Reference	Categories
32	RESPONSE ACCEPTED		Sheet B-44	STRUCTURES

Created By	Created On	Version	Delegate For
	10/17/2016	1	

(On behalf of Saul Perez)
Section A-A: Please verify the location of the tendon PI point. FDOT SDG-2016 has a list of minimum tangent lengths in Table 1.11.4-2. The proposed tangent length violates the value given in this table. Please revise or justify as applicable.

10/28/2016 1

Design was performed in accordance with FDOT SDG January 2015 edition (per RFP) which does not specify minimum tangent lengths adjacent to anchorages.

10/31/2016 1

Response Accepted & Comment Closed

No	Status	Current Holder	Reference	Categories
33	RESPONSE ACCEPTED		Sheet B-64	STRUCTURES

Created By	Created On	Version	Delegate For
	10/17/2016	1	

(On behalf of Saul Perez)
Section B-B is incomplete (the top deck surface and curb are not shown).

10/28/2016 1

The linework for Section B-B has been completed.

10/31/2016 1

Response Accepted & Comment Closed

No	Status	Current Holder	Reference	Categories
34	RESPONSE ACCEPTED		Sheet B-65	STRUCTURES

Created By	Created On	Version	Delegate For
	10/17/2016	1	

(On behalf of Saul Perez)
The cross section at the canopy blister shows tendons in conflict with the blister. The plan view shows that, at this location, the tendons have already been deviated to miss the blister. Please revise accordingly.

10/28/2016 1

The Cross Section at Canopy Blisters has been revised.

10/31/2016 1

Response Accepted & Comment Closed

No	Status	Current Holder	Reference	Categories
35	RESPONSE ACCEPTED		Sheet B-66	STRUCTURES

Created By	Created On	Version	Delegate For
	10/17/2016	1	

On behalf of Saul Perez)
Typical canopy cross section shows 4 tendons instead of the 3 tendons shown in the partial plan view. Please revise.

10/28/2016 1

The Typical Cross Section has been revised.

10/31/2016 1

Response Accepted & Comment Closed

Submittal Report

Financial Project:	434688-1-58-01	Submital Type:	PLANS
Submittal Phase:	PHASE IV	Submital Staff Type:	CONSULTANT
Recieved Date:	9/15/2016	Response Due Date:	10/19/2016
Grace Period:	0	District:	SIXTH
Status:	CLOSED	Create Date:	9/15/2016
Create User Id:	PD601MI	Last Update:	9/15/2016
		Last Update User Id:	PD601MI

Description:

434688-1: Foundation Design for FIU UNIVERSITY CITY PROSPERITY PROJ. ALONG SW 109 AVE & SR 90/SW 8 ST

Group: PRELIMINARY ENGINEERING
Phase Review Type: LAP Project
Status: Submitted
Phase Initiation Date: 9/15/2016
Comments Due Date: 10/6/2016
Days Allowed for Review: 22
Review Meeting: 10/19/2016 10:00 AM to 11:00 AM @ to be schedule if needed
Plans Format: Electronic
Comments: External Project Manager: Manuel Feliciano, P.E.
E-mail: [redacted]
Phone #[redacted]
Section: Phase: 100% Foundation Design
Review Meeting will be schedule if needed
Design Criteria is Florida Green Book
Work Program Construction Budget:
Production Date: DESIGN- BUILD

Threads:

No	Status	Current Holder	Reference	Categories
10	RESPONSE ACCEPTED		Geotechnical Report:	STRUCTURES

Created By	Created On	Version	Delegate For
Thomas Andres	9/26/2016	1	

The following comment requires a written response: shallow foundation bearing capacity analysis appears to have assumed no influence of groundwater, and no horizontal forces. Both parameters can have a significant effect on the estimated bearing capacity. Please update the calculations and re-size the footings if necessary.

10/18/2016 1

The influence of groundwater was taken into consideration. However, shallow foundation bearing capacity analyses are conservative already as they assume footings bearing on granular soils (not rock) with a soil friction angle of 40 degrees, when in fact the footings will sit on competent natural limestone (which may also be treated as a cohesive mass with a relatively high cohesion value), in which case the resulting bearing capacity would have been even significantly higher. As suggested, we have made a slight revision to the calculations to incorporate the effect of groundwater while keeping the original conservative assumptions the same. The resulting bearing capacity is now more conservative and still much higher than the maximum recommended factored bearing resistance of 14 ksf. The attached revised report incorporated the revised calculations reflecting this consideration. We disagree that the bearing capacity analyses do not consider the effect of horizontal forces. The design loading information was provided by the bridge engineer, including axial, lateral, and applied moments. Hence, all external stability checks were performed for all external loads provided and eccentricity also checked for these loads. No re-sizing of the footings is necessary.

Thomas Andres 10/27/2016 1

Response Accepted & Comment Closed

No	Status	Current Holder	Reference	Categories
11	RESPONSE ACCEPTED		Sheet B-3:	STRUCTURES

Created By	Created On	Version	Delegate For
Thomas Andres	9/26/2016	1	

This comment is for information only (no response required) due to this being the Foundation Submittal however the General Notes do not address the corrosion protection of the stay -pipe (inner and outer). How is the inside of the pipe protected (primer, etc.)- can it be coated? Recommend a High Performance Painting System on the outside per Specification 560. It is not clear what an Architectural Coating is?

10/18/2016 1

Noted.

Thomas Andres 10/27/2016 1

Response Accepted & Comment Closed

No	Status	Current Holder	Reference	Categories
12	RESPONSE ACCEPTED		Sheets B-8 and B-11 thru B-17:	STRUCTURES

Created By	Created On	Version	Delegate For
Thomas Andres	9/26/2016	1	

This comment requires a written response: Label Footings (Type 1 thru Type 8) on Sheets B-11 thru B-17 per the naming convention given on B-8.

10/18/2016 1

The footing labels on drawing B-11 thru B-17 have been revised to match the labels on drawing B-8.

Thomas Andres 10/27/2016 1

Response Accepted & Comment Closed

No	Stat	Current Holder	Reference	Categories
22	RE	SE ACCEPTED	STRUCTURE MAINTENANCE	STRUCTURES

Created By	Created On	Version	Delegate For
MARIA CARASA	10/18/2016	1	

B-2 Design Specs: LRFD Specs are not in AASHTO 17 Edition.
B-4 Plans & Elev. Call for End Bridge Deck as done for Begin Bridge Deck. (These 2 location should be the control for Geometry).
At End Bridge: Tie Center Line Elevator Tower and Center Line Landing Columns to End Bridge as done for Begin Bridge.

B-5 Sheet Tittle: Consider adding "Superstructure" (Typical Superstructure Cross-Section)
B-8 Not clear what is the control of geometry, specifically the columns supporting the Bridge.
Verify signicance of tying columns to R/W at North End. CL of bearing for Begin and End Bridge should be the CL column. Not clear Tie CL Columns to Begin/End Bridge.
Show Begin Bridge & End Bridge Stations.
Verify why East Column foundations (Type 1 & 7) is larger than West Column foundations (Type 3 & 6).

B-10 Show Direction of Sta or North Arrow
B-11 Verify no Bars @ Column Corners (Not usually done in detailing reinforcing for Bridge Columns) Apply to the 4 Columns supporting the Bridge Ends.

B-14 Verify using only 1 # 4 @ 24" for walls up to 15' ± high (wall 5 at high ends ties 2 #5 bars @ 12")

B-16 At view A-A confusing to show 2 different columns bars together

B-17 Verify sheet Tittle. Seems this is an Elevator Footing

B-19 Some Comment as in B-14 (1 # 4 @ 24")

B-20 & 21 Missing calling for view B-B in plan view

10/18/2016 1

Drawing B-2 makes reference to AASHTO LRFD Seventh Edition. The 17 Edition is not mentioned in the General Notes.

B-4: The proposed dimension to the center line of the north elevator tower has been added.

B-5: Noted.

B-8: The center lines of column/foundations are located using the stationing of the bridge and offset distances given. The Contractor (MCM) has reviewed this drawing and he is clear on how to locate the columns/foundations.
The east side column foundations seem to be larger than the west side foundations; however, the west side foundations are combined footings that support more than one column. In fact, the west side footings are larger than the east side footings.

B-10: The north arrow has been added.

B-11: The rebars were placed in the straight portion of the stirrups near each corner of the column. The column design reflects the rebar layout shown on this drawing. The design of the column meets the AASHTO code design requirements.

B-14: The design of the wall has been verified.

B-16: Noted. The Contractor has reviewed this drawing and believes that the detail is clear enough for construction.

B-17: This drawing shows the Type 8 footing of the north landing. The title of this drawing is appropriate.

B-19: The design of the wall has been verified.

B-20 & 21: View B-B is called out in View A-A.

MARIA CARASA 10/20/2016 1

Response Accepted & Comment Closed

Submittal Report

Financial Project:	434688-1-58-01	Submital Type:	PLANS
Submittal Phase:	PHASE III	Submital Staff Type:	CONSULTANT
Recieved Date:	9/28/2016	Response Due Date:	10/28/2016
Grace Period:	0	District:	SIXTH
Status:	CLOSED	Create Date:	9/28/2016
Create User Id:	PD601MI	Last Update:	2/14/2017
		Last Update User Id:	PD601MI

Description:

434688-1: 90% Superstructure Design for FIU UNIVERSITY CITY PROSPERITY PROJ. ALONG SW 109 AVE & SR 90/SW 8 ST

Group: PRELIMINARY ENGINEERING
Phase Review Type: LAP Project
Status: Submitted
Phase Initiation Date: 9/28/2016
Comments Due Date: 10/14/2016
Days Allowed for Review: 17
Review Meeting: 10/28/2016 10:00 AM to 11:00 AM @ Will be schedule if needed
Plans Format: Electronic
Comments: External Project Manager: Manuel Feliciano, P.E.
E-mail: [redacted]
Phone #: [redacted]
Phase: 90% Superstructure Design
Review Meeting will be schedule if needed
Design Criteria is FDOT PPM
Work Program Construction Budget: $11,875,092
Production Date: DESIGN- BUILD

Threads:

No	Status	Current Holder	Reference	Categories
6	RES .E ACCEPTED		STRUCTURES MAINTENANCE	STRUCTURES

Created By	Created On	Version	Delegate For
MARIA CARASA	10/11/2016	1	

B-2 Design Specs: LRFD Specs are not in AASHTO 17 Edition.
B-4 Plans & Elev. Call for End Bridge Deck as done for Begin Bridge Deck. (These 2 location should be the control for Geometry).
At End Bridge: Tie Center Line Elevator Tower and Center Line Landing Columns to End Bridge as done for Begin Bridge.

B-5 Sheet Tittle: Consider adding "Superstructure" (Typical Superstructure Cross-Section)
B-8 Not clear what is the control of geometry, specifically the columns supporting the Bridge.
Verify significance of tying columns to R/W at North End. CL of bearing for Begin and End Bridge should be the CL column. Tie CL Columns to Begin/End Bridge. Show Begin Bridge & End Bridge Stations.
Verify why East Column foundations (Type 1 & 7) is larger than West Column foundations (Type 3 & 6).

B-10 Show Direction of Sta or North Arrow
B-11 Verify no Bars @ Column Corners (Not usually done in detailing reinforcing for Bridge Columns) Apply to the 4 Columns supporting the Bridge Ends.

B-14 Verify using only 1 # 4 @ 24" for walls up to 15' ± high (wall 5 at high ends, has 2 #5 bars @ 12")

B-16 At view A-A confusing to show 2 different columns bars together

B-17 Verify sheet Tittle. Seems this is an Elevator Footing

B-19 Same Comment as in B-14 (1 # 4 @ 24")

B-20 & 21 Missing calling for view B-B in plan view

10/11/2016 1

Is this comment intended for the Final Foundation submittal?

MARIA CARASA 12/14/2016 1

Yes

No	Status	Current Holder	Reference	Categories
7	COMMENT AGREED WITH		General:	STRUCTURES

Created By	Created On	Version	Delegate For
Thomas Andres	10/11/2016	1	

Include step by step fabrication sequence in the plans and include a TSP for the construction of the precast main-span and CIP back span. The TSP should require a more detailed step-by-step fabrication sequence to be submitted in an Erection Manual submitted by a Specialty Engineer.
The Erection Manual shall include the following:
- Positioning, use and sequencing of falsework, jacking and/or releasing of falsework, formwork, temporary towers, supports and the like.
- Step-by-step PT bar stressing and longitudinal tendon stressing sequence so that stresses during fabrication of both main span and back span stay below design code limits. Also include a step-by-step casting and form stripping sequence with clear delineation of required construction joints. Depict the support condition at the near-site casting yard at the time of stressing.
- Positioning, detailed step-by-step erection plan of the Self-Propelled-Modular-Transporter (SPMT) move of the precast main-span. Include drawings and calculations for the structural based on the support conditions of the precast main-span during the SPMT move.

10/28/2016 1

The general fabrication sequence for the construction of the precast main span and CIP back span has been provided as part of the plan set (see Erection Sequence drawings). The erection manual will provide the mentioned information showing more details of the stressing sequences, support conditions during casting, form stripping sequence, and location of temporary towers.
The step-by-step erection plan of the SPMT will be provided on a separate submittal by the Contractor's Specialty Engineer.

Thomas Andres 11/1/2016 1

This response is okay provided that the step-by-step information per response to Comment 10 is provided in the final plans.

11/8/2016 1

Comment Agreed & Closed

No	Status	Current Holder	Reference	Categories
8	RESPONSE ACCEPTED		General:	STRUCTURES

Created By	Created On	Version	Delegate For
Thomas Andres	10/11/2016	1	

Provide connection details between main span truss with the pylon.

	10/28/2016	1

Connection details between the main span truss and pylon have been provided on the substructure drawings.

Thomas Andres	11/1/2016	1

Response Accepted & Comment Closed

No	Status	Current Holder	Reference	Categories
9	RESPONSE ACCEPTED		Sheets B-38 thru B-45 and B-61, B-63, and B-65:	STRUCTURES

Created By	Created On	Version	Delegate For
Thomas Andres	10/11/2016	1	

Add PT bar anchor caps (top and bottom) per SDG 1.11.2, Standard Index 21802 and Specification 462-1.2.a consistent with approved FDOT PT systems and resize element as required to fit caps.

	10/28/2016	1

Permanent grout caps are provided at the top anchor of each PT bar (Anchorage Protection Type 9 per Standard Index No. 21802). Caps are not needed at the bottom anchor of each PT bar because exposure levels and the risk of corrosion are lower beneath the deck. Dead end anchors will be cast with the precast section with no block out and coated with a galvanizing compound (e.g. Zinc Clad III HS) for additional protection.

Thomas Andres	11/1/2016	1

Response Accepted & Comment Closed

No	Status	Current Holder	Reference	Categories
10	RESPONSE ACCEPTED		Sheets B-37 thru B-40, B-42, B-43, and B-69:	STRUCTURES

Created By	Created On	Version	Delegate For
Thomas Andres	10/11/2016	1	

Include step-by-step PT bar stressing and longitudinal tendon stressing sequence so that stresses during fabrication of both main span and back span stay below design code limits. Also include a step-by-step casting and form stripping sequence with clear delineation of required construction joints. For the main span section (Sheets B-37 thru B-40) depict the support condition at the near-site casting yard at the time of stressing. Also check the temporary condition at the time of transport with a clear delineation of the SPMT support location on stage 3, Sheet B-108 (cantilever distance) consistent with the calculations.

	10/28/2016	1

The PT bar stressing sequence will be provided with the Final submittal. The longitudinal tendon stressing sequence is shown on Sheet B-108 (Stage 2). Calculations showing stresses during stressing operations are below the allowable limits will be provided with the Final submittal.
A step-by-step casting and form stripping sequence will be provided with the Final submittal.
Support conditions for the main span during stressing operations will be shown on the Final submittal.
The temporary support conditions during transport shown on Sheet B-108 (Stage 3) have been revised.

Thomas Andres	11/1/2016	1

Response Accepted & Comment Closed

No	Status	Current Holder	Reference	Categories
11	RESPONSE ACCEPTED		Sheet B-37, Note 8:	STRUCTURES

Created By	Created On	Version	Delegate For
Thomas Andres	10/11/2016	1	

Clarify that the PT bars for members 2 and 11 will not be grouted at the near-site casting yard but will be de-tensioned prior to grouting after span is transported via SPMT to the site.

	10/28/2016	1

Note 8 has been clarified.

Thomas Andres	11/1/2016	1

Response Accepted & Comment Closed

No	Status	Current Holder	Reference	Categories
12	RESPONSE ACCEPTED		Sheets B-48 and	STRUCTURES

Created By	Created On	Version	Delegate For
Thomas Andres	10/11/2016	1	

There is concern of potential cracking due to tension behind the inner PT tendon anchor as the compression zone drags the end web diagonal and pylon (Sheet B-48) behind it. This was an earlier comment.

	10/28/2016	1

Reinforcement has been added to the Type III and Type IV Deck Diaphragms to address this comment.

Thomas Andres	11/1/2016	1

Response Accepted & Comment Closed

No	Status	Current Holder	Reference	Categories
13	RESPONSE ACCEPTED		Sheets B-53 (Section A-A), B-55 (Section A-A),	STRUCTURES

Created By	Created On	Version	Delegate For
Thomas Andres	10/11/2016	1	

Extend the tie down stirrup legs longer to be able to resist radial forces in the curved zones of the tendons.

	10/28/2016	1

The tie down stirrup legs have been extended.

Thomas Andres	11/1/2016	1

Response Accepted & Comment Closed

No	Status	Current Holder	Reference	Categories
14	RESPONSE ACCEPTED		Sheets B-56:	STRUCTURES

Created By	Created On	Version	Delegate For
Thomas Andres	10/11/2016	1	

There is concern of potential cracking due to tension behind the inner (phase 1 C5) PT tendon anchor as the compression zone drags the pylon behind it. This was an earlier comment.

	10/28/2016	1

Reinforcement has been added to the Type III Canopy Diaphragm to address this comment.

Thomas Andres	11/1/2016	1

Response Accepted & Comment Closed

No	Status	Current Holder	Reference	Categories
15	RESPONSE ACCEPTED		Sheets B-60, and B-108, Stage 3:	STRUCTURES

Created By	Created On	Version	Delegate For
Thomas Andres	10/11/2016	1	

The support conditions at the near site casting yard and during SPMT transport is critical (P.T. stressing through SPMT transport). The support needs to be provided at the ends through the end diaphragm at the element lifts off formwork during longitudinal/transverse stressing in the near site casting yard. Support needs to stay in the middle (specify distance) of the cross section during SPMT transport. Also the main span element needs to remain vertical during SPMT transport. Add the appropriate notes to both sheets consistent with the calculations.

	10/28/2016	1

Support condition notes have been added to Sheets B-60 and B-108 (Stage 3).

Thomas Andres	11/1/2016	1

Response Accepted & Comment Closed

No	Status	Current Holder	Reference	Categories
16	RE[illegible]SE ACCEPTED		Sheets B-65, B-6 B-67:	STRUCTURES

Created By	Created On	Version	Delegate For
Thomas Andres	10/11/2016	1	

Check the canopy design where the longitudinal tendons are deviated in plan view resulted in transverse bending of the canopy, due to PT eccentricity.

10/28/2016 1

The transverse local effect of the longitudinal tendons has been taking into account in the design of the canopy. Additional calculations will be provided with the Final submittal.

Thomas Andres 11/1/2016 1

Response Accepted & Comment Closed

No	Status	Current Holder	Reference	Categories
17	RESPONSE ACCEPTED		Sheet B-69:	STRUCTURES

Created By	Created On	Version	Delegate For
Thomas Andres	10/11/2016	1	

Specify PT Anchorage Protection Type 8 for down STA (non-stressing end). Replace Anchorage Protection Type 3 to Type 2 for longitudinal multi-strand tendons in the deck and canopy. Note: Type 3 is for segmental match-cast joint.

10/28/2016 1

Anchorage protection is not needed at the bottom anchor of each PT bar because exposure levels and the risk of corrosion are lower beneath the deck. Dead end anchors will be cast with the precast section with no block out and coated with a galvanizing compound (e.g. Zinc Clad III HS) for additional protection.
Type 3 Anchorage Protection has been revised to Type 2 Anchorage Protection.

Thomas Andres 11/1/2016 1

Response Accepted & Comment Closed

No	Status	Current Holder	Reference	Categories
18	RESPONSE ACCEPTED		Sheet B-70:	STRUCTURES

Created By	Created On	Version	Delegate For
Thomas Andres	10/11/2016	1	

a. Provide pipe camber diagrams.
b. It is unclear how the bolts are fastened to the pylon. Show detail. If the nut is oriented outward how is simply removing the nut sufficient for allowing the necessary movement for jacking? Suggest that head of bolt be oriented outward with imbedded coupler inner shank, nut and plate washer.
c. How is inner surface of pipe protected against corrosion?
d. We have long-term concerns with cracking of the pipe at the welds. Consider an inner stiffener with a weld access hole to strengthen pipe/plate connection especially for the outer pipes. Sheet B-70: The stay pipe numbering system here is different from sheet B-109.
e. Pipe support geometry: it appears the pipe sagging and truss deformation have not been included in the Angle Top and Angle Bottom of the steel pipe.
f. Specify the 16" stay pipe ASTM spec.

11/11/2016 1

a. The camber diagrams will be provided with the erection manual.
b. Additional details will be provided to show how the bolts are fastened to the pylon on the final submittal.
c. Weep holes will be provided at the bottom of each pipe in order to drain any water due to condensation. This will reduce the possibility of corrosion at the bottom of the pipe.
d. Both the forces and variation in force in the steel pipe sections are low when compared to the cross section area. The cross section areas were selected to provide stiffness in order to meet specified vibration frequencies. The areas were not based upon needed force resistance (strength). While the Department's suggested detail would be possible, it would create additional non-uniformity due to the stiffeners and the access holes. Installation of the stiffeners and the repair of the access holes would create additional residual thermal stresses. The simpler weld detail is preferred by the Designer. The stay pipe numbering on Sheet B-109 has been revised.
e. The angle top and angle bottom were calculated based on the final pipe shape. The sagging of the pipe will be eliminated with the camber of the pipe and the effect of the superstructure deformations is not significant in the angle calculations. The maximum rotation is 0.0024 rad due to permanent loads.
f. The ASTM spec has been referenced.

Thomas Andres 12/6/2016 1

Regarding Item c, if the inner surface of the pipe is not primed or coated in any way, we suggest that the pipe be completely sealed prior to installation (including at the ends). This will reduce the likelihood of moisture condensation (corrosion) over time and potential staining. SDG 10.7.D.2 requires tubular members to be capped and sealed.

No	Status	Current Holder	Reference	Categories
19	RES[illegible]SE ACCEPTED		Sheet B-103:	STRUCTURES

Created By	Created On	Version	Delegate For
Thomas Andres	10/11/2016	1	

a. Add cross reference note to Sheet B-70 for unbolting pipe supports.
b. Detail 1: The side and top elastomeric cover for the steel plates, show 1/8" thick. FDOT Standard Index No.20510 required ¼" thick. In elevation view End Bent 1 and End Bent 3, show the gap dimensions between the top surface of the end bent and underneath of the superstructure.

	10/28/2016	1

a. A cross reference note has been added to Sheet B-103.
b. The side elastomeric cover for the steel plates has been revised to 1/4". The top elastomeric cover provided for the steel plates is 3/8". The gap dimensions have been added.

Thomas Andres	11/1/2016	1

Response Accepted & Comment Closed

No	Status	Current Holder	Reference	Categories
20	RESPONSE ACCEPTED		Sheet B-104, Stage 4, Step 3:	STRUCTURES

Created By	Created On	Version	Delegate For
Thomas Andres	10/11/2016	1	

There are concerns with connecting the back-span to the pylon prior fabricating span. Concerns include:
a. Stresses of connection due to flexibility of formwork.
b. Camber (rotational) stresses due to longitudinal P.T.
c. Local stresses (shear lag) at inner anchor as the compression zone drags the pylon.

	10/28/2016	1

a. FIGG has evaluated the back span to pylon connection assuming that the falsework is a very flexible system in order to get an upper bound value for the design tension force between the back span canopy element and the pylon. The connection has been designed to resist construction loads. Please refer to pg. 477-478 of Pylon Substructure Final Design Calculations.
b. The rotational stresses due to post-tensioning have been evaluated. According to our model the maximum camber rotation at the pylon is less than 0.0008 rad. In addition, the maximum tensile and compressive stresses due to the longitudinal P.T. are within the allowable limits by the AASHTO code.
c. Additional reinforcement has been provided between the interface of the diaphragm and the pylon.

Thomas Andres	11/1/2016	1

Response Accepted & Comment Closed

No	Status	Current Holder	Reference	Categories
21	COMMENT AGREED WITH		Structure Maintenance	STRUCTURES

Created By	Created On	Version	Delegate For
MARIA CARASA	10/12/2016	1	

No Comment for the 90% Superstructure Design

	10/28/2016	1

Comment Agreed & Closed

No	Status	Current Holder	Reference	Categories
25	RESPONSE ACCEPTED		Superstructure Design Calculations	STRUCTURES

Created By	Created On	Version	Delegate For
	10/17/2016	1	

(On behalf of Saul Perez)
Superstructure Longitudinal Model (Larsa Model): The effect of the longitudinal post-tensioning on the main deck and the canopy has been correctly incorporated into the structural model. However the effect of the PT bars on the truss diagonal members has not been considered. Since the truss connections are rigid connections, a portion of the PT force will be transferred to adjacent elements as axial forces, moments and shears, i.e., the PT will not be 100% effective and will also be subject to losses due to creep and shrinkage. Please address.

	10/28/2016	1

The effect of the PT bars has been considered in the finite element model (LUSAS Bridge plus) of the main span. PT bars are defined in the truss diagonal members. The stressing sequence of the PT bars has been checked with the finite element model to ensure the structure is within the allowable limits as the bars in each diagonal are stressed.

	10/31/2016	1

Response Accepted & Comment Closed

No	Status	Current Holder	Reference	Categories
26	RE[illegible]SE ACCEPTED		Superstructure D Calculations	STRUCTURES

Created By	Created On	Version	Delegate For
	10/17/2016	1	

(On behalf of Saul Perez)
Section V, Longitudinal Design: the main deck and the canopy stresses have been checked for different load combinations for service III at the end of construction and long term effects. Note, however, that the calculation does not include a check of these elements under strength conditions. Please provide.

10/28/2016 1

Ultimate moment checks for the deck and canopy will be provided with the Final submittal.

10/31/2016 1

Response Accepted & Comment Closed

No	Status	Current Holder	Reference	Categories
27	RESPONSE ACCEPTED		Superstructure Design Calculations	STRUCTURES

Created By	Created On	Version	Delegate For
	10/17/2016	1	

(On behalf of Saul Perez)
Section V, Longitudinal Design, Page 781, check bucking of top chord: The in-plane buckling capacity of the canopy (top chord) is checked. Since the full length of the canopy is unrestrained for moving laterally (except at the pylon support) and the section appears to be relatively weak in torsion a lateral-torsional buckling mode is expected. To capture this behavior a global stability analysis should be performed. The same LARSA model used for the longitudinal analysis can be utilized for this purpose. Conditions to be investigated are:
a) Permanent loads and live load acting in the main span (factored loads).
b) Same as a) but live loads acting on one side of the span, i.e., worst torsional effect for the structure (factored loads).

11/11/2016 1

The lateral stability of the canopy (top chord) has been verified for each of the LRFD strength load combinations, including both full and one sided live load cases. Even at the factored load levels, the incremental deflections (large displacement theory LRFD 4.5.3.2) between the last series of load steps remain linear.

11/16/2016 1

(On behalf of Saul Perez)
During the next submittal the additional calculations performed as result of these comments will be reviewed.

No	Status	Current Holder	Reference	Categories
28	RESPONSE ACCEPTED		Superstructure Design Calculations	STRUCTURES

Created By	Created On	Version	Delegate For
	10/17/2016	1	

(On behalf of Saul Perez)
Section V, Longitudinal Design, Page 840, design of diagonal members for service conditions: Note that the assumption is that the effect of the post-tensioning bars is 100% effective. As indicated in comment 1 due to the rigid joints, there will be a transfer of forces to contiguous elements and there will be losses in the PT due to elastic shortening, creep and shrinkage. The calculation shown can be taken as a preliminary design and they should be checked by including the post-tensioning forces in the diagonal members in the global longitudinal model. Please verify.

10/28/2016 1

The effect of the PT bars has been considered in the finite element model (LUSAS Bridge plus) of the main span. PT bars are defined in the truss diagonal members. The stressing sequence of the PT bars has been checked with the finite element model to ensure the structure is within the allowable limits as the bars in each diagonal are stressed.

10/31/2016 1

Response Accepted & Comment Closed

No	Status	Current Holder	Reference	Categories
29	RESPONSE ACCEPTED		Superstructure Design Calculations	STRUCTURES

Created By	Created On	Version	Delegate For
	10/17/2016	1	

(On behalf of Saul Perez)
Section VI, transverse Design, Page 1120: The PT loss ratio used is 0.67 based on LARSA results at the eoc. This loss ratio appears high; the long term value should be used. Additionally, drawing B-69 shows a force of 140k or approximately 60% of GUT at the live end after anchor set. Please clarify and/or reevaluate as needed.

10/28/2016	1	

The table on Sheet B-69 has been revised for consistency with the calculations.

10/31/2016	1	

Response Accepted & Comment Closed

No	Status	Current Holder	Reference	Categories
30	RESPONSE ACCEPTED		Superstructure Design Calculations	STRUCTURES

Created By	Created On	Version	Delegate For
	10/17/2016	1	

(On behalf of Saul Perez)
Frequency Model, Page 1196: It appears that the 3D-Larsa model has been constrained to move only in the x-z plane (longitudinal-vertical plane) as indicated in the information for the joints given in Pages 1201 thru 1208 (Y displacement restrained and rotations about the x-z axes restrained). In this regard, the model will not provide the transverse frequency of vibration of the structure and will not consider that the flexural vibrations (vertical) may be strongly coupled with the rotational vibration about the longitudinal axes (torsion). This can be seen in the output for the frequency of vibrations given in Pages 1219 & 1220. The reported first frequency of 2Hz corresponds to the longitudinal vibration of the bridge, while the second mode (3.07 Hz) corresponds to the vertical vibration. Notice that, most probably, this frequency will be smaller once the bridge is allowed to vibrate in 3D. The fact that the bridge was constrained to vibrate only in the vertical plane can be seen from the mass participation factor in the Y direction which is reported as zero for all reported frequency modes. As commented in previous revisions, due to the relatively low torsional stiffness of this bridge (as compared to its vertical and horizontal bending stiffness); torsional vibration should also be evaluated. Although this mode is not indicated in the AASHTO Specifications for Pedestrian Bridges Section 6- Vibrations, this particular vibration mode needs to be investigated. The reason being that a common loading case is to have the live load applied only on one side of the bridge (traffic mostly in one direction) which most probably will activate this vibration mode.
Please reevaluate the frequencies using the 3-D model allowing the bridge to freely vibrate in any direction.

11/11/2016	1	

The original restraint condition of the model was done to simplify identifying the frequency of the desired vertical mode shape, knowing that vertical and lateral behaviors are essentially uncoupled. To address this comment, we have re-run the frequency evaluations, with the model free to vibrate in any direction, and confirmed that the vertical and lateral frequencies of the deck meet the requirements of the contract. The analysis includes a great number of mode shapes, including torsional ones. However, the contract does not specify any torsional frequency limits.

11/16/2016	1	

Response Accepted & Comment Closed

No	Status	Current Holder	Reference	Categories
31	RESPONSE ACCEPTED		Sheet B-38 and B-40	STRUCTURES

Created By	Created On	Version	Delegate For
	10/17/2016	1	

(On behalf of Saul Perez)
Please verify that there is no conflict between the post-tensioning bar duct and the section reinforcement as shown in Sheet B-40. The 4" or 4.5" distance between the PT bar centroid and the face of the element may not be sufficient when considering the concrete cover, the stirrups, the longitudinal rebar and the OD of the duct, especially at Section F-F in Sheet B-38(2.5" □ PT bar).

10/28/2016	1	

The location of the 2.5" diameter PT bars has been revised.

10/31/2016	1	

Response Accepted & Comment Closed

No	Stat	Current Holder	Reference	Categories
32	RE SE ACCEPTED		Sheet B-44	STRUCTURES

Created By	Created On	Version	Delegate For
	10/17/2016	1	

(On behalf of Saul Perez)
Section A-A: Please verify the location of the tendon PI point. FDOT SDG-2016 has a list of minimum tangent lengths in Table 1.11.4-2. The proposed tangent length violates the value given in this table. Please revise or justify as applicable.

10/28/2016 1

Design was performed in accordance with FDOT SDG January 2015 edition (per RFP) which does not specify minimum tangent lengths adjacent to anchorages.

10/31/2016 1

Response Accepted & Comment Closed

No	Status	Current Holder	Reference	Categories
33	RESPONSE ACCEPTED		Sheet B-64	STRUCTURES

Created By	Created On	Version	Delegate For
	10/17/2016	1	

(On behalf of Saul Perez)
Section B-B is incomplete (the top deck surface and curb are not shown).

10/28/2016 1

The linework for Section B-B has been completed.

10/31/2016 1

Response Accepted & Comment Closed

No	Status	Current Holder	Reference	Categories
34	RESPONSE ACCEPTED		Sheet B-65	STRUCTURES

Created By	Created On	Version	Delegate For
	10/17/2016	1	

(On behalf of Saul Perez)
The cross section at the canopy blister shows tendons in conflict with the blister. The plan view shows that, at this location, the tendons have already been deviated to miss the blister. Please revise accordingly.

10/28/2016 1

The Cross Section at Canopy Blisters has been revised.

10/31/2016 1

Response Accepted & Comment Closed

No	Status	Current Holder	Reference	Categories
35	RESPONSE ACCEPTED		Sheet B-66	STRUCTURES

Created By	Created On	Version	Delegate For
	10/17/2016	1	

On behalf of Saul Perez)
Typical canopy cross section shows 4 tendons instead of the 3 tendons shown in the partial plan view. Please revise.

10/28/2016 1

The Typical Cross Section has been revised.

10/31/2016 1

Response Accepted & Comment Closed

Submittal Report

Financial Project:	434688-1-58-01	Submital Type:	PLANS
Submittal Phase:	PHASE IV	Submital Staff Type:	CONSULTANT
Recieved Date:	10/17/2016	Response Due Date:	11/14/2016
Grace Period:	0	District:	SIXTH
Status:	CLOSED	Create Date:	10/17/2016
Create User Id:	PD601MI	Last Update:	10/17/2016
		Last Update User Id:	PD601MI

Description:

434688-1: Structural Pylon & Landing Structures Design for FIU UNIVERSITY CITY PROSPERITY PROJ. ALONG SW 109 AVE & SR 90/SW 8 ST

Group: PRELIMINARY ENGINEERING Phase Review Type: LAP Project
Status: Submitted
Phase Initiation Date: 10/17/2016 Comments Due Date: 10/28/2016 Days Allowed for Review: 12
Review Meeting: 11/14/2016 10:00 AM to 11:00 AM @ To be schedule if required
Field Meeting:
Plans Format: Electronic
Comments: External Project Manager: Erika N. Hango, P.E.
E-mail: [redacted]
Phone #: [redacted]
Section: Phase: 100% Structural Pylon & landing structures Design
Review Meeting will be schedule if needed
Design Criteria is Florida Green Book, Bridge: FDOT
Work Program Construction Budget: $12,041,779
Production Date: DESIGN- BUILD

Threads:

No	Status	Current Holder	Reference	Categories
12	RESPONSE ACCEPTED		Sheets B-24, Cross Section and Section A-A:	STRUCTURES

Created By	Created On	Version	Delegate For
Thomas Andres	10/28/2016	1	

The scale of the sections make it difficult to understand detailer's intent. Also showing all bars instead of first and last grouping of the bars would help reduce congestion and clarify intent.

11/14/2016 1

New details were previously developed using a bigger scale. The Contractor has reviewed this drawing and believes that these details are clear for construction.

Thomas Andres 12/6/2016 1

The details on Sheet B-24 violate the requirements of Structures Detailing Manual Sections 2.8 and 2.9.

No	Stat	Current Holder	Reference	Categories
13	RES E ACCEPTED		Sheets B-24 and L	STRUCTURES

Created By	Created On	Version	Delegate For
Thomas Andres	10/28/2016	1	

The pouring sequence of the pylon column and CIP backspan and limits of the various construction joints is unclear.

11/14/2016 1

The pouring sequence is shown on the Erection Sequence sheets submitted with the 90% Superstructure plans. The Contractor has reviewed these drawings and believes that these details are clear for construction.

Thomas Andres 12/6/2016 1

We still feel that plans are not as clear as they should be.

No	Status	Current Holder	Reference	Categories
14	RESPONSE ACCEPTED		Sheet B-24, Section A-A and Detail 1:	STRUCTURES

Created By	Created On	Version	Delegate For
Thomas Andres	10/28/2016	1	

Clarify on the precast mainspan side of Section View that the Pylon Base / Precast Mainspan interface is to be grouted.

11/14/2016 1

A note has been added to clarify the interface to be grouted.

Thomas Andres 12/6/2016 1

Response Accepted & Comment Closed

No	Status	Current Holder	Reference	Categories
15	RESPONSE ACCEPTED		Sheets B-24, Detail1, and Sheet B-25, Section E	STRUCTURES

Created By	Created On	Version	Delegate For
Thomas Andres	10/28/2016	1	

Is the intent to embed a section of drainage pipe in the pour then couple the pipe either-side of pour? The structural plans need to be detailed accordingly and sections need to accommodate the pipe joints.

11/14/2016 1

Yes, this is the intent. The concrete opening (6" radius) has been sized to accommodate the PVC coupling (<5" radius). Additional details are provided on the Superstructure plans.

Thomas Andres 12/6/2016 1

Response Accepted & Comment Closed

No	Status	Current Holder	Reference	Categories
16	RESPONSE ACCEPTED		Sheet B-25:	STRUCTURES

Created By	Created On	Version	Delegate For
Thomas Andres	10/28/2016	1	

Include a Note 8 which states that the annulus between the 11P06 bars and the 4" I.D. reinforcement sleeve is to be grouted prior to concreting.

11/14/2016 1

The suggested note has been added.

Thomas Andres 12/6/2016 1

Response Accepted & Comment Closed

No	Stat	Current Holder	Reference	Categories
17	RES E ACCEPTED		Sheet B-26, Secti C:	STRUCTURES

Created By	Created On	Version	Delegate For
Thomas Andres	10/28/2016	1	

Show the 11P06 bars.

11/14/2016 1

The 11P06 bars are shown on Sheet B-26 as hollow circles. The 11P06 bars are cast with the intermediate pylon and splice with the 11P01 bars in the upper pylon.

Thomas Andres 12/6/2016 1

Okay. Call-out the IIP06 hollow bars in Section C-C.

No	Status	Current Holder	Reference	Categories
19	RESPONSE ACCEPTED		339-341	STRUCTURES

Created By	Created On	Version	Delegate For
	10/28/2016	1	

Calculations Pylon Substructure Design:
The designer has used an in-house program for designing the columns for biaxial flexo-compression. The section at Upper Pylon Base - Top of Lower Pylon is the critical section (a C/D of 1.05 is obtained). The reviewer performed an independent calculation using the program SP column and a C/D ratio of 0.97 was obtained. Although the analysis performed has the limitation that the PT bar was replaced by an equivalent mild reinforcing bar with the same ultimate force as the PT bar (i.e.,Aeq = Asp x Fpu/Fy), the results seems to be conservative side. I.e., when using the true stress-strain curve of the PT bar, the force on these bars will approach Asp x Fpu but will be smaller than this value. It seems that in order to avoid being borderline in this design the PT bar diameter can be bumped up to the next PT bar size. Please take a second look at this design.

11/14/2016 1

The FIGG proprietary software has the capability of combining the mild reinforcement with post-tensioning bars. FIGG's software has been used in many projects with excellent results. The reported C/D ratio of 1.05 is for the strength load combination III, which includes 150 mph wind speed with an equivalent design pressure of 91 psf on the upper pylon. Therefore, the pylon design meets the code requirements.

1/9/2017 1

No further comment

No	Status	Current Holder	Reference	Categories
20	RESPONSE ACCEPTED		B-25	STRUCTURES

Created By	Created On	Version	Delegate For
	10/28/2016	1	

The Main Span Truss end vertical post is housed within the pylon section. The calculation shows that this precast element has been assumed to act in conjunction with the cast in place portion of the pylon.
A) Sections B-B thru D-D shows that there are transverse rebars sticking out of the precast section and overlapping with the 5P02 bars. The reviewer has been unable to find the sizes and distribution of these rebars. Note that in the superstructure 90% submittal (see Sheet B-40, Section D-D) these bars are also not present. Please revise.
B) In order to create a mechanical bonding between the precast vertical post and the CIP pylon, it is recommended that the surfaces of the precast portion embedded into the pylon should be roughened.

11/14/2016 1

a.) Agree. The size and distribution of these bars have been added to the Final Superstructure plans.
b.) Agree. A note has been added to specify the surface to be roughened.

1/9/2017 1

No further comment

No	Stat	Current Holder	Reference	Categories
21	RES SE ACCEPTED		General	STRUCTURES

Created By	Created On	Version	Delegate For
	10/28/2016	1	

There are a couple of comments in the review of the 90% superstructure that may have an impact on the design of the substructure. One of the comments is related to the global stability analysis of the structure and the other is related to the frequency of vibration of the structure. The analysis presented for these items in the indicated submittal is from the point of view of the reviewer not complete. If the designer shows that the structure "as is" complies with the stability and frequency requirements indicated above, then no changes to the substructure is needed. On the other hand there is the possibility that the structure may need to be stiffen laterally, for example by restraining the top ends of the canopy for lateral displacements. In this hypothetical situation the effects on the substructure may need to be evaluated.

11/21/2016 1

The lateral stability of the canopy (top chord) has been verified and the vertical and lateral frequencies of the deck meet the requirements of the contract. Therefore, no changes to the substructure are needed. Please see responses to Comments #27 & 30 on the 90% Superstructure submittal.

1/9/2017 1

Response Accepted & Comment Closed

Submittal Report

Financial Project:	434688-1-58-01	Submital Type:	PLANS
Submittal Phase:	PHASE IV	Submital Staff Type:	CONSULTANT
Recieved Date:	2/14/2017	Response Due Date:	3/23/2017
Grace Period:	0	District:	SIXTH
Status:	CLOSED	Create Date:	2/14/2017
Create User Id:	PD601MI	Last Update:	6/13/2017
		Last Update User Id:	KNKSARA

Description:

434688-1: 100% Superstructure Design for FIU UNIVERSITY CITY PROSPERITY PROJ. ALONG SW 109 AVE & SR 90/SW 8 ST

Group: PRELIMINARY ENGINEERING
Phase Review Type: LAP Project
Status: Submitted
Phase Initiation Date: 2/14/2017
Comments Due Date: 3/7/2017
Days Allowed for Review: 22
Review Meeting: 3/23/2017 10:00 AM to 11:00 AM @ To be schedule if required
Plans Format: Electronic
Comments: External Project Manager: Manuel Feliciano, P.E.
E-mail: [redacted]
Phone #[redacted]
Phase: 100% Superstructure Design
Review Meeting will be schedule if needed
Design Criteria is FDOT PPM
Work Program Construction Budget: $11,875,092
Production Date: DESIGN- BUILD

Threads:

No	Status	Current Holder	Reference	Categories
3	RESPONSE ACCEPTED		B-39, B-40, B-43 and B-69:	STRUCTURES

Created By	Created On	Version	Delegate For
Thomas Andres	2/20/2017	1	

Corrosion protection is not in compliance with Design Index 21802.

This comment requires a written response.

	3/30/2017	1

Permanent grout caps are provided at the live stressing end of each PT bar (Anchorage Protection Type 9 per Standard Index No. 21802) as shown on Sheet B-69. Dead end anchors will be cast within the precast section with no block out. The dead end anchor will be coated with a galvanizing compound (e.g. Zinc Clad III HS) for additional corrosion protection as the exposure levels and the risk of corrosion are lower beneath the deck.

Thomas Andres	4/3/2017	1

Response Accepted & Comment Closed

No	Stat	Current Holder	Reference	Categories
4	RES E ACCEPTED		B-39, B-40, and B-	STRUCTURES

Created By	Created On	Version	Delegate For
Thomas Andres	2/20/2017	1	

Provide geometry control for both spans (deck elevations and camber diagrams). Include a plan note to require shop drawing for forming details including a step-by-step forming plan; including support conditions and forming design, camber details and calculations based on forming stiffness, etc.

This comment requires a written response.

3/30/2017 1

The erection manual will provide the requested information showing more details of the support conditions during casting, form stripping sequence, and location of temporary towers. In addition, a table of elevations has been added to Sheets B-37 & B-41.
The plan note related to the shop drawing requirements will be added to the listed drawings in the RFC package.

Thomas Andres 4/3/2017 1

Response Accepted & Comment Closed

No	Status	Current Holder	Reference	Categories
5	RESPONSE ACCEPTED		B-38 and B-109 Stage 2, Step 2:	STRUCTURES

Created By	Created On	Version	Delegate For
Thomas Andres	2/20/2017	1	

During the stressing of the PT bars in Stage 2, Step 2, there is a concern with cracking the adjacent members that are not yet stressed or adjacent members that are not post-tensioned. The temporary stress check needs to account for the rigidity of the joints.
a. B-109 Stage 2, Step 1.B: Are only vertical and diagonal members with PT bars to be cast? If so, when are the other members to be cast? Clarify intent.
b. B-109 Stage 2, Step 2:
i. Clarify what is intended for vertical versus diagonal members.
ii. Clarify what order to stress members to minimize cracking of adjacent members. Consider stressing members in the order from the most-vertical to the least-vertical.
iii. There is a concern with cracking in adjacent members prior to longitudinal PT that are not PT'ed. See sketches below:

This comment requires a written response.

3/30/2017 1

a. Sheet B-109, Stage 2, Steps 1.A through 1.C give the casting sequence of the main span superstructure elements. Labels have also been added to the cross section to further clarify.
b.i. The diagonals are members with PT bars while the vertical members are reinforced concrete members. A note has been added to Sheet B-109, Stage 2 to further clarify.
b-ii. A more detailed stressing sequence has been provided on Sheet B-109 (Stage 2) for clarification. This sequence has been added to the RFC Submittal plan sheet.
b-iii. The effect of the PT bars has been considered in the finite element model analysis (LUSAS Bridge plus) of the main span. PT bars are defined in the truss diagonal members. The stressing sequence of all PT has been checked with the finite element model to ensure the structure is within the allowable limits as each member is stressed.

Thomas Andres 4/3/2017 1

Response Accepted & Comment Closed

No	Stat	Current Holder	Reference	Categories
6	RE SE ACCEPTED		B-42, B-109 Stag Step 5:	STRUCTURES

Created By	Created On	Version	Delegate For
Thomas Andres	2/20/2017	1	

During the stressing of the PT bars in Stage 5, Step 5, there is a concern with cracking the adjacent members that are not yet stressed or adjacent members that are not post-tensioned. The temporary stress check needs to account for the rigidity of the joints.
i. Clarify what order to stress members to minimize cracking of adjacent members. Consider stressing members in the order from the most-vertical to the least-vertical.
ii. There is a concern with cracking in adjacent members prior to longitudinal PT that are not PT'ed. See sketches below:

This comment requires a written response.

3/30/2017 1

i. A more detailed stressing sequence has been provided on Sheet B-109 (Stage 4) for clarification. The stressing sequence of the PT bars has been checked to ensure the structure is within the allowable limits as the bars in each diagonal are stressed.
ii. The stressing sequence of the longitudinal PT has been checked to ensure the structure is within the allowable limits as each tendon is stressed.

To clarify, this response applies to Sheets B-109 (Stage 4) and B-110 (Stage 5).

Thomas Andres 4/3/2017 1

Response Accepted & Comment Closed

No	Status	Current Holder	Reference	Categories
7	RESPONSE ACCEPTED		B54 thru B-59:	STRUCTURES

Created By	Created On	Version	Delegate For
Thomas Andres	2/20/2017	1	

There is a concern that without transverse PT of the canopy end diaphragms that cracking will develop during longitudinal PT stressing. The concern is that the web will get dragged behind the compression zone. See sketch below.

This comment requires a written response.

3/30/2017 1

The concrete tensile stress was checked and is less than 3sqrt(f'c). In addition, 6-#8 bars are provided at the face of the Type II canopy diaphragm and 3-#8 bars are provided at the face of the Type III canopy diaphragm based on our strut and tie analysis.

Thomas Andres 4/3/2017 1

Response Accepted & Comment Closed

No	Status	Current Holder	Reference	Categories
8	RESPONSE ACCEPTED		B-57, Section A-A; B-59, Section A-A:	STRUCTURES

Created By	Created On	Version	Delegate For
Thomas Andres	2/20/2017	1	

The 5S03 bars do not appear to be long enough to resist the radial tendon force.

This comment requires a written response.

4/4/2017 1

The 5S03 bars cannot be extended down per the provided sketch because the vertical member does not exist at the location of the tendon anchorages. The 5S03 bar legs tie into the reinforcement mat at the bottom of the canopy with a 90 degree standard hook. The 5S03 bars have been extended up to tie into the diagonal bar at the top face of the diaphragm for the RFC submittal.

Thomas Andres 4/11/2017 1

Response Accepted & Comment Closed

No	Status	Current Holder	Reference	Categories
9	RESPONSE ACCEPTED		B-70, Detail A:	STRUCTURES

Created By	Created On	Version	Delegate For
Thomas Andres	2/20/2017	1	

Suggest that 2 ½" grout pad be added to facilitate fit-up.

This comment requires a written response.

3/30/2017 1

A 1" thick grout pad will be added to the bearing plates at the end of the pipes near the pylon (Detail A).

Thomas Andres 4/3/2017 1

Response Accepted & Comment Closed

No	Status	Current Holder	Reference	Categories
10	RESPONSE ACCEPTED		B-109:	STRUCTURES

Created By	Created On	Version	Delegate For
Thomas Andres	2/20/2017	1	

a. Stage 2, Steps 4 and 5: Suggest that not all walkway tendons D1 thru D6 be stressed prior to stressing canopy tendons. Sequence stressing to reduce temporary stresses in the span (e.g. Stress Tendons D1 thru D4, Stress C2 and C3, Stress D5 and D6).
b. Stage 3: Show SPMT support locations consistent with the design calculations. Check span for temporary hauling boundary conditions.

This comment requires a written response.

3/30/2017 1

a. The erection manual will provide more details of the stressing sequence. A proposed stressing sequence has been provided on Sheet B-109, Stage 2 in the RFC submittal.
b. The design calculations are consistent with the current location of the SPMT supports shown on Sheet B-109. The span was checked to ensure stresses are within the allowable limits with the supports located at the first interior deck nodal zones. The distances to the centerline of the transporters have been added to Sheet B-109, Stage 3.

Thomas Andres 4/3/2017 1

Response Accepted & Comment Closed

No	Status	Current Holder	Reference	Categories
11	RESPONSE ACCEPTED		B-109 and B-110: Stage 4, Step 3, and Stage 5, St	STRUCTURES

Created By	Created On	Version	Delegate For
Thomas Andres	2/20/2017	1	

These steps are not clear. It is not clear from the Substructure Pylon details the limits of intermediate pylon region to be cast and closure pour region to be cast. Add additional details to clarify intent.

This comment requires a written response.

3/30/2017 1

Once the precast main span unit is in place, the pylon intermediate section (Sheets B-24 thru B-25) will be cast with construction joints that will connect with the back span deck, diagonals, and canopy. Proposed construction joint lines have been labeled on Sheet B-24A to define the limits of the intermediate pylon region. Next, the back span deck, diagonals, and canopy will be cast in the order listed. Finally, the closure will be poured to connect the deck and canopy sections.

Thomas Andres 4/3/2017 1

Response Accepted & Comment Closed

No	Status	Current Holder	Reference	Categories
27	RESPONSE ACCEPTED			STRUCTURES

Created By	Created On	Version	Delegate For
	3/7/2017	1	

On sheet B-70, anchor bolts are specified as ASTM F1554 Grade 104 with ASTM A563 nuts and washers. Does this meet requirements of Specification (Section 460)?

3/30/2017 1

The specifications shown on B-70 are in accordance with FDOT Standard Specifications Section 646-2.3.

To clarify, the specified grade on Sheet B-70 is Grade 105.

4/3/2017 1

Response Accepted & Comment Closed

No	Status	Current Holder	Reference	Categories
28	RESPONSE ACCEPTED			STRUCTURES

Created By	Created On	Version	Delegate For
	3/7/2017	1	

Is 2-1/2" thick grout on canopy blister on B-70 to be "non-shrinkage"? Needs to meet any FDOT Specification? Not specified.

3/30/2017 1

The grout will not be "non-shrinkage." The grout will be composed of a similar concrete mix as of the superstructure to match the appearance of the concrete. A note has been added to Sheet B-70.

4/21/2017 1

The use of non-shrinkage grout it is highly recommended due to the susceptibility to cracking in the area and the loads it will be subjected to (cracking may cause bolts to become loose). Mixes with high compressive strength tend to have higher cement content and be more susceptible to cracking. Non-shrinkage grout will help avoid future issues.

5/23/2017 1

Non-shrinkage grout will be specified, as recommended.

5/30/2017 1

No further comments. Thanks.

No	Status	Current Holder	Reference	Categories
29	RESPONSE ACCEPTED			STRUCTURES

Created By	Created On	Version	Delegate For
	3/7/2017	1	

On sheet B-70 anchor bolts are specified with a length of 30". Is the intent for the bolts to be 30" or have an embedment of 30". If embedment of 30" is required, there may be areas where this may not be possible due to maximum thickness of 27-7/8" on blister area. (see Section A-A on B-71). Clarify.

3/30/2017 1

The intent is for the bolt to be 30" in total length. An embedment length of 21" was used in the calculations.

4/3/2017 1

Response Accepted & Comment Closed

No	Status	Current Holder	Reference	Categories
31	COMMENT RESOLVED		Calculations	STRUCTURES

Created By	Created On	Version	Delegate For
	5/2/2017	1	

Temporary Freyssinet hinges were introduced at the top and bottom of the south vertical post of the main span truss. A) There is no explanation within the calculations as to why hinges were introduced. B) If these hinges were introduced to avoid flexural forces during the application of PT forces and forces due to concrete creep and shrinkage then the conditions at the other end are similar, but no hinges were introduced there. C) For the main span erection model (Page 531) the provided information does not allow for a verification that these hinges were considered in the model. Please, clarify the above concerns.

5/23/2017 1

A) The temporary hinges were introduced in order to reduce the bending moments in the vertical member furthest from the pylon.
B) The vertical member located near the pylon does not require temporary hinges since the moment due to the canopy self-weight is significantly less than the moment of the other end.
C) The temporary hinges were considered in the structural model. See pages 524 and 525 of the Superstructure Calculation binder under the Slave/Master Activity sections.

Alfredo Reyna 6/13/2017 1

We take no exception to their responses
Regards,
Saul Perez, P.E.

No	Status	Current Holder	Reference	Categories
32	CO[illegible]T RESOLVED		Calculations	STRUCTURES

Created By	Created On	Version	Delegate For
	5/2/2017	1	

Checking of buckling in Canopy (Page 784). During the 90% review a comment was made indicating that global stability analysis needed to be performed to verify the stability of the canopy. Being the canopy unrestrained from moving laterally (except at the pylon support) and being the section relatively weak in torsion a lateral-torsional buckling mode may be of concern. The consultant responded that the response of the system using a linear analysis and using a large displacement theory under factored loads shows apparently not notably differences. The approach is reasonable; however, the calculations have not been included. Please provide.

5/23/2017 1

Please see attached calculations related to this comment.

Alfredo Reyna 6/13/2017 1

We take no exception to their responses
Regards,
Saul Perez, P.E.

No	Status	Current Holder	Reference	Categories
33	COMMENT RESOLVED		Calculations	STRUCTURES

Created By	Created On	Version	Delegate For
	5/2/2017	1	

South End Vertical Post – Service Limit State (Page 1124): An independent calculation using strain compatibility for the controlling load condition (P=80.3 kips and M=780.3 k-ft) indicates the stress in the rebar = 41.5 ksi and the stress in the concrete of 2.95 ksi (NA=9.867 in, Ec=4730 ksi & ec = 0.000624 in/in, fc=0.35f'c, concrete behaves in the linear range). Please verify and revise approach used for the service condition design.

5/23/2017 1

Our calculation indicates that the stress in the rebar is approximately 36 ksi (see top of page 1124). Therefore, the service stress is adequate in accordance with AASHTO LRFD Section 5.7.3.4. We have confirmed the stress in the rebar with another software (XTRACT) resulting in 35.7 ksi. Please see attached XTRACT results.

Alfredo Reyna 6/13/2017 1

We take no exception to their responses
Regards,
Saul Perez, P.E.

No	Status	Current Holder	Reference	Categories
34	COMMENT RESOLVED		Calculations	STRUCTURES

Created By	Created On	Version	Delegate For
	5/2/2017	1	

Frequency of Vibration Analysis (Pages 1366 and 1367): The report of frequencies shows that the first two modes of vibration correspond to frequencies of 0.85 Hz and 1.1 Hz which correspond to lateral cumulative mass participation factor in the lateral direction of 14.9% and 36.1% respectively. The report does not show the modal shape of the structure, but these modes may correspond to a lateral and rotational movement of the main span near the begin of the bridge. The designer has ignored these frequencies and instead has only considered the third mode of vibration with f= 1.98 Hz and a cumulative mass participation factor of 73.3 %. This third frequency has been reported and compared against the lateral frequency requirements of AASHTO (f>1.5Hz). The reviewer has concerns that the neglected first two lateral vibration modes may potentially generate local vibration and comfort issues and believes that a second look to the possible effects of these neglected modes is warranted.

5/23/2017 1

The first and second modes were ignored since the mass participation percentage was not significant. The first two modes correspond to lateral movement of the pylon. As per RFP documents, only the lateral and vertical frequencies of the deck are required to meet the natural frequency criteria. Therefore, the first significant mode was compared to the lateral frequency requirement by AASHTO code.

Alfredo Reyna 6/13/2017 1

We take no exception to their responses
Regards,
Saul Perez, P.E.

No	Status	Current Holder	Reference	Categories
35	CO[illegible] T RESOLVED		Sheet B-39	STRUCTURES

Created By	Created On	Version	Delegate For
	3/17/2017	1	

Detail 1 shows a Dayton Superior D250SCA Bar Lock Coupler at the Freysinnet hinge. The product data sheet for this coupler shows this to be a thick walled tube of 14 inches in length and consequently as specified the coupler cannot be installed in the available 16 inch space. Please reevaluate the type of coupler to be used.

3/30/2017 1

We have found that the proposed coupler length can be installed within the provided 16 inch space.

5/2/2017 1

Please provide how the coupler is to be installed and accommodate the construction sequence.

5/23/2017 1

The couplers will be installed following the manufacturer's recommendations and will be placed in the structure as described in the attached document.

Alfredo Reyna 6/13/2017 1

We take no exception to their responses
Regards,
Saul Perez, P.E.

No	Status	Current Holder	Reference	Categories
36	COMMENT RESOLVED		Sheet B-39	STRUCTURES

Created By	Created On	Version	Delegate For
	3/17/2017	1	

Detail 1 shows a Dayton Superior D250SCA Bar Lock Coupler at the Freysinnet hinge. The product data sheet for this coupler shows this to be a thick walled tube of 14 inches in length and consequently as specified the coupler cannot be installed in the available 16 inch space. Please reevaluate the type of coupler to be used.

3/30/2017 1

We have found that the proposed coupler length can be installed within the provided 16 inch space.

5/2/2017 1

Please provide how the coupler is to be installed and accommodate the construction sequence.

5/23/2017 1

The couplers will be installed following the manufacturer's recommendations and will be placed in the structure as described in the attached document.

Alfredo Reyna 6/13/2017 1

We take no exception to their responses

Regards,

Saul Perez, P.E.

INDEPENDENT PEER REVIEWER'S
CERTIFICATION LETTER

February 10, 2017

FIU / Florida International University
Facilities Construction Services
Facilities Management
11555 S.W. 17th Street CSC 251
Miami, FL 33199
[redacted]

Attn: Alberto Delgado

Reference: **Independent Peer Review Category 2 Structures**
University City Prosperity Project
Financial Project ID: 434688-1-58-01
Federal Aid Number:
Contract Number: BT-904

Submittal: **100% Bridge Superstructure Plans**
Submittal No. 3
Bridge Number(s): N/A

Dear Mr. Delgado,

Pursuant to the requirements of the Contract Documents, Louis Berger hereby certifies that an independent peer review of the above-referenced submittal has been conducted in accordance with Chapter 26 of the Plans Preparation Manual and all other governing regulations. Component plans that were included in the peer review are as follows:

100% Bridge Superstructure Plans

Outstanding / Unresolved Comments and Issues:
All comments have been resolved.

Certification Statement:
I certify that the component plans listed in this letter have been verified by independent review, that all review comments have been adequately resolved, and that the plans are in compliance with Department and FHWA requirements presented in the Contract Documents.

Please do not hesitate to contact me if you have any questions.

Name of Independent Review Firm	Louis Berger
Name of Independent Reviewer	Ayman A. Shama, Ph.D., P.E.
Title	Associate Vice President / Director of Seismic Engineering
Florida Professional Engineer Lic. No.	[redacted]
Signature:	/Ayman A. Shama, Ph.D., P.E.
Date:	February 10, 2017

AYMAN LICENSE No. 81471 STATE OF FLORIDA PROFESSIONAL ENG

PHOTOS TAKEN THE MORNING OF THE CALASPO BY ALFREDO REYNA, D6 LAP COORDINATOR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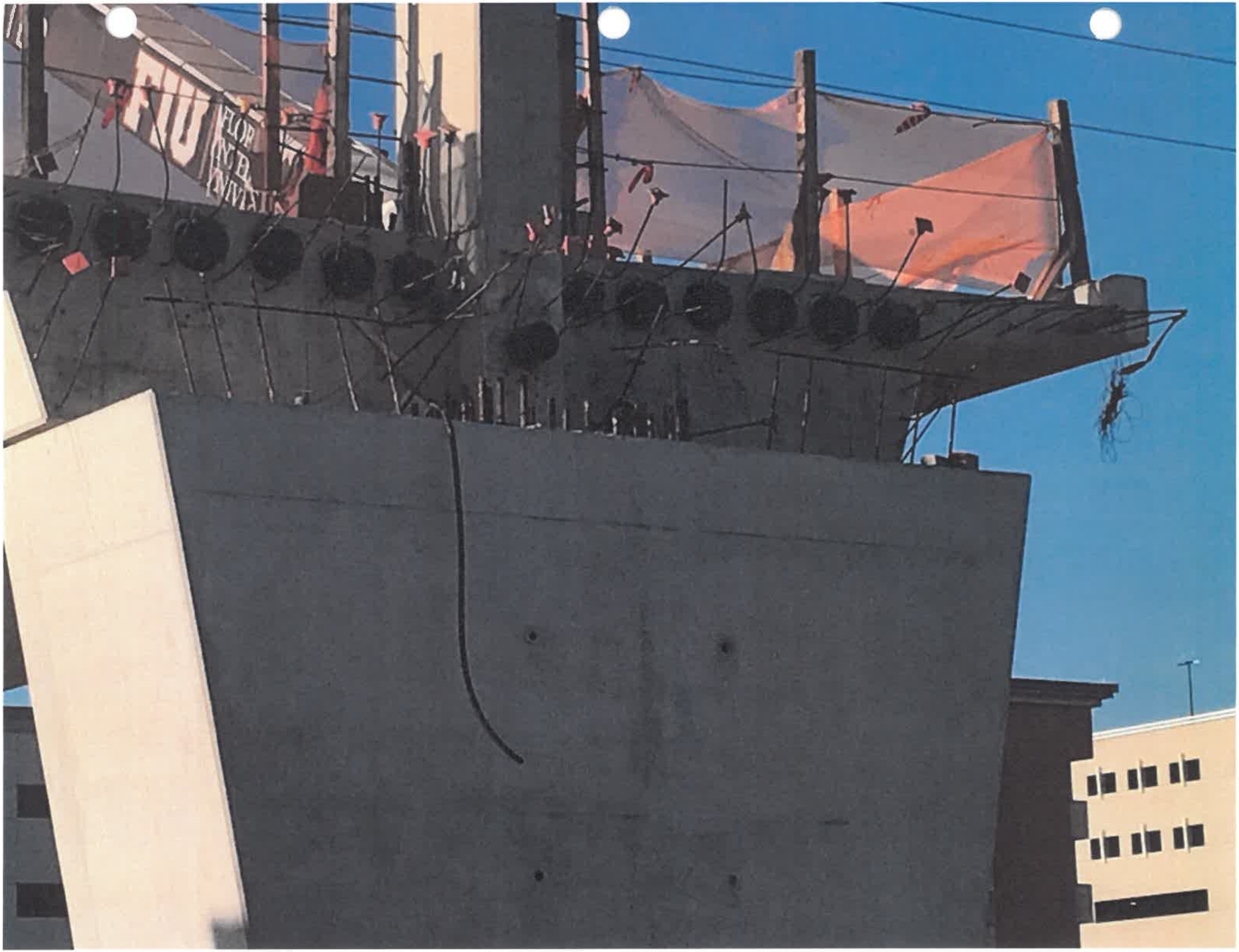
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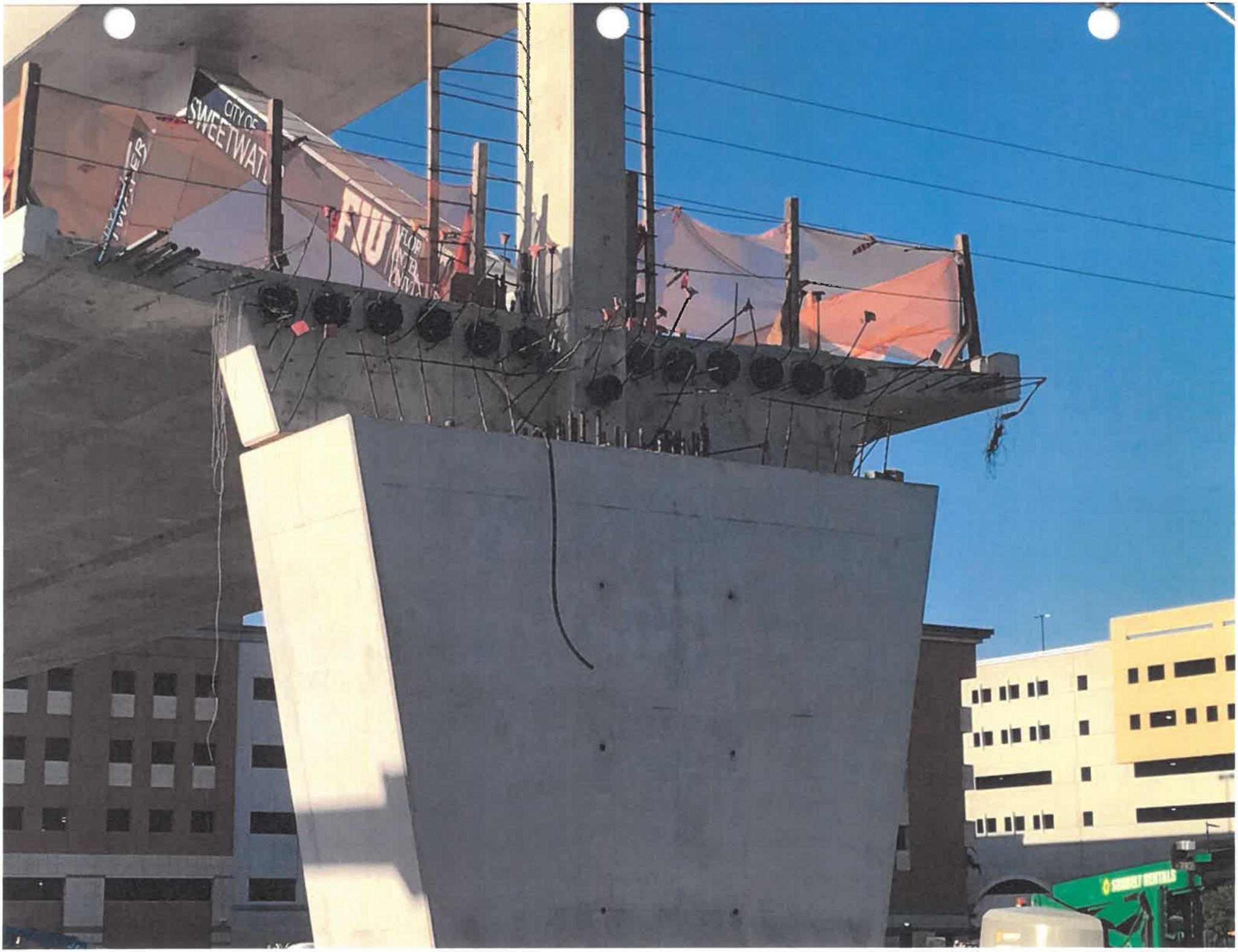
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