Static Wind Load Test

ASTM E 72-14a
Strength Test of Panels for Building Construction
Transverse Load–Horizontal Specimen

May 5, 2015

REPORT NUMBER: **HETI-15-5032**

MANUFACTURER: PROJECT CLASSIC STRUCTURAL ENGINEERING
7318 Texas Trail, Boca Raton, Florida 33487.

TEST LOCATION: Hurricane Engineering & Testing Inc.
6120 NW 97th Avenue, Doral, Florida, 33178

NOTIFICATION NUMBER: HETI14025 (MIAMI-DADE COUNTY, FLORIDA
LAB. CERTIFICATION No.: 10-1117.07 (MIAMI-DADE COUNTY, FLORIDA)
IAS. CERTIFICATION No.: TL-296 (ISO 17025-05)
FBC ORGANIZATION No: TST1691
FBPE Certificate of Authorization Number: 6905

PRODUCT: Composite Panels
(See Hurricane Engineering & Testing, Inc. marked Drawing).

PRODUCT SIZE: Test # 7: 51" wide x 256" long x 8 3/16" deep (20'-8" Span)

PRODUCT DESCRIPTION: 3500 psi Concrete Covered Steel Panel (Reference Material Tensile Test Report No. HETI-15-T303; Concrete Compression Test Report No. HETI-15-C101)

DRAWING NO.: Test #7: S4 by Project Classic Structural Engineering, dated 2/26/15

TEST WITNESSED BY: Syed Waqar Ali, Ph.D. (HETI)
Nasreen K. Ali, E.I. (HETI)
Eugenio Rivera (HETI)
Mr. Rafael E. Droz-Seda, P.E. (HETI)

ULTIMATE PRESSURE SUMMARY

Report No.	Test No.	Sample Span	Ultimate Pressure
HETI-15-5032	7	20'-8"	240 psf
HETI-15-5033	7	20'-8"	160 psf
HETI-15-5034	7	20'-8"	180 psf

20'-8" Product Description

Each sample was constructed by attaching (2) separate panel halves on top of each other to create the hexagon shaped steel frame. The panels were setup to create a 1 5/8" camber at the center. The (2) panels were attached with (4) rows of (31) #10 x ¾" Hex Head Self Drilling Screws (HH SDS) located at 1 ½", 6 5/8", 12 ¾", 19 ½", 24 1/8", 30 5/8", 37", 44 ¾", 52 ¼", 64 5/8", 75 5/8", 85", 96 1/8", 104 ½", 111 ½", 124", 132 ½", 142 ¼", 151 5/8", 162 ½", 172 ¼", 182 ¾", 193 ¼", 201 3/8", 209 ½", 216 3/8", 222 ½", 228 ¾", 235 1/8", 240 ½", and 245 5/8" from the left end. Once the samples were constructed, a layer of 0.142" thick (6" x 6" square) steel lathing the size of the sample was laid on top Once the sample was completely constructed, an average layer of 2.06" of 3500 psi concrete was poured on top of the finished single panel sample.

Individual Panel Size: 25 ½" w x 248 ½" long x 3 1/16" deep

Double Finished Panel Size: 50 3/8" w x 248 ½" long x 6 1/8" deep

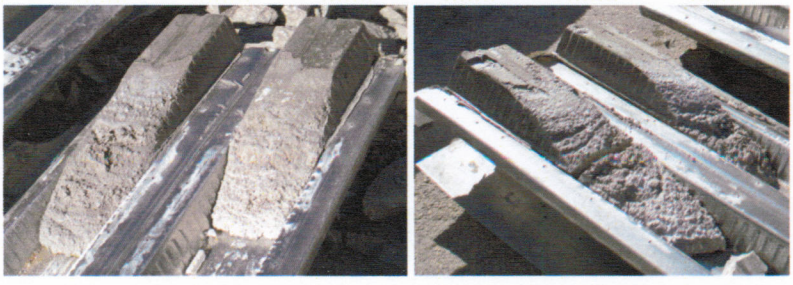
Composite Finished Panel Size: 51" w x 256" long x 8 3/16" deep

Corrugated Panel Thickness: 16ga (0.060" with coating)

Concrete: 3500 psi

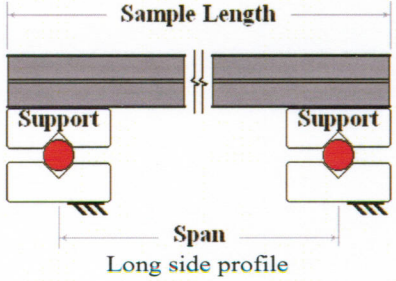
Test Procedure: Tested as per ASTM E 72 – 14a, Section 11.3.1.1

Note*: All composite panels manufactured with concrete resulted in a partial filling of the hexagonal cavity at each end of the panel. The minimum full hexagon fill is 8" and the maximum full fill of the cavity was 10". After the full fill of the cavity, the concrete tapers off to zero in 10" to 24". See photo below.



Apparatus: Uniformly distributed loading by vacuum pump acting below the specimen, a 2 mil plastic sheathing above the specimen and an airtight chamber as per section 11.3.1.3 of ASTM E 72 – 14a. The pressure was read with a water column manometer and a pressure transducer.

Supports: The samples were supported by rollers as per diagram below:



Long side profile

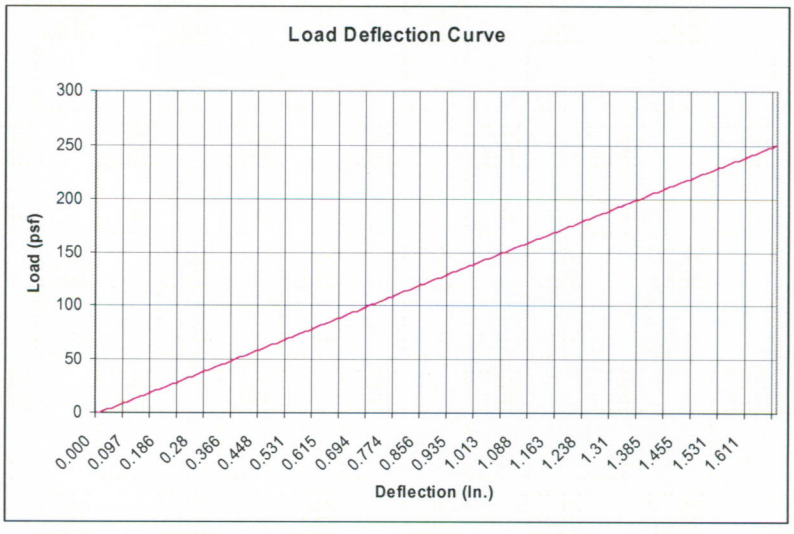
Deflection Gage: The deflection was measured using linear variable differential transformers (LVDT HETI-0172).

TEST RESULTS

Test # 7
PRODUCT SIZE: 20'-8"
(Test Date: February 26, 2015)

Sample # 1 *(Test Reference No. HETI-15-5032)*

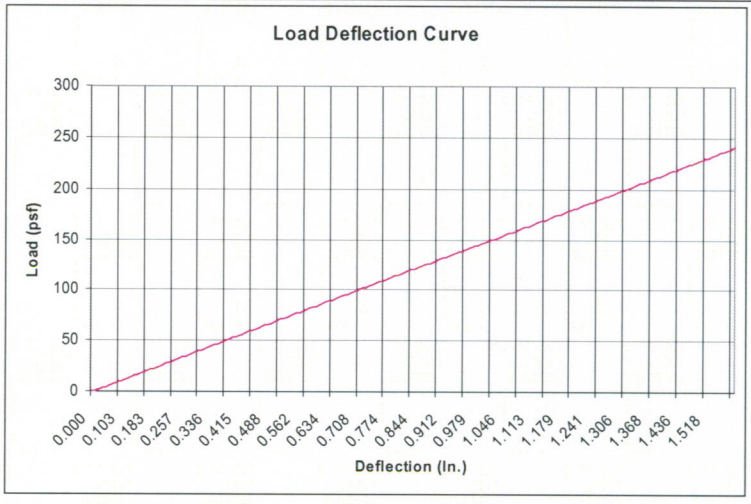
	Pressure (psf)	Deflection Location 1 (inches)	Set Loc.1	Recovery Loc. 1 (%)	Duration (seconds)
Starting Load	0.0	0.00	0.00	100	300
Load	60	0.45	0.00	100	300
Load	80	0.61	0.00	100	300
Load	100	0.71	0.00	100	300
Load	110	0.76	0.00	100	300
Load	120	0.84	0.00	100	300
Load	130	0.89	0.00	100	300
Load	140	0.96	0.00	100	300
Load	150	1.03	0.00	100	300
Load	160	1.07	0.00	100	300
Load	170	1.14	0.00	100	300
Load	180	1.21	0.00	100	300
Load	190	1.27	0.00	100	300
Load	200	1.34	0.00	100	300
Load	210	1.39	0.00	100	300
Load	220	1.50	0.01	99	300
Load	230	1.57	0.02	99	300
Load	240	1.76	0.03	98	300
Load	250	1.88	0.10	95	300
Failure Load	Failed at 270 PSF, top surface buckled at center.				



(Test Date: February 26, 2015)

Sample # 2 **(Test Reference No. HETI-15-5033)**

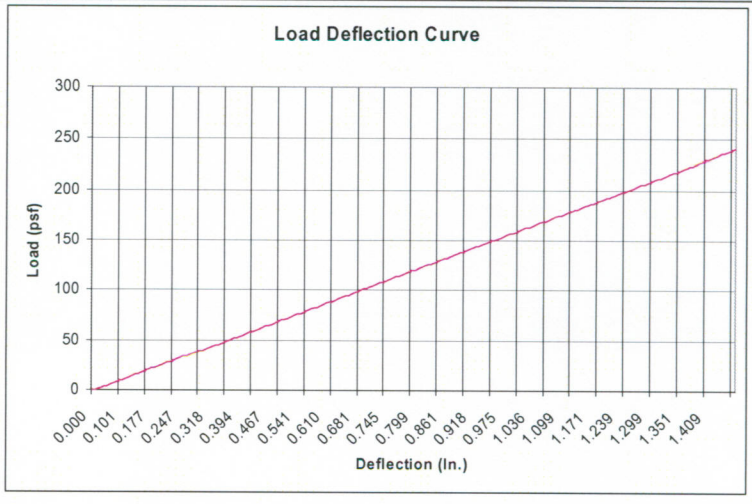
	Pressure (psf)	Deflection Location 1 (inches)	Set Loc.1	Recovery Loc. 1 (%)	Duration (seconds)
Starting Load	0.0	0.00	0.00	100	300
Load	100	0.83	0.04	95	300
Load	150	1.10	0.05	95	300
Load	200	1.52	0.12	92	300
Load	220	1.56	0.02	99	300
Load	240	1.84	0.16	91	300
Failure Load	Failed at 259 PSF, top surface buckled at center				



(Test Date: February 26, 2015)

Sample # 3 **(Test Reference No. HETI-15-5034)**

	Pressure (psf)	Deflection Location 1 (inches)	Set Loc.1	Recovery Loc. 1 (%)	Duration (seconds)
Starting Load	0.0	0.00	0.00	100	300
Load	100	0.78	0.05	94	300
Load	200	1.53	0.19	88	300
Load	220	1.49	0.05	97	300
Load	240	1.52	0.06	96	300
Failure Load	Failed at 260 PSF, top surface buckled at center				



Conclusion

The samples were structurally intact at the conclusion of this test.

NOTE: The above results were obtained using the designated test methods that indicates compliance with the performance requirements of the referenced specifications. This report does not constitute certification of the specimens tested.

STATEMENT OF INDEPENDENCE

The Hurricane Engineering & Testing, Inc., does not have, nor does it intend to acquire or will acquire, a financial interest in any company manufacturing or distributing products tested or labeled by the Hurricane Engineering & Testing, Inc. Hurricane Engineering & Testing, Inc., is not owned, operated or controlled by any company manufacturing or distributing products it test or labels.

Dr. Nasreen K. Ali
Vice President

Mr. Rafael E. Droz-Seda, P.E.
Resident Engineer

Static Wind Load Test

ASTM E 72-14a
Strength Test of Panels for Building Construction
Transverse Load–Horizontal Specimen

May 5, 2015

REPORT NUMBER: **HETI-15-5013**

MANUFACTURER: PROJECT CLASSIC STRUCTURAL ENGINEERING
7318 Texas Trail, Boca Raton, Florida 33487.

TEST LOCATION: Hurricane Engineering & Testing Inc.
6120 NW 97th Avenue, Doral, Florida, 33178

NOTIFICATION NUMBER: HETI14025 (MIAMI-DADE COUNTY, FLORIDA
LAB. CERTIFICATION No.: 10-1117.07 (MIAMI-DADE COUNTY, FLORIDA)
IAS. CERTIFICATION No.: TL-296 (ISO 17025-05)
FBC ORGANIZATION No: TST1691
FBPE Certificate of Authorization Number: 6905

PRODUCT: Composite Panels
(See Hurricane Engineering & Testing, Inc. marked Drawing).

PRODUCT SIZE: Test #8 and #16: 27" w x 292 ¼" x 8 3/16" deep (23'8" span)
Test #1 and #6: 27" w x 376 ¼" x 8 3/16" deep (30'8" span)

PRODUCT DESCRIPTION: 3500 psi Concrete Covered Steel Panel (Reference Material Tensile Test Report No. HETI-15-T303, HETI-15-T304, HETI-15-T305; Concrete Compression Test Report No. HETI-15-C101)

DRAWING NO.: **Test #8 & 16**: S5 by Project Classic Structural Engineering, dated 2/11/15
Test #1 & 6: S6 by Project Classic Structural Engineering, dated 2/12/15

TEST WITNESSED BY: Syed Waqar Ali, Ph.D. (HETI)
Nasreen K. Ali, E.I. (HETI)
Eugenio Rivera (HETI)
Mr. Rafael E. Droz-Seda, P.E. (HETI)

- Gauge Location

ULTIMATE PRESSURE SUMMARY

Report No.	Test No.	Sample Span	Ultimate Pressure
HETI-15-5013	8	23'-8"	230 psf
HETI-15-5019	16	23'-8"	240 psf
HETI-15-5020	1	23'-8"	240 psf
HETI-15-5021	6	30'-8"	130 psf

23'-8" Product Description

Each sample was constructed by attaching (2) separate panel halves on top of each other to create the hexagon shaped steel frame. The panels were setup to create a 1 7/8" camber at the center. The (2) panels were attached with (4) rows of (39) #10 x ¾" Hex Head Self Drilling Screws (HH SDS) located at 2", 6", 9 ½", 14 ¼", 20 ½", 22 3/8", 26 3/8", 32 ½", 39", 47", 55 ½", 61", 65 ¾", 74 ¼", 84 ¼", 95 ¼", 105 ¾", 114 ¾", 125", 134 ¾", 145 ¼", 155 ½", 165 ¾", 175 ½", 179", 189 ½", 199", 209", 218 ¾", 229", 238", 245 ¾", 252", 258 ¼", 264 ¼", 270", 274", 277 ½", and 282" from the left end. Next, an 18 gauge x 24 1/8" x 284 ¼" flat galvanized steel sheet was placed on the bottom of the panel and was attached using (4) rows of (37) # 10 x ¾" HH SDS located at 1 5/8", 5 ¾", 9 ¼", 12 ¾", 19 1/8", 25", 33", 41", 49 5/8", 59 3/8", 69", 78 ¼", 88 3/8", 99 1/8", 109", 118 5/8", 129", 139", 142 ½", 148 ¾", 157 ½", 167 ½", 179 ¼", 189 ¾", 200", 209", 220", 230 ¾", 239 3/8", 246 7/8", 253", 258 ¾", 265", 269 ¾", 275", 278 ¾", and 282 ½" from the left end. Once the samples were constructed, a layer of 0.142" thick (6" x 6" square) steel lathing the size of the sample was laid on top of the panel. Lastly, an average layer of 2.06" of 3500 psi concrete was poured on top of the finished single panel sample.

Individual Panel Size:	25 ½" w x 284 5/8" long x 3 1/16" deep
Single Finished Panel Size:	27" w x 284 5/8" long x 6 1/8" deep
Composite Finished Panel Size:	27" w x 292 ¼" long x 8 3/16" deep
Corrugated Panel Thickness:	18ga (0.048" with coating)
Reinforcement:	(1) 18ga (0.048"with coating) galv. steel flat sheet (24 1/8" w x 284 ¼")
Concrete:	3500 psi
Test Procedure:	Tested as per ASTM E 72 – 14a, Section 11.3.1.1

30'-8" Product Description

Each sample was constructed by attaching (2) separate panel halves on top of each other to create the hexagon shaped steel frame. The panels were setup to create a 3 ½" camber at the center. The (2) panels were attached with (4) rows of (52) #10 x ¾" Hex Head Self Drilling Screws (HH SDS) located at 2", 6 ½", 10 ½", 15", 21", 26 ¼", 32", 39", 47", 54 ½", 66", 74", 81 ¼", 88 1/8", 94", 100 ½", 106 ¾", 110 ½", 114", 118", 125", 135 ½", 145 ½", 155 ¼", 165 ¼", 174 ¾", 185 ¼", 193 ½", 198 ¼", 202 ¼", 208 ¼", 214 ¼", 220", 227 ½", 235 ¼", 243 ½", 253", 263", 273 ¼", 283 ¾", 293 3/8", 303 3/8", 314 3/8", 322 ¼", 329", 336 3/8", 342 ½", 348 ¼", 354 ¼", 358", 362 3/8", and 366 ¼" from the left end. Next, (2) 18 gauge x 24 1/8" x 368 ¼" flat galvanized steel sheets were placed on top of the panel and were attached using (4) rows of (45)

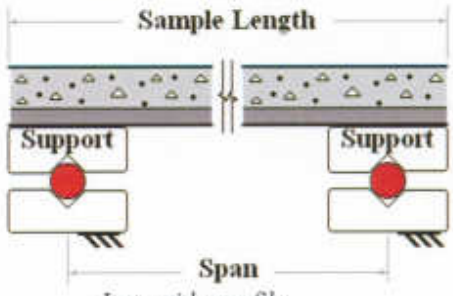
10 x ¾" HH SDS located at 2", 5 ½", 14", 21", 27", 32 ½", 40 ¼", 46 ¾", 55 ¼", 65 ½", 75 ½", 86", 95 ½", 105", 115 ½", 125 ½", 135", 145 ¼", 156", 166 ¼", 175 ½", 184 ¾", 193", 203 5/8", 214 ½", 224 ½", 234 ¼", 243", 254 ¾", 264", 274", 284 ½", 295 ¼", 303 ¼", 315 ½", 323 ½", 330 ½", 336 ½", 342 ¾", 349 ½", 355", 359", 363 ¼", and 366" from the left end. Once the samples were constructed, a layer of 0.142" thick (6" x 6" square) steel lathing the size of the sample was laid on top of the panel. Lastly, an average layer of 2.06" of 3500 concrete was poured on top of the finished single panel sample.

Individual Panel Size:	25 ½" w x 368 ½" long x 3 1/16" deep
Single Finished Panel Size:	27" w x 368 ½" long x 6 1/8" deep
Composite Finished Panel Size:	27" w x 376 ¼" long x 6 1/8" deep
Corrugated Panel Thickness:	16ga (0.048" with coating)
Reinforcement:	(2) 18ga (0.048"with coating) galv. steel flat sheet (24 1/8" w x 368 ¼")
Concrete:	3500 psi
Test Procedure:	Tested as per ASTM E 72 – 14a, Section 11.3.1.1

Note*: All composite panels manufactured with concrete resulted in a partial filling of the hexagonal cavity at each end of the panel. The minimum full hexagon fill is 8" and the maximum full fill of the cavity was 10". After the full fill of the cavity, the concrete tapers off to zero in 10" to 24". See photo below.

Apparatus: Uniformly distributed loading by vacuum pump acting below the specimen, a 2 mil plastic sheathing above the specimen and an airtight chamber as per section 11.3.1.3 of ASTM E 72 – 14a. The pressure was read with a water column manometer and a pressure transducer.

Supports: The samples were supported by rollers as per diagram below:



Long side profile

Deflection Gage: The deflection was measured using linear variable differential transformers (LVDT, HETI-0172).

TEST RESULTS

Test # 8

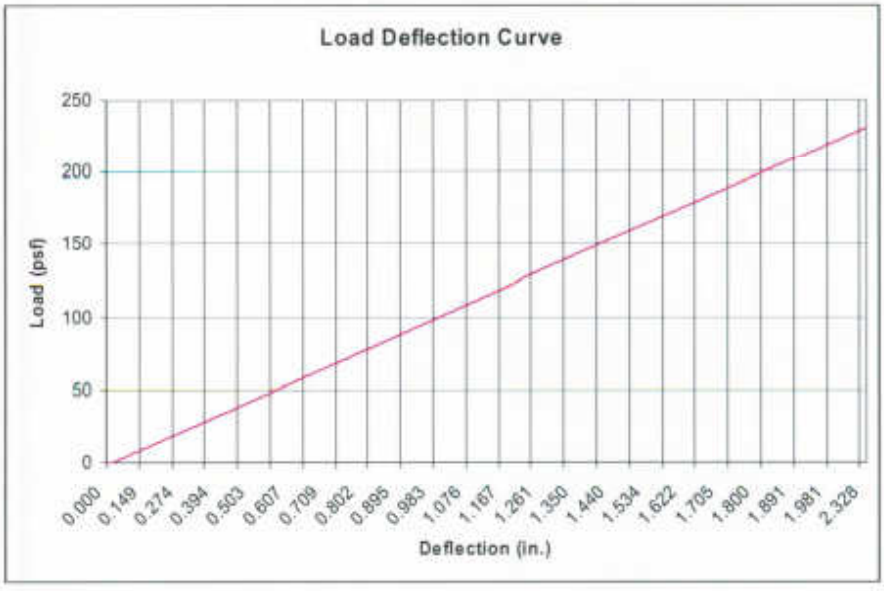
(Test Date: January 29, 2015)

Product Size: 23' 8"

Sample # 1 (Test Reference No. HETI-15-5013)

	Pressure (psf)	Deflection Location Center (inches)	Set	Recovery (%)	Duration (seconds)
Starting Load	0.0	0.00	0.00	---	---
Load	40	0.54	0.00	100	300
Load	60	0.70	0.00	100	300
Load	80	0.86	0.00	100	300
Load	100	1.03	0.00	100	300
Load	120	1.22	0.04	97	300
Load	130	1.28	0.02	98	300
Load	140	1.40	0.06	96	300
Load	150	1.41	0.01	99	300
Load	160	1.51	0.05	97	300
Load	170	1.54	0.06	96	300
Load	180	1.62	0.05	97	300
Load	190	1.72	0.06	97	300
Load	200	1.90	0.02	99	300
Load	220	2.16	0.10	95	300
Load	230	2.33	0.17	93	300
Load	240	---	---	---	---
Failure Load	Failed at 240 PSF, Longitudinal End Shear				

Note: An additional 525 lbs weight was placed at the center of the assembly during the testing.



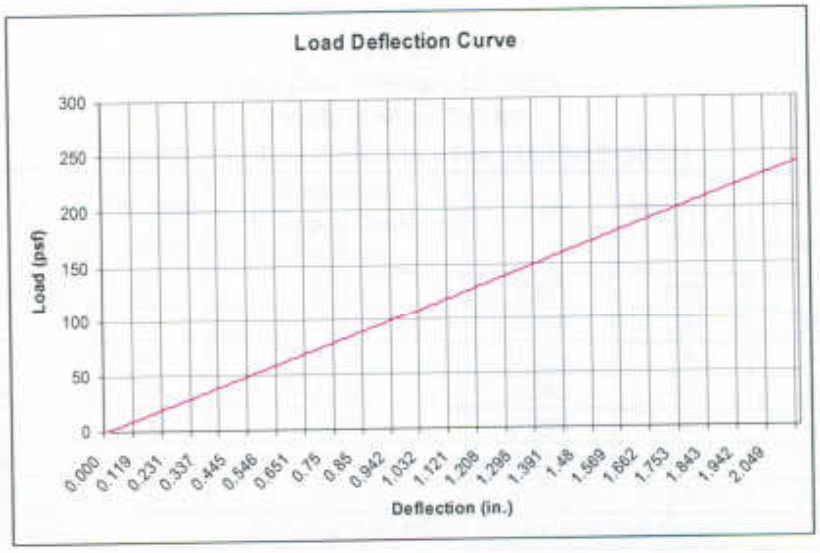
Test # 16

(Test Date: February 6, 2015)

Product Size: 23' 8"

Sample # 2 (Test Reference No. HETI-15-5019)

	Pressure (psf)	Deflection Location Center (inches)	Set	Recovery (%)	Duration (seconds)
Starting Load	0.0	0.00	0.00	100	300
Load	110	0.96	0.00	100	300
Load	160	1.54	0.16	90	300
Load	180	1.62	0.03	98	300
Load	200	1.75	0.05	97	300
Load	220	2.07	0.14	93	300
Load	230	2.29	0.18	92	300
Load	240	2.34	0.14	94	300
Failure Load	Failed at 260 PSF, Longitudinal End Shear				



Test # 1

(Test Date: February 11, 2015)

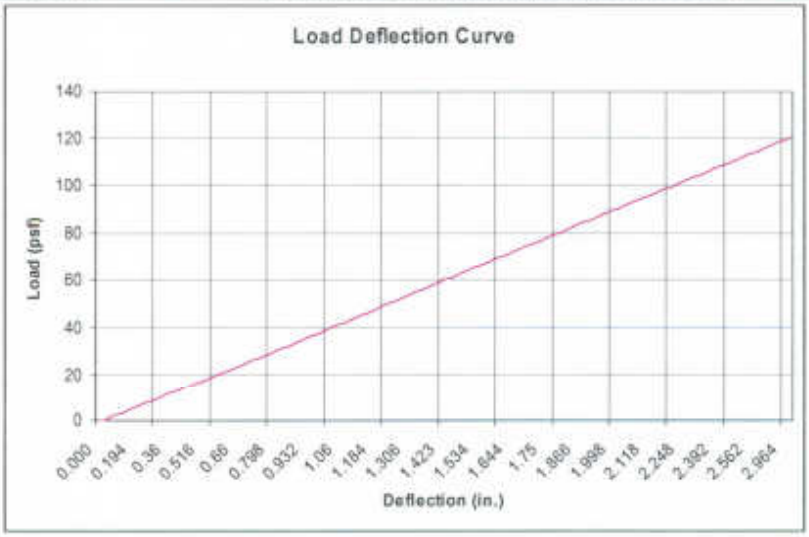
Product Size: 23' 8"

Sample # 3 (Test Reference No. HETI-15-5020)

	Pressure (psf)	Deflection Location Center (inches)	Set	Recovery (%)	Duration (seconds)
Starting Load	0.0	0.00	0.00	100	300
Load	80	0.77	0.04	95	300
Load	160	1.64	0.06	96	300
Load	180	1.56	0.07	96	300
Load	200	1.71	0.08	95	300
Load	220	1.87	0.10	95	300
Load	240	2.12	0.19	91	300
Failure Load	Failed at 260 PSF, Longitudinal End Shear				

Test # 6
(Test Date: February 13, 2015)
Product Size: 30' 8"
Sample # 2 (Test Reference No. HETI-15-5022)

	Pressure (psf)	Deflection Location Center (inches)	Set	Recovery (%)	Duration (seconds)
Starting Load	0.0	0.00	0.00	100	300
Load	40	1.09	0.00	100	300
Load	60	1.57	0.05	97	300
Load	80	1.99	0.09	95	300
Load	100	2.41	0.16	94	300
Load	120	3.04	0.36	88	300
Failure Load	Failed at 130 PSF, Longitudinal End Shear				



Conclusion

The samples were structurally intact at the conclusion of this test.

NOTE: The above results were obtained using the designated test methods that indicates compliance with the performance requirements of the referenced specifications. This report does not constitute certification of the specimens tested.

STATEMENT OF INDEPENDENCE

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Dr. Nasreen K. Ali
Vice President

Mr. Rafael E. Droz-Seda, P.E.
Resident Engineer

Static Wind Load Test

ASTM E 72-14a
Strength Test of Panels for Building Construction
Transverse Load–Horizontal Specimen

May 5, 2015

REPORT NUMBER: **HETI-15-5003**

MANUFACTURER: PROJECT CLASSIC STRUCTURAL ENGINEERING
7318 Texas Trail, Boca Raton, Florida 33487.

TEST LOCATION: Hurricane Engineering & Testing Inc.
6120 NW 97th Avenue, Doral, Florida, 33178

NOTIFICATION NUMBER: HETI14025 (MIAMI-DADE COUNTY, FLORIDA
LAB. CERTIFICATION No.: 10-1117.07 (MIAMI-DADE COUNTY, FLORIDA)
IAS. CERTIFICATION No.: TL-296 (ISO 17025-05)
FBC ORGANIZATION No: TST1691
FBPE Certificate of Authorization Number: 6905

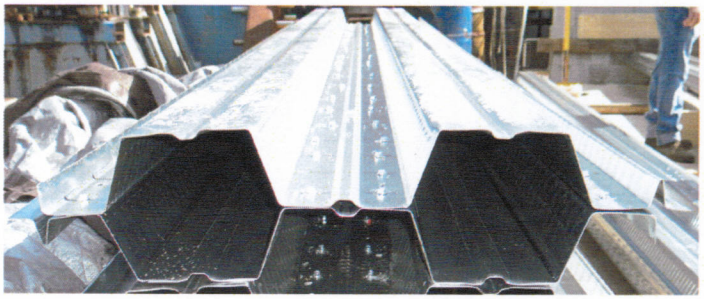
PRODUCT: Non-Composite Panels
(See Hurricane Engineering & Testing, Inc. marked Drawing).

PRODUCT SIZE: Test #1 (samples 1-3): 51 5/8" w x 248 ½" long x 6 1/8" deep (20'-8" Span)
Test #2: 51 5/8" w x 284 ½" x 6 1/8" deep (23'-8" Span)
Test #3: 51 5/8" w x 368 ½" x 6 1/8" deep (30'-8" Span)

PRODUCT DESCRIPTION: (Reference Material Tensile Test Report No. HETI-15-T303, HETI-15-T304, HETI-15-T305)

DRAWING NO.: S1 by Project Classic Structural Engineering, dated 1/12/15
S2 by Project Classic Structural Engineering, dated 1/13/15
S3 by Project Classic Structural Engineering, dated 1/14/15

TEST WITNESSED BY: Syed Waqar Ali, Ph.D. (HETI)
Nasreen K. Ali, E.I. (HETI)
Eugenio Rivera (HETI)
Mr. Rafael E. Droz-Seda, P.E. (HETI)



20'-8" Product Description

Each sample was constructed by attaching (2) separate panel halves on top of each other to create the hexagon shaped steel frame. The panels were setup to create a 1 ½" camber at the center. The (2) panels were attached with (4) rows of (31) #10 x ¾" Hex Head Self Drilling Screws (HH SDS) located at 1 ½", 6 5/8", 12 ¾", 19 ½", 24 1/8", 30 5/8", 37", 44 ¾", 52 ¼", 64 5/8", 75 5/8", 85", 96 1/8", 104 ½", 111 ½", 124", 132 ½", 142 ¼", 151 5/8", 162 ½", 172 ¼", 182 ¾", 193 ¼", 201 3/8", 209 ½", 216 3/8", 222 ½", 228 ¾", 235 1/8", 240 ½", and 245 5/8" from the left end.

Individual Panel Size:	25 ½" w x 248 ½" long x 3 1/16" deep
Single Finished Panel Size:	27" w x 248 ½" long x 6 1/8" deep
Double Finished Panel Size:	51 5/8" w x 248 ½" long x 6 1/8" deep
Corrugated Panel Thickness:	16ga (0.060" with coating)
Concrete:	None
Test Procedure:	Tested as per ASTM E 72 – 14a, Section 11.3.1.1

23'-8" Product Description

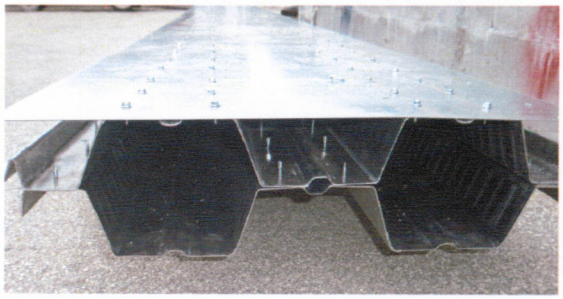
Each sample was constructed by attaching (2) separate panel halves on top of each other to create the hexagon shaped steel frame. The panels were setup to create a 1 7/8" camber at the center. The (2) panels were attached with (4) rows of (39) #10 x ¾" Hex Head Self Drilling Screws (HH SDS) located at 2", 6", 9 ½", 14 ¼", 20 ½", 22 3/8", 26 3/8", 32 ½", 39", 47", 55 ½", 61", 65 ¾", 74 ¼", 84 ¼", 95 ¼", 105 ¾", 114 ¾", 125", 134 ¾", 145 ¼", 155 ½", 165 ¾", 175 ½", 179", 189 ½", 199", 209", 218 ¾", 229", 238", 245 ¾", 252", 258 ¼", 264 ¼", 270", 274", 277 ½", and 282" from the left end. Next, an 18 gauge x 24 1/8" x 284 ¼" flat galvanized steel sheet was placed on top of the panel and was attached using (4) rows of (37) # 10 x ¾" HH SDS located at 1 5/8", 5 ¾", 9 ¼", 12 ¾", 19 1/8", 25", 33", 41", 49 5/8", 59 3/8", 69", 78 ¼", 88 3/8", 99 1/8", 109", 118 5/8", 129", 139", 142 ½", 148 ¾", 157 ½", 167 ½", 179 ¼", 189 ¾", 200", 209", 220", 230 ¾", 239 3/8", 246 7/8", 253", 258 ¾", 265", 269 ¾", 275", 278 ¾", and 282 ½" from the left end.

Individual Panel Size:	25 ½" w x 284 ½" long x 3 1/16" deep
Single Finished Panel Size:	27" w x 284 ½" long x 6 1/8" deep
Double Finished Panel Size:	51 5/8" w x 284 ½" long x 6 1/8" deep
Corrugated Panel Thickness:	18ga (0.048" with coating)
Reinforcement:	(1) 18ga (0.048" with coating) galv. steel flat sheet (24 1/8" w x 284 ¼")
Concrete:	None

30'-8" Product Description

Each sample was constructed by attaching (2) separate panel halves on top of each other to create the hexagon shaped steel frame. The panels were setup to create a 3 ½" camber at the center. The (2) panels were attached with (4) rows of (52) #10 x ¾" Hex Head Self Drilling Screws (HH SDS) located at 2", 6 ½", 10 ½", 15", 21", 26 ¼", 32", 39", 47", 54 ½", 66", 74", 81 ¼", 88 1/8", 94", 100 ½", 106 ¾", 110 ½", 114", 118", 125", 135 ½", 145 ½", 155 ¼", 165 ¼", 174 ¾", 185 ¼", 193 ½", 198 ¼", 202 ¼", 208 ¼", 214 ¼", 220", 227 ½", 235 ¼", 243 ½", 253", 263", 273 ¼", 283 ¾", 293 3/8", 303 3/8", 314 3/8", 322 ¼", 329", 336 3/8", 342 ½", 348 ¼", 354 ¼", 358", 362 3/8", and 366 ¼" from the left end. Next, (2) 18 gauge x 24 1/8" x 368 ¼" flat galvanized steel sheets were placed on top of the panel and were attached using (4) rows of (45) # 10 x ¾" HH SDS located at 2", 5 ½", 14", 21", 27", 32 ½", 40 ¼", 46 ¾", 55 ¼", 65 ½", 75 ½", 86", 95 ½", 105", 115 ½", 125 ½", 135", 145 ¼", 156", 166 ¼", 175 ½", 184 ¾", 193", 203 5/8", 214 ½", 224 ½", 234 ¼", 243", 254 ¾", 264", 274", 284 ½", 295 ¼", 303 ¼", 315 ½", 323 ½", 330 ½", 336 ½", 342 ¾", 349 ½", 355", 359", 363 ¼", and 366" from the left end.

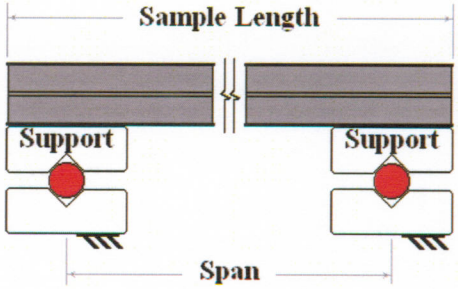
Individual Panel Size:	25 ½" w x 368 ½" long x 3 1/16" deep
Single Finished Panel Size:	27" w x 368 ½" long x 6 1/8" deep
Double Finished Panel Size:	51 5/8" w x 368 ½" long x 6 1/8" deep
Corrugated Panel Thickness:	16ga (0.048")
Reinforcement:	(2) 18ga (0.048" with coating) galv. steel flat sheet (24 1/8" w x 368 ¼")
Concrete:	None
Test Procedure:	Tested as per ASTM E 72 – 14a, Section 11.3.1.1



Sample showing connection of (1) or (2) galv. flat steel sheets to the finished single panel for 23'-8" and 30'-8" samples. (Sample was flipped over to show connection. Flat sheet is installed on bottom of sample.)

Apparatus: Uniformly distributed loading by vacuum pump acting below the specimen, a 2 mil plastic sheathing above the specimen and an airtight chamber as per section 11.3.1.3 of ASTM E 72 – 14a. The pressure was read with a water column manometer and a pressure transducer.

Supports: The samples were supported by rollers as per diagram below:



Long side profile

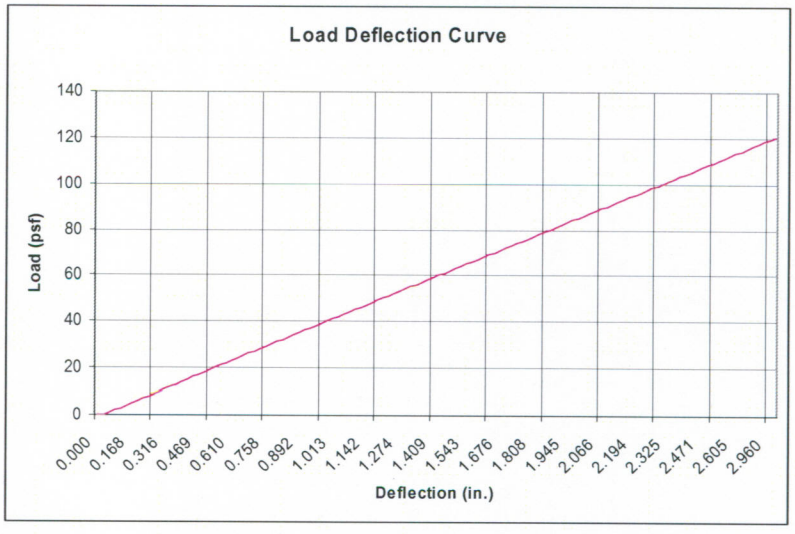
Deflection Gage: The deflection was measured using linear variable differential transformers (LVDT HETI-0172).

TEST RESULTS

Test # 1
PRODUCT SIZE: 20'-8"

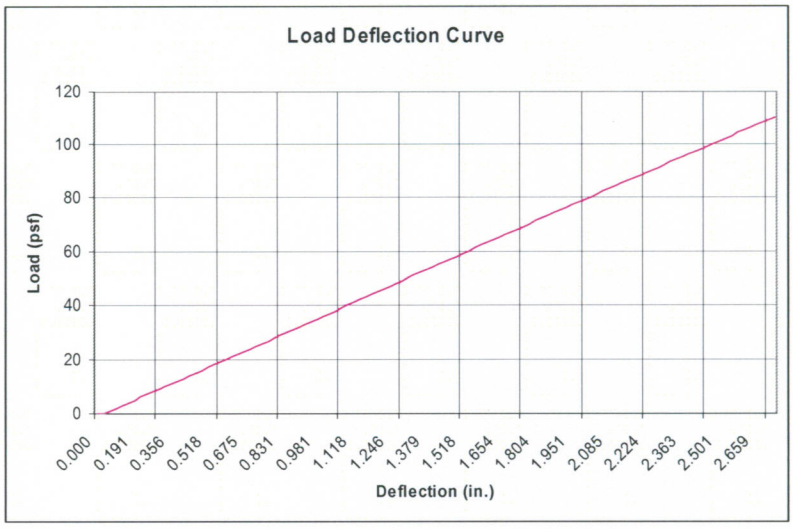
Sample # 1 **(Test Reference No. HETI-15-5003)** (Test Date: January 12, 2015)

	Pressure (psf)	Deflection Location 1 (inches)	Deflection Location 2 (inches)	Deflection Location 3 (inches)	Set Loc.1 /Loc. 2/Loc.3	Recovery Loc. 1 (%)	Duration (seconds)
Starting Load	0.0	0.00	0.00	0.00	0.000/0.000/0.000	100	300
Load	20	0.57	0.11	0.16	0.000/0.016/0.023	100	300
Load	40	1.07	0.19	0.23	0.005/0.010/0.025	99	300
Load	60	1.52	0.28	0.29	0.043/0.020/0.023	96	300
Load	80	2.03	0.36	0.34	0.097/0.029/0.024	94	300
Load	100	2.54	0.46	0.40	0.199/0.045/0.039	90	300
Load	120	2.96	0.56	0.43	0.091/0.042/0.017	96	300
Failure Load	Failed at 130 PSF, top surface buckled at center.						



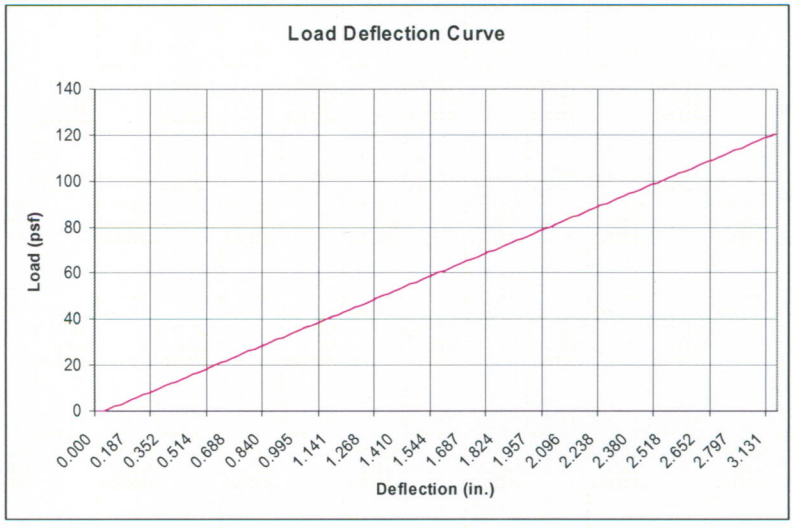
Sample # 2 **(Test Reference No. HETI-15-5003)** (Test Date: January 13, 2015)

	Pressure (psf)	Deflection Location 1 (inches)	Deflection Location 2 (inches)	Deflection Location 3 (inches)	Set Loc.1 /Loc. 2/Loc.3	Recovery Loc. 1 (%)	Duration (seconds)
Starting Load	0.0	0.00	0.00	0.00	0.00/0.00/0.00	100	300
Load	60	1.70	0.32	0.38	0.07/0.02/0.04	96	300
Load	80	2.17	0.41	0.48	0.11/0.02/0.02	95	300
Load	100	2.70	0.50	0.52	0.18/0.04/0.03	93	300
Load	110	2.83	0.55	0.57	0.10/0.04/0.03	96	300
Failure Load	Failed at 120 PSF, top surface buckled at center						



Sample # 3 **(Test Reference No HETI-15-5003)** (Test Date: January 13, 2015)

	Pressure (psf)	Deflection Location 1 (inches)	Deflection Location 2 (inches)	Deflection Location 3 (inches)	Set Loc.1 /Loc. 2/Loc.3	Recovery Loc. 1 (%)	Duration (seconds)
Starting Load	0.0	0.00	0.00	0.00	0.00/0.00/0.00	100	300
Load	60	1.82	0.37	0.20	0.08/0.04/0.03	96	300
Load	80	2.17	0.43	0.16	0.09/0.02/0.02	96	300
Load	100	2.72	0.54	0.19	0.11/0.04/0.02	96	300
Load	110	2.90	0.53	0.24	0.13/0.03/0.02	96	300
Load	120	3.13	0.57	0.43	0.16/0.04/0.03	95	300
Failure Load	Failed at 130 PSF, top surface buckled at center						

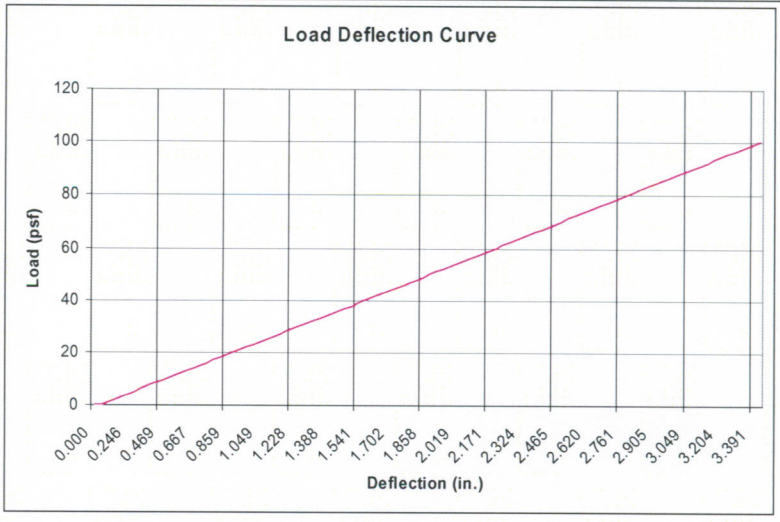


Test # 2

Product Size: 23'-8"

Sample # 1 (Test Reference No. HETI-15-5004) (Test Date: January 13, 2015)

	Pressure (psf)	Location 1 (inches)	Location 2 (inches)	Set Loc.1 /Loc. 2	Recovery Loc. 1 (%)	Duration (seconds)
Starting Load	0.0	0.00	0.00	0.000/0.000	100	300
Load	60	2.52	0.32	0.022/0.063	99	300
Load	80	2.97	0.33	0.097/0.026	97	300
Load	90	3.18	0.34	0.054/0.017	98	300
Load	100	3.49	0.36	0.059/0.012	98	300
Failure Load	Failed at 110 PSF, top surface buckled at center.					

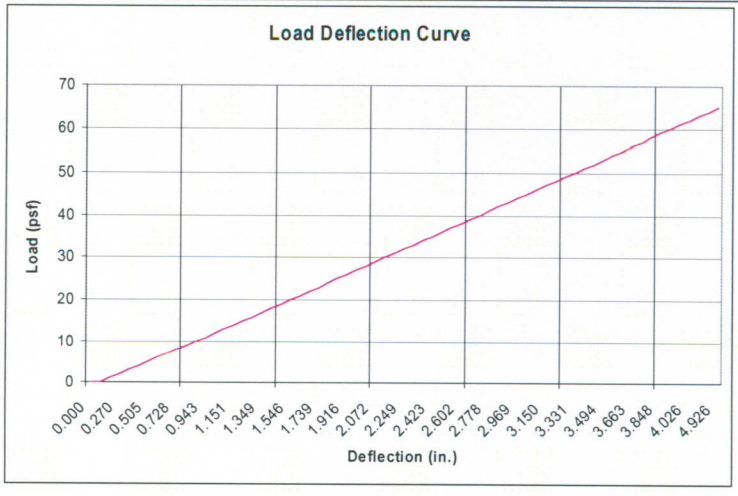


Test # 3

Product Size: 30'-0"

Sample # 1 (Test Reference No. HETI-15-5005) (Test Date: January 14, 2015)

	Pressure (psf)	Location 1 (inches)	Location 2 (inches)	Set Loc.1 /Loc. 2	Recovery Loc. 1 (%)	Duration (seconds)
Starting Load	0.0	0.00	0.00	0.000/0.000	100	300
Load	40	2.94	0.30	0.183/0.071	94	300
Load	60	4.24	0.34	0.349/0.049	92	300
Load	65	4.92	0.34	0.569/0.028	88	300
Failure Load	Failed at 70 PSF, top surface buckled at center.					



Conclusion

The samples were structurally intact at the conclusion of this test.

NOTE: The above results were obtained using the designated test methods that indicates compliance with the performance requirements of the referenced specifications. This report does not constitute certification of the specimens tested.

STATEMENT OF INDEPENDENCE

The Hurricane Engineering & Testing, Inc., does not have, nor does it intend to acquire or will acquire, a financial interest in any company manufacturing or distributing products tested or labeled by the Hurricane Engineering & Testing, Inc. Hurricane Engineering & Testing, Inc., is not owned, operated or controlled by any company manufacturing or distributing products it test or labels.

Dr. Nasreen K. Ali
Vice President

Mr. Rafael E. Droz-Seda, P.E.
Resident Engineer

Shear Test

May 5, 2015

REPORT NUMBER: **HETI-15-M500**

MANUFACTURER: PROJECT CLASSIC STRUCTURAL ENGINEERING
7318 Texas Trail, Boca Raton, Florida 33487

TEST LOCATION: Hurricane Engineering & Testing Inc.
6120 NW 97th Avenue, Doral, Florida, 33178

NOTIFICATION NUMBER: HETI14025 (MIAMI-DADE COUNTY, FLORIDA
LAB. CERTIFICATION No.: 10-1117.07 (MIAMI-DADE COUNTY, FLORIDA)
IAS. CERTIFICATION No.: TL-296 (ISO 17025-05)
FBC ORGANIZATION No: TST1691
FBPE Certificate of Authorization Number: 6905

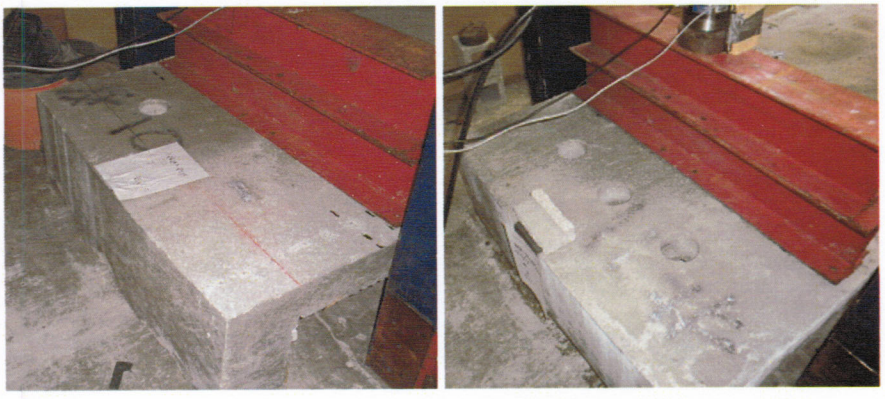
PRODUCT: Composite Panels
(See Hurricane Engineering & Testing, Inc. marked Drawing).

PRODUCT SIZE: 51" wide x 161" long x 8 3/16" deep and 14 ½" high (12'-0" Span)

PRODUCT DESCRIPTION: 3500 psi Concrete Covered Steel Panel (Reference Material Tensile Test Report No. HETI-15-T305; Concrete Compression Test Report No. HETI-15-C101)

DRAWING NO.: No Cores: S9 by Project Classic Structural Engineering, dated 1/30/15
One Core: S10 by Project Classic Structural Engineering, dated 2/6/15
Two Cores: S11 by Project Classic Structural Engineering, dated 2/12/15
Three Cores: S12 by Project Classic Structural Engineering, dated 2/13/15

TEST WITNESSED BY: Syed Waqar Ali, Ph.D. (HETI)
Nasreen K. Ali, E.I. (HETI)
Eugenio Rivera (HETI)
Mr. Rafael E. Droz-Seda, P.E. (HETI)



12'-0" Product Description

Each sample was constructed by attaching (2) separate panel halves on top of each other to create the hexagon shaped steel frame. The (2) panels were attached with (4) rows of (23) #10 x ¾" Hex Head Self Drilling Screws (HH SDS) located at 2 ¼", 6 ¼", 10 ¾", 14 ¾", 19 ¾", 26 ½", 33 ¼", 39 3/8", 47 ½", 56 ¼", 60 5/8", 68 1/8", 78 ¼", 89 1/8", 96", 105 3/8", 111", 117 1/8", 124", 129 1/8", 133 3/8", 137 7/8", and 141 ½" from the left end. Once the samples were constructed, a layer of 0.142" thick (6" x 6" square) steel lathing the size of the sample was laid on top as well as (3) #4 bent rebars 40" in length (length parallel to panel) which connected to a rebar end assembly using rebar tie wires. The rebar end assembly was comprised of (4) 24" long # 5 rebar and (3) #3 5" x 9" stirrups. The 24" rebar was tied to the inside of the (3) stirrups using rebar tie wire, which were located at the ends and center of the 24" rebar (See photo below). The rebar end assembly was laid into the bottom of a 51" wide x 8" high x 14 ½" deep form on each end. Once the sample was completely constructed, an average layer of 2.06" of 3500 psi concrete was poured on top of the finished double panel sample.

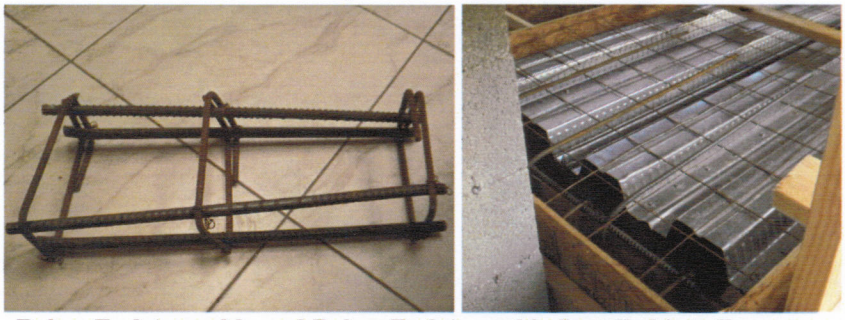
Individual Panel Size: 25 ½" w x 144" long x 3 1/16" deep

Double Finished Panel Size: 50 3/8" w x 144" long x 6 1/8" deep

Composite Finished Panel Size: 51" w x 161" long x 8 3/16" deep x 14 ½" high

Corrugated Panel Thickness: 18ga (0.048")

Concrete: 3500 psi

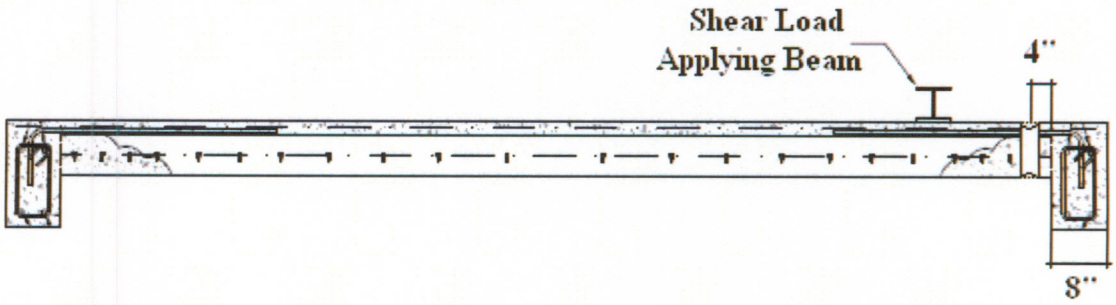


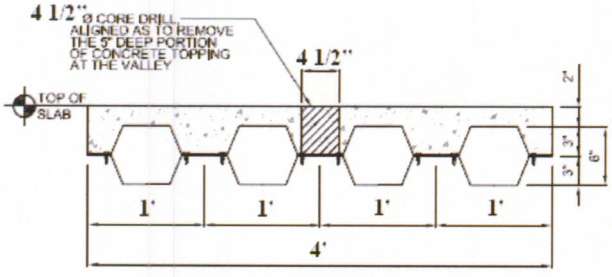
Rebar End Assembly and Rebar End Assembly Installed into Form

Note*: All composite panels manufactured with concrete resulted in a partial filling of the hexagonal cavity at each end of the panel. The minimum full hexagon fill is 8" and the maximum full fill of the cavity was 10". After the full fill of the cavity, the concrete tapers off to zero in 10" to 24". See photo below.

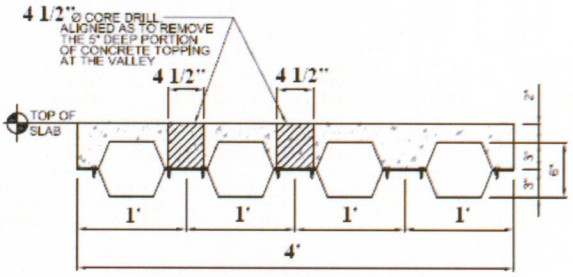
Test Procedure: 4 ½" diameter cores were removed from the samples tested below. One, two, or three cores were removed at 12" away from the edge of the sample as seen in the diagrams below. The shear load was applied by using a hydraulic pump, ram, load cell, and by using a 6 ½" x 8" I-beam the width of the sample to evenly apply the load across the sample.

Deflection Gage: The deflection was measured using linear variable differential transformers (LVDT, HETI-0172).

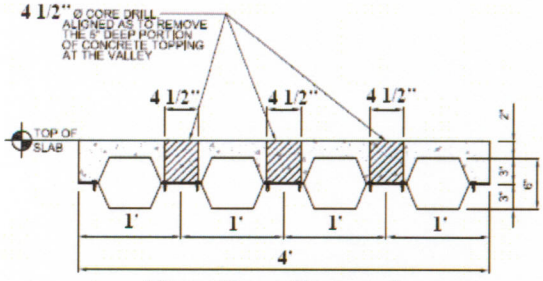




One Core Removed



Two Cores Removed



Three Cores Removed

TEST RESULTS

HETI-15-M500

(Test Date: January 30, 2015)

Composite Sample without Holes. Shear Point at 24" from end. 18 Gauge Steel.

Sample No.	Load (lbs)	Average Center Deflection (in)	Failure Mode
1	27,670	0.90	Shear induced diagonal tension cracks

HETI-15-M501

(Test Date: February 6, 2015)

Composite Sample with One Hole. Shear Point at 24" from end. 18 Gauge Steel.

Sample No.	Load (lbs)	Average Center Deflection (in)	Failure Mode
1	25,550	0.83	Shear induced diagonal tension cracks

HETI-15-M505

(Test Date: February 12, 2015)

Composite Sample without Holes. Shear Point at 24" from end. 18 Gauge Steel.

Sample No.	Load (lbs)	Average Center Deflection (in)	Failure Mode
1	22,914	0.84	Shear induced diagonal tension cracks

TEST RESULTS

HETI-15-M506

(Test Date: February 12, 2015)

Composite Sample with Two Holes. Shear Point at 24" from end. 18 Gauge Steel.

Sample No.	Load (lbs)	Average Center Deflection (in)	Failure Mode
1	20,355	0.64	Shear induced diagonal tension cracks

HETI-15-M507

(Test Date: February 13, 2015)

Composite Sample without Holes. Shear Point at 24" from end. 18 Gauge Steel.

Sample No.	Load (lbs)	Average Center Deflection (in)	Failure Mode
1	20,499	0.55	Shear induced diagonal tension cracks

HETI-15-M508

(Test Date: February 13, 2015)

Composite Sample with Three Holes. Shear Point at 24" from end. 18 Gauge Steel.

Sample No.	Load (lbs)	Average Center Deflection (in)	Failure Mode
1	22,265	0.71	Shear induced diagonal tension cracks

Conclusion

The samples were structurally intact at the conclusion of this test.

NOTE: The above results were obtained using the designated test methods that indicates compliance with the performance requirements of the referenced specifications. This report does not constitute certification of the specimens tested.

STATEMENT OF INDEPENDENCE

The Hurricane Engineering & Testing, Inc., does not have, nor does it intend to acquire or will acquire, a financial interest in any company manufacturing or distributing products tested or labeled by the Hurricane Engineering & Testing, Inc. Hurricane Engineering & Testing, Inc., is not owned, operated or controlled by any company manufacturing or distributing products it test or labels.

Dr. Nasreen K. Ali
Vice President

Mr. Rafael E. Diaz-Seda, P.E.
Resident Engineer

Shear Test

May 5, 2015

REPORT NUMBER: **HETI-15-M502**

MANUFACTURER: PROJECT CLASSIC STRUCTURAL ENGINEERING
7318 Texas Trail, Boca Raton, Florida 33487.

TEST LOCATION: Hurricane Engineering & Testing Inc.
6120 NW 97th Avenue, Doral, Florida, 33178

NOTIFICATION NUMBER: HETI14025 (MIAMI-DADE COUNTY, FLORIDA
LAB. CERTIFICATION No.: 10-1117.07 (MIAMI-DADE COUNTY, FLORIDA)
IAS. CERTIFICATION No.: TL-296 (ISO 17025-05)
FBC ORGANIZATION No: TST1691
FBPE Certificate of Authorization Number: 6905

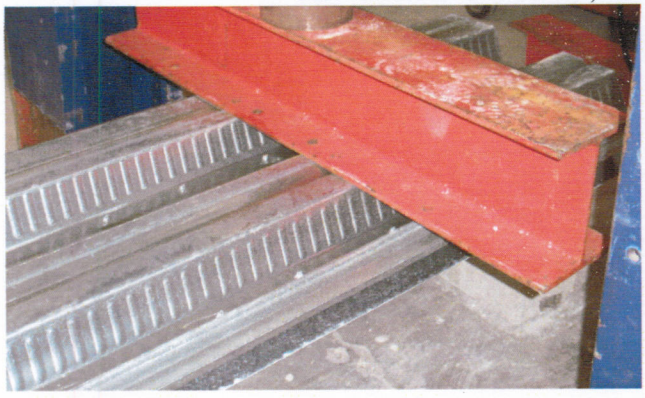
PRODUCT: Non Composite Panels
(See Hurricane Engineering & Testing, Inc. marked Drawing).

PRODUCT SIZE: 27" w x 248 ½" long x 6 1/8" deep
27" w x 284 ½" x 6 1/8" deep
27" w x 368 ½" x 6 1/8" deep

PRODUCT DESCRIPTION: Steel Panel (Reference Material Tensile Test Report No. HETI-15-T303, HETI-15-T304, HETI-15-T305)

DRAWING NO.: S7 by Project Classic Structural Engineering, dated 2/10/15
S8 by Project Classic Structural Engineering, Dated 2/9/15
S19 by Project Classic Structural Engineering, Dated 2/10/15

TEST WITNESSED BY: Syed Waqar Ali, Ph.D. (HETI)
Nasreen K. Ali, E.I. (HETI)
Eugenio Rivera (HETI)
Mr. Rafael E. Droz-Seda, P.E. (HETI)



20'-8" Product Description

Each sample was constructed by attaching (2) separate panel halves on top of each other to create the hexagon shaped steel frame. The panels were setup to create a 1 ½" camber at the center. The (2) panels were attached with (4) rows of (31) #10 x ¾" Hex Head Self Drilling Screws (HH SDS) located at 1 ½", 6 5/8", 12 ¾", 19 ½", 24 1/8", 30 5/8", 37", 44 ¾", 52 ¼", 64 5/8", 75 5/8", 85", 96 1/8", 104 ½", 111 ½", 124", 132 ½", 142 ¼", 151 5/8", 162 ½", 172 ¼", 182 ¾", 193 ¼", 201 3/8", 209 ½", 216 3/8", 222 ½", 228 ¾", 235 1/8", 240 ½", and 245 5/8" from the left end.

Individual Panel Size:	25 ½" w x 248 ½" long x 3 1/16" deep
Single Finished Panel Size:	27" w x 248 ½" long x 6 1/8" deep
Double Finished Panel Size:	51 5/8" w x 248 ½" long x 6 1/8" deep
Corrugated Panel Thickness:	16ga (0.060" with coating)
Concrete:	None

23'-8" Product Description

Each sample was constructed by attaching (2) separate panel halves on top of each other to create the hexagon shaped steel frame. The panels were setup to create a 1 7/8" camber at the center. The (2) panels were attached with (4) rows of (39) #10 x ¾" Hex Head Self Drilling Screws (HH SDS) located at 2", 6", 9 ½", 14 ¼", 20 ½", 22 3/8", 26 3/8", 32 ½", 39", 47", 55 ½", 61", 65 ¾", 74 ¼", 84 ¼", 95 ¼", 105 ¾", 114 ¾", 125", 134 ¾", 145 ¼", 155 ½", 165 ¾", 175 ½", 179", 189 ½", 199", 209", 218 ¾", 229", 238", 245 ¾", 252", 258 ¼", 264 ¼", 270", 274", 277 ½", and 282" from the left end. Next, an 18 gauge x 24 1/8" x 284 ¼" flat galvanized steel sheet was placed on top of the panel and was attached using (4) rows of (37) # 10 x ¾" HH SDS located at 1 5/8", 5 ¾", 9 ¼", 12 ¾", 19 1/8", 25", 33", 41", 49 5/8", 59 3/8", 69", 78 ¼", 88 3/8", 99 1/8", 109", 118 5/8", 129", 139", 142 ½", 148 ¾", 157 ½", 167 ½", 179 ¼", 189 ¾", 200", 209", 220", 230 ¾", 239 3/8", 246 7/8", 253", 258 ¾", 265", 269 ¾", 275", 278 ¾", and 282 ½" from the left end.

Individual Panel Size:	25 ½" w x 284 ½" long x 3 1/16" deep
Single Finished Panel Size:	27" w x 284 ½" long x 6 1/8" deep
Double Finished Panel Size:	51 5/8" w x 284 ½" long x 6 1/8" deep
Corrugated Panel Thickness:	18ga (0.048" with coating)
Reinforcement:	(1) 18ga (0.048" with coating) galv. steel flat sheet (24 1/8" w x 284 ¼")
Concrete:	None

30'-8" Product Description

Each sample was constructed by attaching (2) separate panel halves on top of each other to create the hexagon shaped steel frame. The panels were setup to create a 3 ½" camber at the center. The (2) panels were attached with (4) rows of (52) #10 x ¾" Hex Head Self Drilling Screws (HH SDS) located at 2", 6 ½", 10 ½", 15", 21", 26 ¼", 32", 39", 47", 54 ½", 66", 74", 81 ¼", 88 1/8", 94", 100 ½", 106 ¾", 110 ½", 114", 118", 125", 135 ½", 145 ½", 155 ¼", 165 ¼", 174 ¾", 185 ¼", 193 ½", 198 ¼", 202 ¼", 208 ¼", 214 ¼", 220", 227 ½", 235 ¼", 243 ½", 253", 263", 273 ¼", 283 ¾", 293 3/8", 303 3/8", 314 3/8", 322 ¼", 329", 336 3/8", 342 ½", 348 ¼", 354 ¼", 358", 362 3/8", and 366 ¼" from the left end. Next, (2) 18 gauge x 24 1/8" x 368 ¼" flat galvanized steel sheets were placed on top of the panel and were attached using (4) rows of (45) # 10 x ¾" HH SDS located at 2", 5 ½", 14", 21", 27", 32 ½", 40 ¼", 46 ¾", 55 ¼", 65 ½", 75 ½", 86", 95 ½", 105", 115 ½", 125 ½", 135", 145 ¼", 156", 166 ¼", 175 ½", 184 ¾", 193", 203

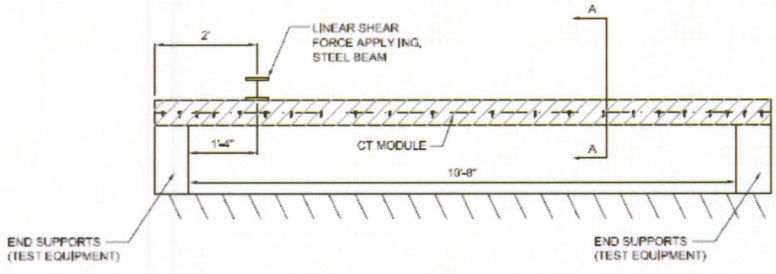
5/8", 214 ½", 224 ½", 234 ¼", 243", 254 ¾", 264", 274", 284 ½", 295 ¼", 303 ¼", 315 ½", 323 ½", 330 ½", 336 ½", 342 ¾", 349 ½", 355", 359", 363 ¼", and 366" from the left end.

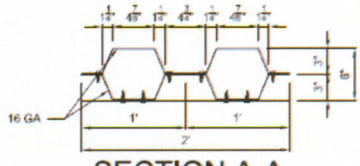
Individual Panel Size:	25 ½" w x 368 ½" long x 3 1/16" deep
Single Finished Panel Size:	27" w x 368 ½" long x 6 1/8" deep
Double Finished Panel Size:	51 5/8" w x 368 ½" long x 6 1/8" deep
Corrugated Panel Thickness:	16ga (0.048" with coating)
Reinforcement:	(2) 18ga (0.048" with coating) galv. steel flat sheet (24 1/8" w x 368 ¼")
Concrete:	None

Sample showing connection of (1) or (2) galv. flat steel sheets to the finished single panel for 23'-8" and 30'-8" samples. (Sample was flipped over to show connection. Flat sheet is installed on bottom of sample.)

Test Procedure: The shear load was applied by using a hydraulic pump, ram, load cell, and by using a 6 ½" x 8" I-beam the width of the sample to evenly apply the load across the sample.

Deflection Gage: The deflection was measured using linear variable differential transformers (LVDT, HETI-0172).





SECTION A-A

SCALE: 1" = 1'

TEST RESULTS

HETI-15-M502

(Test Date: February 9, 2015)

Non-Composite Sample without Holes. Shear Point at 24" from end. 16 Gauge Steel

Sample No.	Load (lbs)	Average Center Deflection (in)	Failure Mode
1	6,151	1.21	Local Buckling at Shear Point
2	6,392	1.14	Local Buckling at Shear Point

HETI-15-M503

(Test Date: February 10, 2015)

Non-Composite Sample without Holes. Shear Point at 24" from end.
18 Gauge Steel sample with 18 Gauge Flat support on bottom.

Sample No.	Load (lbs)	Average Center Deflection (in)	Failure Mode
1	6,938	1.25	Local Buckling at Shear Point
2	7,153	1.23	Local Buckling at Shear Point

HETI-15-M504

(Test Date: February 10, 2015)

Non-Composite Sample without Holes. Shear Point at 24" from end.
16 Gauge Steel sample with (2) 18 Gauge Flat supports on bottom.

Sample No.	Load (lbs)	Average Center Deflection (in)	Failure Mode
1	7,663	1.13	Local Buckling at Shear Point
2	8,605	1.23	Local Buckling at Shear Point

Conclusion

The samples were structurally intact at the conclusion of this test.

NOTE: The above results were obtained using the designated test methods that indicates compliance with the performance requirements of the referenced specifications. This report does not constitute certification of the specimens tested.

STATEMENT OF INDEPENDENCE

The Hurricane Engineering & Testing, Inc., does not have, nor does it intend to acquire or will acquire, a financial interest in any company manufacturing or distributing products teted or labeled by the Hurricane Engineering & Testing, Inc. Hurricane Engineering & Testing, Inc., is not owned, operated or controlled by any company manufacturing or distributing products it test or labels.

Dr. Nasreen K. Ali
Vice President

Mr. Rafael E. Diaz-Seda, P.E.
Resident Engineer

Gravity Load Test

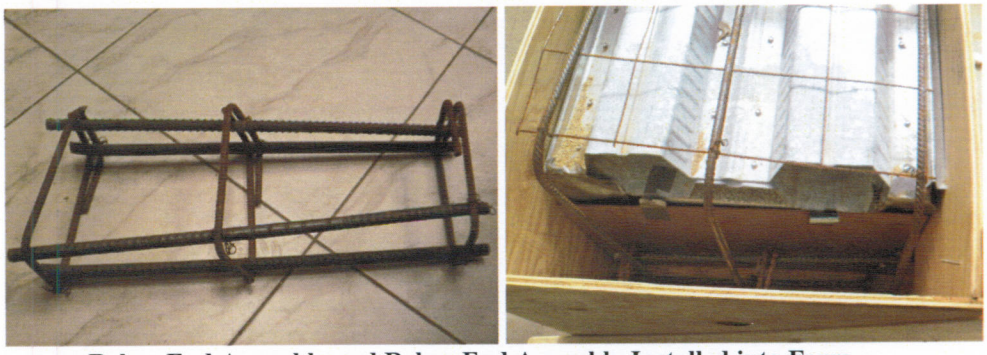
(Section 1710 of IBC and Florida Building Code)

May 5, 2015

REPORT NUMBER:	**HETI-15-5023**
MANUFACTURER:	PROJECT CLASSIC STRUCTURAL ENGINEERING 7318 Texas Trail, Boca Raton, Florida 33487.
TEST LOCATION:	Hurricane Engineering & Testing Inc. 6120 NW 97th Avenue, Doral, Florida, 33178
NOTIFICATION NUMBER:	HETI14025 (MIAMI-DADE COUNTY, FLORIDA
LAB. CERTIFICATION No.:	10-1117.07 (MIAMI-DADE COUNTY, FLORIDA)
IAS. CERTIFICATION No.:	TL-296 (ISO 17025-05)
FBC ORGANIZATION No:	TST1691
FBPE Certificate of Authorization Number: 6905	
PRODUCT:	Composite Panels *(See Hurricane Engineering & Testing, Inc. marked Drawing).*
PRODUCT SIZE:	Test # 13: 27" wide x 301 ½" long x 8 3/16" deep x 14 ½" high (23'-8" Span) Test # 14: 27" wide x 264 ¼" long x 8 3/16" deep x 14 ½" high (20'-8" Span) Test # 15: 27" wide x 384 ¼" long x 8 3/16" deep x 14 ½" high (30'-8" Span)
PRODUCT DESCRIPTION:	3500 psi Concrete Covered Steel Panel (Reference Material Tensile Test Report No. HETI-15-T303, HETI-15-T304, HETI-15-T305; Concrete Compression Test Report No. HETI-15-C101)
DRAWING NO.:	Test # 13: S14 by Project Classic Structural Engineering, dated 2/17/15 Test # 14: S13 by Project Classic Structural Engineering, dated 2/18/15 Test # 15: S15 by Project Classic Structural Engineering, dated 2/20/15
DESIGN LOADS (psf):	**+80**
TEST WITNESSED BY:	Syed Waqar Ali, Ph.D. (HETI) Nasreen K. Ali, E.I. (HETI) Eugenio Rivera (HETI) Mr. Rafael E. Droz-Seda, P.E. (HETI)

20'-8" Product Description

Each sample was constructed by attaching (2) separate panel halves on top of each other to create the steel frame. The panels were setup to create a 1 5/8" camber at the center. The (2) panels were attached with (4) rows of (31) #10 x ¾" Hex Head Self Drilling Screws (HH SDS) located at 1 ½", 6 5/8", 12 ¾", 19 ½", 24 1/8", 30 5/8", 37", 44 ¾", 52 ¼", 64 5/8", 75 5/8", 85", 96 1/8", 104 ½", 111 ½", 124", 132 ½", 142 ¼", 151 5/8", 162 ½", 172 ¼", 182 ¾", 193 ¼", 201 3/8", 209 ½", 216 3/8", 222 ½", 228 ¾", 235 1/8", 240 ½", and 245 5/8" from the left end. Once the samples were constructed, a layer of 01.42" thick (6" x 6" square) steel lathing the size of the sample was laid on top as well as (3) #4 rebars the length of the panel which connected to a rebar end assembly using rebar tie wires. The rebar end assembly was comprised of (4) 24" long # 5 rebar and (3) #3 5" x 9" stirrups. The 24" rebar was tied to the inside of the (3) stirrups using rebar tie wire, which were located at the ends and center of the 24" rebar (See photo below). The rebar end assembly was laid into the bottom of a 27" wide x 14 ½" high x 8" deep form on each end. Once the sample was completely constructed, an average layer of 2.06" of 3500 psi concrete was poured on top of the finished single panel sample.



Rebar End Assembly and Rebar End Assembly Installed into Form

Individual Panel Size:	25 ½" w x 248 ½" long x 3 1/16" deep
Single Finished Panel Size:	27" w x 248 ½" long x 6 1/8" deep
Composite Finished Panel Size:	27" w x 264 ¼" long x 8 3/16" deep x 14 ½" high
Thickness of All Panels:	16ga (0.060" with coating)
Concrete:	3500 psi
Test Procedure:	Section 1710 of IBC and Florida Building Code

23'-8" Product Description

Each sample was constructed by attaching (2) separate panel halves on top of each other to create the steel frame. The panels were setup to create a 1 5/8" camber at the center. The (2) panels were attached with (4) rows of (39) #10 x ¾" Hex Head Self Drilling Screws (HH SDS) located at 2", 6", 9 ½", 14 ¼", 20 ½", 22 3/8", 26 3/8", 32 ½", 39", 47", 55 ½", 61", 65 ¾", 74 ¼", 84 ¼", 95 ¼", 105 ¾", 114 ¾", 125", 134 ¾", 145 ¼", 155 ½", 165 ¾", 175 ½", 179", 189 ½", 199", 209", 218 ¾", 229", 238", 245 ¾", 252", 258 ¼", 264 ¼", 270", 274", 277 ½", and 282" from the left end. Next, an 18 gauge x 24 1/8" x 284 ¼" flat galvanized steel sheet was placed on top of the panel and was attached using (4) rows of (37) # 10 x ¾" HH SDS located at 1 5/8", 5 ¾", 9 ¼", 12 ¾", 19 1/8", 25", 33", 41", 49 5/8", 59 3/8", 69", 78 ¼", 88 3/8", 99 1/8", 109", 118 5/8", 129", 139", 142 ½", 148 ¾", 157 ½", 167 ½", 179 ¼", 189 ¾", 200", 209", 220", 230 ¾", 239 3/8", 246 7/8", 253", 258 ¾", 265", 269 ¾", 275", 278 ¾", and 282 ½" from the left end. Once the samples were constructed, a layer of 01.42" thick (6" x 6" square) steel lathing the size of the sample was laid on top as well as (3) #4 rebars the length of the panel which connected to a rebar end assembly using rebar tie wires. The rebar end assembly was comprised of (4) 24" long # 5 rebar and (3) #3 5" x 9" stirrups. The 24" rebar was tied to the inside of the (3) stirrups using rebar tie wire, which were located at the ends and center of the 24" rebar (as in

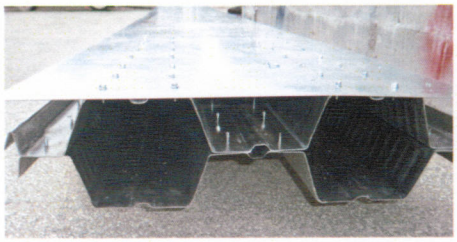
previous sample). The rebar end assembly was laid into the bottom of a 27" wide x 14 ½" high x 8" deep form on each end. Once the sample was completely constructed, an average layer of 2.06" of 3500 psi concrete was poured on top of the finished single panel sample.

Individual Panel Size:	25 ½" w x 284 ½" long x 3 1/16" deep
Single Finished Panel Size:	27" w x 284 ½" long x 6 1/8" deep
Composite Finished Panel Size:	27" w x 301 ½" long x 6 1/8" deep
Thickness of All Panels:	18ga (0.048" with coating)
Reinforcement:	(1) 18ga (0.048" with coating) galv. steel flat sheet (24 1/8" w x 284 ¼")
Concrete:	3500 psi
Test Procedure:	Section 1710 of IBC and Florida Building Code

30'-8" Product Description

Each sample was constructed by attaching (2) separate panel halves on top of each other to create the steel frame. The panels were setup to create a 1 5/8" camber at the center. The (2) panels were attached with (4) rows of (52) #10 x ¾" Hex Head Self Drilling Screws (HH SDS) located at 2", 6 ½", 10 ½", 15", 21", 26 ¼", 32", 39", 47", 54 ½", 66", 74", 81 ¼", 88 1/8", 94", 100 ½", 106 ¾", 110 ½", 114", 118", 125", 135 ½", 145 ½", 155 ¼", 165 ¼", 174 ¾", 185 ¼", 193 ½", 198 ¼", 202 ¼", 208 ¼", 214 ¼", 220", 227 ½", 235 ¼", 243 ½", 253", 263", 273 ¼", 283 ¾", 293 3/8", 303 3/8", 314 3/8", 322 ¼", 329", 336 3/8", 342 ½", 348 ¼", 354 ¼", 358", 362 3/8", and 366 ¼" from the left end. Next, (2) 18 gauge x 24 1/8" x 368 ¼" flat galvanized steel sheets were placed on top of the panel and were attached using (4) rows of (45) # 10 x ¾" HH SDS located at 2", 5 ½", 14", 21", 27", 32 ½", 40 ¼", 46 ¾", 55 ¼", 65 ½", 75 ½", 86", 95 ½", 105", 115 ½", 125 ½", 135", 145 ¼", 156", 166 ¼", 175 ½", 184 ¾", 193", 203 5/8", 214 ½", 224 ½", 234 ¼", 243", 254 ¾", 264", 274", 284 ½", 295 ¼", 303 ¼", 315 ½", 323 ½", 330 ½", 336 ½", 342 ¾", 349 ½", 355", 359", 363 ¼", and 366" from the left end. Once the samples were constructed, a layer of 01.42" thick (6" x 6" square) steel lathing the size of the sample was laid on top as well as (3) #4 rebars the length of the panel which connected to a rebar end assembly using rebar tie wires. The rebar end assembly was comprised of (4) 24" long # 5 rebar and (3) #3 5" x 9" stirrups. The 24" rebar was tied to the inside of the (3) stirrups using rebar tie wire, which were located at the ends and center of the 24" rebar (as in previous sample). The rebar end assembly was laid into the bottom of a 27" wide x 14 ½" high x 8" deep form on each end. Once the sample was completely constructed, an average layer of 2.06" of 3500 psi concrete was poured on top of the finished single panel sample.

Individual Panel Size:	25 ½" w x 368 ½" long x 3 1/16" deep
Single Finished Panel Size:	27" w x 368 ½" long x 6 1/8" deep
Composite Finished Panel Size:	27" w x 384 ¼" long x 6 1/8" deep
Thickness of All Panels:	16ga (0.048" with coating)
Reinforcement:	(2) 18ga (0.048" with coating) galv. steel flat sheet (24 1/8" w x 368 ¼")
Concrete:	3500 psi
Test Procedure:	Section 1710 of IBC and Florida Building Code



Sample showing connection of (1) or (2) galv. flat steel sheets to the finished single panel for 23'-8" and 30'-8" samples. (Sample was flipped over to show connection. Flat sheet is installed on bottom of sample.)

Note*: All composite panels manufactured with concrete resulted in a partial filling of the hexagonal cavity at each end of the panel. The minimum full hexagon fill is 8" and the maximum full fill of the cavity was 10". After the full fill of the cavity, the concrete tapers off to zero in 10" to 24". See photo below.

TEST RESULTS

HETI-15-5024 (Span: 20'-8")

Sample started on 2/17/15 3:18 P.M. Stopped on 2/18/15 at 3:18 P.M.

Sample No.	Pressure (psf)	Unloaded Deflection At Start (in)	Loaded Deflection At Start (in)	Loaded Deflection At End (in)	Unloaded Deflection At End (in)	Set (in)	Recovery (%)	Duration (hrs)
1	80	0.00	0.53	0.55	0.00	0.00	100	24

HETI-15-5023 (Span 23'-8")

Sample started on 2/16/15 2:42 P.M. Stopped on 2/17/15 at 2:42 P.M.

Sample No.	Pressure (psf)	Unloaded Deflection At Start (in)	Loaded Deflection At Start (in)	Loaded Deflection At End (in)	Unloaded Deflection At End (in)	Set (in)	Recovery (%)	Duration (hrs)
1	80	0.00	0.78	0.85	0.00	0.00	100	24

HETI-15-5025 (Span: 30'-8")

Sample started on 2/18/15 4:26 PM. Stopped on 2/19/15 at 4:26 P.M.

Sample No.	Pressure (psf)	Unloaded Deflection At Start (in)	Loaded Deflection At Start (in)	Loaded Deflection At End (in)	Unloaded Deflection At End (in)	Set (in)	Recovery (%)	Duration (hrs)
1	80	0.00	1.37	1.42	0.00	0.00	100	24

The initial and final readings were taken at the start and stop time of the test. The Deflection and set were obtained by subtracting Final Position from Initial Position, and set was obtained as the difference between Initial unloaded and final unloaded position.

Conclusion

The samples were structurally intact at the conclusion of this test. The 24 hours Gravity Load Test was performed as per Section 1710 of IBC and Florida Building Code.

NOTE: The above results were obtained using the designated test methods that indicates compliance with the performance requirements of the referenced specifications. This report does not constitute certification of the specimens tested.

STATEMENT OF INDEPENDENCE

The Hurricane Engineering & Testing, Inc., does not have, nor does it intend to acquire or will acquire, a financial interest in any company manufacturing or distributing products tested or labeled by the Hurricane Engineering & Testing, Inc. Hurricane Engineering & Testing, Inc., is not owned, operated or controlled by any company manufacturing or distributing products it test or labels.

Dr. Nasreen K. Ali
Vice President

Mr. Rafael E. Diaz-Seda, P.E.
Resident Engineer

HURRICANE ENGINEERING & TESTING INC.

ACCREDITED

ISO 17025 Accredited Computer Controlled Product Testing
Wind Load Design, Analysis & Evaluation

MIAMI-DADE COUNTY APPROVED

Tensile Test

April 6, 2015

REPORT NUMBER: **HETI-15-T303**

MANUFACTURER: PROJECT CLASSIC STRUCTURAL ENGINEERING
7318 Texas Trail, Boca Raton, Florida 33487.

TEST LOCATION: Hurricane Engineering & Testing Inc.
6120 NW 97th Avenue, Doral, Florida, 33178

NOTIFICATION NUMBER: HETI14025 (MIAMI-DADE COUNTY, FLORIDA
LAB. CERTIFICATION No.: 10-1117.07 (MIAMI-DADE COUNTY, FLORIDA)
IAS. CERTIFICATION No.: TL-296 (ISO 17025-05)
FBC ORGANIZATION No: TST1691
FBPE Certificate of Authorization Number: 6905

PRODUCT: 16 Gauge Corrugated Galvanized Steel
MATERIAL: Corrugated Galvanized Steel with a 0.0599" Nominal Thickness
TENSILE TEST EQUIP.: Universal Testing Machine CMT5105 HETI-0887.
COMMENT: Tested as per ASTM E 8-13a

Test Results

Sample (No)	Width (inches)	Thickness (inches)	Area (in^2)	Ultimate Load (lbs)	Ultimate Stress (psi)	Yield Stress (psi)	Elongation (%)
1	0.5110	0.0583	0.0297913	1846.89	61994	48000	50.78
2	0.5110	0.0583	0.0297913	1829.45	61409	47500	49.57
3	0.5110	0.0583	0.0297913	1824.63	61247	47000	46.19
4	0.5110	0.0583	0.0297913	1819.15	61063	46500	51.06
5	0.5110	0.0583	0.0297913	1843.57	61883	45500	51.96
Average				**1833**	**61500**	**47000**	**50**

Galvanizing coat thickness of 0.0016" was subtracted from the total thickness.

STATEMENT OF INDEPENDENCE

The Hurricane Engineering & Testing, Inc., does not have, nor does it intend to acquire or will acquire, a financial interest in any company manufacturing or distributing products tested or labeled by the Hurricane Engineering & Testing, Inc. Hurricane Engineering & Testing, Inc., is not owned, operated or controlled by any company manufacturing or distributing products it test or labels.

Dr. Nasreen K. Ali
Vice President

Mr. Rafael E. Diaz-Seda, P.E.
Resident Engineer

HURRICANE ENGINEERING & TESTING INC.

ACCREDITED

ISO 17025 Accredited Computer Controlled Product Testing
Wind Load Design, Analysis & Evaluation

MIAMI-DADE COUNTY APPROVED

Tensile Test

April 6, 2015

REPORT NUMBER: **HETI-15-T305**

MANUFACTURER: PROJECT CLASSIC STRUCTURAL ENGINEERING
7318 Texas Trail, Boca Raton, Florida 33487.

TEST LOCATION: Hurricane Engineering & Testing Inc.
6120 NW 97th Avenue, Doral, Florida, 33178

NOTIFICATION NUMBER: HETI14025 (MIAMI-DADE COUNTY, FLORIDA
LAB. CERTIFICATION No.: 10-1117.07 (MIAMI-DADE COUNTY, FLORIDA)
IAS. CERTIFICATION No.: TL-296 (ISO 17025-05)
FBC ORGANIZATION No: TST1691
FBPE Certificate of Authorization Number: 6905

PRODUCT: 18 Gage Corrugated Galvanized Steel.
MATERIAL: Corrugated Galvanized Steel with a 0.04768" Nominal Thickness
TENSILE TEST EQUIP.: Universal Testing Machine CMT5105 HETI-0887.
COMMENT: Tested as per ASTM E 8-13a

Test Results

Sample (No)	Width (inches)	Thickness (inches)	Area (in^2)	Ultimate Load (lbs)	Ultimate Stress (psi)	Yield Stress (psi)	Elongation (%)
1	0.511	0.0458	0.0234038	1583.31	67652	59500	36.58
2	0.511	0.0458	0.0234038	1585.11	67729	59500	36.96
3	0.511	0.0458	0.0234038	1594.92	68148	59000	38.62
4	0.511	0.0458	0.0234038	1587.20	67818	59500	38.44
5	0.511	0.0458	0.0234038	1601.76	68440	61500	41.64
Average				**1590**	**68000**	**60000**	**38.45**

Galvanizing coat thickness of 0.001885" was subtracted from the total thickness.

STATEMENT OF INDEPENDENCE

The Hurricane Engineering & Testing, Inc., does not have, nor does it intend to acquire or will acquire, a financial interest in any company manufacturing or distributing products tested or labeled by the Hurricane Engineering & Testing, Inc. Hurricane Engineering & Testing, Inc., is not owned, operated or controlled by any company manufacturing or distributing products it test or labels.

Dr. Nasreen K. Ali
Vice President

Mr. Rafael E. Diaz-Seda, P.E.
Resident Engineer

HURRICANE ENGINEERING & TESTING INC.

ACCREDITED

ISO 17025 Accredited Computer Controlled Product Testing
Wind Load Design, Analysis & Evaluation

MIAMI-DADE COUNTY APPROVED

Tensile Test

April 6, 2015

REPORT NUMBER: **HETI-15-T304**

MANUFACTURER: PROJECT CLASSIC STRUCTURAL ENGINEERING
7318 Texas Trail, Boca Raton, Florida 33487.

TEST LOCATION: Hurricane Engineering & Testing Inc.
6120 NW 97th Avenue, Doral, Florida, 33178

NOTIFICATION NUMBER: HETI14025 (MIAMI-DADE COUNTY, FLORIDA
LAB. CERTIFICATION No.: 10-1117.07 (MIAMI-DADE COUNTY, FLORIDA)
IAS. CERTIFICATION No.: TL-296 (ISO 17025-05)
FBC ORGANIZATION No: TST1691
FBPE Certificate of Authorization Number: 6905

PRODUCT: 18 Gage Flat Galvanized Steel.
MATERIAL: Flat Galvanized Steel with a 0.0477" Nominal Thickness
TENSILE TEST EQUIP.: Universal Testing Machine CMT5105 HETI-0887.
COMMENT: Tested as per ASTM E 8-13a

Test Results

Sample (No)	Width (inches)	Thickness (inches)	Area (in^2)	Ultimate Load (lbs)	Ultimate Stress (psi)	Yield Stress (psi)	Elongation (%)
1	0.5110	0.0461	0.0235571	1616.03	68601	60500	41.38
2	0.5110	0.0461	0.0235571	1611.06	68389	59000	41.95
3	0.5110	0.0461	0.0235571	1620.21	68778	59500	41.01
4	0.5110	0.0461	0.0235571	1618.62	68710	60500	42.08
5	0.5110	0.0461	0.0235571	1618.33	68698	59000	44.30
Average				**1617**	**68600**	**59500**	**42.14**

Galvanizing coat thickness of 0.0016" was subtracted from the total thickness.

STATEMENT OF INDEPENDENCE

The Hurricane Engineering & Testing, Inc., does not have, nor does it intend to acquire or will acquire, a financial interest in any company manufacturing or distributing products tested or labeled by the Hurricane Engineering & Testing, Inc. Hurricane Engineering & Testing, Inc., is not owned, operated or controlled by any company manufacturing or distributing products it test or labels.

Dr. Nasreen K. Ali
Vice President

Mr. Rafael E. Diaz-Seda, P.E.
Resident Engineer

Uplift Load Test

May 5, 2015

REPORT NUMBER: **HETI-15-5028**

MANUFACTURER: PROJECT CLASSIC STRUCTURAL ENGINEERING
7318 Texas Trail, Boca Raton, Florida 33487

TEST LOCATION: Hurricane Engineering & Testing Inc.
6120 NW 97th Avenue, Doral, Florida, 33178

NOTIFICATION NUMBER: HETI14025 (MIAMI-DADE COUNTY, FLORIDA
LAB. CERTIFICATION No.: 10-1117.07 (MIAMI-DADE COUNTY, FLORIDA)
IAS. CERTIFICATION No.: TL-296 (ISO 17025-05)
FBC ORGANIZATION No: TST1691
FBPE Certificate of Authorization Number: 6905

PRODUCT: Composite Panels
(See Hurricane Engineering & Testing, Inc. marked Drawing).

PRODUCT SIZE:
Test # 13: 27" wide x 301 ½" long x 8 3/16" deep x 14 ½" high (23'-8" Span)
Test # 14: 27" wide x 264 ¼" long x 8 3/16" deep x 14 ½" high (20'-8" Span)
Test # 15: 27" wide x 384 ¼" long x 8 3/16" deep x 14 ½" high (30'-8" Span)

PRODUCT DESCRIPTION: 3500 psi Concrete Covered Steel Panel (Reference Material Tensile Test Report No. HETI-15-T303, HETI-15-T304, HETI-15-T305; Concrete Compression Test Report No. HETI-15-C101)

DRAWING NO.:
Test # 13: S21 by Project Classic Structural Engineering, dated 2/24/15
Test # 14: S20 by Project Classic Structural Engineering, dated 2/23/15
Test # 15: S22 by Project Classic Structural Engineering, dated 2/23/15

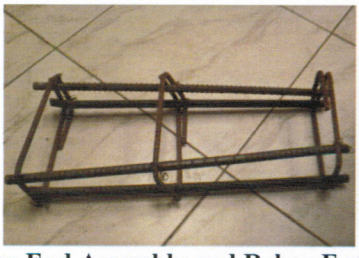
TEST WITNESSED BY:
Syed Waqar Ali, Ph.D. (HETI)
Nasreen K. Ali, E.I. (HETI)
Eugenio Rivera (HETI)
Mr. Rafael E. Droz-Seda, P.E. (HETI)

ULTIMATE PRESSURE SUMMARY

Report No.	Test No.	Sample Span	Ultimate Pressure
HETI-15-5028	13	23'-8"	240 psf
HETI-15-5027	14	20'-8"	160 psf
HETI-15-5030	15	30'-8"	180 psf

20'-8" Product Description

Each sample was constructed by attaching (2) separate panel halves on top of each other to create the hexagon shaped steel frame. The panels were setup to create a 1 ½" camber at the center. The (2) panels were attached with (4) rows of (31) #10 x ¾" Hex Head Self Drilling Screws (HH SDS) located at 1 ½", 6 5/8", 12 ¾", 19 ½", 24 1/8", 30 5/8", 37", 44 ¾", 52 ¼", 64 5/8", 75 5/8", 85", 96 1/8", 104 ½", 111 ½", 124", 132 ½", 142 ¼", 151 5/8", 162 ½", 172 ¼", 182 ¾", 193 ¼", 201 3/8", 209 ½", 216 3/8", 222 ½", 228 ¾", 235 1/8", 240 ½", and 245 5/8" from the left end. Once the samples were constructed, a layer of 0.142" thick (6" x 6" square) steel lathing the size of the sample was laid on top as well as (3) #4 rebars the length of the panel which connected to a rebar end assembly using rebar tie wires. The rebar end assembly was comprised of (4) 24" long # 5 rebar and (3) #3 5" x 9" stirrups. The 24" rebar was tied to the inside of the (3) stirrups using rebar tie wire, which were located at the ends and center of the 24" rebar (See photo below). The rebar end assembly was laid into the bottom of a 27" wide x 14 ½" high x 8" deep form on each end. Once the sample was completely constructed, an average layer of 2.06" of 3500 psi concrete was poured on top of the finished single panel sample.




Rebar End Assembly and Rebar End Assembly Installed into Form

Individual Panel Size:	25 ½" w x 248 ½" long x 3 1/16" deep
Single Finished Panel Size:	27" w x 248 ½" long x 6 1/8" deep
Composite Finished Panel Size:	27" w x 264 ¼" long x 8 3/16" deep x 14 ½" high
Corrugated Panel Thickness:	16ga (0.060" with coating)
Concrete:	3500 psi

23'-8" Product Description

Each sample was constructed by attaching (2) separate panel halves on top of each other to create the hexagon shaped steel frame. The panels were setup to create a 1 7/8" camber at the center. The (2) panels were attached with (4) rows of (39) #10 x ¾" Hex Head Self Drilling Screws (HH SDS) located at 2", 6", 9 ½", 14 ¼", 20 ½", 22 3/8", 26 3/8", 32 ½", 39", 47", 55 ½", 61", 65 ¾", 74 ¼", 84 ¼", 95 ¼", 105 ¾", 114 ¾", 125", 134 ¾", 145 ¼", 155 ½", 165 ¾", 175 ½", 179", 189 ½", 199", 209", 218 ¾", 229", 238", 245 ¾", 252", 258 ¼", 264 ¼", 270", 274", 277 ½", and 282" from the left end. Next, an 18 gauge x 24 1/8" x 284 ¼" flat galvanized steel sheet was placed on top of the panel and was attached using (4) rows of (37) # 10 x ¾" HH SDS located at 1 5/8", 5 ¾", 9 ¼", 12 ¾", 19 1/8", 25", 33", 41", 49 5/8", 59 3/8", 69", 78 ¼", 88 3/8", 99 1/8", 109", 118 5/8", 129", 139", 142 ½", 148 ¾", 157 ½", 167 ½", 179 ¼", 189 ¾", 200", 209", 220", 230 ¾", 239 3/8", 246 7/8", 253", 258 ¾", 265", 269 ¾", 275", 278 ¾", and

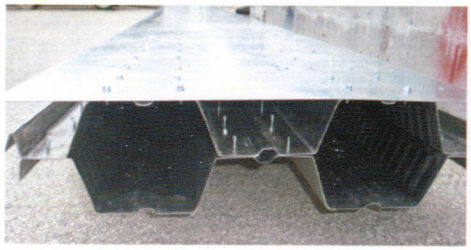
282 ½" from the left end. Once the samples were constructed, a layer of 0.142" thick (6" x 6" square) steel lathing the size of the sample was laid on top as well as (3) #4 rebars the length of the panel which connected to a rebar end assembly using rebar tie wires. The rebar end assembly was comprised of (4) 24" long # 5 rebar and (3) #3 5" x 9" stirrups. The 24" rebar was tied to the inside of the (3) stirrups using rebar tie wire, which were located at the ends and center of the 24" rebar (as in previous sample). The rebar end assembly was laid into the bottom of a 27" wide x 14 ½" high x 8" deep form on each end. Once the sample was completely constructed, an average layer of 2.06" of 3500 psi concrete was poured on top of the finished single panel sample.

Individual Panel Size:	25 ½" w x 284 ½" long x 3 1/16" deep
Single Finished Panel Size:	27" w x 284 ½" long x 6 1/8" deep
Composite Finished Panel Size:	27" w x 301 ½" long x 6 1/8" deep
Corrugated Panel Thickness:	18ga (0.048" with coating)
Reinforcement:	(1) 18ga (0.048"with coating) galv. steel flat sheet (24 1/8" w x 284 ¼")
Concrete:	3500 psi

30'-8" Product Description

Each sample was constructed by attaching (2) separate panel halves on top of each other to create the hexagon shaped steel frame. The panels were setup to create a 3 ½" camber at the center. The (2) panels were attached with (4) rows of (52) #10 x ¾" Hex Head Self Drilling Screws (HH SDS) located at 2", 6 ½", 10 ½", 15", 21", 26 ¼", 32", 39", 47", 54 ½", 66", 74", 81 ¼", 88 1/8", 94", 100 ½", 106 ¾", 110 ½", 114", 118", 125", 135 ½", 145 ½", 155 ¼", 165 ¼", 174 ¾", 185 ¼", 193 ½", 198 ¼", 202 ¼", 208 ¼", 214 ¼", 220", 227 ½", 235 ¼", 243 ½", 253", 263", 273 ¼", 283 ¾", 293 3/8", 303 3/8", 314 3/8", 322 ¼", 329", 336 3/8", 342 ½", 348 ¼", 354 ¼", 358", 362 3/8", and 366 ¼" from the left end. Next, (2) 18 gauge x 24 1/8" x 368 ¼" flat galvanized steel sheets were placed on top of the panel and were attached using (4) rows of (45) # 10 x ¾" HH SDS located at 2", 5 ½", 14", 21", 27", 32 ½", 40 ¼", 46 ¾", 55 ¼", 65 ½", 75 ½", 86", 95 ½", 105", 115 ½", 125 ½", 135", 145 ¼", 156", 166 ¼", 175 ½", 184 ¾", 193", 203 5/8", 214 ½", 224 ½", 234 ¼", 243", 254 ¾", 264", 274", 284 ½", 295 ¼", 303 ¼", 315 ½", 323 ½", 330 ½", 336 ½", 342 ¾", 349 ½", 355", 359", 363 ¼", and 366" from the left end. Once the samples were constructed, a layer of 0.142" thick (6" x 6" square) steel lathing the size of the sample was laid on top as well as (6) #4 rebars the length of the panel which connected to a rebar end assembly using rebar tie wires. The rebar end assembly was comprised of (4) 24" long # 5 rebar and (3) #3 5" x 9" stirrups. The 24" rebar was tied to the inside of the (3) stirrups using rebar tie wire, which were located at the ends and center of the 24" rebar (as in previous sample). The rebar end assembly was laid into the bottom of a 27" wide x 14 ½" high x 8" deep form on each end. Once the sample was completely constructed, an average layer of 2.06" of 3500 psi concrete was poured on top of the finished single panel sample.

Individual Panel Size:	25 ½" w x 368 ½" long x 3 1/16" deep
Single Finished Panel Size:	27" w x 368 ½" long x 6 1/8" deep
Composite Finished Panel Size:	27" w x 384 ¼" long x 6 1/8" deep
Corrugated Panel Thickness:	16ga (0.048" with coating)
Reinforcement:	(2) 18ga (0.048" with coating) galv. steel flat sheet (24 1/8" w x 368 ¼")
Concrete:	3500 psi



Sample showing connection of (1) or (2) galv. flat steel sheets to the finished single panel for 23'-8" and 30'-8" samples. (Sample was flipped over to show connection. Flat sheet is installed on bottom of sample.)

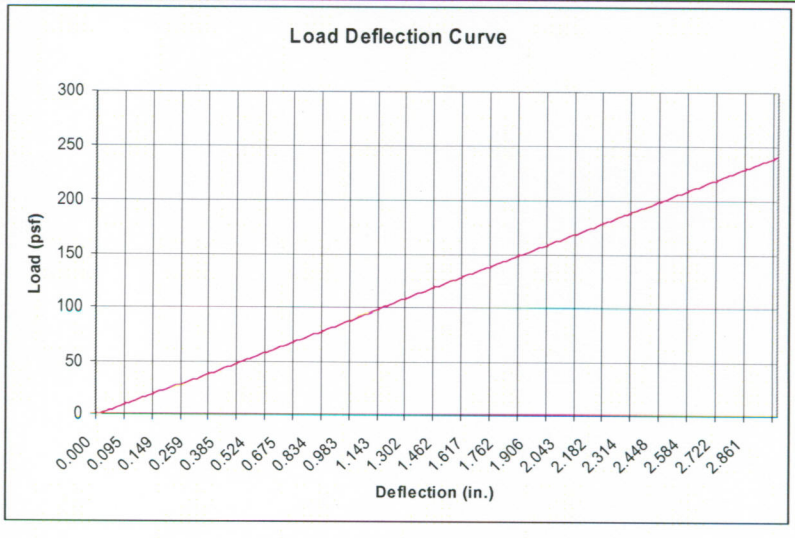
Note*: All composite panels manufactured with concrete resulted in a partial filling of the hexagonal cavity at each end of the panel. The minimum full hexagon fill is 8" and the maximum full fill of the cavity was 10". After the full fill of the cavity, the concrete tapers off to zero in 10" to 24". See photo below.

TEST RESULTS

(Test Reference No. HETI-15-5028) (20'8")

(Test Date: February 24, 2015)

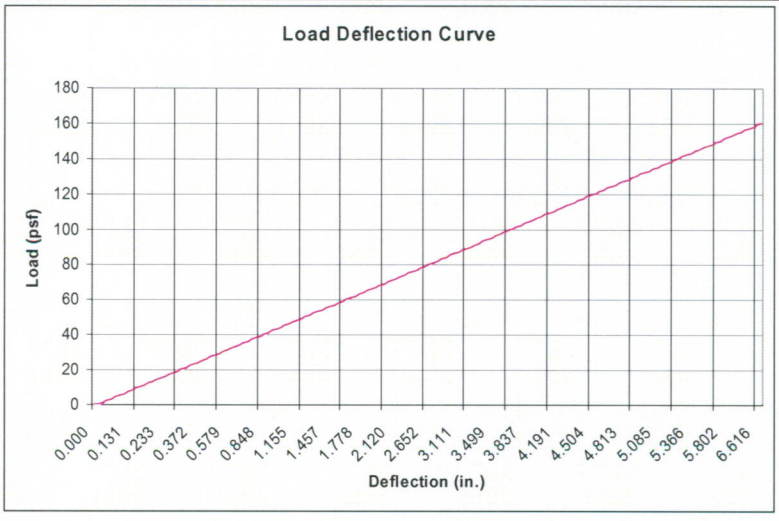
Pressure (psf)	Deflection Center (inches)	Set (inches)	Recovery Loc. 1 (%)	Duration (hours)
+60	0.39	0.000	100	30
+80	0.50	0.000	100	30
+100	0.67	0.000	100	30
+120	0.91	0.021	98	30
+140	1.14	0.020	98	30
+160	1.38	0.021	98	30
+180	2.04	0.043	98	30
+200	2.32	0.050	98	30
+220	2.87	0.070	98	30
+240	3.21	0.060	98	30
+260	Support connection to the floor failed.			



(Test Reference No. HETI-15-5027) (30'8")

(Test Date: February 23, 2015)

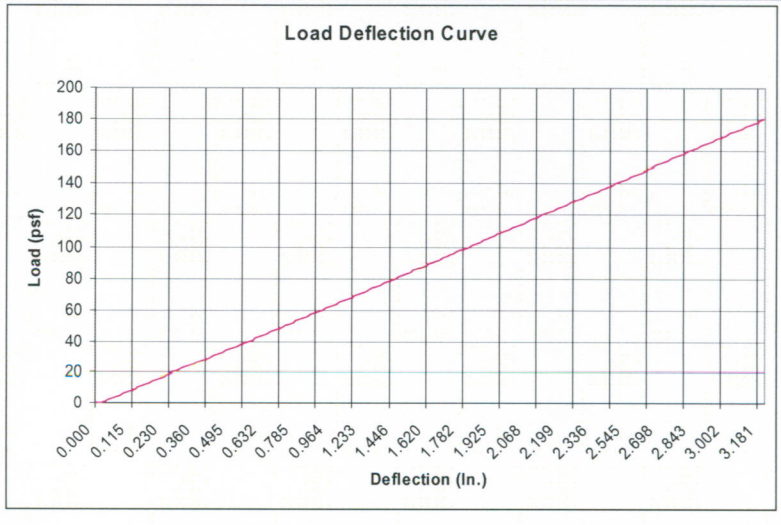
Pressure (psf)	Deflection Center (inches)	Set (inches)	Recovery Loc. 1 (%)	Duration (hours)
+40	0.62	0.00	100	30
+60	1.04	0.01	99	30
+80	1.51	0.01	99	30
+100	2.10	0.01	99	30
+120	3.03	0.02	99	30
+140	5.35	0.07	99	30
+160	6.72	0.08	99	30
+180	Support connection to the floor failed.			



(Test Reference No. HETI-15-5030) (23'8")

(Test Date: February 23, 2015)

Pressure (psf)	Deflection Center (inches)	Set (inches)	Recovery Loc. 1 (%)	Duration (hours)
+80	1.32	0.00	100	30
+160	2.88	0.02	99	30
+180	3.33	0.00	100	30
+200	Support connection to the floor failed.			



Conclusion

The samples were structurally intact at the conclusion of this test.

NOTE: The above results were obtained using the designated test methods that indicates compliance with the performance requirements of the referenced specifications. This report does not constitute certification of the specimens tested.

STATEMENT OF INDEPENDENCE

The Hurricane Engineering & Testing, Inc., does not have, nor does it intend to acquire or will acquire, a financial interest in any company manufacturing or distributing products tested or labeled by the Hurricane Engineering & Testing, Inc. Hurricane Engineering & Testing, Inc., is not owned, operated or controlled by any company manufacturing or distributing products it test or labels.

Dr. Nasreen K. Ali
Vice President

Mr. Rafael E. Diaz-Seda, P.E.
Resident Engineer

HURRICANE ENGINEERING & TESTING INC.

ACCREDITED

ISO 17025 Accredited Computer Controlled Product Testing
Wind Load Design, Analysis & Evaluation

MIAMI-DADE COUNTY APPROVED

Compressive Strength of Cylindrical Concrete Specimens
ASTM C39-14a

March 5, 2015

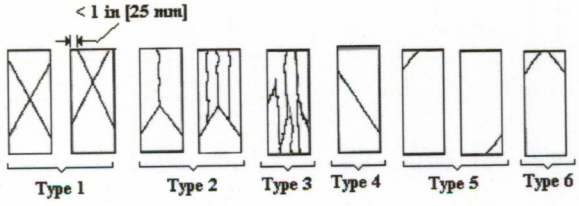
REPORT NUMBER: HETI-15-C101

MANUFACTURER: PROJECT CLASSIC STRUCTURAL ENGINEERING
7318 Texas Trail, Boca Raton, Florida 33487.

TEST LOCATION: Hurricane Engineering & Testing Inc.
6120 NW 97th AVE, Doral, FL 33178

NOTIFICATION NUMBER: HETI15001 (MIAMI-DADE COUNTY, FLORIDA)
LAB. CERTIFICATION No.: 10-1117.07 (MIAMI-DADE COUNTY, FLORIDA)
IAS. CERTIFICATION No.: TL-296 (ISO 17025-05)
FBC ORGANIZATION No: TST1691
FBPE Certificate of Authorization Number: 6905
PRODUCT: Cores from poured Concrete Slab.
SOURCE ID: Lab prepared cores.
POUR DATE: December 16, 2014
TEST DATE: January 9, 2015
REFERENCE TEST NO.: HETI-15-C101
CAPPING MATERIAL: No. 600 Sulfur-based, flake-form capping compound.

Diameter (in)	Length (in)	Corr. Factor	Area (in^2)	Ult. Load (lbf)	Ult. Stress (psi)	Failure Mode
4.05	8.00	1.00	12.88249338	45640	3540	4
4.05	8.00	1.00	12.88249338	45460	3530	4
Average					**3500**	---



STATEMENT OF INDEPENDENCE
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Dr. Nasreen K. Ali
Vice President

Mr. Rafael E. Diez-Seda, P.E.
Resident Engineer

Cyclic Wind Load Test
(FBC TAS 203)

May 5, 2015

REPORT NUMBER: **HETI-15-5019**

MANUFACTURER: PROJECT CLASSIC STRUCTURAL ENGINEERING
7318 Texas Trail, Boca Raton, Florida 33487

TEST LOCATION: Hurricane Engineering & Testing Inc.
6120 NW 97th Avenue, Doral, Florida, 33178

NOTIFICATION NUMBER: HETI14025 (MIAMI-DADE COUNTY, FLORIDA
LAB. CERTIFICATION No.: 10-1117.07 (MIAMI-DADE COUNTY, FLORIDA)
IAS. CERTIFICATION No.: TL-296 (ISO 17025-05)
FBC ORGANIZATION No: TST1691
FBPE Certificate of Authorization Number: 6905

PRODUCT: Composite Panels
(See Hurricane Engineering & Testing, Inc. marked Drawing).

PRODUCT SIZE: Test # 17: 27" wide x 264 ¼" long x 8 3/16" deep (20'8" Span)
Test # 18: 27" wide x 292 ¼" long x 8 3/16" deep (23'8" Span)

PRODUCT DESCRIPTION: 3500 psi Concrete Covered Steel Panel (Reference Material Tensile Test Report No. HETI-15-T303, HETI-15-T304, HETI-15-T305; Concrete Compression Test Report No. HETI-15-C101)

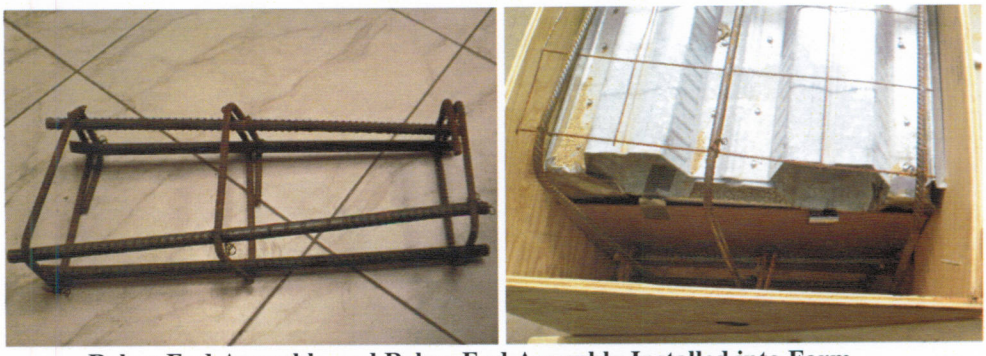
DRAWING NO.: **Test # 17**: S16 by Project Classic Structural Engineering, dated 2/6/15
Test # 18: S16 by Project Classic Structural Engineering, dated 2/6/15

DESIGN LOADS (psf): **+80 (HETI-15-5019), -100 (HETI-15-5029, HETI-15-5031)**

TEST WITNESSED BY: Syed Waqar Ali, Ph.D. (HETI)
Nasreen K. Ali, E.I. (HETI)
Eugenio Rivera (HETI)
Mr. Rafael E. Droz-Seda, P.E. (HETI)

20'-8" Product Description

Each sample was constructed by attaching (2) separate panel halves on top of each other to create the hexagon shaped steel frame. The panels were setup to create a 1 5/8" camber at the center. The (2) panels were attached with (4) rows of (31) #10 x ¾" Hex Head Self Drilling Screws (HH SDS) located at 1 ½", 6 5/8", 12 ¾", 19 ½", 24 1/8", 30 5/8", 37", 44 ¾", 52 ¼", 64 5/8", 75 5/8", 85", 96 1/8", 104 ½", 111 ½", 124", 132 ½", 142 ¼", 151 5/8", 162 ½", 172 ¼", 182 ¾", 193 ¼", 201 3/8", 209 ½", 216 3/8", 222 ½", 228 ¾", 235 1/8", 240 ½", and 245 5/8" from the left end. Once the samples were constructed, a layer of 0.142" thick (6" x 6" square) steel lathing the size of the sample was laid on top as well as (3) #4 rebars the length of the panel which connected to a rebar end assembly using rebar tie wires. The rebar end assembly was comprised of (4) 24" long # 5 rebar and (3) #3 5" x 9" stirrups. The 24" rebar was tied to the inside of the (3) stirrups using rebar tie wire, which were located at the ends and center of the 24" rebar (See photo below). The rebar end assembly was laid into the bottom of a 27" wide x 14 ½" high x 8" deep form on each end. Once the sample was completely constructed, an average layer of 2.06" of 3500 psi concrete was poured on top of the finished single panel sample.



Rebar End Assembly and Rebar End Assembly Installed into Form

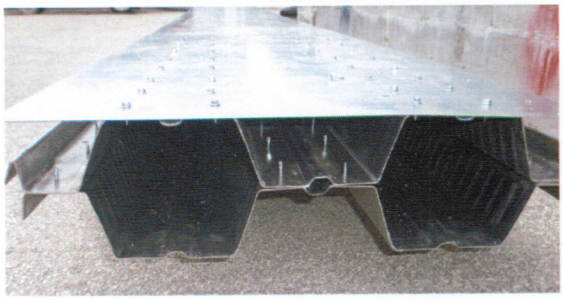
Individual Panel Size:	25 ½" w x 248 ½" long x 3 1/16" deep
Single Finished Panel Size:	27" w x 248 ½" long x 6 1/8" deep
Composite Finished Panel Size:	27" w x 264 ¼" long x 8 3/16" deep x 14 ½" high
Corrugated Panel Thickness:	16ga (0.060" with coating)
Concrete:	3500 psi

23'-8" Product Description

Each sample was constructed by attaching (2) separate panel halves on top of each other to create the hexagon shaped steel frame. The panels were setup to create a 1 5/8" camber at the center. The (2) panels were attached with (4) rows of (39) #10 x ¾" Hex Head Self Drilling Screws (HH SDS) located at 2", 6", 9 ½", 14 ¼", 20 ½", 22 3/8", 26 3/8", 32 ½", 39", 47", 55 ½", 61", 65 ¾", 74 ¼", 84 ¼", 95 ¼", 105 ¾", 114 ¾", 125", 134 ¾", 145 ¼", 155 ½", 165 ¾", 175 ½", 179", 189 ½", 199", 209", 218 ¾", 229", 238", 245 ¾", 252", 258 ¼", 264 ¼", 270", 274", 277 ½", and 282" from the left end. Next, an 18 gauge x 24 1/8" x 284 ¼" flat galvanized steel sheet was placed on top of the panel and was attached using (4) rows of (37) # 10 x ¾" HH SDS located at 1 5/8", 5 ¾", 9 ¼", 12 ¾", 19 1/8", 25", 33", 41", 49 5/8", 59 3/8", 69", 78 ¼", 88 3/8", 99 1/8", 109", 118 5/8", 129", 139", 142 ½", 148 ¾", 157 ½", 167 ½", 179 ¼", 189 ¾", 200", 209", 220", 230 ¾", 239 3/8", 246 7/8", 253", 258 ¾", 265", 269 ¾", 275", 278 ¾", and 282 ½" from the left end. Once the samples were constructed, a layer of 0.142" thick (6" x 6" square) steel lathing the size of the sample was laid on top as well as (3) #4 rebars the length of the panel which connected to a rebar end assembly using rebar tie wires. The rebar end assembly was comprised of (4) 24" long # 5 rebar and (3) #3 5" x 9" stirrups. The 24" rebar was tied to the inside of the (3) stirrups using rebar tie wire, which were located at the ends and center of the

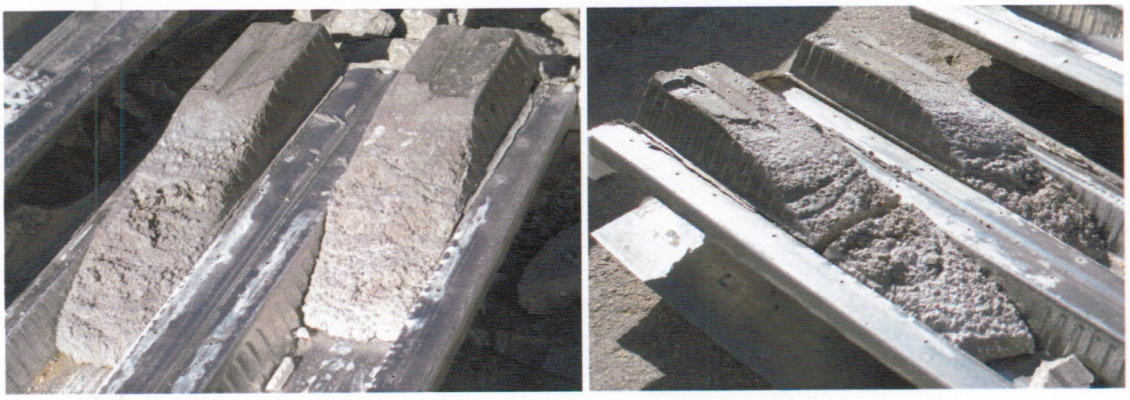
24" rebar (as in previous sample). The rebar end assembly was laid into the bottom of a 27" wide x 14 ½" high x 8" deep form on each end. Once the sample was completely constructed, an average layer of 2.06" of 3500 psi concrete was poured on top of the finished single panel sample.

Individual Panel Size:	25 ½" w x 284 ½" long x 3 1/16" deep
Single Finished Panel Size:	27" w x 284 ½" long x 6 1/8" deep
Composite Finished Panel Size:	27" w x 301 ½" long x 8 3/16" deep x 14 ½" high (15-5031)
	27" w x 292 ¼" long x 8 3/16" deep (15-5019)
Corrugated Panel Thickness:	18ga (0.048" with coating)
Reinforcement:	(1) 18ga (0.048"with coating) galv. steel flat sheet (24 1/8" w x 284 ¼")
Concrete:	3500 psi



Sample showing connection of (1) galv. flat steel sheet to the finished single panel for 23'-8" sample. (Sample was flipped over to show connection. Flat sheet is installed on bottom of sample.)

Note*: All composite panels manufactured with concrete resulted in a partial filling of the hexagonal cavity at each end of the panel. The minimum full hexagon fill is 8" and the maximum full fill of the cavity was 10". After the full fill of the cavity, the concrete tapers off to zero in 10" to 24". See photo below.



TEST RESULTS

Cyclic Wind Pressure Test Results (23'8")

(Test Reference No. HETI-15-5019)

(Test Date: February 6, 2015)

DESIGN LOAD (psf): **+80 (Downward)**

Cycles	Pressure (psf)	Center Deflection (in)	Set (in)	Recovery (%)	Duration (sec)
Positive Pressure Cycles					
600	**+40**	---	---	---	0.9
70	**+48**	---	---	---	1.0
1	**+80**	---	---	---	1.4
1	**+104**	---	---	---	1.8

Cyclic Wind Pressure Test Results (20'8")

(Test Reference No. HETI-15-5029)

(Test Date: February 23, 2015)

DESIGN LOAD (psf): **+100 (Upward)**

Cycles	Pressure (psf)	Deflection (in)	Set (in)	Recovery (%)	Duration (sec)
Positive Pressure Cycles					
600	**-50**	0.49	---	---	1.0
70	**-60**	0.60	---	---	1.0
1	**-130**	1.78	---	---	2.6

Cyclic Wind Pressure Test Results (23'8")

(Test Reference No. HETI-15-5031)

(Test Date: February 24, 2015)

DESIGN LOAD (psf): **+100 (Upward)**

Cycles	Pressure (psf)	Deflection (in)	Set (in)	Recovery (%)	Duration (sec)
Positive Pressure Cycles					
600	**-50**	0.70	---	---	1.0
70	**-60**	0.91	---	---	1.2
1	**-130**	1.93	---	---	2.6

Conclusion

The samples were tested in accordance with TAS 203-94 of the Florida Building Code. The samples were structurally intact at the conclusion of this test.

NOTE: The above results were obtained using the designated test methods that indicates compliance with the performance requirements of the referenced specifications. This report does not constitute certification of the specimens tested. This report does not constitute certification of the specimens tested.

STATEMENT OF INDEPENDENCE

The Hurricane Engineering & Testing, Inc., does not have, nor does it intend to acquire or will acquire, a financial interest in any company manufacturing or distributing products tested or labeled by the Hurricane Engineering & Testing, Inc. Hurricane Engineering & Testing, Inc., is not owned, operated or controlled by any company manufacturing or distributing products it test or labels.

Dr. Nasreen K. Ali
Vice President

Mr. Rafael E. Diaz-Seda, P.E.
Resident Engineer

Cyclic Foot Traffic Load Simulation.

May 5, 2015

REPORT NUMBER: **HETI-15-M528**

MANUFACTURER: PROJECT CLASSIC STRUCTURAL ENGINEERING
7318 Texas Trail, Boca Raton, Florida 33487.

TEST LOCATION: Hurricane Engineering & Testing Inc.
6120 NW 97th Avenue, Doral, Florida, 33178

NOTIFICATION NUMBER: HETI14025 (MIAMI-DADE COUNTY, FLORIDA
LAB. CERTIFICATION No.: 10-1117.07 (MIAMI-DADE COUNTY, FLORIDA)
IAS. CERTIFICATION No.: TL-296 (ISO 17025-05)
FBC ORGANIZATION No: TST1691
FBPE Certificate of Authorization Number: 6905

PRODUCT: Composite Panel
(See Hurricane Engineering & Testing, Inc. marked Drawing).

PRODUCT SIZE: 51" wide x 161" long x 8 3/16" deep and 14 ½" high (12'-0" Span)

PRODUCT DESCRIPTION: 3500 psi Concrete Covered Steel Panel (Reference Material Tensile Test Report No. HETI-15-T304, HETI-15-T305; Concrete Compression Test Report No. HETI-15-C101)

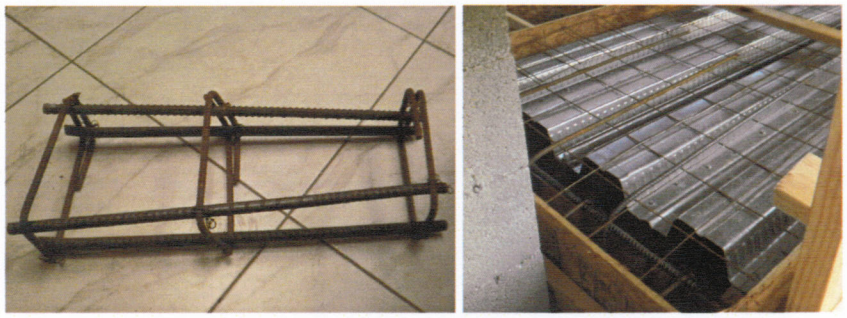
DRAWING NO.: S23 by Project Classic Structural Engineering, dated 1/22/15.

TEST WITNESSED BY: Syed Waqar Ali, Ph.D. (HETI)
Nasreen K. Ali, E.I. (HETI)
Eugenio Rivera (HETI)
Mr. Rafael E. Droz-Seda, P.E. (HETI)

12'-0" Product Description

Each sample was constructed by attaching (2) separate panel halves on top of each other to create the hexagon shaped steel frame. The (2) panels were attached with (4) rows of (23) #10 x ¾" Hex Head Self Drilling Screws (HH SDS) located at 2 ¼", 6 ¼", 10 ¾", 14 ¾", 19 ¾", 26 ½", 33 ¼", 39 3/8", 47 ½", 56 ¼", 60 5/8", 68 1/8", 78 ¼", 89 1/8", 96", 105 3/8", 111", 117 1/8", 124", 129 1/8", 133 3/8", 137 7/8", and 141 ½" from the left end. Once the samples were constructed, a layer of 0.142" thick (6" x 6" square) steel lathing the size of the sample was laid on top as well as (3) #4 bent rebars 40" in length (length parallel to panel) which connected to a rebar end assembly using rebar tie wires. The rebar end assembly was comprised of (4) 24" long # 5 rebar and (3) #3 5" x 9" stirrups. The 24" rebar was tied to the inside of the (3) stirrups using rebar tie wire, which were located at the ends and center of the 24" rebar (See photo below). The rebar end assembly was laid into the bottom of a 51" wide x 8" high x 14 ½" deep form on each end. Once the sample was completely constructed, an average layer of 2.06" of 3500 psi concrete was poured on top of the finished double panel sample.

Individual Panel Size:	25 ½" w x 144" long x 3 1/16" deep
Double Finished Panel Size:	50 3/8" w x 144" long x 6 1/8" deep
Composite Finished Panel Size:	51" w x 161" long x 8 3/16" deep x 14 ½" high
Corrugated Panel Thickness:	18ga (0.048")
Concrete:	3500 psi



Rebar End Assembly and Rebar End Assembly Installed into Form

Note*: All composite panels manufactured with concrete resulted in a partial filling of the hexagonal cavity at each end of the panel. The minimum full hexagon fill is 8" and the maximum full fill of the cavity was 10". After the full fill of the cavity, the concrete tapers off to zero in 10" to 24". See photo below.

TEST RESULTS

The load was applied three feet from end and along centerline on a one square foot area using hydraulic cylinder and automated control system.

No. Of Cycles	Maximum Force (lbs)	Minimum Force (lbs)	Result
1000	500	0	No failure was observed; locally concrete remained intact and concrete to steel contact appeared intact.

Conclusion

The sample was structurally intact at the conclusion of this test.

NOTE: The above results were obtained using the designated test methods that indicates compliance with the performance requirements of the referenced specifications. This report does not constitute certification of the specimens tested.

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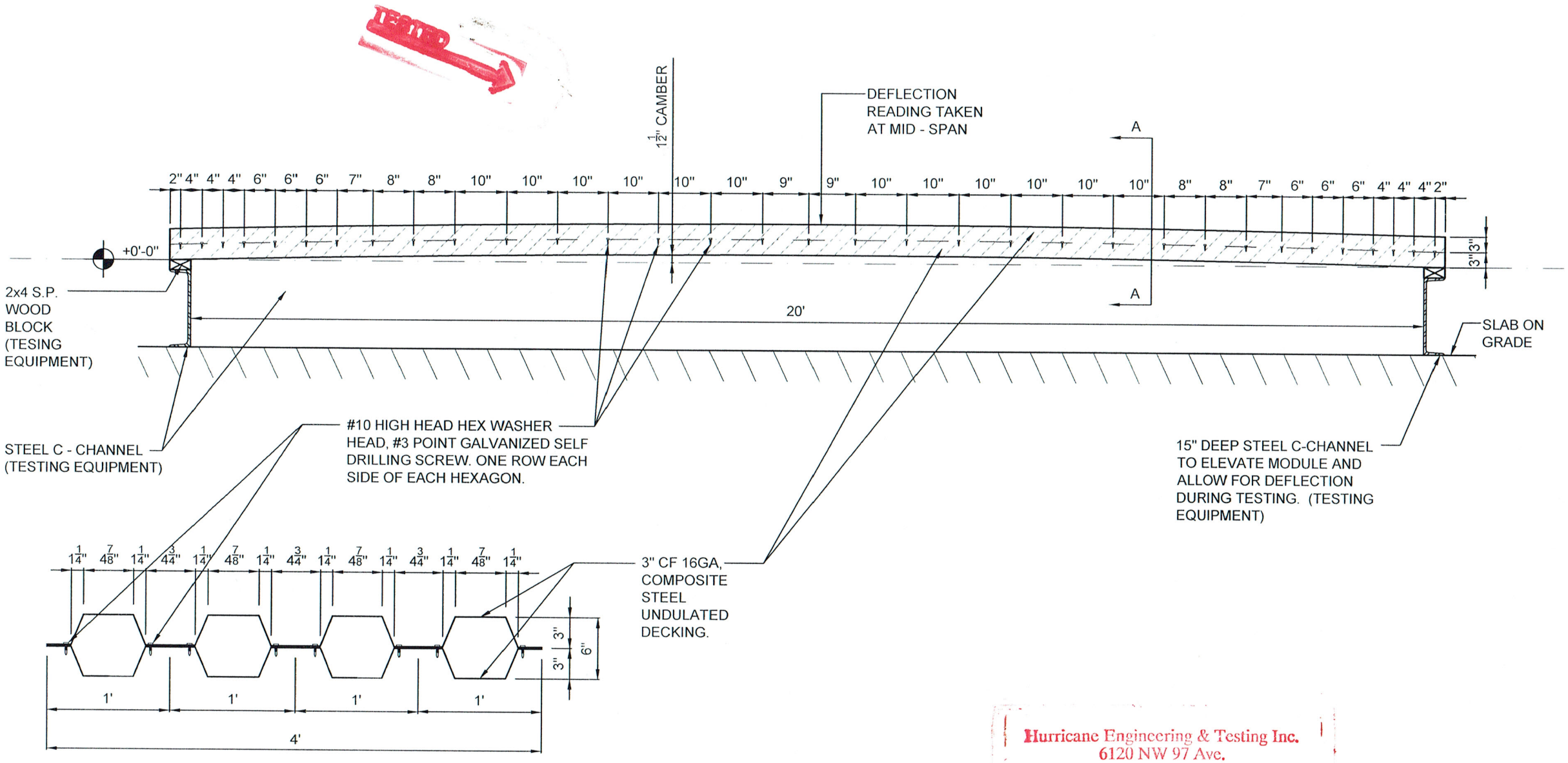
Dr. Nasreen K. Ali
Vice President

Mr. Rafael E. Diaz-Seda, P.E.
Resident Engineer



SECTION A-A

SCALE: 1" = 1'

Hurricane Engineering & Testing Inc.
6120 NW 97 Ave.
Miami, FL 33178
Tel (800) 755-9782

1/S1 NON COMPOSITE MODULE CT161600,20' CLEAR SPAN, STATIC POSITIVE AIR PRESSURE (TOPPING POUR STAGE, LOAD AND RELEASE INCREMENTAL CYCLES TO FAILURE)

SCALE: 1/2" = 1'

CLASSIC T - FLOOR SYSTEM
ASTM E72 TESTING
DATE : 1/12/15
SPECIMEN : CT161600
TEST #1 : 15-5003
TOTAL LENGTH : 20'-8"
CLEAR SPAN : 20'-0"
NUMBER OF SPECIMENS : 3

CLASSIC T FLOOR SYSTEM
7318 TEXAS TRAIL
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CLASSIC T - ASTM E72 TESTING
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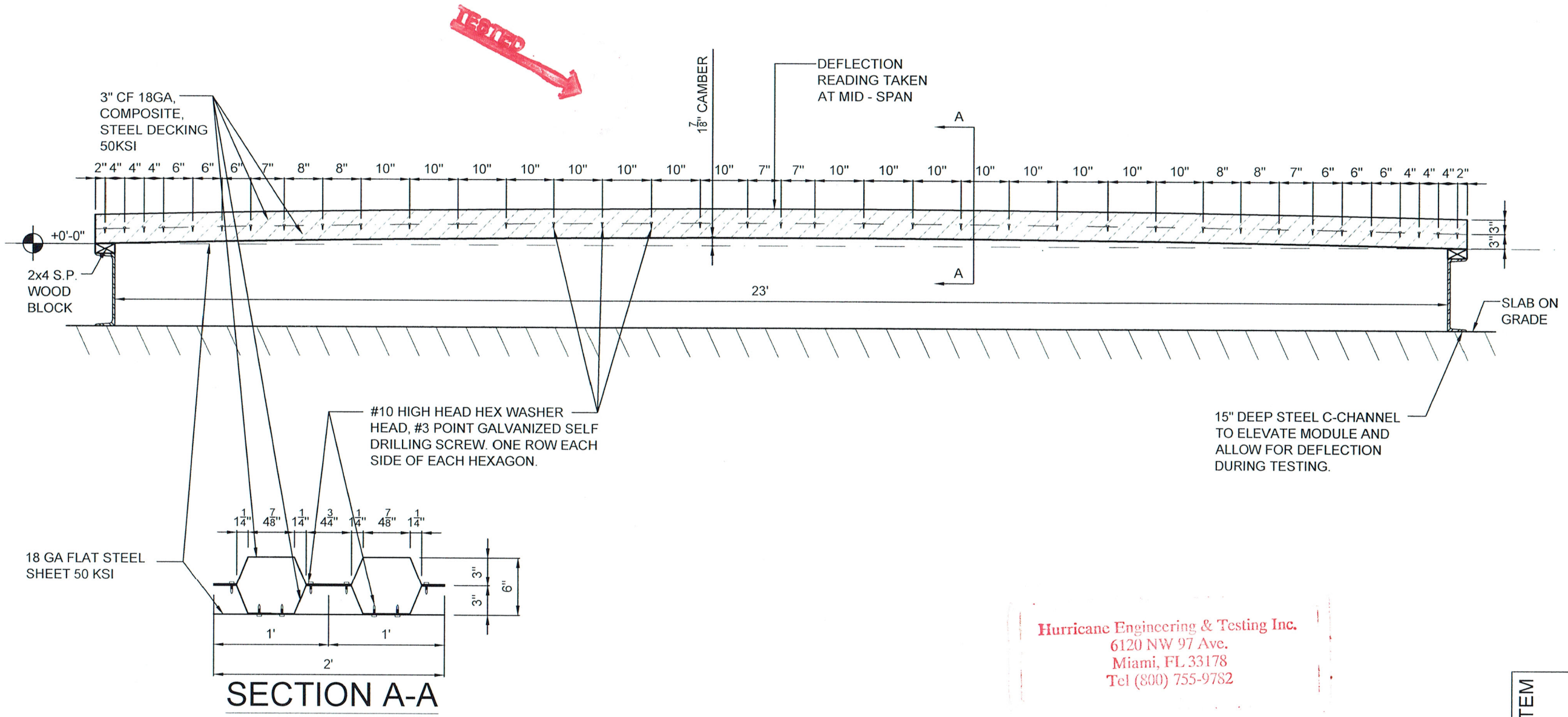
TEST #1 - NON COMPOSITE MCDULE CT161600,20' CLEAR SPAN, STATIC POSITIVE AIR PRESSURE (TOPPING POUR STAGE, LOAD AND RELEASE INCREMENTAL CYCLES TO FAILURE)

JOB # 1830

S1

OF 23



SECTION A-A

SCALE: 1" = 1'

1 / S2 NON COMPOSITE MODULE CT181818,23' CLEAR SPAN, STATIC POSITIVE AIR PRESSURE (TOPPING POUR STAGE, LOAD AND RELEASE INCREMENTAL CYCLES TO FAILURE)

SCALE: 1/2" = 1'

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CLASSIC T - FLOOR SYSTEM
ASTM E72 TESTING
DATE : 1/13/15
SPECIMEN : CT181818
TEST #2 : 15-5004
TOTAL LENGTH : 23'-8"
CLEAR SPAN : 23'-0"
NUMBER OF SPECIMENS : 1

7316 TEXAS TRAIL
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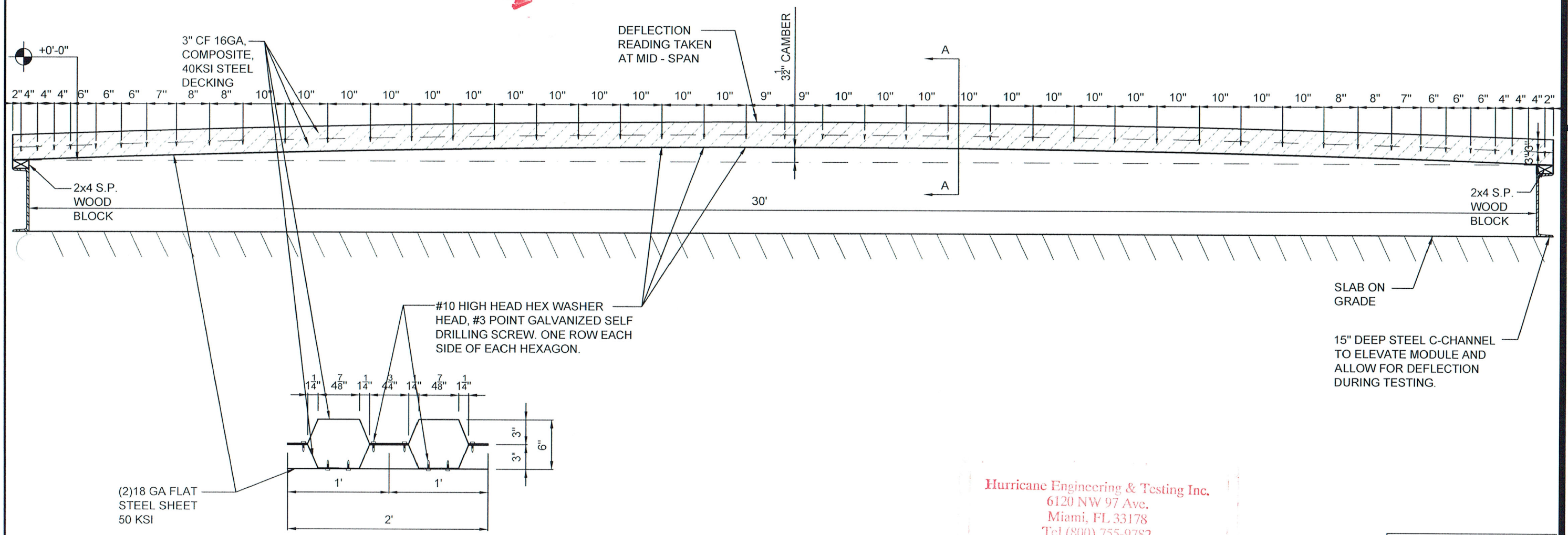
TEST #2 - NON COMPOSITE MODULE CT181818,23' CLEAR SPAN, STATIC POSITIVE AIR PRESSURE (TOPPING POUR STAGE, LOAD AND RELEASE INCREMENTAL CYCLES TO FAILURE)

JOB # 1830

S2

OF 23

TESTED



SECTION A-A

SCALE: 1" = 1'

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1 S3 NON COMPOSITE MODULE CT16161818, 30' CLEAR SPAN, STATIC POSITIVE AIR PRESSURE (TOPPING POUR STAGE, LOAD AND RELEASE INCREMENTAL CYCLES TO FAILURE)

SCALE: 1/2" = 1'

CLASSIC T - FLOOR SYSTEM
ASTM E72 TESTING
DATE : 1/14/15
SPECIMEN : CT16161818
TEST #3 : 15-5005
TOTAL LENGTH : 30'-8"
CLEAR SPAN : 30'-0"
NUMBER OF SPECIMENS : 1

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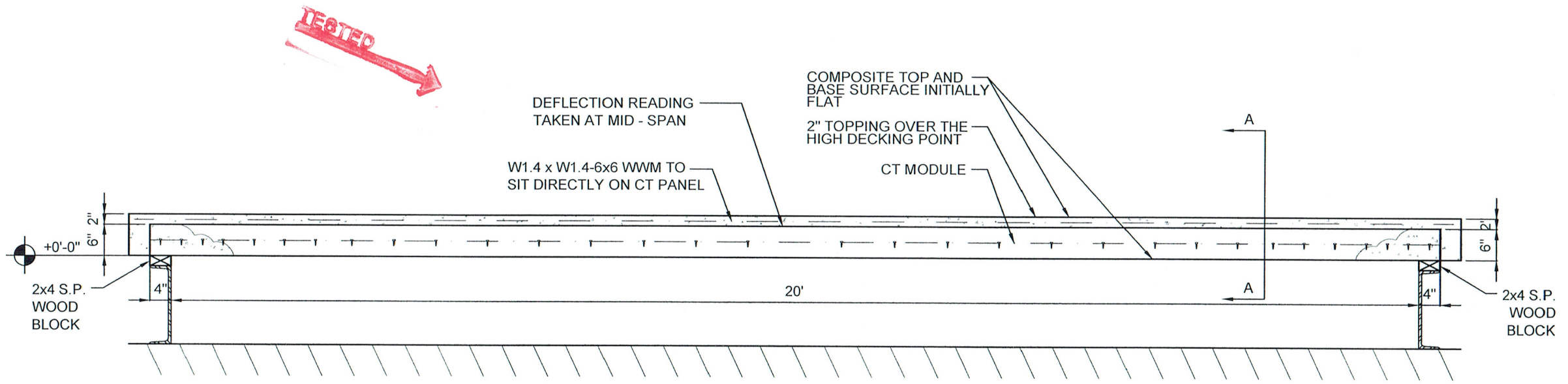
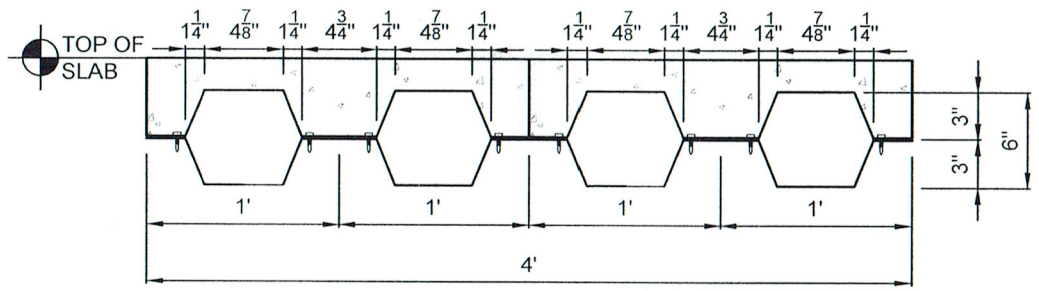
TEST #3 - NON COMPOSITE MODULE CT16161818, 30' CLEAR SPAN, STATIC POSITIVE AIR PRESSURE (TOPPING POUR STAGE, LOAD AND RELEASE INCREMENTAL CYCLES TO FAILURE)

JOB #: 1830
S3
OF 23





SECTION A-A

SCALE: 1" = 1'

1/S4 COMPOSITE STATIC POSITIVE AIR PRESSURE, 20' CLEAR SPAN (SERVICE STAGE: INCREMENTAL SINGLE LOAD AND RELEASE CYCLES TO FAILURE)

SCALE: 1/2" = 1'

CLASSIC T - FLOOR SYSTEM
ASTM E72 TESTING
DATE : 2/26/15
SPECIMEN : COMPOSITE
TEST #4 : 15-5032 & 15-5033 & 15-5034
TOTAL LENGTH : 20'-8"
CLEAR SPAN : 20'-0"
NUMBER OF SPECIMENS : 3

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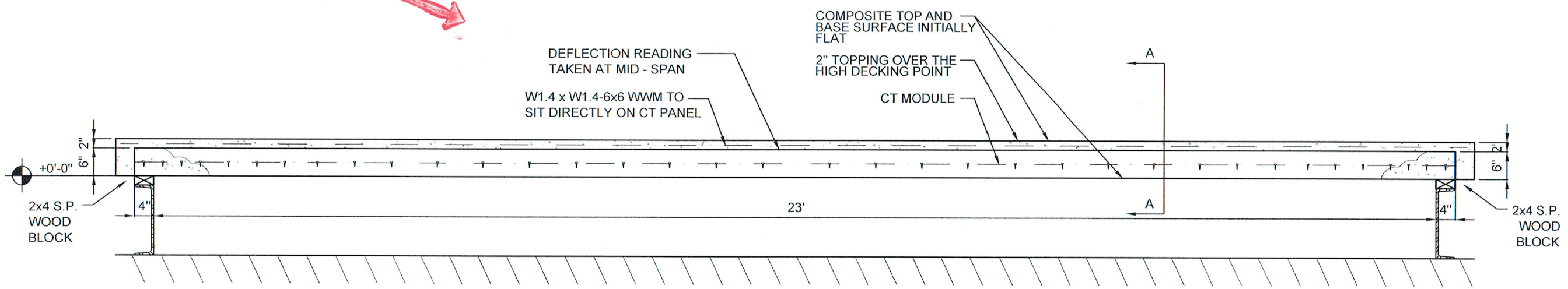
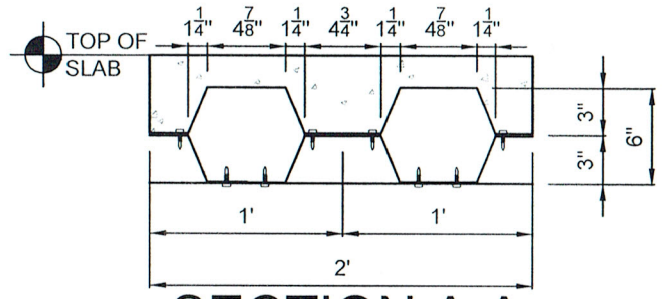
TEST #4 - COMPOSITE STATIC POSITIVE AIR PRESSURE, 20' CLEAR SPAN
(SERVICE STAGE: INCREMENTAL SINGLE LOAD AND RELEASE
CYCLES TO FAILURE)

JOB # : 1830

S4
OF 23

TESTED





SECTION A-A

SCALE: 1" = 1'

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1/S5 COMPOSITE STATIC POSITIVE PRESSURE, 23' CLEAR SPAN (SERVICE STAGE: INCREMENTAL SINGLE LOAD AND RELEASE CYCLES TO FAILURE)

SCALE: 1/2" = 1'

CLASSIC T - FLOOR SYSTEM
ASTM E72 TESTING
DATE : 1/29/15 & 2/11/15
SPECIMEN : COMPOSITE
TEST #5 : 15-5013 & 15-1520
TOTAL LENGTH : 23'-8"
CLEAR SPAN : 23'-0"
NUMBER OF SPECIMENS : 2

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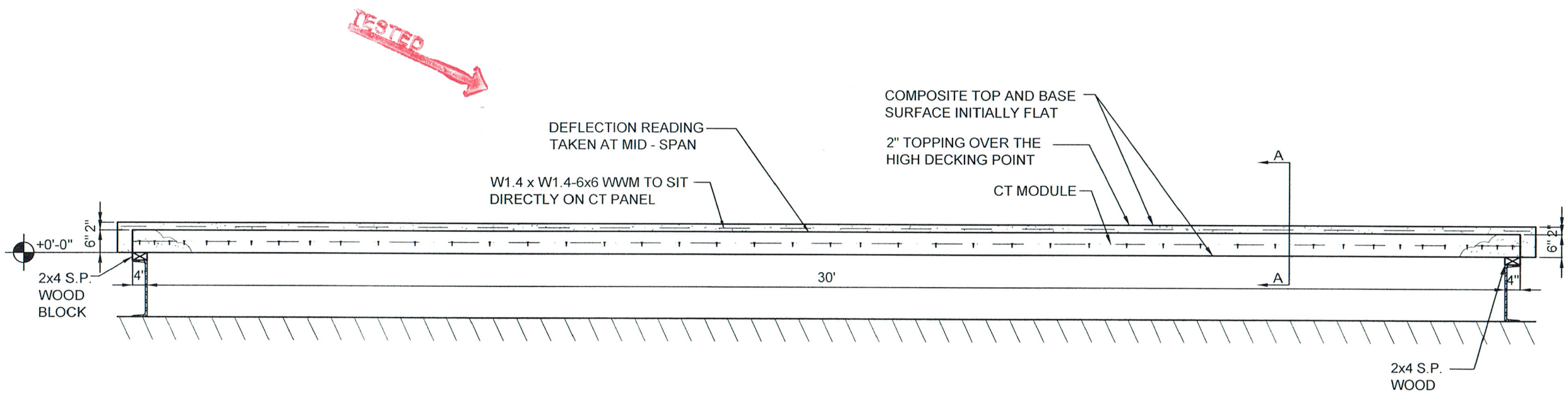
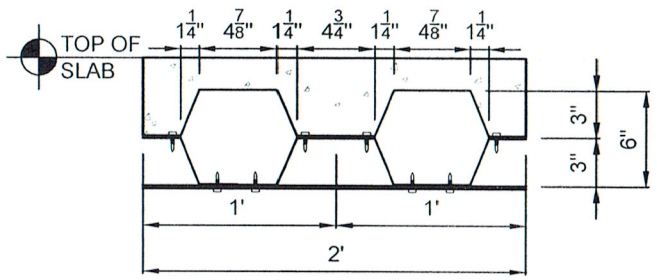
TEST #5 - COMPOSITE STATIC POSITIVE PRESSURE, 23' CLEAR SPAN
(SERVICE STAGE: INCREMENTAL SINGLE LOAD AND RELEASE CYCLES TO FAILURE)

JOB # : 1830

S5

OF 23





SECTION A-A

SCALE: 1" = 1'

1/S6 COMPOSITE STATIC POSITIVE PRESSURE, 30' CLEAR SPAN (SERVICE STAGE: INCREMENTAL SINGLE LOAD AND RELEASE CYCLES TO FAILURE)

3/8"=1'

CLASSIC T - FLOOR SYSTEM
ASTM E72 TESTING
DATE : 2/12/15
SPECIMEN : COMPOSITE
TEST #6 : 15-5021
TOTAL LENGTH : 30'-8"
CLEAR SPAN : 30'-0"
NUMBER OF SPECIMENS : 1

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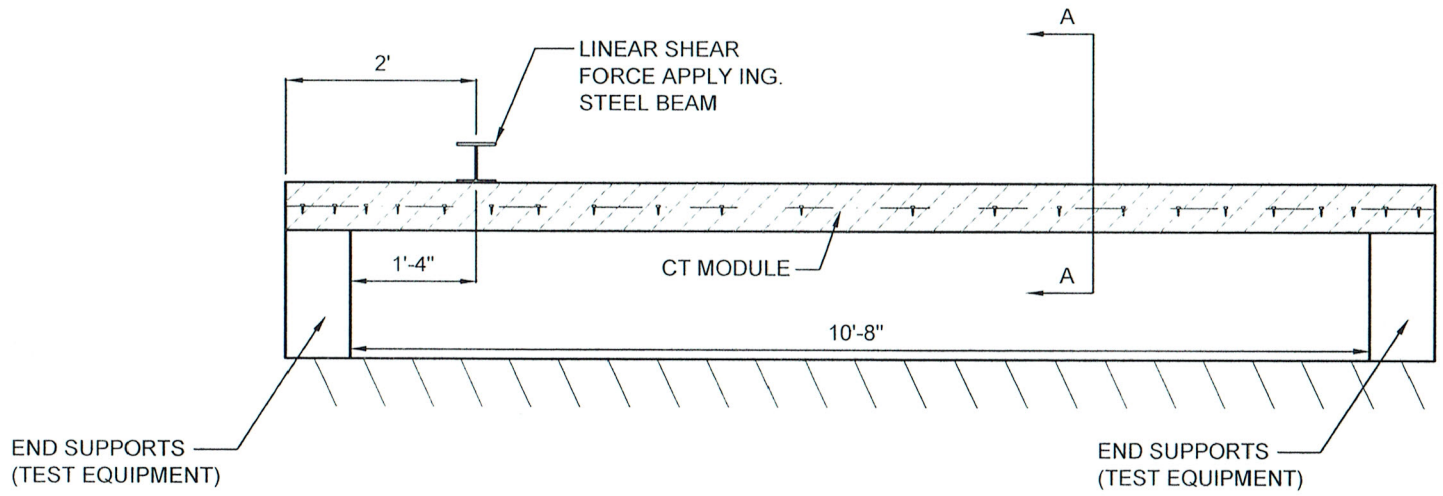
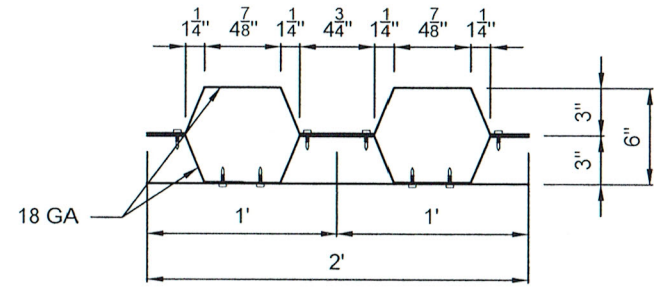
TEST #6 - COMPOSITE STATIC POSITIVE PRESSURE, 30' CLEAR SPAN (SERVICE STAGE: INCREMENTAL SINGLE LOAD AND RELEASE CYCLES TO FAILURE)

JOB #: 1830

S6

TESTED





SECTION A-A

SCALE: 1" = 1'

1/S7 END SHEAR - NON COMPOSITE - CT181800 (INCREMENTAL END SHEAR TO FAILURE)

SCALE: 1/2" = 1'

CLASSIC T - FLOOR SYSTEM
ASTM E72 TESTING
DATE : 2/10/15
SPECIMEN : CT181800
TEST #7 : 15-M503
TOTAL LENGTH : 12'-0"
CLEAR SPAN : 10'-8"
NUMBER OF SPECIMENS : 2

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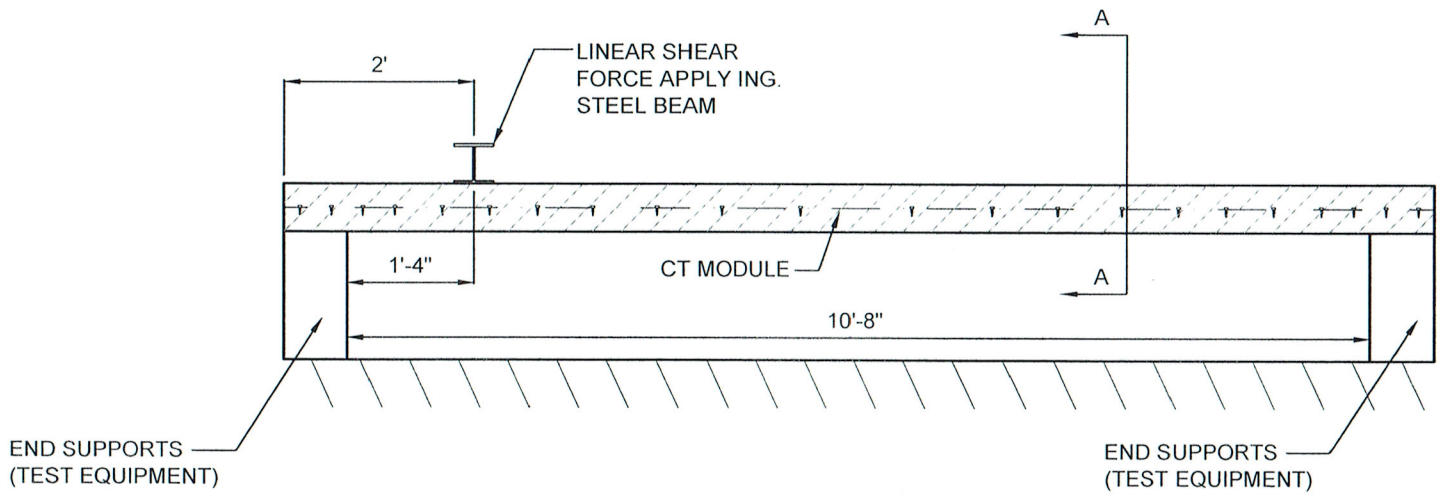
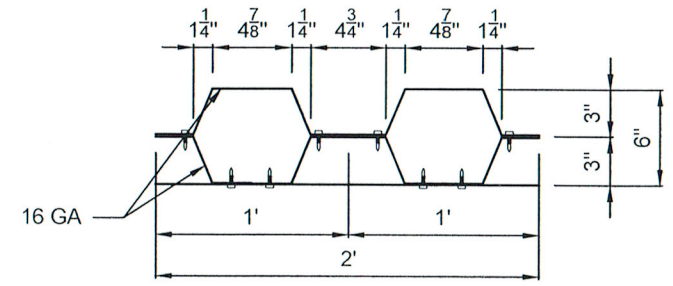
TEST #7 - END SHEAR - NON COMPOSITE - CT181800
(INCREMENTAL END SHEAR TO FAILURE)

JOB # : 1830
S7
OF 23

TESTED





SECTION A-A

SCALE: 1" = 1'

1/S8 END SHEAR - NON COMPOSITE - CT161600 (INCREMENTAL END SHEAR TO FAILURE)

SCALE: 1/2" = 1'

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CLASSIC T - FLOOR SYSTEM
ASTM E72 TESTING
DATE : 2/9/15 & 2/10/15
SPECIMEN : CT161600
TEST #8 : 15-M520 & 15-M504
TOTAL LENGTH : 12'-0"
CLEAR SPAN : 10'-8"
NUMBER OF SPECIMENS : 4

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TEST #8 - END SHEAR - NON COMPOSITE - CT161600
(INCREMENTAL END SHEAR TO FAILURE)

JOB #: 1830

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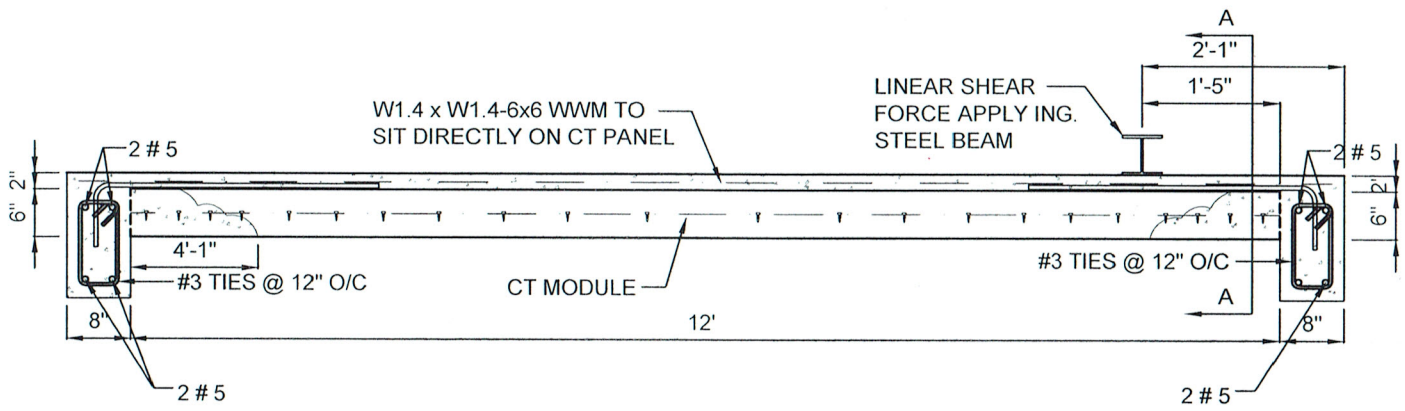
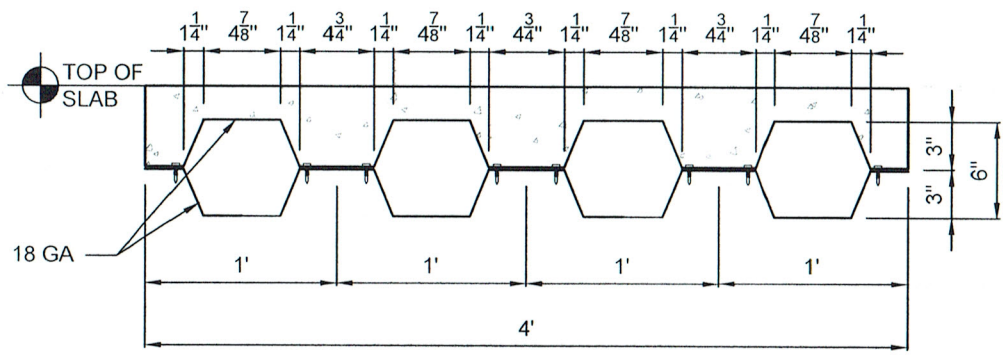
OF 23

TESTED





SECTION A-A

SCALE: 1" = 1'

1 / S9 END SHEAR - COMPOSITE - CT181800 -(3) EQUAL SPECIMENS (INCREMENTAL END SHEAR TO FAILURE)

SCALE: 1/2" = 1'

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CLASSIC T - FLOOR SYSTEM
ASTM E72 TESTING
DATE : 1/30/15 & 2/12/15 & 2/13/15
SPECIMEN : CT181800
TEST #9 : 15-M500 & 15-M505 & 15-M507
TOTAL LENGTH : 12'-8"
CLEAR SPAN : 12'-0"
NUMBER OF SPECIMENS : 3

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TEST #9 - END SHEAR - COMPOSITE - CT181800 -(3) EQUAL SPECIMENS
(INCREMENTAL END SHEAR TO FAILURE)

JOB # 1830

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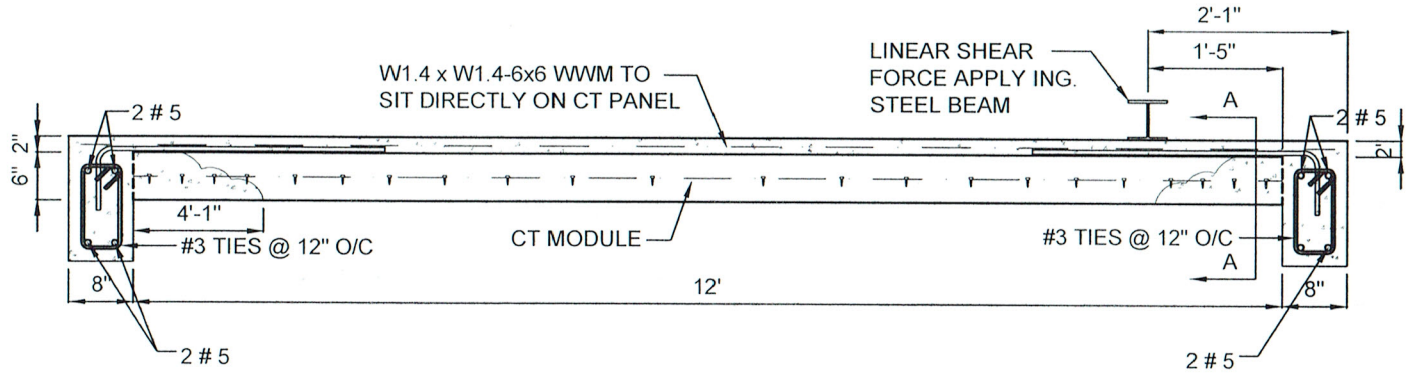
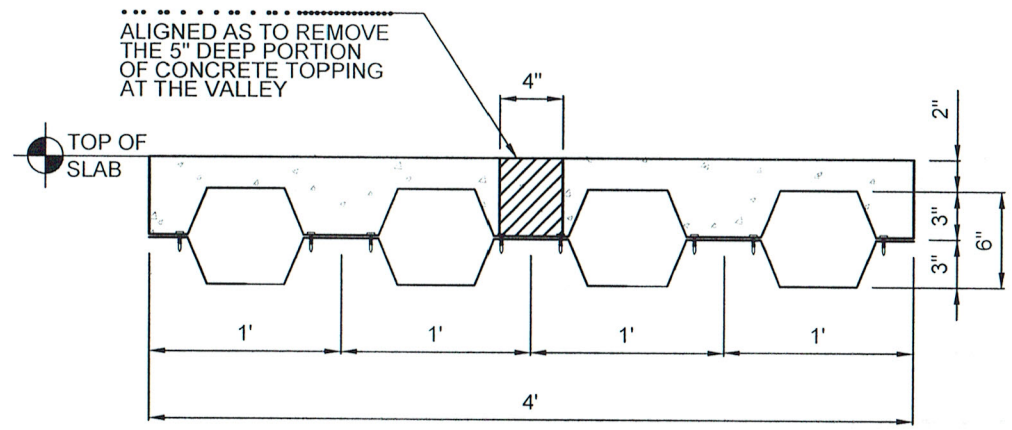
OF 23



1 / S10 END SHEAR - COMPOSITE - CT181800 - (1) CORE (INCREMENTAL END SHEAR TO FAILURE)

SCALE: 1/2" = 1'



SECTION A-A

SCALE: 1" = 1'

CLASSIC T - FLOOR SYSTEM
ASTM E72 TESTING
DATE : 2/6/15
SPECIMEN : CT181800
TEST #10 : 15-M501
TOTAL LENGTH : 12'-8"
CLEAR SPAN : 12'-0"
NUMBER OF SPECIMENS : 1

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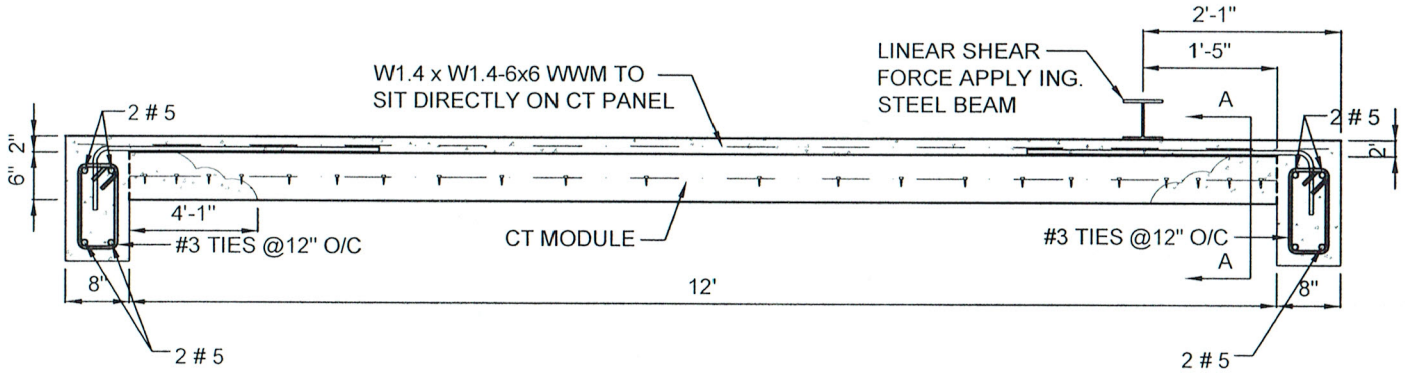
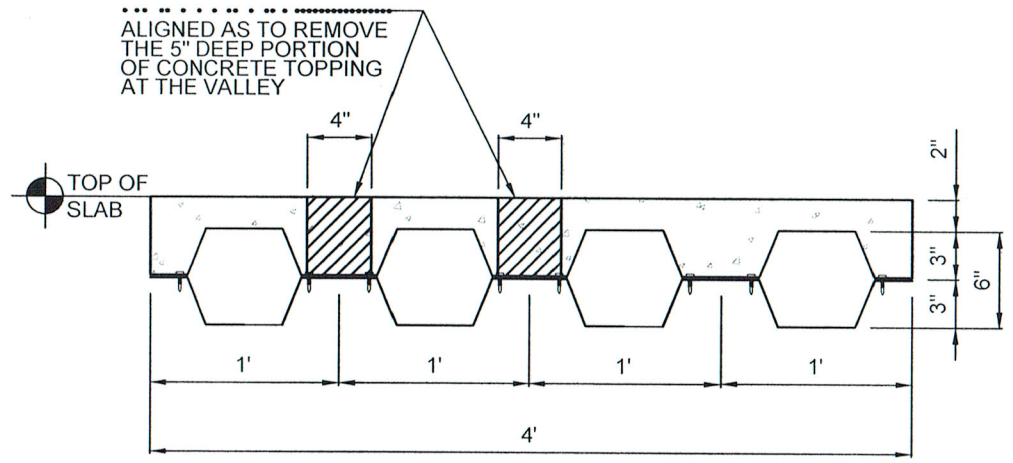
TEST #10 - END SHEAR - COMPOSITE - CT181800 - (1) CORE
(INCREMENTAL END SHEAR TO FAILURE)
JOB # 1830
S10
OF 23





SECTION A-A

SCALE: 1" = 1'

1 / S11 END SHEAR - COMPOSITE - CT181800 - (2) CORES (INCREMENTAL END SHEAR TO FAILURE)

SCALE: 1/2" = 1'

CLASSIC T - FLOOR SYSTEM
ASTM E72 TESTING
DATE : 2/12/15
SPECIMEN : CT181800
TEST #11 : 15-M506
TOTAL LENGTH : 12'-8"
CLEAR SPAN : 12'-0"
NUMBER OF SPECIMENS : 1

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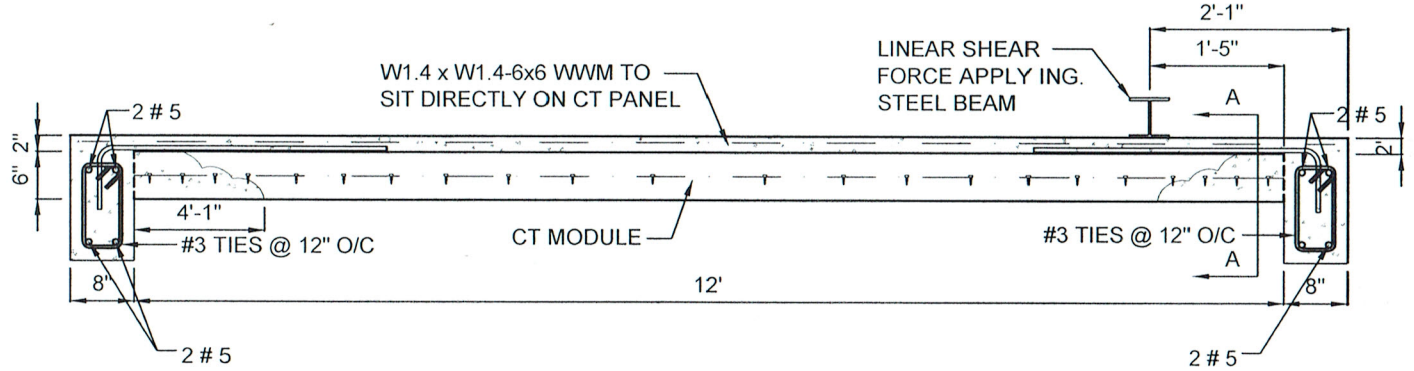
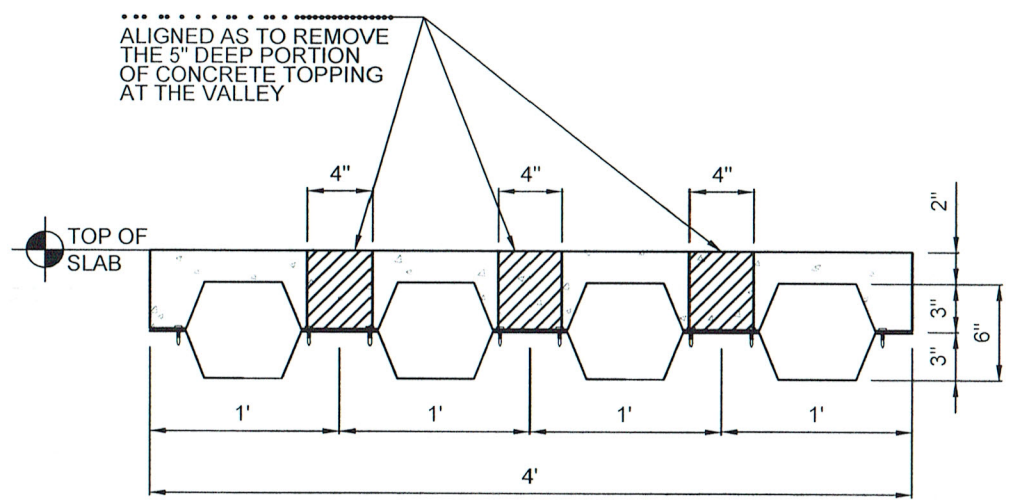
TEST #11 - END SHEAR - COMPOSITE - CT181800 - (2) CORES
(INCREMENTAL END SHEAR TO FAILURE)

JOB # : 1830
S11
OF 23





SECTION A-A

SCALE: 1" = 1'

1 / S12 END SHEAR - COMPOSITE - CT181800 - (3) CORES (INCREMENTAL END SHEAR TO FAILURE)

SCALE: 1/2" = 1'

CLASSIC T - FLOOR SYSTEM
ASTM E72 TESTING
DATE: 2/13/15
SPECIMEN : CT181800
TEST #12 : 15-M508
TOTAL LENGTH : 12'-8"
CLEAR SPAN : 12'-0"
NUMBER OF SPECIMENS : 1

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(3) CORES
(INCREMENTAL END SHEAR TO FAILURE)

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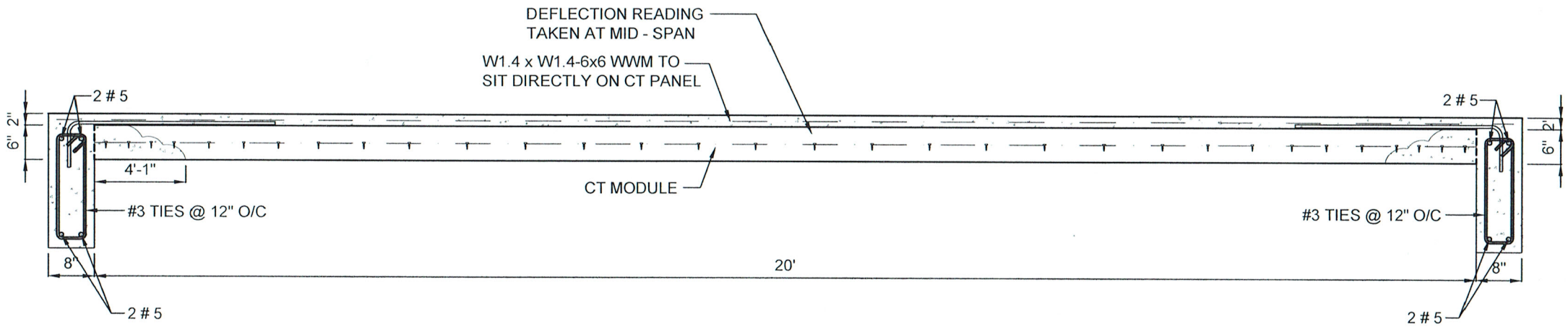
TEST #12 - END SHEAR - COMPOSITE - CT181800 - (3) CORES
(INCREMENTAL END SHEAR TO FAILURE)

JOB #: 1830

S12

OF 23

TESTED



1 / S13 COMPOSITE STATIC POSITIVE AIR PRESSURE (GRAVITY 24 HOURS)

SCALE: 1/2" = 1'

CLASSIC T - FLOOR SYSTEM
ASTM E72 TESTING
DATE : 2/18/15
SPECIMEN : COMPOSITE
TEST #13 : 15-5024
TOTAL LENGTH : 20'-8"
CLEAR SPAN : 20'-0"
NUMBER OF SPECIMENS : 1

CLASSIC T
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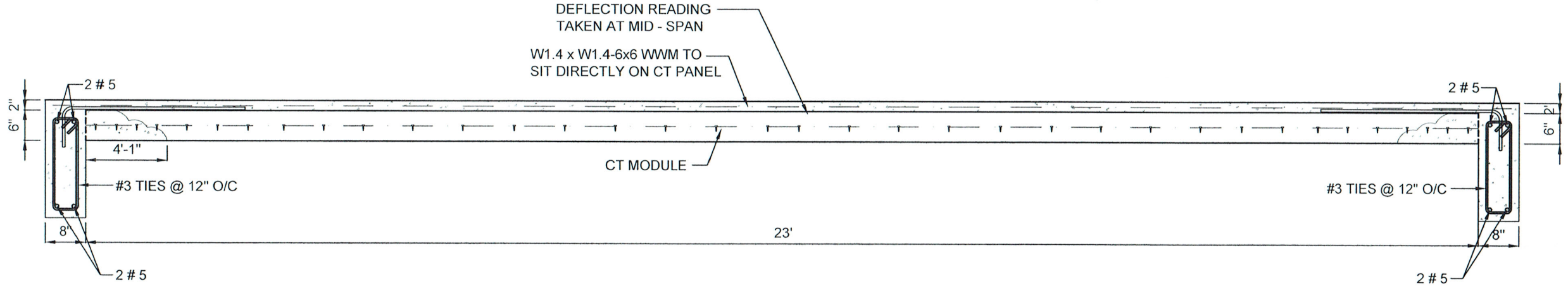
TEST #13 - COMPOSITE STATIC POSITIVE AIR PRESSURE
(GRAVITY SUSTAINED 24 HOURS)

JOB #: 1830

S13

OF 23

TESTED



1 / S14 COMPOSITE STATIC POSITIVE AIR PRESSURE (GRAVITY SUSTAINED 24 HOURS)

SCALE: 1/2" = 1'

CLASSIC T - FLOOR SYSTEM
ASTM E72 TESTING
DATE : 2/17/15
SPECIMEN : COMPOSITE
TEST #14 : 15-5023
TOTAL LENGTH : 23'-8"
CLEAR SPAN : 23'-0"
NUMBER OF SPECIMENS : 1

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PROJECT
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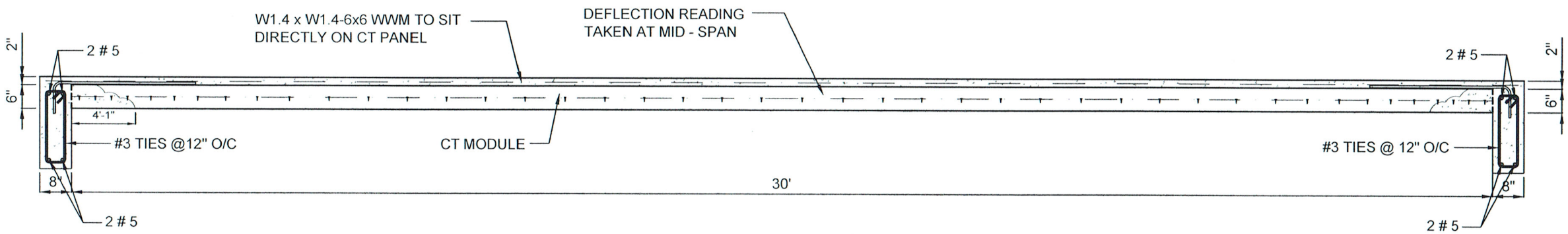
TEST #14 - COMPOSITE STATIC POSITIVE AIR PRESSURE
(GRAVITY SUSTAINED 24 HOURS)

JOB # : 1830

S14

TESTED



1/S15 COMPOSITE STATIC POSITIVE AIR PRESSURE (GRAVITY SUSTAINED 24 HOURS)

$\frac{3}{8}$"=1'

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CLASSIC T - FLOOR SYSTEM
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DATE : 2/20/15
SPECIMEN : COMPOSITE
TEST #15 : 15-5025
TOTAL LENGTH : 30'-8"
CLEAR SPAN : 30'-0"
NUMBER OF SPECIMENS : 1

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TEST #15 - COMPOSITE STATIC POSITIVE AIR PRESSURE
(GRAVITY SUSTAINED 24 HOURS)

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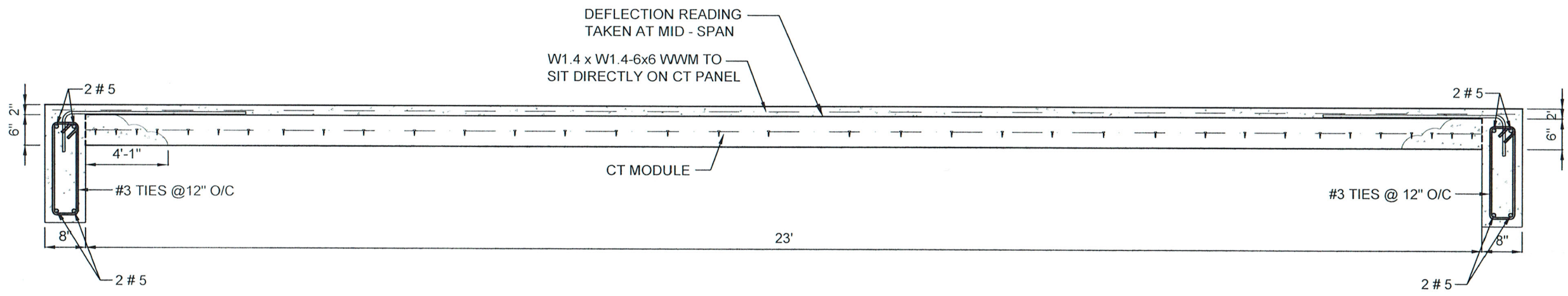
JOB # : 1830

S15

OF 23



1 S16 COMPOSITE CYCLIC POSITIVE PRESSURE, 23' CLEAR (80 PSF CYCLES SERVICE STAGE, LOAD & RELEASE) SUBSEQUENTLY, STATIC POSITIVE TO FAILURE (GRAVITY)

SCALE: 1/2" = 1'

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CLASSIC T - FLOOR SYSTEM
ASTM E72 TESTING
DATE : 2/6/15 (CYCLIC)
2/6/15 (GRAVITY TO FAILURE)
SPECIMEN : COMPOSITE
TEST #16 : 15-5019
TOTAL LENGTH : 23'-8"
CLEAR SPAN : 23'-0"
NUMBER OF SPECIMENS : 1

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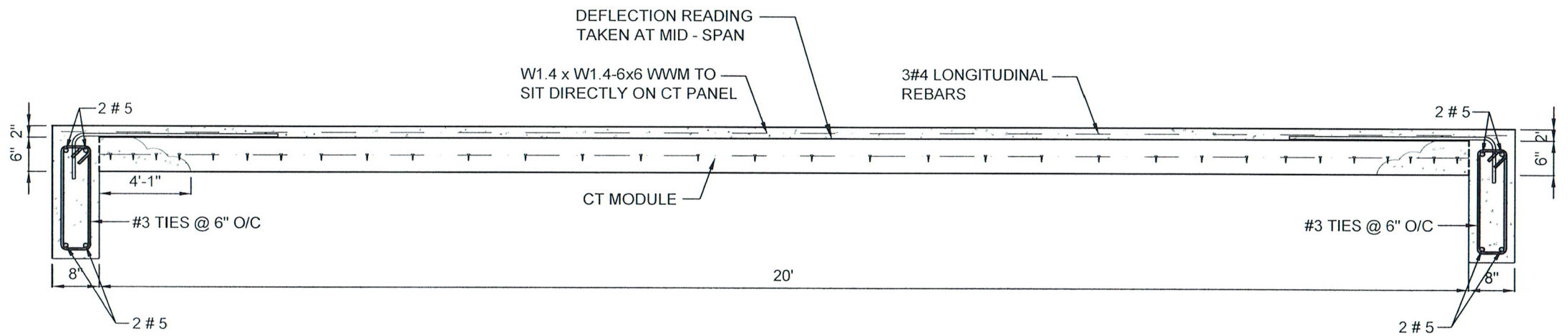
TEST #16 - COMPOSITE CYCLIC POSITIVE PRESSURE, 23' CLEAR (80 PSF SERVICE STAGE, LOAD & RELEASE) SUBSEQUENTLY, STATIC POSITIVE TO FAILURE (GRAVITY)

JOB # 1830

S16

OF 23



COMPOSITE CYCLIC NEGATIVE AIR PRESSURE,20' CLEAR SPAN (UPLIFT, CYCLIC)

1 / S17

SCALE: 1/2" = 1'

TESTED

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CLASSIC T - FLOOR SYSTEM
ASTM E72 TESTING
DATE : 2/23/15
SPECIMEN : COMPOSITE
TEST # 17 : 15-5029
TOTAL LENGTH : 20'-8"
CLEAR SPAN : 20'-0"
NUMBER OF SPECIMENS : 1

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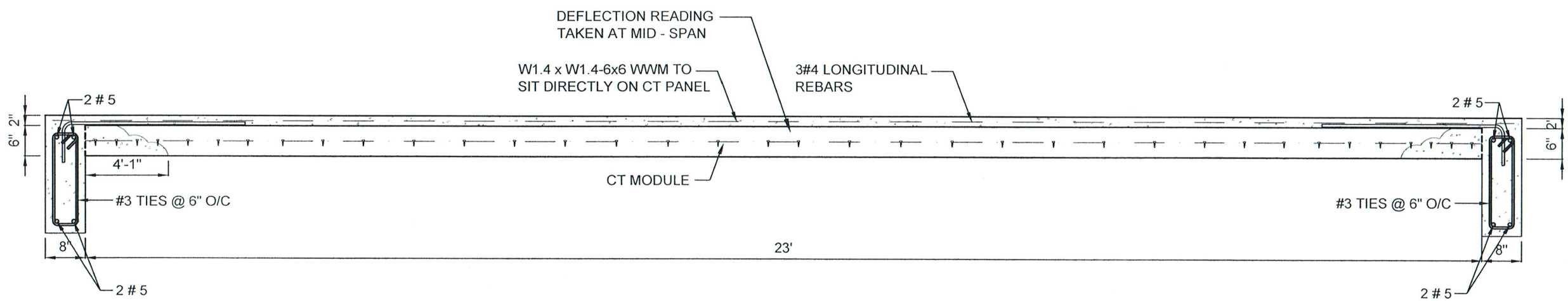
TEST #17 - COMPOSITE CYCLIC NEGATIVE AIR PRESSURE,20' CLEAR SPAN (UPLIFT, CYCLIC, 600@30PSF, 600@50PSF, 1@ 130PSF)

JOB # : 1830

S17

OF 23



TESTED

1 / S18 COMPOSITE CYCLIC NEGATIVE PRESSURE,23' CLEAR SPAN (UPLIFT, CYCLIC)

SCALE: 1/2" = 1'

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CLASSIC T - FLOOR SYSTEM
ASTM E72 TESTING
DATE : 2/24/15
SPECIMEN : COMPOSITE
TEST #18 : 15-5031
TOTAL LENGTH : 23'-8"
CLEAR SPAN : 23'-0"
NUMBER OF SPECIMENS : 1

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TEST #18 - COMPOSITE CYCLIC NEGATIVE PRESSURE,23' CLEAR SPAN
(UPLIFT, CYCLIC, 600@30PSF, 600@50PSF, 1@ 130PSF)

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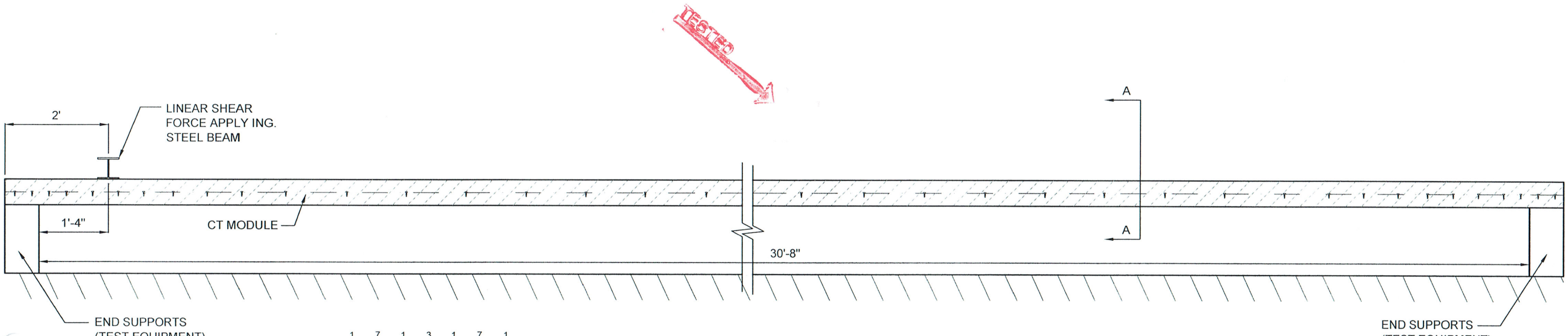
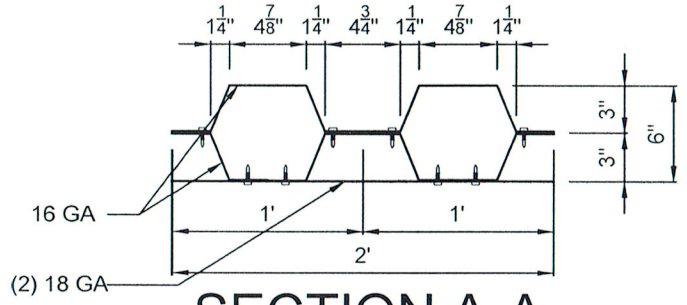
JOB # 1830

S18





SECTION A-A

SCALE: 1" = 1'

1 / S19 END SHEAR - NON COMPOSITE - CT16161818 (INCREMENTAL END SHEAR TO FAILURE)

SCALE: 1/2" = 1'

TESTED

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CLASSIC T - FLOOR SYSTEM
ASTM E72 TESTING
DATE : 2/10/15
SPECIMEN : CT16161818
TEST #7 : 15-M502
TOTAL LENGTH : 30'-8"
CLEAR SPAN : 30'-0"
NUMBER OF SPECIMENS : 2

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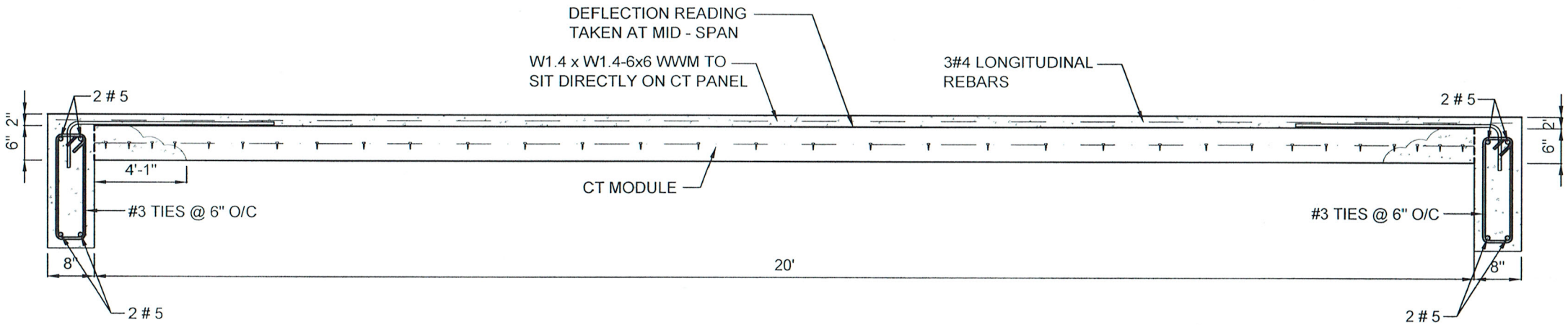
END SHEAR - NON COMPOSITE - CT16161818
(INCREMENTAL END SHEAR TO FAILURE)

JOB # : 1830

S19

OF 23



1 / S20 COMPOSITE STATIC NEGATIVE PRESSURE,20' CLEAR SPAN (UPLIFT: LOAD AND RELEASE INCREMENTAL TO FAILURE)

SCALE: 1/2" = 1'

CLASSIC T - FLOOR SYSTEM
ASTM E72 TESTING
DATE : 2/23/15
SPECIMEN : COMPOSITE
TEST #20 : 15-5028
TOTAL LENGTH : 20'-8"
CLEAR SPAN : 20'-0"
NUMBER OF SPECIMENS : 1

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TEST #20 - COMPOSITE STATIC NEGATIVE PRESSURE,
20' CLEAR SPAN (UPLIFT: LOAD AND RELEASE
INCREMENTAL TO FAILURE)
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JOB # : 1830
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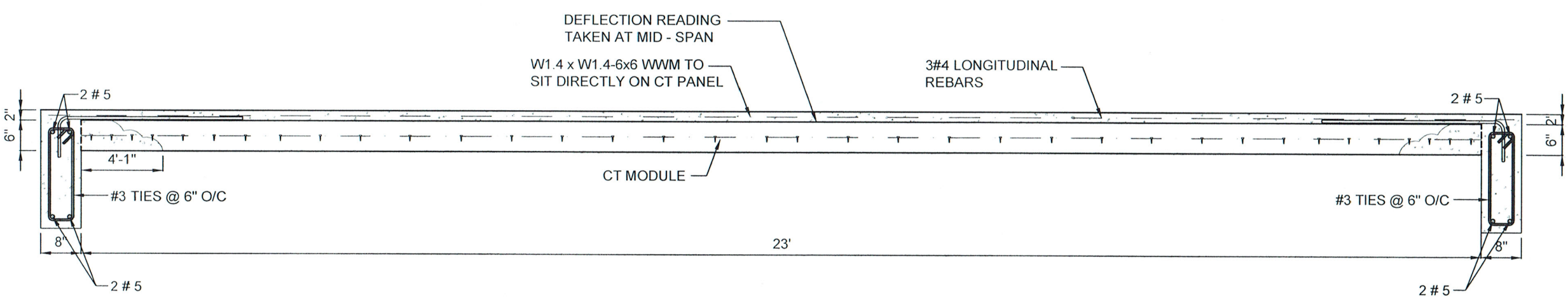
OF 23



1 S21 COMPOSITE STATIC NEGATIVE PRESSURE,23' CLEAR SPAN (UPLIFT: LOAD AND RELEASE INCREMENTAL TO FAILURE)

SCALE: 1/2" = 1'

TESTED

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CLASSIC T - FLOOR SYSTEM
ASTM E72 TESTING
DATE : 2/24/15
SPECIMEN : COMPOSITE
TEST #21 : 15-5030
TOTAL LENGTH : 23'-8"
CLEAR SPAN : 23'-0"
NUMBER OF SPECIMENS : 1

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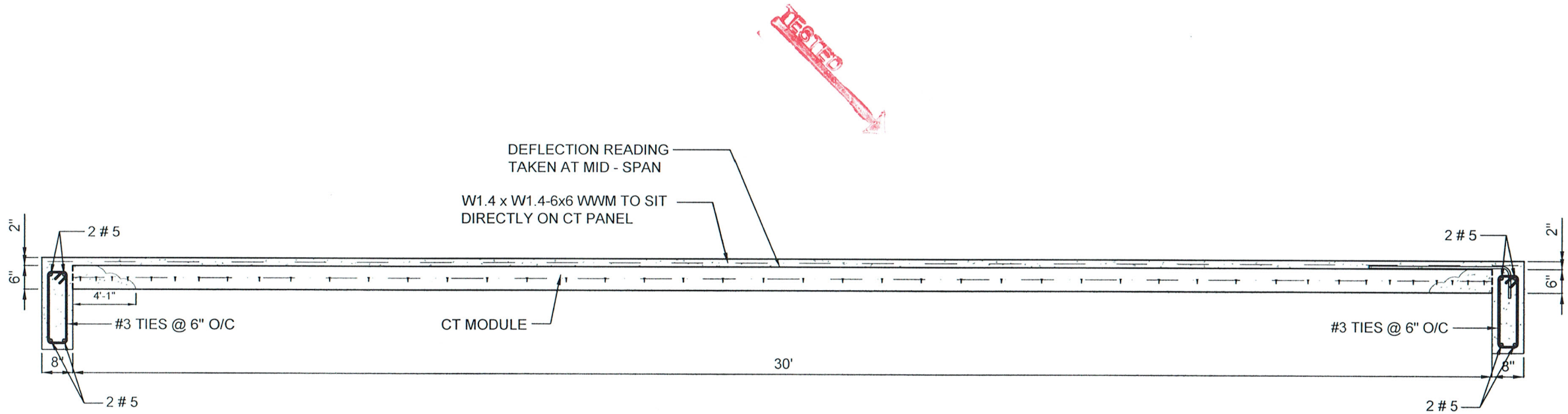
TEST #21 - COMPOSITE STATIC NEGATIVE PRESSURE,
23' CLEAR SPAN (UPLIFT: LOAD AND RELEASE
INCREMENTAL TO FAILURE)

JOB # : 1830

S21

OF 23



TESTED

1 / S22 COMPOSITE STATIC NEGATIVE PRESSURE,30' CLEAR SPAN (UPLIFT: LOAD AND RELEASE INCREMENTAL TO FAILURE)

$\frac{3}{8}$"=1'

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CLASSIC T - FLOOR SYSTEM
ASTM E72 TESTING
DATE : 2/23/15
SPECIMEN : COMPOSITE
TEST #22 : 15-5027
TOTAL LENGTH : 30'-8"
CLEAR SPAN : 30'-0"
NUMBER OF SPECIMENS : 1

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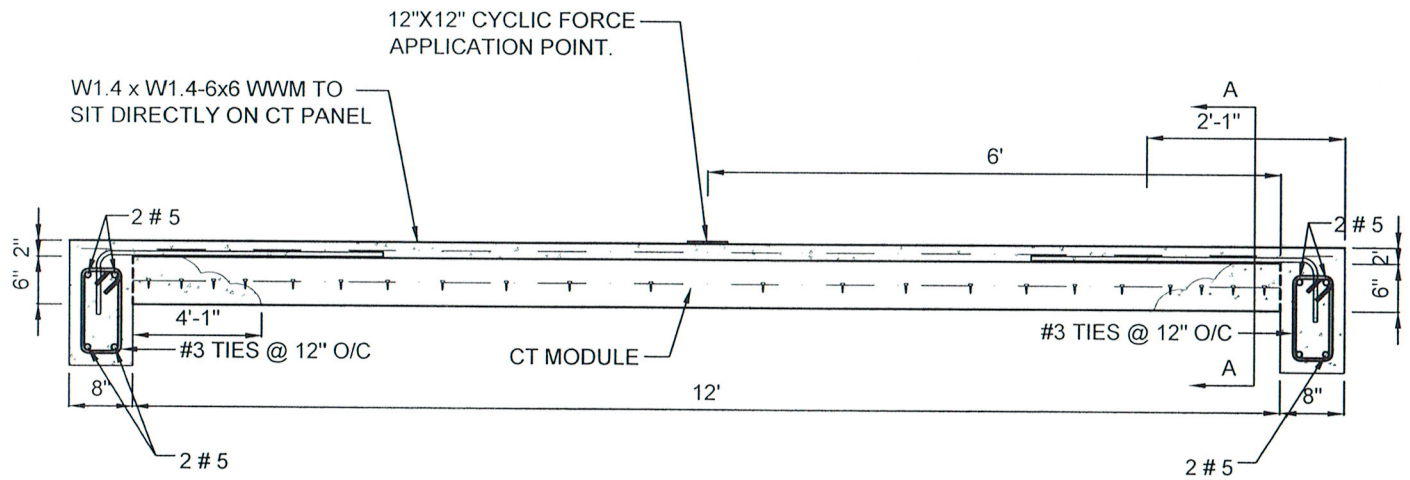
TEST #22 - COMPOSITE STATIC NEGATIVE PRESSURE,
30' CLEAR SPAN (UPLIFT: LOAD AND RELEASE
INCREMENTAL TO FAILURE)

JOB # : 1830

S22

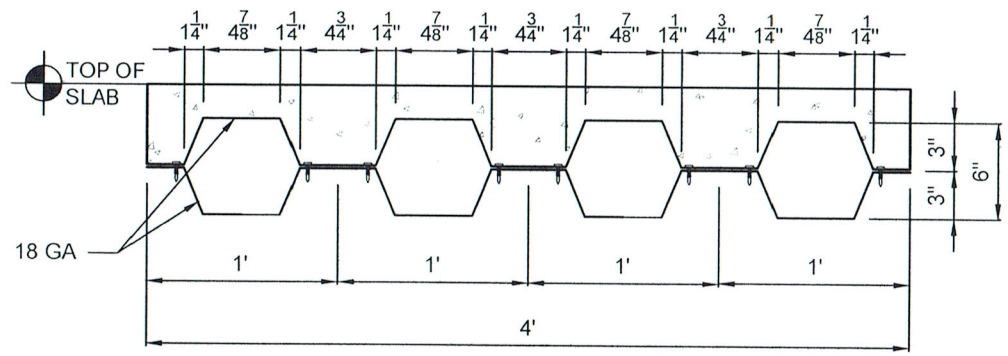
OF 23

TESTED



1 / S23 FOOT TRAFFIC - COMPOSITE - CT181800 1000 CYCLES, 500 LB, 1SQFT FORCE AREA

SCALE: 1/2" = 1'



SECTION A-A

SCALE: 1" = 1'

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CLASSIC T - FLOOR SYSTEM
ASTM E72 TESTING
DATE :1/22/15
SPECIMEN : CT181800
TEST : 15-M528
TOTAL LENGTH : 12'-8"
CLEAR SPAN : 12'-0"
NUMBER OF SPECIMENS : 1

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FOOT TRAFFIC - COMPOSITE - CT181800
1000 CYCLES, 500 LB, 1SQFT FORCE AREA

JOB # : 1830

S23

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