



SUBMITTAL
DIVISION: 22
NO.: 221116-03

Title: Domestic Water Piping - Above Ground Type L Copper Pipe & Fittings

PRIORITY: High

Division: 22
No.: 221116-03

Contract No.: E6L38

LEAD Project No.: 18-04

DESIGN TEAM REVIEW

Rev.	Description	Received	From	Sent	To	Returned	Forwarded	Status	Days Held
A	Domestic Water Piping - Above Ground Type L Copper Pipe & Fittings	19-Nov-19	KL	20-Nov-19	APCTE			OUT FOR REVIEW	

FDOT REVIEW

Rev.	Description	Received	From	Sent	To	Returned	Forwarded	Status	Days Held
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Walker

Project Submittal Number: _____

- ☒ No Exception Taken ☐ Make Corrections Noted
Resubmittal not Required
☐ Rejected ☐ Revise and Resubmit
☐ Submittal Not Required
No Review Performed

Drawings have been reviewed for design intent and general compliance with the information given in the contract documents. Deviations from contract documents shall be clearly identified and are not reviewed nor accepted unless identified. Contractor is responsible for dimensions, quantities, fabrication, processes, and techniques of construction, coordination of its work with that of all other trades and satisfactory performance of its work.

Date: 11/21/2019 By: JSirling



Review is for general conformance with the Contract Documents. Comments shall not be construed as relieving the supplier/subcontractor from strict compliance with such documents. The supplier/subcontractor remain responsible for details and accuracy, for complying with standards of the industry regarding fabrication, assembly, erection, and installation procedures.

- ☒ REVIEWED ☐ REVISED & RESUBMIT
☐ REVIEWED AS NOTED ☐ REJECTED

By: Joanna Flores

Date: 11/20/2019



L. TRIANA & ASSOCIATES, INC.
CONSULTING ENGINEERS

Mechanical - Electrical - Plumbing - Fire Protection

9701 SW 56th STREET
MIAMI, FLORIDA 33165
PH: (305) 595-9765 / FAX: (305) 596-1814

SHOP DRAWING REVIEW

NO EXCEPTIONS TAKEN:

NOTE COMMENTS: _____

DISAPPROVED: _____

RESUBMIT: _____

DATE:

REVIEWED

By Lester Triana, P.E. at 12:03 pm, Nov 21, 2019

REVIEW FOR GENERAL CONFORMANCE WITH THE DESIGN CONCEPT AND CONTRACT DOCUMENTS. MARKINGS OR COMMENTS SHALL NOT BE CONSTRUED AS RELIEVING THE CONTRACTOR FROM COMPLIANCE WITH THE PROJECT PLAN AND SPECIFICATIONS, NOR DEPARTURES THEREFROM. THE CONTRACTOR REMAINS RESPONSIBLE FOR DETAILS AND ACCURACY, FOR CONFIRMING AND CORRELATING ALL QUANTITIES, JOB CONDITIONS AND DIMENSIONS, FOR SELECTING FABRICATION PROCESSES, FOR TECHNIQUES OF ASSEMBLY AND CONSTRUCTION, AND FOR PERFORMING HIS WORK IN A SAFE MANNER.

KL RECEIVED 11/26/2019



Submittal #123.0 22 1116G (PGTH) - DOMESTIC WATER PIPING (WALKER)

Kaufman Lynn Construction, Inc.
3185 S. Congress Avenue
Delray Beach, Florida 33445
Phone: 561-361-6700
Fax: 561-361-6979

Project: 1074 - Golden Glades Multimodal Transportation Facility
SW Quadrant of the Golden Glades Interchange Miami-Dade
Florida

Domestic Water Piping - Above Ground Type 'L' Copper Pipe and Fittings (All Buildings)

SPEC SECTION:	22 1116G (PGTH) - DOMESTIC WATER PIPING (WALKER)	SUBMITTAL MANAGER:	Tom Reeder (Kaufman Lynn Construction, Inc.)
STATUS:	Open	DATE CREATED:	11/19/2019
ISSUE DATE:	11/19/2019	REVISION:	0
RESPONSIBLE CONTRACTOR:	Integ Miami LLC	RECEIVED FROM:	Daniela Salas
RECEIVED DATE:	10/16/2019	SUBMIT BY:	12/1/2019
FINAL DUE DATE:	11/27/2019	LOCATION:	
SUB JOB:		COST CODE:	
		TYPE:	Product Data
APPROVERS:	Mario Rojas (A & P Consulting Transportation Engineers Corp.)		
BALL IN COURT:	Joanna Flores (Lead Engineering Contractors)		
DISTRIBUTION:	Carlos Teijeiro (Kaufman Lynn Construction, Inc.) , Tom Reeder (Kaufman Lynn Construction, Inc.) , Leonor Flores (Kaufman Lynn Construction, Inc.) , Joanna Flores (Lead Engineering Contractors) , Albert Acevedo (Kaufman Lynn Construction, Inc.)		
DESCRIPTION:			
ATTACHMENTS:	#22 1116G-3 Domestic Water Piping - Type 'L' Copper Pipe and Fittings - Submitted.pdf		

SUBMITTAL WORKFLOW

NAME	SUBMITTER/ APPROVER	SENT DATE	DUE DATE	RETURNED DATE	RESPONSE	ATTACHMENTS	COMMENTS
Joanna Flores	Submitter		11/20/2019		Pending		
Mario Rojas	Approver		11/27/2019		Pending		

BY

DATE

COPIES TO

Submittal # #43**KL SUBMITTAL #22 1116G-3**

FO-INTEG-PROJECT-PO0001-REV.03 Gestión de Control de Calidad / Quality Management

Information

Status: In Review**Task/tareas condition****Legend**

Overdue



Issue



On Time



Delayed Start



Inactive

Project (CDC) - Empresa/ COMPANY: Integ Miami LLC

Project (CDC) - CDC (Centro de Costo) I-PLUMBING-GGTMF-021919

Project (CDC) - Customer Name Kaufman Lynn Construction

Project (CDC) - Ubicacion 15890 Northwest 7th Avenue, Miami, Florida 33169

Submittal

Title: Pipe and fitting Cooper Type L Above grade Domestic Water Lines**Spec Section:** SECTION 22 1116**Description:** Pipe and fitting Cooper Type L - Above grade Domestic Water Lines - All Buildings**Submittal Type :** Product Data**Submitted On:****Responsible Contractor:** Integ Miami LLC**Submittal Manager:** Eduardo Pereira**Issue Date:** 18-10-2019 12:00 AM**Final Due Date:** 25-10-2019**Lead Time:** 5**Ball in Court:** Integ

Attachment

Attachment: 43 Submittal PIPE & FITTING COOPER Type L.pdf**Linked Drawings:****Notes:**

Stamp Info

Stamp Date: 16-10-2019**Other Name:**
☐ **Show Stamp on PDF:**
KAUFMAN LYNN CONSTRUCTION - SUBMITTALProject No. 1074 Submittal No. #22 1116G-3

Reviewed

Make Corrections Noted

Submit Specified Item

Checking is only for general conformance with the design concept of the project and general compliance with the information given in the Contract Documents. Any action shown is subject to the requirements of the plans and specifications. Subcontractor is responsible for dimensions which shall be confirmed and correlated at the job site, fabrication processes and techniques sequences of construction, coordination of his/her work with that of all trades, and the satisfactory performance of his/her work.

DATE: 11/19/2019 BY: T. REEDER

Submittal logs

Add Submittal LOG

10/16/2019

PROYECTOS INTEG -



Revision #	Date Submittal REV	Attachement Document:	Comments:
No submittal logs found			

Submittal Approval

☐ Approval

Name/Title:

Signature _____

Created on Oct. 14 at 7:31 AM (PDT). Last updated by pma@integca.com, [PMA](#) today at 7:50 AM (PDT). Owned by pma@integca.com, [PMA](#).

KAUFMAN LYNN CONSTRUCTION - SUBMITTAL

Project No. 1074 Submittal No. #22 1116G-3

☒ Reviewed ☐ Make Corrections Noted

☐ Submit Specified Item

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DATE: 11/19/2019 BY: T. REEDER



COPPER TUBE FOR PLUMBING AND MECHANICAL APPLICATIONS

Job Name	GGMTF	Contractor	INTEG MIAMI LLC
Job Location	GOLDEN GLADES	Wholesaler	
Engineer		Streamline® Rep	

Product Description:

Streamline® Copper Tube for use in plumbing and mechanical applications. Available sizes (Type K, L, M, & DWV) ranging from ¼" to 8" in diameter. All tube shall be manufactured in the United States.

Material:

Streamline® Copper Tube is manufactured from UNS C12200 grade of copper.

Key Specifications:

Streamline® Copper Tube (Type K, L, M) shall conform to the NSF/ANSI 61 Annex G requirements and is manufactured to meet ASTM B88. Copper drainage tube (DWV) is made to meet ASTM B306. Copper refrigeration coils, ACR/Nitrogenized straight lengths and line sets are made to meet the chemical, mechanical, cleanliness and eddy current testing requirements of the applicable specifications of ASTM B280.

Installation:

Installations shall comply with the latest applicable building codes for the local jurisdiction. For detailed installation instructions, consult the Copper Development Association at copper.org.

References:

ASTM B75	Seamless Copper Tube
C12200	99.9% Pure Copper (can be used for potable water)
NSF/ANSI 61 Annex G	Safe Drinking Water Act (third party certification)
ASTM B88	Seamless Copper Water and Gas Tube (Type K, L, M)
ASTM B280	Seamless Copper Tube for Air Conditioning and Refrigeration
ASTM B306	Seamless Drainage Tube Code (DWV)

KAUFMAN LYNN CONSTRUCTION - SUBMITTAL

Project No. 1074 Submittal No. #22 1116G-3

Reviewed ☒ Make Corrections Noted ☐

Submit Specified Item

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DATE: 11/19/2019 BY: T. REEDER



Reviewed for general conformance to the contract documents. This review does relieve the vendor of the responsibility of making the work conform to the plans and the **FDOT Design Standards.**

Submittal #:	43
CDC:	I-PLUMBING-GGMTF-021919
Job #:	424
Reviewed by:	EDUARDO PEREIRA
Date:	10/16/2019
Vendor:	REVISION
Product Description:	Pipe and fitting Cooper Type L Above grade Domestic Water Lines

Copper [tube or fitting] UNS C122000 has been evaluated by NSF International to NSF/ANSI 61 for use in drinking water supplies of pH 6.5 and above. Drinking water supplies that are less than pH 6.5 may require corrosion control to limit leaching of copper into the drinking water.





COPPER TUBE DATA

Streamline[®] Copper Tube sets the standard for quality, consistency and service in the plumbing industries. With a full line of copper tube products to support most all plumbing supply and DWV applications, Streamline[®] Copper Tube is available in all common types including Type K, Type L, Type M and DWV. Each piece of tube is incised marked and color coded for easy, long lasting identity. Manufactured in accordance with applicable standards, our ongoing commitment to quality continues to make Streamline[®] Copper Tube the preferred and specified brand of industry professionals.

TYPE K RATED WORKING PRESSURE (PSIG)

NOM. DIA.	WT/FT	FT/BN DL	150°F	200°F	300°F	400°F
1/4	0.145	500	913	860	842	537
3/8	0.269	500	960	904	885	565
1/2	0.344	500	758	713	698	446
5/8	0.418	200	626	589	577	368
3/4	0.641	200	724	682	668	426
1	0.839	100	557	524	513	327
1 1/4	1.04	100	452	425	416	266
1 1/2	1.36	100	420	396	387	247
2	2.06	—	370	348	341	217
2 1/2	2.93	—	338	319	312	199
3	4.00	—	328	308	302	193
3 1/2	5.12	—	311	293	286	183
4	6.51	—	306	288	282	180
5	9.67	—	293	276	270	172
6	13.90	—	295	277	271	173
8	25.90	—	314	295	289	184

TYPE L

1/4	0.126	500	775	729	714	456
3/8	0.198	500	662	623	610	389
1/2	0.285	500	613	577	565	361
5/8	0.362	200	537	505	495	316
3/4	0.455	200	495	466	456	291
1	0.655	100	420	395	387	247
1 1/4	0.884	100	373	351	344	219
1 1/2	1.14	100	347	327	320	204
2	1.75	—	309	291	285	182
2 1/2	2.48	—	285	269	263	168
3	3.33	—	270	254	248	159
3 1/2	4.29	—	258	243	238	152
4	5.38	—	249	235	230	147
5	7.61	—	229	215	211	135
6	10.2	—	213	201	196	125
8	19.3	—	230	216	212	135

Tables give computed allowable stress for annealed copper tube at indicated temperature.

KAUFMAN LYNN CONSTRUCTION - SUBMITTAL
Project No. 1074 Submittal No. #22 1116G-3

✓ Reviewed _____ Make Corrections Noted _____
Submit Specified Item _____

Checking is only for general conformance with the design concept of the project and general compliance with the information given in the Contract Documents. Any action shown is subject to the requirements of the plans and specifications. Subcontractor is responsible for dimensions which shall be confirmed and correlated at the job site, fabrication processes and techniques, sequences of construction, coordination of his/her work with that of all trades, and the satisfactory performance of his/her work.

DATE: 11/19/2019 BY: T. REEDER



COPPER TUBE DATA

TYPE M RATED WORKING PRESSURE (PSIG)

NOM. DIA.	WT/FT	FT/BNDL	150°F	200°F	300°F	400°F
3/8	0.145	500	485	456	447	285
1/2	0.204	500	420	395	387	247
3/4	0.328	200	346	326	319	204
1	0.465	100	286	270	264	169
1 1/4	0.682	100	287	271	265	169
1 1/2	0.94	100	282	265	259	166
2	1.46	-	254	239	234	149
2 1/2	2.03	-	233	219	215	137
3	2.68	-	215	203	199	127
3 1/2	3.58	-	214	202	197	126
4	4.66	-	213	201	197	126
5	6.66	-	198	186	182	116
6	8.92	-	186	175	171	109
8	16.5	-	195	183	180	115

TYPE DWV

NOM. DIA	WT/FT	FT/BNDL	150°F	200°F	300°F	400°F
1 1/4	0.65	100	280	269	258	165
1 1/2	0.809	100	249	240	230	147
2	1.07	-	185	178	170	109
3	1.69	-	135	130	125	80
4	2.87	-	127	122	117	75
5	4.43	-	129	124	119	76
6	6.1	-	126	121	116	74
8	10.6	-	124	119	114	73

Table give computed allowable stress for annealed copper tube at indicated temperature.

TECHNICAL DATA

Values of allowable internal working pressure for copper tube in service are based on the formula from ANSI B31, Standard Code for Pressure Piping:

$$P = \frac{2 S t m}{D \max - 0.8 t m}$$

P = Allowable Pressure
S = Allowable stress
T = Wall thickness
D Max = Outside Diameter

@ 150°F S = 5100 PSIG annealed
@ 200°F S = 4800PSIG annealed
@ 300°F S = 4700 PSIG annealed
@ 400°F S = 3000 PSIG annealed

KAUFMAN LYNN CONSTRUCTION - SUBMITTAL

Project No. 1074 Submittal No. #22 1116G-3

☒ Reviewed ☐ Make Corrections Noted

☐ Submit Specified Item

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Subcontractor is responsible for dimensions which shall be confirmed and

correlated at the job site, fabrication processes and techniques sequences of

construction, coordination of his/her work with that of all trades, and the

satisfactory performance of his/her work.

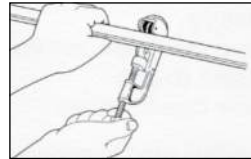
DATE: 11/19/2019 BY: T. REEDER

All ratings listed for types K, L, M, DWV and refrigeration service tube in the preceding charts are calculated for tube in the annealed condition. These values should be used when soldering, brazing or welding is employed for joining components in a system. While the ratings for hard drawn tube are substantially higher, they should only be used for systems using properly designed flare or compression mechanical joints, since joining by any heating process might anneal (soften) the tube.

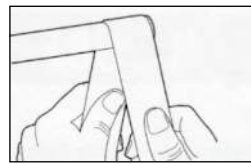
In designing a system, careful consideration should also be given to joint ratings as well as those of the components.

COPPER TUBE AND SOLDER TYPE FITTINGS

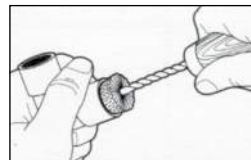
1. Cut tube square with the cutter or fine hack saw (32 tooth blade is recommended). Remove Burr.
2. Clean outside end of copper tube thoroughly with sand cloth or sandpaper equal depth of fitting. Leave no dark spots.
3. Clean inside of fitting carefully to tube stop with wire brush. Note: Sand cloth or sandpaper may also be used.
4. Using a brush, apply light uniform coat of soldering flux to the outside of the tube and inside of the fitting.
5. Slip tube into fitting to tube stop. Turn tube back and forth once or twice to distribute flux evenly.
6. Apply heat uniformly around the fitting with torch. When solder melts upon contact with heated fitting, the proper soldering temperature has been reached. Remove flame and feed solder slightly off center at the bottom of the joint. Proceed across the bottom of the fitting and up to the top center position. Return to the starting point, and then proceed up the incomplete side to the top, again, overlapping the solder metal. Wipe off surplus solder with a piece of cloth.



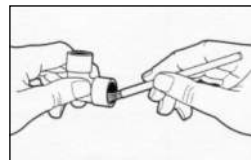
1. Cut tube to length & remove burr with file or scraper.



2. Clean outside of tube with sandpaper or sand cloth.



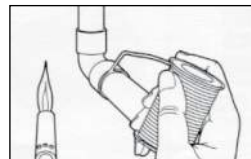
3. Clean inside of fitting with wire brush, sand cloth or sandpaper.



4. Apply flux thoroughly to inside of fitting.



5. Apply flux thoroughly to outside of tube - assemble tube and fitting.



6. Apply heat with torch. When solder melts upon contact with heated fitting, the proper temp for soldering has been reached. Remove flame & feed solder to the joint at one or two points until a ring of solder appears at the end of the fitting.

CAUTION: No not overheat the joint or direct the flame into the face of the fitting cup. Overheating could burn the flux, which will destroy its effectiveness and the solder will not enter the joint properly.

KAUFMAN LYNN CONSTRUCTION - SUBMITTAL

Project No. 1074 Submittal No. #22 1116G-3

✓ Reviewed _____ Make Corrections Noted _____

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DATE: 11/19/2019 BY: T. REEDER