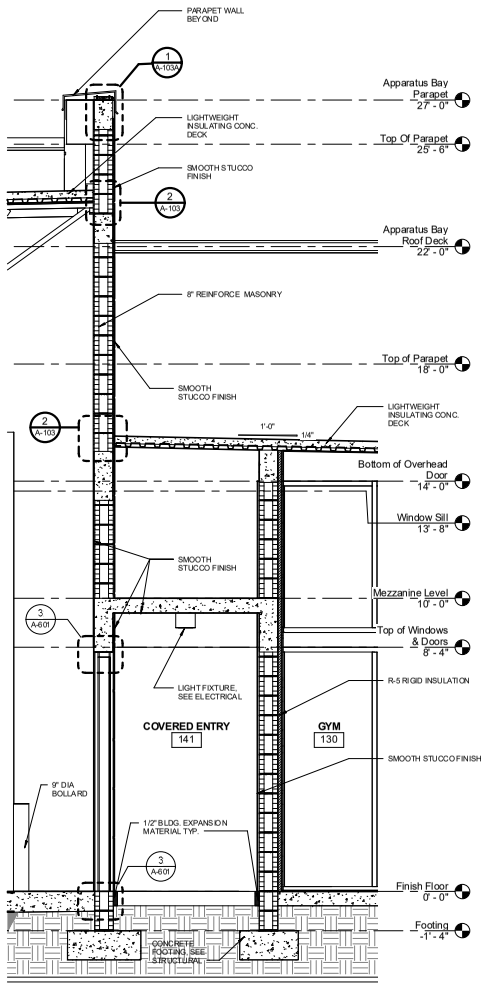
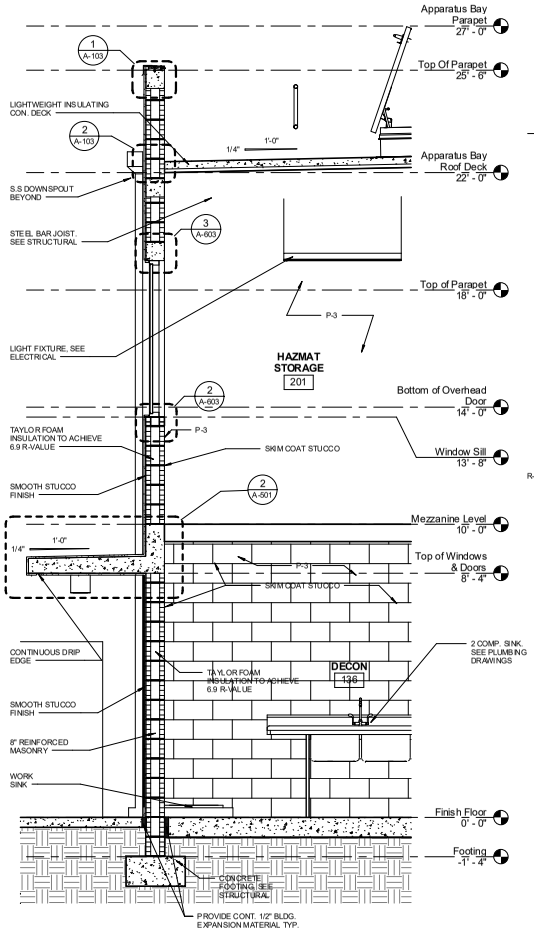


1 A-307 ENLARGED SECTION 10
SCALE: 1/2" = 1'-0"



2 A-307 ENLARGED SECTION 11
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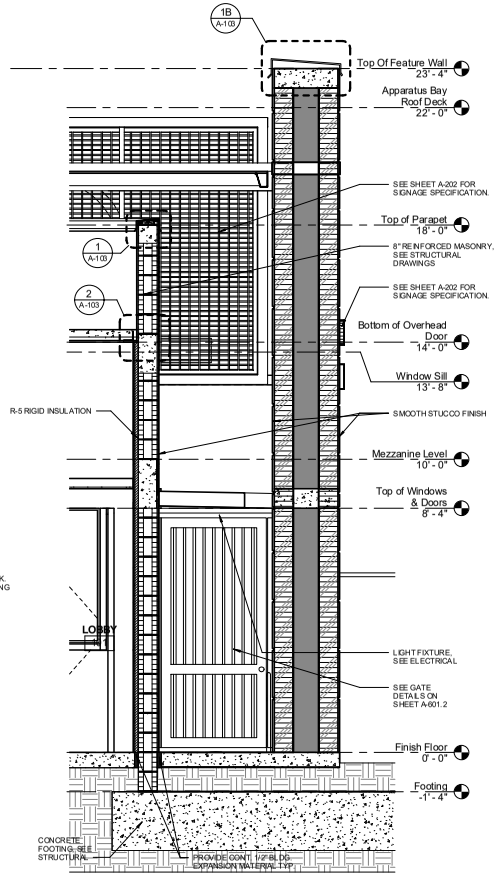

3 A-307 ENLARGED SECTION 12
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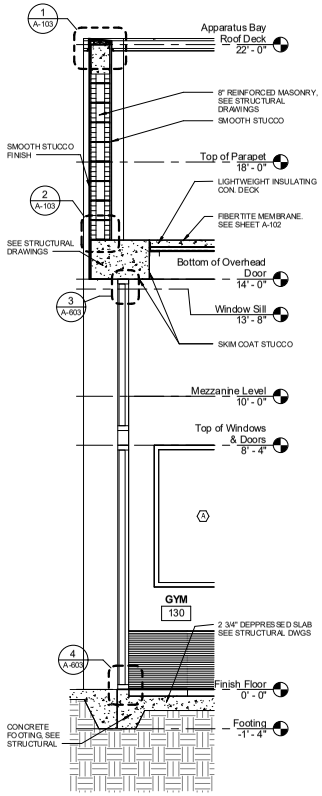


4 A-307 ENLARGED SECTION 13
SCALE: 1/2" = 1'-0"

BID SET

CHRIS P. ZIMMERMAN, A.I.A.
REGISTERED ARCHITECT NO. 10,995
STATE OF FLORIDA

DATE: 03-19-18

CONSULTANT

CITY OF FORT LAUDERDALE
PUBLIC WORKS DEPARTMENT
ENGINEERING & ARCHITECTURE
100 North Andrews Avenue, Fort Lauderdale, Florida 33301

NO.	DATE	DESCRIPTION
	03-9-16	BID SET

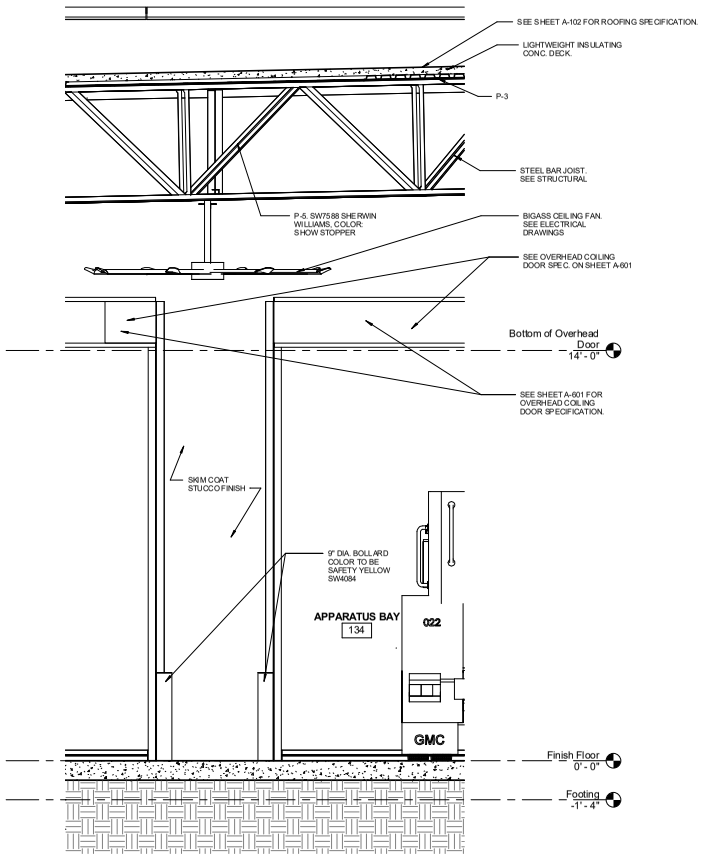
REVISIONS

City of Fort Lauderdale

PROJECT # 10909
FIRE STATION #8

CPZ ARCHITECTS, INC.
1717 SW 1ST AVENUE
FORT LAUDERDALE, FL 33315
PHONE: (954) 763-3525 FAX: (954) 337-6359
AA-26000603 WWW.CPZARCHITECTS.COM

DRAWN BY: Author
DATE: 10-29-16
CHECK BY: Checker
SCALE: 1/2" = 1'-0"
SHEET NO.: A-307
OF
TOTAL: 105
DRAWING TITLE: Enlarged Wall Sections
DRAWING FILE NO.: 4-138-84



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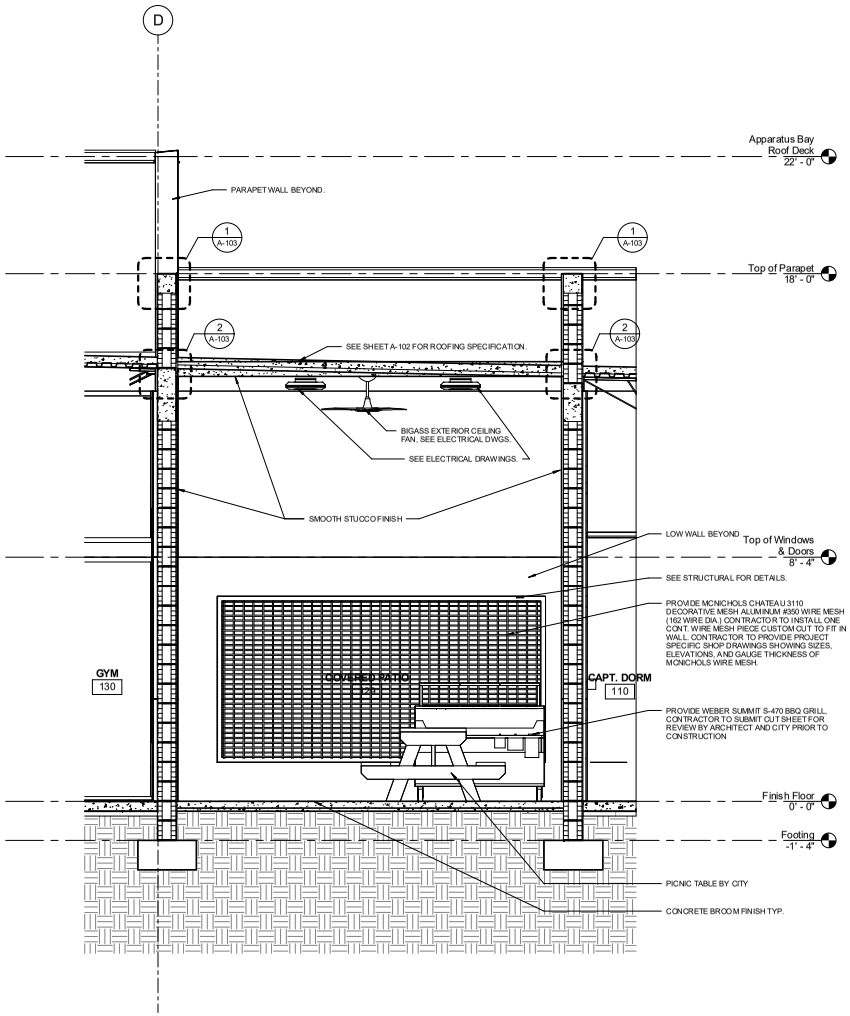


2 A-308 ENLARGE COVER PATIO
SCALE: 1/2" = 1'-0"

BID SET

CHRIS P. ZIMMERMAN, A.I.A.
REGISTERED ARCHITECT NO. 10,995
STATE OF FLORIDA
DATE: 03-19-18

CONSULTANT

CITY OF FORT LAUDERDALE
PUBLIC WORKS DEPARTMENT
ENGINEERING & ARCHITECTURE
100 North Andrews Avenue, Fort Lauderdale, Florida 33301

NO.	DATE	DESCRIPTION
	03-9-18	BID SET

REVISIONS

City of Fort Lauderdale

PROJECT # 10909
FIRE STATION #8

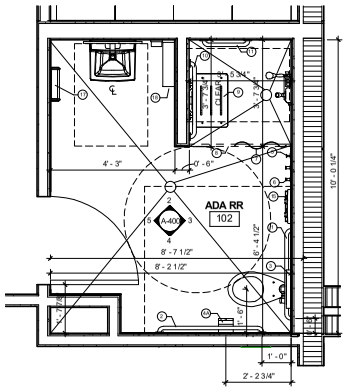
CPZ ARCHITECTS, INC.
414 WEST BROWARD BOULEVARD
FORT LAUDERDALE, FLORIDA 33311
PHONE: (954) 792-8252
AA-26000603
1717 SW 1ST AVENUE
FORT LAUDERDALE, FL 33315
FAX: (954) 337-6859
WWW.CPZARCHITECTS.COM

CPZ

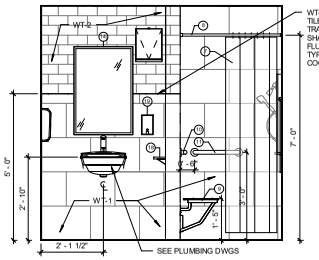
DRAWN BY:	DATE:
Author	10-29-16
CHECK'D BY:	SCALE:
Checker	1/2" = 1'-0"

SHEET NO. A-308 OF
TOTAL: 105
DRAWING TITLE: Enlarged Wall Sections
DRAWING FILE NO. 4-138-84

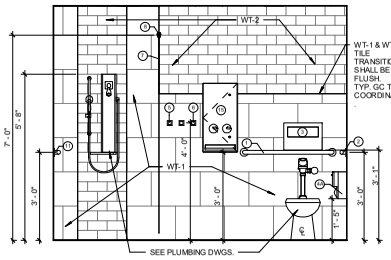
Bid 12139-983



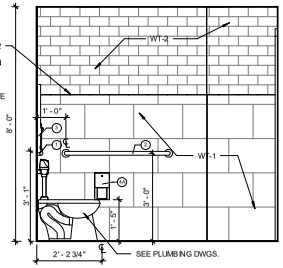
1 A-400 — ENLARGED PLAN- ADA RESTROOM



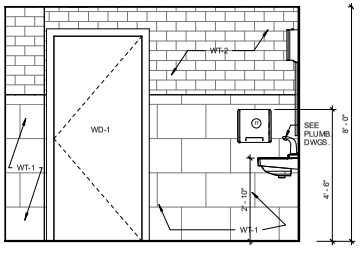
2 A-400 — ADA RESTROOM INT. ELEVATION 2



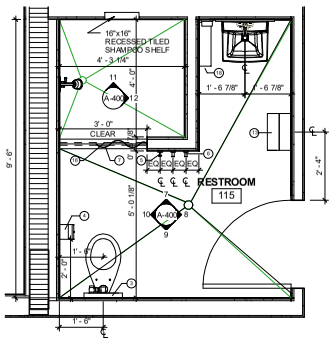
3 A-400 — ADA RESTROOM INT. ELEVATION 3



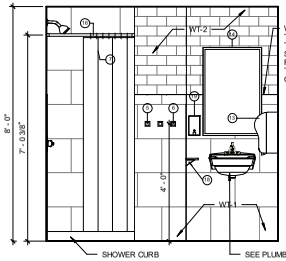
4 A-400 — ADA RESTROOM INT. ELEVATION 4



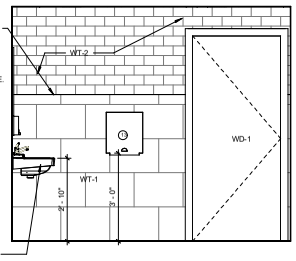
5 A-400 — ADA RESTROOM INT. ELEVATION 5



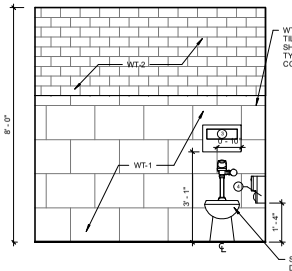
6 A-400 — ENLARGED PLAN- RESTROOM 1



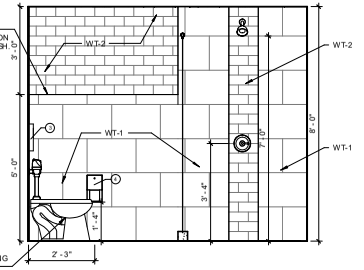
7 A-400 — RESTROOM 1 INT. ELEVATION 7



8 A-400 — RESTROOM 1 INT. ELEVATION 8



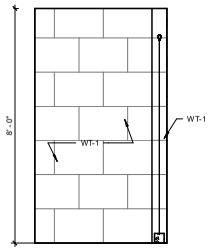
9 A-400 — RESTROOM 1 INT. ELEVATION 9



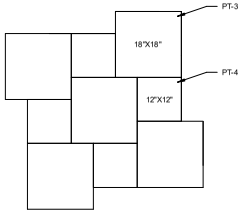
10 A-400 — RESTROOM 1 INT. ELEVATION 10

TOILET ROOM ACCESSORIES SCHEDULE

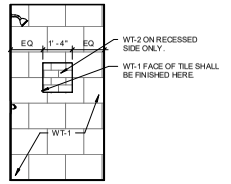
MARK	MANUFACTURER	MODEL #	DESCRIPTION	REMARKS
1	Bobrick Washroom Equipment, Inc.	B-6806 SERIES	X36" Grab Bar	Stainless Steel, Satin Finish
2	Bobrick Washroom Equipment, Inc.	B-6806 SERIES	X42" Grab Bar	Stainless Steel, Satin Finish
3	--	--	Toilet Seat Cover Dispenser	Provide by City & Installed by Contractor
4	--	--	Toilet Tissue Dispenser	Provide by City & Installed by Contractor
4A	Bobrick	B-2888	Toilet Tissue Dispenser	Stainless Steel, Satin Finish
5	Bobrick Washroom Equipment, Inc.	B-671	Surface Mounted Towel Pin	Stainless Steel, Bright Polished
6	Bobrick Washroom Equipment, Inc.	B-233	Surface Mounted Clothes Hooks	
7	Bobrick Washroom Equipment, Inc.	B-204-2	Shower Curtain 42"	-
8	Bobrick Washroom Equipment, Inc.	B-207.42	Extra Heavy Duty Shower Curtain Rod	-
9	Bobrick Washroom Equipment, Inc.	B-5192	Folding Shower Seat	Stainless Steel, Satin Finish
10	Bobrick Washroom Equipment, Inc.	B-6806 Series	X30" Grab Bar	Stainless Steel, Satin Finish
11	Bobrick Washroom Equipment, Inc.	B-6806.99	X18" Grab Bar	Stainless Steel, Satin Finish
13	--	--		
14	Bobrick Washroom Equipment, Inc.	B-290	24"x36" Mirror Frame w/ S.S. Channel	Stainless Steel, Satin Finish
15	Provided & Installed by Owner		Wall Mounted Napkin/Tampon Vendor	Stainless Steel, Satin Finish
16	Bobrick Washroom Equipment, Inc.	B-207.36	Extra Heavy Duty Shower Curtain Rod	-
17	Bobrick Washroom Equipment, Inc.	B-7120 115V	Hand Dryer	High Gloss, Epoxy Finish
18	Bobrick Washroom Equipment, Inc.	B-295 x 18	Stainless Steel Shelf	Stainless Steel, Satin Finish
19	--	-	Soap Dispenser	Provide by City & Installed by Contractor



12 A-400 — RESTROOM 1 INT. ELEVATION 12



13 A-400 — TYP. BATHROOM FLOOR TILE LAYOUT



11 A-400 — RESTROON 1 INT. ELEVATION 11

STATE OF FLORIDA — CERTIFICATE OF AUTHORIZATION — REGISTERED ARCHITECT — AR 10995

CHRIS P. ZIMMERMAN, A.I.A.
REGISTERED ARCHITECT NO. 10,995
STATE OF FLORIDA

DATE: 03-19-18

BID SET

CONSULTANT

CITY OF FORT LAUDERDALE
PUBLIC WORKS DEPARTMENT
ENGINEERING & ARCHITECTURE
100 North Andrews Avenue, Fort Lauderdale, Florida 33301

NO.	DATE	DESCRIPTION	BY
	03-19-18	BID SET	

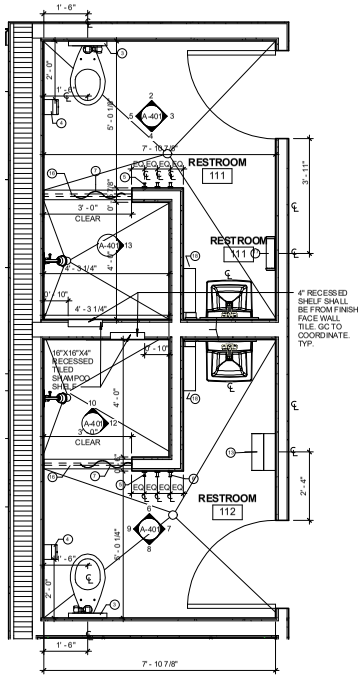
CITY OF FORT LAUDERDALE

PROJECT # 10909
FIRE STATION #8

CPZ ARCHITECTS, INC.
1717 SW 1ST AVENUE
FORT LAUDERDALE, FL 33315
PHONE: (954) 767-8275 FAX: (954) 337-6859
AA-26000605 WWW.CPZARCHITECTS.COM

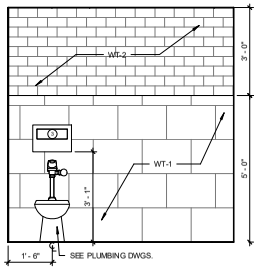
DRAWN BY: Author
DATE: 10-29-16
CHECK'D BY: Checker
SCALE: As indicated

SHEET NO: A-400
OF:
TOTAL: 105
DRAWING TITLE: Restroom Int. Elevations
DRAWING FILE NO: 4-138-84



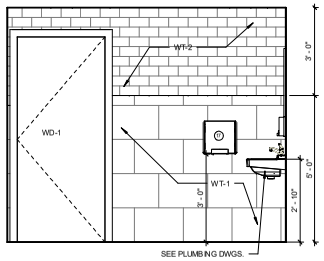
ENLARGED PLAN- RESTROOM 2 & 3

1 / A-401 SCALE: 1/2" = 1'-0"



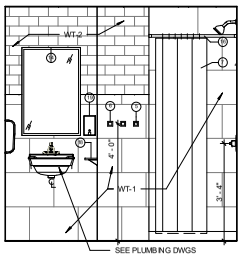
RESTROOM 3 INT. ELEVATION 2

2 / A-401 SCALE: 1/2" = 1'-0"



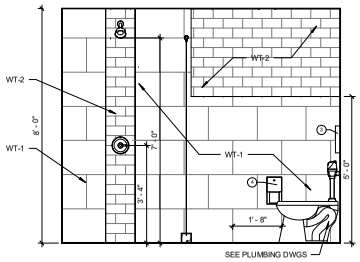
RESTROOM 3 INT. ELEVATION 3

3 / A-401 SCALE: 1/2" = 1'-0"



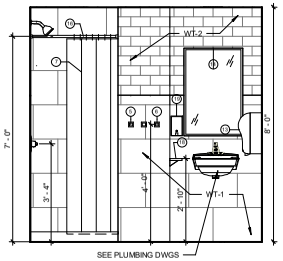
RESTROOM 3 INT. ELEVATION 4

4 / A-401 SCALE: 1/2" = 1'-0"



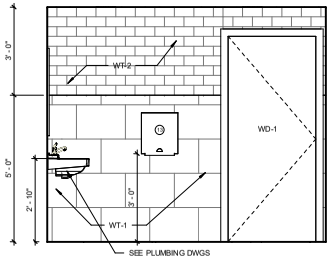
RESTROOM 3 INT. ELEVATION 5

5 / A-401 SCALE: 1/2" = 1'-0"



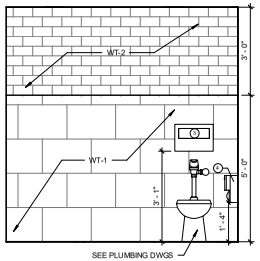
RESTROOM 2 INT. ELEVATION 6

6 / A-401 SCALE: 1/2" = 1'-0"



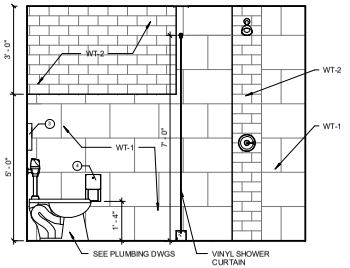
RESTROOM 2 INT. ELEVATION 7

7 / A-401 SCALE: 1/2" = 1'-0"



RESTROOM 2 INT. ELEVATION 8

8 / A-401 SCALE: 1/2" = 1'-0"



RESTROOM 2 INT. ELEVATION 9

9 / A-401 SCALE: 1/2" = 1'-0"

TOILET ROOM ACCESSORIES SCHEDULE

MARK	MANUFACTURER	MODEL #	DESCRIPTION	REMARKS
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2	Bobrick Washroom Equipment, Inc.	B-6806 SERIES	X42" Grab Bar	Stainless Steel, Satin Finish
3	--	--	Toilet Seat Cover Dispenser	Provide by City & Installed by Contractor
4	--	--	Toilet Tissue Dispenser	Provide by City & Installed by Contractor
4A	Bobrick	B-2888	Toilet Tissue Dispenser	Stainless Steel, Satin Finish
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6	Bobrick Washroom Equipment, Inc.	B-233	Surface Mounted Clothes Hooks	
7	Bobrick Washroom Equipment, Inc.	B-204-2	Shower Curtain 42"	-
8	Bobrick Washroom Equipment, Inc.	B-207.42	Extra Heavy Duty Shower Curtain Rod	-
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10	Bobrick Washroom Equipment, Inc.	B-6806 Series	X30" Grab Bar	Stainless Steel, Satin Finish
11	Bobrick Washroom Equipment, Inc.	B-6806.99	X18" Grab Bar	Stainless Steel, Satin Finish
13	--	--		
14	Bobrick Washroom Equipment, Inc.	B-290	24"x36" Mirror Frame w/ S.S. Channel	Stainless Steel, Satin Finish
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16	Bobrick Washroom Equipment, Inc.	B-207.36	Extra Heavy Duty Shower Curtain Rod	-
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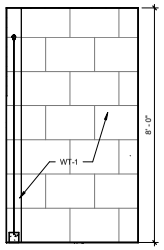
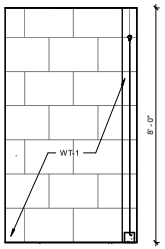
19	--	-	Soap Dispenser	Provide by City & Installed by Contractor



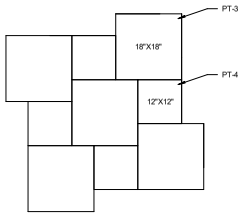
RESTROOM 3 INT. ELEVATION 13

13 / A-401 SCALE: 1/2" = 1'-0"



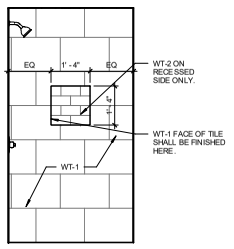
RESTROOM 2 INT. ELEVATION 12

12 / A-401 SCALE: 1/2" = 1'-0"



TYP. BATHROOM FLOOR TILE LAYOUT

11 / A-401 SCALE: 3/4" = 1'-0"



RESTROOM 2 INT. ELEVATION 10

10 / A-401 SCALE: 1/2" = 1'-0"

BID SET

STATE OF FLORIDA CHRISTOPHER P. ZIMMERMAN REGISTERED ARCHITECT AR 10995

CHRIS P. ZIMMERMAN, A.I.A.
REGISTERED ARCHITECT NO. 10,995
STATE OF FLORIDA

DATE: 03-19-18

CONSULTANT

CITY OF FORT LAUDERDALE
PUBLIC WORKS DEPARTMENT
ENGINEERING & ARCHITECTURE
100 North Andrews Avenue, Fort Lauderdale, Florida 33301

REVISIONS

NO.	DATE	DESCRIPTION
	03-9-18	BID SET

City of Fort Lauderdale

PROJECT # 10909
FIRE STATION #8

CPZ ARCHITECTS, INC.
414 WEST BROWARD BOULEVARD
FORT LAUDERDALE, FLORIDA 33312
PHONE: (954) 792-8252
1717 SW 1ST AVENUE
FORT LAUDERDALE, FLORIDA 33315
FAX: (954) 337-6859
AA-26000665 WWW.CPZARCHITECTS.COM

DRAWN BY: Author
DATE: 10-29-16
CHECK'D BY: Checker
SCALE: As indicated

SHEET NO: A-401
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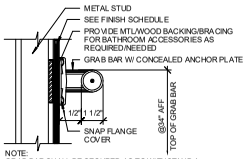
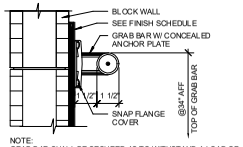
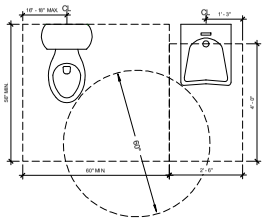
TOTAL: 105
DRAWING TITLE: Restroom Int. Elevations
DRAWING FILE NO: A-138-84



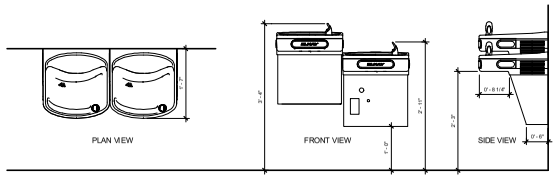
TYP. GRAB BAR AT STUD WALL DETAIL



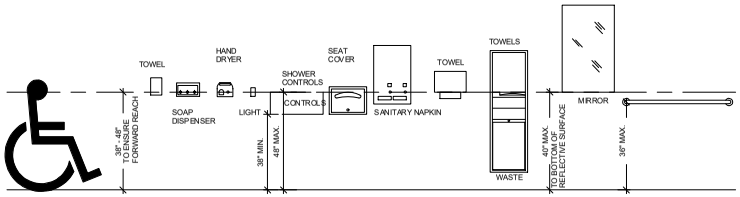
TYP. GRAB BAR AT BLOCK WALL DETAIL



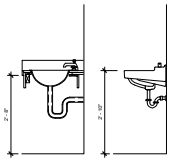
ADA TOILET ROOM CLEARANCES



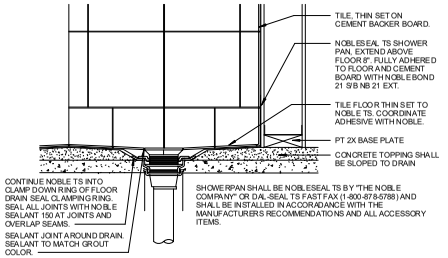
HI-LO WATER COOLER DETAIL



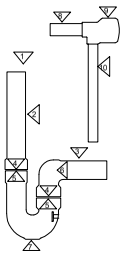
ADA TOILET ACCESSORY HEIGHTS



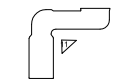
SINK VANITY DETAIL



TYP. SHOWER PAN DETAIL



1. 1-7/8" I.D. TO ACCOMMODATE NEARLY ALL 1-1/4" AND 1-1/2" AND P.V.C. P-TRAPS (DOES NOT FIT SCHEDULE 40 P.V.C.)
2. 10" TAIL PIPE (TRIM AS NEEDED TO COVER ENTIRE PIPE)
3. 10" WASTE ARM (TRIM AS NEEDED TO COVER ENTIRE PIPE)
4. TAIL PIECE & WASTE ARM COVERS OVERLAP J-BEND TO PROVIDE A CLEAN FINISH APPEARANCE.
5. NUT STRUCTURE ENCLOSURES ON ENDS OF J-BEND COVER ALLOW ALL ACCOMMODATION OF VARIOUS J-BEND SIZES.
6. ELBOW ON INSULATION IS ENLARGED TO ACCOMMODATE FEMALE ELBOW ON WASTE LINE.
7. ALL OWANCES FOR CLEAN OUT NUT DEPTH AND EASY ACCESS TO CLEAN OUT BY REMOVING J BEND COVER.
8. 3" WATER LINE EXTENSION FOR FULL COVERAGE OF EXTENDED SUPPLY PIPES.
9. WATER VALVE INSULATION COMPLETELY COVERS KEYED AND STANDARD ANGLE STOPS.
10. 10" SUPPLY LINE COVER.
11. OFFSET P-TRAP COVER FITS TRAP ON CERTAIN HANDICAP LAVATORIES, (ORDER SEPARTATELY) PART 500HS.



PIPE INSULATION

CONSULTANT

CITY OF FORT LAUDERDALE
PUBLIC WORKS DEPARTMENT
ENGINEERING & ARCHITECTURE
100 North Andrews Avenue, Fort Lauderdale, Florida 33301

NO.	DATE	DESCRIPTION
	03-9-16	BID SET

REVISIONS

City of Fort Lauderdale

PROJECT # 10909
FIRE STATION #8

CPZ ARCHITECTS, INC.
414 WEST BROWARD BOULEVARD
FT. LAUDERDALE, FLORIDA 33312
PHONE: (954) 792-8525
AA-C2600003
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FORT LAUDERDALE, FL 33315
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WWW.CPZARCHITECTS.COM

CPZ

DRAWN BY:	DATE:
Author	10-29-16
CHECKED BY:	SCALE:
Checker	As indicated

SHEET NO. A-401.1 OF TOTAL 105

DRAWING TITLE: Restroom & Water Fountain Details

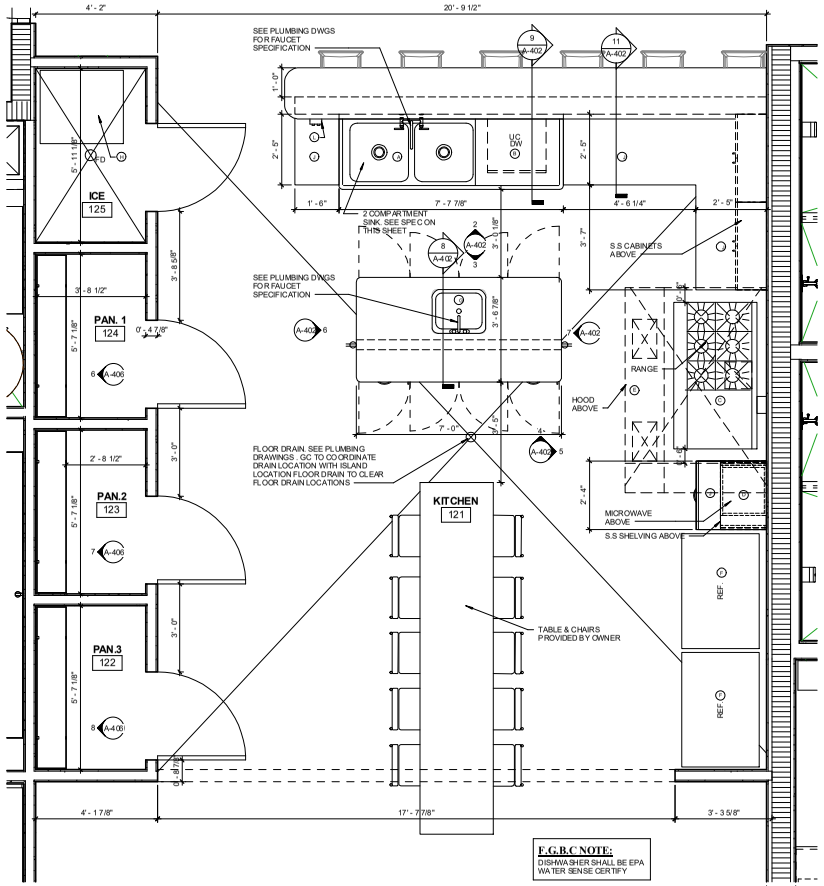
DRAWING FILE NO. 4-138-84

BID SET

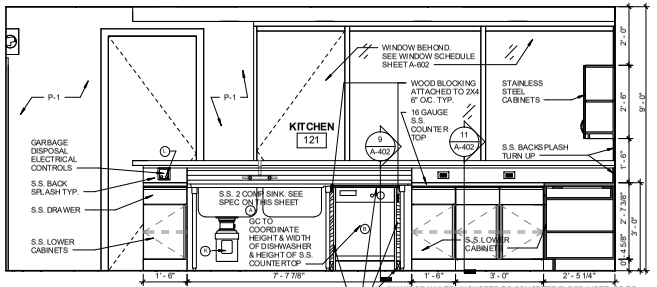
STATE OF FLORIDA CHRISTOPHER P. ZIMMERMAN AR 10995 REGISTERED ARCHITECT

CHRIS P. ZIMMERMAN, A.I.A.
REGISTERED ARCHITECT NO. 10,995
STATE OF FLORIDA

DATE: 03-19-18



1 A-402 ENLARGED PLAN- KITCHEN
SCALE: 1/2" = 1'-0"



2 A-402 KITCHEN INT. ELEVATION 2
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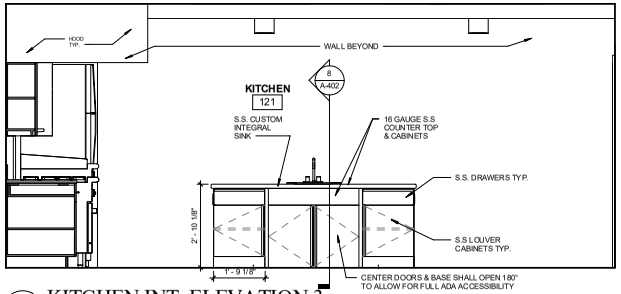

3 A-402 KITCHEN INT. ELEVATION 3
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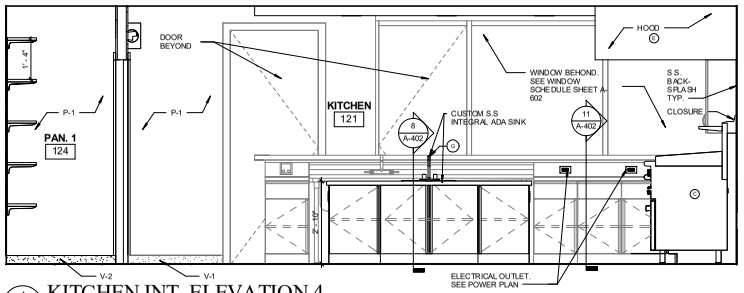

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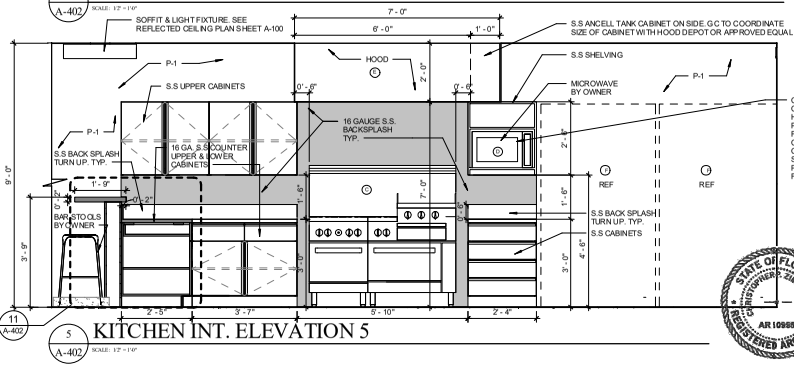

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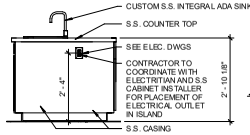
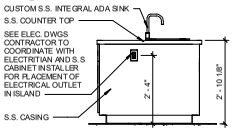


6 A-402 KITCHEN INT. ELEVATION 6
SCALE: 1/2" = 1'-0"



7 A-402 KITCHEN INT. ELEVATION 7
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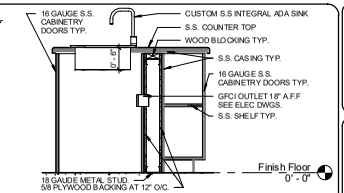
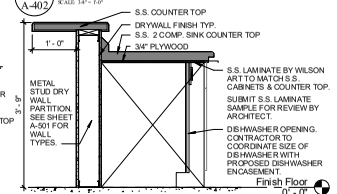
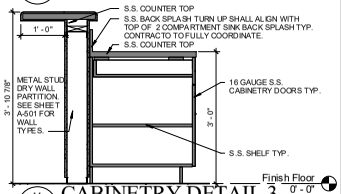


8 A-402 CABINETRY DETAIL 2
SCALE: 3/4" = 1'-0"



9 A-402 CABINETRY DETAIL
SCALE: 3/4" = 1'-0"



11 A-402 CABINETRY DETAIL 3
SCALE: 3/4" = 1'-0"

KITCHEN EQUIPMENT SCHEDULE

Mark	Description	Manufacturer	Model Number	Type Comments
A	16 Ga. 304 s/s Regaline Sins - Two Compartment	Advance Tabco	93-42-48-36R	
B	Dishwasher			
C	60" Range - 6 Burners 24" Griddle Broiler - 1 Standard Oven 1 Convection Oven	Garland	GFE60-6R24RR	
D	Convection 24" Microwave in Stainless Steel			Owner to provide, GC to install
E	Hood			See Mechanical Dwgs.
F	27.8 cu ft Refrigerator			Owner to provide, GC to install
F	27.8 cu ft Refrigerator			Owner to provide, GC to install
G	Custom S.S. Integral ADA sink			
H	Ice Matchine	Manitowoc Indigo Series	IY-0454A B-570 Ice Stg Bin	
J	Custom S.S Fabricated Cabinets, Counter tops & Drawers	Custom S.S cabinet manufacturer	Custom Fabricated	See specifications Sections 11-40-00, 11-41-00
K	SS Series Food Waste Disposer	Insinkerator	SS-100	
L	Garbage Dispossal Electrical Controls	Insinkerator	Control center model MS-8	GB controler shall be recessed in low wall gc to coordinate

STAINLESS STEEL CUSTOM CABINETRY SPECIFICATION NOTE:

ALL STAINLESS STEEL COUNTERS, UNDERCOUNTER SHELVES AND STAINLESS STEEL ISLAND SHALL BE 16 GAUGE COMMERCIAL GRADE, HEAVY DUTY INDUSTRIAL QUALITY KITCHEN. ALL ITEMS FULLY WELDED AND GROUND SMOOTH.

CONTRACTOR TO SUBMIT FULLY DETAILED PROJECT SPECIFIC SHOP DRAWINGS SHOWING FLOOR LAYOUT, CABINET ELEVATIONS, CABINET SECTIONS PRIOR TO FABRICATION. SEE SPECIFICATION SECTION 11-40-00 AND 11-41-00

KITCHEN HOOD NOTE:

KITCHEN HOOD BY HOOD DEPOT OR APPROVED EQUAL. CONTACT: RODNEY L. FRITZ. PHONE: (954) 570-9860.

KITCHEN HOOD AND SUPPRESSION SYSTEM SHOP DRAWINGS TO BE SUBMITTED UNDER A SEPARATE PERMIT BY GENERAL CONTRACTOR.

A PERFORMANCE TEST SHALL BE CONDUCTED UPON COMPLETION AND BEFORE FINAL APPROVAL OF THE INSTALLATION OF A VENTILATION SYSTEM SERVING COMMERCIAL COOKING APPLIANCES PER FMC 507.16 CONTRACTOR SHALL VERIFY AND CAPTURE A CONTAINMENT PERFORMANCE OF EXHAUST SYSTEM PER FMC 507.16.1

CHRIS P. ZIMMERMAN, A.I.A.
REGISTERED ARCHITECT NO. 10,995
STATE OF FLORIDA
DATE: 03-19-18

BID SET

CONSULTANT

CITY OF FORT LAUDERDALE
PUBLIC WORKS DEPARTMENT
ENGINEERING & ARCHITECTURE
100 North Andrews Avenue, Fort Lauderdale, Florida 33301

NO.	DATE	DESCRIPTION
	03-9-18	BID SET

REVISIONS

City of Fort Lauderdale

PROJECT # 10909
FIRE STATION #8

CPZ ARCHITECTS, INC.
414 WEST BROWARD BOULEVARD
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PHONE: (954) 792-8252 FAX: (954) 337-6859
AA-26000865 WWW.CPZARCHITECTS.COM

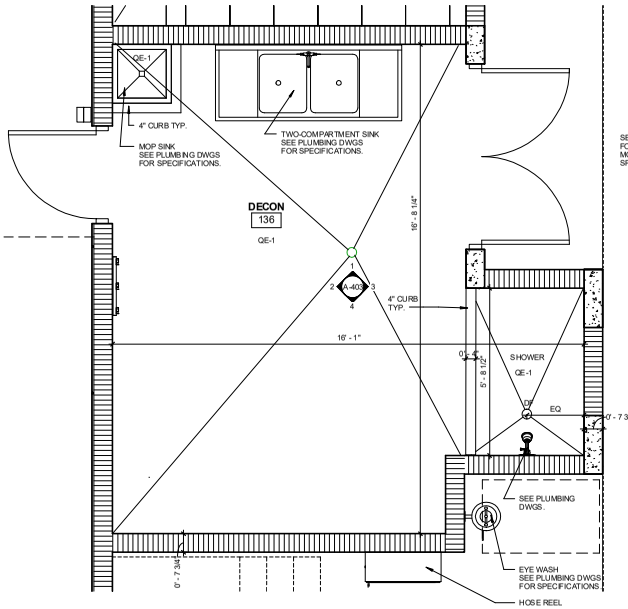
1717 SW 1ST AVENUE
FORT LAUDERDALE, FL 33315

CPZ

DRAWN BY: Author
DATE: 10-29-16
CHECK'D BY: Checker
SCALE: As indicated

SHEET NO. A-402
OF TOTAL: 105
DRAWING TITLE: Kitchen Int. Elevations
DRAWING FILE NO. 4-138-84

Bid 12139-983



0 A-403 ENLARGED PLAN - DECON
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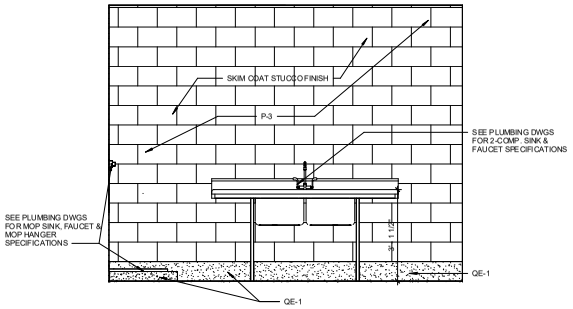

1 A-403 DECON INT. ELEVATION 1
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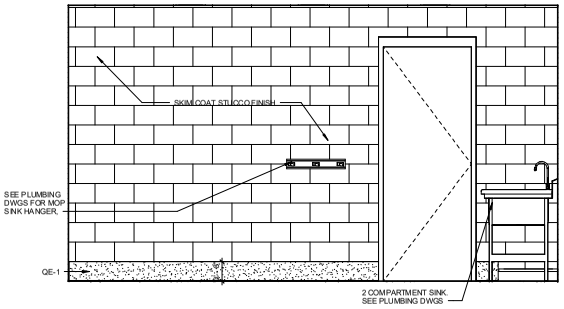

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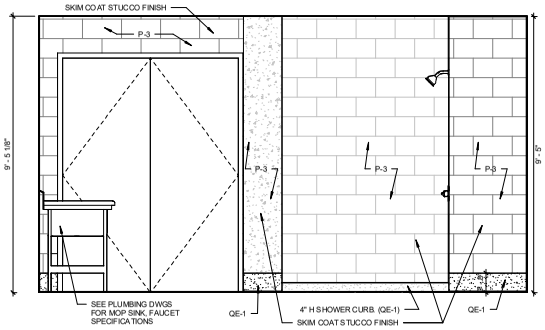
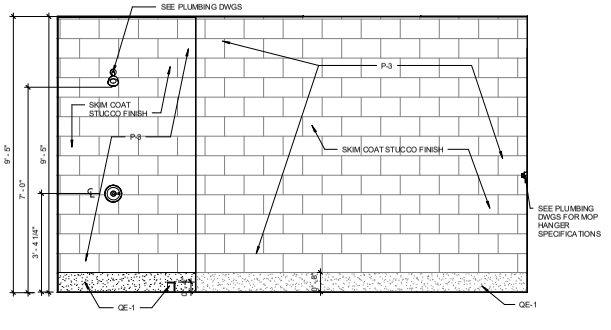


3 A-403 DECON INT. ELEVATION 3
SCALE: 1/2" = 1'-0"



4 A-403 DECON INT. ELEVATION 4
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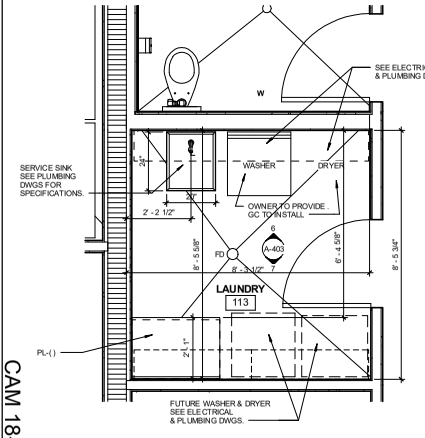
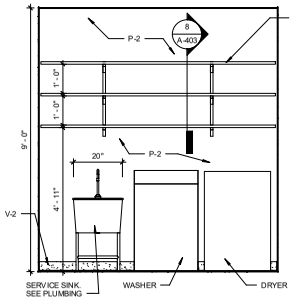
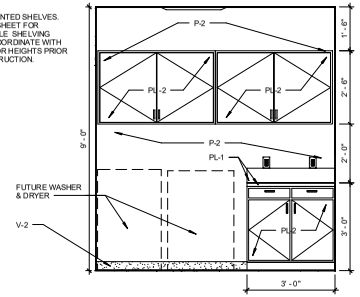


5 A-403 ENLARGED PLAN - LAUNDRY ROOM
SCALE: 1/2" = 1'-0"



6 A-403 LAUNDRY ROOM INT. ELEVATION 5
SCALE: 1/2" = 1'-0"



7 A-403 LAUNDRY ROOM INT. ELEVATION 6
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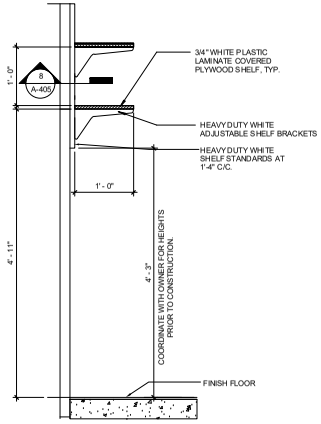


8 A-403 HEAVY DUTY ADJUSTABLE SHELVING DETAIL (LAUNDRY RM)
SCALE: 3" = 1'-0"

F.G.B.C NOTE:

WASHING MATCHINE SHALL B E EPA WATERSENSE CERTIFIED.

CONSULTANT

CITY OF FORT LAUDERDALE
PUBLIC WORKS DEPARTMENT
ENGINEERING & ARCHITECTURE
100 North Andrews Avenue, Fort Lauderdale, Florida 33301

NO.	DATE	DESCRIPTION	BY
	03-19-18	BID SET	

REVISIONS

City of Fort Lauderdale

PROJECT # 10909
FIRE STATION #8

CPZ ARCHITECTS, INC.
1717 SW 1ST AVENUE
FORT LAUDERDALE, FLORIDA 33315
PHONE: (954) 767-0225 FAX: (954) 337-0259
AA-26000603 WWW.CPZARCHITECTS.COM

DRAWN BY:	DATE:
Author	10-29-16
CHECKED BY:	SCALE:
Checker	As indicated

SHEET NO.	OF
A-403	
TOTAL: 105	

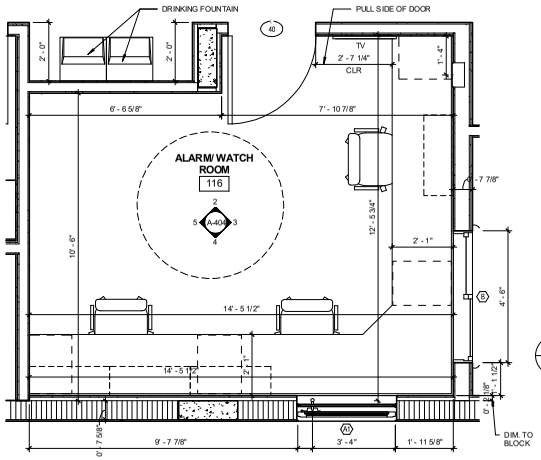
DRAWING TITLE:
Laundry & Decon Int. Elevs

DRAWING FILE NO.
4-138-84

BID SET

CHRIS P. ZIMMERMAN, A.I.A.
REGISTERED ARCHITECT NO. 10,995
STATE OF FLORIDA

DATE: 03-19-18



1 A-404 ENLARGED PLAN - OFFICE
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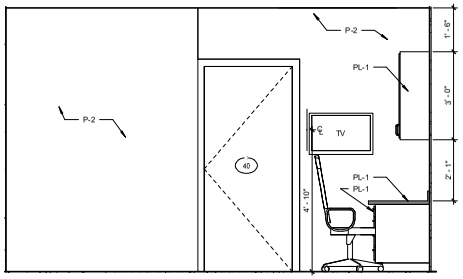

2 A-404 OFFICE INT. ELEVATION 1
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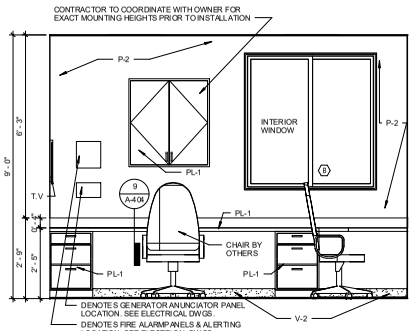

3 A-404 OFFICE INT. ELEVATION 2
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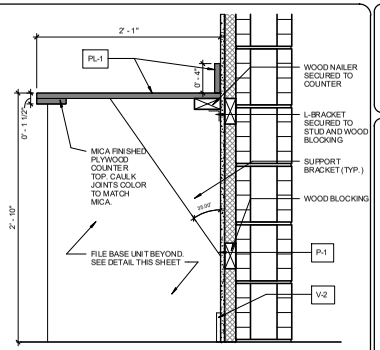

9 A-404 COUNTERTOP DETAIL
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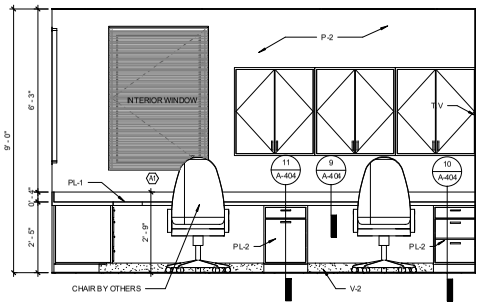

4 A-404 OFFICE INT. ELEVATION 3
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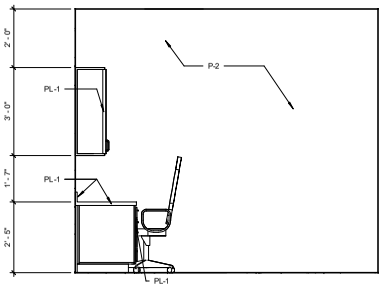

5 A-404 OFFICE INT. ELEVATION 4
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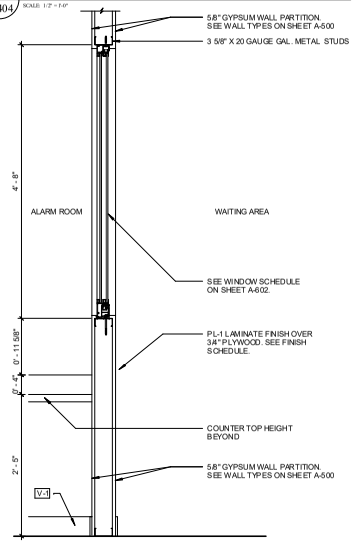
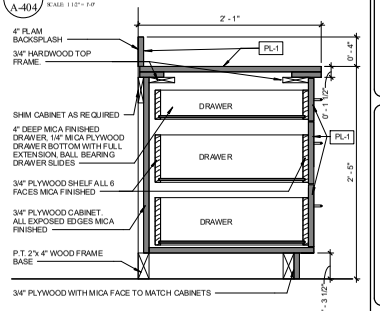
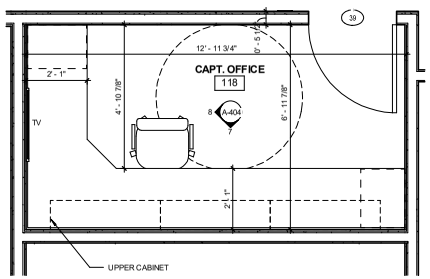


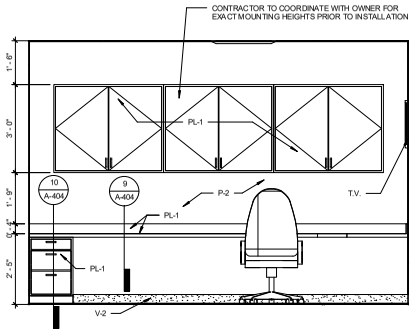
12 A-404 PASS THRU WINDOW DETAIL
SCALE: 1" = 1'-0"



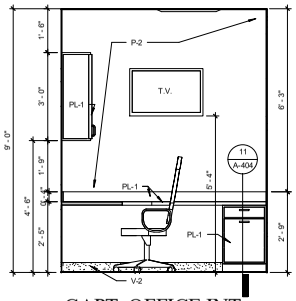
10 A-404 THREE DRAWER BASE UNIT DETAIL
SCALE: 1 1/2" = 1'-0"



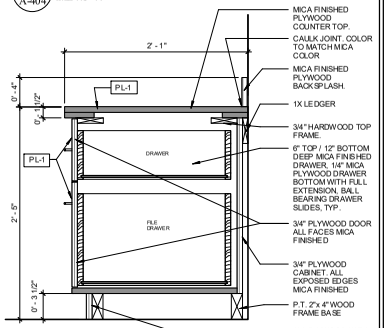
6 A-404 ENLARGED PLAN - CAPT. OFFICE
SCALE: 1/2" = 1'-0"



7 A-404 CAPT. OFFICE INT. ELEVATION 1
SCALE: 1/2" = 1'-0"



8 A-404 CAPT. OFFICE INT. ELEVATION 2
SCALE: 1/2" = 1'-0"



11 A-404 FILE BASE UNIT DETAIL
SCALE: 1 1/2" = 1'-0"

BID SET

STATE OF FLORIDA · CHRISTOPHER P. ZIMMERMAN · REGISTERED ARCHITECT · AR 10995

CHRIS P. ZIMMERMAN, A.I.A.
REGISTERED ARCHITECT NO. 10,995
STATE OF FLORIDA

DATE: 03-19-18

CONSULTANT

CITY OF FORT LAUDERDALE
PUBLIC WORKS DEPARTMENT
ENGINEERING & ARCHITECTURE
100 North Andrews Avenue, Fort Lauderdale, Florida 33301

NO.	DATE	DESCRIPTION
	03-19-18	BID SET

REVISIONS

City of Fort Lauderdale

PROJECT # 10909
FIRE STATION #8

CPZ ARCHITECTS, INC.
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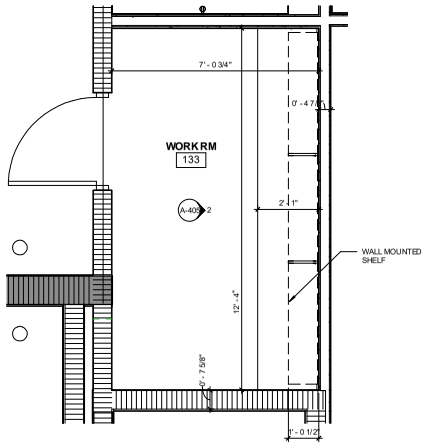
DRAWN BY:	DATE:
Author	10-29-16
CHECK'D BY:	SCALE:
Checker	As indicated

SHEET NO.	OF
A-404	
TOTAL: 105	

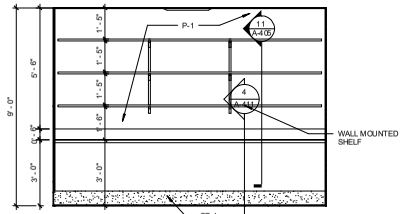
DRAWING TITLE:
Offices Int. Elevations

DRAWING FILE NO.
4-138-84

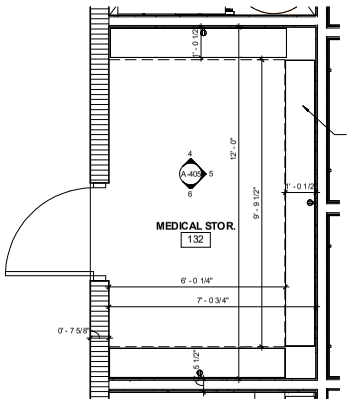
Bid 12139-983



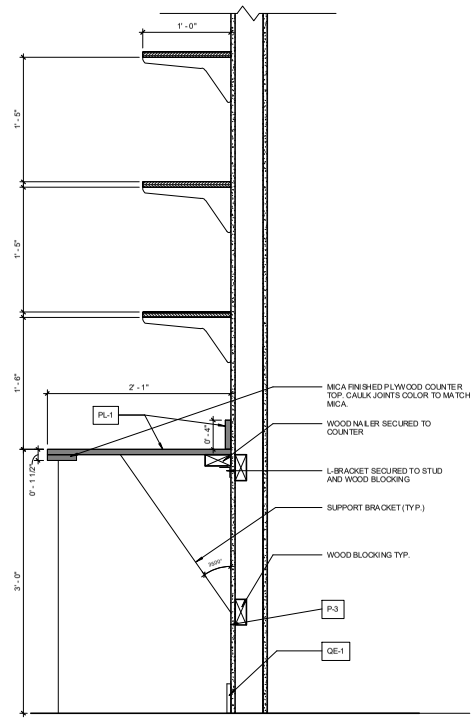
1 A-405 SCALE: 1/2" = 1'-0"
ENLARGED PLAN - WORK ROOM



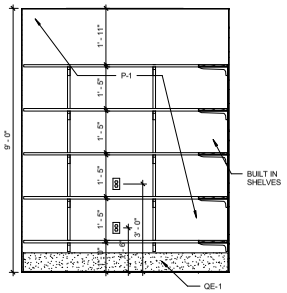
2 A-405 SCALE: 3/8" = 1'-0"
WORK ROOM INT. ELEVATION 2



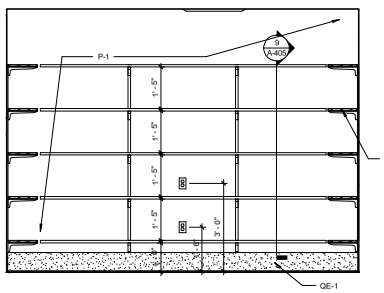
3 A-405 SCALE: 1/2" = 1'-0"
ENLARGED PLAN - MEDICAL STORAGE



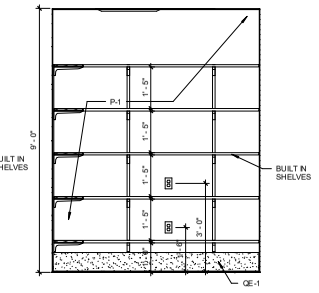
11 A-405 SCALE: 1 1/2" = 1'-0"
COUNTERTOP DETAIL1



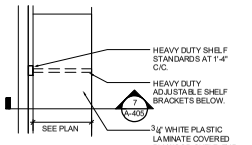
4 A-405 SCALE: 1/2" = 1'-0"
MEDICAL STORAGE INT. ELEVATION 4



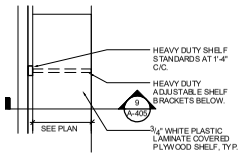
5 A-405 SCALE: 1/2" = 1'-0"
MEDICAL STORAGE INT. ELEVATION 5



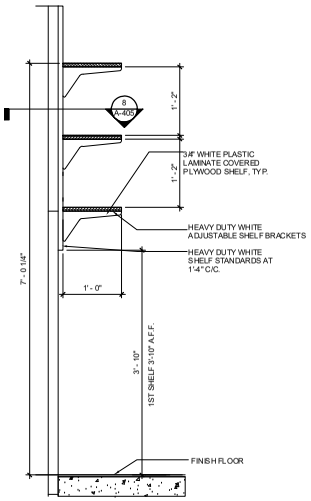
6 A-405 SCALE: 1/2" = 1'-0"
MEDICAL STORAGE INT. ELEVATION 6



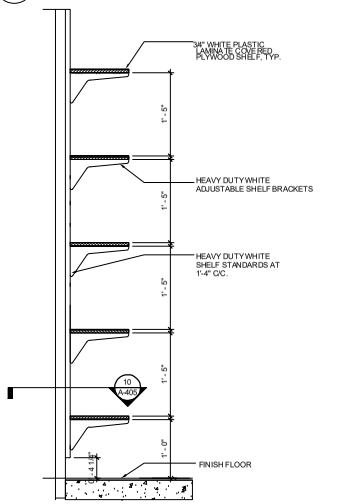
8 A-405 SCALE: 1" = 1'-0"
HEAVY DUTY ADJUSTABLE SHELVING PLAN DETAIL (JANITOR TYP.)



10 A-405 SCALE: 1" = 1'-0"
HEAVY DUTY ADJUSTABLE SHELVING PLAN DETAIL (MEDICAL STORAGE TYP.)



7 A-405 SCALE: 1" = 1'-0"
HEAVY DUTY ADJUSTABLE SHELVING DETAIL (JANITOR TYP)



9 A-405 SCALE: 1" = 1'-0"
HEAVY DUTY ADJUSTABLE SHELVING DETAIL (MEDICAL STORAGE TYP)

BID SET

CHRIS P. ZIMMERMAN, A.I.A.
REGISTERED ARCHITECT NO. 10,995
STATE OF FLORIDA

DATE: 03-19-18

CONSULTANT

CITY OF FORT LAUDERDALE
PUBLIC WORKS DEPARTMENT
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100 North Andrews Avenue, Fort Lauderdale, Florida 33301

NO.	DATE	DESCRIPTION
	03-19-18	BID SET

REVISIONS

City of Fort Lauderdale

PROJECT # 10909
FIRE STATION #8

CPZ ARCHITECTS, INC.
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CPZ

DRAWN BY:	DATE:
Author	10-29-16
CHECKED BY:	SCALE:
CPZ	As indicated

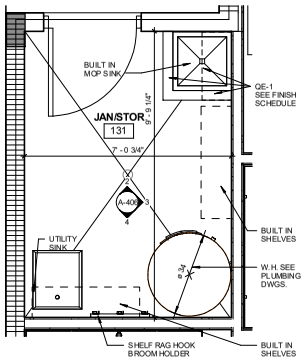
SHEET NO.	OF
A-405	

TOTAL: 105

DRAWING TITLE:
Work Room & Medical Storage

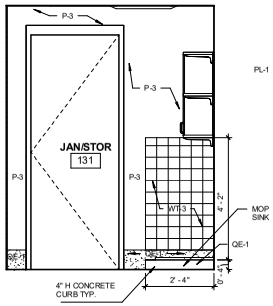
DRAWING FILE NO.
4-138-84

Bid 12139-983



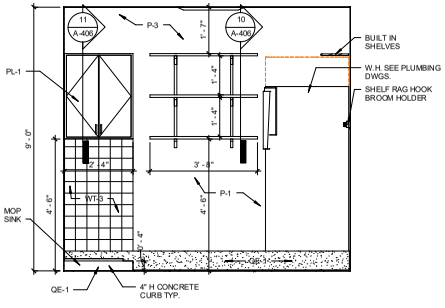
ENLARGED PLAN JANITOR/STORAGE

1 / A-406 SCALE: 1/2" = 1'-0"



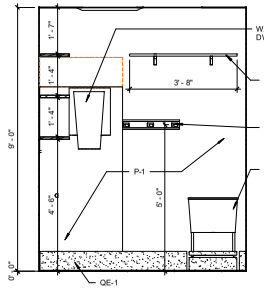
JANITOR/STORAGE INT. ELEVATION 2

2 / A-406 SCALE: 1/2" = 1'-0"



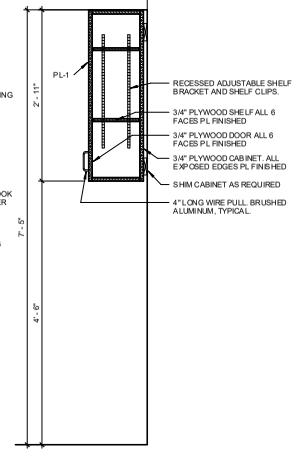
JANITOR/STORAGE INT. ELEVATION 3

3 / A-406 SCALE: 1/2" = 1'-0"



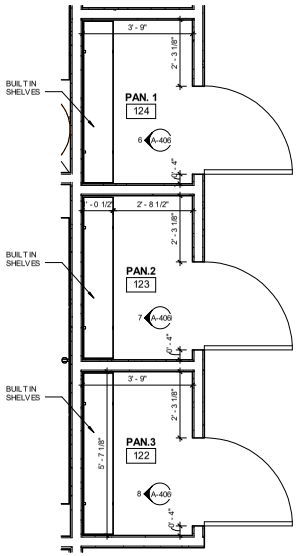
JANITOR/STORAGE INT. ELEVATION 4

4 / A-406 SCALE: 1/2" = 1'-0"



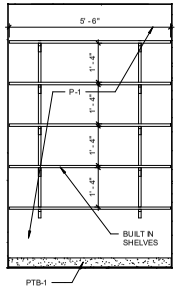
UPPER CABINET SECTION DETAIL

11 / A-406 SCALE: 1" = 1'-0"



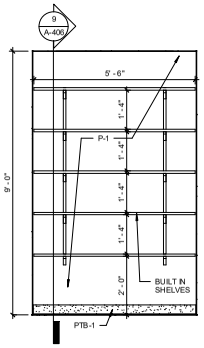
ENLARGED PLAN - PANTRY 1, 2 & 3

5 / A-406 SCALE: 1/2" = 1'-0"



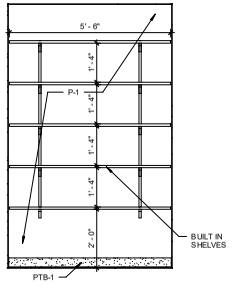
PANTRY 1 INT. ELEVATION

6 / A-406 SCALE: 1/2" = 1'-0"



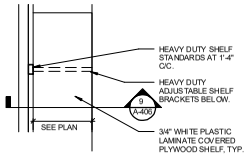
PANTRY 2 INT. ELEVATION

7 / A-406 SCALE: 1/2" = 1'-0"



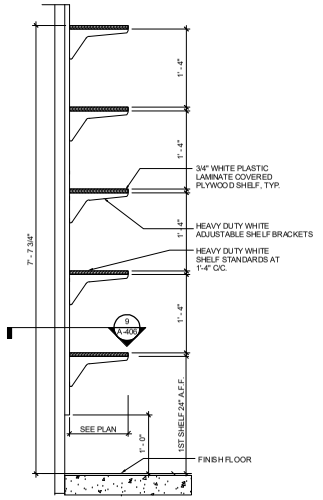
PANTRY 3 INT. ELEVATION

8 / A-406 SCALE: 1/2" = 1'-0"



HEAVY DUTY ADJUSTABLE SHELVING PLAN DETAIL (PANTRY TYP.)

10 / A-406 SCALE: 1" = 1'-0"



HEAVY DUTY ADJUSTABLE SHELVING DETAIL (PANTRY TYP)

9 / A-406 SCALE: 1" = 1'-0"

BID SET

CHRIS P. ZIMMERMAN, A.I.A.
REGISTERED ARCHITECT NO. 10,995
STATE OF FLORIDA

DATE: 03-19-18

CONSULTANT

CITY OF FORT LAUDERDALE
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NO.	DATE	DESCRIPTION
	03-9-18	BID SET

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FIRE STATION #8

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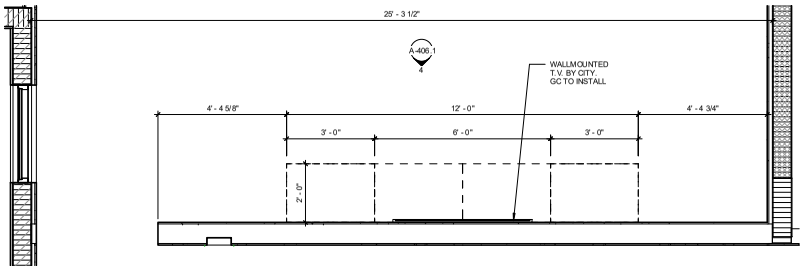
Author	10-29-16
CHECK'D BY:	SCALE:
Checker	As indicated

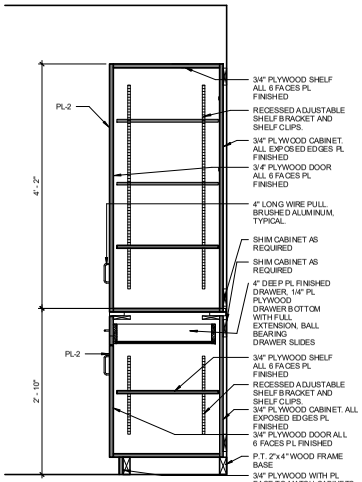
SHEET NO. A-406 OF TOTAL 105

DRAWING TITLE: Pantry & Janitor/Storage Elevations

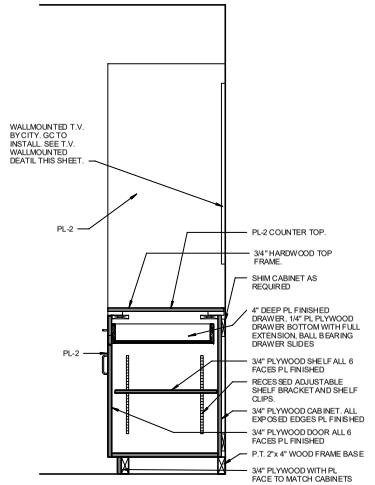
DRAWING FILE NO. A-136-84



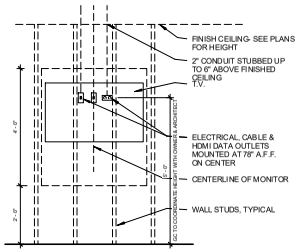
1 A-406.1 ENLARGED FLOOR PLAN - DAY ROOM
SCALE: 1/2"= 1'-0"



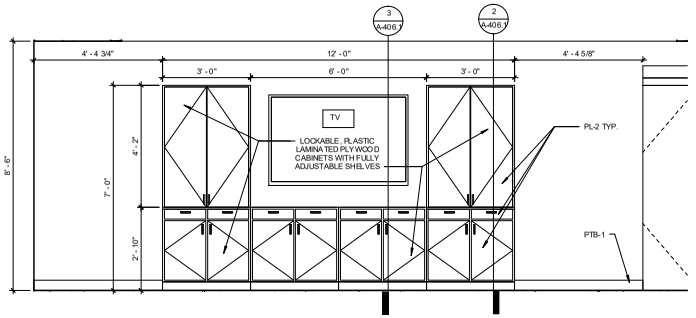
2 A-406.1 CABINET SECTION DETAIL TYP.
SCALE: 1"= 1'-0"



3 A-406.1 CABINET SECTION DETAIL TYP. 2
SCALE: 1"= 1'-0"



5 A-406.1 TV WALLMOUNT DETAIL
SCALE: 1/2"= 1'-0"



4 A-406.1 DAY ROOM T.V. SYSTEM FURNITURE ELEVATION 1
SCALE: 1/2"= 1'-0"

BID SET

CHRIS P. ZIMMERMAN, A.I.A.
REGISTERED ARCHITECT NO. 10,995
STATE OF FLORIDA
DATE: 03-19-18

CONSULTANT

CITY OF FORT LAUDERDALE
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REVISIONS

NO.	DATE	DESCRIPTION
	03-9-16	BID SET

City of Fort Lauderdale

PROJECT # 10909
FIRE STATION #8

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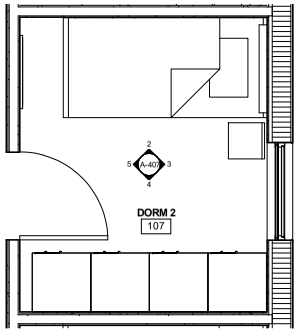
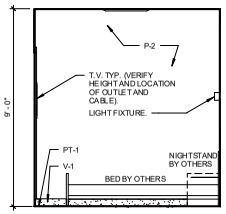
DRAWN BY: Author
DATE: 10-29-16
CHECK'D BY: Checker
SCALE: As indicated

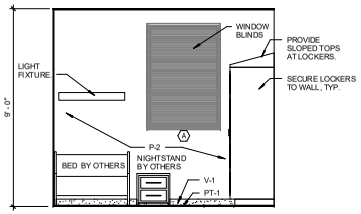
SHEET NO.: A-406.1
OF
TOTAL: 105
DRAWING TITLE: Day Room Int. Elevations
DRAWING FILE NO.: 4-138-84



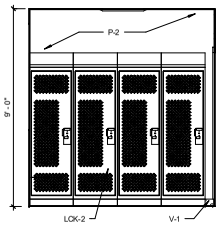
1 A-407 ENLARGED PLAN - DORM ROOM
SCALE: 1/2" = 1'-0"



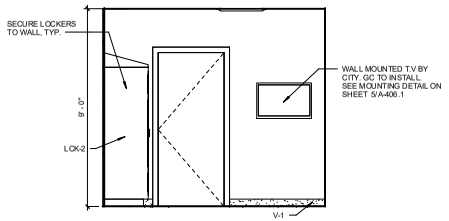
2 A-407 DORM INTERIOR ELEVATION 1
SCALE: 3/8" = 1'-0"



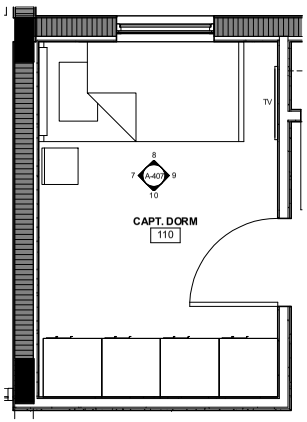
3 A-407 DORM INTERIOR ELEVATION 2
SCALE: 3/8" = 1'-0"



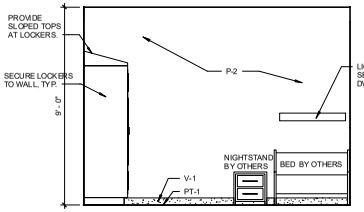
4 A-407 DORM INTERIOR ELEVATION 3
SCALE: 3/8" = 1'-0"



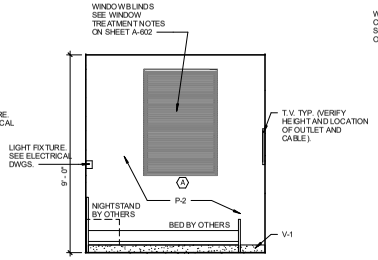
5 A-407 DORM INTERIOR ELEVATION 4
SCALE: 3/8" = 1'-0"



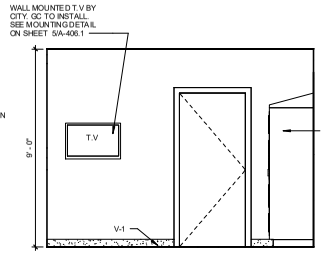
6 A-407 ENLARGED CAPTAINS DORM ROOM
SCALE: 1/2" = 1'-0"



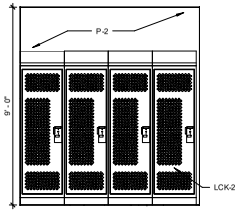
7 A-407 CAPT. DORM INT. ELEVATION 1
SCALE: 3/8" = 1'-0"



8 A-407 CAPT. DORM INT. ELEVATION 2
SCALE: 3/8" = 1'-0"



9 A-407 CAPT. DORM INT. ELEVATION 3
SCALE: 3/8" = 1'-0"



10 A-407 CAPT. DORM INT. ELEVATION 4
SCALE: 3/8" = 1'-0"

SOUND PROOFING DORMS, I.T. RM., CAPTAIN'S OFFICE AND UTILITY ROOM NOTE:

CONTRACTOR TO CAULK AND SEAL ALL PENETRATIONS THROUGH WALLS. CAULK AND SEAL WHERE DRYWALL MEETS CONCRETE FLOOR.CAULK AND SEAL AROUND MUD RINGS AND ELECTRICAL OUTLET BOXES. USE ONLY ACOUSTICAL CAULK (TYP.). INSTALL ACOUSTICAL DOOR BOTTOM AND ACOUSTICAL PREMITER SEAL.

SURFACE MOUNTED ACOUSTIC AUTOMATIC DOOR BOTTOM, HEAD AND JAMB SEAL COMPRESS O-MATIC BY ZERO INTERNATIONAL A. (AUTOMATIC DOOR BOTTOM SURFACE MOUNTED) : MODEL #367 FINISH TO BE CLEAR ANNODIZED. B.(DOOR SEAL): MODEL#870 FINISH TO BE CLEAR ANNODIZED.

SOUNDPROOFING NOTES:

1. ALL ACOUSTIC SEALANT TO BE NON-HARDENING. ADD BACKER ROD WHERE NECESSARY AND SUGGESTED BY THE SEALANT MANUFACTURER. PROVIDE CLEAR GAPS AS SHOWN ON THE DETAILS LISTED.

2. PROVIDE A CONTINUOUS BEAD OF ACOUSTIC SEALANT AROUND THE PERIMETER OF ALL SOUND CRITICAL WALLS.

3. GYPSUM WALL BOARD MAY BE REGULAR 5.8" OR TYPE X.

4. WHERE A SOUND CRITICAL WALL ABUTTS A GLASS WINDOW ADD 1/2" THICK CLOSE CEL NEOPRENE FOAM BETWEEN THE WALL AND WINDOW MULLION/GLASS TO PROVIDE AN AIRTIGHT SEAL.

5. STAGGER ALL ELECTRICAL BACK BOXES BETWEEN OPPOSITE ROOMS TO PREVENT SOUND TRANSFER. PLACE ONE BOX PER STUD CAVITY ONLY.

STATE OF FLORIDA CHRIS P. ZIMMERMAN REGISTERED ARCHITECT AR 10995

CHRIS P. ZIMMERMAN, A.I.A.
REGISTERED ARCHITECT NO. 10,995
STATE OF FLORIDA

DATE: 03-19-18

BID SET

CONSULTANT

CITY OF FORT LAUDERDALE
PUBLIC WORKS DEPARTMENT
ENGINEERING & ARCHITECTURE
100 North Andrews Avenue, Fort Lauderdale, Florida 33301

NO.	DATE	DESCRIPTION
	03-9-18	BID SET

REVISIONS

City of Fort Lauderdale

PROJECT # 10909
FIRE STATION #8

CPZ ARCHITECTS, INC.
4164 WEST BROWARD BOULEVARD
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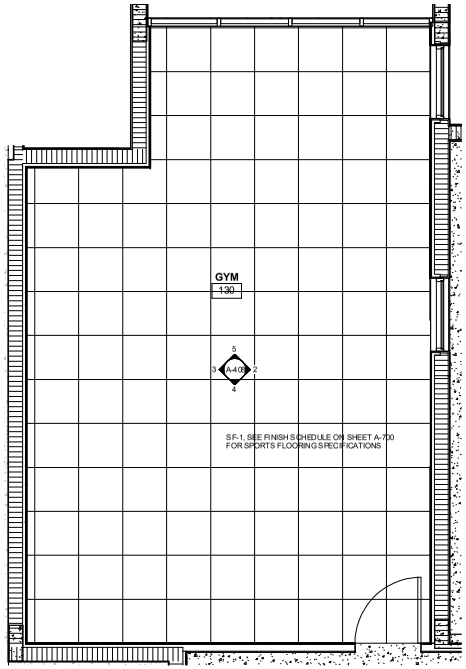
FORT LAUDERDALE, FL 33315
FAX: (954) 337-6859
WWW.CPZARCHITECTS.COM

CPZ

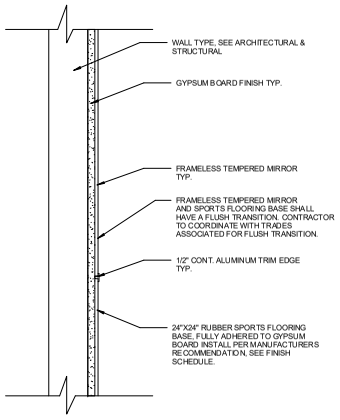
DRAWN BY:	DATE:
Author	10-29-16
CHECK'D BY:	SCALE:
Checker	As indicated

SHEET NO. A-407 OF
TOTAL: 105
DRAWING TITLE: Dorm Room Int. Elevation
DRAWING FILE NO. 4-138-84

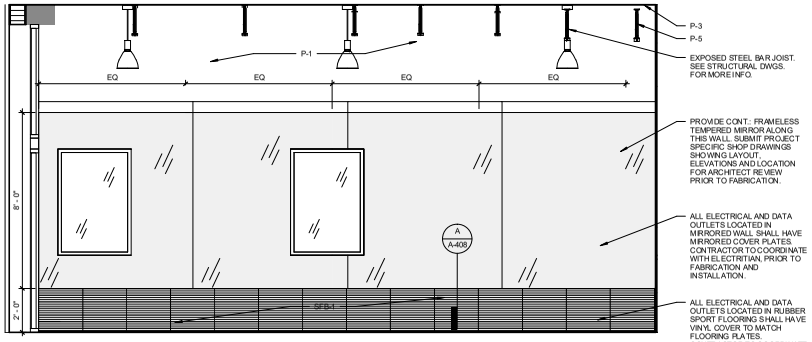
Bid 12139-983



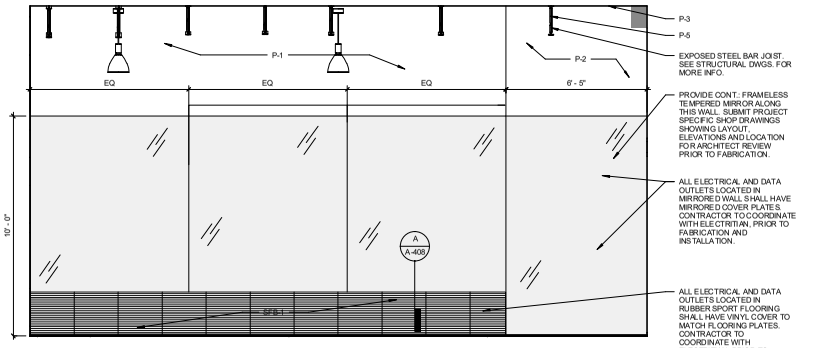
1 A-408 ENLARGED PLAN - GYM
SCALE: 3/8" = 1'-0"



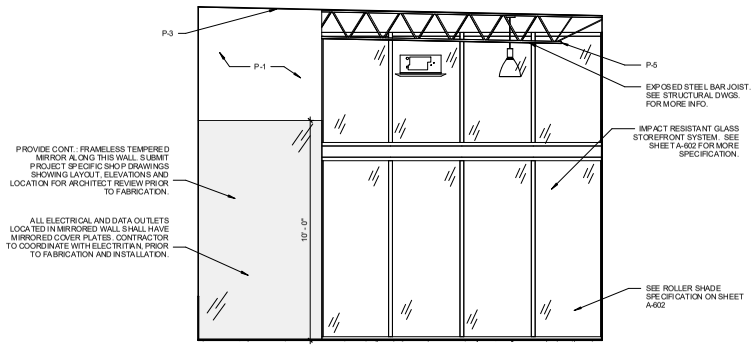
A A-408 TYPICAL GYM WALL TRANSITION DETAIL
SCALE: NOT TO SCALE



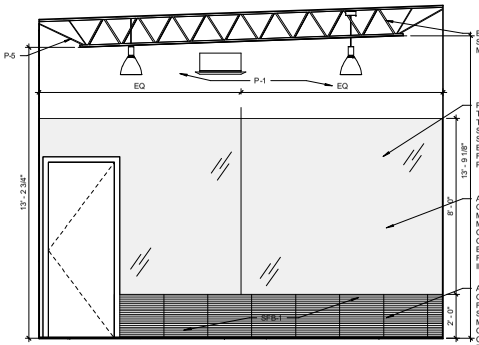
2 A-408 GYM INT. ELEVATION 1
SCALE: 3/8" = 1'-0"



3 A-408 GYM INT. ELEVATION 2
SCALE: 3/8" = 1'-0"



5 A-408 GYM INT. ELEVATION 4
SCALE: 3/8" = 1'-0"



4 A-408 GYM INT. ELEVATION 3
SCALE: 3/8" = 1'-0"

NOTES:

PROVIDE ELECTRICAL OUTLET AND DATA BOX EXTENSIONS IN ALL WALLS AS REQUIRED IN MIRRORED WALLS AND SPORTS FLOOR BASE WALL FOR A FLUSH TRANSITION. CONTRACTOR TO COORDINATE WITH ELECTRITIAN PRIOR TO ORDERING AND INSTALLATION

NOTES:

SEE SHEET A-700 FOR INTERIOR PAINT SPECIFICATION.

STATE OF FLORIDA BOARD OF ARCHITECTURE REGISTERED ARCHITECT AR 10995

CHRIS P. ZIMMERMAN, A.I.A.
REGISTERED ARCHITECT NO. 10,995
STATE OF FLORIDA

DATE: 03-19-18

BID SET

CONSULTANT

CITY OF FORT LAUDERDALE
PUBLIC WORKS DEPARTMENT
ENGINEERING & ARCHITECTURE
100 North Andrews Avenue, Fort Lauderdale, Florida 33301

REVISIONS

NO.	DATE	DESCRIPTION
	03-9-18	BID SET

City of Fort Lauderdale

PROJECT # 10909
FIRE STATION #8

CPZ ARCHITECTS, INC.
1717 SW 1ST AVENUE
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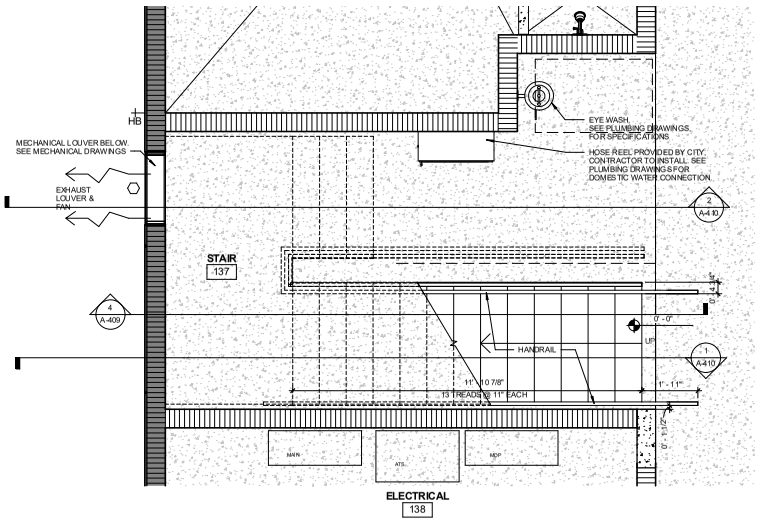
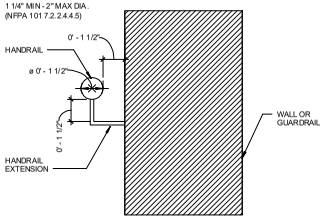
AA-26000865 WWW.CPZARCHITECTS.COM

DRAWN BY: Author	DATE: 10-29-16
CHECK'D BY: Checker	SCALE: As indicated

SHEET NO. A-408 OF
TOTAL: 105
DRAWING TITLE: Gym Int. Elevations
DRAWING FILE NO. 4-138-84



1 A-409 ENLARGED STAIR PLAN - FIRST FLOOR
SCALE: 1/2" = 1'-0"



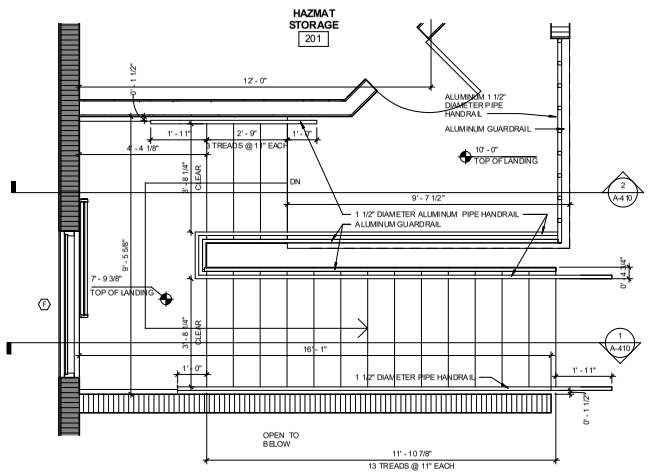
ALL HANDRAIL ENDS MUST RETURN TO WALL, POST OR FLOOR. FBC 1014

ALL HANDRAILS TO COMPLY WITH FBC 2014 ACCESSIBILITY, SECTION 505

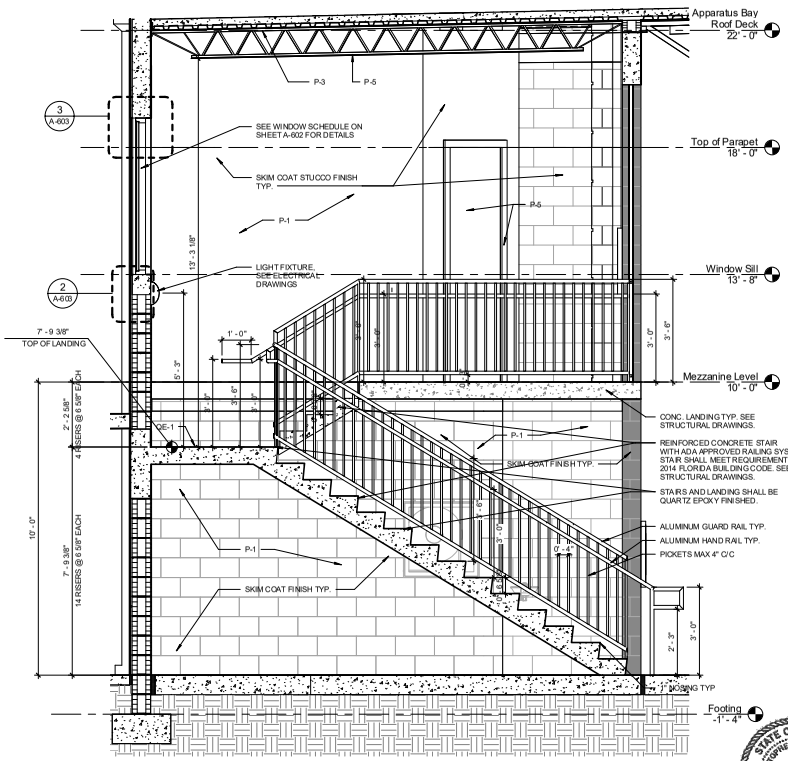
3 A-409 TYP. HANDRAIL DETAIL
SCALE: 3" = 1'-0"

STAIR RAILING NOTES:

1. ALL RAILINGS SHALL BE 1 1/2" DIAMETER ALUMINUM RAILINGS, CROSS RAILS AND SUPPORTS. AT AREAS OF PICKETS, PICKETS SHALL BE MIN. 3/4" DIAMETER AT 4" C/C.
2. ALL RAILINGS SHALL BE ALUMINUM. RAILINGS, SHALL BE FABRICATED IN AS LARGE OF SECTIONS AS POSSIBLE TO MINIMIZE THE QUANTITY OF FIELD WELDS AND CONNECTIONS AS POSSIBLE.
3. RAILINGS SHALL BE PAINTED WITH TWO COATS OF SEMI-GLOSS SHERWIN-WILLIAMS SW 7063 NEBULOUS WHITE. SEE INTERIOR PAINT SPEC. ON SHEET A-700.
4. ALL RAILINGS SHALL BE IN ACCORDANCE WITH 2014 FLORIDA BUILDING CODE.
5. CONTRACTOR TO SUBMIT FULLY DETAILED PROJECT SPECIFIC STAIR RAILING SHOP DRAWINGS. STAIR RAILING SHOP DRAWINGS SHALL BE SIGNED AND SEALED BY A FLORIDA REGISTERED ENGINEER.



2 A-409 ENLARGED STAIR PLAN - MEZZANINE LEVEL
SCALE: 1/2" = 1'-0"



4 A-409 TYPICAL GUARDRAIL DETAIL
SCALE: 1/2" = 1'-0"

CHRIS P. ZIMMERMAN, A.I.A.
REGISTERED ARCHITECT NO. 10,995
STATE OF FLORIDA

DATE: 03-19-18

BID SET

CONSULTANT

CITY OF FORT LAUDERDALE
PUBLIC WORKS DEPARTMENT
ENGINEERING & ARCHITECTURE
100 North Andrews Avenue, Fort Lauderdale, Florida 33301

NO.	DATE	DESCRIPTION
	03-9-18	BID SET

REVISIONS

City of Fort Lauderdale

PROJECT # 10909
FIRE STATION #8

CPZ ARCHITECTS, INC.
1717 SW 1ST AVENUE
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FORT LAUDERDALE, FLORIDA

DRAWN BY:	DATE:
Author	10-29-16
CHECK'D BY:	SCALE:
Checker	As indicated

SHEET NO.	OF
A-409	

TOTAL: 105

DRAWING TITLE:
Stair Enlarged Plan & Details

DRAWING FILE NO.
4-136-84

CONSULTANT

CITY OF FORT LAUDERDALE
PUBLIC WORKS DEPARTMENT
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100 North Andrews Avenue, Fort Lauderdale, Florida 33301

REVISIONS

NO.	DATE	DESCRIPTION
	03-19-18	BID SET

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PLANTATION, FLORIDA 33317
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PROJECT # 10909
FIRE STATION #8
1717 SW 31ST AVENUE
FORT LAUDERDALE, FL 33315

DRAWN BY:	Author
CHECKED BY:	Checker
DATE:	10-29-16
SCALE:	1/2" = 1'-0"

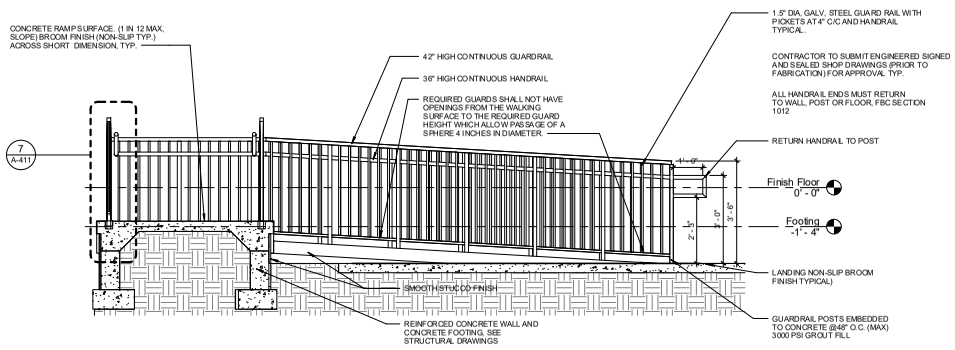
SHEET NO: A-410
TOTAL: 105
DRAWING TITLE: Stair Sections
DRAWING FILE NO.: 1-FS-8-4

BID SET

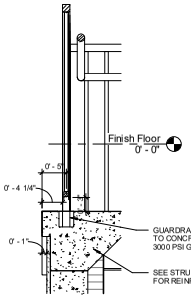
CHRIS P. ZIMMERMAN, A.I.A.
REGISTERED ARCHITECT NO. 10,995
STATE OF FLORIDA
DATE: 03-19-18

2 Stair Section.
A-410 SCALE: 1/2" = 1'-0"

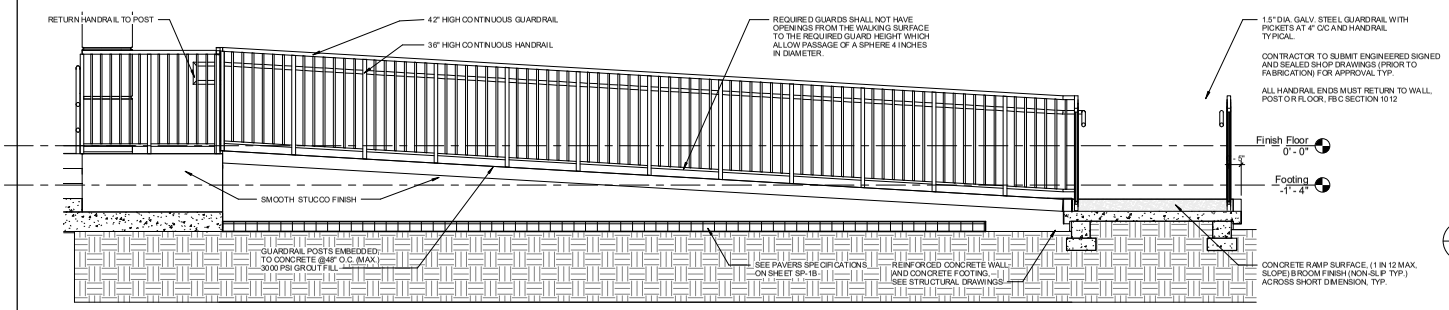
1 Stair Section
A-410 SCALE: 1/2" = 1'-0"



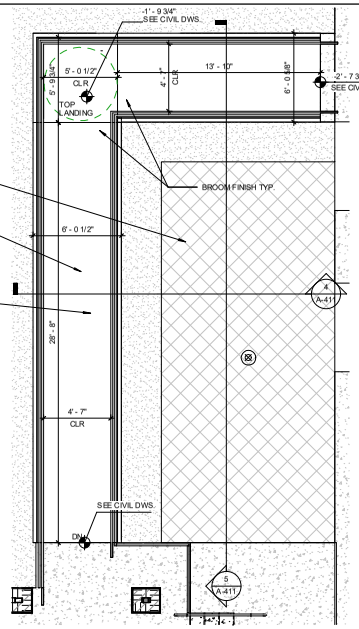
4 A-411 ENLARGED SECTION 16
SCALE: 1/2" = 1'-0"



7 A-411 TYPICAL PICKET SECTION
SCALE: 1" = 1'-0"



5 A-411 ENLARGED SECTION 17
SCALE: 1/2" = 1'-0"



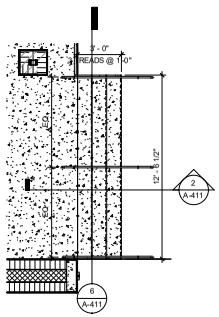
3 A-411 ENLARGED FLOOR PLAN - ENTRANCE RAMP
SCALE: 1/4" = 1'-0"

RAILING NOTES:

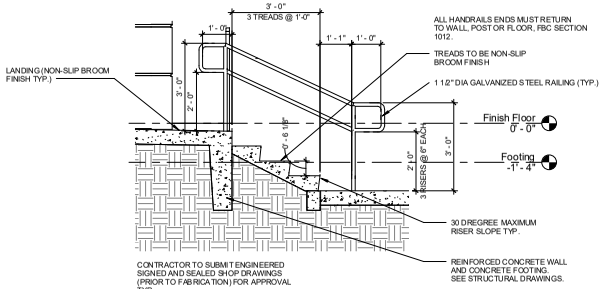
1. ALL SITE RAILINGS SHALL BE 1 1/2" DIAMETER RAILINGS, CROSS RAILS AND SUPPORTS. AT AREAS OF PICKETS, PICKETS SHALL BE MIN. 3/4" DIAMETER AT 4" O/C.
2. ALL RAILINGS SHALL BE DESIGNED BY A FLORIDA LICENSED ENGINEER, SIGNED AND SEALED SHOP DRAWINGS AND STRUCTURAL CALCULATIONS SHALL BE PROVIDED. ALL RAILS SHALL BE DESIGNED (STRENGTH , SIZE, SPACING, HEIGHTS, ETC.) TO COMPLY WITH THE 2014 FLORIDA BUILDING CODE ALL CHAPTER INCLUDING ACCESSIBILITY.
3. ALL RAILINGS SHALL BE HOT DIPPED GALVANIZED STEEL. RAILS SHALL BE FABRICATED IN AS LARGE OF SECTIONS AS POSSIBLE PRIOR TO GALVANIZING TO MINIMIZE THE QUANTITY OF FIELD WELDS AND CONNECTIONS AS POSSIBLE.

RAMP & HAND RAILING PAINT SPECIFICATION:

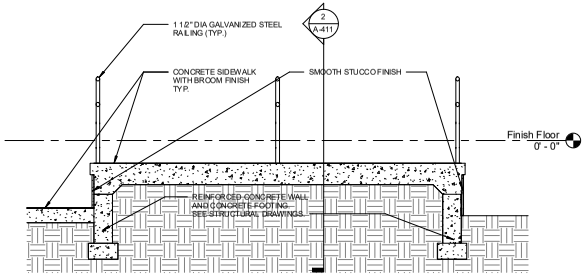
Non/Ferrous Metal — High Performance Finish (Including Handrails and Guardrails- Stair. Gloss Finish)
Primer: Pro Industrial Pro-Cryl Universal Primer, B66-310 Series
NOTE: BARE ALUMINUM APPLY DTM WASHPRIMER.
1st coat: Hydrogloss Water Based Urethane (B65W181/B65T184 Series).
2nd coat: Hydrogloss Water Based Urethane (B65W181/B65T184 Series).



1 A-411 ENLARGED FLOOR PLAN - ENTRANCE STAIRS
SCALE: 1/4" = 1'-0"



2 A-411 ENLARGED SECTION 15
SCALE: 1/2" = 1'-0"



6 A-411 ENLARGED SECTION 18
SCALE: 1/2" = 1'-0"

CONSULTANT

CITY OF FORT LAUDERDALE
PUBLIC WORKS DEPARTMENT
ENGINEERING & ARCHITECTURE
100 North Andrews Avenue, Fort Lauderdale, Florida 33301

NO.	DATE	DESCRIPTION
	03-19-18	BID SET

REVISIONS

City of Fort Lauderdale

PROJECT # 10909
FIRE STATION #8

CPZ ARCHITECTS, INC.
1777 SW 1ST AVENUE
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CPZ

DRAWN BY:	DATE:
Author	10-29-16
CHECK'D BY:	SCALE:
Checker	As indicated

SHEET NO. A-411 OF TOTAL: 105

DRAWING TITLE: Ramps & Stairs Sections

DRAWING FILE NO. 4-138-84

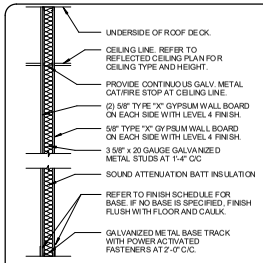
BID SET

STATE OF FLORIDA REGISTERED ARCHITECT AR 10995

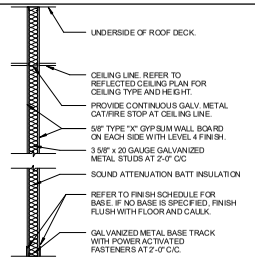
CHRIS P. ZIMMERMAN, A.I.A.
REGISTERED ARCHITECT NO. 10,995
STATE OF FLORIDA

DATE: 03-19-18

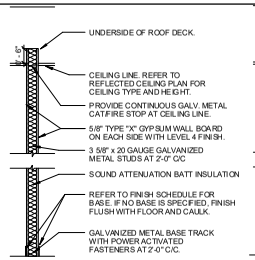
5/10/2018 5:38 AM



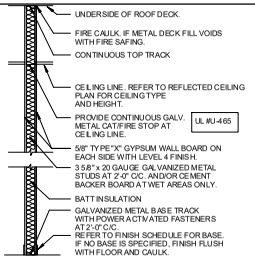
1 GYPSUM WALL PARTITION
SCALE: 1/2"=1'-0"



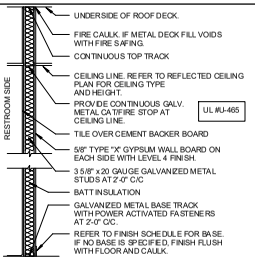
1A GYPSUM WALL PARTITION
SCALE: 1/2"=1'-0"



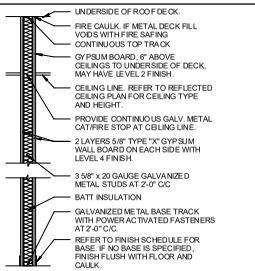
1B GYPSUM WALL PARTITION
SCALE: 1/2"=1'-0"



1C GYPSUM WALL PARTITION
SCALE: 1/2"=1'-0"
GA FILE NO. WP1072

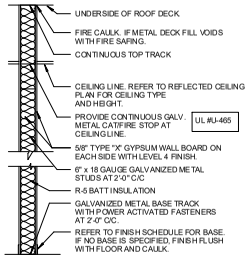


1D 1 HOUR GYPSUM CHASE WALL PARTITION
SCALE: 1/2"=1'-0"
GA FILE NO. WP1072



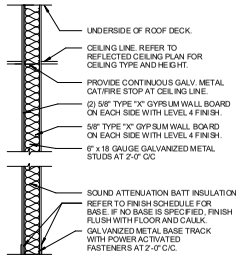
1F 2 HOUR RATED GYPSUM WALL PARTITION
SCALE: 1/2"=1'-0"
GA FILE NO. WP 1616

NOTE: G.C. TO SEAL ALL JOINTS AND PENETRATIONS IN THIS WALL WITH ACOUSTICAL SEALANT. SEE SOUND PROOFING DORM ROOMS, I.T. CAPTAIN OFFICE & MECH. ROOM NOTE ON SHEET A-407.



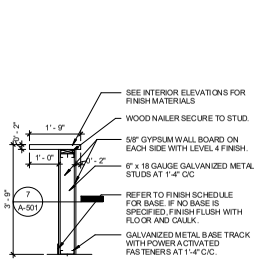
1G GYPSUM WALL PARTITION
SCALE: 1/2"=1'-0"
GA FILE NO. WP1072

NOTE: G.C. TO SEAL ALL JOINTS AND PENETRATIONS IN THIS WALL WITH ACOUSTICAL SEALANT. SEE SOUND PROOFING DORM ROOMS, I.T. CAPTAIN OFFICE & MECH. ROOM NOTE ON SHEET A-407.

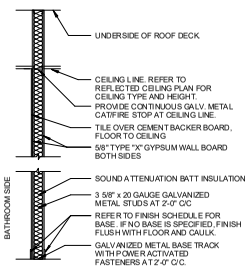


1H GYPSUM WALL PARTITION
SCALE: 1/2"=1'-0"

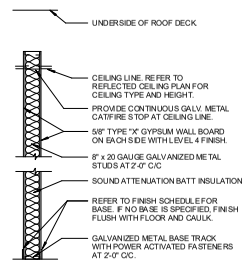
NOTE: G.C. TO SEAL ALL JOINTS AND PENETRATIONS IN THIS WALL WITH ACOUSTICAL SEALANT. SEE SOUND PROOFING DORM ROOMS, I.T. CAPTAIN OFFICE & MECH. ROOM NOTE ON SHEET A-407.



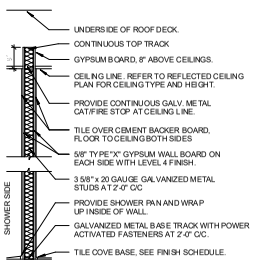
2 GYPSUM WALL PARTITION- KNEE WALL
SCALE: 1/2"=1'-0"



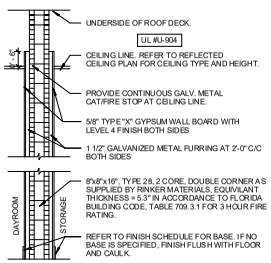
3 GYPSUM WALL PARTITION W/ TILE
SCALE: 1/2"=1'-0"



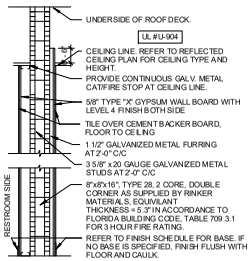
3A GYPSUM WALL PARTITION
SCALE: 1/2"=1'-0"



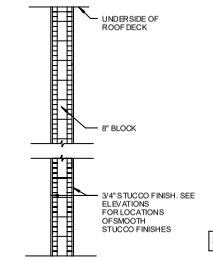
4 TOILET/SHOWER ROOM PARTITION
SCALE: 1/2"=1'-0"



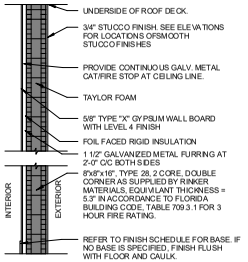
5 INT. BLOCK PARTITION WITH GYPSUM BOARD
SCALE: 1/2"=1'-0"



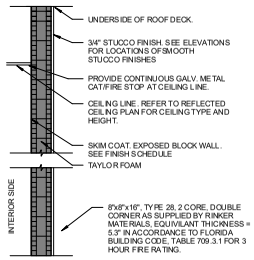
6 INT. BLOCK PARTITION CHASE WALL
SCALE: 1/2"=1'-0"



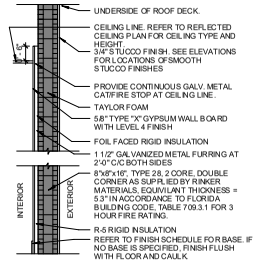
7 EXT. BLOCK WALL WITH STUCCO
SCALE: 1/2"=1'-0"



EXT. BLOCK WALL WITH GYP. BOARD/STUCCO
8 SCALE: 1/2"=1'-0"

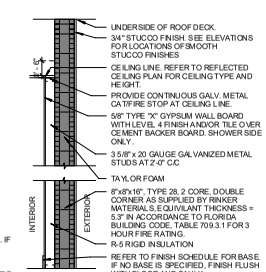


9 EXT. BLOCK WALL WITH STUCCO
SCALE: 1/2"=1'-0"

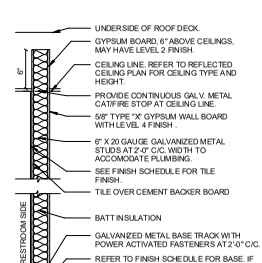


10 EXT. BLOCK WALL WITH GYP. BOARD/STUCCO
SCALE: 1/2"=1'-0"

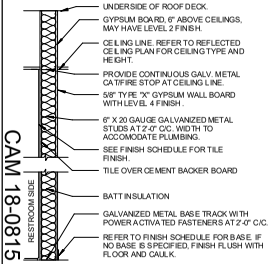
NOTE: G.C. TO SEAL ALL JOINTS AND PENETRATIONS IN THIS WALL WITH ACOUSTICAL SEALANT. SEE SOUND PROOFING DORM ROOMS, I.T. CAPTAIN OFFICE & MECH. ROOM NOTE ON SHEET A-407.



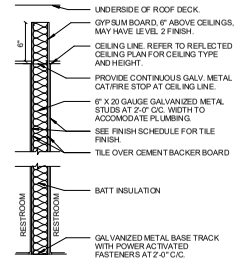
EXT. BLOCK CHASE WALL WITH GYP. BOARD/STUCCO
11 SCALE: 1/2"=1'-0"



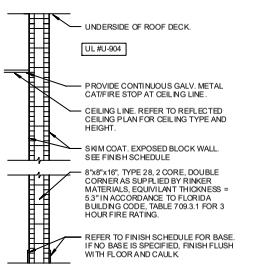
12 GYPSUM WALL CHASE PARTITION
SCALE: 1/2"=1'-0"



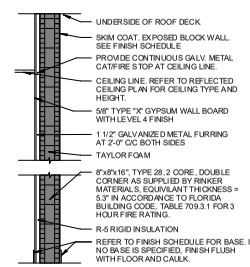
12A GYPSUM WALL CHASE PARTITION
SCALE: 1/2"=1'-0"



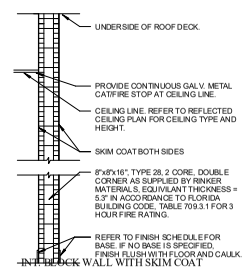
CHASE PARTITION WITH TILE ON BOTH SIDES
13 SCALE: 1/2"=1'-0"



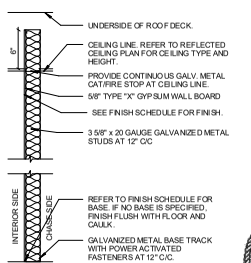
2 HR. RATED INT. BLOCK WALL WITH SKIM COAT
14 SCALE: 1/2"=1'-0"



2 HR. RATED INT. BLOCK WALL WITH GYP. BOARD/SKIM COAT
15 SCALE: 1/2"=1'-0"



INT. BLOCK WALL WITH SKIM COAT
16 SCALE: 1/2"=1'-0"



17 GYPSUM CHASE WALL TYP.
SCALE: 1/2"=1'-0"

STATE OF FLORIDA CHRISTOPHER P. ZIMMERMAN AR 10995 REGISTERED ARCHITECT

CHRIS P. ZIMMERMAN, A.I.A.
REGISTERED ARCHITECT NO. 10,995
STATE OF FLORIDA

DATE: 03-19-18

BID SET

CONSULTANT

CITY OF FORT LAUDERDALE
PUBLIC WORKS DEPARTMENT
ENGINEERING & ARCHITECTURE
100 North Andrews Avenue, Fort Lauderdale, Florida 33301

City of Fort Lauderdale

NO.	DATE	DESCRIPTION
	03-19-18	BID SET

PROJECT # 10909
FIRE STATION #8

CPZ ARCHITECTS, INC.
424 WEST BROWARD BOULEVARD
FORT LAUDERDALE, FLORIDA 33301
PHONE: (954) 792-8252 FAX: (954) 337-6859
AA-26000603 WWW.CPZARCHITECTS.COM

CPZ

DRAWN BY: Author	DATE: 10-29-16
CHECK'D BY: Checker	SCALE: 1/2" = 1'-0"

SHEET NO. A-500 OF TOTAL: 105

DRAWING TITLE: Wall Types

DRAWING FILE NO. 4-198-84

Bid 12139-983

CONSULTANT

CITY OF FORT LAUDERDALE
PUBLIC WORKS DEPARTMENT
ENGINEERING & ARCHITECTURE
100 North Andrews Avenue, Fort Lauderdale, Florida 33301

REVISIONS

NO.	DATE	DESCRIPTION
	03-19-18	BID SET

City of Fort Lauderdale

PROJECT # 10909
FIRE STATION #8
1717 SW 1ST AVENUE
FORT LAUDERDALE, FL 33315

CPZ ARCHITECTS, INC.
4316 WEST BROWARD BOULEVARD
PLANTATION, FLORIDA 33317
PHONE: (954) 792-8525 FAX: (954) 317-0359
AA #26000685 WWW.CPZARCHITECTS.COM

DRAWN BY:	Author
APPROV. BY:	Checker
DATE:	10/29/16
SCALE:	1/2" = 1'-0"

SHEET NO. A-500A
TOTAL SHEETS: 105
DRAWING TITLE: Wall Types
DRAWING FILE NO.: 1-1525-54

BID SET

CHRIS P. ZIMMERMAN, A.I.A.
REGISTERED ARCHITECT NO. 0015995
STATE OF FLORIDA

STATE OF FLORIDA · CHRISTOPHER PAUL ZIMMERMAN · AR 15995 · REGISTERED ARCHITECT

DATE: 03-19-18

GA FILE NO. WP 7000	PROPRIETARY[1]	1 HOUR FIRE	35 to 39 STC SOUND
GYPSUM WALLBOARD, STEEL C-T STUDS			

One layer 1" x 24" proprietary type X gypsum panels inserted between 2½" floor and ceiling J runners with T section of 2½" proprietary C-T steel studs between panels OPPOSITE SIDE: One layer ⅝" proprietary type X gypsum wallboard applied parallel to studs with 1" Type S drywall screws 8" o.c. at edges and 12" o.c. at intermediate studs. **(WLB)**

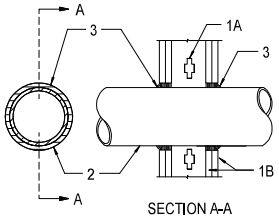
G-P Gypsum	PROPRIETARY GYPSUM BOARD ⅝" ToughRock® Fireguard® 1" ToughRock Fireguard® Shaftliner	Thickness: 31⁄2" Limiting Height: Refer to manufacturer Approx. Weight: 7 psf Fire Test: GET, 1-7-74; ITS, #-90-01 ITS Design GPYW4 60-01 Sound Test Estimated	

SHAFT WALL
SCALE: 1½"=1'-0"

CAM 18-0815
Exhibit 2
Page 18 of 350

SYSTEM NO. W-L-1001

(FORMERLY SYSTEM NO. 147)
F Ratings- 1, 2, 3 and 4 Hr (See Item 3)
L Rating At Ambient- less than 1 CFM/sq ft
L Rating At 400 F-less than 1 CFM/sq ft



SECTION A-A

1. **WALL ASSEMBLY**- The 1,2,3, or 4 hr fire rated gypsum wall board/stud wall assembly shall be constructed of the materials and in the manner described in the individual U300 or U400 Series Wall or Partition Designs in the UL Fire Resistance Directory and shall include the following construction features:

A. **Studs**- Wall framing may consist of either wood studs (max 2 hr fire rated assemblies) or steel channel studs. Wood studs to consist of nom 2 by 4 in. lumber spaced 16 in. OC with nom 2 by 4 in. lumber end plates and cross braces. Steel studs to be min 3-5/8 in. wide by 1-3/8 in. deep channels spaces max 24 in. OC.
B. **Gypsum Board***- Nom 1/2 or 5/8 in. thick, 4 ft. wide with square or tapered edges. The gypsum wallboard type, thickness, number of layers, fastener types and sheet orientation shall be as specified in the individual U300 or U400 Series Design in the UL Fire Resistance Directory. Max diam of opening is 26 in.

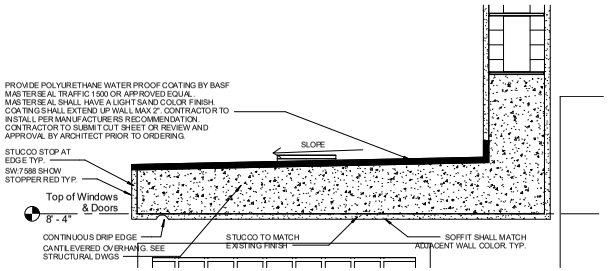
2. **THROUGH PENETRANT**- One metallic pipe, conduit or tubing installed either concentrically or eccentrically within the fire stop system. The annular space between pipe, conduit or tubing and periphery of opening shall be min of 0 in. (point contact) to max 2 in. pipe, conduit or tubing to be rigidly supported on both sides of wall assembly. The following types and sizes of metallic pipes, conduits or tubing may be used:

A. **Steel Pipe**- Nom 2 in. diam (or smaller) Schedule 10 (or heavier) steel pipe.
B. **Iron Pipe**- Nom 24 in. diam (or smaller) service weight (or heavier) cast iron soil pipe, nom 12 in. diam (or smaller) or Class 50 (or heavier) ductile iron pressure pipe.
C. **Conduit**- Nom 6 in. diam (or smaller) steel conduit or nom 4 in. diam (or smaller) steel electrical metallic tubing.
D. **Copper Tubing**- Nom 6 in. diam (or smaller) Type L (or heavier) copper tubing.
E. **Copper Pipe**- Nom 6 in. diam (or smaller) Regular (or heavier) copper pipe.
F. **Through Penetrating Product***- Flexible Metal Piping The following types of steel flexible metal gas piping may be used:
1. Nom 2 in. diam (or smaller) steel flexible metal gas piping. Plastic covering on piping may or may not be removed on both sides of floor or wall assembly.
OMEGA FLEX INC
2. Nom 1 in. diam (or smaller) steel flexible metal gas piping. Plastic covering on piping may or may not be removed on both sides of floor or wall assembly
WARD MFG INC
3. **Fill, Void or Cavity Material***- Caulk- Min 5/8, 1-1/4, 1-7/8 and 2-1/2 in. thickness of caulk for 1,2,3 and 4 hr rated assemblies, respectively, applied within annulus, flush with both surfaces of wall. Min 1/4 in. diam bead of caulk applied to gypsum board/penetrant interface at point contact location on both sides of wall. The hourly F Rating of the firestop system is dependent upon the hourly fire rating of the wall assembly in which it is installed, as shown in the following table. The hourly T Rating of the firestop system is dependent upon the type or size of the pipe or conduit and the hourly fire rating of tre wall assembly in which it is installed, as tabulated below:

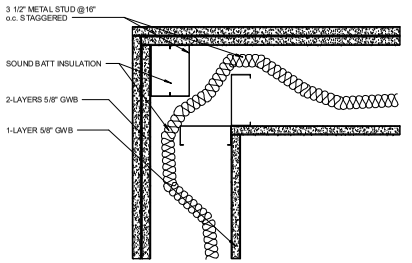
MAX. Pipe or Conduit Diam In	F Rating Hr	T Rating Hr
1	1 or 2	0+, 1 or 2
1	3 or 4	3 or 4
4	1 or 2	0
6	3 or 4	0
12	1 or 2	0

+When copper pipe is used, T Rating is 0 h.
3M COMPANY - CP 25WB+
*Bearing the UL Classification Mark

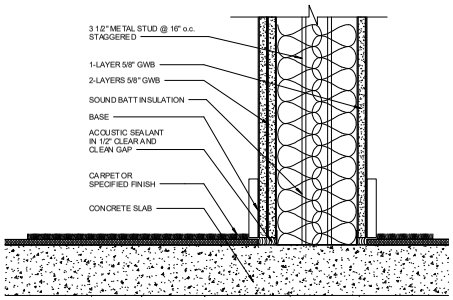
1 A-501 FIRE PENETRATION DETAIL
SCALE: 3/8" = 1'-0"



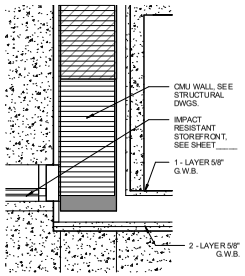
2 A-501 CONCRETE OVERHAND DETAIL
SCALE: 1 1/2" = 1'-0"



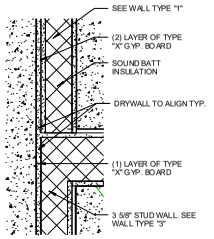
3 A-501 CORNER DETAIL
SCALE: 3/4" = 1'-0"



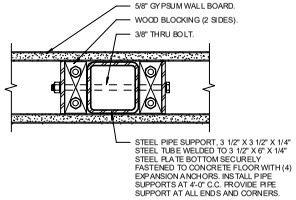
4 A-501 TYP. BASE DETAIL
SCALE: 3/4" = 1'-0"



5 A-501 Detail 1
SCALE: 1 1/2" = 1'-0"



6 A-501 ENLARGED WALL DETAIL AT DORM/ ADA RR 102
SCALE: 1 1/2" = 1'-0"



LOW INTERIOR GYPSUM PARTITION SUPPORT DETAIL

7 A-501
SCALE: 3" = 1'-0"

BID SET

CHRIS P. ZIMMERMAN, A.I.A.
REGISTERED ARCHITECT NO. 10,995
STATE OF FLORIDA

DATE: 03-19-18

CONSULTANT

CITY OF FORT LAUDERDALE
PUBLIC WORKS DEPARTMENT
ENGINEERING & ARCHITECTURE
100 North Andrews Avenue, Fort Lauderdale, Florida 33301

REVISIONS

NO.	DATE	DESCRIPTION
	03-19-18	BID SET

City of Fort Lauderdale

PROJECT # 10909
FIRE STATION #8

CPZ ARCHITECTS, INC.
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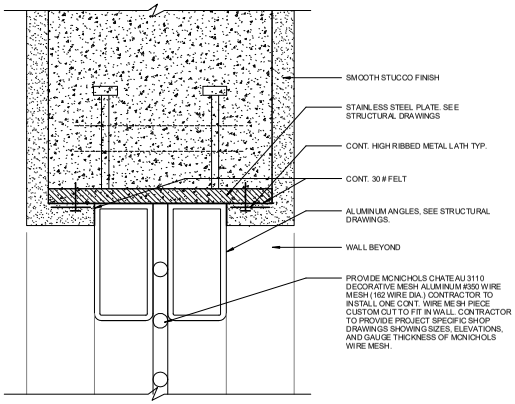
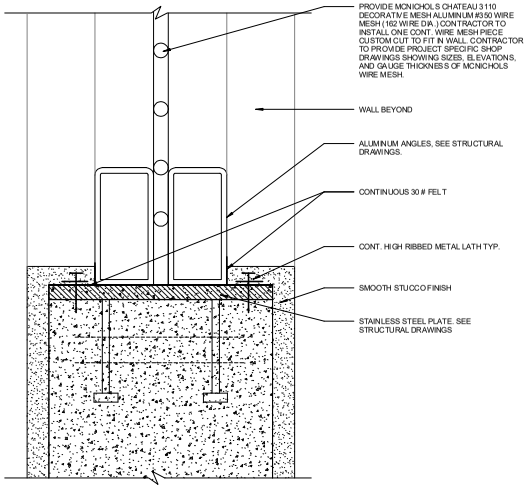
AA-26000603 WWW.CPZARCHITECTS.COM

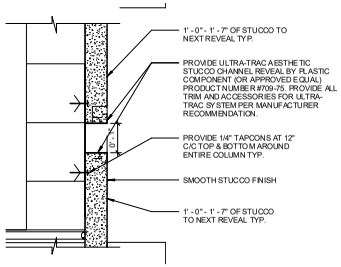
DRAWN BY: Author
DATE: 10-29-16
CHECKED BY: Checker
SCALE: As indicated
SHEET NO.: A-501
OF
TOTAL: 105
DRAWING TITLE: Details
DRAWING FILE NO.: 4-138-84



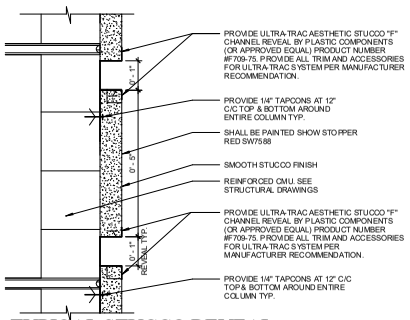
2 A-502 LOW WALL HEAD DETAIL
SCALE: 6" = 1'-0"



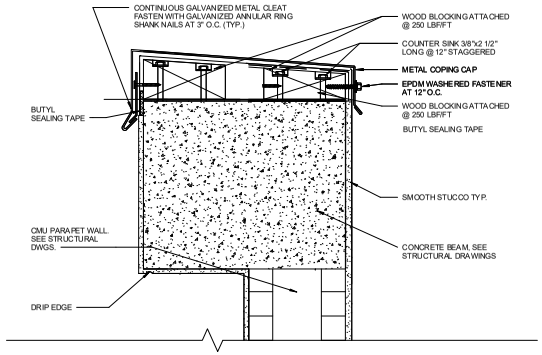
3 A-502 LOW WALL SILL DETAIL
SCALE: 6" = 1'-0"



4 A-502 STUCCO REVEAL DETAIL 1
SCALE: 6" = 1'-0"



5 A-502 TYPICAL STUCCO REVEAL DETAIL 2
SCALE: 6" = 1'-0"



6 A-502 WALL FLASHING WITH WIDE CONC. BEAM WITH METAL CAP FLASHING.
SCALE: 3 1/2" = 1'-0"

BID SET

CONSULTANT

CITY OF FORT LAUDERDALE
PUBLIC WORKS DEPARTMENT
ENGINEERING & ARCHITECTURE
100 North Andrews Avenue, Fort Lauderdale, Florida 33301

NO.	DATE	DESCRIPTION
	03-9-16	BID SET

REVISIONS

City of Fort Lauderdale

PROJECT # 10909
FIRE STATION #8

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CPZ

DRAWN BY: Author
DATE: 10-29-16
CHECK'D BY: Checker
SCALE: As indicated
SHEET NO.: A-502
OF
TOTAL: 105
DRAWING TITLE: Details
DRAWING FILE NO.: 4-138-84

STATE OF FLORIDA
CHRISTOPHER P. ZIMMERMAN
AR 10995
REGISTERED ARCHITECT

CHRIS P. ZIMMERMAN, A.I.A.
REGISTERED ARCHITECT NO. 10,995
STATE OF FLORIDA

DATE: 03-19-18

DOOR SCHEDULE

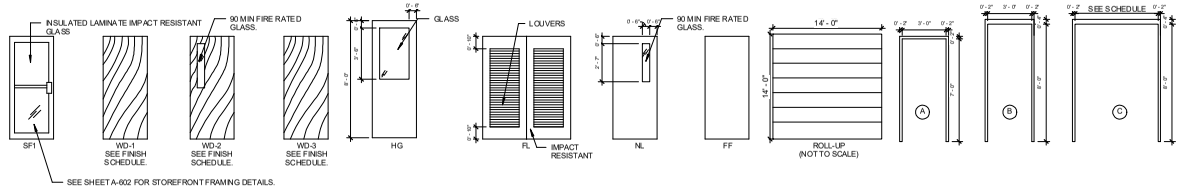
NUMBER	LOCATION	TYPE	MATERIAL	SIZE W	SIZE H	THICKNESS	FINISH	UNDER CUT	RATING	HARDWARE	FRAME MATERIAL	FRAME FINISH	JAMB	HEAD	SILL	REMARKS
1	LOBBY	SF-1	ALUM/GLASS	3' - 8"	8' - 4"	1 3/4"	CLEAR ANNODIZED	--	--	03	ALUM	CLEAR ANODIZED ALUMINUM	8/A601.1	7/A601.1	9/A601.1	
2	COVERED PATIO	SF-1	ALUM/GLASS	3' - 0"	8' - 2"	1 3/4"	CLEAR ANNODIZED	--	--	04	ALUM	CLEAR ANODIZED ALUMINUM	8/A601.1	7/A601.1	9/A601.1	
3	JAN/STOR	FF	HM	3' - 0"	8' - 0"	1 3/4"	P-5	--	90 MIN	13	B	P-5	1/A601	1/A601	D/A601	
4	CORRIDOR 3	NL	HM	3' - 0"	8' - 0"	1 3/4"	P-5 / P-6	--	90 MIN	16	B	P-5 / P-6	2A/A601	2A/A601	C/A601	P-5 APPARATUS BAY SIDE ONLY. / P-6 LIVING QUARTER DOOR SLAB ONLY.
5	WORK RM	FF	HM	3' - 0"	8' - 0"	1 3/4"	P-5	--	90 MIN	12	B	P-5	1/A601	1/A601	D/A601	
6	MEDICAL STOR	FF	HM	3' - 0"	8' - 0"	1 3/4"	P-5	--	90 MIN	12	B	P-5	1/A601	1/A601	D/A601	
7	ICE	WD-1	WD	3' - 0"	7' - 0"	1 3/4"	STAINED	--		06	A	P-1	4/A601	4/A601	A/A601	
8	PAN. 1	WD-1	WD	3' - 0"	7' - 0"	1 3/4"	STAINED	--		10	A	P-1	4/A601	4/A601	A/A601	
9	PAN. 2	WD-1	WD	3' - 0"	7' - 0"	1 3/4"	STAINED	--		10	A	P-1	4/A601	4/A601	A/A601	
10	PAN. 3	WD-1	WD	3' - 0"	7' - 0"	1 3/4"	STAINED	--		10	A	P-1	4/A601	4/A601	A/A601	
11	RESTROOM	WD-1	WD	3' - 0"	7' - 0"	1 3/4"	STAINED	--		08	A	P-1	4/A601	4/A601	E/A601	
12	LAUNDRY	WD-1	WD	3' - 0"	7' - 0"	1 3/4"	STAINED	--		07	A	P-1	4/A601	4/A601	E/A601	
13	LOBBY	WD-1	WD	3' - 0"	7' - 0"	1 3/4"	STAINED	--		15	A	P-1	4/A601	4/A601	A/A601	
14	ADA RR	WD-1	WD	3' - 0"	7' - 0"	1 3/4"	STAINED	--		08	A	P-1	4/A601	4/A601	E/A601	
15	DORM 6	WD-1	WD	3' - 0"	7' - 0"	1 3/4"	STAINED	--		08	A	P-1	4A/A601	4A/A601	4A/A601	PROVIDE ACOUSTICAL DOOR BOTTOM & DOOR SEALS BY ZERO INTERNATIONAL, SEE SOUND PROOFING NOTES ON SHEET A-407
16	DORM 5	WD-1	WD	3' - 0"	7' - 0"	1 3/4"	STAINED	--		08	A	P-1	4A/A601	4A/A601	4A/A601	PROVIDE ACOUSTICAL DOOR BOTTOM & DOOR SEALS BY ZERO INTERNATIONAL, SEE SOUND PROOFING NOTES ON SHEET A-407
17	DORM 4	WD-1	WD	3' - 0"	7' - 0"	1 3/4"	STAINED	--		08	A	P-1	4A/A601	4A/A601	4A/A601	PROVIDE ACOUSTICAL DOOR BOTTOM & DOOR SEALS BY ZERO INTERNATIONAL, SEE SOUND PROOFING NOTES ON SHEET A-407
18	DORM 3	WD-1	WD	3' - 0"	7' - 0"	1 3/4"	STAINED	--		08	A	P-1	4A/A601	4A/A601	4A/A601	PROVIDE ACOUSTICAL DOOR BOTTOM & DOOR SEALS BY ZERO INTERNATIONAL, SEE SOUND PROOFING NOTES ON SHEET A-407
19	DORM 2	WD-1	WD	3' - 0"	7' - 0"	1 3/4"	STAINED	--		08	A	P-1	4A/A601	4A/A601	4A/A601	PROVIDE ACOUSTICAL DOOR BOTTOM & DOOR SEALS BY ZERO INTERNATIONAL, SEE SOUND PROOFING NOTES ON SHEET A-407
20	GYM	HG	HM	3' - 0"	8' - 0"	1 3/4"	P-6	--		07.1	B	P-1	4/A601	4/A601	F/A601	
21	DECON	FF	HM	(2) 3'-0"	8' - 0"	1 3/4"	P-5	--		17	C	P-5	1/A601	1/A601	D/A601	
22	TURN OUT GEAR	FF	HM	3' - 0"	8' - 0"	1 3/4"	P-5	--		11	B	P-5	1/A601	1/A601	D/A601	
23	ELECTRICAL	FF	HM	(2) 3'-0"	8' - 0"	1 3/4"	SEE EXTERIOR ELEVATION	--		01	C	SEE EXTERIOR ELEVATION	3/A601	3/A601	3/A601	
24	APPARATUS BAY	ROLL-UP	STL	14' - 0"	14' - 0"	1 3/4"	P-5	--		18	--	P-5	5/A601	5/A601	5/A601	SEE SPECIFICATION SECTION 08 33 00
25	APPARATUS BAY	ROLL-UP	STL	14' - 0"	14' - 0"	1 3/4"	P-5	--		18	--	P-5	5/A601	5/A601	5/A601	SEE SPECIFICATION SECTION 08 33 00
26	APPARATUS BAY	ROLL-UP	STL	14' - 0"	14' - 0"	1 3/4"	P-5	--		18	--	P-5	5/A601	5/A601	5/A601	SEE SPECIFICATION SECTION 08 33 00
27	APPARATUS BAY	ROLL-UP	STL	14' - 0"	14' - 0"	1 3/4"	P-5	--		18	--	P-5	5/A601	5/A601	5/A601	SEE SPECIFICATION SECTION 08 33 00
28	APPARATUS BAY	ROLL-UP	STL	14' - 0"	14' - 0"	1 3/4"	P-5	--		18	--	P-5	5/A601	5/A601	5/A601	SEE SPECIFICATION SECTION 08 33 00
29	APPARATUS BAY	FF	HM	3' - 0"	8' - 0"	1 3/4"	P-5	--		05	B	P-5	3/A601	3/A601	3/A601	P-5 APPARATUS BAY SIDE ONLY
30	DECON	FF	HM	3' - 0"	8' - 0"	1 3/4"	P-5	--		05	B	P-5	1/A601	1/A601	D/A601	
31	APPARATUS BAY	ROLL-UP	STL	14' - 0"	14' - 0"	1 3/4"	P-5	--		18	--	P-5	10/A601	10/A601	10/A601	SEE SPECIFICATION SECTION 08 33 00
32	CAPT. DORM	WD-1	WD	3' - 0"	7' - 0"	1 3/4"	STAINED	--		08	A	P-1	4A/A601	4A/A601	4A/A601	PROVIDE ACOUSTICAL DOOR BOTTOM & DOOR SEALS BY ZERO INTERNATIONAL, SEE SOUND PROOFING NOTES ON SHEET A-407
33	DORM 1	WD-1	WD	3' - 0"	7' - 0"	1 3/4"	STAINED	--		08	A	P-1	4A/A601	4A/A601	4A/A601	PROVIDE ACOUSTICAL DOOR BOTTOM & DOOR SEALS BY ZERO INTERNATIONAL, SEE SOUND PROOFING NOTES ON SHEET A-407
34	RESTROOM	WD-1	WD	3' - 0"	7' - 0"	1 3/4"	STAINED	--		08	A	P-1	4/A601	4/A601	E/A601	
36	STORAGE	WD-3	WD	3' - 0"	7' - 0"	1 3/4"	STAINED	--	45 MIN	13.1	A	P-1	4/A601	4/A601	A/A601	
37	IT	WD-2	WD	3' - 0"	7' - 0"	1 3/4"	STAINED	--	90 MIN	14A	A	P-1	4A/A601	4A/A601	4A/A601	
38	COVERED REAR ENTRANCE	FF	HM	3' - 0"	8' - 0"	1 3/4"	SEE EXTERIOR ELEVATION / P-6	--		05	B	SEE EXTERIOR ELEVATION / P-1	2/A601	2/A601	2/A601	P-6 LIVING QUARTER DOOR SLAB ONLY.
39	CAPT. OFFICE	WD-1	WD	3' - 0"	7' - 0"	1 3/4"	STAINED	--		09	A	P-1	4A/A601	4A/A601	4A/A601	PROVIDE ACOUSTICAL DOOR BOTTOM & DOOR SEALS BY ZERO INTERNATIONAL, SEE SOUND PROOFING NOTES ON SHEET A-407
40	ALARM/WATCH ROOM	WD-1	WD	3' - 0"	7' - 0"	1 3/4"	STAINED	--		07	A	P-1	4A/A601	4A/A601	4A/A601	
41	CLOSET	WD-1	WD	3' - 0"	7' - 0"	1 3/4"	STAINED			14	A	P-1	4/A601	4/A601	A/A601	
42	RESTROOM	WD-1	WD	3' - 0"	7' - 0"	1 3/4"	STAINED	--		08	A	P-1	4/A601	4/A601	E/A601	
43	UTILITY RM	FL	HM	(2) 3'-0"	8' - 0"	1 3/4"	P-4			01	C	SEE EXTERIOR ELEVATION	1/A601	1/A601	1/A601	PROVIDE ACOUSTICAL DOOR BOTTOM & DOOR SEALS BY ZERO INTERNATIONAL, SEE SOUND PROOFING NOTES ON SHEET A-407
44	HAZMAT EQUIPMENT STORAGE	FF	HM	2' - 6"	8' - 0"	1 3/4"	P-5	--	45 MIN	12	A	P-5	4/A601	4/A601	B/A601	
45	APPARATUS BAY	FF	HM	3' - 0"	8' - 0"	1 3/4"	P-5	--		05	B	P-4	3/A601	3/A601	3/A601	P-5 APPARATUS BAY SIDE ONLY
46	COVERED PATIO	SEE SHEET A-601,2 STL.	SEE SHEET A-601,2 STL.	SEE SHEET A-601,2 STL.	SEE SHEET A-601,2 STL.	--	--	--	POWDER COAT	05A	--	POWDER COAT	--	--	--	
47	COVERED PUBLIC ENTRANCE	SEE SHEET A-601,2 STL.	SEE SHEET A-601,2 STL.	SEE SHEET A-601,2 STL.	SEE SHEET A-601,2 STL.	--	--	--	POWDER COAT	05B	--	POWDER COAT	--	--	--	

HARDWARE NOTES:

1. CONTRACTOR SHALL COORDINATE ALL HARDWARE REQUIREMENTS WITH THE OWNER PRIOR TO ORDERING.
2. ALL HINGES SHALL BE STAINLESS STEEL, BALL BEARING HINGES.
3. ALL DOOR CLOSURES TO BE BY "LCN" COMMERCIAL GRADE, ADA CODE COMPLIANT AND EQUIPPED WITH HOLDER OPEN FEATURE.
4. ALL DOORS AND FRAMES SHALL HAVE DOOR SILENCERS.
5. ALL INTERIOR HARDWARE SHALL BE SCHLAGE ADA COMPLIANT LEVER. ALL EXTERIOR HARDWARE SHALL BE SCHLAGE HEAVY DUTY ADA COMPLIANT.
6. ALL HARDWARE SHALL HAVE ADA COMPLIANT LEVERS AND MATCH BUILDING STANDARD.
7. CONTRACTOR SHALL COORDINATE ALL HARDWARE WITH METRO-DADE COUNTY PRODUCT APPROVALS OF THE EXTERIOR DOOR AND FRAMES. PRODUCT APPROVALS SHALL INCLUDE HARDWARE MANUFACTURER SPECIFIED ABOVE.
8. CONTRACTOR TO SUBMIT SHOP DRAWINGS TO OWNER/ARCHITECT FOR REVIEW PRIOR TO ORDERING DOORS.
9. CONTRACTOR TO PROVIDE WOOD AND STAIN SAMPLES OF DOORS TO OWNER/ARCHITECT FOR REVIEW PRIOR TO ORDERING.
10. ALL OFFICE LOCKSETS ARE TO BE KEYED SEPARATELY.

DOOR NOTES:

1. WEATHER-STRIP ALL EXTERIOR DOORS.
2. DETAILS INDICATE BASIC WALL CONSTRUCTION AND DIMENSIONS. ALSO SEE INTERIOR ELEVATIONS AND FINISH SCHEDULE FOR SPECIAL FINISHES.
3. ALL EXTERIOR DOORS ARE TO BE IMPACT RESISTANT. CONTRACTOR SHALL SUBMIT METRO-DADE COUNTRY PRODUCT APPROVALS.
4. ALL DOORS AND HARDWARE SHALL COMPLY WITH NFPA 101, SECTION 7.2.1
5. ALL WOOD DOORS TO BE SOLID CORE.
6. CONTRACTOR TO PROVIDE PRODUCT APPROVALS FOR ALL EXTERIOR DOORS FOR ARCHITECTS' REVIEW AND SUBMIT TO BUILDING DEPARTMENT. CONTRACTOR TO MARK SUBMITTALS CLEARLY TO IDENTIFY THE UNIT SIZE, ANCHOR TYPE AND SPACE FOR THE SPECIFIC UNIT APPLICABLE TO THIS PROJECT. SUBMIT PRODUCT APPROVALS AT TIME OF PERMITTING.
7. ALL DOORS SHALL MEET LEVEL "E" RISK CATEGORY IV ESSENTIAL FACILITY BUILDING PER F.B.C. 2017 SECTION 1626.2.4



DOOR AND FRAME ELEVATIONS

DOOR ABBREVIATIONS:

ALUM	ALUMINUM	IM	IMPACT GLASS
STL	STEEL	V/P	VIEW PANEL
UC	UNDERCUT	w/	WITH
LV	LOUVER	TYP	TYPICAL
HG	HALF GLASS	FF	FULL FLUSH
MTL	METAL	WD-PH	WOOD PREHUNG
PT	PAINTED	WDP	WOOD: PAINTED
SCW-PT	SOLID CORE WOOD, PAINTED	SF	STORE FRONT
C.W.	CLEAR WIRE	S.F/LT	STORE-FRONT/SIDE-LITE
T.C.	TEMPERED, CLEAR	HM	HOLLOW METAL
NG	NARROW GLASS	L.T	SIDE-LITE
FG	FULL GLASS	WD	WOOD-FACTORY FINISH
FL	FULLY LOUVERED		

STATE OF FLORIDA — CHRISTOPHER P. ZIMMERMAN — REGISTERED ARCHITECT — AR 10995

CHRIS P. ZIMMERMAN, A.I.A.
REGISTERED ARCHITECT NO. 10,995
STATE OF FLORIDA

DATE: 03-19-18

CONSULTANT

CITY OF FORT LAUDERDALE
PUBLIC WORKS DEPARTMENT
ENGINEERING & ARCHITECTURE
100 North Andrews Avenue, Fort Lauderdale, Florida 33301

NO.	DATE	DESCRIPTION
	03-19-18	BID SET

REVISIONS

City of Fort Lauderdale

PROJECT # 10909
FIRE STATION #8

CPZ ARCHITECTS, INC.
414 WEST BROWARD BOULEVARD
FORT LAUDERDALE, FLORIDA 33301
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CPZ

DRAWN BY: Author
DATE: 10-29-16
CHECK'D BY: Checker
SCALE: As indicated

SHEET NO.: A-600
OF:
TOTAL: 105
DRAWING TITLE: Door Schedule
DRAWING FILE NO.: 4-138-84

BID SET

HARDWARE SCHEDULE

Hardware Group No. 01 - Exterior
Florida Building Code #FL14022 R6
Provide each PR door(s) with the following:

Qty	Description	Catalog Number	Finish	Mfr
8	EA HINGE	5BB1 4.5 X 4.5 NRP	630	IVE
1	EA PANIC HARDWARE	WS-9927-EO-ER36-29-9F-SNB	626	VON
1	EA PANIC HARDWARE	WS-9927-L-ER36-06-299F-SNB	626	VON
2	EA RIM CYLINDER	20-057	626	SCH
2	EA SURFACE CLOSER	4040XP SCUSH	689	LCN
2	EA KICK PLATE	8400 10" X 2" LDW	630	IVE
1	EA GASKETING	8144S-BK	S-Bk	ZER
2	EA DOOR SWEEP	381A 36"	AL	ZER
2	EA DOOR SWEEP	8197 AA-3'	AL	ZER
1	EA THRESHOLD	566A 72" MSLA-10	AL	ZER

Operational Description

Free Egress at all times. Pressing Push Bar retracts latchbolts. Latchbolt retracted by lever unless locked by key. Key locks and unlocks lever.
Free Egress at all times. Pressing Push Bar retracts latchbolts. No exterior trim. Dogging by hex key, locks down the pushbar or crossbar so the latchbolt remains retracted.
Self-Closing. Templating allows Spring CUSH Arm to stop the door's swing between 85 and 110 degrees.

Hardware Group No. 02 - Exterior
Provide each PR door(s) with the following:

Qty	Description	Catalog Number	Finish	Mfr
8	EA HINGE	5BB1 4.5 X 4.5 NRP	630	IVE
2	EA SURFACE BOLT	SB360 12" T	604	IVE
1	EA VANDL STOREROOM LOCK	ND96PD RHO	626	SCH
2	EA SURFACE CLOSER	4040XP SCUSH	689	LCN
2	EA KICK PLATE	8400 10" X 2" LDW	630	IVE
1	EA GASKETING	8144S-BK	S-Bk	ZER
2	EA DOOR SWEEP	381A 36"	AL	ZER
2	EA DOOR SWEEP	8197AA-3'	AL	ZER
1	EA THRESHOLD	566A 72" MSLA-10	AL	ZER

Hurricane code compliant opening. Hardware as scheduled per Schlage Lock NOA#13-1217.17.

Operational Description
Vandlgard lever. Outside lever always disengaged. Entrance by key only. Inside lever always unlocked.
Self-Closing. Templating allows Spring CUSH Arm to stop the door's swing between 85 and 110 degrees.

Hardware Group No. 03 - Exterior-Card Access
Provide each SGL door(s) with the following:

Qty	Description	Catalog Number	Finish	Mfr
4	EA HW HINGE	5BB1HW 4.5 X 4.5 NRP	630	IVE
1	EA POWER TRANSFER	EPT10	689	VON
1	EA ELEC PANIC HARDWARE	RX-EL-HH-9947-NL-OP-110MD-SNB	626	VON
1	EA RIM CYLINDER	20-057	626	SCH
1	EA SURFACE CLOSER	4040XP SCUSH	689	LCN
1	EA PA MOUNTING PLATE	4040-18PA	689	LCN
1	EA MULTITECH READER	MT15 mount on exterior	BLK	SCE
1	EA POWER SUPPLY	PS914 900-2RS	LGR	VON

Hurricane code compliant opening. Balance of hardware by storefront manufacturer.

Operational Description
Free Egress at all times. Pressing Push Bar retracts latchbolts. Latchbolt retracted by lever unless locked by key. Key locks and unlocks lever.
Self-Closing. Templating allows Spring CUSH Arm to stop the door's swing between 85 and 110 degrees.
Accessories
Door unlocked by valid credential at reader. .

Hardware Group No. 04 - Exterior
Provide each SGL door(s) with the following:

Qty	Description	Catalog Number	Finish	Mfr
4	EA HINGE	5BB1 4.5 X 4.5 NRP	630	IVE
1	EA PANIC HARDWARE	HH-9947-L-06	626	VON
1	EA RIM CYLINDER	20-057	626	SCH
1	EA SURFACE CLOSER	4040XP SCUSH	689	LCN
1	EA PA MOUNTING PLATE	4040-18PA	689	LCN

Hurricane code compliant opening. Balance of hardware by storefront manufacturer.

Operational Description
Free Egress at all times. Pressing Push Bar retracts latchbolts. Latchbolt retracted by lever unless locked by key. Key locks and unlocks lever.
Self-Closing. Templating allows Spring CUSH Arm to stop the door's swing between 85 and 110 degrees.
Accessories

Hardware Group No. 05 - Exterior-Card Access
Florida Building Code #FL14022 R6.
Provide each SGL door(s) with the following:

Qty	Description	Catalog Number	Finish	Mfr
4	EA HW HINGE	5BB1HW 4.5 X 4.5 NRP	630	IVE
1	EA POWER TRANSFER	EPT10	689	VON
1	EA ELEC PANIC HARDWARE	RX-WS-9927-L-ER36-06	626	VON
1	EA RIM CYLINDER	20-057	626	SCH
1	EA SURFACE CLOSER	4040XP SCUSH	689	LCN
1	EA KICK PLATE	8400 10" X 2" LDW	630	IVE
2	EA GASKETING	8144S-BK	S-Bk	ZER
1	EA DOOR SWEEP	381A 36"	AL	ZER
1	EA DOOR SWEEP	8197AA-3'	AL	ZER
1	EA THRESHOLD	566A 36" MSLA-10	AL	ZER
1	EA MULTITECH READER	MT15 mount on exterior	BLK	SCE
1	EA POWER SUPPLY	PS914 900-2RS	LGR	VON

Operational Description
Free Egress at all times. Pressing Push Bar retracts latchbolts. Latchbolt retracted by lever unless locked by key. Key locks and unlocks lever. One internal SPDT switch monitors the depression of the pushbar or crossbar.
Self-Closing. Templating allows Spring CUSH Arm to stop the door's swing between 85 and 110 degrees.
Door unlocked by valid credential at reader. .

Hardware Group No. 05A - Exterior-Card Access-Gate
Provide each SGL door(s) with the following:

Qty	Description	Catalog Number	Finish	Mfr
4	EA HINGE	5BB 1 4.5 X 4.5 NRP	630	IVE
1	EA POWER TRANSFER	EPT10	689	VON
1	EA ELEC PANIC HARDWARE	RX-EL-HH-98-L-06-SNB	626	VON
1	EA RIM CYLINDER	20-057	626	SCH
1	EA SURFACE CLOSER	4040XP SCUSH	689	LCN
1	EA MULTITECH READER	MT15 mount on exterior	BLK	SCE
1	EA POWER SUPPLY	PS914 900-2RS	LGR	VON

Balance of hardware by gate manufacturer.

Operational Description
Free Egress at all times. Pressing Push Bar retracts latchbolts. Latchbolt retracted by lever unless locked by key. Key locks and unlocks lever. Control contact electrically retracts the latchbolt, either for momentary unlatching, or for extended periods of time. One internal SPDT switch monitors the depression of the pushbar or crossbar.
Self-Closing. Templating allows Spring CUSH Arm to stop the door's swing between 85 and 110 degrees.
Door unlocked by valid credential at reader. .

Hardware Group No. 05B - Exterior-Gate
Provide each SGL door(s) with the following:

Qty	Description	Catalog Number	Finish	Mfr
4	EA HINGE	5BB1 4.5 X 4.5 NRP	630	IVE
1	EA DBL CYL DEADBOLT	B662P	626	SCH

Balance of hardware by gate manufacturer.

Operational Description
Deadbolt thrown or retracted by key from either side. Bolt automatically deadlocks when fully thrown.

Hardware Group No. 06 - Ice
Provide each SGL door(s) with the following:

Qty	Description	Catalog Number	Finish	Mfr
3	EA HINGE	5BB1 4.5 X 4.5 NRP	652	IVE
1	EA PASSAGE SET	ND10S RHO	626	SCH
1	EA KICK PLATE	8400 10" X 2" LDW	630	IVE
3	EA SILENCER	SR64	GRY	IVE

Operational Description
Both levers always unlocked. Inside lever is always free for immediate egress.

Hardware Group No. 07 - Laundry, Alarm/Watch Room
Provide each SGL door(s) with the following:

Qty	Description	Catalog Number	Finish	Mfr
3	EA HINGE	5BB1 4.5 X 4.5	652	IVE
1	EA PASSAGE SET	ND10S RHO	626	SCH
1	EA SURFACE CLOSER	4040XP REG OR PA AS REQ	689	LCN
1	EA KICK PLATE	8400 10" X 2" LDW	630	IVE
1	EA WALL STOP	WS407CVX	630	IVE
3	EA SILENCER	SR64	GRY	IVE

Operational Description
Both levers always unlocked. Inside lever is always free for immediate egress.
Self-Closing.

Hardware Group No. 07_1 - Gym
Provide each SGL door(s) with the following:

Qty	Description	Catalog Number	Finish	Mfr
4	EA HINGE	5BB1 4.5 X 4.5	652	IVE
1	EA PASSAGE SET	ND10S RHO	626	SCH
1	EA SURFACE CLOSER	4040XP REG OR PA AS REQ	689	LCN
1	EA KICK PLATE	8400 10" X 2" LDW	630	IVE
1	EA WALL STOP	WS407CVX	630	IVE
3	EA SILENCER	SR64	GRY	IVE

Operational Description
Both levers always unlocked. Inside lever is always free for immediate egress.
Self-Closing.

Hardware Group No. 08 - Restroom Dorm Room
Provide each SGL door(s) with the following:

Qty	Description	Catalog Number	Finish	Mfr
3	EA HINGE	5BB1 4.5 X 4.5	630	IVE
1	EA PRIVACY LOCK	ND40S RHO	626	SCH
1	EA SURFACE CLOSER	4040XP REG OR PA AS REQ	689	LCN
1	EA WALL STOP	WS407CVX	630	IVE
3	EA SILENCER	SR64	GRY	IVE

Operational Description
Push-button locking. Can be opened from outside with small screwdriver. Turning inside lever or closing door releases button. Inside lever is always free for immediate egress.
Self-Closing.

Hardware Group No. 09 - Captain's Office
Provide each SGL door(s) with the following:

Qty	Description	Catalog Number	Finish	Mfr
3	EA HINGE	5BB1 4.5 X 4.5	652	IVE
1	EA VANDL ENTRANCE LOCK	ND92PD RHO	626	SCH
1	EA WALL STOP	WS407CVX	630	IVE
1	EA GASKETING	8144S-BK	S-Bk	ZER

Operational Description
Vandlgard lever. Turn/push-button locking; pushing and turning button disengages outside lever, requiring use of key until button is manually unlocked. Push-button locking; pushing button disengages outside lever until unlocked by key or by turning inside lever.utside lever until unlocked by key or by turning inside lever.

Hardware Group No. 10 - Pantry
Provide each SGL door(s) with the following:

Qty	Description	Catalog Number	Finish	Mfr
3	EA HINGE	5BB1 4.5 X 4.5 NRP	652	IVE
1	EA ELEC CLASSROOM LOCK	CO-100-CY-70-KP-RHO-PD	626	SCE
1	EA KICK PLATE	8400 10" X 2" LDW	630	IVE
3	EA SILENCER	SR64	GRY	IVE

Operational Description
Lockset is normally secure. Inside lever always allows free egress. Valid toggle credentials on the exterior may be used to change to a passage or secured status.

Hardware Group No. 11 - Bunker/Gear
Provide each SGL door(s) with the following:

Qty	Description	Catalog Number	Finish	Mfr
4	EA HINGE	5BB1 4.5 X 4.5 NRP	652	IVE
1	EA VANDL CLASSROOM LOCK	ND94PD RHO	626	SCH
1	EA SURFACE CLOSER	4040XP REG OR PA AS REQ	689	LCN
1	EA KICK PLATE	8400 10" X 2" LDW	630	IVE
1	EA WALL STOP	WS407CVX	630	IVE
3	EA SILENCER	SR64	GRY	IVE

Operational Description
Vandlgard lever. Outside lever disengaged and unlocked by key. Inside lever always unlocked.
Self-Closing.

Hardware Group No. 12 - Rated-Med Storage,Work Room,Hazmat Storage
Provide each SGL door(s) with the following:

Qty	Description	Catalog Number	Finish	Mfr
4	EA HINGE	5BB1 4.5 X 4.5 NRP	652	IVE
1	EA VANDL STOREROOM LOCK	ND96PD RHO	626	SCH
1	EA SURFACE CLOSER	4040XP REG OR PA AS REQ	689	LCN
1	EA KICK PLATE	8400 10" X 2" LDW	630	IVE
2	EA GASKETING	8144S-BK	S-Bk	ZER

Operational Description
Vandlgard lever. Outside lever always disengaged. Entrance by key only. Inside lever always unlocked.
Self-Closing.

Hardware Group No. 13 - Rated-Janitor/Storage
Provide each SGL door(s) with the following:

Qty	Description	Catalog Number	Finish	Mfr
4	EA HINGE	5BB1 4.5 X 4.5	652	IVE
1	EA VANDL STOREROOM LOCK	ND96PD RHO	626	SCH
1	EA SURFACE CLOSER	4040XP REG OR PA AS REQ	689	LCN
1	EA KICK PLATE	8400 10" X 2" LDW	630	IVE
1	EA WALL STOP	WS407CVX	630	IVE
2	EA GASKETING	8144S-BK	S-Bk	ZER

Operational Description
Vandlgard lever. Outside lever always disengaged. Entrance by key only. Inside lever always unlocked.
Self-Closing.

Hardware Group No. 13.1 - Rated-Storage
Provide each SGL door(s) with the following:

Qty	Description	Catalog Number	Finish	Mfr
3	EA HINGE	5BB1 4.5 X 4.5	652	IVE
1	EA VANDL STOREROOM LOCK	ND96PD RHO	626	SCH
1	EA SURFACE CLOSER	4040XP REG OR PA AS REQ	689	LCN
1	EA KICK PLATE	8400 10" X 2" LDW	630	IVE
1	EA WALL STOP	WS407CVX	630	IVE
1	EA GASKETING	8144S-BK	S-Bk	ZER

Operational Description
Vandlgard lever. Outside lever always disengaged. Entrance by key only. Inside lever always unlocked.
Self-Closing.

Hardware Group No. 14 - Closet
Provide each SGL door(s) with the following:

Qty	Description	Catalog Number	Finish	Mfr
3	EA HINGE	5BB1 4.5 X 4.5	652	IVE
1	EA VANDL STOREROOM LOCK	ND96PD RHO	626	SCH
1	EA SURFACE CLOSER	4040XP REG OR PA AS REQ	689	LCN
1	EA KICK PLATE	8400 10" X 2" LDW	630	IVE
3	EA SILENCER	SR64	GRY	IVE

Operational Description
Vandlgard lever. Outside lever always disengaged. Entrance by key only. Inside lever always unlocked.
Self-Closing.

Hardware Group No. 14A - I.T.Room
Provide each SGL door(s) with the following:

Qty	Description	Catalog Number	Finish	Mfr
3	EA HINGE	5BB1 4.5 X 4.5	652	IVE
1	EA VANDL STOREROOM LOCK	ND96PD RHO	626	SCH
1	EA ELECTRIC STRIKE	6211 FSE	630	VON
1	EA SURFACE CLOSER	4040XP REG OR PA AS REQ	689	LCN
1	EA KICK PLATE	8400 10" X 2" LDW	630	IVE
1	EA FIRE/LIFE WALL MAG	SEM7850	689	LCN
1	EA GASKETING	8144S-BK	S-Bk	ZER
1	EA MULTITECH READER	MT15	BLK	SCE
1	EA POWER SUPPLY	PS914 900-2RS	LGR	VON

Wall magnets must be tied into the fire alarm system.

Operational Description
Vandlgard lever. Outside lever always disengaged. Entrance by key only. Inside lever always unlocked.
Electric strike is released when power is applied (Fail Secure).
Self-Closing.
Door unlocked by valid credential at reader. .

Hardware Group No. 15 - Card Access-Corridor
Provide each SGL door(s) with the following:

Qty	Description	Catalog Number	Finish	Mfr
3	EA HINGE	5BB1 4.5 X 4.5 NRP	652	IVE
1	EA POWER TRANSFER	EPT10	689	VON
1	EA ELEC PANIC HARDWARE	EL-99-L-06-SNB	626	VON
1	EA RIM CYLINDER	20-057	626	SCH
1	EA SURFACE CLOSER	4040XP REG OR PA AS REQ	689	LCN
1	EA KICK PLATE	8400 10" X 2" LDW	630	IVE
4	EA SILENCER	SR64	GRY	IVE
1	EA MULTITECH READER	MT15	BLK	SCE
1	EA POWER SUPPLY	PS914 900-2RS	LGR	VON

Card access system by security supplier

Operational Description
Free Egress at all times. Pressing Push Bar retracts latchbolts. Latchbolt retracted by lever unless locked by key. Key locks and unlocks lever. Control contact electrically retracts the latchbolt, either for momentary unlatching, or for extended periods of time.
Self-Closing.
Door unlocked by valid credential at reader. .

Hardware Group No. 16 - Rated-Corridor
Provide each SGL door(s) with the following:

Qty	Description	Catalog Number	Finish	Mfr
4	EA HINGE	5BB1 4.5 X 4.5 NRP	652	IVE
1	EA FIRE EXIT HARDWARE	99-L-F-996-06	626	VON
1	EA RIM CYLINDER	20-057	626	SCH
1	EA SURFACE CLOSER	4040XP REG OR PA AS REQ	689	LCN
1	EA KICK PLATE	8400 10" X 2" LDW	630	IVE
1	EA FLOOR STOP	FS438	626	IVE
1	EA GASKETING	8144S-BK	S-Bk	ZER

Operational Description
Free Egress at all times. Pressing Push Bar retracts latchbolts. Latchbolt retracted by lever unless locked by key. Key locks and unlocks lever.
Self-Closing.

Hardware Group No. 17 - Decon
Provide each PR door(s) with the following:

Qty	Description	Catalog Number	Finish	Mfr
8	EA HINGE	5BB1 4.5 X 4.5 NRP	652	IVE
2	EA MANUAL FLUSH BOLT	FB458	626	IVE
1	EA VANDL STOREROOM LOCK	ND96PD RHO	626	SCH
2	EA SURFACE CLOSER	4040XP REG OR PA AS REQ	689	LCN
2	EA KICK PLATE	8400 10" X 1" LDW	630	IVE
1	EA GASKETING	8144S-BK	S-Bk	ZER

Operational Description
Vandlgard lever. Outside lever always disengaged. Entrance by key only. Inside lever always unlocked.
Self-Closing.

Hardware Group No. 18

Hardware by Door Manufacturer

CONSULTANT

CITY OF FORT LAUDERDALE
PUBLIC WORKS DEPARTMENT
ENGINEERING & ARCHITECTURE
100 North Andrews Avenue, Fort Lauderdale, Florida 33301

CPZ ARCHITECTS, INC.
414 WEST BROWARD BOULEVARD
FORT LAUDERDALE, FLORIDA 33301
PHONE: (954) 763-8275 FAX: (954) 337-6859
AA-26000683 WWW.CPZARCHITECTS.COM

REVISIONS

NO.	DATE	DESCRIPTION
	03-19-18	BID SET

City of Fort Lauderdale

PROJECT # 10909
FIRE STATION #8
1717 SW 1ST AVENUE
FORT LAUDERDALE, FLORIDA 33315

DRAWN BY: Author
DATE: 10-29-16
CHECKED BY: Checker
SCALE: 12" = 1'-0"

SHEET NO.: A-600A
OF: TOTAL: 105
DRAWING TITLE: Hardware Schedule
DRAWING FILE NO.: 4-138-84

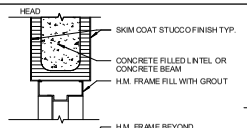
BID SET

STATE OF FLORIDA — CHRISTOPHER P. ZIMMERMAN — AR 10995 — REGISTERED ARCHITECT

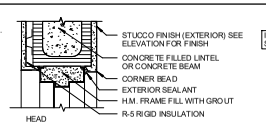
CHRIS P. ZIMMERMAN, A.I.A.
REGISTERED ARCHITECT NO. 10,995
STATE OF FLORIDA

DATE: 03-19-18

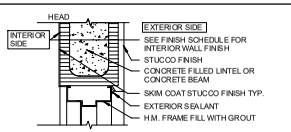
Bid 12139-983



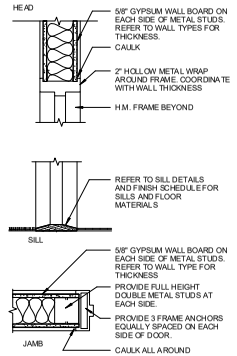
1 A-601 EXPOSED INTERIOR/EXTERIOR BLOCK WALL
SCALE: 1 1/2"=1'-0"



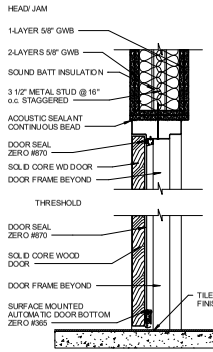
2 A-601 EXTERIOR BLOCK WALL
SCALE: 1 1/2"=1'-0"



3 A-601 EXTERIOR BLOCK WALL
SCALE: 1 1/2"=1'-0"



4 A-601 INTERIOR DRYWALL PARTITIONS
SCALE: 1 1/2"=1'-0"



4A A-601 INTERIOR BLOCK WALL
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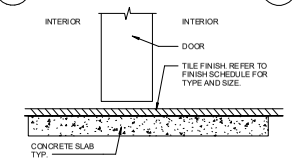
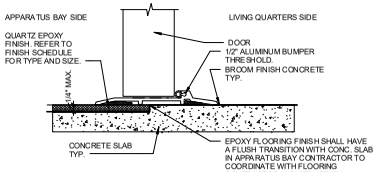


A A-601 TILE TRANSITION DETAIL
N.T.S.



D A-601 EPOXY & CONCRETE SLAB TRANSITION DETAIL
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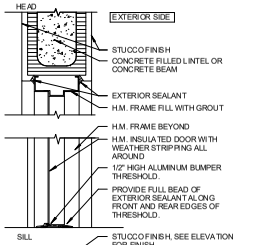

5 A-601 EXTERIOR BLOCK WALL
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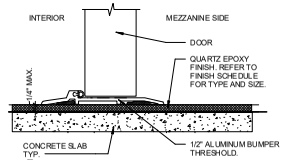

B A-601 QUARTZ EPOXY DETAIL
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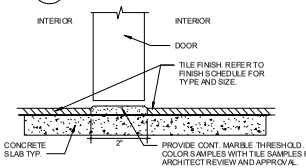
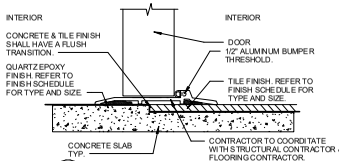


E A-601 TILE TRANSITION W/ MARBLE THRESHOLD
N.T.S.



C A-601 TILE & QUARTZ EPOXY DETAIL
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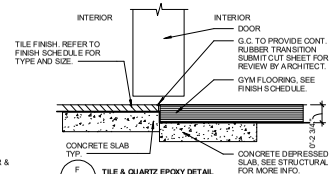
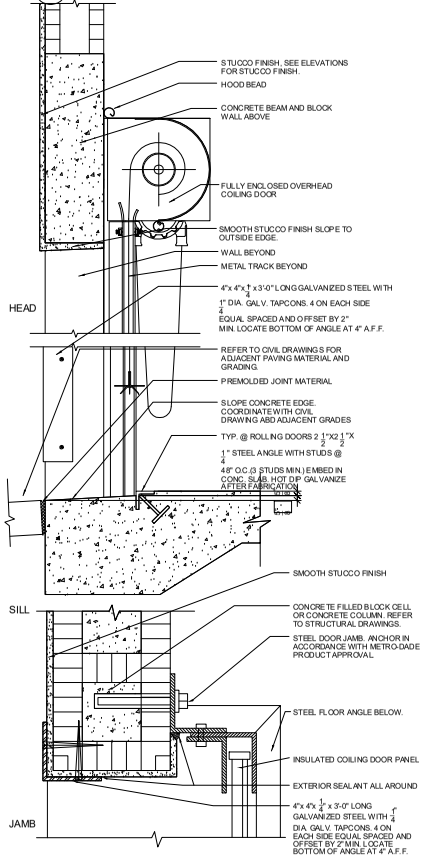


F A-601 TILE & QUARTZ EPOXY DETAIL
N.T.S.

THRESHOLD DETAILS



5 A-601 COIL TYPE GARAGE DOOR DETAIL
SCALE: 1 1/2"=1'-0"

EACH BAY DOOR TO BE ON A DIFFERENT REMOTE CONTROL FREQUENCY TYPICAL.

PROVIDE LONG RANGE REMOTE CONTROLS AND RECEIVERS FOR ALL FIRE STATION BAY DOORS TYPICAL.

BAY ROLL UP DOORS:
ROLL UP DOORS SHALL BE '610 SERIES' MANUFACTURED BY "OVERHEAD DOOR CORPORATION". DOORS SHALL HAVE MIAMI-DADE COUNTY PRODUCT APPROVAL FOR LARGE MISSILE IMPACT. (15-1228.05) AND COMPLY WITH F.B.C 2017 SECTION 1626.2.4, LEVEL "E" RISK CATEGORY IV, ESSENTIAL FACILITY BUILDING.

CONTRACTOR SHALL SUBMIT FULLY DETAILED PROJECT SPECIFICATION SHOP DRAWINGS WITH PRODUCT APPROVAL.

GENERAL CONTRACTOR SHALL COORDINATE THE INSTALLATON REQUIREMENTS AND ANCHORING DETAIL OF THE DOORS WITH THE CONCRETE COLUMNS, PRIOR TO POURING COLUMNS, TO ASSURE THAT THE REINFORCING STEEL IS CLEAR FROM THE AREA THAT IS REQUIRED FOR THE ANCHOR BOLTS OF THE DOOR SUPPORTS.

ROLL UP DOORS SHALL BE MANUALLY CHAIN OPERATED, WITH PADLOCKABLE CHAIN KEEPER ON GUIDE. CHAIN HOIST OPERATOR TO HAVE ENDLESS STEEL CHAIN, CHAIN POCKET WHEEL GUARD, AND GEAR REDUCTION UNIT.

ALL DOORS SHALL BE MOTORIZED. REMOTE CONTROLS SHALL BE PROVIDED FOR ALL DOOR. ALL DOORS SHALL OPERATE ON A DIFFERENT FREQUENCY. CONTRACTOR SHALL COORDINATE FREQUENCY LOCATIONS W/ OWNER. ALL DOORS SHALL BE EQUIPPED W/ AN INFRARED SENSOR ACROSS THE DOOR OPENING TO PREVENT ACCIDENTAL DOOR CLOSING ON VEHICLES. CONTRACTOR SHALL COORDINATE W/ THE OWNER ON MOUNTING HEIGHT OF ALL SENSORS.

ROLL UP DOORS SHALL BE GALVANIZED, PHOSHATE TREATED

OVERHEAD DOOR SHALL BE FACTORY CUSTOM PAINTED PER OVERHEAD DOOR EXTERIOR, PAINT SPECIFICATION ON SHEET A-200. (MINIMUM 2.5 MILS CURED FILM THICKNESS).

PROVIDE STEEL HOOD WITH REINFORCED TOP AND BOTTOM EDGES WITH 1/4" THK STEEL INTERMEDIATE SUPPORT TO PREVENT EXCESSIVE SAG. PROVIDE 24 GAUGE OPERATOR AND BRACKET MECHANISM COVER.

PROVIDE FULL WEATHERSTRIPPING; 3-POINT COMPRESSIBLE VINYL GASKET BOTTOM SEAL EXTEDING INTO GUIDES, VINYL STRIP GUIDE SEALS AGAINST FASCIA SIDE OF CURTIAN, NEOPHRENE/RAYON BAFFLE AT HOOD TO IMPEDE AIR FLOW ABOVE COIL AND NYLON BRUSH LINTEL SEAL FITTED AT DOOR HEADER TO IMPEDE AIR FLOW.

DOORS SHALL HAVE A FULL ONE YEAR WARRANTY (MINIMUM), FULLY EXECUTED AND DATED STARTING ON THE DATE OF SUBSTANTIAL COMPLETION.

INSTALL DOORS COMPLETE WITH ALL REQUIRED FASTENERS AND ACCESSORIES. UPON COMPLETION LUBRICATE, TEST AND ADJUST DOORS FOR EASE OF OPERATION, FREE FROM WARP, TWIST OR DISTORTION.

INSTALL ALL BAY DOORS AS PER MANUFACTURER'S SPECIFICATIONS TYP. SEE SPECIFICATION SECTION 08 33 00.

STATE OF FLORIDA CHRISTOPHER P. ZIMMERMAN AR 10995 REGISTERED ARCHITECT

CHRIS P. ZIMMERMAN, A.I.A.
REGISTERED ARCHITECT NO. 10,995
STATE OF FLORIDA

DATE: 03-19-18

BID SET

CONSULTANT

CITY OF FORT LAUDERDALE
PUBLIC WORKS DEPARTMENT
ENGINEERING & ARCHITECTURE
100 North Andrews Avenue, Fort Lauderdale, Florida 33301

NO.	DATE	DESCRIPTION
	03-19-18	BID SET

REVISIONS

City of Fort Lauderdale

PROJECT # 10909
FIRE STATION #8

CPZ ARCHITECTS, INC.
4104 WEST BROWARD BOULEVARD
PLANTATION, FLORIDA 33317
PHONE: (954) 792-8252
AA-26000603
1717 SW 1ST AVENUE
FORT LAUDERDALE, FLORIDA 33315
FAX: (954) 337-6259
WWW.CPZARCHITECTS.COM

CPZ

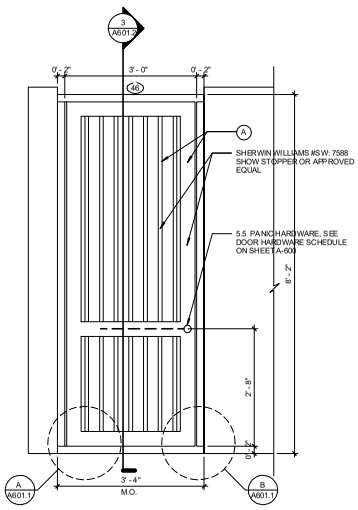
DRAWN BY:	DATE:
Author	10-29-16
CHECK'D BY:	SCALE:
Checker	As indicated

SHEET NO. A-601 OF TOTAL: 105

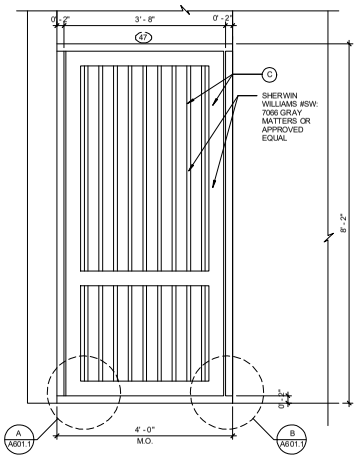
DRAWING TITLE: Door Details

DRAWING FILE NO. 4-136-84

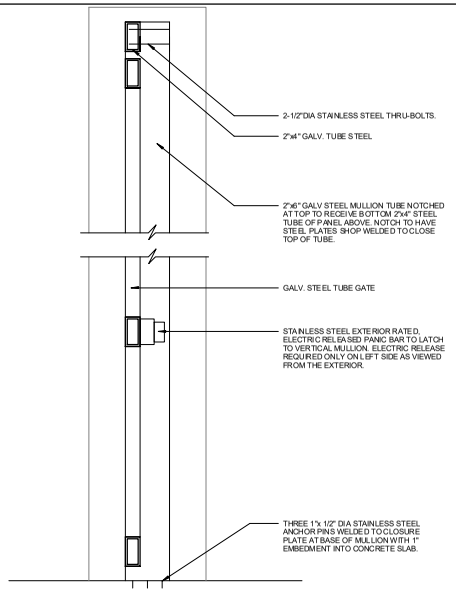
Bid 12139-983



1 GATE ELEVATIONS - DOOR 46
A-601.2 SCALE: 3/4" = 1'-0"



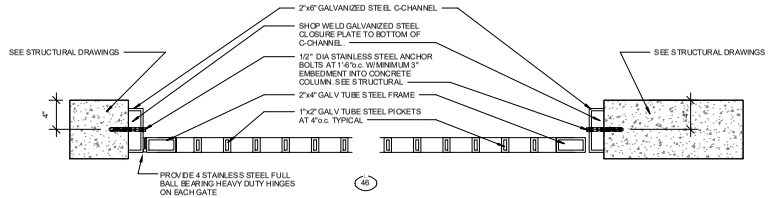
2 GATE ELEVATIONS - DOOR 47
A-601.2 SCALE: 3/4" = 1'-0"



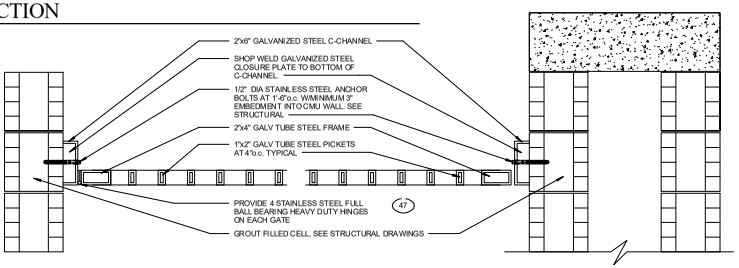
3 GATE SECTION
A-601.2 SCALE: 1 1/2" = 1'-0"

GATE GENERAL NOTES:

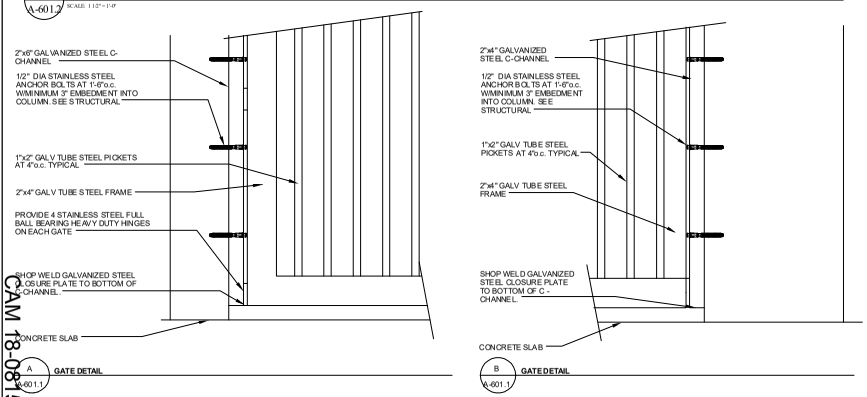
1. GATE DRAWINGS AND DETAILS ARE SHOWN FOR GENERAL DESIGN INTENT ONLY. CONTRACTOR SHALL PROVIDE ENGINEERED, SIGNED & SEALED SHOP DRAWINGS SHOWING ALL DETAILS. ALL STEEL SHAPES AND SIZES SHALL BE VERIFIED BY FABRICATOR'S ENGINEER.
2. ALL GATES AND FENCES SHALL BE PRE-FABRICATED AS MUCH AS POSSIBLE AND THEN HOT-DIPPED GALVANIZED. FINAL FINISH SHALL BE E.S.P. FINISH IN COLORS AS SHOWN.
3. GATE FABRICATORS ENGINEER TO DETERMINE IF FRAME SIZES SHALL BE 2x4 OR 2x6 TUBE STEEL.
4. CONTRACTOR IS RESPONSIBLE TO FIELD VERIFY ALL DIMENSIONS AND ADJUST ACCORDINGLY.
5. ALL FIELD WELDS SHALL BE COLD GALVANIZED AND THEN REPAINTED WITH FIELD APPLIED E.S.P. FINISH.
6. CONTRACT TO PROVIDE INPUT ON BEST FABRICATION METHOD FOR APPLYING AND FINISHING DECROATIVE STEEL PLATES.
7. GATES SHALL HAVE POWDER COAT FINISH #SW: 7588 SHOW STOPPER OR APPROVED EQUAL
8. CONTRACTOR TO SUBMIT SIGNED & SEALED SHOP DRAWINGS BY A FLORIDA REGISTERED ENGINEER SHOWING, GATE ELEVATIONS, SECTIONS, DETAILS, STRUCTURAL CALCULATIONS. GATE DESIGN SHALL COMPLY WITH 2014 F.B.C. REQUIREMENTS



4 GATE FLOOR PLAN - DOOR 46
A-601.2 SCALE: 1 1/2" = 1'-0"



5 GATE FLOOR PLAN - DOOR 47
A-601.2 SCALE: 1 1/2" = 1'-0"



GATE DETAILS
SCALE: 1 1/2" = 1'-0"

STATE OF FLORIDA CHRISTOPHER P. ZIMMERMAN AR 10995 REGISTERED ARCHITECT

CHRIS P. ZIMMERMAN, A.I.A.
REGISTERED ARCHITECT NO. 10,995
STATE OF FLORIDA

DATE: 03-19-18

BID SET

CONSULTANT

CITY OF FORT LAUDERDALE
PUBLIC WORKS DEPARTMENT
ENGINEERING & ARCHITECTURE
100 North Andrews Avenue, Fort Lauderdale, Florida 33301

NO.	DATE	DESCRIPTION
	03-19-18	BID SET

REVISIONS

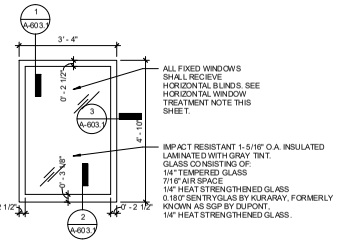
City of Fort Lauderdale

PROJECT # 10909
FIRE STATION #8

CPZ ARCHITECTS, INC.
1717 SW 1ST AVENUE
FORT LAUDERDALE, FLORIDA 33315
PHONE: (954) 792-8275 FAX: (954) 337-6859
AA-26000603 WWW.CPZARCHITECTS.COM

DRAWN BY: Author
DATE: 10-29-16
CHECK'D BY: Checker
SCALE: As indicated

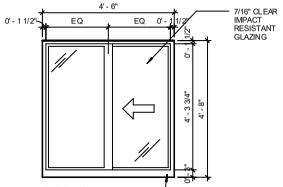
SHEET NO.: A-601.2
OF:
TOTAL: 105
DRAWING TITLE: Gate Details
DRAWING FILE NO.: 4-138-84



FIXED IMPACT RESISTANT INSULATED LAMINATED GLAZING. PROVIDE FLORIDA PRODUCT APPROVAL FL# FL14218 SYSTEM BY YKK AP YHS50FI, OR APPROVED EQUAL.

A

SCALE: 1/2" = 1'-0"

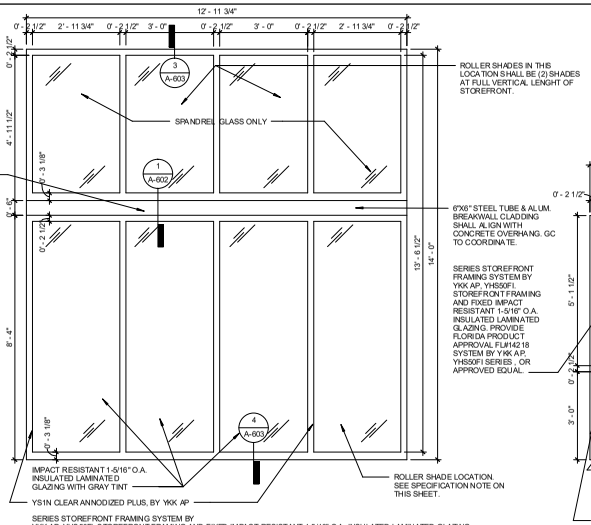


SENTINEL SERIES 120 HORIZONTAL ROLLER WINDOW BY CGI. PROVIDE IMPACT RESISTANT GLAZING.

(VIEW FROM LOBBY SIDE)

B

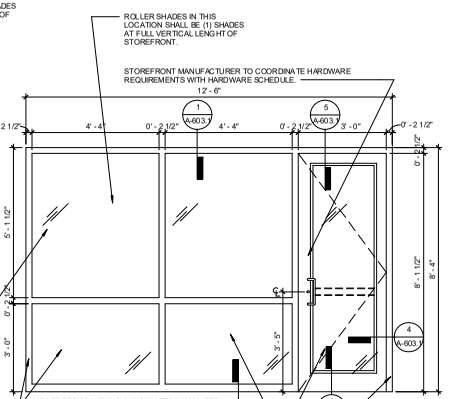
SCALE: 1/2" = 1'-0"



SERIES STOREFRONT FRAMING SYSTEM BY YKK AP, YHS50FI. STOREFRONT FRAMING AND FIXED IMPACT RESISTANT 1-5/16" O.A. INSULATED LAMINATED GLAZING. PROVIDE FLORIDA PRODUCT APPROVAL FL#14218 SYSTEM BY YKK AP, YHS50FI SERIES , OR APPROVED EQUAL.

C

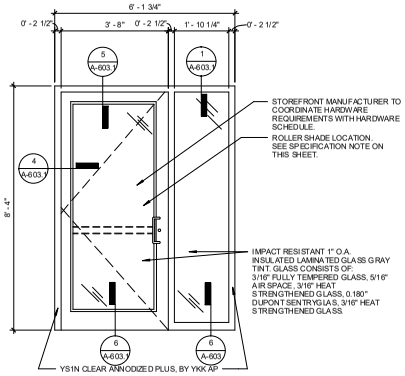
SCALE: 1/2" = 1'-0"



IMPACT RESISTANT STOREFRONT DOOR BY YKK AP, SERIES 35H, OR APPROVED EQUAL. PROVIDE FLORIDA PRODUCT APPROVAL FL# 16554.2 . EXPOSED LAMINATED FILM SHALL NOT BE USED.

D

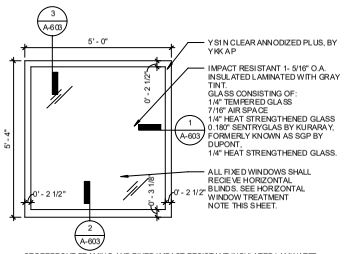
SCALE: 1/2" = 1'-0"



IMPACT RESISTANT STOREFRONT DOOR BY YKK AP, SERIES 35H, OR APPROVED EQUAL. PROVIDE FLORIDA PRODUCT APPROVAL FL# 16554.2 . EXPOSED LAMINATED FILM SHALL NOT BE USED.

E

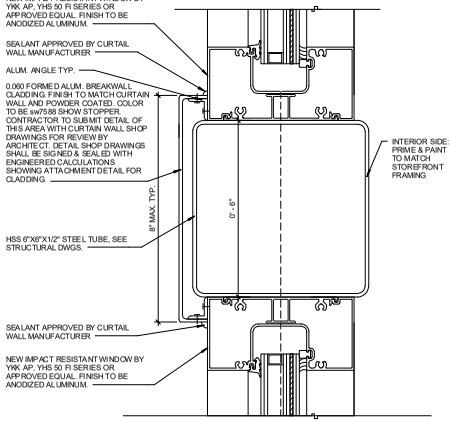
SCALE: 1/2" = 1'-0"



STOREFRONT FRAMING AND FIXED IMPACT RESISTANT INSULATED LAMINATED GLAZING. PROVIDE FLORIDA PRODUCT APPROVAL FL# FL14218 SYSTEM BY YKK AP YHS50FI, OR APPROVED EQUAL.

F

SCALE: 1/2" = 1'-0"



1 A-602 Typical Window Head Detail

SCALE: 6" = 1'-0"

NOTE:
ALL STORE FRONT WINDOWS AND DOOR SHALL MEET LEVEL "E", RISK CATEGORY IV, ESSENTIAL FACILITY BUILDING, PER F.B.C. 2017, SECTION 1626.2.4

ROLLER SHADE WINDOW TREATMENT NOTE:

STOREFRONT WINDOWS OPENINGS AS SHOWN ON THIS SHEET SHALL HAVE ROLLER SHADES INSTALLED. SEE SPECIFICATION SECTION 12 24 13 MANUALLY OPERATED RB 500 ROLLER SHADES IN SPECIFICATION MANUAL. CONTRACTOR TO SUBMIT SHOP DRAWINGS OF ALL WINDOWS REQUIRED TO HAVE ROLLER SHADES FOR ARCHITECT AND OWNER REVIEW. PROVIDE COLOR SAMPLES AND MOCK-UP SAMPLES PER SPECIFICATION SECTION 12 24 13 FOR REVIEW AND APPROVAL BY OWNER AND ARCHITECT.

HORIZONTAL WINDOW TREATMENT NOTE:

ALL EXTERIOR WINDOW OPENING SHALL HAVE HORIZONTAL LOUVER BLINDS INSTALLED. SEE SPECIFICATION SECTION 12 21 23 HORIZONTAL LOUVER BLINDS IN SPECIFICATION MANUAL. CONTRACTOR TO SUBMIT SHOP DRAWINGS OF ALL WINDOWS REQUIRED TO HAVE BLINDS FOR ARCHITECT AND OWNER REVIEW. PROVIDE COLOR SAMPLES AND MOCK-UP SAMPLES PER SPECIFICATION SECTION 12 21 23 FOR REVIEW AND APPROVAL BY OWNER AND ARCHITECT.

WINDOW NOTES:

1. GLAZING SHALL HAVE A GRAY TINT.

2. ALL EXTERIOR GLAZING FENESTRATION SHALL MEET APPLICABLE REQUIREMENTS FOR U-FACTOR AND SHGC IN 2014 FBC ENERGY CONSERVATION (5TH EDITION) BUILDING ENVELOPE REQUIREMENTS: FENESTRATION TABLE C402.3

3. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR REVIEW PRIOR TO CONSTRUCTING ANY MASONRY OPENING. SHOP DRAWINGS SHALL SPECIFICALLY INDICATE FENESTRATION ARE IN COMPLIANCE WITH THE 2014 F.B.C ENERGY CONSERVATION (5TH EDITION). CONTRACTOR TO FIELD VERIFY ALL EXISTING WINDOW SIZES PRIOR TO ORDERING.

WINDOW SCHEDULE

NUMBER	MASONRY OPENING WIDTH	MASONRY OPENING HEIGHT	MANUFACTURER	TYPE	CONSTRUCTION	GLASS SPECIFICATION	FRAME FINISH	REMARKS
A	40"	58"	YKK AP, YHS 50FI SERIES	FIXED	ALUMINUM	1 5/16" IMPACT/INSULATED LAMINATED GLASS. GRAY TINT	YS1N CLEAR ANNODIZED PLUS	FL#14218. PROVIDE GLASS COLOR SAMPLES FOR ARCHITECT REVIEW PRIOR TO ORDERING. SEE STOREFRONT ELEVATION FOR GLASS SPECIFICATION.
B	54"	56"	CGI SENTINEL SERIES 120	HORIZONTAL SLIDER OPERABLE WINDOW	ALUMINUM	7/16" CLEAR LAMINATED IMPACT RESISTANT	CLEAR ANNODIZED ALUMINUM	
C	155.75"	168"	YKK AP, YHS 50FI SERIES	STORE FRONT	ALUMINUM	1 5/16" IMPACT/INSULATED LAMINATED GLASS. GRAY TINT	YS1N CLEAR ANNODIZED PLUS	FL#14218. PROVIDE GLASS COLOR SAMPLES FOR ARCHITECT REVIEW PRIOR TO ORDERING. SEE STOREFRONT ELEVATION FOR GLASS SPECIFICATION.
D	150"	100"	YKK AP, YHS 50FI SERIES YKK AP, 35H SERIES	STORE FRONT	ALUMINUM	1" O.A. IMPACT/ INSULATED LAMINATED GLASS . GRAY TINT	YS1N CLEAR ANNODIZED PLUS	FL#14218, FL#16554.2. PROVIDE GLASS COLOR SAMPLES FOR ARCHITECT REVIEW PRIOR TO ORDERING. SEE STOREFRONT ELEVATION FOR GLASS SPECIFICATION.
E	73.75"	100"	YKK AP, YHS 50FI SERIES YKK AP, 35H SERIES	STORE FRONT	ALUMINUM	1" O.A. IMPACT/ INSULATED LAMINATED GLASS . GRAY TINT	YS1N CLEAR ANNODIZED PLUS	FL#14218, FL#16554.2. PROVIDE GLASS COLOR SAMPLES FOR ARCHITECT REVIEW PRIOR TO ORDERING. SEE STOREFRONT ELEVATION FOR GLASS SPECIFICATION.
F	60"	64"	YKK AP, YHS 50FI SERIES	FIXED	ALUMINUM	1 5/16" IMPACT/INSULATED LAMINATED GLASS. GRAY TINT	YS1N CLEAR ANNODIZED PLUS	FL#14218. PROVIDE GLASS COLOR SAMPLES FOR ARCHITECT REVIEW PRIOR TO ORDERING. SEE STOREFRONT ELEVATION FOR GLASS SPECIFICATION.

CHRIS P. ZIMMERMAN, A.I.A.
REGISTERED ARCHITECT NO. 10,995
STATE OF FLORIDA

DATE: 03-19-18

BID SET

CONSULTANT

CITY OF FORT LAUDERDALE
PUBLIC WORKS DEPARTMENT
ENGINEERING & ARCHITECTURE
100 North Andrews Avenue, Fort Lauderdale, Florida 33301

NO.	DATE	DESCRIPTION
	03-19-18	BID SET

REVISIONS

City of Fort Lauderdale

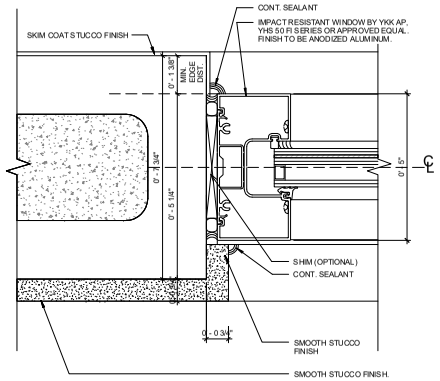
PROJECT # 10909
FIRE STATION #8

CPZ ARCHITECTS, INC.
1171 SW 1ST AVENUE
FORT LAUDERDALE, FLORIDA 33315
PHONE: (954) 763-8275 FAX: (954) 337-6859
AA-26000603 WWW.CPZARCHITECTS.COM

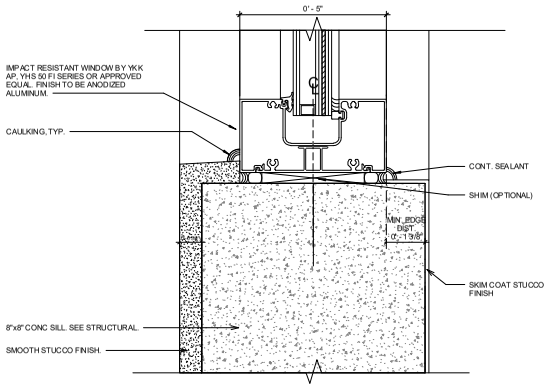
DRAWN BY: Author
DATE: 10-29-16
CHECK'D BY: Checker
SCALE: As indicated

SHEET NO. A-602
OF TOTAL: 105
DRAWING TITLE: Window Schedule
DRAWING FILE NO. 4-138-84

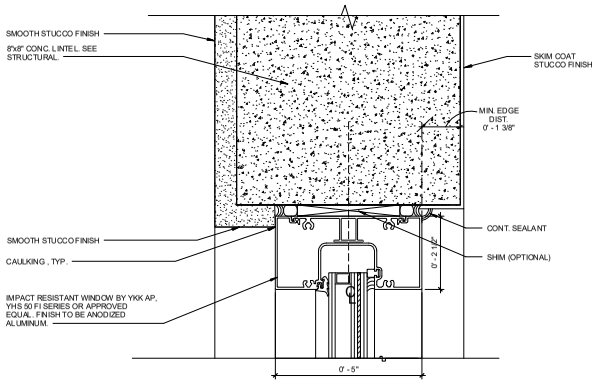
Bid 12139-983



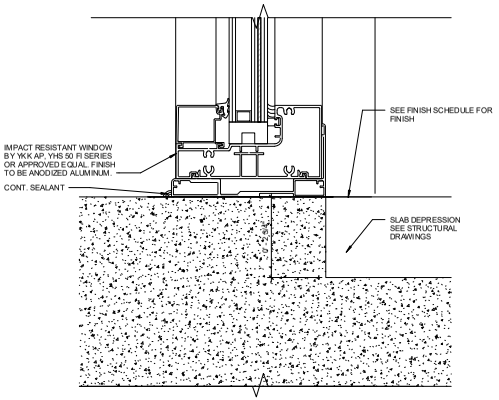
1 A-603 Typical Jamb Detail
SCALE: 6" = 1'-0"



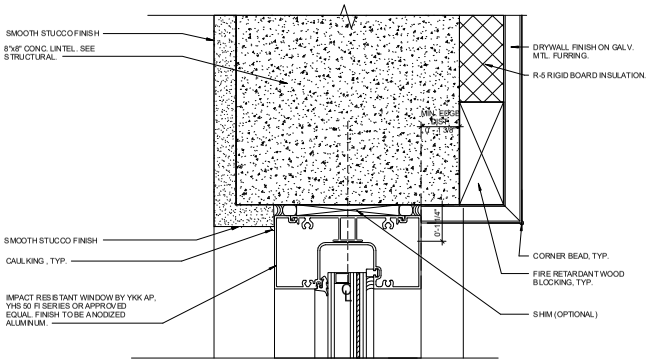
2 A-603 Typical Window Sill Detail
SCALE: 6" = 1'-0"



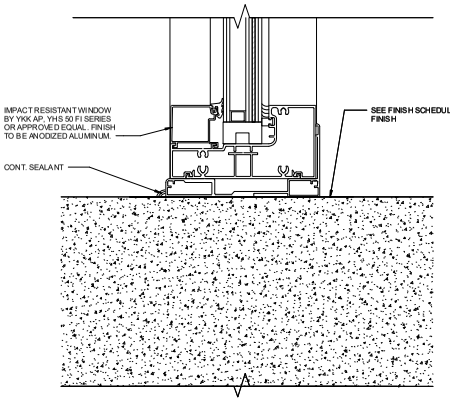
3 A-603 Typical Window Head Detail
SCALE: 6" = 1'-0"



4 A-603 Typical Storefront Sill Detail
SCALE: 6" = 1'-0"



5 A-603 Typical Window Head Detail
SCALE: 6" = 1'-0"



6 A-603 Typical Storefront Sill Detail
SCALE: 6" = 1'-0"

CONSULTANT

CITY OF FORT LAUDERDALE
PUBLIC WORKS DEPARTMENT
ENGINEERING & ARCHITECTURE
100 North Andrews Avenue, Fort Lauderdale, Florida 33301

CPZ ARCHITECTS, INC.
414 WEST BROWARD BOULEVARD
FORT LAUDERDALE, FLORIDA 33312
PHONE: (954) 763-8275
AA-C2600003
1777 SW 1ST AVENUE
MIAMI, FLORIDA 33129
FAX: (954) 337-6859
WWW.CPZARCHITECTS.COM

REVISIONS

NO.	DATE	DESCRIPTION
	03-19-18	BID SET

City of Fort Lauderdale

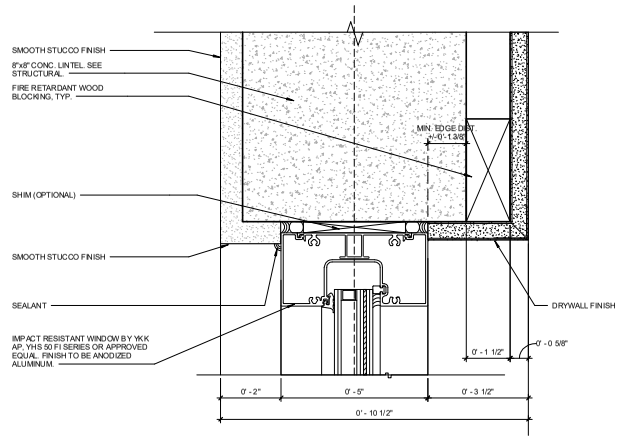
PROJECT # 10909
FIRE STATION #8

DRAWN BY: Author | DATE: 10-29-16
CHECK'D BY: Checker | SCALE: 6" = 1'-0"

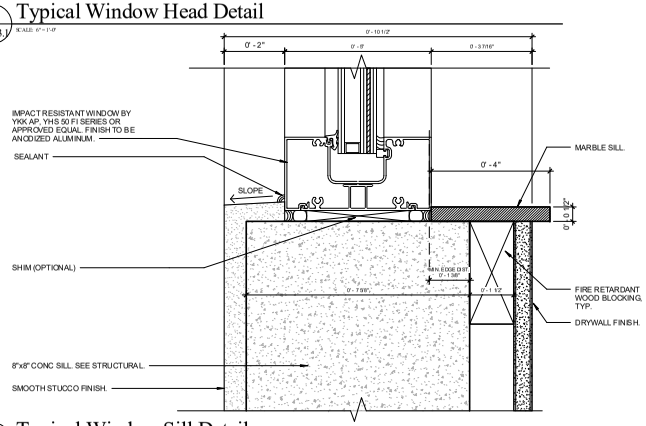
SHEET NO.: A-603 | OF
TOTAL: 105
DRAWING TITLE: Window Details
DRAWING FILE NO.: 4-138-84

BID SET

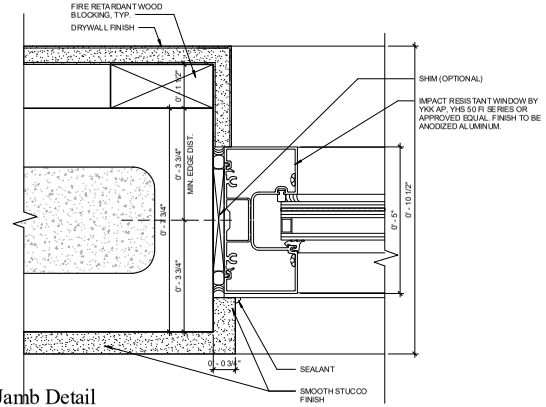
CHRIS P. ZIMMERMAN, A.I.A.
REGISTERED ARCHITECT NO. 10,995
STATE OF FLORIDA
DATE: 03-19-18



1 A-603.1 Typical Window Head Detail
SCALE: 6" = 1'-0"



2 A-603.1 Typical Window Sill Detail
SCALE: 6" = 1'-0"



3 A-603.1 Typical Jamb Detail
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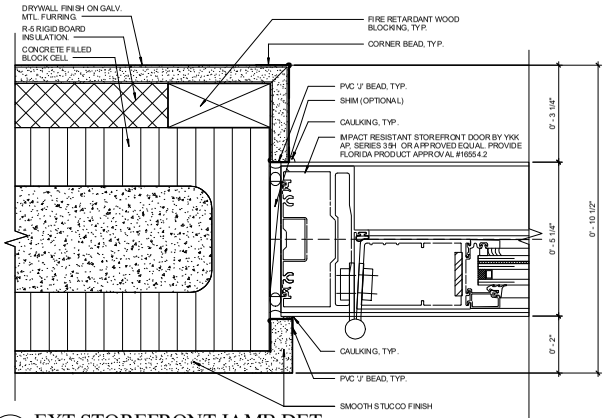
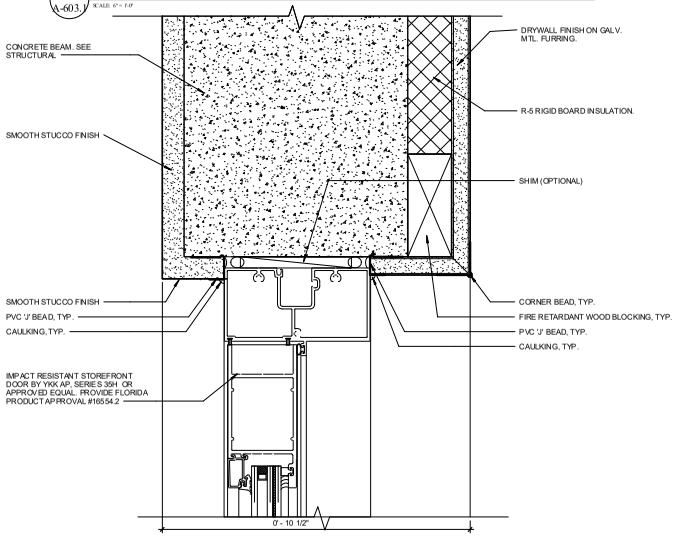
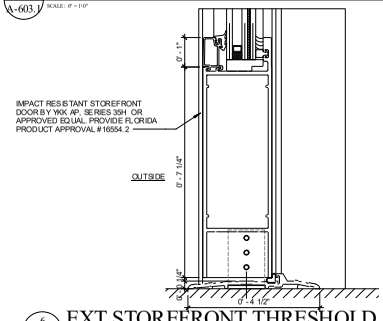


4 A-603.1 EXT STOREFRONT JAMB DET
SCALE: 6" = 1'-0"



5 A-603.1 EXT STOREFRONT HEAD DET
SCALE: 6" = 1'-0"



6 A-603.1 EXT STOREFRONT THRESHOLD
SCALE: 6" = 1'-0"

BID SET

CHRIS P. ZIMMERMAN, A.I.A.
REGISTERED ARCHITECT NO. 10,995
STATE OF FLORIDA
DATE: 03-19-18

CONSULTANT

CITY OF FORT LAUDERDALE
PUBLIC WORKS DEPARTMENT
ENGINEERING & ARCHITECTURE
100 North Andrews Avenue, Fort Lauderdale, Florida 33301

NO.	DATE	DESCRIPTION
	03-19-18	BID SET

REVISIONS

City of Fort Lauderdale

PROJECT # 10909
FIRE STATION #8

CPZ ARCHITECTS, INC.
416 WEST BROWARD BOULEVARD
FORT LAUDERDALE, FLORIDA 33312
PHONE: (954) 792-8525
AA-26000665
1717 SW 1ST AVENUE
FORT LAUDERDALE, FL 33315
FAX: (954) 337-6859
WWW.CPZARCHITECTS.COM

DRAWN BY:	DATE:
Author	10-29-16
CHECK'D BY:	SCALE:
Checker	6" = 1'-0"

SHEET NO.: A-603.1 OF
TOTAL: 105
DRAWING TITLE: Window & Door Details
DRAWING FILE NO.: 4-138-84

Bid 12139-983

5/10/2018 5:38 AM

FINISH MATERIALS

FLOORING & GROUT		**BASE**	
PT-1	PORCELAIN TILE: DAL-TILE . SADDLE BROOK GLAZED PORCELAN 6"x6" COLOR : GRAVEL ROAD SD16. GROUT COLOR: 11 SAHARA BEIGE BY MAPEI.	V-1	VINYL WALLBASE: 4.25" H MILLWORK REVEAL PROFILE BY JOHNSONITE. COLOR TO BE 29 MOON ROCK. SEE SPECIFICATION SECTION 09 65 13
PT-2	PORCELAIN TILE: DAL-TILE KEYSTONES 2x2 MOSAIC TILE. (SHOWER TILES) COLOR: SUEDE GREY D182. GROUT COLOR 42 PLATINUM BY LATICRETE	V-2	VINYL WALLBASE: 4"H STANDARD BASE BY JOHNSONITE COLOR TO BE 29 MOON ROCK. SEE SPECIFICATION SECTION 09 65 13
PT-3	PORCELAIN TILE: DAL-TILE CONTINENTAL SLATE 18" X 18" PORCELAIN COLOR: ENGLISH GREY CS57; GROUT COLOR PLATINUM BY LATICRETE	PTB-1	PORCELAIN TILE BULLNOSE BASE: SKU NUMBER S-43H9 3"X18" BULLNOSE TILE.
PT-4	PORCELAIN TILE: DAL-TILE CONTINENTAL SLATE 12" X 12" PORCELAIN COLOR: ENGLISH GREY CS57; GROUT COLOR PLATINUM BY LATICRETE	QEB-1	EPOXY FLOORING- 6" H. BASE
QE-1	EPOXY FLOORING: DEX-O-TEX; SEE EPOXY FLOORING SPECIFICATION. COLOR: DFS-B-05	SFB-1	SPORTS FLOORING: 24"X24" JOHNSONITE MULTI-FUNCTIONAL & SPORTS FLOORING - COLOR TO BE 733 MOLTEN. PRODUCT #SMH-XX. SUBMIT COLOR SAMPLES FOR ARCHITECT REVIEW/PRIOR TO ORDERING. INSTALL PER MANUFACTURERS RECOMMENDATION. SEE SPECIFICATION SECTION 09 62 48 & 09 65 13
SF-1	SPORTS FLOORING: PLITEQ GENIEMAT RT70 REBONDED RECYCLED RUBBER SOUND CONTROL FLOORING SEE SPECIFICATION SECTION 09 65 66 FOR MANUFACTURER'S RECOMMENDATION INSTALLATION REQUIREMENTS. COLOR TO BE BLACK, CONTRACTOR TO SUBMIT ALL COLOR SAMPLES PER SPECIFICATION 09 65 66.	COORDINATE COLOR SCHEME WITH THE ARCHITECT/ OWNER, PRIOR TO PURCHASE AND OR INSTALLATION. PROVIDE FINISH SAMPLES FOR REVIEW AND APPROVAL PRIOR TO APPLICATION (TYPICAL) SEE PAINT. SPECIFICATION FOR INTERIOR PAINT FINISH THIS SHEET. SEE PAINT SPECIFICATION FOR EXTERIOR PAINT FINISH ON SHEET A-200 & A-201	
PDS-1	THE ANDERSON COMPANY WATERHOG, ECO ELITE MATS MODEL #2240 CLASSIC BOARDER. COLOR: TO BE SELECTED BY ARCHITECT AND OWNER. SUBMIT COLOR SAMPLES FOR REVIEW AND APPROVAL. SIZES : (4) 4'x6' SEE FINISH PLAN ON SHEET A-104 FOR EXACT LOCATION OF MATS	**WALLS / DOORS**	
CEILING		P-1	WALL PAINT : SW7029 SHERWIN WILLIAMS, COLOR: AGREEABLE GRAY.
ACT-1	ARMSTRONG : ULTIMA (1911) 2'-0" X 2'-0" X 3/4" ACOUSTICAL LAY-IN CEILING TILE WITH SUPRAFINE XL 9/16" SUSPENSION SYSTEM.	P-2	WALL PAINT : SW0049 SHERWIN WILLIAMS, COLOR: SILVER GRAY..
ACT-2	ARMSTRONG: GEORGIAN-HIG WASHABILITY, UNPERFORATED (794) 2'-0" X 2'-0" X 5/8" SQUARE ACOUSTICAL LAY-IN CEILING TILE WITH PRELUDE 15/16" SUSPENSION SYSTEM.	P-3	WALL PAINT : SW7008 SHERWIN WILLIAMS, COLOR: ALABASTER.
ACT-3	ARMSTRONG: OPTIMA (3251) 2'-0" X 2'-0" X 1" ACOUSTICAL LAY-IN CEILING TILE WITH INTERLUDE XL 9/16" SUSPENSION SYSTEM.	P-4	WALL PAINT : SW7066 SHERWIN WILLIAMS, COLOR: GRAY MATTERS
GB-1	GYPSUM BOARD CEILING. PAINTED IN SHE WIN WILLIAMS SW7008 ALABASTER.	P-5	WALL / DOOR PAINT . SW7588 SHERWIN WILLIAMS, COLOR: SHOW STOPPER, SEE DOOR SCHEDULE FOR DOOR PAINT LOCATION.
DOORS		P-6	DOOR PAINT: SW6082 SHERWIN WILLIAMS, COLOR: COBBLE BROWN.
WD-1	ALL WOOD DOOR BY VT ARCHITECTURAL DOORS, VT DOOR NATURAL BIRCH TYPE 5509H. COLOR: RAUINE 07	WT-1	PORCELAIN TILE. DALTILE - "UNITY COLOR BODY PORCELAIN" 12" X 24" WALL TILE. COLOR: TOBACCO P403 , GROUT COLOR: 27 HEMP BY LATICRETE.
WD-2	ALL WOOD DOOR BY VT ARCHITECTURAL DOORS, VT DOOR NATURAL BIRCH TYPE 5P11H (90 MIN.) COLOR: RAUINE 07	WT-2	PAVER TILE. DALTILE - "BRICK WORK" 4" X 8" BRICK WORK COLOR: ALCOVE BW04 GROUT COLOR: 76 STERLING SILVER BY LATICRETE.
WD-3	ALL WOOD DOOR BY VT ARCHITECTURAL DOORS, VT DOOR NATURAL BIRCH TYPE 5P08 (45 MIN.) COLOR: RAUINE 07	WT-3	CERAMIC TILE. DALTILE - SEMI-GLOSS GROUPS 2 4 1/2" x 4 1/2" WALL TILE. COLOR: SUEDE GRAY 0182, GROUT COLOR: 19 PEARL GRAY BY MAPEI.
MD-1	ALL METAL DOORS BY REPUBLIC DOORS & FRAMES. PAINT FINISH.	**LOCKERS**	
ROOF		LOK-1	TURNOUT/GEAR LOCKERS ALL WELDED 1-TIER VARSITY DOOR LOCKERS BY LIST INDUSTRIES INC. (18"W X 22" D X 72"H) COLOR: TO BE SELECTED BY ARCHITECT. CONTRACTOR TO PROVIDE SHOP DRAWINGS & COLOR SAMPLES TO ARCHITECT FOR REVIEW & APPROVAL. SEE CSI SPECIFICATION FOR MORE INFORMATION. COMPANY: LIST INDUSTRIES INC. CONTACT: ROBERT ESPINEIRA, STORAGECRAFT. PHONE: 561-213-8735. EMAIL: HRE@STORAGECRAFT-FL.COM
	ROOF MEMBRANE: BY FIBERTITE (50 MIL. WHITE) (W/FELT BACKING AT LIVING QUARTER AND APPARATUS BAY) SRI:=	LOK-2	THE CLASSMATE UNIBODY ALL WELDED DORM ROOM LOCKERS W/ SLOPED TOPS BY LIST INDUSTRIES INC. 1-TIER, (24"W X 24"D X 72"H) COLOR: TO BE SELECTED BY ARCHITECT CONTRACTOR TO PROVIDE SHOP DRAWINGS & COLOR SAMPLES TO ARCHITECT FOR REVIEW & APPROVAL. SEE CSI SPECIFICATION FOR MORE INFORMATION. COMPANY: LIST INDUSTRIES INC. CONTACT: ROBERT ESPINEIRA, STORAGECRAFT. PHONE: 561-213-8735. EMAIL: HRE@STORAGECRAFT-FL.COM
	ROOF MEMBRANE: BY SOPREMA SRI:=	LOK-3	TURNOUT GEAR LOCKER BENCHES BY ASI GROUP. BENCHES SHALL BE 12"X 48" HARDWOOD BENCH TOPS WITH 1 1/2" DIA. STL. TUBING WITH 10 GA. STL. FLANGES WELDED TO EACH END. PEDESTAL DIA. SHALL BE 16 1/4" HIGH POWDER COATED TO MATCH ADJACENT LOCKERS. CONTRACTOR TO SUBMIT SHOP DRAWINGS & COLOR SAMPLES FOR ARCHITECT TO REVIEW APPROVAL PRIOR TO FABRICATION. COMPANY: WATER SOLUTIONS MARKETING ; CONTACT: TIM GILL; PHONE: 407-679-7044; MOBILE: 954-410-3688; FAX: 407-679-7030; EMAIL: TGILL@WATERSOLUTIONSMARKETING.COM
DRYWALL		**PLASTIC LAMINATE**:	
GYP	5/8" "TOUGHROCK" GYPSUM WALL BOARD BY GEORGIA PACIFIC. (CEILINGS AND WALLS)	PL-1	WILSON ART; #7965K-12; WALLNUT HEIGHTS SUBMIT COLOR SAMPLE FOR ARCHITECT REVIEW PRIOR TO INSTALLATION.
STRUCTRAL:		PL-2	WILSON ART; TO BE SELECTED BY OWNER & ARCHITECT. GC TO SUBMIT COLOR SAMPLES FOR ARCHITECT & OWNER REVIEW PRIOR TO ORDERING.
METAL STUDS BY CLARK DIETRICH AND CHANNELS BY CLARKWESTERN BUILDING SYSTEMS. (FLORIDA MANUFACTURING PLANT)			

ROOM FINISH SCHEDULE

NUMBER	NAME	FLOOR	BASE	NORTH WALL	EAST WALL	SOUTH WALL	WEST WALL	CEILING	CEILING HEIGHT	REMARKS
101	LOBBY	PT-1	PTB-1	P-2	P-1	P-1	P-1	GB-1 / P-3	9'-0"	
102	ADA RR	PT-3 / PT-4	WT-1	WT-1/ WT-2	WT-1 / WT-2	WT-1 / WT-2	WT-1 / WT-2	GB-1 / P-3	9'-0"	
103	DORM 6	PT-1	V-1	P-2	P-2	P-2	P-2	ACT-3	9'-0"	
104	DORM 5	PT-1	V-1	P-2	P-2	P-2	P-2	ACT-3	9'-0"	
105	DORM 4	PT-1	V-1	P-2	P-2	P-2	P-2	ACT-3	9'-0"	
106	DORM 3	PT-1	V-1	P-2	P-2	P-2	P-2	ACT-3	9'-0"	
107	DORM 2	PT-1	V-1	P-2	P-2	P-2	P-2	ACT-3	9'-0"	
108	DORM 1	PT-1	V-1	P-2	P-2	P-2	P-2	ACT-3	9'-0"	
109	CLOSET	PT-1	V-2	P-1	P-1	P-1	P-1	GB-1 / P-1	8'-0"	
110	CAPT. DORM	PT-1	V-1	P-2	P-2	P-2	P-2	ACT-3	9'-0"	
111	RESTROOM	PT-2 / PT-3 / PT-4	WT-1	WT-1/ WT-2	WT-1 / WT-2	WT-1 / WT-2	WT-1 / WT-2	GB-1 / P-3	9'-0"	PT-2 SHOWER / FLOOR ONLY
112	RESTROOM	PT-2 / PT-3 / PT-4	WT-1	WT-1/ WT-2	WT-1 / WT-2	WT-1 / WT-2	WT-1 / WT-2	GB-1 / P-3	9'-0"	PT-2 SHOWER / FLOOR ONLY
113	LAUNDRY	PT-3 / PT-5	V-2	P-2	P-2	P-2	P-2	ACT-2	9'-0"	
114	STORAGE	PT-1	V-2	P-2	P-2	P-2	P-2	GB-1	9'-0"	
115	RESTROOM	PT-2 / PT-3 / PT-4	WT-1	WT-1/ WT-2	WT-1 / WT-2	WT-1 / WT-2	WT-1 / WT-2	GB-1	9'-0"/8'-0"	PT-2 SHOWER / FLOOR ONLY
116	ALARM/ WATCH ROOM	PT-1	V-1	P-2	P-2	P-2	P-2	ACT-3	9'-0"	CONTRACTOR TO COORDINATE WITH CITY PRIOR TO PAINT.
117	IT ROOM.	PT-1	V-2	P-1	P-1	P-1	P-1	ACT-3	9'-0"	
118	CAPT. OFFICE	PT-1	V-1	P-2	P-2	P-2	P-2	ACT-3	9'-0"	
119	UTILITY RM.	SC-1	V-2	P-1	P-1	P-1	P-1	EXP	VARIES	
120	DAY ROOM	PT-1	PTB-1	P-1	P-1	P-1	P-2	ACT-1/GB-1 / P-3	9'-0"/8'-6"	
121	KITCHEN	PT-1	PTB-1	P-1	P-1	P-1	P-1	ACT-2	9'-0"	
122	PAN.3	PT-1	PTB-1	P-1	P-1	P-1	P-1	GB-1	9'-0"	
123	PAN.2	PT-1	PTB-1	P-1	P-1	P-1	P-1	GB-1	9'-0"	
124	PAN. 1	PT-1	PTB-1	P-1	P-1	P-1	P-1	GB-1	9'-0"	
125	ICE	PT-1	PTB-1	P-1	P-1	P-1	P-1	GB-1	9'-0"	
126	CORRIDOR 3	PT-1	PTB-1	P-1	P-1	P-1	P-1	ACT-1	9'-0"	
127	CORRIDOR 1	PT-1	PTB-1	P-1	P-1	P-1	P-1	ACT-1	9'-0"	
128	CORRIDOR 2	PT-1	PTB-1	P-2	P-1	P-1	P-1	ACT-1	9'-0"	
129	COVERED PATIO	SC-1	---	P-3	P-3	P-3	P-3	P-3	VARIES	CONC. SLAB BROOM FINISH.
130	GYM	SF-1	---	P-1	P-1	P-1	P-1	EXP / P-3 /P-5	9'-0"	P-5 BAR JOIST ONLY. SEE ENLARGED SECTIONS FOR CEILING COLOR SCHEME.
131	JAN/STOR	QE-1	QEB-1	WT-3/P-1	WT-3/P-1	P-1	P-1	ACT-2	9'-0"	WT-3 AT MOP SINK WALL, SEE SHEET A-406
132	MEDICAL STOR.	QE-1	QEB-1	P-1	P-1	P-1	P-1	ACT-2	9'-0"	
133	WORK RM	QE-1	QEB-1	P-1	P-1	P-1	P-1	ACT-2	9'-0"	
134	APPARATUS BAY	SC-1	---	P-1	P-1	P-1	P-1	EXP / P-3 /P-5	VARIES	P-5 BAR JOIST ONLY. CONC. SLAB BROOM FINISH, SEE ENLARGED SECTIONS FOR CEILING COLOR SCHEME.
135	TURN OUT GEAR LOCKERS	QE-1	QEB-1	P-1	P-1	P-1	P-1	EXP / P-3	VARIES	
136	DECON	QE-1	QEB-1	P-1	P-1	P-1	P-1	EXP / P-3	VARIES	
137	STAIR	QE-1	QEB-1	P-1	P-1	P-1	P-1	EXP / P-3	VARIES	
138	ELECTRICAL	SC-1	---	P-3	P-3	P-3	P-3	EXP / P-3	VARIES	
139	COVERED PUBLIC ENTRANCE	SC-1	---	SEE EXTERIOR ELEVATION	SEE EXTERIOR ELEVATION	SEE EXTERIOR ELEVATION	SEE EXTERIOR ELEVATION	P-5	SEE EXTERIOR ELEVATION	CONC. SLAB BROOM FINISH.
140	COVERED REAR ENTRANCE	SC-1	---	SEE EXTERIOR ELEVATION	SEE EXTERIOR ELEVATION	SEE EXTERIOR ELEVATION	SEE EXTERIOR ELEVATION	P-4	SEE EXTERIOR ELEVATION	CONC. SLAB BROOM FINISH.
141	COVERED ENTRY	SC-1	---	SEE EXTERIOR ELEVATION	SEE EXTERIOR ELEVATION	SEE EXTERIOR ELEVATION	SEE EXTERIOR ELEVATION	P-4	SEE EXTERIOR ELEVATION	CONC. SLAB BROOM FINISH.
201	HAZMAT STORAGE	QE-1	QEB-1	P-3	P-3	P-3	P-3	EXP / P-3	VARIES	
202	MEZZANINE STORAGE AREA	QE-1	QEB-1	P-1	P-1	P-1	P-1	EXP / P-3	VARIES	

INTERIOR FINISH CLASSIFICATIONS:

MATERIAL	CLASSIFICATION
ACOUSTIC CEILINGS	A
CERAMIC / PORCELAIN TILE FLOORING	ASTM C650
VINYL BASE	B
PAINTED GYPSUM WALLBOARD	A

INTERIOR FINISH NOTES:

ALL FINISHES COMPLY WITH N.F.P.A. 101 SEC. 8-3.3.

N.F.P.A 1221 2-1.2.3. ALL FINISHES SHALL HAVE A FLAME SPREAD RATING OF 25 OR LESS AND A SMOKE DEVELOPMENT RATING OF 50 OR LESS.

ALL TELEPHONE, DATA AND ELECTRIC ROOMS TO RECEIVE CONTINUOS 3/4" FIRE RATED BACKER BOARD ON ALL WALLS FROM FINISH FLOOR TO 8'-0".

CONTRACTOR SHALL PERFORM MOISTURE TEST ON ALL FLOOR SLABS TO VERIFY THAT THE MOISTURE CONTENT IS ACCEPTABLE TO THE FLOORING MANUFACTURER, PRIOR TO INSTALLING ANY FLOORING.

FINISH LEGEND

FLOOR		BASE		WALLS		CEILINGS	
C	CARPET	V	VINYL	SC	SHEM COAT.	ACT	ACOUSTICAL TILE
SC	SEALED CONCRETE	CTB	CERAMIC TILE	CMU	MASONRY BLOCK	GB	GYPSUM WALLBOARD
CTF	CERAMIC TILE	PTB	PORCELAIN TILE	CT	CERAMIC TILE	P	PAINT
PT	PORCELAIN TILE	WD	WOOD 4"	GB	GYPSUM WALLBOARD	PL	PLASTER
CS	SEALED CONCRETE	QE	QUARTZ EPOXY	P	PAINT	EXP	EXPOSED STRUCTURE
SPT	SPORTS FLOOR	R	RUBBER	VWC	VINYL WALL COVERING		
N	NONE	CB	CARPET	STCO	STUCCO		
VCT	VINYL TILE	N	NONE	OR	CHAIR RAIL		

COLOR COORDINATION NOTE:
CONTRACTOR SHALL LAYOUT A COLOR COORDINATION MOCKUP FOR SIMILAR ROOMS FOR REVIEW BY ARCHITECTOWNER OR ITS REPRESENTATIVE, PRIOR TO ORDERING FINISHES. MOCKUP SAMPLE SHALL INCLUDE: 6 S.F. FLOORING, 3 L.F. BASE AND 12 S.F. OF WALL PAINT.

INTERIOR PAINT SPECIFICATION:

Capt. Dorm, Capt. Office, Alarm/Watch Room, Corridors, Day Room, Gym, Closet , I.T. Room

Gypsum Board - Walls
Eg-Shel Finish
Primer: ProMar 200 Zero VOC Latex Primer, B28W2600
1st coat: ProMar 200 Zero VOC Interior Latex Eg-Shel, B20-2600 Series
2nd coat: ProMar 200 Zero VOC Interior Latex Eg-Shel, B20-2600 Series

Gypsum Board - Ceiling
Flat Finish
Primer: ProMar® 200 Zero VOC Latex Primer, B28W2600
1st coat: ProMar 200 Zero VOC Interior Latex Flat, B30-2600 Series
2nd coat: ProMar 200 Zero VOC Interior Latex Flat, B30-2600 Series

Ferrous Metal — Doors, Frames, and Miscellaneous Metals
Semi-Gloss Finish
Primer: Pro Industrial Pro-Cryl Universal Primer, B66-310 Series
1st coat: Pro Industrial Acrylic Semi-Gloss, B66-650 Series
2nd coat: Pro Industrial Acrylic Semi-Gloss, B66-650 Series

Apparatus Bay, Bunker Gear Room, Decon, Stair , Janitor/Storage, Work Room, Mechanical Room, Medical Storage, Electrical, Decon, Turn Out Gear Lockers, Hazmat Storage, Mezzanine Storage Area.

Exposed Metal Deck - Ceiling
High Performance Finish
1st coat: Waterborne Acrylic Dry Fall, (B42W1/B42T1/B42W2/ B42W3)
2nd coat: Waterborne Acrylic Dry Fall, (B42W1/B42T1/B42W2/ B42W3)

CMU — Interior Walls
High Performance Finish
Filler coat: Loxon Block Surfacer, A24W200
1st coat: Pro Industrial Water Based Catalyzed Epoxy Gloss, B73-300 Series
2nd coat: Pro Industrial Water Based Catalyzed Epoxy Gloss, B73-300 Series

Non/Ferrous Metal — Doors, Frames, and Miscellaneous Metals
Gloss Finish
Guardrail- Stair,
Gloss Finish & Exposed Bar Joist)
Primer: Pro Industrial Pro-Cryl Universal Primer, B66-310 Series
NOTE: BARE ALUMINUM APPLY DTM WASHPRIMER.
1st coat: Hydrogloss Water Based Urethane (B65W181/B65T184 Series).
2nd coat: Hydrogloss Water Based Urethane (B65W181/B65T184 Series).

Non/Ferrous Metal — High Performance Finish (Including Handrails and Guardrail- Stair,
Gloss Finish & Exposed Bar Joist)
Primer: Pro Industrial Pro-Cryl Universal Primer, B66-310 Series
NOTE: BARE ALUMINUM APPLY DTM WASHPRIMER.
1st coat: Hydrogloss Water Based Urethane (B65W181/B65T184 Series).
2nd coat: Hydrogloss Water Based Urethane (B65W181/B65T184 Series).

Bathrooms, Shower, Laundry Room, Storage

Semi-Gloss — High Performance Finish
Primer: ProMar 200 Zero VOC Latex Primer, B28W2600
1st coat: Pro Industrial Pre-Catalyzed Waterbased Epoxy Semi-Gloss, K46 Series
2nd coat: Pro Industrial Pre-Catalyzed Waterbased Epoxy Semi-Gloss, K46 Series

Kitchen, ICE, Pan#1, Pan#2 Pan#3

Gypsum Board — Walls
Primer: ProMar 200 Zero VOC Latex Primer, B28W2600
1st coat: ProMar 200 Zero VOC Interior Latex Eg-Shel, B20-2600 Series
2nd coat: ProMar 200 Zero VOC Interior Latex Eg-Shel, B20-2600 Series

Semi-Gloss Finish
Primer: ProMar 200 Zero VOC Latex Primer, B28W2600
1st coat: ProMar 200 Zero VOC Interior Latex Semi-Gloss, B31-2600 Series
2nd coat: ProMar 200 Zero VOC Interior Latex Semi-Gloss, B31-2600 Series

Gypsum Board — Ceiling
Semi-Gloss Finish
Primer: ProMar 200 Zero VOC Latex Primer, B28W2600
1st coat: ProMar 200 Zero VOC Interior Latex Semi-Gloss, B31-2600 Series
2nd coat: ProMar 200 Zero VOC Interior Latex Semi-Gloss, B31-2600 Series

EPOXY FLOORING SPECIFICATION:

STEP 1: VAPOR CONTROL PRIMER 200 BY DEX-O-TEX, OR APPROVED EQUAL.
STEP 2: DECOR-FLOR BROADCAST EPOXY FLOOR BY DEX-O-TEX OR APPROVED EQUAL.
STEP 3: QUICK-GLAZE BY DEX-O-TEX OR APPROVED EQUAL. CONTRACTOR TO APPLY GROUT COAT AND TOP COAT.

NOTE: COLOR TO BE DFS29. PROVIDE CONT. 6" WALL BASE. INSTALL WALL BASE PER MANUFACTURERS RECOMMENDATIONS. CONTRACTOR TO SUBMIT COLOR SAMPLES AND SHOP DRAWINGS PRIOR TO FABRICATION FOR ARCHITECT REVIEW AND APPROVAL.

CONTACT: DEX-O-TEX
COMMERCIAL PRODUCTS GROUP, LLC. OR APPROVED EQUAL.
(704) 577-4346

APPARATUS BAY CONCRETE DECK SEALER:

CONTRACTOR TO SEAL ENTIRE NEW APPARATUS BAY WITH SIKAGUARD 705L. INSTALL PER MANUFACTURERS RECOMMENDATION. CONTRACTOR TO SUBMIT PRODUCT DATA SHEET PRIOR TO INSTALLATION FOR ARCHITECT REVIEW AND APPROVAL PRIOR TO INSTALLATION.

SUSTAINABLE NOTES:

PAINTS AND COATINGS:

1. PAINTS AND COATING ON INTERIOR WALLS AND CEILING MUST NOT EXCEED VOC CONTENT LIMITS PER GREEN SEAL STANDARD GS-11, 1ST EDITION MAY 20 1993.
2. ANTI-CORROSIVE PAINTS AND ANTI RUST PAINTS ON INTERIOR FERROUS METALS SHALL NOT EXCEED THE VOC CONTENT LIMIT OF 2500/L PER GREEN SEAL STANDARD GC-03/
3. WOOD FINISHES, FLOOR COATINGS, STAINS, PRIMERS, AND SHELLACS ON INTERIOR SURFACES MUST NOT EXCEED VOC LIMITS PER SCAWMD RULE 113 JAN 1, 2004.

ADHESIVES

1. ADHESIVES SEALERS AND SEALANT PRIMERS MUST COMPLY WITH RULE 1168 AND PER TABLE ONE OF LEED V.2009 NC IEQ 4.1.

FLOORING

1. ALL CARPET MUST MEET THE REQUIREMENTS OF THE CARPET AND RUG INSTITUTE GREEN LABEL PLUS PROGRAM.
2. ALL CARPET CUSHIONS MUST MEET THE CARPET AND RUG INSTITUTE GREEN LABEL PLUS PROGRAM.
3. ALL CARPET ADHESIVES MUST MEET THE VOC LIMIT OF 50G/L.
4. ALL HARD SURFACE FLOORING MUST COMPLY WITH FLOORSCORE STANDARD.
5. SITE APPLIED ADHESIVES , GROUTS, FINISHES, AND SEALERS MUST COMPLY WITH FLOOR SCORE.
6. ALL CONCRETE AND WOOD SEALERS SHALL MEET THE REQUIREMENTS OF SCAQMD RULE 113, ARCHITECTURAL COATINGS AS OF JANUARY 2004.
7. TILE SETTINGS ADHESIVES AND GROUTS MUST MEET SCAQMD RULE 1168. VOC LIMITS AS NOTED EFFECTIVE ON JULY 1, 2005 AND JANUARY 7, 2005.

WOOD

1. ALL WOOD PRODUCTS PERMANENTLY INSTALLED SHALL BE FSC CERTIFIED PRODUCTS.
2. ALL COMPOSITE WOOD PRODUCTS SHALL CONTAIN NO ADDED UREA-FORMALDEHYDE RESINS.
3. LAMIMATE ADHESIVES SHALL NOT CONTAIN UREA-FORMALDEHYDE RESINS.
4. ALL ADHESIVES, SEALANTS AND PRIMERS TO BE COMPLIANT WITH SCAWMD RULE #1168.
5. VOC LIMITS.

STATE OF FLORIDA — CHRISTOPHER PAUL ZIMMERMAN — REGISTERED ARCHITECT — AR 10995

CHRIS P. ZIMMERMAN, A.I.A.
REGISTERED ARCHITECT NO. 10,995
STATE OF FLORIDA

DATE: 03-19-18

BID SET

CONSULTANT

CITY OF FORT LAUDERDALE
PUBLIC WORKS DEPARTMENT
ENGINEERING & ARCHITECTURE
100 North Andrews Avenue, Fort Lauderdale, Florida 33301

NO.	DATE	DESCRIPTION
	03-19-18	BID SET

REVISIONS

City of Fort Lauderdale

PROJECT # 10909
FIRE STATION #8

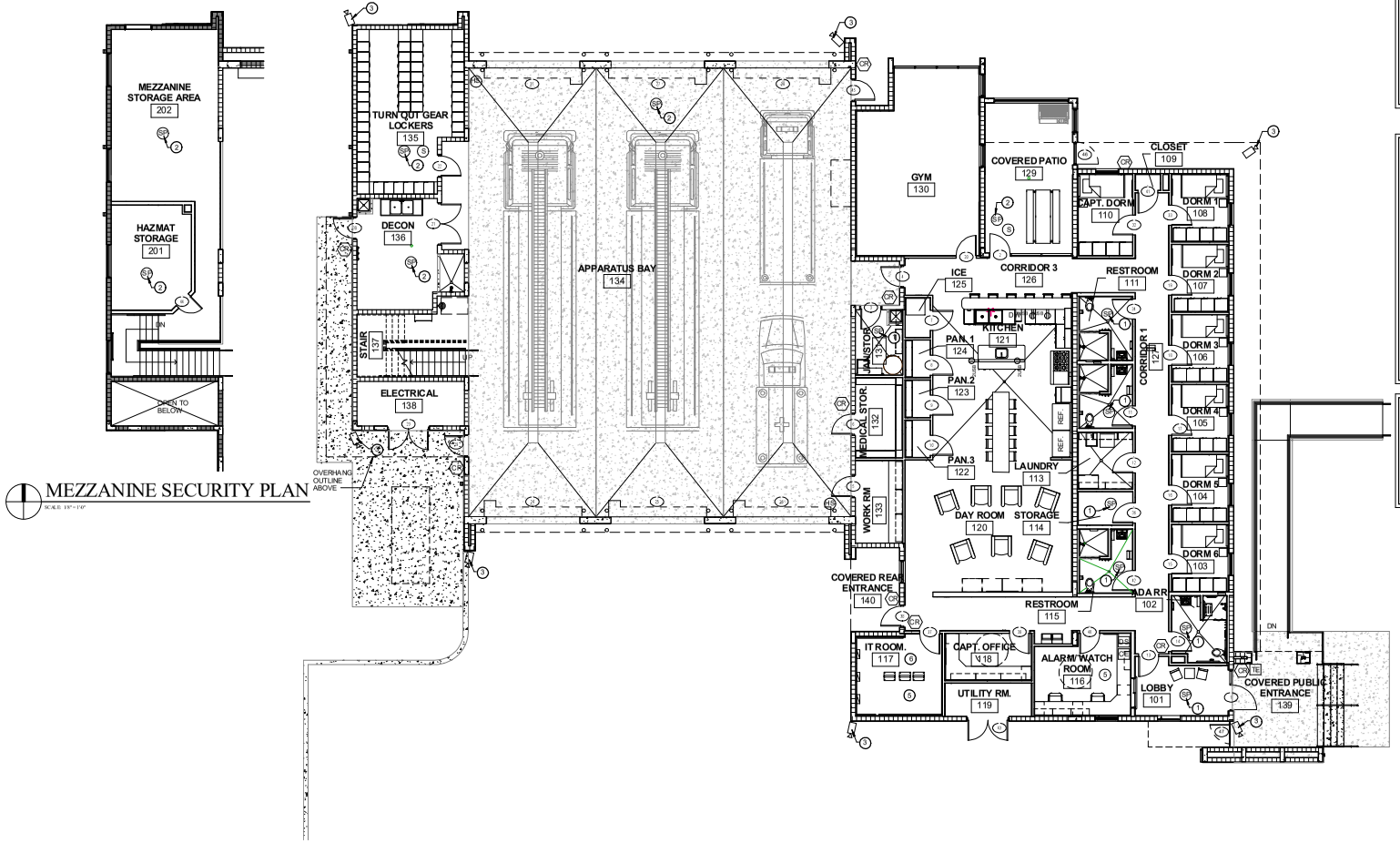
CPZ ARCHITECTS, INC.
414 WEST BROWARD BOULEVARD
FORT LAUDERDALE, FLORIDA 33301
PHONE: (954) 763-8275 FAX: (954) 337-6859
AA-26000603 WWW.CPZARCHITECTS.COM

DRAWN BY: Author
DATE: 10-29-16
CHECK'D BY: Checker
SCALE: As indicated

SHEET NO.: A-700
OF
TOTAL: 105
DRAWING TITLE: Finish Schedule
DRAWING FILE NO.: 4-136-84

Bid 12139-983

CAM 18-0815
Exhibit 2
Page 28 of 350



MEZZANINE SECURITY PLAN
SCALE: 1/8" = 1'-0"

SECURITY PLAN
SCALE: 1/8" = 1'-0"

LEGEND:

- NEW CARD READER, SEE ELECTRICAL DWGS.
- STATION ALERTING STROBE, SEE SHEET E3.1.
- CARD ACCESS CONTROL SYSTEM
- SECURITY PANEL
- TELEPHONE ENTRY CONTROL, PROVIDED BY CITY.
- ALERTING SYSTEM EQUIPMENT, SEE ELECTRICAL DWGS.
- CEILING MOUNTED SPEAKER, SEE ELECTRICAL DWGS.
- NEW SECURITY CAMERA
- HORN STROBE, SEE SHEET E3.1.
- CERT. RADIO CONNECTION, SEE ELECTRICAL DWGS.

SECURITY NOTES:

1. CEILING MOUNTED SPEAKER FOR STATION ALERTING SYSTEM SHALL BE PROVIDED AND INSTALLED BY CITY. CONTRACTOR TO INSTALL CEILING BRIDGE & CEILING BACK BOX COMBINATION, BY VALCOM MODEL #V-9916M FOR CEILING MOUNTED SPEAKER. CONTRACTOR TO COORDINATE WITH CITY FOR EXACT LOCATION PRIOR TO INSTALLATION.

2. CEILING MOUNTED SPEAKER FOR STATION ALERTING SYSTEM SHALL BE PROVIDED AND INSTALLED BY CITY. CONTRACTOR TO INSTALL CEILING BRIDGE BY VALCOM MODEL #V-9914M-5. CONTRACTOR TO COORDINATE WITH CITY FOR EXACT LOCATION PRIOR TO INSTALLATION.

3. PROVIDE 3/4" CONDUIT FROM UNDERSIDE OF SOFFIT OR WALL TO I.T. ROOM #117. CONTRACTOR TO COORDINATE WITH CITY FOR EXACT LOCATION & HEIGHT PRIOR TO INSTALLATION. SECURITY CAMERAS SHALL BE PROVIDED BY CITY.

4. NOT USED.

5. ALL ALERTING EQUIPMENT TO TERMINATE IN I.T. ROOM. CONTRACTOR TO COORDINATE WITH CITY FOR ALL REQUIREMENTS.

6. ROOF MOUNTED ANTENNA LOCATION FOR STATION ALERTING SYSTEM. SEE SHEET E-3.2.

GENERAL NOTES:

A. CONTRACTOR TO COORDINATE WITH OWNER ALL CARD READER LOCATIONS PRIOR TO ORDERING AND INSTALLATION.
B. CONTRACTOR AND SECURITY CONTRACTOR TO COORDINATE SECURITY DRAWINGS WITH ELECTRICAL DRAWINGS.
C. CONTRACTOR AND SECURITY CONTRACTOR TO COORDINATE DOOR & HARDWARE SCHEDULE DRAWINGS WITH SECURITY DRAWINGS.
D. CONTRACTOR AND SECURITY CONTRACTOR TO COORDINATE ARCHITECTURAL DRAWINGS AND SECURITY DRAWINGS.

BID SET

CHRIS P. ZIMMERMAN, A.I.A.
REGISTERED ARCHITECT NO. 10,995
STATE OF FLORIDA
DATE: 03-19-18

CONSULTANT

CITY OF FORT LAUDERDALE
PUBLIC WORKS DEPARTMENT
ENGINEERING & ARCHITECTURE
100 North Andrews Avenue, Fort Lauderdale, Florida 33301

NO.	DATE	DESCRIPTION
	03-9-18	BID SET

BELONG TO: City of Fort Lauderdale

PROJECT # 10909
FIRE STATION #8

CPZ ARCHITECTS, INC.
414 WEST BROWARD BOULEVARD
FORT LAUDERDALE, FLORIDA 33312
PHONE: (954) 792-8252
AA-26000603
1717 SW 1ST AVENUE
FORT LAUDERDALE, FL 33315
FAX: (954) 337-6859
WWW.CPZARCHITECTS.COM

DRAWN BY: Author	DATE: 10-29-16
CHECK'D BY: Checker	SCALE: 1/8" = 1'-0"
SHEET NO. A-800	OF TOTAL: 105
DRAWING TITLE: Security Plan	
DRAWING FILE NO. 4-138-84	

Bid 12139-983

CONSULTANT

NITIN RAMADVE
FL PE #81459
MARCH 18, 2018

CITY OF FORT LAUDERDALE
PUBLIC WORKS DEPARTMENT
ENGINEERING & ARCHITECTURE
100 North Andrews Avenue, Fort Lauderdale, Florida 33301

REVISIONS

NO.	DATE	BY	DESCRIPTION
	03-19-18		BID SET

CPZ ARCHITECTS, INC.
4316 WEST BROWARD BOULEVARD
PLANTATION, FLORIDA 33317
PHONE: (954) 792-8525 FAX: (954) 317-0259
AA #26000685 WWW.CPZARCHITECTS.COM

PROJECT # 10909
FIRE STATION #8
1717 SW 1ST AVENUE
FORT LAUDERDALE, FL 33315

DRAWN BY: MEL
DATE: 03-19-18
CHECKED BY: DOC
SCALE:

SHEET NO. S-0.0
TOTAL 105

DRAWING TITLE:
COVER SHEET

DRAWING FILE NO.
1 OF 1 OF 1 SHT

BID SET

CERTIFICATE OF AUTHORIZATION NO. 27202
1328 North University Drive
Plantation, FL 33322
PHONE: (954) 484-1177

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TO THE BEST OF MY KNOWLEDGE AND BELIEF, THE WORK DESCRIBED IN THESE DRAWINGS COMPLIES WITH THE FLORIDA BUILDING CODES.
16FTLU15

5/10/2018 5:38 AM

STRUCTURAL NOTES

GENERAL:
STRUCTURAL DRAWINGS SHALL BE USED IN CONJUNCTION WITH JOB SPECIFICATIONS AND ARCHITECTURAL, MECHANICAL, ELECTRICAL, PLUMBING, AND SITE DRAWINGS. CONSULT THESE DRAWINGS FOR DEPRESSIONS, AND OTHER DETAILS NOT SHOWN ON STRUCTURAL DRAWINGS.

DIMENSIONS AND CONDITIONS MUST BE VERIFIED IN THE FIELD. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER BEFORE PROCEEDING WITH THE AFFECTED PART OF THE WORK.

THE STRUCTURE IS DESIGNED TO BE SELF-SUPPORTING AND STABLE AFTER THE BUILDING IS COMPLETE. IT IS THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE ERECTION PROCEDURES AND SEQUENCE TO ENSURE SAFETY OF THE BUILDING AND ITS COMPONENTS DURING ERECTION. THIS INCLUDES THE ADDITION OF NECESSARY SHORING, SHEETING, TEMPORARY BRACING, GUYS OR TIEDOWNS.

CONTRACTOR PROPOSED CHANGES AND SUBSTITUTIONS:
PROPOSED CHANGES OR SUBSTITUTIONS TO STRUCTURAL DETAILS OR PLANS SHALL BE SUBMITTED TO THE ENGINEER OF RECORD (EOR) FOR REVIEW AND APPROVAL. SUBMITTALS SHALL CONTAIN FULL DOCUMENTATION OF CHANGES OR SUBSTITUTIONS WITH SUPPORTING, SEALED CALCULATIONS (WHERE APPLICABLE). THE REVIEW OF CHANGES AND SUBSTITUTIONS, RE-ANALYSIS AND/OR RE-DRAFTING TO INCORPORATE CHANGES OR SUBSTITUTIONS INTO CONTRACT DOCUMENTS ARE ADDITIONAL SERVICES FOR EOR. CONSTRUCTION COST REVISIONS ARE BETWEEN THE CONTRACTOR AND OWNER AND ARE NOT REVIEWED BY THE EOR.

DESIGN LOADS:
THE STRUCTURAL SYSTEM FOR THIS BUILDING HAS BEEN DESIGNED IN ACCORDANCE WITH THE FLORIDA BUILDING CODE 2014 EDITION. THE FOLLOWING SUPERIMPOSED LOADINGS HAVE BEEN UTILIZED:

ROOF (JOISTS):
LIVE LOAD: 30 psf.
DEAD LOAD: 20 psf.
DEAD LOAD: 5 psf (AVAILABLE TO RESIST UPLIFT)
MECH, EQUIPMENT: SEE PLANS.

SECOND FLOOR:
LIVE LOAD: 100 psf.
DEAD LOAD: 15 psf

WIND
ASCE 7-10
Vult = 180 MPH, Vasd = 140
EXPOSURE C
RISK CATEGORY IV
ENCLOSED, COEFFICIENT: ±0.18
DIRECTIONALITY FACTOR: 0.85

SPECIAL INSPECTIONS:
SPECIAL INSPECTION OF THE CONSTRUCTION IS REQUIRED AS INDICATED BELOW. SPECIAL INSPECTOR SHALL BE RETAINED BY OWNER & SUBMIT REQUIRED DOCUMENTATION AND QUALIFICATIONS TO BUILDING OFFICIAL, ARCHITECT AND ENGINEER.
REQUIRED INSPECTIONS:
1) MASONRY CONSTRUCTION, REINFORCING AND GROUTED CELLS
2) STRUCTURAL STEEL, ALL WELDS AND CONNECTIONS.
3) CAST-IN-PLACE CONCRETE SLAB AT SECOND FLOOR.

REPORTS OF TESTING AND INSPECTION:
TESTING REPORTS FOR STRUCTURAL ITEMS AS REQUIRED WITHIN THESE DOCUMENTS AND/OR WITHIN THE SPECIFICATIONS SHALL BE SUBMITTED TO THE ENGINEER OF RECORD IN A TIMELY MANNER IN ELECTRONIC FORMAT. REPORTS OF INSPECTION SHALL BE SUBMITTED TO ENGINEER OF RECORD ON A WEEKLY BASIS AND REPORTS CONTAINING INFORMATION ON NONCONFORMING INSTALLATIONS SHALL BE COPIED TO THE ENGINEER OF RECORD IMMEDIATELY.

SHOP DRAWING REVIEW:
ELECTRONIC VERSIONS OF STRUCTURAL DRAWINGS ARE THE SOLE, COPYRIGHTED PROPERTY OF TRC WORLDWIDE ENGINEERING, INC. ELECTRONIC VERSIONS OF DRAWINGS ARE NOT TO BE USED OR TRANSFERRED WITHOUT THE EXPRESS, WRITTEN PERMISSION OF TRC WORLDWIDE ENGINEERING, INC. USERS WILL SIGN A RELEASE.

SHOP DRAWINGS WILL BE REVIEWED FOR GENERAL COMPLIANCE WITH THE DESIGN INTENT OF THE CONTRACT DOCUMENTS ONLY. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY COMPLIANCE WITH THE CONTRACT DOCUMENTS AS TO QUANTITY, LENGTH, ELEVATIONS, DIMENSIONS, ETC.

SHOP DRAWINGS SHALL BE REVIEWED BY THE CONTRACTOR'S FIELD ENGINEER PRIOR TO SUBMITTAL TO THE ARCHITECT/ENGINEER. DRAWINGS SUBMITTED WITHOUT REVIEW WILL BE RETURNED UNCHECKED.

SHOP DRAWING SUBMITTALS SHALL BE IN ELECTRONIC PDF FILE FORMAT ONLY. THE CONTRACTOR SHALL MAKE PRINTS FROM THE MARKED UP PDF FILES AS REQUIRED FOR DISTRIBUTION.

THE CONTRACT DOCUMENTS WILL GOVERN OVER THE SHOP DRAWINGS UNLESS OTHERWISE SPECIFIED IN WRITING BY THE ENGINEER.

CHANGES AND ADDITIONS MADE ON RE-SUBMITTALS SHALL BE CLEARLY FLAGGED AND NOTED. THE PURPOSE OF THE RE-SUBMITTALS SHALL BE CLEARLY NOTED ON THE LETTER OF TRANSMITTAL. ARCHITECT/ENGINEER REVIEW WILL BE LIMITED TO THOSE ITEMS CAUSING THE RE-SUBMITTAL.

SHOP DRAWING SUBMITTALS ARE REQUIRED FOR ALL FRAMING SHOWN ON THESE DRAWINGS INCLUDING, BUT NOT LIMITED TO: CONCRETE MIXES, CONCRETE AND MASONRY REINFORCING, STRUCTURAL STEEL AND CONNECTIONS, STEEL DECK , LIGHT GAGE FRAMING, WOOD ROOF TRUSS FRAMING

SHOP DRAWINGS FOR SPECIALTY ENGINEERED PRODUCTS:
THE FOLLOWING SYSTEMS AND COMPONENTS AS A MINIMUM REQUIRE FABRICATION AND ERECTION DRAWINGS PREPARED BY A DELEGATED ENGINEER. DELEGATED ENGINEER SHALL POSSESS CURRENT PROFESSIONAL LICENSURE IN THE LOCALITY OF THE PROJECT AND SHALL MAINTAIN MINIMUM LIABILITY INSURANCE COVERAGE OF $1,000,000.

LIGHT GAGE STEEL EXTERIOR WALL SYSTEMS, ALUMINUM WALL SYSTEMS, GLAZED CURTAIN WALLS, PREFABRICATED STEEL STAIRS & RAILINGS, ARCHITECTURAL PRECAST CONCRETE ELEMENTS, OPEN WEB STEEL JOISTS, STEEL TRUSSES AND STRUCTURAL STEEL CONNECTIONS REQUIRING ENGINEERING.

SUBMITTALS SHALL CLEARLY IDENTIFY THE SPECIFIC PROJECT AND APPLICABLE CODES. LIST THE DESIGN CRITERIA, AND SHOW ALL DETAILS AND PLANS NECESSARY FOR PROPER FABRICATION AND INSTALLATION. CALCULATIONS AND SHOP DRAWINGS SHALL IDENTIFY SPECIFIC PRODUCT UTILIZED. GENERIC PRODUCTS WILL NOT BE ACCEPTED.

SHOP DRAWINGS AND CALCULATIONS SHALL BE PREPARED UNDER THE DIRECT SUPERVISION AND CONTROL OF THE DELEGATED ENGINEER.

SHOP DRAWINGS AND CALCULATIONS REQUIRE THE IMPRESSED SEAL, DATE AND SIGNATURE OF THE DELEGATED ENGINEER. COMPUTER PRINTOUTS ARE AN ACCEPTABLE SUBSTITUTE FOR MANUAL COMPUTATIONS PROVIDED THEY ARE ACCOMPANIED BY SUFFICIENT DESCRIPTIVE INFORMATION TO PERMIT THEIR PROPER EVALUATION. SUCH DESCRIPTIVE INFORMATION SHALL BEAR THE IMPRESSED SEAL AND SIGNATURE OF THE DELEGATED ENGINEER AS AN INDICATION THAT HE/SHE HAS ACCEPTED RESPONSIBILITY FOR THE RESULTS. SEPIAS DO NOT REQUIRE SIGNATURE AND SEAL. THE STRUCTURAL ENGINEER WILL RETAIN ONE SIGNED AND SEALED BLUELINE PRINT FOR RECORD.

DRAWINGS PREPARED SOLELY TO SERVE AS A GUIDE FOR FABRICATION AND INSTALLATION (SUCH AS REINFORCING STEEL SHOP DRAWINGS OR STRUCTURAL STEEL ERECTION DRAWINGS) AND REQUIRING NO ENGINEERING DO NOT REQUIRE THE SEAL OF A DELEGATED ENGINEER.

CATALOG INFORMATION ON STANDARD PRODUCTS DOES NOT REQUIRE THE SEAL OF A DELEGATED ENGINEER.

REVIEW BY THE STRUCTURAL ENGINEER OF RECORD OF SUBMITTALS IS LIMITED TO VERIFYING THE FOLLOWING:

1. THAT THE SPECIFIED STRUCTURAL SUBMITTALS HAVE BEEN FURNISHED.
2. THAT THE STRUCTURAL SUBMITTALS HAVE BEEN SIGNED AND SEALED BY THE DELEGATED ENGINEER.
3. THAT THE DELEGATED ENGINEER HAS UNDERSTOOD THE DESIGN INTENT AND HAS USED THE SPECIFIED STRUCTURAL CRITERIA. (NO DETAILED CHECK OF CALCULATIONS WILL BE MADE).
4. THAT THE CONFIGURATION SET FORTH IN THE STRUCTURAL SUBMITTALS IS CONSISTENT WITH THE CONTRACT DOCUMENTS. (NO DETAILED CHECK OF DIMENSIONS OR QUANTITIES WILL BE MADE).

SUBMITTALS NOT MEETING THE ABOVE CRITERIA WILL NOT BE REVIEWED.

FOUNDATIONS:
SEE THE FOLLOWING REPORT FOR COMPLETE GEOTECHNICAL RECOMMENDATIONS AND INSTALLATION PROCEDURES.

REPORT PREPARED BY: GEOSOL,INC
TITLED: GEOTECHNICAL REPORT FOR PROPOSED STRUCTURE AND ASSOCIATED PARKING FACILITIES
PROJECT No. P-215102
DATED: OCTOBER 2, 2015

THIS REPORT SHALL BE CONSIDERED PART OF THE CONTRACT DOCUMENTS ENGINEERS, INCLUDE FOLLOWING ONLY FOR SPREAD FOOTING FOUNDATIONS.

FOUNDATION DESIGN IS BASED ON A SOIL BEARING PRESSURE OF 2,500 psf.

FORMWORK AND SHORING:
NO STRUCTURAL CONCRETE SHALL BE STRIPPED UNTIL IT HAS REACHED AT LEAST TWO THIRDS OF THE 28 DAY DESIGN STRENGTH; DESIGN, ERECTION AND REMOVAL OF ALL FORMWORK, SHORES AND RESHORES SHALL MEET THE REQUIREMENTS SET FORTH IN ACI STANDARDS 347 AND 301. DRAWINGS FOR SHORING AND RESHORING SHALL BE PREPARED BY A FLORIDA REGISTERED PROFESSIONAL ENGINEER.

PLUMBING SLEEVES:
SLEEVE LOCATIONS AND SIZES MUST BE APPROVED BY THE ENGINEER PRIOR TO PLACEMENT. MINIMUM SLEEVE SPACING SHALL BE THREE DIAMETERS CENTER TO CENTER OF THE LARGER SLEEVE OR 6" CLEAR BETWEEN SLEEVES, WHICHEVER IS GREATER. SLEEVES OR GROUPS OF SLEEVES TO INCH IN DIAMETER AND LARGER SHALL BE TREATED AS A SLAB OPENING AND REINFORCED PER TYPICAL OPENING REINFORCING DETAILS.

EMBEDDED CONDUITS:
LOCATIONS AND SIZES OF CONDUIT MUST BE APPROVED BY THE ENGINEER PRIOR TO PLACEMENT. WITHIN SLABS, BEAMS OR WALLS, CONDUIT SHALL OCCUPY ONLY THE MIDDLE ONE THIRD OF THE MEMBER DEPTH OR THICKNESS, MAXIMUM CONDUIT O.D. FOR SINGLE CONDUITS OR SUM OF O.D.'S FOR MULTIPLE CONDUITS THAT CROSS SHALL BE NO LARGER THAN ONE THIRD THE SLAB DEPTH. PARALLEL CONDUITS SHALL BE SPACED WITH A MINIMUM OF 3 DIAMETERS CLEAR. CONDUITS SHALL BE A MINIMUM OF ONE DIAMETER AWAY FROM AND SHALL NOT INTERFERE WITH OR DISPLACE ANY TENDONS OR REINFORCING. CONDUIT SHALL NOT BE TIED TO REINFORCING OR TENDONS. CONDUITS SHALL NOT OCCUR WITHIN COLUMN ZONES OF SLABS AND OR TRANSFER GIRDERS. CONDUIT PLACEMENT SHALL NOT IMPAIR THE STRENGTH OF THE CONSTRUCTION AS JUDGED BY THE ENGINEER.

CONSTRUCTION JOINTS:
ANY DEVIATION OR ADDITION OF CONSTRUCTION JOINT FROM THAT SHOWN ON THE PLANS MUST BE REVIEWED BY THE ENGINEER. ALTERNATE OR ADDED CONSTRUCTION JOINT LOCATIONS ARE ACCEPTABLE ONLY AS A CHANGE ORDER, WHICH WILL INCLUDE ENGINEERING CHARGES BY THE ENGINEER OF RECORD FOR REDESIGN OF THE STRUCTURE, SHORING, ETC.

REINFORCING STEEL:
SHALL BE ASTM A615 GRADE 60 DEFORMED BARS, FREE FROM OIL, SCALE AND RUST AND PLACED IN ACCORDANCE WITH THE TYPICAL BENDING DIAGRAM AND PLACING DETAILS OF ACI STANDARDS AND SPECIFICATIONS, SECURE APPROVAL OF SHOP DRAWINGS PRIOR TO COMMENCING FABRICATION.

WELDED WIRE FABRIC:
TO CONFORM TO ASTM A 185, FREE FROM OIL, SCALE AND RUST AND PLACED IN ACCORDANCE WITH THE ENGINEER, ALTERNATE OR ADDED CONSTRUCTION JOINT LOCATIONS ARE ACCEPTABLE ONLY AS A CHANGE ORDER, WHICH WILL INCLUDE ENGINEERING CHARGES BY THE ENGINEER OF RECORD FOR REDESIGN OF THE STRUCTURE, SHORING, ETC.

CONCRETE:
SHALL BE PER AN APPROVED MIX DESIGN PROPORTIONED TO ACHIEVE A STRENGTH AT 28 DAYS AS LISTED BELOW WITH A PLASTIC AND WORKABLE MIX:

3000 psi FOR FOUNDATIONS AND SLABS ON GRADE.
4000 psi FOR APPARATUS BAY SLAB ON GRADE.
4000 psi FOR OTHER STRUCTURAL CONCRETE.

CONCRETE SHALL BE PLACED AND CURED ACCORDING TO ACI STANDARDS AND SPECIFICATIONS.

SUBMIT PROPOSED MIX DESIGN WITH RECENT FIELD CYLINDER OR LAB TESTS FOR REVIEW PRIOR TO USE. MIX SHALL BE UNIQUELY IDENTIFIED BY MIX NUMBER OR OTHER POSITIVE IDENTIFICATION. MIX SHALL MEET THE REQUIREMENTS OF ASTM C33 FOR COARSE AGGREGATE. CONCRETE SHALL COMPLY WITH THE REQUIREMENTS OF ASTM STANDARD C94 FOR MEASURING, MIXING, TRANSPORTING, ETC. CONCRETE TICKETS SHALL BE TIME STAMPED WHEN CONCRETE IS BATCHED. THE MAXIMUM TIME ALLOWED FROM THE TIME THE MIXING WATER IS ADDED UNTIL IT IS DEPOSITED IN ITS FINAL POSITION SHALL NOT EXCEED ONE AND ONE HALF (1 1/2) HOURS. IF FOR ANY REASON THERE IS A LONGER DELAY THAN THAT STATED ABOVE, THE CONCRETE SHALL BE DISCARDED. IT SHALL BE THE RESPONSIBILITY OF THE TESTING LAB TO NOTIFY THE OWNER'S REPRESENTATIVE AND THE CONTRACTOR OF ANY NONCOMPLIANCE WITH THE ABOVE. SLABS SHALL BE CURED USING A DISSIPATING CURING COMPOUND MEETING ASTM STANDARD C309 TYPE 1-D AND SHALL HAVE A FUGITIVE DYE. THE COMPOUND SHALL BE PLACED AS SOON AS THE FINISHING IS COMPLETED OR AS SOON AS THE WATER HAS LEFT THE UNFINISHED CONCRETE. SCUFFED OR BROKEN AREAS IN THE CURING MEMBRANE SHALL BE RECOATED DAILY. CALCIUM CHLORIDES SHALL NOT BE UTILIZED; OTHER ADMIXTURES MAY BE USED ONLY WITH THE APPROVAL OF THE ENGINEER.

CONCRETE MIX DESIGNS SHALL INCLUDE A WRITTEN DESCRIPTION INDICATING WHERE EACH PARTICULAR MIX IS TO BE PLACED WITHIN THE STRUCTURE. IF ACCEPTED, PEA ROCK PUMP MIX USE IS LIMITED TO VERTICAL ELEMENT POURS AND BEAM POURS LESS THAN 60 LINEAR FEET PER POUR.

CONCRETE DESIGN MIX SUBMITTALS SHALL INCLUDE TESTED, STATISTICAL BACK UP DATA AS PER CHAPTER 5 OF ACI 318.

CONCRETE TESTING:
AN INDEPENDENT TESTING LABORATORY SHALL PERFORM THE FOLLOWING TESTS ON CAST IN PLACE CONCRETE:

a)ASTM C143 "STANDARD TEST METHOD FOR SLUMP OF PORTLAND CEMENT CONCRETE." MAXIMUM SLUMP SHALL BE 5 INCHES.

b)ASTM C39 "STANDARD TEST METHOD FOR COMPRESSIVE STRENGTH OF CYLINDRICAL CONCRETE SPECIMENS." A SEPARATE TEST SHALL BE CONDUCTED FOR EACH CLASS, FOR EVERY 50 CUBIC YARDS (OR FRACTION THEREOF), PLACED PER DAY. REQUIRED CYLINDER (S) QUANTITIES AND TEST AGE AS FOLLOWS:

2 AT 7 DAYS
2 AT 28 DAYS

ONE ADDITIONAL RESERVE CYLINDER TO BE TESTED UNDER THE DIRECTION OF THE ENGINEER, IF REQUIRED. IF 28 DAY STRENGTH IS ACHIEVED, THE ADDITIONAL CYLINDER(s) MAY BE DISCARDED.

CHEMICAL (ADHESIVE) ANCHORS:
SHALL BE AN EQUAL TWO PART EPOXY POLYMER INJECTION SYSTEM, SUCH AS RAMSET "EPCON", POWERS RAWL "POWER FAST" CARTRIDGE SYSTEM, DUR O WAL "DUR O PAR" EPOXY ANCHORING SYSTEM OR HILTI/HEA11 EPOXY DOWELING SYSTEM, OR ENGINEER APPROVED SUBSTITUTION. INSTALLED IN ACCORDANCE WITH MANUFACTURERS INSTRUCTIONS. INSTALLERS SHALL BE TRAINED BY THE MANUFACTURER'S REPRESENTATIVE.

POST-INSTALLED ANCHORS:
1. POST-INSTALLED ANCHORS SHALL ONLY BE USED WHERE SPECIFIED ON THE DRAWINGS.

2. CONTRACTOR SHALL OBTAIN APPROVAL FROM ENGINEER OF RECORD PRIOR TO USING POST-INSTALLED ANCHORS FOR MISSING OR MISPLACED CAST-IN-PLACE ANCHORS.

3. CARE SHALL BE GIVEN TO AVOID CONFLICTS WITH EXISTING REBAR WHEN DRILLING HOLES. HOLES SHALL BE DRILLED AND CLEANED PER THE MANUFACTURER'S INSTRUCTIONS.

4. UNLESS SPECIFIED OTHERWISE, ANCHORS SHALL BE EMBEDDED IN THE APPROPRIATE SUBSTRATE WITH A MINIMUM EMBEDMENT OF 8 TIMES THE NOMINAL ANCHOR DIAMETER OR THE EMBEDMENT REQUIRED TO SUPPORT THE INTENDED LOAD, ANCHORS SHALL BE INSTALLED PER THE MANUFACTURER'S INSTALLATION INSTRUCTIONS AT NOT LESS THAN MINIMUM EDGE DISTANCE AND/OR SPACINGS INDICATED IN THE MANUFACTURER'S LITERATURE.

5. SUBSTITUTION REQUESTS, FOR PRODUCTS OTHER THAN THOSE LISTED BELOW, SHALL BE SUBMITTED TO THE ENGINEER WITH CALCULATIONS THAT ARE PREPARED & SEALED BY A REGISTERED PROFESSIONAL ENGINEER SHOWING THAT THE SUBSTITUTED PRODUCT WILL ACHIEVE AN EQUIVALENT CAPACITY USING THE APPROPRIATE DESIGN PROCEDURE REQUIRED BY THE BUILDING CODE.

POST-INSTALLED ANCHORS (CONT.):
B. ACCEPTABLE PRODUCTS ARE:
- A. EXPANSION ANCHORS FOR NON-CRACKED CONCRETE ONLY:
  - WEDGE-ALL (WA), BY SIMPSON STRONG-TIE
  - KWIK BOLT 3, BY HILTI
- B. CRACKED CONCRETE MECHANICAL ANCHORS:
  - STRONG-BOLT (STB), BY SIMPSON STRONG-TIE
  - KWIK BOLT (TZ), BY HILTI
- C. SCREW ANCHORS:
  - TITEN HD (THD), BY SIMPSON STRONG-TIE
  - HUS-H, BY HILTI
- D. ADHESIVE ANCHORS:
  a) FOR ANCHORING INTO SOLID BASE MATERIAL (CONCRETE AND GROUT-FILLED CMU):
  - ACRYLO-TIE (AT)
  - SET EPOXY-TE (SET) WITH RETROFIT BOLTS (RFB), BY SIMPSON STRONG-TIE
  - HIT RE 500, BY HILTI
  b) FOR ANCHORING INTO HOLLOW BASE MATERIAL (HOLLOW CMU):
  - CONTACT ENGINEER OF RECORD

MASONRY WALLS:
MASONRY UNITS SHALL MEET ASTM C 90 FOR HOLLOW LOAD BEARING TYPE MASONRY WITH UNIT STRENGTH OF 1900 psi ON THE NET AREA (fm = 1500 psi), MORTAR SHALL BE TYPE 'M' OR 'S' AND MEET ASTM C 270, GROUT SHALL BE 2000 psi MINIMUM COMPRESSIVE STRENGTH AND MEET ASTM C 476, PROVIDE HOOKED DOWELS IN FOOTINGS FOR VERTICAL REINFORCING ABOVE. SEE SCHEDULE FOR LAP SPLICES

BLOCK CELLS SHALL BE GROUT FILLED WITH VERTICAL REINFORCING BARS AT CORNERS, INTERSECTIONS, EACH SIDE OF OPENINGS OVER 4 FEET WIDE, AND AS SHOWN ON THE PLANS, DOWELS SHALL BE USED TO PROVIDE CONTINUITY INTO THE STRUCTURE ABOVE AND/OR BELOW, UNLESS NOTED OTHERWISE. USE METAL LATH, MORTAR, OR SPECIAL UNITS TO CONFINE CONCRETE AND GROUT TO AREA REQUIRED. MASONRY SHALL BE LAID IN RUNNING BOND PATTERN UNLESS NOTED OTHERWISE.

INTERSECTING WALLS SHALL BE INTERLOCKED WITH RUNNING BOND UNLESS NOTED OTHERWISE.
PROVIDE 9 GAGE GALVANIZED HORIZONTAL JOINT REINFORCING (DUR O WAL OR ENGINEER APPROVED SUBSTITUTION) AT ALTERNATE BLOCK COURSES.

IF REQUIRED, CONTROL JOINTS SHALL BE PROVIDED IN CONCRETE MASONRY CONSTRUCTION AT LOCATIONS INDICATED ON THE CONTRACT DRAWINGS. HORIZONTAL WALL REINFORCING SHALL BE STOPPED EACH SIDE OF CONTROL JOINTS. SEE ARCHITECTURAL DRAWINGS FOR SEALANT REQUIREMENTS AT CONTROL JOINTS. MAXIMUM SPACING FOR CONTROL JOINTS SHALL BE 32-0".

SUBMIT PROPOSED GROUT MIX DESIGN FOR REVIEW PRIOR TO USE. MIX SHALL BE UNIQUELY IDENTIFIED BY MIX NUMBER OR OTHER POSITIVE IDENTIFICATION. GROUT SLUMP SHALL BE BETWEEN 8 AND 11 INCHES. USE OF SUPERPLASTICIZER IS PROHIBITED.

CELLS TO BE GROUT FILLED SHALL HAVE VERTICAL ALIGNMENT SUFFICIENT TO MAINTAIN A CLEAR, UNOBSTRUCTED, CONTINUOUS VERTICAL GROUT SPACE. CLEANOUT OPENINGS SHALL BE PROVIDED AT THE BOTTOM OF CELLS TO BE GROUT FILLED IN EACH POUR IN EXCESS OF 5 FEET IN HEIGHT. ANY OVERHANGING MORTAR OR OTHER OBSTRUCTION OR DEBRIS SHALL BE REMOVED FROM THE INSIDES OF SUCH CELL WALLS. THE CLEANOUTS SHALL BE SEALED BEFORE GROUTING, AFTER INSPECTION.

VERTICAL REINFORCEMENT SHALL BE HELD IN POSITION AT TOP AND BOTTOM AND AT INTERVALS NOT EXCEEDING 192 BAR DIAMETERS. CELLS CONTAINING REINFORCEMENT SHALL BE FILLED SOLIDLY WITH GROUT. GROUT SHALL BE POURED IN LIFTS OF 4 FEET MAXIMUM HEIGHT. GROUT SHALL BE CONSOLIDATED AT TIME OF PLACING BY VIBRATING AND RECONSOLIDATED LATER BY VIBRATING BEFORE PLASTICITY IS LOST.

WHEN TOTAL GROUT POUR EXCEEDS 5 FEET IN HEIGHT, THE GROUT SHALL BE PLACED IN 4 FOOT LIFTS. MINIMUM CELL DIMENSION SHALL BE IN ACCORDANCE WITH TABLE 5 OF ACI 530.1 (3" X 3" FOR COARSE GROUT, 12 FT. MAXIMUM POUR HEIGHT).

WHEN THE GROUTING IS STOPPED FOR ONE HOUR OR LONGER, HORIZONTAL CONSTRUCTION JOINTS SHALL BE MADE BY STOPPING THE POUR OF GROUT NOT LESS THAN 1-1/2 INCH BELOW THE TOP OF THE UPPERMOST UNIT GROUTED.

LINTELS:
LINTELS SHALL BE REINFOCED CAST IN PLACE CONCRETE AND SHALL BEAR A MINIMUM OF 8" AT EACH END, REFER TO CONCRETE LINTEL SCHEDULE ON S0.2 FOR SIZES AND REINFORCING REQUIREMENTS.

TIE BEAMS:
BEAMS WITH THE PREFIX "TB" SHALL BE OF CONCRETE, POURED AFTER THE BLOCK WALLS BELOW ARE IN PLACE. REINFORCING SHALL BE CONTINUOUS THROUGH TIE BEAMS WITH MINIMUM LAP SPLICES OF 48 BAR DIAMETERS AND BENT BARS AT CORNERS. USE METAL LATH, MORTAR, OR SPECIAL UNITS TO CONFINE CONCRETE TO AREA REQUIRED, IN ACCORDANCE WITH ACI 530.1 (SOLID METAL OR FELT CAVITY CAPS ARE PROHIBITED).

STRUCTURAL STEEL:
ROLLED SHAPES SHALL CONFORM TO ASTM A-572 OR A-992 GRADE 50 AND "THE SPECIFICATION FOR DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS" BY THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION, INC. SHOP CONNECTIONS TO BE WELDED (UTILIZING E70XX ELECTRODES) AND FIELD CONNECTIONS TO BE BOLTED, UNLESS OTHERWISE NOTED ON STRUCTURAL DRAWINGS. STEEL SHALL RECEIVE ONE SHOP COAT AND ONE FIELD TOUCH UP COAT OF APPROVED PAINT, EXCEPT WHERE GALVANIZING IS INDICATED ON THE DRAWINGS.

STRUCTURAL TUBING SHALL CONFORM TO ASTM A 500, GRADE B, Fy = 46 ksi. STRUCTURAL PIPE SHALL CONFORM TO ASTM A 53 GRADE B, TYPE E OR S, Fy = 35 ksi. BEAM CONNECTIONS TO TUBE COLUMNS SHALL BE A.I.S.C. THRU-PLATE TYPE UNLESS SHOWN OTHERWISE.

BOLTED CONNECTIONS SHALL CONSIST OF MINIMUM ¾ INCH DIAMETER ASTM A 325 HIGH STRENGTH BOLTS. BEAM CONNECTIONS SHALL BE DESIGNED BY THE FABRICATOR FOR THE REACTIONS SHOWN ON THE PLANS. IF NOT SHOWN, THE FABRICATOR SHALL DESIGN THE BEAM CONNECTIONS TO SUPPORT AN END REACTION OF (W/2 KIPS FROM THE TABLES IN PART 2 "ALLOWABLE UNIFORM LOADS IN KIPS FOR BEAMS LATERALLY SUPPORTED" OF THE MANUAL OF STEEL CONSTRUCTION (9TH EDITION), BUT CONNECTIONS SHALL NOT HAVE LESS THAN 2 ROWS OF BOLTS. SUBMIT CALCULATIONS, SIGNED AND SEALED, BY AN ENGINEER LICENSED AND INSURED IN THE STATE OF FLORIDA. ANCHOR BOLTS SHALL CONFORM TO ASTM (THREADED ROD).

WHERE BEAMS ARE FRAMED INTO EMBEDS IN CONCRETE OR MASONRY CONSTRUCTION, THE CONTRACTOR SHALL CONSIDER THE EFFECT OF ROTATION OF THE BEAM AT THE CONNECTION UNDER APPLICATION OF DEAD LOAD DURING CONSTRUCTION AND SHALL ALLOW FOR SUCH ROTATION IN THE DESIGN OF THE CONNECTION AND IN THE CONSTRUCTION SEQUENCE. ALL BOLTED CONNECTIONS SHALL BE VISUALLY INSPECTED.

MACHINE AND LAG BOLTS:
SHALL BE A 307 HOT DIPPED GALVANIZED WITH GALVANIZED WASHERS.

SHEAR STUD CONNECTORS:
SHEAR STUD CONNECTORS SHALL BE FABRICATED AND INSTALLED IN ACCORDANCE WITH AWS D1.1 "STRUCTURAL WELDING CODE", SECTION 7. STUD WELDING. WHERE STUDS ARE PART OF A COMPOSITE FLOOR SYSTEM, STUD WELDING SHALL BE BY AUTOMATIC WELDING EQUIPMENT ONLY. HAND WELDING OF STUDS IS NOT ALLOWED. STUDS SHALL BE TYPE 'B'. HEADED STUDS HAVING A MINIMUM TENSILE STRENGTH OF 60,000 psi., AND SHALL BE OF LENGTH AND DIAMETER SHOWN ON STRUCTURAL DRAWINGS.

WELDING:
WELDING SHALL BE DONE BY WELDERS WITH CURRENT CERTIFICATION USING ASTM E70 SERIES ELECTRODE FOR SHIELDED METAL ARC WELDING, AND E70 SERIES LOW HYDROGEN ELECTRODES FOR ALL WELDING OF HIGH STRENGTH STEELS AND FOR FIELD WELDING.

WELDS SHOWN ON STRUCTURAL DRAWINGS ARE MINIMUM DESIGN REQUIREMENTS. THE FABRICATOR'S SHOP DRAWINGS SHALL REFLECT WELDS IN ACCORDANCE WITH AWS REQUIREMENTS.

ALL FULL PENETRATION GROOVE WELDS SHALL BE INSPECTED BY ULTRASONIC TESTING. ALL OTHER WELDS SHALL BE VISUALLY INSPECTED WITH 25% ULTRASONIC TESTED UNLESS NOTED OTHERWISE. SEE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.

UNLESS NOTED OTHERWISE ON THE DRAWINGS, GROOVE WELDS SHALL BE FULL PENETRATION.

PROVIDE FILLET WELDS AT CONTACT POINTS BETWEEN STEEL MEMBERS SUFFICIENT TO DEVELOP THE ALLOWABLE TENSILE STRENGTH OF THE SMALLER MEMBER AT THE JOINT UNLESS DETAILED OTHERWISE ON THE DRAWINGS.

STEEL JOISTS:
SHALL BE THE SIZE AND SPACING AS SHOWN ON THE STRUCTURAL DRAWINGS AND SHALL BE DESIGNED, FABRICATED, INSTALLED AND BRIDGED IN ACCORDANCE WITH THE STEEL JOIST INSTITUTE SPECIFICATIONS. ENDS OF BRIDGING LINES TERMINATING AT WALLS OR BEAMS SHALL BE ANCHORED THERETO AT TOP AND BOTTOM CHORDS. MINIMUM JOIST BRIDGING TERMINATION CONNECTIONS TO MASONRY SHALL BE L3 X 3 X 1/4 X 3" LONG WITH (1) 1/2" DIAMETER ANCHOR BOLT OR 1/4 X 4 X 4 WITH (1) 1/2" X 5" HEADED STUD TO CONCRETE. BRIDGING SHALL BE WELDED OR BOLTED AT POINTS OF CONTACT, WELD SHALL NOT DAMAGE THE JOIST. CROSS BRIDGING SHALL BE WELDED OR BOLTED AT ITS CENTER POINT.

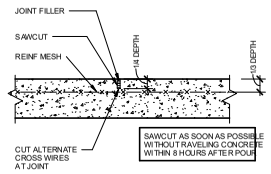
K SERIES JOISTS SHALL BEAR A MINIMUM OF 2 1/2" ON STEEL BEAMS AND 4" ON CONCRETE BEAMS. JOIST BEARING PLATES TO BE MINIMUM 1/2" X 5" X 7" WITH (2) 1/2" DIAMETER X 6" SHEAR STUD CONNECTORS. BEARING PLATES FOR BACK TO BACK SINGLE JOISTS SHALL BE MINIMUM 1/2" X 7 1/2" X 12" WITH (4) 1/2" DIAMETER X 6" SHEAR STUD CONNECTORS. BEARING PLATES SHALL BE CAST INTEGRALLY WITH THE CONCRETE BEAM. WELD JOISTS TO BEARING PLATES WITH A MINIMUM OF (2) 1/8" X 3" LONG FILLET WELDS, UNLESS NOTED OTHERWISE.

SUBMIT SHOP DRAWINGS FOR REVIEW PRIOR TO FABRICATION. SHOP DRAWING SUBMITTAL SHALL INCLUDE LAYOUT, COMPONENT DESIGNATION, BRIDGING, AND PERTINENT SECTIONS AND DETAILS. SUBMITTALS FOR JOISTS, OTHER THAN STANDARD SJI CATALOG SELECTIONS WHICH HAVE BEEN CHECKED BY SJI, SHALL BEAR THE SIGNATURE AND IMPRESSED SEAL OF A FLORIDA REGISTERED PROFESSIONAL ENGINEER.

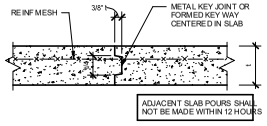
JOIST BEARING:
WHERE STEEL BEAMS SUPPORT JOISTS FRAMING FROM ONE SIDE ONLY, OR WHERE JOISTS FROM ONE SIDE ARE 30% LONGER THAN THE JOISTS ON THE OPPOSITE OF THE BEAM, JOISTS SHALL BEAR FULL WIDTH OF THE STEEL BEAM OR 5 1/2", WHICH EVER IS LESS.

NET UPLIFT DESIGN:
STEEL ROOF JOISTS SHALL BE DESIGNED TO WITHSTAND NET UPLIFT INDICATED ON DRAWINGS, IN ADDITION TO THE STANDARD SJI BOTTOM CHORD BRIDGING, WHICH INCLUDES THE FIRST END PANELS, THE JOIST MANUFACTURER SHALL PROVIDE DESIGN CALCULATIONS FOR UPLIFT, EITHER CONFIRMING THE SJI BRIDGING REQUIREMENT OR PROVIDING A DESIGN ADEQUATE FOR THE UPLIFT. THIS SUBMITTAL SHALL BEAR THE SIGNATURE AND IMPRESSED SEAL OF A FLORIDA REGISTERED PROFESSIONAL ENGINEER.

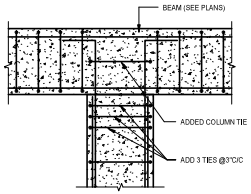
STEEL ROOF DECK:
SHALL BE 1 1/2" DEEP TYPE 'B', 22 GAGE GALVANIZED (G90) CORRUGAT



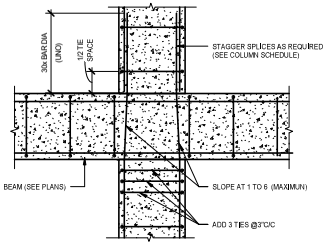
5 S-1.1 TYPICAL CONTRACTION JOINT (CJ) DETAIL N.T.S



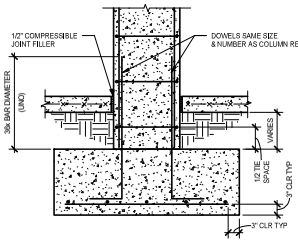
4 S-1.1 TYPICAL CONSTRUCTION JOINT (KJ) DETAIL N.T.S



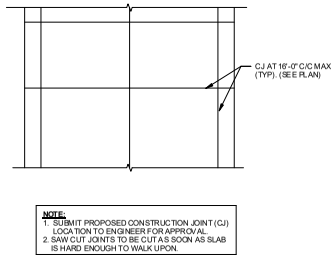
3 S-1.1 TYPICAL CONCRETE COLUMN TERMINATION AT BEAM N.T.S



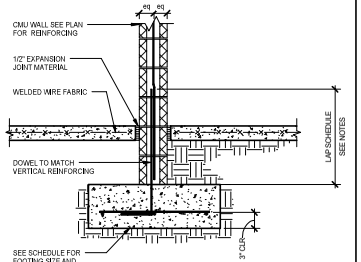
2 S-1.1 TYPICAL CONCRETE COLUMN THRU INTERMEDIATE BEAM N.T.S



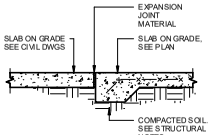
1 S-1.1 TYPICAL CONCRETE COLUMN BASE DETAIL AT FOUNDATION N.T.S



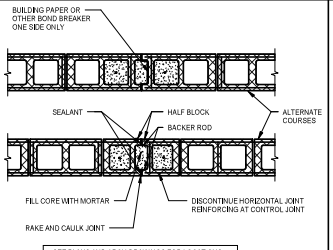
10 S-1.1 TYPICAL SLAB-ON GRADE JOINT DETAIL N.T.S



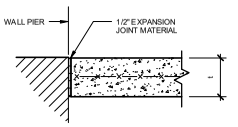
9 S-1.1 TYPICAL WALL FOOTING SECTION N.T.S



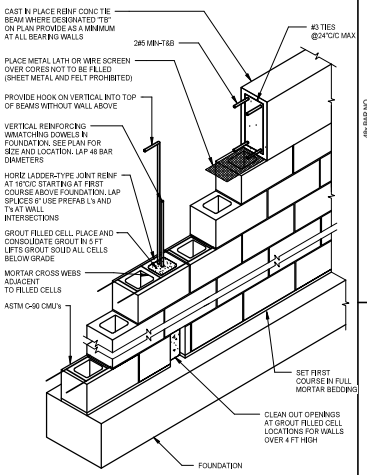
8 S-1.1 TYPICAL SECTION THRU TE-1 N.T.S



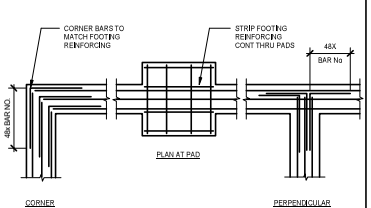
7 S-1.1 TYPICAL MASONRY CONTROL JOINT 3/4" = 1'-0"



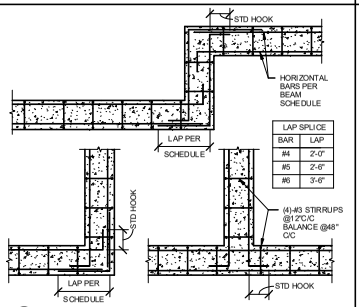
6 S-1.1 TYPICAL ISOLATION JOINT (IJ) DETAIL 3/4" = 1'-0"



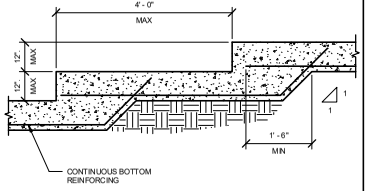
15 S-1.1 TYPICAL MASONRY WALL CONSTRUCTION DETAIL FOR RUNING BOND LAYOUT N.T.S



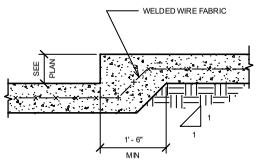
14 S-1.1 TYPICAL FOOTING INTERSECTION DETAIL 3/4" = 1'-0"



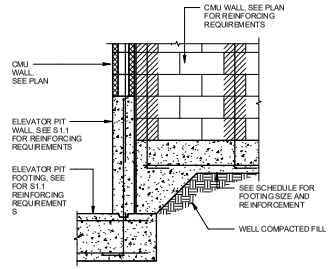
13 S-1.1 TYP. TIE BEAM CORNER REINFORCING DETAIL N.T.S



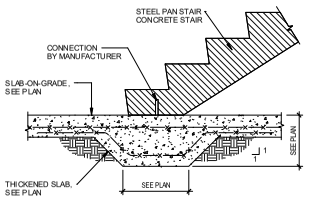
12 S-1.1 TYPICAL STEPPED FOOTING DETAIL N.T.S



11 S-1.1 TYPICAL STEPPED SLAB DETAIL N.T.S



17 S-1.1 TYPICAL SECTION AT STEP FOOTING AT ELEVATOR N.T.S



16 S-1.1 TYPICAL STAIR BASE DETAIL N.T.S

BID SET

CONSULTANT

CITY OF FORT LAUDERDALE
PUBLIC WORKS DEPARTMENT
ENGINEERING & ARCHITECTURE
100 North Andrews Avenue, Fort Lauderdale, Florida 33301

MTH RANGWIJE FL PE #81469 MARCH 16, 2018

NO	DATE	BY	PROJ	DESCRIPTION
	03-19-18			BID SET

REVISIONS

City of Fort Lauderdale

PROJECT # 10909
FIRE STATION #8

CPZ ARCHITECTS, INC.
414 WEST BROWARD BOULEVARD
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PHONE: (954) 792-8252
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1717 SW 1ST AVENUE
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www.trcww.com

TO THE BEST OF MY KNOWLEDGE AND ABILITY, THE COMPLETED STRUCTURE DEPICTED ON THESE PLANS COMPLIES WITH THE APPLICABLE MINIMUM BUILDING CODES.
15FTL015

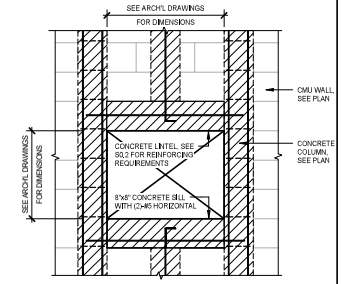
DRAWN BY	DATE
MEL	03-19-18
CHECK BY	SCALE
D.K	As indicated

SHEET NO. S-1.1 OF

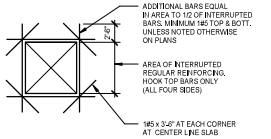
TOTAL: 105

DRAWING TITLE:
TYPICAL DETAILS

DRAWING FILE NO. 4-138-84

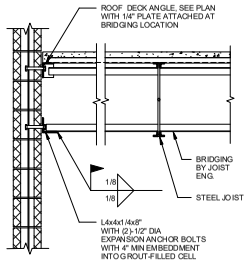


4 S-1.2 TYPICAL CMU WALL OPENING DETAIL
N.T.S

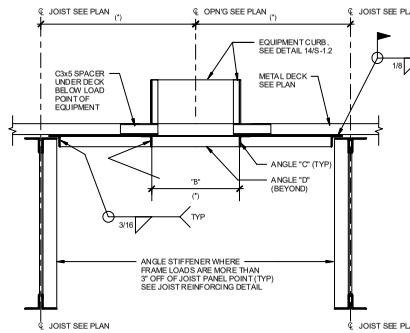


NOTES:
1. OMIT ADDED BARS AT OPENINGS OF 10" OR LESS AND RUN NORMAL REINFORCING BY SIDE OF OPNG.
2. HOOK BARS AT AFFECTED ENDS WHERE BARS CANNOT BE EXTENDED PAST THE OPENING.
3. OPENINGS SHALL BE SHOWN ON THE STEEL PLACING DRAWINGS AND REINFORCED ACCORDINGLY.

3 S-1.2 TYPICAL REINFORCEMENT AT SLAB OPENING DETAIL
N.T.S



2 S-1.2 TYPICAL BRIDGING DETAIL
N.T.S

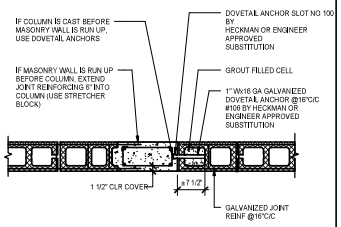


ROOF OPENING FRAME SCHEDULE

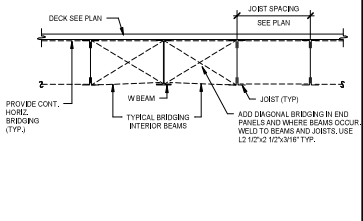
DIM "A"	DIM "B"	ANGLE SIZE "C"	ANGLE SIZE "D"
2'-0"	4'-0"	3x3x3 3/16	3x3x3 3/16
3'-0"	5'-0"	3x3x3 3/16	3x3x3 1/4
4'-0"	6'-0"	3x3x3 3/16	3 1/2x3 1/2x1/4
5'-0"	7'-0"	3x3x3 3/16	4x4x5/16

NOTES:
1. SEE ROOF FRAMING PLAN FOR ORIENTATION.
2. COORDINATE DIMENSION WITH EQUIPMENT SUPPLIER.
3. WHEN JOIST BRIDGING INTERFERES WITH ROOF OPENING FRAMES, STOP BRIDGING AT EACH SIDE OF OPENING AND "X" BRIDGE LAST BRIDGING SPACE EACH SIDE OF OPENING. ADD ADDITIONAL BRIDGING WITH "X" BRIDGING AND HORIZONTAL BRIDGING ON EACH SIDE OF CUT BRIDGING AREA. EXTEND ADDED BRIDGING PAST CUT BRIDGING.

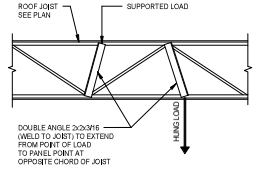
1 S-1.2 TYPICAL ROOF OPENING FRAME DETAILS WITH ANGLES
N.T.S



7 S-1.2 TYPICAL TIE COLUMn ANCHORAGE DETAIL
N.T.S

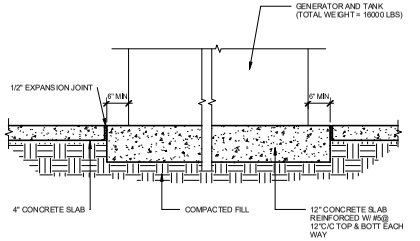


8 S-1.2 TYPICAL JOIST BRIDGING DETAIL
N.T.S



NOTES:
1. PROVIDE REINFORCEMENT AT SUPPORTED OR HUNG LOADS > 300#
2. DETAIL NOT REQ'D, IF LOAD IS APPLIED DIRECTLY TO JOIST PANEL POINT.
3. COMPLY WITH JOIST MANUFACTURERS REQUIREMENTS.

5 S-1.2 JOIST REINFORCING DETAILS AT POINT LOADS
N.T.S

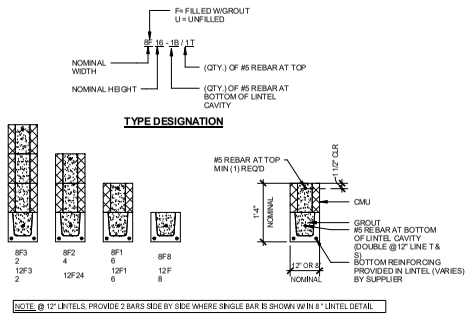


12 S-1.2 TYPICAL GENERATOR AND TANK SLAB DETAIL
N.T.S

LINTEL SCHEDULE

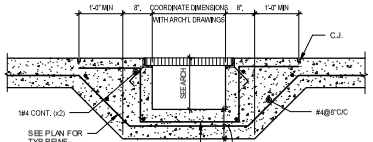
LINTEL SPAN	LINTEL DESIGNATION		REMARKS
UP TO 4'-0"	8 F8-1B	12F8-2B	
FROM 4'-0" TO 6'-0"	8 F8-1B/1T	12F8-2B	
FROM 6'-1" TO 8'-0"	8 F16-1B/1T	12F16-2B/2T	
FROM 8'-1" TO 10'-0"	8 F24-2B/2T	12F16-2B/2T	
FROM 10'-1" TO 13'-0"	8 F32-2B/2T	12F24-2B/2T	
OVER 13'-0"	CAST IN PLACE BEAM		

NOTES:
1. LINTELS SHALL BE "CAST -CRETE" OR EQUIVALENT PRECAST CONCRETE U.N.O
2. LINTELS SHALL BEAR 5" MIN. ON "CMU CONCRETE AND 3" MIN ON STEEL ANGLES.



NOTE: @ 12" LINTELS, PROVIDE 2 BARS SIDE BY SIDE WHERE SINGLE BAR IS SHOWN WITH 8 " LINTEL DETAIL

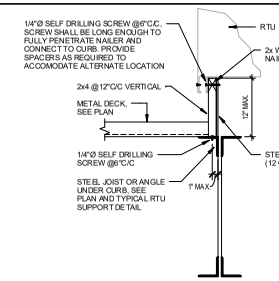
10 S-1.2 MASONRY OPENING LINTEL DETAIL
N.T.S



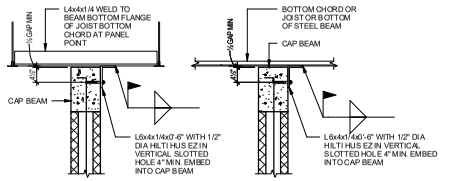
9 S-1.2 TYPICAL TRENCH DETAIL
N.T.S

BAR NUMBER	8" CMU CENTER
#3	1'-3"
#4	1'-8"
#5	2'-1"
#6	2'-3"
#7	4'-2"

8 S-1.2 CMU REINFORCING LAP SPLICE SCHEDULE
N.T.S



14 S-1.2 TYPICAL RTU CURB FASTENER DETAIL
1" = 1'-0"



INFILL CMU WALL PARALLEL TO FRAMING
SPACE AT 10'-0"C/C MAX. UNO

INFILL CMU WALL PERPENDICULAR TO FRAMING
SPACE AT 10'-0"C/C MAX. UNO

13 S-1.2 TYPICAL INFILL CMU WALL BRACING DETAIL
N.T.S

CONSULTANT

CITY OF FORT LAUDERDALE
PUBLIC WORKS DEPARTMENT
ENGINEERING & ARCHITECTURE
100 North Andrews Avenue, Fort Lauderdale, Florida 33301

MITIGRANGIVE (LPE#81469) MARCH 16, 2018

CPZ ARCHITECTS, INC.
414 WEST BROWARD BOULEVARD
FORT LAUDERDALE, FLORIDA 33311
PHONE: (954) 763-8275 FAX: (954) 337-6359
AA-26000603 WWW.CPZARCHITECTS.COM

NO.	DATE	BY	PROJ	DESCRIPTION
	03-19-18			BID SET

REVISIONS

City of Fort Lauderdale

PROJECT # 10909
FIRE STATION #8

1717 SW 1ST AVENUE
FORT LAUDERDALE, FL 33315

DRAWN BY: MEL
DATE: 03-19-18
CHECK BY: D.K
SCALE: As indicated

SHEET NO: S-1.2
OF TOTAL: 105

DRAWING TITLE:
TYPICAL DETAILS

DRAWING FILE NO: 4-138-84

BID SET

WORLDWIDE ENGINEERING
CERTIFICATE OF AUTHORIZATION NO. 27322
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Plantation, FL. 33322
PHONE: (954) 474-7777
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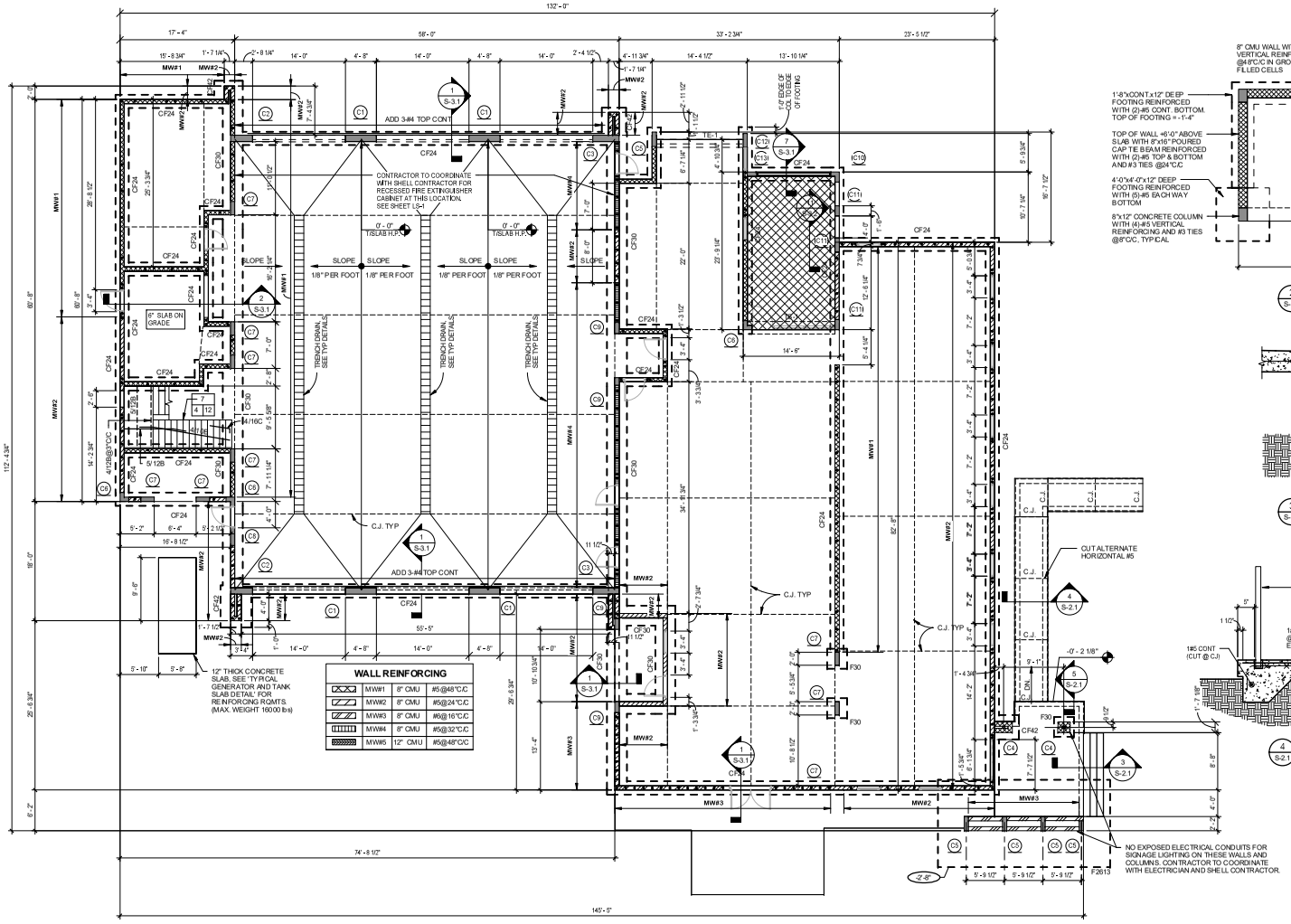
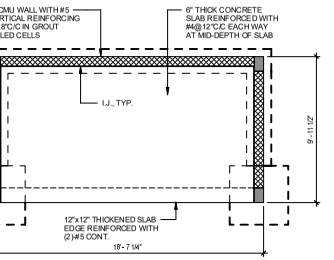
www.trcworld.com
TO THE BEST OF MY KNOWLEDGE AND ABILITY, THE COMPLETED STRUCTURE DEPICTED ON THESE PLANS COMPLIES WITH THE APPLICABLE MINIMUM BUILDING CODES.
15FTL015

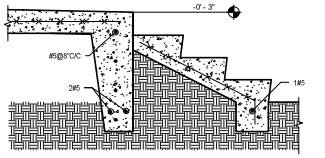
Bid 12139-983



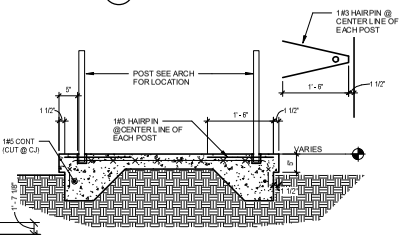
1 S-2.1 FOUNDATION AND GROUND FLOOR PLAN
1/8" = 1'-0"



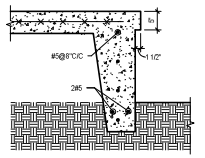
2 S-2.1 DUMPSTER PLAN
1/4" = 1'-0"



3 S-2.1 SECTION
3/4" = 1'-0"



4 S-2.1 SECTION
3/4" = 1'-0"



5 S-2.1 SECTION
3/4" = 1'-0"

FOUNDATION/GROUND FLOOR PLAN NOTES:

1. VERIFY ALL DIMENSIONS, ELEVATIONS AND SLAB FINISHES WITH ARCHITECTURAL DRAWINGS BEFORE COMMENCING CONSTRUCTION. FOR ADDITIONAL DIMENSIONAL INFORMATION SEE ARCHITECTURAL DRAWINGS.
2. CENTERLINES OF COLUMNS AND WALLS SHALL COINCIDE WITH THE FOUNDATION CENTERLINES UNLESS SHOWN OTHERWISE.
3. SEE DRAWING S2.4 FOR BEAM, COLUMN AND FOOTING SCHEDULES.
4. SEE DRAWING S0.1 FOR STRUCTURAL NOTES.
5. ELEVATIONS SHOWN ON THE STRUCTURAL DRAWINGS REFER TO DATUM AT +0'-0" WHICH CORRESPONDS TO +9.00 FEET N.A.V.D. (VERIFY WITH ARCHL AND CIVIL DRAWINGS).
6. ELEVATION TOP OF FOOTINGS SHALL BE -1'-4" UNLESS OTHERWISE SHOWN THUS (-4'-0") SEE STEP FOOTING DETAIL
7. SLAB ON GRADE SHALL BE A MINIMUM 4" THICK WITH ONE LAYER OF 6X6 – W1.4 X W1.4 WELDED WIRE FABRIC AT 1/3-DEPTH UNLESS OTHERWISE NOTED. WHERE SHOWN ON PLAN, SLAB SHALL BE 6" THICK MINIMUM WITH ONE LAYER OF 6x6-W1.4xW1.4 WWF AT 1/3 DEPTH. WIRE FABRIC SHALL BE PROVIDED IN SHEETS AND PLACE ON SAND CHAIRS. REFERENCE ARCHITECTURAL DRAWINGS FOR SLOPES AND DRAINS. PLACE SLAB ON 10 MIL VAPOR BARRIER ON COMPACTED FILL. SLAB AT APPARATUS BAY SHALL BE AN 8" THICK CONCRETE SLAB (f'c=4000psi) ON 12" THICK LIME ROCK AND 10 MIL IMPERVIOUS MEMBRANE, REINFORCED WITH #4@12"C/C TOP & BOTT CLEAR COVER SHALL BE 1 1/2".
8. SLAB CONTRACTION JOINTS ARE REQUIRED AND ARE INDICATED AS C.J. ON PLAN. CONTRACTION JOINTS SHALL BE SAW CUT (WITHIN 4 HOURS OF POUR).

   CONTRACTION JOINT LOCATION SHOWN MAY BE CHANGED AS REQUIRED FOR CONSTRUCTION SEQUENCING PROVIDED:

   THE MAXIMUM DISTANCE BETWEEN JOINTS IS LESS THAN 16'; THE SLAB AREA BETWEEN JOINTS IS LESS THAN 256 SQUARE FEET; THE BOUNDED AREA IS AS SQUARE AS POSSIBLE AND IN NO CASE THE RATIO OF LONG SIDE TO SHORT SIDE EXCEED 1.5.
9. SLAB CURING IS REQUIRED. SEE STRUCTURAL NOTES.
10. TE-1 – INDICATES AN 8" WIDE X 8" DEEP X CONTINUOUS CONCRETE THICKENED SLAB EDGE REINFORCED WITH (1) #5 HORIZONTAL REINFORCING BAR.
11. FOR MASONRY WALL REINF. SEE SCHEDULE. ALL WALLS SHALL HAVE MINIMUM 2 BARS AT WINDOW JAMBS, AND MIN 1 BAR AT EACH SIDE OF OPENINGS, AT INTERSECTIONS, ENDS OF WALL AND WHERE SHOWN. SEE TYPICAL DETAILS FOR OTHER REQUIREMETS.
12. TS-1 - INDICATES A 16" WIDEx12" DEEP x CONTINUOUS THICKENED SLAB REINFORCED WITH (2)#5 HORIZ. REINF. BAR.
13. AT APPARATUS BAY SLAB ON GRADE PLACE 12" OF SUBGRADE STABILIZED TO LBR OF 40 AND COMPACTED TO 98% OF AASHTO T-180 MAX. DRY DENSITY. REFER TO GEOTECHNICAL REPORT FOR ADDITIONAL INFORMATION.
14. INDICATES 2 3/4" DEPRESSED SLAB, SEE ARCHITECTURAL DRAWING FOR FLOORING SPECIFICATION IN THIS AREA. CONTRACTOR TO COORDINATE WITH STRUCTURAL CONTRACTOR AND FLOORING CONTRACTOR FOR EXACT DEPRESSION DEPTH IN SLAB PRIOR TO FORMING AND POURING SLAB.

BID SET

CONSULTANT

CITY OF FORT LAUDERDALE
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15FTLD 15

NTP/PRAWDFE
FL PE #81459
MARCH 16, 2018

NO	DATE	BY	PROJ	DESCRIPTION
	03-19-18			BID SET

REVISIONS

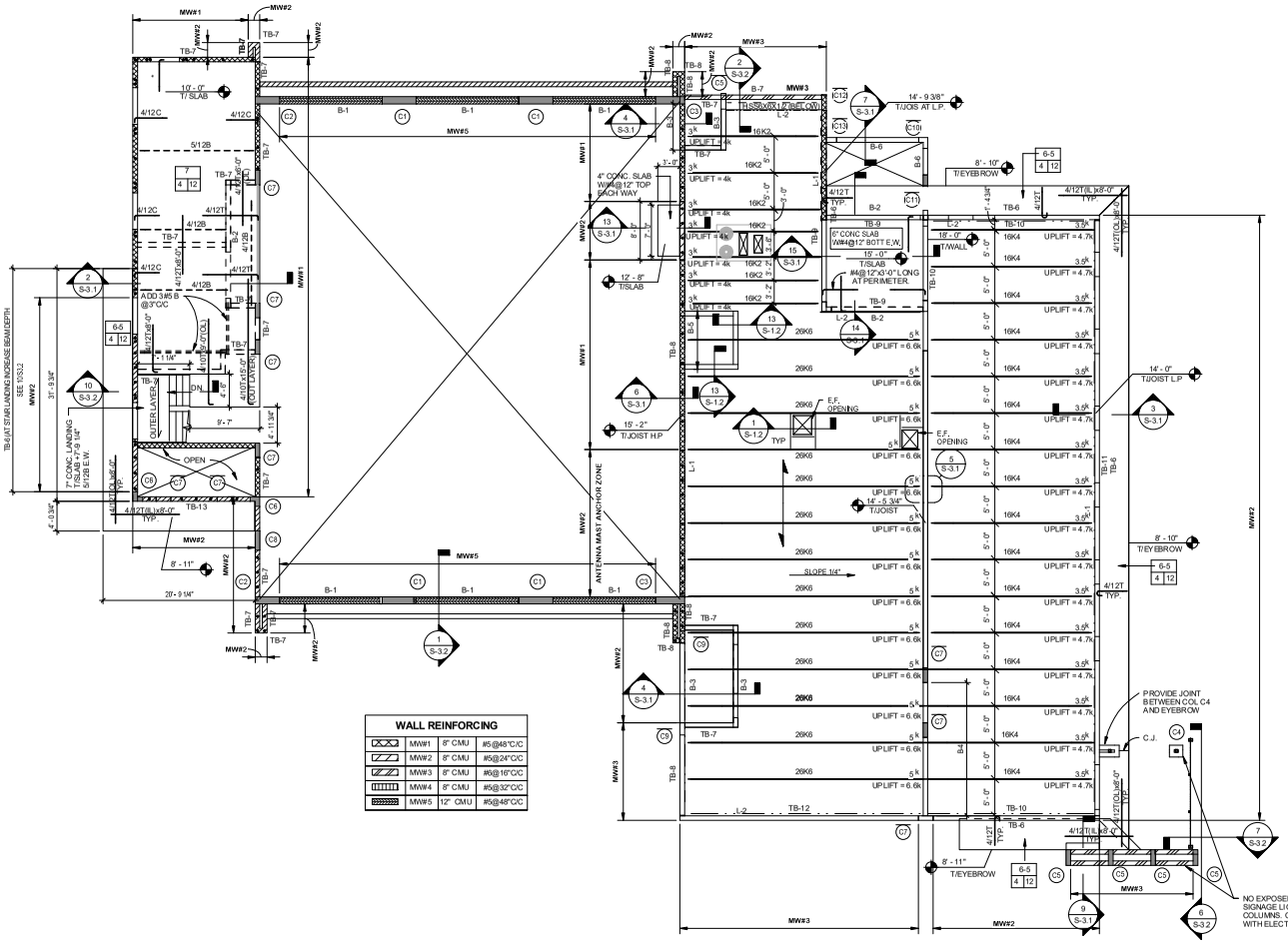
City of Fort Lauderdale

PROJECT # 10909
FIRE STATION #8
1717 SW 1ST AVENUE
FORT LAUDERDALE, FLORIDA 33315

DRAWN BY: MEL
DATE: 03-19-18
CHECK BY: D.K
SCALE: As indicated

SHEET NO.: S-2.1
OF:
TOTAL: 105
DRAWING TITLE: FOUNDATION FLOOR PLAN
DRAWING FILE NO.: 4-138-84

Bid 12139-983



WALL REINFORCING			
	MW#1	8" CMU	#5@48"C/C
	MW#2	8" CMU	#5@24"C/C
	MW#3	8" CMU	#5@16"C/C
	MW#4	8" CMU	#5@32"C/C
	MW#5	12" CMU	#5@48"C/C

1 S-2.2 MEZZANINE PLAN
1/8" = 1'-0"

MEZZANINE FLOOR/LOW ROOF PLAN NOTES:

1. REFER TO ARCHITECTURAL DRAWINGS FOR ROOFING MATERIALS, ROOF SLOPES, DRAINS, ETC.
2. ALL ELEVATIONS SHOWN ON THESE PLANS ARE RELATIVE TO THE TOP OF THE GROUND FLOOR SLAB AT ELEVATION +0' -0".
3. REFER TO STRUCTURAL NOTES FOR ADDITIONAL INFORMATION.
4. VERIFY ALL ELEVATIONS WITH ARCHITECTURAL DRAWINGS.
5. FOR SIZE AND LOCATION OF ROOF OPENINGS SEE MECHANICAL AND ARCHITECTURAL DRAWINGS.
6. MECHANICAL EQUIPMENT SHALL BE LOCATED WITHIN LIMITS SHOWN ON ROOF PLANS.
7. FOR DIMENSIONS NOT SHOWN SEE FOUNDATION PLAN ON S2.1 AND ARCHITECTURAL DRAWINGS.
8. MAXIMUM SPACING OF STEEL JOISTS TO BE 5'-0" UNLESS NOTED OTHERWISE ON PLAN.
9. L1 = DECK ANGLE, L3"x3"x1/4" WITH 5/8" DIAMETER EXPANSION BOLTS AT 16"C/C" MAXIMUM WITH 4" EMBEDMENT.
10. L2 = DECK SUPPORT ANGLE, L5"x5"x1/4" (LLV) WITH 5/8" DIAMETER EXPANSION BOLTS AT 16" C/C MAXIMUM WITH 5" EMBEDMENT
11. TOP OF STEEL SHALL BE AS NOTED ON PLAN
12. ROOF SYSTEM OVER BAR JOIST SHALL CONSIST OF 1 1.0" DEEP, TYPE 'B', 22 GAGE GALVANIZED (G90) CORRUGATED VENTED STEEL DECK. REFER TO STRUCTURAL NOTES. FASTEN TO SUPPORT WITH 5/8" DIA PUDDLE WELDS IN 36/5 PATTERN WITH 10-#10 TEK SIDELAP FASTENERS PER SPAN
13. FLOOR SLAB SHALL BE 7" CONCRETE SLAB REINFORCED PER SLAB AS SHOWN ON PLAN. OUTER REINFORCEMENT LAYERS SHALL BE IN EAST/WEST DIRECTION.
14. STAIRS SHALL BE METAL PAN STAIRS WITH CONCRETE INFILL TREADS BY SPECIALTY ENGINEER. STAIRS AND INTERMEDIATE LANDINGS SHALL ACT AS A DIAPHRAGM TO BRACE MASONRY WALLS. THE SPECIALTY ENGINEER SHALL CONSIDER THESE DIAPHRAGM FORCES WHEN DESIGNING THE STAIR SYSTEM.

BID SET

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15FTL015

CONSULTANT

MITIGRAM/FE
FL/PE #81489
MARCH 15, 2018

CITY OF FORT LAUDERDALE
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	03-19-18			BID SET

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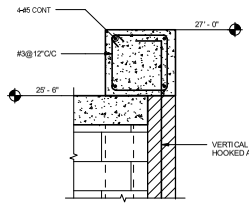
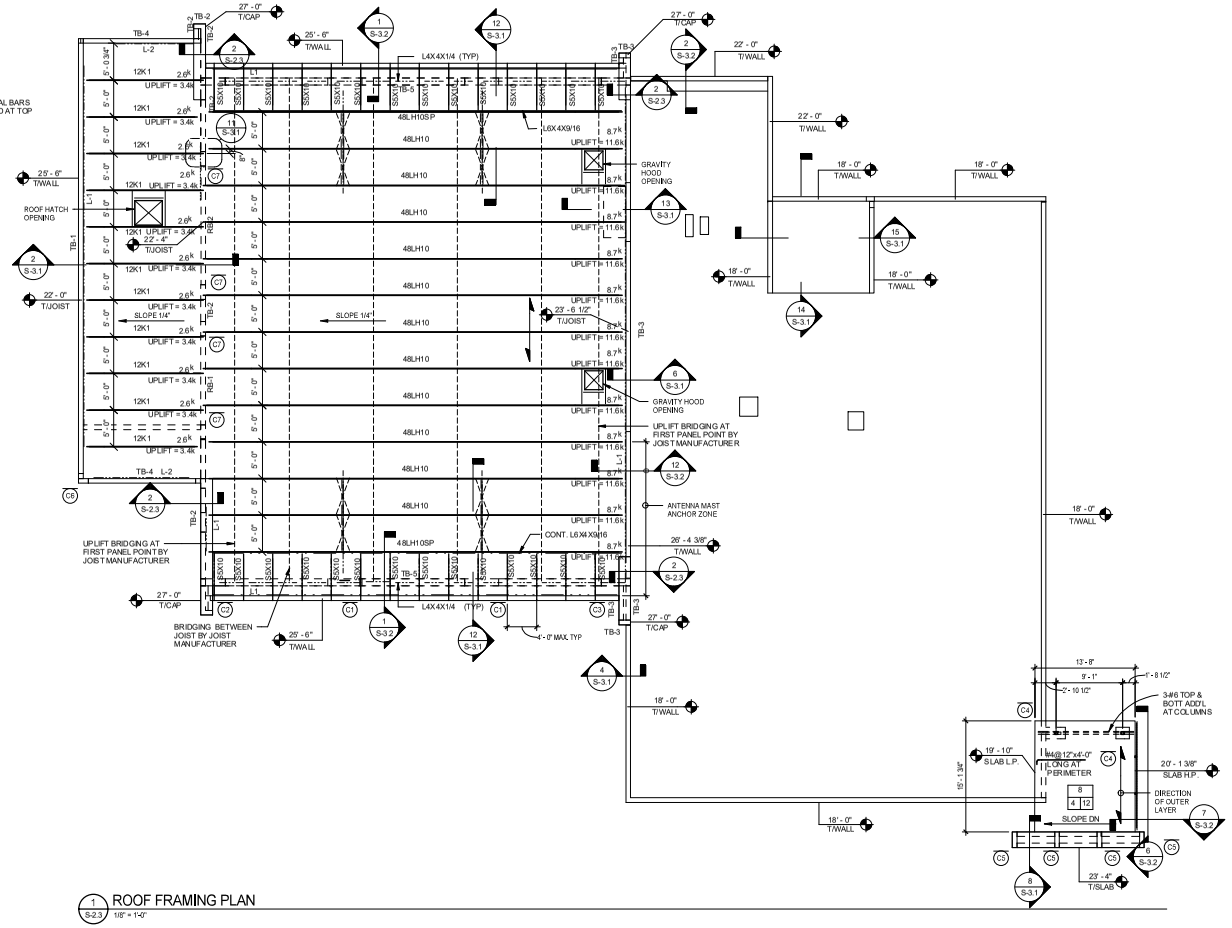
CHECKED BY	SCALE
D.K	As indicated

SHEET NO. S-2.2 OF
TOTAL 105
DRAWING TITLE: MEZZANINE FLOOR PLAN
DRAWING FILE NO. 4-138-84



2 S-2.3 SECTION 3/4" = 1'-0"



1 S-2.3 ROOF FRAMING PLAN 1/8" = 1'-0"

ROOF PLAN NOTES:

1. REFER TO ARCHITECTURAL DRAWINGS FOR ROOFING MATERIALS, ROOF SLOPES, DRAINS, ETC.
2. ALL ELEVATIONS SHOWN ON THESE PLANS ARE RELATIVE TO THE TOP OF THE GROUND FLOOR SLAB AT ELEVATION +0'-0".
3. REFER TO STRUCTURAL NOTES FOR ADDITIONAL INFORMATION.
4. VERIFY ALL ELEVATIONS WITH ARCHITECTURAL DRAWINGS.
5. FOR SIZE AND LOCATION OF ROOF OPENINGS SEE MECHANICAL AND ARCHITECTURAL DRAWINGS.
6. MECHANICAL EQUIPMENT SHALL BE LOCATED WITHIN LIMITS SHOWN ON ROOF PLANS.
7. FOR DIMENSIONS NOT SHOWN SEE FOUNDATION PLAN ON S2.1 AND ARCHITECTURAL DRAWINGS.
8. MAXIMUM SPACING OF STEEL JOISTS TO BE 5'-6" UNLESS NOTED OTHERWISE ON PLAN.
9. L1 = DECK ANGLE, L3"x3"x1/4" WITH 5/8" DIAMETER ANCHOR BOLTS AT 16"C/C" MAXIMUM WITH 4" EMBEDMENT.
10. L2 = DECK SUPPORT ANGLE, L5"x3"x1/4" (LLV) WITH 5/8" DIAMETER ANCHOR BOLTS AT 16" C/C MAXIMUM WITH 5" EMBEDMENT.
11. TOP OF STEEL SHALL BE AS NOTED ON PLAN
12. ROOF SYSTEM OVER BAR JOIST SHALL CONSIST OF 1 1/2" DEEP, TYPE 'B', 22 GAGE GALVANIZED (G90) CORRUGATED VENTED STEEL DECK. REFER TO STRUCTURAL NOTES FASTEN TO SUPPORT WITH 5/8" DIA PUDDLE WELDS IN 36/7 PATTERN W/ (4) #10 TEK SIDELAP FASTENERS PER SPAN.

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15FTLO15

CONSULTANT

MITHRANARAYE ELPE 891459 MARCH 16, 2018

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NO.	DATE	BY	PROJ	DESCRIPTION
	03-19-18			BID SET

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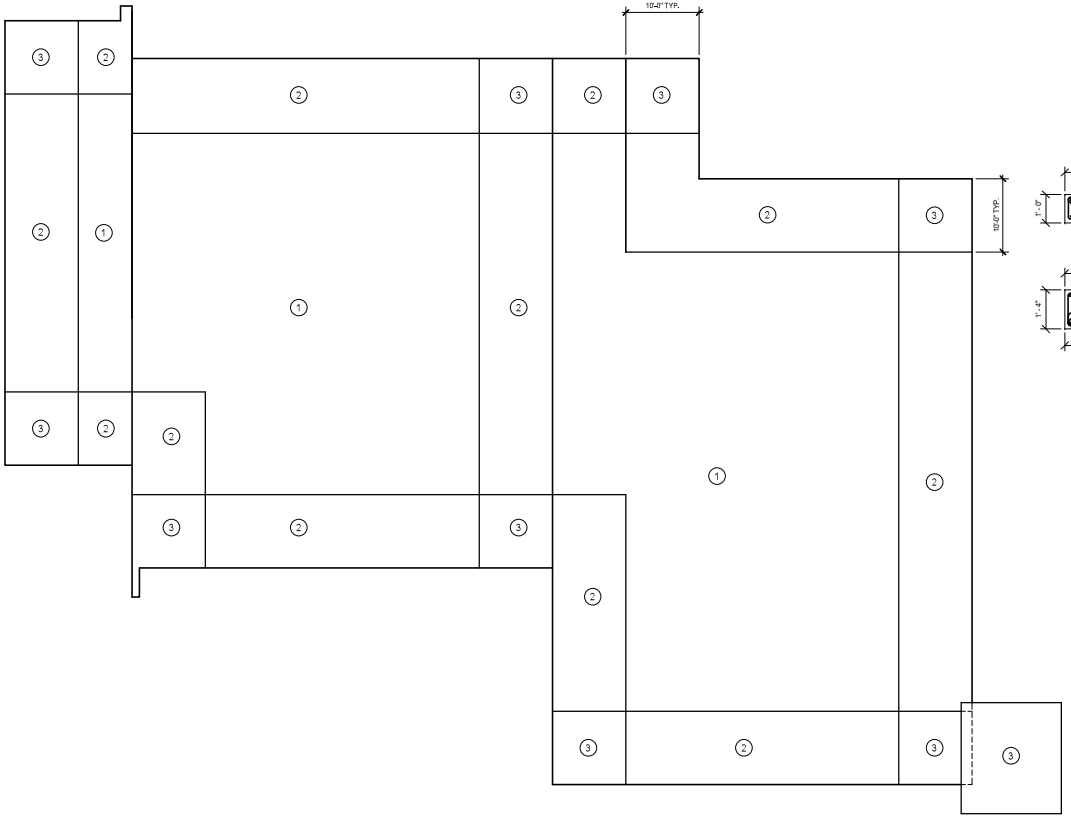
SHEET NO. S-2.3 OF TOTAL 105

DRAWING TITLE: ROOF FRAMING PLAN

DRAWING FILE NO. 4-138-84

Bid 12139-983



3 S-2.4 COMPONENTS AND CLADDING
1/8" = 1'-0"

COMPONENTS AND CLADDINGGROSS WIND PRESSURES SCHEDULE (PSF) (LOAD FOR STRENGTH DESIGN)

TRIBUTARY AREA	ROOF ZONES			WALL ZONES		OVERHANG	
	ZONE 1	ZONE 2	ZONE 3	ZONE 4	ZONE 5	ZONE 6	ZONE 7
10 SQ. FT.	+32.0	+32.0	+32.0	+71.0	+71.0	--	--
	-78.0	-131.0	-197.0	-77.0	-95.0	-112.0	-185.0
20 SQ. FT.	+30.0	+30.0	+30.0	+68.0	+68.0	--	--
	-76.0	-117.0	-163.0	-74.0	-88.0	-110.0	-145.0
50 SQ. FT.	+27.0	+27.0	+27.0	+64.0	+64.0	--	--
	-73.0	-98.0	-118.0	-70.0	-81.0	-108.0	-92.0
100 SQ. FT.	+25.0	+25.0	+25.0	+61.0	+61.0	--	--
	-71.0	-85.0	-85.0	-67.0	-74.0	-106.0	-53.0
200 SQ. FT.	+25.0	+25.0	+25.0	+57.0	+57.0	--	--
	-71.0	-85.0	-85.0	-63.0	-68.0	-91.0	-53.0
500 SQ. FT.	+25.0	+25.0	+25.0	+54.0	+54.0	--	--
	-71.0	-85.0	-85.0	-59.0	-59.0	-73.0	-53.0

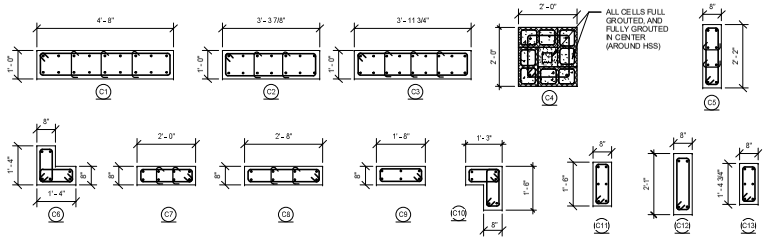
NOTES:
1. DESIGN WIND SPEED = 160 MPH
2. LOADS FOR ALLOWABLE STRESS DESIGN (0.6 x WIND LOAD)
3. ZONE 5 IS LOCATED (6'-0") FROM EDGE BUILDING CORNERS
4. ZONE 4 IS BALANCE OF BUILDING
5. (+) - INDICATES INWARD PRESSURE
6. (-) - INDICATES OUTWARD PRESSURE
7. PRESSURE FOR TRIBUTARY AREAS BETWEEN THOSE SHOWN MAY BE INTERPOLATED

COMPONENTS AND CLADDING GROSS WIND PRESSURES SCHEDULE (PSF) (LOAD FOR ALLOWABLE STRESS DESIGN)

TRIBUTARY AREA	ROOF ZONES			WALL ZONES		OVERHANG	
	ZONE 1	ZONE 2	ZONE 3	ZONE 4	ZONE 5	ZONE 6	ZONE 7
10 SQ. FT.	+19.0	+19.0	+19.0	+43.0	+43.0	--	--
	-47.0	-78.0	-118.0	-46.0	-57.0	-67.0	-111.0
20 SQ. FT.	+18.0	+18.0	+18.0	+41.0	+41.0	--	--
	-46.0	-70.0	-98.0	-44.0	-53.0	-66.0	-87.0
50 SQ. FT.	+16.0	+16.0	+16.0	+38.0	+38.0	--	--
	-44.0	-59.0	-71.0	-42.0	-48.0	-65.0	-55.0
100 SQ. FT.	+15.0	+15.0	+15.0	+36.0	+36.0	--	--
	-43.0	-51.0	-51.0	-40.0	-44.0	-63.0	-32.0
200 SQ. FT.	+15.0	+15.0	+15.0	+34.0	+34.0	--	--
	-43.0	-51.0	-51.0	-38.0	-41.0	-55.0	-32.0
500 SQ. FT.	+15.0	+15.0	+15.0	+32.0	+32.0	--	--
	-43.0	-51.0	-51.0	-36.0	-36.0	-44.0	-32.0

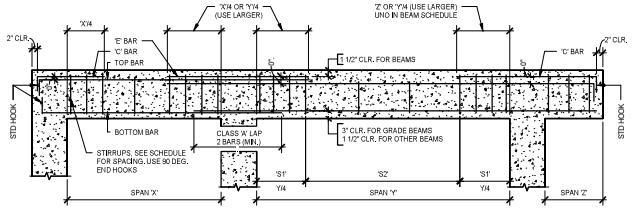
COLUMN SCHEDULE

MARK	SIZE (WxLxD)	REINF	TIES	REMARKS
C1	12x56	18#7	#3 TIES @ 8"C/C	
C2	12x39 7/8	14#7	#3 TIES @ 8"C/C	
C3	12x47 3/4	18#7	#3 TIES @ 8"C/C	
C4	SEE BELOW	4#5	#3 TIES @ 8"C/C	HS 5t.x t.x5/16, GALVANIZED IN CENTER
C5	8x26	6#7	#3 TIES @ 8"C/C	
C6	8x16	6#6	#3 TIES @ 8"C/C	
C7	8x24	8#5	#3 TIES @ 8"C/C	
C8	8x32	8#6	#3 TIES @ 8"C/C	
C9	8x20	6#6	#3 TIES @ 8"C/C	
C10	SEE BELOW	6#7	#3 TIES @ 8"C/C	
C11	8x18	6#6	#3 TIES @ 8"C/C	
C12	8x25	8#6	#3 TIES @ 8"C/C	
C13	8x16	6#6	#3 TIES @ 8"C/C	



BEAM SCHEDULE

MARK	ELEVATION	SIZE WxL (IN)	BOTTOM REINFORCING	TOP REINFORCING	'C' REINFORCING	'E' REINFORCING	STIRRUPS	REMARKS
B-1	16' - 0"	12x24	2-#7	2-#7			#4@8"C/C	ADD 2-#5 CONT MID-DEPTH BARS EACH FACE
B-2	10' - 0"	8x20	2-#5	2-#5			#3@8"C/C	ADD 1-#5 CONT MID-DEPTH BARS EACH FACE
B-3	10' - 0"	8x20	2-#5	2-#5			#3@8"C/C	
B-4	14' - 3 1/4"	8x1 9 1/4	2-#5	2-#5			#3@8"C/C	
B-5	9' - 8"	8x16	2-#5	2-#5			#3@8"C/C	
B-6	8' - 4"	8x16	2-#5	2-#5			#3@8"C/C	#5 CONT MID-DEPTH 1 EACH FACE
B-7	15' - 4"	24x16	4-#7	4-#7			#3@8"C/C	TOP & BOTT BARS SHALL HOOK INTO COLUMNS BEYOND
RB-1	21' - 11"	8x21 3/8"	2-#6	2-#6			#3@8"C/C	
RB-2	21' - 11"	8x21 3/8"	2-#6	2-#6			#3@8"C/C	
TB-1	21' - 9 1/2"	8x12	2-#5	2-#5			#3@16"C/C	
TB-2	21' - 1 1"	8x12	2-#5	2-#5			#3@8"C/C	
TB-3		8x12	2-#5	2-#5			#3@8"C/C	
TB-4	VARIES	8x1 2/16	2-#5	2-#5			#3@16"C/C	TOP OF BEAM SLOPES, BOTTOM OF BEAM IS FLAT
TB-5	VARIES	12x12 MIN	2-#6	2-#6			#3@12"C/C	TOP OF BEAM SLOPES, BOTTOM OF BEAM IS FLAT
TB-6	10' - 0"	8x20	2-#5	2-#5			#3@8"C/C	ADD 1-#5 CONT MID-DEPTH EACH FACE
TB-7	10' - 0"	8x12	2-#5	2-#5			#3@16"C/C	
TB-8	14' - 11 1/2"	8x12	2-#5	2-#5			#3@16"C/C	
TB-9	14' - 6 7/8"	8x12	2-#5	2-#5			#3@16"C/C	
TB-10	14' - 3 1/4"	8x16	2-#6	2-#6			#3@16"C/C	
TB-11	13' - 9 1/2"	8x13 1/2"	2-#5	2-#5			#3@16"C/C	
TB-12	14' - 11 1/2"	8x16	2-#6	2-#6			#3@16"C/C	
TB-13	10' - 8"	8x28	2-#5	2-#5			#3@8"C/C	ADD 2-#5 CONT MID-DEPTH BARS EACH FACE



2 S-2.4 TYPICAL BENDING DIAGRAM FOR BEAMS AND ONE WAY SLABS
1/8" = 1'-0"

FOOTING SCHEDULE

MARK	SIZE	REINFORCING	REMARKS
CF24	2'-0"x1'-0"xCONT	3#5 CONT. BOTT AND #4@16" TRANSVERSE BOTTOM	
CF30	2'-6"x1'-0"xCONT	3#5 CONT. BOTT AND #4@16" TRANSVERSE BOTTOM	
CF42	3'-6"x1'-0"xCONT	4#5 CONT. BOTT AND #4@16" TRANSVERSE BOTTOM	
F30	3'-0"x3'-0"x12" DEEP	4#5 BOTT E.W.	
F2613	2'6'-0"x13'-2"x24" DEEP	#7@12" T & B E.W.	

BID SET

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15FTL015

CONSULTANT

MITHUN RANGWE
FL PE 81149
MARCH 16, 2018

CITY OF FORT LAUDERDALE
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NO.	DATE	REVISIONS
	03-19-18	BID SET

City of Fort Lauderdale

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CPZ

DRAWN BY:	MEL	DATE:	03-19-18
CHECK BY:	D.K	SCALE:	As indicated

SHEET NO. S-2.4 OF
TOTAL: 105

DRAWING TITLE:
SCHEDULES

DRAWING FILE NO. 4-138-84

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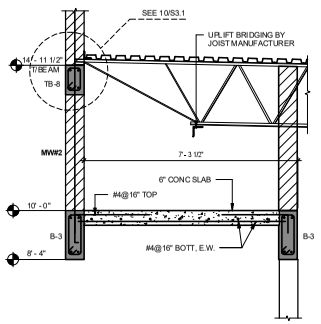
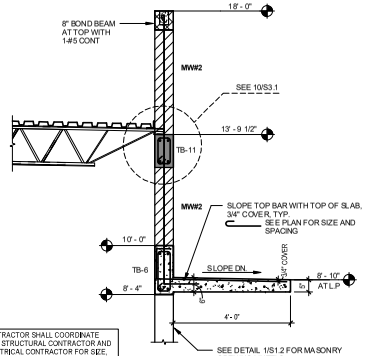
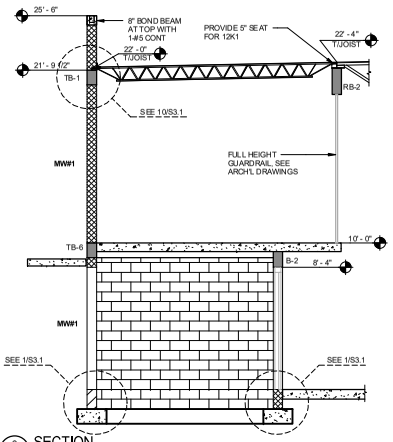


4 S-3.1 SECTION 1/2" = 1'-0"



3 S-3.1 SECTION 1/2" = 1'-0"



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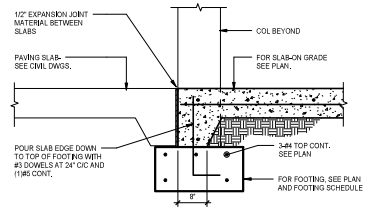
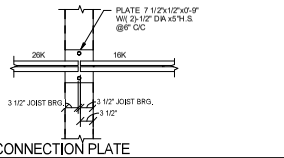
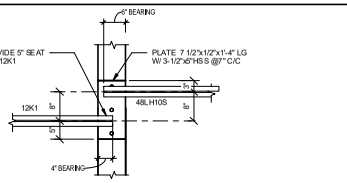


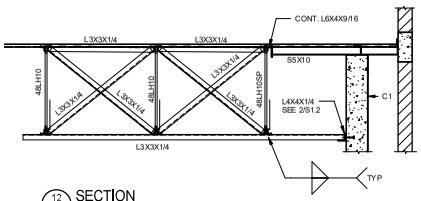
1 S-3.1 SECTIONS AT TYP. DOOR OPENING 3/4" = 1'-0"



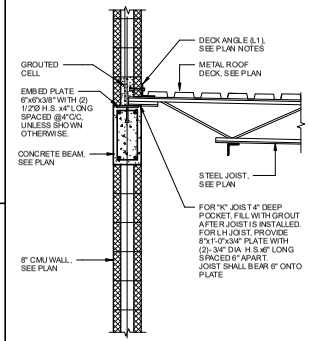
5 S-3.1 26K AND 16K CONNECTION PLATE 3/4" = 1'-0"



11 S-3.1 12K1 AND 48LH CONNECTION PLATE 3/4" = 1'-0"



12 S-3.1 SECTION 3/8" = 1'-0"



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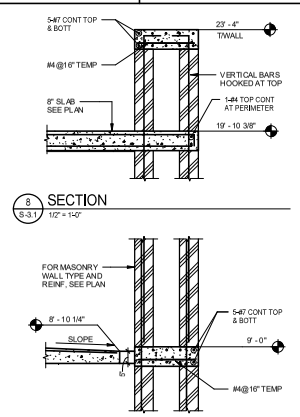
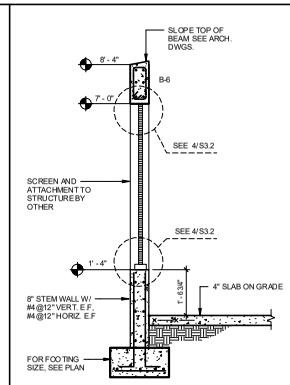
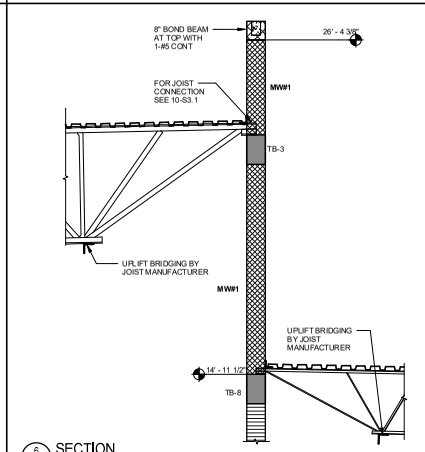


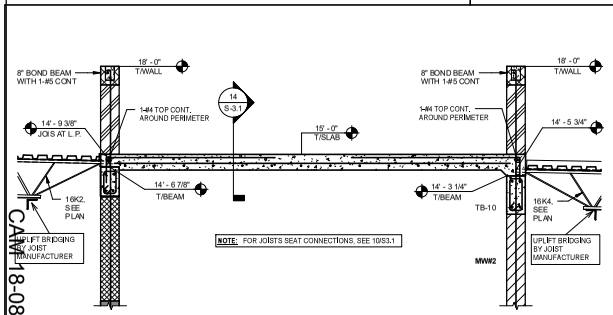
9 S-3.1 SECTION 1/2" = 1'-0"



7 S-3.1 SECTION 1/2" = 1'-0"



6 S-3.1 SECTION 1/2" = 1'-0"



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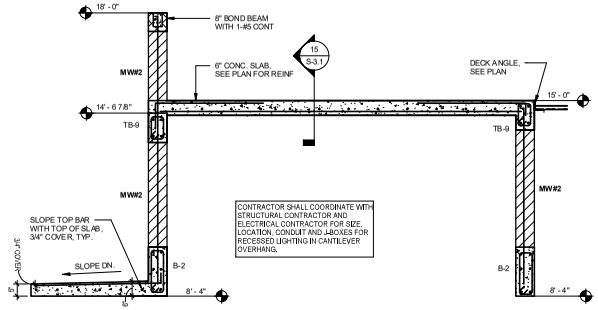
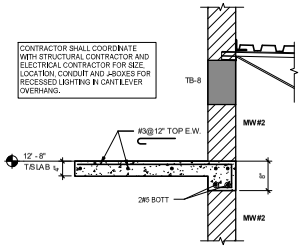


14 S-3.1 SECTION 1/2" = 1'-0"



13 S-3.1 SECTION 3/4" = 1'-0"

BID SET

CONSULTANT

MITH PRANGVE FLPE 891489 MARCH 15, 2018

CITY OF FORT LAUDERDALE
PUBLIC WORKS DEPARTMENT
ENGINEERING & ARCHITECTURE
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15FTL015

NO.	DATE	REVISIONS
	03-19-18	BID SET

City of Fort Lauderdale

PROJECT # 10909
FIRE STATION #8
1717 SW 1ST AVENUE
FORT LAUDERDALE, FLORIDA 33315

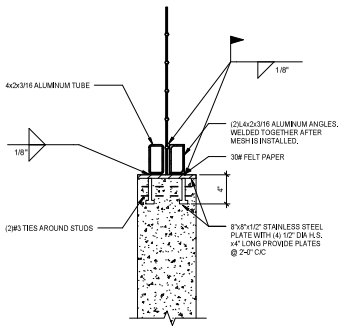
DRAWN BY:	MEL	DATE: 03-19-18
CHECK BY:	D.K	SCALE: As indicated

SHEET NO. S-3.1 OF TOTAL 105

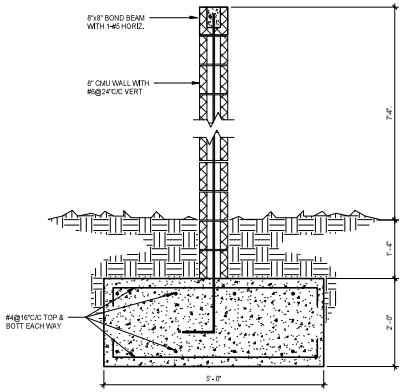
DRAWING TITLE: SECTIONS

DRAWING FILE NO. 4-138-84

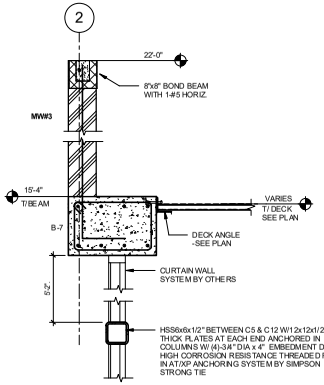
Bid 12139-983



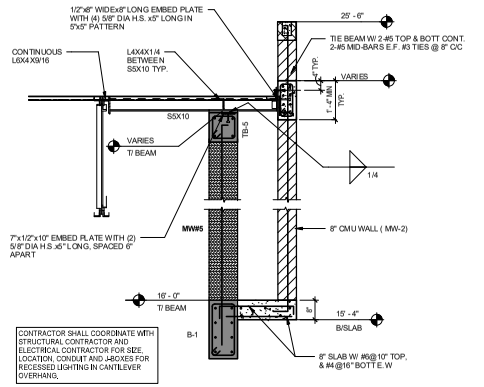
4 S-3.2 TYPICAL MESH ATTACHMENT AT OPEN PATIO
1 1/2" = 1'-0"



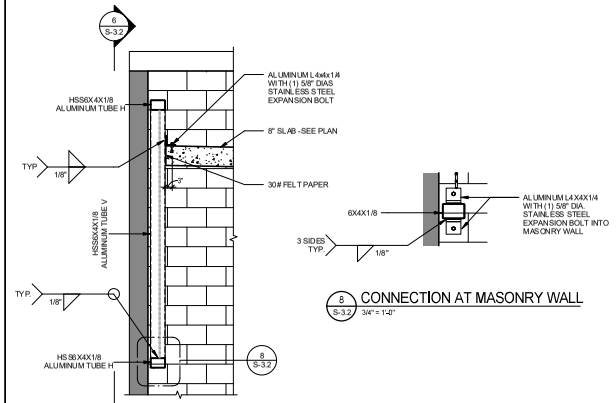
3 S-3.2 TYPICAL SECTION AT DUMPSTER
3/4" = 1'-0"



2 S-3.2 SECTION
3/4" = 1'-0"

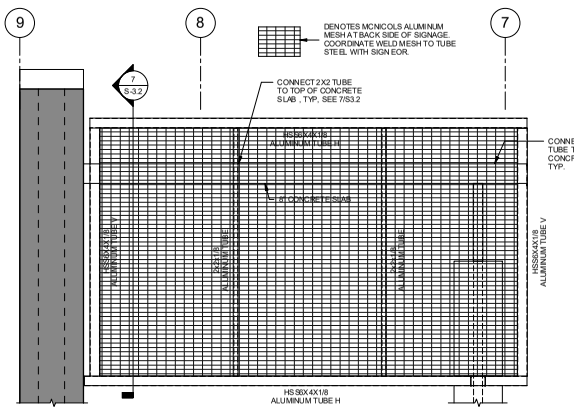


1 S-3.2 SECTION
1/2" = 1'-0"

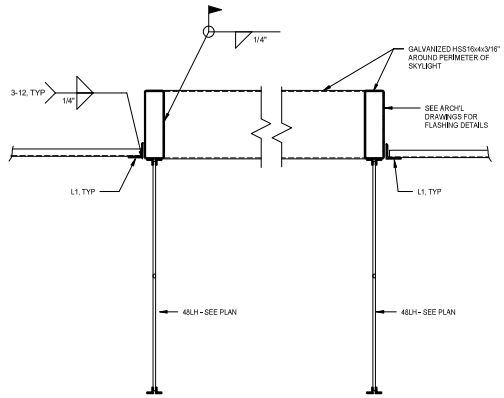


8 S-3.2 CONNECTION AT MASONRY WALL
3/4" = 1'-0"

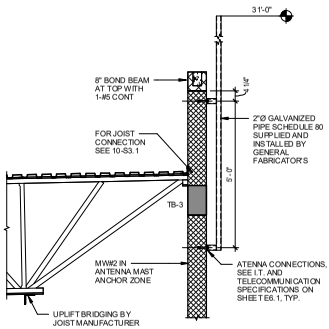
7 S-3.2 SECTION
1/2" = 1'-0"



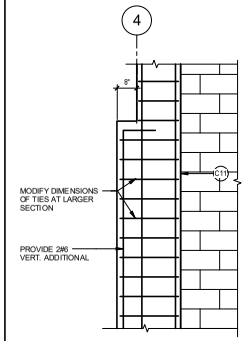
6 S-3.2 SIGN ELEVATION
1/2" = 1'-0"



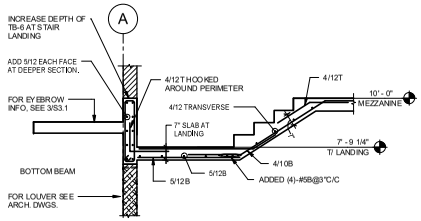
5 S-3.2 TYPICAL SECTION AT SKYLIGHT
1" = 1'-0"



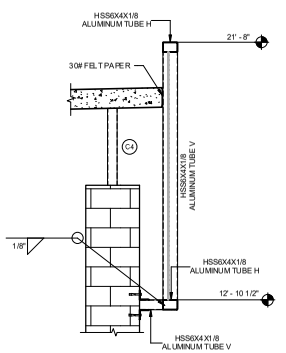
12 S-3.2 SECTION
1/2" = 1'-0"



11 S-3.2 COLUMN 11 AT OPEN PATIO
1/2" = 1'-0"



10 S-3.2 SECTION AT STAIR LANDING
3/8" = 1'-0"



9 S-3.2 SECTION
1/2" = 1'-0"

CONSULTANT

MITH BRANDWE
FL PE #81459
MARCH 15, 2018

CITY OF FORT LAUDERDALE
PUBLIC WORKS DEPARTMENT
ENGINEERING & ARCHITECTURE
100 North Andrews Avenue, Fort Lauderdale, Florida 33301

NO	DATE	BY	PROJ	DESCRIPTION
	03-19-18			BID SET

REVISIONS

City of Fort Lauderdale

PROJECT # 10909
FIRE STATION #8

CPZ ARCHITECTS, INC.
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CPZ

DRAWN BY: MEL
DATE: 03-19-18
CHECK BY: DK
SCALE: As indicated

SHEET NO.: S-3.2
OF
TOTAL: 105

DRAWING TITLE:
SECTIONS

DRAWING FILE NO.: 4-138-84

BID SET

TRC WORLDWIDE ENGINEERING
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15FTL015

Bid 12139-983

MECHAN CA N TES

1. THE C..NTRACT..R SHA.. FURN SH A.... AB..R..MATER A..S..AND E..U.PMENT NECESSAR.. FI R THE INSTA I ATI IN I F A C MP ETE SI STEM IN ACCI RDANCE WITH THESE DRAWIN.S THE F..R DA BU TION C DE 01 AND A ..THER APPLICAB E STATE C..UNIT AND I CA..I RD NANCES AND THE ATEST ADDIT..N IF THE FI ..WIN PUB..ICAT..NS..SMACNA-85_9...95\ASHRAE 15-01_9_01_6_-0_.NFPA 1.0-0 ..-0..1. 90A-0 90B-01\191-99 96-01\ANSI Z10.1-98 Z10.3-98 Z 1.8-9 Z 19.83-96

.. THE C..NTRACT..R SHA.. PA..A.. C..STS ..F PERM I..INSPECT..NS AND A..I..I THER C..STS INCIDENTA..I T.. THE C..MP..ET..N AND TESTIN..I..F TH..B W..RK.

3. THE C..NTRACT..R SHA.. T IS T THE S TE AND C..I RDINATE W..RK WITH THE THER TRADES.

I.. THE C..NTRACT..R SHA.. SUPP THE ARCH TECT WITH "AS-BUI T" DRAWIN S.

5. C..NTRACT..R SHA..I SUBMI..T..F..R APPR..VAL F..E S..C..P ES ..F MANUFACTURER S DRAWIN..S F..R EACH P ECE ..F E..U.PMENT AND C..NTRL..S INCLUDED IN C..NTRACT.

6. A..I MATER A..S SHA..I BE NEW..F U.S. MANUFACTURER ..F..I..I..D..UA..TI..A ..W..RK SHA.. BE PERFI RMED AT INDUSTR STANDARD UA TI E E B I CERTIFIED PR..FESSI INA S, A TIE/ U.PMENT SHA BE U IR ET STED, A TI NSTA TAT NS SHA C MP TWITH FMC 01 CH, 3 ENERA RE U ATI NS, BU..D.N..S I..CATED WITH N 3.000 FT FRI..M THE ..CEAN SHA.. UTI..ZE N..N-FERR US MATER A\S FI R A TI UTD I R E P SED SUPPI RTS STANDS FASTENERS ETC.

1 DUCTW RK

A. A I DUCTW RK SHA.. BE ..A.. AN ZED SHEETMETAL WITH SEA ED SEAMS AND J..INTS W.TH E..TERNA.. B..ANKET NSU AT..N N-6 MIN. THE C..NTRACTI R SHA.. PRI ..IDE A.. SHEETMETA DUCTW RK HAN ERS AU ..SUPP RT STEE ETC. A TI E DUCT SHA BE RATED C ASS TU -181 STED WITH META ZED INNER AND UTER F I NERS M IN, R-6 WITH A MA ..T TA II EN TH N TT EI CEED 15 FT. INSTA.. U..ISTED F IR P ENUM FI E B E DUCTW RK E B I W SUPP RTS AT EACH D FFUSER R TE AND RE ISTER E UA T I FE E FI W E B W AS MANUFACTURED B THERMAFI E T, A I META DUCTS SHA.. BE FABR CATED IN ACCI RDANCE WITH ATEST ED T IN IF S,M,A,C,N,A.

B. A.. UTD.. L R E..P..SED DUCTW..RK SHA.. BE ..A..AN ZED ,D..UB..E WA..I SHEETMETA ..E..UA.. TI..UNTED MI.. ..T.. ..T WITH MIN. R-8 INSU AT..N AND SEA ED SEAMS AND J..INTS. THE C..NTRACTI R SHA.. PRI ..IDE A.. SHEETMETA DUCTW..RK HAN ERS AU ..SUPP RT STEE ETC. PRI IDE S..ID NER AND CA AT WITH TW CA TS F C RR S..N-RES/STANT PAINT R E ..U..A ENT. PRI IDE PT NA III WNER S DEC S I N A UNI NUM IR STAN ESS STEE C NSTRUCTI N.

C. A.. E DUCT SHA BE RATED C ASS U -181 STED WITH META ZED INNER AND UTER E NERS M IN, R-6 WITH A MA ..T TA II EN TH N TT EI CEED 15 FT. FI E B E DUCTW RK E B W SUPP RTS AT EACH D FFUSER R TE AND RE ISTER E UA T I FE E FI W E B W AS MANUFACTURED B THERMAFI E T,

D. A.. METAL E HAUST MAKE-UP R THERW.SE DUCTS NSTA ED N ..CAT NS WHERE DEWPI NT C.ND..T..NS CAN CCUR NS DE THE DUCT SHA.. BE E..TERNA..I..I NSULATED WITH R-6 MIN.

E. A.. AIR C..ND T..IN N..I DUCT W..RK ENC..ISED IN A CHASE SHA.. BE SHEETMETA ..I A..AN ZED WITH E..TERNA.. B ANKET NSU AT..N N-6 MIN, PR ..IDE INNER LINER F..R THE FIRST 10 FEET ..F THE MA.R TRUNKS C..NNECTI N.. TI. THE UN T AND .NC..UD N..THE FIRST E..B..W ..R AS NDICATED IN THE PI ANS,

THE C..NTRACT..R SHA.. PRI ..IDE A SHEETMETA DUCTW..RK HAN ERS AU ..SUPP RT STEE ETC. A TI META DUCTS SHA BE FABR CATED N ACCI RDANCE WITH ATEST ED T IN F S,M,A,C,N,A.

SPECIA..N..TE.

SMACNA DUCT PRESSURE CI ASSES BASED I N I PERATIN PRESSURE ARE 1/ T I T 3 F E AND 10. EACH DUCT S STEM SHA I BE C NSTRUCTED F R THE SPEC F C DUCT PRESSURE CLASS SHI WN IN PI ANS,

WHERE N PRESSURE C ASS IS SPEC FIED F R C NSTANT L..UME S..STEMS ..I WW. ..- PRESSURE C ASS S THE BASIS I F C MP IANCE WITH THE SMACNA STANDARDS RE ARD ESS

IF E I CT , WHERE NI PRESSURE C ASS S SPEC F ED FI R I AR AB E II UME S STEMS I ..*

W. PRESSURE C ASS IS THE BASIS I F C MP IANCE WITH THE SMACNA STANDARDS FI R DUCTW RK UPSTREAM I F "AI B" ES, A I DUCTW RK SHA I BE SEA ED T SMACNA "HI AC DUCT C NSTRUCTI IN STANDARDS" FI R TS PRESSURE C ASS SEA IN METHI DS.

A I E HAUST DUCTS AND UTSIDE AIR DUCTS SHA BE IA I AN ZED SHEET META I

8. WITH SEA ED SEAMS AND J..INTS, A UTSIDE A R DUCT SHA BE INSULATED WITH E..TERNA.. B ANKET NSULAT..N N-6 MIN, AT META E HAUST MAKE-UP I R THERWISE DUCTS NSTA ED N ..CAT NS WHERE DEWPI NT C.ND..T..NS CAN CCUR NS DE THE DUCT SHA I BE E..TERNA.. I NSULATED WITH R-6 MIN.

9. UTSIDE A R NTAKES SHA BE SCREENED WITH A CI RR S T N RES STANT MATERIA N T AR ER THAN 1/..I MESH, L..IA INTAKES SHA..LIN..IT BE TAKEN FR..M A..I..CATL N C..I..SER THAN 10 FT. FRI M AN CHIMNE I ENT UT ET R SAN TAR SEWER ENT UT ET UN ESS SUCH ENT S N IT ESS THAN TI NCHES AB I E THE UTS DE A R ENT, UTSIDE A R INTAKE ENTS I..CATED I N R..I RS WI.. BE FRI PERI..I MARKED W.TH A UN..ERSAL MARKIN..I "INTAKE", PERMANENTL.. ATTACHED PER FMC 1.01..SEC. .01,5.1

10. DUCT S ZES SH..WN ARE INS DE DIMENSI..NS.

11. A..I AIR DE..CES D IFFUSERS RE STERS AND R..ILES SHA..I BE A..I..A..UM NUM C..NSTRUCTI N W.TH E..F..ISED SURFACE I FF WH TE BAKED ENAME..IN IGH I R AS SPECIFIED B ARCHITECT, DE CES SHA BE AS SPECIFIED IN E UA T I TUS R METAL A IRE, PRI DE PP ISED B ADE DAMPERS AT A TI D FUSERS AND RE STERS AS ND CATED IN P ANS, PRI DE DA ANC N I DAMPERS FI R A I SUPP I AND RETURN D FFUSERS AND RE STERS T ENSURE C MPI ANCE WITH FMC 01 PAR. 601.1 AND PAR. 603.15 FI R BA ANCED A R FI W.

13. TEMPERATURE C NTRI SITHERM STAT - C TI R WHITE.

A. SHA BE C MB NAT N C TI N HEATIN SYSTEM C F WHERE A C WED BY C DE W TH U ARMAF E NSU AT N, PRI DE APPR ED WATER E EL DETCT R SWITCHES, THERM STAT C PERATED A C NTR S SHA BE INTERLATED T THE JI HNS..IN C..NTR..I..S METAS..IS BU..DIN C..NTR..L S..STEM

13. THERM STAT TI CAT IN SHA BE APPR ED B I WNER EN NEER AND USER BEFI RE NSTA T AT IN, INSTALLTHERM STAT S T S, 5 A F, PER A.D.A.RE..U.REMENTS WHERE APP CAB E, MECHANICA IC NTRACT IR SHA C I RD NATE WITH E ECTR CA CI NTRACTI R A I RE U.REMENTS FI R JUNCTI N B ES C NDUITS/C NTR WIRIN I PI WER ETC, AND DEFINE RESPONSIBILITIES AND SC..PE IF WI RK FI R EACH TRADE PR..I R T.. AN..I PURCHASIN.. R NSTA..I AT..IN.

WHENEVER THERE ARE M RE THAN INE SENS R IR THERM STAT/SIDE B S DE/THE SHA TH BE AN..IED T, ETHER WITH THE SAME C NTR ER PLATE WHERE ER PI SS B E. C NTRACTI R SHA C I RD NATE TH S SSUE WITH ARCHTECT/ WNER PR I R T I NSTA I AT N AND SHA IBR N I AN D SCREPANC I TI THE EN NEER S ATTENTI IN.

AN INDEPENDENT C..MM..SS..I N N..I AI..ENT HAS BEEN RETAINED T ENSURE THAT THIS PR JECT S C MP ETED ACC RD NI T I ..WNER RE..U.REMENTS, C..MM.SS..I NED S.STEMS SHA ..INCLUDE H..AC..R..I..U HT.N..I..U HTIN..I C..NTR ..I AND D..MEST..C H T WATER, A T C NTRACTI RS WITH SC..PE F IR THESE S..STEMS SHA.. BE RESPONSIBLE F..R CARRYIN..I..UT D CUMENTATI N AND TEST N I ACTI T ES AS D RECTED BY C..MM.SS NIN A IENT.

MECHAN CA SHEET NDE

SHEET L	DESCR PT..N
M0.1	MECHAN CAL N..TES..LEGEND L..NDE..
M .1	1ST MECHAN CAL FI..R P AN
M .1	MEZZAN NE AND R..IF MECHAN CA I P AN
M6.1	MECHAN CAL SCHEDU ES
M6.1	CI NTRI IDA IRAM
M6.3	HI TD P'AN
M .1	MECHAN CAL DETA ..S
M .1	MECHAN CAL DETA ..S

MECHAN CA E END

SUPP T A R CE TIN DIFFUSER

RETURN A R CE TIN R E

WA TIT U ER / WATT D FFUSER.

NEAR D FFUSER

MANUA T UME C NTR DAMPER

M..T..R ZED DAMPER

FI RE DAMPER

REDUCER L R INCREASER

F E DUCT

EI ST NI F E DUCT

E ST N DUCTW RK

UP SUPP L ..UTS DE A R SECT N UP

DN SUPP T C UTS DE A R SECT N DN

UP RETURN L R E..HAUST DUCT SECT N UP

DN RETURN R E HAUST DUCT SECT N DN

RI UND UP

SH TE TAP DAMPER

R FTP UN T

S..LEN.. D ..A..E.

RE RE CATE

CE..NL R N..NE E..HAUST FAN

STANDARD S.NL..E DUCT ..L T B ..- 3.0" SER GE C EARANCE

THERM STAT

HUM D.STAT

REFRI ERANT SENS R

STAT.C PRESSURE SENS..R

DUCT SM KE DETECT R

AP - ACCESS PANE

AD - ACCESS D R

I UME C NTR I DAMPER

M D MANUA PERATED DAMPER

SUPP L..AIR DIFFUSER R TIC DES NATI N

RETURN/E HAUST A R DIFFUSER R TIC DES NATI N

LAR AB..E FRE..I DR..E C..NTR..L PANE..

SUPP ..AIR

RETURN A/R

U/C D..L R UNDER CUT

E UIPMENT TA

ARTI- UTSIDE A R R..LF TL P UNIT

RTU- R TIF T P UNIT

"A" - I AR AB E UME B

EF - E HAUST FAN

N TA S MB I S MA APP T THESE P ANS

H AC ABBRE AT N E END

AC	A R C NDITI NIN
AFF	ABI E F N SH F I R
BDD	BACK DRAFT DAMPER
CD	C NDENSATE DRA N
C P	CI EFFIC ENT F PERFORMANCE
DB	DRY BU B
DIA	DIAMETER
E	EL..ST..N..T.. REMA..N
EER	ENER..I EFFICIENCY RATI
EDH	E ECTR C DUCT HEATER
EF	E HAUST FAN
ESP	EXTERNA STATIC PRESSURE
F	FILTER
FD	FIRE DAMPER
F A	FU..I..I AD AMPS.
FMS	FI W MEASURIN STATI N
IP	NTE RATED PART- TIAD TA UE.
MCA	MIN MUM C RCUIT AMPS (F..R W.RE S.ZI N..I
M D	MANUA I PERATED DAMPER
MI CP	MA IMUM I ERCURRENT PR TECTI N DE ICE AMPS
NC	N..I SE CR TER A
O/A	OUTS DE A R
P BD	PI STE B ADE DAMPER
PD	PRESSURE DR..P.
R	EI ST NI T S BE RI CATED
R/A	RETURN A/R
R A	RATED LL AD AMPS.
SEER	STANDARD ENERI..I EFFICIENCY RATI
TSP	TI TA STAT C PRESSURE
U D	I UME C NTR I DAMPER
U/D	.AR/AB..E FREQUENC.. DR..E
WB	WET BU B

NOTE: N T A T SI MB I S MA APPI TI THESE PI AN.

CONSULTANT

CITY OF FORT LAUDERDALE
PUBLIC WORKS DEPARTMENT
ENGINEERING & ARCHITECTURE
100 North Andrews Avenue, Fort Lauderdale, Florida 33301

CPZ ARCHITECTS, INC.
120 WEST HILLSBORO BOULEVARD
PLANTATION, FLORIDA 33317
PHONE (954) 792-8525 FAX: (954) 357-0199
AA 26000685 WWW.CPZARCHITECTS.COM

REVISIONS

NO.	DATE	BY	CHK'D	DESCRIPTION
	03-14-18			BID SET

PROJECT # 10909
FIRE STATION #8

FORT LAUDERDALE
617 SW 1ST AVE

DRAWN BY: KP/JH
DATE: 09-16-16
CHECKED BY: CPZ
SCALE:

SHEET NO. M0.1
OF
TOTAL SHEETS: 105
DRAWING TITLE:
DRAWING FILE NO. 4-138-84

MECHANICAL NOTES

ISSUED FOR PERMIT ONLY 2018-04-17

KAMM CONSULTING PROJECT # 2017-0738
PROJECT MANAGER: JOHN MAYR

KAMM CONSULTING
1408 Orchid Drive
Fort Lauderdale, Florida 33304
954.448.0792
PRINCIPAL
Brandon Kamm
Florida License #0078252
02-09-18
date

CONSULTANT

CITY OF FORT LAUDERDALE
PUBLIC WORKS DEPARTMENT
ENGINEERING & ARCHITECTURE
100 North Andrews Avenue, Fort Lauderdale, Florida 33301

REVISIONS				
NO.	DATE	BY	CHK'D	DESCRIPTION
	05-10-18			BID SET

CPZ ARCHITECTS, INC.
1717 SW 1ST AVE
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PHONE (954) 763-8525 FAX (954) 537-4599
AA #26000685 WWW.CPZARCHITECTS.COM

PROJECT # 10909
FIRE STATION #8

DRAWN BY: KP/JH
DATE: 04-16-16
CHECKED BY: CPZ
SCALE:

SHEET NO. M2.1
OF
TOTAL SHEETS: 105
DRAWING TITLE:
DRAWING FILE NO. 4-138-04

MECHANICAL PLAN

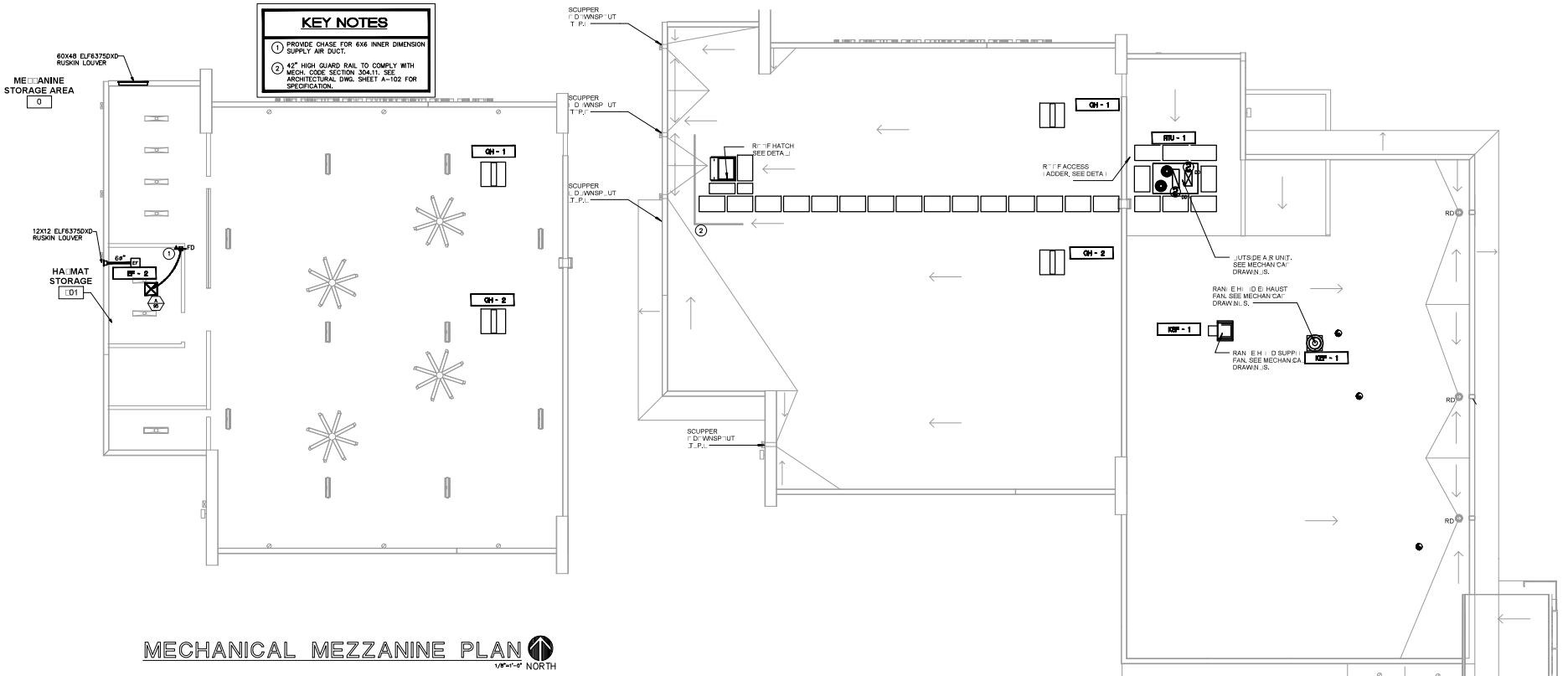
KAMM CONSULTING, INC.
KAMM CONSULTING PROJECT #
PROJECT MANAGER: JOHN KAMM
1505 PALM AVENUE
WINTER PARK, FLORIDA 32789
PH: (407) 647-1818 FAX: (407) 645-0752
E-MAIL: JOHN@KAMMCONSULTING.COM
CERTIFICATE OF AUTHORIZATION #: EB 0000389
ADDENDA
PERMIT SET

KEY NOTES

1. AUTOMATIC OPERATION OF THE SYSTEM SHALL NOT REDUCE THE VENTILATION AIRFLOW RATE BELOW 0.05 CFM PER SQUARE FOOT OF FLOOR AREA THE SYSTEM SHALL BE CAPABLE OF PRODUCING A VENTILATION AIRFLOW RATE OF 0.20 CFM PER SQUARE FOOT OF FLOOR AREA.
2. GAS WATER HEATER INTAKE AND EXHAUST VENT.
3. C: SENS R T: BE: LOCATED AT 5 FEET AB: E FLOOR LEVEL. T: T-STAT: SHALL BE LOCATED AT 5 FT TBE: WFN SHED DEI IN:.
4. DUCT UP T: HAZMAT ST: RAGE AREA.
5. PRE: JBE SPEA: METX: DUCT WORK.
6. SP-RA: TI: RECTAN: U AIR DUCT TRANS T: N:
7. MECHANICA: C: UNTRACT R TI: C: RDINATE WITH ALL MECHANICAL EQUIPMENT REQUIREMENTS AND PUR: LE PANEL R RE: U RED.
8. EQUIPMENT T: C: IMPO: WITH U DO SEC: :S-18: :S.
9. EQUIPMENT MA: NUT BE AN: OCCUPIED THAN 5 FEET ABOVE FINISHED FLOOR.

KEY NOTES

1. PROVIDE CHASE FOR 6X6 INNER DIMENSION SUPPLY AIR DUCT.
2. 42" HIGH GUARD RAIL TO COMPLY WITH MECH. CODE SECTION 304.11. SEE ARCHITECTURAL DWG. SHEET A-102 FOR SPECIFICATION.



MECHANICAL MEZZANINE PLAN
1/8"=1'-0" NORTH

MECHANICAL ROOF PLAN
1/8"=1'-0" NORTH

CONSULTANT

CITY OF FORT LAUDERDALE
PUBLIC WORKS DEPARTMENT
ENGINEERING & ARCHITECTURE
100 North Andrews Avenue, Fort Lauderdale, Florida 33301

REVISIONS

NO.	DATE	BY	CHK'D	DESCRIPTION
	05-14-18			BID SET

City of Fort Lauderdale

PROJECT # 10909
FIRE STATION #8

CPZ ARCHITECTS, INC.
110 WEST DRONFIELD BOULEVARD
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PHONE (954) 792-8525 FAX: (954) 337-0759
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1717 SW 1ST AVE
FORT LAUDERDALE, FL 33315

DRAWN BY: KP/JH
DATE: 09-16-16
CHECKED BY: CPZ
SCALE:

SHEET NO. M2.2
OF
TOTAL: 105
DRAWING TITLE:
DRAWING FILE NO. 4-138-84

MECHANICAL ROOF PLAN

ISSUED FOR PERMIT ONLY 12-09-17

KAMM CONSULTING PROJECT #: 2017-0738
PROJECT MANAGER: JOHN MAYR

KAMM CONSULTING
1408 Cr□□□A□□□□
F□□P□□□□ FAX: (□□□) 954.448.0792
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C□□□□□□□□□□□□□□□□□□□□□□□□□□□□

PRINCIPAL
Br□□□□, Br□□□ Fl□□□□, □□□□98252

02-09-18
□□□

Bid 12139-983

ROOFTOP A/C EQUIPMENT SCHEDULE

SYSTEM	A/C UNIT TAG	RTU-1	
	MANUFACTURER	CARRIER	
	MODEL	ULTRADRY UDC-HC09M4S018C00A-GY	
	TOTAL SENSIBLE CAP. MBH.	41.3	
	TOTAL COOLING CAP. MBH.	88.8	
	ENT. AIR TEMP D.B./W.B. °F	80°/67°	
	LEAV. AIR TEMP D.B./W.B. °F	–	
	SUPPLY AIR CFM	1000	
	OUTSIDE AIR CFM	450	
	VOLTAGE	208/3ø/60	
	MCA/MOCP	49.0/50.0	
	SEER/EER	–/12.2	
	OPERATING WEIGHT LBS.	1117	
	DIMENSIONS L x W x H (IN.)	88X60X50	
	–	–	
COND. SECTION	REF./LBS.	R-410A/–	
	NOMINAL TONNAGE/STAGES	7.5/2	
	NO. OF COMPRESSORS	2	
	COMP. R.L.A. EACH	13.6/13.3	
	NO. OF OUTDOOR FANS	2	
	FAN FLA. EACH	1.5 EA	
	NOTES	1–14	
EVAP. SECTION	INDOOR FAN TYPE	FC	
	FAN E.S.P. (IN. W.G.)	0.5"	
	FAN H.P./B.H.P.	0.82 BHP	
	FAN F.L.A.	5.2	
	COIL ROWS/FPI	–	
	HEATER TYPE	ELECTRIC	
	HEATER K.W. @ RATED VOLTAGE	16.0 @ 208V/3ø	
	NO. OF STEPS	2	
	FILTER TYPE/EFF.		

NOTES:
1. UNITS SHALL BE "ARI" RATED. APPROVED EQUIVALENT: AAON, LENNOX, McQUAY, TRANE, YORK
2. PROVIDE FACTORY BUILT ROOFCURB 14"(OR 20" IF NECESSARY) HIGH, INSTALL UNIT LEVEL WITHIN PRESCRIBED TOLERENCES (SEE DETAIL)
3. PROVIDE COMPRESSOR 5–YEAR WARRANTY
4. PROVIDE SLOPED CONDENSATE DRAIN PAN AND INTERNAL TRAP.
5. PROVIDE HOT GAS REHEAT.
6. PROVIDE MOTORIZED/MODULATING OUTSIDE AIR DAMPER
7. PROVIDE SERVICE CLEARANCES PER MFGR'S RECOMMENDATIONS.
8. PROVIDE SINGLE POINT POWER ENTRY.
9. PROVIDE FACTORY MOUNTED FUSED DISCONNECT, COORDINATE PRIOR TO PURCHASING
10. PROVIDE VIBRATION/SOUND ISOLATION CURB.
11. PROVIDE MOTOR OVERLOAD AND THERMAL PROTECTION.
12. PROVIDE MATCHING PROGRAMMABLE THERMOSTAT.
13. PROVIDE ELECTRONIC CONDENSATION CONTROL SYSTEM FOR DRAIN PAN(S).
14. PROVIDE ELECTRIC HEATER WITH MIN. 2 STAGES IF OVER 10 KW CAPACITY.

GRAVITY INTAKE HOOD SCHEDULE

TAG	MANUF. & MODEL	THROAT SIZE (IN x IN)	WEIGHT (LBS)	CFM	STATIC P.D. (IN.W.G.)	DIMENSIONS (LxWxH)	NOTES
GH–1,2	S&P BGH–I	20X16	46	1700	.07	33X29X15	1,2

(*) APPROVED EQUAL MANUFACTURER: PENN, COOK, ACME

GENERAL NOTES:
1. PROVIDE BIRD & INSECT SCREEN
2. PROVIDE WITH FACTORY ROOF CURB

SPLIT SYSTEM EQUIPMENT SCHEDULE

CONDENSING UNIT

CU TAG	MANUFACTURER & MODEL	NOMINAL TONNAGE	CAP. STAGES	(S)EER	REFRIG./LBS	LIQ./SUCT. LINES	NO. FANS	FAN FLA(EA)	NO. COMP.	COMP.RLA(EA)	VOLTAGE/PH	MCA/MOCP	WEIGHT (LBS)	L x W x H (IN)	NOTES
CU–1A1B	CARRIER/ 38VC–A4C660H3F–UL	14	0–100%	11.0	R–410A	5/8–1 1/8	1	VARIABLE	3	VARIABLE	208/3/60	69/80	838	47.6X30.7X72.8	1–13
CU–2,3	UDC–AC36P4M0D D0360DA–V01	1.5	1	16	R410A/–	3/8x3/4	1	0.50	1	9.0	208/1/60	19/30	125	26X26X29	1–8,17
CU–4,5	CARRIER/38MAQB12R–––1	1.0	1	(16)	R410A/2.8	1/4:3/8	1	0.17	1	11.20	208/1/60	15/25	75	33X13X21	1–8

AIR HANDLING UNIT

AHU TAG	MANUFACTURER & MODEL	TOTAL MBH	SENSIBLE MBH	TOTAL CFM	O/A CFM MIN–MAX	E.S.P.("W.G.)	ENT. DB/WB	LEAV. DB/WB	ROWS/FPI	FAN HP/FLA	HEATER KW	VOLTAGE/PH	MCA/MOCP	WEIGHT (LBS)	L x W x H (IN)	NOTES
AHU–1–7,10 11,13,14,20	CARRIER/APD091M42UL	7.5	–	263	–	–	80/67	–/–	N/A	25 WATTS	N/A	208/1	0.5/15	33	23X23X10	1–15,16,18
AHU–8,9,12, 15,17,18	CARRIER/MMU–AP0122	12.0	–	330	–	–	80/67	–		60 WATTS	N/A	208/1	0.5/15	35	11X23X23	1–14,16,18
AHU–2,3	UDC–AC36P4M0D 0D0600A–V01	27.2	14.6	500	250	1.0	80/67	–	–	0.75/6.80	10	208/1	31.2/35.0	335	25X23X67	1–11,17
AHU–4,5	CARRIER/40DVQ012	11.8	–	341	–	–	80/67	–	2/16	0.020/0.38	–	208/1	POWER FROM OUTDOOR UNIT	20	30X8X11	1–8

NOTES:
1. UNITS RATED PER ARI 210, 240 AND 270, APPROVED EQUAL: CARRIER, TRANE
2. PROVIDE WITH ELECTRIC EXPANSION VALVES, LIQUID LINE FILTER DRYER AND MULTI–USE SERVICE VALVES
3. PROVIDE COMPRESSOR WITH CRANKCASE HEATER AND MIN. 5–YEAR WARRANTY
4. PROVIDE HIGH AND LOW PRESSURE CONTROL AND OVER TEMPERATURE PROTECTION.
5. PROVIDE WEATHERPROOF ELECTRIC CONTROLS AND SINGLE SIDE SERVICE ACCESS
6. SIZE AND INSTALL REFRIGERANT PIPING PER MANUFACTURER RECOMMENDATIONS.
7. PROVIDE DISCONNECT BY ELECTRICAL CONTRACTOR FOR A.H.U., COORDINATE PRIOR TO PURCHASING
8. PROVIDE DISCONNECT BY ELECTRICAL CONTRACTOR FOR C.U., COORDINATE PRIOR TO PURCHASING
9. PROVIDE ZONE PROGRAMABLE THERMOSTAT AND A MULTIPLE ZONE CONTROLLER WITH CONTROLS AND
10. PROVIDE REFRIGERANT LINES SIZE AS RECOMMENDED BY MANUFACTURER, NOT TO EXCEED RECOMMENDED EQUIV. LENGTH FOR LONGER RUNS COORDINATE WITH MANUFACTURER PRIOR TO PURCHASE OR ANY WORK. MECHANICAL CONTRACTOR TO PROVIDED COMPLETE PIPING SHOP DRAWINGS OF SANYO SYSTEM PRIOR INSTALLATION. PROVIDE "BALL STYLE" ISOLATION VALVES FOR LIQUID AND SUCTION LINE AT EACH AHU.
13. PROVIDE PERMANENT WASHABLE FILTER FOR AHU MINIMUM MERV 6.
14. PROVIDE THROWAWAY, MIN. 30% EFF. MERV 6 FILTER AND VIBRATION ISOLATION FOR AHU
15. CONTRACTOR TO MAKE A FILTER TRACK.
16. THERMOSTAT FOR EACH UNIT SHALL BE METASYS BACNET COMPATIBLE.
17. PROVIDE HOT GAS REHEAT.
18. PROVIDE INTEGRATED MANUFACTURE SUPPLIED CONDENSATE PUMP.

COORDINATION NOTE:
MECHANICAL CONTRACTOR SHALL COORDINATE ALL ELECTRICAL REQUIREMENTS AND ACCESSORIES WITH ELECTRICAL CONTRACTOR PRIOR TO PURCHASING AND INSTALLATION AND SHALL BRING ANY DISCREPANCIES TO THE ATTENTION OF ENGINEER

FAN SCHEDULE

SELECTION DATA					FAN DATA			MOTOR DATA				GENERAL DATA				
TAG	SERVICE AREA	MANUF.(*)	MODEL	CONFIG.	CFM	ESP ("WG)	SONES	HP	RPM	DRIVE	VOLTAGE	WEIGHT (LBS)	DIMENSIONS L"xW"xH"	OPENING L"xW"	CONTROL	ACCESSORIES
EF–1	APPARATUS AREA	GREENHECK	BDF–120	INLINE	3100	.5	11.7	.87	727	BELT	208/3/60	142	33X27X20	*	INTEGRATE WITH GAS DETECTION SYSTEM	1–8 & 10–15
EF–11	JANITOR	GREENHECK	SP–B70	CEILING	50	.2	1.2	45 WATT	675	DIRECT	120/1/60	9	14X12X7	*	LIGHT INTERLOCK	*
EF–3,4	TURNOUT GEAR /DECON	GREENHECK	SP–A200	CEILING	200	.2	1.4	48 WATT	900	DIRECT	120/1/60	10	14X12X8	*	INDEPENDENT SWITCH	*
EF–5,6	STAIR WELL	GREENHECK	SE1–8	SIDEWALL	200	.125	3.5	55 WATT	1350	DIRECT	120/1/60	–	13X13X7	*	LIGHT INTERLOCK	*
EF–7–10 EF–2	RR/ELECTRICAL /HAZMAT	GREENHECK	SP–B110	CEILING	100	.375	2.7	80 WATT	950	DIRECT	120/1/60	10	14X12X8	*	LIGHT INTERLOCK INDEPENDENT SWITCH	*

(*) APPROVED EQUAL MANUFACTURER: COOK, TWIN–CITY, ACME, PENN

ACCESSORIES NOTES:
1. PROVIDE GRILLE COLOR PER ARCH. SPECS
2. PROVIDE BACK DRAFT DAMPER
3. PROVIDE FACTORY MOUNTED DISCONNECT SWITCH AND INTEGRAL THERMAL OVERLOAD PROTECTION, COORDINATE WITH ELECTRICAL CONTRACTOR PRIOR TO ANY PURCHASING.
4. PROVIDE LOUVER.
5. LOCATE BACK DRAFT DAMPER AT DISCHARGE
7. PROVIDE MINIMUM TWO BELTS
8. PROVIDE BIRD SCREEN
9. PROVIDE SPEED CONTROL.
10. PROVIDE WEATHERHOOD DRAIN AND CORROSION COATING.
11. SUPPORT FROM STRUCTURE COMPLETE WITH VIBRATION ISOLATORS
12. PROVIDE MOTOR COVER
13. PROVIDE EMERGENCY POWER

GENERAL FAN NOTES:
a. MOTOR STARTERS, DISCONNECTS (IF NOT FACTORY PROVIDED) AND ALL EQUIPMENT NORMAL POWER AND EMERGENCY POWER WIRING BY ELEC. CONTRACTOR
b. ALL CONTINUOUS–DUTY MOTORS SHALL BE PROVIDED WITH OVERLOAD PROTECTION ACCORDING TO NATIONAL ELECTRICAL CODE PAR. 430–32.
c. FIELD ADJUST OPENINGS WITH STRUCTURE.
d. ALL OUTDOOR EQUIPMENT SHALL COMPLY WITH LOCAL ZONING NOISE ORDINANCE OR NOT EXCEED A NOISE LEVEL OF 65dB AS MEASURED RADIALLY 30 FT. FROM THE EQUIPMENT IN ALL DIRECTIONS.
e. COORDINATE WITH ELECTRICAL CONTRACTOR BEFORE BIDDING OR ORDERING ANY EQUIPMENT.
f. SEE PROJECT PLANS AND SPECIFICATIONS FOR OTHER FIELD SUPPLIED ITEMS AND ADDITIONAL INFORMATION.
g. ALL FANS ON ROOF SHALL BE PAINTED AS PER ARCHITECTURAL SPECS.
h. EF–2,3,4 TO BE ON INDEPENDENT SWITCH.

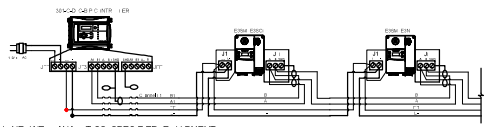
OUTSIDE AIR CALCULATIONS

(PER TABLE 403.3, FLORIDA BUILDING CODE 5TH EDITION (2014) MECHANICAL

	AREA SERVED OR UNIT TAG	NET OCCUPIABLE AREA SQ.FT.	AREA OUTDOOR AIR RATE (RA) CFM/FT^2	TOTAL NO. OF PEOPLE	PEOPLE OUTDOOR AIR RATE (RP) CFM/PERSON	DEFAULT VALUES OCC. DENS. P/ 1000FT^2 FL. AR.	TOTAL NO. OF PEOPLE FROM DEFAULT VALUES	COMBINED OUTDOOR AIR RATE CFM/PERSON	TOTAL CFM O/A REQUIRED	TOTAL CFM O/A PROVIDED	NOTES
	OARTU–1 –	3833	0.06	10	5	–	–	230+50	280	450	SEE NOTES
	AHU–2 –	362	0.06	10	5	–	–	22+50	72	250	SEE NOTES
	AHU–3 –	222	0.06	2	5	–	–	13+10	23	250	SEE NOTES
	TOTAL	4417.0	–	1	–	–	–	–	375.0	585.0	–

NOTES:
1. CALCULATIONS ARE BASED ON ESTIMATED MAX. OCUPPANCY RATES PER ARCHITECTURAL PLANS AND TABLE 403.3 FLORIDA BUILDING CODE 5TH EDITION (2014) MECHANICAL.
2. FOR OFFICE AND OTHER SIMILAR AREAS CALCULATIONS ARE BASED ON CONTINUOUS OCCUPANCY.

HVAC CONTROLS SYSTEM



HVAC EQUIPMENT

PROVIDE A COMPLETE DIRECT DIGITAL CONTROL (DDC) SYSTEM FOR ALL HVAC EQUIPMENT SPECIFIED IN THIS CONTRACT. COORDINATE WITH MANUFACTURER'S REPRESENTATIVE FOR ALL EQUIPMENT SPECIFIED IN OTHER SECTIONS OF THE SPECIFICATIONS.

APPARATUS BAY CONTROLS – DETECTION SYSTEM – EQUIPMENT AND EQUIPMENT
1. 30–GAL CO–CO DETECTION CONTROLLER W/ DATA LOGGER AND BACNET/IP OUTPUT
2. ESSM ESP–UNIT NETWORK SENSORS
3. ESSCO–CO SENSOR W/ CARTRIDGE
4. ESN–UNIT SENSOR W/ CARTRIDGE
5. STASR (10) DACH HANGING SENSOR
6. 500 AMP POWER SUPPLY

SEQUENCE OF OPERATIONS

- CARBON MONOXIDE DETECTION SYSTEM SHALL BE SET AT 50 PPM THAT SHALL ACTIVATE EXHAUST FAN EF–1, SECOND ALARM SHALL BE SET AT 50 PPM THAT SHALL ACTIVATE HANGING SENSORS, FANS SHALL CONTINUE RUNNING UNTIL BELOW 5 PPM.
- NITROGEN DIOXIDE DETECTION SYSTEM SHALL BE SET AT 0.5 PPM THAT SHALL ACTIVATE EXHAUST FAN EF–1, SECOND ALARM SHALL BE SET AT 1 PPM THAT SHALL ACTIVATE HANGING SENSORS, FANS SHALL CONTINUE RUNNING UNTIL BELOW 5 PPM.
- PROGRAM 30 SECOND DELAY INTERLOCK SHUTOFF.

SYSTEM NOTES:

1. PROVIDE TECHNICIAN (CHECK PROPER FUNCTION OF SENSORS AND CARTRIDGES PERFORMANCE BEFORE HURS.
2. PROVIDE FACTORY CERTIFIED AND EXPERIENCED TECHNICIAN.
3. PROVIDE COMMISSIONING AND SYSTEM TRAINING AND MAINTENANCE.
4. MANUFACTURER SHALL INCLUDE ONE (1) DPDT 5A 50 ACFM CREDIT INCLUDED WITH EACH SENSOR/RELAY WITH CONNECTION AND CONTROL WIRING
5. EXHAUST FANS AND HANGING SENSORS.
6. PROVIDE AUDIBLE ALARM WITH EACH SENSOR RATED AT 80DBA @ 10FT.
7. CONTROLS CONTRACTOR TO PROVIDE POWER TO SENSORS AND CONTROL WIRING.
8. CONTROLS CONTRACTOR TO FINISHED DESIGN.
9. NOTE: SENSOR LOCATION AT 1 FOOT BELOW FINISHED CEILING.

CONTACT ANTHONY BARDUCCI FROM TECHNICAL SUPPORT AT 954–581–4511 FOR ANTHONY.BARDUCCI@JOHNSONCONTROLS.COM

SUPPLY AIR GRILLE SCHEDULE

TAG	MANUF. & MODEL	FACE SIZE	NECK SIZE	MATERIAL	FRAME	FINISH	DAMPER	THROW	NC	CFM RANGE	NOTES
A	NAILOR/6400–OA	24X24	SEE SCH.	ALUM.	NOTE #3	WHITE	OBD	4–WAY	MAX. 30	SEE SCH.	1–6
B	NAILOR/6400–OA	12X12	SEE SCH.	ALUM.	NOTE #3	WHITE	OBD	4–WAY	MAX. 30	SEE SCH.	1–6
C	NAILOR/51EC	NECK 4½ LONG 1–3/4"		ALUM.	DUCT MT.	OFF WHITE	–	–	MAX. 30	SEE PLAN	1–3

(*) EQUIVALENT MANUFACTURER: METALAIRE, PRICE, CARNES, T & B, NAILOR

GENERAL NOTES:
1. PROVIDE SPIN–IN COLLAR AT TRUNK TO FLEX DUCT CONNECTION.
2. PROVIDE TYPICAL 4–WAY DIFFUSION, 2–WAY OR 3–WAY ONLY WHERE INDICATED ON PLAN
3. REFER TO ARCHITECT PLANS FOR CEILING TYPE.
4. FINAL COLOR SELECTION SUBJECT TO ARCHITECT APPROVAL.
5. FLEX DUCT SIZE TO BE SAME AS DIFFUSER NECK SIZE.
6. PROVIDE INSULATION ON THE BACK OF DIFFUSER IF IN UNCONDITIONED SPACE.

CONTRACTOR SHALL VERIFY WITH ARCHITECT AND TENANT/OWNER, PRIOR TO ANY PURCHASING OR INSTALLATION, IF A BUILDING STANDARD HAS TO BE FOLLOWED REGARDING A SPECIFIC MODEL OR MANUFACTURER AND SHALL BRING ANY DISCREPANCY TO THE ATTENTION OF ENGINEER.

FLEX SCHEDULE	
6ø"	50–125 CFM
8ø"	130–200 CFM
10ø"	205–330 CFM
12ø"	335–450 CFM
14ø"	455–600 CFM
16ø"	605–700 CFM

RETURN AIR GRILLE SCHEDULE

TAG	MANUF. & MODEL	FACE SIZE	NECK SIZE	MATERIAL	FRAME	FINISH	DAMPER	THROW	NC	CFM RANGE	NOTES
AA	NAILOR/6250–OA	24X24	SEE SCH.	ALUM.	NOTE #1	WHITE	OBD	–	MAX. 30	SEE SCH.	1–3
BB	NAILOR/6250–OA	24X24	SEE SCH.	ALUM.	NOTE #1	WHITE	OBD	–	MAX. 30	SEE SCH.	1–3
CC	NAILOR/51EC	NECK 4½ LONG 1–3/4"		ALUM.	DUCT MT.	OFF WHITE	–	–	MAX. 30	SEE PLAN	1–3

(*)EQUIVALENT MANUFACTURER: METALAIRE, PRICE, CARNES, T & B, NAILOR

GENERAL NOTES:
1. REFER TO ARCHITECT PLANS FOR CEILING TYPE.
2. FINAL COLOR SELECTION SUBJECT TO ARCHITECT APPROVAL.
3. PROVIDE INSULATION ON THE BACK OF DIFFUSER IF IN UNCONDITIONED SPACE

CONTRACTOR SHALL VERIFY WITH ARCHITECT AND TENANT OR OWNER, PRIOR TO ANY PURCHASING OR INSTALLATION, IF A BUILDING STANDARD HAS TO BE FOLLOWED REGARDING A SPECIFIC MODEL OR MANUFACTURER AND SHALL BRING ANY DISCREPANCY TO THE ATTENTION OF ENGINEER.

NECK SIZE	CFM RANGE	NECK SIZE	CFM RANGE
6X6	0–150 CFM	15X15	0–900 CFM
8X8	0–250 CFM	18X18	0–1350 CFM
10X10	0–400 CFM	22x22	0–2000 CFM
12X12	0–600 CFM		

CONSULTANT

CITY OF FORT LAUDERDALE
PUBLIC WORKS DEPARTMENT
ENGINEERING & ARCHITECTURE
100 North Andrews Avenue, Fort Lauderdale, Florida 33301

REVISIONS			
NO.	DATE	BY	CHK'D	DESCRIPTION
	03-14-18			BID SET

City of Fort Lauderdale

PROJECT # 10909
FIRE STATION #8

FORT LAUDERDALE, FLORIDA

CPZ ARCHITECTS, INC.
CPZ

DRAWN BY: KP/JH
DATE: 09-16-16
CHECKED BY: CPZ
SCALE:

SHEET NO. M6.1
OF
TOTAL: 105
DRAWING TITLE:
DRAWING FILE NO. 4-138-84

MECHANICAL SCHEDULES

ISSUED FOR PERMIT ONLY 03-09-17

KAMM CONSULTING PROJECT #: 2017-0738
PROJECT MANAGER: JOHN MAYR

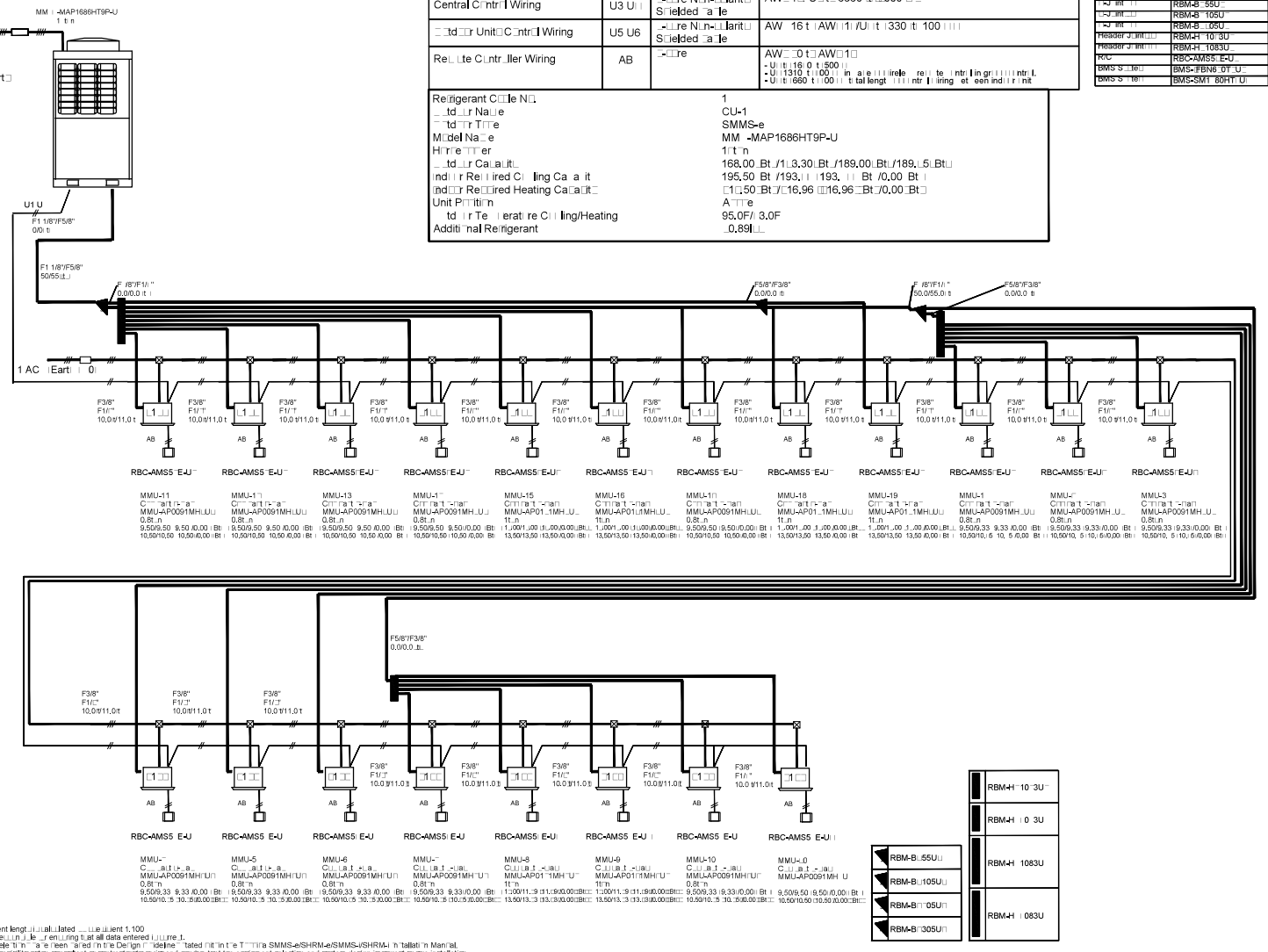
KAMM CONSULTING

PRINCIPAL
BRIAN L. BUTLER FLORIDA LICENSE #0082252

02-09-18
DATE

SIGNATURE

Bid 12139-983



C ntr l Wiring			
Na e	a el	Wiring	Wiring Si e and engt
td r - ndi r C ntr l Wiring	U1 U	- re N n- l arit Si elded a le	AW 16: U t 3 80 t 1000 AW 1 : U t 6560 t 000
Central C ntr l Wiring	U3 U	- re N n- arit Si elded a le	
td r Unit C ntr l Wiring	U5 U6	- re N n- arit Si elded a le	AW 16 t AW 1 /U t 330 t 100
Re te C ntr ller Wiring	AB	- re	AW 0 t AW 1 - U t 16: 0 t 500 - U t 1310 t 00 - U t 660 t 00 t tal lengt ntr l ring et een ind r nit

Re rigerant C le N	1
td r Na e	CU-1
td r Tr e	SMMS-e
Model Na e	MM -MAP1686HT9P-U
H r e er	1 t n
td r Ca a it	168,00 Bt /1 ,3,30 Bt /189,00 Bt /189, 5 Bt
ndi r Re ired C ling Ca a it	195,50 Bt /193, 193, Bt /0,00 Bt
ndi r Re ired Heating Ca a it	1 ,50 Bt /16,96 16,96 Bt /0,00 Bt
Unit P siti n	A e
td r Te erat re C ling/Heating	95.0F/ 3.0F
Additi nal Re rigerant	.0.89

Pr d t Na e	M del Na e	t
td r Unit	MM -MAP1686HT9P-U	1
ndi r Unit	MMU-AP0091MH U	13
ndi r Unit	MMU-AP01 1MH U	6
A e ter ke	RBC-UM11P W-U	19
J int	RBM-B 55U	1
J int	RBM-B 105U	1
J int	RBM-B 05U	1
Header J int	RBM-H 10 3U	1
Header J int	RBM-H 1083U	
R/C	RBC-AMS5 E-U	19
BMS S te	BMS-FBN6 0T U	1
BMS S te	BMS-SM1 80HT U	1

Note: E ual lent lengt i ual ulated i ue i ient 1.100
- T e i er i, ire i, n i e r en i ing t at all data entered i i re t.
- E ti n ent ele ti n a e een ai ed i n t i e De ign ide ine tated i it in t e T a SMMS-e/SHRM-e/SMMS-i/SHRM-i i n tallati n Manual.
- ti i i e re n i i i t e ent r i n trai t i i en and i n it de ign i re t re in tallati n.
- Plea le ni te t at in t e e ent i i t e ti e en an i n eing all ed i n t e i en de ign ra ange in ing/ eating re e ent a re-e al ati n i t e air ndi ioning te i e ade i n t i al in tallati n.

CONSULTANT

CITY OF FORT LAUDERDALE
PUBLIC WORKS DEPARTMENT
ENGINEERING & ARCHITECTURE
100 North Andrews Avenue, Fort Lauderdale, Florida 33301

REVISIONS				
NO.	DATE	BY	CHK'D	DESCRIPTION
	03-14-18			BID SET

City of Fort Lauderdale

PROJECT # 10909
FIRE STATION #8

CPZ ARCHITECTS, INC.
FORT LAUDERDALE
417 SW 1ST AVE
FORT LAUDERDALE, FLORIDA 33301
PHONE (954) 763-4525 FAX: (954) 357-0199
AA-C0000683 WWW.CPZARCHITECTS.COM

DRAWN BY: KP/JH
DATE: 09-16-16
CHECKED BY: CPZ
SCALE:

SHEET NO. M6.2
OF
TOTAL: 105
DRAWING TITLE:
DRAWING FILE NO. 4-138-84

CONTROLS DIAGRAM
ISSUED FOR PERMIT ONLY

KAMM CONSULTING PROJECT #: 2017-0738
PROJECT MANAGER: JOHN MAYO
KAMM CONSULTING
1408 Cr A
P 954.448.0792
PRINCIPAL:
02-09-18

Bid 12139-983

CONSULTANT

CITY OF FORT LAUDERDALE
PUBLIC WORKS DEPARTMENT
ENGINEERING & ARCHITECTURE
100 North Andrews Avenue, Fort Lauderdale, Florida 33301

REVISIONS				
NO.	DATE	BY	CHK'D	DESCRIPTION
	05-10-18			BID SET

CPZ ARCHITECTS, INC.
6316 WEST BROWARD BOULEVARD
PLANTATION, FLORIDA 33317
PHONE (954) 792-8525 FAX (954) 537-4599
AA #26000685 WWW.CPZARCHITECTS.COM

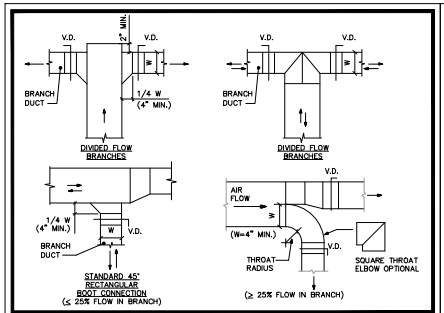
PROJECT # 10909
FIRE STATION #8
1717 SW 1ST AVE
FORT LAUDERDALE, FL 33315

DRAWN BY: KP/AH
DATE: 03-16-16
CHECKED BY: CPZ
SCALE:
SHEET NO. M6.3
OF
TOTAL SHTS.
DRAWING TITLE:
DRAWING FILE NO. 4-138-04

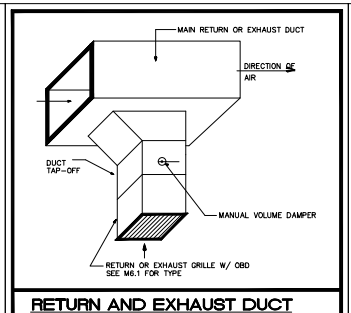
HOOD PLAN

ISSUED FOR PERMIT ONLY

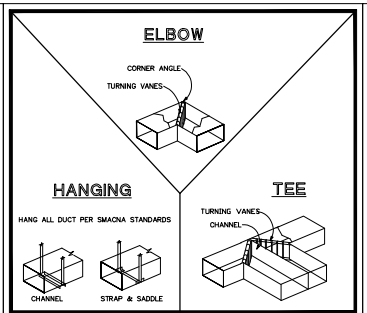
KAMM CONSULTING
KAMM CONSULTING PRODUCTS
1505 SW 11TH AVENUE
POMPANO BEACH, FLORIDA 33069
PHONE: (954) 946-0454 FAX: (954) 946-0457
CERTIFICATE OF AUTHORIZATION #: 6486



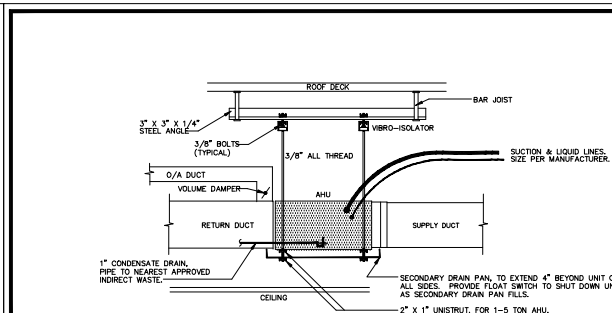
BRANCH TAKE-OFF AND DIVIDED FLOW
NOT TO SCALE



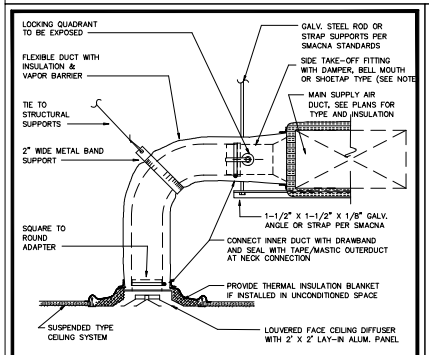
RETURN AND EXHAUST DUCT MOUNTED GRILLE DETAIL
NOT TO SCALE



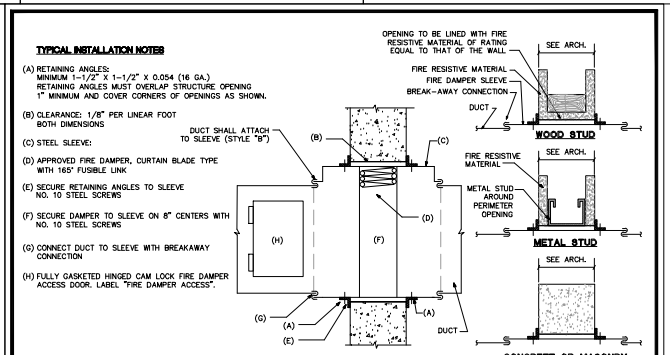
HVAC DUCT DETAILS
NOT TO SCALE



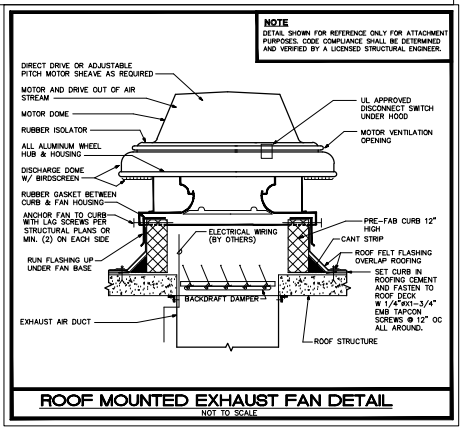
AIR HANDLER MOUNTING DETAIL
NOT TO SCALE



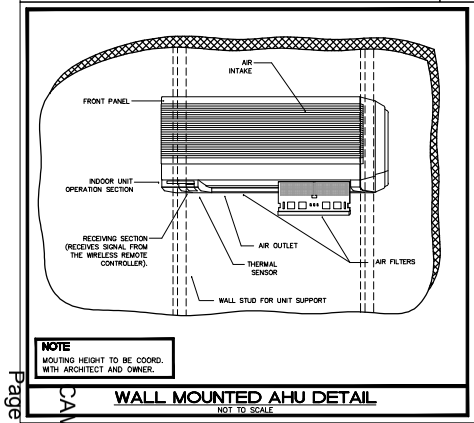
TYPICAL DIFFUSER DETAIL
NOT TO SCALE



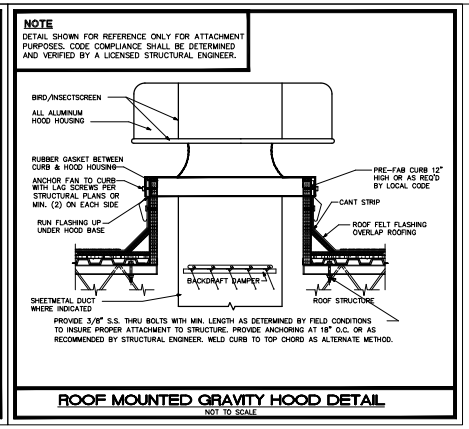
STYLE "B" DYNAMIC FIRE DAMPER DETAIL
NOT TO SCALE



ROOF MOUNTED EXHAUST FAN DETAIL
NOT TO SCALE



WALL MOUNTED AHU DETAIL
NOT TO SCALE



ROOF MOUNTED GRAVITY HOOD DETAIL
NOT TO SCALE

CONSULTANT

CITY OF FORT LAUDERDALE
PUBLIC WORKS DEPARTMENT
ENGINEERING & ARCHITECTURE
100 North Andrews Avenue, Fort Lauderdale, Florida 33301

NO.	DATE	BY	CHK'D	DESCRIPTION
	03-14-18			BID SET

REVISIONS

City of Fort Lauderdale

PROJECT # 10909
FIRE STATION #8

CPZ ARCHITECTS, INC.
150 WEST HILLSBORO BOULEVARD
PLANTATION, FLORIDA 33317
PHONE (954) 792-8525 FAX (954) 337-0709
AA-C000683 WWW.CPZARCHITECTS.COM

DRAWN BY: KP/JH
DATE: 09-16-16
CHECKED BY: CPZ
SCALE:

SHEET NO. M7.1
OF
TOTAL: 105
DRAWING TITLE: MECHANICAL DETAILS
DRAWING FILE NO. 4-138-84

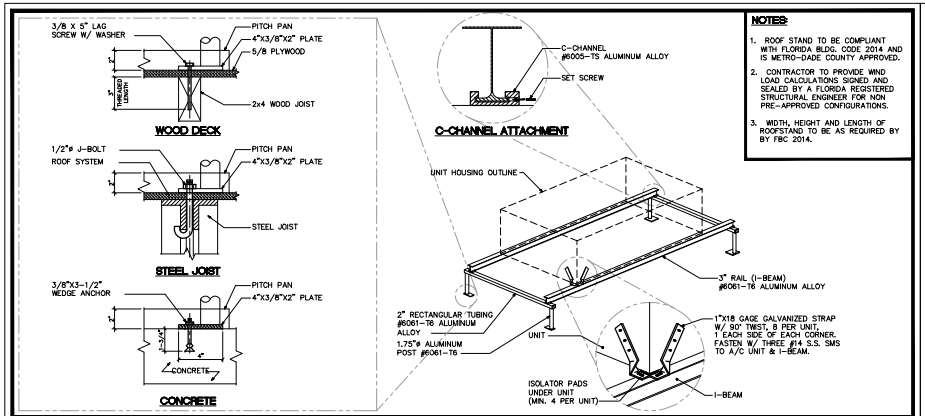
ISSUED FOR PERMIT ONLY 10-06-17

KAMM CONSULTING PROJECT #: 2017-0738
PROJECT MANAGER: JOHN MAYR

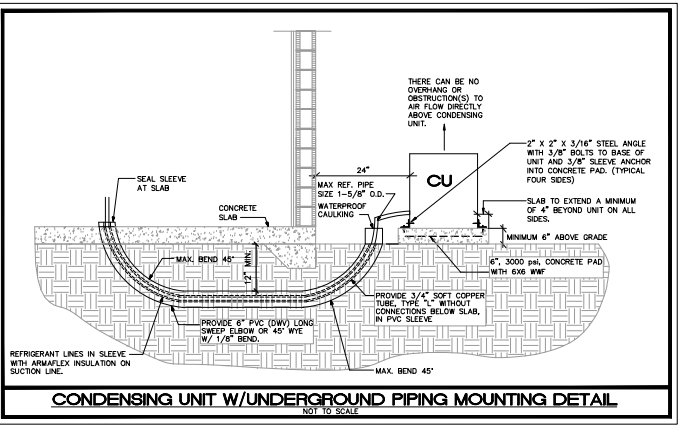
KAMM CONSULTING

PRINCIPAL: Brian H. Brito Florida License #59252
02-09-18

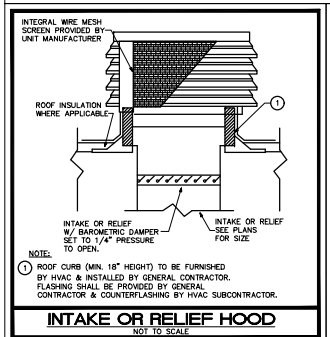
CAM 18-0815
Exhibit 2
Page 46 of 350



A/C ROOF EQUIPMENT MOUNTING DETAIL
NOT TO SCALE

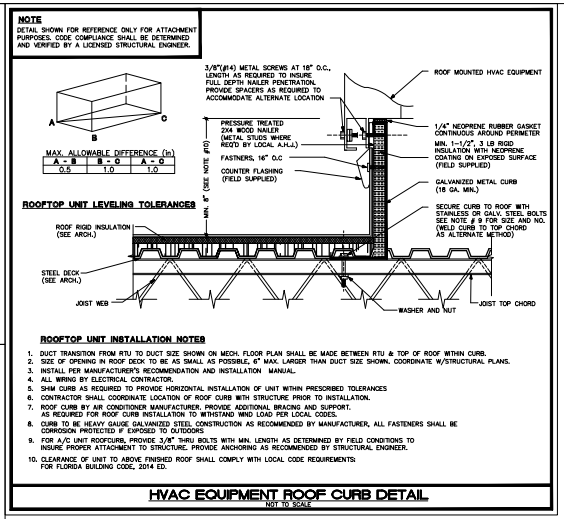


CONDENSING UNIT W/UNDERGROUND PIPING MOUNTING DETAIL
NOT TO SCALE



NOTE:
(1) ROOF CURB (MIN. 18" HEIGHT) TO BE FURNISHED BY HVAC & INSTALLED BY GENERAL CONTRACTOR. FLASHING SHALL BE PROVIDED BY GENERAL CONTRACTOR & COUNTERFLASHING BY HVAC SUBCONTRACTOR.

INTAKE OR RELIEF HOOD
NOT TO SCALE

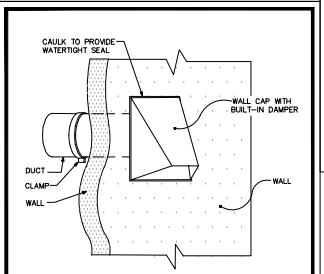


ROOFTOP UNIT LEVELING TOLERANCES

ROOFTOP UNIT INSTALLATION NOTES

1. DUCT TRANSITION FROM RTU TO DUCT SIZE SHOWN ON MECH. FLOOR PLAN SHALL BE MADE BETWEEN RTU & TOP OF ROOF WITHIN CURB.
2. SIZE OF OPENING IN ROOF DECK TO BE AS SMALL AS POSSIBLE, 4" MAX. LARGER THAN DUCT SIZE SHOWN. COORDINATE W/STRUCTURAL PLANS.
3. INSTALL PER MANUFACTURER'S RECOMMENDATION AND INSTALLATION MANUAL.
4. ALL WIRING BY ELECTRICAL CONTRACTOR.
5. SHIM CURB AS REQUIRED TO PROVIDE HORIZONTAL INSTALLATION OF UNIT WITHIN PRESCRIBED TOLERANCES
6. CONTRACTOR SHALL COORDINATE LOCATION OF ROOF CURB WITH STRUCTURE PRIOR TO INSTALLATION.
7. ROOF CURB BY AIR CONDITIONER MANUFACTURER. PROVIDE ADDITIONAL BRACING AND SUPPORT. AS REQUIRED FOR ROOF CURB INSTALLATION TO WITHSTAND WIND LOAD PER LOCAL CODES.
8. CURB TO BE HEAVY GAUGE GALVANIZED STEEL CONSTRUCTION AS RECOMMENDED BY MANUFACTURER, ALL FASTENERS SHALL BE CORROSION PROTECTED IF EXPOSED TO OUTDOORS
9. FOR A/C UNIT ROOFCURB, PROVIDE 3/8" THRU BOLTS WITH MIN. LENGTH AS DETERMINED BY FIELD CONDITIONS TO INSURE PROPER ATTACHMENT TO STRUCTURE. PROVIDE ANCHORING AS RECOMMENDED BY STRUCTURAL ENGINEER.
10. CLEARANCE OF UNIT TO ABOVE FINISHED ROOF SHALL COMPLY WITH LOCAL CODE REQUIREMENTS FOR FLORIDA BUILDING CODE, 2014 ED.

HVAC EQUIPMENT ROOF CURB DETAIL
NOT TO SCALE



WALL CAP DETAIL
NOT TO SCALE

CONSULTANT

CITY OF FORT LAUDERDALE
PUBLIC WORKS DEPARTMENT
ENGINEERING & ARCHITECTURE
100 North Andrews Avenue, Fort Lauderdale, Florida 33301

REVISIONS				
NO.	DATE	BY	CHK'D	DESCRIPTION
	03-14-18			BID SET

City of Fort Lauderdale

PROJECT # 10909
FIRE STATION #8

CPZ ARCHITECTS, INC.
101 WEST ATLANTIC BOULEVARD
PLANTATION, FLORIDA 33317
PHONE (954) 792-8525 FAX: (954) 337-0199
AA-C0000685 WWW.CPZARCHITECTS.COM

1717 SW 1ST AVE
FORT LAUDERDALE, FL 33315

CPZ

DRAWN BY: KP/JH | DATE: 09-16-16
CHECKED BY: CPZ | SCALE:

SHEET NO. M7.2 | OF
TOTAL: 105
DRAWING TITLE: MECHANICAL DETAILS
DRAWING FILE NO. 4-138-84

ISSUED FOR PERMIT ONLY 2018-05-17

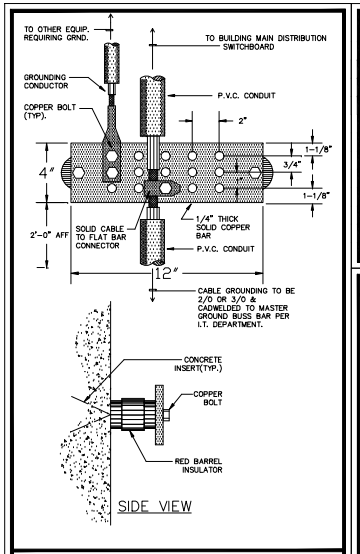
KAMM CONSULTING PROJECT #: 2017-0738
PROJECT MANAGER: JOHN MAYR

KAMM CONSULTING
1408 Orange Avenue
Fort Pierce, Florida 34950
Phone: (772) 595-1744 Cell: (954) 448-0792
Certificate of Authorization No. 98189

PRINCIPAL: Brian H. Brittle, P.E. Florida License #59252
02-09-18
DATE

BID 12139-983

TYPE	MFG. / CAT. / DESCRIPTION	VOLT	MOUNTING	NOTES
A	DAYBRITE 2EVG38L835-4-D-UNV-DIM		RECESS	
A1	DAYBRITE 2EVG43L835-4-D-UNV-DIM		RECESS	
A4	LIUMINIS PR1250-L1W65RO-VOLT-DRT-K35-SPG		PENDENT	
A4-EM	LIUMINIS PR1250-L1W65RO-VOLT-DRT-K35-SPG-EMLC		PENDENT	WITH EM BATTERY PACK
B	GARDCO BRM830-42-CWL-NW-360-UNV-COLOR		GROUND MOUNT	
C	INTENCE SS6G21100358-I200 / IC630W-SFW		RECESS	
C1	INTENCE SS4G21100258-I200 / IC430W-SFW		RECESS	
D	INTENCE SS6G21100358-I200 / IC632W-SFW-S8		RECESS	
E	WILLIAMS WMAUD-2-L15-835U-L15-835-AF-DRV-UNV-PS2R-120		SURFACE	SUPPLY WITH PULL CORD
EM	BEGHELLI ELSE-20SLED-120/277-W		SURFACE WALL MOUNT	
F	WILLIAMS 17-4L55-840-A-DRV-UNV		SURFACE	
G2	GARDCO SFC-DM-5W-55LA-NW-UNV-NP		SURFACE	
G3	GARDCO SFC-DM-5R-105LA-NW-UNV-NP		SURFACE	
H	LIGHTOLIER S5R640K7		SURFACE	
I	LIGHTOLIER S7R640K10		SURFACE	
J	WILLIAMS AVX-4-L87-835-WPC-DIM-UNV		SURFACE	
M	WILLIAMS 75L-4-L20-835-A1212-DRV-UNV		SURFACE	
M1	WILLIAMS 75L-2-L10-835-A1212S-DRV-UNV		SURFACE	
O	WILLIAMS ASM-4-L46-835-A-UNV		SURFACE	
P	LUMINAIRE TSL94-4-50W-3530K-M7-120-CP-WHT		SURFACE	
Q1	LIGHTOLIER C4RR24L30840NZ3U-C4RDLWH		RECESS	
R	BIG ASS FAN BIG ASS FAN HIGH BAY LIGHTS WITH CONTROLER		SURFACE	ALL LIGHT FIXTURE EDGES TO BE RED AT ALL CORNERS
S	BIG ASS FAN BIG ASS FAN HAIKU CEILING FAN WITH CONTROLS		SURFACE	
S1	BIG ASS FAN BIG ASS FAN ESSENCE CEILING FAN WITH CONTROLS		SURFACE	ALL WINGLETS SHALL BE RED
W1	GARDCO 161-4-220LA-9670-NW-UNV		SURFACE	
X	DAYBRITE CXXL3RW		SURFACE	
SA	GARDCO P32-A1-1-3-215LN-NW-UNV-COLOR-PTF2		POLE MOUNT	20' AFG CONCRETE POLE
SB	GARDCO P21-A1-1-5W-148LA-NW-UNV-COLOR-PTF2		POLE MOUNT	10' AFG CONCRETE POLE
SC	GARDCO P32-A1-1-5W-215LA-NW-UNV-COLOR-PTF2		POLE MOUNT	20' AFG CONCRETE POLE
SD	GARDCO P32-A1-1-4-215LN-NW-UNV-COLOR-PTF2		POLE MOUNT	20' AFG CONCRETE POLE
SE	GARDCO CSFM-32L-700-NW-SF-RN-UNV-COLOR		POLE MOUNT	10' AFG CONCRETE POLE
SI	INSIGHT MC-3-5-40K-45-EASCW24-INT(VOLT)-COLOR		WALL MOUNT	
SJ	INSIGHT MX-12-40K-120-U-CES-48-INT-1-MW		WALL MOUNT	
UL	BK B-HP2-LED-TR-E66-SP-MAC-11-XXX		IN GRADE	



GROUND BAR DETAIL

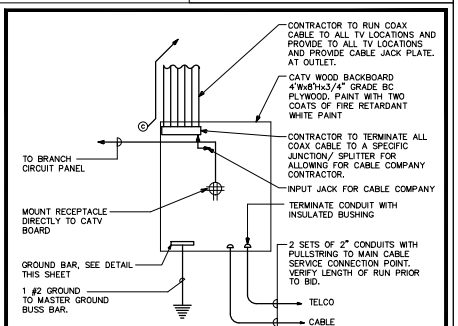
NOT TO SCALE

LOW VOLTAGE

1. CITY I.T. DEPARTMENT SHALL INSTALL ALL NETWORKING CABLING THROUGH OUT THE BUILDING. ALL CABLING SHALL BE CAT5 CABLE AND TO TERMINATE IN I.T. ROOM.

LIGHTNING PROTECTION

PROVIDE COMPLETE LIGHTING PROTECTION, BY BONDED LIGHTING, PROVIDE FULLY ENGINEERED (SIGN AND SEALED) SHOP DRAWINGS FOR REVIEW BY CITY AND ENGINEERS PRIOR TO FABRICATION AND INSTALLATION.



TELEPHONE/ CABLE TV RISER DIAGRAM

NOT TO SCALE

GENERAL NOTE

1. STREET LIGHTING FOR ADJACENT STREETS TO BE PROVIDED BY UTILITY COMPANY. UTILITY COMPANY TO PROVIDE A MINIMUM OF 0.5 FOOTCANDLES.
2. SPECIFIC LIGHTING FIXTURES, SELECTED BY TYPE, PHOTOMETRIC PERFORMANCE. LIGHTING PATTERN AND LUMEN OUTPUT WERE USED IN THE ILLUMINATION TO PRODUCE THE REQUIRED EFFECTS AND ILLUMINATION. SUBSTITUTION OF THE LIGHT FIXTURES WILL RESULT IN DIFFERENT ILLUMINATION COVERAGE AND LIGHTING PATTERN.
TO CONFIRM THAT THE SPECIFIED PHOTOMETRIC CRITERIA HAS BEEN MET, A COMPUTER DISK CONTAINING THE IES PHOTOMETRIC FILE FOR THE PROPOSED ALTERNATE/SUBSTITUTION MUST BE SUBMITTED TO KAMM CONSULTING ENGINEERS FOR EVALUATION. ANY ACCEPTABLE ALTERNATE/SUBSTITUTE MUST BE APPROVED IN WRITING PRIOR TO BID DATE.

ELECTRICAL SHEET INDEX

E0.1	ELECTRICAL NOTES, LEGEND & INDEX
E1.1	SITE PHOTOMETRIC PLAN
E1.2	SITE POWER PLAN
E1.3	SIGN ELEVATION PHOTMETRIC PLAN
E2.1	LIGHTING PLAN
E2.2	MEZZANINE LIGHTING PLAN
E3.1	POWER PLAN
E3.1.1	BDA CONDUIT PLAN
E3.2	MEZZANINE POWER PLAN
E5.1	ELECTRICAL RISER DIAGRAM
E6.1	IT DATA

ELECTRICAL LEGEND

- TELEPHONE OUTLET WITH 3/4" CONDUIT STUBBED OUT FROM WALL 6" ABOVE CEILING. MOUNT 18" A.F.F. TO CENTER LINE OF OUTLET UNLESS OTHERWISE NOTED.
- DATA OUTLET WITH 3/4" CONDUIT STUBBED OUT FROM WALL 6" ABOVE CEILING. MOUNT 18" A.F.F. TO CENTER LINE OF OUTLET UNLESS OTHERWISE NOTED.
- TELEPHONE/DATA OUTLET WITH 3/4" CONDUIT STUBBED OUT FROM WALL 6" ABOVE CEILING. WITH PULL STRING. WALL MOUNT CENTER AT 4" ABOVE COUNTER. COORD. WITH MILLWORK.
- TELEPHONE/DATA OUTLET WITH 3/4" CONDUIT STUBBED OUT FROM WALL 6" ABOVE CEILING. MOUNT 18" A.F.F. TO CENTER LINE OF OUTLET UNLESS OTHERWISE NOTED. PROVIDE CAT 6 CABLES BACK TO IT ROOM. PROVIDE FACE PLATE NEATLY MARKED
- TELEPHONE/DATA OUTLET WITH 3/4" CONDUIT RUN TO THE NEAREST STUD WALL AND STUBBED OUT FROM WALL 6" ABOVE CEILING. PROVIDE BRASS COVER PLATE AND CARPET FLANGE.
- TELEVISION OUTLET WITH 3/4" CONDUIT STUBBED OUT FROM WALL 6" ABOVE CEILING. PROVIDE COAX CABLE AND TERMINATION PLATE. SEE CABLE TV DETAIL. COORDINATE HT WITH OWNER PRIOR TO INSTALLATION.
- 20 AMP SINGLE RECEPTACLE (NEMA 5-20R) MOUNTED AT 18" A.F.F. TO CENTER LINE OF OUTLET UNLESS NOTED OTHERWISE.
- 20 AMP DUPLEX RECEPTACLE (NEMA 5-20R) MOUNTED AT 18" A.F.F. TO CENTER LINE OF OUTLET UNLESS NOTED OTHERWISE.
- 20 AMP QUADRUPLEX RECEPTACLE (NEMA 5-20R) MOUNTED AT 18" A.F.F. TO CENTER LINE OF OUTLET UNLESS NOTED OTHERWISE.
- (GFI) 20 AMP DUPLEX RECEPTACLE (NEMA 5-20R) WITH GROUND FAULT CIRCUIT INTERRUPTER, MOUNT AT 18" A.F.F. TO CENTER LINE OF OUTLET. UNLESS NOTED OTHERWISE.
- 20 AMP 120V DUPLEX RECEPTACLE WALL MOUNT CENTER ABOVE COUNTER, COORDINATE WITH MILLWORK.
- 20 AMP DUPLEX RECEPTACLE (NEMA 5-20R) WITH ISOLATED GROUND, MOUNT AT 18" A.F.F. TO CENTERLINE OF OUTLET UNLESS OTHERWISE NOTED.
- 20 AMP QUADRUPLEX RECEPTACLE (NEMA 5-20R) WITH ISOLATED GROUND, MOUNT AT 18" A.F.F. TO CENTERLINE OF OUTLET UNLESS OTHERWISE NOTED.
- 20 AMP DUPLEX RECEPTACLE (NEMA 5-20R). RECESS RAISED FLOOR MOUNTED BOXES. PROVIDE BLACK COVER PLATE AND FLANGE BY WIREMOLD OR APPROVED EQUAL.
- 20 AMP 120v DUPLEX RECEPTACLE (NEMA 5-20R), TWIST LOCK RECEPTACLE, CEILING MOUNTED. VERIFY EXACT LOCATION WITH OWNER.
- SPECIAL-PURPOSE RECEPTACLE
- JUNCTION BOX
- PROVIDE CEILING MOUNTED JBOX WITH 50' OF KUSSMAUL ELECTRONICS 20A CORD AND KASSMAUL ELECT 20A, 120V POWER CONNECTOR. PROVIDE 20A BREAKAWAY CONNECTION ON THE CORD AT 24" FROM THE POWER CONNECTOR. PROVIDE 3' CEILING MOUNTED CORD HOOKS ON ON EACH SIDE JBOX AT 10' SPACING. VERIFY EXACT REQUIREMENTS WITH CONTRACTOR.
- PROVIDE CEILING MOUNTED JBOX WITH 50' OF KUSSMAUL ELECTRONICS 30A CORD AND KASSMAUL ELECT 30A, 120V POWER CONNECTOR. PROVIDE 20A BREAKAWAY CONNECTION ON THE CORD AT 24" FROM THE POWER CONNECTOR. PROVIDE 3' CEILING MOUNTED CORD HOOKS ON ON EACH SIDE JBOX AT 10' SPACING. VERIFY EXACT REQUIREMENTS WITH CONTRACTOR.
- SINGLE GANG JUNCTION BOX FOR POWER CONNECTION TO MODULAR FURNITURE SYSTEM INSTALL IN EXACT MANNER AS DIRECTED BY FURNITURE SUPPLIER.
- DOUBLE GANG JUNCTION BOX FOR TELEPHONE/DATA CONNECTION TO MODULAR FURNITURE SYSTEM. INSTALL IN EXACT MANNER AND LOCATION AS DIRECTED BY FURNITURE SUPPLIER. EXTEND (2) 3/4" EMPTY CONDUITS FROM JUNCTION BOX TO ABOVE CEILING AND TERMINATE WITH INSULATING BUSHING 6" FROM WALL.
- TELE/POWER POLE FOR TELEPHONE/DATA/POWER CONNECTION TO MODULAR FURNITURE 8 WIRE SYSTEM (SEE DETAIL THIS SHEET). INSTALL IN EXACT MANNER AND LOCATION AS DIRECTED BY FURNITURE SUPPLIER, WIREMOLD CATALOG # 2SDTP-4D W/IVORY FINISH.
- SPECIAL PURPOSE TWIST LOCK RECEPTACLE MOUNTED AT CEILING, VERIFY EXACT LOCATION WITH OWNER.
- EXHAUST FAN. SEE MECHANICAL DRAWINGS FOR SPECIFICATIONS.
- $ SINGLE POLE, 20 AMP, SWITCH. MOUNT 46" A.F.F. TO CENTERLINE OF SWITCH UNLESS OTHERWISE NOTED.
- $3 3-WAY, 20 AMP, SWITCH. MOUNT 46" A.F.F. TO CENTERLINE OF SWITCH UNLESS OTHERWISE NOTED.
- $D SINGLE POLE, 20 AMP, SWITCH WITH DIMMER. MOUNT 46" A.F.F. TO CENTERLINE OF SWITCH UNLESS OTHERWISE NOTED.
- MOTOR RATED SWITCH
- OCCUPANCY SWITCH, WATTSTOPPER, MOUNT 46" A.F.F. TO CENTERLINE OF SWITCH UNLESS OTHERWISE NOTED.
- TWO POLE, 30 AMP SWITCH. MOUNT ADJACENT EQUIPMENT TO BE CONTROLLED.
- FACTORY MOUNTED DISCONNECT/STARTER (SEE MECHANICAL SCHEDULE)
- FUSIBLE DISCONNECT SWITCH A = POLES, B= FRAME SIZE, C= FUSE RATING
- FUSIBLE MOTOR STARTER DISCONNECT SWITCH A = POLES, B= NEMA SIZE, C= FUSE RATING
- GROUNDING ELECTRODE & CONDUCTOR SYSTEM
- TRANSFORMER
- ELECTRICAL PANELBOARD
- PROVIDE 10'-0" DUCT-O-WIRE SLIDE WIRE SYSTEM OF KUSSMAUL CORDS. SLIDE WIRE SYSTEM SHALL BE PROVIDED WITH CLAMPS SIZED FOR 2 CABLES. COORDINATE EXACT LOCATIONS WITH CITY FIRE DEPT. AND GC PRIOR TO INSTALLATION. VERIFY EXACT REQUIREMENTS WITH GC.
- TELEPHONE WOOD BACKBOARD
- DB DOOR BELL: WALL MOUNT 48" AFF. PROVIDE 3/4" CONDUIT WITH PULL STRING TO 6" ABOVE CEILING. COORDINATE WITH CITY I.T. DEPARTMENT FOR EXACT LOCATION.
- TE TELEPHONE ENTRY CONTROL PROVIDE 3/4" CONDUIT AND JUNCTION BOX WITH PULL STRING TO 6" ABOVE CEILING, SEE SHEET A800 TELEPHONE ENTRY CONTROL SPECIFICATIONS. COORDINATE WITH CITY I.T. DEPARTMENT FOR EXACT LOCATION.
- WP WEATHERPROOF
- T/C TIME CLOCK
- RE RELOCATED
- E EXISTING TO REMAIN
- A.F.F. ABOVE FINISH FLOOR
- CEILING MOUNTED DUAL TECHNOLOGY MOTION SENSOR BY WATTSTOPPER.
- CEILING MOUNTED LOW VOLTAGE DUAL TECHNOLOGY MOTION SENSOR BY WATTSTOPPER.
- SPEAKER JUNCTION BOX. SEE SHEET A-800 FOR SPEAKER BACK BOX SPECIFICATION. VERIFY EXACT LOCATION WITH EQUIPMENT WITH CITY PRIOR TO INSTALLATION. PROVIDE 3/4" CONDUIT WITH PULLSTRING 6" ABOVE NEAREST DROP CEILING.
- AP WIFI ACCESS POINT PROVIDE JUNCTION BOX AND 1" CONDUIT BACK TO I.T. ROOM #117.
- S STATION ALERTING STROBES. PROVIDE 4X4 BACK BOX WITH CONTINUOUS 1" CONDUIT TO IT ROOM #117. STROBES HANG 18" BELOW CEILING IN FRONT OF DOORWAY. CONTRACTOR TO COORDINATE CLEARANCE WITH DOORWAY.
- HORN STROBE AND LED LIGHT(STATION ALERTING SYSTEM): PROVIDE 12X12X12 BACK BOX AND 1" CONTINUOUS CONDUIT TO I.T. ROOM 117.

ELECTRICAL SPECIFICATIONS

PART 1 – GENERAL

A. THE CONTRACTOR SHALL SUPPLY AND INSTALL ALL NEW ELECTRICAL WORK INDICATED. CONSTRUCTION SHALL BE IN ACCORDANCE WITH DRAWINGS AND APPLICABLE SPECIFICATIONS. IF A PROBLEM IS ENCOUNTERED IN COMPLYING WITH THIS REQUIREMENT, CONTRACTOR SHALL NOTIFY THE ARCHITECT/ENGINEER AS SOON AS POSSIBLE AFTER DISCOVERY OF THE PROBLEM AND SHALL NOT PROCEED WITH THAT PORTION OF THE WORK UNTIL ARCHITECT/ENGINEER HAS DIRECTED CORRECTIVE ACTION TO BE TAKEN.
B. THE CONTRACTOR SHALL VISIT THE JOB SITE PRIOR TO BID AND FAMILIARIZE HIMSELF WITH ALL CONDITIONS AFFECTING ELECTRICAL AND COMMUNICATIONS INSTALLATION AND MAKE PROVISIONS AS TO THE COST THEREOF.
C. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE LATEST EDITION OF THE NATIONAL ELECTRIC CODE (AS ADOPTED BY THE AUTHORITY HAVING JURISDICTION) AND ALL CODES AND ORDINANCES OF THE AUTHORITY HAVING JURISDICTION. THE SPECIFICATION, CODES AND STANDARDS LISTED BELOW ARE UTILIZED IN THIS PROJECT.
   1. NATIONAL ELECTRICAL CODE (NFPA-70)
   2. CODE FOR SAFETY TO LIFE (NFPA_101)
   3. STANDARD FOR THE INSTALLATION, MAINTENANCE AND USE OF LOCAL PROTECTIVE SIGNALING SYSTEMS (NFPA-72)
   4. UNDERWRITERS' LABORATORIES (UL)
   5. NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION (NEMA)
   6. AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)
   7. FEDERAL SPECIFICATION (FED. SPEC.)
   8. INSULATED POWER CABLE ENGINEERS ASSOCIATION (IPCEA)
   9. FLORIDA BUILDING CODE. 2014 EDITION
   10. INSTITUTE OF ELECTRICAL AND ELECTRONIC ENGINEERS (IEEE)
   11. CITY OF FORT LAUDERDALE BUILDING CODE. (AMENDMENTS TO FLORIDA BUILDING CODE 2014)
   12. ADDITIONALLY, DESIGN, PRACTICES AND CONDITIONS MUST CONFORM WITH THE OCCUPATIONAL SAFETY AND HEALTH ACT OF 1970 (OSHA)
D. DO NOT SCALE THE ELECTRICAL DRAWINGS. REFER TO ARCHITECTURAL PLANS AND ELEVATIONS FOR EXACT LOCATION OF ALL EQUIPMENT. CONFIRM WITH OWNER'S REPRESENTATIVE.
E. IT IS NOT THE INTENT OF THESE PLANS TO SHOW EVERY MINOR DETAIL OF CONSTRUCTION. THE CONTRACTOR IS EXPECTED TO FURNISH AND INSTALL ALL ITEMS FOR A COMPLETE ELECTRICAL SYSTEM AND PROVIDE ALL REQUIREMENTS NECESSARY FOR EQUIPMENT TO BE PLACED IN PROPER WORKING ORDER.
F. CONTRACTOR SHALL GUARANTEE ALL MATERIALS AND WORKMANSHIP FREE FROM DEFECTS FROM A PERIOD OF NOT LESS THAN ONE YEAR FROM DATE OF ACCEPTANCE.
G. CORRECTION OF ANY DEFECTS SHALL BE COMPLETED WITHOUT ADDITIONAL CHARGE AND SHALL INCLUDE REPLACEMENT OR REPAIR OF ANY OTHER PHASE OF THE INSTALLATION WHICH MAY HAVE BEEN DAMAGED THERE BY.
H. ALL REQUIRED INSURANCE SHALL BE PROVIDED FOR PROTECTION AGAINST PUBLIC LIABILITY AND PROPERTY DAMAGE THE DURATION OF THE WORK.
I. CONTRACTOR SHALL PAY FOR ALL PERMITS, FEES, INSPECTIONS AND TESTING. CONTRACTOR TO OBTAIN PERMIT AND APPROVED SUBMITTALS PRIOR TO BEGINNING WORK OR ORDERING EQUIPMENT.
J. THE TERM "PROVIDE" USED IN THE CONSTRUCTION DOCUMENTS AND SPECIFICATIONS SHALL MEAN THAT THE CONTRACTOR IS TO FURNISH, INSTALL AND CONNECT COMPLETE.

PART 2 – PRODUCTS

A. MINIMUM WIRE SIZE SHALL BE #12 A.W.G. (EXCEPT AS NOTED OTHERWISE FOR CONTROL WIRING). ALL CONDUCTORS SHALL BE 98% CONDUCTIVITY, COPPER WITH "THHN-THWN" INSULATION UNLESS OTHERWISE NOTED.
B. ELECTRICAL METALLIC TUBING (EMT) SHALL BE OF BEST QUALITY STEEL, SMOOTH INSIDE AND OUT AND SHALL BE HOT-DIPPED GALVANIZED.
C. OUTLET BOXES SHALL BE PRESSED STEEL IN DRY LOCATIONS, CAST ALLOY WITH THREADED HUBS IN WET OR DAMP LOCATIONS AND SPECIAL ENCLOSURES FOR OTHER CLASSIFIED AREAS.
D. RIGID NONMETALIC CONDUIT SHALL BE SCHEDULE 40 PVC.
E. ALL MATERIALS SHALL BE NEW AND BEAR UNDERWRITERS' LABELS WHERE APPLICABLE.
F. PANELBOARDS:
   1. CURRENT CARRYING BUSES SHALL BE COPPER. GROUND BUS BARS SHALL BE COPPER.
   2. ALL CIRCUIT BREAKERS SHALL BE BOLT ON. PLUG-IN BREAKERS ARE NOT ACCEPTABLE.
   3. CIRCUIT BREAKERS USED AS SWITCHES IN FLUORESCENT OR HID LIGHTING CIRCUITS SHALL BE LISTED AND MARKED "SWD"
   4. ALL CIRCUIT BREAKERS FEEDING MECHANICAL EQUIPMENT SHALL BE HACR TYPE.
   5. A.I.C. RATINGS SHALL BE AS INDICATED ON PANELBOARD SCHEDULES.
   6. ALL PANELBOARDS SHALL BE FURNISHED WITH PLASTIC LAMINATE NAMEPLATES WITH 1/4" ENGRAVED LETTERING FOR PANEL IDENTIFICATION.
   7. ALL PANELBOARDS SHALL BE PROVIDED WITH TYPE-WRITTEN DIRECTORY OF BRANCH CIRCUIT DESIGNATIONS.
G. DISCONNECT SWITCHES SHALL BE H.P. RATED, HEAVY DUTY, QUICK-MAKE, QUICK-BREAK. ENCLOSURES SHALL BE NEMA-1 FOR INDOOR LOCATIONS, NEMA 3R FOR OUTDOOR LOCATIONSOR AS OTHERWISE NOTED.
H. MOTOR STARTERS SHALL BE MANUAL OR MAGNETIC AS INDICATED ON THE ELECTRICAL DRAWINGS, WITH OVERLOAD RELAYS IN EACH PHASE.
I. WIRING DEVICES (GENERAL PURPOSE RECEPTACLES AND WALL SWITCHES) COLOR SHALL BE COORDINATED WITH CLIENT.

PART 3 – EXECUTION

A. COLOR CODING OF CONDUCTORS SHALL BE AS FOLLOWS:
   1. 208/120 VOLTS, 3 PHASE, 4-WIRE SYSTEM: UNGROUNDED CONDUCTORS: 1 BLACK, 1 RED AND 1 BLUE, GROUNDED (NEUTRAL) CONDUCTOR; WHITE. GROUNDING CONDUCTORS SHALL BE GREEN.
   2. 480/277 VOLT, 3-PHASE, 4-WIRE SYSTEM: UNGROUNDED CONDUCTORS: 1 BROWN, 1 YELLOW, AND 1 PURPLE. GROUNDED (NEUTRAL) CONDUCTORS; GREY. GROUNDING CONDUCTORS SHALL BE GREEN.
   3. BRANCH CIRCUIT WIRING (#6 AND SMALLER) SHALL BE COLOR CODED BY CONTINUOUS INSULATION COLOR AND FEEDERS AND SERVICES (#4 AND LARGER) SHALL BE CODED AT ALL JUNCTION OR PULL POINTS (EXCEPT LB'S OR LBD'S) USING COLOR MARKERS OR PLASTIC TAPE MANUFACTURED FOR THE PURPOSE.
B. WIRING METHODS
   1. ALL CONDUCTORS SHALL BE INSTALLED IN ELECTRICAL METALLIC TUBING (EMT) UNLESS OTHERWISE NOTED, SPECIFIED OR AS SPECIFICALLY PROHIBITED BY THE AUTHORITY HAVING JURISDICTION. ALL FITTINGS AND COUPLINGS FOR EMT CONDUIT SHALL BE ALL STEEL RAIN TIGHT COMPRESSION TYPE OR ALL STEEL CONCRETE TIGHT SET SCREW TYPE.
   2. SCHEDULE 40 PVC CONDUIT WITH FITTINGS AND COUPLINGS APPROPRIATE FOR THE USE, SHALL BE INSTALLED UNDERGROUND OR BELOW SLABS ON GRADE.
   3. TYPE MC CABLE WITH ALUMINUM ARMOR AND INTERNAL GROUND IS ACCEPTABLE FOR USE AS GENERAL BRANCH CIRCUIT WIRING FOR CIRCUITS 20 AMPERES OR LESS AND CONCEALED IN WALLS OR ABOVE SUSPENDED CEILING AND AS APPROVED BY THE AUTHORITY HAVING JURISDICTION.
C. ELECTRICAL SYSTEM SHALL BE COMPLETE AND EFFECTIVELY GROUNDED AS REQUIRED BY THE LATEST EDITION OF THE N.E.C. AND LOCAL CODES.
D. ALL WORK SHALL BE PERFORMED BY A LICENSED ELECTRICAL CONTRACTOR IN A FIRST CLASS WORKMANLIKE MANNER. THE COMPLETED SYSTEM SHALL BE FULLY OPERATIVE AND ACCEPTED BY ENGINEER/ARCHITECT.
E. ALL WORK SHALL BE COORDINATED WITH OTHER TRADES TO AVOID INTERFERENCE WITH THE PROGRESS OF CONSTRUCTION.
F. THE ELECTRICAL INSTALLATION SHALL MEET ALL STANDARD REQUIREMENTS OF POWER AND TELEPHONE COMPANIES, AND SHALL BE FULLY COORDINATED WITH THEM PRIOR TO COMMENCEMENT OF WORK.
G. PROVIDE AND INSTALL CONDUIT, CONDUCTORS, PULL WIRES, BOXES, COVER PLATES, AND WIRING DEVICES, FOR ALL OUTLETS AS INDICATED.
H. MATERIALS, PRODUCTS, AND EQUIPMENT, INCLUDING ALL COMPONENTS THEREOF, SHALL BE NEW AND SUCH AS APPEAR ON THE UL LIST OF APPROVED ITEMS AND SHALL MEET OR EXCEED THE REQUIREMENTS OF NEC, NEMA, AND IECE.
I. CONTRACTOR SHALL SUBMIT AT LEAST FIVE (5) SETS OF SHOP DRAWINGS OR CUT SHEETS OF LIGHTING FIXTURES, SWITCHGEAR, AND ELECTRICAL ITEMS FOR APPROVAL BY ENGINEER/ARCHITECT.
J. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CUTTING AND PATCHING REQUIRED OF HIS WORK.
K. ALL LAY-IN LIGHTING FIXTURES SHALL BE SECURED TO THE SUSPENDED CEILING GRID AT EACH CORNER.
L. CONTRACTOR SHALL COORDINATE WITH MECHANICAL DRAWINGS AND PROVIDE ALL NECESSARY CONTROL WIRING.
M. ALL ELECTRICAL POWER WIRING FOR THE HVAC SYSTEM INCLUDING WIRING THRU LINE VOLTAGE CONTROL DEVICES SHALL BE THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR.
N. CONDUCTORS FOR BRANCH CIRCUITS SHALL BE INCREASED FROM SIZES INDICATED ON PANEL SCHEDULES TO PREVENT VOLTAGE DROP EXCEEDING 3% AT THE FARTHEST DEVICE. LOADS FOR DETERMINING CONDUCTOR SIZE SHALL BE BASED ON ACTUAL CONNECTED LOAD OR 80% OF BREAKER SIZE, WHICHEVER IS GREATER. CONTACT ENGINEER OF RECORD FOR ALL RUNS IN EXCESS OF 100 FT. FOR DETERMINATION OF WIRE SIZE. FOR BID PURPOSES, INCREASE WIRE BY ONE (1) WIRE SIZE FOR RUNS 100 FT. TO 200 FT. AND TWO (2) WIRE SIZES FOR RUNS OVER 200 FT.
O. FEEDER CONDUCTORS SHALL BE INCREASED FROM SIZES INDICATED ON RISER DIAGRAM TO PREVENT VOLTAGE DROP EXCEEDING 2% LOADS FOR DETERMINING CONDUCTOR SIZE SHALL BE BASED ON ACTUAL CONNECTED LOAD OR 80% OF BREAKER SIZE, WHICHEVER IS GREATER.
P. THE CONTRACTOR SHALL CONFIRM WITH THE ELECTRICAL UTILITY COMPANY ANY AND ALL REQUIREMENTS SUCH AS: METERING EQUIPMENT REQUIREMENTS AND METERING EQUIPMENT LOCATION, TRANSFORMER SIZE AND LOCATION OR SERVICE POINT, CONDUIT ENTRY AND LUG SIZE RESTRICTIONS. THE CONTRACTOR SHALL SCHEDULE ALL REQUIRED DOWN TIME FOR THE OWNERS CONFIRMATION.
Q. ANY CONFLICTS AND DESCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER BEFORE PROCEEDING WITH ANY WORK.
R. PER NEC 210.8(B)(2) ALL 15- AND 20-AMPERE, 125-VOLT RECEPTACLES IN NONDWELLING-TYPE KITCHENS TO BE GFCI PROTECTED.

ISSUED FOR PERMIT ONLY 10-09-17

KAMM CONSULTING PROJECT #: 2017-0738
PROJECT MANAGER: JOHN MAYER

KAMM CONSULTING
1408 Orchid Avenue
Fort Pierce, Florida 34950
772.595.1744 cell 954.448.0792
CA #26000683

PRINCIPAL: Brighid Brito PE# 69252 02-09-18

CONSULTANT

CITY OF FORT LAUDERDALE
PUBLIC WORKS DEPARTMENT
ENGINEERING & ARCHITECTURE
100 North Andrews Avenue, Fort Lauderdale, Florida 33301

NO.	DATE	BY	CHK'D	DESCRIPTION
	03-14-18			BID SET

City of Fort Lauderdale

PROJECT # 10909
FIRE STATION #8

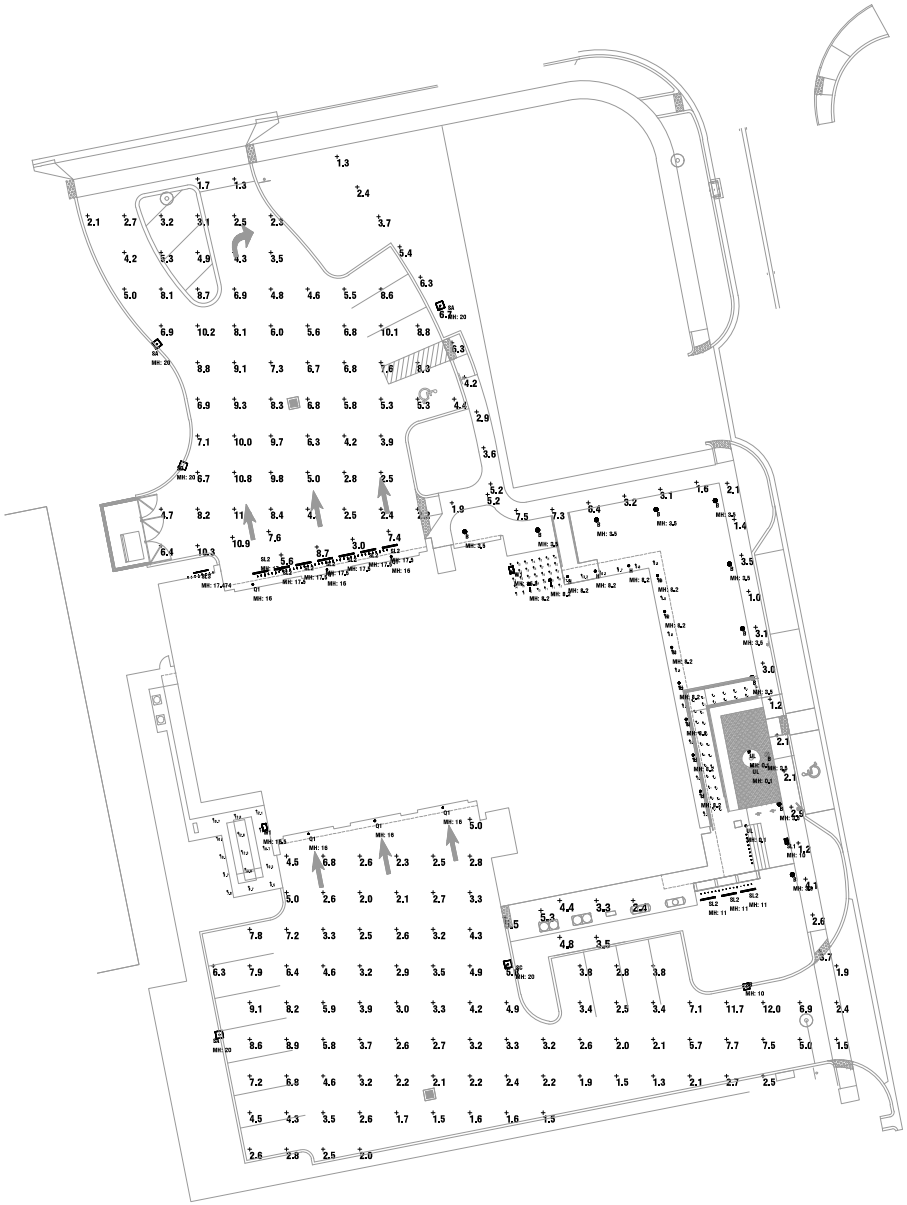
FORT LAUDERDALE 417 SW 1ST AVE

CPZ ARCHITECTS, INC.
110 WEST FRONT ROAD BOARD
PLANT CITY, FLORIDA 33317
PHONE (954) 790-8525 FAX: (954) 357-0199
AA-C2600683 WWW.CPZARCHITECTS.COM

DRAWN BY: KP/JH DATE: 09-16-16
CHECKED BY: CPZ SCALE:

SHEET NO. E0.1 OF
TOTAL SHEETS: 105
DRAWING TITLE: ELECTRICAL NOTES
DRAWING FILE NO. 4-138-84

BID 12139-983



SITE PHOTOMETRIC PLAN

1/16"=1'-0" NORTH

Luminaire Schedule

Project: FIRE STATION #8 - 1717 SW 1st Ave, Fort Lauderdale, FL 33315 - MARCH-29-2017

Symbol	Qty	Label	Description		Lamp	Lumens/Lamp	LLF	Lum. Watts	Total Watts
	11	B	MAXIM GARDEN 85880SCBK-SW-SWMP ROLLED	ROLLED	N.A.	3,000	0.1	41	451
	16	H	MAXIM QUADRAIN 85866SCT	QUADRA MOUNT	N.A.	2,870	0.8	56	896
	2	I	MAXIM DOMINO 57866SWSO	DOMINO MOUNT	N.A.	2,870	0.8	70	140
	9	D1	CREE LED-2000RDT-E-W-HOR-ELL	RECESSED	N.A.	2,870	0.7	31	199
	3	M	MAXIM GARDEN 7554-SCT-ELS-SW	POLE MOUNT: 20'-0" AFG	N.A.	3,000	0.8	105	945
	1	M	MAXIM GARDEN 7554-SW-ELS-SW	POLE MOUNT: 10'-0" AFG	N.A.	3,000	0.8	105	105
	1	M1	MAXIM GARDEN 7554-SW-2-ELS-SW	POLE MOUNT: 20'-0" AFG	N.A.	3,000	0.8	210	210
	3	M	MAXIM GARDEN 7554-SW-ELS-SW	POLE MOUNT: 20'-0" AFG	N.A.	3,000	0.8	210	630
	1	B1	MAXIM GARDEN 55F-SCT-ELS-7554-SW-ELS-SW	POLE MOUNT: 10'-0" AFG	N.A.	3,000	0.8	70	70
	19	B2	BOLLARD 18W-L-W-ELS-120	WALL MOUNT: 7'-0" AFG WALL MOUNT: 10'-0" AFG	N.A.	3,000	0.8	18	180
	1	B3	BOLLARD 18W-L-W-ELS-120	WALL MOUNT: 10'-0" AFG	N.A.	3,000	0.8	88	88
	9	R1	6-4 SPT-ELS-ELS-ELS-SP	RECESSED AT GRADE	N.A.	3,000	0.8	21	189
	2	M1	MAXIM GARDEN 7554-SW-2-ELS-SW	WALL MOUNT: 10'-0" AFG	N.A.	3,000	0.8	210	420

Calculation Summary

Project: FIRE STATION #8 - 1717 SW 1st Ave, Fort Lauderdale, FL 33315 - MARCH-29-2017

Label	Avg	Max	Min	Avg/Min	Max/Min
CALC	14.30	20	9	2.49	5.00
PARK	14.31	20	9	2.49	5.00
SIDEWALK	9.49	17.4	5.3	2.49	7.01
AREA 1	15.47	20	9	3.59	7.20
AREA 2	13.09	16	7	1.71	3.20
AREA 4	17.16	24	9	3.79	4.28
GENERATOR	16.67	19.8	7.8	1.97	1.71
RAMP	9.99	4.4	1.7	3.99	3.99
AT&T	4.82	11.8	1.3	3.79	9.23
SIDEWALK	9.49	5.3	1.4	3.99	7.00

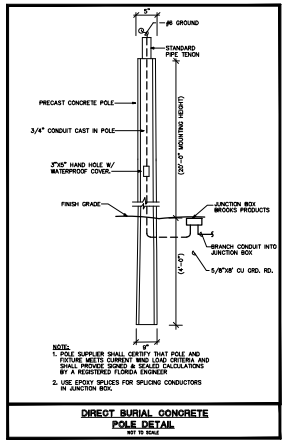
GENERAL NOTE

1. STREET LIGHTING FOR ADJACENT STREETS TO BE PROVIDED BY UTILITY COMPANY. UTILITY COMPANY TO PROVIDE A MINIMUM OF 0.5 FOOTCANDLES.
2. SPECIFIC LIGHTING FIXTURES, SELECTED BY TYPE, PHOTOMETRIC PERFORMANCE, LIGHTING PATTERN AND LUMEN OUTPUT WERE USED IN THE ILLUMINATION TO PRODUCE THE REQUIRED EFFECTS AND ILLUMINATION. SUBSTITUTION OF THE LIGHT FIXTURES WILL RESULT IN DIFFERENT ILLUMINATION COVERAGE AND LIGHTING PATTERN. THEREFORE, SUBSTITUTION OF LIGHTING FIXTURES WILL NOT BE ALLOWED.

GENERAL NOTE

1. STREET LIGHTING FOR ADJACENT STREETS TO BE PROVIDED BY UTILITY COMPANY. UTILITY COMPANY TO PROVIDE A MINIMUM OF 0.5 FOOTCANDLES.
2. SPECIFIC LIGHTING FIXTURES, SELECTED BY TYPE, PHOTOMETRIC PERFORMANCE, LIGHTING PATTERN AND LUMEN OUTPUT WERE USED IN THE ILLUMINATION TO PRODUCE THE REQUIRED EFFECTS AND ILLUMINATION. SUBSTITUTION OF THE LIGHT FIXTURES WILL RESULT IN DIFFERENT ILLUMINATION COVERAGE AND LIGHTING PATTERN.

TO CONFIRM THAT THE SPECIFIED PHOTOMETRIC CRITERIA HAS BEEN MET, A COMPUTER DISK CONTAINING THE IES PHOTOMETRIC FILE FOR THE PROPOSED ALTERNATE/SUBSTITUTION MUST BE SUBMITTED TO KAMM CONSULTING ENGINEERS FOR EVALUATION. ANY ACCEPTABLE ALTERNATE/SUBSTITUTE MUST BE APPROVED IN WRITING PRIOR TO BID DATE.



DIRECT BURIAL CONCRETE POLE DETAIL

NOT TO SCALE

ISSUED FOR PERMIT ONLY 10-04-17

KAMM CONSULTING PROJECT #: 2013-07.38

PROJECT MANAGER: JOHN MAYR

KAMM CONSULTING

1408 Orchid Drive
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Certificate of Authorization #: 28189

PRINCIPAL: RUSSELL BAYLEY FLORIDA REGISTRATION #: 58232

10-04-17 DATE

FILE

SEAL

CONSULTANT

NO.	REVISION	DATE
	PC SET	10-4-17

CITY OF FORT LAUDERDALE
PUBLIC WORKS DEPARTMENT
ENGINEERING & ARCHITECTURE
100 North Andrews Avenue, Fort Lauderdale, Florida 33301

NO.	DATE:	BY	CHK'D	DESCRIPTION

REVISIONS

City of Fort Lauderdale

PROJECT # 10909
FIRE STATION #8

1717 SW 1ST AVE.
FORT LAUDERDALE, FL 33315

CPZ ARCHITECTS, INC.
4316 WEST BROWARD BOULEVARD
PLANTATION, FLORIDA 33317 (954) 317-0159
CA-26000683 WWW.CPZARCHITECTS.COM

CPZ

DRAWN BY:	DATE:
KPJH	05-16-16
CHECKED BY:	SCALE:
CPZ	

SHEET NO. E1.1 OF

TOTAL: 105

DRAWING TITLE: PLAN
SITE PHOTOMETRIC

DRAWING FILE NO. 4-138-84

12139-983

CONSULTANT

CITY OF FORT LAUDERDALE
PUBLIC WORKS DEPARTMENT
ENGINEERING & ARCHITECTURE
100 North Andrews Avenue, Fort Lauderdale, Florida 33301

REVISIONS

NO.	DATE	BY	CHK'D	DESCRIPTION

CPZ ARCHITECTS, INC.
PROJECT # 10909
FIRE STATION #8

1717 SW 1ST AVE.
FORT LAUDERDALE FL 33315
PHONE (954) 767-8529 FAX (954) 317-0259
AA #26000685 WWW.CPZARCHITECTS.COM

DRAWN BY: DATE: 08-16-18
CHECKED BY: SCALE:

SHEET NO. OF
E1.2
TOTAL 105
DRAWING TITLE:
SITE POWER PLAN
DRAWING FILE NO.
4-138-184

KAMM CONSULTING
1408 CYPRESS STREET
FT. LAUDERDALE, FLORIDA 33315
PH: (954) 463-4488 FAX: (954) 463-7792
CERTIFICATE OF AUTHORIZATION #EB189

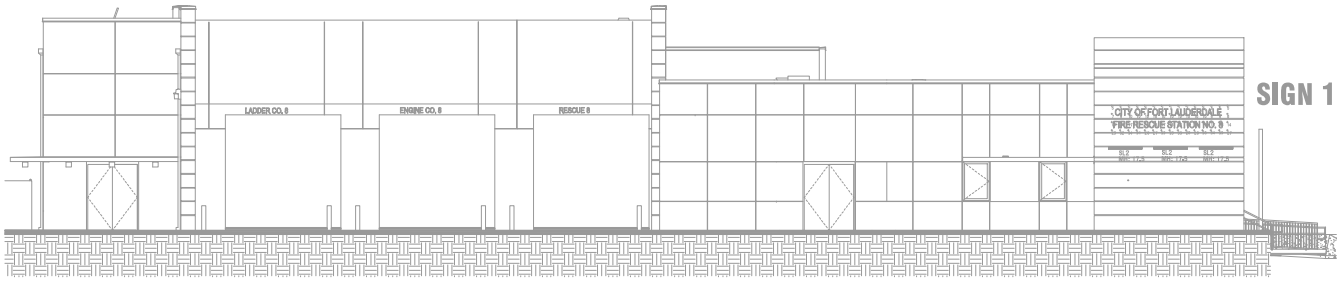
KEY NOTE

1. RELOCATE FPL POLE AND OVERHEAD WIRES & UNDERGROUND WITH (3) EXISTING TRANSFORMERS IN R.O.W. CONTRACTOR SHALL COORDINATE WITH FPL FOR EXACT LOCATION PRIOR TO CONSTRUCTION & INSTALLATION. CONTRACTOR TO RECONNECT (3) NEW TRANSFORMER TO RELOCATED POLE FOR MEP ELECTRICAL SERVICE. WITH FPL FOR EXACT LOCATION PRIOR TO INSTALLATION. FPL CONTACT: LUCAS CORNISH (954) 717-2744 EMAIL: LUCAS.CORNISH@FPL.COM. CONTRACTOR SHALL INCLUDE IN BID A $5,000.00 ALLOWANCE FOR FPL POLE RELOCATION IN R.O.W.
2. PROVIDE WEATHERPROOF JUNCTION BOX FOR GATE MOTOR. COORDINATE EXACT LOCATION AND REQUIREMENTS WITH CONTRACTOR. SEE SHEET SP3.1
3. PROVIDE WEATHERPROOF JUNCTION BOX FOR GATE CONTROL. COORDINATE EXACT LOCATION AND REQUIREMENTS WITH CONTRACTOR. SEE SHEET SP3.1
4. JUNCTION BOX FOR FLAG POLE LIGHT. COORDINATE EXACT LOCATION AND REQUIREMENTS WITH CONTRACTOR.
5. PROVIDE 2-1" CONDUITS TO IT ROOM FOR GATE CONTROL AND GATE INTERCOM. COORDINATE EXACT LOCATION AND REQUIREMENTS WITH CONTRACTOR.
6. VERIFY EXACT REQUIREMENTS WITH CITY AND CONTRACTOR. SEE SHEET SP3.1.
7. PROVIDE 3 WEATHERPROOF JUNCTION BOXES FOR POWER TO GENERATOR EQUIPMENT.
8. PROVIDE 2-2" TRAFFIC SIGNAL CONDUITS IN WEATHERPROOF JUNCTION BOXES FOR CONTROL CONTRACTOR IN MAINTENANCE AGREEMENT. COORDINATE EXACT REQUIREMENTS WITH TRAFFIC DRAWINGS. GENERAL CONTRACTOR SHALL COORDINATE WITH ELECTRICAL CONTRACTOR & TRAFFIC SIGNAL CONTROL CONTRACTOR. ALL TRAFFIC SIGNAL EQUIPMENT INSTALLATION SHALL MEET F.D.O.T. STANDARD SPECIFICATIONS.
9. PROVIDE 3-3" CONDUITS FROM IT ROOM TO ELECTRICAL ROOM.
10. PROVIDE 1" CONDUIT WITH PULL BOX FROM GENERATOR TO ELECTRICAL ROOM.
11. CIRCUIT THRU PHOTOCELL/ TIMECLOCK.
12. (4) 4" CONDUITS FOR (2) CABLE AND (2) TELCO, COORDINATE EXACT LOCATION WITH UTILITY COMPANY.
13. SEE SHEET E3.1 FOR CONDENSING UNIT POWER.
14. PROPOSED NEW TRANSFORMER LOCATION. CONTRACTOR TO PROVIDE (2) 4" PVC40 CONDUITS FROM NEW TRANSFORMER LOCATION TO RELOCATED FPL POLE. CONTRACTOR SHALL COORDINATE WITH FPL FOR EXACT LOCATION AND INSTALLATION WITH FPL AND INSTALLATION OF SECONDARY POWER TO NEW TRANSFORMER TO RELOCATED POLE FOR MEP ELECTRICAL SERVICE. NEW TRANSFORMER TO RELOCATED POLE FOR MEP ELECTRICAL SERVICE. FPL CONTACT: LUCAS CORNISH (954) 717-2744 EMAIL: LUCAS.CORNISH@FPL.COM.

GENERAL NOTES

1. STREET LIGHTING FOR ADJACENT STREETS TO BE PROVIDED BY UTILITY COMPANY. UTILITY COMPANY TO PROVIDE A MINIMUM OF 0.5 FOOTCANDLES.
2. SPECIFIC LIGHTING FIXTURES, SELECTED BY TYPE, PHOTOMETRIC PERFORMANCE, LIGHTING PATTERN AND LUMEN OUTPUT WERE USED IN THE ILLUMINATION TO PRODUCE THE REQUIRED EFFECTS AND ILLUMINATION. SUBSTITUTION OF THE LIGHT FIXTURES WILL RESULT IN DIFFERENT ILLUMINATION COVERAGE AND LUMINANCE PATTERN. THEREFORE, SUBSTITUTION OF LIGHTING FIXTURES WILL NOT BE ALLOWED.

SITE POWER PLAN
1/16"=1'-0" NORTH



SIGN 1

Luminaire Schedule

Project: FIRE STATION #8 - RTC - REV 8 — MARCH- 28 - 2017

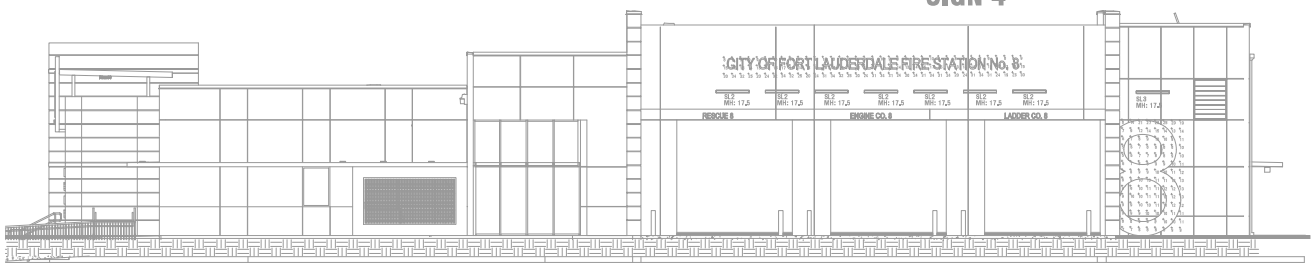
Symbol	Qty	Label	Description	Lamp/Lamp	LLF	Lamp Watts	Total Watts
	1	SL1	PHILIPS GREENOX DSF1-S-ZL-TFD-A48-HE-730	Pulse	0.600	72	72
	19	SL2	BEGHT WD-S-D-105-730	Pulse	0.600	10	190
	1	SL3	BEGHT WD-1-D-105-730	Pulse	0.600	89	89

Calculation Summary

Project: FIRE STATION #8 - RTC - REV 8 — MARCH- 28 - 2017

Label	Avg	Max	Min	Avg/Min	Max/Min
BEGHT	11.49	28	0	N/A	N/A
SL1 1	17.47	89	0	N/A	N/A
SL1 2	11.00	15	7	1.71	2.00
SL1 3	17.16	30	0	N/A	N/A

SIGN 4



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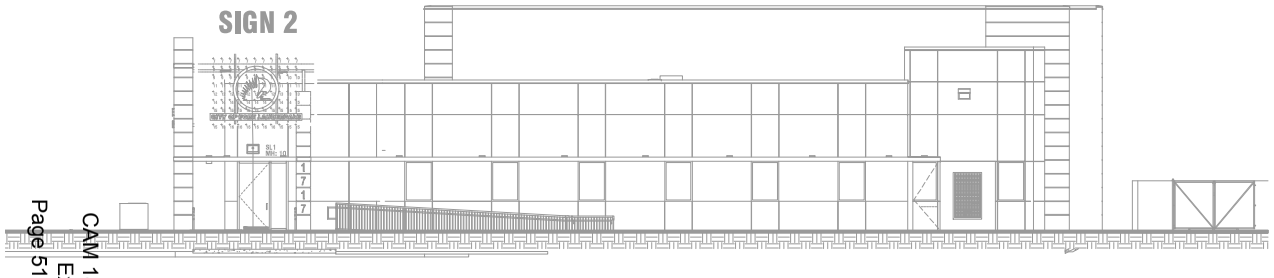

ELEV. PHOTOMETRIC PLAN

1/16"-1'-0" NORTH

NO.	REVISION	DATE
	RFQ#21	10-5-17

CONSULTANT

CITY OF FORT LAUDERDALE
PUBLIC WORKS DEPARTMENT
ENGINEERING & ARCHITECTURE
100 North Andrews Avenue, Fort Lauderdale, Florida 33301

NO.	DATE	BY	CHK'D	DESCRIPTION

REVISIONS

City of Fort Lauderdale

PROJECT # 10909
FIRE STATION #8

1717 SW 1ST AVE.
FORT LAUDERDALE, FL 33315

CPZ ARCHITECTS, INC.
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CPZ

DRAWN BY:	DATE:
KPJH	05-16-16
CHECKED BY:	SCALE:
CPZ	

ISSUED FOR PERMIT ONLY 10-30-17

KAMM CONSULTING PROJECT #: 2013-07.38
PROJECT MANAGER: JOHN MAYR

KAMM CONSULTING
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Phone: 772.595.1744 Office 954.448.0792
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Certificate of Authorization #: 28189

DESIGNED BY: [illegible] DRAWN BY: [illegible] CHECKED BY: [illegible] 10-30-17 DATE

SHEET NO. E1.3 OF
TOTAL: 105
DRAWING TITLE: PLAN ELEV. PHOTOMETRIC
DRAWING FILE NO. 4-138-84

12139-983

CONSULTANT

CITY OF FORT LAUDERDALE
PUBLIC WORKS DEPARTMENT
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NO.	DATE	BY	CHK'D	DESCRIPTION
	02-19-18			BID SET

REVISIONS

CPZ ARCHITECTS, INC.
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PROJECT # 10909
FIRE STATION #8
1717 SW 1ST AVE
FORT LAUDERDALE

DRAWN BY: KP/JH
DATE: 03-16-16
CHECKED BY: CPZ
SCALE:

SHEET NO. E2.1
OF
TOTAL SHEETS: 105
DRAWING TITLE: LIGHTING PLAN
DRAWING FILE NO. 4-138-04

LEGEND

PROVIDE 1400 LUMEN BATTERY PACK

GENERAL NOTES

1. REFER TO ARCHITECTURAL SHEET A-101 FOR LIGHT FIXTURE MOUNTING HEIGHTS.

KEY NOTES

1. CIRCUIT THRU TIMECLOCK/ PHOTOCELL.
2. PROVIDE APPARENTICE II LIGHTING CONTROL PANEL.
3. PLUG INTO CLOSEST POWER PLAN FOR FLAG POLE LIGHTING.

KAMM CONSULTING, INC.
ENGINEERING • LIGHTING • ACOUSTICS
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CERTIFICATE OF AUTHORIZATION #EB 0000889

ISSUED FOR PERMIT ONLY

PROJECT NO. 2017-07-18

ARCHITECTURAL
ELECTRICAL

SEAL

CONSULTANT

CITY OF FORT LAUDERDALE
PUBLIC WORKS DEPARTMENT
ENGINEERING & ARCHITECTURE
100 North Andrews Avenue, Fort Lauderdale, Florida 33301

NO.	DATE	BY	CHK'D	DESCRIPTION
	03-19-18			BID SET

REVISIONS

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PROJECT # 10909
FIRE STATION #8
1717 SW 1ST AVE
FORT LAUDERDALE

DRAWN BY:	DATE:
KP/JH	03-16-16
CHECKED BY:	SCALE:
CPZ	

SHEET NO. E2.2 OF

TOTAL: 105
DRAWING TYPE: LIGHTING PLAN
DRAWING FILE NO. 4-138-04

LEGEND

PROVIDE 1400 LUMEN BATTERY PACK

KEY NOTES

1. BIG ASS FAN CONTROL BOX.
2. COORDINATE WITH CITY FOR EXACT INSTALLATION LOCATIONS PRIOR TO INSTALLATION.

KAMM CONSULTING

KAMM CONSULTING PROJECT #

CONSULTANT

CITY OF FORT LAUDERDALE
PUBLIC WORKS DEPARTMENT
ENGINEERING & ARCHITECTURE
100 North Andrews Avenue, Fort Lauderdale, Florida 33301

NO.	DATE	BY	CHK'D	DESCRIPTION
	05-15-18			BID SET

REVISIONS

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PROJECT # 10909
FIRE STATION #8
1717 SW 1ST AVE
FORT LAUDERDALE

DRAWN BY:	DATE: 05-15-16
CHECKED BY:	SCALE:

SHEET NO. E3.1.1 OF

TOTAL SHEETS: 105
DRAWING TITLE: BDA CONDUIT PLAN
DRAWING FILE NO. 4-138-84

KAMM CONSULTING

KAMM CONSULTING INC.
[illegible]

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ARCHITECTURAL
MECHANICAL
ELECTRICAL
PLUMBING
FIRE PROTECTION
STRUCTURAL

KEY NOTES

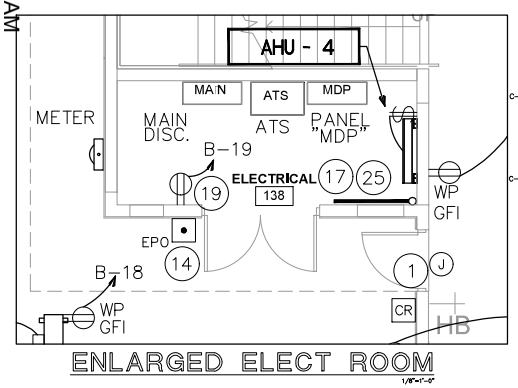
1. PROVIDE 3/4" EMT CONDUIT FROM FIRE ALARM CONTROL PANEL (FACP) LOCATED IN ROOM #118 TO BDA CONNECTION IN I.T. ROOM #117.
2. PROVIDE 18"X18" EMT PULL BOX ABOVE CEILING.
3. PROVIDE 12" SWEEP.
4. PROVIDE 2" METAL CONDUIT, 2" METAL CONDUIT WITH 1 HOUR FIRE RATING, OR COMPLIANCE WITH 2014 FBC, BLDG CODE AND ALL N.E.C. REQUIREMENTS.
5. BDA ALARMS NEED TO BE MONITORED BY THE FACP. PANEL SHALL HAVE SPARE MONITORING CAPACITY.
6. THE ALARM CONTRACTOR SHALL PROVIDE THE INTERFACE MODULES FOR THE BDA MONITORING. IF EXISTING INTERFACE MODULES WILL TAKE CONTACT CLOSURES FROM BDA, ALARM CONTRACTOR SHALL CONVERT THEM TO A FORMAT THAT FACP CAN HANDLE. INTERFACE MODULES SHALL BE LOCATED WITHIN 3' FROM BDA LOCATION.

BDA COORD. NOTE

1. THE ALARMS SHALL BE OPERATIONAL AND ALARM CONTRACTOR SHALL COORDINATE WITH BDA VENDOR WHEN NEEDED. ANY ENGINEERING EVALUATIONS INDICATE THAT THE BDA SYSTEM WILL BE REQUIRED.

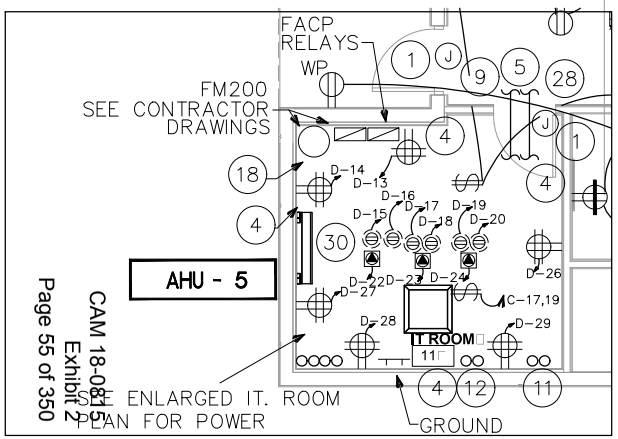
BDA CONDUIT PLAN

1/16"=1'-0" NORTH



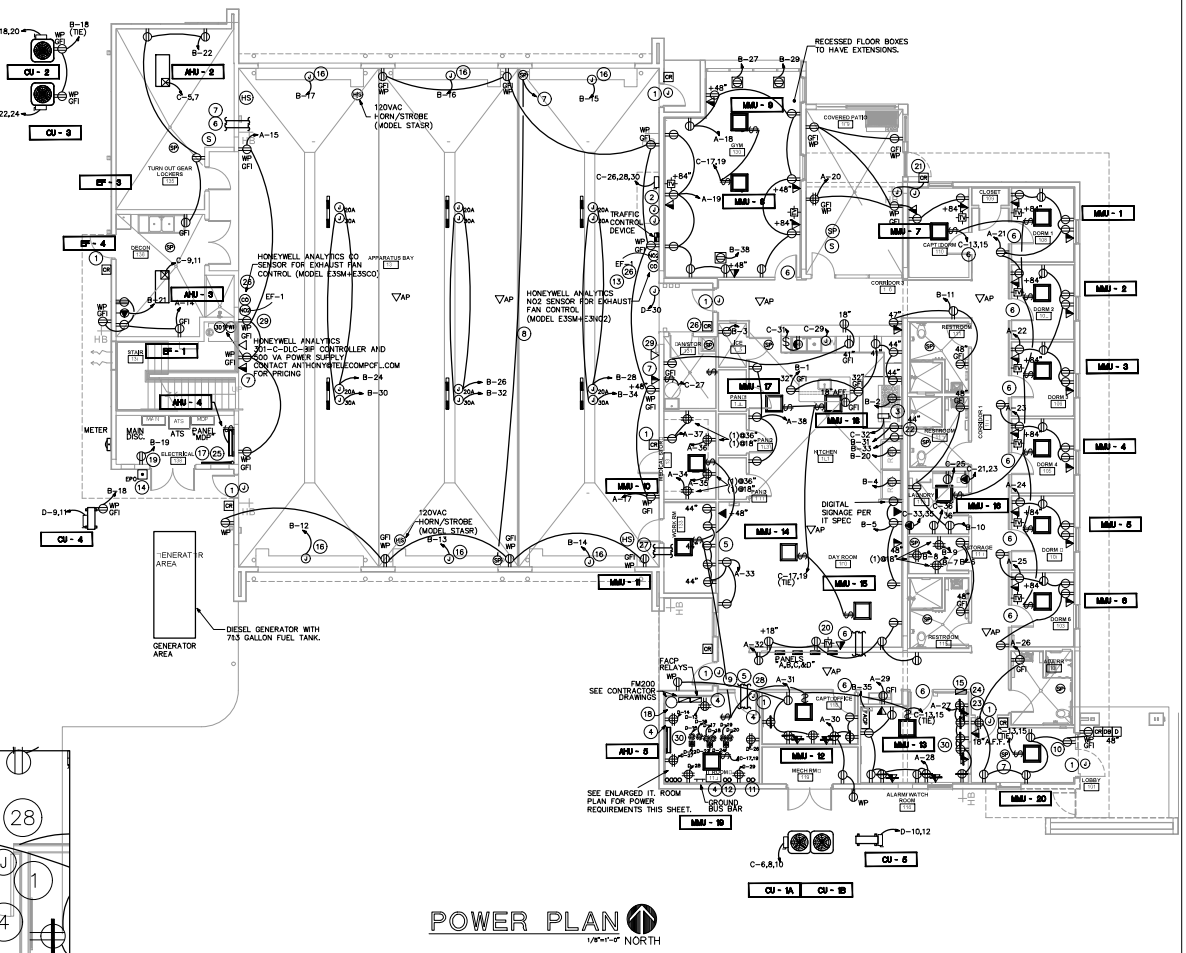
ENLARGED ELECT ROOM

1/8"=1'-0"



ENLARGED IT ROOM

1/8"=1'-0"



POWER PLAN

1/8"=1'-0" NORTH

KEY NOTES

1. PROVIDE J-- BOXES FOR CARD READERS PROVIDE 3/4" CONCEALED EMPTY CONDUIT. CONTRACTOR TO COORDINATE EXACT HEIGHT AND LOCATION WITH IT DEPARTMENT.
2. SHP, 175PSI, 17 CFM, HORIZONTAL 80 GAL. TANK 208V 3PH 60HZ AIR COMPRESSOR BY SPEEDAIRE OR APPROVED EQUAL. MOUNTED ON CONCRETE PLATFORM WITH SERVICE PLATFORM. SEE STRUCTURAL DRAWINGS.
3. PROVIDE POWER FOR HOOD, PROVIDE SHUNT TRIP, GC TO COORDINATE HOOD WITH HOOD CONTACTOR.
4. PROVIDE IT ROOM BACKBOARD ALONG THIS WALL SEE IT ROOM SPECIFICATION NOTES AND FLOOR PLAN NOTES ON SHEET A100.2
5. PROVIDE 4--4" EMPTY CONDUITS THRU WALL ABOVE CEILING FOR DATA. STUB 6" BEYOND WALLS. VERIFY EXACT LOCATION AND REQUIREMENTS WITH CONTRACTOR. PROVIDE SEAL FOR FM200 SYSTEM
6. PROVIDE (2) 2" EMPTY CONDUITS THRU WALL ABOVE CEILING FOR DATA. STUB 6" BEYOND WALLS. VERIFY EXACT LOCATION AND REQUIREMENTS WITH CONTRACTOR.
7. PROVIDE 1" EMPTY CONDUIT WITH PULL STRING TO IT ROOM.
8. PROVIDE EMPTY CONDUIT WITH PULL STRING.
9. NOT USED.
10. PROVIDE RECEPTACLE FOR DOOR BELL. CONTRACTOR TO VERIFY EXACT REQUIREMENTS WITH EQUIPMENT INSTALLER.
11. COMCAST CONDUIT STUB UP LOCATION.
12. ATT CONDUIT STUB UP LOCATION.
13. PROVIDE (2) 2" CONDUITS EXPOSED ON WALL FOR POWER AND DATA REQUIRED FOR TRAFFIC CONTROL DEVICE. VERIFY EXACT REQUIREMENTS WITH CITY. SEE SHEET E1.2 FOR CONDUIT LOCATION. GENERAL CONTRACTOR SHALL COORDINATE WITH ELECTRICAL CONTRACTOR & TRAFFIC SIGNAL CONTRACTOR PRIOR TO INSTALLATION.
14. LOCATION FOR STANDBY GENERATOR STOP BUTTON, VERIFY EXACT LOCATION WITH AUTHORITY HAVING LOCAL JURISDICTION.
15. GENERATOR ANNUNCIATOR PANEL LOCATION.
16. PROVIDE 3/4" EMPTY CONDUIT WITH PULL STRING TO WATCH OFFICE AND DOOR MOTOR FOR ROLL UP DOOR CONTROLS. TERMINATE AT WATCH ROOM. COORDINATE EXACT TERMINATION LOCATION WITH CITY PRIOR TO INSTALLATION. COORDINATE TERMINATION AND CONTROLS REQUIREMENTS WITH EQUIPMENT SUPPLIER.
17. 20A/12POLE LIGHTING CONTRACTOR FOR CONTROL VIA COMBINATION TIMECLOCK/PHOTOCELL FOR TIMECLOCK "ON"-PHOTOCELL "OFF" AND PHOTOCELL "ON"-TIMECLOCK "OFF".
18. FIRE ALARM CONDUIT. SEE TELECOM INFRASTRUCTURE DESIGN SPECIFICATIONS FOR DETAILS.
19. IRRIGATION CONTROLLER.
20. COORDINATE HEIGHT OF OUTLETS, DATA, AND CABLE WITH MILLWORK CONTRACTOR AND GC PRIOR TO INSTALLATION. SEE ARCHITECTURAL DRAWINGS.
21. ELECTRICIAN TO PROVIDE JBOX SURFACE MOUNTED ON WALL WITH 1/2" CONDUIT STUBBED INTO CEILING SPACE FOR GATE CARD READER INSTALLATION. PROVIDE PULL STRING AS NEEDED.
22. 20A, 120V, DUPLEX RECEPTACLE FOR MICROWAVE MOUNT CENTER AT 72"AFF
23. FIRE ALERTING SYSTEM CONTROL LOCATION.
24. CERT RADIO CONNECTION LOCATION.
25. SEE IT ROOM DESIGN GUIDE FOR BACK BOARD SPECIFICATIONS.
26. PROVIDE 3/4" CONDUIT FOR (6) PUSH BUTTON DOOR CONTROL STATIONS TO OPEN ALL DOORS IN APPARATUS BAY. CONTRACTOR TO COORDINATE EXACT LOCATIONS WITH CITY PRIOR TO INSTALLATION.
27. PROVIDE (2) 2" EMPTY CONDUIT THRU WALL FOR DATE. VERIFY EXACT LOCATION AND REQUIREMENTS WITH CONTRACTOR.
28. PROVIDE J-- BOXES FOR CARD READER FOR FUTURE USE. PROVIDE 4"X4" J-- BOX AT CARD READER HEIGHT WITH 3/4" CONDUIT STUB UP. CONTRACTOR TO COORDINATE WITH CITY I.T. DEPARTMENT FOR EXACT REQUIREMENTS PRIOR TO INSTALLATION.
29. SEE SHEET E6.1 FOR IT REQUIREMENTS FOR TELEPHONICS. CONTRACTOR TO COORDINATE ALL REQUIREMENTS WITH ELECTRICAL CONTRACTOR.
30. PROVIDE 3" CONDUIT FROM I.T. ROOM #117 TO WATCH ROOM #116. CONDUIT TO CERT. RADIO IN WATCH ROOM. PROVIDE J-- BOX. PROVIDE FLEX CONDUIT ABOVE COUNTER TO CERT. RADIO. CONTRACTOR TO COORDINATE WITH CITY I.T. DEPARTMENT PRIOR TO INSTALLATION FOR EXACT REQUIREMENTS.

NOTE

A BI-DIRECTIONAL AMPLIFIER AND TWO-WAY RADIO COMMUNICATIONS ENHANCEMENT SYSTEM WILL BE USED AT THIS LOCATION. SEE SHEET E6.1 FOR NOTES AND REQUIREMENTS. ELECTRICAL CONTRACTOR TO COORDINATE ALL ROUGH-IN AND INSTALLATION REQUIREMENTS WITH CITY RADIO COMMUNICATIONS DEPARTMENT.

COORDINATE ALL RELAYS, SEQUENCE OF OPERATION, AND PANEL CONTROLS WITH FM-200 CONTRACTOR. ELECTRICAL CONTRACTOR TO PROVIDE ALLOWANCE FOR FM200 SYSTEM CONNECTIONS, DAMPER CONTROLS, SHUNT TRIPS, WIRING, BOXES, AND CONDUIT. COMPLETE SYSTEM TO BE PROVIDED.

NOTE

CONTRACTOR SHALL COORDINATE ALL IT. SPECIFICATIONS ON SHEET E6.1 WITH ELECTRICAL CONTRACTOR. CONTRACTOR SHALL HAVE A MEETING WITH IT. DEPARTMENT AND ELECTRICAL CONTRACTOR TO REVIEW ALL REQUIREMENTS IN IT. SPECIFICATIONS OUTLINED ON SHEET E6.1 PRIOR TO CONSTRUCTION.

ELECTRICAL CONTRACTOR TO COORDINATE SEQUENCE OF OPERATION AND PROVIDE ALL REQUIRED COMPONENTS TO ACTIVATE APPARATUS BAY DOORS IN THE EVENT OF CARBON MONOXIDE ALARM. SEE MECHANICAL PLANS FOR CARBON MONOXIDE SYSTEM DATA.

GENERAL NOTE

- REFER TO SITE AND ARCHITECTURAL PLANS FOR ADDITIONAL CALL OUTS AND ELECTRICAL WORK.
- ALL ANTENNAE TO BE CONNECTED TO THE LIGHTNING PROTECTION SYSTEM.
- PROVIDE GROUNDING BAR IN IT ROOM FOR LIGHTNING PROTECTION PURPOSES.
- ELECTRICAL CONTRACTOR AND GC TO INSTALL PER IT INFRASTRUCTURE DESIGN AND SPECIFICATION DESIGN GUIDE.
- ELECTRICAL CONTRACTOR TO REFER TO SHEET A--800 FOR ADDITIONAL ELECTRICAL SCOPE OF WORK. CONTRACTOR TO COORDINATE ARCHITECTURAL PLANS WITH ELECTRICAL PLANS.

ISSUED FOR PERMIT ONLY 3/29/2017

KAMM CONSULTING PROJECT #: 2017-0738
PROJECT MANAGER: JOHN MAYR

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PRINCIPAL: BRADLEY BOLLIG
PE#48189 STATE OF COLORADO
02-09-18
DATE

CONSULTANT

CITY OF FORT LAUDERDALE
PUBLIC WORKS DEPARTMENT
ENGINEERING & ARCHITECTURE
100 North Andrews Avenue, Fort Lauderdale, Florida 33301

REVISIONS				
NO.	DATE	BY	CHK'D	DESCRIPTION
	03-14-18			BID SET

City of Fort Lauderdale

PROJECT # 10909
FIRE STATION #8

FORT LAUDERDALE, FLORIDA 33312 — 417 SW 31ST AVE

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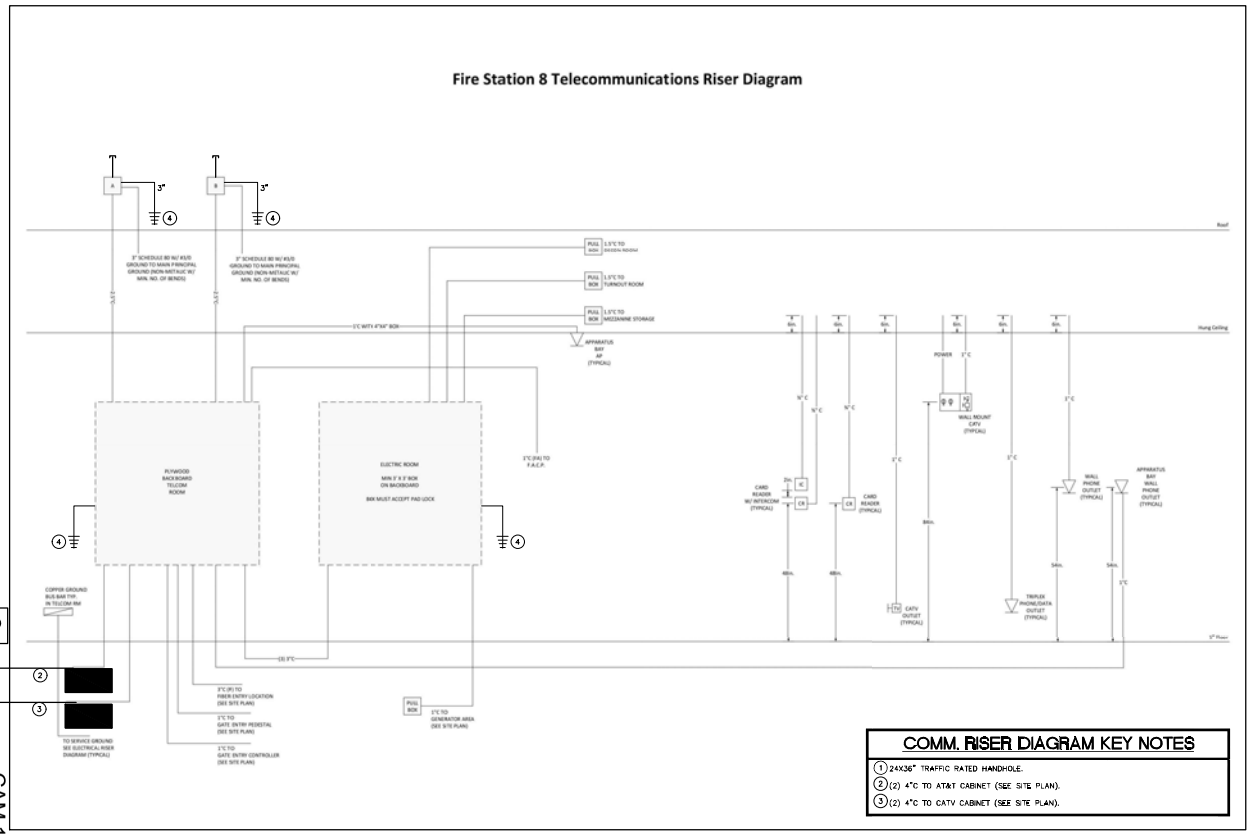
DRAWN BY: KP/JH
DATE: 09-16-16
CHECKED BY: CPZ
SCALE:

SHEET NO. E3.1
OF
TOTAL: 105
DRAWING TITLE: POWER PLAN
DRAWING FILE NO. 4-138-84

Bid 12139-983

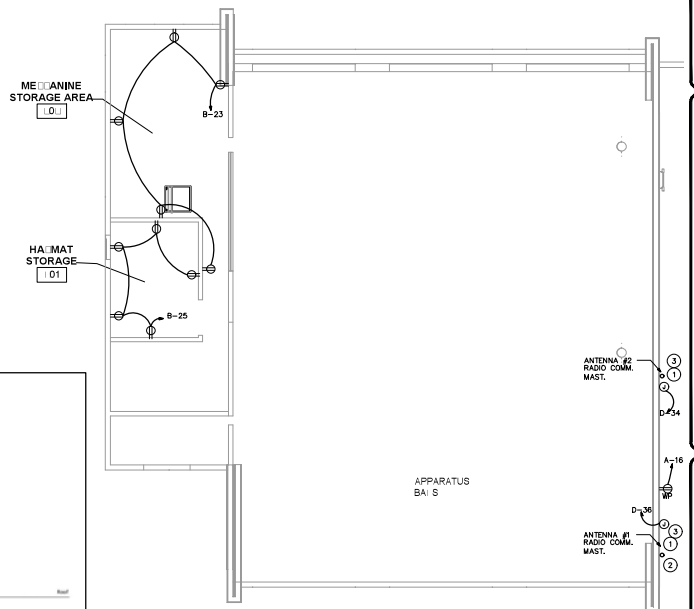


COMM. RISER DIAGRAM KEY NOTES

1. 24X36" TRAFFIC RATED HANDHOLE.
2. (2) 4"C TO AT&T CABINET (SEE SITE PLAN).
3. (2) 4"C TO CATV CABINET (SEE SITE PLAN).

COMMUNICATION RISER DIAGRAM

NTS



MEZZANINE POWER PLAN

NORTH

1/8"=1'-0"

KEY NOTES

1. PROVIDE 1-18X18X12 NEMA 4X JBOX ENCLOSURE TO ACT AS A JUNCTION POINT FOR COAX CABLE ENTRY. CONTRACTOR TO MOUNT 6" ABOVE ROOF DECK. FROM NEMA 4X JBOX ENCLOSURE PROVIDE 1-2-1/2" CONDUIT RUN TO IT ROOM. COORDINATE EXACT LOCATION WITH CONTRACTOR AND CITY PRIOR TO INSTALLATION.
2. PROVIDE 1-2-1/2" CONDUIT RUN FROM NEMA 4X JBOX ENCLOSURE TO APPARATUS BAY FOR TRAFFIC PREEMPTION GPS REPEATER EQUIPMENT. COORDINATE EXACT LOCATION WITH CONTRACTOR AND CITY PRIOR TO INSTALLATION.

   NOTE: ALL CONDUIT SHALL BE RUN WITH MINIMUM BENDS AND DIRECTIONAL CHANGES. ALL UNAVOIDABLE BENDS SHALL BE SWEEP 90s. LBs ARE NOT PERMITTED. COORDINATE EXACT LOCATION WITH CONTRACTOR AND CITY PRIOR TO INSTALLATION.
3. ANTENNA MAST: SEE TELECOMMUNICATION INFRASTRUCTURE DESIGN SPECIFICATION FOR DETAILS. VERIFY EXACT REQUIREMENTS WITH CITY I.T. DEPARTMENT. SEE SHEET E6.1.
4. #3/0 COPPER GROUNDING ELECTRODE TO BUILDING GROUNDING ELECTRODE SYSTEM; 3/4" ø X 10' COPPER GROUND ROD & BUILDING STRUCTURAL STEEL.
5. WP 20 AMP, 120V, GFI, DUPLEX ROOF RECEPTACLE. MOUNT 24" ABOVE FINISH ROOFING.

GENERAL NOTE

1. PROVIDE PLASTIC BUSHING ON THE END OF ALL EMPTY CONDUIT, PRIOR TO CONDUCTOR INSTALLATION.

ISSUED FOR PERMIT ONLY 2/16/17

KAMM CONSULTING PROJECT #: 2017-0738
PROJECT MANAGER: JOHN MAYR

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Certificate of Authorization No. 28189

PRINCIPAL: Brian L. Brito Florida License No. 89252
02-09-18
date

CONSULTANT

CITY OF FORT LAUDERDALE
PUBLIC WORKS DEPARTMENT
ENGINEERING & ARCHITECTURE
100 North Andrews Avenue, Fort Lauderdale, Florida 33301

NO.	DATE	BY	CHK'D	REVISIONS
	03-14-18			BID SET

City of Fort Lauderdale

PROJECT # 10909
FIRE STATION #8

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FORT LAUDERDALE, FL

CPZ

DRAWN BY:	DATE:
KP/JH	09-16-16
CHECKED BY: CPZ	SCALE:

SHEET NO. E3.2 OF

TOTAL: 105

DRAWING TITLE: POWER PLAN & DIAGRAM

DRAWING FILE NO. 4-138-84

Bid 12139-983

CONSULTANT

CITY OF FORT LAUDERDALE
PUBLIC WORKS DEPARTMENT
ENGINEERING & ARCHITECTURE
100 North Andrews Avenue, Fort Lauderdale, Florida 33301

NO.	DATE	BY	CHK'D	DESCRIPTION
	03-19-18			BID SET

REVISIONS

CPZ ARCHITECTS, INC.
6316 WEST BROWARD BOULEVARD
PLANTATION, FLORIDA 33317
PHONE (954) 792-8525 FAX (954) 537-4599
AA #26000685 WWW.CPZARCHITECTS.COM

PROJECT # 10909
FIRE STATION #8
1717 SW 1ST AVE
FORT LAUDERDALE, FLORIDA

DRAWN BY: KP/JH
DATE: 03-16-16
CHECKED BY: CPZ
SCALE:

SHEET NO. E3.3
OF
TOTAL SHEETS: 105
DRAWING TITLE: POWER PLAN
DRAWING FILE NO. 4-138-04

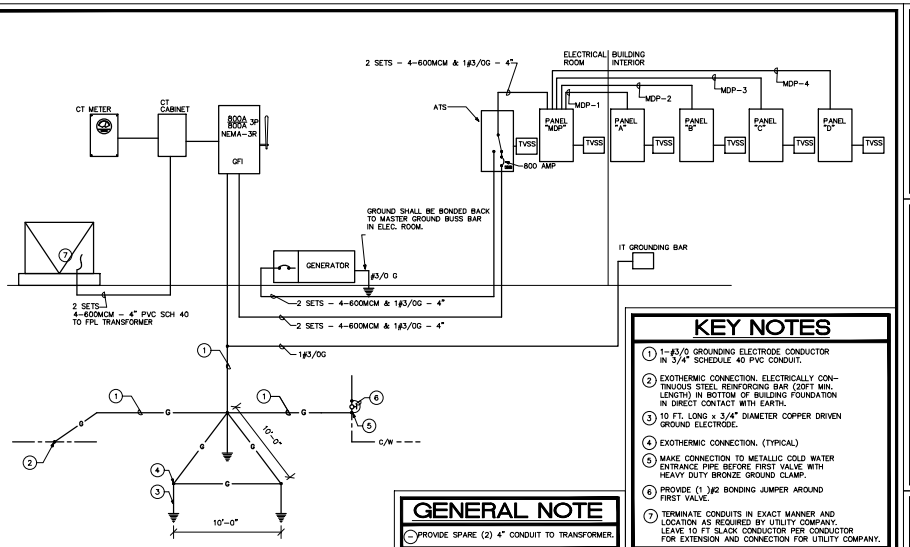
KAMM CONSULTING
KAMM CONSULTING STRUCTURES, P.A.
PROJECT MANAGER: JOHN KAMM, P.E.
1408 SW 11TH AVENUE
FORT LAUDERDALE, FLORIDA 33315
PH: (954) 463-4488 FAX: (954) 463-3880
CERTIFICATE OF AUTHORIZATION #: 26000414

ISSUED FOR PERMIT ONLY

GENERATOR SPECIFICATIONS

A. DIESEL DRIVEN GENERATOR SET SHALL BE KOHLER MODEL 200REOZJF (800 AMPS AT 208V)
- STANDBY POWER RATED 250 KW AT 80% POWER FACTOR.
- 208/120 VOLTS, 3 PHASE, 4 WIRE, 60HZ, 1800 RPM.
- GENERATOR SET SHALL INCLUDE ENGINE, ALTERNATOR AND CONTROLLER FURNISHED BY A SINGLE SUPPLIER AND U.L. 2200 LISTED AS A COMPLETE ASSEMBLY INCLUDING ALL STANDARD EQUIPMENT.

1) KOHLER MODEL 200REOZJF WITH INTEGRATED CONTROL SYSTEM, INCLUDING:
   a. AC VOLTS, AMPS, HERTZ, KW, POWER FACTOR AND PERCENT LOAD READOUTS.
   b. COMPLETE ENGINE MONITOR AS REQUIRED BY N.F.P.A. 110, LEVEL 1.
   c. OVER/UNDER VOLTAGE MONITORING AND SHUT DOWN.
   d. OVER CURRENT AND SHORT CIRCUIT MONITORING AND SHUT DOWN.
   e. "AMPSENTRY" PROTECTION.
2) ENGINE:
   a. ENGINE JACKET WATER HEATER THERMOSTAT CONTROLLED, U.L. LISTED, RATED 2500 WATTS AT 208/240/480 VOLTS, SINGLE PHASE.
   b. ELECTRTONIC/ISOCHRONOUS GOVERNOR.
   c. FLEXIBLE FUEL LINES.
   d. LOW PROFILE CRITICAL GRADE EXHAUST SILENCER WITH STAINLESS, FLEXIBLE EXHAUST COUPLINGS.
   e. LEAD ACID STARTING BATTERIES, CABLES AND RACKS AS REQUIRED BY N.F.P.A. 110.
3) ALTERNATOR:
   a. STANDARD 12 LEAD RECONNECTABLE ALTERNATOR.
   b. CLASS "H" INSULATION, 125°C TEMPERATURE RISE.
   c. PERMANENT MAGNET EXCITER.
   d. ALTERNATOR SET BREAKERS.
      1. BREAKER G-1: 800 AMP/3P THERMAL MAGNETIC MOLDED CASE CIRCUIT BREAKER.
4) FUEL TANK:
   a. 713 GALLON CUSTOM MADE U.L. 2085 LISTED. CONFIRM CAPACITY AND RUN TIME WITH CITY GENERATOR SPECIALIST PRIOR TO BID.
5) ACCESSORIES AND SERVICES
   a. FLOAT EQUALIZER TYPE BATTERY CHARGER WITH ALARMS AS REQUIRED BY N.F.P.A. 110.
   b. LEAD ACID STARTING BATTERIES, CABLES AND RACKS AS REQUIRED BY N.F.P.A. 110.
   c. BREAK GLASS STATION FOR EMERGENCY SHUT-DOWN, ONE IN THE FIRE CONTROL ROOM, ONE IN THE MAIN ELECTRICAL ROOM AND ONE AT THE GENERATOR.
   d. START UP AND ACCEPTANCE TESTING AS REQUIRED BY N.F.P.A. 110 AND CONDUCTED BY FACTORY TRAINED TECHNICIANS.
   e. SPRING TYPE VIBRATIONS ISOLATORS. (INTEGRAL)
   f. TWO SETS OF OPERATORS, PARTS AND INSTALLATION MANUALS.
   g. ONE YEAR, 1500 HOUR COMPREHENSIVE WARRANTY.
   h. REMOTE ANNUNCIATOR AS REQUIRED BY N.F.P.A. 110, LEVEL 1. (LOCATE IN WATCH OFFICE)
   i. CERTIFIED FACTORY TESTING.
   j. ALL ACCESSORIES REQUIRED TO HAVE A COMPLETE AND OPERATIONAL SYSTEM IN ACCORDANCE WITH ALL APPLICABLE CODES AND STANDARDS.
   k. PROVIDE MISSILE IMPACT RATED ENCLOSURE.



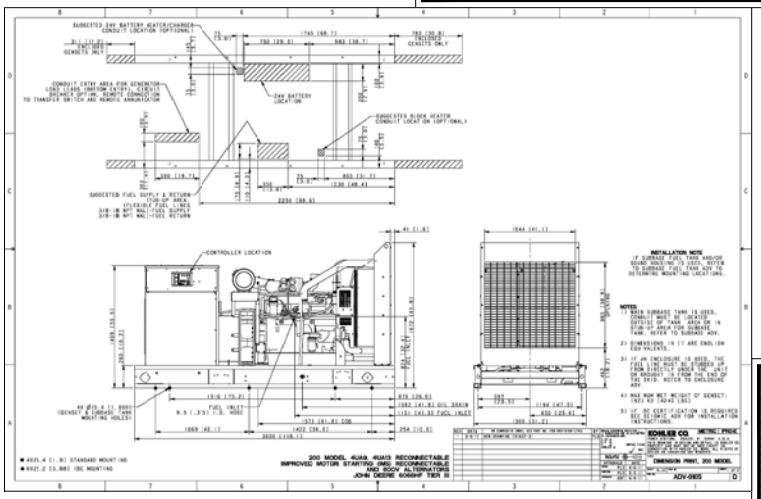
ELECTRICAL RISER DIAGRAM

KEY NOTES

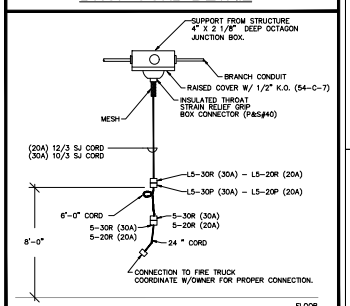
1. 1–#3/0 GROUNDING ELECTRODE CONDUCTOR IN 3/4" SCHEDULE 40 PVC CONDUIT.
2. EXOTHERMIC CONNECTION. ELECTRICALLY CONTINUOUS STEEL REINFORCING BAR (20FT MIN. LENGTH) IN BOTTOM OF BUILDING FOUNDATION IN DIRECT CONTACT WITH EARTH.
3. 10 FT. LONG x 3/4" DIAMETER COPPER DRIVEN GROUND ELECTRODE.
4. EXOTHERMIC CONNECTION. (TYPICAL)
5. MAKE CONNECTION TO METALLIC COLD WATER ENTRANCE PIPE BEFORE FIRST VALVE WITH HEAVY DUTY BRONZE GROUND CLAMP.
6. PROVIDE (1)#2 BONDING JUMPER AROUND FIRST VALVE.
7. TERMINATE CONDUITS IN EXACT MANNER AND LOCATION AS REQUIRED BY UTILITY COMPANY. LEAVE 10 FT SLACK CONDUCTOR PER CONDUCTOR FOR EXTENSION AND CONNECTION FOR UTILITY COMPANY.

GENERAL NOTE

PROVIDE SPARE (2) 4" CONDUIT TO TRANSFORMER.



DROP CORD DETAIL



SCHEDULE OF DISTRIBUTION PANEL "MDP"

MAIN: 800 AMP / 3 POLE, MAIN CIRCUIT BREAKER — VOLTAGE: 208/120V, 3Ø, 4 WIRE
SPEC: SQUARE D OR APPROVED EQUIVALENT — AIC SYMM: 65,000

DESIGNATION	DESCRIPTION	CIRCUIT BREAKER FRAME	TRIP	POLES	FEEDER	A PHASE KVA	B PHASE KVA	C PHASE KVA	NOTES
MDP–1	PANEL "A"	–	200	3	4#3/0 & 1#2G – 2–1/2"	11.2	9.8	10.0	
MDP–2	PANEL "B"	–	200	3	4#3/0 & 1#2G – 2–1/2"	11.8	12.0	10.2	
MDP–3	PANEL "C"	–	200	3	4#3/0 & 1#2G – 2–1/2"	14.1	12.9	11.1	
MDP–4	PANEL "D"	–	225	3	4#4/0 & 1#4 – 2–1/2"	11.8	9.4	9.1	
MDP–5	RTU–1	–	50	3	3#6 & 1#10 – 1"	5.9	5.9	5.9	
MDP–6	KEF–1	–	20	2	2#12 & 1#12 – 1/2"	0.7	–	0.7	
MDP–7	KSF–1	–	20	2	2#12 & 1#12 – 1/2"	0.4	–	0.4	
MDP–8	–	–	–	–	–	–	–	–	
MDP–9	–	–	–	–	–	–	–	–	
MDP–10	–	–	–	–	–	–	–	–	
						55.0	50.0	47.4	KVA PER PHASE
						465.8	416.7	395.0	AMPS PER PHASE
							153.3		TOTAL KVA

NOTES:
PROVIDE SHIELD OVER ALL PROTRUDING ELECTRICAL PANELS TO PROTECT FROM FIRE SPRINKLER DISCHARGE.

SCHEDULE OF BRANCH CIRCUIT PANEL "A"

MAIN: 200 AMP / 3 POLE MAIN CIRCUIT BREAKER — VOLTAGE: 208/120V, 3Ø, 4 WIRE
SPEC: SQUARE D OR APPROVED EQUIVALENT
MOUNTING: FLUSH — AIC SYMM: 22,000

DESCRIPTION	WIRE	GND.	COND.	TRIP	CKT.	A PHASE KVA	B PHASE KVA	C PHASE KVA	CKT.	TRIP	COND.	GND.	WIRE	DESCRIPTION
LIGHTING	#12	#12	1/2"	20	1	0.8 | 0.8			2	20	1/2"	#12	#12	LIGHTING
LIGHTING	#12	#12	1/2"	20	3		0.8 | 0.8		4	20	1/2"	#12	#12	LIGHTING
LIGHTING	#12	#12	1/2"	20	5			0.8 | 0.8	6	20	1/2"	#12	#12	LIGHTING
LIGHTING	#12	#12	1/2"	20	7	0.8 | 0.8			8	20	1/2"	#12	#12	LIGHTING
LIGHTING	#12	#12	1/2"	20	9		0.8 | 1.0		10	20	1/2"	#12	#12	BIG ASS FAN
BIG ASS FAN	#12	#12	1/2"	20	11			1.0 | 1.0	12	20	1/2"	#12	#12	BIG ASS FAN
EXTERIOR LIGHTING	#12	#12	1/2"	20	13	0.8 | 0.8			14	20	1/2"	#12	#12	RECEPTACLES
RECEPTACLES	#12	#12	1/2"	20	15		0.8 | 0.8		16	20	1/2"	#12	#12	RECEPTACLES
RECEPTACLES	#12	#12	1/2"	20	17			0.8 | 0.8	18	20	1/2"	#12	#12	RECEPTACLES
RECEPTACLES	#12	#12	1/2"	20	19	0.8 | 0.8			20	20	1/2"	#12	#12	RECEPTACLES
RECEPTACLES	#12	#12	1/2"	20	21		0.8 | 0.8		22	20	1/2"	#12	#12	RECEPTACLES
RECEPTACLES	#12	#12	1/2"	20	23			0.8 | 0.8	24	20	1/2"	#12	#12	RECEPTACLES
RECEPTACLES	#12	#12	1/2"	20	25	0.8 | 0.8			26	20	1/2"	#12	#12	RECEPTACLES
RECEPTACLES	#12	#12	1/2"	20	27		0.8 | 0.8		28	20	1/2"	#12	#12	RECEPTACLES
DRINKING FOUNTAIN	#12	#12	1/2"	20	29			0.8 | 0.8	30	20	1/2"	#12	#12	RECEPTACLES
RECEPTACLES	#12	#12	1/2"	20	31	0.8 | 0.8			32	20	1/2"	#12	#12	RECEPTACLES
RECEPTACLES	#12	#12	1/2"	20	33		0.8 | 0.8		34	20	1/2"	#12	#12	RECEPTACLES
RECEPTACLES	#12	#12	1/2"	20	35			0.8 | 0.8	36	20	1/2"	#12	#12	RECEPTACLES
RECEPTACLES	#12	#12	1/2"	20	37	0.8 | 0.8			38	20	1/2"	#12	#12	RECEPTACLES
SPARE	–	–	–	20	39		– | –		40	20	–	–	–	SPARE
SPARE	–	–	–	20	41			– | –	42	20	–	–	–	SPARE
						11.2	9.8	10.0	KVA PER PHASE					
						93.3	81.7	83.3	AMPS PER PHASE					
							31.0		TOTAL KVA					

SCHEDULE OF BRANCH CIRCUIT PANEL "B"

MAIN: 200 AMP / 3 POLE MAIN CIRCUIT BREAKER — VOLTAGE: 208/120V, 3Ø, 4 WIRE
SPEC: SQUARE D OR APPROVED EQUIVALENT
MOUNTING: FLUSH — AIC SYMM: 22,000

DESCRIPTION	WIRE	GND.	COND.	TRIP	CKT.	A PHASE KVA	B PHASE KVA	C PHASE KVA	CKT.	TRIP	COND.	GND.	WIRE	DESCRIPTION
RECEPTACLES	#12	#12	1/2"	20	1	0.8 | 1.2			2	20	1/2"	#12	#12	RANGE
ICE MACHINE	#12	#12	1/2"	20	3		1.2 | 1.0		4	20	1/2"	#12	#12	REFRIGERATOR
RECEPTACLES	#12	#12	1/2"	20	5			0.8 | 0.8	6	20	1/2"	#12	#12	RECEPTACLES
RECEPTACLES	#12	#12	1/2"	20	7	0.8 | 0.8			8	20	1/2"	#12	#12	RECEPTACLES
RECEPTACLES	#12	#12	1/2"	20	9		0.8 | 0.8		10	20	1/2"	#12	#12	RECEPTACLES
RECEPTACLES	#12	#12	1/2"	20	11			0.8 | 1.2	12	20	1/2"	#12	#12	DOOR POWER
DOOR POWER	#12	#12	1/2"	20	13	1.2 | 1.2			14	20	1/2"	#12	#12	DOOR POWER
DOOR POWER	#12	#12	1/2"	20	15		1.2 | 1.2		16	20	1/2"	#12	#12	DOOR POWER
DOOR POWER	#12	#12	1/2"	20	17			1.2 | 0.8	18	20	1/2"	#12	#12	EXTERIOR SERVICE RECEPTACLES
IRRIGATION PUMP	#12	#12	1/2"	20	19	1.2 | 1.0			20	20	1/2"	#12	#12	REFRIGERATOR
DECON EQUIPMENT	#12	#12	1/2"	20	21		1.2 | 0.8		22	20	1/2"	#12	#12	LOCKER RECEP
2ND FL RECEP	#12	#12	1/2"	20	23			0.8 | 0.8	24	20	1/2"	#12	#12	OVERHEAD PLUGS
2ND FL RECEP	#12	#12	1/2"	20	25	0.8 | 0.8			26	20	1/2"	#12	#12	OVERHEAD PLUGS
TREADMILL	#12	#12	1/2"	20	27		1.0 | 0.8		28	20	1/2"	#12	#12	OVERHEAD PLUGS
TREADMILL	#12	#12	1/2"	20	29			1.0 | 0.8	30	30	3/4"	#10	#10	OVERHEAD PLUGS
MICROWAVE	#12	#12	1/2"	20	31	1.2 | 0.8			32	30	3/4"	#10	#10	OVERHEAD PLUGS
MICROWAVE	#12	#12	1/2"	20	33		1.2 | 0.8		34	30	3/4"	#10	#10	OVERHEAD PLUGS
FASP	#12	#12	1/2"	20	35			1.2 | 1.0	36	20	1/2"	#12	#12	BIG ASS FAN
SPARE	–	–	–	20	37	– | 0.8			38	20	1/2"	#12	#12	RECEPTACLE
SPARE	–	–	–	20	39		– | –		40	20	–	–	–	SPARE
SPARE	–	–	–	20	41			– | –	42	20	–	–	–	SPARE
						11.8	12.0	11.2	KVA PER PHASE					
						98.3	100.0	93.3	AMPS PER PHASE					
							35.0		TOTAL KVA					

SCHEDULE OF BRANCH CIRCUIT PANEL "C"

MAIN: 200 AMP / 3 POLE MAIN CIRCUIT BREAKER — VOLTAGE: 208/120V, 3Ø, 4 WIRE
SPEC: SQUARE D OR APPROVED EQUIVALENT
MOUNTING: FLUSH — AIC SYMM: 22,000

DESCRIPTION	WIRE	GND.	COND.	TRIP	CKT.	A PHASE KVA	B PHASE KVA	C PHASE KVA	CKT.	TRIP	COND.	GND.	WIRE	DESCRIPTION
SITE LIGHTING	2#10	1#10	3/4"	30	1	2.5 | 2.5			2	30	3/4"	1#10	2#10	SITE LIGHTING
					3		2.5 | 2.5		4	80	1-1/4"	1#8	3#4	
AHU–2	2#8	1#10	3/4"	60	5			3.2 (6.3)	6					CU–1A/ CU–1B
AHU–3	2#8	1#10	3/4"	60	7	3.2 (6.3)			8					
					9		3.2 (6.3)		10					
MAU–1–7,10–14,19,20	2#12	1#12	1/2"	20	11	0.6 | –			12	20	1/2"	#12	#12	ROOFTOP SERVICE RECEPTACLES
					13		0.6 | –		14	20	–	–	–	SPARE
MAU–8,9,15,17,18	2#12	1#12	1/2"	20	15			0.6 | –	16	20	–	–	–	SPARE
					17			0.6 (1.2)	18	20	1/2"	1#12	2#12	CU–2
					19	0.6 (1.2)			20					
DRYER	2#8	1#10	3/4"	50	21		1.4 (1.2)		22	20	1/2"	1#12	2#12	CU–3
					23			1.4 (1.2)	24					
WASHER	#12	#12	1/2"	20	25	1.2 | 1.7			26	40	1"	1#10	3#8	AIR COMPRESSOR
DWH IGNITER	#12	#12	1/2"	20	27		1.0 | 1.7		28	30				SPLINT TRIP
DISHWASHER	#12	#12	1/2"	20	29			1.0 | 1.7	30	30				
GARBAGE DISPOSAL	#12	#12	1/2"	20	31	0.8 | 1.0			32	20	3/4"	#10	#10	HOOD POWER
FUTURE DRYER	2#8	1#10	3/4"	50	33		1.4 (–)		34	20	–	–	–	SPARE
					35			1.4 | 1.2	36	20	1/2"	#12	#12	WASHER
SPARE	–	–	–	20	37		– | –		38	30				
SPARE	–	–	–	20	39			– | –	40	20	–	–	–	SPARE
SPARE	–	–	–	20	41			– | –	42	20	–	–	–	SPARE
						14.1	12.9	11.1	KVA PER PHASE					
						117.5	107.5	92.5	AMPS PER PHASE					
							38.1		TOTAL KVA					

SCHEDULE OF BRANCH CIRCUIT PANEL "D"

MAIN: 225 AMP / 3 POLE MAIN CIRCUIT BREAKER — VOLTAGE: 208/120V, 3Ø, 4 WIRE
SPEC: SQUARE D TYPE "NQOD" OR APPROVED EQUIVALENT
MOUNTING: FLUSH — AIC SYMM: 22,000

DESCRIPTION	WIRE	GND.	COND.	TRIP	CKT.	A PHASE KVA	B PHASE KVA	C PHASE KVA	CKT.	TRIP	COND.	GND.	WIRE	DESCRIPTION
MONUMENT SIGN	#12	#12	1/2"	20	1	1.0 | 1.0			2	20	1/2"	#12	#12	GATE POWER
EXTERIOR SERVICE RECEPTACLES	#12	#12	1/2"	20	3		0.8 | 0.8		4	20	1/2"	#12	#12	RECEPTACLES
GENERATOR BATTERY CHARGER	#12	#12	1/2"	20	5			1.0 | 1.0	6	20	1/2"	#12	#12	GENERATOR BLOCK HEATER
GENERATOR TANK HEATER	#12	#12	1/2"	20	7	1.0 | 1.0			8	20	1/2"	#12	#12	GENERATOR REMOTE ANNUNCI.
CU–1	2#12	#12	1/2"	20	9		(1.6) (1.6)		10	20	1/2"	1#12	2#12	CU–5
				20	11			(1.6) (1.6)	12	20				
IT ROOM POWER	#12	#12	1/2"	20	13	1.2 | 1.2			14	20	1/2"	#12	#12	IT ROOM POWER
IT ROOM POWER	#12	#12	1/2"	20	15		1.2 | 1.2		16	20	1/2"	#12	#12	IT ROOM POWER
IT ROOM POWER	#12	#12	1/2"	20	17			1.2 | 1.2	18	20	1/2"	#12	#12	IT ROOM POWER
IT ROOM POWER	#12	#12	1/2"	20	19	1.2 | 1.2			20	20	1/2"	#12	#12	IT ROOM POWER
IT ROOM POWER	#12	#12	1/2"	20	21		1.2 | 1.2		22	20	1/2"	#12	#12	IT ROOM POWER
IT ROOM POWER	#12	#12	1/2"	20	23			1.2 | 1.2	24	20	1/2"	#12	#12	IT ROOM POWER
IT ROOM POWER	#12	#12	1/2"	20	25	1.2 | 1.2			26	20	1/2"	#12	#12	IT ROOM POWER
IT ROOM POWER	#12	#12	1/2"	20	27		1.2 | 1.2		28	20	1/2"	#12	#12	IT ROOM POWER
IT ROOM POWER	#12	#12	1/2"	20	29			1.2 | 0.5	30	20	1/2"	#12	#12	CO/ NO2 DETECTION SYSTEM
EF–1	3#12	1#12	3/4"	15	31	0.6 | 0.8			32	20	1/2"	#12	#12	FLAG POLE LIGHT
					33		0.6 | 0.8		34	20	1/2"	#12	#12	ANTENNAE POWER
					35			0.6 | 0.8	36	20	1/2"	#12	#12	ANTENNAE POWER
SPARE	–	–	–	20	37	– | –			38	20	–	–	–	SPARE
SPARE	–	–	–	20	39		– | –		40	20	–	–	–	SPARE
SPARE	–	–	–	20	41			– | –	42	20	–	–	–	SPARE
						11.8	9.4	9.1	KVA PER PHASE					
						98.3	78.3	75.8	AMPS PER PHASE					
							30.3		TOTAL KVA					

CONSULTANT
CITY OF FORT LAUDERDALE
PUBLIC WORKS DEPARTMENT
ENGINEERING & ARCHITECTURE
100 North Andrews Avenue, Fort Lauderdale, Florida 33301

REVISIONS

NO.	DATE	BY	CHK'D	DESCRIPTION
	03-14-18			BID SET

City of Fort Lauderdale
FORT LAUDERDALE 47 SW 1ST AVE

PROJECT # 10909
FIRE STATION #8

CPZ ARCHITECTS, INC.
110 WEST BROWARD BOULEVARD
PLANTATION, FLORIDA 33317
PHONE (954) 792-8525 FAX: (954) 354-0199
AA-C2600683 WWW.CPZARCHITECTS.COM

DRAWN BY: KP/JH — DATE: 09-16-16
CHECKED BY: CPZ — SCALE:

ISSUED FOR PERMIT ONLY — 10-06-17

KAMM CONSULTING PROJECT #: 2017-0738
PROJECT MANAGER: JOHN MAYR

KAMM CONSULTING
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[illegible]
CP[illegible]FL[illegible]98189

PRINCIPAL: Br[illegible] Br[illegible] — FL[illegible] 02-09-18 — date

SHEET NO. E5.1 OF
TOTAL: 105
DRAWING TITLE: RISER DIAGRAM
DRAWING FILE NO. 4-138-84

BID SET 12-19-983

email appropriate staff when a fire alarm event occurs. This shall not replace required monitoring services of the FACP.

5. A minimum of a strobe connected to the building FACP shall be installed in the Telecommunications Room. The actual required device shall meet NFPA and AHJ requirements for the type of room.

Building Boxes/Conduits

1. All boxes/conduit pipes shall be installed per the "Telecommunications Riser Diagram" located in this document. Unless otherwise noted, boxes should be installed to match outlet height.
2. All conduits specified must be used for no other purpose than that designated by IT. No electrical, fire alarm, other low voltage, or any other wiring may be installed into these conduit unless approved by IT Unified Communications Services.
3. Wall boxes for typical data/phone, standard Knight CATV, and access control locations shall be 4x4 boxes with a single gang mud ring. 12" clearance required around wall fixing telephones.
4. All TV locations get both (2) Cat 6 jacks installed at the location.
5. Wall boxes for wall hung TV locations shall be Arlington TVRS613 recessed high/low voltage boxes. These must be supplied by electrical contractor. Decora style outlets shall be used and a 4-gang decora plate and 1 decora style blank shall be provided. 24"x12" backer board required for TV mounting purposes. Backer board shall be painted to match wall. Backer board shall be mounted below recessed box.

Antenna Support Mast Number 1

1. Install one (1) 10 foot by 3" schedule 80 galvanized pipe sized to extend four (4) feet above the parapet wall. This mast shall be installed 25 feet 5 inches from the south parapet wall along the inside face of the west parapet. A clear view shall be maintained from this mast to the Police Department building at 1300 W. Broward and to the Utilities site at 949 NW 38th Street. The view shall not be blocked by any obstruction within 200 feet.
2. It shall be the contractor's responsibility to provide and install the brackets and the mast pipe. Brackets are available from Connect IT Wireless, 561-743-8141. See bill of materials.
3. ONLY THE CONNECT IT WIRELESS BRACKETS ARE APPROVED, ANY OTHER MANUFACTURED BRACKETS SHALL BE PRE-APPROVED BY THE CITY. It is strongly recommended that you verify that you have the correct items prior to installation. Please contact Gary Gray, Assistant Telecommunications Manager/Radio Systems Manager at 954 828-5762. If you install incorrect items, it will be your responsibility to correct your errors.
4. The mast needs to extend 4 feet above the parapet wall to provide enough clear mast above the roof for the antennas. The mast shall be 2-inch schedule 80 galvanized steel pipe.
5. At the base of the mast there shall be one 18"x18"x12" minimum NEMA 4 enclosure to act as a junction point for coax cable entry. This enclosure shall be mounted 6 inches above the roof deck to prevent water accumulation within.
6. From the enclosure install one (1) 2-1/2-inch conduit run to the Telecommunications Room. Conduit shall terminate at the backboard. (See riser diagram)
7. From IT room, install one (1) 2-1/2 inch conduit run to the Community Room. (See riser diagram
8. All conduits shall be run with a minimum of bends and directional changes. All unavoidable bend shall be sweep 90s. LBs are not permitted.
9. A 3/0 minimum ground connection from the Master Ground Bus shall be run to the rooftop antenna mast in as direct a path as possible protected within non-metallic conduit. It is preferred that this ground cable not run in metallic conduit at any point along its run. If it is installed in metallic conduit, or passes through metallic boxes, the cable shall be bonded to both ends of the conduit or sleeve as per the bonding requirements detailed in Electrical and Grounding paragraph 3. The cable shall also run to a sub-ground buss located in the NEMA 4 enclosure to permit additional connections to lightning surge suppressors and to the conduits that terminate in the antenna junction box. Connections between the ground cables shall use a cad weld process, NOT clamps or compression fittings. The connections shall be coated after cad welding to protect them from corrosion and damage from the elements. This ground connection is IN ADDITION to any other lightning protection ground cables that may be connected to the

Telecommunications Room Mechanical

1. Install a dedicated (heating, ventilation, Air Conditioning (HVAC) system, for temperature and humidity control, operating 24 hours a day, 365 days a year.
2. A wall-mounted unit is recommended.
3. The HVAC system should be connected to the emergency generator.
4. Heating, Ventilation, Air Conditioning (HVAC) systems should be designed for minimum equipment generated heat loads of 5,000 BTU/hrs. and capable of maintaining interior temperatures of 60°F to 75°F with relative humidity of 30% to 50%, non-condensing. Approximate equipment Watts/hr. will be 2,000.
5. It is recommended that positive pressure with a minimum of one air change per hour be maintained in the TR. Air conditioning equipment must consider heat generated by active devices and satisfy applicable building codes.

Telecommunications Room Conduits

1. All pull boxes shall be identified to permit location three after construction is completed. Pull boxes shall be accessible. All conduits shall have pull strings. All pull strings shall be identified at both ends with: conduit usage and destination.
2. All conduits specified must be used for no other purpose than that designated by IT. No electrical, fire alarm, other low voltage, or any other wiring may be installed into these conduit unless approved by IT Unified Communications Services.
3. See "Communication Riser Diagram" for the most recent conduit information.

Telecommunications Room Security

1. Fort Lauderdale IT requires a Schage 6 pin C Series keyway knob set be provided for the Telecommunications Room. Fort Lauderdale IT will key the provided knob set per our specifications.
2. An automatic closer shall be installed on the door leading to the Telecommunications Room.
3. No other trades shall place equipment into the Telecommunications Room. Only IT personnel have access to this room due to the security requirements of the devices housed within it.
4. While a card reader will not be initially installed, a 4x4 box at card reader height with a conduit 3/4-inch conduit turned towards the Telecommunications Room shall be installed next to the door for future use of a card access system. This shall be blanked with a blank plate that matches other plates throughout building.

Environmental Monitoring

1. Fort Lauderdale IT will install necessary environmental monitoring devices into the Telecommunications Room.
2. A dry contact closure is provided for a location within the Telecommunications Room that will provide a dry contact closure (NO/NC) for an "ALARM" event on the building's FACP. This will be used to monitor and email appropriate staff when a fire alarm event occurs. This shall not replace required monitoring services of the FACP.

Telecommunications Room Fire Protection

1. A FM200 system shall be installed in the Telecommunications Room. The location of said equipment shall be coordinated with Fort Lauderdale IT prior to the installation of the system.
2. No sprinkler shall be placed within envelope of the Telecommunications Room. Sprinkler piping shall not pass through the Telecommunications Room.
3. The alarm contractor to provide necessary contact monitoring for the FM200 control panel by the FACP. Individual contacts shall be provided to monitor status of "Alarm", "Trouble", and "Supervisory" events and report to the FACP accordingly.
4. A relay shall be provided for a location within the Telecommunications Room that will provide a dry contact closure (NO/NC) for an "Alarm", "Trouble", and "Supervisory" event on the FM200 system. This will be used to monitor and

General Information

1. This document is intended to provide technology design recommendations for the implementation of the telecommunication infrastructure in new or remodeled City of Fort Lauderdale buildings.
2. If any information pertaining to installation practices is not in accordance with the code and/or interpretation of the Authority Having Jurisdiction, then the related information contained in this document shall be considered a recommendation only. The installation contractor shall have the sole responsibility to provide and install all necessary requirements of the AHJ.
3. If cubicle type furniture will be used, a meeting should be scheduled between the City's cabling contractor and the selected furniture vendor to decide on the voice/data cabling and what type before the final furniture selection is made.
4. All cabling for data and CATV drops shall be provided by the City's cabling contractor.

Electrical and Grounding

1. All labor and materials for grounding installations shall be per BICSI, EIA/TIA and NEC standards. All external grounds shall be bonded together as a cohesive ground network and be brought into the building to one point, the Master Ground Buss. This includes, but is not limited to, water pipe grounds, fence grounds, gate opener grounds and power utility neutral grounds.
2. As part of the building electrical and grounding plan, a master ground buss shall be installed in the main electrical room. All grounds from other parts of the building will route directly back to this master ground buss. No ground wire shall be installed in metallic conduit or sleeving without providing bonding between the metal conduit and the ground wire at both ends of the conduit as described in paragraph 3. Ground wires for surge suppression shall not be run in conduit with other wires.
3. Install a telecommunication main bonding cable of a minimum 3/0 CU and routed from the Master Ground Buss in the main electrical room to a telecommunications ground buss bar. The cable shall be run in as direct and straight a path as possible. The cable shall be run with no more than 3 bends. Unavoidable bends shall be no smaller than 16-inch radius. In no case shall the ground cable go up in its downward path to the master ground from the main electrical room. This grounding cable shall not be routed in conduit with other cables or conduits. Non-metallic conduit is preferred. If the 3-0 CU ground cable is run within metallic conduit, the cable shall be bonded to both ends of the conduit in a direct short path without any bends in the bonding connection. This bond shall be accomplished with a conductor of no less than No. 4 AWG CU and no more than 3 inches in length. The telecommunications ground buss shall be mounted 12 inches above the floor and centered on the backboard.
4. Install one (1) #6 ground, terminated at each equipment rack and connected to the Telecommunications Ground Buss. All racks shall be bonded together.
5. Install five (5) 5-wire 120V 20A AC quadplex electrical outlets with isolated ground. Each quadplex outlet shall be on a separate circuit. Locate outlet(s) as shown in the "Telecommunications Room Layout" diagram below. Each outlet shall be protected by generator power.
6. Install six (6), two (2) per rack, 3-wire 120V 20A AC NEMA 5-30R whip. The whip shall extend from the ceiling to 3' above the floor. Each 30A outlet shall be a dedicated circuit with isolated ground, protected by generator power. Locate outlet(s) as shown in the "Telecommunications Room Layout" diagram below.

Telecommunications Room Shell

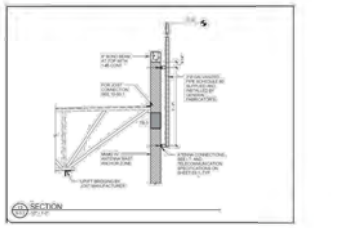
1. Install a ceiling to floor wall to wall 5/8" A-C plywood on all walls of the Telecommunications Room as shown in the Telecommunications Room layout diagram below. Plywood should be void free and either fire rated or treated on all sides and edges with at least two coats of fire-rated paint. If the fire-rated plywood only option is utilized, the ceiling seal shall be visible upon installation.
2. The room must be airtight, with all protrusions from the room to other areas of the building sealed and fire stopped.
3. The entire room must be encapsulated to achieve a 90-minute fire rating.

CITY OF FORT LAUDERDALE

FIRE STATION 8
IT STRUCTURED CABLING SPECIFICATIONS

Telecommunications Roof Plan

1. INFORMATION PENDING CONTACT OWNER REPRESENTATIVE FOR EXACT LOCATIONS.



Antenna Mast Bracket Assembly

See specification section "Antenna Support Mast 1" and "Antenna Support Mast 2" for further information.

Estimate

Connect it Wireless, Inc.
Office: 561-746-6141 Fax: 561-743-8819
210 Eastmoore Way, Suite C
Aurora, FL 33458

Bill To:
Credit Card Sale
City of Fort Lauderdale
100 N Andrews Avenue
Fort Lauderdale, FL 33301
Customer Credit Card Sale

Ship to:
Credit Card Sale
Fort Lauderdale Radio Shop
1301 SW 2nd Court
Fort Lauderdale, FL 33312
Contact Credit Card Sale
PO Number: WP100-GARY-BOM

Notes
RFQ by: Gary Gray gray@fortlauderdale.gov
Estimate by: AB
This estimate was created as a BOM for Gary with City of Fort Lauderdale's version of our WP100.

Memos

Seller	Payment Terms	FOB Point	Shipping Terms	Carrier	Requested Ship Date
Lindsey	CREDIT CARD	Origin	Prepaid & Billed	Ground	2018-03-13

Item #	Type	Number / Description	Unit Price	Qty Ordered	Total Price
1	Sale	WM1 - Bracket Plate, 4' x 4" x 1/4" Hole	$ 5.50	8 ea	$ 44.00
2	Sale	WM1 - Brackets to Wall Assembly	$ 15.75	4 ea	$ 63.00
3	Sale	SCP - Bent Clamp Holes, 1.0" x 1-1/2" x 9-7/8", 9/16" x 3/4" Hole size	$ 3.95	2 ea	$ 7.90
4	Sale	GR38-20 - 5/8" x 20" Galv All Thread Rod	$ 4.00	4 ea	$ 16.00
5	Sale	SMLN - Galvanized Hvy Duty Nut, 5/8"	$ 0.26	8 ea	$ 2.06
6	Sale	SMFW - Galvanized Flat Washer, 5/8"	$ 0.14	8 ea	$ 1.12
7	Sale	SMLW - Galvanized Lock Washer, 5/8"	$ 0.09	8 ea	$ 0.77
8	Sale	GR1.0-8 - 1.0" x 8" Galv All Thread Rod	$ 11.25	4 ea	$ 45.00
9	Sale	1.0HLN - 1.0" Galv Hvaer Duty Nut	$ 0.18	8 ea	$ 1.41
10	Sale	1.0FW - Galvanized Flat Washer, 1.0"	$ 0.09	8 ea	$ 0.71
11	Sale	1.0LW - 1.0" Galv Lock Washer	$ 0.66	8 ea	$ 5.26

Customer Provided Items

The following items shall be considered Not In Contract items and will be coordinated by IT staff:

1. Structured cabling and CATV outlets
2. Rack infrastructure, cable management, and ladder raceway in Telecommunications Room
3. Networking and telephone equipment
4. Card access systems and associated cabling
5. Door intercom systems and associated cabling
6. Security cameras and associated cabling
7. Television equipment
8. Fire Alerting systems and components

antenna mounting mast. This ground cable shall not be sourced from the ground in the telecomroom. It shall run DIRECTLY FROM THE MASTER GROUND BUSS IN THE MAIN ELECTRICAL ROOM TO THE ANTENNA MAST. NONE OF THIS GROUND WIRING MAY BE MADE WITH THE USUAL LIGHTNING PROTECTION TYPE CABLE. CABLES SHALL BE A MINIMUM OF 3/0 CU. Larger size cable is acceptable, however it SHALL NOT BE the open weave lightning protection type as this type of cable is designed to have significant voltage drop along its length. This voltage drop will create problems and cause damage to the electronic equipment that is attached to the antennas.

Antenna Support Mast Number 2

1. Install one (1) 10 foot by 3" schedule 80 galvanized pipe sized to extend four (4) feet above the parapet wall. This mast shall be installed 5 feet 5 inches from the south parapet wall along the inside face of the west parapet.
2. A clear view shall be maintained from this mast to the Police Department building at 1300 W. Broward 4340 to the Utilities site at 949 NW 38th Street. The view shall not be blocked by any obstruction within 200 feet.
3. It shall be the contractor's responsibility to provide and install the brackets and the mast pipe. Brackets are available from Connect IT Wireless, 561-743-8141. See bill of materials. See diagram and all related drawings for required parts.
4. ONLY THE CONNECT IT WIRELESS BRACKETS ARE APPROVED, ANY OTHER MANUFACTURED BRACKETS SHALL BE PRE-APPROVED BY THE CITY. It is strongly recommended that you verify that you have the correct items prior to installation. Please contact Gary Gray, Assistant Telecommunications Manager/Radio Systems Manager at 954 828-5762. If you install incorrect items, it will be your responsibility to correct your errors.
5. The mast needs to extend 4 feet above the parapet wall to provide enough clear mast above the roof for the antennas. The mast shall be 2-inch schedule 80 galvanized steel pipe.
6. At the base of the mast there shall be one 18"x18"x12" minimum NEMA 4 enclosure to act as a junction point for coax cable entry. This enclosure shall be mounted 6 inches above the roof deck to prevent water accumulation within.
7. From the enclosure install one (1) 2-1/2-inch conduit run to the Telecommunications Room. Conduit shall terminate at the backboard. (See riser diagram)
8. All conduits shall be run with a minimum of bends and directional changes. All unavoidable bends shall be sweep 90s. LBs are not permitted.
9. A 3-0 CU minimum ground connection from the Master Ground Buss shall be run to the rooftop antenna mast in as direct a path as possible, protected within non-metallic conduit. It is preferred that this ground cable not run in metallic conduit at any point along its run. If it is installed in metallic conduit, or passes through metallic boxes, the cable shall be bonded to both ends of the conduit or sleeve as per the bonding requirements detailed in Electrical and Grounding paragraph 3. The cable shall also run to a sub-ground buss located in the NEMA 4 enclosure to permit additional connections to lightning surge suppressors and to the conduits that terminate in the antenna junction box. Connections between the ground cables shall use a cad weld process, NOT clamps or compression fittings. The connections shall be coated after cad welding to protect them from corrosion and damage from the elements. This ground connection is IN ADDITION to any other lightning protection ground cables that may be connected to the antenna mounting mast. This ground cable shall not be sourced from the ground in the telecom room. It shall run DIRECTLY FROM THE MASTER GROUND BUSS IN THE MAIN ELECTRICAL ROOM TO THE ANTENNA MAST. NONE OF THIS GROUND WIRING MAY BE MADE WITH THE USUAL LIGHTNING PROTECTION TYPE CABLE. CABLES SHALL BE A MINIMUM OF 3/0 CU. Larger size cable is acceptable, however it SHALL NOT BE the open weave lightning protection type as this type of cable is designed to have significant voltage drop along its length. This voltage drop will create problems and cause damage to the electronic equipment that is attached to the antennas.

ISSUED FOR PERMIT ONLY 03-09-17

KAMM CONSULTING PROJECT #: 2017-0738
PROJECT MANAGER: JOHN MAYR

KAMM CONSULTING
PRINCIPAL:
Brian H. Kamm
FL Reg. #: 0078252
03-09-18
date

CONSULTANT

CITY OF FORT LAUDERDALE
PUBLIC WORKS DEPARTMENT
ENGINEERING & ARCHITECTURE
100 North Andrews Avenue, Fort Lauderdale, Florida 33301

REVISIONS				
NO.	DATE	BY	CHK'D	DESCRIPTION
	03-13-18			BID SET

City of Fort Lauderdale

PROJECT # 10909
FIRE STATION #8

CPZ ARCHITECTS, INC.
110 WEST BROWARD BOULEVARD
PLANTATION, FLORIDA 33317
PHONE (954) 792-8725 FAX: (954) 357-0359
AA-C2600683 WWW.CPZARCHITECTS.COM

1417 SW 1ST AVE
FORT LAUDERDALE, FL 33315

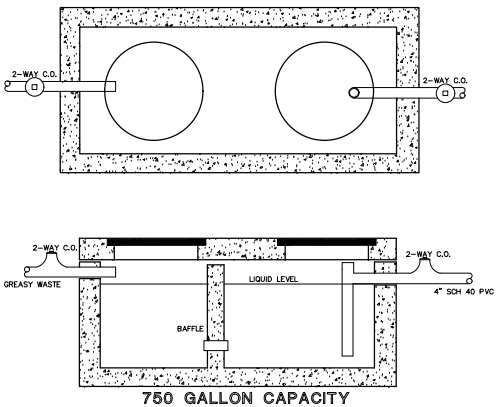
CPZ

DRAWN BY: KP/JH | DATE: 09-16-16
CHECKED BY: CPZ | SCALE:

SHEET NO. E6.1 OF
TOTAL: 105
DRAWING TITLE: IT DESIGN DATA
DRAWING FILE NO. 4-138-84

BID # 12139-983

24" MANHOLE COVERS

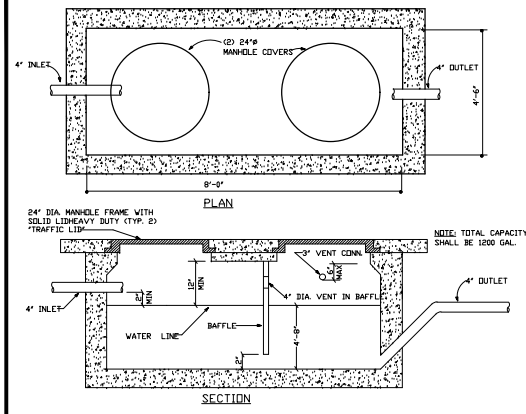


750 GALLON CAPACITY

NOTES
- REINFORCE WALLS & SLAB W/ #4 REBAR @ 6" O.C. EACH WAY. TYP.
- 3000 PSI CONCRETE, MONOLITHIC POUR.
- SUPPLY (2) U.S. FOUNDRY #32 MANHOLE FRAME & LID WITH CAST LETTERS, "GREASE INTERCEPTOR".
- GREASE TRAP SHALL BE APPROVED PER FLORIDA DEPT. OF HEALTH
- GREASE TRAP SHALL COMPLY WITH ALL REGULATIONS OF THE CITY OF FORT LAUDERDALE

GREASE TRAP DETAIL

NOT TO SCALE

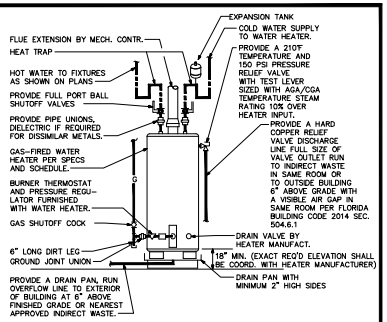


OIL + SAND INTERCEPTOR DETAIL

NOT TO SCALE

F.G.B.C. NOTE

ALL FAUCETS SHALL BE EPA WATERSENSE CERTIFIED IN ORDER TO MEET FLORIDA GREEN BUILDING COALITION CERTIFICATION.



PIPING ARRANGEMENT SHOWN IS SCHEMATIC. ADJUST TO SUIT FIELD CONDITIONS. REFER TO ISOMETRIC RISER FOR PIPE SIZES. SIZES. SET HEATER THERMOSTAT AT 120° F.

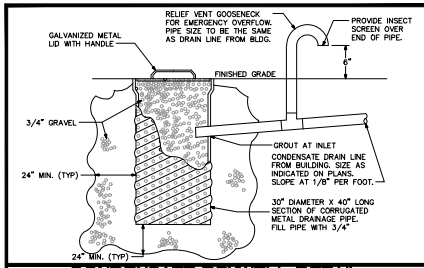
GAS WATER HEATER DETAIL

NOT TO SCALE

PLUMBING FIXTURE SCHEDULE

LAV	LAVATORY, AMERICAN STANDARD DECLYN WALL HUNG #0321.075 WHITE WITH JUST FAUCET J-950 FAUCET. CONTRACTOR TO SUPPLY CONCEALED ARM SUPPORT CARRIER FOR MOUNTING OF LAVATORY. WADE MODEL # 520-M36.
HLAV	HANDICAP LAVATORY, AMERICAN STANDARD, DECLYN WALL HUNG LAVATORY MODEL #0321.075. WHITE, WITH SLOAN OPTIMA EBF-85. CONTRACTOR TO SUPPLY CONCEALED ARM SUPPORT CARRIER FOR MOUNTING OF LAV. WADE MODEL # 520-M36. SUPPLY PLUMBEREX MODEL # 4333 INSULATION KIT, 0.5 GPM AERATOR #PP31704. MUST MEET A.D.A. CODE.
WC	WATER CLOSET, FLUSH VALVE BOWL; FLOOR MOUNTED, SIPHON JET ACTION VITREOUS CHINA, ELONGATED RIM AND 1-1/2" TOP SPUD, AMERICAN STANDARD 2234.015 MADERA AQUAMETER, 1.28 GPF TOILET WITH A SLOAN ROYAL #111 FLUSH VALVE AND A CENTOCO #500CC OPEN FRONT SEAT LESS COVER.
HWC	HANDICAP WATER CLOSET – FLUSH VALVE BOWL; FLOOR MOUNTED, SIPHON JET, VITEROUS CHINA WITH ELONGATED RIM AND 1-1/2" TOP SPUD. 18" HIGH AMERICAN STANDARD #3541.00US ELDERLY NEW CADET AQUAMETER, 1.28 GPF TOILET WITH SLOAN ROYAL #111-1.6 FLUSH VALVE AND A CENTOCO #500CC OPEN FRONT SEAT LESS COVER.
SH	SHOWER, MIXING VALVE HOT AND COLD WATER, SHOWER MIXING VALVE SHALL BE A SYMMONS TEMPTROL 2000 MODEL #25-1-X ANTI-SCALD PRESSURE BALANCED SHOWER VALVE TO INCLUDE A 2.5 GPM FLOW RESTRICTOR AND INTEGRAL SERVICE STOPS.
HSH	HANDICPPED SHOWER, MIXING VALVE HOT AND COLD WATER, SHOWER MIXING VALVE SHALL BE A SYMMONS TEMPTROL 2000 MODEL #25-300-B-30-LR-V ANTI-SCALD PRESSURE BALANCED SHOWER VALVE TO INCLUDE A 2.5 GPM FLOW RESTRICTOR AND INTEGRAL SERVICE STOPS.
SK	SINK: (2) COMPARTMENT SINK: ADVANCE TABCO MODEL #9-62-36-18RL, 18 GA. 304 S/S (SUPPLY WITH SS AN518 DETACHABLE DRAIN BOARDS). FAUCET: T&S BRASS B-2187-01.
SK-1	SINK: (2) COMPARTMENT SINK: ADVANCE TABCO REGALINE STANDARD 930 SERIES, 16 GA. MODEL #93-42-48-36R FAUCET: T&S BRASS ADVANCE TABCO WALL MOUNT MODEL #K-111.
SK-2	INTREGAL ADA SINK SEE ARCHITECTRUAL DRAWINGS SHEET A-402. FAUCET: T&S BRASS BASE MOUNT MODEL# B-1122.
SK-3	SINK: 19CFT(34X20X24) SERVICE SINK BY MUSTEE OR APPROVED EQUAL MODEL# 67103.1004246.
SH EW	DRENCH SHOWER & EYE WASH: BRADLEY MODEL# S19-310JJ, S.S., 1" STAY OPEN BALL VALVE, S.S. PULL ROD.
RD	ROOF DRAIN: ZURN Z-100HD. AE EXTENSION AS REQUIRED.
GWH-1	WATER HEATER SHALL BE 65 GAL. SHIELD GAS 125,000 BTU J.OCHINVAR SHIELD MODEL SNR125-065. PROVIDE FACTORY VENT KIT.
GWH-2	WATER HEATER SHALL BE 90 GAL. SHIELD GAS 150,000 BTU J.OCHINVAR SHIELD MODEL SNA286-125. PROVIDE FACTORY VENT KIT.
RECIRC PUMP	TACO RECIRC. PUMP. MODEL 111 BRONZE CASTING , 115V, 1/8 HP, 2.0 AMP WITH "00" TIMER AQUSTAT.
MOP SK	SEE ARCHITECTURAL DRAWINGS FOR CUSTOM MOP SINK. VALVE/ FAUCET: MUSTEE# 63.600A. ACCESSORIES: MUSTEE# 65.600 MOP HANGER. MUSTEE# 65.700 HOSE/ BRACKET.
TD	WIDE THROAT TRENCH DRAIN SYSTEM. ZURN MODEL Z886-HD-DCE
HB	HOSE BIBB BY WOODFORD, OR APPROVED EQUAL. MODEL# 24CH; INSIDE APPARATUS BAY TO BE LOOSE TEE KEY WITH METAL HANDLE AND VACCUUM BREAKER. OUTSIDE EXTERIOR HOSE BIBBS TO BE VANDAL RESISTANT (LOCKABLE HOSE BIBB) LOOSE TEE KEY WITH METAL HANDLE AND VACUUM BREAKER.

GENERAL NOTES:
(1) – FIXTURES SHALL BE AS SHOWN OR EQUAL.
(2) – ALL FIXTURES SHALL COMPLY WITH TABLE 604.4 OF FBC 2014
(3) – ALL FIXTURE TRIM PACKAGES INCLUDING BUT NOT LIMITED TO TRAP, ANGLE STOP, FLUSH VALVE, SUPPLY TUBES, AND CLEANOUT COVER PLATES SHALL BE OF THE SAME FINISH AS THE ABOVE SPECIFIED FAUCET AND PER ARCHITECTURAL FINISH SCHEDULE.
(4) – ALL FIXTURES SHALL BE ROUGHED IN PER MANUFACTURER CUT SHEET TO MAINTAIN UNIFORMITY.



CONDENSATE DRYWELL DETAIL

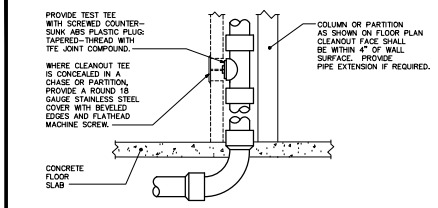
NOT TO SCALE

PLUMBING NOTES

1. ALL WORKMANSHIP AND MATERIALS SHALL BE IN STRICT ACCORDANCE WITH FBC 2014, APPLICABLE LOCAL CODES, RULES AND ORDINANCES.
2. PLUMBING CONTRACTOR SHALL VISIT THE JOB SITE AND THOROUGHLY FAMILIARIZE HIMSELF WITH ALL EXISTING CONDITIONS.
3. ALL MATERIALS SHALL BE NEW.
4. ALL WORK SHALL BE PERFORMED BY A LICENSED PLUMBING CONTRACTOR IN A FIRST CLASS WORKMANLIKE MANNER. THE COMPLETED SYSTEM SHALL BE FULLY OPERATIVE. ALL EXCAVATION AND BACKFILL AS REQUIRED FOR THIS PHASE OF CONSTRUCTION SHALL BE A PART OF THIS CONTRACT.
5. REQUIRED INSURANCE SHALL BE PROVIDED BY THE PLUMBING CONTRACTOR FOR PROTECTION AGAINST PUBLIC LIABILITY AND PROPERTY DAMAGE FOR THE DURATION OF THE WORK.
6. PLUMBING CONTRACTOR SHALL SECURE AND PAY FOR ALL PERMITS, FEES, INSPECTION AND TESTS. PLUMBING CONTRACTOR TO OBTAIN PERMIT AND APPROVED SUBMITTALS PRIOR TO BEGINNING WORK OR ORDERING EQUIPMENT. PLUMBING CONTRACTOR MUST BE PRESENT FOR ALL INSPECTIONS OF HIS WORK BY REGULATORY AUTHORITIES.
7. DRAWINGS ARE DIAGRAMMATIC. DO NOT SCALE FOR THE EXACT LOCATION OF FIXTURES, PIPING, EQUIPMENT, ETC.
8. ALL WORK SHALL BE COORDINATED WITH OTHER TRADES TO AVOID INTERFERENCE WITH THE PROGRESS OF CONSTRUCTION. REPORT ANY DISCREPANCY TO ENGINEER/ARCHITECT PRIOR TO BEGINNING CONSTRUCTION.
9. VERIFY LOCATION, SIZE, DIRECTION OF FLOW AND INVERTS OF ALL EXISTING UTILITIES PRIOR TO BEGINNING OF CONSTRUCTION. ADVISE ENGINEER OF ANY DISCREPANCIES.
10. WATER DISTRIBUTION PIPING ABOVE AND BELOW GROUND SHALL BE TYPE "L" COPPER. COORDINATE WITH LOCAL JURISDICTION FOR ADDITIONAL REQUIREMENTS.
11. SOIL, WASTE, VENT AND RAINWATER PIPING SHALL BE CAST IRON OR PVC, WHERE CODE ALLOWS. PVC MAY NOT BE USED THRU RATED ASSEMBLIES OR IN PLENUMS.
12. ALL FIXTURES MUST BE PROVIDED WITH READILY ACCESSIBLE STOPS AND APPROPRIATELY MARKED ACCESS PANELS. COORDINATE LOCATIONS WITH GENERAL CONTRACTOR PRIOR TO INSTALLATION.
13. FURNISH AND INSTALL APPROVED WATER HAMMER ARRESTORS FOR ALL (GROUP) PLUMBING FIXTURES, SIZED AND LOCATED PER MANUF.'S INSTALLATION INSTRUCTIONS AND WH-PDI 201.
14. DIELECTRIC COUPLINGS ARE REQUIRED BETWEEN ALL DISSIMILAR METAL IN PIPING AND EQUIPMENT CONNECTIONS.
15. ISOLATE COPPER PIPE FROM HANGER OR SUPPORTS WITH ISOLATOR PADS OR MATERIAL.
16. ALL FIRE RATED FLOOR AND WALL PENETRATIONS SHALL BE PROPERLY PROTECTED FROM FIRE, SMOKE AND WATER PENETRATION BY FILLING VOIDS BETWEEN PIPE AND WALL/FLOOR SLEEVES WITH FIRE RATED FOAM. TO ACHIEVE THE SAME RATING AS WALLS OR FLOORS AS PART OF THE PLUMBER'S WORK.
17. PLUMBING CONTRACTOR SHALL GUARANTEE ALL MATERIALS AND WORKMANSHIP FREE FROM DEFECTS FOR A PERIOD OF NOT LESS THAN ONE (1) YEAR FROM DATE OF ACCEPTANCE BY OWNER. CORRECTION OF ANY DEFECTS SHALL BE COMPLETED WITHOUT ADDITIONAL CHARGE AND SHALL INCLUDE REPLACEMENT OR REPAIR OF ANY OTHER PHASE OF THE INSTALLATION WHICH MAY HAVE BEEN DAMAGED.
18. PROVIDE ACCESS PANELS FOR ALL CONCEALED VALVES AND ALL WATER HAMMER ARRESTORS. ACCESS PANELS IN RATED WALLS MUST MAINTAIN THE SAME RATING AND MUST MATCH THE FINISH OF THE WALL IN WHICH IT IS INSTALLED.
19. PROVIDE COMBINATION COVER PLATE AND CLEANOUT PLUG OR ACCESS PANEL FOR ALL WALL CLEANOUTS FINISH TO MATCH FIXTURE TRIM.
20. NO COMBUSTIBLE MATERIAL TO BE USED IN MECHANICAL ROOMS OR IN CEILING SPACES WHERE USED AS RETURN AIR PLENUMS.
21. NO WATER, SANITARY OR DRAINAGE PIPING PERMITTED IN ELECTRICAL OR ELEVATOR EQUIPMENT ROOMS.
22. ALL CONTROL VALVES SHALL BE TAGGED AND MARKED. A REPRODUCIBLE DIAGRAM LOCATING ALL VALVES SHALL BE PROVIDED FOR OWNER/OPERATOR.
23. ALL CONDENSATE DRAIN PIPING SHALL BE TYPE "L" COPPER WITH ARMAFLEX INSULATION PER TABLE 4-11 F.B.C. 2014 WHERE USED IN A RETURN AIR PLENUM. PVC PIPING WITH ARMAFLEX INSULATION MAY BE USED IN LOCATIONS WHERE ALLOWED BY LOCAL CODES. SEE PLUMBING DRAWINGS FOR SIZE AND LOCATION OF PIPING.
24. CONDENSATE LINES SHALL NOT DRAIN ON THE ROOFING SYSTEM OR ANY OF ITS COMPONENTS AND CONDENSATE LINES NEED NOT COMPLY WITH MIN. CLEARANCE REQUIREMENTS PER FBC 2014, PAR. 1522.3.5
25. PROVIDE ANGLE STOPS ON ALL WATER SERVICE LINES TO FIXTURES FOR INDIVIDUAL SHUT-OFF.
26. PROVIDE TRAP PRIMER FOR ALL FLOOR DRAINS, FLOOR SINKS, AND HUB DRAINS SHOWN ON PLANS. IF SPECIFICATION IS NOT PROVIDED, SUPPLY PRECISION PLUMBING PRODUCTS MODEL #PR-500. INSTALL PER MANUFACTURES RECOMMENDATIONS.
27. WATER PIPING INSULATION SHALL BE ARMAFLEX OR EQUAL INSTALLED IN ACCORDANCE WITH MANUFACTURERS INSTRUCTIONS FOR ALL HOT WATER PIPING. WHERE DOMESTIC WATER TEMPERATURES CAN CAUSE SWEATING ALL COLD WATER PIPING SHALL BE INSULATED WITH ARMAFLEX INSULATION, THICKNESS AS PER TABLE 4-11 OF FLORIDA ENERGY CODE.
28. STUDOR MINI/MAXI AIR ADMITTANCE VALVES MAY BE USED AS AN ALTERNATE TO VENT PIPING THRU ROOF WHERE ACCEPTABLE BY THE PLUMBING OFFICIAL AND LOCAL CODES. INSTALLATION SHALL BE AS PER MANUFACTURER'S RECOMMENDATIONS.
29. ALL HORIZONTAL RAINWATER PIPING THE RECEIVES CONDENSATE DISCHARGE FROM AIR CONDITIONING EQUIPMENT SHALL BE INSULATED WITH 1" THK. ARMAFLEX.
30. PLUMBING PLANS IN GENERAL ARE DIAGRAMMATIC IN NATURE, AND ARE TO BE READ IN CONJUNCTION WITH ARCHITECTURAL, MECHANICAL, ELECTRICAL, FIRE SPRINKLER, STRUCTURAL AND CIVIL PLANS AND SHALL BE CONSIDERED AS ONE SET OF DOCUMENTS. PIPING MODIFICATIONS SUCH AS OFFSETS, BENDS, TRANSITIONS, AND SIZES SHALL BE REQUIRED TO PROVIDE AND INSTALL A COMPLETE FUNCTIONAL SYSTEM AND SHALL BE PROVIDED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER. CHANGES IN PIPE SIZES AND ROUTING SHALL BE REQUIRED BY THE CONTRACTOR TO AVOID CONFLICTS AND TO ADAPT TO EXISTING FIELD CONDITIONS PROVIDED THAT INSTALLATION MEETS ALL APPLICABLE CODES.
31. SUPPLY TRAP PRIMER FOR ALL FLOOR DRAINS, FLOOR SINKS, HUB DRAINS, ETC. SHOWN ON PLANS.

PLUMBING SHEET INDEX

SHEET#	DESCRIPTION
P0.1	PLUMBING NOTES, LEGENDS, AND DETAILS
P2.1	SANITARY PLAN
P2.2	STORM DRAINAGE PLAN
P3.1	DOMESTIC WATER PLAN
P5.1	PLUMBING ISOMETRICS



NOTE:
PROVIDE WCO WHERE SHOWN ON PLAN, AND ON SANITARY WASTE BRANCHES NOT SERVED WITH A FLOOR CLEANOUT. LOCATE ABOVE FIXTURE FLOOD RIM WITHIN 4" OF FLOOR. CONSULT LOCAL CODES FOR OTHER WCO REQUIREMENTS.

WALL CLEANOUT DETAIL

NOT TO SCALE

PLUMBING LEGEND

CO	CLEAN OUT
S.O.V.	SHUT-OFF VALVE
COTC	CLEAN OUT TO GRADE
FS	FLOOR SINK
CW	DOMESTIC COLD WATER
HW	DOMESTIC HOT WATER
HWR	DOMESTIC HOT WATER RECIRCULATING
HB	HOSE BIBB
VTR	VENT THRU ROOF
	GATE VALVE
	GLOBE VALVE
	CHECK VALVE
	GAS SOLENOID VALVE
	GAS COCK
	WATER HAMMER ARRESTER (PDI No.)
FD	FLOOR DRAIN
	SANITARY SEWER PIPING
	VENT PIPING
	DOMESTIC COLD WATER PIPING
	HOT WATER PIPING (110°)
	HOT WATER PIPING (140°)
	HOT WATER RECIRCULATING PIPING
CD	CONDENSATE PIPING
A	COMPRESSED AIR PIPING
T&P	TEMPERATURE AND PRESSURE RELIEF
SD	STORM DRAIN PIPING
G	GAS PIPING
	PIPE RISE UP
	PIPE DOWN OR DROP
	CAPPED END OF PIPE
	POINT OF CONNECTION
	P-TRAP

CONSULTANT

CITY OF FORT LAUDERDALE
PUBLIC WORKS DEPARTMENT
ENGINEERING & ARCHITECTURE
100 North Andrews Avenue, Fort Lauderdale, Florida 33301

NO.	DATE	BY	CHK'D	REVISIONS
	03-14-18			BID SET

City of Fort Lauderdale

PROJECT # 10909
FIRE STATION #8

FORT LAUDERDALE, FLORIDA 33312 — 672 SW 1ST AVE

CPZ ARCHITECTS, INC.
630 WEST BROWARD BOULEVARD
PLANTATION, FLORIDA 33317
PHONE (954) 792-8525 FAX: (954) 357-0199
AA-C2600683 WWW.CPZARCHITECTS.COM

DRAWN BY: KP/JH — DATE: 09-16-16
CHECKED BY: CPZ — SCALE:

ISSUED FOR PERMIT ONLY — 2/26/2017

KAMM CONSULTING PROJECT #: 2017-0738
PROJECT MANAGER: JOHN MAYR

KAMM CONSULTING
1408 Orchid Avenue
Fort Pierce, Florida 34950
Phone: 772.595.1744 Cell: 954.448.0792
Certificate of Authorization #98189

PRINCIPAL: Brandon Brown — Florida License #98252 — 02-09-18 — date

SHEET NO. P0.1 OF
TOTAL: 105
DRAWING TITLE: PLUMBING NOTES
DRAWING FILE NO. 4-138-84

BID 12-139-983

CONSULTANT

CITY OF FORT LAUDERDALE
PUBLIC WORKS DEPARTMENT
ENGINEERING & ARCHITECTURE
100 North Andrews Avenue, Fort Lauderdale, Florida 33301

REVISIONS				
NO.	DATE	BY	CHK'D	DESCRIPTION
	03-19-18			BID SET

CPZ ARCHITECTS, INC.
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PROJECT # 10909
FIRE STATION #8
1717 SW 1ST AVE
FORT LAUDERDALE

DRAWN BY: KP/JH
DATE: 03-16-16
CHECKED BY: CPZ
SCALE:

SHEET NO. P2.1
OF
TOTAL SHTS: 105
DRAWING TITLE: SANITARY PLAN
DRAWING FILE NO. 4-138-84

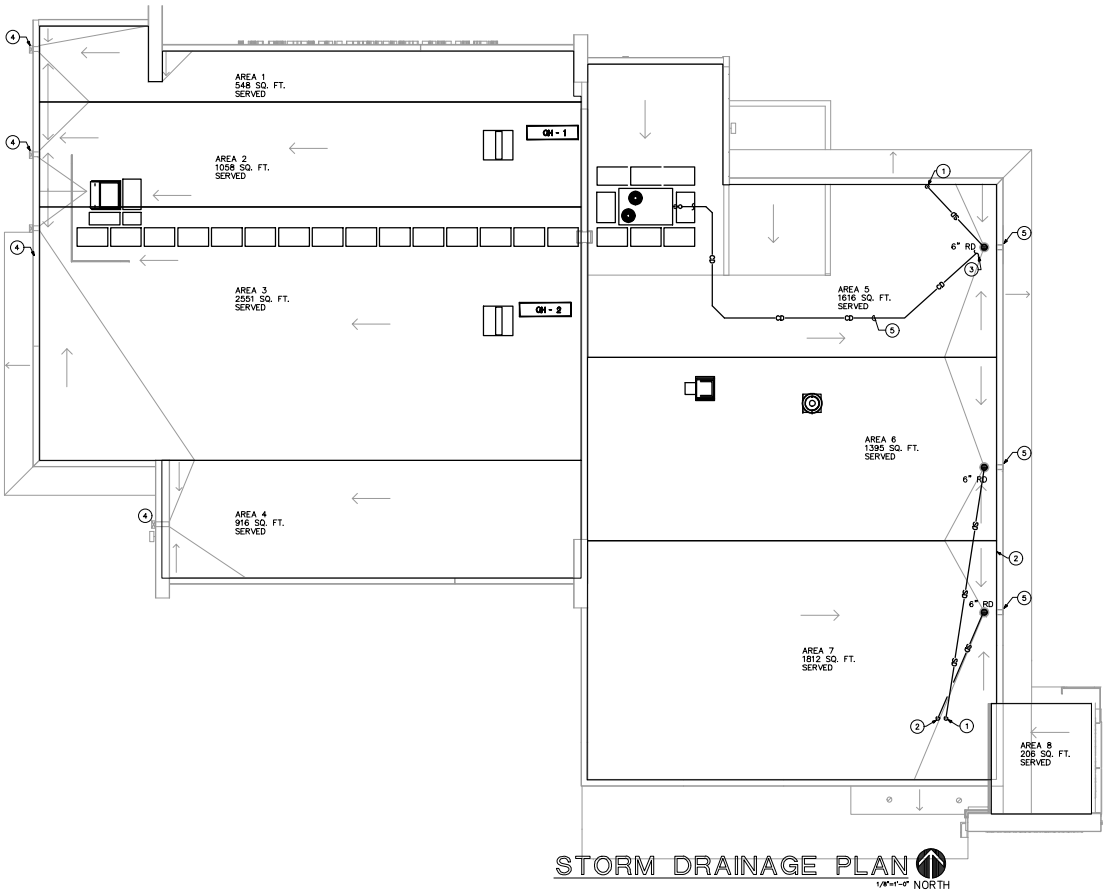
KEY NOTES

1. 4" SANITARY LINE, SEE CIVIL FOR CONTINUATION.
2. CUSTOM S.S. INTREPAL ADA SINK BUILT IN WITH S.S. IS AND COUNTER; SEE SHEET A-5.0 IN ARCHITECTURAL DRAWINGS FOR SPECIFICATION.
3. NEW SAND/ OIL INTERCEPTOR. SEE CIVIL FOR EXACT LOCATION.
4. NEW GREASE TRAP, FIELD VERIFY EXACT SIZE AND LOCATION.
5. 6" STORM DRAIN LINE FROM ABOVE, INVERT 4.50 FINAL FIELD VERIFY EXACT SIZE, LOCATION, AND INVERT PRIOR TO CONSTRUCTION.
6. 8" STORM DRAIN LINE FROM ABOVE, INVERT 4.50 FINAL FIELD VERIFY EXACT SIZE, LOCATION, AND INVERT PRIOR TO CONSTRUCTION.
7. GREASE TRAP AND SAND/OIL INTERCEPTOR SHOWN BY DOTTED LINES.
8. HYDRAULIC ELEVATOR PIT LOCATED ABOVE. 3/4" TANK DRAIN TO INDIRECTLY CONNECT TO FLOOR TRENCH DRAIN.

KAMM CONSULTING, INC.
2601 SW 145th AVENUE, SUITE 110, MIRAMAR, FLORIDA 33027
PHONE: (954) 438-9990 FAX: (954) 438-9991
CERTIFICATE OF AUTHORIZATION #: EB 0000 7672

ISSUED FOR PERMIT (10-2-17) 10/04/17
ISSUED FOR PERMIT (12-13-17) 12/13/17
ISSUED FOR PERMIT (3-19-18) 3/19/18

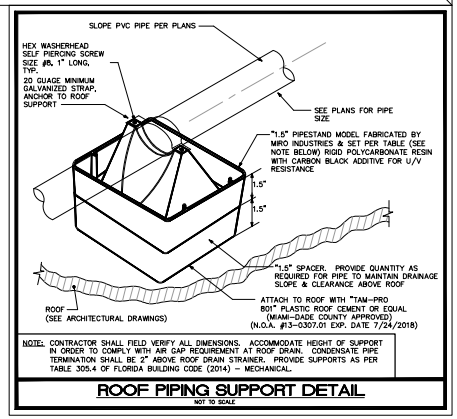
ARCHITECT: [illegible]
STRUCTURAL: [illegible]
MECHANICAL: [illegible]
ELECTRICAL: [illegible]
PLUMBING: [illegible]
FIRE PROTECTION: [illegible]



ROOF AREA CALC.

AREA SERVED	RAIN FALL RATE *	HORIZONTAL SQ. FT.	HORIZONTAL PIPING SIZE	VERTICAL PIPING SIZE	OVERFLOW SCUPPER SIZE
1	5" PER HOUR	548	4"	6"X6"	8"X8"
2	5" PER HOUR	1058	6"	6"X6"	8"X8"
3	5" PER HOUR	2551	8"	6"X6"	8"X8"
4	5" PER HOUR	916	6"	6"X6"	8"X8"
5	5" PER HOUR	1616	6"	6"	8"X8"
6	5" PER HOUR	1395	4"	6"	8"X8"
7	5" PER HOUR	1812	8"	6"	8"X8"
8	5" PER HOUR	206	3"	3"	8" GUTTER
TOTAL ROOF	5" PER HOUR	10102	12"	–	–

* PER FLORIDA BUILDING CODE PLUMBING TABLES 1106.2(2), 1106.6, AND 1106.7.



NOTE: CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS. ACCOMMODATE HEIGHT OF SUPPORT IN ORDER TO COMPLY WITH AIR GAP REQUIREMENT AT ROOF DRAIN. CONDENSATE PIPE TERMINATION SHALL BE 2" ABOVE ROOF DRAIN STRAINER. PROVIDE SUPPORTS AS PER TABLE 305.4 OF FLORIDA BUILDING CODE (2014) – MECHANICAL.

ROOF PIPING SUPPORT DETAIL
NOT TO SCALE

KEY NOTES

1. 6" STORM DRAIN TO BELOW. PROVIDE CLEANOUT AT BASE OF RISER.
2. 6" STORM DRAIN LINE TO BELOW. PROVIDE CLEANOUT AT BASE OF RISER.
3. 3/4" CONDENSATE LINE. TIE TO NEAREST MEANS OF ROOF DRAINAGE.
4. RECTANGULAR DOWN SPOUT. REFER TO SIZING CALCULATION CHART THIS PAGE FOR SIZING. FIELD VERIFY EXACT TERMINATION POINT.
5. SEE ARCHITECTURAL PLAN FOR EXACT SCUPPER LOCATIONS.
6. SEE ROOF PIPING SUPPORT DETAIL ON THIS SHEET.

ISSUED FOR PERMIT ONLY [redacted]

KAMM CONSULTING PROJECT #: 2017-0738
PROJECT MANAGER: JOHN MAYR

KAMM CONSULTING, INC. [redacted]

PRINCIPAL [redacted] [redacted]

02-09-18

CONSULTANT

CITY OF FORT LAUDERDALE
PUBLIC WORKS DEPARTMENT
ENGINEERING & ARCHITECTURE
100 North Andrews Avenue, Fort Lauderdale, Florida 33301

NO.	DATE	BY	CHK'D	DESCRIPTION
	03-14-18			BID SET

City of Fort Lauderdale

PROJECT # 10909
FIRE STATION #8

CPZ ARCHITECTS, INC.
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1717 SW 1ST AVE
FORT LAUDERDALE, FL 33315

DRAWN BY:	DATE:
KP/JH	09-16-16
CHECKED BY:	SCALE:
CPZ	

SHEET NO. P2.2 OF

TOTAL: 105

DRAWING TITLE: STORM DRAINAGE PLAN

DRAWING FILE NO. 4-138-84

B-12139-983

CONSULTANT

CITY OF FORT LAUDERDALE
PUBLIC WORKS DEPARTMENT
ENGINEERING & ARCHITECTURE
100 North Andrews Avenue, Fort Lauderdale, Florida 33301

NO.	DATE	BY	CHK'D	DESCRIPTION
	03-19-18			BID SET

REVISIONS

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PROJECT # 10909
FIRE STATION #8
1717 SW 1ST AVE
FORT LAUDERDALE

DRAWN BY: MP/JH
DATE: 03-16-18
CHECKED BY: CPZ
SCALE:

SHEET NO. P3.1
OF
TOTAL SHEETS IN SET: 105
DRAWING TYPE: MECHANICAL, PLUMBING & FIRE PROTECTION
DRAWING TITLE: DOMESTIC WATER PLAN
DRAWING FILE NO. 4-138-04

KEY NOTES

1. 2" DOMESTIC WATER LINE. TIE TO EXISTING WATER LINE. VERIFY SIZE AND LOCATION PRIOR TO CONSTRUCTION.
2. 3/4" GAS LINE TO PROPANE CONTRACTOR TO COORDINATE ALL REQUIREMENTS WITH LOCAL SUBURBAN PROPANE. CONTACT: MIKE CLARK (954) 709-1000 TO SUPPLY AND PURCHASE PROPANE TANKS. CONTRACTOR TO COORDINATE WITH CITY PRIOR TO INSTALLATION.
3. 3/4" GAS METER. COORDINATE EXACT LOCATION PRIOR TO CONSTRUCTION.
4. GAS PIPING BELOW GRADE. PROVIDE PROPER SLEEVING AS REQUIRED BY CODE.
5. 1,250 GALLON PROPANE TANK. VERIFY EXACT LOCATION PRIOR TO INSTALLATION.
6. DOMESTIC WATER LINES PROVIDED FOR FUTURE WASHING MACHINE.
7. COMPRESSOR MOUNTED ON PLATFORM ABOVE ROOF. SEE ELEC. PLANS FOR COMPRESSOR SPECIFICATION.
8. PROVIDE 1" DIAMETER COMPRESS AIR DOWN TO 36" AFF. WITH LOCK OFF VALVE & PNEUMATIC POWERED NOZZLE.
9. 1" COMPRESSED AIR LINE.
10. SHOWER HEAD SHALL BE INSTALLED AT 7'-0" AFF. CONTRACTOR TO COORDINATE HEIGHT WITH FIRE CHIEF PRIOR TO INSTALLATION.

KAMM CONSULTING, INC.
KAMM CONSULTING STRUCTURES, P.A.
1505 SW 1ST AVENUE
FORT LAUDERDALE, FLORIDA 33315 954-767-1818
P.E. # 57712 CERTIFICATE OF AUTHORIZATION # 6486

ISSUED FOR PERMIT 03-19-18

DOMESTIC WATER PLAN

NORTH

CONSULTANT

CITY OF FORT LAUDERDALE
PUBLIC WORKS DEPARTMENT
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100 North Andrews Avenue, Fort Lauderdale, Florida 33301

NO.	DATE	BY	CHK'D	DESCRIPTION
	05-19-18			BID SET

REVISIONS

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1717 SW 1ST AVE
FORT LAUDERDALE

DRAWN BY: MP/JH DATE: 04-16-18
CHECKED BY: CPZ SCALE:

SHEET NO. P5.1 OF
TOTAL SHEETS: 105
DRAWING TITLE: SANITARY ISOMETRIC
DRAWING FILE NO. 4-138-84

KAMM CONSULTING
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P: (863) 687-1476 F: (863) 687-1480 E: INFO@KAMMCONSULTING.COM
CERTIFICATE OF AUTHORIZATION #: 27000

ISSUED FOR PERMIT ONLY 4/20/18

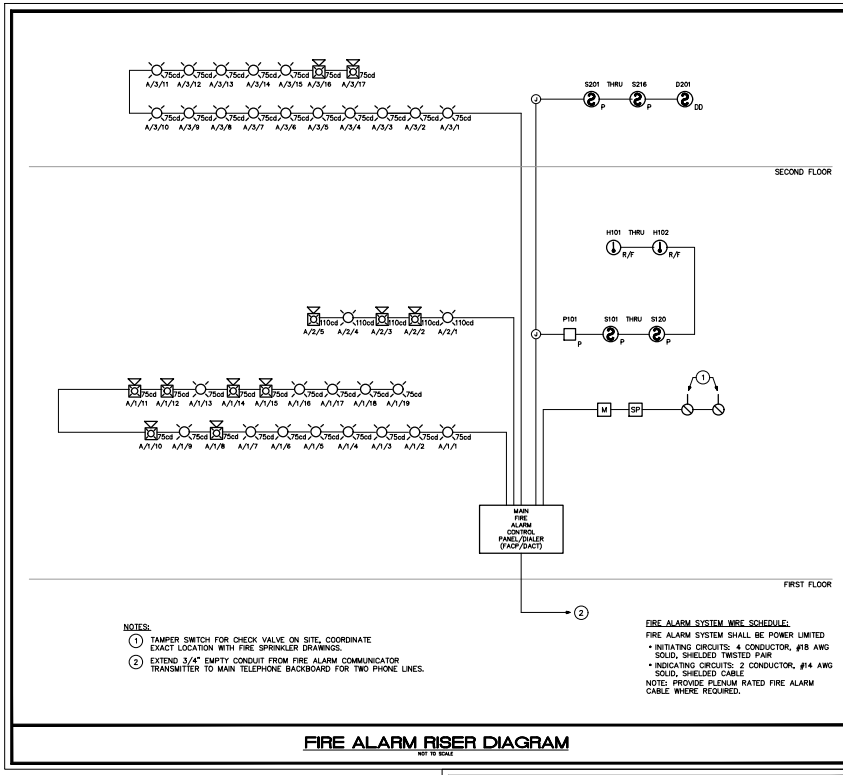
ARCHITECT
PROFESSIONAL ENGINEER
DATE

DOMESTIC WATER ISOMETRIC PLAN
N.T.S.

STORM DRAIN ISOMETRIC PLAN
N.T.S.

GAS PIPING ISOMETRIC
NO SCALE

SANITARY ISOMETRIC PLAN
N.T.S.



NOTES:

1. TAMPER SWITCH FOR CHECK VALVE ON SITE, COORDINATE EXACT LOCATION WITH FIRE SPRINKLER DRAWINGS.
2. EXTEND 3/4" EMPTY CONDUIT FROM FIRE ALARM COMMUNICATOR TRANSMITTER TO MAIN TELEPHONE BACKBOARD FOR TWO PHONE LINES.

FIRE ALARM SYSTEM WIRE SCHEDULE:

FIRE ALARM SYSTEM SHALL BE POWER LIMITED

- INITIATING CIRCUITS: 4 CONDUCTOR, #18 AWG SOLID, SHIELDED TWISTED PAIR
- INDICATING CIRCUITS: 2 CONDUCTOR, #14 AWG SOLID, SHIELDED CABLE

NOTE: PROVIDE PLENUM RATED FIRE ALARM CABLE WHERE REQUIRED.

FIRE ALARM RISER DIAGRAM

NOT TO SCALE

GENERAL NOTE

FIRE ALARM CONTROL PANEL SHALL HAVE SPARE MONITORING CAPACITY FOR THE PUBLIC SAFETY BDA (RADIO SIGNAL) SYSTEM. COORDINATE WITH BDA SUPPLIER FOR CONNECTION AND EXACT REQUIREMENTS REGARDING MONITORING OF SYSTEMS. THE FOLLOWING CONNECTIONS ARE REQUIRED:

1. ANTENNA MALFUNCTION ALARM
2. SIGNAL BOOSTER FAILURE
3. LOW BATTERY CAPACITY INDICATION WHEN 70% OF THE 12 HOUR OPERATING CAPACITY HAS BEEN DEPLETED.
4. POWER SUPPLY SIGNALS SHALL INCLUDE THE FOLLOWING FOR EACH SIGNAL BOOSTER
   - A. LOSS OF NORMAL AC POWER
   - B. FAILURE OF BATTERY CHARGER

FIRE ALARM SHEET INDEX

FA0.1	FIRE ALARM RISER DIAGRAM, NOTES, LEGEND & INDEX
FA2.1	FIRE ALARM PLAN
FA2.2	MEZZANINE FIRE ALARM PLAN

FIRE ALARM NOTES

1. THE MAIN FIRE ALARM CONTROL PANEL SHALL BE A MICROPROCESSOR BASE SYSTEM WITH ADDRESSABLE, INTELLIGENT DETECTORS. ADDRESSABLE CONTROL RELAY AND MONITOR MODULES, VISIBLE AND AUDIBLE SYSTEM ANNUCIATORS AND OTHER SYSTEM CONTROLLED DEVICES AS REQUIRED.
2. PROVIDE REMOTE POWER SUPPLY AS INDICATED FOR EACH FLOOR FOR FUTURE TENANT BUILDOUT. THE FIRE ALARM SHALL BE CAPABLE OF FUTURE EXPANSION AS REQUIRED IN THE TENANT SPACES.
3. ALL WIRING AND CONDUIT TO CONFORM TO N.F.P.A. 72 AND N.E.C. ARTICLE 760. WIRING SHALL BE SOLID COPPER OR STRANDED COPPER WITH A MAX. OF 7 STRANDS FOR 16 GA AND 18 GA. STRANDED COPPER WITH A MAX. OF 19 STRANDS FOR SIZES 14 AND LARGER AS REQUIRED BY N.E.C. 760 AND N.F.P.A. 70.
4. ALL FIRE STOP PENETRATIONS SHALL BE MADE WITH APPROVED (NEC) METALLIC CONDUIT AND SHALL BE SEALED WITH A U.L. APPROVED FIRE STOP MATERIAL. (SEE FIRE STOP DETAIL)
5. ROUTING OF THE FIRE ALARM SYSTEM CONDUIT IS DIAGRAMMATIC ONLY. VERIFY EXACT LOCATIONS PRIOR TO STARTING WORK.
6. ALL FIRE ALARM NOTIFICATION APPLIANCES SHALL ACTIVATE UPON INITIATION OF THE GENERAL ALARM.
7. ALL FIRE ALARM AUDIBLE SIGNALS SHALL HAVE A THREE PLUS TEMPORAL PATTERN.
8. ALL FIRE ALARM AUDIBLE SIGNALS SHALL HAVE A SOUND LEVEL OF AT LEAST 15 dba ABOVE THE AVERAGE AMBIENT SOUND LEVEL.
9. MANUAL STATIONS SHALL BE INSTALLED AT 48" INCHES A.F.F.
10. WALL MOUNTED FIRE ALARM SYSTEM AUDIBLE/VISUAL SIGNALS (COMBINATION DEVICES) SHALL BE MOUNTED SUCH THAT THE ENTIRE STROBE LENS IS 80" A.F.F. OR 6" BELOW CEILING, WHICHEVER IS LOWER.
11. WALL MOUNTED FIRE ALARM SYSTEM VISUAL SIGNALS (STROBES) SHALL BE MOUNTED SUCH THAT THE ENTIRE STROBE LENS IS 80" A.F.F. OR 6" BELOW CEILING, WHICHEVER IS LOWER.
12. SMOKE DETECTORS TO BE INSTALLED AS REQUIRED BY N.F.P.A. 72.
13. THE FIRE ALARM PANEL SHALL HAVE AN EARTH GROUND CONNECTION AS REQUIRED BY THE SYSTEM MANUFACTURER, AND N.E.C. ARTICLE 760. MINIMUM WIRE SIZE IS #8 AWG FOR GROUND CONNECTION. (NOTE PANEL NEUTRAL OR CONDUIT GROUND IS NOT ACCEPTABLE).
14. A GENERAL ALARM SHALL BE ANNUNCIATED UPON ACTIVATION OF ANY PULL STATION, FLOW SWITCH OR DETECTION DEVICE.
15. A TROUBLE SIGNAL SHALL BE ANNUNCIATED UPON FAILURE OR REMOVAL OF ANY DETECTION OR MANUAL DEVICE.
16. A SUPERVISORY SIGNAL SHALL BE ANNUNCIATED UPON ACTIVATION OF ANY FIRE SPRINKLER SYSTEM TAMPER SWITCH.
17. HVAC DUCT SMOKE DETECTORS SHALL BE CONNECTED TO THE FIRE ALARM CONTROL PANEL AND SHALL INITIATE A SUPERVISORY SIGNAL ONLY.
18. FIRE ALARM SYSTEM SHALL BE U.L. CERTIFIED.
19. ALL FIRE ALARM INITIATING DEVICES SHALL BE ADDRESSABLE AND ALL FIRE ALARM CIRCUITS SHALL BE CLASS "B", STYLE "C".
20. PROVIDE CERTIFICATE OF COMPLETION AT THE FINAL INSPECTION OF THE FIRE ALARM SYSTEM.
21. FIRE ALARM CONTRACTOR SHALL PROVIDE A DETAILED SET OF SHOP DRAWINGS (INCLUDING DEVICE CUT SHEETS), A COMPLETE POINT TO POINT WIRING DIAGRAM, FLOOR PLAN DRAWINGS INDICATING ALL DEVICE LOCATIONS AND NUMBERS, COMPLETE BATTERY CALCULATIONS AND COMPLETE NOTIFICATION APPLIANCE CIRCUIT CALCULATIONS (FOR THE SYSTEM TO BE INSTALLED) TO THE BUILDING DEPARTMENT (AUTHORITY HAVING JURISDICTION) AT THE TIME OF APPLICATION FOR BUILDING PERMIT.
22. PROVIDE THE OWNER WITH A COMPLETE FIRE ALARM SYSTEM AND INSTALLATION MANUAL COVERING MANUAL COVERING ALL SYSTEM EQUIPMENT INSTALLED FOR THIS PROJECT. KEEP AT THE MAIN FIRE ALARM CONTROL PANEL.

FIRE ALARM SYMBOLS

$\square_P$	FIRE ALARM MANUAL PULL STATION SIMPLEX 4099-9001
$(2)_P$	PHOTOELECTRIC SMOKE DETECTOR SIMPLEX 4098-9757 4098-9788(BASE)
$(2)_{DD}$	DUCT SMOKE DETECTOR, 24 VOLT SIMPLEX 4098-9756
$(1)_{R/F}$	HEAT DETECTOR (185° F). COMBINATION - RATE OF RISE AND FIXED TEMP. SIMPLEX 4098-9733 4098-9792 CC-623
FACP	FIRE ALARM CONTROL PANEL - ADDRESSABLE - ALARM TRANSMITTER SIMPLEX 4010-9101 4010-9813 4010-9816
	FIRE ALARM HORN / STROBE COMBINATION SIMPLEX 4903-9451(75CD) 4903-9452(110CD) ET70WP-2475R-WP(180CD)
	FIRE ALARM STROBE SIMPLEX 4904-9351(75CD) 4904-9352(110CD)
	FIRE ALARM FLOW SWITCH (FURNISHED BY SPRINKLER CONTRACTOR)
	FIRE ALARM TAMPER SWITCH (FURNISHED BY SPRINKLER CONTRACTOR)
RT	REMOTE TEST SIMPLEX 2098-9806
CR	CONTROL RELAY MODULE SIMPLEX 4098-9843
RI	RELAY IAM SIMPLEX 4090-9002
M	MONITOR MODULE. PROVIDE ONE FOR EACH FLOW SWITCH, TAMPER SWITCH AND AIR DUCT SMOKE DETECTOR SIMPLEX 4090-9001
KB	BUILDING KNOX BOX, MOUNT AT +60" AFF

CONSULTANT

CITY OF FORT LAUDERDALE
PUBLIC WORKS DEPARTMENT
ENGINEERING & ARCHITECTURE
100 North Andrews Avenue, Fort Lauderdale, Florida 33301

REVISIONS

NO.	DATE	BY	CHK'D	DESCRIPTION
	03-14-18			BID SET

City of Fort Lauderdale

PROJECT # 10909
FIRE STATION #8

CPZ ARCHITECTS, INC.
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CPZ

DRAWN BY: KP/JH
DATE: 09-16-16
CHECKED BY: CPZ
SCALE:

SHEET NO. FA0.1
OF
TOTAL: 105
DRAWING TITLE: FIRE ALARM NOTES
DRAWING FILE NO. 4-138-84

BID: 12139-983

ISSUED FOR PERMIT ONLY 2018-05-17

KAMM CONSULTING PROJECT #: 2017-0738
PROJECT MANAGER: JOHN MAYR

KAMM CONSULTING
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PRINCIPAL: Brian L. Brittle Florida License #98252
02-05-18
date
title

CONSULTANT

CITY OF FORT LAUDERDALE
PUBLIC WORKS DEPARTMENT
ENGINEERING & ARCHITECTURE
100 North Andrews Avenue, Fort Lauderdale, Florida 33301

NO	DATE	BY	CHK'D	DESCRIPTION
	03-19-18			BID SET

REVISIONS

CPZ ARCHITECTS, INC.
6316 WEST BROWARD BOULEVARD
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PROJECT # 10909
FIRE STATION #8
1717 SW 1ST AVE
FORT LAUDERDALE

DRAWN BY: KP/JH
DATE: 03-16-16
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SCALE:

SHEET NO. FA2.1
OF
TOTAL NO.
DRAWING TITLE: FIRE ALARM PLAN
DRAWING FILE NO. 4-138-04

KEY NOTE

1 KITCHEN HOOD TO BE TIED INTO FIRE ALARM SYSTEM. FIRE ALARM CONTRACTOR TO COORDINATE WITH HOOD MANUFACTURER PRIOR TO INSTALLATION.

KAMM CONSULTING

CONSULTANT

CITY OF FORT LAUDERDALE
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100 North Andrews Avenue, Fort Lauderdale, Florida 33301

NO.	DATE	BY	CHK'D	DESCRIPTION
	05-10-18			BID SET

REVISIONS

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DRAWN BY: MP/AH DATE: 03-16-16
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SHEET NO. FA2.2 OF
TOTAL SHEETS: 105
DRAWING TITLE: FIRE ALARM PLAN
DRAWING FILE NO. 4-138-84

KAMM CONSULTING, INC.
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CERTIFICATE OF AUTHORIZATION #: EB 0000488

ISSUED FOR PERMIT (TCO) 2

APPROVED

ISSUED FOR PERMIT 1

ZONING SET
BUILDING PERMIT

APPROVED

MEZZANINE
FIRE ALARM PLAN
NORTH

5/10/2018 5:38 AM

SPRINKLER NOTES: CODE SECTION 61G15-32.004

1. THE FOLLOWING NOTES SHALL SERVE AS MEETING THE REQUIREMENTS SET FORTH UNDER THE FLORIDA ADMISTRATIVE CODE SECTION 61G15-32.004 FOR FIRE PROTECTION ENGINEERING DOCUMENTS.

2. THE CONTRACTOR SHALL PROVIDE A COMPLETE SET OF SHOP DRAWINGS FOR FIRE SPRINKLER INSTALLATION FOR THE PROJECT AS INDICATED IN THE DESIGN DOCUMENTS. THE SYSTEM SHALL BE DESIGNED IN ACCORDANCE WITH THE 2014 FLORIDA BUILDING CODE, THE 2014 FLORIDA FIRE PREVENTION CODE, NFPA 13 (2010 EDITION), NFPA 14, NFPA 20, NFPA 24 (2010 EDITIONS), THE OWNER'S INSURANCE COMPANY AND GUIDE LINES IF ANY, THE STATE AND/OR LOCAL FIRE MARSHAL, THE LOCAL BUILDING DEPARTMENT, AND OWNER GUIDE LINE AND STANDARDS IF EXISTING.

3. THE FIRE SPRINKLER SYSTEM SHALL BE DESIGNED AS OUTLINED BELOW:

LIGHT HAZARD: (DESIGNATED AS LH)
DESIGN DENSITY: 0.10 GPM/SQFT OVER THE MOST DEMANDING 1500 SQFT.
FIRE SPRINKLER SPACING 225 SQFT. MAXIMUM.
AREAS/ROOMS: LOBBIES, OFFICES, RESTAURANT SEATING AREAS
HOSE REQUIREMENTS: 100 GPM (TOTAL COMBINED INSIDE/OUTSIDE).

ORDINARY HAZARD GROUP 1: (DESIGNATED AS OH1)
DESIGN DENSITY: 0.15 GPM/SQFT OVER THE MOST DEMANDING 1500 SQFT.
FIRE SPRINKLER SPACING 130 SQFT. MAXIMUM.
AREAS/ROOMS: PARKING, RESTAURANT SERVICE AREAS, MECHANICAL ROOMS, ELEVATOR MACHINE ROOMS, ELECTRIC ROOMS, TELEPHONE ROOMS.
HOSE REQUIREMENTS: 250 GPM (TOTAL COMBINED INSIDE/OUTSIDE).

ORDINARY HAZARD GROUP 2: (DESIGNATED AS OH2)
DESIGN DENSITY: 0.20 GPM/SQFT OVER THE MOST DEMANDING 1500 SQFT.
FIRE SPRINKLER SPACING 130 SQFT. MAXIMUM.
AREAS/ROOMS: RETAIL SPACES, TRASH ROOM, STORAGE SPACES.
HOSE REQUIREMENTS: 250 GPM (TOTAL COMBINED INSIDE/OUTSIDE).

NOTE: NO STORAGE OVER 12 FT SHALL BE ALLOWED.

4. FIRE SPRINKLER CONTRACTOR SHALL BE RESPONSIBLE TO OBTAIN A FIRE FLOW TEST PERFORMED OR WITNESSED BY LOCAL AHJ FIRE DEPARTMENT. SUCH FIRE FLOW TEST RESULTS SHALL BE MODIFIED IN ACCORDANCE WITH THE REQUIREMENTS OF BROWARD COUNTY LOCAL AMENDMENTS TO THE FLORIDA FIRE PREVENTION CODE, SECTION F-112.1 TO BE INCORPORATED AS THE HYDRAULIC DATA FOR HYDRAULIC CALCULATIONS PURPOSES.

5. THE CONTRACTOR SHALL SUBMIT THREE (3) SETS OF SHOP DRAWINGS AND, IF APPLICABLE, HYDRAULIC CALCULATIONS BEARING THE SIGNATURE AND SEAL OF A FLORIDA REGISTERED PROFESSIONAL ENGINEER FOR REVIEW BY THE ARCHITECT/OWNER PRIOR TO COMMENCING ANY FIELD WORK. AS WELL, THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS AND, IF APPLICABLE, HYDRAULIC CALCULATIONS TO THE LOCAL BUILDING DEPARTMENT OR AUTHORITY HAVING JURISDICTION AND OBTAIN ALL NECESSARY APPROVALS AND PERMITS FOR THE PROJECT.

6. THE CONTRACTOR SHALL COORDINATE ALL FIRE SPRINKLER WORK WITH ALL OTHER CONSTRUCTION DISCIPLINES INCLUDING BUT NOT LIMITED TO HVAC, PLUMBING, ELECTRICAL, STRUCTURAL AND CIVIL.
THE CONTRACTOR SHALL ALSO COORDINATE ANY SPECIAL TESTING REQUIRED BY THE OWNER.

7. THE SHOP DRAWINGS, INCLUDING HYDRAULIC CALCULATIONS, SHALL SHOW THE SIZES, TYPES, AND DIMENSIONAL LOCATIONS FOR ALL FIRE SPRINKLERS, MAINS, BRANCHES, AND EXISTING PIPING FOR THE WATER SUPPLY TO THE CONNECTION OF THE SYSTEM.

8. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATION AND FINAL LOCATION OF THE FIRE SPRINKLER HEADS AND/OR PIPING FOR FINAL FIRE PROTECTION LAYOUT DOCUMENTS PREPARATION AND INSTALLATION.

9. THE DESIGN DOCUMENTS ARE NOT AND SHALL NOT BE CONSIDERED SHOP DRAWINGS NOR INSTALLATION DRAWINGS.

10. ALL INFORMATION CONTAINED IN THESE DRAWINGS IS ACCORDING TO THE ORIGINAL CONSTRUCTION DOCUMENTS PROVIDED BY THE OWNER AND LIMITED FIELD OBSERVATIONS. THE ENGINEER OR THE ARCHITECT MAKES NO REPRESENTATION FOR THE ACCURACY OF SUCH INFORMATION.
THE CONTRACTOR SHALL VISIT THE BUILDING AND FIELD VERIFY ALL EXISTING CONDITIONS MATERIALS, EQUIPMENT, DIMENSIONS, ETC. ONCE DEMOLITION TAKES PLACE PRIOR TO SUBMITTING A BID AND COMMENCING ANY WORK.

11. THE CONTRACTOR SHALL REMOVE EXISTING FIRE SPRINKLERS AND/OR FIRE SPRINKLER PIPING NOT REQUIRED FOR THE PERMANENT INSTALLATION AT THE END OF THE INSTALLATION PHASE.

12. ALL WORK BY THE CONTRACTOR SHALL BE DONE IN STRICT COORDINATION AND AS APPROVED BY THE OWNER. ALL INTERRUPTIONS IN THE FUNCTIONING OF THE FIRE SPRINKLER SYSTEM SHALL BE DONE DURING OFF-PEAKK (UNOCCUPIED TIMES) OR STRICTLY AS APPROVED BY THE OWNER. NOTIFICATION OF A SHUTDOWN TO THE FIRE SPRINKLER SYSTEM, INCLUDING THE DURATION TIME, SHALL BE MADE TO THE OWNER A MINIMUM OF SEVEN (7) DAYS IN ADVANCE OF SUCH WORK AND COORDINATED ALSO WITH AHJ WHERE IN THE OPINION OF THE AHJ IF PARTIAL OR TOTAL DEMOLITION OF THE EXISTING FIRE SPRINKLER SYSTEM TAKES PLACE IN SITE AND SUCH DEMOLITION IS OF A HAZARDOUS NATURE, QUALIFIED PERSONNEL SHALL SERVE AS ON-SITE FIRE WATCH.

13. THE CONTRACTOR SHALL BEAR ALL COSTS OF
A. PREPARING SHOP DRAWINGS AND DOCUMENTS
B. SECURING PERMITS AND APPROVALS
C. LABOR
D. MATERIALS
E. CLEAN UP/WASTE REMOVAL
F. FIRE WATCH IN COORDINATION OF AHJ IF REQUIRED.

14. PIPING INSTALLATION
WHEN A MODIFICATION TO AND EXISTING FIRE SPRINKLER SYSTEM TAKES PLACE, THE CONTRACTOR SHALL MATCH THE NEW COMPONENTS SUCH AS PIPE SCHEDULE MATERIALS, FITTINGS, SPRINKLERS, VALVES, ETC. WITH THE EXISTING COMPONENTS ALREADY INSTALLED IN THE JOB OR IF DISCONTINUED WITH TODAYS EQUIVALENTS, OBSERVED WHEN FIELD VERIFICATION TAKES PLACE; THAT SHALL BE AS PER NFPA 13. AHJ AND OWNER GUIDE LINES AND STANDARDS IF ANY WICH IS ALSO RESPONSABILITY OF THE CONTRACTOR VERIFY PREVIOUSLY TO BIDDING, SUBMITTING, PERMITTING, COMMENCING AND INSTALLING ANY EXISTING PROJECT TO BE MODIFIED.
WHEN THE INSTALLATION OF A NEW FIRE SPRINKLER SYSTEM TAKES PLACE, THE CONTRACTOR SHALL PROPOSE THE PIPE SCHEDULE MATERIALS, FITTINGS, VALVES, HANGERS, ETC. ACCORDING TO THE GUIDE LINES AND STANDARDS OF THE OWNER IF ANY, WHICH SHALL BE ALSO RESPONSABILITY OF THE CONTRACTOR VERIFY PREVIOUSLY TO BIDDING, SUBMITTING, PERMITTING, COMMENCING AND INSTALLING ANY NEW WORK) SUCH STANDARDS SHALL BE ALSO AS PER NFPA 13 AND AHJ.
THE FOLLOWING MATERIALS ARE SPECIFICATIONS AS PER NFPA 13.
A. MAKE CHANGES IN SIZE OF PIPE WITH REDUCING FITTINGS; BUSHINGS ARE NOT PERMITTED.
B. CAP OPENINGS IN PIPING DURING CONSTRUCTION.
C. ESCUTCHEONS: FIT EXPOSED PIPES PASSING THROUGH FLOORS, WALL OR CEILING WITH ESCUTCHEONS. MANUFACTURE SPECIAL SIZES OF ESCUTCHEONS FROM STEEL AND PRIME COAT SAME. CUT IN ROUND, RECTANGULAR OR SQUARE SPACE TO PROVIDE A CLEAN APPEARANCE ACCEPTABLE TO THE GAP.
D. PENETRATIONS THROUGH FIRE RATED WALLS SHOULD BE FILLED WITH A UL LISTED FIRE SEALANT IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS AND TO PROVIDE AT LEAST THE MINIMUM FIRE RATING OF THE WALL.
E. CPVC PIPING SHALL NOT BE INSTALLED OVER ANY PORTION OF THE OPENINGS) IN RETURN AIR PLENUMS.
F. ABOVEGROUND PIPE MATERIALS:
1. SCHEDULE 40, FOR PIPE SIZES 1" THROUGH 2".
2. SCHEDULE 40 FOR PIPE SIZES 2½" AND LARGER.
3. ALL EXPOSED PIPE AND FITTINGS TO OUTSIDE AIR SHALL BE GALVANIZED SCH40 PIPE, GALVANIZED FITTINGS, ALL RED PAINTED AND HANG UP WITH STAINLESS STEEL ROD AND HANGERS AS PER NFPA 13•2007•12.24.2.10.1
4. SCHEDULE 80 FOR ½"DR ¾"NIPPLE. NIPPLES SHALL NOT EXCEED 4" IN LENGHT.

G. UNDERGROUND PIPE MATERIALS:
1. DUCTILE IRON MEETING AWWA C104 STANDARDS
2. STEEL MEETING AWWA C200 STANDARDS
3. CONCRETE MEETING AWWA C300 STANDARDS
4. PLASTIC MEETING AWWA C900 STANDARDS, DR 14.

FIRE SPRINKLER SCHEDULE-(REFER TO NOTES BELOW)

SYM	QNT	TYPE/DESCRIPTION	TEMP(°F) RATING	K FACTOR	RESPONSE	NPT	MFG.	MODEL	SIN	ESCUTCHEON FINISH	CONN.	NOTES/INTENDED USE
⊙	-	CONCEALED PENDENT	155	5.6	QUICK	1/2"	TYCO	RFII	TY3531	WHITE	Thread	OFFICES / COMMON AREAS
⊘	-	PENDENT	155	5.6	QUICK	1/2"	TYCO	TY-FRB	TY3231	BRASS	Thread	BELOW OBSTRUCTIONS
◐	-	RECESSED PENDENT	200	5.6	QUICK	1/2"	TYCO	TY-FRB	TY3231	WHITE	Thread	KITCHEN/ DAY ROOM
⊗	-	UPRIGHT	175	5.6	QUICK	1/2"	TYCO	TY-FRB	TY3131	BRASS	Thread	OPEN CEILINGS
○	-	RECESSED DRY PENDENT	155	5.6	QUICK	3/4"	TYCO	DS-1	TY3235	CHROME	Thread	FREEZER COMPARTMENTS
◀	-	HORIZONTAL SIDEWALL	175	5.6	QUICK	1/2"	TYCO	TY-FRB	TY3431	BRASS	Thread	BELOW SLIDING DOORS-APPARATUS BAY

NOTES:
1. ALL FIRE SPRINKLERS SHALL HAVE A U.L. APPROVED CORROSION RESISTANT COATING WHERE EXPOSED TO OUTSIDE AIR, CHEMICALS, MOISTURE, OR OTHER CORROSIVE VAPORS SUFFICIENT TO CAUSE CORROSION OF SUCH DEVICES.
2. THE CONTRACTOR SHALL RECEIVE THE ARCHITECTS APPROVAL FOR ALL FIRE SPRINKLER/ESCUTCHEON FINISHES PRIOR TO ORDERING AND INSTALLING DESPITE WHAT IS SPECIFIED IN THIS SCHEDULE.
3. IF MODIFYING AN EXISTING PROJECT, THE CONTRACTOR SHALL BE RESPONSIBLE TO MATCH THE EXISTING FIRE SPRINKLERS IF STILL FABRICATED TODAY WITH THE NEW TO BE INSTALLED OR IF DISCONTINUED WITH THE NEW EQUIVALENTS FOR TODAY'S INSTALLATION REQUIREMENTS DESPITE WHAT IS SPECIFIED IN THIS SCHEDULE.

HANGER SCHEDULE

NFPA 13 TABLE 4-6.2.2.1 MAXIMUM DISTANCE BETWEEN HANGERD (FT – IN)

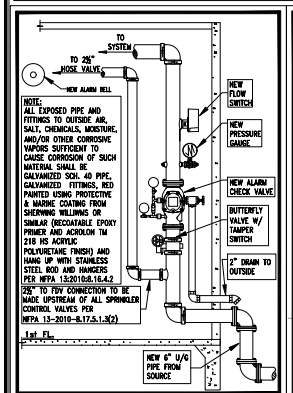
NOMINAL PIPE SIZE	3/4"	1"	1-1/4"	1-1/2"	2"	2-1/2"	3"	3-1/2"	4"	5"	6"	8"
STEEL PIPE EXCEPT THREADED LIGHT-WALL	N/A	12-0	12-0	15-0	15-0	15-0	15-0	15-0	15-0	15-0	15-0	15-0
THREADED LIGHT-WALL STEEL PIPE	N/A	12-0	12-0	12-0	12-0	12-0	12-0	N/A	N/A	N/A	N/A	N/A

NOTES
1. THERE SHALL BE NOT LESS THAN ONE HANGER FOR EACH SECTION OF PIPE
2. SUPPORT SPACING DISTANCE FOR END LINE SPRINKLER DROP ELBOWS AND DROP TEES TO BE IN ACCORDANCE WITH NFPA 13 AND THE PRODUCT APPROVAL LISTING.

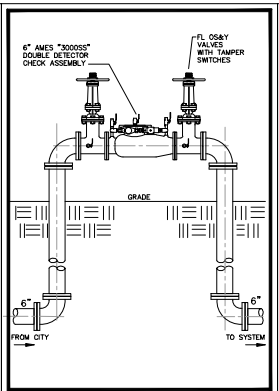
FIRE SPRINKLER SHEET INDEX

SHEET#	DESCRIPTION
FS-0.1	FIRE SPRINKLER NOTES, LEGEND & INDEX
FS-1.1	FIRE SPRINKLER SITE PLAN
FS-2.1	FIRE SPRINKLER GOUND FLOOR PLAN
FS-2.2	FIRE SPRINKLER MEZZANINE FLOOR PLAN

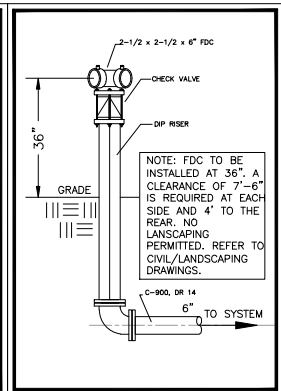
- HYDRAULIC REFERENCE POINT
- CEILING HEIGHT
- NOT IN CONTRACT
- NEW CONCEALED PENDENT SPRINKLER
- NEW UPRIGHT SPRINKLER
- NEW PENDENT SPRINKLER
- NEW RECESSED PENDENT SPRINKLER
- NEW HORIZONTAL SIDEWALL SPRINKLER
- NEW RECESSED DRY PENDENT
- NEW HORIZONTAL SIDEWALL
- NEW SPRINKLER PIPE
- NEW UNDERGROUND SPRINKLER PIPE
- NEW FIRE SPRINKLER RISER W/ 2" DRAIN AND 2¾" FDV CONNECTION PIPE



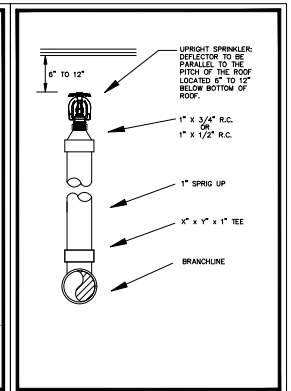
SCHEMATIC OF NEW FIRE SPRINKLER RISER — NOT TO SCALE



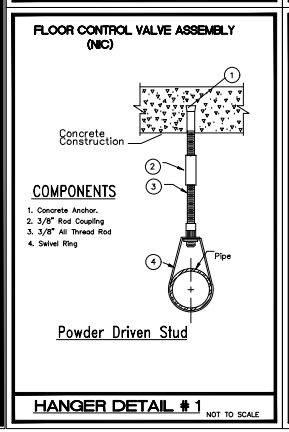
DOUBLE DETECTOR CHECK VALVE — NOT TO SCALE



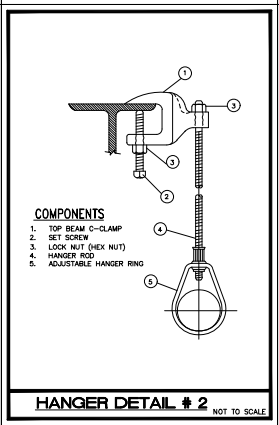
FREE STANDING FDC — NOT TO SCALE



TYPICAL SPRINKLER ON SPRIG — NOT TO SCALE



HANGER DETAIL # 1 — NOT TO SCALE



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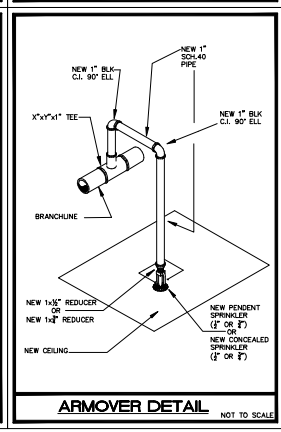
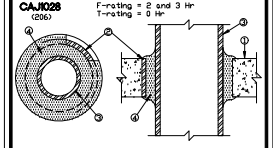


ARMOVER DETAIL — NOT TO SCALE

2 and 3 Hour Fire Rated Through Penetration Firestop For Single Metal Pipe through Concrete floors or walls using FYRE-SHIELD

TREMCO, 3735 Green Rd. Beachwood, OH. 44122. Drawing not to scale



① Floor or Wall assembly = 2.5" thick concrete
② Steel Sleeve – optional – Sch 40(or heavier) steel pipe with length as same as floor/wall thickness
③ •Steel Pipe : Max. 6" steel.
•EMT: 4" electrical metallic tubing.
•Annular space is ¾"
④ Completely fill annular space and thickness of floor or wall with FYRE-SHIELD. Fill material shall be domed on both sides of assembly to a 1/2" height in addition to thickness required for opening

FIRE STOP DETAIL FOR FIRE WALL PENETRATIONS — NOT TO SCALE

FIRE FLOW TEST:
STATIC: 56 psi
RESIDUAL: 45 psi
FLOW: 843.00 gpm
DATE: 9/22/2015
LOCATION: 4550 ROCK ISLAND RD. CORAL SPRINGS, FL
PERFORMED BY: CORAL SPRINGS FIRE DEPARTMENT

MODIFIED PER BOWARD COUNTY LOCAL AMENDMENTS TO FLORIDA FIRE PREVENTION CODE-SECTION F-112 AS FOLLOWS:
STATIC: 50.4 psi
RESIDUAL: 39.4 psi
FLOW: 843.00 gpm

ISSUED FOR PERMIT ONLY — 2[illegible]9-17

KAMM CONSULTING PROJECT #: 2017-0738
PROJECT MANAGER: JOHN MAYR

KAMM CONSULTING — 1408 Oc[illegible]A[illegible]
FL[illegible]2[illegible]F[illegible]3950
P[illegible]954.795.1744 C[illegible]954.448.0792
C[illegible]A[illegible]98189

PRINCIPAL: Br[illegible] Br[illegible] — F[illegible] 0[illegible]98252 — 02-09-18 — date — title

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NO.	DATE	BY	CHK'D	DESCRIPTION
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REVISIONS

City of Fort Lauderdale

PROJECT # 10909
FIRE STATION #8

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CAM 18-0815
Exhibit 2
Page 68 of 350
p. 218

CONSULTANT

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PUBLIC WORKS DEPARTMENT
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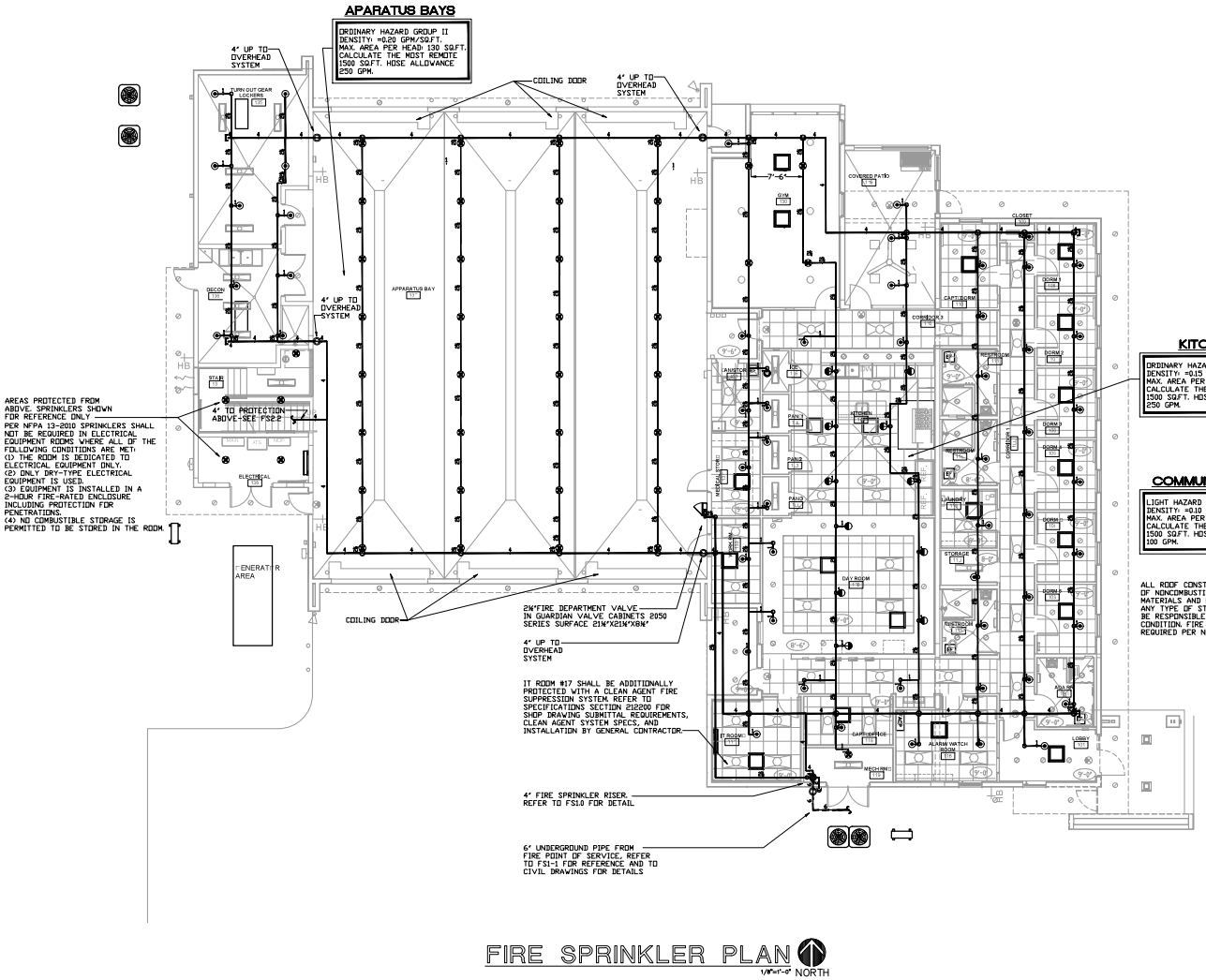
EMAIL: JOHN@KAMMCONSULTING.COM
ARCHITECT: JOHN KAMM FL LIC. #AR-0015389
ENGINEER: FL LIC. #
ARCHITECT: FL LIC. #
ISSUED FOR PERMIT ONLY 2/6/2018
ADDENDA: DATE
PERMIT SUBMITTAL: DATE

FIRE SPRINKLER SITE PLAN

1"=20'-0" NORTH



FIRE SPRINKLER PLAN

1/8"=1'-0" NORTH

IMPORTANT ADDITIONAL NOTES:

1- FIRE SPRINKLER CONTRACTOR SHALL BE RESPONSIBLE TO PROVIDE SHOP DRAWINGS AND HYDRAULIC CALCULATIONS SIGNED AND SEALED BY THEIR OWN FLORIDA REGISTERED PROFESSIONAL ENGINEER FOR FIRE SPRINKLER PERMIT.

2- ALL FIRE SPRINKLERS SHALL HAVE A U.L. APPROVED CORROSION RESISTANT COATING WHERE EXPOSED TO OUTSIDE AIR, SALT, CHEMICALS, MOISTURE, AND/OR OTHER CORROSIVE VAPORS SUFFICIENT TO CAUSE CORROSION OF SUCH DEVICES.

3- THE CONTRACTOR SHALL RECEIVE THE ARCHITECT'S APPROVAL FOR ALL FIRE SPRINKLERS/ESCUTCHEON FINISHES PRIOR TO ORDERING AND INSTALLING DESPITE WHAT IS SPECIFIED IN THESE DOCUMENTS.

4- ALL EXPOSED PIPE AND FITTINGS TO OUTSIDE AIR, SALT, CHEMICALS, MOISTURE, AND/OR OTHER CORROSIVE VAPORS SUFFICIENT TO CAUSE CORROSION OF SUCH MATERIALS SHALL BE GALVANIZED PIPE SCH. 40, GALVANIZED FITTINGS, HANG UP WITH STAINLESS STEEL ROD AND HANGERS AND SHALL BE ALL RED PAINTED.

5- FIRE SPRINKLER CONTRACTOR SHALL BE RESPONSIBLE TO OBTAIN A FLOW TEST PERFORMED BY THE LOCAL AUTHORITY TO ASCERTAIN THE WATER SERVICE REQUIRED FOR THE FIRE SPRINKLER INSTALLATION. THE HYDRAULIC CALCULATIONS SHALL ALLOW FOR A 10% PRESSURE REDUCTION AS A FACTOR OF SAFETY AND COMPLY WITH THE AHJ REQUIREMENTS AND/OR USE PRESSURE AND FLOW CRITERIA PROVIDED BY THE AUTHORITY HAVING JURISDICTION.

6- THE CONTRACTOR SHALL CREATE SHOP DRAWINGS AND PERFORM HYDRAULIC CALCULATIONS AS PER NFPA 13, 2010 8.15.9.5.2 ACCORDING TO THE RESPECTIVE HAZARD REQUIREMENTS BY OWNER STANDARDS IF ANY AND BY CODE, SHALL SHOW PIPE SIZES, ALL FITTINGS, AND DIMENSIONAL LOCATIONS FOR ALL FIRE SPRINKLERS, MAINS, BRANCHES, AND PIPING FOR THE WATER SUPPLY TO THE CONNECTION OF THE SYSTEM.

7- ANY PIPE SIZES INDICATED ON THE FIRE SPRINKLER EOR DOCUMENTS ARE PROVIDED FOR REFERENCE ONLY INCLUDING THE SIZE OF THE FIRE POINT OF SERVICE. THE ENGINEER OF RECORD MAKES NO REPRESENTATION AND CANNOT TAKE ANY RESPONSIBILITY FOR THE ACCURACY OF SUCH REPRESENTATIDN DUE TO THE LACK OF INFORMATION IN THE BEGINNING OF THE PROJECT. THE FIRE SPRINKLER CONTRACTOR CANNOT BASE HIS PRICE IN ANY EOR DRAWING PIPE SIZES DUE TO THE GIVEN REASONS. THE FIRE SPRINKLER CONTRACTOR SHALL BE RESPONSIBLE TO PERFORM AND PROVIDE A HYDRAULICALLY CALCULATED FIRE SPRINKLER SYSTEM CONFORMING TO ALL APPLICABLE NFPA CODES, HAZARDS, INCREASING OF REMOTE AREAS AND/OR DENSITIES IF REQUIRED. USING AND PROVIDING THE PROPER PIPE SIZES FOR THE MOST REMOTE AREAS AND SYSTEMS DEMAND. STARTING AT THE DESIGNATED POINT OF SERVICE AND SUCH CONDITION SHALL BE REFLECTED AND UNDERSTOOD BY THE FIRE SPRINKLER CONTRACTOR ASSUMING ALL HIS RESPONSIBILITIES IF FINAL PIPE SIZES DIFFER FROM FOR DRAWINGS, BEFORE SIGNING ANY POSSIBLE CONTRACT WITH THE OWNERS REPRESENTATIVE.

8- THE FIRE SPRINKLERS SHOWN IN THIS DRAWING ARE A PROPOSED LAYOUT LOCATION ONLY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR FIELD COORDINATION AND FINAL LOCATION OF THE FIRE SPRINKLER HEADS (AS PER NFPA 13 AND AHJ). WITH THE RESPECTIVE HAZARD REQUIREMENTS BY CODE AND PIPING FOR FINAL FIRE PROTECTION LAYOUT DOCUMENTS PREPARATION AND FINAL INSTALLATION.

9- THE CONTRACTOR SHALL COORDINATE ALL FIRE SPRINKLER WORK WITH ALL OTHER CONSTRUCTION DISCIPLINES INCLUDING BUT NOT LIMITED TO HVAC, PLUMBING, ELECTRICAL, STRUCTURAL, CIVIL, ARCHITECTURAL AND FIRE ALARM.
THE CONTRACTOR SHALL ALSO COORDINATE ANY SPECIAL TESTING REQUIRED BY THE OWNER.

10- THE FIRE SPRINKLER CONTRACTOR SHALL SUBMIT CUT SHEETS UL LISTED AND FM APPROVED FOR ALL NEW FIRE SPRINKLER COMPONENTS TO BE INSTALLED FOR THE FIRE SPRINKLER PERMIT INSTALLATION SUBJECT TO THE APPROVAL OF THE ARCHITECT, ENGINEER OR RECORD AND LOCAL AHJ PRIOR INSTALLATION TAKES PLACE.

11- SPRINKLER CONTRACTOR SHALL BE RESPONSIBLE TO PROVIDE PROPER FIRE SPRINKLERS BELOW ANY OBSTRUCTION INCLUDED BUT NOT LIMITED TO DUCT, STRUCTURE, CEILING, SOFFIT, PIPE, DOOR, ETC. IN ORDER TO PROVIDE PROPER FLOOR FIRE PROTECTION CODE COMPLIANCE SYSTEM DESPITE WHAT IS SPECIFIED IN THIS DRAWING. SUCH CONDITION SHALL BE REFLECTED IN HIS BID PRICE BEFORE SIGNING ANY CONTRACT WITH THE OWNER'S REPRESENTATIVE.

ISSUED FOR PERMIT ONLY 2018-05-17

KAMM CONSULTING PROJECT #: 2017-0738
PROJECT MANAGER: JOHN MAYR

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PRINCIPAL: Brandi Britto Florida License 98252
02-05-18
DATE
TITLE

CONSULTANT

CITY OF FORT LAUDERDALE
PUBLIC WORKS DEPARTMENT
ENGINEERING & ARCHITECTURE
100 North Andrews Avenue, Fort Lauderdale, Florida 33301

NO.	DATE	BY	CHK'D	REVISIONS DESCRIPTION
	03-14-18			BID SET

City of Fort Lauderdale

PROJECT # 10909
FIRE STATION #8

CPZ ARCHITECTS, INC.
100 WEST HILLSBORO BOULEVARD
PLANTATION, FLORIDA 33317
PHONE (954) 792-8325 FAX (954) 357-0199
AA-26000683 WWW.CPZARCHITECTS.COM

1717 SW 1ST AVE
FORT LAUDERDALE, FL 33315

CPZ

DRAWN BY: KP/JH
DATE: 09-16-16
CHECKED BY: CPZ
SCALE:

SHEET NO. FS2.1
OF
TOTAL: 105
DRAWING TITLE: FIRE SPRINKLER PLAN
DRAWING FILE NO. 4-138-84

BID 12-139-983

CONSULTANT

CITY OF FORT LAUDERDALE
PUBLIC WORKS DEPARTMENT
ENGINEERING & ARCHITECTURE
100 North Andrews Avenue, Fort Lauderdale, Florida 33301

REVISIONS			
NO	DATE	BY	CHK'D	DESCRIPTION
	03-19-18			BID SET

City of Fort Lauderdale

CPZ ARCHITECTS, INC.
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PROJECT # 10909
FIRE STATION #8
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FORT LAUDERDALE

DRAWN BY: KP/JH DATE: 03-16-16
CHECKED BY: CPZ SCALE:
SHEET NO. FS2.2 OF
TOTAL NO.
DRAWING TITLE: FIRE SPRINKLER PLAN
DRAWING FILE NO. 4-138-04

KAMM CONSULTING
KAMM CONSULTING PROJECT #
7205 SW 41st STREET
FT. LAUDERDALE, FLORIDA 33314
PHONE: (954) 792-4488 FAX: (954) 792-4489
CERTIFICATE OF AUTHORIZATION #: EB 0001889
ARCHITECT: JOHN HOWARD
REGISTRATION #: AR0014414 DATE: 3/9/18

IMPORTANT ADDITIONAL NOTES:

1- FIRE SPRINKLER CONTRACTOR SHALL BE RESPONSIBLE FOR PREPARING SHOP DRAWINGS AND HYDRAULIC CALCULATIONS SIGNED AND SEALED BY THEIR FLORIDA REGISTERED PROFESSIONAL ENGINEER FOR THE SPRINKLER PORTION OF THE PERMIT.

2- ALL FIRE SPRINKLERS SHALL HAVE A UL. LISTING AND BE SUITABLE FOR USE WHERE EXPOSED TO OUTSIDE AIR, SALT, CHEMICALS, MOISTURE, AND/OR OTHER CORROSIVE VAPORS SUFFICIENT TO CAUSE CORROSION OF SUCH DEVICES.

3- THE CONTRACTOR SHALL RECEIVE THE SPRINKLERS APPROVED FOR INSTALLATION BY THE ARCHITECT/ENGINEER PRIOR TO SPECIFIED IN THE DRAWINGS.

4- ALL EXPOSED PIPE AND FITTINGS TO OUTSIDE AIR, SALT, CHEMICALS, MOISTURE, AND/OR OTHER CORROSIVE VAPORS SUFFICIENT TO CAUSE CORROSION OF SUCH MATERIALS SHALL BE GALVANIZED PIPE SCH. 40. GALVANIZED FITTINGS OR 316 STAINLESS STEEL ROD AND HANGERS AND SHALL BE ALL RED PAINTED.

5- FIRE SPRINKLER CONTRACTOR SHALL BE RESPONSIBLE FOR ALL WORK TO BE PERFORMED BY THE LOCAL AUTHORITY TO HAVE WATER SERVICE CONNECTED TO THE FIRE SPRINKLER INSTALLATION. THE HYDRAULIC CALCULATIONS SHALL ALLOW FOR A MINIMUM 10 PSI SAFETY AND COMPLY WITH THE AHJ REQUIREMENTS AND WATER SUPPLY FLOW CRITERIA PROVIDED BY THE AUTHORITY HAVING JURISDICTION.

6- THE CONTRACTOR SHALL CREATE SHOP DRAWINGS AND HYDRAULIC CALCULATIONS AS PER NFPA 13 2010 EDITION FOR ALL NEW FIRE SPRINKLER HAZARD REQUIREMENTS BY OWNER STANDARDS IF ANY AND BY CODE. SHALL SHOW PIPE SIZING, HEAD TYPES AND LOCATIONS. ALL LOCATIONS FOR ALL FIRE SPRINKLERS, MAINS, RISERS AND FIRE DEPARTMENT CONNECTIONS SHALL BE APPROVED BY THE CONNECTION OF THE SYSTEM.

7- ANY PIPE SIZES INDICATED ON THE FIRE SPRINKLER FOR DOCUMENTS ARE PROVIDED FOR REFERENCE ONLY AND MAY NOT BE USED AS THE FIRE POINT OF SERVICE THE ENGINEER OF CANNOT TAKE ANY RESPONSIBILITY FOR THE ACCURACY OF SUCH REPRESENTATION. IT IS TO THE CONTRACTOR'S RESPONSIBILITY TO VERIFY PROJECT THE FIRE SPRINKLER CONTRACTOR CANNOT HAVE THE PIPE SIZES INCREASED DUE TO THE CONTRACTOR'S FAILURE TO DO SO.

8- THE FIRE SPRINKLERS SHOWN IN THIS PLAN ARE APPROXIMATE IN LOCATION ONLY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE FINAL FIRE SPRINKLER AND PIPING LAYOUT TO COMPLY WITH ALL CODE REQUIREMENTS AS PER NFPA 13 AND AHJ. THE CONTRACTOR SHALL COORDINATE ALL FIRE SPRINKLER AND PIPING FOR FINAL FIRE PROTECTION AND MECHANICAL REQUIREMENTS AND FINAL INSTALLATION.

9- THE CONTRACTOR SHALL COORDINATE ALL FIRE SPRINKLER WORK WITH ALL OTHER TRADES INCLUDING BUT NOT LIMITED TO HVAC, PLUMBING, ELECTRICAL, STRUCTURAL, CIVIL, ARCHITECTURAL, AND FIRE ALARM.

10- THE FIRE SPRINKLER CONTRACTOR SHALL SUBMIT CUT SHEETS UL LISTED AND FM APPROVED FOR ALL NEW FIRE SPRINKLER EQUIPMENT TO BE INSTALLED. THE FIRE SPRINKLER PERMIT INSTALLATION SUBJECT TO THE REVIEW AND APPROVAL OF THE ARCHITECT, ENGINEER OR RECORD AND LOCAL AHJ PRIOR INSTALLATION TAKES PLACE.

11- SPRINKLER CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ADDITIONAL SPRINKLERS BELOW ANY OBSTRUCTION INCLUDED BUT NOT LIMITED TO DUCTWORK, PIPING, BEAMS, SOFFIT, PIPE, DOOR, ETC. IN ORDER TO PROVIDE PROPER FLOOR TYPE PROTECTION CODE SPECIFIED OCCUPANCY HAZARD. THE CONTRACTOR SHALL BE IN THIS DRAWING. SUCH CONDITION SHALL BE REVIEWED BY THE ARCHITECT/ENGINEER PRIOR TO ANY CONTRACT WITH THE OWNER'S REPRESENTATIVE.

City of Fort Lauderdale Fire Station 8
Fort Lauderdale, Florida
ITB NO. 12139-983

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FS2.2	FIRE SPRINKLER PLAN

END OF SECTION 00 01 15

PROJECT MANUAL

For the

City of Fort Lauderdale
Fire Station #8

1717 SW 1st Avenue
Fort Lauderdale, Florida

Volume Two of Three

Division 1 – Division 14

ARCHITECT

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Bid Documents
November 6, 2017

SECTION 01 10 00
SUMMARY

PART I. GENERAL

Refer to Division 0 for the specific description of work.

1.1 SCOPE

A. The scope of this Section is to provide the labor, materials, and equipment noted herein and as required to provide the basic administration requirements of this Project.
B. General construction
C. Fixed fee contract
D. General contracting contract
E. General Contractor shall coordinate with Owner for Owner supplied and installed components, as listed in Division 0, and as may be further required.

1.2 GENERAL REQUIREMENTS

A. The work of this section is governed by the conditions set forth in the Agreement between the Owner and Contractor, the General Conditions of the Contract for Construction, Division 0 of these Specifications, and all other documents that make up the Agreement.
B. The Contractor shall ensure that the work of this section is coordinated with the work of all related trades affected by or affecting the work of this Section.

1.3 RELATED SECTIONS

A. General Conditions, Division 0
B. Pricing and Payment Procedures, Section 01 20 00
C. Substitutions, Section 01 25 00
D. Administrative Requirements, Section 01 30 00
E. Submittals, Section 01 33 00
F. Quality Requirements, Section 01 40 00
G. Cutting and Patching, Section 01 40 50
H. References and Definitions, Section 01 42 00
I. Temporary Facilities and Controls, Section 01 50 00

1.4 SUMMARY OF WORK

A. The construction of a new fire station facility as shown on the contract documents.

1.5 PERMITS AND FEES

A. Contractor shall file plans for the building permit.
B. All city permit fees shall be waived. Contractor shall be responsible for processing and handling obtaining all permits. Contractor shall pay for all other permit fees.
C. Contractor shall pay all utility tap fees and service charges for utility hook ups.
D. General Contractor is responsible for all bonds required for construction.

1.6 CONTRACT DOCUMENT INFORMATION

A. All parts of the Agreement as enumerated in the Owner/ Contractor Agreement make up the Contract Documents. What is required by one part is to be required by all parts.
B. It is the contractor's responsibility to ensure that the building is placed as shown on the drawings and all datum are correct.
C. In signing the Agreement with the Owner, the Contractor is agreeing that he or she has familiarized him or herself with all the Documents, including all referenced material and

standards, and fully understands the Scope of Work of the Project.

1.7 MATERIALS

A. All materials shall be new unless otherwise noted.
B. Materials, unless otherwise specified, shall be a tested product or material and bear the label of the testing agency or have such information documented in literature printed by the respective manufacturer.
C. All materials shall be installed in accordance with the industry or manufacturer's standards. This includes proper handling, storage, preparation of substrates, and final installation, and protection.
D. Where these Documents conflict with any industry or manufacturer's standard, the Contractor shall bring this to the attention of the Architect immediately. The Architect will then clarify the material and installation process.
E. Where a single product or manufacturer is specified, that item shall be provided with no substitutions.
F. Where more than one product or manufacturer is specified of an item, one of those items shall be used with no substitutions.
G. Where an "or equal" product will be accepted, it is the Contractor's responsibility to present data showing equal products or manufacturers. If the alternate product is deemed by the Architect not to be equal, then the originally specified item shall be used. See also Section 01 30 00, Submittals and Substitutions.
H. Where an item is specified "to match existing" the Architect will have the final decision as to the acceptance of the item.
I. Where an item or assembly is specified by a performance standard, the Contractor shall use items or assemblies that have been documented by independent testing to meet or exceed those standards. The proposed items or assemblies shall be presented the Architect for review and acceptance through submittals prior to the ordering of the items.
J. No asbestos containing materials shall be installed, nor shall be permitted to be installed in this project.

1.8 MATERIAL STORAGE

A. In general, all material shall be stored in ways recommended by the supplier or manufacturer.
B. The materials and products shall be stored for ease of inspection by the Architect or Engineer, prior to installation.
C. Materials and products shall be protected from the elements and stored on pallets off the floor or ground.
D. Materials shall be protected from damage at all times.
E. Where applicable, materials shall be stored in their original packing until ready for use.
F. Keep materials protected from extensive heat.
G. Remove any damaged materials and replace at no extra cost to the Owner.

1.9 CONSTRUCTION EQUIPMENT

A. Included in the base contract amount shall be the cost of providing all equipment required to deliver, place and install the Work. This shall include but not be limited to the following:
    1. Material handling equipment such as fork lifts and loaders.
    2. Excavating equipment.
    3. Cranes and rigging.
    4. Pumps.
    5. Trucks for delivery material to the Site and hauling material from the Site.
    6. Power hand tools and equipment including blades, drill bits, and other parts of the equipment that may wear with use.
    7. Ladders.
    8. Scaffolding.

B. Where equipment use is part of a unit price or allowance, the cost of that use shall be itemized separately and included in the unit price or allowance.

1.10 CONTRACTOR'S FIELD RECORDS

A. The Contractor shall, from "Notice to Proceed" through "Notice of Substantial Completion", keep a lockable storage area and file cabinet on the job in which to store all approved submittals. This storage area will be accessible to the Owner and Architect at all times upon request.
B. All approved shop drawings, coordination drawings, product data and manufacturers literature, samples, and other submittals required of the Contract Documents shall be kept on file or stored here for immediate access during the course of the job.
C. No work may proceed or material brought onto job until approval for the work or material has been filed in the storage area.
D. A log of all submittals shall be kept in this area with a copy updated and distributed to the Architect and Owner at each weekly site meeting.

1.11 CONTRACTOR USE OF PREMISES

A. Contractor has limited use of the site, as identified in the limits of construction on the drawings.
B. Extent of work area is noted on the Drawings.
C. Areas for storing materials, vehicular access and parking will be designated at pre-construction meeting.
D. Work hours and noise ordinances must be obeyed. These rules will be reviewed at the pre-construction meeting.
E. Contractor must comply with Building Rules and Regulations.
F. Contractor must coordinate any work required outside the designated work area with the Owner’s Project Manager:
    1. Any work that might interrupt utility service to other parts of the site must be coordinated with the Owner’s Project Manager in advance of the proposed interruption.
    2. Any core drilling in floor or access to electrical or plumbing in other spaces on the site is the responsibility of the Contractor to coordinate with the Owner’s Project Manager. Any repairs or replacement of material in these spaces is the responsibility of the Contractor.

END OF SECTION

SECTION 01 11 00

BASIC REQUIREMENTS

PART I. GENERAL

1.1 SCOPE

A. The scope of this Section is to provide the labor, materials, and equipment noted herein and as required to provide the basic administration requirements of this Project including, but not limited to the items listed below.
B. Contract and agreements
C. Site safety
D. Coordination of work
E. Coordination drawings
F. Submittal procedures
G. As built drawings
H. Protection of site and material
I. Progress cleaning and waste removal
J. Starting systems
K. Certificates and warranties
L. Project closeout

1.2 RELATED SECTIONS

A. General Conditions, Division 0
B. Substitutions, Section 01 33 00
C. Temporary Facilities and Controls, Section 01 50 00

1.3 CASH ALLOWANCES

A. Allowances are to include the actual cost of the raw material. The fabrication, delivery, uncrating, protection, taxes, subcontractor mark-up, and installation are to be part of the base bid.
B. Allowances, if required, are noted in individual specification Sections or on the Drawings.

1.4 SITE SAFETY

A. Provide protective fencing and barriers at walks and parking to ensure safe passage on site.
B. Construction is to be limited only to those areas agreed upon at the pre-construction meeting. Contractor shall be responsible for insuring that all subcontractors are aware of these rules and adhere to them.
C. Site protection shall include, but not be limited to, the following:
    1. Side walk barriers including:
        a. Barriers shall conform to all local ordinances for fencing and construction barriers.
        b. Contractor shall provide all drawings required for permitting.
        c. Contractor shall file for and pay for all permits required for sidewalk barriers.
        d. Permanent signage as required to identify safe passage route.
    2. Fencing at excavated areas:
        a. Provide and install plastic orange mesh fencing at areas that have been excavated.
        b. Provide adequate support for this fence to keep it in place throughout the course of the project. Use steel or wooden stakes as required for this purpose.
        c. Fencing material and installation must conform to local and federal

regulations governing site protection.
d. Maintain this fencing on a daily basis to ensure that it is in tack and provides the protection it is required to provide.
3. Temporary lighting of site shall be required as follows:
a. Provide lighting of exterior of site to ensure safe passage on site when dark.

D. Fence enclosing perimeter of site is required and shall be as follows:
1. Galvanized wire hurricane type fence, 6 feet tall, with galvanized steel posts. Fence shall have a lockable gate of adequate width to accommodate construction vehicles and equipment.

E. Provide site signage as follows:
1. At perimeter of site, post NO TRESPASSING signs to adequately notify the public not to enter the site.
a. Construction area: KEEP OUT
2. Post signage as required by the Owner's insurance policy.
3. Signage at perimeter fence shall include the following:
a. Construction area: KEEP OUT

1.5 COORDINATION OF WORK

A. The Contractor is responsible for coordinating all of the Work and all of the Subcontracts of this project.
B. Contractor is responsible for coordinating scheduling, submittals, and Work of the various specification sections to ensure efficient and orderly sequence of interdependent construction elements.
C. Contractor shall coordinate and verify space requirements and installation of mechanical, plumbing and electrical work, which are shown on the Plans diagrammatically. Follow routing of ducts and pipes as shown on plans as closely as possible.
D. Coordination drawings of mechanical work are required for this project. See Section 01300 for these requirements.
E. Coordinate layout of outlets, switches, lights, HVAC registers, thermostats, plumbing fixtures, and like items with framing plans and interior finishes to achieve indicated or implied alignments.

1.6 NOT USED

1.7 SUBMITTAL PROCEDURES

A. Contractor shall submit a Submittal Schedule prior to signing contract.
B. Submittals shall be made in a timely manner in accordance with the Construction Schedule.
C. Submittals shall be sent with a transmittal noting the Project, Contractor, Subcontractor, Supplier and the type of response needed.
D. Revise and re-submit submittals as required by Architect. Note changes made from prior submittals.
E. Keep one copy of all approved submittals on site for reference throughout job, and one copy for inclusion in Project Manual.
F. Architect will review shop drawings and other submittals within **15 calendar days** from date of receiving drawings.
G. Contractor shall allow 25 working days in the Critical Path Schedule for complete review and approval process for each submittal.
H. All work done for which submittals have been made and approved shall conform to the approved submittals or manufacturer's recommendations.
I. Shop drawing procedure:
1. Contractor shall submit all shop drawings in electronic format to Project Architect and Project Manager. If shop drawings are required to be signed and sealed by an independent/specialty engineer, then the Contractor shall submit six (6) prints to the Architect of each shop drawing. GC to deliver and pick up all

shop drawings to and from the Architect's office. Architect/ Engineer will review shop drawings for compliance with design intent only. Contractor is responsible for coordinating Work on shop drawings with field conditions.

J. Product literature and data:
   1. Submit 4 (four) copies of product literature required by individual specification sections.
   2. Literature shall be from the manufacturer's catalogues or other printed literature and shall include the information to confirm that the product or material described conforms to the specifications for this project.
   3. Include manufacturer's warranties in all submittals.
   4. Where the printed literature contains more than one product on a page, highlight the product being submitted for review.
   5. **All options shall be chosen and clearly marked on all submittals.**

K. Samples and Mock-ups:
   1. Submit samples as required by the individual specification sections.
   2. Samples and mock-ups used for the approval of installation of material shall remain intact and visible during installation and shall be the standard by which the installation of that material is judged.
   3. Submit at least two samples for each submittal required. The architect will keep one and the other approved sample will be kept on the job for reference.
   4. Samples shall be labeled as follows:
      a. Labels shall be affixed to back of samples.
      b. Labels shall include the date of submittal.
      c. Labels shall include the project name and address.
      d. Labels shall note the specifics of the finish applied.
   5. Mock-ups shall be provided as required of individual Spec Sections.

1.8 AS BUILT RECORD DRAWINGS

A. Record Prints: Maintain (2) sets of marked-up paper copies of the Contract Drawings and Shop Drawings, incorporating new and revised drawings as modifications are issued.

1. Preparation: Mark record prints to show the actual installation where installation varies from that shown originally. Require individual or entity who obtained record data, whether individual or entity is Installer, subcontractor, or similar entity, to provide information for preparation of corresponding marked-up record prints.

   a. Give particular attention to information on concealed elements that would be difficult to identify or measure and record later.
   b. Accurately record information in an acceptable drawing technique.
   c. Record data as soon as possible after obtaining it.
   d. Record and check the markup before enclosing concealed installations.
   e. Cross-reference record prints to corresponding archive photographic documentation.

2. Content: Types of items requiring marking include, but are not limited to, the following:

   a. Dimensional changes to Drawings.
   b. Revisions to details shown on Drawings.
   c. Depths of foundations below first floor.
   d. Locations and depths of underground utilities.
   e. Revisions to routing of piping and conduits.
   f. Revisions to electrical circuitry.
   g. Actual equipment locations.
   h. Duct size and routing.
   i. Locations of concealed internal utilities.
   j. Changes made by Change Order or Construction Change Directive.
   k. Changes made following Architect's written orders.
   l. Details not on the original Contract Drawings.
   m. Field records for variable and concealed conditions.

n. Record information on the Work that is shown only schematically.
o. Architects supplemental instruction.

3. Mark the Contract Drawings and Shop Drawings completely and accurately. Use personnel proficient at recording graphic information in production of marked-up record prints.
4. Mark record sets with erasable, red-colored pencil and or red marker. Use other colors to distinguish between changes for different categories of the Work at same location.
5. Mark important additional information that was either shown schematically or omitted from original Drawings.
6. Note Construction Change Directive numbers, alternate numbers, Change Order numbers, and similar identification, where applicable.

1.9 PROTECTION OF SITE AND OF STORED AND INSTALLED WORK

A. Contractor shall have on site at all times an adequate means for keeping excavated areas free of standing water.
B. Contractor is responsible for adequate protection of all installed work.
C. Protection requirements for each finish are noted in the Sections herein. Provide materials and installation for the protection of finish surfaces and shall maintain that protection throughout course of the job.
D. Installed Work shall be protected from extreme heat and cold.
E. Contractor is responsible for repairing damage to any installed Work.
F. Material shall be stored in a neat and orderly manner and adequately protected from damage.
G. Each type of material shall be stored in accordance with the requirements of each specification Section and the manufacturer's requirements.
H. Materials used for protection shall be new and clean.

1.10 PROGRESS CLEANING AND WASTE REMOVAL

A. Contractor shall keep the site and structures clean and free of debris at all times.
B. Debris shall be picked up and site cleaned daily. Work areas shall be broom cleaned daily and all debris removed.

1.11 STARTING SYSTEMS

A. Qualified technicians trained to install and operate the equipment shall do start-up.
B. Provide start up testing and balancing of mechanical systems as noted in each Section.
C. Testing and commissioning of mechanical equipment shall follow the following general procedure. Specific tests required are noted in the Mechanical and Electrical Sections.

1. An independent testing agency shall be hired to perform the testing, re-testing as required, and write reports interpreting the test results.
2. The testing agency shall certify that the systems and equipment are performing in compliance with the design intent of the system and with the performance specifications of the equipment.
3. The testing shall be performed in at least two phases:
   a. The first tests shall be performed at completion of rough in of equipment, piping, and ductwork. Preliminary tests shall be performed to ensure that system is roughed in properly, that the proper amount of air (CFMs) is being delivered to each register and grille and that all piping is installed and sealed properly. Installation of insulation and closing of walls may not proceed until these testes have been completed and the system found to be performing as specified.
   b. The second test shall be performed when job is at substantial completion. Full balancing reports, pipe pressure tests and other tests as required by the Mechanical Sections shall be performed.
4. Final acceptance of the Mechanical systems will be based on the following:
   a. Upon completion of these reports they will be reviewed by the Owner

and Architect. When the test results are deemed acceptable and all deficiencies in the systems have been corrected, these reports will be accepted and signed off by the Owner and Architect.

b. A Mechanical Equipment Manual for this project will be prepared by the Contractor and shall include all approved cut sheets, approved shop drawings, wiring diagrams, maintenance instructions, warranties and a list of names, addresses, and phone numbers of the installing companies and their maintenance personnel. This Manual will be submitted with the test reports as part of the requirements for final review.

1.12 MANUFACTURER'S CERTIFICATES AND WARRANTIES

A. When called for by an individual specification section, submit certification by the manufacturer or supplier that the installed Product is installed (and operating) in accordance with the manufacturer's specifications. Distribute two copies of this to the Architect and keep one copy for inclusion in the Project Manual.

B. The Contractor shall correct any defective or rejected work at his own expense prior to acceptance and warrants to the Owner that any defects in workmanship and materials occurring within one year from final acceptance will be corrected expeditiously at the Contractor’s expense.

1.13 PROJECT CLOSEOUT PROCEDURES

A. See Section 017700

END OF SECTION

SECTION 01 12 00

SPECIAL CONDITIONS

PART I. GENERAL

RELATED DOCUMENTS

Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

SPECIAL CONDITIONS

A. Project work includes work in the public right-of-way. Contractor shall coordinate all elements of the work, to assure minimal impact of neighborhood. Interruption of service or access for the operation of the adjacent business and neighborhood is not permitted.

B. General Contractor shall develop a Phasing/Staging plan and Stormwater Pollution Presentation Plan (SWPP) and related schedule to be submitted to the City of Fort Lauderdale for final approval before beginning work.

C. All work along the property lines shall be coordinated with adjacent property owners by the contractor. Contractor is responsible for the repair of any adverse damage to the adjacent property.

D. Contractor to be responsible for all fines levied by failure to meet these requirements.

E. Contractor is responsible for the demolition and/or relocation of existing utilities and structures as necessary for the performance of the Work.

F. Contractor to prepare site survey prior to construction and provide As-Built survey after construction is completed.

G. Contractor is responsible for locating parking for construction crews for this project. If on-site parking cannot be accommodated, contractor shall find alternative parking and transportation of crews at their own expense.

PRODUCTS (Not Used)

EXECUTION (Not Used)

END OF SECTION

SECTION 01 20 00

PRICING AND PAYMENT PROCEDURES

PART I. GENERAL

1.1 SCOPE

A. Schedule of Values and Applications for Payments
B. Change procedures

1.2 GENERAL REQUIREMENTS

A. The work of this section is governed by the conditions set forth in the Agreement between the Owner and Contractor, the General Conditions of the Contract for Construction, Division 0 of these Specifications, and all other documents that make up the Agreement.
B. The Contractor shall ensure that the work of this section is coordinated with the work of all related trades affected by or affecting the work of this Section.

1.3 RELATED SECTIONS

A. General Conditions, Division 0
B. Summary of Work and Basic Requirements, Section 01 11 00
C. Substitutions, Section 01 25 00
D. Administrative Requirements, Section 01 30 00
E. Submittals, Section 01 33 00
F. Quality Requirements, Section 01 40 00
G. Cutting and Patching, Section 01 40 50
H. References and Definitions, Section 01 42 00
I. Temporary Facilities and Controls, Section 01 50 00

1.4 SCHEDULE OF VALUES AND APPLICATIONS FOR PAYMENT

A. Schedule of Values shall be developed on AIA Form G-703 or Owner provided form after acceptance of bid and shall become part of the Contract Documents.
B. Applications for payment shall be made on the AIA Forms G-702 and G-703 or similar electronic document providing all information required of these forms.
C. Partial lien releases from each subcontractor and supplier shall be submitted with each application for payment.

1.5 CHANGE PROCEDURES

A. No extra work shall proceed until a Directive or Change Order has been issued by the Architect and signed by the Owner and Contractor.
B. Work based on Unit Prices may proceed if the unit price has been approved by the Architect and Owner.
C. For Changes in the Scope of Work, the Architect shall issue a scope of work for that change to the Contractor for pricing.
D. For all changes in the Scope of Work, the Contractor shall submit to the Architect and Owner a detailed Cost Proposal in strict accordance the General Conditions of the Contract for review:
    1. Cost Proposals shall include the following:
        a. Date of Proposal
        b. Consecutive numbering of Proposal (CO-1, CO-2, etc.)
        c. Project title, address, and Architect's project number.
        d. A copy of the request by the Owner or Architect for this change.
    2. Cost Proposal for changes shall clearly define the scope of work associated with the proposed change and all related work.

3. Cost Proposals shall include the following:
   a. Material quantities and costs.
   b. Labor quantities and costs
   c. Back-up documentation on all labor, material, and subcontractor costs.
   d. Documentation of credit for work replaced and not performed due to this change.
   e. Impact on Critical Path Construction Schedule as documented on the Schedule showing time required for proposed change. Claims for additional general conditions fees will not be considered if Critical Path Schedule is not impacted by proposed change.
   f. Contractor mark-up 10%
      Sub-contractor mark-up 10%
      Max of all mark-ups 20%

E. All Cost Proposals must be complete or they will not be reviewed. It is the Contractor's responsibility to provide this information in a timely manner so as not to impact the Critical Path Construction Schedule. Any delays caused by improper or late submissions will be borne by the Contractor

F. It is the Contractor's responsibility to provide this information in a timely manner so as not to impact the Critical Path Construction Schedule.

G. Any costs incurred due to delays caused by improper or late submissions shall be borne by the Contractor.

H. Change Orders will be prepared by the Architect on AIA Form G-701 or Owner provided form based on Cost Proposals prepared by the Contractor.

I. Change Orders will be based on a fixed price basis when scope of work is quantifiable. Cost Proposals shall support all work.

J. Change orders will be used to document work done on a Unit Price Basis. Cost Proposals documenting actual units used shall support all work.

K. When a Change Order has been approved, the Contractor shall update the Application for Payment Form G -703 or Owner provided form with a separate line for each Change Order.

L. When a Change Order has been approved, the Contractor shall promptly update and re-issue the Critical Path Construction Schedule showing any impact on the Schedule due to the approval of the Change Order.

END OF SECTION

SECTION 01 25 00

SUBSTITUTIONS

PART I. GENERAL

1.1 SCOPE

A. The scope of this section is to define the Substitution procedures for this Project.
B. Coordination drawing requirements and procedure.
C. Substitution will **ONLY** be accepted during the bid phase of the project. If not approved during the bid phase all items will remain as specified.

1.2 CONTRACTOR'S SUBSTITUTION REQUESTS

A. The Architect will consider formal requests from the Contractor for substitution of Product in place of those specified.
    1. Requests will be considered only in case of Product unavailability or other conditions beyond the control of Contractor
B. The Contractor shall furnish and install all items required to complete all parts of the project design as shown or reasonably implied by the Contract Documents. Any item not specifically shown but required to make the whole system or make it functional or to meet governmental codes shall be included in the Contract as if it were shown.
C. Request by the Contractor for substitutions of materials or products shall be made in writing to the Owner and Architect.
D. Request for substitutions shall be made in a timely manner that will not impact the Critical Path Construction Schedule.
E. Substitutions are not permitted without written approval by the Owner.
F. The Contractor shall, if required, reimburse the Owner, Architect and Consultants for any extra time incurred reviewing request for substitutions whether the substitutions are approved or not.
G. The Contractor assumes, by requesting a substitution, all cost related to making the substitution. This includes all coordination required with other trades for incorporating the substitution into the Work and all other costs associated with the substitution.
H. Contractor shall submit separate request for each substitution.
I. The request for substitution shall include the following. The request will not be considered until this information has been provided:
    1. Product identification, including manufacturer's name and address, model number, and finish of the proposed substitution.
    2. Manufacturer's literature; identify:
        a. Product description of the specified item including manufacturer, model number, and finish.
        b. Reference standards
        c. Performance and test data
    3. Samples, as applicable.
    4. Name and address of similar projects on which Product has been used, and date of each installation.
    5. Data relating to changes in construction schedule.
    6. Any effect of substitution on separate contracts.
    7. List of changes required in other work or Products.
    8. Accurate cost data comparing proposed substitution with Product specified.
        a. Amount of any net change to Contract Sum.
    9. Designation of required license fees or royalties.
    10. Designation of availability of maintenance services, sources, of replacement materials.
    11. Substitutions will not be considered for acceptance when:
        a. They are indicated or implied on shop drawings or product data submittal without a formal request from Contractor.

b. They are requested directly by a subcontractor or supplier.
c. Acceptance will require substantial revision of Contract Documents.

12. Substitute products shall not be ordered or installed without written acceptance of Architect.
13. Architect will determine acceptability of proposed substitutions.
14. Submit only with attached two (2) page form.

1.15 CONTRACTORS REPRESENTATIONS

A. In making formal request for substitution Contractor represents that:
1. He has investigated proposed product and has determined that it is equal to or superior in all respects to that specified.
2. He will provide same warranties or bonds for substitution as for Product specified.
3. He will coordinate installation of accepted substitution into the Work and will make such changes as may be required for the Work to be completed in all respects.
4. He waives claims for additional costs caused by substitution which may subsequently become apparent.
5. Cost data is complete and includes related costs under this Contract, but not the following:
a. Costs under separate contracts.
b. Architect’s costs for redesign or revision of Contract Documents.

1.16 ARCHITECT’S DUTIES

A. Review Contractor’s requests for substitutions with reasonable promptness.
B. Notify Contractor of decision to accept or reject requested substitution in writing.

1.17 CONTRACTOR'S COST PROPOSALS

A. For all changes in the scope of Work, the Contractor shall submit to the Architect and Owner a detailed Cost Proposal in strict accordance the General Conditions of the Contract for review as specified in Section 01 20 00, Pricing and Payment Procedures.
B. All Cost Proposals must be complete or they will not be reviewed. It is the Contractor's responsibility to provide this information in a timely manner so as not to impact the Critical Path Construction Schedule. Any delays caused by improper or late submissions will be born by the Contractor

GENERAL CONTRACTOR REQUEST

FOR SUBSTITUTION

(SUBMIT 3 COPIES)

DATE_____ REQUEST NO._____

TO:_____

_____

PROJECT:_____ NO._____

_____

NAME AND ADDRESS OF CONTRACTOR

_____

_____

Hereby requests approval of the following product or system as an "approved substitution"

_____

NAME AND DESCRIPTION OF SPECIFIED PRODUCT OR SYSTEM:

_____

_____

_____

SPECIFICATION SECTION NO._____ PAGES _____ PARAGRAPH(S)_____

DRAWING NO.(S)_____ DETAIL OR SECTION NO (S)_____

USE SEPARATE FORM FOR EACH SUBMITTAL

_____

NAME AND DESCRIPTION OF SUBMITTAL FOR SUBSTITUTION:

_____

_____

_____

NAME OF
MANUFACTURER_____

ADDRESS_____TELEPHONE_____

NAME OF VENDOR_____

ADDRESS_____TELEPHONE_____

_____

_____

REASON FOR NOT GIVING PRIORITY TO SPECIFIED ITEMS:

NAME OF MANUFACTURER

SUBSTITUTION AFFECTS OTHER MATERIALS OR SYSTEMS:

_____YES _____ NO - IF YES, ATTACH COMPLETE DATA

SUBSTITUTION REQUIRES DIMENSIONAL REVISION OR REDESIGN OF STRUCTURE OR MECHANICAL AND /OR ELECTRICAL WORK:

_____YES _____ NO - IF YES, ATTACH COMPLETE DATA

SAVINGS OR CREDIT TO OWNER FOR ACCEPTING SUBSTITUTE:

$_____

THE ATTACHED DATA IS FURNISHED HEREWITH FOR EVALUATION OF THE SUBSTITUTION:

_____CATALOG, _____DRAWINGS, _____SAMPLES, _____TESTS,_____REPORTS,

_____OTHER.

THE UNDERSIGNED HEREBY CERTIFIES THAT THIS SUBMISSION HAS BEEN FULLY CHECKED AND COORDINATED WITH THE CONTRACT DOCUMENTS.

_____ BY_____

FIRM NAME

ADDRESS

END OF SECTION

SECTION 01 30 00

ADMINISTRATIVE REQUIREMENTS

PART I. GENERAL

1.1 SCOPE

A. Progress meeting requirements.
B. Pre-construction meeting requirements.
C. Pre-installation meeting requirements.
D. Requirements for the coordination of work.
E. Critical path schedule requirements.

1.2 GENERAL REQUIREMENTS

A. The work of this section is governed by the conditions set forth in the Agreement between the Owner and Contractor, the General Conditions of the Contract for Construction, Division 1 of these Specifications, and all other documents that make up the Agreement.
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A. General Conditions, Division 0
B. Summary of Work and Basic Requirements, Section 01 11 00
C. Pricing and Payment Procedures, Section 01 20 00
D. Substitutions, Section 01 25 00
E. Submittals, Section 01 33 00
F. Quality Requirements, Section 01 40 00
G. Cutting and Patching, Section 01 40 50
H. References and Definitions, Section 01 42 00
I. Temporary Facilities and Controls, Section 01 50 00

1.4 PRECONSTRUCTION and PREINSTALLTION MEETINGS

A. The Architect and Owner will schedule a Pre-construction Meeting at the location determined by the owner after awarding the contract prior to start of construction.
B. When required by individual specification section, pre-installation meetings shall be held at the Site prior to commencement of that work.
C. The Architect may, at his or her option, require further coordination meetings to ensure the proper coordination between trades.
D. Contractor shall notify the Architect five (5) working days in advance of such meetings.

1.5 CONSTRUCTION SCHEDULE

A. SEE SECTION 01 32 00

1.6 PROGRESS MEETINGS

A. **Meetings shall be held at the Site on a weekly basis**. Time and day of the meetings shall be decided after award of Contract. It shall be a weekday mutually agreeable to all parties.
B. Architect will take minutes of the meetings and distribute copies to Owner, Contractor and others affected by decisions made at the meeting.
C. Contractor shall have the Job Superintendent and the Project Manager at these meetings

and subcontractors as is deemed necessary.

1.7 COORDINATION OF WORK

A. The Contractor is responsible for coordinating all of the Work and all of the Subcontracts of this project.

B. Contractor is responsible for coordinating scheduling, submittals, and Work of the various specification sections to ensure efficient and orderly sequence of interdependent construction elements.

C. Ensure that all pipes, wiring, and ducts shall be concealed where running adjacent to finished spaces.

D. Contractor shall coordinate and verify space requirements and installation of mechanical, plumbing and electrical work, which are shown on the Plans diagrammatically. Follow routing of ducts and pipes as shown on plans as closely as possible.

E. Coordinate layout of outlets, switches, lights, HVAC registers, thermostats, plumbing fixtures, and like items with framing plans and interior finishes to achieve indicated or implied alignments.

F. The contractor shall have a superintendent on site full time when any work is being performed.

END OF SECTION

SECTION 01 31 00

PROJECT MANAGEMENT AND COORDINATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes administrative provisions for coordinating construction operations on Project including, but not limited to, the following:

1. General coordination procedures.
2. RFIs.
3. Digital project management procedures.
4. Project meetings.

B. Related Requirements:

1. Division 01 Section "Special Conditions" for a description of the special conditions for coordination activities not in this Section.
2. Division 01 Section "Construction photographs & photographic documentation" for preparing and submitting Contractor's construction schedule.
3. Division 01 Section "Closeout Procedures" for coordinating closeout of the Contract.
4. Division 01 Section "General Commissioning Requirements" for coordinating the Work with Owner's Commissioning Authority.

1.3 DEFINITIONS

A. RFI: Request for Information. Request from Owner, Architect, or Contractor seeking information required by or clarifications of the Contract Documents.

1.4 INFORMATIONAL SUBMITTALS

A. Subcontract List: Prepare a written summary identifying individuals or firms proposed for each portion of the Work, including those who are to furnish products or equipment fabricated to a special design. Include the following information in tabular form:

1. Name, address, telephone number, and email address of entity performing subcontract or supplying products.
2. Number and title of related Specification Section(s) covered by subcontract.
3. Drawing number and detail references, as appropriate, covered by subcontract.

B. Key Personnel Names: Within 15 days of starting construction operations, submit a list of key personnel assignments, including superintendent and other personnel in attendance at Project site. Identify individuals and their duties and responsibilities; list addresses and cellular telephone numbers and e-mail addresses. Provide names, addresses, and telephone numbers of individuals assigned as alternates in the absence of individuals assigned to Project.

1. Post copies of list in project meeting room, in temporary field office, in web-based Project software directory, and in prominent location in built facility. Keep list current at all times.

1.5 GENERAL COORDINATION PROCEDURES

A. Coordination: Coordinate construction operations included in different Sections of the Specifications to ensure efficient and orderly installation of each part of the Work. Coordinate construction operations included in different Sections that depend on each other for proper installation, connection, and operation.

1. Schedule construction operations in sequence required to obtain the best results where installation of one part of the Work depends on installation of other components, before or after its own installation.
2. Coordinate installation of different components to ensure maximum performance and accessibility for required maintenance, service, and repair.
3. Make adequate provisions to accommodate items scheduled for later installation.

B. Prepare memoranda for distribution to each party involved, outlining special procedures required for coordination. Include such items as required notices, reports, and list of attendees at meetings.

1. Prepare similar memoranda for Owner and separate contractors if coordination of their Work is required.

C. Administrative Procedures: Coordinate scheduling and timing of required administrative procedures with other construction activities to avoid conflicts and to ensure orderly progress of the Work. Such administrative activities include, but are not limited to, the following:

1. Preparation of Contractor's construction schedule.
2. Preparation of the schedule of values.
3. Installation and removal of temporary facilities and controls.
4. Delivery and processing of submittals.
5. Progress meetings.
6. Preinstallation conferences.
7. Project closeout activities.
8. Startup and adjustment of systems.

1.6 REQUEST FOR INFORMATION (RFI)

A. General: Immediately on discovery of the need for additional information, clarification, or interpretation of the Contract Documents, Contractor shall prepare and submit an RFI in the form specified.

1. Architect will return without response those RFIs submitted to Architect by other entities controlled by Contractor.
2. Coordinate and submit RFIs in a prompt manner so as to avoid delays in Contractor's work or work of subcontractors.

B. Content of the RFI: Include a detailed, legible description of item needing information or interpretation and the following:

1. Project name.
2. City Project number.
3. Date.
4. Name of Contractor.
5. Name of Architect.
6. RFI number, numbered sequentially.
7. RFI subject.
8. Specification Section number and title and related paragraphs, as appropriate.
9. Drawing number and detail references, as appropriate.
10. Field dimensions and conditions, as appropriate.
11. Contractor's suggested resolution. If Contractor's suggested resolution impacts the Contract Time or the Contract Sum, Contractor shall state impact in the RFI.
12. Contractor's signature.
13. Contractor suggested solution for RFI.
14. Attachments: Include sketches, descriptions, measurements, photos, Product Data, Shop Drawings, coordination drawings, and other information necessary to fully describe items needing interpretation.

a. Include dimensions, thicknesses, structural grid references, and details of affected materials, assemblies, and attachments on attached sketches.

C. RFI Forms: Form with substantially the same content as indicated above, acceptable to Architect.

1. Attachments shall be electronic files in PDF format.

D. Architect's Action: Architect will review each RFI, determine action required, and respond. Allow **seven working days** for Architect's response for each RFI. RFIs received by Architect after 1:00 p.m. will be considered as received the following working day.

1. The following Contractor-generated RFIs will be returned without action:

a. Requests for approval of submittals.
b. Requests for approval of substitutions.
c. Requests for approval of Contractor's means and methods.
d. Requests for coordination information already indicated in the Contract Documents.
e. Requests for adjustments in the Contract Time or the Contract Sum.
f. Requests for interpretation of Architect's actions on submittals.
g. Incomplete RFIs or inaccurately prepared RFIs.

2. Architect's action may include a request for additional information, in which case Architect's time for response will date from time of receipt by Architect of additional information.
3. Architect's action on RFIs that may result in a change to the Contract Time or the Contract Sum may be eligible for Contractor to submit Change Proposal according to Division 01 Section "Contract Modification Procedures."

a. If Contractor believes the RFI response warrants change in the Contract Time or the Contract Sum, notify Architect in writing within 10 days of receipt of the RFI response.

E. RFI Log: Prepare, maintain, and submit a tabular log of RFIs organized by the RFI number. Submit log weekly.

1. Project name.
2. Name and address of Contractor.
3. Name and address of Architect.
4. RFI number including RFIs that were returned without action or withdrawn.
5. RFI description.
6. Date the RFI was submitted.
7. Date Architect's response was received.
8. Identification of related Minor Change in the Work, Construction Change Directive, and Proposal Request, as appropriate.

F. On receipt of Architect's action, update the RFI log and immediately distribute the RFI response to affected parties. Review response and notify Architect within seven days if Contractor disagrees with response.

1.7 DIGITAL PROJECT MANAGEMENT PROCEDURES

A. Use of Architect's Digital Data Files: Digital data files of Architect's CAD drawings will be provided by Architect for Contractor's use during construction.

1. Digital data files may be used by Contractor in preparing coordination drawings, Shop Drawings, and Project record Drawings.
2. Architect makes no representations as to the accuracy or completeness of digital data files as they relate to Contract Drawings.
3. Digital Drawing Software Program: Contract Drawings are available in AutoCAD 2016.
4. Contractor shall request digital data file of architects CAD drawings. Architect will issue a electronic document release form for contractor to fill out and return to Architect.

a. Subcontractors, and other parties requesting the Architect's digital data files shall request digital data files through the general contractor only.

B. PDF Document Preparation: Where PDFs are required to be submitted to Architect, prepare as follows:

1. Assemble complete submittal package into a single indexed file incorporating submittal requirements of a single Specification Section and transmittal form with links enabling navigation to each item.
2. Name file with submittal number or other unique identifier, including revision identifier.
3. Certifications: Where digitally submitted certificates and certifications are required, provide a digital signature with digital certificate on where indicated.

1.8 PROJECT MEETINGS

A. General: Schedule and conduct meetings and conferences at Project site unless otherwise indicated.

1. Attendees: Inform participants and others involved, and individuals whose presence is required, of date and time of each meeting. Notify Owner and Architect of scheduled meeting dates and times a minimum of 10 working days prior to meeting.
2. Agenda: Prepare the meeting agenda. Distribute the agenda to all invited attendees.
3. Minutes: Entity responsible for conducting meeting will record significant discussions and agreements achieved. Distribute the meeting minutes to everyone concerned, including Owner and Architect.

B. Preconstruction Conference: After the contract has been awarded, executed and a tentative work schedule has been composed, and prior to the start of the work, the Contractor, the Architect, the City's Representative, and other persons and/or governmental agencies that are involved shall meet. The minimum agenda is to include but is not limited to the following:

1. Agenda: Discuss items of significance that could affect progress, including the following:

a. Distribute and discuss list of major Subcontractors
b. Tentative construction schedule
c. Phasing
d. Critical work sequencing and long-lead items
e. Designation of key personnel and their duties
f. Procedures for processing field decisions and Change Orders
g. Procedures for RFIs
h. Procedures for testing and inspecting
i. Adequacy of distribution of contract documents
j. Submittal of Shop drawings, project data and samples
k. Florida Green Building Coalition requirements
l. Procedures for maintaining Record documents
m. Use of premises
n. Protection of existing construction including landscape materials
o. Work restrictions
p. Responsibility for temporary facilities and controls
q. Procedures for disruptions and shutdowns
r. Major equipment deliveries and priorities
s. Construction waste management and recycling
t. Parking availability
u. Office , work and storage areas
v. Working hours
w. Safety and first-aid procedures
x. Security procedures
y. Housekeeping procedures including progress cleaning
z. Schedule of values
aa. Processing for payments or contract.

2. Minutes: Entity responsible for conducting meeting will record and distribute meeting minutes.

C. Sustainable Design Requirements Coordination Conference: Architect will schedule and architects sustainability consultant will conduct a sustainable design coordination conference before starting construction, at a time convenient to City, Architect, Consultants and Contractor.

1. Attendees: Authorized representatives of the City, City's Commissioning Authority, Architect, and their consultants; Contractor and its superintendent and sustainable design coordinator; major subcontractors; suppliers; and other concerned parties shall attend the conference. Participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work.
2. Agenda: Discuss items of significance that could affect meeting sustainable design requirements, including the following:

a. Sustainable design Project checklist.
b. General requirements for sustainable design-related procurement and documentation.
c. Project closeout requirements and sustainable design certification procedures.
d. Role of sustainable design coordinator.
e. Construction waste management.
f. Construction operations and sustainable design requirements and restrictions.

3. Minutes: Entity responsible for conducting meeting will record and distribute meeting minutes.

D. Reports

a. Daily Construction Reports: Prepare a daily construction report recording the following information concerning events at Project site:

1. List of subcontractors at Project site.
2. Approximate count of personnel at Project site.
3. Equipment at Project site.
4. Material deliveries.
5. High and low temperatures and general weather conditions, including presence of rain.
6. Accidents.
7. Meetings and significant decisions.
8. Unusual events.
9. Stoppages, delays, shortages, and losses.
10. Meter readings and similar recordings.
11. Emergency procedures.
12. Orders and requests of authorities having jurisdiction.
13. Change Orders received and implemented.
14. Construction Change Directives received and implemented.
15. Services connected and disconnected.
16. Equipment or system tests and startups.
17. Partial completions and occupancies.
18. Substantial Completions authorized.

b. Material Location Reports: At weekly intervals, prepare and submit a comprehensive list of materials delivered to and stored at Project site. List shall be cumulative, showing materials previously reported plus items recently delivered. Include with list a statement of progress on and delivery dates for materials or items of equipment fabricated or stored away from Project site. Indicate the following categories for stored materials:

1. Material stored prior to previous report and remaining in storage.
2. Material stored prior to previous report and since removed from storage and installed.
3. Material stored following previous report and remaining in storage.

c. Site Condition Reports: Immediately on discovery of a difference between site conditions and the Contract Documents, prepare and submit a detailed report. Submit with a Request for Information. Include a detailed description of the differing conditions, together with recommendations for changing the Contract Documents.

E. Progress Meetings: Conduct progress meetings at weekly intervals. Coordinate dates of meetings with preparation of payment request.

1. Attendees: In addition to representatives of City and Architect, each contractor, subcontractor, supplier, and other entity concerned with current progress or involved in planning, coordination, or performance of future activities shall be represented at the meetings. All participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work.
2. Agenda: Review and correct or approve minutes of previous progress meetings. Review other items of significance that could affect progress. Include topics for discussion as appropriate to status of Project.

a. Review and approve minutes of previous Progress Meeting.
b. Contractor's Construction Schedule: Review progress since the last meeting. Determine whether each activity is on time, ahead of schedule, or behind schedule, in relation to Contractor's Construction Schedule. Determine how construction behind schedule will be expedited'\; secure commitments form parties involved to do so. Discuss whether schedule revisions are required to ensure that current and subsequent activities will be completed within the Contract Time.
    1) Review schedule for next period.
c. Review present and future needs of each entity present, including the following:
    1) Interface requirements.
    2) Sequence of operations.
    3) Status of submittals.
    4) Deliveries.
    5) Off-site fabrication.
    6) Access.
    7) Site utilization.
    8) Temporary facilities and controls.
    9) Work hours.
    10) Hazards and risks.
    11) Progress cleaning.
    12) Quality and work standards.
    13) Status of correction of deficient items.
    14) Field observations.
    15) RFIs.
    16) Status of proposal requests.
    17) Pending changes.
    18) Status of Change Orders.
    19) Pending claims and disputes.
    20) Documentation of information for payment requests.

3. Minutes: Architect shall record the meeting minutes. Theses minutes shall indicate all items discussed as well as agreed upon or suggested solutions. They shall be a true reflection of what occurred at the meeting.
4. Reporting: Distribute minutes of the meeting by email transmittal to each party present and to parties who should have been present.

F. Project Closeout Conference: City shall schedule and conduct a project closeout conference, at a time convenient to the City and Architect, but no later than 90 days prior to the scheduled date of Substantial Completion.

1. Conduct the conference to review requirements and responsibilities related to Project closeout.
2. Attendees: Authorized representatives of the City, City's Commissioning Authority, Architect, and their consultants; Contractor and its superintendent; major subcontractors; suppliers; and other concerned parties shall attend the meeting. Participants at the meeting shall be familiar with Project and authorized to conclude matters relating to the Work.
3. Agenda: Discuss items of significance that could affect or delay Project closeout, including the following:

a. Preparation of Record Documents.
b. Procedures required prior to inspection for Substantial Completion and for final inspection for acceptance.
c. Procedures for completing and archiving web-based Project software site data files.
d. Submittal of written warranties.
e. Requirements for completing sustainable design documentation.
f. Requirements for preparing operations and maintenance data.
g. Requirements for delivery of material samples, attic stock, and spare parts.
h. Requirements for demonstration and training.

i. Preparation of Contractor's punch list.
j. Procedures for processing Applications for Payment at Substantial Completion and for final payment.
k. Submittal procedures.
l. Owner's partial occupancy requirements.
m. Installation of Owner's furniture, fixtures, and equipment.
n. Responsibility for removing temporary facilities and controls.

4. Minutes: Entity conducting meeting will record and distribute meeting minutes.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION

SECTION 01 33 00

SUBMITTALS

PART I. GENERAL

1.1 SCOPE

A. The scope of this section is to define the Submittal procedures for this Project.
B. Coordination drawing requirements and procedure.

1.2 GENERAL REQUIREMENTS

A. The work of this section is governed by the conditions set forth in the Agreement between the Owner and Contractor, the General Conditions of the Contract for Construction, Division 1 of these Specifications, and all other documents that make up the Agreement.
B. The Contractor shall ensure that the work of this section is coordinated with the work of all related trades affected by or affecting the work of this Section.

1.3 RELATED SECTIONS

A. General Conditions, Division 0
B. Summary of Work and Basic Requirements, Section 01 11 00
C. Pricing and Payment Procedures, Section 01 20 00
D. Administrative Requirements, Section 01 30 00
E. Quality Requirements, Section 01 40 00
F. Cutting and Patching, Section 01 40 50
G. References and Definitions, Section 01 42 00

1.4 SUBMITTALS REQUIRED

A. Submittals are required for, but not limited to the following types of items.
   1. Shop drawings for all items pre-assembled on or off site.
   2. Product data will include all manufacturer's printed literature showing rough-in requirements and all technical data, cleaning and maintenance requirements.
   3. Physical samples (no computer print-outs) of all finishes, as noted in each Section.
   4. Schedules, where multiple items are supplied by one trade such as doors, hardware, lighting, etc. Cut sheets will accompany each schedule required by individual Sections.
   5. Coordination drawings that will coordinate the work of mechanical and electrical trades with that of other trades.
   6. As-built record drawings for all trades.
   7. Contractor's Cost Proposals for changes in work.
   8. Contractor’s request for substitution to obtain Architect's approval for substituting a different product other than the one specified.
   9. Other submittals and in-place mock-ups where noted in each Section.

B. This project will rely heavily on submittals for clarification of quality of proposed and installed items. It is critical that submittals be made timely and accurately.

1.5 SUBMITTAL SCHEDULE

A. Contractor shall submit upon award, per Section 01 32 00, a Critical Path Construction Schedule showing start and completion dates for all activities. This shall include dates for submission of submittals
B. Two weeks after receiving "Notice to Proceed" the Contractor shall revise the Schedule

being specific about dates for submittals, time allowed for review of submittals, and realistic lead times for production, fabrication and delivery of items.

C. Include on the Schedule the following "activities" for each submittal:
   1. Preparation of submittal by contractor, allowing enough time to prepare submittal.
   2. Submittal to and review by Architect. Allow enough time for each review including revisions and re-submittal. Allow at least 25 working days (5 weeks).
   3. Fabrication of product after approval of submittal. This should reflect a realistic time based on the complexity of the product, the workload of the factory or shop, and allowance for shipping.
   4. Delete all holidays from the calendar of the Schedule Program so that holidays are not considered workdays by the Program.

D. Contractor shall also at this time provide the Owner and Architect with a list for review of all proposed items and materials to be used on the project noting names of materials, trade names, brands, and model numbers. This should correspond to the activities on the Critical Path Schedule.

E. Group submittals of related items together. For example, submit glass and metal shop drawings with millwork shops if glass and metal are an integral part of the millwork. Shop drawings will not be reviewed by the Architect if they are incomplete.

F. Delays in the project due to untimely or incomplete submittals will be the responsibility of the Contractor.

1.6 QUALITY ASSURANCE

A. In preparing each submittal, Contractor shall review and coordinate information and material required for each submittal.

B. Contractor shall verify that each item and the submittal for it conform in all respects to the specified requirements for the item as a unit and that it is compatible with related items.

C. By signing the submittal, the Contractor is verifying the submittal has been reviewed and conforms to the material requested by the Architect.

1.7 PREPARATION OF SUBMITTALS

A. Prepare all submittals under the conditions and by the process noted below and other portions of the Contract Documents

B. The Contractor is responsible for coordinating the Work of any submittal with that of other related trades and field conditions. The cost of replacing or moving work due to inaccurate or un-coordinated dimensions or details on the shop drawings or data sheets will be the responsibility of the Contractor.

C. By approving and submitting Shop Drawings, Samples, and Product Data to the Architect, the contractor is representing that he or she has verified their compliance with the requirements of the Contract Documents, has coordinated the Work with previously approved submittals, and has coordinated the submittal with all field conditions, dimensions, related work, and verified all quantities required. Contractor shall stamp and sign each copy of all submittals. If the submittals are not stamped by the Contractor, they will not be reviewed by the Architect.

D. Shop Drawings, Product Data, and Samples shall be clearly labeled with a permanently affixed label noting the Project, Architect, submittal number, location or intended use of item in the project, date of submittal, and note as to this being the first or a re-submittal.

E. Any deviation from the Specifications or Drawings shall be noted and signed by the Contractor on each label.

F. Accompany each submittal with a letter of transmittal noting all information necessary for identifying and reviewing the submittal. This shall include but not be limited to, the number of items, date of submittal, type of submittal, number of Specification Section the work is fabricated under, and a cross-reference number to the number on the submittal. Number each transmittal sequentially. Provide a separate transmittal for each item even when several submittals are sent at one time.

G. Prepare and keep an up-to-date Submittals Log noting status of each submittal. This shall

be coordinated with the Critical path Schedule and status of submittals shall be reflected in updates of the Schedule. Provide the Architect and Owner with updates of this log at weekly site meetings.

H. The Architect will review a maximum of one submittal and one re-review. If the submittals are incomplete and require additional reviews, the Contractor will be responsible for any additional charges.

1.8 ARCHITECT'S REVIEW

A. The Architect shall review each submittal expeditiously. The Architect shall in no case take longer than **fifteen (15) calendar days** to review each submittal from date of receipt of submittal. The Architect shall stamp the date of arrival on each submittal. The contractor shall consider this time in his schedule and in no way affect the construction schedule.

B. Submittals received by Architect after 1:00 p.m. will be considered as received the following working day.

C. All correspondence on submittals by the Contractor shall note the submittal number to expedite replies.

D. After each review the submittal will be returned to the contractor with the Architect's stamp noting the action required:

1. No Exception Taken, means that work may proceed on item submitted, providing submittal complies with Contract Documents.
2. Make Corrections Noted, means that work may proceed on item submitted providing work of submittal complies with Architect's notations and the Contract Documents. If, for any reason, Contractor cannot comply with notations, Contractor shall resubmit item as described for items marked Revise as Corrected.
3. Resubmit as Corrected, means that the submittal shall be revised and resubmitted before proceeding with work on this item or placing the order for this item.
4. Disapproved, means that the submittal does not comply with the Contract Documents and that fabrication, manufacture, or ordering of the item shall not proceed. Items marked Resubmit Properly must be resubmitted in a form that complies with the Contract Documents.

E. The Architect and Owner may reject submittals that are incomplete. If submittals are incomplete, the Contractor will be promptly notified by the Architect. The Contractor will revise the submittal and promptly re-submit it for review.

F. The Contractor shall allow adequate time for re-submittals of each item. The cost of delays caused by rejection of submittals by the Architect shall be born by the Contractor.

G. The Contractor is responsible for insuring that all work complies with the Contract Documents. Review of submittals by the Architect is to review shop drawings for general compliance with the Contract Documents. It is not to be construed as an acceptance of items that do not comply with the Contract Documents or that are dimensioned or detailed incorrectly. Review of samples and mock-ups is to review the materials, finishes, colors and mock-ups to establish standards for these items against which the installed work can be measured.

H. Reviewing the submittals by the Architect does not relieve the Contractor from responsibility of errors that may exist in the submittals.

I. Revisions of submittals:

1. The Contractor shall make revisions to the submittals as directed by the Architect or Owner.
2. If the Contractor considers required revisions to be a change in scope, he or she shall notify the Architect and Owner immediately verbally and by fax memo and confirm the claim in writing within seven (7) calendar days. The claim shall be specific as to why the changes constitute a change in scope with cost documentation. If the written claim is not made with seven (7) days, claims for additional costs or extras will not be honored.
3. Contractor shall revise the submittals only to the extent directed by the Architect or Owner.

J. No work shall proceed on submittals until stamped "No Exception Taken" or "Make Corrections Noted".

1.9 SHOP DRAWINGS

A. Each shop drawing shall have the following information on it's label or title:
   1. Name of project or building
   2. Project submittal number.
   3. Name of Contractor.
   4. Name of Sub contractor, manufacturer, or supplier.
   5. Location of submittal in building.
   6. Legend noting the following, keyed to the items drawn:
      a. Trade names and model numbers of items used.
      b. Complete description of finishes
      c. Other notes as necessary to fully describe materials to be used in fabrication.

B. Shop drawing scale and detail:
   1. Shop drawings shall be drawn at a scale large enough to show all details and construction of item or assembly
   2. All trim shapes and details shall be drawn at full scale.
   3. No shop drawing shall be drawn at less than 3/8" = 1'-0" scale.

C. Contractor shall be responsible for delivering and picking up all shop drawings from the Architect's office.

D. Shop drawing procedure:
   1. All Shop Drawings: Contractor shall submit all shop drawings in electronic format to Project Architect and Project Manager. If shop drawings are required to be signed and sealed by an independent/specialty engineer, then the Contractor shall submit six (6) prints to the Architect of each shop drawing. GC to deliver and pick up all shop drawings to and from the Architect's office.

E. Architect will make notations and stamp the prints. The Contractor will make the necessary prints from this and distribute as required for each submittal.

F. All Division 9 submittals shall be made simultaneously within the first thirty (30) days after award, for color coordination purposes.

1.10 PRODUCT DATA

A. Product Data submittals shall have the following information on its label or title:
   1. Name of project or building
   2. Project submittal number.
   3. Name of Contractor.
   4. Name of Sub contractor, manufacturer, or supplier.
   5. Location of submittal in building.
   6. Specification Section and paragraph for which submittal is being made.

B. If manufacturer's literature shows information not relevant to the Project, mark out those items on the submittal that do not pertain to this project.

C. If specific colors and patterns have not been specified by Architect, submit accurate color and pattern reproductions for items submitted from which Architect can chose these items.

D. Product Data Submission Procedure:
   1. Architectural Product Data: The contractor shall submit in electronic format of the data to the Architect for review. Include appropriate labeling and transmittal with each submittal.
   2. Electrical, Mechanical and Plumbing Product Data: The Contractor shall send in electronic format of the Product Data to the Lighting Consultant, Acoustical Consultant, Electrical, or Mechanical Engineer for their review. A record of the transmittal in electronic format of the product data shall be sent to the Architect. The Engineers shall return the stamped product data to the Contractor in electronic format to the Architect along with the transmittal.

E. After review of the Product Data, the Architect or Consultant will mark-up and stamp the data as specified for Shop drawings and return in electronic format to the Contractor for distribution.

1.11 SAMPLES

A. Submit samples that accurately portray the proposed material to be used on the project.
B. More than one submission may be required if an in-place mock-up is required from an approved, smaller sample.
C. Samples required for each Section are noted on the Drawings or in Specification Sections.
D. Number of samples required may be determined by the need of the Contractor but shall include at least the following: one for the Architect's records, one for the Consultant (if required for a particular item), one for the Owner's records, one to be left on the Job Site for reference, one for the subcontractor, and others as required by the Contractor.
E. Samples may be incorporated in to the Work if approved by the Architect.
F. Delivery of samples:
    1. Small samples that are deliverable by mail services are to be delivered to the Architect's office.
    2. In-place mock-ups of details or finish processes are to be done at the site in a place designated by the Architect. These mock-ups may be incorporated into the Work if approved by the Architect in writing.
G. Sample submittals shall have the following information on their label or tag:
    1. Name of project or building
    2. Project submittal number.
    3. Name of Contractor.
    4. Name of Sub contractor, manufacturer, or supplier.
    5. Location of submittal in building.
    6. Specification Section and paragraph for which submittal is being made.
    7. Specifics about the finish and material.
    8. Provide a 4" x 6" space on label or tag for Architect's review stamp.

1.12 COORDINATION DRAWINGS

A. The Contractor is responsible for coordinating the work of all trades, ensuring that the mechanical systems shall function properly while not interfering with the finish design of the space.
B. As noted on the Drawings or at the Architect’s request at any given time during construction, coordination drawings will be required to facilitate avoidance of conflicts between mechanical trades and location of finished items. These Coordination Drawings shall be prepared by the mechanical trades and shall be reviewed for accuracy and completeness by the Contractor and Architect prior to fabrication and installation of work of the trades involved.
C. Areas of conflict that involve changes in design shall be reviewed jointly by the Contractor, Architect, Owner, and if required, the Engineers. The Contractor shall not make changes in layout of finished items or sizes and shapes of mechanical equipment without the approval of the Architect or Engineer.
D. The minimum scale for Coordination Drawings shall be 3/8" = 1'-0" unless otherwise agreed to due to the size of the spaces.
E. These Coordination drawings shall be the base drawings for all mechanical layout shop drawings.
F. Preparation of Coordination Drawings shall begin at "Notice to Proceed". Preparation of these drawings shall be shown as an activity on the Critical Path Construction Schedule. Fabrication of work of the trades involved may not proceed until this item is completed.
G. Use the following procedure for preparation of Coordination Drawings: (note that this process may be performed electronically when all parties have such capabilities).
    1. A site meeting shall be held so that all trades involved in this coordination can review the existing conditions and agree on a general plan for coordinating the

work.

2. The sheet metal ductwork subcontractor shall then prepare his or her ductwork layout shop drawings showing sizes of ducts to scale. Single lines representing ducts are not permitted. This subcontractor shall submit one (1) 24" X 36" print and one (1) electronic copy in PDF format to the Contractor.
3. The Contractor will then distribute this copy to the following trades in the sequence noted:
   a. To the subcontractor for HVAC equipment. This work will be drawn onto sepia in reproducible green pencil. This drawing shall then be returned to the Contractor for review and approval.
   b. Upon approval of HVAC equipment location, the drawing shall be sent to the plumbing subcontractor who will draw his or her work in using reproducible red pencil. This drawing shall then be returned to the Contractor for review and approval.
   c. Upon approval of plumbing layout by Contractor, the drawing shall be sent to the fire sprinkler subcontractor who will draw their work using reproducible orange pencil. This drawing shall then be returned to the Contractor for review and approval.
   d. Upon approval of fire sprinkler layout and coordination with other work the Contractor shall send the drawing to the electrician who will draw his or her work on the drawing in reproducible blue pencil. This drawing shall show all recessed or semi-recessed lighting and housings. This drawing shall then be returned to the Contractor for review and approval.
   e. The Contractor shall then call a coordination meeting to be attended by the subcontractors and Architect. Conflicts, if they exist shall be resolved at this meeting. The Coordination Plan will be reviewed accordingly.
   f. When the plan has been fully coordinated, the Contractor shall provide each subcontractor and the Architect with two (2) 24" X 36" prints of the coordinated drawing for their use.

H. The Coordination Drawing shall be delineated as follows:
1. Use proposed or existing walls and column line centers for locating all items in plan.
2. Locate all light fixtures showing housing and trim size to scale.
3. Locate all ducts in plan showing all registers, grilles, diffusers, and all transitions, elbows, fire dampers, and volume control dampers.
4. Draw all appropriate sections showing height of recessed light fixtures and access required for maintenance.
5. Show all vertical risers in plan and section showing full height of risers and all transitions required.
6. Show all structural elements on drawings in plans and section to accurately define space available for mechanical work.
7. Show all piping sizes and pitches. Draw sewer lines to scale across space to ensure that proper pitch is attainable.

1.13 AS BUILT RECORD DRAWINGS

A. The Contractor shall provide the Owner with two (2) as-built sets of Marked Up As Built Drawings showing all changes in the work, including but not limited to electrical and mechanical systems as they are installed. These drawings shall show plans and section of all systems, riser diagrams, and locations of all valves, dampers, access points to wiring, other service access points and other information required by Owner.
1. Contractor shall maintain one set of as-built drawings during the course of the work. They will be reviewed at each pay request.
2. At the completion of the project, the contractor shall pay for one clear set of the original drawings. Contractor shall transcribe all as-built marks to the clean set

of prints as a record set of drawings. The contractor shall have the full clean set of as-builts scanned. These drawings and a CD shall be given to the Owner.

B. This may be done electronically but the submittal shall include two (2) bound sets.

END OF SECTION

SECTION 01 35 29

HURRICANE PREPAREDNESS

PART I GENERAL

1.01 REQUIREMENTS

A. The CONTRACTOR is responsible for having plans for protection of the work site during hurricanes and shall prepare and submit a Hurricane Preparedness Plan prior to any construction activity and mobilization.

B. The CONTRACTOR shall maintain existing flows and shall reopen any drainage conveyances that have been diverted or blocked as part of the construction process prior to the weather event.

C. The CONTRACTOR shall work with the CITY as directed in the event of a hurricane, tropical storm, or as otherwise directed, to draw down drainage basins to create storage as necessary.

D. The Hurricane Preparedness Plan shall be submitted at the Preconstruction Meeting for approval and shall include the following:

1. Items and equipment that must be removed from the work site.
2. Methods and materials that will be utilized to secure the materials and work site.
3. Methods and materials that will be utilized to protect uncompleted work items.
4. Plans for evacuation of staff from the work site.
5. Plans for monitoring local weather conditions, National Weather Service weather reports, and local emergency management instructions.
6. Items that must commence at the time of hurricane water in order to be completed and their anticipated duration.

E. The CONTRACTOR shall immediately mobilize his work forces when a Hurricane Watch is issued and they shall commence with those items in the Hurricane Preparedness Plan required to provide hurricane evacuation before a Hurricane Warning is issues.

F. When the National Weather Service's issues a Hurricane Watch for Broward County or adjoining counties, the Contractor shall immediately implement the Hurricane Preparedness Plan.

G. The Cost of preparing and implementing the Hurricane Preparedness Plan shall be the responsibility of the CONTRACTOR. The CONTRACTOR shall follow all instructions from local emergency management officials regarding evacuation of the work site.

1.02 SUBMITTALS

A. Submittal of the Hurricane Preparedness Plan shall be in accordance with Section 01 33 00- Submittal Procedures.

PART 2 – PRODUCTS (NOT APPLICABLE)

PART 3 – EXECUTION (NOT APPLICABLE)

END OF SECTION

SECTION 01 38 00

CONSTRUCTION PHOTOGRAPHS & PHOTOGRAPHIC DOCUMENTATION

1 GENERAL

1.01 DESCRIPTION OF WORK

A. The Contractor shall provide still color photographs of all construction areas prior to start of work and to take construction record color photographs periodically dutiong the course of the Work.

B. Take photographs with maximum depth of field and in focus, to clearly show the work. Photographs with blurry or out-of-focus areas will not be accepted.

1.02 PHOTOGRAPHY REQUIRED

A. Progress photographs shall be submitted to the Architect with each Application for Payment.

B. Photographs shall be submitted to the Architect with each Application for Paymet.
1. Prior to commencement of any demolition/removal work.
2. Of existing improvements that are to remain prior to commencement of work adjacent thereto.
3. Of existing improvements upon completion of adjacent work.
4. Of existing structures that are to be relocated, both before and after relocation.
5. Upon completion of foundations of the new structure.
6. Upon completion of structural framing of new structure.
7. Upon enclosure of new structure.
8. Upon completion of construction of new structure.
9. Upon enclosure of new structure.
10. Upon completion of installation of equipment and facilities.
11. Upon completion of all work and finishes.

C. Maintain key plan with each set of construction photographs that identifies each photographic location.

D. Preconstruction Photographs: Before commencement of demolition, take photographs of Project site and surrounding properties, including existing items to remain during construction, from different vantage points.

1. Flag construction limits before taking construction photographs.

2. Take 20 photographs to show existing conditions adjacent to property before starting the Work.

3. Take 20 photographs of existing buildings either on or adjoining property to accurately record physical conditions at start of construction.

4. Take additional photographs as required to record settlement or cracking of adjacent structures, pavements, and improvements.

E. Periodic Construction Photographs: Take 20 photographs weekly, with timing each month coinciding with the cutoff date associated with each Application for Payment. Select vantage points including aerial photographs to show status of construction and progress since last photographs were taken.

1. Provide 2 sets of CD's and/or USB with each submittal

F. Daily Progress Photographs: Take daily photographs to document progress. Take photographs of all work that will be concealed by subsequent construction activity (such as rough electrical, rough plumbing and rough ductwork). Such photographs shall document actual installed conditions.

G. Aerial Photographs
1. Contractor shall retail an aerial photographic company to provide aerial construction photographs on a monthly basis.
2. Contractor shall provide 3 CD's and/or USB with each pay request.
3. All images shall be high resolution to provide clarity of job progress.

H. Owner Photographic Documentation Contractor: Coordinate with owner's Photographic Documentation Contractor to facilitate that Contractor's provision of interior photographic documentation of the work.

1. City currently under contract with Multivista (Photo Documentation of construction project/site) Contractor shall coordinate with Multivista for accessing the project/site when required.
2. Provide access to Photographic Documentation Contractor at owner-designated periods and/or milestones for interior photographic documentation of work in place.

3. Provide notification to Photographic Documentation Contractor 2 business days prior to reaching owner-designated milestones.

4. Schedule, with Photographic Documentation Contractor, a time window of one business day to photograph each owner-designated milestone prior to covering up the work.

I. Final Completion Construction Photographs: Take 20 color photographs after date of Substantial Completion for submission as Project Record Documents. Architect will inform photographer of desired vantage points.
1. Do not include a date stamp.

1.03 COSTS OF PHOTOGRAPHY

A. The contractor shall pay the cost for all specified photography documentation

PART 2 - PRODUCTS

2.01 IMAGES

A. Digital Color: Images
1. High Resolution

B. CD's & USB
1. All images shall be copied to an electronic compact disc and/or USB appropriately titled.

C. Identifiy each Image shall be titled:
    1. Name and number of Project
    2. Orientation of view
    3. Date and time of exposure

PART 3 – EXECUTION

3.01 VIEW REQUIRED

A. Photograph from locations to adequately illustrate condition of construction and state of progress.
    1. At successive periods of photography. Take at least one photograph from the same overall view as previously.
    2. Consult with the Architect at each period of photography for instruction concerning views required.

3.02 DELIVERY OF CD and/or USB

A. Deliver CD's and/or USB to accompany each Application for Payment.
B. Distribution of prints as soon as processed is anticipated to be as follows:
    1. Architect Two CD's and/or USB (One for Owner).
    2. Project Record File: One copy to be stored by Contractor and furnished to Architect at project completion.
    3. Contractor: One CD's and/or USB.

PART 4 – MEASUREMENT AND PAYMENT

4.01 MEASUREMENT

A. Work under this Section will not be separately measured for payment.

4.02 PAYMENT

A. Work under this Section will be paid for as part of the Contract lump sum price for Division 1 – General Requirements.

END OF SECTION

SECTION 01 40 00

QUALITY REQUIREMENTS

PART I. GENERAL

1.1 SCOPE

A. Field engineering and surveying
B. Preparation and examination
C. Inspection and testing

1.2 GENERAL REQUIREMENTS

A. The work of this section is governed by the conditions set forth in the Agreement between the Owner and Contractor, the General Conditions of the Contract for Construction, Division 1 of these Specifications, and all other documents that make up the Agreement.
B. The Contractor shall ensure that the work of this section is coordinated with the work of all related trades affected by or affecting the work of this Section.

1.3 RELATED SECTIONS

A. General Conditions, Division 0
B. Summary of Work and Basic Requirements, Section 01 11 00
C. Pricing and Payment Procedures, Section 01 20 00
D. Substitutions, Section 01 25 00
E. Administrative Requirements, Section 01 30 00
F. Submittals, Section 01 33 00
G. Cutting and Patching, Section 01 40 50
H. References and Definitions, Section 01 42 00
I. Temporary Facilities and Controls, Section 01 50 00

1.4 INSPECTION AND TESTING

A. The contractor shall be responsible for contacting and coordinating with the testing agency and scheduling tests, as they are required.
B. The structural engineer of record will be performing the reinforced masonry inspections as required by the building department.
C. The tests that are required are as follows. These are in addition to tests required of each Section or as required by the Architect, Engineer or local code officials during the course of Construction:
    1. Soils testing.
    2. Concrete samples and testing.
    3. Tests as noted in Mechanical section of these Specifications and Drawings.
    4. Tests as noted in the Structural Sections of these Specifications and Drawings.
    5. Slab moisture test (aluminum chloride).
    6. Threshold Inspections.
    7. Testing and Balancing as noted in Mechanical section of the Specifications and Drawings.
D. Repair and/or replacement of work not conforming to the Specifications of this Project and the re-testing of this work, shall be performed by the Contractor at no additional cost.
E. The Contractor shall pay an independent testing agency to perform tests and Controlled Inspections required under this contract. The independent testing agency shall be acceptable to the Architect, Engineer and Owner.
F. All testing reports shall be submitted in two (2) copies each to the Architect and to the Owner.

1.5 FIELD ENGINEERING AND SURVEYING

A. It is the contractor's responsibility to ensure that the building is placed as shown on the drawings and all datum are correct.
B. The contractor shall hire an independent surveyor to verify location of foundation as required by the local building officials prior to start of framing. Contractor shall coordinate this work and ensure that the proper submittals are made to the local building department.
C. The Contractor shall be responsible for verifying all field measurements and site conditions as they pertain to general layout of the Building and the Shop Drawings.

1.6 PREPARATION AND EXAMINATION

A. Clean all surfaces prior to applying next material.
B. Prepare all surfaces including priming, cleaning, and application of sealer or bonding agent as per manufacturer's written specifications.
C. Verify that existing site and substrate conditions are acceptable prior to starting subsequent Work. Beginning of new Work is an implied acceptance of the existing conditions.
D. All substrates shall be prepared for the finish work as required of each Section. Contractor shall be responsible for coordinating the work of all trades to ensure that all work is properly prepared.
E. Coordinate the work of all trades to ensure that all work is properly prepared.
F. When requested by the Architect, the Contractor shall obtain written confirmation by subcontractors of the acceptance of substrates prior to starting their respective work.

END OF SECTION

SECTION 01 40 50

CUTTING AND PATCHING

PART I. GENERAL

1.1 SCOPE

A. Cutting and patching

1.2 GENERAL REQUIREMENTS

A. The work of this section is governed by the conditions set forth in the Agreement between the Owner and Contractor, the General Conditions of the Contract for Construction, Division 0 of these Specifications, and all other documents that make up the Agreement.
B. The Contractor shall ensure that the work of this section is coordinated with the work of all related trades affected by or affecting the work of this Section.

1.3 RELATED SECTIONS

A. General Conditions, Division 0
B. Summary of Work and Basic Requirements, Section 01 11 00
C. Pricing and Payment Procedures, Section 01 20 00
D. Substitutions, Section 01 25 00
E. Administrative Requirements, Section 01 30 00
F. Submittals, Section 01 33 00
G. Quality Requirements, Section 01 40 00
H. References and Definitions, Section 01 42 00
I. Temporary Facilities and Controls, Section 01 50 00

1.4 CUTTING AND PATCHING

A. Contractor shall provide cutting and patching as part of base contract as required to:
   1. Correct defective work.
   2. Uncover and install ill-timed Work.
   3. Provide openings in completed work for penetrations of mechanical and electrical work.
B. If cutting and patching is for Work done under a Change Order, the cost shall be part of the cost of that Change Order.
C. Cutting and patching as required to accommodate finish surfaces as indicated on the Drawings and in these Specifications is included in the Contractor's Scope of Work, whether or not it is specifically called out on the Drawings or Specifications.
D. To the greatest extent possible, the Contractor shall keep cutting and patching to a minimum and shall provide sleeves and other penetrations through assemblies for piping, ducts, wiring and other elements as may be required.
E. Prior to cutting and patching the Contractor shall follow this procedure for review of the work to be done:
   1. Notify the Architect in writing of the work to be done. Give at least 48 hours notice.
   2. Send a copy of this notification to all subcontractors with related or affected work.
   3. When deemed necessary by the Architect, a meeting shall be held at the site with all affected parties in attendance to review the proposed cutting and patching procedure.
   4. When deemed necessary by the Architect, the Contractor shall prepare a sample of the proposed cutting and patching process and details to assure that the completed work will match the adjacent surfaces.
   5. Contact all other parties as required herein.

F. Contractor shall obtain written directions or drawings from the Architect or Engineer prior to cutting any of the following structural elements.
   1. Structural steel
   2. Structural concrete
   3. Bearing walls.
   4. Piping.
   5. Ductwork.
   6. Equipment.
   7. Fire rated walls and floors and other fire rated assemblies.

G. Contractor shall obtain written directions or drawings from Architect or Engineer prior to cutting any of the following operational or safety items:
   1. Shoring and bracing.
   2. Vapor barriers.
   3. Flashing.
   4. Waterproofing membranes.
   5. Noise and/or vibration control elements or systems.
   6. Electrical, communications, or control wiring.

H. Cutting and patching of exposed finished material shall be done by the installer of that material including but not limited to the following materials:
   1. Finish carpentry items.
   2. Millwork and casework.
   3. Stone and unit masonry veneer.
   4. Ceramic tile work.
   5. Stucco
   6. Wall coverings.
   7. Roofing material and assemblies.

I. If patches do not match adjacent surfaces, in the opinion of the Architect or Owner, the contractor shall refinish that surface in it's entirety at no extra cost to the Owner.

J. All patches shall be finished to match adjacent surfaces.

K. Cutting and patching as required to accommodate finish surfaces as indicated on the Drawings and in these Specifications is included in the Contractor's Scope of Work, whether or not it is specifically called out on the Drawings or Specifications.

END OF SECTION

SECTION 01 42 00

REFERENCES AND DEFINITIONS

PART I. GENERAL

1.1 SCOPE

A. References
B. Definitions

1.2 GENERAL REQUIREMENTS

A. The work of this section is governed by the conditions set forth in the Agreement Between the Owner and Contractor, the General Conditions of the Contract for Construction, Division 1 of these Specifications, and all other documents that make up the Agreement.

1.3 RELATED SECTIONS

A. General Conditions, Division 0
B. Summary of Work and Basic Requirements, Section 01 11 00
C. Pricing and Payment Procedures, Section 01 20 00
D. Substitutions, Section 01 25 00
E. Administrative Requirements, Section 01 30 00
F. Submittals, Section 01 33 00
G. Quality Requirements, Section 01 40 00
H. Cutting and Patching, Section 01 40 50
I. Temporary Facilities and Controls, Section 01 50 00

1.4 REFERENCES

A. Conform to reference standards by "latest date of issue" shall be as of date of submitting Bids.
B. If reference standard is in conflict with Contract Documents, request clarification from the Architect before proceeding. In general, the more restrictive requirements will apply.
C. Work and equipment shall conform with the standards noted in each specification Section.
D. Trade associations and the standards for this Project are noted in each Specification Section.
E. Where specific documents are referenced, the requirements and standards as set forth in those documents shall become part of these Specifications by reference.

1.5 DEFINITIONS

A. "Provide" means to supply, install, and finish a product or material in its entirety.
B. "Submit" means to submit item for review and approval prior to ordering, manufacturing, or installing that item.
C. "Furnish" shall mean to supply and deliver to the site ready for unloading, unpacking, assembly, and installation as is applicable for each instance.
D. "Install" shall mean activities at the work site (or off site where noted) as required for the unloading, unpacking, storing, assembly, final preparation for and erection of a particular item or material.
E. "Testing laboratory" shall be an independent entity licensed to perform the testing

required for particular products, assemblies, or installations. Tests shall be perform off-site or on-site as required for the situation or material.

F. "Indicated" shall mean shown, noted, scheduled, or specified within the Contract Documents or referenced standards.

G. "Or equal" shall mean approved equal as defined in Section 01 25 00, Submittals.

H. The "Site" is the space available to the Contractor to perform the Work.

I. "Related Sections": This paragraph, where included in a Section, refers to those Sections and trades whose work is directly related to the particular Section. The work of a particular Section shall also be coordinated with any other Sections that may not be on that list. All work of this project is interrelated and shall be so coordinated.

J. "To be selected" means to be selected by the Architect.

END OF SECTION

SECTION 01 50 00

TEMPORARY FACILITIES AND CONTROLS

PART I. GENERAL

1.1 SCOPE

A. Site office
B. Temporary services
C. Signage
D. Staffing
E. Site protection
F. Site access

1.2 GENERAL REQUIREMENTS

A. The work of this section is governed by the conditions set forth in the Agreement between the Owner and Contractor, the General Conditions of the Contract for Construction, Division 1 of these Specifications, and all other documents that make up the Agreement.
B. Coordinate the work of all trades to ensure that all work is properly prepared.

1.3 RELATED SECTIONS

A. General Conditions, Division 0
B. Summary of Work and Basic Requirements, Section 01 11 00
C. Pricing and Payment Procedures, Section 01 20 00
D. Substitutions, Section 01 25 00
E. Administrative Requirements, Section 01 30 00
F. Submittals, Section 01 33 00
G. Quality Requirements, Section 01 40 00

1.4 SITE OFFICE

A. Contractor shall provide a construction trailer on site to conduct his or her site operations.
B. Contractor shall provide an office on site to conduct his or her site operations.
C. The office shall be equipped with the following:
    1. At least one phone line and phone with answering machine.
    2. One fax line and fax machine.
    3. Computer at the site with E-mail service and printer.
    4. Heat and lights.
    5. Layout table for drawings.
    6. File cabinets and desks.
    7. Table and chairs to conduct site meetings to accommodate 8 persons.
    8. Wireless internet connection
    9. Digital camera

1.5 SITE SAFETY

A. Provide protective fencing and barriers at walks and parking to ensure safe passage on site.
B. Site protection shall include, but not be limited to, the following:
    1. Side walk barriers including:
        a. Barriers shall conform to all local ordinances for fencing and construction barriers.
        b. Contractor shall provide all drawings required for permitting.

c. Contractor shall file for and pay for all permits required for sidewalk barriers.
d. Lighting as required for safe passage at night.
e. Permanent signage as required to identify safe passage route.

2. Fencing at excavated areas:
a. Provide and install plastic orange mesh fencing at areas that have been excavated.
b. Provide adequate support for this fence to keep it in place throughout the course of the project. Use steel or wooden stakes as required for this purpose.
c. Fencing material and installation must conform to local and federal regulations governing site protection.
d. Maintain this fencing on a daily basis to ensure that it is in tack and provides the protection it is required to provide.

3. Temporary lighting of site shall be required as follows:
a. Provide lighting of exterior of site to ensure safe passage on site when dark.
b. Provide lighting of interior spaces to ensure safe passage through site at dark.
c. Maintain this lighting during the course of the job to ensure it's proper function.
d. Provide lighting as required by the Owner's insurance policy.

C. Fence enclosing perimeter of site is required and shall be as follows:
1. Galvanized wire hurricane type fence, 6 feet tall, with galvanized steel posts. Fence shall have a lockable gate of adequate width to accommodate construction vehicles and equipment.
2. Solid plywood barrier attached to wooden posts and wood framing. Barrier shall have lockable gates and doors as required to provide access to site by workers and equipment.
3. Fencing shall conform to the requirements of the local building officials.
4. Fencing shall conform to the requirements of the Owner's insurance policy.

D. Provide site signage as follows:
1. At perimeter of site, post NO TRESPASSING signs to adequately notify the public not to enter the site.
2. Post signage as required by the Owner's insurance policy.
3. Signage at perimeter fence shall include the following:
a. Construction area: KEEP OUT
b. HARD HAT AREA
c. Emergency phone numbers.

E. Temporary fire and smoke alarms shall be installed and connected to a central station. These alarms shall be maintained and kept in good working order throughout the course of the project.

F. Construction is to be limited only to those areas agreed upon at the pre-construction meeting. Contractor shall be responsible for insuring that all subcontractors are aware of these rules and adhere to them.

1.6 TEMPORARY SERVICES AND UTILITIES

A. The Contractor shall provide temporary toilets with a weekly cleaning service contract. The toilets will be allowed to be used by other Contractor's workers.

B. Contractor shall pay for installation of his phone lines and phone bills.

C. Contractor shall, using existing or temporary utility connections, provide the job with power, lights, water, ventilation, and heating as required to construct the project.

D. Qwner shall pay electrical bills during construction.

E. Owner shall pay water bills.

1.7 STAFFING

A. Contractor shall provide a list of proposed subcontractors to Architect for review and approval. This list shall be presented for review prior to signing Contract.
B. Contractor shall provide the following staff to manage the project throughout it's duration at a minimum:
   1. Full time on-site project superintendent that has a reasonable level of decision making authority.
   2. A project manager to be present at all project meetings and available at any time by cell phone.
   3. Contractor shall provide labor staff as required to keep site neat, clean, protected and well organized. This shall mean at least one full time laborer.
   4. All project managers & superintendents shall speak clear and understandable English.

1.8 SITE ACCESS

A. Access to town or city streets shall be coordinated by the Contractor with the local highway or traffic department.
B. Contractor shall comply with all City ordinances in regards to maintaining and keeping the public streets clean and free of construction debris, mud and dust.
C. Where work is in a unit within a larger building, contractor shall obey all building rules in regards to protecting public spaces and access to project.

END OF SECTION

SECTION 01 55 26
MAINTENANCE OF TRAFFIC

PART I. GENERAL

1.01 REQUIREMENTS INCLUDED

A. Provide, operate and maintain equipment, services and personnel, with traffic control and protective devices, as required to expedite vehicular traffic flow on haul routes, at site entrances, on-site access roads, and parking areas.

B. Remove temporary equipment and facilities when no longer required, restore grounds to original, or specified conditions.

C. All work in this section shall be in accordance with FDOT Standard Index 600 series and the City of Ft. Lauderdale regulations.

1.02 RELATED REQUIREMENTS

A. All applicable sections of the Specifications.

B. Conditions of the Contract.

1.03 TRAFFIC SIGNALS AND SIGNS

A. Provide and operate traffic control and directional signals or signs required to direct and maintain an orderly flow of traffic in all areas under CONTRACTOR's control, or affected by CONTRACTOR's operations.

1.04 FLAGPERSON

A. Provide qualified and suitably equipped flag-person when construction operations encroach on traffic lanes, as required for regulation of traffic.

1.05 FLARES AND LIGHTS

A. Provide flares and lights during periods of low visibility:
   1. To clearly delineate traffic lanes and to guide traffic.
   2. For use of flag-person in directing traffic.

B. Provide illumination of critical traffic and parking areas.
   1. Maintain free vehicular access to and through parking areas.
   2. Prohibit parking on or adjacent to access roads, or in non-designated areas.

1.06 HAUL ROUTES

A. Consult with OWNER and governing authorities, establish public thoroughfares which will be used as haul routes and site access.

B. Confine construction traffic to designated haul routes.

C. Provide traffic control at critical areas of haul routes to expedite traffic flow, to minimize interference with normal public traffic.

1.07 EMERGENCY ACCESS

A. In order to provide protection to the workers and residents, the Contractor shall maintain emergency access to all adjacent properties at all times during construction. If a road is required to be closed to vehicular traffic and the distance of the closure exceeds 150 feet between stabilized surfaces, or prevents access to properties for a distance that exceeds 150 feet, the Contractor shall provide a 10-foot-wide stabilized access way on one side of the trench capable of supporting a Fire Truck. Contractor shall also provide stabilized access ways across the trench or unstabilized area a minimum of 6 feet in width at a spacing not to exceed 100 feet capable of supporting foot traffic. These access ways shall be protected and delineated with lighted barricades or other such devices as approved by the regulatory agency. Both ends

of the emergency access way shall be blocked in accordance with the MOT permit approved by City of Fort Lauderdale with signage indicating that this access way is to be used by emergency vehicles only.

No trenches or holes shall be left open after working hours. In the event a trench must be left open after hours, it shall be done so only with the express written permission from the Engineer, and it shall be the Contractor's responsibility to provide proper protection of the open trench or hole as required by the regulatory agency. In addition to this provision the contractor shall maintain trench safety and comply with current OSHA regulations and the Trench Safety Act. The contractor shall maintain and keep all safety barricades, signage, flashers, and detours, in operation condition. A copy of the approved MOT plans, and details, shall be on site at all times.

PART II. PRODUCTS (Not Applicable)

PART III. EXECUTION

3.01 MEASUREMENT AND PAYMENT

A. There shall be no special measurement and payment for work under the section; it shall be included in the lump sum price bid for Maintenance of Traffic.

END OF SECTION

SECTION 01 73 00

EXECUTION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes general administrative and procedural requirements governing execution of the Work including, but not limited to, the following:
   1. Construction layout.
   2. Field engineering and surveying.
   3. Installation of the Work.
   4. Cutting and patching.
   5. Coordination of City-installed products.
   6. Progress cleaning.
   7. Starting and adjusting.
   8. Protection of installed construction.
   9. Correction of the Work.

B. Related Sections include the following:
   1. Division 01 Section "Project Management and Coordination" for procedures for coordinating field engineering with other construction activities.
   2. Division 01 Section "Submittal Procedures" for submitting surveys.
   3. Division 01 Section "Closeout Procedures" for submitting final property survey with Project Record Documents, recording of City-accepted deviations from indicated lines and levels, and final cleaning.
   4. Division 02 Section "Selective Structure Demolition" for demolition and removal of selected portions of the building.
   5. Division 07 Section "Penetration Firestopping" for patching penetrations in fire-rated construction.

1.3 DEFINITIONS

A. Cutting: Removal of in-place construction necessary to permit installation or performance of other work.

B. Patching: Fitting and repair work required to restore construction to original conditions after installation of other work.

1.4 INFORMATIONAL SUBMITTALS

A. Qualification Data: For land surveyor.

B. Certificates: Submit certificate signed by land surveyor certifying that location and elevation of improvements comply with requirements.

C. Cutting and Patching Plan: Submit plan describing procedures at least 10 days prior to the time cutting and patching will be performed. Include the following information:
   1. Extent: Describe reason for and extent of each occurrence of cutting and patching.
   2. Changes to In-Place Construction: Describe anticipated results. Include changes to structural elements and operating components as well as changes in building appearance and other significant visual elements.
   3. Products: List products to be used for patching and firms or entities that will perform patching work.
   4. Dates: Indicate when cutting and patching will be performed.
   5. Utilities and Mechanical and Electrical Systems: List services and systems that cutting and patching procedures will disturb or affect. List services and systems that will be relocated and those that will be temporarily out of service. Indicate length of time permanent services and systems will be disrupted.
      a. Include description of provisions for temporary services and systems during interruption of permanent services and systems.

D. Landfill Receipts: Submit copy of receipts issued by a landfill facility, licensed to accept hazardous materials, for hazardous waste disposal.

E. Certified Surveys: Submit two copies signed by land surveyor.

F. Final Property Survey: Submit 10 copies showing the Work performed and record survey data.

1.5 QUALITY ASSURANCE

A. Land Surveyor Qualifications: A professional land surveyor who is licensed by the State of Florida and who is experienced in providing land-surveying services of the kind indicated.

B. Cutting and Patching: Comply with requirements for and limitations on cutting and patching of construction elements.
   1. Structural Elements: When cutting and patching structural elements, notify Architect of locations and details of cutting and await directions from Architect before proceeding. Shore, brace, and support structural elements during cutting and patching. Do not cut and patch structural elements in a manner that could change their load-carrying capacity or increase deflection
   2. Operational Elements: Do not cut and patch operating elements and related components in a manner that results in reducing their capacity to perform as intended or that results in increased maintenance or decreased operational life or safety. Operational elements include the following:
      a. Primary operational systems and equipment.
      b. Fire separation assemblies.
      c. Air or smoke barriers.
      d. Fire-suppression systems.
      e. Plumbing piping systems.
      f. Mechanical systems piping and ducts.
      g. Control systems.
      h. Communication systems.
      i. Fire-detection and -alarm systems.
      j. Conveying systems.
      k. Electrical wiring systems.
      l. Operating systems of special construction.

3. Other Construction Elements: Do not cut and patch other construction elements or components in a manner that could change their load-carrying capacity, that results in reducing their capacity to perform as intended, or that results in increased maintenance or decreased operational life or safety. Other construction elements include but are not limited to the following:
   a. Water, moisture, or vapor barriers.
   b. Membranes and flashings.
   c. Exterior curtain-wall construction.
   d. Sprayed fire-resistive material.
   e. Equipment supports.
   f. Piping, ductwork, vessels, and equipment.
   g. Noise- and vibration-control elements and systems.
4. Visual Elements: Do not cut and patch construction in a manner that results in visual evidence of cutting and patching. Do not cut and patch exposed construction in a manner that would, in Architect's opinion, reduce the building's aesthetic qualities. Remove and replace construction that has been cut and patched in a visually unsatisfactory manner.

C. Cutting and Patching Conference: Before proceeding, meet at Project site with parties involved in cutting and patching, including mechanical and electrical trades. Review areas of potential interference and conflict. Coordinate procedures and resolve potential conflicts before proceeding.

D. Manufacturer's Installation Instructions: Obtain and maintain on-site manufacturer's written recommendations and instructions for installation of products and equipment.

PART 2 - PRODUCTS

2.1 MATERIALS

A. General: Comply with requirements specified in other Sections.
1. For projects requiring compliance with sustainable design and construction practices and procedures, use products for patching that comply with requirements in Division 01 sustainable design requirements Section.

B. In-Place Materials: Use materials for patching identical to in-place materials. For exposed surfaces, use materials that visually match in-place adjacent surfaces to the fullest extent possible.
1. If identical materials are unavailable or cannot be used, use materials that, when installed, will provide a match acceptable to Architect for the visual and functional performance of in-place materials.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Existing Conditions: The existence and location of underground and other utilities and construction indicated as existing are not guaranteed. Before beginning sitework, investigate and verify the existence and location of underground utilities, mechanical and electrical systems, and other construction affecting the Work.
1. Before construction, verify the location and invert elevation at points of connection of sanitary sewer, storm sewer, and water-service piping; underground electrical services, and other utilities.
2. Furnish location data for work related to Project that must be performed by public utilities serving Project site.

B. Examination and Acceptance of Conditions: Before proceeding with each component of the Work, examine substrates, areas, and conditions, with Installer or Applicator present where indicated, for compliance with requirements for installation tolerances and other conditions affecting performance. Record observations.
   1. Examine roughing-in for mechanical and electrical systems to verify actual locations of connections before equipment and fixture installation.
   2. Examine walls, floors, and roofs for suitable conditions where products and systems are to be installed.
   3. Verify compatibility with and suitability of substrates, including compatibility with existing finishes or primers.

C. Written Report: Where a written report listing conditions detrimental to performance of the Work is required by other Sections, include the following:
   1. Description of the Work.
   2. List of detrimental conditions, including substrates.
   3. List of unacceptable installation tolerances.
   4. Recommended corrections.

D. Proceed with installation only after unsatisfactory conditions have been corrected. Proceeding with the Work indicates acceptance of surfaces and conditions.

3.2 PREPARATION

A. Existing Utility Information: Furnish information to local utility that is necessary to adjust, move, or relocate existing utility structures, utility poles, lines, services, or other utility appurtenances located in or affected by construction. Coordinate with authorities having jurisdiction.

B. Field Measurements: Take field measurements as required to fit the Work properly. Recheck measurements before installing each product. Where portions of the Work are indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrication. Coordinate fabrication schedule with construction progress to avoid delaying the Work.

C. Space Requirements: Verify space requirements and dimensions of items shown diagrammatically on Drawings.

D. Review of Contract Documents and Field Conditions: Immediately on discovery of the need for clarification of the Contract Documents caused by differing field conditions outside the control of Contractor, submit a request for information to Architect according to requirements in Division 01 Section "Project Management and Coordination."

3.3 CONSTRUCTION LAYOUT

A. Verification: Before proceeding to lay out the Work, verify layout information shown on Drawings, in relation to the property survey and existing benchmarks. If discrepancies are discovered, notify Architect promptly.

B. General: Engage a land surveyor to lay out the Work using accepted surveying practices.
   1. Establish benchmarks and control points to set lines and levels at each story of construction and elsewhere as needed to locate each element of Project.
   2. Establish limits on use of Project site.

3. Establish dimensions within tolerances indicated. Do not scale Drawings to obtain required dimensions.
4. Inform installers of lines and levels to which they must comply.
5. Check the location, level and plumb, of every major element as the Work progresses.
6. Notify Architect when deviations from required lines and levels exceed allowable tolerances.
7. Close site surveys with an error of closure equal to or less than the standard established by authorities having jurisdiction.

C. Site Improvements: Locate and lay out site improvements, including pavements, grading, fill and topsoil placement, utility slopes, and rim and invert elevations.

D. Building Lines and Levels: Locate and lay out control lines and levels for structures, building foundations, column grids, and floor levels, including those required for mechanical and electrical work. Transfer survey markings and elevations for use with control lines and levels. Level foundations and piers from two or more locations.

E. Record Log: Maintain a log of layout control work. Record deviations from required lines and levels. Include beginning and ending dates and times of surveys, weather conditions, name and duty of each survey party member, and types of instruments and tapes used. Make the log available for reference by Architect.

3.4 FIELD ENGINEERING

A. Identification: City will identify existing benchmarks, control points, and property corners.

B. Reference Points: Locate existing permanent benchmarks, control points, and similar reference points before beginning the Work. Preserve and protect permanent benchmarks and control points during construction operations.
1. Do not change or relocate existing benchmarks or control points without prior written approval of Architect. Report lost or destroyed permanent benchmarks or control points promptly. Report the need to relocate permanent benchmarks or control points to Architect before proceeding.
2. Replace lost or destroyed permanent benchmarks and control points promptly. Base replacements on the original survey control points.

C. Benchmarks: Establish and maintain a minimum of two permanent benchmarks on Project site, referenced to data established by survey control points. Comply with authorities having jurisdiction for type and size of benchmark.
1. Record benchmark locations, with horizontal and vertical data, on Project Record Documents.
2. Where the actual location or elevation of layout points cannot be marked, provide temporary reference points sufficient to locate the Work.
3. Remove temporary reference points when no longer needed. Restore marked construction to its original condition.

D. Certified Survey: On completion of foundation walls, major site improvements, and other work requiring field-engineering services, prepare a certified survey showing dimensions, locations, angles, and elevations of construction and sitework.

E. Final Property Survey: Engage a land surveyor to prepare a final property survey showing

significant features (real property) for Project. Include on the survey a certification, signed by land surveyor, that principal metes, bounds, lines, and levels of Project are accurately positioned as shown on the survey.

1. Show boundary lines, monuments, streets, site improvements and utilities, existing improvements and significant vegetation, adjoining properties, acreage, grade contours, and the distance and bearing from a site corner to a legal point.
2. Recording: At Substantial Completion, have the final property survey recorded by or with authorities having jurisdiction as the official "property survey."

3.5 INSTALLATION

A. General: Locate the Work and components of the Work accurately, in correct alignment and elevation, as indicated.
   1. Make vertical work plumb and make horizontal work level.
   2. Where space is limited, install components to maximize space available for maintenance and ease of removal for replacement.
   3. Conceal pipes, ducts, and wiring in finished areas unless otherwise indicated.
   4. Maintain minimum headroom clearance of 96 inches in occupied spaces and 90 inches in unoccupied spaces.

B. Comply with manufacturer's written instructions and recommendations for installing products in applications indicated.

C. Install products at the time and under conditions that will ensure the best possible results. Maintain conditions required for product performance until Substantial Completion.

D. Conduct construction operations so no part of the Work is subjected to damaging operations or loading in excess of that expected during normal conditions of occupancy.

E. Sequence the Work and allow adequate clearances to accommodate movement of construction items on site and placement in permanent locations.

F. Tools and Equipment: Do not use tools or equipment that produce harmful noise levels.

G. Templates: Obtain and distribute to the parties involved templates for work specified to be factory prepared and field installed. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing products to comply with indicated requirements.

H. Attachment: Provide blocking and attachment plates and anchors and fasteners of adequate size and number to securely anchor each component in place, accurately located and aligned with other portions of the Work. Where size and type of attachments are not indicated, verify size and type required for load conditions.
   1. Mounting Heights: Where mounting heights are not indicated, mount components at heights directed by Architect.
   2. Allow for building movement, including thermal expansion and contraction.
   3. Coordinate installation of anchorages. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors, that are to be embedded in concrete or masonry. Deliver such items to Project site in time for installation.

I. Joints: Make joints of uniform width. Where joint locations in exposed work are not indicated,

arrange joints for the best visual effect. Fit exposed connections together to form hairline joints.

J. Hazardous Materials: Use products, cleaners, and installation materials that are not considered hazardous.

3.6 CUTTING AND PATCHING

A. Cutting and Patching, General: Employ skilled workers to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time, and complete without delay.
   1. Cut in-place construction to provide for installation of other components or performance of other construction, and subsequently patch as required to restore surfaces to their original condition.

B. Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during installation or cutting and patching operations, by methods and with materials so as not to void existing warranties.

C. Temporary Support: Provide temporary support of work to be cut.

D. Protection: Protect in-place construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of Project that might be exposed during cutting and patching operations.

E. Adjacent Occupied Areas: Where interference with use of adjoining areas or interruption of free passage to adjoining areas is unavoidable, coordinate cutting and patching according to requirements in Division 01 Section "Summary."

F. Existing Utility Services and Mechanical/Electrical Systems: Where existing services/systems are required to be removed, relocated, or abandoned, bypass such services/systems before cutting to prevent interruption to occupied areas.

G. Cutting: Cut in-place construction by sawing, drilling, breaking, chipping, grinding, and similar operations, including excavation, using methods least likely to damage elements retained or adjoining construction. If possible, review proposed procedures with original Installer; comply with original Installer's written recommendations.
   1. In general, use hand or small power tools designed for sawing and grinding, not hammering and chopping. Cut holes and slots neatly to minimum size required, and with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.
   2. Finished Surfaces: Cut or drill from the exposed or finished side into concealed surfaces.
   3. Concrete and Masonry: Cut using a cutting machine, such as an abrasive saw or a diamond-core drill.
   4. Excavating and Backfilling: Comply with requirements in applicable Division 31 Sections where required by cutting and patching operations.
   5. Mechanical and Electrical Services: Cut off pipe or conduit in walls or partitions to be removed. Cap, valve, or plug and seal remaining portion of pipe or conduit to prevent entrance of moisture or other foreign matter after cutting.
   6. Proceed with patching after construction operations requiring cutting are complete.

H. Patching: Patch construction by filling, repairing, refinishing, closing up, and similar operations following performance of other work. Patch with durable seams that are as invisible as practicable. Provide materials and comply with installation requirements specified in other

Sections, where applicable.

1. Inspection: Where feasible, test and inspect patched areas after completion to demonstrate physical integrity of installation.
2. Exposed Finishes: Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that will minimize evidence of patching and refinishing.
    a. Clean piping, conduit, and similar features before applying paint or other finishing materials.
    b. Restore damaged pipe covering to its original condition.
3. Floors and Walls: Where walls or partitions that are removed extend one finished area into another, patch and repair floor and wall surfaces in the new space. Provide an even surface of uniform finish, color, texture, and appearance. Remove in-place floor and wall coverings and replace with new materials, if necessary, to achieve uniform color and appearance.
    a. Where patching occurs in a painted surface, prepare substrate and apply primer and intermediate paint coats appropriate for substrate over the patch, and apply final paint coat over entire unbroken surface containing the patch. Provide additional coats until patch blends with adjacent surfaces.
4. Ceilings: Patch, repair, or rehang in-place ceilings as necessary to provide an even-plane surface of uniform appearance.
5. Exterior Building Enclosure: Patch components in a manner that restores enclosure to a weathertight condition and ensures thermal and moisture integrity of building enclosure.

I. Cleaning: Clean areas and spaces where cutting and patching are performed. Remove paint, mortar, oils, putty, and similar materials from adjacent finished surfaces.

3.7 CITY-INSTALLED PRODUCTS

A. Site Access: Provide access to Project site for City's construction forces.

B. Coordination: Coordinate construction and operations of the Work with work performed by City's construction forces.
1. Construction Schedule: Inform City of Contractor's preferred construction schedule for City's portion of the Work. Adjust construction schedule based on a mutually agreeable timetable. Notify City if changes to schedule are required due to differences in actual construction progress.
2. Preinstallation Conferences: Include City's construction forces at preinstallation conferences covering portions of the Work that are to receive City's work. Attend preinstallation conferences conducted by City's construction forces if portions of the Work depend on City's construction.

3.8 PROGRESS CLEANING

A. General: Clean Project site and work areas daily, including common areas. Coordinate progress cleaning for joint-use areas where more than one installer has worked. Enforce requirements strictly. Dispose of materials lawfully.
1. Comply with requirements in NFPA 241 for removal of combustible waste materials and debris.
2. Do not hold materials more than 7 days during normal weather or 3 days if the temperature is expected to rise above 80 deg F.
3. Containerize hazardous and unsanitary waste materials separately from other waste. Mark

containers appropriately and dispose of legally, according to regulations.

B. Site: Maintain Project site free of waste materials and debris.

C. Work Areas: Clean areas where work is in progress to the level of cleanliness necessary for proper execution of the Work.
   1. Remove liquid spills promptly.
   2. Where dust would impair proper execution of the Work, broom-clean or vacuum the entire work area, as appropriate.

D. Installed Work: Keep installed work clean. Clean installed surfaces according to written instructions of manufacturer or fabricator of product installed, using only cleaning materials specifically recommended. If specific cleaning materials are not recommended, use cleaning materials that are not hazardous to health or property and that will not damage exposed surfaces.

E. Concealed Spaces: Remove debris from concealed spaces before enclosing the space.

F. Exposed Surfaces in Finished Areas: Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at time of Substantial Completion.

G. Waste Disposal: Do not bury or burn waste materials on-site. Do not wash waste materials down sewers or into waterways. Comply with waste disposal requirements in Division 01 Section "Temporary Facilities and Controls." Division 01 Section "Construction Waste Management and Disposal."

H. During handling and installation, clean and protect construction in progress and adjoining materials already in place. Apply protective covering where required to ensure protection from damage or deterioration at Substantial Completion.

I. Clean and provide maintenance on completed construction as frequently as necessary through the remainder of the construction period. Adjust and lubricate operable components to ensure operability without damaging effects.

J. Limiting Exposures: Supervise construction operations to assure that no part of the construction, completed or in progress, is subject to harmful, dangerous, damaging, or otherwise deleterious exposure during the construction period.

3.9 STARTING AND ADJUSTING

A. Coordinate startup and adjusting of equipment and operating components with requirements in Division 01 Section "General Commissioning Requirements."

B. Start equipment and operating components to confirm proper operation. Remove malfunctioning units, replace with new units, and retest.

C. Adjust equipment for proper operation. Adjust operating components for proper operation without binding.

D. Test each piece of equipment to verify proper operation. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.

E. Manufacturer's Field Service: Comply with qualification requirements in Division 01 Section "Quality Requirements."

3.10 PROTECTION OF INSTALLED CONSTRUCTION

A. Provide final protection and maintain conditions that ensure installed Work is without damage or deterioration at time of Substantial Completion.

B. Comply with manufacturer's written instructions for temperature and relative humidity.

3.11 CORRECTION OF THE WORK

A. Repair or remove and replace defective construction. Restore damaged substrates and finishes. Comply with requirements in Division 01 Section "Cutting and Patching."
   1. Repairing includes replacing defective parts, refinishing damaged surfaces, touching up with matching materials, and properly adjusting operating equipment.

B. Restore permanent facilities used during construction to their specified condition.

C. Remove and replace damaged surfaces that are exposed to view if surfaces cannot be repaired without visible evidence of repair.

D. Repair components that do not operate properly. Remove and replace operating components that cannot be repaired.

E. Remove and replace chipped, scratched, and broken glass or reflective surfaces.

END OF SECTION

SECTION 01 74 19
CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL

PART 1 GENERAL

1.1 WASTE MANAGEMENT REQUIREMENTS

A. Sustainable construction practices require that this project generate the least amount of trash and waste possible.

B. Employ processes that ensure the generation of as little waste as possible due to error, poor planning, breakage, mishandling, contamination, or other factors.

C. Minimize trash/waste disposal in landfills; reuse, salvage, or recycle as much waste as economically feasible. Divert not less than 75 percent of construction waste, including building demolition waste if any, from landfill.

D. Required Recycling, Salvage, and Reuse: The following may not be disposed of in landfills or by incineration:
   1. Aluminum and plastic beverage containers.
   2. Corrugated cardboard.
   3. Wood pallets.
   4. Clean dimensional wood: May be used as blocking or furring.
   5. Metals, including packaging banding, metal studs, sheet metal, structural steel, piping, reinforcing bars, door frames, and other items made of steel, iron, galvanized steel, stainless steel, aluminum, copper, zinc, lead, brass, and bronze.
   6. Glass.
   7. Gypsum drywall and plaster.
   8. Carpet, carpet cushion, carpet tile, and carpet remnants, both new and removed: DuPont (http://flooring.dupont.com) and Interface (www.interfaceinc.com) conduct reclamation programs.

E. Contractor shall submit periodic Waste Disposal Reports; all landfill disposal, incineration, recycling, salvage, and reuse must be reported regardless of to whom the cost or savings accrues; use the same units of measure on all reports.

F. Contractor shall develop and follow a Waste Management Plan designed to implement these requirements.

G. Methods of trash/waste disposal that are not acceptable are:
   1. Burning on the project site.
   2. Burying on the project site.
   3. Dumping or burying on other property, public or private.
   4. Other illegal dumping or burying.

H. Regulatory Requirements: Contractor is responsible for knowing and complying with regulatory requirements, including but not limited to Federal, state and local requirements, pertaining to legal disposal of all construction and demolition waste materials.

1.2 DEFINITIONS

A. Clean: Untreated and unpainted; not contaminated with oils, solvents, caulk, or the like.

B. Construction and Demolition Waste: Solid wastes typically including building materials, packaging, trash, debris, and rubble resulting from construction, remodeling, repair and demolition operations.

C. Hazardous: Exhibiting the characteristics of hazardous substances, i.e., ignitibility, corrosivity, toxicity or reactivity.

D. Nonhazardous: Exhibiting none of the characteristics of hazardous substances, i.e., ignitibility, corrosivity, toxicity, or reactivity.

E. Nontoxic: Neither immediately poisonous to humans nor poisonous after a long period of exposure.

F. Recyclable: The ability of a product or material to be recovered at the end of its life cycle and remanufactured into a new product for reuse by others.

G. Recycle: To remove a waste material from the project site to another site for remanufacture into a new product for reuse by others.

H. Recycling: The process of sorting, cleansing, treating and reconstituting solid waste and other discarded materials for the purpose of using the altered form. Recycling does not include burning, incinerating, or thermally destroying waste.

I. Return: To give back reusable items or unused products to vendors for credit.

J. Reuse: To reuse a construction waste material in some manner on the project site.

K. Salvage: To remove a waste material from the project site to another site for resale or reuse by others.

L. Sediment: Soil and other debris that has been eroded and transported by storm or well production run-off water.

M. Source Separation: The act of keeping different types of waste materials separate beginning from the first time they become waste.

N. Toxic: Poisonous to humans either immediately or after a long period of exposure.

O. Trash: Any product or material unable to be reused, returned, recycled, or salvaged.

P. Waste: Extra material or material that has reached the end of its useful life in its intended use. Waste includes salvageable, returnable, recyclable, and reusable material.

1.3 SUBMITTALS

A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.

B. Waste Management Plan: Include the following information:
   1. Analysis of the trash and waste projected to be generated during the entire project construction cycle, including types and quantities.
   2. Landfill Options: The name, address, and telephone number of the landfill(s) where trash/waste will be disposed of, the applicable landfill tipping fee(s), and the projected cost of disposing of all project trash/waste in the landfill(s).
   3. Landfill Alternatives: List all waste materials that will be diverted from landfills by reuse, salvage, or recycling.
   4. Meetings: Describe regular meetings to be held to address waste prevention, reduction, recycling, salvage, reuse, and disposal.
   5. Materials Handling Procedures: Describe the means by which materials to be diverted from landfills will be protected from contamination and prepared for acceptance by designated facilities; include separation procedures for recyclables, storage, and packaging.
   6. Transportation: Identify the destination and means of transportation of materials to be recycled; i.e. whether materials will be site-separated and self-hauled to designated centers, or whether mixed materials will be collected by a waste hauler.

C. Waste Disposal Reports: Submit at specified intervals, with details of quantities of trash and waste, means of disposal or reuse, and costs; show both totals to date and since last report.
   1. Submit updated Report with each Application for Progress Payment; failure to submit Report will delay payment.
   2. Submit Report on a form acceptable to Owner.

3. Landfill Disposal: Include the following information:
   a. Identification of material.
   b. Amount, in tons or cubic yards, of trash/waste material from the project disposed of in landfills.
   c. State the identity of landfills, total amount of tipping fees paid to landfill, and total disposal cost.
   d. Include manifests, weight tickets, receipts, and invoices as evidence of quantity and cost.
4. Incinerator Disposal: Include the following information:
   a. Identification of material.
   b. Amount, in tons or cubic yards, of trash/waste material from the project delivered to incinerators.
   c. State the identity of incinerators, total amount of fees paid to incinerator, and total disposal cost.
   d. Include manifests, weight tickets, receipts, and invoices as evidence of quantity and cost.
5. Recycled and Salvaged Materials: Include the following information for each:
   a. Identification of material, including those retrieved by installer for use on other projects.
   b. Amount, in tons or cubic yards, date removed from the project site, and receiving party.
   c. Transportation cost, amount paid or received for the material, and the net total cost or savings of salvage or recycling each material.
   d. Include manifests, weight tickets, receipts, and invoices as evidence of quantity and cost.
   e. Certification by receiving party that materials will not be disposed of in landfills or by incineration.
6. Material Reused on Project: Include the following information for each:
   a. Identification of material and how it was used in the project.
   b. Amount, in tons or cubic yards.
   c. Include weight tickets as evidence of quantity.
7. Other Disposal Methods: Include information similar to that described above, as appropriate to disposal method.

PART 2 PRODUCTS – NOT USED

PART 3 EXECUTION

3.1 WASTE MANAGEMENT PROCEDURES

A. See Section 01 30 00 for additional requirements for project meetings, reports, submittal procedures, and project documentation.

3.2 WASTE MANAGEMENT PLAN IMPLEMENTATION

A. Manager: Designate an on-site person or persons responsible for instructing workers and overseeing and documenting results of the Waste Management Plan.

B. Communication: Distribute copies of the Waste Management Plan to job site foreman, each subcontractor, Sustainability Consultant, and Architect.

C. Instruction: Provide on-site instruction of appropriate separation, handling, and recycling, salvage, reuse, and return methods to be used by all parties at the appropriate stages of the project.

D. Meetings: Discuss trash/waste management goals and issues at project meetings.
   1. Pre-bid meeting.
   2. Pre-construction meeting.
   3. Regular job-site meetings.

E. Facilities: Provide specific facilities for separation and storage of materials for recycling, salvage, reuse, return, and trash disposal, for use by all contractors and installers.
   1. Provide containers as required.
   2. Provide adequate space for pick-up and delivery and convenience to subcontractors.
   3. Keep recycling and trash/waste bin areas neat and clean and clearly marked in order to avoid contamination of materials.

F. Hazardous Wastes: Separate, store, and dispose of hazardous wastes according to applicable regulations.

G. Recycling: Separate, store, protect, and handle at the site identified recyclable waste products in order to prevent contamination of materials and to maximize recyclability of identified materials. Arrange for timely pickups from the site or deliveries to recycling facility in order to prevent contamination of recyclable materials.

H. Reuse of Materials On-Site: Set aside, sort, and protect separated products in preparation for reuse.

I. Salvage: Set aside, sort, and protect products to be salvaged for reuse off-site.

END OF SECTION

SECTION 01 77 00

CLOSE OUT PROCEDURES

PART I. GENERAL

1.1 SUMMARY

A. Section includes administrative and procedural requirements for contract closeout, including, but not limited to, the following:

1. Substantial Completion procedures.
2. Final completion procedures.
3. Warranties.
4. Final cleaning.

B. Related Sections:

1. Divisions 1 through 16 Sections for specific closeout and special cleaning requirements for the Work in those Sections.

1.2 SUBSTANTIAL COMPLETION

A. Preliminary Procedures: Before requesting inspection for determining date of Substantial Completion, complete the following. List items below that are incomplete with request.

1. Prepare a list of items to be completed and corrected (punch list), the value of items on the list, and reasons why the Work is not complete.
2. Advise Owner of pending insurance changeover requirements.
3. Submit closeout submittals specified in other Division 01 Sections, including project record documents, operation and maintenance manuals, final completion construction photographic documentation, damage or settlement surveys, property surveys, and similar final record information.
4. Submit closeout submittals specified in individual Divisions 02 through 33 Sections, including specific warranties, workmanship bonds, maintenance service agreements, final certifications, and similar documents.
5. Submit maintenance material submittals specified in individual Divisions 02 through 33 Sections, including tools, spare parts, extra materials, and similar items, and deliver to location designated by Architect. Label with manufacturer's name and model number where applicable.
    a. Schedule of Maintenance Material Items: Prepare and submit schedule of maintenance material submittal items, including name and quantity of each item and name and number of related Specification Section. Obtain Architect's signature for receipt of submittals.
6. Submit specific warranties, workmanship bonds, maintenance service agreements, final certifications, and similar documents.
7. Submit sustainable design submittals required in Division 01 sustainable design requirements Section and in individual Division 02 through 33 Sections.
8. Obtain and submit releases permitting Owner unrestricted use of the Work and access to services and utilities. Include occupancy permits, operating certificates, and similar releases.

9. Prepare and submit Project Record Documents, operation and maintenance manuals, final completion construction photographic documentation, damage or settlement surveys, property surveys, and similar final record information.
10. Deliver tools, spare parts, extra materials, and similar items to location designated by Owner. Label with manufacturer's name and model number where applicable.
11. Make final changeover of permanent locks and deliver keys to Owner. Advise Owner's personnel of changeover in security provisions.
12. Complete startup testing of systems.
13. Submit test/adjust/balance records.
14. Terminate and remove temporary facilities from Project site, along with mockups, construction tools, and similar elements.
15. Advise Owner of change.
16. Submit changeover information related to Owner's occupancy, use, operation, and maintenance.
17. Complete final cleaning requirements, including touchup painting.
18. Touch up and otherwise repair and restore marred exposed finishes to eliminate visual defects.

B. Inspection: Submit a written request for inspection for Substantial Completion. On receipt of request, Architect will either proceed with inspection or notify Contractor of unfulfilled requirements. Architect will prepare the Certificate of Substantial Completion after inspection or will notify Contractor of items, either on Contractor's list or additional items identified by Architect, that must be completed or corrected before certificate will be issued.

1. Reinspection: Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.
2. Results of completed inspection will form the basis of requirements for final completion.

1.3 FINAL COMPLETION

A. Preliminary Procedures: Before requesting final inspection for determining final completion, complete the following:

1. Submit a final Application for Payment according to Division 1 Section "Payment Procedures."
2. Submit certified copy of Architect's Substantial Completion inspection list of items to be completed or corrected (punch list), endorsed and dated by Architect. The certified copy of the list shall state that each item has been completed or otherwise resolved for acceptance.
3. Submit evidence of final, continuing insurance coverage complying with insurance requirements.
4. Submit pest-control final inspection report and warranty.
5. Instruct Owner's personnel in operation, adjustment, and maintenance of products, equipment, and systems.
6. Submit pest-control final inspection report.
7. Submit final completion photographic documentation.

B. Inspection: Submit a written request for final inspection for acceptance. On receipt of request, Architect will either proceed with inspection or notify Contractor of unfulfilled requirements. Architect will prepare a final Certificate for Payment after inspection or will notify Contractor of construction that must be completed or corrected before certificate will be issued.

1. Reinspection: Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.

1.4 LIST OF INCOMPLETE ITEMS (PUNCH LIST)

A. Organization of List: Include name and identification of each space and area affected by construction operations for incomplete items and items needing correction including, if necessary, areas disturbed by Contractor that are outside the limits of construction.

1. Organize list of spaces in sequential order.
2. Organize items applying to each space by major element, including categories for ceiling, individual walls, floors, equipment, and building systems.
3. Include the following information at the top of each page:

    a. Project number and name.
    b. Date.
    c. Name of Architect
    d. Name of Contractor.
    e. Page number.
4. Submit list of incomplete items in the following format:

    a. PDF electronic file.
    b. Three paper copies, unless otherwise indicated. Architect will return two copies.

1.5 WARRANTIES

A. Submittal Time: Submit written warranties on request of Architect for designated portions of the Work where commencement of warranties other than date of Substantial Completion is indicated.

B. Organize warranty documents into an orderly sequence based on the table of contents of the Project Manual.

1. Bind warranties and bonds in heavy-duty, 3-ring, vinyl-covered, loose-leaf binders, thickness as necessary to accommodate contents, and sized to receive 8-1/2-by-11-inch paper.
2. Provide heavy paper dividers with plastic-covered tabs for each separate warranty. Mark tab to identify the product or installation. Provide a typed description of the product or installation, including the name of the product and the name, address, and telephone number of Installer.
3. Identify each binder on the front and spine with the typed or printed title "WARRANTIES," Project name, and name of Contractor.
4. Scan warranties and bonds and assemble complete warranty and bond submittal package into a single indexed electronic PDF file with links enabling navigation to each item. Provide table of contents at beginning of document.

C. Provide additional copies of each warranty to include in operation and maintenance manuals.

1.6 FORMAT OF OPERATION AND MAINTENANCE MANUALS

A. Manuals, Electronic Files: Submit manuals in the form of a multiple file composite electronic PDF file for each manual type required.

1. Electronic Files: Use electronic files prepared by manufacturer where available. Where scanning of paper documents is required, configure scanned file for minimum readable file size.

2. File Names and Bookmarks: Bookmark individual documents based on file names. Name document files to correspond to system, subsystem, and equipment names used in manual directory and table of contents. Group documents for each system and subsystem into individual composite bookmarked files, then create composite manual, so that resulting bookmarks reflect the system, subsystem, and equipment names in a readily navigated file tree. Configure electronic manual to display bookmark panel on opening file.

A. Manuals, Paper Copy: Submit manuals in the form of hard-copy, bound and labeled volumes.

1. Binders: Heavy-duty, three-ring, vinyl-covered, loose-leaf binders, in thickness necessary to accommodate contents, sized to hold 8-1/2-by-11-inch paper; with clear plastic sleeve on spine to hold label describing contents and with pockets inside covers to hold folded oversize sheets.

   a. If two or more binders are necessary to accommodate data of a system, organize data in each binder into groupings by subsystem and related components. Cross-reference other binders if necessary to provide essential information for proper operation or maintenance of equipment or system.
   b. Identify each binder on front and spine, with printed title "OPERATION AND MAINTENANCE MANUAL," Project title or name and subject matter of contents, and indicate Specification Section number on bottom of spine. Indicate volume number for multiple-volume sets.

2. Dividers: Heavy-paper dividers with plastic-covered tabs for each section of the manual. Mark each tab to indicate contents. Include typed list of products and major components of equipment included in the section on each divider, cross-referenced to Specification Section number and title of Project Manual.

1. Protective Plastic Sleeves: Transparent plastic sleeves designed to enclose diagnostic software storage media for computerized electronic equipment. Enclose title pages and directories in clear plastic sleeves.

1. Supplementary Text: Prepared on 8-1/2-by-11-inch white bond paper.
2. Drawings: Attach reinforced, punched binder tabs on drawings and bind with text.

   a. If oversize drawings are necessary, fold drawings to same size as text pages and use as foldouts.
   a. If drawings are too large to be used as foldouts, fold and place drawings in labeled envelopes and bind envelopes in rear of manual. At appropriate locations in manual, insert typewritten pages indicating drawing titles, descriptions of contents, and drawing locations.

PART 2- PRODUCTS

2.1 MATERIALS

A. Paragraph below contains basic requirements. Revise this article to suit Project or to accommodate unusual situations.

B. Cleaning Agents: Use cleaning materials and agents recommended by manufacturer or fabricator of the surface to be cleaned. Do not use cleaning agents that are potentially hazardous to health or property or that might damage finished surfaces.

1. Use cleaning products that meet Green Seal GS-37, or if GS-37 is not applicable, use products that comply with the California Code of Regulations maximum allowable VOC levels.

PART 3 - EXECUTION

3.1 FINAL CLEANING

A. General: Perform final cleaning. Conduct cleaning and waste-removal operations to comply with local laws and ordinances and Federal and local environmental and antipollution regulations.

B. Cleaning: Employ experienced workers or professional cleaners for final cleaning. Clean each surface or unit to condition expected in an average commercial building cleaning and maintenance program. Comply with manufacturer's written instructions.

1. Complete the following cleaning operations before requesting inspection for certification of Substantial Completion for entire Project or for a portion of Project:

a. Clean Project site, yard, and grounds, in areas disturbed by construction activities, including landscape development areas, of rubbish, waste material, litter, and other foreign substances.
b. Sweep paved areas broom clean. Remove petrochemical spills, stains, and other foreign deposits.
c. Rake grounds that are neither planted nor paved to a smooth, even-textured surface.
d. Remove tools, construction equipment, machinery, and surplus material from Project site.
e. Clean exposed exterior and interior hard-surfaced finishes to a dirt-free condition, free of stains, films, and similar foreign substances. Avoid disturbing natural weathering of exterior surfaces. Restore reflective surfaces to their original condition.
f. Remove debris and surface dust from limited access spaces, including roofs, plenums, shafts, trenches, equipment vaults, manholes, attics, and similar spaces.
g. Sweep concrete floors broom clean in unoccupied spaces.
h. Vacuum carpet and similar soft surfaces, removing debris and excess nap; shampoo if visible soil or stains remain.
i. Clean transparent materials, including mirrors and glass in doors and windows. Remove glazing compounds and other noticeable, vision-obscuring materials. Replace chipped or broken glass and other damaged transparent materials. Polish mirrors and glass, taking care not to scratch surfaces.
j. Remove labels that are not permanent.
k. Touch up and otherwise repair and restore marred, exposed finishes and surfaces. Replace finishes and surfaces that cannot be satisfactorily repaired or restored or that already show evidence of repair or restoration.

1) Do not paint over "UL" and other required labels and identification, including mechanical and electrical nameplates.

l. Wipe surfaces of mechanical and electrical equipment and similar equipment. Remove excess lubrication, paint and mortar droppings, and other foreign substances.
m. Replace parts subject to operating conditions during construction that may impede operation or reduce longevity.

n. Clean plumbing fixtures to a sanitary condition, free of stains, including stains resulting from water exposure.
o. Replace disposable air filters and clean permanent air filters. Clean exposed surfaces of diffusers, registers, and grills.
p. Clean light fixtures, lamps, globes, and reflectors to function with full efficiency. Replace burned-out bulbs, and those noticeably dimmed by hours of use, and defective and noisy starters in fluorescent and mercury vapor fixtures to comply with requirements for new fixtures.
q. Leave Project clean and ready for occupancy.

C. Pest Control: Engage an experienced, licensed exterminator to make a final inspection and rid Project of rodents, insects, and other pests. Prepare a report.

D. Construction Waste Disposal: Comply with waste disposal requirements in Division 01 Section "Temporary Facilities and Controls." Division 01 Section "Construction Waste Management and Disposal."

3.2 REPAIR OF THE WORK

A. Complete repair and restoration operations before requesting inspection for determination of Substantial Completion.

B. Repair or remove and replace defective construction. Repairing includes replacing defective parts, refinishing damaged surfaces, touching up with matching materials, and properly adjusting operating equipment. Where damaged or worn items cannot be repaired or restored, provide replacements. Remove and replace operating components that cannot be repaired. Restore damaged construction and permanent facilities used during construction to specified condition.

1. Remove and replace chipped, scratched, and broken glass, reflective surfaces, and other damaged transparent materials.
2. Touch up and otherwise repair and restore marred or exposed finishes and surfaces. Replace finishes and surfaces that that already show evidence of repair or restoration.

    a. Do not paint over "UL" and other required labels and identification, including mechanical and electrical nameplates. Remove paint applied to required labels and identification.

3. Replace parts subject to operating conditions during construction that may impede operation or reduce longevity.
4. Replace burned-out bulbs, bulbs noticeably dimmed by hours of use, and defective and noisy starters in fluorescent and mercury vapor fixtures to comply with requirements for new fixtures.

END OF SECTION

SECTION 01 81 13

SUSTAINABLE CONSTRUCTION REQUIREMENTS

PART 1 - GENERAL

1.1 DESCRIPTION

A. This Section describes general requirements and procedures to comply with policies for sustainable construction.

B. The Architect has selected materials and utilized integrated design processes that achieve the Owner's objectives. Contractor is responsible to maintain and support these objectives in developing means and methods for performing work and in proposing product substitutions or changes to specified processes. By submitting a change or substitution of materials or processes, contractor must demonstrate its diligence in performing the level of investigation and comparison required under Florida Green Building Coalition policies.

1.2 RELATED WORK

A. Section 01 74 19 CONSTRUCTION WASTE MANANGEMENT.

B. Section 01 81 13.21 SUSTAINABILITY CERTIFICATION REQUIREMENTS - GREEN GLOBES.

1.3 DEFINITIONS

A. Total Materials Cost: A tally of actual material cost from specification divisions 03 through 10, 31 (applicable to foundations) and 32 (applicable to paving, site improvements, and planting). Alternatively, 45 percent of total construction hard costs in those specification divisions.

B. Recycled Content: Recycled content of materials is defined according to Federal Trade Commission Guides for the Use of Environmental Marketing Claims (16 CFR Part 260). Recycled content value of a material assembly is determined by weight. Recycled fraction of assembly is multiplied by cost of assembly to determine recycled content value.

1. "Post-Consumer" material is defined as waste material generated by households or by commercial, industrial, and institutional facilities in their role as end users of the product, which can no longer be used for its intended purpose.
2. "Pre-Consumer" material is defined as material diverted from waste stream during the manufacturing process. Excluded is reutilization of materials such as rework, regrind, or scrap generated in a process and capable of being reclaimed within the same process that generated it.

C. Biobased Products: Biobased products are derived from plants and other renewable agricultural, marine, and forestry materials and provide an alternative to conventional petroleum derived products. Biobased products include diverse categories such as lubricants, cleaning products, inks, fertilizers, and bioplastics.

D. Low Pollutant-Emitting Materials: Materials and products which are minimally odorous, irritating, or harmful to comfort and well-being of installers and occupants.

E. Volatile Organic Compounds (VOC): Chemicals that are emitted as gases from certain solids or liquids. VOCs include a variety of chemicals, some of which may have short- and long-term adverse health effects.

1.4 REFERENCE STANDARDS

A. Carpet and Rug Institute Green Label Plus program.

B. U.S. Department of Agriculture BioPreferred program (USDA BioPreferred).

C. U.S. Environmental Protection Agency Comprehensive Procurement Guidelines (CPG).

D. U.S. Environmental Protection Agency WaterSense Program (WaterSense).

E. U.S. Environmental Protection Agency ENERGY STAR Program (ENERGY STAR).

F. U. S. Department of Energy Federal Energy Management Program (FEMP).

G. Green Electronic Council EPEAT Program (EPEAT).

1.5 SUBMITTALS

A. All submittals to be provided by contractor to Architect.

B. Sustainability Action Plan:

1. Submit documentation as required by this section; provide additional copies of typical submittals required under technical sections when sustainable construction requires copies of record submittals.
2. Within 30 days after Preconstruction Meeting provide a narrative plan for complying with requirements stipulated within this section.
3. Sustainability Action Plan must:
   a. Make reference to sustainable construction submittals defined by this section.
   b. Address all items listed under PERFORMANCE CRITERIA.
   c. Indicate individual(s) responsible for implementing the plan.

C. Project Materials Cost Data Spreadsheet: Within 30 days after the Preconstruction Meeting provide a preliminary Project Materials Cost Data Spreadsheet. The Project Materials Cost Data Spreadsheet must be an electronic file and indicate all materials in Divisions 3 through 10, 31, and 32 used for Project (excluding labor costs and excluding all mechanical, electrical, and plumbing system components), and be organized by specification section. The spreadsheet must include the following:

1. Identify each reused or salvaged material, its cost, and its replacement value.
2. Identify each recycled-content material, its post-consumer and pre-consumer recycled content as a percentage the product's weight, its cost, its combined recycled content value, defined as the sum of post-consumer recycled content value plus one-half of pre-consumer recycled content value, and total combined recycled content value for all materials as a percentage of total materials costs.
3. Identify each biobased material, its source, its cost, and total value of biobased materials as a percentage of total materials costs.
4. Total cost for Project and total cost of building materials used for Project.

D. Low Pollutant-Emitting Materials Tracking Spreadsheet: Within 30 days after Preconstruction Meeting provide a preliminary Low Pollutant-Emitting Materials Tracking Spreadsheet. The Low Pollutant-Emitting Materials Tracking Spreadsheet must be an electronic file and include all materials on Project in categories described under Low Pollutant-Emitting Materials in 01 81 13 and additional product

performance criteria for Low Pollutant-Emitting Materials as described in Section 01 81 13.21 SUSTAINABILITY CERTIFICATION REQUIREMENTS - GREEN GLOBES.

E. Construction Indoor Air Quality (IAQ) Management Plan:
   1. Not more than 30 days after Preconstruction Meeting provide a Construction IAQ Management Plan as an electronic file including descriptions of the following:
      a. Instruction procedures for meeting or exceeding minimum requirements of ANSI/SMACNA 008-2008, Chapter 3, including procedures for HVAC Protection, Source Control, Pathway Interruption, Housekeeping, and Scheduling.
      b. Instruction procedures for protecting absorptive materials stored on-site or installed from moisture damage.
      c. Schedule of submission of photographs of on-site construction IAQ management measures such as protection of ducts and on-site stored oil installed absorptive materials.
      d. Instruction procedures if air handlers must be used during construction, including a description of filtration media to be used at each return air grille.
      e. Instruction procedure for replacing all air-filtration media immediately prior to occupancy after completion of construction, including a description of filtration media to be used at each air handling or air supply unit.
      f. Instruction procedures and schedule for implementing building flush-out.

F. Product Submittals:
   1. Recycled Content: Submit product data from manufacturer indicating percentages by weight of post-consumer and pre-consumer recycled content for products having recycled content (excluding MEP systems equipment and components).
   2. Biobased Content: Submittals for products to be installed or used included on the USDA BioPreferred program's product category lists. Data to include biobased content and source of biobased material; indicating name of manufacturer, cost of each material.
   3. Low Pollutant-Emitting Materials: Submit product data confirming compliance with relevant requirements for all materials on Project in categories described under Low Pollutant-Emitting Materials in 01 81 13 and additional product performance criteria for Low Pollutant-Emitting Materials as described in Section 01 81 13.21 SUSTAINABILITY CERTIFICATION REQUIREMENTS - Florida Green Building Coalition.
   4. For applicable products and equipment, product documentation confirming Energy Star label and EPEAT certification.

G. Sustainable Construction Progress Reports: Concurrent with each Application for Payment, submit a Sustainable Construction Progress Report to confirm adherence with Sustainability Action Plan.
   1. Include narratives of revised strategies for bringing work progress into compliance with plan and product submittal data and calculations to demonstrate compliance with thresholds based on materials costs.

2. Include updated and current Project Materials Cost Data Spreadsheet.
3. Include updated and current Low Pollutant-Emitting Materials Tracking Spreadsheet.
4. Include construction waste tracking, in tons or cubic yards, including waste description, whether diverted or landfilled, hauler, and percent diverted for comingled quantities; and excluding land-clearing debris and soil. Provide haul receipts and documentation of diverted percentages for comingled wastes.

H. Closeout Submittals: Within 14 days after Substantial Completion provide the following:
1. Final version of Project Material Cost Data Spreadsheet.
2. Final version of Low Pollutant-Emitting Materials Tracking Spreadsheet.
3. Manufacturer's cut sheets and product data highlighting the Minimum Efficiency Reporting Value (MERV) for filtration media installed at return air grilles during construction if permanently installed air handling units are used during construction.
4. Manufacturer's cut sheets and product data highlighting the Minimum Efficiency Reporting Value (MERV) for final filtration media in air handling units.
5. Minimum 18 construction photographs including six photographs taken on three different occasions during construction of ANSI/SMACNA 008-2008, Chapter 3 approaches employed, along with a brief description of each approach, documenting implementation of IAQ management measures, such as protection of ducts and on-site stored or installed absorptive materials.
6. Flush-out Documentation:
a. Product data for filtration media used during flush-out.
b. Product data for filtration media installed immediately prior to occupancy.
c. Signed statement describing building air flush-out procedures including dates when flush-out was begun and completed and statement that filtration media was replaced after flush-out.

1.6 QUALITY ASSURANCE

A. Preconstruction Meeting: After award of Contract and prior to commencement of Work, schedule and conduct meeting with Architect to discuss the Project Sustainable Action Plan content as it applies to submittals, project delivery, required Construction Indoor Air Quality (IAQ) Management Plan, and other Sustainable Construction Requirements. The purpose of this meeting is to develop a mutual understanding of the Sustainable Construction Requirements and coordination of contractor's management of these requirements with the Contracting Officer and the Construction Quality Manager.

B. Construction Job Conferences: Status of compliance with Sustainable Construction Requirements of these specifications will be an agenda item at regular job meetings conducted during the course of work at the site.

1.7 APPLICABLE PUBLICATIONS

A. Publications listed below form a part of this specification to extent referenced. Publications are referenced in text by basic designation only. Comply with applicable provisions and recommendations of the following, except as otherwise shown or specified.

B. Green Seal Standard GS-11, Paints, 1st Edition, May 20, 1993.
C. Green Seal Standard GC-03, Anti-Corrosive Paints, 2nd Edition, January 7, 1997.
D. Green Seal Standard GC-36, Commercial Adhesives, October 19, 2000.
E. South Coast Air Quality Management District (SCAQMD) Rule 1113, Architectural Coatings, rules in effect on January 1, 2004.
F. South Coast Air Quality Management District (SCAQMD) Rule 1168, July 1, 2005 and rule amendment date of January 7, 2005.
G. Sheet Metal and Air Conditioning National Contractors' Association (SMACNA) IAQ Guidelines for Occupied Buildings under Construction, 2nd Edition (ANSI/SMACNA 008-2008), Chapter 3.
H. California Department of Public Health Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers, Version 1.1, Emission Testing method for California Specification 01350 (CDPH Standard Method V1.1-2010).
I. Federal Trade Commission Guides for the Use of Environmental Marketing Claims (16 CFR Part 260).
J. ASHRAE Standard 52.2-2007.

PART 2 - PRODUCTS

2.1 PERFORMANCE CRITERIA

A. Construction waste diversion from landfill disposal must comprise at least 50 percent of total construction waste, excluding land clearing debris and soil. Alternative daily cover (ADC) does not qualify as material diverted from disposal.
B. Low Pollutant-Emitting Materials:
    1. Adhesives, sealants and sealant primers applied on site within the weatherproofing membrane must comply with VOC limits of SCAQMD Rule 1168:
        a. Flooring Adhesives and Sealants:
            1) Indoor carpet adhesives: 50 g/L.
            2) Wood Flooring Adhesive: 100 g/L.
            3) Rubber Floor Adhesives: 60 g/L.
            4) Subfloor Adhesives: 50 g/L.
            5) Ceramic Tile Adhesives and Grout: 65 g/L.
            6) Cove Base Adhesives: 50 g/L.
            7) Multipurpose Construction Adhesives: 70 g/L.
            8) Porous Material (Except Wood) Substrate: 50 g/L.
            9) Wood Substrate: 30 g/L.
            10) Architectural Non-Porous Sealant Primer: 250 g/L.
            11) Architectural Porous Sealant Primer: 775 g/L.
            12) Other Sealant Primer: 750 g/L.
            13) Structural Wood Member Adhesive: 140 g/L.
            14) Sheet-Applied Rubber Lining Operations: 850 g/L.

15) Top and Trim Adhesive: 250 g/L.
16) Architectural Sealant: 250 g/L.
17) Other Sealant: 420 g/L.

b. Non-Flooring Adhesives and Sealants:
1) Drywall and Panel Adhesives: 50 g/L.
2) Multipurpose Construction Adhesives: 70 g/L.
3) Structural Glazing Adhesives: 100 g/L.
4) Metal-to-Metal Substrate Adhesives: 30 g/L.
5) Plastic Foam Substrate Adhesive: 50 g/L.
6) Porous Material (Except Wood) Substrate Adhesive: 50 g/L.
7) Wood Substrate Adhesive: 30 g/L.
8) Fiberglass Substrate Adhesive: 80 g/L.
9) Architectural Non-Porous Sealant Primer: 250 g/L.
10) Architectural Porous Sealant Primer: 775 g/L.
11) Other Sealant Primer: 750 g/L.
12) PVC Welding Adhesives: 510 g/L.
13) CPVC Welding Adhesives: 490 g/L.
14) ABS Welding Adhesives: 325 g/L.
15) Plastic Cement Welding Adhesives: 250 g/L.
16) Adhesive Primer for Plastic: 550 g/L.
17) Contact Adhesive: 80 g/L.
18) Special Purpose Contact Adhesive: 250 g/L.
19) Structural Wood Member Adhesive: 140 g/L.
20) Sheet Applied Rubber Lining Operations: 850 g/L.
21) Top and Trim Adhesive: 250 g/L.
22) Architectural Sealants: 250 g/L.
23) Other Sealants: 420 g/L.

2. Aerosol adhesives applied on site within the weatherproofing membrane must comply with the following Green Seal GS-36.
a. Aerosol Adhesive, General-Purpose Mist Spray: 65 percent VOCs by weight.
b. Aerosol Adhesive, General-Purpose Web Spray: 55 percent VOCs by weight.
c. Special-Purpose Aerosol Adhesive (All Types): 70 percent VOCs by weight.

3. Paints and coatings applied on site within the weatherproofing membrane must comply with the following criteria:
a. VOC content limits for paints and coatings established in Green Seal Standard GS-11.
b. VOC content limit for anti-corrosive and anti-rust paints applied to interior ferrous metal substrates of 250 g/L established in Green Seal GC-03.

c. Clear wood finishes, floor coatings, stains, primers, sealers, and shellacs applied to interior elements must not exceed VOC content limits established in SCAQMD Rule 1113.

d. Comply with the following VOC content limits:

1) Anti-Corrosive/Antirust Paints: 250 g/L.
2) Clear Wood Finish, Lacquer: 550 g/L.
3) Clear Wood Finish, Sanding Sealer: 350 g/L.
4) Clear Wood Finish, Varnish: 350 g/L.
5) Floor Coating: 100 g/L.
6) Interior Flat Paint, Coating or Primer: 50 g/L.
7) Interior Non-Flat Paint, Coating or Primer: 150 g/L.
8) Sealers and Undercoaters: 200 g/L.
9) Shellac, Clear: 730 g/L.
10) Shellac, Pigmented: 550 g/L.
11) Stain: 250 g/L.
12) Clear Brushing Lacquer: 680 g/L.
13) Concrete Curing Compounds: 350 g/L.
14) Japans/Faux Finishing Coatings: 350 g/L.
15) Magnesite Cement Coatings: 450 g/L.
16) Pigmented Lacquer: 550 g/L.
17) Waterproofing Sealers: 250 g/L.
18) Wood Preservatives: 350 g/L.
19) Low-Solids Coatings: 120 g/L.

4. Carpet installed in building interior must comply with one of the following:
   a. Meet testing and product requirements of the Carpet and Rug Institute Green Label Plus program.
   b. Maximum VOC concentrations specified in CDPH Standard Method V1.1-2010, using office scenario at the 14 day time point.
5. Each non-carpet flooring element installed in building interior which is not inherently non-emitting (stone, ceramic, powder-coated metals, plated or anodized metal, glass, concrete, clay brick, and unfinished or untreated solid wood flooring) must comply with one of the following:
   a. Meet requirements of the FloorScore standard as shown with testing by an independent third-party.
   b. Maximum VOC concentrations specified in CDPH Standard Method V1.1-2010, using office scenario at 14 day time point.
6. Composite wood and agrifiber products used within the weatherproofing membrane must contain no added urea-formaldehyde resins.
7. Laminating adhesives used to fabricate on-site and shop-applied composite wood and agrifiber assemblies must not contain added urea-formaldehyde.

C. Recycled Content:
   1. Any product being installed or used that are listed on EPA Comprehensive Procurement Guidelines designated product list must meet or exceed the EPA's recycled content recommendations. The EPA Comprehensive Procurement Guidelines categories include:
      a. Building insulation.
      b. Cement and concrete.
      c. Consolidated and reprocessed latex paint.
      d. Floor tiles.
      e. Flowable fill.
      f. Laminated paperboard.
      g. Modular threshold ramps.
      h. Nonpressure pipe.
      i. Patio blocks.
      j. Railroad grade crossing surfaces.
      k. Roofing materials.
      l. Shower and restroom dividers/partitions.
      m. Structural fiberboard.
      n. Nylon carpet and nylon carpet backing.
      o. Compost and fertilizer made from recovered organic materials.
      p. Hydraulic mulch.
      q. Lawn and garden edging.
      r. Plastic lumber landscaping timbers and posts.
      s. Park benches and picnic tables.
      t. Plastic fencing.
      u. Playground equipment.
      v. Playground surfaces.
      w. Bike racks.
   2. Provide building materials with recycled content such that post-consumer recycled content value plus half the pre-consumer recycled content value constitutes a minimum of [10] [20] percent of cost of materials used for Project, exclusive of mechanical, electrical and plumbing components, specialty items such as elevators, and labor and delivery costs.

D. Biobased Content:
   1. Materials and equipment being installed or used that are listed on the USDA BioPreferred program product category list must meet or exceed USDA's minimum biobased content threshold. Refer to individual specification sections for detailed requirements applicable to that section.
      a. USDA BioPreferred program categories include:
         1) Adhesive and Mastic Removers.

2) Carpets.
3) Cleaners.
4) Composite Panels.
5) Corrosion Preventatives.
6) Erosion Control Materials.
7) Dust Suppressants.
8) Fertilizers.
9) Floor Cleaners and Protectors.
10) Floor Coverings (Non-Carpet).
11) Glass Cleaners.
12) Hydraulic Fluids.
13) Industrial Cleaners.
14) Interior Paints and Coatings.
15) Mulch and Compost Materials.
16) Multipurpose Cleaners.
17) Multipurpose Lubricants.
18) Packaging Films.
19) Paint Removers.
20) Plastic Insulating Foam.
21) Pneumatic Equipment Lubricants.
22) Roof Coatings.
23) Wastewater Systems Coatings.
24) Water Tank Coatings.
25) Wood and Concrete Sealers.
26) Wood and Concrete Stains.

E. Materials, products, and equipment being installed which fall into a category covered by the WaterSense program must be WaterSense-labeled or meet or exceed WaterSense program performance requirements, unless disallowed for infection control reasons.

F. Materials, products, and equipment being installed which fall into a category covered by the Energy Star program must be Energy Star-labeled.

1. Energy Star product categories as of 05/19/2015 include:
   a. Appliances:
      1) Air Purifiers and Cleaners.
      2) Clothes Dryers (Residential).
      3) Clothes Washers (Commercial).
      4) Clothes Washers (Residential).
      5) Dehumidifiers.

6) Dishwashers (Residential).
7) Freezers (Residential).

b. Electronics and Information Technology:
1) Audio/Video Equipment.
2) Computers: Desktops, Workstations, and Thin Clients.
3) Computers: Notebooks and Integrated Computers.
4) Small-Scale Servers.
5) Data Center Storage.
6) Displays.
7) Enterprise Servers.
8) Imaging Equipment.
9) Set-Top and Cable Boxes.
10) Telephones.
11) Televisions.
12) Uninterruptible Power Supplies.

c. Food Service Equipment (Commercial):
1) Dishwashers.
2) Fryers.
3) Griddles.
4) Hot Food Holding Cabinets.
5) Ice Machines, Air-Cooled.
6) Ovens.
7) Refrigerated Beverage Vending Machines.
8) Refrigerators and Freezers.
9) Steam Cookers.

d. Heating and Cooling Equipment:
1) Air-Source Heat Pumps (Residential).
2) Boilers (Residential).
3) Ceiling Fans (Residential).
4) Central Air Conditioners (Residential).
5) Gas Furnaces (Residential).
6) Gas Storage Water Heaters (Residential).
7) Gas Water Heaters (Commercial).
8) Geothermal Heat Pumps (Residential).
9) Heat Pump Water Heaters (Residential).
10) Light Commercial Heating and Cooling Equipment.
11) Room Air Conditioners (Residential).

12) Solar Water Heaters (Residential).
13) Ventilation Fans (Residential).
14) Whole-Home Tankless Water Heaters (Residential).

e. Other:
1) Cool Roof Products.
2) Decorative Light Strings.
3) Pool Pumps.
4) Water Coolers.
5) Windows, Doors, and Skylights.

G. Materials, products, and equipment being installed which fall into a category covered by the FEMP program must be FEMP-designated. FEMP-designated product categories as of 05/19/2015 include:
1. Food Service Equipment (Commercial):
a. Ice Machines, Water-Cooled.
2. Heating and Cooling Equipment:
a. Boilers (Commercial).
b. Electric Chillers, Air-Cooled (Commercial).
c. Electric Chillers, Water-Cooled (Commercial).
d. Electric Resistance Water Heaters (Residential).
3. Lighting Equipment:
a. Exterior Lighting.
b. Fluorescent Ballasts.
c. Fluorescent Luminaires.
d. Industrial Lighting (High/Low Bay).
e. Suspended Luminaires.
4. Other Equipment:
a. Pre-Rinse Spray Valves.

H. Electronic products and equipment being installed which fall into a category covered by EPEAT program must be EPEAT registered.
1. Electronic products and equipment covered by EPEAT program as of 05/19/2015 include:
a. Computers: Desktops, Workstations, and Thin Clients.
b. Computers: Notebooks and Integrated Computers.
c. Displays.
d. Imaging Equipment.
e. Televisions.

PART 3 - EXECUTION

3.1 FIELD QUALITY CONTROL

A. Irrigation professionals must be certified under a WaterSense labeled certification program.

B. Construction Indoor Air Quality Management:
   1. During construction, meet or exceed recommended control measures of ANSI/SMACNA 008-2008, Chapter 3.
   2. Protect stored on-site and installed absorptive materials from moisture damage.
   3. If permanently installed air handlers are used during construction, filtration media with a minimum efficiency reporting value (MERV) of 8 must be used at each return air grille, as determined by ASHRAE Standard 52.2-1999 (with errata but without addenda). Replace all filtration media immediately prior to occupancy.
   4. Perform building flush-out as follows:
      a. After construction ends, prior to occupancy and with interior finishes installed, perform a building flush-out by supplying a total volume of 14000 cu. ft. of outdoor air per sq. ft. of floor area while maintaining an internal temperature of at least 60 degrees Fahrenheit and a relative humidity no higher than 60 percent. OR
      b. If occupancy is desired prior to flush-out completion, the space may be occupied following delivery of a minimum of 3500 cu. ft. of outdoor air per sq. ft. of floor area to the space. Once a space is occupied, it must be ventilated at a minimum rate of 0.30 cfm per sq. ft. of outside air or design minimum outside air rate determined in Prerequisite EQ 1, whichever is greater. During each day of flush-out period, ventilation must begin a minimum of three hours prior to occupancy and continue during occupancy. These conditions must be maintained until a total of 14000 cu. ft./sq. ft. of outside air has been delivered to the space.

3.2 ATTACHMENTS

A. Checklist – Florida Green Building Coalition.

END OF SECTION

SECTION 01 81 13

SUSTAINABLILITY CERTIFICATION REQUIREMENTS - FGBC

PART 1 - GENERAL

1.1 DESCRIPTION

A. This section describes general requirements and procedures to comply with the commercial building certification requirements of the Florida Green Building Coalition. These requirements are additional and compatible requirements to objectives of Section 08 11 13, SUSTAINABLE CONSTRUCTION REQUIREMENTS.
B. Other Florida Green Building Coalition prerequisites and credits needed to obtain Florida Green Building Coalition certification depend on material selections and may not be specifically identified as Florida Green Building Coalition requirements. Compliance with requirements needed to obtain Florida Green Building Coalition prerequisites and credits may be used as one criterion to evaluate substitution requests and comparable product requests.
C. Additional Florida Green Building Coalition prerequisites and credits needed to obtain the indicated Florida Green Building Coalition certification depend on Architect's design and other aspects of Project that are not part of the Work of the Contract.
D. A copy of the Florida Green Building Coalition Project checklist is attached at the end of this Section for information only.

1.2 RELATED WORK

A. General sustainable requirements: Section 01 81 13 SUSTAINABLE CONSTRUCTION REQUIREMENTS.
B. Construction waste management and disposal: Section 01 74 19 CONSTRUCTION WASTE MANANGEMENT.

1.3 DEFINITIONS

A. Chain-of-Custody Certificates: Certificates signed by manufacturers certifying that wood used to make products was obtained from forests certified by an FSC-accredited certification body to comply with FSC STD-01-001, "FSC Principles and Criteria for Forest Stewardship." Certificates shall include evidence that manufacturer is certified for chain of custody by an FSC-FSC-accredited certification body.

B. Rapidly Renewable Materials: Materials made from plants that are typically harvested within a 10-year or shorter cycle. Rapidly renewable materials include products made from bamboo, cotton, flax, jute, straw, sunflower seed hulls, vegetable oils, or wool.

C. Regional Materials: Materials that have been extracted, harvested, or recovered, as well as manufactured, within 700 miles of Project site. If only a fraction of a product or material is extracted/harvested/recovered and manufactured locally, then only that percentage (by weight) shall contribute to the regional value.

D. Recycled Content: The recycled content value of a material assembly shall be determined by weight. The recycled fraction of the assembly is then multiplied by the cost of assembly to determine the recycled content value.

E. "Post-consumer" material is defined as waste material generated by households or by commercial, industrial, and institutional facilities in their role as end users of the product, which can no longer be used for its intended purpose.

F. "Pre-consumer" material is defined as material diverted from the waste stream during the manufacturing process. Excluded is reutilization of materials such as rework, regrind, or scrap generated in a process and capable of being reclaimed within the same process that generated it.

G. Recycled Content: The percentage by weight of constituents that have been recovered or otherwise diverted from the solid waste stream, either during the manufacturing process (pre-consumer), or after consumer use (post-consumer).

H. Spills and scraps from the original manufacturing process that are combined with other constituents after a minimal amount of reprocessing for use in further production of the same product are not recycled materials.

I. Discarded materials from one manufacturing process that are used as constituents in another manufacturing process are pre-consumer recycled materials.

1.4 SUBMITTALS

A. Provide submittals to Architect; provide additional copies of typical submittals required under technical section, when sustainability certification requires copies of record submittals.
B. Sustainable Construction Documentation Submittals: Sustainable construction documentation submittals are in addition to other submittals and must be differentiated from items submitted to comply with other requirements, such as Product Data and Certificates.
C. Project Materials Cost Data: Provide statement indicating total cost for materials used for Project. Costs exclude labor, overhead, and profit. Include breakout of costs for following categories of items:

1. Plumbing.
2. Mechanical.
3. Electrical.
4. Specialty items such as elevators and equipment.
5. Wood-based construction materials.

1.5 QUALITY ASSURANCE

A. FGBC Designated Professional: Engage an experienced sustainability professional to coordinate FGBC requirements.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Deliver, store, and handle organic building materials capable of absorbing moisture, to prevent deterioration or damage due to moisture, temperature changes, contaminants, or corrosion.

B. Protect stored material from organic matter including leaves, soil, or insects.
C. Do not deliver or install organic materials or materials capable of absorbing moisture until concrete has cured and wet work including painting or similar operations have been completed.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Provide products and procedures necessary to comply with FGBC requirements referenced in this section. Although specifications include requirements that contribute to referenced FGBC requirements, contractor determines additional materials and procedures necessary to comply with FGBC requirements indicated.

PART 3 - EXECUTION

3.1 NONSMOKING BUILDING

A. Smoking is not permitted within the building or within 8 M (25 feet) of entrances, operable windows, or outdoor-air intakes. Owner to provide

3.2 CONSTRUCTION INDOOR-AIR-QUALITY MANAGEMENT AND ASSESSMENT

A. Comply with Section 08 11 13 SUSTAINABLE CONSTRUCTION REQUIREMENTS.

END OF SECTION

FINAL PROJECT POINTS				Project Summary
Current Project Score		0	Points Below Category Minimum	
Total Points Available		Final Points Achieved	95	
Category 1	9	0	0	**Category 1: Project Management Points (Minimum Required Points: 0)**
Prereq 1.1	R			**Green Project Meeting**
PM1	3	0		Building Information Modeling
PM2	5	0		Cost Benefit Analysis
PM3	1	0		Green Education
Category 2	144	0	30	**Category 2: Energy Points (Minimum Required Points: 30)**
Prereq 2.1	R			**Owner Project Requirements (OPR)**
Prereq 2.2	R			**Basis of Design**
Prereq 2.3	R			**Testing and balancing of installed equipment**
Prereq 2.4	R			**Minimum Energy Performance**
Prereq 2.5	R			**Ozone Depletion Potential Management**
E1	2	0		EPA Target Finder
E2	2	0		Portfolio Manager
E3	10	0		Commissioning
E4	70	0		Energy Performance Improvement
E5	2	0		Envelope Testing
E6	28	0		Renewable Energy Production
E7	4	0		Green Power
E8	4	0		Daylight Sensors
E9	4	0		Occupancy Sensors
E10	1	0		Interior Lighting
E11	5	0		Lighting Power Density
E12	2	0		Solar Study of Building
E13	10	0		Energy Monitoring Interface
Category 3	77	0	30	**Category 3: Water Points (Minimum Required Points: 30)**
Prereq 3.1	R			**Water Use Reduction, acquire at least 3 points from Section W1 (i.e. any combination of W1.1 - W1.6)**
Prereq 3.2	R			**No Invasive (native or exotic) Plants**
Prereq 3.3	R			**Irrigation zones for turf and landscape beds are separate**
Prereq 3.4	R			**Rain shut off device installed CORRECTLY and operable**
Prereq 3.5	R			**Drought Tolerant Landscape, 25%**
W1	15	0		Interior Water Use
W2	4	0		Greywater Reuse
W3	10	0		Rainwater Harvesting
W4	26			Installed Landscape
W5	7	0		Water Conservation Certifications
W6	15	0		Installed Irrigation
Category 4	75	0	10	**Category 4: Site Points (Minimum Required Points: 10)**
Prereq 4.1	R			**Copy of Stormwater Pollution Prevention Plan (SWPPP) and Florida Department of Environmental Protection**
S1	3	0		FDEP Professional
S2	22	0		Site Selection
S3	7	0		Site Enhancement
S4	9	0		Reduce Heat Islands - Hardscape
S5	4	0		Reduce Heat Islands - Roof
S6	4	0		Reduce Heat Islands - Building
S7	18	0		Stormwater
S8	4	0		Vehicular Transportation Alternatives
S9	4	0		Exterior Lighting (not attached to building)
Category 5	42	0	10	**Category 5: Health (Minimum Required Points: 10)**
Prereq 5.1	R			**Environmental Tobacco Smoke (ETS) Control**
Prereq 5.2	R			**Indoor Air Quality (IAQ) Management Plan, During Construction**
H1	14	0		Protect, Monitor, and Remediate Poor IAQ
H2	7	0		Low Emitting Materials
H3	8	0		System Controls
H4	13	0		Productive Work Environment
Category 6	39	0	5	**Category 6: Materials (Minimum Required Points: 5)**
Prereq 6.1	R			**Storage & Collection of Recyclables**
M1	21	0		Material Efficiency and Global Responsibility
M2	9	0		Waste Management
M3	9	0		Local/Regional Materials
Category 7	33	0	10	**Category 7: Disaster Mitigation (Minimum Required Points: 10)**
DM1	16	0		Hurricane Resistance
DM2	9	0		Pest Management
DM3	6	0		Flood
DM4	2	0		Fire Resistance

SECTION 01 91 13

GENERAL COMMISSIONING REQUIREMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes general requirements that apply to the implementation of Commissioning without regard to specific systems, assemblies, or components.

1.3 DEFINITIONS

A. Basis of Design (BOD): A document that records concepts, calculations, decisions, and product selections used to meet the Owner's Project Requirements and to satisfy applicable regulatory requirements, standards, and guidelines. The document includes both narrative descriptions and lists of individual items that support the design process.

B. Commissioning or Commissioning Process: A process used to evaluate and verify that building systems are installed, calibrated, functionally tested and perform according to the Owner's Project Requirements, Basis of Design and the Contract Documents.

C. Commissioning Plan: A document outlining the organization, schedule, and allocation of resources, and documents the requirements to perform the commissioning process.

D. Commissioning Report: A document that records the activities and results of the commissioning process.

E. Commissioning Team: The individuals responsible for implementing the commissioning process.

F. Construction Checklist: A form used by the Contractor to verify that appropriate components are on-site, ready for installation, correctly installed and functional.

G. Functional Performance Test: A dynamic testing of systems (rather than just components) under full operation. Testing occurs in various modes and temperatures to simulate normal operating conditions.

H. Issues Log: A formal and ongoing record of issues and resolutions documented by the Commissioning Team.

I. Owner's Project Requirements (OPR): A document detailing the functional requirements of a project and expectations of how the facility will be used and operated. These include project goals, measurable performance criteria, cost considerations, benchmarks, success criteria, and

supporting information.

J. Start-up Report: A document describing the initial start-up or activation of dynamic equipment.

K. Systems Manual: The systems-focused composite document that focuses on the operation of the building systems and provides information to understand, operate, and maintain the equipment and systems. Typical documents include sequences of operation, initial setpoints, training plans, and commissioning records. This document is in addition to the record construction drawings, documents, and the Operation and Maintenance (O&M) Manuals.

1.4 COORDINATION

A. The Commissioning Team consists of individuals, each having the authority to act on behalf of the entity he or she represents, explicitly organized to implement the commissioning process through coordinated action. The commissioning team shall consist of, but not be limited to, representatives of the Building Owner, Architect, Engineer, and Contractor, including subcontractors, installers, suppliers, and specialists deemed appropriate.

1.5 COMMISSIONING PROCESS

A. The following activities describe commissioning tasks conducted and coordinated by the Commissioning Team prior to and/or during construction in order of occurrence.

1. Develop the OPR to record and detail the functional requirements of a project, Owner's expectations, goals, and objectives of how a facility will be used and operated as related to the building systems being commissioned.
2. Develop the BOD to provide the design team's response to the Owner's Project Requirements and to satisfy applicable regulatory requirements, standards and guidelines and to record the designer's concepts, assumptions, engineering criteria, decisions, selections, and references.
3. Develop a Commissioning Plan to outline the commissioning goals, activities, equipment installation checkout, Functional Performance Tests, commissioning process, project team roles and responsibilities.
4. Schedule and conduct a commissioning kick-off meeting. Members of construction team involved in Commissioning Process shall meet and agree on responsibilities of work, tasks, schedules, deliverables, and implementation of the Commissioning Plan.
5. Schedule and conduct regular commissioning meetings.
6. Complete Construction Checklists and Start-up Reports before and during the equipment and system startup process.
7. Record noted deficiencies discovered as a result of the Commissioning Process in the Issues Log. Deficiencies are defined as those issues where equipment, system, or device performance does not satisfy the Contract Documents, OPR or BOD.
8. Conduct Functional Performance Tests (FPT) utilizing specific equipment and system functional performance test procedures to evaluate and verify system performance.
9. Assemble documents, records, reports, and additional information specific to the operation, integration, repair, training, and maintenance of building systems into a Systems Manual.
10. Verify and document training of the Owner's operation and maintenance personnel on building systems, controls, equipment, and assemblies.
11. Develop a Commissioning Report that summarizes the commissioning activities,

tasks, and findings and documents the commissioning process.

1.6 CONTRACTOR RESPONSIBILITIES

A. The Commissioning (Cx) process does not relieve or reduce responsibility of installing contractors to provide finished and fully functioning equipment and systems.

B. Contractor shall assign representatives with expertise and authority to act on its behalf and shall schedule them to participate in and perform commissioning process activities including, but not limited to, the following:

1. Attend commissioning kick-off meeting and Commissioning Team meetings held on a monthly basis or as determined by the Commissioning Team.
2. Integrate and coordinate Commissioning Process activities into the master construction schedule.
3. Develop, provide, and complete required Construction Checklists and Start-up Reports.
4. Cooperate with the Commissioning Team members for resolution of issues recorded in the Issues Log.
5. Develop Functional Performance Test procedures for systems and equipment undergoing commissioning.
6. Execute Functional Performance Tests and evaluate performance deficiencies identified in test reports and resolve deficiencies in collaboration with the entity responsible for system and equipment installation.
7. Develop and prepare a Systems Manual.
8. Document training of Owner's operation and maintenance staff.
9. Develop a Commissioning Report.

1.7 EQUIPMENT TO BE COMMISSIONED

A. Heating, Ventilating, Air Conditioning (HVAC) Systems

B. Indoor Lighting Control Systems

C. Domestic Hot Water Heating & Circulation

D. Irrigation Control Systems

PART 2 – PRODUCTS

2.1 TESTING EQUIPMENT

A. Standard testing equipment required to perform startup, initial checkout and required functional performance testing to be provided by Division Contractor for equipment being tested.

B. Testing equipment to be of sufficient quality and accuracy to test or measure system performance.

C. Data logging equipment or software required to test equipment to be provided by Contractor.

PART 3 – EXECUTION

3.1 MEETINGS

A. Commissioning Meetings:
   1. Commissioning meetings shall be planned, scheduled, and conducted with Commissioning Team in attendance.
   2. Commissioning meetings topics are to include, but not limited to, schedule, coordination, documentation, and deficiency resolution.
   3. Commissioning meeting minutes shall be recorded and distributed to Commissioning Team.

3.2 CONSTRUCTION CHECKLISTS AND START-UP REPORTS

A. Develop and complete Construction Checklists for major equipment and systems being commissioned.
   1. Document systems, equipment, nameplates and characteristic data and confirm as- built status of equipment or system.
   2. Verify systems and equipment are operational, installed correctly, and complete.
   3. Provide checklists to the Commissioning Team for review.

B. Start-up Reports
   1. Coordinate equipment startup and checkout with Owner, and members of the Commissioning Team
   2. Provide start-up reports to the Commissioning Team for review.
   3. Commissioning Team members may observe start-up for each piece of primary equipment.

3.3 FUNCTIONAL PERFORMANCE TESTING

A. Objectives and Scope:
   1. Demonstrate each system is operating according to the OPR, BOD and Contract Documents.
   2. Functional Performance Testing is comprised of tests to verify components, equipment, systems, and interfaces between systems operate correctly and includes operating modes, interlocks, control sequences, and responses to emergency conditions.

B. Development of Functional Performance Test (FPT) Procedures:
   1. Develop FPT procedures.
   2. Commissioning Team to review FPT procedures prior to execution for feasibility, accuracy, safety, and equipment and warranty protection.
   3. FPT Procedures shall include the following information:
      a. Project name
      b. Date of test
      c. FPT ID number
      d. System ID
      e. System type
      f. Test technicians and participating parties
      g. Specific step-by-step procedures to execute test

h. Acceptance criteria of proper performance and Pass-Fail status
i. Section for comments or notes

C. Execution of Functional Performance Tests:
1. Test Methods: Functional performance testing and evaluation to be achieved by various methods including; direct manipulation of system inputs (i.e. heating or cooling sensors, electrical switches, etc.), manipulation of system inputs with building automation system (i.e. software override of sensor inputs), schedules, trend logs of system inputs and outputs using building automation system.
a. Contractor shall perform the functional performance tests.
b. Commissioning Team members will be notified of testing schedule and may witness Functional Performance Testing.
2. Setup: Each test procedure is performed under conditions that simulate normal operating conditions as closely as possible.
a. Contractor executing test provides necessary system modifications to produce specified conditions (flows, pressures, temperatures, etc.) necessary to execute test and, at completion of test, returns affected building equipment and systems to their pre-test conditions.

D. Coordination and Scheduling: Contractor to provide sufficient notice to Commissioning Team regarding completion schedule of construction checklists and startup of systems and equipment.
1. Schedule Functional Performance Tests once the following sequential priorities are completed:
a. Construction Checklists have been completed, reviewed, and accepted by the Commissioning Team.
b. Equipment pre-start checklist items and manufacturer's pre-start procedures are completed and moisture, dust and other environmental and building integrity issues have been addressed.
c. Testing, Adjusting, and Balancing of systems and equipment is completed.
d. Control systems (HVAC, lighting, etc.) critical to the operation of the building have undergone a preliminary checkout, calibration, and testing.

3.4 DOCUMENTATION, NON-CONFORMANCE AND APPROVAL OF TESTS

A. Documentation:
1. Document results of Functional Performance Tests using forms developed for that purpose.

B. Non-Conformance:
1. Identify and verify deficiencies on standard form and report to the Commissioning Team.
2. Include deficiencies in the Issues Log.
3. Review Issues Log and resolve issues related to testing.
4. Reschedule and repeat testing.
5. In the event additional testing does not meet the performance requirements, Contractor shall resolve issues and repeat tests until satisfactory performance is achieved.

3.5 SYSTEMS MANUAL

A. Documentation:
   1. Collect and organize documents that are specific to the operation and maintenance of the systems and equipment installed in the building.
   2. The Systems Manual shall be completed prior to the training of the Owner's operation and maintenance staff.
   3. The Systems Manual shall include, but not be limited to, the following information:
      a. Site Information, including facility description, project documents, and current building requirements.
      b. Site Contact Information.
      c. Basic operation and maintenance; including general site operating procedures, troubling shooting, recommended maintenance events log, and location of operation and maintenance documents.
      d. Major Systems, including HVAC, lighting, domestic hot water, and landscape irrigation.

3.6 TRAINING

A. Documentation:
   1. Document training of the Owner's operation and maintenance staff for inclusion in the commissioning report and verify the following items:
      a. Systems/equipment overview
      b. Review and demonstration of servicing and preventive maintenance
      c. Review of the information in the Systems Manual
      d. Review of the record drawings on the systems/equipment

3.7 REPORTING

A. Commissioning Report: A Commissioning Report shall be compiled which summarizes tasks, findings, and documentation of the commissioning process.
   1. Report shall address actual performance of building systems in reference to OPR, BOD and Contract Documents.
   2. Report includes:
      a. Executive Summary
      b. History of system deficiencies
      c. Functional performance testing results
      d. Training process, procedures, and outcomes
      e. Summary of commissioning activities
      f. Recommendations

END OF SECTION

SECTION 02 20 10

SUBSURFACE INVESTIGATIONS AND SOIL BORINGS

PART 1. GENERAL

1.1 SOIL BORING INFORMATION AND GEOTECHNICAL TESTING

A. A subsoil investigation report prepared by Geosol Inc., is reproduced and included in these specifications.

B. The interpretation of conditions between said test borings is not guaranteed by the Owner or the Architect and it shall be the Contractor's responsibility.

C. The Contractor shall visit the project site, and at his option and prior to submitting his Bid Documents, may perform his own substrate investigation at this own expenses, after receiving written permission from the Owner.

D. All density and soil compaction and soil preparation testing shall be in accordance with the Geosol Inc. Report dated October 2, 2015. General Contractor shall retain Geosol Inc, to perform all field testing and certification required for this project. This is required to maintain consistency on all soils work.

PART 2. PRODUCTS "Not Applicable"

PART 3. EXECUTION "Not Applicable"

END OF SECTION

SECTION 02 21 20
MILLING OF EXISTING ASPHALT PAVEMENT

PART I. GENERAL

1.01 RELATED DOCUMENTS
A. All applicable provisions of the Bidding and Contract Requirements, and Division 1 – General Requirements shall govern the work under this Section.

1.02 WORK INCLUDED
A. Remove existing asphalt concrete pavement by milling to improve the rideability and cross slope of the finished pavement, to lower the finished grade adjacent to existing curb prior to resurfacing, or to completely remove existing pavement.

B. When milling to improve rideability, the plans will specify an average depth of cut.

C. Contractor to take ownership of milled material.

PART II. PRODUCT

2.01 EQUIPMENT
A. Provide a milling machine capable of maintaining a depth of cut and cross slope that will achieve the results specified in the Contract Documents. Use a machine with a minimum overall length (out to out measurement excluding the conveyor) of 18 feet and a minimum cutting width of 6 feet.

B. Equip the milling machine with a built-in automatic grade control system that can control the transverse slope and the longitudinal profile to produce the specified results.

C. To start the project, the Engineer will approve any commercially manufactured milling machine that meets the above requirements. If it becomes evident after starting milling that the milling machine cannot consistently produce the specified results, the Engineer will reject the milling machine for further use.

D. The Contractor may use a smaller milling machine when milling to lower the grade adjacent to existing curb or other areas where it is impractical to use the above described equipment.

E. Equip the milling machine with means to effectively limit the amount of dust escaping during the removal operation.

F. For complete pavement removal, the Engineer may approve the use of alternate removal and crushing equipment in lieu of the equipment specified above.

PART III. EXECUTION

3.01 MILLING
A. Remove the existing raised reflective pavement markers prior to milling. Include the cost of removing existing pavement markers in the price for milling.

B. When milling to improve rideability or cross slope, remove the existing pavement to the average depth specified in the plans, in a manner that will restore the pavement surface to a uniform cross-section and longitudinal profile. The Engineer may require the use of a stringline to ensure maintaining the proper alignment.

C. Establish the longitudinal profile of the milled surface in accordance with the milling plans. Ensure that the final cross slope of the milled surface parallels the surface cross slope shown on the plans or as directed by the Engineer. Establish the cross slope of the milled surface by a second sensing device near the outside edge of the cut or by an automatic cross slope control mechanism. The plans may waive the requirement of automatic grade or cross slope controls where the situation warrants such action.

D. Multiple cuts may be made to achieve the required pavement configuration or depth of cut. Include in the Quality Control Plan a system to control the cross slope of the milling surface with a minimum frequency of one cross slope measurement every 250 feet during milling operations in order to ensure that the slopes are uniform and in compliance with the designed milling slope. When the difference between the measured cross slope and the designed cross slope exceeds ±0.2% for travel lanes (including turn lanes) and ±0.5% for shoulders, make all corrections immediately to bring the cross slope into an acceptable range. The Engineer will periodically verify the Contractor's measurements at the job site.

E. The Engineer will randomly take ten measurements of the cross slope per day for the first two days of milling operation. If the average cross slope of the ten random measurements per day varies more than the required tolerance (0.2% for travel lanes including turn lanes and 0.5% for shoulders), the milling operation shall be stopped until appropriate corrective actions are made to bring the cross slope into an acceptable range. Approval of the Engineer will be required prior to resuming the milling operation.

F. A recheck of ten random measurements will be made after corrective actions are taken. If the recheck indicates that the cross slope is out of control, the deficient section(s) shall be corrected to bring the cross slope into an acceptable range. During milling operations, the Engineer reserves the right to take ten cross slope measurements per day. If the average cross slope of the ten measurements varies more than the permissible tolerance, the milling operation will be stopped until appropriate corrective actions are made to bring the cross slope into an acceptable range and the deficient sections shall be corrected accordingly.

G. The Engineer may waive the corrections specified above if an engineering determination indicates that the deficiencies are sufficiently separated so as not to significantly affect the final cross slope.

H. For intersections, tapers, crossovers, transitions at the beginning and end of the project and in other similar areas, the cross slope will be adjusted as directed by the Engineer to match the actual site conditions.

I. Operate the milling machine to minimize the amount of dust being emitted. The Engineer may require prewetting of the pavement.

J. Provide positive drainage of the milled surface and the adjacent pavement. Perform this operation on the same day as milling. Repave all milled surfaces no later than the day after the surface was milled unless otherwise stated in the plans.

K. If traffic is to be maintained on the milled surface prior to the placement of the new asphalt concrete, provide suitable transitions between areas of varying thickness to create a smooth longitudinal riding surface. Produce a pattern of striations that will provide an acceptable riding surface. The Engineer will control the traveling speed of the milling machine to produce a texture that will provide an acceptable riding surface.

L. Prior to opening an area which has been milled to traffic, sweep the pavement with a power broom or other approved equipment to remove, to the greatest extent practicable, fine material which will create dust under traffic. Sweep in a manner that will minimize the potential for creation of a traffic hazard and to minimize air pollution.

M. Sweep the milled surface with a power broom prior to placing asphalt concrete.

N. In urban and other sensitive areas, use a street sweeper or other equipment capable of removing excess milled materials and controlling dust. Obtain the Engineer's approval of such equipment, contingent upon its demonstrated ability to do the work.

O. Perform the sweeping operation immediately after the milling operations or as directed by the Engineer.

3.02 MILLED SURFACE

A. Provide a milled surface with a reasonably uniform texture, within 1/4 inch of a true profile grade, and with no deviation in excess of 1/4 inch from a straightedge applied to the pavement perpendicular to the centerline.

B. Ensure that the variation of the longitudinal joint between multiple cut areas does not exceed 1/4 inch. The Engineer may accept areas varying from a true surface in excess of the above stated tolerance without correction if the Engineer determines that they were caused by a pre-existing condition which could not have reasonably been corrected by the milling operations.

C. Correct any unsuitable texture or profile, as determined by the Engineer, at no additional expense to the OWNER.

D. The Engineer may require re-milling of any area where a surface lamination causes a non-uniform texture to occur.

E. Refer to Section 32 40 00 for specifications on resurfacing of asphaltic pavement.

3.03 MEASUREMENT AND PAYMENT

A. Price and payment will be full compensation for all work specified in this Section, including hauling off and stockpiling or otherwise disposing of the milled material. Payment will be made for the plan quantity area, in square yards, over which milling is completed and accepted as more specifically discussed and described in SECTION 01 20 00 for PRICE AND PAYMENT PROCEDURES.

END OF SECTION

SECTION 02 30 00
SUB-SURFACE INVESTIGATION

PART I. GENERAL

1.01 RELATED DOCUMENTS
A. All applicable provisions of the bidding and Contract Requirements, and Division 1 - General Requirements shall govern the work under this section.

1.02 WORK INCLUDED
A. If exploratory sub-surface test holes investigation is provided in the drawings, they are provided as a reference only. Provide all labor, materials, necessary equipment and services to complete the exploratory sub-surface test hole investigation work for existing underground utilities, as indicated on the drawings, as specified herein or both.

B. The exploratory sub-surface investigation for conditions of the project site is the sole responsibility of the CONTRACTOR. In preparing the Bid, the CONTRACTOR shall make all exploratory sub-surface or surface investigations necessary to provide proper background and knowledge to determine the nature and extent of work required.

C. The soil boring information, included in Appendix A, is provided as a reference only. CONTRACTOR must be aware that soil conditions may vary throughout the project. The CONTRACTOR is responsible for investigation and satisfying themselves as to the nature and extent of soil and (underground) water conditions on the project site.

D. OWNER or OWNER's Representative makes no warranties or guarantees concerning the nature of materials to be encountered on the site.

1.03 RELATED WORK
A. Section 31 10 00 - Clearing.

B. Section 31 00 00 - Earthwork.

C. Section 33 10 00 – Water Distribution System.

D. All applicable sections under Divisions 1, 2, 3, and 4.

PART II. PRODUCTS (Not Applicable)

PART III. EXECUTION

3.01 MEASUREMENT AND PAYMENT
A. There shall be no special measurement or payment for the work under this section; it shall be included in the price of all other work.

END OF SECTION

SECTION 02 40 00
DEMOLITION

PART I. GENERAL

1.01 RELATED DOCUMENTS
A. All applicable provisions of the contract, and Division 1 - General Requirements shall govern the work under this section.

1.02 WORK INCLUDED
A. Provide all labor, materials, necessary equipment and services to complete the site demolition work, as indicated on the drawings, as specified herein or both.

1.03 RELATED WORK
A. Section 31 00 00 - Earthwork.
B. All applicable Sections under Divisions 1, 2, and 3.

1.04 QUALITY ASSURANCE
A. CONTRACTOR Qualifications: Minimum of five years of experience in demolition of comparable nature.
B. Requirements of All Applicable Regulatory Agencies:
   1. All applicable Building Codes and other Public Agencies having jurisdiction upon the work.

1.05 SUBMITTALS
A. Permits and notices authorizing building demolition.
B. Certificates of severance of utility services.
C. Permit for transport and disposal of debris.
D. Demolition procedures and operational sequence for review and acceptance by ENGINEER.

1.06 JOB CONDITIONS
A. Existing Conditions
   1. The demolition work shall be done as indicated on the construction plans.
   2. Remove all demolition debris from the site the same day the work is performed. Leave no deposits of demolished material on site overnight.
   3. Structural demolition, excavation, backfill and compaction as indicated in drawings.

B. Protection:
   1. Erect barriers, fences, guardrails, enclosures, and shoring to protect personnel, structures, and utilities remaining intact.
   2. Protect designated trees and plants from damages.
   3. Use all means necessary to protect existing objects and vegetation designated to remain, and, in the event of damage, immediately make all repairs, replacements and dressings to damaged plants necessary, to the approval of the ENGINEER at no additional cost to the OWNER.

C. Maintaining Traffic:
   1. Ensure minimum interference with roads, streets, driveways, sidewalks, and adjacent facilities.
   2. Do not close or obstruct streets and sidewalks without written approval from the OWNER and ENGINEER.
   3. If required by governing authorities, provide alternate routes around closed or obstructed traffic ways.

D. Dust Control:
   1. Use all means necessary for preventing dust from demolition operations from being a nuisance to adjacent property owners. Methods used for dust control are subject to approval by the ENGINEER prior to use.

E. Burning:
   1. On-site burning will not be permitted.

1.07 GENERAL ITEMS

A. Scope of work shall comprise the following: Provide all labor, materials, necessary equipment and services to complete the demolition and clearing work, as indicated on the contract plans, and as specified herein.

B. The CONTRACTOR shall provide references to the OWNER to demonstrate that they are well versed in demolition of a comparable nature. Current occupational licenses held by CONTRACTOR shall be submitted to OWNER.

C. The CONTRACTOR shall be responsible for adherence to all applicable codes of all regulatory agencies having jurisdiction upon the works.

1.08 PRE-DEMOLITION MEETING

A. A meeting shall be held with the OWNER or OWNER's representative at the jobsite to describe intended demolition and cleaning procedures and schedules. This shall include identifying access routes for bringing necessary equipment in, removing debris from site, and designation of any trees, drives or other items to remain.

1.09 EXISTING CONDITIONS

A. The CONTRACTOR shall become thoroughly familiar with the site, and of existing utilities and their connections, and note all conditions, which may influence the work.

B. By submitting a bid, the CONTRACTOR affirms that CONTRACTOR has carefully examined the site and all conditions affecting work. No claim for additional costs will be allowed because of lack of full knowledge of existing conditions.

PART II. PRODUCTS (Not Applicable)

PART III. EXECUTION

3.01 INSPECTION

A. CONTRACTOR shall verify that structures to be demolished are discontinued in use and ready for removal.

B. CONTRACTOR shall not commence work until all conditions and requirements of all applicable public agencies are complied with.

3.02 PREPARATION

A. Arrange for, and verify termination of utility services to include removing meters and capping lines.

B. Notification:

1. Notify the OWNER at least three full working days prior to commencing the work of this Section.

3.03 CLARIFICATION

A. The drawings do not purport to show all objects existing on the site.

B. Before commencing the work of this Section, verify with the OWNER all objects to be removed and all objects to be preserved.

3.04 SCHEDULING

A. Schedule all work in a careful manner with all necessary consideration for the public and the OWNER.

B. Avoid interference with the use of, and passage to and from, adjacent facilities.

3.05 DISCONNECTION OF UTILITIES

A. Before starting site operations, disconnect or arrange for the disconnection of all affected utility service.

1. Arrange and pay for disconnecting, removing, capping, and plugging utility services. Disconnect and stub off. Notify affected utility company in advance and obtain approval before starting this work.
2. Do not interrupt existing utilities serving occupied or used facilities, except when authorized in writing by authorities having jurisdiction.

3. Place markers to indicate location of disconnected services.
4. On-site drainage structures and drain fields shall be removed in their entirety by methods approved by the OWNER's representative.

3.06 PROTECTION OF EXISTING STRUCTURES AND UTILITIES

A. Utility Services: Maintain existing offsite utilities, keep in service, and protect against damage during demolition operations.

B. Prevent movement or settlement of adjacent structures. Provide and place bracing or shoring and be responsible for safety and support of structures. Assume liability for such movement, settlement, damage, or injury.

C. Cease operations and notify OWNER immediately if safety of adjacent structures appears to be endangered. Take precautions to properly support structures. Do not resume operations until safety is restored.

D. Prevent movement, settlement, damage, or collapse of adjacent services, sidewalks, driveways and trees. Assume liability for such movement, settlement, or collapse. Promptly repair damage at no cost to the OWNER.

E. Ensure safe passage of persons around areas of demolition.

3.07 MAINTAINING TRAFFIC

A. Do not interfere with use of adjacent buildings and facilities. Maintain free and safe passage to and from. Conduct demolition operations and removal of debris to ensure minimum interference with roads, streets, walks, and other adjacent occupied or used facilities. Do not close or obstruct streets, walks, or other occupied or used facilities without permission from authorities having jurisdiction. Provide alternate routes around closed or obstructed travel ways if required by governing authorities.

3.08 POLLUTION CONTROLS

A. Use water sprinkling, temporary enclosures, and other suitable methods to limit dust and dirt rising and scattering in air to lowest practical level. Comply with governing regulations pertaining to environmental protection.

B. Clean adjacent structures and improvements of dust, dirt, and debris caused by demolition operations as directed by the OWNER or their representative or governing authorities. Return adjacent areas to condition existing prior to start of work.

3.09 INSPECTION AND PREPARATION

A. Verify that structures to be demolished are discontinued in use and ready for removal.

B. Do not commence work until all conditions and requirements of all applicable public agencies are complied with.

C. Arrange for, and verify termination of utility services to include removing meters and capping lines.

D. The drawings do not purport to show all objects existing on the site; at the pre-demolition meeting before commencement of the work, verify with the OWNER all objects to be removed and all objects to be preserved.

3.10 DEMOLITION

A. Pull out any existing utility lines designated for abandonment, irrigation, electrical lines, pull boxes and splice boxes, MAS and catch basins to be removed and all other objects designated to be removed or interfering with the work. Contact the utility company or agency involved for their requirements for performing this work. All removed equipment and materials shall be removed from the work area the same day as removed.

B. Remove all debris from the site and leave the site in a neat, orderly condition to the full acceptance of the ENGINEER, or the OWNER. No debris shall be left on the site overnight.

C. Clear and Grub and dispose of all trees, shrubs and other organic matter not otherwise addressed on tree removal and relocation plans and specifications.

3.11 DEMOLITION OF SITE STRUCTURES

A. Demolish all site structure items designated to be removed or which are required to be removed to perform the work. This item does not include buildings.

3.12 REMOVAL OF DEBRIS AND DISPOSAL OF MATERIAL

A. Material resulting from demolition and not scheduled for salvaging shall become the property of the CONTRACTOR and shall be removed from site and legally disposed of off-site. Disposal shall be timely, performed as promptly as possible and not left until the final cleanup. Material shall not be left on the job site for more than 60 days.

B. Remove from site contaminated, vermin infested, or dangerous materials encountered and disposed of by safe means so as not to endanger health of workers and public.

C. Burning of removed materials from demolished structures will not be permitted on-site.

3.13 COMPLETION OF WORK

A. Leave the site in a neat, orderly condition to the full acceptance of the OWNER.

B. Dirt remaining after demolition shall be graded level and compacted, in preparation for filling operations to follow demolition. Trenches shall be filled in layers of 12" maximum thickness and compacted in accordance with the technical specifications applicable to backfilling of trenches.

3.14 MEASUREMENT AND PAYMENT

A. Measurement and payment will be based on the actual quantities demolished.

END OF SECTION

SECTION 02 41 16

STRUCTURE DEMOLITION

PART 1. GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes the following:

1. Demolition and removal of buildings and site improvements.
2. Removing below-grade construction.
3. Disconnecting, capping or sealing, and abandoning in-place or removing site utilities.
4. Salvaging items for reuse by Owner.

1.3 RELATED SECTIONS

A. Summary, Division 01 10 00
B. Temporary Facilities and Controls, Section 01 50 00
C. Site Clearing, Division 31

B.

1.4 DEFINITIONS

A. Demolish: Completely remove and legally dispose of off-site.

B. Recycle: Recovery of demolition waste for subsequent processing in preparation for reuse.

C. Salvage: Carefully detach from existing construction, in a manner to prevent damage.

1.5 MATERIALS OWNERSHIP

A. Contractor shall assume no salvage rights.

1.6 SUBMITTALS

A. Schedule of Building Demolition Activities: Indicate the following:

1. Detailed sequence of demolition work, with starting and ending dates for each activity.
2. Temporary interruption of utility services.
3. Shutoff and capping or re-routing of utility services as indicated on drawings.

B. Inventory: Submit a list of items to be removed and salvaged and deliver to Owner prior to start of demolition.

C. Predemolition Photographs and Video: Show existing conditions of adjoining construction and site improvements, including finish surfaces, that might be misconstrued as damage caused by building demolition operations. Comply with Division 1 Section 01 38 00 "Construction Photographs" Submit before the Work begins.

D. Landfill Records: Indicate receipt and acceptance of hazardous wastes by a landfill facility licensed to accept hazardous wastes.

E. Proposed Protection Measures: Submit report, including drawings, that indicates the measures proposed for protecting individuals and property, for environmental protection , for dust control and , for noise control. Indicate proposed locations and construction of barriers.

1.7 PROJECT CONDITIONS

A. Buildings to be demolished will be vacated and their use discontinued before start of the Work. Contractor to coordinate with city.

B. Owner assumes no responsibility for buildings and structures to be demolished.

1. Conditions existing at time of inspection for bidding purpose will be maintained by Owner as far as practical.

C. Hazardous Materials: It is not expected that hazardous materials will be encountered in the Work.

1. If materials suspected of containing hazardous materials are encountered, do not disturb; immediately notify Architect and Owner. Hazardous materials will be removed by Owner under a separate contract.

D. On-site storage or sale of removed items or materials is not permitted.

PART 2. PRODUCTS

2.1 PEFORMANCE REQUIREMENTS

A. Regulatory Requirements: Comply with governing EPA notification regulations before beginning selective demolition. Comply with hauling and disposal regulations of authorities having jurisdiction.

B. Standards: Comply with ANSI/ASSE A10.6 and NFPA 241.

PART 3. EXECUTION

3.1 EXAMINATION

A. Verify that utilities have been disconnected and capped before starting selective demolition operations.

B. Review record documents of existing construction provided by Owner. Owner does not guarantee that existing conditions are same as those indicated in record documents.

C. Survey existing conditions and correlate with requirements indicated to determine extent of selective demolition required.

D. When unanticipated mechanical, electrical, or structural elements that conflict with intended function or design are encountered, investigate and measure the nature and extent of conflict. Promptly submit

a written report to Architect.

E. Engage a professional engineer to perform an engineering survey of condition of building to determine whether removing any element might result in structural deficiency or unplanned collapse of any portion of structure or adjacent structures during selective building demolition operations.

1. Perform surveys as the Work progresses to detect hazards resulting from selective demolition activities.

F. Survey of Existing Conditions: Record existing conditions by use of measured drawings.

3.2 GENERAL

A. Protection:
1. Do not begin demolition until safety partitions, barricades, warning signs and other forms of protection are installed.\
2. Provide safeguards, including warning signs, lights and barricades, for protection of occupants and the general public during demolition.
3. Provide and maintain fire extinguishers. Comply with requirements of governing authorities.
4. Maintain existing utilities which are to remain in service and project from damage during operations.

B. Safety: If at any time safety of existing construction appears to be endangered, take immediate measures to correct such conditions; cease operations and immediately notify the Owner. Do not resume demolition until directed by the Owner.

C. Dust Control: Use water mist, temporary enclosures, and other suitable methods to limit the spread of dust and dirt. Comply with governing environmental protection regulations. Do not create hazardous or objectionable conditions, such as flooding and pollution, when using water.

D. Debris Removal: Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas. Remove debris from elevated portions of building by chute, hoist, or other device that will convey debris to grades level.

E. Progress Cleaning: Clean adjacent buildings and improvements of dust, dirt, and debris caused by demolition operations. Return adjacent areas to condition existing before start of demolition.

3.3 UTILITY SERVICES AND MECHANICAL/ELECTRICAL SYSTEMS

A. Existing Services/Systems to Remain: Maintain services/systems indicated to remain and protect them against damage.

B. Existing Services/Systems to Be Removed, Relocated, or Abandoned: Locate, identify, disconnect, and seal or cap off indicated utility services and mechanical/electrical systems serving areas to be selectively demolished.

3.4 PREPARATION

A. Site Access and Temporary Controls: Conduct selective demolition and debris-removal operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and

used facilities.

1. Comply with requirements for access and protection specified in Section 015000 "Temporary Facilities and Controls."

B. Temporary Facilities: Provide temporary barricades and other protection required to prevent injury to people and damage to adjacent buildings and facilities to remain.

C. Temporary Shoring: Provide and maintain shoring, bracing, and structural supports as required to preserve stability and prevent movement, settlement, or collapse of construction and finishes to remain, and to prevent unexpected or uncontrolled movement or collapse of construction being demolished.

3.5 SELECTIVE DEMOLITION, GENERAL

A. General: Demolish and remove existing construction only to the extent required by new construction and as indicated. Use methods required to complete the Work within limitations of governing regulations.

B. Removed and Salvaged Items:

1. Clean salvaged items.
2. Pack or crate items after cleaning. Identify contents of containers.
3. Store items in a secure area until delivery to Owner.
4. Transport items to Owner's storage area designated by Owner.
5. Protect items from damage during transport and storage.

3.6 SELECTIVE DEMOLITION PROCEDURES FOR SPECIFIC MATERIALS

A. Concrete: Demolish in small sections. Using power-driven saw, cut concrete to a depth of at least 3/4 inch (19 mm) at junctures with construction to remain. Dislodge concrete from reinforcement at perimeter of areas being demolished, cut reinforcement, and then remove remainder of concrete. Neatly trim openings to dimensions indicated.

B. Concrete: Demolish in sections. Cut concrete full depth at junctures with construction to remain and at regular intervals using power-driven saw, then remove concrete between saw cuts.

C. Masonry: Demolish in small sections. Cut masonry at junctures with construction to remain, using power-driven saw, and then remove masonry between saw cuts.

D. Concrete Slabs-on-Grade: Saw-cut perimeter of area to be demolished, then break up and remove.

E. Resilient Floor Coverings: Remove floor coverings and adhesive according to recommendations in RFCI's "Recommended Work Practices for the Removal of Resilient Floor Coverings." Do not use methods requiring solvent-based adhesive strippers.

F. Roofing: Remove no more existing roofing than what can be covered in one day by new roofing and so that building interior remains watertight and weather tight.

1. Remove existing roof membrane, flashings, copings, and roof accessories.
2. Remove existing roofing system down to substrate.

3.7 DISPOSAL OF DEMOLISHED MATERIALS

A. General: Except for items or materials indicated to be recycled, reused, salvaged, reinstalled, or otherwise indicated to remain Owner's property, remove demolished materials from Project site and legally dispose of them in an EPA-approved landfill.

B. Burning: Do not burn demolished materials.

C. Disposal: Transport demolished materials off Owner's property and legally dispose of them

3.8 PATCHING AND RESTORATION

A. Patching: Where removals leave holes and damaged surfaces that will be exposed in the completed construction, such holes and damaged surfaces shall be patched and resorted to match adjacent finished surfaces.

B. Restoration of Site Finishes.
1. Concrete paving.
2. Bituminous paving.
3. Restoration of paving.
4. Restoration of landscaping planting.

3.9 CLEANING

A. Clean adjacent structures and improvements of dust, dirt, and debris caused by selective demolition operations. Return adjacent areas to condition existing before selective demolition operations began.

B. Manage construction waste in accordance with provisions of Section 01 74 19 Construction Waste Management and Disposal. Submit documentation to satisfy the requirements of that Section.

1. Set aside scrap material to be returned to manufacturer for recycling into new product.

END OF SECTION

SECTION 02 87 10
BIKE RACKS

GENERAL

1.1 SUMMARY

A. This section includes specifications for the Bike Hitch.
   1. Bikes parked per unit: 2

1.2 QUALITY ASSURANCE

A. Installer Qualifications: An experienced installer who has completed installation of bicycle racks similar in material, design, and extent to that indicated for this project and whose work has resulted in construction with a record of successful in-service performance.
B. Manufacturer Qualifications: A firm experienced in manufacturing bicycle racks similar to those required for this project and with a record of successful in-service performance.
C. Source Limitations: Obtain each color, finish, shape and type of bicycle rack from a single source with resources to provide components of consistent quality in appearance and physical properties.
D. Product Options: Drawings indicate size, shape and dimensional requirements of bicycle racks and are based on the specific system indicated.

1.3 SUBMITTALS

A. Product Data: Include physical characteristics such as shape, dimensions, bicycle parking capacity and finish for each bicycle rack.
B. Shop Drawings: Show installation details for each bicycle rack.
C. Maintenance Data: For each bicycle rack.

1.4 DELIVERY, STORAGE AND HANDLING

A. Upon delivery, before signing for shipment, inspect for any damages and notate on the B.O.L.
B. Store bicycle racks in original undamaged packages and containers until ready for installation
C. Handle bicycle racks with sufficient care to prevent any scratches or damage to the finish.

PART 2 PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS

A. Provide Bike Hitch racks manufactured by DERO BIKE RACK CO or approved equal, 504 Malcolm Avenue SE, Minneapolis, MN 55414, 1-888-337-6729. Fax: 612-331-2731. Website: www.dero.com

2.2 MATERIALS

A. Center beam: 2” schedule 40 pipe.
B. Ring: 1.5" OD 11 gauge tube.

2.3 FINISHES

A. Provide A 304 grade stainless steel with high luster electropolish finish (Spectra Shield finish for maximum corrosion protection).

2.4 BIKE HITCH

A. Setbacks

1. Parallel Wall Setback: A minimum of 30" should be left between the wall and the rack. 36" is the recommended setback.
2. Distance Between Racks: 24" is the minimum distance between racks. 36" is recommended.
3. Street Setback: 24" is the minimum distance between the street and the rack. 36" is recommended.
4. The foot mounted Bike Hitch has a 5.25" x 5.5" x .25” plate which is installed onto a concrete base with 4 masonry anchors. The foot-mounted Bike Hitch is generally less expensive to install and easier to remove than the in-ground mounted model, while maintaining the same degree of security.
5. 3/8" anchors are the standard anchors shipped with this rack.
6. Setback requirements are available at www.dero.com.

PART 3 EXECUTION

3.1 INSTALLATION

A. Flange mount 5.5” x 5.25” x .25” foot - 4 anchors
B. It is the responsibility of the installer to ensure that all base materials into which the rack will be installed can support the rack and will not be damaged by any required installation procedures.

3.2 ORDERING INFORMATION

A. When ordering or specifying this rack, make sure the product type, finish and fastener type (if applicable) are included. Contact your Dero Rack representative for a current price list or to place an order.
B. The foot mounted Bike Hitch includes 4 wedge anchors or concrete spikes.

3.4 FREIGHT

A. Bike Hitches can be shipped UPS. Call 1-888-337-6729 for freight quotes.

END OF SECTION

SECTION 03 00 00
CONCRETE

PART I. GENERAL

1.01 RELATED DOCUMENTS
A. All applicable provisions of the Bidding and Contract Documents.

1.02 WORK INCLUDED
A. Provide all labor, materials, necessary equipment and services to complete the concrete work, as indicated on the drawings, as specified herein or both, except as for items specifically indicated as "NIC ITEMS".

B. Including but not necessarily limited to the following:
1. Form work, shoring, bracing and anchorage.
2. Concrete reinforcement and accessories.
3. Cast-in-place concrete.
4. Plugging abandoned pipelines and/or structures in place.

1.03 RELATED WORK
A. Section 32 20 00 - Concrete sidewalk

B. Section 32 40 00 - Asphaltic Concrete Paving – General

C. Section 32 50 00 - Portland Cement Concrete Paving

1.04 QUALITY ASSURANCE
A. All work shall be in accordance with ACI 301, latest edition, a copy of which shall be maintained on site.

B. Requirements of Regulatory Agencies: perform work in accordance with local building and other applicable codes.

C. Installation: Performed only by skilled workmen with satisfactory record of performance on completed projects of comparable size and quality.

D. Inspection and Testing:
1. Test Cylinders - As per ASTM C-39.
    a. Minimum of three (3) concrete test cylinder shall be taken for every 75 or less cubic yards of concrete placed each day.
    b. Minimum of one (1) slump test shall be taken during any cold weather concreting, and be cured on job site under same conditions as the concrete it represents.
2. Slump Test - As per ASTM C-143.
    a. Minimum of one (1) slump test shall be taken for each set of test cylinders taken.

1.05 SUBMITTALS
A. Test Reports: Reports of concrete compression, yield, air content and slump tests.

B. Certificates:
1. Manufacturer's certification that materials meet specification requirements.
2. Material content per cubic yards of each class of concrete furnished.
    a. Dry weights of cement.
    b. Saturated surface-dried weights of fine and course aggregate.
    c. Quantities, type and name of all mixtures. d. Weight of water.

3. Ready-mix delivery tickets as per ASTM C-94.

C. Shop Drawings:

1. Show sizes and dimensions for fabrication and placing of reinforcing steel and bar supports.
2. Indicate reinforcement sizes, spaces, locations and quantities or reinforcing steel, and wire fabric, bending and cutting schedules, splicing and supporting and spacing devices.
3. Indicate formwork dimensioning, materials, arrangement of joints and ties.
4. Shop drawings shall be prepared under seal of a Professional Structural Engineer, registered in the State of Florida.

1.06 DELIVERY, STORAGE AND HANDLING

A. Deliver reinforcement to project site in bundles marked with metal tags indicating bar size and length.

B. Handle and store materials to prevent contamination.

1.07 JOB CONDITIONS

A. Allowable concrete temperatures:
1. Hot weather: Maximum 90 degrees F as per ASTM C-94.

B. Do not place concrete during rain, unless protection is provided.

PART II. PRODUCTS

2.01 FORM MATERIALS

A. Materials shall conform to ACI 301, latest edition.

B. Plywood forms: Douglas Fir Species, solid one side, form grade, sound undamaged sheets.

C. Lumber: Southern Pine Species, No. 2 Grade, with grade stamp clearly visible.

D. Form Ties: Removable, snap-off metal, of fixed and adjustable length, cone ends.

E. Tubular Column Type: Round, spirally wound laminated fiber material, clearly visible.

2.02 REINFORCING STEEL

A. Reinforcing steel shall conform to ASTM A615, 60 ksi yield grade billet steel reformed bars; uncoated finish.

B. Welded steel wire fabric shall conform to ANSI/ASTM A185, plain type; coiled rolls, uncoated finish.

2.03 CONCRETE MATERIALS

A. Cement: shall conform to ASTM C150, normal Type II Portland, gray color.

B. Fine and coarse aggregate shall conform to ASTM C33.

C. Water: clean and not detrimental to concrete.

2.04 ADMIXTURES

A. Air Entraining: ASTM C-260

B. Chemical: Type (as required) ASTM C-494.

C. Fly Ash and Pozzolans: ASTM C-618

D. Color - Conditioned Concrete: ASTM C-494 and ASTM C-979

2.05 ACCESSORIES

A. Non-shrink grout: pre-mixed compound with non-metallic aggregate, cement, water reducing and plasticizing agents; capable of minimum compressive strength of 3500 psi.

B. Construction joints: locate and install construction joints, which are not shown on drawings, so as not to impair strength and appearance of the structure, as acceptable to the ENGINEER. Place construction joints perpendicular to the main reinforcement, continue reinforcement across construction joints.

C. Expansion joints: shall be a minimum of 3/4-inch thick asphalt impregnated fiberboard as per ASTM D-1751.

D. Form release agent shall be a colorless material, which will not stain concrete, absorb moisture or impair natural bonding or color characteristics of coating intended for use on concrete.

E. Water shall be clear and potable.

2.06 CURING MATERIALS

A. Water shall be clean and potable.

B. Absorptive mat shall be burlap fabric of 9 oz./sq. yd. clean, roll goods complying with AASHTO M182, Class 3.

C. Membrane curing compound shall conform to ASTM C309.

D. Clear Sealer: "Clear Bond" as manufactured by Guardian Chemical Co., Dayton Day-Chem Cure-W (J-9-A) or approved equal.

E. Color curing compound shall be liquid membrane-forming conforming to ASTM C 309 two-component Lithochrome Colorwax by L.M. Scofield Company, or approved equal, color to match admixture for color-conditioned concrete.

2.07 CONCRETE MIX

A. Mix concrete in accordance with ASTM C94.

B. Concrete:
   1. Compressive strength (28 days): 3000 psi.
   2. Slump: 4(±) 1 inch.

C. Concrete / Flowable fill for grouting and plugging:
   1. Compressive strength (28 days) 2000 psi.
   2. Slump: as required to grout and plug.

PART III. EXECUTION

3.01 FORMWORK ERECTION

A. Verify lines, levels, and measurement before proceeding with formwork.

B. Hand trimmed sides and bottom of earth forms; remove loose dirt.

C. Align form joints.

D. Do not apply form release agent where concrete surfaces receive special finishes or applied coatings, which may be affected by agent.

E. Coordinate work of other sections in forming and setting openings, slots, recesses, chases, sleeves, bolts, anchors and other inserts.

3.02 REINFORCING

A. Place, support and secure reinforcement against displacement.

3.03 PLACING CONCRETE

A. Color Conditioned concrete, when batching, shall not be less than one-third of the capacity of the mixing drum (a minimum of four yards for a ten-yard mixer) and will be in full cubic yard increments.

B. Notify ENGINEER minimum 24-hours prior to commencement of concreting operations.

C. Scratch, float, trowel, broom or belt finish surfaces, as scheduled or indicated on the Drawings.

D. Place 2000 psi concrete for pugging and grouting pipelines and structures in-place as required after proper connection to new service and function of system is complete.

3.04 TOLERANCES

A. Provide Class B tolerance to floor slabs according to ACI 301. Pitch to drains 1/4 inch per foot.

3.05 FINISHES FOR EXPOSED SURFACES

A. Provide exposed surfaces with finishes as called for on the Drawings.

3.06 CONCRETE CURING

A. Curing for standard grey work after finishing, cure concrete by keeping moist for one (1) week after placement. Floors and vertical surfaces may be sprayed with an approved curing compound to retard evaporation of water, if spraying is not objectionable because of future finishing requirements. Begin curing operations as soon as concrete has attained its initial set. Keep exposed concrete surface moist for at least one (1) week.

B. Apply a liquid membrane-forming compound, conforming with ASTM C 309, color to match that of the color condition concrete. Apply on flat work immediately after the finishing operation pursuant to the manufacturers recommendations.

3.07 MEASUREMENT AND PAYMENT

A. No separate measurement and payment is provided for work covered by this Section. All costs in connection with concrete work shall be included in the bid price of any item in the bid schedule for which concrete products, materials, or appurtenances are required.

END OF SECTION

SECTION 03 10 00
CONCRETE FORM WORK

PART I. GENERAL

1.01 RELATED DOCUMENTS
A. All applicable provisions of the Bidding and Contract Requirements, and Division 1 - General Requirements shall govern the work under this Section.

1.02 WORK INCLUDED
A. Formwork for Cast-In-Place Concrete, with shoring, bracing, and anchorage.

B. Openings for other affected work.

C. Form accessories.

D. Stripping forms.

1.03 RELATED WORK
A. Section 03010 - Concrete.

B. Section 03200 - Concrete Reinforcement.

C. Section 03300 - Cast-In-Place Concrete.

1.04 SYSTEM DESCRIPTION
A. Design, engineer and construct formwork, shoring and bracing to meet design code requirements, so that resultant concrete conforms to required shapes, lines, and dimensions.

1.05 QUALITY ASSURANCE
A. Construct and erect concrete formwork in accordance with ACI 301 and 347.

1.06 SUBMITTALS
A. Indicate pertinent dimensions, materials, and arrangement of joints and ties.

B. Prepare shop drawings under seal of Professional Structural Engineer registered in the State of Florida.

C. Manufacturers certification that materials meet specification requirements.

1.07 DELIVERY, STORAGE AND HANDLING
A. Deliver, store and handle materials in accordance with manufacturers recommendations.

B. Deliver form materials in manufacturer's packaging with installation instructions.

C. Store off ground in ventilated and protected area to prevent deterioration from moisture or damage.

D. Remove packaging from void forms.

PART II. PRODUCTS

2.01 FORM MATERIALS
A. Plywood: Douglas Fir Species; medium density overlaid one side grade; sound, undamaged sheets with straight edges.

B. Lumber: Southern Pine Species; No. 2 grade; with grade stamp clearly visible.

C. Tubular Column: Round, of spirally wound laminated fiber type; surface treated with release agent; of size required.

2.02 FORMWORK ACCESSORIES

A. Form Ties: Snap-off metal of adjustable length; cone type; 1 1/2 inch break back dimension; free of defects that will leave holes no larger than 1-1/4 inches diameter in concrete surface.

B. Form Release Agent: Colorless material which will not stain concrete, absorb moisture, or impair natural bonding in color characteristics of coating intended for use on concrete.

C. Fillets for Chamfered Corners: Wood strips or rigid PVC plastic in maximum possible lengths.

D. Nails, Spikes, Lag Bolts, Through Bolts, Anchorages: Sized as required; or strength and character to maintain formwork in place while placing concrete.

PART III. EXECUTION

3.01 INSPECTION

A. Verify lines, levels, and measurements before proceeding with formwork.

3.02 PREPARATION

A. Hand-trim sides and bottoms of earth forms; remove loose dirt prior to placing concrete.

B. Minimize form joints. Symmetrically align joints and make weathertight to prevent leakage of mortar.

C. Arrange and assemble formwork to permit dismantling, stripping, so that concrete is not damaged during its removal.

D. Arrange forms to allow stripping without removal of principal shores, where required to remain in place.

3.03 ERECTION

A. Provide bracing to ensure stability of formwork. Strengthen formwork liable to be overstressed by construction loads.

B. Camber slabs and beams to achieve ACI 301 tolerances.

C. Provide temporary ports in formwork to facilitate cleaning and inspection. Locate openings at bottom of forms to allow flushing water to drain. Close ports with tight fitting panels, flush with inside face of forms, neatly lifted so that joints will be apparent in exposed concrete surfaces.

D. Provide expansion strips on external corners of beams and columns, where exposed.

E. Install void forms. Protect from moisture before concrete placement. Protect from crushing during concrete placement.

F. Construct formwork to maintain tolerances in accordance with ACI 301.

3.04 APPLICATION OF FORM RELEASE AGENT

A. Apply form release agent on formwork in accordance with manufacturer's instructions. Apply prior to placing reinforcing steel, anchoring devices, and embedded items.

B. Do not apply form release agent where concrete surfaces are scheduled to receive special finishes or applied coverings, which may be affected by agent. Soak contact surfaces of untreated forms with clean water. Keep surfaces wet prior to placing concrete.

3.05 INSERTS, EMBEDDED PARTS, AND OPENINGS

A. Provide formed openings where required for work embedded in or passing through concrete.

B. Coordinate work of other sections in forming and setting openings, slots, recesses, chases, sleeves, bolts, anchors, and other inserts.

C. Install accessories in accordance with manufacturer's instructions, level and plumb. Ensure items are not disturbed during concrete placement.

3.06 FORM REMOVAL

A. Notify ENGINEER prior to removing formwork.

B. Do not remove forms and shoring until concrete has sufficient strength to support its own weight, and construction and design loads which may be imposed upon it. Remove load-supporting forms when concrete has attained 75 percent of required 28-day compressive strength, provided construction is reshored.

C. Formwork not supporting weight of concrete, such as sides of beams, walls, columns, and similar parts of the work, may be removed after cumulatively curing at not less than 50 degrees F for 24-hours after placing concrete, provided concrete is sufficiently hard to not be damaged by form removal operations, and provided curing and protection operations are maintained.

D. Formwork supporting weight of concrete, such as beam soffits, joints, slabs and other structural elements, may not be removed in less than 14 days and until concrete has attained design minimum compressive strength at 28-days. Determine potential compressive strength of inplace concrete by testing field-cured specimens representative of concrete location of members.

E. Reshore structural members due to design requirements or construction conditions to permit successive construction.

F. Remove formwork progressively so no unbalanced loads are imposed on structure.

G. Do not damage concrete surfaces during form removal.

H. Store reusable forms for exposed architectural concrete to prevent damage to contact surfaces.

I. Remove formwork in same sequence as concrete placement to achieve similar concrete surface coloration.

3.07 CLEANING

A. Clean forms to remove foreign matter as erection proceeds.

B. Ensure that water and debris drain to exterior through clean-out ports.

3.08 MEASUREMENT AND PAYMENT

A. No separate measurement and payment is provided for work covered by this Section. All costs in connection with concrete formwork shall be included in the bid price of any item in the bid schedule for which concrete formwork is required.

END OF SECTION

SECTION 03 10 00

CONCRETE FORMING AND ACCESSORIES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Section 03 30 00 – Cast-In-Place Concrete.

1.2 REFERENCE STANDARDS

A. American Concrete Institute (ACI):
   1. 301 Specifications for Structural Concrete for Buildings.
   2. 347 Recommended Practice for Concrete Formwork.

B. American Society for Testing and Materials (ASTM):
   1. D1751 Pre-formed Expansion Joint Filler for Concrete Paving and Structural Construction (Non-extruding and Resilient Bituminous Types).

1.3 SUBMITTALS

A. General: In compliance with Section 01340 and as specified herein.

B. Shop Drawings: Illustrating:
   1. Pertinent dimensioning.
   2. Methods of construction.
   3. Arrangement of joints.
   4. Location of bracing and temporary supports.
   5. Ties and shores.
   6. Schedule of erection and stripping.

C. Product Data: Illustrating and describing:
   1. Inserts, anchors, sleeves and other embedded items.
   2. Form ties.
   3. Form oil and form release agent.
   4. Round column forms.
   5. Expansion joint filler.

D. Warranty: Submit written warranty issued by form release agent manufacturer that form release agent will not cause staining, discoloration, or texturing of concrete, prevent proper bonding of subsequently applied materials, or leave a waxy or oily residue.

1.4 DELIVERY AND STORAGE

A. Storage:

   1. Store new and reusable form lumber and form plywood under heavy waterproof coverings, or where well protected from inclement weather.
   2. Stack oiled form plywood on sticking to permit proper ventilation between uses.

3. Store metal forms in such manner to prevent damage by denting, warping twisting and rusting.

PART 2 - PRODUCTS

2.1 WOOD FORM MATERIALS

A. Form Lumber: No. 2 Southern Pine or No. 2 Douglas Fir-Larch, S4S; true and straight members free from cupping, warping, loose knots, excessive checking and other structural defects.

B. Form Plywood: Not less than 5/8-inch thick, exterior type, Class I, Grade "B-B", mill oiled and edge sealed.
1. Concealed surfaces in Finished Work: Standard "B-B Plyform".

C. Form Liners: Units of face design, texture, arrangement and configuration as specified in the architectural drawings and section 03330. Furnish with manufacturer recommended liquid release agent that will not bond with, stain or adversely affect concrete surfaces, and will not impair subsequent treatments of concrete.

2.2 PREFABRICATED FORMS

A. Round Column Forms: Heavy-duty, two-piece sectional column forms suitable for multiple uses.

B. Glass Fiber Fabric Reinforced Plastic Forms: Matched, tight fitting, stiffened to support weight of concrete without deflection detrimental to structural tolerances and appearance of finished concrete surface.

2.3 ACCESSORIES

A. Anchor Slots: Minimum 22 gauge galvanized steel dovetail anchor slot with removable filler insert.

B. Construction Joint Forms: Galvanized steel, tongue and groove shape.

C. Expansion Joint Filler: ASTM D1751, pre-molded, asphalt impregnated cellulose fiber, thickness and depth indicated. For sealed joints use a bond breaker such as polyethylene tape to prevent bleeding.
1. The Burke Company "Fiber Expansion Joint".
2. A. C. Horn, Inc. "Code 1390".
3. W. R. Meadows, Inc. "SealTight Fibre Expansion Joint".
4. Sonneborn "Sonoflex Cane".

D. Flashing Reglets: 26 gauge galvanized steel, 1-1/2 inch deep x 1/2-inch opening; install where required to receive waterproofing membrane or flashing.

E. Form Coating:
1. Concealed from View: Form oil or release agent.
2. Exposed to View: Non-staining, non-residue release agent with required warranty.
a. The Burke Company "Burke Release".
b. L & M Construction Chemicals "Debond".
c. Napco Construction Chemicals "Petkote".
d. Sonneborn "Cast-Off".

F. Form Ties: Removable-type adjustable rod ties with minimum strength of 3000 pounds each that do not leave hole greater than 7/8-inch diameter, or snap-ties that break off not less than one-inch back of concrete surface.
   1. Provide ties with swaged washer or other acceptable device to prevent mortar leakage along tie.

G. Moldings and Chamfer Strips: "C-Select" or "Finish" Southern Pine, straight, sound, and free of knots and other defects.

H. Nails, Spikes, Lag Bolts, Through Bolts, Anchorages: Sized as required; of sufficient strength and character to maintain formwork in place while placing concrete.

I. Shores: Tubular steel or wood forms capable of safely supporting vertical and lateral loads imposed by formwork, concrete and other construction loads and capable of preventing excessive deflection during concrete placing operations.

PART 3 - EXECUTION

3.1 DESIGN

A. General:
   1. Contractor is solely responsible for safety of formwork.
   2. Design formwork in compliance with ACI 301 and ACI 347, and to resist imposed loads and pressures.
   3. Properly brace and tie forms together to maintain their position and shape during concrete placement.
   4. Minimize form joints.
   5. Camber formwork as required to take up settlement caused by concrete placing.
   6. Shoring and formwork shall be designed by an engineer registered in the State of Florida.
   7. Shop drawing shall be submitted which bears the embossed seal of the engineer.

B. Strength: Withstand weight of concrete and loads due to placing operations without deformation beyond 1/360 of shoring spans.

C. Stripping: Arrange and assemble formwork to permit dismantling and stripping without damage to concrete. Design formwork to permit stripping without removal of principal shores where required.

3.2 FORMWORK ERECTION

A. Construction:
   1. Construct forms to provide finished profiles, shapes and dimensions indicated in Drawings.
   2. Construct forms with tight fitting joints to prevent mortar leakage and to withstand high frequency mechanical vibration.

B. Erection:
   1. Erect forms plumb, straight, true-to-lines and levels, and securely brace into position.
   2. Arrange forms to allow stripping without removal of principal shores, where and when these are required to remain in place.

3. Provide bracing to ensure stability of formwork.
4. Provide temporary ports in formwork where required to facilitate cleaning and inspection.
   a. Locate openings at bottom of formwork to allow flushing water to drain.
   b. Close ports with tight fitting panels, flush with inside face of forms, neatly fitted so that joints will not be apparent in exposed concrete surfaces.

C. Tolerances: Construct formwork in compliance with ACI 301 and ACI 347 to maintain following maximum tolerances:
1. Deviation from Horizontal and Vertical Lines: 1/4-inch in 10 feet.
2. Deviation of Building Dimensions Indicated in Drawings and position of Partitions, Walls, and Columns: 1/4-inch in 10 feet.
3. Deviation in Cross-Sectional Dimensions of Columns or Beams or Thickness of Slabs and Walls: Plus or minus 1/4-inch.

3.3 FORM RELEASE AGENT

A. Apply form release agent to form surfaces prior to placing reinforcing steel, anchoring devices, and embedded items.
1. Release agent required on form surfaces where concrete is exposed in finished work.

B. Do not apply form release agent where concrete surfaces will receive special finishes and applied coverings that are affected by agent.
1. Soak inside surfaces of untreated forms with clean water.
2. Keep surfaces wet prior to placing concrete.

3.4 INSERTS, EMBEDDED ITEMS, OPENINGS AND ACCESSORIES

A. Provide formed openings for pipes, conduits, sleeves, and other work embedded in and passing through concrete.

1. Coordinate work of other Sections and cooperate with trades involved in forming and setting openings, slots, recesses, chases, sleeves, bolts, anchors and other inserts.
2. Install anchor bolts in compliance with approved setting plans.
3. Do not perform work unless indicated in drawings or reviewed prior to installation.
4. Do not place concrete until work is accurately located and securely fastened into position.

B. Anchor Slots: Install in concrete surfaces abutted by ends of masonry walls and in concrete surfaces faced with masonry. Set slots vertically, extending continuously to full height of adjacent masonry at centerlines of masonry wall ends and at 2'-0" on center in walls faced with masonry.

C. Chamfer Locations: Exterior corners of beams, joints, columns, and where indicated in Drawings.

D. Joints: Secure expansion joint filler in place as shown in Drawings to prevent displacement when placing concrete. Bore holes through filler for rebar where required and hold down with removable spacer where sealant is to be applied. Apply polyethylene, foil, or other bond breaker tape where sealant is to be applied.

E. Waterstops:

1. Strips:
   a. Prime joint, remove one strip of paper and place waterstop in keyed joints. Lap ends one-inch.
   b. Remove second paper strip immediately prior to placing concrete.
2. Ribbed with Center Bulbs:
   a. Secure to forms.
   b. After form removal, extend into next concrete placement.
   c. Splice as recommended by manufacturer.
   d. Prevent puncture tears and damage.

3.5 FIELD QUALITY CONTROL

A. Inspect and check completed formwork, shoring, and bracing to ensure that work is in compliance with formwork design, and that supports, fastenings, wedges, ties, and parts are secure.

B. Bracing and Shoring:
1. Provide necessary whales, studs, and bracing to prevent forms from bulging and sagging.
2. Double-wedge shores at bottom and keep wedges tight. Do not place shores on top of previously placed concrete for at least 48 hours after placing.
3. Comply with ACI 301 for reshoring.

C. Formwork for Exposed Concrete:

1. Use high density overlay plywood sheets in sizes necessary to provide uniform appearance on exposed surfaces. Fill butt joints between plywood sheets to prevent leakage. Place form ties in uniform and symmetrical pattern.
2. Place moldings or chamfer strips in corners of square column, beam and wall forms except where square corners are indicated.

D. Used form materials may be cleaned and reused if required finished surfaces can be produced.
1. Use form with sheet metal patches over cracks and holes for concealed work only.

E. Records: Maintain record of concrete placement, shoring and form removal.
1. Record rest cylinder strength used to determine early form removal.
2. Keep record available for Architect's examination.

3.6 FORM REMOVAL

A. Do not remove forms until concrete develops sufficient strength to sustain its own weight plus any superimposed loads, and in no case sooner than permitted by ACI 347.

B. Remove forms in such sequence as to constantly insure structural adequacy.
C. Remove form ties and projecting nails from concrete surfaces when forms are stripped.

D. When forms are to be reused, withdraw nails, clean, patch holes and apply uniform coat of form release agent, or form oil, immediately after stripping, and store until reused.

E. Test cylinders may be made at Contractor's expense and unless directed otherwise by Architect, forms may be stripped from locations when concrete has attained 75% of required 28-day compressive strength.

END OF SECTION 03 10 00

SECTION 03 20 00
CONCRETE REINFORCEMENT

PART I. GENERAL

1.01 RELATED DOCUMENTS
A. All applicable provisions of the Bidding and Contract Requirements, and Division 1 - General Requirements shall govern the work under this Section.

1.02 WORK INCLUDED
A. Reinforcing steel bars, welded steel wire fabric, fabricated steel bar or rod mats for cast-in-place concrete.

B. Support chairs, bolsters, bar supports, spaces, for supporting reinforcement.

1.03 RELATED WORK
A. Section 03010 - Concrete.

B. Section 03100 - Concrete Formwork.

C. Section 03300 - Cast-In-Place Concrete.

1.04 QUALITY ASSURANCE
A. Perform concrete reinforcement work in accordance with CRSI Manual and Standard Practice, and Documents 63 and 65.

B. Conform to ACI 301.

1.05 SUBMITTALS
A. Indicate sizes, spacings, locations and quantities of reinforcing steel, bending and cutting schedules, splicing, stirrup spacing, supporting and spacing devices.

B. Prepare shop drawings under seal of Professional Structural ENGINEER registered in the State of Florida.

C. Submit mill test certificates and supplied concrete reinforcing, indicating physical and chemical analysis.

PART II. PRODUCTS

2.01 MATERIALS
A. Reinforcing Steel: ASTM A615, 60-ksi-yield grade billet-steel, deformed bars, uncoated finish.

B. Welded Steel Wire Fabric: ANSI/ASTM A185 plain type; in coiled rolls; uncoated finish.

C. Stirrup Steel: ANSI/ASTM A82.

2.02 ACCESSORY MATERIALS
A. Tie Wire: Minimum 16 gauge annealed type.

B. Chairs, Bolsters, Bar Supports, Spacers: Sized and shaped for strength and support of reinforcement during installation and placement of concrete, including load bearing pad on bottom to prevent vapor barrier puncture.

C. Chairs, Bolsters, Bar Supports, Spacers Adjacent to Architectural Concrete Surfaces: Plastic coated or stainless steel type; sized and shaped as required.

2.03 FABRICATION
A. Fabricate in accordance with ACI 315, providing concrete cover specified in Section 03300.

B. Locate reinforcing splices not indicated on Drawings at points of minimum stress. Indicate location of splices on shop drawings.

PART III. EXECUTION

3.01 INSTALLATION

A. Before placing concrete, clean reinforcement of foreign particles or coatings.

B. Place, support, and secure reinforcement against displacement. Do not deviate from alignment or measurement.

C. Do not dispose or damage vapor barrier required by Section 03300.

3.08 MEASUREMENT AND PAYMENT

A. No separate measurement and payment is provided for work covered by this Section. All costs in connection with concrete reinforcement work shall be included in the bid price of any item in the bid schedule for which concrete reinforcement is required.

END OF SECTION

SECTION 03 20 00

CONCRETE REINFORCING

PART 1 - GENERAL

1.1 REFERENCE STANDARDS

A. American Concrete Institute (ACI):
1. 301 Specifications for Structural Concrete for Buildings.
2. 318 Building Code Requirements for Reinforced Concrete.
3. SP66 ACI Detailing Manual.

B. American Society for Testing and Materials (ASTM):
1. A-82-07 Steel Wire, Plain, for Concrete Reinforcement.
2. A-185-07 Steel Welded Wire Fabric, Plain, for Concrete Reinforcement.
3. A-615-09b Deformed and Plain Billet-Steel Bars for Concrete Reinforcement.

C. American Welding Society (AWS):
1. D1.4 Structural Welding Code - Reinforcing Steel.

D. Concrete Reinforcing Steel Institute (CRSI):
1. Manual of Standard Practice.
2. 63 Recommended Practice for Placing Reinforcing Bars.
3. 65 Recommended Practice for Placing Bar Supports, Specifications and Nomenclature.

1.2 SUBMITTALS

A. General: In compliance with Section 01340 and as specified herein.

B. Shop Drawings: Detail reinforcing in compliance with ACI 315.
1. Provide fully detailed bar lists, bending diagrams, and placing plans.
2. Indicate splices and splicing methods.
3. Indicate types and grades of steel.
4. Indicate quantities of reinforcing steel and wire fabric.
5. Indicate supporting and spacing devices.

C. Product Date: Manufacturer's specifications and brochures for bar support devices.

D. Reports: Certified copy of all mill reports on reinforcing steel, indicating physical properties and chemical analysis.

1.3 DELIVERY AND STORAGE

A. Deliver reinforcing steel to site in easily handled bundles with identification tags securely wired into place.
1. Store reinforcing to prevent damage and protect from corrosion and deformation.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Reinforcing Steel: ASTM A-615; Grade 60.

B. Welded Steel Wire Fabric: ASTM A-185; flat sheets.

C. Bar Chairs:
1. Concealed: 16 gauge galvanized steel wire with 3 x 3-inch base, or solid plastic of proper sizes and design to properly support and position reinforcing steel.
2. Exposed: Fabricated from stainless steel, solid plastic, or galvanized wire with plastic tipped feet.

D. Tie Wires: 16 gauge annealed steel.

2.2 FABRICATION

A. Fabricate reinforcing steel to required shapes and dimensions in compliance with CRSI "Manual of Standard Practice" and ACI 315 with tolerances specified in ACI 301.

B. Do not heat bars for bending or straightening. Do not tack weld bars.

PART 3 - EXECUTION

3.1 PREPARATION

A. Remove grease, dirt, loose mill scale, rust and foreign substances from reinforcing before placing.

B. Clean splashed concrete from reinforcing steel projecting from previously placed concrete before making splices and before placing subsequent concrete.

3.2 INSTALLATION

A. Place reinforcing steel in compliance with CRSI "Recommended Practice for Placing Reinforcing Bars" and ACI 301. Provide not less than minimum coverage indicated in structural drawings over reinforcing steel.

B. Placing:

1. Comply with CRSI publication Placing Reinforcing Bars. Provide not less than ACI minimum coverage over reinforcing when coverage is not indicated in Drawings.
2. Place no reinforcing until forms have been coated with release agent.
3. Place reinforcing supported and secured against displacement. Do not deviate from indicated alignment.
4. Saddle tie reinforcing at intersections and laps. Wire stirrups to both top and bottom bars.
5. Lap welded wire fabric one mesh panel at ends and sides, unless indicated otherwise.
6. Protect reinforcement from damage and displacement after installation and during concrete placing operations. Do not support runways and

chutes upon reinforcing. Do not permit conveying equipment to be wheeled directly upon reinforcing.

C. Bar Chairs: Support reinforcing upon proper support devices in compliance with CRSI "Recommended Practice for Placing Bar Supports, Specifications and Nomenclature".
   1. Space supports not more than 3 bar spaces each way for slabs on grade.
      a. Precast concrete blocks of same mix design as concrete, with tie wires embedded into blocks may be used for slabs on grade, turned down beams and footings in lieu of bar chairs to support reinforcing.
   2. Locate bar and welded wire fabric reinforcing in slabs on grade and slabs on fill to occur within upper one-third of slab thickness.
   3. When in contract with forms and underside of floor slabs with applied finishes, or to be exposed, provide chairs specified for exposed-to-view.

3.3 FIELD QUALITY CONTROL

A. Cutting and Welding: No reinforcing bars cut or welded in field without prior consent of Structural Engineer.

B. Splicing:
   1. Splicing shall conform to ACI 318-05.
      a. Make splices as indicated in Drawings.
      b. Obtain Architect's approval of splices not indicated in Drawings before making splices.
   2. Do not splice bars at points of maximum stress.
   3. Stagger splices at adjacent bars.

C. Protection: Protect reinforcement from damage and displacement after placing and during concrete placement operations. Do not support runways and chutes upon reinforcing. Do not permit conveying equipment to be wheeled directly upon reinforcing.

END OF SECTION 03 20 00

SECTION 03 30 00
CAST-IN-PLACE CONCRETE

PART I. GENERAL

1.01 RELATED DOCUMENTS
A. All applicable provisions of the Bidding and Contract Requirements, and Division 1 - General Requirements shall govern the work under this Section.

1.02 WORK INCLUDED
A. Provide all labor, materials, necessary equipment and services to complete the Cast-In-Place Concrete Work, as indicated on the drawings, as specified herein or both except as for items specifically indicated as "NIC ITEMS".

B. Including but not necessarily limited to the following:
1. Cast-In-Place concrete walls, footings, foundation walls, paving, walks, slabs, formwork, reinforcing and all other components as indicated on the Drawings.

1.03 RELATED WORK
A. Section 03010 - Concrete.

B. Section 03100 - Concrete Form work.

C. Section 03200 - Concrete Reinforcement.

D. Section 03370 - Concrete Curing.

E. Section 02510 - Concrete Sidewalk

1.04 QUALITY ASSURANCE
A. Applicator Qualifications: Minimum of five years experience on 5 comparable concrete projects.

B. Requirements of Regulatory Agencies: Perform work in accordance with local building codes.

C. Allowable Tolerances: Flat work true to plane 1/8 inch in 10 feet.

D. Slump tests as per ASTM C-143, and test cylinders as per ASTM C-39.

1.05 TESTS
A. Submit proposed mix design of each class of concrete to appointed firm for review prior to commencement of work.

B. Testing firm will take cylinders and perform slump and air entrainment tests in accordance with ACI 301.

C. Tests of cement and aggregates will be performed to ensure conformance with requirements stated herein.

D. Three (3) concrete test cylinders will be taken for every 75 cu. yds. or less of each class of concrete placed each day.

E. One (1) slump test will be taken for each set of test cylinders taken.

F. All testing shall be at the expense of the CONTRACTOR.

1.06 SUBMITTALS
A. Provide product data for specified products.

B. Test Reports: Reports of concrete compression, yield, air content, and slump tests.

C. Certificates:
1. Manufacturer's certification that materials meet specification requirements.
2. Material content per cubic yard of each class of concrete furnished.
a. Dry weights of cement.
b. Saturated surface-dried weights of fine and coarse aggregate.
c. Quantities, type and name of admixtures.
d. Weight of water.
3. Ready-mix delivery tickets, ASTM C-94.

D. Shop Drawings:
1. Show sizes and dimensions for fabrication and placing of reinforcing steel and bar supports.
2. Indicate bar schedules, stirrup spacing, and diagrams of bend bars.
3. Detail items of form systems affecting appearance of architectural concrete surfaces such as joints, tie holes, liners, patterns and textures. Show items in relation to entire form system.

1.07 DELIVERY, STORAGE AND HANDLING

A. Deliver reinforcement to project site in bundles marked with metal tags indicating bar size and length.

B. Handle and store materials to prevent contamination.

1.08 ENVIRONMENTAL REQUIREMENTS

A. Allowable concrete temperatures:
- Hot Weather: Maximum 90° F as per ASTM C-94.

B. Do not place concrete during rain, unless protection is provided.

PART II. PRODUCTS

2.01 MATERIALS & MANUFACTURERS

A. Concrete Ready-Mix concrete ASTM C-94.
1. Cement:
a. ASTM C 150, Type II
2. Admixtures:
a. Air entraining: ASTM C-260
b. Chemical: Type (as required) ASTM C-494.
c. Fly ash and pozzolans: ASTM C-618
d. Vapor Barrier: 6-mil thick film of type recommended for below grade application.
3. Coarse aggregate: Not less than 50% clean, hard, crushed stone conforming to requirements of Table 2, size number 467 ASTM C-33.
4. Slump 4 in. maximum; plus tolerance 0, minus tolerance 1 in.
5. Air content: 5% + 1%.
6. Mix proportioning:
a. In accordance with ASTM C-94.
b. 28 day compressive strength of moist cured laboratory samples 3,000 PSI.
c. Use set retarding admixtures during hot weather only when approved by ENGINEER.
d. Minimum cement contents 5 sacks/cubic yards.
e. Add air-entraining agent to concrete work exposed to exterior.
7. Curing Material: Liquid membrane, ASTM C-309, Type 1.
8. Mixes:
a. ASTM C-94.
b. Mix concrete only in quantities for immediate use.
c. Do not retemper or use set concrete.

B. Bars.
1. Deformed billet steel: ASTM A 615, Grade 60.

C. Wire Fabric:
1. Welded Wire Fabric Steel: ASTM A 185

D. Tie Wire: FS QQ-W-461-G, annealed steel, black 16 ga. minimum.

E. Bar supports: Conform to "Bar Support Specification," CRSI Manual of Standard Practice.

F. Forms:
1. Conform with ACI 347, Chapter 3, Material and Form Work.
2. Lumber:
   a. Softwood framing lumber: Kiln dried, PS-20.
   b. Boards less than 1 1/2 in. thick and 2 in. wide, used for basic forms and form liners: Kiln dried.
   c. Grade marked by grading rules agency approved by American Lumber Standards Committee.
   d. Light framing or studs for board or plywood forms, 2 in. to 4 in. width and thickness Construction Standard grade.
   e. Boards for basic forms Construction Standard grade.
   f. Board surface: Smooth.
3. Plywood:
   a. Exterior type softwood plywood, PS 1-66.
   b. Each panel stamped or branded indicating veneer grades, species, type and identification.
   c. Wood faced plywood for architectural concrete surfaces.
      (1). Panel veneer grades: B - C.
      (2). Mill-oiled sides and mill-sealed edges of panels.
4. Ties:
   a. Materials: Stainless Steel.
   b. Type: Snap Ties.
   c. Depth of breakback: 1 in.
   d. Maximum diameter 1/4 in.
5. Form coatings:
   a. Non-staining type.
   b. Agent: Pine oil derivative.

G. Water: Clean and potable.

PART III. EXECUTION

3.01 FORMWORK

A. Conform to ACI 347, Chapter 2, Construction; and Article 4.2, architectural Concrete.

B. Framing, Bracing and Plywood Form Liners: APA Form V 345-72.

C. Provide temporary openings in framework for concrete placement.

D. Fill voids of plywood joints with sealant and tool smooth.

E. CONTRACTOR is responsible for the design, construction, removal and complete safety of formwork and shoring.

F. Form construction shall be provided to shape, lines dimensions of members shown; substantial, tight enough to prevent leakage, and properly braced or tied to maintain position and size, form sides and bottoms of members unless specifically excepted.

3.02 REINFORCING

A. Fabrication shall be provided to latest ACI Manual of Practice ACI-315.

B. Reinforcing free from excessive rust, scale or coating reducing bond. Bars bent cold in fabrication plant. Chairs, support bars, and other accessories furnished to carry and provide coverage as required by ACI Manual.

C. Unless otherwise indicated the minimum coverage is 3 in. for footings (slabs to have 3/4 in. minimum). Call any "crowding" of reinforcement to ENGINEERs attention during placing.

D. Splices shall be Mesh 6 in. lap, bars 30 X diameter minimum.

E. Conduit or pipes embedded in concrete must have specific approval and be located to avoid cracking or reduction in strength. Provide extra strong pipe sleeves where pipes are allowed to pierce concrete beams or walls.

F. Placement:
1. Bar supports: CRSI 65.
2. Reinforcing bars: CRSI 63.

G. Steel Adjustment:
1. Move within allowable tolerances to avoid interference with other reinforcing steel, conduits, expansion joints, or embedded items.
2. Do not move bars beyond allowable tolerances without concurrence of ENGINEER.
3. Do not heat, bend or cut bars without concurrence of ENGINEER.

H. Splices:
1. Lap splices: Tie securely with wire to prevent displacement of splices during placement of concrete.
2. Splice devices: Install in accordance with manufacturer's written instructions.
3. Welding: Perform in accordance with AWS Standards.
4. Do not splice bars except at locations shown on drawings without concurrence of ENGINEER.

I. Wire Fabric:
1. Install in longest practicable length.
2. Lap adjoining pieces one full mesh minimum, and lay splices with 16-gage wire.
3. Offset end laps in adjacent widths to prevent continuous laps.

J. Cleaning: Remove dirt, grease, oil, loose mill scale, excessive rust, and foreign matter that will reduce bond with concrete.

K. Protection During Concreting: Keep reinforcing steel in proper position during concrete placement.

3.03 JOINTS

A. Construction pours shall be continuous pours except where joints are indicated. No additional joints except by special acceptance in writing by the ENGINEER. Allow no construction or interrupted pour joints in any exposed surface, unless treated as part of design.
1. Where indicated and as detailed, provide saw cut type construction joints of sizes as called for on the drawings.

B. Expansion joints shall be constructed as shown on drawings.
1. Expansion material shall be 1/2" continuous full depth strips set 1/2" below finish surface with 1/2" x 1/2" joint sealant filler above.

3.04 BUILT-IN ANCHORING DEVICES, FIXTURES, PIPE SLEEVES AND OTHER INSERTS

A. Build-in and coordinate as required and called for on the drawings all items to be constructed into concrete such as anchoring devices, fixtures, piping, sleeves and other inserts and items as required for a complete installation.

3.05 INSPECTION

A. Assure that excavation and formwork are completed, with smooth rubbed finish, and that excess water is removed.

B. Check that reinforcement is secured in place.

C. Verify that expansion joint material, anchors, and other embedded items are secured in position.

D. Verify anchors, seats, plates, reinforcement, and other items to be cast into concrete are accurately placed, held securely, and will not cause hardship in placing concrete.

3.06 CONCRETE QUALITY

A. Design of mix shall be a laboratory designed mix to satisfy the following requirements and shall be approved by the ENGINEER.
   1. Ready mixed concrete as per ASTM C-94 with 28-day strength 3,000 PSI minimum, for all standard grey concrete work.
   2. Proportion the concrete to work readily into forms and around reinforcement, without excessive manipulation, segregation or water gain. Approved additives may be used to achieve the above results.
   3. Slump shall be maximum 3 in. for footings, and for all other concrete shall be 3 in. to 5 in.
   4. Submit for approval representative test results by independent laboratory to substantiate proposed mix design.

3.07 PREPARATION FOR POURS

A. Notify the OWNER's Representative, ENGINEER and other inspectors at least 36 hours prior to inspection.

B. Equipment forms, and reinforcing shall be clean and wet down, reinforcing firmly secured in place, runways set up and not resting on or displaying reinforcing.

C. Prepare previously placed concrete by cleaning with steel brush and applying bonding agent. Apply bonding agent in accordance with manufacturer's instruction.

D. At locations where new concrete is dowelled to existing work, drill holes in existing concrete, insert steel dowels, and pack solid with non-shrink grout.

3.08 PLACING

A. Mixing and conveying shall be as per ASTM C-94 and as follows:
   1. Maximum elapsed time from addition of water to placing in forms -60 minutes, (total mixing time).
   2. Concrete handled and placed by methods, which keep concrete plastic, prevent separation of materials, and do not displace reinforcement.

B. Deposit as close as possible to final position to avoid segregation of materials. Restrict drop to 3-foot maximum (less for exposed concrete), using tremie if necessary.
   1. Compact by mechanical vibration to thoroughly work around reinforcing and eliminate honeycomb.

C. Place concrete in accordance with ACI 301.

D. Hot Weather Placement: ACI 301.

E. Cold Weather Placement: ACI 301.

F. Ensure reinforcement, inserts, embedded parts and formed joints are not disturbed during concrete placement.

G. Maintain concrete cover around reinforcing as follows:

Item	Coverage
Beams	1 1/2 inch
Supported Slabs	3/4 inch
Column Ties	1 1/2 inch
Walls (exposed to weather or backfill)	2 inch
Footings and Concrete Formed Against Earth	3 inch
Slabs on Fill	2 inch

H. Place concrete continuously between predetermined construction and control joints. Do not break or interrupt successive pours such that cold joints occur.

I. Saw cut control joints at an optimum time after finishing. Use 3/16-inch-thick blade, cutting 1/3 depth of slab thickness.

J. Separate exterior slabs on fill from vertical surfaces with joint filler. Extend joint filler from bottom of slab to within 1/2 inch of finished slab surface.

K. Excessive honeycomb or embedded debris in concrete is not acceptable. Notify ENGINEER upon discovery.

3.09 CONCRETE CURING

A. Curing for standard grey work after finishing, cure concrete by keeping moist for one (1) week after placement. Floors and vertical surfaces may be sprayed with an approved curing compound to retard evaporation of water, if spraying is not objectionable because of future finishing requirements. Begin curing operations as soon as concrete has attained its initial set. Keep exposed concrete surface moist for at least one (1) week.

B. Apply a liquid membrane-forming compound, conforming to ASTM C 309, color to match that of the color condition concrete. Apply on flat work immediately after the finishing operation pursuant to the manufacturers recommendations.

3.10 CONCRETE FINISHING

A. Unexposed concrete work shall be patched and repaired immediately after removal of forms.
   1. Cut off metal ties a minimum of 1 in. back from surface of concrete.
   2. Moderate honeycomb cut out and prepared for patching. Severe honeycomb with exposed steel reinforcing is to be removed or "united" at the discretion of the ENGINEER.
   3. Wet areas for patching and pack carefully with rich mortar rubbed to match surface.

B. Provide concrete surfaces to be left exposed, walls, columns, beams, with smooth rubbed finish.

C. Provide Class B tolerances to floor slabs and toppings according to ACI 301.

D. Pitch to drains 1/4 inch per foot.

E. Exposed concrete work shall be patched and repaired as accepted by ENGINEER after consultation. Patching and rubbing will be kept to a minimum if possible, but when necessary will be done with great care to obtain maximum degree of matching in color and texture to adjacent finished concrete surfaces.

F. Monolithic finish using care to obtain a level surface; floors out of level or with variation greater than 1/8 in. in 10 feet shall be corrected.

G. All finishes shall be as called for on the drawings.

3.11 SEPARATE FLOOR TOPPINGS

A. Prior to placing, roughen concrete base course and remove foreign materials. Broom and vacuum clean.

B. Place dividers, edge strips, reinforcing and other items to be cast in.

C. Apply bonding agent on base course in accordance with manufacturer's instructions. Apply sand and cement slurry coat on base course immediately prior to placing toppings.

D. Place concrete floor toppings to required lines and levels.

3.12 PATCHING

A. Notify ENGINEER immediately upon removal of forms.

B. Patch imperfections.

3.13 DEFECTIVE CONCRETE

A. Modify or replace concrete not conforming to required levels and lines, details, and elevations.

B. Repair or replace concrete not properly placed or of the specified type.

3.14 FIELD QUALITY CONCRETE

A. Maintain records of placed concrete items. Record date, location of pour, quantity, air temperature, and test samples taken.

3.15 PROTECTION

A. Immediately after placement, protect concrete from premature drying, excessively hot or cold temperatures, and mechanical injury.

B. Maintain concrete with minimal moisture loss at relatively constant temperature for period necessary for hydration of cement and hardening of concrete.

C. During curing period, protect concrete from damaging mechanical disturbances, water flow, loading, shocking, and vibration.

3.16 APPLICATION OF BOND COAT FOR CONCRETE LEVELING COAT FOR PAVERS AND TEXTURED SURFACES

A. Provide installation as per manufacturer's standard printed specifications, instructions and recommendations.

3.17 MEASUREMENT AND PAYMENT

A. No separate measurement and payment is provided for work covered by this Section. All cast in place concrete shall be included in the bid price of the relevant item in the bid schedule.

END OF SECTION

SECTION 03 30 00

CAST-IN-PLACE CONCRETE

PART 1 - GENERAL

1.1 RELATED WORK SPECIFIED ELSEWHERE

A. Except as specified otherwise in other Sections, material standards and requirements specified herein form part of basic requirements for all concrete used in work.

B. Related Sections
1. Section 03 10 00 Concrete Formwork.
2. Section 03 20 00 Concrete Reinforcement.

3. Section 09 68 00 Carpet
4. Section 09 67 23 Hybri-Flex Eq Resinous Flooring

1.2 REFERENCE STANDARDS

A. American Concrete Institute (ACI):
1. 214 Recommended Practice for Evaluation of Strength Test Results of Concrete.
2. 301 Specifications for Structural Concrete for Buildings.
3. 302-1R Guide for Concrete Floor and Slab Construction.
4. 302.2 Guide for Concrete Slabs to Receive Moisture-Sensitive Flooring Materials
4. 304 Recommended Practice for Measuring, Mixing Transporting, and Placing Concrete.
5. 305R Recommended Practice for Hot Weather concreting.
6. 318-11 Building Code Requirements for Reinforced Concrete.

B. American Society for Testing and Materials (ASTM):
1. C330 Concrete Lightweight Aggregates.
2. C94 Ready-Mixed Concrete.
3. C150 Portland Cement.
4. C260 Air-Entraining Admixtures for Concrete.
5. C494 Chemical Admixtures for Concrete.
6. C618-08a Fly Ash and Raw or Calcined Natural Pozzolan for Use as a Mineral Admixture in Portland cement concrete.

1.3 TESTING LABORATORY SERVICES

A. Testing and Inspection: In compliance with Section 01410 and as specified herein.
1. Confirmatory mix design tests.
2. Slump tests.
3. Compressive strength tests.
4. Inspection of materials and batching operations in plant.

B. Cooperate with testing laboratory to permit proper testing and inspection procedures.

1.4 SUBMITTALS

A. General: In compliance with Section 01340 and as specified herein.

B. Mix Designs: Submit concrete mix designs to Architect and testing laboratory at preconstruction conference. Provide mix design modifications at least 5 days prior to scheduled placement of concrete using modified mixes.
   1. Prepare individual concrete mix designs for:
      a. Each different required concrete strength class.
      b. Each different type aggregate.
      c. Each different admixture to be used.
   2. If mix designs are based upon field experience with materials to be used, submit substantiating data at time of submitting mix designs.
      a. If suitable field performance data cannot be provided, submit laboratory confirmatory test results upon each proposed mix design in compliance with ACI 318, Section 5.4.
      b. Use only mix designs accepted in writing by Architect.
   3. All mix design submittals shall indicate specifically where proposed mix is to be used.
4. Use of fly ash is not permitted for any concrete except for concrete used in foundations and slabs-on-grade.
5. Use of air-entraining admixture is not permitted for architecturally exposed concrete.
2. Mid-range water-reducing admixture shall be used in all concrete except for concrete used in foundations and slab-on-grade and in lightweight aggregate concrete.
3. Concrete mix containing pea rock as the coarse aggregate is not permitted.

C. Product Data: Submit to Architect:
   1. Certified mill reports on cements.
   2. Certified sieve analysis on aggregates.
   3. Cement manufacturer's name and brand name.
   4. Manufacturer's name and brand names of materials listed as products of more than one approved manufacturer.

D. Truck Delivery Tickets: Include on each ticket:
   1. Certification required by ASTM C94.
   2. Type and brand name of cement.
   3. Amount of cement, in pounds.
   4. Total amount of water, in gallons.
   5. Maximum size aggregate.
   6. Admixture brand and amount (if used).
   7. Batch time.
   8. Mix number.
   9. Instructions to add no water at site.

E. Construction Joint Locations: Submit proposed location of all construction joints for approval by the Engineer.

1.5 QUALITY ASSURANCE

A. Included in the responsibilities for concrete testing are the taking, handling, protecting and storing of test specimens, and the accurate reporting of compressive strength, weight of cylinders, or content of concrete, slump, air content and location of concrete. If the concrete fails to meet any part of the specifications, immediately notify Architect to obtain instructions.

B. Laboratory will be required to obtain samples, in accordance with ASTM C31-88 and perform compression test per ASTM C39-86; air content tests per ASTM C138-81 (gravimetric method), ASTM C173-78 (Volumetric method) or ASTM C231-82 (pressure method); slump test per ASTM C143-78.

C. Laboratory will test the number of cylinders specified below not less than once a day, nor less than once for each 150 cubic yards, or fraction thereof, or for each 5000 square feet of

surface areas for slabs or walls, whichever is smaller, of each class of concrete placed each day.

2 at 7 days for information
2 at 28 days for acceptance
2 at time directed by Architect if cylinders tested at 28 days do not indicate acceptable strength.

D. Moisture Vapor Reduction Admixture Testing Agent Qualifications
1. Personnel conducting field tests shall be qualified as ACI Concrete Field Testing Technician, Grade 1, according to ACI CP-1 or equivalent certification program.
2. Slab Moisture Testing and Evaluation: Personnel performing laboratory tests shall be certified in the conduct of ASTM D5084 under the supervision of a licensed geotechnical engineer. The determination as to whether the concrete slab is prepared to receive flooring, coatings, roofing, etc. rests with the MVRA manufacturer.
3. Source Limitations: Obtain each type of concrete moisture vapor reducing admixture from the same manufacturer.

1.6 EVALUATION AND ACCEPTANCE OF CONCRETE

A. Concrete strength will be evaluated by the Architect according to the provisions of ACI 318-11, Section 5.6. Should evidence of low-strength concrete exist, or if test results indicate non-conformance with these specifications, additional investigation, as outlined in ACI 318, Section 5.6.5 may be directed by the Architect. All such investigation, including the cost of the Architect's time, shall be at the Contractor's expense.

B. If, after additional investigation, evidence of low-strength concrete still exists, load tests in accordance with Chapter 20 of ACI 318 may be ordered by the Architect. In the event the concrete is determined to be inadequate by the Architect, the Contractor will remove it from the project and replace it with concrete conforming to these specifications, subject to all testing requirements herein. All such remedial work shall be at the Contractor's expense.

C. The Contractor shall be fully responsible for ensuring that all concrete and concrete placements are in accordance with the Project Specifications. Failure of Architect or Testing Laboratory to detect defective work, workmanship, or materials shall in no way prevent rejection and the Contractor taking approved corrective action when such defects are discovered. The Architect or the Testing Laboratory shall not, thereby, be obligated to make a final acceptance.

1.7 WARRANTY

A. Moisture Vapor Reduction Admixture (MVRA):

1. MVRA must be installed according to, and in compliance with, the manufacturer's published data sheet to include, but not limited to:

   a. Dosing instructions.
   b. Onsite representation requirements.
   c. Use of an ASTM E 1745 vapor retarder installed following ASTM E 1643 and ASTM F710 guidelines; slabs on deck do not require a vapor retarder.

2. Manufacturer's Warranty: To include:

   a. Term: Life of the concrete.
   b. Repair and/or removal of failed flooring or roofing.
   c. Placement of a topical moisture remediation system.

d. Replacement of flooring/roofing materials like original installed to include material and labor.
e. Daily Testing per ASTM D5084 Hydraulic Conductivity Testing.

3. Adhesion Warranty: MVRA Manufacturer shall provide an adhesion warranty to match the term of the adhesive and/or primer manufacturer's material defect warranty upon MVRA manufacturer's acceptance of field bond test.

PART 2 - PRODUCTS

2.1 CONCRETE MATERIALS

A. Portland Cement: ASTM C150, Type I, or Type III, of approved domestic manufacturer only. Use one brand of cement, for each class of cement throughout project, unless approved otherwise by Architect and Testing Laboratory.

B. Fly Ash: ASTM C618 Class C fly ash manufactured by Monier Resources or General Portland may be substituted for maximum of 25% of cement by weight for concrete used in foundations and slabs-on-grade.

C. Fine Aggregate: ASTM C33, sharp, clean, natural or manufactured sand, uniformly graded No. 4 to No. 100. Use aggregate from a single source for the entire project.

D. Coarse Aggregate:
1. Normal Weight: ASTM C33, washed gravel or crushed stone, graded No. 1 and No. 467 for concrete used in footings and pile caps; No. 67 for all other concrete. Use aggregates from a single source for the entire project.

2.2 ADMIXTURES

A. Acceptable Manufacturers:
1. W. R. Grace & Company.
2. Master Builders.
3. Sika Chemical Corporation.

B. Water Reducing Agents: ASTM C494. Admixtures used in concrete shall contain no calcium chloride or other corrosive chlorides.
1. Water Reducing, Normal Setting: Mid-Range, Type A.
a. W. R. Grace & Company “Daracem 55”
b. Master Builders "CSR-200".
c. Sika Chemical Corporation "Plastocrete 161".
2. Water Reducing and Retarding: Type D.
a. W. R. Grace & Company "WRDA" or Daratard-17".
b. Master Builders "Pozzolith R".
c. Sika Chemical Corporation "Plastiment".

C. Moisture Vapor Reduction Admixture: For use in all interior slabs on ground.

1. Basis-of-Design “Barrier One High Performance Moisture Vapor Reduction Admixture” manufactured by Barrier One, Inc..; 522 S. Hunt Club Blvd., #303, Apopka, Florida 32703; Contact Manufacturer’s representative: P: 877.224.5850, F: 866.594.3490 or Email at: info@barrierone.com

2. Subject to compliance with the requirements of this section, under provisions of Section 01 07, substitutions may be considered. Failure to provide a product that

meets or exceeds the MVRA warranty requirements of Section 01 07 and the MVRA field quality control requirements of 01 05 Quality Assurance “D” will result in all subsequent testing and slab remediation costs being borne by the ready mix supplier.

a. Description: Concrete moisture vapor reduction admixture for all interior slab (on ground and elevated) and structural roof deck construction shall be non-toxic, liquid admixture, specifically designed to have a natural chemical reaction with pre-existing elements inside the concrete to eliminate the route of moisture vapor emission through the slab by restricting the integral capillary system. Chemical reaction shall form a permanent barrier (capillary break) that is integral to the concrete, insoluble, and irremovable.

2.3 READYMIX CONCRETE

A. In accordance with ASTM C94-86b, Alternative No. 2.

B. Strength at 28 days: As specified on the structural drawings.

C. Water-Cement Ratio: Shall not exceed the maximum limit specified on the structural drawings.

D. Slump: Maximum 5 inches.

F. The temperature of concrete shall not exceed 95° F.

G. Admixtures: All concrete slabs placed at air temperatures below 50 degrees Fahrenheit shall contain the specified Non-Chloride, Non-Corrosive accelerator.

2.4 ACCESSORIES

A. Sheet Vapor Retarder: ASTM 1745 Compliant material, with a maximum permeance of 0.1 US Perms and a minimum thickness of 0.01”. Include manufacturer’s recommended adhesive or pressure-sensitive tape.
   1. Products: Subject to compliance with Requirements, [Available products that may be incorporated into the work may be manufactured by, but are not limited to, the following]:
      a. Insulation Solutions, Inc.
      b. Meadows, W.R., Inc.
      c. Raven Industries Inc.
      d. Reef Industries, Inc.
   2. It is the responsibility of the vapor retarder manufacturer to show compliance with the most current version of ASTM E1745.

B. Bonding Compound:

   1. Nonreemulsifiable Emulsion:
      a. W. R. Grace & Company "Daraweld-C".
      b. L & M Construction Chemicals, Inc. "Everbond".
      c. Nox-Crete Chemicals "Vinl-hesive".
      d. Sika Chemical Corporation "Sikabond".
      e. Sonneborn "Sonocrete".
   2. Epoxy:
      a. A. C. Horn, Inc. "Epoxtite 2390".
      b. L & M Construction Chemicals, Inc. "Permunite".
      c. Sika Chemical Corporation "Sikadur HiMod".
      d. Sonneborn "Sonobond".

e. Master Builders, “Concresive”.

C. Bond Breaker
1. 30# and 90# asphalt saturated roofing felt.

D. Expansion Joint Filler
1. Use Ceramar Flexible Foam Expansion Joint Filler by W. R. Meadows or approved equal at points of contact between slab-on-grade and vertical surfaces, such as columns, walls and elsewhere as indicated on the project drawings.

E. Curing Compound
1. Clear Curing and Sealing Compound (VOC complaint): The compound shall have 30 percent solids content minimum, and will not yellow under ultra violet light after 500 hours of test in accordance with ASTM C309-81 and will have a maximum moisture loss of 0.039 grams per sq. cm. when applied at a coverage rate of 250 sq. ft. per gallon. Product shall be “Super Aqua Cure VOX” or “Super Diamond Clear VOX” by The Euclid Chemical Company, “Masterkure” or “MB-429” by Master Builders, Inc.

F. Sheet Material for Curing Concrete
1. Waterproof paper or polyethylene film as per ASTM C171-69.

G. Non-Shrink Grout
1. The non-shrink grout shall be “Euco NS” by The Euclid Chemical Company, or “Masterflow 713” by Master Builders. The factory premixed grout shall conform to ASTM E1107, “Standard Specification for Packaged Dry, Hydraulic-Cement Grout (Non-shrink).” In addition, the grout manufacturer shall furnish test data from an independent laboratory indicating that the grout, when placed at a fluid consistency, shall achieve 95 percent bearing under a 4’ x 4’ base plate.
2. Where high fluidity and/or increased placing time is required use “Euco Hi-Flow Grout” by The Euclid Chemical Company or “Masterflow 938” by Master Builders. In addition, the grout manufacturer shall furnish test data from an independent laboratory indicating that the grout, when placed at a fluid consistency, shall achieve 95 percent bearing under an 18” x 36” base plate.

H. Concrete Floor Topping and Patching Mortar
1. Underlayment: Free-flowing, self-leveling, pumpable cementitious base compound, “Flo-Top” by The Euclid Chemical Company or approved equal.
2. Repair Topping: Self-leveling, polymer modified high strength topping, “Thin Top SL” by The Euclid Chemical Company.
3. Polymer Patching Mortar: “Euco Thin Coat, Concrete Coat” (horizontal repairs), “Verticoat LPL” (Vertical and overhead repairs) by The Euclid Chemical Company or “Sikatop 121 or 122” (horizontal repairs), “Sikatop 123” (vertical and overhead repairs) by Sika Chemical Corp. The low shrinkage structural repair mortar shall be a one component polymer, microsilica modified, high strength concrete repair mortar. This repair mortar only required the addition of water at the jobsite. Product shall be “SR-93” by The Euclid Chemical Company, or EMACO R series products by Master Builders, Inc.

I. Waterstops
1. Waterstops at construction joints shall be Grenstreak Plastic Products, Division of Western Textile Products Company, St. Louis, MO, #784; or Vinylex Corp., Knoxville, TN, #RB6-12; or Vulcan Metal Products, Inc., Birmingham, AL, #8071; or equal.

J. Structural Repair Mortar

1. Repair mortar shall be a shrinkage compensated, rheoplastic one component, cementitious based hand or low velocity spray applied mortar suitable for repairing distressed horizontal, vertical or overhead concrete.
2. The repair mortar shall meet or exceed the following requirements:

Compressive Strength @ 24 hours (ASTM C109)	3500 psi
Flexural Strength @ 28 days (ASTM C348)	1300 psi
Direct Shear Bond Strength (Michigan DOT)	600 psi
Modulus of Elasticity @ 28 days (ASTM C469)	4.6 x 10^6 psi

3. Product shall be EMACO S series by Master Builders, Inc. or approved substitution.

PART 3 - EXECUTION

3.1 PROPORTIONING

A. Determine average compressive strength in compliance with ACI 318.
   1. Evaluate field concrete compressive strength in compliance with ACI 214.

B. Proportion ingredients in compliance with ACI 211.1 for normal weight concrete.
   1. Indicated strengths.
   2. Durability.
   3. Ability to be readily worked into formwork without segregation of materials.

C. Moisture Vapor Reduction Admixture: For mix designs ranging from 0.42 to 0.52 w/cm, dose at 14 ounces per 100 pounds of total cementitious materials. Remove an equal amount of water from the mix. Add separately from other admixtures at the tail end of the load. Mix designs below 0.42 and above 0.52 may require adjustment.

3.2 MIXING

A. Mix concrete in compliance with ACI 304.

B. Provide ready-mixed concrete conforming to requirements of this specification. Do not job-mix concrete.
   1. Thoroughly clean equipment used for mixing and transporting concrete immediately before using.
   2. Use truck mixers conforming to ASTM C94. Do not exceed truck's rated capacity. Mix materials until uniformly distributed; discharge contents completely before recharging mixer.

C. If concrete arrives at Project site with slump below that suitable for placing, water may be added to mixture only if maximum slump is not exceeded and proper water/cement ratio is maintained.
   1. Do not add water to concrete except under direct observation of authorized representative of supplier.
   2. Incorporate authorized additional water and cement by additional mixing materials not less than one-half total mixing time required.
   3. Test cylinders shall be taken from all concrete which is modified in the field.

D. No concrete that is more than 90 minutes old shall be used for construction.

3.3 JOINTS

A. Construction joint locations for all structural slabs shall be approved by the engineer. Provide key ways as indicated on the drawings. Reinforcement shall be continuous through the construction joints.

B. Apply specified epoxy bonding compound on existing concrete surfaces that will be jointed with fresh concrete. Prepare surfaces in accordance with manufacturer's directions and follow mixing and placing instructions.

C. Provide waterstops in construction joints as shown in contract drawings. The length of pre-molded waterstops shall be selected to minimize the number of joints. Make provisions to support and protect waterstops during concrete placement. Field fabricate joints in waterstops in accordance with manufacturer's instructions.

D. Place specified joint material at all isolation joints and at contract between slab-on-grade and vertical concrete surfaces. Extend joint filler to within 1/8" of top of slab.

E. Provide expansion joints of specified size where shown in project drawings. Install covers per Section 05810.

F. Control Joints in Slab-On-Grade: Comply with ACI 302 and project drawings. Control joints shall be cut as soon as the concrete has hardened sufficiently to prevent dislodgment of aggregates. Joints shall be continuous slot to a depth of $1/4^{th}$ the slab thickness, but not less than 1". Complete sawing within 12 hours of concrete placement. Control joints shall be placed at all re-entrant corners. Comply with maximum spacing between joints specified in the project drawings.

G. Provide bull-nose tooled joints in slab composite with concrete joist in accordance with the drawings. Joint shall be 1" in depth.

3.4 EMBEDDED ITEMS

A. General: Set and secure embedded items to formwork so as they do not move during concrete placement, as shown on project drawings.

3.5 PLACING

A. Prior to Placing Concrete:
1. Inspect excavations, subgrades and formwork, as applicable for each placing operation, for accuracy of lines, levels, elevations and dimensions.
2. Inspect placement of reinforcing steel, expansion joint fillers, waterstops, vapor barriers and accessories for proper position, sizes, clearances, fastenings, laps and splices.
3. Moisten, do not saturate, earth subgrades and bearing surfaces not covered with membrane vapor barrier.
4. Thoroughly wet wood forms not otherwise treated with form oil or other approved form release agent.
5. In hot weather, moisten metal forms and decks to reduce potential flash set of concrete.
6. Insure that all reinforcement and other embedded items are securely fastened.

B. Convey concrete from mixer to place of final deposit in one continuous operation.
1. Place concrete as one continuous operation until entire unit being placed is complete.
2. Maintain concrete sufficiently plastic to flow readily into formwork and embed reinforcing without segregation of aggregates.
3. Use only approved methods and equipment for pneumatic placement of concrete.
4. Place concrete without displacing any reinforcement or other embedded items.

C. Use chutes of uniform shape and slope, or tremies, as necessary to control fall of concrete.
1. Limit free fall of concrete to not more than 3 feet.
2. Do not splash concrete upon forms and reinforcing.

D. Do not place partially hardened concrete.
   1. Do not re-temper concrete.
   2. Do not remix concrete after initial set.
   3. Do not place concrete contaminated by foreign materials.

E. Observe provisions of ACI 305 when ambient temperature is 90 degrees F. and greater.

F. Compact concrete thoroughly by rodding, spading, tamping and vibrating.
   1. Use trained, skilled operators under competent supervision for operation of vibrators.
   2. Provide properly sized vibrators, of required vibrations per minute to suit type of formwork, size of aggregate and slump of concrete.
      a. Keep one or more usable spare vibrators at placing location during placing operation.
   3. Penetrate previous lifts with vibrator.
      a. Pass vibrator completely through layer being worked and not less than 3-inches into previous layer.
      b. Hold vibrator in position until entrapped air is released and thin mortar film forms on concrete surface.
      c. Completely immerse vibrator into concrete being worked. Withdraw vibrator slowly to allow concrete to flow back into space occupied by vibrator.
   4. Drag vibrators in horizontal position when consolidating thin concrete slabs. Do not use vibrators for distribution of concrete.

G. When placing new slab areas adjacent to previously placed slabs, set screed tops with surveyor's instrument and make allowances for compaction caused by troweling and natural shrinkage.

H. Before placing concrete on or against previously set concrete:
   1. Thoroughly clean and roughen existing concrete surface.
   2. Coat existing concrete surface with bonding compound applied in compliance with compound manufacturer's printed instructions.

3.6 FINISHING

A. After placing concrete, screed to levels and slopes indicated. Do not use tamping tools to force aggregate away from surface.

B. When the water sheen has disappeared, use a wood float as indicated. Floated surface shall achieve an FF20/FL17 tolerance.

C. Where troweled finish is required, the surface shall initially receive a float finish. The surface shall then be troweled, at least twice, to a smooth dense finish. Remove small imperfections left by troweling machine and bring to a smooth, dense, polished finish by hand troweling. Continue troweling until a ringing sound is produced as the trowel is moved over the surface. Surface shall achieve an FF25/FL20 (FL17 for elevated slabs) tolerance.

D. Unless otherwise noted on plan, provide broomed finish at all ramps and exterior walkways. The surface shall be given a coarse transverse scored texture by drawing a broom or burlap belt across the surface. This operation shall follow immediately after floating. Texture shall be as approved by the Architect from sample panels.

   Provide stamped concrete slab at exterior drive areas and curbs using a pattern in accordance with architectural plans and details.

E. Do not use dry materials, such as sand and cement, on surfaces during finishing.

F. Do not use any procedures, such as the addition of water to the concrete surface that produces a layer of weak material with an increased water-cement ratio at the slab surface.

G. The specified underlayment or repair topping shall be used where surfaces do not achieve their specified tolerances.

H. Where floors are to be covered with thin set tile, trowel as specified above and then broom surfaces to form a “tooth”.

3. 7 CURING

A. As finished work is completed, begin curing. Curing may be accomplished by either of the methods described below, except for items specifically designated for a particular method.

B. Waterproof paper or plastic film curing: Cover damp surfaces with film or paper and lap at edges at least 4 inches. Apply weights to prevent displacement. Repair tears and punctures as they occur.

C. All exposed interior slabs and troweled slabs receiving mastic applied adhesives or metallic or mineral aggregate hardeners shall be cured with the curing and sealing compounds. Exterior slabs, sidewalks, curbs, architectural concrete and any concrete where total resistance to yellowing from ultra-violet light and water exposure is required shall be cured with the specified clear, non-yellowing curing and sealing compound.

D. Do not use curing and sealing compounds on surfaces receiving applied finishes other then resilient tile or carpet.

E. Where forms are left in place, keep forms damp by spraying at frequent intervals for at least 8 days. Do not allow forms to dry out.

3.8 PROTECTION

A. Protect concrete for at least 48 hours after finishing is complete. Erect barriers as necessary to protect uncured areas. Provide wood covers to protect uncured areas. Provide wood covers to protect concrete step-ups.

B. Protect concrete from paint and other stains, and from abrasive traffic.

3.9 PATCHING

A. After forms are removed do not patch or repair, except that fins may be removed to formed surfaces, until Architect has examined the work. After inspection by Architect, patch voids, honeycombs, spalls, chips, as directed.

B. Cut out honeycomb, rock pockets, voids over ¼” in any dimension, and holes left by tie rods and bolts, down to solid concrete, but in no case to a depth of less than 1”. Make edges of cuts perpendicular to the concrete surface. Before placing cement mortar, thoroughly clean, dampen with water and apply the specified bonding compound. The cement mortar shall be placed after the bonding compound has dried. In areas subjected to moisture, the specified epoxy adhesive shall be used. The patching mortar shall be placed while the epoxy adhesive is still tacky.

C. Rub exposed interior finished concrete as specified above. Where form marks and fins detract from appearance or are otherwise objectionable, remove them by rubbing.

D. The specified patching mortar may be used in lieu of the bonding compound and patching mortar with prior approval of the Engineer, when color match of the adjacent concrete is not required.

E. All overhead and vertical surface repairs shall be made with the specified polymer repair mortar (gel consistency).

F. All structural repairs shall be made with prior approval of the Engineer, as to the method and procedure, using the specified epoxy adhesive and/or epoxy mortar or the polymer repair mortar gel formulation. Where epoxy injection procedures must be used, an approved low viscosity epoxy made by the manufacturers previously specified shall be used.

3.10 Testing of Slabs Containing MVRA:

1. The moisture vapor reduction admixture (MVRA) manufacturer will perform all moisture testing in accordance with this specification and will issue project specific warranties prior to installation of any slab finishes; no further field slab moisture nor pH testing shall be required.

    a. Failure to provide a product that meets or exceeds these requirements will result in all subsequent testing and slab remediation costs being borne by the contractor.

2. A representative or agent of the moisture vapor reduction admixture (MVRA) manufacturer must be present at the jobsite during placement of all MVRA treated concrete. Do not proceed without this representative being present.
3. Field testing technician shall, at the expense of the MVRA Manufacturer, procure at least one 4 inch (102 mm) cylinder from every day of placement of MVRA dosed concrete for the purpose of subsequent hydraulic conductivity/coefficient of permeability testing.
4. All cylinders shall be independently lab tested in accordance with ASTM D 5084 at the expense of the MVRA manufacturer.
5. Test results must conform to specified limits.

    a. Should any cylinder from any day of placement deliver results in excess of 6.0 E-08 cm/sec, the concrete moisture vapor reduction admixture manufacturer shall procure, at their expense, a core (or cores) from that day of placement. This core (cores) shall be sent to an independent laboratory for hydraulic conductivity (coefficient or permeability) per ASTM D 5084.
    b. Should any core deliver results in excess of 6.0 E-08 cm/sec per ASTM D 5084, the concrete moisture vapor reduction admixture manufacturer shall provide, at their expense, a topical moisture mitigation system for all areas not meeting the stated limit.

6. Proceeding with placement of concrete dosed with the MVRA without the required representation will result in the contractor bearing the cost to core and ship appropriate material for testing per ASTM D 5084.

3.11 FLOOR TOPPING PLACEMENT

A. Clean substrate of oil, grease or other contaminants and broom clean. Apply primer to the substrate as recommended by the manufacturer. Place topping over primed substrate continuously in a thickness of approximately one inch. Protect completed topping from damage during remainder of construction with wood planking or similar material.

B. The underlayment topping shall be used for interior surfaces receiving applied finishes. The repair topping shall be used in all other areas. Lightweight concrete shall be used where it is required to bring top of slab elevations to the required level.

3.12 MISCELLANEOUS

A. Form depressions in floor slabs and depress structure where indicated. Slope top of slab as indicated on project drawings.

B. Coordinate placement of rigid steel conduit in floor slabs. Place conduit above reinforcements where possible.

C. Do not permanently embed wood members in concrete except as specifically so indicated.

3.13 CLEAN-UP

A. Clean up and leave concrete work free from any loose material. Remove any mortar spills from floors or other materials. Leave areas free from any debris.

B. Remove excess material and equipment from site when work is completed.

END OF SECTION 03 30 00

SECTION 03 90 00
CONCRETE CURING

PART I. GENERAL

1.01 RELATED DOCUMENTS
A. All applicable provisions of the Bidding and Contract Documents.

1.02 WORK INCLUDED
A. Maintenance of conditions for proper concrete curing.

1.03 RELATED WORK
A. Section 32 20 00 - Concrete Sidewalk

B. Section 03 00 00 - Concrete

1.04 QUALITY ASSURANCE
A. Conform to requirements of ACI 301.

1.05 REFERENCES
A. ACI 301 - Specifications for Structural Concrete for Buildings.

B. ASTM C309 - Liquid Membrane-Forming Compounds for Curing Concrete.

1.06 SUBMITTALS
A. Provide product data for specified products.

1.07 ENVIRONMENTAL REQUIREMENTS
A. Maintain ambient temperature at 70 degrees F for three (3) days.

PART II. PRODUCTS

2.01 MATERIALS
A. Water: Clean and not detrimental to concrete.

B. Absorptive Mat: Burlap fabric of 9 oz./sq. yd. clean, roll goods.

C. Curing Compound: As per ASTM C309.

PART III. EXECUTION

3.01 INSPECTION
A. Verify concrete surfaces are ready for curing.

3.02 CURING COMPOUND
A. Apply curing compound in two (2) coats with second coat at right angles to first.

B. Apply in accordance with manufacturer's instructions.

3.03 SPRAYING
A. Spray water over slab areas; maintain wet for three (3) days.

3.04 ABSORPTIVE MAT
A. Saturate burlap side of burlap fabric mat. Place over slab areas, burlap side down; lap edges and ends 12 inches. Maintain in place for seven (7) days.

3.05 CONCRETE CURING

A. Curing for standard grey work after finishing, cure concrete by keeping moist for one (1) week after placement. Floors and vertical surfaces may be sprayed with an approved curing compound to retard evaporation of water, if spraying is not objectionable because of future finishing requirements. Begin curing operations as soon as concrete has attained its initial set. Keep exposed concrete surface moist for at least one (1) week.

B. Apply a liquid membrane-forming compound, conforming with ASTM C 309, color to match that of the color condition concrete. Apply on flat work immediately after the finishing operation pursuant to the manufacturers recommendations.

C. Cure concrete as scheduled or indicated. D. Remove absorptive mat after curing.

3.06 MEASUREMENT AND PAYMENT

A. No separate measurement and payment is provided for work covered by this Section. All costs in connection with concrete curing shall be included in the bid price of any item in the bid schedule for which concrete curing is required.

END OF SECTION

SECTION 04 22 00

CONCRETE UNIT MASONRY

PART 1 - GENERAL

1.1 REFERENCE STANDARDS

A. American Concrete Institute (ACI):

1.	117	Standard Tolerances for Concrete Construction and Materials.
2.	315	Manual of Standard Practice for Detailing Reinforced Concrete Structures
3.	318	Building Code Requirements for Structural Concrete
4.	SP66	ACI Detailing Manual.
5.	530	Building Code Requirements for Masonry Structures.
6.	530.1	Specifications for Masonry Structures

B. American Society for Testing and Materials (ASTM):

1.	A36	Structural Steel.
2.	A82	Steel Wire, Plain, for Concrete Reinforcement.
3.	A153	Zinc Coating (Hot-Dip) on Iron and Steel Hardware.
4.	A366	Steel, Sheet, Carbon, Cold-Rolled, Commercial Quality.
5.	A615	Deformed and Plain Billet-Steel Bars for Concrete Reinforcement.
6.	A641	Zinc-Coated (Galvanized) Carbon Steel Wire.
7.	C129	Non-Load-Bearing Concrete Masonry Units.
8.	D412	Test Methods for Rubber Properties in Tension.
9.	D1752	Preformed Sponge Rubber and Cork Expansion Joint Fillers for Concrete Paving and Structural Construction.
10.	D2000	Classification System for Rubber Products in Automotive Applications.

C. American Welding Society (AWS):

1.	D1.1	Structural Welding Code for Steel.

D. Underwriters Laboratories, Inc. (UL):

1.	618	Standards for Safety for Concrete Masonry Units.

1.2 SUBMITTALS

A. General: In compliance with Section 01340 and as specified herein.

B. Shop Drawings: Include reinforcing detailing, reinforcing fabrication, bending, and placement of unit masonry reinforcing bars. Comply with ACI 315 showing bar schedules, stirrup spacing, diagrams of bent bars, and arrangement of masonry reinforcing.

C. Samples: One of each type of concrete block specified delivered to Project site.

D. Certificates: Three copies of Underwriter's Laboratories certification that concrete block furnished meets or exceeds requirements of one hour rating.

1.3 DELIVERY, STORAGE, AND HANDLING

A. Protect masonry materials during transportation, handling and storage.
   1. Store above ground on level platforms which allow air circulation under stacked units.
   2. Cover with heavy weatherproof coverings to prevent staining by weather, dirt, mud, oils and grease.
   3. Carefully handle to prevent chipping, spalling, cracking and all other damage which impairs strength, durability and appearance.
   4. Discard and remove damaged materials from Project site.

1.4 PROJECT CONDITIONS

A. Environmental Requirements:
   1. Do not lay masonry when temperature is below 32 degrees F. on rising temperature or below 40 degrees F. on falling temperature, unless adequate precautions are taken to prevent Work from freezing.
   2. During freezing or near freezing weather, provide adequate equipment or cover to protect completed portions of work and to maintain minimum temperatures above 50 degrees F.

PART 2 - PRODUCTS

2.1 CONCRETE MASONRY UNITS

A. Concrete Masonry Units: ASTM C 90.
   1. Unit Compressive Strength: Provide units with minimum average net-area compressive strength of 1900 psi (13.1 MPa).
   2. Weight Classification: Normal weight.
   3. Faces to Receive Plaster: Where units are indicated to receive a direct application of plaster, provide textured-face units made with gap-graded aggregates.

B. Fire Rated Concrete Block: Manufacture in compliance with UL 618 for one hour certification.

C. Shapes and Sizes: Uniform texture, square corners, and free from chips, cracks and spalls.
   1. Sizes: Standard units with nominal face dimensions of 8-inch x 16-inch, and 12-inch x 16-inch, thicknesses indicated.
   2. Shapes: Provide stretchers, lintel and bond beams, closed end partition blocks and other shapes indicated and required.

2.2 REINFORCEMENT, ANCHORAGES AND ACCESSORIES

A. Horizontal Reinforcing: 9 gauge wire conforming to ASTM A82.
   1. Standard Truss-Type for Single Wythe:
      a. AA Wire Products Company "Blok-Trus".
      b. Dur-O-Wal, Inc. "Truss Type".
      c. National Wire Products Corporation "Truss Type Block Mesh".
   2. Finish: ASTM A153, Class B-2 with 1.5 ounces zinc per foot coating for exterior work, ASTM A641, Class 3 with 0.1 ounces zinc per foot coating for interior walls in conditioned spaces and brite basic (uncoated) finish for interior work.
   3. Provide factory prefabricated "L" sections for corners, "T" wall intersections, and other special conditions; no toothing permitted.

4. Widths: As recommended by manufacturer for wall thicknesses indicated.

B. Reinforcing Bars: ASTM A615, Grade 60, as specified in Section 03200. Provide ASTM A82 minimum W1.5 galvanized positioners.

C. Flexible Anchoring; Masonry to Steel Columns and Beams: Fabricated from ASTM A82 galvanized steel wire; 1/4-inch diameter wire fabricated with triangular ends with 1/4-inch diameter wire crimped anchors for welding to columns or machine nuts and sized to extend within one-inch of masonry unit face.
1. AA Wire Products Company "AA401A" with AA400".
2. Dur-O-Wal, Inc. "D/A 710" with "D/A 701-708".
3. National Wire Products Corporation "No. 110" with "No. 200".

D. Dovetail Anchoring; Masonry to Concrete Walls and Columns:
1. Slots: Standard 1-inch wide x 1-inch deep with 5/8-inch throat, minimum 24 gauge galvanized steel.
   a. AA Wire Products Company "AA100".
   b. Dur-O-Wal, Inc. "D/A 100".
   c. National Wire Products Corporation "500 Series".
2. Anchors: 3-1/2 inch long x 1/4-inch diameter galvanized wire.
   a. AA Wire Products Company "AA200".
   b. Dur-O-Wal, Inc. "D/A 720-723".
   c. National Wire Products Corporation "506 Series".

E. Control Joints: AA Wire Products Co. "Titewall AA100", Dur-O-Wal, Inc. "D/A 2005", or Ty-Wal Div./Jim Taylor Inc., "Regular"; ASTM D2000, Designation 2AA-805, solid rubber, 80 durometer hardness.

F. Compressible Filler: One of following complying with ASTM D1752:
1. Burke Company "Cork Expansion Joint".
2. A. C. Horn, Inc. "Horn Cork Expansion Joint".
3. J & P Petroleum Products, Inc. "Tex-Cork".
4. W. R. Meadows, Inc. "SealTight Cork".
5. Sonneborn "Sonoflex Cork Expansion Joint".

G. Setting Bed: ASTM C270, Type "S" portland cement mortar, specified in Section 04100.

H. Wire Mesh Hardware Cloth: 1/2-inch x 16 gauge galvanized steel mesh, 1'-4" long; 2-inches less than wall width.

I. Masonry Cleaning Compound: As recommended by, and tested by, masonry unit manufacturer.

PART 3 - EXECUTION

3.1 PREPARATION

A. Ensure items built-in by other trades for this work are properly located and sized.

B. Establish all lines, levels and coursing. Protect from disturbance.

C. Provide temporary bracing during erection of masonry work. Maintain in place until building structure provides permanent bracing.

3.2 ERECTION

A. Lay masonry units plumb, level and true to line with accurate coursing.

B. Fully bond external and internal corners and intersections. Stop off horizontal run by racking back in each course; toothing is not permitted.

C. Do not shift or tap masonry units after mortar has taken initial set. Where adjustment must be made, remove mortar and replace.

D. Perform cutting on Project site with proper power tools to provide straight and true, unchipped edges.

E. Ensure masonry courses are of uniform height. Make vertical and horizontal joints equal and of uniform thickness.

F. Lay concrete masonry units in full face bed shelling, except lay bottom course in full mortar bed.
   1. Lay concrete block in running bond pattern.
   2. Butter head joints before placing units.
   3. Fill joints without slushing.
   4. Remove excess mortar and projections. Take care to prevent breaking block corners.

G. Lay masonry units dry. During prolonged hot and dry periods, units may be lightly dampened if approved by Architect.
   1. Do not lay freshly wet masonry, or masonry bearing a film of ice or frost.
   2. Lay masonry units with 3/8-inch thick bed and head joints to work to modular dimensions.
   3. Provide 1/2-inch joints where required by fire-rated assemblies.

H. Bed and Head Joints for Reinforced (Vertical Bar Reinforcing) and Fire-Rated Partitions:
   1. Bed Joints: Lay all courses in full bed of mortar.

   2. Head Joints: Apply mortar to vertical face shells on both masonry unit already laid and unit to be laid to ensure full head joint.

I. Build nonbearing partitions to within 3/8-inch of underside of floor, roof deck, or structural system, and fill gap with compressible filler.

J. Fire Rated Units: In locations indicated in Drawings.

K. Tool joints, where exposed to view, to hard concave surface with 5/8-inch radius x 18-inch long steel jointing tool.

L. Flush Cut Mortar Joints:
   1. Where resilient floor base is scheduled.
   2. Where concealed by finish materials other than paint.

M. Tolerances:
   1. Variation From Plumb: Do not exceed 1/4-inch in 10 feet, 3/8-inch in 20 feet or any story height.
   2. Variation From Level: Do not exceed 1/4-inch in 20 feet or any bay or 1/2-inch in 40 feet or more.
   3. Variation From Linear Building Line: Do not exceed 1/4-inch in 20 feet or any bay or 1/2-inch in 40 feet or more.

4. Variation From Cross-Sectional Dimension: Do not exceed minus 1/4-inch or plus 1/2-inch from wall thickness indicated.

3.3 REINFORCEMENT AND ANCHORAGES

A. Horizontal: Reinforce masonry walls and partitions with truss-type reinforcing 1'-4" on center vertically.
   1. Provide additional reinforcement spaced 8-inches on center in first and second bed joints above lintels at wall openings. Extend 2'-0" minimum each side of opening.
   2. Provide additional reinforcing in bed joint occurring 8-inches below top of walls.
   3. Provide continuous prefabricated reinforcement at corners and intersections.

B. Anchors:
   1. Anchor concrete masonry walls to abutting concrete walls and columns with dovetail anchors spaced not more than 1'-4" apart vertically.
   2. Anchor masonry walls to structural steel columns with flexible column anchors. Weld anchors to columns 2'-8" o.c. on flange. Weld beam anchors 4'-0" o.c.

C. Reinforce joint corners and intersections with strap anchors 1'-4" on center.

3.4 LINTELS

A. Provide reinforced masonry lintels over openings. Construct lintels using concrete and reinforcing specified and indicated in Drawings.

   1. Use reinforcing bars of full lengths only.
   2. Provide minimum 8-inches bearing at each end.

B. Place and consolidate concrete without disturbing reinforcing.

C. Allow lintels to reach maximum strength before removing temporary supports.

3.5 REINFORCED AND GROUTED COMPONENTS

A. Align vertical unit masonry cells to be filled to maintain clear, unobstructed vertical cell, continuous to foundation. Remove mortar droppings and debris from cells to be grouted.

B. Provide cleanouts at bottom of each vertically reinforced cell, at bottom cell of each pour of grout. Seal cleanouts after inspection of reinforcement, and before grouting begins, with concrete unit masonry or formwork.

C. Place reinforcement in compliance with Drawings, lapping as indicated. Secure at bottom and top and at intervals not exceeding 192 bar diameters.

D. Fill reinforced cells with cement grout in maximum 5'-0" lifts, consolidating by vibrating and rodding.

E. Form horizontal construction joints in grout lifts by stopping grout pour 1-1/2 inches below top of uppermost course in pour.

F. Grout minimum of two block cells adjacent to all jambs, at wall interruptions for structural elements, and at other locations indicated in Drawings.

G. Where units are indicated to be grouted, install wire mesh hardware cloth in cells to prevent migration of grout from masonry units.

3.6 CONTROL JOINTS

A. Control Joints: Make joints 3/8-inch wide unless indicated otherwise.
   1. Do not continue horizontal joint reinforcing across control joints. Stop horizontal joint reinforcement one-inch from control joints.
   2. Install resilient control joint in continuous lengths and weld butt and corner joints in compliance with manufacturer's instructions.
   3. Where control joints occur in running walls, provide sash block with rubber control joint filler.
   4. Size joint in compliance with Section 07920 for sealant performance.
   5. Provide Joints:
      a. In running walls spaced maximum 40'-0" o.c.
      b. At intersecting walls, either of which is more than 10'-0" long.
      c. At structural columns and vertical structural framing members.
      d. At intersections with concrete walls.
      e. At joint between masonry and structural slabs, beams or decks.
      f. At all changes in wall thickness.
      g. At all abrupt changes in wall height.

3.7 BUILT-IN ITEMS

A. As work progresses, build-in hollow metal frames, access doors, steel angle lintels, anchors, sleeves, inserts, boxes, conduit, and other work to be built into masonry.
   1. Tightly enclose sleeves for pipes, ducts and other items which pass through masonry.
   2. Verify anchorages embedded in concrete and attached to structural steel members are properly placed. Embed anchorages in every second joint.

B. Hollow Metal Frames:
   1. Fill in hollow metal frames solid with mortar grout as walls are constructed.
   2. Rake back 1/2-inch joint between hollow metal frame and adjacent masonry to receive sealant.
   3. Build-in anchors and enclose floor clips to secure tight, vibration-free frame.

3.8 CLEANING

A. Replacement: Remove and replace masonry units which are loose, chipped, broken, stained or otherwise damaged, or if units do not match adjoining units. Provide new units to match adjoining units and install in fresh mortar or grout, pointed to eliminate evidence of replacement.

B. Pointing: During tooling of joints, enlarge all voids or holes, except weep holes, and completely fill with mortar. Point-up all joints at corners, openings and adjacent work to provide neat, uniform appearance.

C. Cleaning:
   1. Clean exposed masonry surfaces as Work progresses as soon as practical after erection.
   2. Exercise care to avoid splashing mortar onto masonry and other finished surfaces.
      a. Remove loose mortar and fins with trowel and stiff fiber brushes.
      b. Remove mortar droppings and splashed mortar immediately.

3. Thoroughly wash down walls with clean water and leave in proper condition for applied finishes.
4. Thoroughly clean exposed masonry surfaces of efflorescence, stains, discolorations and other blemishes which will mar finished appearance of surfaces.
5. Protect clean surfaces from future soiling and re-clean as necessary to leave completed Work in first-class condition.

3.9 PROTECTION

A. Protect partially completed masonry against weather, when work is not in progress, but covering top of walls with strong, waterproof, non-staining membrane.

1. Extend membrane at least 2 feet down both sides of walls and anchor securely in place.

B. Provide temporary bracing during erection of masonry work. Maintain in place until building structure provides permanent bracing.

END OF SECTION 04 22 00

SECTION 05 12 00

STRUCTURAL STEEL FRAMING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes structural steel and architecturally exposed structural steel.

B. Related Sections: The following Sections contain requirements that relate to this Section:

1. Division 1 Section "Quality Control" for independent testing agency procedures and administrative requirements.
2. Division 3 Sections “Cast-in-Place Concrete” for embedded assemblies for structural steel connections.
3. Division 5 Section "Metal Fabrications" for loose steel bearing plates and miscellaneous steel framing.
4. Division 9 Section "Special Coatings" for surface preparation and priming requirements.
5. Division 9 Section "Painting" for surface preparation and priming requirements.

1.3 PERFORMANCE REQUIREMENTS

A. Structural Performance: Engineer structural steel connections required by the Contract Documents to be selected or completed by the fabricator to withstand design loadings indicated.

B. Engineering Responsibility: Engage a fabricator who utilizes a qualified professional engineer to prepare calculations, Shop Drawings, and other structural data for structural steel connections.

1.4 SUBMITTALS

A. General: Submit each item in this Article according to the Conditions of the Contract and Division 1 Specification Sections.

B. Product Data for each type of product specified.

C. Shop Drawings detailing fabrication of structural steel components.

1. Include details of cuts, connections, splices, camber, holes, and other pertinent data.
2. Indicate welds by standard AWS symbols, distinguishing between shop and field welds, and show size, length, and type of each weld.
3. Indicate type, size, and length of bolts, distinguishing between shop and field bolts. Identify high-strength bolted slip-critical, direct-tension, or tensioned shear/bearing connections.

4. Include Shop Drawings signed and sealed by a qualified professional engineer responsible for their preparation.

D. Qualification data for firms and persons specified in the "Quality Assurance" Article to demonstrate their capabilities and experience. Include lists of completed projects with project names and addresses, names and addresses of architects and owners, and other information specified.

E. Mill test reports signed by manufacturers certifying that their products, including the following, comply with requirements.

1. Structural steel, including chemical and physical properties.
2. Bolts, nuts, and washers, including mechanical properties and chemical analysis.
3. Direct-tension indicators.
4. Shear stud connectors.
5. Shop primers.
6. Non-shrink grout.

1.5 QUALITY ASSURANCE

A. Installer Qualifications: Engage an experienced Installer who has completed structural steel work similar in material, design, and extent to that indicated for this Project and with a record of successful in-service performance.

B. Fabricator Qualifications: Engage a firm experienced in fabricating structural steel similar to that indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to fabricate structural steel without delaying the Work.

1. Fabricator must participate in the AISC Quality Certification Program and be designated an AISC-Certified Plant as follows:

a. Category: Category I, conventional steel structures.

C. Comply with applicable provisions of the following specifications and documents:

1. AISC's "Specification for Structural Steel Buildings--Allowable Stress Design and Plastic Design."
2. AISC's "Load and Resistance Factor Design (LFRD) Specification for Structural Steel Buildings."
3. AISC's "Specification for Allowable Stress Design of Single-Angle Members."
4. AISC's "Specification for Load and Resistance Factor Design of Single-Angle Members."
5. ASTM A6 "Specification for General Requirements for Rolled Steel Plates, Shapes, Sheet Piling, and Bars for Structural Use."
6. Research Council on Structural Connections' (RCSC) "Specification for Structural Joints Using ASTM A325 or A490 Bolts."
7. Research Council on Structural Connections' (RCSC) "Load and Resistance Factor Design Specification for Structural Joints Using ASTM A325 or A490 Bolts."

D. Professional Engineer Qualifications: A professional engineer who is legally authorized to practice in the jurisdiction where Project is located and who is experienced in providing engineering services of the kind indicated. Engineering services are defined as those performed for projects with structural steel framing that are similar to that indicated for this Project in material, design, and extent.

E. Welding Standards: Comply with applicable provisions of AWS D1.1 "Structural Welding Code-Steel."

1. Present evidence that each welder has satisfactorily passed AWS qualification tests for welding processes involved and, if pertinent, has undergone recertification.

F. Pre-installation Conference: Conduct conference at Project site to comply with requirements of Division 1 Section "Project Meetings."

1.6 DELIVERY, STORAGE, AND HANDLING

A. Deliver structural steel to project site in such quantities and at such times to ensure continuity of installation.

B. Store materials to permit easy access for inspection and identification. Keep steel members off ground by using pallets, platforms, or other supports. Protect steel members and packaged materials from erosion and deterioration.

1. Store fasteners in a protected place. Clean and re-lubricate bolts and nuts that become dry or rusty before use.
2. Do not store materials on structure in a manner that might cause distortion or damage to members or supporting structures. Repair or replace damaged materials or structures as directed.

1.7 SEQUENCING

A. Supply anchorage items to be embedded in or attached to other construction without delaying the Work. Provide setting diagrams, templates, instructions, and directions, as required, for installation.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Structural Steel Shapes, Plates, and Bars: As follows:

1. Carbon Steel: ASTM A36.
2. High-Strength, Low-Alloy Columbium-Vanadium Steel: ASTM A572 Grade 50.

B. Cold-Formed Structural Steel Tubing: ASTM A500, Grade B.

C. Shear Connectors: ASTM A108, Grade 1015 through 1020, headed-stud type, cold-finished carbon steel, AWS D1.1, Type B.

D. Anchor Rods, Bolts, Nuts, and Washers: As follows:

1. Unheaded Rods: ASTM A36 or ASTM A307.
2. Headed Bolts: ASTM A307, Grade A; carbon-steel, hex-head bolts; and carbon-steel nuts.
3. Washers: ASTM A36.

E. High-Strength Bolts, Nuts, and Washers: ASTM A325, Type 1, heavy hex steel structural bolts with direct tension indicators (ASTM F959), heavy hex carbon-steel nuts, and hardened carbon-steel washers.

F. Welding Electrodes: AWS E70XX – Low Hydrogen electrodes.

2.2 PRIMER

A. Primer: Fast-curing, lead- and chromate-free, universal modified-alkyd primer with good resistance to normal atmospheric corrosion, complying with performance requirements of FS TT-P-664.

B. Galvanizing Repair Paint: High-zinc-dust-content paint for re-galvanizing welds and repair painting galvanized steel, with dry film containing not less than 93 percent zinc dust by weight, and complying with DOD-P-21035A or SSPC-Paint 20.

2.3 GROUT

A. Nonmetallic, Shrinkage-Resistant Grout: Premixed, nonmetallic, non-corrosive, non-staining grout containing selected silica sands, portland cement, shrinkage compensating agents, plasticizing and water-reducing agents, complying with ASTM C1107, of consistency suitable for application, and a 30-minute working time.

2.4 FABRICATION

A. Fabricate and assemble structural steel in shop to greatest extent possible. Fabricate structural steel according to AISC specifications referenced in this Section and in Shop Drawings.

1. Camber structural steel members where indicated.
2. Identify high-strength structural steel according to ASTM A6, and maintain markings until steel has been erected.
3. Mark and match-mark materials for field assembly.
4. Fabricate for delivery a sequence that will expedite erection and minimize field handling of structural steel.
5. Complete structural steel assemblies, including welding of units, before starting shop-priming operations.
6. Comply with fabrication tolerance limits of AISC's "Code of Standard Practice for Steel Buildings and Bridges" for structural steel.

B. Fabricate architecturally exposed structural steel with exposed surfaces smooth, square, and free of surface blemishes, including pitting, rust and scale seam marks, roller marks, rolled trade names, and roughness.

1. Remove blemishes by filling, grinding, or by welding and grinding, prior to cleaning, treating, and shop priming.
2. Comply with fabrication requirements, including tolerance limits, of AISC's "Code of Standard Practice for Steel Buildings and Bridges" for architecturally exposed structural steel.

C. Thermal Cutting: Perform thermal cutting by machine to greatest extent possible.

1. Plane thermally cut edges to be welded.

D. Finishing: Accurately mill ends of columns and other members transmitting loads in bearing.

E. Shear Connectors: Prepare steel surfaces as recommended by manufacturer of shear connectors. Use automatic end welding of headed-stud shear connectors according to AWS D1.1 and manufacturer's printed instructions.

F. Holes: Provide holes required for securing other work to structural steel framing and for passage of other work through steel framing members, as shown on Shop Drawings.

1. Cut, drill, or punch holes perpendicular to metal surfaces. Do not flame-cut holes or enlarge holes by burning. Drill holes in bearing plates.
2. Weld threaded nuts to framing and other specialty items as indicated to receive other work.

2.5 SHOP CONNECTIONS

A. Weld Connections: Comply with AWS D1.1 for procedures, appearance and quality of welds, and methods used in correcting welding work.

1. Assemble and weld built-up sections by methods that will maintain true alignment of axes without warp.
2. Verify that weld sizes, fabrication sequence, and equipment used for architecturally exposed structural steel will limit distortions to allowable tolerances. Prevent surface bleeding of back-side welding on exposed steel surfaces. Grind smooth exposed fillet welds in architecturally exposed steel that are 1/4 inch and larger. Grind flush butt welds. Dress exposed welds.

2.6 SHOP PRIMING

A. Shop prime steel surfaces, except the following:

1. Surfaces embedded in concrete or mortar. Extend priming of partially embedded members to a depth of 2 inches (50 mm).
2. Surfaces to be field welded.
3. Surfaces to be high-strength bolted with slip-critical connections.
4. Surfaces to receive sprayed-on fireproofing.
5. Galvanized surfaces.

B. Surface Preparation: Clean surfaces to be painted. Remove loose rust, loose mill scale, and spatter, slag, or flux deposits. Prepare surfaces according to SSPC specifications as follows:
1. SSPC-SP 3 "Power Tool Cleaning."

C. Priming: Immediately after surface preparation, apply primer according to manufacturer's instructions and at rate recommended by SSPC to provide a dry film thickness of not less than 1.5 mils. Use priming methods that result in full coverage of joints, corners, edges, and exposed surfaces.

1. Stripe paint corners, crevices, bolts, welds, and sharp edges.
2. Apply 2 coats of shop paint to inaccessible surfaces after assembly or erection. Change color of second coat to distinguish it from first.

D. Painting: Apply a 1-coat, non-asphaltic primer complying with SSPC's "Painting System Guide No. 7.00" to provide a dry film thickness of not less than 1.5 mils.

2.7 GALVANIZING

A. Hot-Dip Galvanized Finish: Apply zinc coating by the hot-dip process to structural steel indicated for galvanizing according to ASTM A123.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Before erection proceeds, and with the steel erector present, verify elevations of concrete and masonry bearing surfaces and locations of anchorages for compliance with requirements.

B. Do not proceed with erection until all unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Provide temporary shores, guys, braces, and other supports during erection to keep structural steel secure, plumb, and in alignment against temporary construction loads and loads equal in intensity to design loads. Remove temporary supports when permanent structural steel, connections, and bracing are in place, unless otherwise indicated.

3.3 ERECTION

A. Set structural steel accurately in locations and to elevations indicated and according to AISC specifications referenced in this Section.

B. Base and Bearing Plates: Clean concrete and masonry bearing surfaces of bond-reducing materials and roughen surfaces prior to setting base and bearing plates. Clean bottom surface of base and bearing plates.

1. Set base and bearing plates for structural members on wedges, shims, or setting nuts as required.
2. Tighten anchor bolts after supported members have been positioned and plumbed. Do not remove wedges or shims but, if protruding, cut off flush with edge of base or bearing plate prior to packing with grout.
3. Pack grout solidly between bearing surfaces and plates so no voids remain. Finish exposed surfaces, protect installed materials, and allow to cure.

    a. Comply with manufacturer's instructions for proprietary grout materials.

C. Maintain erection tolerances of structural steel within AISC's "Code of Standard Practice for Steel Buildings and Bridges."

1. Maintain erection tolerances of architecturally exposed structural steel within AISC's "Code of Standard Practice for Steel Buildings and Bridges."

D. Align and adjust various members forming part of complete frame or structure before permanently fastening. Before assembly, clean bearing surfaces and other surfaces that will be in permanent contact. Perform necessary adjustments to compensate for discrepancies in elevations and alignment.

1. Level and plumb individual members of structure.
2. Establish required leveling and plumbing measurements on mean operating temperature of structure. Make allowances for difference between temperature at time of erection and mean temperature at which structure will be when completed and in service.

E. Splice members only where indicated.

F. Remove erection bolts on welded, architecturally exposed structural steel; fill holes with plug welds; and grind smooth at exposed surfaces.

G. Do not use thermal cutting during erection.

H. Finish sections thermally cut during erection equal to a sheared appearance.

I. Do not enlarge unfair holes in members by burning or by using drift pins. Ream holes that must be enlarged to admit bolts.

3.4 FIELD CONNECTIONS

A. Weld Connections: Comply with AWS D1.1 for procedures, appearance and quality of welds, and methods used in correcting welding work.

1. Comply with AISC specifications referenced in this Section for bearing, adequacy of temporary connections, alignment, and removal of paint on surfaces adjacent to field welds.
2. Assemble and weld built-up sections by methods that will maintain true alignment of axes without warp.
3. Verify that weld sizes, fabrication sequence, and equipment used for architecturally exposed structural steel will limit distortions to allowable tolerances. Prevent surface bleeding of back-side welding on exposed steel surfaces. Grind smooth exposed fillet welds 1/4 inch and larger. Grind flush butt welds.

3.5 FIELD QUALITY CONTROL

A. Owner will engage an independent testing and inspecting agency to perform field inspections and tests and to prepare test reports.

1. Testing agency will conduct and interpret tests and state in each report whether tested Work complies with or deviates from requirements.

B. Correct deficiencies in or remove and replace structural steel that inspections and test reports indicate do not comply with specified requirements.

C. Additional testing, at Contractor's expense, will be performed to determine compliance of corrected work with specified requirements.

D. Field-bolted connections will be tested and inspected according to RCSC's "Specification for Structural Joints Using ASTM A325 or A490 Bolts."

E. Field-bolted connections will be tested and inspected according to RCSC's "Load and Resistance Factor Design Specification for Structural Joints Using ASTM A325 or A490 Bolts."

3.6 CLEANING

A. Galvanized Surfaces: Clean field welds, bolted connections, and abraded areas and apply high-zinc-dust-content paint with dry film containing not less than 93% zinc dust by weight, and complying with DOD-P-21035A.

END OF SECTION

SECTION 05 21 00

STEEL JOIST FRAMING

PART 1 GENERAL

1.1 SECTION INCLUDES

A. K-series steel joists.
B. K-series steel joist substitutes.
C. LH- and DLH-series long-span steel joists.
D. Joist girders.
E. Joist accessories.

1.2 SUBMITTALS

A. Product Data: For each type of joist, accessory, and product.
B. Shop Drawings:
   1. Include layout, designation, number, type, location, and spacing of joists.
   2. Include joining and anchorage details, bracing, bridging, and joist accessories; splice and connection locations and details; and attachments to other construction.
C. Welding certificates.
D. Manufacturer certificates.
E. Mill Certificates: For each type of bolt.

1.3 QUALITY ASSURANCE

A. Manufacturer Qualifications: A manufacturer certified by SJI to manufacture joists complying with applicable standard specifications and load tables in SJI's "Specifications."
B. Manufacturer's responsibilities include providing professional engineering services for designing special joists to comply with performance requirements.
C. Welding Qualifications: Qualify field-welding procedures and personnel according to AWS D1.1/D1.1M, "Structural Welding Code - Steel."

1.4 DELIVERY, STORAGE, AND HANDLING

A. Deliver, store, and handle joists as recommended in SJI's "Specifications."

PART 2 PRODUCTS

2.1 K-SERIES STEEL JOISTS

A. Manufacture steel joists of type indicated according to "Standard Specifications for Open Web Steel Joists, K-Series" in SJI's "Specifications," with steel-angle top- and bottom-chord members, underslung ends, and parallel top chord.
B. Steel Joist Substitutes: Manufacture according to "Standard Specifications for Open Web Steel Joists, K-Series" in SJI's "Specifications," with steel-angle or -channel members.

2.2 PRIMERS

A. Low-Emitting Materials: Paints and coatings shall comply with the testing and product requirements of the California Department of Health Services' "Standard Practice for the

Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers."

B. Primer: SSPC-Paint 15, or manufacturer's standard shop primer complying with performance requirements in SSPC-Paint 15.

2.3 JOIST ACCESSORIES

A. Bridging: Provide bridging anchors and number of rows of bridging of configuration, material, size, and type required by SJI's "Specifications" for type of joist, chord size, spacing, and span. Furnish additional erection bridging if required for stability.

B. Furnish ceiling extensions, either extended bottom-chord elements or a separate extension unit of enough strength to support ceiling construction. Extend ends to within 1/2 inch of finished wall surface unless otherwise indicated.

C. Carbon-Steel Bolts and Threaded Fasteners: ASTM A 307, Grade A , carbon-steel, hex-head bolts and threaded fasteners; carbon-steel nuts; and flat, unhardened steel washers.

D. High-Strength Bolts, Nuts, and Washers: ASTM A 325, Type 1, heavy hex steel structural bolts; ASTM A 563 heavy hex carbon-steel nuts; and ASTM F 436 hardened carbon-steel washers.

E. Furnish miscellaneous accessories including splice plates and bolts required by joist manufacturer to complete joist assembly.

2.4 CLEANING AND SHOP PAINTING

A. Clean and remove loose scale, heavy rust, and other foreign materials from fabricated joists and accessories.

B. Apply one coat of shop primer.

PART 3 EXECUTION

3.1 INSTALLATION

A. Do not install joists until supporting construction is in place and secured.

B. Install joists and accessories plumb, square, and true to line; securely fasten to supporting construction according to SJI's "Specifications," joist manufacturer's written recommendations, and requirements in this Section.

1. Before installation, splice joists delivered to Project site in more than one piece.
2. Space, adjust, and align joists accurately in location before permanently fastening.
3. Install temporary bracing and erection bridging, connections, and anchors to ensure that joists are stabilized during construction.

C. Field weld joists to supporting steel. Coordinate welding sequence and procedure with placement of joists. Comply with AWS requirements and procedures for welding, appearance and quality of welds, and methods used in correcting welding work.

D. Install and connect bridging concurrently with joist erection, before construction loads are applied. Anchor ends of bridging lines at top and bottom chords if terminating at walls or beams.

3.2 FIELD QUALITY CONTROL

A. Testing Agency: Owner will engage a qualified independent testing and inspecting agency to inspect field welds and bolted connections and to perform field tests and inspections and prepare test and inspection reports.

END OF SECTION 05 21 00

SECTION 05 31 00
STEEL DECKING

PART 1 GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this section.

1.2 SUMMARY

A. This Section includes steel deck units for floor and roof applications.

1.3 SUBMITTALS

A. General: Submit the following in accordance with Conditions of Contract and Division 1 Specification Sections.

1. Product data including manufacturer's specifications and installation instructions for each type of decking and accessories.

   a. Provide test data for mechanical fasteners used in lieu of welding for fastening deck to supporting structures.

2. Shop drawings showing layout and types of deck units, anchorage details, and conditions requiring closure strips, supplementary framing, sump pans, cant strips, cut openings, special jointing, and other accessories.

1.4 QUALITY ASSURANCE

A. Codes and Standards: Comply with provisions of the following codes and standards, except as otherwise indicated:

1. American Iron and Steel Institute (AISI), "Specification for the Design of Cold-Formed Steel Structural Members."

2. American Welding Society (AWS), D1.3 "Structural Welding Code - Sheet Steel."

3. Steel Deck Institute (SDI), "Design Manual for Composite Decks, Form Decks and Roof Decks."

B. Qualification of Field Welding: Use qualified welding processes and welding operators in accordance with "Welder Qualification" procedures of AWS.

1. Welded decking in place is subject to inspection and testing. Owner will bear expense of removing and replacing portions of decking for testing purposes if welds are found to be satisfactory. Remove work found to be defective and replace with new acceptable work.

C. Underwriters' Label: Provide metal floor deck units listed in Underwriters' Laboratories "Fire Resistance Directory", with each deck unit bearing the UL label and marking for specific system detailed.

D. FM Listing: Provide steel roof deck units that have been evaluated by Factory Mutual System and are listed in "Factory Mutual Approval Guide" for "Class I" fire-rated construction.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated in the work include but are not limited to the following:

B. Manufacturers: Subject to compliance with requirements, provide products of one of the following:

1. Bowman Metal Deck Div., Cyclops Corp.
2. Consolidated Systems, Inc.
3. Epic Metals Corp.
4. Marlyn Steel Products, Inc.
5. H. H. Robertson Co.
6. Roll Form Products, Inc.
7. Roof Deck, Inc.
8. United Steel Deck, Inc.
9. Vulcraft Div., Nucor Corp.
10. Wheeling Corrugating Co.

2.2 MATERIALS

A. Steel for Painted Metal Deck Units: ASTM A 611, grade as required to comply with SDI specifications.

B. Steel for Galvanized Metal Deck Units: ASTM A 446, grade as required to comply with SDI specifications.

C. Miscellaneous Steel Shapes: ASTM A 36.

D. Shear Connectors: Headed stud type, ASTM A 108, Grade 1015 or 1020, cold-finished carbon steel, with dimensions complying with AISC specifications.

E. Shear Connectors: Strap type, ASTM A 570, Grade D, hot-rolled carbon steel.

F. Sheet Metal Accessories: ASTM A 526, commercial quality, galvanized.

G. Galvanizing: ASTM A 525, G60.

H. Galvanizing Repair: Where galvanized surfaces are damaged, prepare surfaces and repair in accordance with procedures specified in ASTM A 780.

I. Paint: Manufacturer's baked-on, rust-inhibitive paint, for application to metal surfaces that have been chemically cleaned and phosphate chemical treated.

J. Flexible Closure Strips: Manufacturer's standard vulcanized, closed-cell, synthetic rubber.

K. Acoustic Sound Barrier Closures: Manufacturer's standard mineral fiber closures.

2.3 FABRICATION

A. General: Form deck units in lengths to span three or more supports, with flush, telescoped, or nested 2-inch laps at ends and interlocking or nested side laps, of metal thickness, depth, and width as indicated.

B. Roof Deck Units: Provide deck configurations that comply with SDI Specifications and Commentary for Steel Roof Deck."

D. Non-Composite Steel Form Deck: Provide fluted sections of metal deck as permanent forms for reinforced concrete slabs.

G. Metal Cover Plates: Fabricate metal cover plates for end-abutting floor deck units of not less than same thickness as decking. Form to match contour of deck units and approximately 6 inches wide.

H. Metal Closure Strips: Fabricate metal closure strips, for cell raceways and openings between decking and other construction, of not less than 0.045-inch min. (18 gauge) sheet steel. Form to provide tight-fitting closures at open ends of cells or flutes and sides of decking.

I. Roof Sump Pans: Fabricate from single piece of 0.071-inch min. (14 gauge) galvanized sheet steel with level bottoms and sloping sides to direct water flow to drain. Provide sump pans of adequate size to receive roof drains and with bearing flanges not less than 3 inches wide. Recess pans not less than 1-1/2 inches below roof deck surface unless otherwise shown or required by deck configuration. Holes for drains will be cut in the field by others.

PART 3 - EXECUTION

3.1 INSTALLATION

A. General: Install deck units and accessories in accordance with manufacturer's recommendations, shop drawings, and as specified herein.

B. Place deck units on supporting steel framework and adjust to final position with ends accurately aligned and bearing on supporting members before being permanently fastened. Do not stretch or contract side lap interlocks.

C. Align deck units for entire length of run of cells and with close alignment between cells at ends of abutting units.

D. Place deck units flat and square, secured to adjacent framing without warp or deflection.

E. Do not place deck units on concrete supporting structure until concrete has cured and is dry.

F. Coordinate and cooperate with structural steel erector in locating decking bundles to prevent overloading of structural members.

G. Do not use floor deck units for storage or working platforms until permanently secured.

H. Fastening Deck Units:

1. Fasten floor deck units to steel supporting members by nominal 5/8- inch puddle welds or elongated welds of equal strength, spaced not more than 12 inches o.c. with a minimum of two welds per unit at each support. See Structural drawings for spacing.

2. Tack weld or use self-tapping No. 8 or larger machine screws at 4 feet o.c. for fastening end closures.

3. Fasten roof deck units to steel supporting members by not less than 5/8-inch-diameter puddle welds or elongated welds of equal strength, spaced not more than 12 inches at every support, and at closer spacing where indicated. See Structural drawings for spacing. In addition, secure deck to each supporting member in ribs where side laps occur.

4. Comply with AWS requirements and procedures for manual shielded metal arc welding, appearance and quality of welds, and methods used in correcting welding work.

a. Use welding washers where recommended by deck manufacturer.

5. Mechanical fasteners, either powder-actuated or pneumatically driven, may be used in lieu of welding, with prior approval. Locate mechanical fasteners and install in accordance with deck manufacturer's instructions.

6. Mechanically fasten side laps of adjacent deck units between supports, at intervals not exceeding 36 inches o.c., using self-tapping No. 8 or larger machine screws. See Structural drawings for spacing.

7. Uplift Loading: Install and anchor roof deck units to resist net uplift loading. See Structural drawings for pressures.

a. Keep the interiors of cells that will be used as raceways free of welds having sharp points or edges.

I. Cutting and Fitting: Cut and neatly fit deck units and accessories around other work projecting through or adjacent to the decking, as shown.

J. Reinforcement at Openings: Provide additional metal reinforcement and closure pieces as required for strength, continuity of decking, and support of other work shown.

K. Hanger Slots or Clips: Provide UL-approved punched hanger slots between cells or flutes of lower element where floor deck units are to receive hangers for support of ceiling construction, air ducts, diffusers, or lighting fixtures.

1. Hanger clips designed to clip over male side lap joints of floor deck units may be used instead of hanger slots.

2. Locate slots or clips at not more than 14 inches o.c. in both directions, not over 9 inches from walls at ends, and not more than 12 inches from walls at sides, unless otherwise indicated.

3. Provide manufacturer's standard hanger attachment devices.

L. Joint Covers: Provide metal joint covers at abutting ends and changes in direction of floor deck units, except where taped joints are required.

M. Roof Sump Pans: Place over openings provided in roof decking and weld to top decking surface. Space welds not more than 12 inches o.c. with at least one weld at each corner.

N. Shear Connectors: Weld shear connectors to supports through decking units in accordance with manufacturer's instructions using automatic welding equipment only. Do not hand weld. Do not weld shear connectors through two layers (lapped ends) of decking units. Weld only on clean, dry deck
surfaces.

O. Closure Strips: Provide metal closure strips at open uncovered ends and edges of roof decking and in voids between decking and other construction. Weld into position to provide a complete decking installation.

1. Provide flexible closure strips instead of metal closures, at Contractor's option, wherever their use will ensure complete closure. Install with adhesive in accordance with manufacturer's instructions.

P. Touch-Up Painting: After decking installation, wire brush, clean, and paint scarred areas, welds, and rust spots on top and bottom surfaces of decking units and supporting steel members.

1. Touch-up galvanized surfaces with galvanizing repair paint applied in accordance with manufacturer's instructions.

2. Touch-up painted surfaces with same type of shop paint used on adjacent surfaces.

Q. In areas where shop-painted surfaces are to be exposed, apply touch-up paint to blend into

adjacent surfaces.

R. Touch-Up Painting: Cleaning and touch-up painting of field welds, abraded areas, and rust spots, as required after erection and before proceeding with field painting, is included in Division 9 under "Painting."

END OF SECTION 05 31 00

SECTION 06 10 00

ROUGH CARPENTRY

PART I. GENERAL

1.1 SCOPE

A. Fasteners and framing accessories
B. Installation of exterior doors and windows
C. Interior soffits and fire-blocking
D. Blocking and backing
E. Shop drawings
F. Samples

1.2 GENERAL REQUIREMENTS

A. The work of this section is governed by the conditions set forth in the Agreement between the Owner and Contractor, the General Conditions of the Contract for Construction, Division 1 of these Specifications, and all other documents that make up the Agreement.
B. The Contractor shall ensure that the work of this section is coordinated with the work of all related trades affected by or affecting the work of this Section.
C. The work of this section includes providing all labor, material, miscellaneous fasteners and accessories, and equipment required to complete the work of this Section including but not limited to that work specified herein and on the Drawings or as required for a complete job.
D. Provide pressure treated material in all instances where contact with masonry is made.

1.3 RELATED SECTIONS

A. Basic Requirements, Section 01 11 00
B. LEED Credit Summary 01 35 63
C. Cast in Place Concrete, Section 03 30 00
D. Unit Masonry, Section 04 22 00
E. Structural steel framing, Section 05 12 00
F. Finish Carpentry, Section 06 20 00
G. Access Panels, Section 08 31 16
H. Gypsum Board Assemblies Section 09 21 16

1.4 REFERENCE STANDARDS

A. All framing lumber and details of wood construction shall conform to latest edition of the "National Design Specification for Wood Construction" (NDS), published by the American Forest & Paper Association.
B. Framing grades are based on Western Wood Products, "Western Lumber Grading Rules and Standards".

1.5 QUALITY ASSURANCE

A. All new dimensional framing lumber shall be grade marked at mill and be surfaced dry to a maximum of 19% moisture content.
B. Material required to be CCA pressure treated shall be stamped at mill treating wood with the treatment and rating noted on each piece of wood.
C. Material required to be fire treated shall be stamped at the mill. The stamp shall show the treatment and fire rating on each piece of wood.

D. Framing material and installation shall comply with all state and local building codes.

1.6 DELIVERY, STORAGE AND HANDLING

A. Framing materials shall be stored off the ground and protected with waterproof tarps at all times.
B. All framing accessories including but not limited to nails, screws, and anchors shall be stored on pallets and covered with waterproof tarps or stored in covered waterproof storage shed.
C. Framing materials and accessories shall be stored in an orderly manner to facilitate reviews of the material by the Architect and Engineer.
D. Tarps and protection of material shall be maintained on a daily basis.

PART 2. PRODUCTS

2.1 GENERAL FRAMING

A. Materials specified herein are the general framing materials for the project. The Drawings may have more restrictive requirements for certain conditions. The structural requirements of the Drawings and structural notes should be reviewed carefully.

2.2 DIMENSIONAL FRAMING MATERIALS

A. Blocking, plates, and miscellaneous non-structural framing;
   1. Standard grade Douglas fir

2.3 ACCESSORIES

A. Nails, screws, bolts and other fasteners shall be:
   1. Hot dip galvanized.
B. Exposed fasteners to be stainless steel:
   1. Grade 304 for non-salt water installations
C. Concealed bolts, nuts, and washers to be chrome/nickel plated steel
D. Sill gasket to be 1/4" by 6" closed cell polyethylene foam in continuous rolls.
E. Insect screening at continuous soffit vents to be black fiberglass screen.

PART 3. EXECUTION

3.1 FRAMING:

A. Set all framing members level, plumb and square.
B. Carefully coordinate joist and rafter layout with mechanical, electrical and plumbing trades. Provide all cutting and headering for mechanical trades as required after obtaining approval from engineer. Do not cut or header any structural member without prior, written approval.
C. Provide adequate bracing during construction so that walls stay plumb, square and straight.
D. Provide fire-blocking at tops of all walls, at tops of walls below soffits, and at midpoints of walls over 12 feet in height. Provide any other fire-blocking as required by local codes.
E. Provide solid 2x blocking at all bath accessories, hand rail brackets, closet shelving and clothes poles, and between changes in materials at wall surfaces.

3.2 EXTERIOR WINDOW AND DOOR INSTALLATION

A. Windows and exterior doors shall be installed per the requirements of their respective

Sections in Division 8.

3.3 TOLERANCES

A. Each wall shall be plumb to within 1/8 in. per 8 foot of length.
B. Building to be square within 1/2" on the diagonal.
C. Each room to be square to within 1/4" on the diagonal.
D. Each wall shall be straight to within 1/8 in. per 10 feet of length.
E. All floors shall be level to within ¼ in. per 20 foot of length.
F. All floors shall be true to within ¼’ in. per 10 feet.

END OF SECTION

SECTION 06 20 00

FINISH CARPENTRY

PART I. GENERAL

1.1 SCOPE

A. Installation of interior doors provided by Section 08210.
B. Installation of all millwork fabricated under Section 06400, unless otherwise noted.
C. Shelving and closet fit out.
D. Submittal of samples
E. Submittal of shop drawings

1.2 GENERAL REQUIREMENTS

A. The work of this section is governed by the conditions set forth in the Agreement between the Owner and Contractor, the General Conditions of the Contract for Construction, Division 1 of these Specifications, and all other documents that make up the Agreement.
B. The Contractor shall ensure that the work of this section is coordinated with the work of all related trades affected by or affecting the work of this Section.
C. The work of this section includes providing all labor, material, miscellaneous fasteners and accessories, and equipment required to complete the work of this Section including but not limited to that work specified herein and on the Drawings or as required for a complete job.

1.3 RELATED SECTIONS

A. LEED Credit Summary 01 35 63
B. Rough Carpentry, Section 06 10 00
C. Joint Protection, Section 07 90 00
D. Doors and Windows, Division 8
E. Gypsum Board Assemblies, Section 09 21 16
F. Painting and Coating, Section 09 90 00

1.4 SUBMITTALS

A. Make submittals in accordance with requirements of Division 1.
B. Submit shop drawings, as noted on the Drawings, on items fabricated and assembled on or off site.
C. Submit factory cut sheets and details of all items manufactured and assembled off site.

1.5 QUALITY ASSURANCE AND REFERENCES

A. All work shall be manufactured and installed according to AWI Quality Standards, 7th Edition, Version 1.0, 1997 published by the Architectural Woodwork Institute, 1952 Isaac Newton Square W., Reston VA. 20190.
B. Lumber shall conform to the requirements of Section 100 of the AWI Quality Standards, 7th Edition.
C. The above standards are minimal requirements. The standards specified herein shall govern if more restrictive.
D. Wood that is required to be fire rated shall conform to the Classification as defined in ASTM E 84, Method of Test for Surface Burning Characteristics of Building Materials (Steiner Tunnel Test). This test is also designated as U. L. No. 273 and NFPA No. 255.

1.6 DELIVERY, STORAGE AND HANDLING

A. Ensure that the materials of this Section are stored in conditioned spaces.
B. Materials of this section shall be stored neatly on racks to avoid damage to the materials.

PART 2. PRODUCTS

2.1 GENERAL

A. Where required by the Drawings or governing building codes the materials specified herein shall be treated to achieve the following fire rating per ASTM E 84:
   1. Flame spread rating of 25 to 75, Class B or Class II.
   2. Smoke developed rating of 450 or less.

2.2 MATERIALS

A. Panel and lumber material:
   1. Painted lumber to be:
      a. Clear white pine
   2. Panel core to be:
      a. Plywood.
   3. Planking for dual purpose boxing ring to be Southern Yellow Pine.

2.3 ACCESSORIES

A. All nails to be galvanized and shall be of length required to penetrate wood substrate 3/4".
B. Nails and other fasteners shall be of the smallest size required to properly fasten the material.

2.4 WOOD TREATMENT AND PRIMING

A. All interior wood that is to be stained, receive a clear finish, or be painted, is to be back primed.
B. Finishing for interior wood is to be as noted on the Drawings and as per Painting, Section 09 90 00.
C. Painted finish as specified in Section 09 90 00.

PART 3. EXECUTION

3.1 EXAMINATION AND PREPARATION

A. Before proceeding with purchasing or fabricating work in this section, obtain approvals for all shop drawings, samples, and mock-ups. Fabrication may proceed from shop drawings "approved as noted". However, a corrected set is to be submitted to the Architect as a record set.
B. As work proceeds, cull out all boards and other material that do not comply
C. Have all required primers and preservatives on site and ready for use prior to starting work.
D. Inspect and sign off on all sub-surfaces prior to starting installation.

3.2 INSTALLATION

A. Install all work in accordance with AWI grades specified herein.
B. All components shall be set true, plumb, and level with no distortions. Shim as required using concealed shims. Scribe and fit work to adjoining work and existing surfaces (i.e.

walls, floors, ceilings, etc.). All work is to be securely and rigidly fastened in place.

C. All miters and joints are to be coplanar.
D. All finish nails shall be countersunk.
E. All plywood and MDF shall be edge banded a per finish required unless edge is to be trimmed.
F. Install wood doors per the requirements of Section 08 10 00.
G. Millwork and cabinets shall be installed per the requirements of Section 06 40 00 and 12350.

3.3 PREPARATION FOR FINISHING

A. Set all nails and fasteners and fill holes after sealing.
B. Clean all glue from joints as work is being done.

3.4 PROTECTION AND JOB CLOSEOUT

A. Protect all finished trim work from damage before, during and after installation.

END OF SECTION

SECTION 06 40 00

ARCHITECTURAL WOODWORK

PART I. GENERAL

1.1 SCOPE

A. Supply and installation of all shop-built and site built architectural casework.
B. Plastic laminate and wood counter tops.
C. Priming of all items to be field painted.
D. Finishing of all shop finished items.
E. All shop assembled wood work items
F. Painted woodwork
G. Transparent finished woodwork
H. Casework with plastic laminate finish
I. Submittals
J. Shop Drawings
K. Samples
L. Mock ups

1.2 GENERAL REQUIREMENTS

A. The work of this section is governed by the conditions set forth in the Agreement between the Owner and Contractor, the General Conditions of the Contract for Construction, Division 1 of these Specifications, and all other documents that make up the Agreement.
B. The Contractor shall ensure that the work of this section is coordinated with the work of all related trades affected by or affecting the work of this Section.
C. The work of this section includes providing all labor, material, miscellaneous fasteners and accessories, and equipment required to complete the work of this Section including but not limited to that work specified herein and on the Drawings or as required for a complete job.

1.3 RELATED SECTIONS

A. Rough Carpentry, Section 06 10 00
B. Finish Carpentry, Section 06 20 00
C. Hardware, Division 8
D. Gypsum Board Assemblies, Section 09 2116
E. Tiling, Section 09 30 00
F. Painting and coating, Section 09 90 00
G. Plumbing, Division 22
H. Electrical, Division 26

1.4 SUBMITTALS

A. Provide large scale shop drawings for review and approval of all casework.
   1. Draw casework, in place, showing adjacent door or window trim to identify any encumbrances on the functioning of the drawers and doors of the cabinets.
   2. Draw plans, sections, elevations and details as required to show all details of the work.
   3. Show veneer pattern and grain direction on all shop drawings.

B. Provide full scale samples of each type of drawer face.
C. Provide full scale samples of each type of door face.
D. Provide full scale samples of each type of panel.

E. Provide 2 samples of each type of finish specified below. Samples to be at least 12" x 12".
F. Provide product data on finish system.
G. Submit manufacturer's literature and cut sheets on each type of cabinet hardware to be supplied by Contractor.

1.5 QUALITY ASSURANCE

A. All work shall be manufactured and installed according to AWI Quality Standards, 7th Edition, Version 1.0, 1997 published by the Architectural Woodwork Institute, 1952 Isaac Newton Square W., Reston VA. 20190.
B. Lumber shall conform to the requirements of Section 100 of the AWI Quality Standards, 7th Edition.
C. Architectural Cabinets shall conform to the requirements of Section 400 of the AWI Quality Standards, 7th Edition.
D. Paneling and Related Wood Doors shall conform to the requirements of Section 500 of the AWI Quality Standards, 7th Edition.
E. Solid Wood Panel Products shall conform to the requirements of Section 200 of the AWI Quality Standards, 7th Edition.
F. The above standards are minimal requirements. The standards specified herein shall govern if more restrictive.
G. Wood that is required to be fire rated shall conform to the Classification as defined in ASTM E 84, Method of Test for Surface Burning Characteristics of Building Materials (Steiner Tunnel Test). This test is also designated as U. L. No. 273 and NFPA No. 255.

1.6 DELIVERY, STORAGE AND HANDLING

A. Millwork shall be delivered to site at least 14 days prior to installation to acclimate to building's environment.
B. Millwork shall be stored in such a way as to prevent damage.
C. Store materials in such a way to accommodate easy inspection of the materials prior to installation.

PART 2. PRODUCTS

2.1 MATERIALS: GENERAL

A. Products, finishing, and installation of Architectural Cabinets shall conform to the requirements set forth in Section 400 of the AWI Quality Standards, 7th Edition.
B. Products, finishing, and installation of Paneling shall conform to the requirements set forth in Section 500 of the AWI Quality Standards, 7th Edition.
C. All wood shall be kiln dried and have a moisture content of between 7% and 9% at time of installation.
D. Note that finger-jointed material is not permitted in Premium or Custom quality work.
E. Where required by the Drawings or governing building codes the materials specified herein shall be treated to achieve the following fire rating per ASTM E 84:
    1. Flame spread rating of 25 to 75, Class B or Class II.
    2. Smoke developed rating of 450 or less.

2.2 MATERIALS

A. Panel and lumber material:
    1. Painted lumber to be:
        a. Clear white pine
B. Interior of cabinet carcasses at cabinets without plumbing to be:
    1. HPDL on 7 ply hardwood veneer core plywood.
C. Interior of vanity, sink cabinets, and other wet cabinets to be melamine on MDF.

D. Drawer boxes to be fabricated of :
   1. Plastic laminate sides and back:
      a. HPDL on 7 ply hardwood veneer core plywood, 1/2" minimum, on all visible surfaces when drawer is open.

2.3 LAMINATE MATERIAL

A. Laminates to conform to NEMA LD 3 for grade and type used.
B. Plastic laminate manufacturer:
   1. Wilsonart International
   2. Or approved equal
C. Laminate material at horizontal surfaces to be High Pressure Decorative Laminate (HPDL):
   1. HGF, Fire rated, .048" thick where noted on the Drawings or required by the governing building codes.
D. Laminate material at vertical surfaces to be High Pressure Decorative Laminate (HPDL):
   1. HGF, Fire rated, .048" thick where noted on the Drawings or required by the governing building codes.

E. Core to be MDF as per AWI grades.
F. Core to be fire treated where required by Drawings or governing building codes.
   1. Flame spread rating of 25 to 75, Class B or Class II.
   2. Smoke developed rating of 450 or less.
G. Match adjacent laminates as required per AWI grade specified.
H. Backer laminate required per AWI grade specified.
I. Semi exposed material to be:
   1. HPDL

2.4 SHELVING MATERIAL:

A. For painted finish, minimum 3/4" plywood, A/A grade with solid edge.
B. For clear finish, minimum 3/4" plywood, AA/AA grade with solid edge unless otherwise detailed on the Drawings.
C. Particleboard or flake board shelves are not permitted.
D. Plastic laminate shelves shall be edge banded on both edges with HPDL to match faces.
E. Shelves to be boards of same material as trim. Thickness and profiles are as per Drawings.
F. Shelves shall be sized for a maximum deflection of 1/4" at mid span.

2.5 ACCESSORIES

A. Shelf pins:
   1. With ferrules
B. Wire manager grommets manufacturer:
   1. Doug Mockett and Company

2.6 HARDWARE

A. Hinges to be:
   1. Concealed, European style.
B. Manufacturers of exposed hinges:
   1. Stanley
   2. Acorn
   3. Baldwin
   4. Merrit
C. Manufacturers of concealed hinges:
   1. Hafele

2. Blum
3. Grass
4. Millworker option.

D. Drawer glides to have the following functions and capacities unless otherwise noted:
1. Extension:
a. Standard
2. Static load capacity shall be the following in general. Glides for special drawers shall be sized accordingly.
a. 75 pounds for commercial
3. Stop requirement:
a. Positive stop
4. Closing:
a. Self closing

E. Drawer glides to be manufactured by:
1. Accuride
2. Blum
3. Hafele
4. Millworker option.

F. Drawer glides to be mounted as follows:
1. Side mount

G. Wire Pulls, brushed aluminum finish.
1. Baldwin
2. Or approved equal

2.7 FABRICATION

A. Millwork shall be fabricated per the following AWI standard:
1. Premium grade

B. All casework shall be fabricated as per Drawings, approved shop drawings, and AWI grades specified herein. In all cases, the stricter details or requirements shall govern.

C. Coordinate all fabrication with mechanical, electrical and plumbing requirements.

D. Contractor is responsible for verifying field conditions and coordinating shop drawings and fabrication with the field conditions. Contractor is to notify Architect in writing if discrepancies are found between field conditions and dimensions on Drawings.

E. Before proceeding with purchasing or fabricating work in this section, obtain approvals for all shop drawings, samples, and mock-ups. Fabrication may proceed from shop drawings "approved as noted". However, a corrected set is to be submitted to the Architect as a record set.

F. All plywood and MDF shall be edge banded as per finish required unless edge is to be trimmed.

G. As work proceeds, cull out all boards and other material that do not comply with the grades specified or the samples approved.

H. European assembly screws are not permitted in Premium work.

I. All joints are to be glued.

J. Non-machined joints are to be doweled or biscuited and glued under pressure.

K. Drawer Construction:
1. Corners to be:
a. Millworker option that complies with AWI Grade specified and the design intent of the Architect.
2. All joints to be glued under pressure.
3. Bottoms to be set in 1/4" groove in drawer sides.

L. Cabinet body construction:
1. Case body members shall be joined as follows;
a. Millworker option that complies with AWI Grade specified and the design intent of the Architect.
2. All joints to be glued under pressure.
3. No exposed fasteners in face of cabinets.

4. Recess 1/4" cabinet backs to allow for installation strips.
5. End panels shall be free of visible fasteners.

M. Face frame and trim joinery:
1. Face frame stile and rail assembly
a. Millworker option that complies with AWI Grade specified and the design intent of the Architect.
2. Face frame to body members:
a. Glue under pressure, no exposed fasteners
3. All joints to be glued under pressure.

2.8 PREPARATION FOR FINISHING

A. Prior to shop priming or finishing, all wood shall be sanded free of all planner marks and sanding marks.
B. Set all nails and fasteners and fill holes after sealing.
C. Clean all glue from joints as work is being done.
D. Coarsest grit for final sanding shall be 150.

2.9 WOOD FINISHING AND PRIMING

A. Washcoat is to be used as a grain filler. It is to be compatible with system specified.

PART 3. EXECUTION

3.1 EXAMINATION AND PREPARATION

A. Have all required primers and preservatives on site and ready for use prior to starting work.
B. Inspect and sign off on all subsurfaces prior to starting installation.
C. Ensure that adequate blocking has been installed for all casework and shelving.
D. Before starting interior millwork installation, building shall be fully enclosed. Heating and AC shall be operational for a stable, controlled environment.
1. Temperature in spaces must be maintained at between 60 and 90 Deg. F.
2. Relative humidity must be maintained between 25% and 55%.
E. Moisture content of millwork shall be checked during installation and shall remain within 1% of that moisture content during and after installation.

3.2 INSTALLATION

A. Install all work in accordance with AWI premium quality standard.
B. All components shall be set true, plumb, and level with no distortions. Shim as required using concealed shims. Scribe and fit work to adjoining work and existing surfaces (i.e. walls, floors, ceilings, etc.). All work is to be securely and rigidly fastened in place.
C. Work which adjoins finished wall surfaces shall be fitted and scribed in a careful manner and ample allowance in fabrication shall be given for cutting and scribing. Maximum scribe permitted is 1 inch wide.
D. All millwork shall be installed with concealed fastening wherever possible. Where this is impossible, the means of securing shall be placed in an inconspicuous place.
E. Accurately fit and glue joints, corners, miters. Joints shall be hairline tight with no gaps. Use screws, not nails, for fastening.
F. Exposed surfaces are to be free from dents, tool marks, warpage, buckle, glue and open joints or other defects affecting serviceability or appearance, visible from any distance.

3.3 PROTECTION, ADJUSTMENTS AND JOB CLOSE OUT

A. Protect all casework before, during and after installation.
B. Make preliminary adjustments to cabinets as work is installed.

C. At close out of job, adjust all drawer fronts, drawer glides, doors and hinges and other hardware for proper tolerances and ease of operation.
D. Touch up any surfaces that have been marred during construction. Use only workers skilled in touch-up work or who were the original finishers. Use only materials that are compatible with the finish.
E. Provide record copies of all approved shop drawings.
F. Provide complete written maintenance instructions for all millwork.

END OF SECTION

SECTION 07 20 00

INSULATION AND FIRESTOPPING

PART I. GENERAL

1.1 SCOPE

A. Firestopping
B. Submittals

1.2 GENERAL REQUIREMENTS

A. The work of this section is governed by the conditions set forth in the Agreement between the Owner and Contractor, the General Conditions of the Contract for Construction, Division 1 of these Specifications, and all other documents that make up the Agreement.
B. The Contractor shall ensure that the work of this section is coordinated with the work of all related trades affected by or affecting the work of this Section.
C. The work of this section includes providing all labor, material, miscellaneous fasteners and accessories, and equipment required to complete the work of this Section including but not limited to that work specified herein and on the Drawings or as required for a complete job.

1.3 RELATED SECTIONS

A. Rough Carpentry, Section 06 10 00
B. Finish Carpentry, Section 06 20 00
C. Gypsum Board Assemblies, Section 09 21 16
D. Access Panels, Section 08 31 00

1.4 SUBMITTALS

A. Supply manufacturer's cut sheets on all insulation material.
B. Provide samples of all rigid insulation.
C. Provide fire rating documentation on all rated material.
D. Submit for review, complete test numbers from U.L. or other approved testing agencies for proposed firestopping assemblies prior to start of work. Proposed assemblies must comply with these tested assemblies and be accepted by the governing building codes and officials.

1.5 QUALITY CONTROL AND STANDARDS

A. Provide manufacturer’s certification of Miami-Dade County Product approval with roofing assembly.
B. All products and installations shall conform to the ASTM referenced herein for the materials specified.
C. All firestopping must have a U.L. or other testing laboratory test number for the assembly and must be installed as per the tested installation.

1.6 DELIVERY, STORAGE AND PROTECTION

A. Store rigid insulation in a dry area, off the ground and protected from sunlight. Do not allow this insulation to come in contact with tar or asphalt products.
B. Protect polystyrene from moisture throughout course of construction.

C. Do not deliver batt insulation until building is weather tight and framing and rough mechanical and electrical work is complete.
D. Protect all insulation from damage while exposed.

PART 2. PRODUCTS

2.1 FIRESTOPPING:

A. Approved products and manufacturer's:
   1. Thermofiber by USG in thickness as required.
   2. Sealants, foams and mortars by 3M: 1-800-328-1687.
B. The types of firestopping required for this project are:
   1. Through penetration firestopping at fire-rated construction.
   2. Construction-gap firestopping at fire-rated construction.

2.2 ACCESSORIES

A. PL 300 to hold Styrofoam in place until backfilling.
B. Polystyrene ventilation channels at vented roofs and ceilings.
C. Vapor barrier at floor slab shall be polyethylene sheeting conforming to ASTM D 4397:
   1. 8 mil polyethylene
   2. As noted on drawings

PART 3. EXECUTION

3.1 EXAMINATION AND PREPARATION

A. Do not start insulation of framing until all inspections have been made and framing and rough mechanical systems approved.

3.2 INSTALLATION OF FIRESTOPPING

A. Protect surrounding surfaces from firestopping materials during installation.
B. Prepare for and install all firestopping per manufacturer's printed literature and the instructions of U.L Resistance Directory or Mortars per Warnock Hersey approval.
C. All gaps in construction, open voids at tops of walls, voids around pipe and conduit penetrations are to be fire and smoke stopped.
D. Leave firestopping installation accessible for inspection by local code officials prior to enclosure.

3.3 INSTALLATION OF ROOF INSULATION

A. Roof insulation shall be installed as a one-source installation by the roofing contractor.
B. Insulation shall be installed as per manufacture's written instructions.
C. Tapered insulation shall be manufactured and installed per reviewed shop drawings.
D. Insure that substrate is prepared as required per roofing manufacturer prior to installation of rigid insulation.

3.4 CLOSEOUT OF INSULATION

A. Prior to covering any work of this section, ensure that all insulation is properly installed.
B. Replace any insulation that has been damaged after installation.
C. Ensure that all work is inspected and approved by the local building code officials prior to covering any insulation.
D. Ensure that insulation and its installation comply with all governing building and energy codes.

END OF SECTION

SECTION 07 21 40

FOAMED-IN-PLACE MASONRY WALL INSULATION

PART 1 GENERAL

1.01 SUMMARY

A. Extent of insulation work is shown on drawings and indicated by provisions of this section.

B. Applications of insulation specified in this section include the following:

1. Foamed-in-Place masonry insulation for thermal, sound and fire resistance values

1.02 SUBMITTALS

A. Product and technical presentation as provided by the manufacturer.

B. Certified Test Reports: With product data, submit copies of certified test reports showing compliance with specified performance values, including R-values, fire performance and sound abatement characteristics.

C: Material Safety Data Sheet: Submit Material Safety Data Sheet complying with OSHA Hazard Communication Standard, 29 CRF 1910 1200.

1.03 QUALITY ASSURANCE

A. Manufacturing Standards: Provide insulation produced by a single and approved manufacturer. The product must come from the manufacturer pre-mixed to ensure consistency.

B. Installer Qualifications for Foamed-In-Place Masonry Insulation: Engage an experienced dealer/applicator who has been trained and licensed by the product manufacturer and which has not less than ten years direct experience in the installation of the product used.

C. Warranty: Upon request, a one year product and installation warranty will be issued by both the manufacturer and installer.

D: Fire Performance Characteristics: Provide insulation materials which are identical to those whose fire performance characteristics, as listed for each material or assembly of which insulation is a part, have been determined by testing, per methods indicated below, by a testing agency acceptable to authorities having jurisdiction.

E. Insurance: Insulation Subcontractor shall carry Products and Completed Operations Insurance with minimum liability limits of $ 7,000,000.

F. Product must be classified by Underwriters Laboratory ® ("UL") as to Surface Burning Characteristics

Fire Resistance Ratings:	ASTM E-119
Surface Burning Characteristics:	ASTM E-84
Combustion Characteristics:	ASTM E-136

PART 2 - PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS

A. Manufacturers of Foamed-in-Place Masonry Insulation: Subject to compliance with requirements, provide products from the following:

a. **"Core-Fill 500™"**- Tailored Chemical Products, P.O. Drawer 4186, Hickory, N.C. 28663, (800) 627-1687

1. Florida Distributor
Tailored Foam of Florida, Inc.
P.O. Box 520986
Longwood, FL 32752
Telephone: 407-332-0333 Fax: 407-830-9174

2.02 INSULATING MATERIALS

A. General: Provide insulating materials which comply with requirements indicated for materials, compliance with referenced standards, and other characteristics.

B. Foamed-in-Place Masonry Insulation: Two component thermal insulation produced by combining a plastic resin and catalyst foaming agent surfactant which, when properly rationed and mixed, together with compressed air produce a cold-setting foam insulation in the hollow cores of hollow unit masonry walls.

Surface Burning Characteristics: Maximum flame spread, smoke developed and fuel contributed of 0, 5 and 0 respectively.

Combustion Characteristics: Must be noncombustible, Class A building material.

Thermal Values: "R" Value of 4.91/inch @ 32 degrees F mean; ASTM C-177

Sound Abatement: Minimum Sound Transmission Class ("STC") rating of 53 and a minimum Outdoor Indoor Transmission Class (“OITC”) rating of 44 for 8” wall assembly (ASTM E 90-90)

PART 3 - EXECUTION

3.01 INSPECTION AND PREPARATION

A. Application Assemblies:

Block Walls: 6", 8", 10" or 12" concrete masonry units

Cavity Walls: 2" cavity or greater

3.02 INSTALLATION OF FOAMED-IN-PLACE INSULATION

A. General: Install foamed-in-place insulation from interior, or as specified, prior to installation of interior finish work and after all masonry and structural concrete work is in place; comply with manufacturer's instructions.

B. Installation: Fill all open cells and voids in hollow concrete masonry walls where shown on drawings. The foam insulation shall be pressure injected through a series of 5/8" to 7/8" holes drilled into every vertical column of block cells (every 8" on center) beginning at an approximate height of four (4) feet from finished floor level. Repeat this procedure at an approximate height of ten (10) feet above the first horizontal row of holes (or as needed) until the void is completely filled. Patch holes with mortar and score to resemble existing surface.

END OF SECTION

END OF SECTION

SECTION 07 52 16

SBS-MODIFIED BITUMEN MEMBRANE ROOFING (HEAT WELDED)

1.01 SUMMARY

A. Work shall include, but is not limited to, the following:
1. Preparation of new concrete roof deck, and all flashing substrates.
2. Anchor/Base Sheet mechanically fastened.
3. SBS-modified bitumen base ply (heat-welded).
4. SBS-modified bitumen Cap Sheet (heat-welded).
5. SBS-modified bitumen membrane flashings.
6. Liquid-applied, reinforced flashings.
7. Sheet metal flashings and sheet metal roof edge system.
8. All related materials and labor required to complete specified roofing necessary to receive specified manufacturer's warranty.

1.02 RELATED SECTIONS

A. Division 01 11 00 Basic Requirements

1.03 DEFINITIONS

A. ASTM D 1079-Definitions of Term Relating to Roofing, Waterproofing and Bituminous Materials.
B. The National Roofing Contractors Association (NRCA) Roofing and Waterproofing Manual, Fifth Edition Glossary.

1.04 PRE-INSTALLATION MEETINGS

A. Convene prior to commencing work at a time and location to be determined by the Owner/Owners Representative.

1.05 REFERENCES

A. AMERICAN SOCIETY OF CIVIL ENGINEERS - Reference Document ASCE 7, Minimum Design Loads for Buildings and Other Structures.
B. AMERICAN STANDARD OF TESTING METHODS (ASTM):
1. ASTM C 726 - Standard Specification for Mineral Wool Roof Insulation Board.
2. ASTM C 728 - Standard Specification for Perlite Thermal Insulation Board.
3. ASTM C 836 - Standard Specification for High Solids Content, Cold Liquid-Applied Elastomeric Waterproofing Membrane for Use with Separate Wearing Course.
4. ASTM C 920 - Standard Specification for Elastomeric Joint Sealants
5. ASTM C 1177/C 1177M - Standard Specification for Glass Mat Gypsum Substrate for Use as Sheathing.
6. ASTM C 1278 - Standard Specification for Fiber-Reinforced Gypsum Panel.
7. ASTM C 1289 - Standard Specification for Faced Rigid Cellular Polyisocyanurate Insulation Board.

8. ASTM D 41 - Standard Specification for Asphalt Primer Used in Roofing, Damp proofing, and Waterproofing.
9. ASTM D 312- Standard Specification for Asphalt Used in Roofing.
10. ASTM D 1970 - Standard Specification for Self-Adhering Polymer Modified Bituminous Sheet Materials Used as Steep Roofing Underlayment for Ice Dam Protection.
11. ASTM D 2178 - Standard Specification for Asphalt Glass Felt Used in Roofing and Waterproofing.
12. ASTM D 3019 - Standard Specification for Lap Cement Used with Asphalt Roll Roofing, Non-Fibered, Asbestos-Fibered, and Non-Asbestos-Fibered.
13. ASTM D 3746 - Standard Test Method for Impact Resistance of Bituminous Roofing System.
14. ASTM D 4586 - Standard Specification for Asphalt Roof Cement, Asbestos-Free.
15. ASTM D 4601 - Standard Specification for Asphalt-Coated Glass Fiber Base Sheet Used in Roofing.
16. ASTM D 5147 - Standard Test Methods for Sampling and Testing Modified Bituminous Sheet Material.
17. ASTM D 5849 - Standard Test Method for Evaluating Resistance of Modified Bituminous Roofing Membrane to Cyclic Fatigue (Joint Displacement)
18. ASTM D 6162 - Standard Specification for Styrene Butadiene Styrene (SBS) Modified Bituminous Sheet Materials Using a Combination of Polyester and Glass Fiber Reinforcements.
19. ASTM D 6163 - Standard Specification for Styrene Butadiene Styrene (SBS) Modified Bituminous Sheet Materials Using Glass Fiber Reinforcements.
20. ASTM D 6164 - Standard Specification for Styrene Butadiene Styrene (SBS) Modified Bituminous Sheet Materials Using Polyester Reinforcements.
21. ASTM D 6298 - Standard Specification for Fiberglass Reinforced Styrene-Butadiene-Styrene (SBS) Modified Bituminous Sheets with a Factory Applied Metal Surface.
22. ASTM D 7379 - Standard Test Methods for Strength of Modified Bitumen Sheet Material Laps Using Cold Process Adhesive.
23. ASTM E 108 - Standard Test Methods for Fire Tests of Roof Coverings.
24. ASTM E 1980 - Standard Practice for Calculating Solar Reflectance Index of Horizontal and Low-Sloped Opaque Surfaces.

C. AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)::
1. ANSI/SPRI/FM 4435/ES-1 Wind Design Standard for Edge System Used with Low Slope Roofing System.
2. ANSI/SPRI FX-1, Standard Field Test Procedure for Determining the Withdrawal Resistance of Roofing Fasteners.
3. ANSI/SPRI IA-1, Standard Field Test Procedure for Determining the Mechanical Uplift Resistance of Insulation Adhesives over Various Substrates.
4. ANSI/FM 4474- American National Standard for Evaluating the Simulated Wind Resistance of Roof Assemblies Using Static Positive and/or Negative Differential Pressures.

D. CANADIAN GENERAL STANDARDS BOARD (CGSB):
1. CGSB 37-GP 56M- Standard for: Modified Bituminous, Prefabricated, and Reinforced for Roofing.

E. FACTORY MUTUAL (FM):
1. FM 4450 - Approval Standard - Class I Insulated Steel Roof Decks.
2. FM 4470 - Approval Standard - Class I Roof Covers.

F. NATIONAL ROOFING CONTRACTORS ASSOCIATION (NRCA).

G. SHEET METAL AND AIR CONDITIONING CONTRACTORS NATIONAL ASSOCIATION INC. (SMACNA) Architectural Sheet Metal Manual.

H. UNDERWRITERS LABORATORY (UL):
1. UL 790 Standard Test Methods for Fire Tests of Roof Coverings.
2. UL 1256 – Fire Test of Roof Deck Constructions.

1.06 ACTION SUBMITTALS

A. Product Data Sheets: Submit manufacturer's product data sheets, installation instructions and/or general requirements for each component.
B. Material Safety Data Sheets: Submit manufacturer's Material Safety Data Sheets (MDS) for each component.
C. Sample/Specimen Warranty from the manufacturer and contractor.
D. Shop Drawings: Provide roof plan and applicable roof system detail drawings.

1.07 INFORMATIONAL SUBMITTALS

A. Contractor Certification: Submit written certification from roofing system manufacturer certifying that the applicator is authorized by the manufacturer to install the specified materials and system.

1.08 CLOSEOUT SUBMITTALS

A. Warranty: Provide manufacturer's and contractor's warranties upon substantial completion of the roofing system.

1.09 QUALITY ASSURANCE

A. MANUFACTURER QUALIFICATIONS:
1. Manufacture shall have 20 years of experience manufacturing SBS-modified bitumen roofing materials.
2. Trained Technical Field Representatives, employed by the manufacturer, independent of sales.
3. Provide reports in a timely manner of all site visit reports.
4. Provide specified warranty upon satisfactory project completion.
B. CONTRACTOR QUALIFICATIONS:
1. Contractor shall be authorized by the manufacturer to install specified materials prior to the bidding period through satisfactory project completion.
2. Applicators shall have completed projects of similar scope using same materials as specified herein.
3. Contractor shall provide full time, on-site superintendent or foreman experienced with the specified roof system through satisfactory project completion.
4. Applicators shall be skilled in the application methods for all materials.
5. Contractor shall maintain a daily record, on-site, documenting material installation and related project conditions.
6. Contractor shall maintain a copy of all submittal documents, on-site, available at all times for reference.

1.10 DELIVERY, STORAGE AND HANDLING

A. Refer to each product data sheet or other published literature for specific requirements.
B. Deliver materials and store them in their unopened, original packaging, bearing the manufacturer's name, related standards, and any other specification or reference accepted as standard.

C. Protect and store materials in a dry, well-vented, and weatherproof location. Only materials to be used the same day shall be removed from this location. During cold weather, store materials in a heated location, removed only as needed for immediate use.

D. When materials are to be stored outdoors, store away from standing water, stacked on raised pallets or dunnage, at least 4 in or more above ground level. Carefully cover storage with "breathable" tarpaulins to protect materials from precipitation and to prevent exposure to condensation.

E. Carefully store roof membrane materials delivered in rolls on-end with selvage edges up. Store and protect roll storage to prevent damage.

F. Properly dispose of all product wrappers, pallets, cardboard tubes, scrap, waste, and debris. All damaged materials shall be removed from job site and replaced with new, suitable materials.

1.11 SITE CONDITIONS

A. SAFETY:

1. The contractor shall be responsible for complying with all project-related safety and environmental requirements.
2. Heat-welding shall include heating the specified membrane ply using propane roof torches or electric hot-air welding equipment. The contractor shall determine when and where conditions are appropriate to utilize heat-welding equipment. When conditions are determined by the contractor to be unsafe to proceed, equivalent SBS-modified bitumen materials and methods shall be utilized to accommodate requirements and conditions.
3. Refer to NRCA CERTA recommendations, local codes and building owner's requirements for hot work operations.
4. The contractor shall review project conditions and determine when and where conditions are appropriate to utilize the specified liquid-applied, or semi-solid roofing materials. When conditions are determined by the contractor to be unsafe or undesirable to proceed, measures shall be taken to prevent or eliminate the unsafe or undesirable exposures and conditions, or equivalent approved materials and methods shall be utilized to accommodate requirements and conditions.
5. The contractor shall review project conditions and determine when and where conditions are appropriate to utilize the specified hot asphalt-applied materials. When conditions are determined by the contractor to be unsafe or undesirable to proceed, measures shall be taken to prevent or eliminate the unsafe or undesirable exposures and conditions, or equivalent approved materials and methods shall be utilized to accommodate requirements and conditions. .
6. The contractor shall refer to product Material Safety Data Sheets (MDS) for health, safety, and environment related hazards, and take all necessary measures and precautions to comply with exposure requirements.

B. ENVIRONMENTAL CONDITIONS:

1. Monitor substrate temperature and material temperature, as well as all environmental conditions such as ambient temperature, moisture, sun, cloud cover, wind, humidity, and shade. Ensure conditions are satisfactory to begin work and ensure conditions remain satisfactory during the installation of specified materials. Materials and methods shall be adjusted as necessary to accommodate varying project conditions. Materials shall not be installed when conditions are unacceptable to achieve the specified results.
2. Precipitation and dew point: Monitor weather to ensure the project environment is dry before, and will remain dry, during the application of roofing materials. Ensure all roofing materials and substrates remain above the dew point temperature as required to prevent condensation and maintain dry conditions.
3. Mopping asphalt application: Primer, where used, shall be fully dry before applying hot asphalt. Take all necessary measures and monitor all conditions, to ensure the specified

asphalt temperature is no less than 400°F (204°C) at the point of contact with the specified membrane as it is rolled into the hot asphalt.

4. Cold adhesive application: Primer, where used, shall be fully dry before proceeding. During cold weather, store the specified membrane adhesives, flashing cements and mastics in heated storage areas. Take all necessary measures and monitor application conditions, to ensure the adhesive and cement materials are no less than 70°F (21°C) at the point of contact with the membrane.
5. Self-adhered membrane application: During cold weather, store the specified self-adhered membrane and primer materials in heated storage areas to ensure materials remain no less than 70°F (21°C) during application. Ensure conditions allow primer to remain tacky, but not wet so that primer will transfer to finger when touched. Self-adhered primer should not fully dry and lose tack before applying the self-adhered membrane. Ensure conditions remain satisfactory to achieve membrane adhesion as specified.
6. Heat-Welding Application: Take all necessary precautions and measures to monitor conditions to ensure all environmental conditions are safe to proceed with the use of torches and hot-air welding equipment. Combustibles, flammable liquids and solvent vapors that represent a hazard shall be eliminated and primers shall be fully dry before proceeding with heat-welding operations. Refer to NRCA CERTA recommendations.

1.12 PERFORMANCE REQUIREMENTS

A. WIND UPLIFT RESISTANCE:
1. Performance testing shall be in accordance with ANSI/FM 4474, FM 4450, FM 4470, UL 580 or UL 1897.
   a. Roof System Design Pressures: Calculated in accordance with ASCE 7, or applicable standard, for the specified roof system attachment requirements:
      i. Field of Roof (Zone 1): - See structural drawings
      ii. Perimeter of Roof (Zone 2): - See structural drawings
      iii. Corners of Roof (Zone 3): - See structural drawings

B. FIRE CLASSIFICATION:
1. Performance testing shall be in accordance with UL 790, ASTM E108, FM 4450 or FM 4470.
   a. Meets requirements of UL Class A or FM Class A.
2. Performance testing shall be in accordance with UL 1256, FM 4450 or FM 4470 to meet the specified requirements for interior flame spread and fuel contribution.
   a. Meets requirements of UL 1256, or FM Class 1.

C. ROOF SLOPE:
1. Finished roof slope for SBS modified bitumen surfaces shall be ¼ inch per foot (2 percent) minimum for roof drainage.

D. IMPACT RESISTANCE:
1. Performance testing for impact resistance shall be in accordance with FM 4450, FM 4470, ASTM D3746 or CGSB 37-GP 56M to meet the specified impact resistance requirements.
   a. Meets requirements for FM-SH (Severe Hail), ASTM D3746, or CGSB 37-GP 56M.
2. Performance testing for Large Missile Impact Resistance shall be in accordance with SSTD 12-99.
   a. Meets requirements for State of Florida Public Shelter Design Criteria for Enhanced Hurricane Protection Areas.

E. ENERGY-STAR RATING:

1. The roof membrane shall meet the approval requirements of the US EPA EnergyStar Program. Cap sheet shall be surfaced with highly reflective, factory-applied, tri-laminate film surfacing. (SOPREMA Soprastar cap sheet basis of design):
    a. Membrane Cap Sheet shall be an EnergyStar Approved Product.
        i. Solar Reflectance: Initial: 0.78 3-year: 0.74
        ii. Thermal Emittance: Initial: 0.89 3-year: 0.66
        iii. Solar Reflectance Index (SRI): Initial 97 3-year: 86

F. ENERGY CONSERVATION REQUIREMENTS:
1. Polyisocyanurate Insulation "R" Value: Long-term thermal resistance (LTTR) values of the specified foam insulation shall be determined in accordance with CAN/ULC-S770.
2. Polyisocyanurate Insulation "R" Value: Shall be determined in accordance with ASTM C1289-11a.
3. Thermal Resistance 'R' for the specified roof insulation system shall include the continuous insulation (ci) above the roof deck.
    a. Total Thermal Resistance R Value, continuous insulation (ci) above-deck: R(00)

G. ROOF EDGE SYSTEM SECUREMENT:
    a. Performance testing in accordance with ANSI/SPRI ES-1.
    b. Performance testing meets requirements for specified roof system design pressures.

1.13 WARRANTY

A. Manufacturer's No Dollar Limit (NDL), Labor and Material Warranty. The manufacturer shall provide the owner with the manufacturer's labor and material warranty covering products and contractor workmanship for 20 years from the date the warranty is issued.
B. The contractor shall guarantee the workmanship and shall provide the owner with the contractor's warranty covering workmanship for a period of 2 years from completion date.

PART 2 PRODUCTS

2.01 MANUFACTURER

A. SINGLE SOURCE MANUFACTURER: All SBS modified bitumen membrane and flashing sheets shall be manufactured by a single supplier with 20 years or more manufacturing history in the US.
B. PRODUCT QUALITY ASSURANCE PROGRAM: Manufacturer shall be an ISO 9001 registered company. A 'Quality Compliance Certificate (QCC) for reporting/confirming the tested values of the SBS-Modified Bitumen Membrane Materials will be supplied upon request.
C. ACCEPTABLE MANUFACTURER:
1. SOPREMA, located at: 310 Quadral Dr.; Wadsworth, OH 44281; Tel: 800-356-3521; Tel: 330-334-0066; Website: www.soprema.us.

2.02 ROOFING SYSTEM

A. ROOFING SYSTEM BASIS OF DESIGN: SOPREMA

2.03 SBS-MODIFIED BITUMEN MEMBRANES

A. BACKER-PLY:
1. Refer to NRCA CERTA for BACKER-PLY recommendations when heat welding SBS-modified bitumen. Refer to VAPOR RETARDER Section below for backer-ply options.

B. BASE SHEET/ANCHOR SHEET:
1. BASE SHEET/ANCHOR SHEET, MECHANICALLY FASTENED:
a. SOPREMA Modified Sopra-G: SBS-modified bitumen coated and impregnated glass fiber base sheet, mechanically fastened, for use with heat-welded, asphalt or cold adhesive-applied membrane applications.
i. Width: 36 in (0.914 m)
ii. Meets or exceeds ASTM D4601, Type II, and UL Type G2.

C. BASE PLY/FLASHING BASE PLY
1. BASE PLY/FLASHING BASE PLY, HEAT-WELDED:
a. SOPREMA Sopralene Flam 180: SBS-modified bitumen membrane with plastic burn-off film on top and bottom surfaces. Non-woven polyester reinforcement.
i. Thickness: 120 mils (3.0 mm)
ii. Width: 39.4 in (1 m)
iii. Length: 32.8 ft (10 m)
iv. Meets or exceeds ASTM D6164, Type I, Grade S.

D. CAP SHEET/FLASHING CAP SHEET:
1. CAP SHEET/ FLASHING CAP SHEET, HEAT-WELDED:
a. SOPREMA Sopralene Flam 180 FR GR: SBS-modified bitumen membrane Cap Sheet with a burn-off film bottom surface and mineral granule top surface. Non-woven polyester reinforced. UL Class A for specified roof slope requirements.
i. Thickness: 154 mils (3.9 mm)
ii. Width: 39.4 in (1 m)
iii. Length: 32.8 ft (10 m)
iv. Meets or exceeds ASTM D6164, Type I, Grade G.
v. Granule Surfacing:
a) White mineral granules.
b) SOPREMA SG Granule. Highly reflective, bright white mineral granule surfacing, listed by the Cool Roof Rating Council (CRRC).
i) Solar Reflectance: Initial: 0.70
ii) Thermal Emittance: Initial: 0.89
iii) Solar Reflectance Index (SRI): Initial: 86

2.04 ACCESSORIES

A. PRIMERS:
1. SOPREMA Elastocol 500 Primer: Asphalt cut-back primer. Primer for the preparation of roof membrane and flashing substrates for asphalt, heat-welded, hot asphalt and cold adhesive-applied applications.
a. Meets or exceeds ASTM D41
b. VOC content: 350 g/L or less.

B. GENERAL PURPOSE ROOFING CEMENT AND MASTIC
1. SOPREMA Sopramastic: SBS Mastic. Fiber-reinforced, roofing cement, packaged in 5 gallon pails. General purpose roofing cement for low-slope roofing used for sealing membrane T-joints and membrane edges along terminations, transitions and at roof penetrations.
a. VOC Content: 190 g/L or less.
b. Meets or exceeds ASTM D4586, Type I, Class II.

2. SOPREMA Sopramastic: SBS Mastic. Fiber-reinforced, roofing cement, packaged in 10.4 oz caulk tubes. General purpose roofing cement for low-slope roofing used for sealing membrane T-joints and membrane edges along terminations, transitions and at roof penetrations.
   a. VOC Content: 190 g/L or less.
   b. Meets or exceeds ASTM D4586, Type I, Class II.

C. GENERAL PURPOSE SEALANT
1. SOPREMA Sopramastic SP1: General purpose, gun-grade, elastomeric sealant for sealing vertical joints/cracks.
   a. VOC Content: 20 g/L or less.
   b. Meets or exceeds ASTM C920, Type S, Grade NS, Class 50.

D. MEMBRANE FASTENERS AND PLATES
1. SOPREMA TWIN-LOC NAIL: Membrane fastener and metal plate.
2. SOPREMA Base Sheet Fastener BSF 1.2 in: Anchor/Base sheet fastener and metal plate.
3. SOPREMA Base Sheet Fastener BSF 1.7 in: Anchor/Base sheet fastener and metal plate.

E. MINERAL GRANULES:
1. SOPREMA Granules: No. 11, mineral coated colored granules, color to match cap sheet, supplied by membrane cap sheet manufacturer.
   a. SOPREMA Granules
   b. SOPREMA SG Granules

F. SHEET METAL FLASHING:
1. Contractor shall furnish all sheet metal flashings, counter flashings, roof edge system, and all other related sheet metal flashings and associated fasteners necessary to flash and counter flash the specified roofing system.
2. Sheet metal flashing materials and fasteners shall be compatible with adjacent materials, to accommodate all project related exposures.
3. Sheet Metal Flashing Material: Aluminum.
4. Roof Edge System: Tested per ANSI/SPRI ES-1 to meet or exceed design pressures at roof edge.

G. SHEET METAL, ROOF EDGE SYSTEM:
1. Roof edge system shall include all components and associated fasteners included by the manufacturer to comply with specified performance requirements. Contractor shall provide all other related fasteners and sealants not provided as part of the roof edge system, and required in the manufacturer's product data sheets.
2. SOPREMA SopraBond Fascia, Style G (Style B), Hickman Engineered System, MBED For BUR & MOD BIT: "Style G" Gravel Stop or "Style B" Drip Edge Box Style, engineered roof edge system fabricated with continuous off-set pattern of holes in the metal flange through which two layers of modified bitumen plies are bonded together.
   a. Material: Aluminum.
   b. Gauge/Thickness: 24 gauge steel
   c. Cleat: Galvanized steel.
   d. Finish: Kynar 500 custom SW7588 Show Stopper.
   e. Profile: Style G with 1-1/16 in cant formed to retain water/gravel along the roof edge. Style B with 5/16 in to terminate modified bitumen along the edge, for drip-edge applications.
   f. Tested per ANSI/SPRI ES-1to meet or exceed design pressures at roof edge.

PART 3 EXECUTION

3.01 EXAMINATION

A. Examination includes visual observations, qualitative analysis, and quantitative testing measures as necessary to ensure conditions remain satisfactory throughout the project.

B. The contractor shall examine all roofing substrates including, but not limited to: insulation materials, roof decks, walls, curbs, rooftop equipment, fixtures, and wood blocking.

C. The applicator shall not begin installation until conditions have been properly examined and determined to be clean, dry and, otherwise satisfactory to receive specified roofing materials.

D. During the application of specified materials, the applicator shall continue to examine all project conditions to ensure conditions remain satisfactory to complete the specified roofing system.

3.02 PREPARATION

A. Before commencing work each day, the contractor shall prepare all roofing substrates to ensure conditions are satisfactory to proceed with the installation of specified roofing materials. Preparation of substrates includes, but is not limited to, substrate repairs, securement of substrates, eliminating all incompatible materials, and cleaning.

B. Where conditions are found to be unsatisfactory, work shall not begin until conditions are made satisfactory to begin work. Commencing of work shall indicate contractor's acceptance of conditions.

3.03 PRIMER APPLICATION

A. Apply the appropriate specified primer to dry, compatible substrates as required to enhance adhesion of new specified roofing materials.

B. Apply primer using brush, roller, or sprayer at the rate published on the product data sheet.

C. Fully prime substrates using brush, roller, or sprayer at the application rate published in the product data sheet

D. Asphalt Primer: Apply ELASTOCOL 500 primer to dry compatible masonry, metal, wood and other required substrates before applying asphalt and heat-welded membrane plies. Primer is optional for most solvent based solvent-based SBS adhesives and cements, refer to product data sheets.

E. Project conditions vary throughout the day. Monitor changing conditions, monitor the drying time of primers, and monitor the adhesion of the membrane plies. Adjust primer and membrane application methods as necessary to achieve the desired results.

3.04 HEAT WELDING

A. The Contractor is responsible for project safety. Where conditions are deemed unsafe to use open flames, manufacturer's alternate membrane application methods shall be used to install SBS modified bitumen membrane and flashings. Acceptable alternate installation methods include hot asphalt, cold adhesive-applied, self-adhered membranes and mechanically fastened plies. Hot-air welding equipment may be used in lieu of roof torches to seal membrane side and end laps where heat welding the laps is necessary. Refer to NRCA CERTA, local codes and building owner's requirements for hot work operations.

B. Single or multi-nozzle, hand-held propane roof torches shall be used to install heat-welded membrane and flashing plies. Multi-nozzle carts (dragon wagons) may also be utilized to install

membrane plies. Seven (7) nozzle carts are recommended for more uniform heat application in lieu of five (5) nozzle carts.

3.05 SBS MASTIC AND GENERAL PURPOSE ROOFING CEMENT APPLICATION

A. Apply SOPREMA Sopramastic general purpose SBS mastic and roofing cement to seal drain leads, metal flanges, seal along membrane edge at terminations, and where specified and required in detail drawings.
B. Do not use general purpose SBS mastics and roofing cement where flashing cement applications are required. Do not use SBS mastics and roofing cement beneath SBS-modified bitumen membrane and flashing plies.
C. Apply general purpose SBS mastic and elastic roofing cement using caulk gun, or notched trowel at 2.0 – 2.5 gallons per square on each surface. Application rates vary based on substrate porosity and roughness. Tool-in as necessary to seal laps
D. Embed matching granules into wet cement where exposed.

3.06 MECHANICALLY FASTENED ANCHOR/BASE SHEET APPLICATION

A. Follow material product data sheets and published general requirements for installation instructions.
B. Ensure environmental conditions are satisfactory, and will remain satisfactory, during the application of the sheet.
C. Unroll the membrane onto the roof surface. Allow the sheet to relax prior to installing the fasteners.
D. Starting at the low point of the roof, lay out the membrane to ensure the plies are installed perpendicular to the roof slope, shingled to prevent back-water laps.
E. Cut rolls to working lengths as required conforming to roof conditions. .
F. Align sheet at side-laps to produce a consistent overlap required for wind uplift resistance approvals.
G. As uniform tension is being applied, fasten the sheet beginning at the center of the sheet and work towards the end-laps, removing all wrinkles and buckles as fastening progresses.
H. Install specified base sheet fasteners along the center line of side-laps, and intermediate rows staggered between side-laps, and fasten all end-laps.
I. Fasten base sheet as required for specified wind uplift resistance. Install additional fasteners in roof perimeter and corners as specified.

3.07 HEAT-WELDED, FULLY ADHERED MEMBRANE APPLICATION

A. Follow material product data sheets and published general requirements for installation instructions.
B. Ensure environmental conditions are satisfactory, and will remain satisfactory, during the application of the heat-welded membrane.
C. Ensure all primers are fully dry before beginning heat-welding operations.
D. Unroll membrane onto the roof surface and allow to relax prior to installing the membrane.
E. Starting at the low point of the roof, lay out the membrane to ensure the plies are installed perpendicular to the roof slope, shingled to prevent back-water laps.
F. Ensure all roofing and flashing substrates are prepared and acceptable to receive the heat-welded membrane.
G. Cut rolls to working lengths to conform to roof conditions, and lay out to always work to a selvage edge.
H. Ensure specified side-laps and end-laps are maintained. End-laps should be staggered 3 ft apart.

I. As the membrane is un-rolled, apply heat to the underside of the membrane until the plastic burn-off film melts away. Continuously move the torch back-and-forth across the underside of the roll to melt the bitumen on the underside of the sheet, while continuously unrolling sheet.

J. While unrolling and heating the sheet, ensure a constant flow hot bitumen approximately ¼ to 1/2 in flows ahead of the roll as it is unrolled, and there is 1/8 to 1/4 in bleed out at all laps.

K. Adjust the application of heat to the underside of the membrane and to substrate as required for varying substrates and environmental conditions.

L. At the 6 in end-laps, melt the plastic burn-off film from the top surface or embed granules, where present, using a torch or hot-air welder.

M. At end-laps, cut a 45 degree dog-ear away from the selvage edge, or otherwise ensure the membrane is fully heat-welded watertight at all T-joints.

N. Each day, physically inspect all side and end-laps, and ensure the membrane is sealed watertight. Where necessary, use a torch or hot-air welder and a clean trowel to ensure all laps are sealed.

O. Inspect the installation each day to ensure the plies are fully adhered. Repair all voids, wrinkles, open laps and all other deficiencies.

P. Offset cap sheet side and end-laps away from the base ply laps so that Cap Sheet laps are not located within 18 in of base ply laps.

3.08 FLASHING APPLICATION, HEAT WELDED

A. Refer to SBS manufacturer's membrane application instructions, flashing detail drawings, and follow product data sheets and other published requirements for installation instructions. Refer to manufacturer's membrane flashing detail drawings.

B. The contractor is responsible for project safety. Refer to NRCA CERTA recommendations and building owner requirements for hot work operations.

C. Where required to seal substrates for fire safety, install specified adhered, self-adhered or fastened backer ply to the substrate. Ensure backer-ply covers and seals all substrates requiring protection from exposure to torch operations.

D. Ensure all flashing substrates that require primer are primed, and the primer is fully dry.

E. Unroll the flashing base ply and flashing Cap Sheet onto the roof surface to their complete length. Once relaxed, cut the membrane to the required working lengths to accommodate the flashing height, cants and the required over-lap onto the horizontal roof surface.

F. Cut the flashing membrane from the end of the roll in order to always install flashings to the side-lap line or selvage edge line.

G. Lay out the flashing base ply and flashing Cap Sheet to offset all side-laps a minimum of 12 inches so that side-laps are never aligned on top of the ply beneath. Shingle the flashing ply laps to prevent back-water laps.

H. Install non-combustible cant strips at transitions where required.

I. Ensure correct membrane and flashing sequencing to achieve redundant, multi-ply, watertight flashings.

J. ROOF MEMBRANE BASE PLY:

1. Before installing flashings, install the roof membrane base ply in the horizontal field of the roof, and extend the base ply up to the top of the cant, where present, at roof terminations, transitions and penetrations.

K. FLASHING BASE PLY:

1. Install the flashing base ply starting at the top leading edge of the vertical flashing substrate, down over the cant and onto the horizontal surface of the roof a minimum of 3 inches beyond the of base of the cant. Cut the base ply at corners to form 3 inch side-laps. Install gussets to seal corner transitions.
2. Install one or more flashing base ply(s) at all roof terminations, transitions and penetrations.

L. ROOF MEMBRANE CAP SHEET:
1. Install the roof membrane Cap Sheet in the horizontal field of the roof over the flashing base ply up to the roof termination, transition or penetration, and up to the top of cants where present.
2. Using a chalk line, mark a line on the membrane Cap Sheet a minimum of 4 inches from the base of the cant onto the roof. Where granules are present, embed the Cap Sheet granules using a torch and trowel or granule embedder to prepare the surface to receive the flashing Cap Sheet.

M. FLASHING CAP SHEET:
1. Install the flashing Cap Sheet starting at the top leading edge on the vertical substrate, over the cant and onto the roof surface 4 inches from the base of the cant.
2. Install the flashing Cap Sheet to ensure a minimum two (2) ply flashing system is present at all roof terminations, transitions and penetrations.

N. During the membrane and flashing installation, ensure all plies are completely adhered into place, with no bridging, voids or openings. Ensure bitumen or flashing cement bleed-out is present at all flashing side and end-laps.

O. Use a damp sponge float or damp rag to press-in the heat-welded flashing plies during installation.

P. Where sufficient bitumen bleed-out is not present, and for all self-adhered plies, apply specified gun-grade sealant or mastic to seal the membrane termination along all roof terminations, transitions and penetrations. These include gravel stop edge metal, pipe penetrations, along the top edge of curb and wall flashing, and all other flashing terminations where necessary to seal flashings watertight.

Q. Fasten the top leading edge of the flashing 8 in on-centers with appropriate 1 in cap nails or other specified fasteners. Seal fastener penetrations watertight using specified sealant or mastic.

3.09 SHEET METAL FLASHING APPLICATION

A. Refer to sheet metal flashing detail drawings, and follow product data sheets and published general requirements for installation instructions.

B. Follow the most recent edition of the SMACNA Architectural Sheet Metal Manual for fabrication and installation requirements.

3.10 CLEAN-UP

A. Clean-up and properly dispose of waste and debris resulting from these operations each day as required to prevent damages and disruptions to operations.

END OF SECTION

SECTION 07 54 00

THERMOPLASTIC MEMBRANE ROOFING

1.0 GENERAL

1.1 REQUIREMENTS

A. Furnish and install a new weather and watertight --- High Performance KEE Thermoplastic Roofing System on the following:

KEE Membrane Roof
45 Avenue and Coconut Creek Parkway
Coconut Creek, FL

B. This roofing project consists of roofing approximately 4,000 sq. ft. using a Mechanically Attached FiberTite-XT 050 membrane.

C. This specification is constructed around FiberTite Roofing Systems and Seaman Corporation's General Guide Specification as the standard of performance and quality and shall be considered part of these specifications.

1.2 PROJECT SCOPE

A. Roofing Contractor shall furnish all labor, materials, tools, equipment and supervision necessary to complete the installation of a new High Performance Mechanically Attached FiberTite-XT 050 including roof related insulation, flashings, accessories and related metalwork in strict accordance with the contract, drawings and High Performance Membrane Roof System Manufacturer's **(MRSM)** most current specifications and details.

B. The roofing contractor shall be an "Authorized Roofing Contractor" of the MRSM in good standing and be fully knowledgeable of all the requirements within the contract documents as well as all job site conditions that could affect their work.

C. The roofing contractor shall confirm all given information and notify the building owner / owner's representative, prior to bid, of any conflicts that will affect the quality or cost of the proposal.

D. Any contractor wishing to submit a proposal using an alternative "High Performance" roofing system other than the approved manufacturer(s) must submit a pre-qualification request in writing at least fourteen (14) days prior to the bid date justifying in writing that the alternate is of equal quality and performance in ALL RESPECTS to the high performance selected foundation of this specification.

E. Failure to submit a timely pre-qualification proposal will be grounds for total rejection of the contractor's proposal.

1.3 QUALITY ASSURANCE

A. Manufacturer's Qualifications: The High Performance Membrane Manufacturer shall be an American owned company with no less than 25 years experience as a

commercial roofing manufacturer.

B. Installer Qualifications: A licensed roofing contractor, authorized by the MRSM with a minimum of five (5) years experience installing the type of roof system specified for this project.

C. Source Limitations: Obtain all components including roof insulation and/or cover-board, fasteners adhesives and other accessories as required, from the approved MRSM.

D. The specified membrane roofing system must consist of the materials required and be installed under the following criteria.

1. UL Listing; provide materials bearing Underwriters Laboratories (UL) marking / label on the packaging or containers indicating materials have been produced under UL classification and follow-up services.
2. Miami-Dade County, Notice of Acceptance (NOA) Listing; provide membrane roofing system and materials that have been evaluated by Miami-Dade County for wind uplift. Identify materials with a Miami-Dade County marking / label.

E. Project requiring or subject to FMG Approval shall be defined by a specific RoofNav Assembly Number.

F. The roofing contractor shall maintain an adequate number of skilled workers who are thoroughly trained and experienced in the necessary crafts, and who are completely familiar with the specified requirements and methods necessary for the proper performance of the work. No allowance will be made for lack of skill on the part of the workers.

G. Any deviations from contract, drawings and/or specifications must be submitted in writing for approval prior to implementation to the design professional representing the owner and the MRSM for acceptance / approval by both parties.

H. Upon completion of the roof installation the roofing contractor shall arrange for a quality assurance / warranty inspection by the Technical Service Department of the approved MRSM. Notice of the inspection date and time will be given to the owner / owner's representative at least 72 hours prior to the inspection taking place.

1.4 REFERENCES

A. ASTM D6754 Standard Specification for Ketone Ethylene Ester Based Sheet Roofing

B. ASTM D 751 Test Methods for Coated Fabrics

C. Seaman Corporation / FiberTite General Guide Specification FTR GS04/08

D. UL 790 Underwriters Laboratories (UL) - Fire Hazard Classifications

E. FM 4470 GM Global (FM) - Roof Assembly Classifications

F. National Roofing Contractors Association (NRCA) - Roofing and Waterproofing Manual

1.5 PERFORMANCE REQUIREMENTS

A. General Performance: completed high performance membrane roof system and base flashing shall withstand specified uplift pressures, thermally induced movement, and

exposure to weather without failure due to defective manufacture, fabrication, installation or other defects in construction.

B. Material Compatibility: provide roofing materials that are compatible with one another under conditions of service and application required, as demonstrated by the MRSM based upon insitu field evidence of the roofing membrane/systems service life cycle greater than 20-years.

C. Roofing System Design: provide high performance membrane roofing system that is identical to systems that have been successfully tested by a qualified testing and inspecting agency to resist wind uplift pressure calculated according to ASCE-7.

D. Energy Performance: provide high performance membrane roofing system that is listed on the EPA website as ENERGY STAR qualified and has an initial Solar Reflective Index equal to or greater than 78.

1.6 SUBMITTAL REQUIREMENTS

A. Prior to mobilization and commencement of work, the roofing contractor shall submit the following:

B. Shop drawings showing roof layout, construction details to be implemented and identifying materials to be used

C. Sample of MRSM Commercial Roofing Warranty

D. Submit a letter from MRSM attesting that the roofing contractor is an authorized roofing contractor of the prescribed roofing material in good standing.

E. If pre-finished metal is called for, submit a color chart for the pre-finished metal in order for a color selection to be made.

F. Submit an assembly letter and/or an approved Pre-Installation Notice / Request for Warranty from the high performance membrane roof system manufacturer certifying compliance with the system requirements described in the Quality Assurance section of this specification.

1.7 PRODUCTS AND/OR WORK NOT INCLUDED IN THIS SPECIFICATION

A. Rough Carpentry; wood nailers and wood blocking

B. Masonry; waterproofing, through wall flashing, scupper openings

C. Plumbing; installation of any roof drains

D. Electrical; rooftop electrical penetrations

E. Mechanical; rooftop HVAC equipment installation

1.8 PRODUCT DELIVERY, STORAGE AND HANDLING

A. Deliver all materials to the job site in manufacturer's original, unopened containers, with legible labels and in sufficient quantity to allow for continuity of work.

B. Select and operate material handling equipment in a safe manner, guarding against damage to existing construction or newly applied roofing and conforming to manufacturer's recommendations of handling and storage.

C. All rolls of membrane shall be stored, lying down, elevated above the roof deck and completely protected from moisture with tarpaulins. (Manufacturer's packaging is not considered adequate for outdoor storage.)

D. Insulation and cover board materials shall be elevated on pallets and fully protected from moisture with tarpaulins. (Manufacturer's packaging is not considered adequate protection from moisture.)

E. Adhesives and sealants shall be safely stored between 50° F and 80°F prior to use.

F. Flammable materials shall be stored in a cool, dry area away from sparks and open flames. Follow all precautions as outlined in manufacturer's Material Safety Data Sheets.

G. Materials, having been determined by the owner/owner's representative to be damaged, shall be immediately removed from the construction site and replaced at no cost to the owner.

1.9 COORDINATION

A. Prior to installation of materials, a pre-roofing conference shall be held with the roofing contractor, general contractor, owner/owner's representative(s) and representatives of all trades that may be working on the roof / completed membrane to discuss the specified roofing system, coordinate its proper application and the expectations of all parties involved. The authorized roofing contractor and the owner/owner's representative shall notify all parties a minimum of fourteen days prior to the meeting.

B. Plan and coordinate the installation of the roofing system with other trades in such a manner to avoid membrane damage, keeping the complete installation weather tight and in accordance with all approved details and warranty requirements.

C. A Technical Representative of the MRSM shall be available to make recommendations necessary to ensure compliance with project specifications and specification alternatives due to unforeseen job conditions.

D. Topics of discussion at the pre-construction meeting may include the following:

1. Utility Usage
2. Sanitary Facilities
3. Material Storage Areas
4. Roof loading areas
5. Site Access
6. Roof Access
7. Project security
8. Rooftop Penetrations
9. Completed Roof Protection
10. Employee parking

1.10 JOB CONDITIONS

A. Safety

1. Take all necessary precautions regarding worker health and safety when using solvents, adhesives and hot asphalt.
2. Store flammable liquid and materials away from open sparks, flames and extreme heat.
3. Take necessary precautions when using solvents and adhesives near fresh air intakes.
4. Comply with all OSHA requirements for construction. It is the roofing contractor's responsibility to comply with all state, federal and local codes, guidelines and safety requirements.
5. Daily site cleanup shall be performed to minimize debris and hazardous congestion.
6. Roof work involves handling combustible and heavy materials at height, on some occasions directly over other trades working below the roof deck or in cases of occupied buildings, over building occupants. Extreme caution will be utilized when installing the roof to prevent injury to roofing personnel, other trades, building occupants and to property. Listed below is a partial list of safety requirements, additional requirements exist in order to comply with OSHA and jobsite regulations.
7. Material Safety Data Sheets (MSDS) shall be maintained on the jobsite for any and all roofing materials being stored or installed on the project.
8. Fire suppression equipment will be readily available on the roof top whenever combustible roofing material is being handled. Protect against fire and flame spread at all times.
9. Roofing contractor will establish a safety plan and rooftop evacuation procedures and brief his personnel on appropriate emergency actions.

B. Protection

1. Schedule installation sequence to limit access and utilization of the newly installed membrane for material storage, construction staging, mechanical and/or excessive foot traffic.
2. Provide proper protection on all newly completed roofing to avoid damage to the new roofing system.
3. Traffic should be minimized on a freshly laid roof.
4. Protect building walls, rooftop units, windows and other components during installation.

C. Additional Precautions

1. Adverse weather conditions e.g. extreme temperature, high winds, high humidity and moisture, could have a detrimental effect on adhesives, general production efforts and/or the quality of the finished installation. Contact FTCS for

recommendations and acceptable tolerances.

2. Daily production schedules of new roofing shall be limited to only that which can be made 100% watertight at the end of the day, including all flashing and night seals.
3. All surfaces to receive new roof system, including insulation and flashing, shall be free from all dirt, debris and be thoroughly dry.
4. Comply with local EPA requirements as published by Local, State and Federal authorities.
5. All construction debris shall be removed from the construction site and legally dispose of off site.
6. If a condition is discovered that is not covered by the project drawings and specifications notify the general contractor and owner's representative immediately and resolve the conflict. Take appropriate steps to prevent water intrusion into the roof system until such conflict is resolved and roofing operations are continued.

1.11 WARRANTY

A. Furnish the Owner with a Twenty (20) Year No Dollar Limit Total System Warranty covering the cost of repairing leaks as a direct result of either defects in the membrane or the workmanship involved in its installation.

B. Provide contractor's warranty covering leaks caused by material defects and or installation workmanship for a period of two years.

2.0 PRODUCTS

2.1 GENERAL

A. All roofing system components shall be manufactured or supplied by approved MRSM.

B. Unless approved otherwise prior to project bid, all roofing components are to be manufactured or supplied through approved MRSM and be included in the warranty coverage.

C. For purposes of designating type and quality, drawings and specifications are based upon FiberTite Roofing Systems as manufactured and supplied by Seaman Corporation of Wooster, Ohio. For additional information, the roofing contractor shall refer to FiberTite General Guide Specifications.

2.2 FIBERTITE MEMBRANE

A. FiberTite-XT50 - nominal 50-mil ketone ethylene ester (KEE) membrane, reinforced with a 6.5-oz yd² knitted polyester fabric, as manufactured by Seaman Corporation, under the trade name FiberTite-XT50, conforming to the physical properties as outlined in the associated data sheet. FiberTite-XT50 greatly exceeds all

requirements outlined ASTM D 6754 - 02 Standard Specification for Ketone Ethylene Ester (KEE) Sheet Roofing. Membrane color shall be DC196 Off-White

PHYSICAL PROPERTIES

ASTM D 6754-02Test Method(s)	**ASTM D6754 Min. Req.**	**FiberTite-XT50 Typ. Values**
Thickness, mm (in.) *ASTM D 751*	0.79 (0.031)	1.27 (0.050) nom.
Thickness over Fiber mm (in) *Optical method (inches)*	0.15 (0.006)	0.38 (0.015)
Breaking Strength N (lbf) *ASTM D 751 proc. B – strip*	1175 (265)	1779 (400)
Elongation at Break % *ASTM D 751 - strip*	15	18
Tear Strength N (lbf) *ASTM D 751 proc. B. tongue tear*	335 (75)	556 (125)
Linear Dimensional Change % *ASTM D 1204 max %*	1.3	0.78
Fabric Adhesion N/m (lbf/in) *ASTM D 751*	225 (13)	No Peel
Low Temperature Bend *ASTM D 2136 (°F)*	-30	-40
Retention of Properties after Heat Aging *ASTM D 3045 – 176°F/156 days*		
Breaking Strength Strip % Original:	90	90
Elongation at Break Strip % Original:	90	90
Low Temperature Bend after Heat Aging	-30	-40
Change in Weight after Exposure in Water *ASTM D 471 158°F, 166h, one side only, max %*	0.0 +6.0	0.0, +3.7
Factory Seam Strength N (lbf) *ASTM D 751 Grab Method*	1780 (400)	> Fabric Strength
Hydrostatic Resistance Mpa (psi) *ASTM D 751*	3.5 (500)	5.9 (850)
Static Puncture Resistance *ASTM D 5602 (99lbf)*	Pass	Pass
Dynamic Puncture Resistance (J) *ASTM D 5635*	10	30
Accelerated Weathering *Practice G 155 / xenon*	5,000 hr.	10,000 hr.
Cracking or Crazing at 7x magnification	None	None

Accelerated Weathering *Practice G 154 / UVA*	5,000 hr.	10,000 hr.
Cracking or Crazing at 7x magnification	None	None
Fungi Resistance: *Practice G 21, 28 days*		
Sustained Growth	None	None
Fungi Resistance: Discoloration	None	None
Abrasion Test Cycles *ASTM D 3389 H-18 wheel / 1,000 g load*	1,500	> 2,000
Solar Reflective Index (SRI) *Color: DC 196 off white*	n/a	98.54

2.3 FLASHING MEMBRANE

A. DC196 Off-White Nominal 50-mil FiberTite-XT membrane shall be used for all flashing requirements to match the field membrane and warranty expectations selected for the roofing system.

2.4 INSULATION

A. Not Applicable.

2.5 APPROVED INSULATION

A. Not Applicable.

2.6 COVER BOARD

A. Not Applicable.

2.7 VAPOR RETARDER

A. The decision regarding the inclusion of a vapor retarder within the roof system shall fall within the responsibility of the design professional and is outside the scope of this specification. Consult N.R.C.A. or other technical resource for appropriate guidelines.

B. Vapor retarder for use in a roof system shall comply with identifiable code and/or insurance requirements.

C. The vapor retarder manufacturer shall certify, in writing, that the specified vapor retarder meets identifiable code requirements and is approved for its intended use.

2.8 ROOF ACCESSORIES

A. Furnish accessories manufactured, marketed or approved by MRSM required to complete the roof installation to manufacturer's specification including (as applicable)

but not limited to the items listed below.

1. ADHESIVES; application technique and coverage rates will vary according to substrate and environmental conditions.
    i FTR-190e Bonding Adhesive - A VOC compliant solvent borne, contact (two sided) bonding adhesive, designed for bonding non-fleece back FiberTite membranes to properly prepared and pre-authorized horizontal and vertical substrates.
2. FTR-101 Sealant; a one-component gun-grade polyurethane sealant to seal flashing termination.
3. FTR-SL1 Sealant; a one-component *pourable*, self leveling, polyurethane sealant to fill "pitch pans".
4. Fiber Clad Metal; to fabricate metal flashing, 4' x 10' sheets of 24 gauge hot dipped G-90 steel, or 0.040 thick 3003H14 aluminum, laminated with a 0.020 mil polymeric coating.
5. FTR-Pre-Molded Flashing(s); injection molded vent stack and inside/outside corner flashing using FiberTite KEE compound.
6. FTR Non-Reinforced Membrane; field fabrication membrane, 0.060 mil non-reinforced KEE membrane.
7. FTR-Tuff Track Walk Way & Protection Pads; high grade walk way/protection material with "slip resistant" design.
8. FTR-Fasteners
    i FiberTite MAGNUM Series; to secure FiberTite to steel, wood and structural concrete decks. A #15-13, buttress threaded, #3 Phillips head fastener constructed of case hardened carbon steel with a reduced diameter drill point and corrosion resistant coating.
    ii FiberTite HD; to secure insulation to steel, wood and structural concrete decks. A #14-13, heavy duty threaded steel #3 Phillips truss, self tapping corrosion resistant fastener.
9. FTR-MAGNUM Barbed Stress Plates; used to anchor membrane,2.5 inch x 1.5 inch rectangular in dimension with 0.75 inch radial corners, manufactured from 18 gauge AZ-50 galvalume steel with a 0.250 inch diameter hole in its center. The plate has a raised reinforcement area and eight "barbs".
10. FTR-Sand Dollar Insulation Stress Plates; used to secure insulation and/or cover-board to steel, wood and structural concrete decking. Manufactured from high density polyethylene, 3 inch in diameter, designed with a self locking mechanism to secure the head of the FTR fasteners into the plate.
11. FTR-Termination Bar; membrane flashing(s) restraint/termination seals, nominal 1/8 inch x 1 inch x 10' 6060-T5 extruded aluminum bar with pre-punched slots, 8 inch on center.

3.0 **EXECUTION**

3.1 GENERAL

A. The latest manufacturer specifications and installation techniques are to be followed along with the following additional requirements. These specific minimum requirements must be accounted for in the contractors bid / proposal and shall not be altered.

B. The roofing contractor is responsible for providing a suitable substrate surface for the proper installation of the Membrane Roofing System, roof insulation and specified components.

C. The roofing contractor shall examine all areas and conditions where by work in this section is to be installed.

D. Notify the Building Owner / Owner Representative of any and all conditions detrimental to the proper and timely execution of the work. Do not proceed until such conditions have been corrected to the satisfaction of the owner / owner's representative.

E. Commencement of roofing operations indicates the roofing contractor's acceptance of the roofing substrate for roof application.

3.2 SUBSTRATE PREPARATION

A. Surfaces scheduled to receive new membrane roofing shall be free of any standing water, dew, ice, loose debris or any other contaminate that could impair the quality of the installation.

B. Substrate shall be smooth, clean and free of sharp edges and or projections and obvious depressions that would interfere with the installation of a high quality high performance

C. Examine all the areas and conditions where by work in this section is to be installed. Correct any and all conditions detrimental to the proper and timely execution of the work. Do not proceed until such conditions have been corrected to the satisfaction of the owner / owner's representative.

D. Lightweight "Cellular" Insulating Concrete

1. Lightweight "Cellular" insulating concrete, herein after referred to as "lightweight concrete", shall be installed by trained applicators, approved in writing by the Lightweight Manufacturer.

2. Lightweight concrete shall be installed in strict accordance with the manufacturer's installation requirements and standard industry practices.

3. The finished lightweight concrete installation shall exhibit an oven dry density of a nominal 50 pounds per cubic foot and a minimum compressive strength equal to or greater than 300 psi.

4. Newly installed lightweight concrete shall be protected from the intrusion of "free water" / rain infiltration.

5. "Intruded" water must be removed prior to the installation of the new FiberTite Roofing System. Consult the appropriate lightweight concrete manufacturer for methodology.

6. The lightweight concrete shall be installed to provide positive slope and subsequent positive drainage of the new FiberTite Roofing System.
7. Finished lightweight concrete shall be a minimum thickness of 2 inches, properly cured and dry with a moisture content less than 20% by weight and falling toward a target equilibrium of 7%, prior to the installation of the new FiberTite Roofing System.
8. Finished surface(s) shall be treated per manufacturer's recommendations to ensure uniform curing and surface hardness.
9. All lightweight insulating concrete decks shall be vented per manufacturer's recommendations or local building code requirments.
10. Mechanically attached FiberTite Roofing Systems, installed over lightweight concrete, shall be attached into the supporting structural decking. Lightweight concrete is not considered to be a structural component.

3.3 INSTALLATION - GENERAL

A. Perform all related work specified in other sections of the contract documents necessary for the proper installation of the high performance high performance.
B. Ensure mechanical fasteners do not penetrate items located within or secured to the bottom of the deck: i.e. electrical conduit, post tension cables or other miscellaneous items.
C. Outside ambient air temperatures must be 40°F and rising during the use of any and all adhesives.

3.4 MEMBRANE INSTALLATION

A. Quality Control
   1. It will be the responsibility of the roofing contractor to initiate and maintain a QC program to govern all aspects of the installation of the Membrane Roofing System.
   2. The project foreman and or supervisor will be responsible for the daily execution of the QC program which will include but is not limited to the supervision, inspection and probing of all heat welding incorporated within the Membrane Roofing System.
   3. If inconsistencies in the quality of the application of the composite, membrane and/or welds are found, all work shall cease until corrective actions are taken to ensure the continuity the installation.
B. General
   1. Work shall be coordinated to ensure that sequencing of the installation promotes a 100% watertight installation at the end of each day.
   2. Restrictions regarding outside ambient air temperature are relative only to the exposure limits of the workers and/or adhesives.

3. When using adhesives outside ambient air temperature shall be above 40°. Curing or drying time of the adhesive will be affected by ambient temperatures and must be taken into consideration when determining flashing lengths.
4. Humidity can effect the drying time of solvent borne adhesives and/or cause condensation to form on the newly applied adhesive.
5. Moisture may not be present on the adhesive prior to mating or application of Membrane Roofing System.
6. New Membrane Roofing Systems shall only be installed over properly prepared and sound substrates, free from excessive surface roughness, dirt, debris and moisture.

3.5 MEMBRANE SECUREMENT

A. The properly positioned membrane shall be attached using FTR Magnum Fasteners and Magnum Stress Plates installed through the membrane and insulation assembly and engage the structural decking.

B. The Magnum stress plates shall be installed straight and parallel to existing structural purlin members. All stress plates must set completely on the membrane allowing a minimum of 1/2 inch from the edge and allow sufficient room to facilitate welding.

C. Fastener row spacing and intervals shall be established to resist design pressures, determined in compliance with procedures outlined within the current publication of ASCE Standard 7. Alternative designs may be determined using the criteria within Factory Mutual Research Loss Prevention Data.

D. Perimeter zone and corner zone enhancement is required on all mechanically fastened roofing systems. Perimeters and corners are defined as follows:

E. Perimeter: 10% of the width of the roof areas or 40% of the height of the roof area, which ever is less to a minimum of 4-ft. Perimeter zones run parallel to all external roof edges including those with parapet walls.

F. Corner zones are the square intersection of perimeters.

G. Projects having variable roof levels shall treat the outer boundary of each level as a perimeter. Internal expansion joints, firewalls or adjoining building walls greater than 3 feet are not considered perimeter areas.

H. Perimeters and corners may be enhanced by:

I. Installing "half" rolls of membrane fastened as prescribed by project requirements

J. Adding additional rows of fasteners through the top of the membrane system within the perimeter at prescribed intervals area and sealing with a 6 inch strip

K. Individual project, insurance and building code requirements can vary substantially.

3.6 HOT AIR WELDING

A. General

1. All field seams exceeding 10 feet in length shall be welded with an approved automatic welder.
2. All field seams must be clean and dry prior to initiating any field welding.
3. All welding shall be performed only by qualified personnel to ensure the quality and continuity of the weld.

B. Hand Welding

1. The lap or seam area of the membrane should be intermittently tack welded to hold the membrane in place.
2. Properly hand welded seams shall utilize a 1-1/2 inch wide nozzle, to create a homogeneous weld, a nominal 1-1/2 inches in width.

C. Automatic Machine Welding

1. Follow all manufacturers' instructions for the safe operation of the automatic welder.
2. Follow local code requirements for electric supply, grounding and surge protection.
3. Properly Automatic Machine welded seams shall utilize a 1-1/2 inch wide nozzle, to create a homogeneous weld, a nominal 1-1/2 inches in width.

3.7 INSPECTION

A. The job foreman and/or supervisor shall initiate daily inspections of all completed work which shall include, but is not limited to the probing of all field welding with a dull pointed instrument to assure the quality of the application and ensure that any equipment or operator deficiencies are immediately resolved.

B. Ensure that all aspects of the installation (sheet layout, attachment, welding, flashing details, etc.) are in strict accordance with the most current MRSM Specifications and Details.

C. Excessive patching of field seams because of inexperienced or poor workmanship will not be accepted at time of FINAL INSPECTION FOR WARRANTY ACCEPTANCE.

3.8 FLASHING

A. Clean all vents, pipes, conduits, tubes, walls, and stacks to bare metal. All protrusions must be properly secured to the roof deck with approved fasteners.

B. Flash all curbs, parapets and interior walls in strict accordance with approved MRSM details.

C. The base flange of all membrane flashing shall extend out on to the plane of the deck, beyond the wood nailers to a maximum width of 8 inches.

D. Vertical flashing shall be terminated no less than 8 inch above the plane of the deck with approved termination bar and counter-flashing or metal cap flashing.

E. Complete all inside and outside corner flashing details with MRSM pre-formed corners or an approved field fabrication detail.

F. Probe all seams with a dull, pointed probe to ensure the weld has created a homogeneous bond.

3.9 METAL FLASHING

A. All perimeter edge details are to be fabricated from Polymeric-Clad Metal or utilize a prefabricated Fascia System.

B. Fasten all metal flashing to wood nailers or approved substrate with approved fasteners 8 inches on center.

C. Install metal flashing in accordance with MRSM Published Specifications and Construction Details.

3.10 ROOF DRAINS

A. Flash all roof drains in accordance with MRSM roof drain details.

B. Minimum 60-mil non-reinforced membrane shall be used for flashing the drain assembly.

C. The drain target sheet should be sized and installed to provide for a minimum of 12 inch of exposed 60-mil on all sides of the drain

3.11 PITCH PANS

A. EVERY REASONABLE effort shall be made to eliminate the need for pitch pans including the removal of all existing pans.

B. In the event of no alternative, fabricate pitch pans from Polymeric-Clad metal, installed in accordance with MRSM details.

C. Pitch Pans and the sealant will require periodic maintenance by the building owner's maintenance personnel.

3.12 EXPANSION JOINTS

A. Flash all expansion joints in accordance with authorized/approved details. Fasten all expansion joint material according to MRSM specifications. Ensure the expansion material has sufficient material to expand to the widest point in expansion without causing undue stress on the expansion joint material.

B. If the expansion joint is a "pre-formed" system, the manufacturer, description and a drawing illustrating the method of installation must be included in the contractor's submittals.

3.13 SEALANTS

A. Apply authorized sealant(s) to all surface mounted reglets and per project requirements. Sealant(s) are to shed water. Follow all manufacturer's instructions and installation guides.

B. Use primer when recommended by the manufacturer.

C. Sealants will require periodic maintenance by the building owner's maintenance personnel.

3.14 TEMPORARY SEALS

A. At the end of each working day or at the sign of rain, install temporary, 100% watertight seal(s) where the completed new roofing adjoins the uncovered deck.

B. If water is allowed to enter beneath the newly completed roofing, the affected area(s) shall be removed and replaced at no additional expense to the building owner.

C. Prior to the commencement of work, cut out and remove all contaminated membrane, insulation, roof cement or sealant and properly dispose off site.

3.15 WALKWAYS

A. Walkways and protection pads shall be installed at staging areas for roof top equipment maintenance or areas subject to regular foot traffic as designated by contract and/or drawings.

3.15 LIGHTNING PROTECTION

A. The installation of lightning protection must be coordinated with the authorized roofing contractor, certified lightning contractor and the building owner.

B. The lightning protection must be installed in such a manner that base plates, air terminals and cables do not penetrate the roofing membrane without the use of pre-approved flashing details.

3.17 COMPLETION

A. Remove any and all debris, excess materials and scrap of any kind from the roof and surrounding premises prior to demobilization.

B. Inspect all field welds, detailing and terminations to ensure a 100% the watertight installation.

3.18 WARRANTY INSPECTION

A. Upon completion of the project, the authorized roofing contractor shall complete and submit the MRSM Project Completion Notice.

B. Upon receipt of the notice of completion, a Technical Representative of the MRSM shall schedule an inspection with a representative of the authorized roofing contractor to thoroughly review the installation and verify compliance with MRSM specifications.

C. Any corrections or modifications necessary for compliance with the specifications and acceptance for warranty (punch list) will be noted on the Final Inspection for Warranty Form.

D. Upon completion of all punch list items and final acceptance of the installation, a warranty as authorized by the MRSM will be issued.

SECTION 07 60 00

FLASHING AND SHEET METAL

PART I. GENERAL

1.1 SCOPE

A. Aluminum flashing
B. Submittals
C. Shop drawings
D. Samples
E. Mock ups

1.2 GENERAL REQUIREMENTS

A. The work of this section is governed by the conditions set forth in the Agreement between the Owner and Contractor, the General Conditions of the Contract for Construction, Division 1 of these Specifications, and all other documents that make up the Agreement.
B. The Contractor shall ensure that the work of this section is coordinated with the work of all related trades affected by or affecting the work of this Section.
C. The work of this section includes providing all labor, material, miscellaneous fasteners and accessories, and equipment required to complete the work of this Section including but not limited to that work specified herein and on the Drawings or as required for a complete job.

1.3 RELATED SECTIONS

A. Basic Requirements, Section 01 11 00
B. Masonry, Division 4
C. Carpentry, Division 6
D. Roofing, Division 7
E. Doors and Windows, Division 8
F. Plumbing, Division 22
G. HVAC, Division 23

1.4 SUBMITTALS

A. Provide shop drawings on all exposed custom sheet metal work.
B. Provide samples of the following items for approval:
   1. Gutters, downspout, collector with all fastening and accessories.
   2. All exposed flashing, fascias and copings.

1.5 PERFORMANCE CRITERIA

A. Final detailing shall be reviewed with the Architect prior to start of fabrication.

1.6 QUALITY ASSURANCE

A. Work shall be performed in accordance with the latest recommendations and details of the Architectural Sheet Metal Manual, 5th Edition published by SMACNA; 4201 Lafayette Center Drive, Chantilly, VA, 20151.
B. Provide water test on the following:
   1. Built in gutter system: Plug downspouts and fill with water for 24 hours to test for leaks. Fill to the high water mark of the system.
   2. For concealed downspouts, testing shall be done by the Plumber, Division 15, and shall meet the requirements for waste lines.

1.7 DELIVERY AND PROTECTION

A. Carefully store flashing, gutters, and leaders on job so that they do not get damaged.
B. After work is installed, protect as necessary to keep work from being damaged.

PART 2. PRODUCTS

2.1 FLASHING

A. The weights of the flashing specified herein are adequate for most conditions noted. Where heavier weight flashing is called for by the above mentioned standards, those weights shall be used.
B. Metal flashings covered under Section 07 60 00, Flashing & Sheet metal, to be provided in matching color by Metal Roofing Manufacturer.
C. Aluminum flashing:
    1. Base, cap, and counter flashing to be .040".
    2. Continuous flashing to be .040".
    3. Head flashing, through wall, and window pans to be .040".

2.2 REGLETS

A. Reglets shall be by:
    1. Fry Reglet; 800-237-9773
        a. Springlok flashing system
B. Reglets shall be the following style:
    1. SM- Surface mounted
    2. Stucco over masonry block
C. Reglets shall be the following material:
    1. Aluminum
D. Fasteners for reglets shall be as supplied by the reglet manufacturer.
E. Sealants and caulking are as specified under Section 07 90 00.
F. Sealants shall be applied per Section 07 90 00 by this installer as part of a one source system.
G. Counter flashing shall be manufactured by reglet manufacturer. Counter flashing shall be compatible with reglet system and compatible with roofing and/or waterproofing system.

2.3 ACCESSORIES

A. Nails at aluminum or galvanized steel to be steel.
B. Solder to be 50/50 tin/ lead.
C. Nailing clips to be same material as metal being clipped.
D. Primer shall be asphaltic type conforming to ASTM D 41 to be used at dissimilar metals and at aluminum or steel in contact with lime and mortar.
E. Plastic cement to be fibrated asphalt type conforming to ASTM D 4586.
F. Sealants to be compatible with metal. Sealants are specified in Section 07900.

2.4 FABRICATION, GENERAL

A. Fabricate flashing and other sheet metal in accordance with details on Drawings and Architectural Sheet Metal Manual for item fabricated.
B. Neutralize solder flux after soldering.
C. Site-fabricate all door and window pans, plumbing vent and exhaust fan flashing and other exposed flashing. Use field measurements for exact fits.
D. Hem all exposed edges with 1/2" hem.

PART 3. EXECUTION

3.1 EXAMINATION AND PREPARATION

A. Verify that all roof penetrations, fascia and roof trim, window and door framing are

complete before starting respective flashing.

B. Verify that all base sheets and ice shields are in place before roof flashing is started.
C. Prime any dissimilar metal with asphaltic primer if metal will come in contact with copper flashing.
D. Provide and fabricate flashing as required to be installed by other trades.

3.2 INSTALLATION

A. Install all work as per Drawings, CDA and SMACNA standards for a particular item.
B. Make all flashing connections water tight by soldering if copper, galvanized steel, or stainless steel.
C. Make connections at aluminum with rivets and sealants or by welding.
D. Provide expansion joints in all flashing as per details in the Architectural Sheet Metal Manual.
E. All sheet metal work shall have concealed connections and be installed with clips wherever possible.
F. Install reglets as per manufacturer's details and printed instructions.
   1. Coordinate reglet installation with related trades.
   2. Install counter flashing system that is manufactured by reglet manufacturer

3.3 CLOSEOUT

A. Provide water tests to ensure water tightness of all flashing and gutters.

END OF SECTION

SECTION 07 72 33

ROOF HATCHES

PART I. GENERAL

1.1 SUMMARY

A. Work Included: Provide factory-fabricated roof hatches for ladder access.

1.2 SUBMITTALS

A. Product Data: Submit manufacturer's product data.

B. Shop Drawings: Submit shop drawings including profiles, accessories, location, adjacent construction interface, and dimensions.

C. Warranty: Submit executed copy of manufacturer's standard warranty.

1.3 QUALITY ASSURANCE

A. Manufacturer: A minimum of 5 years experience manufacturing similar products.

B. Installer: A minimum of 2 years experience installing similar products.

C. Manufacturer's Quality System: Registered to ISO 9001:2008 Quality Standards including in-house engineering for product design activities.

1.4 DELIVERY, STORAGE AND HANDLING

A. Deliver products in manufacturer's original packaging. Store materials in a dry, protected, well-vented area. Inspect product upon receipt and report damaged material immediately to delivering carrier and note such damage on the carrier's freight bill of lading.

1.5 WARRANTY

A. Manufacturer's Warranty: Provide manufacturer's standard warranty. Materials shall be free of defects in material and workmanship for a period of five years from the date of purchase. Should a part fail to function in normal use within this period, manufacturer shall furnish a new part at no charge.

PART 2 - PRODUCTS

2.1 MANUFACTURER

A. Basis-of-Design Manufacturer: Type S Roof Hatch by The Bilco Company, P.O. Box 1203, New Haven, CT 06505, 1-800-366-6530, Fax: 1-203-933-8478, Web: www.bilco.com.

2.2 ROOF HATCH

A. Furnish and install where indicated on plans metal roof hatch Type S, size width: 36" (914mm) x length: 30" (762mm). Length denotes hinge side. The roof hatch shall be single leaf. The roof hatch shall be pre-assembled from the manufacturer.

B. Performance characteristics:

1. Cover shall be reinforced to support a minimum live load of 40 psf (195kg/m^2) with a maximum deflection of 1/150th of the span and a [select: 140 psf (684 kg/m^2) wind uplift for galvanized steel (Type S-20) and aluminum (Type S-50) roof hatches or 20 psf (97 kg/m^2) for stainless steel (Type S-90) roof hatches or roof hatches with an aluminum cover and galvanized steel curb (Type S-40)].
2. Operation of the cover shall be smooth and easy with controlled operation throughout the entire arc of opening and closing.
3. Operation of the cover shall not be affected by temperature.
4. Entire hatch shall be weather tight with fully welded corner joints on cover and curb.
5. Galvanized steel (Type S-20) and aluminum (Type S-50) roof hatches shall be Miami-Dade Product approved (NOA No. 14-0708.07 Expiration Date: December 2, 2019), meeting large and small missile impact requirements. Florida Product Approval #FL15110.
6. Hatch shall have pop-up post by manufacturer as indicated on drawings.

C. Cover: Shall be [select: 14 gauge (1.9mm) paint bond G-90 galvanized steel or 11 gauge (2.3mm) aluminum] with a 3” (76mm) beaded flange with formed reinforcing members. Cover shall have a heavy extruded EPDM rubber gasket that is bonded to the cover interior to assure a continuous seal when compressed to the top surface of the curb.

D. Cover insulation: Shall be fiberglass of 1” (25mm) thickness, fully covered and protected by a metal liner [select: 22 gauge (.8mm) paint bond G-90 galvanized steel or 18 gauge (1mm) aluminum].

E. Curb: Shall be 12” (305mm) in height and of 11 gauge (2.3mm) aluminum. The curb shall be formed with a 3-1/2” (89mm) flange with 7/16” (11.1mm) holes provided for securing to the roof deck. The curb shall be equipped with an integral metal capflashing of the same gauge and material as the curb, fully welded at the corners, that features the Bil-Clip® flashing system, including stamped tabs, 6” (153mm) on center, to be bent inward to hold single ply roofing membrane securely in place.

F. Curb insulation: Shall be rigid, high-density fiberboard of 1” (25mm) thickness on outside of curb.

G. Lifting mechanisms: Manufacturer shall provide compression spring operators enclosed in telescopic tubes to provide, smooth, easy, and controlled cover operation throughout the entire arc of opening and closing. The upper tube shall be the outer tube to prevent accumulation of moisture, grit, and debris inside the lower tube assembly. The lower tube shall interlock with a flanged support shoe [for aluminum construction: welded to the curb assembly; for steel construction: through bolted to the curb assembly].

H. Hardware

1. Heavy pintle hinges shall be provided
2. Cover shall be equipped with a spring latch with interior and exterior turn handles
3. Roof hatch shall be equipped with interior and exterior padlock hasps.
4. The latch strike shall be a stamped component bolted to the curb assembly.
5. Cover shall automatically lock in the open position with a rigid hold open arm equipped with a 1” (25mm) diameter red vinyl grip handle to permit easy release for closing.
6. Compression spring tubes shall be an anti-corrosive composite material and all other hardware shall be zinc plated and chromate sealed. [For installation in highly corrosive environments or when prolonged exposure to hot water or steam is anticipated, specify Type 316 stainless steel hardware].
7. Cover hardware shall be bolted into heavy gauge channel reinforcing welded to the underside of the cover and concealed within the insulation space.

I. Finishes: Factory finish shall be mill finish aluminum.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates and openings for compliance with requirements for installation tolerances and other conditions affecting performance. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

A. Install products in strict accordance with manufacturer's instructions and approved submittals. Locate units level, plumb, and in proper alignment with adjacent work.

1. Test units for proper function and adjust until proper operation is achieved.
2. Repair finishes damaged during installation.
3. Restore finishes so no evidence remains of corrective work.

3.3 ADJUSTING AND CLEANING

A. Clean exposed surfaces using methods acceptable to the manufacturer which will not damage finish.

END OF SECTION

SECTION 07 90 00

JOINT PROTECTION

PART I. GENERAL

1.1 SCOPE

A. Sealants at exterior horizontal surfaces
B. Sealants at exterior vertical surfaces, painted
C. Sealants at interior horizontal surfaces, painted
D. Sealants at interior vertical surfaces, painted
E. Sealants at wet installations
F. Acoustical sealants
G. Submittals
H. Samples
I. Mock ups

1.2 GENERAL REQUIREMENTS

A. The work of this section is governed by the conditions set forth in the Agreement between the Owner and Contractor, the General Conditions of the Contract for Construction, Division 1 of these Specifications, and all other documents that make up the Agreement.
B. The Contractor shall ensure that the work of this section is coordinated with the work of all related trades affected by or affecting the work of this Section.
C. The work of this section includes providing all labor, material, miscellaneous fasteners and accessories, and equipment required to complete the work of this Section including but not limited to that work specified herein and on the Drawings or as required for a complete job.

1.3 SUBMITTALS

A. Submit manufacturer's printed product literature for review for each sealant specified. Keep one copy of literature for each system on the job site for reference. Literature shall include test results showing compliance with ASTM numbers and complete installation instructions for each material.
B. Submit color charts for preliminary color selection of all exposed sealants by Architect.
C. Install sample of sealants at each condition for Architect's approval prior to proceeding with work of this section. Sample shall show color and quality of workmanship.

1.4 QUALITY ASSURANCE

A. Each product for each type of joint shall be purchased from a single manufacturer.
B. Each trade is responsible for sealing joints of their work as part of a single source responsibility unless noted otherwise.
C. All materials shall conform to the ASTM numbers noted herein for each type of material and installation. These qualifications shall be clearly marked on each container of sealant.

1.5 DELIVERY, STORAGE AND HANDLING

A. Materials shall be delivered in their original, unopened packages, and protected from exposure to the elements.
B. Store all materials off the floor on pallets and cover with plastic tarps.
C. Damaged or deteriorated materials shall be removed from the premises.

PART 2. PRODUCTS

2.1 SEALANTS

A. Paintable sealants at doors, windows and other openings at exterior concrete or masonry to be:
   1. Polyurethane conforming to ASTM C 920, Grade NS, Class 25, Use M, G, or A, single component gun grade. Approved products are;
      a. Sonneborn NP 1
      b. Sonneborn Ultra
      c. Tremco DYMONIC

B. Paintable sealants at doors, windows and other openings at interior wood, concrete or masonry to be:
   1. Butyl sealant conforming to ASTM C 1085, Grade NS, Class 12.5 Use G, single component gun grade. Approved products are:
      a. Tremco Butyl Sealant
      b. BC-158, Pecora Corp

C. Caulking at ceramic tile at wet areas to be:
   1. One component, mildew resistant, silicone sealant, sanded or unsanded, conforming to ASTM C 920 Type S, Grade NS, Class 25, Use NT, G, A. Approved products are;
      a. Sonneborn OmniPlus
      b. Tremco Spectrem 1
      c. Tremco Spectrem 2
      d. GE Silicone Sealant

2.2 ACCESSORIES

A. Primers to be as required by sealant manufacturer for proper adhesion to surfaces being caulked.
B. Backer rods to be closed cell polyethylene of size appropriate for condition.
C. Bond breaker tape to be polyethylene tape of type as recommended by sealant manufacturer.
D. Masking tape for masking adjacent surfaces to be to non-staining type that will not damage surfaces or sealants.

PART 3. EXECUTION

3.1 EXAMINATION AND PREPARATION

A. Clean all surfaces of dust and dirt before applying sealant.
B. Prime surfaces as per manufacturer's specifications prior to applying sealant.
C. Ensure that backer-rod is of proper size for joint being sealed. Backer rod should be compressed about 25% of it's size for a proper fit.
D. Install backer-rods and bond breaker tape as required. Do not install any flat caulk joints without bond breaker tape. Do not install any three-sided caulk joints.
E. Apply bond breaker tape to backs of joints less than 3/8 inch deep.
F. Do not apply sealant if surfaces are wet or damp.
G. Do not start sealant work until colors of sealants have been approved and in-place samples of workmanship approved.
H. Tape off surrounding areas to get clean, straight edges.
I. Use mechanics with at least 5 years experience in this type of work.

3.2 INSTALLATION

A. Install all sealants exactly as per manufacturer's specifications and details. Keep a copy of the manufacturer's installation details on the job for reference for each type of product .
B. Install sealants in accordance with ASTM C 1193.
C. Install acoustical sealants in accordance with ASTM C 919 and details of STC rated system.
D. Carefully coordinate sealant system with other systems so that all systems perform as a

total waterproof system.

E. Install all caulk joints carefully and professionally.

F. Tool all joints carefully to the shape as approved by the Architect.

3.3 CLEANING AND PROTECTION

A. Protect all sealants from damage and dirt after installation.

B. Keep traffic off sealants used in paving and other horizontal surfaces until sealants are cured.

C. Remove and replace any sealants that are damaged. Patched areas to match existing caulking perfectly.

D. Clean all sealants from adjacent surfaces immediately after installation.

E. At close out, provide Owner with all manufacturers maintenance instructions for sealants.

END OF SECTION

SECTION 08 10 00

STEEL DOORS AND FRAMES

PART I. GENERAL

1.1 SCOPE

A. Steel doors and frames
B. Grade I doors
C. Flush doors
D. Fire rated doors and frames
E. Submittals
F. Shop drawings
G. Samples

1.2 GENERAL REQUIREMENTS

A. The work of this section is governed by the conditions set forth in the Agreement between the Owner and Contractor, the General Conditions of the Contract for Construction, Division 1 of these Specifications, and all other documents that make up the Agreement.
B. The Contractor shall ensure that the work of this section is coordinated with the work of all related trades affected by or affecting the work of this Section.
C. The work of this section includes providing all labor, material, miscellaneous fasteners and accessories, and equipment required to complete the work of this Section including but not limited to that work specified herein and on the Drawings or as required for a complete job.

1.3 SUBMITTALS

A. Submit manufacturer’s certification of Miami-Dade product approval.
B. Submit manufacturer's written literature on doors and frames.
C. Submit shop drawings for each type of door and frame assembly including a schedule showing size and rough opening for each door, undercut required for each door, and hardware set up for each door. Clearly note gauges of all metal for doors, reinforcing, and frames.
D. Shop drawings shall include the following:
   1. Elevations and details for each type of door with jamb and sill (if applicable) shown. Indicate dimensions of stiles, rails, and panels.
   2. Show dimensions of finish door and rough openings.
   3. Show hardware located to scale and dimensioned.
   4. Show all profiles at full scale.
   5. Show all joining details.
   6. Show glazing details if applicable.
   7. Bevel required on door edge.
   8. Undercut required for door.
E. Submit product data on the following.
   1. Factory finishes
   2. Glazing material coordinated with Section 08800.
   3. Weather stripping, gaskets, and other accessories.

1.4 QUALITY ASSURANCE

A. Doors and frames shall be manufactured in accordance with the recommendations set forth in the latest edition of ANSI/SDI-100-91, "Recommended Specifications Standard Steel Doors and Frames", and all standards referenced within.
B. Perform work in accordance with SDI-117, "Manufacturing Tolerances- Standard Steel

Doors and Frames" published by the Steel Door Institute.

C. **All steel doors and frame shall meet level "E" risk category IV essential facility building, per F.B.C 2017 section 1626.2.4**

1.5 WARRANTY

A. Doors and frames to be warranted for 5 years against rusting, blistering, and/or peeling of paint, disassembly, leaking, warping beyond insulation tolerances, and failure of insulating glass.

1.6 DELIVERY AND PROTECTION

A. Coordinate delivery of frames with related trades.
B. Deliver doors when only after roof is on and weatherproofed.
C. Doors shall be protected from damage throughout course of job.
D. Doors shall be stored in a clean and dry environment until hung.
E. Doors shall be stacked in a way so that they will not warp or bow.
F. Materials shall be delivered in their original, unopened packages, and protected from exposure to the elements.

PART 2. PRODUCTS

2.1 MATERIALS

A. Doors to be manufactured to the following SDI standard Grades:
   1. Grade I; Standard-duty, 1 ¾" thick, Full flush design
B. Steel specifications:
   1. Cold rolled steel shall conform to ASTM A 366 or A 620 and A 568.
   2. Hot rolled steel shall conform to ASTM A 569 and A 568.
   3. Hot dipped zinc coated galvanized steel shall conform to ASTM A 653. Galvanizing shall be to A40, A60 or G60 per SDI requirements.
   4. Electroplated galvanizing for anchors and accessories shall conform to ASTM A 591, 4OZ. The steel shall conform to ASTM A 568.
C. Steel for doors to be of the following gauges:
   1. 20 gauge for Grade I
D. Door Frames to be the following gauge of steel:
   1. 16 or 18 gauge for Grade I
E. Reinforcement for hardware in doors shall be the following gauge:
   1. Hinges at 1 ¾" doors; 10 gauge
   2. Pivot hinges; 7 gauge
   3. Floor checking hinges; 7 gauge
   4. Locks and other hardware; 14 gauge
F. Reinforcement for hardware in frames shall be the following gauge:
   1. Hinges at 1 ¾" doors; 10 gauge
   2. Locks and other hardware; 14 gauge
   3. Pivot hinges; 7 gauge
   4. Floor checking hinges; 7 gauge

G. Doors to be rated as per Door Schedule on Drawings and as required by local and state codes. Mechanically fasten fire-rating labels to doors and frames.

2.2 DOOR CONSTRUCTION

A. Each face of full flush doors shall be constructed of one sheet of steel of thickness required for Grade and Model of door.
B. Doors noted to be Seamless design shall have no visible seams on the vertical edges.
C. Tops and bottoms of doors shall have flush end closures.
D. Tops and bottoms of doors shall have inverted end closures.

E. Cores of doors shall be:
   1. Kraft honeycomb
   2. Polyurethane
   3. Polystyrene
F. Louvered doors are to be manufactured per SDI-111C, “Recommended Louver Details for Standard Steel Doors".

2.3 FRAME CONSTRUCTION

A. Interior frames are to be welded construction.
B. Interior frames are to be masonry anchored.
C. Exterior frames are to be welded construction.
D. At welded construction, all welds are to be concealed wherever possible. Visible welds are to ground smooth.
E. Frames shall have a minimum of three anchors per jamb of not less than 18 gauge galvanized steel.
F. Frames shall have floor anchors where applicable or one extra jamb anchor.
G. Stops are to be terminated at floor as per Drawings and reviewed final shop drawings.
H. Mechanically fasten fire-rating labels to frames.
I. Install neoprene silencers on frames.
J. Frames shall be prepped for hardware at factory. Hardware is as per Section 08705. Obtain templates or hardware samples from Hardware supplier.
K. Frames at masonry shall have mortar guards installed at the factory.

2.4 FIRE DOORS

A. Fire rated doors and frames shall comply with the following tests:
   1. ANSI/ UL10b, Fire Test of Door Assemblies.
   2. NFPA 252, Fire Test of Door Assemblies.
B. The following fire rated door assemblies are required:
   1. Class C, 45 minutes rating.
C. All doors and frames shall have the fire rating and test number permanently affixed.
D. Gaskets for fire rated door assemblies shall be manufacturer's standard as used on tested assembly.

2.5 FINISH

A. Preparation and priming of doors shall comply with ANSI A 224.1, "Test Procedure and Acceptance Criteria for Prime Painted Steel Surfaces".
B. Galvanized surfaces shall be chemically treated and cleaned prior to priming.
C. All other steel surfaces are to be cleaned per requirements of paint manufacturer.
D. All doors and frames shall be factory primed with primer compatible with acrylic finish paint.
E. All doors and frames shall be factory primed with primer compatible with acrylic finish paint.
F. All frames that are to be in contact with masonry or concrete are to be backing primed with an asphaltic primer.

PART 3. EXECUTION

3.1 SCHEDULE

A. See Door Schedule on Drawings for a complete list of doors for this job.

3.2 INSTALLATION

A. Coordinate rough openings for door frames with masonry and framing.
B. Coordinate floor clearances and undercut of doors with Architect prior to completion of shop drawings or fabrication of doors.
C. Frames shall be installed per recommendations of SDI-105, Recommended Erection

Instructions for Steel Frames.

D. Frames at masonry shall be installed per recommendations of SDI-110, Standard Steel Doors and Frames for Modular Masonry Construction.
E. Install doors as per manufacturer's instructions and per SDI-1117.
F. Doors shall be hung plumb and true with 1/8" space between door and frame.
G. Doors shall be hung coplanar within 1/8" measured on the diagonal.
H. Door frames shall be installed with screws where applicable.
I. Doors shall be re-primed and finished after installation.
J. Install hardware as supplied per Section 08 71 00.

3.3 CLOSEOUT

A. At end of job, check that all doors are within the tolerances noted above. Replace any door that has warped or is otherwise damaged or beyond acceptable tolerances.
B. Check that all doors swing freely and close easily. Adjust doors as required.
C. Check that all doors have proper clearances at floors, sills, carpets, and rugs.
D. Touch-up doors and frames as required. Coordinate with Section 09 90 00, Painting.

END OF SECTION

SECTION 08 14 16

FLUSH WOOD VENEER DOORS (WD-1)

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Interior Flush Wood Veneer Doors:
    1. Five-ply flush bonded doors.

1.2 RELATED SECTIONS

A. Section 08100 (08 12 00) - Metal Frames.
B. Section 08710 (08 10 00) - Door Hardware.
C. Section 08800 (08 80 00) – Glass & Glazing.

1.3 REFERENCES

A. ANSI A208.1 - Particleboard.
B. ASTM E 90 - Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements.
C. ASTM E 413 - Classification for Rating Sound Insulation.
D. AWI/AWMAC/WI Architectural Woodwork Standards, Section 9 - Doors.
E. NFPA 80 - Standard for Fire Doors and Other Opening Protectives.
F. UBC 7-2-1997/UL 10C - Positive Pressure Fire Tests of Door Assemblies.
G. WDMA Finish System TR-6, Catalyzed Polyurethane.
H. WDMA I.S. 1A - Architectural Wood Flush Doors.
I. WDMA I.S. 10 - Industry Standard for Testing Cellulosic Composite Materials for Use in Fenestration Products.

1.4 SUBMITTALS

A. Comply with Section 01330 (01 33 00) - Submittal Procedures.
B. Product Data: Submit manufacturer's product data, including door construction description and WDMA I.S.1-A and AWS classifications.
C. Schedules: Submit manufacturer's schedules, including door dimensions, cutouts, species, finish, and hardware. Reference individual door numbers as indicated on the Drawings.
D. Samples: Submit manufacturer's door finish samples, showing range of color variation.
E. Test Reports: Submit manufacturer's test results of STC ratings from testing performed by independent testing agency for sound-retardant doors.
F. Manufacturer's Certification: Submit manufacturer's certification that doors comply with specified requirements and are suitable for intended application.
G. Environmental Documentation: Submit manufacturer's environmental documentation for the following FCBC categories.
    1. Category 5: Health
    2. Category 6: Materials
H. Cleaning Instructions: Submit manufacturer's cleaning instructions for doors.
I. Warranty: Submit manufacturer's standard warranty.

1.5 QUALITY ASSURANCE

A. Tolerances for Warp, Telegraphing, Squareness, and Prefitting Dimensions: WDMA I.S.1-A.
B. Identifying Label: Each door shall bear identifying label indicating:
    1. Door manufacturer.
    2. Order number.
    3. Door number.
    4. Fire rating, if applicable.
C. Environmental Responsibility: Provide doors manufactured with the following environmentally responsible components:
    1. Core:
        a. Agrifiber Core:
            i. Rapidly renewable materials.
            ii. Pre-consumer recycled content.
            iii. No added urea formaldehyde.
    2. Composite Crossband:
        a. High-Density Fiberboard (HDF):
            i. Forest Stewardship Council (FSC) certified.
            ii. Pre-consumer recycled content.
            iii. No added urea formaldehyde.
    3. Stiles and Rails:
        a. Structural Composite Lumber (SCL):
            i. Forest Stewardship Council (FSC) certified.
            ii. No added urea formaldehyde.
        b. GREENGUARD Certification Program:
            a. GREENGUARD Indoor Air Quality Certified.

1.6 DELIVERY, STOREAGE AND HANDLING

A. Delivery:
    1. Deliver doors to site in manufacturer's original, unopened containers and packaging, with labels clearly identifying product name and manufacturer.
    2. Package doors individually in polybags.
B. Storage:
    1. Store doors in accordance with manufacturer's instructions.
    2. Store doors in clean, dry area indoors, protected from damage and direct sunlight.
    3. Store doors flat on level surface.
    4. Do not store doors directly on concrete.
    5. Keep doors completely covered. Use covering which allows air circulation and does not permit light to penetrate.
    6. Store doors between 50 and 90 degrees F (10 and 32 degrees C) and 25 to 55 percent relative humidity.
C. Handling:
    1. Handle doors in accordance with manufacturer's instructions.
    2. Protect doors and finish during handling and installation to prevent damage.
    3. Handle doors with clean hands or clean gloves.
    4. Lift and carry doors. Do not drag doors across other doors or surfaces.

1.7 ENVIRONMENTAL REQUIREMENTS

A. Do not subject doors to extreme conditions or changes in temperature or relative humidity in accordance with WDMA I.S.1-A.

1.8 WARRANTY

A. Warrant solid core, interior doors for life of installation against warpage, delamination, and defects in materials and workmanship.

B. Defects noted during warranty period shall be corrected at no cost to Owner. Corrective work shall include labor and material for repair, replacement, refinishing, and rehanging as required.

PART 2 PRODUCTS

2.1 MANUFACTURER

A. VT Industries, Inc., 1000 Industrial Park, PO Box 490, Holstein, Iowa 51025. Toll Free (800) 827-1615. Phone (712) 368-4381. Fax (712) 368-4111. www.vtindustries.com. door_info@vtindustries.com.

2.2 GENERAL

A. Glass Mouldings:
   1. Non-Rated Flush Doors: VT Industries Style VT1.
   2. Fire-Rated Doors: VT Industries Style 110, steel vision frame, beige prime finish.
B. Glazing: As specified in Section 08800 (08 80 00).
C. Door Louvers: As specified in Section 10225 (08 91 26).

2.3 FIVE-PLY FLUSH BONDED DOORS

A. Five-Ply Flush Bonded Doors: Heritage Collection.
   1. Model:
      a. 5509H, WSPC-5, agrifiber core, non-rated
   2. Compliance: WDMA I.S.1-A.
      a. Aesthetic Grade: Premium.
      b. Duty Level: Extra heavy duty
      c. Type: WSPC-5
   3. Seven-Ply and Non-Bonded Core Construction: Not acceptable.
   4. Door Thickness: 1-3/4 inches.
   5. STC Rating:
      a. Model 5509H : STC 30
   6. Stiles:
      a. Inner Stiles: 1-3/8 inches wide, before prefitting.
      b. Structural Composite Lumber (SCL) With Outer Stile: Same species as face veneer.
      c. Outer Stile: Apply after beveling and before face application.
   7. Rails:
      a. Structural composite lumber (SCL).
      b. Minimum Width Before Prefitting: 1-3/8 inches.
   8. Core:
      a. Material: Agrifiber
      b. Agrifiber Compliance: ANSI A208.1, Grade 1-LD-2.
   9. Door Assembly:
      a. Stiles and Rails: Bonded to core.
      b. Sand entire assembly flat as a unit to ensure minimal telegraphing of core components through face veneers.
   10. Composite Crossband:
      a. Apply to core in hot press using Type I, exterior, water-resistant adhesive, before application of hardwood edges.
      b. Exposed Crossbanding: Not allowed along stile edges.
   11. Veneers:
      a. Apply to crossbanded core in hot press using Type I, exterior, water-resistant adhesive.
      b. Species: Natural Birch
      c. Cut: Rotary
      d. Match: Slip
      e. Assembly: Center Balanced
      f. Minimum Thickness Before Sanding: 1/42 inch.

12. Positive Pressure:
    a. Smoke Gasketing: Apply smoke gasketing around frame perimeter and between door and pairs to meet Smoke (S) rating.
    b. Intertek/Warnock Hersey Category A Guidelines: Edge sealing systems not allowed on frames.
13. Electronic Barcode: "VTsmartdoor" barcode technology.:
    a. Location: Fire label, hinge stile of doors.
    b. Provide fire-rated door assembly information required for Owner's annual fire-door inspection in accordance with NFPA 80, Paragraph 5.2.1.

2.4 FABRICATION

A. Prefit Doors:
    1. Prefit and bevel doors at factory to fit openings.
    2. Prefit Tolerances: WDMA I.S.1-A and AWS Section 9.
B. Factory-machine doors for mortised hardware, including pilot holes for hinge screws and lock fronts required.

2.5 FINISHES

A. Doors shall receive factory finishing.
B. Factory Finishing: WDMA System TR-6, catalyzed polyurethane, premium grade.
    1. Stain coat.
    2. Sealer: 3 coats.
    3. Sanding: Sand.
    4. Topcoat: 2 coats.
C. Stain Color: Ravine (RA07).
D. Top and Bottom Rails: Factory sealed.

PART 3 EXECUTION

3.1 EXAMINATION

A. Examine locations to receive doors. Notify Architect of conditions that would adversely affect installation or subsequent use. Do not begin installation until unacceptable conditions are corrected.
B. Ensure frames are solidly anchored, allowing no deflection when doors are installed.
C. Ensure frames are plumb, level, square, and within tolerance.

3.2 PREPARATION

A. Allow doors to become acclimated to building temperature and relative humidity for a minimum of 24 hours before installation.

3.3 INSTALLATION

A. Install doors in accordance with manufacturer's instructions.
B. Install doors at locations indicated on the Door Schedule.
C. Install doors plumb, level, and square.
D. Install door hardware as specified in Section 08 71 00.

3.4 ADJUSTING

A. Adjust doors to swing freely, without binding in frame.
B. Adjust hardware to operate properly.
C. Repair minor damages to finish in accordance with manufacturer's instructions and as approved by Architect.
D. Remove and replace damaged doors that cannot be successfully repaired, as determined by Architect.

3.5 CLEANING

A. Clean doors promptly after installation in accordance with manufacturer's instructions.
B. Do not use harsh cleaning materials or methods that could damage finish.

3.6 PROTECTION

A. Protect installed doors from damage during construction.

END OF SECTION

SECTION 08 14 16

FLUSH WOOD VENEER DOORS (WD-2)

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Interior Flush Wood Veneer Doors:
    1. Flush fire-rated wood doors.

1.2 RELATED SECTIONS

A. Section 08100 (08 12 00) - Metal Frames.
B. Section 08710 (08 71 00) - Door Hardware.
C. Section 08800 (08 80 00) – Glass & Glazing.

1.3 REFERENCES

A. ANSI A208.1 - Particleboard.
B. ASTM E 90 - Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements.
C. ASTM E 413 - Classification for Rating Sound Insulation.
D. AWI/AWMAC/WI Architectural Woodwork Standards, Section 9 - Doors.
E. NFPA 80 - Standard for Fire Doors and Other Opening Protectives.
F. UBC 7-2-1997/UL 10C - Positive Pressure Fire Tests of Door Assemblies.
G. WDMA Finish System TR-6, Catalyzed Polyurethane.
H. WDMA I.S. 1A - Architectural Wood Flush Doors.
I. WDMA I.S. 10 - Industry Standard for Testing Cellulosic Composite Materials for Use in Fenestration Products.

1.4 SUBMITTALS

A. Comply with Section 01330 (01 33 00) - Submittal Procedures.
B. Product Data: Submit manufacturer's product data, including door construction description and WDMA I.S.1-A and AWS classifications.
C. Schedules: Submit manufacturer's schedules, including door dimensions, cutouts, species, finish, and hardware. Reference individual door numbers as indicated on the Drawings.
D. Samples: Submit manufacturer's door finish samples, showing range of color variation.
E. Test Reports: Submit manufacturer's test results of STC ratings from testing performed by independent testing agency for sound-retardant doors.
F. Manufacturer's Certification: Submit manufacturer's certification that doors comply with specified requirements and are suitable for intended application.
G. Environmental Documentation: Submit manufacturer's environmental documentation for the following FCBC Categories.
    1. Category 5: Health
    2. Category 6: Materials
H. Cleaning Instructions: Submit manufacturer's cleaning instructions for doors.
I. Warranty: Submit manufacturer's standard warranty.

1.5 QUALITY ASSURANCE

A. Tolerances for Warp, Telegraphing, Squareness, and Prefitting Dimensions: WDMA I.S.1-A.
B. Identifying Label: Each door shall bear identifying label indicating:
    1. Door manufacturer.

2. Order number.
3. Door number.
4. Fire rating, if applicable.

C. Fire-Rated Doors: Labeled by Intertek/Warnock Hersey
   1. Construction Details and Hardware Application: Approved by labeling agency.
D. Positive Pressure Opening Assemblies: UBC 7-2-1997/UL 10C.
E. Environmental Responsibility: Provide doors manufactured with the following environmentally responsible components:
   1. Composite Crossband:
      a. High-Density Fiberboard (HDF):
         i. Pre-consumer recycled content.
         ii. No added urea formaldehyde.
   2. GREENGUARD Certification Program:
      a. GREENGUARD Indoor Air Quality Certified.

1.6 DELIVERY, STOREAGE AND HANDLING

A. Delivery:
   1. Deliver doors to site in manufacturer's original, unopened containers and packaging, with labels clearly identifying product name and manufacturer.
   2. Package doors individually in polybags.
B. Storage:
   1. Store doors in accordance with manufacturer's instructions.
   2. Store doors in clean, dry area indoors, protected from damage and direct sunlight.
   3. Store doors flat on level surface.
   4. Do not store doors directly on concrete.
   5. Keep doors completely covered. Use covering which allows air circulation and does not permit light to penetrate.
   6. Store doors between 50 and 90 degrees F (10 and 32 degrees C) and 25 to 55 percent relative humidity.
C. Handling:
   1. Handle doors in accordance with manufacturer's instructions.
   2. Protect doors and finish during handling and installation to prevent damage.
   3. Handle doors with clean hands or clean gloves.
   4. Lift and carry doors. Do not drag doors across other doors or surfaces.

1.7 ENVIRONMENTAL REQUIREMENTS

A. Do not subject doors to extreme conditions or changes in temperature or relative humidity in accordance with WDMA I.S.1-A.

1.8 WARRANTY

A. Warrant solid core, interior doors for life of installation against warpage, delamination, and defects in materials and workmanship.
B. Defects noted during warranty period shall be corrected at no cost to Owner. Corrective work shall include labor and material for repair, replacement, refinishing, and rehanging as required.

PART 2 PRODUCTS

2.1 MANUFACTURER

A. VT Industries, Inc., 1000 Industrial Park, PO Box 490, Holstein, Iowa 51025. Toll Free (800) 827-1615. Phone (712) 368-4381. Fax (712) 368-4111. www.vtindustries.com. door_info@vtindustries.com.

2.2 GENERAL

A. Glass Mouldings:
    1. Non-Rated Flush Doors: VT Industries Style VT1.
    2. Fire-Rated Doors: VT Industries Style 110, steel vision frame, beige prime finish.
B. Glazing: As specified in Section 08800 (08 80 00).
C. Door Louvers: As specified in Section 10225 (08 91 26).

2.3 FLUSH FIRE-RATED WOOD DOORS

A. Flush Fire-Rated Wood Doors: Heritage Collection.
    1. Model:
        a. 5P11H, FD-90PP-5, mineral core, 90-minute rated, positive pressure
    2. Compliance: WDMA I.S.1-A.
        a. Quality Grade: Premium.
        b. Type: FD-5.
    3. Door Thickness: 1-3/4 inches.
    4. STC Rating:
        a. STC 35
    5. Inner Stiles: Noncombustible material
    6. Rails:
        a. Fire-retardant material
        b. Width: Manufacturer's standard width.
    7. Core:
        a. Fire-Retardant Mineral Core: Does not contain asbestos or added urea formaldehyde.
    8. Composite Crossband:
        a. Apply to core in hot press using Type I, exterior, water-resistant adhesive.
        b. Exposed Crossbanding: Not allowed along stile edges.
    9. Veneers:
        a. Apply to crossbanded core in hot press using Type I, exterior, water-resistant adhesive.
        b. Species: Natural Birch
        c. Cut: Rotary
        d. Match: Slip
        e. Assembly: Center Balanced
        f. Minimum Thickness Before Sanding: 1/42 inch.
    10. Positive Pressure:
        a. Smoke Gasketing: Apply smoke gasketing around frame perimeter and between door and pairs to meet Smoke (S) rating.
        b. Intertek/Warnock Hersey Category A Guidelines: Edge sealing systems not allowed on frames.
    11. Electronic Barcode: "VTsmartdoor" barcode technology.:
        a. Location: Fire label, hinge stile of doors.
        b. Provide fire-rated door assembly information required for Owner's annual fire-door inspection in accordance with NFPA 80, Paragraph 5.2.1.

2.4 FABRICATION

A. Prefit Doors:
    1. Prefit and bevel doors at factory to fit openings.
    2. Prefit Tolerances: WDMA I.S.1-A and AWS Section 9.
B. Factory-machine doors for mortised hardware, including pilot holes for hinge screws and lock fronts required.

2.5 FINISHES

A. Doors shall receive factory finishing.
B. Factory Finishing: WDMA System TR-6, catalyzed polyurethane, premium grade.
    1. Stain coat.
    2. Sealer: 3 coats.
    3. Sanding: Sand.

4. Topcoat: 2 coats.

C. Stain Color: Ravine (RA07).
D. Top and Bottom Rails: Factory sealed.

PART 3 EXECUTION

3.1 EXAMINATION

A. Examine locations to receive doors. Notify Architect of conditions that would adversely affect installation or subsequent use. Do not begin installation until unacceptable conditions are corrected.
B. Ensure frames are solidly anchored, allowing no deflection when doors are installed.
C. Ensure frames are plumb, level, square, and within tolerance.

3.2 PREPARATION

A. Allow doors to become acclimated to building temperature and relative humidity for a minimum of 24 hours before installation.

3.3 INSTALLATION

A. Install doors in accordance with manufacturer's instructions.
B. Install doors at locations indicated on the Door Schedule.
C. Install doors plumb, level, and square.
D. Install door hardware as specified in Section 08 71 00.

3.4 ADJUSTING

A. Adjust doors to swing freely, without binding in frame.
B. Adjust hardware to operate properly.
C. Repair minor damages to finish in accordance with manufacturer's instructions and as approved by Architect.
D. Remove and replace damaged doors that cannot be successfully repaired, as determined by Architect.

3.5 CLEANING

A. Clean doors promptly after installation in accordance with manufacturer's instructions.
B. Do not use harsh cleaning materials or methods that could damage finish.

3.6 PROTECTION

A. Protect installed doors from damage during construction.

END OF SECTION

SECTION 08 14 16

FLUSH WOOD VENEER DOORS (WD-3)

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Interior Flush Wood Veneer Doors:
    1. Flush fire-rated wood doors.

1.2 RELATED SECTIONS

A. Section 08100 (08 12 00) - Metal Frames.
B. Section 08710 (08 10 00) - Door Hardware.
C. Section 08800 (08 80 00) – Glass & Glazing.

1.3 REFERENCES

A. ANSI A208.1 - Particleboard.
B. ASTM E 90 - Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements.
C. ASTM E 413 - Classification for Rating Sound Insulation.
D. AWI/AWMAC/WI Architectural Woodwork Standards, Section 9 - Doors.
E. NFPA 80 - Standard for Fire Doors and Other Opening Protectives.
F. UBC 7-2-1997/UL 10C - Positive Pressure Fire Tests of Door Assemblies.
G. WDMA Finish System TR-6, Catalyzed Polyurethane.
H. WDMA I.S. 1A - Architectural Wood Flush Doors.
I. WDMA I.S. 10 - Industry Standard for Testing Cellulosic Composite Materials for Use in Fenestration Products.

1.4 SUBMITTALS

A. Comply with Section 01330 (01 33 00) - Submittal Procedures.
B. Product Data: Submit manufacturer's product data, including door construction description and WDMA I.S.1-A and AWS classifications.
C. Schedules: Submit manufacturer's schedules, including door dimensions, cutouts, species, finish, and hardware. Reference individual door numbers as indicated on the Drawings.
D. Samples: Submit manufacturer's door finish samples, showing range of color variation.
E. Environmental Documentation: Submit manufacturer's environmental documentation for the following FCBC Categories.
    1. Category 5: Health
    2. Category 6: Materials
F. Cleaning Instructions: Submit manufacturer's cleaning instructions for doors.
G. Warranty: Submit manufacturer's standard warranty.

1.5 QUALITY ASSURANCE

A. Tolerances for Warp, Telegraphing, Squareness, and Prefitting Dimensions: WDMA I.S.1-A.
B. Identifying Label: Each door shall bear identifying label indicating:
    1. Door manufacturer.
    2. Order number.
    3. Door number.
    4. Fire rating, if applicable.
C. Fire-Rated Doors: Labeled by Intertek/Warnock Hersey

1. Construction Details and Hardware Application: Approved by labeling agency.

D. Positive Pressure Opening Assemblies: UBC 7-2-1997/UL 10C.
E. Environmental Responsibility: Provide doors manufactured with the following environmentally responsible components:
    1. Core:
        a. Structural Composite Lumber Core:
            i. Pre-consumer recycled content.
            ii. No added urea formaldehyde.
    2. Composite Crossband:
        a. High-Density Fiberboard (HDF):
            i. Pre-consumer recycled content.
            ii. No added urea formaldehyde.
    3. Stiles and Rails:
        a. Structural Composite Lumber (SCL):
            i. No added urea formaldehyde.
    4. GREENGUARD Certification Program:
        a. GREENGUARD Indoor Air Quality Certified.

1.6 DELIVERY, STOREAGE AND HANDLING

A. Delivery:
    1. Deliver doors to site in manufacturer's original, unopened containers and packaging, with labels clearly identifying product name and manufacturer.
    2. Package doors individually in polybags.
B. Storage:
    1. Store doors in accordance with manufacturer's instructions.
    2. Store doors in clean, dry area indoors, protected from damage and direct sunlight.
    3. Store doors flat on level surface.
    4. Do not store doors directly on concrete.
    5. Keep doors completely covered. Use covering which allows air circulation and does not permit light to penetrate.
    6. Store doors between 50 and 90 degrees F (10 and 32 degrees C) and 25 to 55 percent relative humidity.
C. Handling:
    1. Handle doors in accordance with manufacturer's instructions.
    2. Protect doors and finish during handling and installation to prevent damage.
    3. Handle doors with clean hands or clean gloves.
    4. Lift and carry doors. Do not drag doors across other doors or surfaces.

1.7 ENVIRONMENTAL REQUIREMENTS

A. Do not subject doors to extreme conditions or changes in temperature or relative humidity in accordance with WDMA I.S.1-A.

1.8 WARRANTY

A. Warrant solid core, interior doors for life of installation against warpage, delamination, and defects in materials and workmanship.
B. Defects noted during warranty period shall be corrected at no cost to Owner. Corrective work shall include labor and material for repair, replacement, refinishing, and rehanging as required.

PART 2 PRODUCTS

2.1 MANUFACTURER

A. VT Industries, Inc., 1000 Industrial Park, PO Box 490, Holstein, Iowa 51025. Toll Free (800) 827-1615. Phone (712) 368-4381. Fax (712) 368-4111. www.vtindustries.com. door_info@vtindustries.com.

2.2 GENERAL

A. Glass Mouldings:
    1. Non-Rated Flush Doors: VT Industries Style VT1.
    2. Fire-Rated Doors: VT Industries Style 110, steel vision frame, beige prime finish.
B. Glazing: As specified in Section 08800 (08 80 00).
C. Door Louvers: As specified in Section 10225 (08 91 26).

2.3 FLUSH FIRE-RATED WOOD DOORS

A. Flush Fire-Rated Wood Doors: Heritage Collection.
    1. Model:
        a. 5P08H, SCLC-45PP-5, structural composite lumber core, 45-minute rated, positive pressure
    2. Compliance: WDMA I.S.1-A.
        a. Quality Grade: Premium.
        b. Type: FD-5.
    3. Door Thickness: 1-3/4 inches.
    4. Inner Stiles: Structural composite lumber (SCL) with high-pressure decorative laminate edges, 45-minute rated
    5. Rails:
        a. Structural composite lumber (SCL), 45-minute rated
        b. Width: Manufacturer's standard width.
    6. Core:
        a. Structural Composite Lumber Core: WDMA I.S. 10.
    7. Composite Crossband:
        a. Apply to core in hot press using Type I, exterior, water-resistant adhesive.
        b. Exposed Crossbanding: Not allowed along stile edges.
    8. Veneers:
        a. Apply to crossbanded core in hot press using Type I, exterior, water-resistant adhesive.
        b. Species: Natural Birch
        c. Cut: Rotary
        d. Match: Slip
        e. Assembly: Center Balanced
        f. Minimum Thickness Before Sanding: 1/42 inch.
    9. Positive Pressure:
        a. Smoke Gasketing: Apply smoke gasketing around frame perimeter and between door and pairs to meet Smoke (S) rating.
        b. Intertek/Warnock Hersey Category A Guidelines: Edge sealing systems not allowed on frames.
    10. Electronic Barcode: "VTsmartdoor" barcode technology.:
        a. Location: Fire label, hinge stile of doors.
        b. Provide fire-rated door assembly information required for Owner's annual fire-door inspection in accordance with NFPA 80, Paragraph 5.2.1.

2.4 FABRICATION

A. Prefit Doors:
    1. Prefit and bevel doors at factory to fit openings.
    2. Prefit Tolerances: WDMA I.S.1-A and AWS Section 9.
B. Factory-machine doors for mortised hardware, including pilot holes for hinge screws and lock fronts required.

2.5 FINISHES

A. Doors shall receive factory finishing.

B. Factory Finishing: WDMA System TR-6, catalyzed polyurethane, premium grade.
    1. Stain coat.
    2. Sealer: 3 coats.
    3. Sanding: Sand.
    4. Topcoat: 2 coats.
C. Stain Color: Ravine (RA07).
D. Top and Bottom Rails: Factory sealed.

PART 3 EXECUTION

3.1 EXAMINATION

A. Examine locations to receive doors. Notify Architect of conditions that would adversely affect installation or subsequent use. Do not begin installation until unacceptable conditions are corrected.
B. Ensure frames are solidly anchored, allowing no deflection when doors are installed.
C. Ensure frames are plumb, level, square, and within tolerance.

3.2 PREPARATION

A. Allow doors to become acclimated to building temperature and relative humidity for a minimum of 24 hours before installation.

3.3 INSTALLATION

A. Install doors in accordance with manufacturer's instructions.
B. Install doors at locations indicated on the Door Schedule.
C. Install doors plumb, level, and square.
D. Install door hardware as specified in Section 08 71 00.

3.4 ADJUSTING

A. Adjust doors to swing freely, without binding in frame.
B. Adjust hardware to operate properly.
C. Repair minor damages to finish in accordance with manufacturer's instructions and as approved by Architect.
D. Remove and replace damaged doors that cannot be successfully repaired, as determined by Architect.

3.5 CLEANING

A. Clean doors promptly after installation in accordance with manufacturer's instructions.
B. Do not use harsh cleaning materials or methods that could damage finish.

3.6 PROTECTION

A. Protect installed doors from damage during construction.

END OF SECTION

SECTION 08 33 00

OVERHEAD COILING SERVICE DOORS

PART I. GENERAL

1.1 SECTION INCLUDES

A. Overhead coiling service doors.

1.2 RELATED SECTIONS

A. Section 06 20 00 - Finish Carpentry:

B. Section 09900 - Painting: Field applied finish.

C. Section 26 05 33 - Raceway and Boxes: Conduit from electric circuit to door operator and from door operator to control station.

1.3 REFERENCES

A. ASTM A 653 - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.

B. ASTM A 666 - Standard Specification for Austenitic Stainless Steel Sheet, Strip, Plate, and Flat Bar.

C. ASTM A 924 - Standard Specification for General Requirements for Steel Sheet, Metallic-Coated by the Hot-Dip Process.

D. ASTM B 221 - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes.

E. NEMA 250 - Enclosures for Electrical Equipment (1000 Volts Maximum).

F. NEMA MG 1 - Motors and Generators.

1.4 DESIGN / PERFORMANCE REQUIREMENTS

A. Overhead coiling service doors:
   1. Wind Loads: Design door assembly to withstand wind/suction load of 20 psf (958 Pa) without damage to door or assembly components.
   2. Operation: Design door assembly, including operator, to operate for not less than 20,000 cycles.

B. Single-Source Responsibility: Provide doors, tracks, motors, and accessories from one manufacturer for each type of door. Provide secondary components from source acceptable to manufacturer of primary components.

C. Products Requiring Electrical Connection: Listed and classified by Underwriters Laboratories, Inc. acceptable to authority having jurisdiction as suitable for purpose specified.

1.5 SUBMITTALS

A. Submit under provisions of Section 01 33 00.

B. Product Data: Manufacturer's data sheets on each product to be used, including:
   1. Preparation instructions and recommendations.

2. Storage and handling requirements and recommendations.
3. Details of construction and fabrication.
4. Installation instructions.

C. Shop Drawings: Include detailed plans, elevations, details of framing members, anchoring methods, required clearances, hardware, and accessories. Include relationship with adjacent construction.

Note: Contractor shall submit custom paint data from Sherwin Williams with overall project submittal. See section 3.2 under finish for custom paint info.

D. Selection Samples: For each finish product specified, two complete sets of color chips representing manufacturer's full range of available colors and patterns.

E. Verification Samples: For each finish product specified, two samples, minimum size 6 inches (150 mm) long, representing actual product, color, and patterns.

F. Manufacturer's Certificates: Certify products meet or exceed specified requirements.

G. Operation and Maintenance Data: Submit lubrication requirements and frequency, and periodic adjustments required.

1.6 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in performing Work of this section with a minimum of five years experience in the fabrication and installation of security closures.

B. Installer Qualifications: Installer Qualifications: Company specializing in performing Work of this section with minimum three years and approved by manufacturer.

C. Mock-Up: Provide a mock-up for evaluation of surface preparation techniques and application workmanship.
1. Finish areas designated by Architect.
2. Do not proceed with remaining work until workmanship, color, and sheen are approved by Architect.
3. Refinish mock-up area as required to produce acceptable work.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Store products in manufacturer's unopened packaging until ready for installation.

B. Protect materials from exposure to moisture. Do not deliver until after wet work is complete and dry.

C. Store materials in a dry, warm, ventilated weathertight location.

PART 2

2.1 PROJECT CONDITIONS

A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's absolute limits.

2.2 COORDINATION

A. Coordinate Work with other operations and installation of adjacent materials to avoid damage to installed materials.

2.3 WARRANTY

A. Warranty: Manufacturer's limited door and operator system, except the counterbalance spring and finish, to be free from defects in materials and workmanship for 3 years or 20,000 cycles, whichever occurs first.

B. Warranty: Manufacturer's limited door warranty for 2 years for all parts and components.

PART 3 PRODUCTS

3.1 MANUFACTURERS

A. Acceptable Manufacturer: Overhead Door Corp. or approved equal, 2501 S. State Hwy. 121, Suite 200, Lewisville, TX 75067. ASD. Tel. Toll Free: (800) 275-3290. Phone: (469) 549-7100. Fax: (972) 906-1499. Web Site: www.overheaddoor.com. E-mail: info@overheaddoor.com.

B. Requests for substitutions will be considered in accordance with provisions of Section 01 25 00.

3.2 OVERHEAD COILING SERVICE DOORS

A. Industrial Doors: Overhead Door Corporation Model 610 Service Door.
1. Curtain: Interlocking roll-formed slats as specified following. Endlocks shall be attached to each end of alternate slats to prevent lateral movement.
   a. Flat profile type F-265 for doors between 18 feet 4 inches (5.59 m) and 25 feet 4 inches (7.72 m) wide, fabricated of:
      1) 16 gauge galvanized steel.
2. Finish:
   a. Galvanized Steel: Slats and hood galvanized in accordance with ASTM A 653 and receive rust-inhibitive, roll coating process, including 0.2 mils thick baked-on prime paint, and custom top coat by Sherwin Williams. Apply (2) coats of Sherwin Williams hydro-gloss single component water based Urethane (B65W181). Contact Sherwin Williams rep. Randy Guidry (954)868-4949. Contractor to coordinate with overhead door manufacturer and Sherwin Williams prior to applying any top coat paint.
3. Weatherseals:
   a. Vinyl bottom seal.
   b. Guide weatherseal.
4. Bottom Bar:
   a. Extruded aluminum for doors up to 15 feet 4 inches (4.67 m) wide.
5. Guides: Three structural steel angles.
   a. Finish: PowderGuard Weathered finish with Sherwin Williams SW 7588 Show Stopper.
6. Brackets:
   a. Galvanized steel to support counterbalance, curtain and hood.
7. Counterbalance: Helical torsion spring type housed in a steel tube or pipe barrel, supporting the curtain with deflection limited to 0.03 inch per foot of span. Counterbalance is adjustable by means of an adjusting tension wheel.
8. Hood:
   a. 24 gauge galvanized steel with intermediate supports as required.

9. Electric Motor Operation: Provide UL listed electric operator, size as recommended by manufacturer to move door in either direction at not less than 2/3 foot nor more than 1 foot per second.
    a. Sensing Edge Protection:
        1) Electric sensing edge.
    b. Operator Controls:
        1) Push-button operated control stations with open, close, and stop buttons.
        2) Push-button and key operated control stations with open, close, and stop buttons.
        3) Controls for interior location.
        4) Controls surface mounted.
    c. Special Operation:
        1) Vehicle detector operation.
        2) Radio control operation.
    d. Motor Voltage: 115/230 single phase, 60 Hz.
10. Windload Design:
    a. Standard windload shall be as indicated on drawings.
    b. Miami-Dade County NOA 15-1228.05
    c. Provide continuous wind locks (and minimum of 22-gauge slats) to meet missile impact specification.
11. Locking:
    a. Interior slide bolt lock for electric operation with interlock switch.
    b. Cylinder lock.
12. Wall Mounting Condition:
    a. Face-of-wall mounting.

PART 4 EXECUTION

4.1 EXAMINATION

A. Verify opening sizes, tolerances and conditions are acceptable.

B. Examine conditions of substrates, supports, and other conditions under which this work is to be performed.

C. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

4.2 PREPARATION

A. Clean surfaces thoroughly prior to installation.

B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

4.3 INSTALLATION

A. Install in accordance with manufacturer's instructions.

B. Use anchorage devices to securely fasten assembly to wall construction and building framing without distortion or stress.

C. Securely and rigidly brace components suspended from structure. Secure guides to structural members only.

D. Fit and align assembly including hardware; level and plumb, to provide smooth operation.

E. Coordinate installation of electrical service. Complete wiring from disconnect to unit components.

F. Coordinate installation of sealants and backing materials at frame perimeter as specified in Section 07 90 00.

G. Install perimeter trim and closures.

H. Instruct Owner's personnel in proper operating procedures and maintenance schedule.

4.4 ADJUSTING

A. Test for proper operation and adjust as necessary to provide proper operation without binding or distortion.

B. Adjust hardware and operating assemblies for smooth and noiseless operation.

4.5 CLEANING

A. Clean curtain and components using non-abrasive materials and methods recommended by manufacturer.

B. Remove labels and visible markings.

C. Touch-up, repair or replace damaged products before Substantial Completion.

4.6 PROTECTION

A. Protect installed products until completion of project.

END OF SECTION

SECTION 08 41 13

ALUMINUM FRAMED ENTRANCES AND STOREFRONT

MODEL 35H IMPACT RESISTANT AND BLAST MITIGATION ENTRANCES

PART 1 GENERAL

Furnish all necessary materials, labor, and equipment for the complete installation of the aluminum storefront system as shown on the drawings and specified herein.

1.01 SUMMARY

A. Section includes: Aluminum Swing Doors, including:
   1. YKK AP Model 35H Impact Resistant and Blast Mitigating Heavy Duty Swing Doors.

1.02 SYSTEM DESCRIPTION

A. Performance Requirements: Aluminum swing doors shall meet all requirements of ASTM E 1886, ASTM E 1996 and South Florida Building Code Protocols TAS 201, TAS 202, and TAS 203 and comply with the following specific performance requirements indicated.

1. Air Infiltration (Single Acting Butt Hinges, Continuous Hinges, or Offset Pivots): Air infiltration shall be tested in accordance with ASTM E 283 at static pressure of 1.57 PSF (75 Pa). Infiltration shall not exceed 0.50 CFM/FT² for single door or 1.00 CFM/FT² for pair doors.

2.Water Infiltration: No uncontrolled water other than condensation on indoor face of any component tested in accordance with ASTM E 331 at a test pressure differential of 10.5 psf (503 Pa). Water test to be performed immediately after design pressure test. Standard 35H Entrances are intended for 1st floor applications.

3. Structural: Door corner structural strength shall be tested per YKK AP's dual moment test procedure and certified by an independent testing laboratory to ensure corner integrity and weld compliance. Certified test procedures and results are available upon request.

4. Structural Uniform Load Test:
   a. Doors:

   1) Positive Pressure:
   90 PSF – For Air Only Threshold, 70 PSF – Air and Water Threshold; insulating glazing.

   2) Negative Pressure: 90 PSF

5. Forced Entry Resistance: Tests performed simultaneously with 300 lb. forces applied to the active door panel within 3" of the locks in the direction that would tend to open the door while 150 lb. forces are applied in both perpendicular directions to the 300 lb. force simultaneously.

6. Thermal Performance: When tested in accordance with AAMA 1503 and NFRC 102:
   a. Condensation Resistance Factor (CRFr): A minimum of 28.
   b. Thermal Transmittance U Value: 0.77 BTU/HR/FT²/ºF or less.

1.03 SUBMITTALS

A. General: Prepare, review, approve, and submit specified submittals in accordance with "Conditions of the Contract" and Division 1 Submittals Sections. Product data, shop drawings, samples, and similar submittals are defined in "Conditions of the Contract."

B. Product Data: Submit product data for each type storefront series specified.

C. Substitutions: See substitution section 01 25 00.

D. Shop Drawings: Submit shop drawings showing layout, profiles, and product components, including anchorage, accessories, finish colors and textures.

E. Samples: Submit verification samples for colors on actual aluminum substrates indicating full color range expected in installed system

F. Quality Assurance / Control Submittals:
1. Test Reports: Submit certified test reports showing compliance with specified performance characteristics and physical properties.
2. Installer Qualification Data: Submit installer qualification data.

G. Closeout Submittals:
1. Warranty: Submit warranty documents specified herein.
2. Project Record Documents: Submit project record documents for installed materials in accordance with Division 1 Project Closeout (Project Record Documents) Section.

1.04 QUALITY ASSURANCE

A. Qualifications:
1. Installer Qualifications: Installer experienced (as determined by contractor) to perform work of this section who has specialized in the installation of work similar to that required for this project. If requested by Owner, submit reference list of completed projects.

2. Manufacturer Qualifications: Manufacturer capable of providing field service representation during construction process.

1.05 PROJECT CONDITIONS / SITE CONDITIONS

A. Field Measurements: Verify actual measurements/openings by field measurements before fabrication; show recorded measurements on shop drawings. Coordinate field measurements, fabrication schedule with construction progress to avoid construction delays.

1.06 WARRANTY

A. Project Warranty: Refer to "Conditions of the Contract" for project warranty provisions.
B. Manufacturer's Warranty: Submit, for Owner's acceptance, manufacturer's standard warranty document executed by an authorized company official.
1. Warranty Period: Manufacturer’s one (1) year standard warranty commencing on the substantial date of completion for the project provided that the warranty, in no event, shall start later than six (6) months from the date of shipment by YKK AP America Inc.

PART 2 PRODUCTS

It is the intent of this specification to have a single source responsibility for the supply of the aluminum doors and framing systems on this project. Any deviation from the acceptable manufacturers listed below must be approved in writing by the architect at least ten (10) days prior to bid date.

2.01 MANUFACTURERS (Acceptable Manufacturers/Products)

Acceptable Manufacturers:
A. YKK AP America Inc, or approved equal.
270 Riverside Parkway, Suite A, Austell, GA 30168

Telephone: (678) 838-6000; Fax: (678) 838-6001
Contact: Timothy B. Counts. Cell: (561)-531-2489

1. Impact Resistant and Blast Mitigating Entrances:
YKK AP Model 35H Impact Resistant and Blast Mitigating Entrances.
a. 35H Description: 3-7/8" (98.36 mm) Door Stile, 2-3/8" thick.

B. EFCO, Corporation
6140 Enfinger Road Pace, Florida 325771
Telephone: (800) 221-4169; Fax: 1-850-994-0011

C. KAWNEER
555 Guthridge Ct. Technology Park/ Atlanta Norcross, GA 30092
Telephone: (770) 449-5555; Fax: (770)734-1560

2. Corner Construction: Fabricate door corners joined by concealed reinforcement secured with screws and sigma deep penetration welding.

3. Glazing: Manufacturer's standard glazing stops with EPDM glazing gaskets to prevent water infiltration at the exterior and structural silicone sealant for wet glazing, EPDM silicone compatible gasket for dry glazing with fixed stops at the interior.

4. Weather-stripping: Manufacturer's standard elastomer type in replaceable rabbets for stiles and rails.

5. Standard Hardware:
(1-1/2 to 2) pair of Grade 1 mortised butt hinges per leaf. Ball bearing 4-1/2" x 4" NRP Stainless Steel US32D finish.
(1) Adams Rite® MS1850 three point hookbolt lock on active leaf or single door. (1) Adams Rite two point lock on inactive leaf.

(2) H-4202 Keyed cylinders (H-4204 thumbturn on inside optional).
Type "A" standard YKK AP push/pull (Type "C" 1" diameter tubular push/pull is optional).
LCN 4040 surface mounted closer (hold open optional).
(1) Adams E9-0503 mill finish (air only) threshold.

2.02 MATERIALS

A. Extrusions: ASTM B 221 (ASTM B 221M), 6063-T5 Aluminum Alloy.
B. Aluminum Sheet:
1. Anodized Finish: ASTM B 209 (ASTM B 209M), 5005-H14 Aluminum Alloy, 0.050" (1.27 mm) minimum thickness.
2. Painted Finish: ASTM B 209 (ASTM B 209M), 3003-H14 Aluminum Alloy, 0.080" (1.95 mm) minimum thickness.

2.03 ACCESSORIES

A. Manufacturer's Standard Accessories:
1. Fasteners: Zinc plated steel concealed fasteners; Hardened aluminum alloys or AISI 300 series less steel exposed fasteners, countersunk, finish to match aluminum color.
2. Perimeter Sealant: Non-skinning type, AAMA 803.3.
3. Glazing: Setting blocks, edge blocks, and spacers in accordance with ASTM C 864, shore durometer hardness as recommended by manufacturer. Glazing gaskets in accordance with ASTM C 864.
4. Glazing Adhesive: Dow Corning® 995 Structural Silicone Sealant.

2.04 FABRICATION

A. Shop Assembly: Fabricate and assemble units with joints only at intersection of aluminum members with uniform hairline joints; rigidly secure, and sealed in accordance with manufacturer's recommendations.

1. Hardware: Drill and cut to template for hardware. Reinforce frames and door stiles to receive hardware in accordance with manufacturer's recommendations.

2. Welding: Conceal welds on aluminum members in accordance with AWS recommendations or methods recommended by manufacturer. Members showing welding bloom or discoloration on finish or material distortion will be rejected.

2.05 FINISHES AND COLORS

A. YKK AP America Anodized Plus® Finish:

CODE	DESCRIPTION
YS1N*	Clear Anodized Plus®

* Indicates standard finish usually carried as inventory.
Anodized Plus® is an advanced sealing technology that completely seals the anodic film yielding superior durability (See AAMA 612).

B. Anodized Finishing: Prepare aluminum surfaces for specified finish; apply shop finish in accordance with the following:
   1. Anodic Coating: Electrolytic color coating followed by an organic seal applied in accordance with the requirements of AAMA 612. Aluminum extrusions shall be produced from quality controlled billets meeting AA-6063-T5.
      a. Exposed Surfaces shall be free of scratches and other serious blemishes.
      b. Extrusions shall be given a caustic etch followed by an anodic oxide treatment and then sealed with an organic coating applied with an electrodeposition process.
      c. The anodized coating shall comply with all of the requirements of AAMA 612: Voluntary Specifications, Performance Requirements and Test Procedures for Combined Coatings of Anodic Oxide and Transparent Organic Coatings on Architectural Aluminum. Testing shall demonstrate the ability of the finish to resist damage from mortar, salt spray, and chemicals commonly found on construction sites, and to resist the loss of color and gloss.
      d. Overall coating thickness for finishes shall be a minimum of 0.7 mils.

C. Finishes Testing:
   1. Apply 0.5% solution NaOh, sodium hydroxide, to small area of finished sample area; leave in place for sixty
      minutes; lightly wipe off NaOh; Do not clean area further.
   2. Submit samples with test area noted on each sample.

PART 3 EXECUTION

3.01 MANUFACTURER'S INSTRUCTIONS / RECOMMENDATIONS

A. Compliance: Comply with manufacturer's product data, including product technical bulletins, installation instructions, and product carton instructions. Latest Installation Manual can be found at www.ykkap.com.

3.02 EXAMINATION

A. Site Verification of Conditions: Verify conditions (which have been previously installed under other sections) are acceptable for product installation in accordance with manufacturer's instructions.

1. Verify location of preset anchors, perimeter fasteners, and block-outs are in accordance with shop drawings.

3.03 PREPARATION

A. Adjacent Surfaces Protection: Protect adjacent work areas and finish surfaces from damage during product installation.

1. Aluminum Surface Protection: Protect aluminum surfaces from contact with lime, mortar, cement, acids, and other harmful contaminants.

3.04 INSTALLATION

A. General: Install manufacturer's system in accordance with shop drawings, and within specified tolerances.

1. Shim and brace aluminum system before anchoring to structure.
2. Provide sill flashing at exterior storefront systems. Extend extruded flashing continuous with slice joints; set in continuous beads of sealant.
3. Verify storefront system allows water entering system to be collected in gutters and wept to exterior.

Verify metal joints are sealed in accordance with the manufacturer's instructions.

4. Seal metal to metal storefront system joints using sealant recommended by system manufacturer.

3.05 FIELD QUALITY CONTROL

A. Manufacturer's Field Services: Upon request, provide manufacturer's field service consisting of site visit for inspection of product installation in accordance with manufacturer's instructions.

B. Field Test: Conduct field test to determine water tightness of storefront system. Conduct test in accordance with AAMA 501.2.

3.06 ADJUSTING AND CLEANING

A. Adjusting: Adjust swing doors for operation in accordance with manufacturer's recommendations.

B. Cleaning: The General Contractor shall clean installed products in accordance with manufacturer's instructions prior to owner's acceptance, and remove construction debris from project site. Legally dispose of debris.

C. Protection: The General Contractor shall protect the installed product's finish surfaces from damage during construction.

END OF SECTION

SECTION 08 41 13

ALUMINUM FRAMED ENTRANCES AND STOREFRONT

YKK AP YHS 50 FI SERIESGENERAL

PART 1 GENERAL

Furnish all necessary materials, labor, and equipment for the complete installation of the aluminum storefront system as shown on the drawings and specified herein.

1.01 SUMMARY

A. Section includes: Aluminum Storefront Systems
   1. YKK AP Series YHS 50 FI Impact Resistant Storefront System Insulating Glazing

1.02 SYSTEM DESCRIPTION

A. All test unit sizes and configurations shall conform to the minimum sizes in accordance with; Florida High Velocity Hurricane Zone (HVHZ) Protocols, ASTM E 1886, ASTM E 1996, and/or meet all requirements of TAS 201, TAS 202, and TAS 203. They shall also comply with the following specific performance requirements indicated.

1. Air Infiltration: Completed storefront systems shall have 0.06 CFM/FT² (1.10 m³/h·m²) maximum allowable infiltration when tested in accordance with ASTM E 283 at differential static pressure of 6.24 psf (299 Pa).

2. Water Infiltration: No uncontrolled water when tested in accordance with ASTM E 331 at test pressure differential of: 12 PSF (575 Pa) (or when required, field tested in accordance with AAMA 503). Fastener Heads must be seated and sealed against Sill Flashing on any fasteners that penetrate through the Sill Flashing.

3. Wind Loads: Completed storefront system shall withstand wind pressure loads normal to wall plane indicated:
   a. Exterior Walls:
      1) Positive Pressure: Wind load pressure indicated on drawings.
      2) Negative Pressure: Wind load pressure indicated on drawings.

4. Deflection: Maximum allowable deflection in any member when tested in accordance with ASTM E 330 with allowable stress in accordance with AAMA Specifications for Aluminum Structures.
   a. Without Horizontals: L/175 or 3/4" (19.1mm) maximum. .
   b. With Horizontals: L/175 or
      L/240 + 1/4" (6.4mm) for spans greater than 13'-6" (4.1m) but less than 40'-0" (12.2m).

5. Thermal Movement: Provide for thermal movement caused by 180 degrees F. (82.2 degrees C.) surface temperature, without causing buckling stresses on glass, joint seal failure, undue stress on structural elements, damaging loads on fasteners, reduction of performance, or detrimental effects.

6. Thermal Performance: When tested in accordance with AAMA 1503, and AAMA 507,
   a. Condensation Resistance Factor (CRF_f): A minimum of 35 (CRF_g 59).
   b. Thermal Transmittance U-Factor: 0.50 BTU/HR/FT²/°F or less when tested in accordance with NFRC 100.

Note: Thermal performance depends on glass specified. U-Factor shown for system when using a 1-5/16" insulating glass unit - 1/4" tempered as required with 0.040 low emissivity coating on surface #2, 1/2" air space with aluminum spacer, 1/4" heat strengthened / 0.090 PVB interlayer / 1/4" heat strengthened. Size: 2007mm x 2007mm (79 inches x 79 inches)

7. Acoustical Performance – when tested in accordance with AAMA 1801:
   a. Sound Transmission Class (STC) shall not be less than 39.

1.03 SUBMITTALS

A. General: Prepare, review, approve, and submit specified submittals in accordance with "Conditions of the Contract" and Division 1 Submittals Sections. Product data, shop drawings, samples, and similar submittals are defined in "Conditions of the Contract."

B. Product Data: Submit product data for each type storefront series specified.

C. Substitutions: See substitution section 01 25 00.

D. Shop Drawings: Submit shop drawings showing layout, profiles, and product components, including anchorage, accessories, finish colors and textures.

E. Samples: Submit verification samples for colors on actual aluminum substrates indicating full color range expected in installed system

F. Quality Assurance / Control Submittals:
1. Test Reports: Submit certified test reports showing compliance with specified performance characteristics and physical properties.
2. Installer Qualification Data: Submit installer qualification data.

G. Closeout Submittals:
1. Warranty: Submit warranty documents specified herein.
2. Project Record Documents: Submit project record documents for installed materials in accordance with Division 1 Project Closeout (Project Record Documents) Section.

1.04 QUALITY ASSURANCE

A. Qualifications:
1. Installer Qualifications: Installer experienced (as determined by contractor) to perform work of this section who has specialized in the installation of work similar to that required for this project. If requested by Owner, submit reference list of completed projects.

2. Manufacturer Qualifications: Manufacturer capable of providing field service representation during construction process.

1.05 PROJECT CONDITIONS / SITE CONDITIONS

A. Field Measurements: Verify actual measurements/openings by field measurements before fabrication; show recorded measurements on shop drawings. Coordinate field measurements, fabrication schedule with construction progress to avoid construction delays.

1.06 WARRANTY

A. Project Warranty: Refer to "Conditions of the Contract" for project warranty provisions.
B. Manufacturer's Warranty: Submit, for Owner's acceptance, manufacturer's standard warranty document executed by an authorized company official.

1. Warranty Period: Manufacturer's one (1) year standard warranty commencing on the substantial date of completion for the project provided that the warranty, in no event, shall start later than six (6) months from the date of shipment by YKK AP America Inc.

PART 2 PRODUCTS

It is the intent of this specification to have a single source responsibility for the supply of the aluminum doors and framing systems on this project. Any deviation from the acceptable manufacturers listed below must be approved in writing by the architect at least ten (10) days prior to bid date.

2.01 MANUFACTURERS (Acceptable Manufacturers/Products)

Acceptable Manufacturers:

A. YKK AP America Inc, or approved equal.
270 Riverside Parkway, Suite A, Austell, GA 30168
Telephone: (678) 838-6000; Fax: (678) 838-6001
Contact: Timothy B. Counts. Cell: (561)-531-2489

1. Storefront System: YKK AP YHS 50 FI Impact Resistant and Blast Mitigating Storefront System.

B. EFCO, Corporation
6140 Enfinger Road Pace, Florida 325771
Telephone: (800) 221-4169; Fax: 1-850-994-0011

C. KAWNEER
555 Guthridge Ct. Technology Park/ Atlanta Norcross, GA 30092
Telephone: (770) 449-5555; Fax: (770)734-1560

D. Storefront Framing Systems:

1. Description: Center set, exterior flush glazed; jambs and vertical mullions continuous; head, sill, intermediate horizontal attached by screw spline joinery. Continuous and wept sill flashing.

2. Components: Manufacturer's standard extruded aluminum mullions, entrance doors, framing, and indicated shapes, perimeter anchor fillers and steel reinforcing as required.

3. Glazing: Manufacturer's standard glazing stops with EPDM glazing gaskets to prevent water infiltration at the exterior and Dow Corning® 995 Structural Silicone Sealant with fixed stops at the interior.

2.02 MATERIALS

A. Extrusions: ASTM B 221 (ASTM B 221M), 6063-T5 Aluminum Alloy.

B. Aluminum Sheet:
1. Anodized Finish: ASTM B 209 (ASTM B 209M), 5005-H14 Aluminum Alloy, 0.050" (1.27 mm) minimum thickness.
2. Painted Finish: ASTM B 209 (ASTM B 209M), 3003-H14 Aluminum Alloy, 0.080" (1.95 mm) minimum thickness.

2.03 ACCESSORIES

A. Manufacturer's Standard Accessories:

A. Manufacturer's Standard Accessories:

1. Fasteners: Zinc plated steel concealed fasteners; Hardened aluminum alloys or AISI 300 series stainless steel exposed fasteners.

2. Glazing: Setting blocks, edge blocks, and spacers in accordance with ASTM C 864, shore durometer hardness as recommended by manufacturer; Glazing gaskets in accordance with ASTM C 864.
3. 0.050 Aluminum Sill Flashing End Dams featuring 3 point attachment.

2.04 RELATED MATERIALS (Specified In Other Sections)

A. Refer to section 08 80 00 Glass and Glazing.

2.05 FABRICATION

A. Shop Assembly: Fabricate and assemble units with joints only at intersection of aluminum members with uniform hairline joints; rigidly secure, and sealed in accordance with manufacturer's recommendations.

1. Hardware: Drill and cut to template for hardware. Reinforce frames and door stiles to receive hardware in accordance with manufacturer's recommendations.

2. Welding: Conceal welds on aluminum members in accordance with AWS recommendations or methods recommended by manufacturer. Members showing welding bloom or discoloration on finish or material distortion will be rejected.

2.06 FINISHES AND COLORS

A. YKK AP America Anodized Plus® Finish:

CODE	DESCRIPTION
YS1N*	Clear Anodized Plus®

* Indicates standard finish usually carried as inventory.
Anodized Plus® is an advanced sealing technology that completely seals the anodic film yielding superior durability (See AAMA 612).

B. Anodized Finishing: Prepare aluminum surfaces for specified finish; apply shop finish in accordance with the following:
   1. Anodic Coating: Electrolytic color coating followed by an organic seal applied in accordance with the requirements of AAMA 612. Aluminum extrusions shall be produced from quality controlled billets meeting AA-6063-T5.
      a. Exposed Surfaces shall be free of scratches and other serious blemishes.
      b. Extrusions shall be given a caustic etch followed by an anodic oxide treatment and then sealed with an organic coating applied with an electrodeposition process.
      c. The anodized coating shall comply with all of the requirements of AAMA 612: Voluntary Specifications, Performance Requirements and Test Procedures for Combined Coatings of Anodic Oxide and Transparent Organic Coatings on Architectural Aluminum. Testing shall demonstrate the ability of the finish to resist damage from mortar, salt spray, and chemicals commonly found on construction sites, and to resist the loss of color and gloss.
      d. Overall coating thickness for finishes shall be a minimum of 0.7 mils.

C. Finishes Testing:
   1. Apply 0.5% solution NaOh, sodium hydroxide, to small area of finished sample area; leave in place for sixty
      minutes; lightly wipe off NaOh; Do not clean area further.
   2. Submit samples with test area noted on each sample.

PART 3 EXECUTION

3.01 MANUFACTURER'S INSTRUCTIONS / RECOMMENDATIONS

A. Compliance: Comply with manufacturer's product data, including product technical bulletins, installation instructions, and product carton instructions. Latest Installation Manual can be found at www.ykkap.com.

3.02 EXAMINATION

A. Site Verification of Conditions: Verify conditions (which have been previously installed under other sections) are acceptable for product installation in accordance with manufacturer's instructions.
   1. Verify location of preset anchors, perimeter fasteners, and block-outs are in accordance with shop drawings.

3.03 PREPARATION

A. Adjacent Surfaces Protection: Protect adjacent work areas and finish surfaces from damage during product installation.
   1. Aluminum Surface Protection: Protect aluminum surfaces from contact with lime, mortar, cement, acids, and other harmful contaminants.

3.04 INSTALLATION

A. General: Install manufacturer's system in accordance with shop drawings, and within specified tolerances.
   1. Shim and brace aluminum system before anchoring to structure.
   2. Provide sill flashing at exterior storefront systems. Extend extruded flashing continuous with slice joints; set in continuous beads of sealant.
   3. Verify storefront system allows water entering system to be collected in gutters and wept to exterior.
      Verify metal joints are sealed in accordance with the manufacturer's instructions.
   4. Seal metal to metal storefront system joints using sealant recommended by system manufacturer.

3.05 FIELD QUALITY CONTROL

A. Manufacturer's Field Services: Upon request, provide manufacturer's field service consisting of site visit for inspection of product installation in accordance with manufacturer's instructions.
B. Field Test: Conduct field test to determine water tightness of storefront system. Conduct test in accordance with AAMA 501.2.

3.06 ADJUSTING AND CLEANING

A. Adjusting: Adjust swing doors for operation in accordance with manufacturer's recommendations.
B. Cleaning: The General Contractor shall clean installed products in accordance with manufacturer's instructions prior to owner's acceptance, and remove construction debris from project site. Legally dispose of debris.
C. Protection: The General Contractor shall protect the installed product's finish surfaces from damage during construction.

END OF SECTION

SECTION 08 57 00

HURRICANE RESISTANT CASEMENT WINDOWS

PART I. GENERAL

1.1 SECTION INCLUDES

A. Aluminum Windows: Impact-resistant aluminum windows, including aluminum extrusions, finish, glass, operating hardware, screens, internal sealants and weather stripping, for high velocity hurricane zone (HVHZ) construction. (Sentinel)

1.2 RELATED SECTIONS

A. Section 06 10 00 - Rough Carpentry.

B. Section 07 90 00 - Joint Protection.

1.3 REFERENCES

A. American Architectural Manufacturers Association:
   1. AAMA 701/702: Pile weatherstripping and replaceable weatherseals.
   2. AAMA 2603: Organic coatings on aluminum.
   3. AAMA 2605: High-performance organic coatings on aluminum.

B. American Society of Civil Engineers
   1. ASCE 7: Minimum Design Loads for Buildings and other Structures.

C. American Society for Testing and Materials:
   1. ASTM B 221: Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes.
   2. ASTM E 283: Standard Test Method for Determining the Rate of Air Leakage Through Exterior Windows, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen.
   3. ASTM E 330: Standard Test Method for Structural Performance of Exterior Windows, Doors, Skylights and Curtain Walls by Uniform Static Air Pressure Difference.
   4. ASTM E 331: Standard Test Method for Water Penetration of Exterior Windows, Skylights, Doors, and Curtain Walls by Uniform Static Air Pressure Difference.

D. Florida Building Code - Building, 2004 (FBC):
   1. Sections governing construction in a high-velocity wind zone (HVWZ).
      a. FBC 1620: HVWZ Wind Loads (Structural).
      b. FBC 2410: HVWZ General (Glass and Glazing).
      c. FBC 2411: HVWZ Windows, Doors, Glass and Glazing.
   2. Miami Dade County Test Application Standards (TAS) adopted by FBC:
      a. TAS 201-95.1: Impact Test Procedures.
      b. TAS 202-95.1: Criteria for Testing Impact Resistant Building Envelope Components (Uniform Static Air Pressure Method).
      c. TAS 203-95.1: Criteria for Testing Products Subject to Cyclic Wind Pressure Loading.

1.4 PERFORMANCE REQUIREMENTS

A. Impact-Resistant Aluminum Window and Door Performance:
   1. Structural Test: ASTM E 330.
   2. Water Infiltration Resistance: ASTM ES47/E 331 and FBC TAS 202.
   3. Air Infiltration Resistance: ASTM E 283.
   4. Windborne Debris Impact Resistance: Pass large missile impact tests; Florida Building Code, FBC TAS 201.

5. Hurricane Wind Pressure Resistance: After passing large missile impact test, pass cyclic pressure tests following FBC TAS 203.

1.5 SUBMITTALS

A. Shop Drawings: Refer to Section 01 30 00 - Administrative Requirements for complete submittal procedures. Indicate elevations, locations, markings, quantities, material, head jamb and sill conditions, metal thickness, sizes, shapes, dimensions, finishes and wind pressures.

B. Product Data: Provide detailed data on Manufacturers catalog data on each product to be used, including Miami Dade County Product Approval (NOA) and Florida Building Code (FBC) HVHZ Product Approval.

C. Selection Samples: For each finish specified, two complete sets of color chips representing manufacturer's full range of available colors and patterns.

1.6 QUALITY ASSURANCE

A. Manufacturer Qualifications: Not less than 10 years of experience in manufacturing impact-resistant aluminum windows and doors.

B. Installer Qualifications: Skilled and experienced to install manufacturer's units of the types specified.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Store products in manufacturer's unopened packaging in a clean, dry area until ready for installation.

B. Protect exposed metal and glass surfaces to prevent damage to finish.

1.8 WARRANTIES

A. Warranty Period: Contact CGI Windows and Doors, Inc. for details on 10 year limited warranty.
1. Structural, Hardware and Certain Finishes: 10 years.
2. Stress Cracks on Glass: 1 year.
3. Delamination on Laminated Glass Units: 5 years.
4. Insulated Glass (sealed component): 10 years.

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. Acceptable Manufacturer: CGI Windows and Doors, Inc. or approved equal , which is located at: 10100 N. W. 25th St. ; Miami, FL 33172; Toll Free Tel: 800-442-9042 ; Tel: 305-593-6590; Fax: 305-593-6592; Email: ocordova@cgiwindows.com; Web: www.cgiwindows.com

B. Requests for substitutions will be considered in accordance with provisions of Section 01 25 00 - Substitutions.

2.2 ALUMINUM WINDOWS (SENTINEL)

A. Casement Windows: " Sentinel Collection" Series 238 Casement Windows by CGI Windows and Doors, Inc.
1. Example Sizes and Related Design Pressures: Refer to product approvals for latest results.
a. Unit Size: 48 by 72 inches, 90 psf Positive, 90 psf Negative (HS/HS), as indicated on drawings..
2. Air Infiltration Resistance: Air leakage no more than 0.04 cfm/sqft of glass area at pressure differential of 6.24 psf (air infiltration tests conducted at pressure differential of 1.57 psf may not be used to justify compliance).
3. Water Infiltration Resistance: No water penetration at a static air pressure differential of 15 percent of positive design pressure with a maximum tested performance of 16.5 psf.
4. Construction: Heavy extruded aluminum-alloy sections, precision cut and assembled with

sealed, mitered hairline joints and no visible fasteners when vents are closed. Provide grooves in extrusions to receive double weather stripping between vents and frames. Casement and project-out vents outward.

5. Member Wall Thicknesses:
   a. Frames: At least 0.080 inch (2.03 mm).
   b. Vents: At least 0.090 inch (2.29 mm).
6. Frame Depth: At least 2.075 inches (53 mm). Provide 0.50 (12.7 mm) inch flanges at perimeter frames.
7. Sightlines: Jambs, Sill and Head: 3.5 inches (89 mm).
8. Corner Construction:
   a. At Casement Window Frames and Vents: Assemble with sealed mitered, hairline joints, made rigid by fastening with No. 10 stainless steel screws.
   b. At Frames: 4 stainless steel corner keys and 4 aluminum corner keys.
   c. At Vents: 4 stainless steel corner keys.
9. Glazing Beads: Extruded aluminum snap-in design, with 0.50 inch (12.7 mm) glass bite for impact-resistant glazing.
10. Weatherstripping: Dual continuous rows of weatherstripping, one row of Schlegel Q-Lon and another row of Aptus.
11. Finishes: Uniform at all visible surfaces exterior and interior, vents open or shut.
12. Factory Glazing:
    a. La Insulated laminated impact resistant glass unit - 3/4 inch (19 mm) thick (nominal) insulated Saflex PVB laminated consisting of a sacrificial exterior light and a clear, non-yellowish, non-crazing interlayer sandwiched between two panes of glass.Note: Insulated, laminated LOE366 glass tint shall match Trulite glass tint for 3100 Series. Contractor to coordinate with Trulite and CGI prior to ordering.
       1) Exterior sacrificial light/pane - 1/8 Inch (3.2mm) tempered
          (a) Tint in outer pane. None - clear.
          (b) Tint in outer pane. Gray.
          (c) Tint in outer pane. Bronze.
          (d) Tint in outer pane. Green (Solexia).
13. Window Features:
    a. Raised Profiles: Extruded double applied raised profile 1 inch (25.4 mm).
    b. Muntins: 3.5 inch (89 mm) muntins.
    c. Screens: At interior of all vents; charcoal fiberglass insect screen fabric, tightly splined into extruded aluminum-alloy frames with rigid corner construction.
    d. Glazing Beads: Ogee glazing bead profile (colonial).
    e. Glazing Beads: Square glazing bead profile (contemporary).
    f. Handles: Folding crank handles.
14. Standards: Miami Dade County NOA (Notices of Acceptance).
15. Aluminum Alloy and Temper: AA 6063-T5 and T6 temper.
16. Hardware: Factory applied and field adjusted.
    a. Operators: Single-arm rotary operator with crank handle, running in stainless steel operator track. Provide snubber blocks.
    b. Hinges: Pair of stainless steel 4-bar concealed hinges.
    c. Sash Locks, with Keepers: Two cam locks with lever handle; one at vents less than 30 inch (760 mm) high. Provide one 1/8 inch (3.2 mm) thick stainless steel keeper at each cam lock.
    d. Hardware Colors: To match window frame clear anodize aluminum finish.
       1) Color: Clear anodized aluminum.
    e. Operator Finish: E-Gard Finish.
    f. Hardware:
       1) Hardware Finish: CoastGard operator finish.
       2) Stainless steel operator.
       3) Limit opening devices, keyed and non-keyed; in addition to operator.
       4) Washability Hinges: For window sizes 24 inches (610 mm) wide and above.
       5) Locks: Custodial type locks, for institutional use.

2.3 FINISHES

A.Custom clear anodized aluminum finish to match Trulite storefront 3100 Series. Contractor to coordinate with Trulite and CGI prior to ordering.
B.Clear Anodized Finish: NAAMM AA-C2241, 215R1, Class I, minimum 0.7 mills, in natural aluminum color. Contractor to coordinate with Trulite and CGI prior to ordering.

PART 3 EXECUTION

3.1 PREPARATION

A. Before start of unit installation, check openings for adequacy of pressure preservative treated wood blocking that will receive frames. Check the size, quantity, spacing, clearances, and rigidity of fastenings and their conformance to the specified NOA.

3.2 PREPARATION

A. Coordinate with Section 06 10 00 - Rough Carpentry
   1. 3/4 inch (19 mm) or 1-1/2 inch (38.1 mm) as per specified NOA rectangular or beveled pressure preservative treated South Yellow Pine blocking, set in a full bed of sealant.
   2. Fasten with to structure with drilled concrete fasteners spaced as required in NOA, so that blocking is continuous and is tightly butted to fill corners of each opening.

B. Coordinate with Section 07 91 26 - Joint Fillers
   1. Sealant at exterior perimeter of aluminum frames, in deeply grooved stucco or in 1/4 inch (6 mm) gaps where other exterior finish materials terminate next to frames.
   2. Sealant in 1/8 inch (3.2 mm) gap at frame interior perimeters where sills and interior finish materials such as gypsum board and tile terminate next to frames.

C. Perform cutting, fitting, forming, drilling, and grinding of frames, without damage to finish, as needed to fit project conditions and make watertight. Replace components with damage to exposed finishes.

3.3 WINDOW INSTALLATION

A. Install windows following manufacturer's instructions.

B. Attach window frame and shims to perimeter blocking at openings to accommodate construction tolerances and other irregularities. Maintain integrity of air barriers and vapor retarder sheets.

C. Align windows plumb and level, free of warp or twist.

D. Adjust vents to close snugly and put in smooth operating order.

3.4 CLEANING

A. Refer to manufacturers instructions for proper cleaning and maintenance of the products.

END OF SECTION

SECTION 08 58 90

HURRICANE REISTANT FIXED WINDOWS

1.1 SECTION INCLUDES

A. Aluminum Windows: Impact-resistant aluminum windows, including aluminum extrusions, finish, glass, operating hardware, screens, internal sealants and weather stripping, for high velocity hurricane zone (HVHZ) construction. (Estate)

B.

1.2 RELATED SECTIONS

A. Section 06 10 00 – Rough Carpentry.

B. Section 07 90 00 – Joint Protection

1.3 REFERENCES

A. American Architectural Manufacturers Association:

1. AAMA 701/702: Pile weatherstripping and replaceable weatherseals.
2. AAMA 2603: Organic coatings on aluminum.
3. AAMA 2605: High-performance organic coatings on aluminum.

B. American Society of Civil Engineers

1. ASCE 7: Minimum Design Loads for Buildings and other Structures.

C. American Society for Testing and Materials:

1. ASTM B 221: Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes.
2. ASTM E 283: Standard Test Method for Determining the Rate of Air Leakage Through Exterior Windows, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen.
3. ASTM E 330: Standard Test Method for Structural Performance of Exterior Windows, Doors, Skylights and Curtain Walls by Uniform Static Air Pressure Difference.
4. ASTM E 331: Standard Test Method for Water Penetration of Exterior Windows, Skylights, Doors, and Curtain Walls by Uniform Static Air Pressure Difference.

D. Florida Building Code - Building, 2014 FBC (5th Edition):

1. Sections governing construction in a high-velocity hurricane zone (HVHZ).
   a. FBC 1620: HVHZ Wind Loads (Structural).
   b. FBC 2410: HVHZ General (Glass and Glazing).
   c. FBC 2411: HVHZ Windows, Doors, Glass and Glazing.
2. Miami Dade County Test Application Standards (TAS) adopted by FBC:
   a. TAS 201-94.1: Impact Test Procedures.
   b. TAS 202-94.1: Criteria for Testing Impact Resistant Building Envelope Components (Uniform Static Air Pressure Method).
   c. TAS 203-94.1: Criteria for Testing Products Subject to Cyclic Wind Pressure Loading.

1.4 PERFORMANCE REQUIREMENTS

A. Impact-Resistant Aluminum Window and Door Performance:

1. Structural Test: FBC TAS 202 and ASTM E 330.
2. Water Infiltration Resistance: FBC TAS 202 and ASTM ES47/E 331.
3. Air Infiltration Resistance: FBC TAS 202 and ASTM E 283.
4. Windborne Debris Impact Resistance: Pass large missile impact tests; Florida Building Code, FBC TAS 201.
5. Hurricane Wind Pressure Resistance: After passing large missile impact test, pass cyclic pressure tests following FBC TAS 203.

1.5 SUBMITTALS

A. Shop Drawings: Refer to Section 01 30 00 - Administrative Requirements for complete submittal procedures. Indicate elevations, locations, markings, quantities, materials, head jamb and sill conditions, metal thickness, sizes, shapes, dimensions, finishes and wind pressures.

B. Product Data: Provide detailed data on Manufacturers catalog data on each product to be used, including Miami Dade County Product Approval (NOA) and Florida Building Code (FBC) HVHZ Product Approval.

C. Selection Samples: For each finish specified, two complete sets of color chips representing manufacturer's full range of available colors and patterns.

1.6 QUALITY ASSURANCE

A. Manufacturer Qualifications: Not less than 10 years of experience in manufacturing impact-resistant aluminum windows and doors.

B. Installer Qualifications: Skilled and experienced to install manufacturer's units of the types specified.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Store products in manufacturer's unopened packaging in a clean, dry area until ready for installation.

1.8 Protect exposed metal and glass surfaces to prevent damage to finish

1.9 WARRANTIES

A. Warranty Period: Contact CGI Windows and Doors, Inc. for details on 10 year limited warranty.
1. Structural, Hardware and Certain Finishes: 10 years.
2. Stress Cracks on Glass: 1 year.
3. Delamination on Laminated Glass Units: 5 years.
4. Insulated Glass (sealed component): 10 years.

1.10 ALUMINUM WINDOWS

A. Fixed Windows: Estate Series 238 Rectangular Designer Fixed Windows by CGI Windows and Doors, Inc.
1. Rectangular Fixed Windows – Example Sizes and Related Design Pressures. Refer to product approvals for latest results:
a. Unit Size: 48 by 72 inches, 90 psf Positive, 90 psf Negative (HS/HS), as indicated on drawings..
2. Air Infiltration Resistance: Air leakage no more than 0.07 cfm/ft^2 of glass area at pressure differential of 6.24 psf (air infiltration tests conducted at pressure differential of 1.57 psf may not be used to justify compliance).
3. Water Infiltration Resistance: No water penetration at a static air pressure differential of 15 percent of positive design pressure with a maximum tested performance of 16.5 psf.
4. Construction. Heavy extruded aluminum-alloy sections, precision cut and assembled with sealed, mitered, hairline joints.
5. Member Wall Thicknesses: Rectangular window fixed frames: At least 0.080 inch (2.03 mm). Designer Fixed window frames: At least 0.100 inch (2.54 mm). Rectangular window vents: At least 0.090 inch (2.29 mm). Designer fixed window vents: At least 0.100 inch (2.54 mm).
6. Frame Depth: Rectangular fixed windows frames: At least 2.075 inches (53 mm).
7. Sightlines:
a. Rectangular fixed - jambs, sill and head - 3.5 inches (89 mm)
8. Corner construction at rectangular fixed window frames: Assemble with sealed, mitered, hairline joints, made rigid by fastening with No. 10 stainless steel screws. At fixed window frames: 4 stainless steel corner keys and 4 aluminum corner keys.
9. Fixed window frame construction: Use the same vent and frame extrusions as are used in casement and project-out Series 238 windows, but screw vent extrusion to frame extrusion at interior using No. 10 x 1 inch (25 mm) stainless steel sheet metal screws around entire window, spaced as required by NOA. Apply plastic caps matching color of finish to screw heads.
10. Glazing beads. Rectangular fixed - extruded aluminum snap-in design, with 0.500 inch (12.7 mm) glass bite for impact-resistant glazing at rectangular fixed windows.
11. Finish: Uniform at all visible surface exterior and interior, vents open or shut, as specified.
12. Glass: As specified, factory glazed.
a. Insulated laminated impact resistant glass unit - 3/4 inch (19 mm) thick (nominal) insulated Saflex PVB laminated consisting of a sacrificial exterior light and a clear, non-yellowish, non-crazing interlayer sandwiched between two panes of glass.Note: Insulated, laminated LOE366 glass tint shall match Trulite glass tint for 3100 Series. Contractor to coordinate with Trulite and CGI prior to ordering.
1) Exterior sacrificial light/pane - 1/8 Inch (3.2mm) tempered
(a) Tint in outer pane. None - clear.
(b) Tint in outer pane. Gray.

(c) Tint in outer pane. Bronze.
(d) Tint in outer pane. Green (Solexia).
2) Airspace - 1/4 inch (6 mm) minimum air space
3) Low E and high performance glass coatings as specified.
4) Laminated Unit:
(a) Consisting of clear, non-yellowish, non-crazing interlayer sandwiched between two panes of glass.
(b) Outer and inner panes of laminated unit – 1/8 inch (3.2mm), using either annealed or tempered glass (when required by loads).
(c) Tint – None - clear, or clear Low E.
(d) Interlayer: - 0.090 inch/90 Mil PVB.

13. Standards: Miami Dade County NOA (Notices of Acceptance).
14. Aluminum alloy and temper: AA 6063-T5 and T6 temper.

1.11 FINISH

A. Custom clear anodized aluminum finish to match Trulite storefront 3100 Series. Contractor to coordinate with Trulite and CGI prior to ordering.
B. Clear Anodized Finish: NAAMM AA-C2241, 215R1, Class I, minimum 0.7 mills, in natural aluminum color. Contractor to coordinate with Trulite and CGI prior to ordering.

PART 2 EXECUTION

2.1 PREPARATION

A. Before start of unit installation, check openings for adequacy of pressure preservative treated wood blocking that will receive frames. Check the size, quantity, spacing, clearances, and rigidity of fastenings and their conformance to the specified NOA.

2.2 PREPARATION

A. Coordinate with Section 06100 - Wood blocking and fasteners to structure:
1. 3/4 inch (19 mm) or 1-1/2 inch (38.1 mm) as per specified NOA rectangular or beveled pressure preservative treated South Yellow Pine blocking, set in a full bed of sealant.
2. Fasten with to structure with drilled concrete fasteners spaced as required in NOA, so that blocking is continuous and is tightly butted to fill corners of each opening.

B. Coordinate with Section 07920 - Exterior and interior sealants at unit perimeters:
1. Sealant at exterior perimeter of aluminum frames, in deeply grooved stucco or in 1/4 inch (6 mm) gaps where other exterior finish materials terminate next to frames.
2. Sealant in 1/8 inch (3.2 mm) gap at frame interior perimeters where sills and interior finish materials such as gypsum board and tile terminate next to frames.

C. Perform cutting, fitting, forming, drilling, and grinding of frames, without damage to finish, as needed to fit project conditions and make watertight. Replace components with damage to exposed finishes.

2.3 WINDOW INSTALLATION

A. Install windows following manufacturer's instructions.

B. Attach window frame and shims to perimeter blocking at openings to accommodate construction tolerances and other irregularities. Maintain integrity of air barriers and vapor retarder sheets.

C. Align windows plumb and level, free of warp or twist.

D. Adjust vents to close snugly and put in smooth operating order.

2.4 CLEANING

A. Refer to manufacturers instructions for proper cleaning and maintenance of the products.

END OF SECTION

SECTION 08 71 00

DOOR HARDWARE

PART 1 GENERAL

1.1 SUMMARY

A. Finish hardware items required for swinging doors indicated on schedules and/or shown on drawings including hinges, lock or latch sets, dead locks, cylinders, bolts, exit devices, push/pull units, closers and miscellaneous door control devices, protection plates, and other miscellaneous hardware.

B. Provide hardware including all necessary accessories.

1.2 RELATED SECTIONS

A. Carpentry Section

B. Hollow metal doors

C. Wood doors

D. Fire Alarm and Detection System

E. Card Access System

F. Electrical

1.3 REFERENCES

A. American with Disabilities Act of 1990 (ADA)

B. American with Disabilities Act Accessibility Guidelines (ADAAG)

C. All applicable local codes

1.4 SUBMITTALS

A. Hardware schedules:

1. Submit 6 copies of fully detailed hardware schedule
2. Horizontal schedules are not permitted
3. Acceptance of hardware schedule will not relieve the contractor of the responsibility of furnishing the specified hardware and all hardware necessary to complete the project.
4. Include a separate index, listing all doors in the project, sorted numerically, with appropriate set number next to each door.
5. Identify all manufacturers of each item with type, numbers and finish symbols.

B. Catalog cuts:

1. Submit 2 sets of catalog cuts for each type of hardware furnished.
2. Furnish templates and approved hardware schedule to respective trades as required to ensure accurate setting, reinforcing, and fitting of finish hardware.
3. Provide parts and maintenance manual and proper tools necessary to maintain the equipment.

1.5 DELIVERY, STORAGE, and HANDLING

A. Provide a safe, dry, secure storage area to protect hardware before installation.

B. Hardware shall be packaged separately, labeled with symbols corresponding to that on the hardware schedule identifying hardware location within building. Each container or package shall include necessary fastenings, instructions, and installation templates to facilitate installation. All hardware shall be delivered, transportation charges prepaid to jobsite.

1.6 QUALITY ASSURANCE

A. Hardware shall comply with all codes including life safety, local fire Safety Codes, hurricane codes, and all other local codes.

1.7 KEYING

A. All cylinders shall be seven pin interchangeable core.

B. Construction cores shall be "green" brass type. The cores, keys and control keys are to be turned over to owner at the end of project. Obtain receipt.

C. Provide:
2 permanent change keys per lock
6 permanent master keys per set
9 construction keys
2 extractor keys

Part 2 PRODUCTS

2.1 MANUFACTURERS: Numbers listed are those of the following

1. Hinges: Stanley Alternate: Bommer
   Electric Hinges: Stanley Alternate: Command Access
2. Locks, deadbolts, cylinder: Best Locks No Substitution
3. Exit devices: Precision Alternate: Sargent
4. Closers: Stanley Alternate: LCN
5. Architectural trim: Hiawatha Alternate: Trimco
6. Door gasketing, thresholds: Pemko Alternate: McKinney
7. Security Equipment supplied by Security Contractor
   Lou Tunno Cell 561 665-1885, Direct 561 487-7752

2.2 MATERIALS: unless noted otherwise in hardware sets:

A. HINGES

1. Use full mortise,5-knuckle,ball bearing FBB179 or FBB191 series as detailed. Use FBB179 on interior doors and FBB191 on exterior doors unless otherwise specified.

Electric through wire hinge shall be Stanley Series CEFBB179 or CEFBB191 as detailed. Provide 6 wires and a 4' lead.

2. For doors up to 90" use 3 hinges per leaf. Use one extra hinge for each additional 30" in height.
3. For doors up to and including 36" wide, use standard weight hinge. Doors over 36" and up to 48" use heavy weight hinge.
4. Size width of hinge to have narrowest projection trim permitting.

Exterior doors and locked, reverse bevel interior doors to have non-removable pins.

B. LOCKS, LATCHES, DEADBOLTS, CYLINDERS

1. Locks shall be Best Lock 9K Series with 15C trim and 40 Series with 15H trim as specified. Finish shall be as specified. Locks shall have 2/¾" backset. Electrified locks shall be as detailed.

2. Provide cylinders to fit aluminum doors and exit devices.

3. Provide key cabinet to accommodate all keys with 100% expansion.

4. Provide abrasive warning on all locksets to areas deemed to be dangerous to the visually impaired such as mechanical rooms, electrical rooms, and custodial rooms. Provide such tactile warning on the back of key side.

5. Exterior doors shall comply with Hurricane and Wind Load requirements and shall meet +/-90PSF. N.O.A. shall be provided with submittals.

6. Card readers RP-40 shall be supplied by security contractor.

D. EXIT DEVICES

1. Provide Precision APEX 2000 series as detailed. The exit device shall be non-handed, field reversible and base material and finish shall be stainless steel 630. The chassis shall be investment cast steel and zinc dichromated. The exit device must have dead latching. The touch bars shall have dampeners for quiet operation.

2. Trim shall be heavy duty cast material US26D (626) and shall be through-bolted. All trim shall be vandal resistant unless otherwise specified.

3. Exit devices shall accommodate vision lites or glass windows up to 1/4" without spacers or shims.

4. Exit devices shall be have a 5 year warranty against defects in material and workmanship for a period of 5 years from date of invoice and shall have N.O.A for Dade County Hurricane Code Component Approval N.O A. 04-0512.01.

E. CLOSERS

1. Provide Stanley D-4550 series closers. Size per manufacturer's recommendations before installing. All closers shall be R-14 aluminum alloy, have full complement needle bearings and have three separate, independently adjusted, non-critical valves for back check, general closing speed, and final latch closing speed (pressure relief valves not acceptable). Closers to have a minimum 10 year warranty. All heavy duty arms shall be forged steel.

All closers shall be in compliance with Positive Pressure Fire Testing and meet UL10C and UBC 7-2.

2. All closers shall be mounted on door side opposite public corridor except where door reveal or jamb conditions prevent this application.

3. Provide "Compression Stop" CS arm where not possible to have auxiliary stops.

4. Provide all drop plates or accessories necessary for proper function or installation of closer.

5. Magnetic Hold opens: Rixson 998

F. ARCHITECTURAL TRIM

1. Push Plates shall be 200F 4 x 16 and Pull Plates shall be 658 x 200F stainless steel (630).

2. Cut for cylinder if necessary. Coordinate with accessibility requirements.

3. Kick plates, mop plates and other door protective plates shall be stainless steel. Kick plates shall be 10 x 1 1/2" LDW and mop plates shall be 4 x 1 1/2 LDW . Hiawatha 050 series.

G. FLUSH BOLTS, FLOOR/WALL/OVERHEAD STOPS/HOLDERS

1. Where a door is parallel to and will strike a wall in the open position provide an appropriate stoop from the following list or as noted in hardware sets:

a. Wall stop 9211T 630
b. Manual Flush bolts 3780 626
c. Automatic Flush bolts 3245 626 x COR-PC

H. DOOR GASKETING AND THRESHOLDS

1. Provide as noted in hardware sets or as detailed:

a. Threshold 2005AT or as detailed
Saddle 1665A for inswing doors or as drawn on sill details.

b. Door gasketing: S88 silicon seal or 45041CP

c. Door Shoe: 234AS

d. Astragals 305CN

e. Rain Drip: 346C (extend 2” past opening on both sides.)

I. SILENCERS

1. Provide 3 silencers for each single door and 2 silencers for each pair of doors.

J. FINISHES

Hinges: US32D (630) or US26D (652) as detailed
Locksets, cylinders, dead bolts: US26D
Exit Devices: US32D (630) with US26D (626) trim

Closers: standard aluminum finish
Architectural Trim: US32D (630)or US26D (626)
Floor/wall/overhead holders/stops: US32D (630)
US26D (626)
Door gasketing, thresholds: Mill finish anodized aluminum

PART 3. EXECUTION

3.1 INSPECTION

A. Examine openings scheduled to receive hardware. Repair openings requiring corrective work prior to installation of hardware.

3.2 INSTALLATION

A. Install and adjust for proper operation and function. Protect hardware while other work is being finished.

B. All fasteners shall be the type consistent with the job conditions and the quality of the hardware and shall match in finish.

C. Install hardware in accordance with manufacturer's installation instructions.

D. The following heights and locations, unless otherwise indicated, are shown from finish floor to center line of item. Conform to all code requirements.

1. Hinges. . . . . standard placement
2. Cylindrical locksets. . . . . 38".
3. Deadlock or deadlatch. . . 48" max.
4. Push plate/pull plate. . . . .48"
5. Pull only. . . . . .42"
6. Exit device. . . . . 38"
7. Kick plates. . . . . 1/4" above door bottom
8. Stops and holders:
    a. Wall - where knob or pull will hit
    b. Floor - 2" from leading edge of door if conditions permit
    c. Overhead holder - per template
    d. Door holder - 2" from leading edge of door

E. Install finish hardware after operations causing dampness have been completed. At completion of job, leave hardware clean and free from disfigurement.

F. Install door closers with steel through bolts. Aluminum bolts will not be acceptable. Locate on the door so that closer will operate to maximum degree of opening. Door closer shall not act as a door stop with the exception of "Compression Stop (CS)" arm closers. Size according to manufacturer's recommendation and handicap accessiblity requirements.

G. Install stops and holders at approved locations.

a. on concrete and solid masonry with lead shields. (rawl plugs not acceptable)
b. on hollow wall, with toggle bolts
c. to doors with through bolts and grommet nut or sex nuts as applicable.

HARDWARE SETS: Refer To Drawings

END SECTION

SECTION 08 80 00

GLASS & GLAZING

PART I. GENERAL

1.1 SCOPE

A. Glass and glazing for doors and windows.
B. Mirrors
C. Submittals
D. Shop drawings
E. Samples

1.2 GENERAL REQUIREMENTS

A. The work of this section is governed by the conditions set forth in the Agreement between the Owner and Contractor, the General Conditions of the Contract for Construction, Division 1 of these Specifications, and all other documents that make up the Agreement.
B. The Contractor shall ensure that the work of this section is coordinated with the work of all related trades affected by or affecting the work of this Section.
C. The work of this section includes providing all labor, material, miscellaneous fasteners and accessories, and equipment required to complete the work of this Section including but not limited to that work specified herein and on the Drawings or as required for a complete job.

1.3 QUALITY ASSURANCE

A. Materials and work of this section to be in accordance with the Glass Association of North America (GANA), "Glazing Manual."
B. Safety glass shall conform to ANSI Z97.1 and CPSC 16 CFR 1201, Cat. I or Cat II.
C. Float and patterned glass shall conform to ASTM C 1036.
D. Heat treated glass shall conform to ASTM C 1048.
E. Laminated glass shall conform to ASTM C 1172 and ASTM C 1036 and ASTM C 1048 for the type of glass used in the lamination.
F. Mirrors shall conform to Federal Specification DD-M-411.
G. All exterior glazing shall meet level "E" risk category IV, essential facility building, per F.B.C. 2017 section 1626.2.4.

1.4 SUBMITTALS

A. Submit literature on glazing materials specified herein or as part of manufacture's submittals for products specified in other Sections in which glass is installed. The literature shall contain the following:

1. Type of glass
2. Class of glass
3. Quality of glass
4. ASTM designation
5. Type of coatings
6. Thickness of each type of glass

B. Provide manufacturer's literature on the following:
1. Glazing tape
2. Sealants.
3. Glazing gaskets
4. Setting blocks

C. Provide shop drawings on the following: