DATE: 08/30/19 BLD #: BLD 19-00468 TENANT BUILD-OUT FOR: PROFILE BY SANFORD IOWA CITY,

PROJECT INFORMATION

APPLICABLE BUILDING CODES

- 2018 INTERNATIONAL BUILDING CODE 2018 INTERNATIONAL EXISTING BUILDING CODE
- 2018 INTERNATIONAL ENERGY CONSERVATION CODE 2018 INTERNATIONAL FIRE CODE
- 2018 INTERNATIONAL FUEL GAS CODE 2018 INTERNATIONAL MECHANICAL CODE
- 2015 UNIFORM PLUMBING CODE 2017 NATIONAL ELECTRIC CODE

COMPLIANCE STATEMENT

THIS IS A LEVEL 2 ALTERATION WITH A CHANGE OF USE FROM UNOCCUPIED TO M/B. DUE TO THE FACT THAT ADJACENT SPACES ARE UNOCCUPIED, THE NEW M OCCUPANCY IS LESS HA77ARDOUS FOR FACH OF THE FOLLOWING CATAGORIES: MEANS OF EGRESS HAZZARD CATAGORIES, HEIGHT AND AREA HAZZARD CATAGORIES AND EXPOSURE EXTERIOR WALLS HAZZARD CATAGORIES. THIS ALTERATION DOES NOT INCLUDE AN ADDITION THAT ADDITIONAL LIFE SAFETY MEASURES WOULD NEED TO BE ANALYZED SUCH AS SPRINKLER SYSTEMS AND FIRE ALARM SYSTEMS. BUILDING ELEMENTS AND MATERIALS, MEANS OF EGRESS AND ACCESSIBILITY HAVE ALL BEEN ADDRESSED AS APPLICABLE TO THIS INDIVIDUAL SPACE.

BUILDING SIZE

TENANT BUILD-OUT

OCCUPANCY CLASSIFICATIONS EXISTING OCCUPANCY CLASSIFICATION

2,001 SF

UNOCCUPIED

NEW OCCUPANCY CLASSIFICATIONS NON SEPARATED USES w/ MIXED OCCUPANCY CLASSIFICATIONS WITHIN **TENANT SPACE INCLUDE:** MERCANTILE GROUP M BUSINESS GROUP E STORAGE GROUP S-2

MEANS OF EGRESS

250 FT. EXIT ACCESS TRAVEL DISTANCE (SPRINKLERED)

EGRESS WIDTH PER OCCUPANT SERVED = 0.2" (SPRINKLERED) (21) TOTAL OCCUPANTS x 0.2" = 4.2" EGRESS WIDTH REOUIRED PROVIDED EGRESS WIDTH = 108"

CONSTRUCTION CLASSIFICATION

TYPE II(B) CONSTRUCTION

SEISMIC CATEGORY: B

ENTIRE BUILDING IS FULLY EQUIPPED w/ AN AUTOMATIC SPRINKLER SYSTEM PER N.F.P.A. 13

ALLOWABLE AREAS

MOST RESTRICTIVE OCCUPANCY	WITHIN THE BUILDING IS POTENTIALLY A-
2018 IBC TABLE 506.2	(At) = 9,500 S.F. PER FLOOR (UNSPRINKLED) (At) = 38,000 S.F. PER FLOOR (SPRINKLED)

TOTAL ALLOWABLE BUILDING AREA = 38,000 S.F. PER FLOOR (SPRINKLED

GC TO VERIFY OCCUPANCY CLASSIFICATIONS OF ALL BUILDING TENANTS FIRE SEPARATION BETWEEN NEW TENANT SPACE AND EXISTING TENANTS TO **BE PROVIDED PER IBC 508.4** FINAL OCCUPANCY LOAD WILL NOT EXCEED THE TOTAL ALLOWABLE AREA OF THE BUILDING

DEFERRED SUBMITTALS

IF FIRE PROTECTION SHEETS (FIRE ALARM AND FIRE SPRINKLER) ARE INCLUDED IN THIS SUBMITTAL IT SHOULD BE NOTED THEY ARE SCOPE DOCUMENTS ONLY. THE CONTRACTOR WOULD BE RESPONSIBLE FOR ALL DESIGN/ENGINEERING, SUBMITTALS AND PERMITTING AS SPECIFIED IN THESE DOCUMENTS

OCCUPANT LOADS

OCCUPANT LOADS BASED ON 2018 INTERNATIONAL BUILDING CODE, TABLE 1004.1.2

ROOM OR SPACE DESIGNATION	CLASSIFICATION OF OCCUPANCY FOR USE	FLOOR AREA (S.F.)	DENSITY SF/PERSON	OCCUPANT LOAD BY CALCULATION	OCCUPANT LOAD BY ACTUAL NO.	AREA OCCUPANT LOAD TOTAL		
RETAIL	MERCANTILE GRADE FLOOR AREAS	700	60 GROSS	11.66	-	12		
CONSULT	BUSINESS AREAS	698	100 GROSS	6.98	-	7		
STORAGE ROOM	ACCESSORY STORAGE AREAS	448	300 GROSS	1.49	-	2		
AREA ACCOUNTED FOR IN OTHER SPACES, UNINHABITABLE SPACES, AND UNOCCUPIED SPACES		155	-			0		
	TOTALS	2,001	TOTAL	TOTAL OCCUPANT LOAD OF TENANT SPACE = 21 OCCUPANTS				

SANITARY FIXTURES

PLUMBING FIXTURE FACTORS BASED ON 2018 INTERNATIONAL BUILDING CODE, TABLE 2902.1

	OCCUPANCY	W	ATER CLOSETS		LAVATO	DRIES	DRINKING F	OUNTAINS
TYPE	CAPACITY	FACTORS	# M. FIX.	# F. FIX.	FACTORS	# FIX.	FACTORS	# FIX.
M GROUP (MERCANTILE)	12 PERSONS (6 M / 6 F)	1/500	0.01	0.01	1/750	0.016	1/1000	0.012
B GROUP (OFFICE)	7 PERSONS (4 M / 4 F)	1/25 (FIRST 50) 1/50 (AFTER)	0.16	0.16	1/40 (FIRST 80) 1/80 (AFTER)	0.17	1/100	0.07
S GROUP (STORAGE)	2 PERSONS (1 M / 1 F)	1/100	0.01	0.01	1/100	0.02	1/1000	0.002
TOTAL			0.18	0.18		0.20		0.084
PROVIDED FIXTURES			1 (WC)	1 (WC)		2		2





PROJECT OWNER PROFILE BY SANFORD CONTACT: KRISTI HEY 1305 W. 18TH STREET SIOUX FALLS, SD 57105 P: (605) 312-7704 F: (605) 312-7701

SYMBOLS LEGEND

EXCEL ENGINEERING INC. EXCEL ENGINEERING INC. CONTACT: TIM STOPPLEWORTH CONTACT: JAY OESTREICH 100 CAMELOT DRIVE 100 CAMELOT DRIVE FOND DU LAC, WI 54935 FOND DU LAC, WI 54935 P: (920) 926-9800 P: (920) 926-9800 F: (920) 926-9801 F: (920) 926-9801

NOTE TO CONTRACTOR

PROFILE BY SANFORD RESERVES THE RIGHT TO DETERMINE A FAIR AND EQUITABLE SOLUTION TO ANY PROBLEMS, MISTAKES, OVERSIGHTS OR HIDDEN DAMAGE. PLEASE PHONE OUR OFFICE IMMEDIATELY UPON DISCOVERY. DO NOT INSTINCTIVELY PRODUCE A SOLUTION, OR PROCEED WITH WORK THAT WOULD RESULT IN A CHANGE ORDER REQUIRING REIMBURSEMENT BY THE OWNER OR SYMPATECO, INC. ANY SOLUTIONS OUTSIDE THIS POLICY SHALL BE WITH PRIOR APPROVAL AND WILL BE AT THE FRANCHISEE'S OR CONTRACTOR EXPENSE.

LIST OF ABBREVIATIONS

 CONTRACTORS: IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY FOR PROPER COORDINATION AND COMPLETION OF THE WORK DESCRIBED. BEFORE ORDERING MATERIALS OR COMMENCING WITH WORK WHICH IS DEPENDENT UPON PROPER SIZING OF, OR INSTALLATION IN EXISTING PREVIOUS CONDITIONS, THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS BY TAKING MEASUREMENTS AT BUILDING SITE AND SHALL BE RESPONSIBLE FOR THEIR CORRECTNESS. ANY DISCREPANCIES BETWEEN DRAWINGS AND/OR SPECIFICATIONS AND EXISTING CONDITIONS SHALL BE REFERRED TO THE ARCHITECT FOR ADJUSTMENT BEFORE ANY WORK AFFECTED THEREBY IS COMMENCED.

NOTIFY ARCHITECT OF ALL DISCREPANCIES IN WRITING BEFORE PROCEEDING WITH WORK. ANY ERRORS, AMBIGUITIES

ANY PART OF THE WORK IS STARTED. UNLESS EXPRESSLY STIPULATED, NO ADDITIONAL ALLOWANCE WILL BE MADE IN

AND OMISSIONS IN DRAWINGS AND SPECIFICATIONS SHALL BE REPORTED TO ARCHITECT FOR CORRECTION BEFORE

THE CONTRACTORS' AND/OR MANUFACTURERS' FAVOR BY VIRTUE OF ERRORS, AMBIGUITIES AND/OR OMISSIONS

WHICH SHOULD HAVE BEEN DISCOVERED DURING THE PREPARATION OF BID ESTIMATE AND DIRECTED TO THE

ARCHITECT'S ATTENTION IN A TIMELY MANNER

- MATERIALS: WHEN REFERENCE IS MADE IN THE SPECIFICATIONS TO TRADE NAMES OF TO THE NAMES OF MANUFACTURERS, SUCH REFERENCES ARE MADE SOLELY TO DESIGNATE AND IDENTIFY QUALITY OF MATERIAL OR EQUIPMENT, AND NOT TO RESTRICT COMPETITIVE BIDDING. IF THE CONTRACTOR WISHES TO USE MATERIALS OR EQUIPMENT OTHER THAN SPECIFIED, PRIOR WRITTEN APPROVAL OF ARCHITECT AND OWNER MUST BE OBTAINED. THE ARCHITECT AND OWNER WILL APPROVE SUCH MATERIAL OR EQUIPMENT CHANGES IF THEY ARE CONSIDERED SUITABLE AND EQUAL TO THOSE SPECIFIED.
- MANUFACTURER'S DIRECTIONS: ALL MANUFACTURED ARTICLES, MATERIAL AND EQUIPMENT SHALL BE APPLIED, INSTALLED, CONNECTED, ERECTED, USED, CLEANED AND CONDITIONED AS DIRECTED BY THE MANUFACTURERS, UNLESS HEREIN SPECIFIED TO THE CONTRARY.
- WORK AND MATERIAL NOT SPECIFIED: ANY ITEM OF WORK NECESSARY TO THE PROPER COMPLETION OF CONSTRUCTION UNDER THIS CONTRACT WHICH IS NOT SPECIFICALLY COVERED IN THE DRAWINGS AND SPECIFICATIONS SHALL BE PERFORMED IN A MANNER DEEMED GOOD PRACTICE OF THE TRADE INVOLVED. MATERIALS AND EQUIPMENT NOT SPECIFICALLY COVERED BY THE DRAWINGS AND SPECIFICATIONS SHALL BE OF A STANDARD EQUAL TO GOOD PRACTICE COMMENSURATE WITH THE CLASS OF STRUCTURE CONSTRUCTED AND TO THE MATERIALS SHOWN OR SPECIFIED HEREIN.
- PERMITS, FEES AND NOTICES: THE CONTRACTOR WILL SECURE AND PAY FOR THE BUILDING PERMIT UNLESS OTHER ARRANGEMENTS ARE MADE WITH THE OWNER. THE CONTRACTOR SHALL SECURE AND PAY FOR ALL OTHER PERMITS RELATED TO HIS WORK. THE CONTRACTOR SHALL GIVE ALL NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS, CODES AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY BEARING ON THE PERFORMANCE OF HIS WORK. INSURANCE: OWNER AND ALL CONTRACTORS SHALL EFFECT AND MAINTAIN PROPER INSURANCE.
- CHANGES IN WORK: ALL CHANGES IN THE DOCUMENTS ARE TO BE DOCUMENTED BY MEMO, FIELD ORDER, OR CHANGE ORDER INITIATED BY THE ARCHITECT AND SIGNED BY OWNER AND CONTRACTOR.







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SHEET INDEX

			LATES	T SHEET REVISION
NUMBER	SHEET NAME / DESCRIPTION	SHEET ISSUE DATE	NUMBER	DATE
GENERAL	r			
CS1.0	TITLE SHEET	AUG. 27, 2019		
T2.0	GENERAL BUILDING SPECIFICATIONS	AUG. 27, 2019		
T2.1	GENERAL BUILDING SPECIFICATIONS	AUG. 27, 2019		
T3.0	LANDLORD WORK LETTER	AUG. 27, 2019		
ARCHITEC	TURAL			
D1.1	DEMOLITION FLOOR PLAN	AUG. 27, 2019		
A1.1	FLOOR PLAN	AUG. 27, 2019		
A1.2	FIXTURE PLAN	AUG. 27, 2019		
A1.3	FINISH PLAN	AUG. 27, 2019		
A1.4	REFLECTED CEILING PLAN	AUG. 27, 2019		
A4.0	DETAILS & ELEVATIONS	AUG. 27, 2019		
A4.1	DETAILS	AUG. 27, 2019		
A5.0	ENLARGED PLANS	AUG. 27, 2019		
PLUMBING				
P0.1	LEGEND AND SPECIFICATIONS	AUG. 27, 2019		
P1.1	FLOOR PLANS	AUG. 27, 2019		
P2.0	ISOMETRICS	AUG. 27, 2019		
P3.0	DETAILS	AUG. 27, 2019		
P4.0	SCHEDULES	AUG. 27, 2019		
IRE PROT	ECTION			
FP0.1	LEGEND, SPECIFICATIONS, SCHEDULES & FLOOR PLAN	AUG. 27, 2019		
HVAC				
H0.1	LEGEND AND SPECIFICATIONS	AUG. 27, 2019		
H1.1	FIRST FLOOR PLAN	AUG. 27, 2019		
H3.0	DETAILS	AUG. 27, 2019		
H4.0	SCHEDULES	AUG. 27, 2019		
	L			
E0.1	SYMBOLS LEGEND & FIXTURE SCHEDULE	AUG. 27, 2019		
E0.2	SPECIFICATIONS	AUG. 27, 2019		
E1.1	FLOOR PLAN - ELECTRICAL	AUG. 27, 2019		
E4.0	ONELINE DIAGRAMS, SCHEDULES & DETAILS	AUG. 27, 2019		

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LOCATION MAP





TITLE SHEET

GENERAL BUILDING SPECIFICATIONS

DIVISION 00 PROCUREMENT AND CONTRACTING REQUIREMENTS

00 72 00 GENERAL CONDITIONS

ns Reviewed and Approved for Construction with Notatio Plan review notes may not reflect all code deficiencie: Failure to identify a code deficiency during a review of pla Does not alleviate any obligation to comply with all applicab code provisions

TE: 08/30/19

#: BLD19-00468

A. THE AIA GENERAL CONDITIONS A201 LATEST EDITION IS A PART OF THESE DOCUMENTS. COPIES ARE ON FILE AT THE OFFICE OF EXCEL ENGINEERING, INC.

00 73 16 INSURANCE REQUIREMENTS

CONTRACTOR SHALL PROCURE AND MAINTAIN THROUGHOUT THE TERM OF THE CONTRACT POLICIES OF INSURANCE FROM A CARRIER WITH AN A.M. BEST RATING OF "A/VII" OR BETTER. CONTRACTOR SHALL FURNISH OWNER WITH A CERTIFICATE OF INSURANCE PRIOR TO COMMENCING WORK TO INCLUDE COVERAGE AND MINIMUM LIMITS AS FOLLOWS: A. COMMERCIAL GENERAL LIABILITY

- 1. FORM
- a. COMMERCIAL GENERAL LIABILITY INCLUDING PREMISES & OPERATIONS, BROAD FORM PROPERTY DAMAGE, CONTRACTUAL LIABILITY, SCU & COMPLETED OPERATIONS WRITTEN UNDER "OCCURRENCE" FORMAT 2. MINIMUM LIMITS
- a) \$1,000,000 PER OCCURRENCE / \$2,000,000 AGGREGATE / \$2,000,000 PRODUCT/COMPLETED OPERATIONS AGGREGATE
- 3. ENDORSEMENTS a. GENERAL AGGREGATE APPLIES PER PROJECT/LOCATION
- b. WAIVER OF ANY RIGHT OF SUBROGATION IN FAVOR OF THE OWNER
- c. THE OWNER AND ITS SUBSIDIARIES AND AFFILIATES ARE NAMED AS AN ADDITIONAL INSURED INCLUDING PREMISES/OPERATIONS AND COMPLETED OPERATIONS **** SEE ADDITIONAL INSURED ENDORSEMENTS SECTION
- d. 30 DAYS WRITTEN NOTICE OF REDUCTION IN COVERAGE, CANCELLATION OR NON-RENEWAL IN FAVOR OF THE OWNER 4. OTHER
- A. PRODUCTS-COMPLETED OPERATIONS COVERAGE TO BE CARRIED FOR TWO YEARS AFTER SUBSTANTIAL COMPLETION CONTRACTOR SHALL PROVIDE VERIFICATION OF EMPLOYMENT PRACTICES LIABILITY (EPL) COVERAGE
- B. AUTOMOTIVE LIABILITY 1. FORM
 - a. COMMERCIAL AUTOMOBILE LIABILITY PROVIDING LIABILITY COVERAGE FOR OWNED, NON-OWNED OR HIRED AUTOMOBILES
- 2. MINIMUM LIMITS
- a. \$1,000,000 COMBINED SINGLE LIMIT 3. ENDORSEMENT
- a. 30 DAYS WRITTEN NOTICE BY CERTIFIED MAIL OF REDUCTION IN COVERAGE, CANCELLATION, OR NON-RENEWAL IN FAVOR OF OWNER MCS-90 ENDORSEMENT (IF APPLICABLE) b. WAIVER OF SUBROGATION INCLUDING IN FAVOR OF THE OWNER
- C. WORKER'S COMPENSATION
- 1. FORM a. STANDARD POLICY NAMING SOUTH DAKOTA OR ANY OTHER STATES WHERE THE CONTRACTOR IS WORKING AS A COVERED STATE(S)
- 2. MINIMUM LIMITS
- a. STATUTORY WORKERS COMPENSATION BENEFITS b. EMPLOYERS LIABILITY LIMITS OF \$100,000 / \$500,000 / \$100,000
- 3. ENDORSEMENTS
- a. WAIVER OF SUBROGATION IN FAVOR OF OWNER REQUIRED ENDORSEMENT #WC 00 03 13 b. 30 DAYS WRITTEN NOTICE BY CERTIFIED MAIL OF REDUCTION IN COVERAGE, CANCELLATION OR NON-RENEWAL IN FAVOR OF OWNER
- D. UMBRELLA
- 1. FORM
- a. UMBRELLA 2. MINIMUM LIMITS
- a. \$2,000,000 PER OCCURRENCE / \$2,000,000 AGGREGATE
- 3. ENDORSEMENTS
- a. 30 DAYS WRITTEN NOTICE BY CERTIFIED MAIL OF REDUCTION IN COVERAGE, CANCELLATION OR NON-RENEWAL IN FAVOR OF CONTRACTOR
- b. PER PROJECT AGGREGATE
- c. FOLLOW FORM 4. OTHER
- a. POLICY TERM TO BE CONCURRENT WITH COMMERCIAL GENERAL LIABILITY POLICY AND AUTOMOBILE I IABII ITY POLICY b. UMBRELLA COVERAGE MUST INCLUDE AS INSUREDS ALL ENTITIES THAT ARE ADDITIONAL INSUREDS ON THE
- COMMERCIAL GENERAL LIABILITY (CGL). E. CHARTERED AIRCRAFT (OPTIONAL)
- a. ALL AIRCRAFT CHARTERED BY CONTRACTOR/SUBCONTRACTOR AND SUB-SUBCONTRACTOR MUST CARRY BODILY INJURY AND PROPERTY DAMAGE COMBINED SINGLE LIMITS OF \$3,000,000 PER OCCURRENCE TIMES THE NUMBER OF PASSENGERS SEATS. LIABILITY FOR PASSENGERS MUST BE INCLUDED.
- F. PRIVATE AIRCRAFT (OPTIONAL) 1. OTHER
 - a. (GENERAL AVIATION ONLY) USED BY CONTRACTORS, SUBCONTRACTORS AND SUB-SUBCONTRACTORS ON BUSINESS. AIRCRAFT LIABILITY INSURANCE WITH BODILY INJURY LIABILITY, PROPERTY DAMAGE, INCLUDING COVERAGE FOR PASSENGERS OF \$2,000,000 COMBINED SINGLE LIMIT PER OCCURRENCE FOR EACH PASSENGER.
- G. ADDITIONAL INSURED ENDORSEMENTS SECTIONS
 - **** CONTRACTOR IS REQUIRED TO ADD THE OWNER AS AN ADDITIONAL INSURED

ALL COVERAGE SHALL BE PRIMARY AND NON-CONTRIBUTORY WITH ANY OTHER INSURANCE AVAILABLE TO THE OWNER. CONTRACTOR SHALL PROVIDE EVIDENCE OF COVERAGE (CERTIFICATE OF INSURANCE) PRIOR TO COMMENCING WORK ALONG WITH COPIES OF THE REQUIRED ADDITIONAL INSURED ENDORSEMENTS

- H. DEDUCTIBLES AND SELF-INSURED RETENTIONS
- ANY DEDUCTIBLES OR SELF-INSURED RETENTIONS MUST BE DECLARED TO AND APPROVED BY THE OWNER. THE OWNER MAY REQUIRE THE CONTRACTOR TO PURCHASE COVERAGE WITH A LOWER DEDUCTIBLE OR RETENTION OR PROVIDE PROOF OF ABILITY TO PAY LOSSES AND RELATED INVESTIGATIONS, CLAIM ADMINISTRATIONS, AND DEFENSE EXPENSES WITHIN THE RETENTION.
- I. ACCEPTABILITY OF INSURERS INSURANCE IS TO BE PLACED WITH INSURERS WITH A CURRENT A.M. BESTS RATING OF NO LESS THAN A-/VII, UNLESS OTHERWISE ACCEPTABLE TO THE OWNER.
- J. CLAIMS MADE POLICIES
 - IF ANY OF THE REQUIRED POLICIES PROVIDED CLAIMS-MADE COVERAGE 1. THE RETROACTIVE DATE MUST BE SHOWN, AND MUST BE BEFORE THE DATE OF THE CONTRACT OR THE BEGINNING OF CONTRACT WORK
 - 2. INSURANCE MUST BE MAINTAINED AND EVIDENCE OF INSURANCE MUST BE PROVIDED FOR AT LEAST
 - FIVE (5) YEARS AFTER COMPLETION OF THE CONTRACT WORK 3. IF COVERAGE IS CANCELLED OR NON-RENEWED, AND NOT REPLACED WITH ANOTHER CLAIMS-MAKE POLICY FORM WITH A RETROACTIVE DATE PRIOR TO THE CONTRACT EFFECTIVE DATE, THE CONTRACTOR MUST PURCHASE "EXTENDED REPORTING" COVERAGE FOR A MINIMUM OF FIVE (5)
- YEARS AFTER COMPLETION OF WORK. K. VERIFICATION OF COVERAGE CONTRACTOR SHALL FURNISH THE OWNER WITH ORIGINAL CERTIFICATES AND AMENDATORY ENDORSEMENTS OR COPIES OF THE APPLICABLE POLICY LANGUAGE EFFECTING COVERAGE REQUIRED BY THIS CLAUSE. ALL CERTIFICATES AND ENDORSEMENTS ARE TO BE RECEIVED AND APPROVED BY THE OWNER BEFORE WORK COMMENCES. HOWEVER, FAILURE TO OBTAIN THE REQUIRED DOCUMENTS PRIOR TO THE WORK BEGINNING SHALL NOT WAIVE THE CONTRACTORS OBLIGATION TO PROVIDE THEM.
- **DIVISION 01 GENERAL REQUIREMENTS**

01 11 00 SUMMARY OF WORK

A. THE PLANS AND SPECIFICATIONS ARE INTENDED TO GIVE A DESCRIPTION OF THE WORK. NO DEVIATION FROM THE PLANS AND SPECIFICATIONS SHALL BE MADE WITHOUT THE WRITTEN CONSENT OF EXCEL ENGINEERING, INC. THE CONTRACTOR IS TO CLARIFY ANY DISCREPANCIES WITH EXCEL ENGINEERING, INC. PRIOR TO BEGINNING WORK. THE CONTRACTOR SHALL VISIT THE SITE TO VERIFY EXISTING CONDITIONS AND ACCESS TO THE WORK AREA.

01 25 13 PRODUCT SUBSTITUTION PROCEDURES

A. REFERENCE TO MATERIALS OR SYSTEMS HEREIN BY NAME, MAKE OR CATALOG NUMBER IS INTENDED TO ESTABLISH A QUALITY STANDARD, AND NOT TO LIMIT COMPETITION. THE WORDS "OR APPROVED EQUIVALENT" ARE IMPLIED FOLLOWING EACH BRAND NAME/MODEL NUMBER UNLESS STATED OTHERWISE. "OR APPROVED EQUIVALENT" MATERIALS SHALL BE APPROVED BY EXCEL ENGINEERING, INC. PRIOR TO BIDS BEING ACCEPTED AND ACCEPTANCE FOR USE. PROVIDE A LETTER FROM THE MANUFACTURER CERTIFYING THAT THE PRODUCT MEETS OR EXCEEDS THE SPECIFIED PRODUCT.

01 31 00 PROJECT MANAGEMENT AND COORDINATION

A. G.C. TO PROVIDE WEEKLY PROGRESS REPORTS AND PHOTOS AT SPECIFIC TIME FRAME PROVIDED BY PROFILE AND AT ROUGH IN PRIOR TO INSTALLATION

- WORK.
- TEMPORARY OCCUPANCY PERMIT IF REQUIRED.
- D. AVAILABILITY OF CAD FILES
- b. EXCEL ENGINEERING PROJECT NUMBER
- REFUNDABLE

- PAYMENT WHENEVER POSSIBLE. 6. REVIT FILES WILL NOT BE MADE AVAILABLE.

01 32 00 SCHEDULING OF WORK

3 23 SHOP DRAWINGS, PRODUCT DATA AND SAMPLES

-ARCHITECTURAL-

- INTERIOR FINISHES

01 40 00 QUALITY REQUIREMENTS

01 41 00 REGULATORY REQUIREMENTS

01 45 00 QUALITY CONTROL

A. THE CONTRACTOR SHALL CONTACT EXCEL ENGINEERING, INC. (2) WORKING DAYS PRIOR TO POURING CONCRETE FOOTINGS AND BEFORE THE STRUCTURAL SYSTEM HAS BEEN ENCLOSED. A FINAL INSPECTION WILL BE MADE BY EXCEL ENGINEERING, INC. UPON COMPLETION OF THE PROJECT. B. NOTIFY ARCHITECT ONE WEEK IN ADVANCE TO SCHEDULE FINAL COMPLIANCE WALK-THRU. PRIOR TO THIS WALK THRU, PROVIDE THE ARCHITECT WITH THE FIRE PROTECTION SYSTEM TEST REPORT AND A COPY OF THE ELEVATOR INSPECTION REPORT AS APPLICABLE. ALL COMPONENT SUBMITTALS SHOULD BE FILED AND AVAILABLE FOR REVIEW AT THE WALK THRU. THE BUILDING SHALL BE COMPLETE AND ALL SYSTEMS OPERATIONAL AT THE TIME OF THE WALK THRU. IF THE ARCHITECT IS REQUIRED TO MAKE ADDITIONAL VISITS DUE TO NON-COMPLIANCE, THEY WILL BE CHARGED TO THE REQUESTING CONTRACTOR.

01 53 00 TEMPORARY CONSTRUCTION

NOT HAVE THE EXPERTISE REQUIRED.

0171 00 FIELD ENGINEERING

REOUIREMENTS.

01 78 00 CLOSEOUT SUBMITTALS

EQUIPMENT.

01 78 36 WARRANTIES

DIVISION 02 EXISTING CONDITIONS

- 02 41 19 SELECTIVE STRUCTURAL DEMOLITION
- - NOTIFY ARCHITECT AND OWNER.
 - OF GOVERNING REGULATIONS.

APPROVED LANDFILL.

DIVISION 03 CONCRETE

B. THE CONTRACTOR HAS THE SOLE RESPONSIBILITY FOR AND SHALL HAVE CONTROL OF CONSTRUCTION MEANS. METHODS, TECHNIQUES, SEQUENCES, AND SAFETY PRECAUTIONS AND PROCEDURES USED TO CONSTRUCT THE

C. THE CONTRACTOR SHALL FURNISH ALL LABOR, MATERIAL (INCLUDING TAXES) AND EQUIPMENT AS NECESSARY TO COMPLETE THE WORK. PERMITS SHALL BE OBTAINED AND PAID FOR BY THE RESPECTIVE CONTRACTOR, INCLUDING

1. CAD FILES OF CONSTRUCTION DOCUMENTS MAY BE OBTAINED BY CONTACTING EXCEL ENGINEERING, INC. REQUESTS SHALL BE EMAILED TO BILLING@EXCELENGINEER.COM AND INCLUDE THE FOLLOWING INFORMATION: a. EXCEL ENGINEERING PROJECT NAME

c. SHEET NUMBERS REQUESTED

2. COST FOR CAD FILES WILL BE \$75 PER REQUEST, PLUS \$25 FOR EACH SHEET REQUESTED. ALL FEES ARE NON-

3. PAYMENT MUST BE MADE THRU EXCEL ENGINEERING, INC. PAYPAL ACCOUNT BEFORE CAD FILES WILL BE SENT. INFORMATION ON THE PAYPAL ACCOUNT WILL BE SENT TO THE REQUESTOR ALONG WITH THE TOTAL FEE DUE. 4. SUBSEQUENT REQUESTS (TO INCLUDE ADDENDAS, CONSTRUCTION BULLETINS, REVISIONS, ETC) FOR CAD FILES ARE CONSIDERED A SEPARATE REQUEST AND THE \$75 PER REQUEST AND \$25 PER SHEET COST WILL APPLY. CONTRACTOR WILL NOT RECEIVE NEW CAD FILES WHEN PLANS CHANGE UNLESS A NEW REQUEST IS MADE. 5. CAD FILES WILL BE SENT BY METHOD OF EXCEL ENGINEERING, INC. CHOOSING WITHIN 24 HOURS OF RECEIPT OF

A. CONTRACTOR TO PROVIDE OWNER WITH SCHEDULE TO REVIEW PRIOR TO COMMENCEMENT OR WORK.

A. SUBMIT FIVE (5) COPIES OF ARCHITECTURAL, STRUCTURAL (HVAC, PLUMBING, FIRE PROTECTION AND ELECTRICAL IF PART OF THIS PLAN) SHOP DRAWINGS TO EXCEL ENGINEERING, INC. FOR APPROVAL PRIOR TO FABRICATION AND INSTALLATION. ARRANGEMENTS FOR ELECTRONIC SUBMISSION OF SHOP DRAWINGS IN PORTABLE DOCUMENT FORMAT (PDF) MAY BE MADE WITH EXCEL ENGINEERING, INC. PRIOR TO SUBMISSION. ELECTRONIC SUBMISSIONS MADE WITHOUT PRIOR ARRANGEMENT WILL BE RETURNED WITHOUT COMMENT AND STAMPED "REJECTED-RESUBMIT. SHOP DRAWINGS SHALL BE REVIEWED AND STAMPED BY THE CONTRACTOR PRIOR TO SUBMITTING FOR APPROVAL. SHOP DRAWING SUBMITTALS MUST BE 100% COMPLETE AND IN ONE (1) PACKAGE FOR THE ITEM BEING SUBMITTED. NON-COMPLETE SHOP DRAWINGS OR PARTIAL ITEM SHOP DRAWINGS WILL BE RETURNED TO THE CONTRACTOR WITHOUT COMMENT AND STAMPED "REJECTED-RESUBMIT." CONTRACTORS WHO KNOWINGLY WANT TO SUBMIT NON-COMPLETE SHOP DRAWINGS OR BREAK SINGLE ITEM SHOP DRAWINGS INTO MULTIPLE SUBMITTALS WILL BE RESPONSIBLE TO MAKE ARRANGEMENTS WITH EXCEL ENGINEERING, PRIOR TO SUBMITTING THE SHOP DRAWING(S), TO COMPENSATE EXCEL ENGINEERING FOR THE EXTRA WORK INVOLVED. NON-STRUCTURAL ITEMS AND SAMPLES FOR FINISHES ARE TO BE SUBMITTED TO EXCEL ENGINEERING, INC. FOR APPROVAL PRIOR TO

CABINETRY AND MILLWORK

INSTALLATION. AT A MINIMUM, PROVIDE THE FOLLOWING SUBMITTALS:

DOORS, FRAMES AND HARDWARE FURNITURE FIXTURES

EXTERIOR FINISHES

B. CONTRACTOR SHALL ALLOW 10 WORKING DAYS IN SCHEDULE FOR A/E TO REVIEW SHOP DRAWINGS. IF SHOP DRAWINGS REQUIRE AN EXPEDITED REVIEW PROCESS, CONTACT A/E PRIOR TO SUBMITTING THE SHOP DRAWINGS TO MAKE THE APPROPRIATE ARRANGEMENT.

A. IN AS MUCH AS THE SPECIFICATIONS ARE BRIEF, THE CONTRACTOR SHALL PROVIDE WORKMANSHIP THAT IS NEAT, SECURE AND OF THE BEST QUALITY WITH THE BEST POSSIBLE APPEARANCE AND UTILITY MEETING ALL APPLICABLE STANDARDS. FAULTY WORK SHALL BE REPAIRED OR REPLACED AT NO COST TO THE OWNER. INDUSTRY STANDARDS SHALL BE USED AS THE GUIDE FOR QUALITY OF MATERIALS AND WORKMANSHIP.

A. ALL APPLICABLE FEDERAL, STATE, AND LOCAL CODES, ORDINANCES AND REGULATIONS, INCLUDING THE REQUIREMENTS OF THE AMERICAN WITH DISABILITIES ACT (A.D.A.) ARE MADE PART OF THESE SPECIFICATIONS AND SHALL BE COMPLIED WITH AS FAR AS THEY APPLY TO WORK UNDER THIS CONTRACT.

A. THE CONTRACTOR SHALL FURNISH TEMPORARY BRACING OF ALL BUILDING ELEMENTS DURING CONSTRUCTION. TEMPORARY BRACING SYSTEMS SHALL BE DESIGNED TO WITHSTAND CODE DESIGN LOADS. CONTRACTOR SHALL RETAIN SERVICES OF A PROFESSIONAL ENGINEER TO DESIGN AND SUPERVISE BRACING INSTALLATION IF THEY DO

A. THE CONTRACTOR SHALL PROVIDE ALL LAYOUT AS REQUIRED, COMPETENT FULLTIME ONSITE SUPERVISION, AND BROOM CLEANING OF CONSTRUCTION SITE INCLUDING DUMPSTERS FOR REFUSE DISPOSAL. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL SAFETY ON SITE AND PROTECTION OF SITE PER LOCAL, STATE AND FEDERAL

A. THE CONTRACTOR SHALL FURNISH "AS-BUILT" DRAWINGS REFLECTING ALL CHANGES DURING CONSTRUCTION. PROVIDE TWO (2) COPIES OF OPERATING AND MAINTENANCE MANUALS TO OWNER FOR ALL FURNISHED

A. THE CONTRACTOR SHALL GUARANTEE ALL WORKMANSHIP AND MATERIALS FOR A PERIOD OF ONE YEAR AFTER SUBSTANTIAL COMPLETION OF THE PROJECT. FURNISH MANUFACTURER'S WRITTEN WARRANTIES FOR SPECIFIED EQUIPMENT STATING EFFECTIVE WARRANTY DATE.

A. CONDUCT DEMOLITION AND DEBRIS REMOVAL OPERATIONS TO INSURE MINIMUM INTERFERENCE WITH ROADS, STREETS, WALKS, AND OTHER ADJACENT OCCUPIED AND USED FACILITIES. B. IT IS UNKNOWN WHETHER HAZARDOUS MATERIALS WILL BE ENCOUNTERED, DO NOT DISTURB, IMMEDIATELY

C. DEMOLISH AND REMOVE EXISTING CONSTRUCTION ONLY TO THE EXTENT REQUIRED BY NEW CONSTRUCTION AND AS SHOWN ON THE DEMOLITION PLANS. USE METHODS REQUIRED TO COMPLETE THE WORK WITHIN LIMITATIONS

D. EXCEPT FOR ITEMS OR MATERIALS INDICATED TO BE REUSED, SALVAGED, REINSTALLED OR TO REMAIN OWNER'S PROPERTY, REMOVE DEMOLISHED MATERIALS FROM PROJECT SITE AND LEGALLY DISPOSE OF THEM IN AN EPA

03 30 00 CAST-IN-PLACE CONCRETE

A. DESIGN AND CONSTRUCTION OF ALL CAST-IN-PLACE CONCRETE WORK SHALL CONFORM TO ACI 318 BUILDING CODE AND CRSI MANUAL OF STANDARD PRACTICE.

B. CONCRETE SLAB CONSTRUCTION TO BE PROVIDED PER MORE STRINGENT REQUIREMENTS OF GEOTECHNICAL REPORT OR CONSTRUCTION DOCUMENTS.

C. DESIGN MIXES SHALL BE IN ACCORDANCE WITH ASTM C94.

- 1. STRENGTH TO BE MIN. 3,000 PSI AT 28 DAYS FOR FOOTINGS AND HOUSEKEEPING PADS.
- 2. STRENGTH TO BE MIN. 3,500 PSI AT 28 DAYS FOR SLABS ON GRADE. 3. STRENGTH TO BE MIN. 4,000 PSI AT 28 DAYS FOR WALLS, PIERS, COLUMNS, BEAMS, EXTERIOR CONCRETE,
- STRUCTURAL SLABS, CONCRETE FILLED METAL DECK AND PRECAST TOPPINGS. 4. SLUMP SHALL BE 4" (+/- 1"). 5. ALL CONCRETE EXPOSED TO WEATHER SHALL BE AIR-ENTRAINED WITH 4-7% AIR CONTENT. NO OTHER
- ADMIXTURES SHALL BE USED WITHOUT APPROVAL OF EXCEL ENGINEERING, INC. CALCIUM CHLORIDE SHALL NOT BE USED.
- 6. MAXIMUM AGGREGATE SIZE FOR FOOTING TO BE 1 1/2" AND MAXIMUM AGGREGATE SIZE FOR ALL OTHER WORK TO BE 3/4" D. PLACE SLABS ON GRADE WITH CONSTRUCTION JOINT OR SAW JOINT AS INDICATED ON THE PLANS. SAW CUT TO BE
- DONE AS SOON AS POSSIBLE, BUT NO LATER THAN 24 HOURS AFTER CONCRETE IS PLACED. ALL INTERIOR SLABS TO HAVE A TROWEL FINISH AND ALL EXTERIOR SLABS TO HAVE A LIGHT BROOM FINISH UNLESS NOTED OTHERWISE. MAINTAIN FLOOR LEVEL AT WALLS AND PITCH SURFACES UNIFORMLY TO DRAINS. ALL CONCRETE IS TO BE CURED FOR 7 DAYS. FLOORS TO BE STAINED, TO RECEIVE AN ASHFORD SEALER, OR TO RECEIVE ANOTHER FINISH THAT IS NOT COMPATIBLE WITH CURING COMPOUNDS ARE TO BE WET CURED OR CURED WITH AN ARMORLON TRANSGUARD 4000 WET CURE COVER PER MANUFACTURER'S SPECIFICATION. EXTERIOR SLABS SHALL BE SEPARATED FROM BUILDINGS WITH CONTINUOUS 1/2" FIBER EXPANSION JOINT AND/OR 1/4" FIBER EXPANSION JOINT AT DECORATIVE MASONRY UNITS. INTERIOR SLABS SHALL BE SEPARATED FROM FOUNDATION WALLS AND PIERS WITH FORM RELEASE AGENT, 15 LB. FELT OR AS DETAILED ON PLANS.
- E. THE SLAB-ON-GRADE FLOOR FLATNESS/LEVELNESS SHALL MEET TO THE FOLLOWING CRITERIA: 1. TOP OF FLOOR ELEVATION SHALL BE WITHIN 3/4" OF DESIGN ELEVATION IN ACCORDANCE TO ACI 117
- TOLERANCES 2. THE SPECIFIED OVERALL VALUE FOR THE FLOOR FLATNESS/LEVELNESS PER ACI 117 AND ASTM E1155 IS AS FOLLOWS
- a. NONCRITICAL MECHANICAL ROOMS, NONPUBLIC AREAS, AND PARKING FF20 / FL15.
- b. CARPETED AREAS IN COMMERCIAL OFFICE, INDUSTRIAL BUILDING FF25 / FL20.
- c. THIN-SET FLOORING, WAREHOUSE, POLISHED CONCRETE FF35 / FL25. d. WAREHOUSE WITH AIR-PALLET USE, ICE RINKS - FF45 / FL35.
- e. CRITICAL AREAS AS INDICATED ON PLAN >FF50 / >FL50.
- 3. THE MINIMUM LOCAL VALUE FOR THE FLOOR FLATNESS/LEVELNESS SHALL NOT BE LESS THAN 67% OF THE SPECIFIED OVERALL VALUE
- 4. CONTRACTOR SHALL REPLACE AREAS THAT DO NOT MEET THESE CRITERIA. F. ALL REINFORCING BARS SHALL BE ASTM A615 GRADE 60. THICKNESS OF CONCRETE COVER OVER REINFORCEMENT SHALL BE NOT LESS THAN 3" WHERE CONCRETE IS DEPOSITED AGAINST THE GROUND WITHOUT THE USE OF FORMS AND NOT LESS THAN 1 1/2" IN ALL OTHER LOCATIONS. ALL REINFORCING SHALL BE LAPPED 36 DIAMETERS FOR UP TO #6 BARS, 60 DIAMETERS FOR #7 TO #10 BARS OR AS NOTED ON THE DRAWINGS AND EXTENDED AROUND CORNERS WITH CORNER BARS. PLACING AND DETAILING OF STEEL REINFORCING AND REINFORCING SUPPORTS
- SHALL BE IN ACCORDANCE WITH CRSI AND ACI MANUAL AND STANDARD PRACTICES. THE REINFORCEMENT SHALL NOT BE PAINTED AND MUST BE FREE OF GREASE/OIL, DIRT OR DEEP RUST WHEN PLACED IN THE WORK. ALL WELDED WIRE FABRIC SHALL MEET THE REQUIREMENTS OF ASTM A185. WELDED WIRE FABRIC SHALL BE PLACED 2" FROM TOP OF SLAB, UNLESS INDICATED OTHERWISE. 5. CONTRACTOR SHALL ENGAGE A QUALIFIED INDEPENDENT TESTING AND INSPECTING AGENCY TO SAMPLE
- MATERIALS, PERFORM TESTS, AND SUBMIT TEST REPORTS DURING CONCRETE PLACEMENT. TESTS WILL BE PERFORMED ACCORDING TO ACI 301. CAST AND LABORATORY CURE ONE SET OF FOUR STANDARD CYLINDERS FOR EACH COMPOSITE SAMPLE FOR EACH DAY'S POUR OF EACH CONCRETE MIX EXCEEDING 5 CU. YD., BUT LESS THAN 25 CU. YD., PLUS ONE SET FOR EACH ADDITIONAL 50 CU. YD. OR FRACTION THEREOF. PERFORM COMPRESSIVE-STRENGTH TESTS ACCORDING TO ASTM C 39. TEST TWO SPECIMENS AT 7 DAYS AND TWO SPECIMENS AT 28 DAYS. PERFORM SLUMP TESTING ACCORDING TO ASTM C 143. PROVIDE ONE TEST AT POINT OF PLACEMENT FOR EACH COMPOSITE SAMPLE, BUT NOT LESS THAN ONE TEST FOR EACH DAY'S POUR OF EACH CONCRETE MIX. PERFORM ADDITIONAL TESTS WHEN CONCRETE CONSISTENCY APPEARS TO CHANGE.
- H. PROTECT FRESHLY PLACED CONCRETE FROM PREMATURE DRYING AND EXCESSIVE COLD OR HOT TEMPERATURES. IN HOT, DRY, AND WINDY WEATHER, APPLY AN EVAPORATION-CONTROL COMPOUND ACCORDING TO MANUFACTURER'S INSTRUCTIONS AFTER SCREEDING AND BULL FLOATING, BUT BEFORE POWER FLOATING AND TROWELING
- I. LIMIT MAXIMUM WATER-CEMENTITIOUS RATIO OF CONCRETE EXPOSED TO FREEZING, THAWING AND DEICING SALTS TO 0 45
- J. APPLY TROWEL FINISH TO MONOLITHIC SLAB SURFACES TO BE EXPOSED TO VIEW AND SLAB SURFACES TO BE COVERED WITH RESILIENT FLOORING, CARPET, PAINT, OR OTHER THIN FILM-FINISH COATING SYSTEM. APPLY
- NONSLIP BROOM FINISH TO EXTERIOR CONCRETE PLATFORMS, STEPS, AND RAMPS, AND ELSEWHERE AS INDICATED. K. TEST RESULTS WILL BE REPORTED IN WRITING TO ARCHITECT, READY-MIX PRODUCER, AND CONTRACTOR WITHIN 24 HOURS AFTER TESTS. REPORTS OF COMPRESSIVE STRENGTH TESTS SHALL CONTAIN THE PROJECT IDENTIFICATION NAME AND NUMBER, DATE OF CONCRETE PLACEMENT, NAME OF CONCRETE TESTING SERVICE, CONCRETE TYPE AND CLASS, LOCATION OF CONCRETE BATCH IN STRUCTURE, DESIGN COMPRESSIVE STRENGTH AT 28 DAYS, CONCRETE MIX PROPORTIONS AND MATERIALS, COMPRESSIVE BREAKING STRENGTH, AND TYPE OF BREAK FOR BOTH 7-DAY TESTS AND 28-DAY TESTS.

DIVISION 6 WOOD, PLASTICS AND COMPOSITES

06 10 00 ROUGH CARPENTRY

- A. LUMBER SHALL BE GRADED AND STAMPED WITH MINIMUM STRUCTURAL DESIGN VALUES AS LISTED BELOW. 1. #1/#2 DOUG FIR — 850 PSI FB, 95 PSI FV, 1,600 KSI E (BEAMS, LINTELS & HEADERS, UNLESS NOTED). 2. #1/#2 S.P.F. — 875 PSI FB, 1,150 PSI FC, 1,400 KSI E (ALL STUDS & PLATES, UNLESS NOTED)
- 3. LVL @ 1,800 KSI E OR MICRO-LAM @ 1,900 KSI E 2600 PSI FB, 285 PSI FV (OR AS NOTED ON THE PLANS). 4. WOOD HEADER MATERIAL SHALL BE FREE OF ALL SPLITS, SHAKES AND CHECKS. B. MISCELLANEOUS LUMBER: PROVIDE NO. 3 OR STANDARD GRADE LUMBER OF ANY SPECIES FOR SUPPORT OR
- ATTACHMENT OF OTHER CONSTRUCTION, INCLUDING ROOFTOP EQUIPMENT CURBS AND SUPPORT BASES, CANT STRIPS, BUCKS, NAILERS, BLOCKING, AND SIMILAR MEMBERS.
- C. PROTECTION AGAINST DECAY WITH PRESERVATIVE-TREATED WOOD SHALL BE REQUIRED IN THE FOLLOWING AREAS: 1. ALL WOOD SILL PLATES, FRAMING, AND FURRING STRIPS ATTACHED TO EXTERIOR BELOW GRADE MASONRY AND CONCRETE WALLS.
- 2. ALL WOOD PLATES, BLOCKING, FRAMING AND FURRING STRIPS ATTACHED TO EXTERIOR, SINGLE-WYTHE MASONRY WALLS.
- 3. ALL WOOD CAP FLASHING BLOCKING ATTACHED TO MASONRY OR CONCRETE PARAPETS.
- 4. ALL WOOD SLEEPERS AND SILL PLATES ON CONCRETE SLABS IN DIRECT CONTACT WITH EARTH. a) EXCEPTION: WOOD SILL PLATES ON CONCRETE SLABS SEPARATED FROM DIRECT CONTACT TO THE EARTH WITH A 10 MIL POLYETHYLENE VAPOR RETARDANT WILL NOT REQUIRE PRESERVATIVE-TREATMENT. 5. ALL WOOD IN CONTACT WITH GROUND OR EXPOSED TO THE WEATHER.
- D. FINISHES FOR FASTENERS AND HARDWARE IN CONTACT WITH PRESERVATIVE-TREATED WOOD ARE BASED ON THE FOLLOWING ASSUMPTIONS
- 1. ALL INTERIOR TREATED WOOD SHALL USE AN ACQ-C, ACQ-D (CARBONATE), CBA-A, OR CA-B TREATMENT WITH RETENTION LEVELS LESS THAN OR EQUAL TO 0.40 PCF, 0.40 PCF, 0.41 PCF, AND 0.21 PCF RESPECTIVELY. 2. ALL CONNECTION HARDWARE AND FASTENERS IN DIRECT CONTACT WITH INTERIOR TREATED WOOD SHALL BE
- HOT-DIPPED GALVANIZED, MECHANICALLY GALVANIZED, OR STAINLESS STEEL. 3. ALL CONNECTION HARDWARE AND FASTENERS IN DIRECT CONTACT WITH EXPOSED EXTERIOR TREATED WOOD OR UNKNOWN TREATMENTS SHALL BE STAINLESS STEEL.
- 4. USE TAPCON "CLIMASEAL" FASTENERS TO CONNECT ACQ-TREATED WOOD BLOCKING TO MASONRY OR CONCRETE PARAPETS
- SHOP DRAWINGS FOR PRESERVATIVE-TREATED WOOD, HARDWARE, AND FASTENERS 1. THE CONTRACTOR SHALL FURNISH MATERIAL CERTIFICATES FOR ALL PRESERVATIVE-TREATED WOOD TYPES, SPECIFYING THE NAME OF THE TREATING COMPANY, THE PRESERVATIVE USED, THE LEVEL OF TREATMENT (0.10,
- 0.25, 0.40, ETC.), THE INTENDED USE (ABOVE GROUND, GROUND CONTACT, ETC.), AND A REFERENCE TO THE APPROPRIATE AWPA STANDARD 2. THE CONTRACTOR SHALL FURNISH MATERIAL DATA SHEETS FOR HARDWARE AND FASTENERS IN CONTACT WITH
- PRESERVATIVE-TREATED WOOD.

06 20 23 INTERIOR FINISH CARPENTRY

- A. BEFORE INSTALLING INTERIOR FINISH CARPENTRY, CONDITION MATERIALS TO AVERAGE PREVAILING HUMIDITY IN INSTALLATION AREAS FOR A MINIMUM OF 24 HOURS.
- B. INSTALL INTERIOR FINISH CARPENTRY LEVEL, PLUMB, TRUE, AND ALIGNED WITH ADJACENT MATERIALS. C. INSTALL TRIM WITH MINIMUM NUMBER OF JOINTS PRACTICAL, USING FULL LENGTH PIECES FROM MAXIMUM LENGTHS OF LUMBER AVAILABLE. COPE AT RETURNS, MITER AT OUTSIDE CORNERS AND COPE AT INSIDE CORNERS
- TO PRODUCE TIGHT FITTING JOINTS. USE SCARF JOINTS FOR END TO END JOINTS. D. IN STEEL STUD CONSTRUCTION, ATTACH WITH FINISH SCREWS - PREDRILL AND COUNTERSINK FASTENERS, FILL SURFACE FLUSH WITH FINISH COMPATIBLE FILLER AND SAND SMOOTH - PROVIDE SAMPLE TO OWNER/ INTERIOR
- DESIGNER E. SEE PLANS FOR INTERIOR TRIM AND CARPENTRY MATERIAL TYPE AND LOCATION.

06 40 23 INTERIOR ARCHITECTURAL WOODWORK

- A. BEFORE INSTALLATION, CONDITION WOODWORK TO AVERAGE PREVAILING HUMIDITY CONDITIONS IN
- INSTALLATION AREAS. EXAMINE SHOP-FABRICATED WORK FOR COMPLETION AND COMPLETE WORK AS REQUIRED
- B. INSTALL WOODWORK TO COMPLY WITH REQUIREMENTS FOR THE SAME GRADE SPECIFIED ON THE PLANS FOR FABRICATION OF TYPE OF WOODWORK INVOLVED.
- C. INSTALL WOODWORK LEVEL, PLUMB, TRUE, AND STRAIGHT TO A TOLERANCE OF 1/8 INCH IN 96 INCHES. SHIM AS REQUIRED WITH CONCEALED SHIMS.
- D. SCRIBE AND CUT WOODWORK TO FIT ADJOINING WORK, REFINISH CUT SURFACES AND REPAIR DAMAGED FINISH AT CUTS.
- E. INSTALL CABINETS WITHOUT DISTORTION SO DOORS AND DRAWERS FIT OPENINGS PROPERLY AND ARE ACCURATELY ALIGNED. ADJUST HARDWARE TO CENTER DOORS AND DRAWERS IN OPENINGS AND TO PROVIDE UNENCUMBERED OPERATION.

- F. ANCHOR COUNTERTOPS SECURELY THROUGH SUPPORTS INTO UNDERSIDE OF COUNTERTOP. CAULK SPACE
- BETWEEN BACKSPLASH AND WALL WITH SEALANT G. SEE PLAN FOR CABINETS, COUNTERTOPS, WINDOW SILLS, ETC., MATERIAL TYPE AND LOCATION.

DIVISION 07 THERMAL AND MOISTURE PROTECTION

07 21 00 INSULATION

- A. ALL INSULATION MATERIALS AND INSTALLATION SHALL COMPLY WITH LOCAL AND STATE CODES. B. PRODUCT: FIBERGLASS INSULATION TO BE FIBERGLASS BATT OR ROLL COMPLYING WITH ASTM C665 AND NONCOMBUSTIBLE PER ASTM E136. THICKNESS OR R VALUE AS INDICATED ON PLANS. IF THICKNESS IS NOT SHOWN ON PLANS, THICKNESS TO BE THE DEPTH OF THE WALL OR RAFTER SYSTEM.
- 1. MANUFACTURER: CERTAINTEED OR OWNENS CORNING C. PRODUCT: VAPOR RETARDER TO BE MEMBRANE VAPOR RETARDER INSTALLED ON WARM SIDE (NORMALLY INSIDE) FACE OF THE INSULATION
- 1. MANUFACTURER: "MEMBRAIN" BY CERTAINTEED
- D. PRODUCT: BLOWN IN FIBER GLASS INSULATION TO BE INSULSAFE SP.
- 1. MANUFACTURER: CERTAINTEED E. PRODUCT: BLOWN IN WALL INSULATION TO BE OPTIMA.
- 1. MANUFACTURER: CERTAINTEED
- F. PRODUCT: ACOUSTICAL WALL INSULATION TO BE NOISE REDUCER SOUND CONTROL BATTS IN WOOD FRAME CONSTRUCTION. WALL INSULATION TO BE CERTASOUND SOUND ATTENUATION BATTS IN METAL FRAMED WALLS AND CEILINGS. ACOUSTICAL CEILING BATTS TO BE CERTASOUND. 1. MANUFACTURER: CERTAINTEED

07 84 13 PENETRATION FIRESTOPPING

A. PROVIDE PRODUCTS BY ONE OF THE FOLLOWING:

- 1. GRACE CONSTRUCTION PRODUCTS 2. <u>HILTI, INC</u>.
- 3. JOHNS MANVILLE
- 4. <u>3M FIRE PROTECTION PRODUCTS</u>
- 5. TREMCO, INC. TREMCO FIRE PROTECTION SYSTEMS GROUP 6. USG CORPORATION
- B. PROVIDE PENETRATION FIRESTOPPING THAT IS PRODUCED AND INSTALLED TO RESIST SPREAD OF FIRE ACCORDING TO REQUIREMENTS INDICATED, RESIST PASSAGE OF SMOKE AND OTHER GASES, AND MAINTAIN ORIGINAL FIRE-RESISTANCE RATING OF CONSTRUCTION PENETRATED. PENETRATION FIRESTOPPING SYSTEMS SHALL BE COMPATIBLE WITH ONE ANOTHER, WITH THE SUBSTRATES FORMING OPENINGS, AND WITH PENETRATING ITEMS IF ΔΝΥ
- C. PENETRATIONS IN FIRE-RESISTANCE-RATED WALLS: RATINGS DETERMINED PER ASTM E 814 OR UL 1479.
- 1. F-RATING: NOT LESS THAN THE FIRE-RESISTANCE RATING OF CONSTRUCTIONS PENETRATED.
- D. PENETRATIONS IN HORIZONTAL ASSEMBLIES: RATINGS DETERMINED PER ASTM E 814 OR UL 1479. 1. F-RATING: AT LEAST 1 HOUR, BUT NOT LESS THAN THE FIRE-RESISTANCE RATING OF CONSTRUCTIONS
- PENETRATED 2. T-RATING: AT LEAST 1 HOUR, BUT NOT LESS THAN THE FIRE-RESISTANCE RATING OF CONSTRUCTIONS PENETRATED EXCEPT FOR FLOOR PENETRATIONS WITHIN THE CAVITY OF A WALL
- E. PENETRATIONS IN SMOKE BARRIERS: PROVIDE PENETRATION FIRESTOPPING WITH RATINGS DETERMINED PER UL 1479. 1. L-RATING: NOT EXCEEDING 5.0 CFM/SQ. FT. OF PENETRATION OPENING AT BOTH AMBIENT AND ELEVATED
- TEMPERATURES F. EXPOSED PENETRATION FIRESTOPPING: PROVIDE PRODUCTS WITH FLAME-SPREAD AND SMOKE-DEVELOPED
- INDEXES OF LESS THAN 25 AND 450, RESPECTIVELY, AS DETERMINED PER ASTM E 84. G. ACCESSORIES: PROVIDE COMPONENTS FOR EACH PENETRATION FIRESTOPPING SYSTEM THAT ARE NEEDED TO
- INSTALL FILL MATERIALS AND TO MAINTAIN RATINGS REQUIRED. USE ONLY THOSE COMPONENTS SPECIFIED BY PENETRATION FIRE STOPPING MANUFACTURER AND APPROVED BY QUALIFIED TESTING AND INSPECTING AGENCY FOR FIRESTOPPING INDICATED.
- H. EXAMINE SUBSTRATES AND CONDITIONS, FOR COMPLIANCE WITH REQUIREMENTS FOR OPENING CONFIGURATIONS, PENETRATING ITEMS, SUBSTRATES, AND OTHER CONDITIONS AFFECTING PERFORMANCE OF THE WORK. I. INSTALL PENETRATION FIRE STOPPING TO COMPLY WITH MANUFACTURER'S WRITTEN INSTALLATION INSTRUCTIONS
- AND PUBLISHED DRAWINGS FOR PRODUCTS AND APPLICATIONS INDICATED J. INSTALL FORMING MATERIALS AND OTHER ACCESSORIES OF TYPES REQUIRED TO SUPPORT FILL MATERIALS DURING THEIR APPLICATION AND IN THE POSITION NEEDED TO PRODUCE CROSS-SECTIONAL SHAPES AND DEPTHS REQUIRED
- TO ACHIEVE FIRE RATINGS INDICATED 1. AFTER INSTALLING FILL MATERIALS AND ALLOWING THEM TO FULLY CURE, REMOVE COMBUSTIBLE FORMING MATERIALS AND OTHER ACCESSORIES NOT INDICATED AS PERMANENT COMPONENTS OF FIRESTOPPING. K. INSTALL FILL MATERIALS FOR FIRESTOPPING BY PROVEN TECHNIQUES TO PRODUCE THE FOLLOWING RESULTS:
- 1. FILL VOIDS AND CAVITIES FORMED BY OPENINGS, FORMING MATERIALS, ACCESSORIES, AND PENETRATING ITEMS AS REQUIRED TO ACHIEVE FIRE-RESISTANCE RATINGS INDICATED. 2. APPLY MATERIALS SO THEY CONTACT AND ADHERE TO SUBSTRATES FORMED BY OPENINGS AND PENETRATING
- 3. FOR FILL MATERIALS THAT WILL REMAIN EXPOSED AFTER COMPLETING THE WORK, FINISH TO PRODUCE
- SMOOTH, UNIFORM SURFACES THAT ARE FLUSH WITH ADJOINING FINISHES.

L. IDENTIFY PENETRATION FIRESTOPPING WITH PREPRINTED METAL OR PLASTIC LABELS. ATTACH LABELS PERMANENTLY TO SURFACES ADJACENT TO AND WITHIN 6 INCHES OF FIRESTOPPING EDGE SO LABELS WILL BE VISIBLE TO ANYONE SEEKING TO REMOVE PENETRATING ITEMS OR FIRESTOPPING. USE MECHANICAL FASTENERS OR SELF-ADHERING-TYPE LABELS WITH ADHESIVES CAPABLE OF PERMANENTLY BONDING LABELS TO SURFACES ON WHICH LABELS ARE PLACED. INCLUDE THE FOLLOWING INFORMATION ON LABELS:

1. THE WORDS "WARNING - PENETRATION FIRESTOPPING - DO NOT DISTURB. NOTIFY BUILDING MANAGEMENT OF ANY DAMAGE"

- 2. CONTRACTOR'S NAME, ADDRESS, AND PHONE NUMBER
- 3. DESIGNATION OF APPLICABLE TESTING AND INSPECTING AGENCY
- 4. DATE OF INSTALLATION 5. MANUFACTURER'S NAME
- 6. INSTALLER'S NAME

07 92 00 SEALANTS

- A. GENERAL: IT IS THE INTENTION OF THIS SPECIFICATION THAT ALL JOINTS ARE TO RECEIVE SEALANT. SEALANT SHALL BE APPLIED IN ALL LOCATIONS INDICATED ACCORDING TO THE MANUFACTURER'S WRITTEN INSTRUCTIONS, INCLUDING BUT NOT LIMITED TO; JOINT WIDTH, SURFACE PREPARATION, PRIMERS, APPLICATION TEMPERATURE, AND MATERIAL STORAGE. SEALANT IS TO BE APPLIED AFTER FINISH OPERATIONS ARE COMPLETE. UNLESS OTHERWISE NOTED IN THE MANUFACTURER'S INSTRUCTIONS, APPROPRIATE SIZED BACKER RODS AND BOND BREAK IS REQUIRED AT ALL JOINTS.
- B. EXTERIOR:
- 1. SEAL PERIMETER OF ALL WINDOWS, DOORS, LOUVERS, VENT OPENINGS, AND ANY LOCATION WHERE DIFFERENT MATERIALS MEET, WITH SEALANT TYPE ES-1.
- 2. SEAL JOINTS AT ROOF OPENINGS, EAVES, AND SOFFITS, FOR A WATERTIGHT CONNECTION WITH SEALANT TYPE ES-2.
- 3. SEAL THRESHOLDS TO SUBSTRATE WITH SEALANT TYPE ES-3.
- 4. SEAL ALL CMU CONTROL JOINTS, JOINTS IN PRE-CAST CONCRETE PANELS, AND JOINTS BETWEEN PRE-CAST COMPONENTS AND MASONRY OR OTHER PRE-CAST OR CAST-IN —PLACE CONCRETE, WITH SEALANT TYPE ES-1. 5. SEAL ALL JOINTS IN TRAFFIC SURFACES SUCH AS CONCRETE PAVEMENT, SIDEWALKS, AND PADS WITH SEALANT TYPE ES-5. USE ES-6 AT SURFACES SLOPING IN EXCESS OF 1/2" PER FOOT.
- 6. SEAL BASE CHANNELS FOR INSULATED METAL PANELS WITH SEALANT TYPE ES-7.
- 7. SEAL PANEL TO PANEL JOINTS IN INSULATED METAL PANELS WITH SEALANT TYPE ES-7.
- 8. SEAL FACE JOINTS IN INSULATED PANELS WHERE INDICATED WITH SEALANT TYPE ES-8.
- C. INTERIOR:
- 1. SEAL ALL CMU CONTROL JOINTS, JOINTS IN PRE-CAST CONCRETE PANELS, AND JOINTS BETWEEN PRE-CAST COMPONENTS AND MASONRY OR OTHER PRE-CAST OR CAST-IN —PLACE CONCRETE, WITH SEALANT TYPE ES-1.
- 2. SEAL JOINTS IN EXPOSED CONCRETE SLABS IN WITH SEALANT TYPE ES-9.
- 3. SEAL JOINTS BETWEEN TOP OF CONCRETE CURBS AND INSULATED METAL PANELS WITH SEALANT TYPE ES-10. 4. SEAL JOINTS IN COOLER AND FREEZER FLOORS WITH SEALANT ES-11.
- 5. SEAL JOINTS AT ALL LOCATIONS INDICATED TO RECEIVE "STRANLOK" FINISH IN FOOD PROCESSING FACILITIES, FOOD PREPARATION, AND FOOD STORAGE AREAS WITH SEALANT TYPE ES-10.
- 6. SEAL COUNTERTOPS, BACKSPLASH, PERIMETERS OF PLUMBING FIXTURES WITH SEALANT TYPE ES-12. 7. SEAL UNDER BASE TRACK FOR DRYWALL PARTITIONS, INTERIOR DOOR AND WINDOW FRAMES, AND WALL
- ANGLE AT SUSPENDED CEILINGS WITH SEALANT TYPE AS-1. D. SEALANT SCHEDULE: (SIMILAR PRODUCTS BY OTHER MANUFACTURERS MAY BE SUBMITTED FOR APPROVAL.)
- 1. ES-1: TREMCO "DYMONIC FC", ONE PART HIGH PERFORMANCE POLYURETHANE SEALANT.
- 2. ES-2: TREMCO "GUTTER SEAL" SYNTHETIC RUBBER AND RESIN SEALANT. ES-3 TREMCO "BUTYL SEALANT"
- 4. ES-4 TREMCO "VULKEM 116" ONE PART LOW MODULUS POLYURETHANE SEALANT.
- 5. ES-5: TREMCO "VULKEM 45" ONE PART, SELF LEVELING, POLYURETHANE SEALANT.
- 6. ES-6: TREMCO "VULKEM 45SSL" ONE PART, SELF LEVELING, POLYURETHANE SEALANT.
- 7. ES-7: TREMCO "DYMONIC" ONE PART, HIGH PERFORMANCE, LOW MODULUS, POLYURETHANE SEALANT. 8. ES-8: TREMCO "SPECTREM 3" ONE PART, LOW MODULUS SILICONE SEALANT.
- 9. ES-9: VERSA-FLEX "SL/85" TWO PART, SELF-LEVELING, POLYUREA SEALANT.
- 10. ES-10: TREMCO DYMERIC 240FC, MULTI-COMPONENT CHEMICALLY CURING POLYURETHANE SEALANT.
- 11. ES-11: M&M "SPAL-PRO RSF" TWO COMPONENT POLYUREA JOINT FILLER.
- 12. ES-12: GE SILICONE II KITCHEN AND BATH SILICONE SEALANT.
- 13. AS-1: DAP "ALEX PLUS" PAINTABLE ACRYLIC-SILICONIZED SEALANT



PROJECT INFORMATION

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GENERAL BUILDING SPECIFICATIONS

08 11 13 HOLLOW METAL DOORS AND FRAMES

- A. HOLLOW METAL FRAMES: COMPLY WITH ANSI/SDI A250.11.
- 1. SET FRAMES ACCURATELY IN POSITION, PLUMBED, ALIGNED, AND BRACED SECURELY UNTIL PERMANENT ANCHORS ARE SET. AFTER WALL CONSTRUCTION IS COMPLETE, REMOVE TEMPORARY BRACES, LEAVING SURFACES SMOOTH AND UNDAMAGED.
- a. AT FIRE-PROTECTION-RATED OPENINGS, INSTALL FRAMES ACCORDING TO NFPA 80. B. HOLLOW METAL DOORS: FIT HOLLOW METAL DOORS ACCURATELY IN FRAMES, WITHIN CLEARANCES. SHIM AS NECESSARY TO ACHIEVE CLEARANCES INDICATED. 1. FIRE-RATED DOORS: INSTALL DOORS WITH CLEARANCES ACCORDING TO NFPA 80.
- 2. SMOKE-CONTROL DOORS: INSTALL DOORS ACCORDING TO NFPA 105. C. SEE PLAN FOR PRODUCT SPECIFICATION AND LOCATION. FURNISH AND INSTALL ALL DOORS AND FRAMES AS INDICATED ON THE PLANS.

08 14 16 FLUSH WOOD DOORS

Plan review notes may not reflect all code deficiencie: Failure to identify a code deficiency during a review of p Does not alleviate any obligation to comply with all applicab code provisions

TE: 08/30/19

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- A. INSTALL DOORS TO COMPLY WITH MANUFACTURER'S WRITTEN INSTRUCTIONS AND THE REFERENCED QUALITY STANDARD, AND AS INDICATED.
- 1. INSTALL FIRE-RATED DOORS IN CORRESPONDING FIRE-RATED FRAMES ACCORDING TO NFPA 80. B. ALIGN IN FRAMES FOR UNIFORM CLEARANCE AT EACH EDGE.
- C. SEE PLAN FOR PRODUCT SPECIFICATION AND LOCATION. FURNISH AND INSTALL ALL DOORS AS INDICATED ON THE PLANS.

08 41 13 ALUMINUM-FRAMED ENTRANCES AND STOREFRONTS

A. INSTALLATION

- 1. COMPLY WITH MANUFACTURER'S WRITTEN INSTRUCTIONS. 2. DO NOT INSTALL DAMAGED COMPONENTS.
- 3. FIT JOINTS TO PRODUCE HAIRLINE JOINTS FREE OF BURRS AND DISTORTION.
- 4. RIGIDLY SECURE NONMOVEMENT JOINTS. 5. INSTALL ANCHORS WITH SEPARATORS AND ISOLATORS TO PREVENT METAL CORROSION AND ELECTROLYTIC DETERIORATION.
- 6. SEAL JOINTS WATERTIGHT UNLESS OTHERWISE INDICATED.
- B. INSTALL COMPONENTS TO DRAIN WATER PASSING JOINTS, CONDENSATION OCCURRING WITHIN FRAMING MEMBERS, AND MOISTURE MIGRATING WITHIN THE SYSTEM TO EXTERIOR.
- C. INSTALL COMPONENTS PLUMB AND TRUE IN ALIGNMENT WITH ESTABLISHED LINES AND GRADES, AND WITHOUT WARP OR RACK
- D. ENTRANCE DOORS: INSTALL DOORS TO PRODUCE SMOOTH OPERATION AND TIGHT FIT AT CONTACT POINTS. E. SEE PLAN FOR PRODUCT SPECIFICATION AND LOCATION. FURNISH AND INSTALL ALL ENTRANCES AND STOREFRONTS AS INDICATED ON THE PLANS.

08 71 00 HARDWARE

- A. REOUIREMENTS: 1. ALL LOCKSETS SHALL BE LEVER TYPE AS REQUIRED TO MEET REQUIREMENTS OF A.D.A.
- 2. ALL OTHER HARDWARE SHALL CONFORM TO THE REQUIREMENTS OF A.D.A.
- 3. ALL EXIT DOORS SHALL BE EQUIPPED WITH LEVER TYPE OR PANIC TYPE EXIT HARDWARE OPENABLE FROM THE INSIDE WITHOUT THE USE OF A LATCH, KEY OR BOLT. 4. CONTRACTOR TO COORDINATE KEYING SCHEDULE WITH OWNER.
- B. MOUNTING HEIGHTS: MOUNT DOOR HARDWARE UNITS AT HEIGHTS REQUIRED TO COMPLY WITH GOVERNING
- REGULATIONS C. INSTALL EACH DOOR HARDWARE ITEM TO COMPLY WITH MANUFACTURER'S WRITTEN INSTRUCTIONS.
- D. THRESHOLDS: SET THRESHOLDS FOR EXTERIOR AND ACOUSTICAL DOORS IN FULL BED OF SEALANT.
- E. ADJUSTMENT: ADJUST AND CHECK EACH OPERATING ITEM OF DOOR HARDWARE AND EACH DOOR TO ENSURE PROPER OPERATION OR FUNCTION OF EVERY UNIT. REPLACE UNITS THAT CANNOT BE ADJUSTED TO OPERATE AS INTENDED. ADJUST DOOR CONTROL DEVICES TO COMPENSATE FOR FINAL OPERATION OF HEATING AND VENTILATING EQUIPMENT AND TO COMPLY WITH REFERENCED ACCESSIBILITY REQUIREMENTS.
- F. SEE PLAN FOR PRODUCT SPECIFICATION AND LOCATION. FURNISH AND INSTALL ALL HARDWARE AS INDICATED ON THE PLAN.

08 80 00 GLAZING

- A. COMPLY WITH COMBINED WRITTEN INSTRUCTIONS OF MANUFACTURERS OF GLASS, SEALANTS, GASKETS, AND OTHER GLAZING MATERIALS, UNLESS MORE STRINGENT REQUIREMENTS ARE INDICATED, INCLUDING THOSE IN REFERENCED GLAZING PUBLICATIONS.
- B. PROTECT GLASS EDGES FROM DAMAGE DURING HANDLING AND INSTALLATION. REMOVE DAMAGED GLASS FROM PROJECT SITE AND LEGALLY DISPOSE OF OFF PROJECT SITE. DAMAGED GLASS IS GLASS WITH EDGE DAMAGE OR OTHER IMPERFECTIONS THAT, WHEN INSTALLED, COULD WEAKEN GLASS AND IMPAIR PERFORMANCE AND
- APPEARANCE. C. PROVIDE SAFETY GLASS IN ALL GLAZING AS LISTED BELOW UNLESS NOTED OTHERWISE:
- 1. WHERE REQUIRED BY FEDERAL, STATE AND LOCAL CODES.
- D. SAFETY GLASS REQUIREMENTS: 1. SAFETY GLASS SHALL BE, BUT NOT LIMITED TO
 - a. TEMPERED GLASS
 - b. LAMINATED GLASS c. SAFETY PLASTIC
- d. SAFETY INSULATING UNITS WHICH MEET THE TEST REQUIREMENTS OF ANSI Z97.1, AND WHICH ARE CONSTRUCTED, TREATED, OR COMBINED WITH OTHER MATERIALS SO AS TO MINIMIZE THE LIKELIHOOD OF CUTTING AND PIERCING INJURIES RESULTING FROM HUMAN IMPACT WITH THE GLAZING MATERIAL. 2. ALL SAFETY GLAZING MATERIAL SHALL BE LABELED PER LOCAL, STATE, AND FEDERAL REQUIREMENTS.
- E. SEE PLAN FOR PRODUCT SPECIFICATION AND LOCATION. FURNISH AND INSTALL THE GLAZING AS INDICATED ON THE PLAN.

DIVISION 09 FINISHES

09 01 00 FINISHES

- A. REQUIREMENTS:
- 1. PROVIDE AND INSTALL ALL FINISHES AS INDICATED ON PLANS.
- 2. INSTALL ALL MATERIALS PER MANUFACTURER'S RECOMMENDATIONS AND SPECIFICATIONS. 3. "FINISH" INSTALLER INSPECT SUBSURFACE AND PREPARE AS PER MANUFACTURER'S SPECIFICATIONS PRIOR TO INSTALLATION OF PRODUCT
- 4. ALL FINISHES TO MEET ALL CODE REQUIREMENTS AND REGULATIONS INCLUDING FLAME SPREAD AND SMOKE DEVELOPMENT. B. EXTRA MATERIAL
- 1. PROVIDE NEW, EXTRA MATERIAL OF EACH FINISH TYPE AND COLOR TO BE TURNED OVER TO OWNER AT JOB COMPLETION FOR THE FOLLOWING ITEMS
- a. PAINT: PROVIDE 1 GALLON FOR FIELD COLORS AND 1 QUART FOR ACCENT COLORS APPLIED. b. RESILIENT TILE FLOORING: PROVIDE 1 BOX FOR EVERY 50 BOXES OR FRACTION THEREOF INSTALLED.
- FURNISH MINIMUM 10 LINEAR FEET FOR EACH 500 LINEAR FEET OR FRACTION THEREOF OF EACH TYPE OF RESLIENT ACCESSORY SUPPLIED.
- c. ACOUSTICAL CEILING TILE: PROVIDE FULL-SIZE UNITS EQUAL TO 2% OF QUANTITY INSTALLED, BUT NOT LESS THAN 1 BOX OF EACH TYPE OF CEILING TILE SUPPLIED. d. WOOD FLOORING: PROVIDE FULL-SIZE UNITS EQUAL TO 3% OF QUANTITY INSTALLED, BUT NOT LESS THAN
- 50 S F e. LAMINATE FLOORING: CERAMIC, QUARRY AND PORCELAIN TILE: PROVIDE FULL-SIZE UNITS EQUAL TO 3% OF QUANTITY INSTALLED, BUT NOT LESS THAN 50 S.F.
- f. RESILIENT SHEET FLOORING: PROVIDE NOT LESS THAN 10 LINEAR FEET FOR EACH 500 LINEAR FEET OR FRACTION THEREOF INSTALLED.
- g. WALL COVERING MATERIAL: PROVIDE FULL-SIZE UNITS EQUAL TO 5 PERCENT INSTALLED. h. TILE CARPET: PROVIDE FULL-SIZE UNITS EQUAL TO 5 PERCENT OF THE AMOUNT INSTALLED, BUT NOT LESS
- THAN 10 SQ. YD.
- i. SHEET CARPET: PROVIDE FULL-WIDTH ROLLS EQUAL TO 5 PERCENT OF THE AMOUNT INSTALLED, BUT NOT LESS THAN 10 SQ. YD.
- j. CERAMIC, QUARRY AND PORCELAIN TILE: PROVIDE FULL-SIZE UNITS EQUAL TO 3% OF QUANTITY INSTALLED, BUT NOT LESS THAN 50 S.F.

09 22 16 DRYWALL STUDS (INTERIOR NON-BEARING)

A. REQUIREMENTS

- 1. STUDS SHALL BE SECURED TO TOP AND BOTTOM TRACK WITH (1) #8ML SCREW IN EACH FLANGE (UNLESS A SLIP TRACK IS REQUIRED AT THE TOP OF THE WALL). 2. PROVIDE SLIP TRACK AT TOP OF FULL HEIGHT PARTITIONS.
- 3. STUDS SHALL BE INSTALLED PER "GYPSUM CONSTRUCTION HANDBOOK" AS PUBLISHED BY UNITED STATES
- GYPSUM COMPANY LATEST EDITION 4. DRYWALL STUDS SHALL BE ACCORDING TO THE LIST BELOW OR AS INDICATED ON THE PLANS (THESE HEIGHTS
- ARE BASED ON THE STUDS HAVING (1) LAYER OF DRYWALL EACH FACE).
- 5. STUD SIZE GAUGE LIMITING HEIGHT WITH STUD SPACING
- a. 3 5/8" 25 GA. 13'-6" AT 16" O.C. 11'-9" AT 24" O.C.
- b. 3 5/8" 22 GA. 15'-3" AT 16" O.C. 13'-4" AT 24" O.C. c. 3 5/8" — 20 GA. — 15'-11" AT 16" O.C. — 13'-11" AT 24" O.C.

PROVIDE MOISTURE AREAS PROVIDE 1. DUROCK CEMENT BOARD BY USG CORPORATION OR EQUAL

2. BPB AMERICAN INC.

USG CORPORATION

LOCATIONS PROVIDE:

3. G-P GYPSUM

- G. DRYWALL FINISHES SHALL BE INSTALLED PER THE LATEST EDITION OF "RECOMMENDED LEVELS OF GYPSUM BOARD FINISH" GA-214 AS PUBLISHED BY THE AWCI, PAINTING AND DECORATING CONTRACTORS OF AMERICA, GYPSUM ASSOCIATION AND CISCA. PROVIDE A LEVEL 1 FINISH AT ALL CONCEALED AND ABOVE CEILING AREAS AND A LEVEL 4 FINISH ON ALL EXPOSED BELOW CEILING AREAS OR AS NOTED ON PLANS.
- H. LEVELS OF FINISH 1. SEE PLANS FOR FINISH LOCATIONS.
- 2. LEVEL 0 NO TAPING, FINISHING OR ACCESSORIES REQUIRED. 3. LEVEL 1 — JOINTS AND INTERIOR ANGLES HAVE TAPE SET IN JOINT COMPOUND; SURFACE IS FREE OF EXCESS JOINT COMPOUND; TOOL MARKS AND RIDGES ARE ACCEPTABLE; TAPE AND FASTENERS ARE NOT COVERED WITH
- JOINT COMPOUND. 4. LEVEL 2 — JOINTS AND INTERIOR ANGLES HAVE TAPE EMBEDDED IN JOINT COMPOUND AND HAVE A THIN COAT OF JOINT COMPOUND OVER JOINTS AND INTERIOR ANGLES; FASTENER HEADS AND ACCESSORIES ARE COVERED WITH JOINT COMPOUND; SURFACE IS FREE OF EXCESS JOINT COMPOUND; TOOL MARKS AND RIDGES ARE
- ACCEPTABLE 5. LEVEL 3 — JOINTS AND INTERIOR ANGLES HAVE TAPE EMBEDDED IN JOINT COMPOUND AND ONE ADDITIONAL COAT OF JOINT COMPOUND OVER ALL JOINTS AND INTERIOR ANGLES; FASTENER HEADS AND ACCESSORIES
- COVERED WITH TWO (2) COATS OF JOINT COMPOUND; NO TOOL MARKS OR RIDGES. 6. LEVEL 4 — JOINTS AND INTERIOR ANGLES HAVE TAPE EMBEDDED IN JOINT COMPOUND AND TWO SEPARATE
- COATS OF JOINT COMPOUND APPLIED OVER ALL FLAT JOINTS AND ONE SEPARATE COAT APPLIED OVER INTERIOR ANGLES; FASTENER HEADS AND ACCESSORIES ARE COVERED WITH THREE (3) SEPARATE COATS OF
- JOINT COMPOUND: NO TOOL MARKS OR RIDGES. 7. LEVEL 5 — IN ADDITION TO REQUIREMENTS OF LEVEL 4, A THIN SKIM COAT OF JOINT COMPOUND OR EQUAL SHALL BE APPLIED TO THE ENTIRE SURFACE: NO TOOL MARKS OR RIDGES ON THIS SURFACE.

09 30 00 PORCELAIN/CERAMIC TILING

- A. COMPLY WITH TCA'S "HANDBOOK FOR CERAMIC TILE INSTALLATION" FOR TCA INSTALLATION METHODS SPECIFIED
- IN TILE INSTALLATION SCHEDULES
- DFTAILS C. PROVIDE MANUFACTURER'S STANDARD PORCELAIN / CERAMIC TILE AS SPECIFIED COMPLYING WITH STANDARD GRADE REQUIREMENTS OF ANSI A137.1 STATIC COEFFICIENT OF FRICTION TO BE 0.60 MIN AND A DYNAMIC
- COEFFICIENT OF FRICTION OF 0.42 MIN.
- COVERING WITHOUT INTERRUPTIONS UNLESS OTHERWISE INDICATED. TERMINATE WORK NEATLY AT OBSTRUCTIONS, EDGES, AND CORNERS WITHOUT DISRUPTING PATTERN OR JOINT ALIGNMENTS. F. ACCURATELY FORM INTERSECTIONS AND RETURNS. PERFORM CUTTING AND DRILLING OF TILE WITHOUT MARRING VISIBLE SURFACES CAREEULLY GRIND OUT EDGES OF THE ABUTTING TRIM FINISH OR BUILT IN ITEMS FOR STRAIGHT ALIGNED JOINTS. FIT TILE CLOSELY TO ELECTRICAL OUTLETS, PIPING, FIXTURES, AND OTHER PENETRATIONS SO PLATES, COLLARS, OR COVERS OVERLAP TILE.
- G. JOINTING PATTERN: LAY TILE IN GRID PATTERN UNLESS OTHERWISE INDICATED. LAY OUT TILE WORK AND CENTER TILE FIELDS IN BOTH DIRECTIONS IN EACH SPACE OR ON EACH WALL AREA. LAY OUT TILE WORK TO MINIMIZE THE USE OF PIECES THAT ARE LESS THAN HALF OF A TILE. PROVIDE UNIFORM JOINT WIDTHS UNLESS OTHERWISE INDICATED
- H. METAL EDGE STRIPS: INSTALL WHERE EXPOSED EDGE OF TILE FLOORING MEETS CARPET, WOOD, OR OTHER FLOORING THAT FINISHES FLUSH WITH OR BELOW TOP OF TILE AND NO THRESHOLD IS INDICATED.
- I. SEE PLAN FOR PRODUCT SPECIFICATION AND LOCATION.

09 51 13 ACOUSTICAL PANEL CEILINGS

- A. COMPLY WITH ASTM C636 (STANDARD PRACTICE FOR INSTALLATION OF METAL CEILING SUSPENSION SYSTEMS FOR ACOUSTICAL TILE AND LAY-IN PANELS), ASTM C635 (STANDARD SPECIFICATION FOR THE MANUFACTURE, PERFORMANCE AND TESTING OF METAL SUSPENSION SYSTEMS FOR ACOUSTICAL TILE AND LAY-IN PANEL CEILINGS) AND SEISMIC DESIGN REQUIREMENTS INDICATED, PER MANUFACTURER'S WRITTEN INSTRUCTIONS AND CISCA'S
- "CEILING SYSTEMS HANDBOOK". B. SUSPEND CEILING HANGERS FROM BUILDING'S STRUCTURAL MEMBERS, PLUMB AND FREE FROM CONTACT WITH INSULATION OR OTHER OBJECTS WITHIN CEILING PLENUM. SPLAY HANGERS ONLY WHERE REQUIRED AND, IF PERMITTED WITH FIRE-RESISTANCE-RATED CEILINGS, TO MISS OBSTRUCTIONS, OFFSET RESULTING HORIZONTAL FORCES BY BRACING, COUNTER SPLAYING, OR OTHER EQUALLY EFFECTIVE MEANS. WHERE WIDTH OF DUCTS AND OTHER CONSTRUCTION WITHIN CEILING PLENUM PRODUCES HANGER SPACING THAT INTERFERE WITH LOCATION OF HANGERS, USE TRAPEZES OR EQUIVALENT DEVICES. WHEN STEEL FRAMING DOES NOT PERMIT INSTALLATION OF HANGER WIRES AT SPACING REQUIRED, INSTALL CARRYING CHANNELS OR OTHER SUPPLEMENTAL SUPPORT FOR ATTACHMENT OF HANGER WIRES. WIRE HANGERS TO BE ZINC-COATED CARBON STEEL WIRE COMPLYING WITH ASTM A641 STANDARDS, SIZED TO WITHSTAND 5X THE HANGER DESIGN LOAD BUT NOT LESS THAN .106" C. INSTALL EDGE MOLDINGS AND TRIM AT PERIMETER OF ACOUSTICAL CEILING AREA AND WHERE NECESSARY TO
- CONCEAL EDGES OF ACOUSTICAL PANELS. SCREW ATTACH MOLDINGS TO SUBSTRATE, LEVELING WITH CEILING SUSPENSION SYSTEM. MITER CORNERS ACCURATELY AND CONNECT SECURELY. D. INSTALL SUSPENSION SYSTEM RUNNERS SO THEY ARE SQUARE AND SECURELY INTERLOCKED WITH ONE ANOTHER.
- REMOVE AND REPLACE DENTED, BENT, OR KINKED MEMBERS. SUSPENSION SYSTEM AS REQUIRED FOR THE SPECIFIED TILE-INTERMEDIATE DUTY CLASSIFICATION.
- E. PROVIDE CORROSION RESISTANT GRID IN SHOWER AND EXTREME ENVIRONMENT AREAS.
- F. INSTALL ACOUSTICAL PANELS WITH UNDAMAGED EDGES AND FIT ACCURATELY INTO SUSPENSION SYSTEM RUNNERS AND EDGE MOLDINGS. SCRIBE AND CUT PANELS AT BORDERS AND PENETRATIONS TO PROVIDE A NEAT, PRECISE FIT. G. PROVIDE HOLD-DOWN CLIPS AT ENTRY VESTIBULE(S) AND FOR FIRST 12' OF CORRIDOR(S) IN FRONT OF EACH
- EXTERIOR DOOR
- I. SEE PLAN FOR PRODUCT SPECIFICATION AND LOCATION.

09 64 00 WOOD FLOORING (WF)

- C. SOLID-WOOD FLOORING: BLIND NAIL OR STAPLE FLOORING TO SUBSTRATE. D. PROTECT INSTALLED WOOD FLOORING DURING REMAINDER OF CONSTRUCTION PERIOD WITH COVERING OF HEAVY KRAFT PAPER OR OTHER SUITABLE MATERIAL. DO NOT USE PLASTIC SHEET OR FILM THAT MIGHT CAUSE
- CONDENSATION.

09 65 13 RESILIENT BASE AND ACCESSORIES

AND ACCESSORIES

d. 6" — 25 GA. — 20'-0" AT 16" O.C. — 17'-6" AT 24" O.C. e. 6" — 22 GA. — 22'-9" AT 16" O.C. — 19'-11" AT 24" O.C. f. 6" — 20 GA. — 23'-9" AT 16" O.C. — 20'-9" AT 24" O.C.

- 09 29 00 GYPSUM BOARD (GYP)
- A. DRYWALL SHALL BE INSTALLED PER THE LATEST EDITIONS OF "RECOMMENDED SPECIFICATIONS FOR THE
- APPLICATION AND FINISHING OF GYPSUM BOARD" GA-216 AS PUBLISHED BY THE GYPSUM ASSOCIATION AND THE "GYPSUM CONSTRUCTION HANDBOOK" AS PUBLISHED BY UNITED STATES GYPSUM COMPANY.
- 1. PROVIDE CONTROL JOINTS PER THESE REQUIREMENTS.
- B. COMPLY WITH ASTM C36 OR ASTM C 1396 AS APPLICABLE TO THE TYPE OF GYPSUM BOARD INDICATED. C. SUBJECT TO COMPLIANCE WITH REQUIREMENTS, MANUFACTURES OFFERING PRODUCTS THAT MAY BE INCORPORATED INCLUDE, BUT ARE NOT LIMITED TO THE FOLLOWING:
- 1. AMERICAN GYPSUM CO.
- 4. LAFARGE NORTH AMERICA INC. 5. NATIONAL GYPSUM COMPANY
- D. AT ALL TOILET ROOMS, LOCKERS ROOMS, COOLER/FREEZER ROOMS, UNDER FRP PANELS OR OTHER DAMP/WET
- 1. MOLD TOUGH GYPSUM BY USG CORPORATION OR EQUAL. E. UNDER CERAMIC AND PORCELAIN TILE IN TOILET ROOMS, LOCKER ROOMS OR OTHER DAMP/WET LOCATIONS
- 1. FIBEROCK AQUA-TOUGH TILE BACKER BOARD BY USG CORPORATION OR EQUAL. F. UNDER CERAMIC AND PORCELAIN TILE IN SHOWERS, TUBS, KITCHEN WASH DOWN AREAS OR OTHER HIGH-

- B. JOINTS IN TILE SURFACE TO BE LOCATED DIRECTLY ABOVE JOINTS IN CONCRETE SUBSTRATES BRIDGE CRACKS OR JOINTS WITH 'NOBLESEAL CIS' COMPOSITE SHEET MEMBRANE OVER ALL SAW CUT JOINTS IN CONCRETE SLABS WHERE BRIDGED BY PORCELAIN / CERAMIC TILE - INSTALL JOINT BRIDGING MATERIAL PER MANUF. SPEC'S AND
- PROVIDE COLORED GROUT AT ALL INTERIOR TILE SURFACES -COLOR TO BE SELECTED BY ARCHITECT/OWNER. E. EXTEND TILE WORK INTO RECESSES AND UNDER OR BEHIND EQUIPMENT AND FIXTURES TO FORM COMPLETE

- H. PROVIDE APPROVED FIRE RATED GRID SYSTEM FOR FIRE RATED CEILINGS.
- A. COMPLY WITH FLOORING MANUFACTURER'S WRITTEN INSTALLATION INSTRUCTIONS, BUT NOT LESS THAN APPLICABLE RECOMMENDATIONS IN NWFA'S "INSTALLATION GUIDELINES: WOOD FLOORING".
- B. PROVIDE EXPANSION SPACE AT WALLS AND OTHER OBSTRUCTIONS AND TERMINATIONS OF FLOORING.

E. SEE PLAN FOR PRODUCT SPECIFICATION AND LOCATION.

- A. PROVIDE MANUFACTURES STANDARD VINYL BASE AS SPECIFIED THAT COMPLIES WITH ASTM F1861 TYPE TV. B. PROVIDE MANUFACTURES STANDARD VINYL ACCESSORIES AS SPECIFIED THAT COMPLIES WITH ASTM F2169 TYPE TV. C. COMPLY WITH MANUFACTURER'S WRITTEN INSTRUCTIONS FOR INSTALLING RESILIENT BASE AND ACCESSORIES. D. PREPARE SUBSTRATES ACCORDING TO MANUFACTURER'S WRITTEN INSTRUCTIONS TO ENSURE ADHESION OF BASE
- E. APPLY RESILIENT BASE TO WALLS, COLUMNS, PILASTERS, CASEWORK AND CABINETS IN TOE SPACES AND OTHER PERMANENT FIXTURES IN ROOMS AND AREAS WHERE BASE IS SPECIFIED. F. INSTALL RESILIENT BASE IN LENGTHS AS LONG AS PRACTICAL WITHOUT GAPS AT SEAMS AND WITH TOPS OF
- ADJACENT PIECES ALIGNED. G. TIGHTLY ADHERE RESILIENT BASE OR ACCESSORY TO SUBSTRATE THROUGHOUT LENGTH OF EACH PIECE, WITH BASE OR ACCESSORY IN CONTINUOUS CONTACT WITH HORIZONTAL AND VERTICAL SUBSTRATES.

- H. DO NOT STRETCH RESILIENT BASE DURING INSTALLATION.
- I. ON MASONRY SURFACES OR OTHER SIMILAR IRREGULARS SUBSTRATES. FILL VOIDS ALONG TOP EDGE OF RESILIENT BASE WITH MANUFACTURER'S RECOMMENDED ADHESIVE FILLER MATERIAL. J. SEE PLAN FOR PRODUCT SPECIFICATION AND LOCATION.

09 65 16 RESILIENT SHEET FLOORING (RSF)

- K. PREPARE SUBSTRATES ACCORDING TO MANUFACTURER'S WRITTEN INSTRUCTIONS TO ENSURE ADHESION OF FLOOR COVERINGS
- 1. MOISTURE TESTING: PERFORM TESTS RECOMMENDED BY MANUFACTURER. PROCEED WITH INSTALLATION ONLY AFTER SUBSTRATES PASS TESTING L. FILL CRACKS, HOLES, AND DEPRESSIONS IN SUBSTRATES WITH TROWELABLE LEVELING AND PATCHING COMPOUND
- AND REMOVE BUMPS AND RIDGES TO PRODUCE A UNIFORM AND SMOOTH SUBSTRATE. M. DO NOT INSTALL FLOOR COVERINGS UNTIL THEY ARE SAME TEMPERATURE AS SPACE WHERE THEY ARE TO BE
- INSTALLED N. SWEEP AND VACUUM CLEAN SUBSTRATES TO BE COVERED BY FLOOR COVERINGS IMMEDIATELY BEFORE
- INSTALLATION.
- O. COMPLY WITH MANUFACTURER'S WRITTEN INSTRUCTIONS FOR INSTALLING FLOOR COVERINGS. P. UNROLL FLOOR COVERINGS AND ALLOW THEM TO STABILIZE BEFORE CUTTING AND FITTING.
- Q. SCRIBE AND CUT FLOOR COVERINGS TO BUTT NEATLY AND TIGHTLY TO VERTICAL SURFACES, PERMANENT FIXTURES, AND BUILT-IN FURNITURE INCLUDING CABINETS, PIPES, OUTLETS, AND DOOR FRAMES.
- R. ADHERE FLOOR COVERINGS TO SUBSTRATES USING A FULL SPREAD OF ADHESIVE APPLIED TO SUBSTRATE TO PRODUCE A COMPLETED INSTALLATION WITHOUT OPEN CRACKS, VOIDS, RAISING AND PUCKERING AT JOINTS, TELEGRAPHING OF ADHESIVE SPREADER MARKS, AND OTHER SURFACE IMPERFECTIONS. S. COMPLY WITH MANUFACTURER'S WRITTEN INSTRUCTIONS FOR CLEANING AND PROTECTION OF FLOOR COVERING.
- T. SEE PLAN FOR PRODUCT SPECIFICATION AND LOCATION.

09 65 19 RESILIENT TILE FLOORING (RTF)

- A. PROVIDE MANUFACTURES STANDARD VINYL COMPOSITE FLOOR TILE AS SPECIFIED COMPLYING WITH ASTM F1066 CLASSIFICATIONS
- B. PREPARE SUBSTRATES ACCORDING TO MANUFACTURER'S WRITTEN INSTRUCTIONS TO ENSURE ADHESION OF FLOOR COVERINGS 1. MOISTURE TESTING: PERFORM TESTS RECOMMENDED BY MANUFACTURER. PROCEED WITH INSTALLATION
- ONLY AFTER SUBSTRATES PASS TESTING C. FILL CRACKS, HOLES, AND DEPRESSIONS IN SUBSTRATES WITH TROWELABLE LEVELING AND PATCHING COMPOUND AND REMOVE BUMPS AND RIDGES TO PRODUCE A UNIFORM AND SMOOTH SUBSTRATE.
- D. DO NOT INSTALL FLOOR COVERINGS UNTIL THEY ARE SAME TEMPERATURE AS SPACE WHERE THEY ARE TO BE INSTALLED
- E. SWEEP AND VACUUM CLEAN SUBSTRATES TO BE COVERED BY FLOOR COVERINGS IMMEDIATELY BEFORE INSTALLATION.
- F. COMPLY WITH MANUFACTURER'S WRITTEN INSTRUCTIONS FOR INSTALLING FLOOR TILE.
- G. LAY OUT FLOOR TILES FROM CENTER MARKS ESTABLISHED WITH PRINCIPAL WALLS, DISCOUNTING MINOR OFFSETS, SO TILES AT OPPOSITE EDGES OF ROOM ARE OF EQUAL WIDTH. ADJUST AS NECESSARY TO AVOID USING CUT WIDTHS THAT EQUAL LESS THAN ONE-HALF TILE AT PERIMETER. MATCH TILES FOR COLOR/PATTERN AND LAY TILE WITH GRAIN DIRECTION ALTERNATING IN ADJACENT TILES.
- H. SCRIBE, CUT, AND FIT FLOOR TILES TO BUTT NEATLY AND TIGHTLY TO VERTICAL SURFACES AND PERMANENT FIXTURES INCLUDING BUILT-IN FURNITURE, CABINETS, PIPES, OUTLETS, AND DOOR FRAMES. I. EXTEND FLOOR TILES INTO TOE SPACES, DOOR REVEALS, CLOSETS, AND SIMILAR OPENINGS. EXTEND FLOOR TILES TO
- CENTER OF DOOR OPENINGS. J. ADHERE FLOOR TILES TO FLOORING SUBSTRATES USING A FULL SPREAD OF ADHESIVE APPLIED TO SUBSTRATE TO
- PRODUCE A COMPLETED INSTALLATION WITHOUT OPEN CRACKS, VOIDS, RAISING AND PUCKERING AT JOINTS, TELEGRAPHING OF ADHESIVE SPREADER MARKS, AND OTHER SURFACE IMPERFECTIONS. K. FLOORING CONTRACTOR SHALL STRIP AND FINISH ALL VCT FLOORING AS RECOMMENDED PER MANUFACTURERS
- SPECIFICATIONS PRIOR TO OCCUPANCY. .. COMPLY WITH MANUFACTURER'S WRITTEN INSTRUCTIONS FOR CLEANING AND PROTECTION OF FLOOR TILE. M. SEE PLAN FOR PRODUCT SPECIFICATION AND LOCATION.

09 68 13 TILE CARPETING (TC)

- A. GENERAL: COMPLY WITH CRI 104, SECTION 14, "CARPET MODULES", AND WITH CARPET TILE MANUFACTURER'S
- WRITTEN INSTALLATION INSTRUCTIONS B. Prepare floor surfaces receiving new flooring as required for a smooth and level surface prior to installing new flooring.
- C. INSTALLATION METHOD: AS RECOMMENDED IN WRITING BY CARPET TILE MANUFACTURER. D. EXTEND CARPET TILE INTO TOE SPACES, DOOR REVEALS, CLOSETS, OPEN-BOTTOMED OBSTRUCTIONS, REMOVABLE FLANGES, ALCOVES, AND SIMILAR OPENINGS.
- E. INSTALL PATTERN PARALLEL TO WALLS AND BORDERS.
- F. SEE PLAN FOR PRODUCT SPECIFICATION AND LOCATION.

09 68 16 SHEET CARPET (SC)

- A. COMPLY WITH CRI 104 AND CARPET MANUFACTURER'S WRITTEN INSTALLATION INSTRUCTIONS.
- B. Prepare floor surfaces receiving new flooring as required for a smooth and level surface prior to installing new flooring. C. COMPLY WITH CARPET MANUFACTURER'S WRITTEN RECOMMENDATIONS AND SHOP DRAWINGS FOR SEAM LOCATIONS AND DIRECTION OF CARPET; MAINTAIN UNIFORMITY OF CARPET DIRECTION AND LAY OF PILE. AT
- DOORWAYS, CENTER SEAMS UNDER THE DOOR IN CLOSED POSITION. D. EXTEND CARPET INTO TOE SPACES, DOOR REVEALS, CLOSETS, OPEN-BOTTOMED OBSTRUCTIONS, REMOVABLE
- FLANGES, ALCOVES, AND SIMILAR OPENINGS. E. INSTALL PATTERN PARALLEL TO WALLS AND BORDERS.
- F. SEE PLAN FOR PRODUCT SPECIFICATION AND LOCATION.

09 72 00 WALL COVERING

- A. CLEAN SUBSTRATES OF SUBSTANCES THAT COULD IMPAIR BOND OF WALL COVERING, INCLUDING DIRT, OIL, GREASE, MOLD, MILDEW, AND INCOMPATIBLE PRIMERS.
- B. PREPARE SUBSTRATES TO ACHIEVE A SMOOTH, DRY, CLEAN, STRUCTURALLY SOUND SURFACE FREE OF FLAKING, UNSOUND COATINGS, CRACKS, AND DEFECTS.
- C. ACCLIMATIZE WALL-COVERING MATERIALS BY REMOVING THEM FROM PACKAGING IN THE INSTALLATION AREAS NOT LESS THAN 24 HOURS BEFORE INSTALLATION. D. CUT WALL-COVERING STRIPS IN ROLL NUMBER SEQUENCE. CHANGE ROLL NUMBERS AT PARTITION BREAKS AND
- CORNERS E. INSTALL WALL COVERING WITH NO GAPS OR OVERLAPS, NO LIFTED OR CURLING EDGES, AND NO VISIBLE
- SHRINKAGE.
- F. MATCH PATTERN AT 72" ABOVE FINISHED FLOOR.
- G. Extend wall covering a min. of 6" behind permanent casework and equipment H. INSTALL SEAMS VERTICAL AND PLUMB AT LEAST 6 INCHES (150 MM) FROM OUTSIDE CORNERS AND 3 INCHES (75 MM) FROM INSIDE CORNERS UNLESS A CHANGE OF PATTERN OR COLOR EXISTS AT CORNER. NO HORIZONTAL
- SEAMS ARE PERMITTED I. FULLY BOND WALL COVERING TO SUBSTRATE. REMOVE AIR BUBBLES, WRINKLES, BLISTERS, AND OTHER DEFECTS.
- J. REMOVE EXCESS ADHESIVE AT FINISHED SEAMS, PERIMETER EDGES, AND ADJACENT SURFACES.
- K. ADHESIVE TO BE MILDEW RESISTANT, NON-STAINING AS RECOMMENDED BY THE WALL COVERING MANUFACTURER. L. SEE PLAN FOR PRODUCT SPECIFICATION AND LOCATION.

09 91 00 PAINTING

- A. REMOVE AND/OR PROTECT ALL HARDWARE, HARDWARE ACCESSORIES, MACHINED SURFACES, PLATES, LIGHTING FIXTURES, SPRINKLER HEADS AND SIMILAR ITEMS THAT ARE NOT TO BE PAINTED, BUT REQUIRE PROTECTION FROM THE PAINTING PROCESS. RE-INSTALL SAME AFTER COMPLETION OF PAINTING. MASK OFF ALL NAMEPLATES, EQUIPMENT IDENTIFICATION AND SIMILAR ITEMS. REMOVAL AND REINSTALL OF ITEMS IS TO BE DONE BY
- CONTRACTOR SKILLED IN SUCH WORK. B. SEAL TOPS, BOTTOMS AND CUTOUTS OF UNPRIMED WOOD DOORS WITH A HEAVY COAT OF SEALER IMMEDIATELY UPON DELIVERY TO THE PROJECT.

D. GALVANIZED METAL: CLEAN PER SSPC-SP1 USING DETERGENT AND WATER OR A DEGREASING CLEANER TO REMOVE

H. FURNISH ALL LABOR, MATERIALS, TOOLS, EQUIPMENT AND SCAFFOLDING REQUIRED FOR COMPLETING SURFACE

I. EXCESS MATERIALS, CONTAINERS AND OTHER ITEMS NECESSARY FOR THE COMPLETION OF THE WORK MUST BE

J. PAINT ALL EXPOSED MISCELLANEOUS ITEMS, FINISHED OR UNFINISHED (INCLUDING H.V.A.C. RETURN AIR GRILLES,

K. CONTRACTOR TO VERIFY THAT PAINT IS COMPATIBLE WITH PRIMER OF SHOP PRIMED SURFACES. NOTIFY EXCEL

L. THE CONTRACTOR SHALL KEEP EMPTY CONTAINERS ON THE PROJECT SITE UNTIL ALL PRODUCTS ARE VERIFIED AS TO

COLOR AND/OR SHEEN. THE CONTRACTOR SHALL LEAVE WITH THE OWNER ALL OPENED PAINT CONTAINERS.

MUNICIPALITY AND/OR STATE. THE PAINTING CONTRACTOR IS RESPONSIBLE FOR COMPLETE ADHERENCE TO ALL

DISPOSED OF IN A MANNER THAT MEETS OR EXCEEDS THE STRICTEST LAWS GOVERNING THE PROJECT'S

GREASES AND OILS. APPLY A TEST AREA, PRIMING AS REQUIRED. ALLOW THE COATING TO DRY AT LEAST ONE WEEK

BEFORE TESTING. IF ADHESION IS POOR, BRUSH BLAST PER SSPC-SP7 IS NECESSARY TO REMOVE THESE TREATMENTS.

C. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROPER PREPARATION OF ALL SURFACES PRIOR TO THE PAINTING INSTALLATION.

E. THE FINISH PRODUCT SHALL HAVE A CONSISTENT, SMOOTH APPEARANCE OF THE SPECIFIED LUSTER.

F. APPLY PAINT PER MANUFACTURER'S TEMPERATURE AND HUMIDITY REQUIREMENTS.

G. COMPLETED WORK SHALL BE FREE FROM DEFECTS AND FLAWS.

PREPARATION, PAINTING, FINISHING AND RELATED ITEMS.

CONDUIT, ETC.) TO MATCH ADJOINING WALL SURFACES.

ENGINEERING IF THERE ARE ANY COMPATIBILITY ISSUES.

DISPOSAL REGULATIONS.

- M. ALL PAINT COLORS, STAIN COLORS, AND VARNISH TO BE SELECTED BY ARCHITECT/OWNER FROM A FULL RANGE OF AVAILABLE COLORS UNLESS NOTED OTHERWISE. 1. EXPOSED MECHANICAL PIPING SYSTEM SHALL BE PAINTED PER "FERROUS METAL (PRIMED, BRUSH/ROLLER)" SPEC
 - AS FOLLOWS: a. GAS PIPING — YELLOW
- b. FIRE PROTECTION RED
- N. ALL EXPOSED EXTERIOR& INTERIOR METAL SURFACES SHALL BE PAINTED, U.N.O.
- O. EXTERIOR ITEMS 1. FERROUS METAL (PRIMED): STRUCTURAL STEEL, MISCELLANEOUS IRON, HANDRAILS, HOLLOW METAL DOORS AND FRAMES, ROOF STRUCTURE, EXPOSED ROOF PIPING, ETC .: a. ALKYD SHOP PRIMER ON METAL OR 1 COAT S-W KEM BOND HS UNIVERSAL METAL PRIMER B50 SERIES
- b. 2 COATS S-W PRO INDUSTRIAL ACRYLIC SEMI GLOSS, B66-650 @ 2.5-4.0 MILS DFT/COAT.
- 2. GALVANIZED, ALUMINUM, ZINC-COATED AND NON-FERROUS METALS a. 1 COAT S-W PRO INDUSTRIAL PRO-CRYL UNIVERSAL PRIMER, B66-310 SERIES, @ 2.0-4.0 MILS DFT. b. 2 COATS S-W PRO INDUSTRIAL ACRYLIC SEMI GLOSS, B66-650 @ 2.5-4.0 MILS DFT/COAT.
- 3. CONCRETE: a. 1 COAT S-W LOXON CONCRETE MASONRY PRIMER A24W8300 @ 2.0-3.5 MILS DFT.
- b. 2 COAT S-W A-100 EXTERIOR LATEX SATIN A82 SERIES @ 1.5-2.0 MILS DFT/COAT.
- P. INTERIOR ITEMS 1. GYPSUM DRYWALL FINISH: EG-SHEL
- a. 1 COAT S-W PROMAR 200 ZERO VOC INTERIOR LATEX PRIMER B28W2600 @ 1.2-1.5 MILS DFT. b. 2 COATS S-W PROMAR 200 ZERO VOC INTERIOR LATEX EG-SHEL B20-2600 @ 1.6-2.2 MILS DFT/COAT.
- 2. GYPSUM DRYWALL FINISH: FLAT a. 1 COAT S-W PROMAR 200 ZERO VOC INTERIOR LATEX PRIMER B28W2600 @ 1.2-1.5 MILS DFT. b. 2 COATS S-W PROMAR 200 ZERO VOC INTERIOR LATEX FLAT B30W2600 @ 1.6-2.2 MILS DFT/COAT.
- 3. GYPSUM DRYWALL FINISH: SEMI-GLOSS a. 1 COAT S-W PROMAR 200 ZERO VOC INTERIOR LATEX PRIMER B28W2600 @ 1.2-1.5 MILS DFT. b. 2 COATS S-W PROMAR 200 ZERO VOC INTERIOR LATEX SEMI-GLOSS B31W2600 @ 1.6-2.2 MILS DFT/COAT.
- 4. GYPSUM DRYWALL FINISH: EPOXY SYSTEM SEMI-GLOSS a. 1 COAT S-W PROMAR 200 ZERO VOC INTERIOR LATEX PRIMER B28W2600 @ 1.2-1.5 MILS DFT.
- b. 2 COATS S-W PRO INDUSTRIAL WATER BASED CATALYZED EPOXY B73 SERIES @ 2.0-4.0 MILS DFT/COAT. 5. NEW WOOD FINISH: STAINED a. 1 COAT S-W WOOD CLASSICS 250 INTERIOR OIL STAIN A49-800 SERIES.
- b. 1 COAT S-W WOOD CLASSICS WATERBORNE POLYURETHANE GLOSS VARNISH A68. c. 1 COAT S-W WOOD CLASSICS WATERBORNE POLYURETHANE SATIN VARNISH A68.
- d. 0.8-1.2 MILS DTF/COAT. 6. NEW WOOD FINISH: PAINTED

a. 1 COAT S-W PREMIUM WALL AND WOOD PRIMER B28W8111 @ 1.8-2.1 MILS DFT.

- b. 2 COATS S-W PRO INDUSTRIAL ACRYLIC SEMI GLOSS B-66-650 @ 2.5-4.0 MILS DFT/COAT. 7. FERROUS METAL (PRIMED, BRUSH/ROLLER) — DOORS, FRAMES, HANDRAILS, MISC. METALS, ETC., FINISH: ACRYLIC
- a. 1 COAT S-W PRO INDUSTRIAL PRO-CRYL UNIVERSAL PRIMER B66-310 @ 2.0-4.0 MILS DFT.
- b. 2 COATS S-W PRO INDUSTRIAL ACRYLIC SEMI GLOSS B-66-650 @ 2.5 4 MILS DFT/COAT.
- 8. FERROUS METAL (PRIMER, SPRAYED) ALL EXPOSED STRUCTURAL STEEL AND EXPOSED MECHANICAL/ELECTRICAL ITEMS, FINISH: ALKYD a. SPOT PRIME AS NEEDED: S-W KEM BOND HS UNIVERSAL METAL PRIMER B50 SERIES @ 2.0-5.0 MILS DFT.
- b. FINISH COAT S-W SUPER SAVE-LITE HI-TEC DRY FALL, EG-SHEL B48 SERIES @ 3.0-3.5 MILS DFT. 9. FERROUS METAL (PRIMER, SPRAYED) - ALL EXPOSED STRUCTURAL STEEL AND EXPOSED MECHANICAL/ELECTRICAL
- ITEMS. NORMAL EXPOSURE, FINISH: ACRYLIC a. SPOT PRIME AS NEEDED: S-W PRO INDUSTRIAL PRO-CRYL UNIVERSAL PRIMER @ 2.0-4.0 MILS DFT.
- b. FINISH COAT S-W PRO INDUSTRIAL WATERBORNE ACRYLIC DRY FALL, EG-SHEL, B 42W2 @ 3.0-4.5 MILS DFT. 1. CONTRACTOR SHALL MAINTAIN A DAILY LOG OF TEMPERATURE (50F-110F) AND RELATIVE HUMIDITY. 2. AMBIENT TEMPERATURE AND SUBSTRATE TEMPERATURE SHALL BE 50 DEGREES F TO 110 DEGREES F. 3. RELATIVE HUMIDITY SHALL NOT EXCEED 75%.
- 10. GALVANIZED: INTERIOR CEILING DECKING:
- a. SPRAYED i. FINISH COAT S-W PRO INDUSTRIAL WATERBORNE ACRYLIC DRY FALL, EG-SHEL, B42W2 @ 3.0-4.5 MILS DFT
- 11. ALUMINUM, ZINC-COATED AND NON-FERROUS METALS: a. 1 COAT S-W PRO INDUSTRIAL PRO-CRYL UNIVERSAL PRIMER B66-310 @ 2.0 — 4.0 MILS DFT.
- b. 2 COATS S-W PRO INDUSTRIAL ACRYLIC SEMI GLOSS B66-650 @ 2.5-4.0 MILS DFT/COAT.
- 12. CONCRETE MASONRY UNITS: ACRYLIC FINISH: SEMI-GLOSS
- a. 1 COAT S-W PREPRITE BLOCK FILLER B25W25- WHITE. b. 2 COATS S-W PROMAR 200 ZERO VOC INTERIOR LATEX SEMI-GLOSS B31W2600 @ 1.6 -2.2 MILS DFT/COAT. 13. CONCRETE MASONRY UNITS EPOXY FINISH: SEMI-GLOSS
- a. 1 COAT S-W HEAVY DUTY BLOCK FILLER B42W46-WHITE.
- b. 2 COATS S-W PRO INDUSTRIAL WATER BASED CATALYZED EPOXY B73 SERIES @ 2.0-4.0 MILS DFT/COAT.
- 14. PRECAST CONCRETE: EG-SHEL
- a. 1 COAT S-W LOXON CONCRETE MASONRY PRIMER A24W8300 @ 2.0-3.5 MILS DFT. b. 2 COAT S-W PROMAR 200 ZERO VOC INTERIOR LATEX EG-SHEL B20 SERIES @ 1.5-2.0 MILS DFT/COAT. 15. FERROUS METAL (PRIMER, SPRAYED), ALL EXPOSED STRUCTURAL STEEL: EPOXY/URETHANE
- a. PREPARATION SSPC-SP-6 COMMERCIAL BLAST.
- b. 1 COAT DUPONT CORLAR 2.1 LF63225P WHITE (4.0 6.0 DFT) MIX 1:1 WITH VF525 ACTIVATOR. (IF ROLLER APPLIED USE 5% RT001P ROLLING THINNER PER MIXED GALLON OF EPOXY).
- c. 1 COAT DUPONT IMRON 3.5 HG -33M24861 WHITES (2.0 MILS DFT) MIX 4:1 WITH VG-M6005 ACTIVATOR. (IF
- ROLLER APPLIED USE 10Z OF RT002P ROLLING ADDITIVE PER MIXED GALLON OF IMRON). Q. PROVIDE A YELLOW STRIPED AREA, 3' DEEP BY THE WIDTH OF THE ELECTRICAL PANELS, ON THE CONCRETE FLOOR IN FRONT OF THE ELECTRICAL PANELS AND SWITCHGEAR. AT THE SWITCHGEAR, PAINT THE EXPOSED PORTION OF THE CONCRETE HOUSEKEEPING PAD YELLOW.

DIVISION 10 SPECIALTIES

10 14 00 SIGNAGE

- A. REOUIREMENTS
- 1. CONTRACTOR TO FURNISH AND INSTALL SIGNAGE PER LOCAL, STATE, AND FEDERAL CODES AND PER ADDITIONAL DETAILS ON PLANS.
- 2. COORDINATE STYLE AND COLOR WITH OWNER UNLESS SPECIFICALLY INDICATED ON PLANS.
- 3. ALL SIGNAGE SHALL MEET THE REQUIREMENTS OF THE A.D.A. AND ANSI.
- 4. WHERE PERMANENT IDENTIFICATION IS PROVIDED FOR ROOMS AND SPACES, SIGNS SHALL BE INSTALLED ON THE WALL ADJACENT TO THE LATCH SIDE OF THE DOOR. WHERE THERE IS NO WALL SPACE TO THE LATCH SIDE OF THE DOOR, INCLUDING AT DOUBLE LEAF DOORS, SIGNS SHALL BE PLACED ON THE NEAREST ADJACENT WALL. 5. MOUNTING HEIGHT SHALL BE 60" ABOVE FINISH FLOOR TO THE CENTERLINE OF THE SIGN UNLESS INDICATED
- OTHERWISE 6. PROVIDE HANDICAP PARKING SIGNS AS INDICATED ON PLANS AND AS REQUIRED BY LOCAL, STATE, AND FEDERAL CODES.

10 44 00 FIRE EXTINGUISHERS

- A. REQUIREMENTS
- 1. FURNISH AND INSTALL EXTINGUISHERS PER LOCAL, STATE, AND FEDERAL CODES, AND N.F.P.A. NO.10-1978. 2. MOUNT FIRE EXTINGUISHER NOT HIGHER THAN 48" ABOVE FINISH FLOOR UNLESS LOCAL REGULATIONS REQUIRE DIFFERENT HEIGHT.
- 3. ALL FIRE EXTINGUISHERS AND CABINETS TO MEET THE REQUIREMENTS OF THE A.D.A. AND ANSI A117.1.

DIVISION 21 FIRE SUPPRESSION

- **21 10 00 FIRE PROTECTION WORK**
- A. SEE FIRE PROTECTION PLANS FOR SPECIFICATIONS.

DIVISION 22 PLUMBING

- 22 05 00 PLUMBING WORK
- A. SEE PLUMBING PLANS FOR SPECIFICATIONS

DIVISION 23 HEATING AND VENTILATING AND AIR CONDITIONING

23 05 00 HEATING AND VENTILATION WORK

A. SEE HVAC PLANS FOR SPECIFICATIONS.

DIVISION 26 ELECTRICAL

26 05 00 ELECTRICAL WORK

SEE ELECTRICAL PLANS FOR SPECIFICATIONS.

ARCHITECTS • ENGINEERS • SURVEYORS Always a **Better Plan** 100 Camelot Drive Fond Du Lac, WI 54935 Phone: (920) 926-9800 www.EXCELENGINEER.com

PROJECT INFORMATION

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#: BLD19-00468

LANDLORD WORK LETTER

14. CONDITIONS AND DELIVERY OF PREMISES.LESSOR shall deliver the leased premises to LESSEE in an "as is" condition, and LESSOR makes no representations or warranties regarding the condition of the leased premises nor as to compliance with the applicable building, housing or other ordinances. LESSEE acknowledges that LESSEE has had the opportunity to inspect the leased premises and agrees to accept possession thereof in an "as is" condition. In the event LESSOR is unable to deliver the leased premises at the beginning of the term of this Lease, LESSEE'S only remedy shall be an abatement of rent.

15. <u>ALTERATIONS AND IMPROVEMENTS</u>.LESSEE shall have the right to make any and all improvements, and to repair, replace, and retrofit the leased premises as may be desired by LESSEE, at LESSEE'S expense; provided, however, that LESSEE shall submit its plans for LESSEE'S improvements and alterations for LESSOR'S approval, which shall not be unreasonably withheld, delayed, or conditioned. As to any LESSEE'S improvements and alterations, such work shall be performed with new materials, in a good and workmanlike manner, strictly in accordance with plans and specifications therefore first approved in writing by LESSOR and in accordance with all applicable laws and ordinances. LESSEE shall be responsible for the costs and expenses of any of LESSEE'S improvements and alterations to the leased premises, including all costs and expenses associated with the construction of any of said improvements and alterations to the leased premises that may be required by the laws, ordinances, or any governmental body or agency. Furthermore, LESSEE may install trade fixtures and equipment on the leased premises. Upon termination of this Lease, all alterations and improvements, temporary or permanent, made in or upon the leased premises by LESSEE shall become LESSOR'S property and shall remain in the leased premises on termination without compensation, allowance, or credit to LESSEE. Upon termination of this Lease, if LESSEE is not in default hereunder, LESSEE may remove LESSEE'S trade fixtures and equipment and other articles of personal property incident to LESSEE'S business; provided, however, that LESSEE shall repair any injury or damage to the leased premises which may result from such removal and shall restore the leased premises to the same condition as prior to the installation thereof. If LESSEE does not remove said articles of personal property from the leased premises prior to the expiration or earlier termination of the Lease, LESSOR shall treat such articles of personal property as having been transferred to LESSOR without further payment or credit by LESSOR to LESSEE or obligation to LESSEE. LESSOR may, in this event, dispose of said articles of personal property belonging to LESSEE of any kind and nature. Such disposal may take place in any manner, commercially reasonable or not, including destruction and disposal in the Johnson County landfill.





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PROFESSIONAL SEAL SHEET DATES SHEET ISSUE AUG. 27, 2019 REVISIONS JOB NUMBER 1942920 SHEET NUMBER

LANDLORD WORK LETTER

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DATE: 08/30/19

BLD #: BLD19-00468



GENERAL NOTES

ALL DEMOLITION BY GENERAL CONTRACTOR UNLESS NOTED OTHERWISE.

GENERAL CONTRACTOR AND MECHANICAL SUBS TO FIELD VERIFY ALL DIMENSIONS. LOCATIONS OF WALLS, DOORS AND OTHER ITEMS HAVE BEEN FIELD MEASURED FOR GENERAL LAYOUT ONLY. REPORT ANY DISCREPANCIES TO EXCEL ENGINEERING FOR CLARIFICATION PRIOR TO THE START OF WORK.

WHERE REMOVAL OF PIPES, CONDUIT, DUCTWORK, ETC. HAS LEFT AN OPENING, FILL AND PATCH OPENING TO MATCH THE ADJACENT CONSTRUCTION AND FINISH AS REQUIRED.

PATCH ALL WORK AT REMOVAL AND NEW CONNECTION POINTS AS REQUIRED TO MATCH ADJACENT NEW OR EXISTING FINISHES.

BEFORE COMMENCING WITH DEMOLITION WORK, REVIEW WITH THE OWNER WHICH ITEMS ARE TO BE SALVAGED AND TURNED OVER TO THE OWNER, IN ADDITION TO THOSE LISTED ON THE PLAN. ANY ITEM NOT WANTED BY THE OWNER SHALL BE REMOVED FROM THE JOB SITE BY THE GENERAL CONTRACTOR AND DISPOSED OF IN THE PROPER AND LEGAL MANNER.

ALL EXISTING GYP BOARD SUBSTRATES TO BE PREPPED TO ACCEPT NEW FINISHES PER THE ROOM FINISH SCHEDULE. IF EXISTING SUBSTRATE CANNOT ACCEPT NEW FINISHES REPLACE AS REQUIRED.

CONTRACTOR TO DEMO ALL EXISTING/UNUSED ITEMS SUSPENDED FROM ABOVE IN NEW AREAS THAT WILL BE EXPOSED TO STRUCTURE IN NEW LAYOUT. ITEMS TO REMAIN IN EXPOSED AREAS ARE TO BE RELOCATED TO BOTTOM OF JOIST/TRUSS/DECK AND RUN IN A NEAT, ORDERLY FASHION

SEE MECHANICAL AND ELECTRICAL SHEETS FOR DEMO NOTES

SEE PLUMBING DRAWINGS FOR DESCRIPTION OF REQUIRED PLUMBING DEMOLITION.

MECHANICAL NOTES

GC AND PLUMBING CONTRACTOR TO VERIFY IN FIELD LOCATION OF ALL PIPING AND FIXTURES. CONTRACTOR TO REWORK / REROUTE ANY EXISTING PIPING, FITTINGS, ECT. AS NEEDED TO ALIGN WITH NEW WORK.

COORDINATE DEMOLITION OF EXISTING PIPING TO BE REMOVED WITH GC.

NO EXISTING PLANS OF UNDERGROUND PIPING EXIST. FIELD VERIFY LOCATIONS OF EXISTING PIPE MAINS. REUSE ANY PIPING OF SUFFICIENT SIZE IN GOOD CONDITION. REROUTE AS REQUIRED BY ACTUAL CONDITIONS.

WHERE EXISTING PIPING IS TO BE REMOVED CAP BRANCH PIPE IF NOT BEING USED FOR NEW CONSTRUCTION.

ELECTRICAL CONTRACTOR TO DEMO AND REMOVE ALL CONDUIT, WIRING, OUTLETS, SWITCHES, LIGHTING FIXTURES, BREAKERS, TELEPHONE BOARDS, ELECTRIC PANELS AND ANY EQUIPMENT NOT USED IN NEW LAYOUT.

ELECTRICAL CONTRACTOR TO REWORK ANY EXISTING SIGNAGE OR POWER CIRCUITS REMAINING IN EXPOSED CEILING AREA OF NEW SPACE SO THAT THEY ARE RUN IN A NEAT AND ORDERLY FASHION.

REMOVE ALL EXISTING HVAC EQUIPMENT, DUCTWORK AND GRILLES UNLESS INDICATED AS EXISTING TO REMAIN.

HVAC CONTRACTOR TO COORDINATE ALL DEMO / WALL AND/OR ROOF PENETRATIONS WITH GC, OWNER AND LANDLORDS REQUIRED ROOFING CONTRACTOR.

HVAC CONTRACTOR TO CAP ANY DUCT DROPS FROM RTU OR EXHAUST EQUIPMENT NOT USED IN NEW LAYOUT.

HVAC CONTRACTOR TO COORDINATE WITH LANDLORD ANY REMOVED HVAC EQUIPMENT TO BE ABANDONED IN PLACE OR SAVED AT OFFSITE LOCATION BY LANDLORD.

DEMOLITION KEYED NOTES (1) REMOVED ALL UNUSED ITEMS NOT NEEDED FOR NEW WORK.



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DEMOLITION FLOOR PLAN

DOOR SCHEDULE DOOR SIZE UNDERCUT DOOR WIDT DOOR FRAME OR GRILLE HARDWARE NO. H HEIGHT THICKNESS TYPE TYPE (W x H) SET REMARKS 3'-0" 8'-2 1/2" 1 3/4" GLASS 3'-0" 7'-0" 1 3/4" 1" UC WD1 HM1 3'-0" 7'-0" 1 3/4" 1" UC WD1 HM1 3'-0" 7'-0" 1 3/4" MD1 HM1 3'-0" 6'-11 1 3/4" EXT 100 1/8" 14b 6'-0" 7'-0" 1 3/4" (2)MD1 HM2

REMARKS:

- 1. NEW INTERIOR DOORS SHALL BE SOLID CORE, 5-PLY WOOD w/ WELDED HOLLOW METAL FRAMES. DOOR AND FRAME SHALL BE PAINTED TO MATCH WALL.
- 2. DOOR, SIDELIGHT AND ALL ASSOCIATED HARDWARE TO BE PROVIDED BY OWNER. SEE DOOR DETAILS 1/A4.0, 3/A4.0, & 4/A4.0.
- 3. GC TO VERIFY EXISTING HARDWARE MEETS TENANTS REQUIREMENTS, IS IN GOOD WORKING ORDER, AND COMPLIES w/ ADA. IF NOT, CONTRACTOR TO REPLACE w/ COMPLIANT HARDWARE. GC TO VERIFY FINISH, STYLE AND FUNCTION OF HARDWARE WITH OWNER PRIOR TO START OF WORK
- 4. GC TO PREP/PAINT EXISTING INTERIOR AND EXTERIOR OF DOOR AND FRAME TO MATCH ADJACENT WALLS. GC TO VERIFY EXTERIOR FINISH WITH BUILDING OWNER

GENERAL NOTES:

- 1. RE-KEY ALL EXISTING ENTRY/EXIT DOORS. PROVIDE 10 KEYS
- 2. PROVIDE IVES U696 150° VIEWER AT EXISTING REAR EXIT DOOR(S) WITHOUT VIEW PANELS INSTALLED AT 5'-0" AFF.

HARDWARE SET SCHEDULE SET DESCRIPTION LOCKSET: AL SERIES, PRIVACY (AL40S/F76)* 1 HINGES: IVES, 1-1/2 PAIRS, 4.5x4.5 WALL STOP: IVES, WS447 CLOSER: PULL SIDE REG (689) NORTON 7501 LOCKSET: AL SERIES, STOREROOM (AL80PD/F86) HINGES: IVES, 1-1/2 PAIRS, 4.5x4.5

- LOCKSET: AL SERIES, PASSAGE (AL10S/F75) HINGES: IVES, 1-1/2 PAIRS, 4.5X4.5 HARDWARE NOTES:
- . ALL HARDWARE FINISH TO BE 626/US26D, SATIN CHROMIUM PLATED/BRUSHED CHROME OR SIMILAR FINISH
- 2. UTILIZE SATURN TYPE LEVER. 3. ALL DOORS TO HAVE THREE (3) SILENCERS (TYPICAL)
- PROVIDE BLOCKING AT WALL STOP.
- 5. ALL HINGES TO BE FULL MORTISE, BALL BEARING (STANDARD/MEDIUM DUTY). STAINLESS STEEL PIN.
- 6. ALL HARDWARE TO BE IN COMPLIANCE WITH IBC SECTION 1010.1.1, 1010.1.7, 1010.1.9, 1010.1.10



FIRE EXTINGUISHER / CABINET SPECIFICATION:

MANUFACTURER: JL INDUSTRIES, INC.

PRODUCT: FIRE EXTINGUISHER CABINET -MODEL 'AMBASSADOR' 1017V10 -PROVIDE 'FIRE-FX' FIRE RATED TUB OPTION WHEN LOCATED IN RATED WALLS (1 & 2 HOUR-RATED) -PROVIDE BLACK VERTICAL LETTERING SPELLING 'FIRE EXTINGUISHER' ON CABINET DOOR

10 lb. CAPACITY ; 4A-80BC RATING

MISC: PAINT CABINET TO MATCH ADJACENT WALL FINISH



Plans Reviewed and Approved for Construction with Notations Plan review notes may not reflect all code deficiencies. Failure to identify a code deficiency during a review of plan Does not alleviate any obligation to comply with all applicabl code provisions

DATE: 08/30/19 D #: BLD19-00468

> FIRE EXTINGUISHER: - 'COSMIC' 10E







SINK AT APPROX. 7'-6" A.F.F. SEE DETAIL 6/A4.0

FLOOR PLAN

FF&E DIVISION OF WORK S.I. SUPPLIED ITEMS (PLEASE NOTE NOT ALL FIXTURES MAY BE USED)

TAG	DESCRIPTION	FURNISHED BY	INSTALLED BY	REMARKS
002	BACK WRAP	S.I.	GC	
003	RETAIL CABINET 116"	S.I.	GC	
004	DISPLAY SHELVING, SINGLE WIDE	S.I.	GC	
005	DISPLAY SHELVING, DOUBLE WIDE	S.I.	GC	
006	CONSULTANT ROOM CABINETS	S.I.	GC	DESK TO BE CENTERED ON THE WALL
007	OMITTED			
008	OMITTED			
009	CONFERENCE ROOM CABINET	S.I.	GC	
010	42" ROUND TABLE, HIGH	S.I.	GC	
011	36" ROUND TABLE, LOW	S.I.	GC	
013	TIERED SHELF, FREESTANDING	S.I.	GC	
014	OMITTED			
015	PORTABLE TABLE, 24"D x 48"W	S.I.	GC	
016	RESTROOM CABINET ORGANIZER	S.I.	GC	
018	RETAIL CABINET (102")	S.I.	GC	
020	DISPLAY SHELVING, TRIPLE WIDE	S.I.	GC	
022	FLOOR DISPLAY STAND	S.I.	GC	
023	DISPLAY SHELVING, TRIPLE WIDE	S.I.	GC	5'-0" TALL
024	LAMINATE COUNTER	S.I.	GC	USED WITH TRIPLE WIDE SHELVING, 5'-(
025	DISPLAY SHELVING, DOUBLE WIDE	S.I.	GC	5'-0" TALL
026	LAMINATE COUNTER	S.I.	GC	USED WITH DOUBLE WIDE SHELVING, 5
028	RESTROOM COUNTER, LAV & FAUCET	S.I.	GC	LAV-UNDERMOUNT SINK BOWEL W/CC OFFSET DRAIN, R= RH SOAP DISPENSEF DISPENSER, SEE PLUMBING SCHED.
029	PERFORM COUNTER DISPLAY	S.I.	GC	TO BE USED ON THE CASH WRAP
030	ADA CASH WRAP	S.I.	GC	
031	ADA BREAKROOM SINK CABINET (w/ UNDER COUNTER REFRIGERATOR)	S.I.	GC	SEE PLUMBING SCHEDULE FOR SINK AN
032	ADA BREAKROOM SINK CABINET (NO UNDER COUNTER REFRIGERATOR)	S.I.	GC	SEE PLUMBING SCHEDULE FOR SINK AN
033	BAG HOOKS, SET OF FOUR	S.I.	GC	PROVIDE BLOCKING, SEE PLAN
034	СОАТ НООК	S.I.	GC	DOOR MOUNT @ 65" AFF, TOP OF HOC
035	COAT HOOKS, QTY. 2 (12" BETWEEN)	S.I.	GC	WALL MOUNT @ 65" AFF, TOP OF HOO
037	13" X 13" TILE	S.I.	GC	SITS ON TOP OF FLOOR UNDER SCALE
038	RETAIL GONDOLA - SHELVES BOTH SIDES	S.I.	GC	
039	RETAIL GONDOLA - SHELVES ONE SIDE	SI	GC	

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TE: 08/30/19

#: BLD19-00468







C701

SCHEDULE:

C601 C602 C700

FF&E DIVISION OF WORK OWNER SUPPLIED ITEMS

	(PLEASE NOTE NOT ALL FIXTURES MAY BE USED)										
TAG	DESCRIPTION	FURNISHED BY	INSTALLED BY	REMARKS							
C100	HAWORTH SOJI TASK CHAIR	OWNER	OWNER								
C101	HAWORTH VERY SIDE CHAIR	OWNER	OWNER								
C102	HAWORTH LOOK SIDE CHAIR	OWNER	OWNER								
C103	HAWORTH POPPY LOUNGE CHAIR	OWNER	OWNER								
C110	PIVOT DOORS, LEFT/RIGHT	OWNER	OWNER	REFER TO SHOP DRAWINGS FOR DIMENSIONS. FINISHED OPENING SIZE SHALL BE 8'-4" TALL x ROOM WIDTH (SEE PLAN)							
C200	LOCKERS	OWNER	GC	PROVIDE 12"H BLOCKING AT 60" AFF, WIDTH OF LOCKERS. GC TO INSTALL LOCKERS							
C201	SHELVING, 14"D x 30"W	OWNER	GC								
C202	WIRE SHELVING, 18"W x 36"D	OWNER	GC	FIVE (5) SHELVES TO BE INSTALLED FOR EACH SHELVING UNIT							
C203	WIRE SHELVING, 18"W x 48"D	OWNER	GC	FIVE (5) SHELVES TO BE INSTALLED FOR EACH SHELVING UNIT							
C204	WIRE SHELVING, 18"W x 60"D	OWNER	GC	FIVE (5) SHELVES TO BE INSTALLED FOR EACH SHELVING UNIT							
C205	WIRE SHELVING, 24"W x 36"D	OWNER	GC	FIVE (5) SHELVES TO BE INSTALLED FOR EACH SHELVING UNIT							
C206	WIRE SHELVING, 24"W x 48"D	OWNER	GC	FIVE (5) SHELVES TO BE INSTALLED FOR EACH SHELVING UNIT							
C207	WIRE SHELVING, 24"W x 60"D	OWNER	GC	FIVE (5) SHELVES TO BE INSTALLED FOR EACH SHELVING UNIT							
C208	WIRE SHELVING, 24"W x 72"D	OWNER	GC	FIVE (5) SHELVES TO BE INSTALLED FOR EACH SHELVING UNIT							
C209	WIRE SHELVING, 24"W x 36"D	OWNER	GC	w/SURFACE MOUNTED RAIL TRACK							
C210	WIRE SHELVING, 24"W x 42"D	OWNER	GC	w/SURFACE MOUNTED RAIL TRACK							
C211	WIRE SHELVING, 24"D x 48"W	OWNER	GC	w/ SURFACE MOUNTED FLOOR TRACK							
C212	CHROME COAT RACK, 24"D x 48"W	OWNER	GC								
C300	32" FLAT SCREEN TV & WALL MOUNT	OWNER	OWNER	VERIFY INSTALL HEIGHT							
C301	48" FLAT SCREEN TV & WALL MOUNT	OWNER	OWNER	VERIFY INSTALL HEIGHT							
C302	65" FLAT SCREEN TV & WALL MOUNT	OWNER	OWNER	VERIFY INSTALL HEIGHT							
C400	MICROWAVE	OWNER	GC	FRIGIDAIRE #FFCM1134LS							
C401	UNDERCOUNTER REFRIGERATOR	OWNER	GC	DANBY #DAR026A2BSLDB							
C402	3-DOOR FREEZER (BACK ROOM)	OWNER	GC	AURORA - MODEL#: ABF3 - DIM: 81.9"W X 31.5"D X 83.1"H FREEZER TO BE UNLOADED AND INSTALLED BY GC							
C403	TWO-DOOR FREEZER (RETAIL)	OWNER	GC	AURORA MODEL #: GMF48 - DIM: 54.4"W X 31.5"D X 83.5"H FREEZER TO BE UNLOADED AND INSTALLED BY GC, REMOVE CASTERS							
C404	2-DOOR FREEZER (BACK ROOM)	OWNER	GC	AURORA - MODEL#: ABF2 - DIM: 54.4"W X 31.5"D X 82.2"H FREEZER TO BE UNLOADED AND INSTALLED BY GC							
C405	1-DOOR FREEZER (BACK ROOM)	OWNER	GC	AURORA - MODEL#: ABF1-L - DIM: 27"W X 31.5"D X 83.1"H FREEZER TO BE UNLOADED AND INSTALLED BY GC							
C406	REFRIGERATOR (BACK ROOM)	OWNER	GC	INSIGNIA - MODEL#: NS-RTM18WH8 - COLOR: WHITE DIM: 29.5"W X 32.8"D X 66.6"H							
C407	PAPER TOWEL DISPENSER (BREAKROOM)	OWNER	GC								
C408	SOAP DISPENSER (BREAKROOM)	OWNER	GC								
C410	STADIOMETER (CONSULT ROOMS)	OWNER	GC	CENTER ON WALL (TYP). CONTACT OWNER FOR MOUNTING HEIGHT AND LOCATION IN ROOM							
C411	SCALE	OWNER	OWNER								
C412	SOAP DISPENSER (RESTROOM)	GC	GC	AMERICAN SPECIALTIES #0332 FOR WALL HUNG LAV ONLY							
C500	MOP SINK	GC	GC	SEE PLUMBING SCHEDULES							
C501	WATER HEATER	GC	GC	SEE PLUMBING SCHEDULES							
C503	WATER CLOSET	GC	GC	SEE PLUMBING SCHEDULES							
C504	URINAL (WHERE REQUIRED)	GC	GC	SEE PLUMBING SCHEDULES							
C505	WALL MOUNTED LAVATORY	GC	GC	R=RH SOAP DISPENSER, L=LH SOAP DISPENSER, SEE PLUMBING							
C506	DRINKING FOUNTAIN/BOTTLE FILLING STATION	GC	GC	SEE PLUMBING SCHEDULES							
C507	BATHROOM TRASH RECEPTACLE	OWNER	GC	GEORGIA-PACIFIC MODEL #59451							
C600	SIGNAGE ON STAND-OFF'S	OWNER	OWNER	GC TO COORDINATE INSTALL w/ OMAHA NEON							
C601	EXTERIOR SIGNAGE	OWNER	OWNER	SEE ELEC. LAYOUT. GC TO COOR. INSTALL w/ OMAHA NEON							
C602	U6 DATA ROOM RACK	OWNER	OWNER								
C700	CORE PRINCIPLE WALL COVERING	OWNER	GC	THE WALL GRAPHIC SHOULD BE FREE OF ANY ITEMS LIKE LIGHT SWITCHES, OUTLETS, THERMOSTATS, FIRE EXTINGUISHERS, ECT. PLEASE VERIFY WITH OTHER TRADES AND NOTIFY PROFILE CM IF THERE ARE ANY ITEMS INTERFERING WITH THE WALL GRAPHIC							
C701	DELTA SIGN	OWNER	OWNER	GC TO COORDINATE INSTALL w/ OMAHA NEON							

FF&E DIVISON OF WORK GENERAL NOTES

S.I. = SYMPATECO, INC. ALL ELECTRICAL AND PLUMBING CONNECTIONS BY GC

GENERAL CONTRACTOR TO ACCEPT DELIVERY, UNLOAD AND PLACE THE FOLLOWING OWNER PROVIDED ITEMS IN A SECURE PLACE UNTIL INSTALLATION. THE OWNER WILL COORDINATE AND SCHEDULE DELIVERY OF THESE ITEMS BASED ON THE GENERAL CONTRACTORS

1. ALL SYMPATECO (SI SUPPLIED) ITEMS

2. FRIDGES AND FREEZERS IDENTIFIED ON THE PLAN 3. LIGHTING FIXTURES

4. FLOORING (CARPET, TILE AND ACCESSORIES)

5. PROFILE SUPPLIED IT EQUIPMENT

6. SHELVING SHOWN ON THE PLAN 7. PROFILE PROVIDED MISC. MATERIALS (COMES ON 1 - 2 PALLETS)







MATERIAL LEGEND

CODE	MANUFACTURER	STYLE	COLOR	SIZE	NOTES
ACOUST	ICAL CEILING TILE		1		
ACT-1	USG	RADAR, TEGULAR EDGE	WHITE	24" x 24"	
ACT-2	USG	VINYL COATED GYP PANEL	WHITE	24" x 24"	
CORNER	GUARD				
CG1	TRIMACO	MODEL# 01184G	CLEAR	1.125" x 1.125" x 48" (.0625 THICKNESS)	PLASTIC CORNER GUARD. INSTALL IN CONFERENCE ROOM OPENINGS TO PROTECT HIGH TRAFFIC AREAS.
CERAMI	C TILES		1		·
CT1	FLORIM	ELITE	BEIGE	6" x 36"	TILE TO LAID WITH 1/3 OFFSETS
СТ3	BEDROSIAN	MEDITERRANEAN BEIGE	MEDITERRANEAN BEIGE ECLIPSE (SPLIT FACE)	12" x 12"	DRY STACK
СТ8	AVANTI	CURRENT FLAT	BIANCO	12" x 36"	
СТ9	AVANTI	CURRENT WAVY	BIANCO	12" x 36"	
CT10	MOSA	GLOBAL COLLECTION / GLOBALGRIP	DUTCH ORANGE GLOSS	4" x 12"	
CARPET	/ WOOD FLOORING				
CPT1	SHAW CONTRACT	VERTICAL EDGE TILE, #59114	PAPRIKA MARGIN, #67156	18" x 36" TILE (6.40 MM THICKNESS)	INSTALL MONOLITHIC. CUT CPT1 TILES AS NECESSARY TO ACCOMMODATE PATTERN SHOWN IN FIGURE 1 THIS SHEET.
CPT2	SHAW CONTRACT	COLOUR PLANK TILE, #59595	PAPRIKA, #95668	18" x 36" TILE, FILED CUT TO 9" x 36" (6.40 MM THICKNESS)	INSTALL MONOLITHIC. INSERT RANDOMLY INTO CPT1 AT APPROXIMATELY 15% OF OVERALL COVERAGE (QTY 7 - 9" x 16" OF CPT2 PER QTY 24 18" x 36" OF CPT1). SEE FIGURE 1 THIS SHEET
CR1	EL & EL WOOD PRODUCTS (OR EQUAL)	MODEL #651MUL	PAINTED SW 0054 TWILIGHT GRAY	9/16" x 2 1/2"	GC TO VERIFY LENGTHS NEEDED & FIELD CUT
FLOORIN	IG TRANSITIONS				
EPOXY			CLEAR		CLEAR COAT EPOXY SEALER
FLOORIN	IG TRANSITIONS				
TRANS1	GENOTEX	FX EDGE DIVIDER	SATIN SILVER		TILE & CARPET TRANSITION, FLOAT CARPET TO MATCH HEIGHT. USE R-PROFILE FOR CURVES
TRANS2	JOHNSONITE	EG-XX-H	PEBBLE WG, #32		CARPET AND CONCRETE TRANSITION
TRANS3	GENOTEK	ROUND EDGE	SATIN SILVER		TILE EDGE & WALL TRANSITION
TRANS4	SCHLUTER	AE100 SANITARY COVE	SATIN ANODIZED ALUMINUM	10mm	TILE EDGE & WALL TRANSITION IN RESTROOMS
TRANS5	GENOTEX	WIDE TOP TRIM	SATIN SILVER	10mm	WALL TRIM IN RESTROOMS
PAINTS					
P1	SHERWIN WILLIAMS	DOWNY	SW 7002	-	EGGSHELL
P2	SHERWIN WILLIAMS	RUCOUS ORANGE	SW 6883	-	EGGSHELL
P3	SHERWIN WILLIAMS	TWILIGHT GRAY	SW 0054	-	EGGSHELL
PLASTIC	LAMINATE				
PLAM3	WILSONART	CLASSIC LINEN	4943-38	-	
SOLID SU	JRFACES				
SS1	AVONITE	-	SNOWFALL	-	ALSO USED AT WINDOW SILLS, AVONITE OR EQUAL
SS2	AVONITE	-	CLIFFSIDE	-	OTHER MANUFACTURE ACCEPTABLE, REVIEW COLOR w/ OWNER
BASE TR	IMS				
VB1	JOHNSONITE	COVED	SNOW WHITE, #01	4"H ROLL	USE WITH P1 & P3
VB2	JOHNSONITE	COVED	CARROT, #140	4"H ROLL	USE WITH P2
WALL CO	OVERINGS				
WC1	OMAHA NEON	CUSTOM WALLPAPER	-	48"W ROLLS	WORD WALLPAPER
WC2	OMAHA NEON	CORE PRINCIPLES WALLPAPER	-	48"W ROLLS	CORE PRINCIPLE WALLPAPER, SEE REMARKS ON A1.2 SCHEDULE
SIGN					
SIGN1	OMAHA NEON	CUSTOM SIGN	-	-	DELTA SIGN, SIGN CO. TO INSTALL
ADHESI	/ES				
-	-	25# POWER GROUT	910 BRIGHT WHITE	-	WALL GROUT
-	-	25# POWER GROUT	903 BIRCH	-	FLOOR GROUT
-	SHAW	SHAW 5000	-	-	ADHESIVE FOR CARPET TILE INSTALLATION
-	-	PREMIUM	-	-	COVE BASE ADHESIVE FOR VINYL BASE INSTALLATION
PROVIDE	THE FOLLOWING ITEMS	FOR MAINTENANCE STOCK:			
1. AM	IINIMUM OF 20 EXTRA CE	ILING TILE PANELS.			

CARPET TILE, IN ALL COLORS, EQUAL TO 4% OF AMOUNT INSTALLED. A MINIMUM OF 1 GAL. EXTRA PAINT FOR EACH COLOR INSTALLED.

NOT LESS THAN 10 LINEAL FEET FOR EACH 500 LINEAL FEET OR FRACTION THEREOF, IN ROLL FORM OF EACH MATERIAL, STYLE AND COLOR OF VINYL WALL BASE INSTALLED.

• GENERAL CONTRACTOR IS RESPONSIBLE FOR ACCEPTING DELIVERIES, UNLOADING OF AND PLACING OF

FLOORING MATERIALS IN A SECURE AREA PROVIDED BY THE OWNER UNTIL TIME OF INSTALLATION

• INSTALLING CONTRACTOR TO PROVIDE WALL COVERING ADHESIVE.

FURNISHED INSTALLED BY GC GC GC GC GC GC OWNER GC GC GC GC GC OWNER GC OWNER GC OWNER GC OWNER GC OWNER GC GC GC GC GC GC GC GC GC -OWNER GC OWNER GC OWNER GC OWNER GC OWNER OWNER OWNER GC OWNER GC GC GC GC GC



	ROOM FINISH SCHEDULE										
/I #	ROOM NAME	FLOOR	BASE	WALL FINISH	CEILING FINISH	REMARKS					
)	RETAIL	CT1/CPT1,CPT2	VB1/VB2	P1/P2/P3/CT3/SIGN13	ACT-1/EXPOSED	EXPOSED CEILING STRUCTURE - PAINT P3					
	CONSULT 1	CPT1/CPT2	VB1	P1/P3/WC1/CR1	ACT-1	SEE DETAIL 2/A4.0					
2	CONSULT 2	CPT1/CPT2	VB1	P1/P3/WC1/CR1	ACT-1	SEE DETAIL 2/A4.0					
}	CONSULT 3	CPT1/CPT2	VB1	P1/P3/WC1/CR1	ACT-1	SEE DETAIL 2/A4.0					
•	CONSULT 4	CPT1/CPT2	VB1	P1/P3/WC1/CR1	ACT-1	SEE DETAIL 2/A4.0					
;	CONSULT 5	CPT1/CPT2	VB1	P1/P3/WC1/CR1	ACT-1	SEE DETAIL 2/A4.0					
)	HALLWAY	CPT1/CPT2	VB1	P1	ACT-1						
	WOMENS RESTROOM	CT1	TRANS4	P1/CT8/CT9/CT10	ACT-1						
2	MENS RESTROOM	CT1	TRANS4	P1/CT8/CT9/CT10	ACT-1						
	BREAKROOM	EPOXY	VB1	P1	EXPOSED	EXPOSED CEILING STRUCTURE - PAINT P3					

SEE MATERIAL LEGEND FOR FINISH DESIGNATIONS AND DEFINITIONS. SEE ELEVATIONS FOR ADDITIONAL FINISH CLARIFICATION

FINISH NOTES

1. CT1 TO BE INSTALLED STAGGERED PER MANUFACTURER'S RECOMMENDATIONS. SEE PLAN FOR INSTALLED DIRECTION.

WHERE EXPOXY IS SPECIFIED, APPLY ONE COAT OF CLEAR EXPOXY SEALER.

AT TILE INSTALLATIONS, UTILIZE CAULK AND BACKER ROD AT ALL PERIMETERS AND CORNERS JOINTS FOR MOVEMENT. INSTALL PER TCA & MANUFACTURER'S RECOMMENDATIONS

4. UTILIZE GRAY COLORED THIN SET WHEN INSTALLING TILE.

5. 1/8" GROUT JOINT TYPICAL WHEN INSTALLING CT1 & CT8-10.

6. ALL WALLS, BOTTOM OF BULKHEADS AND SOFFITS TO BE PAINTED P1 UNLESS NOTED OTHERWISE (SEE FINISH PLAN)

ALL WALLS TO BE A LEVEL 4 FINISH, INCLUDING EXISTING WALLS TO REMAIN.

7.1. WALLS WITH WC1 AND WC2 SHALL BE PRIMED TO ACCEPT OWNER PROVIDED WALL COVERING AT THE ENTIRE WALL. 7.2. WALLS WITH SIGN1 SHALL BE PAINTED P1 FOR RANDOM OWNER PROVIDED CUSTOM SIGN. INSTALLED BY OTHERS.

7.3. ALL PAINTED WALLS SHALL RECEIVE A 3/4" NAP ROLLER TEXTURE. 7.4 ALL WALL COVERING/SIGN WALLS SHALL HAVE NO 3/4" NAP ROLLER TEXTURE

ALL EXPOSED CEILING FIXTURES/DUCTS/GRILLES THAT ARE VISIBLE BELOW JOISTS ARE TO BE PAINTED P3. WHERE FIXTURE MEETS WALL, THE WALL SHALL BE THE PAINT COLOR OF THE WALL AS INDICATED ON FINISH PLANS. FINISHED PAINT DETAIL SHOULD LOOK LIKE FIGURE 2.



FIGURE 1 NOT TO SCALE



FIGURE 2 NOT TO SCALE



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<u>FINISH PLAN</u>



DATE: 08/30/19





REFLECTED CEILING PLAN NOTES:

- LIGHT FIXTURE PACKAGE TO BE SUPPLIED BY OWNER.
- ALL LIGHT FIXTURES TO BE REVIEWED BY OWNER FOR AESTHETICS APPROVAL BEFORE ORDERING.
- LIGHT FIXTURES IN RETAIL AND CONFERENCE ROOM SHALL BE ON DIMMERS.
- TRACK FIXTURE: -AT 9'-0" LAY-IN CEILINGS FIXTURE SHALL HAVE 12" RIGID STANDOFFS. -AT 10'-0" LAY-IN CEILINGS FIXTURE SHALL HAVE 24" RIGID STANDOFFS.
- TRACK FIXTURE AT EXPOSED STRUCTURE CEILING (WHERE APPLICABLE) SHALL HAVE RIGID STANDOFFS EXTENDED FROM STRUCTURE ABOVE WITH THE FIXTURE HEAD AT ±7'-6" AFF
- CIRCULAR TRACK FIXTURE: -AT 9'-0" LAY-IN CEILINGS FIXTURE SHALL HAVE 7 1/2" RIGID STANDOFFS. -AT 10'-0" LAY-IN CEILINGS FIXTURE SHALL HAVE 18" RIGID STANDOFFS.
- AT RETAIL AND CONFERENCE ROOMS WITH EXPOSED STRUCTURE CEILING, (WHERE APPLICABLE) ALL DUCTS SHALL BE ROUND SPIRAL AND ALL VENTS TO HAVE ROUND COIL DIFFUSERS.
- 10" CEILING FASCIA 6 WEEK LEAD TIME
- WATER HEATER LOCATION: SEE SHEET A1.1-GENERAL NOTES, SHEET A1.2 FIXTURE PLAN, & 6/A4.0.

SYMBOLS LEGEND ++++

	ACOUSTICAL TILE CEILING PANELS -SEE ROOM FINISH SCHEDULE FOR TYPE
	GYPSUM BOARD CEILING -SEE ROOM FINISH SCHEDULE
X'-X"	DESIGNATES CEILING/BULKHEAD HEIGHT AFF
4	EMERGENCY LIGHT - SEE ELECTRICAL PLANS
	CEILING RETURN, TRANSFER, OR EXHAUST GRILLE - SEE HVAC PLANS
	CEILING SUPPLY GRILLE - SEE HVAC PLANS
0	LED RECESSED CAN - SEE ELECTRICAL PLANS
	TRACK FIXTURE w/ RIGID STANDOFFS & LED HEAD(S) - SEE ELECTRICAL PLANS
\square	PENDANT LIGHT FIXTURE (MOUNT BOTTOM AT 7'-0" AFF) - SEE ELECTRICAL PLANS
	SUSPENDED LED DIRECT/INDIRECT FIXTURE (MOUNT BOTTOM AT 8'-6" AFF) - SEE ELECTRICAL PLANS
	2'x4' SUSPENDED LED FIXTURE (NO LENS) - SEE ELECTRICAL PLANS
	1'x4' SUSPENDED LED FIXTURE (NO LENS) - SEE ELECTRICAL PLANS
S ZONE X	CEILING MOUNTED SPEAKER - SEE PLAN FOR ZONING
E	EXIT SIGN
	IP CAMERA, CEILING MOUNTED
	CEILING MOUNTED DATA LINE
F	CEILING MOUNTED EXHAUST FAN. TURN ON/OFF TO LIGHT SWITCH

MOUNTED EXHAUST FAN IN RESTROOM



REFLECTED CEILING PLAN

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SHEET NUMBER



Plans Reviewed and Approved for Construction with Notations Plan review notes may not reflect all code deficiencies.

DATE: 08/30/19

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INSULATION

Plans Reviewed and Approved for Construction with Notations Plan review notes may not reflect all code deficiencies. Failure to identify a code deficiency during a review of plans Does not alleviate any obligation to comply with all applicable code provisions.

DATE: 08/30/19

D #: BLD19-00468

Owner Provided Items







DESCRIPTION	INSTALLED BY
Bag Hooks.	GC
Window Shades.	Standard Textiles
Display Freezer.	GC
IT Equipment /Cameras.	Profile IT
Chairs.	Canfield
Stadiometer (One goes in each consult room/on the accent wall/verify height with the Owner).	GC
Glass Doors.	Canfield
Coat Hooks (Two go in each consult room, mounted 65" above finished floor to top of hook, 12" apart).	GC
13 x 13 Floor Tile (This tile is used for a solid surface under each scale in the consult rooms).	Store Manager
2-Door Storage Freezer .	GC
Lockers.	GC
Shelving.	GC
Microwave.	GC
Refrigerator, full size.	GC
Refrigerator, undercounter (Only used when there is no room for a full size fridge).	GC
Bulletin Board (3'x2').	GC
Wall hung soap dispenser.	GC
Wall hung paper towel dispenser.	GC
8'-0" Fold-In-Half Table.	Store Manager
Folding Chair.	Store Manager
Step Stool.	Store Manager
8' Ladder.	Store Manager
Utility Cart.	Store Manager
Surface mounted toilet paper holder.	GC
Recessed Trash Receptacle (Includes towel dispenser & AC adapter for dispenser).	GC
Coat Hooks (One on each women's/unisex restroom door or stall)	GC
Shelving	GC
Wall Coverings (Installed in the consult rooms and conference room).	GC
Interior Signage & Graphics Package (Signage behind reception desk & graphics on front door, freezer door, consult room doors, & delta in retail area.	Omaha Neon
Exterior Signage (GC responsible for electrical connections to signage).	Omaha Neon
Ceramic Tile (Includes mortar, grout, caulk, & transitions).	GC
Carpet (Transitions & vinyl base provided by the Owner. Any adhesives or caulk to be provided by the GC).	GC
Vinyl Base (Any adhesives to be provided by the GC).	GC
Miscellaneous Items	Store Manager



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JOB NUMBER

1942920

SHEET NUMBER

A4





IIRROR INSTALLED ——— Y GC	
N-COUNTER SOAP	
EE DETAIL 6/A5.0 OR COUNTER/SINK	
ROVIDE LOCKING AS EQUIRED	

GC TO INSTALL TRANS4 AT BASE

FIGURE 4

Plans Reviewed and Approved for Construction with Notations Plan review notes may not reflect all code deficiencies. Failure to identify a code deficiency during a review of plans Does not alleviate any obligation to comply with all applicable code provisions.

DATE: 08/30/19 #: BLD19-00468











TESTROOM ELEVATION A5.0 SCALE: 1/2" = 1'-0"

ENLARGED PLANS

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A5.0

SHEET NUMBER

PLUMBING SPECIFICATIONS

DIVISION 22 PLUMBING

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ATE: 08/30/19 #: BLD19-00468

22 05 00 BASIC PLUMBING REQUIREMENTS

- A. SEE DIVISION 00 PROCUREMENT AND CONTRACTING AND DIVISION 01 GENERAL REQUIREMENT FOR ADDITIONAL
- REOUIREMENTS B. THE CONTRACTOR IS RESPONSIBLE FOR REVIEWING THE TENANT WORK LETTER AND IS TO CLARIFY ANY
- DISCREPANCIES WITH EXCEL ENGINEERING, INC. PRIOR TO BEGINNING WORK. C. SUBSTITUTIONS
- 1. SEE DIVISION 01 23 00 PRODUCT SUBSTITUTION PROCEDURES FOR ADDITIONAL REQUIREMENTS. 2. CONTRACTOR SHALL PROVIDE ALL SUPPORTING DATA AND ASSUME THE BURDEN OF PROOF THAT ANY SUBSTITUTE IS EQUIVALENT AS TO APPEARANCE, CONSTRUCTION, CAPACITY, AND PERFORMANCE. THE JUDGMENT OF EQUIVALENCY SHALL BE MADE BY THE ENGINEER AT THE TIME OF SHOP DRAWING REVIEW, NOT DURING BIDDING
- 3. WHERE SUBSTITUTE EQUIPMENT REQUIRES REDESIGN OF ANY PART OF THE PROJECT, THE COST OF REDESIGN AND ADDITIONAL COSTS OF THE WORK SHALL BE PAID BY THE CONTRACTOR. REDESIGN SHALL BE SUBJECT TO THE APPROVAL OF ALL AUTHORITIES HAVING JURISDICTION OVER THE WORK INCLUDING THE ARCHITECT/ FNGINFFR
- 4. CONTRACTOR SHALL ASSUME ALL COORDINATION RESPONSIBILITIES FOR SUBSTITUTE EQUIPMENT INCLUDING COORDINATION ACROSS TRADES AND COORDINATION OF PREVIOUSLY REVIEWED AND APPROVED SHOP DRAWING SUBMITTALS, SHOULD THESE SHOP DRAWINGS BE AFFECTED BY THE SUBSTITUTED EQUIPMENT. D. SHOP DRAWINGS, PRODUCT DATA, TEST RESULTS AND SAMPLE SUBMITTALS:
- 1. SEE DIVISION 01 33 23 SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES FOR ADDITIONAL REQUIREMENTS a. PROVIDE HVAC EQUIPMENT OPERATING AND MAINTENANCE MANUALS TO THE OWNER PER IECC C303.3 AND C408.2.5.1.
- E. FINISHING AND PAINTING
- 1. SEE DIVISION 09 91 00 FINISH AND PAINTING FOR ADDITIONAL REQUIREMENTS. 2. PREPARE EXPOSED PIPE, FITTINGS, SUPPORTS, AND ACCESSORIES FOR FINISH PAINTING IN ROOMS THAT WILL HAVE CEILING AND STRUCTURE PAINTED.
- 3. COORDINATE WORK WITH THE PAINTERS SO THAT ALL EQUIPMENT IS INSTALLED PRIOR TO PAINTING. P.C. SHALL PAINT ITEMS IF NOT IN PLACE PRIOR TO NORMAL ROUTINE PAINTING.
- 4. IF FINISH BECOMES RUSTED, CORRODED, SCRATCHED, OR FLAKED DURING STORAGE OR INSTALLATION, REFINISH THE EQUIPMENT TO THE SATISFACTION OF THE OWNER.
- 5. WHERE THE PLUMBING CONTRACTOR IS REQUIRED TO PAINT, THE PAINTING SHALL BE DONE IN ACCORDANCE WITH THE PAINTING PORTION OF THE ARCHITECTURAL SPECIFICATION.
- F. DETAILS AND SCHEDULES ARE SHOWN TO AID THE CONTRACTOR AND ARE NOT MEANT TO BE INCLUSIVE OF ALL DEVICES. PROVIDE REQUIRED EQUIPMENT AND ACCESSORIES FOR A COMPLETE INSTALLATION.
- G. INSTALL ALL EQUIPMENT PER MANUFACTURER'S INSTALLATION INSTRUCTIONS AND REQUIREMENTS. PROVIDE ADDITIONAL WORK AND MATERIALS AS REQUIRED.
- H. REGULATORY REOUIREMENTS
- 1. PERFORM WORK PER ALL LOCAL AND STATE CODES, ORDINANCES AND REGULATIONS HAVING JURISDICTION. I. COORDINATE INSTALLATION OF PLUMBING WORK WITH THE OTHER CONTRACTORS TO AVOID CONFLICTS WITH
- OTHER WORK J. CUTTING AND PATCHING
- 1. PROVIDE ALL CUTTING AND PATCHING NECESSARY FOR PLUMBING WORK INSTALLATION UNLESS THIS WORK IS IDENTIFIED TO BE THE WORK OF OTHER CONTRACTORS. PATCHING SHALL MATCH ADJACENT SURFACES. CORE DRILL OR SAW-CUT OPENINGS THROUGH EXISTING CONCRETE.
- 2. P.C. SHALL PROVIDE SAWCUTTING, EXCAVATION, AND BACKFILL OF EXISTING FLOORS AS REQUIRED FOR INSTALLATION OF NEW UNDERGROUND PIPING. P.C. SHALL PROVIDE CONCRETE AND REINFORCING PER FLOOR SLAB SPECIFICATIONS IN REMOVED AREA OF THICKNESS TO MATCH EXISTING (FIELD VERIFY). PROVIDE DOWELS INTO EXISTING FLOOR SLAB. DOWEL DIAMETER SHALL BE MINIMUM ONE EIGHTH OF FLOOR SLAB THICKNESS. DOWEL LENGTH SHALL BE 12" FOR SLABS LESS THAN 6" THICK, 16" FOR SLABS 6-7" THICK, 18" FOR SLABS 8-9" THICK, AND 20" FOR SLABS GREATER THAN 9" THICK. DOWELS SHALL BE SPACED 12" O.C. AND PENETRATION IN EXISTING SLAB SHALL BE HALF THE LENGTH.
- K. FIRE RATED INTERIOR WALL AND FLOOR PIPE PENETRATIONS
- 1. SLEEVE REQUIRED FOR PENETRATION OF CONCRETE AND MASONRY WALLS AND FLOORS. 2. SEAL OPENING AROUND PIPE WITH A UL APPROVED FIRE-STOP SYSTEM HAVING AN F-RATING NOT LESS THAN THE HOURLY RATING OF THE ASSEMBLY BEING PENETRATED.
- 3. WHERE A SLEEVE IS REOUIRED, FURNISH AND INSTALL SLEEVES FOR NEW DRYWALL WALLS AND CONCRETE WALLS AND FLOORS. FURNISH SLEEVES TO THE MASON CONTRACTOR FOR INSTALLATION IN NEW MASONRY WALLS. PROVIDE SLEEVE AND GROUT SLEEVE IN EXISTING MASONRY WALLS.
- L. SEALANTS 1. PLUMBING CONTRACTOR SHALL PROVIDE ALL SEALANTS WHERE JOINT IS HIDDEN AND WHERE JOINT IS EXPOSED IN MECHANICAL ROOM.
- 2. SEALANT CONTRACTOR SHALL PROVIDE SEALANTS AT ALL EXPOSED LOCATIONS IN FINISHED ROOMS. M. ESCUTCHEONS
- 1. INSTALL ONE-PIECE (TWO PIECE FOR EXISTING PIPING) POLISHED CHROME PLATED STEEL ESCUTCHEONS AT PENETRATIONS EXPOSED IN FINISHED ROOMS (ROOMS WHICH DON'T HAVE UNFINISHED CONCRETE FLOORS
- 2. ESCUTCHEONS WITH SPRINGS FOR WALL AND CEILING LOCATIONS 3. ID TO CLOSELY FIT AROUND PIPE/INSULATION, OD THAT COMPLETELY COVERS THE OPENING.
- 4. ESCUTCHEONS REQUIRED IN CABINETS AND CASEWORK.
- N. PROJECT COMPLETION 1. CLEAN FIXTURES AND EQUIPMENT AND LEAVE IN PROPER WORKING CONDITION AT THE TIME OF FINAL CLEAN-
- 2. REMOVE, CLEAN AND REPLACE AERATORS AFTER FLUSHING WATER PIPING.
- 3. PROVIDE OPERATING INSTRUCTIONS FOR A TOTAL OF ONE HALF (0.5) HOURS. MAINTAIN A RECORD OF OPERATING INSTRUCTION PERIODS AND OBTAIN OWNER SIGNOFF THAT INSTRUCTIONS HAVE BEEN COMPLETED.

22 05 19 METERS AND GAUGES

- A. PRESSURE GAUGES AND THERMOMETERS 1. MANUFACTURERS: TRERICE, U.S. GAUGE, ASHCROFT, MARSH, WEISS, WEKSLER.
- STEM THERMOMETERS:
- a. GENERAL PURPOSE: TRERICE BX9, ASTM E1, ORGANIC SPIRIT LIQUID FILL, CAST ALUMINUM CASE WITH EPOXY FINISH, CAST ALUMINUM ADJUSTABLE JOINT WITH POSITIVE LOCKING DEVICE, 9" SCALE, 3/4" NPT BRASS STEM, WITH EXTENSIONS AS REQUIRED FOR INSULATION.
- b. PROVIDE THERMOWELL FOR ALL THERMOMETERS. BRASS IN COPPER TUBING, STAINLESS STEEL IN STAINLESS STEEL PIPE. SIZE AND INSERTION LENGTH FOR APPLICATION. PROVIDE HEAT TRANSFER MEDIUM. 3. SCALE RANGES AND MINIMUM INCREMENT AS FOLLOWS:
- a. COLD WATER: 0-100 PSIG/ 1 PSIG; 0-100 DEG F/ 1 DEG F
- b. HOT WATER: 0-100 PSIG/ 1 PSIG; 0-160 DEG F/ 2 DEG F.
- 4. EXTEND NIPPLES TO ALLOW INSULATION CLEARANCE.
- 5. INSTALL WHERE READ FROM NORMAL OPERATING LEVEL.
- 6. CALIBRATE FOR ACCURACY.
- 22 05 29 PIPE AND EQUIPMENT HANGERS AND SUPPORTS

- A. MANUFACTURERS: B-LINE, EMPIRE INDUSTRIES, GLOBAL PIPE HANGER PRODUCTS, GRINNEL, NATIONAL PIPE HANGER, UNI STRUT.
- C. ANGLES, CHANNELS, AND BEAMS: ASTM A36 AND A572 AS REQUIRED.
- D. HANGERS SHALL NOT BE ATTACHED TO JOIST BRIDGING.
- E. ATTACHMENT TO METAL DECK: HANGERS MAY BE ANCHORED TO METAL FLOOR/ROOF DECK IF ALL THE FOLLOWING CONDITIONS ARE MET:
- 1. MAXIMUM HANGER LOAD OF 50 LBS.
- 2. ANCHORED TO BOTTOM OF DECK FLUTES, NOT UPPER FLUTE. 3. ANCHOR LENGTH SHALL EXCEED DECK DEPTH.
- F. PIPE HANGERS/SUPPORTS
- 1. SEE DETAILS ON PLANS FOR ADDITIONAL PIPE HANGER SPECIFICATIONS.
- 2. SEE SCHEDULE ON PLANS FOR HANGER SPACING.
- 3. CONFORM TO ASME B31.9 AND MANUFACTURER'S STANDARDIZATION SOCIETY (MSS) SP-58-2009. 4. MATERIALS
- a. V BOTTOM CLEVIS HANGER: MSS SP-58 TYPE 1, B-LINE FIGURE B3106 AND FIGURE B3106V PRE-GALVANIZED PLASTIC PIPE SUPPORT CHANNEL FOR PEX PIPING TO INCREASE HANGER SPACING. 5. INSTALL HANGERS AND SUPPORTS SO PIPING LIVE AND DEAD LOADS AND STRESSES FROM MOVEMENT WILL
- NOT BE TRANSMITTED TO CONNECTED EQUIPMENT. ADJUST HANGERS TO DISTRIBUTE LOADS EQUALLY ON ATTACHMENTS AND TO PROVIDE INDICATED PIPE SLOPES.
- G. STRUT SYSTEM 1. COMPLY WITH THE LATEST REVISION OF MFMA STANDARDS PUBLICATION NUMBER MFMA-3, "METAL FRAMING STANDARDS PUBLICATION".
- 2. INSTALL STRUT IN ACCORDANCE WITH MFMA-102 "GUIDELINES FOR THE USE OF METAL FRAMING"; IN ACCORDANCE WITH EQUIPMENT MANUFACTURER'S RECOMMENDATONS, AND WITH RECOGNIZED INDUSTRY PRACTICES.
- 3. COLD FORMED LOW CARBON STEEL METAL FRAMING CHANNEL STRUT: B-LINE TYPE B CHANNEL.
- 4. MANUFACTURER'S STANDARD FINISH OR PLAIN. 5. 1-5/8 INCHES WIDE IN VARYING HEIGHTS AND WELDED COMBINATIONS AS REQUIRED TO MEET LOAD
- CAPACITIES H. PROVIDE SUPPORT FOR UTILITY METERS IN ACCORDANCE WITH REQUIREMENTS OF UTILITY COMPANIES.

- 22 05 53 MECHANICAL IDENTIFICATION
- A. PIPE IDENTIFICATION 1. INDOOR SELF-ADHESIVE PIPE MARKERS

- 5. LOCATIONS

- d. MINIMUM ONE LOCATION PER ROOM. e. INSTALL IDENTIFICATION AFTER PIPING AND INSULATION IS COMPLETE TO ENSURE MAXIMUM VISIBILITY OF THE IDENTIFICATION SYSTEM. f. BEHIND ACCESS PANELS AND ALL OTHER ACCESSIBLE POINTS OF SERVICE.
- i. AT EACH MAJOR PIECE OF EQUIPMENT.

22 07 00 INSULATION

- A. GENERAL
- 1. SEE INSULATION SCHEDULES ON PLANS FOR ADDITIONAL INFORMATION. 2. INSULATION, INSULATION SYSTEMS AND JACKETS SHALL MEET UL-723/ASTM E84 REQUIREMENTS OF MAX. FIRE HAZARD CLASSIFICATION OF 25, AND MAX. FLAME SPREAD, FUEL CONTRIBUTED, AND SMOKE DEVELOPED OF 50 WHEN INSTALLED IN RETURN AIR PLENUMS.

- HANGERS
- 5. REPAIR INSULATION ON EXISTING PIPING WHICH IS DAMAGED DUE TO CONNECTING OF NEW PIPING. MAINTAIN EXISTING VAPOR BARRIER INTEGRITY
- B. FIBERGLASS (F.G.) INSULATION 1. RIGID PIPING:
 - a. O.C. FIBERGLAS PIPE INSULATION, KNAUF EARTHWOOL PIPE INSULATION, JOHNS MANVILLE MICRO-LOK. b. SINGLE OR DOUBLE ADHESIVE SELF-SEALING LAP SYSTEM FOR LONGITUDINAL JOINT, PRESSURE SENSITIVE

 - c. 3.5-5.5 LB./CU.FT., R=4.3 / NOMINAL INCH AT 75 DEG F.

 - f. VALVES, FITTINGS, AND FLANGE COVERS:
- C. ELASTOMERIC FOAM INSULATION

1. SEAL BUTT JOINTS WITH ADHESIVE. 2. PIPE

- a. MANUFACTURERS: AEROFLEX AEROCEL SSPT, K-FLEX INSUL-LOCK DS, ARMACELL AP/ARMAFLEX BLACK
- LAPSEAL. b. EPDM/PVC BASE ELASTOMERIC FOAM MATERIAL
- c. DUAL TAPE CLOSURE d. MAX. 'K' VALUE 0.245 AT 75 DEG F
- e. MAX. CONTINUOUS TEMPERATURE 220 DEG F f. MAX. 0.05 PERM PER ASTM E96
- g. MAX. FIRE/SMOKE DEVELOPED OF 25/50 PER ASTM E84 FOR UP TO 2" THICK.
- D. PIPE INSULATION REQUIREMENTS

10 THRU 18.

E. EXCAVATING

USED FROM SITE.

OF BEARING SOIL

FREESTANDING SURFACE WATER.

A. PIPING

B. PIPING INSTALLATION

ASTM SPECIFICATIONS.

C. PIPING TESTING

F. BEDDING AND BACKFILL

a. MANUFACTURERS: MARKING SERVICES MS-900, BRADY B-736, SETON OPTI-CODE. b. FLEXIBLE PVC FILM WITH PRESSURE SENSITIVE ACRYLIC ADHESIVE BACKING WITH PRINTED MARKINGS. c. SECURE WITH 2" WIDE TAPE WITH ARROWS INDICATING FLOW. 2. COLOR, OVERALL SIZE AND LETTER HEIGHT SHALL CONFORM TO ASME A13.1- 2007 "SCHEME FOR THE **IDENTIFICATION OF PIPING SYSTEMS**" 3. IDENTIFY PIPE SERVICE, FLOW DIRECTION, AND PRESSURE. 4. NOMENCLATURE TO MATCH NAME ON DRAWING LEGEND. a. LOCATE TO FACE GREATEST POINT OF VISIBILITY. ALL ADJACENT LABELS TO BE INSTALLED NEATLY IN A ROW. b. LOCATE IDENTIFICATION NOT-TO-EXCEED 50 FEET FOR EXPOSED PIPING. c. LOCATE IDENTIFICATION NOT-TO-EXCEED 25 FEET FOR PIPING ABOVE CEILINGS.

- g. NEAR LOCATIONS WHERE PIPES PENETRATE WALLS, FLOORS OR CEILINGS. h. NEAR EACH VALVE AND CONTROL DEVICE.
- 3. INSTALL MATERIALS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS AND MICA PUBLICATION "COMMERCIAL AND INDUSTRIAL STANDARDS", 2011 SEVENTH EDITION.
- 4. CONTINUE INSULATION WITHOUT INTERRUPTIONS THROUGH WALLS AND FLOOR PENETRATIONS AND
 - BUTT STRIP SEALS, ALL SERVICE JACKET VAPOR BARRIER COVERING.
- d. MAX 850 DEG F, JACKET MAX 150 DEG F, 0.02 PERM.
- e. COMPRESSIVE STRENGTH AT 10% DEFORMATION 125 LB./S.F.
- 1). ZESTON 2000/300 SERIES, CEELCO 300 SERIES, PROTO LOSMOKE PVC JACKET 2). HIGH IMPACT 30 MIL WHITE PVC WITH PRECUT FIBERGLASS INSERTS. MAX TEMP 150 DEG
- h. PROVIDE MANUFACTURER PREFORMED INSULATION OVER VALVES AND FITTINGS i. FIELD CUTTING AND GLUING LONGITUDINAL JOINT NOT PERMITTED.
- 1. INSULATE ENTIRE PIPING SYSTEM INCLUDING VALVES AND FITTINGS PER MICA INSULATION STANDARDS PLATES
- 2. SEAL ALL INSULATION ENDS.

22 10 00 EXCAVATION AND BACKFILL

- A. P.C. SHALL EXCAVATE AND BACKFILL TRENCHES FOR PLUMBING WORK.
- B. MAINTAIN, PROTECT, AND TEMPORARILY SUPPORT ABOVE AND BELOW GRADE UTILITIES WHICH ARE TO REMAIN. C. PROVIDE AND MAINTAIN ALL FENCING, BARRICADES, SIGNS, WARNING LIGHTS, AND/OR OTHER EQUIPMENT NECESSARY TO KEEP ALL EXCAVATION PITS AND TRENCHES AND THE ENTIRE SUBGRADE AREA SAFE UNDER ALL CIRCUMSTANCES AND AT ALL TIMES. NO EXCAVATION SHALL BE LEFT UNATTENDED WITHOUT ADEQUATE
- D. ELEVATIONS SHOWN ON THE PLANS ARE SUBJECT TO SUCH REVISIONS AS MAY BE NECESSARY TO FIT FIELD
- 1. CUT TRENCHES SUFFICIENTLY WIDE TO ENABLE INSTALLATION AND ALLOW INSPECTION. REMOVE WATER OR MATERIALS THAT INTERFERE WITH WORK.
- 2. DO NOT INTERFERE WITHIN 45 DEGREE BEARING SPLAY OF FOUNDATIONS.
- 3. EXCAVATE MINIMUM 4" BELOW BOTTOM OF PIPE IF STONE GREATER THAN 1" OR BEDROCK IS ENCOUNTERED. 4. REMOVE UNSTABLE AREAS OF SUBGRADE BELOW PIPE TO MINIMUM 24" BELOW PIPE OR TO STABLE MATERIAL. BACKFILL WITH PEA GRAVEL, LIMESTONE SCREENINGS, OR EQUIVALENT AND COMPACT TO DENSITY EQUAL TO REQUIREMENTS FOR SUBSEQUENT BACKFILL MATERIAL. 5. STOCKPILE EXCAVATED MATERIAL IN AREA DESIGNATED ON SITE AND REMOVE EXCESS MATERIAL NOT BEING
- 1. LINES PASSING UNDER FOUNDATIONS: a. INSTALL WITH MINIMUM OF 1-1/2 INCH CLEARANCE TO CONCRETE AND ENSURE THERE IS NO DISTURBANCE
- b. BACKFILL WITH COMPACTED ENGINEER FILL PER GEOTECH REPORT. 2. MECHANICALLY COMPACT BEDDING AND BACKFILL TO PREVENT SETTLEMENT. THE INITIAL COMPACTED LIFT TO NOT EXCEED 24" COMPACTED TO 95% DENSITY PER MODIFIED PROCTOR TEST (ASTM D-1557). SUBSEQUENT LIFTS UNDER PAVEMENTS, CURBS, WALKS AND STRUCTURES ARE NOT TO EXCEED 12" AND BE COMPACTED TO 95% DENSITY PER MODIFIED PROCTOR TEST. IN ALL OTHER AREAS WHERE CONSTRUCTION ABOVE THE EXCAVATION IS NOT ANTICIPATED WITHIN 2 YEARS, MECHANICALLY COMPACT BACKFILL IN LIFTS NOT
- EXCEEDING 24" TO 90% DENSITY PER MODIFIED PROCTOR TEST. 3. MAINTAIN OPTIMUM MOISTURE CONTENT OF FILL MATERIALS TO ATTAIN REQUIRED COMPACTION DENSITY.
- 4. BEDDING: WHERE OVEREXCAVATED, BRING BACK TO BOTTOM OF PIPE ELEVATION WITH DRY SAND, GRAVEL OR CRUSHED STONE PASSING A 3/4" SIEVE. 5. BACKFILL TO A DEPTH OF 12" OVER THE PIPE WITH SAND, CRUSHED STONE THAT PASSES A 1" SIEVE. PLACE IN
- WELL TAMPED MAXIMUM 6" LAYERS FOR LENGTH OF SEWER AND WIDTH OF TRENCH. BACKFILL ABOVE 12" ABOVE THE PIPE:
- a. UNDER EXISTING AND FUTURE UTILITIES AND BUILDINGS: GRANULAR MATERIALS, PIT RUN SAND, GRAVEL, OR CRUSHED STONE, FREE FROM LARGE STONES, ORGANIC, AND FROZEN MATERIALS. 7. DIRECT SURFACE WATER AWAY FROM STOCKPILE SITE TO PREVENT EROSION OR DETERIORATION OF MATERIALS. REMOVE STOCKPILE, LEAVE AREA IN A CLEAN AND NEAT CONDITION. GRADE SITE SURFACE TO PREVENT

22 11 00 WATER PIPING AND VALVES

- 1. SEE PIPE SCHEDULE ON PLANS FOR ADDITIONAL INFORMATION.
- 1. DRAWINGS AND DIAGRAMS SHOW SIZE AND APPROXIMATE LOCATION OF PIPING. THE DRAWINGS SHALL NOT BE SCALED TO DETERMINE EXACT LOCATION. PROVIDE ADDITIONAL OFFSETS TO COORDINATE WITH
- INSTALLATION REQUIREMENTS OF OTHER SYSTEMS. 2. ROUTE ABOVE GROUND PIPING IN ORDERLY MANNER, PARALLEL TO BUILDING STRUCTURE. OFFSET PIPE
- CONNECTIONS AT EQUIPMENT TO ALLOW FOR SERVICE, SUCH AS REMOVAL OF THE EQUIPMENT. 3. INSTALL IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
- 4. INSTALL PIPING TO CONSERVE BUILDING SPACE AND NOT INTERFERE WITH USE OF SPACE AND OTHER WORK. GROUP PIPING WHENEVER PRACTICAL AT COMMON ELEVATIONS.
- 5. INSTALL PIPING TO ALLOW FOR EXPANSION AND CONTRACTION WITHOUT STRESSING PIPE, JOINTS, OR
- CONNECTED EQUIPMENT WITH RESPECT TO THE BUILDING AND PLUMBING SYSTEM. 6. PROVIDE CLEARANCE FOR INSTALLATION OF INSULATION AND ACCESS TO VALVES.
- 7. DO NOT ROUTE PIPING ABOVE TRANSFORMERS, PANELBOARDS, MOTOR CONTROL CENTERS, SWITCHBOARDS OR OTHER ELECTRICAL DISTRIBUTION EQUIPMENT.
- 8. PROVIDE NON-CONDUCTING DIELECTRIC CONNECTIONS WHEREVER JOINTING DISSIMILAR METALS. 9. USE ONLY NEW MATERIAL, FREE OF DEFECTS, RUST AND SCALE, AND MEETING THE LATEST REVISION OF THE
- 10. PREPARE EXPOSED UNFINISHED PIPE, FITTINGS, SUPPORTS, AND ACCESSORIES, READY FOR FINISH PAINTING. 11. SLOPE PIPING AND ARRANGE SYSTEMS TO DRAIN AT LOW POINTS. USE TOP CONNECTIONS FOR TAKEOFFS TO EQUIPMENT ABOVE THE MAINS AND BOTTOM CONNECTIONS FOR TAKEOFFS TO EQUIPMENT BELOW THE MAINS. 12. USE LONG RADIUS ELBOWS FOR ALL 90 DEGREE ELBOWS.
- 13. INSTALL VALVE STEM BETWEEN THE VERTICAL (UPRIGHT) OR HORIZONTAL POSITION. 14. DO NOT SUPPORT WEIGHT OF PIPING ON VALVE.
- 1. EACH TEST MUST BE WITNESSED BY THE OWNER'S REPRESENTATIVE. IF LEAKS ARE FOUND, REPAIR THE AREA WITH NEW MATERIALS AND REPEAT THE TEST. DO NOT INSULATE PIPE UNTIL IT HAS BEEN SUCCESSFULLY
- 2. MEASURE AND RECORD TEST PRESSURE AT THE HIGH POINT IN THE SYSTEM.

- 3. TEST WATER DISTRIBUTION SYSTEM WITH POTABLE WATER UNDER A WATER PRESSURE OF 100 PSIG OR THE WORKING PRESSURE OF THE SYSTEM (WHICHEVER IS GREATER) FOR A PERIOD OF (4) HOURS. IF LOCAL AUTHORITIES REQUIRE MORE STRINGENT TESTING, CONTRACTOR SHALL COMPLY WITH THOSE REQUIREMENTS. 4. WHERE NEW PIPING IS AN EXTENSION OF THE EXISTING SYSTEM, TEST THE NEW PIPING PRIOR TO CONNECTION TO THE EXISTING SYSTEM
- D. WATER PIPING BALANCING
- 1. VERIFY THAT SUFFICIENT WATER FLOW, PRESSURE AND TEMPERATURE ARE AVAILABLE AT EACH OUTLET AND EQUIPMENT CONNECTION 2. BALANCE CIRCULATING HOT WATER SYSTEM TO ENSURE PROPER CIRCULATION OF HOT WATER IN THE SYSTEM
- WITH HOT WATER AVAILABLE TO ALL FIXTURES AND CONNECTIONS. E. FLUSH AND DISINFECT DOMESTIC WATER SUPPLY SYSTEM AS FOLLOWS:
- 1. FILL PIPING WITH POTABLE WATER AND ALLOW TO STAND FOR 24 HOURS.
- 2. FLUSH EACH OUTLET BEGINNING WITH OUTLET CLOSEST TO BUILDING CONTROL VALVE AND THEN EACH SUCCESSIVE OUTLET IN THE SYSTEM.
- 3. FLUSH EACH OUTLET MINIMUM 1 MINUTE AND UNTIL WATER APPEARS CLEAR AT THE OUTLET. 4. FILL SYSTEM WITH WATER/CHLORINE SOLUTION OF 50 PPM OF CHLORINE AND LET STAND FOR 24 HOURS, OR 200 PPM FOR 3 HOURS.
- 5. FLUSH WITH POTABLE WATER.
- 6. REPEAT DISINFECTION IF BACTERIOLOGICAL CONTAMINATION EXISTS.
- 7. PERFORM WATER QUALITY TEST IF REQUIRED BY LOCAL AUTHORITIES. 8. IF LOCAL AUTHORITIES REQUIRE MORE STRINGENT FLUSHING AND DISINFECTION, CONTRACTOR SHALL COMPLY WITH THOSE REQUIREMENTS.
- F. VALVES 1. MANUFACTURERS: NIBCO, APOLLO, KEYSTONE, CENTERLINE, DEZURIK, CRANE, MUELLER, POWELL, VIEGA, GRINNELL, SIOUX CHIEF. LISTING OF MODEL NUMBER DOES NOT PRECLUDE OTHER ACCEPTABLE
- MANUFACTURERS FROM PROVIDING EQUIVALENT VALVES.
- 2. PROVIDE BRONZE VALVE FOR COPPER PIPE. 3. SHUTOFF VALVES 1" AND SMALLER
- a. PEX BALL VALVE
- 1). APOLLO 77X SERIES 2). BRONZE THREE PIECE BODY, CHROME PLATED BRASS BALL, FULL PORT, TEFLON SEATS AND STUFFING BOX RING, LEVER HANDLE WITH VALVE EXTENSIONS FOR INSULATED PIPING, CRIMP JOINT ENDS, 200 PSI
- WOG. NSF 61 LISTED.
- 4. SHUTOFF VALVES 2" AND SMALLER a. BRONZE BALL VALVE:
 - 1). SOLDERED: NIBCO S-685-66-LF.
 - 2). PRESS FITTING: VIEGA SERIES 2970.*ZL OR SERIES 2971.*ZL
 - 3). TWO PIECE, CHROME PLATED BRASS OR STAINLESS STEEL BALL, FULL PORT, REINFORCED PTFE SEATS AND STUFFING BOX RING, LEVER HANDLE WITH LOCKABLE HANDLE AND VALVE STEM EXTENSIONS FOR INSULATED PIPING, 250 PSI, NSF 61 ANNEX G LISTED.
- b. CPVC BALL VALVE 1). SIOUX CHIEF 648 SERIES
- 2). TWO PIECE BRASS BODY, CHROME PLATED BRASS OR STRAINLESS STEEL BALL, FULL PORT, TEFLON SEATS AND STUFFING BOX RING, LEVER HANDLE WITH VALVE EXTENSIONS FOR INSULATED PIPING, CPVC SOCKET ENDS, 150 PSI WORKING PRESSURE.
- 5. MANUAL BALANCE VALVES 2" AND SMALLER a. BELL & GOSSETT A-549LFP(C), CALEFFI, NIBCO, FLOWSET, ARMSTRONG, AND IMI HYDRONIC ENGINEERING): BRONZE BODY WITH CALIBRATED BRASS ORIFICE OR VENTURI, MEMORY STOP, SOLDERED ENDS AND PRESSURE TAPS. 125 PSIG RATING AT 240 DEG F, NSF 61 ANNEX G LISTED LEAD FREE.
- b. INSTALL 5 PIPE DIAMETERS DOWNSTREAM AND 2 PIPE DIAMETERS UPSTREAM OF A FITTING. 6. DRAIN VALVES: SHUTOFF VALVE WITH THREADED CAP. PROVIDE FOR COMPLETE SYSTEM DRAINAGE, NSF 61
- LISTED 7. SPRING LOADED CHECK VALVES
- a. 2" AND SMALLER:
- 1). THREADED: NIBCO MODEL 480-Y-LF 2). BRONZE BODY, TFE SEAT AND DISC, STAINLESS STEEL SPRING, CLASS 125, NSF 61 ANNEX G LISTED LEAD

22 13 00 DRAIN PIPING AND VALVES

- A. PIPING INSTALLATION
- 1. INSTALL IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS. 2. FIELD VERIFY EXISTING AND PROPOSED SEWER ELEVATIONS AND SIZES AND NOTIFY THE OWNER'S
- REPRESENTATIVE IN WRITING OF ANY VARIATION OF THE ELEVATIONS BEFORE BEGINNING ANY SEWER AND BUILDING DRAIN WORK.
- 3. DRAWINGS AND DIAGRAMS SHOW SIZE AND APPROXIMATE LOCATION OF PIPING. THE DRAWINGS SHALL NOT BE SCALED TO DETERMINE EXACT LOCATION. PROVIDE ADDITIONAL OFFSETS TO COORDINATE WITH INSTALLATION REQUIREMENTS OF OTHER SYSTEMS.
- 4. ROUTE ABOVE GROUND PIPING IN ORDERLY MANNER, PARALLEL TO BUILDING STRUCTURE. OFFSET PIPE CONNECTIONS AT EOUIPMENT TO ALLOW FOR SERVICE, SUCH AS REMOVAL OF THE EOUIPMENT
- 5. INSTALL PIPING TO CONSERVE BUILDING SPACE AND NOT INTERFERE WITH USE OF SPACE AND OTHER WORK. GROUP PIPING WHENEVER PRACTICAL AT COMMON ELEVATIONS. 6. INSTALL PIPING TO ALLOW FOR EXPANSION AND CONTRACTION WITHOUT STRESSING PIPE, JOINTS, OR
- CONNECTED EQUIPMENT WITH RESPECT TO THE BUILDING AND PLUMBING SYSTEM. 7. PROVIDE CLEARANCE FOR INSTALLATION OF INSULATION AND ACCESS TO VALVES.
- 8. DO NOT ROUTE PIPING ABOVE TRANSFORMERS, PANELBOARDS, MOTOR CONTROL CENTERS, SWITCHBOARDS OR OTHER ELECTRICAL DISTRIBUTION EQUIPMENT.
- 9. PROVIDE NON-CONDUCTING DIELECTRIC CONNECTIONS WHEREVER JOINTING DISSIMILAR METALS. 10. PROVIDE NO-HUB ADAPTER ON PVC PIPE WHERE USING NO-HUB COUPLINGS.
- 11. SLOPE SANITARY PIPE 2" AND SMALLER 1/4" PER FOOT; 3" AND LARGER PIPING 1/8" PER FOOT. B. SANITARY DRAIN PIPING TESTING: TEST DRAIN AND VENT PIPING PER CODE REQUIREMENTS.
- 22 40 00 PLUMBING FIXTURES

A. FIXTURES

- 1. SEE SCHEDULES FOR ADDITIONAL INFORMATION. 2. LIKE FIXTURE TYPE (FAUCETS, WATER CLOSETS, LAVS) SHALL BE THE PRODUCT OF THE SAME MANUFACTURER. 3. SAFETY COVERS OVER EXPOSED WASTE AND SUPPLY PIPING AT ADA ACCESSIBLE FIXTURES SHALL BE LAV-GUARD BY TRUEBRO OR EQUIVALENT.
- B. INSTALLATION
- 1. INSTALL IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
- 2. PROVIDE CHROME PLATED RIGID SUPPLIES TO FIXTURES WITH STOPS, REDUCERS, AND ESCUTCHEONS UNLESS OTHERWISE NOTED IN SCHEDULES AND DETAILS.
- 3. SEAL FIXTURES TO WALL AND FLOOR SURFACES WITH MILDEW-RESISTANT SILICONE SEALANT, COLOR TO MATCH 4. INSTALL BARRIER-FREE FIXTURES IN COMPLIANCE WITH LOCAL CODES AND FEDERAL ADA ACCESSIBILITY
- **GUIDELINES** 5. EXPOSED TRAPS, PIPING, AND ESCUTCHEONS SHALL BE CHROME PLATED BRASS UNLESS OTHERWISE NOTED IN
- SCHEDULES AND DETAILS
- 6. ADJUST LAVATORY THERMOSTATIC MIXING VALVE TO 105 DEG F MAXIMUM OUTLET TEMPERATURE.

LEGEND			
NOTE: ALL SYMBOLS SHOWN MAY NOT APPE	AR ON DRAWINGS.		
SYM. ABBR. IDENTIFICATIO	<u>DN SYM.</u>	ABBR.	IDENTIFICATION
PIPING ACCESSORIES			
CO CLEAN OUT			PIPING CAP
			UNION
O FCO FLOOR CLEAN OUT (FLUSH)	 旦		THERMOMETER
	<u>ହ</u>		PRESSURE GAUGE
		НВ	HOSE BIBB
SHUTOFF VALVE	Ô	RD	ROOF DRAIN
BALANCE VALVE	0	OF	OVERFLOW DRAIN
CHECK VALVE	\square	FD	FLOOR DRAIN
GLOBE VALVE	0	HD	HUB DRAIN
Q WHA WATER HAMMER ARRESTOF		HD-R	HUB DRAIN WITH REDUCER
TEST CONNECTION	X	<u>، </u>	FIXTURE UNIT (WATER SUPPLY OR WASTE)
PIPING			
CW COLD HARD WATER PIPIN	NG —ST—	ST	STORM PIPING
HW HOT WATER PIPING	OF	OF	OVERFLOW CONDUCTOR PIPING
HWR HOT WATER RETURN PIP	ING	V	VENT PIPING
	G —SA—	SA	SANITARY SEWER PIPING
MISCELLANEOUS			
	\bigcirc		DETAIL OR SECTION NUMBER SHEET NUMBER
ABBREVIATIONS			
		NTS	NOT TO SCALE
AFF ABOVE FINISHED FLOOR		OC	ON CENTER
AFG ABOVE FINISHED GRADE		PC	PLUMBING CONTRACTOR
BJ BETWEEN JOISTS		RI	ROUGH IN
EC ELECTRICAL CONTRACTOR		ΤJ	THRU JOISTS
FPC FIRE PROTECTION CONTRAC	TOR	TTS	TIGHT TO STRUCTURE
GC GENERAL CONTRACTOR / CONSTRUCTION MANAGER		TYP	TYPICAL
HC HVAC CONTRACTOR		VTR	VENT THRU ROOF
IE INVERT ELEVATION		WP	WEATHER PROOF
NIC NOT IN CONTRACT			
FIRE RATED WALLS			
FIRE - 1 HOUR			FIRE - 3 HOUR
FIRE - 2 HOUR			FIRE - 4 HOUR



SHEET INDEX

NUMBER	SHEET NAME
PLUMBING	
P0.1	LEGEND AND SPECIFICATIONS
P1.1	FLOOR PLANS
P2.0	ISOMETRICS
P3.0	DETAILS
P4.0	SCHEDULES

LEGEND AND SPECIFICATIONS

PROFESSIONAL SEAL

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ATE: 08/30/19 D #: BLD19-00468



GENERAL NOTES:

- ALL PIPING IS TO BE CONCEALED. IF BUILDING CONSTRUCTION
 DOES NOT PERMIT CONCEALING PIPING, LOCATIONS AND ROUTING ARE TO BE APPROVED BY ARCHITECT/OWNER PRIOR TO INSTALLATION.
- INSTALL CLEANOUTS AT STACKS WHICH PENETRATE THE LOWEST FLOOR LEVEL 28" AFF UNLESS NOTED OTHERWISE.
- FLOOR AND WALL CLEANOUT LOCATIONS NOT PERMITTED TO BE MOVED WITHOUT APPROVAL OF ARCHITECT/ENGINEER.
- SEE ARCHITECTURAL A5 SHEETS FOR ADA RELATED INSTALLATION DETAILS.

<u>KEYNOTES:</u>

3" TO

<u>FD-1C</u>

3" TO

SS-1

3" TO

WC-1H

3" UP TO

<u>WC-1H</u>

—V. UP

3" TO

- $\langle 1 \rangle$ CONNECT TO MINIMUM 3" SANITARY DRAIN PROVIDED BY THE LANDLORD. FIELD VERIFY EXISTING PIPING LOCATION, ELEVATION, DIRECTION OF FLOW AND SIZE AT POINT OF CONNECTION AND THAT NEW PIPE ROUTE IS CLEAR OF UTILITIES AND OTHER OBSTRUCTIONS PRIOR TO INSTALLATION OF ANY PIPING. REROUTE AS REQUIRED. COSTS INCURRED FOR FAILURE TO DO SO SHALL BE THE CONTRACTOR'S RESONSIBILITY. CONTRACTOR SHALL PERFORM A DYE TEST TO ENSURE PIPE BEING CONNECTED TO IS ACTIVE.
- $\langle 2 \rangle$ VERIFY LOCATION AND CONNECT TO DOMESTIC WATER TERMINATION PROVIDED BY THE LANDLORD. PROVIDE VALVE FOR TENANT SPACE AT TERMINATION IF NONE EXISTS. REROUTE AS REQUIRED. VERIFY EXISTING WATER METER / BACKFLOW PREVENTER LOCATION AND REQUIREMENTS ARE PER AHJ REQUIREMENTS. VERIFY WATER PRESSURE AT POINT OF CONNECTION MEETS OR EXCEEDS PRESSURE NOTED IN WATER CALCULATION PRIOR TO INSTALLATION OF ANY NEW WORK. NOTIFY OWNER AND EXCEL ENGINEERING IF PRESSURE IS BELOW MINIMUM REQUIREMENT.
- $\overline{(3)}$ <u>WH-1</u> MOUNT ON PLATFORM. SEE WATER HEATER PIPING DETAIL FOR CONTINUATION.
- $\langle 4 \rangle$ CONNECT TO EXISTING.





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			WASTE			COLD W	ATER		HOT WA	TER	TOTAL WAT				
				TRAP			BRANCH			BRANCH	4				
NO.	FIXTURE	UNITS	TOTAL	SIZE	UNITS	TOTAL	SIZE	UNITS	TOTAL	SIZE	UNITS	TOTAL			
1	DRINKING FOUNTAIN / EWC	0.5	0.5	1 1/4"	0.5	0.5	1/2"	-	-	-	0.5	0.5			
3	FLOOR DRAIN- 3"	5	15	3"	-	-	-	-	-	-	-	-			
2	LAV - SINGLE	1	2	1 1/4"	0.75	1.5	1/2"	0.75	1.5	1/2"	1	2			
1	SINK- KITCHEN /FAUCET	2	2	1 1/2"	1.13	1.13	1/2"	1.13	1.13	1/2"	1.5	1.5			
1	SINK- SERVICE- 3"	3	3	3"	2.25	2.25	1/2"	2.25	2.25	1/2"	3	3			
2	WATER CLO- TANK	4	8	-	2.5	5	1/2"	-	-	-	2.5	5			
10	TOTAL		30.5			10.38			4.88			12			



NOT TO SCALE

BLD #: BLD19-00468

Plans Reviewed and Approved for Construction with Notations Plan review notes may not reflect all code deficiencies. Failure to identify a code deficiency during a review of plans Does not alleviate any obligation to comply with all applicable code provisions. DATE: 08/30/19



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WATER PRESSURE DATA

- TENANT FIXTURE UNITS PREDOMINATE FLUSH TYPE
- CONTINUOUS FLOW GPM 3 4 TENANT DEMAND

PRESSURE AVAILABLE AFTER METER

- MAXIMUM PRESSURE ALLOWED ON SYSTEM MINIMUM PRESSURE REQUIRED AT POINT OF CONNECTION (P.O.C.)
- MINIMUM POC PIPE SIZE
- TENANT METER SIZE 8
- TENANT METER PRESSURE LOSS 9 10 TENANT BACKFLOW PREVENTER PRESSURE LOSS
- PRESSURE AVAILABLE FOR DISTRIBUTION 11

WATER DISTRIBUTION SIZING - COLD WATER

А	AVAILABLE BUILDING WATER PRESSURE	35.0 PSIG				
В	START POINT TAG (SEE ISOMETRIC FOR TAG LOCATION)	P.O.C.				
С	DIST. PREVIOUS START POINT TO THIS START POINT			WSFL	J@8'/SEC	
D	UNIFORM LOSS PREV. START POINT TO THIS START POINT			Copper	CPVC	PEX
Е	PIPE PRESSURE DROP FROM METER TO START POINT		Pipe	Flush	Flush	Flush
F	CONTROLLING FIXTURE: ID:	WC-1H	size	tank	tank	tank
	ROOM NAME & NO.:	MENS "112"	1/2	4.0	3.0	2.5
	PRESSURE REQUIRED	25 PSIG	3/4	14.0	10.0	5.0
G	ELEV. DIFF. BETW. METER AND CONTROLLING FIXTURE	3 FEET	1	31.0	23.0	19.0
Н	PRESSURE LOSS DUE TO WATER SOFTENER	0 PSIG	1 1/4	58.0	41.0	34.0
Ι	PRESSURE LOSS DUE TO MIXING VALVE	0 PSIG	1 1/2	107.0	68.0	55.0
J	PRESSURE AVAILABLE FOR PIPING PRESSURE DROP	8.7 PSIG	2	260.0	171.0	135.0
К	DEVELOPED LENGTH START PT. TO CONTR. FIXTURE	55 FEET	2 1/2	469.0	385.0	
L	EQUIVALENT LENGTH START PT. TO CONTR. FIXTURE	83 FEET	3	752.0	655.0	
Μ	PRESSURE AVAILABLE FOR UNIFORM LOSS	10.54 PSIG/100'	4	1792.0	1094.0	
WATER I	DISTRIBUTION SIZING - HOT WATER					
			-			
А	AVAILABLE BUILDING WATER PRESSURE	35.0 PSIG				
В	START POINT TAG (SEE ISOMETRIC FOR TAG LOCATION)	P.O.C.				

A	AVAILABLE DUILDING WATER PRESSURE		55.0 PSIG				
В	START POINT TAG (SEE ISOMETRIC FOR TAG	G LOCATION)	P.O.C.				
С	DIST. PREVIOUS START POINT TO THIS STAF	RT POINT			WSFL	J@5'/SEC	
D	UNIFORM LOSS PREV. START POINT TO THI	S START POINT			Copper	CPVC	PEX
E	PIPE PRESSURE DROP FROM METER TO STA	ART POINT		Pipe	Flush	Flush	Flush
F	CONTROLLING FIXTURE:	ID:	L-1	size	tank	tank	tank
		ROOM NAME & NO.:	WOMENS "111"	1/2	2.5	1.9	1.6
		PRESSURE REQUIRED	8 PSIG	3/4	8.8	6.3	3.1
G	ELEV. DIFF. BETW. METER AND CONTROLLIN	NG FIXTURE	3 FEET	1	19.4	14.4	11.9
Н	PRESSURE LOSS DUE TO WATER SOFTENER		0 PSIG	1 1/4	36.3	25.6	21.3
Ι	PRESSURE LOSS DUE TO MIXING VALVE		12 PSIG	1 1/2	66.9	42.5	34.4
J	PRESSURE AVAILABLE FOR PIPING PRESSUR	RE DROP	13.7 PSIG	2	162.5	106.9	84.4
К	DEVELOPED LENGTH START PT. TO CONTR.	FIXTURE	85 FEET	2 1/2	293.1	240.63	
L	EQUIVALENT LENGTH START PT. TO CONTR	R. FIXTURE	128 FEET	3	470.0	409.4	
М	PRESSURE AVAILABLE FOR UNIFORM LOSS		10.74 PSIG/100'	4	1120.0	683.8	



NOT TO SCALE

GENERAL NOTES:

- SEE UNDERGROUND PLAN AND FIXTURE UNIT SCHEDULE FOR WASTE DRAIN BRANCH AND TRAP SIZE TO FIXTURE.
- SEE FIXTURE UNIT SCHEDULE FOR WATER SUPPLY BRANCH SIZE TO FIXTURE.
- PIPING SIZED BASED ON TYPE L COPPER TUBING. IF CPVC OR PEX IS SUBSTITUTED RESIZE PER TABLE IN WATER CALCULATIONS.

<u>KEYNOTES:</u>

(1) CONNECT TO EXISTING.

12	F.U.
TANK	
0	GPM
9.2	GPM

75.0 PSIG 35.0 PSIG 1 INCHES N/A INCHES 0 PSIG 0 PSIG 35.0 PSIG

WASTE AND VENT ISOMETRIC

SHEET DATES SHEET ISSUE AUG. 27, 2019 REVISIONS JOB NUMBER 1942920 SHEET NUMBER **P2.0** 2019 © EXCEL ENGINEERING, INC.

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BUILD-OUT BY SAN

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PROFESSIONAL SEAL

PROJECT INFORMATION

ISOMETRICS



DATE: 08/30/19 BLD #: BLD19-00468

VAPOR WATER VAPOR CPVC PEX METAL PIPE PLASTIC PIPE 8' 5' 6' 4' 32" 3/8" 3/8" 9' 5' 7' 4' 32" 3/8" 3/8" 9' 6' 8' 4' 32" 3/8" 3/8" 9' 6' 8' 4' 32" 3/8" 3/8" 9' 6' 8' 4' 32" 3/8" 3/8" 9' 7' 9' 4' 32" 3/8" 3/8" 12' 8' 10' 4' 32" 3/8" 3/8" 12' 8' 11' 4' - 3/8" 3/8" 12' 9' 12' 4' - 3/8" 3/8" 12' 10' 12' 4' - 3/8" 3/8" 12' 12' 12' 4' - 3/8" 3/8" 12' 12' </th
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12' 4' - 5/8" 3/8"
12' 4' - 5/8" 3/8"
12' 4' - 3/4" 3/8"
15' 10' 10' 10'
1 EVERY FLOOR LEVEL OR SPACING LISTED.
STANDARDIZATION SOCIETY
NGERS WITHIN 12" OF FLBOWS AND TEES AND AT CONCENTRATED LOADS

³ PIPE SUPPORT SCHEDULE





PIPE SCHEDULE									
							со	PPER	
			C12	2200 PI	PE			FITT	INGS
SERVICE	LOCATION	PIPE SIZE	IARD DRAWN	E K SOFT	D DRAWN	e threaded (1)	ER SOLDER (1)	OPPER PRESS O-RINGS (4)	T OR ASTM B-75 LOY GROOVED

		COPPER										PEX		PVC										CPVC						
			C12200) PIPE			FITTI	NGS			JOI	NTS	PIPE	FITTINGS	JOINTS			PIPE			FIT	TINGS	JOIN	Г į		PIPE		FITT	INGS	JOINT
SERVICE	LOCATION	PIPE SIZE	ASTM B42, B88 TYPE L HARD DRAWN	ASTM B42, B30 LIFE N SOFT ASTM B42, B280 HARD DRAWN	ASME B16.15 CAST BRONZE THREADED (1)	ASME B16.18 CAST COPPER SOLDER (1)	ASME B16.18 OR B16.22 COPPER PRESS FITTINGS WITH EPDM O-RINGS (4)	ASTM B-88 CDA 89833 CAST OR ASTM B-75 C12200 WROT COPPER ALLOY GROOVED FITTING. (5)	ASME B16.22 WROUGHT COPPER SOLDER (2	LEAD FREE SOLDER	ASTM B32 AWS A5.8 BCuP SILVER BRAZE	COLD PRESS MECH. JOINT (4) COUPLING JOINT (5) (6)	ASTM F876, F877, F2023	ASTM F2159	PER MFR REQUIREMENTS	SCH. 40 PRESSURE RATED ASTM D1785	SCH. 40 PRESSURE RATED ASTM D1785	DWV NON-PRESS. RATED ASTM F891	SCH. 40 NON-PRESS. RATED ASTM D1784, D2665	SDR 35 NON-PRESS. ASTM D3034	SCH. 40 ASTM D 2466	SCH. 40 DWV ASTM D2665	ASTM F656 PRIMER, ASTM D2564 SOLVENT CEMENT	ASTM F477 ELASTOMERIC GASKET	SCHEDULE	ASTM D2846 - SDR 11	ASTM D1784 CLASS 23447, F441	ASTM D1784, F2618	ASTM D1784, F439	SOLVENT CEMENT ASTM F493 SOLVENT CEMENT ASTM F493 NSF 14
WATER	ABOVE GROUND	ALL	X		Х	X	Х	Х	X	Х		X X	Х	Х	Х											Х	Х		Х	×
SANITARY	ABOVE GROUND	ALL																Х				Х	Х							
DRAIN AND VENT	UNDER BUILDING	ALL														Х			Х			Х	Х							

(2) LEAD-FREE PER ASTM B75 ALLOY C12200 (4) INSTALL PER MANUFACTURER'S INSTRUCTIONS. 50 YEAR WARRANTY AGAINST MANUFACTURING DEFECTS.

(5) INSTALL PER MANUFACTURER'S INSTRUCTIONS. 10 YEAR WARRANTY AGAINST MANUFACTURING DEFECTS.

(6) GRINNELL FIG 672 OR EQUIVALENT. DUCTILE IRON ASTM A536 GRADE 65-45-11 HOUSING WITH COPPER ACRYLIC ENAMEL COATING, ZINC PLATED TRACK HEAD

BOLTS CONFORMING TO ASTM A-183, GRADE "EN" EPDM (COPPER COLOR CODE) NSF 61 APPROVED COMPOUND GASKET SUITABLE FOR WATER TEMPERATURE.

SEF	ERVICE SINK SCHEDULE (S.S.)														
			BASIN				FAUCET								
NO.	MOUNTING	MAT'L	SIZE	RIM	MODEL	PIPING	BACKFLOW	GPM	MFR/MODEL						
				GUARD		EXPOSURE	PREVENTER								
1	FLOOR	DURASTONE	24x24x10	(1)	MUSTEE 63M	CONCEALED	WATTS SERIES 8	5-7	CHICAGO 305						

- ACCEPTABLE MANUFACTURERS:

-BASIN: MUSTEE, FIAT, KOHLER, WILLIAMS.

-FAUCET: CHICAGO, DELTA, KOHLER, AMERICAN STANDARD, SYMMONS. T&S BRASS. -DRAINS AND TRAPS: KOHLER, DEARBORN, KEENEY, MCGUIRE, BRASSCRAFT.

- FLOOR SERVICE SINKS WITH 3" BRASS DRAIN, STAINLESS STEEL 3 MOP HOLDER HANGER, HEAVY DUTY 5/8" DIAMETER

REINFORCED RUBBER HOSE, AND STAINLESS STEEL HOSE BRACKET.

(1) BUMPER GUARDS ON EXPOSED RIMS.

SINK SCHEDULE (S.)

			SINK						FAUCET			
NO.	COMPA	RTMENT	OVERALL	MODEL	NO.	SPOL	JT	GPM	HANDLE	FINISH	SPRAY	MODEL
	NO.	DEPTH	SIZE		HOLES	REACH	HEIGHT					
1	2	6"	33"x22"	ELKAY ECTSRAD33226TBG1 (1)	1	8.7"	6.4"	1.8	LEVER	STAINLESS	YES	KRAUS KPF-1610-SS (1)

- ACCEPTABLE MANUFACTURERS:

-STOPS AND SUPPLIES: KOHLER, BRASSCRAFT, DEARBORN, KEENEY, MCGUIRE.

-DRAINS AND TRAPS: KOHLER, DEARBORN, KEENEY, MCGUIRE, BRASSCRAFT. - SELF-RIMMING 18 GA. 304 S.S. SINK, ANGLE SUPPLIES WITH HANDLE STOPS (BRASSCRAFT OCR1912AX C). PROVIDE EACH

COMPARTMENT WITH STAINLESS STEEL STRAINER AND TAILPIECE (ELKAY LKAD35), AND 1-1/2" "P" TRAP (BRASSCRAFT 0030).

- VERIFY SINK CUTOUT SIZE WILL FIT IN COUNTERTOP WITH CABINET SHOP DRAWINGS PRIOR TO ORDERING.

(1) SINK AND FAUCET FURNISHED BY SYMPATECO. INSTALLED BY P.C.

THERMOSTATIC MIXING VALVE SCHEDULE (TMV)

	I TERINIUS IATIC INIAING VALVE SCHEDULE (I.NI.V.)												
NO.	SERVICE	INLETS	OUTLET	MAX. FLOW (GPM)	ACTUAL FLOW (GPM)	ACT. P.D. (PSI)	TEMP. SETTING (°F)	MODEL	REMARKS				
1	LAVATORY	1/2"	1/2"	14.0	2.0	4	105	LFMMV	"WATTS" (2)				

- ACCEPTABLE MANUFACTURERS: SYMMONS, WATTS, POWERS.

- LEAD FREE BODY, REMOVABLE CARTRIDGE WITH STRAINER, STAINLESS STEEL SPRING, EPDM O-RINGS AND SOLID WAX

THERMOSTAT ASSEMBLY.

- P.C. SHALL FIELD ADJUST TMV TO TEMPERATURE SETTING INDICATED IN SCHEDULE.

(2) POINT OF USE TMV SHALL COMPLY WITH ASSE 1017, 1069 AND 1070.

WA	WATER CLOSET SCHEDULE (W.C.)													
		MIN.	ACTUAL	MIN.		-								
NO.	MT'G	MaP	MaP	PRESS.	TYPE	GPF	MFR/MODEL	RIM HT.	PIPING	SUPPLY STOP	SEAT			
		(1)	(1)	PSIG				A.F.F.	CONNECTION	MFR/MODEL				
1H	FLOOR	800	1000	8	TANK	1.28	KOHLER K-3609	16-1/2"	LOOSE KEY STOP	BRASSCRAFT SCR1912AX C	BEMIS 1655 SSCT			
100								•						

- ACCEPTABLE MANUFACTURERS:

-BOWL: TOTO, KOHLER, AMERICAN STANDARD, CRANE, ELJER, MANSFIELD.

-SUPPLY STOPS: BRASSCRAFT, CHICAGO, KOHLER, DEARBORN, KEENEY, MCGUIRE. -SEAT: TOTO, KOHLER, BEMIS, SPERZEL, OLSONITE, AMERICAN STANDARD, CHURCH.

- TANK WATER CLOSETS: CLOSE-COUPLED WITH VITREOUS CHINA TANK AND COVER, FLUSH ASSEMBLY, ANGLE SUPPLY, AND TANK INSULINER.

- FLOOR SET WATER CLOSETS WITH BOLT CAPS.

- CONTROLS FOR ADA ACCESSIBLE FIXTURES SHALL BE ON THE OPEN SIDE.

(1) MAXIMUM PERFORMANCE (MaP) RATING PER VERITEC CONSULTING INC. AND KOELLER AND COMPANY. PROVIDE MAP RATING INFORMATION WITH PRODUCT SUBMITTAL.

CLEANOUT SCHEDULE

			BODY	PLUG	ACC	ESS COVER			REMARKS	
SYM.	LOCATION	SIZES	MAT'L	MAT'L	MAT'L	MISC.	MISC.	FIGURE		
FCO	FINISHED ROOMS W/O CARPET (1)	2" - 6"	C.I.	PVC	N.B.	-	-	Z-1400	"ZURN"	
WCO	WALL	3" - 4"	(5)	POLY	S.S.	-	-	Z-1469	"ZURN"	

- ACCEPTABLE MANUFACTURERS: J.R. SMITH, SCHIER, JOSAM, WADE, ZURN.

- RECESSED TAPER THREAD PLUG WITH SLOTTED RECESS.

(1) FINISHED ROOMS ARE ROOMS WITH CARPET OR FLOOR TILE OR ROOMS ACCESSIBLE BY A DOOR LESS THAN 42" WIDE.

(5) PROVIDE "HOLDRITE" TESTRITE TEST/CLEANOUT TEE. THREADED PLUG WITH BRASS INSERT. MATERIAL SHALL MATCH PIPE MATERIAL TO WHICH TEE IS BEING CONNECTED.

DRAIN SCHEDULE

			OUTLET	BODY	STRAINER/TOP				
SYM.	TYPE	APPLICATION	SIZE	MAT'L	MAT'L	SIZE	MISC.	MODEL	REMARKS
FD-1	FLOOR	PEDESTRIAN TRAFFIC	2"-3" (2)	CAST IRON	N. B. "TYPE B"	5" DIA	-	ZN-415-5B	"ZURN" (3)
		1	1	1		1	1	1	1

- ACCEPTABLE MANUFACTURERS: ZURN, J.R. SMITH, JOSAM, WADE, WATTS, SCHIER, KUSEL, SIOUX CHIEF.

(2) AS NOTED ON DRAWINGS

(3) PROVIDE BARRIER TYPE INSERT DRAIN TRAP SEALCOMPLIANT WITH ASSE 1072.

TE: 08/30/19 #: BLD19-00468

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INSULATION SCHEDULE	NSULATION SCHEDULE												
SERVICE	LOCATION	INSULATION	INSULATION										
		THICKNESS & TYPE (1)	JACKET										
COLD WATER	GENERAL BUILDING	1/2" RIGID F.G. OR ELAST. FOAM (10)	NR										
COLD WATER	IN WALLS	1/2" ELASTOMERIC FOAM	NR										
COLD WATER (PEX AND CPVC)	ALL	NR	NR										
HOT WATER	GENERAL BUILDING	1" RIGID F.G. OR ELAST. FOAM (10)	NR										
HOT WATER	IN WALLS	1/2" ELASTOMERIC FOAM	NR										

NR = NOT REQUIRED

STARTER TYPE:

INSULATION NOTES

(1) WHERE INSULATION IS PROVIDED ON PIPING INSULATE METERS, VALVES, BACKFLOW PREVENTERS AND ALL INLINE EQUIPMENT. (10) INSULATION NOT REQUIRED FOR EXPOSED FINAL PIPING CONNECTIONS TO FIXTURES.

ELECTRICAL/STARTER/DISCONNECT SCHEDULE														
		E	LECTRIC	CAL DAT	Ά			STARTER			DISCON	IECT		
SYM.	LOCATION	HP	KW	AMPS	VOLT	PH.	TYPE	LOCATION	FURN.	ACCESS-	DIS-	FURN.	REMARKS	
									BY	ORIES	CONNECT	BY		
EWC-1	SEE DWG	-	-	7.0	120	1	INTEG	INTEGRAL	EM	-	NR	-	REC.	
WH-1	114	-	1.5	-	120	1	INTEG	INTEGRAL	EM	-	R	EC	H.W.	
P-1	114	-	0.04	-	120	1	RELAY	INTEGRAL	PC	-	R	EC	H.W.	

INTEG.= INTEGRAL: PROVIDED INTEGRAL WITH EQUIPMENT.

FURNISHED BY:	ACCESSORIES:
EM = EQUIPMENT MANUFACTURER	HOA = HAND-OFF-AUT
PC = PLUMBING CONTRACTOR	PL = PILOT LIGHT

EC = ELECTRICAL CONTRACTOR

PB = PUSH BUTTON

- ACCEPTABLE MANUFACTURERS: ALLEN BRADLEY, CUTLER HAMMER, SQUARE D, GENERAL ELECTRIC. - VERIFY VOLTAGE AND PHASE WITH ELECTRICAL CONTRACTOR BEFORE ORDERING EQUIPMENT.

ELECTRIC MATER COOLER COLERINE (EM/C)

ELE	LECTRIC WATER COOLER SCHEDULE (E.W.C.)														
	550500	CAP.	BARRIER	NUMBER		RATED	FULL								
NO.	RECESS	(GPH)	FREE		CONTROL	WATTS		MODEL	REMARKS						
				DASING			AIVIF 3								
1	NO	8.0	YES	2	FRONT/SIDE PUSHBAR	360	7.0	EZSTL8LC	"ELKAY" (1) (2)						

- ACCEPTABLE MANUFACTURERS: ELKAY, HALSEY TAYLOR, OASIS, HAWS, FILTRINE.

- PROVIDE WITH 1-1/4" WITH C.O. PLUG ("BRASSCRAFT" 0010BX), AND ANGLE WATER STOP WITH HANDLE ("BRASSCRAFT" OCR19Z C). - CAPACITY BASED ON 50 DEGREE F WATER IN AMBIENT TEMPERATURE OF 90 DEGREES F.

- LEAD FREE CONSTRUCTION.

(1) WALL MOUNTED, STAINLESS STEEL BASIN, VINYL CLAD CABINET. (2) PROVIDE "ELKAY" MODEL LKAPREZL CANE APRON.

MATED LEATED COLLEDIU E (MULL)

WAT														
NO.	LOC.	MOUNTING	SIZE DIA. X HT.	COMM. TANK WARR.	KW	VOLTAGE/ PHASE	AMPS	REC. GPH	TANK SIZE GAL.	MODEL	REMARKS			
1	114	PLATFORM	18" x 25"	3 YR	1.5	120/1	12.6	6.2	19	LE120U3-1	"BRADFORD WHITE"			

- ACCEPTABLE MANUFACTURERS: BRADFORD WHITE, RHEEM, LOCHINVAR, STATE, BOCK. - RECOVERY BASED ON 100 DEGREE F TEMPERATURE RISE, GLASS LINING, 100 PSIG T&P RELIEF VALVE SETTING, 150 PSIG WORKING PRESSURE.

CIRC															
NO.	SERVICE	FLUID TEMP F	GPM	HEAD (FT)	RPM	MOTOR H.P.	MIN. EFF.	TYPE	MODEL	REMARKS					
1	HOT WATER CIRC	120	3	5	2800	39 WATT	-	IN-LINE	NBF-8	"B&G" (1)					

- ACCEPTABLE MANUFACTURERS: GRUNDFOS, B & G, ARMSTRONG, TACO, ALLIS-CHALMERS, AMTROL. - SEE MOTOR SPECIFICATIONS FOR MOTOR REQUIREMENTS.

- LEAD FREE BRONZE BODY. (1) PROVIDE SWITCHING RELAY PER WATER HEATER PIPING DETAIL.

EXP	EXPANSION TANK SCHEDULE (E.T.)														
NO.	MOUNTING	TANK TYPE	CONN. SIZE	TANK CAP. (GAL.)	ACCEPT. CAPACITY (GAL.)	PRECHARGE PRESSURE (PSIG)	WORKING PRESS (PSIG)	DIA.	HEIGHT	WEIGHT FILLED (LBS.)	MODEL	REMARKS			
1	PIPE	DIAPHRAGM	3/4"	2.1	0.9	(1)	150	8"	11.6"	14	PH 5	"FLEXCON"			

- ACCEPTABLE MANUFACTURERS: FLEXCON, AMTROL, WESSELS. (1) VERIFY WATER PRESSURE PRIOR TO INSTALLATION. SET PRECHARGE PRESSURE TO STATIC PRESSURE IN STREET.

I AVATORY SCHEDULE (I)

LA	LAVATORT SCHEDULE (L.)											
		OVERALL		LAV	DRAIN		รเ	JPPLY STOP	FAUCET			
NO.	MOUNTING	SIZE	CENTERS	MODEL	TYPE	MODEL	TYPE	MODEL	TYPE	GPM	MODEL	
1	INTEGRAL	(1)	SINGLE (1)	(1)	OFFSET GRID	K-7131-A	KEY	BRASSCRAFT SCR1912AX C	SINGLE HANDLE	0.5	MISENO ML102 (4)	

- ACCEPTABLE MANUFACTURERS:

-DRAINS AND TRAPS: KOHLER, DEARBORN, KEENEY, MCGUIRE, BRASSCRAFT. -STOPS AND SUPPLIES: KOHLER, BRASSCRAFT, DEARBORN, KEENEY, MCGUIRE.

- ALL MODEL NUMBERS BASED ON KOHLER UNLESS INDICATED OTHERWISE.

- VITREOUS CHINA LAVS, 1-1/4" "P" TRAP WITH CLEANOUT PLUG (BRASSCRAFT 0010), BUSHING ON END OF OUTLET TUBE, WALL FLANGE.

- ALL WETTED PARTS SHALL BE LEAD FREE COMPLIANT.

- FAUCETS WITH VANDAL RESISTANT AERATOR.

(1) INTEGRAL BASIN PROVIDED WITH COUNTERTOP BY SYMPATECO. COORDINATE FAUCET HOLE DRILLING WITH G.C.. (4) FAUCET FURNISHED BY SYMPATECO. INSTALLED BY P.C.

DISCONNECT: NR= NOT REQUIRED R = REQUIRED WP= WEATHERPROOF F= FUSED

REMARKS:

H.W.= HARD WIRED

REC.=RECEPTACLE

ARCHITECTS • ENGINEERS • SURVEYORS Always a **Better Plan** 100 Camelot Drive Fond Du Lac, WI 54935 Phone: (920) 926-9800 www.EXCELENGINEER.com **PROJECT INFORMATION** Ο 4 \sim \sim С $\mathbf{\mathcal{L}}$ Ο Ο BUILD \mathbf{m} Ζ Ζ ш ഗ 0 \mathbf{C} PROFESSIONAL SEAL 19633 SHEET DATES SHEET ISSUE AUG. 27, 2019 REVISIONS

<u>SCHEDULES</u>

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JOB NUMBER

1942920

SHEET NUMBER

FIRE PROTECTION SPECIFICATIONS

DIVISION 21 FIRE PROTECTION

ins Reviewed and Approved for Construction with Notatio Plan review notes may not reflect all code deficit Failure to identify a code deficiency d

TE: 08/30/19 #: BLD19-00468

21 05 00 BASIC FIRE PROTECTION REQUIREMENTS

- A. SEE DIVISION 00 PROCUREMENT AND CONTRACTING AND DIVISION 01 GENERAL REQUIREMENT FOR ADDITIONAL REQUIREMENTS.
- B. THE CONTRACTOR IS RESPONSIBLE FOR REVIEWING THE TENANT WORK LETTER AND IS TO CLARIFY ANY
- DISCREPANCIES WITH EXCEL ENGINEERING, INC. PRIOR TO BEGINNING WORK. C. SHOP DRAWINGS, PRODUCT DATA, TEST RESULTS AND SAMPLE SUBMITTALS
- 1. SEE DIVISION 01 33 23 SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES FOR ADDITIONAL REQUIREMENTS D. FINISHING AND PAINTING
- 1. SEE DIVISION 09 91 00 FINISH AND PAINTING FOR ADDITIONAL REQUIREMENTS. 2. PREPARE EXPOSED PIPE, FITTINGS, SUPPORTS, AND ACCESSORIES FOR FINISH PAINTING IN ROOMS THAT WILL HAVE CEILING AND STRUCTURE PAINTED.
- 3. COORDINATE WORK WITH THE PAINTERS SO THAT ALL EQUIPMENT IS INSTALLED PRIOR TO PAINTING. F.P.C. SHALL PAINT ITEMS IF NOT IN PLACE PRIOR TO NORMAL ROUTINE PAINTING.
- 4. IF FINISH BECOMES RUSTED, CORRODED, SCRATCHED, OR FLAKED DURING STORAGE OR INSTALLATION.
- REFINISH THE EQUIPMENT TO THE SATISFACTION OF THE OWNER. E. INSTALL ALL EQUIPMENT PER MANUFACTURER'S INSTALLATION INSTRUCTIONS AND REQUIREMENTS. PROVIDE
- ADDITIONAL WORK AND MATERIALS AS REQUIRED.
- F. DETAILS AND SCHEDULES ARE SHOWN TO AID THE CONTRACTOR AND ARE NOT MEANT TO BE INCLUSIVE OF ALL DEVICES. PROVIDE REQUIRED EQUIPMENT AND ACCESSORIES FOR A COMPLETE INSTALLATION. G. COORDINATE WORK WITH OTHER CONTRACTORS AND MAKE ADJUSTMENTS TO THE FIRE PROTECTION SYSTEM INSTALLATION WHERE IT WILL BE INSTALLED IN CLOSE PROXIMITY TO THE WORK OF OTHER TRADES. IF THE FPC INSTALLS WORK BEFORE COORDINATING IT WITH OTHER TRADES SO AS TO CAUSE INTERFERENCE WITH WORK OF
- OTHER TRADES, THE FPC SHALL MAKE NECESSARY CHANGES IN THE WORK TO CORRECT THE CONDITION WITHOUT EXTRA CHARGES H. PROVIDE ALL CUTTING AND PATCHING NECESSARY FOR FIRE PROTECTION WORK INSTALLATION UNLESS THIS WORK
- IS IDENTIFIED TO BE THE WORK OF OTHER CONTRACTORS. PATCHING SHALL MATCH ADJACENT SURFACES. CORE DRILL OR SAW-CUT OPENINGS THROUGH EXISTING CONCRETE. A. FIRE RATED INTERIOR WALL AND FLOOR PIPE PENETRATIONS
- 1. SLEEVE REQUIRED FOR PENETRATION OF CONCRETE AND MASONRY WALLS AND FLOORS. 2. SEAL OPENING AROUND PIPE WITH A UL APPROVED FIRE-STOP SYSTEM HAVING AN F-RATING NOT LESS THAN
- THE HOURLY RATING OF THE ASSEMBLY BEING PENETRATED. 3. WHERE UL FIRE-STOP SYSTEM REQUIRES A SLEEVE, FURNISH AND INSTALL SLEEVES FOR NEW DRYWALL WALLS, AND CONCRETE WALLS AND FLOORS. FURNISH SLEEVES TO THE MASON CONTRACTOR FOR INSTALLATION IN
- NEW MASONRY WALLS. PROVIDE SLEEVE AND GROUT SLEEVE IN EXISTING MASONRY WALLS. SEE PLANS FOR ADDITIONAL WALL AND FLOOR PENETRATION DETAILS.
- I. SEALANTS
 - a. FIRE PROTECTION CONTRACTOR SHALL PROVIDE ALL SEALANTS WHERE JOINT IS HIDDEN AND WHERE JOINT IS EXPOSED IN MECHANICAL ROOM. b. SEALANT CONTRACTOR SHALL PROVIDE SEALANTS AT ALL EXPOSED LOCATIONS IN FINISHED ROOMS.
- J. ESCUTCHEONS
 - a. INSTALL ONE-PIECE (TWO PIECE FOR EXISTING PIPING) POLISHED CHROME PLATED STEEL ESCUTCHEONS AT PENETRATIONS EXPOSED IN FINISHED ROOMS (ROOMS WHICH DON'T HAVE UNFINISHED CONCRETE FLOORS).
 - b. ESCUTCHEONS WITH SPRINGS FOR WALL AND CEILING LOCATIONS.
 - c. ID TO CLOSELY FIT AROUND PIPE/INSULATION, OD THAT COMPLETELY COVERS THE OPENING.
- d. ESCUTCHEONS REQUIRED IN CABINETS AND CASEWORK. PROVIDE A COMPLETE DESIGN/BUILD FIRE PROTECTION SYSTEM FOR THE PROPOSED PROJECT.
- L. FIRE PROTECTION CONTRACTOR SHALL BE LICENSED BY AUTHORITY HAVING JURISDICTION TO FURNISH AND INSTALL FIRE PROTECTION SYSTEMS.
- M. CONTRACTOR SHALL COMPLETE DESIGN AND SUBMIT FOR APPROVAL TO AUTHORITIES HAVING JURISDICTION WITHIN 60 DAYS OF CONTRACT AWARD. CONSTRUCTION REWORK COSTS INCURRED BY OTHER CONTRACTORS DUE TO FAILURE BY FPC TO OBTAIN APPROVAL IN A TIMELY MANNER SHALL BE BORNE BY THE FIRE PROTECTION CONTRACTOR.
- N. CONTRACTOR SHALL BE RESPONSIBLE FOR DESIGNING AND SIZING THE DISTRIBUTION SYSTEMS BY HYDRAULIC CALCULATION, AND SHALL PROVIDE THE NECESSARY ENGINEERING DRAWINGS AND CALCULATIONS TO OBTAIN ACCEPTANCE OF ALL AUTHORITIES HAVING JURISDICTION.
- O. IF THE CONTRACTOR'S FIRE PROTECTION DESIGN REQUIRES ANY MODIFICATIONS OR ADDITIONS TO THE BUILDING IN ORDER TO MEET THE SPRINKLER SYSTEM REQUIREMENTS, THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE COST OF MODIFICATIONS OR ADDITIONS OR SHALL SPECIFICALLY NOTE IN THE BID THE WORK REQUIRED.
- P. DRAWINGS INDICATING NEW FIRE PROTECTION SYSTEMS TO BE INSTALLED WITH PIPE SIZES, ETC., AND COPY OF SYSTEMS HYDRAULIC CALCULATIONS SHALL BE SUBMITTED TO THE FOLLOWING FOR REVIEW: 1. EXCEL ENGINEERING
- 2. NUMBER OF PRINTS AS REQUIRED TO LOCAL FIRE DEPARTMENT AUTHORITY.
- 3. NUMBER OF PRINTS AS REQUIRED TO OWNER'S INSURING AUTHORITY. Q. THE REQUIREMENTS OF MUNICIPAL AND STATE CODES, LAWS, ORDINANCES AND REGULATIONS, AND NFPA ARE MADE PART OF THESE SPECIFICATIONS AND SHALL BE COMPLIED WITH AS FAR AS THEY APPLY TO THE WORK.
- R. LEAVE SYSTEM IN PROPER WORKING CONDITION AT THE TIME OF FINAL CLEAN-UP. PROVIDE OPERATING INSTRUCTIONS FOR A TOTAL OF ONE HALF (0.5) HOUR. MAINTAIN A RECORD OF
- **OPERATING INSTRUCTION PERIODS** FPC IS RESPONSIBLE FOR VERIFYING AND OBTAINING WATER FLOW TEST DATA FOR DESIGN. TESTS TO BE REPRESENTATIVE OF HIGH WATER USE PERIODS.
- S. TESTS AND INSPECTIONS 1. CONTRACTOR SHALL BE RESPONSIBLE FOR TESTING AND CERTIFICATION OF SYSTEMS AND ORDERING INSPECTIONS AS REQUIRED BY AUTHORITIES HAVING JURISDICTION.
- 2. ALL TESTS SHALL BE CONDUCTED IN THE PRESENCE OF AND TO THE SATISFACTION OF THE OWNER OR AN
- AUTHORIZED REPRESENTATIVE. 3. INSPECTIONS SHALL BE MADE BY THE OWNER'S AUTHORIZED REPRESENTATIVE AND INSPECTORS HAVING JURISDICTION.

21 05 29 SUPPORTS AND HANGERS

- A. PROVIDE PIPE HANGERS AND SUPPORTS IN COMPLIANCE WITH NFPA 13.
- B. HANGERS SHALL NOT BE ATTACHED TO JOIST BRIDGING. C. ATTACHMENT TO METAL DECK: HANGERS MAY BE ANCHORED TO METAL FLOOR/ROOF DECK IF ALL THE FOLLOWING CONDITIONS ARE MET:
- 1. MAXIMUM HANGER LOAD OF 50 LBS.
- 2. ANCHORED TO BOTTOM OF DECK FLUTES, NOT UPPER FLUTE.

3. ANCHOR LENGTH SHALL EXCEED DECK DEPTH.

21 05 53 IDENTIFICATION A. PROVIDE IDENTIFICATION PER NFPA 13.

21 13 13 PIPING

- A. DESIGN REQUIREMENTS: ALL SYSTEM COMPONENTS SHALL BE RATED FOR THE MAXIMUM WORKING PRESSURE TO WHICH THEY ARE EXPOSED BUT NOT LESS THAN 175 PSIG.
- B. PIPE AND FITTINGS: PROVIDE PER NFPA 13.
- C. INSTALL PIPE AND FITTINGS IN ACCORDANCE WITH NFPA 13, MANUFACTURERS INSTALLATION INSTRUCTIONS AND RECOGNIZED INDUSTRY PRACTICES.
- D. INSTALL PIPING LEVEL, TAKING INTO ACCOUNT DRAINAGE REQUIREMENTS. PIPING SHALL NOT FOLLOW ROOF PITCH WHERE PITCH CHANGES.
- E. INSTALL PIPING PARALLEL TO WALLS AND CEILINGS AND AT HEIGHTS WHICH DO NOT OBSTRUCT WINDOWS, DOORWAYS, STAIRWAYS, OR PASSAGEWAYS. OFFSET OR REROUTE PIPING TO CLEAR INTERFERENCES WHICH DEVELOP IN THE FIELD.
- F. INSTALL PIPING TO CONSERVE BUILDING SPACE AND NOT INTERFERE WITH USE OF SPACE. CONCEAL PIPING WITHIN WALLS AND CHASES OR ABOVE CEILINGS.
- G. COORDINATION 1. COORDINATE LOCATIONS OF PIPING WITH PIPING, DUCTWORK, CONDUIT AND EQUIPMENT OF OTHER
- CONTRACTORS.
- REVIEW DRAWINGS FOR EXACT LOCATION OF PIPE SPACES, CEILING HEIGHTS, CEILING GRID, LIGHT FIXTURES
- AND GRILLES BEFORE INSTALLING PIPING.
- 3. INSTALL WITH SUFFICIENT CLEARANCES FOR INSTALLATION OF OTHER CONTRACTOR'S WORK.
- 4. PIPING SHALL NOT OBSTRUCT SERVICE CLEARANCES REQUIRED FOR EQUIPMENT. 5. PIPING SHALL NOT BE INSTALLED BELOW OR WITHIN 45 DEG OF LIGHT EDGE.
- 6. DO NOT ROUTE PIPING ABOVE TRANSFORMERS, PANELBOARDS, MOTOR CONTROL CENTERS, SWITCHBOARDS OR OTHER ELECTRICAL DISTRIBUTION EQUIPMENT.
- 7. ROUTE MAINS AROUND ELECTRICAL AND COMPUTER ROOMS. ONLY PIPING SERVING THESE ROOMS ALLOWED IN THE ROOMS. H. PROVIDE PROTECTIVE SLEEVE COVERING WHERE COPPER OR STEEL PIPING IS EMBEDDED IN MASONRY OR
- CONCRETE PROVIDE CLEARANCE FOR ACCESS TO VALVES AND PIPING SPECIALTIES.
- PREPARE EXPOSED PIPE, FITTINGS, SUPPORTS, AND ACCESSORIES NOT PREFINISHED, READY FOR FINISH PAINTING. K. PIPING SYSTEM LEAK TESTS
- 1. CONDUCT PRESSURE TEST WITH WATER. IF LEAKS ARE FOUND, REPAIR THE AREA WITH NEW MATERIALS AND REPEAT THE TEST.
- 2. TEST PIPING IN SECTIONS OR ENTIRE SYSTEM AS REQUIRED BY SEQUENCE OF CONSTRUCTION. DO NOT CONCEAL PIPE UNTIL IT HAS BEEN SUCCESSFULLY TESTED. PROVIDE TEMPORARY RESTRAINTS AT FITTINGS OR EXPANSION JOINTS IF REQUIRED FOR THE ADDITIONAL PRESSURE LOAD UNDER TEST. ENTIRE TEST MUST BE WITNESSED BY THE DIVISION'S REPRESENTATIVE.
- 3. USE CLEAN WATER AND REMOVE AIR FROM THE PIPING BEING TESTED WHERE POSSIBLE. MEASURE AND RECORD TEST PRESSURE AT THE HIGH POINT IN THE SYSTEM.
- 4. TEST SYSTEM AT 175 PSI FOR 2 HOURS SHOWING NO LEAKAGE

FORMS 21 13 15 SPECIALTIES

- A. DRAIN (BALL) VALVES
- 1. MANUFACTURERS: NIBCO, APOLLO, CRANE, HAMMOND, WATTS. 2. NIBCO 585-70HC OR EQUIVALENT BRONZE TWO PIECE BODY, STAINLESS STEEL BALL AND TRIM, FULL PORT,
- LEVER HANDLE, THREADED ENDS. PROVIDE 3/4" HOSE CONNECTION WITH CAP AT EACH DRAIN CONNECTION.

21 13 17 AUTOMATIC SPRINKLER SYSTEMS

- A. SYSTEM DESCRIPTION
- 1. PROVIDE AUTOMATIC SPRINKLER SYSTEM TO PROTECT BUILDING AREA INDICATED.
- REQUIREMENTS OF LOCAL AUTHORITIES HAVING JURISDICTION.
- 3. UL LISTED AND LABELED SYSTEM COMPONENTS RATED FOR 175 PSIG MINIMUM OPERATING PRESSURE.
- 5. SIMILAR COMPONENT ITEMS SHALL BE BY THE SAME MANUFACTURER.
- B. SPRINKLERS 1. MANUFACTURERS: VIKING, CENTRAL, TYCO.
- 2. SEE SCHEDULE ON PLANS.
- C. INSTALLATION
- 2. APPLY PAPER COVER OVER SPRINKLER HEADS WHERE CEILING IS TO BE PAINTED OR SPRAYED. REMOVE
- PROTECTIVE PAPER COVER AFTER PAINTING OR SPRAYING IS COMPLETED. 3. PROVIDE MOUNTABLE METAL BOX OF SPARE HEADS WITH PROPER WRENCH FOR HEAD REPLACEMENT.
 - Ο CONSULT 5 Ο CONSULT 3 103 Ο \cap CONSULT 1 101 \cap

3. PROVIDE DRAIN VALVES AT ALL LOW AND TRAPPED AREAS OF SYSTEM AND WHERE REQUIRED TO DRAIN RISERS.

2. SYSTEM DESIGN SHALL CONFORM TO SYSTEM SCHEDULE ON THE DRAWINGS, AND COMPLY WITH NFPA 13 AND

4. INCLUDE INSIDE AND OUTSIDE HOSE STREAMS IN THE DESIGN OF THE HYDRAULICALLY CALCULATED SPRINKLER

1. INSTALL SPRINKLER HEADS TO MISS ALL LIGHTS, GRILLES AND ANY OTHER CEILING OBSTRUCTIONS.

4. PROVIDE WIRE GUARDS ON SPRINKLERS LOCATED BELOW 84 INCHES AFF.





DESIGN CRITERIA

DESIGNATION	
LH	
OG1	

- CONTRACTOR SHALL VERIFY DESIGN CRITERIA

(1) QUICK RESPONSE HEADS.

(2) REDUCE REMOTE AREA BY 2007 NFPA 13 FIG. 11.2.3.2.3.1 FOR AREAS WITH QUICK RESPONSE SPRINKLERS. SEE REFLECTED ARCH PLAN FOR CEILING HEIGHTS. (3) INCREASE AREA OF OPERATION BY 30% FOR AREAS WITH SLOPED CEILING GREATER THAN 1 IN 6.

SPRINKLER REQUIREMENTS					
LOCATION	STYLE	TEMPERATURE	FINISH	CUSTOM	CENTER OF TILE
		CLASSIFICATION		COLOR	(FOR LAY-IN CEILINGS)
А	CONCEALED	ORDINARY	WHITE	N/A	YES
В	UPRIGHT	ORDINARY	BRASS	N/A	N/A

- CENTER OF TILE LOCATION ESTABLISHED AFTER CEILING GRID IS INSTALLED. - ALL TEMPERATURES AS LISTED UNLESS OTHERWISE REQUIRED BY NFPA. - SIDEWALL HEADS ARE ACCEPTABLE IN LIEU OF PENDENT WHERE APPLICABLE.

GENERAL NOTES

SEE ARCHITECTURAL PLANS FOR ADDITIONAL INFORMATION.

- ALL PIPING IS TO BE CONCEALED. IF BUILDING CONSTRUCTION DOES NOT PERMIT CONCEALING PIPING, LOCATIONS AND ROUTING ARE TO BE APPROVED BY ARCHITECT/ OWNER PRIOR TO INSTALLATION
- VERIFY OVERHEAD EQUIPMENT/DUCTWORK LOCATIONS WITH ARCHITECTURAL AND HVAC PLANS. PROVIDE SPRINKLERS AT THESE LOCATIONS PER NFPA 13.

<u>KEYNOTES</u>

- NOT ALL KEYNOTES MAY APPEAR ON PLAN. (1) ADJUST EX. SPRINKLER LOCATIONS FOR NEW LAYOUT. REUSE EX. PIPING WHERE POSSIBLE. PROVIDE NEW SPRINKLERS. REROUTE PIPING WHERE IT INTERFERES WITH NEW DUCTWORK.
- 2 PROVIDE SPRINKLER COVERAGE UNDER PLATFORM/ SOFFIT AS REQUIRED.

INDICATES DESIGN CRITERA DESIGNATION (SEE SCHEDULE) INDICATES SPRINKLER DESIGNATION (SEE SCHEDULE)

LEGEND

E: ALL SYMBOLS SHOWN MAY NOT APPEAR ON DRAWINGS.	
YM. ABBR. IDENTIFICATION	SYM. ABBR. IDENTIFICATION
SCELLANEOUS	
EL ELEVATION	
EQUIPMENT BY OTHERS. CONNECTION BY FPC	DETAIL OR SECTION NUMBER SHEET NUMBER
BREVIATIONS	
	NIC NOT IN CONTRACT
AFF ABOVE FINISHED FLOOR	NTS NOT TO SCALE
AFG ABOVE FINISHED GRADE	OC ON CENTER
BJ BETWEEN JOISTS	PC PLUMBING CONTRACTOR
EC ELECTRICAL CONTRACTOR	TJ THRU JOISTS
FPC FIRE PROTECTION CONTRACTOR	TTS TIGHT TO STRUCTURE
GC GENERAL CONTRACTOR / CONSTRUCTION MANAGER	TYP TYPICAL
HC HVAC CONTRACTOR	WP WEATHER PROOF
RATED WALLS	
FIRE - 1 HOUR	FIRE - 3 HOUR
FIRE - 2 HOUR	FIRE - 4 HOUR

 SYSTEM TYPE	HAZARD/ COMMODITY	MINIMUM DENSITY (3)	REMOTE AREA	HOSE ALLOWANCE
WET	LIGHT HAZARD (1)	0.10 GPM/S.F.	1,500 S.F. (2)	100 GPM
WET	ORDINARY GROUP 1 (1)	0.15 GPM/S.F.	1,500 S.F. (2)	250 GPM







LEGEND, SPECIFICATIONS, SCHEDULES & FLOOR PLAN

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FPO.

HVAC SPECIFICATIONS

DIVISION 23 HVAC

ans Reviewed and Approved for Construction with Notations Plan review notes may not reflect all code deficiencies Failure to identify a code deficiency during a review of pla Does not alleviate any obligation to comply with all applicable

ATE: 08/30/19 #: BLD19-00468

23 05 00 BASIC HVAC REQUIREMENTS

- A. SEE DIVISION 00 PROCUREMENT AND CONTRACTING AND DIVISION 01 GENERAL REQUIREMENT FOR ADDITIONAL
- REOUIREMENTS. B. HVAC CONTRACTOR SHALL VERIFY REQUIREMENTS FOR TEMPORARY HEATING WITH GENERAL CONTRACTOR AND INCLUDE IN HIS SCOPE OF WORK WHEN DIRECTED BY G.C. INSTALL IN ACCORDANCE WITH ALL CODE AND OSHA
- **REQUIREMENTS FOR CONSTRUCTION PROJECTS.** C. SUBSTITUTIONS

- 1. SEE DIVISION 01 23 00 PRODUCT SUBSTITUTION PROCEDURES FOR ADDITIONAL REQUIREMENTS. 2. CONTRACTOR SHALL PROVIDE ALL SUPPORTING DATA AND ASSUME THE BURDEN OF PROOF THAT ANY SUBSTITUTE IS EQUIVALENT AS TO APPEARANCE, CONSTRUCTION, CAPACITY, AND PERFORMANCE. THE JUDGMENT OF EQUIVALENCY SHALL BE MADE BY THE ENGINEER AT THE TIME OF SHOP DRAWING REVIEW, NOT DURING BIDDING.
- 3. WHERE SUBSTITUTE EQUIPMENT REQUIRES REDESIGN OF ANY PART OF THE PROJECT, THE COST OF REDESIGN AND ADDITIONAL COSTS OF THE WORK SHALL BE PAID BY THE CONTRACTOR. REDESIGN SHALL BE SUBJECT TO THE APPROVAL OF ALL AUTHORITIES HAVING JURISDICTION OVER THE WORK INCLUDING THE ARCHITECT/ENGINEER.
- 4. CONTRACTOR SHALL ASSUME ALL COORDINATION RESPONSIBILITIES FOR SUBSTITUTE EQUIPMENT INCLUDING COORDINATION ACROSS TRADES AND COORDINATION OF PREVIOUSLY REVIEWED AND APPROVED SHOP DRAWING SUBMITTALS, SHOULD THESE SHOP DRAWINGS BE AFFECTED BY THE SUBSTITUTED EQUIPMENT.
- D. SHOP DRAWINGS, PRODUCT DATA, TEST RESULTS, PROJECT CLOSEOUT DOCUMENTS: 1. SEE DIVISION 01 33 23 SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES FOR ADDITIONAL REQUIREMENTS 2. CONSTRUCTION ADMINISTRATION SUBMITTAL LIST:
 - a. DUCTWORK b. DUCTWORK ACCESSORIES
 - c. INSULATION
 - d. GRILLES e. FANS
 - f. TEMPERATURE CONTROLS
- g. TEST AND BALANCE REPORT 3. PROJECT CLOSEOUT
- a. PROVIDE HVAC EQUIPMENT OPERATING AND MAINTENANCE MANUALS TO THE OWNER PER IECC C303.3 AND C408.2.5.1.
- b. AS-BUILT DRAWINGS SHALL BE MARKED ON A FINAL SET OF DRAWINGS WHICH INCLUDES ALL REVISIONS. E. FINISHING AND PAINTING
- 1. SEE DIVISION 09 91 00 FINISH AND PAINTING FOR ADDITIONAL REQUIREMENTS. 2. PREPARE EXPOSED PIPE, FITTINGS, SUPPORTS, AND ACCESSORIES FOR FINISH PAINTING IN ROOMS THAT WILL HAVE CEILING AND STRUCTURE PAINTED.
- 3. COORDINATE WORK WITH THE PAINTERS SO THAT ALL EOUIPMENT IS INSTALLED PRIOR TO PAINTING. H.C.
- SHALL PAINT ITEMS IF NOT IN PLACE PRIOR TO NORMAL ROUTINE PAINTING. 4. IF FINISH BECOMES RUSTED, CORRODED, SCRATCHED, OR FLAKED DURING STORAGE OR INSTALLATION, REFINISH
- THE EQUIPMENT TO THE SATISFACTION OF THE OWNER. 5. WHERE THE HEATING CONTRACTOR IS REQUIRED TO PAINT, THE PAINTING SHALL BE DONE IN ACCORDANCE
- WITH THE PAINTING PORTION OF THE ARCHITECTURAL SPECIFICATION. F. DETAILS AND SCHEDULES ARE SHOWN TO AID THE CONTRACTOR AND ARE NOT MEANT TO BE INCLUSIVE OF ALL
- DEVICES. PROVIDE REQUIRED EQUIPMENT AND ACCESSORIES FOR A COMPLETE INSTALLATION. G. INSTALL ALL EQUIPMENT PER MANUFACTURER'S INSTALLATION INSTRUCTIONS AND REQUIREMENTS. PROVIDE ADDITIONAL WORK AND MATERIALS AS REQUIRED.
- H. PROVIDE ALL CUTTING AND PATCHING NECESSARY FOR HVAC WORK INSTALLATION UNLESS THIS WORK IS
- IDENTIFIED TO BE THE WORK OF OTHER CONTRACTORS. PATCHING SHALL MATCH ADJACENT SURFACES.
- I. REMOVE HVAC DUCTWORK, PIPING, EQUIPMENT, ETC. INDICATED BY THE DRAWINGS TO BE DEMOLISHED FROM THE
- JOB SITE, UNLESS INDICATED TO BE TURNED OVER TO THE OWNER. J. PROJECT COMPLETION
- 1. INSTALL CLEAN SET OF FILTERS IN ALL UNITS AT TIME OF TESTING AND BALANCING. 2. CLEAN GRILLES AND EQUIPMENT AND LEAVE IN PROPER WORKING CONDITION AT THE TIME OF FINAL CLEAN-UP.

23 07 00 INSULATION

- A GENERAL 1. SEE INSULATION SCHEDULES ON PLANS FOR ADDITIONAL INFORMATION.
- 2. INSULATION, INSULATION SYSTEM AND JACKETS SHALL MEET UL-723/ASTM E84 REQUIREMENTS OF MAX. FIRE HAZARD CLASSIFICATIONS OF 25, AND MAX, FLAME SPREAD, FUEL CONTRIBUTED, AND SMOKE DEVELOPED OF 50 WHEN INSTALLED IN A RETURN AIR PLENUM.
- 3. INSTALL MATERIALS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS AND MICA PUBLICATION "NATIONAL COMMERCIAL AND INDUSTRIAL STANDARDS", 2011 SEVENTH EDITION.
- 4. CONTINUE INSULATION WITHOUT INTERRUPTIONS THROUGH WALLS AND FLOOR PENETRATIONS AND HANGERS. B. FIBERGLASS (F.G.) INSULATION 1. FLEX. F.G.
 - a. O.C. SOFTR DUCT WRAP, KNAUF FRIENDLY FEEL DUCT WRAP, CERTAINTEED SOFTTOUCH, JOHNS MANVILLE MICROLITE EQ FSK DUCT WRAP.
- b. GLASS FIBER INSULATION FACTORY LAMINATED TO FRK/FSK VAPOR RETARDER. LISTED THICKNESS IS NOMINAL.
- c. 0.75 LB/CU. FT., R=3.3 / NOMINAL INCH AT 75 DEG F.
- d. MAX 250 DEG F, JACKET MAX 150 DEG F, 0.02 PERM. RIGID F.G:
- a. GLASS FIBER INSULATION WITH FACTORY APPLIED FRK VAPOR RETARDER.
- b. R=3.7 / NOMINAL INCH AT 75 DEG F.
- c. MAX 450 DEG F, JACKET MAX 150 DEG F, 0.02 PERM. d. INDOOR DUCTWORK:
- 1). O.C. TYPE 703, CERTAINTEED CERTAPRO CB 300, JOHNS MANVILLE 814
- 2). 3 LB./CU.FT., COMPRESSIVE STRENGTH AT 10% DEFORMATION 25 LB./S.F.
- e. EOUIPMENT: 1). O.C. TYPE 705, CERTAINTEED CERTA PRO CB 600, JOHNS MANVILLE 817,
- 2). 6 LB./CU.FT., COMPRESSIVE STRENGTH AT 10% DEFORMATION 200 LB./S.F.
- 3. SEMI-RIGID F.G.:
- a. O.C. FIBERGLAS PIPE AND TANK INSULATION, KNAUF PIPE AND TANK INSULATION, b. MINIMUM PIPE SIZE 10" AND LARGER. c. ALL SERVICE JACKET VAPOR BARRIER COVERING, INSULATION ADHERED WITH THE END GRAIN
- PERPENDICULAR TO THE JACKET.
- d. 3 LB./CU.FT., R=3.7 / NOMINAL INCH AT 75 DEG F.
- e. MAX 650 DEG F, JACKET MAX 150 DEG F, 0.02 PERM. f. COMPRESSIVE STRENGTH AT 10% DEFORMATION 125 LB./S.F.
- 4. ACOUSTICAL DUCT LINING a. O.C. QUIETR ROTARY DUCT LINER, KNAUF EQUIPMENT LINER M, CERTAINTEED TOUGHGARD 2, JOHNS MANVILLE LINATEX.
- b. DUCT LINER COMPLYING WITH ASTM C1071, NFPA 90A AND 90B.
- c. LININGS MUST MEET ASTM C1338, ASTM G21 FUNGI TEST AND ASTM G22 BACTERIA TEST.
- d. AIR STREAM SURFACES SHALL BE EVALUATED IN ACCORDANCE WITH THE "EROSION TEST" IN UL 181 AND SHALL NOT BREAK AWAY, CRACK, PEEL, FLAKE OFF, OR SHOW EVIDENCE OF DELAMINATION OR CONTINUED EROSION UNDER TEST CONDITIONS.
- e. EDGE COAT ALL TRANSVERSE JOINTS AND EXPOSED EDGES.
- f. R= 4.2 /INCH AT 75 DEG F.
- g. MAX 250 DEG F C. DUCT INSULATION REQUIREMENTS
- 1. INSULATE FITTINGS, JOINTS, FLANGES, FLEXIBLE CONNECTIONS, DAMPERS, AND IN-LINE ACCESSORIES WITHOUT INTERNAL LINING/INSULATION WITH SAME MATERIAL AND THICKNESS AS SPECIFIED FOR THE DUCT SYSTEM. STOP AND POINT INSULATION AROUND ACCESS DOORS AND DAMPER OPERATORS TO ALLOW OPERATION WITHOUT DISTURBING WRAPPING.

23 31 13 DUCTWORK

- A. PERFORM WORK IN ACCORDANCE WITH THE LATEST EDITIONS OF SMACNA HVAC DUCT CONSTRUCTION STANDARDS, NFPA 90A.
- B. GENERAL 1. PAINT THE INSIDE OF ALL DUCTS VISIBLE THROUGH GRILLES IN ROOMS WITH CEILINGS WITH DULL BLACK PAINT 2. CERTAIN VERTICAL AND HORIZONTAL OFFSETS ARE INDICATED IN DUCTS TO INDICATE THE GENERAL POSITION
- RELATIONSHIP OF THE DUCTWORK SYSTEMS; PROVIDE ADDITIONAL OFFSETS AS REQUIRED TO COORDINATE WITH THE INSTALLATION OF OTHER SYSTEMS, CEILINGS AND STRUCTURE. THE DRAWINGS SHALL NOT BE SCALED TO DETERMINE EXACT LOCATION OF DUCTWORK.
- 3. PROVIDE TEMPORARY CLOSURES OF METAL OR TAPED POLYETHYLENE ON OPEN DUCTWORK TO PREVENT CONSTRUCTION DUST FROM ENTERING DUCTWORK SYSTEM.
- 4. LOCATE DUCTS WITH SUFFICIENT SPACE AROUND EQUIPMENT TO ALLOW NORMAL OPERATING AND MAINTENANCE ACTIVITIES.
- 5. INCREASE DUCT SIZES GRADUALLY, NOT EXCEEDING 15 DEGREES WHENEVER POSSIBLE. 30 DEGREE MAXIMUM. 6. ROUND DUCTS MAY BE SUBSTITUTED FOR RECTANGULAR IF SIZED IN ACCORDANCE WITH ASHRAE TABLES OF EOUIVALENT RECTANGULAR AND ROUND DUCTS.
- C. ROUND DUCTWORK
- 1. CONCEALED BRANCH DUCTWORK TO GRILLES AND DIFFUSERS MAY BE LONGITUDINAL LOCKSEAM. ALL OTHER ROUND DUCTWORK SHALL BE SPIRAL LOCKSEAM WITH FITTINGS AND COUPLINGS MINIMUM 2 GAUGES HEAVIER THAN DUCT
- D. FLEXIBLE DUCTWORK
- 1. MANUFACTURERS: THERMAFLEX, FLEXMASTER, CLEVAFLEX.
- 2. U.L. 181 LISTED CLASS 1 FACTORY FABRICATED FLEXIBLE AIR DUCT, COMPLY WITH NFPA 90A, FLAME SPREAD OF 25 OR LESS, SMOKE DEVELOPED RATING OF 50 OR LESS.

- SPECIFIED.
- 6. SUPPLY DUCTWORK SHALL BE INSULATED WITH FIBERGLASS INSULATION, MINIMUM R VALUE 4, WITH VAPOR
- INSULATION
- 10. DO NOT RUN THROUGH WALLS OR PARTITIONS. E. DUCTWORK SEALANTS
- a. SYNTHETIC RUBBER RESIN BASE.
- b. -20 TO 200 DEG F.
- e. APPLY MINIMUM 20-MIL THICK WET FILM AT TEMPERATURES BETWEEN 35-100 DEG F.
- a. MILL FINISH ALUMINUM SUSTRATE WITH GRAY ADHESIVE.
- b. MINIMUM 30 MIL THICK c. MIN. 17 LB PER LINEAR INCH PEEL STRENGTH

f. PRESSURE CLASSES UP TO 10" W.C.

- 2. STANDING SEAM GORED OR PLEATED ELBOWS.
- BEFORE JOINING SECTIONS.
- 4. PROVIDE STRAP HANGERS AT JOINTS SYMMETRICALLY SPACED.
- G. DUCT CLEANING
- USED DURING CONSTRUCTION.
- FANS

H. SEALING DUCT PENETRATIONS

23 33 00 DUCTWORK ACCESSORIES

- B. TURNING VANES
- C. MANUAL VOLUME DAMPERS

D. TAKE-OFF FITTINGS

E. DUCT ACCESS DOORS

6. PROVIDE AT:

F. FLEXIBLE CONNECTIONS

DAY OUTPUT.

BELOW 55 DEG F.

3. ECONOMIZER:

2-19.

TYPE BALANCING DAMPERS.

3. MINIMUM PRESSURE RANGE -1/2" TO 4" W.C., TEMPERATURE RANGE 0-200 DEG F.

4. ACOUSTIC: THERMAFLEX M-KE OR G-KM, FLEXMASTER TYPE 1 OR 6

a. POLYETHYLENE, SPUNBOUND NYLON OR CHLORINATED POLYETHYLENE LINER. b. DUCTWORK TO HAVE TESTED ACOUSTICAL PERFORMANCE NOT LESS THAN 2 DB LESS THAN THE TYPES

5. SEMI-RIGID FLEXIBLE ALUMINUM DUCTWORK NOT PERMITTED.

BARRIER JACKET WITH MAXIMUM 0.10 PERM RATING 7. CONNECT TO SUPPLY DUCTWORK BY SLIDING CORE OVER COLLAR, TAPE JOINT WITH MINIMUM 3 WRAPS OF TAPE, AND APPLY METAL BAND CLAMP OR PANDUIT. FOR INSULATED DUCTWORK, PULL INSULATION AND OUTER JACKET BACK INTO POSITION, AND TAPE WITH MINIMUM 3 WRAPS OF TAPE BETWEEN FLEX DUCT AND DUCT

8. CONNECT TO GRILLES AND RETURN AND TRANSFER DUCTWORK WITH METAL BAND CLAMP OR PANDUIT. 9. MAXIMUM LENGTH FROM DUCTWORK TO GRILLES OR SLOTS 8'-0" WITH ONE 90 DEG ELBOW.

1. MANUFACTURERS: HARDCAST SURE-GRIP 404 SOLVENT BASED DUCT SEALANT OR EQUIVALENT.

c. PRESSURE CLASSES UP TO 10" W.C., MEETING SEAL CLASS A.

d. MAXIMUM FLAME SPREAD OF 25, SMOKE DEVELOPED OF 50.

2. HARDCAST ALUMA-GRIP 701 OR EQUIVALENT PRESSURE SENSITIVE DUCT JOINT ROLLED SEALANT MAY BE USED

IN PLACE OF MASTIC. SEALANT SHALL COMPLY WITH THE FOLLOWING:

d. MAX FLAME SPREAD OF 25, MAX SMOKE DEVELOPED OF 50 WHEN TESTED IN ACCORDANCE WITH ASTM G-

e. VOC: 0 G/L, COMPLIANT WITH LEED SCAQMD RULE 1168.

F. ADDITIONAL REQUIREMENTS FOR GALVANIZED DUCTWORK EXPOSED IN FINISHED SPACES

1. ROUND DUCTS EXPOSED IN FINISHED SPACES SHALL BE SPIRAL LOCKSEAM.

3. WHERE REQUIRED, SEAL ROUND DUCTWORK BY PLACING A BEAD OF SEALER AROUND THE INSIDE OF THE DUCT

5. CLEAN DUCTWORK WITH A VINEGAR AND WATER SOLUTION AFTER INSTALLATION TO PREPARE FOR PAINTING.

1. PROTECT DUCTWORK AGAINST ENTRY OF FOREIGN MATTER DURING CONSTRUCTION. PROVIDE TEMPORARY

END CAPS AND SEALS. PROVIDE TEMPORARY FILTERS OVER RETURN OR EXHAUST AIR INLETS IF DUCTWORK IS 2. REMOVE ALL DIRT AND FOREIGN MATTER AND CLEAN DIFFUSERS, REGISTERS, AND GRILLES BEFORE OPERATING

1. THRU NON-RATED WALLS WHERE DRYWALL, CONCRETE, OR MASONRY EXTENDS TO STRUCTURE, FILL VOID BETWEEN DUCT AND WALL WITH MINERAL WOOL AND CAULK BOTH SIDES WITH NON-HARDENING CAULK.

A. GENERAL - ALL DUCT ACCESSORIES SHALL BE CONSTRUCTED OF SAME MATERIAL AS DUCTWORK BEING INSTALLED IN.

1. MANUFACTURERS: AERO/DYNE CO. H.E.P., HART & COOLEY, UNITED MCGILL, SEMCO. 2. RECTANGULAR DUCTWORK: AIRFOIL TURNING VANES IN ACCORDANCE WITH SMACNA FIG. 2-3 AND 2-4. VANE

RADIUS AS PROVIDED BY AERO/DYNE H.E.P. OR 4-1/2 INCHES WITH A 3-1/2 INCH SPACING. 3. ROUND DUCTWORK: TWO-PIECE MITERED, MINIMUM 20 GAUGE.

1. MANUFACTURERS: RUSKIN, VENT PRODUCTS, UNITED MCGILL.

2. DAMPERS WITH EXTENDED SHAFTS AND QUADRANTS, OPERATOR WITH LOCKING DEVICE, POSITION INDICATOR, AND ELEVATED PLATFORM FOR EXTERNALLY INSULATED DUCTWORK. 3. EVERY SUPPLY, RETURN AND EXHAUST GRILLE SHALL HAVE EITHER A VOLUME DAMPER IN THE BRANCH DUCT OR AT THE GRILLE WHERE SHOWN. IF ONE IS NOT SHOWN, CONTRACTOR SHALL PROVIDE VOLUME DAMPER IN

DUCT IF DUCT IS ACCESSIBLE, OTHERWISE AT THE GRILLE. 4. RECTANGULAR DAMPERS WHICH DO NOT EXCEED 12" HIGH OR 36" WIDE: BUTTERFLY DAMPER, MINIMUM 22 GAUGE. SHAFT ALONG ENTIRE LENGTH OF DAMPER FOR DAMPERS EXCEEDING 18" IN WIDTH. 5. RECTANGULAR DAMPERS GREATER THAN 12" HIGH OR 36" WIDE: MULTI-BLADE DAMPER WITH CONNECTING LINKAGE TO CONTROL FROM A SINGLE POINT. BLADES MINIMUM 16 GAUGE WITH OPPOSED BLADE ACTION. 6. ROUND DAMPERS: MINIMUM 20 GAUGE BUTTERFLY DAMPER.

1. MANUFACTURERS: FLEXMASTER, UNITED MCGILL.

2. ROUND BRANCH TAKE-OFFS TO MULTIPLE GRILLES SHALL BE CONICAL 3. RECTANGULAR BRANCH TAKE-OFFS TO MULTIPLE GRILLES SHALL BE PER DUCT FITTING DETAIL ON PLANS. 4. ROUND TAKE-OFFS TO INDIVIDUAL GRILLES: ONE PIECE SPIN-IN WITH INTEGRAL FACTORY INSTALLED LOCKING

1. PROCESS DUCT: SEE DETAIL ON PLANS.

2. MANUFACTURERS: CESCO, FLEXMASTER, VENT PRODUCTS, KEES, UNITED MCGILL, SEMCO, DUCTMATE. 3. HINGE, LATCHES, HANDLES, AND RUBBER GASKET IN FRAME. 1" INSULATED DOUBLE WALL CONSTRUCTION FOR DOORS IN LINED OR EXTERNALLY INSULATED DUCTWORK. ATTACHMENT CABLES FOR SPIN-IN UNITS. DOOR SUITABLE FOR DUCT STATIC PRESSURE CLASS.

4. DOOR SIZE 2" LESS THAN THE WIDTH OF THE DUCT (MAX. DOOR SIZE 24"X 24" (24" DIA.). 5. ROUND DUCTWORK: 16 GAUGE ROLLED SHEET METAL HINGED ACCESS DOOR WITH BUCKLE LOCKS.

a. MOTOR OPERATED AND BACKDRAFT DAMPERS b. UPSTREAM SIDE OF TURNING VANES IN RETURN AND EXHAUST DUCTWORK

c. AT ANY DEVICE IN THE DUCT WHICH REQUIRES MAINTENANCE, SERVICE OR CLEANING. 7. USE HINGED ACCESS DOORS WHERE POSSIBLE. USE CAM OPERATED REMOVABLE DOORS WHERE SPACE PREVENTS THE OPENING OF A HINGED MODEL.

1. MANUFACTURERS: VENTFABRICS, DURO-DYNE.

2. MATERIAL BOLTED SECURELY TO THE EQUIPMENT AND CONNECTING DUCTWORK WITH #16 GAUGE GALVANIZED IRON BAND (LOOP) CLAMPS BOLTED TIGHT TO MAKE AN AIRTIGHT CONNECTION, MINIMUM 6" WIDE.

3. PROVIDE AT INLET AND OUTLET OF ALL AIR HANDLING UNITS AND FANS IN ACCORDANCE WITH SMACNA FIGURE

4. CONVENTIONAL INTERIOR: VENTGLAS, -20 TO 200 DEG F., 30 OZ. PER SQUARE YARD GLASS FABRIC DOUBLE COATED WITH NEOPRENE, UL 214 APPROVED.

23 90 10 SEQUENCE OF OPERATION

A. EXISTING GAS FURNACE AND CONDENSING UNIT

1. PROVIDE A HONEYWELL VISION PRO 8000 SEVEN DAY PROGRAMMABLE HEATING/COOLING THERMOSTAT CAPABLE OF 2 STAGES OF HEATING AND 2 STAGES OF COOLING (CONVENTIONAL), WITH ECONOMIZER/TIME OF

a. SET FAN SETTING TO "ON" FOR FAN TO RUN CONTINUOUSLY IN OCCUPIED PERIODS, AND TO RUN WITH

EQUIPMENT OPERATION DURING UNOCCUPIED PERIODS. b. SET INSTALLER SETUP NUMBERS TO MATCH INSTALLED SYSTEM IN ADDITION TO THE FOLLOWING (CONTACT ENGINEER WITH ANY QUESTIONS REGARDING ANY SETUP NUMBERS):

1). 101 APPLICATION: COMMERCIAL

2). 326 EXTENDED FAN RUN TIME IN HEAT: 60 SECONDS. 2. PROVIDE HONEYWELL T6031 THERMOSTAT TO LOCKOUT CONDENSING UNIT AT OUTSIDE AIR TEMPERATURES

a. PROVIDE OUTSIDE AND RETURN AIR DAMPERS.

b. PROVIDE A HONEYWELL W7220 JADE INTEGRATED ECONOMIZER MODULE. SET MODULE TO ENTHALPY CURVE ES2 (HIGH LIMIT OF 75 DEG. F) FOR SINGLE ENTHALPY AND ES1 (HIGH LIMIT OF 28 BTU/LB/DA) FOR DIFFERENTIAL ENTHALP

c. PROVIDE HONEYWELL C7400 OUTDOOR AIR ENTHALPY SENSOR AND C7046A DISCHARGE AIR TEMPERATURE SENSOR. LOCATE DISCHARGE AIR SENSOR DOWNSTREAM OF FAN, UPSTREAM OF COOLING COIL. d. PROVIDE HONEYWELL C7400 RETURN AIR ENTHALPY SENSOR FOR DIFFERENTIAL ENTHALPY CONTROL.

e. PROVIDE HONEYWELL M7415 PROPORTIONING ACTUATOR FOR DAMPER CONTROL. PROVIDE Q298B LINKAGE HARDWARE FOR LINKING THE ACTUATOR TO AN ADDITIONAL DAMPER.

f. THERMOSTAT SHALL ACTIVATE ECONOMIZER LOGIC MODULE DURING OCCUPIED HOURS. OUTSIDE AIR DAMPER SHALL OPEN TO MINIMUM OPEN POSITION (ADJUSTABLE AT THE MODULE). g. IF OUTSIDE AIR ENTHALPY IS LOWER THAN SETPOINT AND THERMOSTAT CALLS FOR FIRST STAGE COOLING, ECONOMIZER LOGIC MODULE SHALL OPEN OUTSIDE AIR DAMPER. OUTSIDE AIR DAMPER POSITION SHALL BE MODULATED BY MIXED AIR TEMPERATURE SENSOR TO MAINTAIN 52 TO 56 DEG F MIXED AIR TEMPERATURE.

IF OUTDOOR AIR IS NOT ABLE TO SATISFY MIXED AIR TEMPERATURE SETPOINT, MODULE SHALL TURN ON CONDENSING UNIT. h. IF OUTSIDE AIR ENTHALPY IS GREATER THAN SETPOINT, ECONOMIZER LOGIC MODULE SHALL TURN ON

CONDENSING UNIT i. IF OUTSIDE AIR ENTHALPY IS LOWER THAN INDOOR ENTHALPY AND THERMOSTAT CALLS FOR FIRST STAGE COOLING, ECONOMIZER LOGIC MODULE SHALL OPEN OUTSIDE AIR DAMPER. OUTSIDE AIR DAMPER

POSITION SHALL BE MODULATED BY MIXED AIR TEMPERATURE SENSOR TO MAINTAIN 52 TO 56 DEG F MIXED AIR TEMPERATURE. IF OUTDOOR AIR IS NOT ABLE TO SATISFY MIXED AIR TEMPERATURE SETPOINT, MODULE SHALL TURN ON CONDENSING UNIT

- i. IF OUTSIDE AIR ENTHALPY IS GREATER THAN INDOOR ENTHALPY, ECONOMIZER LOGIC MODULE SHALL TURN ON FIRST STAGE OF CONDENSING UNIT. MODULE SHALL TURN ON SECOND STAGE OF CONDENSING UNIT BASED ON A CALL FOR SECOND STAGE COOLING FROM THE THERMOSTAT.
- 4. MOUNT AND WIRE ALL CONTROL WIRING ASSOCIATED WITH THE FURNACES AND CONDENSING UNITS AND PROVIDE ANY ADDITIONAL DEVICES NECESSARY FOR A COMPLETE OPERATIONAL SYSTEM.

23 95 00 TESTING, ADJUSTING AND BALANCING

- A. QUALITY ASSURANCE 1. PERFORM TOTAL SYSTEM BALANCE IN ACCORDANCE WITH AABC NATIONAL STANDARDS FOR FIELD MEASUREMENT AND INSTRUMENTATION, TOTAL SYSTEM BALANCE OR NEBB PROCEDURAL STANDARDS FOR TESTING, BALANCING AND ADJUSTING OF ENVIRONMENTAL SYSTEMS, AND ASHRAE STANDARD 111.
- 2. THE TESTING, ADJUSTING AND BALANCING (TAB) CONTRACTOR SHALL BE AN INDEPENDENT COMPANY SPECIALIZING IN THE TESTING, ADJUSTING, AND BALANCING OF SYSTEMS WITH MINIMUM THREE YEARS
- EXPERIENCE AND NOT ASSOCIATED WITH THE SUPPLIERS OF EQUIPMENT OR THE INSTALLING CONTRACTOR. 3. PERFORM WORK UNDER SUPERVISION OF AABC CERTIFIED TEST AND BALANCE ENGINEER OR NEBB CERTIFIED TESTING, BALANCING AND ADJUSTING SUPERVISOR.
- B. SUBMITTALS CONTRACTOR SHALL SUBMIT THE FINAL TESTING AND BALANCING REPORT PRIOR TO PROJECT COMPLETION AND IN ADVANCE OF DATE OF OCCUPANCY. SUBMIT REPORTS ON AABC NATIONAL STANDARDS FOR TOTAL SYSTEM BALANCE OR NEBB FORMS.
- 2. SUBMIT THE DESIGN AND ACTUAL DATA FOR EACH SCHEDULED PIECE OF EQUIPMENT: MODEL; SUPPLY, RETURN, AND OUTSIDE AIR FLOWS; STATIC PRESSURE PROFILES OF AIR HANDLING UNIT COMPONENTS AND ALL FANS; FAN RPM, BHP, AMPERAGE; FAN AND MOTOR SHEAVE, DIAMETER, BORE AND MAKE; BELT SIZE AND QUANTITY; MOTOR SHEAVE CENTER LINE AND OPERATOR DISTANCE; ROOM AIR FLOW; EQUIPMENT FLOW RATES AND PRESSURE DROPS.
- C. INSTALLATION TOLERANCES
- AIR HANDLING SYSTEMS: ADJUST SUPPLY SYSTEMS TO WITHIN PLUS OR MINUS 5 PERCENT OF DESIGN AND RETURN AND EXHAUST SYSTEMS TO PLUS OR MINUS 10 PERCENT OF DESIGN. AIR OUTLETS AND INLETS: ADJUST TOTAL AIR FLOW TO SPACE TO WITHIN PLUS 10 PERCENT AND MINUS 5
- PERCENT OF DESIGN 3. ADJUST OUTLETS AND INLETS IN SPACE TO WITHIN PLUS OR MINUS 10 PERCENT OF DESIGN
- D. AIR SYSTEM BALANCE 1. VARY TOTAL SYSTEM AIR QUANTITIES BY ADJUSTING FAN SPEEDS. VARY BRANCH AIR QUANTITIES BY DAMPER **REGULATION**
- 2. ADJUST SETTINGS ON DIRECT DRIVE FANS WITH ECM MOTORS AS REQUIRED TO ACHIEVE DESIGN AIRFLOW. 3. ADJUST OUTSIDE AIR, RETURN AIR, AND EXHAUST AIR AUTOMATIC DAMPERS FOR DESIGN CONDITIONS. 4. TEST GAS FURNACE AT MINIMUM AND 100% OUTSIDE AIR.
- E. FANS WITH FIXED MOTOR SHEAVES TEST THE FAN EQUIPMENT. IF THE DESIGN CONDITIONS ARE NOT OBTAINED, CALCULATE THE FINAL FIXED MOTOR SHEAVE AND/OR BELTS REOUIRED TO OBTAIN DESIGN CONDITIONS. HEATING CONTRACTOR SHALL OBTAIN THE FINAL FIXED MOTOR SHEAVE AND BELT(S) FROM THE FAN MANUFACTURER AND TURN THEM OVER TO THE TAB CONTRACTOR FOR INSTALLATION.
- F. EXISTING EQUIPMENT/SYSTEMS 1. TEST EXISTING EQUIPMENT WHERE INDICATED ON THE PLANS PRIOR TO ANY DEMOLITION. SUBMIT TEST DATA TO ENGINEER BEFORE DEMOLITION BEGINS.
- 2. BALANCE ALL EXISTING EQUIPMENT SCHEDULED AND EXISTING AIR INLETS/OUTLETS WHERE AIR QUANTITIES ARE NOTED ON THE DRAWINGS.

EGEND

NOTE: ALL SYMBC	LS SHOWN MAY NOT APPEAR ON DRAWINGS.			
<u>SYM.</u> <u>ABBR.</u>	IDENTIFICATION	SYM.	ABBR.	IDENTIFICATION
DUCTWORK				
R R				
				SA OR OA DUCT DOWN OR AWAY
	RADIUS ELBOW			EA DUCT DOWN OR AWAY
	SQUARE ELBOW WITH TURNING VANES			RA DUCT DOWN OR AWAY
	SQUARE ELBOW WITHOUT TURNING VANES	Ē	VD	VOLUME DAMPER
	SQUARE OR RECTANGULAR BRANCH TAKEOFF	-E	BDD	BACKDRAFT DAMPER
	RECTANGULAR TO ROUND TAKEOFF	- <u>F</u> ∰-•	MOD	MOTOR OPERATED DAMPER
· <u> </u>	TEE WITH TURNING VANES	DS	DSD	DUCT SMOKE DETECTOR
Ţ Ţ	ROUND TO ROUND CONICAL TAKEOFF	₿ €	FD	FIRE DAMPER
	ECCENTRIC TRANSITION	Î S	SD	SMOKE DAMPER
	CONCENTRIC TRANSITION	- - - - - -	FSD	FIRE/SMOKE DAMPER
	SOUARE TO ROUND TRANS.		SG	SUPPLY GRILLE
	DUCT CAP		EG,RG,	(E)XHAUST / (R)ETURN / (T)RANSFER GRILLE
L	ACOUSTICALLY LINED DUCT (NOT ALWAYS	UCD	UCD	UNDERCUT DOOR (BY GC)
SA SA	SUPPLY AIR DUCT UP		DTG	DOOR TRANSFER GRILLE
AO	OUTSIDE AIR DUCT UP		FC	FLEXIBLE CONNECTION
RA RA	RETURN AIR DUCT UP		AD	ACCESS DOOR
EA	EXHAUST AIR DUCT UP			
	DETAIL OR SECTION NUMBER			
	SHEET NUMBER			STATIC PRESS. SENSOR
H	HUMIDISTAT / HUMID. SENSOR	(SS)		SLAB TEMPERATURE SENSOR
T	THERMOSTAT / TEMP. SENSOR	4⊠		COMBINATION STARTER
		MS		MANUAL STARTER
AFF	ABOVE FINISHED FLOOR		OC	ON CENTER
AFG	ABOVE FINISHED GRADE		PC	PLUMBING CONTRACTOR
AP	ACCESS PANEL		RAO	RETURN AIR OPENING
BJ	BETWEEN JOISTS		TAO	TRANSFER AIR OPENING
BOD	BOTTOM OF DUCT		TCC	TEMPERATURE CONTROL CONTRACTOR
BOG	BOTTOM OF GRILLE		TCP	TEMPERATURE CONTROL PANEL
EAO	EXHAUST AIR OPENING		TJ	THRU JOISTS
EC	ELECTRICAL CONTRACTOR		TYP.	TYPICAL
GC	GENERAL CONTRACTOR / CONSTRUCTION MANAGER		TTS	TIGHT TO STRUCTURE
НС	HVAC CONTRACTOR		TV	TURNING VANES
IMP	INSULATED METAL PANEL		VFD	VARIABLE FREQUENCY DRIVE
NIC	NOT IN CONTRACT		WP	WEATHER PROOF
NTS	NOT TO SCALE		WWM	WELDED WIRE MESH
<u>PIPING</u>				
G/LP	NATURAL GAS/LP GAS	()		PIPING BOTTOM TAKE-OFF
	PIPE DOWN OR AWAY			PIPING TOP TAKE-OFF
]	PIPING CAP	O		PIPE UP



BASED ON ASHRAE 0.4% DESIGN CONDITIONS.

SHEET INDEX

NUMBER	SHEET NAME							
HVAC								
H0.1	LEGEND AND SPECIFICATIONS							
H1.1	FIRST FLOOR PLAN							
H3.0	DETAILS							
H4.0	SCHEDULES							



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LEGEND AND SPECIFICATIONS

DATE: 08/30/19

BLD #: BLD19-00468





<u>GENERAL NOTES</u>

- VERIFY BUILDING OPENING AND CURB SIZES LISTED ON PLANS WITH ACTUAL EQUIPMENT SCHEDULED AND SUPPLIED. COORDINATE REQUIRED OPENING SIZES AND LOCATIONS WITH CONTRACTORS PROVIDING OPENING. SCHEDULES AND ACTUAL EQUIPMENT SIZES SHALL TAKE PRECEDENCE OVER SIZES SHOWN ON PLANS.
- DETAIL REFERENCES ON PLANS ARE TO AID THE CONTRACTOR IN IDENTIFYING THE APPLICABLE DETAIL. NOT ALL DETAILS, OR INSTANCES OF DETAILS, ARE REFERENCED ON PLANS. CONTRACTOR IS RESPONSIBLE TO REVIEW AND COMPLY WITH ALL APPLICABLE DETAILS WHETHER OR NOT REFERENCED ON PLANS.
- COORDINATE LOCATION OF ALL EXPOSED PIPING AND DUCTWORK WITH OWNER PRIOR TO INSTALLATION.
- IF DUCT SYSTEMS ARE USED FOR TEMPORARY HEAT, PROVIDE TEMPORARY FILTERS AT RETURN AIR OPENINGS AND INSTALL FILTERS IN THE UNITS EQUIVALENT TO THE EFFICIENCY OF THE SPECIFIED FILTERS FOR THE UNIT. IF PROPER EFFICIENCY FILTERS ARE NOT INSTALLED IN UNIT, UNIT AND ALL DUCTWORK DOWNSTREAM OF UNIT SHALL BE CLEANED BEFORE TEST AND BALANCE.
- COORDINATE GRILLE LOCATIONS WITH FINAL REFLECTED CEILING PLAN AND COORESPONDING LIGHTING CONFIGURATION.
- MOUNT DUCTWORK IN AREAS AS HIGH AS POSSIBLE ABOVE SPACES WITH 10'-0" HIGH CEILINGS.

DEMOLITION NOTES

• REMOVE ALL EXISTING DUCTWORK AND GRILLES UNLESS INDICATED AS EXISTING TO REMAIN.

<u>KEYNOTES</u>

(1) MOUNT THERMOSTAT AT 48" A.F.F. IN LOCATIONS AS SHOWN, UNLESS LOCAL CODE AUTHORITY WILL ALLOW A MOUNTING HEIGHT OF 60" A.F.F. THERMOSTATS SHALL BE HONEYWELL VISION PRO THR8320R COMMERCIAL SERIES OR APPROVED EQUAL. THERMOSTAT PROVIDED BY HVAC CONTRACTOR.

- 2 NOT USED.
- $\langle 3 \rangle$ Gas furnace for New Tenant Construction. See existing Gas FURNACE SCHEDULE ON SHEET H4.0. FIELD VERIFY EXACT LOCATION OF UNIT AND ADJUST DUCTWORK ACCORDINGLY. CLEAN UNIT, GREASE ALL BEARINGS, LEAK-CHECK AND CHARGE REFRIGERANT SYSTEM, REPLACE FILTERS AT END OF TENANT BUILD-OUT CONSTRUCTION, AND CLEAN OUTDOOR AND INDOOR COILS.
- $\langle 4 \rangle$ connect to existing.
- $\overline{5}$ REMOVE EXISTING 18"Ø SA AND RA DUCTS.
- $\left< 6 \right>$ EXISTING GAS PIPING, REFRIGERANT PIPING AND CONDENSATE DRAIN TO REMAIN.
- $\langle 7 \rangle$ louvers to be centered in Brick areas below cantilevered floor ABOVE.

HVAC CALCULATION NOTES

HVAC CALCULATIONS ASSUMES THE FOLLOWING FOR THE ENVELOPE. CONSTRUCTION:

- WALL WITH WOOD STUDS/INSULATION: R-VALUE = 19.54 TOTAL

- GLASS: INSULATED CLEAR GLAZING

U-VALUE = 0.38SHADING COEFFICIENT = 0.53

IF ACTUAL ENVELOPE CONSTRUCTION VARIES FROM THESE ESTIMATES, CONTRACTOR TO CONTACT EXCEL ENGINEERING INC.



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24 GA. SHEET METAL PLENUM BOX. PAINT INTERIOR BLACK. ACOUSTICALLY LINE AT TRANSFER AND RETURN GRILLES AND PAINT FASTENERS BLACK. MINIMUM 8" DEPTH GRILLE NECK SIZE RETURN, EXHAUST OR TRANSFER GRILLE 3 H3.0 NOT TO SCALE

DATE: **08/30/19** BLD #: **BLD19-00468**

> C:\L 8/2





	LOUVER SCHEDULE (L.)													
					SIZE		FREE	MAX.						
NO	. SERVES	APPLICATION	CFM	D	W	Н	AREA	APD	SCREEN	MAT'L	FRAME	FINISH	MODEL	REMARKS
				"	"	"	S.F.	" W.C.						
1	EX. GF-1	O.A. DUCTED	1,800	6	32	32	3.43	0.04	BIRD	ALUM.	CHANNEL	(1)	ESD-603	"GREENHECK" (2)
2	RELILEF / EXH.	E.A. DUCTED	2,000	6	32	32	3.43	0.05	BIRD	ALUM.	CHANNEL	(1)	ESD-603	"GREENHECK" (2)

- ACCEPTABLE MANUFACTURERS: GREENHECK, RUSKIN, CARNES, TITUS, AMERICAN WARMING AND VENTILATING, IAC, CESCO, POTTORFF. - BIRD SCREEN: 1/2"x 1/2" 19 GAUGE GALVANIZED WIRE.

- INTAKE LOUVERS SHALL MEET CLASS A REQUIREMENTS WHEN RATED ACCORDING TO AMCA 511-99 AND TESTED PER AMCA 500-L-99. (1) BAKED ENAMEL - COLOR AS SELECTED BY LANDLORD.

(2) PROVIDE WITH EXTENDED SILL.

SUP	PLY	GRILI	-E SCHE	DULE	(S.G

SUP	PLY GRILL	E SCHE	DULE	(S.G.)							
		CFM	NECK/	INLET							
NO.	TYPE	RANGE	FACE		MAT'L	DAMPER	FINISH	FRAME	THROW	MODEL	REMARKS
1-6		0-75	24 X 24	6"	STEEL	(1)	WHITE	I AY-IN	4-WAY	TMS	"TITUS"
	LOUVER			0	01222						
1-8	LOUVER	76-275	24 X 24	8"	STEEL	(1)	WHITE	LAY-IN	4-WAY	TMS	"TITUS"
1-10	LOUVER	276-375	24 X 24	10"	STEEL	(1)	WHITE	LAY-IN	4-WAY	TMS	"TITUS"
1-12	LOUVER	375-550	24 X 24	12"	STEEL	(1)	WHITE	LAY-IN	4-WAY	TMS	"TITUS"
1-14	LOUVER	551-750	24 X 24	14"	STEEL	(1)	WHITE	LAY-IN	4-WAY	TMS	"TITUS"
2S	DBL DEFL.	SEE DWG	(2)	-	STEEL	(1)	WHITE	SURFACE MOUNT	DBL DEFL. (4)	300R	"TITUS"

- ACCEPTABLE MANUFACTURERS: TITUS, PRICE, CARNES, METALAIRE, ANEMOSTAT, KRUEGER.

- NOT ALL SUPPLY GRILLES SCHEDULED ARE USED ON THE PROJECT.

(1) DAMPER AT THE GRILLE INDICATED BY A "D" AFTER THE GRILLE DESIGNATION. EXAMPLE: SG1SD-6 IS SG1S-6 WITH A DAMPER. (2) NECK SIZE INDICATED ON PLAN AT GRILLE IDENTIFICATION.

(4) FRONT BLADES IN THE HORIZONTAL DIRECTION.

RET	RETURN GRILLE SCHEDULE (R.G.)											
		MAX	NECK	FLEX.								
NO.	ТҮРЕ	CFM	SIZE	DUCT. DIA.	MATL	DAMPER	FINISH	FRAME				
1-6	EGG CRATE	75	24 x 12	6"	ALUM.	(4)	WHITE	LAY-IN (2)				
1-8	EGG CRATE	275	24 x 12	8"	ALUM.	(4)	WHITE	LAY-IN (2)				
1-10	EGG CRATE	450	24 x 12	10"	ALUM.	(4)	WHITE	LAY-IN (2)				
1-12	EGG CRATE	750	24 x 12	12"	ALUM.	(4)	WHITE	LAY-IN (2)				
1-14	EGG CRATE	1,100	24 x 24	14"	ALUM.	(4)	WHITE	LAY-IN (2)				
1-16	EGG CRATE	1,600	24 x 24	16"	ALUM.	(4)	WHITE	LAY-IN (2)				
2S	LOUVERED	SEE DWG.	(5)	-	STEEL	(4)	WHITE	SURFACE MOU				

- ACCEPTABLE MANUFACTURERS: TITUS, PRICE, CARNES, METALAIRE, ANEMOSTAT, KRUEGER. - NOT ALL RETURN GRILLES SCHEDULED ARE USED ON THE PROJECT.

- BRANCH DUCT SIZE TO GRILLE SHALL BE SAME SIZE AS NECK UNLESS OTHERWISE NOTED.

(2) SURFACE MOUNT BORDER WITH NO SCREW HOLES FOR LAY-IN APPLICATION. (3) 1/2 X 1/2 / 1/2 CORE

(4) DAMPER AT THE GRILLE INDICATED BY A "D" AFTER THE GRILLE DESIGNATION. EXAMPLE: RG1SD-6 IS RG1S-6 WITH A DAMPER.

(5) NECK SIZE INDICATED ON PLAN AT GRILLE IDENTIFICATION.

(6) BLADES IN HORIZONTAL DIRECTION

Plans Reviewed and Approved for Construction with Notations Plan review notes may not reflect all code deficiencies. Failure to identify a code deficiency during a review of plans Does not alleviate any obligation to comply with all applicable code provisions.

TE: 08/30/19 #: BLD19-00468

	MODEL	REMARKS
	50F (3)	"TITUS"
Т	350R (6)	"TITUS"

DUCTWORK AND DUCTWOF	JCTWORK AND DUCTWORK INSULATION SCHEDULE									
		DUCT	SMACNA	INSULATIO	INSUL.					
SERVICE	LOCATION	MAT'L	PRESS.	RECTANGULAR	ROUND	JACKET				
			CLASS	DUCT	DUCT					
SUPPLY GAS FURNACE	EXPOSED IN ROOM SERVED	GALV. ST.	+1"	N.R.	N.R.	N.R.				
SUPPLY GAS FURNACE	EXPOSED IN ROOM SERVED	GALV. ST.	+1"			N.R.				
RETURN UPSTREAM OF FAN	CONCEALED AND EXPOSED	GALV. ST.	-1"	N.R.	N.R.	N.R.				
OUTSIDE AND MIXED AIR	EXPOSED	GALV. ST.	-1"	2" RIGID F.G.	2" SEMI-RIGID F.G.	N.R.				
RELIEF	EXPOSED	GALV. ST.	+1/2"	1.5" RIGID F.G. (2)	1.5" SEMI-RIGID F.G.(2)	N.R.				
EXHAUST DOWNSTREAM OF FAN	EXPOSED	GALV. ST.	+1"	1.5" RIGID F.G.	1.5" SEMI-RIGID F.G.	N.R.				
EXHAUST DOWNSTREAM OF FAN	CONCEALED	GALV. ST.	+1"	1.5" FLEX. F.G. (2)	1.5" FLEX. F.G. (2)	N.R.				
	·									

N.R. = NOT REQUIRED

EXPOSED = VISIBLE FROM OCCUPIED SPACE.

CONCEALED = HIDDEN FROM VIEW BY WALLS AND CEILINGS.

MATERIALS:

GALV. STEEL: ASTM A653, LOCK FORMING QUALITY, 1.25 OUNCES/ S.F. ZINC COATING (G90 IN ACCORDANCE WITH ASTM A90 BOTH SIDES). - ALL JOINTS, LONGITUDINAL AND TRANSVERSE SEAMS AND CONNECTIONS IN DUCTWORK SHALL BE SEALED PER IECC 403.2.9. (2) INSULATE FROM 18" UPSTREAM OF THE BACKDRAFT OR MOTOR OPERATED DAMPER TO THE POINT WHERE THE DUCT EXITS THE BUILDING.

ELECTRICA	LECTRICAL/STARTER/DISCONNECT SCHEDULE															
ELECTRICAL DATA STARTER SMOKE DISCONNECT																
SYM.	HP	KW	AMPS	MCA	MOP	VOLT	PH.	TYPE	LOCATION	FURN.	AUX.	ACCESS-	DETECTOR	DIS-	FURN.	REMARKS
										BY	CONTACT	ORIES		CONNECT	BY	
CEF-1	-	0.08	-	-	-	120	1	(1)	(1)	EC	-	-	-	R	EM	-
CEF-2	-	0.08	-	-	-	120	1	(1)	(1)	EC	-	-	-	R	EM	-

STARTER TYPE:

INTEG.= INTEGRAL: PROVIDED INTEGRAL WITH EQUIPMENT.

FURNISHED BY:

EM = EQUIPMENT MANUFACTURER HOA = HAND-OFF-AUTO HC = HEATING CONTRACTOR

ACCESSORIES: PL =LED PILOT LIGHT EC = ELECTRICAL CONTRACTOR PB = PUSH BUTTON

DISCONNECT: NR= NOT REQUIRED R = REQUIRED 3R = NEMA 3R

- VERIFY VOLTAGE AND PHASE WITH ELECTRICAL CONTRACTOR BEFORE ORDERING EQUIPMENT. (1) WALL OCCUPANCY SENSOR PROVIDED BY E.C. TO TURN ON ROOM LIGHTS AND FAN.

EXIS	EXISTING GAS FURNACE AND CONDENSING UNIT SCHEDULE (EX. G.F. & EX. C.U.)													
			O.A.	FURNACE			IACE	CONDENSING UNIT			Г			
NO.	POSITION	CFM	CFM	MBH	MBH	NO. OF	H.P.	MODEL	NO.	MCA	MOCP	VOLT.	MODEL	REMARKS
				IN	OUT	STAGES								
1	HORIZONTAL	1800	425	120	116	2	1	AUH2D120	1	32	50	208/1	4A7A6061	AMERICAN STANDARD

- PROVIDE WITH NEW 2" ASHRAE STD 52.2 MERV 8 T.A. FILTERS

- THE ABOVE INFORMATION IS BASED ON ORIGINAL BUILDING DESIGN DOCUMENTS AND FIELD SURVEY. CONTRACTOR TO VERIFY.

CABINET EXHAUST FAN SCHEDULE (C.E.F.)

						•				
NO.	AREA SERVED	TYPE	CFM	S.P. " W.C.	RPM	MOTOR WATTS	MAX. SONES	DUCT COLLAR SIZE	MODEL	REMAR
1	TOILET RM	CEILING	100	0.38	950	80	2.7	6"	SP-B110	"GREENH
2	TOILET RM	CEILING	100	0.38	950	80	2.7	6"	SP-B110	"GREENH

- ACCEPTABLE MANUFACTURERS: GREENHECK, COOK, PENN, CARNES.

- SUPPORT FROM STRUCTURE, ISOLATE FAN AND ASSOCIATED DUCTWORK.

- PROVIDE SPEED CONTROL MOUNTED ON FAN HOUSING, INTERNAL PLUG-IN DISCONNECT AND BACKDRAFT DAMPER

- PROVIDE WITH WHITE ALUMINUM GRILLE

REMARKS:

REC.=RECEPTACLE





DATE: 08/30/19 #: BLD19-00468

LIGHT FIXTURE SCHEDULE

DESCRIPTION

TYPE C16 6" DOWNLIGHT (OFCI)

- EM1 WALL BATTERY EMERGENCY LIGHT WITH SELF-DIAGNOSTICS
- ID4 4' LINEAR DIRECT/INDIRECT (OFCI)
- L2 2X4 LAY-IN TROFFER ACRYLIC LENS (OFCI)
- P1 PENDANT MOUNT (OFCI) R2 EXTERIOR REMOTE EMERGENCY HEAD (OFCI)
- T1 4' TRACK AT EXPOSED CEILINGS (OFCI)
- T3 6' DIAMETER TRACK (OFCI) XE COMBO SINGLE FACE EXIT W/REMOTE POWER EM HEADS - RED LETTERS (OFCI)

<u>GENERAL NOTES</u>

- FOR A COMPLETE FIXTURE INSTALLATION. SEE MOUNTING DETAILS WHEN APPLICABLE. • ALL LIGHTING FIXTURES ARE TO BE OWNER FURNISHED AND CONTRACTOR INSTALLED.
- LIGHTING CONTROLS ARE SUPPLIED AND INSTALLED BY THE ELECTRICAL CONTRACTOR.

\square \geq \rightarrow <u>FIRE ALAR</u> Q Ž Č F (H) (\mathbb{S}) SD MISCELLA _____ _____ ___]

REMARKS

(3)

(1)

(5)

(4)(6)

(4)(8)

120 LED 45 120 100W INC. 100 120 W/FIXTURE

VOLTAGE QTY

120

120

120

120

120

120

LAMP

TYPE

W/FIXTURE

W/FIXTURE

LED

W/FIXTURE

• FIXTURE MODEL NUMBER MAY NOT REFLECT ALL MOUNTING HARDWARE. ELECTRICAL CONTRACTOR SHALL PROVIDE ALL NECESSARY MOUNTING EQUIPMENT, LENSES, STEMS, SAFETY CHAINS, END PLATES, AND ALL OTHER HARDWARE NECESSARY

REMARKS:

-

TOTAL

WATTAGE

16

56

(1) PROVIDE CABLE LENGTH TO MOUNT BOTTOM OF FIXTURE AT 8'-6" AFF.

PEERLESS / PNLP-24G-45W-35K-MV

CONTEMPORARY LIGHTING / E20419-09

NORA LIGHTING / NLCBC-651-30K-DW / NHIC-6LMRAT

PEERLESS / LDX5-307-68-70-35K-FA-WM-A5-MV

(2) NOT USED.

(3) PROVIDE MINIMUM 12W LAMPHEADS FOR EMERGENCY LIGHTS.

SURE-LITES / CC7NCSD

EXITRONIX / TRL-EM-BR-CL

GENERAL ELECTRICAL NOTES

ACCORDANCE WITH CEILING AND ELEVATION PLANS.

THE SYSTEMS FURNISHED SHALL BE A PART OF THE SHOP DRAWING SUBMITTAL.

AFFECTED TO INSTALL THEIR WORK PROPERLY AND WITHOUT DELAY.

DO NOT REFERENCE ELECTRICAL DRAWINGS FOR EXACT LOCATION.

(4) PROVIDE MANUFACTURERS STANDARD LENGTHS OF TRACK TO MATCH LENGTHS SHOWN ON PLANS. PROVIDE ALL

NORA LIGHTIING / NRS0-P04 / NRS90-R39I / NRS0-N17-7-1/2 -11-1/2 / * / NRS0-P81 / * / *

NORA LIGHTING / NRS0-P04 / NRS0-N17-7-1/2 -11-1/2 / * / NRS0-P81 / * / *

SEE ARCHITECTURAL REFLECTED CEILING AND ELEVATION PLANS FOR LOCATION OF ALL LIGHTING FIXTURES. LOCATE FIXTURES IN

UNDERSTANDING THE FUNCTION AND OPERATION OF THE SYSTEMS. E.C. SHALL REVIEW THE ONELINES, RISERS, AND FLOOR

• DEVICE LOCATIONS MAY BE DISTORTED FOR CLARITY. LOCATE DEVICES SYMMETRICALLY WITH THE ARCHITECTURAL ELEMENTS.

MAXIMUM HEADROOM AND SPACE CONDITION AT ALL POINTS IN THE BUILDING. WHERE HEADROOM OR SPACE CONDITIONS

• CONTRACTOR SHALL COORDINATE WITH THE OTHER TRADES TO VERIFY SPACES ARE CLEAR OF OBSTRUCTIONS. MAINTAIN

• FURNISH OTHER TRADES ADVANCE INFORMATION ON LOCATIONS AND SIZES OF PIPING, DUCTWORK, EQUIPMENT, FRAMES,

• SEE HVAC AND PLUMBING PLANS FOR LOCATIONS OF HEATING, VENTILATING, AIR CONDITIONING AND PLUMBING EQUIPMENT.

CONTRACTOR SHALL WORK UNTIL SERVICE IS RESTORED. OUTAGE WORK SHALL BE DONE AFTER OR BEFORE NORMAL WORKING

MANUF. / MODEL

BOXES, SLEEVE AND OPENINGS NEEDED FOR WORK. FURNISH INFORMATION AND SHOP DRAWINGS TO PERMIT TRADES

• SCHEDULE REQUIRED POWER, TELEPHONE, OR DATA OUTAGES IN OCCUPIED AREAS OF THE BUILDING WITH THE OWNER.

APPEAR INADEQUATE, NOTIFY ARCHITECT/ENGINEER BEFORE PROCEEDING WITH THE INSTALLATION.

PLANS FOR THE EXACT QUANTITIES AND LOCATION OF ALL EQUIPMENT. E.C. SHALL FURNISH AND INSTALL ALL EQUIPMENT SHOWN ON ANY OR ALL OF THESE DIAGRAMS AND DRAWINGS. DETAILED WIRING DIAGRAMS SHOWING ACTUAL WIRING FOR

• ONELINE DIAGRAMS AND RISER DIAGRAMS ARE A DIAGRAMMATIC REPRESENTATION TO AID THE CONTRACTOR IN

SUPPORTS, CONNECTORS AND POWER SUPPLIES FOR A COMPLETE AND WORKING SYSTEM. SEE REFLECTED CEILING PLAN (5) PROVIDE CABLE LENGTH TO MOUNT BOTTOM OF PENDANT AT 7'-0" AFF. (6) TRACK MOUNTED AT 9'-0" CEILINGS SHALL HAVE 12" RIGID STANDOFFS. TRACK MOUNTED AT 10'-0" CEILINGS SHALL HAVE 24" RIGID STANDOFFS. TRACKS MOUNTED AT EXPOSED STRUCTURE SHALL HAVE RIGID STANDOFFS

EXTENDED FROM STRUCTURE ABOVE TO MOUNT BOTTOM OF TRACK HEAD AT 7'-6". FIELD VERIFY LENGTH. (7) PROVIDE CHAIN TO HANG FIXTURES 9'-0" AFF TO BOTTOM OF FIXTURE.

(8) CIRCULAR TRACK MOUNTED AT 9'-0" CEILINGS SHALL HAVE 7-1/2" RIGID STANDOFFS. CIRCULAR TRACK MOUNTED AT 10'-0" CEILINGS SHALL HAVE 18" RIGID STANDOFFS. TRACKS MOUNTED AT EXPOSED STRUCTURE SHALL HAVE RIGID STANDOFFS EXTENDED FROM STRUCTURE ABOVE TO MOUNT BOTTOM OF TRACK HEAD AT 7'-6". FIELD VERIFY LENGTH.

2.8 SURELITE / APCH-7R

HOURS, ON WEEKENDS OR HOLIDAYS.

LEGEND

<u>SYM.</u>	IDENTIFICATION	<u>SY</u> M.	<u>IDENTIFICATION</u>
<u>LIG</u> HTING			
\cap	RECESSED, SURFACE, OR PENDANT MOUNTED LIGHT	4_4	EMERGENCY LIGHT MOUNT 11'-0" AFF TO TOP OR 8"
0	FIXTURE		BELOW CEILING, WHICHEVER IS LOWER
<u> </u>	MOUNT 7'-0" AFF OR 8" ABOVE MIRROR	47	RECESSED EMERGENCY LIGHT
0	RECESSED, SURFACE MOUNTED, OR CHAIN HUNG LIGHT FIXTURE	\odot	OCCUPANCY SENSOR
Π	PENDANT FIXTURE	ЭH	WALL MOUNTED OCCUPANCY SENSOR WITH SWITCH
	EXTERIOR WALL MOUNTED OR INTEROR WALL WASH	- Charles - Char	DUAL LEVEL/CIRCUIT OCCUPANCY SENSOR WITH SWITCH
	FIXTURE		
<u>R</u>	EXII LIGHI	PC	
<u>WIRING DE</u>			
\$	MOUNT 46" AFF TO CENTER, $3 = 3$ WAY, $4 = 4$ WAY, P	мw Ф	
	= PILOT, D = DIMMER, K = KEYED DUAL LEVEL SWITCH.	 	POWER RECEPTACLE.
\$\$	MOUNT 46" AFF TO CENTER SEE DETAIL	¥	MOUNT 18" AFF TO CENTER
\$	LOW VOLTAGE SWITCH. MOUNT 46" AFF TO CENTER	⊕	SWITCH BOTTOM HALF OF RECEPTACLE, TOP HALF
φ	SIMPLEX RECEPTACLE. MOUNT 18" AFF TO CENTER	۲	SPECIAL OUTLET
φ	DUPLEX RECEPTACLE. MOUNT 18" AFF TO CENTER	Ő	JUNCTION BOX
11			COMBINATION FLOOR OUTLET/BLANK JUNCTION
₩	MOUNT 18" AFF TO CENTER	$\oplus \mathbb{O}$	BOX - WIREMOLD - RESOURCE RFB/SERIES OR
Ŷ	BACKSPLASH TO CENTER. IF NO BACKSPLASH	\bullet	BLANK BOX 4 EXTRA DEEP BOX, SINGLE GANG RING, BLANKPLATE, 1" C STUB INTO ACCESSIBLE SPACE,
	MOUNT 6" ABOVE COUNTER		
ሐ		A	above counter blank box, 4" extra deep box, SINGLE gang ring, blankplate, 1"C stubbed into
Ψ	FLK = FLOOR MOUNTED CLG = CEILING/SOFFIT MOUNTED	U	ACCESSIBLE SPACE, MOUNT 6" ABOVE BACKSPLASH
MOTORS /	MOTOR CONTROL / EQUIPMENT		IO CENTER
	DISCONNECT FURNISHED BY EC		
	F = FUSIBLE	MS	MANUAL STARTER
	NON-COMBINATION STARTER	N	
${\bf a}_{I}$	COMBINATION STARTER	N	MOTOR CONNECTION REQUIRING REMOTE
\sim	SURFACE MOUNTED PANELBOARD		EQUIPMENT CONNECTION
	RECESSED PANELBOARD		SURFACE MOUNTED RACEWAY
	M / LIFE SAFETY		
3	STROBE. MOUNT 84" AFF TO TOP OR 6" BELOW		MAGNETIC DOOR HOLDER
 ∇	CEILING WHICHEVER IS LOWER		
Ď	BELOW CEILING WHICHEVER IS LOWER	FS	SPRINKLER FLOW SWITCH
<u>ک</u>	HORN (SOUNDER). MOUNT 84" AFF TO TOP OR 6"	TS	SPRINKLER TAMPER SWITCH
	BELOW CEILING WHICHEVER IS LOWER		
	POLL STATION. MOUNT 46 AFF TO CENTER	<u>я</u>	DOOR CHIME
θ	HEAT DETECTOR	FACP	FIRE ALARM CONTROL PANEL
S	SMOKE DETECTOR	FAA	FIRE ALARM ANNUNCIATOR PANEL
(Sp	DUCT SMOKE DETECTOR	େ	CARBON MONOXIDE DETECTOR
MISCELLAN	IEOUS	9	
· · · · · ·			ITEMS AND/OR DEVICES CIRCUITED TOGETHER
			ITEMS AND/OR DEVICES CIRCUITED TOGETHER. BUT
	CONDOIT WITH BUSHING ON END.	~~~	SWITCHED SEPARATELY
1	ELECTRICAL HOMERUN, CIRCUIT AS SHOWN	-12	RELAY CIRCUIT
PNL-X	SHARED ELECTRICAL HOMERUN WHEN WIRE TAG HAS ()	\Diamond	DETAIL OR SECTION NUMBER
		0	SHELT NOWBER
		НС	HVAC CONTRACTOR
AFF	ABOVE FINISHED FLOOR	IG	ISOLATED GROUND
AFG	ABOVE FINISHED GRADE	IMP	INSULATED METAL PANEL
BZ	BUG ZAPPER	LCP	LIGHTING CONTROL PANEL
DISC	DISCONNECT	NL	NIGHT LIGHT
DW	DISHWASHER	NTS	NOT TO SCALE
EC	ELECTRICAL CONTRACTOR	OC	ON CENTER
ELEV	ELEVATION	PC	PLUMBING CONTRACTOR
EM	EMERGENCY	PNL	PANELBOARD
ETR	EXISTING TO REMAIN	REF	REFRIGERATOR
EWC	ELECTRIC WATER COOLER	UC	UNDER COUNTER
FF	FOOT FOAMER	3R	NEMA 3R
FPC		4X	NEMA 4X
GC	GENERAL CONTRACTOR/CONSTRUCTION MANAGER	WT	
GDSP		AFIMK	INAINSFURMER
SECURITY			
	DOOR CONTACT	CR	CARD READER
			CAMERA
			CAIVIERA
		~	
T	MOUNT 18" AFF TO CENTER	(J))	CEILING MOUNTED SPEAKER
	W = WALL MOUNT 52" AFF TO CENTER		
$\nabla \nabla$	DATA OUTLET, 1" C STUB INTO ACCESSIBLE SPACE, MOUNT 18" AFF TO CENTER	-1 \\	
~ *	X = NUMBER OF DATA DROPS PER BOX	\neg	WALL WOUNTED SPEAKER
	COMBINATION TELEPHONE/DATA, 1" C STUB INTO	TV	TELEVISION OUTLET MOUNT 18" AFF TO CENTER
v	THE STOLE BULLINE TO ALL TATED		

ARCHITECTS • ENGINEERS • SURVEYORS Always a Better Plan 100 Camelot Drive Fond Du Lac, WI 54935 Phone: (920) 926-9800 www.EXCELENGINEER.com **PROJECT INFORMATION** 40 \sim 7 ഹ $\mathbf{\mathcal{L}}$ 4 Ο \Box Ο BUILD \sim > UIT \mathbf{m} S Z 4 Ž ш ĒŖ ____ Ω GIL S 30 -





SHEET INDEX

NUMBER	NUMBER SHEET NAME						
ELECTRICAL							
E0.1	SYMBOLS LEGEND & FIXTURE SCHEDULE						
E0.2	SPECIFICATIONS						
E1.1	FLOOR PLAN - ELECTRICAL						
E4.0	ONELINE DIAGRAMS, SCHEDULES & DETAILS						

SYMBOLS LEGEND & FIXTURE SCHEDULE

SPECIFICATIONS

DIVISION 26 ELECTRICAL

26 05 00 BASIC ELECTRICAL REQUIREMENTS

- A. SEE DIVISION 00 PROCUREMENT AND CONTRACTING AND DIVISION 01 GENERAL REQUIREMENT FOR ADDITIONAL REOUIREMENTS B. ELECTRICAL CONTRACTOR SHALL VERIFY REQUIREMENTS FOR TEMPORARY LIGHTING AND POWER WITH GENERAL
- CONTRACTOR AND INCLUDE IN HIS SCOPE OF WORK WHEN DIRECTED BY G.C. INSTALL IN ACCORDANCE WITH ALL CODE AND OSHA REQUIREMENTS FOR CONSTRUCTION PROJECTS. C. SUBSTITUTIONS
- BIDDING
- 3. WHERE SUBSTITUTE EQUIPMENT REQUIRES REDESIGN OF ANY PART OF THE PROJECT, THE COST OF REDESIGN AND ADDITIONAL COSTS OF THE WORK SHALL BE PAID BY THE CONTRACTOR. REDESIGN SHALL BE SUBJECT TO THE APPROVAL OF ALL AUTHORITIES HAVING JURISDICTION OVER THE WORK INCLUDING THE ARCHITECT/ENGINEER.
- D. FINISHING AND PAINTING 1. SEE DIVISION 09 91 00 FINISH AND PAINTING FOR ADDITIONAL REQUIREMENTS. 2. PREPARE EXPOSED CONDUIT, FITTINGS, SUPPORTS, AND ACCESSORIES FOR FINISH PAINTING IN ROOMS THAT WILL
- HAVE CEILING AND STRUCTURE PAINTED. 3. E.C. SHALL PROVIDE A FACTORY OR FIELD APPLIED PRIME AND FINISH COAT OF COLOR SELECTED BY THE OWNER'S REPRESENTATIVE TO ALL ROOF MOUNTED EQUIPMENT AND OTHER EXTERIOR MATERIALS, INCLUDING SUPPORT HARDWAR
- 4. COORDINATE WORK WITH THE PAINTERS SO THAT ALL EQUIPMENT IS INSTALLED PRIOR TO PAINTING. E.C. SHALI PAINT ITEMS IF NOT IN PLACE PRIOR TO NORMAL ROUTINE PAINTING. 5. IF FINISH BECOMES RUSTED, CORRODED, SCRATCHED, OR FLAKED DURING STORAGE OR INSTALLATION, REFINISH
- THE EQUIPMENT TO THE SATISFACTION OF THE OWNER. 6. WHERE THE ELECTRICAL CONTRACTOR IS REQUIRED TO PAINT, THE PAINTING SHALL BE DONE IN ACCORDANCE

- F. INSTALL ALL EQUIPMENT PER MANUFACTURER'S INSTALLATION INSTRUCTIONS AND REQUIREMENTS. PROVIDE ADDITIONAL WORK AND MATERIALS AS REQUIRED. G. COORDINATE INSTALLATION OF ELECTRICAL WORK WITH THE OTHER CONTRACTORS TO AVOID CONFLICTS WITH
- OTHER WORK H. MAINTAIN MAXIMUM HEADROOM AND SPACE CONDITION AT ALL POINTS IN THE BUILDING. WHERE HEADROOM OR SPACE CONDITIONS APPEAR INADEQUATE, NOTIFY ARCHITECT/ENGINEER BEFORE PROCEEDING WITH THE INSTALLATION.
- I. COMPLY WITH THE REQUIREMENTS OF NFPA; NATIONAL, STATE AND LOCAL ELECTRICAL CODES AND LOCAL UTILITY REGULATIONS
- J. MATERIAL SHALL BEAR U.L. AND/OR OTHER APPROVED AGENCY LISTING. K. INSTALL MOTOR STARTERS/RELAYS FURNISHED BY HVAC AND PLUMBING CONTRACTORS, AND WIRE FROM THE POWER SOURCE TO THE STARTER/RELAY AND FROM THE STARTER/RELAY TO THE MOTOR.
- L. VERIFY ELECTRICAL SIZE AND CONNECTION REQUIREMENTS FOR EQUIPMENT FURNISHED BY OTHERS WITH FINAL SHOP DRAWINGS M. CONTRACTOR SHALL CALL LOCAL UTILITY LOCATING SERVICE AND CONDUCT A PRIVATE UTILITY LOCATE TO INSURE THAT ALL ELECTRICAL FEEDERS, BRANCH CIRCUITS, LOW VOLTAGE CABLES AND FIBER OPTIC HAVE BEEN LOCATED BEFORE STARTING SITE DEMOLITION. DESIGN ENGINEER AND GENERAL CONTRACTOR SHALL BE NOTIFIED OF ANY
- OWNER. CONTRACTOR SHALL WORK UNTIL SERVICE IS RESTORED. OUTAGE WORK SHALL BE PERFORMED DURING NON-WORKING HOURS, WEEKENDS, OR HOLIDAYS, O. PROVIDE ALL CUTTING AND PATCHING NECESSARY FOR ELECTRICAL WORK INSTALLATION UNLESS THIS WORK IS IDENTIFIED TO BE THE WORK OF OTHER CONTRACTORS. PATCHING SHALL MATCH ADJACENT SURFACES. CORE DRILL
- OR SAW-CUT OPENINGS THROUGH EXISTING CONCRETE.
- O. PROJECT CLOSEOUT 1. MARK RECORD DRAWINGS ON A FINAL SET OF DRAWINGS WHICH INCLUDES ALL REVISIONS. 2. PROVIDE RECORD DRAWINGS TO THE OWNER IN AUTOCAD FORMAT
- R. LOCATION 1. THE ARCHITECT SHALL RESERVE THE RIGHT TO MAKE OUTLET POSITION CHANGES UP TO 10' BEFORE INSTALLATION WITHOUT ANY ADDITIONAL COSTS TO PROJECT. 2. DO NOT LOCATE OUTLETS OR EQUIPMENT WHERE THE USEFULNESS AND/OR OPERATION WILL BE AFFECTED BY THE
- WORK OF OTHER TRADES, DOOR SWING, COUNTER, EQUIPMENT, ETC. INSTALL EQUIPMENT, JUNCTION BOXES, PULL BOXES AND ACCESSORIES TO PERMIT ACCESS WITHOUT PELOCATE INSTALLED OR YET TO BE INSTALLED EQUIPMENT.
- 4. ACCESS PANELS
- a. FURNISH ACCESS PANELS OF ADEQUATE SIZE TO PERMIT SERVICE OF CONCEALED DEVICES. PANELS SHALL BE SUITABLE FOR INSTALLATION IN THE MATERIAL FORMING THE FINISHED SURFACE, WITH FLUSH METAL FRAME, FLUSH HINGED STEEL DOOR, FLUSH SCREWDRIVER OPERATED LATCH.
- b. PANELS UL LISTED TO CONFORM TO THE FIRE RATING OF THE SURFACE INSTALLED IN. c. TURN ACCESS PANEL OVER TO CONTRACTOR SKILLED IN THE CONSTRUCTION OF THE SURFACES INVOLVED FOR INSTALLATION.
- d. ARCHITECT TO APPROVE ACCESS PANEL LOCATION PRIOR TO INSTALLATION OF EQUIPMENT REQUIRING ACCESS. e. COORDINATE WITH THE OTHER CONTRACTORS AND WHEREVER PRACTICAL, GROUP DEVICES IN SUCH A
- MANNER SO AS TO MINIMIZE PANELS. S. PENETRATIONS
- 1. SLEEVES
- a. FURNISH RIGID CONDUIT SLEEVES FOR CABLES PASSING THROUGH MASONRY, CONCRETE, OR OTHER SIMILAR CONSTRUCTION.
- b. FURNISH SLEEVE TO MASON FOR NEW MASONRY WALLS.
- 2. NON-FIRE RATED INTERIOR WALL AND FLOOR PENETRATIONS: FILL VOID BETWEEN CONDUIT AND SLEEVE, CONCRETE, OR DRYWALL WITH EXPANDING POLYURETHANE FOAM. CAULK BETWEEN CONDUIT AND SLEEVE OR WALL WITH NON-HARDENING CAULK.
- 3. FIRE RATED INTERIOR WALL AND FLOOR PENETRATIONS: SEAL OPENING AROUND PIPE WITH A UL APPROVED FIRE-
- STOP SYSTEM HAVING AN F-RATING NOT LESS THAN THE HOURLY RATING OF THE ASSEMBLY BEING PENETRATED. 4. SMOKE WALL PENETRATIONS: CONDUITS OR CABLES PENETRATING PENETRATION SHALL NOT DESTROY THE
- BARRIER'S INTEGRITY.
- 5. CONTRACTOR SHALL USE CAUTION PRIOR TO MAKING PENETRATIONS AS TO NOT DISTURB ANY EXISTING UTILITIES THAT MIGHT BE PRESENT IN EXISTING WALLS, CEILINGS OR FLOORS. THIS CONTRACTOR IS RESPONSIBLE FOR LOCATING EXISTING UTILITIES IN EXISTING WALLS, CEILINGS OR FLOORS.
- 6. SEAL ALL RACEWAY, CABLE AND CONDUIT PENETRATIONS THROUGH ALL WALLS IN THE ELECTRICAL ROOM(S).
- T. EXCAVATION AND BACKFILL
- 1. VERIFY ALL EXISTING UNDERGROUND ELECTRICAL FEEDERS, BRANCH CIRCUITS, LOW VOLTAGE CABLES AND FIBER OPTIC AND PLUMBING PIPING HAVE BEEN LOCATED PRIOR TO EXCAVATION. CONTRACTOR SHALL NOT USE MACHINE EXCAVATORS AROUND EXISTING BURIED ELECTRICAL AND PLUMBING LINES.
- 2. EXCAVATE AND BACKFILL TRENCHES FOR ELECTRICAL WORK. BACKFILL AND COMPACTION SHALL MEET
- REOUIREMENTS SPECIFIED ELSEWHERE
- 3. CONDUIT PASSING UNDER FOOTINGS AND FOUNDATION WALLS ARE ALLOWED WHERE PERMITTED BY NEC. MAINTAIN MINIMUM 1-1/2" CLEARANCE UNDER FOOTINGS AND FOUNDATION WALLS.
- 4. BURY CONDUIT AND CABLE A MINIMUM 24" DEEP WITH 6" SAND BED ABOVE AND BELOW, AND WARNING MARKER TAPE MINIMUM 12" ABOVE.
- U. REMODELING IN EXISTING CONSTRUCTION
- 1. CONCEAL CONDUIT IN WALLS, ABOVE CEILING, OR BELOW FLOORS. 2. WHERE IT IS IMPOSSIBLE TO CONCEAL CONDUIT AND WHEN APPROVED BY ARCHITECT, METAL SURFACE RACEWAY MAY BE USED FOR 110 VOLT OR GREATER POWER. PLASTIC SURFACE RACEWAY MAY BE USED UNDER THE
 - FOLLOWING CIRCUMSTANCES:
 - a. EACH LINE VOLTAGE CIRCUIT IN THE RACEWAY IS PROVIDED WITH A SEPARATE GREEN GROUND WIRE. b. RACEWAY HAS DIVIDERS BETWEEN THE LOW VOLTAGE AND LINE VOLTAGE COMPARTMENTS. c. WIRE HOLDDOWN CLIPS ARE PROVIDED IN THE RACEWAY.

26 05 02 UTILITIES

- A. EXISTING PROVIDED BY LANDLORD.
- A. TYPE AND SIZE 1. NO. 10 & 12: SOLID OR STRANDED COPPER, 600V, THHN/THWN.
- 2. NO. 8 TO 3: STRANDED COPPER, 600V, THHN/THWN. 3. NO. 2 TO 4/0: STRANDED COPPER OR ALUMINUM, 600V, THHN/THWN.
- 4. 250 KCMIL AND LARGER: STRANDED COPPER OR ALUMINUM, 600V, XHHW. 5. MINIMUM BRANCH CIRCUIT WIRE SIZE NO. 12.
- 6. CONTROL WIRING: STRANDED COPPER, MINIMUM NO. 14.
- 7. GREEN INSULATION, COPPER STRANDED EQUIPMENT GROUND. 8. NM CABLE IS ACCEPTABLE WHERE ALLOWED BY STATE AND LOCAL CODES AND LOCAL AUTHORITY HAVING JURISDICTION.
- JURISDICTION.

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- 1. SEE DIVISION 01 23 00 PRODUCT SUBSTITUTION PROCEDURES FOR ADDITIONAL REQUIREMENTS.
- 2. CONTRACTOR SHALL PROVIDE ALL SUPPORTING DATA AND ASSUME THE BURDEN OF PROOF THAT ANY SUBSTITUTE IS EQUIVALENT AS TO APPEARANCE, CONSTRUCTION, CAPACITY, AND PERFORMANCE. THE JUDGMENT OF EQUIVALENCY SHALL BE MADE BY THE ENGINEER AT THE TIME OF SHOP DRAWING REVIEW, NOT DURING

- WITH THE PAINTING PORTION OF THE ARCHITECTURAL SPECIFICATION. E. DETAILS AND SCHEDULES ARE SHOWN TO AID THE CONTRACTOR AND ARE NOT MEANT TO BE INCLUSIVE OF ALL
- DEVICES. PROVIDE REQUIRED EQUIPMENT AND ACCESSORIES FOR A COMPLETE INSTALLATION.

- DISCREPANCIES BETWEEN PLAN AND FIELD CONDITIONS PRIOR TO CONSTRUCTION. N. SCHEDULE REQUIRED POWER, TELEPHONE OR DATA OUTAGES IN OCCUPIED AREAS OF THE BUILDING WITH THE
- P. REMOVE FROM THE JOB SITE ELECTRICAL CONDUIT, PANELS, CABLE, WIRE, EQUIPMENT, ETC. INDICATED BY THE
- DRAWINGS TO BE DEMOLISHED, UNLESS INDICATED TO BE TURNED OVER TO THE OWNER.
- 3. CLEAN FIXTURES AND EQUIPMENT AND LEAVE IN PROPER WORKING CONDITION AT THE TIME OF FINAL CLEAN-UP.

- c. FURNISH, INSTALL, AND GROUT SLEEVE IN EXISTING MASONRY AND NEW CONCRETE WALLS.
- d. SLEEVE NOT REQUIRED FOR DRYWALL WALLS OR CORE DRILLED HOLE IN CONCRETE WALL.

26 05 19 LOW VOLTAGE POWER CONDUCTORS AND CABLES (600V AND LESS)

9. UF CABLE IS ACCEPTABLE WHERE ALLOWED BY STATE AND LOCAL CODES AND LOCAL AUTHORITY HAVING

- 10. TYPE AC OR MC CABLE IS ACCEPTABLE WHERE ALLOWED BY STATE AND LOCAL CODES AND LOCAL AUTHORITY
- HAVING JURISDICTION 11. TYPE AC OR MC CABLE UTILIZED IN ALL PATIENT CARE AREAS SHALL COMPLY WITH THE "REDUNDANT GROUND"
- REQUIREMENTS OF NEC 517.13(A) AND (B). B. NEUTRALS AND GROUNDS SHALL BE COLOR CODED PER NEC.
- C. WIRE COLORS 1. 120/208-VOLT AND 120/240-VOLT SYSTEM: PHASE-A (BLACK), PHASE-B (RED), PHASE-C (BLUE).
- 2. 277/480-VOLT SYSTEMS: PHASE-A (BROWN), PHASE-B (ORANGE), PHASE-C (YELLOW). D. TWO PERCENT VOLTAGE DROP AT PANELBOARDS AND THREE PERCENT FOR BRANCH CIRCUITS FOR FIVE PERCENT
- VOLTAGE DROP PER NEC E. PROVIDE GROUND CONDUCTOR(S) WITH EVERY BRANCH CIRCUIT AND EVERY FEEDER.
- F. WHEN USING ALUMINUM CONDUCTORS: THE CONTRACTOR SHALL SEAL ALL EXPOSED ALUMINUM WHEN CONDUCTOR IS EXPOSED IN A LUG WITH AN ANTI-OXIDANT COMPOUND. THE CONDUCTORS SHALL BE COMPACT CONCENTRIC
- STRANDED PURE ALUMINUM CONDUCTORS G. PROVIDE A SEPARATE GROUND CONDUCTOR AND A SEPARATE NEUTRAL CONDUCTOR WHEN AN INDIVIDUAL RECEPTACLE OR PIECE OF EQUIPMENT IS SHOWN WITH AN INDIVIDUAL HOMERUN.
- H. PROVIDE A SEPARATE NEUTRAL CONDUCTOR FOR EACH LIGHTING BRANCH CIRCUIT THAT SERVES HID, ELECTRONIC FLUORESCENT BALLASTS AND SOLID-STATE LED DRIVERS OR PROVIDE A NEUTRAL CONDUCTOR ONE SIZE LARGER THAN
- THE LARGEST SOURCE CONDUCTOR WHEN THE NEUTRAL IS SHARED. I. TESTING: ALL CIRCUITS SHALL BE TESTED FOR PROPER OPERATION AND FUNCTION. REPAIR ALL NON-WORKING, NEWLY
- INSTALLED, CIRCUITS. J. VERIFY LUG SIZES AND TERMINATION LOCATION PRIOR TO INSTALLING FEEDERS.
- 26 05 29 HANGERS AND SUPPORTS
- A. CONDUIT HANGERS, ATTACHMENTS, AND SUPPORTS 1. PROVIDE PROPER FITTINGS AND SUPPORT SUITABLE FOR AMBIENT/ENVIRONMENTAL CONDITIONS AND SERVICE
- DUTY
- 2. ATTACH TO STRUCTURAL COMPONENTS TO NOT JEOPARDIZE STRUCTURAL INTEGRITY. 3. PROVIDE ANGLES, CHANNELS, AND BEAMS AS REQUIRED.
- B. BACKBOARDS
- 1. 3/4" PLYWOOD PAINTED ON BOTH SIDES AND EDGES WITH TWO COATS OF WHITE ENAMEL PAINT TO MOUNT EQUIPMENT WHERE SHOWN.
- 2. SUPPORT WITH PAINTED OR GALVANIZED STEEL CHANNEL

26 05 30 CONDUIT

- A. RMC
- 1. ALLOWED FOR ALL SIZES BELOW GRADE AND INSIDE ABOVE GRADE. REQUIRED WHERE CALLED OUT ON PLANS.
- 3. GALVANIZED RIGID STEEL REQUIRED FOR ALL UNDERGROUND 90 DEGREE BENDS.
- 4. GALVANIZED RIGID STEEL WITH GALVANIZED RIGID STEEL FITTINGS, THREADED WATERTIGHT. B. EMT
- 1. ALLOWED FOR INSIDE ABOVE GRADE CONDUIT 2" AND SMALLER.
- 2. STEEL SET SCREW OR COMPRESSION TYPE FITTINGS WITH INSULATED THROAT. C. ENT
- 1. SIZES: MINIMUM 1/2", MAXIMUM 1" ALLOWED FOR ABOVE GRADE CONDUIT WHICH IS CONCEALED INSIDE NON-RATED WALLS AND WHERE PERMITTED
- BY CODE AND LOCAL AUTHORITY HAVING JURISDICTION. 3. SUPPORT MINIMUM EVERY TWO FEET.
- D. FLEXIBLE
- 1. MINIMUM SIZE 1/2".
- 2. MAXIMUM LENGTH 36" FOR CONNECTION TO HVAC EQUIPMENT 3. MAXIMUM LENGTH 72" FOR CONNECTION TO FIXTURES IN TILE CEILINGS.
- 4. STEEL FITTINGS WITH INSULATED THROAT, UL LISTED.
- E. PVC 1. USE FOR CONDUIT IN CONCRETE, UNDER FLOOR SLABS, OR IN EARTH WHEN PERMITTED BY CODE AND LOCAL
- ORDINANCES. ALLOWED FOR ABOVE GRADE CONDUIT WHEN CONDUIT IS UL LISTED FOR DIRECT SUNLIGHT EXPOSURE AND
- WHEN ALLOWED BY CODE AND LOCAL AUTHORITY HAVING JURISDICTION.
- 3. MINIMUM SIZE 3/4". 4. SCHEDULE 40 PVC.
- F FITTINGS
- 1. FITTING MATERIAL SHALL MATCH CONDUIT MATERIAL UNLESS OTHERWISE NOTED IN PLANS AND SPECIFICATIONS OR WITH WRITTEN APPROVAL BY ENGINEER. G. INSTALLATION
- 1. DRAWINGS AND DIAGRAMS SHOW SIZE AND APPROXIMATE LOCATION OF CONDUIT. THE DRAWINGS ARE DIAGRAMMATIC AND SHALL NOT BE SCALED TO DETERMINE EXACT LOCATION. PROVIDE ADDITIONAL OFFSETS AS REQUIRED FOR FIELD CONDITIONS. ROUTE CONDUIT IN ORDERLY MANNER, PARALLEL TO BUILDING STRUCTURE.
- CONCEAL CONDUIT IN FINISHED AREAS. INSTALL UL APPROVED EXPANSION FITTINGS COMPLETE WITH GROUNDING JUMPERS WHERE CONDUITS CROSS BUILDINGS EXPANSION JOINTS AND IN LONG CONDUIT RUNS WHERE DIFFERENTIAL EXPANSION OR CONTRACTION WOULD CAUSE BENDING OR SEPARATION.
- 3. WHERE CONDUIT IS INSTALLED IN EXISTING WALLS, FLOORS OR HARD CEILINGS THE CONTRACTOR SHALL CUT AND PATCH SURFACES TO MATCH EXISTING FOR INSTALLING CONDUIT AND RACEWAYS. THE CUTTING AND PATCHING SHALL BE DONE BY THIS CONTRACTOR TO THE SATIFACTION OF THE GENERAL CONTRACTOR.
- 4. INSTALL CONDUIT WITH ADEOUATE DRAINAGE

THROUGH-WALL AND BACK-TO-BACK BOXES NOT ALLOWED.

26 05 53 IDENTIFICATION FOR ELECTRICAL SYSTEMS

RECESSED PANELBOARDS.

a. TRANSFORMER IDENTIFICATION

b. LABEL EQUIPMENT THAT IT SERVES.

a. LABEL EQUIPMENT THAT IT SERVES.

CENTERS, DISCONNECTS AND STARTERS.

A. EXISITNG PANELBOARD(S) TO BE RE-USED.

1. LABEL SHALL MEET THE MOST CURRENT NFPA 70E REQUIREMENTS

A. MANUFACTURERS: COOPER, HUBBELL, LEVITON AND PASS & SEYMOUR.

1. 20-AMPERE HUBBELL 1221 SINGLE POLE, 1223 THREE-WAY AND 1224 FOUR-WAY.

1. SWITCH AND RECEPTACLE COLORS SHALL BE WHITE.

2. COVER PLATE COLORS SHALL BE WHITE.

c. "FED FROM" LABEL.

c. "FED FROM" LABEL

b. "FED FROM" LABEL

FOLLOWING LOCATIONS:

b. FAULT CURRENT AMPERE RATING

RACEWAY MANUFACTURER TO BE COMPATIBLE WITH THE RACEWAY USED.

- 5. PROVIDE PULL STRING IN ALL EMPTY CONDUITS. 6. WHEN REQUIRED BY STATE AND LOCAL CODES AND ORDINANCES, PROVIDE SEPARATE CONDUIT/RACEWAY FOR
- FIRE ALARM AND TELECOMMUNICATION SYSTEMS 7. ROUTE CONDUIT ABOVE LAY-IN SUSPENDED CEILINGS SO AS NOT TO INTERFERE WITH TILE REMOVAL. 8. INSTALL FLEXIBLE STEEL CONDUIT DROPS FROM INDEPENDENT JUNCTION BOX MOUNTED ABOVE CEILING TO
- RECESSED LIGHT FIXTURES.
- 9. SECURE CONDUITS WITH AT LEAST ONE CORROSION PROOF MALLEABLE ALLOY STRAP OR HANGER EVERY 8 FT. DO
- NOT USE PERFORATED STRAPPING. 10. PROVIDE UL LISTED FIRE-WALL PENETRATIONS WHEN CONDUIT PASS THROUGH A FIRE RATED WALL.
- 26 05 33 BOXES

GASKETS

TO EXISTING FACILITIES.

1. PANELBOARDS

2. TRANSFORMERS:

3. DISCONNECTS:

1. PANELBOARDS

FURNISHING

26 27 26 WIRING DEVICES

B. COLOR

C. WALL SWITCHES:

26 24 16 PANELBOARDS

A. FLUSH INTERIOR 4" SQUARE STEEL BOXES WITH RAISED COVERS AND SQUARE CUT CORNERS. PROVIDE BOXES RATED FOR THROUGH FEED.

WHERE PERMITTED BY STATE AND LOCAL CODES AND AUTHORITY HAVING JURISDICTION. PROVIDE COVERS WITH

C. JUNCTION AND SPLICE BOXES SHALL HAVE GALVANIZED SCREW COVERS AND BE NOT LESS THAN CODE DIMENSIONS.

D. OUTLET AND JUNCTION BOXES USED AS SURFACE METAL RACEWAY SHALL BE MANUFACTURED BY THE SURFACE METAL

E. VERIFY LOCATION PRIOR TO ROUGH-IN. MATCH THE HEIGHT OF EXISTING DEVICES FOR INSTALLATIONS IN ADDITIONS

A. ENGRAVED LABELS: ENGRAVED 3-LAYER PHENOLIC LABEL WITH BLACK LETTERS ON WHITE MATERIAL, UNLESS OTHER

ATTACHED WITH DOUBLE BACKED ADHESIVE TAPE UNLESS INDICATED OTHERWISE. LABELS REQUIRED AT:

B. PROVIDE TYPEWRITTEN DIRECTORY ACCURATELY INDICATING ROOMS AND/OR EQUIPMENT BEING SERVED AT THE

. PROVIDE ARC-FAULT LABELS ON ALL SWITCHBOARDS, DISTRIBUTION PANELS, PANELBOARDS, MOTOR CONTROL

2. PROVIDE COLORED LABELS. VERIFY LABEL TYPE IS ACCEPTABLE TO THE OWNER'S REPRESENTATIVE PRIOR TO

COLORS ARE CALLED OUT ON THE DRAWINGS OR DETAILS. LABELS MINIMUM 3/4" HIGH AND 3" LONG. LABELS MAY BE

a. MOUNT IDENTIFICATION LABEL AT THE TOP OF THE FRONT COVER. MOUNT ON THE INSIDE OF DOOR FOR

B. PROVIDE CAST BOXES FOR EXTERIOR USE DEVICES. NONMETALLIC BOXES MAY BE USED FOR EXTERIOR USE DEVICES

2. SEE LEGEND FOR MOUNTING HEIGHTS.

- 3. PROVIDE PILOT LIGHT SWITCHES WHERE INDICATED.
- D. DIMMERS 1. 20 AMPERE SLIDE DIMMER WITH INTEGRAL ON/OFF SWITCH. DIMMER SHALL BE RATED FOR AN LED LOAD OF 1200
- WATTS MINIMUM, UNLESS NOTED OTHERWISE. 2. FOR LED DIMMING LOADS GREATER THAT 1200W PROVIDE LEVITON AWSMT-7DW OR APPROVED EQUIVALENT.
- PROVIDE COLOR CHANGE KIT AS NECESSARY TO MEET DEVICE COLOR SPECIFICATIONS. 3. DIMMERS RATED OVER 1200W SHALL NOT BE MULTI-GANGED. INSTALL PER MANUFACTURERS INSTALLATION
- INSTRUCTIONS.
- 4. CONTRACTOR SHALL VERIFY WITH THEIR SUPPLIER(S) ALL DIMMERS AND DIMMABLE FIXTURES ARE 100%
- COMPATIBLE. E. RECEPTACLES:
- 1. DUPLEX GROUNDED RECEPTACLES, 20 AMPERE SPECIFICATION GRADE, HUBBELL 5362.
- 2. GFCI RECEPTACLES: 20-AMPERE HUBBELL SPECIFICATION GRADE WITH LOCK OUT CAPABILITY UPON GFCI FAILURE. 3. USB CHARGER DUPLEX RECEPTACLE, 20 AMPERE WITH 2 USB 3 AMP CHARGING PORTS, LEVITON T5832.
- 4. EXTERIOR RECEPTACLES SHALL BE MARKED "WEATHER-RESISTANT" PER NEC.
- 5. SEE LEGEND FOR MOUNTING HEIGHTS. 6. REVIEW RECEPTACLE LAYOUT WITH OWNER PRIOR TO ROUGH-IN.
- 7. VERIFY ACTUAL LOCATION OF EQUIPMENT WITH OWNER PRIOR TO ROUGH-IN.
- MAKE CONNECTIONS THROUGH THE USE OF PIG-TAILS. F. COVER PLATES
- 1. INTERIOR: SMOOTH NYLON MATERIAL.
- 2. MECHANICAL EQUIPMENT ROOM: STEEL.
- 3. EXTERIOR: WEATHER-PROOF, GASKETED, LIFT COVER. RECEPTACLE COVER SHALL ALLOW CONTINUED USE WHEN COVER IS CLOSED
- G. BLANK, TELEVISION AND TELEPHONE OUTLETS: 4" SQUARE EXTRA DEEP BOX, SINGLE GANG RING AND BLANK COVER PLATE. PROVIDE CONDUIT FROM EACH BOX INTO AN ACCESSIBLE SPACE. TERMINATE CONDUIT WITH INSULATED CONNECTORS ON BOTH ENDS.

26 27 27 OCCUPANCY SENSORS / VACANCY SENSORS

- A. MANUFACTURERS: COOPER, HUBBELL, LEVITON, SENSOR SWITCH, & THE WATT STOPPER
- 1. COLOR: SHALL BE THE SAME COLOR AS WIRING DEVICES. REFERENCE SPECIFICATION SECTION 26 27 26. 2. SHALL BE FROM THE SAME MANUFACTURER AS THE WIRING DEVICES.
- B. SENSOR TECHNOLOGY 1. ULTRASONIC (US).
 - a. RESTROOMS
 - b. HALLWAYS
- 2. PASSIVE INFRARED (PIR)
- a. STORAGE ROOMS 3. DUAL TECHNOLOGY (PASSIVE INFRARED & ULTRASONIC)
- a. OFFICES
- b. CONFERENCE ROOMS c. CLASSROOMS
- d. OTHER SPACES
- C. SENSOR PERFORMANCE
- 1. INFRARED: a. UTILIZE MULTIPLE SEGMENTED LENS, WITH INTERNAL GROOVES TO ELIMINATE DUST AND RESIDUE BUILD-UP. 2. ULTRASONIC
- a. UTILIZE AN OPERATING FREQUENCY OF 32 KHZ OR 40 KHZ THAT SHALL BE CRYSTAL CONTROLLED TO OPERATE WITHIN PLUS OR MINUS 0.005% TOLERANCE. UTILIZE DOPPLER SHIFT ULTRASONIC DETECTION TECHNOLOGY. 3. DUAL TECHNOLOGY
- a. UTILIZE MULTIPLE SEGMENTED LENS, WITH INTERNAL GROOVES TO ELIMINATE DUST AND RESIDUE BUILD-UP. b. UTILIZE AN OPERATING FREQUENCY OF 32 KHZ OR 40 KHZ THAT SHALL BE CRYSTAL CONTROLLED TO OPERATE WITHIN PLUS OR MINUS 0.005% TOLERANCE.
- c. INCORPORATE DOPPLER SHIFT ULTRASONIC AND PASSIVE INFRARED MOTION DETECTION TECHNOLOGIES. PRODUCTS THAT REACT TO NOISE OR AMBIENT SOUND SHALL NOT BE CONSIDERED.
- 4. SENSOR DEVICES SHALL HAVE EITHER INTEGRAL DUAL RELAYS OR CONTROL SEPARATE DUAL RELAY POWER PACKS TO ACHIEVE DUAL LEVEL LIGHTING WHEN DUAL LEVEL CONTROL IS INDICATED. 5. INTEGRAL ADJUSTABLE LIGHT LEVEL SENSOR WITH CAPACITY TO CONTROL ONE OR MORE RELAY WHEN THE
- SELECTED ADEOUATE DAYLIGHT IS PRESENT
- 6. UTILIZE ZERO CROSSING CIRCUITRY WHICH INCREASES RELAY LIFE AND SENSORS LONGEVITY 7. SHOULD POWER BE INTERRUPTED AND SUBSEQUENTLY RESTORED, SETTINGS AND PARAMETERS SAVED IN
- PROTECTED MEMORY SHALL NOT BE LOST. 8. SENSORS SHALL BE SIZED FOR THE ROOM THEY SERVE BY MANUFACTURER'S VENDOR OR COVER 1,500 SQUARE FEET WITH STANDARD LENS AND UP TO 90 LINEAR FEET WITH LONG RANGE LENS FOR WALKING MOTION WHEN MOUNTED AT A CEILING HEIGHT OF 12 FEET.
- 9. INDEPENDENT SENSITIVITY ADJUSTMENTS AND LED DISPLAY FOR EACH SENSING TECHNOLOGY 10. SENSOR SHALL HAVE STANDARD 5 YEAR WARRANTY AND BE UL LISTED.
- D. CONTROL STRATEGIES 1. AUTOMATIC CONTROLS SHALL BE MANUAL ON, OR SHALL TURN ON NOT MORE THAN 50% OF THE OF THE CONTROLLED LAMPS WITH THE REMAINING LAMPS BEING CONTROLLED MANUALLY. a. EXCEPTION: PUBLIC CORRIDORS, STAIRWAYS, RESTROOMS, PRIMARY ENTRANCES AND LOBBIES SHALL HAVE
- FULL ON AUTOMATIC CONTROLS. 2. AUTOMATIC CONTROLS SHALL TURN LIGHTS OFF WITHIN 30 MINUTES OF ALL OCCUPANTS LEAVING THE SPACE. 3. RETRIGGER TIME DELAY: ONLY ONE MOTION IS NECESSARY TO TURN ON THE LIGHTS WITHIN 5 SECONDS AFTER
- TURNING OFF. 4. E.C. SHALL INCLUDE TIME IN HIS BID TO WORK WITH THE OWNER AND MANUFACTURER TO DETERMINE THE PROPER TIME AND SENSOR SETTINGS FOR EACH SENSOR IN THE SPACES IN WHICH THEY OPERATE. INCLUDE TIME IN BID TO HAVE THE MANUFACTURER'S REPRESENTATIVE ON SITE AND REVIEW THE JOB TO DETERMINE WHAT THE EXPECTED EQUIPMENT SETTINGS SHOULD BE.

26 28 16 ENCLOSED DISCONNECT SWITCHES

- A. ELECTRICAL COMPONENTS, DEVICES, AND ACCESSORIES: LISTED AND LABELED AS DEFINED IN NFPA 70, ARTICLE 100, BY A TESTING AGENCY ACCEPTABLE TO AUTHORITIES HAVING JURISDICTION, AND MARKED FOR INTENDED USE.
- B. NONFUSIBLE SWITCH: TYPE GD WITH LOCKABLE HANDLE. C. FUSIBLE SWITCH: TYPE HD WITH CLIPS TO ACCOMMODATE FUSES. HANDLE LOCKABLE IN OPEN AND CLOSED
- POSITION. HANDLE INTERLOCKED WITH COVER IN CLOSED POSITION WITH INTERLOCK BYPASS. D. ENCLOSURES: NEMA AB 1 AND NEMA KS 1 TO MEET ENVIRONMENTAL CONDITIONS OF INSTALLED LOCATION.
- 1. OUTDOOR LOCATIONS: NEMA 250 TYPE 3R.
- E. MANUFACTURER'S STANDARD PRIME-COAT FINISH READY FOR FIELD PAINTING. F. LABEL EACH ENCLOSURE WITH ENGRAVED METAL OR LAMINATED-PLASTIC NAMEPLATE MOUNTED WITH CORROSION-RESISTANT SCREWS.
- G. INSTALL EQUIPMENT GROUNDING CONNECTIONS FOR SWITCHES AND CIRCUIT BREAKERS WITH GROUND CONTINUITY TO MAIN ELECTRICAL GROUND BUS.
- H. DEMONSTRATE PRODUCT CAPABILITY AND COMPLIANCE WITH REQUIREMENTS AFTER INSTALLATION AND AFTER ELECTRICAL CIRCUITRY HAS BEEN ENERGIZED. 1. PERFORM VISUAL AND MECHANICAL INSPECTION AND ELECTRICAL TEST. CERTIFY COMPLIANCE WITH TEST
- PARAMETERS 2. CORRECT MALFUNCTIONING UNITS, ON-SITE WHERE POSSIBLE, AND RETEST TO DEMONSTRATE COMPLIANCE

DIVISION 27 COMMUNICATIONS

27 05 00 TELECOMMUNICATION PREMISE WIRING

- A. CONTRACTOR SHALL PROVIDE JUNCTION BOXES, CONDUIT STUBS, AND PLENUM RATED CAT 6 WIRING FOR ALL TELEPHONE, DATA AND COMBINATION TELEPHONE/DATA JACKS SHOWN ON THE DRAWINGS. CONTRACTOR SHALL
- PROVDIE AND INSTALL ALL LOW VOLTAGE CABLING. PROVIDE 10' SERVICE LOOP AT EACH LOCATION. B. TELEVISION, TELEPHONE, DATA, AND COMBINATIN DATA/TELEPHONE OUTLETS: PROVIDE 4" SQUARE EXTRA DEEP BOX, SINGLE GANG RING. PROVIDE 1" CONDUIT FROM EACH BOX INTO AN ACCESSIBLE CEILING SPACE. IN ROOMS WITH NO ACCESSIBLE CEILING SPACE STUB CONDUIT TO DATA RACK LOCATION. TERMINATE CONDUIT WITH INSULATED CONNECTORS ON BOTH ENDS.
- C. CONTRACTOR SHALL LABEL EACH CABLE PULLED ON EACH END OF THE CABLE SO OWNER CAN IDENTIFY EACH CABLE WHEN THEY TERMINATE. THE CONTRACTOR SHALL BE CAREFUL WHEN PULLING CABLE TO NOT DAMAGE ANY CABLES. ANY CABLES THAT DO NOT PASS THE OWNER'S DATA PORT MAP TEST WILL NEED TO BE RE-PULLED BY THE CONTRACTOR.



PROJECT INFORMATION

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SPECIFICATIONS



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nns Reviewed and Approved for Construction with Notation Plan review notes may not reflect all code deficiencies. Failure to identify a code deficiency during a review of plans Does not alleviate any obligation to comply with all applicable code provisions.

re: 08/30/19 #: BLD19-00468



ELECTRICAL NOTES

- ``EXTERIOR RECEPTACLES SHALL BE GFCI TYPE. PROVIDE PASS & SEYMOUR SERIES "WI UC" OR EQUIVALENT COVER. (PER NEC 406.8(B) AND AHJ) COLOR SHALL BE SELECTED BY ARCHITECT.
- VERIFY OUTLET LOCATIONS WITH OWNER PRIOR TO ROUGH-IN.
- ROUGH-IN RECEPTACLES FOR ELECTRIC WATER COOLERS (EWC) BEHIND UNIT. VERIFY
 LOCATION PRIOR TO ROUGH-IN.
- PROVIDE GFCI PROTECTION FOR ALL SINGLE PHASE RECEPTACLES LOCATED IN THE FOLLOWING LOCATIONS: BATHROOMS, KITCHENS, ROOFS, SERVING WATER COOLERS & VENDING MACHINES, WHERE WITHIN 6'-0" OF A SINK, AND ALL OTHER WET LOCATIONS.
- SEE SHEET E4.0 FOR BRANCH CIRCUIT FEEDER SIZES.
- ALL CONDUITS TO ISLAND CABINETRY AND TABLES SHALL BE UNDERGROUND.
- WIRE EMERGENCY LIGHTS UNSWITCHED TO LIGHTING CIRCUIT SERVING SAME ROOM, OR TO "NIGHT LIGHT" CIRCUIT WHEN AVAILABLE.
- INSTALL A 1 1/4" CONDUIT FROM THE TV TO THE COMPUTER IN THE BASE CABINET AT ALL TV LOCATIONS TO ACCOMMODATE ADDITIONAL CABLING INSTALLED BY OWNER.
- RUN ALL ELECTRICAL, DATA CABLING ETC. IN CONDUIT AT ALL EXPOSED CEILING LOCATIONS.
- G.C. SHALL BE RESPONSIBLE FOR ACCEPTING DELIVERY, INVENTORY, UNLOADING AND PLACING OF LIGHT FIXTURES FURNISHED BY OWNER.
- ELECTRICAL, DATA AND COMMUNICATIONS LOCATIONS ON THIS DRAWING ARE THE MINIMUM REQUIRED DROPS. ADDITIONAL DATA DROPS SHALL BE PROVIDED AS REQUIRED BY CODE. ALL ELECTRICAL, DATA AND COMMUNICATIONS SYSTEMS SHALL BE INSTALLED PER STATE AND LOCAL CODES.
- ALL DATA CABLING SHALL BE PLENUM RATED CAT6 AND GRAY IN COLOR WITH ONE DATA CABLE RUN TO EACH LOCATION SHOWN. ELECTRICIAN SHALL BE RESPONSIBLE FOR ROUGH-IN, AND FOR PULLING CABLE TO ALL DATA LOCATIONS. OWNER WILL TERMINATE AND PATCH ALL DATA CONNECTIONS. CARE SHOULD BE TAKEN WHEN PULLING CABLE TO NOT DAMAGE ANY CABLE. ANY DATA LOCATION THAT DOES NOT PASS THE OWNERS DATA PORT TEST WILL NEED TO BE RE-PULLED BY THE CONTRACTOR.
- INSTALL INTERMATIC TIME SWITCH ET1705C, 30 AMPS TO BE INSTALLED FOR EXTERIOR SIGNAGE.
- ALL DATA CABLING SHALL HAVE A 10' SERVICE LOOP. CONTRACTOR SHALL LABEL EACH CABLE PULLED ON BOTH ENDS OF THE CABLE.
- TELEVISION, TELEPHONE, DATA, AND COMBINATIN DATA/TELEPHONE OUTLETS: PROVIDE 4" SQUARE EXTRA DEEP BOX, AND SINGLE GANG RING. PROVIDE 1" CONDUIT FROM EACH BOX INTO AN ACCESSIBLE CEILING SPACE. IN ROOMS WITH NO ACCESSIBLE CEILING SPACE STUB CONDUIT TO DATA RACK LOCATION. TERMINATE CONDUIT WITH INSULATED CONNECTORS ON BOTH ENDS.
- THE OWNER'S VENDOR WILL BE RESPONSIBLE FOR TERMINATING AND PATCHING ALL DATA CONNECTIONS. IF FINAL INSPECTION FROM THE LOCAL JURISDICTION DOES NOT ALLOW OPEN BOXES FOR FINAL INSPECTIONS, IT IS THIS EC'S RESPONSIBILITY TO INSTALL COVER PLATES ON ALL THE OPEN DATA BOXES IN ORDER TO PASS FINAL INSPECTION.

ELECTRICAL KEYED NOTES:

- 1 POWER TO THE SOUND MASKING SPEAKERS WILL BE PROVIDED BY DC ADAPTER(S)PLUGGED INTO (2) DOUBLE DUPLEX RECEPTACLES LOCATED IN DATA CLOSET. RECEPTACLES SHALL BE CONTROLLED BY HALLWAY LIGHT SWITCH THROUGH CONTACTOR (SEE KEYED NOTE 16). EC SHALL INSTALL THE OWNER FURNISHED SOUND MASKING SPEAKER, PROVIDE PLENUM RATED CABLES FROM THE SPEAKER TO THE DOUBLE DUPLEX RECEPTACLES IN THE DATA CLOSET AND SPLICE CONNECTIONS AT THE SPEAKER AND AT THE DATA CLOSET FOR THE ADAPTER. THE ADAPTER IS FURNISED WITH THE SOUND MASKING SPEAKER FURNISHED BY THE OWNER. A SINGLE ADAPTER CAN POWER A MAXIMUM OF 3 SOUND MASKING SPEAKERS.
- QWNER TO FURNISH A SOUND SYSTEM EQUAL TO JBL COMMERCIAL SERIES CSM-32 PUBLIC ADDRESS MIXER WITH CSA-2120 POWER AMPLIFIER, CSR-2SV ZONE CONTROLLERS. THE EC IS RESPONSIBLE FOR INSTALLING OWNER FURNISHED SOUND SYSTEM SPEAKERS (CSS8018) AND BACK CANS. EC SHALL FURNISH AND INSTALL AND LABEL 18 AWG/2 WIRE, CONNECTED FROM AUDIO SPEAKERS TO DISCOVERY ROOM CABINET. SOUND SYSTEM SPEAKERS SHALL BE CENTERED IN LAY-IN CEILING PANELS OR SUSPENDED AT EXPOSED STRUCTURE CEILING AREAS AND AWAY FROM LIGHT FIXTURES, DIFFUSERS AND DUCTS. SEE A1.6, RCP FOR SPEAKER LOCATIONS.
- 3 EC SHALL FURNISH AND INSTALL NEMA L5-20R 20A 125V UL/CSA 1HP SINGLE RECEPTACLE. INSTALLATION OF RECEPTACLE SHALL BE COMPLETED BEFORE THER OWNER PROVIDED IT EQUIPMENT IS INSTALLED. COORDINATE WITH OWNER.
- VERIFY POWER REQUIREMENTS WITH OWNERS EQUIPMENT SUPPLIER PRIOR TO ROUGH IN.
 MAKE FINAL CONNECTION TO OWNER PROVIDED SIGNAGE. PROVIDE JUNCTION BOX(ES)
- AND ASSOCIATED 120V, 1Ø, 20 AMP CIRCUIT FOR SIGNAGE. FIELD VERIFY EXACT ROUGH-IN LOCATION. PROVIDE INTERMATIC TIMESWITCH ET1705C FOR CONTROL. SEE EXTERIOR LIGHTING CONTROL DETAIL. COORDINATE WITH OWNER / LANDLORD.
- 6 CIRCUIT AND CONTROL EXHAUST FAN WITH LIGHTING CIRCUIT AND MOTION SENSOR CONTROLS THIS ROOM.
- 7
 SWITCH/DIMMER BANK. SEE DETAIL 5/E4.0
- 8 IP CAMERAS FURNISHED AND INSTALLED BY OWNER. PLENUM RATED CAT 6 CABLING SHALL BE INSTALLED FROM CAMERA LOCATIONS TO DATA ROOM BY EC. EC SHALL PROVIDE CONDUIT FOR CAT6 WIRING AT ALL EXPOSED CEILING AREAS. VERIFY EXACT LOCATIONS WITH OWNER PRIOR TO ROUGH-IN.
- 9 EC TO PROVIDE DOOR CHIME HEATH ZENITH WIRELESS ENTRY ALERT CHIME SL-7352. PROVIDE ADDITIONAL DOOR CHIME IN BREAKROOM PER PLANS.
- 10 ELECTRICAL CONTRACTOR TO PROVIDE 4'x4' SHEET OF PAINTED PLYWOOD FOR OWNER PROVIDED DATA RACK. MOUNT PLYWOOD AT HEIGHT TO ALLOW FOR INSTALLATION OF WALL MOUNTED DATA RACK. BOTTOM OF DATA RACK SHALL MOUNTED AT 48" AFF.
- EC IS RESPONSIBLE FOR ROUGHING IN AND PROVIDING ALL CABLING FOR THE VOLUME CONTROLLERS FOR THE CEILING SPEAKERS. EC SHALL PROVIDE (1) CAT6 CABLE FROM EACH VOLUME CONTROLLER TO DISCOVERY ROOM CABINET. THE OWNER'S LOW VOLTAGE CONTRACTOR WILL FURNISH THE VOLUME CONTROLLERS. VOLUME CONTROLLERS SHALL BE MOUNTED ABOVE COUNTER FOR CEILING SPEAKERS. EC TO PROVIDE PROPER LABELING ON ALL SPEAKER AND CONTROL WIRES.
- OWNER TO FURHISH AND INSTALL DATA RACK, COOPER B-LINE (V-LINE SERIES) MODEL
 NUMBER VLWM2425PB WITH POWER MANAGEMENT ACCESSORY SB30061015FB 10 OUTLET
 15AMP SURGE PROTECTED POWER STRIP.
- 13 PROVIDE 1A CURRENT LIMITER
- (2) DOUBLE DUPLEX RECEPTACLES FOR SOUND MASKING SPEAKERS ON DEDICATED CIRCUIT.
- (15) RECEPTACLE FOR BREAKROOM DOOR CHIME.
- (16) CONTROL SOUND MASKING DOUBLE DUPLEX RECEPTACLES IN DATA CLOSET WITH HALLWAY LIGHTS. PROVIDE CONTACTOR IN NEMA 1 ENCLOSURE IN DATA CLOSET.
 (17) RECEPTACLE AND TV BOX CENTERED BEHIND TV. SEE ELEVATION 8/A4.0 FOR CORRECT
- PLACEMENT OF BOXES, ELVATIONS LOCATIONS WILL TAKE PRECEDENCE OVER ELECTRICAL DRAWINGS.
- (18) PROVIDE POWER FROM SWITCHING RELAY TO PUMP. L.V. WIRING BY P.C. SEE WATER HEATER PIPING DETAIL ON P3.0. FOR MORE INFORMATION.
- (19) WATER HEATER, SEE SHEET A1.1-GENERAL NOTE, A1.2 FIXTURE PLAN AND A1.4.1 ELEVATION.

COORDINATE LOCATION OF ALL EXPOSED CONDUIT WITH OWNER PRIOR TO INSTALLATION.

FLOOR PLAN - ELECTRICAL



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		3 ø FEEDER SC	CHEDULES		
	3 WIR	RE FEEDERS		4 WI	RE FEEDERS
FEEDER DESIGNATION	CONDUIT SIZE(S)	CONDUCTORS & GROUNDING CONDUCTOR(S) SIZES	FEEDER DESIGNATION	CONDUIT SIZE(S)	CONDUCTORS & GROUNDING CONDUCTOR(S) SIZES
20 - 3G	1/2"	(3) #12 & #12 GND	20 - 4G	1/2"	(4) #12 & #12 GND
25 - 3G	3/4"	(3) #10 & #10 GND	25 - 4G	3/4"	(4) #10 & #10 GND
30 - 3G	3/4"	(3) #10 & #10 GND	30 - 4G	3/4"	(4) #10 & #10 GND
35 - 3G	3/4"	(3) #8 & #10 GND	35 - 4G	3/4"	(4) #8 & #10 GND
40 - 3G	3/4"	(3) #8 & #10 GND	40 - 4G	3/4"	(4) #8 & #10 GND
45 - 3G	3/4"	(3) #6 & #10 GND	45 - 4G	3/4"	(4) #6 & #10 GND
50 - 3G	1"	(3) #6 & #10 GND	50 - 4G	1"	(4) #6 & #10 GND
60 - 3G	1"	(3) #4 & #8 GND	60 - 4G	1-1/4"	(4) #4 & #8 GND
70 - 3G	1"	(3) #4 & #8 GND	70 - 4G	1-1/4"	(4) #4 & #8 GND
80 - 3G	1"	(3) #3 & #8 GND	80 - 4G	1-1/4"	(4) #3 & #8 GND
90 - 3G	1-1/4"	(3) #2 & #8 GND	90 - 4G	1-1/4"	(4) #2 & #8 GND
100 - 3G	1-1/4"	(3) #2 & #8 GND	100 - 4G	1-1/4"	(4) #2 & #8 GND
110 - 3G	1-1/4"	(3) #1 & #6 GND	110 - 4G	1-1/2"	(4) #1 & #6 GND
125 - 3G	1-1/4"	(3) #1 & #6 GND	125 - 4G	1-1/2"	(4) #1 & #6 GND
150 - 3G	1-1/2"	(3) #1/0 & #6 GND	150 - 4G	2"	(4) #1/0 & #6 GND
175 - 3G	2"	(3) #2/0 & #4 GND	175 - 4G	2"	(4) #2/0 & #4 GND
200 - 3G	2"	(3) #3/0 & #2 GND	200 - 4G	2"	(4) #3/0 & #2 GND
NOTE: Ground Conductor S	ize May Be Reduc	ed Based On Overcurrent And/Or Ground Fault Prot	ection Equipment (NE	C 250)	
NOTE: Conductor Sizes Liste	ed Above Are For	Copper. Aluminum With Equivalent or Greater Ampa	city May Be Substitute	ed For All Feeders 10	00A And Larger.

2 CONDUIT PENETRATION DETAILS E4.0 NOT TO SCALE

AMP/POLE	CONDUCT.	GND. CONDUCT.	CON
15A/1P OR 15A/2P	(2) #12	#12	1/2"
20A/1P OR 20A/2P	(2) #12	#12	1/2"
15A/3P OR 20A/3P	(3) #12	#12	1/2"
25A/1P OR 25A/2P	(2) #10	#10	3/4"
30A/1P OR 30A/2P	(2) #10	#10	3/4"
25A/3P OR 30A/3P	(3) #10	#10	3/4"
35A/1P OR 35A/2P	(2) # 8	#10	3/4"
40A/1P OR 40A/2P	(2) # 8	#10	3/4"
35A/3P OR 40A/3P	(3) #8	#10	3/4"
45A/1P OR 45A/2P	(2) #6	#10	1"
45A/3P OR 50A/3P	(3) #6	#10	1"
50A/1P OR 50A/2P	(2) #6	#10	1"
60A/1P OR 60A/2P	(2) #4	#8	1"
60A/3P	(3) #4	#8	1 1/4
70A/3P OR 80A/3P	(3) #4	#8	1 1/4
90A/3P	(3) #3	#8	1 1/4
100A/3P OR 110A/3P	(3) #2	#6	1 1/2
125A/3P	(3) #1	#6	1 1/2

PANELBOARD: A	
Location: BREAKROOM 114	Volts:
Supply From: UTILITY	Phases:
Mounting: SURFACE	Wires:
Enclosure: NEMA 1	

NOTES:...

EXISTING PANELBOARD TO BE REUSED. PROVIDE NEW BREAKERS AS REQUIRED, BREAKERS SHALL BE OF SAME MANUFACTURER & TYPE AS EXISITNG. "G" SUFFIX DENOTES GFI TYPE BREAKER

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180	
	3328
1182	
	180
720	
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540	
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12	25.00%
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	720 720 720 0 0 0 VA A





ONELINE DIAGRAMS, SCHEDULES & DETAILS