RESTROOM RENOVATION FOR :

LAKE METROPARKS
ERIE SHORE GOLF COURSE

7298 Lake Rd. East Madison, Ohio 44057

OWNER:
Lake Metroparks
Administrative Offices
11211 Spear Road
Concord Townshio, Ohio 44077
440.639.7275
Contact: Timothy Lane

ARCHITECT:
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SYMBOLS & MATERIALS

EARTH
POROUS FILL
POURED CONCRETE
CONCRETE BLOCK
BRICK
STEEL
ROUGH WOOD
FINISHED WOOD
PLYWOOD
RIGID INSULATION
BATT INSULATION
GYPSUM BOARD
METAL

1/1 SECTION
1 ELEVATION
1/1 DETAIL
1 WINDOW TYPE
1 DOOR NUMBER
001 ROOM NUMBER
1 WALL TYPE
1 REVISION NUMBER

ABBREVIATIONS

AB	ANCHOR BOLT	HM	HOLLOW METAL
ACT	ACOUSTIC CEILING TILE	HR	HOUR
ADJ	ADJUSTABLE	HT	HEIGHT
AFF	ABOVE FINISH FLOOR	HVAC	HEATING, VENTILATING AIR CONDITIONING
ALT	ALTERNATE		
ALUM	ALUMINUM	INSUL	INSULATION
ARCH	ARCHITECTURAL	JB	JUNCTION BOX
BJ	BAR JOIST	LF	LINEAL FEET
BLK	BLOCK	LG	LONG
BLK'G	BLOCKING	LLH	LONG LEG HORIZONTAL
BM	BEAM	LLR	LONG LEG VERTICAL
BRG	BEARING	MASY	MASONRY
BRK	BRICK	MFR	MANUFACTURER
BTM	BOTTOM	MECH	MECHANICAL
C/C	CENTER TO CENTER	MO	MASONRY OPENING
CJ	CONTROL JOINT	MTL	METAL
CKT	CIRCUIT	NIC	NOT IN CONTRACT
CLG	CEILING	NTS	NOT TO SCALE
COL	COLUMN	O/C	ON CENTER
CONC	CONCRETE	PL	PLATE, PROPERTY LINE
CONST	CONSTRUCTION	PR	PAIR
CONT	CONTINUOUS	PT	PRESERVATIVE TREATED
CONTR	CONTRACTOR	RAD	RADIUS
CL	CENTERLINE	REINF	REINFORCE (ED) (ING)
CMU	CONCRETE MASONRY UNIT	REP	REPRESENTATIVE
CRS	COURSE	REQD	REQUIRED
DEM	DEMISING	SF	SQUARE FEET
DIA	DIAMETER	SPECS	SPECIFICATIONS
DIM	DIMENSION	STRUCT	STRUCTURAL
DN	DOWN	STL	STEEL
DS	DOWNSPOUT	SS	STAINLESS STEEL
DW	DRYWALL	T/BM	TOP OF BEAM
DWGS	DRAWINGS	TEMP	TEMPERED
EF	EACH FACE	TG	TRUSS GIRDER
ELEC	ELECTRICAL	T&G	TONGUE AND GROOVE
EW	EACH WAY	T/JST	TOP OF JOIST
EXT	EXTERIOR	T/ST	TOP OF STEEL
FIN	FINISH	TOM	TOP OF MASONRY
FM	FACTORY MUTUAL	TOS	TOP OF SLAB
FR	FIRE RATED	TYP	TYPICAL
FT	FOOTING	UNO	UNLESS NOTED OTHERWISE
GA	GAUGE	VT	VINYL TILE
GALV	GALVANIZED	VCT	VINYL COMPOSITION TILE
GWB	GYPSUM WALL BOARD	VWC	VINYL WALL COVERING
HC	HANDICAPPED	W/	WITH
		W/O	WITHOUT

CODE REVIEW

SCOPE OF WORK:
INTERIOR RESTROOM RENOVATIONS OF AN EXISTING BUILDING. SCOPE INCLUDES NEW ROOM CONFIGURATION, NEW PLUMBING FIXTURES, ACCESSORIES, ELECTRICAL, CEILINGS, FLOORING AND INTERIOR FINISHES. RESTROOM'S CONFIGURATION CHANGES ARE BEING MADE TO PROVIDE ADA COMPLAINT FACILITIES.

PROJECT AREA: 466 S.F.
USE GROUP "B" NO CHANGE IN USE
BUILDING CLASSIFICATION : 5B
MAX OCCUPANT LOAD : NO CHANGE TO EXISTING CAPACITY

DRAWING INDEX

SHEET NUMBER	SHEET TITLE
CS	COVER SHEET
AD100	PARTIAL EXISTING / DEMOLITION FLOOR & CEILING PLAN
A100	PARTIAL FLOOR & CEILING PLAN
A200	RESTROOM INTERIOR ELEVATIONS, SECTION & DETAILS INTERIOR ELEVATIONS / SECTION & DETAILS DOOR SCHEDULE - DETAILS & SECTIONS
M000	HVAC LEGENDS, SYMBOLS AND ABBREVIATIONS
M001	HVAC SPECIFICATIONS
M100	PARTIAL FLOOR PLAN - HVAC
M200	HVAC DETAILS
P000	PLUMBING LEGENDS, SYMBOLS AND ABBREVIATIONS
P001	PLUMBING SPECIFICATIONS
P100	PARTIAL FLOOR PLAN - PLUMBING
P200	PLUMBING DETAILS AND ISOMETRIC
E101	PARTIAL FLOOR PLAN - ELECTRICAL DEMOLITION, POWER & SYSTEMS, AND LIGHTING
E201	ELECTRICAL SCHEDULES, GENERAL NOTES, WIRING DIAGRAM
E202	ELECTRICAL SPECIFICATIONS

SITE MAP

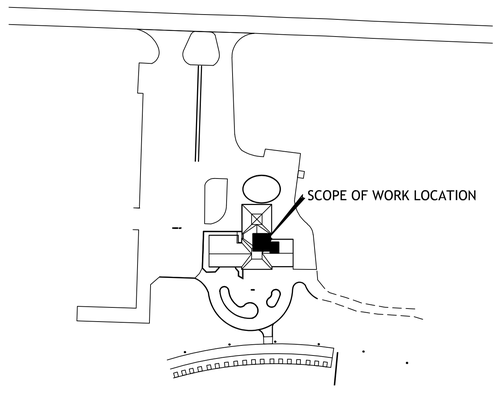


GENERAL NOTES

1. DRAWINGS:
   a. DRAWINGS ARE DIAGRAMMATIC AND ARE INTENDED TO SHOW APPROXIMATE LOCATIONS. DIMENSIONS GIVEN ON THE PLANS IN FIGURES SHALL TAKE PRECEDENCE OVER SCALED DIMENSIONS; AND ALL DIMENSIONS, WHETHER FIGURED OR SCALED, SHALL BE VERIFIED IN THE FIELD.
   b. THE EXACT LOCATION OF WALLS, DOORS, WINDOWS, APPARATUS, EQUIPMENT, PIPING, CONDUIT AND ELECTRICAL EQUIPMENT, ETC., SHALL BE ASCERTAINED FROM THE ARCHITECT OR HIS REPRESENTATIVE IN THE FIELD, AND THE WORK SHALL BE LAID OUT ACCORDINGLY. SHOULD THE CONTRACTOR FAIL TO ASCERTAIN SUCH LOCATIONS THE WORK SHALL BE CHANGED AT HIS OWN EXPENSE WHEN REQUESTED BY THE ARCHITECT. THE ARCHITECT RESERVES THE RIGHT TO MAKE MINOR CHANGES IN LOCATION UP TO THE TIME OF INSTALLING WITHOUT ADDITIONAL COST.
   c. THE DRAWINGS AND PROJECT MANUAL, WHERE APPLICABLE, ARE INTENDED TO COVER A COMPLETE PROJECT IN EVERY RESPECT. EACH AND EVERY ITEM, SYSTEM, ETC., IS TO BE COMPLETE UNLESS OTHERWISE DEFINITELY INDICATED ON THE DRAWINGS OR IDENTIFIED IN THE SPECIFICATIONS.
   d. THE DRAWINGS AND PROJECT MANUAL, WHERE APPLICABLE, ARE INTENDED TO SUPPLEMENT EACH OTHER AND ANY MATERIAL OR LABOR CALLED FOR IN ONE SHALL BE FURNISHED EVEN THOUGH NOT SPECIFICALLY MENTIONED IN BOTH.
   e. DEMOLITION AND/OR REMOVAL OF EXISTING FLOORS, WALLS, ROOFING, ETC. MAY NECESSITATE THE REMOVAL OR RELOCATION OF EXISTING PIPING, CONDUIT, SERVICES, ETC.. SUCH REMOVAL AND RELOCATION SHALL BE CONSIDERED PART OF THE DEMOLITION WORK WITHOUT ADDITIONAL COST, WHETHER OR NOT SPECIFICALLY SHOWN ON THE DRAWINGS OR LISTED IN THE SPECIFICATIONS.
2. CONTRACTOR TO REVIEW AND BECOME FAMILIAR WITH ALL EXISTING CONDITIONS PRIOR TO COMMENCING WORK. ANY CONDITIONS NOT DOCUMENTED ON THESE DRAWINGS OR OBSERVED TO BE DIFFERENT THAN THOSE SHOWN ON THESE DRAWINGS ARE TO BE REPORTED TO THE ARCHITECT, PRIOR TO BEGINNING WORK.
3. CONTRACTOR TO CONTACT LOCAL UTILITIES, IF NECESSARY, SUBMIT ALL APPLICABLE PERMIT DOCUMENTS, QUALIFICATIONS, ETC., AND BE RESPONSIBLE FOR ALL FEES ASSOCIATED WITH PERMITS, UTILITY EXTENSIONS, TAP-INS, ETC. ARCHITECT TO SUBMIT DOCUMENTS FOR PERMIT PLAN REVIEW AND OWNER REVIEW, HOWEVER, THE CONTRACTOR WILL BE RESPONSIBLE FOR OBTAINING THE PERMITS AND ALL PERMIT AND INSPECTION COSTS.
4. THE CONTRACTOR SHALL REMOVE ALL DEBRIS OFF SITE AS A RESULT OF THIS PROJECT, DAILY / OR AS DIRECTED BY OWNER'S REPRESENTATIVE.
5. THE CONTRACTOR SHALL SCHEDULE HIS WORK AND MATERIAL AND EQUIPMENT DELIVERIES SO AS NOT TO INTERFERE WITH THE DAILY OPERATIONS OF THE FACILITY.
6. THE CONTRACTOR SHALL PROTECT EXISTING FACILITIES, EQUIPMENT, FIXTURES, ETC. FROM DAMAGE DURING THE COURSE OF CONSTRUCTION.
7. ALL DAMAGED SURFACES AND/OR FINISHES AS A RESULT OF AND ADJACENT TO THE WORK SHALL BE REPAIRED AND FINISHED TO THEIR ORIGINAL CONDITION. THIS INCLUDES, BUT IS NOT LIMITED TO, ADJACENT SPACES, STOREFRONTS, WALKS, ETC.
8. THE CONTRACTOR SHALL PROVIDE THE NECESSARY ENCLOSURES OR BARRICADES TO ISOLATE THE WORK FROM THE REST OF THE FACILITY. AREAS ADJACENT TO THE CONSTRUCTION SHALL BE SWEPT CLEAN DAILY.
9. EACH CONTRACTOR IS RESPONSIBLE TO COORDINATE AND SCHEDULE HIS WORK WITH THE GENERAL CONTRACTOR AND ALL OTHER CONTRACTORS WHOSE WORK WILL BE AFFECTED.
10. PARKING AT THE SITE BY ALL CONSTRUCTION STAFF SHALL BE LIMITED TO ONLY THE AREAS DESIGNATED BY THE OWNER.
11. THE AREA OF WORK SHALL MAINTAIN A WEATHER TIGHT CONDITION AT ALL TIMES. THE CONTRACTOR SHALL TAKE ALL PRECAUTIONS NECESSARY TO SECURE THE AREA OF WORK.
12. THIS CONTRACT REQUIRES COMPLETE, FINISHED WORKABLE PROJECT OF THE AREAS INDICATED BY THE CONTRACT DOCUMENTS AND SHALL INCLUDE ALL MATERIALS AND LABOR NECESSARY TO COMPLETE REGARDLESS OF WEATHER OR NOT ALL WORK OE EACH ITEM IS SPECIFICALLY INDICATED ON ANY OTHER PORTION OF THE DRAWINGS AND/OR NOTES.
13. WHERE MATERIALS REFERENCED ON DRAWINGS OR NECESSARY TO COMPLETE THE WORK OF THIS CONTRACT ARE NOT SPECIFIED HEREIN. PROVIDE BEST QUALITY MATERIALS ALL ITEMS AND WORK ON DRAWINGS ARE NEW ALL WORK WHICH HAS BEEN DAMAGED SHALL BE REPAIRED OR REPLACED AT NO COST TO THE OWNER WHERE ITEMS CAN NOT BE REPAIRED TO A "NEW CONDITION" OR WHERE THE STRUCTURAL INTERGRITY HAS BEEN AFFECTED, ITEM SHALL BE REPLACED AT NO COST TO THE OWNER.
14. CONTRACTOR IS RESPONSIBLE TO VERIFY ALL SITE AND FIELD AND CONDITIONS PRIOR TO SUBMITTING BIDS AND COMMENCING WORK IF THERE AREA ANY DISCREPANCIES BETWEEN DRAWINGS AND FIELD CONDITIONS NOTIFY THE CONSTRUCTION MANAGER AND ARCHITECT/ENGINEER AND REQUEST CLARIFICATION.
15. CONTRACTOR SHALL OBTAIN FROM OWNER ALL REQUIREMENTS FOR INSTALLATION OF OWNER PROVIDED EQUIPMENT INCLUDING ROUGHING DIAGRAMS, INSTALLATION INSTRUCTIONS, ELECTRICAL SCHEMATICS, TEMPLTES, LAYOUTS AND DIMNENSIONS AND ALL OTHER INFORMATION NECESSARY FOR A PROPER WELL COORDINATED INSTALLATION PRIOR TO ROGH-IN OF SERVICES, CONFER WITH OWNER EXACT LOCATION OF ALL ITEMS.
16. ALL CONTRACTORS ARE TO COORDINATE THE WORK OF EACH OTHER SO THAT THE WORK AND SCHEDULE ARE NOT IMPEDED. SCHDULE WORK PROGRESS THROUGHOUT THE ENTIRE PROJECT TO PREVENT CONFLICTS AND INTERFERENCES. OBTAIN ALL NECESSARY INFORMATION SUCH AS SIZES, LOCATIONS, TEMPLATES, LAYOUT DIMENSIONS AND ALL OTHER INFORMATION NECESSARY FOR A PROPER AND WELL COORDINATED INSTALLATION. PRIOR TO INSTALLATIONS OF IYEMS, VERIFY AND CONFIRM WITH EACH CONTRACTOR EXACT LOCATION OF ALL TIMES.
17. ALL PENETRATIONS THROUGH FLOORS AND FULL HEIGHT WALLS TO BE FIRE STOPPED. ALL GAPS AND JOINTS AT RATED FLOORS, ROOFS AND WALLS TO BE FIRE & SMOKE STOPPED. GAPS AND JOINTS INCLUDE (BUT ARE NOT LIMITED TO) TOP OF WALL TO FLOOR OR ROOF DECK, WALL TO BEAMS AND CONTROL OR EXPANSION JOINTS FIRE STOPPING INCLUDES BOTH FORM OR PACKING MATERIAL AND THE FILL, VOID OR CAVITY MATERIALS.
18. ON THE PULL SIDE OF A FINISHED DOOR OPENING, THE STRIKE SIDE SHALL BE NOMINAL 18" FROM THE PERPENDICULAR WALL, ON THE PUSH SIDE OF A DOOR OPENING EQUIPPED WITH BOTH A CLOSER AND LATCH, THE STRIKE SIDE SHALL BE NOMINAL 12" FROM A PERPENDICULAR WALL.
19. REMOVE DEBRIS AND OTHER MATERIALS FROM SITE AS WORK PROGRESSES. REMOVE RUBBISH FROM JOB SITE REGULARLY AND LEAVE PREMISES AND WORK IN CLEAN CONDITION. RUBBISH SHALL NOT BE ALLOWED TO ACCUMULATE AND SHALL BE APPROPRIATELY DISPOSED OF.
20. PRIOR TO COMPLETION, CLEAN PREMISES FOR OCCUPANCY BY OWNER. CLEANING SHALL INCLUDED, BUT NOT BE LIMITED TO THE FOLLOWING.
   a. REMOVAL OF GREASE, MASTIC, ADHESIVE, DUST, DIRT, STAINS, LABELS AND OTHER FOPREIGN MATERIALS FROM EXPOSED SURFACES
   b. VENTILATING SYSTEM:
      - CLEAN PERMANENT FILTERS AND REPLACE DISPOSABLE FILTERS IF UNITS WERE OPERATED DURING CONSTRUCTION
      - CLEAN DUCTS, BLOWERS AND COILS IF UNIT WERE OPERATED WITHOUT FILTERS DURING CONSTRUCTION
   c. THE EXTERNAL SURFACE OF ALL EQUIPMENT SHALL BE CLEANED AT THE COMPLETION OF THE WORK TO REMOVE ALL CONCRETE, DUST AND DIRT WELDING AND CUTTING SPLATTER, ETC.
   d. PRIOR TO FINAL COMPLETION, OR OWNER OCCUPANCY, CONTRACTOR SHALL CONDUCT AN INSPECTION OF SIGHT-EXPOSED SURFACES, AND ALL WORK AREAS, TO VERIFY THAT THE ENTIRE WORK IS CLEAN.

(SQUARE FOOTAGES SHOWN ON PLANS ARE FOR BUILDING /OWNER USE ONLY. CONTRACTOR TO VERIFY ALL SQUARE FOOTAGES)

LOCATION MAP



STATE OF OHIO
CHRISTOPHER D SMITH 9912446
REGISTERED ARCHITECT
CHRISTOPHER D. SMITH
LICENSE #9912446
EXPIRATION DATE 12/31/2026

tda thendesign architecture

RESTROOM RENOVATION FOR :
LAKE METROPARKS
ERIE SHORES GOLF COURSE
7298 LAKE ROAD EAST
MADISON, OHIO 44057

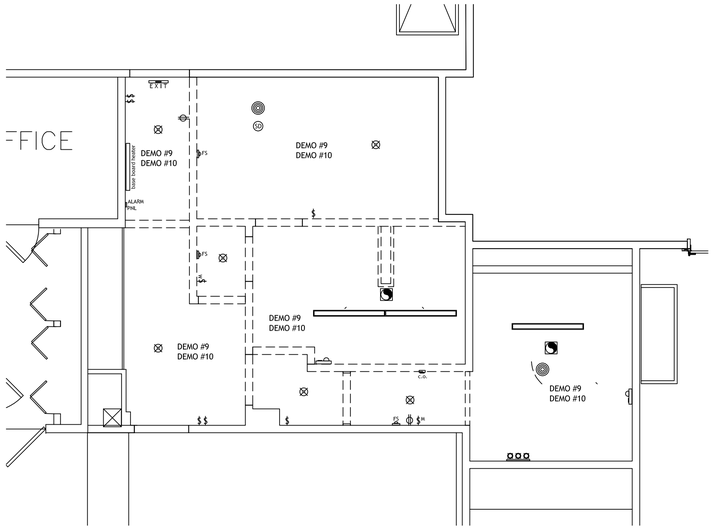
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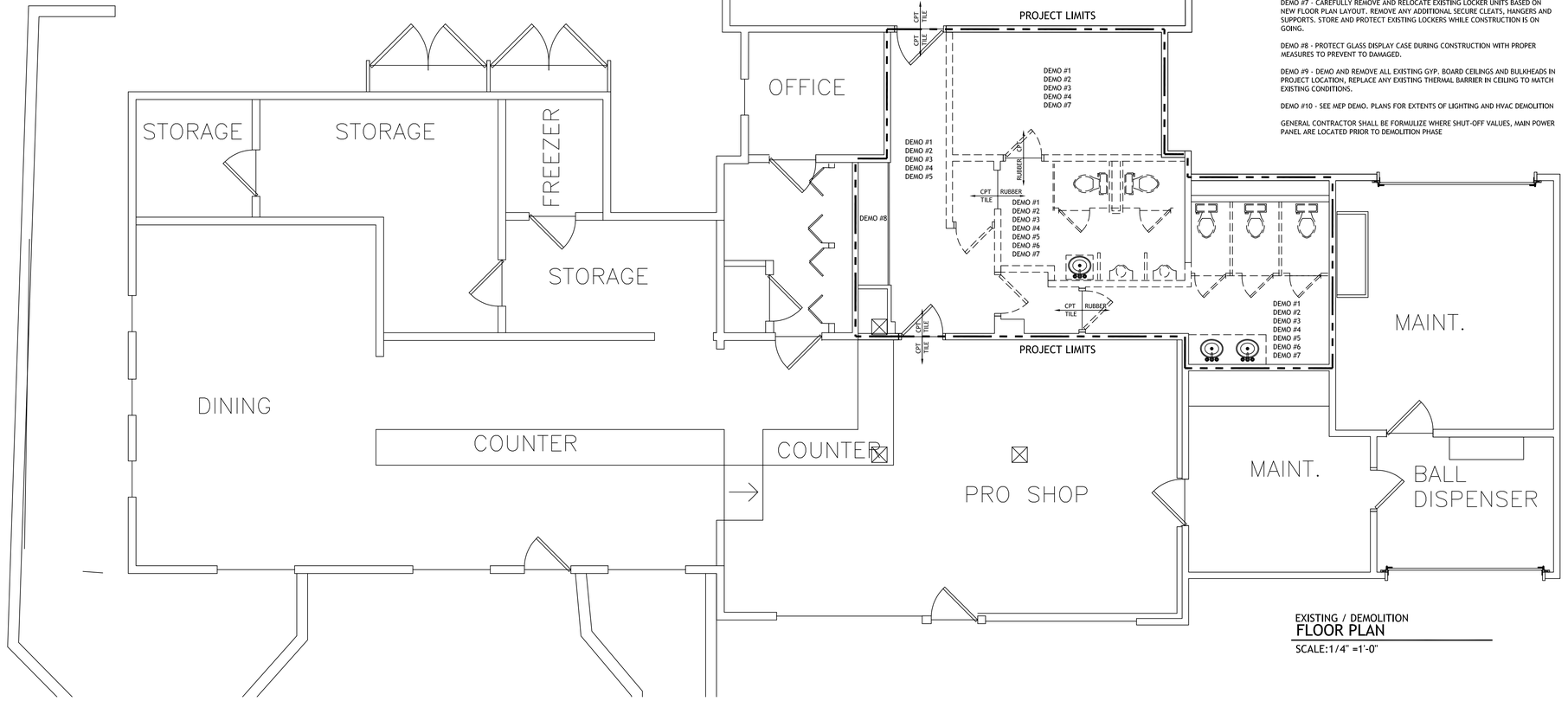
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COVER SHEET

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checked by: TDA
sheet number: CS
job number: 26060



EXISTING / DEMOLITION
RELECTED CEILING PLAN
SCALE:1/4" =1'-0"



EXISTING / DEMOLITION
FLOOR PLAN
SCALE:1/4" =1'-0"

DEMOLITION NOTES

DEMO #1 - REMOVE ALL EXISTING WALL CONSTRUCTION (SHOWN DASHED) FROM SUB-FLOOR LEVEL TO STRUCTURE ABOVE. INSURE EXISTING WALLS ARE NOT LOAD BEARING AND / OR PROVIDE PROPER SHORING, BRACING & TEMP WALLS DURING DEMOLITION PHASE OF WORK. PROVIDE SHARP CUT CORNERS WHEN REMOVING WALL CONSTRUCTION ADJACENT TO EXISTING WALL TO REMAIN FOR SMOOTH LEVEL TRANSITION. REMOVE EXISTING WALL COVERING, MIRRORS OR SIGNAGE FROM WALLS, ITEMS TO BE SALVAGED FOR OWNERS USE.

DEMO #2 - REMOVE ALL EXISTING FLOOR MATERIAL AS DIRECTED (CARPET, RUBBER ETC) FROM SUB-LEVEL ADHESIVE SURFACE TO FINISH FLOOR. REMOVE ALL EXISTING FLOOR BASE.

DEMO #3 - REMOVE ALL EXISTING DOORS & FRAMES (SHOWN DASHED) INCLUDING HARDWARE, CLOSURE, LATCH, ETC.

DEMO #4 - REMOVE ALL EXISTING CEILING CONSTRUCTION MATERIAL (CEILING GYP BOARD) FOR OPEN CEILING CONDITION. REMOVE ALL HANGERS, SUPPORTS FOR LIGHT/HVAC FIXTURES.

DEMO #5 - ALL INTERIOR UTILITIES NOT BEING USED SHOULD BE CAPPED, REMOVE BACK TO SOURCE OR TERMINATED. NO EXISTING WIRING SHOULD BE USED, RESTORED, OR GROUNDED MATERIAL. PLUMBING SHALL BE INSPECTED FOR SIZE, PROPER FIT AND FLUSHED / CLEANED FOR ADEQUATE PRESSURE. INSURE EXISTING VENT PIPE IS ADEQUATE IN SIZE AND TO REMAIN THRU ROOF LINE WITH PROPER BOOT NECESSARY. EXISTING HVAC DUCT WORK, EXHAUST FANS SHALL BE REMOVED / REPLACED BASED ON NEW FLOOR PLAN LAYOUT.

DEMO #6 - ALL PLUMBING FIXTURES (SHOWN DASHED) SHALL BE REMOVED INCLUDING HARDWARE, MOUNTING PLATES, SUPPORTS ETC. ALL RESTROOM PARTITION SHALL BE REMOVED INCLUDING HARDWARE, SUPPORT BRACKETS, ETC.

DEMO #7 - CAREFULLY REMOVE AND RELOCATE EXISTING LOCKER UNITS BASED ON NEW FLOOR PLAN LAYOUT. REMOVE ANY ADDITIONAL SECURE CLEATS, HANGERS AND SUPPORTS. STORE AND PROTECT EXISTING LOCKERS WHILE CONSTRUCTION IS ON GOING.

DEMO #8 - PROTECT GLASS DISPLAY CASE DURING CONSTRUCTION WITH PROPER MEASURES TO PREVENT TO DAMAGED.

DEMO #9 - DEMO AND REMOVE ALL EXISTING GYP. BOARD CEILINGS AND BULKHEADS IN PROJECT LOCATION, REPLACE ANY EXISTING THERMAL BARRIER IN CEILING TO MATCH EXISTING CONDITIONS.

DEMO #10 - SEE MEP DEMO. PLANS FOR EXTENTS OF LIGHTING AND HVAC DEMOLITION

GENERAL CONTRACTOR SHALL BE FORMULIZE WHERE SHUT-OFF VALUES, MAIN POWER PANEL ARE LOCATED PRIOR TO DEMOLITION PHASE

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RESTROOM RENOVATION FOR :

LAKE METROPARKS

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7298 LAKE ROAD EAST
MADISON, OHIO 44057

no.	description	date
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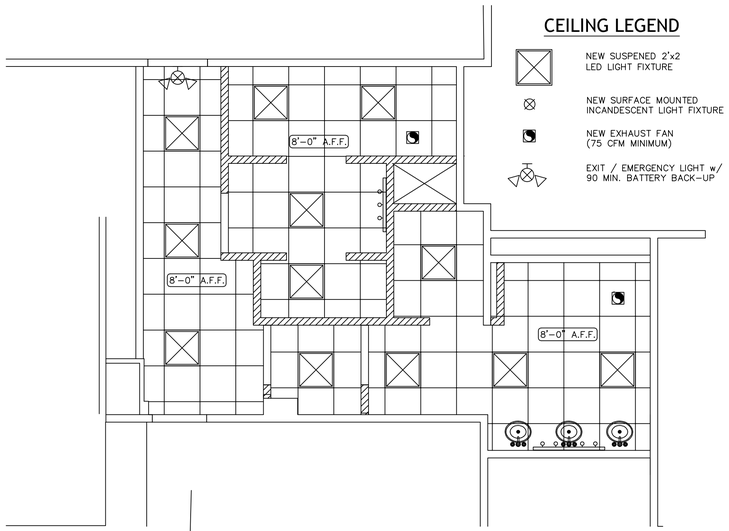
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DEMOLITION SHEET

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AD100

job number:
26060



CEILING LEGEND

- NEW SUSPENED 2'x2 LED LIGHT FIXTURE
- NEW SURFACE MOUNTED INCANDESCENT LIGHT FIXTURE
- NEW EXHAUST FAN (75 CFM MINIMUM)
- EXIT / EMERGENCY LIGHT w/ 90 MIN. BATTERY BACK-UP

NEW
RELECTED CEILING PLAN
SCALE:1/4" =1'-0"

WALL TYPES

A — PROVIDE ONE LAYER OF 5/8" TYPE "X" GYPSUM BOARD - (EACH SIDE) ON 3 5/8" x 25 GA. MTL. STUDS @ 16" O.C. FROM FLOOR LINE TO UNDERSIDE OF STRUCTURE ABOVE, - EXTEND GYP. BOARD TO DECKING ABOVE. PROVIDE SOUND ATTENUATION BATTS IN WALL CAVITIES. PROVIDE SLIP TRACK CONNECTION TO ALLOW FOR FLOOR DEFLECTION. NOM. THICKNESS - 5", ACT. THICKNESS - 4 7/8"

OPTION #1
PROPOSED FLOOR PLAN
SCALE:1/4" =1'-0"

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FLOOR PLAN

drawn by:
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checked by:
TDA

sheet number:
A100

job number:
26060

ROOM FINISH SCHEDULE

NO.	ROOM NAME	FLOOR	BASE	N. WALL	E. WALL	S. WALL	W. WALL	CEILING
001	MEN'S RESTROOM	RF	INTRAGAL BASE	FRP / PAINT	FRP / PAINT	FRP / PAINT	FRP / PAINT	AC
002	WOMEN'S RESTROOM	RF	INTRAGAL BASE	FRP / PAINT	FRP / PAINT	FRP / PAINT	FRP / PAINT	AC
003	CORRIDOR	CARPET TILE	RB	PAINT	PAINT	PAINT	PAINT	AC

ROOM FINISH NOTES

* ALL FINISHES TO BE APPROVED BY TENANT PRIOR TO ORDERING OR INSTALLATION.
* ALL INTERIOR FINISHES SHALL MEET OR EXCEED ALL STANDARDS & CODES FOR COMMERCIAL INSTALLATIONS.
* FINISHES SHALL MEET ASTM E84 AND ASTM 684.
* CONTRACTOR TO SCHEDULE / COORDINATE INSTALLTION TOGETHER w/ ANY COUNTERS TO MODIFATIONS (CUTOUT FOR HOSES/WIRING) OR VENDOR SUPPLIED EQUIPMENT.
* FLOORING TO MEET 804.5.1 MIN. CRITICAL RADIANT FLUX CLASS II
* INTERIOR FINISHES COMPLY WITH CH. 8 SECTION 801, TABLE 803.5
CLASS A FLAME - SPREAD INDEX 0-25, SMOKE INDEX 0-45
CLASS B FLAME - SPREAD INDEX 26-75, SMOKE INDEX 0-45
CLASS C FLAME - SPREAD INDEX 76-200, SMOKE INDEX 0-45

1. ALL FINISH SHALL BE PROVIDED AND INSTALLED AS A PART OF THIS CONTRACT.
2. THE SUB-CONTRACTOR SHALL INSTALL ALL REQUIRED NON COMBUSTIBLE BLOCKING AS REQUIRED FOR THE INSTALLATION OF ALL MILLWORK AND TOILET ROOM ACCESSORIES. COORDINATE BLOCKING WITH EQUIPMENT SUPPLIERS. 3. PROVIDE VINYL TRANSITION STRIPS AT ALL LOCATIONS WHERE DISSIMILAR FLOOR MATERIALS MEET.
4. COORDINATE LOCATIONS OF ELECTRICAL SWITCHES, PANELS, WATER SERVICE, TELEPHONE SERVICE, ETC. WITH UTILITIES COMPANIES. COORDINATE ALL WORK WITH THE MECHANICAL, PLUMBING, AND ELECTRICAL SUB-CONTRACTORS.
5. ALL INTERIOR FINISHES SHALL CONFORM TO A MAXIMUM CLASS 111 FLAME SPREAD RATING AND A MAXIMUM DEVELOPMENT RATING OF 450. ACOUSTICAL CEILING AND INSULATION TO HAVE A MAXIMUM FLAME SPREAD OF 25 AND A MAXIMUM SMOKE DEVELOPMENT RATING OF 50
6. ALL INTERIOR FINISHES MUST COMPLY WITH O.B.C. SECTION 803, 804, AND 805.
7. DOOR THRESHOLD AND TRANSITION STRIPS SHALL NOT EXCEED 1/2" IN HEIGHT.
8. ALL SUBSTITUTIONS MUST BE SUBMITTED TO THE ARCHITECT PRIOR TO BIDDING, ANY REQUESTS FOR CHANGES AFTER BIDDING MUST BE SUBMITTED TO THE ARCHITECT FOR APPROVAL.
9. ALL WET AREAS SUCH AS NEAR SINKS SHALL BE MOISTURE RESISTANT GYPSUM BOARD.
10. IN ROOMS WITH NEW FINISHES - REMOVE EXISTING FINISH, PATCH, PRIME AND PREPARE TO RECEIVE NEW FINISH

NOTE: PER OBC SECTION 1210.1 WALLS WITHIN 2'-0" OF TOILET SHALL HAVE HARD SMOOTH SURFACE - MARLITE OR EPOXY PAINTED MOISTURE PROOF BOARD FROM 6" COVE TO 4'-0" HIGH

ADAAG 4.16.5 - WATER CLOSET FLUSH CONTROLS MUST BE MOUNTED ON OPEN SIDE OF TOILET ROOM
ADAAG 4.19.2 - ACCESSIBLE LAVATORIES MUST HAVE A MAXIMUM HEIGHT OF 34" ABOVE THE FLOOR AND KNEE CLEARANCE OF 29" MINIMUM
ADAAG 4.19.4 - EXPOSED HOT WATER AND DRAIN PIPES UNDER LAVATORIES MUST BE INSULATED.
ADAAG 4.19.6 - BOTTOM EDGE OF MIRRORS MUST BE NO HIGHER THAN 40" ABOVE FLOOR

NOTE: USE MOISTURE RESISTANT (GREEN BOARD) BOARD IN RESTROOMS

FINISHES

FINISH	DESCRIPTION
	FLOOR
RF	SEAMLESS RESINOUS FLOORING SYSTEM w/ INTERGRAL COVED BASE (COLOR TO BE SELECTED)
SC	SEALED CONCRETE (2 COATS)
CARPET	18 x 18 CARPET FLOOR TILE
	BASE
RB	6" HIGH COVED RUBBER BASE (COLOR TO BE SELECTED)
INTRAGAL	6" HIGH COVED BASE (COLOR TO BE SELECTED)
	WALLS
FRP	REINFORCED PLASTIC NON-ABSORBATE PANELS w/ TRIM PIECES (4'-6" A.F.F.)
P	PAINT (SHERWIN WILLIAMS)
	CEILING
AC	2x2 SUSPENDED ACOUSITAL CEILING TILE AND GRID SYSTEM (COLOR TO BE SELECTED)
	MISCELLANEOUS

DOOR SCHEDULE

* FOR ALL DOOR REPLACEMENTS
FIELD VERIFY EXISTING SIZES

DOOR NUMBER	LOCATION	DOOR TYPE	SIZE *			MATERIALS				HDWE.	REMARKS
			WIDTH	HEIGHT	THICKNESS	DOOR	FINISH	FRAME	FINISH		
01	EXISTING WOMEN'S R.R.	A	3'-0"	7'-0"	1 3/4"	H.M.	P	H.M.	P	SET #1	
02	EXISTING WOMEN'S R.R.	A	3'-0"	7'-0"	1 3/4"	H.M.	P	H.M.	P	SET #1	
03	EXISTING MEN'S R.R.	A	3'-0"	7'-0"	1 3/4"	H.M.	P	H.M.	P	SET #1	

HARDWARE LEGEND

DOOR FINISHES : (P) = PAINTED
ALL FINISHES SHALL MATCH BUILDING STANDARDS

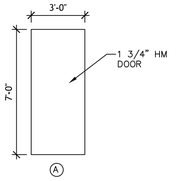
HARDWARE SETS

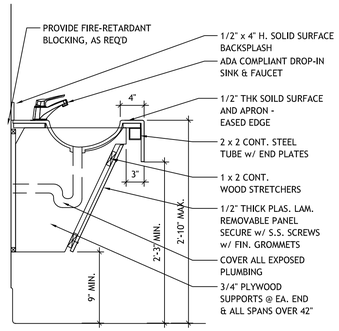
SET 1 PASSAGE FUNCTION : 1-1/2 PAIR BUTTS (STANLEY)
LOCKSET (SCHLAGE)
FLOOR MOUNTED DOOR BUMPER (BALDWIN)
EXTERIOR FINISH TO MATCH EXISTING SYSTEM.
PUSH / PULL S.S. HANDLE

HARDWARE NOTES

1. ALL NEW DOOR HARDWARE TO BE ADA COMPLIANT WITH LEVER HANDLES.
2. RE-USE EXISTING DOORS REMOVED DURING DEMOLITION
3. REUSE ALL HARDWARE ON EXISTING DOORS. DOORS TO RECEIVE NEW HARDWARE AS INDICATED IN DOOR SCHEDULE
4. PROVIDE FLOOR MOUNTED DOOR STOPS FOR ALL DOORS.

DOOR TYPES

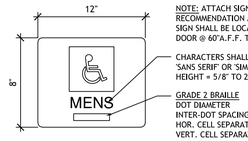




A / A200 TYPICAL ADA SINK RESTROOM SECTION
SCALE: 1"=1'-0"

SIGN SHALL BE MATTE OR OTHER NON-GLARE FINISH. CHARACTERS AND SYMBOLS SHALL CONTRAST WITH THE BACKGROUNDS (I.E. LIGHT ON DARK OR DARK ON LIGHT) SIGN BACKGROUND SHALL DISTINCTLY CONTRAST WITH CONTRAST WITH THE ADJACENT WALL COLOR.

NOTE: A DARK BACKGROUND WITH LIGHT COLORED CHARACTERS AND SYMBOLS ARE RECOMMENDED



LAVATORY SIGN DETAIL

SCALE: N.T.S.

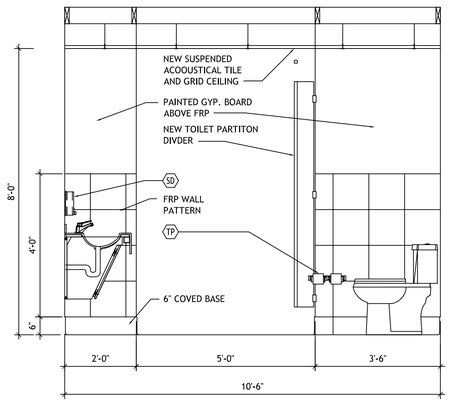
ACCESSORY SCHEDULE

NO.	ITEM	DESCRIPTION
MR	B-166 12030	MIRROR w/ STAINLESS STEEL CHANNEL FRAME
SD	SOAP DISPENSER	BOBRICK SURFACE MOUNTED - B2111 OWNER TO APPROVE
TP	TOILET TISSUE DISPENSER	BOBRICK B-2746 - STAINLESS STL. OWNER TO APPROVE
HD	HAND DRYER DISPENSER	BOBRICK B-710 OWNER TO APPROVE
GB	B-6806 x 36	BOBRICK 36" x 1-1/2" DIAMETER SATIN FINISH STAINLESS STEEL GRAB BAR WITH SNAP FLANGE
GB	B-6806 x 42	BOBRICK 42" x 1-1/2" DIAMETER SATIN FINISH STAINLESS STEEL GRAB BAR WITH SNAP FLANGE
GB	B-6806 x 18	BOBRICK 18" x 1-1/2" DIAMETER SATIN FINISH STAINLESS STEEL GRAB BAR WITH SNAP FLANGE

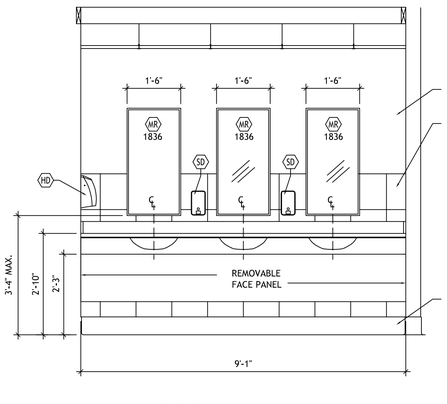
CONTRACTOR TO PROVIDE SHOP DWGS. FOR ARCHITECT TO REVIEW

ADA NOTES

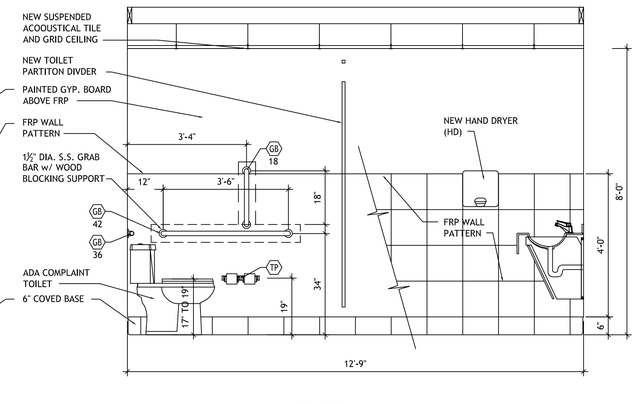
1. DOOR THRESHOLD HEIGHTS MUST NOT EXCEED 1/2 INCH.
2. DOOR HARDWARE AND CONTROLS FOR ACCESSIBLE PLUMBING FIXTURES MUST BE OPERABLE WITH ONE HAND & MUST NOT REQUIRE TIGHT GRASPING, PINCHING, OR TWISTING OF THE WRISTS.
3. ACCESSIBLE WATER CLOSET'S SIDE GRAB BAR MUST BE 42 INCHES IN LENGTH MINIMUM AND EXTEND AT LEAST 54 INCHES FROM THE REAR WALL.
4. ACCESSIBLE WATER CLOSETS SIDE GRAB BAR MUST BEGIN 12 INCHES FROM THE REAR WALL.
5. ACCESSIBLE WATER CLOSETS REAR GRAB BAR MUST BE 36 INCHES IN LENGTH.
6. ACCESSIBLE WATER CLOSETS REAR GRAB BAR MUST BEGIN NO MORE THAN 6 INCHES FROM THE WALL.
7. WATER CLOSET GRAB BARS MUST BE MOUNTED 33 TO 36 INCHES ABOVE THE FLOOR.
8. ACCESSIBLE WATER CLOSETS MUST HAVE 17 TO 19 INCH RIM HEIGHT ABOVE THE FLOOR.
9. THE CENTERLINE OF ACCESSIBLE WATER CLOSETS MUST BE 18 INCHES FROM THE SIDEWALL.
10. ACCESSIBLE TOILET PAPER DISPENSERS MUST BE INSTALLED BELOW THE GRAB BARS NO LESS THAN 19 INCHES ABOVE THE FLOOR & NO MORE THAN 36 INCHES FROM THE REAR WALL.
11. ACCESSIBLE LAVATORIES MUST HAVE A MINIMUM CLEAR SPACE OF 30 INCHES BY 48 INCHES & MUST NOT EXTEND MORE THAN 19 INCHES UNDER THE LAVATORY.
12. ACCESSIBLE LAVATORIES MUST EXTEND A MINIMUM OF 17 INCHES FROM THE REAR WALL.
13. ACCESSIBLE LAVATORIES MUST HAVE A MAXIMUM HEIGHT OF 34 INCHES ABOVE THE FLOOR & A KNEE CLEARANCE TO THE APRON OF 29 INCHES MINIMUM ABOVE THE FLOOR.
14. HOT WATER AND DRAIN PIPES UNDER ACCESSIBLE LAVATORIES MUST BE INSULATED OR OTHER- WISE CONFIGURED TO PROTECT AGAINST CONTACT. THERE MUST BE NO SHARP OR ABRASIVE SURFACE BENEATH THEM.
15. THE BOTTOM EDGE OF ACCESSIBLE LAVATORY MIRRORS MUST BE NO HIGHER THAN 40 INCHES ABOVE THE FLOOR.
16. ACCESSIBLE DRINKING FOUNTAINS MUST HAVE A MINIMUM CLEAR FLOOR SPACE OF 30 INCHES BY 48 INCHES
17. THE SPOUT OF ACCESSIBLE DRINKING FOUNTAINS MUST BE NO MORE THAN 36 INCHES ABOVE THE FLOOR.
18. ALL PERMANENT SIGNAGE MUST HAVE CHARACTERS RAISED 1/32 INCHES MINIMUM AND MUST BE ACCOMPANIED WITH GRADE 2 BRAILLE. IF IDENTIFYING A ROOM, SIGNAGE MUST BE MOUNTED TO THE LATCH SIDE OF THE DOOR, 60 INCHES ABOVE THE FLOOR MEASURED FROM THE CENTERLINE OF THE SIGN.



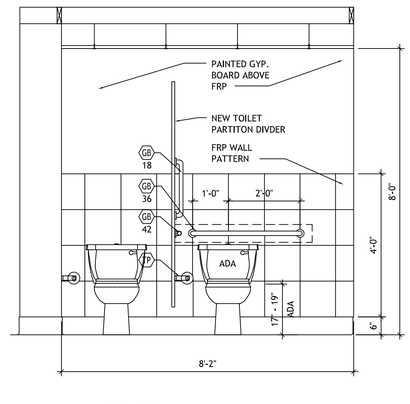
8 / A200 WOMEN'S RESTROOM ELEVATION
SCALE: 1/2"=1'-0"



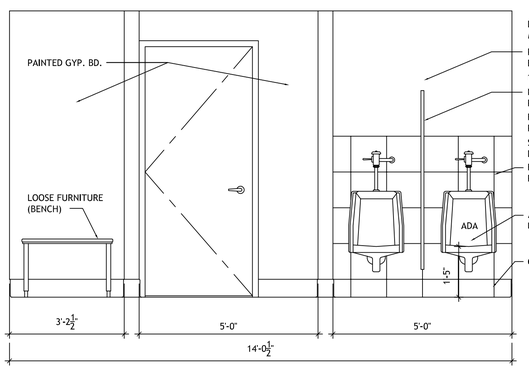
7 / A200 WOMEN'S RESTROOM ELEVATION
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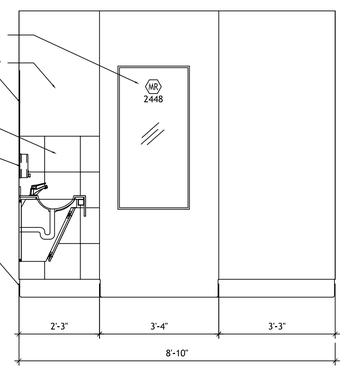
6 / A200 WOMEN'S RESTROOM ELEVATION
SCALE: 1/2"=1'-0"



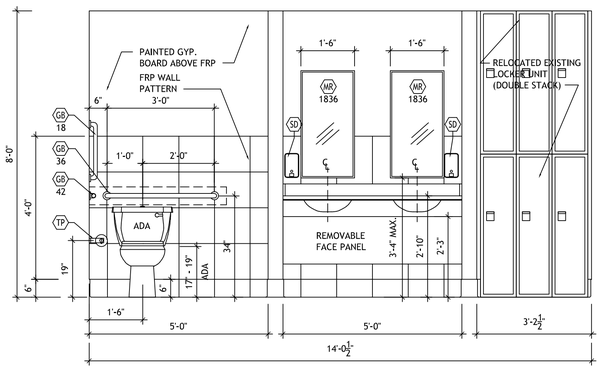
5 / A200 WOMEN'S RESTROOM ELEVATION
SCALE: 1/2"=1'-0"



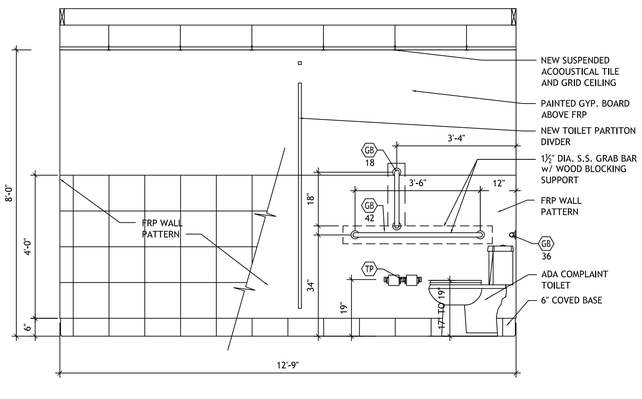
4 / A200 MEN'S RESTROOM ELEVATION
SCALE: 1/2"=1'-0"



3 / A200 MEN'S RESTROOM ELEVATION
SCALE: 1/2"=1'-0"



2 / A200 MEN'S RESTROOM ELEVATION
SCALE: 1/2"=1'-0"



1 / A200 MEN'S RESTROOM ELEVATION
SCALE: 1/2"=1'-0"

STATE OF OHIO
CHRISTOPHER D SMITH 9912446
REGISTERED ARCHITECT
CHRISTOPHER D. SMITH
LICENSE #9912446
EXPIRATION DATE 12/31/2026

tda thendesign architecture

RESTROOM RENOVATION FOR :
LAKE METROPARKS
ERIE SHORES GOLF COURSE
7298 LAKE ROAD EAST
MADISON, OHIO 44057

BID / PERMIT		10.21.2026

no.	description	date
	revisions / Issues	

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sheet name:
INTERIOR ELEVATION, DETAILS & SECTIONS

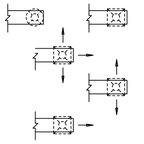
drawn by: TDA
checked by: TDA
sheet number: A200
job number: 26060

DUCTWORK SYMBOLS

UP DN — SUPPLY DUCT (UP & DOWN)

UP DN — RETURN DUCT (UP & DOWN)

UP DN — EXHAUST DUCT (UP & DOWN)

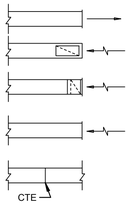


ROUND AND SQUARE 4-WAY CEILING DIFFUSERS

SQUARE 3-WAY CEILING DIFFUSERS

SQUARE 2-WAY CEILING DIFFUSERS

SQUARE 1-WAY CEILING DIFFUSERS



SUPPLY TOP GRILLE (WALL TYPE)

EXHAUST OR RETURN CEILING GRILLE

EXHAUST OR RETURN BOTTOM GRILLE (WALL TYPE)

EXHAUST OR RETURN TOP GRILLE (WALL TYPE)

CONNECT NEW DUCT TO EXISTING DUCT



INCLINED RISE, IN DIRECTION OF AIR FLOW



INCLINED DROP, IN DIRECTION OF AIR FLOW



LIMIT OF DEMOLITION



VANED ELBOW (PROVIDE ALL SQUARE OR RECTANGULAR ELBOWS WITH VANES EVEN IF SYMBOL IS MISSING)



STANDARD RADIUS ELBOW



NEW DUCT (INSIDE DIMENSIONS: WIDTH x DEPTH)



EXISTING DUCT TO REMAIN



EXISTING DUCT TO BE REMOVED



DUCT WITH SOUND LINING



MANUAL VOLUME DAMPER



THERMOSTAT

HVAC ABBREVIATIONS

SYMBOL	DESCRIPTION
MBH	1000 BRITISH THERMAL UNITS PER HOUR
BHP	BRAKE HORSE POWER
BTUH	BRITISH THERMAL UNITS PER HOUR
CTE	CONNECT TO EXISTING
CFM	CUBIC FEET PER MINUTE
°F	DEGREES FAHRENHEIT
Ø	DIAMETER
EC	ELECTRICAL CONTRACTOR
EA	EXHAUST AIR
EF	EXHAUST FAN
ETR	EXISTING TO REMAIN
ESP	EXTERNAL STATIC PRESSURE
FPM	FEET PER MINUTE
GC	GENERAL CONTRACTOR
GRV	GRAVITY ROOF VENTILATOR
HP	HORSE POWER
"WG	INCHES WATER GAUGE
MOCP	MAXIMUM OVER CURRENT PROTECTION
MAX	MAXIMUM
MC	MECHANICAL CONTRACTOR
MIN	MINIMUM
MCA	MINIMUM CIRCUIT AMPACITY
MOD	MOTOR OPERATED DAMPER
OA	OUTSIDE AIR
PSI	POUNDS PER SQUARE INCH
RA	RETURN AIR
RPM	REVOLUTIONS PER MINUTE
SA	SUPPLY AIR
TSP	TOTAL STATIC PRESSURE

GENERAL NOTES

1. ALL CONTRACTORS FOR THIS PROJECT ARE RESPONSIBLE TO REVIEW THE SUMMARY OF WORK FOR REFERENCE TO OWNERSHIP OF WORK AND SPECIFIC JOB RESPONSIBILITIES.
2. DUCTWORK CONNECTIONS TO EQUIPMENT ARE PURSUANT TO EQUIPMENT MANUFACTURERS RECOMMENDATIONS.
3. ALL DUCT DIMENSIONAL DATA REPRESENTS CLEAR INSIDE DIMENSIONS.
4. CONTRACTOR TO VERIFY FIELD CONDITIONS AND DIMENSIONS OF JOB BEFORE CONSTRUCTION.
5. COORDINATE ALL WORK WITH OTHER TRADES TO AVOID ANY CONFLICTS.
6. CONTRACTOR SHALL MAKE NECESSARY TURNS AND OFFSETS TO AVOID ANY CONFLICTS WITH BUILDING ELEMENTS.
7. PROVIDE VOLUME DAMPERS IN EVERY BRANCH LINE BEFORE EACH DIFFUSER OR GRILLE.
8. COORDINATE DUCT, WALL AND ROOF PENETRATIONS WITH RELEVANT TRADES.
9. INSTALL ALL PIPING, DUCTWORK AND EQUIPMENT FOR BEST SERVICE ACCESS TO UNITS.
10. SEE ARCHITECTURAL REFLECTED CEILING PLANS FOR EXACT LOCATIONS OF ALL GRILLES, REGISTERS, AND DIFFUSERS. CENTER DIFFUSERS IN 2'x2' HALF OF CEILING TILE.
11. ALL PENETRATIONS THROUGH NON-FIRE RATED ASSEMBLIES SHALL BE SLEEVED, CAULKED OR OTHERWISE SEALED AGAINST SOUND TRANSMISSION. ALL EXPOSED PENETRATIONS SHALL HAVE A FLANGED EDGE, CONCEALING EDGE OF OPENING.
12. ALL PATCHING SHALL MATCH EXISTING, ADJACENT MATERIAL IN COLOR AND QUALITY.
13. THE MECHANICAL CONTRACTOR WILL REVIEW THE TEMPERATURE CONTROL SPECIFICATION FOR SPECIFIC CONTRACTOR AND EQUIPMENT SUPPLIER RESPONSIBILITIES.

INDEX OF MECHANICAL DRAWINGS

Sheet Number	Sheet Name
M000	HVAC LEGENDS, SYMBOLS AND ABBREVIATIONS
M001	HVAC SPECIFICATIONS
M100	PARTIAL FLOOR PLANS - HVAC
M200	HVAC SCHEDULES AND DETAILS

MECHANICAL: 4

STATE OF OHIO ★ PETER J. VERSTIVO E-71040 REGISTERED PROFESSIONAL ENGINEER ★

tda thendesign architecture

ERIE SHORES GOLF COURSE RENOVATIONS

7238 LAKE ROAD EAST
MADISON, OHIO 44057

01	PERMIT	10.21.26

no.	description	date
	revisions / issues	

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sheet name:
HVAC LEGENDS, SYMBOLS, AND ABBREVIATIONS

drawn by: SAS

checked by: ARB

sheet number: M000

job number: 26060

HVAC GENERAL SPECIFICATIONS

A. REQUIREMENTS SPECIFIED IN DIVISION 1, INSTRUCTIONS TO BIDDERS, ALTERNATES, CONTRACT AND PROPOSAL (AS APPLICABLE), ALONG WITH THESE SPECIFICATIONS AND ALL ITS SECTIONS, COMPRISE THE CONTRACT DOCUMENTS FOR THE MECHANICAL CONTRACT. DRAWINGS AND ALL THEIR REVISIONS UP TO THE BID SUBMITTAL DATE BECOME A BINDING PART OF THE CONTRACT, ALONG WITH THESE SPECIFICATIONS AS THOUGH THEY WERE ONE; AND ANYTHING IMPLIED BY THE SPECIFICATIONS SHALL BE INTERPRETED AS ALSO IMPLIED BY THE DRAWINGS AND VICE VERSA.

B. THE CONTRACTOR FOR THIS WORK IS REFERRED TO "INSTRUCTIONS TO BIDDERS" "GENERAL CONDITIONS" AND "SPECIAL CONDITIONS" (AS APPLICABLE) AS PART OF THIS CONTRACT. WORK OF THIS PROJECT IS TO COORDINATED WITH THE OWNER CLOSELY AS THE REST OF THE FACILITY IS TO REMAIN IN OPERATION DURING THIS PROJECT, AND IS NOT BE DISTURBED BY WORK OF THIS PROJECT.

C. THE CONTRACTOR SHALL CAREFULLY EXAMINE THE PROJECT SITE AND SURROUNDINGS AND MAKE ALL NECESSARY INVESTIGATIONS REQUIRED TO INFORM THEMSELVES AS TO ALL DIFFICULTIES THAT MAY BE ENCOUNTERED IN THE EXECUTION OF THE CONTRACT DOCUMENTS.

D. THE CONTRACTOR SHALL EXAMINE ALL DRAWINGS, SPECIFICATIONS, AND ALL OTHER DATA AND INSTRUCTIONS PERTAINING TO THE WORK REGARDLESS OF WHAT DRAWING IT MAY APPEAR OR IN WHICH SPECIFICATION IT IS DESCRIBED. THE CONTRACTOR WILL NOT BE ALLOWED EXTRA COMPENSATION RESULTING FROM THE CONTRACTOR'S FAILURE TO FULLY EXAMINE ALL THE DRAWINGS, SPECIFICATIONS, DATA, AND INSTRUCTIONS.

E. WITH THE EXCEPTION OF SYSTEMS AND EQUIPMENT FURNISHED BY OWNER IF SPECIFIED, IT IS INTENDED THAT WORK COVERED BY THESE SPECIFICATIONS AND DRAWINGS INCLUDE EVERYTHING REQUISITE TO MAKE THE VARIOUS SYSTEMS COMPLETE AND OPERATIVE, IRRESPECTIVE OF WHETHER OR NOT EVERY ITEM IS SPECIFICALLY PROVIDED FOR. ANY OMISSION OF DIRECT REFERENCE TO ANY ESSENTIAL ITEM SHALL NOT EXCUSE THE CONTRACTOR FROM COMPLYING WITH THE ABOVE INTENT.

F. THE MECHANICAL DRAWINGS AND SPECIFICATIONS ARE MEANT TO SUPPLEMENT EACH OTHER. IN CASE OF AN INCONSISTENCY, THE MOST STRINGENT REQUIREMENT SHALL GOVERN. FIGURED DIMENSIONS SUPERSEDE SCALED ONES. THE CONTRACTOR SHALL NOT TAKE ADVANTAGE OF ANY INCONSISTENCY IN SPECIFICATIONS AND DRAWINGS, AND SHALL PROMPTLY CALL THE OWNER'S ATTENTION TO ANY INCONSISTENCY IN THE SPECIFICATIONS AND DRAWINGS.

G. LAYOUT OF EQUIPMENT, DUCTWORK, ACCESSORIES, SPECIALTIES AND SUSPENDED, CONCEALED OR EXPOSED PIPING SYSTEMS, ARE DIAGRAMMATIC UNLESS DIMENSIONED. IN PREPARING SHOP DRAWINGS, CONTRACTOR SHALL CHECK PROJECT CONDITIONS BEFORE INSTALLING WORK. IF THERE ARE ANY INTERFERENCES OR CONFLICTS, THEY SHALL BE CALLED TO THE ATTENTION OF THE ARCHITECT IMMEDIATELY FOR CLARIFICATION.

H. THE MECHANICAL CONTRACTOR SHALL KEEP ON THE JOB ONE COMPLETE SET OF THE CONTRACT WORKING DRAWINGS ON WHICH HE SHALL RECORD ANY DEVIATIONS OR CHANGES FROM SUCH CONTRACT DRAWINGS MADE DURING CONSTRUCTION. THESE AS-BUILT DRAWINGS SHALL SHOW CHANGES TO SIZE, TYPE, CAPACITY, ETC. OF ANY MATERIAL. UPON COMPLETION AND FINAL ACCEPTANCE OF THE PROJECT, THE CONTRACTOR SHALL PROVIDE THE OWNER WITH TWO (2) SETS OF "AS BUILT" DRAWINGS.

I. CONTRACTOR SHALL COORDINATE THE WORK OF THE DIFFERENT TRADES SO THAT INTERFERENCE BETWEEN DUCTWORK, PIPING, EQUIPMENT, STRUCTURAL, AND ELECTRICAL WORK WILL BE AVOIDED. ALL NECESSARY OFFSETS IN PIPING AND DUCTWORK, AND ALL FITTINGS, AND OTHER COMPONENTS, REQUIRED TO INSTALL THE WORK PROPERLY SHALL BE FURNISHED COMPLETE IN PLACE AT NO ADDITIONAL COST.

J. PRIOR TO SUBMITTING SHOP DRAWINGS, THE CONTRACTOR SHALL CHECK FOR DIMENSIONAL CORRECTNESS, INTERFERENCES AND CONFORMANCE TO SPECIFICATIONS AND PLANS. THE CONTRACTOR IS TO SUBMIT ELECTRONIC SHOP DRAWINGS IN PDF FORMAT, CATALOG SHEETS FOR EQUIPMENT, DUCTWORK AND PIPING LAYOUTS AND CONTROL AND WIRING DIAGRAMS TO THE ARCHITECT FOR REVIEW. EACH CONTRACTOR IS RESPONSIBLE TO DISTRIBUTE APPROVED SHOP DRAWINGS TO ALL OTHER TRADES AFFECTED BY HIS WORK AND EQUIPMENT.

K. THE CONTRACTOR MAY OFFER SUBSTITUTIONS WITH HIS BID EXCEPT FOR CERTAIN ITEMS WHICH MAY BE INDICATED AS HAVING NO SUBSTITUTE. ONLY ONE REQUEST FOR SUBSTITUTION WILL BE CONSIDERED FOR EACH PRODUCT. WHEN THE SUBSTITUTION IS NOT ACCEPTED, THE SPECIFIED PRODUCT SHALL BE PROVIDED.

L. THE CONTRACTOR SHALL ARRANGE AND PAY FOR ALL PERMITS, FEES AND INSPECTIONS REQUIRED IN CONNECTION WITH THIS INSTALLATION. THE CONTRACTOR MUST PRESENT THE OWNER WITH PROPERLY SIGNED CERTIFICATES OF FINAL INSPECTIONS BEFORE WORK WILL BE ACCEPTED.

M. THE CONTRACTOR SHALL NOTIFY THE UTILITY COMPANIES AS REQUIRED BY LAW AND DETERMINE THE EXACT LOCATIONS OF EXISTING UTILITIES, PRIOR TO BEGINNING WORK. ALL ACTIVE SERVICES ENCOUNTERED SHALL BE PROTECTED AND SUPPORTED. ALL INACTIVE SERVICES SHALL BE REMOVED OR DEACTIVATED AS SHOWN OR DIRECTED BY THE ARCHITECT. THE CONTRACTOR SHALL COORDINATE WITH THE ARCHITECT AND UTILITY COMPANIES FOR UTILITY TIE-INS FOR THIS WORK AND SHALL PAY ALL FEES AND CHARGES RELATED TO THIS WORK.

N. THE CONTRACTOR SHALL GIVE NOTICES AND COMPLY WITH LAWS, ORDINANCES, RULES, REGULATIONS AND ORDERS OF ANY PUBLIC AUTHORITY BEARING ON THE WORK. IF THE CONTRACTOR OBSERVES THE CONTRACT DOCUMENTS ARE AT VARIANCE WITH SUCH IN ANY RESPECT, PROMPTLY NOTIFY THE ARCHITECT, IN WRITING SUCH THAT ALL NECESSARY CHANGES CAN BE MADE. IF CONTRACTOR KNOWINGLY PERFORMS ANY WORK CONTRARY TO SUCH WITHOUT NOTICE TO THE ARCHITECT, HE SHALL ASSUME FULL RESPONSIBILITY THEREFORE AND SHALL BEAR COST ATTRIBUTED THERETO.

O. THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN A NEAT AND WORKMANLIKE MANNER. MATERIALS SHALL BE NEW. SECONDS OR DAMAGED MATERIALS SHALL NOT BE USED. CONTRACTOR IS RESPONSIBLE FOR THE SAFETY AND GOOD CONDITION OF THE EQUIPMENT, MATERIALS AND SYSTEMS INSTALLED UNTIL FINAL ACCEPTANCE BY THE ARCHITECT. ALL MATERIALS SHALL BE STORED IN SUCH A MANNER AS TO PREVENT ANY DAMAGE PRIOR TO INSTALLATION.

P. THE CONTRACTOR WILL BE HELD RESPONSIBLE FOR DAMAGE CAUSED BY HIS WORK OR THROUGH NEGLECT OF HIS WORKMEN. REPAIRING OF DAMAGED WORK SHALL BE DONE BY THE CONTRACTOR AS DIRECTED BY THE ARCHITECT. COST OF REPAIRS SHALL BE PAID BY THE CONTRACTOR.

Q. THE CONTRACTOR SHALL TEST ALL HIS EQUIPMENT AND WORK IN THE PRESENCE OF THE OWNER'S REPRESENTATIVE. ALL EQUIPMENT, APPARATUS, ETC. SHALL COMPLY FULLY WITH THE REQUIREMENTS OF THE SPECIFICATIONS AND DRAWINGS. PROVIDE TRAINING OF OWNER'S PERSONNEL AS REQUIRED AND OBTAIN SIGN-OFF ON SAME.

R. THE CONTRACTOR SHALL WARRANT ALL MATERIALS AND ALL WORK INSTALLED BY HIM OR HIS SUBCONTRACTORS FOR A PERIOD OF ONE YEAR FROM DATE OF FINAL ACCEPTANCE. ALL EQUIPMENT REQUIRING LUBRICATION SHALL BE LUBRICATED WITH CORRECT GRADE, TYPE AND QUANTITY OF LUBRICANT BEFORE BEING PLACED IN SERVICE. MAINTAIN ALL LUBRICATION, GASKETING, AND PACKING DURING CONSTRUCTION, AND ASSURE THAT AT THE TIME OF ACCEPTANCE, ALL ARE IN FIRST CLASS OPERATING CONDITION.

S. PRIOR TO FINAL ACCEPTANCE, THE CONTRACTOR SHALL PROVIDE IDENTIFICATION OF MECHANICAL SYSTEMS (IN COMPLIANCE WITH CONTRACT REQUIREMENTS) AND SHALL CLEAN ALL EQUIPMENT AND SYSTEMS TO THE SATISFACTION OF THE OWNER'S REPRESENTATIVE.

HVAC GENERAL SPECIFICATIONS:

A. THE CONTRACTOR SHALL FURNISH ALL MATERIALS MEETING ASME, ASTM, NFPA, AND NEMA SPECIFICATIONS. THE CONSTRUCTION AND INSTALLATION OF DUCTWORK SHALL CONFORM TO THE LATEST EDITION OF THE SMACNA HVAC DUCT CONSTRUCTION STANDARDS.

B. THE CONTRACTOR SHALL PROVIDE ALL NECESSARY MATERIALS, EQUIPMENT, CONTROLS, TRANSPORTATION, HOISTING, ETC. NECESSARY TO INSTALL A COMPLETE AND OPERABLE HEATING, VENTILATING AND AIR CONDITIONING SYSTEM.

C. THE CONTRACTOR SHALL PAY FOR AND HAVE THE MECHANICAL SYSTEMS BALANCED BY AN INDEPENDENT BALANCING COMPANY. THE REPORT IS TO INCLUDE, BUT NOT BE LIMITED TO, ALL SUPPLY DIFFUSER AND EXHAUST GRILLE AIRFLOWS WITH THREE (3) COPIES TO BE SUBMITTED TO THE ARCHITECT PRIOR TO FINAL ACCEPTANCE. IF PROJECT IS A RENOVATION OR ADDITION, PERFORM PRE-DEMO BENCHMARKING TAB AS REQUIRED TO DETERMINE AND DOCUMENT FLOWS ASSOCIATED WITH THE PROJECT AREAS SO THAT THOSE VALUES ARE KNOWN FOR THE PROJECT WORK AND NOT EXCEEDED, OR OTHERWISE ADVERSELY AFFECTED. MECHANICAL CONTRACTOR TO PROVIDE FINAL SHEAVES AND DRIVES NEEDED FOR FINAL BALANCE, AND ANY TEMPORARY MEASURES REQUIRED FOR SAME SUCH AS ADDITIONAL DAMPERS, VALVES, DAMPERED OR VALVED BYPASSES, ETC.

HVAC DEMOLITION

A. REFER TO DIVISION 01 SECTION "CUTTING AND PATCHING" AND DIVISION 02 SECTION "SELECTIVE STRUCTURE DEMOLITION" FOR GENERAL DEMOLITION REQUIREMENTS AND PROCEDURES.

B. DISCONNECT, DEMOLISH, AND REMOVE HVAC SYSTEMS, EQUIPMENT, AND COMPONENTS INDICATED TO BE REMOVED.

a. DUCTS TO BE REMOVED: REMOVE PORTION OF DUCTS INDICATED TO BE REMOVED AND PLUG REMAINING DUCTS WITH SAME OR COMPATIBLE DUCTWORK MATERIAL.

b. DUCTS TO BE ABANDONED IN PLACE: CAP OR PLUG DUCTS WITH SAME OR COMPATIBLE DUCTWORK MATERIAL.

c. EQUIPMENT TO BE REMOVED: DISCONNECT AND CAP SERVICES AND REMOVE EQUIPMENT.

d. EQUIPMENT TO BE REMOVED AND REINSTALLED: DISCONNECT AND CAP SERVICES AND REMOVE, CLEAN, AND STORE EQUIPMENT; WHEN APPROPRIATE, REINSTALL, RECONNECT, AND MAKE EQUIPMENT OPERATIONAL.

C. IF PIPE, INSULATION, OR EQUIPMENT TO REMAIN IS DAMAGED IN APPEARANCE OR IS UNSERVICEABLE, REMOVE DAMAGED OR UNSERVICEABLE PORTIONS AND REPLACE WITH NEW PRODUCTS OF EQUAL CAPACITY AND QUALITY.

HVAC DUCT AND ACCESSORIES SPECIFICATIONS:

A. DUCTWORK AND PLENUMS SHALL BE CONSTRUCTED IN ACCORDANCE WITH SMACNA HVAC DUCT STANDARDS AND AS FOLLOWS:

a. ALL ABOVEGROUND DUCTWORK SHALL BE FABRICATED OF NEW G90 GALVANIZED SHEET STEEL (OR ALUMINUM OR STAINLESS STEEL WHERE CALLED FOR ON DRAWINGS), AND SHALL BE CONSTRUCTED AND BRACED IN ACCORDANCE WITH THE STANDARDS SET FORTH IN LATEST EDITION OF THE SMACNA CONSTRUCTION STANDARDS. NO FIBERGLASS DUCTBOARD PERMITTED.

b. DUCT DIMENSIONS SHOWN ARE FREE INSIDE DIMENSIONS AND SHALL BE FOLLOWED UNLESS JOB CONDITIONS REQUIRE ALTERATIONS. DUCT SIZE REVISIONS SHALL BE BASED ON THE EQUAL FRICTION METHOD.

c. ALL ELBOWS IN THE SYSTEM SHALL BE MADE WITH CENTERLINE RADIUS OF ONE AND ONE-HALF (1-1/2) TIMES THE TURNING WIDTH OF THE DUCT. WHERE SPACE PROHIBITS THE SPECIFIED MINIMUM RADIUS, SQUARE ELBOWS WITH DOUBLE RADIUS TURNING VANES SCREWED IN PLACE MAY BE USED. CHANGES IN DUCT SIZES SHALL HAVE MAXIMUM FLOW ANGLES OF 15° DIVERGING AND 60° CONTRACTING. ALL TAKE-OFFS AND BRANCH/RUNOUT CONNECTIONS TO BE CONICAL OR EXPANDED.

d. THE MECHANICAL DRAWINGS INDICATE THE GENERAL ROUTING OF DUCTWORK. WHEN JOB CONDITIONS WARRANT ALTERATIONS, THE EXACT ROUTE SHALL BE COORDINATED WILL ALL OTHER TRADES. ALSO, PROVIDE DUCT TRANSITIONS AS REQUIRED AS ALL MAY NOT BE SHOWN.

e. HANGERS TO BE PLACED 8 FEET ON CENTERS MAXIMUM WITH 1" X 16 GAUGE MINIMUM STRAPS FOR DUCTS. NO CABLE TYPE DUCT SUPPORTS ALLOWED.

f. ALL DUCTWORK SHALL BE SEALED TO SMACNA SEAL CLASS A.

g. SMACNA PRESSURE CLASSES TO BE AS FOLLOWS:

- ALL DUCTWORK, 2" PRESSURE CLASS.

B. BALANCING DAMPERS SHALL BE FABRICATED IN ACCORDANCE WITH THE LATEST ISSUE OF THE SMACNA DUCT MANUAL AND AS FOLLOWS:

a. RECTANGULAR DAMPERS SHALL BE SINGLE BLADE TYPE IN DUCTS UP TO 11" HIGH AND SHALL BE OPPOSED BLADE TYPE IN DUCTS 12" HIGH AND ABOVE.

b. ROUND DAMPERS SHALL BE SINGLE BLADE TYPE.

c. PROVIDE END BEARINGS ON ALL DAMPERS. ON MULTIPLE BLADE DAMPERS, BEARINGS SHALL BE OIL-IMPREGNATED NYLON OR SINTERED BRONZE.

d. PROVIDE LOCKING INDICATING QUADRANT REGULATORS ON ALL DAMPERS. WHERE ROD LENGTHS EXCEED 30", PROVIDE A REGULATOR AT BOTH ENDS.

e. ON INSULATED DUCTS MOUNT QUADRANT REGULATORS ON STAND-OFF MOUNTING BRACKETS, BRACES OR ADAPTORS.

f. PROVIDE BALANCING DAMPERS IN A RUNOUTS, IN REQUIRED BRANCH DUCTING, AND OTHER AS REQUIRED FOR PROPER SYSTEM BALANCING.

C. DUCTWORK INSULATION AND JACKETS SHALL BE AS FOLLOWS:

a. ALL MATERIALS SHALL HAVE FLAME SPREAD/SMOKE DEVELOPMENT RATING OF 25/50 IN ACCORDANCE WITH ASTM E84, NFPA 225, AND U.L. 723.

b. TYPE A: FLEXIBLE GLASS FIBER ALL SERVICE DUCT WRAP WITH A "K" VALUE OF 0.25 AT 75 F, FOIL SCRIM VAPOR BARRIER FACING AND A DENSITY OF 1.5 PCF.

c. TYPE B: RIGID FIBERGLASS BOARD INSULATION WITH A "K" VALUE OF 0.24 AT 75 F, FACTORY APPLIED ASJ WHITE VAPOR BARRIER JACKET AND A DENSITY OF 6.0 PCF.

d. CONCEALED SUPPLY AND EXHAUST/RELIEF (WITHIN 10' OF THE EXTERIOR) DUCTS SHALL BE INSULATED WITH 1-1/2" THICK TYPE A INSULATION PROVIDING 100% COVERAGE OF ADHESIVE WITH EDGES TIGHTLY BUTTED. WHERE DUCT EXCEEDS 30" THE BOTTOM OF THE INSULATION SHALL BE ADDITIONALLY HELD IN PLACE WITH A ROW OF PINS AND CLIPS DOWN THE CENTER ON 12" CENTERS. ALL JOINTS SHALL BE SEALED BY TAPING WITH 3" WIDE VAPOR BARRIER TAPE. PATCHES OF TAPE SHALL BE APPLIED WHERE PINS PROTRUDE THROUGH THE FACING.

HVAC EQUIPMENT SPECIFICATIONS:

A. THE EQUIPMENT SCHEDULED ON THE DRAWINGS SET THE LEVEL OF QUALITY, FUNCTION, AND PERFORMANCE THAT IS REQUIRED. OTHER SIMILAR MANUFACTURER'S (AS LISTED BELOW) PRODUCTS MAY BE SUBMITTED AS SUBSTITUTES BUT THEY WILL BE SUBJECT TO THE OWNER'S REQUIREMENTS AND TO THE ENGINEER'S APPROVAL.

B. OTHER MANUFACTURER'S THAT MAY BE CONSIDERED FOR THE PROJECT SCHEDULED EQUIPMENT:

a. FOR AIR DEVICES: ANEMOSTAT, PRICE OR KREUGER.

a. FOR FANS: GREENHECK OR PENNBARRY.

SEQUENCES OF OPERATION:

A. TEMPERATURE CONTROL SEQUENCE OF OPERATIONS

a. EXHAUST FANS EF-1 AND EF-2 SHALL BE INTERLOCKED WITH THEIR RESPECTIVE RESTROOM LIGHT SWITCH. WHEN THE LIGHT SWITCH IS ENERGIZED, THE ASSOCIATED EXHAUST FAN SHALL START. WHEN THE LIGHT SWITCH IS DE-ENERGIZED, THE ASSOCIATED EXHAUST FAN SHALL SHUT DOWN.

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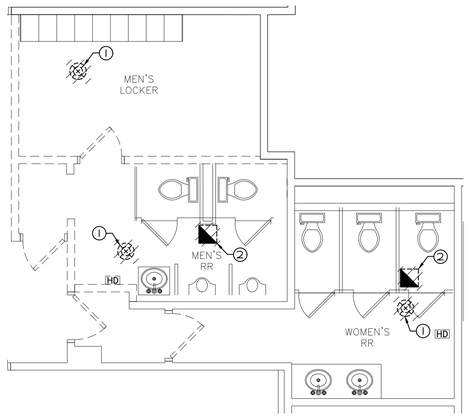
sheet name:
HVAC SPECIFICATIONS

drawn by: SAS

checked by: ARB

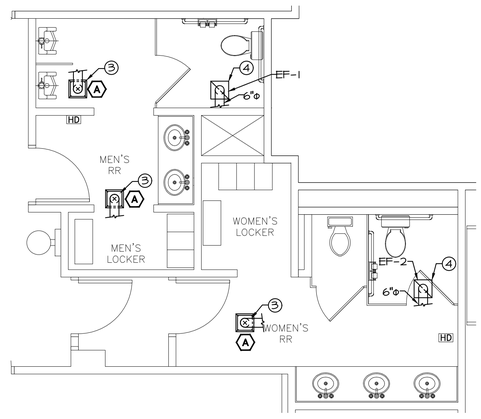
sheet number: M001

job number: 26060



PARTIAL FLOOR PLAN - HVAC DEMOLITION

SCALE: 1/4"=1'-0"



PARTIAL FLOOR PLAN - HVAC

SCALE: 1/4"=1'-0"

DEMOLITION NOTE:

THIS DEMOLITION PLAN IS FOR GENERAL INFORMATION OF EXISTING DEVICES AND EQUIPMENT AND IS NOT INTENDED TO BE TOTALLY INCLUSIVE OF ALL DEMOLITION REQUIRED. CONTRACTOR SHALL VISIT THE SITE AND VERIFY ALL DEMOLITION REQUIRED. THIS PLAN IS NOT A RECORD DRAWING AND SHALL BE CONSIDERED A GENERAL SCOPE OF THE DEMOLITION REQUIRED. THE CONTRACTOR WILL BE RESPONSIBLE TO DEMOLISH ALL ITEMS NECESSARY FOR THE NEW WORK (ALL TRADES) TO BE PERFORMED PROPERLY, AND THE CONTRACTOR WILL BE RESPONSIBLE TO RELOCATE ALL DUCTWORK AND PIPING THAT IS TO REMAIN ACTIVE. THE CONTRACTOR SHALL VISIT THE SITE AND THOROUGHLY INSPECT THE CURRENT FIELD CONDITIONS AT THE PROJECT SITE.

NO DEMOLITION THAT WILL AFFECT THE OWNER'S USE OF NEARBY OCCUPIED SPACES WILL BE PERMITTED WITHOUT FIRST SECURING THE OWNER'S AUTHORIZATION.

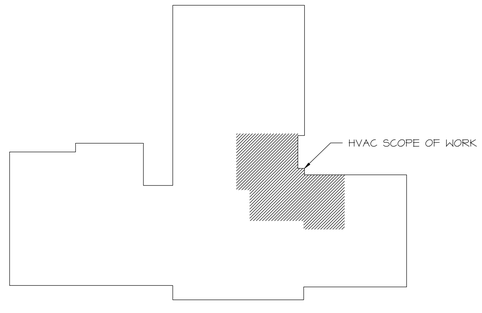
NO ATTEMPT HAS BEEN MADE TO SHOW THE EXTENT OF ARCHITECTURAL/ GENERAL DEMOLITION WORK ON THE MECHANICAL DRAWINGS. CONTRACTOR SHALL REFER TO THE ARCHITECTURAL AND MECHANICAL DRAWINGS FOR SUCH DETAILS.

CODED NOTES:

1. EXISTING SUPPLY DIFFUSER TO BE REMOVED.
2. EXISTING CEILING-MOUNTED EXHAUST FAN, ASSOCIATED CONTROLS, AND CONTROL WIRING TO BE REMOVED.
3. LOCATION OF NEW SUPPLY DIFFUSER. EXTEND AND TRANSITION NEW ø6" DUCT FROM CONNECTION TO EXISTING DUCT. FIELD VERIFY EXACT SIZE AND LOCATION. CONTRACTOR RESPONSIBLE FOR ANY ADDITIONAL DUCTWORK REQUIRED. BALANCE TO PRE-BALANCED CFM.
4. LOCATION OF NEW EXHAUST FAN. EXTEND AND TRANSITION NEW ø6" DUCT FOR CONNECTION TO EXISTING DUCT FROM PREVIOUS EXHAUST FAN SERVING THE SPACE. FIELD VERIFY EXACT SIZE AND LOCATION. CONTRACTOR RESPONSIBLE FOR ANY ADDITIONAL DUCTWORK REQUIRED.

GENERAL NOTE:

1. PRE-BALANCE ALL EXISTING SUPPLY DIFFUSERS PRIOR TO CONSTRUCTION AND RECORD CFM VALUES. UPON COMPLETION OF WORK, RE-BALANCE DIFFUSERS TO MATCH RECORDED PRE-BALANCED AIRFLOWS WHILE MAINTAINING NEGATIVE PRESSURE IN RESTROOMS RELATIVE TO ADJACENT SPACES.



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PARTIAL FLOOR PLANS - HVAC

drawn by: SAS
checked by: ARB
sheet number: M100
job number: 26060

FAN SCHEDULE

MARK	AREA SERVED	DRIVE TYPE/MAX NOMINAL RPM	CAPACITY CFM	S.P.(IN. WG)	INPUT WATTS	MAX. NOISE SONES	POWER	MOUNTING STYLE	APPROX. UNIT WEIGHT	MANUFACTURER & MODEL No.	NOTES
EF-1	MEN'S RR	DIRECT / 1444	210	0.50	66 W	6.0	115/1/60	CEILING	25	COOK GCVF-180	1, 2, 3, 4, 5
EF-2	WOMEN'S RR	DIRECT / 1161	140	0.50	31 W	3.5	115/1/60	CEILING	25	COOK GN-146	1, 2, 3, 4, 5

NOTES:

1. FURNISH UNIT WITH EC MOTOR AND SPEED CONTROLLER.
2. FURNISH UNIT WITH BACKDRAFT DAMPER IN DISCHARGE. INTERLOCK TO OPEN WHEN FAN IS OPERATING.
3. INTERLOCK FAN WITH LIGHT SWITCH.
4. REMOTE MOUNT FAN SPEED CONTROLLER ON FAN HOUSING.
5. DISCONNECTS BY E.C.

DIFFUSER, REGISTER, AND GRILLE SCHEDULE

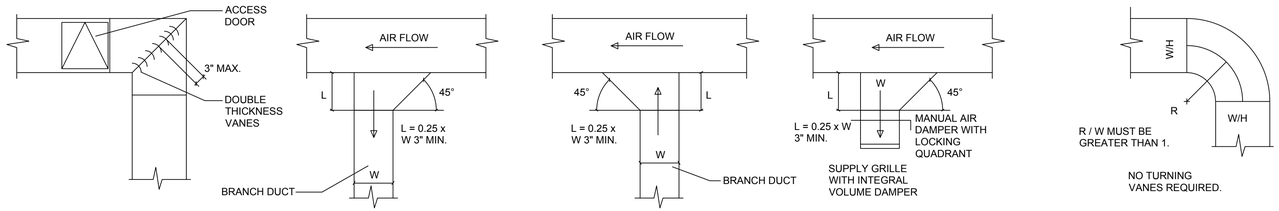
MARK	MOUNTING	DIFFUSER FACE	NECK SIZE	MAX. CFM	MAX. N.C.	MAX. N.C.	MODEL	NOTES
(A)	LAY-IN	12 X 12	6"ø	AS NOTED	30	PLAQUE FACE SUPPLY DIFFUSER	TITUS OMNI	1

NOTES:

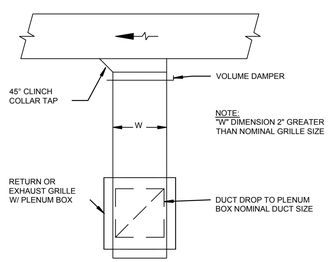
1. CONTRACTOR SHALL FIELD-VERIFY EXISTING DUCT SIZE AND ENSURE NECK SIZE ON NEW DIFFUSER MATCHES EXISTING.

DUCTWORK DETAIL

NOT TO SCALE

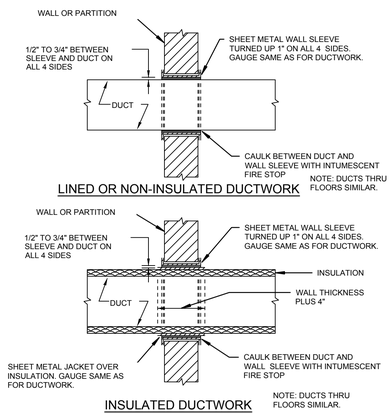


SQUARE ELBOW | SUPPLY TAP | RETURN TAP | SUPPLY TAP WITH SUPPLY GRILLE | ALTERNATE RECTANGULAR ELBOW



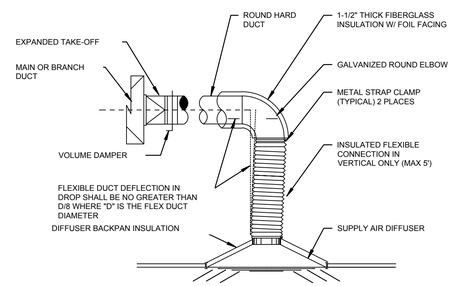
RETURN OR EXHAUST GRILLE CONNECTION

NOT TO SCALE



DETAIL OF DUCT PASSING THRU WALLS OR PARTITIONS

NOT TO SCALE



DIFFUSER CONNECTION - FLEX DETAIL

NOT TO SCALE

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HVAC SCHEDULES AND DETAILS

drawn by: SAS

checked by: ARB

sheet number: M200

job number: 26060

PLUMBING PROJECT NOTES

1	ALL WORK MUST COMPLY WITH THE REQUIREMENTS OF LOCAL CODES AND ORDINANCES. WHERE INSPECTIONS ARE REQUIRED BY AUTHORITY HAVING JURISDICTION, WORK MUST NOT BE CONCEALED UNTIL INSPECTIONS AND TESTING ARE COMPLETED AND ACCEPTED.
2	PRIOR TO BID, CONTRACTOR MUST BECOME FAMILIAR WITH THE REQUIREMENTS OF THE DRAWINGS, SPECIFICATIONS, GENERAL NOTES AS WELL AS ALL OTHER NOTES SHOWN ON THE CONTRACT DOCUMENTS. VISIT THE SITE TO ESTABLISH THE EXISTING CONDITIONS PRIOR TO BID AND PRIOR TO ANY PIPE OR EQUIPMENT FABRICATION. SYSTEMS MUST BE ERECTED USING CONTRACTOR'S FIELD MEASUREMENTS FOR COORDINATION WITH EQUIPMENT, STRUCTURE, FIRE PROTECTION, COMMUNICATION, AND ELECTRICAL CONDITIONS IN THE SPACE.
3	ALL CONTRACT DOCUMENTS ARE DIAGRAMMATIC AND INDICATE THE GENERAL ARRANGEMENTS OR GEOMETRICAL RELATIONSHIPS OF EQUIPMENT AND SERVICES. THEY ARE NOT INTENDED TO SPECIFY OR SHOW EVERY OFFSET, SEQUENCE, DEVICE, OPTION, FITTING, OR COMPONENT. DO NOT SCALE DRAWINGS.
4	INFORMATION AND COMPONENTS SHOWN ON DIAGRAMS OR DETAILS, BUT NOT SHOWN ON THE PLANS, AND VICE VERSA, MUST BE PROVIDED AS IF EXPRESSLY REQUIRED BY BOTH.
5	EXCEPT WHERE INDICATED OTHERWISE, THE NOTION OR DESCRIPTION OF ANY ITEM IN THE CONTRACT DOCUMENTS CARRIES WITH IT THE INSTRUCTIONS TO FURNISH AND INSTALL THE ITEM, WHETHER OR NOT THE INSTRUCTION IS EXPLICITLY STATED.
6	THE CONTRACT DOCUMENTS REFLECT A SYSTEM DESIGNED AROUND SPECIFIC REFERENCE PRODUCTS. THE SELECTION OF WHICH HAS IMPACTED THE DESIGNS OF OTHER TRADES. SOME EQUIPMENT MAY BE REQUIRED AS SCHEDULED WITH NO SUBSTITUTIONS (REFER TO EQUIPMENT SCHEDULES). FOR OTHER EQUIPMENT, IF ALTERNATE MANUFACTURERS ARE SUBMITTED OR BID, IT IS THE RESPONSIBILITY OF THIS CONTRACTOR TO COORDINATE ALL THE DIFFERENCE AND IMPACTS WITH ALL OTHER TRADES PRIOR TO BID, INCLUDING THE COSTS ASSOCIATED WITH REQUIRED CHANGES TO OTHER TRADES IF ALTERNATE EQUIPMENT IS BID OR INSTALLED.
7	COORDINATE PLACEMENT OF ALL PLUMBING RELATED EQUIPMENT AND DEVICES WITH OTHER TRADES. DO NOT POSITION OR INSTALL ANY PLUMBING EQUIPMENT OR DEVICES IN ANY SYSTEM IN SUCH A WAY THAT IT WILL BE INACCESSIBLE OR UN-MAINTAINABLE AFTER CONSTRUCTION IS COMPLETED.
8	NO OTHER TRADES ARE ALLOWED TO BE SUPPORTED FROM MATERIALS, EQUIPMENT OR DEVICES INSTALLED BY THE PLUMBING TRADES. LIKEWISE, ALL WORK INSTALLED BY THE PLUMBING TRADES MUST BE SUPPORTED FROM THE STRUCTURE ABOVE, FROM WALLS OR FROM THE FLOOR UNLESS OTHERWISE INDICATED.
9	REPLACE OR REPAIR ALL ARCHITECTURAL FEATURES REMOVED OR DAMAGED DURING THE COURSE OF THE WORK. REPAIR OR REPLACEMENT MUST, AS A MINIMUM, EQUAL ORIGINAL CONDITION. SPECIAL CARE MUST BE TAKEN ON THE ROOFS TO PREVENT DAMAGE. ANY DAMAGE MUST BE PROMPTLY REPAIRED AT NO EXPENSE TO THE OWNER BY AN OWNER APPROVED ROOFING CONTRACTOR.
10	ALL WIRING INSTALLED FOR CONTROLS, POWER, INTERLOCKS, ETC. MUST BE INSTALLED IN CONDUIT. MATERIALS AND INSTALLATION MUST COMPLY WITH NFPA AND NEC REQUIREMENTS, AND LOCAL CODES.
11	SEAL ALL ROOF AND WALL PENETRATIONS, FLASH AND COUNTER-FLASH ALL ROOF PENETRATIONS. MINIMUM ACCEPTABLE HEIGHT OF FLASHING IS TWELVE (12) INCHES ABOVE ROOF.
12	CONTRACTOR SHALL INSTALL STEEL PIPE SLEEVES THRU WALLS, FOOTERS, ETC. SLEEVES TO BE MINIMUM TWO (2) SIZES LARGER THAN THE SANITARY LINE, STORM LINE, AND WATER LINE.
14	ALL FLOOR DRAINS AND FLOOR SINKS TO BE PROVIDED WITH ASSE #1072 TRAP SEALS UNLESS OTHERWISE NOTED.
15	ALL SANITARY PIPING LOCATED IN THE RETURN AIR PLENUM SHALL BE CAST IRON. ALL AREAS ABOVE CEILING TO BE CONSIDERED A RETURN AIR PLENUM UNLESS NOTED OTHERWISE.
19	FIELD VERIFY INVERTS ON PLANS.
20	CONTRACTOR IS RESPONSIBLE TO INSTALL NEW PIPING PER CONSTRUCTION CONDITIONS

PLUMBING LEGEND

EXISTING PIPING	
EXISTING PIPING TO BE REMOVED	
SANITARY SEWER	SAN
VENT PIPING	V
COLD WATER	CW
HOT WATER	HW
HOT WATER RETURN	HWR
SHUT OFF VALVE	
CHECK VALVE	
BALANCING VALVE	
PRESSURE REDUCING VALVE	
REDUCED PRESS. BACKFLOW PREVENTOR	
DOUBLE CHECK VALVE ASSEMBLY	
TEMPERATURE GAUGE	T.G.
PRESSURE GAUGE	P.G.
DRAIN VALVE	D.V.
HOSE VALVE	H.V.
HOSE BIBB	H.B.
CATCH BASIN	C.B.
INLET BASIN	I.B.
CLEANOUT	C.O.
MANHOLE	M.H.
FLOOR DRAIN	F.D.
SQUARE FOOTAGE	S.F.
CONNECT TO EXISTING	C.T.E.

PLUMBING ABBREVIATIONS

SYMBOL	DESCRIPTION
BFF	BELOW FINISHED FLOOR
CO	CLEAN OUT
CTE	CONNECT TO EXISTING
CW	COLD WATER
HWH	DOMESTIC WATER HEATER
EC	ELECTRICAL CONTRACTOR
ETR	EXISTING TO REMAIN
FD	FLOOR DRAIN
WH	FREEZE PROOF HOSE BIBB WALL HYDRANT
G	NATURAL GAS
GC	GENERAL CONTRACTOR
GPM	GALLONS PER MINUTE
HW	HOT WATER
INV	INVERT
LAV	LAVATORY
LF	LINEAL FEET
MAX	MAXIMUM
MC	MECHANICAL CONTRACTOR
MIN	MINIMUM
PC	PLUMBING CONTRACTOR
PRV	PRESSURE REGULATING VALVE
PSI	POUNDS PER SQUARE INCH
PVC	POLYVINYL CHLORIDE
HWR	RECIRCULATING HOT WATER
FS	FLOOR SINK
SAN	SANITARY SEWER
UR	URINAL
V	VENT PIPING
VTR	VENT THROUGH ROOF
WC	WATER CLOSET
°F	DEGREES FAHRENHEIT
Ø	DIAMETER

INDEX OF MECHANICAL DRAWINGS

Sheet Number	Sheet Name
P000	PLUMBING LEGENDS, SYMBOLS AND ABBREVIATIONS
P001	PLUMBING SPECIFICATIONS
P100	FLOOR PLAN - PLUMBING
P200	PLUMBING DETAILS AND ISOMETRIC

PLUMBING: 4

1.1 - PLUMBING FIXTURE SCHEDULE

MARK	FIXTURE DESCRIPTION	COLD WATER	HOT WATER	WASTE PIPE	VENT PIPE	REMARKS	MANUFACTURER	MODEL #
WC	WATER CLOSET	1"	---	4"	2"	VITREOUS CHINA, ELONGATED RIM, HIGH EFFICIENCY, 1.28 GPF, ADA HEIGHT; AMERICAN STANDARD NO. 2403.128 ONE PIECE TANK-TYPE TOILET.	AMERICAN STANDARD	2403.128
UR-A	URINAL	3/4"	---	2"	1 1/2"	VITREOUS CHINA, WALL MOUNTED AT STANDARD HEIGHT, ZURN NO. Z5755-U URINAL; WITH ZURN MODEL NO. Z6003AV-ULF, 0.125 GPF MANUAL FLUSH VALVE.	ZURN	Z5755-U / Z6003AV-ULF
UR-B	URINAL	3/4"	---	2"	1 1/2"	VITREOUS CHINA, WALL MOUNTED AT ADA HEIGHT, ZURN NO. Z5755-U URINAL; WITH ZURN MODEL NO. Z6003AV-ULF, 0.125 GPF MANUAL FLUSH VALVE.	ZURN	Z5755-U / Z6003AV-ULF
EWC	ELECTRIC WATER COOLER	1/2"	---	1 1/2"	1 1/2"	WALL MOUNTED, SINGLE FOUNTAIN;STAINLESS STEEL, ELEVATED ANTI-SQUIRT BUBBLER WITH STREAM GUARD, AUTOMATIC STREAM REGULATOR, MOUNTING BRACKET, REFRIGERATED WITH FAN COOLED CONDENSER; MODEL NO. VRC8WSK BY ELKAY.	ELKAY	VRC8WSK
LAV	LAVATORY	1/2"	1/2"	1 1/2"	1 1/2"	VITREOUS CHINA, UNDERMOUNT, 4" FAUCET CENTERS; AMERICAN STANDARD MODEL NO. 0484.000 WITH ZURN NO. Z81000-XL FAUCET AND ASSE 1070 MIXING VALVE.	AMERICAN STANDARD / ZURN	0484.000 / Z81000-XL / ASSE 1070

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drawn by: CPK

checked by: ADO

sheet number: P000

job number: 26060

PLUMBING SPECIFICATIONS

A. CONTRACTOR SHALL FURNISH ALL MATERIALS MEETING ANSI, AND FS SPECIFICATIONS.

B. ALL PIPING SHALL BE TESTED IN AN ACCORDANCE WITH THE GOVERNING PLUMBING CODE. ANY DAMAGE AS A RESULT OF TESTS SHALL BE REPAIRED OR DAMAGED MATERIALS REPLACED AT NO COST TO THE OWNER.

C. DIELECTRIC FITTINGS: COMBINATION FITTING OF COPPER ALLOY AND FERROUS MATERIALS WITH THREADED, SOLDER-JOINT, PLAIN, OR WELD-NECK END CONNECTIONS THAT MATCH PIPING SYSTEM MATERIALS.

D. MECHANICAL SLEEVE SEALS: MODULAR SEALING ELEMENT UNIT, DESIGNED FOR FIELD ASSEMBLY, TO FILL ANNULAR SPACE BETWEEN PIPE AND SLEEVE. LINK-SEAL, METRAFLEX CO., OR FERNCO.

E. ESCUTCHEONS : MANUFACTURED WALL AND CEILING ESCUTCHEONS AND FLOOR PLATES, WITH AN ID TO CLOSELY FIT AROUND PIPE, TUBE, AND INSULATION OF INSULATED PIPING AND AN OD THAT COMPLETELY COVERS OPENING. INSTALL ESCUTCHEONS FOR PENETRATIONS OF WALLS, CEILINGS, AND FLOORS

F. INSTALL SLEEVES FOR PIPES PASSING THROUGH CONCRETE AND MASONRY WALLS AND CONCRETE FLOOR AND ROOF SLABS.

G. ECCENTRIC REDUCING COUPLINGS SHALL BE PROVIDED IN ALL CASES WHERE AIR OR WATER POCKETS WOULD OTHERWISE OCCUR DUE TO A REDUCTION IN PIPE SIZE.

H. INSTALL DRAINS, CONSISTING OF A TEE FITTING, NPS 3/4 FULL PORT-BALL VALVE, AND SHORT NPS 3/4 THREADED NIPPLE WITH CAP, AT LOW POINTS IN PIPING SYSTEM MAINS AND ELSEWHERE AS REQUIRED FOR SYSTEM DRAINAGE.

I. FIRE-BARRIER PENETRATIONS: MAINTAIN INDICATED FIRE RATING OF WALLS, PARTITIONS, CEILINGS, AND FLOORS AT PIPE PENETRATIONS. SEAL PIPE PENETRATIONS WITH FIRESTOP MATERIALS. REFER TO DIVISION 07 SECTION "PENETRATION FIRESTOPPING" FOR MATERIALS.

J. PLUMBING IDENTIFICATION

1. PROVIDE PLASTIC OR METAL LABELS FOR EQUIPMENT MECHANICALLY FASTENED TO EQUIPMENT
2. WARNING SIGNS AND LABELS SHALL BE MULTILAYER, MULTICOLOR, PLASTIC LABELS FOR MECHANICAL ENGRAVING, 1/8 INCH THICK, AND HAVING PREDRILLED HOLES FOR ATTACHMENT HARDWARE. LETTER COLOR: WHITE. BACKGROUND COLOR: RED.
3. SELF-ADHESIVE PIPE LABELS: PRINTED PLASTIC WITH CONTACT-TYPE, PERMANENT-ADHESIVE BACKING.
4. PIPE LABEL CONTENTS: INCLUDE IDENTIFICATION OF PIPING SERVICE USING SAME DESIGNATIONS OR ABBREVIATIONS AS USED ON DRAWINGS, PIPE SIZE, AND AN ARROW INDICATING FLOW DIRECTION.
5. INSTALL WARNING LABELS STATING “CAUTION: NON-POTABLE WATER. DO NOT DRINK” ON ALL NON-POTABLE WATER PIPING AFTER IT HAS BEEN INSULATED.

K. SANITARY AND SANITARY VENT PIPING

1. ALL ABOVE GROUND PIPING SHALL BE ASTM A888 SERVICE WEIGHT HUBLESS CAST IRON PIPE AND CAST IRON NO HUB FITTINGS WITH CISPI-310 NEOPRENE COUPLINGS, STAINLESS STEEL CLAMPS AND SHIELDS.

2. EXCEPTION : ABOVE GROUND SANITARY VENT DRAIN PIPING MAY BE SOLID-WALL SCHEDULE 40 PVC PIPE, PVC SOCKET FITTINGS, AND SOLVENT-CEMENTED JOINTS ONLY IN NON-PLENUM RATED AREAS.

3. PIPING SHALL BE INSTALLED IN AN ORDERLY MANNER, AND SHALL MAINTAIN GRADIENT, CONSERVE BUILDING SPACE, AND ALLOW FOR EXPANSION AND CONTRACTION.

4. INSTALLATION SHALL FOLLOW CISPI'S "CAST IRON SOIL PIPE AND FITTINGS HANDBOOK" FOR HUBLESS-COUPLING JOINTS OR COMPRESSION JOINTS.

5. TEST SANITARY DRAINAGE PIPING ACCORDING TO PROCEDURES OF AUTHORITIES HAVING JURISDICTION OR IN ABSENCE OF PUBLISHED PROCEDURES, AS FOLLOWS:
   a. TEST FOR LEAKS AND DEFECTS IN NEW PIPING AND PARTS OF EXISTING PIPING THAT HAVE BEEN ALTERED, EXTENDED, OR REPAIRED. IF TESTING IS PERFORMED IN SEGMENTS, SUBMIT SEPARATE REPORT FOR EACH TEST, COMPLETE WITH DIAGRAM OF PORTION OF PIPING TESTED.
   b. LEAVE UNCOVERED AND UNCONCEALED NEW, ALTERED, EXTENDED, OR REPLACED DRAINAGE PIPING UNTIL IT HAS BEEN TESTED AND APPROVED. EXPOSE WORK THAT WAS COVERED OR CONCEALED BEFORE IT WAS TESTED.
   c. TEST PROCEDURE: TEST DRAINAGE PIPING ON COMPLETION OF ROUGHING IN. CLOSE OPENINGS IN PIPING SYSTEM AND FILL WITH WATER TO POINT OF OVERFLOW, BUT NOT LESS THAN 10-FOOT HEAD OF WATER. FROM 15 MINUTES BEFORE INSPECTION STARTS TO COMPLETION OF INSPECTION, WATER LEVEL MUST NOT DROP. INSPECT JOINTS FOR LEAKS.
   d. REPAIR LEAKS AND DEFECTS WITH NEW MATERIALS AND RETEST PIPING, OR PORTION THEREOF, UNTIL SATISFACTORY RESULTS ARE OBTAINED.
   e. PREPARE REPORTS FOR TESTS AND REQUIRED CORRECTIVE ACTION.

L. DOMESTIC WATER PIPING

1. ABOVE GROUND PIPING 3" AND SMALLER SHALL BE ASTM B88 TYPE L COPPER TUBING WITH ANSI B16.22 WROUGHT COPPER SOLDER JOINT FITTINGS. 4" AND LARGER SHALL BE ASTM A53 SCHEDULE 40 GALVANIZED STEEL PIPE WITH MALLEABLE OR DUCTILE IRON HOT DIPPED GALVANIZED MECHANICAL GROOVED WITH U.L. APPROVED FITTINGS AND COUPLINGS.

2. PIPING TESTS:

   p. FILL DOMESTIC. CHECK COMPONENTS TO DETERMINE THAT THEY ARE NOT AIR BOUND AND THAT PIPING IS FULL OF WATER.
   q. TEST FOR LEAKS AND DEFECTS IN NEW PIPING AND PARTS OF EXISTING PIPING THAT HAVE BEEN ALTERED, EXTENDED, OR REPAIRED. IF TESTING IS PERFORMED IN SEGMENTS, SUBMIT A SEPARATE REPORT FOR EACH TEST, COMPLETE WITH DIAGRAM OF PORTION OF PIPING TESTED.
   r. LEAVE NEW, ALTERED, EXTENDED, OR REPLACED DOMESTIC WATER PIPING UNCOVERED AND UNCONCEALED UNTIL IT HAS BEEN TESTED AND APPROVED. EXPOSE WORK THAT WAS COVERED OR CONCEALED BEFORE IT WAS TESTED.
   s. CAP AND SUBJECT PIPING TO STATIC WATER PRESSURE OF 50 PSIG ABOVE OPERATING PRESSURE, WITHOUT EXCEEDING PRESSURE RATING OF PIPING SYSTEM MATERIALS. ISOLATE TEST SOURCE AND ALLOW TO STAND FOR FOUR HOURS. LEAKS AND LOSS IN TEST PRESSURE CONSTITUTE DEFECTS THAT MUST BE REPAIRED.
   e. REPAIR LEAKS AND DEFECTS WITH NEW MATERIALS AND RETEST PIPING OR PORTION THEREOF UNTIL SATISFACTORY RESULTS ARE OBTAINED.
   f. PREPARE REPORTS FOR TESTS AND FOR CORRECTIVE ACTION REQUIRED.

M. PIPE HANGERS AND SUPPORTS:

1. EXCEPT AS OTHERWISE INDICATED, PROVIDE FACTORY FABRICATED PIPE HANGERS AND SUPPORTS COMPLYING WITH MSS SP-58, OR ONE OF THE FOLLOWING TYPES LISTED, SELECTED BY INSTALLER TO SUIT PIPING SYSTEMS, IN ACCORDANCE WITH MSS SP-69 AND MANUFACTURER'S PUBLISHED PRODUCT INFORMATION.

2. STRUCTURAL PERFORMANCE: HANGERS AND SUPPORTS FOR HVAC PIPING AND EQUIPMENT SHALL WITHSTAND THE EFFECTS OF GRAVITY LOADS AND STRESSES WITHIN LIMITS AND UNDER CONDITIONS INDICATED ACCORDING TO ASCE/SEI 7.

3. HANGERS FOR PIPE SIZES 1/2" TO 1-1/2": MALLEABLE IRON, ADJUSTABLE SWIVEL SPLIT RING. HANGERS FOR PIPE SIZES 2" AND LARGER: CARBON STEEL, ADJUSTABLE, CLEVIS.

4. WALL SUPPORT FOR PIPE SIZES TO 3": CAST IRON HOOK.

5. COPPER PIPE SUPPORT: CARBON STEEL RING, ADJUSTABLE COPPER PLATED.

6. PIPE SUPPORTS SHALL BE 5' ON CENTERS AND WITHIN 12" OF EACH HORIZONTAL ELBOW.

4. ACCEPTABLE MANUFACTURERS: ANVIL, CLEVIS, GRINNELL, FEE AND MASON, ELCEN, UNISTRUT, PHD.

N. PIPING INSULATION

1. ACCEPTABLE MANUFACTURERS: OWENS-CORNING, KNAUF, CERTAINTEED, PITTSBURG-CORNING

2. DOMESTIC HOT, HOT WATER RECIRC., & COLD WATER SHALL BE INSULATED WITH 1" GLASS FIBER NON-COMBUSTABLE PREFORMED INSULATION, ASTM C547 WITH A "K" VALUE OF .23" AT 75°F AND FACTORY APPLIED VAPOR BARRIER JACKET. VAPOR BARRIER JACKETS SHALL BE KRAFT REINFORCED WHITE VAPOR BARRIER WITH SELF-SEALING ADHESIVE JOINTS.

O. VALVES:

1. ACCEPTABLE MANUFACTURERS: APOLO, NIBCO, CRANE.

2. IF VALVE APPLICATIONS ARE NOT INDICATED, USE THE FOLLOWING:

   a. SHUTOFF SERVICE: BALL, BUTTERFLY, OR GATE VALVES.
   b. THROTTLING SERVICE: GLOBE, BALL, OR BUTTERFLY VALVES
   c. PUMP-DISCHARGE: CHECK VALVES

3. GATE VALVES UP TO 3" SHALL BE BRONZE BODY, NON RISING STEM AND HANDWHEEL, INSIDE SCREW, WEDGE DISC, SOLDER ENDS. 4" AND LARGER SHALL BE IRON BODY, BRONZE TRIM, OS&Y, FLANGED ENDS.

4. GLOBE VALVES UP TO 3" SHALL BE BRONZE BODY, RISING STEM AND HANDWHEEL, INSIDE SCREW, RENEWABLE COMPOSITION DISC, SOLDER ENDS, WITH BACK SEATING CAPACITY. 4" AND LARGER SHALL BE IRON BODY, BRONZE MOUNTED, FLANGED ENDS.

5. BALL VALVES UP TO 2" SHALL BE BRONZE BODY, STAINLESS STEEL BALL, TEFLON SEATS AND STUFFING BOX RING, LEVER HANDLE, SOLDER ENDS.

6. SWING CHECK VALVES UP TO 2 1/2" SHALL BE BRONZE SWING DISC, RENEWABLE DISC AND SEAT SOLDER ENDS. 3" AND LARGER SHALL BE IRON BODY, BRONZE TRIM, RENEWABLE DISC AND SEAT, FLANGED ENDS WITH LEVER AND WEIGHT OR SPRING.

7. INSTALL CHAINWHEELS ON OPERATORS FOR GATE VALVES NPS 4 AND LARGER AND MORE THAN 96 INCHES ABOVE FLOOR. EXTEND CHAINS TO 60 INCHES ABOVE FINISHED FLOOR.

P. DOMESTIC WATER PIPING SPECIALTIES

1. FLOOR DRAINS TO BE PROVIDED WITH ASSE #1072 TRAP SEALS.

Q. SANITARY PIPING SPECIALTIES

1. ACCEPTABLE MANUFACTURES - JOSAM, ZURN, WADE, SMITH

2. FLOOR CLEANOUTS (FCO) SHALL BE DUCO CAST IRON, TWO PIECE BODY INTERNAL GASKETED ABS CLEANOUT PLUG AND ADJUSTABLE HOUSING WITH SCORIATED SECURED ROUND NICKEL BRONZE TOP. J.R. SMITH MODEL 4020.

3. ROOF FLASHING ASSEMBLIES: MANUFACTURED ASSEMBLY MADE OF 4.0-LB/SQ. FT., 0.0625-INCH- THICK, LEAD FLASHING COLLAR AND SKIRT EXTENDING AT LEAST 8 INCHES FROM PIPE, WITH GALVANIZED-STEEL BOOT REINFORCEMENT AND COUNTERFLASHING FITTING.

4. EXECUTION
   a. INSTALL AIR-GAP FITTINGS ON DRAINING-TYPE BACKFLOW PREVENTERS AND ON INDIRECT-WASTE PIPING DISCHARGE INTO SANITARY DRAINAGE SYSTEM.

R. PLUMBING FIXTURES

1. PLUMBING FIXTURES ARE SPECIFIED IN THE PLUMBING FIXTURE SCHEDULE

2. ACCEPTABLE MANUFACTURERS:

WC'S, LAVS, URINALS - AMERICAN STANDARD, ZURN, SLOAN, KOHLER.

WC SEATS - OSONITE, CHURCH, BEMIS,

EWC'S - ELKAY, HALSEY-TAYLOR, OASIS.

S. CLEANING

CLEAN AND DISINFECT POTABLE DOMESTIC WATER PIPING AS FOLLOWS:
1. PURGE NEW PIPING AND PARTS OF EXISTING PIPING THAT HAVE BEEN ALTERED, EXTENDED, OR REPAIRED BEFORE USING.
2. USE PURGING AND DISINFECTING PROCEDURES PRESCRIBED BY AUTHORITIES HAVING JURISDICTION; IF METHODS ARE NOT PRESCRIBED, USE PROCEDURES DESCRIBED IN EITHER AWWA C651 OR AWWA C652 OR FOLLOW PROCEDURES DESCRIBED BELOW:
   a. FLUSH PIPING SYSTEM WITH CLEAN, POTABLE WATER UNTIL DIRTY WATER DOES NOT APPEAR AT OUTLETS.
   b. FILL AND ISOLATE SYSTEM ACCORDING TO EITHER OF THE FOLLOWING:
      1) FILL SYSTEM OR PART THEREOF WITH WATER/CHLORINE SOLUTION WITH AT LEAST 50 PPM OF CHLORINE. ISOLATE WITH VALVES AND ALLOW TO STAND FOR 24 HOURS.
      2) FILL SYSTEM OR PART THEREOF WITH WATER/CHLORINE SOLUTION WITH AT LEAST 200 PPM OF CHLORINE. ISOLATE AND ALLOW TO STAND FOR THREE HOURS.
   c. FLUSH SYSTEM WITH CLEAN, POTABLE WATER UNTIL NO CHLORINE IS IN WATER COMING FROM SYSTEM AFTER THE STANDING TIME.
   d. SUBMIT WATER SAMPLES IN STERILE BOTTLES TO AUTHORITIES HAVING JURISDICTION. REPEAT PROCEDURES IF BIOLOGICAL EXAMINATION SHOWS CONTAMINATION.

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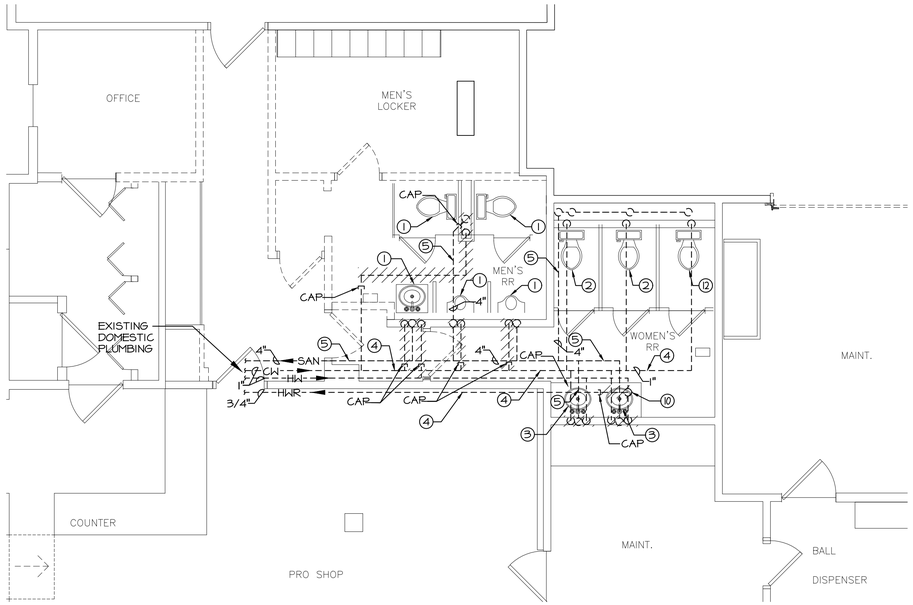
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FLOOR PLAN - PLUMBING DEMOTLITION

drawn by: CPK

checked by: ADO

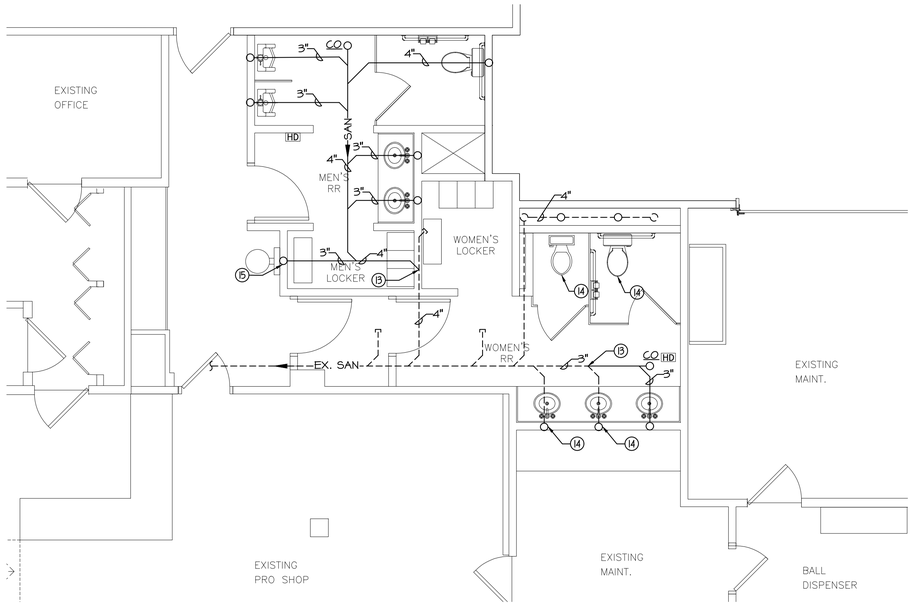
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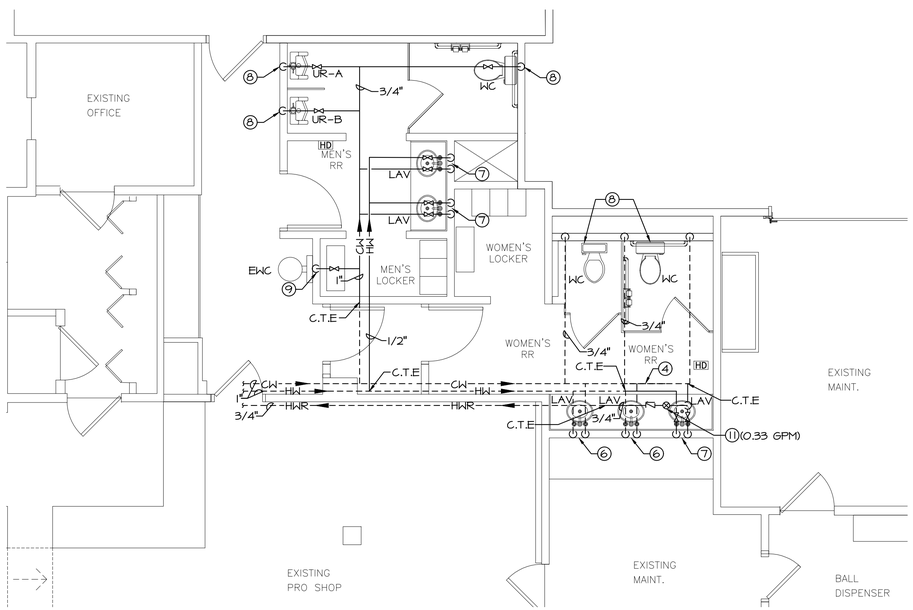
PARTIAL FLOOR PLAN - PLUMBING DEMOLITION

SCALE: 1/4"=1'-0"



PARTIAL FLOOR PLAN - UNDERGROUND PLUMBING

SCALE: 1/4"=1'-0"



PARTIAL FLOOR PLAN - PLUMBING

SCALE: 1/4"=1'-0"

CODED NOTES:

1. EXISTING PLUMBING FIXTURE IS TO BE REMOVED. REMOVE SANITARY PIPING BACK TO BELOW GRADE, CAP, AND ABANDON IN PLACE. REMOVE ASSOCIATED DOMESTIC PIPING BACK TO THE POINT SHOWN AND CAP.
2. EXISTING FIXTURE IS TO BE REMOVED. REMOVE SANITARY AND CW PIPING BACK TO WALL, CAP, AND PREPARE FOR CONNECTION TO NEW FIXTURE.
3. EXISTING FIXTURE IS TO BE REMOVED. REMOVE ASSOCIATED SANITARY LINE BACK TO THE WALL, CAP, AND PREPARE FOR RECONNECTION TO NEW FIXTURE. REMOVE ASSOCIATED DOMESTIC LINES BACK TO THE POINT SHOWN AND CAP.
4. APPROXIMATE LOCATION OF EXISTING DOMESTIC PIPING TO REMAIN. FIELD VERIFY EXACT SIZE AND LOCATION.
5. APPROXIMATE LOCATION OF EXISTING SANITARY LINE TO REMAIN. FIELD VERIFY EXACT SIZE, LOCATION AND INVERT PRIOR TO STARTING NEW WORK.
6. CONNECT NEW FIXTURE TO EXISTING CW AND HW LINE IN WALL.
7. 1/2" CW AND HW LINE DOWN FOR CONNECTION TO FIXTURE.
8. CONNECT NEW FIXTURE TO EXISTING CW LINE IN WALL.
9. 1/2" CW LINE DOWN FOR CONNECTION TO FIXTURE.
10. EXISTING HOT WATER RETURN LINE IS TO BE REMOVED BACK TO THE POINT SHOWN AND CAPPED.
11. BALANCE VALVE AND CHECK VALVE. SET BALANCE VALVE TO THE FLOW INDICATED ON DRAWING.
12. EXISTING FIXTURE IS TO BE REMOVED. REMOVE SANITARY AND CW PIPING BACK TO WALL, CAP, AND ABANDON IN PLACE. PATCH WALL TO MATCH EXISTING MATERIAL, QUALITY, AND FINISH.
13. CONNECT NEW SANITARY LINE TO EXISTING. FIELD VERIFY SIZE, LOCATION AND INVERT PRIOR TO STARTING NEW WORK.
14. CONNECT NEW FIXTURE TO EXISTING SANITARY LINE IN WALL.
15. CONNECT SANITARY LINE TO DRINKING FOUNTAIN IN WALL.

GENERAL NOTE:

(1) CONTRACTOR TO VERIFY EXISTING CONDITIONS PRIOR TO CONSTRUCTION.

(2) WALLS, FLOORS, ETC. DISTURBED DURING CONSTRUCTION SHALL BE REPAIRED TO MATCH EXISTING AND/OR TO ACCOMMODATE NEW CONSTRUCTION. COORDINATE WITH GENERAL CONTRACTOR.

(3) ALL DEMOLISHED PIPING TO BE REMOVED TO ABOVE CEILING, BELOW FLOORS, OR TO BEHIND WALLS AS REQUIRED.

(4) ALL REMOVED PLUMBING FIXTURES, NOT TO BE REUSED, SHALL BE DISPOSED-OF BY PLUMBING CONTRACTOR.

(5) REUSED PLUMBING FIXTURES, IF DAMAGED DURING WORK, SHALL BE REPLACED BY PLUMBING CONTRACTOR AT PLUMBING CONTRACTOR'S EXPENSE.

(6) PLUMBING CONTRACTOR IS TO CAMERA/SCOPE THE EXISTING SANITARY SYSTEM TO IDENTIFY EXISTING ROUTINGS AND INVERTS PRIOR TO ANY NEW WORK.

DEMOLITION NOTE:

THIS DEMOLITION PLAN IS FOR GENERAL INFORMATION OF EXISTING PLUMBING PIPING AND FIXTURES AND IS NOT INTENDED TO BE TOTALLY INCLUSIVE OF ALL DEMOLITION REQUIRED. CONTRACTOR SHALL VISIT THE SITE AND VERIFY ALL DEMOLITION REQUIRED. THIS PLAN IS NOT A RECORD DRAWING AND SHALL BE CONSIDERED A GENERAL SCOPE OF THE DEMOLITION REQUIRED. THE CONTRACTOR WILL BE RESPONSIBLE TO DEMOLISH ALL ITEMS NECESSARY FOR THE NEW WORK (ALL TRADES) TO BE PERFORMED PROPERLY, AND THE CONTRACTOR WILL BE RESPONSIBLE TO RELOCATE ALL PLUMBING PIPING THAT IS TO REMAIN ACTIVE. THE CONTRACTOR SHALL VISIT THE SITE AND THOROUGHLY INSPECT THE CURRENT FIELD CONDITIONS AT THE PROJECT SITE.

NO DEMOLITION THAT WILL AFFECT THE OWNER'S USE OF NEARBY OCCUPIED SPACES WILL BE PERMITTED WITHOUT FIRST SECURING THE OWNER'S AUTHORIZATION.

NO ATTEMPT HAS BEEN MADE TO SHOW THE EXTENT OF ARCHITECTURAL/ PLUMBING/GENERAL DEMOLITION WORK ON THE PLUMBING DRAWINGS. CONTRACTOR SHALL REFER TO THE ARCHITECTURAL AND PLUMBING DRAWINGS FOR SUCH DETAILS.

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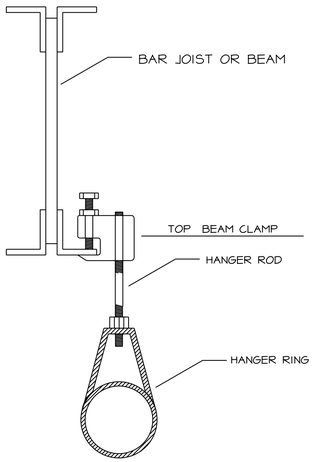
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FLOOR PLAN - PLUMBING DEMOLITION

drawn by: CPK

checked by: ADO

sheet number: P100

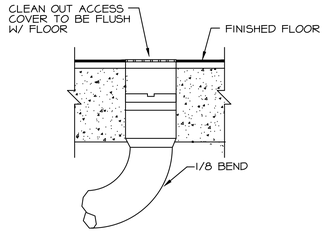
job number: 26060



PIPE HANGER DETAIL

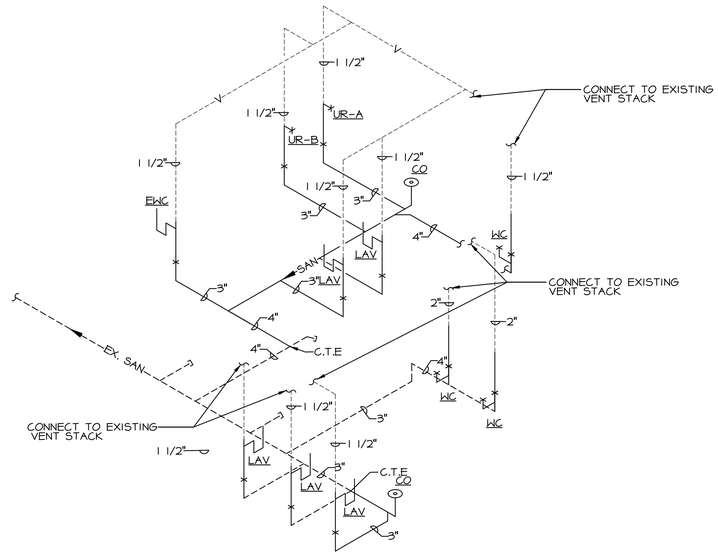
N.T.S.

(1) HANGER ROD SIZE AND LENGTH TO BE DETERMINED BY CONTRACTOR TO SUIT FIELD CONDITIONS.



FLOOR CLEANOUT DETAIL

N.T.S.



SANITARY ISOMETRIC

N.T.S.

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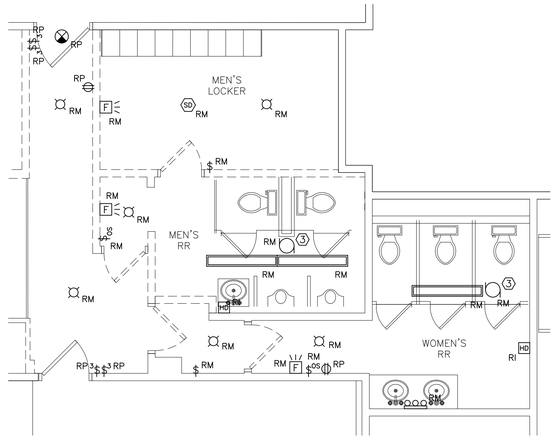
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PLUMBING DETAILS

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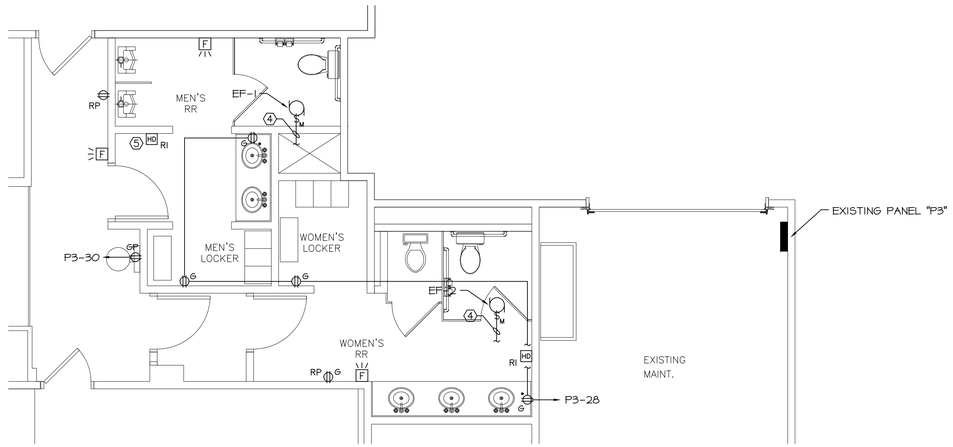
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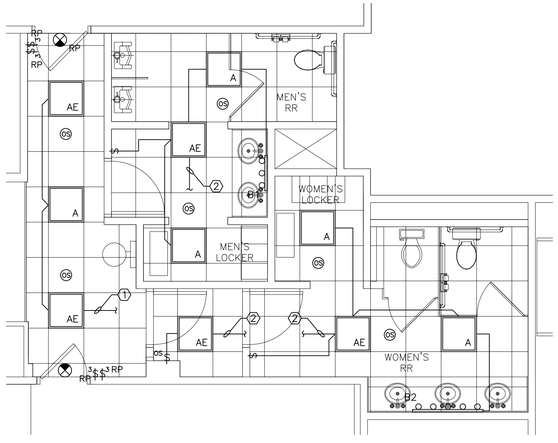
PARTIAL FLOOR PLAN - ELECTRICAL DEMOLITION

SCALE: 1/4"=1'-0"



PARTIAL FLOOR PLAN - POWER AND SYSTEMS

SCALE: 1/4"=1'-0"



PARTIAL FLOOR PLAN - LIGHTING

SCALE: 1/4"=1'-0"

DEMO KEY

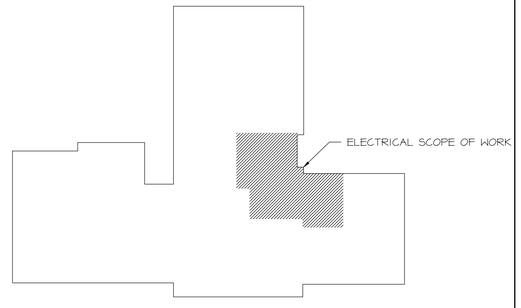
RM	-	REMOVE DEVICE OR FIXTURE. PATCH TO MATCH AS REQUIRED.
RP	-	REPLACE DEVICE OR FIXTURE.
RI	-	REPLACE DEVICE OR FIXTURE AND REINSTALL. EXTEND/ REPLACE/REROUTE WIRING AS NECESSARY.
EX	-	EXISTING DEVICE OR FIXTURE TO REMAIN. REWIRE AS SHOWN OR REQUIRED. RELAMP EXISTING FIXTURES. PROVIDE NEW BALLASTS AS REQUIRED.

DEMOLITION NOTES:

1. THIS DEMOLITION PLAN IS FOR GENERAL INFORMATION OF EXISTING DEVICES AND EQUIPMENT AND IS NOT INTENDED TO BE TOTALLY INCLUSIVE OF ALL DEMOLITION REQUIRED. CONTRACTOR SHALL VISIT THE SITE AND VERIFY ALL DEMOLITION REQUIRED. THIS PLAN IS NOT A RECORD DRAWING AND SHALL BE CONSIDERED A GENERAL SCOPE OF THE DEMOLITION REQUIRED. THE CONTRACTOR WILL BE RESPONSIBLE TO DEMOLISH ALL ITEMS NECESSARY FOR THE NEW WORK (ALL TRADES) TO BE PERFORMED PROPERLY, AND THE CONTRACTOR WILL BE RESPONSIBLE TO RELOCATE ALL ELECTRICAL, TELEPHONE, CATV, ETC. WIRING THAT IS TO REMAIN ACTIVE. THE CONTRACTOR SHALL VISIT THE SITE AND THOROUGHLY INSPECT THE CURRENT FIELD CONDITIONS AT THE PROJECT SITE.
2. NO DEMOLITION THAT WILL AFFECT THE OWNER'S USE OF NEARBY OCCUPIED SPACES WILL BE PERMITTED WITHOUT FIRST SECURING THE OWNER'S AUTHORIZATION.
3. NO ATTEMPT HAS BEEN MADE TO SHOW THE EXTENT OF ARCHITECTURAL/ MECHANICAL/GENERAL DEMOLITION WORK ON THE ELECTRICAL DRAWINGS. CONTRACTOR SHALL REFER TO THE ARCHITECTURAL AND MECHANICAL DRAWINGS FOR SUCH DETAILS.
4. THE CONTRACTOR IS RESPONSIBLE TO DISPOSE OF THE EXISTING LIGHTING FIXTURES, BALLAST AND LAMPS IN A LEGAL MANNER IN STRICT ACCORDANCE WITH THE EPA DIRECTIVE. THE CONTRACTOR SHALL PAY ALL EXPENSES ASSOCIATED WITH THE DISPOSAL.

NOTES

1. RECONNECT TO EXISTING ROOM LIGHTING CIRCUIT AND SWITCHING.
2. RECONNECT TO EXISTING ROOM LIGHTING CIRCUIT AND SWITCH AS SHOWN.
3. EXISTING EXHAUST FAN TO BE REMOVED. REMOVE ALL ASSOCIATED ELECTRICAL ITEMS AS REQUIRED.
4. CONNECT TO RESPECTIVE ROOM LIGHTING CIRCUIT AND CONTROL WITH LIGHT SWITCH.
5. PROVIDE SURFACE, WALL MOUNTED HAND DRYER WITH HEPA FILTRATION. HAND DRYER TO BE CORROSION RESISTANT. INFRARED OPTICAL SENSOR ACTIVATION. CONTROL TO INCLUDE A SPEED AND SOUND CONTROL MECHANISM, ADJUSTABLE HEAT CONTROL WITH HIGH, MEDIUM, LOW AND OFF SETTING. 1500W MAX, 120V. BASIS OF DESIGN: EXCEL XLERATOR HAND DRYER #XL-SB-H-1.1N-110-120V OR EQUIVALENT MANUFACTURER.



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sheet name:
PARTIAL FLOOR PLANS - ELECTRICAL

drawn by: BMK

checked by: TJC

sheet number:
E101

job number:
26060

GENERAL PROJECT NOTES

1. ALL WORK IN AREAS OUTSIDE OF DESIGNATED CONSTRUCTION AREAS SHALL BE SCHEDULED IN ADVANCE WITH THE OWNER. THE WORK SHALL BE PERFORMED AT TIMES AND DAYS AS DICTATED BY THE OWNER.
2. FOR ALL DEMOLITION ITEMS, VERIFY WHICH ITEMS AND/OR EQUIPMENT THE OWNER DESIRES TO RETAIN AND PLACE SUCH ITEMS ON THE PROPERTY AS LOCATED BY THE OWNER. ALL OTHER ITEMS AND/OR EQUIPMENT SHALL BE REMOVED FROM THE SITE BY THE CONTRACTOR.
3. IT IS NOT INTENDED THAT THE PLANS INDICATE ALL THE NECESSARY BENDS, OFFSETS, PULL BOXES AND OBSTRUCTIONS. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO INSTALL HIS WORK TO CONFORM TO THE STRUCTURE, MAINTAIN HEADROOM AND KEEP OPENINGS AND PASSAGEWAYS CLEAR. REFER TO THE ARCHITECTURAL DRAWINGS FOR DIMENSIONS.
4. IT IS NOT INTENDED THAT THE PLANS INDICATE ALL CONDUIT ROUTES, PULL BOXES, ETC. CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING ACTUAL CONDUIT ROUTING, QUANTITY AND LOCATION OF PULL BOXES WITHIN ACCESSIBLE LOCATIONS. PROVIDE SCREW-COVER PULL BOXES IN CONDUIT RUNS AS REQUIRED TO LIMIT THE NUMBER OF BENDS TO NO MORE THAN THREE (3) OR 270 DEGREES TOTAL. SIZE PULL BOXES IN ACCORDANCE WITH NEC, ARTICLE 314.28. DOCUMENT ON RECORD DRAWINGS, SIZE AND LOCATION OF PULL BOXES USED IN FEEDER CONDUIT RUNS.
5. ALL CONDUITS SHALL BE CONCEALED, EXCEPT IN ELECTRICAL OR MECHANICAL ROOMS.
6. VERIFY LOCATIONS OF ALL ELECTRICAL EQUIPMENT WITH ARCHITECTURAL DRAWINGS AND INTERIOR DETAILS AND FINISHES. IN CENTERING OUTLETS AND LOCATING BOXES AND OUTLETS, ALLOW FOR OVERHEAD PIPES, DUCTS, AND MECHANICAL EQUIPMENT, VARIATIONS IN FIREPROOFING AND PLASTERING, WINDOW AND DOOR TRIM, PANELING, HUNG CEILINGS AND THE LIKE, AND CORRECT ANY INACCURACY RESULTING FROM FAILURE TO DO SO WITHOUT EXPENSE TO OWNER.
7. REFER TO ARCHITECTURAL CASEWORK ELEVATIONS FOR EXACT PLACEMENT OF ABOVE-COUNTER MOUNTED DEVICES. COORDINATE LOCATION AND INSTALLATION OF OUTLET BOXES WITH MILLWORK SUPPLIER.
8. PROVIDE REQUIRED EXPANSION/DEFLECTION FITTINGS AT LOCATIONS WHERE CONDUIT PASSES THRU EXPANSION JOINTS. FITTINGS SHALL ALLOW SEISMIC MOVEMENT REQUIRED BY STRUCTURAL ENGINEER.
9. PROVIDE 24" MINIMUM HORIZONTAL SEPARATION BETWEEN OUTLET BOXES INSTALLED ON OPPOSITE SIDES OF A COMMON WALL SO AS TO MAINTAIN ACOUSTICAL INTEGRITY OF WALL AND FIRE RATING. PROVIDE UL LISTED FIRE RATED SEALS FOR ALL RACEWAY PENETRATIONS THRU FIRE RATED WALLS, SLABS, AND CEILINGS IN ACCORDANCE WITH NEC 300.21. PROPOSED FIRE-STOPPING MATERIAL SHALL BE SUBMITTED FOR APPROVAL BY THE LOCAL FIRE INSPECTOR PRIOR TO INSTALLATION.
10. CONNECT ALL ELECTRONIC DOOR DEVICES PROVIDED UNDER DIVISION 8. COORDINATE MOUNTING LOCATIONS AND WIRING REQUIREMENTS WITH DOOR HARDWARE SUPPLIER.
11. PROVIDE ALL CUTTING AND PATCHING WHICH MAY BE REQUIRED FOR THE PROPER INSTALLATION OF THE NEW ELECTRICAL WORK. ALL PATCHING SHALL BE OF THE SAME MATERIALS, WORKMANSHIP, AND FINISH AND SHALL ACCURATELY MATCH ALL ADJACENT WORK.
12. PLAN INSTALLATION OF NEW WORK AND CONNECTIONS TO EXISTING WORK TO INSURE MINIMUM INTERFERENCE WITH REGULAR OPERATION OF EXISTING FACILITIES. ALL SYSTEM SHUTDOWNS AFFECTING OTHER AREAS SHALL BE COORDINATED WITH BUILDING OWNER. ALARM, EMERGENCY AND LIFE SAFETY SYSTEMS SHALL NOT BE INTERRUPTED OR COMPROMISED. ALL SHUTDOWNS/INTERRUPTIONS SHALL BE DURING PREMIUM TIME.
13. REMOVE OR RELOCATE ANY EXISTING ELECTRICAL ITEM OR DEVICE NECESSARY FOR EXISTING OR NEW INSTALLATION BUT INTERFERING WITH NEW INSTALLATION. RECONNECT ANY ELECTRICAL ITEM THAT IS RELOCATED. SPLICE OR RE-ROUTE AND EXTEND EXISTING BRANCH CIRCUIT WIRING FROM THE ORIGINAL LOCATION OF THE DEVICE TO IT'S NEW LOCATION. FOR ALL ELECTRICAL ITEMS THAT ARE REMOVED AND AND NOT RELOCATED, DISCONNECT AND REMOVE ALL ASSOCIATED WIRING BACK TO IT'S SOURCE, JUNCTION BOX OR NEXT DEVICE TO REMAIN FOR FUTURE EXTENSION.
14. CUT, CHANNEL OR FISH EXISTING WALLS SCHEDULED TO REMAIN AS REQUIRED TO INSTALL ELECTRICAL ITEMS AS SHOWN ON THE PLANS. WHERE EXISTING WALLS HAVE BEEN CUT, PATCH AND FINISH WALL SURFACE TO MATCH ADJACENT AREA AS DIRECTED BY ARCHITECT.
15. PATCH EXISTING WALLS OR CEILINGS SCHEDULED TO REMAIN FOLLOWING REMOVAL OF ANY ELECTRICAL ITEM OR DEVICE THAT WILL NOT BE REPLACED DURING THE NEW CONSTRUCTION PHASE. MATCH EXISTING WALL OR CEILING SURFACE AND FINISH. RELATED WORK SHALL BE PERFORMED BY WORKERS SKILLED IN THAT TRADE.
16. REMOVE AND RE-INSTALL CEILING TILES AS REQUIRED FOR ELECTRICAL WORK IN AREAS WHERE NO OTHER TRADES ARE INVOLVED. REPLACE ANY TILES THAT ARE DAMAGED DURING REMOVAL OR REINSTALLATION WITH NEW TILES TO MATCHING EXISTING.
17. THE CONTRACTOR SHALL VISIT THE SITE AND THOROUGHLY EXAMINE THE EXISTING CONDITIONS AND THE EXISTING CONDITIONS IMPACT ON THE WORK TO BE PERFORMED. THE CONTRACTOR WILL NOT RECEIVE ADDITIONAL COMPENSATION FOR WORK NECESSARY TO COMPLETE THE INTENDED INSTALLATION DUE TO EXISTING CONDITIONS.
18. ALL BRANCH CIRCUITS MUST HAVE SEPARATE NEUTRALS.
19. FOR ALL FLUORESCENT AND/OR LED FIXTURES, PROVIDE A DISCONNECTING MEANS TO DISCONNECT SIMULTANEOUSLY FROM THE SOURCE OF SUPPLY ALL CONDUCTORS OF THE BALLAST, INCLUDING THE GROUNDED CONDUCTOR, IF ANY. THIS REQUIREMENT SHALL BE IN STRICT ACCORDANCE WITH ARTICLE 410.73 (G) OF THE N.E.C.
20. FOR ALL SMOKE DETECTOR INSTALLATIONS, SMOKE DETECTORS SHALL BE A MINIMUM OF THREE (3) FEET FROM ANY SUPPLY OR RETURN AIR DIFFUSER, IN ACCORDANCE WITH NFPA 72.
21. PROVIDE LOW VOLTAGE WIRING FOR ALL LED FIXTURES BETWEEN THE FIXTURES AND TO THE WALL SWITCH SWITCH/CONTROL PANEL FOR DIMMING.
22. THE CONTRACTOR SHALL PROVIDE THE FOLLOWING ITEMS TO BE LOCATED IN THE FIELD. THESE ITEMS ARE IN ADDITION TO THOSE SHOWN ELSEWHERE ON THE DRAWINGS. ASSUME 80' OF WIRING FOR EACH RESPECTIVE DEVICE:

    A. TWO DUPLEX RECEPTACLES (⏚)

23. ALL FLOOR MOUNTED ELECTRICAL PANELS, SWITCH BOARDS, TRANSFER SWITCHES, ETC. SHALL HAVE A 4" CONCRETE PAD.
24. THE CONTRACTOR SHALL INCLUDE ALL FEES FROM ELECTRICAL UTILITY.
25. THE CONTRACTOR SHALL VERIFY SHORT CIRCUIT FAULT CURRENT AND ARC FLASH VALUE WITH UTILITY COMPANY PRIOR TO PURCHASE OF EQUIPMENT AND PROVIDE LABELING AND EQUIPMENT AS REQUIRED BY NFPA 70E AND NEC 110.16.
26. THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR FIRE ALARM VENDOR DRAWINGS PER OBC 907.1. THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE TO SUBMIT THE FIRE ALARM DRAWINGS TO ALL LOCAL AND STATE BUILDING DEPARTMENTS AS REQUIRED.
27. PROVIDE INTEGRAL TVSS ON ALL EMERGENCY SYSTEMS SWITCHBOARDS AND PANELBOARDS PER NEC 700.8.
28. PROVIDE ARC ENERGY REDUCTION FOR ALL OVERCURRENT DEVICES 1200 AMPS OR HIGHER PER NEC 240.87.
29. SEAL ALL EXISTING AND NEW CONDUIT PENETRATIONS THROUGH ALL WALLS WITH EITHER RED FIRE CAULKING (IF WALLS ARE RATED) OR WHITE SOUND CAULKING (IF WALL AREA NOT RATED) AS REQUIRED.

LIGHTING FIXTURE SCHEDULE

MARK	DESCRIPTION	WATTAGE	VOLTS	MOUNTING	REMARKS
A	LITHONIA #CPX-2X2-3200LM-80CRI-35K-SWL-MIN10-ZT-MVOLT 2' X 2' LED FLAT PANEL	39	120	LAY-IN	
AE	LITHONIA #CPX-2X2-3200LM-80CRI-35K-SWL-MIN10-ZT-MVOLT -EW10 2' X 2' LED FLAT PANEL W/ EMERGENCY DRIVER	39	120	LAY-IN	
B1	LITHONIA #FMVCSLS-24IN-MVOLT-30K-35K-40K-90CRI-BN 24" LED VANITY LIGHT	27	120	WALL	VERIFY COLOR SELECTION IF ARCHITECT. SET CCT AT 35K.
B2	LITHONIA #FMVCSLS-48IN-MVOLT-30K-35K-40K-90CRI-BN 48" LED VANITY LIGHT	36	120	WALL	VERIFY COLOR SELECTION IF ARCHITECT. SET CCT AT 35K.
⊗	LITHONIA #LQM-S-W-RG-MVOLT-EL EMERGENCY EXIT FIXTURE	5W	120	UNIVERSAL	SHADED PORTION DENOTES ORIENTATION. PROVIDE (2) FACE WHERE SHOWN OR REQUIRED.

MECHANICAL EQUIPMENT SCHEDULE

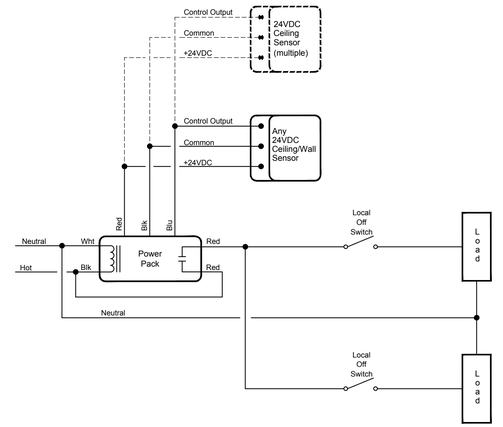
MARK	DESCRIPTION	HP	KVA	VOLTAGE/Ø	STARTER	COMBO STARTER AT LOAD	SAFETY SWITCH AT LOAD	NOTES
EF-1	EXHAUST FAN	FRAC	N/A	120/1	N/A	N/A	MANUAL STARTER	1,2,3
EF-2	EXHAUST FAN	FRAC	N/A	120/1	N/A	N/A	MANUAL STARTER	1,2,3

MECHANICAL EQUIPMENT SCHEDULE NOTES:

1. MAKE FIELD CONNECTIONS WITH GREENFIELD FLEX AND FITTINGS. SIZE AS NOTED OR REQUIRED.
2. FURNISH AND INSTALL MANUAL MOTOR STARTER.
3. CONNECT TO LOCAL LIGHTING CIRCUIT AND SWITCH WITH ROOM LIGHTING.

SYMBOL SCHEDULE

SYMBOL	DESCRIPTION
$	HUBBELL #HBL1221-I SINGLE POLE TOGGLE SWITCH 20A 120-277V
$3	HUBBELL #HBL1223-I 3 WAY TOGGLE SWITCH 20A 120-277V
$OS	HUBBELL #AD2000I1 DUAL TECHNOLOGY OCCUPANCY SENSOR/WALL SWITCH
⏚	HUBBELL #5352I 20A DUPLEX RECEPTACLE 125 VOLT WITH BRASS BACK STRAP
⏚•	DOT DENOTES TO INSTALL DEVICE ABOVE COUNTER TOP SEE ARCHITECTURAL DRAWINGS. COORDINATE AS NECESSARY. VERIFY MOUNTING HEIGHTS.
G OR GFI WP	HUBBELL #GF20IL - WP DENOTES WEATHER PROOF COVER - HUBBELL #WP26M GFCI DUPLEX RECEPTACLE
GP	HUBBELL 20A DUPLEX RECEPTACLE 125 VOLT WITH BRASS BACK STRAP GFCI PROTECTED UPSTREAM BY GFCI RECEPTACLE OR GFCI CIRCUIT BREAKER. LABEL COVER PLATE AS "GFCI PROTECTED".
F	PROVIDE SYSTEM COMPATIBLE DEVICE AND TIE INTO EXISTING FIRE ALARM SYSTEM. ADA STROBE UNIT 6" DOWN FROM FINISHED CEILING BUT MAX. OF 80" ABOVE FINISHED FLOOR - MINI UNIT
OS	HUBBELL #ATD2000CRP SENSOR, #CU300A POWER PACK 24VDC DUAL TECHNOLOGY OCCUPANCY SENSOR
J	JUNCTION BOX - SIZE AS REQUIRED
HD	HAND DRYER
$M	MANUAL MOTOR STARTER
◄─//	LONG SLASH DENOTES NEUTRAL CONDUCTOR, SHORT SLASH DENOTES PHASE CONDUCTOR AND\SLASH DENOTES ISOLATED GROUND CONDUCTOR



OCCUPANCY SENSOR WIRING DIAGRAM

N.T.S.

EXISTING PANEL "P3"

100 AMP MLO | 1 PH | 3 W | 240/120 VOLT | AIC SURFACE MTD

DESCRIPTION	CIR NO	LOAD	C.B. AMP		C.B. AMP	LOAD	CIR NO	DESCRIPTION
EXISTING	1		50		30		2	EXISTING
↓	3						4	↓
EXISTING	5		20		15		6	EXISTING
EXISTING	7		20		20		8	EXISTING
EXISTING	9		20				10	↓
EXISTING	11		20		20		12	EXISTING
EXISTING	13		20		20		14	EXISTING
EXISTING	15		20		20		16	EXISTING
EXISTING	17		20		20		18	EXISTING
EXISTING	19		20		20		20	EXISTING
EXISTING	21		20		20		22	EXISTING
EXISTING	23		20		20		24	EXISTING
EXISTING	25		20		20		26	EXISTING
EXISTING	27		30		20	720	28	RECEPS LR'S, RR'S
EXISTING	29		20		•20	500	30	WATER COOLER

NOTES:
1. PROVIDE CIRCUIT BREAKERS IN EXISTING PANEL TO MATCH THIS LAYOUT AS SHOWN. MATCH EXISTING PANEL AIC RATING.

• - DENOTES GFCI TYPE CIRCUIT BREAKER

STATE OF OHIO ★ TIMOTHY J. COY E-69073 ★ REGISTERED PROFESSIONAL ENGINEER

tda thendesign architecture

ERIE SHORES GOLF
COURSE RENOVATIONS

7298 LAKE ROAD EAST
MADISON, OHIO 44057

no.	description	date
01	PERMIT	10.21.26

revisions / issues

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sheet name:
SYMBOLS, SCHEDULES, DIAGRAMS, NOTES

drawn by: BMK

checked by: TJC

sheet number: E201

job number: 26060

GENERAL ELECTRICAL SPECIFICATIONS

ELECTRICAL REQUIREMENTS

1. THE INTENT OF THESE SPECIFICATIONS AND NOTES IS FOR THE CONTRACTOR TO PROVIDE ALL LABOR, MATERIAL, SUPERVISION, AND EQUIPMENT NECESSARY FOR A COMPLETE ELECTRICAL INSTALLATION AS DESCRIBED IN THE DRAWINGS AND SPECIFICATIONS FOR A FULLY OPERATIVE ELECTRICAL SYSTEM.

2. THE ELECTRICAL INSTALLATION OF EQUIPMENT AND OTHER WORK SHALL COMPLY WITH OR EXCEED ALL REQUIREMENTS OF THE LATEST EDITION OF THE NATIONAL ELECTRIC CODE AND ALL STATE AND LOCAL CODES AND ORDINANCES APPLICABLE TO THIS PROJECT.

3. THE CONTRACTOR SHALL SECURE ALL NECESSARY PERMITS REQUIRED BY LAWS, REGULATIONS, CODES OR ORDINANCES, NECESSARY TO FURNISH AND INSTALL ALL WORK INDICATED ON THE PLANS OR HEREIN SPECIFIED.

4. THE ENTIRE ELECTRICAL INSTALLATION SHALL BE IN COMPLIANCE WITH OR EXCEED THE REQUIREMENTS OF THE LATEST EDITION OF:
A. THE NATIONAL ELECTRICAL CODE, NFPA 70
B. THE NATIONAL FIRE ALARM CODE, NFPA 72
C. STATE, COUNTY OR LOCAL CODES AND ORDINANCES HAVING JURISDICTION

WIRING METHODS

A. SUMMARY
1. SECTIONS INCLUDE:
a. BASIC MATERIALS AND METHODS.
b. CONDUITS.
c. BUILDING WIRES AND CABLES.
d. WIRE CONNECTIONS AND DEVICES.
e. BOXES.
f. WIRING DEVICES.
2. RELATED SECTIONS:
a. MOTORS AND MOTOR CONTROLS WILL BE FURNISHED AND INSTALLED UNDER OTHER SECTIONS UNLESS OTHERWISE NOTED ON DRAWINGS.

B. SEQUENCING AND SCHEDULING
1. MAKE FINAL ELECTRICAL CONNECTIONS OF BUILDING SIGNAGE FURNISHED AND INSTALLED BY OTHERS IN ACCORDANCE WITH ALL APPLICABLE CODES.
2. MAKE FINAL ELECTRICAL CONNECTIONS TO NEW AND RELOCATED EQUIPMENT.
3. MAKE FINAL ELECTRICAL UTILITY CONNECTION TO MEET DATE REQUIRED.
4. ALL BRANCH CIRCUIT AND HOME RUN CONDUITS SHALL CONSIST OF A MAXIMUM OF 3 CURRENT CARRYING CONDUCTORS UNLESS DERATING OF THE CONDUCTORS IS APPLIED IN STRICT ACCORDANCE WITH ARTICLE 310 OF THE NEC. NO TWO UNGROUNDED CONDUCTORS SHALL BE CONNECTED TO THE SAME CIRCUIT BREAKER IN ANY PANEL. NO SPLICING OF BRANCH CIRCUIT CONDUCTORS IN ANY PANELS, SAFETY SWITCHES, OR CIRCUIT BREAKERS SHALL BE PERMITTED.
5. ANY NEW PIECE OF EQUIPMENT, SWITCH, DEVICE, ETC., SHOWN MOUNTED ON AND/OR ADJACENT TO ANY EQUIPMENT WHICH IF INSTALLED, WOULD IMPAIR THE PROPER OPERATION OF THAT EQUIPMENT, WILL BE REMOVED AND RELOCATED BY THE CONTRACTOR AS REQUIRED IN ORDER THAT EQUIPMENT WILL FUNCTION PROPERLY.

C. SYSTEM DESCRIPTION
1. CODES, PERMITS, AND FEES
a. THIS ELECTRICAL INSTALLATION SHALL COMPLY WITH:
a.1. ALL LAWS APPLICABLE TO THE ELECTRICAL INSTALLATION WITH ARE ENFORCED BY LOCAL AUTHORITIES.
a.2. THE LATEST EDITION OF THE NATIONAL ELECTRICAL CODE, UNLESS AUTHORITY HAVING JURISDICTION STATES OTHERWISE.
a.3. THE REGULATIONS OF THE SERVICING ELECTRICAL UTILITY COMPANY.

D. PROJECT CONDITIONS
1. WIRE, CABLE, AND CONDUIT ROUTING IS SHOWN ON DRAWINGS IN APPROXIMATE LOCATIONS UNLESS DIMENSIONED. DETERMINE EXACT ROUTING AND LENGTHS REQUIRED. DETERMINE CABLE ROUTING TO AVOID INTERFERENCE WITH OTHER WORK. ROUTE PARALLEL AND PERPENDICULAR TO BUILDING CONSTRUCTION FOR COMPLETE WIRING SYSTEM REGARDLESS WHETHER EXPOSED OR CONCEALED

E. PRODUCTS
1. IDENTIFICATION OF EQUIPMENT
a. FURNISH LAMINATED PLASTIC NAME PLATES WITH 3/4 INCH MINIMUM CONTRASTING-COLOR ENGRAVED LETTERS FOR EACH MAIN DISTRIBUTION PANEL, PANELBOARD, SAFETY SWITCH, CONTACTOR, TIME SWITCH, AND PUSH-BUTTON. THE NAMEPLATES SHALL BE BOLTED OR POP-RIVETED TO EQUIPMENT AND SHALL CLEARLY IDENTIFY THE EQUIPMENT OR EQUIPMENT SERVED, AS NOTED ON DRAWINGS.
2. CONDUIT RACEWAYS
a. SIZE ALL CONDUITS IN ACCORDANCE WITH THE NEC, BUT IN NO CASE LESS THAN THE FOLLOWING:
a.1. DATA WIRING, AND TELEPHONE SYSTEMS: 1 INCH MINIMUM, UNLESS OTHERWISE NOTED.
a.2. FLEXIBLE METAL CONDUIT NOT EXCEEDING 72 INCHES FOR CONNECTION OF LIGHT FIXTURES RECESSED IN SUSPENDED CEILINGS: 1/2 INCH MINIMUM.
a.3. OTHER USES: 3/4 INCH MINIMUM.
b. CONDUIT TYPES PERMITTED (MUST BEAR THE UL LABEL):
b.1. GALVANIZED RIGID METAL CONDUIT (GRC), UL 6.
b.2. ALUMINUM RIGID METAL CONDUIT, ANSI C80.5.
b.3. INTERMEDIATE METAL CONDUIT (IMC), UL 1242.
b.4. ELECTRICAL METALLIC TUBING (EMT), ANSI C80.3.
b.5. PVC RIGID NONMETALLIC CONDUIT (PVC): SCHEDULE 40, NEMA TC 2.
b.6. FLEXIBLE METAL CONDUIT: GREENFIELD, WHERE ALLOWED BY LOCAL AURHORITY.
b.7. LIQUIDTIGHT FLEXIBLE METAL CONDUIT: SEAL-TITE, WITH PVC JACKET.
c. CONDUIT REQUIREMENTS:
c.1. BELOW GRADE AND IN SLAB: PVC SCHEDULE 40.
c.2. ABOVE GRADE INDOORS: EMT
c.3. OUTDOORS: GRC AS REQUIRED BY LOCAL AUTHORITY.
c.4. INSIDE WALK-INS: RIGID ALUMINUM CONDUIT.
3. WIRES AND CABLES
a. WIRE AND CABLE AS INDICATED AND REQUIRED BY THE DRAWINGS SHALL BEAR THE UL LABEL AND STAMPING INDICATING WIRE SIZE, TYPE, VOLTAGE, AND GRADE, AND SHALL MEET THE STANDARD SPECIFICATIONS AND TEST ESTABLISHED FOR SUCH MATERIALS AND CONSTRUCTION BY ASTM, NEMA, ANSI, AND IPCEA WHERE APPLICABLE.
b. CONDUCTORS SIZED #12 AWG AND LARGER SHALL BE STRANDED. CONDUCTORS SIZED #14 AWG AND SMALLER SHALL BE SOLID.
c. COMPLY WITH THE FOLLOWING COLOR WIRE AND CABLE CODE:

208/120 SYSTEM	480/277 SYSTEM
PHASE A-BLACK	PHASE A- BROWN
PHASE B-RED	PHASE B- ORANGE
PHASE C- BLUE	PHASE C- YELLOW
NEUTRAL- WHITE	NEUTRAL- GREY
EQUIPMENT GROUND- GREEN	EQUIPMENT GROUND- GREEN

INSTALL IDENTIFICATION TAGS ON EACH CONDUCTOR ENTERING PANEL, SWITCH, JUNCTION BOX AND PULL BOX TO IDENTIFY CONDUCTOR.
d. #12 AND #10 CONDUCTORS SHALL HAVE CONTINUOUS INSULATION COLOR, AS LISTED ABOVE.
e. COLOR CODE CONDUCTORS LARGER THAN ABOVE, WHICH DO NOT HAVE CONTINUOUS INSULATION COLOR BY APPLICATION OF AT LEAST TWO LAPS OF COLORED TAPE ON EACH CONDUCTOR AT ALL POINTS OF ACCESS INCLUDING JUNCTION BOXES. COLOR TAPE SHALL BE THE EQUAL OF 3M PRODUCTS, SCOTCH #35.
f. CONDUCTORS SHALL BE SOFT ANNEALED COPPER INSULATED FOR 600 VOLTS UNLESS SPECIFICALLY INDICATED OTHERWISE. ALUMINUM CONDUCTORS ARE NOT ALLOWED ON THIS PROJECT.
g. USE THE FOLLOWING WIRES AND INSULATION MATERIALS FOR THE APPLICATIONS LISTED BELOW:
g.1. FEEDERS: TYPE THHN/THWN, IN RACEWAY.
g.2. BRANCH CIRCUITS: TYPE THHN/THWN, IN RACEWAY.

TYPE THHN SHALL NOT BE USED IN WET OR DAMP LOCATIONS
h. PROVIDE WIRE AND RACEWAY SYSTEMS AS DESCRIBED HEREIN AND AS INDICATED ON THE DRAWINGS.
i. NO WIRE SHALL BE SMALLER THAN #12 AWG, UNLESS OTHERWISE NOTED, EXCEPT THAT WIRING FOR SIGNAL AND PILOT CONTROL CIRCUITS MAY BE #14 AWG, UNLESS OTHERWISE NOTED.
j. ALL NEUTRALS SHALL BE DEDICATED. SHARING OF NEUTRALS IS NOT PERMITTED.

4. WIRES CONNECTIONS AND DEVICES
a. RUN CONDUCTORS WITHOUT SPLICES FROM OUTLET TO OUTLET, EXCEPT WITHIN JUNCTION BOXES. MAKE SPLICES IN #8 AWG AND SMALLER WIRE WITH INSULATED IDEAL "WINGNUT", 3M "SCOTCHLOK", OR APPROVED SUBSTITUTE CONNECTORS OF PROPER SIZE. 3M NO. 567 IN-LINE SELF-STRIPPING CONNECTORS MAY BE USED FOR BALLAST LEAD CONNECTIONS IN FLUORESCENT LIGHT ROWS ONLY. MAKE SPLICES IN #6 AWG AND LARGER WIRE WITH APPROVED COMPRESSION CONNECTORS. IF ANY OTHER TYPE OF CONNECTOR IS PROPOSED FOR USE ON ANY SIZE CONDUCTOR, SUBMIT FOR APPROVAL PRIOR TO USE.
5. OUTLET BOXES AND CONDUIT FITTINGS
a. OUTLET BOXES:
a.1. SHEET METAL OUTLET BOXES: NEMA OS 1, HOT-DIP GALVANIZED, 4 INCH MINIMUM SQUARE - 2 1/8 INCH DEEP, UNLESS OTHERWISE REQUIRED. BOXES FOR OUTLETS INSTALLED FLUSH IN DRYWALL CONSTRUCTION DRYWALL MAY BE SINGLE OR MULTIPLE GANGS AS REQUIRED. BOXES, SHALL COMPLY WITH NFPA 70 (NATIONAL ELECTRICAL CODE) REGARDING MAXIMUM ALLOWABLE NUMBER OF CONDUCTORS. SINGLE GANG "HANDY BOXES" (2-1/8"X4"X1-1/2") ARE ALLOWED WERE APPLICABLE.
a.2. CAST BOXES: NEMA FB 1, TYPE FD, ALUMINUM. PROVIDE GASKETED COVER BY BOX MANUFACTURER.
b. OUTLET BOXES INTENDED TO SUPPORT LIGHTING FIXTURES SHALL BE APPROVED FOR THE PURPOSE.
c. CONDUIT CONNECTORS:
c.1. ALL FITTINGS INSTALLED FOR RIGID METAL CONDUITS SHALL BE THREADED TYPE UNLESS NOTED OTHERWISE.
c.2. STEEL: APPLETON TW AND TWC SERIES; O.Z./GEDNEY 6000S AND 7000S SERIES; ETP 2200 SERIES. DIE CAST WILL NOT BE APPROVED.
c.3. INDOOR EMT FITTINGS SHALL BE STEEL COMPRESSION TYPE.
c.4. OUTDOOR GRC OR IMC BOX CONNECTIONS SHALL BE MADE WITH MEYERS SEAL-TITE HUBS.
c.5. THREADLESS GRC OR IMC FITTINGS SHALL NOT BE USED. INDOOR GRC OR IMC CONNECTIONS SHALL BE MADE WITH DOUBLE LOCKNUTS AND BUSHINGS. PROVIDE INSULATED BUSHINGS FOR DATA CONDUITS.
c.6. PVC FITTINGS OF THE SOLVENT WELD TYPE SHALL BE USED FOR PVC CONDUIT.
d. SEAL-OFF FITTINGS:
d.1. INSTALL SEAL-OFF FITTINGS WHERE REQUIRED BY CODE OR SHOWN ON THE DEARINGS. USE CROUSE-HINDS EQUAL IN OZ GEDNEY OR APPLETON. INSTALL ALL SEALS USING "CHICO X" FIBER AND "CHICO A" SEALING COMPOUND PRIOR TO FINAL COMPLETION ON THE JOB.
6. WIRING DEVICES - PER SYMBOL SCHEDULE

F. SUPPORTING DEVICES:
1. ELECTRICAL EQUIPMENT SUPPORTS: SUPPORT ELECTRICAL EQUIPMENT WITH UNISTRUT CHANNEL, MINERALLAC PIPE HANGERS, OR IN ANOTHER APPROVED MANNER WHERE DETAILS ARE NOT INDICATED.
2. SLEEVES: SHEET METAL SLEEVES SHALL NOT BE USED. CAULK PENETRATIONS THROUGH OUTSIDE WALLS ABOVE GRADE WITH SEALANT AS SPECIFIED UNDER JOINT SEALANT SECTION OF THESE SPECIFICATIONS.
3. CONDUIT SUPPORTS: HANGARS SHALL BE UNISTRUT SERIES P3000 OR P3300, OR B-LINE TYPE U-CHANNELS AND ACCESSORIES DEPENDING ON THE LOAD AND SPAN INVOLVED. CADDY CLIPS SHALL BE USED ONLY FOR DROP CEILING T-GRID CONSTRUCTION AS REQUIRED. DO NOT SUPPORT CONDUIT FROM CEILING SUSPENSION SYSTEM.
4. ANCHORS, BOLTS, AND SCREWS: FASTEN CONDUIT STRAPS, DISCONNECT SWITCHES, PANELBOARDS, AND OTHER EQUIPMENT SECURED TO WALLS AND SLABS WITH CADMIUM PLATED SCREWS OR BOLTS AND ACKERMAN-JOHNSON LEAD CINCH ANCHORS, EXPANSION BOLTS OR APPROVED SUBSTITUTE ANCHORS OF AN APPROVED MANUFACTURER AND FITTED IN HOLES DRILLED WITH THE PROPER SIZE MASONRY DRILL. WOOD PLUGS WILL NOT BE ACCEPTED AND ANCHORS SHALL BE PROPERLY SIZED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS FOR THE LOAD TO BE SUPPORTED.

G. EXECUTION
1. INSTALLATION
a. INSTALL SPECIFIED MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS AND AS INDICATED ON DRAWINGS.
b. EXISTING ELECTRICAL LINES: IF ANY EXISTING POWER, TELEPHONE, OR OTHER ELECTRICAL LINES AND APPURTENANCES ARE ENCOUNTERED WHICH INTERFERE WITH THE PROPER INSTALLATION OF NEW WORK AND WHICH WILL NOT BE USED IN CONNECTION WITH NEW WORK, CLOSE SUCH ITEMS IN PROPER MANNER AND, IF NECESSARY, MOVE OR REMOVE THE LINES AS DIRECTED BY THE OWNER'S REPRESENTATIVE.
c. CUTTING AND PATCHING: WHERE CUTTING IS REQUIRED THROUGH WALLS, FLOORS, OR CEILINGS, MAKE OPENINGS TO LARGER THAN REQUIRED AND REPAIR AFFECTED SURFACES TO MATCH ADJACENT SURFACES.
d. ELECTRICAL BOXES ARE SHOWN ON DRAWINGS IN APPROXIMATE LOCATIONS UNLESS DIMENSIONED. ADJUST BOX LOCATION UP TO 10 FEET IF REQUIRED TO ACCOMMODATE INTENDED PURPOSE WITH NO ADDITIONAL COST TO CONTRACT.
e. INSTALL BOXES TO PRESERVE FIRE RESISTANCE RATING OF PARTITIONS AND OTHER ELEMENTS, USING MATERIALS AND METHODS SPECIFIED.
f. COORDINATE MOUNTING HEIGHTS AND LOCATIONS OF OUTLETS MOUNTED ABOVE COUNTERS, BENCHES, AND BACKSPLASHES.
g. LOCATE OUTLET BOXES TO ALLOW LUMINAIRES POSITIONED AS SHOWN ON DRAWINGS.
h. ALIGN ADJACENT WALL MOUNTED OUTLET BOXES FOR SWITCHES, THERMOSTATS, AND SIMILAR DEVICES.
i. DO NOT INSTALL FLUSH MOUNTING BOX BACK-TO-BACK IN WALLS.
j. USE CAST OUTLET BOX WITH WEATHERPROOF COVER IN EXTERIOR LOCATIONS EXPOSED TO THE WEATHER AND ALL WET LOCATIONS.
k. INSTALL KNOCKOUT CLOSURES IN UNUSED BOX OPENINGS.
l. INSTALL SWITCHES WITH OFF POSITION DOWN.
m. ALL PENETRATIONS BY ELECTRICAL RACEWAYS OR EQUIPMENT THROUGH ROOFS, CEILINGS, WALLS OR FLOORS SHALL BE SEALED AND MADE PERMANENTLY WATER TIGHT.
m.1. SEAL ALL EXISTING AND NEW CONDUIT PENETRATIONS THROUGH ALL WALLS WITH EITHER RED FIRE CAULKING (IF WALLS ARE RATED) OR WHITE SOUND CAULKING (IF WALL AREA NOT RATED) AS REQUIRED.
n. ACCESS TO EQUIPMENT: LOCATE ALL CONTROL DEVICES, SPECIALTIES, PULL BOXES, ETC., SO AS TO PROVIDE FOR EASY ACCESS FOR OPERATION, REPAIR, AND MAINTENANCE AND, IF CONCEALED, FURNISH AND INSTALL ACCESS DOORS.
o. PAINTING: TOUCH-UP ITEMS OF EQUIPMENT WHOSE FACTORY FINISH HAS BEEN MARRED OR DAMAGED DURING INSTALLATION, RESTORING IT TO ITS ORIGINAL APPEARANCE.

H. CONDUIT
1. INSTALLATION:
a. INSTALL WIRING IN CONDUIT, UNLESS OTHERWISE NOTED IN THE DRAWINGS OR SPECIFICATIONS.
b. INSTALL CONDUITS CONCEALED, EXCEPT IN UNFINISHED AREAS AND WHERE INDICATED ON THE DRAWINGS.
c. SECURELY SUPPORT CONDUIT AND PIPING BY MEANS OF APPROVED HANGERS. SUPPORT SPACING SHALL BE IN ACCORDANCE WITH THE NEC. MAKE NECESSARY PROVISIONS FOR EXPANSION OF CONDUIT AND SECURELY ANCHOR CONDUIT WHERE NECESSARY TO PROPERLY DISTRIBUTE STRESSES.
d. FLEXIBLE METAL CONDUIT: SUPPORT EVERY 4 FEET 6 INCHES AND WITHIN 12 INCHES OF TERMINATIONS, WITH CADDY CLIPS OR APPROVED SUBSTITUTE.
e. LIQUIDTIGHT FLEXIBLE METAL CONDUIT: SUPPORT EVERY 4 FEET 6 INCHES AND WITHIN 12 INCHES OF TERMINATIONS.
f. KEEP OPENINGS IN CONDUITS CLOSED DURING THE PROGRESS OF THE WORK. SWAB CONDUITS CLEAN BEFORE PULLING WIRE.
g. CLEAN PVC CONDUIT PER MANUFACTURER'S RECOMMENDATIONS BEFORE APPLICATION OF SOLVENT CEMENT.
h. FURNISH AND INSTALL SUITABLE ROOF PENETRATIONS WHERE CONDUITS PENETRATE THE ROOF SEAL.
i. USE 18 INCHES OF FLEXIBLE METAL CONDUIT OR LIQUIDTIGHT FLEXIBLE METAL CONDUIT FOR FINAL CONNECTIONS TO HVAC EQUIPMENT, MOTORS, OR ANY EQUIPMENT WITH INHERENT VIBRATION.
j. COORDINATE INSTALLATION OF CONDUIT IN MASONRY WORK.
k. ROUTE ALL CONDUITS PARALLEL OR PERPENDICULAR TO BUILDING LINES, REGARDLESS WHETHER EXPOSED OR CONCEALED.
l. ALLOW MINIMUM OF 6 INCHES CLEARANCE AT HEAT SOURCES.
m. ALL ROOF TOP UNITS, MAKE-UP AIR HANDLERS (MAU), SUPPLY FANS (SF) AND CONDENSING UNITS SHALL BE SERVED THROUGH ROOF CURB, ELIMINATING ROOF PENETRATIONS. FOR MAU AND SF - PROVIDE ADDITIONAL 24 INCHES OF CABLE FOR MAINTENANCE.
n. CEILING GRID WIRE HANGER SHALL NOT BE USED TO SUPPORT CONDUITS.
o. PROVIDE SUITABLE NYLON PULL STRING OR POLYPROPYLENE STRING IN EMPTY CONDUIT EXCEPT SLEEVES AND NIPPLES.
2. LOCATION:
k. GALVANIZED RIGID METAL CONDUIT (GRC): PERMITTED FOR GENERAL EXPOSED OR CONCEALED WORK ABOVE OR BELOW GRADE OR IN SLABS POURED ON GRADE (WHERE SHOWN ON THE DRAWINGS).
l. ALUMINUM RIGID METAL CONDUIT: PERMITTED FOR GENERAL EXPOSED OR CONCEALED WORK IF INSTALLED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS. NOT PERMITTED EMBEDDED IN CONCRETE OR DIRECTLY BELOW CONCRETE SLAB POURED ON GRADE.
m. INTERMEDIATE METAL CONDUIT (IMC): PERMITTED FOR GENERAL EXPOSED OR CONCEALED WORK.
n. ELECTRICAL METALLIC TUBING (EMT): PERMITTED FOR GENERAL EXPOSED OR CONCEALED WORK.
o. PVC RIGID NONMETALLIC CONDUIT (PVC): PERMITTED FOR BELOW GRADE OR IN SLAB WHEN PERMITTED BY GOVERNING CODES.
p. FLEXIBLE METAL CONDUIT (GREENFIELD): PERMITTED FOR CONCEALED WORK OR FOR CONNECTIONS TO EQUIPMENT IN DRY AREAS IF ACCEPTABLE WITH LOCAL AUTHORITY.
q. LIQUIDTIGHT FLEXIBLE METAL CONDUIT: PERMITTED EXPOSED IN LENGTHS OF 6 FEET OR LESS FOR CONNECTIONS TO ROOFTOP UNITS AND CONDENSING UNITS, AND SIMILAR EQUIPMENT WHERE RIGID CONNECTIONS ARE NOT SUITABLE.

I. CONSTRUCTION
1. INTERFACE WITH OTHER WORK:
a. COORDINATE LOCATIONS OF OUTLET BOXES TO OBTAIN MOUNTING HEIGHTS INDICATED ON DRAWINGS.
b. INSTALL WALL SWITCH TO CENTER LINE ABOVE FINISHED FLOOR AS FOLLOWS:
b.1. ALL LOCATIONS: 48 INCHES UNLESS NOTED.
c. INSTALL CONVENIENCE RECEPTACLE 18 INCHES CENTER LINE ABOVE FINISHED FLOOR UNLESS NOTED.
d. INSTALL SWITCHES WITHIN 4 INCHES OF DOOR FRAME (OR AS SPACE PROVIDES)

J. OPENINGS
1. MAKE FINAL CONNECTION OF MOTORS, STARTERS, DISCONNECTS, AND OTHER ITEMS FURNISHED AND INSTALLED UNDER OTHER SECTIONS.

K. WIRE
1. MAKE CONDUCTOR SIZE AND LENGTH FOR PARALLEL FEEDERS IDENTICAL.
2. LACE OR CLIP GROUPS OF FEEDER CONDUCTORS AT DISTRIBUTION CENTERS AND WIREWAYS.
3. PROVIDE COPPER GROUNDING CONDUCTORS AND STRAPS.
4. USE WIRE PULLING LUBRICANT FOR PULLING #4 AWG AND LARGER WIRE.
5. INSTALL WIRE IN CONDUIT RUNS AFTER CONCRETE AND MASONRY WORK IS COMPLETE AND AFTER MOISTURE IS SWABBED FROM CONDUITS.
6. MAKE SPLICES, TAPS, AND TERMINATIONS TO CARRY FULL AMPACITY OF CONDUCTORS.

L. WIRING DEVICES
1. OUTLETS OR DEVICES IMPROPERLY LOCATED OR INSTALLED SHALL BE REPAIRED OR REPLACED AT THE CONTRACTOR'S EXPENSE. OUTLETS AND DEVICES SHALL BE SET PLUMB OR HORIZONTAL FLUSH OR SURFACE MOUNTED AS REQUIRED.
2. B. BACK-TO-BACK MOUNTING OF RECEPTACLES, SWITCHES, AND OTHER WIRING DEVICES SHALL NOT BE PERMITTED.

M. FIELD QUALITY CONTROL
1. OPERATE EACH DEVICE WITH CIRCUIT ENERGIZED AND VERIFY PROPER OPERATION.
2. INSPECT WIRE AND CABLE FOR PHYSICAL DAMAGE AND PROPER CONNECTION.
3. TEST EACH GFCI RECEPTACLE DEVICE FOR PROPER OPERATION.
4. VERIFY CONTINUITY OF EACH BRANCH CIRCUIT CONDUCTOR.

GROUNDING

A) FURNISH AND INSTALL ALL GROUNDING FOR THE ELECTRICAL SERVICE IN STRICT ACCORDANCE TO THE NATIONAL ELECTRICAL CODE SPECIFICALLY ARTICLE 230 AND ARTICLE 250 OF THE NATIONAL ELECTRICAL CODE.
B) GROUNDING ELECTRODE CONDUCTOR SHALL BE COPPER BARE WIRE, SIZE AS NOTED.
C) ALL SOLDERLESS OR COMPRESSION TYPE GROUND CONNECTORS SHALL BE COPPER.
D) ALL CONDUCTORS SHALL BE UL LISTED 98% CONDUCTIVITY COPPER.
E) ACCEPTABLE GROUND CLAMPS AND CONNECTOR MANUFACTURERS ARE AS FOLLOWS:
1) BURNDY CORPORATION
2) PENN-UNION
3) THOMAS & BETTS
F) PROVIDE ALL BONDING AND BONDING JUMPERS AT SERVICE AS REQUIRED BY ARTICLE 250.
G) EQUIPMENT GROUND CONDUCTORS SHALL BE COPPER SIZED AS PER TABLE 250-95 NATIONAL ELECTRIC CODE. CONDUCTORS SHALL BE GREEN AND NO. 8 AND LARGER SHALL BE MARKED WITH GREEN COLORED TAPE OR GREEN ADHESIVE LABELS. PROVIDE AN INSULATED N.E.C. CODE SIZED CONDUCTOR IN ALL CONDUITS.

PANELBOARDS

A. GENERAL:
1. PANELBOARDS SHALL MEET UL STANDARDS 50 AND 67, SHALL BEAR UL LABELS AND SHALL MEET NEMA STANDARDS.
2. PROVIDE PANELBOARDS WITH CIRCUIT PROTECTIVE DEVICES AS SHOWN AND/OR SCHEDULED ON THE DRAWINGS.
3. PANELBOARDS SHALL BE RATED AND ARRANGED FOR THE SYSTEM UTILIZATION VOLTAGE. REFER TO THE DRAWINGS FOR AMPERE RATINGS.
4. PANELBOARDS SHALL HAVE SPACES FOR FUTURE DEVICES AS INDICATED ON THE DRAWINGS.
5. PANELBOARDS SHALL FULLY RATED FOR THE AVAILABLE FAULT CURRENT AT THE PANELBOARDS.
6. PANELBOARD MOUNTING SHALL BE SURFACE OR FLUSH MOUNTED AS INDICATED ON THE DRAWINGS.
7. MAIN, FEEDER AND BRANCH CIRCUIT DEVICES SHALL BE FULLY RATED.
8. BUS BARS MAY BE EITHER COPPER OR ALUMINUM. BUS BARS SHALL, AS A MINIMUM, BE BRACED FOR AVAILABLE FAULT CURRENTS. BUSSING SHALL BE FULLY RATED.
9. TERMINAL LUGS SHALL BE AL/CU COMPRESSION TYPE.
10. PANELBOARDS SHALL BE UL LISTED FOR SERVICE ENTRANCE WHERE USED FOR THAT PURPOSE.
11. PROVIDE EQUIPMENT GROUND BUS IN ALL PANELBOARDS.
12. PROVIDE ISOLATED GROUND BUS IN PANELBOARDS SERVING ISOLATED GROUNDING TYPE RECEPTACLES AND/OR WHERE INDICATED ON THE DRAWINGS.
13. PROVIDE 200% RATED NEUTRAL BUS IN PANELBOARDS SERVED BY NON-LINEAR LOAD TYPE TRANSFORMERS AND/OR WHERE INDICATED ON THE DRAWINGS.
14. PANELBOARDS SHALL BE G.E., SQUARE D, SIEMENS OR CUTLER-HAMMER.

B. CIRCUIT BREAKER DISTRIBUTION PANELBOARDS:
1. CIRCUIT BREAKER DISTRIBUTION PANELBOARDS SHALL BE SQUARE D, I-LINE TYPE OR EQUIVALENT BY MANUFACTURERS LISTED IN THIS SPECIFICATION SECTION.
2. ENCLOSURES AND TRIM FRONTS SHALL BE NEMA TYPE 1 AND SHALL BE CONSTRUCTED IN ACCORDANCE WITH UL 50 REQUIREMENTS.
3. BOXES SHALL BE GALVANIZED STEEL. BOXES OF SURFACE MOUNTED PANELBOARDS LOCATED IN FINISHED AREAS SHALL HAVE A RUST-PROOF PRIME COAT AND A FINISH COAT OF GRAY ENAMEL PAINT.
4. INTERIOR TRIM SHALL BE DEAD-FRONT CONSTRUCTION TO SHIELD USER FROM ENERGIZED PARTS.
5. TRIM FRONT FOR SURFACE MOUNTED PANELBOARDS SHALL BE FOUR-PIECE UNLESS INDICATED OTHERWISE. PROVIDE ONE-PIECE TRIM WITH HINGED DOOR FOR FLUSH MOUNTED PANELBOARDS. TRIM FRONT SHALL BE PAINTED GRAY ENAMEL. TRIM FRONT WITH DOOR SHALL HAVE CYLINDRICAL TUMBLER TYPE LOCK. ALL LOCK ASSEMBLIES SHALL BE KEYED ALIKE. PROVIDE TWO (2) KEYS FOR EACH LOCK.
6. PROVIDE ENGRAVED LAMINATED PHENOLIC NAMEPLATES FOR EACH DEVICE. PANELBOARDS WITH DOORS MAY BE PROVIDED WITH A CLEAR PLASTIC COVERED TYPEWRITTEN DIRECTORY LOCATED ON THE INSIDE OF THE DOOR IN LIEU OF ENGRAVED NAMEPLATES.
7. CIRCUIT BREAKERS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE FOLLOWING STANDARDS: UL 489 FEDERAL SPEC. W-C-375/GEN NEMA AB1 CSA 22.2, NO. 5-M1986 IEC 157-1 BS 4752
8. CIRCUIT BREAKERS SHALL BE MOLDED CASE THERMAL MAGNETIC TYPE OR ELECTRONIC TRIP TYPE AS INDICATED ON THE DRAWINGS.
9. GROUND FAULT PROTECTION SHALL BE PROVIDED WHERE INDICATED ON THE DRAWINGS.
10. PROVIDE ACCESSORIES AS INDICATED ON THE DRAWINGS.

C. LIGHTING AND APPLIANCE PANELBOARDS
1. LIGHTING AND APPLIANCE PANELBOARDS FOR 120/208 VOLT SERVICE SHALL BE SQUARE D, TYPE NQOD OR EQUIVALENT BY MANUFACTURERS LISTED IN THIS SPECIFICATION SECTION.
2. LIGHTING AND APPLIANCE PANELBOARDS FOR 480/277 VOLT SERVICE SHALL BE GE, TYPE NEHB OR EQUIVALENT BY MANUFACTURERS LISTED IN THIS SPECIFICATION SECTION.
3. ENCLOSURES AND TRIM FRONTS SHALL BE NEMA TYPE 1 AND SHALL BE CONSTRUCTED IN ACCORDANCE WITH UL 50 REQUIREMENTS.
4. CABINETS SHALL BE CONSTRUCTED OF ONE-PIECE CODE GAUGE GALVANIZED STEEL WITH MOUNTING STUDS, AND SHALL HAVE WIRING GUTTERS OF AMPLE SIZE AND KNOCKOUTS FOR CONDUIT CONNECTIONS AS REQUIRED.
5. INTERIOR TRIM SHALL BE DEAD-FRONT CONSTRUCTION TO SHIELD USER FROM ENERGIZED PARTS.
6. TRIM FRONT SHALL BE ONE-PIECE WITH HINGED DOOR WITH DOOR IN DOOR CONSTRUCTION. TRIM FRONT SHALL BE PAINTED GRAY ENAMEL. TRIM FRONT WITH DOOR SHALL HAVE CYLINDRICAL TUMBLER TYPE LOCK. ALL LOCK ASSEMBLIES SHALL BE KEYED ALIKE. PROVIDE TWO (2) KEYS FOR EACH LOCK.
7. PANELBOARD DOORS SHALL BE PROVIDED WITH A CLEAR PLASTIC COVER TYPEWRITTEN DIRECTORY LOCATED ON THE INSIDE OF THE DOOR. A DUPLICATE COPY OF EACH COMPLETED DIRECTORY SHALL BE DELIVERED TO THE OWNER.
8. MAIN CIRCUIT BREAKERS SHALL BE MOLDED CASE THERMAL MAGNETIC TYPE.
9. BRANCH CIRCUIT BREAKERS SHALL BE MOLDED CASE, THERMAL MAGNETIC, QUICK-MAKE, QUICK BREAK TYPE. BREAKERS SHALL BE CALIBRATED FOR OPERATION IN AN AMBIENT TEMPERATURE OF 40 C. BREAKERS SHALL BE BOLT ON TYPE OF SINGLE UNIT CONSTRUCTION. TWO AND THREE POLE BREAKERS, WHERE CALLED FOR, SHALL BE SINGLE UNIT COMMON TRIP.
10. BRANCH CIRCUIT BREAKERS SHALL HAVE THE FOLLOWING MINIMUM SHORT CIRCUIT RATINGS. 10K AIC FOR 208V SYSTEMS AND 14K AIC FOR 480V SYSTEMS. REFERENCE DRAWINGS FOR PROJECT SPECIFIC AIC RATINGS WHICH MAY EXCEED THESE MINIMUM RATINGS.
11. BREAKERS USED AS SWITCHES FOR FLUORESCENT LIGHTING CIRCUITS SHALL BE APPROVED FOR THE PURPOSE AND MARKED "SWD".
12. UNLESS NOTED OTHERWISE ON THE DRAWINGS, ALL GROUND FAULT INTERRUPTING (GFI) BRANCH CIRCUIT BREAKERS SHALL INCORPORATE OVERLOAD, SHORT CIRCUIT AND UL CLASS A (5 MILLIAMP SENSITIVITY) FOR PERSONNEL PROTECTION GROUND FAULT CIRCUIT BREAKERS WITH 30 MILLIAMP SENSITIVITY SHALL BE USED EQUIPMENT PROTECTION APPLICATIONS ONLY.
13. BREAKERS SERVING HEATING/AIR CONDITIONING/REFRIGERATION EQUIPMENT SHALL BE UL LISTED "HACR" TYPE.

TRANSIENT VOLTAGE SUPPRESSION

A. PRODUCTS
1. MCOV: 115% OF SYSTEM VOLTAGE
2. SERVICE ENTRANCE SUPPRESSORS:
a. INTEGRAL DISCONNECT SWITCH
b. INTERNAL THERMAL PROTECTION
c. INDICATOR LIGHT DISPLAY FOR PROTECTION STATUS
d. PEAK SURGE CURRENT RATING: 200 kA
e. PROTECTION MODES FOR 480Y/277V, THREE-PHASE, FOUR-WIRE - FOUR MODES
e.1. LINE-LINE
e.2. LINE-NEUTRAL
e.3. LINE-GROUND
e.4. NEUTRAL-GROUND
f. FAULT CURRENT RATING: 200 kA
3. INDOOR ENCLOSURE

LIGHTING

A. GENERAL:
1. SECTION INCLUDES:
a. INTERIOR LIGHTING AND EXTERIOR FIXTURES.
b. CIRCUIT AND CONNECTION TO ILLUMINATED SIGNS ATTACHED TO BUILDING.
2. RELATED DOCUMENTS:
a. THE CONTRACT DOCUMENTS, AS DEFINED IN THE GENERAL CONDITIONS, APPLY TO THE WORK OF THIS SECTION. ADDITIONAL REQUIREMENTS AND INFORMATION NECESSARY TO COMPLETE THE WORK OF THIS SECTION MAY BE FOUND IN OTHER DOCUMENTS.
3. QUALITY ASSURANCE
a. FIXTURES AND THEIR ELECTRICAL COMPONENTS SHALL BEAR THE UL LABEL.

B. PRODUCTS:
1. SUPPLY MANUFACTURERS - AS NOTED ON FIXTURE SCHEDULE.
2. LIGHTING FIXTURES
a. LIGHTING FIXTURES ARE SCHEDULED ON DRAWINGS.
b. NEW FIXTURES SHALL BE COMPLETE, INCLUDING HICKEYS, SUSPENSION NIPPLES AND ALL OTHER MATERIALS AND EQUIPMENT AS REQUIRED FOR HANGING FIXTURES IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE AND MANUFACTURERS' RECOMMENDATIONS.
c. VERIFY CEILING AND WALL DETAILS. FURNISH NEW FIXTURES COMPLETE WITH MANUFACTURER'S RECOMMENDED MOUNTING ARRANGEMENTS FOR CEILING OR WALL CONSTRUCTION ENCOUNTERED.
d. FLUORESCENT FIXTURES SHALL BE PROPERLY ALIGNED. FLUORESCENT STRIP FIXTURES WITH REFLECTORS SHALL HAVE PLASTIC CLIPS INSTALLED AT EACH JOINT TO ALIGN THE REFLECTORS END TO END.
e. INCANDESCENT FIXTURES SHALL BE PROVIDED COMPLETE WITH LAMPS. PROVIDE RECESSED INCANDESCENT FIXTURES WITH TRIM RINGS COMPATIBLE WITH THE CEILING MATERIAL WHERE FIXTURE IS TO BE INSTALLED.
f. EXIT LIGHTING AND EMERGENCY LIGHTING FIXTURES AND WIRING SHALL MEET THE REQUIREMENTS OF FEDERAL, STATE, AND LOCAL CODES, INCLUDING NFPA 70 AND NFPA 101.
g. VOLTAGE: BALLASTS FOR USE ON 120 OR 277 VOLT SYSTEMS SHALL BE SUITABLE AND GUARANTEED FOR A VOLTAGE RANGE OF 120 VOLTS TO 277 VOLTS.
h. FIXTURES AND LAMPS SHALL BE WIPED CLEAN BEFORE AND AFTER INSTALLATION.
i. ALL LIGHTING FIXTURES SHALL BE SECURELY SUPPORTED AND ANCHORED TO PROVIDE A SAFE AND PERMANENT INSTALLATION. FIXTURE HANGERS, ANCHORS OR SUPPORTS SHALL BE TESTED TO SUPPORT THE EQUIVALENT OF FOUR TIMES THE WEIGHT OF THE FIXTURE OR EQUIPMENT.
3. ILLUMINATED SIGNS
a. FURNISH ELECTRICAL CIRCUITS, CONTROLS AND CONNECTIONS, AS SHOWN OR REQUIRED.
4. FLUORESCENT LAMPS
a. MANUFACTURERS: GENERAL ELECTRIC, TYPES AS SCHEDULED ON THE DRAWINGS. NO SUBSTITUTIONS OF LAMPS SHALL BE PERMITTED.
5. FLUORESCENT BALLASTS
a. FLUORESCENT BALLASTS: SUITABLE FOR OPERATION WITH T-8 LAMPS, ELECTRONIC, AS INDICATED ON THE FIXTURE SCHEDULE. NO SUBSTITUTIONS OF BALLASTS PERMITTED.

C. EXECUTION:
1. INSTALLATION
a. INSTALL LIGHTING FIXTURES, LAMPS, AND SIGN CIRCUITS AND CONNECTIONS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS AND AS INDICATED ON DRAWINGS.
b. RECESSED FIXTURES INSTALLED IN LAY-IN CEILING GRID SYSTEMS SHALL HAVE MAXIMUM SIX FEET OF FLEXIBLE CONDUIT FROM OUTLET BOXES SUPPORTED FROM BUILDING STRUCTURAL SYSTEM TO FIXTURES. FIXTURES SHALL BE ATTACHED TO CEILING GRID.
c. FIXTURES SHALL NOT BE INSTALLED UNTIL CEILING GRID SYSTEM HAS BEEN LEVELED TO ASSURE LEVEL PLANE.
d. INSTALL LIGHTING FIXTURES IN ACCORDANCE WITH THE FIXTURE MANUFACTURER'S WRITTEN INSTRUCTIONS AND RECOGNIZED INDUSTRY PRACTICES. FIXTURES SHALL EXACTLY FIT THE TYPE OF CEILING SYSTEM SCHEDULED. REPORT ANY DISCREPANCY TO THE ARCHITECT/ENGINEER.
e. INSTALL A MINIMUM OF TWO (2) INDEPENDENT WIRE HANGERS, ONE ON EACH CORNER SUPPORTED FROM BUILDING STRUCTURE, FOR ALL LAY-IN FLUORESCENT LIGHT FIXTURES. WIRE HANGER GAUGE SHALL BE SAME AS CEILING SYSTEM WIRE HANGER GAUGE.
f. AFTER COMPLETING INSTALLATION OF ENERGIZED SYSTEM, DEMONSTRATE PROPER OPERATION OF LIGHTING FIXTURES AND CONTROLS. MAKE CORRECTIONS AS NECESSARY.
g. PRE-INSPECTION TASKS: IMMEDIATELY BEFORE FINAL INSPECTION, THOROUGHLY CLEAN ALL FIXTURES INSIDE AND OUT, ADJUST ALL TRIM TO PROPERLY FIT ADJACENT SURFACES, REPLACE BROKEN OR DAMAGED PARTS. ANY FIXTURES, OR PARTS OF FIXTURES, WHICH HAVE BEGUN TO SHOW SIGNS OF RUST OR CORROSION AT THE TIME OF COMPLETION OF THE JOB, SHALL BE REMOVED AND REPLACED WITH PROPERLY PROTECTED METAL PARTS.

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revisions / issues

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