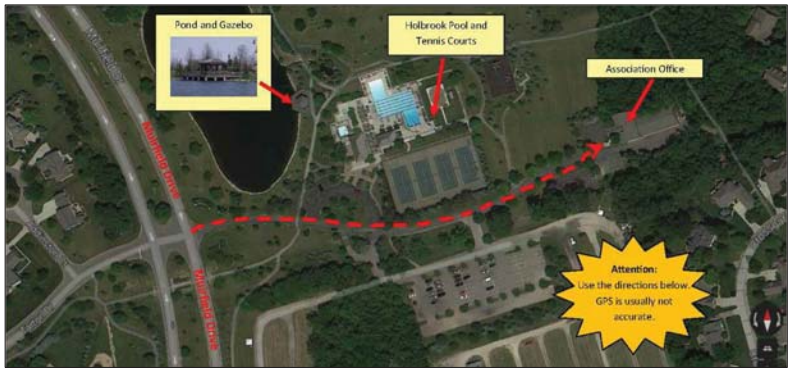
CONSTRUCTION DOCUMENTS
ALTERATIONS & REMODELING

for the Muirfield Association, Inc.
8372 Muirfield Drive
Dublin, Ohio 43017



LOCATION MAP

Architect	Contractor	Client
A. PETER LENZ, AIA 515 Hartford Street Worthington, Ohio 43085	TO BE DETERMINED – –	Muirfield Association 8372 Muirfield Drive Dublin, Ohio 43017
ATTN: Peter Lenz AIA	ATTN: –	ATTN: Walter Zeier, G.M.
(614) 840-0844	(---) --- - ----	(614) 889-0922

STATE OF OHIO · ARTHUR PETER LENZ · 4530 · REGISTERED ARCHITECT

BUILDING CODE DATA

CODES:
OHIO BUILDING CODE (OBC) - (2011)

CONSTRUCTION TYPE: Mixed use

REVIEWING AUTHORITY: City Of Dublin

Existing shop - 5,857sf lower level
Addition - 1,787sf lower level
Total S1 Use - 7,644sf

Existing Lobby - 285sf entry level
Existing Office - 2,442sf upper level
Addition - 585sf upper level
Total B Use - 3,312sf

ACTUAL (NET) S.F.: 10,956sf - 2 Stories

BUILDING LIMITATIONS: OBC table 503
USE, BUILDING AREA & HEIGHT - B Business 9,000 SF, 2 Stories Type VB
- S1 Storage 9,000 SF, 1 Story Type VB
OBC 508.4.3 Allowable height. Occupancy height limitations based on grade plane. Individual occupancies comply.

OCCUPANCY LOAD TABLE 1004.1.1
B OFFICES = 33
S-1 SHOPS & WAREHOUSE = 26

OCCUPANCY FIRE SEPARATION NONE-Table 508.4

PORTABLE FIRE EXTINGUISHERS Provide extiguishers as required in OBC Section 906.3

PROJECT DATA

ZONING:
Parcel # 273-001938-00
District - Muirfield Village 1
Planned Unit Development District
Area 5.025 Acres

SITE DATA

TOTAL SITE AREA:	5.025 Acres=218,889 SF
TOTAL DISTURBED AREA:	ASPHALT OVERLAY
PRE DEVELOPED IMPERVIOUS:	15,963 SF
Building:	6365 SF
POST DEVELOPED IMPERVIOUS:	15,963 SF
Building:	8870 SF

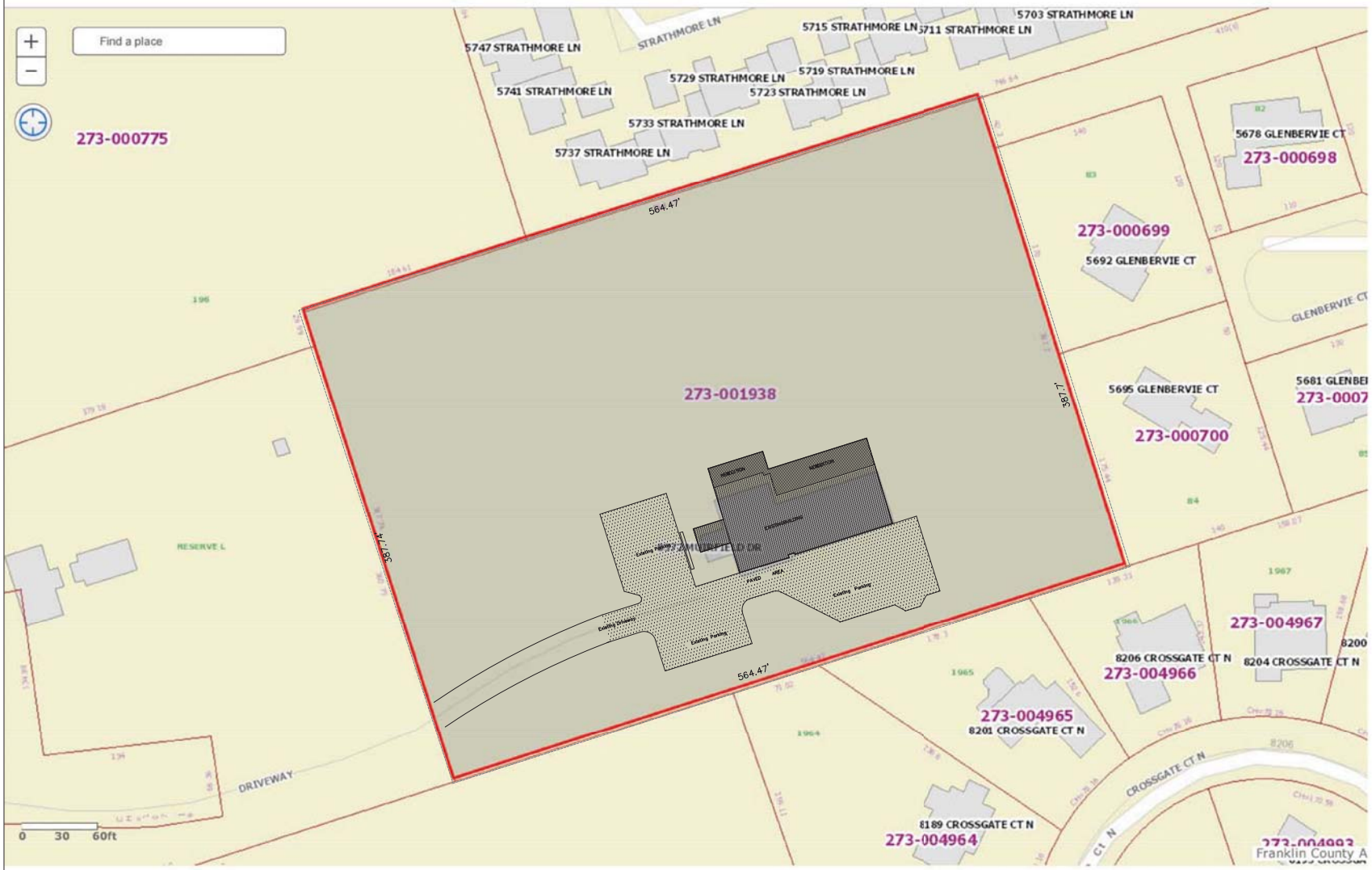
GENERAL NOTES:

1. All work shall comply with the latest editions of the Ohio Building Code, the NFPA Code, the National Electric Code, the National Plumbing Code and all other state and local codes having jurisdiction.
2. Contractor shall be responsible for verifying all measurements in field prior to ordering materials and prefabricating items. Any deviation between field measurements and drawings shall be reported to the architect.
3. Contractor shall be familar with the entire scope of the project and shall be responsible for coordinating his work with that of other contractors.
4. Contractor shall have visited the site and fully familarized themselves as to the existing conditions. Nothing contained herein shall be construed as to fully representing existing conditions at the building site.
5. Contractor shall obtain and pay for any and all permits required by laws, ordinances, and public authorities having jurisdiction unless agreed to otherwise between contractor and owner.
6. Contractor shall furnish and install miscellaneous forms, blocking, hangars, supports, fittings, and similar, etc. which are not necessarily shown on the drawings but are required to fully complete the work.
7. Dimensions shall be as indicated on the drawings. Clarification, if required, shall be obtained from the architect. The drawings are not to be scaled. All wall dimensions are from face of gypsum.
8. All items marked N.I.C. on the drawings and specifications means Not In Contract.
9. "Or equal" in the drawings and specifications shall mean or equal as approved by architect or owner.
10. The contractor shall provide all shop drawings and samples as required and obtain the architects approval prior to ordering and installation.
11. Work not indicated in the drawings and specifications by separate contractor(s) shall be permitted without hindrance or delay. The general contractor shall cooperate fully with separate contractor(s) for storage of materials, schedule, and completion of work.
12. The client, architect, consultants, and all inspectors from pertinent agencies shall be permitted access to the job site at all times during normal working hours.
13. Door dimensions for existing door units have been rounded to the nearest inch on the drawings. Specific dimensions by manufacturers may vary from the drawings.
14. The contractor shall verify location and size of all floor, roof, and wall openings with all applicable drawings.
15. The contractors shall verify inserts and embedded items with all applicable drawings before pouring concrete.
16. Details are intended to show method and manner of accomplishing work. Minor modifications may be required to suit the job dimensions or conditions and shall be included as part of the work.
17. Gypsum wall board and stud wall systems to follow manufacturers and industry standards for materials and installation.
18. The contractors shall provide all necessary temporary dust barriers, lighting, coverings, fire protection and other equipment to protect the safety of all persons and the property throughout the entire period of the construction contract.
19. The contractor shall verify type, location, and number of fire extinguishers with local building code official or fire marshal.
20. The contractor shall be responsible for constructing all fire-rated spaces to the requirements of the applicable codes and standards. Provide fire dampers and access panels for ducts and a/c fixtures when passing through these spaces. Provide appropriate fire-rated enclosure behind recessed light fixtures where required.
21. It shall be the responsibility of the general contractor to supervise all cutting and patching of finished work made necessary by the work, changes in the work or errors in the work. All replacement work shall be finished to match adjoining surfaces.
22. Where required fireproofing is removed or damaged for the placing of clip angles, braces, supports, etc, the fireproofing shall be replaced to maintain the integrity of the fireproofing system.
23. The contractor shall provide galvanic isolation between dissimilar metals.
24. Where factory painted items occur, such as grilles, diffusers, metal trim and accessories, paint the adjacent surface to match as directed by the architect.
25. It shall be the responsibility of the contractor to obtain approval by the building inspector for all concealed work before closing up.
26. The general contractor shall be responsible for all work on drawings unless noted otherwise.

DRAWING LIST

REVISED 12/7/2015
G0.01_COVER-SHEET

ParcelID: 273-001938-00
MUIRFIELD ASSOCIATION



project title

Alterations for
The Muirfield
Association Office
Dublin, OH.43017

for

Muirfield Assoc. Board

Site Plan noted Scale

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614-301-6166 cell
Architecture Space Planning

seal

STATE OF OHIO
ARTHUR
PETER
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REGISTERED ARCHITECT

date		revisions
01	25	Preliminary
7	15	Bid Set
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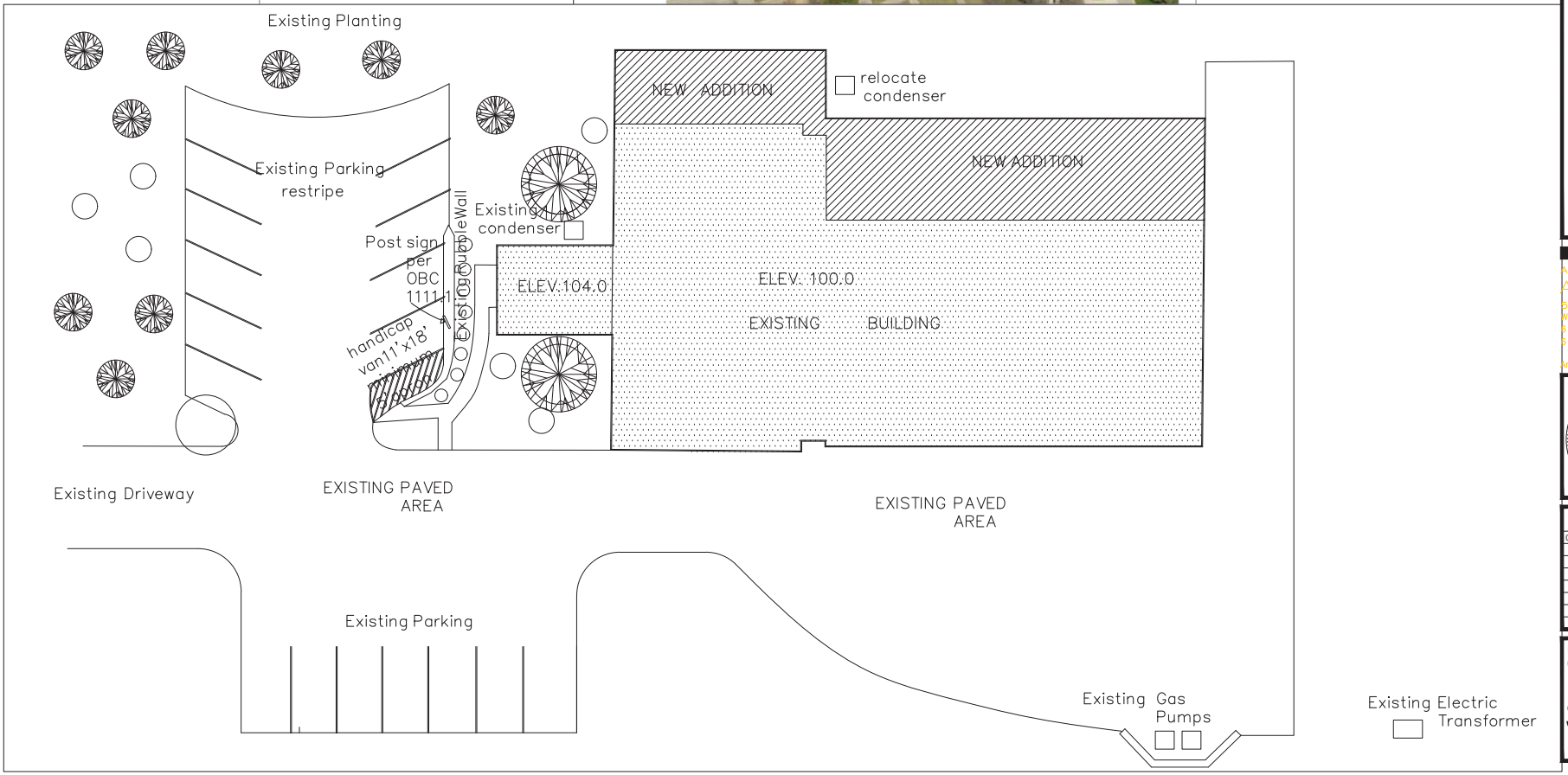
12	07	Resubmittal II

project number
01-015

sheet number
SP.01

date Dec 7, 2015



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Site Plan
Scale 3/32" =1"-0"

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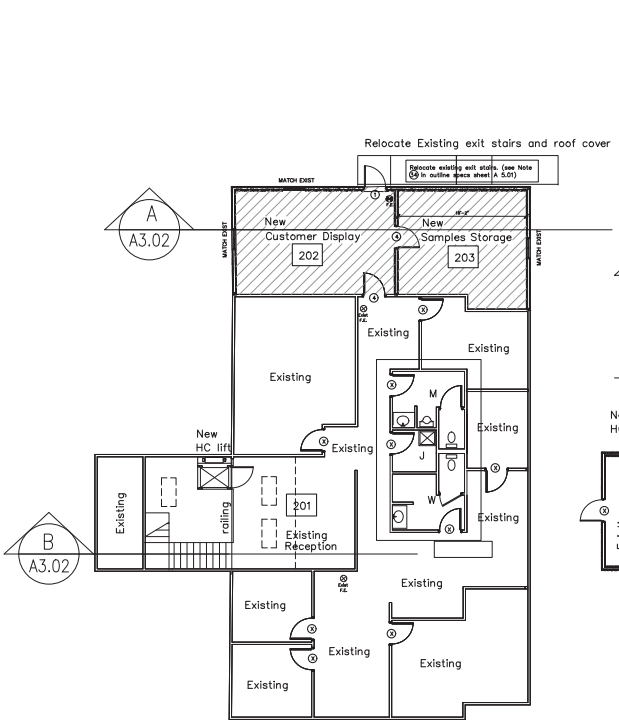
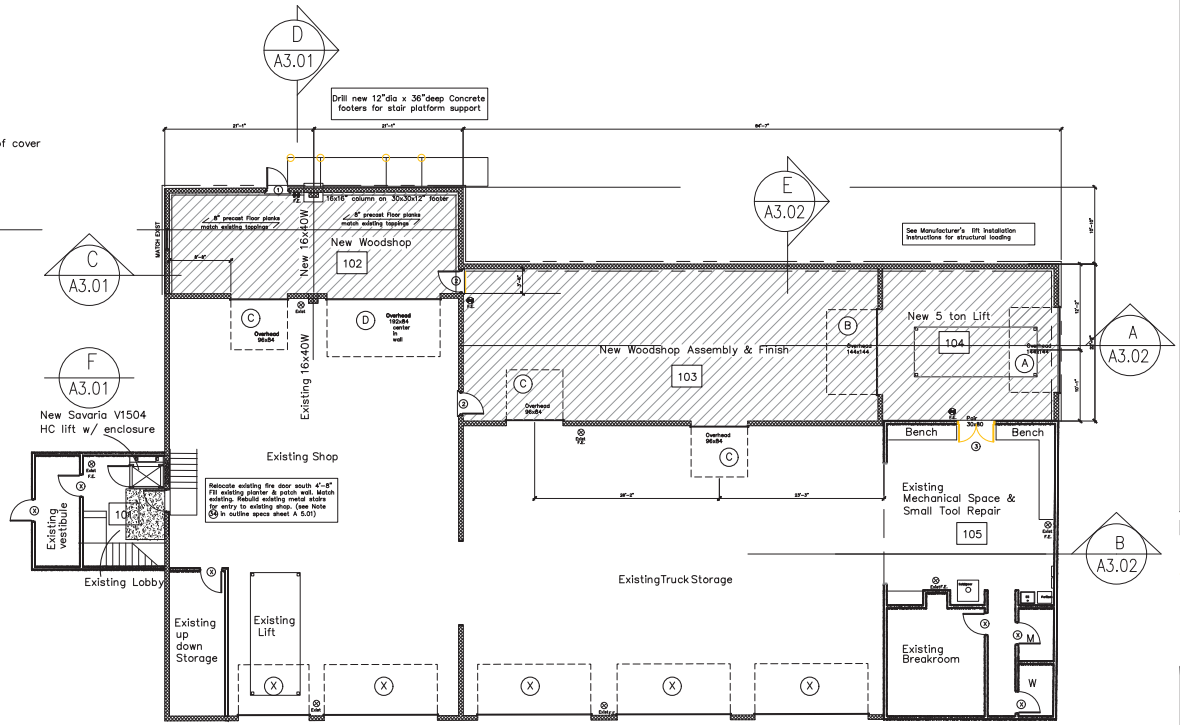


UPPER FLOOR



LOWER FLOOR

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Floor Plans @ 1/8"=1'-0"

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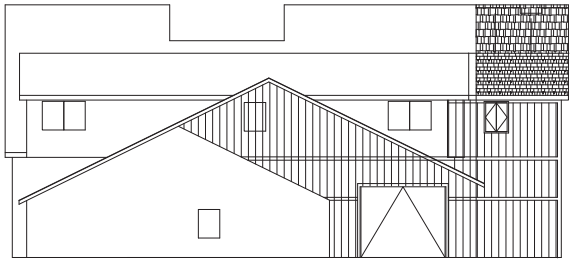
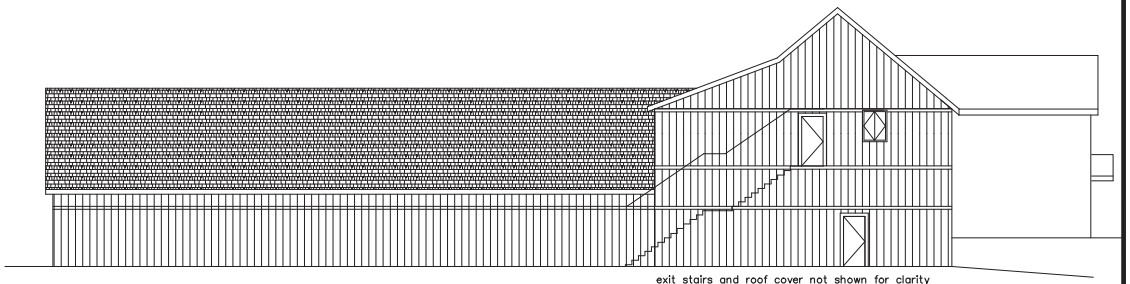


Ⓑ WEST ELEVATION
1/8" = 1'-0"

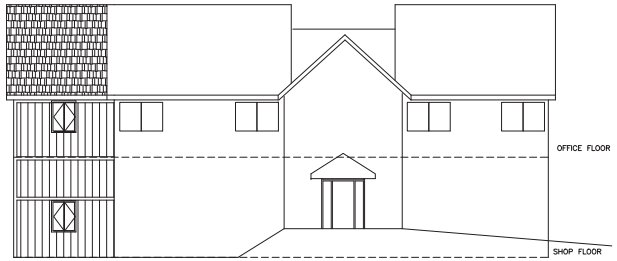


Ⓑ NORTH ELEVATION
1/8" = 1'-0"

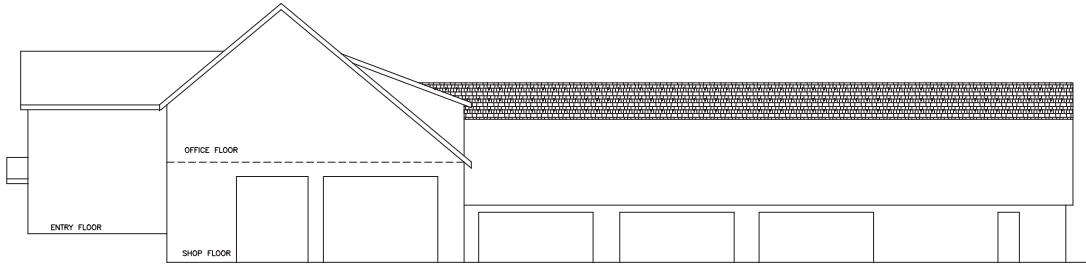
exit stairs and roof cover not shown for clarity

Existing buildings shown in outline only.
Rendered New additions to match existing.

New windows match existing 20x36 CC–2



Ⓑ EAST ELEVATION
1/8" = 1'-0"



Ⓑ SOUTH ELEVATION existing
1/8" = 1'-0"

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Exterior Elevations @ 1/8"=1'-0"

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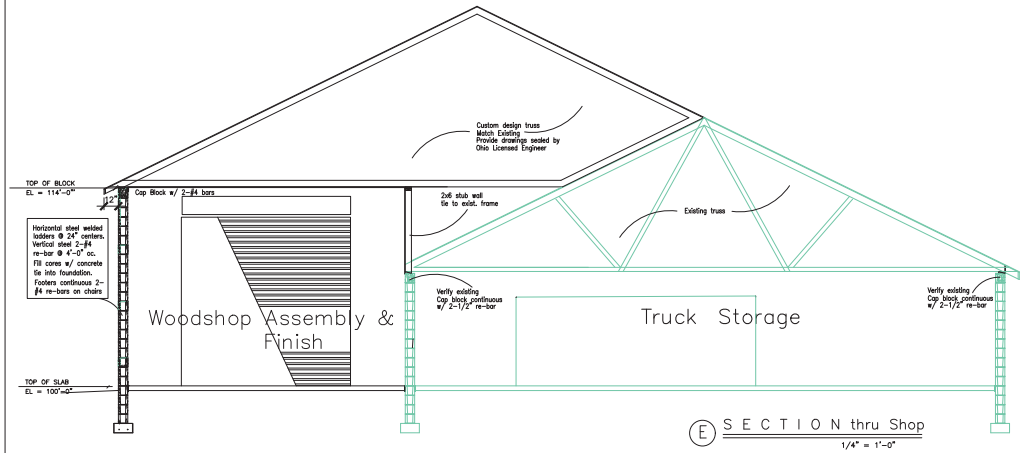
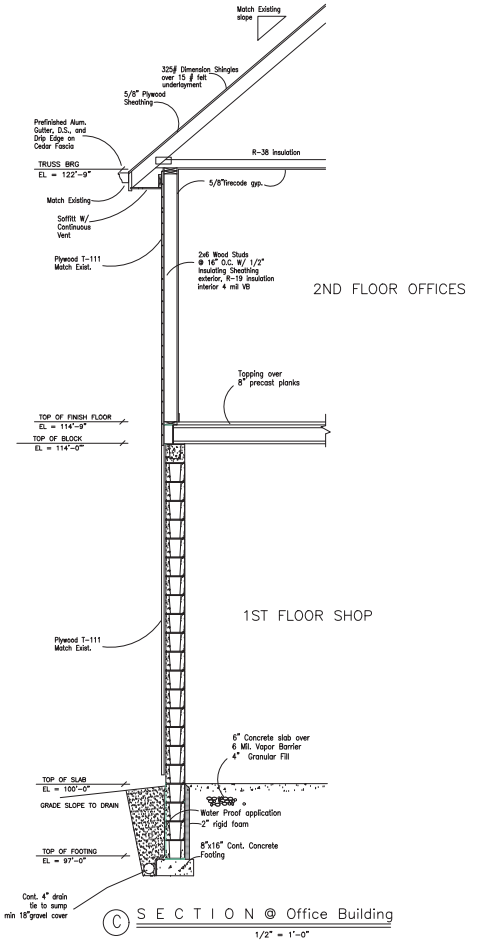


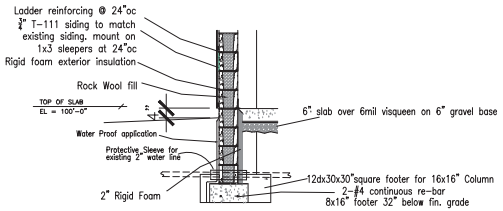
E SECTION thru Shop

1/4" = 1'-0"



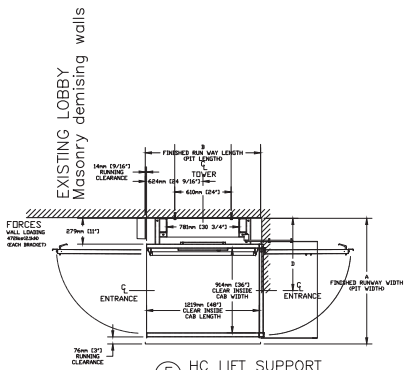
C SECTION @ Office Building

1/2" = 1'-0"



D SECTION @ WOODSHOP

1/2" = 1'-0"



F HC LIFT SUPPORT

1/2" = 1'-0"

INFORMATION FROM
MANUFACTURER'S
PLANNING GUIDE FOR
V1504 VERTICAL
PLATFORM LIFT

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Sections

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DOOR SCHEDULE *

NO	TYPE	SIZE/MATERIAL	FRAME	HARDWARE	closer	REMARKS
1	STEEL	3'-0" x 6'-8" FLUSH	HM	Lever LOCKSET	YES	Exterior Insulated Assmbly
2	STEEL	PAIR 2'-8"x 6'-8" FLUSH	HM	Lever LATCHSET	YES	Fixed leaf head bolt
3	STEEL	3'-0" x 6'-8" FLUSH	HM	Lever LOCKSET	—	
4	WOOD	3'-0" x 6'-8" FLUSH	WOOD	Lever LATCHSET	—	
5	WOOD	3'-0" x 6'-8" FLUSH	WOOD	PRIVACY LEVER	—	
X	X	EXISTING VARIES	–	REPAIR as required	—	

* Match existing Masterlock system

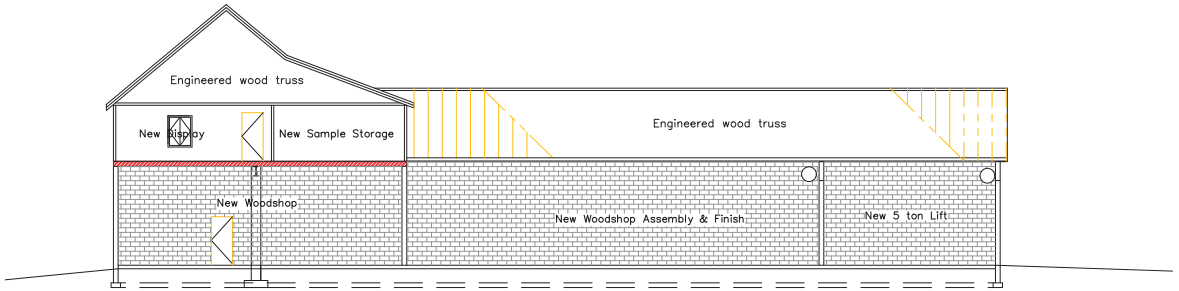
ROOM FINISH SCHEDULE

ROOM NO.	ROOM NAME	FLOOR: LVT (Patcraft)	FLOOR: CARPET TILE (J&J Flooring)	FLOOR: CONCRETE SEALER	FLOOR: CONCRETE FLOOR HARDENER	FLOOR: CONCRETE BLOCK FILLER	FLOOR: EXISTING CONCRETE	FLOOR: CONCRETE TO REMAIN	FLOOR: EXISTING TO REMAIN	BASE: RUBBER	BASE: WOOD	BASE: CONCRETE TO REMAIN	WALLS: GYPSUM DRYWALL	WALLS: CONCRETE BLOCK	WALLS: EXISTING TO REMAIN	WALLS: WOOD PANEL	WALLS: EXISTING PLASTER	CEILINGS: GYPSUM DRYWALL	CEILINGS: CEILING TILE	CEILINGS: EXISTING TO REMAIN	CEILING HEIGHT	REMARKS
		V	C	S	T	M	X	H	T	N	M	X	G	CM	CT	P	X	GWB-FT	G	CM	ES	X	P		
101	Enclosed Entry				TP		X				WP	X	CP	CM		P	X		CP			X	P	VARIES	* REFINISH
102	Woodshop			S				R								P		CMU	G				P	10'-0"	
103	Assembly & Finish			S				R								P		CMU	G				P	10'-0"	
104	5 Ton Lift			S				R								P		CMU	G				P	10'-0"	
105	Small Tool Repair			CP			X	EP					X			P	X	CMU	CP			X	P	8'-0"	* REFINISH
201	Reception			CP			X				WP	X	CP			P	X		CP			X	P	8'-0"	* REFINISH
202	Customer Display			C							W		G			P			G				P	8'-0"	
203	Samples Storage			C							W		G			P			G				P	8'-0"	

X* Existing: clean and repair as needed to finish space

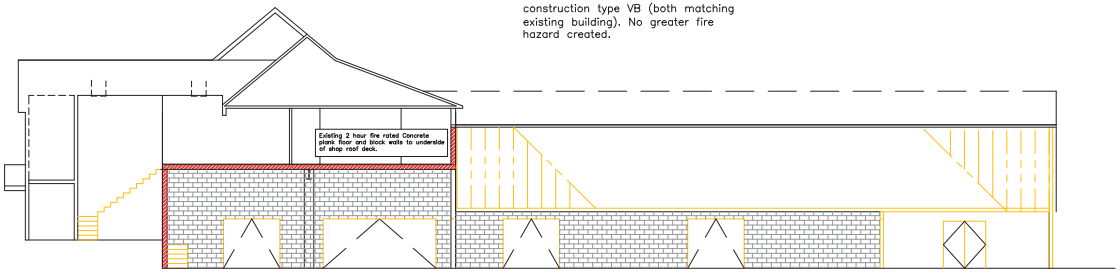
INTERIOR FINISHES

LVT Flooring: Patcraft– Click Refresh 1600V in step locking system no adhesive
Carpet tiles: J & J Flooring system– Kinetex–24x24 textile composite Flooring
Concrete Flooring: Laticrete floor hardener additive. Non–slip broom finish in shop
Concrete block: SW 1st coat block filler 2 coats Industrial Enamel finish
Gypsum Drywall: SW 1st coat latex primer 2 coats Interior latex eggshell finish
Ceiling tile: Armstrong Cortega Second Look #2758



B A–1.01 New Addition OBC 2011 permit
1/4" = 1'–0"

New Addition. Fire separation NOT REQUIRED between B and S–1 uses. construction type VB (both matching existing building). No greater fire hazard created.



B A–1.01 OBBC Permitted work 1981–1994
1/4" = 1'–0"

Approved non–conforming legacy code. Permitted in 4 phases. Fire separation required between B and S–1 uses. existing construction type VB, IIIB and IIB with both horizontal and vertical separation Information provided by owner from approved Working Drawings.

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Schedules Sections

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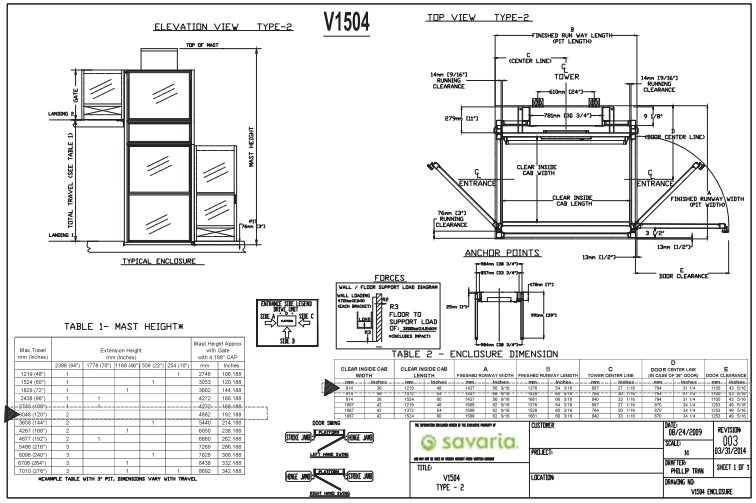
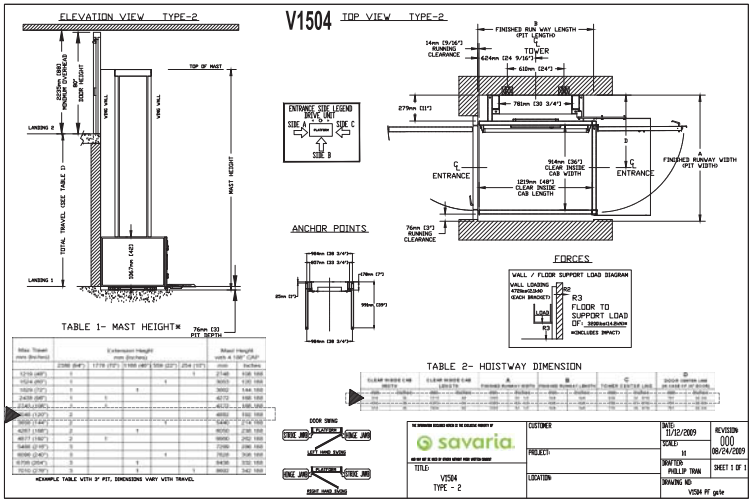
01-015

sheet number
A3.02

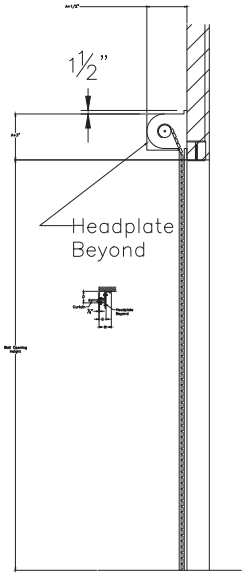
date Dec 7, 2015





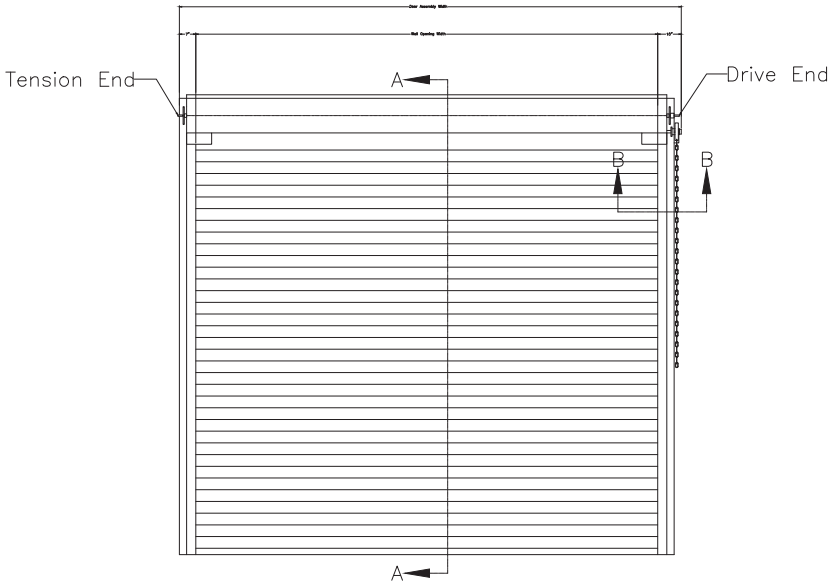
V-1504 LIFT & ENCLOSURE

ROLLING DOOR ELEVATION & SECTION



LINTEL

2–3½x5x5/16" steel angles back to back 4" bearing both sides. In new walls fill cores in jambs both sides & add #4 bar continuous vertically. On existing walls angles to outside supporting existing block. Remove bearing block both sides and replace with solid core. Add steel shims for bearing.



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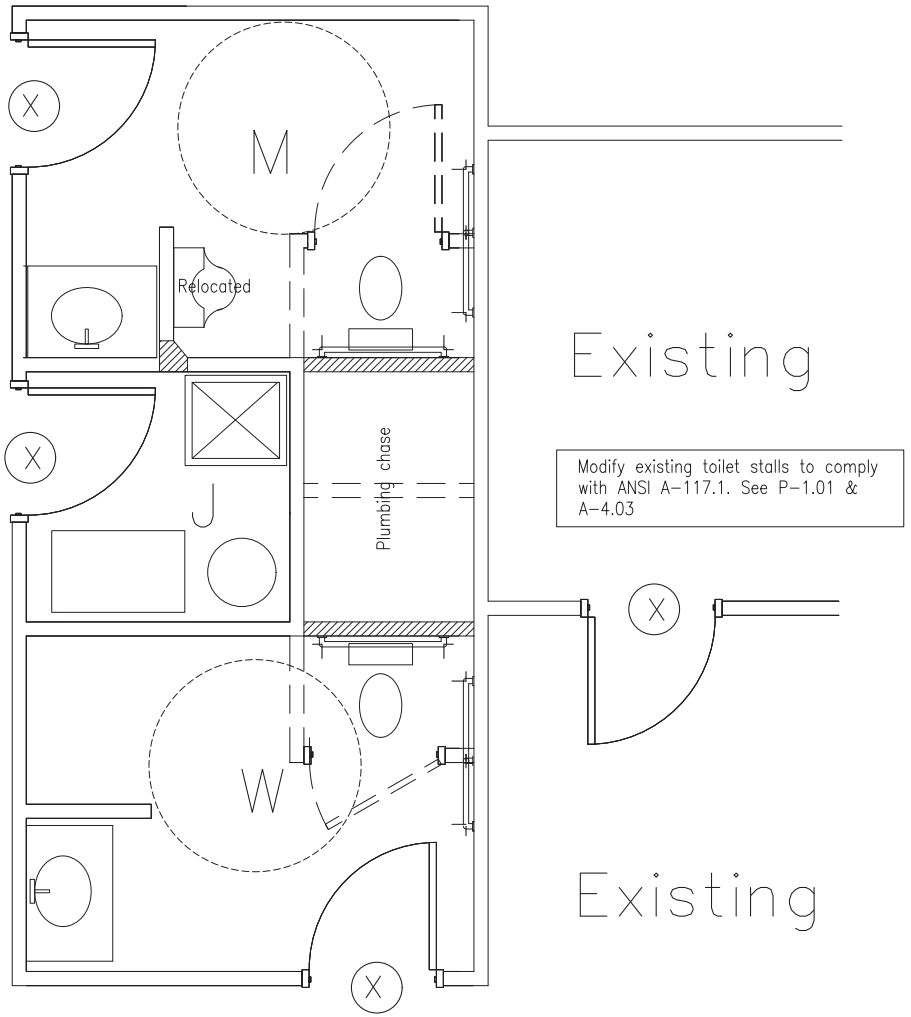

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Toilet revisions
scale $\frac{3}{4}$"=1'-0"

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604.3 Clearance.

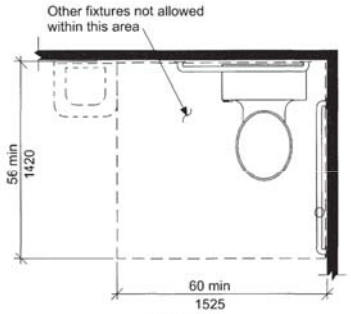


FIG. 604.3
SIZE OF CLEARANCE FOR WATER CLOSET

604.3.1 Clearance width. Clearance around a water closet shall be 60 inches (1525 mm) minimum in width, measured perpendicular from the sidewall.

604.3.2 Clearance Depth. Clearance around the water closet shall be 56 inches (1420 mm) minimum in depth, measured perpendicular from the rear wall.

604.3.3 Clearance Overlap. The required clearance around the water closet shall be permitted to overlap the water closet, associated grab bars, paper dispensers, sanitary napkin receptacles, coat hooks, shelves, accessible routes, clear floor space at other fixtures and the turning space. No other fixtures or obstructions shall be within the required water closet clearance.

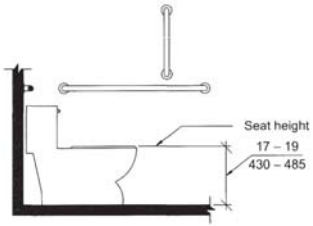
604.4 Height. The height of water closet seats shall be 17 inches (430 mm) minimum and 19 inches (485 mm) maximum above the floor, measured to the top of the seat. Seats shall not be sprung to return to a lifted position.

EXCEPTION: A water closet in a toilet room for a single occupant, accessed only through a private office and not for common use or public use, shall not be required to comply with Section 604.4.

604.5 Grab Bars. Grab bars for water closets shall comply with Section 609 and shall be provided in accordance with Sections 604.5.1 and 604.5.2. Grab bars shall be provided on the rear wall and on the side wall closest to the water closet.

EXCEPTIONS:

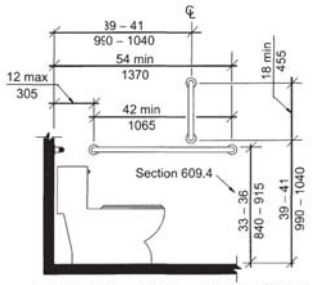
1. Grab bars are not required to be installed in a toilet room for a single occupant, accessed only through a private office and not for common use or public use, provided reinforcement has been installed in walls and located so as to permit the installation of grab bars complying with Section 604.5.
2. In detention or correction facilities, grab bars are not required to be installed in housing or holding cells or rooms that are specially designed without protrusions for purposes of suicide prevention.



Note: For children's dimensions see Fig. 604.11.4

FIG. 604.4
WATER CLOSET SEAT HEIGHT

604.5.1 Fixed Side Wall Grab Bars. Fixed side-wall grab bars shall be 42 inches (1065 mm) minimum in length, located 12 inches (305 mm) maximum from the rear wall and extending 54 inches (1370 mm) minimum from the rear wall. In addition, a vertical grab bar 18 inches (455 mm) minimum in length shall be mounted with the bottom of the bar located 39 inches (990 mm) minimum and 41 inches (1040 mm)



Note: For children's dimensions see Fig. 609.4.2

FIG. 604.5.1
SIDE WALL GRAB BAR FOR WATER CLOSET

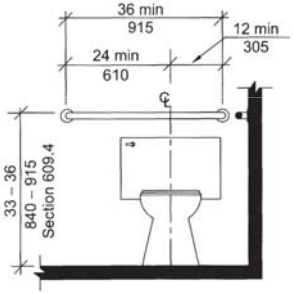
maximum above the floor, and with the center line of the bar located 39 inches (990 mm) minimum and 41 inches (1040 mm) maximum from the rear wall.

EXCEPTION: The vertical grab bar at water closets primarily for children's use shall comply with Section 609.4.2.

604.5.2 Rear Wall Grab Bars. The rear wall grab bar shall be 36 inches (915 mm) minimum in length, and extend from the centerline of the water closet 12 inches (305 mm) minimum on the side closest to the wall, and 24 inches (610 mm) minimum on the transfer side.

EXCEPTIONS:

1. The rear grab bar shall be permitted to be 24 inches (610 mm) minimum in length, centered on the water closet, where wall space does not permit a grab bar 36 inches (915 mm) minimum in length due to the location of a recessed fixture adjacent to the water closet.
2. Where an administrative authority requires flush controls for flush valves to be located in a position that conflicts with the location of the rear grab bar, that grab bar shall be permitted to be split or shifted to the open side of the toilet area.



Note: For children's dimensions see Fig. 609.4.2

FIG. 604.5.2
REAR WALL GRAB BAR FOR WATER CLOSET

604.6 Flush Controls. Flush controls shall be hand operated or automatic. Hand operated flush controls shall comply with Section 309. Flush controls shall be located on the open side of the water closet.

EXCEPTION: In ambulatory accessible compartments complying with Section 604.10, flush controls shall be permitted to be located on either side of the water closet.

604.7 Dispensers. Toilet paper dispensers shall comply with Section 309.4. *Where the dispenser is located* above the grab bar, the outlet of the dispenser shall be located within an area 24 inches (610 mm) minimum and 36 inches (915 mm) maximum from the rear wall. Where the dispenser is located below the grab bar, the outlet of the dispenser shall be located within an area 24 inches (610 mm) minimum and 42 inches (1065 mm) maximum from the rear wall. The outlet of the dispenser shall be located 18 inches (455 mm) minimum and 48 inches (1220 mm) maximum above the floor. Dispensers shall comply with Section 609.3. Dispensers shall not be of a type that control delivery, or do not allow continuous paper flow.

604.8 Coat Hooks and Shelves. Coat hooks provided within toilet compartments shall be 48 inches (1220 mm) maximum above the floor. Shelves shall be 40 inches (1015 mm) minimum and 48 inches (1220 mm) maximum above the floor.

604.9 Wheelchair Accessible Compartments.

604.9.1 General. Wheelchair accessible compartments shall comply with Section 604.9.

604.9.2 Size. Toilet compartments shall comply with Section 604.9.2.1 or 604.9.2.2 as applicable.

604.9.2.1 Minimum area. The minimum area of a wheelchair accessible compartment shall be 60 inches (1525 mm) minimum in width measured perpendicular to the side wall, and 56 inches (1420 mm) minimum in depth for wall hung water closets, and 59 inches (1500 mm) minimum in depth for floor mounted water closets measured perpendicular to the rear wall.

604.9.2.2 Compartment for children's use. The minimum area of a wheelchair accessible compartment primarily for children's use shall be 60 inches (1525 mm) minimum in width measured perpendicular to the side wall, and 59 inches (1500 mm) minimum in depth for wall hung and floor mounted water closets measured perpendicular to the rear wall.

604.9.3 Doors. Toilet compartment doors, including door hardware, shall comply with Section 404, except if the approach is to the latch side of the compartment door clearance between the door side of the stall and any obstruction shall be 42 inches (1065 mm) minimum. The door shall be self-closing. A door pull complying with Section 404.2.6 shall be placed on both sides of the door near the latch. Toilet compartment doors shall not swing into the required minimum area of the compartment.

604.9.3.1 Door Opening Location. The farthest edge of toilet compartment door opening shall be located in the front wall or partition or in the side wall or partition as required by Table 604.9.3.1.

604.9.4 Approach. Wheelchair accessible compartments shall be arranged for left-hand or right-hand approach to the water closet.

project title
Alterations for
The Muirfield
Association Office
Dublin, OH.43017
for
Muirfield Assoc. Board

Part ANSI A-117.1

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date		revisions
01	25	Preliminary
7	15	Bid Set
10	12	supplemental info
11	30	Resubmittal Permit
12	07	Resubmittal II

project number
01-015

sheet number
A4.03

date Dec 7, 2015

OVERHEAD GARAGE DOORS

Garage doors specified are Overhead Door Company, Lewisville Texas Contact (800) 929-3667. Owner to select one of 4 standard finishes, Galvanized Steel Curtain, and Operator to be a non-motorized chain hoist.

A. 144x144" Stormlite AP Model 627 with an R=10.9 and an installed U-value of 0.84.
B. 144x144" Model 610.
C. 96x84" Model 610.
D. 192x84" Model 610.

Provide structural header as required for each opening

HINGED SWINGING DOORS

Hinged doors to match exist. size as shown
Hardware to match existing. Locking to comply with OBC Section 1008.

PORTABLE FIRE EXTINGUISHERS

F.E. Provide extiguishers (OBC Section 906.3) Type 2A-10BC hang where shown on drawings, Mounted height: top not above 60 inches.

xist F.E. Existing Fire Extinguishers

GENERAL NOTES:

1. Patch and repair all walls and ceiling as needed. prepare surfaces per manufacturer's requirements for scheduled finish.

CODED CONSTRUCTION NOTES:

1. Patch rough opening and finish with gypsum wallboard per building standard.
2. Prepare rough opening and install relocated door and frame as indicated. Trim per building standard.
3. Existing wall to be removed. existing lighting, electrical devices, wiring and conduit not scheduled for reuse abandon above ceiling per NEC 2014.
4. Construct new partitions per plan. Typical construction: 2x4 Wood studs at 16"oc with 1 layer $\frac{5}{8}$" gypsum drywall on each side. Partitions to be fastened to floor and ceiling trusses. Prepare surface per manufacturer's requirements for scheduled finish.
5. Install new 80"high doors and match type, trim and finish to building standards.
6. Remove existing partition.
7. Install casement window to match existing. Trim per building standards.
8. Prepare rough openings for new overhead garage doors. Size as shown on drawings. See Overhead Garage Door specs.

EXECUTION:
The structure is self supporting and stable after the work is fully completed. It is the Contractor's responsibility to determine the construction procedure and sequence and to ensure the stability of the building and its component parts and of the adequacy of temporary or incomplete connections during erection. This includes the addition of whatever temporary bracing, guys, or tie-downs that might be necessary. Such material is not shown on the drawings.

Framing shall follow the AITC 104-2003, typical timber construction standards for platform framing. Engineered wood products shall installed in accordance with the manufacturer's published framing details. The completed framing system shall be constructed in accordance with the drawings, shall be plumb and braced at the exterior corners with $\frac{1}{2}$" plywood for required lateral wind loads and shall be fastened with the recommended fastening schedule.

The Contractor shall notify the Architect of request to review the work work upon substantial completion of the framing and shall be present for said on-site review of the work. The Contractor shall implement Architect directed changes or additions to the framing to satisfy design intent. The design of the building is not complete until the Architect has completed the on site review and the contractor has completed all changes or additions based on the on-site review.

HVAC NOTES

1 ALL WORK PERFORMED SHALL BE IN ACCORDANCE WITH 2011 OMC. (See Sheets M-1 & M-2 for specifications)

PLUMBING NOTES

1 ALL WORK PERFORMED SHALL BE IN ACCORDANCE WITH 2011 OPC (See Sheet P-1 for specifications)

ELECTRICAL NOTES

1 ALL WORK PERFORMED SHALL BE IN ACCORDANCE WITH 2011 OBC AND 2014 NEC (See Sheets E-1 & E-2 for Specs.)

SITE PLAN AND FOUNDATION PLAN NOTES

1 **FIELD VERIFY ALL UNDERGROUND UTILITIES PRIOR TO EXCAVATION. CALL TOLL FREE TWO DAYS BEFORE YOU DIG 1-800-362-2764 OHIO UTILITIES PROTECTION SERVICE.**

2 **FIELD VERIFY ALL EXISTING SPOT ELEVATIONS AND SITE DIMENSIONS PRIOR TO START OF CONSTRUCTION. ESTABLISH A READILY AVAILABLE BENCHMARK.**

3 **FIELD VERIFY ALL NEW AND EXISTING DRAINAGE** PATTERNS. MAINTAIN POSITIVE FALL FROM ALL EXTERIOR FINISH SURFACES TO DRAIN TO ESTABLISHED SWALES.

4 **GRADE THE PERIMETER OF BUILDING STRUCTURES TO PROVIDE POSITIVE DRAINAGE AWAY FROM THE FOUNDATION THAT FALLS 6" IN FIRST 24" MINIMUM.**

DEMOLITION NOTES

1 **GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE EXTENT OF DEMOLITION THAT IS REQUIRED TO EXECUTE THE NEW WORK. THE AMOUNT OF DEMOLITION AND DISRUPTION SHOULD BE KEPT TO A MINIMUM.**

2 **ALL MATERIALS AND FINISHES INTENDED TO REMAIN SHALL BE PROTECTED FROM DAMAGE.**

3 **GENERAL CONTRACTOR SHALL COORDINATE ALL DISCONNECTS AND SHUT DOWN THAT MAY BE REQUIRED FOR DEMOLITION AND CONSTRUCTION.**

4 **ALL HEIGHTS ARE ROUGH CEILING HEIGHTS AND SHOULD BE FIELD VERIFIED AND MAY VARY.**

STRUCTURAL NOTES

1 **THIS STRUCTURE IS DESIGNED TO RESIST THE FOLLOWING LOADING CONDITIONS (LIVE LOADS):**

- ROOF	30 PSF LIVE LOAD
- ATTIC	**20 PSF LIVE LOAD**
- SECOND FLOOR	50 PSF LIVE LOAD
- FIRST FLOOR	**40 PSF LIVE LOAD**
- WIND	**90 MPH WIND SPEED**

2 **FOOTING DESIGN ASSUMES SOIL-BEARING CAPACITY OF** 3,000 LBS./SQ. FT. A SOILS TEST CONFIRMING CAPACITY, PAID FOR BY THE CONTRACTOR PRIOR TO BEGINNING THIS FOUNDATION WORK.

3 **ALL CONCRETE SHALL HAVE A MINIMUM 28-DAY** COMPRESSIVE STRENGTH OF 3000 PSI EXCEPT AS NOTED. **EXTERIOR EXPOSED CONCRETE AND GARAGE FLOOR SLABS SHALL HAVE A MINIMUM 28-DAY COMPRESSIVE** STRENGTH 4000-PSI AND SHALL CONTAIN 4% TO 6% **ENTRAINED AIR. CONCRETE SHALL NOT CONTAIN CALCIUM CHLORIDE.**

4 **ALL CONCRETE WORK SHALL COMPLY WITH: ACI 318-08 "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE"**

5 **ALL COLUMN FOOTINGS SHALL BE AS SPECIFIED OR** TYPICAL: 30"X30"X12" W/ 3 - #5 X 2' EACH WAY **BOTTOM. CENTER FOOTINGS ON COLUMN CENTER LINES. ENCASE ALL STEEL COLUMNS, BEARING PLATES, AND ANCHOR BOLTS BELOW GRADE WITH A MINIMUM OF 3" CONCRETE COVER.**

6 **COLUMNS BEARING ON MASONRY WALLS SHALL BEAR ON BLOCK THAT IS REINFORCED W/ 2 - #5 VERTICAL. FILL CORES WITH ASTM C476 GROUT.**

7 **ALL STEEL COLUMNS SHALL CONFORM TO AISI NAS-07 and AISC 360 -05 ALL 3" DIA. COLUMNS SHALL HAVE A 3/8"X4"X8" BASE PLATE. ALL 4" DIA. COLUMNS SHALL HAVE A 1/2"X4"X8" BASE PLATE. STEEL COLUMNS STARTING AT THE TOP OF THE FOUNDATION WALL OR AT THE FIRST FLOOR SHALL BE 3" DIA. AND SHALL BE FRAMED TIGHTLY ON SIDES WITH 2-2X'S. STEEL COLUMNS USED IN THE BASEMENT SHALL BE 4" DIAMETER.**

8 **ALL STEEL FABRICATION AND DESIGN SHALL COMPLY WITH AISC 360 -05 "SPECIFICATIONS FOR THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS".**

9 **ANCHOR BOLTS SHALL CONFORM TO ASTM A307-07b.**

10 **ALL REINFORCING STEEL SHALL BE GRADE 60.**

11 SPECIAL FOOTING FOR HC-LIFT (SAVARIA V1504) 52"X72" 6" THICK SLAB 4,500psi CONCRETE ON 15" COMPACTED GRAVEL W/ #4 BARS @ 12"oc BOTH WAYS. DEPRESS SLAB 3" BELOW FINISHED FLOOR.

12 FOOTINGS SHALL BEAR ON UNDISTURBED EARTH OR EARTH COMPACTED TO 98% STANDARD PROCTOR.

13 6" THICK FINISHED SLABS IN SHOP AREA. ALL CONTROL JOINTS TO BE SAWN. 6mil VAPOR BARRIER OVER COMPACTED FILL. TOPPING AND FINISHING PER FINISH SCHEDULE.

14 ATTIC DECKING SHALL BE 3/4" THICK TONGUE AND **GROOVE EXPOSURE 1, NAILED AND GLUED TO THE JOISTS.**

15 ROOF SHEATHING SHALL BE: TRUSSES/RAFTERS UP TO 24" C/C - 7/16" OSB EXPOSURE I. **PROVIDE PLYWOOD CLIPS @ 12" C/C AT UNSUPPORTED EDGES.**

(cont) STRUCTURAL NOTES

16 PRODUCTS

AF&PA standard NDS PS 20-05 seasoned, grade marked and conforming to sizes shown on Drawings.
Fb 1500ps (min) E 1,500,000, maximum moisture content not to exceed 19%.
Light Framing:" Stud Grade" S4S for framing.
Structural Framing: #2 or better SPIB or WWPA species.

Plywood: US Product Standard PS 1-09, grade marked.
Non-Veneered Panels: Oriented Strand Board PS-2-10.
Engineered wood products: Truss Joist by Weyerhaeuser.
Exterior sheathing:USG Glass-Mat Sheathing.
Pressure Treated Lumber:meeting AWPA Standard P5-06.
CCA treated products shall not be used.
Construction adhesive:Meeting APA AFG-01.
Connectors: Simpson Strong Tie.
Nails: Meeting ASTM D-1761-12.

17 EXTERIOR WALL CONSTRUCTION SHALL CONFORM TO THE FOLLOWING UNLESS A SPECIFICALLY DESIGNED WALL SYSTEM IS NOTED:
WALLS LESS THAN 10'-0" HIGH - 2X4'S @ 16" C/C.
WALLS FROM 10'-0" AND HIGHER - 2X6'S @ 16" C/C.

18 ALL WOOD IN LOCATIONS SUBJECT TO TERMITE OR DECAY **DAMAGE SUCH AS SILL PLATES AND THE BOTTOM PLATES OF WALLS BEARING ON CONCRETE SLABS SHALL BE PRESSURE TREATED (AWPA-U1) OR BE OF AN APPROVED DECAY RESISTANT SPECIES. COMPLY WITH WESTERN WOOD PRODUCTS ASSOCIATION "TREATED WOOD HANDLING ADVISORY" AND AMERICAN WOOD PRESERVERS TECHNICAL GUIDELINES CONCERNING CONSTRUCTION WITH TREATED WOOD.**

19 A STRUCTURAL ENGINEER REGISTERED IN THE STATE OF **OHIO SHALL DESIGN TRUSSES. TRUSSES SHALL BE DESIGNED IN ACCORDANCE WITH THE NATIONAL DESIGN SPECIFICATION, FOR WOOD, 2005 EDITION AND THE TRUSS PLATE INSTITUTE. NATIONAL DESIGN STANDARD FOR METAL-PLATE-CONNECTED WOOD TRUSS CONSTRUCTION TPI 1-2007. ROOF TUSSES SHALL BE DESIGNED FOR THE FOLLOWING LOADS:**

- TOP CHORD LIVE LOAD	25 PSF SNOW LOAD
- TOP CHORD DEAD LOAD	10 PSF
- BOTTOM CHORD LIVE LOAD	20 PSF
- BOTTOM CHORD DEAD LOAD	10 PSF

20 WHERE THE TERM "G & N" IS NOTED IT MEANS GLUE AND **NAIL. NAILING SHALL APPLY ENOUGH CLAMPING FORCE TO HOLD THE MATING SURFACES IN CONTACT UNTIL THE GLUE ATTAINS FULL STRENGTH. GLUING SHALL CONFORM TO THE INFORMATION STATED BELOW.**
A) PLACE CONTINUOUS BEAD(S) OF GLUE ON ONE OF THE SURFACES TO BE GLUED.
B) SPREAD GLUE OVER 100% OF SURFACES TO BE MATED.
C) NAIL PIECES TOGETHER SO THOSE SURFACES ARE HELD TIGHTLY TOGETHER UNTIL GLUE SETS.
D) WIPE AWAY ANY EXCESS GLUE, WHICH IS EXPELLED IF ITS APPEARANCE WILL BE UNACCEPTABLE IN THE FINISHED STRUCTURE. "TITEBOND CONSTRUCTION ADHESIVE" SHALL BE USED FOR GLUING AS MANUFACTURED BY FRANKLIN INTERNATIONAL.

21 CONFORM TO THE REQUIREMENTS OF THE FOLLOWING **FASTENING SCHEDULE:**
A) ROOF TRUSSES/RAFTERS TO WALL HEADERS: FASTEN WITH SIMPSON STRONG-TIE ANCHOR H4 OR AS SHOWN ON DRAWINGS.
B) OPENING HEADERS MADE WITH MULTIPLE 2X'S AND PLYWOOD: GLUE AND NAIL TOGETHER WHERE THE TERM "G & N" IS NOTED.
C) OPENING HEADERS WITH MULTIPLE LVL LUMBER: FASTEN WITH 1/2" DIA. THROUGH BOLTS @ 1'-6" C/C SPACED 2" FROM TOP AND BOTTOM BEAM, STAGGER BOLTING OR PER MANUFACTURER.
D) THE CONTRACTOR MAY, AT HIS OPTION, ATTACH DRYWALL IN ACCORDANCE WITH 2011 OBC OR ATTACH DRYWALL IN ACCORDANCE WITH THE ADHESIVE METHOD AS RECOMMENDED BY THE UNITED STATES GYPSUM COMPANY.

22 ALL OTHER MEMBER FASTENING SHALL COMPLY WITH **ASCE - 7.**

23 PROVIDE 2X WOOD BLOCKING TO MATCH JOIST SIZE **BETWEEN JOIST UNDER WALLS, WHICH ARE PERPENDICULAR TO JOISTS.**

24 STRUCTURAL HEADERS SHALL BE AS STATED BELOW UNLESS **NOTED OTHERWISE:**
A) 2X4 STUD WALLS - 2-2X8'S + 1/2" PLYWOOD FILLER AND BLOCKING (AS NEEDED)

(cont) STRUCTURAL NOTES

24 (cont) **B) 2X6 STUD WALLS - 3-2X8'S + 2-1/2" PLYWOOD FILLERS AND BLOCKING AS NEEDED. HEADERS SHALL BEAR ON 2-2X STUDS GLUED AND NAILED WHERE THE TERM "G & N" IS NOTED.**

25 IT IS THE CONTRACTOR'S RESPONSIBILITY TO FURNISH **PROPERLY DESIGNED CONNECTIONS FOR ALL MEMBERS NOT SPECIFICALLY STATED ON THE DRAWINGS. THE CONTRACTOR IS ENCOURAGED TO USE SIMPSON STRONG-TIE PRODUCTS.**

26 PROVIDE POSITIVE CONNECTIONS WITH 'SIMPSON - **STRONG TIES' FOR ALL VALLEY, HIP RAFTERS & BEARING MEMBERS.**

27 ALL WOOD CONSTRUCTION SHALL CONFIRM WITH THE **NATIONAL DESIGN SPECIFICATION FOR WOOD, 2005 EDITION.**

28 INSTALL OSB WALL SHEATHING WITH REQUIRED NAIL SIZE **AT 12" C/C EVERYWHERE EXCEPT AT THE CORNERS WHERE THE PATTERN IS TO BE AT 6" C/C.**

29 PROVIDE 2X WOOD BLOCKING TO MATCH JOIST SIZE @ 2' **C/C BETWEEN FLOOR JOIST PARALLEL TO FOUNDATION AND FOUNDATION WALLS.**

30 FLOOR JOISTS UNDER PARALLEL BEARING PARTITIONS **SHALL BE DOUBLED OR ADEQUATELY DESIGNED PER THE** 2011 OBC.

31 PROVIDE ADEQUATE FIRESTOPPING AT ALL REQUIRED LOCATIONS PER 2011 OBC.

32 OWNER IS HEREBY NOTIFIED THAT THE GENERAL **CONTRACTOR PROVIDES NO WARRANTY OR STATEMENT REGARDING RADON OR RADON ABATEMENT AS PERTAINING TO THIS SPECIFIC PROJECT AND NO** ABATEMENT SYSTEM IS INCLUDED. ALL BUILDINGS HAVE A **POTENTIAL FOR RADON LEVELS THAT MAY EXCEED THE RECOMMENDED LEVELS ESTABLISHED BY THE OHIO ENVIRONMENTAL PROTECTION AGENCY.**

33 THE ADDITION IS STRUCTURALLY STABLE WHEN COMPLETED. IT IS THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE PROPER BRACING DURING CONSTRUCTION AND TO PROVIDE A SAFE WORKING ENVIRONMENT DURING CONSTRUCTION.

34 RELOCATED STEEL STAIRS SHALL BE REBUILT TO COMPLY WITH SECTION 1009 STAIRWAYS OF THE 2011 OBC.

35 ALL ELEMENTS OF CONSTRUCTION NOT SPECIFICALLY NOTED ON THESE DRAWINGS SHALL COMPLY WITH THE 2011 OBC.

ROOFING NOTES

1 ALL ROOF PITCHES TO BE PER DRAWING. FLAT ROOF DECK SHALL BE COVERED WITH 16 OZ COPPER SHEET HOOK LOCKED AND SOLDERED JOINTS.

2 FLASH AS REQUIRED AROUND ALL ROOF PENETRATIONS. COORDINATE ALL ROOF PENETRATIONS AND FLASHING DETAILS WITH PLUMBING, MECHANICAL AND ROOFING CONTRACTORS.

3 ALL EAVE CONDITIONS TO RECEIVE ICE DAM PROTECTION PER MANUFACTURER RECOMMENDATION AN D 2011 OBC.

4 VALLEY FLASHING IS TO BE PRE-FINISHED HEAVY GAUGE ALUMINUM. COLOR TO MATCH ROOF AS CLOSELY AS POSSIBLE.

5 ALL VENTS THROUGH ROOF TO PENETRATE ROOF OUT OF THE ENTRANCE VIEW OF THE BUILDING.

SUB-TRADES GENERAL NOTES

1 EACH SUB-CONTRACTOR SHALL OBTAIN AND PAY FOR PERMITS AS REQUIRED BY THE BUILDING DEPARTMENT JURISDICTION THAT IS RESPONSIBLE FOR THE PROJECT SITE LOCATION, AS IT APPLIES TO THE SCOPE OF WORK

2 SUB-CONTRACTOR MUST SCHEDULE ALL INSPECTIONS RELATED TO THE SCOPE OF WORK IN A TIMELY MANNER AND MUST OBTAIN ALL LEGAL APPROVALS TO CULMINATE IN A CERTIFICATE OF FINAL OCCUPANCY PERMIT.

3 EACH MECHANICAL OR OTHER SUB-CONTRACTOR SHALL PLAN THE WORK UNDER THE SUPERVISION OF THE GENERAL CONTRACTOR AND COORDINATE WITH THE OTHER TRADES TO ASSURE CONTINUITY OF THE WORK AND RECEIVE THE APPROVAL OF THE GENERAL CONTRACTOR.

project title

Alterations for The Muirfield Association Office
Dublin, OH.43017

for

Muirfield Assoc. Board

Specifications

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seal

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ARTHUR PETER LENZ 4530
REGISTERED ARCHITECT

date	revisions
01 25	Preliminary
7 15	Bid Set
10 12	supplemental info
11 30	Resubmittal Permit
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project number
01-015

sheet number
A5.01

date Dec 7, 2015

MUIRFIELD ASSOCIATION, INC.
8372 MUIRFIELD DRIVE
DUBLIN, OHIO 43017

LOCATION MAP

0 500'

SCALE: 1"=500'

INDEX OF SHEETS:

STATE OF OHIO
JOHN J. RUTTER, JR.
S-7958
REGISTERED PROFESSIONAL SURVEYOR

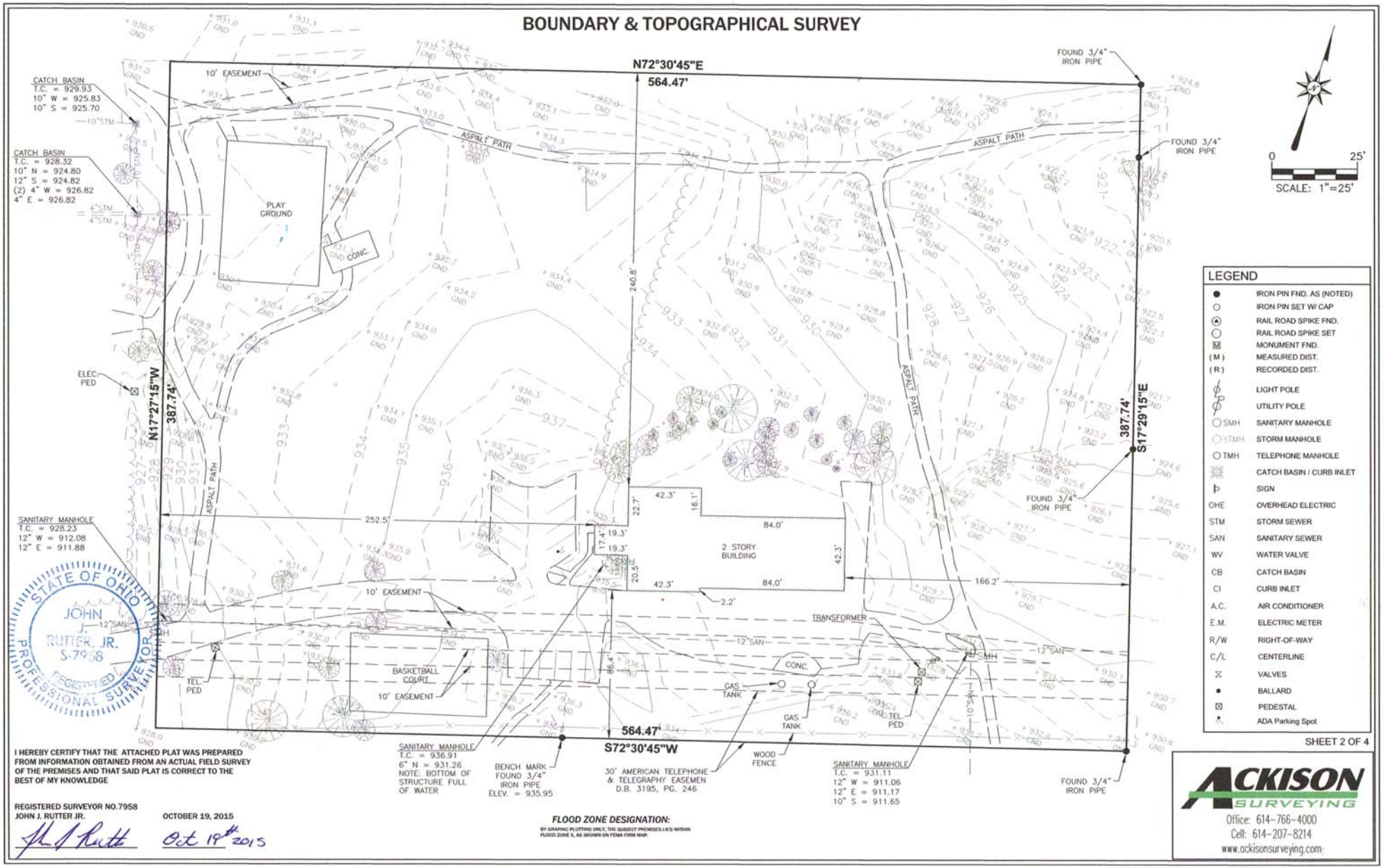
I HEREBY CERTIFY THAT THE ATTACHED PLAT WAS PREPARED FROM INFORMATION OBTAINED FROM AN ACTUAL FIELD SURVEY OF THE PREMISES AND THAT SAID PLAT IS CORRECT TO THE BEST OF MY KNOWLEDGE

REGISTERED SURVEYOR NO.7958
JOHN J. RUTTER JR. OCTOBER 19, 2015

Oct 19th 2015

ACKISON SURVEYING
Office: 614-766-4000
Cell: 614-207-8214
www.ackisonsurveying.com

BOUNDARY & TOPOGRAPHICAL SURVEY



LEGEND

●	IRON PIN FND. AS (NOTED)
○	IRON PIN SET W/ CAP
⊛	RAIL ROAD SPIKE FND.
○	RAIL ROAD SPIKE SET
Ⓜ	MONUMENT FND.
(M)	MEASURED DIST.
(R)	RECORDED DIST.
	LIGHT POLE
	UTILITY POLE
SMH	SANITARY MANHOLE
STMH	STORM MANHOLE
TMH	TELEPHONE MANHOLE
	CATCH BASIN / CURB INLET
	SIGN
OHE	OVERHEAD ELECTRIC
STM	STORM SEWER
SAN	SANITARY SEWER
WV	WATER VALVE
CB	CATCH BASIN
CI	CURB INLET
A.C.	AIR CONDITIONER
E.M.	ELECTRIC METER
R/W	RIGHT-OF-WAY
C/L	CENTERLINE
	VALVES
	BALLARD
	PEDESTAL
	ADA Parking Spot

SHEET 2 OF 4

STATE OF OHIO
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OCTOBER 19, 2015

Oct 19th 2015

FLOOD ZONE DESIGNATION:

BY GRAPHIC PLOTTING ONLY, THE SUBJECT PREMISES LIES WITHIN FLOOD ZONE X, AS SHOWN ON FEMA FIRM MAP.

ACKISON SURVEYING
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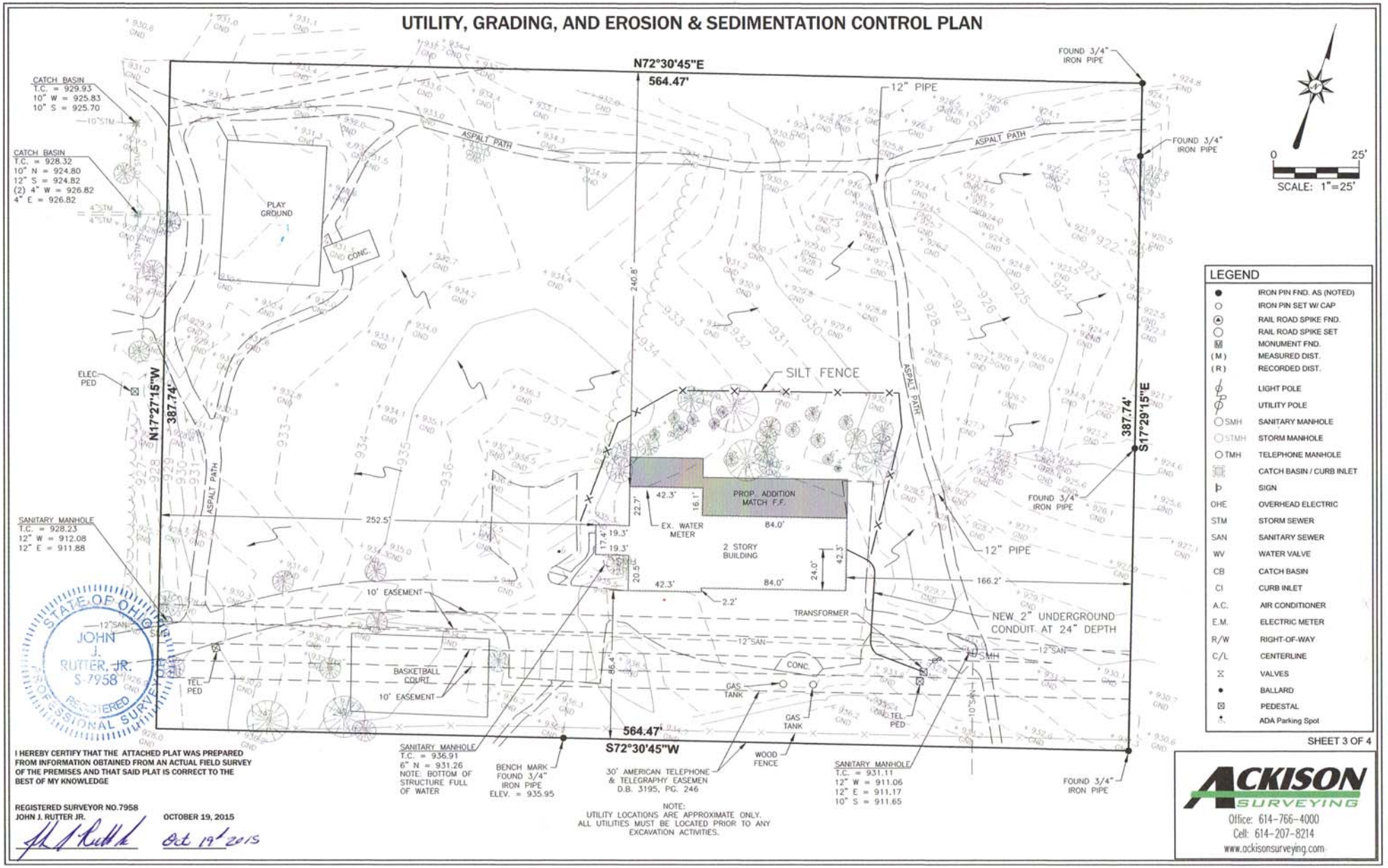
UTILITY, GRADING, AND EROSION & SEDIMENTATION CONTROL PLAN



LEGEND

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	SIGN
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WV	WATER VALVE
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CI	CURB INLET
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R/W	RIGHT-OF-WAY
C/L	CENTERLINE
⧖	VALVES
•	BALLARD
⊠	PEDESTAL
	ADA Parking Spot

SHEET 3 OF 4

STATE OF OHIO
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REGISTERED SURVEYOR NO.7958
JOHN J. RUTTER JR.

OCTOBER 19, 2015

Oct 19th 2015

NOTE:
UTILITY LOCATIONS ARE APPROXIMATE ONLY. ALL UTILITIES MUST BE LOCATED PRIOR TO ANY EXCAVATION ACTIVITIES.

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STAKING PLAN

STATE OF OHIO
JOHN J. RUTTER, JR. 7958
REGISTERED PROFESSIONAL SURVEYOR

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REGISTERED SURVEYOR NO.7958
JOHN J. RUTTER JR.
OCTOBER 19, 2015

John J. Rutter Oct 19th 2015

SHEET 4 OF 4

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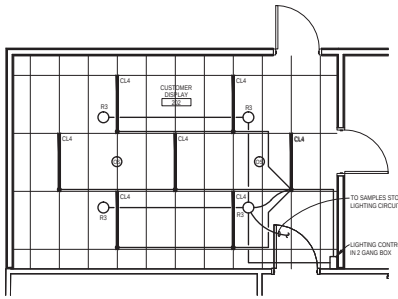


CUSTOMER DISPLAY LIGHTING - ALTERNATE E-1

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

Notes on Wiring

QS Control Link

The QS control link has a free wiring topology (daisy chain, t-tap, etc). The system wiring illustrated by this drawing has been laid out to ensure appropriate power to each device. If, for any reason, the system is to be wired differently than what is shown, please confirm all device power requirements are met (Please refer to "QS Link Power Requirements" for individual device power requirements).
For total QS control wire lengths of less than 500ft (153 m), use Lutron cable GRX-CBL-346S (4 Conductor Non-Plenum) or GRX-PCBL-346S (4 Conductor Plenum). Otherwise use 2#18 AWG (1.0 mm2) and 1 Belden #9461. For total QS control wire lengths of up to 2,000 ft, use GRX-CBL-46L. Total QS control wire length MUST NOT exceed 2,000 ft (600 m).

Panel Link Rules

Panels are daisy chained on one of the configurable links per Lutron's drawing, however they do not have to be in the order shown. DO NOT home-run or t-tap this wiring link. All circuits need to landed in these panels per Lutron's Panel Schedules. The maximum wire length of a panel link is 2,000 ft (600m). An MX-RPTR is used to extend the length of a link by another 2,000 ft (600m). A maximum of (3) MX-RPTRs may be used per link for maximum length of 8,000 ft (2,430 m) per link. If panel is moved to another link, or the loads are not wired as shown in Lutron's panel schedules, Lutron must be notified. This information is important for programming the system. LT-1 link terminators are needed on each end of the link.
Use Lutron cable GRX-CBL-46L (5 conductor non-plenum) or GRX-PCBL-46L (5 conductor plenum rated). Otherwise use 2#12 AWG (4 sq mm)+ 2 #22 AWG (0.5 sq mm) twisted and shielded and between panels add 1#18 AWG (1.0 sq mm) for emergency sensing cable by others.

DMX Cable

DMX Link wiring requires one Belden #9729 (Non-Plenum) or one Beldon #89729 (Plenum) or Dura Flex 22/4 WA cable.

EcoSystem Bus/Loop*

This is a topology free and polarity free wiring (daisy-chain, t-tap, home-run etc.). Keep all the ballasts/modules in one room on the same loop wherever possible. EcoSystem loops are shown on the lighting plans. If there is a discrepancy, and if rooms are wired on a different loop than the one shown, Lutron needs to be notified. This information is important for programming the system.
Use Lutron cable C-CBL-216-GR1 (2#16 Conductor Non-Plenum) or C-PCBL-216-CL-1 (2#16 Conductor Plenum Rated). Otherwise use 2#16 AWG (1.5 sq mm) by others.
Loop length is limited by wire gauge used for E1 and E2 as follows:

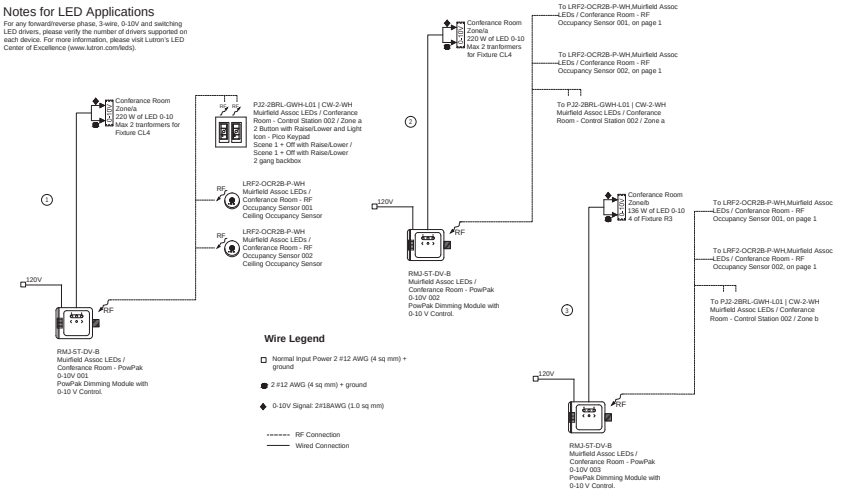
Wire Gauge	Max Loop Length
#18 AWG (1.0 sq mm)	550 ft (167m)
#16 AWG (1.5 sq mm)	900 ft (274m)
#14 AWG (2.5 sq mm)	1,400 ft (426 m)
#12 AWG (4 sq mm)	2,200 ft (670m)

QS Link Power Requirements

Devices : Power Supply	(PDU)
GRAFIK Eye QS	3
ESN (EcoSystem)	30
ESN (Switching) ESN (0-10V)	14
ESN (DALI) ESN (Adaptive)	3
ESN (Motor Module)	0
Plug-in Power Supply J-Box Power Supply	8
DIN Rail power supply	22
Quantum Lighting Hub	33 to each link
Devices : Power Draw	**(PDU)**
QSM (without wired inputs)	3
QSM (with wired inputs)	3 + add PDUs for each sensor in the PDU column
Wired Occ Sensor on QSM	2
Wired photo sensor, pico, IR reciever and Ecosystem keypad on QSM	0.5 each
Digital IO Control Interface	3
NWK Control Interface	2
DMX-512 Interface	2
ESN Programming Interface	2
seeTouch QS	1

Notes for LED Applications

For any forward/reverse phase, 3-wire, 0-10V and switching LED drivers, please verify the number of drivers supported on each device. For more information, please visit Lutron's LED Center of Excellence (www.lutron.com/leds).

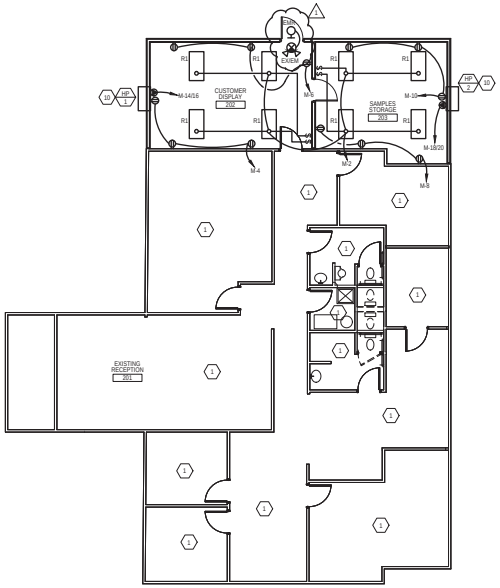


LIGHTING WIRING DIAGRAMS - ALTERNATE E-1

N.T.S.

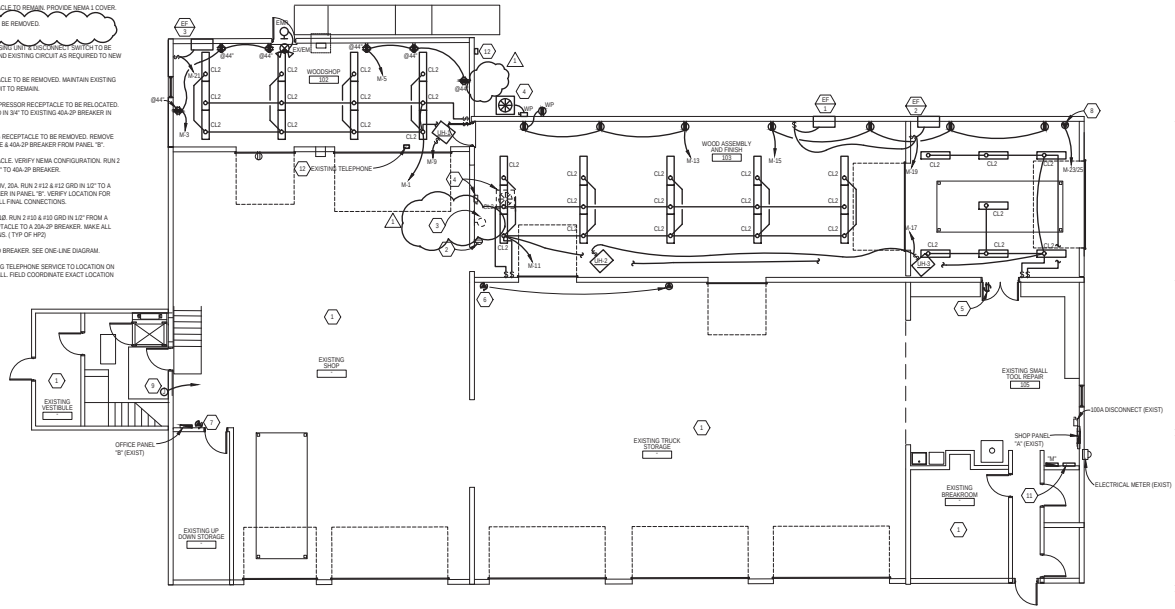
CODED ELECTRICAL NOTES

1. NO WORK IN THIS AREA UNLESS NOTED.
2. EXISTING RECEPTACLE TO REMAIN. PROVIDE NEMA 1 COVER.
3. EXISTING LIGHT TO BE REMOVED.
4. EXISTING CONDENSING UNIT & DISCONNECT - SWITCH TO BE RELOCATED. EXTEND EXISTING CIRCUIT AS REQUIRED TO NEW LOCATION.
5. EXISTING RECEPTACLE TO BE REMOVED. MAINTAIN EXISTING PORTION OF CIRCUIT TO REMAIN.
6. EXISTING AIR COMPRESSOR RECEPTACLE TO BE RELOCATED. RUN 2 #6 & #10 GRD IN 3/4" TO EXISTING 40A-2P BREAKER IN PANEL "A".
7. EXISTING WELDING RECEPTACLE TO BE REMOVED. REMOVE OLD CONDUIT, WIRE & 40A-2P BREAKER FROM PANEL "B".
8. NEW LIFT RECEPTACLE. VERIFY NEMA CONFIGURATION. RUN 2 #6 & #10 GRD IN 3/4" TO 40A-2P BREAKER.
9. HANDICAP LIFT, 120V, 20A. RUN 2 #12 & #12 GRD IN 1/2" TO A NEW 20A-1P BREAKER IN PANEL "B". VERIFY LOCATION FOR ROUGH-IN. MAKE ALL FINAL CONNECTIONS.
10. HP-1, 3.5KW, 240V, 1Ø. RUN 2 #10 & #10 GRD IN 1/2" FROM A NEMA 6-20R RECEPTACLE TO A 20A-2P BREAKER. MAKE ALL FINAL CONNECTIONS. (TYP OF HP2)
11. 200A-2P ENCLOSED BREAKER. SEE ONE-LINE DIAGRAM.
12. RELOCATE EXISTING TELEPHONE SERVICE TO LOCATION ON NEW EXTERIOR WALL. FIELD COORDINATE EXACT LOCATION



SECOND FLOOR ELECTRICAL PLAN

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



FIRST FLOOR ELECTRICAL PLAN

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

Point One Design, Ltd.
Consulting Engineers
9941 York Theta Drive North Royalton, Ohio 44133
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project title

Alterations for The Muirfield Association Office
Dublin, OH.43017
for
Muirfield Assoc. Board

ELECTRICAL PLANS @ 1/8" = 1'-0"

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STATE OF OHIO JAMES A. KNOCHEL 70713 REGISTERED PROFESSIONAL ENGINEER
12/9/2015

date		revisions
07	15	PERMIT
12	7	REVISION 1

project number
01-015

sheet number
E1.01

date 07-15-15

ELECTRICAL SPECIFICATIONS

1. THE REQUIREMENTS AS SET FORTH UNDER GENERAL CONDITIONS, INSTRUCTIONS TO BIDDERS AND GENERAL REQUIREMENTS ARE A PART OF THIS CONTRACT. BIDS SHALL BE BASED ON A COMPLETE/FULL SET OF DRAWINGS. CONTRACTOR IS RESPONSIBLE FOR COORDINATION OF WORK WITH WORK PERFORMED BY OTHER TRADES.

2. CONTRACTOR SHALL VISIT SITE PRIOR TO BIDDING. BIDS SHALL SERVE AS EVIDENCE OF KNOWLEDGE OF EXISTING CONDITIONS. FIELD VERIFY ALL EXISTING ELECTRICAL LOCATIONS, CONDITIONS ETC. FAILURE TO VISIT THE SITE SHALL NOT RELIEVE THE CONTRACTOR FROM ANY RESPONSIBILITY IN THE PERFORMANCE OF THE ELECTRICAL WORK. BEGINNING OF WORK INDICATES ACCEPTANCE OF EXISTING CONDITIONS.

3. FURNISH ALL LABOR, MATERIALS, TESTING, EQUIPMENT, INCIDENTALS AND TOOLS TO PERFORM ELECTRICAL WORK SHOWN, NOTED OR SCHEDULED FOR A COMPLETE AND FINISHED INSTALLATION. MATERIALS, PRODUCTS AND EQUIPMENT, INCLUDING ALL COMPONENTS THEREOF, SHALL BE NEW AND AS SUCH APPEAR ON THE UNDERWRITERS LABORATORIES LIST OF APPROVED ITEMS AND SHALL BE SIZED IN CONFORMITY WITH REQUIREMENTS OF THE LATEST EDITION OF THE NATIONAL ELECTRICAL CODE AND OTHER APPLICABLE CODES, WHICHEVER ARE MORE STRINGENT.

4. ALL WORK IS TO BE IN ACCORDANCE WITH THE LATEST EDITION OF THE NEC AND ALL APPLICABLE FEDERAL, STATE AND LOCAL CODES. ALL ELECTRICAL EQUIPMENT & MATERIALS SHALL BE U.L. LABELED AND LISTED PER NEC 110.3(A)(1).

5. SECURE AND PAY FOR ALL REQUIRED PERMITS, FEES, ASSESSMENTS AND INSPECTION CERTIFICATES THAT RELATE TO THE ELECTRICAL CONTRACT. FURNISH APPROVED CERTIFICATE OF FINAL INSPECTION, AND TURN OVER TO OWNER AT COMPLETION OF PROJECT.

6. THESE ELECTRICAL PLANS ARE DIAGRAMMATIC, NOT SHOWING EVERY ITEM IN EXACT LOCATION OR DETAIL. MEASUREMENTS AND LOCATIONS MUST BE FIELD-VERIFIED AND COORDINATED WITH ARCHITECTURAL, PLUMBING, HVAC, FIRE PROTECTION, STRUCTURAL AND OTHER BUILDING CONDITIONS.

7. THE ELECTRICAL CONTRACTOR SHALL FURNISH (6) COPIES OF SHOP DRAWINGS, REVIEWED AND STAMPED APPROVED BY THE CONTRACTOR, FOR APPROVAL BY THE ARCHITECT AND ENGINEER, PRIOR TO ORDERING EQUIPMENT SUCH AS LIGHT FIXTURES AND DISTRIBUTION EQUIPMENT.

8. CONDUIT SHALL BE STANDARD STEEL RIGID OR EMT (THIN WALL) ACCORDING TO LOCAL CODE REQUIREMENTS. CONDUIT SHALL BE CONCEALED IN FINISHED AREAS, EXCEPT AS OTHERWISE APPROVED BY THE ARCHITECT. THE USE OF SURFACE RACEWAY EXCEPT AS CALLED FOR ON DRAWINGS SHALL REQUIRE APPROVAL OF THE ARCHITECT. EMT CONNECTIONS SHALL BE COMPRESSION OR SET- SCREW TYPE. FLEXIBLE CONDUIT OR TYPE MC CABLE SHALL BE APPROVED FOR CONCEALED BRANCH CIRCUITING AND FOR FINAL CONNECTIONS TO LIGHT FIXTURES, MOTORS AND VIBRATING EQUIPMENT AND WHERE SO USED TO BE GROUNDED WITH A SEPARATE FULL SIZED GREEN GROUNDING CONDUCTOR. EXPOSED FINAL TYPE MC/FLEX CONNECTIONS SHALL BE LIMITED TO 10'-0" IN LENGTH. ARRANGE CIRCUITS SO AS TO AVOID THE USE OF JUNCTION BOXES ABOVE DRYWALL CEILING AREAS. JUNCTION BOXES LOCATED ABOVE LAY-IN CEILINGS ARE ACCEPTABLE.

9. MINIMUM SIZES OF CONDUITS SHALL BE 1/2"

10. PROVIDE ALL CUTTING AND PATCHING REQUIRED FOR INSTALLATION OF ELECTRICAL WORK. ALL CORE DRILLING OR CUTTING OF FIRE-RATED FLOORS, SHAFTS AND WALLS SHALL BE FIRE-STOPPED PRIOR TO FINISH PATCHING. ALL PENETRATIONS SHALL BE FIRE SEALED TO MATCH THE FIRE RATING OF THE FLOOR, SHAFT OR WALL PENETRATED.

11. WIRE SHALL BE SINGLE CONDUCTOR COPPER WITH 600 VOLT INSULATION. MINIMUM WIRE SIZE SHALL BE #12 AWG. ALL WIRE AND CABLE SHALL BE NEW AND SHALL BE BROUGHT TO THE SITE IN UNBROKEN PACKAGES. INCREASE CONDUCTOR BY ONE SIZE FOR EVERY 150' INCREMENT OF DISTANCE FROM THE PANEL BOARD FOR 120 VOLT CIRCUITS. GENERAL WIRING SHALL BE THW, THWN, THHN, OR XHHW. ALUMINUM CONDUCTORS ARE NOT PERMITTED.

12. FURNISH AND INSTALL A COMPLETE WIRED GROUNDING SYSTEM FOR ELECTRICAL EQUIPMENT AND CIRCUITS AS SHOWN ON THE DRAWINGS AND REQUIRED PER N.E.C. ARTICLE 250. ALL GROUNDING CONDUCTORS SHALL BE GREEN, WHERE EXPOSED IN PANEL, OUTLETS, BOXES, ETC.

13. RECEPTACLES SHALL BE 20 AMP, 3-WIRE GROUNDING TYPE EQUAL TO HUBBELL 5362. WALL SWITCHES SHALL BE 20 AMP SPECIFICATION GRADE, RATED AT 120 VOLT AS REQUIRED. ALL DEVICE COVERPLATES SHALL BE PASS AND SEYMOUR OR EQUAL.

14. PROVIDE BRANCH CIRCUIT PANELS WHICH SHALL BE OF THE BOLTED CIRCUIT BREAKER TYPE WITH SOLID COPPER BUSSING FULL SIZED NEUTRAL, 25% GROUND BUSSING, OVERALL HINGED/LOCKABLE DOOR, AND TYPEWRITTEN DIRECTORY INSIDE DOOR. LOAD BALANCE ALL ELECTRICAL PHASES AT PANEL. TWO AND THREE POLE BREAKERS SHALL BE COMMON TRIP TYPE. SQUARE D OR EQUAL BY EATON, CUTLER-HAMMER, OR GENERAL ELECTRIC.

15. PROVIDE SAFETY AND DISCONNECT SWITCHES, FUSED OR NONFUSED, AS CALLED FOR ON DRAWINGS AND AS REQUIRED BY CODE. FUSES AS MANUFACTURED BY BUSSMAN OR EQUAL. DISCONNECT SWITCHES THAT ARE INSTALLED AT AIR CONDITIONING EQUIPMENT, HEAT PUMPS, ETC SHALL BE FUSED IN ACCORDANCE WITH THE EQUIPMENT'S NAME PLATE REQUIREMENTS PER N.E.C. 440-21 & 110.3B. SWITCHES SHALL BE HEAVY DUTY, QUICK MAKE/QUICK BREAK TYPE, FUSIBLE OR NON-FUSIBLE, LOAD AND HORSEPOWER RATED AS MANUFACTURED BY SQUARE D, EATON, CUTLER HAMMER, OR GENERAL ELECTRIC, WEATHERPROOF WHERE APPLICABLE.

16. PROVIDE ARC-FLASH HAZARD WARNING LABELS ON ALL ELECTRICAL EQUIPMENT INCLUDING SWITCHBOARDS, PANELBOARDS, MOTOR CONTROLLERS, AND ANY OTHER EQUIPMENT LIKELY TO REQUIRE EXAMINATION, ADJUSTMENT, SERVICING OR MAINTENANCE WHILE ENERGIZED. THE LABELS SHALL BE LOCATED SO AS TO BE CLEARLY VISIBLE TO QUALIFIED PERSONS BEFORE EXAMINATION.

17. OUTLET BOXES AND COVERS SHALL BE GALVANIZED, ONE-PIECE PRESSED STEEL KNOCKOUT. JUNCTION, PULL BOXES AND COVERS SHALL BE GALVANIZED STEEL, CODE GAUGE SIZE. INSTALL BOXES RIGIDLY ON BUILDING STRUCTURE AND SUPPORT INDEPENDENTLY OF THE CONDUIT SYSTEM. ALSO PROVIDE APPROPRIATE BOX EXTENSIONS TO EXTEND BOXES TO FINISHED FACES OF WALLS ETC. ALL OUTLET BOXES TO HAVE SUITABLE BLOCKING BEHIND THEM TO MINIMIZE THE DEFLECTION THAT OCCURS WHEN PLUGGING/UNPLUGGING INTO THESE DEVICES.

18. ELECTRICAL CONTRACTOR SHALL PROVIDE TEMPORARY SERVICE AND PROVIDE LIGHTING, POWER AND WIRING AS REQUIRED TO FACILITATE APPLICABLE TEMPORARY NEEDS FOR ALL TRADES. HE SHALL FURNISH EXTENSION CORDS FOR HIS OWN USE. ANY TEMPORARY WIRING, FUSES, ETC., SHALL BE REMOVED UPON COMPLETION OF THE PROJECT. PROVIDE GROUND FAULT PROTECTION AS REQUIRED BY N.E.C. AND LOCAL CODES.

19. ALL ELECTRIC WORK SHALL BE INSTALLED SO AS TO BE READILY ACCESSIBLE FOR OPERATING, SERVICING, MAINTAINING AND REPAIRING. HANGERS SHALL INCLUDE ALL MISCELLANEOUS STEEL SUCH AS CHANNELS, RODS, ETC., NECESSARY FOR THE INSTALLATION OF WORK AND SHALL BE FASTENED TO BUILDING STEEL, CONCRETE OR MASONRY, BUT NOT PIPING OR DUCTWORK. ALL CONDUIT SHALL BE CONCEALED WHEREVER POSSIBLE. CONDUITS SHALL BE IN STRAIGHT LINES PARALLEL WITH OR AT RIGHT ANGLES TO COLUMN LINES OR BEAMS AND SEPARATED AT LEAST 3 INCHES FROM WATER LINES WHEREVER THEY RUN ALONGSIDE OR ACROSS SUCH LINES. ALL CONDUCTORS SHALL BE IN CONDUIT, DUCTS OR OTHER CODE APPROVED RACEWAYS.

20. PANELBOARDS AND DISCONNECT SWITCHES SHALL BE IDENTIFIED WITH ENGRAVED BAKELITE NAMEPLATES AS TO DESIGNATION AND VOLTAGE.

21. MATERIALS, EQUIPMENT AND INSTALLATION SHALL BE GUARANTEED FOR A PERIOD OF ONE (1) YEAR FROM DATE OF ACCEPTANCE. DEFECTS APPEARING IN THAT PERIOD SHALL BE CORRECTED AT THE ELECTRICAL CONTRACTOR'S EXPENSE. FOR THE SAME PERIOD, ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO PREMISES CAUSED BY DEFECTS IN WORKMANSHIP OR IN THE WORK OR EQUIPMENT FURNISHED AND/OR INSTALLED BY THE ELECTRICAL CONTRACTOR.

22. IT IS THE INTENT THAT THE FOREGOING WORK SHALL BE COMPLETE IN EVERY RESPECT AND THAT ANY MATERIAL OR WORK NOT SPECIFICALLY MENTIONED OR SHOWN ON THE DRAWINGS, BUT NECESSARY TO FULLY COMPLETE THE WORK SHALL BE FURNISHED.

LIGHTING FIXTURE SCHEDULE

MARK	DESCRIPTION	VOLT	LAMP	MOUNT	MANUFACTURER
R1	2x4 LAY-IN FLUORESCENT W/ 0.125" ACRYLIC PRISMATIC LENS	120	(3) F32 T8	RECESSED	LITHONIA 2SPR-332-A12125-MVOLT
CL2	4' WRAPAROUND FLUORESCENT	120	(2) F32 T8	SURFACE	LITHONIA LB-232-MVOLT
R3	6" LED DIMMABLE RECESSED CAN W/ 1000 LUMEN LAMP & 90 CRI	120	1000 LUMEN LED 4000K	RECESSED	COOPER LD6A1D-D010TE-ERM6A10-940-6LM1-WWF
CL4	T-BAR LED, 4' LONG, LOW VOLTAGE - DIMMABLE	120	LED 4500K	SURFACE	JLC TECH TBSL-HN-424-D-U-W
EX	SELF CONTAINED EMERGENCY LED EXIT LIGHT, WHITE HOUSING	120	LED	UNIVERSAL	LITHONIA LQM-S-W-R
EX/EM	SELF CONTAINED EMERGENCY LED EXIT COMBO, WHITE HOUSING, REMOTE CAPACITY WHERE REQUIRED	120	LED/INCAN.	UNIVERSAL	LITHONIA LHQM-S-W-R-HO
EM	SELF CONTAINED EMERGENCY/6 EGRESS LIGHT, WHITE HOUSING	120	FURN. W/UNIT	WALL @ 90°	LITHONIA ELM
EMR	EXIT DISCHARGE EMERGENCY REMOTE HEAD W/2 LAMPS	6V	FURN. W/UNIT	EXT. WALL ABOVE DOOR	LITHONIA ELA-7-NX-H0606

NOTES:
1. CONNECT ALL EXIT & EMERGENCY LIGHTS TO LOCAL AREA LIGHTING CIRCUIT AHEAD OF ANY SWITCHING.
2. PROVIDE BALLAST DISCONNECT IN ALL LINEAR FLUORESCENT LIGHT FIXTURES PER 2011 N.E.C. 410.130 (G).
3. EQUAL FIXTURES BY COOPER, HUBBELL, LSI, PHILLIPS OR LITHONIA.

ELECTRICAL LEGEND

ELECTRICAL LEGEND NOTES:
1. MOUNTING HEIGHTS INDICATED ARE TO THE TOP OF THE DEVICE OR FIXTURE.
2. MOUNTING HEIGHTS ARE TYPICAL UNLESS NOTED OTHERWISE ON THE FLOOR PLANS.
3. REFER TO ARCHITECTURAL ELEVATIONS FOR ADDITIONAL INFORMATION ON EXACT DEVICE AND FIXTURE LOCATIONS, MOUNTING HEIGHTS AND COORDINATION WITH ARCHITECTURAL HARDWARE AND FIXTURES.
4. NOT ALL SYMBOLS APPLY:

LIGHTING SYMBOL	LIGHTING DESCRIPTION	POWER SYMBOL	POWER DESCRIPTION
$	WALL SWITCH @48" A.F.F. 20A, 120V		DUPLEX RECEPTACLE @20" A.F.F. 20A, 125V
$3	THREE-WAY SWITCH @48" A.F.F., 20A, 120V		DUPLEX RECEPTACLE WITH GROUND FAULT CIRCUIT INTERRUPTER @20" A.F.F., 20A, 125V
	FLUORESCENT LIGHTING OUTLET, RECESSED OR SURFACE MOUNTED PER FIXTURE SCHEDULE.	WP	DUPLEX RECEPTACLE WITH WEATHERPROOF WHILE-IN-USE COVER @18" A.F.F. OR A.F.G. 20A, 125V
NL	LIGHT FIXTURE ON NIGHT LIGHT.		SPECIAL RECEPTACLE AMPERAGE, @20" A.F.F COORDINATE NEMA CONFIG. WITH EQUIPMENT FED.
	CEILING LIGHTING OUTLET, RECESSED OR SURFACE MOUNTED PER FIXTURE SCHEDULE		JUNCTION BOX MOUNTED AS NOTED.
	WALL LIGHTING OUTLET @ HEIGHT PER FIXTURE SCHEDULE OF ARCHITECTURAL ELEVATIONS.		SAFETY DISCONNECT SWITCH @60" A.F.F. TO TOP
	EMERGENCY EXIT LIGHT, SINGLE FACE, CLG. MOUNTED.		PANELBOARD, SURFACE MOUNTED @6'-0" A.F.F. TO TOP
	EMERGENCY EXIT LIGHT, SINGLE FACE, WALL MOUNTED		PANELBOARD, FLUSH MOUNTED @6'-0" A.F.F. TO TOP
	COMBINATION EMERGENCY EXIT/EGRESS LIGHT, SINGLE FACE. CEILING MOUNTED		4" SQ. BOX W/G PLASTER RING @20" A.F.F FOR TELEPHONE OUTLET COVERPLATE WIRING & TERMINATION BY OWNER RUN 3/4"C. FROM BOX UP IN WALL TO ABOVE ACCESSIBLE CEILING
	EMERGENCY EGRESS LIGHT @90" A.F.F WALL MOUNTED		
EMR	EMERGENCY REMOTE HEAD FOR EXIT DISCHARGE	OS	CEILING MOUNTED OCCUPANCY SENSOR

PANEL: "M" | VOLTAGE: 120/240V, 1Ø, 3W
LOCATION: EAST WALL | MAINS: 200A MAIN BREAKER
MOUNTING: SURFACE | NOTE: SERVICE ENTRANCE RATED

LOAD DESCRIPTION	VA	CB/P	NO.	PH	NO.	CB/P	VA	LOAD DESCRIPTION
WOODSHOP LIGHTS	708	20/1	1	A	2	20/1	696	OFFICE ADD. LIGHTS
WOODSHOP RECEPTS	1080	20/1	3	B	4	20/1	540	OFFICE ADD. RECEPTS
WOODSHOP RECEPTS	1080	20/1	5	A	6	20/1	540	OFFICE ADD. RECEPTS
EF-4	696	20/1	7	B	8	20/1	540	OFFICE ADD. RECEPTS
UH-1	200	20/1	9	A	10	20/1	540	OFFICE ADD. RECEPTS
FINISH LIGHTS	1298	20/1	11	B	12	20/1	540	OFFICE ADD. RECEPTS
FINISH RECEPTS	720	20/1	13	A	14	20/2	-	HP-1
FINISH RECEPTS	720	20/1	15	B	16		-	
(2) UH'S	400	20/1	17	A	18	20/2	-	HP-2
EF-1 & EF-2	1392	20/1	19	B	20		-	
EF-3	696	20/1	21	A	22	-	-	SPACE
VEHICLE LIFT	1440	20/2	23	B	24	-	-	SPACE
	1440		25	A	26	-	-	SPACE
SPARE	-	20/1	27	B	28	-	-	SPACE
SPARE	-	20/1	29	A	30	-	-	SPACE
SPARE	-	20/1	31	B	32	-	-	SPACE
SPARE	-	20/1	33	A	34	-	-	SPACE
SPARE	-	20/1	35	B	36	-	-	SPACE
SPACE	-	-	37	A	38	-	-	SPACE
SPACE	-	-	39	B	40	-	-	SPACE

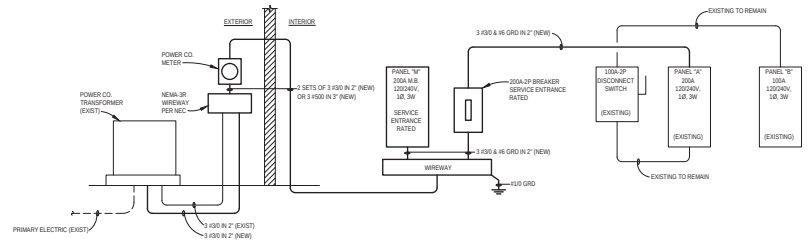
DEMAND LOAD:
22310 / 240 = 93.0A x 1.25 = 116.2 AMPS

CONNECTED LOAD:
PHASE A 10812 W
PHASE B 11498 W
TOTAL CONNECTED LOAD: 22310 W

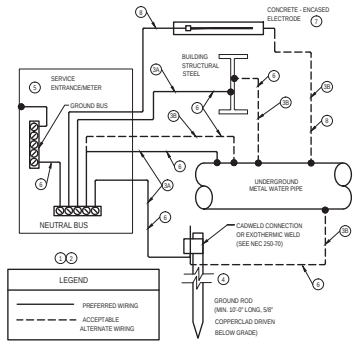
ELECTRICAL LOAD SUMMARY

LOAD DESCRIPTION	CONNECTED WATTS	DEMAND FACTOR	DEMAND WATTS
LIGHTING	2702	100%	2702
RECEPTACLES	5760	IST 10.0 KW @100% REMAINDER @50%	5760
MISC. EQUIPMENT	2880	80%	2304
HVAC	10968	100%	10968
EXIST. SERVICE HIGHEST RECORDED	21600	100%	21600
TOTAL			43334

43334 / 340 = 180.6 A x 1.25 = 225.7 AMPS



ONE-LINE DIAGRAM
N.T.S.



SERVICE ENTRANCE GROUNDING DETAIL
NO SCALE

CODED NOTES:

1. ALL GROUNDING AND BONDING MUST COMPLY WITH NEC ARTICLE 250 AND/ OR LOCAL ORDINANCES.
2. USE NEC TABLE 250-66 TO SIZE BONDING CONDUCTORS/JUMPERS. BONDING JUMPERS MUST BE INSTALLED IN ACCORDANCE WITH NEC ARTICLE 250-68.
3A. BOND GROUND ROD, METAL WATER PIPE, BUILDING STEEL OR METAL (WHERE EFFECTIVELY GROUNDED) AND CONCRETE-ENCASED ELECTRODE (SEE CODED NOTE 7). CONNECTION TO METAL WATER PIPE SHALL BE MADE WITHIN 5 FEET OF POINT OF ENTRANCE OF PIPE PER NEC 250.52 (A) (1).
3B. ALTERNATE BONDING SCHEME: BOND GROUND ROD, BUILDING STEEL OR METAL (WHERE EFFECTIVELY GROUNDED) AND CONCRETE-ENCASED ELECTRODE (SEE CODED NOTE 7) TO METAL WATER PIPE. CONNECTIONS TO METAL WATER PIPE SHALL BE MADE WITHIN 5 FEET OF POINT OF ENTRANCE OF PIPE PER NEC 250.52 (A) (1).
4. LOCATE GROUND ROD OUTSIDE BUILDING WALL NEAR SERVICE ENTRANCE.
5. PROTECT GROUNDING AND BONDING CONDUCTORS WHERE THEY PENETRATE CONCRETE FOUNDATIONS.
6. SIZE CONDUCTOR PER NEC TABLE 250.66 AND NEC ARTICLE 250.66.
7. CONCRETE-ENCASED ELECTRODE ENCASED WITHIN AT LEAST 2 INCHES OF CONCRETE, LOCATED WITHIN AND NEAR THE BOTTOM OF A CONCRETE FOUNDATION OR FOOTING IN DIRECT CONTACT WITH THE EARTH, MINIMUM 20-FOOT LENGTH OF ELECTRICALLY CONDUCTIVE MATERIAL. SEE NEC 250.52 (A) (3).
8. MINIMUM SIZE #1/0 AWG COPPER - SEE NEC 250.52 (A) (3).

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project title
Alterations for
The Muirfield
Association Office
Dublin, OH.43017
for
Muirfield Assoc. Board

ELECTRICAL SCHEDULES & SPECIFICATIONS

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STATE OF OHIO JAMES A. KNOCHEL 70713 REGISTERED ARCHITECT
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MECHANICAL GENERAL NOTES:

1. THE MECHANICAL CONTRACTORS SHALL BE HELD TO HAVE REVIEWED ALL SHEETS OF THESE CONTRACT DOCUMENTS AND WILL BE RESPONSIBLE FOR PERFORMING ALL WORK INDICATED ON ANY SHEET. THE MECHANICAL CONTRACTORS WILL BE RESPONSIBLE FOR COORDINATING THEIR WORK WITH THE WORK OF OTHERS.
2. THE MECHANICAL CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS PRIOR TO STARTING WORK AND ADJUST DUCTWORK, EQUIPMENT LOCATIONS, ETC., TO CORRESPOND TO THE EXISTING CONDITION REQUIREMENTS.
3. MECHANICAL CONTRACTOR SHALL FURNISH TWO (2) COPIES OF A CERTIFIED INDEPENDENT TEST & BALANCE REPORT BY A LICENSED AABC OR NEBB CONTRACTOR TO THE ARCHITECT.
4. EQUIPMENT SHALL BE INSTALLED PER THE OHIO BUILDING CODE AND THE EQUIPMENT MANUFACTURER'S INSTALLATION INSTRUCTIONS. THE MORE STRICT REQUIREMENT SHALL APPLY.
5. MECHANICAL CONTRACTOR TO COORDINATE WITH ELECTRICAL CONTRACTOR FOR ALL POWER AND VOLTAGE REQUIREMENTS.
6. ALL WALL CUTTING, PATCHING, AND FLASHING REQUIRED TO INSTALL THE MECHANICAL SYSTEMS SHALL BE MADE BY THE GENERAL CONTRACTOR.
7. ALL OUTSIDE AIR INTAKES FOR MECHANICAL EQUIPMENT SHALL BE LOCATED A MINIMUM OF 10 FEET FROM EXHAUST OUTLETS OF VENTILATION SYSTEMS, COMBUSTION EQUIPMENT STACKS, PLUMBING VENT AND PROPERTY LINES.
8. MOUNT THERMOSTATS AT 4'-6" AFF OR AS DIRECTED BY ARCHITECT.
9. EXISTING EQUIPMENT, DUCTWORK, PIPING, ETC., SHOWN ON THE DRAWINGS WERE DERIVED FROM LIMITED FIELD OBSERVATIONS, THE MECHANICAL CONTRACTOR IS STILL RESPONSIBLE TO FIELD VISIT SITE TO DETERMINE EXISTING CONDITIONS.

MECHANICAL CODED NOTES:

1. EXISTING SPLIT SYSTEM CONDENSING UNIT TO BE RELOCATED ALONG WITH CONDENSING UNIT DISCONNECT. DISCONNECT EXISTING REFRIGERANT LINES AND PREPARE FOR RECONNECTION AT NEW LOCATION SHOWN. CONDENSING UNIT TO BE MOUNTED ON 4" THICK CONCRETE HOUSEKEEPING PAD. PAD TO EXTEND 6" PAST EXISTING UNIT FOOTPRINT. COORDINATE DISCONNECT RELOCATION WITH ELECTRICAL CONTRACTOR.
2. EXISTING CONDENSING UNIT NEW LOCATION. COORDINATE EXACT LOCATION WITH GENERAL CONTRACTOR PRIOR TO POURING CONCRETE PAD.
3. NEW GAS FIRED UNIT HEATER TO BE SUSPENDED FROM STRUCTURE ABOVE. PROVIDE UNI-STRUT AND THREADED RODS WITH NEOPRENE VIBRATION ISOLATORS FOR SUPPORTING THE UNIT. SEE PLUMBING PLAN FOR NATURAL GAS REQUIREMENTS.
4. SUSPENDED UNIT HEATER THERMOSTAT TO BE INSTALLED 54" ABOVE FINISHED FLOOR. PROVIDE THERMOSTAT CAPABLE OF ADJUSTING TEMPERATURE - AUTO/ON/OFF.
5. EXISTING COMBUSTIBLES CABINET TO BE RELOCATED AS SHOWN ON THIS DRAWING. COORDINATE VENT PENETRATION WITH GENERAL CONTRACTOR PRIOR TO COMMENCEMENT OF HVAC WORK.
6. COMBUSTIBLES CABINET VENT PIPE. VENT TO BE CONNECTED TO CABINET AND EXIT BUILDING NO LESS THAN 7'-0" ABOVE FINISHED GRADE.
7. MECHANICAL CONTRACTOR TO RE-ROUTE EXISTING REFRIGERATION LINES AND RECONNECT TO RELOCATED CONDENSING UNIT PER MANUFACTURER'S RECOMMENDATIONS AND GUIDELINES, SEAL WALL PENTRATIONS WEATHER TIGHT. PROVIDE NEW PIPING INSULATION ON REFRIGERATION PIPING.

THRU-THE-WALL HEAT PUMP SCHEDULE

TAG	MANUFACTURER & MODEL NUMBER	CFM	OUTSIDE AIR	COOLING CAPACITY (BTUH)	COOLING WATTS	EER	ELECTRIC HEATER CAPACITY (KW)	VOLTAGE	CIRCUIT PROTECTION	REMARKS
HP 1	AMANA PTH 093B	245	40	9000	785	11.5	3.5	230V/1PH	20 AMP	19.5 MCA (ELECTRIC HEATING)
HP 2	AMANA PTH 093B	245	35	9000	785	11.5	3.5	230V/1PH	20 AMP	19.5 MCA (ELECTRIC HEATING)

NOTES: PROVIDE COMPLETE WITH HEAT PUMP, SLOPE TOP HOUSE, SLIDE-OUT CHASSIS, ROTARY COMPRESSOR, INTEGRAL THERMOSTAT, ROOM SIDE AND EXTERIOR GRILLES.

SIMILAR MANUFACTURERS: CARRIER & GENERAL ELECTRIC

FAN SCHEDULE

TAG	MANUFACTURER & MODEL NUMBER	AREA SERVED	SERVICE	CFM	ESP	MOTOR HP & VOLTAGE	FAN RPM	FAN TYPE	MAX. SOUND LEVEL	WEIGHT (LBS)	REMARKS
EF 1	GREENHECK SBE-1H20-4	EQUIPMENT STORAGE	EXHAUST	600	0.2	1/4 115V/60/1	649	WALL	8.8	60	NOTES 1-5
EF 2	GREENHECK SBE-1H20-4	EQUIPMENT STORAGE	EXHAUST	600	0.2	1/4 115V/60/1	649	WALL	8.8	60	NOTES 1-4 & 6
EF 3	GREENHECK SBE-1H20-4	WOODSHOP	EXHAUST	600	0.2	1/4 115V/60/1	649	WALL	8.8	60	NOTES 1-4 & 6

NOTES: PROVIDE WITH THE FOLLOWING ITEMS-
1. WALL HOUSING KIT
2. DISCONNECT SWITCH
3. GRAVITY BACK DRAFT DAMPER
4. BIRD SCREEN
5. DIAL TIMER SWITCH UP TO 60 MINUTES
6. WALL SWITCH

VENTILATION AIR REQUIREMENT

HVAC UNIT	ZONE DESCRIPTION	ZONE FLOOR AREA (SQ. FT.) Az	AREA OUTDOOR AIR RATE (CFM/SQ.FT.) Ra	PEOPLE OUTDOOR AIR RATE (CFM/PERSON) Rp	ZONE POPULATION (# OF PEOPLE) Pz	BREATHING ZONE OUTDOOR AIR FLOW (CFM) Vbz	ZONE AIR DISTRIBUTION EFFECTIVENESS Ez	ZONE OUTDOOR AIR FLOW (CFM) Voz	SYSTEM VENTILATION EFFICIENCY Ev	MINIMUM OUTDOOR AIR INTAKE FLOW (CFM) Vot	DESIGN OUTDOOR AIR INTAKE FLOW (CFM)	REMARKS
Zone 1	Customer Display	327	0.06	5	2	29.62	0.8	37.025	1	37.025	40	
	Samples Storage	283	0.06	5	2	26.98	0.8	33.725	1	33.725	35	
ZONE 1 TOTALS		283			4	56.6		70.75		70.75	75	

NOTES: VENTILATION RATES ARE BASED ON IMC 2012, ASHRAE 62.1-2013.

ASHRAE 62.1-2013 ITEM 6.2.2.1 BREATHING ZONE OUTDOOR AIR FLOW (CFM) Vbz = RpPz+RaAz x 1.00

WHERE: Az= ZONE FLOOR AREA Pz = POPULATION Rp = TABLE 6.1 OUTDOOR AIR PER PERSON Ra = TABLE 6.1 OUTDOOR AIR PER AREA

GAS UNIT HEATER SCHEDULE

TAG	MANUFACTURER & MODEL NUMBER	TYPE	INPUT MBH	OUTPUT MBH	CFM	MOTOR HP & VOLTAGE	VENT	REMARKS
UH 1	REZNOR UDAP-60	GAS-FIRED FAN TYPE	60	49.8	769	FRACTIONAL 0.06 115V, 1Ø	4" ROUND	NOTES 1,2,3,4,5
UH 2	REZNOR UDAP-60	GAS-FIRED FAN TYPE	60	49.8	769	FRACTIONAL 0.06 115V, 1Ø	4" ROUND	NOTES 1,2,3,4,5
UH 3	REZNOR UDAP-60	GAS-FIRED FAN TYPE	60	49.8	769	FRACTIONAL 0.06 115V, 1Ø	4" ROUND	NOTES 1,2,3,4,5

NOTES: PROVIDE WITH THE FOLLOWING ITEMS:
1. VIBRATION ISOLATORS
2. SINGLE STAGE GAS VALVE
3. 115VOLT/24VOLT CONTROL TRANSFORMER
4. REZNOR MODEL #CC1 VENT CAP
5. BUILT-IN DISCONNECT SWITCH

SIMILAR MFG'S: STERLING & TRANE

WOODSHOP 102
NATURAL VENTILATION FRESH AIR CALCULATIONS

DOORS	
3' x 7'	21.00 SQ.FT.
OPERABLE WINDOWS	
1'-8" x 2'-11"	4.86 SQ.FT.
TOTAL SQUARE FEET	25.86 SQ.FT.
UNIT SQUARE FOOTAGE:	584 x 4% = 23.36 SQ.FT. NEEDED

WOOD ASSEMBLY AND FINISH 103
NATURAL VENTILATION FRESH AIR CALCULATIONS

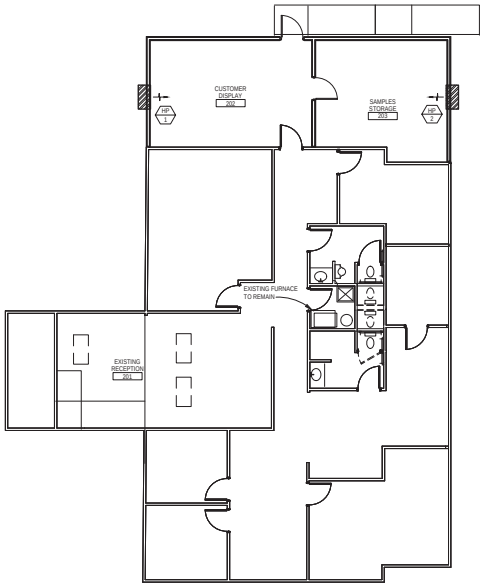
DOORS	
12' x 10'	120.00 SQ.FT.
TOTAL SQUARE FEET	120.00 SQ.FT.
UNIT SQUARE FOOTAGE:	1281 x 4% = 51.24 SQ.FT. NEEDED

5 TON LIFT 104
NATURAL VENTILATION FRESH AIR CALCULATIONS

DOORS	
12' x 10'	120.00 SQ.FT.
TOTAL SQUARE FEET	120.00 SQ.FT.
UNIT SQUARE FOOTAGE:	501 x 4% = 20.04 SQ.FT. NEEDED

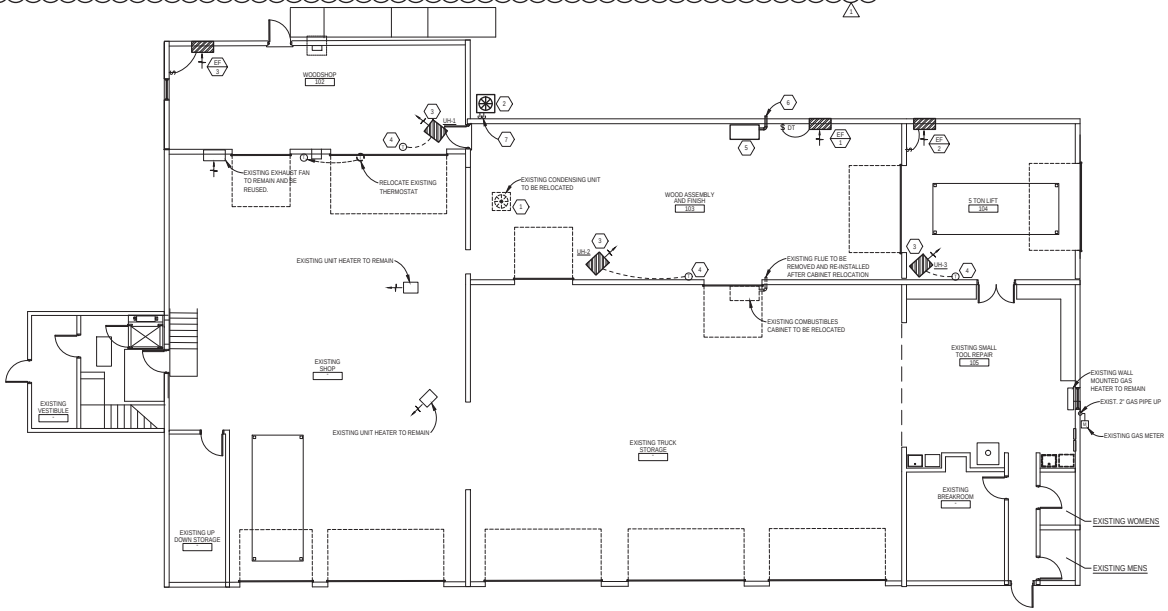
MECHANICAL LEGEND

SYMBOL	DESCRIPTION
	GAS PIPING
	SHUT-OFF VALVE IN RISER
	SHUT-OFF VALVE
	RISER DOWN (ELBOW)
	RISER UP (ELBOW)
	BRANCH-TOP CONNECTION
	BRANCH-BOTTOM CONNECTION
	TEE
	ELBOW
$	SWITCH (BY E.C.)
$ DT	60 MINUTE DIAL TIMER
RL	REFRIGERATION LIQUID
RS	REFRIGERATION SUCTION
CD	CONDENSATE DRAIN
EV	EVAPORATOR UNIT
CU	CONDENSING UNIT
T	THERMOSTAT (ELECTRIC)
UH	UNIT HEATER
EC	EVAPORATOR COIL UNIT
CU	CONDENSING UNIT
MC	MECHANICAL CONTRACTOR
EC	ELECTRICAL CONTRACTOR



SECOND FLOOR MECHANICAL PLAN

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



FIRST FLOOR MECHANICAL PLAN

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

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Alterations for
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for
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MECHANICAL PLANS @ 1/8" = 1'-0"

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MECHANICAL GENERAL

A. CONTRACTOR ALSO REFERRED TO ALL ARCHITECTURAL, STRUCTURAL, ELECTRICAL AND OTHER OWNER DRAWINGS PERTAINING TO PROJECT. ALL OF ABOVE MENTIONED DRAWINGS, AS WELL AS THEIR RESPECTIVE SPECIFICATIONS, ARE A PART OF CONTRACT DOCUMENTS.

B. MECHANICAL DRAWINGS AND SPECIFICATIONS ARE INTENDED TO SUPPLEMENT EACH OTHER, FURNISH ANY MATERIAL OR LABOR CALLED FOR IN ONE EVEN THOUGH NOT SPECIFICALLY MENTIONED IN BOTH.

C. INSTALL AND CONNECT EQUIPMENT, SERVICES AND MATERIALS IN ACCORDANCE WITH BEST ENGINEERING PRACTICE AND ACCORDANCE WITH VARIOUS MANUFACTURER'S WRITTEN INSTRUCTIONS AND RECOMMENDATIONS. FURNISH AND INSTALL COMPLETE AUXILIARY PIPING, VALVES, WATER SEALS, ELECTRICAL CONNECTIONS, ETC., RECOMMENDED BY MANUFACTURER OR REQUIRED FOR PROPER OPERATION.

D. FURNISH MATERIAL OR LABOR WHICH IS NEITHER SHOWN ON DRAWINGS OR CALLED FOR IN SPECIFICATIONS BUT WHICH IS OBVIOUSLY A COMPONENT PART OF AND NECESSARY TO COMPLETE WORK OF SIMILAR CHARACTER.

E. THIS CONTRACTOR SHALL PROCURE AND PAY FOR ALL PERMITS OR LICENSES REQUIRED TO CARRY OUT THIS WORK. HE SHALL PAY FOR ALL CHARGES MADE BY INSPECTION. NOTE: ALL CONTRACTORS SHALL BE LICENSED IN THE COUNTY, CITY, ETC. TO PERFORM ALL NEW WORK.

F. THIS CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE CODES, ORDINANCES AND ALL LOCAL LEGAL REQUIREMENTS. ALL LAWS, RULES AND REGULATIONS OF STATE AND LOCAL GOVERNING AGENCIES SHALL BE CONSIDERED A PART OF THESE SPECIFICATIONS AS FULLY AS IF WRITTEN HEREIN. NO EXTRA COMPENSATION WILL BE ALLOWED FOR ANY CHANGES NECESSARY FOR CODE COMPLIANCE REGARDLESS OF THE METHOD OF INSTALLATION SHOWN ON THE DRAWINGS OR SPECIFIED.

G. THIS CONTRACTOR SHALL TAKE OUT PERMIT WITH PROVISIONS OF INSPECTION BEFORE STARTING ANY WORK. FEE FOR SAME SHALL BE PART OF THIS CONTRACT.

H. WHEN WORK IS COMPLETED, THIS CONTRACTOR SHALL FURNISH TO THE ARCHITECT CERTIFICATES OF APPROVAL FROM THE RESPONSIBLE INSPECTION AGENCIES BEFORE FINAL PAYMENT OF CONTRACT WILL BE ALLOWED.

I. TESTING OF ALL WORK UNDER THIS CONTRACT SHALL BE DONE BY THE CONTRACTOR IN THE PRESENCE OF THE OWNER OR HIS REPRESENTATIVE. ALL APPARATUS, EQUIPMENT, FIXTURES, ETC., SHALL FULLY MEET THE REQUIREMENTS OF THESE SPECIFICATIONS AND DRAWINGS.

J. THE BID SHALL CONTEMPLATE THE FURNISHING AND INSTALLING OF MATERIAL AND EQUIPMENT, EXACTLY AS SPECIFIED OR SHOWN AS SIMILAR BY THE CONTRACT DOCUMENTS. MANUFACTURERS OF SIMILAR EQUIPMENT MUST BE SUBMITTED FOR APPROVAL AND THE CONTRACTOR SUBMITTING ON SIMILAR EQUIPMENT WILL BE RESPONSIBLE FOR ALL COSTS ASSOCIATED WITH CHANGES IN ARCHITECTURAL, STRUCTURAL, MECHANICAL AND/OR ELECTRICAL TRADES DUE TO THE SIMILAR EQUIPMENT CHARACTERISTICS SUBMITTED. BIDS SUBMITTED SHALL LIST ANY ITEMS OF MATERIAL OR EQUIPMENT OTHER THAN SPECIFIED BUT SIMILAR TO THE ONES CALLED FOR SHALL BE LISTED UNDER SUBSTITUTIONS. THESE SUBSTITUTIONS SHALL BE APPROVED TEN WORKING DAYS BEFORE BIDS ARE SUBMITTED; OTHERWISE, THIS CONTRACTOR SHALL COMPLY WITH SPECIFICATION REQUIREMENTS.

K. INSTALL FINAL APPLICATION OF LUBRICATION OIL, REFRIGERANT CHARGE, AND ALL OTHER SUPPLIES NECESSARY TO PLACE THE EQUIPMENT IN OPERATION.

L. CONTRACTOR SHALL GUARANTEE HIS WORK TO BE FREE FROM DEFECTS IN WORKMANSHIP AND MATERIALS FOR A PERIOD OF ONE (1) YEAR FROM DATE OF FINAL ACCEPTANCE.

M. ALL POWER WIRING OF MECHANICAL EQUIPMENT SHALL BE DONE BY THE ELECTRICAL CONTRACTOR. FURNISH THE ELECTRICAL CONTRACTOR WIRING DIAGRAMS FOR ALL ELECTRICALLY POWERED EQUIPMENT PROVIDED WITH THE CONTRACT WHICH SHALL INDICATE THE SERVICE REQUIRED AND ELECTRIC LOAD INVOLVED. ALL LOW VOLTAGE WIRING TO BE PLENUM RATED.

N. THIS CONTRACTOR SHALL VISIT SITE BEFORE SUBMITTING BID AND MAKE ALL NECESSARY OBSERVATIONS, MEASUREMENTS, AND NOTE CONDITIONS UNDER WHICH HIS WORK IS TO BE PERFORMED. NO EXTRA COMPENSATION WILL BE ALLOWED FOR FAILURE TO DO SO. THIS CONTRACT INVOLVES REMODELING OF EXISTING BUILDING AND THEREFORE SHALL FIELD LOCATE EXISTING DUCTWORK, PIPING AND SEWERS BEFORE STARTING WORK.

O. SUBMIT SHOP DRAWINGS, CATALOG SHEETS FOR EQUIPMENT, FIXTURES, DUCTWORK LAYOUT, WIRING DIAGRAMS, ETC., IN SIX (6) COPIES TO THE ARCHITECT FOR REVIEW. EACH CONTRACTOR IS RESPONSIBLE TO DISTRIBUTE APPROVED SHOP DRAWINGS TO ALL OTHER TRADES AFFECTED BY HIS WORK, EQUIPMENT, ETC., FOR COORDINATION.

P. ASSEMBLE AND SUBMIT TO THE ARCHITECT FOR SUBSEQUENT SUBMISSION TO THE OWNER, THREE (3) COMPLETE SETS OF OPERATIONS MANUALS AND MAINTENANCE REQUIREMENTS, COPY OF FIXTURE CUTS WITH MANUFACTURER'S NAME AND MODEL NUMBER, EQUIPMENT WARRANTIES, ETC., FOR EACH ITEM FURNISHED.

Q. ALL CONTRACTORS MUST COORDINATE EACH PIECE OF EQUIPMENT WITH ALL OTHER TRADES (GENERAL CONTRACTOR, PLUMBING CONTRACTOR, MECHANICAL CONTRACTOR, ELECTRICAL CONTRACTOR, ETC.) AFFECTED BY THAT PIECE OF EQUIPMENT (ROOF OPENINGS, WEIGHTS, POWER REQUIREMENTS, VOLTAGES, ETC.) PRIOR TO ORDERING EQUIPMENT AND AGAIN PRIOR TO INSTALLATION (ROOFTOP EQUIPMENT PRIOR TO LIFTING ONTO ROOF). NO EXTRA COMPENSATION WILL BE APPROVED IF COORDINATION IS NOT PERFORMED BY EACH RESPECTIVE CONTRACTOR AND SUBCONTRACTOR.

PLUMBING SPECIFICATIONS

A. CONNECT SEWER, GAS, VENTS AND WATER LINES AS INDICATED ON THE PLUMBING PLANS. DETERMINE THE EXACT LOCATION OF ALL EXISTING SERVICE CONNECTIONS BEFORE STARTING THE INSTALLATION OF ANY WORK. COORDINATE ALL WORK WITH OTHER TRADES, THE GENERAL CONTRACTOR AND THE OWNER'S FIELD REPRESENTATIVE.

B. PLUMBING WORK SHALL CONFORM TO GOOD ENGINEERING PRACTICE AND BE IN ACCORDANCE WITH THE APPLICABLE PLUMBING CODES AND OWNER'S REQUIREMENTS.

C. SANITARY SEWERS AND VENTS INSIDE OF THE BUILDING SHALL BE SERVICE WEIGHT, CAST IRON, NO HUB WITH COMPRESSION TYPE NEOPRENE JOINTS. ABS OR PVC SCHEDULE 40 PIPING SHALL BE AS APPROVED BY THE LOCAL AUTHORITY AND OWNER IN CONCEALED LOCATIONS.

D. ALL COLD AND HOT WATER LINES SHALL BE TYPE 'L' COPPER WITH 98-2 TIN ANTIMONY SOLDER.

E. GAS PIPING ABOVE GROUND SHALL BE SCHEDULE 40 BLACK STEEL WITH 125 POUND BLACK MALLEABLE IRON SCREWED FITTINGS. GAS PIPING COMPOUND AT JOINTS SHALL BE PER NFPA BULLETIN #54 AND LOCAL CODES. GAS VALVES SHALL BE UL LISTED FOR GAS SERVICE. SUCH PIPE SIZES 2" AND LARGER TO BE FERROUS PIPE WITH 150 LB. FORGED STEEL SLIP-ON FLANGES AND 1/16 THICK PERFORATED NEOPRENE GASKETS.

F. INSULATE ALL NEW HOT AND COLD WATER PIPING WITH NONCOMBUSTIBLE ARMSTRONG "ARMAFLEX" TYPE II FOAM INSULATION WITH SEALED JOINTS OR WITH OWENS CORNING FIBERGLASS ASJ/SSL-II HEAVY DENSITY PIPE INSULATION WITH VAPOR BARRIER AND SEALED JOINTS. INSULATION THICKNESS SHALL BE AS FOLLOWS:

COLD WATER BRANCH PIPING UP TO 1"	1/2" THICKNESS
HOT & COLD WATER MAIN PIPING UP TO 1-1/2"	1" THICKNESS

G. PLUMBING CONTRACTOR SHALL INSTALL SHOCK ABSORBERS IN PIPING SYSTEM TO PREVENT NOISE AND DAMAGE DUE TO WATER HAMMER, WHERE NECESSARY. BRANCH PIPING SHALL HAVE ACCESSIBLE SERVICE VALVES. PROVIDE SHUT-OFF VALVES IN THE SUPPLY PIPING TO EVERY FIXTURE.

H. PLUMBING CONTRACTOR SHALL FURNISH AND INSTALL BACKFLOW PREVENTION DEVICES IN ACCORDANCE WITH LOCAL WATER COMPANY REQUIREMENTS.

I. PLUMBING CONTRACTOR SHALL PROVIDE 1 SET OF 'AS-BUILT' DRAWINGS TO THE OWNER.

J. CHLORINATION OF WATER PIPING: THE DOMESTIC WATER PIPING SYSTEM SHALL BE FLUSHED WITH CLEAN POTABLE WATER UNTIL CONTAMINATED WATER DOES NOT APPEAR AT THE OUTLET AND SHALL BE FILLED WITH A SOLUTION CONTAINING 50 PARTS PER MILLION OF CHLORINE AND ALLOWED TO STAND FOR A PERIOD (AS PRESCRIBED BY THE CODE) BEFORE FLUSHING. THE SYSTEM SHALL BE FLUSHED COMPLETELY WITH CLEAR WATER UNTIL ALL RESIDUAL CHLORINE CONTENT IS REMOVED. CHLORINATION SHALL BE PERFORMED AFTER ALL PIPING AND FINAL CONNECTIONS AND PRESSURE TESTING HAS BEEN COMPLETED. IF, AFTER THE PIPES HAVE BEEN CHLORINATED, THE PIPES HAVE TO BE DISMANTLED, THE CHLORINATION PROCESS MUST BE REPEATED.

PLUMBING SPECIFICATIONS (CONTINUED)

K. LABOR SHALL BE PERFORMED IN A WORKMANLIKE MANNER BY MECHANICS SKILLED IN THEIR PARTICULAR TRADE. PIPE AND EQUIPMENT SHALL BE INSTALLED SQUARE AND PLUMB AND ACCESSIBLE FOR PROPER OPERATION AND SERVICE.

L. CUTTING OR PATCHING NECESSARY TO PERMIT THE INSTALLATION OF ANY WORK UNDER THIS CONTRACT SHALL BE THE RESPONSIBILITY OF THIS CONTRACTOR.

M. PROVIDE ANY NECESSARY EXCAVATING AND BACKFILLING FOR THE INSTALLATION OF WORK SPECIFIED IN THIS DIVISION. AFTER THE PIPE HAS BEEN INSTALLED, TESTED AND APPROVED, THE TRENCHES SHALL BE BACKFILLED AND WELL TAMPED TO GRADE WITH APPROVED MATERIAL. GENERAL CONTRACTOR TO RE-POUR CONCRETE FLOOR TO PROPER HEIGHT.

N. PIPING

1. ALL PIPING SHALL BE RUN CONCEALED EXCEPT WHERE SHOWN OTHERWISE ON DRAWINGS.
2. VALVES, TRAPS, CLEANOUTS AND OTHER APPARATUS SHALL BE INSTALLED IN AN EASILY ACCESSIBLE LOCATION.
3. SOIL WASTE, VENT, OFFSETS AND HOUSE DRAINS SHALL BE INSTALLED WITH A MINIMUM UNIFORM GRADE OF 1/8" TO THE FOOT FOR 4" PIPE AND 1/4" TO THE FOOT FOR 3" AND LESS.
4. HOT AND COLD WATER LINES SHALL BE AT LEAST 12" APART WHERE PIPING IS PARALLEL.
5. ESCUTCHEON PLATES SHALL BE PROVIDED WHERE ALL PIPE PASSES THROUGH A FINISHED WALL.
6. CONNECTIONS FROM STEEL TO COPPER PIPING SHALL BE MADE WITH DIELECTRIC TYPE UNIONS, EPCO OR OTHER APPROVED TYPE.

O. COPPER PIPING SHALL BE SUPPORTED AT INTERVALS NOT TO EXCEED 7'-0" AND AT EACH CHANGE IN HORIZONTALS OF VERTICAL. HANGERS SHALL SUPPORT PIPING AT PIPE WITH INSULATION OVER TOP OR WITH METAL SLEEVE TO PROTECT INSULATION FROM BEING CRUSHED.

1. HANGER SHIELD: HANGERS FOR PIPING SHALL BE PLACED AROUND THE OUTSIDE OF THE INSULATION AND PROTECTIVE SHIELDS SHALL BE INSTALLED AT EVERY HANGER LOCATION. SHIELD SHALL NOT BE LESS THAN 2/3 THE CIRCUMFERENCE OF THE INSULATION AND WHERE SPEED CLIPS ARE USED, THE METAL SHIELD SHALL BE CONTINUOUS AROUND THE CIRCUMFERENCE OF THE PIPE INSULATION. SHIELDS SHALL BE FABRICATED OF THE FOLLOWING GAUGES:

NOMINAL PIPE SIZE	METAL GAUGE
0" - 1-1/2"	20

Q. AFTER THE PLUMBING PIPING HAS BEEN INSTALLED, INSPECTED AND APPROVED, THE PIPING SYSTEM SHALL BE FLUSHED TO REMOVE ANY FOREIGN MATTER FROM THE PIPES.

R. ALL PARTS OF THE PLUMBING FIXTURES AND ASSOCIATED EQUIPMENT SHALL BE MAINTAINED BY THE CONTRACTOR THROUGHOUT THE GUARANTEE PERIOD OF ONE YEAR AFTER FINAL ACCEPTANCE OF THE BUILDING.

S. NOTE: ALL PIPE INSULATION (HOT AND COLD PIPE INSULATION) SHALL CONFORM TO THE FIRE AND SMOKE RATES BELOW:

FLAME SPREAD - 25 OR LESS
SMOKE DEVELOPED - 50 OR LESS

T. GENERAL REQUIREMENTS OF PLUMBING FIXTURES AND TRIM:

1. PLUMBING CONTRACTOR SHALL FURNISH AND INSTALL ALL STOPS, TRAPS, ESCUTCHEONS, CONNECTIONS, ETC., AS NECESSARY FOR A COMPLETE INSTALLATION.
2. TERMINATE ALL WATER ROUGH-INS WITH SHUT-OFF VALVES BEFORE CONNECTING EQUIPMENT AND FIXTURES.
3. PURGE ALL WATER LINES BEFORE MAKING FINAL CONNECTIONS.
4. FLASH AND COUNTERFLASH ALL OPENINGS THRU ROOFS WITH SHEET LEAD BUILT AT MINIMUM OF 10" INTO THE ROOFING IN ALL DIRECTIONS FROM THE OUTSIDE OF THE PIPE.
5. WATER AND WASTE LINES TO BE ROUGHED INSIDE WALLS: EXTEND WATER AND WASTE LINES OUT OF WALLS TO EQUIPMENT AND FIXTURES.
6. WHERE THE WORK "FURNISH" OR "INSTALL" APPEARS FOR THE PLUMBING CONTRACT, IT SHALL BE INTERPRETED TO MEAN THE PLUMBING CONTRACTOR SHALL FURNISH ALL LABOR, MATERIALS, EQUIPMENT AND SUPPLIES NECESSARY TO INSTALL AND PLACE IN OPERATION CONDITION.
7. GENERAL WATER PRESSURE SHALL NOT EXCEED 60 PSI. PLUMBING CONTRACTOR SHALL FURNISH AND INSTALL PRESSURE REDUCING VALVES FOR WATER AS REQUIRED.

U. PLUMBING FIXTURES SHALL BE AS INDICATED ON DRAWING P-1.

NOTE: OTHER SIMILAR MANUFACTURERS:
JOSAM, WADE, ZURN, ANCON, WATTS, MIFAB - CLEANOUTS, FLOOR DRAINS, FLOOR SINKS, AMERICAN STANDARD, KOHLER, TOTO, ELJER - WATER CLOSETS, LAVS, URINALS
AMTROL, WATTS - EXPANSION TANKS
JOSAM, ZURN, J.R. SMITH - GREASE INTERCEPTORS

HEATING, VENTILATING & AIR CONDITIONING SPECIFICATIONS

A. IN RESPECT TO ALL MATERIALS REQUIRED, THE CONTRACTOR SHALL FURNISH MATERIALS MEETING AIEE, NEMA, NELA, ASME AND ASTM SPECIFICATIONS. THE INSTALLATION OF ALL WORK SHALL CONFORM TO ASHRAE GUIDE AND SHEET METAL PROMOTION PLAN STANDARDS.

B. MATERIALS SHALL BE NEW AND IN PERFECT CONDITION WHEN INSTALLED, AND SHALL BE PROTECTED FROM ALL INJURY UNTIL FINAL ACCEPTANCE OF THE SYSTEM.

C. THIS CONTRACTOR SHALL REMOVE ALL TOOLS, SURPLUS MATERIALS AND DEBRIS OF ALL KINDS FROM HIS WORK AND LEAVE ALL IN A CLEAN, PERFECT CONDITION, FULLY SATISFACTORY TO THE ARCHITECT.

D. CONTRACTOR SHALL PROVIDE OWNER WITH TWO (2) SETS OF "AS-BUILT" DRAWINGS.

E. FURNISH ALL MATERIALS, TRANSPORTATION, RIGGING, HOISTING, ETC. TO PROVIDE A COMPLETE AND OPERABLE HEATING AND VENTILATING SYSTEM.

F. ALL EQUIPMENT IS TO BE INSTALLED IN A NEAT AND WORKMANLIKE MANNER, ACCORDING TO MANUFACTURERS RECOMMENDATIONS AND GOOD PRACTICES. COORDINATE ALL WORK WITH OTHER TRADES AND WITH THE GENERAL CONTRACTOR.

G. ALL TEMPERATURE CONTROL WIRING SHALL BE DONE BY THE MECHANICAL CONTRACTOR. THIS CONTRACTOR SHALL FURNISH ALL REQUIRED CONTROLS AND WIRING DIAGRAMS AND SHALL SUPERVISE INSTALLATION. ALL ASSOCIATED MECHANICAL WIRING TO BE PLENUM RATED.

H. SYSTEM IS TO BE AIR BALANCED BY AN INDEPENDENT BALANCE COMPANY, TO INCLUDE HVAC UNIT SUPPLY, RETURN AND OUTSIDE AIR CFM, EXHAUST FAN CFM, AIR DISTRIBUTION DEVICE SUPPLY AND RETURN CFM & TOILET EXHAUST CFM WITH THREE (3) REPORTS SUBMITTED TO THE OWNER AND THREE (3) MAINTENANCE MANUALS TURNED OVER TO OWNER BEFORE FINAL ACCEPTANCE. ALL SYSTEMS AND EQUIPMENT ARE TO BE GUARANTEED FOR PARTS AND LABOR FOR ONE YEAR (EXCEPT AIR CONDITIONING COMPRESSOR SHALL HAVE FIVE (5) YEAR WARRANTY).

I. DUCTWORK AND PLENUMS SHALL BE AS SCHEDULED ON THE DRAWINGS PER SMACNA "DUCT CONSTRUCTION" CLASSIFICATION.

J. HVAC EQUIPMENT SHALL BE AS SCHEDULED ON THE DRAWINGS.

HVAC GENERAL NOTES:

1. THE MECHANICAL CONTRACTOR SHALL ALSO ARRANGE THE FINAL INSPECTIONS BY THE BUILDING AUTHORITIES.
2. ALL ROOFTOP EQUIPMENT SHALL BE CONVEYED VIA A CRANE TO THE PROPER LOCATION. ANY OTHER METHOD MUST BE APPROVED BY THE PROJECT MANAGER.
3. NO PIPING, HANGERS, DUCTWORK, ETC., SHALL BE SUSPENDED FROM ROOF DECK. ALL ITEMS SHALL BE SUSPENDED FROM STRUCTURE.
4. MECHANICAL CONTRACTOR TO MAINTAIN MINIMUM 10 FEET BETWEEN EXHAUST VENTS, FANS, ETC., AND OUTSIDE AIR INTAKES.
5. MECHANICAL CONTRACTOR SHALL VERIFY VOLTAGES WITH ELECTRICAL CONTRACTOR PRIOR TO ORDERING OF ANY AND ALL MECHANICAL EQUIPMENT.

REFRIGERANT PIPING NOTES:

1. A/C CONDENSATE DRAIN PIPING SHALL BE TYPE 'L' HARD DRAWN COPPER TUBING (ASTM B-88 LATEST REVISION) WITH WROUGHT COPPER FITTING AND SOLDERED JOINTS WITH 95-5 TIN ANTIMONY OR PVC SCHEDULE 40 PIPIPNG AND FITTINGS AT CONTRACTOR'S OPTION.
2. CONNECTION BETWEEN COPPER PIPING AND FERROUS PIPING OR EQUIPMENT SHALL BE MADE WITH DIELECTRIC UNION.
3. REFRIGERANT PIPING SHALL BE TYPE 'L' HARD DRAWN COPPER (REFRIGERATION GRADE ARC), WROUGHT COPPER FITTINGS (LONG RADIUS ELBOWS). COPPER TO BRASS OR STEEL JOINTS SHALL BE MADE USING A 45% SILVER ALLOY SUCH AS "EASY-FLO" WITH FLUX. INERT NITROGEN SHALL BE PASSED THROUGH THE PIPING DURING BRAZING OPERATIONS TO PREVENT OXIDATIONS. PIPING SHALL BE CUT USING TUBING CUTTER ONLY, HACKSAW CUTS ARE PROHIBITED.
4. AFTER THE INSTALLATION IS COMPLETE, LEAK TEST THE COMPLETE SYSTEM USING A MIXTURE OF NITROGEN AND SYSTEM REFRIGERANT PRESSURIZED TO 75 PSIG.
5. AFTER LEAK TESTING, THE ENTIRE PIPING SYSTEM SHALL BE EVACUATED TO 1500 MICRONS.
6. AFTER EVACUATION, THE SYSTEM SHALL BE CHARGED WITH THE PROPER AMOUNT OF REFRIGERANT FOR DESIGNED OPERATION.
7. THE REFRIGERANT LINES MAY BE PRE-ENGINEERED SYSTEM BY UNIT MANUFACTURER INSTEAD OF MATERIAL LISTED ABOVE.
8. PIPING INSULATION:

a. REFRIGERANT PIPING SUCTION LINE TO BE INSULATED WITH 1" THICK ARMAFLEX PIPE INSULATION.
b. CONDENSATE DRAIN PIPING FROM COIL TO BE INSULATED WITH 1" ARMAFLEX PIPE INSULATION.

project title

Alterations for
The Muirfield
Association Office
Dublin, OH.43017
for
Muirfield Assoc. Board

MECHANICAL SPECIFICATIONS

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ADDITIONAL GAS DEMAND

UNIT HEATER (EXISTING)	60.0	CFH
UNIT HEATER (EXISTING)	60.0	CFH
UNIT HEATER (EXISTING)	60.0	CFH
FURNACE (EXISTING)	100.0	CFH
UNIT HEATER (UH-1 NEW)	60.0	CFH
UNIT HEATER (UH-2 NEW)	60.0	CFH
UNIT HEATER (UH-3 NEW)	60.0	CFH
TOTAL	460.0	CFH

NOTES:
1. GAS PRESSURE AFTER METER SHALL BE 7" WC.

2. PROVIDE NEW PIPING AS REQUIRED. VERIFY ALL ROUTING PRIOR TO INSTALLATION.

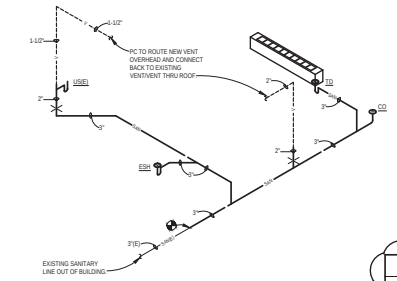
3. THE PLUMBING CONTRACTOR SHALL VERIFY IN WRITING WITH LOCAL GAS COMPANY WHETHER THE EXISTING GAS SERVICE LINE & METER ARE ADEQUATE FOR THE NEW GAS DEMAND. IF INADEQUATE FOR THE NEW GAS THE PLUMBING CONTRACTOR SHALL NOTIFY THE ARCHITECT AND ENGINEER IN WRITING.

GENERAL NOTES:

1. THE LOCATIONS OF PIPING AND EQUIPMENT AS SHOWN ON THE DRAWING ARE GENERAL ONLY. THE PLUMBING CONTRACTOR SHALL VERIFY THE EXACT LOCATION OF ALL PIPING AND EQUIPMENT IN THE FIELD PRIOR TO EXECUTING HIS WORK.
2. PLUMBING CONTRACTOR SHALL COORDINATE EXACT LOCATION OF SERVICES IN BUILDING PRIOR TO STARTING ANY WORK.
3. ALL ITEMS PROJECTING THROUGH THE ROOF SHALL BE FLASHED A MINIMUM OF 12" ABOVE THE ROOF. ALL VENTS SHALL BE A MINIMUM OF 10'-0" FROM ANY OUTSIDE AIR INTAKE.
4. ALL WATER PIPING TO RUN ON WARM SIDE OF THE BUILDING INSULATION. PLUMBING CONTRACTOR TO COORDINATE WITH GENERAL CONTRACTOR.
5. THE PLUMBING CONTRACTOR TO COORDINATE ALL CUTTING OF ROOF, WALLS AND FLOORS WITH GENERAL CONTRACTOR PRIOR TO EXECUTING HIS WORK.
6. SEAL PENETRATIONS THRU FIRE-RATED WALLS WITH THE PROPER FIRE STOPPING MATERIAL TO MAINTAIN FIRE RATING.
7. PLUMBING CONTRACTOR SHALL COORDINATE HIS WORK WITH ALL OTHER TRADES (MECHANICAL, FIRE PROTECTION, ELECTRICAL, ETC.).
8. REFER TO DWG. M-2 FOR SPECIFICATIONS.

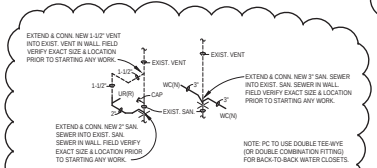
PLUMBING CODED NOTES:

1. PLUMBING CONTRACTOR (P.C.)TO CUT AND REMOVE SECTION OF COMPRESSED AIR PIPING. PREPARE EXISTING PIPING FOR RECONNECTION AND NEW ROUTING, SEE PLANS FOR EXACT CONNECTION LOCATIONS.
2. P.C. TO INSTALL NEW COMPRESSED AIR PIPING, SAME SIZE AND TYPE OF PIPING. COMPRESSED AIR LINE TO RUN ALONG WALL AND OVERHEAD ABOVE NEW GARAGE DOORS. COORDINATE EXACT GARAGE DOOR LOCATIONS WITH ARCHITECTURAL PLANS PRIOR TO COMMENCEMENT OF WORK. AIR COMPRESSOR TO BE TEMPORARILY TAKEN OUT OF SERVICE WHILE NEW COMPRESSED AIR LINES ARE BEING INSTALLED.
3. P.C. TO INSTALL NEW 3/4" HOT WATER LINE TO EXISTING UTILITY SINK DESIGNATED US(E). NEW LOCATION AS SHOWN ON DRAWINGS. TIE INTO EXISTING HOT WATER PIPING LOCATED IN THE WATER HEATER ROOM. PROVIDE KEY STOPS AND ALL NECESSARY WATER PIPING FOR A COMPLETE INSTALLATION. COORDINATE PIPE ROUTING PRIOR TO COMMENCEMENT OF WORK.
4. P.C. TO INSTALL NEW 1-1/4" COLD WATER LINE OVER TO EMERGENCY EYEWASH/DELUGE SHOWER STATION. CONTINUE 3/4" COLD WATER LINE TO EXISTING UTILITY SINK NEW LOCATION AS SHOWN ON DRAWINGS. TIE INTO EXISTING COLD WATER PIPING LOCATED IN THE WATER HEATER ROOM. PROVIDE KEY STOPS AND ALL NECESSARY WATER PIPING FOR A COMPLETE INSTALLATION. COORDINATE PIPE ROUTING PRIOR TO COMMENCEMENT OF WORK.
5. P.C. SHALL EXTEND AND CONNECT GAS LINE TO UNIT HEATER COMPLETE WITH SHUT-OFF VALVE AND DIRT LEG.
6. P.C. SHALL EXTEND AND CONNECT VENT LINE INTO EXISTING VENT SYSTEM. P.C. SHALL FIELD VERIFY EXISTING CONDITIONS, SIZES, LOCATION, ETC. PRIOR TO STARTING WORK.
7. P.C. SHALL EXTEND 3/4" HW & CW TO THERMOSTATIC MIXING VALVE AND CONNECT TEMPER WATER TO EMERGENCY SHOWER/EYE WASH UNIT.
8. P.C. SHALL RELOCATE EXIST. UR COMPLETE TO NEW LOCATION SHOWN. EXISTING SANITARY DRAIN AND WATER CONNECTIONS TO REMAIN. EXTEND & CONNECT 3/4" CW & 2" SAN. SEWER INTO EXISTING WATER AND SANITARY CONNECTIONS FROM EXISTING UR. REWORK PIPING AS REQUIRED IN WALL TO CONNECT INTO EXISTING CW & SAN. SEWER. REWORK EXISTING CONNECTIONS IF NECESSARY FOR NEW WORK. FIELD VERIFY EXACT SIZE & LOCATION PRIOR TO STARTING ANY WORK.
9. EXTEND & CONNECT NEW 1/2" CW INTO EXIST. CW FROM REMOVED WC. REWORK EXISTING CONNECTION AS NECESSARY FOR NEW WORK. FIELD VERIFY EXACT SIZE & LOCATION PRIOR TO STARTING ANY WORK.
10. EXTEND NEW 3" SAN. SEWER INTO EXIST. SAN. SEWER FROM REMOVED WC. REWORK EXISTING CONNECTION AS NECESSARY FOR NEW WORK. FIELD VERIFY EXACT SIZE & LOCATION PRIOR TO STARTING ANY WORK.



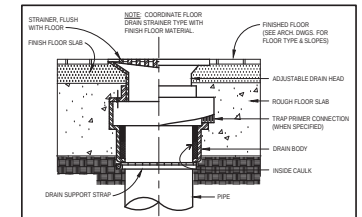
SANITARY STACK DIAGRAM - FIRST FLOOR

SCALE: N.T.S.



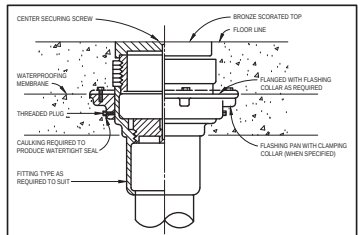
SANITARY STACK DIAGRAM - SECOND FLOOR

SCALE: N.T.S.



FLOOR DRAIN DETAIL

NO SCALE



FLOOR CLEANOUT

NO SCALE

PLUMBING FIXTURE SCHEDULE

MARK	ITEM	FIXTURE	FAUCET	MTG. HT.	CW	HW	TRAP	ACCESSORIES
WC	WATER CLOSET	GERBER 35-022	-	16-1/2"	1/2"	--	INTEG.	NOTE-1

NOTE:

1. VITREOUS CHINA, FLOOR MOUNTED, BACK OUTLET, ELONGATED BOWL, 1.28 GPF, DUAL-FED SIPHON JET. FURNISH WITH OPEN FRONT SEAT.

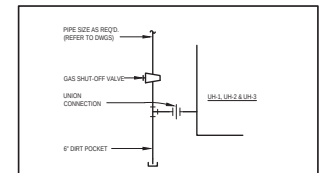
PLUMBING EQUIPMENT:

FLOOR DRAIN (FD)
J.R. SMITH MODEL 2010-A-P050 DUCO CAST IRON BODY WITH FLASHING COLLAR AND ADJUSTABLE NICKEL BRONZE STRAINER HEAD AND ROUND TOP.

FLOOR CLEANOUT (CO)
J.R. SMITH MODEL NO. 4020 DUCO CAST IRON CLEANOUT WITH ROUND ADJUSTABLE SCORIATED SECURED NICKEL BRONZE TOP. NOTE: WHERE CLEANOUTS ARE INSTALLED IN CARPETED AREAS PROVIDE WITH CARPET CLAMPING FRAME (SUFFIX-X)

EMERGENCY SHOWER (ESH)
SPEAKMAN COMPANY MODEL NO. SE-693 COMBINATION EMERGENCY EYE WASH/DELUGE SHOWER STATION. 1-1/4" GALVANIZED STANCHION, PULL ROD ACTIVATED DELUGE SHOWER AND HANDS FREE OPERATION ONCE SHOWER HAS BEEN ACTIVATED. HIGH VISIBILITY YELLOW PULL ROD. THIS COMBINATION EMERGENCY STATION MEETSANSI/ISEA Z358.1 COMPLIANCE ALONG WITH OSHA STANDARDS. PROVIDE MIXING VALVE BY BRADLEY, MODEL # S19-2100 PRE-SET TO 85°F. INSTALL MIXING VALVE IN ACCESSIBLE LOCATION.

TRENCH DRAIN (TD)
ZURN MODEL NO. Z883 6" WIDE SHALLOW TRENCH DRAINAGE SYSTEM. MADE OF HIGH DENSITY POLYPROPYLENE, STRUCTURAL COMPOSITE DRAIN CHANNEL WITH 3.5° DEPTH. 45° SECTION WITH END CAP AND INTEGRAL TOP FRAME, HEAVY DUTY "DURA" COATED CAST IRON GRATE.

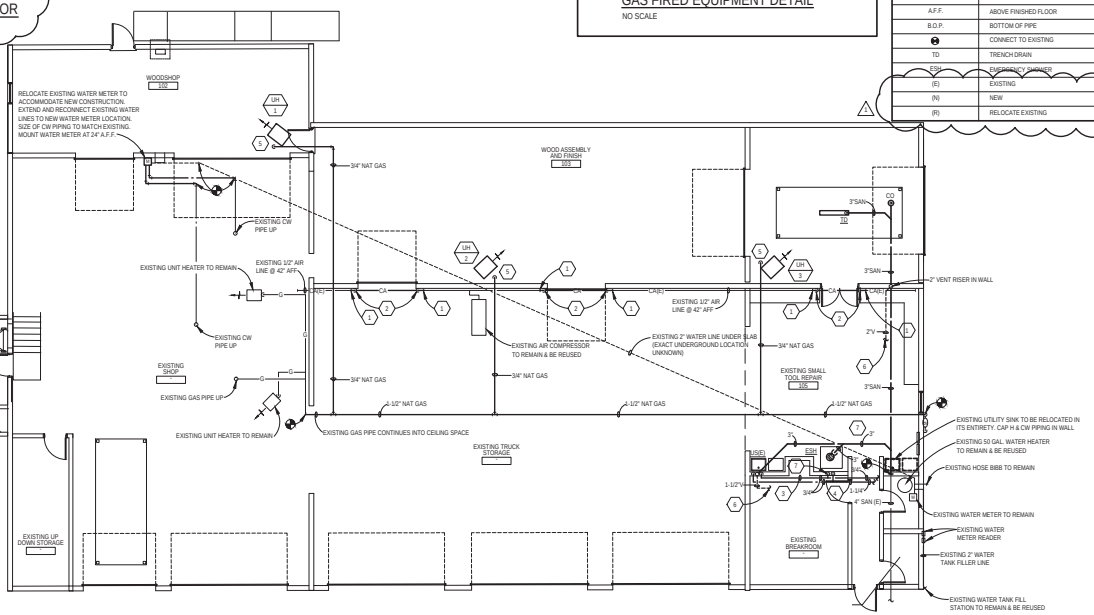


TYPICAL GAS CONNECTION FOR ALL GAS FIRED EQUIPMENT DETAIL

NO SCALE

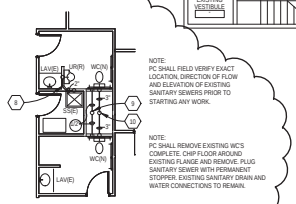
PLUMBING LEGEND

SYMBOL	DESCRIPTION
	COLD WATER PIPING
	HOT WATER PIPING
	SANITARY SEWER
FD	FLOOR DRAIN
CO	FLOOR CLEANOUT
CO	HORIZONTAL CLEANOUT
V	SANITARY VENT PIPING
G	GAS PIPING
CA	COMPRESSED AIR
	CAP ON END OF PIPE
	SHUT-OFF VALVE
	CHECK VALVE
	DOUBLE CHECK BACKFLOW PREVENTOR
	WATER METER
	SHUT-OFF VALVE IN RISER
	GAS SHUT-OFF VALVE
	RISER DOWN (ELBOW)
	RISER UP (ELBOW)
	BRANCH-TOP CONNECTION
	BRANCH-BOTTOM CONNECTION
	TEE
	ELBOW
FPHB	FROSTPROOF HOSE BIBB
HB	HOSE BIBB
WC	WATER CLOSET
LAV	LAVATORY
SS	SERVICE SINK
EWC	ELECTRIC WATER COOLER
SHWR	SHOWER
W	WASHER
D	DRYER
PC	PLUMBING CONTRACTOR
GC	GENERAL CONTRACTOR
EC	ELECTRICAL CONTRACTOR
MC	MECHANICAL CONTRACTOR
A.F.F.	ABOVE FINISHED FLOOR
B.O.P.	BOTTOM OF PIPE
	CONNECT TO EXISTING
TD	TRENCH DRAIN
ESH	EMERGENCY SHOWER
(E)	EXISTING
(N)	NEW
(R)	RELOCATE EXISTING



FIRST FLOOR PLUMBING PLAN

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



NOTE: PC SHALL FIELD VERIFY EXACT LOCATION, DIRECTION OF FLOW AND ELEVATION OF EXISTING SANITARY SEWERS PRIOR TO STARTING ANY WORK.

NOTE: PC SHALL REMOVE EXISTING WC'S COMPLETE. CHIP FLOOR AROUND EXISTING FLANGE AND REMOVE. PLUG SANITARY SEWER WITH PERMANENT STOPPER. EXISTING SANITARY DRAIN AND WATER CONNECTIONS TO REMAIN.

PARTIAL SECOND FLOOR PLUMBING PLAN

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

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PLUMBING PLANS

@ 1/8" = 1'-0"

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