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HUD PROJECT NO.
OHFA PROJECT NO. 22-0250

PROJECT ARCHITECT:	MOODY NOLAN		
	SIGNATURE	TITLE	DATE
OWNER/ DEVELOPER:	COLUMBUS METROPOLITAN HOUSING AUTHORITY		
	SIGNATURE	TITLE	DATE
GENERAL CONTRACTOR:			
	SIGNATURE	TITLE	DATE
LENDER:			
	SIGNATURE	TITLE	DATE
BONDING COMPANY:			
	SIGNATURE	TITLE	DATE

PROJECT NUMBER 22172

COBBLESTONE MANOR

1050 LAMPLIGHTER DRIVE
GROVE CITY, OH 43123

PREPARED FOR:

COLUMBUS METROPOLITAN HOUSING AUTHORITY
COMMUNITY. COMMITMENT. COLLABORATION.

CMHA EXECUTIVE STAFF:

CHARLES D. HILLMAN, PRESIDENT & CEO
TOM WILLIAMSON, CFO
SCOTT SCHARLACH, COO
SCOTT W. AMMARELL, CPO

BOARD OF COMMISSIONERS:

JAMES L. ERVIN, JR., CHAIRMAN
D. MALONE, COMMISSIONER
FREDERICK L. RANSIER, COMMISSIONER
JACQUELIN LEWIS, COMMISSIONER
STEPHEN G. DALEY, COMMISSIONER

Jezerinac Geers Structural Engineering

STRUCTURAL ENGINEERING
5640 Frantz Road
Dublin, Ohio 43017
PHONE: (614) 766-0066
FAX: (614) 766-1223

PREPARED BY:
MOODY•NOLAN

ARCHITECTURE & INTERIOR DESIGN
300 Spruce Street, Suite 300
Columbus, Ohio 43215
PHONE: (614) 461-4664
FAX: (614) 280-8881

AEC ADVANCED ENGINEERING CONSULTANTS

MEP/T/FP ENGINEERING
1405 Dublin Road
Columbus, Ohio 43215
PHONE: (614) 486-4778
FAX: (614) 486-4082

EDGE

LANDSCAPE ARCHITECTURE
330 West Spring Street, Suite 350
Columbus, Ohio 43215
PHONE: (614) 486-3343
FAX: (614) 486-3344

KORDA
KORDA/NEMETH ENGINEERING

CIVIL ENGINEERING
1650 Watermark Drive
Columbus, Ohio 43215
PHONE: (614) 487-1650
FAX: (614) 643-1134

Sol design + consulting

SUSTAINABILITY
501 East Thirteenth Street
Cincinnati, Ohio 45202
PHONE: (513) 455-8228
FAX: (513) 455-8227

BLUNDALL ASSOCIATES, INC.

COST ESTIMATING
7223 ENGLE ROAD, SUITE 215
FORT WAYNE, IN 43804
PHONE: (260) 489-8444
FAX: (260) 489-5994

PERMIT & BID SET 06/08/2023 VOL 1

STATE OF OHIO
JAY W. BOONE
10740
REGISTERED ARCHITECT
JAY W BOONE, LIC. #10740
EXP. DATE: 12/31/2023

PRINT DATE: 11/16/2023 2:58:53 PM
FILE INFO: Autodesk Docs://22172.01 CMHA Cobblestone Manor/22172.01 CMHA Cobblestone Manor_ARCH.rvt

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ABBREVIATIONS

SYMBOLS

&	AND
∠	ANGLE
@	AT
#	NUMBER / POUND
℄	CENTERLINE
℘	PROPERTY LINE

A

AB	ANCHOR BOLT
ABV	ABOVE
AC	AIR CONDITIONING / AIR CONDITIONER
ACOUS	ACOUSTICAL
ACT	ACOUSTIC CEILING TILE
AD	AREA DRAIN
ADJ	ADJACENT / ADJUSTABLE
AFC	ABOVE FINISH CEILING
AFF	ABOVE FINISH FLOOR
AGGR	AGGREGATE
ALUM	ALUMINUM
ALT	ALTERNATE
AP	ACCESS PANEL
APP'D	APPROVED
APPROX	APPROXIMATE
APT	APARTMENT
ARCH	ARCHITECT / ARCHITECTURAL
ASB	ASBESTOS
ASPH	ASPHALT
AV	AUDIO VISUAL

B

BC	BOTTOM OF CURB
BD	BOARD
BET	BETWEEN
BIT	BITUMINOUS
BLDG	BUILDING
BLKG	BLOCKING
BM	BEAM / BENCHMARK
BOS	BOTTOM OF STEEL
BOT	BOTTOM
BRG	BEARING
BSMT	BASEMENT
BUR	BUILT UP ROOF

C

CAB	CABINET
CB	CATCH BASIN
CEM	CEMENT
CFM	COLD FORMED METAL / CUBIC FEET PER MINUTE
CIP	CAST IN PLACE
CI	CURB INLET
CJ	CONTROL JOINT
CL	CENTERLINE
CLG	CEILING
CLOS	CLOSET
CLR	CLEAR
CM	CONSTRUCTION MANAGER
CMU	CONCRETE MASONRY UNIT
CNSK	COUNTERSUNK
CO	CLEANOUT
COL	COLUMN
CONC	CONCRETE
CONN	CONNECTION
CONST	CONSTRUCTION
CONT	CONTINUOUS / CONTINUE
CONTR	CONTRACTOR
CORR	CORRIDOR / CORRUGATED
CPT	CARPET
CRS	COURSE
CT	CERAMIC TILE
CTR	CENTER
CW	COLD WATER

D

DBL	DOUBLE
DEMO	DEMOLISH
DEPT	DEPARTMENT
DET	DETAIL
DF	DRINKING FOUNTAIN
DIA	DIAMETER
DIM	DIMENSION
DISP	DISPENSER
DIV	DIVISION
DL	DEAD LOAD
DN	DOWN
DO	DOOR OPENING
DS	DOWNSPOUT
DW	DISHWASHER
DWG	DRAWING

E

E	EAST
EA	EACH
EC	ELECTRICAL CONTRACTOR
EF	EXHAUST FAN / EACH FACE
EIFS	EXTERIOR INSULATION FINISH SYSTEM
EJ	EXPANSION JOINT
EL	ELEVATION (ABOVE GRADE)
ELECT	ELECTRICAL
ELEV	ELEVATION (BUILDING ELEVATION)
ELV	ELEVATOR
EMER	EMERGENCY
ENCL	ENCLOSURE
EP	ELECTRICAL PANEL / EDGE OF PAVEMENT
EQ	EQUAL
EQUIP	EQUIPMENT
EST	ESTIMATE
EW	EACH WAY
EWC	ELECTRIC WATER COOLER
EXH	EXHAUST
EXP	EXPANSION
EXPO	EXPOSED
EXIST	EXISTING
EXT	EXTERIOR

F

FA	FIRE ALARM
FD	FLOOR DRAIN
FDN	FOUNDATION
FE	FIRE EXTINGUISHER
FEC	FIRE EXTINGUISHER CABINET
FF	FINISH FLOOR
FG	FIBERGLASS
FIN	FINISH OR FINISHED
FLR	FLOOR
FLG	FLASHING
FLUOR	FLUORESCENT
FO	FACE OF
FP	FIREPROOF
FRMG	FRAMING
FRP	FIBER REINFORCED PLASTIC
FRT	FIRE RETARDANT TREATED

F (continued)

FT	FOOT OR FEET
FTG	FOOTING
FURN	FURNACE
FURR	FURRING
FWC	FABRIC WALLCOVERING
FHC	FIRE HOSE CABINET

G

GA	GAGE / GAUGE
GALV	GALVANIZED
GB	GRAB BAR
GC	GENERAL CONTRACTOR
GEN	GENERAL
GFI	GROUND FAULT INTERRUPT
GFRC	GLASS FIBER REINFORCED CONCRETE
GFCMU	GROUND FACE CONCRETE MASONRY UNIT
GL	GLASS OR GLAZING
GND	GROUND
GYP	GYPSUM
GWB	GYPSUM WALLBOARD

H

H	HEIGHT / HIGH
HB	HOSE BIB
HC	HOLLOW CORE
HDBD	HARDBOARD
HDCP	HANDICAP / HANDICAPPED
HDO	HIGH DENSITY OVERLAY
HDR	HEADER
HDW	HARDWARE
HDWD	HARDWOOD
HGT	HEIGHT
HM	HOLLOW METAL
HORIZ	HORIZONTAL
HR	HOUR / HANDRAIL
HTG	HEATING
HV/AC	HEATING, VENTILATING, AIR CONDITIONING
HW	HOT WATER

I

ID	INSIDE DIAMETER
IN	INCH
INCL	INCLUDE
INSUL	INSULATION
INT	INTERIOR
INV	INVERT

J

JAN	JANITOR
JBOX	JUNCTION BOX
JST	JOIST
JT	JOINT

K

KIT	KITCHEN
KO	KNOCKOUT

L

L	LENGTH
LAB	LABORATORY
LAM	LAMINATE
LAV	LAVATORY
LF	LINEAR FOOT
LGTH	LENGTH
LH	LEFT HAND
LL	LIVE LOAD
LLH	LONG LEG HORIZONTAL
LLV	LONG LEG VERTICAL
LT	LIGHT
LTG	LIGHTING

M

MAS	MASONRY
MAT	MATERIAL
MAX	MAXIMUM
MDF	MEDIUM DENSITY FIBERBOARD
MDO	MEDIUM DENSITY OVERLAY
MECH	MECHANICAL
MED	MEDIUM
MEMB	MEMBRANE
MEZZ	MEZZANINE
MFR	MANUFACTURER
MH	MANHOLE
MIN	MINIMUM
MISC	MISCELLANEOUS
MO	MASONRY OPENING
MT	MARBLE TILE
MTD	MOUNTED
MTG	MOUNTING
MTL	METAL
MUL	MULLION

N

N	NORTH
NIC	NOT IN CONTRACT
NO	NUMBER
NOM	NOMINAL
NTS	NOT TO SCALE

O

OA	OVERALL
OBS	OBSCURE
OC	ON CENTER
OD	OUTSIDE DIAMETER
OFC	OFFICE
OH	OVERHEAD
OPNG	OPENING
OPP	OPPOSITE
OSB	ORIENTED STRAND BOARD

P

PC	PRE-CAST
PERF	PERFORATED
PL	PLATE / PROPERTY LINE
PLAM	PLASTIC LAMINATE
PLAS	PLASTIC
PLBG	PLUMBING
PLYWD	PLYWOOD
PNL	PANEL
PORC	PORCELAIN
POS	POINT OF SALE
PR	PAIR
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PT	PAINT / PRESSURE TREATED
PTD	PAINTED
PVC	POLYVINYL CHLORIDE
PVMT	PAVEMENT
PWR	POWER

Q

QT	QUARRY TILE
QTY	QUANTITY

R

R	RADIUS / RISER
RA	RETURN AIR
RB	RUBBER BASE
RD	ROOF DRAIN
REF	REFRIGERATOR / REFERENCE
REINF	REINFORCED
REQ'D	REQUIRED
RES	RESILIENT
REV	REVISION
RH	RIGHT HAND
RM	ROOM
RMV	REMOVE
RO	ROUGH OPENING
ROW	RIGHT OF WAY
RWL	RAIN WATER LEADER

S

S	SOUTH
SA	SUPPLY AIR
SAN	SANITARY
SC	SOLID CORE / SEALED CONCRETE
SCHED	SCHEDULE
SD	SMOKE DETECTOR / STORM DRAIN
SECT	SECTION
SHTG	SHEATHING
SHR	SHOWER
SHT	SHEET
SHT'G	SHEATHING
SIM	SIMILAR
SLV	SHORT LEG VERTICAL
SPEC	SPECIFICATION
SPKR	SPEAKER
SQ	SQUARE
SS	STAINLESS STEEL
SSG	STRUCTURAL SEALANT GLAZED
SSK	SERVICE SINK
STA	STATION
STD	STANDARD
STL	STEEL
STM	STEAM
STOR	STORAGE
STRUCT	STRUCTURAL
SUSP	SUSPENDED
SV	SHEET VINYL
SY	SQUARE YARD
SYM	SYMMETRICAL

T

T	TREAD
T&B	TOP AND BOTTOM
T&G	TONGUE AND GROOVE
TC	TOP OF CURB
TEL	TELEPHONE
THK	THICK(NESS)
TOF	TOP OF FOOTING
TOS	TOP OF STEEL
TOW	TOP OF WALL
TP	TOP OF PAVEMENT
TS	TUBE STEEL
TV	TELEVISION
TW	TOP OF WALL
TYP	TYPICAL
TZ	TERRAZZO

U

UNF	UNFINISHED
UNO	UNLESS NOTED OTHERWISE
UR	URINAL

V

VCT	VINYL COMPOSITION TILE
VB	VAPOR BARRIER / VINYL BASE
VERT	VERTICAL
VEST	VESTIBULE
VIF	VERIFY IN FIELD
VWC	VINYL WALL COVERING

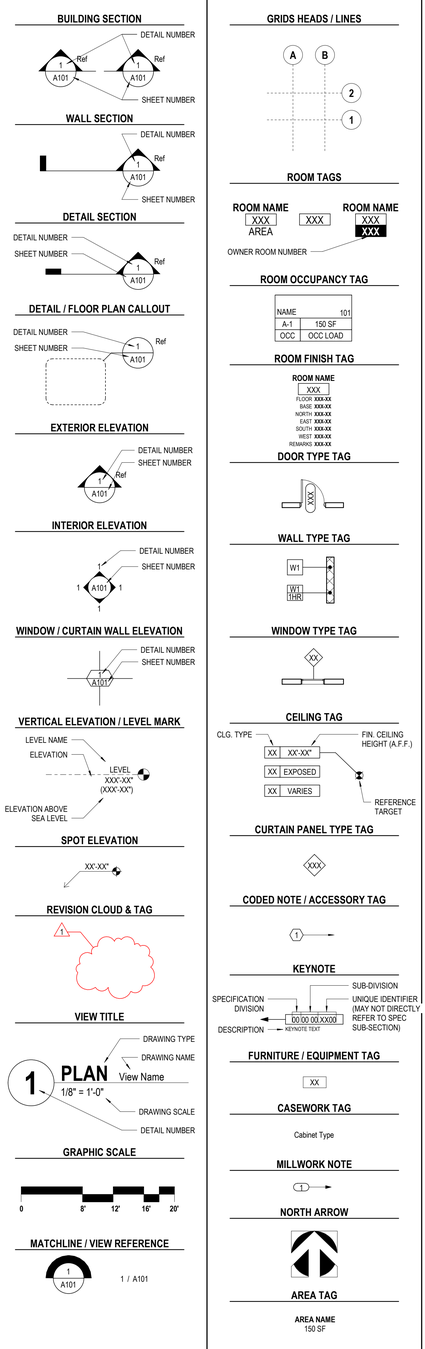
W

W	WEST / WIDTH
WF	WIDE FLANGE
W/	WITH
W/O	WITHOUT
WC	WATER CLOSET
WD	WOOD
WI	WROUGHT IRON
WP	WATERPROOF
WR	WATER RESISTANT
WSCT	WAINSCOT
WT	WEIGHT
WTR	WATER
WWF	WELDED WIRE FABRIC

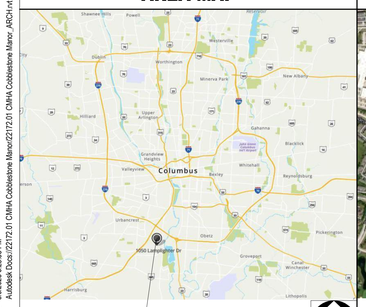
Y

YD	YARD / YARD DRAIN

SYMBOLS LEGEND

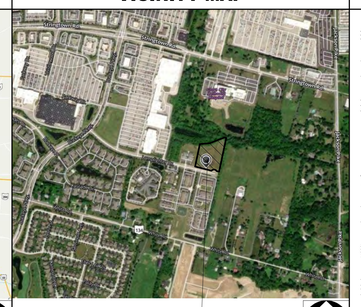


AREA MAP



PROJECT SITE

VICINITY MAP



PROJECT SITE

MATERIALS LEGEND

ALUMINUM	GRANULAR FILL
ACOUSTIC CEILING	GYPSUM BOARD
BRICK	INSULATION - BATT
CONCRETE	INSULATION - RIGID
CONCRETE MASONRY	PLYWOOD
CONCRETE (SURFACE)	STEEL
EARTH	WOOD - ROUGH FRAMING
GLASS - LARGE SCALE	WOOD - ROUGH BLOCKING
GLASS - SMALL SCALE	WOOD - FINISHED

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TECHNOLOGY: 8	
Grand total: 81	

PROJECT SUMMARY

COBBLESTONE MANOR IS AN (82) APARTMENT-UNIT SENIOR LIVING COMMUNITY FACILITY (AGES 55 WITH DISABILITY, 62 FOR ALL OTHER). THE BUILDING'S ORIENTATION AND SITE DESIGN TAKE ADVANTAGE OF THE GENTLY SLOPING SITE TOWARDS THE HEAVILY WOODED AND PROTECTED WETLAND TO THE NORTH. THE SITE/LANDSCAPE DESIGN FEATURES A NATURAL DRY "CREEK BED" ORIGINATING ALONG LAMPLIGHTER DRIVE. THE MAIN ENTRY DRIVE PASSES OVER AND THROUGH THE NATURALLY PLANTED "CREEK" AS IT WRAPS TOWARD THE BUILDING AND BLENDS WITH THE EXISTING TREE LINE. A WALKING PATH WRAPS THE POND AND CONNECTS THE EAST AND WEST WINGS OF THE BUILDING. THIS PATH WILL HAVE THE ABILITY TO CONNECT WITH FACILITIES NORTH OF THE WOODED WETLAND AREA. A DRIVE LANE WILL BE INSTALLED AROUND THE SOUTH OF THE BUILDING TO PROVIDE EMERGENCY RESPONDERS QUICK ACCESS TO THE BACK OF THE BUILDING.

THE EXTERIOR BUILDING MATERIALS PROPOSED FOR THE PROJECT WILL REFLECT THE RURAL RESIDENTIAL VERNACULAR. BRICK AND STONE ARE PREDOMINATELY USED AS BASE MATERIALS WITH TRADITIONAL LOOKING COMPOSITE SIDING (VERTICAL AND HORIZONTAL) USED ON THE STORIES ABOVE. THE EXTERIOR FORM OF THE BUILDING IS DESIGNED TO BREAK DOWN THE SCALE OF THE BUILDING AND RESPOND TO THE BUILDINGS IN THE NEIGHBORHOOD.

THE THREE-STORY, 84,826 GSF BUILDING WILL HAVE (76) SINGLE-BEDROOM UNITS AND (6) TWO-BEDROOM UNITS. THE OVERALL HEIGHT OF THE BUILDING WILL BE (50)' AT THE ROOF PEAK AND (32)' AT THE EAVES.

THE AVERAGE SQUARE FOOTAGE FOR THE SINGLE-BEDROOM UNITS IS 704 GSF AND AN AVERAGE OF 1,213 GSF FOR THE TWO-BEDROOM UNITS. THE PROPOSED DESIGN HAS 72 TOTAL PARKING SPACES (65 STANDARD + 7 ACCESSIBLE SPACES) THAT SERVE 82 UNITS.

A LARGE MULTI-PURPOSE COMMUNITY SPACE JOINS THE TWO BUILDING WINGS AND OPENS TO AN OUTSIDE COVERED PATIO WITH VIEWS OF THE POND. OTHER AMENITIES OFFERED IN THIS PROJECT INCLUDE THE FOLLOWING: WELLNESS SPACE, KITCHENETTE, COFFEE BAR, COMMUNITY ROOM, COMMUNITY LIBRARY, COMPUTER ROOM, COMMON AREA LAUNDRY ROOM. DEDICATED MAIL AND PARCEL AREAS, COMMUNITY WALKING TRAIL, AND COMMUNITY MEETING ROOMS.

UNIT SUMMARY

UNIT TYPE	COUNT	BEDS	AREA (AVG.)
2-BEDROOM UNITS	***6 UNITS***	***12 BEDS***	
TYPICAL	4 UNITS	8 BEDS	1,204 GSF
TYPE A / SENSORY	1 UNIT	2 BEDS	1,258 GSF
SENSORY	1 UNIT	2 BEDS	1,200 GSF
1-BEDROOM UNITS	***76 UNITS***	***76 BEDS***	
TYPICAL	71 UNITS	71 BEDS	704 GSF
TYPE A / SENSORY	4 UNITS	4 BEDS	701 GSF
SENSORY	1 UNIT	1 BEDS	710 GSF
	82 UNITS	***88 BEDS***	

REQUIRED NUMBER OF ANSI TYPE A UNITS (5%) =
82 x .05 = 4.1 / 5 PROVIDED *

REQUIRED NUMBER OF SENSORY (HEARING / VISUALLY IMPAIRED) UNITS (2%) =
82 x .02 = 1.64 REQUIRED / 2 PROVIDED (DEDICATED SENSORY)

*ANSI TYPE A UNITS WILL ALSO INCLUDE SENSORY UNIT FEATURES

#	DATE	CHANGE DESCRIPTION

COLUMBUS METROPOLITAN HOUSING AUTHORITY
COMMUNITY. COMPANIONS. COLLABORATION.

COBBLESTONE MANOR
1050 LAMPLIGHTER DRIVE
GROVE CITY, OH 43123
FOR
CMHA

MOODY•NOLAN
300 SPRUCE STREET
SUITE 300
COLUMBUS, OHIO 43215

PHONE: (614) 461-4664
FAX: (614) 280-8881

DRAWING TITLE:

DRAWING INDEX

STATE OF OHIO
JAY W. BOONE
10740
REGISTERED ARCHITECT
JAY W BOONE, LIC. #10740
EXP. DATE: 12/31/2023

06/08/2023

DRAWN BY: XXX | CHECKED BY: XXX

#22172.01

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PERMIT & BID SET

PRINT DATE: 6/8/2023 2:28:33 PM
FILE INFO: Autodesk Docs://22172.01 CMHA Cobblestone Manor/22172.01 CMHA Cobblestone Manor_ARCH.rvt

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NARRATIVE - UNIVERSAL DESIGN

THE SCOPE OF WORK INCLUDES A NEW RESIDENTIAL BUILDING WITH A TOTAL OF EIGHTY-TWO (82) RESIDENTIAL UNITS. THE DESIGN OF INTERIOR AREAS WILL INCORPORATE PRINCIPLES OF UNIVERSAL DESIGN WHICH INCLUDE EQUITABLE USE, FLEXIBILITY IN USE, SIMPLE, INTUITIVE USE, PERCEPTIBLE INFORMATION AND TOLERANCE FOR ERROR, LOW PHYSICAL EFFORT, AND SIZE & SPACE FOR APPROACH AND USE. COBBLESTONE MANOR WILL PURSUE UNIVERSAL DESIGN FEATURES AND IMPLEMENT THESE FEATURES IN THE PROJECT THROUGHOUT. AS NEW CONSTRUCTION, THE PROJECT WILL FULLY INCORPORATE MANDATORY FEATURES AS REQUIRED BY OHFA'S QAP.

PRINCIPLES OF UNIVERSAL DESIGN:

#1 EQUITABLE USE – THE BUILDING AND UNIT ENTRANCES WILL HAVE A ZERO-STEP ENTRY, ACCESSIBLE TOILETS (PUBLIC USE) AND USABLE BATHROOMS (UNITS) THAT MEET VISITABILITY REQUIREMENTS. UD FEATURES WILL BE IMPLEMENTED TO MAKE UNITS USER FRIENDLY. PARKING WILL BE PROVIDED ALONG AN ACCESSIBLE ROUTE. ACCESSIBLE PARKING SPACES WILL BE LOCATED CLOSEST TO THE MAIN BUILDING ENTRY TO PROVIDE DIRECT ACCESS.

#2 FLEXIBILITY IN USE – RESIDENTIAL UNITS WILL PROVIDE BLOCKING AROUND TOILETS FOR THE INSTALLATION (ACCESSIBLE BATHS) AND FUTURE INSTALLATION (NON-ACCESSIBLE BATHS) OF GRAB BARS AND AN OPEN FLOOR PLAN FOR EASY MANEUVERABILITY. WHERE CURBLESS SHOWERS ARE INSTALLED IN NON-ACCESSIBLE BATHS, BLOCKING WILL BE PROVIDED FOR THE FUTURE INSTALLATION OF GRAB BARS. WHERE ROLL-IN SHOWERS ARE INSTALLED IN ACCESSIBLE BATHS, BLOCKING AND GRAB BARS WILL BE PROVIDED.

#3 SIMPLE, INTUITIVE USE – THE LAYOUT OF THE RESIDENTIAL UNITS IS EASY TO UNDERSTAND REGARDLESS OF THE USER'S EXPERIENCE, KNOWLEDGE, LANGUAGE SKILLS, OR CURRENT CONCENTRATION LEVEL.

#4 PERCEPTIBLE INFORMATION – EXTERIOR AND INTERIOR ILLUMINATION HELP RESIDENTS AND VISITORS FEEL SECURE AND MOVE COMFORTABLY AROUND A ROOM. THE FLOORING AND FINISHES IN THE BUILDING WILL BE DESIGNED TO PROVIDE SLIP RESISTANT FLOORING. MATERIALS WITH EASY TO READ OR MINIMUM PATTERN WILL BE SELECTED TO ACCOMMODATE THE SENSE OF PERCEPTION OF AGING PERSONS OR PERSONS WITH VISUAL IMPAIRMENTS.

#5 TOLERANCES FOR ERROR – THE ROUTE AROUND THE BUILDING AND INTO THE RESIDENTIAL UNITS ALLOWS GUESTS TO SAFELY ACCESS THE HOME AND PROTECT FROM ACCIDENTAL AND TRIPPING/ FALLING. ALL MAIN EXTERIOR ENTRANCES ARE COVERED TO PROTECT THE RESIDENTS AND GUESTS FROM THE WEATHER. ILLUMINATION IS PROVIDED AT EXTERIOR DOORS FOR ADDED SECURITY AND SAFE EGRESS. WITHIN THE INTERIORS, MINIMAL TRANSITIONS BETWEEN FLOORING MATERIALS IS INCORPORATED TO AVOID TRIPPING HAZARDS. SLIP RESISTANT LVT AND SHEET VINYL FLOORING IS LOCATED THROUGHOUT THE UNITS.

#6 LOW PHYSICAL EFFORT – ALL DOOR HARDWARE, PLUMBING, MECHANICAL AND ELECTRICAL CONTROLS WILL BE ACCESSIBLE TO THE RESIDENTS AND WILL REQUIRE LOW EFFORT TO OPERATE. DEVICES INCLUDED IN THIS PROJECT WILL BE LOCATED NO LESS THAN 18" (OUTLETS) ABOVE THE FLOOR AND NO HIGHER THAN 42" ABOVE THE FLOOR.

#7 SIZE AND SPACE FOR APPROACH AND USE – THE NEW RESIDENTIAL BUILDING WILL PROVIDE FIVE (5) ANSI TYPE A UNITS WITH MOBILITY FEATURES.

SITE DESIGN
• ALL COMMON, USABLE AREAS WILL BE ON AN ACCESSIBLE ROUTE.
• ADEQUATE NON-GLARE LIGHTING AT WALKWAYS, ACCESSIBLE ROUTES, AND EXTERIOR SPACES
• ALL EXTERIOR AND BUILDING SIGNAGE PROVIDED WILL BE HIGHLY VISIBLE AND EASY TO READ WITH HIGH CONTRASTING LETTERS / NUMBERS AND BACKGROUNDS.

BUILDING ENTRANCES
• ADA COMPLIANT THRESHOLDS AT BUILDING ENTRIES WITH MINIMUM 36-INCH WIDE DOOR
• MINIMUM CLEARANCES INSIDE AND OUTSIDE THE BUILDING ENTRY DOORS WILL BE PROVIDED.
• COVERED ENTRY AT THE MAIN BUILDING ENTRANCE PROVIDES WEATHER PROTECTION AND WILL INCLUDE ADEQUATE NON-GLARE LIGHTING, BOTH INSIDE AND OUTSIDE THE BUILDING.
• FLOORING MATERIALS WILL BE NON-SLIP ON WALKWAYS AND ENTRYWAYS (EXTERIOR WILL BE CONCRETE AND INTERIOR WILL BE LVT).

INTERIOR CIRCULATION
• ADA COMPLIANT THRESHOLDS WILL BE PROVIDED AT ALL LOCATIONS ON ACCESSIBLE ROUTE.
• 5 LB. MAXIMUM FORCE TO OPEN DOORS AT ACCESSIBLE ENTRANCES.
• WHERE SIGNAGE IS PROVIDED IN COMMON AREAS, BRAILLE WILL BE INCORPORATED FOR ROOM IDENTIFICATION AND DIRECTIONAL SIGNS. SIGNAGE WILL BE EASY TO READ WITH HIGH CONTRASTING LETTERS / NUMBERS AND BACKGROUNDS.
• COMMON SPACE FLOORING WILL BE SLIP-RESISTANT. THE SCALE, COLOR AND CONTRAST OF FLOORING IN COMMON AREAS WILL TAKE INTO CONSIDERATION AN AGING PERSON'S EYES AND DEPTH PERCEPTION.
• ADEQUATE NON-GLARE LIGHTING AT STAIRWAYS, LANDINGS, AND HALLWAYS
• MIN. CLEARANCES (42-INCH MIN.) WITHIN INTERIOR HALLWAYS WILL BE PROVIDED.
• ANTI-SLIP STRIPS ON FRONT EDGE OF STEPS IN COLOR-CONTRAST MATERIAL TO BE PROVIDED.
• HANDRAILS PROVIDED ON BOTH SIDES OF INTERIOR STAIRS.

FAUCETS
• ANTI-SCALD FAUCETS WITH LEVER HANDLE FOR ALL SINKS AND SHOWERS
• THERMOSTATIC PRESSURE BALANCED FAUCETS PER OPC

ELECTRICAL
• PROVIDE THERMOSTAT AND CONTROL PANELS THAT ARE EASY TO READ AND SIMPLE TO OPERATE. MOUNT NO MORE THAN 48" ABOVE FINISHED FLOOR
• LEVER OR BLADE KNOBS WILL BE USED FOR LIGHTING CONTROLS AND ROCKER, TOUCH LIGHT OR HANDS-FREE SWITCHES WILL BE USED (ALSO APPLIES TO COMMON AREAS).
• AT LIGHT SWITCHES, ELECTRICAL OUTLETS, PHONE JACKS, DATA PORTS, AND ENVIRONMENTAL CONTROLS, THEY WILL BE LOCATED AT ACCESSIBLE LOCATIONS NO LESS THAN 18" ABOVE THE FLOOR AND NO HIGHER THAN 42" ABOVE THE FINISH FLOOR (ALSO APPLIES TO COMMON AREAS).
• IN RESIDENTIAL UNIT BEDROOMS, PROVIDE EXTRA ELECTRICAL OUTLETS (NO LESS THAN 18" ABOVE THE FLOOR AND NO HIGHER THAN 24" ABOVE THE FLOOR)
• PROVIDE AUDIBLE AND VISUAL ALARMS FOR SMOKE / FIRE / CARBON MONOXIDE IN ALL CODE-REQUIRED ACCESSIBLE AREAS AND ALL UNITS.

RESIDENTIAL UNITS
GENERAL
• ALL USABLE DOORS TO BE A MINIMUM 36-INCH WIDE DOOR (32-INCH MINIMUM CLEARANCE) WITH LEVER-STYLE DOOR HARDWARE.
• ADA COMPLIANT THRESHOLDS WILL BE PROVIDED AT ALL ANSI TYPE A UNIT DOORS.
• NON-SLIP LVT OR SHEET VINYL FLOORING WITHIN UNIT.
ENTRY
• ZERO-STEP ENTRY WITH A MINIMUM 36-INCH WIDE DOOR AT THE UNIT ENTRY
• UNIT ENTRIES ARE TREATED AS FRONT PORCHES AND INCLUDE ADEQUATE NON-GLARE LIGHTING TO UNLOCK THE DOOR, BOTH INSIDE AND OUTSIDE UNIT ENTRY.
• MINIMUM CLEARANCES INSIDE AND OUTSIDE THE RESIDENTIAL UNIT ENTRY DOORS WILL BE PROVIDED.
• 5 LB. MAXIMUM FORCE TO OPEN DOORS.
• UNIT ENTRY TO PROVIDE DUAL DOOR VIEWERS AT ANSI TYPE A UNITS, WITHIN ACCESSIBLE REACH RANGES

BATHS (RESIDENTIAL UNITS) / TOILETS (AMENITY / COMMON AREAS)
• AT PLUMBING FIXTURES, PROVIDE LEVER TYPE HANDLES AND FAUCETS WITH PRESSURE BALANCED ANTI-SCALD VALVE.
• PROVIDE COUNTERTOPS WITH BEVELED / RADIUSED CORNERS. OUTSIDE CORNERS ARE TO BE 2-INCH CORNER RADIUS, WATERFALL EDGE WITH 1-INCH RADIUS, OR 2-INCH CHAMFER
• IN SHOWERS, PROVIDE ADJUSTABLE-HEIGHT SHOWERHEAD OR HAND-HELD SHOWERHEAD WITH FLEXIBLE HOSE AND EASILY OPERABLE CONTROLS
• NON-GLARE LIGHTING AT VANITIES / SINKS
• PROVIDE MINIMUM BATH AND TOILET FLOOR CLEARANCES
• PROVIDE TOILETS CENTERED 18-INCHES FROM ANY SIDE WALL, SHOWER OR CABINET
• PROVIDE LEVER-TYPE DOOR HANDLES
• MAXIMUM 34-INCH ABOVE FINISHED FLOOR SINK RIM AND COUNTER HEIGHT
• IN-WALL BLOCKING FOR REINFORCEMENT AND INSTALLED GRAB BARS IN WALLS AROUND TOILETS (AMENITY / COMMON AREA TOILETS)
• AT ANSI TYPE A UNITS PROVIDE:
  - ROLL-IN SHOWERS WITH ACCESSIBLE THRESHOLD
  - CLEAR KNEE SPACE (MINIMUM 27-INCHES HIGH) UNDER SINK WITH INSULATED PIPES. (ALSO APPLIES TO AMENITY / COMMON AREA TOILETS). PROVIDE REMOVABLE VANITY CABINET FRONT DOORS AND VALANCE.
  - IN-WALL BLOCKING FOR REINFORCEMENT AND INSTALLED GRAB BARS IN WALLS AROUND BOTH TOILETS AND SHOWERS (ROLL-IN).
• AT ALL UNITS PROVIDE:
  - NON-SLIP SHEET VINYL FLOORING
  - LOOP HANDLE PULLS ON THE CABINETS THAT ALLOW FOR EASY OPERATION AND LOW-EFFORT
  - COLOR CONTRAST BETWEEN FLOOR, COUNTERTOPS AND CABINET FACES
  - IN-WALL BLOCKING FOR REINFORCEMENT IN WALLS AROUND BOTH TOILETS AND SHOWERS (ROLL-IN AND TYPICAL).

KITCHENS (RESIDENTIAL UNITS & COMMON AREAS)
• MINIMUM 15-INCH WIDE CLEAR COUNTER SPACE EACH SIDE OF STOVE, SINK, AND ONE SIDE OF REFRIGERATOR
• NON-GLARE TASK LIGHTING TO ILLUMINATE SINK, STOVE (WHERE PROVIDED) AND WORK AREAS
• WHERE PLUMBING FIXTURES ARE PROVIDED, SINGLE-LEVER TYPE FAUCETS WITH PRESSURE BALANCED ANTI-SCALD VALVE TO BE PROVIDED.
• PROVIDE COUNTERTOPS WITH BEVELED / RADIUSED CORNERS. OUTSIDE CORNERS ARE TO BE 2-INCH CORNER RADIUS, WATERFALL EDGE WITH 1-INCH RADIUS, OR 2-INCH CHAMFER.
• PROVIDE MINIMUM KITCHEN FLOOR CLEARANCES
• NON-SLIP FLOORING
• LOOP HANDLE PULLS ON THE CABINETS THAT ALLOW FOR EASY OPERATION AND LOW-EFFORT
• COLOR CONTRAST BETWEEN FLOOR, COUNTERTOPS AND CABINET FACES
• ADJUSTABLE HEIGHT SHELVES IN WALL CABINETS
• AT ANSI TYPE A UNITS PROVIDE:
  - FRONT MOUNTED CONTROLS ON THE RANGE (ALSO APPLIES TO AMENITY / COMMON AREA KITCHEN)
  - CLEAR KNEE SPACE (MINIMUM 27-INCHES HIGH) UNDER SINK WITH INSULATED PIPES. PROVIDE REMOVABLE BASE CABINET FRONT DOORS AND VALANCE (ALSO APPLIES TO AMENITY / COMMON AREA KITCHEN)
  - MAXIMUM 34-INCH ABOVE FINISHED FLOOR SINK RIM AND COUNTER HEIGHT (ALSO APPLIES TO AMENITY / COMMON AREA KITCHEN)

CLOSETS / STORAGE
• DOORS AND HANDLE PULLS THAT ALLOW FOR EASY OPERATION
• ADJUSTABLE-HEIGHT SHELVES IN CLOSETS

OHFA - DESIGN & CONSTRUCTION FEATURES FORM

OHIO HOUSING FINANCE AGENCY

Design and Construction Features Form
2023 Multifamily Funding Programs

INSTRUCTIONS

1. The architectural entity with whom the owner and developer contracted with to provide architectural services will complete the form and obtain all required signatures for the certifications.
2. The project applicant will submit the completed and signed form with the proposal application.
3. If funded, the project applicant will provide and submit the form again at final application with all changes from what was submitted at proposal application clearly identified.
4. A copy of the final, completed form must also be included in the 80% percent plan sets, copied onto the page(s) following the cover sheet, submitted at final application.

All communications related to the architectural review, including submission of architectural plans, must be sent to arch@ohiohome.org.

SUBMISSION REQUIREMENTS

Preliminary Architectural Submission

At minimum, the proposal application architectural submission must include all of the following:

☐ This form, completed and signed
☐ Exception Request form(s), if applicable.
☐ Preliminary drawings, which shall include all of the following:
- ○ Cover sheet with name of development as submitted to OHFA, development address, development team, drawing index, code information, and table indicating unit schedule (including accessible, adaptable and sensory impaired units), types and sizes:
- ○ Site plan, including parking data and layouts;
- ○ Landscape plan;
- ○ Dimensioned floor plans with gross area of units and floor plans, as well as room designations and proposed finishes;
- ○ Exterior elevations with material notations;
- ○ Typical wall sections (new construction only); and
- ○ Schematic Drawings and/or schematic specifications for HVAC, plumbing, and electrical or similar items included in the scope of work.

Preliminary drawings, described above, shall be submitted in all of the following formats:

☐ Electronic format (pdf)
- ○ Single PDF file for all drawings specified above.
- ○ Separate, single PDF for specifications.

☐ Hard copy
- ○ Full set of architectural plans, 11"x17" scaled to fit. **Full size plans will not be accepted.**

Upon request only, preliminary drawings shall be submitted in DXF R-2017 format or DWG AutoCAD R-2017 format.

Final Architectural Submission

Final applications must include 80 percent complete permit sets, including final plans for all trades. Unless approved by OHFA, the plans must include the **project name as submitted with the proposal application** and **OHFA tracking number.** The submission must show conformity to the preliminary submittal, including the information included within this form. Substantive changes of any items that would affect competitive scoring will not be approved.

At minimum, the final application architectural submission must include all of the following:

☑ This form, completed and signed. Information included in this document must be updated as needed from the proposal application submission, and must match the information in the 80% plans.
☑ Verification that the drawings comply any and all accessibility, energy efficiency, universal design, and/or green building requirements required for the development or committed to in the application for funding.
☑ Asbestos, mold, radon, and lead-based paint considerations as required.
☑ Items required to be completed per Phase I or II Environmental Site Assessment, or per applicable Environmental Review performed by OHFA's environmental consultant.
☑ Plan sets, which shall include all of the following:
- ○ Site plans
- ○ Interior and Exterior elevations
- ○ Dimensioned floor plans
- ○ Wall sections (if applicable)
- ○ Structure (if applicable)
- ○ Finishes
- ○ Details
- ○ Mechanical plans
  - Drawings must have a dimensioned plumbing plan and control points located for rough-in site verification. All pipes through-floor and the walls they are intended to be located within must be dimensioned relative to the foundation where they must align with walls and/or islands above. (new construction and adaptive reuse only)
  - OHFA strongly encourages a surveyor to locate wall and through-slab pipe penetrations. Foundation over dig must be filled with insulation or forms and then back filled per geotechnical reports.

Plan sets, described above, shall be submitted in all of the following formats:

☑ Electronic format (pdf)
- ○ Separate, single PDF files for drawings including all site plans, dimensioned floor plans, elevations, wall sections, structure, finishes, details and mechanical plans.
- ○ Separate, single PDF file for specifications.

☑ Electronic format (AutoCAD)
- ○ Dimensioned floor plans only, submitted in DXF or DWG AutoCAD R-2017 format.
  - It is preferred that the project architect's polyline area lines be included.
  - If drawings are externally referenced (xref), submissions must be bound (xbind) prior to creating files for OHFA.
  - Proprietary authorship information such as title blocks, Architecture seals, etc. should be removed.
  - DXF should be generated from the base file and not a plan sheet file.

☑ Hard copy
- ○ Full set of architectural plans, 11"x17" scaled to fit. **Full size plans will not be accepted.**

FORM SECTIONS

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A. DEVELOPMENT INFORMATION

a. Development Name: COBBLESTONE MANOR
b. OHFA Tracking Number (final application only): 22-0250
c. Address: 1050 LAMPLIGHTER DRIVE
d. City: GROVE CITY
e. Zip Code: 43123
f. Competitive Pool: New Affordability- Metro/Suburban
g. Population Served: Senior
h. Construction Type: New Construction
i. Wage Rate Requirements: If federal or state funds are utilized in the proposed development, select any regulations that apply to the proposed development.
☑ Davis Bacon and related acts: Davis Bacon Act prevailing wage provisions apply to contractors and subcontractors performing on federally funded or assisted contracts in excess of $2,000 for construction, alteration or repair (including painting and decorating) of public buildings or public works.
☐ Ohio Prevailing Wage: Ohio's prevailing wage laws apply to all public improvements financed in whole or in part by public funds when the total overall project cost is fairly estimated to be more than $200,000 for new construction or $60,000 for reconstruction, enlargement, alteration, repair, remodeling, renovation, or painting.
☐ HUD Section 3 Requirements: Section 3 is a provision of the Housing and Urban Development (HUD) Act of 1968 requiring that recipients of certain HUD financial assistance, to the greatest extent feasible, provide job training, employment, and contracting opportunities for low or very low-income residents in connection with projects and public works.
☐ None of the above are applicable

B. PROJECT CONTACTS

a. Architect of Record
- Company: MOODY NOLAN, INC.
- Name: JAY BOONE (CONTACT: ANUP JANARDHANAN)
- Phone: (614) 461-4664
- Email: ANUPJ@MOODYNOLAN.COM

b. Developer
- Company: COLUMBUS METROPOLITAN HOUSING AUTHORITY (CMHA)
- Name: MIKE WAGNER
- Phone: (614) 421-6102
- Email: MWAGNER@CMHANET.COM

c. Owner
- Company: SAME AS DEVELOPER - SEE ABOVE
- Name:
- Phone:
- Email:

C. DEVELOPMENT DETAILS

a. Number of sites: 1
b. Number of residential buildings: 1
c. Number of accessory buildings: 0
d. Date built: TBD
- *For proposals involving acquisition rehabilitation or adaptive reuse, please specify the year the building(s) were originally constructed. For multiple building proposals or scattered site projects, a range of dates may be provided.*

e. Date first occupied: TBD
- *Year development was or will be occupied. For multiple building proposals or scattered site projects, a range of dates may be provided.*

f. Site acreage: 4.14
g. Total # units: 82
h. Total # low-income units: 82
i. Number of efficiency units: 0
j. Number of one-bedroom units: 76
k. Number of two-bedroom units: 6
l. Number of three-bedroom units: 0
m. Number of four-bedroom units: 0
n. Building/Zoning variances received: N/A

D. FLOOR AREA DETAILS

	GSF	Notes
Gross Square Footage of all Buildings	84,826	*Measured from exterior face of exterior building; includes structured exterior spaces (stair, balcony, portico).*
Total Number of Low Income Units	82	
Commercial Space Condominium Areas:	0	*Legally separate space under control of another program or condominimized legal separation.*
Commercial Areas and Fee-Driven Space:	0	*Includes spaces for which residents must pay a fee for use/access (garages, storage).*
Market Rate Unit Area:	0	*Must include lofts, mezzanine and restricted headroom areas*
Low Income Unit Area:	60,791	*Must include lofts, mezzanine and restricted headroom areas*
Managers Unit Area:	0	*Must include lofts, mezzanine and restricted headroom areas*
Common Area (Public):	6,358	*Public restrooms, community rooms, libraries, offices, meeting rooms, kitchens, car canopy, porticos, fitness rooms, laundry, mailboxes.*
Common Area (Circulation):	10,735	*Public hallways, stairways, and corridors to residential units.*
Dedicated Program Space:	517	*Counseling space, wellness and health clinic areas, day care centers, etc.*
Limited Common Area (Private):	0	*Exterior spaces with access only through residential unit. i.e. balcony/porch/deck (patios without roof are not included).*
Support:	3,187	*Electrical, mechanical, elevator room, sprinkler room, janitorial, trash, maintenance, storage that is not for tenant use, free standing maintenance buildings.*
Tenant Storage:	0	*Tenant storage outside of unit.*
Major Vertical Penetrations:	3,237	*Includes duct shafts, stair shaft, elevator shaft, space open to below.*
Structured Parking / Garage:	0	*Attached or detached garage that residents do not pay a fee for.*
Basement:	0	*Includes spaces with a minimum of 7' clear head height. Spaces less than 7' are crawl spaces per RCO 305.*

TOTALS		
Non-Low Income Floor Area	0	*Commercial Space Condo Areas + Commercial Areas + Market Rate Unit Area*
Low Income Floor Area	71,526	*LI unit area + Common Area (Circulation) + Limited Common Area (Private) + Tenant Storage*
% Common Area	20.15%	*Common Area (Public) + Common Area (Circulation) / Gross Square Footage*
Net Rentable Square Footage	84,826	*Gross Square Footage - Non-Low Income floor area*
Average Net Rentable SQFT per LI Unit	1,034.46	*Net Rentable Square Footage/ Total number of Low Income Units*

The following items should **not** be included in any of the above square footages:
• Trash enclosures
• Concrete patios without roofs
• Sidewalks

E. ADAPTABILITY AND ACCESSIBILITY

All developments must be designed and constructed to comply with all local, state, or federal accessibility guidelines that apply.

a. All developments must to comply with the accessibility requirements as outlined in the **Ohio Building Code.** Chapter 4101:1-11, which includes the use of ICC/ANSI A117.1:2009 for the design and construction of accessible units.
☑ Yes, the project will comply with the accessibility requirements as outlined in the Ohio Building Code.

b. All developments receiving OHFA funding must meet the accessibility requirements of **Section 504.** Identify the implementing standard the development will utilize to demonstrate compliance with Section 504 requirements (select one):
☐ Uniform Federal Accessibility Standards (UFAS)
☐ 2010 ADA Standards for Accessible Design under Title II of the ADA, except for certain specific identified provisions, as detailed in HUD's Notice on "Instructions for use of alternative accessibility standard," published in the Federal Register on May 23, 2014 ("Deeming Notice").
☑ An equivalent standard as defined in HUD's Deeming Notice (such as ICC/ANSI A117.1-2009)

c. Developments may be subject to the **Fair Housing Act** design and construction requirements. If the development is subject to the Fair Housing Act design and construction requirements, verify that the project will be designed and constructed to meet the requirements of the Fair Housing Act and that all units, other than the accessible units, will be designed and constructed as ANSI Type B units.
☑ Yes, the project will be designed and constructed to meet the requirements of the Fair Housing Act and all units, other than the accessible units, will be designed and constructed as ANSI Type B units.

d. Number of 504 mobility units required: 4.10
e. Number of 504 sensory units required: 1.64
f. Number of 504 mobility units provided: 5
g. Number of 504 sensory units provided: 2 dedicated (+ 5 mobility ☑)

h. Number of accessible parking spaces: 7

i. Total number of non-conforming accessible units & reason: (only applicable to adaptive reuse or rehabilitation projects if full compliance is technically infeasible. Exception request must have been submitted.)
N/A

F. SUSTAINABILITY

a. Developments must meet all energy efficiency requirements as stated in the **Ohio Building Code or Residential Code.**
☑ Yes, development will meet all energy efficiency requirements as stated in the Ohio Building Code or Residential Code.

b. In addition, all multifamily developments must obtain one of the below **energy efficiency or green building certifications**. Select which certification will apply to the development.

○ Energy Star MFNR Performance Path	○ Energy Star Certified Homes
○ Energy Star MFNR Prescriptive Path	○ Energy Star MF New Construction
○ LEED Certified	○ LEED Gold
◉ LEED Silver	○ LEED Platinum
○ ICC 700 NGBS Bronze	○ ICC 700 NGBS Gold
○ ICC 700 NGBS Silver	○ ICC 700 NGBS Emerald
○ 2020 Enterprise Green Communities	
○ OHFA Limited Scope Rehabilitation Sustainability Standards	

G. EXCEPTION REQUESTS

Select the items an Exception Request form has been submitted for.
☑ No requests for exception were submitted for this development.

EXCEPTION REQUEST SUBMITTED AT PRELIMINARY APPLICATION NO LONGER APPLIES.

New Construction
☐ Items that are subject to non-OHFA (such as local codes or design standards, funding source, etc.) requirements that may conflict with the OHFA Design and Architectural Standards.
☐ Items that are unable to be complied with for a compelling reason, as fully described by the applicant in the Exception Request form.

Rehabilitation or Adaptive Reuse
☐ Universal Design mandatory components
☐ Accessibility requirements (if compliance is technically infeasible)
☐ Items with 75% or more RUL (if replacement required for green certification)
☐ Durable Materials - Exterior
☐ Main Entry
☐ Sidewalks
☐ Durable Materials - Interior
☐ Major Building Components
☐ Common Areas
☐ Elevators
☐ Interior Doors
☐ Floor Coverings
☐ Unit Sizes
☐ Bedroom Sizes
☐ Bathrooms
☐ Kitchen & Appliances
☐ Laundry Facilities

H. DESIGN-RELATED COMPETITIVE CRITERIA

Select the items below that the development is seeking competitive points for under the 2021 QAP.

☐ Design Features
☐ Exercise and Wellness
☐ Number of Bedrooms

I. SCOPE OF WORK NEW For 2023 Click for Excel Workbook

a. **Provide an overview of the proposed improvements to be made** involving site design, building design, mechanical and electrical systems and building components including building exterior, interior, and life safety items.
COBBLESTONE MANOR IS AN 82b APARTMENT UNIT SENIOR LIVING COMMUNITY FACILITY (AGES 55 WITH 80% AMI OR LESS). THE SITE IS LOCATED IN GROVE CITY, OHIO. THE PROPOSED DEVELOPMENT WILL BE THE GENTLY SLOPING SITE TOWARDS THE HEAVILY WOODED AND PROTECTED WETLAND TO THE NORTH. THE SITE/LANDSCAPE DESIGN FEATURES A NATURAL DRY "CREEK BED" ORIGINATING ALONG LAMPLIGHTER DRIVE THE MAIN ENTRY DRIVE PASSES OVER AND THROUGH THE NATURALLY PLANTED "CREEK" AS IT WRAPS TOWARD THE BUILDING AND BLENDS WITH THE EXISTING TREE LINE. A WALKING PATH WRAPS THE POND AND CONNECTS TO THE BUILDING ENTRANCE. THE PARKING LOT IS SPLIT INTO TWO AREAS, WITH THE MAJORITY OF FACILITIES NORTH OF THE WOODED WETLAND AREA. A DRIVE LANE WILL BE INSTALLED AROUND THE SOUTH OF THE BUILDING TO PROVIDE EMERGENCY RESPONDERS QUICK ACCESS TO THE BACK OF THE BUILDING.

THE EXTERIOR BUILDING MATERIALS PROPOSED FOR THE PROJECT WILL REFLECT THE RURAL RESIDENTIAL VERNACULAR. BRICK AND STONE ARE PREDOMINATELY USED AS BASE MATERIALS WITH TRADITIONAL LOOKING COMPOSITE SIDING (VERTICAL AND HORIZONTAL) USED ON THE STORIES ABOVE. THE EXTERIOR FORM OF THE BUILDING IS DESIGNED TO BREAK DOWN THE SCALE OF THE BUILDING AND RESPOND TO THE BUILDINGS IN THE

b. **Address any issues raised in the Phase I Environmental Site Assessment (ESA) report(s) in the space provided below.** Include information for all single-site and scattered-site proposals, as required by applicable program funding guidelines.
SEE PHASE I ESA REPORT

c. **For any developments involving acquisition and rehabilitation, adaptive reuse or historic preservation,** provide a narrative describing the history of improvements made to the building(s) and/or units.
N/A

d. **For any developments proposing adaptive reuse or rehabilitation with historic tax credits,** specify any restrictions or requirements that will be used to determine compliance with the Ohio Historic Preservation Tax Credit and/or Federal Historic Preservation Tax Credit programs.
N/A

e. **Address any issues raised in the Physical Capital Needs Assessment (PCNA) and Scope of Work report(s) in the space provided below.** Include information for all developments proposing rehabilitation of existing units or the adaptive reuse of a building at proposal submission., especially where the scope of work and PCNA do not agree..
N/A

J. UNIVERSAL DESIGN COMPONENTS

Select all of the below items that will be included in the development. Mandatory items are marked with an asterisk. Refer to the pages 29 and 68-70 of the 2022-2023 QAP for more detail.

Additionally, specify the architectural page reference, or if it will be covered by a general/universal plan note, mark "None".

Which of the below threshold options will the development be seeking? (select one)
☐ All mandatory items + 10 additional in 50% of units
☑ All mandatory items + 5 additional in 100% of units

Entry
Included? Page or Note Item
☑ A501-A505 *36" wide (minimum) entry door with lever-style handle (mandatory for NC only)
☑ A501-A505 *Minimum 5' x 5' level clear space inside and outside entry door
☑ E002, E101A-E203B *Adequate non-glare lighting at walkways, accessible routes, and exterior spaces
☑ E101A-E203B *Adequate lighting both inside and outside the building and unit entrance
☑ A300-A304, A820 *High visibility address numbers (both building and exterior units)
☑ A300-A304 *Overhead weather protection at entrances (mandatory for NC only)
☐ Built-in shelf/bench/ledge located outside the door
☐ A900 Nonslip surfaces on walkways and entryways
☐ Primary unit entry with an accessible/dual peephole and backlit doorbell
☐ Door locks that are easy to operate, such as keyless locks with remote control or keypad
☑ A101 No-step entry (1/2" or less threshold) at main entrance

Interior Stairs and Hallways
Included? Page or Note Item
☑ E101A-E203B *Adequate lighting to illuminate all stairway(s), landings, and hallway(s)
☑ A101-A103B *Walkways with a minimum width of 42"
☑ A900 *Anti-slip strips on front edge of steps in color-contrast material
☑ A900 Color contrast between stair treads and risers
☑ A601 Handrails on both sides of interior stairs

Interior Doors
Included? Page or Note Item
☑ A501-A505, A701 *34" wide (minimum) doors leading to habitable room, allowing for a 32" minimum clearance
☑ A501-A505, A701 *Lever-style door hardware on all interior doors
☑ A501-A505, A701 *Interior maximum door threshold of ¼ inch beveled or flush
☑ A501-A505 Pocket doors with easy-to-grip handles
☑ A501-A505, A810 *Lever handles on drawers and cabinets
☑ E401-E404 *Non-glare task lighting to illuminate sink, stove, and work areas
☑ A501-A505 Adjustable height shelves in wall cabinets
☑ A503-A505 Base cabinets with pull out drawers
☐ Pull-out work surface near the oven, refrigerator and/or microwave.
☑ A900 Visual contrast at front edge of countertop or between the countertop and the cabinets
☐ Side-by-side refrigerator-freezer
☑ A501, A503, A801 Cooktop/range with front or side-mounted controls (senior units only)
☐ Extra outlets for small appliances, electronics, etc.
☑ A810 Clear knee space (at least 27" high) under sink, counters, and/or cook tops. If under sink, pipes must have protection and may not be in the required knee space. May be open knee space or achieved by means of removable base cabinets or fold-back or self-storing doors.

Closets/Storage
Included? Page or Note Item
☐ Area is well-lit with a switch located outside the space
☑ A501-A505, A701 Doors and handles that are easy to operate. No bi-fold or accordion-type doors.
☑ A820 Adjustable-height shelving and/or closet rods OR clothes rods installed at multiple heights
☐ Pull out-shelves, rollout cabinets, and other easy to access storage components

K. CERTIFICATION

We represent, warrant and certify to OHFA that the following does and will apply to the proposed development:

The Development will be designed and constructed to meet the requirements of all applicable laws, codes, program guidelines, as well as the OHFA Design and Architectural Standards and specific features applicable to the project as outlined in this form. This includes any and all local, state, or federal accessibility laws that currently exist and apply to the project. Any additional cost of construction required for the Development to be in compliance with any of these laws has been included in the development budget.

By signing this document, the owner, architect, and general contractor certify that the plans, specifications, and features submitted as part of this application will become a minimum standard for the proposed development. This hereby becomes a binding agreement for the actual construction intent if the development is awarded OHFA funding.

OHFA does not take responsibility for design, construction, and plan review or any other municipal or building department review or approval and in no way does this agreement supersede any requirement by such jurisdictions.

OHFA reserves the right to verify compliance with agreed-upon features including durability of materials, accessibility, universal design, green building requirements and energy efficiency components.

1. Architect:
I certify that the plans, specifications, and scope of work for the Development meet, and will continue to meet, any and all requirements including those set forth in this form, the OHFA Design and Architectural Standards, and all other applicable laws, codes, program guidelines or policy documents.

I understand that I am contractually obligated to know the federal, state and local accessibility laws applicable to the Development and have applied them accordingly. To the best of my professional knowledge and belief, I agree that the Development as designed is in compliance with all applicable federal, state and local housing and accessibility laws and regulations.

MOODY NOLAN, INC.	(614) 461-4664	jboone@moodynolan.com
Company/Firm Name	Phone Number	Email
300 SPRUCE STREET, SUITE 300, COLUMBUS, OHIO 43215		
Company/Firm Address		
JAY BOONE	PARTNER	
Printed Name (Firm Authorized Signatory)	Title	
Signature	Date	

2. General Contractor:
I certify that I have reviewed the plans, specifications, and scope of work for the Development and that the Development shall be constructed in accordance with any and all requirements as set forth in this form, the OHFA Design and Architectural Standards, and all other applicable laws, codes, program guidelines or policy documents.

I understand that I am obligated to know the federal, state and local accessibility laws applicable to the Development and will build the project accordingly.

Company/Firm Name	Phone Number	Email
Company/Firm Address		
Printed Name (Firm Authorized

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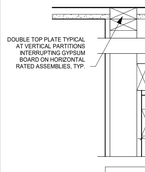
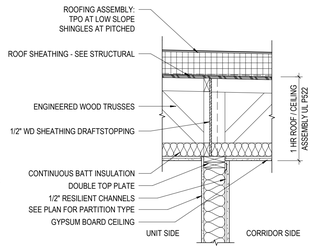
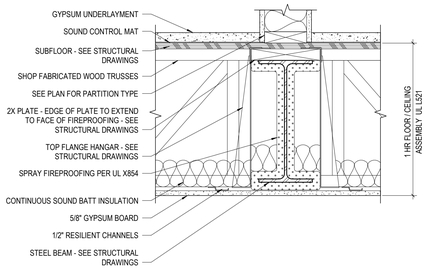


DETAIL AT RATED FLOOR/CEILING ASSEMBLY

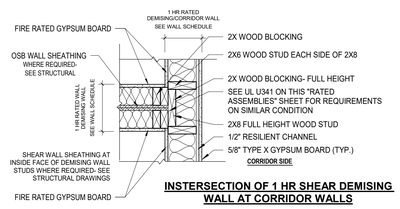
11 DETAIL TYPICAL SOFFIT
1 1/2" = 1'-0"



6 DETAIL ROOF FRAMING @ CORRIDOR WALL
3/4" = 1'-0"

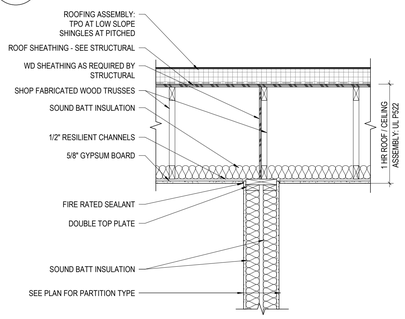


1 DETAIL FIREPROOFING OF BEAM @ WOOD FLOOR
1 1/2" = 1'-0"

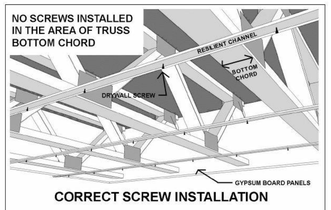


INSTERSECTION OF 1 HR SHEAR DEMISING WALL AT CORRIDOR WALLS

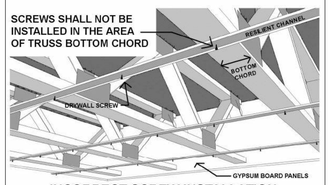
10 DETAIL INTERSECTION OF SHEAR DEMISING WALL AT CORRIDOR
1" = 1'-0"



5 DETAIL ROOF FRAMING @ DEMISING WALL
3/4" = 1'-0"



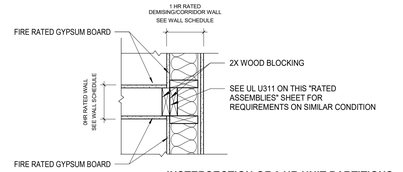
CORRECT SCREW INSTALLATION



INCORRECT SCREW INSTALLATION
SCREWS SHALL NOT TOUCH WOOD FRAMING

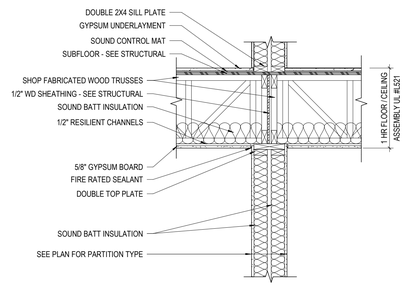
SOUND INSULATION NOT SHOWN FOR CLARITY

RESILIENT CHANNEL DETAIL
NOT TO SCALE

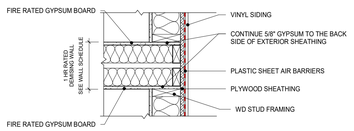


INSTERSECTION OF 0 HR UNIT PARTITIONS AT DEMISING AND CORRIDOR WALLS

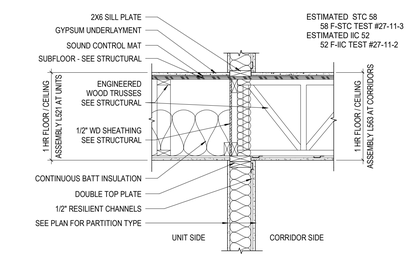
9 DETAIL INTERSECTION OF DEMISING WALL AT INTERIOR PARTITION
1" = 1'-0"



4 DETAIL TYPICAL 1 HR FLOOR/CEILING FRAMING @ DEMISING WALL
3/4" = 1'-0"

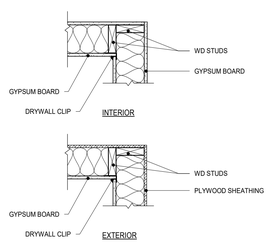


8 DETAIL INTERSECTION OF DEMISING WALL AT EXTERIOR WALL
1" = 1'-0"

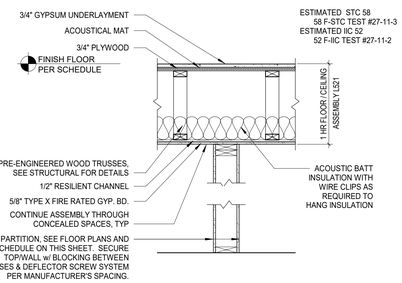


AT CORRIDORS USE L563. ALL CORRIDORS TO BE GYPSUM BOARD INSTALLED ON STRUCTURAL WOOD MEMBERS. PROVIDE A MINIMUM OF 1 HOUR RATED FIRE ASSEMBLY. STC REQUIREMENTS DO NOT APPLY AT SEPARATIONS BETWEEN CORRIDORS.

3 DETAIL TYPICAL 1 HR FLOOR/CEILING ASSEMBLY AT CORRIDOR WALLS
3/4" = 1'-0"

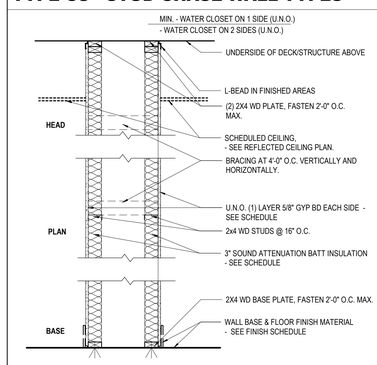


7 DETAIL TWO-STUD CORNERS - TYPICAL
1" = 1'-0"



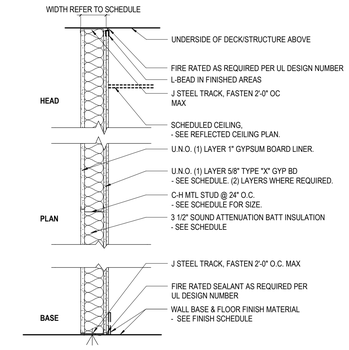
2 DETAIL TYPICAL 1 HR FLOOR/CEILING ASSEMBLY AT UNIT WALLS
3/4" = 1'-0"

TYPE CS - STUD CHASE WALL TYPES



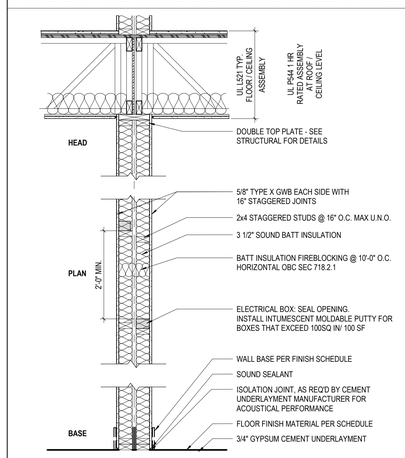
TYPE	WIDTH	STUD WIDTH	GYP. BD - 1 SIDE	GYP. BD - 2 SIDES	"TYPE X" GYP. BD.	FIRE RATING	UL #	STC RATING	SOUND INSUL.	CODED NOTES	COMMENTS
CS3	1'-10 1/2"	3 1/2"	No	Yes	No	0HR		52	Yes	01, 04	

TYPE S - SHAFT WALL TYPES



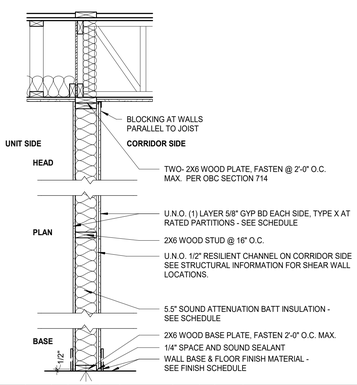
TYPE	WIDTH	STUD WIDTH	GYP. BD - 1 SIDE	GYP. BD - 2 SIDES	"TYPE X" GYP. BD.	FIRE RATING	UL #	STC RATING	SOUND INSUL.	CODED NOTES	COMMENTS
S3	4 5/8"	4"	No	Yes	Yes	1HR	UL# U469	39	No	06	

TYPE DW- WD STUD DEMISING WALL TYPES



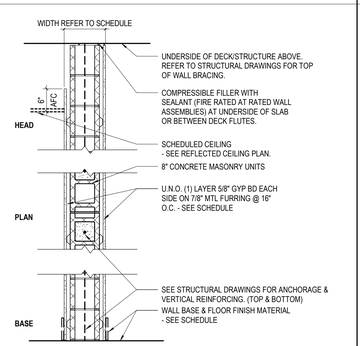
TYPE	WIDTH	STUD WIDTH	GYP. BD - 1 SIDE	GYP. BD - 2 SIDES	"TYPE X" GYP. BD.	FIRE RATING	UL #	STC RATING	SOUND INSUL.	CODED NOTES	COMMENTS
DW	9 3/4"	2x4	No	Yes	Yes	1HR	UL# U341	57	Yes	04	

TYPE CW- 2x6 WD STUD CORRIDOR TYPES



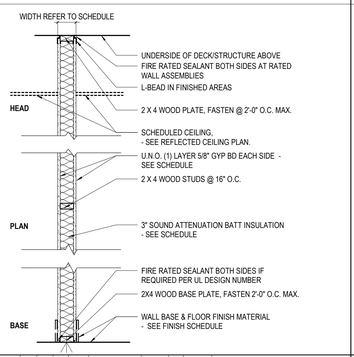
TYPE	WIDTH	STUD WIDTH	GYP. BD - 1 SIDE	GYP. BD - 2 SIDES	"TYPE X" GYP. BD.	FIRE RATING	UL #	STC RATING	SOUND INSUL.	CODED NOTES	COMMENTS
CW	7 1/4"	2X6	No	Yes	No	1HR	UL #U311	50+	Yes	04	

TYPE 8 - 8" CONCRETE MASONRY WALLS



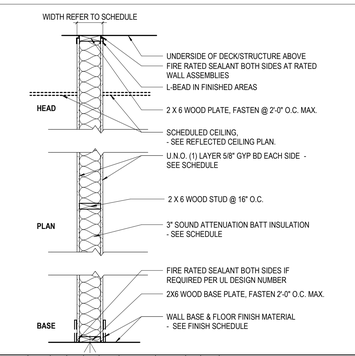
TYPE	WIDTH	GYP. BD - 1 SIDE	GYP. BD - 2 SIDES	"TYPE X" GYP. BD	FIRE RATING	UL #	STC RATING	SOUND INSUL.	CODED NOTES	COMMENTS
8A	7 5/8"	No	No	No	1HR	UL# U505	48	No	08	
8D	9 1/8"	Yes	No	No	1HR	UL# U505	48+	No	10	7/8" METAL FURRING @ 16" O.C
8K	7 5/8"	No	No	No	2HR	UL# U505	48+	No	08	
8S	10 1/8"	No	No	No	1HR	UL#U505	48	No	08	ADHERED MGF STONE VENEER ON ONE SIDE

TYPE 11 - 2 X 4 WOOD STUD WALL TYPES



TYPE	WIDTH	STUD WIDTH	GYP. BD - 1 SIDE	GYP. BD - 2 SIDES	"TYPE X" GYP. BD.	FIRE RATING	UL #	STC RATING	SOUND INSUL.	CODED NOTES	COMMENTS
11A	4 3/4"	2x4	No	Yes	Yes	1HR	UL# U305	35	No	04	
11C	4 3/4"	2x4	No	Yes	No	0HR		46	Yes	04	
11D	4 3/4"	2x4	No	Yes	No	0HR		35	No	04	
11E	4 1/8"	2x4	Yes	No	No	0HR		35	No	04	
11F	4 3/4"	2x4	No	Yes	No	0HR			No	05	
11L	4 1/8"	2x4	Yes	No	No	0 HR		46	No	04	

TYPE 12 - 2 X 6 WOOD STUD WALL TYPES



TYPE	WIDTH	STUD WIDTH	GYP. BD - 1 SIDE	GYP. BD - 2 SIDES	"TYPE X" GYP. BD.	FIRE RATING	UL #	STC RATING	SOUND INSUL.	CODED NOTES	COMMENTS
12A	6 3/4"	2X6	No	Yes	Yes	1HR	UL# U305	35 EST.	No	04	
12B	6 3/4"	2X6	No	Yes	Yes	1HR	UL# U305	46 EST.	Yes	04	
12C	6 3/4"	2X6	No	Yes	No	0HR		46 EST.	Yes	04	
12D	6 3/4"	2X6	No	Yes	No	0HR		35 EST.	No	04	
12E	6 1/8"	2X6	Yes	No	No	0HR		35	No	04	
12F	6 3/4"	2X6	No	Yes	No	0HR			No	05	
12G	8"	2X6	No	Yes	Yes	2HR	UL# U301	40 EST.	No	04	2 LAYERS TYPE "X" GYPSUM BOARD
12R	10 1/2"	2X6	No	Yes	Yes	2HR	UL# U301	40 EST.	No	04	2 LAYERS TYPE "X" GYPSUM BOARD; ADHERED MGF STONE VENEER ON ONE SIDE
12S	9 1/8"	2X6	Yes	No	No	0HR		35 EST.	No	04	ADHERED MGF STONE VENEER ON ONE SIDE
12T	9 1/2"	2X6	No	Yes	Yes	2HR	UL# U301	40 EST.	No	04	2 LAYERS TYPE "X" GYPSUM BOARD; ADHERED MGF STONE VENEER ON ONE SIDE

GENERAL NOTES - WALL TYPE

1. ALL DIMENSIONS TO FACE OF WALL U.N.O.
2. USE 5/8" WATER RESISTANT GYP. BD. ON ALL WET WALLS, UNO.
3. USE CEMENT BOARD FOR ALL WALLS TO RECEIVE CERAMIC TILE, UNO.
4. FIRE SAFE ALL JOINTS AND PENETRATIONS AT FIRE RATED PARTITIONS.
5. UL NUMBERS LISTED APPLY ONLY TO THE TESTED MANUFACTURERS. EQUAL MANUFACTURERS' EQUIVALENT ASSEMBLY INFORMATION MUST BE APPROVED BY ARCHITECT.
6. INSULATION MUST EXTEND FULL HEIGHT OF PARTITION. WHERE SOUND ATTENUATION BATTS ARE INDICATED IN PARTITIONS, INSTALL ACOUSTIC SEALANT AT BOTH SIDES, ALONG THE TOP AND BOTTOM, AND AT INTERSECTING PARTITIONS.
7. WHERE 3 5/8", 4" OR 6" STUD WALLS ARE INDICATED, SEE SPECIFICATIONS FOR HEIGHT LIMITS
8. REFER TO FINISH SCHEDULE FOR FINISHES.
9. SEAL TOP & BOTTOM OF PARTITION WITH ACOUSTIC SEALANT AS REQUIRED BY STC RATING.

CODED NOTE LEGEND

1. BRACE EACH STUD @ 4'-0" O.C. TO BACK-UP WALL FOR ENTIRE HEIGHT OF PARTITION.
2. BRACE EACH STUD @ 8'-0" O.C. TO BACK-UP WALL FOR ENTIRE HEIGHT OF PARTITION.
3. SMOKE TIGHT SEAL SHALL BE PROVIDED AT TOP, BOTTOM AND ENDS OF WALL AND AT ALL PENETRATIONS.
4. FULL HEIGHT PARTITION. TERMINATE GYP. BD. AND STUDS AT DECK/STRUCTURE ABOVE.
5. STOP GYP. BD. AND STUDS 6" AFC. BRACE PARTITION TO DECK/STRUCTURE PER METAL STUD MANUFACTURER DESIGN LOADING CRITERIA.
6. FULL HEIGHT SHAFT WALL. TERMINATE GYP BD. AND STUDS AT DECK/STRUCTURE ABOVE.
7. FULL HEIGHT PARTITION. TERMINATE GYP BD., PLYWOOD AND STUDS AT DECK/STRUCTURE ABOVE.
8. FULL HEIGHT PARTITION. TERMINATE CMU AT DECK/STRUCTURE ABOVE.
9. STOP CMU FULL COURSE ABOVE FINISH CEILING. BRACE WALL TO STRUCTURE PER STRUCTURAL DRAWINGS.
10. FULL HEIGHT PARTITION. TERMINATE CMU AT DECK ABOVE. STOP FURRING AND GYP. BD. @ 6" ABOVE FINISHED CEILING.
11. STOP WALL FULL COURSE ABOVE FINISH CEILING. BRACE WALL TO STRUCT. PER STRUCTURAL DRAWINGS.

#	DATE	CHANGE DESCRIPTION

COLUMBUS METROPOLITAN HOUSING AUTHORITY
COMMUNITY · COMPANIONSHIP · COLLABORATION

COBBLESTONE MANOR
1050 LAMPLIGHTER DRIVE
GROVE CITY, OH 43123
FOR
CMHA

MOODY•NOLAN
300 SPRUCE STREET
SUITE 300
COLUMBUS, OHIO 43215

PHONE: (614) 461-4664
FAX: (614) 280-8881

DRAWING TITLE:

WALL TYPE SCHEDULE

STATE OF OHIO
JAY W. BOONE
10740
REGISTERED ARCHITECT
JAY W BOONE, LIC. #10740
EXP. DATE: 12/31/2023

06/08/2023

DRAWN BY: XXX | CHECKED BY: XXX

#22172.01

G003

PERMIT & BID SET

PRINT DATE: 11/16/2023 2:32:27 PM
FILE INFO: Autodesk Docs://22172.01 CMHA Cobblestone Manor/22172.01 CMHA Cobblestone Manor_ARCH.rvt

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Design No. U305

October 02, 2019

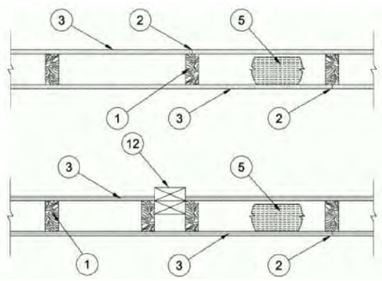
Bearing Wall Rating — 1 Hr

Finish Rating — See Items 3, 3A, 3D, 3E, 3F, 3G, 3H, 3J and 3L.

STC Rating - 56 (See Item 9)

This design was evaluated using a load design method other than the Limit States Design Method (e.g., Working Stress Design Method). For jurisdictions employing the Limit States Design Method, such as Canada, a load restriction factor shall be used — See Guide BXUV or BXUV7

* Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.



1. Wood Studs — Nom 2 by 4 in. spaced 16 in. OC max, effectively firestopped.

2. Joints and Nail-Heads — Joints covered with joint compound and paper tape. Joint compound and paper tape may be omitted when square edge boards are used. As an alternate, nom 3/32 in. thick gypsum veneer plaster may be applied to the entire surface of Classified veneer baseboard with the joints reinforced with paper tape. Nailheads exposed or covered with joint compound.

3. Gypsum Board* — 5/8 in. thick paper or vinyl surfaced, with beveled, square, or tapered edges, applied either horizontally or vertically. Gypsum panels nailed 7 in. OC with 6d cement coated nails 1-7/8 in. long, 0.0915 in. shank diam and 15/64 in. diam heads. When used in widths other than 48 in., gypsum panels are to be installed horizontally. For an alternate method of attachment of gypsum panels, refer to Items 6 through 6F, Steel Framing Members*.
When Items 6, 6B, 6C, 6D, 6E, or 6F, Steel Framing Members*, are used, gypsum panels attached to furring channels with 1 in. long Type S bugle-head steel screws spaced 12 in. OC.

When Item 6A, Steel Framing Members*, is used, two layers of gypsum panels attached to furring channels. Base layer attached to furring channels with 1 in. long Type S bugle-head steel screws spaced 12 in. OC. Face layer attached to furring channels with 1-5/8 in. long Type S bugle-head steel screws spaced 12 in. OC. All joints in face layers staggered with joints in base layers. One layer of gypsum board attached to opposite side of wood stud without furring channels as described in Item 3.

When Item 7, resilient channels are used, 5/8 in. thick, 4 ft wide gypsum panels applied vertically. Screw attached furring channels with 1 in. long, self-drilling, self-tapping Type S or S-12 steel screws spaced 8 in. OC, vertical joints located midway between studs.

CABOT MANUFACTURING ULC — Type X (finish rating 22 min), 5/8 Type X, Moisture Resistant Type X, Gypsum Sheathing Type X, Mold & Mildew Resistant Type X and Mold & Mildew Resistant AR Type X, Type Blueglass Exterior Sheathing

AMERICAN GYPSUM CO — Types AGX-1(finish rating 23 min.), M-Glass (finish rating 23 min.), Type AGX-11 (finish rating 26 min), Type AGX-12 (finish rating 22 min), Type LightRoc (finish rating 23 min.) or Type AG-C

BEIJING NEW BUILDING MATERIALS PUBLIC LTD CO — Type DBX-1 (finish rating 24 min)

CERTAINTEED GYPSUM INC — Type 1, Type SF3 (finish rating 20 min) or FRPC, Type C.. Type X or Type X-1 (finish rating 26 min); Type EGRG or GlasRoc (finish rating 23 min), GlasRoc-2, Type Habito (finish rating 26 min).

CGC INC — Type AR (finish rating 24 min), Type C (finish rating 24 min), Type IP-AR (finish rating 24 min), Type IPC-AR (finish rating 24 min), Type IP-X1 (finish rating 24 min), Type IP-X2 (finish rating 24 min), Type SCX (finish rating 24 min), Type SHX (finish rating 24 min), Type ULX (finish rating 22 min), Type WRC (finish rating 24 min), Type WRX (finish rating 24 min)

CONTINENTAL BUILDING PRODUCTS OPERATING CO, L L C — Type LGFC6A (finish rating 34 min), Type LGFC2A, Type LGFC-C/A, Type LGFC-WD, Type LGLLX (finish rating 21 min), Type CLLX (finish rating 24 min)

GEORGIA-PACIFIC GYPSUM L L C — Type 5 (finish rating 26 min), Type 6 (finish rating 23 min), Type 9 (finish rating 26 min), Type C (finish rating 26 min), Type DGG (finish rating 20 min), Type GPFS1 (finish rating 20 min), Type GPFS2 (finish rating 20 min), Type GPFS6 (finish rating 26 min), Type DS, Type DAP, Type DD (finish rating 20 min), Type DA, Type DAPC, Type LS (finish rating 23 min), Type X, Veneer Plaster Base - Type X, Water Rated - Type X, Sheathing - Type X, Soffit - Type X, Type LWX (finish rating 22 min), Veneer Plaster Base-Type LWX (finish rating 22 min), Water Rated-Type LWX (finish rating 22 min), Sheathing Type-LWX (finish rating 22 min), Soffit-Type LWX (finish rating 22 min), Type DGLW (finish rating 22 min), Water Rated-Type DGLW (finish rating 22 min), Sheathing Type- DGLW (finish rating 22 min), Soffit-Type DGLW (finish rating 22 min), Type LWX (finish rating 22 min), Type LW2X (finish rating 22 min), Veneer Plaster Base - Type LW2X (finish rating 22 min), Water Rated - Type LW2X (finish rating 22 min), Sheathing - Type LW2X (finish rating 22 min), Soffit - Type LW2X (finish rating 22 min), Type DGL2W (finish rating 22 min), Water Rated - Type DGL2W (finish rating 22 min), Sheathing - Type DGL2W (finish rating 22 min)

NATIONAL GYPSUM CO — Type FSK (finish rating 20 min), Type FSK-G (finish rating 20 min), Type FSW (finish rating 20 min), Type FSW-2 (finish rating 24 min), Type FSW-3 (finish rating 20 min), Type FSW-5 (finish rating 22 min), Type FSW-G (finish rating 20 min), Type FSK-C (finish rating 20 min), Type FSW-C (finish rating 20 min), Type FSMR-C, Type FSW-6 (finish rating 20 min), Type FSL (finish rating 24 min), Type FSW-8, Type FSLX (finish rating 21 min).

NATIONAL GYPSUM CO — Riyadh, Saudi Arabia — Type FR, or WR.

PABCO BUILDING PRODUCTS L L C, DBA PABCO GYPSUM — Types C, PG-2 (finish rating 20 min), PG-3 (finish rating 20 min), Types PG-3W, PG-5W (finish rating 20 min), Type PG-4 (finish rating 20 min), Type PG-6 (finish rating 23 min), Types PG-3WS, PG-5WS, PGS-WRS (finish rating 20 min), Types PG-5, PG-9 (finish rating 26 min), PG-11 PG-13 (Nails increased to 2 in.), or Type PG-C

PANEL REY S A — Type GREX, GRIX, PRX, PRC, PRC2; Types RHX, Guard Rey, MDX, ETX (finish rating 22 min)

SIAM GYPSUM INDUSTRY (SARABURI) CO LTD — Type EX-1 (finish rating 26 min)

THAI GYPSUM PRODUCTS PCL — Type C, Type X (finish rating 26 min)

UNITED STATES GYPSUM CO — Type AR (finish rating 24 min), Type C (finish rating 24 min), Type FRX-G (finish rating 29 min), Type IP-AR (finish rating 24 min), Type IPC-AR (finish rating 24 min), Type IP-X1 (finish rating 24 min), Type IP-X2 (finish rating 24 min), Type SHX (finish rating 24 min), Type SCX (finish rating 24 min), Type SGX (finish rating 24 min), Type ULX (finish rating 22 min), Type WRX (finish rating 24 min), Type WRC (finish rating 24 min), Type ULIX (finish rating 20 min)

USG BORAL DRYWALL SFZ LLC — Type SGX (finish rating 24 min).

USG MEXICO S A DE C V — Type AR (finish rating 24 min), Type C (finish rating 24 min), Type WRX (finish rating 24 min), Type WRC (finish rating 24 min), Type IP-X1 (finish rating 24 min), Type IP-X2 (finish rating 24 min), Type SHX (finish rating 24 min), SCX (finish rating 24 min), Type IP-AR (finish rating 24 min), Type IPC-AR (finish rating 24 min), Type ULX (finish rating 22 min)

3A. Gypsum Board* — (As an alternate to Item 3) — 5/8 in. thick gypsum panels, with beveled, square, or tapered edges, applied either horizontally or vertically. Gypsum panels fastened to framing with 1-1/4 in. long Type W coarse thread gypsum panel steel screws spaced a max 8 in. OC, with last screw 1 in. from edge of board. When used in widths of other than 48 in., gypsum boards are to be installed horizontally.
AMERICAN GYPSUM CO — Types AGX-1 (finish rating 25 min.), M-Glass (finish rating 25 min.), AG-C (finish rating 25 min.), LightRoc (finish rating 25 min.)

CERTAINTEED GYPSUM INC — Type C, Type X or Type X-1 (finish rating 26 min)

CGC INC — Type AR (finish rating 24 min), Type C (finish rating 24 min), Type IP-AR (finish rating 24 min), Type IPC-AR (finish rating 24 min), Type IP-X1 (finish rating 24 min), Type IP-X2 (finish rating 24 min), Type SCX (finish rating 24 min), Type SHX (finish rating 24 min), Type WRC (finish rating 24 min), Type WRX (finish rating 24 min)

NATIONAL GYPSUM CO — Type FSW (finish rating 24 min)

UNITED STATES GYPSUM CO — Type AR (finish rating 24 min), Type SCX (finish rating 24 min), Type SGX (finish rating 24 min), Type C (finish rating 24 min), Type WRX (finish rating 24 min), Type WRC (finish rating 24 min), Type IP-X1 (finish rating 24 min), Type IP-X2 (finish rating 24 min), Type SHX (finish rating 24 min), Type FRX-G (finish rating 24 min), Type IP-AR (finish rating 24 min), Type IPC-AR (finish rating 24 min)

USG BORAL DRYWALL SFZ LLC — Types C, SCX, SGX (finish rating 24 min).

USG MEXICO S A DE C V — Type AR (finish rating 24 min), Type C (finish rating 24 min), Type WRX (finish rating 24 min), Type WRC (finish rating 24 min), Type IP-X1 (finish rating 24 min), Type IP-X2 (finish rating 24 min), Type SHX (finish rating 24 min), Type SCX, Type IP-AR (finish rating 24 min), Type IPC-AR (finish rating 24 min)

3B. Gypsum Board* — (As an alternate to Item 3) — Nom 3/4 in. thick, installed with 1-7/8 in. long cement coated nails as described in Item 3 or 1-3/8 in. long Type W coarse thread gypsum panel steel screws as described in Item 3A.
CGC INC — Types AR, IP-AR

UNITED STATES GYPSUM CO — Types AR, IP-AR

USG MEXICO S A DE C V — Types AR, IP-AR

3C. Gypsum Board* — (As an alternate to Items 3, 3A and 3B) — 5/8 in. thick, 2 ft wide, tongue and groove edge, applied horizontally to one side of the assembly. Installed with 1-7/8 in. long cement coated nails as described in Item 3 or 1-1/4 in. long Type W coarse thread gypsum panel steel screws as described in Item 3A. Joint covering (Item 2) not required.
CGC INC — Type SHX

UNITED STATES GYPSUM CO — Type SHX

USG MEXICO S A DE C V — Type SHX

Design No. U305 (continued)

3D. Gypsum Board* — (As an alternate to Items 3, 3A, 3B, or 3C — Not Shown) — For Direct Application to Studs Only- Nom 5/8 in. thick lead backed gypsum panels with beveled, square or tapered edges, applied vertically. Vertical joints centered over studs and staggered min 1 stud cavity on opposite sides of studs. Wallboard secured to studs with 1-5/8 in. long Type W coarse thread gypsum panel steel screws spaced 8 in. OC at perimeter and in the field. Lead batten strips required behind vertical joints of lead backed gypsum wallboard and optional at remaining stud locations. Lead batten strips, min 1-1/2 in. wide, max 10 ft long with a max thickness of 0.125 in. placed on the face of studs and attached to the stud with two 1 in. long Type S-12 pan head steel screws, one at the top of the strip and one at the bottom of the strip. Lead discs or tabs may be used in lieu of or in addition to the lead batten strips or optional at other locations. Max 3/4 in. diam by max 0.125 in. thick lead discs compression fitted or adhered over steel screw heads or max 1/2 in. by 1-1/4 in. by max 0.125 in. thick lead tabs placed on gypsum boards underneath screw locations prior to the installation of the screws. Lead batten strips to have a purity of 99.9% meeting the Federal specification QQ-L-201f, Grade "C".

RAY-BAR ENGINEERING CORP — Type RB-LBG (finish rating 24 min)

3E. Gypsum Board* — (As an alternate to Items 3, 3A, 3B, 3C, and 3D) — 5/8 in. thick gypsum panels, with square edges, applied either horizontally or vertically. Gypsum panels fastened to framing with 1-1/4 in. long Type W coarse thread gypsum panel steel screws spaced a max 8 in. OC, with last 2 screws 1 and 4 in. from edge of board or nailed 7 in. OC with 6d cement coated nails 1-7/8 in. long, 0.0915 in. shank diam and 15/64 in. diam heads. When used in widths of other than 48 in., gypsum boards are to be installed horizontally.

GEORGIA-PACIFIC GYPSUM L L C — Type DGG (finish rating 20 min), GreenGlass Type X (finish rating 23 min)

3F. Gypsum Board* — (As an alternate to Items 3, 3A, 3B, 3C, 3D, and 3E) — 5/8 in. glass-mat faced with square edges, applied either horizontally or vertically. Gypsum panels nailed 7 in. OC around the perimeter and in the field with 6d cement coated nails 1-7/8 in. long, 0.0915 in. shank diam and 15/64 in. diam heads. Nails shall be placed 1 inch and 3 inch from horizontal joints and 7 inch OC thereafter.

CGC INC — Type USGX (finish rating 22 min)

UNITED STATES GYPSUM CO — Type USGX (finish rating 22 min.)

USG BORAL DRYWALL SFZ LLC — , Type USGX (finish rating 22 min.)

USG MEXICO S A DE C V — Type USGX (finish rating 22 min.)

3G. Gypsum Board* — (As an alternate to Items 3 through 3F) — 5/8 in. thick paper surfaced applied vertically. Gypsum panels nailed 7 in. OC with 6d cement coated nails 1-7/8 in. long, 0.0915 in. shank diam and 15/64 in. diam heads.

GEORGIA-PACIFIC GYPSUM L L C — Type X ComfortGuard Sound Deadening Gypsum Board (finish rating 27 min)

3H. Gypsum Board* — (As an alternate to Items 3) — Not to be used with items 6 or 7. 5/8 in. thick paper surfaced applied vertically only. Gypsum panels nailed 7 in. OC with 6d cement coated nails 1-7/8 in. long, 0.0915 in. shank diam and 15/64 in. diam heads.

NATIONAL GYPSUM CO — Type SBWB

3I. Gypsum Board* — (As an alternate to Items 3 through 3H, Not Shown) — Nominal 5/8 in. thick, 4 ft wide panels, applied vertically. Panels nailed 7 in. OC with 6d cement coated nails 1-7/8 in. long, 0.0915 in. shank diam and 15/64 in. diam heads. Panel joints covered with paper tape and two layers of joint compound. Nailheads covered with two layers of joint compound.

PABCO BUILDING PRODUCTS L L C, DBA PABCO GYPSUM — Type QuietRock ES (finish rating 20 min)

3J. Gypsum Board* — (As an alternate to Item 3) — Not to be used with items 6 or 7. 5/8 in. thick paper surfaced applied vertically or horizontally. Gypsum panels secured per item 3 or 3A.

CERTAINTEED GYPSUM INC — Type SilentFX

3K. Gypsum Board* — (As an alternate to Item 3) — 5/8 in. thick gypsum panels, with beveled, square, or tapered edges, applied either horizontally or vertically. Gypsum panels fastened to framing with 1-1/4 in. long Type W coarse thread gypsum panel steel screws spaced a maximum 8 in. OC with the last screw 1 in. from the edge of the board. When used in widths other than 48 in., gypsum panels are to be installed horizontally.
NATIONAL GYPSUM CO — Type FSK (finish rating 20 min), Type FSK-G (finish rating 20 min), Type FSW (finish rating 20 min), Type FSW-2 (finish rating 24 min), Type FSW-3 (finish rating 20 min), Type FSW-5 (finish rating 22 min), Type FSW-G (finish rating 20 min), Type FSK-C (finish rating 20 min), Type FSW-C (finish rating 20 min), Type FSMR-C, Type FSW-6 (finish rating 20 min), Type FSL (finish rating 24 min), Type FSW-8, Type FSLX (finish rating 21 min).

3L. Gypsum Board* — (As an alternate to Item 3) — For Direct Application to Studs Only — Nom 5/8 in. thick lead backed gypsum panels with beveled, square or tapered edges, applied vertically. Vertical joints centered over studs and staggered min 1 stud cavity on opposite sides of studs. Wallboard secured to studs with 1-5/8 in. long Type W coarse thread gypsum panel steel screws spaced 8 in. OC at perimeter and in the field. Lead batten strips required behind vertical joints of lead backed gypsum wallboard and optional at remaining stud locations. Lead batten strips, min 2 in. wide, max 10 ft long with a max thickness of 0.140 in. placed on the face of studs and attached to the stud with two 1 in. long Type S-8 pan head steel screws, one at the top of the strip and one at the bottom of the strip. Lead discs, max 5/16 in. diam by max 0.140 in. thick. compression fitted or adhered over the screw heads. Lead batten strips to have a purity of 99.5% meeting the Federal specification QQ-L-201f, Grades "B, C or D".

MAYCO INDUSTRIES INC — "X-Ray Shielded Gypsum"

3M. Gypsum Board* — (As an alternate to Items 3) — For Direct Application to Studs Only — For use as the base layer or as the face layer. Nom 5/8 in. thick lead backed gypsum panels with beveled, square or tapered edges, applied vertically. Vertical joints centered over studs and staggered min 1 stud cavity on opposite sides of studs. Wallboard secured to studs with 1-5/8 in. long Type W coarse thread gypsum panel steel screws spaced 8 in. OC at perimeter and in the field when applied as the base layer. When applied as the face layer screw length to be increased to 2-1/2 in.1. Lead batten strips required behind vertical joints of lead backed gypsum wallboard and optional at remaining stud locations. Lead batten strips, min 2 in. wide, max 8 ft long with a max thickness of 0.14 in. placed on the face of studs and attached to the stud with construction adhesive and two 1 in. long Type S-12 pan head steel screws, one at the top of the strip and one at the bottom of the strip. Lead discs, nominal 3/8 in. diam by max 0.085 in. thick. Compression fitted or adhered over the screw heads. Lead batten strips and discs to have a purity of 99.9% meeting the Federal specification QQ-L-201f, Grade "C". Fasteners for face layer gypsum panels (Items 4, 4A or 4B) when installed over lead backed board to be min 2-1/2 in. Type S-12 bugle head steel screws spaced as described in Item 4.

RADIATION PROTECTION PRODUCTS INC — Type RPP - Lead Lined Drywall

3N. Gypsum Board* — (As an alternate to Item 3) — 5/8 in. thick, 4 ft. wide, applied horizontally or vertically with vertical joints centered over studs and staggered one stud cavity on opposite sides of studs. Secured as described in Item 3 or 3A.

CERTAINTEED GYPSUM INC — Easi-Lite Type X (finish rating 24 min), Easi-Lite Type X-2 (finish rating 24 min)

3O. Wall and Partition Facings and Accessories* — (As an alternate to Item 3, Not Shown) — Nominal 5/8 in. thick, 4 ft wide panels, applied vertically. Panels nailed 7 in. OC with 6d cement coated nails 1-7/8 in. long, 0.0915 in. shank diam and 15/64 in. diam heads. Panel joints covered with paper tape and two layers of joint compound. Nailheads covered with two layers of joint compound.

PABCO BUILDING PRODUCTS L L C, DBA PABCO GYPSUM — Type QuietRock 527 (finish rating 24 min).

3P. Gypsum Board* — (As an alternate to Item 3, Not Shown) — Two layers nom. 5/16 in. thick gypsum panels applied vertically or horizontally. Horizontal edge joints and horizontal butt joints on opposite sides of studs need not be staggered or backed by wood studs. Horizontal joints on the same side between face and base layers need not be staggered. Base layer gypsum panels fastened to studs with 1-1/4 in. long drywall nails spaced 8 in. OC. Face layer gypsum panels fastened to studs with 1-7/8 in. long drywall nails spaced 8 in. OC starting with a 4" stagger.

NATIONAL GYPSUM CO — Type FSW (finish rating 25 min)

3Q. Gypsum Board* — (As an alternate to Item 3) — 5/8 in. thick gypsum panels, with beveled, square, or tapered edges, applied either horizontally or vertically. Gypsum panels fastened to framing with 1-1/4 in. long Type W coarse thread gypsum panel steel screws spaced a maximum 10 in. OC with the last two screws 4 and 1 in. from the edges of the board. When used in widths other than 48 in., gypsum panels are to be installed horizontally.

CONTINENTAL BUILDING PRODUCTS OPERATING CO, L L C — Type LGFC6A (finish rating 21 min), Type LGFC2A, Type LGFC-C/A, Type LGFC-WD, Type LGLLX

3R. Gypsum Board* — (As an alternate to Item 3. For use with Item 5H) — Any 5/8 in. thick, 4 ft. wide, Gypsum Board listed in Item 3 above. Applied either horizontally or vertically, and screwed to panels with 1-5/8 in. long Type W coarse thread steel screws at 8 in. OC at perimeter and in the field with the last two screws 4 and 3/4 in. from the edges of the board when applied as the base layer. When used in widths other than 48 in., gypsum panels are to be installed horizontally.

3S. Gypsum Board* — 3/4 in. thick paper or vinyl surfaced, with beveled, square, or tapered edges, applied either horizontally or vertically. Gypsum panels secured as described in Item 3 with nail length increased to 2 in.

PABCO BUILDING PRODUCTS L L C, DBA PABCO GYPSUM — Type PG-13

3T. Wall and Partition Facings and Accessories* — (as an alternate to 5/8 in. thick board as outlined in Item 3) — Nominal 1-3/8 in. thick, 4 ft wide panels, applied vertically or horizontally. Fastened with #6 x 2 in. long drywall screws spaced 8 in. OC along the perimeter and 12 in. OC in the field.

PABCO BUILDING PRODUCTS L L C, DBA PABCO GYPSUM — Type QuietRock 545

4. Steel Corner Fasteners — (Optional) — For use at wall corners. Channel shaped, 2 in. long by 1 in. high on the back side with two 1/8 in. wide cleats protruding into the 5/8 in. wide channel, fabricated from 24 gauge galv steel. Fasteners applied only to the end or cut edge (not along tapered edges) of the gypsum board, no greater than 2 in. from corner of gypsum board, max spacing 16 in. OC. Nailed to adjacent stud through tab using one No. 6d cement coated nail per fastener. Corners of wall board shall be nailed to top and bottom plate using No. 6d cement coated nails.

5. Batts and Blankets* — (Optional — Required when Item 6A is used (RC-1)) — Glass fiber or mineral wool insulation. Should be placed to completely or partially fill the stud cavities. When Item 6A is used, glass fiber or mineral wool insulation shall be friction-fitted to completely fill the stud cavities.

CERTAINTEED CORP

JOHNS MANVILLE

KNAUF INSULATION LLC

MANSON INSULATION INC

ROCK WOOL MANUFACTURING CO — Delta Board

ROCKWOOL — Acoustical Fire Batts - Type AFB, min. density 1.69 pcf / 27.0 kg/m3

THERMAFIBER INC — Type SAFB, SAFB FF

5A. Fiber, Sprayed* — (Not Shown — Not for use with Item 6) — As an alternate to Batts and Blankets (Item 5) — Spray applied cellulose material. The fiber is applied with water to completely fill the enclosed cavity in accordance with the application instructions supplied with the product with a nominal dry density of 2.7 lb/ft3. Alternate Application Method: The fiber is applied without water or adhesive at a nominal dry density of 3.5 lb/ft3, in accordance with the application instructions supplied with the product. When Item 6B is used, Fiber, Sprayed shall be INS735, INS745, INS750LD, INS765LD or INS773LD.

U S GREENFIBER L L C — INS735, INS745 and INS750LD for use with wet or dry application. INS515LD, INS541LD, INS735, INS765LD, and INS773LD are to be used for dry application only

5B. Fiber, Sprayed* — (Not Shown - Not for use with Item 6) — As an alternate to Batts and Blankets (Item 5) - Spray applied cellulose insulation material. The fiber is applied with water to interior surfaces in accordance with the application instructions supplied with the product. Applied to completely fill the enclosed cavity. Minimum dry density of 4.3 pounds per cubic ft.

NU-WOOL CO INC — Cellulose Insulation

5C. Batts and Blankets* — Required for use with resilient channels, Item 7, 3 in. thick mineral wool batts, friction-fitted to fill interior of wall.

THERMAFIBER INC — Type SAFB, SAFB FF

5D. Glass Fiber Insulation — (As an alternate to Item 5C) — 3 in. thick glass fiber batts bearing the UL Classification Marking as to Surface Burning and/or Fire Resistance, friction-fitted to fill the interior of the wall. See Batts and Blankets (BKNV or BZJZ) Categories for names of Classified companies.

Design No. U305 (continued)

5E. Batts and Blankets* — (Required for use with Wall and Partition Facings and Accessories, Item 3D) — Glass fiber insulation, nom 3-1/2 in. thick, min. density of 0.80 pcf, with a flame spread of 25 or less and a smoke developed of 50 or less, friction-fitted to completely fill the stud cavities. See Batts and Blankets Category (BKNV) for names of manufacturers.

5F. Fiber, Sprayed* — (Optional, Not Shown — Not for use with Items 6, 6A, 6B, 6C, or 6D) — As an alternate to Batts and Blankets (Item 5) and Item 5A - Spray applied granulated mineral fiber material. The fiber is applied with adhesive, at a minimum density of 4.0 pcf, to completely fill the enclosed cavity in accordance with the application instructions supplied with the product. See Fiber, Sprayed (CCAZ).

AMERICAN ROCKWOOL MANUFACTURING, LLC — Type Rockwool Premium Plus

5G. Fiber, Sprayed* — (Optional, Not Shown — Not for use with Items 6, 6A, 6B, 6C, or 6D). — As an alternate to Batts and Blankets (Item 5) and Item 5A - Brown Colored Spray applied cellulose fiber. The fiber is applied with water to completely fill the enclosed stud cavity in accordance with the application instructions supplied with the product. The minimum dry density shall be 4.30 lbs/ft3.

INTERNATIONAL CELLULOSE CORP — Celbar-RL

5H. Foamed Plastic* — (Optional -For use with Item 3R) — Spray applied, foamed plastic insulation, at any thickness from partial fill to completely filling stud cavity.

SES FOAM INC — Nexseal™ 2.0 or Nexseal™ 2.0 LE Spray Foam and Sucraseal Spray Foam.

5I. Fiber, Sprayed* — (Not Shown — Not for use with Item 6) — As an alternate to Batts and Blankets (Item 5) - Spray-applied cellulose material. The fiber is applied with water to completely fill the enclosed cavity in accordance with the application instructions supplied with the product. To facilitate the installation of the material, any thin, woven or non-woven netting may be attached by any means possible to the outer face the studs. The material shall reach equilibrium moisture content before the installation of materials on either face of the studs. The minimum dry density shall be 5.79 lbs/ft3.

APPLEGATE HOLDINGS L L C — Applegate Advanced Stabilized Cellulose Insulation

6. Steel Framing Members* — (Optional, Not Shown) — Furring channels and Steel Framing Members as described below:

a. Furring Channels — Formed of No. 25 MSG galv steel. 2-9/16 in. or 2-23/32 in. wide by 7/8 in. deep, spaced 24 in. OC perpendicular to studs. Channels secured to studs as described in Item b. Ends of adjoining channels are overlapped 6 in. and tied together with double strand of No. 18 SWG galv steel wire near each end of overlap. As an alternate, ends of adjoining channels may be overlapped 6 in. and secured together with two self-tapping #6 framing screws, min. 7/16 in. long at the midpoint of the overlap, with one screw on each flange of the channel. Gypsum board attached to furring channels as described in Item 3.

b. Steel Framing Members* — Used to attach furring channels (Item 6a) to studs. Clips spaced 48 in. OC. RSIC-1 and RSIC-1 (2.75) clips secured to studs with No. 8 x 2-1/2 in. coarse drywall screw through the center grommet. RSIC-V and RSIC-V (2.75) clips secured to studs with No. 8 x 1-1/2 in. coarse drywall screw through the center hole. Furring channels are friction fitted into clips. RSIC-1 and RSIC-V clips for use with 2-9/16 in. wide furring channels. RSIC-1 (2.75) and RSIC-V (2.75) clips for use with 2-23/32 in. wide furring channels.

PAC INTERNATIONAL L L C — Types RSIC-1, RSIC-V, RSIC-1 (2.75), RSIC-V (2.75)

6A. Steel Framing Members* — (Optional, Not Shown) — Furring channels and Steel Framing Members on one side of studs as described below:

a. Furring Channels — Formed of No. 25 MSG galv steel, spaced 24 in. OC perpendicular to studs. Channels secured to studs as described in Item b. Ends of adjoining channels are overlapped 6 in. and tied together with double strand of No. 18 SWG galv steel wire near each end of overlap. Batts and Blankets placed in stud cavity as described in Item 5. Two layers of gypsum board attached to furring channels as described in Item 3.

b. Steel Framing Members* — Used to attach furring channels (Item 6Aa) to one side of studs only. Clips spaced 48 in. OC., and secured to studs with two No. 8 x 2-1/2 in. coarse drywall screws, one through the hole at each end of the clip. Furring channels are friction fitted into clips.

KINETICS NOISE CONTROL INC — Type Isomax

6B. Steel Framing Members* — (Optional, Not Shown) — Furring channels and Steel Framing Members as described below:

a. Furring Channels - Formed of No. 25 MSG galv steel. 2-3/8 in. wide by 7/8 in. deep, spaced 24 in. OC perpendicular to studs. Channels secured to studs as described in Item b. Ends of adjoining channels are overlapped 6 in. and tied together with double strand of No. 18 SWG galv steel wire near each end of overlap. As an alternate, ends of adjoining channels may be overlapped 6 in. and secured together with two self-tapping #6 framing screws, min. 7/16 in. long at the midpoint of the overlap, with one screw on each flange of the channel. Gypsum board attached to furring channels as described in Item 3.

b. Steel Framing Members* — Used to attach furring channels (Item 6Ba) to studs. Clips spaced 48 in. OC. Genie clips secured to studs with No. 8 x 1-1/2 in. coarse drywall screw through the center hole. Furring channels are friction fitted into clips.

PLITEQ INC — Type Genie Clip

6C. Steel Framing Members* — (Optional, Not Shown) — Furring channels and Steel Framing Members as described below:

a. Furring Channels — Formed of No. 25 MSG galv steel. Spaced 24 in. OC perpendicular to studs. Channels secured to studs as described in Item b. Ends of adjoining channels overlapped 6 in. and tied together with double strand of No. 18 AWG galvanized steel wire. Gypsum board attached to furring channels as described in Item 3.

b. Steel Framing Members* — Used to attach furring channels (Item 6Ca) to studs. Clips spaced 48 in. OC., and secured to studs with No. 2 in. coarse drywall screw with 1 in. diam washer through the center hole. Furring channels are friction fitted into clips.

STUDCO BUILDING SYSTEMS — RESILMOUNT Sound Isolation Clips - Type A237 or A237R

6D. Steel Framing Members* — (Optional, Not Shown) — Furring channels and Steel Framing Members as described below:

a. Furring Channels — Formed of No. 25 MSG galv steel, spaced 24 in. OC, and perpendicular to studs. Channels secured to studs as described in Item b. Ends of adjoining channels overlapped 6 in. and secured in place with a double strand of No. 18 AWG twisted steel wire. Gypsum board attached to furring channels as described in Item 3.

b. Steel Framing Members* — Used to attach furring channels (Item 6Da) to studs. Clips spaced 48 in. OC., and secured to studs with No. 8 x 2-1/2 in. coarse drywall screw through the center hole. Furring channels are friction fitted into clips.

REGUPOL AMERICA — Type SonusClip

6E. Steel Framing Members* — (Optional, Not Shown) — Resilient channels and Steel Framing Members as described below:

a. Resilient Channels — Formed of No. 25 MSG galv steel, spaced 24 in. OC, and perpendicular to studs. Channels secured to studs as described in Item b. Ends of adjoining channels overlapped 6 in. and secured in place with two No. 8 15 x 1/2 in. Phillips Modified Truss screws spaced 2-1/2 in. from the center of the overlap. Gypsum board attached to resilient channels as described in Item 3.

b. Steel Framing Members* — Used to attach resilient channels (Item 6Ea) to studs. Clips spaced 48 in. OC., and secured to studs with No. 8 x 2-1/2 in. coarse drywall screw through the center hole. Resilient channels are secured to clips with one No. 10 x 1/2 in. pan-head self-drilling screw.

KEENE BUILDING PRODUCTS CO INC - Type RC+ Assurance Clip

6F. Steel Framing Members* — (Optional, Not Shown) — Furring channels and Steel Framing Members as described below:

a. Furring Channels — Formed of No. 25 MSG galv steel. 2-23/32 in. wide by 7/8 in. or 1-1/2 in. deep, spaced 24 in. OC perpendicular to studs. Channels secured to studs as described in Item b. Ends of adjoining channels are overlapped 6 in. and tied together with double strand of No. 18 SWG galv steel wire near each end of overlap. As an alternate, ends of adjoining channels may be overlapped 6 in. and secured together with two self-tapping #6 framing screws, min. 7/16 in. long at the midpoint of the overlap, with one screw on each flange of the channel. Gypsum board attached to furring channels as described in Item 3.

b. Steel Framing Members* — Used to attach furring channels (Item 6Fa) to studs. Clips spaced 48 in. OC. Clips secured to studs with No. 8 x 2-1/2 in. coarse drywall screw through the center grommet. Furring channels are friction fitted into clips.

CLARKDIETRICH BUILDING SYSTEMS — Type ClarkDietrich Sound Clip

7. Furring Channel — Optional — Not Shown — For use on one side of the wall - Resilient channels, 25 MSG galv steel, spaced vertically 24 in. OC, flange portion screw attached to one side of studs with 1-1/4 in. long diamond shaped point, double lead Phillips head steel screws. When resilient channels are used, insulation, Items 5C or 5D is required.

8. Caulking and Sealants — (Not Shown, Optional) — A bead of acoustical sealant applied around the partition perimeter for sound control.

9. STC Rating — The STC Rating of the wall assembly is 56 when it is constructed as described by Items 1 through 6, except:

A. Item 2, above — Nailheads Shall be covered with joint compound.
B. Item 2, above — Joints As described, shall be covered with fiber tape and joint compound.
C. Item 5, above — Batts and Blankets* The cavities formed by the studs shall be friction fit with R-19 unfaced fiberglass insulation batts measuring 6-1/4 in. thick and 15-1/4 in. wide.
D. Item 6, above — Steel Framing Members* Type RSIC-1 clips shall be used to attach gypsum board to studs on either side of the wall assembly.
E. Item 8, above — Caulking and Sealants (Not Shown) A bead of acoustical sealant shall be applied around the partition perimeter for sound control.
F. Steel Corner Fasteners (Item 4), Fiber, Sprayed (Items 5A and 5B) and Steel Framing Members (Item 6A), not evaluated as alternatives for obtaining STC rating.

10. Wall and Partition Facings and Accessories* — (Optional, Not Shown) — Nominal 1/2 in. thick, 4 ft wide panels, for optional use as an additional layer on one or both sides of the assembly. Panels attached in accordance with manufacturer's recommendations. When the QR-500 or QR-510 panel is installed between the wood framing and the UL Classified gypsum board, the required UL Classified gypsum board layer(s) is/are to be installed as indicated as to fastener type and spacing, except that the required fastener length shall be increased by a minimum of 1/2 in. Not evaluated or intended as a substitute for the required layer(s) of UL Classified Gypsum Board.

PABCO BUILDING PRODUCTS L L C, DBA PABCO GYPSUM — Type QuietRock QR-500 and QR-510

11. Cementitious Backer Units* — (Optional Item Not Shown — For Use On Face Of 1 Hr Systems With All Standard Items Required) - 7/16 in., 1/2 in., 5/8 in., 3/4 in. or 1 in. thick, min. 32 in. wide. Applied vertically or horizontally with vertical joints centered over studs. Fastened to studs and runners with cement board screws of adequate length to penetrate stud by a minimum of 3/8 in. for steel framing members, and a minimum of 3/4 in. for wood framing members spaced a max of 8 in. OC. When 4 ft. wide boards are used, horizontal joints need not be backed by framing.

NATIONAL GYPSUM CO — Type DuraBacker, PermaBase, DuraBacker Plus, or PermaBase Plus

12. Non-Bearing Wall Partition Intersection — (Optional) —Two nominal 2 by 4 in. studs or nominal 2 by 6 in. studs nailed together with two 3 in. long 10d nails spaced a max. 16 in. OC. vertically and fastened to one side of the minimum 2 by 4 in. stud with 3 in. long 10d nails spaced a max. 16 in. OC. vertically. Intersection between partition wood studs to be flush with the 2 by 4 in. studs. The wall partition wood studs are to be framed by with a second 2 by 4 in. wood stud fastened with 3 in. long 10d nails spaced a max. 16 in. OC. vertically. Maximum one non-bearing wall partition intersection per stud cavity. Non-bearing wall partition stud depth shall be at a minimum equal to the depth of the bearing wall.

13. Mesh Netting — (Not Shown) — Any thin, woven or non-woven fibrous netting material attached with staples to the outer face of one row of studs to facilitate the installation of the sprayed fiber from the opposite row.

14. Mineral and Fiber Board* — (Optional, Not Shown) — For optional use as an additional layer on one side of wall. Nom 1/2 in. thick, 4 ft wide with long dimension parallel and centered over studs. Attached to framing with 2 in. long Type W steel screws, spaced 12 in. OC. The required UL Classified gypsum board layer(s) is/are to be installed as indicated as to fastener type and spacing, except that the required fastener length shall be increased by a minimum of 1/2 in. Not evalu

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Design No. U341

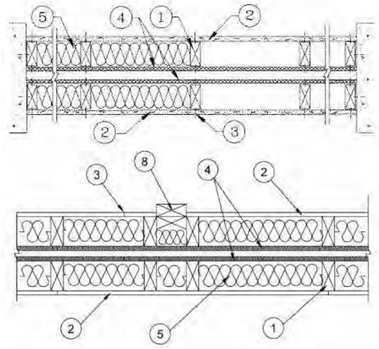
March 06, 2018

Bearing Wall Rating — 1 Hr.

Finish Rating — Min 20 min.

This design was evaluated using a load design method other than the Limit States Design Method (e.g., Working Stress Design Method). For jurisdictions employing the Limit States Design Method, such as Canada, a load restriction factor shall be used — See Guide BXUV or BXUV7

* Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.



HORIZONTAL SECTION

1. Wood Studs — Nom 2 by 4 in., spaced 24 in. OC max. Cross braced at mid-height and effectively firestopped at top and bottom of wall. No min. air space between stud rows except to accommodate attachment of sheathing, where required. See items 4 and 5.

2. Gypsum Board* — Any 5/8 in. thick UL Classified Gypsum Board that is eligible for use in Design Nos. L501, G512 or U305. Nom 5/8 in. thick 4 ft wide. Gypsum board or lath applied horizontally or vertically, unless specified below, and nailed to studs and bearing plates 7 in. OC with 6d cement coated nails, 1-7/8 in. long, 0.0915 in. shank diam and 1/4 in. diam head. As an alternate, No. 6 bugle head drywall screws, 1-7/8 in. long, may be substituted for the 6d cement coated nails.
When Steel Framing Members* (Item 6-6C) are used, wallboard attached to furring channels with 1 in. long Type S bugle-head steel screws spaced 12 in. OC.

When used in widths other than 48 in., gypsum board to be installed horizontally.

ACADIA DRYWALL SUPPLIES LTD (View Classification) — CKNX.R25370

AMERICAN GYPSUM CO (View Classification) — CKNX.R14196

BEIJING NEW BUILDING MATERIALS PUBLIC LTD CO (View Classification) — CKNX.R19374

CERTAINTEED GYPSUM INC (View Classification) — CKNX.R3660

CGC INC (View Classification) — CKNX.R19751

CONTINENTAL BUILDING PRODUCTS OPERATING CO, L L C (View Classification) — CKNX.R18482

GEORGIA-PACIFIC GYPSUM L L C (View Classification) — CKNX.R2717

LOADMASTER SYSTEMS INC (View Classification) — CKNX.R11809

NATIONAL GYPSUM CO (View Classification) — CKNX.R3501

PABCO BUILDING PRODUCTS L L C, DBA PABCO GYPSUM (View Classification) — CKNX.R7094

PANEL REY S A (View Classification) — CKNX.R21796

SIAM GYPSUM INDUSTRY (SARABURI) CO LTD (View Classification) — CKNX.R19262

THAI GYPSUM PRODUCTS PCL (View Classification) — CKNX.R27517

UNITED STATES GYPSUM CO (View Classification) — CKNX.R1319

USG BORAL DRYWALL SFZ LLC (View Classification) — CKNX.R38438

USG BORAL DRYWALL SFZ LLC (View Classification) — CKNX.R38438

USG MEXICO S A DE C V (View Classification) — CKNX.R16089

2A. Gypsum Board* — (As an alternate to Item 2, not shown) — Nominal 5/8 in. thick, 4 ft wide panels, applied vertically to studs and bearing plates on one side of the assembly with 1-5/8 in. long Type S screws spaced 12 in. OC at perimeter of panels and 8 in. OC in the field. Horizontal joints of vertically applied panels need not be backed by studs. Panel joints covered with paper tape and two layers of joint compound. Screwheads covered with two layers of joint compound. Batts and Blankets placed in stud cavity as described in Item 5C. Not evaluated for use with Steel Framing Members, Furring Channels or Fiber, Sprayed.
PABCO BUILDING PRODUCTS L L C, DBA PABCO GYPSUM — Type QuietRock QR-530 (finish rating 23 min).

2B. Gypsum Board* — (As an alternate to Item 2, not shown) — Any 5/8 in. thick gypsum panels that are eligible for use in Design Nos. L501, G512 or U305, supplied by the Classified companies listed below shown in the Gypsum Board* (CKNX) category. Applied horizontally or vertically and attached to studs and bearing plates with 1-1/4 in. long Type W coarse thread gypsum panel steel screws spaced a max 8 in. OC, with last screw 1 in. from edge of board. When used in widths other than 48 in., gypsum board to be installed horizontally.
CGC INC

UNITED STATES GYPSUM CO

USG BORAL DRYWALL SFZ LLC

USG MEXICO S A DE C V

2C. Gypsum Board* — (As an alternate to Item 2, Not Shown) — 5/8 in. thick gypsum panels applied horizontally or vertically and attached to studs and bearing plates with 1-1/4 in. long Type W coarse thread gypsum panel steel screws spaced a max 8 in. OC, with last screw 1 in. from edge of board. When used in widths other than 48 in., gypsum board to be installed horizontally.
AMERICAN GYPSUM CO — Types AGX-1, M-Glass, AG-C, LightRoc

CERTAINTEED GYPSUM INC — Type C, Type X or Type X-1

NATIONAL GYPSUM CO — Type FSK, Type FSK-G, Type FSW, Type FSW-3, Type FSW-5, Type FSW-G, Type FSK-C, Type FSW-C, Type FSMR-C, Type FSW-6, Type FSL

THAI GYPSUM PRODUCTS PCL — Type C or Type X

2D. Gypsum Board* — (As an alternate to Items 2, 2A, 2B and 2C) — 5/8 in. thick gypsum panels, with square edges, applied either horizontally or vertically. Gypsum panels fastened to framing with 1-1/4 in. long Type W coarse thread gypsum panel steel screws spaced a max 8 in. OC, with last 2 screws 1 and 4 in. from edge of board or nailed as described in Item 2. When used in widths of other than 48 in., gypsum boards are to be installed horizontally.
GEORGIA-PACIFIC GYPSUM L L C — GreenGlass Type X, Type DGG.

2E. Gypsum Board* — (As an alternate to Items 2 through 2D) — 5/8 in. thick, 4 ft. wide, paper surfaced applied vertically only and secured as described in Item 2.
GEORGIA-PACIFIC GYPSUM L L C — Type X ComfortGuard Sound Deadening Gypsum Board.

2F. Gypsum Board* — (As an alternate to Items 2 through 2E) - Installed as described in Item 2. 5/8 in. thick, 4 ft. wide, paper surfaced, applied vertically only and fastened to the studs and plates with 6d cement coated nails 1-7/8 in. long, 0.0915 in. shank diam and 1/4 in. diam heads, 7 in. OC. Not for use with item #6.
NATIONAL GYPSUM CO — SoundBreak XP Type X Gypsum Board

2G. Gypsum Board* — (As an alternate to Items 2 through 2F) — Nominal 5/8 in. thick, 4 ft wide panels, applied vertically and secured as described in Item 2.
PABCO BUILDING PRODUCTS L L C, DBA PABCO GYPSUM — Types QuietRock ES.

2H. Gypsum Board* — (As an alternate to Items 2 through 2G) — Installed as described in Item 2. 5/8 in. thick, 4 ft. wide, paper surfaced, applied vertically or horizontally fastened to the studs and plates with 1-1/4 in. long Type W coarse thread gypsum panel steel screws spaced a max 8 in. OC, with last screw 1 in. from edge of board.
CERTAINTEED GYPSUM INC — Type SilentFX

2I. Wall and Partition Facings and Accessories* — (As an alternate to Items 2 through 2H) — Nominal 5/8 in. thick, 4 ft wide panels, applied vertically and secured as described in Item 2.
PABCO BUILDING PRODUCTS L L C, DBA PABCO GYPSUM — Type QuietRock 527.

2J. Gypsum Board* — (As an alternate to 5/8 in. Type FSW in Item 2) — 2 layers nom. 5/16 in. thick gypsum panels applied vertically or horizontally. Horizontal joints on the same side need not be staggered. Inner layer attached with fasteners, as described in item 2, spaced 24 in. OC. Outer layer attached per item 2.
NATIONAL GYPSUM CO — Type FSW.

2K. Gypsum Board* — (As an alternate to Item 2) — 5/8 in. thick gypsum panels, with beveled, square, or tapered edges, applied either horizontally or vertically. Gypsum panels fastened to framing with 1-1/4 in. long Type W coarse thread gypsum panel steel screws spaced a maximum 10 in. OC with the last two screws 4 and 1 in. from the edges of the board. When used in widths other than 48 in., gypsum panels are to be installed horizontally.
CONTINENTAL BUILDING PRODUCTS OPERATING CO, L L C — Type LGFC6A (finish rating 21 min), Type LGFC2A, Type LGFC-C/A, Type LGFC-WD, Type LGLLX

3. Joints and Nailheads — Gypsum board joints of outer layer covered with tape and joint compound. Nail heads of outer layer covered with joint compound. As an alternate, nom 3/32 in. thick gypsum veneer plaster may be applied to the entire surface of Classified veneer baseboard with joints reinforced with paper tape.

4. Sheathing — (Optional) — Septum may be sheathed with min 7/16 in. thick wood structural panels min grade "C-D" or "Sheathing" or min 1/2 in. thick Mineral and Fiber Boards*.
See Mineral and Fiber Boards (CERZ) category for names of Classified companies.

5. Batts and Blankets* — 3-1/2 in. max thickness glass or mineral fiber batt insulation. Optional when sheathing (Item 4) is used on both halves of wall.

See Batts and Blankets (BZJZ) category for list of Classified companies.

Design No. U341 (continued)

5A. Fiber, Sprayed* — As an alternate to Batts and Blankets (Item 5) — Spray applied cellulose material. The fiber is applied with water to completely fill the enclosed cavity in accordance with the application instructions supplied with the product with a nominal dry density of 2.7 lb/ft3. Alternate Application Method: The fiber is applied without water or adhesive at a nominal dry density of 3.5 lb/ft3, in accordance with the application instructions supplied with the product.

U S GREENFIBER L L C — INS735 & INS745 for use with wet or dry application. INS510LD, INS515LD, INS541LD, INS735, INS745, INS765LD, and INS770LD are to be used for dry application only.

5B. Fiber, Sprayed* — As an alternate to Batts and Blankets (Item 5) and Item 5A when Sheathing (Item 4) is used on both halves of wall - Spray applied cellulose insulation material. The fiber is applied with water to interior surfaces in accordance with the application instructions supplied with the product. Applied to completely fill the enclosed cavity. Minimum dry density of 4.3 pounds per cubic ft.

NU-WOOL CO INC — Cellulose Insulation

5C. Batts and Blankets* — (Required for use with Wall and Partition Facings and Accessories, Item 2A. Use of Sheathing, Item 4, does not nullify requirement of Item 5C for use with Item 2A) — Glass fiber insulation, nom 3-1/2 in. thick, min. density of 0.80 pcf, with a flame spread of 25 or less and a smoke developed of 50 or less, friction-fitted to completely fill the stud cavities. See Batts and Blankets Category (BKNV) for names of manufacturers.

5D. Fiber, Sprayed* — As an alternate to Batts and Blankets (Item 5) and Item 5A when Sheathing (Item 4) is used on both halves of wall - Spray applied cellulose fiber. The fiber is applied with water to completely fill the enclosed cavity in accordance with the application instructions supplied with the product. The minimum dry density shall be 4.30 lbs/ft3.

INTERNATIONAL CELLULOSE CORP — Celbar-RL

6 Steel Framing Members* — (Optional, Not Shown) — Furring channels and Steel Framing Members as described below:
A. Furring Channels — Formed of No. 25 MSG galv steel. 2-9/16 in. or 2-23/32 in. wide by 7/8 in. deep, spaced 24 in. OC perpendicular to studs. Channels secured to studs as described in Item b. Ends of adjoining channels are overlapped 6 in. and tied together with double strand of No. 18 SWG galv steel wire near each end of overlap. As an alternate, ends of adjoining channels may be overlapped 6 in. and secured together with two self-tapping #6 framing screws, min. 7/16 in. long at the midpoint of the overlap, with one screw on each flange of the channel. Wallboard attached to furring channels as described in Item 2.
B. Steel Framing Members* — Used to attach furring channels (Item a) to studs (Item 1) . Clips spaced 48 in. OC., and secured to studs with No. 8 x 2-1/2 in. coarse drywall screw through the center grommet. Furring channels are friction fitted into clips. RSIC-1 clip for use with 2-9/16 in. wide furring channels. RSIC-1 (2.75) clip for use with 2-23/32 in. wide furring channels.

PAC INTERNATIONAL L L C — Types RSIC-1, RSIC-1 (2.75).

6A. Steel Framing Members* — (Optional, Not Shown) — Furring channels and Steel Framing Members as described below:
a. Furring Channels — Formed of No. 25 MSG galv steel. 2-3/8 in. wide by 7/8 in. deep, spaced 24 in. OC perpendicular to studs. Channels secured to studs as described in Item b. Ends of adjoining channels are overlapped 6 in. and tied together with double strand of No. 18 SWG galv steel wire near each end of overlap. As an alternate, ends of adjoining channels may be overlapped 6 in. and secured together with two self-tapping #6 framing screws, min. 7/16 in. long at the midpoint of the overlap, with one screw on each flange of the channel. Gypsum board attached to furring channels as described in Item 2.
b. Steel Framing Members* — Used to attach furring channels (Item a) to studs. Clips spaced 48 in. OC. Genie clips secured to studs with No. 8 x 1-1/2 in. coarse drywall screw through the center hole. Furring channels are friction fitted into clips.

PLITEQ INC — Type Genie Clip

6B. Steel Framing Members* — (Optional, Not Shown) — Furring channels and Steel Framing Members as described below:
a. Furring Channels — Formed of No. 25 MSG galv steel. Spaced 24 in. OC perpendicular to studs. Channels secured to studs as described in Item b. Ends of adjoining channels overlapped 6 in. and tied together with double strand of No. 18 AWG galvanized steel wire.Gypsum board attached to furring channels as described in Item 2.
b. Steel Framing Members* — Used to attach furring channels (Item 6Ba) to studs. Clips spaced 48 in. OC., and secured to studs with 2 in. coarse drywall screw with 1 in. diam washer through the center hole. Furring channels are friction fitted into clips.

STUDCO BUILDING SYSTEMS — RESILMOUNT Sound Isolation Clips - Type A237R

6C. Steel Framing Members* — (Optional, Not Shown) — Furring channels and Steel Framing Members as described below:
A. Furring Channels — Formed of No. 25 MSG galv steel. Spaced 24 in. OC perpendicular to studs. Channels secured to studs as described in Item 6Ca. Ends of adjoining channels overlapped 6 in. and tied together with double strand of No. 18 AWG galvanized steel wire.Gypsum board attached to furring channels as described in Item 2.
B. Steel Framing Members* — Used to attach furring channels (Item 6CA) to studs. Clips spaced 48 in. OC., and secured to studs with No. 8 x 2-1/2 in. coarse drywall screw through the center hole. Furring channels are friction fitted into clips.

REGUPOL AMERICA — Type SonusClip

7. Wall and Partition Facings and Accessories* — (Optional, Not shown) — Nominal 1/2 in. thick, 4 ft wide panels, for optional use as an additional layer on one or both sides of the assembly. Panels attached in accordance with manufacturer's recommendations. When the QR-500 or QR-510 panel is installed between the wood framing and the UL Classified gypsum board, the required UL Classified gypsum board layer(s) is/are to be installed as indicated as to fastener type and spacing, except that the required fastener length shall be increased by a minimum of 1/2 in. Not evaluated or intended as a substitute for the required layer(s) of UL Classified Gypsum Board.

PABCO BUILDING PRODUCTS L L C, DBA PABCO GYPSUM — Type QuietRock QR-500 and QR-510

8. Non-Bearing Wall Partition Intersection — (Optional) — Two nominal 2 by 4 in. stud or nominal 2 by 6 in. stud nailed together with two 3in. long 10d nails spaced a max. 16 in. OC. vertically and fastened to one side of the minimum 2 by 4 in. stud with 3 in. long 10d nails spaced a max 16 in. OC. vertically. Intersection between partition wood studs to be flush with the 2 by 4 in. studs. The wall partition wood studs are to be framed by with a second 2 by 4 in. wood stud fastened with 3 in. long 10d nails spaced a max. 16 in. OC. vertically. Maximum one non-bearing wall partition intersection per stud cavity. Non-bearing wall partition stud depth shall be at a minimum equal to the depth of the bearing wall.

*** Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.**

1 U341 - TYP @ DEMISING WALLS (1 HR)

12" = 1'-0"

Design No. U905

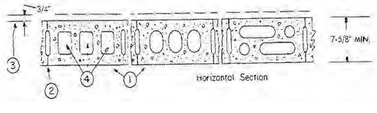
November 09, 2020

Bearing Wall Rating — 2 HR.

Nonbearing Wall Rating — 2 HR

This design was evaluated using a load design method other than the Limit States Design Method (e.g., Working Stress Design Method). For jurisdictions employing the Limit States Design Method, such as Canada, a load restriction factor shall be used — See Guide BXUV or BXUV7

* Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.



1. Concrete Blocks* — Various designs. Classification D-2 (2 hr).
See Concrete Blocks category for list of eligible manufacturers.

2. Mortar — Blocks laid in full bed of mortar, nom. 3/8 in. thick, of not less than 2-1/4 and not more than 3-1/2 parts of clean sharp sand to 1 part Portland cement (proportioned by volume) and not more than 50 percent hydrated lime (by cement volume). Vertical joints staggered.

3. Portland Cement Stucco or Gypsum Plaster — Add 1/2 hr to classification if used. Where combustible members are framed in wall, plaster or stucco must be applied on the face opposite framing to achieve a max. Classification of 1-1/2 hr. Attached to concrete blocks (Item 1).

4. Loose Masonry Fill — If all core spaces are filled with loose dry expanded slag, expanded clay or shale (Rotary Kiln Process), water repellant vermiculite masonry fill insulation, or silicone treated perlite loose fill insulation add 2 hr to classification.

5. Foamed Plastic* — (Optional-Not Shown) — 1-1/2 in. thick max, 4 ft wide sheathing attached to concrete blocks (Item 1).
ATLAS ROOFING CORP — "EnergyShield Pro Wall Insulation", "EnergyShield Pro 2 Wall Insulation", EnergyShield CGF Pro and EnergyShield Ply Pro

CARLISLE COATINGS & WATERPROOFING INC — Type R2+ SHEATHE

DUPONT DE NEMOURS, INC. — Types Thermax Sheathing, Thermax Light Duty Insulation, Thermax Heavy Duty Insulation, Thermax Metal Building Board, Thermax White Finish Insulation, Thermax Ci Exterior Insulation, Thermax XARMOR ci Exterior Insulation, Thermax IH Insulation, Thermax Plus Liner Panel, Thermax Heavy Duty Plus (HDP), TUFF-R™ ci Insulation, Thermax Butler Stylwall Insulation Board and Thermax Morton Heavy Duty Insulation Board

FIRESTONE BUILDING PRODUCTS CO L L C — "Enverge™ CI Foil Exterior Wall Insulation" and "Enverge™ CI Glass Exterior Wall Insulation"

HUNTER PANELS, A DIVISION OF CARLISLE CONSTRUCTION MATERIALS, LLC — Types "Xci-Class A", "Xci Foil (Class A)", "Xci 286"

RMAX, A BUSINESS UNIT OF SIKA CORPORATION — Types "TSX-8500", "ECOMAXci FR", "TSX-8510", "ECOMAX xi FR White", "ECOMAXci", "ECOMAXci FR Air Barrier", "Thermasheath-XP", "Thermasheath", "Durasheath", "Thermasheath-3", "Durasheath-3".

JOHNS MANVILLE — Type "AP Foil-Faced Foam Sheathing"

5A. Building Units* — As an alternate to Items 5, min. 1-in thick polyisocyanurate composite foamed plastic insulation boards, nom. 48 by 48 or 96 in.

HUNTER PANELS, A DIVISION OF CARLISLE CONSTRUCTION MATERIALS, LLC — "Xci NB", "Xci Ply"

RMAX, A BUSINESS UNIT OF SIKA CORPORATION — "Thermasheath-SI", "ECOBASEci", "ThermaBase-CI", "ECOMAXci FR Ply", "ECOMAXci Ply".

*** Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.**

2 U905 - TYP @ STAIR & ELEV WALLS (1HR)

12" = 1'-0"

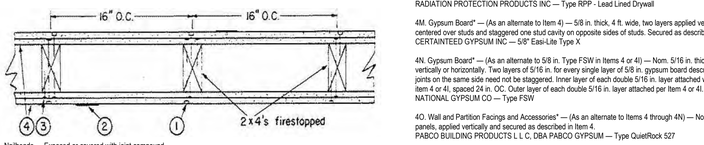
Design No. U301

May 28, 2021

Bearing Wall Rating — 2 Hr.
Finish Rating — 66 Min.

This design was evaluated using a load design method other than the Limit States Design Method (e.g., Working Stress Design Method). For jurisdictions employing the Limit States Design Method, such as Canada, a load restriction factor shall be used — See Guide BXUV or BXUV7

* Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.



1. Nailheads — Exposed or covered with joint compound.
2. Joints — Exposed joints covered with joint compound and paper tape. Joint compound and paper tape may be omitted when square edge boards are used. As an alternate, nom 3/32 in. thick gypsum veneer plaster may be applied to the entire surface of Classified veneer baseboard with the joints reinforced with paper tape.
3. Nails — 6d cement coated nails 1-7/8 in. long, 0.0915 in. shank diam, 1/4 in. diam heads, and 8d cement coated nails 2-3/8 in. long, 0.113 in. shank diam, 9/32 in. diam heads.
4. Gypsum Board* — 5/8 in. thick, two layers applied either horizontally or vertically. Inner layer attached to studs with the 1-7/8 in. nails spaced 6 in. OC. Outer layer attached to studs over inner layer with the 2-3/8 in. long nails spaced 8 in. OC. Vertical joints located over studs. All joints in face layers staggered with joints in base layers. Joints of each base layer offset with joints of base layer on opposite side.
When used in widths other than 48 in., gypsum board to be installed horizontally.

When Steel Framing Members* (Item 6 or any alternate clips) are used, base layer attached to furring channels with 1 in. long Type S bugle-head steel screws spaced max 24 in. OC; face layer attached with 1-5/8 in. long Type S bugle-head steel screws spaced max 12 in. OC.

AMERICAN GYPSUM CO — Types AGX-1, M-Glass, AG-C, AGX-11, LightRoc

BEIJING NEW BUILDING MATERIALS PUBLIC LTD CO — Type DBX-1

CABOT MANUFACTURING ULC — Type X, 5/8 Type X, Moisture Resistant Type X, Gypsum Sheathing Type X, Mold & Mildew Resistant Type X and Mold & Mildew Resistant AR Type X, Type Blueglass Exterior Sheathing

CERTAINTEED GYPSUM INC — Types EGRG, GlasRoc, GlasRoc-2, Type C, Type X, Type X-1

CGC INC — Types AR, C, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, ULIX, ULX, USGX, WRC, WRX

CERTAINTEED GYPSUM INC — Types LGFC2A, LGFC6A, LGFC-C/A, LGFC-WD, LGLLX, CLLX

GEORGIA-PACIFIC GYPSUM L L C — Types 5, 6, 9, C, DAP, DD, DA, DAPC, DGG, DS, GPFS6. LS, TG-C, Type X, Veneer Plaster Base-Type X, Water Rated-Type X, Sheathing Type-X, Soffit-Type X, GreenGlass Type X, Type LWX, Veneer Plaster Base-Type LWX, Water Rated-Type LWX, Sheathing Type-LWX, Soffit-Type LWX, Type DGLW, Water Rated-Type DGLW, Sheathing Type- DGLW, Soffit-Type DGLW, Type LWZX, Veneer Plaster Base - Type LWZX, Water Rated - Type LWZX, Sheathing - Type LWZX, Soffit - Type LWZX, Type DGLZW, Water Rated - Type DGLZW, Sheathing - Type DGLZW

NATIONAL GYPSUM CO — Types eXP-C, FSK, FSK-C, FSK-G, FSW, FSW-3, FSW-5, FSW-6, FSW-8, FSW-C, FSW-G, FSMR-C, FSL, RSX

NATIONAL GYPSUM CO — Riyadh, Saudi Arabia — Type FR, or WR.

PABCO BUILDING PRODUCTS L L C, DBA PABCO GYPSUM — Types C, PG-2, PG-3, PG-3W, PG-4, PG-5, PG-5W, PG-5WS, PG-9, PG-11, PG-C, PGS-WRS, PGI

PANEL REY S A — Types PRC, PRC2, PRX, RHX, MDX, ETX, GREX, GRIX

SIAM GYPSUM INDUSTRY (SARABURI) CO LTD — Type EX-1

THAI GYPSUM PRODUCTS PCL — Type C or Type X

UNITED STATES GYPSUM CO — Types AR, C, FRX-G, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, ULIX, ULX, USGX, WRC, WRX

USG BORAL DRYWALL SFZ LLC — Types C, SCX, USGX

USG MEXICO S A DE C V — Types AR, C, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, ULX, USGX, WRC, WRX

4A. Gypsum Board* — (As an alternate to Item 4) — Nom 3/4 in. thick, installed as described in Item 4.
CGC INC — Types AR, IP-AR

UNITED STATES GYPSUM CO — Types AR, IP-AR

USG MEXICO S A DE C V — Types AR, IP-AR

4B. Gypsum Board* — (As an alternate to Items 4 and 4A) — 5/8 in. thick, 2 ft wide, tongue and groove edge, applied horizontally as the outer layer to one side of the assembly. Secured as described in Item 4. Joint covering (Item 2) not required.
CGC INC — Type SHX

UNITED STATES GYPSUM CO — Type SHX

USG MEXICO S A DE C V — Type SHX

4C. Gypsum Board* — (As an alternate to Items 4, 4A or 4B — Not Shown) — For Direct Application to Studs Only- For use on one or both sides of the wall as the base layer or one or both sides of the wall as the face layer. Nom 5/8 in. thick lead backed gypsum panels with beveled, square or tapered edges, applied vertically. Vertical joints centered over studs and staggered min 1 stud cavity on opposite sides of studs. Wallboard secured to studs with 1-5/8 in. long Type W coarse thread gypsum panel steel screws spaced 8 in. OC at perimeter and in the field when applied as the base layer. When applied as the face layer screw length to be increased to 2-1/2 in. Lead batten strips, min 1-1/2 in. wide, max 10 ft long with a max thickness of 0.125 in. placed on the face of studs and attached to the stud with two 1 in. long Type S-12 pan head steel screws, F4j one at the top of the strip and one at the bottom of the strip. Lead discs or tabs may be used in lieu of or in addition to the lead batten strips or optional at other locations. Max 3/4 in. diam by max 0.125 in. thick lead discs compression fitted or adhered over steel screw heads or max 1/2 in. by 1-1/4 in. by max 0.125 in. thick lead tabs placed on gypsum boards underneath screw locations prior to the installation of the screws. Lead batten strips to have a purity of 99.9% meeting the Federal specification QQ-L-201f, Grade "C". Fasteners for face layer gypsum panels (Items 4, 4A or 4B) when installed over lead backed board to be min 2-1/2 in. Type S-12 bugle head steel screws spaced as described in Item 4.
RAY-BAR ENGINEERING CORP — Type RB-LBG.

4D. Gypsum Board* — As an Alternate to Item 4 — 5/8 in. thick applied either horizontally or vertically. Inner layers fastened to framing with 1-1/4 in. long Type W coarse thread gypsum panel steel screws spaced a max 8 in. OC, with last screw 1 in. from edge of board. Outer layers fastened to framing with 1-7/8 in. long Type W coarse thread gypsum panel steel screws spaced a max 8 in. OC, with last screw 1 in. from edge of board. When used in widths other than 48 in., gypsum board to be installed horizontally. All joints in face layers staggered with joints in base layers. Joints of each base layer offset with joints of base layer on opposite side.
AMERICAN GYPSUM CO — Types AGX-1, M-Glass, AG-C, LightRoc

4E. Gypsum Board* — (As an alternate to Items 4 through 4D) — 5/8 in. thick, 4 ft. wide, paper surfaced applied vertically and secured as described in Item 4.
GEORGIA-PACIFIC GYPSUM L L C — Type X ComfortGuard Sound Deadening Gypsum Board

4F. Gypsum Board* — (As an alternate to Item 4) — Not to be used with item 6, 6A, 6B or 6C. 5/8 in. thick, 4 ft. wide, paper surfaced, applied vertically and secured as described in Item 4.
NATIONAL GYPSUM CO — Type SBWB

4G. Gypsum Board * — (As an alternate to Items 4 through 4F) — Nominal 5/8 in. thick, 4 ft wide panels, applied vertically and secured as described in Item 4.
PABCO BUILDING PRODUCTS L L C, DBA PABCO GYPSUM — Types QuietRock ES

4H. Gypsum Board* — (As an alternate to Item 4) — Not to be used with item 6, 6A, 6B, or 6C. 5/8 in. thick, 4 ft. wide, paper surfaced, applied vertically or horizontally and secured as described in Item 4.
CERTAINTEED GYPSUM INC — Type SilentFX

4I. Gypsum Board* — (As an alternate to Item 4) — 5/8 in. thick, two layers applied either horizontally or vertically. Inner layer attached to studs with 1-1/4 in. long Type W steel screws spaced 8 in. OC. Outer layer attached to studs over inner layer with 2 in. long Type W steel screws spaced 8 in. OC offset 6 in. from base layer. Vertical joints located over studs. Vertical and horizontal joints between inner and outer layers staggered. Outer layer joints covered with joint tape and compound, screwheads covered with joint compound. As an alternate to the joint compound nom 3/32 in. thick gypsum veneer plaster may be applied to the entire surface of Classified veneer baseboard. Joints reinforced. Wallboard other than 48 in. wide must be applied horizontally. The SoundBreak XP Type X Gypsum Board is not to be used with item 6, 6A, 6B, or 6C.
NATIONAL GYPSUM CO — Types eXP-C, FSK, FSK-C, FSK-G, FSW, FSW-3, FSW-5, FSW-6, FSW-C, FSW-G, FSMR-C, SBWB

4J. Gypsum Board* — (As an alternate to Items 4) — For Direct Application to Studs Only- For use as the base layer or as the face layer. Nom 5/8 in. thick lead backed gypsum panels with beveled, square or tapered edges, applied vertically. Vertical joints centered over studs and staggered min 1 stud cavity on opposite sides of studs. Wallboard secured to studs with 1-5/8 in. long Type W coarse thread gypsum panel steel screws spaced 8 in. OC at perimeter and in the field when applied as the base layer. When applied as the face layer screw length to be increased to 2-1/2 in. Lead batten strips required behind vertical joints of lead backed gypsum wallboard and optional at remaining stud locations. Lead batten strips, min 2 in. wide, max 8 ft long with a max thickness of 0.14 in. placed on the face of studs and attached to the stud with construction adhesive and two 1 in. long Type S-12 pan head steel screws, one at the top of the strip and one at the bottom of the strip. Lead discs, nominal 3/8 in. diam by max 0.085 in. thick. compression fitted or adhered over the screw heads. Lead batten strips and discs to have a purity of 99.9% meeting the Federal specification QQ-L-201f, Grade "C". Fasteners for face layer gypsum panels (Items 4, 4A and 4B) when installed over lead backed board to be min 2-1/2 in. Type S-12 bugle head steel screws spaced as described in Item 4.
RADIATION PROTECTION PRODUCTS INC — Type RPP - Lead Lined Drywall

4M. Gypsum Board* — (As an alternate to Item 4) — 5/8 in. thick, 4 ft. wide, two layers applied vertically with vertical joints centered over studs and staggered one stud cavity on opposite sides of studs. Secured as described in Item 4.
CERTAINTEED GYPSUM INC — 5/8" Easi-Lite Type X

4N. Gypsum Board* — (As an alternate to 5/8 in. Type FSW in Items 4 or 4I) — Nom. 5/16 in. thick gypsum panels applied vertically or horizontally. Two layers of 5/16 in. for every single layer of 5/8 in. gypsum board described in Item 4 or 4I. Horizontal joints on the same side need not be staggered. Inner layer of each double 5/16 in. layer attached with fasteners, as described in Item 4 or 4I, spaced 24 in. OC. Outer layer of each double 5/16 in. layer attached per Item 4 or 4I.
NATIONAL GYPSUM CO — Type FSW

4O. Wall and Partition Facings and Accessories* — (As an alternate to Items 4 through 4N) — Nominal 5/8 in. thick, 4 ft wide panels, applied vertically and secured as described in Item 4.
PABCO BUILDING PRODUCTS L L C, DBA PABCO GYPSUM — Type QuietRock 527

4P. Gypsum Board* — (As an alternate to Item 4) — 5/8 in. thick, two layers applied either horizontally or vertically. Inner layer attached to studs with 1-1/4 in. long Type W steel screws spaced 10 in. OC with the last two screws 4 and 1 in. from the edges of the board. Vertical joints located over studs. Vertical and horizontal joints between inner and outer layers staggered. Outer layer joints covered with joint tape and compound, screwheads covered with joint compound. When used in widths other than 48 in., gypsum panels are to be installed horizontally.
CERTAINTEED GYPSUM INC — Type LGFC6A, Type LGFC2A, Type LGFC-C/A, Type LGFC-WD, Type LGLLX

4Q. Gypsum Board* — (As an alternate to Item 4. For use with Item 13) — Any 5/8 in. thick, 4 ft. wide, Gypsum Board UL Classified for Fire Resistance (CKNX) eligible for use in Design Nos. U305 and L501 or G512. Two layers, applied either horizontally or vertically, and screwed to studs with 1-5/8 in. long Type W coarse thread steel screws at 8 in. OC at perimeter and in the field with the last two screws 4 and 3/4 in. from the edges of the board when applied as the base layer. For the face layer, screw length to be increased to 2-1/2 in. All joints in face layers staggered with joints in base layers. When used in widths other than 48 in., gypsum panels are to be installed horizontally.
4R. Gypsum Board* — As an Alternate to Item 4 — 5/8 in. thick applied either horizontally or vertically. Inner layers fastened to framing with 1-1/4 in. long Type W coarse thread gypsum panel steel screws spaced a max 8 in. OC, with last screw 1 in. from edge of board. Outer layers fastened to framing with 1-7/8 in. long Type W coarse thread gypsum panel steel screws spaced a max 8 in. OC, with last screw 1 in. from edge of board. When used in widths other than 48 in., gypsum board to be installed horizontally. All joints in face layers staggered with joints in base layers. Joints of each base layer offset with joints of base layer on opposite side.
CERTAINTEED GYPSUM INC — Types EGRG, GlasRoc, GlasRoc-2, Type C, Type X, Type X-1, Easi-Lite Type X, SilentFX

4S. Gypsum Board* — (As an alternate to Item 4. For use with Item 13A) — 5/8 in. thick, two layers applied vertically. Inner layer attached to studs with the 1-7/8 in. nails spaced 6 in. OC. Outer layer attached to studs over inner layer with the 2-3/8 in. long nails spaced 8 in. OC. Vertical joints located over studs. All joints in face layers staggered with joints in base layers. Joints of each base layer offset with joints of base layer on opposite side.
AMERICAN GYPSUM CO — Types AGX-1

BEIJING NEW BUILDING MATERIALS PUBLIC LTD CO — Type DBX-1

CABOT MANUFACTURING ULC — "5/8 Type X"

CERTAINTEED GYPSUM INC — Type X

CGC INC — Type SCX

PANEL REY S A — Type PRX

SIAM GYPSUM INDUSTRY (SARABURI) CO LTD — Type EX-1

THAI GYPSUM PRODUCTS PCL — Type X

UNITED STATES GYPSUM CO — Type SCX

USG BORAL DRYWALL SFZ LLC — Types SCX

USG MEXICO S A DE C V — Type SCX

4T. Gypsum Board* — (As an alternate to Item 4. For use with Item 13B) — Any 5/8 in. thick, 4 ft. wide, Gypsum Board listed in Item 4 above. Two layers applied vertically with vertical joints centered over studs and staggered one stud cavity on opposite sides of studs. All joints in outer layers staggered with joints in inner layers. Inner layer attached to studs with 1-5/8 in. long Type W coarse thread gypsum panel steel screws spaced 8 in. OC at perimeter and in the field. Outer layer attached to studs over inner layer with the 2-1/2 in. long Type W coarse thread gypsum panel steel screws spaced 8 in. OC.
5. Molded Plastic* — Not Shown. Optional — Solid vinyl siding mechanically secured over the outer layer to framing members in accordance with manufacturer's recommended installation details.
ALSIDE, DIV OF ASSOCIATED MATERIALS INC

GENTEK BUILDING PRODUCTS LTD

VYTEC CORP

6. Steel Framing Members* — (Optional, Not Shown) — Furring channels and Steel Framing Members as described below:
A. Furring Channels — Formed of No. 25 MSG galv steel. 2-9/16 in. or 2-23/32 in. wide by 7/8 in. deep, spaced 24 in. OC perpendicular to studs. Channels secured to studs as described in Item b. Ends of adjoining channels are overlapped 6 in. and tied together with double strand of No. 18 SWG galv steel wire near each end of overlap. As an alternate, ends of adjoining channels may be overlapped 6 in. and secured together with two self-tapping #6 framing screws, min. 7/16 in. long at the midpoint of the overlap, with one screw on each flange of the channel. Wallboard attached to furring channels as described in Item 4.
B. Steel Framing Members* — Used to attach furring channels (Item 6a) to studs. Clips spaced 48 in. OC., and secured to studs with No. 8 x 2-1/2 in. coarse drywall screw through the center grommet. Furring channels are friction fitted into clips. RSIC-1 clip for use with 2-9/16 in. wide furring channels. RSIC-1 (2.75) clip for use with 2-23/32 in. wide furring channels.
PAC INTERNATIONAL L L C — Types RSIC-1, RSIC-1 (2.75)

6A.

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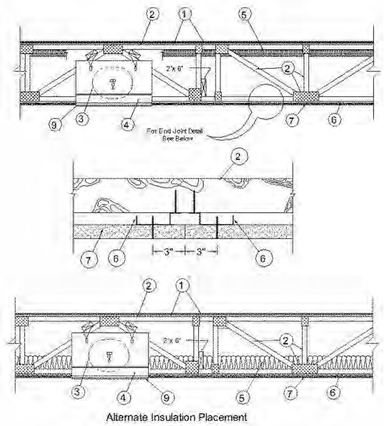
Design No. L521

April 05, 2018

Unrestrained Assembly Rating — 1 Hr

Finish Rating — 25 Min (See Items 5 and 5A), 20 Min (See Items 6H and 7A)
This design was evaluated using a load design method other than the Limit States Design Method (e.g., Working Stress Design Method). For jurisdictions employing the Limit States Design Method, such as Canada, a load restriction factor shall be used — See Guide BXUV or BXUV7

* Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.



Alternate Insulation Placement

1. Flooring System — The flooring system shall consist of one of the following:

System No. 1

Subflooring — Nom 23/32 in. thick wood structural panels installed perpendicular to trusses with end joints staggered. Plywood or panels secured to trusses with construction adhesive and No. 6d ringed shank nails, spaced 12 in. OC along each truss. Staples having equal or greater withdrawal and lateral resistance strength may be substituted for the 6d nails.

Vapor Barrier — (Optional) — Nom 0.030 in. thick commercial asphalt saturated felt.

Finish Floor — Min 1 by 4 in. T & G lumber installed perpendicular to trusses, or min 15/32 in. thick wood structural panels, min grade "Underlayment" or "Single-Floor". Face grain of plywood or strength axis of panel to be perpendicular to joists with joints staggered.

System No. 2

Subflooring — Nom 23/32 in. thick wood structural panels installed perpendicular to trusses with end joints staggered. Plywood or panels secured to trusses with construction adhesive and No. 6d ringed shank nails, spaced 12 in. OC along each truss. Staples having equal or greater withdrawal and lateral resistance strength may be substituted for the 6d nails.

Vapor Barrier — (Optional) — Nom 0.030 in. thick commercial asphalt saturated felt.

Floor Mat Materials* — (Optional) — Floor mat material nom 1/8 in. (3 mm) thick loose laid over the subfloor. Floor topping thickness shall be a min of 3/4 in. (19 mm).

HACKER INDUSTRIES INC — FIRM-FILL SCM 125

Alternate Floor Mat Materials — (Optional) — Floor mat material nom 1/4 in. (6 mm) thick loose laid over the subfloor. Floor topping thickness shall be a min of 1 in. (25 mm).

HACKER INDUSTRIES INC — Type FIRM-FILL SCM 250

Alternate Floor Mat Materials — (Optional) — Floor mat material nom 3/8 in. (10 mm) thick loose laid over the subfloor. Floor topping thickness shall be a min of 1-1/4 in. (32 mm)

HACKER INDUSTRIES INC — FIRM-FILL SCM 400

Alternate Floor Mat Materials — (Optional) — Floor mat material nom 3/4 in. (19 mm) thick loose laid over the subfloor. Floor topping thickness shall be a min of 1-1/2 in. (38 mm).

HACKER INDUSTRIES INC — Type FIRM-FILL SCM 750

Metal Lath (Optional) — (Optional) — For use with 3/8 in. (10 mm), or greater, floor mat materials, 3/8 in. expanded steel diamond mesh, 3.4 lbs/sq yd placed over the floor mat material. Hacker Floor Primer to be applied prior to the placement of the metal lath. When metal lath is used, floor topping thickness a nom 1 in. (25 mm) over the floor mat.

Finish Flooring — Floor Topping Mixture* — Min 3/4 in. thickness of floor topping mixture having a min compressive strength of 1100 psi. Mixture shall consist of 6.8 gal of water to 80 lbs of floor topping mixture to 1.9 cu ft of sand.

HACKER INDUSTRIES INC — Firm-Fill Gypsum Concrete, Firm-Fill 2010, Firm-Fill 3310, Firm-Fill 4010, Gyp-Span Radiant

System No. 3

Subflooring — Nom 23/32 in. thick wood structural panels installed perpendicular to trusses with end joints staggered. Plywood or panels secured to trusses with construction adhesive and No. 6d ringed shank nails, spaced 12 in. OC along each truss. Staples having equal or greater withdrawal and lateral resistance strength may be substituted for the 6d nails.

Vapor Barrier — (Optional) — Nom 0.030 in. thick commercial asphalt saturated felt.

Finish Floor* — Mineral and Fiber Board — Min 1/2 in. thick, supplied in sizes ranging from 3 ft by 4 ft to 8 ft by 12 ft.

HOMASOTE CO — Type 440-32 Mineral and Fiber Board

System No. 4

Subflooring — Nom 23/32 in. thick wood structural panels installed perpendicular to trusses with end joints staggered. Plywood or panels secured to trusses with construction adhesive and No. 6d ringed shank nails, spaced 12 in. OC along each truss. Staples having equal or greater withdrawal and lateral resistance strength may be substituted for the 6d nails.

Vapor Barrier — (Optional) — Nom 0.030 in. thick commercial asphalt saturated felt.

Finish Flooring* — Floor Topping Mixture — Min 3/4 in. thickness of floor topping mixture having a minimum compressive strength of 1800 psi. Refer to manufacturer's instructions accompanying the material for specific mix design.

UNITED STATES GYPSUM CO — Types LRK, HSLRK, CSD

LATICRETE SUPERCAP L L C — Types LRK, HSLRK

USG MEXICO S A DE C V — Types LRK, HSLRK, CSD

Floor Mat Materials* — (Optional) — Floor mat material loose laid over the subfloor. Refer to manufacturer's instructions regarding the minimum thickness of floor topping over each floor mat material.

UNITED STATES GYPSUM CO — Types SAM, LEVELROCK® Brand Sound Reduction Board, LEVELROCK® Brand Floor Underlayment SRM-25

Alternate Floor Mat Materials* — (Optional) — Nom 3/8 in. thick floor mat material loose laid over the subfloor.
GRASSWORX L L C — Type SC50

System No. 5

Structural Cement-Fiber Units* — Nom 3/4 in. thick, with long edges tongue and grooved. Long dimension of panels to be perpendicular to wood trusses with end joints staggered a min of 2 ft and centered over the trusses. Panels secured to wood trusses with 1-5/8 in. long, No. 8, self- countersinking wood screw spaced a max of 12 in. OC in the field with a screw located 1 in. and 2 in. from each edge, and 8 in. OC on the perimeter with a screw located 2 in. from each edge, located 1/2 in. from the end edges of the panel.

UNITED STATES GYPSUM CO — Types STRUCTO-CRETE, USGSP

Finish Flooring — Floor Topping Mixture* — Min 3/4 in. thickness of floor topping mixture having a minimum compressive strength of 1800 psi. Refer to manufacturer's instructions accompanying the material for specific mix design.
UNITED STATES GYPSUM CO — Types LRK, HSLRK, CSD

LATICRETE SUPERCAP L L C — Types LRK, HSLRK

USG MEXICO S A DE C V — Types LRK, HSLRK, CSD

Floor Mat Materials* — (Optional) — Floor mat material loose laid over the subfloor. Refer to manufacturer's instructions regarding the minimum thickness of floor topping over each floor mat material.
UNITED STATES GYPSUM CO — Types SAM, LEVELROCK® Brand Sound Reduction Board, LEVELROCK® Brand Floor Underlayment SRM-25

System No. 6 (For Use with Item 7A Only)

Finish Floor — Nom 23/32 in. thick wood structural panels installed perpendicular to trusses with end joints staggered. Plywood or panels secured to trusses with construction adhesive and 2-1/2 in. long nails, spaced 12 in. OC along each truss and 8 in. OC at the perimeter.

System No. 7

Subflooring — Nom 23/32 in. thick wood structural panels installed perpendicular to trusses with end joints staggered. Plywood or panels secured to trusses with construction adhesive and No. 6d ringed shank nails, spaced 12 in. OC along each truss. Staples having equal or greater withdrawal and lateral resistance strength may be substituted for the 6d nails.

Vapor Barrier —(Optional) - Nom 0.030 in. thick commercial asphalt saturated felt.

Design No. L521 (continued)

Floor Mat Materials* — (Optional) — Floor mat material nom 5/64 in. (2 mm) thick adhered to subfloor with Hacker Floor Primer. Primer to be applied to the surface of the mat prior to the placement of floor-topping mixture. Floor topping thickness a min 1 in. over the floor mat.

ECORE INTERNATIONAL INC — Type QTscu 4002

HACKER INDUSTRIES INC — Type Hacker Sound-Mat

Alternate Floor Mat Materials — (Optional) — Floor mat material nom 1/4 in. (6 mm) thick adhered to subfloor with Hacker Floor Primer. Primer to be applied to the surface of the mat prior to the placement of a min 1-1/4 in. (32 mm) of floor-topping mixture.

ECORE INTERNATIONAL INC — Type QTrbm 3006-3

HACKER INDUSTRIES INC — Type Hacker Sound-Mat II

Metal Lath (Optional) — For use with 3/8 in. (10 mm) floor mat materials, 3/8 in. expanded steel diamond mesh, 3.4 lbs/sq yd placed over the floor mat material. Hacker Floor Primer to be applied prior to the placement of the metal lath. When metal lath is used, floor topping thickness a nom 1-1/4 in. over the floor mat.

Finish Flooring — Floor Topping Mixture* — Min 3/4 in. thickness of floor topping mixture having a min compressive strength of 1100 psi. Mixture shall consist of 6.8 gal of water to 80 lbs of floor topping mixture to 1.9 cu ft of sand.

HACKER INDUSTRIES INC — Firm-Fill Gypsum Concrete, Firm-Fill High Strength, Gyp-Span Radiant

2. Trusses — Parallel chord trusses, spaced a max of 24 in. OC, fabricated from nom 2 by 4 lumber, with lumber oriented vertically or horizontally. Min truss depth is 12 in. when no Ceiling Damper* is used and 16 in. when a Ceiling Damper* is used. Truss members secured together with min 0.0355 in. thick galv steel plates. Plates have 5/16 in. long teeth projecting perpendicular to the plane of the plate. The teeth are in pairs facing each other (made by the same punch), forming a split tooth type plate. Each tooth has a chisel point on its outside edge. These points are diagonally opposite each other for each pair. The top half of each tooth has a twist for stiffness. The pairs are repeated on approx. 7/8 in. centers with four rows of teeth per inch of plate width.
3. Air Duct* — Any UL Class 0 or Class 1 flexible air duct installed in accordance with the instructions provided by the damper manufacturer.
4. Ceiling Damper* — For use with min 18 in. deep trusses. Max nom area shall be 324 sq in. with the length not to exceed 24 in. and the width not to exceed 20 in. Max height of damper shall be 14 in. Aggregate damper openings shall not exceed 162 sq in. per 100 sq ft of ceiling area. Damper installed in accordance with the manufacturers installation instructions provided with the damper. A steel grille (Item 9) shall be installed in accordance with installation instructions.
C&S AIR PRODUCTS — Model RD-521

POTTORFF — Model CFD-521

4A. Alternate Ceiling Damper* — For use with min 18 in. deep trusses. Max nom area shall be 196 sq in. with the length not to exceed 26 in. and the width not to exceed 14 in. Max height of damper shall be 7 in. Aggregate damper openings shall not exceed 98 sq in. per 100 sq ft of ceiling area. Damper installed in accordance with the manufacturers installation instructions provided with the damper. A steel grille (Item 9) not to exceed 144 in.2 shall be installed in accordance with installation instructions.

C&S AIR PRODUCTS — Model RD-521-BT

POTTORFF — Model CFD-521-BT

4B. Alternate Ceiling Damper* — For use with min 18 in. deep trusses. Max nom area shall be 256 sq in. with the length not to exceed 24 in. and the width not to exceed 20 in. Max height of damper shall be 17 in. Aggregate damper openings shall not exceed 128 sq in. per 100 sq ft of ceiling area. Damper installed in accordance with the manufacturers installation instructions provided with the damper. A steel grille (Item 9) shall be installed in accordance with installation instructions.
C&S AIR PRODUCTS — Models RD-521-IP, RD-521-NP

POTTORFF — Models CFD-521-IP, CFD-521-NP

4C. Alternate Ceiling Damper* — Ceiling damper & fan assembly for use with min 18 in. deep trusses. Max nom area shall be 75 sq in. with the length not to exceed 8-9/16 in. and the width not to exceed 8-3/4 in. Max height of damper shall be 9-7/8 in. Aggregate damper openings shall not exceed 38 sq in. per 100 sq ft of ceiling area. Damper shall be installed in combination with one of the fan models described in, and in accordance with, the manufacturer's installation instructions provided with the damper. A plastic grille (Item 9) shall be installed in accordance with installation instructions.
DELTA ELECTRONICS INC — Models CRD2, GBR-CRD, ITG-CRD

4D. Alternate Ceiling Damper* — Ceiling damper & fan assembly for use with min 18 in. deep trusses. Max nom area shall be 75 sq in. with the length not to exceed 9-1/4 in. and the width not to exceed 9-3/4 in. Max height of damper shall be 9-7/8 in. Aggregate damper openings shall not exceed 45 sq in. per 100 sq ft of ceiling area. Damper shall be installed in combination with one of the fan models described in, and in accordance with, the manufacturer's installation instructions provided with the damper. A plastic grille (Item 9) shall be installed in accordance with installation instructions.
DELTA ELECTRONICS INC — Model SIG-CRD

4E. Alternate Ceiling Damper* — Ceiling damper & fan assembly for use with min 18 in. deep trusses. Max nom area shall be 131 sq in. with the length not to exceed 11-1/16 in. and the width not to exceed 11-7/8 in. Aggregate damper openings shall not exceed 66 sq in. per 100 sq ft of ceiling area. Damper shall be installed in combination with one of the fan models described in, and in accordance with, the manufacturer's installation instructions provided with the damper. A plastic grille (Item 9) shall be installed in accordance with installation instructions.
DELTA ELECTRONICS INC — Model SMT-CRD

4F. Alternate Ceiling Damper* — Ceiling damper & fan assembly for use with min 18 in. deep trusses. Max nom area shall be 103 sq in. with the length not to exceed 10-1/8 in. and the width not to exceed 10-1/8 in. Aggregate damper openings shall not exceed 52 sq in. per 100 sq ft of ceiling area. Damper shall be installed in combination with one of the fan models described in, and in accordance with, the manufacturer's installation instructions provided with the damper. A plastic grille (Item 9) shall be installed in accordance with installation instructions.
PANASONIC CORPORATION, PANASONIC CORPORATION OF NORTH AMERICA — Model PC-RD05C5

4G. Alternate Ceiling Damper* — Ceiling damper & fan assembly for use with min 18 in. deep trusses. Max nom area shall be 113 sq in. with the length not to exceed 10-1/8 in. and the width not to exceed 11-1/8 in. Aggregate damper openings shall not exceed 57 sq in. per 100 sq ft of ceiling area. Damper shall be installed in combination with one of the fan models described in, and in accordance with, the manufacturer's installation instructions provided with the damper. A plastic grille (Item 9) shall be installed in accordance with installation instructions.
BROAN-NUTONE L L C — Model RDFUWT

4H. Alternate Ceiling Damper* — Ceiling damper & fan assembly for use with min 18 in. deep trusses. Max nom area shall be 79 sq in. with the length not to exceed 10 in. and the width not to exceed 7-15/16 in. Aggregate damper openings shall not exceed 40 sq in. per 100 sq ft of ceiling area. Damper shall be installed in combination with one of the fan models described in, and in accordance with, the manufacturer's installation instructions provided with the damper. A metallic grille (Item 9) shall be installed in accordance with installation instructions.
BROAN-NUTONE L L C — Models RDJ1 and RDH

4I. Alternate Ceiling Damper* — Ceiling damper & fan assembly for use with min 18 in. deep trusses. Max nom area shall be 87 sq in. with the length not to exceed 9 in. and the width not to exceed 9-11/16 in. Aggregate damper openings shall not exceed 44 sq in. per 100 sq ft of ceiling area. Damper shall be installed in combination with one of the fan models described in, and in accordance with, the manufacturer's installation instructions provided with the damper. A plastic grille (Item 9) shall be installed in accordance with installation instructions.
BROAN-NUTONE L L C — Model RDMWT

5. Batts and Blankets* — (Optional) — Glass fiber or mineral wool insulation bearing the UL Classification Marking as to Surface Burning Characteristics and/or Fire Resistance. When the resilient channels (Item 6) or furring channels (Item 6A) are spaced 24 in. OC, no insulation shall be installed in the concealed space. When the resilient channels (Item 6) or furring channels (Item 6A) are spaced 16 in. OC, the insulation shall be a max of 3-1/2 in. thick, and shall be secured against the subflooring with staples at 12 in. OC or held suspended in the concealed space with 0.090 in. diam galv steel wires attached to the wood trusses at 12 in. OC. When the resilient channels (Item 6) or furring channels (Item 6A) are spaced a max of 12 in. OC or when the Steel Framing Members (Item 6B) are used, there is no limit in the overall thickness of insulation, and the insulation can be secured against the subflooring, held suspended in the concealed space or draped over the resilient or furring channels (or Steel Framing Members) and gypsum panel membrane. When Steel Framing Members (Item 6C) are used, max 3-1/2 in. thick insulation shall be draped over the furring channels (Item 6Ca) and gypsum board ceiling membrane, and friction-fitted between trusses and Steel Framing Members (Item 6Cd). The finished rating has only been determined when the insulation is secured to the subflooring.
5A. Fiber, Sprayed* — (Dry Dense Packed 100% Borate Formulation) — (Optional) — As an alternate to Item 5, When used, the resilient channel or furring channel gypsum board attachment is modified as specified in Items 6 and 7 and wire mesh (Item 10) shall be attached to the furring channels to facilitate installation of the material. The finished rating when Fiber, Sprayed is used has not been determined. The fiber is applied without water or adhesive at a nominal dry density of 3.5 lb/ft3, in accordance with the application instructions supplied with the product. When Item 5A (Fiber, Sprayed) is used, two layers of gypsum board required as described in Item 7. Not evaluated for use with Item 6B, 6C, 6G or 6H.
U S GREENFIBER L L C — INS735, INS745, INS765LD & INS770LD to be used with dry application only

5B. Fiber, Sprayed* — (Loose Fill 100% Borate Formulation) — (Optional) — As an alternate to Items 5 and 5A, The finished rating when Fiber, Sprayed is used has not been determined. The fiber is applied without water or adhesive at a minimum dry density of 0.5 lb/ft3 and at a max thickness of 3-1/2 in., in accordance with the application instructions supplied with the product. Wire mesh (Item 10) shall be attached to the furring channels to facilitate installation of the material. When Item 5B (Fiber, Sprayed) is used, two layers of gypsum board required as described in Item 7. Not evaluated for use with Item 6B, 6C, 6D, 6E, 6F, 6G, 6H or 6I.
U S GREENFIBER L L C — INS735, INS745, INS765LD & INS770LD to be used with dry application only

5C. Foamed Plastic* — (As alternate to Item 5, 5A, or 5B, Not Shown) — Spray foam insulation applied directly to the underside of the plywood subflooring. Spray foam insulation installed to a maximum thickness of 10 in. at a nominal 0.5 lb/ft3 density. Spray foam insulation is limited to use with minimum 18 in. deep trusses (Item 2). When spray foam insulation is installed, resilient channels (Item 6) shall be installed maximum 12 in. OC, with channels adjacent to butt joints of gypsum board (Item 7) spaced maximum 3 in. away from gypsum butt joints. Gypsum board (Item 7) to be installed using minimum 1-1/4 in. long Type S screws, spaced maximum 8 in. OC, and butted end joints shall be staggered min. 2 ft within the assembly, and occur midway between the continuous furring channels. If used with a fire damper (Items 4 through 4H) in the concealed space, minimum 1 in. clearance to be maintained between damper housing and spray foam insulation. Not evaluated for use with Items 5 through 5B, or 6A through 6I.
SES FOAM INC — Sucraseal 0.5 lb

5D. Cavity Insulation - Batts and Blankets* or Fiber, Sprayed* — (As described above in Items 5 through 5B) — (For Use with Item 7A, Not Shown) – Min. 3-1/2 in thick with no limit on maximum thickness fitted in the concealed space, draped over the resilient channel (Item 6H)/gypsum board (Item 7A) ceiling membrane.
5E. Foamed Plastic* — (As alternate to Item 5, 5A, or 5C, Not Shown) — Spray foam insulation applied directly to the underside of the plywood subflooring. Spray foam insulation installed to a maximum thickness of 10 in. at a nominal 0.5 lb/ft3 or 2.0 lb/ft3 density, depending on the product installed. Spray foam insulation is limited to use with minimum 18 in. deep trusses (Item 2). When spray foam insulation is installed, resilient channels (Item 6) shall be installed maximum 12 in. OC, with channels adjacent to butt joints of gypsum board (Item 7) spaced maximum 3 in. away from gypsum butt joints. Gypsum board (Item 7) to be installed using minimum 1-1/4 in. long Type S screws, spaced maximum 8 in. OC, and butted end joints shall be staggered min. 2 ft within the assembly, and occur midway between the continuous furring channels. If used with a fire damper (Items 4 through 4H) in the concealed space, minimum 1 in. clearance to be maintained between damper housing and spray foam insulation. Not evaluated for use with Items 5 through 5B, or 6A through 6I.
BASF CORP — Enertite® NM, Enertite® G, FE1788; Spraytite® 178, Spraytite® 81206, Walltite® 200, Walltite® US, Walltite® US-N, and Walltite® HP+

6. Resilient Channels — Formed from min 25 MSG galv steel installed perpendicular to trusses. When there is no insulation installed in the concealed space the resilient channels are spaced 24 in. OC. When insulation (Item 5) is secured to the underside of the subfloor the resilient channels are spaced 16 in. OC. When insulation, Items 5, 5A or 5B is applied over the furring channel/gypsum panel ceiling membrane, or when Item 5C or 5E is applied to underside of subflooring, the resilient channels are spaced 12 in. OC. Channels secured to each truss with 1-1/4 in. long Type S bugle head steel screws. Channels overlapped 4 in. at splices. Two channels, spaced 6 in. OC, oriented opposite each gypsum panel end joint as shown in the above illustration. Additional channels shall extend min 6 in. beyond each side edge of panel.

6A. Steel Framing Members* — (Not Shown) — As an alternate to Item 6.
a. Furring Channels — Formed of No. 25 MSG galv steel, 2-9/16 in. or 2-23/32 in. wide by 7/8 in. deep, spaced 16 in. OC perpendicular to wood structural members. When insulation, Items 5, 5A or 5B is applied over the furring channel/gypsum panel ceiling membrane, the furring channel spacing shall be reduced to 12 in. OC. Channels secured to trusses as described in Item b. Ends of adjoining channels overlapped 6 in. and tied together with double strand of No. 18 AWG galv steel wire near each end of overlap.

b. Steel Framing Members* — Used to attach furring channels (Item a) to trusses (Item 2). Clips spaced 48 in. OC. RSIC-1 and RSIC-1 (2.75) clips secured to alternating trusses with No. 8 x 2-1/2 in. coarse drywall screw through the center grommet. RSIC-V and RSIC-V (2.75) clips secured to alternating trusses with No. 8 x 1-1/2 in. coarse drywall screw through the center hole. Furring channels are friction fitted into clips. RSIC-1 and RSIC-V clips for use with 2-9/16 in. wide furring channels. RSIC-1 (2.75) and RSIC-V (2.75) clips for use with 2-23/32 in. wide furring channels. Adjoining channels are overlapped as described in Item a. As an alternate, ends of adjoining channels may be overlapped 6 in. and secured together with two self-tapping No. 6 framing screws, min 7/16 in. long at the midpoint of the overlap, with one screw on each flange of the channel. Additional clips required to hold furring channel that supports the gypsum board butt joints, as described in Item 7. When Fiber, Sprayed (Item 5B) is used, two layers of nom 5/8 in. thick, 4 ft wide gypsum board shall be installed as described in Item 7.

Design No. L521 (continued)

PAC INTERNATIONAL L L C — Types RSIC-1, RSIC-V, RSIC-1 (2.75), RSIC-V (2.75)

6B. Steel Framing Members — (Not Shown) — As an alternate to Item 6, main runners, cross tees, cross channels and wall angle as listed below.
a. Main Runners — Nom 10 or 12 ft long, 15/16 in. or 1-1/2 in. wide face, spaced 4 ft. OC. Main runners suspended by min 12 SWG galv steel hanger wires spaced 48 in. OC. Hanger wires to be located adjacent to main runner/cross tee intersections. Hanger wires wrapped and twist-tied on 16d nails driven in to side of trusses at least 5 in. above the bottom face.
b. Cross Tees or Channels — Nom 4 ft long cross tees, with 15/16 in. or 1-1/2 in. wide face, or nom 4 ft long cross channels, with 1-1/2 in. wide face, either spaced 16 in. OC, installed perpendicular to the main runners. Additional cross tees or channels used 8 in. from each side of butted gypsum board end joints. The cross tees or channels may be riveted or screw-attached to the wall angle or channel to facilitate the ceiling installation.
c. Wall Angle or Channel — Painted or galv steel angle with 1 in. legs or channel with 1 in. legs, 1-9/16 in. deep attached to walls at perimeter of ceiling with fasteners 16 in. OC. To support steel framing member ends and for screw-attachment of the gypsum panel.

CGC INC — Type DGL or RX

USG INTERIORS LLC — Type DGL or RX

6C. Steel Framing Members* — (Not Shown) — As an alternate to Item 6.
a. Furring Channels — Hat-shaped furring channels, 7/8 in. deep by 2-5/8 in. wide at the base and 1-1/4 in. wide at the face, formed from No. 25 ga. galv steel, spaced max. 16 in. OC perpendicular to trusses and Cold Rolled Channels (Item 6Cb). Furring channels secured to Cold Rolled Channels at every intersection with a 1/2 in. pan head self-drilling screw through each furring channel leg. Ends of adjoining channels overlapped 4 in. and tied together with two double strand No. 18 SWG galv steel wire ties, one at each end of overlap. Supplemental furring channels at base layer and outer layer gypsum board butt joints are not required. Batts and Blankets draped over furring channels as described in Item 5. Two layers of gypsum board attached to furring channels as described in Item 7.
b. Cold Rolled Channels — 1-1/2 in. by 1/2 in., formed from No. 16 ga. galv steel, positioned vertically and parallel to trusses, friction-fitted into the channel caddy on the Steel Framing Members (Item 6Cd). Adjoining lengths of cold rolled channels lapped min. 6 in. and wire-tied together with two double strand 18 SWG galv steel wire ties, one at each end of overlap.
c. Blocking — Where truss design does not permit direct, full contact of the hanger bracket, a piece of nominal 2 by 4 in. lumber (blocking), min. 6 in. long to permit full contact of the hanger bracket, to be secured vertically to the side of the truss (Item 2) at the top and bottom of the blocking at each Steel Framing Member (Item 6Cd) location.
d. Steel Framing Members* — Hangers spaced 48 in. OC. max along truss, and secured to the blocking (Item 6Cc) on alternating trusses with a single 5/16 in. by 2 in. hex head lag bolt or four #6 1-1/4 in. drywall screws through mounting hole(s) on the hanger bracket. The two 1/4 in. long steel teeth on the hanger are embedded in the side of the blocking. Hanger positioned on blocking and leveling bolt height adjusted such that furring channels are flush with bottom of trusses before gypsum board installation. Spring gauge of hanger chosen per manufacturer's instructions.

KINETICS NOISE CONTROL INC — Type ICW

6D. Steel Framing Members* — (Not Shown) — As an alternate to Item 6.
a. Furring Channels — Formed of No. 25 MSG galv steel, 2-3/8 in. wide by 7/8 in. deep, spaced 16 in. OC perpendicular to wood structural members. When insulation, Items 5 or 5A is applied over the furring channel/gypsum panel ceiling membrane, the furring channel spacing shall be reduced to 12 in. OC. Channels secured to trusses as described in Item b. Ends of adjoining channels overlapped 6 in. and tied together with double strand of No. 18 AWG galv steel wire near each end of overlap.
b. Steel Framing Members* — Used to attach furring channels (Item a) to trusses (Item 2). Clips spaced 48 in. OC, and secured to the bottom chord of alternating trusses with two No. 8 x 2-1/2 in. course drywall screws, one through the hole at each end of the clip. When insulation, Items 5 or 5A is applied over the furring channel/gypsum panel ceiling membrane, the clip spacing shall be reduced to 24 in. OC and secured to consecutive trusses. Furring channels are friction fitted into clips. Adjoining channels are overlapped as described in Item a. As an alternate, ends of adjoining channels may be overlapped 6 in. and secured together with two self-tapping No. 6 framing screws, min 7/16 in. long at the midpoint of the overlap, with one screw on each flange of the channel. Additional clips required to hold furring channel that supports the gypsum board butt joints, as described in Item 7. Two layers of gypsum board required as described in Item 7. Not evaluated for use with Item 5B.

KINETICS NOISE CONTROL INC — Type Isomax

6E. Steel Framing Members* — (Not Shown) — As an alternate to Item 6.
a. Furring Channels — Formed of No. 25 MSG galv steel, 2-3/8 in. wide by 7/8 in. deep, spaced 16 in. OC perpendicular to wood structural members. When insulation, Items 5 or 5A is applied over the furring channel/gypsum panel ceiling membrane, the furring channel spacing shall be reduced to 12 in. OC. Channels secured to trusses as described in Item b. Ends of adjoining channels overlapped 6 in. and tied together with double strand of No. 18 AWG galvanized steel wire near each end of overlap.
b. Steel Framing Members* — Used to attach furring channels (Item a) to trusses (Item 2). Clips spaced 48 in. OC, and secured to the bottom chord of alternating trusses with one No. 8 x 2-1/2 in. coarse drywall screw through center grommet. When insulation, Items 5 or 5A is applied over the furring channel/gypsum panel ceiling membrane, the clip spacing shall be reduced to 24 in. OC and secured to consecutive trusses. Furring channels are friction fitted into clips. Adjoining channels are overlapped as described in Item a. As an alternate, ends of adjoining channels may be overlapped 6 in. and secured together with two self-tapping No. 6 framing screws, min 7/16 in. long at the midpoint of the overlap, with one screw on each flange of the channel. Additional clips required to hold furring channel that supports the gypsum board butt joints, as described in Item 7. Not evaluated for use with Item 5B.

PLITEQ INC — Type Genie Clip

6F. Steel Framing Members* — (Not Shown) — As an alternate to Items 6, furring channels and Steel Framing Members as described below.
a. Furring Channels — Formed of No. 25 MSG galv steel, 2-5/8 in. wide by 7/8 in deep, spaced 16 in OC, perpendicular to joists. When insulation, Items 5 or 5A is applied over the furring channel/gypsum panel ceiling membrane, the furring channel spacing shall be reduced to 12 in. OC. Channels secured to joists as described in Item b.
b. Steel Framing Members* — Used to attach furring channels (Item a) to the trusses (Item 2). Clips spaced at 48" OC and secured to the bottom of the joists with one 2 in. Coarse Drywall Screw with 1 in. diam washer through the center hole. Furring channels are then friction fitted into clips. Ends of channels are overlapped 6" and tied together with double strand of No. 18 AWG galvanized steel wire. Additional clips are required to hold furring channel that supports the gypsum board butt joints as described in Item 7.

STUDCO BUILDING SYSTEMS — RESILMOUNT Sound Isolation Clips - Type A237 or A237R

6G. Steel Framing Members* — (Not Shown) — As an alternate to Item 6 — Not for use with Items 5, 5A or 5B — Main runners nom 12 ft long, spaced 72 in. OC. Main runners suspended by min 12 SWG galv steel hanger wires spaced 48 in. OC. Cross tees, nom 6 ft long, installed perpendicular to main runners and spaced 24 in. OC. Additional 6 ft long cross tees required at each gypsum board end joint with butted gypsum board end joints centered between cross tees spaced 8 in. OC. The main runners and cross tees may be riveted or screw attached to the wall angle or channel to facilitate the ceiling installation.

USG INTERIORS LLC — Type DGL or RX

6H. Resilient Channels — For Use With Item 7A - Formed from min 25 MSG galv steel installed perpendicular to trusses and spaced 16 in. OC. Channels secured to each truss with 1-5/8 in. long Type S bugle head steel screws. Channels overlapped 4 in. at splices. Two channels, spaced 6 in. OC, oriented opposite each gypsum panel end joint. Additional channels shall extend min 6 in. beyond each side edge of panel. Insulation, Item 5D is applied over the resilient channel/gypsum panel ceiling membrane.
6I. Steel Framing Members* — (Not Shown) — As an alternate to Item 6, furring channels and Steel Framing Members as described below.
a. Furring Channels — Formed of No. 25 MSG galvanized steel, 2-1/2 in. wide by 7/8 in deep, spaced 16 in OC, perpendicular to trusses. When insulation, Items 5 or 5A is applied over the furring channel/gypsum panel ceiling membrane, the furring channel spacing shall be reduced to 12 in. OC. Channels secured to trusses as described in Item b.
b. Steel Framing Members* — Used to attach furring channels (Item 6Ia) to the trusses (Item 2). Clips spaced 48 in. OC on alternating trusses and secured to the bottom chord of the trusses with one 2-1/2 in. coarse drywall screw through the center grommet in accordance with the manufacturer's installation instructions. Furring channels are then friction fitted into clips. Ends of channels are overlapped 6 in. and tied together with double strand of No. 18 AWG galvanized steel wire. Additional clips are required to hold the furring channel that supports one end of the gypsum board butt joints as described in Item 7.

REGUPOL AMERICA — Type SonusClip

7. Gypsum Board* — Nom 5/8 in. thick, 48 in. wide gypsum panels. When resilient channels (Item 6) are used, gypsum panels installed with long dimension perpendicular to resilient channels. Gypsum panels secured with 1 in. long Type S bugle head steel screws spaced 12 in. OC and located a min of 1/2 in. from side joints and 3 in. from the end joints. When insulation (Items 5 or 5A) is applied over the resilient channel/gypsum panel ceiling membrane screw spacing shall be reduced to 8 in. OC. When insulation (Item 5C or 5E) is applied to the underside of the subflooring, screw spacing shall be reduced to 8 in. OC and minimum 1-1/4 in. long Type S screws to install gypsum to the resilient channels (Item 6), and butted end joints shall be staggered min. 2 ft within the assembly, and occur midway between the continuous furring channels. End joints secured to both resilient channels as shown in end joint detail. When Steel Framing Members (Item 6A) are used, gypsum panels installed with long dimensions perpendicular to furring channels. Panels attached to the furring channels using 1 in. long Type S bugle-head steel screws spaced 8 in. OC along butted end joints and in the field of the panel. Butted end joints shall be staggered min. 2 ft within the assembly, and occur midway between the continuous furring channels. Each end of each gypsum panel shall be supported by a single length of furring channel equal to the width of the gypsum panel plus 6 in. on each end. The two support furring channels shall be spaced approximately 3-1/2 in. OC, and be attached to underside of the truss with one clip at each end of the channel. When Steel Framing Members* (Item 6B) are used, gypsum panels installed with long dimension perpendicular to cross tees with side joints centered along main runners and end joints centered along cross tees. Panels fastened to cross tees with 1 in. long Type S bugle-head screws spaced in the field and 8 in. OC along end joints. Panels fastened to main runners with 1 in. long Type S bugle-head screws spaced midway between cross tees. Screws along sides and ends of panels spaced 3/8 to 1/2 in. from panel edge. End joints of panels shall be staggered with spacing between joints on adjacent panels not less than 4 2 ft OC. When Fiber, Sprayed (Items 5A or 5B) is used, two layers of nom 5/8 in. thick, 4 ft wide gypsum board are installed with long dimensions perpendicular to furring channels. Base layer gypsum board secured with 1 in. long Type S bugle head steel screws spaced 12 in. OC and located a min of 1/2 in. from side joints and 3 in. from the end joints. End joints secured to both resilient channels as shown in end joint detail. Outer layer gypsum board secured with 1-5/8 in. long Type S bugle head steel screws spaced 12 in. OC and located a min of 1/2 in. from side joints and 3 in. from the end joints. Outer layer shall be finished as described in Item 8. When both Steel Framing Members (Item 6A) and Fiber, Sprayed (Items 5A or 5B) are used, furring channels spaced 12 in. OC and two layers of nom 5/8 in. thick, 4 ft wide gypsum board are installed with long dimension perpendicular to furring channels. Base layer secured to furring channels with nom 1 in. long Type S bugle head screws spaced 8 in. OC along butted end joints and in the field of the board. Butted end joints shall be staggered min. 2 ft within the assembly, and occur midway between the continuous furring channels. Each end of each gypsum board shall be supported by a single length of furring channel equal to the width of the gypsum board plus 6 in. on each end. The two support furring channels shall be spaced approximately 3-1/2 in. OC, and be attached to the underside of the truss with one clip at each end of the channel. Outer layer secured to furring channels using 1-5/8 in. long Type S screws spaced 8 in. OC and 1-1/2 in. from the end joint. Butted end joints to be offset a min. of 8 in. from base layer end joints. Butted side joints of outer layer to be offset min. 18 in. from butted side joints of base layer. When Steel Framing Members (Item 6C) are used, two layers of nom 5/8 in. thick, 4 ft wide gypsum board are installed with long dimensions perpendicular to furring channels (Item 6Ca). Base layer attached to the furring channels using 1 in. long Type S bugle head steel screws spaced 8 in. OC along butted end joints and 12 in. OC in the field of the board. Butted end joints centered on the continuous furring channels. Butted base layer end joints to be offset a min of 16 in. in adjacent courses. Outer layer attached to the furring channels using 1-5/8 in. long Type S bugle head steel screws spaced 8 in. OC at butted end joints and 12 in. OC in the field. Butted end joints centered on the continuous furring channels and offset a min of 16 in. from butted end joints of base layer. Butted side joints of outer layer to be offset min 16 in. from butted side joints of base layer. When Steel Framing Members (Item 6D) are used, two layers of nom 5/8 in. thick, 4 ft wide gypsum board are installed with long dimensions perpendicular to furring channels. Base layer attached to the furring channels using 1 in. long Type S bugle-head steel screws spaced 12 in. OC in the field of the board. Butted end joints shall be staggered min 2 ft. within the assembly, and occur midway between the continuous furring channels. Each end of each gypsum board shall be supported by a single length of furring channel equal to the width of the gypsum board plus 6 in. on each end. The two support furring channels shall be spaced approximately 4 in. OC, and be attached to underside of the truss with one Isomax clip at each end of the channel. Screw spacing along the gypsum board butt joint shall be 8

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Design No. L563

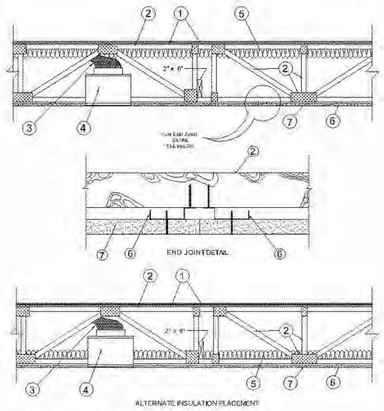
November 28, 2018

Unrestrained Assembly Rating - 1/2 Hr, 1 Hr (See Item 1, System 1)

Finish Rating - 25 Min (See Items 5 or 5A and 7), 20 Min. (See Items 6E and 7A)

This design was evaluated using a load design method other than the Limit States Design Method (e.g., Working Stress Design Method). For jurisdictions employing the Limit States Design Method, such as Canada, a load restriction factor shall be used — See Guide BXUV or BXUV7

* Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.



1. Flooring System — The flooring system shall consist of one of the following:

System No. 1

Subflooring — Nom 23/32 in. thick wood structural panels installed perpendicular to trusses with end joints staggered. Plywood panels secured to trusses with construction adhesive and No. 6d ringed shank nails spaced 12 in. OC along each truss. TetraGRIP™ nails measuring 2-3/8 in. long, 0.113 in. diameter, 0.272 in. round head, and helically threaded shank with barbed features on the helix meeting ASTM F1667 and having equal or greater withdrawal and lateral resistance strength may be substituted for the 6d nails. Staples having equal or greater withdrawal and lateral resistance strength may be substituted for the 6d nails.

Vapor Barrier - (Optional) — Nom 0.030 in. thick commercial asphalt saturated felt.

Finish Flooring — Min 1 by 4 in. T & G lumber fastened diagonally to trusses, or min 15/32 in. thick wood structural panels, min grade "Underlayment" or "Single Floor". Face grain of plywood or strength axis of panel to be perpendicular to trusses with joints staggered.

System No. 2

Subflooring — Min 23/32 in. thick T & G wood structural panels installed perpendicular to trusses with end joints staggered 4 ft. Plywood or nonveneer APA rated panels secured to trusses with construction adhesive and No. 6d ringed shank nails spaced 12 in. OC along each truss. TetraGRIP™ nails measuring 2-3/8 in. long, 0.113 in. diameter, 0.272 in. round head, and helically threaded shank with barbed features on the helix meeting ASTM F1667 and having equal or greater withdrawal and lateral resistance strength may be substituted for the 6d nails. Staples having equal or greater withdrawal and lateral resistance strength may be substituted for the 6d nails.

Floor Mat Materials* - (Optional) — Floor mat material nom 5/64 in. (2 mm) thick adhered to subfloor with Hacker Floor Primer. Primer to be applied to the surface of the mat prior to the placement of a min 1 in. of floor-topping mixture.

ECORE INTERNATIONAL INC — Type QTscu 4002

HACKER INDUSTRIES INC — Type Hacker Sound-Mat

Alternate Floor Mat Materials - (Optional) — Floor mat material nom 1/4 in. (6 mm) thick adhered to subfloor with Hacker Floor Primer. Primer to be applied to the surface of the mat prior to the placement of a min 1-1/4 in. (32 mm) of floor-topping mixture.

ECORE INTERNATIONAL INC — Type QTrbm 3006-3

HACKER INDUSTRIES INC — Type Hacker Sound-Mat II.

Alternate Floor Mat Materials - (Optional)— Floor mat material nom 1/8 in. (3 mm) thick loose laid over the subfloor. Floor topping thickness shall be a min of 3/4 in. (19 mm)

HACKER INDUSTRIES INC — FIRM-FILL SCM 125

Alternate Floor Mat Materials - (Optional)— Floor mat material nom 1/4 in. (6 mm) thick loose laid over the subfloor. Floor topping thickness shall be a min of 1 in. (25 mm)

HACKER INDUSTRIES INC — Type FIRM-FILL SCM 250, Quiet Qurl 55/025

Alternate Floor Mat Materials - (Optional)— Floor mat material nom 3/8 in. (10 mm) thick loose laid over the subfloor. Floor topping thickness shall be a min of 1-1/4 in. (32 mm)

HACKER INDUSTRIES INC — FIRM-FILL SCM 400, Quiet Qurl 60/040

Alternate Floor Mat Materials - (Optional) — Floor mat material nom 3/4 in. (19 mm) thick loose laid over the subfloor. Floor topping thickness shall be a min of 1-1/2 in. (38 mm)

HACKER INDUSTRIES INC — Type FIRM-FILL SCM 750, Quiet Qurl 65/075

Metal Lath (Optional) — For use with 3/8 in. (10 mm) floor mat materials, 3/8 in. expanded steel diamond mesh, 3.4 lbs/sq yd placed over the floor mat material. Hacker Floor Primer to be applied prior to the placement of the metal lath. When metal lath is used, floor topping thickness a nom 1-1/4 in. over the floor mat.

Finish Flooring - Floor Topping Mixture* — Min 3/4 in. thickness of floor topping mixture having a min compressive strength of 1100 psi. Mixture shall consist of 6.8 gal of water to 80 lbs of floor topping mixture to 1.9 cu ft of sand.

HACKER INDUSTRIES INC — Firm-Fill Gypsum Concrete, Firm-Fill 2010, Firm-Fill 3310, Firm-Fill 4010, Firm-Fill High Strength, Gyp-Span Radiant

System No. 3

Subflooring — Min 23/32 in. thick T & G wood structural panels installed perpendicular to trusses with end joints staggered 4 ft. Plywood or nonveneer APA rated panels secured to trusses with construction adhesive and No. 6d ringed shank nails spaced 12 in. OC along each truss. TetraGRIP™ nails measuring 2-3/8 in. long, 0.113 in. diameter, 0.272 in. round head, and helically threaded shank with barbed features on the helix meeting ASTM F1667 and having equal or greater withdrawal and lateral resistance strength may be substituted for the 6d nails. Staples having equal or greater withdrawal and lateral resistance strength may be substituted for the 6d nails.

Finish Floor - Mineral and Fiber Board* — Min 1/2 in. thick, supplied in sizes ranging from 3 ft by 4 ft to 8 ft by 12 ft. All joints to be staggered a min of 12 in. with adjacent sub-floor joints.

HOMASOTE CO — Type 440-32 Mineral and Fiber Board

System No. 4

Subflooring — Min Nom 23/32 in. thick wood structural panels installed perpendicular to trusses with end joints staggered. Plywood or panels secured to trusses with construction adhesive and No. 6d ringed shank nails spaced 12 in. OC along each truss. TetraGRIP™ nails measuring 2-3/8 in. long, 0.113 in. diameter, 0.272 in. round head, and helically threaded shank with barbed features on the helix meeting ASTM F1667 and having equal or greater withdrawal and lateral resistance strength may be substituted for the 6d nails. Staples having equal or greater withdrawal and lateral resistance strength may be substituted for the 6d nails.

Vapor Barrier - (Optional) — Nom 0.010 in. thick commercial asphalt saturated felt.

Finish Flooring — Min 1 by 4 in. T & G lumber fastened diagonally to trusses, or min 15/32 in. thick wood structural panels, min grade "Underlayment" or "Single Floor". Face grain of plywood or strength axis of panel to be perpendicular to trusses with joints staggered.

UNITED STATES GYPSUM CO — Types LRK, HSLRK, CSD

LATICRETE SUPERCAP L L C — Types LRK, HSLRK

USG MEXICO S A DE C V — Types LRK, HSLRK, CSD

Floor Mat Materials* — (Optional) - Floor mat material loose laid over the subfloor. Refer to manufacturer's instructions regarding the minimum thickness of floor topping over each floor mat material.

UNITED STATES GYPSUM CO — Types SAM, LEVELROCK® Brand Sound Reduction Board, LEVELROCK® Brand Floor Underlayment SRM-25

Alternate Floor Mat Materials* - (Optional) — Nom 3/8 in. thick floor mat material loose laid over the subfloor.

GRASSWORX L L C — Type SC50

System No. 5

Subflooring — Min 23/32 in. thick T & G wood structural panels installed perpendicular to trusses with end joints staggered 4 ft. Plywood or nonveneer APA rated panels secured to trusses with construction adhesive and No. 6d ringed shank nails spaced 12 in. OC along each truss. TetraGRIP™ nails measuring 2-3/8 in. long, 0.113 in. diameter, 0.272 in. round head, and helically threaded shank with barbed features on the helix meeting ASTM F1667 and having equal or greater withdrawal and lateral resistance strength may be substituted for the 6d nails. Staples having equal or greater withdrawal and lateral resistance strength may be substituted for the 6d nails.

Vapor Barrier - (Optional) — Nom 0.030 in. thick commercial asphalt saturated felt.

Design No. L563 (continued)

Finish Flooring - Floor Topping Mixture* — Min 1-1/2 in. thickness of floor topping mixture having a min compressive strength of 1000 psi and a cast density of 100 plus or minus 5 pcf. Foam concentrate mixed 40:1 by volume with water and expanded at 100 psi through nozzle. Mixture shall consist of 1.4 cu feet of preformed foam concentrate to 94 lbs Type I Portland cement, 300 lbs of sand with 5-1/2 gal of water.

ELASTIZELL CORP OF AMERICA — Type FF

System No. 6

Deleted.

System No. 7

Subflooring — Min 23/32 in. thick T & G wood structural panels installed perpendicular to trusses with end joints staggered 4 ft. Plywood or nonveneer APA rated panels secured to trusses with construction adhesive and No. 6d ringed shank nails spaced 12 in. OC along each truss. TetraGRIP™ nails measuring 2-3/8 in. long, 0.113 in. diameter, 0.272 in. round head, and helically threaded shank with barbed features on the helix meeting ASTM F1667 and having equal or greater withdrawal and lateral resistance strength may be substituted for the 6d nails. Staples having equal or greater withdrawal and lateral resistance strength may be substituted for the 6d nails.

Vapor Barrier - (Optional) — Nom 0.030 in. thick commercial asphalt saturated felt.

Finish Flooring - Floor Topping Mixture* — Min 1-1/2 in. thickness of floor topping mixture having a min compressive strength of 1000 psi and a cast density of 100 plus or minus 5 pcf. Foam concentrate mixed 40:1 by volume with water and expanded at 100 psi through nozzle. Mixture shall consist of 1.2 cu feet of preformed foam concentrate to 94 lbs Type I Portland cement, 300 lbs of sand with 5.5 gal of water.

AERIX INDUSTRIES — Floor-Topping Mixture

System No. 8

Subflooring — Min 23/32 in. thick T & G wood structural panels installed perpendicular to trusses with end joints staggered 4 ft. Plywood or nonveneer APA rated panels secured to trusses with construction adhesive and No. 6d ringed shank nails spaced 12 in. OC along each truss. TetraGRIP™ nails measuring 2-3/8 in. long, 0.113 in. diameter, 0.272 in. round head, and helically threaded shank with barbed features on the helix meeting ASTM F1667 and having equal or greater withdrawal and lateral resistance strength may be substituted for the 6d nails. Staples having equal or greater withdrawal and lateral resistance strength may be substituted for the 6d nails.

Finish Flooring - Floor Topping Mixture* — Min 3/4 in. thickness of floor topping mixture having a min compressive strength of 1000 psi. Mixture shall consist of 5 to 8 gal of water to 80 lbs of floor topping mixture to 2.1 cu ft of sand.

ULTRA QUIET FLOORS — Types UQF-A, UQF-Super Blend, UQF-Plus 200

System No. 9

Subflooring — Min 23/32 in. thick T & G wood structural panels installed perpendicular to trusses with joints staggered 4 ft. Plywood or nonveneer APA rated panels secured to trusses with construction adhesive and No. 6d ring shank nails spaced 12 in. OC along each truss. TetraGRIP™ nails measuring 2-3/8 in. long, 0.113 in. diameter, 0.272 in. round head, and helically threaded shank with barbed features on the helix meeting ASTM F1667 and having equal or greater withdrawal and lateral resistance strength may be substituted for the 6d nails. Staples having equal or greater withdrawal and lateral resistance strength may be substituted for the 6d nails.

Vapor Barrier - (Optional) — Nom 0.030 in. thick commercial asphalt saturated felt.

Finish Flooring - Floor Topping Mixture* — Min 3/4 in. thickness of floor topping mixture having a minimum compressive strength of 1500 psi. Refer to manufacturer's instructions accompanying the material for specific mix design.

MAXXON CORP — Type D-C, GC, GC2000, L-R, T-F, CT, SS

RAPID FLOOR SYSTEMS — Type RF, RFP, RFU, Ortecrete

Floor Mat Materials* - (Optional) — Floor mat material loose laid over the subfloor. Refer to manufacturer's instructions regarding the minimum thickness of floor topping over each floor mat material.

MAXXON CORP — Type Acoustil-Mat 1/8, Acoustil-Mat 1/4, Acoustil-Mat 1/4 Premium, Acoustil-Mat 3/8, Acoustil-Mat 3/8 Premium, Acoustil-Mat 3/4, Acoustil-Mat 3/4 Premium, Acoustil-Top.

Floor Mat Reinforcement — (Optional) Refer to manufacturer's instructions regarding minimum thickness of floor topping for use with floor mat reinforcement.

Metal Lath - (Optional) 3/8 in. expanded galvanized steel diamond mesh, 3.4 lbs/sq yd loose laid over the floor mat material.

Fiber Glass Reinforcement — (Optional) - 0.015 in. thick PVC coated non-woven fiberglass mesh, 0.368 lbs./sq. yd loose laid over the floor mat material.

System No. 10

Subflooring — Min 23/32 in. thick plywood with T & G edges along the 8 ft sides and exterior glue, or non-veneer APA Rated "Sturd-I-Floor" T & G panels per APA specifications PRP-108. Plywood or non-veneer APA rated panels secured to trusses with construction adhesive and No. 6d ringed shank nails spaced 12 in. OC along each truss. TetraGRIP™ nails measuring 2-3/8 in. long, 0.113 in. diameter, 0.272 in. round head, and helically threaded shank with barbed features on the helix meeting ASTM F1667 and having equal or greater withdrawal and lateral resistance strength may be substituted for the 6d nails. Staples having equal or greater withdrawal and lateral resistance strength may be substituted for the 6d nails.

Vapor Barrier — (Optional) Nom 0.030 in. thick commercial asphalt saturated felt.

Finish Flooring - Floor Topping Mixture* — Min 3/4 in. thickness of floor topping mixture having a min compressive strength of 1000 psi. Refer to manufacturer's instructions accompanying the material for specific mix design.

FORMULATED MATERIALS LLC — Types FR-25, FR-30, and SiteMix

Floor Mat Material* — (Optional) Floor mat material nominal 2 - 9.5 mm thick loose laid over the subfloor. Floor topping shall be a min of 3/4 in.

FORMULATED MATERIALS LLC — Types M1, M2, M3, R1, and R2

System No. 11

Subflooring — Min 23/32 in. thick wood structural panels, min grade "C-D" or "Sheathing". Face grain of plywood or strength axis of panels to be perpendicular to the joists with joints staggered.

Vapor Barrier — (Optional) - Commercial asphalt saturated felt, 0.030 in. thick.

Vapor Barrier — (Optional) - Nom 0.010 in. thick commercial rosin-sized building paper.

Finish Flooring* — Min 3/4 in. thickness of any Floor Topping Mixture bearing the UL Classification Marking as to Fire Resistance. See Floor- and Roof-Topping Mixtures (CCOX) category for names of Classified Companies.

Floor Mat Materials* — (Optional) - Nom. 1/4 in. thick loose laid over the subfloor. Floor topping thickness shall be a minimum of 3/4 in.

KEENE BUILDING PRODUCTS CO INC — Type Quiet Qurl 55/025 and Quiet Qurl 55/025 N

Alternate Floor Mat Materials* — (Optional) - Floor mat material Nom. 3/8 in. thick loose laid over the subfloor. Floor topping thickness shall be a minimum of 1 in.

KEENE BUILDING PRODUCTS CO INC — Type Quiet Qurl 60/040 and Quiet Qurl 60/040 N

Alternate Floor Mat Materials* — (Optional) - Floor mat material Nom. 3/4 in. thick loose laid over the subfloor. Floor topping thickness shall be a minimum of 1-1/2 in.

KEENE BUILDING PRODUCTS CO INC — Type Quiet Qurl 65/075, Quiet Qurl 65/075 N

Alternate Floor Mat Materials* — (Optional) - Floor mat material Nom. 1/8 in. thick loose laid over the subfloor. Floor topping thickness shall be a minimum of 3/4 in.

KEENE BUILDING PRODUCTS CO INC — Type Quiet Qurl 52/013 and Quiet Qurl 52/013 N

Alternate Floor Mat Materials* — (Optional) - Floor mat material Nom. 1/4 in. entangled net core with a compressible fabric attached to the bottom loose laid over the subfloor. Floor topping thickness shall be a minimum of 1 in.

KEENE BUILDING PRODUCTS CO INC — Quiet Qurl 55/025 MT and Quiet Qurl 55/025 N MT

System No. 12

Subflooring — Min 23/32 in. thick wood structural panels, min grade "C-D" or "Sheathing". Face grain of plywood or strength axis of panels to be perpendicular to the joists with joints staggered.

Vapor Barrier — (Optional) - Commercial asphalt saturated felt, 0.030 in. thick.

Vapor Barrier — (Optional) - Nom 0.010 in. thick commercial rosin-sized building paper.

Finish Flooring — Min 3/4 in. thickness of lightweight insulating concrete with Perlite Aggregate* or Vermiculite Aggregate*, or gypsum concrete.

See Perlite Aggregate (CFFX) and Vermiculite Aggregate (CJZZ) categories for names of manufacturers.

Floor Mat Materials* — (Optional) - Nom. 1/4 in. thick loose laid over the subfloor. Floor topping thickness shall be a minimum of 3/4 in.

KEENE BUILDING PRODUCTS CO INC — Type Quiet Qurl 55/025 and Quiet Qurl 55/025 N

Alternate Floor Mat Materials* — (Optional) - Floor mat material Nom. 3/8 in. thick loose laid over the subfloor. Floor topping thickness shall be a minimum of 1 in.

KEENE BUILDING PRODUCTS CO INC — Type Quiet Qurl 60/040 and Quiet Qurl 60/040 N

Alternate Floor Mat Materials* — (Optional) - Floor mat material Nom. 3/4 in. thick loose laid over the subfloor. Floor topping thickness shall be a minimum of 1-1/2 in.

KEENE BUILDING PRODUCTS CO INC — Type Quiet Qurl 65/075, Quiet Qurl 65/075 N

Alternate Floor Mat Materials* — (Optional) - Floor mat material Nom. 1/8 in. thick loose laid over the subfloor. Floor topping thickness shall be a minimum of 3/4 in.

KEENE BUILDING PRODUCTS CO INC — Type Quiet Qurl 52/013 and Quiet Qurl 52/013 N

Alternate Floor Mat Materials* — (Optional) - Floor mat material Nom. 1/4 in. entangled net core with a compressible fabric attached to the bottom loose laid over the subfloor. Floor topping thickness shall be a minimum of 1 in.

KEENE BUILDING PRODUCTS CO INC — Quiet Qurl 55/025 MT and Quiet Qurl 55/025 N MT

System No. 13

Subflooring — Min 23/32 in. thick plywood with T & G edges along the 8 ft sides and exterior glue, or nonveneer APA Rated "Sturd-I-Floor" T & G panels per APA specifications PRP-108. Plywood or nonveneer APA rated panels secured to trusses with construction adhesive and No. 6d ringed shank nails spaced 12 in. OC along each truss. TetraGRIP™ nails measuring 2-3/8 in. long, 0.113 in. diameter, 0.272 in. round head, and helically threaded shank with barbed features on the helix meeting ASTM F1667 and having equal or greater withdrawal and lateral resistance strength may be substituted for the 6d nails. Staples having equal or greater withdrawal and lateral resistance strength may be substituted for the 6d nails.

Vapor Barrier — (Optional) — Nom 0.030 in. thick commercial asphalt saturated felt.

Finish Flooring - Floor Topping Mixture* — Min 3/4 in. thickness of floor topping mixture having a min compressive strength of 1000 psi. Refer to manufacturer's instructions accompanying the material for specific mix design.

Design No. L563 (continued)

ACG MATERIALS — AccuCrete types NexGen, Green, Prime, B, M, and PrePour, AccuRadiant, AccuLevel types G40, G50 and SD30.

Floor Mat Material* — (Optional) — Floor mat material nominal 2 - 9.5 mm thick loose laid over the subfloor. Floor topping shall be a min of 3/4 in.

ACG MATERIALS — AccuQuiet types P80, C40, D13, D-18, D25, DX38, EM.125, EM.125S, EM.250, EM.250S, EM.375, EM.375S, EM.750, and EM.750S.

System No. 14

Subflooring — Min 23/32 in. thick plywood with T & G edges along the 8 ft sides and exterior glue, or nonveneer APA Rated "Sturd-I-Floor" T & G panels per APA specifications PRP-108. Plywood or nonveneer APA rated panels secured to trusses with construction adhesive and No. 6d ringed shank nails spaced 12 in. OC along each truss. TetraGRIP™ nails measuring 2-3/8 in. long, 0.113 in. diameter, 0.272 in. round head, and helically threaded shank with barbed features on the helix meeting ASTM F1667 and having equal or greater withdrawal and lateral resistance strength may be substituted for the 6d nails. Staples having equal or greater withdrawal and lateral resistance strength may be substituted for the 6d nails.

Vapor Barrier — (Optional) — Nom 0.030 in. thick commercial asphalt saturated felt.

Finish Flooring - Floor Topping Mixture* — Min 3/4 in. thickness of floor topping mixture having a min compressive strength of 1000 psi. Refer to manufacturer's instructions accompanying the material for specific mix design.

DEPENDABLE LLC — GSL M3.4, GSL K2.6, GSL-CSD and GSL RH.

Floor Mat Materials* — (Optional) - Nom. 1/4 in. thick loose laid over the subfloor. Floor topping thickness shall be a minimum of 3/4 in.

KEENE BUILDING PRODUCTS CO INC — Type Quiet Qurl 55/025 and Quiet Qurl 55/025 N

Alternate Floor Mat Materials* — (Optional) - Floor mat material Nom. 3/8 in. thick loose laid over the subfloor. Floor topping thickness shall be a minimum of 1 in.

KEENE BUILDING PRODUCTS CO INC — Type Quiet Qurl 60/040 and Quiet Qurl 60/040 N

Alternate Floor Mat Materials* — (Optional) - Floor mat material Nom. 3/4 in. thick loose laid over the subfloor. Floor topping thickness shall be a minimum of 1-1/2 in.

KEENE BUILDING PRODUCTS CO INC — Type Quiet Qurl 65/075, Quiet Qurl 65/075 N

Alternate Floor Mat Materials* — (Optional) - Floor mat material Nom. 1/8 in. thick loose laid over the subfloor. Floor topping thickness shall be a minimum of 3/4 in.

KEENE BUILDING PRODUCTS CO INC — Type Quiet Qurl 52/013 and Quiet Qurl 52/013 N

Alternate Floor Mat Materials* — (Optional) - Floor mat material Nom. 1/4 in. entangled net core with a compressible fabric attached to the bottom loose laid over the subfloor. Floor topping thickness shall be a minimum of 1 in.

KEENE BUILDING PRODUCTS CO INC — Quiet Qurl 55/025 MT and Quiet Qurl 55/025 N MT

System No. 15

Subflooring — Min 15/32 in. thick wood structural panels, min grade "Underlayment" or "Single-Floor". Face grain of plywood or strength axis of panel to be perpendicular to joists with joints staggered. Plywood or non-veneer APA rated panels secured to trusses with construction adhesive and No. 6d ringed shank nails spaced 12 in. OC along each truss.
Wall and Partition Facings and Accessories* - Sound Barrier (Optional) — Acoustic Sleeper pads stapled to the top of the subfloor and centered over wood trusses. Acoustic Sleeper pads are to be spaced appropriately so that the finish floor panels are fastened through Acoustic Sleeper pads to trusses.

STC ARCHITECTURAL PRODUCTS L L C DBA STC SOUND CONTROL — Acoustic Sleeper

Finish Floor — Min 15/32 in. thick wood structural panels, min grade "Underlayment" or "Single-Floor". Face grain of plywood or strength axis of panel to be perpendicular to joists with joints staggered. Butt joints of panels have the option of being sealed with any UL Classified caulk or sealant found under - Fill, Void or Cavity Materials* (XHHW).

System No. 16

Subflooring - Structural Cement-Fiber Units* — Nominal 19 mm (3/4 in.) thick tongue and groove structural cement-fiber units. Long dimension of panels to be perpendicular to trusses with end joints staggered. Panels fastened to the trusses with #10 self-drilling, self-tapping cement board screws 1-3/4 in. long. Screws shall be spaced 6 in. OC along the perimeter of each sheet and 12 in. OC in the field of each sheet. Screws shall be spaced 1/2 in. from end joints and 1 in. from side joints.

ECTEK INTERNATIONAL INC — Armoroc Panel

Subflooring (Alternate) — Building Units* — Nom 3/4 in. thick, tongue and grooved boards. Long dimension of boards to be perpendicular to trusses with end joints staggered a min of 4 ft. and centered over the trusses. Boards secured to trusses with 1-1/4 in. long self-drilling, self- tapping screws spaced a max of 12 in. OC in the field with screws located 1 in. from long edge, and max 8 in. OC along the end joints with screws located 1/2 in. from end joint.

ECTEK INTERNATIONAL INC — Type MegaBoard

Vapor Barrier - (Optional) — Nom 0.030 in. thick commercial asphalt saturated felt.
Finish Flooring — Min 1 by 4 in. T & G lumber fastened diagonally to trusses, or min 15/32 in. thick wood structural panels, min grade "Underlayment" or "Single Floor". Face grain of plywood or strength axis of panel to be perpendicular to trusses with joints staggered.

System No. 17

Structural Cement-Fiber Units* — For use with UNITED STATES GYPSUM CO Types C, IP-X2, IPC-AR and ULIX gypsum boards only. Nom 3/4 in. thick, with long edges tongue and grooved. Long dimension of panels to be perpendicular to wood trusses with end joints staggered a min of 2 ft and centered over the trusses. Panels secured to wood trusses with 1-5/8 in. long, No. 8, self- countersinking wood screw spaced a max of 12 in. OC in the field with a screw located 1 in. and 2 in. from each edge, and 8 in. OC on the perimeter with a screw located 2 in. from each edge, located 1/2 in. from the end edges of the panel.

UNITED STATES GYPSUM CO — Types STRUCTO-CRETE, USGSP

2. Trusses — Parallel chord trusses, spaced a max of 24 in. OC, fabricated from nom 2 by 4 lumber, with lumber oriented vertically or horizontally. Min truss depth is 12 in. when Ceiling Dampers* are not used. Min truss depth is 18 in. when Ceiling Damper* is used. Truss members secured together with min 0.036 0356 in. thick galvanized steel plates. Plates have 5/16 in. long teeth projecting perpendicular to the plane of the plate. The teeth are in pairs facing each other (made by the same punch), forming a split tooth type plate. Each tool has a chisel point on its outside edge. These points are diagonally opposite each other for each pair. The top half of each tooth has a twist for stiffness. The pairs are repeated on approx. 7/8 in. centers with four rows of teeth per inch of plate width.

3. Air Duct* (Optional) — Any UL Class 0 or Class 1 flexible air duct installed in accordance with the instructions provided by the damper manufacturer.

4. Ceiling Damper* (Optional). To be used with Air Duct Item 3. — For use with min 16 in. deep trusses Max plenum box size nom 19 in. long by 19 in. wide and 11-7/8 in. high fabricated from galv steel. Aggregate damper openings shall not exceed 128 sq in. per 100 sq ft of ceiling area. Damper installed in accordance with the manufacturers installation instructions provided with the damper.
AIRE TECHNOLOGIES INC — Models: CRD model 50 w/Boot, CRD model 50EA w/Boot, CRD model 55 w/Boot, CRD model 55 EA w/Boot.

LLOYD INDUSTRIES INC — Model CRD 50-BT, CRD 50-EA-BT, CRD 55-BT, CRD 55 EA-BT

4A. Alternate Ceiling Damper* — For use with min 18 in. deep trusses Max plenum box size nom 13 in. long by 13 in. wide and 11-7/8 in. high fabricated from galv steel. Aggregate damper openings shall not exceed 50 sq in. per 100 sq ft of ceiling area. Damper installed in accordance with the manufacturers installation instructions provided with the damper.
LLOYD INDUSTRIES INC — Model CRD 50-BT-6, CRD 50-EA-BT-6, CRD 55-BT-6, CRD 55 EA-BT-6, CRD50-w-X-BT-6

4B. Alternate Ceiling Damper* — For use with min 18 in. deep trusses Max size ceiling outlet in plenum box nom 12 in. long by 12 in. wide. Plenum box fabricated from galv steel. Aggregate damper openings shall not exceed 72 sq in. per 100 sq ft of ceiling area. Damper installed in accordance with the manufacturers installation instructions provided with the damper.
AIRE TECHNOLOGIES INC — Models: CRD model 50 w/Boot, CRD model 50EA w/Boot, CRD model 55 w/Boot, CRD model 55 EA w/Boot.

LLOYD INDUSTRIES INC — Model CRD 50-95BT, CRD 50-EA-95BT, CRD 55-95BT, CRD 55 EA-95BT

4C. Alternate Ceiling Damper* — For use with min 18 in. deep trusses. Max size ceiling outlet in plenum box nom 16 in. long by 16 in. wide. Aggregate damper openings shall not exceed 128 sq in. per 100 sq ft of ceiling area. Damper installed in accordance with the manufacturers installation instructions provided with the damper.
CROWN PRODUCTS CO INC — Models CRD50-FGPB-4.2-CP, -6.0-CP; CRD50-FGPB-4.2-EA-CP, -6.0-EA-CP.

LLOYD INDUSTRIES INC — Models CRD 50- FGPB-4.2, - 4.2 NI, -6.0, -6.0 NI; CRD50-EA-FGPB-4.2, -4.2 NI, -6.0, -6.0 NI.

4D. Alternate Ceiling Damper* — For use with min 18 in. deep trusses Max plenum box size nom 15 in. long by 15 in. wide and 11-7/8 in. high fabricated from galv steel. Aggregate damper openings shall not exceed 72 sq in. per 100 sq ft of ceiling area. Damper installed in accordance with the manufacturers installation instructions provided with the damper.
LLOYD INDUSTRIES INC — Models 45-CRD-LT-BT and 45-CRD-LTD-BT

4E. Alternate Ceiling Damper* — For use with min 18 in. deep trusses Max size ceiling outlet in plenum box nom 10 in. long by 10 in. wide. Plenum box fabricated from galv steel. Aggregate damper openings shall not exceed 50 sq in. per 100 sq ft of ceiling area. Installed in accordance with the manufacturers installation instructions provided with the damper.
LLOYD INDUSTRIES INC — Model 45-LTD-95-BT-4

4F. Alternate Ceiling Damper* — For use with min 18 in. deep trusses Max plenum box size nom 19 in. long by 15 in. wide and 11-7/8 in. high fabricated from galv steel. Aggregate damper openings shall not exceed 96 sq in. per 100 sq ft of ceiling area. Damper installed in accordance with the manufacturers installation instructions provided with the damper.
LLOYD INDUSTRIES INC — Model CRD50-w X-BT

4G. Alternate Ceiling Damper* — For use with min. 18 in. deep trusses. Max. nom area shall be 349 sq in. Max. overall length and width shall not exceed 18-11/16 in. by 18-11/16 in. with max. 16 in. by 16 in. register opening. Aggregate damper openings shall not exceed 175 sq in. per 100 sq ft of ceiling area. Damper installed in accordance with the manufacturers installation instructions provided with the damper. An aluminum or steel grille (Item 9) shall be installed in accordance with installation instructions.
MIAMI TECH INC — Model Series RxCRD, RxCRDS or RxCRPD

4H. Alternate Ceiling Damper* — For use with min 18 in. deep trusses Max plenum box size nom 19 in. long by 19 in. wide and 11-7/8 in. high fabricated from galv steel. Aggregate damper openings shall not exceed 128 sq in. per 100 sq ft of ceiling area. Damper installed in accordance with the manufacturers installation instructions provided with the damper.
METAL-FAB INC — Models MSCD-HC and MRCD-HC

5. Batts and Blankets* — (Optional) - Glass fiber or mineral wool insulation bearing the UL Classification Marking as to Surface Burning Characteristics and/or Fire Resistance. When no insulation is installed in the concealed space resilient channels (Item 6) are spaced 24 in. OC. When the resilient channels (Item 6) are spaced 16 in. OC, the insulation shall be a max of 3-1/2 in. thick, and shall be secured against the subflooring with staples at 12 in. OC or held suspended in the concealed space with 0.090 in. diam galv steel wires attached to the wood trusses at 12 in. OC. When the resilient channels are spaced a max of 12 in. OC or when the Steel Framing Members (Item 6A) are used, there is no limit in the overall thickness of insulation, and the insulation can be secured against the subflooring, held suspended in the concealed space or draped over the resilient channels (or Steel Framing Members) and gypsum panel membrane. The finished rating has only been determined when the insulation is secured to the subflooring.

5A. Loose Fill Material* — (Optional) - As an alternate to Item 5, when the resilient channels (Item 6) are spaced a max of 12 in. OC, or when the Steel Framing Members (Item 6A) are used - Any loose fill material bearing the UL Classification Marking for Surface Burning Characteristics. There is no limit in the overall thickness of insulation. The finished rating when loose fill material is used has not been determined

5B. Cavity Insulation - Batts and Blankets* or Loose Fill Material* - (Not Shown) — (As described above in Items 5 and 5A) — For Use with Item 7A — Min. 3-1/2 in thick with no limit on maximum thickness fitted in the concealed space, draped over the resilient channel (Item 6E)/gypsum board (Item 7A) ceiling membrane.

Design No. L563 (continued)

6. Resilient Channels — Formed from min 25 MSG galv steel installed perpendicular to the trusses. When insulation (Item 5) is secured to the underside of the subfloor, the resilient channels are spaced 16 in. OC. When insulation (Items 5 or 5A) is applied over the resilient channel/gypsum panel ceiling membrane, the resilient channels are spaced 12 in. OC. Channels secured to each truss with 1-1/4 in. long Type S bugle head steel screws. Channels overlapped 4 in. at splices. Two channels, spaced 6 in. OC, oriented opposite each gypsum panel end joint as shown in the above illustration. Additional channels shall extend min 6 in. beyond each side edge of panel.

6A. Alternate Steel Framing Members — (Not Shown) - As an alternate to Items 6, main runners, cross tees, cross channels and wall angle as listed below:
A. Main Runners — Nom 10 or 12 ft long, 15/16 in. or 1-1/2 in. wide face, spaced 4 ft. OC. Main runners suspended by min 12 SWG galv steel hanger wires spaced 48 in. OC. Hanger wires to be located adjacent to main runner/cross tee intersections. Hanger wires wrapped and twist-tied on 16d nails driven in to side of trusses at least 5 in. above the bottom face.
B. Cross Tees — Nom 4 ft long, 1-1/2 in. wide face, installed perpendicular to the main runners, spaced 16 in. OC. Additional cross tees or cross channels used at 8 in. from each side of butted gypsum panel end joints. The cross tees or cross channels may be riveted or screw attached to the wall angle or channel to facilitate the ceiling installation.
C. Cross Channels — Nom 4 or 12 ft long, installed perpendicular to main runners, spaced 16 in. OC.
D. Wall Angle or Channel — Painted or galv steel angle with 1 in. legs or channel with 1 in. legs, 1-9/16 in. deep attached to walls at perimeter of ceiling with fasteners 16 in. OC. To support steel framing member ends and for screw-attachment of the gypsum panel.

CGC INC — Type DGL or RX.

USG INTERIORS LLC — Type DGL or RX.

6B. Steel Framing Members* — (Not Shown) — As an alternate to Items 6 and 6A.
a. Furring Channels — Formed of No. 25 MSG galv steel, 2-3/8 in. wide by 7/8 in. deep, spaced 16 in. OC perpendicular to wood structural members. When insulation, Items 5 or 5A is applied over the furring channel/gypsum panel ceiling membrane, the furring channel spacing shall be reduced to 12 in. OC. Channels secured to trusses as described in Item b. Ends of adjoining channels overlapped 6 in. and tied together with double strand of No. 18 AWG galvanized steel wire near each end of overlap.
b. Steel Framing Members* — Used to attach furring channels (Item a) to trusses (Item 2). Clips spaced 48 in. OC, and secured to the bottom chord of alternating trusses with one No. 8 x 2-1/2 in. coarse drywall screw through center grommet. When insulation, Items 5 or 5A is applied over the furring channel/gypsum panel ceiling membrane, the clip spacing shall be reduced to 24 in. OC and secured to consecutive trusses. Furring channels are friction fitted into clips. Adjoining channels are overlapped as described in Item a. As an alternate, ends of adjoining channels may be overlapped 6 in. and secured together with two self-tapping No. 6 framing screws, min 7/16 in. long at the midpoint of the overlap, with one screw on each flange of the channel. Additional clips required to hold furring channel that supports the gypsum board butt joints, as described in Item 7.

PLITEQ INC — Type Genie Clip

6C. Steel Framing Members* — (Not Shown) - As an alternate to Items 6, 6A and 6B.
a. Furring Channels — Formed of No. 25 MSG galv steel, 2-9/16 in. or 2-23/32 in. wide by 7/8 in. deep, spaced 16 in. OC perpendicular to wood structural members. When insulation, Items 5 or 5A is applied over the furring channel/gypsum panel ceiling membrane, the furring channel spacing shall be reduced to 12 in. OC. Channels secured to trusses as described in Item b. Ends of adjoining channels overlapped 6 in. and tied together with double strand of No. 18 AWG galv steel wire near each end of overlap.
b. Steel Framing Members* — Used to attach furring channels (Item a) to trusses (Item 2). Clips spaced 48 in. OC. RSIC-1 and RSIC-1 (2.75) clips secured to alternating trusses with No. 8 x 2-1/2 in. course drywall screw through the center grommet. Furring channels are friction fitted into clips. RSIC-1 clips for use with 2-9/16 in. wide furring channels. RSIC-1 (2.75) clips for use with 2-23/32 in. wide furring channels. Adjoining channels are overlapped as described in Item a. As an alternate, ends of adjoining channels may be overlapped 6 in. and secured together with two self-tapping No. 6 framing screws, min 7/16 in. long at the midpoint of the overlap, with one screw on each flange of the channel. Additional clips required to hold furring channel that supports the g

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Design No. P522

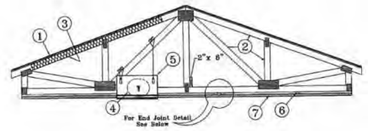
April 05, 2018

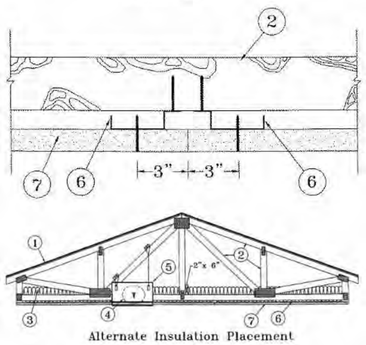
Unrestrained Assembly Rating — 1 Hr

Finish Rating — 25 Min (See Items 3 or 3A)

This design was evaluated using a load design method other than the Limit States Design Method (e.g., Working Stress Design Method). For jurisdictions employing the Limit States Design Method, such as Canada, a load restriction factor shall be used — See Guide BXUV or BXUV7

* Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.





Alternate Insulation Placement

1. Roofing System* — Any UL Class A, B or C Roofing System (TGFU) or Prepared Roof Covering (TFWZ) acceptable for use over nom 15/32 in. thick wood structural panels, min. grade "C-D" or "Sheathing". Nom 15/32 in. thick wood structural panels secured to trusses with No. 6d ringed shank nails spaced 12 in. OC along each truss. Staples having equal or greater withdrawal and lateral resistance strength may be substituted for the 6d nails. Construction adhesive may be used with either the nails or staples.

2. Trusses — Pitched or parallel chord wood trusses, spaced a max of 24 in. OC, fabricated from nom 2 by 4 lumber, with lumber oriented vertically or horizontally. Truss members secured together with min. 0.0356 in. thick galv steel plates. Plates have 5/16 in. long teeth projecting perpendicular to the plane of the plate. The teeth are in pairs facing each other (made by the same punch), forming a split tooth type plate. Each tooth has a chisel point on its outside edge. These points are diagonally opposite each other for each pair. The top half of each tooth has a twist for stiffness. The pairs are repeated on approximately 7/8 in. centers with four rows of teeth per inch of plate width. Where the truss intersects with the interior face of the exterior walls, the min truss depth shall be 5-1/4 in. with a min roof slope of 3/12 and a min. area in the plane of the truss of 21 sq/ft. Where the truss intersects with the interior face of the exterior walls, the min truss depth may be reduced to 3 in. if the batts and blankets (Item 3) are used as shown in the above illustration (Alternate Insulation Placement) and are firmly packed against the intersection of the bottom chords and the plywood sheathing.

3. Batts and Blankets* — (Optional) — Required when Item 6B is used — Glass fiber insulation, secured to the wood structural panels with staples spaced 12 in. OC or to the trusses with 0.090 in. diam galv steel wires spaced 12 in. OC. Any glass fiber insulation bearing the UL Classification Marking as to Surface Burning Characteristics and/or Fire Resistance, having a min density of 0.5 pcf. As an option, the insulation may be fitted in the concealed space, draped over the resilient channel/gypsum board ceiling membrane when resilient channels and gypsum board attachment is modified as specified in Items 6 and 7. When Steel Framing Members (Item 6B) are used, max 3-1/2 in. thick insulation shall be draped over the furring channels (Item 6Ba) and gypsum board ceiling membrane, and friction-fitted between trusses and Steel Framing Members (Item 6Bd). The finished rating has only been determined when the insulation is secured to the decking.

3A. Fiber, Sprayed* — As an alternate to Item 3 (not evaluated for use with Item 6B) — Any thickness of spray-applied cellulose insulation material, having a min density of 0.5 lb/ft3, applied with water, over the resilient channel/gypsum board ceiling membrane when resilient channels and gypsum board attachment is modified as specified in Items 6 and 7. Fiber, Sprayed is applied with moisture in accordance with the application instructions supplied with the product. The finish rating when Fiber Sprayed is used has not been determined. Alternate application method: The fiber is applied without water or adhesive in accordance with the application instructions supplied with a minimum density of 0.5 lb/ft3 over the resilient channel/gypsum board ceiling membrane when resilient channels and gypsum board attachment is modified as specified in Items 6 and 7. Alternate application method: The fiber is applied without water or adhesive to a nominal density of 3.5 lb/ft3 behind netting (Item 9) stapled to the rafters. The netting is stapled at both lower edges of the rafters creating a cavity to accept the cellulose fiber.
U S GREENFIBER L L C — INS735 & INS745 for use with wet or dry application. INS510LD, INS515LD, INS541LD, INS735, INS745, INS765LD, and INS770LD are to be used for dry application only.

3B. Foamed Plastic* — (As an alternate to Item 3 or 3A, Not Shown) — Spray foam insulation applied directly to the underside of the underside of the roofing system (Item 1). Spray foam insulation installed to a maximum thickness of 10 in. at a nominal 0.5 lb/ft3 density. When spray foam insulation is used, resilient channels (Item 6) shall be installed maximum 12 in. OC, with channels adjacent to butt joints of gypsum board (Item 7) installed at 6 in. OC to allow for maximum 3 in. spacing off ends of the gypsum board joints. Gypsum board (Item 7) to be installed using 1-1/4 in. long Type S screws, spaced maximum 8 in. OC, and butted end joints shall be staggered min. 2 ft within the assembly, and occur midway between the continuous furring channels. If used with a fire damper (Items 5 through 5H) in the concealed space, minimum 1 in. clearance to be maintained between damper housing and spray foam insulation. Not evaluated for use with Items 6A through 6F.
SES FOAM INC — Sucraseal 0.5 lb

3C. Cavity Insulation - Batts and Blankets* or Fiber, Sprayed* — (As described above) in Items 3 and 3A — (For Use with Item 7B, Not Shown) — Min. 3-1/2 in thick with no limit on maximum thickness fitted in the concealed space, draped over the resilient channel (Item 6G)/gypsum board (Item 7B) ceiling membrane.

3D. Foamed Plastic* — (As alternate to Item 3, 3A, or 3B, Not Shown) — Spray foam insulation applied directly to the underside of the roofing system (Item 1). Spray foam insulation installed to a maximum thickness of 10 in. at a nominal 0.5 lb/ft3 or 2.0 lb/ft3 density, depending on the product installed. When spray foam insulation is installed, resilient channels (Item 6) shall be installed maximum 12 in. OC, with channels adjacent to butt joints of gypsum board (Item 7) spaced maximum 3 in. away from gypsum butt joints. Gypsum board (Item 7) to be installed using minimum 1-1/4 in. long Type S screws, spaced maximum 8 in. OC, and butted end joints shall be staggered min. 2 ft within the assembly, and occur midway between the continuous furring channels. If used with a fire damper (Items 5 through 5H) in the concealed space, minimum 1 in. clearance to be maintained between damper housing and spray foam insulation. Not evaluated for use with Items 6A through 6F.
BASF CORP — Enerrite® NM, Enerrite® G, FE1788®, Sprayrite® 178, Sprayrite® 81206, Walltite® 200, Walltite® US, Walltite® US-N, and Walltite® HP+

4. Air Duct* — Any UL Class 0 or Class 1 flexible air duct installed in accordance with the instructions provided by the damper manufacturer.

5. Ceiling Damper* — Max nom area, 324 sq in. Max square size, 18 in. by 18 in. rectangular sizes not to exceed 324 sq in. with a max width of 18 in. Max damper height is 14 in. Installed in accordance with manufacturers installation instructions provided with the damper. Max damper openings not to exceed 162 sq in. per 100 sq ft of ceiling area.
C&S AIR PRODUCTS — Model RD-521

POTTORFF — Model CFD-521

5A. Alternate Ceiling Damper* — Max nom area, 196 sq in. Max square size, 14 in. by 14 in. Rectangular sizes not to exceed 196 sq in. with a max width of 26 in. Max overall damper height is 7 in. Installed in accordance with the manufacturers installation instructions provided with the damper. Max damper openings not to exceed 98 sq in. per 100 sq ft of ceiling area.
C&S AIR PRODUCTS — Model RD-521-BT

POTTORFF — Model CFD-521-BT.

5B. Alternate Ceiling Damper* — Max nom area shall be 256 sq in. with the length not to exceed 24 in. and the width not to exceed 20 in. Max height of damper shall be 17 in. Aggregate damper openings shall not exceed 128 sq in. per 100 sq ft of ceiling area. Damper installed in accordance with the manufacturers installation instructions provided with the damper. A steel grille shall be installed in accordance with installation instructions.

POTTORFF — Models CFD-521-IP, CFD-521-NP

5C. Alternate Ceiling Damper* — Ceiling damper & fan assembly. Max nom area shall be 75 sq in. with the length not to exceed 8-9/16 in. and the width not to exceed 8-3/4 in. Max height of damper shall be 9-7/8 in. Aggregate damper openings shall not exceed 38 sq in. per 100 sq ft of ceiling area. Damper shall be installed in combination with one of the fan models described in, and in accordance with, the manufacturers installation instructions provided with the damper. A plastic grille shall be installed in accordance with installation instructions.

DELTA ELECTRONICS INC — Models CRD2, GBR-CRD, ITG-CRD

5D. Alternate Ceiling Damper* — Ceiling damper & fan assembly for use with min 18 in. deep trusses. Max nom area shall be 75 sq in. with the length not to exceed 9-1/4 in. and the width not to exceed 9-3/4 in. Max height of damper shall be 9-7/8 in. Aggregate damper openings shall not exceed 45 sq in. per 100 sq ft of ceiling area. Damper shall be installed in combination with one of the fan models described in, and in accordance with, the manufacturer's installation instructions provided with the damper. A plastic grille shall be installed in accordance with installation instructions.

DELTA ELECTRONICS INC — Model SIG-CRD

5E. Alternate Ceiling Damper* — Ceiling damper & fan assembly for use with min 18 in. deep trusses. Max nom area shall be 131 sq in. with the length not to exceed 11-1/16 in. and the width not to exceed 11-7/8 in. Aggregate damper openings shall not exceed 66 sq in. per 100 sq ft of ceiling area. Damper shall be installed in combination with one of the fan models described in, and in accordance with, the manufacturer's installation instructions provided with the damper. A plastic grille shall be installed in accordance with installation instructions.

DELTA ELECTRONICS INC — Model SMT-CRD

5F. Alternate Ceiling Damper* — Ceiling damper & fan assembly for use with min 18 in. deep trusses. Max nom area shall be 103 sq in. with the length not to exceed 10-1/8 in. and the width not to exceed 10-1/8 in. Aggregate damper openings shall not exceed 52 sq in. per 100 sq ft of ceiling area. Damper shall be installed in combination with one of the fan models described in, and in accordance with, the manufacturer's installation instructions provided with the damper. A plastic grille shall be installed in accordance with installation instructions.

PANASONIC CORPORATION, PANASONIC CORPORATION OF NORTH AMERICA — Model PC-RD05C5

Design No. P522 (continued)

5G. Alternate Ceiling Damper* — Ceiling damper & fan assembly for use with min 18 in. deep trusses. Max nom area shall be 113 sq in. with the length not to exceed 10-1/8 in. and the width not to exceed 11-1/8 in. Aggregate damper openings shall not exceed 57 sq in. per 100 sq ft of ceiling area. Damper shall be installed in combination with one of the fan models described in, and in accordance with, the manufacturer's installation instructions provided with the damper. A plastic grille shall be installed in accordance with installation instructions.

BROAN-NUTONE L L C — Model RDFUWT

5H. Alternate Ceiling Damper* — Ceiling damper & fan assembly for use with min 18 in. deep trusses. Max nom area shall be 79 sq in. with the length not to exceed 10 in. and the width not to exceed 7-15/16 in. Aggregate damper openings shall not exceed 40 sq in. per 100 sq ft of ceiling area. Damper shall be installed in combination with one of the fan models described in, and in accordance with, the manufacturer's installation instructions provided with the damper. A metallic grille shall be installed in accordance with installation instructions.

BROAN-NUTONE L L C — Models RDJ1 and RDH

5I. Alternate Ceiling Damper* — Ceiling damper & fan assembly for use with min 18 in. deep trusses. Max nom area shall be 87 sq in. with the length not to exceed 9 in. and the width not to exceed 9-11/16 in. Aggregate damper openings shall not exceed 44 sq in. per 100 sq ft of ceiling area. Damper shall be installed in combination with one of the fan models described in, and in accordance with, the manufacturer's installation instructions provided with the damper. A plastic grille shall be installed in accordance with installation instructions.

BROAN-NUTONE L L C — Model RDMWT

6. Furring Channels — Resilient channels formed of 25 MSG thick galv steel. Installed perpendicular to the trusses (Item 2), spaced a max of 16 in. OC when no insulation (Item 3 or 3A) is fitted in the concealed spaced, or a max of 12 in. OC when insulation (Item 3 or 3A) is fitted in the concealed space, draped over the resilient channel/gypsum board ceiling membrane, or when insulation (Item 3B or 3D) is applied to the underside of the roofing system (Item 1). Two courses of resilient channel positioned 6 in. OC at walboard butt-joints (3 in. from each end of wallboard). Channels oriented opposite at wallboard butt-joints. Channel splices overlapped 4 in. beneath wood trusses. Channels secured to each truss with 1-1/4 in. long Type S screws.

6A. Steel Framing Members* — (Not Shown) — As an alternate to Item 6, furring channels and Steel Framing Members as described below:
a. Furring Channels — Formed of No. 25 MSG galv steel, 2-9/16 in. or 2-23/32 in. wide by 7/8 in. deep, spaced 24 in. OC perpendicular to trusses when no insulation (Items 3 or 3A) is fitted in the concealed space or 12 in. OC when insulation (Items 3 or 3A) is fitted in the concealed space, draped over the furring channel/gypsum board ceiling membrane or 24 in. OC when insulation (Items 3 or 3A) is fitted in the concealed space, draped over the furring channel/gypsum board ceiling membrane and a second layer of gypsum board is attached as described in Item 7 for steel framing members. Channels secured to trusses as described in Item 6Ab. Ends of adjoining channels overlapped 6 in. and tied together with double strand of No. 18 SWG galv steel wire near each end of overlap.
b. Steel Framing Members — Used to attach furring channels (Item a) to trusses (Item 2). Clips spaced 48 in. OC. RSIC-1 and RSIC-1 (2.75) clips secured to alternating trusses with No. 8 by 2-1/2 in. coarse drywall screw through the center grommet. RSIC-V and RSIC-V (2.75) clips secured to alternating trusses with No. 8 by 1-1/2 in. coarse drywall screw through the center hole. Furring channels are friction fitted into clips. RSIC-1 and RSIC-V clips for use with 2-9/16 in. wide furring channels. RSIC-1 (2.75) and RSIC-V (2.75) clips for use with 2-23/32 in. wide furring channels. Adjoining channels are overlapped as described in Item 6Aa. As an alternate, ends of adjoining channels may be overlapped 6 in. and secured together with two self-tapping No. 6 framing screws, min. 7/16 in. long at the midpoint of the overlap, with one screw on each flange of the channel. Additional clips required to hold furring channel that supports the gypsum board butt joints, as described in Item 7.

PAC INTERNATIONAL L L C — Types RSIC-1, RSIC-V, RSIC-1 (2.75), RSIC-V (2.75).

6B. Steel Framing Members* — (Not Shown) — As an alternate to Items 6 and 6A.
a. Furring Channels — Hat-shaped furring channels, 7/8 in. deep by 2-5/8 in. wide at the base and 1-1/4 in. wide at the face, formed from No. 25 ga. galv steel, spaced max 16 in. OC perpendicular to trusses and Cold Rolled Channels (Item 6Bb). Furring channels secured to Cold Rolled Channels at every intersection with a 1/2 in. pan head self-drilling screw through each furring channel leg. Ends of adjoining channels overlapped 4 in. and tied together with two double strand No. 18 SWG galv steel wire ties, one at each end of overlap. Supplemental furring channels at base layer and outer layer gypsum board butt joints are not required. Batts and Blankets draped over furring channels are flush with bottom of trusses before gypsum board installation. Spring gauge of hanger chosen per manufacturer's instructions.

KINETICS NOISE CONTROL INC — Type ICW.

6C. Steel Framing Members* — (Not Shown) — As an alternate to Items 6, 6A and 6B.
a. Furring Channels — Formed of No. 25 MSG galv steel, 2-3/8 in. wide by 7/8 in. deep installed perpendicular to wood structural members. Channels spaced a max of 24 in. OC when no insulation (Item 3 or 3A) is fitted in the concealed space or a max of 12 in. OC when insulation (Item 3 or 3A) is fitted in the concealed space. Channels secured to trusses as described in Item 6Cb. Ends of adjoining channels overlapped 6 in. and tied together with double strand of No. 18 AWG galvanized steel wire near each end of overlap.
b. Steel Framing Members* — Used to attach furring channels (Item 6Ca) to trusses (Item 2). Clips secured to the bottom chord of each truss (24 in. OC) with one No. 8 by 2-1/2 in. long coarse drywall screw through center grommet. Furring channels are friction fitted into clips. Adjoining channels are overlapped as described in Item 6Ca. As an alternate, ends of adjoining channels may be overlapped 6 in. and secured together with two self-tapping No. 6 framing screws, min 7/16 in. long at the midpoint of the overlap, with one screw on each flange of the channel. Additional clips required to hold furring channel that supports the gypsum board butt joints, as described in Item 7.

PLITEQ INC — Type Genie Clip

6D. Steel Framing Members* — (Not Shown) — As an alternate to Items 6, 6A, 6B and 6C.
a. Main runners — Installed perpendicular to trusses — Nom 10 or 12 ft long, 15/16 in. or 1-1/2 in. wide face, spaced 4 ft OC. Main runners hung a min of 2 in. from bottom chord of trusses with 12 SWG galv steel wire. Wires located a max of 48 in. OC.
b. Cross ties or channels — Nom 4 ft long, 15/16 in. or 1-1/2 in. wide face or cross channels, nom 4 ft long, 1-1/2 wide face, installed perpendicular to the main runners, spaced 16 in. OC. Additional cross ties or channels used at 8 in. from each side of butted gypsum board end joints. The cross tees or channels may be riveted or screw-attached to the wall angle or channel to facilitate the ceiling installation.
c. Wall angles or channels — Used to support steel framing member ends and for screw-attachment of the gypsum wallboard — Min 0.016 in. thick painted or galvanized steel angle with 1 in. legs or min. 0.016 in. thick painted or galvanized steel channel with a 1 by 1-1/2 by 1 in. profile, attached to walls at perimeter of ceiling with fasteners 16 in. OC.

CGC INC — Type DGL or RX

USG INTERIORS LLC — Type DGL or RX

6E. Alternate Steel Framing Members* — (Not Shown) — As an alternate to Items 6, 6A, 6B, and 6C, furring channels and Steel Framing Members as described below:
a. Furring Channels — Formed of No. 25 MSG galv steel, 2-5/8 in. wide by 7/8 in deep, spaced 24 in OC, perpendicular to trusses. When insulation, Items 3 or 3A is used, the furring channel spacing shall be reduced to 12 in. OC. Channels secured to joists as described in Item b.
b. Steel Framing Members* — Used to attach furring channels (Item a) to the wood trusses (Item 2). Clips spaced at 48" OC and secured to the bottom of the trusses with one 2 in. Coarse Drywall Screw with 1 in. diam washer through the center hole. Furring channels are then friction fitted into clips. Ends of channels are overlapped 6" and tied together with double strand of No. 18 AWG galvanized steel wire. Additional clips are required to hold the Gypsum Butt joints as described in Item 7.

STUDCO BUILDING SYSTEMS — RESILMOUNT Sound Isolation Clips - Type A237 or A237R

6F. Steel Framing Members* — (Not Shown) — As an alternate to Items 6 through 6E- Not for use with Items 3 or 3A. Main runners nom 12 ft long, spaced 72 in. OC. Main runners suspended by min 12 SWG galv steel hanger wires spaced 48 in. OC. Cross tees, nom 6 ft long, installed perpendicular to main runners and spaced 24 in. OC. Additional 6 ft long cross tees required at each gypsum board end joint. Gypsum board end joints centered between cross tees spaced 8 in. OC. The main runners and cross tees may be riveted or screw attached to the wall angle or channel to facilitate the ceiling installation.

USG INTERIORS LLC — Type DGL or RX

6G. Resilient Channels — For Use With Item 7B - Formed from min 25 MSG galv steel installed perpendicular to trusses and spaced 16 in. OC. Channels secured to each truss with 1-5/8 in. long Type S bugle head steel screws. Channels overlapped 4 in. at splices. Two channels, spaced 6 in. OC, oriented opposite each gypsum panel end joint. Additional channels shall extend min 6 in. beyond each side edge of panel. Insulation, Item 3C is applied over the resilient channel/gypsum panel ceiling membrane.

7. Gypsum Board* — One layer of nom 5/8 in. thick by 48 in. wide boards, installed with long dimension parallel to trusses. Attached to the resilient channels using 1 in. long Type S bugle-head screws. Screws spaced a max of 12 in. OC along butted end-joints and in the field when no insulation (Item 3 or 3A) is fitted in the concealed space, or a max of 8 in. OC along butted end-joints and in the field when insulation (Item 3 or 3A) is fitted in the concealed space, draped over the resilient channel/gypsum board ceiling membrane. When insulation (Item 3B or 3D) is installed in the concealed space, spray-applied to the underside of the roofing system (Item 1), screws are spaced a max of 8 in. OC along resilient channels, fasteners are increased in length to 1-1/4 in, and gypsum board butt joints shall be staggered min. 2 ft within the assembly, and occur between the main furring channels.
When Steel Framing Members* (Item 6A or 6C) are used, sheets installed with long dimension perpendicular to furring channels and side joints of sheet located beneath trusses. Gypsum board screws are driven through channel spaced 12 in. OC in the field when no insulation (Item 3 or 3A) is fitted in the concealed space, or 8 in. OC in the field when insulation (Item 3 or 3A) is fitted in the concealed space, draped over the furring channel/gypsum board ceiling membrane. Gypsum board butt joints shall be staggered min. 2 ft within the assembly, and occur between the main furring channels. At the gypsum board butt joints, each end of the gypsum board shall be supported by a single length of furring channel equal to the width of the wallboard plus 6 in. on each end. The furring channels shall be spaced approximately 3-1/2 in. OC, and be attached to the trusses with one clip at each end of the channel. Screw spacing along the butt joint to attach the gypsum board to the furring channels shall be 8 in. OC. Second (outer) layer of gypsum board required when furring channels (Item 6A, a) are spaced 24 in. OC and insulation is fitted in the concealed space, draped over the furring channel/gypsum board ceiling membrane. Outer layer of gypsum board attached to the furring channels using 1-5/8 in. long Type S bugle-head screws spaced 8 in. OC at butted joints and 12 in. OC in the field. Butted end joints of outer layer to be offset a minimum of 8 in. from base layer end joints. Butted side joints of outer layer to be offset minimum 18 in. from butted side joints of base layer.

When Steel Framing Members (Item 6B) are used, two layers of nom 5/8 in. thick, 4 ft wide gypsum board are installed with long dimensions perpendicular to furring channels (Item 6Ba). Base layer attached to the furring channels using 1 in. long Type S bugle head steel screws spaced 8 in. OC along butted end joints and 12 in. OC in the field of the board. Butted end joints centered on the continuous furring channels. Butted base layer end joints to be offset a min of 16 in. in adjacent courses. Outer layer attached to the furring channels using 1-5/8 in. long Type S bugle head steel screws spaced 8 in. OC at butted end joints and 12 in. OC in the field. Butted end joints centered on the continuous furring channels and offset a min of 16 in. from butted end joints of base layer. Butted side joints of outer layer to be offset min 16 in. from butted side joints of base layer.

When Steel Framing Members (Item 6C) are used, one layer of nom 5/8 in. thick, 4 ft wide gypsum board is installed with long dimensions perpendicular to furring channels. Gypsum board secured to furring channels with nom 1 in. long Type S bugle-head steel screws spaced 8 in. OC in the field of the board. Gypsum board butted end joints shall be staggered minimum 72 in. At the gypsum board butt joints, each end of each gypsum board shall be supported by a single length of furring channel equal to the width of the gypsum board plus 3 in. on each end, spaced approximately 2 in. in from joint. Screw spacing along the gypsum board butt joint shall be 8 in. OC. Butt joint furring channels shall be attached with a RESILMOUNT Sound Isolation Clip secured to underside of every truss that is located over the butt joint. Over all Gypsum Board side joints, approximately 20 in. lengths of furring channel shall be installed parallel to trusses (Item 2) between main furring channels. Side joint furring channels shall be attached to underside of the joist with RESILMOUNT Sound Isolation Clips - located approximately 2 in. from each end of the approximate 20 in. length of channel. Both Gypsum Boards at side joints fastened into channel with screws spaced 8 in. OC, approximately 1/2 in. from joint edge.

When Steel Framing Members (Item 6E) are used, one layer of nom 5/8 in. thick, 4 ft wide gypsum board is installed with long dimensions perpendicular to furring channels. Gypsum board secured to furring channels with nom 1 in. long Type S bugle-head steel screws spaced 8 in. OC in the field of the board. Gypsum board butted end joints shall be staggered minimum 48 in. and centered over main furring channels. At the gypsum board butt joints, each end of each gypsum board shall be supported by a single length of furring channel equal to the width of the gypsum board plus 3 in. on each end. The two support furring channels shall be spaced approximately 3 in. in from end joint. Screw spacing along the gypsum board butt joint and along both additional channels shall be 8 in. OC. Additional screws shall be placed in the adjacent section of gypsum board into the aforementioned 3 in. extension of the extra butt joint channels as well as into the main channel that runs between. Butt joint furring channels shall be attached with one RESILMOUNT Sound Isolation Clip at each end of the channel.

Design No. P522 (continued)

When alternate Steel Framing Members* (Item 6F) are used, one layer of nom 5/8 in. thick, 4 ft wide gypsum board sheets installed with long dimension (side joints) perpendicular to the 6 ft long cross tees with the end joints staggered min 4 ft and centered between cross tees which are spaced 8 in. OC. Gypsum board side joints may occur beneath or between main runners. Prior to installation of the gypsum board sheets, backer strips consisting of nom 7-3/4 in. wide pieces of gypsum board are to be laid atop the cross tee flanges and centered over each butted end joint location. The backer strips are to be secured to the flanges of the cross tees at opposite corners of the backer strip with hold down clips to prevent the backer strips from being uplifted during screw-attachment of the gypsum board sheets. Gypsum board fastened to cross tees with 1 in. drywall screws spaced 1 in. and 4 in. from the side joints and max 8 in. OC in the field of the board. The butted end joints are to be secured to the backer strip with No. 10 by 1-1/2 in. long Type G laminating screws located 1 in. from each side of the butted end joint and spaced 1 in. and 4 in. from the side joints and max 8 in. OC in the field of the board.

CGC INC — Types C, IP-X2, IPC-AR

UNITED STATES GYPSUM CO — Types C, IP-X2, IPC-AR

USG BORAL DRYWALL SFZ LLC — Type C

USG MEXICO S A DE C V — Types C, IP-X2, IPC-AR

7A. Gypsum Board* — For use with Steel Framing Members (Item 6D) when Batts and Blankets* (Item 3) are not used - One layer of nom 5/8 in. thick by 48 in. wide boards, installed with long dimension parallel to the main runners. Gypsum board fastened to each cross tee or channel with five wallboard screws, with one screw located at the midspan of the cross tee or channel, one screw located 12 in. from and on each side of the cross tee or channel mid span and one screw located 1-1/2 in. from each gypsum board side joint. Except at wallboard end joints, wallboard screws shall be located on alternating sides of cross tee flange. At gypsum board end joints, gypsum board screws shall be located 1/2 in. from the joint. Gypsum board fastened to main runners with wallboard screws 1/2 in. from side joints, midway between intersections with cross tees or channels (16 in. OC). End joints of adjacent gypsum board sheets shall be staggered not less than 32 in. Gypsum board sheets screw attached to leg of wall angle with wallboard screws spaced 12 in. OC. Joints treated as described in Item 7. For use with Steel Framing Members* (Item 6D) when Batts and Blankets* (Item 3) are used - Ratings limited to 1 Hour - 5/8 in. thick, 4 ft wide; installed with long dimension perpendicular to cross tees with side joints centered along main runners and end joints centered along cross tees. Fastened to cross tees with 1 in. long steel gypsum board screws spaced 8 in. OC in the field and 8 in. OC along end joints. Fastened to main runners with 1 in. long gypsum board screws spaced midway between cross tees.
Screws along sides and ends of boards spaced 3/8 to 1/2 in. from board edge. End joints of the sheets shall be staggered with spacing between joints on adjacent boards not less than 4 ft OC.

CGC INC — Type C or IP-X2

UNITED STATES GYPSUM CO — Type C or IP-X2

USG BORAL DRYWALL SFZ LLC — Type C

USG MEXICO S A DE C V — Type C or IP-X2

7B. Gypsum Board* — For use with Items 3C and 6G. Nom 5/8 in. thick, 48 in. wide gypsum panels installed with long dimension perpendicular to resilient channels. Gypsum panels secured with 1 in. long Type S bugle head steel screws spaced 8 in. OC and located a min of 1/2 in. from side joints and 3 in. from the end joints. Finish Rating with this ceiling system is 20 min.

UNITED STATES GYPSUM CO — Type ULIX

8. Finishing System — (Not Shown) — Vinyl, dry or premixed joint compound, applied in two coats to joints and screw-heads; paper tape, 2 in. wide, embedded in first layer of compound over all joints. As an alternate, nom 3/32 in. thick veneer plaster may be applied to the entire surface of gypsum board. Alternate Ceiling Membrane — Not Shown.

9. Netting — Fibrous, woven netting material fastened to underside of each joist with staples, with side joints overlapped.

* Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.

1 P522 - TYP ROOF ASSEMBLY (1 HR)

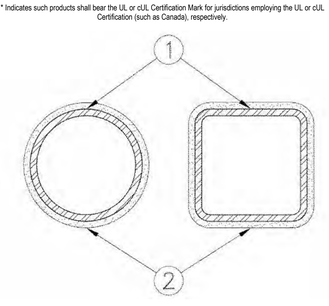
12" = 1'-0"

Design No. X673

October 29, 2010

Ratings - 3/4, and 1 Hr (See Item 2)

* Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.



1. Steel Column — Square, rectangular or circular tubular steel columns with the minimum sizes shown in the table below. Steel columns shall be free of dirt, loose scale and oil. Column shall be primed with metal alkyd primer.

2. Mastic and Intumescent Coating* — Coating applied in accordance with manufacturer's instructions to the minimum dry film thickness shown below:

Rating, hr	Steel Column Size	Column A/P	Required Min Thickness, In.
3/4	ST 5 x 3 x 1/4 in.	0.22	0.130
1	ST 5 x 3 x 1/4 in.	0.22	0.134
1	SP 8.625 in. diam x 1/4 in.	0.24	0.135

A/D Fire Protection Systems Inc — Type "A/D FIREFILM III" or "A/D FIREFILM III C" investigated for Interior Conditioned Space Purpose and Interior General Purpose.

* Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.

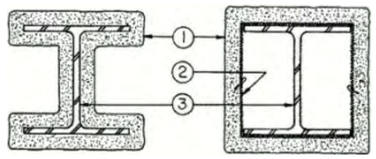
2 X673 - FIRE RATED_STEEL COLUMNS

12" = 1'-0"

Design No. X854

July 12, 2019

Ratings — 1, 1-1/2, 2, 3 and 4 hr.
* Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.



1. Spray-Applied Fire Resistive Materials* — Applied by mixing with water and spraying in more than one coat to the thicknesses shown below, to steel surfaces which are clean and free of dirt, loose scale, and oil. Min avg and min ind density of 15/14 pcf respectively. Min avg and min ind density of 22/19 pcf respectively for Types Z-106, Z-106/G, Z-106/HY. Min avg and min ind density of 40/36 pcf respectively for Types Z-146, Z-146PC and Z-146T cementitious mixture. Min avg and min ind density of 50/45 pcf respectively for Types Z-156, Z-156T and Z-156PC. For method of density determination, see Design Information Section, Sprayed Material.
The thickness of Spray-Applied Fire Resistive Materials to be applied to all surfaces of the column (Item 1) required for rating periods of 1 h, 1-1/2 h, 2 h, 3 h, 4 h may be determined by the equation:

$$h = \frac{R}{1.05\,(W/D) + 0.61}$$

Where:

h = Spray-Applied Fire Resistive Materials thickness in the range 0.25-3.875 in.

R = Fire resistance rating in hours (1 - 4 h)

D = Heated perimeter of steel column in inches

W = Weight of steel column in lbs per foot

W/D = 0.338 to 6.76

As an alternate to the equation, the minimum thickness of Spray-Applied Fire Resistive Materials required for various fire resistance ratings of contour sprayed or boxed columns may be determined from the table below:

TABLE 1

			Min Thk (In.)			
Col Size	W/D	1 Hr	1-1/2 Hr	2 Hr	3 Hr	4 Hr
W4x13	0.556	11/16	1-3/16	1-5/8	2-1/2	3-3/8
W5x16	0.55	11/16	1-3/16	1-5/8	2-1/2	3-3/8
W5x19	0.644	5/8	1-1/8	1-7/16	2-5/16	3-1/8
W6x9	0.338	15/16	1-1/2	2	2-1/2	3-13/16
W6x12	0.448	13/16	1-3/8	1-13/16	2-1/2	3-3/4
W6x15	0.431	13/16	1-3/8	1-13/16	2-1/2	3-13/16
W6x16	0.584	11/16	1-3/16	1-9/16	2-7/16	3-5/16
W6x20	0.563	11/16	1-3/16	1-9/16	2-1/2	3-3/8
W6x25	0.696	5/8	1-1/16	1-3/8	2	2-11/16
W8x13	0.421	13/16	1-3/8	1-7/8	2-1/2	3-13/16
W8x15	0.481	3/4	1-5/16	1-3/4	2-1/2	3-5/8
W8x18	0.499	3/4	1-1/4	1-11/16	2-1/2	3-1/2
W8x21	0.577	11/16	1-3/16	1-9/16	2-1/2	3-5/16
W8x24	0.591	11/16	1-1/8	1-9/16	2-7/16	3-5/16
W8x28	0.688	5/8	1-1/16	1-3/8	2	2-11/16
W8x31	0.665	5/8	1-1/16	1-7/16	2-5/16	3-1/16
W8x35	0.749	9/16	1	1-5/16	2	2-11/16
W8x40	0.849	9/16	3/4	1-1/8	1-11/16	2-1/2
W8x48	1	1/2	3/4	1	1-11/16	2-5/16
W8x58	1.2	7/16	3/4	13/16	1-3/8	1-15/16
W8x67	1.37	3/8	5/8	3/4	1-1/4	1-11/16
W10x12	0.347	7/8	1-1/2	2	2-1/2	3-13/16
W10x15	0.429	13/16	1-3/8	1-7/8	2-1/2	3-13/16
W10x17	0.482	3/4	1-5/16	1-3/4	2-1/2	3-5/8
W10x19	0.538	3/4	1-1/4	1-5/8	2-1/2	3 7/16
W10x22	0.523	3/4	1-1/4	1-11/16	2-1/2	3-1/2
W10x26	0.612	11/16	1-1/8	1-1/2	2-3/8	3-1/4
W10x30	0.699	5/8	1-1/16	1-3/8	2	2-11/16
W10x33	0.661	5/8	1-1/16	1-7/16	2-5/16	3-1/8
W10x39	0.78	9/16	1	1-1/4	2	2-11/16
W10x45	0.888	1/2	3/4	1-1/8	1-11/16	2-1/2
W10x49	0.84	9/16	3/4	1-1/8	1-11/16	2-1/2
W10x54	0.922	1/2	3/4	1-1/16	1-11/16	2-1/2
W10x60	1.01	1/2	3/4	1	1-5/8	2-5/16
W10x68	1.15	7/16	3/4	7/8	1-7/16	2
W10x77	1.28	7/16	11/16	3/4	1-5/16	1-13/16
W10x88	1.45	3/8	5/8	11/16	1-3/16	1-5/8
W10x100	1.64	3/8	9/16	11/16	1-1/8	1-1/2
W10x112	1.81	5/16	1/2	11/16	1-1/8	1-1/2
W12x14	0.363	7/8	1-1/2	2	2-1/2	3-13/16
W12x16	0.41	13/16	1-7/16	1-7/8	2-1/2	3-13/16
W12x19	0.485	3/4	1-5/16	1-3/4	2-1/2	3-5/8
W12x22	0.56

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Design No. L538

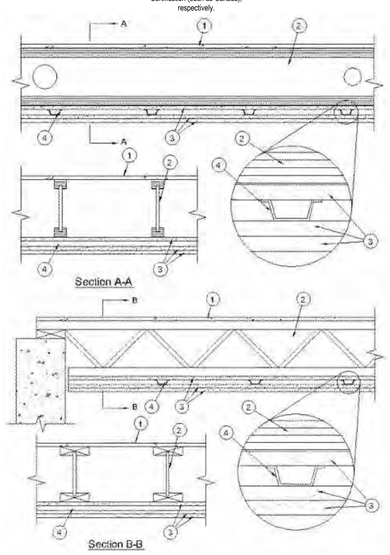
May 05, 2020

Unrestrained Assembly Rating — 2 Hr.

Finish Rating — More Than 90 Min.

This design was evaluated using a load design method other than the LimitStates Design Method (e.g., Working Stress Design Method). For jurisdictionsemploying the Limit States Design Method, such as Canada, a load restrictionfactor shall be used — See Guide BXUV or BXUV7

* Indicates such products shall bear the UL or cUL Certification Mark forjurisdictions employing the UL or cUL Certification (such as Canada), respectively.



1. Flooring Systems — The flooring system shall consist of one of the following:

System No. 1

Subflooring — Min 5/8 in. thick wood structural panels, min grade "Underlayment" or "Single Floor". Face grain of plywood orstrength axis of panels to be perpendicular to joists with end joints centered over the top chord of the joist and staggered.

System No. 2

Subflooring — Min 5/8 in. thick wood structural panels, min grade "Underlayment" or "Single Floor". Face grain of plywood orstrength axis of panels to be perpendicular to joists with end joints centered over the top chord of the joist and staggered.

Finish Flooring — Min 3/4 in. thickness of lightweight insulating concrete with Perlite Aggregate* or Vermiculite Aggregate*, or gypsum concrete.

See Perlite Aggregate (CFFX) and Vermiculite Aggregate (CJZZ) categories for names of manufacturers

System No. 3

Subflooring — Min 5/8 in. thick wood structural panels, min grade "Underlayment" or "Single Floor". Face grain of plywood orstrength axis of panels to be perpendicular to joists with end joints centered over the top chord of the joist and staggered.

Finish Floor — Mineral and Fiber Board* — Min 1/2 in. thick, supplied in sizes ranging from 3 ft by 4 ft to 8 ft by 12 ft. Alljoints to be staggered a min of 12 in. with adjacent sub-floor joints.

HOMASOTE CO — Type 440-32 Mineral and Fiber Board

System No. 4

Subflooring — Min 1 by 6 in. T & G lumber fastened diagonally to joists, or min 15/32 in. thick plywood or 7/16 in. thickoriented strand board (OSB) wood structural panels, min grade "C-D" or "Sheathing". Face grain of plywood or strength axis ofpanels to be perpendicular to the joists with joints staggered.

Floor Mat Materials* — (Optional) — Floor mat material nom 5/64 in. (2 mm) thick adhered to subfloor with Hacker FloorPrimer. Primer to be applied to the surface of the mat prior to the placement of a min 1 in. of floor-topping mixture.

HACKER INDUSTRIES INC — Type Hacker Sound-Mat.
Alternate Floor Mat Materials — (Optional) — Floor mat material nom 1/4 in. (6 mm) thick adhered to subfloor with HackerFloor Primer. Primer to be applied to the surface of the mat prior to the placement of a min 1-1/4 in. (32 mm) of floor-toppingmixture.

HACKER INDUSTRIES INC — Type Hacker Sound-Mat II
Alternate Floor Mat Materials — (Optional) — Floor mat material nom 1/8 in. (3 mm) thick loose laid over the subfloor. Floortopping thickness shall be a min of 3/4 in. (19 mm)

HACKER INDUSTRIES INC — FIRM-FILL SCM 125

Alternate Floor Mat Materials — (Optional) — Floor mat material nom 1/4 in. (6 mm) thick loose laid over the subfloor. Floortopping thickness shall be a min of 1 in. (25 mm)

HACKER INDUSTRIES INC — Type FIRM-FILL SCM 250, Quiet Qurl 55/025
Alternate Floor Mat Materials — (Optional) — Floor mat material nom 3/8 in. (10 mm) thick loose laid over the subfloor. Floor topping thickness shall be a min of 1-1/4 in. (32 mm)

HACKER INDUSTRIES INC — FIRM-FILL SCM 400, Quiet Qurl 60/040
Alternate Floor Mat Materials — (Optional) — Floor mat material nom 3/4 in. (19 mm) thick loose laid over the subfloor. Floor topping thickness shall be a min of 1-1/2 in. (38 mm)

HACKER INDUSTRIES INC — Type FIRM-FILL SCM 750, Quiet Qurl 65/075
BXUV.L538 | UL Product iQ https://iq.ulprospector.com/en/profile?e=142923 of 9 7/15/2020, 2:38 PM

Metal Lath — (Optional) — For use with 3/8 in. (10 mm) floor mat materials, 3/8 in. expanded steel diamond mesh, 3.4 lbs/sqyd placed over the floor mat material. Hacker Floor Primer to be applied prior to the placement of the metal lath. When metallath is used, floor topping thickness a nom 1-1/4 in. over the floor mat.

Finish Flooring — Floor Topping Mixture* — Min 3/4 in. thickness of floor topping mixture having a min compressivestrength of 1100 psi. Mixture shall consist of 6.8 gal of water to 80 lbs of floor topping mixture to 1.9 cu ft of sand.

HACKER INDUSTRIES INC — Firm-Fill Gypsum Concrete, Firm-Fill 2010, Firm-Fill 3310, Firm-Fill 4010, Firm-Fill High Strength,Gyp-Span Radiant

System No. 5

Subflooring — Min 1 by 6 in. T & G lumber fastened diagonally to joists, or min 15/32 in. thick plywood or 7/16 in. thickoriented strand board (OSB) wood structural panels, min grade "C-D" or "Sheathing". Face grain of plywood or strength axis ofpanels to be perpendicular to the joists with joints staggered.

Finish Flooring — Floor Topping Mixture* — Min 3/4 in. thickness of floor topping mixture having a minimum compressivestrength of 1500 psi. Refer to manufacturer's instructions accompanying the material for specific mix design.

MAXXON CORP — Type Maxxon Standard and Maxxon High Strength
Floor Mat Materials* — (Optional) — Floor mat material loose laid over the subfloor. Refer to manufacturer's instructionsregarding the minimum thickness of floor topping over each floor mat material.

MAXXON CORP — Type Encapsulated Sound Mat.
Floor Mat Reinforcement — (Optional) Refer to manufacturer's instructions regarding minimum thickness of floor toppingfor use with floor mat reinforcement.

Metal Lath — (Optional) — 3/8 in. expanded galvanized steel diamond mesh, 3.4 lbs/sq yd loose laid over the floor matmaterial. Fiber Glass Reinforcement- (Optional, Not Shown) - 0.015 in. thick PVC coated non-woven fiberglass mesh, 0.368 lbs/sq ydloose laid over the floor mat material.

System No. 6

Subflooring — Min 5/8 in. thick wood structural panels, min grade Underlayment or Single Floor. Face grain of plywood orstrength axis of panels to be perpendicular to joists with end joints centered over the top chord of the joist and staggered.

Finish Flooring — Floor Topping Mixture* — Min 3/4 in. thickness of floor topping mixture having a min compressivestrength of 1000 psi. Refer to manufacturer's instructions accompanying the material for specific mix design.
FORMULATED MATERIALS LLC — Types FR-25, FR-30, and SiteMix

Floor Mat Material* — (Optional) Floor mat material nominal 2 - 9.5 mm thick loose laid over the subfloor. Floor toppingshall be a min of 1 in.

FORMULATED MATERIALS LLC — Types M1, M2, M3, Elite, Duo, R1, and R2

System No. 7

Subflooring — Nom 23/32 in. thick wood structural panels installed perpendicular to trusses with end joints staggered. Plywood or panels secured to trusses with construction adhesive and No. 6d ringed shank nails, spaced 12 in. OC along eachtruss. Staples having equal or greater withdrawal and lateral resistance strength may be substituted for the 6d nails.

Vapor Barrier — (Optional) — Nom 0.010 in. thick commercial asphalt saturated felt.

Design No. L538 (continued)

Finish Flooring — Floor Topping Mixture* — Min 3/4 in. thickness of floor topping mixture having a minimum compressivestrength of 1800 psi. Refer to manufacturer's instructions accompanying the material for specific mix design.

UNITED STATES GYPSUM CO — Types LRK, HSLRK, CSD

USG MEXICO S A DE C V — Types LRK, HSLRK, CSD

Floor Mat Materials* — Floor mat material loose laid over the subfloor. Refer to manufacturer's instructions regarding theminimum thickness of floor topping over each floor mat material.

UNITED STATES GYPSUM CO — Types SAM, LEVELROCK® Brand Sound Reduction Board, LEVELROCK® Brand FloorUnderlayment SRM-25

Alternate Floor Mat Materials* — (Optional) — Nom 3/8 in. thick floor mat material loose laid over the subfloor.

GRASSWORX L L C — Type SC50

System No. 8

Subflooring — Min 15/32 in. thick wood structural panels, min grade "C-D" or "Sheathing". Face grain of plywood or strengthaxis of panels to be perpendicular to the joists with joints staggered.

Vapor Barrier — (Optional) — Commercial asphalt saturated felt, 0.030 in. thick.

Vapor Barrier — (Optional) — Nom 0.010 in. thick commercial rosin-sized building paper.

Finish Flooring* — Min 3/4 in. thickness of any Floor Topping Mixture bearing the UL Classification Marking as to FireResistance. See Floor- and Roof-Topping Mixtures (CCCX) category for names of Classified Companies.
Floor Mat Materials* — (Optional) — Nom. 1/4 in. thick loose laid over the subfloor. Floor topping thickness shall be aminimum of 3/4 in.

KEENE BUILDING PRODUCTS CO INC — Type Quiet Qurl 55/025 and Quiet Qurl 55/025 NAlternate Floor Mat Materials* — (Optional) — Floor mat material Nom. 3/8 in. thick loose laid over the subfloor. Floortopping thickness shall be a minimum of 1 in.

KEENE BUILDING PRODUCTS CO INC — Type Quiet Qurl 60/040 and Quiet Qurl 60/040 NAlternate Floor Mat Materials* — (Optional) — Floor mat material Nom. 3/4 in. thick loose laid over the subfloor. Floortopping thickness shall be a minimum of 1-1/2 in.

KEENE BUILDING PRODUCTS CO INC — Type Quiet Qurl 65/075, Quiet Qurl 65/075 NAlternate Floor Mat Materials* — (Optional) — Floor mat material Nom. 1/8 in. thick loose laid over the subfloor. Floortopping thickness shall be a minimum of 3/4 in.

KEENE BUILDING PRODUCTS CO INC — Type Quiet Qurl 52/013 and Quiet Qurl 52/013 NAlternate Floor Mat Materials* — (Optional) — Floor mat material Nom. 1/4 in. entangled net core with a compressiblefabric attached to the bottom loose laid over the subfloor. Floor topping thickness shall be a minimum of 1 in.

KEENE BUILDING PRODUCTS CO INC — Quiet Qurl 55/025 MT and Quiet Qurl 55/025 N MT

System No. 9

Subflooring — Min 5/8 in. thick wood structural panels, min grade "Underlayment" or "Single Floor". Face grain of plywood orstrength axis of panels to be perpendicular to joists with end joints centered over the top chord of the joist and staggered.

Finish Flooring — Floor Topping Mixture* — Min 3/4 in. thickness of floor topping mixture having a min compressive strength of 1000 psi. Refer to manufacturer's instructions accompanying the material for specific mix design.

ACG MATERIALS — Accu-Crete types NexGen, Green, Prime, B, M, and PrePour, AccuRadiant, AccuLevel types G40, G50 andSD30

Floor Mat Material* — (Optional) — Floor mat material nominal 2 - 9.5 mm thick loose laid over the subfloor. Floor toppingshall be a min of 1 in.

ACG MATERIALS — AccuQuiet types P80, C40, D13, D-18, D25, DX38, EM.125, EM.125S, EM.250, EM.250S, EM.375, EM.375S,
EM.750, and EM.750S

System No. 10

Subflooring — Min 5/8 in. thick wood structural panels, min grade "Underlayment" or "Single Floor". Face grain ofplywood or strength axis of panels to be perpendicular to joists with end joints centered over the top chord of thejoist and staggered.

Finish Flooring — Floor Topping Mixture* — Min 3/4 in. thickness of floor topping mixture having a mincompressive strength of 1000 psi. Refer to manufacturer's instructions accompanying the material for specific mixdesign.

DEPENDABLE LLC — GSL M3.4, GSL K2.6, GSL-CSD or GSL RH

Floor Mat Materials* — (Optional) — Nom. 1/4 in. thick loose laid over the subfloor. Floor topping thickness shallbe a minimum of 3/4 in.

KEENE BUILDING PRODUCTS CO INC — Type Quiet Qurl 55/025 and Quiet Qurl 55/025 NAlternate Floor Mat Materials* — (Optional) — Floor mat material Nom. 3/8 in. thick loose laid over the subfloor.Floor topping thickness shall be a minimum of 1 in.

KEENE BUILDING PRODUCTS CO INC — Type Quiet Qurl 60/040 and Quiet Qurl 60/040 NAlternate Floor Mat Materials* — (Optional) — Floor mat material Nom. 3/4 in. thick loose laid over the subfloor.Floor topping thickness shall be a minimum of 1-1/2 in.

KEENE BUILDING PRODUCTS CO INC — Type Quiet Qurl 65/075, Quiet Qurl 65/075 NAlternate Floor Mat Materials* — (Optional) — Floor mat material Nom. 1/8 in. thick loose laid over the subfloor.Floor topping thickness shall be a minimum of 3/4 in.

KEENE BUILDING PRODUCTS CO INC — Type Quiet Qurl 52/013 and Quiet Qurl 52/013 NAlternate Floor Mat Materials* — (Optional) — Floor mat material Nom. 1/4 in. entangled net core with acompressible fabric attached to the bottom loose laid over the subfloor. Floor topping thickness shall be a minimumof 1 in.

KEENE BUILDING PRODUCTS CO INC — Quiet Qurl 55/025 MT and Quiet Qurl 55/025 N MT

System No. 11

Subflooring — Min 5/8 in. thick wood structural panels, min grade "Underlayment" or "Single Floor". Face grain ofplywood or strength axis of panels to be perpendicular to joists with end joints centered over the top chord of thejoist and staggered.

Finish Flooring* — Floor Topping Materials — Min 3/4 in. to 1-1/2 in. thickness of any Floor Topping Mixturebearing the UL Classification Marking as to Fire Resistance with a minimum compressive strength of 1500 psi.
See Floor- and Roof-Topping Mixtures (CCCX) category for names of Classified Companies.

Floor Mat Materials* — (Optional) — Floor mat material nom 1/8 in. to 3/4 in. thick. Loose laid over the subfloor.
When used, Acousti-flor CSM (crack suppression mat) is loose laid over the floor mat material. Floor toppingmaterial thickness is dependent on thickness of floor mat used.

WALFLOR INDUSTRIES INC — Type Acousti-flor, Acousti-flor CSM. Floor topping thickness depends on products used asfollows:

Acousti-flor (1/8 in. thick) - Floor topping thickness shall be a minimum of 3/4 in.

Acousti-flor (1/4 in. thick) - Floor topping thickness shall be a minimum of 1 in.

Acousti-flor (3/8 in. thick) - Floor topping thickness shall be a minimum of 1 in.

Acousti-flor (3/4 in. thick) - Floor topping thickness shall be a minimum of 1-1/2 in.

Metal Lath — (Optional) — Expanded steel diamond mesh, 2.5 lb / sq yd loose laid over floor mat material.
Fiberglass Mesh Reinforcement — (Optional) — Coated non-woven glass fiber mesh grid loose laid over floor matmaterial.

System No. 12

Subflooring — Min 5/8 in. thick wood structural panels, min grade "Underlayment" or "Single Floor". Face grain ofplywood or strength axis of panels to be perpendicular to joists with end joints centered over the top chord of thejoist and staggered.

Finish Flooring - Floor Topping Mixture* — Min 1 in. thickness of floor topping mixture having a min compressivestrength of 4500 psi. Refer to manufacturer's instructions accompanying the material for specific mix design.

SIKA DEUTSCHLAND GMBH — Type SCHONOX AP Rapid Plus

System No. 13

Subflooring - Building Units* — Nom. 1-1/2 in. thick T & G laminated composite plywood sub-floor panels to beperpendicular to the trusses with end joints staggered 4 ft. End joints centered over top chord of trusses. Subfloorpanels secured to trusses with construction adhesive and #8 by 3 in. wood screws spaced 12 in. OC in the field and 6in. OC at the end joints.

RSP INDUSTRIES INC — SAP board

System No. 14

Subflooring — Min 5/8 in. thick wood structural panels, min grade "Underlayment" or "Single Floor". Face grain ofplywood or strength axis of panels to be perpendicular to joists with end joints centered over the top chord of thejoist and staggered.

Vapor Barrier — (Optional) - Commercial asphalt saturated felt, 0.030 in. thick.

Vapor Barrier — (Optional) - Nom 0.010 in. thick commercial rosin-sized building paper.

Finish Flooring - Floor Topping Mixture* — Min 3/4 in. thickness of any Floor Topping Mixture bearing the ULClassification Marking as to Fire Resistance. See Floor- and Roof-Topping Mixtures (CCCX) category for names ofClassified Companies.

Floor Mat Materials* — (Optional, Not Shown) - Floor mat material loose laid over the subfloor. Refer tomanufacturer's instructions regarding the minimum thickness of floor topping over each floor mat material.

LOW & BONAR INC — EnkaSonic® by Colbond a member of the Low & Bonar group Types 125, 250, 250 Plus, 400, 400 Plus,750, and 750 Plus.

Floor Mat Reinforcement — (Optional) - Refer to manufacturer's instructions regarding minimum thickness offloor topping for use with floor mat reinforcement.

Metal Lath — (Optional) — Expanded steel diamond mesh, 2.5 lb / sq yd loose laid over floor mat material.

Fiberglass Mesh Reinforcement — (Optional) — Coated non-woven glass fiber mesh grid loose laid over floor matmaterial.

2. Structural Wood Members* — Min 9-1/2 in. deep "I" shaped wood joists spaced at a max of 19.2 in. OC. Joiststhall conform to ICC-ES ESR-1153 Report. Joist top and bottom chords minimum 1-3/8 in. deep by 2.3 in. wide andconstructed of either Microllam laminated veneer lumber (LVL) or TimberStrand laminated strand lumber (LSL).
Webs constructed of minimum 3/8 in. thick Performance Plus OSB, PS2, Exposure 1. Installation shall be inaccordance with manufacturers published literature

2A. Alternate Structural Wood Members* — Min 14 in. deep wood and steel trusses spaced max 19.2 in. OC. Mintruss bearing on bearing plates to be in accordance with the truss manufacturer's published installation instructions.Trusses nailed or bolted to bearing plates, through steel bearing clips, in accordance with the manufacturer'spublished installation instructions.

Design No. L538 (continued)

3. Gypsum Board* — Three layers of 5/8 in. thick by 4 ft wide gypsum board. Top layer boards installed with thelong dimension perpendicular to joists or trusses with end joints located under bottom of joists or trusses. Endjoints in adjacent rows shall be staggered on adjacent joists or trusses . Top layer boards secured to bottom chord ofjoists or trusses with 1-5/8 in. long Type S bugle head screws with hi-lo threads, spaced max 8 in. OC. Screws located1-1/2 to 2 in., and 3/4 in. from side and end joints, respectively. Bottom two layers of gypsum board installedperpendicular to furring channels (Item 4) with end joints centered on the furring channels. Middle layer boardssecured to each furring channel with 1 or 1-1/4 in. long Type S-12 bugle head steel screws with hi-lo threads spacedmax 8 in. OC. Screws located 1-1/2 to 2 in. and 5/8 to 3/4 in. from side and end joints, respectively. Face layerboards secured to each furring channel through the middle layer with 1-5/8 or 1-7/8 in. long Type S-12 bugle headsteel screws with hi-lo threads, spaced a max of 8 in. OC. Screws located 1-1/2 to 2 in. and 5/8 to 3/4 in. from sideand end joints, respectively. End joints and side joints of the face layer boards shall be staggered a min of 16 in. from the joints in the middle layer. If end joints of the face layer boards are not centered on the furring channels, the end of boards at the end joint shall be attached to the middle layer boards with 1-1/2 in. long Type G steel screws spaced 8 in. OC and located 1-1/2 in. from the end joint. All screws shall be driven no further than flush withthe face of the boards in order not to damage the core of the boards.

AMERICAN GYPSUM CO — Types AG-C

CERTAINTEED GYPSUM INC — Type C

CGC INC — Types C, IP-X2, IPC-AR, ULIX

CONTINENTAL BUILDING PRODUCTS OPERATING CO, L L C — Type LGFC-C/A

GEORGIA-PACIFIC GYPSUM L L C — Types 5, C, DAPC, TG-C

NATIONAL GYPSUM CO — Types FSK-C, FSK-G, FSW-C, FSW-G

PABCO BUILDING PRODUCTS L L C, DBA PABCO GYPSUM — Types C, PG-3, PG-C

PANEL REY S A — Type PRC

THAI GYPSUM PRODUCTS PCL — Type C

UNITED STATES GYPSUM CO — Types C, IP-X2, IPC-AR, ULIX

USG BORAL DRYWALL SFZ LLC — Type C

USG MEXICO S A DE C V — Types C, IP-X2, IPC-AR

4. Furring Channels — Resilient channels, 1/2 in. deep, or inverted hat type furring channels, 7/8 in. deep, formedfrom 0.019 in. thick galv steel, spaced 16 in. OC (12 in. OC when ULIX is used) perpendicular to joists or trusses.
Channels secured to each joist or truss with 1-7/8 in. long Type S steel screws with hi-lo threads.

5. Finishing System — (Not Shown) — Vinyl, dry or premixed joint compound, applied in two coats to joints andscrew-heads. Nom 2 in. wide paper tape embedded in first layer of compound over all joints. As an alternate, nom3/32 in. thick veneer plaster may be applied to the entire surface of gypsum board.

*** Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.**

2 L538 - 2 HR RATED CEILING AT ELEC E-100

12" = 1'-0"

Design No. U356

March 06, 2018

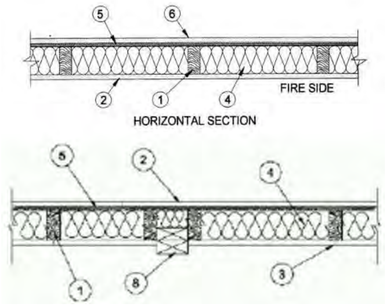
Bearing Wall Rating - 1 Hr Rating Exposed to Fire on Interior Face Only

Bearing Wall Rating — 1 Hr Rating Exposed to Fire on Exterior Face (See Item 6E)

Finish Rating — 23 Min or 25 Min (See Item 2C)

This design was evaluated using a load design method other than the Limit States Design Method (e.g., Working Stress Design Method). For jurisdictions employing the Limit States Design Method, such as Canada, a load restriction factor shall be used — See Guide BXUV or BXUV7

* Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.



1. Wood Studs — Nom 2 by 4 in. spaced 16 in. OC with two 2 by 4 in. top and one 2 by 4 in. bottom plates. Studs laterally-braced by wood structural panel sheathing (Item 5). When Mineral and Fiber Boards* (Item 5A) are considered as bracing for the studs, the load is restricted to 76% of allowable axial load. Walls effectively fire stopped at top and bottom of wall.

2. Gypsum Board* — Any 5/8 in. thick UL Classified Gypsum Board that is eligible for use in Design Nos. L501, G512 or U305. Nom 5/8 in. thick, 4 ft wide, applied vertically and nailed to studs and bearing plates 7 in. OC with 6d cement-coated nails, 1-7/8 in. long with 1/4 in. diam head.
When Item 7, 7B, 7C or 7D Steel Framing Members*, is used, gypsum panels attached to furring channels with 1 in. long Type S bugle-head steel screws spaced 12 in. OC.

When Item 7A Steel Framing Members*, is used, two layers of gypsum panels attached to furring channels. Base layer attached to furring channels with 1 in. long Type S bugle-head steel screws spaced 12 in. OC. Face layer attached to furring channels with 1-5/8 in. long Type S bugle-head steel screws spaced 12 in. OC. All joints in face layers staggered with joints in base layers.

ACADIA DRYWALL SUPPLIES LTD (View Classification) — CKNX.R25370

AMERICAN GYPSUM CO (View Classification) — CKNX.R14196

BEIJING NEW BUILDING MATERIALS PUBLIC LTD CO (View Classification) — CKNX.R19374

CERTAINTEED GYPSUM INC (View Classification) — CKNX.R3660

CGC INC (View Classification) — CKNX.R19751

CONTINENTAL BUILDING PRODUCTS OPERATING CO, L L C (View Classification) — CKNX.R18482

GEORGIA-PACIFIC GYPSUM L L C (View Classification) — CKNX.R2717

LOADMASTER SYSTEMS INC (View Classification) — CKNX.R11809

NATIONAL GYPSUM CO (View Classification) — CKNX.R3501

PABCO BUILDING PRODUCTS L L C, DBA PABCO GYPSUM (View Classification) — CKNX.R7094

PANEL REY S A (View Classification) — CKNX.R21796

SIAM GYPSUM INDUSTRY (SARABURI) CO LTD (View Classification) — CKNX.R19262

THAI GYPSUM PRODUCTS PCL (View Classification) — CKNX.R27517

UNITED STATES GYPSUM CO (View Classification) — CKNX.R1319

USG BORAL DRYWALL SFZ LLC (View Classification) — CKNX.R38438

USG MEXICO S A DE C V (View Classification) — CKNX.R16089

2A. Gypsum Board* — (As an alternate to Item 2, Not Shown) — Any 5/8 in. thick 4 ft wide gypsum panels that are eligible for use in Design Nos. L501, G512 or U305, supplied by the Classified Companies listed below shown in the Gypsum Board* (CKNX) category. Applied vertically and attached to studs and bearing plates with 1-1/4 in. long Type W coarse thread gypsum panel steel screws spaced a max 8 in. OC, with last screw 1 in. from edge of board.
CGC INC

UNITED STATES GYPSUM CO

USG BORAL DRYWALL SFZ LLC

USG MEXICO S A DE C V

2B. Gypsum Board* — (As an alternate to Item 2, Not Shown) — 5/8 in. thick 4 ft wide gypsum panels applied vertically and attached to studs and bearing plates with 1-1/4 in. long Type W coarse thread gypsum panel steel screws spaced a max 8 in. OC, with last screw 1 in. from edge of board.
ACADIA DRYWALL SUPPLIES LTD — Type X, 5/8 Type X, Type Blueglass Exterior Sheathing

AMERICAN GYPSUM CO — Types AGX-1, M-Glass, AG-C, LightRoc

CERTAINTEED GYPSUM INC — Type C, Type X, Type X-1, Easi-Lite Type X-2

GEORGIA-PACIFIC GYPSUM L L C — Types X, Veneer Plaster Base-Type X, Water Rated-Type X, Sheathing Type-X, Soffit-Type X, Type X ComfortGuard Sound Deadening Gypsum Board.

PABCO BUILDING PRODUCTS L L C, DBA PABCO GYPSUM — Types PG-11, PGS-WRS.

THAI GYPSUM PRODUCTS PCL — Type C or Type X

2C. Gypsum Board* — (As an alternate to Item 2, Not Shown) — For Use with Item 5A only - 5/8 in. thick 4 ft wide gypsum panels applied horizontally and attached to studs and bearing plates with 1-1/4 in. long Type W coarse thread gypsum panel steel screws spaced a max 8 in. OC, with last screws 1 in.and 4 in. from edges of board. Finish Rating is 25 min.
ACADIA DRYWALL SUPPLIES LTD — 5/8 Type X, Type Blueglass Exterior Sheathing

GEORGIA-PACIFIC GYPSUM L L C — Type X, Veneer Plaster Base-Type X, Water Rated-Type X, Sheathing Type-X, Soffit-Type X

PABCO BUILDING PRODUCTS L L C, DBA PABCO GYPSUM — Types PG-11, PGS-WRS

2D. Gypsum Board* — (As an alternate to Item 2) — Not to be used with item 7. 5/8 in. thick, 4 ft. wide, paper surfaced, applied vertically only and fastened to the studs and plates with 6d cement coated nails 1-7/8 in. long, 0.0915 in. shank diam and 1/4 in. diam heads, 7 in. OC.
NATIONAL GYPSUM CO — SoundBreak XP Type X Gypsum Board

2E Gypsum Board* — (As an alternate to Items 2 through 2D) — Nominal 5/8 in. thick, 4 ft wide panels, secured as described in Item 2.
PABCO BUILDING PRODUCTS L L C, DBA PABCO GYPSUM — Type QuietRock ES.

2F. Gypsum Board* — (As an alternate to Item 2) — Not to be used with item 7. 5/8 in. thick, 4 ft. wide, paper surfaced, applied vertically or horizontally and fastened to the studs and plates with 1-1/4 in. long Type W coarse thread gypsum panel steel screws spaced a max 8 in. OC, with last screw 1 in. from edge of board.
CERTAINTEED GYPSUM INC — Type SilentFX

2G. Wall and Partition Facings and Accessories* — (As an alternate to Items 2 through 2F) — Nominal 5/8 in. thick, 4 ft wide panels, secured as described in Item 2.
PABCO BUILDING PRODUCTS L L C, DBA PABCO GYPSUM — Type QuietRock 527.

2H. Gypsum Board* — (As an alternate to Item 2) — 5/8 in. thick gypsum panels, with beveled, square, or tapered edges, applied either horizontally or vertically. Gypsum panels fastened to framing with 1-1/4 in. long Type W coarse thread gypsum panel steel screws spaced a maximum 10 in. OC with the last two screws 4 and 1 in. from the edges of the board. When used in widths other than 48 in., gypsum panels are to be installed horizontally.

CONTINENTAL BUILDING PRODUCTS OPERATING CO, L L C — Type LGFC6A (finish rating 21 min), Type LGFC2A, Type LGFC-C/A, Type LGFC-WD, Type LGLLX

2I. Gypsum Board* — (As an alternate to Item 2) — 5/8 in. thick gypsum panels, with beveled, square, or tapered edges, applied either horizontally or vertically. Gypsum panels fastened to framing with 1-1/4 in. long Type W coarse thread gypsum panel steel screws spaced a max 8 in. OC, with last screw 1 in. from edge of board. When used in widths of other than 48 in., gypsum boards are to be installed horizontally.
AMERICAN GYPSUM CO — Types AGX-1 (finish rating 25 min.), M-Glass (finish rating 25 min.), AG-C (finish rating 25 min.), LightRoc (finish rating 25 min.)

NATIONAL GYPSUM CO — Type FSK, Type FSK-G, Type FSW, Type FSW-3, Type FSW-5, Type FSW-G, Type FSK-C, Type FSW-C, Type FSMR-C, Type FSW-6, Type FSL

2J. Gypsum Board* — (As an alternate to Item 2) - 5/8 in. thick gypsum panels, with beveled, square, or tapered edges, applied either horizontally or vertically. Gypsum panels fastened to framing with 1-1/4 in. long Type W coarse thread steel screws spaced a max 8 in. OC with the last screw 1 in. from edge of board. When used in widths other than 48 in., gypsum boards are to be installed horizontally.

CERTAINTEED GYPSUM INC — Type C, Type X or Type X-1(finish rating 26 min), Easi-Lite Type X (finish rating 24 min), Easi-Lite Type X-2, Type EGRG or GlasRoc or GlasRoc Sheathing (finish rating 23 min)

3. Joints and Fastener Heads — (Not Shown) — Gypsum board joints covered with tape and joint compound. Fastener heads covered with joint compound.

4. Batts and Blankets* — Mineral fiber or glass fiber insulation, 3-1/2 in. thick, pressure fit to fill wall cavities between studs and plates. Mineral fiber insulation to be unfaced and to have a min density of 3 pcf. Glass fiber insulation to be faced with aluminum foil or kraft paper and to have a min density of 0.9 pcf (min R-13 thermal insulation rating).

See Batts and Blankets* (BKNV) Category in the Building Materials Directory and Batts and Blankets* (BZJZ) Category in the Fire Resistance Directory for names of Classified Companies.

Design No. U356 (continued)

4A. Fiber, Sprayed* — As an alternate to Batts and Blankets (Item 4) — Spray applied cellulose material. The fiber is applied with water to completely fill the enclosed cavity in accordance with the application instructions supplied with the product with a nominal dry density of 2.7 lb/ft3. Alternate Application Method: The fiber is applied without water or adhesive at a nominal dry density of 3.5 lb/ft3, in accordance with the application instructions supplied with the product.

U S GREENFIBER L L C — INS735 & INS745 for use with wet or dry application. INS510LD, INS515LD, INS541LD, INS735, INS745, INS765LD, and INS770LD are to be used for dry application only.

4B. Fiber, Sprayed* — As an alternate to Item 4 and 4A — Spray applied cellulose material. The fiber is applied with water to completely fill the enclosed cavity in accordance with the application instructions supplied with the product. Nominal dry density of 4.58 lb/ft 3.

NU-WOOL CO INC — Cellulose Insulation

4C. Fiber, Sprayed* — As an alternate to Batts and Blankets (Item 4) — Spray applied cellulose fiber. The fiber is applied with water to completely fill the enclosed cavity in accordance with the application instructions supplied with the product. The minimum dry density shall be 4.30 lbs/ft3.

INTERNATIONAL CELLULOSE CORP — Cellbar-RL

4D. Fiber, Sprayed* — As an alternate to Batts and Blankets (Item 4) — Spray applied, granulated mineral fiber material. The fiber is applied with adhesive, at a minimum density of 4.0 pcf, to completely fill the enclosed cavity in accordance with the application instructions supplied with the product. See Fiber, Sprayed (CCAZ).

AMERICAN ROCKWOOL MANUFACTURING, LLC — Type Rockwool Premium Plus

5. Wood Structural Panel Sheathing — Min 7/16 in. thick, 4 ft wide wood structural panels, min grade "C-D" or "Sheathing". Installed with long dimension of sheet (strength axis) or face grain of plywood parallel with or perpendicular to studs. Vertical joints centered on studs. Horizontal joints backed with nom 2 by 4 in. wood blocking. Attached to studs on exterior side of wall with 6d cement coated box nails spaced 6 in. OC at perimeter of panels and 12 in. OC along interior studs.

5A. Mineral and Fiber Boards* — As an alternate to Item 5 - Min 1/2 in. thick, 4 ft wide sheathing, installed vertically to studs. Vertical joints centered on studs. Horizontal joints backed with nom 2 by 4 in. wood blocking. Attached to studs on exterior side of wall with 1-1/2 in. long galvanized roofing nails spaced 6 in. OC at perimeter of panels and 12 in. OC along interior studs. As an option a weather resistive barrier may be applied over the Mineral and Fiber Boards.

6. Exterior Facings — Installed in accordance with the manufacturer's installation instructions. One of the following exterior facings is to be applied over the sheathing:

A. Vinyl Siding — Molded Plastic* — Contoured rigid vinyl siding having a flame spread value of 20 or less.
See Molded Plastic (BTAT) category in the Building Materials Directory for names of manufacturers.

B. Particle Board Siding — Hardboard exterior siding including patterned panel or lap siding.

C. Wood Structural Panel or Lap Siding — APA Rated Siding, Exterior, plywood, OSB or composite panels with veneer faces and structural wood core, per PS 1 or APA Standard PRP-108, including textured, rough sawn, medium density overlay, brushed, grooved and lap siding.

D. Cementitious Stucco — Portland cement or synthetic stucco systems with self-furring metal lath or adhesive base coat. Thickness from 3/8 to 3/4 in., depending on system.

E. Brick Veneer — Any type on nom 4 in. wide brick veneer. When brick veneer is used, the rating is applicable with exposure on either face. Brick veneer fastened with corrugated metal wall ties attached over sheathing to wood studs with 8d nail per tie: ties spaced not more than each sixth course of brick and max 32 in. OC horizontally. One in. air space provided between brick veneer and sheathing.

F. Exterior Insulation and Finish System (EIFS) — Nom 1 in. Foamed Plastic* insulation bearing the UL Classification Marking, attached over sheathing and finished with coating system, or Portland cement or synthetic stucco systems, in accordance with manufacturer's instructions. See Foamed Plastic (BRYX and CCVW) categories for names of Classified companies.

G. Siding — Aluminum or steel siding attached over sheathing to studs.

H. Fiber-Cement Siding — Fiber-cement exterior sidings including smooth and patterned panel or lap siding.

I. Wall and Partition Facings and Accessories* — Stone veneer is mortar bonded to a lath, scratch coat and water resistant barrier applied to sheathing, installed in accordance with the manufacturers installation instructions, and meeting the requirements of local code agencies.

ELDORADO STONE OPERATIONS L L C — Type Eldorado Stone

6A. Building Units* — As an alternate to Exterior Facing Item 6 — Insulated steel panels, 12 through 42 in. wide. Attached over sheathing through retainer clips to studs or support steel with No. 14 hex head self-tapping screws located at each joint in the concealed lip of the units and spaced in accordance with the structural design requirements.

CENTRIA, A DIVISION OF NCI GROUP, INC — Types Formawall Dimension Series and Formawall Graphix Series

KINGSPAN INSULATED PANELS INC — Types 200, 300, 400, 900, or KS series, 2 through 6 in. thickness; CWP-V, H, 2 through 3 in. nominal thickness or Designwall 2000 or Designwall 4000, 2 and 3 in. nominal thickness.

7. Steel Framing Members* — (Optional, Not Shown) — Furring Channels and Steel Framing Members as described below:
a. Furring Channels — Formed of No. 25 MSG galv steel. 2-9/16 in. or 2-23/32 in. wide by 7/8 in. deep, spaced 24 in. OC perpendicular to studs. Channels secured to studs as described in Item b. Ends of adjoining channels are overlapped 6 in. and tied together with double strand of No. 18 SWG galv steel wire near each end of overlap. As an alternate, ends of adjoining channels may be overlapped 6 in. and secured together with two self-tapping #6 framing screws, min. 7/16 in. long at the midpoint of the overlap, with one screw on each flange of the channel. Gypsum board attached to furring channels as described in Item 2.
b. Steel Framing Members* — Used to attach furring channels (Item 7A) to studs. Clips spaced 48 in. OC., and secured to studs with No. 8 x 2-1/2 in. coarse drywall screw through the center grommet. Furring channels are friction fitted into clips. RSIC-1 clip for use with 2-9/16 in. wide furring channels. RSIC-1 (2.75) clip for use with 2-23/32 in. wide furring channels.

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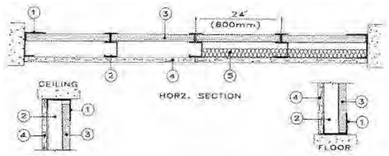
Design No. U469

December 03, 2022

Assembly Rating — 1 HR

Nonbearing Wall

*** Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.**



1. Floor and Ceiling Runners — "J" - shaped, 2-1/2 in. wide with unequal legs of 1 in. and 2 in., fabricated from 24 MSG galv steel (min 20 MSG steel required when Item 4A, 4B, or 4C is used). Runners attached to structural supports with steel fasteners located not greater than 2 in. from ends and not greater than 24 in. OC.
2. Steel Studs — "C-H" shaped studs, 2-1/2 in. wide by 1-1/2 in. deep, fabricated from min 25 MSG galv steel (min 20 MSG steel required when Item 4A, 4B, or 4C is used), spaced 24 in. or 600 mm OC (max 16 in. OC when Item 4A, 4B, or 4C is used). Vertically restrained walls require studs to be cut 3/8 in. less than floor to ceiling height.
3. Gypsum Board* — 1 in. thick gypsum wallboard liner panels, supplied in nominal 24 in. or 600 mm widths. Vertical edges inserted in "H" shaped section of "C-H" studs. Free edge of end panels attached to long leg of "J" runners with 1-5/8 in. long Type S head steel screws spaced not greater than 12 in. OC.
CERTAINTEED GYPSUM INC — Types Shaftliner, EGRG Shaftliner or GlasRoc Shaftliner

CGC INC — Type SLX.

CERTAINTEED GYPSUM INC — Type LGFCSL

GEORGIA-PACIFIC GYPSUM L L C — Types TP-6, DGUSL, and TRSL

UNITED STATES GYPSUM CO — Type SLX

USG BORAL DRYWALL SFZ LLC — Type SLX

USG MEXICO S A DE C V — Type SLX.

4. Gypsum Board* — 5/8 in. thick, 4 ft or 1200 mm wide, applied vertically and attached to studs with 1 in. long Type S steel screws spaced 12 in. OC along the edges and in the field of the boards.
AMERICAN GYPSUM CO — Types AGX-1, M-Glass, AG-C, LightRoc.

CABOT MANUFACTURING ULC — 5/8 Type X, Type Blueglass Exterior Sheathing

CERTAINTEED GYPSUM INC — Type C, Type X-1.

CGC INC — Types C, IP-X1, IP-X2, IPC-AR, SCX, ULIX, ULX, or WRC.

CERTAINTEED GYPSUM INC — Types LGFC-C, LGFC-C/A, LGFC6A

GEORGIA-PACIFIC GYPSUM L L C — Types 5, DAPC, Type X, Veneer Plaster Base - Type X, Water Rated - Type X, Sheathing - Type X, Soffit - Type X, Type TG-C, Type LWX, Veneer Plaster Base-Type LWX, Water Rated-Type LWX, Sheathing Type-LWX, Soffit-Type LWX, Type DGLW, Water Rated-Type DGLW, Sheathing Type- DGLW, Soffit-Type DGLW, Type LW2X, Veneer Plaster Base - Type LW2X, Water Rated - Type LW2X, Sheathing - Type LW2X, Soffit - Type LW2X, Type DGL2W, Water Rated - Type DGL2W, Sheathing - Type DGL2W, Type DGG, Type DAP, Type DS.

PABCO BUILDING PRODUCTS L L C, DBA PABCO GYPSUM — Types C, PG-11, PG-C, PGS-WRS, PGI

SAINT-GOBAIN GYPROC MIDDLE EAST FZE — Type Gyproc FireStop, Gyproc FireStop MR, Gyproc FireStop M2TECH, Gyproc FireStop ACTIVAir, Gyproc FireStop MR ACTIVAir, Gyproc FireStop M2TECH ACTIVAir, Gyproc DuraLine, Gyproc DuraLine MR, Gyproc DuraLine M2TECH, Gyproc DuraLine ACTIVAir, Gyproc DuraLine MR ACTIVAir, Gyproc DuraLine M2TECH ACTIVAir

THAI GYPSUM PRODUCTS PCL — Type C.

UNITED STATES GYPSUM CO — Types C, FRX-G, IP-X1, IP-X2, IPC-AR, SCX, ULIX, ULX or WRC.

USG BORAL DRYWALL SFZ LLC — Types C, SCX

USG MEXICO S A DE C V — Types C, IP-X1, IP-X2, IPC-AR, SCX, ULX, or WRC.

4A. Gypsum Board* — Not Shown - As an Alternate to Item 4. Nom 5/8 in. thick lead backed gypsum panels with beveled, square or tapered edges, applied vertically. Vertical joints centered over studs and staggered min 1 stud cavity on opposite sides of studs. Wallboard secured to studs with 1-1/4 in. long Type S-12 steel screws spaced 8 in. OC at perimeter and 12 in. OC in the field. Lead batten strips (Item 6) required behind vertical joints
RAY-BAR ENGINEERING CORP — Type RB-LBG

4B. Gypsum Board* — Not Shown - As an Alternate to Item 4. Nom 5/8 in. thick lead backed gypsum panels with beveled, square or tapered edges, applied vertically. Vertical joints centered over studs and staggered min 1 stud cavity on opposite sides of studs. Wallboard secured to studs with 1-1/4 in. long Type S-12 steel screws spaced 8 in. OC at perimeter and 12 in. OC in the field. Lead batten strips required behind vertical joints. To be used with Lead Batten Strips (see Item 6B) or Lead Discs (see Item 6C).
MAYCO INDUSTRIES INC — Type X-Ray Shielded Gypsum

4C. Gypsum Board* — (Not Shown - As an Alternate to Item 4.). Nom 5/8 in. thick lead backed gypsum panels with beveled, square or tapered edges, applied vertically. Vertical joints centered over studs and staggered min 1 stud cavity on opposite sides of studs. Wallboard secured to studs with 1-1/4 in. long Type S-12 steel screws gypsum panel steel screws spaced 8 in. OC at perimeter and 12 in. OC in the field. Lead batten strips required behind vertical joints of lead backed gypsum wallboard and optional at remaining stud locations. Lead batten strips, min 2 in. wide, max 8 ft long with a max thickness of 0.14 in. placed on the face of studs and attached to the stud with construction adhesive and two 1 in. long Type S-12 pan head steel screws, one at the top of the strip and one at the bottom of the strip. Lead discs, nominal 3/8 in. diam by max 0.085 in. thick. Compression fitted or adhered over the screw heads. Lead batten strips and discs to have a purity of 99.9% meeting the Federal specification QQ-L-201f, Grade "C".
RADIATION PROTECTION PRODUCTS INC — Type RPP - Lead Lined Drywall

5. Batts and Blankets* — (Optional) — Mineral wool batts partially or completely filling stud cavity.
ROCKWOOL — Type AFB, min. density 1.8 pcf / 28.8 kg/m3

THERMAFIBER INC — Type SAFB, SAFB FF

5A. Fiber, Sprayed* — As an alternate to Batts and Blankets (Item 5) — (100% Borate Formulation) — Spray applied cellulose material. The fiber is applied with water to completely fill the enclosed cavity in accordance with the application instructions supplied with the product with a nominal dry density of 2.7 lb/ft3. Alternate Application Method: The fiber is applied without water or adhesive at a nominal dry density of 3.5 lb/ft3, in accordance with the application instructions supplied with the product.
Applegate Greenfiber Acquisition LLC — INS735, INS745, INS750LD, and Insulmax for use with wet or dry application. INS765LD and INS773LD are to be used for dry application only.

5B. Fiber, Sprayed* — As an alternate to Batts and Blankets (Item 5) - Spray applied cellulose insulation material. The fiber is applied with water to interior surfaces in accordance with the application instructions supplied with the product. Applied to completely fill the enclosed cavity. Minimum dry density of 4.3 pounds per cubic ft.
NU-WOOL CO INC — Cellulose Insulation

5C. Fiber, Sprayed* — As an alternate to Batts and Blankets (Item 5) - Spray applied cellulose fiber. The fiber is applied with water to completely fill the enclosed cavity in accordance with the application instructions supplied with the product. The minimum dry density shall be 4.30 lbs/ft3.
INTERNATIONAL CELLULOSE CORP — Celbar-RL

5D. Deleted.
5E. Fiber, Sprayed* — As an alternate to Batts and Blankets (Item 5) - Spray-applied cellulose material. The fiber is applied with water to completely fill the enclosed cavity in accordance with the application instructions supplied with the product. To facilitate the installation of the material, any thin, woven or non-woven netting may be attached by any means possible to the outer face the studs. The material shall reach equilibrium moisture content before the installation of materials on either face of the studs. The minimum dry density shall be 5.79 lbs/ft3.
APPLEGATE HOLDINGS L L C — Applegate Advanced Stabilized Cellulose Insulation

6. Lead Batten Strips — For Use with Item 4A - (Not Shown) — Lead batten strips required behind vertical joints of lead backed gypsum wallboard (Item 4A) and optional at remaining stud locations. Strips, min 1-1/2 in. wide, max 10 ft long with a max thickness of 0.125 in. Strips placed on the interior face of studs and attached from the exterior face of the stud with two 1 in. long Type S-12 pan head steel screws, one at the top of the strip and one at the bottom of the strip. Lead batten strips to have a purity of 99.9% meeting the Federal specification QQ-L-201f, Grade "C".
6A. Lead Discs or Tabs — (Not Shown) - Used in lieu of or in addition to the lead batten strips (Item 6) or optional at other locations - Max 3/4 in. diam by max 0.125 in. thick lead discs compression fitted or adhered over steel screw heads or max 1/2 in. by 1-1/4 in. by max 0.125 in. thick lead tabs placed on gypsum boards (Item 5) underneath screw locations prior to the installation of the screws. Lead discs or tabs to have a purity of 99.9% meeting the Federal specification QQ-L-201f, Grade "C".
6B. Lead Batten Strips — (Not Shown, for use with Item 4B) Lead batten strips, 2 in. wide, max 10 ft long with a max thickness of 0.140 in. Strips placed on the face of studs and attached to the stud with two min. 1 in. long min. Type S-8 pan head steel screws, one at the top of the strip and one at the bottom of the strip or with one min. 1 in. long min. Type S-8 pan head steel screw at the top of the strip. Lead batten strips to have a purity of 99.5% meeting the Federal specification QQ-L-201f, Grades "B, C or D".
6C. Lead Discs — (Not Shown, for use with Item 4B) Max 5/16 in. diam by max 0.140 in. thick lead discs compression fitted or adhered over steel screw heads. Lead discs to have a purity of 99.5% meeting the Federal Specification QQ-L-201f, Grades "B, C or D".

*** Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.**

1 **U469 - SHAFT WALL**
12" = 1'-0"

#	DATE	CHANGE DESCRIPTION

COLUMBUS METROPOLITAN HOUSING AUTHORITY
COMMUNITY. COMMITMENT. COLLABORATION.

COBBLESTONE MANOR
1050 LAMPLIGHTER DRIVE
GROVE CITY, OH 43123
FOR
CMHA

MOODY•NOLAN
300 SPRUCE STREET
SUITE 300
COLUMBUS, OHIO 43215

PHONE: (614) 461-4664
FAX: (614) 280-8881

DRAWING TITLE:

UL ASSEMBLIES - U469

STATE OF OHIO
JAY W. BOONE
10740
REGISTERED ARCHITECT

JAY W BOONE, LIC. #10740
EXP. DATE: 12/31/2022

06/08/2023

DRAWN BY: **Author** CHECKED BY: **Checker**

#22172.01

G010

PERMIT & BID SET

PRINT DATE: 11/16/2022 2:32:35 PM
FILE INFO: Autodesk Docs://22172.01 CMHA Cobblestone Manor/22172.01 CMHA Cobblestone Manor_ARCH.rvt

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BASED ON 2017 OBC

PLUMBING FIXTURE TOTALS

	OCCUPANCY		WATER CLOSETS		URINALS PERMITTED FOR SUBSTITUTION	WATER CLOSETS MINUS URINALS	LAVATORIES		BATHS & SHOWERS	DRINKING FOUNTAINS	SERVICE SINKS	KITCHEN SINKS	AUTO CLOTHES WASHER CONNS
	MALE	FEMALE	MALE	FEMALE			MALE	FEMALE					
SUBTOTAL	37	38	0.45	0.64			0.28	0.29	82	0.36			4.1
			1	1			1	1					
TOTAL	75		84		1	83	84		82	1	1	82	5

PLUMBING FIXTURE CALCULATOR

CLASSIFICATION	OCCUPANCY TYPE	DESCRIPTION	OCCUPANCY TOTAL	GENDER OCCUPANCY TOTALS		WATER CLOSETS		URINALS	LAVATORIES		BATHTUBS OR SHOWERS	DRINKING FOUNTAINS	OTHER
				MALE	FEMALE	MALE	FEMALE		MALE	FEMALE			
ASSEMBLY	A-3	Auditoriums without permanent seating, art galleries, exhibition halls, museums, lecture halls, libraries, arcades and gymnasiums	49	24	25	0.19 1 per 50	0.38 1 per 25	0.13	0.12 1 per 100	0.13 1 per 50	-	0.10 1 per 100	*1 SERVICE SINK TOTAL: 1
		Passenger terminals and transportation facilities	0	0	0	0.00 1 per 500	0.00 1 per 500	0.00	0.00 1 per 750	0.00 1 per 750	-	0.00 1 per 1000	*1 SERVICE SINK TOTAL: 0
		Places of worship and other religious services	0	0	0	0.00 1 per 60	0.00 1 per 60	0.00	0.00 1 per 60	0.00 1 per 60	-	0.00 1 per 300	*1 SERVICE SINK TOTAL: 0
BUSINESS	B	Buildings for the transaction of business, profess. services, other services involving merchandise, office bldgs, banks, light industrial and similar uses	26	13	13	0.26 1 per 50	0.26 1 per 50	0.13	0.16 1 per 50	0.16 1 per 50	-	0.26 1 per 50	*1 SERVICE SINK TOTAL: 1
RESIDENTIAL	R-2	Apartment house	DWELLING UNITS 82			*1 PER DWELLING UNIT TOTAL: 82		0	*1 PER DWELLING UNIT TOTAL: 82		*1 PER DWELLING UNIT TOTAL: 82	-	*1 KITCHEN SINK PER DWELLING UNIT TOTAL: 82 / *1 AUTOMATIC CLOTHES WASHER CONNECTION PER 20 DWELLING UNITS TOTAL: 4.10

NOTE: THE COMMON AREAS SERVE THE RESIDENTS OF THE BUILDING. MOST OF THE UNITS (64%) ARE ON THE FIRST AND SECOND FLOORS WHERE TENANTS ARE WITHIN THE CODE REQUIRED DISTANCE OF USING THEIR OWN TOILET FACILITIES. IN LOOKING AT THE BUSINESS AREA AND HALF OF THE CAPACITY OF THE COMMUNITY ROOM, WE MEET THE REQUIREMENTS OF PROVIDING ONE TOILET FACILITY FOR 3RD FLOOR TENANTS AND VISITORS ON THE MAIN FLOOR FOR EACH SEX.

BUILDING INFORMATION

OWNER NAME	COLUMBUS METROPOLITAN HOUSING AUTHORITY (CMHA)
OWNER ADDRESS	880 EAST 11TH AVENUE COLUMBUS, OH 43211
SITE ADDRESS	1050 LAMPLIGHTER DRIVE GROVE CITY, OH 43123

DESCRIPTION

PROJECT DESCRIPTION: COBBLESTONE MANOR IS AN 82 UNIT, THREE STORY MULTI-FAMILY RESIDENTIAL FACILITY FOR SENIOR LIVING. THE PROPOSED THREE-STORY BUILDING WILL BE WOOD FRAMED CONSTRUCTION AND HAVE SHINGLES AT THE SLOPED ROOF AND MEMBRANE ROOF SYSTEM AT THE LOW SLOPE ROOF. THE BUILDING WILL HAVE A MIX OF 1-BEDROOM AND 2-BEDROOM UNITS. VINYL WINDOWS WITH COMPOSITE SLIDING DOORS AT JULIET BALCONIES ARE PROPOSED FOR THE DWELLING UNITS AND ALUM STOREFRONT AT THE COMMUNITY ROOM AND LOBBY. THE BUILDING WILL HAVE ELEVATORS SERVING THE LOBBY WITH COMMON AMENITIES LOCATED ON THE FIRST FLOOR. DWELLING UNIT DOORS WILL BE PRE-HUNG SOLID CORE. ALL FINISHES WILL MEET THE REQUIREMENTS OF OHFA'S QAP. SEE FOLLOWING DRAWING SHEETS FOR ADDITIONAL INFORMATION.

SITE INFORMATION

SITE ZONING	PUD-R / C-2
SITE AREA	4.19 AC
PARKING SHOWN	72
ACCESSIBLE PARKING	7
STANDARD PARKING	65

BUILDING CODES

TITLE	EDITION
OHIO BUILDING CODE	2017 OBC
OHIO PLUMBING CODE	2017 OPC
OHIO MECHANICAL CODE	2017 OMC
NATIONAL ELECTRICAL CODE	2017 NEC - NFPA 70
INTERNATIONAL ENERGY CONSERVATION CODE	2012 IECC
ICC A117.1 - 2009 ACCESSIBLE AND USEABLE BUILDINGS AND FACILITIES	OHFA PROJECT SELECTED SAFE HARBOR 2010 ASHRAE 90.1
OHIO FIRE CODE	2017 OFC
AUTOMATIC SPRINKLER SYSTEMS	2016 NFPA 13
NATIONAL FIRE ALARM AND SIGNALING CODE	2016 NFPA 72
SAFETY CODE FOR ELEVATORS/ESCALATORS	2016 ASME A17.1

USE AND OCCUPANCY CLASSIFICATION

	REQUIREMENTS	SECTION
BUILDING CLASSIFICATION	MIXED USE NON-SEPARATED R-2 / B / A-3 - USE A3 (MOST RESTRICTIVE)	310.4
SMALL ASSEMBLY SPACES	ASSEMBLY SPACES w/ OCCUPANT LOAD OF < 50 PERSONS OR 750 SF SHALL BE CLASSIFIED GROUP B	303.1.2
ACCESSORY USES	ACCESSORY SPACES < 10% OF FLOOR AREA ON STORY THEY ARE LOCATED	508.2.3
INCIDENTAL USES:	SEPARATION AND / OR PROTECTION 1 HOUR OR PROVIDE AUTOMATIC SPRINKLER SYSTEM	509
	INCIDENTAL USES SHALL NOT EXCEED 10% OF FLOOR AREA	509.3

GENERAL BUILDING HEIGHTS AND AREAS

	REQUIREMENTS	SECTION/TABLE
CONSTRUCTION TYPE	5A (PROTECTED/SPRINKLERED)	TABLE 506.2
USE GROUP	MIXED USE NON-SEPARATED R-2 / B / A-3 - USE A3 (MOST RESTRICTIVE)	
ALLOWABLE HEIGHT	70 FT (A3)	TABLE 504.3
ACTUAL HEIGHT	50 FT	
ALLOWABLE # OF STORIES ABOVE GRADE	3 STORIES (A-3)	TABLE 504.4
ACTUAL # OF STORIES ABOVE GRADE	3 STORIES	
ALLOWABLE AREA	34,500 SF (A-3)	TABLE 506.2
FRONTAGE INCREASE	I = [F/P-0.25]W/30 I = [0.5-0.25] 30/30 = 0.25	506.3.3
ALLOWABLE FLOOR AREA PER STORY MIXED-OCCUPANCY, MULTISTORY	Aa = [At + (Ns x If)] Aa = 34,500 + 11,500 x 0.25 Aa = 34,500 + 2,875 = **37,375 SF**	
ACTUAL FLOOR AREA	FIRST FLOOR = 27,593 SF SECOND FLOOR = 26,670 SF THIRD FLOOR = 26,251 SF TOTAL = 80,514 SF	

TYPES OF CONSTRUCTION

	REQUIREMENTS	SECTION
CONSTRUCTION TYPE	TYPE 5A	
PRIMARY STRUCTURAL FRAME	1 HR	TABLE 601
EXTERIOR BEARING WALLS	1 HR	TABLE 601
EXTERIOR NON-BEARING WALLS	0 HR WHERE SEPARATION DISTANCE ≥ 30 FT 1 HR WHERE SEPARATION DIST ≥ 10 FT & < 30 FT	TABLE 602
INTERIOR BEARING WALLS	1 HR	TABLE 601
INTERIOR NON-BEARING WALLS	0 HR	TABLE 601
FLOORS	1 HR	TABLE 601
ROOF	1 HR	TABLE 601
EXTERIOR WALL OPENINGS	NO LIMIT WHERE FIRE SEPARATION ≥ 20 FT	TABLE 705.8.5
	VERTICAL SEPARATION OF OPENINGS - N/A	TABLE 705.8.5 EXCEPTION 1 & 2

FIRE-RESISTIVE-RATED CONSTRUCTION

	REQUIREMENTS	SECTION
STAIRWAY ENCLOSURES	1 HOUR CONNECTING < 4 STORIES	713.4
ELEVATOR ENCLOSURE	1 HOUR CONNECTING < 4 STORIES	713.4
PIPE SHAFTS AND DUCTS	1 HOUR CONNECTING < 4 STORIES	713.4
TRASH CHUTES	1 HOUR CONNECTING < 4 STORIES	713.4
	TRASH ROOM AT BOTTOM TO HAVE A 1 HR RATED ENCLOSURE	713.4
HOISTWAY OPENING PROTECTION	NOT REQUIRED CONNECTING < 4 STORIES	3006.2
CORRIDORS	A & B OCCUPANCY = 0 HR w/ SPRINKLER	TABLE 1020.1
	R OCCUPANCY = 1/2 HR w/ SPRINKLER	TABLE 1020.1
EXTERIOR WALLS BEARING	1 HR	TABLE 601
NON-BEARING	< 30FT FIRE SEPARATION = 1 HR	TABLE 602
OPENING PROTECTIVES	WALL RATING / DOOR RATING	TABLE 716.5
FIRE BARRIERS - SHAFT ENCLOSURES	1 HR / 1 HR	
FIRE PARTITIONS & CORRIDOR WALLS	1 HR / 3/4 HR - 1/2 HR / 1/3 HR	
ATTIC DRAFTSTOPPING	AREA 3,000 SF MAX OR ABOVE EVERY TWO DWELLING UNITS, WHICHEVER IS SMALLER	708.4 EXCEPTION 5
R-2 OCCUPANCY		420.1 - 420.6
SEPARATION WALLS	FIRE PARTITION	708
DWELLING / SLEEPING UNITS	1 HR (SPRINKLERED)	708
CORRIDOR WALLS	1 HR (SPRINKLERED)	TABLE 1020.1
HORIZONTAL SEPARATION	1 HR (SPRINKLERED)	711

INTERIOR FINISHES

	REQUIREMENTS	SECTION
CLASSIFICATION	A-3 / B / R-2	803
WALL AND CEILING - INT EXT STAIRWAYS	CLASS B / B / C	TABLE 803.11
WALL AND CEILING - EXIT CORRIDORS	CLASS B / C / C	TABLE 803.11
WALL AND CEILING - ROOMS	CLASS C / C / C	TABLE 803.11
FLOOR COVERINGS	DOC FF-1 "PILL TEST" or ASTM D2859	804.4.1

FIRE PROTECTION SYSTEMS

	REQUIREMENTS	SECTION
SPRINKLER SYSTEM	BUILDING WILL BE EQUIPPED THROUGHOUT WITH AN AUTOMATIC SPRINKLER SYSTEM IN ACCORDANCE WITH 903.3.1.1 (NFPA 13)	
FIRE EXTINGUISHERS	CLASS 2A - 75' TRAVEL DISTANCE / 6,000 SF AREA	906 / NFPA 10
FIRE ALARM SYSTEM		907.2.9 / NFPA 72
MANUAL FIRE ALARMS		907.2.9.1
SMOKE DETECTORS		907.2.9.2

MEANS OF EGRESS

	REQUIREMENTS	SECTION
MAX. FLOOR AREA ALLOWANCE PER OCCUPANT	FUNCTION OF SPACE / FLOOR AREA PER OCCUPANT RESIDENTIAL (R-2) 200 SF/ OCCUPANT BUSINESS (B) 100 SF/ OCCUPANT ASSEMBLY (A3) 15 SF/ OCCUPANT UNCONCENTRATED SEATS STORAGE (S-2) 300 SF/ OCCUPANT	TABLE 1004.1.2
ACTUAL OCCUPANCY CALCULATION	SEE SHEETS G101 AND G102, LIFE SAFETY PLANS	
EGRESS WIDTH	0.3 INCH FOR STAIRWAYS AND 0.2 INCH OTHER	1005.3.1 & 1005.3.2
DOOR ENCROACHMENT CORRIDORS & STAIRS	WHEN IN THE FULLY OPENED POSITION, DOORS CANNOT OBSTRUCT MORE THAN 7" OF THE REQUIRED WIDTH, AND AT ANY POINT ALONG ITS SWING IT CANNOT OBSTRUCT THE REQUIRED WIDTH BY MORE THAN HALF.	1005.7.1 & 1010.1.6
MINIMUM NUMBER OF EXITS	1 - 500 OCCUPANTS = 2 EXITS 501 - 1,000 OCCUPANTS = 3 EXITS MORE THAN 1,000 = 4 EXITS	TABLE 1006.3.1
EXIT SEPARATION	1/3 DIAGONAL OF AREA SERVED (SPRINKLERED)	1007.1.1
DOOR SWINGS	DOOR SHALL SWING IN THE DIRECTION OF EGRESS TRAVEL SERVING AN OCCUPANT LOAD OF 50 OR MORE PERSONS	1010.1.2.1
AREAS OF REFUGE	NOT REQUIRED	1009.3 EXCEPTIONS 5 AND 8
STAIRWAY WIDTH	SHALL BE DETERMINED BY 1005.3.1, BUT NOT LESS THAN 44 INCHES	1011.2
HEADROOM	80 INCHES MINIMUM	1011.3
TREADS AND RISERS	RISERS - 7 INCH MAXIMUM AND 4 INCH MINIMUM TREADS - 11 INCH MINIMUM	1011.5.2
LANDINGS	EQUAL TO STAIR WIDTH, 48 INCH MAXIMUM	1011.6
HANDRAILS	STAIRS SHALL HAVE HANDRAILS ON EACH SIDE AND COMPLY WITH SECTION 1014	1011.11
	34 IN < HEIGHT < 38 IN	1014.2
	1 1/4 IN < GRASPABILITY < 2 IN	1014.3.1
RAMP SLOPE	RAMPS USED AS PART OF MEANS OF EGRESS = NOT STEEPER THAN 1:12 (8% SLOPE) OTHER PEDESTRIAN RAMPS = NOT STEEPER THAN 1:8 (12.5% SLOPE)	1012.2
RAMP VERTICAL RISE	30 INCHES MAXIMUM	1012.4
RAMP WIDTH	NOT LESS THAN THAT REQUIRED FOR CORRIDORS; 36 INCHES MINIMUM	1012.5.1
HANDRAILS	RAMPS WITH A RISE GREATER THAN 6 INCHES SHALL HAVE HANDRAILS ON BOTH SIDES AND COMPLY WITH SECTION 1014	1012.8
TRAVEL DISTANCE LIMITATIONS	TRAVEL DISTANCE GROUP A, R-2 = 250 FEET GROUP B = 300 FEET GROUP S-2 = 400 FEET COMMON PATH GROUP A = 75 FEET GROUP B, & S = 100 FEET GROUP R-2 = 125 FEET	TABLE 1017.2 TABLE 1006.2.1
SINGLE EXISTS	INDIVIDUAL MULTISTORY DWELLING UNITS SHALL BE PERMITTED TO HAVE A SINGLE EXIT OR ACCESS TO A SINGLE EXIT FROM THE DWELLING UNIT PROVIDED THAT: -THE DWELLING UNIT COMPLIES WITH SECTION 1006.2.1 AS A SPACE WITH ONE MEANS OF EGRESS. -THE EXIT ACCESS OUTSIDE THE DWELLING UNIT'S ENTRANCE DOOR PROVIDES ACCESS TO NOT LESS THAN TWO EXITS.	1006.3.2(5) 1006.2.1 EXCEPTION 1
CORRIDOR WIDTH	AS DETERMINED IN SECTION 1005.1, BUT NOT LESS THAN 44 INCHES	1020.2
	24 INCHES - ACCESS TO ELECTRICAL, MECHANICAL OR PLUMBING EQUIPMENT	1020.2 EXCEPTION 1
	36 INCHES - WITH A REQUIRED OCCUPANT CAPACITY OF LESS THAN 50	1020.2 EXCEPTION 2
	36 INCHES - WITHIN A DWELLING UNIT	1020.2 EXCEPTION 2
DEAD ENDS	50 FEET MAXIMUM; 20 FEET FOR ASSEMBLY OCCUPANCIES	1020.4 EXCEPTION 2

GENERAL NOTES - CODE PLAN

1. ALL STRUCTURAL STEEL BEARING MEMBERS WILL NEED PROTECTED WITH SPRAY APPLIED FIREPROOFING - COLUMNS (IFRM) / BEAMS (SFRM). THIS DOES NOT INCLUDE CANOPY CONSTRUCTION.
2. CANOPY CONSTRUCTION TO INCLUDE NON-COMBUSTIBLE MATERIALS AND/OR FIRE-RETARDANT TREATED WOOD.
3. WHEN BUILDING IS NEARING COMPLETION, CONTRACTOR TO COORDINATE EFFORTS TO HAVE THE BUILDING TESTED TO DETERMINE IF AN EMERGENCY RESPONDER RADIO SYSTEM IS REQUIRED. IF SYSTEM IS REQUIRED, PROVIDE AND INSTALL PER SECTION 510 OF THE OHIO FIRE CODE. REFER TO SPECIFICATIONS FOR COST ALLOWANCE FOR THE WORK.
4. CONTRACTOR TO KEEP A SET OF APPROVED CONSTRUCTION DOCUMENTS AT THE WORK SITE, ALONG w/ MANUFACTURER'S INSTALLATION INSTRUCTIONS AND PRODUCT INFORMATION AND SHALL BE AVAILABLE FOR USE AND REFERENCE BY THE BUILDING OFFICIAL AT ALL TIMES WHILE SUCH WORK IS IN PROGRESS.

TRAVEL DISTANCE TYPES

TRAVEL DISTANCE

COMMON PATH OF TRAVEL

FIRE EQUIPMENT LEGEND

FE — FIRE EXTINGUISHER

FEC — FIRE EXTINGUISHER AND CABINET

RATED WALL LEGEND

1 HOUR FIRE RATED BARRIER TO SHEATHING ABOVE

1 HOUR FIRE RATED PARTITION TO RATED ASSEMBLY

1 HR FIRE RATED STRUCTURE - LOAD BEARING WALL

2 HOUR FIRE RATED PARTITION TO SHEATHING ABOVE

1 HR FIRE RATED EXTERIOR WALL ASSEMBLY (UL DESIGN NO. U356 - INTERIOR EXPOSURE ONLY)

1 HR FIRE RATED EXTERIOR WALL ASSEMBLY (UL DESIGN NO. U356 - EXTERIOR & INTERIOR EXPOSURE)

OCCUPANCY TAGS

STAIR

WIDTH (IN)	0"
FACTOR (IN/OCC)	0.20
EGRESS CAPACITY	0.0

DOOR

WIDTH (IN)	0"
FACTOR (IN/OCC)	0.2
EGRESS CAPACITY	0

ROOM

NAME	101
A-1	150 SF
OCC	OCC LOAD

OCCUPANCY GROUP — A-1 — ROOM SF

OCCUPANT LOAD — OCC — OCCUPANT LOAD FACTOR

OCCUPANCY CALCULATION

FIRST FLOOR 27,547 SF

ASSEMBLY - COMMUNITY 1133 SF / 15 SF NET/PERSON = 76
ASSEMBLY - LIBRARY 321 SF / 15 SF NET/PERSON = 22
ASSEMBLY - FLEX SPACE 475 SF / 15 SF NET/PERSON = 14
WELLNESS 590 SF / 50 SF GROSS/PERSON = 12
BUSINESS 2,600 SF / 100 SF GROSS/PERSON = 26
RESIDENTIAL 22,428 SF / 200 SF GROSS/PERSON = 113
TOTAL FIRST FLOOR = 263

SECOND FLOOR 26,630 SF / 200 SF GROSS/PERSON = 134

THIRD FLOOR 26,327 SF / 200 SF GROSS/PERSON = 132

BUILDING TOTAL 529

#	DATE	CHANGE DESCRIPTION
1	10/16/23	Grove City Comments

COLUMBUS METROPOLITAN HOUSING AUTHORITY
COMMUNITY. COMMITMENT. COLLABORATION.

COBBLESTONE MANOR
1050 LAMPLIGHTER DRIVE
GROVE CITY, OH 43123
FOR
CMHA

MOODY•NOLAN
300 SPRUCE STREET
SUITE 300
COLUMBUS, OHIO 43215

PHONE: (614) 461-4664
FAX: (614) 280-8881

DRAWING TITLE:

CODE DATA

STATE OF OHIO — JAY W. BOONE — 10740 — REGISTERED ARCHITECT

JAY W BOONE, I.C. #10740
EXP. DATE: 12/31/2023

06/08/2023

DRAWN BY: XXX CHECKED BY: XXX

#22172.01

G100

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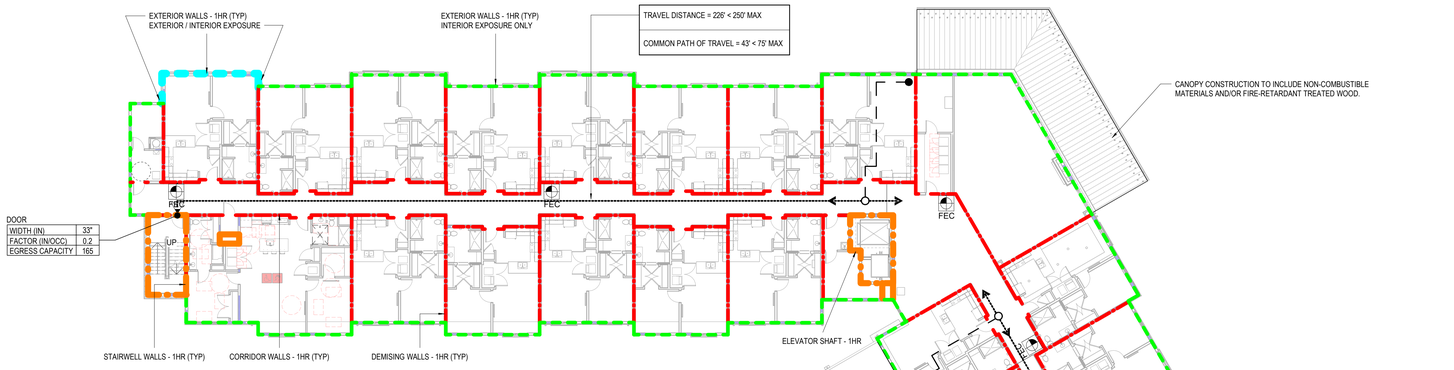
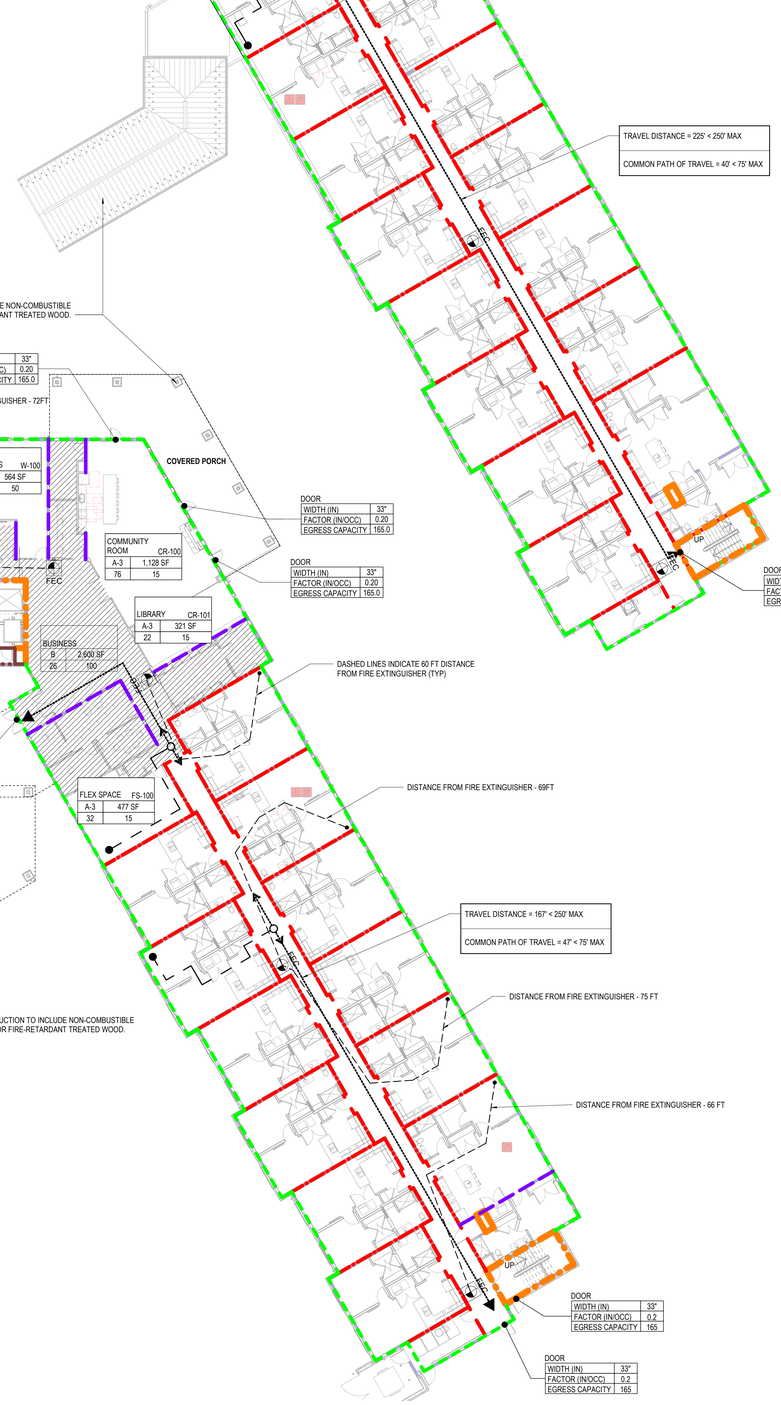


SECOND FLOOR OCCUPANT LOAD: 134 PERSONS
SECOND FLOOR EGRESS CPACITY: 330 PERSONS

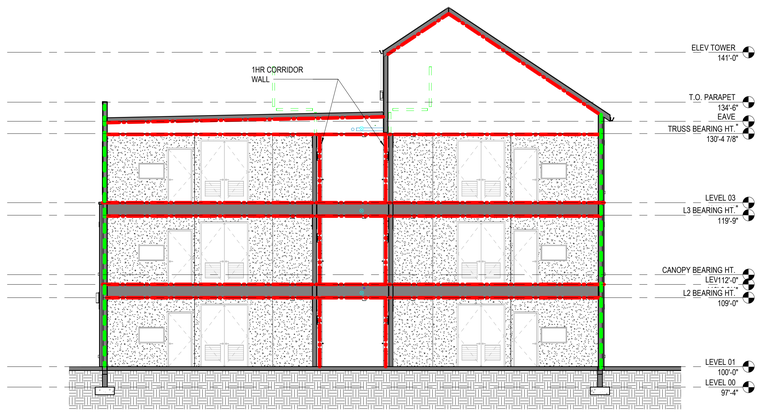
2 PLAN LEVEL 02 - CODE PLAN
1/16" = 1'-0"



NOTE:
ALL STRUCTURAL STEEL BEARING MEMBERS ARE TO BE PROTECTED WITH SPRAY APPLIED FIREPROOFING - COLUMNS (IFRM) UL X673 / BEAMS (SFRM) UL X854.
THIS DOES NOT INCLUDE CANOPY CONSTRUCTION.

FIRST FLOOR OCCUPANT LOAD: 263 PERSONS
FIRST FLOOR EGRESS CPACITY: 990 PERSONS

1 PLAN LEVEL 01 - CODE PLAN
1/16" = 1'-0"



3 BUILDING SECTION - TYPICAL
1/8" = 1'-0"

GENERAL NOTES - CODE PLAN

1. ALL STRUCTURAL STEEL BEARING MEMBERS WILL NEED PROTECTED WITH SPRAY APPLIED FIREPROOFING - COLUMNS (IFRM) / BEAMS (SFRM). THIS DOES NOT INCLUDE CANOPY CONSTRUCTION.
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TRAVEL DISTANCE TYPES

- TRAVEL DISTANCE
- COMMON PATH OF TRAVEL

FIRE EQUIPMENT LEGEND

- FE — FIRE EXTINGUISHER
- FEC — FIRE EXTINGUISHER AND CABINET

RATED WALL LEGEND

- 1 HOUR FIRE RATED BARRIER TO SHEATHING ABOVE
- 1 HOUR FIRE RATED PARTITION TO RATED ASSEMBLY
- 1 HR FIRE RATED STRUCTURE - LOAD BEARING WALL
- 2 HOUR FIRE RATED PARTITION TO SHEATHING ABOVE
- 1 HR FIRE RATED EXTERIOR WALL ASSEMBLY (UL DESIGN NO. U356 - INTERIOR EXPOSURE ONLY)
- 1 HR FIRE RATED EXTERIOR WALL ASSEMBLY (UL DESIGN NO. U356 - EXTERIOR & INTERIOR EXPOSURE)

OCCUPANCY TAGS

STAIR

WIDTH (IN)	0"
FACTOR (IN/OCC)	0.20
EGRESS CAPACITY	0.0

DOOR

WIDTH (IN)	0"
FACTOR (IN/OCC)	0.2
EGRESS CAPACITY	0

ROOM

NAME	101	
A-1	150 SF	ROOM SF
OCC	OCC LOAD	OCCUPANT LOAD FACTOR

OCCUPANCY GROUP — A-1; OCCUPANT LOAD — OCC

OCCUPANCY CALCULATION

FIRST FLOOR	27,547 SF
ASSEMBLY - COMMUNITY	1133 SF / 15 SF NET/PERSON = 76
ASSEMBLY - LIBRARY	321 SF / 15 SF NET/PERSON = 22
ASSEMBLY - FLEX SPACE	475 SF / 15 SF NET/PERSON = 14
WELLNESS	590 SF / 50 SF GROSS/PERSON = 12
BUSINESS	2,600 SF / 100 SF GROSS/PERSON = 26
RESIDENTIAL	22,428 SF / 200 SF GROSS/PERSON = 113
	TOTAL FIRST FLOOR = 263
SECOND FLOOR	26,630 SF / 200 SF GROSS/PERSON = 134
THIRD FLOOR	26,327 SF / 200 SF GROSS/PERSON = 132
	BUILDING TOTAL 529

#	DATE	CHANGE DESCRIPTION
1	10/16/23	Grove City Comments

COLUMBUS METROPOLITAN HOUSING AUTHORITY
COMMUNITY. COMMITMENT. COLLABORATION.

COBBLESTONE MANOR
1050 LAMPLIGHTER DRIVE
GROVE CITY, OH 43123
FOR
CMHA

MOODY•NOLAN
300 SPRUCE STREET
SUITE 300
COLUMBUS, OHIO 43215
PHONE: (614) 461-4664
FAX: (614) 280-8881

DRAWING TITLE:
LEVEL 01 & 02 - CODE PLAN & SECTION

STATE OF OHIO — JAY W. BOONE — 10740 — REGISTERED ARCHITECT
JAY W BOONE, LIC. #10740
EXP. DATE: 12/31/2023

06/08/2023
DRAWN BY: XXX CHECKED BY: XXX
#22172.01

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2 **PLAN** ROOF - CODE PLAN
1/16" = 1'-0"

1 **PLAN** LEVEL 03 - CODE PLAN
1/16" = 1'-0"

GENERAL NOTES - CODE PLAN

1. ALL STRUCTURAL STEEL BEARING MEMBERS WILL NEED PROTECTED WITH SPRAY APPLIED FIREPROOFING - COLUMNS (IFRM) / BEAMS (SFRM). THIS DOES NOT INCLUDE CANOPY CONSTRUCTION.
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TRAVEL DISTANCE TYPES

TRAVEL DISTANCE

COMMON PATH OF TRAVEL

FIRE EQUIPMENT LEGEND

FE — FIRE EXTINGUISHER

FEC — FIRE EXTINGUISHER AND CABINET

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1 HOUR FIRE RATED BARRIER TO SHEATHING ABOVE

1 HOUR FIRE RATED PARTITION TO RATED ASSEMBLY

1 HR FIRE RATED STRUCTURE - LOAD BEARING WALL

2 HOUR FIRE RATED PARTITION TO SHEATHING ABOVE

1 HR FIRE RATED EXTERIOR WALL ASSEMBLY (UL DESIGN NO. U356 - INTERIOR EXPOSURE ONLY)

1 HR FIRE RATED EXTERIOR WALL ASSEMBLY (UL DESIGN NO. U356 - EXTERIOR & INTERIOR EXPOSURE)

OCCUPANCY TAGS

STAIR

WIDTH (IN)	0"
FACTOR (IN/OCC)	0.20
EGRESS CAPACITY	0.0

DOOR

WIDTH (IN)	0"
FACTOR (IN/OCC)	0.2
EGRESS CAPACITY	0

ROOM

	NAME	101	
OCCUPANCY GROUP	A-1	150 SF	ROOM SF
OCCUPANT LOAD	OCC	OCC LOAD	OCCUPANT LOAD FACTOR

OCCUPANCY CALCULATION

FIRST FLOOR	27,547 SF	
ASSEMBLY - COMMUNITY	1133 SF / 15 SF NET/PERSON = 76	
ASSEMBLY - LIBRARY	321 SF / 15 SF NET/PERSON = 22	
ASSEMBLY - FLEX SPACE	475 SF / 15 SF NET/PERSON = 14	
WELLNESS	590 SF / 50 SF GROSS/PERSON = 12	
BUSINESS	2,600 SF / 100 SF GROSS/PERSON = 26	
RESIDENTIAL	22,428 SF / 200 SF GROSS/PERSON = 113	
		TOTAL FIRST FLOOR = 263
SECOND FLOOR	26,630 SF / 200 SF GROSS/PERSON = 134	
THIRD FLOOR	26,327 SF / 200 SF GROSS/PERSON = 132	
		BUILDING TOTAL 529

#	DATE	CHANGE DESCRIPTION
1	10/16/23	Grove City Comments

COLUMBUS METROPOLITAN HOUSING AUTHORITY
COMMUNITY. COMMERCE. COLLABORATION.

COBBLESTONE MANOR
1050 LAMPLIGHTER DRIVE
GROVE CITY, OH 43123
FOR
CMHA

MOODY•NOLAN
300 SPRUCE STREET
SUITE 300
COLUMBUS, OHIO 43215

PHONE: (614) 461-4664
FAX: (614) 280-8881

DRAWING TITLE:

LEVEL 03 & ROOF - CODE PLAN

STATE OF OHIO
JAY W BOONE
10740
REGISTERED ARCHITECT

JAY W BOONE, LIC. #10740
EXP. DATE: 12/31/2023

06/08/2023

DRAWN BY: **XXX** CHECKED BY: **XXX**

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GROSS BUILDING

AREA PLAN SCHEDULE (GROSS BUILDING)	
NAME	AREA
LEVEL 01	
GROSS BUILDING	30,643 SF
LEVEL 02	
GROSS BUILDING	27,863 SF
LEVEL 03	
GROSS BUILDING	26,314 SF
GRAND TOTAL	84,820 SF

3 **PLAN** LEVEL 03 - GROSS BUILDING AREA
1" = 30'-0"

2 **PLAN** LEVEL 02 - GROSS BUILDING AREA
1" = 30'-0"

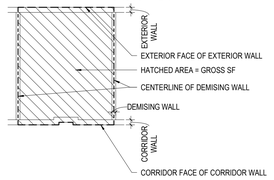
1 **PLAN** LEVEL 01 - GROSS BUILDING AREA
1" = 30'-0"

GENERAL NOTES - AREA PLANS

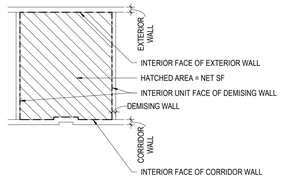
A. AREA PLAN SHEET IS AVAILABLE IN COLOR UPON REQUEST.
B. REFER TO OVERALL FLOOR PLANS AND ENLARGED UNIT PLANS FOR ADDITIONAL INFORMATION.

AREA LEGEND

GROSS AREA



NET AREA



#	DATE	CHANGE DESCRIPTION

COLUMBUS METROPOLITAN HOUSING AUTHORITY
COMMUNITY. COMMITMENT. COLLABORATION.

COBBLESTONE MANOR
1050 LAMPLIGHTER DRIVE
GROVE CITY, OH 43123
FOR
CMHA

MOODY•NOLAN
300 SPRUCE STREET
SUITE 300
COLUMBUS, OHIO 43215

PHONE: (614) 461-4664
FAX: (614) 280-8881

DRAWING TITLE:
AREA PLANS - GROSS BUILDING

STATE OF OHIO
JAY W. BOONE
10740
REGISTERED ARCHITECT
JAY W BOONE, LIC. #10740
EXP. DATE: 12/31/2023

06/08/2023
DRAWN BY: XXX | CHECKED BY: XXX
#22172.01

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3 PLAN LEVEL 03 - GROSS AREA
1" = 30'-0"

2 PLAN LEVEL 02 - GROSS AREA
1" = 30'-0"

1 PLAN LEVEL 01 - GROSS AREA
1" = 30'-0"

C.A. CIRCULATION
C.A. PUBLIC
DEDICATED PROGRAMMATIC SPACE
MAJOR VERTICAL PENETRATION
RESIDENTIAL
SUPPORT

AREA PLAN SCHEDULE (GROSS)

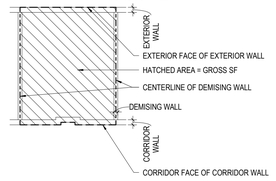
DEPARTMENT	AREA
C.A. CIRCULATION	
C.A. CIRCULATION	10,516 SF
	10,516 SF
C.A. PUBLIC	
C.A. PUBLIC	6,352 SF
	6,352 SF
DEDICATED PROGRAMMATIC SPACE	
DEDICATED PROGRAMMATIC SPACE	517 SF
	517 SF
MAJOR VERTICAL PENETRATION	
MAJOR VERTICAL PENETRATION	3,237 SF
	3,237 SF
RESIDENTIAL	
RESIDENTIAL	60,944 SF
	60,944 SF
SUPPORT	
SUPPORT	3,253 SF
	3,253 SF
GRAND TOTAL	84,820 SF

GENERAL NOTES - AREA PLANS

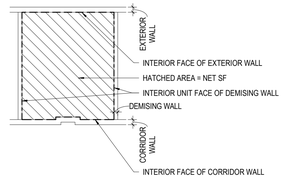
A. AREA PLAN SHEET IS AVAILABLE IN COLOR UPON REQUEST.
B. REFER TO OVERALL FLOOR PLANS AND ENLARGED UNIT PLANS FOR ADDITIONAL INFORMATION.

AREA LEGEND

GROSS AREA



NET AREA



UNIT MATRIX SCHEDULE

UNIT TYPE	NAME	AREA	COUNT
LEVEL 01			
1-BED TYPE A / SENSORY	UNIT 1a-AS	1,406 SF	2
1-BED	UNIT 1b	14,133 SF	20
2-BED	UNIT 2b	1,191 SF	1
2-BED SENSORY	UNIT 2b-S	1,200 SF	1
LEVEL 02			
	PERSONALIZED TENANT SPACE	76 SF	1
1-BED TYPE A / SENSORY	UNIT 1a-AS	699 SF	1
1-BED	UNIT 1b	18,334 SF	26
2-BED TYPE A / SENSORY	UNIT 2a-AS	1,258 SF	1
2-BED	UNIT 2b	1,184 SF	1
LEVEL 03			
	PERSONALIZED TENANT SPACE	77 SF	1
1-BED TYPE A / SENSORY	UNIT 1a-AS	700 SF	1
1-BED	UNIT 1b	17,535 SF	25
1-BED SENSORY	UNIT 1b-S	710 SF	1
2-BED	UNIT 2b	2,442 SF	2
GRAND TOTAL		60,944 SF	84

#	DATE	CHANGE DESCRIPTION
1	07/11/2023	OHFA REVISIONS

COLUMBUS METROPOLITAN HOUSING AUTHORITY
COMMUNITY. COMPETENCE. COLLABORATION.

COBBLESTONE MANOR
1050 LAMPLIGHTER DRIVE
GROVE CITY, OH 43123
FOR
CMHA

MOODY•NOLAN
300 SPRUCE STREET
SUITE 300
COLUMBUS, OHIO 43215

PHONE: (614) 461-4664
FAX: (614) 280-8881

DRAWING TITLE:

AREA PLANS - GROSS

STATE OF OHIO
JAY W. BOONE
10740
REGISTERED ARCHITECT

JAY W BOONE, LIC. #10740
EXP. DATE: 12/31/2023

06/08/2023

DRAWN BY: **XXX** CHECKED BY: **XXX**

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3 **PLAN** LEVEL 03 - NET AREA
1" = 30'-0"

2 **PLAN** LEVEL 02 - NET AREA
1" = 30'-0"

1 **PLAN** LEVEL 01 - NET AREA
1" = 30'-0"

C.A. CIRCULATION
C.A. PUBLIC
DEDICATED PROGRAMMATIC SPACE
MAJOR VERTICAL PENETRATION
PROGRAMMATIC
RESIDENTIAL
SUPPORT

AREA PLAN SCHEDULE (BUILDING NET)

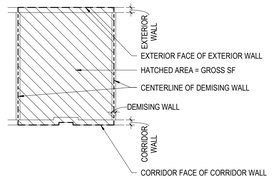
DEPARTMENT	AREA
C.A. CIRCULATION	
C.A. CIRCULATION	10,621 SF
C.A. PUBLIC	
C.A. PUBLIC	5,459 SF
DEDICATED PROGRAMMATIC SPACE	
DEDICATED PROGRAMMATIC SPACE	477 SF
MAJOR VERTICAL PENETRATION	
MAJOR VERTICAL PENETRATION	1,589 SF
PROGRAMMATIC	
PROGRAMMATIC	574 SF
RESIDENTIAL	
RESIDENTIAL	55,975 SF
SUPPORT	
SUPPORT	2,547 SF
TOTAL	77,241 SF

GENERAL NOTES - AREA PLANS

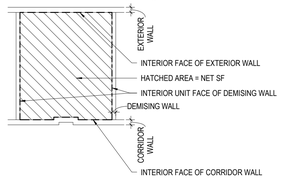
A. AREA PLAN SHEET IS AVAILABLE IN COLOR UPON REQUEST.
B. REFER TO OVERALL FLOOR PLANS AND ENLARGED UNIT PLANS FOR ADDITIONAL INFORMATION.

AREA LEGEND

GROSS AREA



NET AREA



#	DATE	CHANGE DESCRIPTION

COLUMBUS METROPOLITAN HOUSING AUTHORITY
COMMUNITY. COMMITMENT. COLLABORATION.

COBBLESTONE MANOR
1050 LAMPLIGHTER DRIVE
GROVE CITY, OH 43123
FOR
CMHA

MOODY•NOLAN
300 SPRUCE STREET
SUITE 300
COLUMBUS, OHIO 43215

PHONE: (614) 461-4664
FAX: (614) 280-8881

DRAWING TITLE:

AREA PLANS - NET

STATE OF OHIO
JAY W. BOONE
10740
REGISTERED ARCHITECT
JAY W BOONE, LIC. #10740
EXP. DATE: 12/31/2023

06/08/2023

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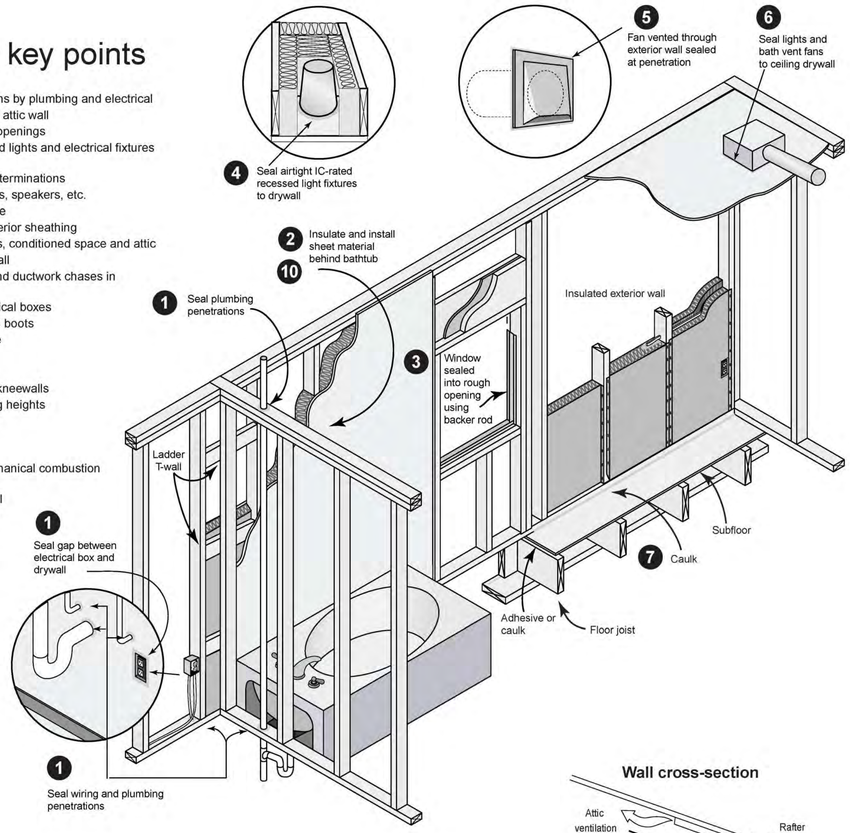
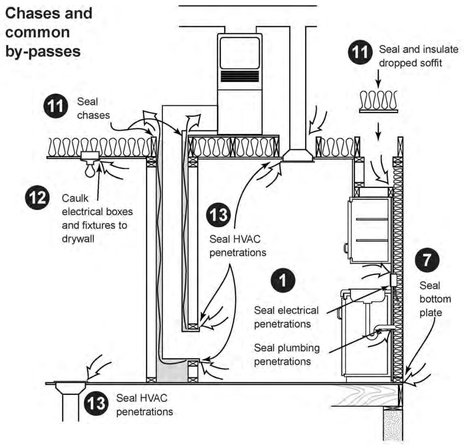
Appendix

Air sealing key points

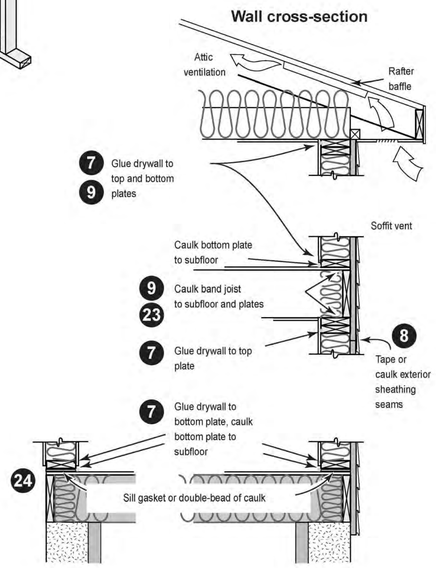
1. Plate and wall penetrations by plumbing and electrical
2. Tub/shower on outside or attic wall
3. Window and door rough openings
4. Airtight, IC-rated recessed lights and electrical fixtures exposed to attic
5. Exterior wall exhaust fan terminations
6. Ceiling mounted bath fans, speakers, etc.
7. Bottom plate and top plate
8. Seams between rigid exterior sheathing
9. Band area between floors, conditioned space and attic
10. Garden tub on exterior wall
11. Mechanical equipment and ductwork chases in attics, crawlspaces
12. Ceiling/crawlspace electrical boxes
13. Ceiling/crawlspace HVAC boots
14. Shower and tub drain line
15. Fireplace inserts
16. Attic kneewall doors
17. Joist cavities under attic kneewalls
18. Transition between ceiling heights (e.g., 10' to 8')
19. Attic scuttle hole
20. Attic pull-down stairs
21. Wall penetrations of mechanical combustion closets
22. Thresholds at mechanical combustion closet doors
23. Band joist exposed to exterior
24. Band area exposed to unconditioned space (such as basement or garage)
25. Exterior wall penetrations for refrigeration lines, condensate line, etc.



Chases and common by-passes



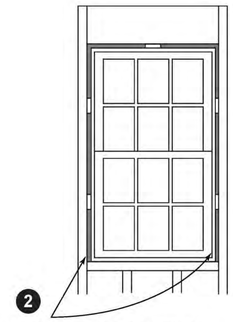
Wall cross-section



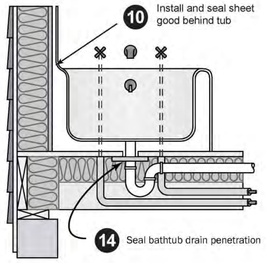
Appendix

Air sealing key points *continued*

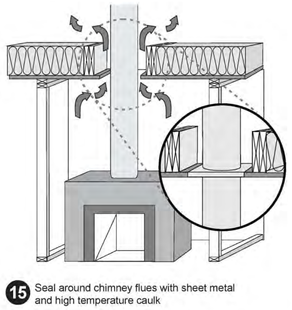
Window rough opening



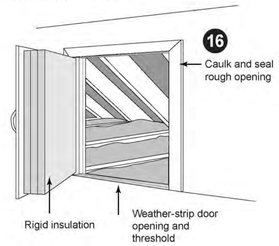
Shower/tub drain rough opening

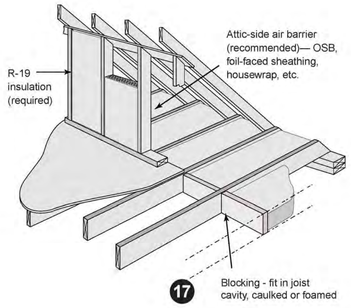


Combustion chase penetrations

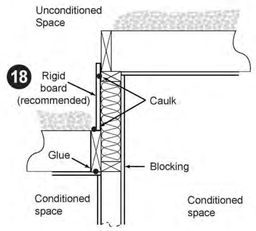


Attic knee-walls



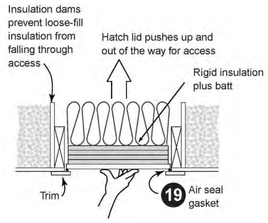


Two-level attic

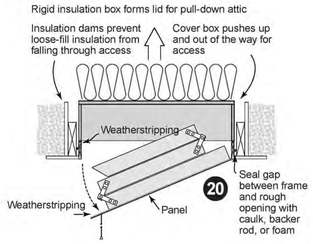


Disclaimer:
This document is intended solely to help graphically demonstrate the air leakage provisions of section 502.1.4 of the 2000 IECC. It does not cover all airsealing locations or techniques. Other code provisions may be applicable as well.

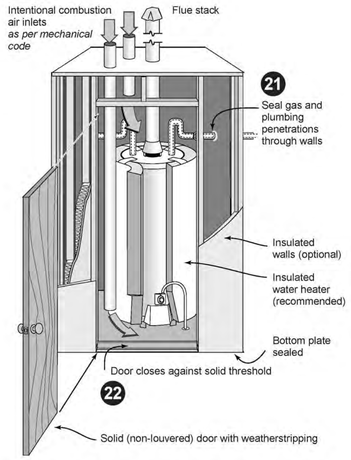
Attic scuttle



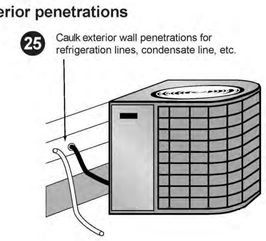
Attic pull-down stairs



Combustion closet



Exterior penetrations



Poster prepared for inclusion in Georgia Energy Code
Prepared by Southface Energy Institute
www.southface.org

DETAILS SHOWN: NOT TO SCALE

NOTE: THE DETAILS PROVIDED ARE INTENDED SOLELY TO HELP GRAPHICALLY DEMONSTRATE POTENTIAL AIR LEAKAGE. IT DOES NOT COVER ALL AIR SEALING LOCATIONS OR TECHNIQUES. REFER TO CODE PLANS FOR ALL APPLICABLE PROVISIONS.

GENERAL NOTES- AIR LEAKAGE

A. ALL OPENINGS, SUCH AS DOORS AND WINDOWS, INCLUDING ALL SILL PANNING AS REQUIRED, TO BE FLASHED.
B. ALL GRADING TO BE SLOPED AWAY FROM BUILDING/FOUNDATION (GRADE - SLOPE AWAY GUARANTEED FOR ONE (1) YEAR).
C. GRANULAR FILL OR DRAIN BOARD TO BE INSTALLED AGAINST FOUNDATION WALLS. SEE ARCHITECTURAL DRAWINGS AND GEOTECHNICAL REPORT.
D. BITUMEN SPRAY OR DAMPPROOFING ON BELOW-GRADE WALLS. SEE ARCHITECTURAL DRAWINGS. BITUMEN SPRAY OR DAMPPROOFING ONLY REQUIRED AT THE ELEVATOR PIT.
E. FOOTER TILE (BELOW TOP OF FOOTER TO DAYLIGHT OR TO INTERIOR TILE/SUMP).
F. ALL FOUNDATION INSULATION, EXTEND TO TOP OF FOOTER.
G. INSTALL ALL (WALL/CEILING) INSULATION AGAINST CONDITIONED SURFACES (FACE STAPLE ALL BATTS).
H. ENCLOSE ALL (WALL) INSULATION ON ALL SIX SIDES - PROTECT FROM AIR WASH.
I. ALL (CEILING) INSULATION TO BE EVEN DEPTH (REACH A MINIMUM OF R-38 ADJACENT TO UNCONDITIONED SPACES).
J. SOFFIT CHUTES ARE TO BE FULL CAVITY WITH TABS TO PROTECT EDGE OF PERIMETER INSULATION.
K. PROVIDE "KRAFT" FACED FIBERGLASS INSULATION - INSTALL INSULATION PER ENERGY STAR INSULATION GUIDE (GRADE 1) FACE STAPLED TO STUDS - FILL ALL CAVITIES - ALL INSULATION TO BE GUARANTEED FOR ONE (1) YEAR.
L. PROVIDE A CONTINUOUS AIR BARRIER: CONTINUOUSLY SEAL ALL EXTERIOR SHEATHING JOINTS, INCLUDING THE TOP AND BOTTOM EDGES. PROVIDE HOUSE WRAP, TAPING ALL SEAMS, INCLUDING TOP AND BOTTOM EDGES.
M. SEAL ALL RECESSED CAN LIGHTS, RECESSED CEILING EXHAUST FANS, UTILITY BOXES, AND DOOR JAMBS.
N. GLUE/GASKET DRYWALL TO TOP PLATE ON ALL WALLS ADJACENT TO COLD SPACES ABOVE.

#	DATE	CHANGE DESCRIPTION

COLUMBUS METROPOLITAN HOUSING AUTHORITY
COMMUNITY. COMMITMENT. COLLABORATION.

COBBLESTONE MANOR
1050 LAMPLIGHTER DRIVE
GROVE CITY, OH 43123
FOR
CMHA

MOODY•NOLAN
300 SPRUCE STREET
SUITE 300
COLUMBUS, OHIO 43215

PHONE: (614) 461-4664
FAX: (614) 280-8881

DRAWING TITLE:

AIR SEALING DETAILS

STATE OF OHIO
JAY W. BOONE
10740
REGISTERED ARCHITECT

JAY W BOONE, LIC. #10740
EXP. DATE: 12/31/2022

06/08/2023

DRAWN BY: **Author** CHECKED BY: **Checker**

#22172.01

G300

PERMIT & BID SET

PRINT DATE: 11/16/2023 2:34:54 PM
FILE INFO: Autodesk Docs://22172.01 CMHA Cobblestone Manor/22172.01 CMHA Cobblestone Manor_ARCH.rvt

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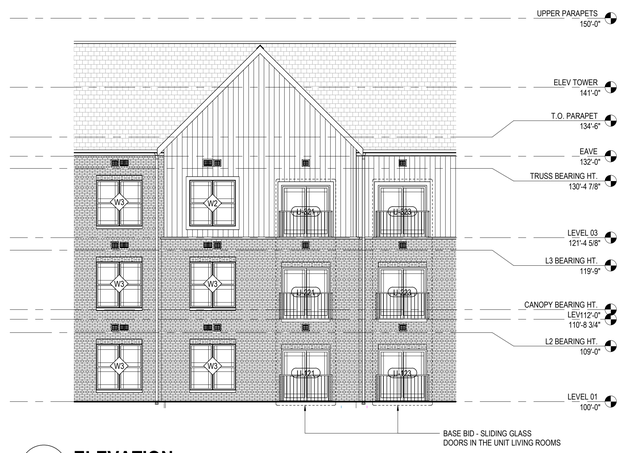
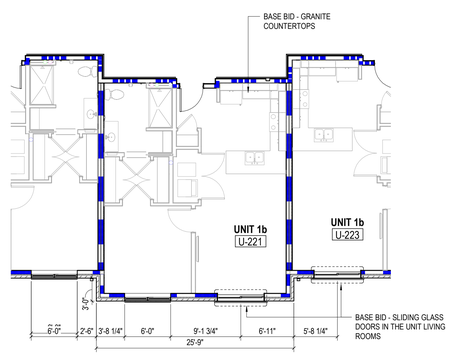


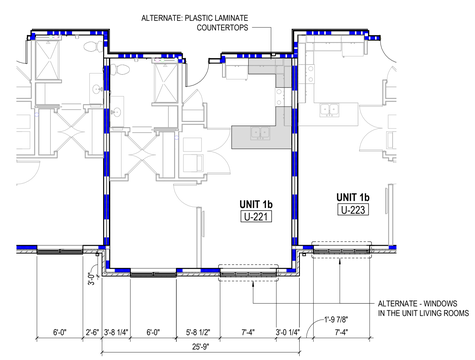
4 **ELEVATION** SLIDING DOORS - BASE BID
1/8" = 1'-0"

2 **ELEVATION** ADD VINYL WINDOWS ALTERNATE
1/8" = 1'-0"

NOTE: ALTERNATE APPLIES TO ALL SLIDING DOOR LOCATIONS AND NOT JUST AS SHOWN IN THE PARTIAL ELEVATION.



3 **PLAN** SLIDING DOORS - BASE BID
1/8" = 1'-0"



1 **PLAN** WINDOWS SUBSTITUTE - ALTERNATE
1/8" = 1'-0"

NOTE: ALTERNATE APPLIES TO ALL UNIT KITCHEN COUNTERTOP LOCATIONS AND NOT JUST THE ONE UNIT AS SHOWN IN THE PARTIAL PLAN.

ALTERNATES

A. PROVIDE & INSTALL VINYL WINDOWS IN LIEU OF SLIDING GLASS DOORS
B. PROVIDE & INSTALL FORMICA COUNTERTOPS IN LIEU OF GRANITE IN ALL UNIT KITCHENS. THIS DOES NOT APPLY TO THE PUBLIC AREAS ON THE FIRST FLOOR.

#	DATE	CHANGE DESCRIPTION

COLUMBUS METROPOLITAN HOUSING AUTHORITY
COMMUNITY. COMMITMENT. COLLABORATION.

COBBLESTONE MANOR
1050 LAMPLIGHTER DRIVE
GROVE CITY, OH 43123
FOR:
CMHA

MOODY•NOLAN
300 SPRUCE STREET
SUITE 300
COLUMBUS, OHIO 43215

PHONE: (614) 461-4664
FAX: (614) 280-8881

DRAWING TITLE:

DEDUCT ALTERNATES

STATE OF OHIO
JAY W. BOONE
10740
REGISTERED ARCHITECT

JAY W BOONE, LIC. #10740
EXP. DATE: 12/31/2022

06/08/2023

DRAWN BY: **Author** CHECKED BY: **Checker**

#22172.01

G400

PERMIT & BID SET

PRINT DATE: 11/16/2022 2:35:04 PM
FILE INFO: Autodesk Docs://22172.01 CMHA Cobblestone Manor/22172.01 CMHA Cobblestone Manor_ARCH.rvt

CITY OF GROVE CITY, FRANKLIN COUNTY, OHIO
SITE IMPROVEMENT PLAN
FOR
COBBLESTONE MANOR
1050 LAMPLIGHTER DRIVE GROVE CITY, OH 43123
2023

INDEX OF SHEETS		
TITLE SHEET	1	C0.0
ALTA SURVEY	2	C0.1
DEMOLITION PLAN	3	C0.2
GENERAL NOTES & ESTIMATE OF QUANTITIES	4	C0.3
STAKING PLAN	5	C1.1
STAKING DETAILS	6	C1.2
SIGNAGE & STRIPING PLAN	7	C1.3
FIRE ACCESS PLAN	8	C1.4
GRADING & STORM SEWER PLAN	9	C2.1
STORM SEWER DETAILS	10	C2.2
STORM SEWER DETAILS	11	C2.3
STORM SEWER PROFILES	12	C2.4
EROSION CONTROL PLAN PHASE 1	13	C2.5
EROSION CONTROL PLAN PHASE 2	14	C2.6
EROSION CONTROL DETAILS	15	C2.7
UTILITY PLAN	16	C3.1
UTILITY DETAILS	17	C3.2
UTILITY PROFILES	18	C3.3
TREE INVENTORY PLAN	19	L0.00
LANDSCAPE PLAN	20	L1.01
PLANTING DETAILS	21	L2.01
SITE PLAN - ELECTRICAL	22	E002
PHOTOMETRIC SITE PLAN	23	E003
DETAILS - ELECTRICAL	24	E501
SITE & WALL DETAILS	25	A450

GENERAL ZONING INFORMATION	
ADDRESS:	1050 LAMPLIGHTER DRIVE
PARCEL NO.:	040012669
EXISTING ZONING CLASSIFICATION/DISTRICT:	PUD-R / C-2

SITE DATA TABLE	
PROPOSED BUILDING HEIGHT:	50'
BUILDING AREA:	27,733 SF
RESIDENTIAL UNITS	82
TOTAL SITE AREA:	4.19 AC
BUILDING/PAVEMENT LOT COVERAGE:	49%
TOTAL DISTURBED AREA:	3.70 AC
PRE-DEVELOPED IMPERVIOUS:	0.00 AC
POST-DEVELOPED IMPERVIOUS:	2.06 AC
CRITICAL STORM	10-YR

PROPERTY OWNERS				
X	OWNER NAME	PARCEL	ADDRESS	ZONING CLASSIFICATION
1	COLUMBUS METROPOLITAN HOUSING AUTHORITY	040012669	1185 LAMPLIGHTER DR	PUD-R / C-2
2	CREATIVE HOUSING INC XCII	040014766	1200-1230 LAMPLIGHTER DR	PUD-R
3	LAMPLIGHTER SENIOR HOUSING LLC	040014948	1185 LAMPLIGHTER DR	PUD-R
4	LAMPLIGHTER SENIOR HOUSING LLC	040015540	1185 LAMPLIGHTER DR	PUD-R
5	WECHTER DENISE E	160002849	1180 WHITE ROAD	R
6	OHIO HEALTH CORPORATION	040015521	1325-1375 STRINGTOWN RD	M-1
7	PARKWAY CENTRE EAST RETAIL LLC	040015070	4108-4164 BUCKEYE PW	C-2

CONTROL POINTS				
No.	Northing	Easting	Elevation	Description
1	682549.27	1818563.02	741.66	PK NAIL IN CURB
2	682608.62	1818234.29	741.95	PK NAIL IN CURB

IRON PIN SET IS A 5/8" DIAMETER X 30' LONG REBARS WITH CAPS THAT READ "CW DESIGN GROUP, LLC".

THE BEARINGS DESCRIBED HEREIN ARE BASED ON THE OHIO STATE PLANE COORDINATE SYSTEM, SOUTH ZONE, NAD83 (2011). SAID BEARINGS ORIGINATED FROM A FIELD TRAVERSE WHICH WAS REFERENCED TO SAID COORDINATE SYSTEM BY GPS OBSERVATIONS AND OBSERVATIONS OF SELECTED STATIONS IN THE OHIO DEPARTMENT OF TRANSPORTATION VIRTUAL REFERENCE STATION NETWORK. THE NORTH RIGHT OF WAY LINE OF LAMPLIGHTER DRIVE WITH THE MONUMENTED BEARING OF NORTH 78°32'11" WEST IS THE BASIS OF BEARINGS.

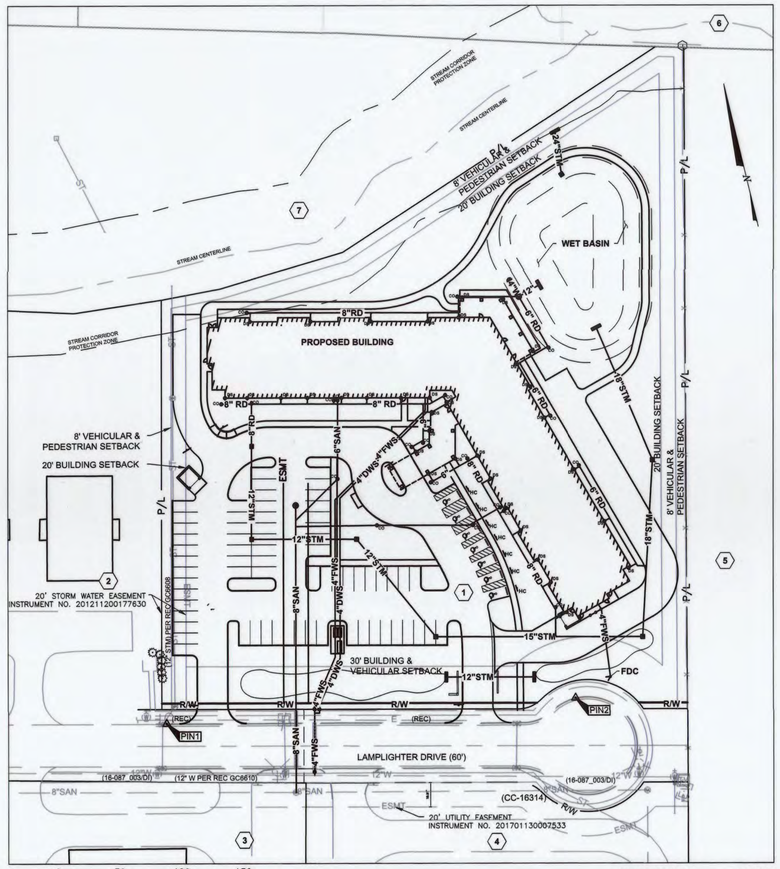
THE DESCRIBED TRACT IS PART OF AUDITOR'S TAX PARCEL NUMBER 040-012669-00 AND IS BASED ON INSTRUMENT #S. 200601040001335, 201012300178570, 201308150139492, 201606280082044, 201706140080789, AND 201907300094293, PLAT BOOK 113, PAGE 99, PLAT BOOK 115, PAGES 94-95, AND PLAT BOOK 121, PAGE 93.

THIS DESCRIPTION WAS MADE IN ACCORDANCE WITH FIELD SURVEY CONDUCTED BY CW DESIGN GROUP, LLC IN NOVEMBER 2020.

CW Design Group
ENGINEERING SOLUTIONS
PHONE: 614-846-9279
972 Linkfield Drive
Worthington, Ohio 43085

CHARLES A. WAGNER, PS - 8091
CW DESIGN GROUP, LLC
04/14/2023
DATE

OHIO Utilities Protection SERVICE
Click, Call or Tap Before You Dig



INDEX MAP

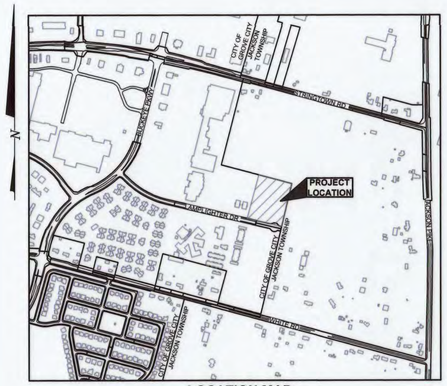
SANITARY CC PLAN CC19878
WATER SERVICE PLAN WSP7129

DESCRIPTION
THE DEVELOPMENT WILL PROVIDE THE SENIOR RESIDENTIAL MARKET WITH OPPORTUNITIES TO RESIDE IN A WELL-PLANNED COMMUNITY LOCATED NEAR ESSENTIAL SERVICES. THE SITE CONSISTS OF A 82 UNIT, 84,864 GSF BUILDING WITH ADJACENT PARKING LOT, WET DETENTION POND, DRAINAGE FEATURES AND LANDSCAPING.

STANDARD DRAWINGS
THE STANDARD DRAWINGS LISTED ON THIS PLAN SHALL BE CONSIDERED A PART THEREOF.

C-GC-01	C-GC-40
C-GC-03	C-GC-42A
C-GC-04	C-GC-46A
C-GC-11	C-GC-58
C-GC-12	C-GC-70A
C-GC-18	C-GC-74
C-GC-20	C-GC-75A
C-GC-23	C-GC-77
C-GC24	2030 7/1/21
C-GC-26	L6310 1/26/18
C-GC-27	L6317A 5/17/21
C-GC-31	L6317B 5/17/21
C-GC-32	L9002 5/17/21
	L9901 9/21/22

FEMA NOTE
ACCORDING TO THE FEDERAL EMERGENCY MANAGEMENT AGENCY'S FLOOD INSURANCE MAP (DATED JUNE 17, 2008) THE SUBJECT PARCEL SHOWN HEREIN LIES WITH ZONE X, COMMUNITY PANEL NO 39049C0406K. THIS PROJECT WILL NOT REQUIRE ANY WORK IN THE FLOOD PLAIN OR FLOOD WAY.



LOCATION MAP
(NOT TO SCALE)

SITE DEVELOPMENT DATA

OWNER/DEVELOPER:
COLUMBUS METROPOLITAN HOUSING AUTHORITY
880 EAST 11TH AVENUE
COLUMBUS, OH 43211
CONTACT: MIKE WAGNER
P: 614-421-6102
F: 614-421-4516
EMAIL: MWAGNER@CMHANET.COM

ARCHITECT:
MOODY NOLAN
300 SPRUCE STREET, SUITE 300
COLUMBUS, OH 43215
CONTACT: ANUP JANARDHANAN
P: 614-280-3220
EMAIL: ANUPJ@MOODYNOLAN.COM

ENGINEER:
KORDA/NEMETH ENGINEERING, INC.
1650 WATERMARK DRIVE
COLUMBUS, OH 43215
CONTACT: ERIC WALSH
P: 614-487-1650
EMAIL: ERIC.WALSH@KORDA.COM

LANDSCAPE ARCHITECT:
EDGE
330 W. SPRING STREET, SUITE 350
COLUMBUS, OH 43215
CONTACT: BASILIO FORESI
P: 614-487-3006
EMAIL: BFORESI@EDGELA.COM

CITY OF GROVE CITY APPROVALS
CITY OF GROVE CITY SIGNATURES ON THIS PLAN SIGNIFY ONLY CONCURRENCE WITH THE GENERAL PURPOSES AND GENERAL LOCATION OF THIS PROJECT. ALL TECHNICAL DETAILS REMAIN THE RESPONSIBILITY OF THE ENGINEER PREPARING THE PLANS.

MAYOR, CITY OF GROVE CITY — DATE 7-26-2023
CITY ADMINISTRATOR, CITY OF GROVE CITY — DATE 07/24/2023
DIRECTOR OF PUBLIC SAFETY, CITY OF GROVE CITY — DATE 7-26-2023
DIRECTOR OF PUBLIC SERVICE, CITY OF GROVE CITY — DATE 07/25/2023
REVIEWED FOR THE CITY OF GROVE CITY — DATE 7/21/23
CHIEF, JACKSON TOWNSHIP FIRE DEPARTMENT — DATE 8/2/23

PLAN PREPARED BY:
KORDA Korda/Nemeth Engineering, Inc - Consulting Engineers
1650 Watermark Drive, Suite 200 - Columbus, Ohio 43215-7010
TEL 614-487-1650 - FAX 614-487-8881 - WEB www.korda.com

STATE OF OHIO ERIC J. WALSH E-80715 REGISTERED PROFESSIONAL ENGINEER
REGISTERED ENGINEER NO. — DATE 7/13/2023

REV.	DATE	DESCRIPTION	REVISION/UPLOAD DATE

SITE IMPROVEMENT PLAN FOR COBBLESTONE MANOR
1050 LAMPLIGHTER DRIVE
GROVE CITY, OH 43213
PID: 040012669

TITLE SHEET

KORDA
Korda/Nemeth Engineering, Inc - Consulting Engineers
1650 Watermark Drive, Suite 200 - Columbus, Ohio 43215-7010
TEL 614-487-1650 - FAX 614-487-8881 - WEB www.korda.com
DRAWN BY: KGW CHECKED BY: EJW

THE ARCHITECT / ENGINEER ASSUMES NO RESPONSIBILITY OR LIABILITY FOR THE USE OF THESE PLANS FOR ANY PROJECT OTHER THAN SPECIFICALLY AUTHORIZED BY THEM AND SIGNED AND SEALED FOR SUCH SPECIFIC LOCATION IN THE STATE, PROVINCE OR TERRITORY SHOWN ON THE SEAL. THIS BUILDING USE IS ONLY APPLICABLE IN AREAS MEETING THE STATED DESIGN CRITERIA.

KNE JOB # 2020-0427
GC# XXXXX
DRAWING NUMBER:
1/25

#	DATE	CHANGE DESCRIPTION

COLUMBUS METROPOLITAN HOUSING AUTHORITY
COMMUNITY. COMMITMENT. COLLABORATOR.

COBBLESTONE MANOR
1050 LAMPLIGHTER DRIVE
GROVE CITY, OH 43123
FOR
CMHA

MOODY•NOLAN
300 SPRUCE STREET
SUITE 300
COLUMBUS, OHIO 43215
PHONE: (614) 461-4664
FAX: (614) 280-8881

DRAWING TITLE:
TITLE SHEET

KORDA/NEMETH ENGINEERING, INC.
1650 WATERMARK DRIVE
COLUMBUS, OHIO 43215
DESIGNED BY KGW
DRAWN BY KGW
CHECKED BY EJW
JOB FILE 2020-0427

STATE OF OHIO ERIC J. WALSH E-80715 REGISTERED PROFESSIONAL ENGINEER

06/08/2023
DRAWN BY: KGW CHECKED BY: EJW
#22172.01
C0.0
PERMIT & BID SET

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PRINT DATE: 3/1/2023 10:05:19 AM
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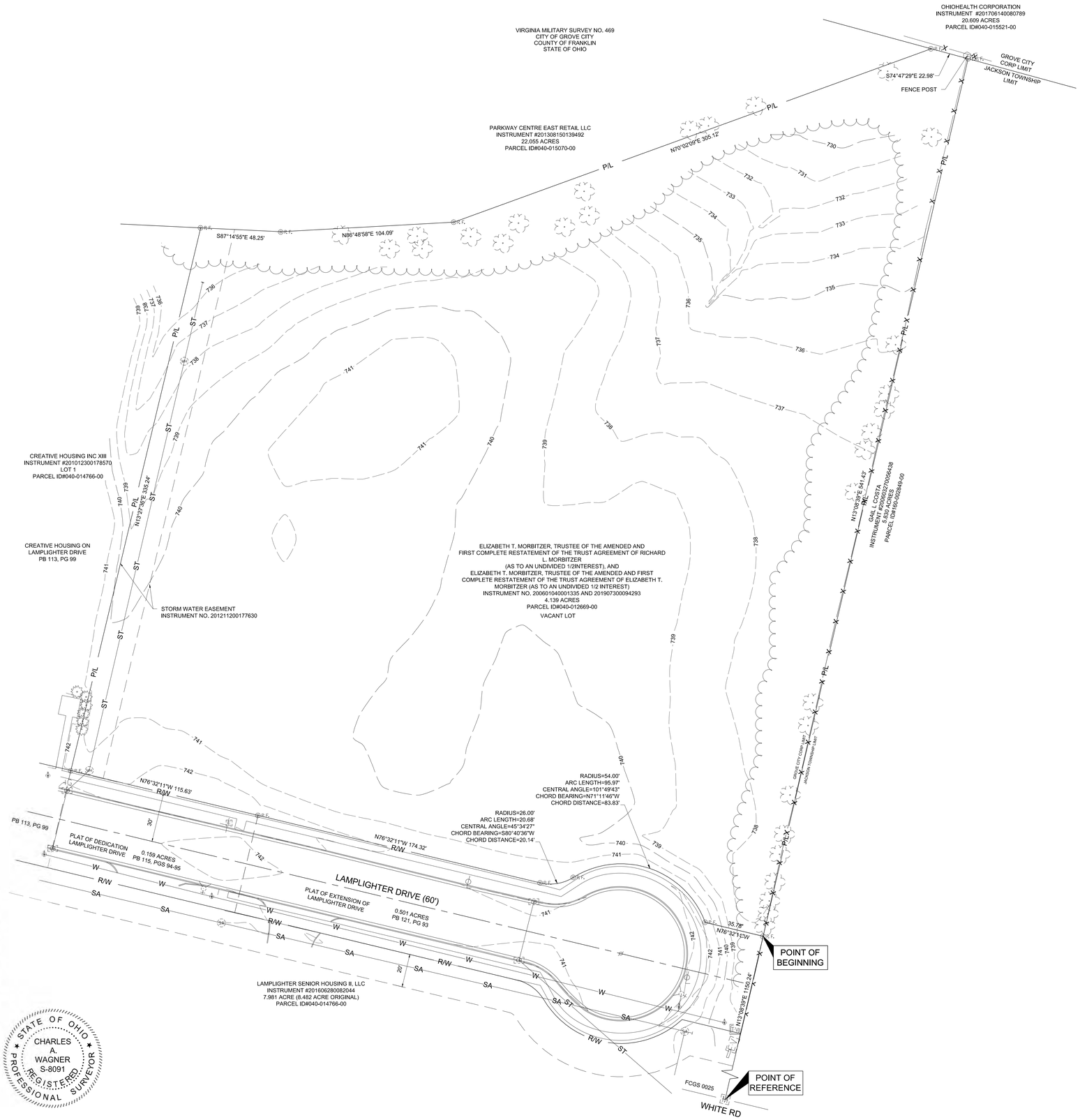

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THIS DESCRIPTION WAS MADE IN ACCORDANCE WITH FIELD SURVEY CONDUCTED BY CW DESIGN GROUP, LLC IN NOVEMBER 2020.

STATE OF OHIO
CHARLES A. WAGNER
S-8091
REGISTERED
PROFESSIONAL SURVEYOR

CW Design Group
ENGINEERS | SURVEYORS
PHONE: 614-846-9279
972 Linkfield Drive
Worthington, Ohio 43085

CHARLES A. WAGNER, PS -8091
CW DESIGN GROUP, LLC

04/14/2023
DATE

N

0 15 30 60
1"=30'
US SURVEY FEET

SURVEY EXHIBIT

COBBLESTONE MANOR

C0.1

1
1

[cwdg@cwdg.net] D:\Archive\2020\Projects\200037\Drawings\xBase.dwg - April 14, 2023 @ 2:41pm

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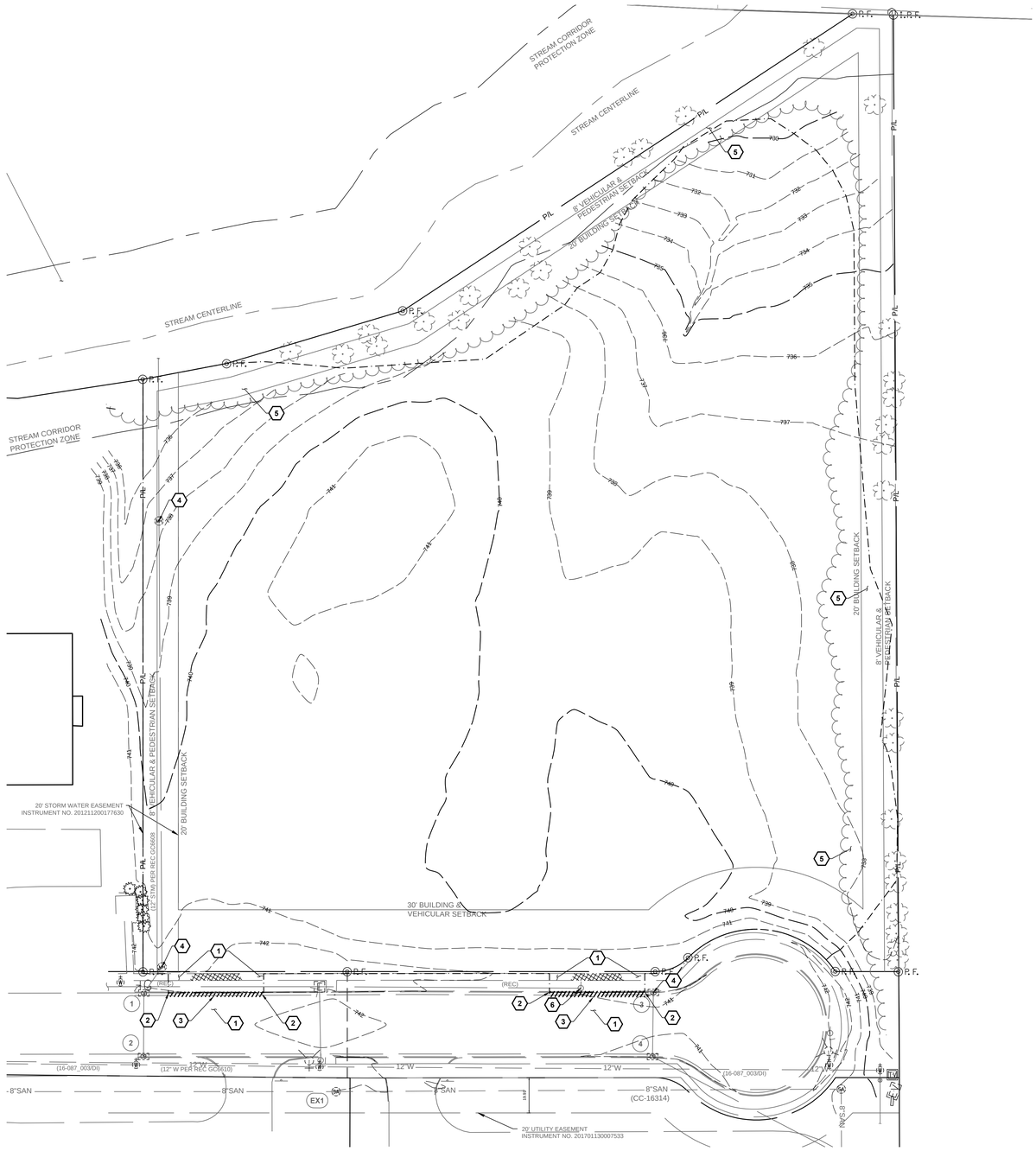

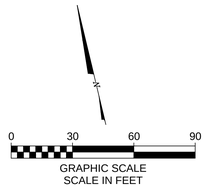

DEMOLITION LEGEND

EXISTING

P/L	PROPERTY LINE
R/W	RIGHT-OF-WAY
	PAVEMENT
	WALK
SA	SANITARY SEWER
ST	STORM SEWER
W	WATER LINE

PROPOSED

	REMOVE EXISTING ASPHALT, GRAVEL, AND CONCRETE PAVEMENT, CONCRETE SIDEWALK, BUILDING FOUNDATION, AND PAVEMENT BASE MATERIALS
	REMOVE EXISTING CONCRETE CURB
	LIMITS OF GRADING

GENERAL NOTES:

1. SITE SURVEY PERFORMED BY CW DESIGN GROUP, DATED 12/18/2020. REFER TO ALTA/NSPS LAND TITLE SURVEY FOR ALL EXISTING SITE FEATURES.
2. DISPOSE OF CONSTRUCTION DEBRIS OFF-SITE IN ACCORDANCE WITH LOCAL CODES.
3. REMOVE AND DISPOSE OF ON SITE FEATURES AS SHOWN ON THE PLAN.
4. SAW-CUT EXISTING PAVEMENT AT LIMITS OF PAVEMENT REMOVAL TO FULL DEPTH USING CARE TO CUT NEAT, STRAIGHT LINES. CUT AT EXISTING JOINTS WHERE POSSIBLE.
5. CONTRACTOR TO PROTECT EXISTING SITE FEATURES TO REMAIN OUTSIDE CONSTRUCTION LIMITS. REPAIR ANY DAMAGE TO THE SATISFACTION OF THE OWNER AT NO ADDITIONAL COST.
6. CONTROL DUST AT THE SITE. PROVIDE STREET CLEANING WHEN NECESSARY, AND WHEN REQUESTED BY OWNER.
7. GRADE SITE DURING CONSTRUCTION TO PROVIDE POSITIVE DRAINAGE TO EXISTING AND/OR PROPOSED STORM WATER MANAGEMENT SYSTEMS.
8. PERFORM WORK IN ACCORDANCE WITH LOCAL CODES AND REGULATIONS.

(X) CODED NOTES:

1. PROTECT EXISTING PAVEMENT/SIDEWALK TO REMAIN.
2. PROTECT EXISTING CONCRETE CURB OR CURB AND GUTTER TO REMAIN.
3. SAWCUT EXISTING PAVEMENT WITH NEAT, STRAIGHT LINES. MATCH EXISTING PAVEMENT GRADE AT THIS POINT.
4. PROTECT EXISTING UTILITY STRUCTURE TO REMAIN. ADJUST TO FINAL GRADE.
5. REMOVE TREES WITHIN GRADING LIMITS. REFER TO SHEET 19 (L0.00) FOR TREE PRESERVATION.
6. REMOVE AND RELOCATE EXISTING LIGHT POLE AND FOUNDATION. COORDINATE WITH GROVE CITY SERVICE DEPARTMENT FOR LIGHT POLE RELOCATION.

INDIANA BAT HABITAT PROTECTION:

1. FOR ANY TREES DESIGNATED FOR REMOVAL THAT MAY BE POTENTIAL BAT HABITAT AREAS, REMOVAL SHALL ONLY OCCUR FROM OCTOBER 1ST TO MARCH 31ST. IF THE CONTRACTOR PREFERS TO REMOVE THE TREES OUTSIDE OF THIS TIME FRAME, A SURVEY MUST BE CONDUCTED ACCORDING TO THE UNITED STATES FISH AND WILDLIFE SERVICES AND BY A BIOLOGIST WITH ALL REQUIRED FEDERAL AND/OR STATE COLLECTION PERMITS TO DETERMINE THE PRESENCE OF ANY INDIANA BATS. THE DATA COLLECTED DURING THE SURVEY MUST BE PROVIDED TO THE GROVE CITY SERVICE DEPARTMENT AT (614)-277-1100 ACCORDING TO THE CONDITIONS OF THE PERMIT AND ANY REGULATORY AUTHORITY REQUIREMENTS. IF NO BATS ARE PRESENT THE TREE SHALL BE REMOVED WITHIN 24 HOURS OF THE SURVEY BEING CONDUCTED. IF BATS ARE FOUND TO BE PRESENT, THEN TREE SHALL REMAIN AND A PROTECTION AND ENHANCEMENT PLAN WILL BE REQUIRED.

REV.	DATE	DESCRIPTION	REVISION/UPLOAD DATE

SITE IMPROVEMENT PLAN FOR COBBLESTONE MANOR
1050 LAMPLIGHTER DRIVE
GROVE CITY, OH 43213
PID: 04001869

DEMOLITION PLAN

KORDA
Korda/Nemeth Engineering, Inc - Consulting Engineers
1650 Watermark Drive, Suite 200 - Columbus, OH 43215-7009
TEL 614-487-1650 - FAX 614-487-5981 - WEB www.korda.com

DRAWN BY: KGW CHECKED BY: EJW

THE ARCHITECT / ENGINEER ASSUMES NO RESPONSIBILITY OR LIABILITY FOR THE USE OF THESE PLANS FOR ANY PROJECT OTHER THAN SPECIFICALLY AUTHORIZED BY THEM AND SIGNED AND SEALED FOR SUCH SPECIFIC LOCATION IN THE STATE, PROVINCE OR TERRITORY SHOWN ON THE SEAL. THIS BUILDING USE IS ONLY APPLICABLE IN AREAS MEETING THE STATED DESIGN CRITERIA.

KNE JOB # 2020-0427
GC# XXXXX

DRAWING NUMBER:
3/25

#	DATE	CHANGE DESCRIPTION

COLUMBUS METROPOLITAN HOUSING AUTHORITY
COMMUNITY, COMMUNITY, COLUMBUS/OHIO

COBBLESTONE MANOR
1050 LAMPLIGHTER DRIVE
GROVE CITY, OH 43123
FOR
CMHA

MOODY•NOLAN
300 SPRUCE STREET
SUITE 300
COLUMBUS, OHIO 43215

PHONE: (614) 461-4664
FAX: (614) 280-8881

DRAWING TITLE:
DEMOLITION PLAN

KORDA/NEMETH ENGINEERING, INC.
1650 WATERMARK DRIVE
COLUMBUS, OHIO 43215
DESIGNED BY KGW
DRAWN BY KGW
CHECKED BY EJW
JOB FILE 2020-0427

STATE OF OHIO
ERIC J. WALSH
E-80715
PROFESSIONAL ENGINEER

06/08/2023
DRAWN BY: KGW CHECKED BY: EJW
#22172.01
C0.2
PERMIT & BID SET

PRINT DATE: 3/10/23 10:26:19 AM
FILE INFO: Autodesk Docs://22172.01 CMHA Seasons Grove/22172.01 CMHA Seasons Grove_ARCH.rvt

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CITY OF GROVE CITY, OHIO
STREET, STORM, AND WATER GENERAL NOTES - MARCH 28, 2023

1. SPECIFICATIONS: The most current City of Columbus and Ohio Department of Transportation (ODOT) "Construction and Material Specifications" (CMSC and ODOT CMS respectively) together with the requirements of the City of Grove City, Ohio, including all supplements thereto, in force on the date of the contract shall govern all materials and workmanship involved in the improvements shown on these plans, except as such specifications are modified by the following specifications, or by the construction details set forth herein. In case of any conflict among these identified technical specifications, the greater requirement shall take precedence (as determined by the sole discretion of the City).

General provisions of the ODOT CMS and the City of Columbus CMSC shall not apply unless specifically referenced. This exclusion includes, but is not necessarily limited to, Division 100 of the ODOT CMS and City of Columbus CMSC.

2. BENCH MARKS: The Contractor shall carefully preserve bench marks, property corners, reference points, and stakes. Any bench mark, property corner, or survey marker damaged or disturbed by the Contractor shall be reset by an Ohio Registered Surveyor at the Contractor's expense.

3. SAFETY REQUIREMENTS: The Contractor and any and all Subcontractors shall be solely responsible for complying with all federal, state, and local safety requirements, together with exercising precautions at all times for the protection of persons (including employees) and property. It is also solely the responsibility of the Contractor and Subcontractor to initiate, maintain, and supervise all safety requirements, precautions, and programs in connection with the work, including all OSHA rules and regulations.

4. PERMITS: The Contractor or Developer shall secure and pay for all permits and government fees, licenses, and inspections necessary for the proper execution and completion of the improvements shown on the plans.

5. NOTIFICATION: The Contractor shall notify the City at least 48 hours in advance (holidays and weekends excluded) of the anticipated start of work requiring inspection, testing, or approval by the City. Work shall not commence until a preconstruction conference is held. Prior to or at the time of the preconstruction conference, the Developer shall provide the approved construction plans to the Service Department in electronic (.pdf) format and the requested number of hard copies.

The Contractor must provide pre-notification of work to adjacent owners no less than Forty-Eight (48) hours prior to work being performed that will have an effect on residents and/or businesses. The pre-notification must be in writing and it must include: (1) Contractor name and 24-hour phone number; (2) a description of work being performed; (3) a list of restrictions on the affected residents and/or businesses; (4) instructions to affected residents and/or businesses. The written notification shall be submitted to the City for approval at least Fourteen (14) days prior to work beginning.

The Contractor shall post "No Parking" signs in appropriate areas no less than 48 hours in advance of any parking restriction. The Contractor will provide pre-approved "No Parking" signs on cardstock for use on the project. The Contractor shall coordinate with the City of Grove City on the printing of the signs. The Contractor must insert the days and times of the proposed parking restriction, the reason for the restriction, and the Contractor's contact information on the cardstock sign using black permanent marker. The Contractor must also supply heavyweight sheet protectors and weather resistant sleeves for installation of signs and to protect the signs from damage caused by weather. The wooden stakes for "No Parking" signs shall be 1-in. x 2-in. x 36-in. The weather proof sleeves shall be 9-in. x 12-in. Staples® Heavyweight Job Ticket Holders (Staples Item No. 812754) or Approved Equal. The weather resistant sleeve with sign shall be fixed to the stake using heavy-duty staples. "No Parking" signs must be installed, maintained, revised (if delays cause an adjustment in parking restriction), and removed by the Contractor. No additional compensation will be paid for resident/business notification or posting required signage.

As set forth herein, the Contractor shall provide all notices required under the Contract Documents and Specifications strictly in the manner prescribed therein. The Contractor shall defend, indemnify, and hold harmless the City and its officers, employees, representatives, and agents (hereinafter collectively referred to as the "City") against any and all claims, actions, damages, costs, and legal liability of every name and nature that the City may sustain, incur or be required to pay (including, but not limited to, consultant and attorney's fees, disbursements, costs or other expenses) arising out of or in connection with the Contractor's failure to strictly comply with the notice provisions imposed under the Contract Documents and Specifications.

6. INSPECTION: No work shall commence until arrangements have been made with the City Engineer and Director of Public Service for inspection services and payment of the inspection fee deposit.

7. UTILITIES: The identity and locations of existing underground utilities in the construction area have been shown on the approved construction drawings as accurately as provided by the Owner of the underground utility as required by Section 153.64 or Section 3781.27 of the Ohio Revised Code. The City of Grove City assumes no responsibility for the accuracy of locations or depths of underground facilities whether shown on the approved construction drawings or not. When unknown or incorrectly located underground utilities are encountered during construction, the Contractor shall immediately notify the utility owner, the City and the Design Engineer.

The Contractor shall notify the Ohio Utilities Protection Service (OUPS) at (800) 362-2764 at least 48 HOURS, and NO MORE THAN 10 DAYS PRIOR TO excavating, with such time periods not including weekends or holidays. Contractor shall similarly contact all utility owners who are not subscribers to OUPS.

If there are markers or other apparent physical evidence in or near the project area that may indicate the existence of underground petroleum or natural gas pipelines, the Contractor shall additionally contact the Oil & Gas Producers Underground Protection Service (OGPUPS) at (800) 925-0988. Said notification shall be given a minimum of 48 hours prior to the commencement of construction.

The following utilities are known or can be expected to be located within the limits of this project.

UTILITY	OWNER	TELEPHONE
Water, Sanitary, Storm and Street Lighting Facilities	City of Grove City 4035 Broadway Grove City, Ohio 43123	(614) 277-1100

LIST ALL PUBLIC & PRIVATE UTILITIES WITHIN/ADJACENT TO PROJECT LIMITS

The Contractor is responsible for the investigation, location, support, protection and restoration of all existing utilities and appurtenances whether shown on the plans or not. The Contractor shall proceed with the work and protect all underground utilities in a manner at least as cautious and protective of safety and underground utilities as those methods identified in Sections 3781.25 through 3781.30 of the Ohio Revised Code.

All private utility relocation (gas, electric, phone, etc.) will be the responsibility of the utility owners. The Contractor is responsible for coordinating the relocation and/or protection of any utilities as required by the plan with the owner of the affected utility.

8. EXPOSE EXISTING UTILITY: Where potential grade and alignment conflicts might occur with existing utilities, or as specifically called out on the plans, the Contractor shall expose utilities or structures sufficiently in advance of laying pipe for the Design Engineer to verify the vertical and horizontal effect on the proposed construction. Any discrepancy with the plans shall be coordinated with the City to ensure that there are no construction or conflict issues associated with said discrepancy.

9. CONFLICTS: In all conflicts in elevation between the water main and gravity sewers, the water main shall be lowered during construction per the requirements of the City of Columbus, unless otherwise directed by the City.

10. HOUSE SERVICE LINES: The Contractor shall assume that each house has at least one (1) sanitary, one (1) water, and one (1) gas service line unless more are marked by the utility company. It is the Contractor's responsibility to locate and support these service lines. Cost for location and support shall be included in the cost bid for various items. Where service lines are cut or broken, the lines are to be restored to the standards of the utility owner at the Contractor's expense within 12 hours of the cutting or breaking of the service line.

11. SITE VISIT: The Contractor shall perform field reconnaissance to become acquainted with the existing site conditions and the potential effects upon the scope of work.

12. RIGHTS-OF-WAY: In addition to the direct requirements of the contract specifications, the Contractor shall observe and conform to the specific requirements of all Rights-of-Way, including easements, court entries, rights-of-entry, or action filed in court in accordance with the code of the applicable governing agency.

13. EASEMENTS: Approval of this plan is contingent upon all easements required for the construction of the work being secured and submitted to the City of Grove City for recording prior to commencement of the work, and no work which requires an easement will be allowed to proceed until this has been done.

Plans which require easements that will be recorded as part of a subdivision plat may be approved prior to submission and approval of said plat. However, the plat must be approved and recorded prior to acceptance by the City of Grove City of the subject improvements.

14. WORK LIMITS: The Contractor is responsible for containing all performed work and all equipment, materials, vehicles, etc., used to complete the work within the rights-of-way of the streets, roadways, temporary easements, permanent easements and the property boundaries of the project improvements, as shown on these plans.

The Contractor is responsible for the cost of restoration for any area outside of the right-of-way, permanent easement or project property boundaries to former condition or better and to the satisfaction of the Property Owner and the City.

15. CONTRACT WORK PERFORMED BY THE CITY: In the event that it becomes necessary for the City to perform work of an immediate nature (such as the placement of barricades or replacement of signs or other warning or protective devices) required of the Contractor by this contract because of failure or refusal of the Contractor to perform such work, the Contractor/Developer shall reimburse the City at the rate of 2.5 times the actual cost of labor, materials and equipment necessary to perform such work.

16. CONVENIENCE FACILITIES: The Contractor shall furnish and maintain sanitary convenience facilities for the workmen and inspectors for the duration of the work.

17. NON-RUBBER TIRED VEHICLES: No non-rubber tired vehicles shall be moved on City streets, existing private roadways or parking lots. Exceptions may be granted by the City of Grove City, for public roadways only, where short distances and special circumstances are involved. Granting of exceptions must be in writing, and any damage must be repaired by the Contractor to the satisfaction of the City of Grove City.

18. BUS ROUTE COORDINATION: Should the project impact bus routes and/or stops, the Contractor shall contact the Service Program Manager of The Central Ohio Transit Authority (COTA) by phone at (614) 308-4373 two (2) weeks prior to construction to coordinate proper bus movements through or around the job site during the project. This will include, but is not limited to, the temporary relocation or removal of COTA signs and/or bus stop locations.

19. SIGNS, MAILBOXES, FENCES, ETC.: The Contractor shall be responsible for restoring all signs, mailboxes, fences, guardrail, shrubs, property, drainage structures, or other physical features disturbed or damaged during construction, whether shown on the plans or not, to their original or better condition and location and to the satisfaction of the Property Owner and the City of Grove City.

20. PRUNING: Branches or growth which interferes with the free construction of the project may be removed from trees/bushes that are to be saved by the use of pruning tools with prior approval from the City's Urban Forester. All pruning tools used and methods employed shall meet the approval of the City's Urban Forester. The branches shall be removed per ANSI standards.

Trees damaged or destroyed that were not designated for removal or approved by the City for removal shall be replaced at the Contractor's expense.

21. DEWATERING: The Contractor is solely responsible to the Ohio Department of Natural Resources (ODNR) for registry, maintenance, and abandonment of any withdrawal devices used in the construction of this project.

Installation of any well, well point, pit or other device used for the purpose of lowering the groundwater level to facilitate construction of this project shall be properly abandoned in accordance with the provisions of Section 3745-9-10 of the Ohio Administrative Code or as directed by the Director or their representatives.

The Contractor shall be required to complete and file a Well Log and a Drilling Report Form with ODNR, Division of Water, within 30 days of the completion of installation of any well, well point, pit or other device used for the purpose of removing groundwater from an aquifer, in accordance with Sections 1521.01 and 1521.05 of the Ohio Revised Code. In addition, any such facility that has a capacity to withdraw waters of the State in an amount greater than 100,000 gallons per day from all sources shall be registered by the Contractor with the Chief of the ODNR, Division of Water, within three (3) months of the completion of the facility in accordance with Section 1521.16 of the Ohio Revised Code. Copies of the necessary paperwork can be obtained at ODNR, Division of Water, Fountain Square, Columbus, OH, 43224-1387 – Phone: (614) 265-6717.

The Contractor shall furnish and operate suitable pumping equipment of such capacity, adequate to dewater the trench, should water be encountered. The trench shall be sufficiently dewatered so that the placement of bedding and the laying and joining of pipe is made on firm, dry ground. If dewatering operations produce acceptable subgrades, and only as directed by the Engineer, unsuitable materials shall be removed and replaced by CMSC Item 906, stone foundation.

The Contractor shall convey all trench water to a natural drainage channel or storm sewer without damage to property. The Contractor shall provide in place and maintain the necessary sediment and erosion control measures to filter the dewatering discharge and to prevent erosion at the discharge location.

22. REPLACEMENT OF DRAIN TILES AND STORM SEWERS: All drain tile and storm sewers damaged, disturbed, or removed as a result of the Contractor's operations shall be replaced with the same quality pipe or better, maintaining the same gradient as existing. Replaced drain tile shall be laid on compacted bedding equal in density to that of surrounding stratum. If possible, the drain tile and/or storm sewer shall be connected to a storm sewer structure, curb underdrain or outlet into the roadway ditch as applicable. Replacement shall be done at the time of the backfill operation.

23. PAVEMENT CROSSINGS: For all permitted crossing of existing streets that are to be open to traffic the restoration shall be completed in one of the following manners:

a. Immediately complete permanent, full-depth pavement repair in accordance with the plan and/or standard details.

b. Provide temporary pavement in accordance with ODOT CMS Item 615 and standard drawing C-QC-69. The finished surface of the temporary pavement shall be asphalt. Aggregate topped trenches shall not be open to traffic unless directed by the City.

24. SAW CUTTING: When saw cutting of pavement (concrete, asphalt, etc.) is necessary, the Contractor shall employ dust collection measures and shall ensure all slurry is cleaned from the roadway immediately after sawing. The Contractor is solely responsible for any damage to private property caused by fugitive dust and slurry.

25. MAINTAIN DRAINAGE: The flow in all sewers, drains and watercourses encountered shall be maintained by the Contractor at his own expense, and whenever such watercourses and drains are disturbed or destroyed during the prosecution of the work, they shall be restored by the Contractor at his own cost and expense, unless specific provision is made within the Contract Documents for the measure of and payment for such cost specific items, to a condition satisfactory to the City.

26. INLET PROTECTION: The Contractor is responsible to keep all storm sewer inlets protected from excessive amounts of sediments using adequate filtering devices as approved by the City.

27. EROSION & SEDIMENTATION CONTROL: The Contractor shall provide sediment control at all points where stormwater runoff leaves the project including waterways, overland sheet flow and storm sewers. Erosion and sediment control shall be provided as per the requirements of the City of Grove City Stormwater Design Manual and the Standards and Specifications of the "Rainwater and Land Development" manual of the OEPA.

The developer shall prepare a Stormwater Pollution Prevention Plan (SWP3) for proposed improvements resulting in the land disturbance or one acre or more. The SWP3 shall be prepared in accordance with the general and specific requirements outlined in the City of Grove City Stormwater Design Manual and the OEPA's permit for stormwater discharges associated with construction activity or its subsequent OEPA issued revision. The SWP3 shall be submitted to the City for review and shall be approved prior to the commencement of land disturbing activities. A copy of the OEPA Notice of Intent (NOI) submission shall be made available to the City.

Erosion control measures are to be installed per NPDES permit regulations or as directed by the City, and are to be maintained until such time that they are no longer required by the permit and the City.

All land disturbing activities shall be subject to inspection and site investigation by the City of Grove City and/or the Ohio EPA. Failure to comply with these regulations is subject to legal enforcement action.

The Contractor is responsible to notify the City of Grove City 48 hours prior to commencement of initial site land disturbance on any site of one (1) or more acres as well as disturbance of lands less than an acre that are part of a larger common plan of development. This includes site clearing, grubbing and any earth moving. Primary erosion and sediment control practices are mandated by regulations to be in place from the beginning of the construction activity.

All disturbed areas resulting from construction activities shall be stabilized in accordance with the temporary and permanent soil stabilization requirements indicated within the City of Grove City Seeding and Mulching General Notes.

It is the Contractor's responsibility to maintain the sediment and erosion control features used on this project. The site shall be inspected at least once every seven calendar days and within 24 hours after any storm event greater than one-half inch of rain per 24-hour period. Records of these inspections shall be kept and made available to jurisdictional agencies if requested. Any sediment or debris which has reduced the efficiency of a structure shall be removed immediately. Should a structure or feature become damaged, the Contractor shall repair or replace it.

28. SEEDING AND MULCHING: Seeding and mulching shall conform to the notes contained herein, the requirements of Grove City and CMSC Section 659. In the event of a conflict, the more stringent requirement, determined at the sole discretion of the City of Grove City shall apply. In addition to these requirements, the seeding and mulching shall conform to the following:

Permanent seeding: disturbed areas that are at final grade must be permanently stabilized within seven days of the most recent disturbance. Disturbed areas within 50 feet of a surface water must be permanently stabilized within 2 days of reaching final grade.

Temporary seeding: disturbed areas that are not at final grade and that will be dormant for more than 14 days shall be temporarily stabilized within 7 days of the most recent disturbance. Disturbed areas within 50 feet of a surface water and that will be dormant for more than 14 days shall be temporarily stabilized within 2 days of the most recent disturbance.

All topsoil shall be of the highest quality and free of all stones, trash, and other deleterious materials greater than 1/4-inch. Before placing topsoil, the disturbed areas shall be free of large rocks and debris (greater than 3-inch in size). Organic content shall be tested by an approved lab and certified to be between 10-20% by weight. All topsoil shall be saturated with water and allowed to settle prior to seeding. Settled areas shall be refilled and saturated again prior to seeding. The grades shall match all existing landscape and any improvements completed under this plan. The Contractor shall scarify the soil surface to open the soil prior to seeding. All seeding, fertilizer, and mulch shall be placed within five (5) working days of placing topsoil.

All seeding, mulching and fertilizer shall be placed by utilizing hydro-seeding / hydromulching methods. In all cases if using seed or hydro-seed, it shall be covered with Penn Mulch or other mulch approved to cover grass seed. Straw shall not be permitted.

Residential Single-Family Homes: All residential homes shall have the front yard, side yards and at least 10' off the back of the structure sodded. The remaining lot can be grass seed with cover requirements previously mentioned.

Commercial/Multifamily Projects: All roadway frontage requires sod from curb to building. Sod and/or seed shall be placed in all remaining barren areas. In certain cases the final development plan identifies specific areas of grass seed placement vs. sod which shall be adhered to.

REQUIRED PERMANENT SEED MIXES FOR CONSTRUCTION
Option #1 (Seeding Dates: March 1 to September 30)
40% Kentucky Blue Grass
20% Creeping Red Fine Fescue
20% Chewings Fine Fescue
20% Penn Fine Perennial Rye Grass
Option #2 (Fall Seeding Dates After September 30)
30% Kentucky Blue Grass
30% Creeping Red fescue
50% Perennial Rye (Penn Fine, Keystone, or equal)
Fertilizer
12-12-12 at 2- pounds per 1,000 square feet (dry or liquid)

Temporary seeding shall be applied per the specifications provided within the OEPA "Rainwater and Land Development" manual.

29. LANDSCAPING:
Tree Planting Typical: When planting evergreen and deciduous trees, 50% of the wire cage/basket and 50% of the burlap shall be removed from the root balls of the trees along with any tags, twine and trunk wrap.

Screening of Service Structures: Any service structure in all zoning districts, whether shown on the development plan or not, shall be screened. Examples include but are not limited to propane tanks, transport, vegetation, debris, rubbish or trash material, compacted to 85% of its maximum laboratory dry weight and placed per Item 901.17.

Aggregate for bedding shall be No. 57 or No. 8, as per Item 703.

The excavated trench width 12-inches above the conduit may be increased without extra compensation.

39. TRENCH BACKFILL FOR WATER MAIN: Trenches within a 1:1 influence of the roadway and/or pavement, including all points to within 3-feet behind the curb or edge of pavement, shall be filled and compacted per 912 backfill. Trenches within the right-of-way, but outside the road influence, shall be filled and compacted as per 911 backfill. All other trenches shall be filled and compacted as per 911 backfill at a minimum, or as otherwise indicated within these plans.

All item numbers shown below refer to City of Columbus Construction and Material Specifications (CMSC) item numbers.

912 backfill shall be granular material, conforming to Item 304, compacted as stipulated in Item 912.03. In all cases granular material shall be used around all manholes, structures and cleanouts. Item 613 Low Strength Mortar Backfill is required when the sewer is installed under existing payment, but otherwise only allowed when specifically requested by the City. In such cases shall be Type II or Type III.

911 backfill shall be natural soil free from stones larger than 2-inches across their greatest dimension, topsoil, vegetation, debris, rubbish or frozen material, compacted to 85% of its maximum laboratory dry weight and placed per Item 901.17.

Aggregate for bedding shall be No. 57 or No. 8, as per Item 703.

The excavated trench width 12-inches above the conduit may be increased without extra compensation.

39. TRENCH BACKFILL FOR WATER MAIN: Trenches within a 1:1 influence of the roadway and/or pavement, including all points to within 3-feet behind the curb or edge of pavement, shall be filled and compacted per 912 backfill. Trenches within the right-of-way, but outside the road influence, shall be filled and compacted as per 911 backfill. All other trenches shall be filled and compacted as per 911 backfill at a minimum, or as otherwise indicated within these plans.

All item numbers shown below refer to City of Columbus Construction and Material Specifications (CMSC) item numbers.

811.01 backfill shall be granular material, conforming to Item 304, compacted as stipulated in Item 811.11. In all cases granular material shall be used around all valves and structures. Item 613 Low Strength Mortar Backfill is required when the main is installed under existing payment, but otherwise only allowed when specifically requested by the City. In such cases shall be Type II or Type III.

801.12 backfill shall be natural soil free from stones larger than 2-inches across their greatest dimension, topsoil, vegetation, debris, rubbish or frozen material, compacted per the requirements of 801.12.

Aggregate for bedding shall be No. 57 as per Item 703.

The excavated trench width 12-inches above the conduit may be increased without extra compensation.

40. TRENCHES: All trenches shall be maintained as safe as possible by the Contractor at all times and backfilled as soon as practical. All trenches during non-working hours require traffic plates, and/or lighted barricades and construction fence.

41. WATER MAIN SEPARATION: The Contractor shall maintain 18-inches vertical and 10-feet horizontal separations between any water main and sanitary or storm sewers.

42. DEFLECTION TESTING: All flexible sewers are subject to Mandrel Testing and video inspection as directed by the City Engineer. Testing shall be performed no sooner than 30 days after the pipe trench has been backfilled and all roadway and site fills over the sewers constructed. The testing shall be completed in conformance with the requirements of CMSC Item 901.21. Maximum deflection shall not exceed 5% of the base inside diameter. Cost of the testing shall be at the expense of the Contractor.

43. GRADE CHECKS: The Contractor shall ensure there is a surveyor's level and rod on the project for use in performing grade checks whenever sewer line structures or pipe are being installed. The Contractor shall make this equipment available for the use of, and assist, the City's Resident Project Representative (RPR) in performing grade checks when requested by the RPR. The RPR will make all reasonable attempts to confine requests for assistance in performing grade checks to a time convenient to the Contractor.

These checks will be performed to ensure the following:
A. Proper placement of each structure.
B. Proper installation of initial runs of pipe from a structure.
C. Grade after an overnight or longer shutdown.
D. Grade, at any other time the RPR has reason to question grade of installation.

A grade check performed by the City's RPR in no way relieves the Contractor from the ultimate responsibility to ensure construction to the plan grade.

44. GRADE CHANGES: If it is determined that the elevation of the existing sewer, or existing appurtenance to be connected to, differs from the plan elevation or results in a change in the plan sewer slope, the Design Engineer shall be notified before starting construction of any portion of the proposed sewer which will be affected by the variance in the existing elevations.

If it is determined that the proposed sewer will intersect an existing sewer or underground utility if constructed as shown on the plan, the Design Engineer shall be notified before starting construction of any portion of the proposed sewer which would be affected by the interference with an existing facility.

Grades and elevations shown on the plans shall not be revised under any circumstances without first obtaining written approval from the City.

45. STRUCTURE ADJUSTMENT: The Contractor shall field verify the top of casting elevation of all proposed manholes. If precast structures are utilized, a minimum of the top 6-inches and a maximum of 12-inches shall be field placed with grade rings to allow for field adjustment.

46. TEMPORARY BULKHEAD: The Contractor shall install a temporary bulkhead, where directed on the plans, prior to construction of the proposed sewers and shall maintain same until said sewers are accepted by the City.

47. BACKFILL TESTING: Prior to construction of the public roadway, soil density tests shall be made on all sanitary sewer, water and designated storm sewer trenches which cross the proposed pavements or which lie such that the proposed pavements are located within any part of the influence line of said trench. Where said results indicate that the trench backfill does not meet the compaction requirements of Item 801.11 or 912.03, as applicable, of the Construction and Material Specifications (CMSC), all backfill material shall be removed, replaced, and re-tested until compaction meets said requirements of Item 801.11 or 912.03, as applicable.

48. CONCRETE CURE AND SEAL: All exposed exterior concrete finished flatwork is to receive 2 coats of Dayton Superior Cure & Seal 1315 EF, VOCOMP-25 Cure & Seal, or approved equal. No other method or curing compound will be permitted. This note supersedes any other note or standard drawing referenced. Payment for this curing compound and associated work shall be included in the associated pay items that require exposed concrete flatwork including but not limited to curb, combined curb and gutter, drive approaches, sidewalks, and curb ramps.

49. RECORD DRAWINGS: The Developer shall provide Record Drawings per latest version of Record Drawing Policy at time of project completion. At a minimum, the plans must include top of casting and invert elevations for all sanitary and storm structures and identify any and all field modifications to, and deviations from, the approved plan set. The plans must include the installed pipe length, pipe diameter, material, coordinates of water quality BMP's, and normal pool elevations. Water infrastructure shall be documented on the Record Drawings in accordance with the current City of Columbus Water Line Record Plan Preparation checklist. A redline set of plans reflecting the As-Built information shall be kept onsite and updated by the Developer/Contractor. If the redline plans are incomplete or missing information, the Developer shall be responsible for supplying the missing information by field survey or other means to facilitate a complete set of Record Drawings. Upon approval of the redline set the Developer is responsible for submitting an electronically drafted Record Drawing set to the City.

City of Grove City Special Water Notes

50. HYDRANT USAGE: In addition to the requirements of the City of Columbus, the Contractor shall obtain a fire hydrant permit from the Jackson Township Fire Department prior to connection of water supply lines to any hydrants.

51. PRESSURE TESTING: In addition to the requirements of the City of Columbus (CMSC 801), each valved section of water main shall be tested independently of one another unless otherwise approved by the City Engineer. Pressure test shall be conducted with all watch valves open and hydrant foot valves closed.

Any testing performed against existing valves shall be at the Contractor's risk and in strict compliance with the requirements of the City. If satisfactory results cannot be obtained against an existing valve, the new line shall be disconnected from the existing valve, plugged and retested. Disconnection from the existing water main and any repairs necessary because of damage caused to the existing lines, valves and service connections shall be at the Contractor's expense.

52. WATER MAIN DISINFECTION: In addition to the requirements of the City of Columbus, Contractor shall provide written notification to the City of Grove City's Resident Project Representative that the water main is ready for disinfection.

53. SERVICE TRANSFERS: In addition to the requirements of the City of Columbus, the disposition of all other existing services shown on the plans and not indicated as transfers shall be coordinated with the City prior to any action.

54. INTERRUPTION OF WATER SERVICE: The Contractor shall give written notice to all affected property owners at least 24 hours, but not more than 72 hours prior to any temporary interruption of water service. Interruption of water service shall be held to a minimum and shall be approved by the City of Grove City.

55. EXISTING VALVES: All existing valves shall be operated by City of Columbus, Division of Water personnel only.

56. HAND SWABBING: In addition to the requirements of the City of Columbus, the Contractor shall hand swab all pipes and fittings that are not otherwise disinfected. The amount of chlorine to be used during hand swabbing operations will be determined by the City of Grove City.

57. BLOCKING: All fittings shall be adequately restrained with concrete blocking per the City of Columbus standard construction drawings. All fittings to be backed must be thoroughly wrapped in a plastic sheeting prior to placing concrete.

58. EXISTING PLUGS, CAPS, ETC.: Plugs and caps removed from existing waterlines shall be delivered to the Public Service Department, 3262 Ventura Blvd., Grove City, Ohio, unless otherwise directed by the City.

59. FIRE HYDRANT REPLACED OR RELOCATED: No existing fire hydrants to be replaced or relocated shall be removed, taken out of service, until the new waterlines are in service and the new fire hydrants are accepted by the Jackson Township Fire Department.

60. WATER SERVICES: Where and as shown on the plans, the water services shall be extended from the proposed main to the proposed permanent local locations of the curb stop to its terminus point with Copper Type K and a temporary box set at the end of the extension.

61. POLYETHYLENE ENCASEMENT: In addition to the requirements of the City of Columbus, Contractor shall wrap all ductile iron pipe with tube style 8 mil linear low density polyethylene (LLDPE) film and loose polyethylene only (no recycled material) per AWWA C-105. The color shall be black with minimum 2% carbon black UV inhibitor and printed per the AWWA C-105 standard. Installation shall be done in accordance with the "Polyethylene Encasement Installation Guide" written by the Ductile Iron Pipe Research Association (DIPRA).

All lumps of clay, mud, cinders, etc., on the pipe surface shall be removed before the pipe is covered with polyethylene. When fitting polyethylene encased pipe use a fabric type sling or padded cable. Joints shall be overlapped and taped. Fold excess slack over the top of the pipe and tape every 3-feet. Small holes or tears shall be repaired with a piece of tape placed over the hole. Large holes or tears should be repaired by taping another piece of polyethylene over the hole. To avoid damage during backfilling allow adequate slack in the film tube at joints. Backfill material shall be free of cinders, rocks, boulders, nails, sticks or other material that will damage the polyethylene sleeve.

Appurtenances such as bolted joints, valves, service taps shall also be wrapped. For service taps, wrap two/three layers of tape completely around the polyethylene-encased pipe to cover the area where tapping machine will be mounted. Install corporation stop directly through the tape and polyethylene. Wrap copper service at least 3-feet back from installation with tape and additional polyethylene film to prevent electrolysis.

CITY OF COLUMBUS WATER SERVICE PLAN NOTES (MODIFIED):

1. NO WATER SERVICE CONNECTION PERMITS SHALL BE ISSUED OR CONNECTIONS MADE TO ANY WATER TAPS UNTIL THE PUBLIC WATER MAIN HAD BEEN DISINFECTED BY THE CITY OF COLUMBUS, DIVISION OF WATER. CONTRACTOR SHALL PROVIDE WRITTEN NOTIFICATION TO THE CITY OF GROVE CITY THAT THE WATER MAIN IS READY FOR DISINFECTION.
2. NO WATER SERVICE CONSTRUCTION, BEFORE OR AFTER THE WATER METER(S), SHALL BEGIN PRIOR TO FEE PAYMENT TO THE UTILITY PERMITS OFFICE AT 111 N. FRONT STREET (614-645-7330).
3. THE CITY OF COLUMBUS CONSTRUCTION AND MATERIAL SPECIFICATIONS (CMSC), 2019 EDITION AND ALL REVISIONS, INCLUDING ALL PROVISIONS AND SUPPLEMENTAL SPECIFICATIONS SHALL GOVERN THIS IMPROVEMENT, UNLESS OTHERWISE NOTED.
4. ALL WATERLINE MATERIALS AND INSTALLATIONS SHALL BE IN ACCORDANCE WITH THE CURRENT APPROVED MATERIALS LIST AND RULES AND REGULATIONS OF THE CITY OF COLUMBUS, DIVISION OF WATER; UNLESS OTHERWISE SHOWN ON THE PLANS OR APPROVED BY THE CITY OF COLUMBUS DIVISION OF WATER. ONLY PRODUCTS LISTED ON THE CURRENT APPROVED MATERIALS LIST WILL BE PERMITTED TO BE INSTALLED.
5. IT SHALL BE UNLAWFUL FOR ANY PERSON TO PERFORM ANY WORK ON THE PUBLIC WATER DISTRIBUTION SYSTEM WITHOUT FIRST SECURING LICENSE TO ENGAGE IN SUCH WORK, AS INDICATED IN COLUMBUS CITY CODE SECTION 1103.02 AND 1103.06. THIS WORK INCLUDES ANY ATTACHMENTS, ADDITIONS TO OR ALTERATIONS IN ANY CITY SERVICE PIPE OR APPURTENANCES (INCLUDING WATER SERVICE LINES AND WATER SERVICE TAPS). THIS REQUIREMENT MAY BE MET BY UTILIZATION OF A SUBCONTRACTOR WHO POSSESSES A CITY OF COLUMBUS WATER CONTRACTOR LICENSE OR A COMBINED WATER/SEWER CONTRACTOR LICENSE TO PERFORM THIS WORK. UTILIZATION OF A SUBCONTRACTOR MUST MEET THE LICENSING REQUIREMENTS OF CITY OF COLUMBUS BUILDING CODE, IN PARTICULAR SECTION 4114.119 AND 4114.529.
6. FOR ANY EMERGENCIES THAT OCCUR AFTER NORMAL WORKING HOURS INVOLVING THE WATER DISTRIBUTION SYSTEM, PLEASE CONTACT THE DIVISION OF WATER DISTRIBUTION MAINTENANCE OFFICE AT 614-645-7788.
7. SITE UTILITY CONTRACTOR SHALL OBTAIN A RIGHT OF WAY PERMIT PRIOR TO STARTING ANY SITE WATER SERVICE AND/OR WATER SERVICE TAP INSTALLATION OR PLACEMENT OF ANY WATER SERVICE MATERIALS INTO THE PUBLIC RIGHT OF WAY.
8. SITE UTILITY CONTRACTOR SHALL OBTAIN A PERMIT FROM THE CITY OF COLUMBUS - CITY FORESTER AT 614-645-6640 FOR ANY WORK DONE WITHIN 10 FEET OF A TREE IN THE RIGHT OF WAY.
9. THERE SHALL BE A 10 FOOT MINIMUM HORIZONTAL AND 18 INCH VERTICAL SEPARATION BETWEEN WATER SERVICE TAP(S), WATER SERVICE LINE(S), PRIVATE WATER SYSTEMS AND ANY SANITARY AND/OR STORM SEWER SYSTEMS.
10. WHEN WATER TAPS ARE INSTALLED BY TRENCHLESS METHODS AND CROSS AN EXISTING STORM AND/OR SANITARY SEWER, THE CONTRACTOR SHALL VERIFY THE CONDITION OF THE SEWER(S) BY VIDEO INSPECTION METHODS FOLLOWING THE TAP INSTALLATIONS.
11. EXISTING RIGHT OF WAY LINE(S), PROPOSED RIGHT OF WAY LINE(S) AND/OR WATER MAIN EASEMENT LINES SHALL BE STAKED AT 10 FOOT INCREMENTS BY A STATE OF OHIO LICENSED SURVEYOR WHEN THE WATER SERVICE TAP(S) AND/OR WATER SERVICE(S) ARE INSTALLED AND INSPECTED BY THE COLUMBUS DIVISION OF WATER.
12. ALL INSPECTIONS REQUIRE A 24 HOUR ADVANCE NOTICE.
13. ALL PUBLIC FIRE HYDRANTS, WHETHER NEW OR RELOCATED, SHALL BE INSPECTED AND APPROVED BY THE DIVISION OF FIRE PRIOR TO BEING PUT INTO SERVICE. THE CONTRACTOR SHALL CONTACT THE DIVISION OF FIRE AT 645-7642-7642 EXT. 75658 TO SCHEDULE THE INSPECTION OF THE NEW OR RELOCATED FIRE HYDRANTS. THE CITY WILL PROVIDE THE CONTRACTOR "OUT OF SERVICE" RINGS THAT SHALL BE PLACED ON ALL NEW OR RELOCATED FIRE HYDRANTS TO CLEARLY IDENTIFY THEM AS INACTIVE. AFTER WRITTEN NOTIFICATION OF ACCEPTANCE HAS BEEN RECEIVED, THE CONTRACTOR SHALL REMOVE THE "OUT OF SERVICE" RINGS FROM THE FIRE HYDRANTS. ALL "OUT OF SERVICE" RINGS SHALL BE RETURNED TO THE CITY.
14. ALL PUBLIC FIRE HYDRANTS, WHETHER NEW OR RELOCATED, SHALL BE INSPECTED AND APPROVED BY THE JACKSON TOWNSHIP FIRE DEPARTMENT PRIOR TO BEING PUT INTO SERVICE. THE CONTRACTOR SHALL CONTACT THE JACKSON TOWNSHIP FIRE DEPARTMENT AT 614-875-5588 TO SCHEDULE THE INSPECTION OF THE NEW OR RELOCATED FIRE HYDRANTS. THE CONTRACTOR SHALL OBTAIN A FIRE HYDRANT PERMIT FROM THE JACKSON TOWNSHIP FIRE DEPARTMENT PRIOR TO CONNECTION OF WATER SUPPLY LINES TO ANY HYDRANTS
15. SITE UTILITY CONTRACTOR SHALL FLUSH ALL WATER SERVICES PRIOR TO ANY WATER METER INSTALLATION. THE CITY OF COLUMBUS IS NOT RESPONSIBLE FOR ANY CITY WATER METER DAMAGE CAUSED BY NON-FLUSHING.
16. SITE UTILITY CONTRACTOR SHALL CALL COLUMBUS DIVISION OF WATER AT 614-645-7330 FOR INSPECTION OF 2" AND SMALLER WATER SERVICE TAPS FROM THE WATER MAIN THRU THE CURB STOP AND WATER SERVICES FROM THE CURB STOP THRU THE WATER METER SETTING.
17. IF A TAP IS BEING REUSED AND DISCOVERED TO BE LEAD, THE TAP SHALL BE ABANDONED AT THE WATER MAIN PER CMSC ITEM 808 AND A NEW TAP SHALL BE INSTALLED.
18. SITE UTILITY CONTRACTOR SHALL CALL COLUMBUS DIVISION OF WATER AT 614-645-7330 FOR INSPECTION OF ALL WATER SERVICE TAP ABANDONMENTS COMPLETED AT THE WATER MAIN PER CMSC ITEM 808.
19. ALL 2" AND SMALLER WATER SERVICE PIPE SHALL BE TYPE K SOFT TEMPER COPPER ONLY FROM THE CITY WATER MAIN THRU THE CURB STOP PER STANDARD DETAIL DRAWING L-9901 AND SHALL BE TYPE K SOFT TEMPER COPPER OR A DIVISION OF WATER APPROVED POLY TUBING FROM THE CURB STOP THRU THE WATER METER SETTING.
20. 1" AND SMALLER METER SETTING(S) SHALL BE PER COLUMBUS DIVISION OF WATER STANDARD DETAIL DRAWING L-9503.
21. SITE UTILITY CONTRACTOR SHALL CALL COLUMBUS DIVISION OF WATER AT 614-645-8276 TO HAVE 1.5" AND SMALLER METER(S) INSTALLED.
22. 1.5" AND 2" METER SETTING(S) SHALL BE PER COLUMBUS DIVISION OF WATER STANDARD DETAI

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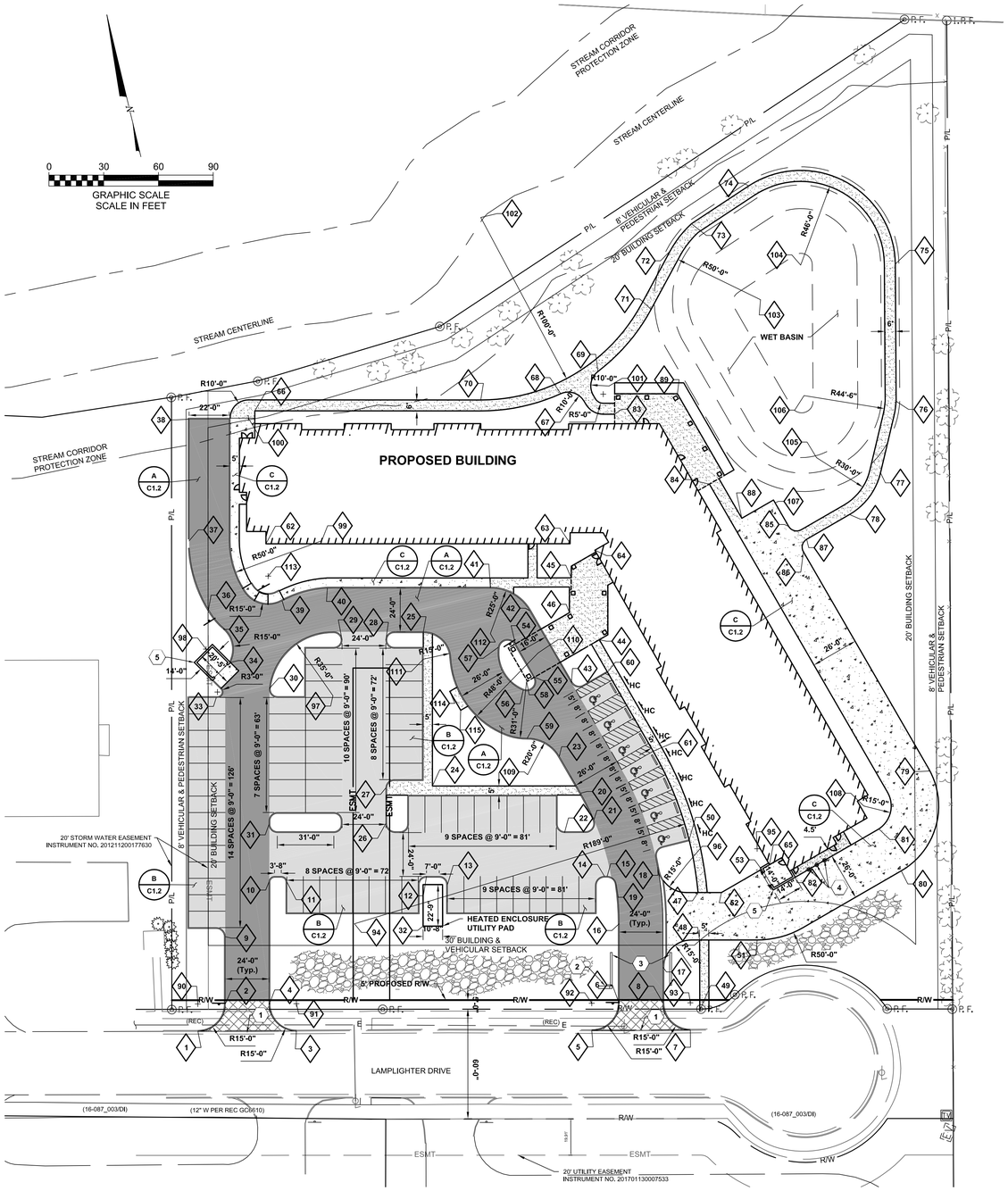


STAKING LEGEND

EXISTING	PROPOSED
PROPERTY LINE	BUILDING/WALL
RIGHT-OF-WAY	STRAIGHT CURB PER C-GC-58
PAVEMENT	PAVEMENT
WALK	WALK
	RIGHT-OF-WAY
	HEAVY DUTY ASPHALT PER DETAIL A/6 (C1.2)
	LIGHT DUTY ASPHALT PER DETAIL B/6 (C1.2)
	CONCRETE SIDEWALK PER C-GC-46A
	HEAVY DUTY CONCRETE PAVEMENT PER DETAIL C/6 (C1.2)
	COMMERCIAL DRIVEWAY APPROACH PER C-GC-42A
	HANDICAPPED PARKING SIGN A/6 (C1.3)
	BUMPER BLOCK PER DETAIL E/6 (C1.2)

GENERAL NOTES:

1. DIMENSIONS AND COORDINATES ARE GIVEN TO FACE OF CURB AND FACE OF BUILDING UNLESS OTHERWISE NOTED.
2. CURB AND SIDEWALK RADII SHALL BE 5'-0" UNLESS OTHERWISE NOTED.
3. PROVIDE STRIPING AND SYMBOLS AS SHOWN PER ODOT ITEM 640 AND 641. STRIPING PAINT SHALL BE ODOT ITEM 740.02 TYPE 4 WITHOUT GLASS BEADS. TYPICAL LINE WIDTH SHALL BE 4 INCHES, COLOR WHITE.
4. STANDARD PARKING STALL DIMENSIONS ARE 9'-0" IN WIDTH BY 20'-0" IN LENGTH UNLESS OTHERWISE NOTED.
5. ANY PROPERTY PINS DAMAGED AS PART OF CONSTRUCTION SHALL BE RESET BY AN OHIO REGISTERED SURVEYOR.
6. PROVIDE 5 HANDICAP ACCESSIBLE PARKING SIGNS AND 2 VAN ACCESSIBLE PARKING SIGNS AS SHOWN ON DETAIL D/7 (C1.3). FINAL LOCATION OF SIGNS TO BE DETERMINED BY ARCHITECT.
7. REFER TO ARCHITECTURAL AND LANDSCAPE DRAWINGS FOR ALL SITE SIGNAGE NOT SHOWN ON THIS SHEET.

(X) CODED NOTES:

1. SAW-CUT EXISTING PAVEMENT WITH NEAT, STRAIGHT LINES. MATCH EXISTING PAVEMENT GRADE AT THIS POINT.
2. PROJECT SIGNAGE - SINGLE SIDED MONUMENT SIGN, SEE DETAIL #4/21 (L2.01).
3. DECORATIVE WOOD GUARDRAIL TO SIMULATE BRIDGE CROSSING - SEE DETAIL #5/21(L2.01).
4. PROTECTIVE BOLLARDS. REFER TO DETAIL 9/24 (E501).
5. DUMPSTER ENCLOSURE. REFER TO ARCHITECTURAL PLAN SHEET 25 (A450)

Coordinate Table

	Northing	Easting
105	682830.40	1818647.29
1	682603.86	1818244.43
2	682614.96	1818262.50
3	682591.42	1818296.95
4	682608.86	1818285.72
5	682553.90	1818454.31
6	682564.99	1818472.40
7	682541.56	1818506.85
8	682559.64	1818495.76
9	682650.80	1818271.10
10	682674.41	1818301.44
11	682672.14	1818310.88
12	682657.23	1818385.97
13	682650.17	1818396.10
14	682634.50	1818480.78
15	682634.15	1818482.26
16	682607.36	1818482.55
17	682578.54	1818500.34
18	682632.47	1818510.32
19	682628.85	1818486.02
20	682681.83	1818478.64
21	682665.97	1818482.38
22	682662.91	1818465.14
23	682704.12	1818472.03
24	682704.58	1818400.71
25	682787.90	1818415.58
26	682690.59	1818371.13
27	682709.54	1818375.67
28	682788.31	1818394.56
29	682793.90	1818371.22
30	682777.42	1818326.37
31	682705.03	1818308.78
32	682631.16	1818377.84
33	682779.33	1818296.89
34	682796.20	1818308.92
35	682815.25	1818309.74
36	682827.10	1818303.91
37	682866.26	1818302.41
38	682931.10	1818317.95

Coordinate Table

	Northing	Easting
39	682822.48	1818344.28
40	682823.49	1818370.06
41	682802.67	1818456.88
42	682785.47	1818475.02
43	682741.95	1818487.93
44	682761.19	1818508.30
45	682797.72	1818501.25
46	682779.42	1818495.83
47	682613.91	1818528.57
48	682588.43	1818523.33
49	682550.57	1818514.22
50	682643.10	1818530.54
51	682581.08	1818553.98
52	682610.92	1818541.02
53	682619.06	1818564.93
54	682769.65	1818463.03
55	682749.58	1818468.98
56	682744.06	1818461.32
57	682770.10	1818453.60
58	682748.16	1818464.19
59	682717.93	1818457.30
60	682742.84	1818508.53
61	682694.91	1818522.75
62	682854.88	1818342.95
63	682815.99	1818505.16
64	682809.49	1818517.32
65	682619.57	1818570.18
66	682927.11	1818354.00
67	682887.35	1818521.04
68	682897.17	1818519.15
69	682904.25	1818541.84
70	682904.02	1818475.79
71	682930.54	1818578.09
72	682959.22	1818595.72
73	682970.98	1818610.52
74	682983.83	1818645.88
75	682923.42	1818713.94
76	682850.27	1818696.84
77	682814.16	1818679.42

Coordinate Table

	Northing	Easting
78	682795.89	1818657.53
79	682649.01	1818667.65
80	682599.48	1818639.58
81	682624.69	1818633.05
82	682609.62	1818582.33
83	682879.33	1818545.28
84	682830.02	1818586.81
85	682797.31	1818623.67
86	682781.98	1818628.22
87	682788.19	1818631.59
88	682807.65	1818599.71
89	682882.42	1818581.41
90	682618.45	1818247.92
91	682606.01	1818300.45
92	682568.49	1818457.81
93	682556.14	1818510.35
94	682641.16	1818341.55
95	682629.70	1818565.64
96	682630.02	1818525.71
97	682765.41	1818359.24
98	682806.40	1818297.63
99	682849.35	1818373.03
100	682924.03	1818349.68
101	682895.09	1818545.86
102	683001.26	1818499.13
103	682921.70	1818637.62
104	682935.02	1818663.40
106	682865.05	1818648.52
107	682811.69	1818619.40
108	682638.78	1818627.92
109	682698.43	1818452.86
110	682762.00	1818474.05
111	682773.31	1818412.08
112	682778.36	1818451.06
113	682837.39	1818340.01
114	682752.80	1818422.00
115	682741.30	1818425.42

REV.	DATE	DESCRIPTION	REVISION/UPLOAD DATE

SITE IMPROVEMENT PLAN FOR COBBLESTONE MANOR

1050 LAMPLIGHTER DRIVE
GROVE CITY, OH 43213
PID: 940012669

STAKING PLAN

KORDA
Korda/Nemeth Engineering, Inc - Consulting Engineers
1650 Watermark Drive, Columbus, Ohio 43215-7970
TEL 614-487-1650 - FAX 614-487-2683 - WEB www.korda.com

DRAWN BY: KGW CHECKED BY: EJW

THE ARCHITECT / ENGINEER ASSUMES NO RESPONSIBILITY OR LIABILITY FOR THE USE OF THESE PLANS FOR ANY PROJECT OTHER THAN SPECIFICALLY AUTHORIZED BY THEM AND SIGNED AND SEALED FOR SUCH SPECIFIC LOCATION IN THE STATE, PROVINCE OR TERRITORY SHOWN ON THE SEAL. THIS BUILDING USE IS ONLY APPLICABLE IN AREAS MEETING THE STATED DESIGN CRITERIA.

KNE JOB # 2020-0427
GC# XXXXX

DRAWING NUMBER:
5/25

#	DATE	CHANGE DESCRIPTION

COLUMBUS METROPOLITAN HOUSING AUTHORITY
COMMUNITY. COMMITMENT. COLLABORATION.

COBBLESTONE MANOR
1050 LAMPLIGHTER DRIVE
GROVE CITY, OH 43123
FOR
CMHA

MOODY•NOLAN
300 SPRUCE STREET
SUITE 300
COLUMBUS, OHIO 43215
PHONE: (614) 461-4664
FAX: (614) 280-8881

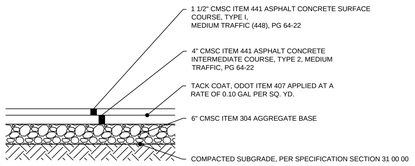
DRAWING TITLE:
STAKING PLAN

KORDA/NEMETH ENGINEERING, INC.
1650 WATERMARK DRIVE
COLUMBUS, OHIO 43215
DESIGNED BY KGW
DRAWN BY KGW
CHECKED BY EJW
JOB FILE 2020-0427

STATE OF OHIO
ERIC J. WALSH
E-80715
REGISTERED
PROFESSIONAL ENGINEER

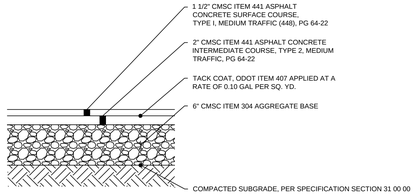
06/08/2023
DRAWN BY: KGW CHECKED BY: EJW
#22172.01
C1.1
PERMIT & BID SET

PRINT DATE: 3/1/2023 10:06:19 AM
FILE INFO: Autodesk Docs://22172.01 CMHA Seasons Grove/22172.01 CMHA Seasons Grove_ARCH.rvt



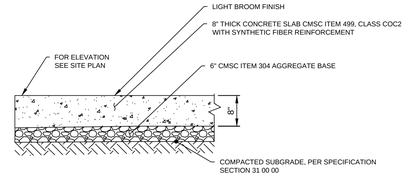
NOTES:
1. COMPOSE HOT MIX ASPHALT MIXTURE WITH AGGREGATE AND ASPHALT BINDER MEETING ODOT REQUIREMENTS.
2. SUBMIT AN APPROVED JOB MIX FORMULA INCLUDING MIX TYPE PROPOSED FOR USE, AGGREGATE SOURCE, TYPE, AND GRADATION, PERCENT OF ASPHALT BINDER, AND UNIT WEIGHT OF THE MIXTURE.
3. OBTAIN JOB MIX FORMULA APPROVAL BY PROVIDING A PREVIOUSLY ODOT APPROVED FORMULA OR PROVIDE THE OWNER'S TESTING AGENCY WITH A MIX FORMULA FOR TESTING AND APPROVAL. THE AGENCY PERFORMING THE TESTING MUST BE LEVEL III BITUMINOUS CONCRETE APPROVED BY ODOT.
4. PROVIDE QUALITY ASSURANCE TESTING IN ACCORDANCE WITH ODOT ITEM 448 AND SUPPLEMENTAL SPECIFICATION 1055. THE AGENCY PERFORMING THE TESTING MUST HAVE A CURRENT LEVEL I BITUMINOUS CONCRETE APPROVAL FROM ODOT.
5. PROVIDE COMPACTION RANGING FROM 90 TO 97.9% OF THE AVERAGE MAXIMUM SPECIFIC GRAVITY FOR SURFACE COURSE AND 90 TO 96.9% FOR INTERMEDIATE COURSE. REMOVE AND REPLACE MATERIAL PLACED OUTSIDE OF SAID RANGES. PROVIDE REPLACEMENT PAVEMENT AND QUALITY ASSURANCE TESTING AT NO ADDITIONAL COST TO THE OWNER.

A DETAIL
HEAVY DUTY ASPHALT PAVEMENT N.T.S.



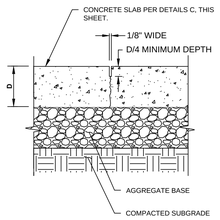
NOTES:
1. COMPOSE HOT MIX ASPHALT MIXTURE WITH AGGREGATE AND ASPHALT BINDER MEETING ODOT REQUIREMENTS.
2. SUBMIT AN APPROVED JOB MIX FORMULA INCLUDING MIX TYPE PROPOSED FOR USE, AGGREGATE SOURCE, TYPE, AND GRADATION, PERCENT OF ASPHALT BINDER, AND UNIT WEIGHT OF THE MIXTURE.
3. OBTAIN JOB MIX FORMULA APPROVAL BY PROVIDING A PREVIOUSLY ODOT APPROVED FORMULA OR PROVIDE THE OWNER'S TESTING AGENCY WITH A MIX FORMULA FOR TESTING AND APPROVAL. THE AGENCY PERFORMING THE TESTING MUST BE LEVEL III BITUMINOUS CONCRETE APPROVED BY ODOT.
4. PROVIDE QUALITY ASSURANCE TESTING IN ACCORDANCE WITH ODOT ITEM 441 AND SUPPLEMENTAL SPECIFICATION 1055. THE AGENCY PERFORMING THE TESTING MUST HAVE A CURRENT LEVEL I BITUMINOUS CONCRETE APPROVAL FROM ODOT.
5. PROVIDE COMPACTION RANGING FROM 90 TO 97.9% OF THE AVERAGE MAXIMUM SPECIFIC GRAVITY FOR SURFACE COURSE AND 90 TO 96.9% FOR INTERMEDIATE COURSE. REMOVE AND REPLACE MATERIAL PLACED OUTSIDE OF SAID RANGES. PROVIDE REPLACEMENT PAVEMENT AND QUALITY ASSURANCE TESTING AT NO ADDITIONAL COST TO THE OWNER.

B DETAIL
LIGHT DUTY ASPHALT PAVEMENT N.T.S.



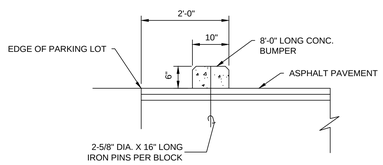
NOTES:
1. PROVIDE JOINTS AS INDICATED ON DRAWINGS. IN ABSENCE OF INFORMATION ON THE DRAWINGS, LOCATE AS SPECIFIED IN SECTION 32 13 00.
2. PROVIDE CONTROL AND ISOLATION JOINTS PER DETAILS G AND H, THIS SHEET.
3. SYNTHETIC FIBER REINFORCEMENT: ASTM C1116-97 AND ASTM C1018-97. ACCEPTABLE PRODUCTS INCLUDE, BUT ARE NOT LIMITED:
   A. NYCON NYLON FIBERS
   B. FORTA NYLO-MONO NYLON FIBERS
   C. FIBERMESH FIBERMIX STEALTH POLYPROPYLENE FIBERS
   D. GRACE POLYPROPYLENE FIBERS
4. SYNTHETIC FIBER REINFORCEMENT SHALL BE USED IN STRICT ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. DOSAGE RATE SHALL BE AS RECOMMENDED BY THE MANUFACTURER, BUT NOT LESS THAN 1 POUND PER CUBIC YARD.
5. DISSIPATING CURING COMPOUND: COMPLY WITH ASTM C309-98A, TYPE 1, CLASS B (CLEAR), EXCEPT MOISTURE LOSS NOT TO EXCEED 0.40 KG/SQ M. IN 72 HOURS. COMPOUND SHALL COMPLY WITH EPA'S VOC REQUIREMENTS. APPLY AT THE MANUFACTURER'S WRITTEN RECOMMENDED APPLICATION RATE. COMPLETELY REMOVE CURING COMPOUND PRIOR TO APPLICATION OF PENETRATING SEALER.
6. PENETRATING SEALER: ACCEPTABLE PRODUCTS INCLUDE, BUT ARE NOT LIMITED TO:
   A. L&M CONSTRUCTION CHEMICALS - AQUAPEL PLUS 40
   B. PROSOCO - SALTGUARD WB
   C. HILS AMERICA INC. - CHEM-TRETE BSM 40
   D. MASTER BUILDERS INC. - MASTERSEAL SL 40
   E. LVMTAL INTERNATIONAL - ISO-FLEX 618-50 WB
   F. BASF - ENVIROSEAL 40 OR HYDROZO SILANE 40
   G. TEX-COTE - RAINSTOPPER RS140
7. IF CONCRETE INSTALLED OCTOBER-MARCH, WAIT UNTIL APRIL-SEPTEMBER TO APPLY PENETRATING SEALER. IF SCHEDULE DOES NOT ALLOW FOR APPLICATION OF SEALER, PROVIDE CREDIT FOR NON-PERFORMANCE.

C DETAIL
HEAVY DUTY CONCRETE SLAB N.T.S.

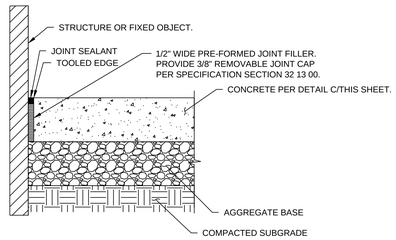


NOTES:
1. PLACE CONTROL JOINTS WITHIN 8 HOURS OF CONCRETE PLACEMENT AND AT LOCATIONS INDICATED ON THE STAKING PLAN. IF JOINTS ARE NOT SHOWN ON STAKING PLAN, PROVIDE AT LOCATIONS INDICATED BELOW:
   A. SPACING (IN FEET) SHALL BE BETWEEN 2 TO 2-1/ 2 TIMES SLAB THICKNESS (IN INCHES IN BOTH DIRECTIONS (I.E. 4" SLAB SHALL HAVE JOINT SPACING OF 8-10 FEET).
   B. GRID OF CONTROL JOINTS SHALL BE APPROXIMATELY SQUARE WITH LONGEST SIDE TO BE NOT LONGER THAN 1.5 TIMES THE SHORTEST SIDE (I.E. 4 FOOT WIDE WALK SHALL HAVE JOINT SPACING AT 4-6 FEET).

D DETAIL
SAW CUT CONCRETE CONTROL JOINT- LONGITUDINAL OR TRANSVERSE N.T.S.



E DETAIL
BUMPER BLOCK N.T.S.



NOTES:
1. PLACE ISOLATION JOINTS WHERE NEW CONCRETE SLAB ABUTS STRUCTURES OR FIXED OBJECTS INCLUDING: BUILDINGS, WALLS, COLUMNS, POLE BASES, CURBS, CATCH BASINS, EXISTING CONCRETE, OR AS NOTED ON THE STAKING PLAN.
2. PROVIDE AT FORMED EDGE OF PREVIOUSLY POURED SLABS. SEAL JOINT WITH JOINT SEALANT, SEE SPECIFICATION SECTION 32 13 00.
3. SUBMIT SAMPLE FOR COLOR APPROVAL. PRE-FORMED JOINT FILLER - NON-IMPREGNATED TYPE, CLOSED CELL RESILIENT POLYETHYLENE FOAM, 1/2" THICK UNLESS OTHERWISE NOTED, CERAMAR FLEXIBLE FOAM EXPANSION JOINT BY W.R. MEADOWS OR EQUAL MEETING THE REQUIREMENTS OF ASTM D 1752 SECTIONS 5.1 THROUGH 5.4. REFER TO SPECIFICATION SECTION 32 13 00.

F DETAIL
CONCRETE ISOLATION JOINT N.T.S.

REV.	DATE	DESCRIPTION

REVISION/UPLOAD DATE

SITE IMPROVEMENT PLAN FOR COBBLESTONE MANOR
1050 LAMPLIGHTER DRIVE
GROVE CITY, OH 43213
PID: 040012669

STAKING DETAILS

KORDA
Korda/Nemeth Engineering, Inc - Consulting Engineers
1650 Watermark Drive, Suite 200 - Columbus, Ohio 43215
TEL 614-487-1650 - FAX 614-487-8981 - WEB www.korda.com

DRAWN BY: KGW CHECKED BY: EJW

THE ARCHITECT / ENGINEER ASSUMES NO RESPONSIBILITY OR LIABILITY FOR THE USE OF THESE PLANS FOR ANY PROJECT OTHER THAN SPECIFICALLY AUTHORIZED BY THEM AND SIGNED AND SEALED FOR SUCH SPECIFIC LOCATION IN THE STATE, PROVINCE OR TERRITORY SHOWN ON THE SEAL. THIS BUILDING USE IS ONLY APPLICABLE IN AREAS MEETING THE STATED DESIGN CRITERIA.

KNE JOB # 2020-0427
GC# XXXXX

DRAWING NUMBER:
6/25

#	DATE	CHANGE DESCRIPTION

COLUMBUS METROPOLITAN HOUSING AUTHORITY
COMMUNITY · COMMUNITY · COLUMBUS

COBBLESTONE MANOR
1050 LAMPLIGHTER DRIVE
GROVE CITY, OH 43123
FOR
CMHA

MOODY·NOLAN
300 SPRUCE STREET
SUITE 300
COLUMBUS, OHIO 43215

PHONE: (614) 461-4664
FAX: (614) 280-8881

DRAWING TITLE:
STAKING DETAILS

STATE OF OHIO
ERIC J. WALSH
E-80715
REGISTERED
PROFESSIONAL ENGINEER

06/08/2023

DRAWN BY: **KGW** CHECKED BY: **EJW**

#22172.01

C1.2

PERMIT & BID SET

KORDA/NEMETH ENGINEERING, INC.
1650 WATERMARK DRIVE
COLUMBUS, OHIO 43215
DESIGNED BY KGW
DRAWN BY KGW
CHECKED BY EJW
JOB FILE 2020-0427

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PRINT DATE: 3/1/2023 13:05:19 AM
FILE INFO: Autodesk Docs://22172.01 CMHA Seasons Grove/22172.01 CMHA Seasons Grove_ARCH.rvt

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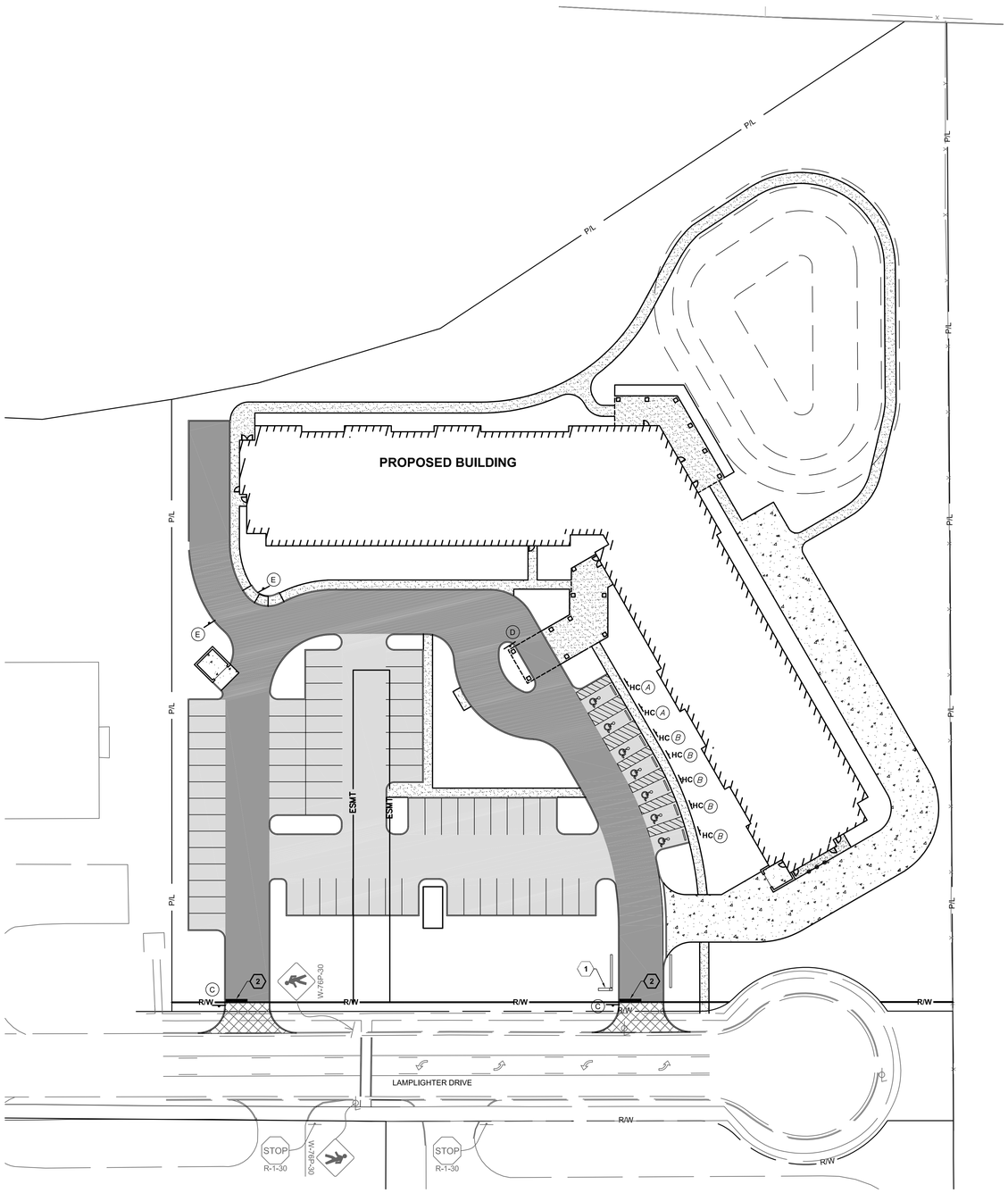
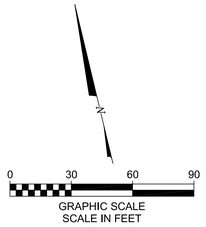




STAKING LEGEND

EXISTING

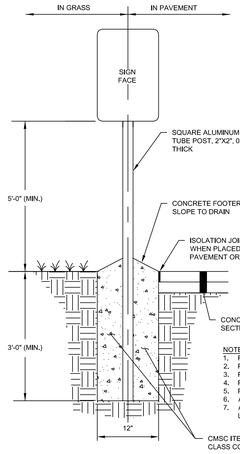
- P/L — PROPERTY LINE
- R/W — RIGHT-OF-WAY
- PAVEMENT
- WALK
- PAVEMENT MARKING
- SIGN

PROPOSED

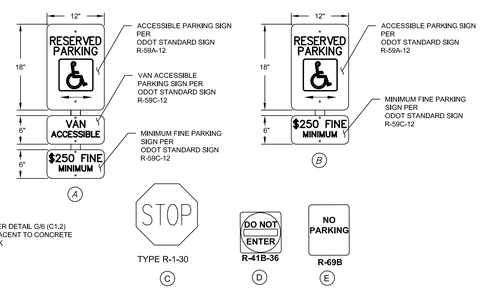
- BUILDING/WALL
- STRAIGHT CURB PER C-GC-58
- PAVEMENT
- WALK
- R/W — RIGHT-OF-WAY
- PAVEMENT MARKING
- HEAVY DUTY ASPHALT PER DETAIL A/6 (C1.2)
- LIGHT DUTY ASPHALT PER DETAIL B/6 (C1.2)
- CONCRETE SIDEWALK PER C-GC-46A
- HEAVY DUTY CONCRETE PAVEMENT PER DETAIL C/6 (C1.2)
- COMMERCIAL DRIVEWAY APPROACH PER C-GC-42A
- HC — HANDICAPPED PARKING SIGN PER DETAIL A/6 (C1.3)
- SIGN PER DETAIL A/6 (C1.3)
- BUMPER BLOCK PER DETAIL E/6 (C1.2)
- PAINTED WHEELCHAIR SYMBOL

(X) CODED NOTES:

1. PROJECT SIGNAGE - SINGLE SIDED MONUMENT SIGN, SEE DETAIL #4/21 (L2.01).
2. 12"X20" STOP BAR.



NOTES:
1. PROVIDE SIGN IN ACCORDANCE WITH ODOT ITEM 630.
2. PROVIDE 0.063 THICK, FLAT ALUMINUM SIGN PANELS.
3. PROVIDE REFLECTIVE FINISH ON SIGN.
4. PROVIDE PERMANENT WEATHERPROOF ALUMINUM CAP ON POST TOP.
5. PROVIDE "VAN ACCESSIBLE" SIGN WHERE NOTED ON DRAWINGS.
6. ATTACH SIGNS WITH UNISTRUT UNIVERSAL DRIVE RIVET OR APPROVED EQUAL.
7. ACCESSIBLE SIGNAGE TO BE AS SHOWN UNLESS OTHERWISE SPECIFIED BY LOCAL CODE.



A DETAIL
SITE SIGNAGE

N.T.S.

REV.	DATE	DESCRIPTION

REVISION/UPLOAD DATE

SITE IMPROVEMENT PLAN FOR COBBLESTONE MANOR

1050 LAMPLIGHTER DRIVE
GROVE CITY, OH 43213
PID: 940012669

SIGNAGE & STRIPING PLAN

KORDA
Korda/Nemeth Engineering, Inc - Consulting Engineers
1650 Watermark Drive, Columbus, Ohio 43215-7026
TEL 614-487-1650 - FAX 614-487-5581 - WEB www.korda.com

DRAWN BY: KGW CHECKED BY: EJW

THE ARCHITECT / ENGINEER ASSUMES NO RESPONSIBILITY OR LIABILITY FOR THE USE OF THESE PLANS FOR ANY PROJECT OTHER THAN SPECIFICALLY AUTHORIZED BY THEM AND SIGNED AND SEALED FOR SUCH SPECIFIC LOCATION IN THE STATE, PROVINCE OR TERRITORY SHOWN ON THE SEAL. THIS BUILDING USE IS ONLY APPLICABLE IN AREAS MEETING THE STATED DESIGN CRITERIA.

KNE JOB # 2020-0427
GC# XXXXX

DRAWING NUMBER:
7/25

#	DATE	CHANGE DESCRIPTION

COLUMBUS METROPOLITAN HOUSING AUTHORITY
COMMUNITY. COMMITMENT. COLLABORATION.

COBBLESTONE MANOR
1050 LAMPLIGHTER DRIVE
GROVE CITY, OH 43123
FOR
CMHA

MOODY•NOLAN
300 SPRUCE STREET
SUITE 300
COLUMBUS, OHIO 43215

PHONE: (614) 461-4664
FAX: (614) 280-8881

DRAWING TITLE:
SIGNAGE & STRIPING PLAN

KORDA/NEMETH ENGINEERING, INC.
1650 WATERMARK DRIVE
COLUMBUS, OHIO 43215
DESIGNED BY KGW
DRAWN BY KGW
CHECKED BY EJW
JOB FILE 2020-0427

STATE OF OHIO
ERIC J. WALSH
E-80715
REGISTERED
PROFESSIONAL ENGINEER

06/08/2023
DRAWN BY: KGW CHECKED BY: EJW
#22172.01
C1.3
PERMIT & BID SET

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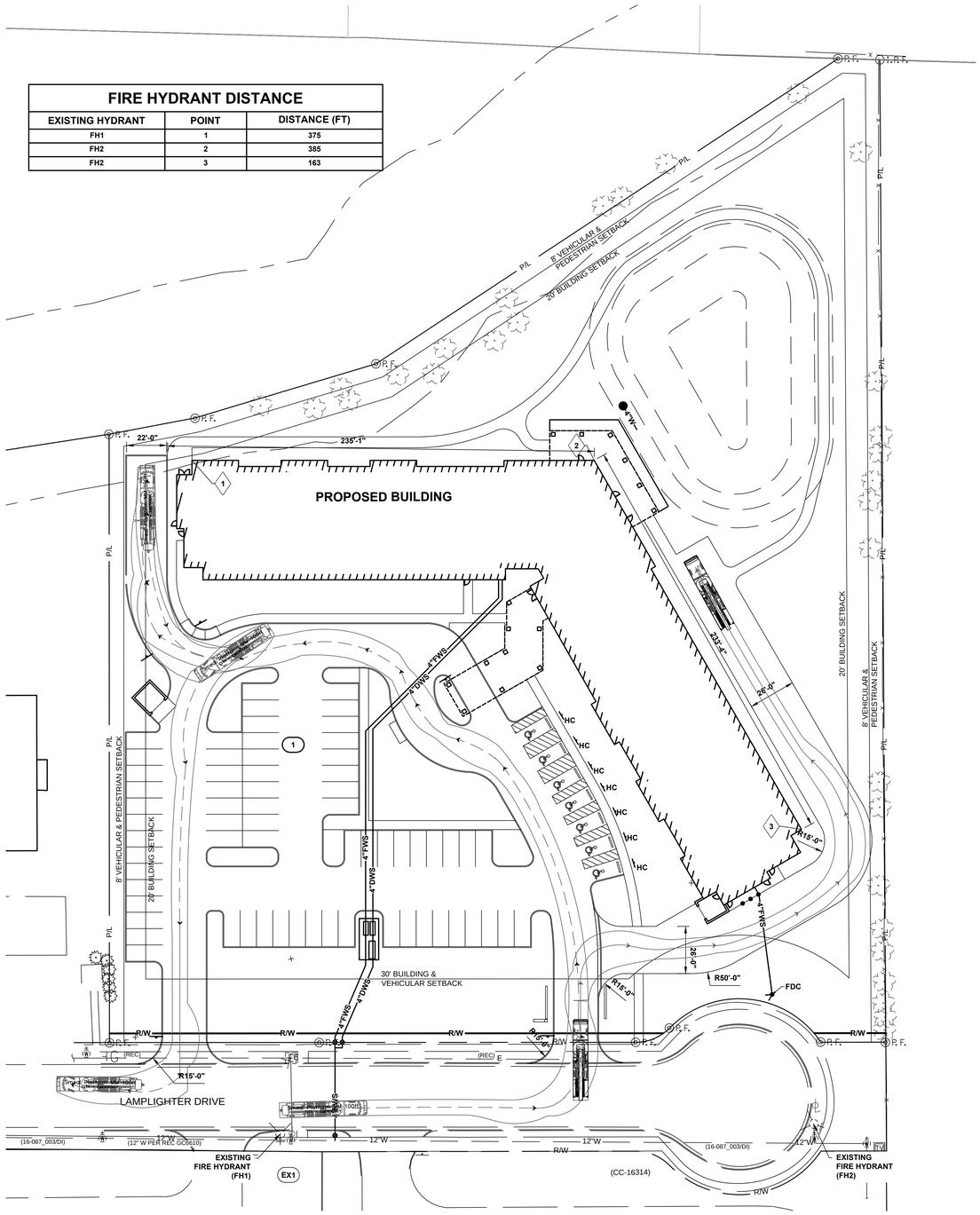
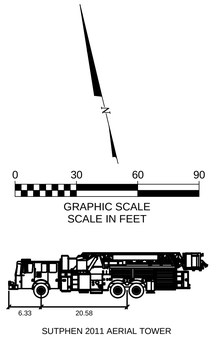
FIRE HYDRANT DISTANCE

EXISTING HYDRANT	POINT	DISTANCE (FT)
FH1	1	375
FH2	2	385
FH2	3	163





REV.	DATE	DESCRIPTION

REVISION/UPLOAD DATE

SITE IMPROVEMENT PLAN FOR COBBLESTONE MANOR

1050 LAMPLIGHTER DRIVE
GROVE CITY, OH 43213
PID: 04001/2869

FIRE ACCESS PLAN

KORDA
Korda/Nemeth Engineering, Inc - Consulting Engineers
Water/Wastewater - Sanitary - Storm - Roadway - Bridges - Dams
TEL 614-487-1650 - FAX 614-487-9881 - WEB www.korda.com

DRAWN BY: KGW CHECKED BY: EJW

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KNE JOB # 2020-0427
GC# XXXXX

DRAWING NUMBER:
8/25

#	DATE	CHANGE DESCRIPTION

COLUMBUS METROPOLITAN HOUSING AUTHORITY
COMMUNITY, COMMITMENT, COLUMBUSRISING.

COBBLESTONE MANOR
1050 LAMPLIGHTER DRIVE
GROVE CITY, OH 43123
FOR
CMHA

MOODY•NOLAN
300 SPRUCE STREET
SUITE 300
COLUMBUS, OHIO 43215

PHONE: (614) 461-4664
FAX: (614) 280-8881

DRAWING TITLE:
FIRE ACCESS PLAN

KORDA/NEMETH ENGINEERING, INC.
1650 WATERMARK DRIVE
COLUMBUS, OHIO 43215
DESIGNED BY KGW
DRAWN BY KGW
CHECKED BY EJW
JOB FILE 2020-0427

STATE OF OHIO
ERIC J. WALSH
E-80715
REGISTERED
PROFESSIONAL ENGINEER

06/08/2023
DRAWN BY: KGW CHECKED BY: EJW
#22172.01
C1.4
PERMIT & BID SET

PRINT DATE: 3/1/2023 10:26:19 AM
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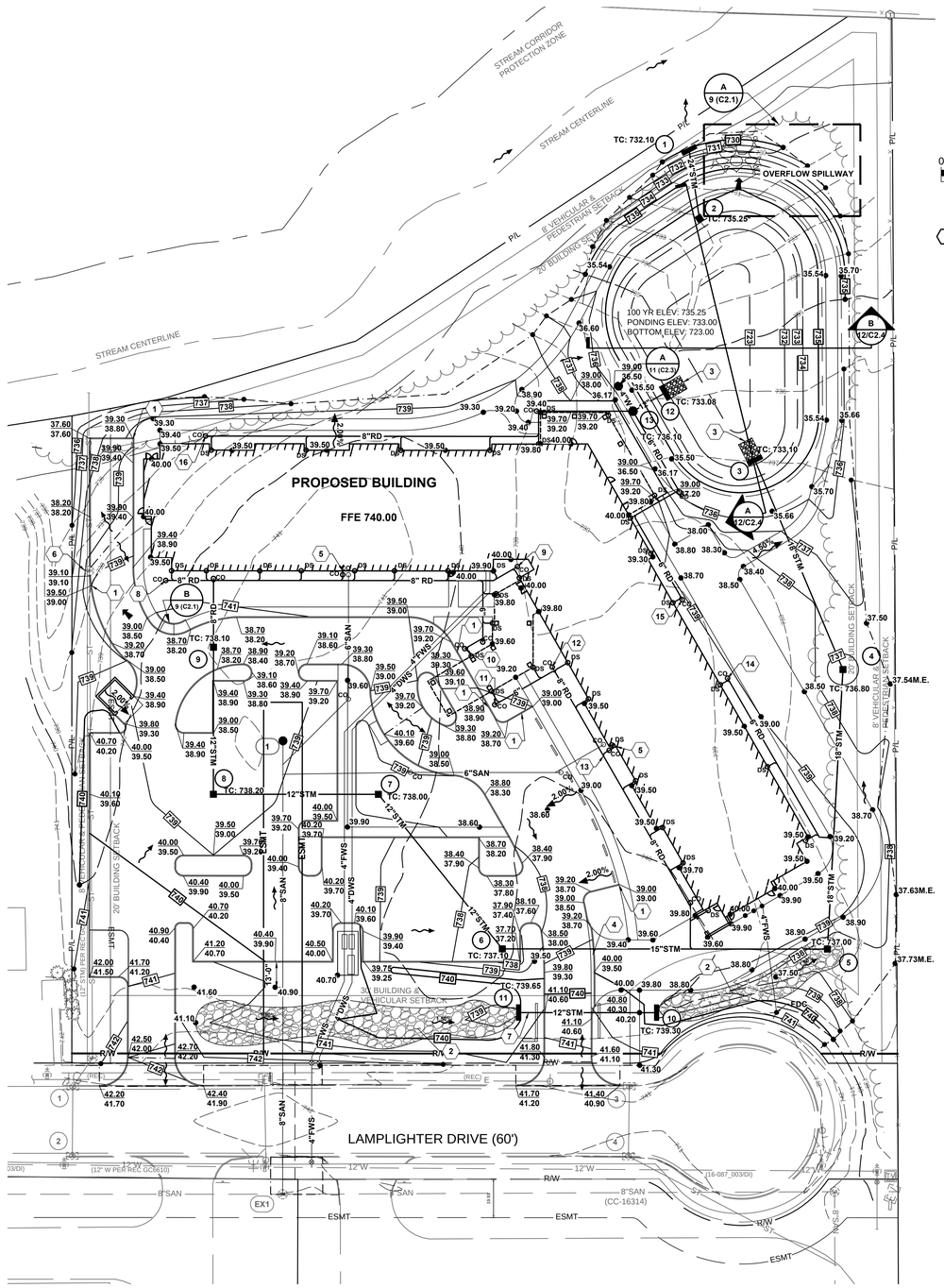


GRADING LEGEND

EXISTING

- P/L — PROPERTY LINE
- R/W — RIGHT-OF-WAY
- PAVEMENT
- WALK
- SA — SANITARY SEWER
- ST — STORM SEWER
- W — WATER LINE
- STREAM CENTERLINE
- STREAM CORRIDOR PROTECTION ZONE

PROPOSED

- 800 — INDEX CONTOUR
- 799 — INTERMEDIATE CONTOUR
- BUILDING/WALL
- W — WATER LINE
- F — FIRE PROTECTION SERVICE LINE
- STM — STORM SEWER
- SAN — SANITARY SEWER
- CATCH BASIN
- MANHOLE
- DS — DOWNSPOUT ADAPTER
- GATE VALVE & CURB BOX
- FIRE DEPARTMENT CONNECTION
- X — STRUCTURE NUMBER
- FLOW DIRECTION ARROW
- EMERGENCY OVERFLOW
- 35.00 — SPOT ELEVATION
- 700.00 — TOP OF CURB ELEVATION
- 699.50 — PAVEMENT ELEVATION AT FACE OF CURB

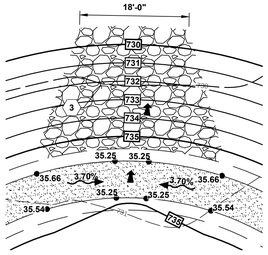
0 30 60 90
GRAPHIC SCALE
SCALE IN FEET

CODED NOTES

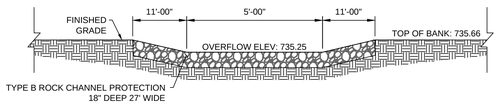
1. TAPER FROM FULL HEIGHT CURB TO FLUSH CURB IN 5'-0".
2. 4"-8" TAN AND GRAY COBBLES (18" DEPTH) FOR LIMITS SHOWN. UNDERLAY WITH NON-WOVEN GEOTEXTILE FABRIC. TOP OF COBBLES TO BE LEVEL WITH FINISHED GRADE. CONFIRM FINISHED GRADE HAS MINIMUM SLOPE OF 1.50% BEFORE INSTALLATION.
3. PROVIDE ODOT TYPE C ROCK CHANNEL PROTECTION 18" DEEP.
4. PROVIDE MOUNTABLE CURB PER CITY OF COLUMBUS STANDARD DRAWING 2030.
5. ROOF DRAIN INVERT CONNECTION @ ELEV. 737.00
6. ADJUST MANHOLE TO GRADE.
7. INSTALL STORM PIPE AND HEADWALLS PER C-GC-24.
8. 25' ~ 8" PVC @1.00% INV. 736.51'
9. 159' ~ 8" PVC @1.00% INV. 737.85'
10. 41' ~ 6" PVC @1.00% INV. 738.04'
11. 36' ~ 6" PVC @1.00% INV. 737.89'
12. 53' ~ 8" PVC @1.00% INV. 737.53'
13. 112' ~ 8" PVC @2.50% INV. 737.00'
14. 101' ~ 6" PVC @2.00% INV. 736.22'
15. 123' ~ 6" PVC @2.00% INV. 735.46'
16. 234' ~ 8" PVC @1.00% INV. 735.34'

GENERAL NOTES:

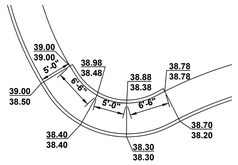
1. CONSTRUCTION WORK WILL NOT BE PERMITTED WITHOUT APPROVED PLANS AND INSPECTION.
2. PERFORM WORK IN ACCORDANCE WITH GROVE CITY MATERIAL SPECIFICATIONS AND STANDARD CONSTRUCTION DRAWINGS. IN CASE OF A DISCREPANCY BETWEEN GROVE CITY REQUIREMENTS AND PROJECT SPECIFICATIONS, GROVE CITY STANDARDS SHALL GOVERN.
3. SOIL EROSION AND SEDIMENTATION BMP MEASURES, PER SHEET 14 (C2.6), SHALL BE INSTALLED PRIOR TO START OF ANY CONSTRUCTION AND SHALL BE MAINTAINED UNTIL CONSTRUCTION HAS BEEN COMPLETED, INCLUDING GRASS BEING WELL ESTABLISHED AND/OR PERMANENT EROSION AND SEDIMENTATION BMP MEASURES IN PLACE. BMP MEASURES SHALL BE TO THE SATISFACTION OF GROVE CITY.
4. ADD 700 TO SPOT ELEVATIONS TO OBTAIN U.S.G.S. ELEVATIONS.
5. CONTROL DUST ON THE SITE AND PREVENT TRACKING SOIL OFF SITE. CONTRACTOR SHALL, AT THE END OF EACH WORKING DAY, CLEAN DIRT AND SEDIMENT TRACKED ONTO STREETS.
6. REMOVE SEDIMENT FROM DETENTION AREAS, OUTLET STRUCTURES, AND UNDERDRAINS ONCE FINAL SEED HAS BEEN ESTABLISHED.
7. EXTEND UTILITIES TO WITHIN 5'-0" OF FACE OF BUILDING UNLESS OTHERWISE NOTED. COORDINATE EXACT LOCATION WITH PLUMBING CONTRACTOR. FINAL CONNECTION BY PLUMBING CONTRACTOR.
8. MAXIMUM FINISH SLOPES SHALL BE 4:1 UNLESS OTHERWISE NOTED.
9. COORDINATES AND ELEVATIONS BASED ON SURVEY PERFORMED BY CW DESIGN GROUP, LLC
10. CONTRACTOR SHALL STRIP AND STOCKPILE EXISTING TOPSOIL THROUGHOUT THE SITE PRIOR TO EXCAVATION. UPON COMPLETION OF FINAL GRADING, PROVIDE 6 INCHES OF TOPSOIL AND SEED AREAS DISTURBED BY CONSTRUCTION, INCLUDING LAYDOWN AREAS AND TRAILER LOCATIONS IF LOCATED OUTSIDE THE GRADING/SEEDING LIMITS.
11. DISPOSE EXCESS EXCAVATED MATERIALS AND UNACCEPTABLE/UNSUITABLE SOILS OFF SITE IN ACCORDANCE WITH LOCAL CODES. NO PERMANENT STOCKPILES WILL REMAIN ON SITE.
12. EXISTING VALVES, MANHOLES, AND OTHER APPURTANCES TO REMAIN LOCATED WITHIN THE WORK LIMITS SHALL BE ADJUSTED TO FINISH GRADE.
13. OUTLET CURB UNDERDRAINS TO ADJACENT EXISTING UNDERDRAINS OR STORM SEWER SYSTEM.
14. EXPOSE UTILITIES NOTED THUS EXPOSE PRIOR TO BEGINNING WORK ON THAT UTILITY TO DETERMINE EFFECTS ON THE PROPOSED ALIGNMENT AND PROFILE. REPORT ELEVATION AND LOCATION TO THE ENGINEER IN ORDER THAT ANY CORRECTIONS TO THE ELEVATION AND LOCATION CAN BE MADE.
15. CONCRETE ADJACENT TO BUILDING SHALL BE SLOPED AWAY FROM BUILDING AT 2.0% UNLESS OTHERWISE NOTED.
16. ROOF DRAINS, FOUNDATION DRAINS, AND OTHER CLEAN WATER CONNECTIONS TO THE SANITARY SEWER ARE PROHIBITED.



A DETAIL
OVERFLOW SPILLWAY 1:10



A DETAIL
OVERFLOW SPILLWAY N.T.S.



B DETAIL
CURB RAMP DETAIL 1:10

STORM SEWER STRUCTURE COORDINATES

Structure	TC	Northing	Easting	Northing As-Built	Easting As-Built
1	732.10	683004.51	1818654.37		
2	735.25	682968.88	1818651.30		
3	733.10	682841.32	1818649.97		
4	736.80	682724.27	1818669.33		
5	737.00	682585.30	1818627.80		
6	737.10	682624.57	1818464.01		
7	738.00	682717.37	1818420.23		
8	738.20	682737.30	1818337.08		
9	738.10	682811.33	1818354.83		
10	739.30	682573.63	1818535.07		
11	739.65	682590.76	1818463.62		
12	733.08	682885.37	1818613.97		
13	736.10	682879.67	1818594.66		

STORM SEWER TABLE

Line	Length	Bearing	Size
3-4	118.65	S9°23'32.99"E	18" STM.
4-5	145.04	S16°38'12.49"W	18" STM.
5-6	168.44	N76°31'08.80"W	15" STM.
6-7	102.61	N25°15'19.15"W	12" STM.
7-8	85.50	N76°31'08.80"W	12" STM.
8-9	76.12	N13°28'51.20"E	12" STM.
2-1	35.76	N4°55'28.55"E	24" STM.
10-11	73.48	N76°31'08.80"W	12" STM.
12-13	20.13	S73°32'22.71"W	12" STM.

REV.	DATE	DESCRIPTION	REVISION/UPLOAD DATE

SITE IMPROVEMENT PLAN FOR COBBLESTONE MANOR

1050 LAMPLIGHTER DRIVE
GROVE CITY, OH 43213
PID: 04001269

GRADING & STORM SEWER PLAN

KORDA
Korda/Nemeth Engineering, Inc - Consulting Engineers
1650 Watermark Drive, Columbus, Ohio 43215-7010
TEL 614-487-1650 - FAX 614-487-5981 - WEB www.korda.com

DRAWN BY: KGW CHECKED BY: EJW

THE ARCHITECT / ENGINEER ASSUMES NO RESPONSIBILITY OR LIABILITY FOR THE USE OF THESE PLANS FOR ANY PROJECT OTHER THAN SPECIFICALLY AUTHORIZED BY THEM AND SIGNED AND SEALED FOR SUCH SPECIFIC LOCATION IN THE STATE, PROVINCE OR TERRITORY SHOWN ON THE SEAL. THIS BUILDING USE IS ONLY APPLICABLE IN AREAS MEETING THE STATED DESIGN CRITERIA.

KNE JOB # 2020-0427
GC# XXXXX

DRAWING NUMBER:
9/25

#	DATE	CHANGE DESCRIPTION

COLUMBUS METROPOLITAN HOUSING AUTHORITY
COMMITMENT. COMMUNITY. EXCELLENT HOUSING.

COBBLESTONE MANOR
1050 LAMPLIGHTER DRIVE
GROVE CITY, OH 43123
FOR
CMHA

MOODY•NOLAN
300 SPRUCE STREET
SUITE 300
COLUMBUS, OHIO 43215
PHONE: (614) 461-4664
FAX: (614) 280-8881

DRAWING TITLE:
GRADING & STORM SEWER PLAN

KORDA/NEMETH ENGINEERING, INC.
1650 WATERMARK DRIVE
COLUMBUS, OHIO 43215
DESIGNED BY KGW
DRAWN BY KGW
CHECKED BY EJW
JOB FILE 2020-0427

STATE OF OHIO
ERIC J. WALSH
E-80715
REGISTERED
PROFESSIONAL ENGINEER

06/08/2023
DRAWN BY: KGW CHECKED BY: EJW
#22172.01
C2.1
PERMIT & BID SET

PRINT DATE: 3/1/2023 10:05:19 AM
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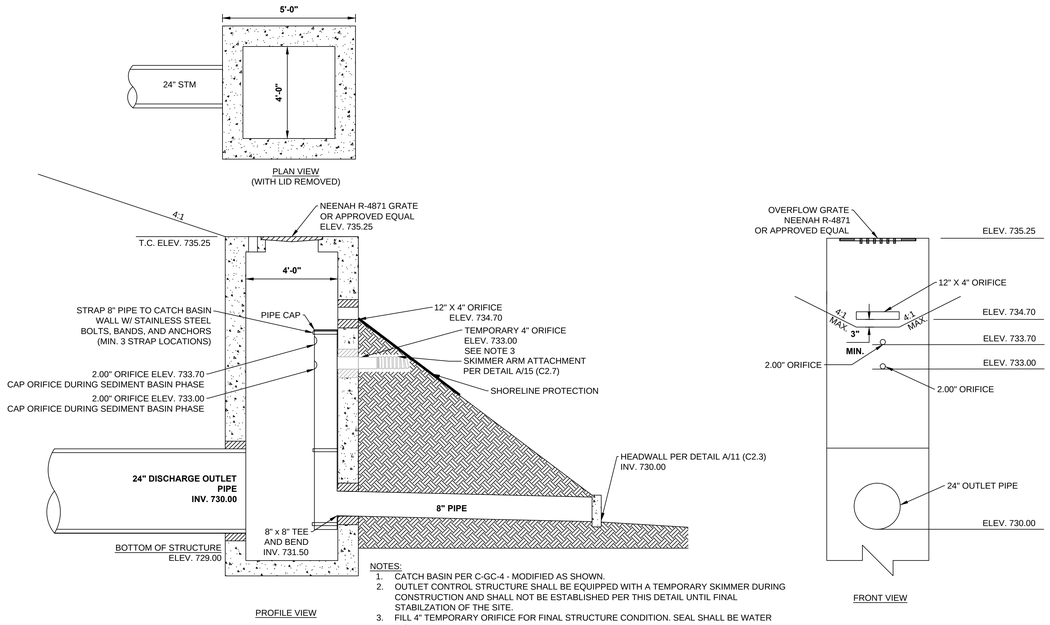
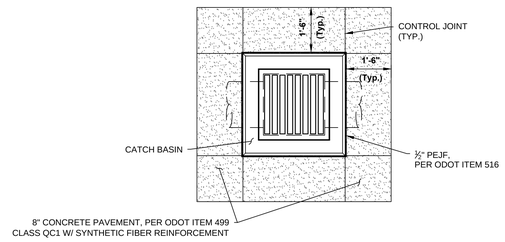


NOTES:
1. CATCH BASIN PER C-GC-4 - MODIFIED AS SHOWN.
2. OUTLET CONTROL STRUCTURE SHALL BE EQUIPPED WITH A TEMPORARY SKIMMER DURING CONSTRUCTION AND SHALL NOT BE ESTABLISHED PER THIS DETAIL UNTIL FINAL STABILZATION OF THE SITE.
3. FILL 4" TEMPORARY ORIFICE FOR FINAL STRUCTURE CONDITION. SEAL SHALL BE WATER TIGHT.

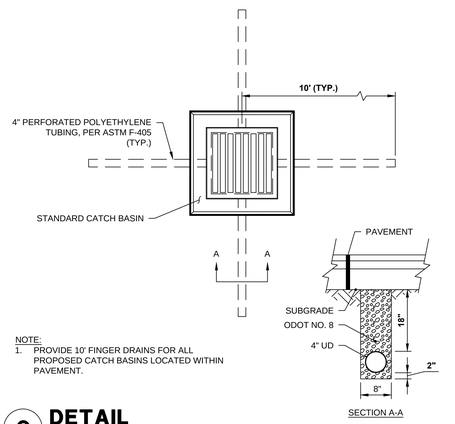
A DETAIL
BASIN OUTLET CONTROL STRUCTURE 2 — **N.T.S.**



PLAN VIEW

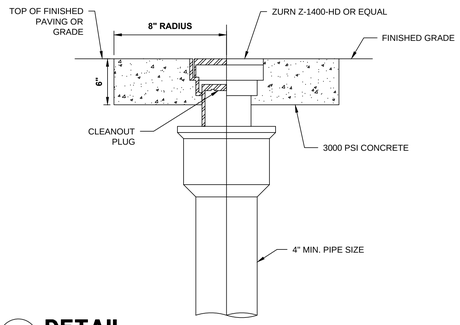
NOTES:
1. SYNTHETIC FIBER REINFORCEMENT: ASTM C1116-97 AND ASTM C1018-97. ACCEPTABLE PRODUCTS INCLUDE:
   A. NYCON NYLON FIBERS
   B. FORTA NYLO-MONO FIBERS
   C. FIBERMESH FIBERMIX STEALTH POLYPROPYLENE FIBERS
   D. GRACE POLYPROPYLENE FIBERS
   SYNTHETIC FIBER REINFORCEMENT SHALL BE USED IN STRICT ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. DOSAGE RATE SHALL BE AS RECOMMENDED BY THE MANUFACTURER, BUT NOT LESS THAN 1 POUND PER CUBIC YARD.
2. DISSIPATING CURING COMPOUND: COMPLY WITH ASTM C309-98A, TYPE 1, CLASS B (CLEAR), EXCEPT MOISTURE LOSS NOT TO EXCEED 0.40 KG/M² IN 72 HOURS. COMPOUND SHALL COMPLY WITH EPA'S VOC REQUIREMENTS. APPLY AT THE MANUFACTURER'S WRITTEN RECOMMENDED APPLICATION RATE. COMPLETELY REMOVE CURING COMPOUND PRIOR TO APPLICATION OF PENETRATING SEALER.
3. PENETRATING SEALER: ACCEPTABLE PRODUCTS INCLUDE, BUT ARE NOT LIMITED TO:
   A. L&M CONSTRUCTION CHEMICALS - AQUAPEL PLUS 40
   B. PROSOSO - SALTGUARD WB
   C. HULS AMERICA INC. - CHEM-TRETE BSM 40
   D. MASTER BUILDERS INC. - MASTERSEAL SL 40
   E. LYMTAL INTERNATIONAL - ISO-FLEX 618-50 WB
   F. BASF - ENVIROSEAL 40 OR HYDROZO SILANE 40
   G. TEX-COTE - RAINSTOPPER RS140

B DETAIL
COLLAR AT CATCH BASIN IN PAVEMENT — **N.T.S.**

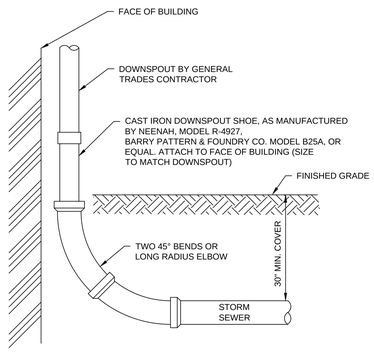


NOTE:
1. PROVIDE 10' FINGER DRAINS FOR ALL PROPOSED CATCH BASINS LOCATED WITHIN PAVEMENT.

C DETAIL
PAVEMENT UNDERDRAIN — **N.T.S.**



D DETAIL
EXTERIOR CLEANOUT — **N.T.S.**



E DETAIL
DOWNSPOUT ADAPTER — **N.T.S.**

REV.	DATE	DESCRIPTION

REVISION/UPLOAD DATE

SITE IMPROVEMENT PLAN FOR COBBLESTONE MANOR
1050 LAMPLIGHTER DRIVE
GROVE CITY, OH 43213
PID: 040012869

STORM SEWER DETAILS

KORDA
Korda/Nemeth Engineering, Inc - Consulting Engineers
1650 Watermark Drive, Suite 200 - Columbus, Ohio 43215
TEL 614-487-1650 - FAX 614-487-8981 - WEB www.korda.com

DRAWN BY: KGW CHECKED BY: EJW

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KNE JOB # 2020-0427
GC# XXXXX

DRAWING NUMBER:
1025

#	DATE	CHANGE DESCRIPTION

COLUMBUS METROPOLITAN HOUSING AUTHORITY
COMMUNITY. COMMITMENT. COLUMBUSHOUSING.

COBBLESTONE MANOR
1050 LAMPLIGHTER DRIVE
GROVE CITY, OH 43123
FOR
CMHA

MOODY•NOLAN
300 SPRUCE STREET
SUITE 300
COLUMBUS, OHIO 43215

PHONE: (614) 461-4664
FAX: (614) 280-8881

DRAWING TITLE:
STORM SEWER DETAILS

KORDA/NEMETH ENGINEERING, INC.
1650 WATERMARK DRIVE
COLUMBUS, OHIO 43215
DESIGNED BY KGW
DRAWN BY KGW
CHECKED BY EJW
JOB FILE 2020-0427

STATE OF OHIO
ERIC J. WALSH
E-80715
REGISTERED
PROFESSIONAL ENGINEER

06/08/2023
DRAWN BY: **KGW** CHECKED BY: **EJW**
#22172.01
C2.2
PERMIT & BID SET

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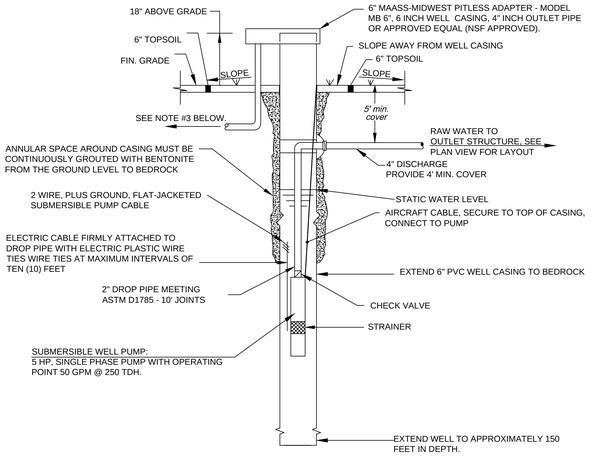
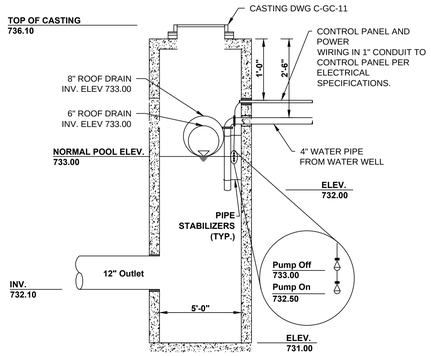


NOTES:

1. CONTRACTOR SHALL PROVIDE A WELL THAT PRODUCES 50 GPM AS DESCRIBED ABOVE. IN THE EVENT THAT THE PRODUCTION WELL CANNOT SUPPLY 50 GPM, THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY.
2. INSTALL PITLESS ADAPTER PER MANUFACTURER'S SPECIFICATIONS.
3. CONTRACTOR SHALL PROVIDE ALL CONTROL WIRING, BRANCH CIRCUIT WIRING, AND CONDUIT TO RECHARGE WELL PUMP CONTROL PANEL.
4. CONTRACTOR SHALL COORDINATE ALL WORK, INCLUDING FINAL CONNECTION AT PITLESS ADAPTER.
5. PROVIDE WEATHER PROOF CONTROL PANEL SUITABLE FOR EXTERIOR MOUNTING. PANEL SHALL INCLUDE MOTOR STARTER, CONTROLS, CONTROL TRANSFORMER (MIN. 100 VA), ETC. AS REQUIRED AND SHALL BE COMPLETELY FACTORY WIRED AND BENCH TESTED FOR SATISFACTORY OPERATION PRIOR TO SHIPMENT. CONNECT CONTROL WIRING FROM RECHARGE WELL PUMP.

A DETAIL
RECHARGE WELL N.T.S.



NOTES:

1. PROVIDE FLEXIBLE WATER TIGHT CONNECTORS AT ALL PIPES CONNECTING INTO MANHOLE.
2. PROVIDE 2 - NARROW ANGLE FLOAT SWITCHES COMPLETE WITH GALVANIZED ROD. RECHARGE WELL CONTROL SWITCH SHALL CONSIST OF 2 NORMALLY CLOSED SWITCHES. FLOAT CASING SHALL BE POLYPROPYLENE. SWITCH CABLE WILL BE TYPE SO NEOPRENE JACKET 4#18 CONDUCTOR, 41 STRAND, 480 VOLT INSULATION. CABLE SHALL BE SECURED TO SUPPORT ROD WITH A POLYPROPYLENE COMPOSITION CLAMP WITH STAINLESS STEEL BOLTS. THIS CONTRACTOR TO PROVIDE CONTROL CABLING IN 1" CONDUIT (PROVIDED BY ELECTRICAL CONTRACTOR) FOR CONNECTION TO RECHARGE WELL CONTROL PANEL.
3. ALL CONTROL WIRES AND FLOAT SHALL BE INCLUDED IN LUMP PRICE FOR RECHARGE WELL PUMP.
4. MANHOLE SHALL BE WATER TIGHT CONSTRUCTION WITH O-RING JOINTS.
5. ELECTRICAL CONTRACTOR SHALL PROVIDE CONTROL AND POWER WIRING AND CONDUIT FROM CONTROL PANEL, MANHOLE TO WATER WELL AND MAKE ALL CONNECTIONS.
6. UPON FINAL CONNECTIONS TO CONTROL PANEL AND WATER WELL, PROVIDE TEST TO CONFIRM SYSTEM FUNCTIONS AS DESIGNED. ANY MODIFICATIONS NECESSARY TO CORRECT SYSTEM SHALL BE PERFORMED AT NO ADDITIONAL COST TO OWNER.
7. COORDINATE PANEL LOCATION WITH LANDSCAPE ARCHITECT/MEP & OWNER PRIOR TO ORDERING CONDUIT & WIRING.

B DETAIL
RECHARGE WELL CONTROL STRUCTURE (WET BASIN) N.T.S.

REV.	DATE	DESCRIPTION

REVISION/UPLOAD DATE

SITE IMPROVEMENT PLAN FOR COBBLESTONE MANOR
1050 LAMPLIGHTER DRIVE
GROVE CITY, OH 43213
PID: 040012669

STORM SEWER DETAILS

KORDA
Korda/Nemeth Engineering, Inc - Consulting Engineers
1650 Watermark Drive - Columbus, Ohio 43215-7970
TEL 614-487-1650 - FAX 614-487-9881 - WEB www.korda.com

DRAWN BY: KGW CHECKED BY: EJW

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KNE JOB # 2020-0427
GC# XXXXX

DRAWING NUMBER:
11/25

#	DATE	CHANGE DESCRIPTION

COLUMBUS METROPOLITAN HOUSING AUTHORITY
COMMUNITY, COMMITMENT, COLLABORATION.

COBBLESTONE MANOR
1050 LAMPLIGHTER DRIVE
GROVE CITY, OH 43123
FOR
CMHA

MOODY•NOLAN
300 SPRUCE STREET
SUITE 300
COLUMBUS, OHIO 43215

PHONE: (614) 461-4664
FAX: (614) 280-8881

DRAWING TITLE:
STORM SEWER DETAILS

KORDA/NEMETH ENGINEERING, INC.
1650 WATERMARK DRIVE
COLUMBUS, OHIO 43215
DESIGNED BY KGW
DRAWN BY KGW
CHECKED BY EJW
JOB FILE 2020-0427

STATE OF OHIO
ERIC J. WALSH
E-80715
REGISTERED
PROFESSIONAL ENGINEER

06/08/2023
DRAWN BY: KGW CHECKED BY: EJW
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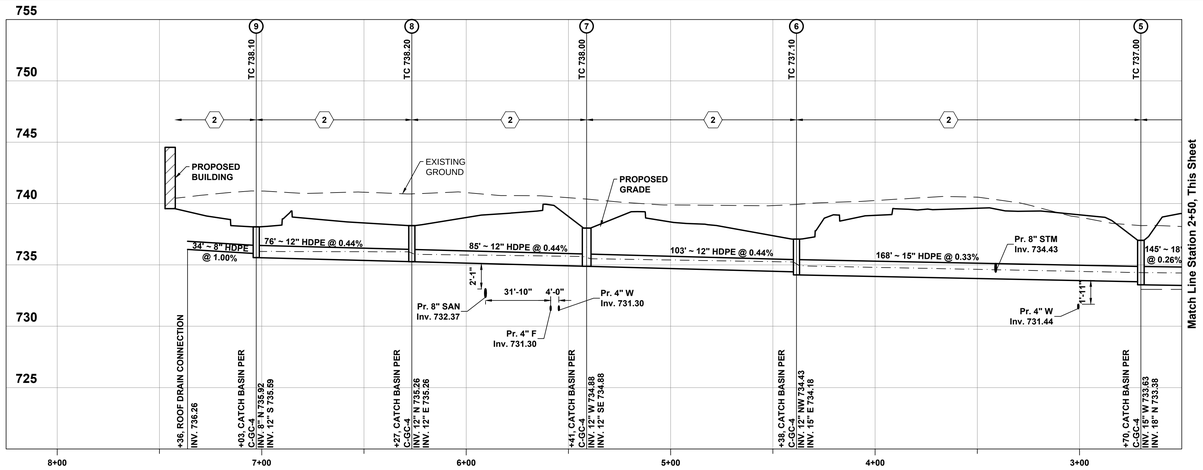
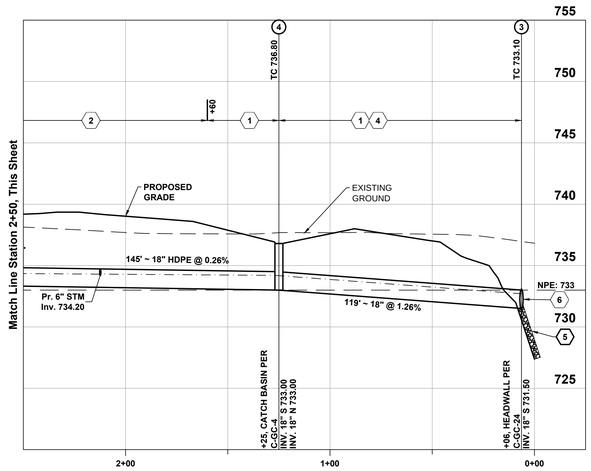


Storm 1-7 Profile
Scale: 1"=30' Horiz. 1"=5' Vert.

(X) CODED NOTES:

1. BACKFILL WITH COMPACTED BACKFILL PER CMSC ITEM 911.
2. BACKFILL WITH COMPACTED GRANULAR MATERIAL PER CMSC ITEM 912.
3. INSTALL REINFORCED CONCRETE PIPE PER CMSC ITEM 706.02.
4. CONCRETE PIPE PER CMSC ITEM 706.02 WITH WATERTIGHT JOINTS PER CMSC ITEM 901.15.
5. PROVIDE ODOT TYPE C ROCK CHANNEL PROTECTION 18" DEEP X 10' LONG X WIDTH OF HEADWALL.
6. PROVIDE STONE VENEER ON HEADWALLS PER C-GC-24.
7. PROVIDE MINIMUM 30" COVER ABOVE PIPE PRIOR TO INSTALLATION.

5-YEAR HYDRAULIC GRADE LINE



Storm 1-7 Profile
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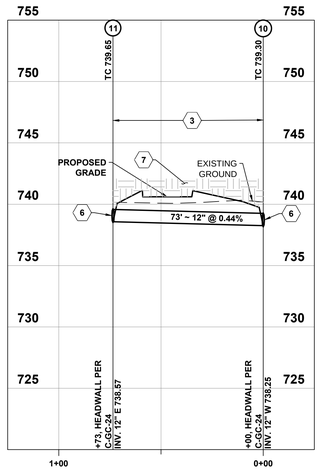
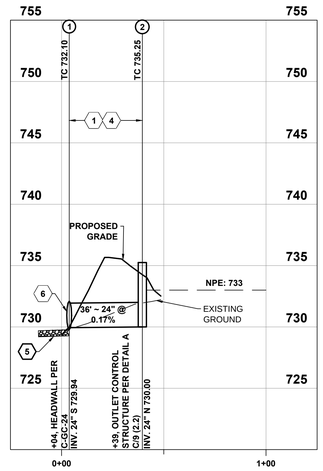


Storm 8-9 Profile
Scale: 1"=30' Horiz. 1"=5' Vert.



Storm 10-11 Profile
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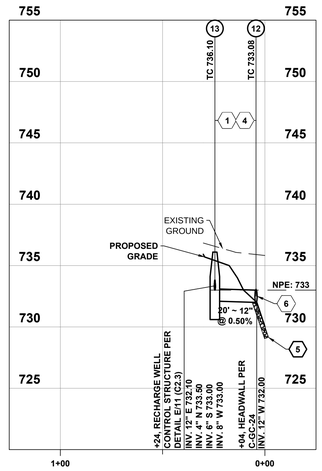
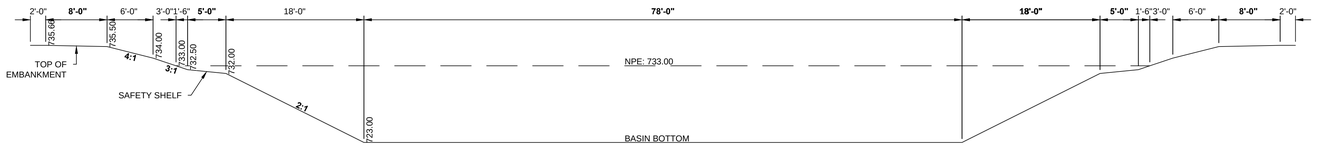
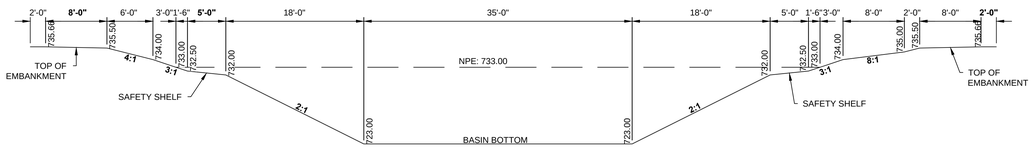


Storm 12-13 Profile
Scale: 1"=30' Horiz. 1"=5' Vert.



A DETAIL
WET BASIN SECTION
N.T.S.



B DETAIL
WET BASIN SECTION
N.T.S.

REV.	DATE	DESCRIPTION

REVISION/UPLOAD DATE

SITE IMPROVEMENT PLAN FOR COBBLESTONE MANOR

1050 LAMPLIGHTER DRIVE
GROVE CITY, OH 43213
PID: 040012869

STORM SEWER PROFILES

KORDA
Korda/Nemeth Engineering, Inc - Consulting Engineers
5150 Westerville Road, Suite 100 - Columbus, Ohio 43229-3703
TEL 614-487-1650 - FAX 614-487-9981 - WEB www.korda.com

DRAWN BY: KGW CHECKED BY: EJW

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GC# XXXXX

DRAWING NUMBER:
12/25

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COLUMBUS METROPOLITAN HOUSING AUTHORITY
COMMUNITY, COMMITMENT, COLLABORATION.

COBBLESTONE MANOR
1050 LAMPLIGHTER DRIVE
GROVE CITY, OH 43123
FOR
CMHA

MOODY•NOLAN
300 SPRUCE STREET
SUITE 300
COLUMBUS, OHIO 43215

PHONE: (614) 461-4664
FAX: (614) 280-8881

DRAWING TITLE:
STORM SEWER PROFILES

KORDA/NEMETH ENGINEERING, INC.
1650 WATERMARK DRIVE
COLUMBUS, OHIO 43215

DESIGNED BY KGW
DRAWN BY KGW
CHECKED BY EJW
JOB FILE 2020-0427

STATE OF OHIO
ERIC J. WALSH
E-80715
REGISTERED
PROFESSIONAL ENGINEER

06/08/2023

DRAWN BY: KGW CHECKED BY: EJW

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PERMIT & BID SET

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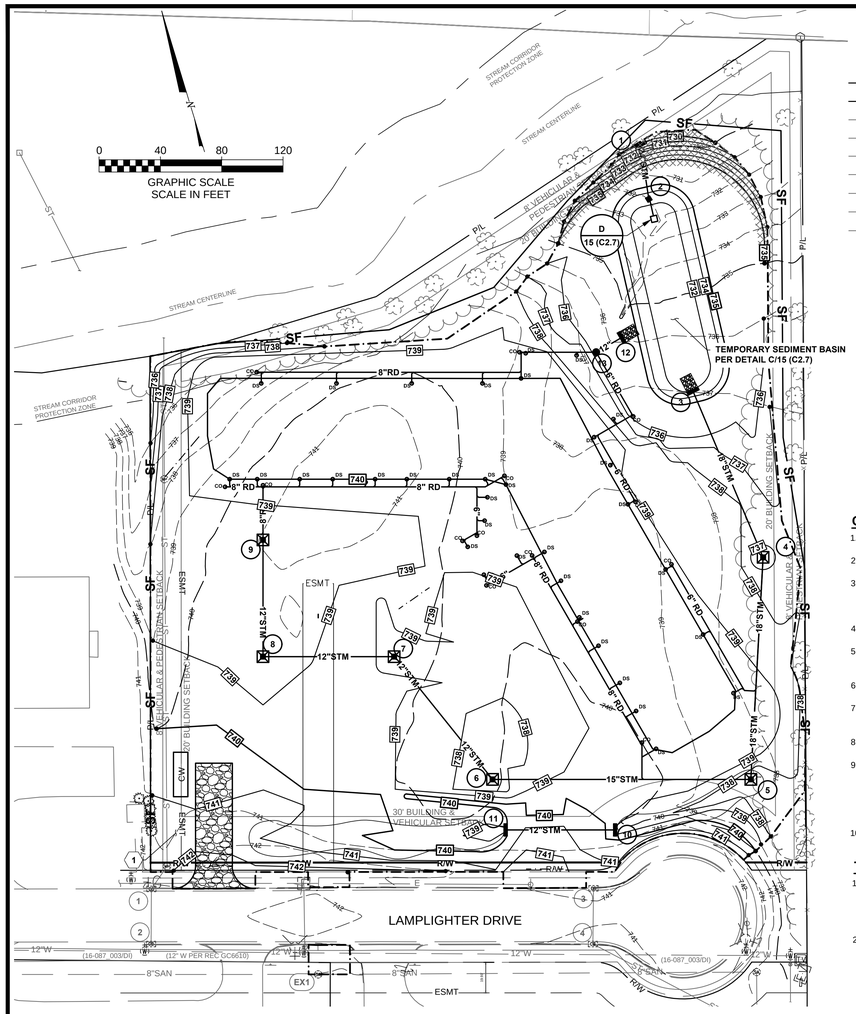

LEGEND

EXISTING

P/L	PROPERTY LINE
R/W	RIGHT-OF-WAY
	PAVEMENT
	WALK
SAN	SANITARY LINE
STM	STORM LINE
W	WATER LINE
	STREAM CENTERLINE
	STREAM CORRIDOR PROTECTION ZONE

PROPOSED

800	INDEX CONTOUR
799	INTERMEDIATE CONTOUR
	LIMITS OF GRADING
SF	LINEAR SEDIMENT BARRIER PER C-GC-74
	FILTER FABRIC INLET PROTECTION PER C-GC-70A
	STABILIZED CONSTRUCTION ENTRANCE PER C-GC-75A
CW	CONCRETE WASHOUT PER DETAIL B/15 (C2.7)
	EROSION CONTROL MATTING PER DETAIL E/15 (C2.7)

CONTRACTOR'S RESPONSIBILITIES:

1. PRIOR TO CONSTRUCTION OPERATIONS IN A PARTICULAR AREA, ALL SEDIMENTATION AND EROSION CONTROL FEATURES SHALL BE IN PLACE. FIELD ADJUSTMENT WITH RESPECT TO LOCATIONS MAY BE MADE BY THE ENGINEER AS REQUESTED.
2. DETAILS HAVE BEEN PROVIDED ON THE PLANS IN AN EFFORT TO HELP THE CONTRACTOR PROVIDE EROSION AND SEDIMENTATION CONTROL.
3. THE DETAILS SHOWN ON THE PLAN SHALL BE CONSIDERED A MINIMUM ADDITIONAL OR ALTERNATE DETAILS MAY BE FOUND IN OHIO'S RAINWATER AND LAND DEVELOPMENT MANUAL. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR PROVIDING NECESSARY AND ADEQUATE MEASURES FOR PROPER CONTROL OF EROSION AND SEDIMENT RUNOFF FROM THE SITE DISCHARGES ASSOCIATED WITH THE CONSTRUCTION ACTIVITY.
4. FIELD ADJUSTMENTS WITH RESPECT TO LOCATIONS AND DIMENSIONS MAT BE MADE BY THE ENGINEER, GROVE CITY AND THE OHIO EPA.
5. A TEMPORARY SEDIMENT BASIN MUST BE PROVIDED FOR SITES THAT SHALL HAVE A COMMON DISTURBED DRAINAGE AREA OF TEN ACRES OR MORE. THE TEMPORARY SEDIMENT BASIN SHALL REMAIN IN PLACE UNTIL THE SITE IS PERMANENTLY STABILIZED.
6. THE CONTRACTOR SHALL PLACE INLET PROTECTION FOR THE SEDIMENTATION CONTROL IMMEDIATELY AFTER THE CONSTRUCTION OF CATCH BASINS OR INLETS WHICH ARE NOT TRIBUTARY TO A SEDIMENT BASIN OR TRAP.
7. IT MAY BECOME NECESSARY TO REMOVE PORTIONS OF SEDIMENTATION CONTROLS DURING CONSTRUCTION TO FACILITATE THE GRADING OPERATIONS IN CERTAIN AREAS. HOWEVER, THE CONTROLS SHALL BE REPLACED UPON COMPLETION OF GRADING OR DURING ANY INCLEMENT WEATHER.
8. THE CONTRACTOR SHALL BE RESPONSIBLE TO HAVE THE CURRENT STORM WATER POLLUTION PREVENTION PLAN IMMEDIATELY AVAILABLE OR POSTED ON SITE.
9. THE CONTRACTOR SHALL BE RESPONSIBLE TO ENSURE THAT NO SOLID OR LIQUID WASTE IS DISCHARGED INTO STORM WATER RUNOFF. UNTREATED SEDIMENT-LADEN RUNOFF SHALL NOT FLOW OFF OF SITE WITHOUT BEING DIRECTED THROUGH A CONTROL PRACTICE. CONCRETE TRUCKS WILL NOT BE ALLOWED TO WASH OUT OR DISCHARGE SURPLUS CONCRETE INTO OR ALONGSIDE RIVERS, STREAMS, OR CREEKS OR INTO NATURAL OR MAN-MADE CHANNELS OR SWALES LEADING THERETO. CONCRETE WASH WATER AND SURPLUS CONCRETE SHALL BE CONFINED TO APPROVED AREAS; AFTER SOLIDIFYING, THESE WASTE MATERIALS SHALL BE REMOVED FROM THE SITE.
10. THE COST FOR TEMPORARY CHANNELS SEDIMENT BASINS AND OTHER APPURTENANT EARTH-MOVING OPERATIONS SHALL BE INCLUDED IN THE PRICE BID FOR EROSION AND SEDIMENTATION QUANTITIES.

TEMPORARY AND PERMANENT SEEDING:

1. THE LIMITS OF SEEDING AND MULCHING ARE SHOWN ON THE PLAN. SEEDING HAS BEEN ASSUMED TO BE 5' OUTSIDE THE WORK LIMITS OR RIGHT-OF-WAY, WHICHEVER IS GREATER. ALL AREAS NOT DESIGNATED TO BE SEEDED SHALL REMAIN UNDER NATURAL GROUND COVER. THOSE AREAS DISTURBED OUTSIDE THE SEEDING LIMITS SHALL BE SEEDED AND MULCHED AT THE CONTRACTOR'S EXPENSE.
2. TEMPORARY AND PERMANENT SEEDING SHALL BE APPLIED PER THE REQUIREMENTS IDENTIFIED WITHIN THE CITY OF GROVE CITY GENERAL NOTES AND OHIO'S RAINWATER AND LAND DEVELOPMENT MANUAL.

TEMPORARY STABILIZATION

AREA REQUIRING TEMPORARY STABILIZATION	TIME FRAME TO APPLY EROSION CONTROLS
ANY DISTURBED AREAS WITHIN 50 FEET OF A SURFACE WATER OF THE STATE AND NOT AT FINAL GRADE.	WITHIN TWO DAYS OF THE MOST RECENT DISTURBANCE IF THE AREA WILL REMAIN IDLE FOR MORE THAN 14 DAYS.
FOR ALL CONSTRUCTION ACTIVITIES, ANY DISTURBED AREAS THAT WILL BE DORMANT FOR MORE THAN 14 DAYS BUT LESS THAN ONE YEAR, AND NOT WITHIN 50 FEET OF A SURFACE WATER OF THE STATE.	WITHIN SEVEN DAYS OF THE MOST RECENT DISTURBANCE WITHIN THE AREA. FOR RESIDENTIAL SUBDIVISIONS, DISTURBED AREAS MUST BE STABILIZED AT LEAST SEVEN DAYS PRIOR TO TRANSFER OF PERMIT COVERAGE FOR THE INDIVIDUAL LOT(S).
DISTURBED AREAS THAT WILL BE IDLE OVER WINTER.	PRIOR TO THE ONSET OF WINTER WEATHER.

EROSION AND SEDIMENT CONTROL NARRATIVE

EROSION AND SEDIMENT CONTROL NARRATIVE:

PLAN DESIGNER: KORDA/NEMETH ENGINEERING INC. 1650 WATERMARK DRIVE, SUITE 200 COLUMBUS, OHIO 43215 PHONE: (614) 487-1650 FAX: (614) 487-8981

OWNER: NAME: COLUMBUS METROPOLITAN HOUSING AUTHORITY
ADDRESS: 880 EAST 11TH AVENUE COLUMBUS, OHIO 43211
CONTACT: MIKE WAGNER
PHONE: 614-421-6102
EMAIL: MWAGNER@CMHANET.COM

NOI PERMIT: XXXXXXXX

EXISTING SITE CONDITIONS: THE SITE CONSISTS OF UNDEVELOPED AGRICULTURAL LAND.

PROJECT DESCRIPTION: THE PROJECT INCLUDES A 80,810 SF SENIOR LIVING FACILITY WITH ADJACENT PARKING LOT, WET DETENTION POND, DRAINAGE FEATURES AND LANDSCAPED AREAS.

DISTURBED AREA: 3.70 ACRES

SITE DRAINS TO: SITE GENERALLY DRAINS TO A STREAM WHICH EVENTUALLY DISCHARGES TO THE SCIOTO RIVER.

SITE BMPS: LOCATIONS OF SITE BMPS, INCLUDING DUMPSTERS, VEHICLE FUELING AREAS, CONCRETE TRUCK WASH, MATERIAL STORAGE, AND TOPSOIL STOCKPILES SHALL BE DETERMINED BY CONTRACTOR. IF FINAL LOCATION OF BMPS DIFFER FROM THE LOCATIONS SHOWN, CONTRACTOR SHALL MODIFY SWPPP AND INFORM OHIO EPA OF NEW LOCATION OF BMPS.

ADJACENT AREAS: THE SITE IS BOUNDED BY WOODED AREA AND STREAM TO THE NORTH, LAMPLIGHTER DRIVE TO THE SOUTH, AGRICULTURAL LAND TO THE EAST, AND DEVELOPED PROPERTY TO THE WEST.

SOILS: ACCORDING TO SOIL SURVEY RECORDS, THE SOIL TYPES ON THE SITE ARE (CeB) CELINA SILT LOAM, (CrB) CROSBY SILT LOAM, (MIC2) MIAMIAN SILTY CLAY LOAM WHICH ARE HYDROLOGIC SOIL GROUP C/D.

EROSION AND SEDIMENT CONTROL MEASURES: PROVIDE SILT FENCE AT CRITICAL AREAS AS SHOWN ABOVE. ANY NEW OR EXISTING STORM INLETS IMPACTED BY THE NEW CONSTRUCTION ACTIVITY WILL NEED THE APPROPRIATE INLET PROTECTION FOR SEDIMENT CONTROL. PROVIDE INLET PROTECTION AT EXISTING AND PROPOSED DRAINAGE STRUCTURES. ANY OFFSITE BORROW OR SPOIL AREAS SHALL BE SUBJECT TO THE REQUIREMENTS SET FORTH BY THE OHIO EPA. ALL EROSION AND SEDIMENT CONTROL MEASURES FOR OFFSITE AREAS NOT COVERED BY A SEPERATE NOI OR SWP3 SHALL BE COORDINATED WITH THE OHIO EPA. TRENCH GROUNDWATER CONTAINING SEDIMENT MUST BE EFFECTIVELY TREATED PRIOR TO DISCHARGE INTO THE STORM SEWER SYSTEM. USE MEANS NECESSARY TO CONTROL DUST ONSITE AND PREVENT TRACKING SOIL OFFSITE.

JURISDICTION: EROSION AND SEDIMENT CONTROL PRACTICES ARE SUBJECT TO FIELD MODIFICATION AT THE DISCRETION OF THE CITY OF GROVE CITY AND/OR THE OHIO EPA.

COEFFICIENTS: PRE-DEVELOPED CURVE NUMBER = 77
POST-DEVELOPED CURVE NUMBER = 86
EXISTING IMPERVIOUS AREA = 0.01 ACRES
PROPOSED IMPERVIOUS AREA = 2.06 ACRES

CONSTRUCTION SEQUENCE

UNLESS NOTED OTHERWISE, THE GENERAL CONTRACTOR IS RESPONSIBLE FOR ALL EROSION AND SEDIMENT CONTROL MEASURES REQUIRED THROUGHOUT THE DURATION OF THE PROJECT.

1. OBTAIN NOI PERMIT BEFORE BEGINNING CONSTRUCTION.
2. CONSTRUCT PERIMETER EROSION AND SEDIMENT CONTROL MEASURES, INCLUDING CONSTRUCTION ENTRANCE, SILT FENCE, AND INLET FILTERS. CONSTRUCT ON SITE SEDIMENT BASINS.
3. CLEAR AND GRUB.
4. INSTALL STORM SEWERS AND INLET FILTERS. UTILIZE DEWATERING BAG PER A/15 (C2.7) WHERE MUDDY WATER IS ENCOUNTERED.
5. STRIP & STOCKPILE TOPSOIL ON-SITE. PROVIDE TEMPORARY SEEDING AND SILT FENCING.
6. PERFORM ROUGH GRADING. STABILIZE EXPOSED SURFACES PER PLAN. ADD ADDITIONAL SILT FENCE IF NECESSARY.
7. INSTALL SITE UTILITIES. UTILIZE DEWATERING BAG PER A/15 (C2.7) WHERE MUDDY WATER IS ENCOUNTERED.

MAINTENANCE/INSPECTION PROCEDURES

1. CONTROL MEASURES SHALL BE INSPECTED AT LEAST ONCE EACH WEEK AND WITHIN 24-HOURS FOLLOWING ANY STORM EVENT OF 0.5 INCHES OR GREATER.
2. MEASURES SHALL BE MAINTAINED IN GOOD WORKING ORDER; IF A REPAIR IS NECESSARY, IT WILL BE INITIATED WITHIN 24 HOURS OF REPORT.
3. TEMPORARY AND PERMANENT SEEDING AND PLANTING WILL BE INSPECTED FOR BARE SPOTS, WASHOUTS, AND HEALTHY GROWTH.
4. A MAINTENANCE INSPECTION REPORT SHALL BE MADE AFTER EACH INSPECTION, AND A WRITTEN LOG MUST BE KEPT. THIS LOG SHALL INDICATE THE DATE OF THE INSPECTION, NAME OF THE INSPECTOR, WEATHER CONDITIONS, OBSERVATIONS, ANY CORRECTIVE ACTIONS TAKEN, AND BE SIGNED IN ACCORDANCE WITH THE CONDITIONS OF THE NPDES PERMIT. ANY CONTROL MEASURE MUST BE REPAIRED/REPLACED WITHIN THREE DAYS OF INSPECTION.
5. PERSONNEL SELECTED FOR INSPECTION AND MAINTENANCE RESPONSIBILITIES SHALL BE TRAINED IN INSPECTION AND MAINTENANCE PRACTICES NECESSARY FOR KEEPING THE EROSION AND SEDIMENT CONTROLS USED ONSITE IN GOOD WORKING ORDER. A WRITTEN DOCUMENT CONTAINING THE SIGNATURES OF CONTRACTORS AND SUBCONTRACTORS INVOLVED IN THE IMPLEMENTATION OF EROSION AND SEDIMENT CONTROL MEASURES MUST BE MAINTAINED AS PROOF ACKNOWLEDGING THAT THEY REVIEWED AND UNDERSTAND THE CONDITIONS AND RESPONSIBILITIES OF THE PLAN. THE DOCUMENT SHALL BE CREATED BY THE CONTRACTOR SIGNED PRIOR TO THE START OF CONSTRUCTION.

DISPOSAL OF SOLID/SANITARY/TOXIC WASTES

1. SOLID, SANITARY AND TOXIC WASTES MUST BE DISPOSED OF IN A PROPER MANNER IN ACCORDANCE WITH LOCAL, STATE AND FEDERAL REGULATIONS.
2. IT IS PROHIBITED TO BURN, BURY OR POUR OUT ONTO THE GROUND OR INTO A STORM WATER CONVEYANCE ANY SOLVENTS, PAINTS, STAINS, GASOLINE, DIESEL FUEL, USED MOTOR OIL, HYDRAULIC FLUID, ANTIFREEZE, CEMENT CURING COMPOUNDS AND OTHER SUCH SOLID AND HAZARDOUS WASTES.
3. ANY RINSE WATERS OF SUCH MATERIAL ARE ALSO PROHIBITED FROM BEING PLACED WHERE THEY MAY ENTER DRAINAGEWAYS.
4. WASH OUT OF CEMENT TRUCKS SHOULD OCCUR IN A DIKED, DESIGNATED AREA, AWAY FROM ANY CONVEYANCE CHANNEL.
5. COORDINATE WASH OUT AREA WITH CONSTRUCTION MANAGER.

STABILIZATION PROCEDURES

CONTRACTOR SHALL BE RESPONSIBLE TO KEEP A RECORD OF DATES WHEN MAJOR GRADING ACTIVITIES OCCUR, WHEN EARTH DISTURBANCE HAS TEMPORARILY OR PERMANENTLY CEASED ON A PORTION OF THE SITE, AND WHEN STABILIZATION MEASURES HAVE BEEN INITIATED.

THE USE OF STRAW MULCH IS PROHIBITED WITHOUT APPROVAL FROM THE CITY'S SERVICE DEPARTMENT.

DEWATERING

DISCHARGES FROM DEWATERING ACTIVITIES, INCLUDING DISCHARGES FROM DEWATERING OF TRENCHES AND EXCAVATIONS ARE PROHIBITED UNLESS MANAGED BY APPROPRIATE CONTROLS.

GENERAL NOTES:

1. A COPY OF THE SWPPP PLAN AND THE APPROVED EPA STORMWATER PERMIT (WITH THE SITE-SPECIFIC NOI NUMBER) SHALL BE KEPT ONSITE AT ALL TIMES.
2. PROVIDE FILTER FABRIC INLET PROTECTION PER C-GC-70A AT ALL EXISTING AND PROPOSED STORM INLET STRUCTURES RECEIVING FLOW FROM DISTURBED AREAS.
3. SOIL EROSION AND BMP MEASURES SHALL BE INSTALLED PRIOR TO START OF ANY CONSTRUCTION AND SHALL BE MAINTAINED AT ALL TIMES DURING CONSTRUCTION. BMP MEASURES SHALL BE TO THE SATISFACTION OF THE OHIO EPA. CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING AND MODIFYING BMP'S AND SWPPP AS NECESSARY DUE TO CONSTRUCTION PHASING AS THE PROJECT ADVANCES TO SATISFY THE OHIO EPA TO COMPLY WITH OHIO EPA PERMIT NO. OHC000006 "GENERAL PERMIT AUTHORIZATION FOR STORM WATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITY UNDER THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM".
4. EROSION AND SEDIMENTATION CONTROL PRACTICES ARE SUBJECT TO FIELD MODIFICATION AT THE DISCRETION OF GROVE CITY AND/OR THE OHIO EPA.
5. UNDER NORMAL CIRCUMSTANCES, NO OVERLAND DISCHARGE SHALL BE ALLOWED FROM SEDIMENT BASIN.
6. STREET CLEANING (ON AN AS-NEEDED BASIS) IS REQUIRED THROUGH THE DURATION OF THIS CONSTRUCTION PROJECT. THIS INCLUDES SWEEPING, POWER CLEANING, AND (IF NECESSARY) MANUAL REMOVAL OF DIRT OR MUD IN THE STREET GUTTERS. AT A MINIMUM CLEAN AT THE END OF EACH WORK DAY.
7. DIRECT DISCHARGE OF SEDIMENT LADEN WATER TO THE CITY'S SEWER SYSTEM OR A RECEIVING STEAM IS A VIOLATION OF OHIO EPA AND GROVE CITY REGULATIONS. THE CONTRACTOR WILL BE HELD LIABLE FOR THE VIOLATION AND SUBSEQUENT FINES.

CODED NOTES

1. PROVIDE FUELING AND WASTE DISPOSAL AREAS. FINAL LOCATION DETERMINED BY CONTRACTOR.

REV.	DATE	DESCRIPTION

REVISION/UPLOAD DATE

SITE IMPROVEMENT PLAN FOR COBBLESTONE MANOR
1050 LAMPLIGHTER DRIVE
GROVE CITY, OH 43213
PID: 04001/2669

EROSION CONTROL PLAN PHASE 1

KORDA
Korda/Nemeth Engineering, Inc.- Consulting Engineers
1650 Watermark Drive - Suite 200 - Columbus, Ohio 43215
TEL 614-487-1650 - FAX 614-487-8981 - WEB www.korda.com

DRAWN BY: KGW CHECKED BY: EJW

THE ARCHITECT / ENGINEER ASSUMES NO RESPONSIBILITY OR LIABILITY FOR THE USE OF THESE PLANS FOR ANY PROJECT OTHER THAN SPECIFICALLY AUTHORIZED BY THEM AND SIGNED AND SEALED FOR SUCH SPECIFIC LOCATION IN THE STATE, PROVINCE OR TERRITORY SHOWN ON THE SEAL. THIS BUILDING USE IS ONLY APPLICABLE IN AREAS MEETING THE STATED DESIGN CRITERIA.

KNE JOB # 2020-0427
GC# XXXXX

DRAWING NUMBER:
13/25

#	DATE	CHANGE DESCRIPTION

COLUMBUS METROPOLITAN HOUSING AUTHORITY
COMMUNITY. COMMITMENT. COLUMBUSPOR.

COBBLESTONE MANOR
1050 LAMPLIGHTER DRIVE
GROVE CITY, OH 43123
FOR
CMHA

MOODY•NOLAN
300 SPRUCE STREET
SUITE 300
COLUMBUS, OHIO 43215

PHONE: (614) 461-4664
FAX: (614) 280-8881

DRAWING TITLE:
EROSION CONTROL PLAN PHASE 1

KORDA/NEMETH ENGINEERING, INC.
1650 WATERMARK DRIVE
COLUMBUS, OHIO 43215
DESIGNED BY KGW

DRAWN BY KGW
CHECKED BY EJW
JOB FILE 2020-0427

STATE OF OHIO
ERIC J. WALSH
E-80715
Registered
PROFESSIONAL ENGINEER

06/08/2023
DRAWN BY: KGW CHECKED BY: EJW
#22172.01

C2.5

PERMIT & BID SET

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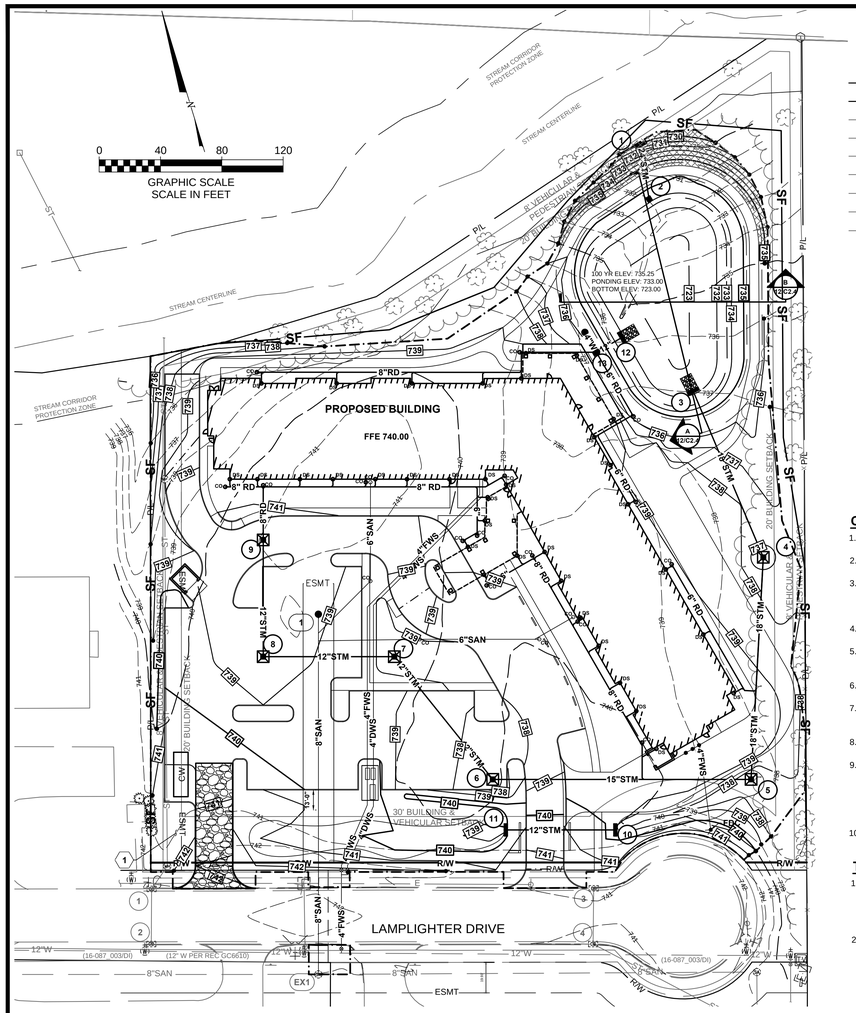

LEGEND

EXISTING

- P/L — PROPERTY LINE
- R/W — RIGHT-OF-WAY
- PAVEMENT
- WALK
- SAN — SANITARY LINE
- STM — STORM LINE
- W — WATER LINE
- STREAM CENTERLINE
- STREAM CORRIDOR PROTECTION ZONE

PROPOSED

- 800 — INDEX CONTOUR
- 799 — INTERMEDIATE CONTOUR
- LIMITS OF GRADING
- SF — LINEAR SEDIMENT BARRIER PER C-GC-74
- FILTER FABRIC INLET PROTECTION PER C-GC-70A
- STABILIZED CONSTRUCTION ENTRANCE PER C-GC-75A
- CW — CONCRETE WASHOUT PER DETAIL B/15 (C2.7)
- EROSION CONTROL MATTING PER DETAIL E/15 (C2.7)

CONTRACTOR'S RESPONSIBILITIES:

1. PRIOR TO CONSTRUCTION OPERATIONS IN A PARTICULAR AREA, ALL SEDIMENTATION AND EROSION CONTROL FEATURES SHALL BE IN PLACE. FIELD ADJUSTMENT WITH RESPECT TO LOCATIONS MAY BE MADE BY THE ENGINEER AS REQUESTED.
2. DETAILS HAVE BEEN PROVIDED ON THE PLANS IN AN EFFORT TO HELP THE CONTRACTOR PROVIDE EROSION AND SEDIMENTATION CONTROL.
3. THE DETAILS SHOWN ON THE PLAN SHALL BE CONSIDERED A MINIMUM ADDITIONAL OR ALTERNATE DETAILS MAY BE FOUND IN OHIO'S RAINWATER AND LAND DEVELOPMENT MANUAL. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR PROVIDING NECESSARY AND ADEQUATE MEASURES FOR PROPER CONTROL OF EROSION AND SEDIMENT RUNOFF FROM THE SITE DISCHARGES ASSOCIATED WITH THE CONSTRUCTION ACTIVITY.
4. FIELD ADJUSTMENTS WITH RESPECT TO LOCATIONS AND DIMENSIONS MAT BE MADE BY THE ENGINEER, GROVE CITY AND THE OHIO EPA.
5. A TEMPORARY SEDIMENT BASIN MUST BE PROVIDED FOR SITES THAT SHALL HAVE A COMMON DISTURBED DRAINAGE AREA OF TEN ACRES OR MORE. THE TEMPORARY SEDIMENT BASIN SHALL REMAIN IN PLACE UNTIL THE SITE IS PERMANENTLY STABILIZED.
6. THE CONTRACTOR SHALL PLACE INLET PROTECTION FOR THE SEDIMENTATION CONTROL IMMEDIATELY AFTER THE CONSTRUCTION OF CATCH BASINS OR INLETS WHICH ARE NOT TRIBUTARY TO A SEDIMENT BASIN OR TRAP.
7. IT MAY BECOME NECESSARY TO REMOVE PORTIONS OF SEDIMENTATION CONTROLS DURING CONSTRUCTION TO FACILITATE THE GRADING OPERATIONS IN CERTAIN AREAS. HOWEVER, THE CONTROLS SHALL BE REPLACED UPON COMPLETION OF GRADING OR DURING ANY INCLEMENT WEATHER.
8. THE CONTRACTOR SHALL BE RESPONSIBLE TO HAVE THE CURRENT STORM WATER POLLUTION PREVENTION PLAN IMMEDIATELY AVAILABLE OR POSTED ON SITE.
9. THE CONTRACTOR SHALL BE RESPONSIBLE TO ENSURE THAT NO SOLID OR LIQUID WASTE IS DISCHARGED INTO STORM WATER RUNOFF. UNTREATED SEDIMENT-LADEN RUNOFF SHALL NOT FLOW OFF OF SITE WITHOUT BEING DIRECTED THROUGH A CONTROL PRACTICE. CONCRETE TRUCKS WILL NOT BE ALLOWED TO WASH OUT OR DISCHARGE SURPLUS CONCRETE INTO OR ALONGSIDE RIVERS, STREAMS, OR CREEKS OR INTO NATURAL OR MAN-MADE CHANNELS OR SWALES LEADING THERETO. CONCRETE WASH WATER AND SURPLUS CONCRETE SHALL BE CONFINED TO APPROVED AREAS; AFTER SOLIDIFYING, THESE WASTE MATERIALS SHALL BE REMOVED FROM THE SITE.
10. THE COST FRO TEMPORARY CHANNELS SEDIMENT BASINS AND OTHER APPURTENANT EARTH-MOVING OPERATIONS SHALL BE INCLUDED IN THE PRICE BID FOR EROSION AND SEDIMENTATION QUANTITIES.

TEMPORARY AND PERMANENT SEEDING:

1. THE LIMITS OF SEEDING AND MULCHING ARE SHOWN ON THE PLAN. SEEDING HAS BEEN ASSUMED TO BE 5' OUTSIDE THE WORK LIMITS OR RIGHT-OF-WAY, WHICHEVER IS GREATER. ALL AREAS NOT DESIGNATED TO BE SEEDED SHALL REMAIN UNDER NATURAL GROUND COVER. THOSE AREAS DISTURBED OUTSIDE THE SEEDING LIMITS SHALL BE SEEDED AND MULCHED AT THE CONTRACTOR'S EXPENSE.
2. TEMPORARY AND PERMANENT SEEDING SHALL BE APPLIED PER THE REQUIREMENTS IDENTIFIED WITHIN THE CITY OF GROVE CITY GENERAL NOTES AND OHIO'S RAINWATER AND LAND DEVELOPMENT" MANUAL.

Permanent Stabilization

AREA REQUIRING PERMANENT STABILIZATION	TIME FRAME TO APPLY EROSION CONTROLS
ANY AREAS THAT WILL LIE DORMANT FOR ONE YEAR OR MORE.	WITHIN SEVEN DAYS OF THE MOST RECENT DISTURBANCE.
ANY AREAS WITHIN 50 FEET OF A SURFACE WATER OF THE STATE AND AT FINAL GRADE.	WITHIN TWO DAYS OF REACHING FINAL GRADE.
ANY OTHER AREAS AT FINAL GRADE.	WITHIN SEVEN DAYS OF REACHING FINAL GRADE WITHIN THAT AREA.

WHERE VEGETATIVE STABILIZATION TECHNIQUES MAY CAUSE STRUCTURAL INSTABILITY OR ARE OTHERWISE UNOBTAINABLE, ALTERNATIVE STABILIZATION TECHNIQUES MUST BE EMPLOYED. PERMANENT AND TEMPORARY STABILIZATION ARE DEFINED IN PART VII.

TEMPORARY STABILIZATION

AREA REQUIRING TEMPORARY STABILIZATION	TIME FRAME TO APPLY EROSION CONTROLS
ANY DISTURBED AREAS WITHIN 50 FEET OF A SURFACE WATER OF THE STATE AND NOT AT FINAL GRADE.	WITHIN TWO DAYS OF THE MOST RECENT DISTURBANCE IF THE AREA WILL REMAIN IDLE FOR MORE THAN 14 DAYS.
FOR ALL CONSTRUCTION ACTIVITIES, ANY DISTURBED AREAS THAT WILL BE DORMANT FOR MORE THAN 14 DAYS BUT LESS THAN ONE YEAR, AND NOT WITHIN 50 FEET OF A SURFACE WATER OF THE STATE.	WITHIN SEVEN DAYS OF THE MOST RECENT DISTURBANCE WITHIN THE AREA. FOR RESIDENTIAL SUBDIVISIONS, DISTURBED AREAS MUST BE STABILIZED AT LEAST SEVEN DAYS PRIOR TO TRANSFER OF PERMIT COVERAGE FOR THE INDIVIDUAL LOT(S).
DISTURBED AREAS THAT WILL BE IDLE OVER WINTER.	PRIOR TO THE ONSET OF WINTER WEATHER.

POST-CONSTRUCTION POND MAINTENANCE SCHEDULE

THE PROPOSED STORMWATER QUALITY OUTLET STRUCTURE IS A STORMWATER BMP WHICH WILL REQUIRE ONGOING INSPECTION AND MAINTENANCE CLEANING. RESPONSIBILITY AND ASSURANCE OF PERIODIC MAINTENANCE AND THE CONTINUOUS FUNCTIONALITY OF THE CONTROL STRUCTURES IS PERPETUAL; BEGINNING WITH THE OWNER AT THE TIME OF INSTALLATION AND CONTINUING TO ALL FUTURE OWNERS OF SAID PRIVATE STORM SEWER SYSTEM. GENERAL RECOMMENDATIONS ARE AS FOLLOWS:

RELEASE CONTROL STRUCTURE	VISUALLY INSPECT AND REMOVE SEDIMENT AND TRASH.	MONTHLY AND AFTER RAINFALL EVENTS 0.5 INCHES OR GREATER OR IF STANDING WATER PERSISTS FOR MORE THAN 72 HOURS

MAINTAIN DOCUMENTATION OF ALL INSPECTIONS NOTING WHEN MAINTENANCE IS PERFORMED. PROVIDE DOCUMENTATION TO CITY OF GROVE CITY UPON REQUEST.

EROSION AND SEDIMENT CONTROL NARRATIVE

EROSION AND SEDIMENT CONTROL NARRATIVE:

PLAN DESIGNER: KORDA/NEMETH ENGINEERING INC. 1650 WATERMARK DRIVE, SUITE 200 COLUMBUS, OHIO 43215 PHONE: (614) 487-1650 FAX: (614) 487-8981

OWNER: NAME: COLUMBUS METROPOLITAN HOUSING AUTHORITY
ADDRESS: 880 EAST 11TH AVENUE COLUMBUS, OHIO 43211
CONTACT: MIKE WAGNER
PHONE: 614-421-6102
EMAIL: MWAGNER@CMHANET.COM

NOI PERMIT: XXXXXXXX

EXISTING SITE CONDITIONS: THE SITE CONSISTS OF UNDEVELOPED AGRICULTURAL LAND.

PROJECT DESCRIPTION: THE PROJECT INCLUDES A 80,810 SF SENIOR LIVING FACILITY WITH ADJACENT PARKING LOT, WET DETENTION POND, DRAINAGE FEATURES AND LANDSCAPED AREAS.

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EROSION AND SEDIMENT CONTROL MEASURES: PROVIDE SILT FENCE AT CRITICAL AREAS AS SHOWN ABOVE. ANY NEW OR EXISTING STORM INLETS IMPACTED BY THE NEW CONSTRUCTION ACTIVITY WILL NEED THE APPROPRIATE INLET PROTECTION FOR SEDIMENT CONTROL. PROVIDE INLET PROTECTION AT EXISTING AND PROPOSED DRAINAGE STRUCTURES. ANY OFFSITE BORROW OR SPOIL AREAS SHALL BE SUBJECT TO THE REQUIREMENTS SET FORTH BY THE OHIO EPA. ALL EROSION AND SEDIMENT CONTROL MEASURES FOR OFFSITE AREAS NOT COVERED BY A SEPERATE NOI OR SWP3 SHALL BE COORDINATED WITH THE OHIO EPA. TRENCH GROUNDWATER CONTAINING SEDIMENT MUST BE EFFECTIVELY TREATED PRIOR TO DISCHARGE INTO THE STORM SEWER SYSTEM. USE MEANS NECESSARY TO CONTROL DUST ONSITE AND PREVENT TRACKING SOIL OFFSITE.

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POST-DEVELOPED CURVE NUMBER = 86
EXISTING IMPERVIOUS AREA = 0.01 ACRES
PROPOSED IMPERVIOUS AREA = 2.06 ACRES

CONSTRUCTION SEQUENCE

UNLESS NOTED OTHERWISE, THE GENERAL CONTRACTOR IS RESPONSIBLE FOR ALL EROSION AND SEDIMENT CONTROL MEASURES REQUIRED THROUGHOUT THE DURATION OF THE PROJECT.

1. COMPLETE FINAL GRADING FOR HARDSCAPE AREAS.
2. INSTALL AGGREGATE BASE, WALK, CURBS, PAVEMENT, AND BUILDINGS.
3. COMPLETE FINAL GRADING FOR LAWN, LANDSCAPED AREAS. STABILIZE WITH PERMANENT SEEDING.
4. CONFIRM SITE STABILIZATION.
5. REMOVE ALL EROSION AND SEDIMENT CONTROLS. ESTABLISH OUTLET CONTROL STRUCTURE PER DETAIL A/10 (C2.2) AND INSTALL WET POND.
6. FILE NOT WITHIN 45 DAYS OF FINAL STABILIZATION.

MAINTENANCE/INSPECTION PROCEDURES

1. CONTROL MEASURES SHALL BE INSPECTED AT LEAST ONCE EACH WEEK AND WITHIN 24-HOURS FOLLOWING ANY STORM EVENT OF 0.5 INCHES OR GREATER.
2. MEASURES SHALL BE MAINTAINED IN GOOD WORKING ORDER; IF A REPAIR IS NECESSARY, IT WILL BE INITIATED WITHIN 24 HOURS OF REPORT.
3. TEMPORARY AND PERMANENT SEEDING AND PLANTING WILL BE INSPECTED FOR BARE SPOTS, WASHOUTS, AND HEALTHY GROWTH.
4. A MAINTENANCE INSPECTION REPORT SHALL BE MADE AFTER EACH INSPECTION, AND A WRITTEN LOG MUST BE KEPT. THIS LOG SHALL INDICATE THE DATE OF THE INSPECTION, NAME OF THE INSPECTOR, WEATHER CONDITIONS, OBSERVATIONS, ANY CORRECTIVE ACTIONS TAKEN, AND BE SIGNED IN ACCORDANCE WITH THE CONDITIONS OF THE NPDES PERMIT. ANY CONTROL MEASURE MUST BE REPAIRED/REPLACED WITHIN THREE DAYS OF INSPECTION.
5. PERSONNEL SELECTED FOR INSPECTION AND MAINTENANCE RESPONSIBILITIES SHALL BE TRAINED IN INSPECTION AND MAINTENANCE PRACTICES NECESSARY FOR KEEPING THE EROSION AND SEDIMENT CONTROLS USED ONSITE IN GOOD WORKING ORDER. A WRITTEN DOCUMENT CONTAINING THE SIGNATURES OF CONTRACTORS AND SUBCONTRACTORS INVOLVED IN THE IMPLEMENTATION OF EROSION AND SEDIMENT CONTROL MEASURES MUST BE MAINTAINED AS PROOF ACKNOWLEDGING THAT THEY REVIEWED AND UNDERSTAND THE CONDITIONS AND RESPONSIBILITIES OF THE PLAN. THE DOCUMENT SHALL BE CREATED BY THE CONTRACTOR SIGNED PRIOR TO THE START OF CONSTRUCTION.

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3. ANY RINSE WATERS OF SUCH MATERIAL ARE ALSO PROHIBITED FROM BEING PLACED WHERE THEY MAY ENTER DRAINAGEWAYS.
4. WASH OUT OF CEMENT TRUCKS SHOULD OCCUR IN A DIKED, DESIGNATED AREA, AWAY FROM ANY CONVEYANCE CHANNEL.
5. COORDINATE WASH OUT AREA WITH CONSTRUCTION MANAGER.

STABILIZATION PROCEDURES

CONTRACTOR SHALL BE RESPONSIBLE TO KEEP A RECORD OF DATES WHEN MAJOR GRADING ACTIVITIES OCCUR, WHEN EARTH DISTURBANCE HAS TEMPORARILY OR PERMANENTLY CEASED ON A PORTION OF THE SITE, AND WHEN STABILIZATION MEASURES HAVE BEEN INITIATED.

THE USE OF STRAW MULCH IS PROHIBITED WITHOUT APPROVAL FROM THE CITY'S SERVICE DEPARTMENT.

DEWATERING

DISCHARGES FROM DEWATERING ACTIVITIES, INCLUDING DISCHARGES FROM DEWATERING OF TRENCHES AND EXCAVATIONS ARE PROHIBITED UNLESS MANAGED BY APPROPRIATE CONTROLS.

GENERAL NOTES:

1. A COPY OF THE SWPPP PLAN AND THE APPROVED EPA STORMWATER PERMIT (WITH THE SITE-SPECIFIC NOI NUMBER) SHALL BE KEPT ONSITE AT ALL TIMES.
2. PROVIDE FILTER FABRIC INLET PROTECTION PER C-GC-70A AT ALL EXISTING AND PROPOSED STORM INLET STRUCTURES RECEIVING FLOW FROM DISTURBED AREAS.
3. SOIL EROSION AND BMP MEASURES SHALL BE INSTALLED PRIOR TO START OF ANY CONSTRUCTION AND SHALL BE MAINTAINED AT ALL TIMES DURING CONSTRUCTION. BMP MEASURES SHALL BE TO THE SATISFACTION OF THE OHIO EPA. CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING AND MODIFYING BMP'S AND SWPPP AS NECESSARY DUE TO CONSTRUCTION PHASING AS THE PROJECT ADVANCES TO SATISFY THE OHIO EPA TO COMPLY WITH OHIO EPA PERMIT NO. OHC000006 "GENERAL PERMIT AUTHORIZATION FOR STORM WATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITY UNDER THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM".
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CODED NOTES

1. PROVIDE FUELING AND WASTE DISPOSAL AREAS. FINAL LOCATION DETERMINED BY CONTRACTOR.

REV.	DATE	DESCRIPTION	REVISION/UPLOAD DATE

SITE IMPROVEMENT PLAN FOR COBBLESTONE MANOR
1050 LAMPLIGHTER DRIVE
GROVE CITY, OH 43213
PID: 04001268

EROSION CONTROL PLAN PHASE 2

KORDA
Korda/Nemeth Engineering, Inc - Consulting Engineers
1650 Watermark Drive, Columbus, Ohio 43215-7928
TEL 614-487-1650 - FAX 614-487-8981 - WEB www.korda.com

DRAWN BY: KGW CHECKED BY: EJW

THE ARCHITECT / ENGINEER ASSUMES NO RESPONSIBILITY OR LIABILITY FOR THE USE OF THESE PLANS FOR ANY PROJECT OTHER THAN SPECIFICALLY AUTHORIZED BY THEM AND SIGNED AND SEALED FOR SUCH SPECIFIC LOCATION IN THE STATE, PROVINCE OR TERRITORY SHOWN ON THE SEAL. THIS BUILDING USE IS ONLY APPLICABLE IN AREAS MEETING THE STATED DESIGN CRITERIA.

KNE JOB # 2020-0427
GC# XXXXX

DRAWING NUMBER:
14/25

#	DATE	CHANGE DESCRIPTION

COLUMBUS METROPOLITAN HOUSING AUTHORITY
COMMITMENT. COMPETENCE. COLLABORATION.

COBBLESTONE MANOR
1050 LAMPLIGHTER DRIVE
GROVE CITY, OH 43123
FOR
CMHA

MOODY•NOLAN
300 SPRUCE STREET
SUITE 300
COLUMBUS, OHIO 43215
PHONE: (614) 461-4664
FAX: (614) 280-8881

DRAWING TITLE:
EROSION CONTROL PLAN PHASE 2

KORDA/NEMETH ENGINEERING, INC.
1650 WATERMARK DRIVE
COLUMBUS, OHIO 43215
DESIGNED BY KGW
DRAWN BY KGW
CHECKED BY EJW
JOB FILE 2020-0427

STATE OF OHIO
ERIC J. WALSH
E-80715
PROFESSIONAL ENGINEER

06/08/2023
DRAWN BY: KGW CHECKED BY: EJW
#22172.01

C2.6

PERMIT & BID SET

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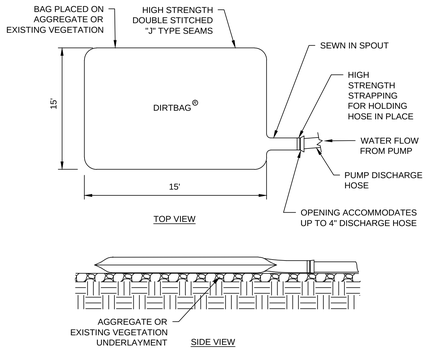
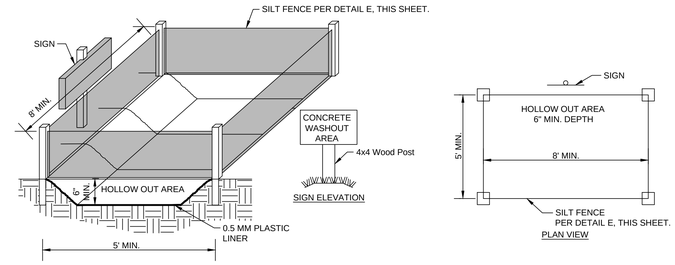


NOTES:
1. THE PUMPING OR DIRECT DISCHARGE OF SEDIMENT-LADEN (MUDDY) WATER TO THE CITY'S SEWER SYSTEM OR A RECEIVING STREAM IS A VIOLATION OF OHIO EPA AND CITY OF GROVE CITY REGULATIONS.
2. ALL INLETS RECEIVING FLOW FROM RUNOFF, PUMPING ACTIVITIES, OR OTHER DIRECT DISCHARGES SHALL BE FITTED WITH AN INLET PROTECTION DEVICE THAT IS PROPERLY SIZED AND SECURED TO REDUCE THE DISCHARGE OF SEDIMENT INTO THE STORM SEWER AND RECEIVING STREAM. INLET PROTECTION IS REQUIRED ON ALL INLETS RECEIVING DISCHARGE REGARDLESS OF WHETHER OR NOT THE INLET IS TRIBUTARY TO ANY DOWNSTREAM EROSION AND SEDIMENT CONTROLS.
3. DISCHARGE HOSES USED DURING PUMPING ACTIVITIES SHALL BE FITTED WITH SEDIMENT BAGS THAT ARE PROPERLY SIZED PER MANUFACTURER'S RECOMMENDATIONS REGARDLESS OF WHAT OTHER SEDIMENT CONTROLS ARE IN PLACE FURTHER DOWNSTREAM. SEDIMENT BAGS MUST BE PROPERLY SECURED TO THE DISCHARGE HOSE AND PLACED OVER VEGETATED AREAS, WHERE FEASIBLE, DURING DISCHARGE. SEE DETAIL ABOVE OF A TYPICAL SEDIMENT BAG INSTALLATION.

A DETAIL
DEWATERING BAG N.T.S.



NOTES:
1. CONCRETE TRUCKS SHALL UTILIZE AREAS TO WASHOUT TRUCKS.
2. ACCUMULATED CONCRETE SHALL BE REMOVED FROM THE SITE AND DISPOSED PROPERLY.
3. PLACE PLASTIC LINER OVER THE ENTIRE HOLLOW OUT AREA PRIOR TO USE.
4. PROVIDE ITEMS NOTED ABOVE INCLUDING REMOVAL OF CONCRETE WASHOUT UPON COMPLETION OF THE PROJECT AS NOTED IN THE BID PRICE FOR THE PROJECT.
5. FILL HOLLOW AREA TO A DEPTH OF 4 TO 6 INCHES WITH CMSC ITEM 703 AGGREGATE, SIZE #57, #2, OR #4.
6. USE OF ROLL AWAY OR OTHER PORTABLE CONTAINERS IS AN ACCEPTABLE ALTERNATIVE (AND HIGHLY ENCOURAGED) PROVIDED THEY ARE USED IN ACCORDANCE WITH NPDES GUIDELINES ON CONCRETE WASHOUT.

B DETAIL
CONCRETE TRUCK WASHOUT AREA N.T.S.

Sediment Basin Summary Sheet
Cobblestone Manor
Grove City, OH

By: KGW Date: 4/13/2023

REQUIRED VOLUME CALCULATIONS

Disturbed Area Tributary to Basin =	3.7	Acres				
Total Area Tributary to Basin =	3.7	Acres				
Dewatering Zone Volume Req'd =	248	C.Y.	=	6,693	CU. FT.	(67 C.Y./Ac)
Sediment Storage Volume Req'd =	137	C.Y.	=	3,696	CU. FT.	(37 C.Y./Ac.)

SEDIMENT STORAGE VOLUME PROVIDED

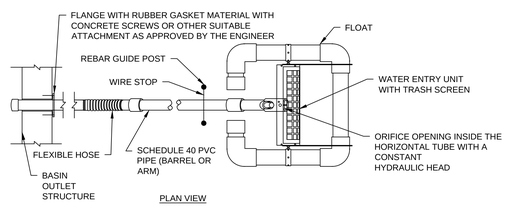
Desired Depth of Sed. Storage =	1.5		
Desired Length to Width Ratio =	4	(4 for 4:1 Recommended)	
Desired Length of Sed. Basin Bottom =	120	Width of Sediment Basin =	30 ft
Invert of Outlet Control Orifice =	733.00		
Bottom of Pond Elevation =	731.50		
Bottom of Pond Surface Area =	3600	S.F. @ Elev.	731.50
Top of Sediment Storage Area =	4536	S.F. @ Elev.	733.00
Sediment Storage Volume Provided =	**226**	**C.Y. >**	**136.9 C.Y. Required**

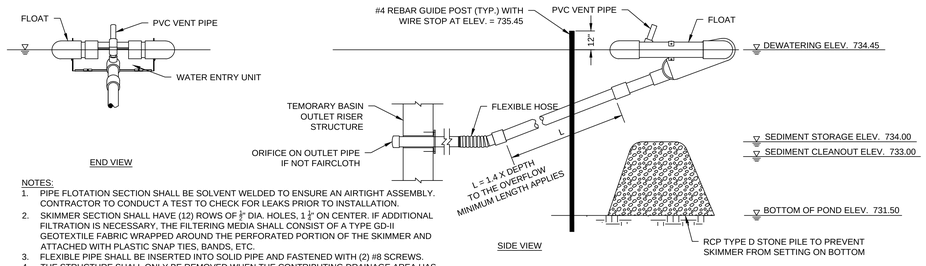
DEWATERING ZONE DISCHARGE CALCULATION

Invert of Outlet Control Orifice =	733.00	
Required Storage Volume =	248	C.Y.
Pond Elevation at 248 C.Y. Storage =	734.45	FT = Top of Pipe Riser

OUTLET FLOW CALCULATION

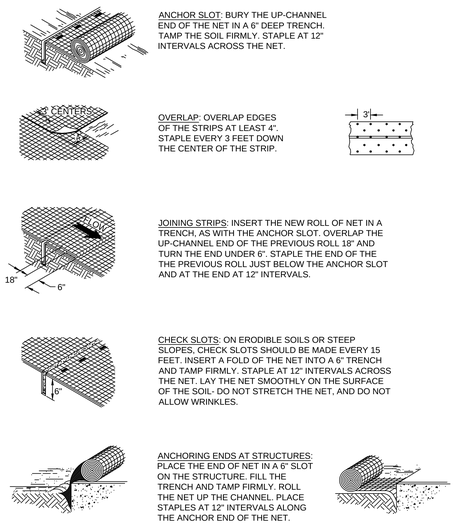
C DETAIL
SEDIMENT BASIN N.T.S.

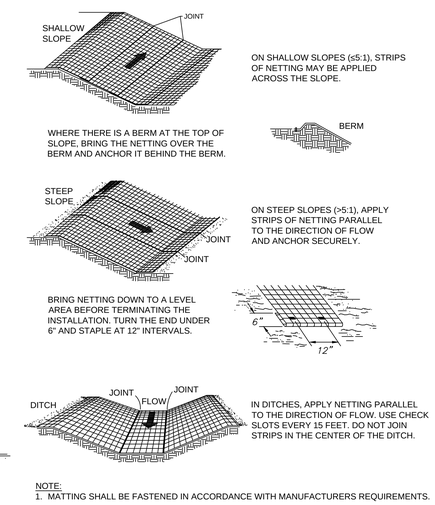




NOTES:
1. PIPE FLOTATION SECTION SHALL BE SOLVENT WELDED TO ENSURE AN AIRTIGHT ASSEMBLY. CONTRACTOR TO CONDUCT A TEST TO CHECK FOR LEAKS PRIOR TO INSTALLATION.
2. SKIMMER SECTION SHALL HAVE (12) ROWS OF $\frac{3}{8}$" DIA. HOLES, 1 $\frac{1}{2}$" ON CENTER. IF ADDITIONAL FILTRATION IS NECESSARY, THE FILTERING MEDIA SHALL CONSIST OF A TYPE GD-II GEOTEXTILE FABRIC WRAPPED AROUND THE PERFORATED PORTION OF THE SKIMMER AND ATTACHED WITH PLASTIC SNAP TIES, BANDS, ETC.
3. FLEXIBLE PIPE SHALL BE INSERTED INTO SOLID PIPE AND FASTENED WITH (2) #8 SCREWS.
4. THE STRUCTURE SHALL ONLY BE REMOVED WHEN THE CONTRIBUTING DRAINAGE AREA HAS BEEN PROPERLY STABILIZED.
5. REMOVE SEDIMENT WHEN BASIN IS 40% FULL.
6. ACCEPTABLE MANUFACTURERS: FAIRCLOTH SKIMMER; MARLEE FLOAT SKIMMER, IAS SKIMMER, OR APPROVED EQUAL.

D DETAIL
TEMPORARY SKIMMER N.T.S.





NOTE:
1. MATTING SHALL BE FASTENED IN ACCORDANCE WITH MANUFACTURERS REQUIREMENTS.

E DETAIL
INSTALLATION AND ORIENTATION OF NETTING AND MATTING N.T.S.

REV.	DATE	DESCRIPTION	REVISION/UPLOAD DATE

SITE IMPROVEMENT PLAN FOR COBBLESTONE MANOR
1050 LAMPLIGHTER DRIVE
GROVE CITY, OH 43213
PID: 040012669

EROSION CONTROL DETAILS

KORDA
Korda/Nemeth Engineering, Inc - Consulting Engineers
1650 Watermark Drive, Columbus, Ohio 43215
TEL 614-487-1650 - FAX 614-487-8981 - WEB www.korda.com

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KNE JOB # 2020-0427
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DRAWING NUMBER:
15/25

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COMMUNITY. COMMITMENT. COLLABORATION.

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GROVE CITY, OH 43123
FOR
CMHA

MOODY•NOLAN
300 SPRUCE STREET
SUITE 300
COLUMBUS, OHIO 43215
PHONE: (614) 461-4664
FAX: (614) 280-8881

DRAWING TITLE:
EROSION CONTROL DETAILS

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1650 WATERMARK DRIVE
COLUMBUS, OHIO 43215
DESIGNED BY KGW
DRAWN BY KGW
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STATE OF OHIO
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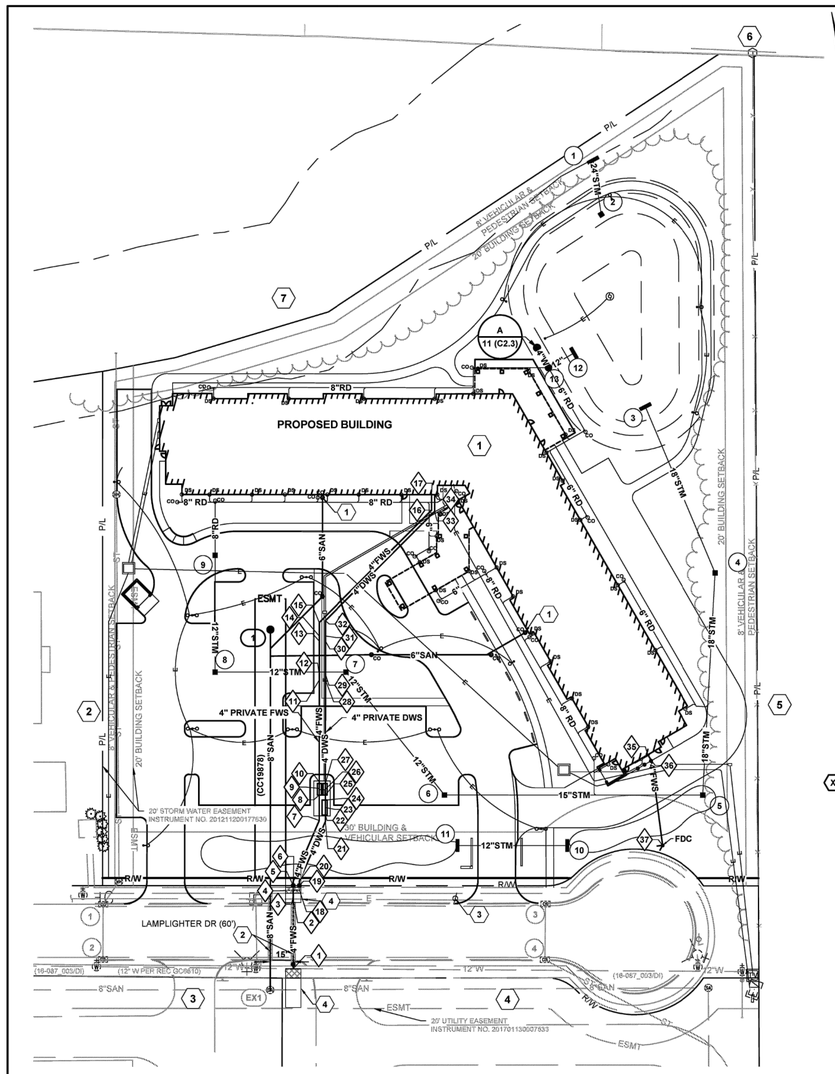


0 40 80 120
GRAPHIC SCALE
SCALE IN FEET

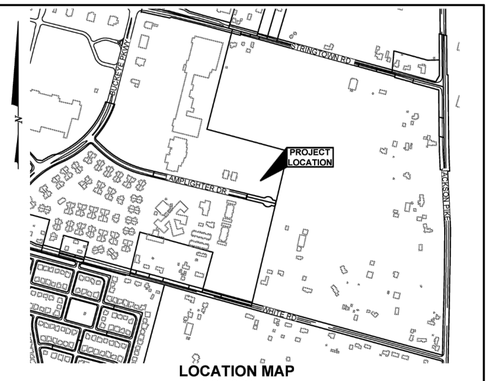
UTILITY LEGEND

PROPOSED

- W — WATER LINE
- F — FIRE PROTECTION SERVICE LINE
- STM — STORM SEWER
- SAN — SANITARY SEWER
- W — FIRE HYDRANT
- GATE VALVE & CURB BOX
- FIRE DEPARTMENT CONNECTION
- E — UNDERGROUND ELECTRIC LINE
- CO — CLEAN OUT
- MANHOLE
- ESMT — EASEMENT
- 1 / 100 — STRUCTURE NUMBER
- LIMITS OF JACK AND BORE OPERATION
- REMOVE AND REPLACE PAVEMENT IN KIND

EXISTING

- P/L — PROPERTY LINE
- R/W — RIGHT-OF-WAY
- PAVEMENT
- WALK
- SA — SANITARY LINE
- ST — STORM LINE
- W — WATER LINE
- E — ELECTRIC LINE



LOCATION MAP
(NOT TO SCALE)

GENERAL NOTES:

1. DIMENSIONS AND COORDINATES ARE FROM FACE OF CURB OR EXTERIOR FACE OF BUILDING, UNLESS OTHERWISE NOTED.
2. EXTEND UTILITIES TO WITHIN 5' OF FACE OF BUILDING, UNLESS OTHERWISE NOTED. COORDINATE EXACT LOCATION WITH PLUMBING CONTRACTOR. FINAL CONNECTION BY PLUMBING CONTRACTOR.
3. REFER TO SHEETS 9-11 (C2.1-C2.3) FOR STORM SEWER INFORMATION.
4. MAINTAIN MINIMUM 4'-0" COVER OVER ALL WATERLINES.
5. MAINTAIN MINIMUM 18" VERTICAL CLEARANCE FROM THE OUTSIDE OF ANY WATERLINE PIPE TO THE OUTSIDE OF ANY STORM OR SANITARY SEWER.
6. PROVIDE THRUST BLOCKS OR RESTRAINED MECHANICAL JOINT PIPE AT EACH VALVE, TEE, FITTING, OR CHANGE IN DIRECTION OF WATERLINE.
7. REFER TO GROVE CITY STANDARD DRAWINGS FOR TYPICAL FIRE HYDRANT INSTALLATION DETAILS.
8. ROOF DRAINS, FOUNDATION DRAINS, AND OTHER CLEAN WATER CONNECTIONS TO THE SANITARY SEWER ARE PROHIBITED.
9. ALL COORDINATES AND ELEVATIONS BASED ON SURVEY PERFORMED BY CW DESIGN GROUP, LLC
10. WHERE PLANS PROVIDE FOR A PROPOSED UTILITY TO BE CONNECTED TO, OR CROSS OVER, OR UNDER AN EXISTING UNDERGROUND UTILITY, THE CONTRACTOR SHALL LOCATE THE EXISTING PIPES OR UTILITIES, BOTH AS TO LINE AND GRADE BEFORE STARTING TO LAY THE PROPOSED UTILITY. THESE LOCATIONS ARE NOTED THUS: EXPOSE. IF IT IS DETERMINED THAT THE ELEVATION OF THE EXPOSED UTILITY DIFFERS FROM THE PLAN ELEVATION, RESULTS IN A CHANGE IN THE PLAN SEWER SLOPE, OR WILL INTERSECT AN EXISTING UTILITY AS SHOWN ON THE PLAN, THE ENGINEER SHALL BE NOTIFIED BEFORE STARTING CONSTRUCTION OF ANY PORTION OF THE PROPOSED UTILITY WHICH WILL BE AFFECTED BY THE VARIANCE IN THE EXISTING ELEVATIONS.
11. SUPPORT AND PROTECT ALL UTILITIES EXPOSED DURING EXCAVATION AND TRENCHING.

(X) CODED NOTES:

1. CAP AND MARK FOR FUTURE CONNECTION. COORDINATE FINAL LOCATION AND ELEVATION WITH PLUMBING CONTRACTOR. FINAL CONNECTION BY PLUMBING CONTRACTOR.
2. JACK AND BORE WATER & SANITARY SEWER UNDER LAMPLIGHTER DRIVE.
3. LIGHT POLE AND FOUNDATION. COORDINATE RELOCATION WITH GROVE CITY SERVICE DEPARTMENT.
4. LIMITS OF JACKING AND RECEIVING PITS 10'X25'.

PROPERTY OWNERS

(X)	OWNER NAME	PARCEL	ADDRESS	ZONING CLASSIFICATION
1	COLUMBUS METROPOLITAN HOUSING AUTHORITY	040012669	1050 LAMPLIGHTER DR	PUD-R / C-2
2	CREATIVE HOUSING INC XCII	040014766	1200-1230 LAMPLIGHTER DR	PUD-R
3	LAMPLIGHTER SENIOR HOUSING LLC	040014948	1185 LAMPLIGHTER DR	PUD-R
4	LAMPLIGHTER SENIOR HOUSING LLC	040015540	1185 LAMPLIGHTER DR	PUD-R
5	WECHTER DENISE E	160002849	1180 WHITE ROAD	R
6	OHIO HEALTH CORPORATION	040015521	1325-1375 STRINGTOWN RD	M-1
7	PARKWAY CENTRE EAST RETAIL LLC	040015070	4108-4164 BUCKEYE PW	C-2

WATER SERVICE COORDINATES

No.	Type	Northing	Easting	NORTHING AS-BUILT	EASTING AS-BUILT	CENTERLINE ELEVATION
1	12" X 4" TAPPING SLEEVE & VALVE W/ HDVB	682537.41	1818341.61			
2	45° VERT. BEND	682581.31	1818352.14			
3	45° VERT. BEND	682584.22	1818352.84			
4	4" X 4" TEE	682587.14	1818353.54			
5	4" WATER SERVICE VALVE	682590.06	1818354.24			
6	11.25° HORIZ. BEND	682592.98	1818354.94			
7	11.25° HORIZ. BEND	682627.42	1818380.54			
8	90° VERT. BEND	682643.46	1818384.40			
9	HEATED ENCLOSURE PER DETAIL C/2	682647.72	1818385.41			
10	90° VERT. BEND	682651.98	1818386.43			
11	45° VERT. BEND	682716.42	1818401.88			
12	45° VERT. BEND	682720.02	1818402.74			
13	45° VERT. BEND	682741.09	1818407.79			
14	45° VERT. BEND	682744.36	1818408.57			
15	45° HORIZ. BEND	682752.91	1818410.62			
16	45° HORIZ. BEND	682807.09	1818498.97			
17	WATER TERMINATION PER DETAIL A/3	682816.91	1818501.32			
18	90° HORIZ. BEND	682586.21	1818357.43			
19	4" WATER SERVICE VALVE	682589.13	1818358.13			
20	11.25° HORIZ. BEND	682592.04	1818358.82			
21	11.25° HORIZ. BEND	682625.72	1818384.24			
22	90° VERT. BEND	682629.89	1818385.24			
23	HEATED ENCLOSURE PER DETAIL B/2	682634.07	1818386.39			
24	90° VERT. BEND	682639.45	1818387.54			
25	90° VERT. BEND	682642.58	1818388.29			
26	HEATED ENCLOSURE PER DETAIL C/2	682646.26	1818389.17			
27	90° VERT. BEND	682649.91	1818390.05			
28	45° VERT. BEND	682715.49	1818405.76			
29	45° VERT. BEND	682719.09	1818406.64			
30	45° VERT. BEND	682740.16	1818411.67			
31	45° VERT. BEND	682743.43	1818412.46			
32	45° HORIZ. BEND	682753.12	1818414.79			
33	45° HORIZ. BEND	682805.82	1818500.72			
34	WATER TERMINATION PER DETAIL A/3	682816.44	1818503.27			
35	BUILIDNG CONNECTION	682619.27	1818599.00			
36	22.50° HORIZ. BEND	682614.72	1818600.35			
37	4" FDC	682559.52	1818594.57			

EASEMENT REFERENCE			
CITY NO.	COUNTY RECORDER VOL.	COUNTY RECORDER PAGE	GRANTOR

REVISIONS		
NO	DESCRIPTION	APPROVAL/DATE

PLAN PREPARED BY:

STATE OF OHIO — ERIC J. WALSH E-80715 — REGISTERED PROFESSIONAL ENGINEER

KORDA
Korda/Nemeth Engineering, Inc - Consulting Engineers
1650 Watermark Drive, Suite 200 - Columbus, Ohio 43215-7010
TEL 614-487-1650 - FAX 614-487-8981 - WEB www.korda.com

PE SIGNATURE: Eric Walsh DATE: 06-01-2023

APPROVED FOR GENERAL ARRANGEMENTS ONLY
DIVISION OF WATER
CITY OF COLUMBUS

TEH 7/6/2023

PROJECT TITLE

COBBLESTONE MANOR
1050 LAMPLIGHTER DRIVE
GROVE CITY, OH 43123
PID: 040012669

WSP7129

SHEET: 1/3

#	DATE	CHANGE DESCRIPTION

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Eric Walsh

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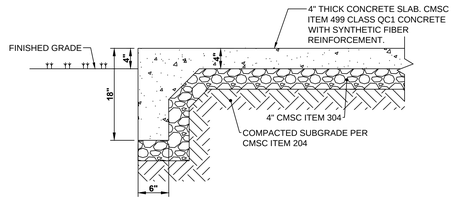


NOTES:

A. SYNTHETIC FIBER REINFORCEMENT: ASTM C1116-97 AND ASTM C1018-97. ACCEPTABLE PRODUCTS INCLUDE, BUT ARE NOT LIMITED:
   1. NYCON NYLON FIBERS
   2. FORTA NYLO-MONO NYLON FIBERS
   3. FIBERMESH FIBERMIX STEALTH POLYPROPYLENE FIBERS
   4. GRACE POLYPROPYLENE FIBERS

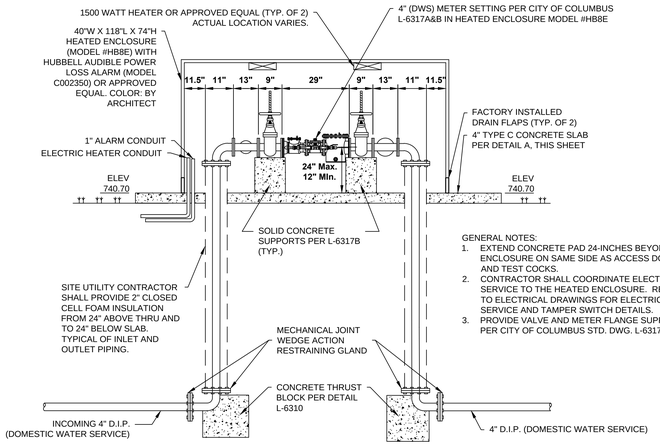
   SYNTHETIC FIBER REINFORCEMENT SHALL BE USED IN STRICT ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. DOSAGE RATE SHALL BE AS RECOMMENDED BY THE MANUFACTURER, BUT NOT LESS THAN 1 POUND PER CUBIC YARD.

B. DISSIPATING CURING COMPOUND: COMPLY WITH ASTM C309-98A, TYPE 1, CLASS B (CLEAR), EXCEPT MOISTURE LOSS NOT TO EXCEED 0.40 KG/SQ M. IN 72 HOURS. COMPOUND SHALL COMPLY WITH EPA'S VOC REQUIREMENTS. APPLY AT THE MANUFACTURER'S WRITTEN RECOMMENDED APPLICATION RATE. COMPLETELY REMOVE CURING COMPOUND PRIOR TO APPLICATION OF PENETRATING SEALER.

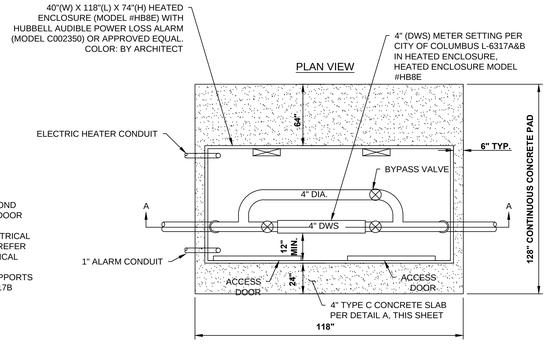
C. PENETRATING SEALER: ACCEPTABLE PRODUCTS INCLUDE, BUT ARE NOT LIMITED TO:
   1. L&M CONSTRUCTION CHEMICALS - AQUAPEL PLUS 40
   2. PROSOCO - SALTGUARD WB
   3. HULS AMERICA INC. - CHEM-TRETE BSM 40
   4. MASTER BUILDERS INC. - MASTERSEAL SL 40
   5. LYMTAL INTERNATIONAL - ISO-FLEX 618-50 WB
   6. BASF - ENVIROSEAL 40 OR HYDROZO SILANE 40
   7. TEX-COTE - RAINSTOPPER RS140

D. PROVIDE TURNDOWN ON ALL FOUR SIDES OF CONCRETE SLAB.

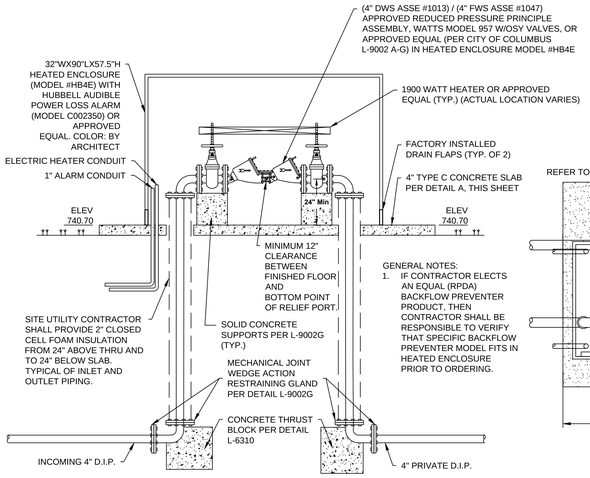
A DETAIL
HEATED ENCLOSURE CONCRETE SLAB
N.T.S.



GENERAL NOTES:
1. EXTEND CONCRETE PAD 24-INCHES BEYOND ENCLOSURE ON SAME SIDE AS ACCESS DOOR AND TEST COCKS.
2. CONTRACTOR SHALL COORDINATE ELECTRICAL SERVICE TO THE HEATED ENCLOSURE. REFER TO ELECTRICAL DRAWINGS FOR ELECTRICAL SERVICE AND TAMPER SWITCH DETAILS.
3. PROVIDE VALVE AND METER FLANGE SUPPORTS PER CITY OF COLUMBUS STD. DWG. L-6317B

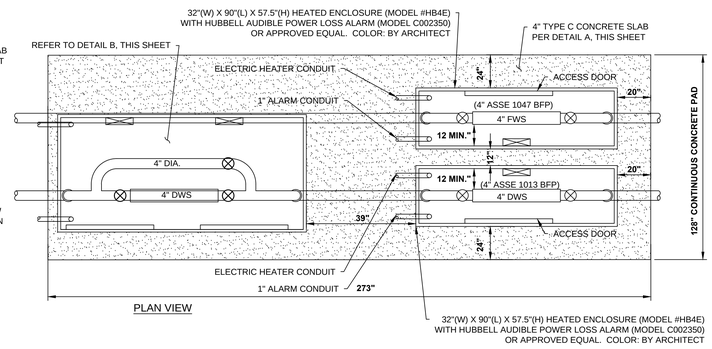


B DETAIL
HEATED ENCLOSURE FOR METER SETTING
N.T.S.



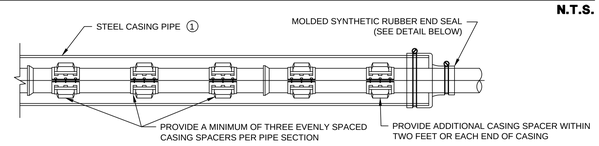
SECTION VIEW DOMESTIC WATER SERVICE

GENERAL NOTES:
1. IF CONTRACTOR ELECTS AN EQUAL (RPDA) BACKFLOW PREVENTER PRODUCT, THEN CONTRACTOR SHALL BE RESPONSIBLE TO VERIFY THAT SPECIFIC BACKFLOW PREVENTER MODEL FITS IN HEATED ENCLOSURE PRIOR TO ORDERING.



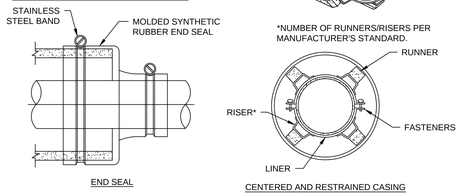
PLAN VIEW

C DETAIL
HEATED ENCLOSURES FOR BACKFLOW PREVENTERS
N.T.S.



SIZE UTILITY MAIN	MAX. BELL O.D.	MIN. SMOOTH STEEL CASING PIPE REQ'D.
4"	8.19"	14"
6"	10.19"	16"
8"	13.19"	18"
12"	17.25"	24"
16"	22.38"	30"
20"	27.25"	36"
24"	31.56"	42"
30"	38.75"	48"
36"	45.00"	54"
42"	51.25"	60"
48"	58.00"	66"
54"	65.63"	72"
60"	72.38"	84"

① NOTE:
1. CASING PIPE SIZE BASED ON TYPICAL BELL O.D. OF D.I. RESTRAINED JOINT PIPE MANUFACTURED AND NOMINAL CONCRETE PIPE SIZE. STEEL CASING PIPE SHALL MEET ASTM SPECIFICATIONS 35,000 PSI YIELD STRENGTH AND 60,000 PSI TENSILE STRENGTH, OR APPROVED EQUAL. COAT THE CASING PIPE PER THE MANUFACTURER'S RECOMMENDATIONS. CASING PIPE SHALL HAVE A MINIMUM WALL THICKNESS OF 0.375 INCHES UNLESS OTHERWISE APPROVED BY THE ENGINEER.



D DETAIL
CASING PIPE, SPACERS AND END SEALS
N.T.S.

EASEMENT REFERENCE			
CITY NO.	COUNTY RECORDER VOL.	COUNTY RECORDER PAGE	GRANTOR

REVISIONS		
NO.	DESCRIPTION	APPROVAL/DATE

PLAN PREPARED BY:

STATE OF OHIO ERIC J. WALSH E-80715 REGISTERED PROFESSIONAL ENGINEER

KORDA
Korda/Nemeth Engineering, Inc - Consulting Engineers
1650 Watermark Drive, Suite 200 - Columbus, Ohio 43215-7010
TEL 614-487-1650 - FAX 614-487-8981 - WEB www.korda.com

PE SIGNATURE: Eric Walsh DATE: 06-01-2023

PROJECT TITLE

COBBLESTONE MANOR
1050 LAMPLIGHTER DRIVE
GROVE CITY, OH 43123
PID: 040012669

WSP7129

SHEET: 2/3

#	DATE	CHANGE DESCRIPTION

COLUMBUS METROPOLITAN HOUSING AUTHORITY

COBBLESTONE MANOR
1050 LAMPLIGHTER DRIVE
GROVE CITY, OH 43123
FOR
CMHA

MOODY•NOLAN
300 SPRUCE STREET
SUITE 300
COLUMBUS, OHIO 43215

PHONE: (614) 461-4664
FAX: (614) 280-8881

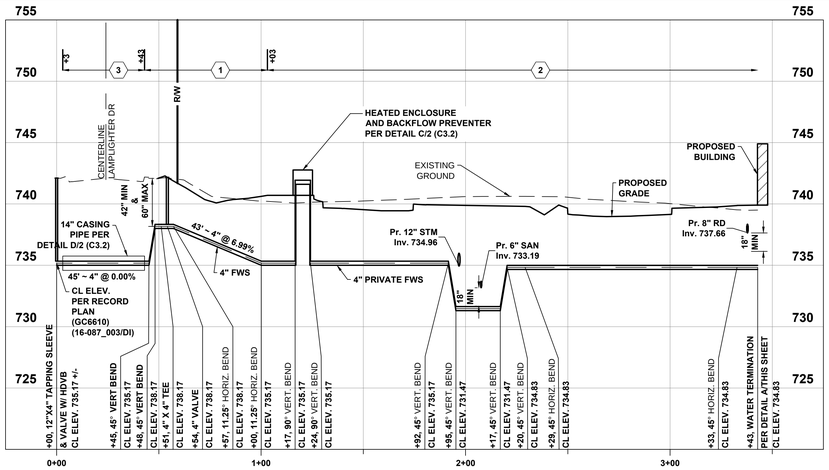
DRAWING TITLE:
UTILITY DETAILS

KORDA/NEMETH ENGINEERING, INC.
1650 WATERMARK DRIVE
COLUMBUS, OHIO 43215
DESIGNED BY KGW
DRAWN BY KGW
CHECKED BY EJW
JOB FILE 2020-0427

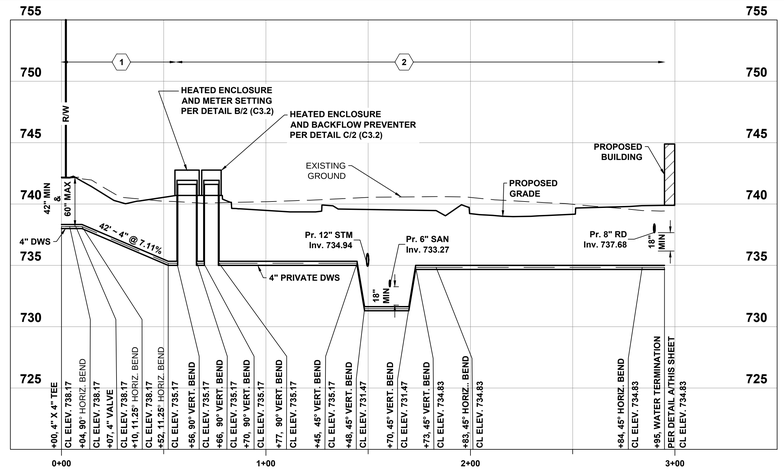
STATE OF OHIO ERIC J. WALSH E-80715 REGISTERED PROFESSIONAL ENGINEER
Eric Walsh

06/08/2023
DRAWN BY: **KGW** CHECKED BY: **EJW**
#22172.01
C3.2
PERMIT & BID SET

PRINT DATE: 3/1/2023 10:05:19 AM
FILE INFO: Autodesk Docs://22172.01 CMHA Seasons Grove/22172.01 CMHA Seasons Grove_ARCH.rvt



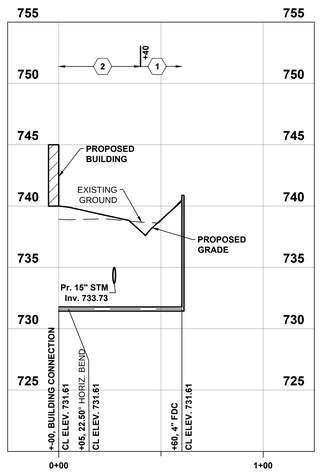
4 Inch Fire Service Profile
Scale: 1"=30' Horiz. 1"=5' Vert.



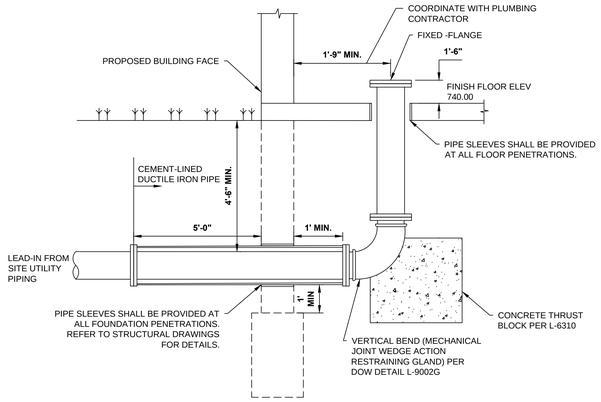
4 Inch Domestic Service Profile
Scale: 1"=30' Horiz. 1"=5' Vert.

(X) CODED NOTES:

1. BACKFILL WITH COMPACTED BACKFILL PER CMSC ITEM 911
2. BACKFILL WITH COMPACTED GRANULAR MATERIAL PER CMSC ITEM 912
3. JACK AND BORE UNDER LAMPLIGHTER DRIVE. PROVIDE CASING PER DETAIL D/2 (C3.3)



FIRE DEPARTMENT CONNECTION Profile
Scale: 1"=30' Horiz. 1"=5' Vert.



NOTES:
1. ALL WORK WITHIN BUILDING SHALL BE PER PLUMBING SPECIFICATIONS.
2. COORDINATE FOOTING LOCATIONS AND SLEEVES WITH FOUNDATION CONSTRUCTION.
3. COORDINATE FINAL LOCATIONS AND ELEVATIONS WITH PLUMBING CONTRACTOR.
4. PROVIDE CEMENT-LINED DUCTILE IRON PIPE BEGINNING 5'-0" OUTSIDE OF THE BUILDING AND CONTINUING THROUGH THE FLOOR PENETRATION. CAP WATER SERVICE ABOVE GROUND FOR FUTURE CONNECTION BY THE PLUMBING CONTRACTOR.

(A) DETAIL
WATER SERVICE TERMINATION (SLAB ON GRADE) **N.T.S.**

CITY OF COLUMBUS WATER SERVICE PLAN NOTES:

1. NO WATER SERVICE CONSTRUCTION, BEFORE OR AFTER THE WATER METER(S), SHALL BEGIN PRIOR TO FEE PAYMENT TO THE UTILITY PERMITS OFFICE AT 111 N. FRONT STREET (614-645-7330).
2. THE CITY OF COLUMBUS CONSTRUCTION AND MATERIAL SPECIFICATIONS (CMSC), 2018 EDITION AND ALL REVISIONS, INCLUDING SPECIAL PROVISIONS AND SUPPLEMENTAL SPECIFICATIONS SHALL GOVERN THIS IMPROVEMENT, UNLESS OTHERWISE NOTED.
3. ALL WATERLINE MATERIALS AND INSTALLATIONS SHALL BE IN ACCORDANCE WITH THE CURRENT APPROVED MATERIALS LIST AND RULES AND REGULATIONS OF THE CITY OF COLUMBUS, DIVISION OF WATER, UNLESS OTHERWISE SHOWN ON THE PLANS OR APPROVED BY THE CITY OF COLUMBUS DIVISION OF WATER. ONLY PRODUCTS LISTED ON THE CURRENT APPROVED MATERIALS LIST WILL BE PERMITTED TO BE INSTALLED.
4. IT SHALL BE UNLAWFUL FOR ANY PERSON TO PERFORM ANY WORK ON THE PUBLIC WATER DISTRIBUTION SYSTEM WITHOUT FIRST SECURING LICENSE TO ENGAGE IN SUCH WORK, AS INDICATED IN COLUMBUS CITY CODE SECTION 1103.02 AND 1103.06. THIS WORK INCLUDES ANY ATTACHMENTS, ADDITIONS TO OR ALTERATIONS IN ANY CITY SERVICE PIPE OR APPURTENANCES (INCLUDING WATER SERVICE LINES AND WATER SERVICE TAPS). THIS REQUIREMENT MAY BE MET BY UTILIZATION OF A SUBCONTRACTOR WHO POSSESSES A CITY OF COLUMBUS WATER CONTRACTOR LICENSE OR A COMBINED WATER/SEWER CONTRACTOR LICENSE TO PERFORM THIS WORK. UTILIZATION OF A SUBCONTRACTOR MUST MEET THE LICENSING REQUIREMENTS OF CITY OF COLUMBUS BUILDING CODE, IN PARTICULAR SECTION 4114.119 AND 4114.529.
5. FOR ANY EMERGENCIES THAT OCCUR AFTER NORMAL WORKING HOURS INVOLVING THE WATER DISTRIBUTION SYSTEM, PLEASE CONTACT THE DIVISION OF WATER DISTRIBUTION MAINTENANCE OFFICE AT 614-645-7788.
6. SITE UTILITY CONTRACTOR SHALL OBTAIN A RIGHT OF WAY PERMIT PRIOR TO STARTING ANY SITE WATER SERVICE AND/OR WATER SERVICE TAP INSTALLATION OR PLACEMENT OF ANY WATER SERVICE MATERIALS INTO THE PUBLIC RIGHT OF WAY.
7. THERE SHALL BE A 10 FOOT MINIMUM HORIZONTAL AND 18 INCH VERTICAL SEPARATION BETWEEN WATER SERVICE TAP(S), WATER SERVICE LINE(S), PRIVATE WATER SYSTEMS AND ANY SANITARY AND/OR STORM SEWER SYSTEMS.
8. EXISTING RIGHT OF WAY LINE(S), PROPOSED RIGHT OF WAY LINE(S) AND/OR WATER MAIN EASEMENT LINES SHALL BE STAKED AT 10 FOOT INCREMENTS BY A STATE OF OHIO LICENSED SURVEYOR WHEN THE WATER SERVICE TAP(S) AND/OR WATER SERVICE(S) ARE INSTALLED AND INSPECTED BY THE COLUMBUS DIVISION OF WATER.
9. ALL INSPECTIONS REQUIRE A 24 HOUR ADVANCE NOTICE.
10. SITE UTILITY CONTRACTOR SHALL FLUSH ALL WATER SERVICES PRIOR TO ANY WATER METER INSTALLATION. THE CITY OF COLUMBUS IS NOT RESPONSIBLE FOR ANY CITY WATER METER DAMAGE CAUSED BY NON-FLUSHING.
11. SITE UTILITY CONTRACTOR SHALL CALL COLUMBUS DIVISION OF WATER AT 614-645-7330 FOR INSPECTION AND HYDROSTATIC TEST OF 3" AND LARGER WATER SERVICE TAPS FROM THE WATER MAIN THRU THE CONTROL VALVE AND WATER SERVICES FROM THE CONTROL VALVE THRU THE WATER METER SETTING. HYDROSTATIC TEST SHALL BE PER CMSC ITEM 801.14 AND SHALL BE PERFORMED FROM THE WATER MAIN THRU THE WATER METER SETTING.
12. ALL 3" THRU 12" WATER SERVICE PIPE SHALL BE ONLY DUCTILE IRON FROM WATER MAIN THRU THE CITY WATER METER SETTING(S) INCLUDING THE METER BYPASS.
13. 3" AND LARGER METER SETTING(S) SHALL BE PER COLUMBUS DIVISION OF WATER STANDARD DETAIL DRAWINGS L6317 A-E.
14. 2" AND LARGER METERS SHALL BE PURCHASED AT THE UTILITY PERMITS OFFICE AT 111 N. FRONT STREET AND PICKED UP AT A UTILITY METERING SERVICES AT 3568 INDIANOLA AVENUE.
15. BACKFLOW PREVENTION ASSEMBLY(S) SHALL BE INSTALLED, WHERE REQUIRED. PER COLUMBUS DIVISION OF WATER STANDARD DETAIL DRAWINGS L-9002 A THRU G. CONTRACTOR(S) SHALL CALL 614-645-6674 WITH BACKFLOW PREVENTION QUESTIONS. CONTRACTOR(S) SHALL CALL 614-645-5781 TO SCHEDULE BACKFLOW PREVENTION INSPECTION REQUESTS.
16. DOMESTIC WATER SERVICE BACKFLOW PREVENTER(S) SHALL MEET THE ASSE #1013 APPROVAL/STANDARD AND SHALL BE SIZED TO MATCH THE CITY WATER METER.
17. THE FIRE WATER SERVICE BACKFLOW PREVENTER(S) SHALL MEET THE APPROPRIATE ASSE APPROVAL/STANDARD AND SHALL BE EQUIPPED WITH A DETECTOR METER THAT IS ITRON 100W (TOWER) OR 100R (REMOTE) COMPATIBLE, MEASURES IN CUBIC FEET AND MEETS THE AWWA C-700 STANDARD. FIRE WATER BACKFLOW PREVENTER(S) SHALL BE SIZED TO MATCH THE FIRE WATER SERVICE SIZE AND EQUIPPED WITH O.S.&Y. VALVES.
18. A 1" I.D. CONDUIT WITH 1 DRAWSTRING PER WATER METER SHALL BE PROVIDED BY THE SITE UTILITY CONTRACTOR FROM THE WATER METER VAULT TO THE HEATED ENCLOSURE. CONDUIT SHALL EXTEND 6" INTO THE VAULT AND BE CLEAR OF ALL ACCESS PORTALS. CONDUIT SHALL EXTEND 18" UP INTO THE SLAB FOR THE HEATED ENCLOSURE ALONG THE HEATER WALL. CONDUIT SHALL HAVE A MINIMUM BURY OF 24" FROM THE VAULT TO THE HEATED ENCLOSURE. CONDUIT SHALL BE FOR THE REMOTE WIRES ONLY. ANY OTHER WIRING SHALL HAVE A SEPARATE CONDUIT.
19. IF DOMESTIC AND/OR FIRE WATER SERVICE METER(S) AND/OR THEIR BACKFLOW PREVENTER(S) ARE TO BE LOCATED INSIDE AN ABOVE GROUND HEATED ENCLOSURE THAT IS ASSE #1060 CLASS 1 APPROVED, THE ENCLOSURE SHALL HAVE A THERMOSTATICALLY OPERATED HEATER. THE HEATER SHALL BE SIZED PER THE ENCLOSURE MANUFACTURERS SPECS TO MAINTAIN A 40 DEGREE FAHRENHEIT INSIDE TEMPERATURE AT AN OUTSIDE TEMPERATURE OF MINUS 30 DEGREE FAHRENHEIT. HEAT TAPE/RODS WILL NOT BE PERMITTED.
20. BACKFLOW PREVENTION DEVICES MUST BE TESTED AT THE TIME OF INSTALLATION BY A TESTER APPROVED BY THE DIVISION OF WATER BACKFLOW COMPLIANCE OFFICE. A COMPLETE LIST OF APPROVED TESTERS CAN BE FOUND AT WWW.COLUMBUS.GOV/BACKFLOW/CONSUMERS. RESULTS MUST BE SUBMITTED THROUGH THE ONLINE WEB SUBMITTAL SYSTEM AT WWW.COLUMBUS.TOKAYTEST.COM.

UNDERGROUND PRIVATE WATER SYSTEM(S) AFTER THE CITY WATER METER(S):

1. SITE UTILITY CONTRACTOR SHALL CALL GROVE CITY PUBLIC SERVICE DEPUTY DIRECTOR FOR INSPECTION OF UNDERGROUND PRIVATE DOMESTIC AND/OR FIRE WATER SYSTEM(S) AFTER THE CITY WATER METER(S). THIS WILL INCLUDE DOMESTIC WATER LOOPS AND FIRE WATER LOOPS INCLUDING PRIVATE FIRE HYDRANTS THRU THE SITE BEFORE COVERING.
2. SITE UTILITY CONTRACTOR SHALL CALL JACKSON TOWNSHIP FIRE DEPARTMENT FOR FLUSHING AND/OR PRESSURE TEST INSPECTION OF PRIVATE FIRE SYSTEM AFTER THE CITY FIRE WATER SERVICE METER AND BACKFLOW PREVENTER
3. 4" AND LARGER PIPE MATERIAL FOR THE UNDERGROUND PRIVATE WATER SYSTEM AFTER THE CITY WATER METER SHALL BE DUCTILE IRON, C900 OR C909 PIPE ONLY TO A POINT 5' OUTSIDE THE BUILDING FOOTPRINT.

EASEMENT REFERENCE			
CITY NO.	COUNTY RECORDER VOL.	COUNTY RECORDER PAGE	GRANTOR

REVISIONS		
NO.	DESCRIPTION	APPROVAL/DATE

PLAN PREPARED BY:

STATE OF OHIO ERIC J. WALSH E-80715 REGISTERED PROFESSIONAL ENGINEER

KORDA
Korda/Nemeth Engineering, Inc - Consulting Engineers
1650 Watermark Drive, Suite 200 - Columbus, Ohio 43215-7010
TEL 614-487-1650 - FAX 614-487-8881 - WEB www.korda.com

PE SIGNATURE: Eric Walsh DATE: 06-01-2023

PROJECT TITLE

COBBLESTONE MANOR
1050 LAMPLIGHTER DRIVE
GROVE CITY, OH 43123
PID: 040012669

WSP7129

SHEET: 3/3

#	DATE	CHANGE DESCRIPTION

COLUMBUS METROPOLITAN HOUSING AUTHORITY
COMMUNITY. COMMITMENT. COLLABORATION.

COBBLESTONE MANOR
1050 LAMPLIGHTER DRIVE
GROVE CITY, OH 43123
FOR
CMHA

MOODY•NOLAN
300 SPRUCE STREET
SUITE 300
COLUMBUS, OHIO 43215

PHONE: (614) 461-4664
FAX: (614) 280-8881

DRAWING TITLE:
UTILITY PROFILES

KORDA/NEMETH ENGINEERING, INC.
1650 WATERMARK DRIVE
COLUMBUS, OHIO 43215
DESIGNED BY KGW
DRAWN BY KGW
CHECKED BY EJW
JOB FILE 2020-0427

STATE OF OHIO ERIC J. WALSH E-80715 REGISTERED PROFESSIONAL ENGINEER
Eric Walsh

06/08/2023
DRAWN BY: **KGW** CHECKED BY: **EJW**
#22172.01
C3.3
PERMIT & BID SET

© 2021 MOODY•NOLAN INC.

PRINT DATE: 3/1/2023 10:56:19 AM
FILE INFO: Autodesk Docs://22172.01 CMHA Seasons Grove/22172.01 CMHA Seasons Grove_ARCH.rvt

CC19878
CITY OF GROVE CITY, FRANKLIN COUNTY, OHIO
PUBLIC SANITARY SEWER IMPROVEMENT PLAN
FOR
COLUMBUS METROPOLITAN HOUSING AUTHORITY
COBBLESTONE MANOR
2023

SHEET INDEX		
SHEET		DESCRIPTION
1/3	C3.4	TITLE SHEET
2/3	C3.5	GENERAL NOTES
3/3	C3.6	PLAN AND PROFILE

ESTIMATE OF QUANTITIES

THESE QUANTITIES HAVE BEEN PROVIDED ONLY AS AN ESTIMATE TO THE SCOPE OF THE WORK FOR INSPECTION PURPOSES ONLY. THE CONTRACTOR IS SOLEY RESPONSIBLE TO EVALUATE THE COMPLETE PROJECT AS DETAILED IN THE NOTES, PLANS, AND SPECIFICATIONS AND PROCEDURES NECESSARY FOR THE COMPLETION OF THE PLAN IMPROVEMENTS AND SUBMIT HIS TOTAL PROJECT COST ACCORDINGLY. DEVIATION BETWEEN THE PLANS AND THE QUANTITIES SHALL NOT BE CAUSE FOR ADDITIONAL COMPENSATION. SUBMISSION OF BID MEANS ACCEPTANCE OF ENTIRE PROJECT, WHETHER OR NOT DESCRIBED IN THE TABLE BELOW.
CALCULATED BY: KGW DATE: 06/5/2023 CHECKED BY: EJW DATE: 06/5/2023

ITEM	QUANTITY	UNIT	DESCRIPTION
			SANITARY SEWER
604	1	EA	MANHOLE PER C-GC-3
604	5	EA	6" CLEANOUT PER C-GC-22
931	187	LF	8" SANITARY SEWER, WITH TYPE I BEDDING
901	48	LF	8" SANITARY SEWER WITH 18" CASING PIPE PER DETAIL A/3
931	279	LF	6" SANITARY SEWER, WITH TYPE I BEDDING
915	2	EA	8"X6" DIA WYE FITTING

PROPERTY OWNERS

X	OWNER NAME	PARCEL	ADDRESS	ZONING CLASSIFICATION
1	COLUMBUS METROPOLITAN HOUSING AUTHORITY	040012669	1050 LAMPLIGHTER DR	PUD-R / C-2
2	CREATIVE HOUSING INC XCII	040014766	1200-1230 LAMPLIGHTER DR	PUD-R
3	LAMPLIGHTER SENIOR HOUSING LLC	040014948	1185 LAMPLIGHTER DR	PUD-R
4	LAMPLIGHTER SENIOR HOUSING LLC	040015540	1185 LAMPLIGHTER DR	PUD-R
5	WECHTER DENISE E	160002849	1180 WHITE ROAD	R
6	OHIO HEALTH CORPORATION	040015521	1325-1375 STRINGTOWN RD	M-1
7	PARKWAY CENTRE EAST RETAIL LLC	040015070	4108-4164 BUCKEYE PW	C-2

SITE DATA TABLE	
TOTAL SITE AREA:	4.19 AC
TOTAL DISTURBED AREA:	0.20 AC

CONTROL POINTS

No.	Northing	Easting	Elevation	Description
1	682549.27	1818563.02	741.66	PK NAIL IN CURB
2	682606.62	1818234.29	741.95	PK NAIL IN CURB

IRON PIN SET IS A 5/8" DIAMETER X 30" LONG REBARS WITH CAPS THAT READ "CW DESIGN GROUP, LLC".

THE BEARINGS DESCRIBED HEREIN ARE BASED ON THE OHIO STATE PLANE COORDINATE SYSTEM, SOUTH ZONE, NAD83 (2011). SAID BEARINGS ORIGINATED FROM A FIELD TRAVERSE WHICH WAS REFERENCED TO SAID COORDINATE SYSTEM BY GPS OBSERVATIONS AND OBSERVATIONS OF SELECTED STATIONS IN THE OHIO DEPARTMENT OF TRANSPORTATION VIRTUAL REFERENCE STATION NETWORK. THE NORTH RIGHT OF WAY LINE OF LAMPLIGHTER DRIVE WITH THE MONUMENTED BEARING OF NORTH 76°32'11" WEST IS THE BASIS OF BEARINGS.

THE DESCRIBED TRACT IS PART OF AUDITOR'S TAX PARCEL NUMBER 040-012669-00 AND IS BASED ON INSTRUMENT #s 200601040001335, 201012300178570, 201308150136492, 201508280080204, 201706140080789, AND 201907300094293, PLAT BOOK 113, PAGE 99, PLAT BOOK 115, PAGES 94-95, AND PLAT BOOK 121, PAGE 93.

THIS DESCRIPTION WAS MADE IN ACCORDANCE WITH FIELD SURVEY CONDUCTED BY CW DESIGN GROUP, LLC IN NOVEMBER 2020.

CW Design Group
ENGINEERS & SURVEYORS
PHONE: 614-846-9279
972 Lindfield Drive
Worthington, Ohio 43085

CHARLES A. WAGNER, PS -8661
CW DESIGN GROUP, LLC

04/14/2023
DATE

NOTES

1. APPROVAL ON THE PART OF THE CITY OF COLUMBUS IS GIVEN PURSUANT TO THE PROVISIONS OF THE SEWER SERVICE AGREEMENT WITH THE CITY OF GROVE CITY, OHIO DATED MARCH 20, 2001 AND ALL SUBSEQUENT AMENDMENTS THEREOF.
2. SANITARY SEWER MEETS OR EXCEEDS CITY OF COLUMBUS DESIGN STANDARDS (INCLUDING) PER CAPITA FLOW, PEAKING FACTOR, AND I/I ALLOWANCE) AND MATERIAL SPECIFICATIONS.

SANITARY SEWER CAPOFF NOTE

SEWER CAPOFF PERMIT IS REQUIRED PRIOR TO ISSUANCE OF DEMOLITION PERMIT. OBTAIN CAPOFF PERMIT FROM SEWER PERMIT OFFICE 111 N. FRONT ST., 1ST FLOOR (614) 645-7490

SANITARY SEWER NOTE

CONNECTION TO SANITARY SEWER CANNOT BE MADE WITHOUT OBTAINING A PERMIT FROM SEWER PERMIT OFFICE 111 N FRONT STREET (614) 645-7490.

OHIO Utilities Protection SERVICE
Click, Call or Tap Before You Dig

0 200 400 600
GRAPHIC SCALE
SCALE IN FEET

INDEX MAP & TRIBUTARY MAP
1"=200'

WATER SERVICE PLAN WSP7129

STANDARD DRAWINGS

THE STANDARD DRAWINGS LISTED ON THIS PLAN SHALL BE CONSIDERED A PART THEREOF.

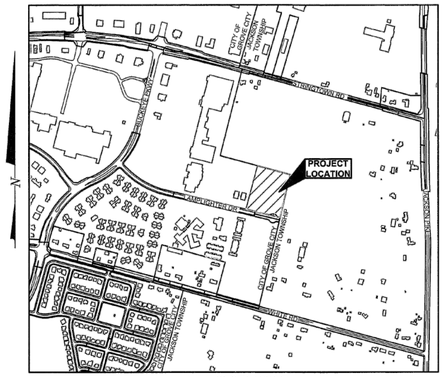
C-GC-01	C-GC-22
C-GC-03	C-GC-26
C-GC-18	C-GC-27
C-GC-20	C-GC-37

PLAN PREPARED BY:

KORDA Korda/Nemeth Engineering, Inc - Consulting Engineers
1650 Watermark Drive, Suite 200 - Columbus, Ohio 43215-7010
TEL 614-487-1650 - FAX 614-487-8981 - WEB www.korda.com

STATE OF OHIO ERIC J. WALSH E-80715 REGISTERED PROFESSIONAL ENGINEER

REGISTERED ENGINEER NO. — 7/13/2023 DATE



LOCATION MAP
(NOT TO SCALE)

SITE DEVELOPMENT DATA

OWNER/DEVELOPER:
COLUMBUS METROPOLITAN HOUSING AUTHORITY
880 EAST 11TH AVENUE
COLUMBUS, OH 43211
CONTACT: MIKE WAGNER
P: 614-421-6102
F: 614-421-4516
EMAIL: MWAGNER@CMHANET.COM

ARCHITECT:
MOODY NOLAN
300 SPRUCE STREET, SUITE 300
COLUMBUS, OH 43215
CONTACT: ANUP JANARDHANAN
P: 614-280-3220
EMAIL: ANUPJ@MOODYNOLAN.COM

ENGINEER:
KORDA/NEMETH ENGINEERING, INC.
1650 WATERMARK DRIVE
COLUMBUS, OH 43215
CONTACT: ERIC WALSH
P: 614-487-1650
EMAIL: ERIC.WALSH@KORDA.COM

LANDSCAPE ARCHITECT:
EDGE
330 W. SPRING STREET, SUITE 350
COLUMBUS, OH 43215
CONTACT: BASILIO FORESI
P: 614-487-3006
EMAIL: BFORESI@EDGELA.COM

ON SITE CONTACT: MIKE WAGNER
PHONE: 614-421-6102
E-MAIL: MWAGNER@CMHA.NET
SITE IS TRIBUTARY TO: SCIOTO RIVER

CITY OF GROVE CITY APPROVALS

MAYOR, CITY OF GROVE CITY — 7.26.23 DATE

CITY ADMINISTRATOR, CITY OF GROVE CITY — 07/24/2023 DATE

DIRECTOR OF PUBLIC SAFETY, CITY OF GROVE CITY — 7/26/2023 DATE

DIRECTOR OF PUBLIC SERVICE, CITY OF GROVE CITY — 07/25/2023 DATE

REVIEWED FOR THE CITY OF GROVE CITY — 7/21/23 DATE

CITY OF COLUMBUS APPROVALS

APPROVAL ON THE PART OF THE CITY OF COLUMBUS IS GIVEN PURSUANT TO THE PROVISIONS OF THE SEWER SERVICE AGREEMENT WITH THE CITY OF GROVE CITY, OHIO DATED MARCH 20, 2001 AND ALL SUBSEQUENT AMENDMENTS THEREOF.

CITY OF COLUMBUS SIGNATURES ON THIS PLAN SIGNIFY ONLY CONCURRENCE WITH THE GENERAL PURPOSES AND GENERAL LOCATION OF THIS PROJECT. ALL TECHNICAL DETAILS REMAIN THE RESPONSIBILITY OF THE ENGINEER PREPARING THE PLANS. APPROVAL FOR SANITARY SEWERS ONLY.

ADMINISTRATOR, DIVISION OF SEWERAGE AND DRAINAGE — 08/31/23 DATE

DIRECTOR, DEPARTMENT OF PUBLIC UTILITIES — 9.11.2023 DATE

REV.	DATE	DESCRIPTION	REVISION/UPLOAD DATE

CC19878
COBBLESTONE MANOR
1050 LAMPLIGHTER DRIVE
GROVE CITY, OH 43213
PID: 040012669

TITLE SHEET

KORDA Korda/Nemeth Engineering, Inc - Consulting Engineers
1650 Watermark Drive, Suite 200 - Columbus, Ohio 43215-7010
TEL 614-487-1650 - FAX 614-487-8981 - WEB www.korda.com

DRAWN BY: KGW CHECKED BY: EJW

THE ARCHITECT / ENGINEER ASSUMES NO RESPONSIBILITY OR LIABILITY FOR THE USE OF THESE PLANS FOR ANY PROJECT OTHER THAN SPECIFICALLY AUTHORIZED BY THEM AND SIGNED AND SEALED FOR SUCH SPECIFIC LOCATION IN THE STATE, PROVINCE OR TERRITORY SHOWN ON THE SEAL. THIS BUILDING USE IS ONLY APPLICABLE IN AREAS MEETING THE STATED DESIGN CRITERIA.

KNE JOB # 2020-0427

DRAWING NUMBER:
1/3

#	DATE	CHANGE DESCRIPTION

COLUMBUS METROPOLITAN HOUSING AUTHORITY
COMMUNITY. COMMITMENT. COLLABORATION.

COBBLESTONE MANOR
1050 LAMPLIGHTER DRIVE
GROVE CITY, OH 43123
FOR
CMHA

MOODY•NOLAN
300 SPRUCE STREET
SUITE 300
COLUMBUS, OHIO 43215

PHONE: (614) 461-4664
FAX: (614) 280-8881

DRAWING TITLE:
TITLE SHEET

KORDA/NEMETH ENGINEERING, INC.
1650 WATERMARK DRIVE
COLUMBUS, OHIO 43215
DESIGNED BY KGW
DRAWN BY KGW
CHECKED BY EJW
JOB FILE 2020-0427

STATE OF OHIO ERIC J. WALSH E-80715 REGISTERED PROFESSIONAL ENGINEER

06/08/2023
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CITY OF GROVE CITY, OHIO
SANITARY DEVELOPMENT GENERAL NOTES
-MARCH 28, 2023

1. SPECIFICATIONS: The most current City of Columbus and Ohio Department of Transportation (ODOT) "Construction and Material Specifications" (CMSC and ODOT CMS respectively) together with the requirements of the City of Grove City, Ohio, including all supplements thereto, in force on the date of the contract shall govern all materials and workmanship involved in the improvements shown on these plans, except as such specifications are modified by the following specifications, or by the construction details set forth herein. In case of any conflict among these identified technical specifications, the greater requirement shall take precedence (as determined by the sole discretion of the City).

General provisions of the ODOT CMS and the City of Columbus CMSC shall not apply unless specifically referenced. This exclusion includes, but is not necessarily limited to, Division 100 of the ODOT CMS and City of Columbus CMSC.

2. BENCH MARKS: The Contractor shall carefully preserve bench marks, property corners, reference points, and stakes. Any bench mark, property corner, or survey marker damaged or disturbed by the Contractor shall be reset by an Ohio Registered Surveyor at the Contractor's expense.

3. SAFETY REQUIREMENTS: The Contractor and any and all Subcontractors shall be solely responsible for complying with all federal, state, and local safety requirements, together with exercising precautions at all times for the protection of persons (including employees) and property. It is also solely the responsibility of the Contractor and Subcontractor to initiate, maintain, and supervise all safety requirements, precautions, and programs in connection with the work, including all OSHA rules and regulations.

4. PERMITS: The Contractor or Developer shall secure and pay for all permits and government fees, licenses, and inspections necessary for the proper execution and completion of the improvements shown on the plans.

5. NOTIFICATION: The Contractor shall notify the City at least 48 hours in advance (holidays and weekends excluded) of the anticipated start of work requiring inspection, testing, or approval by the City. Work shall not commence until a preconstruction conference is held. Prior to or at the time of the preconstruction conference, the Developer shall provide the approved construction plans to the Service Department in electronic (.pdf) format and the requested number of hard copies.

The Contractor must provide pre-notification of work to adjacent owners no less than FortyEight (48) hours prior to work being performed that will have an effect on residents and/or businesses. The pre-notification must be in writing and it must include: (1) Contractor name and 24-hour phone number; (2) a description of work being performed; (3) a list of restrictions on the affected residents and/or businesses; (4) instructions to affected residents and/or businesses. The written notification shall be submitted to the City for approval at least Fourteen (14) days prior to work beginning.

The Contractor shall post "No Parking" signs in appropriate areas no less than 48 hours in advance of any parking restriction. The Contractor will provide pre-approved "No Parking" signs on cardstock for use on the project. The Contractor shall coordinate with the City of Grove City on the printing of the signs. The Contractor must insert the days and times of the proposed parking restriction, the reason for the restriction, and the Contractor's contact information on the cardstock sign using black permanent marker. The Contractor must also supply stakes and weather resistant sleeves for installation of signs and to protect the signs from damage caused by weather. The wooden stakes for "No Parking" signs shall be 1-in. x 2-in. x 36-in. The weather proof sleeves shall be 9-in. x 12-in. Staples® Heavyweight Job Ticket Holders (Staples Item No. 812754) or Approved Equal. The weather resistant sleeve with sign shall be fixed to the stake using heavy-duty staples. "No Parking" signs must be installed, maintained, revised (if delays cause an adjustment in parking restriction), and removed by the Contractor. No additional compensation will be paid for resident/business notification or posting required signage.

As set forth herein, the Contractor shall provide all notices required under the Contract Documents and Specifications strictly in the manner prescribed therein. The Contractor shall defend, indemnify, and hold harmless the City and its officers, employees, representatives, and agents (hereinafter collectively referred to as the "City") against any and all claims, actions, demages, costs, and legal liability of every name and nature that the City may sustain, incur or be required to pay (including, but not limited to, consultant and attorney's fees, disbursements, costs or other expenses) arising out of or in connection with the Contractor's failure to strictly comply with the notice provisions imposed under the Contract Documents and Specifications.

6. INSPECTION: No work shall commence until arrangements have been made with the City Engineer and Director of Public Service for inspection services and payment of the inspection fee deposit.

7. UTILITIES: The identity and locations of existing underground utilities in the construction area have been shown on the approved construction drawings as accurately as provided by the Owner of the underground utility as required by Section 153.64 or Section 3781.27 of the Ohio Revised Code. The City of Grove City assumes no responsibility for the accuracy of locations or depths of underground facilities whether shown on the approved construction drawings or not. When unknown or incorrectly located underground utilities are encountered during construction, the Contractor shall immediately notify the utility owner, the City and the Design Engineer.

The Contractor shall notify the Ohio Utilities Protection Service (OUPS) at (800) 362-2764 at least 48 HOURS, and NO MORE THAN 10 DAYS PRIOR TO excavating, with such time periods not including weekends or holidays. Contractor shall similarly contact all utility owners who are not subscribers to OUPS.

If there are markers or other apparent physical evidence in or near the project area that may indicate the existence of underground petroleum or natural gas pipelines, the Contractor shall additionally contact the Oil & Gas Producers Underground Protection Service (OGPUPS) at (800) 925-0988. Said notification shall be given a minimum of 48 hours prior to the commencement of construction.

The following utilities are known or can be expected to be located within the limits of this project.

UTILITY	OWNER	TELEPHONE
Water, Sanitary, Storm and Street Lighting Facilities	City of Grove City 4035 Broadway Grove City, Ohio 43123	(614) 277-1100
AMERICAN ELECTRIC POWER ATTN: PAUL PAXTON 777 HOPEWELL DRIVE HEATH, OHIO 43056 OFFICE: (740)348-5322 AEP SOLUTION CENTER: (800)277-2177	COLUMBIA GAS OF OHIO ATTN: ROB CALDWELL 3350 JOHNNY APPLESEED CT. COLUMBUS, OHIO 43231 OFFICE: (614)818-2104 CELL: (614)370-1906 CUSTOMER SERVICE: (800)344-4077 DAMAGE PREVENTION: (866)632-6243	

The Contractor is responsible for the investigation, location, support, protection and restoration of all existing utilities and appurtenances whether shown on the plans or not. The Contractor shall proceed with the work and protect all underground utilities in a manner at least as cautious and protective of safety and underground utilities as those methods identified in Sections 3781.25 through 3781.30 of the Ohio Revised Code.

All private utility relocation (gas, electric, phone, etc.) will be the responsibility of the utility owners. The Contractor is responsible for coordinating the relocation and/or protection of any utilities as required by the plan with the owner of the affected utility.

8. EXPOSE EXISTING UTILITY: Where potential grade and alignment conflicts might occur with existing utilities, or as specifically called out on the plans, the Contractor shall expose utilities or structures sufficiently in advance of laying pipe for the Design Engineer to verify the vertical and horizontal effect on the proposed construction. Any discrepancy with the plans shall be coordinated with the City to ensure that there are no construction or conflict issues associated with said discrepancy.

9. CONFLICTS: In all conflicts in elevation between the water main and gravity sewers, the water main shall be lowered during construction per the requirements of the City of Columbus, unless otherwise directed by the City.

10. HOUSE SERVICE LINES: The Contractor shall assume that each house has at least one (1) sanitary, one (1) water, and one (1) gas service line unless more are marked by the utility company. It is the Contractor's responsibility to locate and support these service lines. Cost for location and support shall be included in the cost bid for various items. Where service lines are cut or broken, the lines are to be restored to the standards of the utility owner at the Contractor's expense within 12 hours of the cutting or breaking of the service line.

11. SITE VISIT: The Contractor shall perform field reconnaissance to become acquainted with the existing site conditions and the potential effects upon the scope of work.

12. RIGHTS-OF-WAY: In addition to the direct requirements of the contract specifications, the Contractor shall observe and conform to the specific requirements of all Rights-of-Way, including easements, court entries, rights-of-entry, or action filed in court in accordance with the code of the applicable governing agency.

13. EASEMENTS: Approval of this plan is contingent upon all easements required for the construction of the work being secured and submitted to the City of Grove City for recording prior to commencement of the work, and no work which requires an easement will be allowed to proceed until this has been done.

Plans which require easements that will be recorded as part of a subdivision plat may be approved prior to submission and approval of said plat. However, the plat must be approved and recorded prior to acceptance by the City of Grove City of the subject improvements.

14. WORK LIMITS: The Contractor is responsible for containing all performed work and all equipment, materials, vehicles, etc., used to complete the work within the rights-of-way of the streets, roadways, temporary easements, permanent easements and the property boundaries of the project improvements, as shown on these plans.

The Contractor is responsible for the cost of restoration for any area outside of the right-of way, permanent easement or project property boundaries to former condition or better and to the satisfaction of the Property Owner and the City.

15. CONTRACT WORK PERFORMED BY THE CITY: In the event that it becomes necessary for the City to perform work of an immediate nature (such as the placement of barricades or replacement of signs or other warning or protective devices) required of the Contractor by this contract because of failure or refusal of the Contractor to perform such work, the Contractor/Developer shall reimburse the City at the rate of 2.5 times the actual cost of labor, materials and equipment necessary to perform such work.

16. CONVENIENCE FACILITIES: The Contractor shall furnish and maintain sanitary convenience facilities for the workmen and inspectors for the duration of the work.

17. NON-RUBBER TIRED VEHICLES: No non-rubber tired vehicles shall be moved on City streets, existing private roadways or parking lots. Exceptions may be granted by the City of Grove City, for public roadways only, where short distances and special circumstances are involved. Granting of exceptions must be in writing, and any damage must be repaired by the Contractor to the satisfaction of the City of Grove City.

18. BUS ROUTE COORDINATION: Should the project impact bus routes and/or stops, the Contractor shall contact the Service Program Manager of The Central Ohio Transit Authority (COTA) by phone at (614) 308-4373 two (2) weeks prior to construction to coordinate proper bus movements through or around the job site during the project. This will include, but is not limited to, the temporary relocation or removal of COTA signs and/or bus stop locations.

19. SIGNS, MAILBOXES, FENCES, ETC.: The Contractor shall be responsible for restoring all signs, mailboxes, fences, guardrail, shrubs, property, drainage structures, or other physical features disturbed or damaged during construction, whether shown on the plans or not, to their original or better condition and location and to the satisfaction of the Property Owner and the City of Grove City.

20. PRUNING: Branches or growth which interferes with the free construction of the project may be removed from trees/bushes that are to be saved by the use of pruning tools with prior approval from the City's Urban Forester. All pruning tools used and methods employed shall meet the approval of the City's Urban Forester. The branches shall be removed per ANSI standards.

Trees damaged or destroyed that were not designated for removal or approved by the City for removal shall be replaced at the Contractor's expense.

21. DEWATERING: The Contractor is solely responsible to the Ohio Department of Natural Resources (ODNR) for registry, maintenance, and abandonment of any withdrawal devices used in the construction of this project.

Installation of any well, well point, pit or other device used for the purpose of lowering the groundwater level to facilitate construction of this project shall be properly abandoned in accordance with the provisions of Section 3745-9-10 of the Ohio Administrative Code or as directed by the Director or their representatives.

The Contractor shall be required to complete and file a Well Log and a Drilling Report Form with ODNR, Division of Water, within 30 days of the completion of installation of any well, well point, pit or other device used for the purpose of removing groundwater from an aquifer, in accordance with Sections 1521.01 and 1521.05 of the Ohio Revised Code. In addition, any such facility that has a capacity to withdraw waters of the State in an amount greater than 100,000 gallons per day from all sources shall be registered by the Contractor with the Chief of the ODNR, Division of Water, within three (3) months after completion of the facility in accordance with Section 1521.16 of the Ohio Revised Code. Copies of the necessary paperwork can be obtained at ODNR, Division of Water, Fountain Square, Columbus, OH, 43224-1387 – Phone: (614) 265-6717.

The Contractor shall furnish and operate suitable pumping equipment of such capacity, adequate to dewater the trench, should water be encountered. The trench shall be sufficiently dewatered so that the placement of bedding and the laying and joining of pipe is made on firm, dry ground. If dewatering cannot produce acceptable subgrade, and only as directed by the Engineer, unsuitable materials shall be removed and replaced by CMSC Item 906, stone foundation.

The Contractor shall convey all trench water to a natural drainage channel or storm sewer without damage to property. The Contractor shall be responsible to place and maintain the necessary sediment and erosion control measures to filter the dewatering discharge and to prevent erosion at the discharge location.

22. REPLACEMENT OF DRAIN TILES AND STORM SEWERS: All drain tile and storm sewers damaged, disturbed, or removed as a result of the Contractor's operations shall be replaced with the same quality pipe or better, maintaining the same gradient as existing. Replaced drain tile shall be laid on compacted bedding equal in density to surrounding stratum. If possible, the drain tile and/or storm sewer shall be connected to a storm sewer structure, curb underdrain or outlet into the roadway ditch as applicable. Replacement shall be done at the time of the backfill operation.

23. PAVEMENT CROSSINGS: For all permitted crossing of existing streets that are to be open to traffic the restoration shall be completed in one of the following manners:

a. Immediately complete permanent, full-depth pavement repair in accordance with the plan and/or standard details.

b. Provide temporary pavement in accordance with ODOT CMS Item 615 and standard drawing C-QC-69. The finished surface of the temporary pavement shall be asphalt. Aggregate topped trenches shall not be open to traffic unless directed by the City.

24. SAW CUTTING: When saw cutting of pavement (concrete, asphalt, etc.) is necessary, the Contractor shall employ dust collection measures and shall ensure all slurry is cleaned from the roadway immediately after sawing. The Contractor is solely responsible for any damage to private property caused by fugitive dust and slurry. Sawing of any material containing silica shall conform to OSHA requirements.

25. MAINTAIN DRAINAGE: The flow in all sewers, drains and watercourses encountered shall be maintained by the Contractor at his own expense, and whenever such watercourses and drains are disturbed or destroyed during the prosecution of the work, they shall be restored by the Contractor at his own cost and expense, unless specific provision is made within the Contract Documents for the measure of and payment for such cost specific items, to a condition satisfactory to the City.

26. INLET PROTECTION: The Contractor is responsible to keep all storm sewer inlets protected from excessive amounts of sediments using adequate filtering devices as approved by the City.

27. EROSION & SEDIMENTATION CONTROL: The Contractor shall provide sediment control at all points where stormwater runoff leaves the project including waterways, overland sheet flow and storm sewers. Erosion and sediment control shall be provided as per the requirements of the City of Grove City Stormwater Design Manual and the Standards and Specifications of the "Rainwater and Land Development" manual of the OEPA.

The developer shall prepare a Stormwater Pollution Prevention Plan (SWP3) for proposed improvements resulting in the land disturbance or one acre or more. The SWP3 shall be prepared in accordance with the general and specific requirements outlined in the City of Grove City Stormwater Design Manual and the OEPA's permit for stormwater discharges associated with construction activity or its subsequent OEPA-issued revision. The SWP3 shall be submitted to the City for review and shall be approved prior to the commencement of land disturbing activities. A copy of the OEPA Notice of Intent (NOI) submission shall be made available to the City.

Erosion control measures are to be installed per NPDES permit regulations or as directed by the City, and are to be maintained until such time that they are no longer required by the permit and the City.

All land disturbing activities shall be subject to inspection and site investigation by the City of Grove City and/or the Ohio EPA. Failure to comply with these regulations is subject to legal enforcement action.

The Contractor is responsible to notify the City of Grove City 48 hours prior to commencement of initial site land disturbance on any site of one (1) or more acres as well as disturbance of lands less than one acre that are part of a larger common plan of development. This includes site clearing, grubbing and any earth moving. Primary erosion and sediment control practices are mandated by regulations to be in place from the beginning of the construction activity.

All disturbed areas resulting from construction activities shall be stabilized in accordance with the temporary and permanent soil stabilization requirements indicated within the City of Grove City Seeding and Mulching General Notes.

It is the Contractor's responsibility to maintain the sediment and erosion control features used on this project. The site shall be inspected at least once every seven calendar days and within 24 hours after any storm event greater than one-half inch of rain per 24 hour period. Records of these inspections shall be kept and made available to jurisdictional agencies if requested. Any sediment or debris which has reduced the efficiency of a structure shall be removed immediately. Should a structure or feature become damaged, the Contractor shall repair or replace it.

28. SEEDING AND MULCHING: Seeding and mulching shall conform to the notes contained herein, the requirements of Grove City and CMSC Section 659. In the event of a conflict, the more stringent requirement, determined at the sole discretion of the City of Grove City shall apply. In addition to these requirements, the seeding and mulching shall conform to the following:

Permanent seeding: disturbed areas that are at final grade must be permanently stabilized within seven days of the most recent disturbance. Disturbed areas within 50 feet of a surface water must be permanently stabilized within 2 days of reaching final grade.

Temporary seeding: disturbed areas that are not at final grade and that will be dormant for more than 14 days shall be temporarily stabilized within 7 days of the most recent disturbance. Disturbed areas within 50 feet of a surface water and that will be dormant for more than 14 days shall be temporarily stabilized within 2 days of the most recent disturbance.

All topsoil shall be of the highest quality and free of all stones, trash, and other deleterious materials greater than 1/4-inch. Before placing topsoil, the disturbed areas shall be free of large rocks and debris (greater than 3-inch in size). Organic content shall be tested by an approved lab and certified to be between 10-20% by weight. All topsoil shall be saturated with water and allowed to settle prior to seeding. Settled areas shall be refilled and saturated again prior to seeding. The grades shall match all existing landscape and any improvements completed under this plan. The Contractor shall scarify the soil surface to open the soil prior to seeding. All seeding, fertilizer, and mulch shall be placed within five (5) working days of placing topsoil.

All seeding, mulching and fertilizer shall be placed by utilizing hydro-seeding / hydromulching methods. In all cases if using seed or hydro-seed, it shall be covered with Penn Mulch or other mulch approved to cover grass seed. Straw shall not be permitted.

Residential Single-Family Homes: All residential homes shall have the front yard, side yards and at least 10' off the back of the structure sodded. The remaining lot can be grass seed with cover requirements previously mentioned.

Commercial/Multifamily Projects: All roadway frontage requires sod from curb to building. Sod and/or seed shall be placed in all remaining barren areas. In certain cases the final development plan identifies specific areas of grass seed placement vs. sod which shall be adhered to.

REQUIRED PERMANENT SEED MIXES FOR CONSTRUCTION
Option #1 (Seeding Dates: March 1 to September 30)
40% Kentucky Blue Grass
20% Creeping Red Fine Fescue
20% Chewings Fine Fescue
20% Penn Fine Perennial Rye Grass
Option #2 (Fall Seeding Dates After September 30)
30% Kentucky Blue Grass
20% Creeping Red fescue
50% Perennial Rye (Penn Fine, Keystone, or equal)
Fertilizer
12-12-12 at 2- pounds per 1,000 square feet (dry or liquid)

Temporary seeding shall be applied per the specifications provided within the OEPA "Rainwater and Land Development" manual.

29. LANDSCAPING:
Tree Planting Typical: When planting evergreen and deciduous trees, 50% of the wire cage/basket and 50% of the burlap shall be removed from the root balls of the trees along with any tags, twine and trunk wrap.

Screening of Service Structures: Any service structure in all zoning districts, whether shown on the development plan or not, shall be screened. Examples include but are not limited to propane tanks, trash dumpsters, electrical transformers, air conditioners/cooling towers, utility vaults which extend above grade, and other equipment or elements providing service to a building or site. Screening is defined as a continuous 100% opaque landscape hedge, solid fence, wall, or earthen mound on all sides. This note shall be added to the landscape plan.

Tree Preservation: If tree preservation is required, a specific Tree Preservation Plan shall be provided. Proper fencing along with minimum 8 ½" x 11" signage every 20' shall be noted on the plans. Signs shall be legible and state 'Preservation Area, No Construction or Encroachment Permitted under section 1136, City of Grove City'. A site inspection shall be performed by the Urban Forester or his/her designee, prior to any construction and/or destruction, to evaluate existing trees and those scheduled for removal. Call 614-277-1100 to schedule.

30. SOIL STOCKPILES: The Contractor shall be responsible for keeping all soil stockpiles, including trench excavation stockpiles, protected from erosion. The areas surrounding the stockpiles are to be protected from sediment with the use of perimeter control devices such as earth or compost filter sock devices or silt fences. These perimeter control devices shall be maintained for the duration of the project.

31. DISPOSAL OF EXCAVATION: Unless specifically stated otherwise on the plans, the Contractor shall dispose of all excavated material that is not being used as fill at an offsite location. The Contractor shall provide a copy of the signed, written agreement between the Contractor and the offsite landowner before such disposal occurs. The agreement shall clearly state the purpose of the agreement and indicate the landowner's permission for such use.

32. CLEANUP: The Contractor shall be responsible for the immediate cleanup of any debris, mud or dirt tracked or spilled on City and/or public streets or private drives whether inside or outside the project area. The Contractor is responsible for the cost of any services contracted and/or completed by the City of Grove City in the cleanup of any tracking or spillage anytime during project construction. The Engineer may require the Contractor to perform weekly street cleaning if excessive amounts of dirt and mud are left along the street. This may include removal by sweeping, power cleaning, or manual methods.

33. CONSTRUCTION DEBRIS: All debris, rubble, unusable materials, and items not salvaged by the Owner shall become the property of the Contractor and shall be removed from the site by the Contractor and disposed of properly.

34. SIGN PAINTING: All signs located within the public right-of-way (traffic control, advance warning, wayfinding, etc.) shall be painted according to this specification. All visible elements of sign mounting systems such as sign back, backing assemblies, support posts, and hardware shall be painted according to Federal Specification 595-B Color #27040 – Black. Painting must be performed under controlled environmental conditions and in accordance with manufacturer's recommendations pertaining to surface preparation, material handling and application.

35. MAINTENANCE OF TRAFFIC NOTES: All temporary traffic control devices shall be furnished, erected, maintained and removed by the Contractor in accordance with the Ohio Manual of Uniform Traffic Control Devices for Construction and Maintenance Operations (current edition), copies of which are available from the Ohio Dept. of Transportation, Bureau of Traffic, 1980 West Broad St., Columbus, OH 43223.

Steady-burning, Type "C" lights shall be required on all barricades, drums, and similar traffic control devices in use at night. Cones are NOT approved for use at night.

All trenches within the road right-of-way shall be backfilled or securely plated during nonworking hours.

Access to all properties within the project area shall be maintained at all times.

All traffic lanes shall be fully open to traffic from 7:00 a.m. to 9:00 a.m. and 4:00 p.m. to 6:00 p.m. weekdays on all roadways within the project area. One lane may be closed to traffic during working hours.

FOR ROADS DESIGNATED PRINCIPAL ARTERIAL, MINOR ARTERIAL, OR COLLECTOR:
Two-way, one-lane traffic shall be maintained during construction operations in accordance with the Ohio Manual of Uniform Traffic Control Devices (OMUTCD). A uniformed officer shall be substituted for each flagman shown on that page and such officers shall be present whenever two-way, one-lane operation is in effect.

FOR ROADS DESIGNATED LOCAL STREET:
Police Officers are not needed, unless a hazard develops, for two-way, one-lane traffic maintained during construction operations on all local roadways within the project area. If a hazard develops, an off-duty officer may be assigned by the City to the project at the Contractor's expense.

All permanent traffic controls not in conflict with the temporary traffic controls shall be maintained through this project by the Contractor. Permanent traffic controls may be temporarily relocated as approved by the Engineer. The Contractor shall assume all liability for missing, damaged, and improperly placed signs.

Any work done by the City, including installation, modification, removal and/or replacement of permanent traffic control devices as a result of work done by the Contractor or as a result of the negligence of the Contractor shall be at the expense of the Contractor.

All permanent pavement markings and traffic control signs as shown on this plan shall be installed by the Contractor at the Developer's expense. All temporary maintenance of traffic controls, including law enforcement officers and their cars, shall be installed by the Contractor at the Developer's expense. The City of Grove City shall be notified a minimum of forty-eight (48) hours (excluding weekends and holidays) prior to the installation of permanent markings to inspect and approve pavement marking layout before markings are placed.

36. CONCRETE PIPE AND STRUCTURE INSPECTION: All precast concrete products shall be inspected at the location of manufacture. All concrete pipe, storm, and sanitary sewer structures shall be stamped or have such identification noting that said pipe, storm, and sanitary structures have been inspected by the City of Columbus and meets their specifications. Installation of pipe and structures without proper identification shall not be permitted. Cost of said inspection shall be the responsibility of the Developer. Invoices shall be submitted to the Construction Representative of Record and paid from the project observation fees.

37. PIPE MATERIAL: The installation of all sewer pipe on this project shall be in accordance with Section 901 of the CMSC, unless specifically indicated otherwise, with materials conforming to the appropriate sections of CMSC or ODOT CMS, respectively. The following pipe materials will be permitted for use for public sewers:

SANITARY SEWER PIPE
Outside of R/W Limits
Flexible Pipe according to the following specifications:
- Flexible Pipe (PVC Pipe per CMSC 720.08 only, ASTM D-3034, SDR 35) will be allowed for sewers up to and including 15-inch diameter that have a minimum of 4 feet coverage and a maximum 20 feet coverage.
- Flexible Pipe (PVC Pipe per CMSC 720.08 only, ASTM D-3034, SDR 26) will be allowed for sewers 8-inch-10-inch diameter that exceed 20 feet in depth.
- Polypropylene (PP) pipe <30-inch diameter conforming to ASTM F 2736 as modified by ODOT CMS 707.65 and/or CMSC 720.13 with a maximum 20 feet coverage and a minimum 2.5 feet coverage.

Mandrel testing shall be performed on all flexible pipe per CMSC 901.21.

Rigid Pipe will be required for all sewers greater than 30-inches (Reinforced Concrete Pipe CMSC 706.02, Vitrified Clay Pipe CMSC 706.08, Ductile Iron CMSC 801.03) and for any sewers greater than 15-inch diameter that will have less than 4 feet of coverage or more than 20 feet of coverage.

Within R/W
- Flexible Pipe will be allowed for sewers up to and including 15-inch diameter (PVC Pipe per CMSC 720.08 only, ASTM D-3034, SDR 35) that have a minimum of 4 feet coverage and a maximum of 20 feet coverage.
- Flexible Pipe (PVC Pipe per CMSC 720.08 only, ASTM D-3034, SDR 26) will be allowed for sewers 8-inch-10-inch diameter that exceed 20 feet in depth.
- Polypropylene (PP) pipe <30-inch diameter conforming to ASTM F 2736 as modified by ODOT CMS 707.65 and/or CMSC 720.13 with a maximum 20 feet coverage and a minimum 2.5 feet coverage.

Mandrel testing shall be performed on all flexible pipe per CMSC 901.21.

Rigid Pipe will be required for all sewers greater than 30-inches (Reinforced Concrete Pipe CMSC 706.02, Vitrified Clay Pipe CMSC 706.08, Ductile Iron CMSC 801.03) and for any sewers greater than 15-inch diameter that will have less than 4 feet of coverage or more than 20 feet of coverage.

38. TRENCH BACKFILL: Trenches within a 1:1 influence of the roadway and/or pavement, including all points to within 3-feet behind the curb or edge of pavement, shall be filled and compacted per 912 backfill. Trenches within the right-of-way, but outside the road influence, shall be filled and compacted as per 911 backfill. All other trenches shall be filled and compacted as per 911 backfill at a minimum, or as otherwise indicated within these plans.

All item numbers shown below refer to City of Columbus Construction and Material Specifications (CMSC) item numbers.

912 backfill shall be granular material, conforming to Item 304, compacted as stipulated in Item 912.03. In all cases granular material shall be used around all manholes, structures and cleanouts. Item 613 Low Strength Mortar Backfill is required when the sewer is installed under existing payment, but otherwise only allowed when specifically requested by the City. In such cases shall be Type II or Type III.

911 backfill shall be natural soil free from stones larger than 2-inches across their greatest dimension, topsoil, vegetation, debris, rubbish or frozen material, compacted to 95% of its maximum laboratory dry weight and placed per Item 901.17.

Aggregate for bedding shall be No. 57 or No. 8, as per Item 703.

The excavated trench width 12-inches above the conduit may be increased without extra compensation.

39. TRENCHES: All trenches shall be maintained as safe as possible by the Contractor at all times and backfilled as soon as practical. All trenches during non-working hours require traffic plates, and/or lighted barricades and construction fence.

40. WATER MAIN SEPARATION: The Contractor shall maintain 18-inches vertical and 10-feet horizontal separations between any water main and sanitary or storm sewers.

41. DEFLECTION TESTING: All flexible sewers are subject to Mandrel Testing and video inspection as directed by the City Engineer. Testing shall be performed no sooner than 30 days after the pipe trench has been backfilled and all roadway and site fills over the sewers constructed. The testing shall be completed in conformance with the requirements of CMSC Item 901.21. Maximum deflection shall not exceed 5% of the base inside diameter. Cost of the testing shall be at the expense of the Contractor.

42. GRADE CHECKS: The Contractor shall ensure there is a surveyor's level and rod on the project for use in performing grade checks whenever sewer structures or pipe are being installed. The Contractor shall make this equipment available for the use of, and assist, the City's Resident Project Representative (RPR) in performing grade checks when requested by the RPR. The RPR will make all reasonable attempts to confine requests for assistance in performing grade checks to a time convenient to the Contractor.

These checks will be performed to ensure the following:
a. Proper placement of each structure.
b. Proper installation of initial runs of pipe from a structure.
c. Grade, after an overnight or longer shutdown.
d. Grade, at any other time the RPR has reason to question grade of installation.

A grade check performed by the City's RPR in no way relieves the Contractor from the ultimate responsibility to ensure construction to the plan grade.

43. GRADE CHANGES: If it is determined that the elevation of the existing sewer, or existing appurtenance to be connected to, differs from the plan elevation or results in a change in the plan sewer slope, the Design Engineer shall be notified before starting construction of any portion of the proposed sewer which will be affected by the variance in the existing elevations.

If it is determined that the proposed sewer will intersect an existing sewer or underground utility if constructed as shown on the plan, the Design Engineer shall be notified before starting construction of any portion of the proposed sewer which would be affected by the interference with an existing facility.

Grades and elevations shown on the plans shall not be revised under any circumstances without first obtaining written approval from the City.

44. STRUCTURE ADJUSTMENT: The Contractor shall field verify the top of casting elevation of all proposed manholes. If precast structures are utilized, a minimum of the top 6-inches and a maximum of 12-inches shall be field placed with grade rings to allow for field adjustment.

45. TEMPORARY BULKHEAD: The Contractor shall install a temporary bulkhead, where directed on the plans, prior to construction of the proposed sewers and shall maintain same until said sewers are accepted by the City.

46. TRENCH DAMS: All sanitary sewers require trench dams between manholes and on service laterals, at the property line, made of bentonite or other approved impermeable clay. Trench dams shall be constructed on all sanitary sewers in accordance with CMSC Item 901.11.

47. VISUAL INSPECTION: All sanitary sewers shall be video recorded in a digital format approved by the City after construction and prior to acceptance of the sewers by the City of Grove City. The recording shall remain the property of the City. The media shall clearly identify the location of the camera within the sewer, date and time of the recording, and be of sufficient quality to determine the condition of the sanitary sewers. An additional video recording of the sewers shall be completed just prior to the expiration of the guarantee period.

48. LEAKAGE TESTING: The Contractor's specific attention is directed to the requirements of either the infiltration, exfiltration, or air test as specified by the City of Grove City, Ohio. Leakage through the joints of the sewer shall not exceed the following allowable limits: 100 gallons per inch of tributary sewer diameter per 24 hours per mile of length or the computed equivalent for shorter lengths and shorter periods of time. All sanitary sewers, manholes and services shall be tested per CMSC Item 901.

49. RISERS: Service risers, CMSC Item 914, shall be installed where depths from the wyes to the existing or proposed ground elevations exceed 10-feet. The tops of risers shall be no more than 9-feet ± below the existing or proposed surface elevation, whichever is higher. Riser extensions shall be a minimum of 3-feet in length.

50. CLEAN WATER CONNECTIONS PROHIBITED: Roof drains, foundation drains and other clean water connections to the sanitary sewer system are prohibited on this project (Ordinance C51-76, Adopted June 21, 1976).

51. Y-POLES: Approved Y-poles made of 2-inch x 2-inch lumber shall be furnished and placed at all Y-branches and at the end of extended services. Y-poles shall extend from the end of service pipe to at least 2-feet above existing or proposed grade, whichever is higher.

52. CONCRETE CURE AND SEAL: All exposed exterior concrete finished flatwork is to receive 2 coats of Dayton Superior Cure & Seal 1315 EF, VOCOMP-25 Cure & Seal, or approved equal. No other method or curing compound will be permitted. This note supersedes any other note or standard drawing referenced. Payment for this curing compound and associated work shall be included in the associated pay items that require exposed concrete flatwork including but not limited to curb, combined curb and gutter, drive approaches, sidewalks, and curb ramps.

53. "Survey Coordinates" shall include all material, equipment, and labor necessary to obtain horizontal and vertical (northing, easting, and elevation) survey coordinates for the sanitary sewer improvements. The survey coordinates shall be obtained for the completed sewer construction and shall include all structure tops of casting, pipe inverts, wyes, and other fittings; for sanitary force mains, the coordinates obtained should also include valves, tees, crosses, bends, deflections, plugs, reducers, tapping sleeves, blow offs, air releases, curb stops, casing pipe termini, and other fittings. Additional survey coordinates are required on the force main every 250-feet where no fitting or other force main structure is being installed within that length of the improvement.

54. All survey coordinates shall be referenced to the applicable County Engineer's Monuments, and shall be based on the North American Datum of 1983 (NAD 83) with the (NSRS2007) adjustment, with further reference made to the Ohio State Plane South Coordinate System, South Zone, with elevations based on NAVD 88 datum. All coordinates (Northing, Easting, Elevation) shall be referenced to the nearest hundredth (N xxxxxx.xx, E xxxxxx.xx, Elev. xxx.xx). All survey coordinates shall be accurate to within 1.0 foot horizontal and a tenth of a foot (0.10') or less vertical.

The coordinates shall be documented to the City or designated Representative in digital spreadsheet form and shall include the applicable item, station, northing, easting, and elevation. Coordinates shall be submitted to the City or designated Representative on a biweekly basis.

55. RECORD DRAWINGS: The Developer shall provide Record Drawings per latest version of Record Drawing Policy at time of project completion. At a minimum, the plans must include top of casting and invert elevations for all sanitary structures and identify any and all field modifications to, and deviations from, the approved plan set. The plans must also include the installed pipe length, pipe diameter, and coordinates of structures. A redline set of plans reflecting the As-Built information shall be kept onsite and updated by the Developer/Contractor. If the redline plans are incomplete or missing information, the Developer shall be responsible for supplying the missing information by field survey or other means to facilitate a complete set of Record Drawings. Upon approval of the redline set the Developer is responsible for submitting an electronically drafted Record Drawing set to the City.

LEGEND

EXISTING

- PROPERTY LINE
- RIGHT-OF-WAY
- PAVEMENT
- WALK
- SANITARY LINE
- STORM LINE
- WATER LINE
- SIGN
- DECIDUOUS TREE
- SURVEY CONTROL POINT
- STRUCTURE NUMBER

PROPOSED

- RIGHT-OF-WAY
- WATER LINE
- FIRE PROTECTION SERVICE LINE
- STORM SEWER
- SANITARY SEWER
- FIRE HYDRANT
- GATE VALVE & CURB BOX
- FIRE DEPARTMENT CONNECTION
- CLEAN OUT
- MANHOLE
- UNDERGROUND ELECTRIC LINE
- TRIBUTARY AREA
- STRUCTURE NUMBER
- LIMITS OF JACK AND BORE CASING
- REMOVE AND REPLACE PAVEMENT IN KIND

REV.	DATE	DESCRIPTION	REVISION/UPLOAD DATE

CC19878
COBBLESTONE MANOR
1050 LAMPLIGHTER DRIVE
GROVE CITY, OH 43213
PID: 040012669

GENERAL NOTES

KORDA
Korda/Nemeth Engineering, Inc - Consulting Engineers
1650 Watermark Drive, Columbus, Ohio 43215-7046
TEL 614-487-1650 - FAX 614-487-0893 - WEB www.korda.com

DRAWN BY: KGW CHECKED BY: EJW

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KNE JOB # 2020-0427

DRAWING NUMBER:
2/3

#	DATE	CHANGE DESCRIPTION

COLUMBUS METROPOLITAN HOUSING AUTHORITY
COMMUNITY. COMMITMENT. COLLABORATION.

COBBLESTONE MANOR
1050 LAMPLIGHTER DRIVE
GROVE CITY, OH 43123
FOR
CMHA

MOODY•NOLAN
300 SPRUCE STREET
SUITE 300
COLUMBUS, OHIO 43215
PHONE: (614) 461-4664
FAX: (614) 280-8881

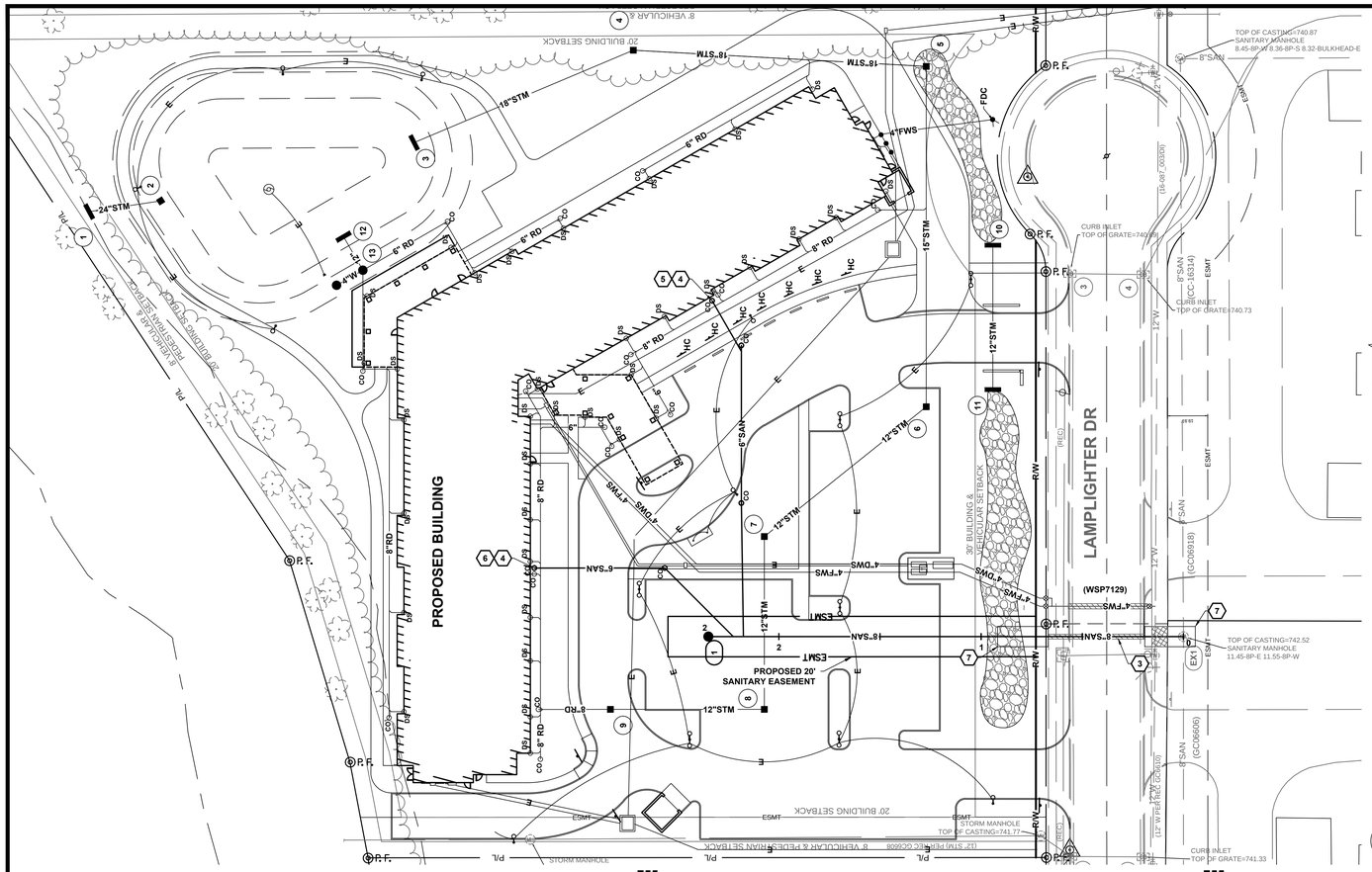
DRAWING TITLE:
GENERAL NOTES

KORDA/NEMETH ENGINEERING, INC.
1650 WATERMARK DRIVE
COLUMBUS, OHIO 43215
DESIGNED BY KGW
DRAWN BY KGW
CHECKED BY EJW
JOB FILE 2020-0427

STATE OF OHIO
ERIC J. WALSH
E-80715
REGISTERED
PROFESSIONAL ENGINEER

06/08/2023
DRAWN BY: KGW CHECKED BY: EJW
#22172.01
C3.5
CC-19878

PRINT DATE: 3/1/2023 10:05:19 AM
FILE INFO: Autodesk Docs://



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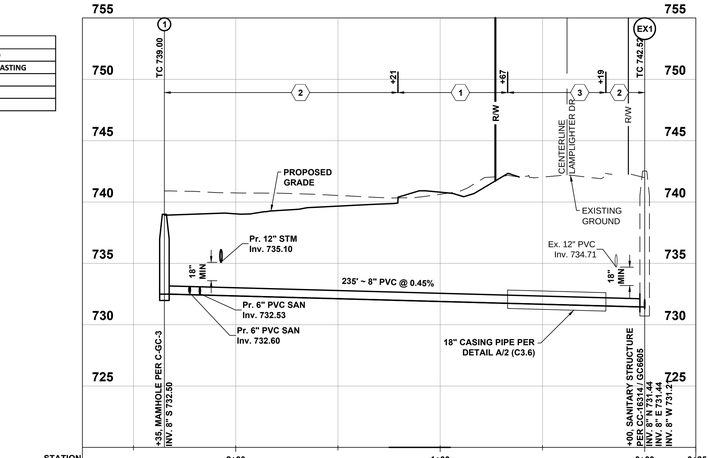


STATION		2+00		1+00		0+00	-0+25
SURFACE		740.74	740.53	740.63	742.03	741.98	
INVERT		732.34	732.11	731.89	731.66	731.44	
CUT TO INVERT		8.40	8.42	8.74	10.36	10.54	

Sanitary Main Extension Profile
Scale: 1"=30' Horiz. 1"=5' Vert.

755

SANITARY SERVICE SCHEDULE

DOWN MH	-	UP MH	Lot #	WYE STATION PLAN	WYE STATION RECORD	SERVICE LENGTH PLAN	SERVICE LENGTH RECORD	RISER LENGTH PLAN	RISER LENGTH RECORD	FG ELEV	EOS ELEV PLAN	EOS ELEV RECORD	EOS RECORD NORTHING	EOS RECORD EASTING
EX1	-	1	040012669	2+17.50		167'		7.47		740.00	736.00			
EX1	-	1	040021669	2+22.50		112'		7.40		740.00	736.00			

Service Length: Horizontal distance from the sanitary main to the end of service.
Riser Length: Vertical distance from the invert of the mainline sewer to the top of the riser.
End of Service (EOS): Location where service is capped.
FG ELEV: Finish Grade elevation just outside the structure.

SANITARY SEWER STRUCTURE COORDINATES

Structure	TC	Northing	Easting	Northing As-Built	Easting As-Built
1	739.00	682755.81	1818378.55		
EX1	742.52			682527.41	1818323.79

SANITARY SEWER TABLE

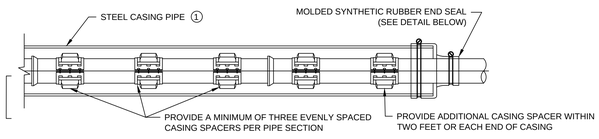
Line	Length	Bearing	Size
EX1-1	234.87	N13°28'51.20"E	8" San.

N

0 30 60 90
GRAPHIC SCALE
SCALE IN FEET

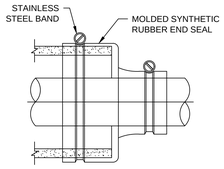
X CODED NOTES:

1. BACKFILL WITH COMPACTED BACKFILL PER CMSC ITEM 911
2. BACKFILL WITH COMPACTED GRANULAR MATERIAL PER CMSC ITEM 912
3. JACK AND BORE UNDER SIDEWALK AND LAMPLIGHTER DRIVE.
4. CAP AND MARK FOR FUTURE CONNECTION. COORDINATE FINAL LOCATION AND ELEVATION WITH PLUMBING CONTRACTOR. FINAL CONNECTION BY PLUMBING CONTRACTOR.
5. 167' ~ 6" SANITARY PIPE @ 2.08%. INVERT ELEVATION @ 736.00. BACKFILL WITH COMPACTED GRANULAR MATERIAL PER CMSC ITEM 912.
6. 112' ~ 6" SANITARY PIPE @ 3.03%. INVERT ELEVATION @ 736.00. BACKFILL WITH COMPACTED GRANULAR MATERIAL PER CMSC ITEM 912.
7. LIMITS OF JACKING AND RECEIVING PITS 10'X25'.

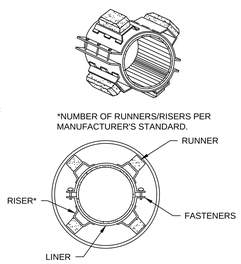


SIZE UTILITY MAIN	MAX. BELL O.D.	MIN. SMOOTH STEEL CASING PIPE REQ'D.
4"	8.19"	14"
6"	10.19"	16"
8"	13.19"	18"
12"	17.25"	24"
16"	22.38"	30"
20"	27.25"	36"
24"	31.56"	42"
30"	38.75"	48"
36"	45.00"	54"
42"	51.25"	60"
48"	58.00"	66"
54"	65.63"	72"
60"	72.38"	84"

1 NOTE:
1. CASING PIPE SIZE BASED ON TYPICAL BELL O.D. OF D.I. RESTRAINED JOINT PIPE MANUFACTURED AND NOMINAL CONCRETE PIPE SIZE. STEEL CASING PIPE SHALL MEET ASTM SPECIFICATIONS 35,000 PSI YIELD STRENGTH AND 60,000 PSI TENSILE STRENGTH, OR APPROVED EQUAL. COAT THE CASING PIPE PER THE MANUFACTURER'S RECOMMENDATIONS. CASING PIPE SHALL HAVE A MINIMUM WALL THICKNESS OF 0.375 INCHES UNLESS OTHERWISE APPROVED BY THE ENGINEER.

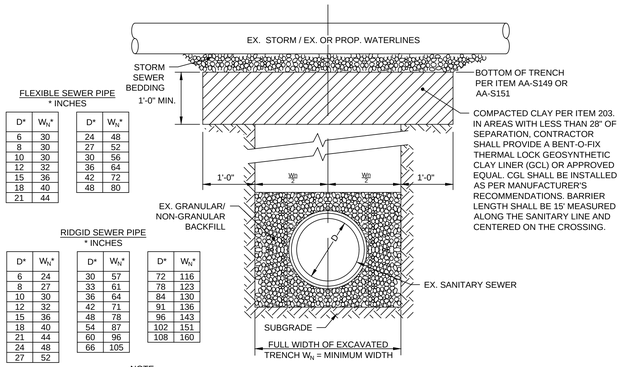


END SEAL



CENTERED AND RESTRAINED CASING SPACER

A DETAIL
CASING PIPE, SPACERS AND END SEALS N.T.S.



FLEXIBLE SEWER PIPE
* INCHES

D*	W_{bc}*	D*	W_{bc}*
6	30	24	48
8	30	27	52
10	30	30	56
12	32	36	64
15	36	42	72
18	40	48	80
21	44		

RIDGID SEWER PIPE
* INCHES

D*	W_{bc}*	D*	W_{bc}*	D*	W_{bc}*
6	24	30	57	72	116
8	27	33	61	78	123
10	30	36	64	84	130
12	32	42	71	91	136
15	36	48	78	96	143
18	40	54	87	102	151
21	44	60	96	108	160
24	48	66	105		
27	52				

NOTE:
1. THIS DETAIL IS REQUIRED AT SANITARY SEWER AND STORM SEWER CROSSINGS AND SANITARY SERVICE LATERALS AND STORM SEWER CROSSINGS. THIS DETAIL IS NOT BEING USED TO MITIGATE CROSSINGS WHERE THERE IS LESS THAN 18" OF VERTICAL DISTANCE FROM OUTSIDE TO OUTSIDE OF PIPES. IN SUCH CASES, PROVIDE WATER TIGHT STORM SEWERS 10' ON EACH SIDE OF EXISTING SANITARY SEWER CROSSING, AS SHOWN ON PLANS.

B DETAIL
ANTI INFILTRATION & INFLOW BARRIER N.T.S.

REV.	DATE	DESCRIPTION

REVISION/UPLOAD DATE

CC19878
COBBLESTONE MANOR
1050 LAMPLIGHTER DRIVE
GROVE CITY, OH 43213
PID: 040012669

PLAN & PROFILE

KORDA
Korda/Nemeth Engineering, Inc - Consulting Engineers
1650 Watermark Drive, Columbus, Ohio 43215-7027
TEL 614-487-1650 - FAX 614-487-5993 - WEB www.korda.com

DRAWN BY: KGW CHECKED BY: EJW

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KNE JOB # 2020-0427

DRAWING NUMBER:
3/3

#	DATE	CHANGE DESCRIPTION

COLUMBUS METROPOLITAN HOUSING AUTHORITY
COMMUNITY. COMMITMENT. COLLABORATION.

COBBLESTONE MANOR
1050 LAMPLIGHTER DRIVE
GROVE CITY, OH 43123
FOR
CMHA

MOODY•NOLAN
300 SPRUCE STREET
SUITE 300
COLUMBUS, OHIO 43215

PHONE: (614) 461-4664
FAX: (614) 280-8881

DRAWING TITLE:
PLAN AND PROFILE

KORDA/NEMETH ENGINEERING, INC.
1650 WATERMARK DRIVE
COLUMBUS, OHIO 43215
DESIGNED BY KGW
DRAWN BY KGW
CHECKED BY EJW
JOB FILE 2020-0427

STATE OF OHIO
ERIC J. WALSH
E-80715
REGISTERED
PROFESSIONAL ENGINEER

06/08/2023
DRAWN BY: KGW CHECKED BY: EJW
#22172.01
C3.6
CC-19878

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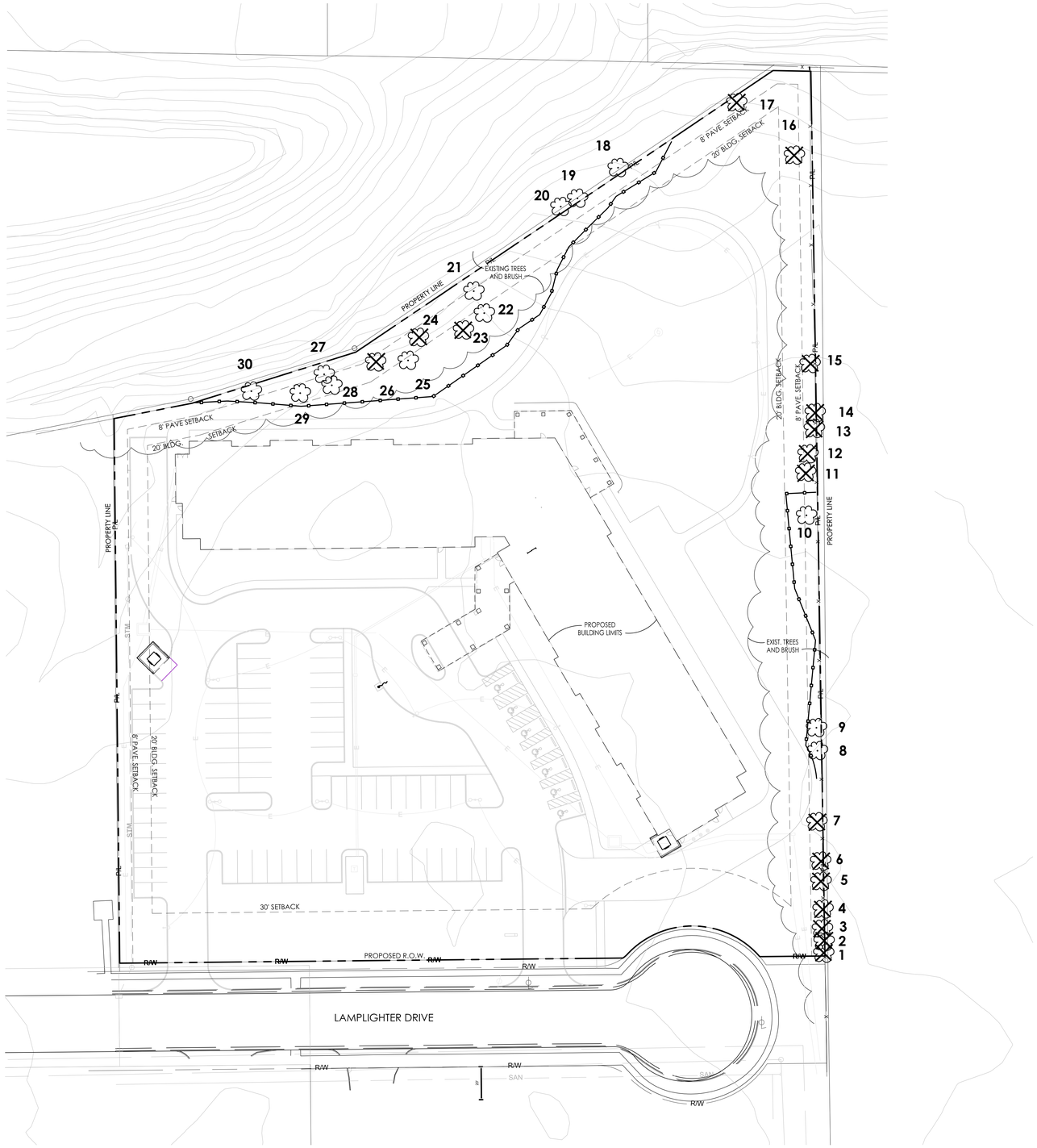
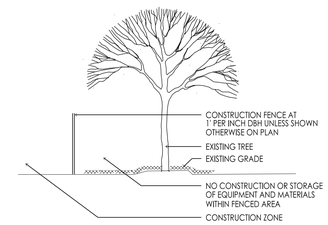
INDIANA BAT HABITAT PROTECTION NOTE:
For any trees designated for removal that may be potential bat habitat areas, removal shall only occur from October 1st to March 31st. If the contractor prefers to remove the trees outside of this time frame, a survey must be conducted according to the United States Fish and Wildlife Services and by a biologist with all required federal and/or state collection permits to determine the presence of any Indiana Bats. The data collected during the survey must be provided to the Grove City Service Department at (614) 277-1100 according to the conditions of the permit and any regulatory authority requirements. If no bats are present the tree shall be removed within 24 hours of the survey being conducted. If bats are found to be present, then tree shall remain and a protection and enhancement plan will be required.

CONDITION CATEGORIES
DEAD
POOR
FAIR
GOOD

TREE INVENTORY SCHEDULE

TAG #	COMMON NAME	DBH	CONDITION	REMOVED	PRESERVED
1	HACKBERRY	12"	POOR	X	
2	HACKBERRY	14"	POOR	X	
3	CHERRY	12"	POOR	X	
4	CHERRY	18"	POOR	X	
5	HACKBERRY	8"	FAIR	X	
6	HACKBERRY	18"	FAIR	X	
7	ASH	8"	DEAD	X	
8	CHERRY	10"	FAIR		X
9	HACKBERRY	12"	FAIR		X
10	CHERRY	8"	FAIR		X
11	ASH	10"	DEAD	X	
12	ASH	10"	POOR	X	
13	HACKBERRY	12"	POOR	X	
14	MULBERRY	12"	POOR	X	
15	LINDEN	26"	POOR	X	
16	CHERRY	12"	POOR	X	
17	CHERRY	12"	POOR	X	
18	HONEYLOCUST	10"	FAIR		X
19	LINDEN	10"	FAIR		X
20	LINDEN	8"	FAIR		X
21	HACKBERRY	12"	FAIR		X
22	LINDEN	6"	FAIR		X
23	LINDEN	10"	DEAD	X	
24	LINDEN	14"	POOR	X	
25	HACKBERRY	8"	FAIR		X
26	LINDEN	12"	POOR	X	
27	LINDEN	10"	FAIR		X
28	FLOWERING PEAR	6"	FAIR		X
29	HONEYLOCUST	8"	FAIR		X
30	LINDEN	16"	FAIR		X





1 TREE PROTECTION FENCE
NTS

0' 15' 30' 60'
NORTH

GENERAL NOTES

1. ALL TREES IN THE CONSTRUCTION AREA NOT SPECIFICALLY DESIGNATED FOR REMOVAL SHALL BE PRESERVED. TREES TO BE PRESERVED SHALL BE PROTECTED WITH HIGH VISIBILITY TREE PROTECTION FENCE AS SHOWN ON PLAN.
2. ONLY TREES 6" CAL. (DBH) AND LARGER WITHIN DEVELOPMENT LIMITS NOTED ON THESE PLANS.
3. PROTECTION FENCING OR BARRIER SHALL REMAIN THROUGHOUT CONSTRUCTION AND ANY SUBSEQUENT GRADING OR EXCAVATION UNLESS OTHERWISE APPROVED ON A CLEARING AND GRADING PLAN. IN NO CASE SHALL MATERIALS, DEBRIS, FILL, VEHICLES OR EQUIPMENT BE STORED WITHIN THIS ENCLOSURE.

LEGEND

EXISTING TREES TO BE PRESERVED

EXISTING TREES TO BE REMOVED

TREE PROTECTION FENCE

TREE TO BE PROTECTED

X = 1' PER CALIPER INCH (DBH) OR AS SHOWN ON PLAN.

NOTE: FENCING SHOWN ON PLAN IS BASED ON GRADING LIMITS.

EDGE
PLANNING • LANDSCAPE ARCHITECTURE • URBAN DESIGN
330 WEST SPRING STREET, SUITE 350
COLUMBUS, OHIO 43215
614-486-3343

#	DATE	CHANGE DESCRIPTION

COLUMBUS METROPOLITAN HOUSING AUTHORITY
COMPASSION. COMMITMENT. COLLABORATION.

COBBLESTONE MANOR
1050 LAMPLIGHTER DRIVE
GROVE CITY, OH 43123
FOR
CMHA

MOODY•NOLAN
300 SPRUCE STREET
SUITE 300
COLUMBUS, OHIO 43215
PHONE: (614) 461-4664
FAX: (614) 280-8881

DRAWING TITLE:
TREE INVENTORY PLAN

STATE OF OHIO
BASILIO & PORRECA
LANDSCAPE ARCHITECT

06/08/2023
DRAWN BY: BDF
CHECKED BY: BDF
#22172.01

L0.00

PERMIT & BID SET

PRINT DATE: 3/1/2023 10:05:19 AM
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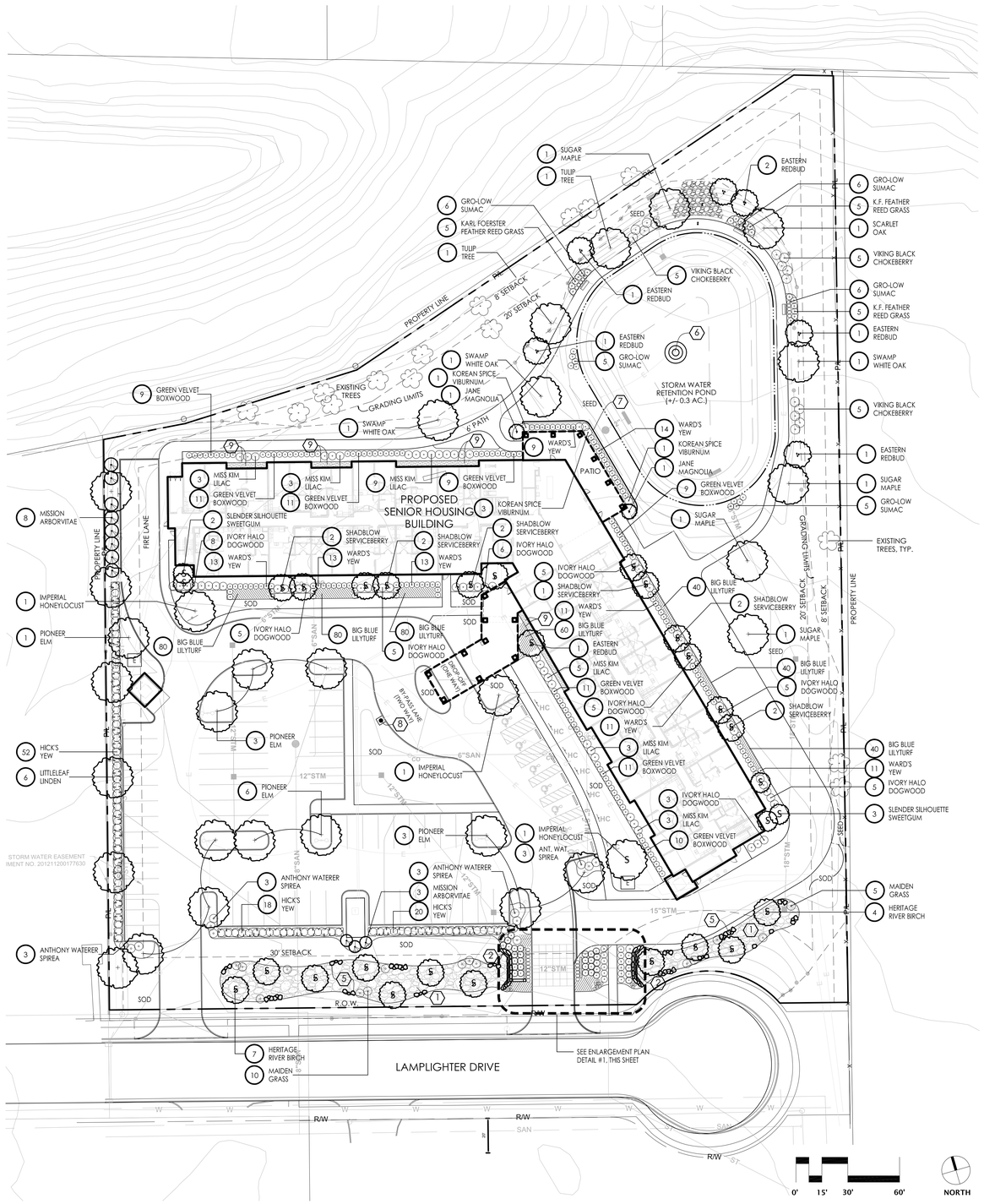
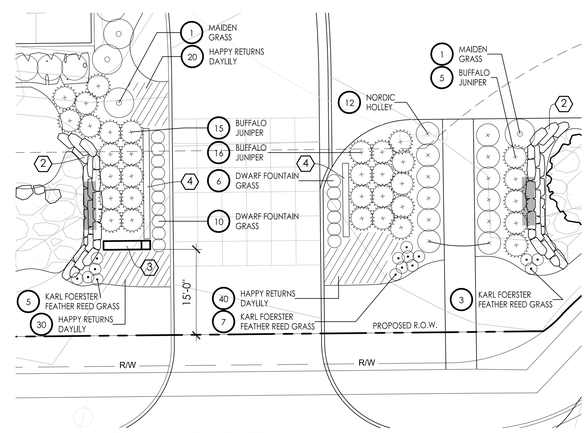


LANDSCAPE COMPLIANCE SUMMARY

REQUIRED PER PUD-R ZONING TEXT	PROVIDED	KEY
M. Landscaping:		
1. Off-Street Parking and Vehicular Use Area Screening:		
a. Lamplighter Drive: Off-street parking and vehicular use areas along Lamplighter Drive shall be screened from the public street view with a continuous three (3) feet height evergreen hedge.	a. Evergreen hedge (Hick's Yew) along parking lot fronting Lamplighter Drive.	
b. Side Yard (West Lot Line): The side yard shall be landscaped along all off-street parking and vehicular use areas to include a continuous evergreen screen, three (3) feet height minimum, and deciduous tree plantings at a rate of one (1) tree per fifty-five (55) linear feet of vehicular use area. Evergreen shrubs shall be a minimum thirty-six (36) inches in height at installation.	b. Continuous evergreen hedge (Mission Arborvitae) along fire lane plus (5) deciduous trees @ 1 per 55 lf (330' / 55 = 6 trees)	
c. Side Yard (East Lot Line): Landscaping in this area shall not be required. However, efforts shall be made to retain the existing vegetation and trees.	c. Existing trees to be preserved	
d. Rear Yard (North Lot Line): Landscaping in this area shall not be required. However, efforts shall be made to retain the existing vegetation and trees, noting the Stream Corridor Protection Zone.	d. Existing trees to be preserved	
2. Interior Vehicular Use Areas		
a. Within the vehicular use areas, each peninsula, island, aisle end island or planting area is to contain at least one (1), two (2) inch caliper tree. Tree plantings and light fixtures locations shall be coordinated to minimize conflicts.	a. Decidous tree provided at each peninsula, island, aisle end island as indicated on plan.	
4. Site Trees		
a. One (1) site tree shall be provided for every three (3) dwelling units.	a. 82 units / 3 = 27.333 or 28 trees required 30 trees provided	S
b. Trees may be small, medium or large species, and may be single or multi-stemmed trees. Single-stem trees shall be a minimum two (2) inches in caliper at install. Multi-stem trees shall be a minimum six (6) feet in height at install.		
c. Trees shall be located around the primary structure on all sides.		
3. Foundation Plantings		
a. Foundation plantings shall be required for all facades of the building not otherwise occupied by entrances, sidewalks, patios, porches, parking or loading areas or other similar areas.		
b. Foundation plantings shall be provided at a rate of at least one (1) shrub per ten (10) linear feet of façade, and other living materials, rather than bark, mulch, gravel or other non-living material. Shrubs planted as foundation plantings shall be a minimum twenty-four (24) inches in height at installation.	b. 1,010 LF of facade / 10 = 101 shrubs required 251 shrubs provided	
c. Foundation plantings shall be located within a planting bed extending at least forty-two (42) inches from the foundation.		
6. Retention Area Planting		
a. Retention basins shall be landscaped and shall meet the landscape design requirements for Type 2 basins as outlined in the Stormwater Design Manual.	a. Type 2 Basin Landscape Required 1 Shrub per 12 LF (436/12 = 36.3 or 37) 0 Perennials 1 Deciduous Shade Tree per 100 LF (436/100=4.6 or 5) 1 Ornamental Tree per 75 LF (436/75=5.8 or 6) 0 Observation Areas (less than 1 Acre) 1 Fountain/ Aerator (<0.75 Acre)	Landscape Provided 43 Shrubs 0 Perennials 8 Deciduous Shade Trees 6 Ornamental Trees 3 Observation Areas 1 Aerating Fountain
b. In addition to options outlined in the Stormwater Design Manual, jute matting is permitted as an option for basic shoreline protection.		
7. Grass and Groundcover		
a. All areas of the Development not covered by landscaping shall be planted per Code (Section 1136.11).		
b. Sod shall be installed in all disturbed areas along public roadways (Lamplighter Drive).		



1 ENLARGEMENT PLAN

SCALE: 1" = 10'

GENERAL LANDSCAPE NOTES:

1. EXAMINE FINISH SURFACE, GRADES, TOPSOIL QUALITY AND DEPTH. DO NOT START ANY WORK UNTIL UNSATISFACTORY CONDITIONS HAVE BEEN CORRECTED. VERIFY LIMITS OF WORK BEFORE STARTING.
2. CONTRACTOR IS RESPONSIBLE FOR COST OF REPAIRS TO EXISTING CONDITIONS WHEN DAMAGED BY CONTRACTOR. REPAIR DAMAGES TO THE SATISFACTION OF GROVE CITY.
3. ALL PLANT MASSES TO BE CONTAINED WITHIN 3" DEEP HARDWOOD BARK MULCH BED.
4. CONTRACTOR SHALL MAINTAIN POSITIVE DRAINAGE IN ALL LAWN AREAS.
5. FINE GRADE LAWN AREAS TO PROVIDE A SMOOTH AND CONTINUAL GRADE FREE OF IRREGULARITIES OR DEPRESSIONS.
6. CONTRACTOR SHALL SEED OR SOD ALL AREAS DISTURBED DURING CONSTRUCTION. SEE PLAN. SEED TO BE COVERED WITH HYDROMULCH OR PENN MULCH. STRAW MULCH IS PROHIBITED.
7. ALL PLANTS SHALL MEET OR EXCEED STANDARDS SET IN THE U.S.A. STANDARD FOR NURSERY STOCK.
8. ALL PLANTING OPERATIONS SHALL ADHERE TO THE AMERICAN ASSOCIATION OF NURSERYMEN STANDARDS.
9. ALL PARKING LOT ISLANDS TO BE SODDED.

CONSTRUCTION NOTES:

1. DRAINAGE DITCH TO APPEAR AS NATURALIZED DRY CREEK BED. INSTALL 4"-8" DIA. TAN & GRAY STONE COBBLES OVER WEED FABRIC - SEE CIVIL ENG. DWGS.
2. DRY STACKED STONE RETAINING WALL. 2'-3' HGT. WALL TO BE INCORPORATED WITH AND TO CONCEAL HEADWALLS.
3. PROJECT SIGNAGE - SINGLE-SIDED MONUMENT SIGN. SEE DETAIL #4/ L2.01.
4. DECORATIVE WOOD GUARDRAIL TO SIMULATE BRIDGE CROSSING - SEE DETAIL #5/L2.01.
5. BOULDER OUTCROPPING, TYP.
6. AERATING FOUNTAIN
   MODEL: PHOENIX 60Hz, 1/2HP FRACTIONAL SERIES
   MANUFACTURER: OTTERBINE BAREBO, INC.,
   WWW.OTTERBINE.COM
   POWER: 230v, 1 PHASE, 3.2 AMP.,
   PUMP RATE: 195 GPM
   AERATING FOUNTAIN BY OTTERBINE BAREBO, INC. DISTRIBUTED BY: WOLF CREEK COMPANY, 614-985-3070, OR APPROVED EQUAL.
7. SEGMENTAL BLOCK RETAINING WALL - SEE DETAIL #6/L2.01. FACE OF WALL TO BE 6'-0" FROM EDGE OF PATIO SLAB. ENDS OF WALL TO BE FLUSH WITH ADJACENT GRADE.
8. 30' EXPOSED HGT. FLAGPOLE - SEE SPECIFICATIONS. ALIGN FLAGPOLE WITH CENTER OF CANOPY WITHIN 4'x4' CONCRETE PAD. COORDINATE WITH LIGHTING.
9. DECORATIVE GRAVEL 1"-3" ROUNDS AT 4" (MIN.) DEPTH OVER WEED FABRIC. COLOR TO COMPLIMENT BUILDING. SUBMIT SAMPLE FOR REVIEW PRIOR TO INSTALLATION. INSTALL 3/16" THICK, 4" DEPTH STEEL EDGING ALIGNED WITH BUILDING FACE. MODEL: BORDER GUARD BY BORDER CONCEPTS, OR APPROVED EQUAL. COLOR: BLACK

EDGE
PLANNING • LANDSCAPE ARCHITECTURE • URBAN DESIGN
330 WEST SPRING STREET, SUITE 350
COLUMBUS, OHIO 43215
614-486-3343

#	DATE	CHANGE DESCRIPTION

COLUMBUS METROPOLITAN HOUSING AUTHORITY
COMMUNITY COMMITMENT COLLABORATION

COBBLESTONE MANOR
1050 LAMPLIGHTER DRIVE
GROVE CITY, OH 43123
FOR
CMHA

MOODY•NOLAN
300 SPRUCE STREET
SUITE 300
COLUMBUS, OHIO 43215
PHONE: (614) 461-4664
FAX: (614) 280-8881

DRAWING TITLE:

LANDSCAPE PLAN

STATE OF OHIO BASILIO F. FURGERI 7999 REGISTERED LANDSCAPE ARCHITECT

06/08/2023

DRAWN BY: BDF | CHECKED BY: BDF

#22172.01

L1.01

PERMIT & BID SET

PRINT DATE: 3/1/2023 10:05:19 AM
FILE INFO: Autodesk Docs://22172.01 CMHA Seasons Grove/22172.01 CMHA Seasons Grove_ARCH.rvt

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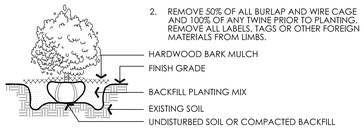
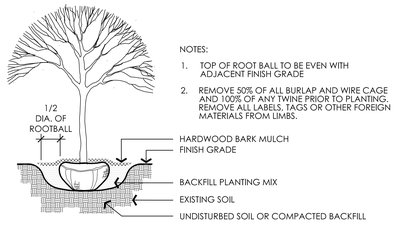
NOTES:
1. TOP OF ROOT BALL TO BE EVEN WITH ADJACENT FINISH GRADE.
2. REMOVE 50% OF ALL BURLAP AND WIRE CAGE AND 100% OF ANY TWINE PRIOR TO PLANTING. REMOVE ALL LABELS, TAGS OR OTHER FOREIGN MATERIALS FROM LIMBS.



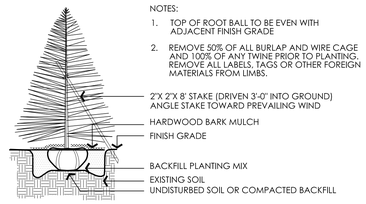
1 SHRUB PLANTING DETAIL
NTS

NOTES:
1. TOP OF ROOT BALL TO BE EVEN WITH ADJACENT FINISH GRADE
2. REMOVE 50% OF ALL BURLAP AND WIRE CAGE AND 100% OF ANY TWINE PRIOR TO PLANTING. REMOVE ALL LABELS, TAGS OR OTHER FOREIGN MATERIALS FROM LIMBS.



2 DECID. TREE PLANTING DETAIL
NTS

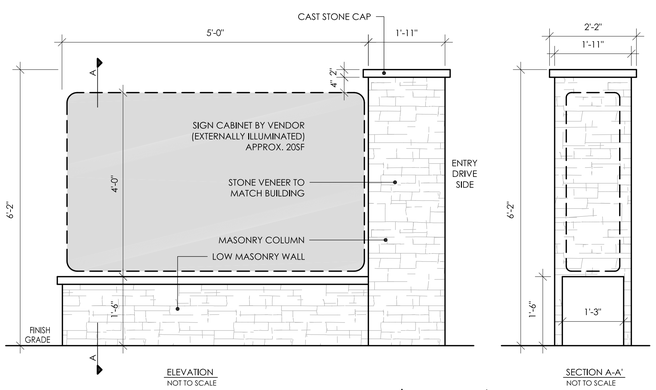
NOTES:
1. TOP OF ROOT BALL TO BE EVEN WITH ADJACENT FINISH GRADE
2. REMOVE 50% OF ALL BURLAP AND WIRE CAGE AND 100% OF ANY TWINE PRIOR TO PLANTING. REMOVE ALL LABELS, TAGS OR OTHER FOREIGN MATERIALS FROM LIMBS.



3 EVERGREEN TREE PLANTING DETAIL
NTS

PLANT MATERIALS LIST NOTE: CONTRACTOR RESPONSIBLE FOR PLANT QUANTITIES SHOWN ON PLAN.

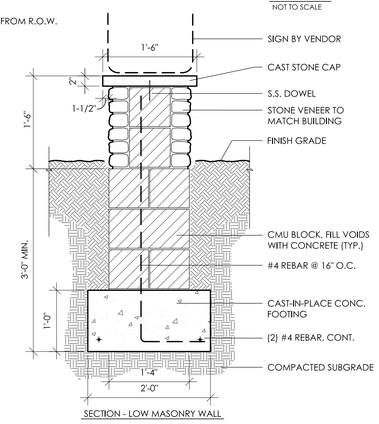
QTY.	COMMON NAME	BOTANICAL NAME	SIZE	ROOT	REMARKS
	SHADE TREES				
4	SUGAR MAPLE	Acer saccharum	2 1/2" Cal.	B&B	
11	HERITAGE RIVER BIRCH	Betula nigra 'Heritage'	7'-8' Hgt.	B&B	Multi-Stem
3	IMPERIAL HONEYLOCUST	Gleditsia triacanthos var. inermis 'Imperial'	2" Cal.	B&B	
5	SLENDER SILHOUETTE SWEETGUM	Liquidamber styraciflua	2 1/2" Cal.	B&B	
2	TULIP TREE	Liriodendron tulipifera	2 1/2" Cal.	B&B	
1	SCARLET OAK	Quercus coccinea	2 1/2" Cal.	B&B	
3	SWAMP WHITE OAK	Quercus bicolor	2 1/2" Cal.	B&B	
6	LITTLELEAF LINDEN	Tilia cordata	2" Cal.	B&B	Matched form
13	PIONEER ELM	Ulmus x hollandica 'Pioneer'	2 " Cal.	B&B	
	ORNAMENTAL TREES				
11	SHADBLOW SERVICEBERRY	Amelanchier canadensis	6' - 7' Hgt.	B&B	Multi-Stem
7	EASTERN REDBUD	Cercis canadensis	2" Cal.	B&B	
2	JANE MAGNOLIA	Magnolia 'Jane'	5'-6' Hgt.	B&B	Multi-Stem
	SHRUBS				
81	GREEN VELVET BOXWOOD	Buxus 'Green Velvet'	24" Hgt.	Cont.	
47	IVORY HALO DOGWOOD	Cornus alba 'Bailhalo'	24"-30" Hgt.	Cont.	
36	BUFFALO JUNIPER	Juniperus sabina 'Buffalo'	24" Spr.	Cont.	
26	MISS KIM LILAC	Syringa pubescens subsp. patula 'Miss Kim'	24"-30" Hgt.	Cont.	
95	WARD'S YEW	Taxus × media 'Wardii'	24" Hgt.	Cont.	
90	HICK'S YEW	Taxus x media 'Hicksii'	36" Hgt.	B&B	
11	MISSION ARBORVITAE	Thuja occidentalis 'Techny'	6' Hgt.	B&B	
6	KOREAN SPICE VIBURNUM	Viburnum carlesii	30"-36" Hgt.	B&B	
28	GRO-LOW SUMAC	Rhus aromatica 'Gro-Low'	18" Spr.	Cont.	
12	ANTHONY WATERER SPIREA	Spiraea japonica 'Anthony Waterer'	24" Hgt.	Cont.	
15	VIKING BLACK CHOKEBERRY	Aronia melanocarpa 'Viking'	30"-36" Hgt.	B&B	
12	NORDIC HOLLY	Ilex glabra 'Chamzin'	24" Hgt.	Cont.	
	PERENNIALS / GROUNDCOVER				
30	KARL FOERSTER FEATHER REED GRASS	Calamagrostis x acutiflora 'Karl Foerster'	1 Gal.	Cont.	
90	HAPPY RETURNS DAYLILY	Hemerocallis 'Happy Returns'	1 Gal.	Cont.	
420	BIG BLUE LILYTURF	Liriope muscari 'Big Blue'	1 Gal.	Cont.	
17	MAIDEN GRASS	Miscanthus sinensis 'Gracillimus'	2 Gal.	Cont.	
16	DWARF FOUNTAIN GRASS	Pennisetum alopecuroides 'Hameln'	1 Gal.	Cont.	



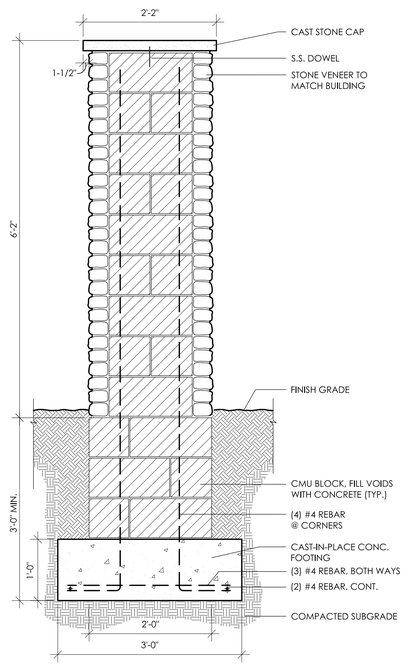
ELEVATION
NOT TO SCALE

SECTION A-A'
NOT TO SCALE

NOTE: SOUTH ELEVATION SHOWN LOOKING FROM R.O.W.

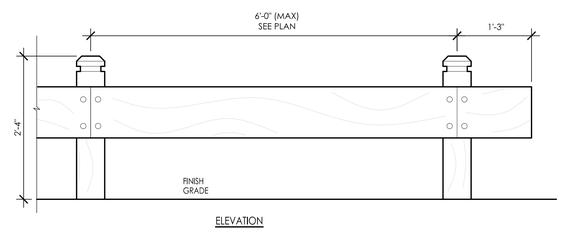


SECTION - LOW MASONRY WALL

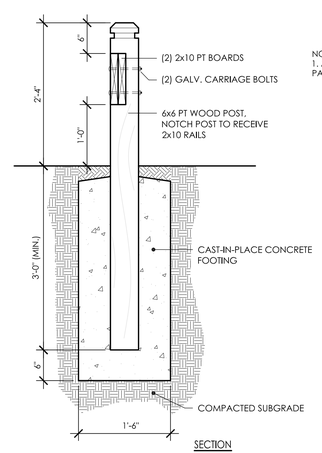


SECTION - MASONRY COLUMN

4 MONUMENT SIGN
SCALE: 1" = 1'-0"



ELEVATION

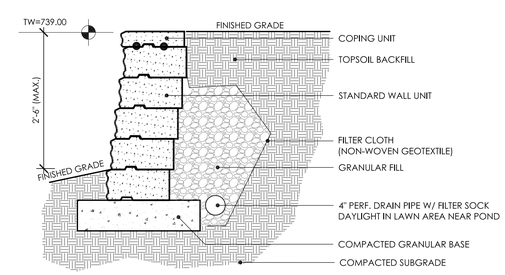


SECTION

NOTE:
1. ALL EXPOSED WOOD SURFACES TO BE PAINTED OR STAINED TO MATCH BUILDING.

5 DECORATIVE WOOD GUARDRAIL TYP. OF 2
NTS

NOTE:
SEGMENTAL BLOCK WALL BY: UNILOCK, OR APPROVED EQUAL
STYLE: PISA
COLOR: GRANITE
SUBMIT SHOP DRAWINGS FOR REVIEW PRIOR TO INSTALLATION.



6 SEGMENTAL BLOCK RETAINING WALL
NTS

EDGE
PLANNING • LANDSCAPE ARCHITECTURE • URBAN DESIGN
330 WEST SPRING STREET, SUITE 350
COLUMBUS, OHIO 43215
614-486-3343

#	DATE	CHANGE DESCRIPTION

COLUMBUS METROPOLITAN HOUSING AUTHORITY
COMMUNITY. CONVENIENCE. COLLABORATION.

COBBLESTONE MANOR
1050 LAMPLIGHTER DRIVE
GROVE CITY, OH 43123
FOR
CMHA

MOODY•NOLAN
300 SPRUCE STREET
SUITE 300
COLUMBUS, OHIO 43215
PHONE: (614) 461-4664
FAX: (614) 280-8881

DRAWING TITLE:

PLANTING DETAILS

STATE OF OHIO BASILIO BORGHI 1999 REGISTERED LANDSCAPE ARCHITECT

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