# SITE PLAN LAYOUT & COVER SHEET

**Site Plan Review**
**03-14-2022**
**City of Kalamazoo**

## REGULATORY SIGN LEGEND:

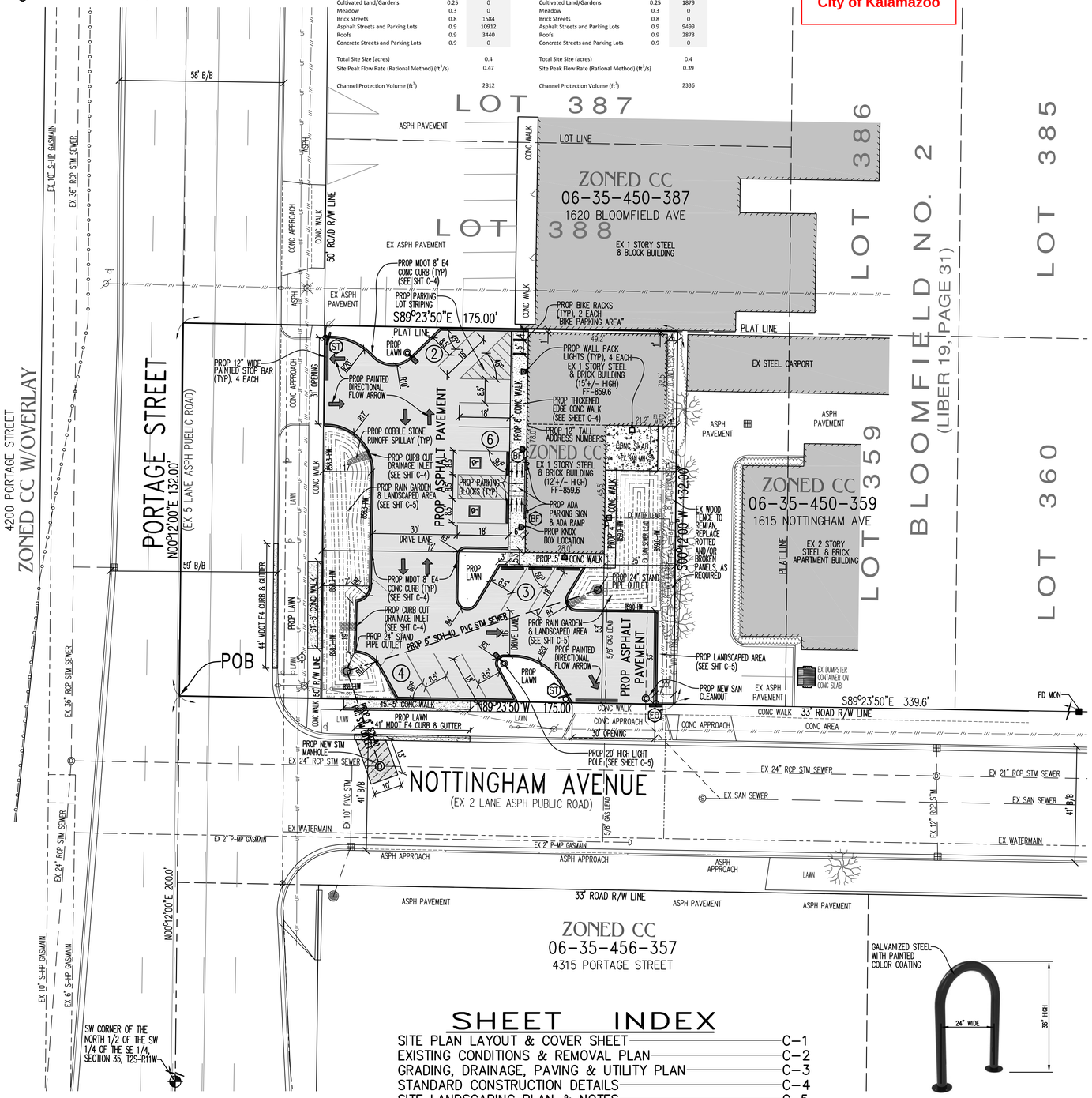
- (ST) STOP SIGN (18"x18")
- (EO) EXIT ONLY (12"x18")
- (BF) BARRIER FREE PARKING (12"x18")

**PRE-DEVELOPMENT CONDITIONS**
Simplified Table of Rational Method Runoff Coefficients ( C )

| Surface Cover | C | Area of Surface Cover on Site (ft²) |
|---|---|---|
| Lawns | 0.1 | 564 |
| Forest | 0.15 | 0 |
| Cultivated Land/Gardens | 0.25 | 0 |
| Meadow | 0.3 | 0 |
| Brick Streets | 0.8 | 1584 |
| Asphalt Streets and Parking Lots | 0.9 | 10912 |
| Roofs | 0.9 | 3440 |
| Concrete Streets and Parking Lots | 0.9 | 0 |
| Total Site Size (acres) | | 0.4 |
| Site Peak Flow Rate (Rational Method) (ft³/s) | | 0.47 |
| Channel Protection Volume (ft³) | | 2812 |

**POST-DEVELOPMENT CONDITIONS**
Simplified Table of Rational Method Runoff Coefficients ( C )

| Surface Cover | C | Area of Surface Cover on Site (ft²) |
|---|---|---|
| Lawns | 0.1 | 2249 |
| Forest | 0.15 | 0 |
| Cultivated Land/Gardens | 0.25 | 1879 |
| Meadow | 0.3 | 0 |
| Brick Streets | 0.8 | 0 |
| Asphalt Streets and Parking Lots | 0.9 | 9499 |
| Roofs | 0.9 | 2873 |
| Concrete Streets and Parking Lots | 0.9 | 0 |
| Total Site Size (acres) | | 0.4 |
| Site Peak Flow Rate (Rational Method) (ft³/s) | | 0.39 |
| Channel Protection Volume (ft³) | | 2336 |




## SHEET INDEX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BIKE RACK DETAIL:

## PROJECT DESCRIPTION:

SITE WORK RELATED TO THE MARIHUANA PROVISIONING FACILITY INCLUDES:
THE WORK ON THE SUBJECT SITE INCLUDES THE REMODELING 2,873 SQUARE FEET OF A EXISTING BUILDING, NEW CONCRETE SIDEWALK & RAMP, NEW ASPHALT PAVEMENT, MINOR PAVEMENT REPAIRS TO THE EXISTING PARKING LOT PAVEMENT AND SEALED COATED. ALL PROPOSED CONSTRUCTION SHALL MEET AND COMPLY WITH CITY OF CITY OF KALAMAZOO STANDARDS, SPECIFICATIONS, AND ORDINANCES, AS REQUIRED.

## PROPERTY DESCRIPTION

PARCEL NUMBER 06-35-450-001, 4305 PORTAGE STREET
LAND SITUATED IN THE CITY OF KALAMAZOO, COUNTY OF KALAMAZOO, STATE OF MICHIGAN TO WIT:
BEGINNING IN THE NORTH AND SOUTH 1/4 LINE OF SECTION 35, TOWN 2 SOUTH, RANGE 11 WEST AT A POINT 200 FEET NORTH OF THE SOUTHWEST CORNER OF THE NORTH 1/2 OF THE SOUTHWEST 1/4 OF THE SOUTHEAST 1/4 OF SAID SECTION RUNNING NORTH ALONG THE NORTH AND SOUTH 1/4 LINE OF SAID SECTION 132 FEET; THENCE EAST PARALLEL TO SOUTH LINE OF THE NORTH 1/2 OF THE SOUTHWEST 1/4 OF SAID THE SOUTHEAST 1/4 OF SAID SECTION 175 FEET; THENCE SOUTH PARALLEL TO SAID NORTH AND SOUTH 1/4 LINE 132 FEET; THENCE WEST 175 FEET TO THE PLACE OF BEGINNING

NORTH

GRAPHIC SCALE
20 0 10 20
( IN FEET )
1 inch = 20 ft.

## ZONING INFORMATION:

ACCORDING TO THE CURRENT CITY OF KALAMAZOO ZONING ORDINANCE THIS PROPERTY IS CURRENTLY ZONED CC (COMMUNITY COMMERCIAL DISTRICT), AND IS SUBJECT TO THE FOLLOWING CONDITIONS:

1) MINIMUM LOT SIZE = 5,000 SFT
2) MINIMUM LOT WIDTH = NONE SPECIFIED
3) FRONT SETBACK = NONE SPECIFIED
4) SIDE SETBACK = NONE SPECIFIED
5) REAR SETBACK = NONE SPECIFIED
6) MAXIMUM BUILDING HEIGHT = 65 FEET
7) MAXIMUM TOTAL IMPERVIOUS = 80% (INCLUDES BUILDINGS)

## FLOOD PLAIN NOTE:

THIS PROPERTY LIES IN ZONE "X" (AREAS OUTSIDE THE 100 YEAR ANNUAL CHANCE FLOODPLAIN) OF THE FLOOD INSURANCE RATE MAP COMMUNITY PANEL NO. 26077C0310D WHICH BEARS AN EFFECTIVE DATE OF FEBRUARY 17, 2010 AND IS NOT IN A SPECIAL FLOOD HAZARD AREA.

## WETLAND NOTE:

ACCORDING TO THE FINAL WETLAND INVENTORY MAPS OF MICHIGAN, THERE ARE NO WETLAND AREAS ON THIS PROPERTY.

## SITE DATA:

1) SITE ZONING = CC (COMMUNITY COMMERCIAL DISTRICT)
2) ADJACENT ZONING = CC (ALL ADJACENT)
3) TOTAL GROSS OVERALL AREA = 23,100 SFT or 0.53 ACRES
   PARCEL AREA (EXCLUDING ROAD RIGHT-OF-WAY) = 16,500 SFT
4) TOTAL GROSS BUILDING AREA:
   EXISTING TOTAL FLOOR AREA = 2,873 SFT
5) MAXIMUM BUILDING HEIGHT ALLOWED = 65'-0"
   EXISTING BUILDING HEIGHT = 1 STORY/20'-0"+/-
6) MAXIMUM BUILDING LOT COVERAGE ALLOWED = NONE SPECIFIED
   EXISITNG TOTAL SITE COVERAGE = 2,873/16,500 = 17%
7) MAXIMUM IMPERVIOUS COVERAGE ALLOWED = 80%
   EXISITNG SITE IMPERVIOUS COVERAGE = 15,936/16,500 = 96.6%
   PROPOSED SITE IMPERVIOUS COVERAGE = 12,343/16,500 = 74.8%
8) PARKING SPACE & LANE SIZE REQUIREMENTS
   a) REGULAR PARKING SPACE = 8.5' x 18'
   b) BARRIER FREE SPACE = 9' x 18' W/8' AISLE (VAN ACCESSIBLE)
   c) DRIVE LANE WIDTH (ONE WAY) = 12' (MIN)
   d) DRIVE LANE WIDTH (TWO WAY) = 20' (MIN)
9) PARKING REQUIRED (RETAIL/MERCANTILE):
   1 SPACE PER 330 SFT OF GROSS FLOOR AREA, =
   2,873/330 = 8.7 SPACES or 9 SPACES
   TOTAL PARKING REQUIRED = 9 SPACES
10) SITE PARKING PROVIDED:
    TOTAL EXISTING PARKING SPACES = 15 SPACES
    (SEE SHEET C-2, EX CONDITIONS SURVEY)
    TOTAL PROPOSED PARKING SPACES = 15 SPACES
11) BARRIER FREE PARKING REQUIRED:
    BARRIER FREE PARKING REQUIRED = 1, PROVIDED = 2
12) LOADING SPACES REQUIRED = 0, PROVIDED = 0
13) EXISTING LAND USE = VACANT BUILDING/SITE
14) PROPOSED LAND USE = PROVISIONING CENTER
15) PROPOSED SITE ADDRESS = 4305 PORTAGE STREET

## STANDARD NOTES FOR SITE PLANS:

* **A. EXTENSION OF PUBLIC UTILITIES:** ALL PUBLIC SANITARY SEWER AND/OR WATERMAIN SHALL BE EXTENDED TO THE FURTHEST LIMITS OF THE PROPERTY, INCLUDING CORNER LOTS, WITH THE PIPE SIZE AND MATERIAL APPROVED BY CITY OF KALAMAZOO. THIS IS NECESSARY FOR PLAN APPROVAL. FOR WATER SERVICE OF 1" OR LESS OR A BUILDING ON A CORNER LOT, THE REQUIREMENTS TO EXTEND THE PUBLIC WATERMAIN AND/OR SANITARY SEWER ALONG BOTH PROPERTY LINES WILL BE REVIEWED.

* **B. WATERMAIN LOOPING:** ALL PUBLIC WATERMAINS SHALL BE LOOPED WHENEVER POSSIBLE. THE PIPE SIZE REQUIREMENTS SHALL BE APPROVED BY CITY OF KALAMAZOO.

**C. INDUSTRIAL PRETREATMENT PROGRAM (IPP):** THIS PERMIT IS REQUIRED FOR ALL COMMERCIAL (NON-RESIDENTIAL) AND INDUSTRIAL DISCHARGES. THE OWNER SHALL OBTAIN AN INDUSTRIAL PRETREATMENT DISCHARGE PERMIT PRIOR TO THE ISSUANCE OF A SEWER CONNECTION PERMIT. INDUSTRIAL DISCHARGE PERMITS ARE NONTRANSFERABLE.

**D. SOIL EROSION:** THE CONTRACTOR SHALL SUBMIT A DETAILED SOIL EROSION AND SEDIMENTATION CONTROL PLAN AND OBTAIN AN ACT 451 PART 91, SOIL EROSION AND SEDIMENTATION CONTROL PERMIT FROM THE CITY OF KALAMAZOO, SOIL EROSION & SEDIMENTATION CONTROL DEPARTMENT. THIS INCLUDES THE PAYMENT OF FEES AND THE PROVIDING OF NECESSARY BONDS. NO EARTH CHANGES OR EXCAVATION SHALL BE STARTED PRIOR TO THE ISSUANCE OF THIS PERMIT. THE DEVELOPER SHALL PROTECT ALL EXISTING AND PROPOSED STORM SEWER FACILITIES ON AND ADJACENT TO THE SITE DURING EXCAVATION AND CONSTRUCTION. ALL SEDIMENT SHALL BE CONTAINED ON SITE. ANY SILT IN COUNTY DRAINS, STORM SEWER, CULVERTS, ETC. AS A RESULT OF THIS PROJECT, SHALL BE REMOVED BY THE CONTRACTOR AT THEIR COST.

* **E. FLOOD PLAIN OR WETLAND CONSTRUCTION:** THE DEVELOPER SHALL APPLY TO THE MICHIGAN DEPARTMENT OF ENVIRONMENT, GREAT LAKES & ENERGY FOR A PERMIT FOR THE ALTERATION AND/OR OCCUPATION OF A FLOOD PLAIN OR FLOODWAY, AS REQUIRED UNDER PA 451.

* **F. NPDES STORM WATER DISCHARGE PERMIT:** THE OWNER OF THE PROPERTY SHALL OBTAIN A NPDES STORM WATER DISCHARGE PERMIT FOR CONSTRUCTION ACTIVITIES FROM EGLE AS REQUIRED UNDER PUBLIC ACT 451. THE NOTICE OF COVERAGE FORM SHALL BE SUBMITTED THROUGH CITY OF KALAMAZOO WITH THE SOIL EROSION CONTROL PERMIT APPLICATION. ALL EGLE FEES SHALL ACCOMPANY THE NOTICE OF COVERAGE. EVIDENCE OF THIS PERMIT MAY BE REQUIRED PRIOR TO PLAN APPROVAL BY MCDC. LESS THAN 5 ACRES WILL BE DISTURBED IN CONSTRUCTION OF THIS PROJECT, THEREFORE A NPDES STORM WATER DISCHARGE PERMIT WILL NOT BE REQUIRED.

* **G. CITY OF KALAMAZOO PERMIT TO CONSTRUCT A PUBLIC UTILITY:** AFTER THE APPROVAL OF THIS SITE PLAN, THE DEVELOPER SHALL CONSTRUCTION OF ALL PUBLIC SANITARY SEWER AND WATERMAIN IN ACCORDANCE WITH THE CITY STANDARDS AND SPECIFICATIONS. THE DEVELOPER MUST HAVE CITY OF KALAMAZOO APPROVAL AND A SEWER AND WATER PERMIT ISSUED, PRIOR TO BEGINNING CONSTRUCTION.

* **H. CITY OF KALAMAZOO ROAD RIGHT-OF-WAY PERMITS:** THE DEVELOPER SHALL OBTAIN A PERMIT FROM THE CITY OF KALAMAZOO TO PERFORM WORK WITHIN THE PUBLIC RIGHT-OF-WAY. ALL FEES FOR THE PERMIT, BONDS AND INSURANCE'S ARE THE RESPONSIBILITY OF THE CONTRACTOR.

**I. CITY OF KALAMAZOO SANITARY SEWER AND WATER PERMIT:** PRIOR TO THE ISSUANCE OF A BUILDING PERMIT BY THE LOCAL MUNICIPALITY, THE DEVELOPER SHALL BE REQUIRED TO OBTAIN A SANITARY SEWER AND/OR WATER TAP-IN PERMIT FROM THE CITY OF KALAMAZOO WATER & WASTEWATER UTILITIES DEPARTMENT.

* **J. STATE CONSTRUCTION PERMITS:** THE SANITARY SEWER AND WATERMAIN CONSTRUCTION PERMITS FROM THE MICHIGAN DEPARTMENT OF ENVIRONMENT, GREAT LAKES & ENERGY SHALL BE SUBMITTED TO THE EGLE AFTER APPROVAL FROM CITY OF KALAMAZOO, IF REQUIRED. CONSTRUCTION SHALL NOT BEGIN UNTIL THESE STATE PERMITS ARE ISSUED.

* NOT APPLICABLE TO THIS PROJECT

## SITE PLAN NOTES:

1. TOTAL PROPERTY AREA = 23,100 SFT or 0.53 ACRES, EXCLUDING ROAD R/W = 16,500 SFT or 0.378 ACRES

2. ALL DAILY RELATED MARIHUANA WASTE PRODUCTS WILL BE DISPOSED OF IN A LOCKED TRASH RECEPTICAL WITHIN THE SAFE ROOM, AND DISPOSED OF WEEKLY BY A LICENSED MARIHUANA DISPOSAL COMPANY. ALL OTHER WASTE/TRASH PRODUCTS WILL BE DISPOSED OFF INTO CURBSIDE TRASH CARTS ON A WEEKLY BASIS. NO DUMPSTER ENCLOSURE IS PROPOSED.

3. ALL EXISTING SANITARY SEWER LEAD AND WATER LEAD(S) MAY REQUIRE A CITY OF KALAMAZOO PERMIT FOR CONNECTION APPLICATION FROM THE ENGINEERING DEPARTMENT AND WATER DEPARTMENT, AND MAY ALSO REQUIRE A FINAL INSPECTION BY THE CITY OF KALAMAZOO WATER AND WASTEWATER DEPARTMENT PRIOR TO FINAL APPROVALS.

4. NO OUTDOOR LONG TERM STORAGE IS ALLOWED ON THE SITE, AND ON-SITE BURNING WILL NOT BE ALLOWED.

5. THE CONTRACTOR MUST KEEP ALL DRIVES CLEAN AND OPEN DURING CONSTRUCTION.

6. AFTER ALL PROPOSED CONSTRUCTION WORK IS COMPLETED, THE CONTRACTOR MUST CLEAN ALL DISTURBED PAVEMENT AREAS, SEED ALL DISTURBED LAWN AREAS, AND REMOVE TEMPORARY SOIL EROSION CONTROL ITEMS.

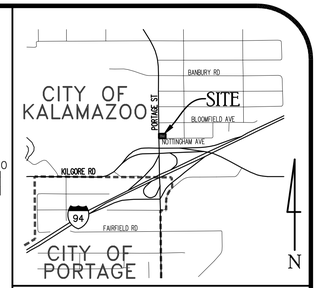
7. NO LANDSCAPE IRRIGATION IS PROPOSED FOR THE DEVELOPMENT.

8. ALL STORM SEWER DRAINAGE, SANITARY SEWER LEAD, AND WATER LEADS ARE EXISTING. NO PROPOSED AND/OR ADDITIONAL UTILITIES ARE PROPOSED FOR THIS PROJECT.

Know what's below. Call before you dig.

## UTILITY STATEMENT

THE UNDERGROUND UTILITIES SHOWN HAVE BEEN LOCATED FROM FIELD SURVEY INFORMATION AND EXISTING DRAWINGS, IF AVAILABLE. THE SURVEYOR AND/OR ENGINEER MAKES NO GUARANTEES THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. THE SURVEYOR AND/OR ENGINEER FURTHER DOES NOT WARRANT THAT THE UNDERGROUND UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED ALTHOUGH HE DOES CERTIFY THAT THEY ARE LOCATED AS ACCURATELY AS POSSIBLE FROM INFORMATION AVAILABLE. THE SURVEYOR AND/OR ENGINEER HAS NOT PHYSICALLY LOCATED THE UNDERGROUND UTILITIES.




LOCATION MAP

## L E G E N D

- EX ROAD SIGNS
- EX UTILITY POLE & GUY ANCHOR
- EX STREET LIGHT POLE
- EX OVERHEAD POWERLINES
- EX BURIED FIBER OPTICS
- EX PEDESTAL
- EX STREET LIGHT POLE
- EX BUILDING LINE
- EX STORM SEWER
- EX STORM MANHOLE
- EX STORM CATCHBASINS
- EX SANITARY SEWER
- EX SANITARY MANHOLE
- EX WATERMAIN
- EX FIRE HYDRANT
- EX WATER MANHOLE
- EX GATEVALVE
- EX GAS LINE
- EX GAS & ELEC METERS
- EX CHAIN LINK FENCE
- EX WOOD FENCE
- EX WOODS AREA
- CONC CONCRETE
- ASPH ASPHALT
- B/B BACK TO BACK
- EX EXISTING
- EX BUILDING AREA
- EX ASPHALT AREAS
- EX CONCRETE AREAS
- EX GRAVEL AREAS
- (7) PROP PARKING SPACE NO.
- PROP BARRIER FREE (ADA) PARKING
- PROP PAINTED TRAFFIC FLOW ARROW
- PROP TRAFFIC SIGN
- PROP LIGHT POLE
- PROP WALL PACK LIGHT
- PROP CONCRETE WALL or CURB
- PROP CONCRETE AREAS
- PROP ASPHALT PAVEMENT

## SANITARY SEWER BASIS OF DESIGN:

WATER USAGE = 100 GALLONS PER DAY (GPD) PER EMPLOYEE AND 100 CUSTOMERS PER DAY AT 10 GPD PER PERSON

TOTAL EMPLOYEES PER DAY = 5 EMPLOYEES AT 100 GPD/PERSON; PLUS TOTAL CUSTOMERS PER DAY = 100 CUSTOMERS PER DAY AT 10 GPD/PERSON

DAILY SEWAGE FLOW = 5 x 100 = 500 GPD + 100 x 10 = 1000 GPD = 500 + 1000 = 1,500 GPD TOTAL

TOTAL DAILY PEAK FLOW = 1,500 GPD x 1.1 x 4 = 6,600 GPD. 6,600 GPD / 1 DAY/24 HR / 1 HR/60 MIN = 4.58 GPM

TOTAL NEW FLOW FROM SITE = 4.58 GPM OR 0.0102 CFS

NOTES:
1. NO GREASE TRAP/SEPARATOR IS PROPOSED. NO WASTE OR CHEMICAL BYPRODUCTS, OTHER THAN THE NORMAL HUMAN WASTE WILL BE PUT IN THE WASTEWATER SYSTEM.
2. THE PROPOSED AIR FILTER WILL NOT HAVE ANY EFFLUENT DISCHARGE TO THE WASTEWATER SYSYTEM.

3 WORKING DAYS | BEFORE YOU DIG CALL MISS DIG 1-800-482-7171 | (TOLL FREE) FOR THE LOCATION OF UNDERGROUND FACILITIES

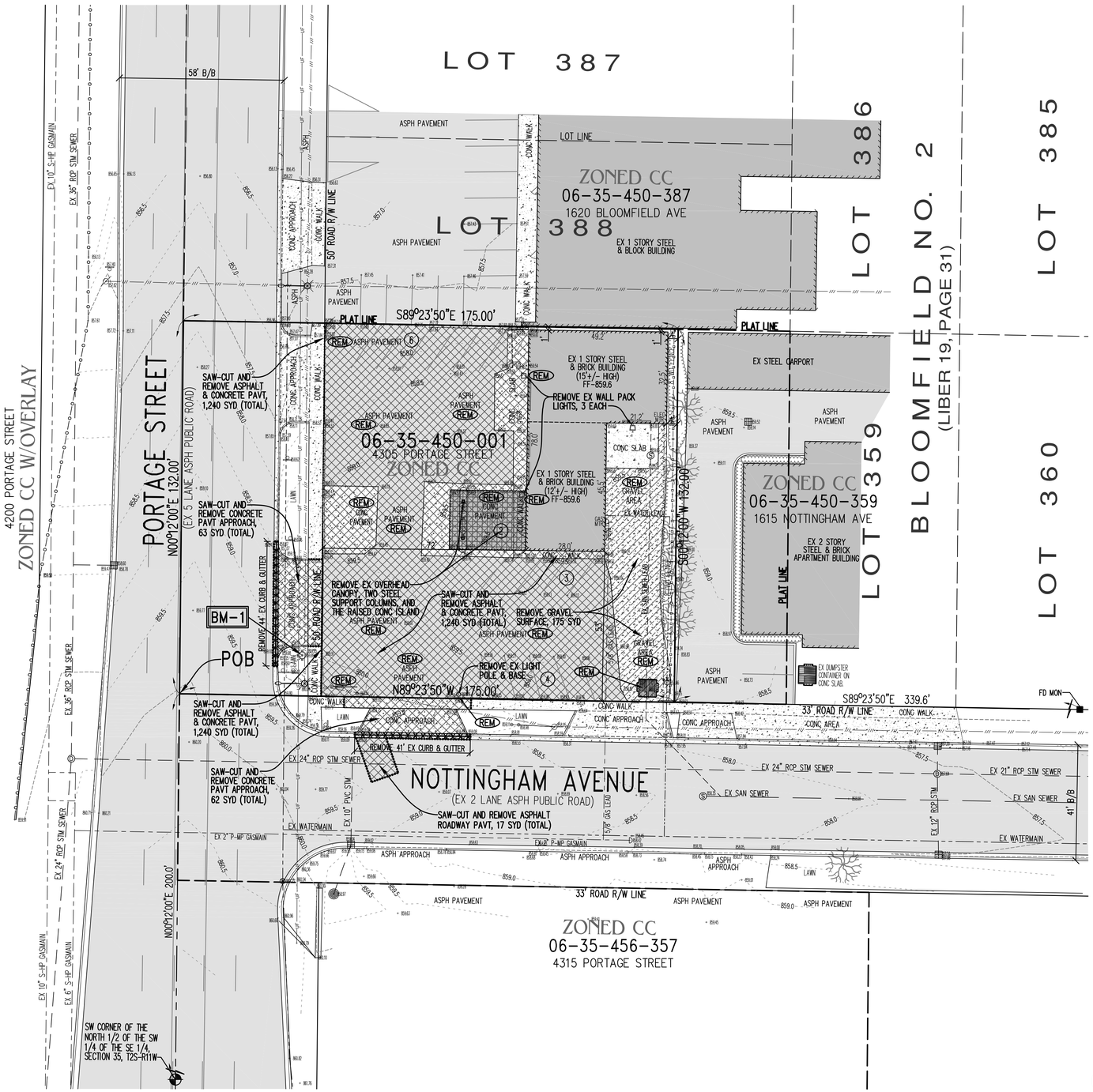
STATE OF MICHIGAN — JENNIFER B.M. MILLER — ENGINEER — No. 45076 — REGISTERED PROFESSIONAL ENGINEER

BMCC JOBS/050621-8F/KALAMAZOO/4305 PORTAGE - SITE PLAN - COVER - C-1

| | | | | | |
|---|---|---|---|---|---|
| SCALE: 1"=20' | OWNER/DEVELOPER: JEK PROPERTIES, LLC, 4330 SOUTH LAKE LANE, SHELBY TOWNSHIP, MI 48316, PHONE: 248.755.1808 | PART OF THE SOUTHEAST 1/4 SECTION 35, T2S-R11W CITY OF KALAMAZOO, MICHIGAN | BM CC | BM CONSTRUCTION CONSULTANTS, 2240 LAUDERDALE STREET, FLINT, MICHIGAN 48532, PHONE: 810.423.5014, EMAIL:BMCONSTRUCTION@COMCAST.NET | SITE PLAN LAYOUT & COVER SHEET FOR: PROPOSED MARIHUANA PROVISIONING CENTER, 4305 PORTAGE ROAD, KALAMAZOO, MICHIGAN 49001 |
| JOB NO. 050621 | | | | | |

| REVISIONS | DRN. BY: | J.R.B. | 06.22.2021 | SHEET NO: |
|---|---|---|---|---|
| 10.15.2021 | DSN BY: | J.R.B. | " | C-1 |
| 01.20.2022 | CHK'D BY: | J.B.M. | " | |
| 03.14.2022 | APPR BY: | J.B.M. | " | |

# SURVEY OF EXISTING CONDITIONS & REMOVAL PLAN

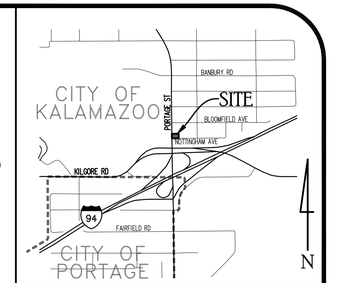



## PROPERTY DESCRIPTION

PARCEL NUMBER 06-35-450-001, 4305 PORTAGE STREET
LAND SITUATED IN THE CITY OF KALAMAZOO, COUNTY OF KALAMAZOO, STATE OF MICHIGAN TO WIT: BEGINNING IN THE NORTH AND SOUTH 1/4 LINE OF SECTION 35, TOWN 2 SOUTH, RANGE 11 WEST AT A POINT 200 FEET NORTH OF THE SOUTHWEST CORNER OF THE NORTH 1/2 OF THE SOUTHWEST 1/4 OF THE SOUTHEAST 1/4 OF SAID SECTION RUNNING NORTH ALONG THE NORTH AND SOUTH 1/4 LINE OF SAID SECTION 132 FEET; THENCE EAST PARALLEL TO SOUTH LINE OF THE NORTH 1/2 OF THE SOUTHWEST 1/4 OF SAID THE SOUTHEAST 1/4 OF SAID SECTION 175 FEET; THENCE SOUTH PARALLEL TO SAID NORTH AND SOUTH 1/4 LINE 132 FEET; THENCE WEST 175 FEET TO THE PLACE OF BEGINNING

NORTH

GRAPHIC SCALE
20 0 10 20
( IN FEET )
1 inch = 20 ft.




LOCATION MAP

## ZONING INFORMATION:

ACCORDING TO THE CURRENT CITY OF KALAMAZOO ZONING ORDINANCE THIS PROPERTY IS CURRENTLY ZONED CC (COMMUNITY COMMERCIAL DISTRICT), AND IS SUBJECT TO THE FOLLOWING CONDITIONS:

1) MINIMUM LOT SIZE = 5,000 SFT
2) MINIMUM LOT WIDTH = NONE SPECIFIED
3) FRONT SETBACK = NONE SPECIFIED
4) SIDE SETBACK = NONE SPECIFIED
5) REAR SETBACK = NONE SPECIFIED
6) MAXIMUM BUILDING HEIGHT = 65 FEET
7) MAXIMUM TOTAL IMPERVIOUS = 80% (INCLUDES BUILDINGS)

## FLOOD PLAIN NOTE:

THIS PROPERTY LIES IN ZONE "X" (AREAS OUTSIDE THE 100 YEAR ANNUAL CHANCE FLOODPLAIN) OF THE FLOOD INSURANCE RATE MAP COMMUNITY PANEL NO. 26077C0310D WHICH BEARS AN EFFECTIVE DATE OF FEBRUARY 17, 2010 AND IS NOT IN A SPECIAL FLOOD HAZARD AREA.

## WETLAND NOTE:

ACCORDING TO THE FINAL WETLAND INVENTORY MAPS OF MICHIGAN, THERE ARE NO WETLAND AREAS ON THIS PROPERTY.

## L E G E N D

| | |
|---|---|
| EX ROAD SIGNS | EX CHAIN LINK FENCE |
| EX UTILITY POLE & GUY ANCHOR | EX WOOD FENCE |
| EX STREET LIGHT POLE | EX SURFACE ELEVATION |
| EX OVERHEAD POWERLINES | EX CONTOUR ELEVATION |
| EX BURIED FIBER OPTICS | EX BRUSH AND/OR BUSHES |
| EX STREET LIGHT POLE | EX TREE |
| EX WALL PACK LIGHT FIXTURE | FOUND MONUMENTATION |
| EX PEDESTAL | CONC CONCRETE |
| EX BUILDING LINE | ASPH ASPHALT |
| EX GAS LINE | BARRIER FREE SPACE |
| EX GAS & ELEC METERS | EX BUILDING AREA |
| EX STORM SEWER | EX ASPHALT AREAS |
| EX STORM MANHOLE | EX CONCRETE AREAS |
| EX STORM CATCHBASINS | EX GRAVEL AREAS |
| EX SANITARY SEWER | SAW CUT LINE |
| EX SANITARY MANHOLE | CURB & GUTTER REMOVE |
| EX WATERMAIN | REMOVE PAVEMENT |
| EX FIRE HYDRANT | REMOVE GRAVEL AREAS |
| EX WATER MANHOLE | REMOVE STRUCTURE |
| EX GATEVALVE | (REM) REMOVE ITEM(S) |
| | (ADJ.) ADJUST ITEM(S) |

## DEMOLITION/REMOVAL NOTES:

1. ALL DEMOLITION WORK SHALL CONFORM TO ALL LOCAL CODES AND ORDINANCES. ALL DEMOLITION OPERATIONS SHALL COMPLY WITH MIOSHA REGULATIONS INSOFAR AS THEY APPLY TO THE REQUIRED WORK. A SOIL EROSION CONTROL PERMIT MUST BE OBTAINED FROM THE CITY OF KALAMAZOO – SOIL EROSION CONTROL DEPARTMENT PRIOR TO BEGINNING ANY DEMOLITION/REMOVAL WORK.
2. THE DEMOLITION/REMOVAL CONTRACTOR SHALL FOLLOW DEMOLITION & REMOVAL POLICY IN CITY OF KALAMAZOO AND IN KALAMAZOO COUNTY.
3. THE DEMOLITION/REMOVAL CONTRACTOR SHALL INSTALL SOIL EROSION CONTROL ITEMS PRIOR TO ANY REMOVALS OR EARTHWORK, AS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER.
4. ALL DEMOLITION/REMOVAL MATERIAL SHALL BE PROPERLY REMOVED FROM THE SITE AND DISPOSED OF IN A LEGAL DESIGNATED DISPOSAL AREA. NO ON-SITE BURNING WILL BE PERMITTED. PERMITS AND FEES FOR DISPOSAL OF DEMOLITION MATERIAL SHALL BE OBTAINED AND PAID FOR BY THE CONTRACTOR.
5. THE CONTRACTOR SHALL DEMOLISH AND REMOVE ANY ITEMS AS SHOWN ON THESE PLANS. UTILITY LEAD WORK SHALL BE COORDINATED WITH THE APPROPRIATE UTILITY COMPANIES, IF APPLICABLE.
6. BACKFILL EXCAVATED AREAS WITH CLEAN GRANULAR FILL COMPACTED TO 95% DENSITY PER MODIFIED PROCTOR IN MAXIMUM 9" LIFTS.
7. AT THE CONCLUSION OF THE DEMOLITION/REMOVAL OPERATIONS, THE ENTIRE WORK AREA SHALL BE LEFT IN A CLEAN CONDITION WITH ANY PROTECTIVE DEVICES AND BARRIERS REMOVED. ALL EXPOSED AREAS SHALL BE SUITABLY TOP SOILED, SEEDED AND/OR MULCHED.
8. DEMOLISH AND REMOVE ALL EXISTING ITEMS AS SHOWN. VISIT THE SITE TO DETERMINE THE EXTENT OF DEMOLITION WORK WHICH MAY OR MAY NOT BE SHOWN ON THE PLANS.
9. CONTRACTOR SHALL INSTALL INFI-SHIELD OR AN APPROVED ALTERNATE FOR MANHOLES IN DRIVE, IF APPLICABLE.
10. CONTRACTOR SHALL OBTAIN A MANHOLE CASTING ADJUSTING PERMIT FROM THE CITY OF KALAMAZOO WATER & WASTEWATER UTILITIES DEPARTMENT FOR ANY CITY SANITARY SEWER OR WATER MANHOLES WITHIN CONSTRUCTION.
11. CONTRACTOR SHALL SAW-CUT ALL EXISTING CONCRETE AND ASPHALT PAVEMENT AND CONCRETE CURBS, PRIOR TO REMOVAL. REPLACE PAVEMENT IN KIND OR AS SHOWN ON THE ACCOMPANYING CONSTRUCTION PLANS.

## SURVEYOR NOTES:

1. DATE OF LAST FIELD WORK: JUNE 12, 2021.
2. THE BEARINGS ARE RELATIVE TO THE DESCRIPTION PROVIDED BY THE CLIENT.
3. THE VERTICAL DATUM IS NORTH AMERICAN VERTICAL DATUM 1988 (NAVD88).
4. THE CURRENT ZONING AS EVIDENCED BY CITY OF KALAMAZOO IS CC, COMMUNITY COMMERCIAL DISTRICT.
5. PER OBSERVATION, THIS SITE IS EITHER CURRENTLY SUPPLIED BY OR HAS ACCESS TO THE FOLLOWING PUBLIC UTILITIES: DOMESTIC WATER, SANITARY SEWER, STORM SEWER, GAS, ELECTRIC, AND TELEPHONE. EITHER LOCATED ADJACENT TO THE SUBJECT SITE OR WITHIN PUBLIC ROAD RIGHT-OF-WAY.
6. TOTAL PROPERTY AREA = 23,100 SFT or 0.53 ACRES; 16,500 SFT EXCLUDING ROAD RIGHT-OF-WAY.
7. THERE ARE 15 PARKING SPACES ON-SITE AT THE TIME OF THE SURVEY, INCLUDING 2 SPACES UNDER THE CANOPY.

## UTILITY STATEMENT

THE UNDERGROUND UTILITIES SHOWN HAVE BEEN LOCATED FROM FIELD SURVEY INFORMATION AND EXISTING DRAWINGS, IF AVAILABLE. THE SURVEYOR AND/OR ENGINEER MAKES NO GUARANTEES THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. THE SURVEYOR AND/OR ENGINEER FURTHER DOES NOT WARRANT THAT THE UNDERGROUND UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED ALTHOUGH HE DOES CERTIFY THAT THEY ARE LOCATED AS ACCURATELY AS POSSIBLE FROM INFORMATION AVAILABLE. THE SURVEYOR AND/OR ENGINEER HAS NOT PHYSICALLY LOCATED THE UNDERGROUND UTILITIES.

811 Know what's below. Call before you dig.

3 WORKING DAYS BEFORE YOU DIG CALL MISS DIG 1-800-482-7171 (TOLL FREE) FOR THE LOCATION OF UNDERGROUND FACILITIES

## BENCHMARK NO. 1

ARROW ON FIRE HYDRANT, NORTHEAST CORNER OF NOTTINGHAM & PORTAGE, BY SOUTHWEST CORNER OF SITE, AS SHOWN ELEVATION=861.94 (NAVD88)

| | | | | | |
|---|---|---|---|---|---|
| SCALE: 1"=20' | OWNER/DEVELOPER: JEK PROPERTIES, LLC<br>4330 SOUTH LAKE LANE<br>SHELBY TOWNSHIP, MI 48316<br>PHONE: 248.755.1808 | PART OF THE SOUTHEAST 1/4 SECTION 35, T2S-R11W CITY OF KALAMAZOO, MICHIGAN | BM CONSTRUCTION CONSULTANTS<br>2240 LAUDERDALE STREET<br>FLINT, MICHIGAN 48532<br>PHONE: 810.423.5014<br>EMAIL:BMCONSTRUCTION@COMCAST.NET | SURVEY OF EXISTING CONDITIONS & REMOVAL PLAN FOR:<br>PROPOSED MARIHUANA PROVISIONING CENTER<br>4305 PORTAGE ROAD, KALAMAZOO, MICHIGAN 49001 | REVISIONS<br>10.05.2021<br>01.20.2022 |
| JOB NO. 050621 | | | | | DRN. BY: J.R.B. 06.22.2021<br>DSN BY: J.R.B. "<br>CHK'D BY: J.B.M. "<br>APPR BY: J.B.M. " |

SHEET NO: C-2

BMCC JOBS/050621-86' KALAMAZOO/4305 PORTAGE - EX SURVEY/REMOVE - C-2

# GRADING, DRAINAGE, & PAVING PLAN

## RAIN GARDEN CONSTRUCTION NOTES:

1. PLACE 3 SYD COBBLE STONE RIP-RAP AT EACH CURB CUT INLET LOCATION, AS SHOWN.

2. BUILD THE GARDEN BED WITH A PLANTING MIX OF SAND (25-35%), COMPOST (50% OR MORE) AND NATIVE SOIL (15-25%), VARIATIONS OF THESE PROPORTIONS MAY BE WORKABLE.

3. STABILIZE THE TOP OF THE GARDEN WITH A NATURAL MULCH 2 TO 3 INCHES DEEP. THE MULCH ACTS AS A SPONGE TO CAPTURE HEAVY METALS, OILS, AND GREASE. BACTERIA BREAKS DOWN THE POLLUTANTS AS THE MULCH DECAYS. THE MULCH ALSO REDUCES WEEDS AND MAINTENANCE.

4. SELECT A NATURAL MULCH SUCH AS AGED SHREDDED HARDWOOD BARK THAT WILL GRADUALLY DECOMPOSE, ADDING COMPOST (HUMUS) TO THE SOIL. APPLY THE MULCH TO A DEPTH OF 2 - 4 INCHES AND REPLENISH, AS NEEDED.

5. RAIN GARDEN SIDE SLOPES SHALL HAVE A MINIMUM OF 1 ON 3 SIDE SLOPES.

6. BOTTOM OF RAIN GARDEN SHALL BE PLANTED WITH A MIXTURE OF GROUNDCOVER AND WETLAND-BASED PLANTINGS NATIVE TO MICHIGAN, SUCH AS NATIVE GRASSES OR WILDFLOWERS WITHIN 48 HOURS OF FINAL GRADE.

7. SEE THIS SHEET FOR PROPOSED 24 INCH STAND PIPE OUTLET STRUCTURE DETAILS.

## CONSTRUCTION NOTES:

1. PROPOSED SPOT ELEVATIONS ARE TO TOP OF PAVEMENT UNLESS NOTED OTHERWISE. SEE SHEET C-4 FOR MISCELLANEOUS CONSTRUCTION DETAILS TO CALCULATE THE TOP OF WALK OR TOP OF CURB ELEVATIONS.

2. ALL NEW PROPOSED STORM SEWER SHALL BE SCH-40 PLOYVINYL CHORIDE PIPE (PVC). ALL NEW ROOF DRAIN PIPE SHALL BE 6" SCH-40 PVC PIPE, BENDS, AND WYES, OR APPROVED EQUAL. ALL FRAMES AND COVERS FOR THE ROOF DRAIN CLEANOUTS SHALL BE EAST JORDAN IRON WORKS FRAME NO. 3639Z1, PRODUCT NO. 003639125, AND COVER TYPE 3639A1 (STORM), PRODUCT NO 00363927, OR APPROVED EQUAL.

3. ALL NEW STORM SEWER UNDER PROPOSED PAVEMENT SHALL BE BACKFILLED WITH CLASS II SAND COMPACTED TO A MINIMUM 95% OF MAXIMUM UNIT WEIGHT BY MODIFIED PROCTOR FOR THE FULL DEPTH OF THE TRENCH.

4. SEE SHEET C-4 FOR STANDARD CONSTRUCTION DETAILS & NOTES.

5. THE BARRIER FREE RAMPS MUST BE BUILT PER ADA STANDARDS AND SPECIFICATIONS.

## UTILITY NOTES:

1. THE CONTRACTOR SHALL INSTALL A NEW SANITARY SEWER CLEANOUT STRUCTURE AT THE ROAD RIGHT-OF-WAY LINE, AS SHOWN ON THESE PLANS, IN ACCORDANCE WITH THE CITY STANDARD DETAILS AND SPECIFICATIONS.

2. SAND FILL UNDER ANY FLOOR SLAB, WALKS, PAVED AREAS, ETC. SHALL BE MINIMUM MDOT CLASS II SAND BACKFILL. FILL SAND SHALL NOT HAVE MOISTURE CONTENT GREATER THAN 15%. THE SAND SHALL BE COMPACTED TO 95% OF MATERIAL THE UNIT WEIGHT BY MODIFIED PROCTOR.

3. FOR ANY DEMOLITION WORK, PLEASE SEE DEMOLITION NOTES ATTACHED HEREWITH (SEE SHEET C-2).

4. VERIFY EXACT LOCATION OF UNDERGROUND UTILITIES PRIOR TO BEGINNING CONSTRUCTION.

5. CONTRACTOR IS TO ADJUST ANY UTILITY ELEMENT MEANT TO BE FLUSH WITH GRADE (CLEAN OUT, VALVE BOXES, MANHOLES, CATCH BASINS, INLETS, ETC.) THAT IS AFFECTED BY SITE WORK OR GRADE CHANGES, WHETHER SPECIFICALLY NOTED ON PLANS OR NOT. THE CONTRACTOR SHALL OBTAIN ANY NECESSARY PERMITS FOR ADJUSTMENT AT THE CONTRACTOR'S EXPENSE.

6. THE WATER SUPPLY FOR ALL COMMERCIAL AND INDUSTRIAL BUILDINGS SHALL BE EQUIPPED WITH A BACKFLOW PREVENTION DEVICE IN ACCORDANCE WITH BUILDING CODES. AN APPROVAL OF METHODS MUST BE ACQUIRED FROM THE CITY.

7. ALL ON SITE WATER SERVICE SHALL MEET THE REQUIREMENTS OF THE CITY STANDARD DETAILS AND SPECIFICATIONS.

8. THE CONTRACTOR SHALL NOTIFY MISS DIG (811) THREE (3) WORKING DAYS PRIOR TO STARTING ANY EXCAVATION WITH POWER EQUIPMENT.

## UTILITY NOTES (CONT):

9. THE CONTRACTOR SHALL COMPLY WITH ALL LOCAL, COUNTY, STATE, AND LOCAL REGULATIONS FOR ALL WORK THAT TAKES PLACE ON THE SITE.

10. THE CONTRACTOR/DEVELOPER SHALL PAY FOR AND OBTAIN ALL PERMITS REQUIRED BY FEDERAL, STATE, LOCAL, OR PRIVATE AGENCIES AND PAY ALL CHARGES FOR INSPECTION AND TESTING.

11. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CLEANING UP THE PREMISES, AND UPON COMPLETION OF THE PROJECT, LEAVE THE SITE IN AN ACCEPTABLE CONDITION AS DETERMINED BY THE ENGINEER OR OWNER.

12. THE CONTRACTOR MUST CONTACT THE CITY OF KALAMAZOO AND SECURE THE REQUIRED PERMIT AND BOND PRIOR TO BEGINNING CONSTRUCTION. CONTRACTOR MUST FOLLOW ALL REQUIREMENT IN THE PERMIT, INCLUDING THE PROPER CONSTRUCTION TRAFFIC SIGNAGE, IF REQUIRED.

13. FOR PROTECTION OF UNDERGROUND UTILITIES AND IN CONFORMANCE WITH PUBLIC ACT 53, 1974, THE CONTRACTOR SHALL DIAL 1-800-482-7171 A MINIMUM OF THREE FULL WORKING DAYS, EXCLUDING SATURDAYS, SUNDAYS, AND HOLIDAYS, PRIOR TO BEGINNING EACH EXCAVATION IN AREAS WHERE PUBLIC UTILITIES HAVE NOT BEEN PREVIOUSLY LOCATED. MEMBERS WILL THUS BE ROUTINELY NOTIFIED. THIS DOES NOT RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY OF NOTIFYING UTILITY OWNERS WHO MAY NOT BE A PART OF THE "MISS DIG" ALERT SYSTEM.

## L E G E N D

| | |
|---|---|
| EX ROAD SIGNS | EX SURFACE ELEVATION |
| EX UTILITY POLE & GUY ANCHOR | EX CONTOUR ELEVATION |
| EX STREET LIGHT POLE | EX DRAINAGE FLOW ARROW |
| EX OVERHEAD POWERLINES | PROP CONCRETE CURB (MDOT E4) |
| EX BURIED FIBER OPTICS | PROP CONCRETE AREAS |
| EX PEDESTAL | PROP ASPHALT PAVEMENT |
| EX STREET LIGHT POLE | PROP HEAVY-DUTY ASPHALT PAVEMENT |
| EX BUILDING LINE | PROP COBBLE STONE SPILLWAY |
| EX STORM SEWER | PROP TOP OF CURB/WALK ELEVATION (T-860.0) |
| EX STORM MANHOLE | PROP BOTTOM OF CURB/WALK ELEVATION (B-859.5) |
| EX STORM CATCHBASINS | PROP TOP OF SURFACE ELEVATION (859.3) |
| EX SANITARY SEWER | PROP TOP OF SIDEWALK ELEVATION (•859.6) |
| EX SANITARY MANHOLE | PROP DRAINAGE FLOW ARROW |
| EX WATERMAIN | PROP 24" CSP STAND PIPE |
| EX FIRE HYDRANT | PROP STORM SEWER PIPE |
| EX WATER MANHOLE | PROP DRAINAGE STRUCTURE - COVER B |
| EX GATEVALVE | PROP SANITARY SEWER CLEANOUT STRUCTURE |
| EX GAS LINE | PROP PVC ROOF DRAIN & CLEANOUT |
| EX GAS & ELEC METERS | PROP SURFACE CONTOUR ELEVATION (858.5) |
| EX CHAIN LINK FENCE | PROP 10 YEAR STM CONTOUR ELEVATION (859.0-HW) |
| EX WOOD FENCE | PROP DRAINAGE AREA BOUNDARY |
| | PROP DRAINAGE AREAS (DA-1 or DA-2) |

NORTH

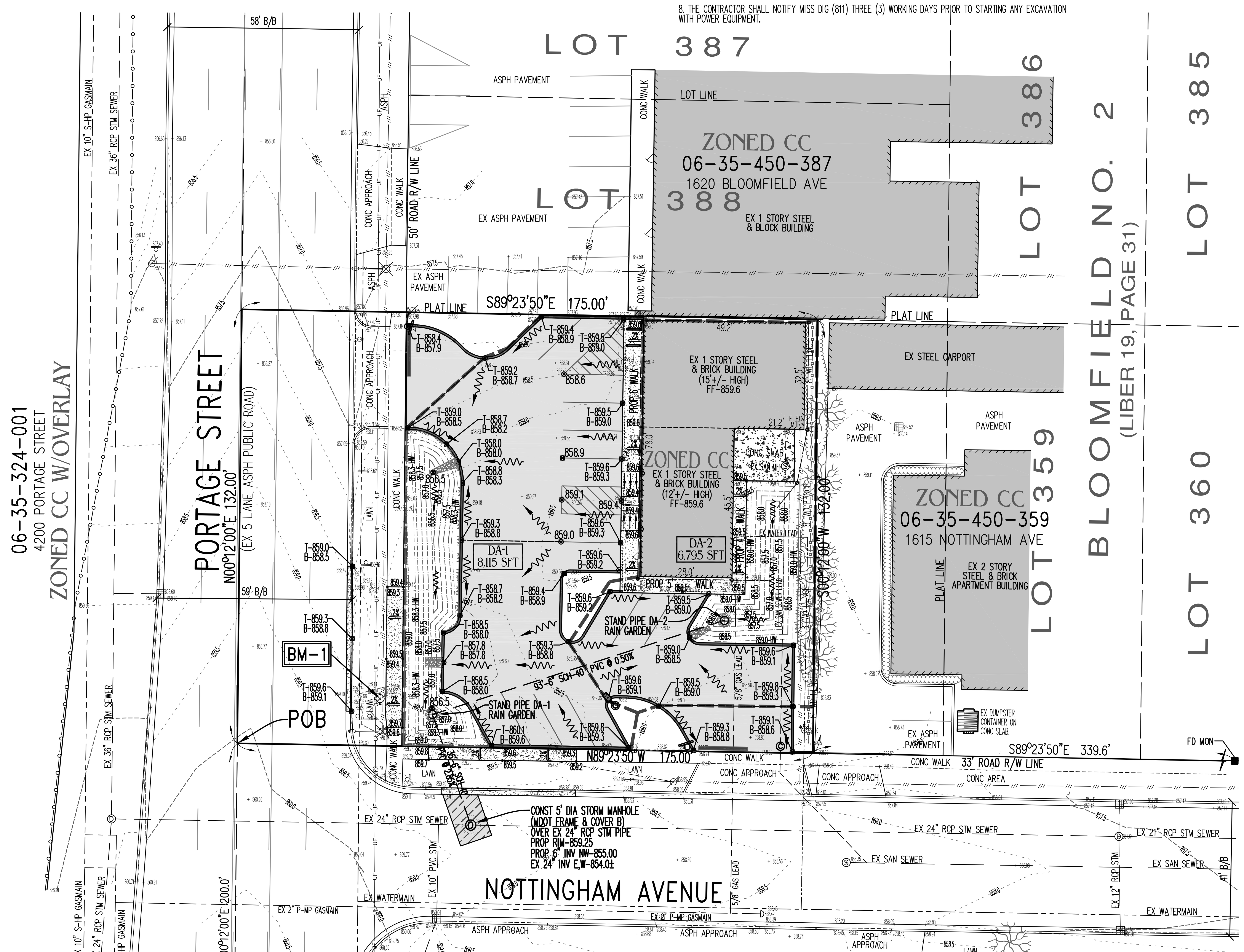
GRAPHIC SCALE

20 0 10 20

( IN FEET )
1 inch = 20 ft.

## BENCHMARK NO. 1

ARROW ON FIRE HYDRANT, NORTHEAST CORNER OF NOTTINGHAM & PORTAGE, BY SOUTHWEST CORNER OF SITE, AS SHOWN ELEVATION-861.94 (NAVD88)




| 4305 PORTAGE STREET - KALAMAZOO - MMPC - DRAINAGE AREA 1 | | | | |
|---|---|---|---|---|
| **10 YEAR STORM EVENT REQUIRED STORAGE VOLUME** | | | | |
| **Site Drainage Area =** | 8,110 | Sft | 0.186 | Acres |
| **Weighted Runoff Coefficient** | | | | |
| On-site Type of Surfaces | Total Sft | Multiply | Runoff Coeff | Value |
| Lawn Area | 1,785 | X | 0.15 | 268 |
| Gravel/Deck/Brick Area | 0 | X | 0.80 | 0 |
| Pavement Area | 6,068 | X | 0.90 | 5,461 |
| Roof Area | 0 | X | 0.90 | 0 |
| Open Water | 257 | X | 1.00 | 257 |
| **Totals** | **8,110** | | | **5,986** |
| Calculated Weighted "C" Formula = 5,986 / 8,110 = 0.738 | | | | |
| **Site Weighted "C" Factor =** | | | **0.750** | |
| **Q Allowable (Per City of Kalamazoo Requirements)** | | | | |
| Q Allowable (Qa) | | = | **0.20** | cfs/acre |
| Total Site Qa | 0.186 x 0.20 = | | **0.037** | cfs |
| **Total Site Allowable Outflow (Qo)** | | | | |
| Qo = Qa/(AxC) = 0.037/(0.186 x 0.75) = | | **Qo =** | **0.27** | Cfs/Acre imperv |
| **Storage Time (T10) (In Minutes that Maximum Storage will Occur)** | | | | |
| T10 = -19.9+SQRT(4530/Qo) = -19.9+SQRT(4530/0.27) = | | **T10 =** | **110.44** | Minutes |
| **Maximum Volume of Storage per acre of Imperviousness (Vs10)** | | | | |
| Vs10 = 9108xT10/(T10+19.9)-(40xQoxT10) | | | | |
| = 9108x110.44/(110.44+19.9)-40x0.27x110.44 = | | **Vs10 =** | **6539.39** | Cft/Acre imperv |
| **Total Volume of Storage Required (Vt10)** | | | | |
| Vt10 = Vs x A x C = 6539.39x0.186x0.75 = | | **Vt10 =** | **913** | **Cft Required** |
| 10 Year Highwater Elevation Calculated = | | **Elevation =** | **858.26** | **Calc'd 10 Yr HW** |
| 10 Year Highwater Elevation Proposed = | | **Elevation =** | **858.30** | **Prop 10 Yr HW** |
| Rain Garden Outlet Invert Elevation = | | **Elevation =** | **856.50** | **Outlet Invert** |
| Rain Garden Volume Provided = | | **Volume =** | **917.60** | **Volume Provided** |
| **Bankfull Flood Storage Volume (1.5" Rain)** | | | | |
| Bankfull Volume = 5,445xAxC = 5,445 x 0.186 x 0.75 = | | **Volume =** | **760** | Cft |
| Bankfull Flood Elevation = | | **Elevation =** | **858.12** | |
| **First Flush Storage Volume (First 1" of Rain)** | | | | |
| First Flush Volume = 3,630xAxC = 3,630 x 0.186 x 0.75 = | | **Volume =** | **507** | Cft |
| First Flush Elevation = | | **Elevation =** | **857.78** | |
| **Proposed 24 Inch Perforated Riser Design** | | | | |
| **First Flush Runoff Formula** | | | | |
| Qff = FFvol / 24 Hrs / 3600 Sec = 507/24/3600 | | Qff = | 0.006 | cfs |
| h(avg) = 2/3 (FFelev - Outlet Invert) = 2/3(857.78-856.50) = | | h(avg) = | 0.853 | Ft |
| A = Qff/0.62SQRT(64.4 x h(avg)) = 0.003/0.62SQRT(64.4x0.853)= | | A = | 0.00128 | Sft |
| Orifice Area = 1/4 inch Diameter | | Orifice = | 0.00034 | Sft |
| A / Orifice = 0.00128/0.00034 = | | # of Holes = | 3.75 | **4 Holes** |
| Invert Elevation of 1/4 Inch Diameter Holes = | | Invert = | **856.50** | Elevation |
| **Bankfull Flood Formula** | | | | |
| h(avg) = 2/3 (BFelev - Outlet Invert) = 2/3(858.12-856.50) = | | h(avg) = | 1.08 | Ft |
| Q90 = 0.62(#FFholes)(Orifice diameter)SQRT(64.4xh(avg))= | | Q90 = | 0.0066 | cfs |
| T90 = (1 sec/Q90)(1hr/3600sec)(BFvol) = | | T90 = | 32.0 | Hours |
| Volume Thru First Flush = (Q90)(24hrs)(3600sec/hr) = | | Volume = | 571 | Cft |
| Remaining Volume = BFvol - Vol ThruFF = 760 - 571 = | | Volume = | 190 | Cft |
| Qbf = (RemVol / 24 Hrs / 3600 Sec) = 190/24/3600 | | Qbf = | 0.00220 | cfs |
| h(avg) = 2/3 (BF-FF) = 2/3(858.12 - 857.78) = | | h(avg) = | 0.23 | Ft |
| A=Qbf/0.62SQRT(64.4 x h(avg)) =0.00220/0.62SQRT(64.4x0.23)= | | A = | 0.00092 | Sft |
| Orifice Area = 1/4 inch Diameter | | Orifice = | 0.00034 | Sft |
| A / Orifice = 0.00092/0.00034 = | | # of Holes = | 2.71 | **3 Holes** |
| Invert Elevation of 1/4 Inch Diameter Holes = | | Invert = | **857.78** | Elevation |
| **Outlet Pipe Flow Design (Restrictor Pipe)** | | | | |
| **Qtotal Formula = 0.62A x (2gh)^0.5** | | | | |
| Acceleration due to Gravity | | g = | 32.2 | feet/s2 |
| Head on Pipe | | H = | 1.74 | Ft |
| Diameter of Pipe | | D = | **1.00** | Inch |
| Cross-section area of pipe | | A = | 0.0104 | Sft |
| **Discharge (From DA-1)** | | Q = | **0.037** | cfs |
| **Total Q Allowable Discharge from DA-1** | | Q = | **0.036** | cfs |

| 4305 PORTAGE STREET - KALAMAZOO - MMPC - DRAINAGE AREA 2 | | | | |
|---|---|---|---|---|
| **10 YEAR STORM EVENT REQUIRED STORAGE VOLUME** | | | | |
| **Site Drainage Area =** | 6,795 | Sft | 0.156 | Acres |
| **Weighted Runoff Coefficient** | | | | |
| On-site Type of Surfaces | Total Sft | Multiply | Runoff Coeff | Value |
| Lawn Area | 1,094 | X | 0.15 | 164 |
| Gravel/Deck/Brick Area | 0 | X | 0.80 | 0 |
| Pavement Area | 2,243 | X | 0.90 | 2,019 |
| Roof Area | 2,873 | X | 0.90 | 2,586 |
| Open Water | 585 | X | 1.00 | 585 |
| **Totals** | **6,795** | | | **5,354** |
| Calculated Weighted "C" Formula = 5,354 / 6,795 = 0.7879 | | | | |
| **Site Weighted "C" Factor =** | | | **0.800** | |
| **Q Allowable (Per City of Kalamazoo Requirements)** | | | | |
| Q Allowable (Qa) | | = | **0.20** | cfs/acre |
| Total Site Qa | 0.156 x 0.20 = | | **0.031** | cfs |
| **Total Site Allowable Outflow (Qo)** | | | | |
| Qo = Qa/(AxC) = 0.031/(0.156 x 0.80) = | | **Qo =** | **0.25** | Cfs/Acre imperv |
| **Storage Time (T10) (In Minutes that Maximum Storage will Occur)** | | | | |
| T10 = -19.9+SQRT(4530/Qo) = -19.9+SQRT(4530/0.25) = | | **T10 =** | **114.71** | Minutes |
| **Maximum Volume of Storage per acre of Imperviousness (Vs10)** | | | | |
| Vs10 = 9108xT10/(T10+19.9)-(40xQoxT10) | | | | |
| = 9108x114.71/(114.71+19.9)-40x0.25x114.71 = | | **Vs10 =** | **6614.42** | Cft/Acre imperv |
| **Total Volume of Storage Required (Vt10)** | | | | |
| Vt10 = Vs x A x C = 6614.42x0.156x0.80 = | | **Vt10 =** | **825** | **Cft Required** |
| 10 Year Highwater Elevation Calculated = | | **Elevation =** | **859.00** | **Calc'd 10 Yr HW** |
| 10 Year Highwater Elevation Proposed = | | **Elevation =** | **859.00** | **Prop 10 Yr HW** |
| Rain Garden Outlet Invert Elevation = | | **Elevation =** | **857.00** | **Outlet Invert** |
| Rain Garden Volume Provided = | | **Volume =** | **825.00** | **Volume Provided** |
| **Bankfull Flood Storage Volume (1.5" of Rain)** | | | | |
| Bankfull Volume = 5,445xAxC = 5445 x 0.156 x 0.80 = | | **Volume =** | **680** | Cft |
| Bankfull Flood Elevation = | | **Elevation =** | **858.79** | |
| **First Flush Storage Volume (First 1" of Rain)** | | | | |
| First Flush Volume = 3,630xAxC = 3630 x 0.156 x 0.80 = | | **Volume =** | **453** | Cft |
| First Flush Elevation = | | **Elevation =** | **858.44** | |
| **Proposed 24 Inch Perforated Riser Design** | | | | |
| **First Flush Runoff Formula** | | | | |
| Qff = FFvol / 24 Hrs / 3600 Sec = 453/24/3600 | | Qff = | 0.0052 | cfs |
| h(avg) = 2/3 (FFelev - Outlet Invert) = 2/3(858.44-857.00) = | | h(avg) = | 0.96 | Ft |
| A =Qff/0.62SQRT(64.4 x h(avg)) = 0.0052/0.62SQRT(64.4x0.960)= | | A = | 0.001076 | Sft |
| Orifice Area = 1/4 inch Diameter | | Orifice = | 0.000341 | Sft |
| A / Orifice = 0.001076/0.000341 = | | # of Holes = | 3.16 | **3 Holes** |
| Invert Elevation of 1/4 Inch Diameter Holes = | | Invert = | **857.00** | Elevation |
| **Bankfull Flood Formula** | | | | |
| h(avg) = 2/3 (BFelev - Outlet Invert) = 2/3(858.79-857.00) = | | h(avg) = | 1.19 | Ft |
| Q90 = 0.62(#FFholes)(Orifice diameter)SQRT(64.4xh(avg))= | | Q90 = | 0.00585 | cfs |
| T90 = (1 sec/Q90)(1hr/3600sec)(BFvol) = | | T90 = | 32.3 | Hours |
| Volume Thru First Flush = (Q90)(24hrs)(3600sec/hr) = | | Volume = | 505 | Cft |
| Remaining Volume = BFvol - Vol ThruFF = 680 - 505 = | | Volume = | 174 | Cft |
| Qbf = (RemVol / 24 Hrs / 3600 Sec) = 174/24/3600 | | Qbf = | 0.00202 | cfs |
| h(avg) = 2/3 (BF-FF) = 2/3(858.79 - 858.44) = | | h(avg) = | 0.23 | Ft |
| A = Qbf/0.62SQRT(64.4 x h(avg)) =0.00202/0.62SQRT(64.4x0.23)= | | A = | 0.00084 | Sft |
| Orifice Area = 1/4 inch Diameter | | Orifice = | 0.000341 | Sft |
| A / Orifice = 0.00084/0.000341 = | | # of Holes = | 2.47 | **2 Holes** |
| Invert Elevation of 1/4 Inch Diameter Holes = | | Invert = | **858.44** | Elevation |
| **Outlet Pipe Flow Design (Restrictor Pipe)** | | | | |
| **Qtotal Formula = 0.62A x (2gh)^0.5** | | | | |
| Acceleration due to Gravity | | g = | 32.2 | feet/s2 |
| Head on Pipe | | H = | 1.96 | Ft |
| Diameter of Pipe | | D = | **0.90** | Inch |
| Cross-section area of pipe | | A = | 0.0044 | Sft |
| **Discharge (From (DA-2)** | | Q = | **0.031** | cfs |
| **Total Q Allowable Discharge from DA-2** | | Qa = | **0.031** | cfs |

| 4305 PORTAGE STREET - KALAMAZOO - MMPC - DRAINAGE AREA 1 | | | | |
|---|---|---|---|---|
| **Total Storage Volume Provided In Detention Basin (10 Year HW Elevation-858.3)** | | | | |
| Water Surface Elevation (Feet) | Area (Sft) | Difference in Elevation | Incremental | Total |
| 856.50 | 66 | | 0 | 0 |
| 857.00 | 257 | 0.5 | 80.75 | 80.75 |
| 857.50 | 552 | 0.5 | 202.25 | 283 |
| 858.00 | 846 | 0.5 | 349.5 | 632.5 |
| **858.30** | 1056 | 0.3 | 285.3 | **917.8** |
| 859.00 | 1352 | 0.7 | 842.8 | 1760.6 |
| **Storage Volume Provided (At 858.3) = 917.6 Cft > 913 Cft Storage Volume Required** | | | | |

| 4305 PORTAGE STREET - KALAMAZOO - MMPC - DRAINAGE AREA 2 | | | | |
|---|---|---|---|---|
| **Total Storage Volume Provided In Detention Basin (10 Year HW Elevation-859.0)** | | | | |
| Water Surface Elevation (Feet) | Area (Sft) | Difference in Elevation | Incremental | Total |
| 857.00 | 52 | | 0 | 0 |
| 857.50 | 213 | 0.5 | 66.25 | 66.25 |
| 858.00 | 398 | 0.5 | 152.75 | 219 |
| 858.50 | 601 | 0.5 | 249.75 | 468.75 |
| **859.00** | 823 | 0.5 | 356 | **824.75** |
| 859.50 | 1038 | 0.5 | 465.25 | 1290 |
| **Storage Volume Provided (At 859.0) = 825 Cft = 825 Cft Storage Volume Required** | | | | |

### 4305 PORTAGE STREET MMPC - STORM SEWER SYSTEM DESIGN

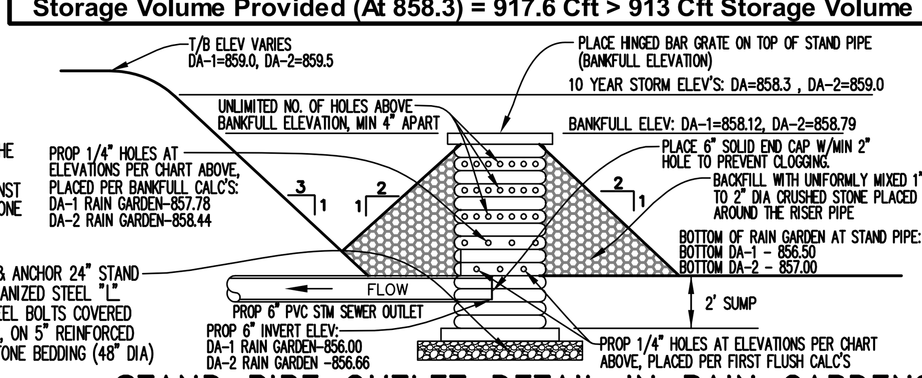
| | | | |
|---|---|---|---|
| Q = A 1.486/n R 2/3 S 1/2 | Q = C I A | I = 175 / (T + 25.00) | Job No: 050621-DJ-MMPC |
| | | | By: JBM / RJB |
| | | | Date: 01.20.2022 |
| | | | Revised: |

**10 YEAR STORM SEWER PIPE DESIGN**

| STRUCTURE # | INCREMENT AREA Ai (SFT) | INCREMENT AREA Ai (ACRE) | TOTAL AREA A (ACRE) | RUNOFF COEFFICIENT C | TIME T (MIN.) | RAINFALL INTENSITY I (IN/HR) | FLOW Q=CIAi (CFS) | TOTAL FLOW (CFS) | PIPE CAPACITY FLOWING FULL (CFS) | DIAMETER OF PIPE (INCHES) | LENGTH OF PIPE TO NEXT STRUCT. (FEET) | SLOPE OF PIPE (%) | VELOCITY OF FLOW (FT/SEC) | TIME OF FLOW (MINUTES) | INVERT ELEV. UPPER END | INVERT ELEV. LOWER END | STRUCUTRE RIM ELEVATION | STRUCTURE COVER TYPE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **SP-2** | **ALLOWABLE OUTFLOW = 0.156 ACRES x 0.20 Qa = 0.031 cfs** | | | | | | | 0.031 | 0.43 | 6 | 93.0 | 0.50 | 2.19 | 0.71 | 856.66 | 856.20 | 859.00 | GRATE |
| **SP-1** | **ALLOWABLE OVERFLOW = 0.186 ACRES x 0.20 Qa = 0.037 cfs** | | | | | | | 0.037 | 1.03 | 6 | 35.0 | 2.85 | 5.23 | 0.11 | 856.00 | 855.00 | 858.30 | GRATE |
| **DS-1** | **END OF PROPOSED 6" SCH-40 PVC OUTLET PIPE AT PROPOSED STRUCTURE DS-1** | | | | | | | | | | | | | | 855.00 | 854.0+/- | 859.25 | B |
| **THE PROPOSED 6" OUTLET PIPE SHALL CARRY A MINIMUM OF 0.342 ACRES x 1.0 Qa = 0.432 CFS < THE PROPOSED OF 1.03 CFS** | | | | | | | | | | | | | | | | | | |

NOTE:
THE CONTRACTOR MUST MAINTAIN INTEGRETY OF THE HOLES PLACED ON THE PERIMETER OF THE 36 INCH CSP STAND PIPE. PLACE NETTING (WIRE MESH) AGAINST THE CSP PRIOR TO BACKFILLING THE STONE IN PLACE, TO PREVENT PLUGGING.

CONST 24" CSP STAND PIPE, GAGE 14, & ANCHOR 24" STAND PIPE TO CONCRETE BASE W/FOUR GALVANIZED STEEL "L" STRAPS AND 5/8" DIA. GALVANIZED STEEL BOLTS COVERED W/TAR AS APPROVED BY THE ENGINEER, ON 5" REINFORCED CONCRETE BASE (36" DIA) ON 6"-6A STONE BEDDING (48" DIA)




STAND PIPE OUTLET DETAIL IN RAIN GARDENS

## RAIN GARDEN 1 SUMMARY:

TOTAL ACRES = 0.186 ACRES (8,110 SFT)
RUNOFF COEFFICIENT "WEIGHTED C" = 0.75
ALLOWABLE OUTFLOW = 0.037 CFS/ACRE
FORMULA USED: KALAMAZOO COUNTY METHOD FOR 10 YEAR STORM, BANKFULL, AND FIRST FLUSH
VOLUME REQUIRED (10 YEAR STORM) = 913 CFT
VOLUME PROVIDED (10 YEAR STORM) = 917.6 CFT
10 YEAR HIGHWATER ELEV = 858.30
BANKFULL ELEV = 858.12, VOLUME = 760 CFT
FIRST FLUSH ELEV = 857.78, VOLUME = 507 CFT
PROP 6 INCH OUTLET INVERT = 856.00
RESTRICTOR SIZE REQUIRED = 1.0 INCH, PROVIDED = 2.0 INCH
(MUST CARRY MINIMUM 0.342 CFS FOR 10 YEAR STORM)

## RAIN GARDEN 2 SUMMARY:

TOTAL ACRES = 0.156 ACRES (6,795 SFT)
RUNOFF COEFFICIENT "WEIGHTED C" = 0.80
ALLOWABLE OUTFLOW = 0.031 CFS/ACRE
FORMULA USED: KALAMAZOO COUNTY METHOD FOR 10 YEAR STORM, BANKFULL, AND FIRST FLUSH
VOLUME REQUIRED (10 YEAR STORM) = 825 CFT
VOLUME PROVIDED (10 YEAR STORM) = 825 CFT
10 YEAR HIGHWATER ELEV = 859.00
BANKFULL ELEV = 858.79, VOLUME = 680 CFT
FIRST FLUSH ELEV = 858.44, VOLUME = 453 CFT
PROP 6 INCH OUTLET INVERT = 856.66
RESTRICTOR SIZE REQUIRED = 0.9 INCH, PROVIDED = 2.0 INCH
(MUST CARRY MINIMUM 0.156 CFS FOR 10 YEAR STORM)

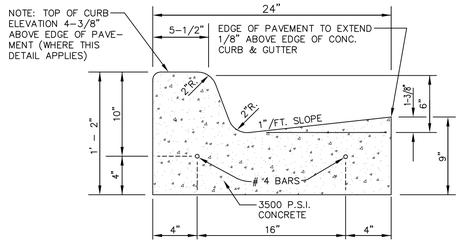
## UTILITY STATEMENT

THE UNDERGROUND UTILITIES SHOWN HAVE BEEN LOCATED FROM FIELD SURVEY INFORMATION AND EXISTING DRAWINGS, IF AVAILABLE. THE SURVEYOR AND/OR ENGINEER MAKES NO GUARANTEES THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. THE SURVEYOR AND/OR ENGINEER FURTHER DOES NOT WARRANT THAT THE UNDERGROUND UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED ALTHOUGH HE DOES CERTIFY THAT THEY ARE LOCATED AS ACCURATELY AS POSSIBLE FROM INFORMATION AVAILABLE. THE SURVEYOR AND/OR ENGINEER HAS NOT PHYSICALLY LOCATED THE UNDERGROUND UTILITIES.

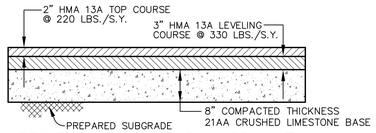
811 Know what's **below.** **Call** before you dig.

BMCC JOBS/050621-J&F/KALAMAZOO/4305 PORTAGE - GDP - C-3

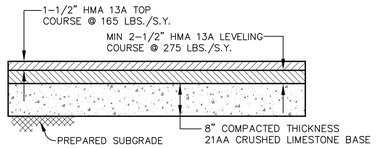
| | | | | | | | |
|---|---|---|---|---|---|---|---|
| SCALE: 1"=20' | OWNER/DEVELOPER: JEK PROPERTIES, LLC, 4330 SOUTH LAKE LANE, SHELBY TOWNSHIP, MI 48316, PHONE: 248.755.1808 | PART OF THE SOUTHEAST 1/4 SECTION 35, T2S-R11W CITY OF KALAMAZOO, MICHIGAN | BM CC | BM CONSTRUCTION CONSULTANTS, 2240 LAUDERDALE STREET, FLINT, MICHIGAN 48532, PHONE: 810.423.5014, EMAIL:BMCONSTRUCTION@COMCAST.NET | GRADING, DRAINAGE, & PAVING PLAN FOR: PROPOSED MARIHUANA PROVISIONING CENTER 4305 PORTAGE ROAD, KALAMAZOO, MICHIGAN 49001 | REVISIONS: 10.05.2021, 01.20.2022 | SHEET NO: C-3 |
| JOB NO. 050621 | | | | | | DRN. BY: J.R.B. 06.22.2021; DSN BY: J.R.B. "; CHK'D BY: J.B.M. "; APPR BY: J.B.M. " | |



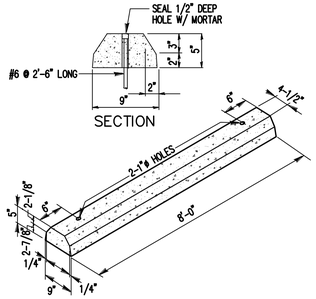

CONCRETE CURB & GUTTER DETAIL F4
(APPLIES TO PUBLIC CITY ROADS)



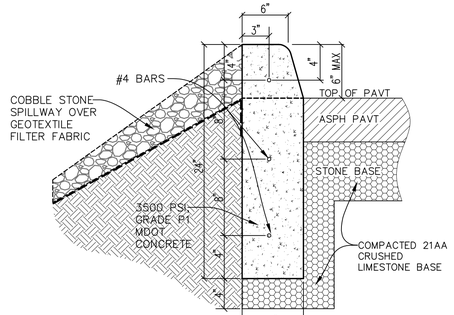

DRIVEWAY APPROACH ASPHALT
PAVEMENT X-SECTION
(APPLIES TO PUBLIC CITY ROADS)



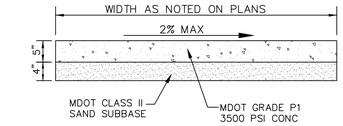

STANDARD PARKING LOT
ASPHALT PAVEMENT X-SECTION



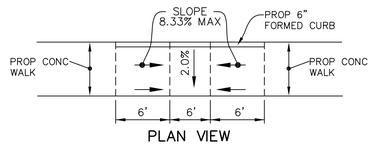

PRECAST CONCRETE WHEEL STOP



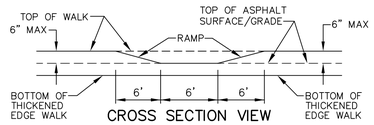

MDOT TYPE E4 CURB DETAIL
(ADJACENT TO ASPHALT PAVEMENT)




5" SIDEWALK X-SECTION




PLAN VIEW

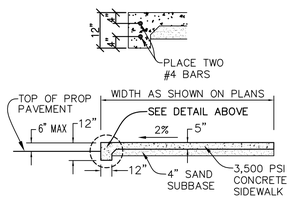



CROSS SECTION VIEW

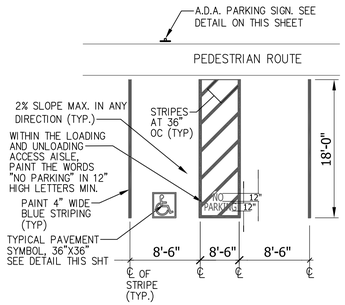
SIDEWALK BARRIER FREE RAMP DETAIL

## ACCESS RAMP CONSTRUCTION NOTES

1. RAMP SHALL HAVE A 12" WIDE BORDER WITH 1/4" X 1/4" GROOVES @ 3/4" O.C.
2. THE SURFACE OF THE RAMP SHALL HAVE A TRANSVERSE BROOMED SLIP-RESISTANT SURFACE TEXTURE ROUGHER THAN THE SURROUNDING SIDEWALK.
3. RAMP CONSTRUCTION SHALL COMPLY WITH ALL FEDERAL, STATE AND LOCAL CODES AND REGULATIONS.
4. THE SIDEWALK RAMP CROSS SECTION SHALL BE A MINIMUM OF 5 INCHES OF 3500 PSI GRADE P1 CONCRETE ON A MINIMUM OF 4 INCHES OF CLASS II SAND SUBBASE.




PROPOSED THICKENED EDGE
SIDEWALK X-SECTION




A.D.A. PARKING & REGULAR SPACE
PAVEMENT MARKING LAYOUT DETAIL

# GENERAL CONSTRUCTION NOTES:

1. ALL SITE CONSTRUCTION WORK SHALL BE IN ACCORDANCE WITH ALL APPLICABLE REQUIREMENTS THE 2012 MICHIGAN DEPARTMENT OF TRANSPORTATION (MDOT) STANDARD SPECIFICATIONS FOR CONSTRUCTION, THE LATEST MDOT STANDARD ROAD PLANS, AND THE LATEST CITY OF KALAMAZOO ZONING ORDINANCE AND ENGINEERING DESIGN STANDARDS. COPIES OF ALL MDOT DOCUMENTS MAY BE OBTAINED FROM THEIR WEBSITE (WWW.MICHIGAN.GOV/MDOT)

2. THE CONTRACTOR SHALL PERFORM ALL WORK NECESSARY TO GRADE THE SITE TO THE GRADES SHOWN ON THE PLANS OR SPECIFIED BY THE ENGINEER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL EXCAVATION, EMBANKMENT, AND THE FURNISHING AND PLACING OF ALL BORROW MATERIAL REQUIRED TO OBTAIN THE SPECIFIED GRADES, AND REMOVAL OF EXCESS EARTH MATERIAL.

3. SUBGRADE PREPARATION: REMOVE ALL ROCKS, DEBRIS, VEGETATION AND TOPSOIL FROM THE AREA TO BE PAVED. SHAPE THE SUBGRADE TO PROPER ELEVATIONS FOR PLACEMENT OF THE PAVEMENT. COMPACT SUBGRADE TO NOT LESS THAN 95% OF MAXIMUM UNIT WEIGHT IN 9 INCH LIFTS IN ACCORDANCE WITH THE MODIFIED PROCTOR T-180 METHOD. THE CONTRACTOR SHALL UNDERCUT ANY UNSUITABLE SUBGRADE MATERIAL AND REPLACE IT WITH SUITABLE MATERIAL COMPACTED TO MINIMUM 95% OF MAX UNIT WEIGHT.

4. ALL WORK NECESSARY TO COMPLETE THIS PROJECT SHALL CONFORM TO ALL RELATED CITY OF KALAMAZOO CODES AND ORDINANCES.

5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS, INSURANCE AND BONDS PRIOR TO CONSTRUCTION, INCLUDING THE PAYMENT OF ANY FEES, REQUIRED BY ANY FEDERAL, STATE, LOCAL, OR PRIVATE ORGANIZATIONS.

6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROPER DISPOSAL OF SURPLUS OR WASTE MATERIAL.

7. SOIL EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE EMPLOYED IN ACCORDANCE WITH THE SOIL EROSION CONTROL PLAN, AND SHALL MEET THE APPROVAL OF THE KALAMAZOO COUNTY DRAIN COMMISSIONER (KCDC) AND/OR CITY OF KALAMAZOO, SOIL EROSION CONTROL DEPARTMENT. CONTRACTOR SHALL OBTAIN SOIL EROSION CONTROL PERMIT FROM THE KCDC AND/OR CITY OF KALAMAZOO SOIL EROSION CONTROL DEPARTMENT (SESC).

8. ALL LAWN OR TURF AREAS SHALL BE ESTABLISHED WITH TOPSOIL AND APPLICATION OF FERTILIZER, SEED AND MULCH IN ACCORDANCE WITH THE FOLLOWING RATES:

TOPSOIL SURFACE = MINIMUM 4 INCHES
CHEMICAL FERTILIZER NUTRIENT = 240 LBS/ARCE
CLASS A SEEDING = 120 LBS/ACRE
MULCH = 2 TONS/ACRE
ALL LANDSCAPE BEDS SHALL HAVE 18" OF TOPSOIL.

ALL MATERIAL SHALL COMPLY WITH MDOT STANDARD SPECIFICATIONS.

9. CONTRACTOR SHALL NOTIFY ALL APPROPRIATE UTILITY COMPANIES PRIOR TO PERFORMING WORK, AND SHALL OBTAIN ANY REQUIRED PERMITS OR APPROVALS PRIOR TO PERFORMING WORK.

10. THREE (3) WORKING DAYS PRIOR TO BEGINNING CONSTRUCTION, IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO CONTACT MISS DIG UTILITY PROTECTION SERVICE (1-800-482-7171) TO VERIFY THE LOCATION OF ALL EXISTING UTILITIES. THE CONTRACTOR SHALL ASSUME RESPONSIBILITY FOR THE PROTECTION OF ALL EXISTING UTILITIES DURING CONSTRUCTION. ALL UTILITIES DAMAGED DURING CONSTRUCTION SHALL BE REPAIRED IN ACCORDANCE WITH THE UTILITY OWNERS REQUIREMENTS AT THE CONTRACTORS EXPENSE.

11. PRIOR TO BEGINNING CONSTRUCTION, THE CONTRACTOR SHALL BE REQUIRED TO EXPOSE ALL EXISTING UTILITIES THAT CROSS THE PROPOSED CONSTRUCTION IN ORDER TO DETERMINE IF A VERTICAL CONFLICT EXISTS BETWEEN THE EXISTING UTILITY AND THE PROPOSED CONSTRUCTION. ALL LABOR REQUIRED TO UNCOVER THE EXISTING UTILITY SHALL BE CONSIDERED AS BEING INCLUDED IN THE COST OF CONSTRUCTION. THE CONTRACTOR SHALL VERIFY THE DEPTH AND HORIZONTAL LOCATIONS OF ALL UTILITIES IN SUFFICIENT TIME SUCH THAT ANY CONFLICTS CAN BE RESOLVED BEFORE WORK IS STARTED IN THAT PORTION OF THE PROJECT. THE CONTRACTOR SHALL ARRANGE FOR THE VARIOUS UTILITY OWNERS TO LOCATE, REMOVE AND REPLACE, OR RELOCATE THEIR FACILITIES. ALL COST FOR THIS WORK SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.

12. PRIOR TO BIDDING THE CONTRACTOR AND SUBCONTRACTORS SHALL MAKE A PERSONAL INVESTIGATION OF THE SITE AND EXISTING SURFACE AND SUBSURFACE CONDITIONS. THE CONTRACTOR IS RESPONSIBLE TO ACQUAINT THEMSELVES WITH CONDITIONS OF THE WORK AREA. THE CONTRACTOR IS ADVISED TO DETERMINE THE SUBSURFACE SOIL AND GROUND WATER CONDITIONS. DEWATERING, IF DETERMINED NECESSARY BY THE CONTRACTOR, WILL BE INCIDENTAL TO THE COST OF CONSTRUCTION.

13. ALL FILL ON THE PROPERTY SHALL BE ADEQUATELY COMPACTED BY ROLLING TO PRODUCE A SURFACE SATISFACTORY FOR THE PROPER INSTALLATION OF THE PROPOSED WORK. BEFORE COMMENCING PAVING WORK, THE PAVING CONTRACTOR MUST MAKE CERTAIN THAT THE SURFACES TO BE COVERED ARE IN PROPER CONDITION. SURFACES NOT ACCEPTABLE SHALL BE REPORTED TO THE OWNER IMMEDIATELY. THE APPLICATION OF PAVING MATERIALS SHALL BE HELD TO BE AN ACCEPTANCE OF THE SURFACES AND WORKING CONDITIONS BY THE PAVING CONTRACTOR WHO WILL BE HELD RESPONSIBLE FOR THE RESULTS. ANY UNSTABLE LIMESTONE BASE OR ASPHALT PAVEMENT MUST BE REMOVED AND REPLACED BY THE CONTRACTOR AT THEIR COST AS REQUIRED BY THE OWNER AND/OR ENGINEER.

14. CONTRACTOR SHALL REMOVE ALL EXISTING STRUCTURES, TREES, BRUSH, FENCES, SLABS, DRIVEWAYS AND/OR SIDEWALKS THAT ARE AFFECTED BY THE PROPOSED WORK. VISIT SITE TO DETERMINE EXTENT OF REMOVAL WORK WHICH MAY OR MAY NOT BE SHOWN ON PLANS.

15. THE FOLLOWING LATEST MDOT STANDARD ROAD PLANS SHALL APPLY TO THIS PROJECT UNLESS THEY ARE SUPERCEDED BY THE CITY OF KALAMAZOO STANDARD DETAILS:

| PLAN NO. | TITLE |
|---|---|
| R-1-G | DRAINAGE STRUCTURES |
| R-29-I | DRIVEWAY OPENINGS & APPROACHES AND CONCRETE SIDEWALKS |
| R-30-G | CONCRETE CURB AND CONCRETE CURB & GUTTER |
| R-80-E | GRANULAR BLANKET, UNDERDRAINS, OUTLET ENDINGS FOR UNDERDRAINS, AND SEWER BULKHEADS |
| R-82-D | BEDDING AND FILLING AROUND PIPE CULVERTS |
| R-83-C | UTILITY TRENCHES |

THE CONTRACTOR MUST OBTAIN COPIES OF THESE MDOT STANDARD PLANS AT THE MDOT WEBSITE (WWW.MICHIGAN.GOV/MDOT) AND MUST COMPLY WITH ALL REQUIREMENTS

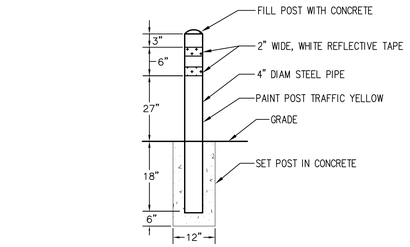
16. THE CONTRACTOR MUST PROVIDE ALL MEASURES REQUIRED FOR TRAFFIC CONTROL DURING CONSTRUCTION AS REQUIRED BY THE CITY OF KALAMAZOO AND IN ACCORDANCE WITH ALL APPLICABLE REQUIREMENTS OF THE 2011 EDITION OF THE MICHIGAN MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES AS AMENDED, AND SECTION 812 OF THE 2012 MDOT STANDARD SPECIFICATIONS FOR CONSTRUCTION. THE CONTRACTOR MUST PLACE PLASTIC DRUMS, TEMPORARY SIGNING, LIGHTED ARROWS, YELLOW CONSTRUCTION WARNING TAPE, AND ANY OTHER MEASURES REQUIRED TO PROTECT THE PUBLIC DURING CONSTRUCTION.

17. ALL PARKING SPACE LINES, CROSSWALKS, STOP BARS, & PAINTED ISLANDS SHALL BE MARKED WITH 4" WHITE REFLECTIVE PAINT. ALL HANDICAP PARKING SPACE LINES SHALL BE MARKED WITH 4" BLUE REFLECTIVE PAINT. HANDICAP SYMBOLS SHALL BE BLUE REFLECTIVE PAINT. ALL MATERIALS SHALL COMPLY WITH SECTION 811 OF THE 2012 MDOT STANDARD SPECIFICATIONS FOR CONSTRUCTION.

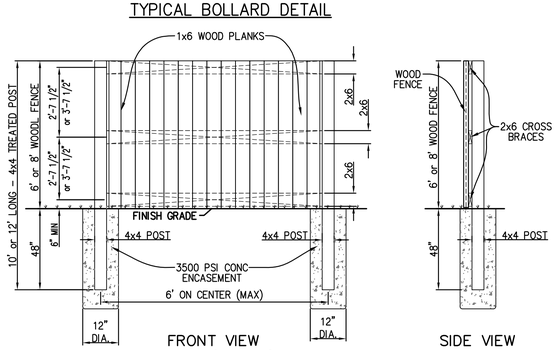
18. ALL TRAFFIC SIGNS SHALL CONFORM WITH THE REQUIREMENTS OF THE 2011 EDITION OF THE MICHIGAN MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES, AS AMENDED, AND SECTION 810 OF THE 2012 MDOT STANDARD SPECIFICATIONS FOR CONSTRUCTION.

19. THE CONTRACTOR SHALL CONTROL NOISE, CARRY OUT A PROGRAM OF DUST CONTROL AND SHALL ALLOW NO ON-SITE BURNING, WITHOUT APPROVAL FROM LOCAL FIRE DEPARTMENT.

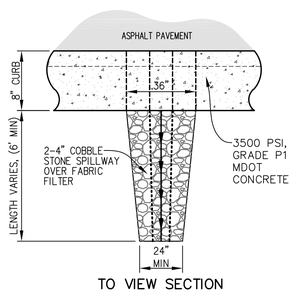
20. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO PROTECT ALL EXISTING UTILITIES AND PAVEMENT. THE CONTRACTOR MUST PROPERLY REPAIR ANY DAMAGE CAUSED BY THEIR OPERATIONS AT THEIR COST AS REQUIRED BY THE OWNER AND/OR ENGINEER.



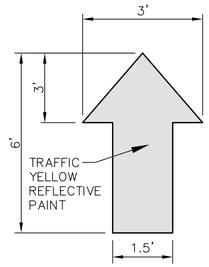

TYPICAL BOLLARD DETAIL



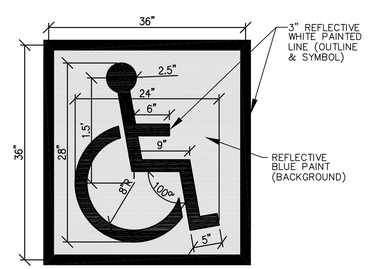

6' or 8' WOOD PRIVACY
FENCE X-SECTION DETAIL




CONCRETE CURB SPILLWAY OPENING




TRAFFIC FLOW ARROW DETAIL
(NO SCALE)




A.D.A. PARKING SYMBOL
TYPICAL @ ALL BARRIER FREE STALLS

A.D.A. PARKING SIGN
TYPICAL @ ALL BARRIER FREE STALLS

BMCC JOBS/050621-I8F/KALAMAZOO/4305 PORTAGE - DETL - C-4

SCALE: NONE

JOB NO. 100521

OWNER/DEVELOPER:
JEK PROPERTIES, LLC
4330 SOUTH LAKE LANE
SHELBY TOWNSHIP, MI 48316
PHONE: 248.755.1808

PART OF THE SOUTHEAST 1/4
SECTION 35, T2S-R11W
CITY OF KALAMAZOO, MICHIGAN

BM CC

BM CONSTRUCTION CONSULTANTS
2240 LAUDERDALE STREET
FLINT, MICHIGAN 48532
PHONE: 810.423.5014
EMAIL:BMCONSTRUCTION@COMCAST.NET

STANDARD CONSTRUCTION DETAILS & NOTES FOR:
PROPOSED MARIHUANA PROVISIONING CENTER
4305 PORTAGE ROAD, KALAMAZOO, MICHIGAN 49001

| REVISIONS | | | |
|---|---|---|---|
| 10.05.2021 | DRN. BY: | J.R.B. | 06.22.2021 |
| 01.20.2022 | DSN BY: | J.R.B. | " |
| | CHK'D BY: | J.B.M. | " |
| | APPR BY: | J.B.M. | " |

SHEET NO: C-4

## PROJECT DESCRIPTION:

SITE WORK RELATEED TO THE MARIHUANA PROVISIONING FACILITY INCLUDES:
THE WORK ON THE SUBJECT SITE INCLUDES THE REMODELING 2,873 SQUARE FEET OF A EXISTING BUILDING, NEW CONCRETE SIDEWALK & RAMP, NEW ASPHALT PAVEMENT, MINOR PAVEMENT REPAIRS TO THE EXISTING PARKING LOT PAVEMENT AND SEALED COATED. ALL PROPOSED CONSTRUCTION SHALL MEET AND COMPLY WITH CITY OF CITY OF KALAMAZOO STANDARDS, SPECIFICATIONS, AND ORDINANCES, AS REQUIRED.

## LANDSCAPE NOTES:

1. ALL CORNER LOT PLANT BEDS TO HAVE 4" OF WOOD MULCH BEDDING PLACED ON GEOTEXTILE WEED BLOCK FABRIC
2. ALL NEW LAWN TREES SHALL HAVE A 5' DIAMETER CIRCLE OF 4" WOOD MULCH BEDDING PLACED ON GEOTEXTILE WEED BLOCK FABRIC BOUNDED BY COMMERCIAL GRADE PLASTIC EDGING.
3. ALL LAWN AREAS SHALL BE ESTABLISHED WITH 4" TOPSOIL SURFACE, FERTILIZER, SEED AND MULCH. ALL LANDSCAPE BEDS SHALL HAVE A 18" DEEP BED OF A MIXTURE THAT CONSISTS OF TOPSOIL & COMPOST.
4. ON-SITE IRRIGATION IS SHALL BE REQUIRED FOR THIS PROJECT.
5. ALL UTILITY STRUCTURES AND TRANSFORMERS MUST BE SCREENED WITH LANDSCAPING.
6. ALL SHRUBS AND BUSHES SHALL BE TRIMMED AND HEIGHTS MAINTAINED TO NO MORE THAN 42 INCHES.

# SITE LANDSCAPING PLAN

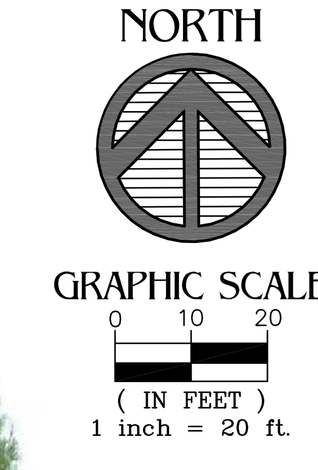
### LEGEND

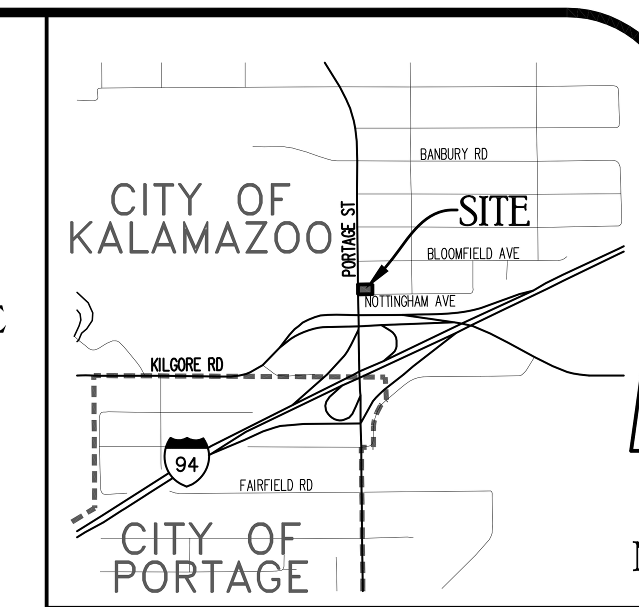
PROP BUSHES OR SHRUBS
PROP CONIFEROUS TREES
PROP DECIDUOUS TREES
AMOUNT OF TREES/SHRUBS
TYPE OF TREE/SHRUB

## SHRUBS, BUSHES, AND PERANNIALS TYPES:

## TREE TYPES:

## RAIN GARDEN SHRUBS, GRASSES, SEDGES, & WILDFLOWER TYPES:




## LOCATION MAP

## PLANT LIST

| QTY | KEY | COMMON NAME | BOTANICAL NAME | SIZE |
|---|---|---|---|---|
| 32 | A | DAYLILLY | HEMEROCALLIS HAPPY RETURNS | BULBS |
| 8 | B | CRIMSON PYGMY BAYBERRY | ATROPURPUREA NANA | 24" HGT |
| 7 | C | WICHITA BLUE JUNIPER | JUNIPERUS SCOPULORUM | 24" HGT |
| 7 | D | DWARF BURNING BUSH | EUONYMUS ALATUS 'COMPACTUS' | 24" HGT |

## TREE LIST

| QTY | KEY | COMMON NAME | BOTANICAL NAME | SIZE |
|---|---|---|---|---|
| 6 | E | AMERICAN ARBORVITAE | THUJA OCCIDENTIALS | 5' HGT |
| 5 | F | WHITE PINE | PINUS STROBUS | 6' HGT |
| 7 | G | BURKII RED CEDAR | JUNIPERUS VIRGINIANA | 5' HGT |
| 2 | H | AMERICAN SWEETGUM | LIQUIDAMBAR STYRACIFLUA | 2.5" CALIPER |
| 1 | J | ROSE OF SHARON | HIBISCUS SYRIACUS | 1.5" CALIPER |

## RAIN GARDEN SHRUB LIST

| QTY | KEY | COMMON NAME | BOTANICAL NAME | SIZE |
|---|---|---|---|---|
| 8 | K | MAPLE LEAF VIBURNUM | VIBURNUM ACERIFOLIUM | 24" HGT |
| 10 | L | MICHIGAN HOLLY | ILEX VERTICILLATA | 36" HGT |

## SITE SEEDING NOTES:

### SITE PREPARATION:

1. CONSIDER PROTECTING SEEDED AREAS FROM PEDESTRIAN ACCESS.

2. WHERE POSSIBLE, DIVERT CONCENTRATED FLOWS AWAY FROM THE SEEDED AREA AT LEAST UNTIL THE VEGETATION IS ESTABLISHED.

3. SOIL TESTS SHOULD BE DONE TO DETERMINE THE NUTRIENT AND PH CONTENT OF THE SOIL. DEPENDING ON THE RESULTS OF SOIL TESTS, SOIL MANAGEMENT MAY BE NECESSARY TO ADJUST THE PH TO BETWEEN 6.5 AND 7.0 (FOR MOST CONDITIONS). NOTE THAT SANDY LOAM, LOAM, AND SILT LOAM ARE THE PREFERRED SOILS FOR SEEDING. CONSIDERATION SHOULD BE GIVEN TO INCORPORATING THESE SOILS INTO THE SEEDBED.

4. PREPARE A 3-5-INCH DEEP SEEDBED, WITH THE TOP 3-4 INCHES CONSISTING OF TOPSOIL. NOTE THAT THE EARTH BED UPON WHICH THE TOPSOIL IS TO BE PLACED SHOULD BE AT THE REQUIRED GRADE.

5. THE SEEDBED SHOULD BE FIRM BUT NOT COMPACT. THE TOP THREE INCHES OF SOIL SHOULD BE LOOSE, MOIST AND FREE OF LARGE CLODS AND STONES. FOR MOST APPLICATIONS, ALL STONES LARGER THAN 2 INCHES IN DIAMETER, ROOTS, LITTER AND ANY FOREIGN MATTER SHOULD BE RAKED AND REMOVED. THE TOPSOIL SURFACE SHOULD BE IN REASONABLY CLOSE CONFORMITY TO THE LINES, GRADES AND CROSS SECTIONS SHOWN ON THE GRADING PLANS.

### PLANTING:

1. SEED SHOULD BE APPLIED AS SOON AFTER SEEDBED PREPARATION AS POSSIBLE, WHEN THE SOIL IS LOOSE AND MOIST. IF THE SEEDBED HAS BEEN IDLE LONG ENOUGH FOR THE SOIL TO BECOME COMPACT, THE TOPSOIL SHOULD BE HARROWED WITH A DISK, A SPRING TOOTH DRAG, A SPIKE TOOTH DRAG, OR OTHER EQUIPMENT DESIGNED TO CONDITION THE SOIL FOR SEEDING.

2. ALWAYS APPLY SEED BEFORE MULCH.

3. APPLY SEED AT THE RATES SPECIFIED IN THE ATTACHED EXHIBITS USING CALIBRATED SPREADERS, CYCLONE SEEDERS, MECHANICAL DRILLS, OR HYDROSEEDERS.

4. IDEALLY, BROADCAST SEED SHOULD BE INCORPORATED INTO THE SOIL BY RAKING OR CHAIN DRAGGING, OR OTHERWISE FLOATED, THEN LIGHTLY COMPACTED TO PROVIDE GOOD SEED-SOIL CONTACT.

5. FOR HYDROSEEDING OPERATIONS:
- SEED SHOULD BE APPLIED AT RECOMMENDED RATES. IF NO RATES ARE GIVEN, USE 150-200 LBS/ACRE.
- USE 2 TONS/ACRE STRAW MULCH, UNLESS OTHERWISE RECOMMENDED. USE 3 TONS/ACRE WHEN DORMANT.

6. ALL NEWLY SEEDED AREAS SHOULD BE PROTECTED FROM EROSIVE FORCES BY MULCH.

## SITE LANDSCAPING DATA:

LANDSCAPING REQUIRED IN COMMUNITY COMMERCIAL DISTRICT (CC):

FRONT YARD SETBACKS (PORTAGE STREET): SHALL CONTAIN A MINIMUM OF ONE TREE OR ONE EVERGREEN TREE FOR EACH 35 FEET OF LINEAR STREET FRONTAGE, PLUS ONE SHRUB FOR EACH 25 FEET OF LINEAR STREET FRONTAGE = 132 FEET ALONG PORTAGE STREET =
A) NO OF TREES REQUIRED = 132/35 = 3.77 or 4 TREES **(PROVIDED 7)**
B) NO OF SHRUBS REQUIRED = 132/25 = 5.28 or 6 SHRUBS **(PROVIDED 8)**

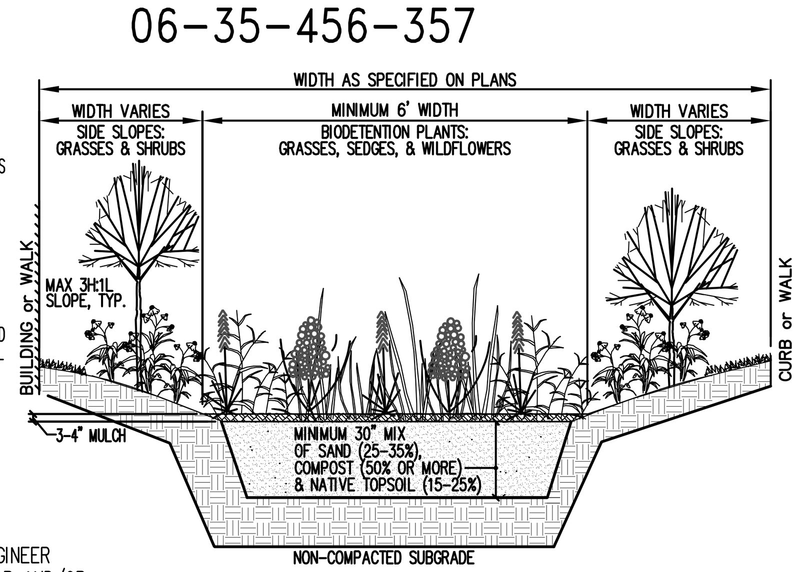
PERIMETER SCREENING FROM PUBLIC STREETS (NOTTINGHAM AVENUE):
A) ALL ZONE DISTRICTS EXCEPT CCBD. IN ALL ZONE DISTRICTS EXCEPT THE CCBD ZONE, EACH PARKING LOT THAT ABUTS A PUBLIC STREET SHALL PROVIDE A LANDSCAPE SCREEN AS FOLLOWS:
1) MINIMUM WIDTH: FIVE (5) FEET.
2) REQUIRED TREES: ONE TREE PER 35 FEET OF LINEAR FRONTAGE = 125/35 = 3.57 or 4 TREES **(PROVIDED 8)**
3) REQUIRED SHRUBS: THREE SHRUBS PER 20 FEET OF LINEAR FRONTAGE = 125/20 = 6.25 or 7 SHRUBS **(PROVIDED 8)**

REQUIRED LANDSCAPING FOR BUILDING PERIMETERS: AT LEAST ONE SHRUB SHALL BE PLANTED PER EACH FIVE LINEAL FEET OF EACH FACADE FACING A PUBLIC RIGHT-OF-WAY OR CONTAINING A PRIMARY ENTRANCE = 78+28 = 106/5 = 21.2 or 22 SHRUBS **(PROVIDED 22)**

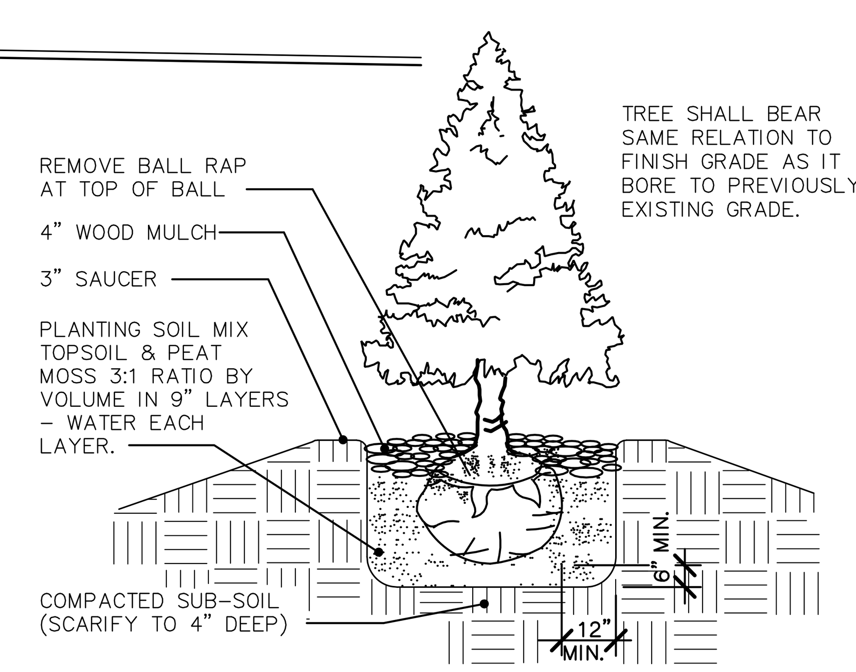
INTERIOR PARKING LOT LANDSCAPING REQUIREMENTS:
A) FIVE PERCENT OF THE ENTIRE PARKING LOT AREA SHALL BE PROVIDED AS A LANDSCAPE AREA;
B) ONE TREE SHALL BE PROVIDED FOR EACH 300 SQUARE FEET OF INTERNAL LANDSCAPE AREA;
C) INTERNAL LANDSCAPE AREAS SHALL BE DISPERSED ON THE SITE SO AS TO BREAK UP THE EXPANSE OF PAVEMENT; AND
D) INTERNAL LANDSCAPE AREAS SHALL BE CURBED FOR PROTECTION OF THE LANDSCAPE MATERIALS.

## RAIN GARDEN CONSTRUCTION NOTES:

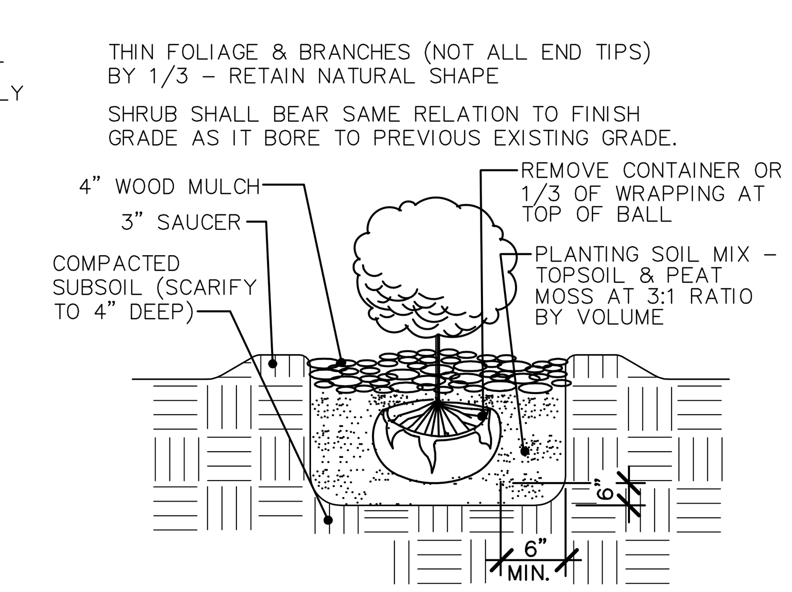
1. PLACE MIN 3 SYD COBBLE STONE RIP-RAP AT EACH CURB CUT INLET LOCATION, AS SHOWN.
2. BUILD THE GARDEN BED WITH A PLANTING MIX OF SAND (25-35%), COMPOST (50% OR MORE) AND NATIVE TOPSOIL (15-25%), VARIATIONS OF THESE PROPORTIONS MAY BE WORKABLE.
3. STABILIZE THE TOP OF THE GARDEN WITH A NATURAL MULCH 3 TO 4 INCHES DEEP. THE MULCH ACTS AS A SPONGE TO CAPTURE HEAVY METALS, OILS, AND GREASE. BACTERIA BREAKS DOWN THE POLLUTANTS AS THE MULCH DECAYS. THE MULCH ALSO REDUCES WEEDS AND MAINTENANCE.
4. SELECT A NATURAL MULCH SUCH AS AGED SHREDDED HARDWOOD BARK THAT WILL GRADUALLY DECOMPOSE, ADDING COMPOST (HUMUS) TO THE SOIL. APPLY THE MULCH TO A DEPTH OF 3 TO 4 INCHES AND REPLENISH, AS NEEDED.
5. RAIN GARDEN SIDE SLOPES SHALL HAVE A MINIMUM OF 1 ON 3 SIDE SLOPES.
6. BOTTOM OF RAIN GARDEN SHALL BE PLANTED WITH A MIXTURE OF GROUNDCOVER AND WETLAND-BASED PLANTINGS NATIVE TO MICHIGAN, SUCH AS NATIVE GRASSES OR WILDFLOWERS WITHIN 48 HOURS OF FINAL GRADE.
7. THE BOTTOM AND SIDE SLOPES OF THE PROPOSED RAIN GARDENS SHALL CONSIST OF THE FOLLOWING SHRUBS, GRASSES & SEDGES, AND WILDFLOWERS:
A) SHRUBS TYPES (10%): MICHIGAN HOLLY, MAPLE LEAF VIBURNUM
B) GRASSES & SEDGES (55%): RUSHES, LITTLE BLUESTEM, PURPLE LOVEGRASS
C) WILDFLOWERS (35%): BUTTERFLYWEED, BLUE-EYED GRASS, PURPLE CONEFLOWER



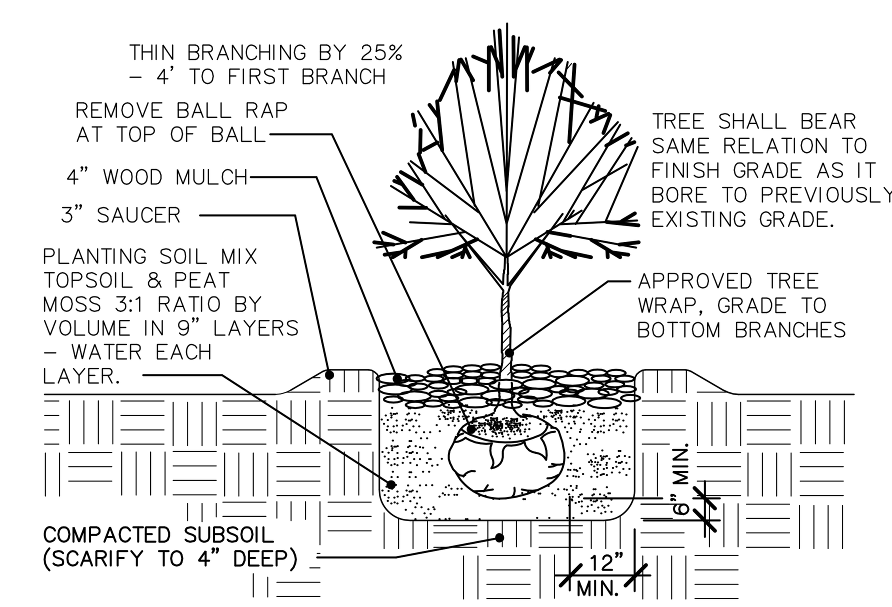

## RAIN GARDEN DETAIL




## EVERGREEN PLANTING DETAIL




## SHRUB PLANTING DETAIL




## TREE PLANTING DETAIL

Know what's **below.** **Call** before you dig.

## UTILITY STATEMENT

THE UNDERGROUND UTILITIES SHOWN HAVE BEEN LOCATED FROM FIELD SURVEY INFORMATION AND EXISTING DRAWINGS, IF AVAILABLE. THE SURVEYOR AND/OR ENGINEER MAKES NO GUARANTEES THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. THE SURVEYOR AND/OR ENGINEER FURTHER DOES NOT WARRANT THAT THE UNDERGROUND UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED ALTHOUGH HE DOES CERTIFY THAT THEY ARE LOCATED AS ACCURATELY AS POSSIBLE FROM INFORMATION AVAILABLE. THE SURVEYOR AND/OR ENGINEER HAS NOT PHYSICALLY LOCATED THE UNDERGROUND UTILITIES.

BMCC JOBS/050621-J&F/KALAMAZOO/4305 PORTAGE - LAND - C-5

| SCALE: 1"=20' | OWNER/DEVELOPER: JEK PROPERTIES, LLC 4330 SOUTH LAKE LANE SHELBY TOWNSHIP, MI 48316 PHONE: 248.755.1808 | PART OF THE SOUTHEAST 1/4 SECTION 35, T2S-R11W CITY OF KALAMAZOO, MICHIGAN | BM CC | BM CONSTRUCTION CONSULTANTS 2240 LAUDERDALE STREET FLINT, MICHIGAN 48532 PHONE: 810.423.5014 EMAIL:BMCONSTRUCTION@COMCAST.NET | SITE LANDSCAPING PLAN FOR: PROPOSED MARIHUANA PROVISIONING CENTER 4305 PORTAGE ROAD, KALAMAZOO, MICHIGAN 49001 |
|---|---|---|---|---|---|
| JOB NO. 050621 | | | | | |

| REVISIONS | | | | SHEET NO: |
|---|---|---|---|---|
| 10.05.2021 | DRN. BY: | J.R.B. | 06.22.2021 | C-5 |
| 01.20.2022 | DSN BY: | J.R.B. | " | |
| | CHK'D BY: | J.B.M. | " | |
| | APPR BY: | J.B.M. | " | |

# SITE LIGHTING PLAN

## PROJECT DESCRIPTION:

SITE WORK RELATEED TO THE MARIHUANA PROVISIONING FACILITY INCLUDES:
THE WORK ON THE SUBJECT SITE INCLUDES THE REMODELING 2,873 SQUARE FEET OF A EXISTING BUILDING, NEW CONCRETE SIDEWALK & RAMP, NEW ASPHALT PAVEMENT, MINOR PAVEMENT REPAIRS TO THE EXISTING PARKING LOT PAVEMENT AND SEALED COATED. ALL PROPOSED CONSTRUCTION SHALL MEET AND COMPLY WITH CITY OF CITY OF KALAMAZOO STANDARDS, SPECIFICATIONS, AND ORDINANCES, AS REQUIRED.

## UTILITY STATEMENT

THE UNDERGROUND UTILITIES SHOWN HAVE BEEN LOCATED FROM FIELD SURVEY INFORMATION AND EXISTING DRAWINGS, IF AVAILABLE. THE SURVEYOR AND/OR ENGINEER MAKES NO GUARANTEES THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. THE SURVEYOR AND/OR ENGINEER FURTHER DOES NOT WARRANT THAT THE UNDERGROUND UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED ALTHOUGH HE DOES CERTIFY THAT THEY ARE LOCATED AS ACCURATELY AS POSSIBLE FROM INFORMATION AVAILABLE. THE SURVEYOR AND/OR ENGINEER HAS NOT PHYSICALLY LOCATED THE UNDERGROUND UTILITIES.

811 Know what's below. Call before you dig.

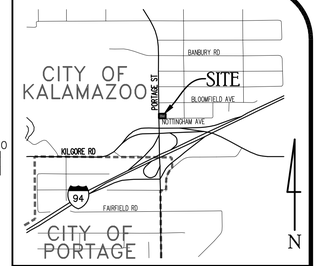
MIRADA MEDIUM LED
LIGHT FIXTURE ON POLE
TYPE A – 20' POLE

LXT-WM2-PLED-II-65 WATT LED
LIGHT FIXTURE ON BUILDING
TYPE B – 10' FROM FINISH GRADE

LXT-WM2-PLED-II-43 WATT LED
LIGHT FIXTURE ON BUILDING
TYPE C – 10' FROM FINISH GRADE

NORTH

GRAPHIC SCALE
20 0 10 20
( IN FEET )
1 inch = 20 ft.




## LOCATION MAP

## L E G E N D

- PROP 20' LIGHT POLE (TYPE A)
- PROP 10' HIGH WALL PACK LIGHT (TYPE B)
- PROP 10' HIGH WALL PACK LIGHT (TYPE C)
- PROP Fc (FOOTCANDLE) GRID POINT
- (A) (B) or (C) PROP LIGHT FIXTURE TYPE

**Luminaire Schedule**

| Symbol | Qty | Label | Arrangement | Description | LLF | Arr Lum Lumens | Arr Watts |
|---|---|---|---|---|---|---|---|
| | 2 | A | SINGLE | MRM-150 WATT LED - 20' POLE HGT | 1.000 | 14,546 | 150 |
| | 4 | B | SINGLE | LXT-WM2-PLED-II-65 WATT LED - 10' A.F.G. | 1.000 | 9,540 | 64.7 |
| | 2 | C | SINGLE | LXT-WM2-PLED-II-43 WATT LED - 10' A.F.G. | 1.000 | 6,281 | 42.7 |

**Calculation Summary**

| Label | CalcType | Units | Avg | Max | Min | Avg/Min | Max/Min |
|---|---|---|---|---|---|---|---|
| OVERALL SITE POINTS AT GRADE 5'x5' | Illuminance | Fc | 0.45 | 12.0 | 0.0 | N.A. | N.A. |
| ALONG PROPERTY LINE PERIMETER | Illuminance | Fc | 0.99 | 7.0 | 0.1 | N.A. | N.A. |

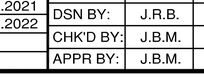
## SITE LIGHTING NOTES:

1. ALL OUTDOOR LIGHTING IN ALL USE DISTRICTS OTHER THAN RESIDENTIAL DISTRICTS SHALL BE SHIELDED SO THE SURFACE OF THE SOURCE OF THE LIGHT SHALL NOT BE VISIBLE FROM ALL ADJACENT RESIDENTIAL DISTRICTS, ADJACENT RESIDENCES AND PUBLIC RIGHTS-OF-WAY.
2. LIGHT FIXTURES WERE DESIGNED AND SHIELDED SO THAT LIGHT IS DIRECTED ONTO THE PARKING AREA AND DIRECTED AWAY FROM ADJACENT PROPERTY AND TRAFFIC.
3. THE DESIGN AND STYLE OF FIXTURES (COLOR, SHAPE, STYLE, AND MATERIALS) SHALL MATCH OR COMPLEMENT THE STYLE AND MATERIALS OF THE BUILDINGS SERVED.
4. ALL LIGHTING EXCEPT SECURITY LIGHTING SHALL BE ON A TIME-CLOCK OR PHOTO-SENSOR SYSTEM, AS APPROVED BY CITY OF KALAMAZOO.
5. PARKING LOTS SHALL BE ILLUMINATED WITH A LIGHT-EMITTING DIODE (LED) OR OTHER APPROVED LIGHTING SYSTEM. THE LIGHTING SYSTEM SHALL PROVIDE NOT LESS THAN ONE FOOTCANDLE OVERALL AVERAGE ILLUMINATION WITH A MINIMUM OF 1.0 FOOTCANDLES ON THE PARKING SURFACE.
6. LIGHTING STANDARDS IN PARKING LOTS IN AND ADJACENT TO RESIDENTIAL ZONES SHALL NOT EXCEED TWENTY FEET IN HEIGHT AS MEASURED FROM THE ADJACENT GRADE TO THE TOP OF THE LIGHT FIXTURE. THE TOTAL LIGHT CUTOFF ANGLE MAY BE NO GREATER THAN 85 DEGREES. ILLUMINATION SHALL NOT BE OF A FLASHING, MOVING OR INTERMITTENT TYPE. ALL ILLUMINATION SHALL BE CONSTANT IN INTENSITY AND COLOR AT ALL TIMES WHEN IN USE.
7. PARKING LOT LIGHTS MUST BE FULL CUT OFF TYPE FIXTURES AND LAMPS MUST BE SHIELDED TO PREVENT LIGHT TRESPASS OR GLARE. A WHITE LIGHT SOURCE SHOULD BE USED FOR THE WALL MOUNTED LIGHTS, SUCH AS INCANDESCENT, METAL HALIDE, OR OTHER LAMPS WITH A COLOR RENDERING INDEX OF AT LEAST 70. MAXIMUM LIGHT LEVELS MUST BE LESS THAN OR EQUAL TO 1.0 FOOTCANDLE BEYOND A PROPERTY LINE, PER CITY ZONING ADJACENT TO ANY COMMERCIAL PROPERTIES.
8. ONLY LIGHTING NECESSARY FOR SITE SECURITY MAY BE LEFT ON BETWEEN MIDNIGHT AND 6:00 AM.
9. SEE THIS SHEET FOR PARKING LOT LIGHT POLE CONSTRUCTION DETAILS THE LIGHT POLE HEIGHTS SHALL BE 20 FEET ABOVE GRADE. THE BUILDING WALLPACK LIGHTS SHALL BE INSTALLED AT 8 FEET ABOVE GRADE, AS NOTED. THE CONTRACTOR SHALL CONTACT MISS DIG 72 HOURS PRIOR TO CONSTRUCTION TO VERIFY IF ANY UNDER GROUND UTILITIES WILL BE IN VICINITY OF THE WORK AREA.

## LIGHTING STATEMENTS:

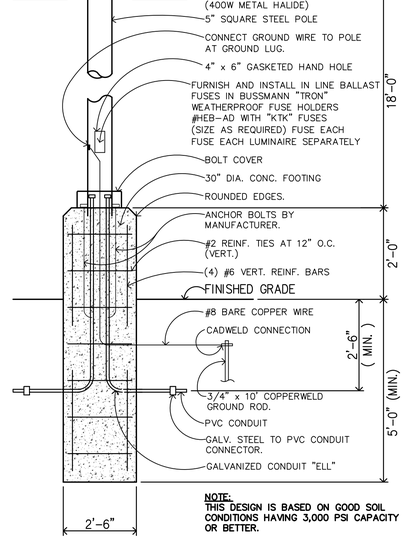
BASED ON THE INFORMATION PROVIDED, ALL DIMENSIONS AND LUMINAIRE LOCATIONS SHOWN REPRESENT RECOMMENDED POSITIONS. THE ENGINEER AND/OR ARCHITECT MUST DETERMINE THE APPLICABILITY OF THE LAYOUT TO EXISTING OR FUTURE FIELD CONDITIONS.

THIS LIGHTING PLAN REPRESENTS ILLUMINATION LEVELS CALCULATED FROM LABORATORY DATA TAKEN UNDER CONTROLLED CONDITIONS IN ACCORDANCE WITH THE ILLUMINATING ENGINEERING SOCIETY (IES) APPROVED METHODS. ACTUAL PERFORMANCE OF ANY MANUFACTURER'S LUMINAIRES MAY VARY DUE TO CHANGES IN ELECTRICAL VOLTAGE, TOLERANCE IN LAMPS/LED'S AND OTHER VARIABLE FIELD CONDITIONS. CALCULATIONS DO NOT INCLUDE OBSTRUCTIONS SUCH AS BUILDINGS, CURBS, LANDSCAPING, OR ANY OTHER ARCHITECTURAL ELEMENTS UNLESS NOTED.



"SHOE-BOX" TYPE HOUSING

NOTE: ALL 18'-0" POLES TO BE MOUNTED ON CONCRETE PEDESTALS 2'-0" ABOVE GRADE, FOR A TOTAL MOUNTING HEIGHT OF 20'-0" ABOVE TOP OF PROPOSED GRADE.




NOTE:
THIS DESIGN IS BASED ON GOOD SOIL CONDITIONS HAVING 3,000 PSI CAPACITY OR BETTER.

## LIGHT POLE DETAIL

BMCC JOBS/050621-8F/KALAMAZOO/4305 PORTAGE - LIGHT - C-6

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| SCALE: 1"=20' | OWNER/DEVELOPER: JEK PROPERTIES, LLC 4330 SOUTH LAKE LANE SHELBY TOWNSHIP, MI 48316 PHONE: 248.755.1808 | PART OF THE SOUTHEAST 1/4 SECTION 35, T2S-R11W CITY OF KALAMAZOO, MICHIGAN | BMCC | BM CONSTRUCTION CONSULTANTS 2240 LAUDERDALE STREET FLINT, MICHIGAN 48532 PHONE: 810.423.5014 EMAIL:BMCONSTRUCTION@COMCAST.NET | SITE LIGHTING PLAN FOR: PROPOSED MARIHUANA PROVISIONING CENTER 4305 PORTAGE ROAD, KALAMAZOO, MICHIGAN 49001 | REVISIONS 10.05.2021 01.20.2022 | DRN. BY: J.R.B. 06.22.2021 |
| JOB NO. 050621 | | | | | | | DSN BY: J.R.B. " |
| | | | | | | | CHK'D BY: J.B.M. " |
| | | | | | | | APPR BY: J.B.M. " |

SHEET NO: C-6

3-14-2022

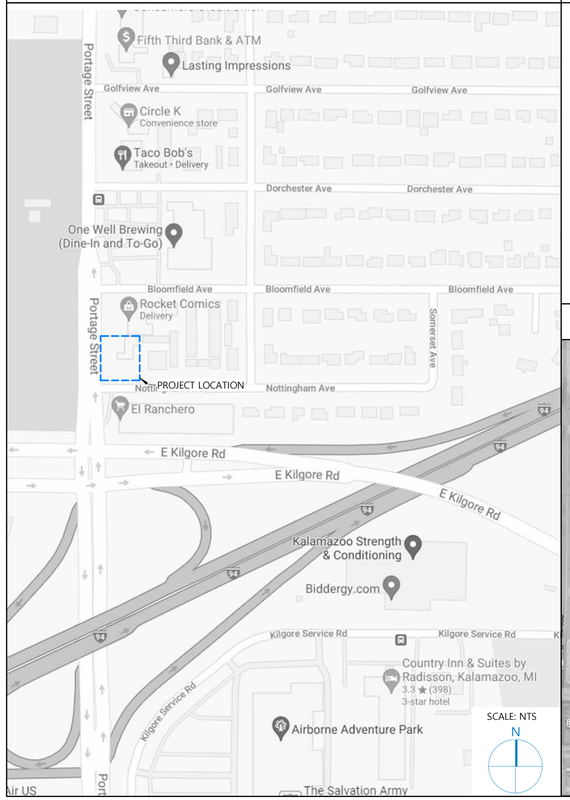
SPA REVISION 2

**PROJECT NUMBER** 210623_05_09
**DATE** 02.18.2022

# 4305 PORTAGE ROAD PROVISIONING CENTER

4305 PORTAGE ROAD
KALAMAZOO, MI 49001

## VICINITY MAP




## PROJECT DIRECTORY

**OWNER**
JEK PROPERTIES, LLC
4330 SOUTH LAKE LANE
SHELBY TOWNSHIP, MI 48316

**ARCHITECT**
DAMIAN FARRELL DESIGN GROUP PLLC
359 METTY DRIVE, SUITE 4A
ANN ARBOR MICHIGAN 48103
PH. 734.998.1331
KGONZALEZ@DFDGONLINE.COM

**SURVEYOR/CIVIL**
BM CONSTRUCTION CONSULTANTS
2240 LAUDERDALE STREET
FLINT, MICHIGAN 48532
BMCONSTRUCTION@COMCAST.NET

## LOCATION MAP

## GENERAL PROJECT INFORMATION

LEGAL DESCRIPTION FOR PARCEL, 06-35-450-001
LAND SITUATED IN THE CITY OF KALAMAZOO, COUNTY OF KALAMAZOO, STATE OF MICHIGAN TO WIT: BEGINNING IN THE NORTH AND SOUTH 1/4 LINE OF SECTION 35, TOWN 2 SOUTH, RANGE 11 WEST AT A POINT 200 FEET NORTH OF THE SOUTHWEST CORNER OF THE NORTH 1/2 OF THE SOUTHWEST 1/4 OF THE SOUTHEAST 1/4 OF SAID SECTION RUNNING NORTH ALONG THE NORTH AND SOUTH 1/4 LINE OF SAID SECTION 132 FEET; THENCE EAST PARALLEL TO SOUTH LINE OF THE NORTH 1/2 OF THE SOUTHWEST 1/4 OF SAID THE SOUTHEAST 1/4 OF SAID SECTION 175 FEET; THENCE SOUTH PARALLEL TO SAID NORTH AND SOUTH 1/4 LINE 132 FEET; THENCE WEST 175 FEET TO THE PLACE OF BEGINNING.

## PROJECT DATA

**MUNICIPALITY:** CITY OF KALAMAZOO
**ZONING DISTRICT:** CC COMMUNITY COMMERCIAL DISTRICT
**LOT AREA REQUIRED:** 5,000 SF
**LOT AREA:** 23,100 SF (0.53 ACRES)
**MAX. BUILDING HEIGHT:** 65'
**PROPOSED BUILDING HEIGHT:** +/- 20'

**SCOPE OF WORK:**

**CODE REVIEW**

MAXIMUM ALLOWABLE AREA (SF): TABLE 503
M MERCANTILE 9,000 SF

CONSTRUCTION TYPE: VB CHAP. 6

MAX. TRAVEL DISTANCE: TABLE 1016.2
MAX. ALLOWABLE TRAVEL DISTANCE w/o SPRINKLERS:
GROUP M MERCANTILE 200 ft.

DEAD END CORRIDORS: SECTION 1018.4
MAX. ALLOWABLE w/o SPRINKLERS: 20 ft.

OCCUPANCY CALCULATION: TABLE 1004.1.2

| OCCUPANCY LOAD | | | |
|---|---|---|---|
| FUNCTION OF SPACE | OCCUPANT LOAD FACTOR | AREA | OCCUPANCY LOAD |
| ACCESSORY | 1/300 SF | 165 SF | 0.55 |
| BUSINESS | 1/100 SF | 704 SF | 7.03 |
| MERCANTILE | 1/60 SF | 1838 SF | 30.63 |
| MERCANTILE STORAGE | 1/300 SF | 193 SF | 0.64 |
| | | **TOTAL:** 2900 SF | 39 OCC. |

****TRIP GENERATION PER ITE 10TH GENERATION**
PROVISIONING CENTER KSF: 2.9 KSF
730.80 DAILY TRIPS (2.9 KSF x 252 TRIPS/KSF)

**PEAK HOUR TRIPS**
60.55 AM PEAK HOUR TRIPS (2.9 KSF x 20.88 TRIPS/KSF)
63.31 PM PEAK HOUR TRIPS (2.9 KSF x 21.83 TRIPS/KSF)

**APPLICABLE CODES:**
2015 MICHIGAN BUILDING CODE
2015 MICHIGAN REHABILITATION CODE FOR EXISTING BUILDINGS
2015 MICHIGAN MECHANICAL CODE
2015 MICHIGAN PLUMBING CODE
2015 MICHIGAN ENERGY CODE
MICHIGAN ELECTRICAL CODE BASED ON THE 2017 NATIONAL ELECTRICAL CODE WITH PART 8 STATE AMENDMENTS
ICC / ANSI A117.1 – 2009 & MICHIGAN BARRIER FREE DESIGN LAW OF PUBLIC ACT 1 OF 1966 AS AMENDED.

## SHEET INDEX


| SHEET NUMBER | SHEET NAME |
|---|---|
| T0.0 | COVER SHEET |
| T1.0 | GENERAL NOTES & ABBREVIATIONS |
| T2.0 | ADA DETAILS |
| T3.0 | CODE REVIEW & LIFE SAFETY PLAN |
| C1.0 | SITE PLAN |
| D1.0 | DEMO PLAN |
| A0.0 | SCHEDULES |
| A1.1 | FLOOR PLAN |
| A2.1 | REFLECTED CEILING PLAN |
| A3.0 | ROOF PLAN |
| A4.0 | ELEVATIONS |
| A5.0 | BUILDING SECTIONS |
| A6.0 | WALL SECTIONS |
| A8.0 | ENLARGED PLANS & INTERIOR ELEVATIONS |
| A8.1 | INTERIOR ELEVATIONS |



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FOR SITE PLAN APPROVAL

4305 PORTAGE ROAD PROVISIONING CENTER
4305 PORTAGE ROAD
KALAMAZOO, MI 49001

| DATE | DESCRIPTION |
|---|---|
| 08.22.2021 | SPA SUBMITTAL |
| 10.05.2021 | SPA REVISION 1 |
| 02.18.2022 | SPA REVISION 2 |

| | |
|---|---|
| DESIGN | Designer |
| DRAWN | Author |
| PROJECT NO. | 210623_05_09 |

## COVER SHEET

To.o

P:\2021\210623_05_09_4305 Portage St (PUFF)\Revit\210916_4035 Portage Road (Puff).rvt


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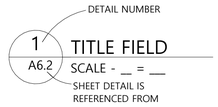
## ABBREVIATIONS

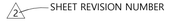
| | | | | | |
|---|---|---|---|---|---|
| | | EQ | EQUAL | | |
| | | EQUIP | EQUIPMENT | P.C. | PRECAST |
| | | EXP | EXPANSION | P.O.C. | POINT OF CONNECTION |
| | | EXT | EXTERIOR | P.T. | PRESSURE TREATED |
| | | | | P/L | PROPERTY LINE |
| # | POUND/NUMBER | | | PERF. | PERFORATED |
| & | AND | F.A. | FIRE ALARM | PL | PLATE |
| (D) | DEMO | F.D. | FLOOR DRAIN | PLAM | PLASTIC LAMINATE |
| (E) | EXISTING | F.E. | FIRE EXTINGUISHER | PLYWD | PLYWOOD |
| (F) | FUTURE | F.O. | FACE OF | PNT | PAINT |
| (N) | NEW | F.O.C. | FACE OF CONCRETE/CURB | PR. | PAIR |
| < | ANGLE | F.O.F. | FACE OF FINISH | PT. | POINT |
| @ | AT | F.O.M. | FACE OF MASONRY | PTL. BD | PARTICLE BOARD |
| ø/DIA. | DIAMETER/ROUND | F.O.S. | FACE OF STUDS | PTN | PARTITION |
| | | F.R. | FIRE RATED | PVC | POLYVINYL CHLORIDE |
| A.B. | ANCHOR BOLT | F.R.P. | FIBER-REINFORCED PLASTIC | PVMT | PAVEMENT |
| A.C. | AIR CONDITIONING | F.R.T. | FIRE RETARDANT TREATED | | |
| A.D. | AREA DRAIN | F.S. | FIRE SPRINKLER | Q.T. | QUARRY TILE |
| ACT | ACOUSTICAL CEILING TILE | FDC | FIRE DEPARTMENT CONNECTION | | |
| ADDM | ADDENDUM | FDN | FOUNDATION | R | RISER/RADIUS |
| ADJ | ADJUSTABLE | FEC | FIRE EXTINGUISHER CABINET | | |
| AFF | ABOVE FINISHED FLOOR | FF | FINISH FLOOR | | |
| AGGR | AGGREGATE | FFE | FINISH FLOOR ELEVATION | | |
| AHU | AIR HANDLING UNIT | FH | FIRE HYDRANT | R.D. | ROOF DRAIN |
| ALT | ALTERNATE | FHVC | FIRE HOSE VALVE CABINET | R.O. | ROUGH OPENING |
| ALUM | ALUMINUM | FIN. | FINISH | R.O.W. | RIGHT OF WAY |
| ANOD | ANODIZED | FLR | FLOORING | RB | RUBBER OR RESILIENT BASE |
| APPROX | APPROXIMATE | FLUOR | FLUORESCENT | RE: | REFERENCE |
| ARCH | ARCHITECTURAL | FRMG | FRAMING | REF. | REFRIGERATOR |
| AUTO | AUTOMATIC | FT | FOOT/FEET | REINF | REINFORCED |
| | | FTG | FOOTING | REQD | REQUIRED |
| B.O. | BOTTOM OF | FURR | FURRING | RESIL | RESILIENT |
| BD | BOARD | | | REV | REVISED |
| BDF | BUILDING DISTRIBUTION FACILITY | G.F.R.G. | GLASS FIBER REINFORCED GYPSUM | RH | ROOF HATCH |
| BFP | BACK FLOW PREVENTER | G.I. | GALVANIZED IRON | RM | ROOM |
| BIT | BITUMINOUS | GA | GAUGE | RTU | ROOF TOP UNIT |
| BLDG | BUILDING | GALV | GALVANIZED | | |
| BLK | BLOCK | GB | GRAB BAR | S. | SOUTH |
| BLKG | BLOCKING | GC | GENERAL CONTRACTOR | S.C. | SOLID CORE |
| BM | BEAM | GFI | GROUND FAULT INTERRUPTED | S.F. | STOREFRONT |
| BOT | BOTTOM | GL | GLASS | S.V. | SHEET VINYL |
| BRG | BEARING | GYP. BD. | GYPSUM BOARD | SCHED | SCHEDULE |
| BTWN | BETWEEN | | | SD | STORM DRAIN OR SMOKE DETECTOR |
| BW | BACK OF WALK | H.M. | HOLLOW METAL | SECT. | SECTION |
| | | HB | HOSE BIBB | SGT | STRUCTURAL GLAZED TILE |
| C.B. | CATCH BASIN | HC | HANDICAP ACCESSIBLE | SH | SHELF |
| C.G. | CORNER GUARD | HDR | HEADER | SHT | SHEET |
| C.I. | CAST IRON | HDWRE | HARDWARE | SHTHG | SHEATHING |
| C.J. | CONTROL JOINT | HGT | HEIGHT | SHWR | SHOWER |
| C.L. | CENTERLINE | HORIZ | HORIZONTAL | SIM. | SIMILAR |
| C.O. | CLEAN OUT | HR | HOUR | SKY | SKYLIGHT |
| CAB | CABINET | HRV | HEAT RECOVERY UNIT | SMH | SEWER MANHOLE |
| CEM | CEMENT | HSS. | HOLLOW STEEL SECTION | SPEC | SPECIFICATION |
| CFL | COUNTERFLASHING | HVAC | HEATING/VENTILATING/ AIR CONDITIONING | SQ. | SQUARE |
| CID | CLEAR INSIDE DIMENSION | | | SS | SOLID SURFACE |
| CLG | CEILING | I.D. | INSIDE DIAMETER/DIMENSION | SST | STAINLESS STEEL |
| CLKG | CAULKING | INC'D | INCLUDED | STD | STANDARD |
| CLO | CLOSET | INSUL | INSULATION | STL | STEEL |
| CLR | CLEAR | INT | INTERIOR | STOR. | STORAGE |
| CMU | CONCRETE MASONRY UNIT | | | STRUC | STRUCTURAL |
| CNTR | COUNTER | | | SUSP. | SUSPENDED |
| COL | COLUMN | JAN | JANITOR | SYM. | SYMMETRICAL |
| CONC | CONCRETE | JT | JOINT | | |
| CONN | CONNECTION | | | T&B | TOP AND BOTTOM |
| CONSTR | CONSTRUCTION | KIT | KITCHEN | T&G | TONGUE AND GROOVE |
| CONT | CONTINUOUS | | | T. | TREAD |
| COORD | COORDINATE | LAB | LABORATORY | T.O. | TOP OF |
| CORR | CORRIDOR | LAV | LAVATORY | T.O.C. | TOP OF CONCRETE |
| CPT | CARPET | LKR | LOCKER | T.O.M. | TOP OF MASONRY |
| CSK | COUNTERSINK/COUNTERSUNK | LT | LIGHT | T.O.S. | TOP OF STEEL |
| CSMT | CASEMENT | LVR | LOUVER | T.S. | TUBE STEEL |
| CT | CERAMIC OR PORCELIN TILE | | | T.V. | TELEVISION |
| CU FT | CUBIC FOOT/FEET | M.O. | MASONRY OPENING | TEL | TELEPHONE |
| | | MATL | MATERIAL | TER | TERAZZO |
| D.F. | DRINKING FOUNTAIN | MAX. | MAXIMUM | TRANS | TRANSITION |
| D.I. | DRAIN INLET | MDF | MEDIUM DENSITY FIBERBOARD | TYP. | TYPICAL |
| D.O. | DOOR OPENING | MECH | MECHANICAL | | |
| DBL | DOUBLE | MEMB | MEMBRANE | U.N.O. | UNLESS NOTED OTHERWISE |
| DEG | DEGREE | MFR | MANUFACTURER | UNFIN. | UNFINISHED |
| DEPT | DEPARTMENT | MH | MANHOLE | UR | URINAL |
| DIA | DIAMETER | MIN. | MINIMUM | | |
| DIAG | DIAGONAL | MIRR | MIRROR | VCT. | VINYL COMPOSITION TILE |
| DIM | DIMENSION | MISC. | MISCELLANEOUS | VERT | VERTICAL |
| DISP | DISPENSER | MTD | MOUNTED | VEST | VESTIBULE |
| DIV | DIVISION | MTL | METAL | VIF | VERIFY IN FIELD |
| DN | DOWN | MULL | MULLION | VWC | VINYL WALL COVERING |
| DR | DOOR | | | | |
| DS | DOWNSPOUT | N. | NORTH | W. | WEST |
| DTL | DETAIL | N.I.C. | NOT IN CONTRACT | W.C. | WATER CLOSET |
| DWG | DRAWING | N.R. | NOT RATED | W/ | WITH |
| DWR | DRAWER | N.T.S. | NOT TO SCALE | W/O | WITHOUT |
| | | NO. | NUMBER | WD | WOOD |
| E | EXISTING NOTED IN EQUIPMENT TAG | NOM | NOMINAL | WDW | WINDOW |
| E. | EAST | | | WF | WIDE FLANGE |
| E.J. | EXPANSION JOINT | O.C. | ON CENTER | WH | WATER HEATER |
| E.W. | EACH WAY | O.D. | OVERFLOW DRAIN | WP | WATERPROOF |
| EA. | EACH | O.H. | OVERHEAD | WRB | WEATHER-RESISTIVE BARRIER |
| ELEC | ELECTRICAL | OF/CI | OWNER FURNISH/ CONTRACTOR INSTALL | WT. | WEIGHT |
| ELEV. | ELEVATION | | | WTR | WATER |
| EMER | EMERGENCY | OF/OI | OWNER FURNISH/ OWNER INSTALL | WWF | WELDED WIRE FABRIC |
| ENCL | ENCLOSURE | OFF. | OFFICE | | |
| EPDM | ETHYLENE PROPYLENE DIENE MONOMER | OPNG | OPENING | XFMR | TRANSFORMER |
| | | OPP | OPPOSITE | | |

## SYMBOLS LEGEND

**DETAIL SYMBOL**



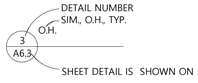

**REVISIONS**



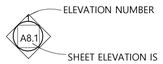

**PLAN TITLE & NORTH ARROW**

**SHEET NUMBERING**

**DETAIL/WALL SECTION CUT SYMBOL**

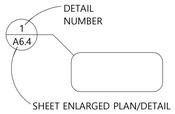



**INTERIOR ELEV. SYMBOL**

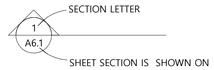



**WALL TYPE**

**ENLARGED PLAN/DETAIL**

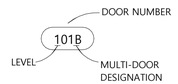



**BUILDING SECTION CUT**




**ROOM NUMBER/CEILING HEIGHT**

**DOOR NUMBER**




## GENERAL NOTES

1. CONTRACTOR SHALL VERIFY AND COORDINATE ALL NEW AND EXISTING CONDITIONS AND DIMENSIONS AT JOB SITE FOR COMPARISON WITH DRAWINGS AND SPECIFICATIONS PRIOR TO BIDDING AND START OF CONSTRUCTION. IF ANY DISCREPANCIES, INCONSISTENCIES OR OMISSIONS ARE FOUND THE ARCHITECT SHALL BE NOTIFIED, IN WRITING FOR CLARIFICATION PRIOR TO PROCEEDING WITH WORK.
2. DO NOT SCALE DRAWINGS. CONTRACTOR SHALL RELY ON ON WRITTEN DIMENSIONS AS GIVEN. THE CONTRACTOR SHALL NOTIFY THE ARCHITECT FOR CLARIFICATION. ALL DIMENSIONS SHALL BE FIELD VERIFIED BY CONTRACTOR AND COORDINATED WITH ALL THE WORK OF ALL TRADES. IF DISCREPANCIES ARE FOUND, THE CONTRACTOR SHALL NOTIFY THE ARCHITECT IN WRITING FOR CLARIFICATION BEFORE COMMENCEMENT OR RESUMPTION OF WORK.
3. ABBREVIATIONS THROUGHOUT THE PLANS ARE THOSE IN COMMON USE. NOTIFY THE ARCHITECT OF ANY ABBREVIATIONS IN QUESTION.
4. CONTRACTOR SHALL COORDINATE THE INSTALLATION OF THE VARIOUS TRADE ITEMS WITHIN THE SPACE ABOVE ALL CEILINGS (INCLUDING, BUT NOT LIMITED TO: STRUCTURAL MEMBERS, MECHANICAL DUCTS AND INSULATION, CONDUITS, RACEWAYS, SPRINKLER SYSTEM, LIGHT FIXTURES, CEILING SYSTEM, AND ANY SPECIAL STRUCTURAL SUPPORTS REQUIRED) AND SHALL BE RESPONSIBLE FOR MAINTAINING THE FINISH CEILING HEIGHT ABOVE THE FINISHED FLOOR INDICATED IN THE DRAWINGS AND THE FINISH SCHEDULE. (CEILING HEIGHT DIMENSIONS ARE TO THE FINISH SURFACE OF THE CEILING).
5. ACCESS PANELS SHALL BE PROVIDED AND INSTALLED WHEREVER REQUIRED BY BUILDING CODE OR FOR THE PROPER OPERATION OR MAINTENANCE OF MECHANICAL OR ELECTRICAL EQUIPMENT, WHETHER OR NOT INDICATE ON THE DRAWINGS. CONTRACTOR SHALL COORDINATE SIZE, LOCATION, AND TYPE OF ACCESS PANEL WITH OTHER CONTRACTORS WORK AND RECEIVE APPROVAL OF THE ARCHITECT. ACCESS PANEL SHALL BE LOCATED, FRAMED OR INSTALLED WITHOUT EXPRESSED APPROVAL OF THE ARCHITECT.
6. DIMENSIONS SHOWN ON THE FLOOR PLANS, SECTIONS, ELEVATIONS, AND DETAILS ARE TO FACE OF STUD, MASONRY, CONCRETE OR GRINDLINES, UNLESS OTHERWISE NOTED.
7. IN THE CASE OF A CONFLICT BETWEEN THE DRAWINGS AND THE SPECIFICATIONS, SPECIFICATIONS SHALL TAKE PRECEDENCE. CONTRACTOR SHALL NOTIFY THE CONSTRUCTION MANAGER OF ANY CONFLICT BEFORE PROCESSING WITH THE WORK.
8. ALL DUCT PENETRATION THROUGH PARTITIONS AND CEILINGS SHALL BE PROVIDED WITH NECESSARY FRAMES AND BRACING AROUND THE OPENING AND SHALL BE PROVIDED WITH AUTOMATIC FIRE DAMPERS AND REQUIRED BY THE BUILDING DEPARTMENT FOR FIRE-RATED PENETRATIONS.
9. THE SPECIFICATIONS AND ALL CONSULTANT DRAWINGS ARE SUPPLEMENTAL TO THE ARCHITECTURAL DRAWINGS. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO COORDINATE WITH THE ARCHITECTURAL DRAWINGS BEFORE THE INSTALLATION OF ANY OF THE CONSULTANT'S WORK AND TO BRING ANY DISCREPANCIES OR CONFLICT TO THE ARCHITECT'S ATTENTION IN WRITING, FOR CLARIFICATION. IMPROPERLY INSTALLED WORK SHALL BE CORRECTED BY THE GENERAL CONTRACTOR AT HIS EXPENSE AND AT NOT EXPENSE TO THE ARCHITECT, HIS CONSULTANTS, OR THE OWNER.
10. CONTRACTOR SHALL PROVIDE AND INSTALL ACCESS PANELS WHERE SHOWN ON THE REFLECTED CEILING PLANS AND AS REQUIRED BY THE BUILDING DEPARTMENT OR NORMAL GOOD PRACTICE TO PROVIDE ACCESS TO ALL TERMINAL BOXES, VOLUME DAMPERS, AND VALVES, ETC. (ALSO SEE NOTE 5)
11. THE ARCHITECT SHALL BE CONSULTED IN ALL CASES WHERE CUTTING INTO AN EXISTING STRUCTURAL PORTION OF ANY BUILDING IS EITHER EXPEDIENT OR NECESSARY, PRIOR TO PROCEEDING WITH WORK, REINFORCEMENT AND/OR SUPPORT SATISFACTORY TO ARCHITECT AND STRUCTURAL ENGINEER SHALL BE PROVIDED BY CONTRACTOR PRIOR TO CUTTING INTO STRUCTURAL PORTIONS OF ANY BUILDING.
12. ALL EXIT DOORS SHALL BE OPERABLE FROM THE INSIDE WITHOUT THE USE OF A KEY OR ANY SPECIAL KNOWLEDGE OR EFFORT AND SHALL BE ACCESSIBLE BY THE HANDICAPPED.
13. MAXIMUM EFFORT TO OPERATE DOORS SHALL NOT EXCEED THE FOLLOWING: - INTERIOR DOORS: 5 LBS - EXTERIOR DOORS: 8.5 LBS - FIRE DOORS: 15 LBS
14. LEGAL EXITS SHALL NOT BE BLOCKED AT ANYTIME.
15. ALL EXIT LIGHTING AND SIGNS TO HAVE MINIMUM 6-INCH-HIGH LETTERS IN ACCORDANCE WITH SECTION 19, CHAPTER 33 OF THE CODE.
16. EMERGENCY LIGHTING SHALL BE PROVIDED GIVING A VALUE ONE FOOTCANDLE AT FLOOR LEVEL. EXIT SIGNS SHALL BE ILLUMINATED BY TWO SEPARATE SOURCES OF POWER PER LOCAL FIRE DEPARTMENT. (ONE SOURCE ON EMERGENCY POWER, SEE ELEC. DWGS.)
17. TEMPORARY PEDESTRIAN PROTECTION SHALL BE PROVIDED AS REQUIRED BY CITY CODE.
18. FINAL CLEAN UP AND DISPOSAL: REMOVE DEBRIS, RUBBISH AND WASTE MATERIAL FROM THE OWNER'S PROPERTY TO A LAWFUL DISPOSAL AREA AND PAY ALL HAULING AND DUMPING COSTS. CONFORM TO PERTAINING FEDERAL STATE AND LOCAL LAWS, REGULATIONS AND ORDERS UPON COMPLETION OF WORK, ALL CONSTRUCTION AREAS SHALL BE LEFT VACUUM-CLEAN AND FREE FROM DEBRIS. CLEAN ALL DUST, DIRT, STAINS, HAND MARKS, PAINT SPOTS, DROPPINGS, AND OTHER BLEMISHES.
19. PRIOR TO INSPECTION OF THE EXISTING FACILITY, THE CONTRACTOR MUST RECEIVE PERMISSION FOR SITE ACCESS FROM THE OWNER OR THE DESIGNATED REPRESENTATIVE.
20. WHEN IT IS NECESSARY TO INTERRUPT ANY EXISTING UTILITY SERVICE TO MAKE CORRECTIONS AND/OR CONNECTION, A MINIMUM OF 48 HOURS ADVANCE NOTICE SHALL BE GIVEN THE OWNER. INTERRUPTIONS IN UTILITY SERVICES SHALL BE OF THE SHORTEST POSSIBLE DURATION FOR THE WORK AT AND HAND AND SHALL BE APPROVED IN ADVANCE BY THE OWNER.
21. IN THE EVENT THE UTILITY SERVICE IS INTERRUPTED WITHOUT THE REQUIRED 48 HOURS NOTICE, THEN THE CONTRACTOR SHALL BE FINANCIALLY LIABLE FOR ALL DAMAGES SUFFERED BY THE OWNER DUE TO THE UNAUTHORIZED INTERRUPTION. RECONNECTION SHALL BE MADE IMMEDIATELY.
22. IF THE CONTRACTOR ASCERTAINS AT ANY TIME THAT REQUIREMENTS OF THIS CONTRACT CONFLICT WITH, OR ARE IN VIOLATION OF, APPLICABLE LAWS, CODES, REGULATIONS AND ORDINANCES, HE SHALL NOT PROCEED WITH WORK IN QUESTION. EXCEPT AT HIS OWN RISK, UNTIL ARCHITECT HAS BEEN NOTIFIED IN WRITING AND WRITTEN DETERMINATION IS MADE BY THE ARCHITECT. WHERE COMPLETED OR PARTIALLY COMPLETED WORK IS DISCOVERED TO BE IN VIOLATION WITH APPLICABLE LAWS, CODES, AND REGULATIONS AND ORDINANCES, CONTRACTOR SHALL BE REQUIRED TO REMOVE THAT WORK FROM THE PROJECT AND REPLACE SUCH WORK WITH ALL NEW COMPLYING WORK AT NOT ADDITIONAL COST TO THE OWNER OR ARCHITECT.
23. ANY WORK INSTALLED IN CONFLICT WITH THE CONTRACT DOCUMENTS SHALL BE CORRECTED BY THE CONTRACTOR AT HIS EXPENSE AND AT NOT ADDITIONAL EXPENSE TO THE OWNER, ARCHITECT, OR CONSULTANTS.
24. FINISH FLOOR ELEVATIONS ARE AS ESTABLISHED BY DATUM LINE, UNLESS OTHERWISE NOTED.
25. THE CONTRACTOR WILL BE RESPONSIBLE FOR VERIFYING FLOOR-TO-FLOOR ELEVATIONS. THE NEW BUILDING EXPANSIONS GROUND FLOOR SHALL ALIGN IN ELEVATION WITH RESPECTIVE FLOORS IN EXISTING BUILDING.
26. THE CONTRACTOR SHALL FURNISH ALL MATERIALS, LABOR, EQUIPMENT, TRANSPORTATION AND SERVICES NECESSARY FOR THE SATISFACTORY COMPLETION OF WORK UNLESS DESIGNATED (N.I.C) OR (O.F.O.I.). ALL EQUIPMENT, WORK AND MATERIALS SHALL COMPLY WITH CURRENT AND LOCAL APPLICABLE CODES AND GOVERNING REGULATIONS, AND THE CONTRACT DOCUMENTS.
27. THE CONTRACTOR SHALL PROTECT ALL FINISH WORK AND SURFACES FROM DAMAGE DURING THE COURSE OF CONSTRUCTION AND SHALL REPLACE AND/OR REPAIR ALL DAMAGED SURFACES CAUSED BY CONTRACTOR OR SUBCONTRACTOR PERSONNEL TO THE SATISFACTION OF THE OWNER AND ARCHITECT.
28. THE CONTRACTOR SHALL PROVIDE ALL NECESSARY PERMITS AND INSPECTIONS.
29. SIZE OF MECHANICAL AND ELECTRICAL EQUIPMENT PADS AND BASES ARE APPROXIMATE ONLY. THE CONTRACTOR SHALL VERIFY DIMENSIONS WITH RESPECTIVE EQUIPMENT MANUFACTURER.
30. SPECIAL NOTICE TO CONTRACTORS: ALL CONTRACTORS PERFORMING WORK ON THE PREMISES SHALL BE RESPONSIBLE FOR INITIATING, MAINTAINING AND SUPERVISING A REASONABLE AND PRUDENT SAFETY PROGRAM INCLUDING BUT NOT LIMITED TO THE ISOLATION OF OWNER AREAS AND THE PROMPT REMOVAL OF ANY DEBRIS OR TOOLS WHICH MIGHT ENDANGER VISITORS AND STAFF OF THE OWNER OR ARCHITECT.
31. CONTRACTOR SHALL PROVIDE AND INSTALL ALL STIFFENERS, BRACING, BACK-UP PLATES AND SUPPORTING BRACKETS REQUIRED FOR THE INSTALLATION OF ALL CASEWORK, TOILET ACCESSORIES AND OF ALL FLOOR-MOUNTED OR SUSPENDED MECHANICAL AND ELECTRICAL EQUIPMENT.
32. THE CONTRACTOR SHALL VERIFY THE LOCATION OF ALL EXISTING UTILITY BELOW GARDE AND RELATED SERVICE CONNECTIONS WITH THE RESPECTIVE UTILITY COMPANIES.
33. THE CONTRACTOR SHALL COORDINATE THE REMOVAL, ABANDONMENT, AND/OR RELOCATION OF THE EXISTING ABOVE OR BELOW GRADE WITH THE RESPECTIVE UTILITY COMPANIES.
34. THE CONTRACTOR SHALL PERFORM ALL WORK WITHIN PUBLIC RIGHT-OF-WAY ACCORDING TO THE LOCAL JURIDSTRICTION STANDARD PLANS AND SPECIFICATIONS. CONTRACTOR SHALL OBTAIN PERMIT FROM APPROPRIATE AGENCIES.
35. THE CONTRACTOR SHALL PROVIDE TEMPORARY BRACES, SHORES AND GUYS REQUIRED TO SUPPORT ALL LOADS TO WHICH THE BUILDING STRUCTURES, UTILITIES AND RIGHT-OF-WAY MAY BE SUBJECTED DURING CONSTRUCTION.
36. THE CONTRACTOR SHALL PROVIDE SANITARY FACILITIES FOR WORKERS' USE. EXISTING FACILITIES SHALL NOT BE USED.
37. THE CONTRACTOR SHALL OBTAIN OSHA PERMITS FOR ANY VERTICAL EXCAVATIONS OVER 5'-0" DEEP INTO WHICH PERSONS MUST DESCEND.
38. THE CONTRACTOR SHALL COORDINATE WITH REPRESENTATIVES OF WATER, ELECTRICAL, GAS,TELEPHONE AND TELEVISIONS COMPANIES TO VERIFY AVAILABLE FACILITIES AND, IF APPLICABLE, TO ESTABLISH TEMPORARY FACILITIES.
39. CONTRACTOR SHALL VERIFY ALL COLUMN COORDINATES AND CHECK THEM AGAINST DIMENSIONS SHOWN ON PLANS AND DETAILS. CONSTRUCTION MANAGER SHOULD BE NOTIFIED OF ANY DISCREPANCIES DURING STAKING.
40. CONTRACTOR AND SUBCONTRACTORS SHALL BE RESPONSIBLE FOR OBTAINING AND PAYING FOR ALL PERMITS AND FEES REQUIRED, NOT NORMALLY COVERED BY THE BUILDING PERMITS.
41. SUBSTITUTIONS: - REFERENCE TO MAKERS, BRAND, MODELS, ETC., IS TO ESTABLISH THE TYPE QUALITY DESIRED; SUBSTITUTION OF ACCEPTABLE EQUIVALENTS WILL BE PERMITTED IF APPROVED BY THE ARCHITECT AND OWNER PRIOR TO BID (UNLESS NOTED OTHERWISE). - THE ARCHITECT, ACTING AS THE OWNER'S DESIGNATED AGENT FOR THE DESIGN FOR THE PROJECT, WILL EXERCISE SOLE AUTHORITY FOR DETERMINING CONFORMANCE OF MATERIALS, EQUIPMENT AND SYSTEMS WITH THE INTENT OF THE DESIGN.
42. ONLY NEW MATERIALS AND EQUIPMENT OF RECENT MANUFACTURE, OF QUALITY SPECIFIED, FREE FROM DEFECTS, WILL BE PERMITTED ON THE WORK.
43. SHOP DRAWINGS: - SHOP DRAWINGS SHALL BE SUBMITTED FOR ALL EQUIPMENT AND MATERIALS WHICH MUST INTERFACE AND COORDINATE WITH OTHERS, WHETHER DETAILED OR NOT. - SHOP DRAWINGS SHALL BE SUBMITTED IN A MINIMUM OF 3 COPIES AND ONE OZALID TRANSPARENCY; BROCHURES IN NOT LESS THAN 8 COPIES/
44. TEMPORARY FACILITIES: - THE CONTRACTOR SHALL PROVIDE A STAGING AND MATERIAL STORAGE AREA ADJACENT TO THE AREA OF CONSTRUCTION. LOCATION SHALL BE COORDINATED WITH THE OWNER. - THE CONTRACTOR SHALL MAKE NECESSARY CONNECTIONS TO THE EXISTING UTILITIES FOR TEMPORARY POWER AND WATER SUPPLIES, AND SHALL COORDINATE SUCH USE WITH THE OWNER PRIOR TO CONNECTION. - THE CONTRACTOR SHALL PROVIDE TEMPORARY BARRICADES TO SEPARATE CONSTRUCTION AREAS FOR PUBLIC SAFETY AROUND ENTIRE PERIMETER OF CONSTRUCTION AREA.
45. THE CONTRACTOR SHALL PROVIDE A BLANKET ONE (1) YEAR GUARANTEE FOR THE CONTRACT PROJECT WITH SEPARATE GUARANTEES AS SPECIFIED FOR TRADES/EQUIPMENT ITEMS WITH NAMES OF LOCAL REPRESENTATIVES TO BE CONTACTED FOR SERVICE. PROVIDE OPERATING MAINTENANCE BROCHURES, AND GUARANTEES AS REQUIRED.
46. THE CONTRACTOR SHALL PROVIDE ONE COMPLETE SET OF AS-BUILT DRAWINGS INDICATING ALL DISCREPANCIES, CHANGES, ETC., AND ACTUAL LOCATIONS OF CONCEALED WORK TO THE ARCHITECT AT THE COMPLETION OF WORK PRIOR TO FINAL PAYMENTS. CHANGED MUST BE DRAFTED. NO FREEHAND REVISIONS WILL BE ACCEPTED.
47. DRAWINGS OF EXISTING CONDITIONS HAVE BEEN COMPILED FROM EXISTING DATA SUPPLIED BY THE OWNER TO THE ARCHITECT. THE ARCHITECT MAKES NO WARRANTY EITHER EXPRESSED OR IMPLIED, FOR THE ACCURACY OR COMPLETENESS OF THE EXISTING INFORMATION RECORDED. CONTRACTOR SHALL FIELD VERIFY ALL EXISTING CONDITIONS. NOTIFY ARCHITECT IN WRITING OF ANY DISCREPANCIES FOR CLARIFICATION PRIOR TO PROCEEDING WITH WORK.
48. THE EXIT DOOR MUST OPEN OVER A LANDING NOT MORE THAN 1" BELOW THE THRESHOLD 3304(h).
49. A PERMIT FROM THE DEPARTMENT OF PUBLIC WORKS IS REQUIRED FOR A PROTECTION FENCE OR CANOPY ON OR OVER ANY STREET OR PUBLIC SPACE
50. APPROVED NUMBERS OR ADDRESSES SHALL BE PROVIDED IN SUCH A POSITION AS TO BE PLAINLY VISIBLE AND LEGIBLE FROM THE STREET.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FOR SITE PLAN APPROVAL

4305 PORTAGE ROAD PROVISIONING CENTER

4305 PORTAGE ROAD
KALAMAZOO, MI 49001

| DATE | DESCRIPTION |
|---|---|
| 08.22.2021 | SPA SUBMITTAL |

| | |
|---|---|
| DESIGN | Designer |
| DRAWN | Author |
| PROJECT NO. | 210623_05_09 |

**GENERAL NOTES & ABBREVIATIONS**

**T1.0**

P:\#2021\#210623_05_09_4305 Portage St (PUFF)\Revit\#210916_4035 Portage Road (Puff).rvt


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NOTES:
1. PROTRUDING OBJECTS SHALL NOT REDUCE THE REQUIRED WIDTH OF AN ACCESSIBLE ROUTE (307.5)
2. PROTRUDING OBJECTS ON A CIRCULATION PATH SHALL COMPLY W/ SECTION 307 (204.1)

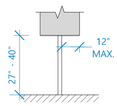


Fig. 307.3 (a)

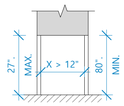


Fig. 307.3 (b)

POST-MOUNTED PROTRUDING OBJECTS

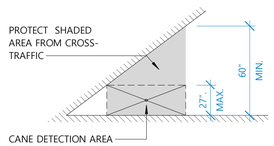


Fig. 307.5
VERTICAL CLEARANCES

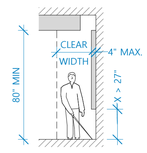


Fig. 307.2
LIMITS OF PROTRUDING OBJECTS

## PROTRUDING OBJECTS
Ref. Section 307

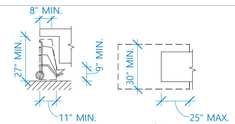


Fig. 306.3
KNEE CLEARANCES

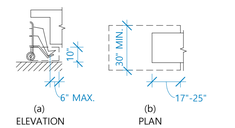


Fig. 306.2
TOE CLEARANCES

## KNEE AND TOE CLEARANCES
Ref. Section 306

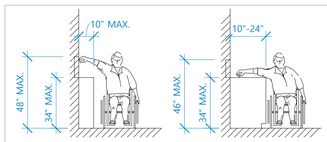


Fig. 308.3.2
OBSTRUCTED HIGH SIDE REACH

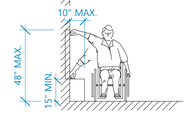


Fig. 308.3.1
UNOBSTRUCTED SIDE REACH

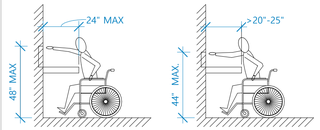


Fig. 308.2.2
OBSTRUCTED HIGH
FORWARD REACH

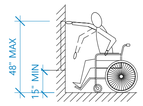
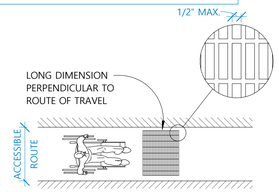


Fig 308.2.1
UNOBSTRUCTED
FORWARD REACH

NOTE:
ANY OPERABLE PART OF ANY DEVICE SHALL BE INSTALLED WITHIN THE REACHES SHOWN (309)

## REACH RANGES
Ref. Section 308

NOTE:
CHANGES IN LEVEL GRATER THAN 1/2" SHALL BE RAMPED, AND SHALL COMPLY W/ SECTIONS 405 AND 406. (303.4)



OPENINGS IN FLOOR OR GROUND SURFACE
Ref. Section 302.3

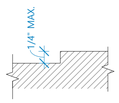


Fig. 303.2

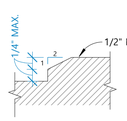


Fig. 303.3
CHANGES IN LEVEL

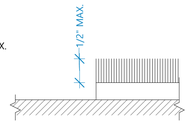
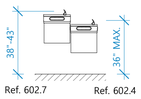


Fig. 302.2
CARPET PILE THICKNESS

## FLOOR & GROUND SURFACES
Ref. Sections 302 & 303

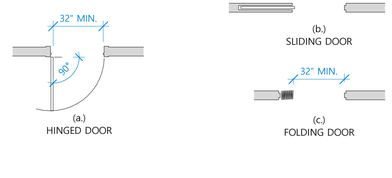
DRINKING FOUNTAIN SPOUT LOCATION Fig. 602.5



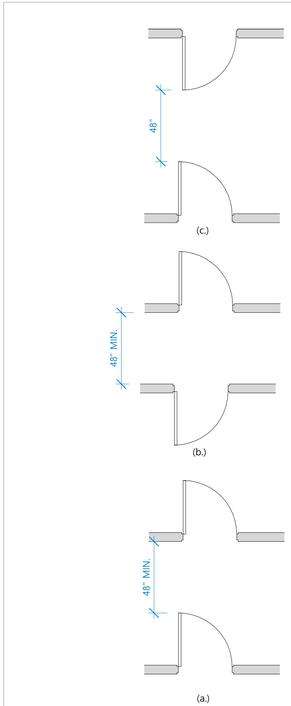
Ref. 602.7 Ref. 602.4
DRINKING FOUNTAIN OUTLET HEIGHTS

DRINKING FOUNTAIN NOTES:
1. KNEE & TOE CLEARANCE PROVIDING WITH 306 SHALL BE PROVIDED (602.2)
2. WHERE A DRINKING FOUNTAIN IS REQUIRED, TWO SHALL BE PROVIDED; ONE HIGH & ONE LOW (211.2)
3. UNITS SHALL HAVE A CLEAR FLOOR SPACE COMPLYING WITH 305 POSITIONED FOR FORWARD APPROACH AND CENTERED ON UNIT (602.2)

## DRINKING FOUNTAIN
Ref. SECTION 602




## CLEAR WIDTH OF DOORWAYS
Fig. 404.2.3




## Door & Gates in Series

CLEAR FLOOR SPACE NOTES:
1. DOOR SHALL BE PERMITTED TO SWING INTO TURNING SPACES (304.4)
2. ONE FULL UNOBSTRUCTED SIDE OF THE CLEAR FLOOR SPACE MUST ADJOIN AN ACCESSIBLE ROUTE OR ANOTHER CLEAR FLOOR SPACE (305.6)
3. A CLEAR FLOOR SPACE IS REQUIRED AT ANY DEVICE WITH AN OPERABLE PART (309.2)

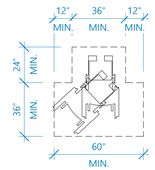
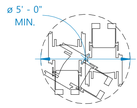


Fig. 304.3.2
T-SHAPED SPACE



Ref. 304.3.2
CIRCULAR SPACE

TURNING SPACE
Ref. Section 304

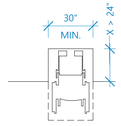


Fig. 305.7.1

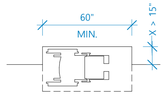
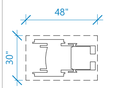
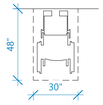


Fig. 305.7.2

## CLEAR FLOOR SPACE IN ALCOVES



CLEAR FLOOR SPACE
Fig. 305.3



FORWARD APPROACH
Fig. 305.5 (a)

PARALLEL APPROACH
Fig. 305.5 (b)

## MINIMUM CLEAR FLOOR SPACE
Ref. Section 304 & 305

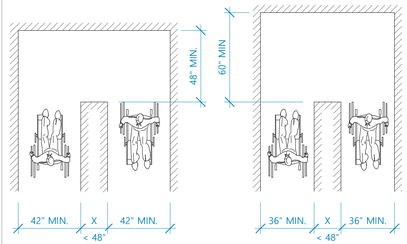
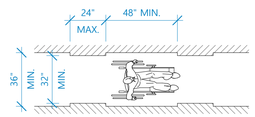


Fig. 403.5.2 (a)
Fig. 403.5.2 (b)

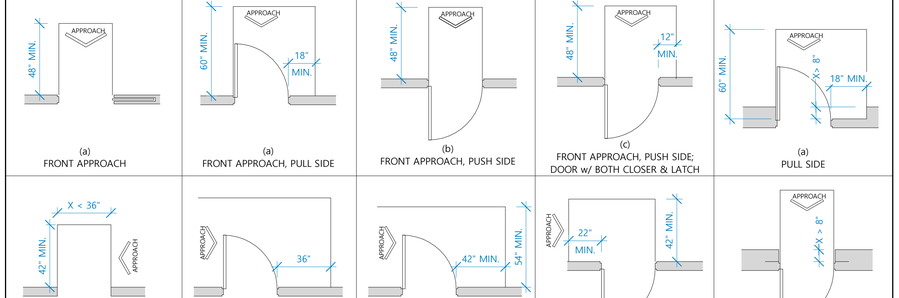
## CLEAR WIDTHS AT 180 DEGREE TURNS



CLEAR WIDTHS
Fig. 403.5.1

ACCESSIBLE ROUTE NOTE:
THE SLOPE OF A WALKING SURFACE ALONG AN ACCESSIBLE ROUTE SHALL NOT BE STEEPER THAN 1°20 AND CROSS SLOPES SHALL NOT EXCEED 1:48 (402)

## ACCESSIBLE ROUTE
Ref. Section 402




MANUAL SWING DOORS & GATES Fig 404.2.4.1

RECESSED DOORS & GATES Fig 404.2.3

DOORWAYS w/o DOORS, SLIDING DOORS, GATES & FOLDING DOORS Fig 404.2.4.2

MANEUVERING CLEARANCE NOTES:
1. DOORS, DOORWAYS AND GATES PROVIDING USER PASSAGE SHALL COMPLY (206.5)
2. ADJUST DOOR CLOSER SO THAT THE DOOR TAKES AT LEAST 5 SECONDS TO MOVE FROM 90 DEGREE OPEN POSITION TO 12 DEGREES FROM LATCH (404.2.8)
3. FIRE DOORS SHALL HAVE A MINIMUM OPENING FORCE ALLOWABLE BY THE BUILDING AND FORE CODES. OTHER INTERIOR DOORS, 5 POUNDS MAXIMUM. (404.2.9)
4. MANEUVERING CLEARANCES ARE REQUIRED AT AUTOMATIC DOORS UNLESS DOOR OPERATION HAS STANDBY POWER (404.3.2)

## MANEUVERING CLEARANCES
Ref. Section 404.2.3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tel: 734.998.1331


FOR SITE PLAN APPROVAL

4305 PORTAGE ROAD PROVISIONING CENTER

4305 PORTAGE ROAD
KALAMAZOO, MI 49001

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|---|---|
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| DRAWN | Author |
| PROJECT NO. | 210623_05_09 |

# ADA DETAILS

# T2.0

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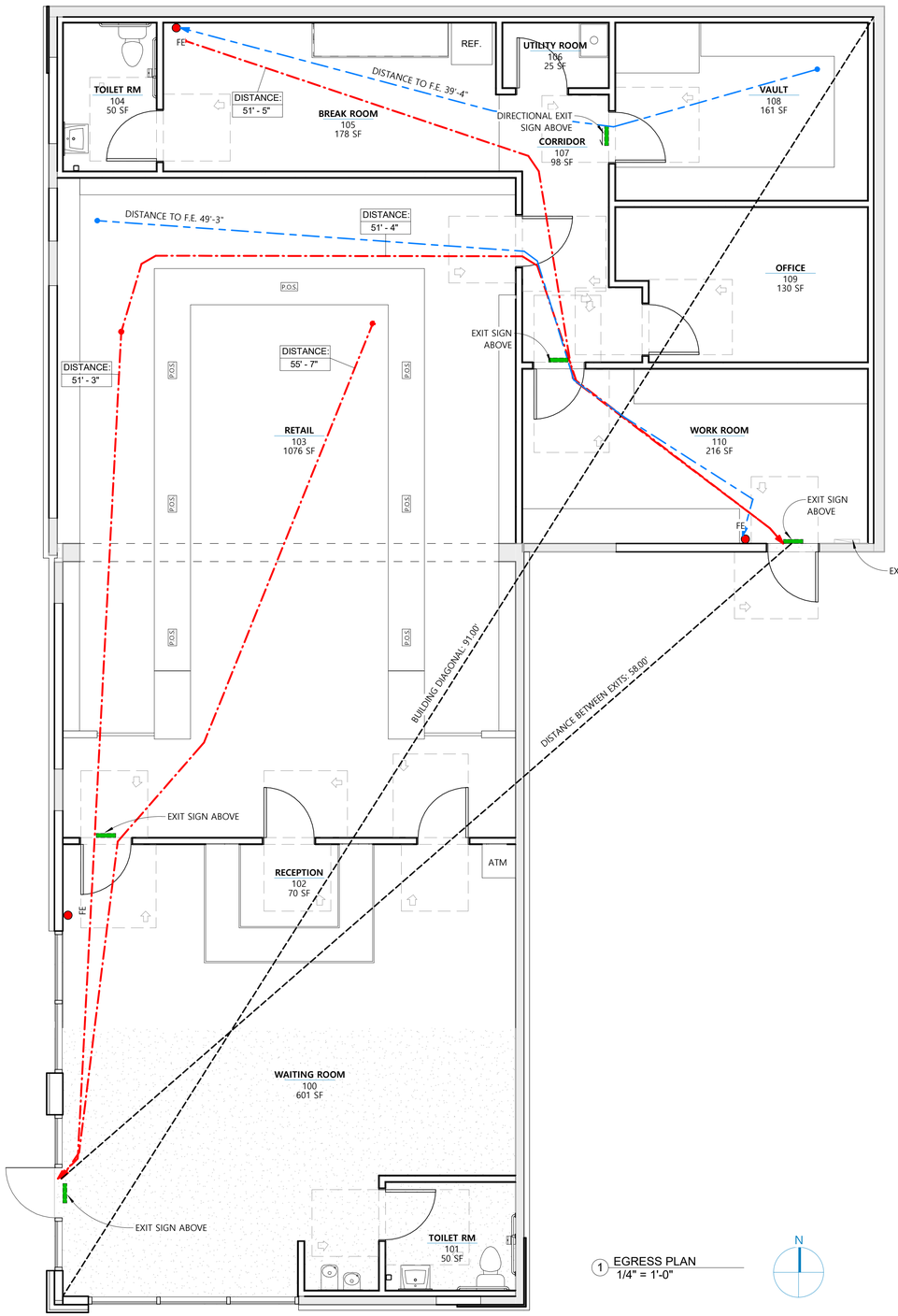
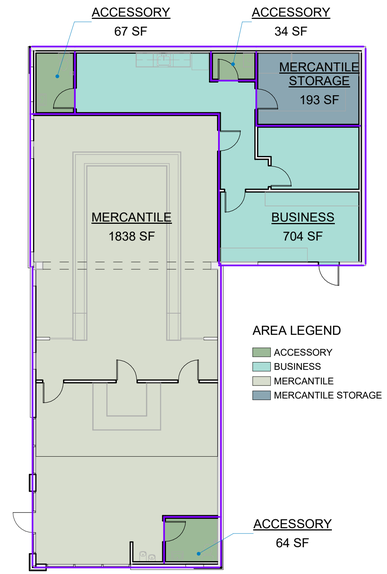



1 EGRESS PLAN
1/4" = 1'-0"




2 AREA PLAN
3/32" = 1'-0"

**APPLICABLE CODES:**
2015 MICHIGAN BUILDING CODE
2015 MICHIGAN REHABILITATION CODE FOR EXISTING BUILDINGS
2015 MICHIGAN MECHANICAL CODE
2015 MICHIGAN PLUMBING CODE
2015 MICHIGAN ENERGY CODE
MICHIGAN ELECTRICAL CODE BASED ON THE 2014 NATIONAL ELECTRICAL CODE WITH PART 8 STATE AMENDMENTS
ICC / ANSI A117.1 – 2009 & MICHIGAN BARRIER FREE DESIGN LAW OF PUBLIC ACT 1 OF 1966 AS AMENDED.

**CODE REVIEW**

MAXIMUM ALLOWABLE AREA (SF): TABLE 503
M MERCANTILE 9,000 SF

CONSTRUCTION TYPE: VB CHAP. 6

MAX. TRAVEL DISTANCE: TABLE 1016.2
MAX. ALLOWABLE TRAVEL DISTANCE w/o SPRINKLERS:
GROUP M MERCANTILE 200 ft.

DEAD END CORRIDORS: SECTION 1018.4
MAX. ALLOWABLE w/o SPRINKLERS: 20 ft.

OCCUPANCY CALCULATION: TABLE 1004.1.2

| OCCUPANCY LOAD | | | |
|---|---|---|---|
| FUNCTION OF SPACE | OCCUPANT LOAD FACTOR | AREA | OCCUPANCY LOAD |
| ACCESSORY | 1/300 SF | 165 SF | 0.55 |
| BUSINESS | 1/100 SF | 704 SF | 7.03 |
| MERCANTILE | 1/60 SF | 1838 SF | 30.63 |
| MERCANTILE STORAGE | 1/300 SF | 193 SF | 0.64 |
| | | **TOTAL:** 2900 SF | 39 OCC. |

**FIRE EXTINGUISHER NOTES:**
HAZARD CLASSIFICATION LOW HAZARD
MIN EXTINGUISHER RATING: 2-A
MAX DISTANCE OF TRAVEL TO EXTINGUISHER: 75'
MAX FLOOR AREA PER UNIT OF A: 1/3000SF = 1 REQUIRED
FIRE EXTINGUISHERS PROVIDED: 3

**LEGEND**

NEW CONSTRUCTION

EXISTING TO REMAIN

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# CODE REVIEW & LIFE SAFETY PLAN

# T3.0

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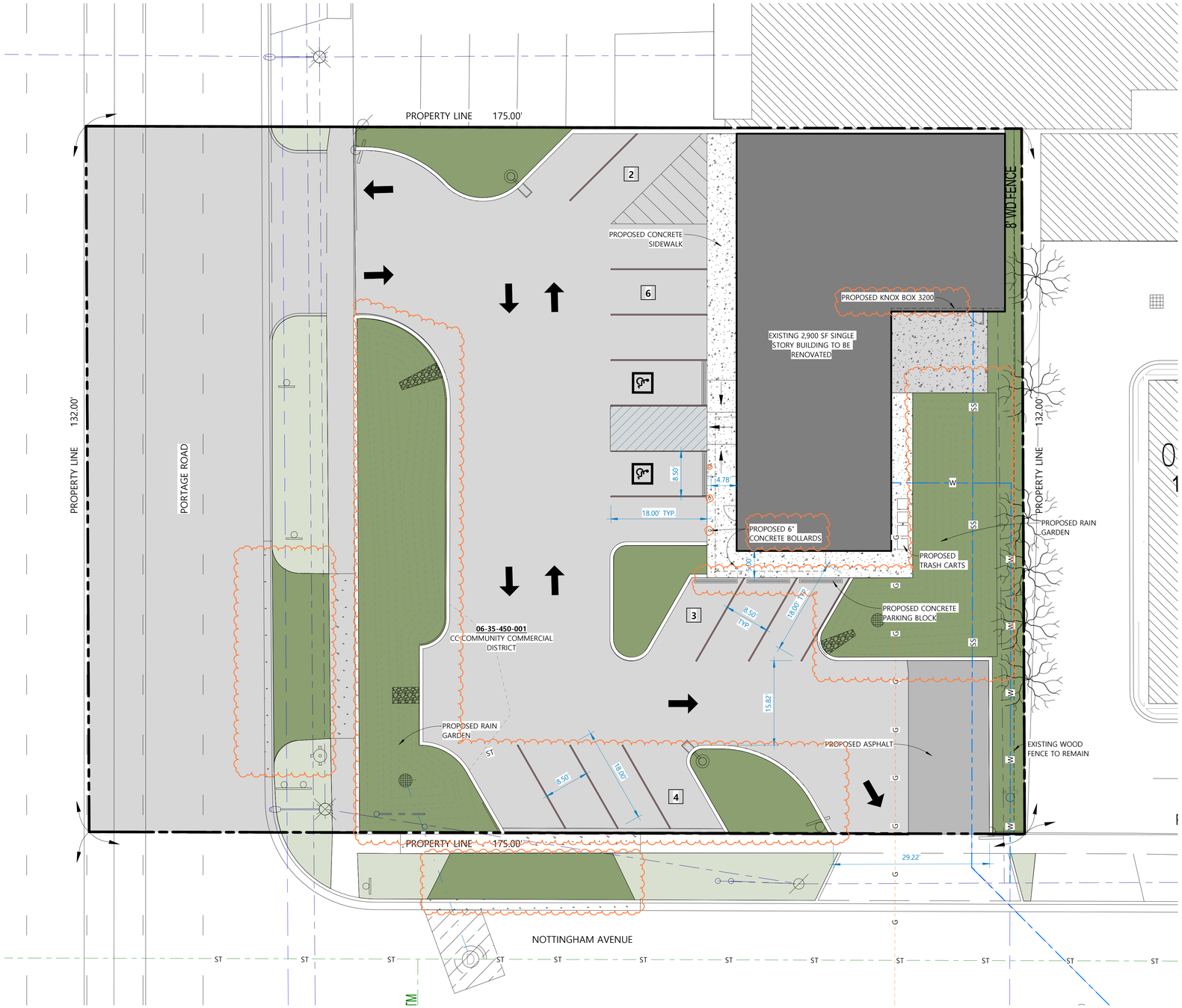


**NOTE: SITE PLAN FOR REFERNECE ONLY. REFER TO CIVIL PLAN ON SHEET C-1**

1 SITE PLAN
1" = 10'-0"

N

## IMPERVIOUS AREA CALCULATION

**TOTAL LOT AREA:** 23,100 SF
**PARCEL AREA (EXCLUDING ROAD RIGHT OF WAY):** 16,500 SF

**EXISTING IMPERVIOUS:** 15,936 SF (96.6%)

**PROPOSED IMPERVIOUS:** PLEASE REFER TO SITE DATA ON SHEET C-1 FOR PROPOSED IMPERVIOUS CALCULATION

## LEGEND

- EXISTING BUILDING TO BE RENOVATED
- PROPOSED CONCRETE DRIVE
- EXISTING CONCRETE
- PROPOSED GREEN SPACE
- EXISTING GREEN SPACE
- PROPERTY LINE
- SETBACK LINE
- EXISTING FENCE
- EXISTING RETAINING WALL
- SS — SS — EXISTING SANITARY SERVICE LEAD
- W — W — EXISTING WATER LEAD
- ST — ST — EXISTING STORM LEAD
- G — G — EXISTING GAS LEAD

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| 02.18.2022 | SPA REVISION 2 |

| | |
|---|---|
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| DRAWN | Author |
| PROJECT NO. | 210623_05_09 |

# SITE PLAN

# C1.0

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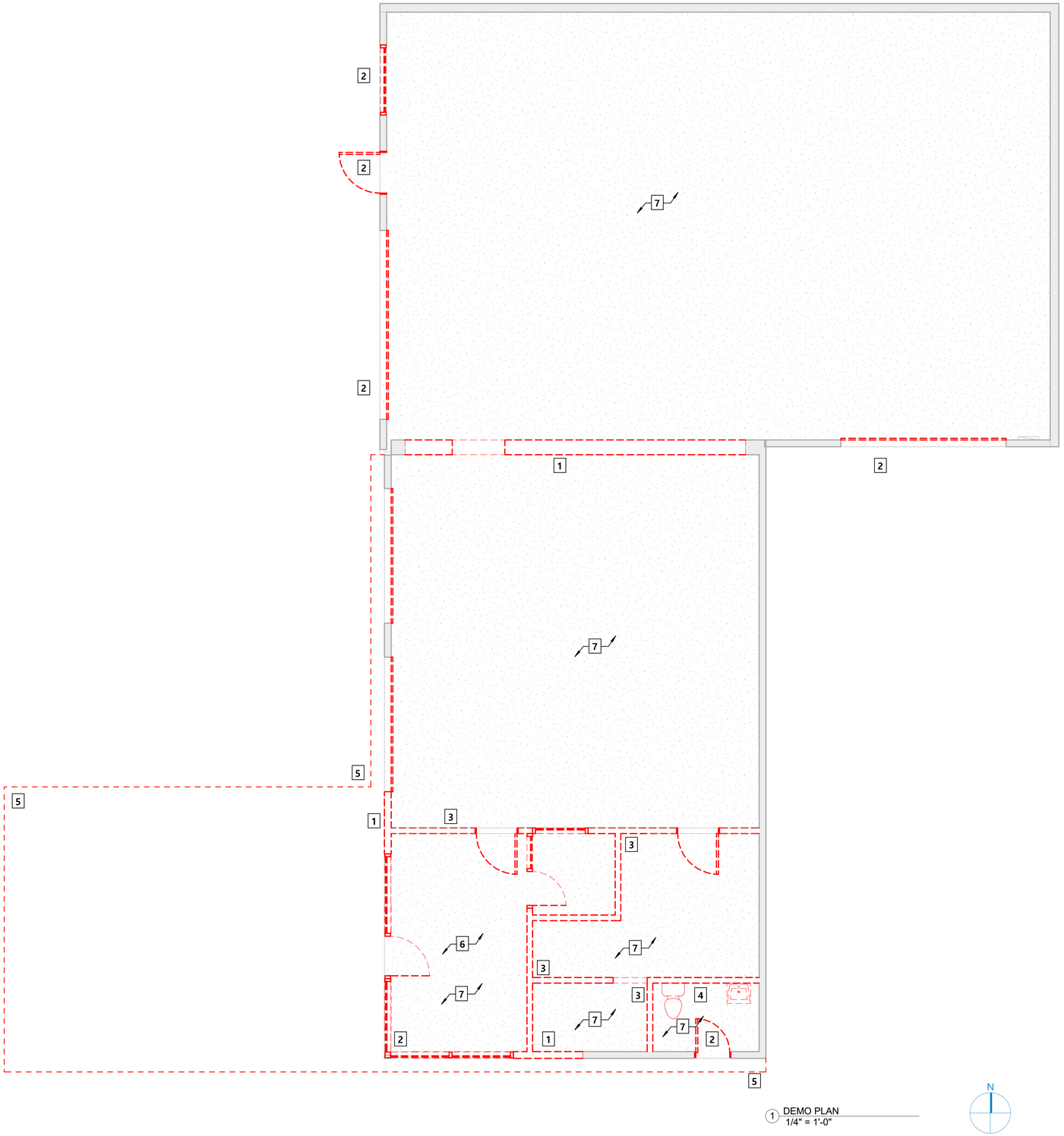


1 DEMO PLAN
1/4" = 1'-0"

## GENERAL DEMOLITION NOTES

ALL ITEMS TO BE RELOCATED ARE TO BE REMOVED, STORED, PROTECTED, AND REINSTALLED BY THE CONTRACTOR. THE CONTRACTOR IS TO ENSURE THE ITEM IS IN WORKING ORDER PROIR TO AND AFTER RELOCATION. OWNER IS TO BE NOTIFIED IF DEFECTS ARE FOUND.

DEMOLITION IN THE EXISTING BUILDING IS TO BE LIMITED TO WITHIN THE AREAS INDICATED. WITHIN THE DEMOLITION AREA, THE DEMOLITION IS TO INCLUDE THE FOLLOWING, UNLESS NOTED OTHERWISE: REMOVAL OF ALL INDICATED FLOOR FINISHES TO THE EXISTING SUBFLOOR; ALL INDICATED CEILING FINISHES AND SYSTEMS ARE TO BE DEMOLISHED TO THE UNDERSIDE OF EXISTING FLOOR JOISTS; ALL INDICATED WALL FINISHES ARE TO BE DEMOLISHED TO WOOD STUD FRAMING AS REQUIRED FOR THE PROPER INSTALLATION OF THE NEW FINISHES; ALL EXISTING STRUCTURAL ELEMENTS ARE TO REMAIN UNDISTURBED.

COORDINATE WITH ALL DRAWINGS AND DESIGN-BUILD REQUIREMENTS FOR ADDTIONAL AREAS OF DEMOLITION BEYOND THE EXTENT SHOWN ON THIS DRAWING. PROVIDE ALL CUT-OUT DEMOLITION REQUIRED FOR THE REMOVAL OF DUCTS, FLOOR DRAINS, ETC. THE SUBCONTRACTOR SHALL FULLY PROTECT ALL ADJACENT FINISHES AND MATERIALS AT THESE LOCATIONS.

DIMENSIONS SHOWN ON THIS DRAWING ARE FOR REFERENCE ONLY. DEMOLITION SHOULD BE SUFFICIENT TO ACCOMODATE THE NEW WORK DESCRIBED IN THESE DRAWINGS.

PROTECT EXISTING TREES DURING CONSTRUCTION. PRESERVE ALL LANDSCAPING WHERE POSSIBLE.

ALL CABINETS AND FIXTURES THAT ARE TO REMAIN SHALL BE PROTECTED DURING CONSTRUCTION.

## DEMO KEY NOTES

1. **REMOVE WALLS** AS REQUIRED FOR NEW OPENINGS. REFER TO PLAN FOR DIMENSIONS.
2. **REMOVE DOORS & WINDOWS** AS SHOWN.
3. **REMOVE INTERIOR WALLS.**
4. **REMOVE PLUMBING FIXTURES.**
5. **REMOVE AWNING ABOVE**
6. **REMOVE DROP CEILING.**
7. **REMOVE ALL LIGHT FIXTURES.**

## LEGEND

EXISTING TO BE REMOVED

EXISTING TO REMAIN

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# DEMO PLAN

# D1.0

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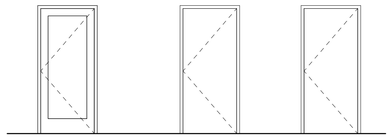
## DOOR SCHEDULE

| LOCATION | DOOR NUMBER | DOOR SIZE | | THICKNESS | DOOR | | | FINISH | | OPERATION | HARDWARE SET | ACCESS CONTROLS | HINGES | ELECTRIC STRIKE | POWER SUPPLY | LOCK GUARD | CARD READER | FOB | EXIT DEVICE | EXIT DEVICE TRIM | SMOKE SEAL | MAG. HOLD OPEN | KICK-DOWN HOLD OPEN | FLUSH BOLT | ASTRAGAL | PUSH PLATE | PULL PLATE | THRESHOLD | SILENCER | WALL BUMPER | DOOR BOTTOM | DOOR CLOSER | WEATHERSTRIPPING | AUTO DOOR BOTTOM | ADHESIVE CORNER PAD | DEADLOCK W/ VAC. INDICATOR | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | WIDTH | HEIGHT | | PANEL TYPE | MATERIAL | FINISH | TYPE | FINISH | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 100A | 3' - 0" | 8' - 0" | 1 3/4" | A | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| WAITING ROOM | 100B | 3' - 0" | 7' - 0" | 1 3/4" | C | HM | PNT | HM | PNT | SWING | | | | | | | | | | | | | | | | | | | | | | | | | | |
| WAITING ROOM | 101 | 3' - 0" | 7' - 0" | 1 3/4" | C | HM | PNT | HM | PNT | SWING | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RECEPTION | 102 | 3' - 0" | 7' - 0" | 1 3/4" | C | HM | PNT | HM | PNT | SWING | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RETAIL | 103 | 3' - 0" | 7' - 0" | 1 3/4" | C | HM | PNT | HM | PNT | SWING | | | | | | | | | | | | | | | | | | | | | | | | | | |
| TOILET RM | 104 | 3' - 0" | 7' - 0" | 1 3/4" | C | HM | PNT | HM | PNT | SWING | | | | | | | | | | | | | | | | | | | | | | | | | | |
| UTILITY ROOM | 106 | 3' - 0" | 7' - 0" | 1 3/4" | C | HM | PNT | HM | PNT | SWING | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CORRIDOR | 107 | 3' - 0" | 7' - 0" | 1 3/4" | C | HM | PNT | HM | PNT | SWING | | | | | | | | | | | | | | | | | | | | | | | | | | |
| VAULT | 108 | 3' - 0" | 7' - 0" | 1 3/4" | C | HM | PNT | HM | PNT | SWING | | | | | | | | | | | | | | | | | | | | | | | | | | |
| OFFICE | 109 | 3' - 0" | 7' - 0" | 1 3/4" | C | HM | PNT | HM | PNT | SWING | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 110A | 3' - 0" | 7' - 0" | 1 3/4" | B | HM | PNT | HM | PNT | SWING | | | | | | | | | | | | | | | | | | | | | | | | | | |
| WORK ROOM | 110B | 3' - 0" | 7' - 0" | 1 3/4" | C | HM | PNT | HM | PNT | SWING | | | | | | | | | | | | | | | | | | | | | | | | | | |



A
EXTERIOR STOREFRONT DOOR



B
EXTERIOR DOOR FLUSH



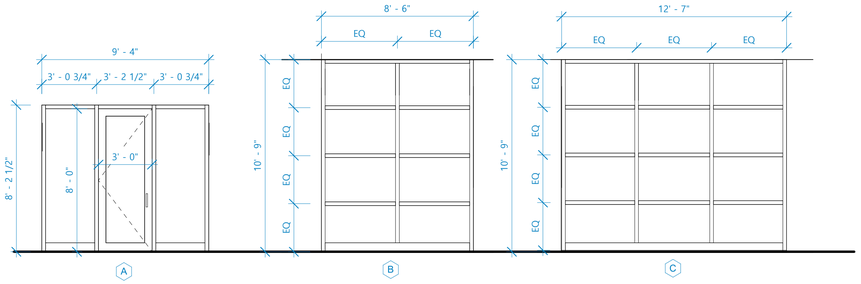
C
INTERIOR DOOR FLUSH

**NOTES:**

1. ALL DOOR HARDWARE ON ACCESSIBLE DOORS SHALL HAVE A SHAPE THAT IS EASY TO GRASP WITH ONE HAND AND DOES NOT REQUIRE TIGHT GRASPING, PINCHING OR TWISTING OF THE WRIST TO OPERATE. OPERABLE PARTS OF THE HARDWARE SHALL BE BETWEEN 34 INCHES AND 48 INCHES ABOVE THE FLOOR.
2. GLASS IS TO BE TEMPERED IF IT MEETS ANY OF THE FOLLOWING:
   - A. ALL GLASS THAT IS BOTH WITHIN 60 INCHES OF THE FLOOR AND 24 INCHES OF THE VERTICAL EDGE OF A DOOR
   - B. GLASS IN A SWINGING OR SLIDING DOORS
   - C. GLAZING WITH AN AREA OF GREATER THAN 9 SF AND 18 INCHES OR LESS ABOVE THE FLOOR SURFACE AND TOP EDGE GREATER THAN 36 INCHES ABOVE THE FLOOR.
   - D. GLAZING IN GUARD RAILS AND RAILINGS
   - E. GLAZING ADJACENT TO STAIRWAYS, LANDINGS AND RAMPS WITHIN A 36 INCH HORIZONTAL DISTANCE OF A WALKING SURFACE AND LESS THAN 60 INCHES ABOVE THE FLOOR OR WALKING SURFACE AND 60 INCHES HORIZONTALLY FROM THE BOTTOM OF A STAIRWAY IN ANY DIRECTION
   - F. GLAZING NEAR WET SURFACES AS OUTLINED IN 2406.4.5

## STOREFRONT SCHEDULE

| TAG | OPERATION | ROUGH OPENING | | MANUFACTURER | MODEL NO. | FINISH | COMMENTS |
|---|---|---|---|---|---|---|---|
| | | WIDTH | HEIGHT | | | | |
| A | FIXED EXTERIOR W/ ADA DOOR | 9' 4" | 8' 2 1/2" | TUBELITE | TBD | TBD | - |
| B | FIXED EXTERIOR | 8' - 6" | 10' - 9" | TUBELITE | TBD | TBD | - |
| C | FIXED EXTERIOR | 12' - 7" | 10' - 9" | TUBELITE | TBD | TBD | - |




## ROOM FINISH SCHEDULE

| ROOM NUMBER | ROOM NAME | AREA | PERIMETER | FINISH | | | | CEILING HEIGHT | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|
| | | | | FLOOR | BASE | WALL | CEILING | | |
| 100 | WAITING ROOM | 601 SF | 128' - 2 1/2" | | VB-1 | PNT | A.C.T.-1 | 11' - 1" | |
| 101 | TOILET RM | 50 SF | 28' - 6 1/4" | T-1 | T-2 | PNT | A.C.T.-1 | 11' - 1" | |
| 102 | RECEPTION | 70 SF | 34' - 0" | | VB-1 | PNT | GYP. BD. | 11' - 1" | |
| 103 | RETAIL | 1076 SF | 142' - 0 1/2" | | VB-1 | PNT | GYP. BD. | 12' - 0 1/2"/16' - 6 1/2" V.I.F. | |
| 104 | TOILET RM | 50 SF | 28' - 11 1/2" | | VB-1 | PNT | GYP. BD. | 16' - 6 1/2" V.I.F. | |
| 105 | BREAK ROOM | 178 SF | 57' - 11 5/8" | | VB-1 | PNT | GYP. BD. | 16' - 6 1/2" V.I.F. | |
| 106 | UTILITY ROOM | 25 SF | 20' - 6" | | VB-1 | PNT | GYP. BD. | 16' - 6 1/2" V.I.F. | |
| 107 | CORRIDOR | 98 SF | 49' - 1 5/8" | | VB-1 | PNT | GYP. BD. | 16' - 6 1/2" V.I.F. | |
| 108 | VAULT | 161 SF | 51' - 5 3/4" | | VB-1 | PNT | GYP. BD. | 16' - 6 1/2" V.I.F. | |
| 109 | OFFICE | 130 SF | 48' - 9" | | VB-1 | PNT | GYP. BD. | 16' - 6 1/2" V.I.F. | |
| 110 | WORK ROOM | 216 SF | 62' - 3 1/4" | | VB-1 | PNT | GYP. BD. | 16' - 6 1/2" V.I.F. | |

## FINISH LEGEND

| MATERIAL | CODE | MANUFACTURER | STYLE | COLOR | MODEL NO. | SUPPLIER | COMMENTS |
|---|---|---|---|---|---|---|---|
| TILE | T-1 | - | - | - | - | - | - |
| | T-2 | - | - | - | - | - | - |
| | T-3 | - | - | - | - | - | - |
| CARPET | CPT-1 | - | | TBD | - | - | - |
| PAINT | PT-1 | - | - | - | - | - | - |
| | PT-2 | - | - | - | - | - | - |
| | PT-3 | - | - | - | - | - | - |
| | PT-4 | - | - | - | - | - | - |
| VINYL WALL BASE | VB-1 | - | - | TBD | - | - | - |
| | - | - | - | - | - | - | - |
| COUNTERTOP | CT-1 | - | - | - | - | - | - |
| | CT-2 | - | - | - | - | - | - |
| | CT-3 | - | - | - | - | - | - |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| DRAWN | Author |
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# SCHEDULES

Ao.o


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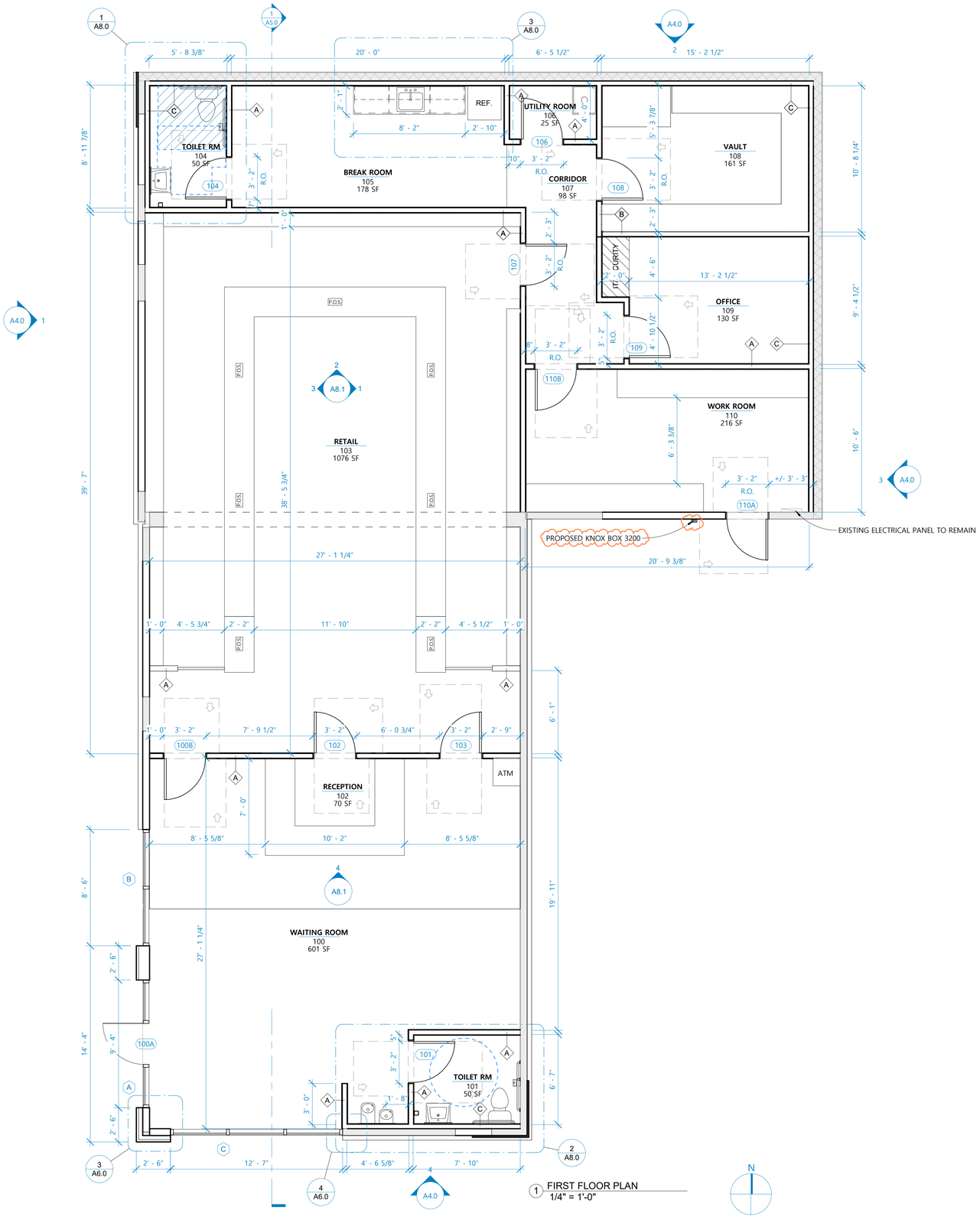


1 FIRST FLOOR PLAN
1/4" = 1'-0"

N

## GENERAL NOTES

1. REFER TO MECHANICAL, PLUMBING, AND ELECTRICAL DRAWINGS FOR SPECIFIC INFORMATION.
2. ALL DIMENSIONS ARE TO FACE OF STUD UNLESS OTHERWISE NOTED.
3. DASHED LINES INDICATE REQUIRED ADA CLEARANCES.
4. VERIFY ALL DIMENSIONS WITH EXISTING CONDITIONS.

## WALL TYPES LEGEND

| TAG / VISUAL | DESCRIPTION |
|---|---|
| A | 5/8" GYPSUM BOARD ON EACH SIDE OF 3 5/8" METAL STUD |
| B | 5/8" GYPSUM BOARD ON EACH SIDE OF 3 5/8" METAL STUD FRAMING @ 16" o.c. TO UNDERSIDE OF DECK, w/ 13 Ga. BM-50 SECURITY MESH (ON SECURED ROOM SIDE) |
| C | 5/8" GYPSUM BOARD ON ONE SIDE OF 3 5/8" METAL STUD |
| | |
| | |

## LEGEND

NEW CONSTRUCTION

EXISTING TO REMAIN


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# FLOOR PLAN

# A1.1

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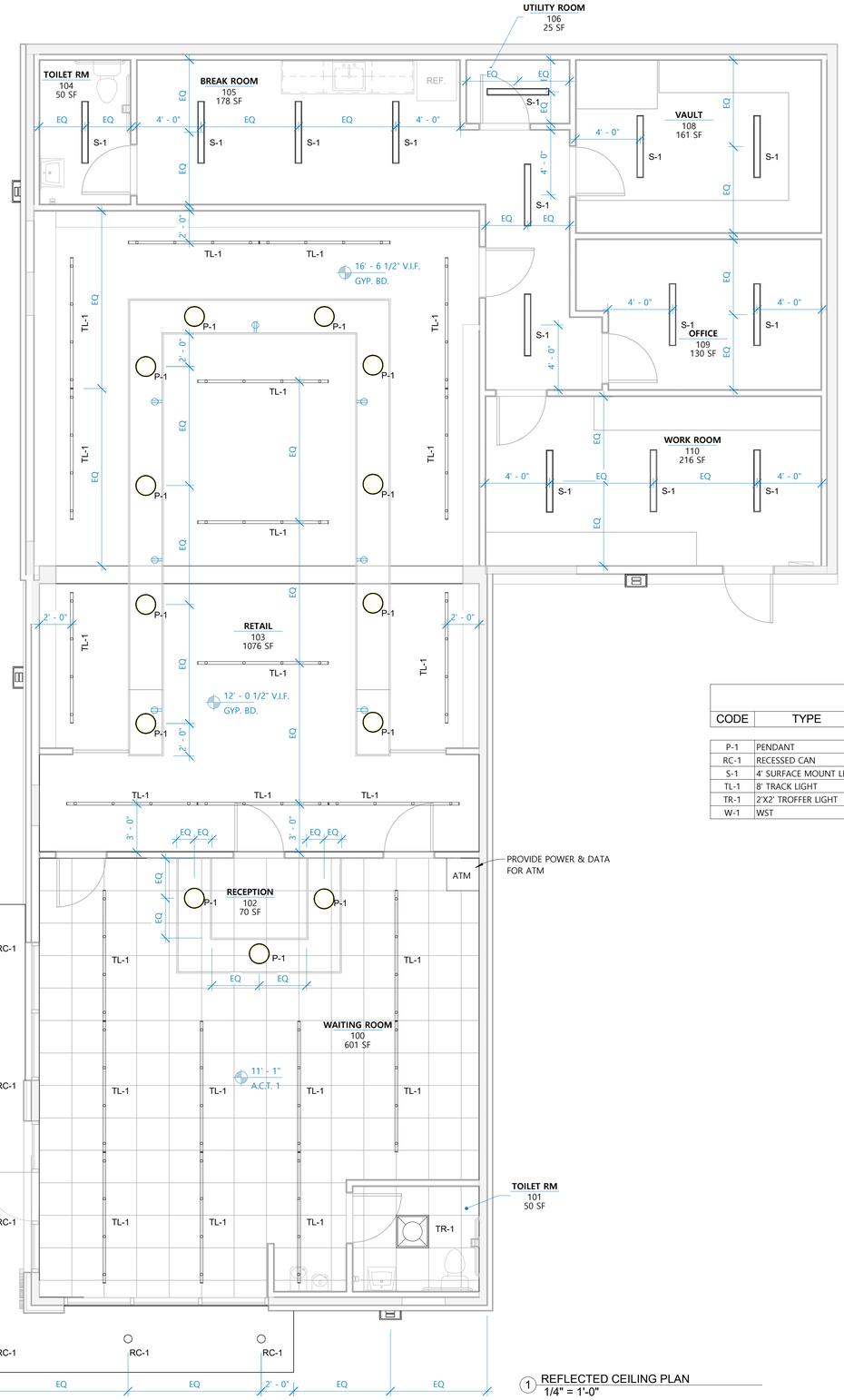


1 REFLECTED CEILING PLAN
1/4" = 1'-0"

| LIGHTING FIXTURE SCHEDULE | | | | | | |
|---|---|---|---|---|---|---|
| CODE | TYPE | MANUF. | MODEL | QTY. | FINISH | COMMENTS |
| P-1 | PENDANT | | TBD BY OWNER | 13 | | |
| RC-1 | RECESSED CAN | | 4" WP | 6 | BLACK | |
| S-1 | 4' SURFACE MOUNT LED | LITHONIA | ZL1N L48 3500LM FST MVOLT 35K 90CRI WH | 14 | | |
| TL-1 | 8' TRACK LIGHT | | | 23 | | |
| TR-1 | 2'X2' TROFFER LIGHT | LITHONIA | 2BLT2 RB 33L 90CRI SDSM MVOLT GZ10 DWAM | 1 | | |
| W-1 | WST | LITHONIA | WST LED P1 40K VW 120 DBL | 4 | BLACK | |

**ELECTRICAL SYMBOL LEGEND**

- WALL — SWITCH
- 3 — 3-WAY SWITCH
- MS — MOTION SENSOR
- 40 — OUTLET
  - GFI- GROUND FAULT INTERRUPTER
  - WP - WATER PROOF
  - NUMBER INDICATED INSTALLATION HEIGHT A.F.F.

**ELECTRICAL NOTES**

1. PLACE FIXTURES AND OUTLETS WHERE SHOWN AND AS REQUIRED BY CODE IF NOT SHOWN ON THESE DRAWINGS.
2. ALL DIMENSIONS ARE TO ROUGH FRAMING OR BRICK SURFACES UNLESS OTHERWISE NOTED.

**LEGEND**

- NEW CONSTRUCTION
- EXISTING TO REMAIN

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# REFLECTED CEILING PLAN

# A2.1

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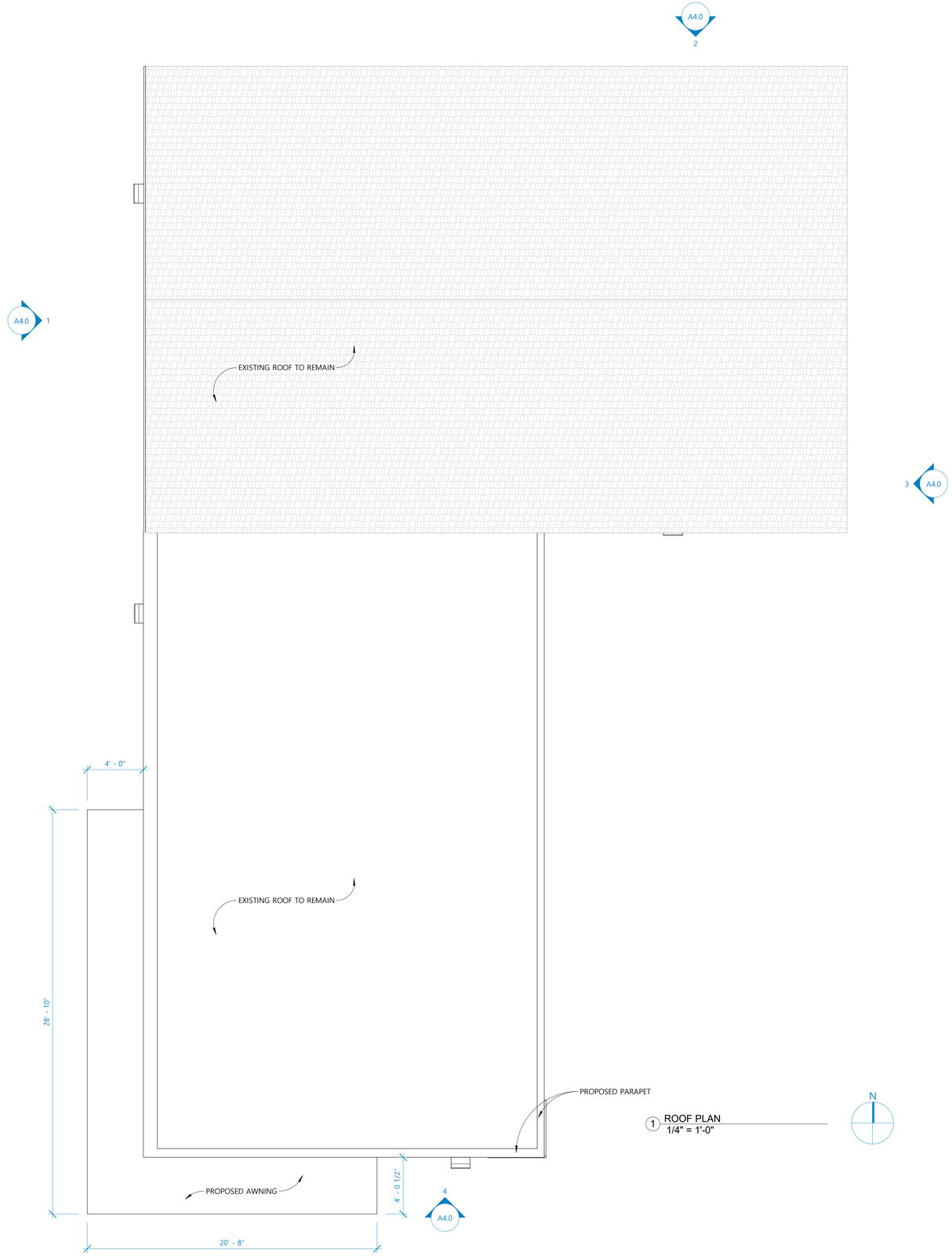


1 ROOF PLAN
1/4" = 1'-0"

N

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# ROOF PLAN

# A3.0

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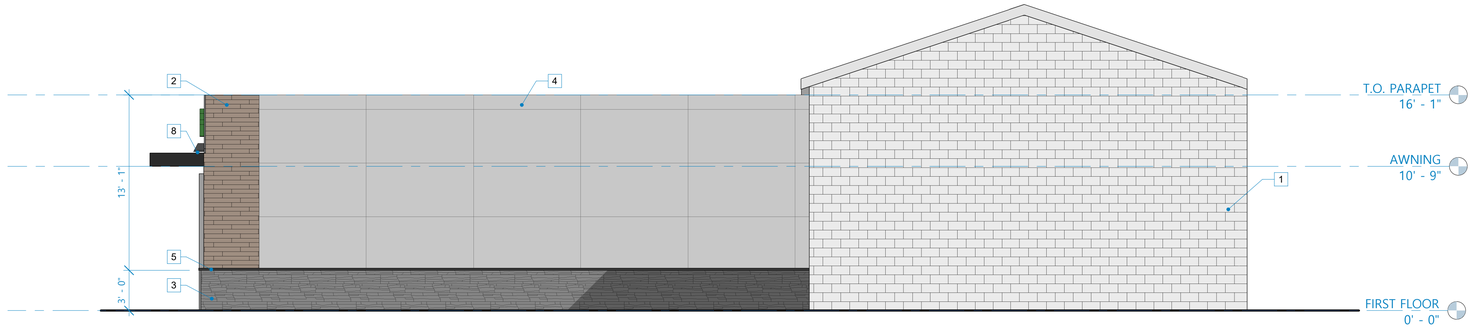
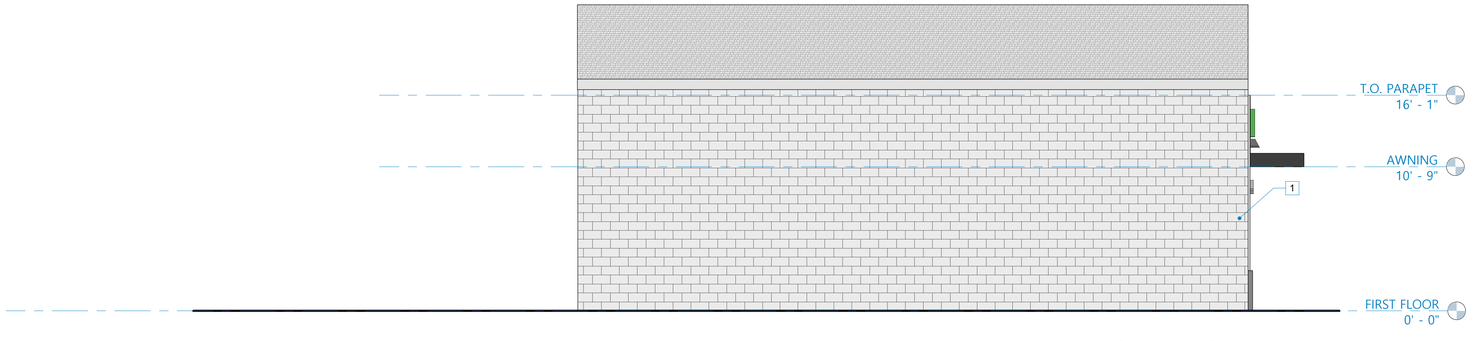
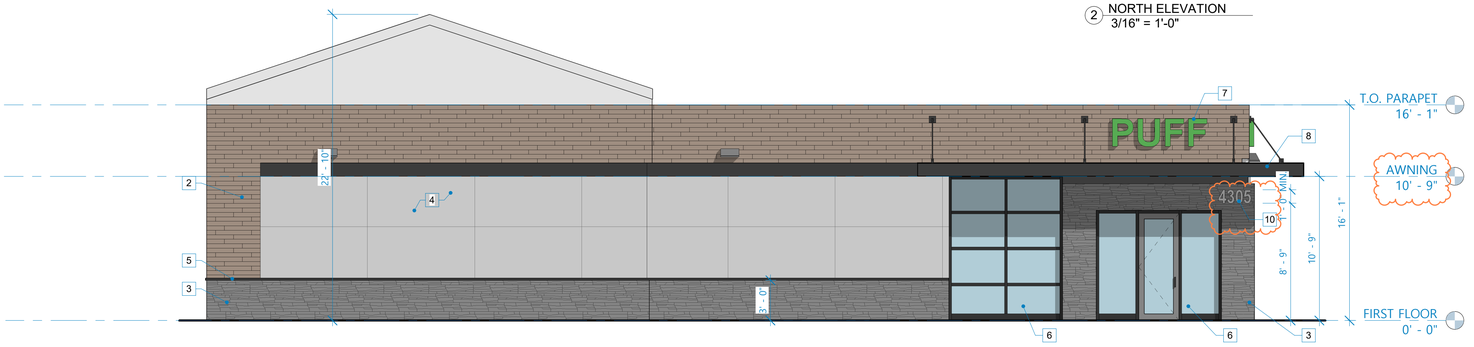


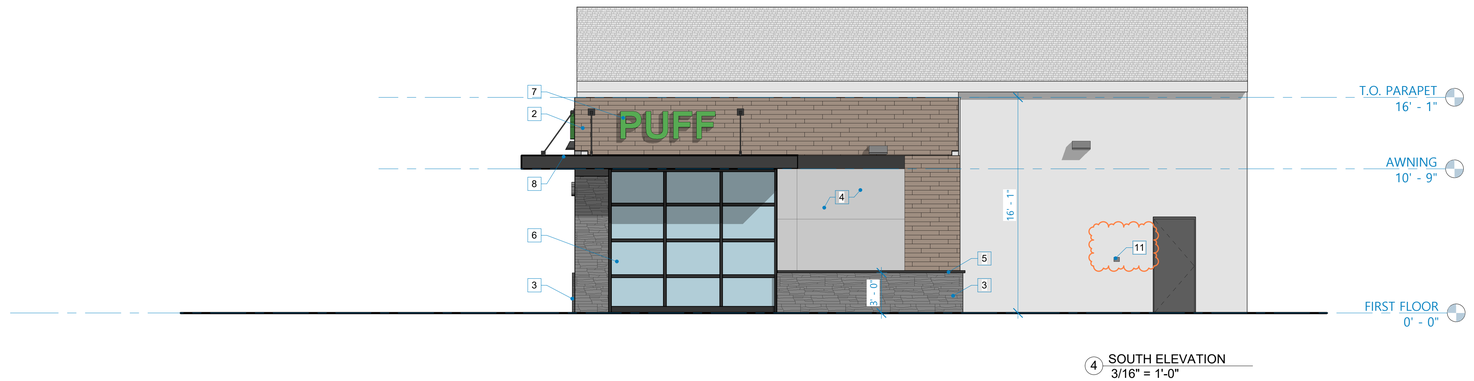

3 EAST ELEVATION
3/16" = 1'-0"




2 NORTH ELEVATION
3/16" = 1'-0"




1 WEST ELEVATION
3/16" = 1'-0"




4 SOUTH ELEVATION
3/16" = 1'-0"

| MATERIAL LEGEND | |
|---|---|
| TAG | DESCRIPTION |
| 1 | PAINT EXISTING CMU. REPAIR IF NECESSARY. |
| 2 | PROPOSED WOOD SIDING, TBD BY OWNER |
| 3 | PROPOSED STONE, TBD BY OWNER. |
| 4 | PROPOSED SIDING, TBD BY OWNER. |
| 5 | PROPOSED LIMESTONE CAP |
| 6 | PROPOSED STOREFRONT SYSTEM |
| 7 | PROPOSED SIGN/LOGO LOCATION |
| 8 | PROPOSED AWNING |
| 9 | PROPOSED WALL PACK |
| 10 | PROPOSED ADDRESS NUMBERS, 12" MIN. |
| 11 | PROPOSED KNOXBOX 3200 |

**LEGEND**

NEW CONSTRUCTION

EXISTING TO REMAIN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# ELEVATIONS

# A4.0

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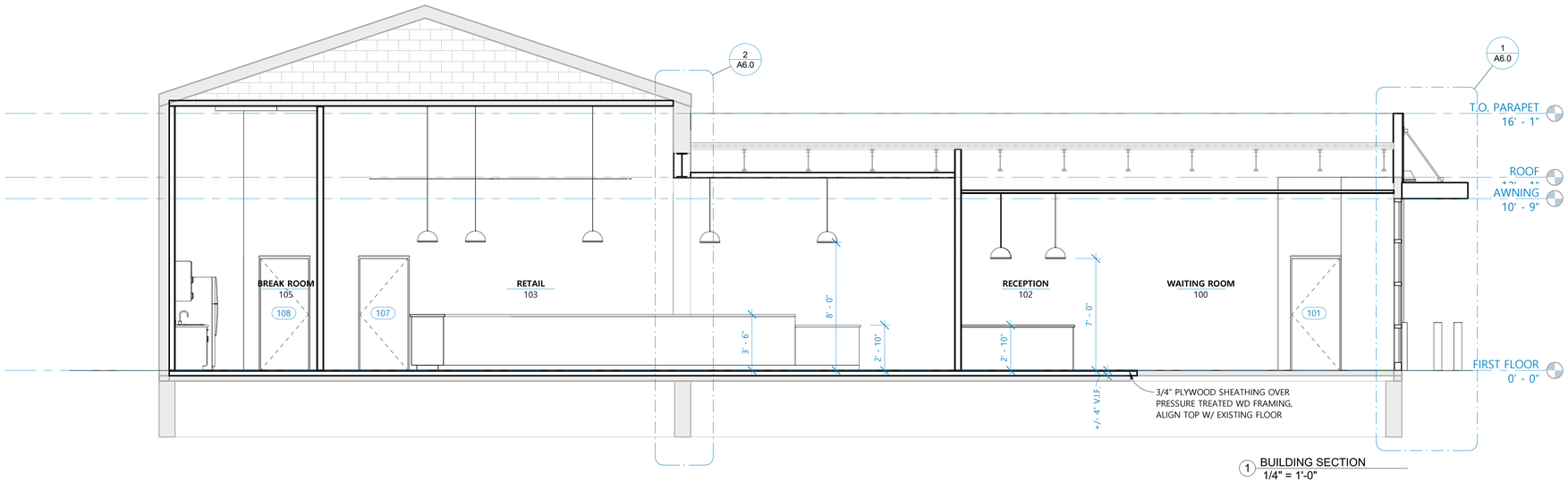


1 BUILDING SECTION
1/4" = 1'-0"

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# BUILDING SECTIONS

# A5.0

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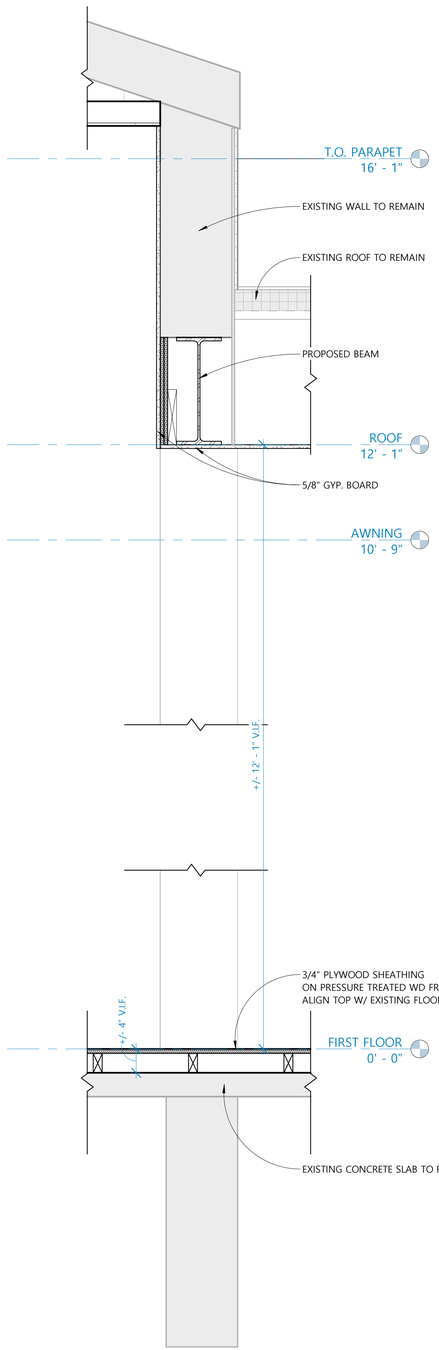
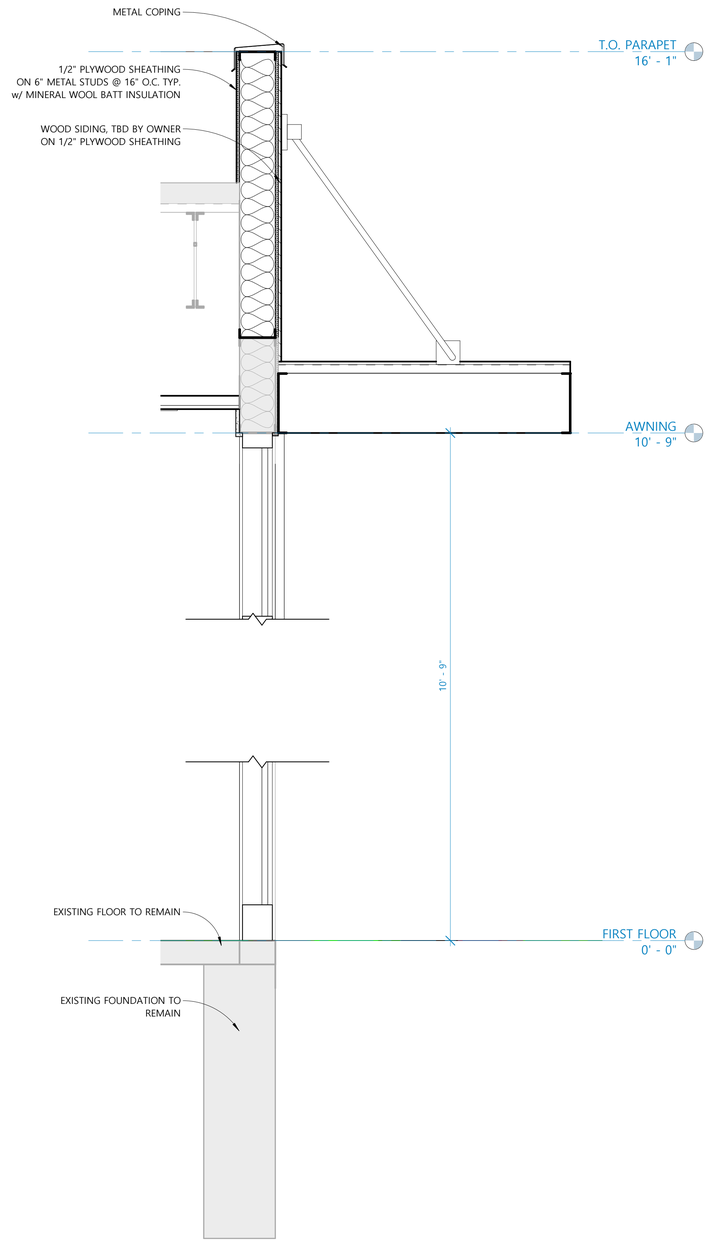
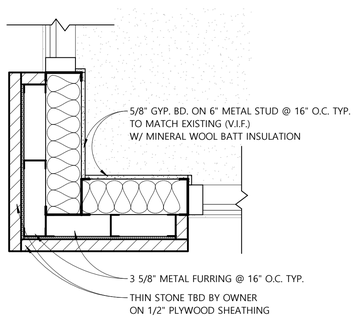


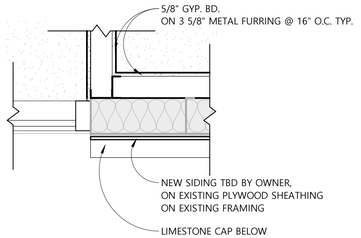

2 WALL SECTION
1" = 1'-0"




1 STOREFRONT WALL SECTION
1" = 1'-0"




3 STONE TO STOREFRONT PLAN DETAIL
1" = 1'-0"




4 STOREFRONT PLAN DETAIL
1" = 1'-0"

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# WALL SECTIONS

# A6.o

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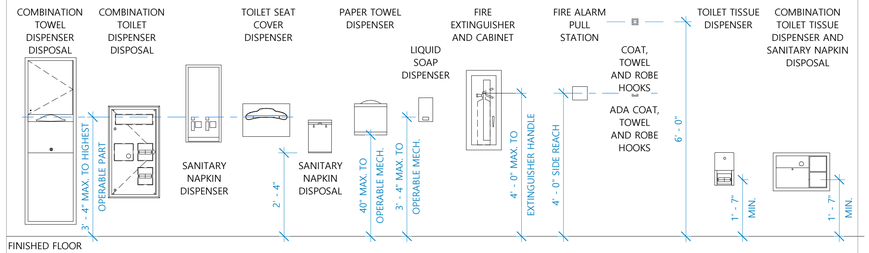
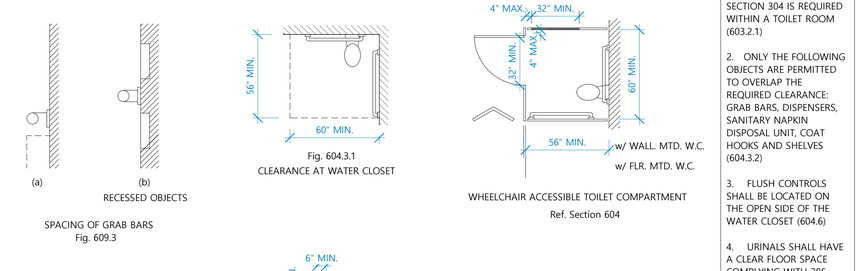



MOUNTING HEIGHTS FOR TOILET ACCESSORIES



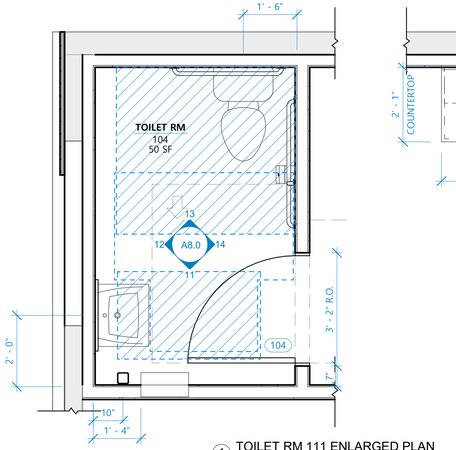

TOILET ROOM CLEARANCES & MOUNTING HEIGHTS
Ref. Chapter 6

TOILET ROOM NOTES:

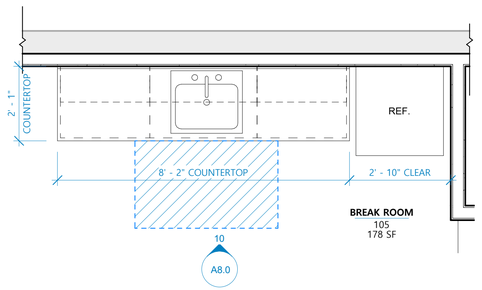
1. A TURNING SPACE PER SECTION 304 IS REQUIRED WITHIN A TOILET ROOM (603.2.1)
2. ONLY THE FOLLOWING OBJECTS ARE PERMITTED TO OVERLAP THE REQUIRED CLEARANCE: GRAB BARS, DISPENSERS, SANITARY NAPKIN DISPOSAL UNIT, COAT HOOKS AND SHELVES (604.3.2)
3. FLUSH CONTROLS SHALL BE LOCATED ON THE OPEN SIDE OF THE WATER CLOSET (604.6)
4. URINALS SHALL HAVE A CLEAR FLOOR SPACE COMPLYING WITH 305 POSITIONED FOR FORWARD APPROACH AND CENTERED ON UNIT (605.3)
5. LAVATORIES SHALL HAVE A CLEAR FLOOR SPACE COMPLYING WITH 305 POSITIONED FOR FORWARD APPROACH AND CENTERED ON UNIT (606.2)
6. KNEE & TOE CLEARANCE COMPLYING WITH 306 SHALL BE PROVIDED (602.2)
7. EXPOSED WATER SUPPLY AND DRAIN PIPES SHALL BE INSULATED. THERE SHALL BE NO SHARP OR ABRASIVE SURFACES UNDER LAVATORIES (606.5)
8. INSTALL GRAB BARS TO WITHSTAND NOT LESS THAT A 250 POUND FORCE APPLIED AT ANY POINT ON THE BAR (609.8)

**BATHROOM ACCESSORY SCHEDULE**

| TYPE | MANUFACTURER | MODEL | FINISH | QUANTITY | COMMENTS |
|---|---|---|---|---|---|
| MIRROR | - | - | - | 2 | - |
| RECESSED PAPER TOWEL DISPENSER/ WASTE RECEPTACLE | - | - | STAINLESS STEEL | 2 | - |
| TOILET PAPER DISPENSER | - | - | STAINLESS STEEL | 2 | - |
| SOAP DISPENSER | - | - | STAINLESS STEEL | 2 | - |
| GRAB BARS *(SET OF THREE)* | - | - | STAINLESS STEEL | 2 | 36" (SIDE), 42" (BACK), 18" (VERTICAL) |




1 TOILET RM 111 ENLARGED PLAN
1/2" = 1'-0"




3 KITCHENETTE ENLARGED PLAN
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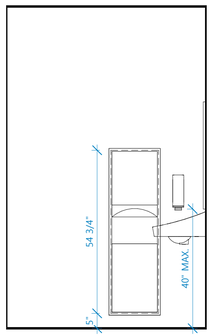
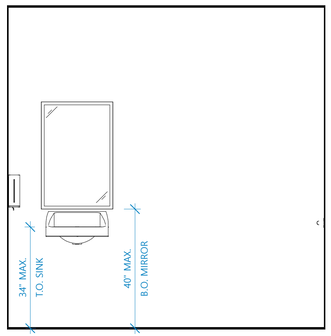
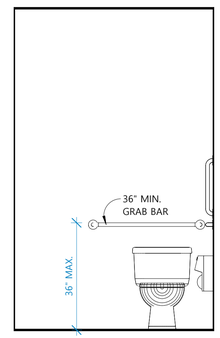



11 TOILET RM 111 - S
1/2" = 1'-0"




12 TOILET RM 111 - W
1/2" = 1'-0"




13 TOILET RM 111 - N
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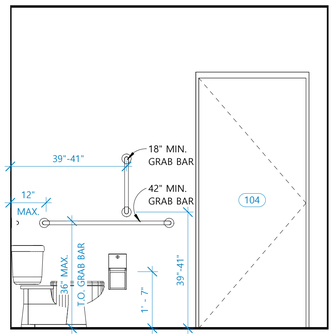
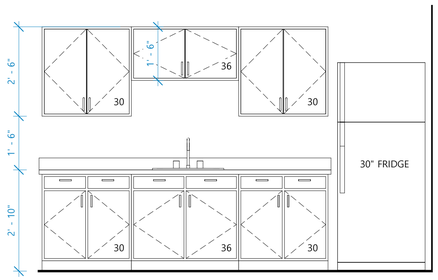
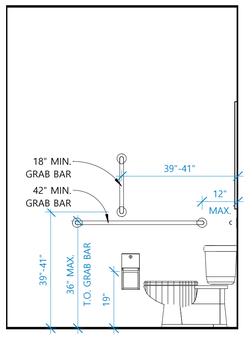


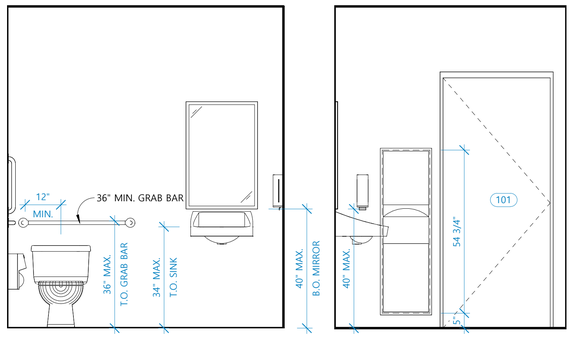

14 TOILET RM 111 - E
1/2" = 1'-0"




10 KITCHENETTE
1/2" = 1'-0"

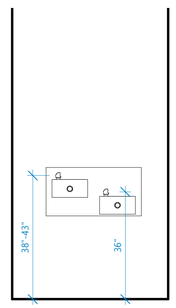



8 TOILET RM 113 - E
1/2" = 1'-0"

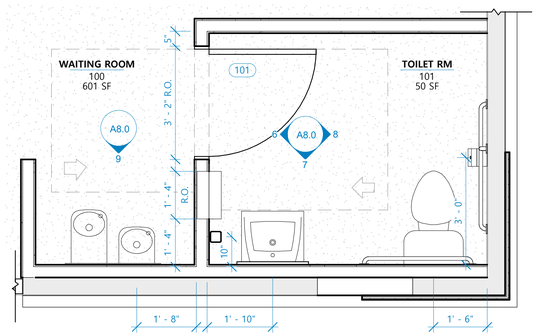



7 TOILET RM 113 - S
1/2" = 1'-0"

6 TOILET RM 113 - W
1/2" = 1'-0"




9 DRINKING FOUNTAIN
1/2" = 1'-0"




2 TOILET RM 113 ENLARGED PLAN
1/2" = 1'-0"

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DAMIAN FARRELL DESIGN GROUP
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tel: 734.998.1331

FOR SITE PLAN APPROVAL

4305 PORTAGE ROAD PROVISIONING CENTER
4305 PORTAGE ROAD
KALAMAZOO, MI 49001

| DATE | DESCRIPTION |
|---|---|
| 08.22.2021 | SPA SUBMITTAL |

| | |
|---|---|
| DESIGN | Designer |
| DRAWN | Author |
| PROJECT NO. | 210623_05_09 |

# ENLARGED PLANS & INTERIOR ELEVATIONS

# A8.0

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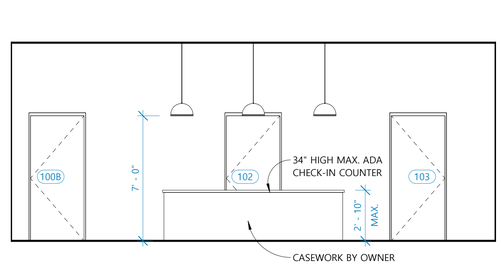
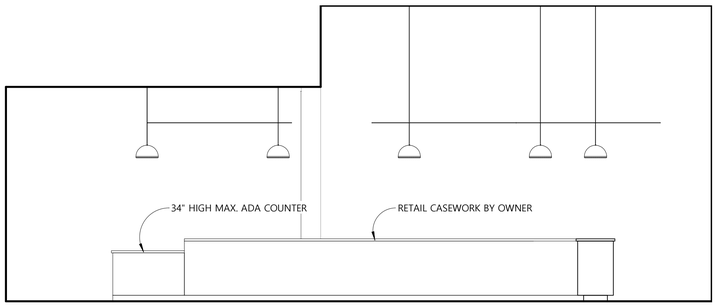
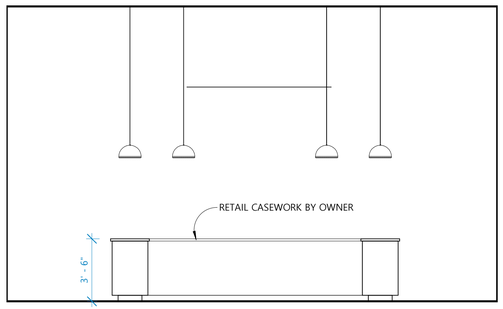


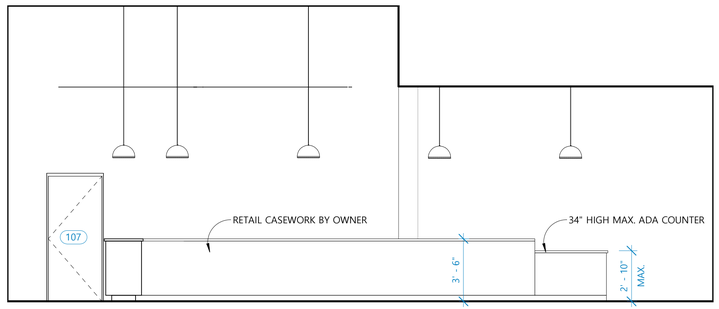

4 CHECK IN DESK
1/4" = 1'-0"




3 RETAIL W ELEVATION
1/4" = 1'-0"




2 RETAIL N ELEVATION
1/4" = 1'-0"




1 RETAIL E ELEVATION
1/4" = 1'-0"

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| | |
|---|---|
| DESIGN | Designer |
| DRAWN | Author |
| PROJECT NO. | 210623_05_09 |

# INTERIOR ELEVATIONS

# A8.1

P:₩2021₩210623_05_09_4305 Portage St (PUFF)₩Revit₩210916_4035 Portage Road (Puff).rvt

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