



Planning Commission
October 15, 2024 - 6:00 PM
233 South Main Street, Monroe, Ohio

Call to Order

Roll Call

Approval of Minutes

- Meeting Minutes from the June 18, 2024 Planning Commission meeting.

Old Business

New Business

- Case No. 2024-10-6-Public Hearing- Consideration of a Conditional Use Permit for the expansion of Monroe First Church of God
- Case No. 2024-10-7- Consideration for the Permitting of Cannabis in the City of Monroe

Administrative Reports

Adjournment



**Planning Commission Minutes
June 18, 2024
233 South Main Street, Monroe, Ohio**

Call to Order

Mrs. Layman called the meeting to order at 6:00 p.m.

Roll Call

Planning Commission members present: Christina McElfresh, Andrew Hall, Robert Duckworth

Planning Commission members not present: Matthew Frye, Debbie Hagedorn

Staff members present: Tom Smith, Development Director; Kameryn Jones, Assistant Development Director; Jameson Cole, Planner; Michelle Layman, Planning and Zoning Specialist

Mr. Duckworth moved to excuse Mr. Frye and Mrs. Hagedorn from tonight's meeting. Seconded by Mr. Hall. Voice vote. Motion carried.

Mrs. Layman requested a motion to appoint a temporary chair for this evening's meeting. Mr. Duckworth moved to appoint Mrs. McElfresh as temporary chair for this evening's meeting. Seconded by Mr. Hall. Voice vote. Motion carried.

Approval of the Minutes

Mr. Duckworth moved to approve the minutes from the March 13, 2024, and May 29, 2024, meetings; seconded by Mr. Hall. Voice vote. Motion carried.

Old Business

None.

New Business

Mrs. McElfresh introduced Case No. 2024-6-4- Consideration of a site plan for Marathon Gas Station.

Mr. Cole presented the case. Mr. Cole stated the background as follows:



- Jake Rudemiller of Leesman Engineering, on behalf of Shops of Monroe Crossings LLC, have submitted a site plan application for a gas station and convenience store to be located at the southeast corner of State Route 4, Roden Park Drive, and Coldwater Drive.
- The applicant proposes a 3,500-square-foot building with a convenience store, drive-through, and automotive re-fueling stations.
- The proposed site is 2.29 acres and is zoned C-4 Gateway Commercial PUD.

Mr. Cole provided photos of the overhead view of the property, surrounding zoning, and photos from different angles of the property.

Mr. Cole reviewed the staff comments as follows:

- Street Trees-
 - The street trees along Hamilton Middletown Road and Coldwater Drive need to be placed in the tree lawn between the sidewalk and the back of the curb.
- Landscaping-
 - The front yard landscaping is required to be a minimum of 20 percent of the required front yard area with a minimum 6-foot-wide area adjacent to the right of way.
 - It appears that the trees required as part of the front yard landscaping are missing. Please revise to include trees within the required front yard area.
- Sidewalk-
 - The code requires sidewalks along all portions of a parcel that front a public or private street as well as a sidewalk connection to the use. The applicant does not show any connection from the sidewalk to the building.

Mr. Cole reviewed department comments as follows:

- Fire Department:
 - A Knox box is required.
- Police Department: No comment.
- Engineering/Public Works Department: engineering review ongoing.

Mr. Cole reviewed staffs recommendation as follows:

- Staff recommends approval of the site plan application with the following conditions:
 - The landscape plan be revised based on staff comments to meet code standards.
 - As a reminder, minimum size and species requirements related to landscaping must be met.
 - As a reminder, if ground mounted or rooftop equipment becomes necessary in the future, screening will be required.



- Revise the site plan to show a pedestrian connection between the sidewalk and the building.
- All other Staff comments and any future Engineering review requirements are to be addressed.
- A GIS compatible file of finalized plans be submitted.

Planning Commission discussed the case. Planning Commission stated there needs to be a sidewalk that connects to the building, street trees, and trees in the front yard area.

Mr. Duckworth moved to approve Case No. 2024-6-4 Consideration of a site plan for Marathon Gas Station with the following conditions:

- The landscape plan be revised based on staff comments to meet code standards.
- As a reminder, minimum size and species requirements related to landscaping must be met.
- As a reminder, if ground-mounted or rooftop equipment becomes necessary in the future, screening will be required.
- Revise the site plan to show a pedestrian connection between the sidewalk and the building.
- All other staff comments and any future engineering review requirements are to be addressed
- A GIS-compatible file of finalized plans be submitted.

Seconded by Mr. Hall. Roll call vote. 3 ayes. Motion carried.

Mrs. McElfresh introduced Case No. 2024-6-5- Consideration of a final plat for Monroe Crossings Section 5 Block B.

Mr. Cole presented the case. Mr. Cole stated the background as follows:

- Monroe Crossings II, LLC has submitted an application for final plat for Section 5 Block A of the Monroe Crossings development.
- This plat will include the construction of 41 single-family residential lots.
- This phase will be approximately 20.98 acres of 105.6 total acres for Section 5.
- The average lot size is 18,982 square feet and the average lot width is 100 feet.
- The proposed density is 1.95 units per acre.

Mr. Cole reviewed an overhead map of the property, the zoning map of the proposed site and surrounding properties and the preliminary plat for Section 5B. Mr. Cole also reviewed photos of the property from different vantage points.

Mr. Cole reviewed staff comments as follows:

- The preliminary plat for Monroe Crossings Section 5 was approved by the Planning Commission in October 2020.



- The preliminary plat provided the design and layout for this last phase of the Monroe Crossings subdivision. The approved preliminary plat included the following:
 - 183 total single-family lots
 - 80' lots—50
 - 90' lots—40
 - 100' lots—93
 - New public streets (proposed as Shyla Court, Braylon Drive, David Lee Court, Samuel Drive, Shawn Drive, Shane Court, and Bray Court)
 - The extension of Blue Springs Drive, Gabrielle Drive, and Morgan Drive
 - 17.93 acres of open space
 - Two water quality ponds that will be engaged with an 8-foot walking path
 - A neighborhood park

Mr. Cole reviewed the department comments as follows:

- Fire Department: No Comment
- Police Department: No Comment
- Public Works/Engineering Department: No Comment

Mr. Cole reviewed the staff recommendation as follows:

- Staff recommends that the Planning Commission move to recommend the Final Plat for Monroe Crossings Section 5 Block B with the following conditions:
 - All other staff comments be addressed.
 - Digital files compatible with City GIS be submitted.

Planning Commission discussed the case.

Mr. Duckworth moved to recommend for approval Case No. 2024-6-5-Consideration of a final plat for Monroe Crossings Section 5 Block B with the following conditions:

- All other staff comments be addressed
- Digital files compatible with city GIS be submitted

Seconded by Mr. Hall. Roll call vote. 3 ayes. Motion carried.

Adjournment

Mr. Duckworth moved to adjourn the meeting. Seconded by Mr. Hall. Voice vote. Motion carried.

The Planning Commission meeting adjourned at 6:28 p.m.

Respectfully submitted,



Michelle Layman
Planning and Zoning Specialist



CITY OF MONROE
Inter-Office Correspondence

TO: Members of the Monroe Planning Commission
FROM: Kameryn Jones
Assistant Development Director

DATE: October 15, 2024
RE: Information Packet for October 15, 2024 Planning Commission Meeting at 6:00 p.m.

I. Case No. 2024-10-6— Public Hearing—Consideration of a Conditional Use Permit for the expansion of Monroe First Church of God

- Haglage Construction, Inc., on behalf of Monroe First Church of God, has submitted a conditional use application for a proposed expansion of the church.
- The applicant is proposing a 11,700 square foot building expansion to house a new worship area, lounge, and nursery.
- The site is 7.3 acres zoned NC Neighborhood Conservation.
- The applicant anticipates construction to start in the beginning of 2025 and end late 2025.



Overhead View of Property



Zoning Map of Proposed Site and Surrounding Properties



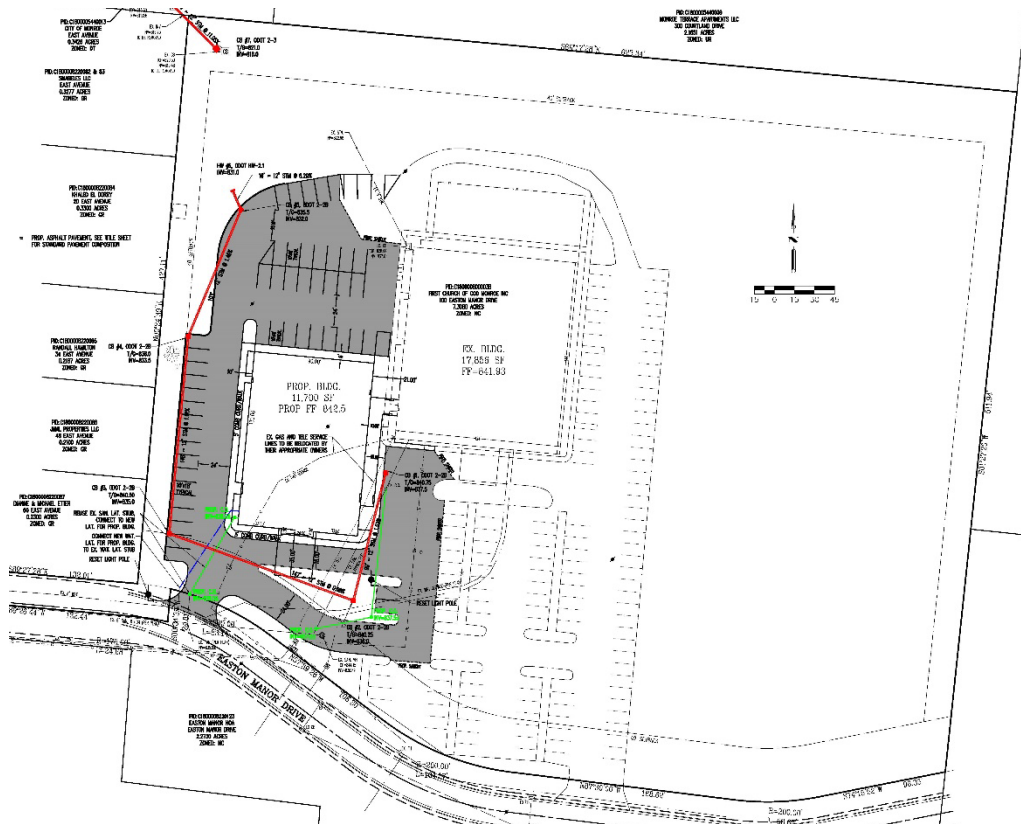
Looking Northeast towards the site from Easton Manor Dr



Looking North towards the site from Easton Manor Dr



Looking Northwest towards the site from the front Easton Manor Dr



Proposed Site Plan

B. Conditional Use Permit

Because this use is considered a “Place of Public Assembly”, categorized as a Conditional Use in the Primary Use Table, a Conditional Use permit and review are required for Planning Commission’s consideration in addition to the site plan.

The following standards shall apply to all conditional uses. Planning Commission shall consider the following standards when making a decision on a conditional use. Staff has provided feedback where applicable.

1. ***The proposed conditional use will operate or be designed in a manner that does not diminish the use or functionality of surrounding properties;***

The proposed expansion should not diminish the function of the surrounding neighborhood.

2. ***The proposed conditional use will incorporate provisions for hours of operation, parking and loading areas, driveways, lighting, signs, landscaping, buffering, and other site improvements;***

The proposed expansion is incorporating additional parking and other site improvements to accommodate the new building. This staff report outlines areas that require revision in order to meet minimum code standards.

3. ***The proposed conditional use must have adequate public services (e.g. streets, off-street parking, pedestrian facilities, water, sewer, gas, electricity, and police and fire protection) available without the reduction of services to any existing uses;***

As part of the expansion, the site is required to meet minimum parking requirements. The applicant has shown the appropriate number of parking stalls. Additionally, the applicant will be extending the 5 FT sidewalk along the north side of Easton Manor Drive.

4. ***If, in the opinion of Planning Commission or City Council, the conditional use becomes a nuisance, the Conditional Use Permit may be recalled for further review, which could lead to the need for additional conditions, restrictions, or the revocation of the permit;***

5. ***The proposed conditional use will incorporate design features to sufficiently protect adjacent uses that may include but are not limited to service areas, pedestrian and vehicular circulation, safety provisions, access ways to and from the site, lighting, screening and buffering, fencing, and building placement; and***

As found in staff comments below, the proposed lighting plan does not meet minimum illumination standards. While it may be appropriate to increase the lighting on the east side of the developed part of the site, having less (but safe) amounts of lighting in the parking area may be appropriate in addition to maintaining the vegetated open space between the church and the homes in the Easton Manor subdivision.

6. ***The proposed use is compatible with adjacent existing uses. Compatibility shall be expressed in terms of appearance, architectural scale, use and intensity, and features, site design and scope, landscaping, as well as the control of adverse environmental impacts, including noise and lighting, or other undesirable conditions.***

This church has existed at this location for many years. The building footprint is expanding toward the street, so its presence will be more pronounced than before. The church will continue its operations, including childcare, which is generally compatible with the adjacent residential uses.

C. Staff Comments

• Landscaping

1. Street trees shall be required every 40 feet on center along all private and public streets for all new sites, development, and expansions of sites.
 - The length along Easton Manor Drive is approximately 644 FT, requiring 16 trees. 7 existing trees along this street may count towards this total, leaving an additional 9 street trees required.
2. Parking islands are required throughout the site and have not been provided in several areas.
 - Endcaps islands (required at the end of all parking rows)
 - i. Endcaps required = 20
 - ii. Endcaps shown = 10
 - iii. Missing = 10
 - Interior islands (In the middle of parking rows installed at intervals of not less than one island for each 15 parking spaces)
 - i. Interior required = 2
 - ii. Interior shown = 0
 - iii. Missing = 2
3. A minimum 20% of the required front yard area must be landscaped. Staff requests missing front yard landscaping along Easton Manor Drive be provided in a revised landscape plan.

• Photometric

1. Illumination is required consistently across the site shall be designed so as not to create dark spots that may create safety issues in such areas as vehicular use areas and connecting pedestrian paths.
 - Areas around the site, along the north perimeter as well as the far east and southeast side of the property, are underlit.
 - Staff suggests the applicant make adjustments to address the rear access drive and the easternmost row of parking.

• Architectural

1. Only 20% of each window area may be opaque or spandrel glass.
 - The elevations refer to tinted glass, which the applicant has clarified will be clear. Revised elevations will need to be submitted with the correct labeling the window material callouts.

D. Department Comments

- **Fire Department:** Fire reserves the right for further review with formal building permit submittal.
- **Police Department:** No comment.
- **Engineering/Public Works Department:** Engineering review ongoing.

E. Staff Recommendation

- Staff recommends approval of the Conditional Use and Site Plan applications with the following conditions:
 1. Discussion and decision regarding minimum lighting requirements as noted in the staff report.
 2. The landscaping plan be revised to address staff report comments.
 3. All landscaping must meet all minimum species and size requirements and be detailed appropriately on the plan.
 4. The building elevations be revised to address staff report comments.
 5. All ground-mounted and rooftop equipment must be appropriately screened as approved by Staff.
 6. All Engineering review comments be addressed.
 7. The applicant will be responsible for maintenance (mowing, etc.) of the right-of-way adjacent to the developed site once improvements are complete.
 8. Digital files of final plans compatible with City GIS be submitted.
 9. All other Staff comments be met.

II. Case No. 2024-10-7—Consideration for the Permitting of Cannabis in the City of Monroe

A. Background

- On September 8, 2016, House Bill 523 was signed into law legalizing the use of medical marijuana in the state of Ohio. Medical Marijuana is regulated by R.C. Chapter 3796: Medical Marijuana Control Program.
- In November 2023, Ohio Issue 2 passed, legalizing the growing, processing, and selling of adult-use cannabis. Adult-use cannabis is regulated by R.C. Chapter 3780: Adult-Use Cannabis Control.
- Adult-use cannabis and medical marijuana, collectively termed as cannabis, are administered by the Division of Cannabis Control.
- Since 2022, City Council has been monitoring the development of the use of cannabis in Ohio and discussing any impacts to the City.
- At present, there is no local legislation or code requirement prohibiting the cultivation, processing, or distribution of cannabis in the City.
- In March of 2024, City Council requested that staff draft legislation regulating the use of cannabis within the City of Monroe.
- Currently, there are four dual-use cannabis dispensaries, one cultivation facility, and one processing facility in Monroe.

B. Staff Comments

- As provided by R.C. Chapters 3796.29 and 3780.25, local authority regarding cannabis uses, the City, at their option, may adopt an ordinance to prohibit or limit the amount of cannabis operators permitted within the City.
- In a special meeting held on June 3, 2024, City Council determined that cannabis use facilities (i.e., cultivators, processors, dispensaries, and testing laboratories) within the City would be:
 1. Permitted to operate only as a conditional use in the General Commercial (GC) zoning district.
 2. Subject to an established fee schedule for the processing of applications, permits, and inspections in the amount of \$300 for a conditional use permit and \$100 for zoning review for a new business or use. These charges are what are assessed against any retail use coming into the City.
- City Council also discussed the notion of implementing a proximity limit of one mile from one dispensary to another within the land use designation. However, that provision is already in place in accordance with Ohio Administrative Code Rule 1301:118-2-06 10 (B): Dispensaries, subsection (I)(6).

- Please note that this rule is in addition to the state statute in that a dispensary shall not be located within 500 feet of the end boundaries of a parcel having situated on it a prohibited facility (church, public school, public library, public playground, or public park).
- In addition, the Home Grow provision of the code (R.C. 3780.25(G)(3)) says the City cannot limit or prohibit home grow. For that reason, it is not called out in the proposed legislation.
- In terms of fiscal impact, a recommendation for adoption would produce additional revenue to the City's general fund balance.

C. Department Comments

- **Fire Department:** No comment
- **Police Department:** No comment.
- **Engineering/Public Works Department:** No comment.

D. Staff Recommendation

- Staff recommends Planning Commission forward a recommendation to City Council that they amend the City of Monroe Code of Ordinances to add Chapter 874: Cannabis Uses, and amend the Planning and Zoning Code sections 1204: Use Specific Standards and 1217: Definitions, and add Adult Cannabis Facilities to Table 1204-3 in the districts where Cannabis Uses are permitted.

CONSTRUCTION PLANS

FIRST CHURCH OF GOD MONROE

100 EASTON MANOR

SITUATED IN M.S. NO.2264

CITY OF MONROE

BUTLER COUNTY, OHIO

GENERAL SANITARY NOTES:

Sanitary laterals shall be extended to at least ten (10) feet beyond the property / right-of-way line or to the edge of the easement whichever is greater.

Sanitary sewer materials and installation shall be per Butler County Water and Sewer specifications, using: Section 3110 for PVC, SDR-35 & 26 pipe; Section 3140 for ABS or PVC composite pipe; Section 3410 for manholes.

Roof drains, foundation drains and other clean water connections to the sanitary sewer system are prohibited.

All buildings to be served by the public sewer system shall be constructed so as to provide a minimum of four feet of vertical separation between the public sanitary sewer, at the point of connection and the lowest building level served by gravity sewer connection. In addition, said building level shall be at least one (1) foot above the lowest point of free-overflow (non-sealed manhole cover) upstream of any treatment facility or wastewater pumping facility that receives the discharge from said building. Said minimum service levels shall be recorded on the "Record Drawing" plans for the development, which will be kept on file in the office of the Butler County Water & Sewer Department.

Butler County Water & Sewer Department does not accept any responsibility for the relocation, repair or replacement of any other utility installed within five (5) feet of the center line of any sanitary sewer main or water main.

Private driveways, parking lots and other paved areas, earthen berms or structures should not be constructed over private water or sewer service lines within the public road right of way or within the easement areas for the public utilities. Should this occur, the property owner shall be held responsible for the protection and repair and for providing access to any curb stops, meter pits, manholes, clean-outs, etc. Installed in conjunction with these private service lines and for any damage or restoration of the paved surfaces or structures that may result from the future operation, maintenance, repair or replacement of said service lines and appurtenances.

Sanitary sewer laterals, which shall include all pipe and appurtenances from the building to the public sewer main, and the connection to the public sewer main shall be considered private and the responsibility of the property owner to maintain. The connection to the sewer main would be any piping that extends out from the main barrel to the sewer main.

GENERAL NOTES:

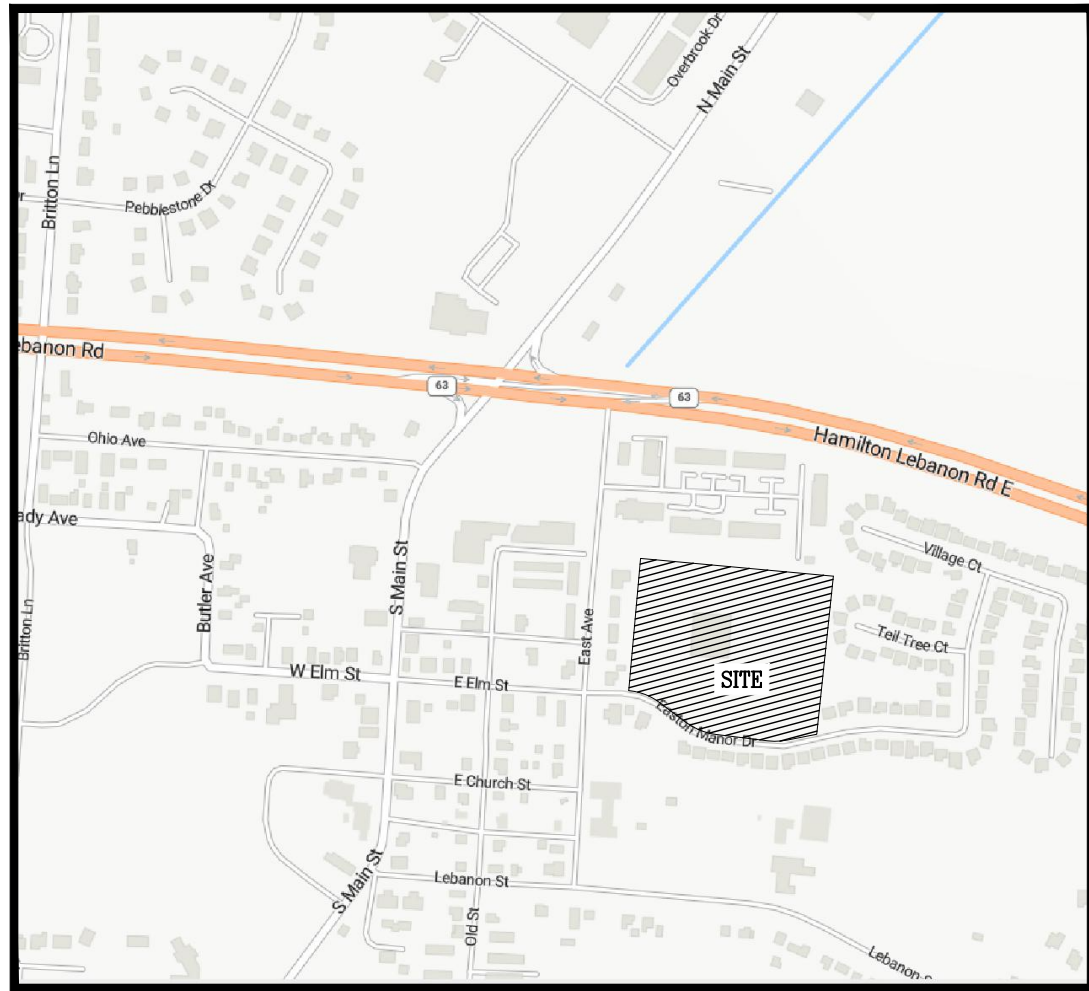
1. REQUIRED NUMBER OF PARKING SPACES FOR 1000 SEATS= 167.
TOTAL PROVIDED = 167.
2. ALL CONSTRUCTION TO BE TO LATEST CITY OF MONROE STANDARDS AND SPECIFICATIONS.
3. ALL UTILITIES ARE TO BE INSTALLED UNDERGROUND.
4. ALL DIMENSIONS ARE TO FACE OF CURB/EDGE OF PAVEMENT.
5. ADDRESS TO BE 12" HIGH NUMBERS, CONTRASTING WITH BUILDING IN COLOR, AND POSTED ON THE UPPER LEFT CORNER OF THE BUILDING FACING EASTON MANOR DRIVE.
6. CONSTRUCTION NOISE SHALL BE KEPT TO A MINIMUM AND OCCUR ONLY DURING DAYLIGHT HOURS.
7. ALL NEW UTILITIES (CABLE, ELECTRIC, GAS, TELE) TO BE UNDERGROUND.
8. ALL WATER AND SEWER TRENCHES SHALL BE VISUALLY INSPECTED BY THE CITY OF MONROE PRIOR TO BACKFILL.
9. ROOF DRAINS, FOUNDATION DRAINS, SUMP PUMPS, AND OTHER CLEAN WATER CONNECTIONS TO THE SANITARY SANITARY SEWER ARE STRICTLY PROHIBITED.
10. ALL WORK SHOWN ON PLANS TO BE DONE BY OWNER UNLESS OTHERWISE INDICATED.
11. ALL WORK SHOWN ON PLANS SHALL BE DONE IN ACCORDANCE WITH THE CITY OF MONROE & BUTLER COUNTY STANDARDS, REGULATIONS, AND SPECIFICATIONS.
12. ALL STORM SEWER SHALL COMPLY WITH CITY OF MONROE STANDARD DRAWING 600-13.

SITE INFORMATION:

SITE AREA = 7.3080 AC.
ZONING: NC
SURROUNDING ZONING:
UR & DT (NORTH)
OR (WEST)
NC (SOUTH, EAST)
PROP BLDG AREA = 11,700 S.F.
PROJECT SCHEDULE: BEGIN NOV 2024
END JUNE 2024

SITE DATA

1. SITE AREA = 7.3080 AC.
2. TOTAL DISTURBED AREA = 1.64 AC.
3. TOTAL IMPERVIOUS AREA = 2.75 AC.
4. TOTAL PERVIOUS AREA = 4.55 AC.
5. TOTAL VEHICULAR USE AREA = 90,000 S.F.



VICINITY MAP
NOT TO SCALE

DEVELOPER

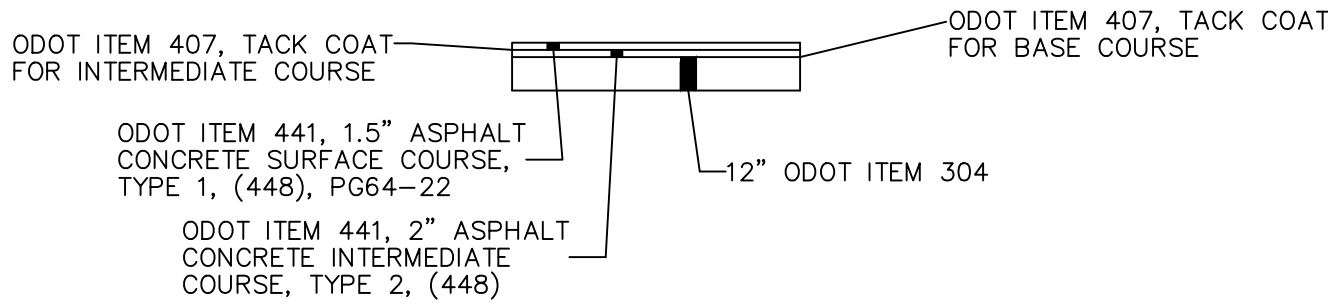
HAGLAGE CONSTRUCTION, INC.
11138 READING ROAD
SHARONVILLE, OHIO 45241
PH: 513/769-3400
FAX: 513/769-3401
www.haglageconstruction.com

ENGINEER/SURVEYOR

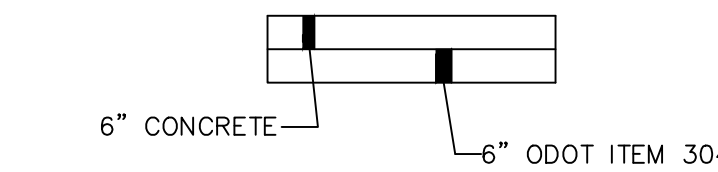
APEX ENGINEERING & SURVEYING, INC.
1068 N. UNIVERSITY BLVD.
MIDDLETOWN, OHIO 45042
PH: (513)424-5202
FAX: (513)424-6202

LOT INFORMATION:

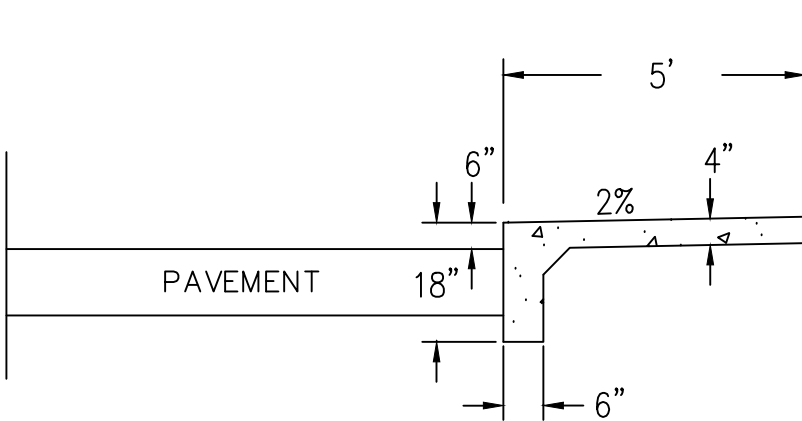
FIRST CHURCH OF GOD MONROE, INC.
100 EASTON MANOR DR.
7.308 ACS
PIN: C1800080000038



STANDARD PAVEMENT COMPOSITION



OPTIONAL CONCRETE PAVEMENT



COMB CURB/WALK DETAIL

SHEET INDEX

TITLE SHEET	1
EXISTING CONDITIONS AND DEMOLITION PLAN	2
PROPOSED SITE DIMENSION PLAN	3
PROPOSED GRADING PLAN	4
STORM SEWER PROFILES, BCWS DETAILS	5
EROSION CONTROL DETAILS	6
SWP3 DETAILS	7

CITY OF MONROE STD. CONSTRUCTION DRAWINGS

300-7	500-1	600-2
300-9	500-4	600-7
300-10	500-5	600-8
		600-9
		600-10
		600-11
		600-12
		600-13
		600-14

APPROVED BY:

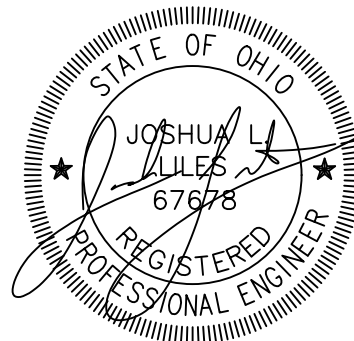
CITY OF MONROE, ENGINEER

DATE

CITY OF MONROE, MANAGER

DATE

UTILITIES AGENTS CITY OF MONROE - PUBLIC WORKS 1000 HOLMAN AVENUE MONROE, OH 45050 513-823-1274 CITY OF MONROE - GOVERNMENT CENTER 2335 S. MAIN STREET MONROE, OH 45050 513-539-7374 SANITARY SEWER - BUTLER COUNTY 130 HIGH STREET - 5TH FLOOR HAMILTON, OH 45011 513-782-5168 DUKE ENERGY - POWER SERVICE 2310 DANA AVENUE - RM EF 324 CINCINNATI, OH 45207 513-458-3847 DUKE ENERGY - GAS SERVICE 139 E. FOURTH STREET - RM 460A CINCINNATI, OH 45202 513-287-2517 SPECTRUM CABLE - CABLE SERVICE 1292 CORNEL PIKE DRIVE CINCINNATI, OH 45242 513-386-5483 ATTN: PHONE SERVICE 1201 FAR HILLS AVENUE DAYTON, OH 45459 937-296-3588 OHIO UTILITIES PROTECTION SERVICE 3 WORKING DAYS BEFORE YOU DIG TOLL FREE 1-800-362-2764 OR 811	SEEDING A. ALL AREAS DESIGNATED FOR SEEDING MUST HAVE A MINIMUM OF 4" OF TOPSOIL OVER THE ENTIRE AREA. THE AREA MUST BE RAKED, ROLLED, AND DRESSED READY FOR SEEDING. NO STONE OVER 1" IN SIZE PERMITTED. DRAINS A. ALL FIELD OR STORM DRAINS WHICH ARE ENCOUNTERED DURING CONSTRUCTION MUST BE REPAIRED AND PROVIDED WITH UNOBSTRUCTED OUTLETS AS APPROVED AND DIRECTED BY THE CITY AND MARKED ON THE RECORD DRAWINGS. CONNECTIONS TO EXISTING PIPE A. WHERE THE PLANS PROVIDE FOR PROPOSED CONDUIT TO BE CONNECTED TO, OR TO CROSS EITHER OVER OR UNDER AN EXISTING SEWER, IT MUST BE THE RESPONSIBILITY OF THE CONTRACTOR TO LOCATE THE EXISTING PIPE BOTH AS TO LINE AND GRADE BEFORE STARTING TO LAY THE PROPOSED CONDUIT. UTILITY SEPARATION A. ANY UNDERGROUND UTILITIES SUCH AS GAS, ELECTRIC, CABLE TV, TELEPHONE, ETC. MUST HAVE 18" HORIZONTAL SEPARATION FROM ANY CITY UTILITY UNLESS OTHERWISE APPROVED. UTILITIES A. THE MAXIMUM LENGTH OF ANY UTILITY TRENCH TO BE OPEN DURING WORKING HOURS MUST BE 250' UNLESS OTHERWISE APPROVED. ALL OVERNIGHT TRENCHES MUST BE CLOSED/BARRICADED AS DIRECTED BY THE CITY. COMPACTION METHODS A. FLOODING WILL NOT BE PERMITTED. B. MECHANICAL DEVICES, HAND DEVICES, VIBRATING PLATES OR OTHER EQUIPMENT APPROVED BY THE CITY IS ACCEPTABLE 1' ABOVE PIPE IN UNIFORM LIFTS OF 12" (LOOSE DEPTH) OF EXISTING NATIVE MATERIAL AND 6" OF GRANULAR BACKFILL. THE HEIGHT OF LIFTS WILL DEPEND UPON THE TYPE OF MECHANICAL EQUIPMENT BEING USED. THE HEIGHT WILL BE 6" FOR HAND OPERATED TOOLS AND UP TO 12" ON EQUIPMENT MOUNTED TOOLS. THE COMPACTION EQUIPMENT MUST BE CAPABLE OF COMPACTING THE MATERIAL UNDER THE HAUNCH OF THE PIPE. C. DENSITY FOR THE ABOVE METHODS MUST BE NO LESS THAN THAT OF THE SURROUNDING GROUND UNLESS OTHERWISE SPECIFIED. CLEAN UP A. THE CONTRACTOR MUST REMOVE SURPLUS EXCAVATED MATERIALS AND CONSTRUCTION MATERIALS AS WORK PROGRESSES. CONTRACTOR MUST MAINTAIN THE STREET IN A CLEAN, SUITABLE, AND SAFE CONDITION. TYPICAL NOTES - ALL SUBDIVISION CONSTRUCTION DRAWINGS A. ALL CONSTRUCTION METHODS AND MATERIALS MUST COMPLY WITH THE CITY ENGINEERING STANDARDS OR ODOT WHOEVER IS MORE RESTRICTIVE. B. ALL COMPACTION MUST MEET THE CITY REQUIREMENTS. IF TESTING OF COMPACTED AREAS IS REQUESTED BY THE CITY, SAID TESTING MUST BE PERFORMED AT THE EXPENSE OF THE DEVELOPER. C. THE CITY WILL LOCATE AREAS IN NEED OF UNDERCUTTING. D. ALL EMBANKMENT AREAS MUST BE COMPACTED TO A MINIMUM OF 90% OF ASTM 1609 STANDARD PROCTOR. CURVE AND TESTED TO REPRESENT A DEPTH OF 12" UNLESS OTHERWISE SPECIFIED BY THE CITY. E. ALL UNPAVED AREAS WITHIN THE RIGHT-OF-WAY MUST BE STABILIZED BY AN APPROVED METHOD AFTER THE CURB IS BACKFILLED IN A TIMELINE DETERMINED BY THE CITY ENGINEER BASED UPON THE SITE CONDITIONS AND WORK BEING DONE. F. STORM WATER POLLUTION PREVENTION SHOULD BE A HIGH PRIORITY ON ALL CONSTRUCTION PROJECTS. ON ALL PROJECTS WHICH DISTURB AT LEAST 1 ACRE OF SOIL, A NPDES PERMIT IS REQUIRED FROM DEPA AND A COPY OF THE PERMIT MUST BE ON FILE AT THE CITY OFFICE BEFORE CONSTRUCTION BEGINS. LOW STRENGTH MORTAR BACKFILL A. IN SITUATIONS WHERE UTILITIES CROSS EXISTING STREETS OR WHERE IT MAY BE DIFFICULT TO GET ADEQUATE COMPACTION OF GRANULAR MATERIAL, LOW STRENGTH MORTAR BACKFILL MAY BE REQUIRED PER ODOT ITEM 613 TYPE 1. ONLY. THE CITY MAY REQUIRE THIS TYPE OF BACKFILL AT THEIR DISCRETION WITH THE COST BEING BORNE BY THE CONTRACTOR.
GENERAL NOTES	REVISIONS: DATE APPROVED: 07/30/2020 PAGE NO. 500-1



2 WORKING DAYS
BEFORE YOU DIG
OHIO811.org
CALL TOLL FREE 800-362-2764
OHIO UTILITIES PROTECTION SERVICE

SCALE: N/A
DATE: 10-10-24
DRAWN: DES
DESIGNED: JLL
CHECKED:



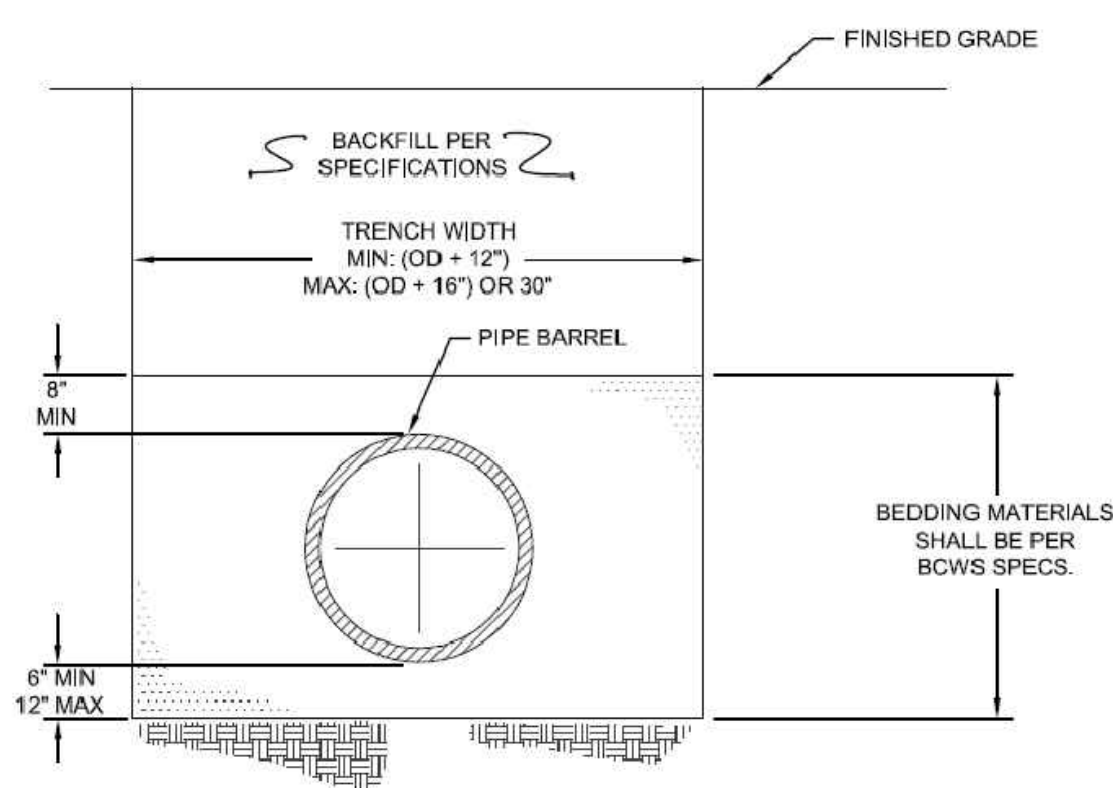
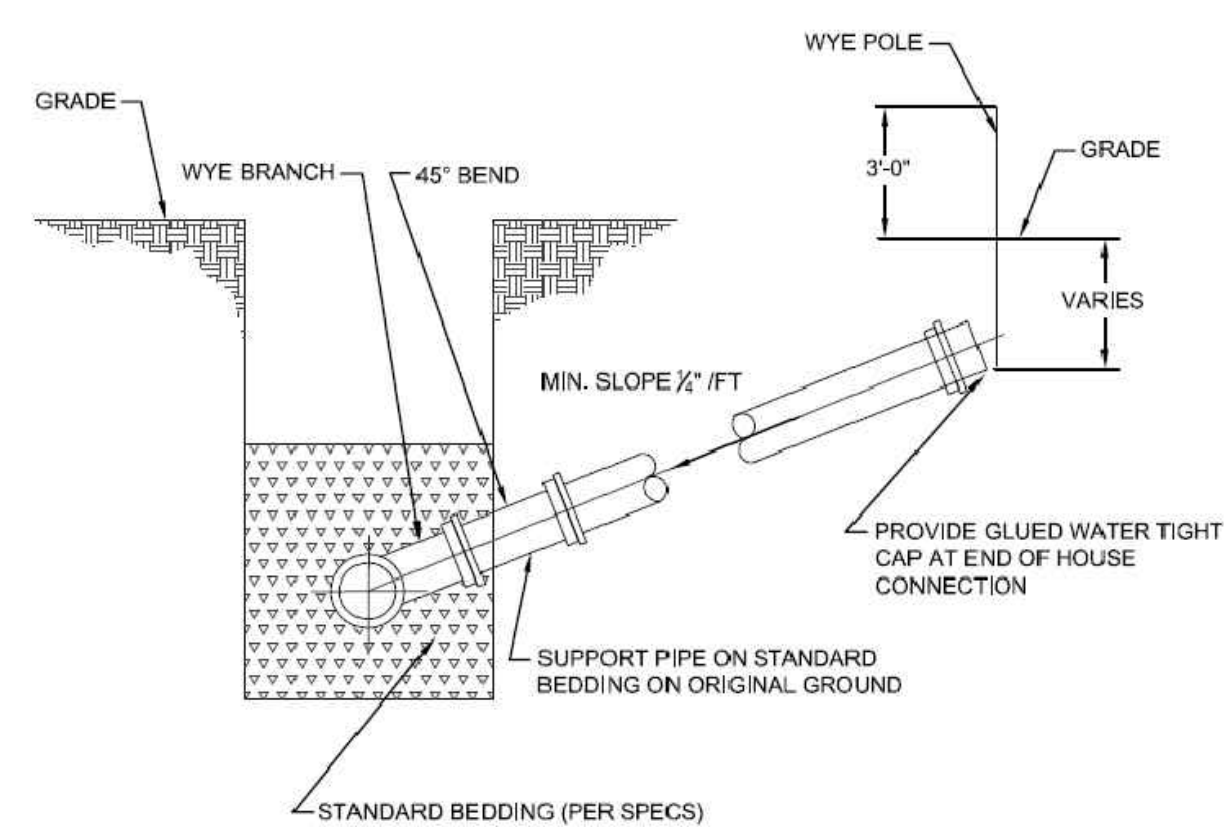
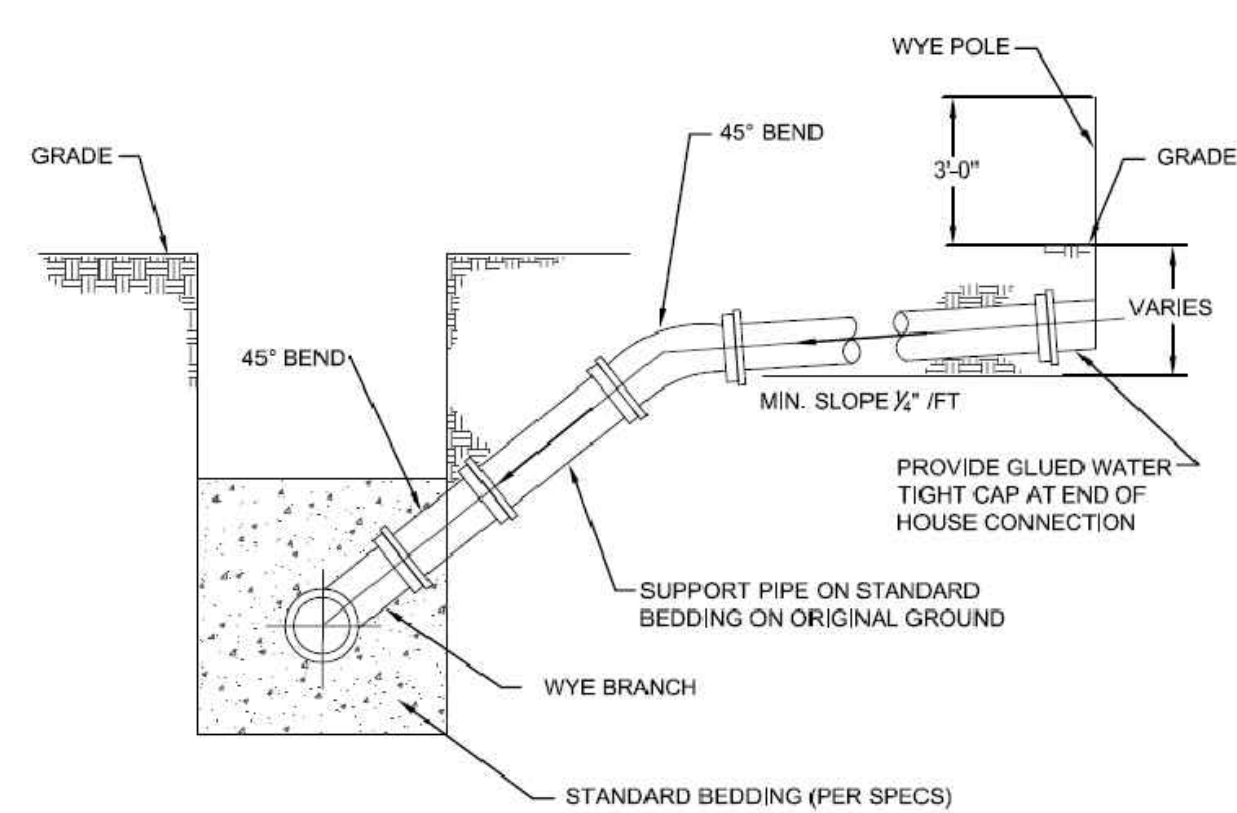
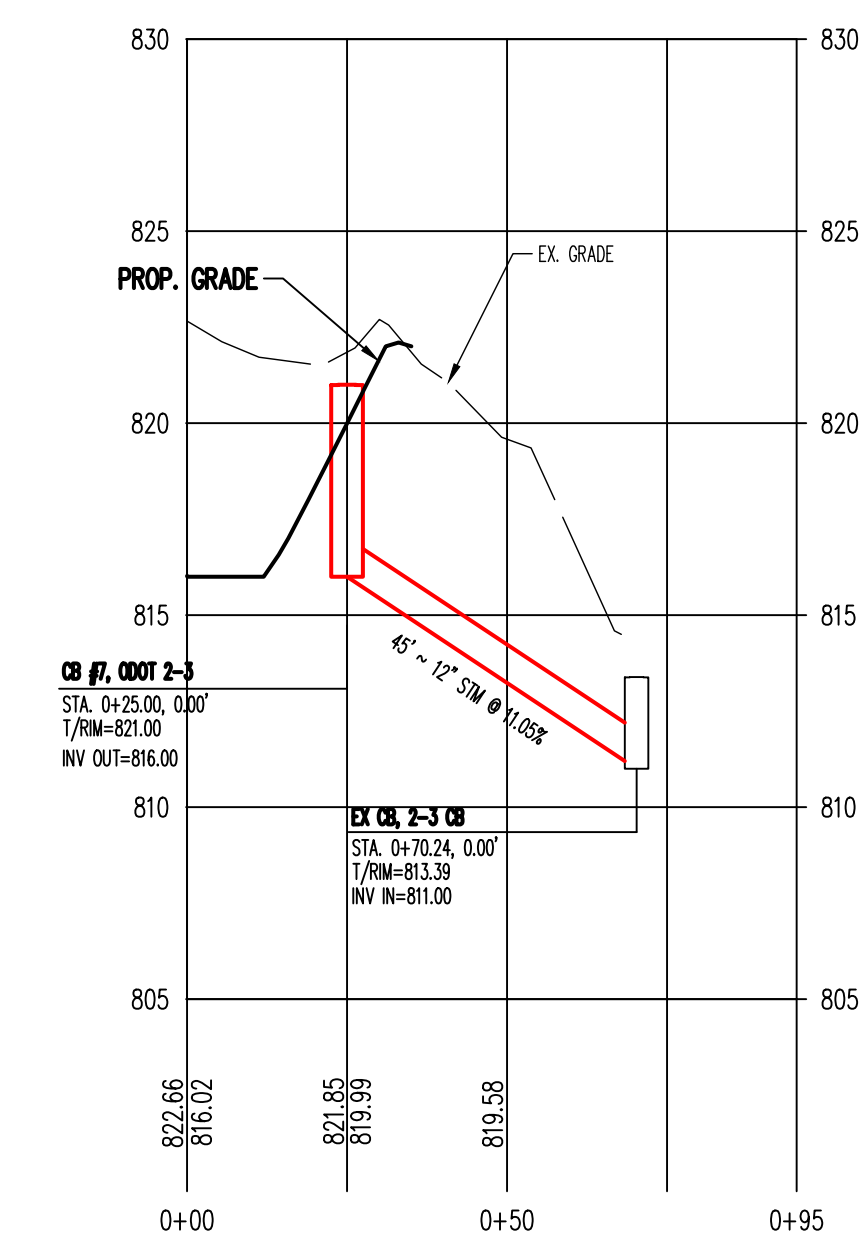
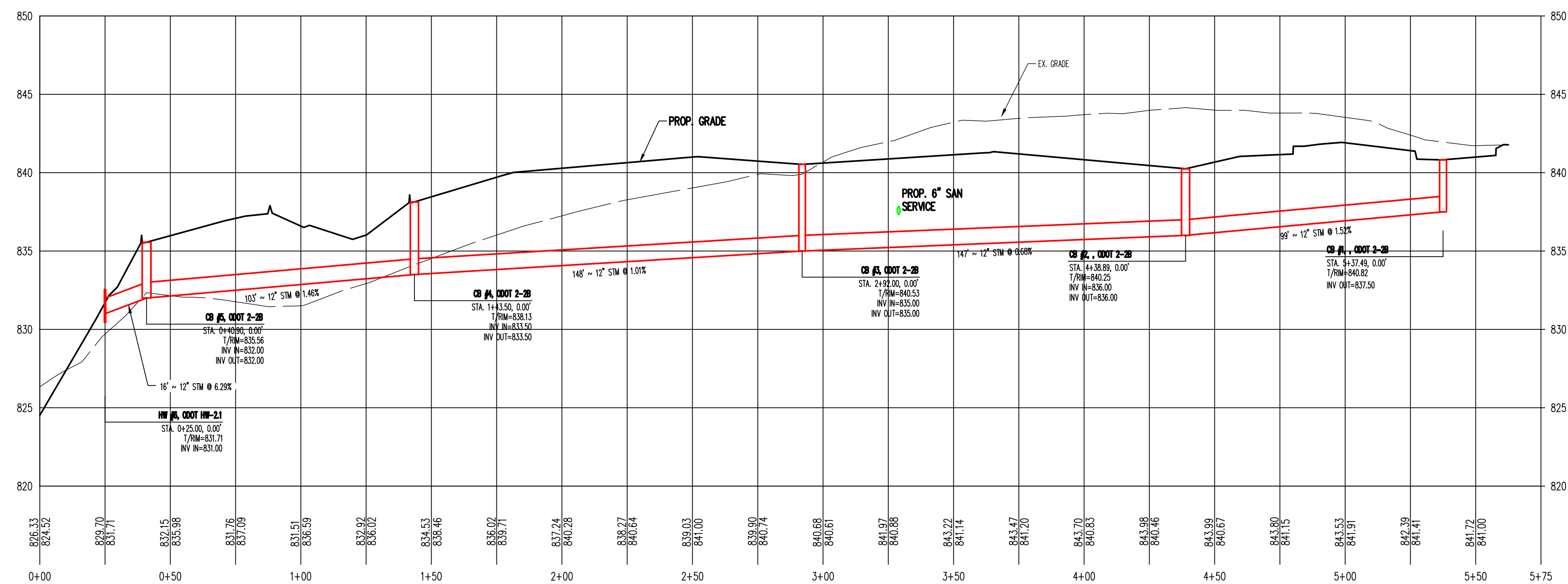
REVISIONS:
1.
2.
3.
4.

PROJECT: 240960
DRAWING: 240960BC

SHEET
1 OF 7







HOUSE CONNECTION
FOR DEEP SEWER



BUTLER COUNTY
WATER AND SEWER
130 HIGH STREET
HAMILTON, OH 45011
TELEPHONE: 513-887-3066
FAX: 513-887-3777

6280

HOUSE CONNECTION
FOR SHALLOW SEWER



BUTLER COUNTY
WATER AND SEWER
130 HIGH STREET
HAMILTON, OH 45011
TELEPHONE: 513-887-3066
FAX: 513-887-3777

6290

TYPICAL TRENCH
DETAIL
SEWER INSTALLATION



BUTLER COUNTY
WATER AND SEWER
130 HIGH STREET
HAMILTON, OH 45011
TELEPHONE: 513-887-3066
FAX: 513-887-3777

6270

2 WORKING DAYS
BEFORE YOU DIG
OHIO811.org
CALL TOLL FREE 800-362-2764
OHIO UTILITIES PROTECTION SERVICE

SCALE: 1"=30' H, 1"=5' V
DATE: 10-10-24
DRAWN: DES
DESIGNED: JLL
CHECKED:

APEX
ENGINEERING & SURVEYING, INC.
1068 N. UNIVERSITY BLVD. MIDDLETOWN, OHIO 45042
PH: (513) 424-5202 OR (513) 832-8891 FAX: (513) 424-5202

REVISIONS:
1.
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3.
4.
PROJECT: 240960
DRAWING: 240960BC
SHEET
5 OF 7

STORM SEWER PROFILES
BCWS DETAILS
FIRST CHURCH OF GOD MONROE
CITY OF MONROE
BUTLER COUNTY, OHIO

PROJECT DATA:

PROJECT DESCRIPTION
CONSTRUCTION OF A 11,700 SF CHURCH WITH RELATED PARKING AND UTILITIES

LATITUDE: N 39°26'33"
LONGITUDE: W 84°21'32"
ESTIMATED CONSTRUCTION DATES: NOV 2024-MAY 2025

TOTAL SITE AREA: 7.3080 ACRES

TOTAL DISTURBED AREA	1.64 AC.
EXISTING IMPERVIOUS AREA	2.30 AC.
PROPOSED IMPERVIOUS AREA	0.45 AC.
TOTAL IMPERVIOUS AREA	2.75 AC.
PRE CONSTRUCTION COEFFICIENT	0.40
POST CONSTRUCTION COEFFICIENT	0.72

IMMEDIATE RECEIVING WATER/WS4: MONROE STORM SEWER
ULTIMATE RECEIVING WATER: MILLERS CREEK TO DICKS RUN TO THE GREAT MIAMI RIVER
EXISTING LAND USE: EXISTING CHURCH
SOILS: WYJB-Wynn-Urban land complex

CONSTRUCTION SEQUENCE:

TO COMPLETE THE EXCAVATION AND CONSTRUCTION OF THE PROPOSED JOB IMPROVEMENTS, COORDINATION OF THE CONTRACTOR'S WORK CREWS WILL BE REQUIRED. THE EXISTING DITCHES WILL PERFORM TEMPORARY SEDIMENT CONTROL AND STORAGE DURING THE PROPOSED CONSTRUCTION. WORK WILL GENERALLY PROCEED FROM DOWNSTREAM TO UPSTREAM IN THESE WORK AREAS. THE GENERAL CONSTRUCTION SEQUENCE IS AS FOLLOWS:

- INSTALL EROSION CONTROL ITEMS.
- STRIP TOPSOIL AND ANY UNSUITABLE MATERIAL THROUGH THE INCREMENTAL WORK AREA.
- INSTALL TEMPORARY DITCH CHECKS IN DOWNSTREAM END OF EXISTING DITCH WITHIN 24 HOURS FOLLOWING THE STRIPPING OPERATION.
- IF U/G PIPE IS CALLED FOR IN THIS PORTION OF WORK AREA, PIPE CREW WILL INSTALL PIPE AS WELL AS MANHOLES.
- AS PIPE INSTALLATION PROGRESSES, REPAIR OF THE ROADWAY WILL PROCEED BEHIND IT.
- ANY DISTURBED OR EXPOSED AREAS SHALL BE STABILIZED PER OEPA TEMPORARY AND PERMANENT STABILIZATION REGULATIONS INCLUDING:
 - SEEDING
 - DITCH MATTING
 - INLET PROTECTION
 - MULCHING
 - WATERING

EMERGENCY ACTION & SPILL PREVENTION PLAN

THE SCOPE OF WORK COVERED BY THIS PLAN INCLUDES EMERGENCY RESPONSE TO SPILLS, CONTAINMENT OF SPILLED LIQUIDS, EMERGENCY NOTIFICATION NUMBERS, AND SOIL EXCAVATION FOR SPILL CLEAN-UP.

IN THE EVENT OF A SPILL EVENT THE EMPLOYEE SHALL ASSESS THE SPILL AND IMMEDIATELY NOTIFY THE SAFETY OFFICER AND SUPERVISOR IN CHARGE, OR OTHER INDIVIDUALS AS LISTED BELOW.

NAME PHONE NUMBER

SITE SUPERINTENDENT

PROJECT ENGINEER

IMMEDIATELY AFTER NOTIFICATION, THE EMPLOYEE WILL BE DIRECTED BY THE SAFETY OFFICER, OR RESPONSIBLE PARTY TO START CONTAINMENT PROCEDURES TO PREVENT THE MATERIAL FROM REACHING THE STORM SEWERS, DRAINAGE DITCH, AND OTHER OUTLETS USING THE FOLLOWING ACTIONS OR ANY OTHER MEANS NECESSARY WITHOUT COMPROMISING WORKER SAFETY:

- CLEAR PERSONNEL FROM THE SPILL AREA AND ROPE OFF AREA.
- STOP THE SPILL.
- USE SORBENT MATERIALS, PLUG PUTTY, OR HOLE PUTTY AS NECESSARY TO CONTROL THE SPILL AT THE SOURCE.
- CONSTRUCT A TEMPORARY CONTAINMENT DIKE OF SORBENT MATERIALS OR DIRT TO CONTAIN SPILL.

SPILL KITS WILL BE LOCATED ON THE PROJECT AS DESIGNATED ON THE SWPPP PLAN.

UPON COMPLETION OF CONTAINMENT OPERATIONS, PROPER CLEAN-UP PROCEDURES WILL BE IMPLEMENTED IN ACCORDANCE WITH REGULATORY PROCEDURES.

ADDITIONAL EMERGENCY CONTACT NUMBERS: 24 HOUR PHONE NO.: 614-728-3898
OHIO EPA

GENERAL NOTES

THE CONTRACTOR IS HEREBY ADVISED THAT STRICTER POLLUTION CONTROL STANDARDS AND ENFORCEMENT HAVE BEEN IMPOSED BY THE OHIO EPA SINCE MARCH 10, 2003 AND WITH A REVISION IN APRIL 2018. ALSO, MANY PRIVATE CITIZEN ENVIRONMENTAL GROUPS, WHO HAVE BEEN KNOWN TO FILE CIVIL LEGAL ACTIONS, ARE PRESENT IN THE AREA AND OBSERVE ALL CONSTRUCTION OPERATIONS.

THE CONTRACTOR SHALL INFORM ALL SUBCONTRACTORS OF THE REQUIREMENTS AND RESPONSIBILITIES OF THE SWPPP AND SHALL DOCUMENT ALL SUCH NOTIFICATIONS AND/OR DISCUSSIONS.

THE CONTRACTOR WILL BE REQUIRED TO PARTICIPATE IN SEDIMENT AND EROSION CONTROL INSPECTIONS ON A WEEKLY BASIS AND SIGN AN APPROVED INSPECTION SHEET THAT SHALL BE KEPT ON FILE AT THE JOB SITE.

UNLESS OTHERWISE NOTED, STANDARDS AND SPECIFICATIONS ESTABLISHED IN THE LATEST EDITION OF THE OEPA "RAINWATER AND LAND DEVELOPMENT" HANDBOOK SHALL GOVERN THE EROSION AND SEDIMENT CONTROL INSTALLATIONS SPECIFIED ON THIS PLAN.

THIS PROJECT WILL INVOLVE SEVERAL CONSTRUCTION PHASES AND SEQUENCING THROUGHOUT ITS LIFETIME. IT IS VERY IMPORTANT THAT ALL TEMPORARY SEDIMENT AND EROSION CONTROL (S&EC) FIELD METHODS ALONG WITH THIS PLAN, ARE UPDATED TO REFLECT THE ACTUAL FIELD CONDITIONS, CURRENT WEATHER CONDITIONS AND SITE GRADE CHANGES. THE ENGINEER OR THE OHIO EPA CAN AND WILL MODIFY THIS PLAN AS NECESSARY.

THE CONTRACTOR WILL VOLUNTARILY SELF REPORT ANY POTENTIAL VIOLATIONS OF THE OEPA NPDES PERMIT TO THE ENGINEER AND THE OEPA

THE CONTRACTOR SHALL REMOVE EXISTING GROUND COVER ONLY AS NECESSARY FOR THE PROJECT PHASE CURRENTLY UNDER CONSTRUCTION.

CONSTRUCTION AND DEMOLITION DEBRIS SHALL BE PROPERLY DISPOSED OF ACCORDING TO OHIO EPA REQUIREMENTS.

THE CONTRACTOR WILL BE REQUIRED TO BUILD SEDIMENT BASINS OR SEDIMENT TRAPS OR USE EQUAL METHODS TO DETAIN AND CLEAN WATER TO ACCEPTABLE EPA STANDARDS BEFORE RELEASING THE WATER BACK INTO THE STREAM.

THERE SHALL BE NO TURBID DISCHARGES TO SURFACE WATERS, RESULTING FROM DEWATERING ACTIVITIES. SEDIMENT-LADEN WATER MUST PASS THROUGH A SETTLING POND, FILTER BAG, OR OTHER COMPARABLE PRACTICE, PRIOR TO DISCHARGE.

NO SOLID OR LIQUID WASTE SHALL BE DISCHARGED INTO STORM WATER RUNOFF.

ALL PROCESS WASTEWATER (EQUIPMENT WASHING, LEACHATE FROM ON-SITE WASTE DISPOSAL, ETC.) SHALL BE COLLECTED AND DISPOSED OF AT A PUBLICLY OWNED TREATMENT WORKS.

ALL CONSTRUCTION ACTIVITIES MUST COMPLY WITH ALL LOCAL EROSION/SEDIMENT CONTROL, WASTE DISPOSAL, SANITARY AND HEALTH REGULATIONS.

OTHER EROSION CONTROL ITEMS MAY BE NECESSARY DUE TO ENVIRONMENTAL CONDITIONS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLATION AND IMPLEMENTATION OF ADDITIONAL EROSION CONTROL ITEMS, AT THE ENGINEER'S DISCRETION.

NO SOIL, ROCK, DEBRIS OR OTHER MATERIAL SHALL BE DUMPED OR PLACED IN ANY AREAS NOT ADEQUATELY PROTECTED BY EROSION CONTROL INSTALLATIONS.

IT IS PREFERRED TO USE PERMANENT EROSION CONTROL ITEMS AS SHOWN IN THE PLANS TO CONTROL CONSTRUCTION POLLUTION WHEN POSSIBLE. OTHERWISE, THE TEMPORARY POLLUTION PREVENTION ITEMS ARE TO BE USED.

MOST TEMPORARY S&EC METHODS, INCLUDING BUT NOT LIMITED TO, SILT FENCE AND DITCH CHECKS MAY ALL HAVE TO BE PERIODICALLY REMOVED AND REPLACED, OR MOVED FROM THE EXISTING ROAD DITCH OR STRIPPED AREAS AS WORK PROGRESSES. ANY CHANGES SHALL BE NOTED IN THE PLAN BY RED LINE AND DATED ON A CORRECTIVE ACTION LOG.

ALL TEMPORARY SEDIMENT CONTROLS AND STORM WATER QUALITY METHODS WILL BE BUILT/INSTALLED AS THE PROJECT PROGRESSES TO ELIMINATE UNNECESSARY DISTURBANCE AND REDUNDANCY. ALL TEMPORARY CONTROLS SHALL BE IN PLACE AND FUNCTIONING PROPERLY WHEN THREATENING WEATHER IS IMMINENT.

"TEMPORARY STABILIZATION" MEANS THE ESTABLISHMENT OF TEMPORARY VEGETATION, MULCHING, GEOTEXTILES, SOD, PRESERVATION OF EXISTING VEGETATION AND OTHER TECHNIQUES CAPABLE OF QUICKLY ESTABLISHING COVER OVER DISTURBED AREAS TO PROVIDE EROSION CONTROL BETWEEN CONSTRUCTION OPERATIONS.

"PERMANENT STABILIZATION" MEANS THE ESTABLISHMENT OF PERMANENT VEGETATION, DECORATIVE LANDSCAPE MULCHING, MATTING, SOD, RIP RAP AND LANDSCAPING TECHNIQUES TO PROVIDE PERMANENT EROSION CONTROL ON AREAS WHERE CONSTRUCTION OPERATIONS ARE COMPLETE OR WHERE NO FURTHER DISTURBANCE IS EXPECTED FOR AT LEAST A YEAR.

OFF-SITE TRACKING OF SEDIMENTS SHALL BE MINIMIZED. A STABILIZED CONSTRUCTION ENTRANCE WILL BE PROVIDED TO HELP REDUCE VEHICLE TRACKING OF SEDIMENTS. ALL PAVED STREETS ADJACENT TO THE SITE WILL BE SWEEP DAILY TO REMOVE ANY EXCESS MUD, DIRT OR ROCK TRACKED FROM THE SITE. DUMP TRUCKS HAULING MATERIAL FROM THE CONSTRUCTION SITE WILL BE COVERED WITH A TARP.

STABILIZATION PRACTICES

PERMANENT SEEDING AND MULCHING STABILIZATION SHALL BE PROVIDED PER OEPA GUIDELINES AS SET FORTH IN PART II.B OF OHIO EPA PERMIT NO.: 0HC000005. (SEE TABLE 1)

TABLE 1: PERMANENT STABILIZATION	
AREA REQUIRING PERMANENT STABILIZATION	AREA REQUIRING PERMANENT STABILIZATION
ANY AREAS THAT WILL LIE DORMANT FOR ONE YEAR OR MORE	WITHIN SEVEN DAYS OF THE MOST RECENT DISTURBANCE
ANY AREAS WITHIN 50 FEET OF A SURFACE WATER OF THE STATE AND AT FINAL GRADE	WITHIN TWO DAYS OF REACHING FINAL GRADE
ANY OTHER AREAS AT FINAL GRADE	WITHIN SEVEN DAYS OF REACHING FINAL GRADE WITHIN THAT AREA

TEMPORARY SEEDING AND MULCHING STABILIZATION SHALL BE PROVIDED PER OEPA GUIDELINES AS SET FORTH IN PART II.B OF OHIO EPA PERMIT NO.: 0HC000005. (SEE TABLE 2)

TABLE 2: TEMPORARY STABILIZATION	
AREA REQUIRING TEMPORARY STABILIZATION	TIME FRAME TO APPLY EROSION CONTROLS
ANY DISTURBED AREAS WITH 50 FEET OF A SURFACE WATER OF THE STATE AND NOT AT FINAL GRADE	WITHIN TWO DAYS OF THE MOST RECENT DISTURBANCE IF THE AREA WILL REMAIN IDLE FOR MORE THAN 14 DAYS
FOR ALL CONSTRUCTION ACTIVITIES, ANY DISTURBED AREAS THAT WILL BE DORMANT FOR MORE THAN 14 DAYS BUT LESS THAN ONE YEAR, AND NOT WITHIN 50 FEET OF A SURFACE WATER OF THE STATE	WITHIN SEVEN DAYS OF THE MOST RECENT DISTURBANCE WITHIN THE AREA FOR RESIDENTIAL SUBDIVISIONS, DISTURBED AREAS MUST BE STABILIZED AT LEAST SEVEN DAYS PRIOR TO TRANSFER OF PERMIT COVERAGE FOR THE INDIVIDUAL LOT(S).
DISTURBED AREAS THAT WILL BE IDLE OVER WINTER	PRIOR TO THE ONSET OF WINTER WEATHER

ALL TEMPORARY EROSION AND SEDIMENT CONTROL INSTALLATIONS SHALL BE REMOVED WHEN 70% VEGETATION HAS BEEN REACHED.

SEEDING & MULCHING

MULCH AND/OR OTHER APPROPRIATE VEGETATIVE PRACTICES SHALL BE APPLIED TO DISTURBED AREAS WITHIN 7 DAYS OF GRADING IF THE AREA IS TO REMAIN DORMANT (UNDISTURBED) FOR MORE THAN 14 DAYS OR ON AREAS AND PORTIONS OF THE SITE WHICH CAN BE BROUGHT TO FINAL GRADE.

MULCH SHALL CONSIST OF UNROTTED SMALL GRAIN STRAW APPLIED AT THE RATE OF 2 TONS/AC. OR 90 LB./1000 SQ. FT. (TWO TO THREE BALES). THE STRAW MULCH SHALL BE SPREAD UNIFORMLY BY HAND OR MECHANICALLY SO THE SOIL SURFACE IS COVERED FOR UNIFORM DISTRIBUTION OF HAND-SPREAD MULCH, DIVIDE AREA INTO APPROXIMATELY 1000-SQ.-FT. SECTIONS AND PLACE TWO 45-LB. BALES OF STRAW IN EACH SECTION.

MULCH SHALL BE ANCHORED IMMEDIATELY TO MINIMIZE LOSS BY WIND OR RUNOFF. THE FOLLOWING ARE ACCEPTABLE METHODS FOR ANCHORING MULCH:

- MECHANICAL-USE A DISK, CRUMPER, OR SIMILAR TYPE TOOL. SET STRAIGHT TO PUNCH OR ANCHOR THE MULCH MATERIAL INTO THE SOIL. STRAW MECHANICALLY ANCHORED SHALL NOT BE FINELY CHOPPED BUT BE LEFT GENERALLY LONGER THAN 6 IN.
- MULCH NETTINGS-USE ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS, FOLLOWING ALL PLACEMENT AND ANCHORING SUGGESTIONS. USE IN AREAS OF WATER CONCENTRATION AND STEEP SLOPES TO HOLD MULCH IN PLACE.
- SYNTHETIC BINDERS-FOR STRAW MULCH, SYNTHETIC BINDERS SUCH AS ACRYLIC DLR (AGRI-TAC), DCA-70, PETROSET, TERRA TACK OR EQUAL MAY BE USED AT RATES RECOMMENDED BY THE MANUFACTURER. ALL APPLICATIONS OF SYNTHETIC BINDERS MUST BE CONDUCTED IN SUCH A MANNER WHERE THERE IS NO CONTACT WITH WATERS OF THE STATE.
- WOOD CELLULOSE FIBER - WOOD CELLULOSE FIBER MAY BE USED FOR ANCHORING STRAW. THE FIBER BINDER SHALL BE APPLIED AT A NET DRY WEIGHT OF 750 LB./ACRE. THE WOOD CELLULOSE FIBER SHALL BE MIXED WITH WATER AND THE MIXTURE SHALL CONTAIN A MAXIMUM OF 50 LB./100 GAL. OF WOOD CELLULOSE FIBER

TEMPORARY SEEDING & MULCHING FOR EROSION CONTROL			
SEED TYPE	PER 1,000 SQ. FT.	PER ACRE	
PERENNIAL RYEGRASS	1 POUND	40 POUNDS	
TALL FESCUE	1 POUND	40 POUNDS	
ANNUAL RYEGRASS	1 POUND	40 POUNDS	
SMALL GRAIN STRAW	90 POUNDS	2 TONS	
FERTILIZER	6 POUNDS OF 10-10-10 OR 12-12-12	250 POUNDS OF 10-10-10 OR 12-12-12	

NOTE: OTHER APPROVED SPECIES MAY BE SUBSTITUTED

STOCKPILE

SILT FENCING SHALL BE INSTALLED AROUND TEMPORARY SPOIL STOCKPILES. THESE STOCKPILES SHALL BE STRAW MULCHED AND/OR TEMPORARILY SEEDED WITHIN 7 WORKING DAYS IF LEFT DORMANT FOR 14 DAYS OR LONGER.

TIMING OF CONTROLS/MEASURES

AS INDICATED IN THE SEQUENCE OF MAJOR ACTIVITIES, CONSTRUCTION ENTRANCE(S) AND SILT FENCE WILL BE CONSTRUCTED PRIOR TO CLEARING OR GRADING OF ANY OTHER PORTIONS OF THE SITE. SEDIMENT CONTROL DEVICES SHALL BE IMPLEMENTED FOR ALL AREAS REMAINING DISTURBED LONGER THAN 14 DAYS AND/OR WITHIN 7 DAYS OF ANY GRUBBING ACTIVITIES. AREAS WHERE CONSTRUCTION ACTIVITY TEMPORARILY CEASES FOR MORE THAN 14 DAYS WILL BE STABILIZED WITH A TEMPORARY SEED AND MULCH WITHIN 2 DAYS OF THE LAST DISTURBANCE IF THE AREA IS WITHIN 50 FEET OF A STREAM, AND WITHIN 7 DAYS OF THE LAST DISTURBANCE IF THE AREA IS MORE THAN 50 FEET AWAY FROM A STREAM. ONCE CONSTRUCTION ACTIVITY CEASES PERMANENTLY IN AN AREA, THAT AREA WILL BE STABILIZED WITH PERMANENT SEED AND MULCH. AFTER THE ENTIRE SITE IS STABILIZED, THE ACCUMULATED SEDIMENT WILL BE REMOVED FROM THE BASIN.

STABILIZATION TYPE	J	F	M	A	M	J	J	A	S	O	N	D
PERMANENT SEEDING			*	*	*	*	*	*	*	*	*	*
DORMANT SEEDING	*	*	*							*	*	*
TEMPORARY SEEDING	*	*	*	*	*	*	*	*	*			
SODDING			**	**	**	**	**	**	**			
MULCHING	*	*	*	*	*	*	*	*	*	*	*	*

* IRRIGATION NEEDED

** IRRIGATION NEEDED FOR 2-3 WEEKS AFTER SOD IS APPLIED

INSPECTIONS

ALL BMPs ON THIS SITE SHALL BE INSPECTED BY "QUALIFIED INSPECTION PERSONNEL" ASSIGNED BY THE CONTRACTOR OR DESIGNATED REPRESENTATIVE AT LEAST ONCE EVERY SEVEN CALENDAR DAYS AND BY THE END OF THE NEXT CALENDAR DAY, EXCLUDING WEEKENDS AND HOLIDAYS UNLESS WORK IS SCHEDULED, AFTER A RAIN EVENT OF 0.5 INCHES PER 24 HOUR PERIOD. A RECORD OF THESE INSPECTIONS SHALL BE MAINTAINED IN THE CONSTRUCTION OFFICE WITH THE SWPPP FOR PUBLIC VIEWING. ANY VIOLATIONS WILL BE REPORTED THROUGH THE PROJECT PERSONNEL. A RAIN GAUGE WILL BE LOCATED WITHIN THE PROJECT LIMITS.

FOLLOWING EACH INSPECTION, A CHECKLIST MUST BE COMPLETED AND SIGNED BY THE QUALIFIED INSPECTION PERSONNEL REPRESENTATIVE. AT A MINIMUM, THE INSPECTION REPORT SHALL INCLUDE:

- THE INSPECTION DATE;
- NAMES, TITLES, AND QUALIFICATIONS OF PERSONNEL MAKING THE INSPECTION;
- WEATHER INFORMATION FOR THE PERIOD SINCE THE LAST INSPECTION (OR SINCE COMMENCEMENT OF CONSTRUCTION ACTIVITY IF THE FIRST INSPECTION) INCLUDING A BEST ESTIMATE OF THE BEGINNING OF EACH STORM EVENT, DURATION OF EACH STORM EVENT, APPROXIMATE AMOUNT OF RAINFALL FOR EACH STORM EVENT (IN INCHES), AND WHETHER ANY DISCHARGES OCCURRED;
- WEATHER INFORMATION AND A DESCRIPTION OF ANY DISCHARGES OCCURRING AT THE TIME OF THE INSPECTION;
- LOCATION(S) OF DISCHARGES OF SEDIMENT OR OTHER POLLUTANTS FROM THE SITE;
- LOCATION(S) OF BMPs THAT NEED TO BE MAINTAINED;
- LOCATION(S) OF BMPs THAT FAILED TO OPERATE AS DESIGNED OR PROVED INADEQUATE FOR A PARTICULAR LOCATION;
- LOCATION(S) WHERE ADDITIONAL BMPs ARE NEEDED THAT DID NOT EXIST AT THE TIME OF INSPECTION; AND
- CORRECTIVE ACTION REQUIRED INCLUDING ANY CHANGES TO THE SWP'S NECESSARY AND IMPLEMENTATION DATES.

MAINTENANCE

THE CONTRACTOR SHALL MAINTAIN, REPAIR, OR REPLACE ALL EROSION CONTROL INSTALLATIONS AS NEEDED TO ENSURE THE CONTINUED PERFORMANCE OF THEIR INTENDED FUNCTION. ALL REPAIRS TO BMPs SHALL BE MADE WITHIN 3 DAYS (OR SOONER IF POSSIBLE) OF NOTIFICATION OF DEFICIENCIES. IF THE CORRECTIONS ARE NOT MADE WITHIN THE 3 DAY PERIOD, LIQUIDATED DAMAGES MAY BE ASSESSED AS PER THE ODOT OMS SECTION 108.27.

ONGOING INSPECTION OF INSTALLATIONS WILL BE PERFORMED BY THE CONTRACTOR OR DESIGNATED REPRESENTATIVE.

ANY TRAPPED SEDIMENT OR DEBRIS REMOVED DURING CLEANING OF OR REMOVAL OF BMP INSTALLATIONS SHALL BE PLACED IN AREAS NOT SUBJECT TO EROSION AND PERMANENTLY STABILIZED.

DUST CONTROL

DUST CONTROL INVOLVES PREVENTING OR REDUCING DUST FROM EXPOSED SOILS OR OTHER SOURCES DURING LAND DISTURBING, DEMOLITION AND CONSTRUCTION ACTIVITIES TO REDUCE THE PRESENCE OF AIRBORNE SUBSTANCES WHICH MAY PRESENT HEALTH HAZARDS, TRAFFIC SAFETY PROBLEMS OR HARM ANIMAL OR PLANT LIFE.

THE FOLLOWING SPECIFICATIONS FOR DUST CONTROL SHALL BE FOLLOWED ONSITE:

- VEGETATIVE COVER AND/MULCH - APPLY TEMPORARY OR PERMANENT SEEDING AND MULCH TO AREAS THAT WILL REMAIN IDLE FOR OVER 14 DAYS. SAVING EXISTING TREES AND LARGE SHRUBS WILL ALSO REDUCE SOIL AND AIR MOVEMENT ACROSS DISTURBED AREAS. SEE TEMPORARY SEEDING, PERMANENT SEEDING, MULCHING PRACTICES, AND TREE AND NATURAL AREA PROTECTION PRACTICES.
- WATERING - SPRAY SITE WITH WATER UNTIL THE SURFACE IS WET BEFORE AND DURING GRADING AND REPEAT AS NEEDED, ESPECIALLY ON HAUL ROADS AND OTHER HEAVY TRAFFIC ROUTES. WATERING SHALL BE DONE AT A RATE THAT PREVENTS DUST BUT DOES NOT CAUSE SOIL EROSION. WETTING AGENTS SHALL BE UTILIZED ACCORDING TO MANUFACTURERS' INSTRUCTIONS.
- SPRAY-ON ADHESIVES - APPLY ADHESIVE ACCORDING TO THE FOLLOWING TABLE OR MANUFACTURERS' INSTRUCTIONS.

ADHESIVE	WATER/DILUTION (ADHESIVE:WATER)	NOZZLE TYPE	APPLICATION RATE (GAL./AC)
LATEX EMULSION	12:5:1	FINE	235
RESIN IN WATER ACRYLIC EMULSION (NO TRAFFIC)	4:1	FINE	300
ACRYLIC EMULSION (NO TRAFFIC)	7:1	COARSE	450
ACRYLIC EMULSION (TRAFFIC)	3:5:1	COARSE	350

SPILL PREVENTION

THE FOLLOWING ARE THE MATERIAL MANAGEMENT PRACTICES THAT WILL BE USED TO REDUCE THE RISK OF SPILLS OR OTHER ACCIDENTAL EXPOSURE OF MATERIALS AND SUBSTANCES TO STORM WATER RUNOFF.

GOOD HOUSEKEEPING:

- AN EFFORT WILL BE MADE TO STORE ONLY ENOUGH PRODUCT REQUIRED TO DO THE JOB.
- ALL MATERIALS STORED ONSITE WILL BE STORED IN A NEAT, ORDERLY MANNER IN THEIR APPROPRIATE CONTAINERS AND, IF POSSIBLE, UNDER A ROOF OR OTHER ENCLOSURE.
- PRODUCTS WILL BE KEPT IN THEIR ORIGINAL CONTAINERS WITH THE ORIGINAL MANUFACTURER'S LABEL.
- SUBSTANCES WILL NOT BE MIXED WITH ONE ANOTHER UNLESS RECOMMENDED BY THE MANUFACTURER.
- WHENEVER POSSIBLE, ALL OF A PRODUCT WILL BE USED UP BEFORE DISPOSING OF THE CONTAINER.
- MANUFACTURERS' RECOMMENDATIONS FOR PROPER USE AND DISPOSAL WILL BE FOLLOWED.
- THE SITE SUPERINTENDENT WILL INSPECT DAILY TO ENSURE PROPER USE AND DISPOSAL OF MATERIALS ONSITE.

HAZARDOUS PRODUCTS:

- PRODUCTS WILL BE KEPT IN ORIGINAL CONTAINERS UNLESS THEY ARE NOT RESEALABLE.
- ORIGINAL LABELS AND MATERIAL SAFETY DATA WILL BE RETAINED; THEY CONTAIN IMPORTANT PRODUCT INFORMATION.
- IF SURPLUS PRODUCT MUST BE DISPOSED OF, MANUFACTURERS' OR LOCAL AND STATE RECOMMENDED METHODS FOR PROPER DISPOSAL WILL BE FOLLOWED.

SPILL CONTROL PRACTICES

IN ADDITION TO THE GOOD HOUSEKEEPING AND MATERIAL MANAGEMENT PRACTICES DISCUSSED IN THE PREVIOUS SECTIONS OF THIS PLAN, THE FOLLOWING PRACTICES WILL BE FOLLOWED FOR SPILL PREVENTION AND CLEANUP:

- ALL SPILLS SHALL BE CLEANED UP IMMEDIATELY AFTER DISCOVERY. MANUFACTURERS' RECOMMENDED METHODS FOR SPILL CLEANUP POSTED AND SITE PERSONNEL WILL BE MADE AWARE OF THE PROCEDURES AND THE LOCATION OF THE INFORMATION AND CLEANUP SUPPLIES.
- MATERIALS AND EQUIPMENT NECESSARY FOR SPILL CLEANUP WILL BE KEPT IN THE MATERIAL STORAGE AREA ONSITE. EQUIPMENT AND MATERIALS WILL INCLUDE BUT NOT BE LIMITED TO BROOMS, DUST PANS, WOPS, RAGS, GLOVES, GOGGLES, KITTY LITTER, SAND, SAWDUST, AND PLASTIC AND METAL TRASH CONTAINERS SPECIFICALLY FOR THIS PURPOSE.
- THE SPILL AREA WILL BE KEPT WELL VENTILATED AND PERSONNEL WILL WEAR APPROPRIATE PROTECTIVE CLOTHING TO PREVENT INJURY FROM CONTACT WITH A HAZARDOUS SUBSTANCE.
- SPILLS OF TOXIC OR HAZARDOUS MATERIAL WILL BE REPORTED TO THE APPROPRIATE STATE OR LOCAL GOVERNMENT AGENCY, REGARDLESS OF THE SIZE. SPILLS OF 25 OR MORE GALLONS OF PETROLEUM WASTE MUST BE REPORTED TO OHIO EPA (1-800-282-8378), THE LOCAL FIRE DEPARTMENT, AND THE LOCAL EMERGENCY PLANNING COMMITTEE WITHIN 30 MINUTES OF THE ALL SPILLS, WHICH RESULT IN CONTACT WITH WATERS OF THE STATE, MUST BE REPORTED TO THE OHIO EPA'S HOTLINE.
- SOILS CONTAMINATED BY PETROLEUM OR OTHER CHEMICAL SPILLS MUST BE TREATED/DISPOSED AT AN OHIO EPA APPROVED SOLID WASTE MANAGEMENT FACILITY OR HAZARDOUS WASTE TREATMENT, STORAGE OR DISPOSAL FACILITY (TSDP).
- THE SPILL PREVENTION PLAN WILL BE ADJUSTED TO INCLUDE MEASURES TO PREVENT THIS TYPE OF SPILL FROM REOCCURRING AND HOW TO CLEAN UP THE SPILL IF THERE IS ANOTHER ONE. A DESCRIPTION OF THE SPILL, WHAT CAUSED IT, AND THE CLEANUP MEASURES WILL ALSO BE INCLUDED.
- THE SITE SUPERINTENDENT RESPONSIBLE FOR THE DAY-TO-DAY SITE OPERATIONS, WILL BE THE SPILL PREVENTION AND CLEANUP COORDINATOR. HE WILL DESIGNATE SITE PERSONNEL WHO WILL RECEIVE SPILL PREVENTION AND CLEANUP TRAINING. THESE INDIVIDUALS WILL EACH BECOME RESPONSIBLE FOR A PARTICULAR PHASE OF PREVENTION AND CLEANUP. THE NAMES OF RESPONSIBLE SPILL PERSONNEL WILL BE POSTED IN THE MATERIAL STORAGE AREA AND IN THE OFFICE TRAILER ONSITE.

PRODUCT SPECIFIC PRACTICES

PETROLEUM PRODUCTS

ALL ONSITE VEHICLES WILL BE MONITORED FOR LEAKS AND RECEIVE REGULAR PREVENTIVE MAINTENANCE TO REDUCE THE CHANCE OF LEAKAGE. PETROLEUM PRODUCTS WILL BE STORED IN TIGHTLY SEALED CONTAINERS WHICH ARE CLEARLY LABELED. ANY ASPHALT SUBSTANCES USED ONSITE WILL BE APPLIED ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS.

FUEL STORAGE TANKS SHALL BE LOCATED AWAY FROM SURFACE WATERS AND STORM SEWER SYSTEM INLETS. FUEL TANKS SHALL BE STORED IN A DIKED AREA CAPABLE OF HOLDING 150% OF THE TANK CAPACITY.

FERTILIZERS

FERTILIZERS USED WILL BE APPLIED ONLY IN THE MINIMUM AMOUNTS RECOMMENDED BY THE MANUFACTURER. ONCE APPLIED, FERTILIZER WILL BE WORKED INTO THE SOIL TO LIMIT EXPOSURE TO STORM WATER. STORAGE WILL BE IN A COVERED SHED. THE CONTENTS OF ANY PARTIALLY USED BAGS OF FERTILIZER WILL BE TRANSFERRED TO A SEALABLE PLASTIC BIN TO AVOID SPILLS.

PAINTS
ALL CONTAINERS WILL BE TIGHTLY SEALED AND STORED WHEN NOT REQUIRED FOR USE. EXCESS PAINT WILL NOT BE DISCHARGED TO THE STORM SEWER SYSTEM BUT WILL BE PROPERLY DISPOSED OF ACCORDING TO MANUFACTURERS' INSTRUCTIONS OR STATE AND LOCAL REGULATIONS.

CONCRETE WASH WATER/WASH OUTS

CONCRETE WASH WATER SHALL NOT BE ALLOWED TO FLOW TO STREAMS, DITCHES, STORM DRAINS, OR ANY OTHER WATER CONVEYANCE. A SUMP OR PIT WITH NO POTENTIAL FOR DISCHARGE SHALL BE CONSTRUCTED IF NEEDED TO CONTAIN CONCRETE WASH WATER. FIELD TILE OR OTHER SUBSURFACE DRAINAGE STRUCTURES WITHIN 10 FT. OF THE SUMP SHALL BE CUT AND PLUGGED. FOR SMALL PROJECTS, TRUCK CHUTES MAY BE RINSED ON THE LOT AWAY FROM ANY WATER CONVEYANCES.

PERMITTEE

NAME:

ADDRESS 1:

ADDRESS 2:

PHONE:

CONTACT:

EMAIL:

GENERAL PERMIT:-----

NPDES PERMIT:-----

DATE OF ISSUE:-----

EROSION CONTROL NOTES
FIRST CHURCH OF GOD MONROE
CITY OF MONROE
BUTLER COUNTY, OHIO



SCALE: N/A
DATE: 10-10-24
DRAWN: DES
DESIGNED: JLL
CHECKED:

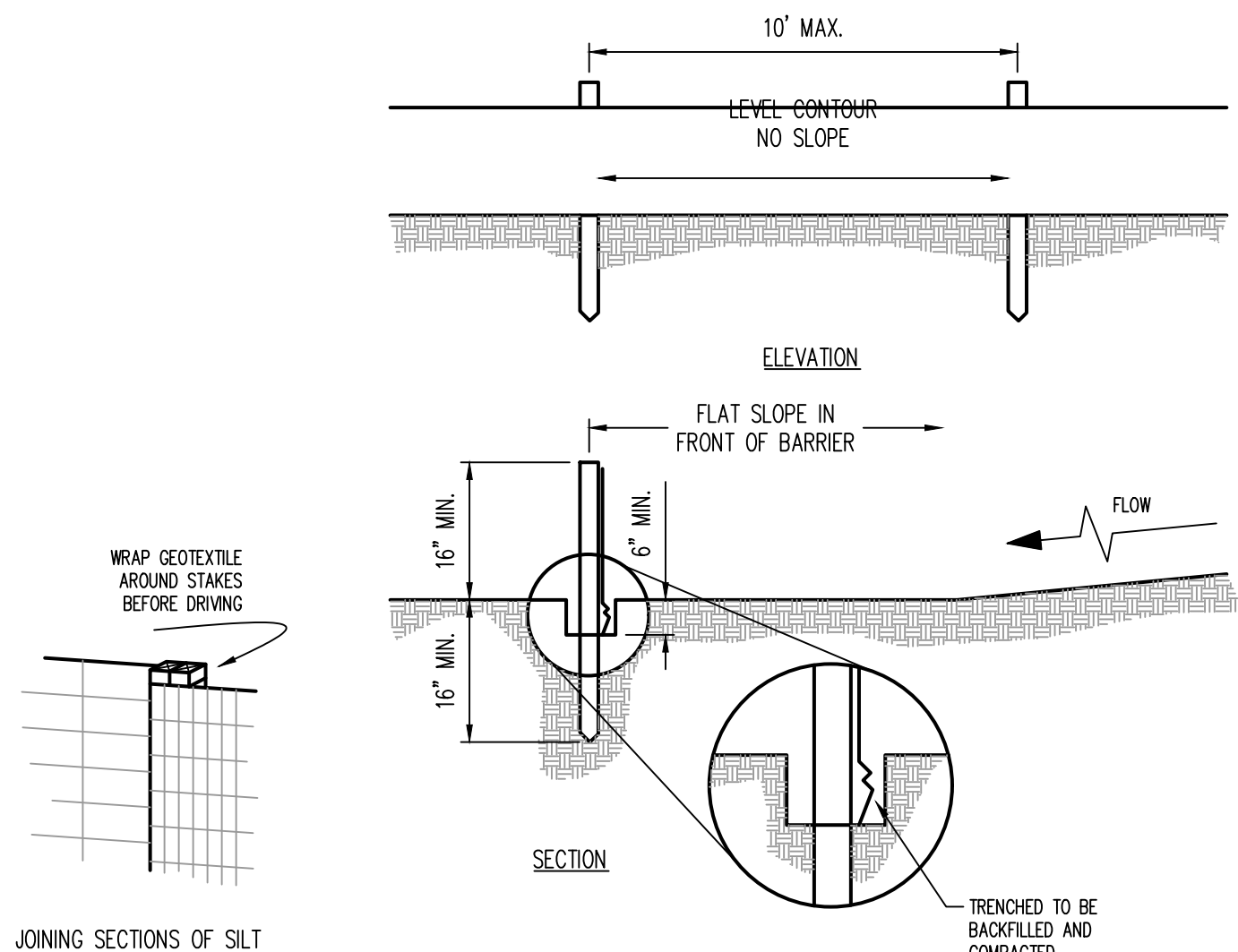


REVIEWS:

- 1.
- 2.
- 3.
- 4.

PROJECT: 240960
DRAWING: 240960BC

SHEET
6 OF 7



JOINING SECTIONS OF SILT

- NOTES:
1. SILT FENCE SHALL BE CONSTRUCTED BEFORE UPSLOPE LAND DISTURBANCE BEGINS.
 2. ALL SILT FENCE SHALL BE PLACED AS CLOSE TO THE CONTOUR AS POSSIBLE SO THAT WATER WILL NOT CONCENTRATE AT LOW POINTS IN THE FENCE AND SO THAT SMALL SWALES OR DEPRESSIONS THAT MAY CARRY SMALL CONCENTRATED FLOW TO THE SILT FENCE ARE DISSIPATED ALONG ITS LENGTH.
 3. ENDS OF THE SILT FENCES SHALL BE BROUGHT UPSLOPE SLIGHTLY SO THAT WATER FLOWED BY THE SILT FENCE WILL BE PREVENTED FROM FLOWING AROUND THE ENDS.
 4. SILT FENCE SHALL BE PLACED ON THE FLATTEST AREA AVAILABLE.
 5. WHERE POSSIBLE, VEGETATION SHALL BE PRESERVED FOR 5 FEET (OR AS MUCH AS POSSIBLE) UPSLOPE FROM THE SILT FENCE. IF VEGETATION IS REMOVED, IT SHALL BE REESTABLISHED WITHIN 7 DAYS FROM THE INSTALLATION OF THE SILT FENCE.
 6. THE HEIGHT OF THE SILT FENCE SHALL BE A MINIMUM OF 16 INCHES ABOVE THE ORIGINAL GROUND SURFACE.
 7. THE SILT FENCE SHALL BE PLACED IN AN EXCAVATED OR SLICED TRENCH CUT A MINIMUM OF 6 INCHES DEEP. THE TRENCH SHALL BE MADE WITH A TRENCHER, CABLE LAYING MACHINE, SLICING MACHINE, OR OTHER SUITABLE DEVICE THAT WILL ENSURE AN ADEQUATELY UNIFORM TRENCH DEPTH.
 8. THE SILT FENCE SHALL BE PLACED WITH THE STAKES ON THE DOWNSLOPE SIDE OF THE GEOTEXTILE. A MINIMUM OF 8 INCHES OF GEOTEXTILE MUST BE BELOW THE GROUND SURFACE. EXCESS MATERIAL SHALL LAY ON THE BOTTOM OF THE 6-INCH DEEP TRENCH. THE TRENCH SHALL BE BACKFILLED AND COMPACTED ON BOTH SIDES OF THE FABRIC.
 9. SEAMS BETWEEN SECTIONS OF SILT FENCE SHALL BE SPLICED TOGETHER ONLY AT A SUPPORT POST WITH A MINIMUM 6-IN. OVERLAP PRIOR TO DRIVING INTO THE GROUND.
 10. MAINTENANCE - SILT FENCE SHALL ALLOW RUNOFF TO PASS ONLY AS OFFICE FLOW THROUGH THE GEOTEXTILE. IF RUNOFF OVERTOPS THE SILT FENCE, FLOWS UNDER THE FABRIC OR AROUND THE FENCE ENDS, OR IN ANY OTHER WAY ALLOWS A CONCENTRATED FLOW DISCHARGE, ONE OF THE

FOLLOWING SHALL BE PERFORMED, AS APPROPRIATE: 1) THE LAYOUT OF THE SILT FENCE SHALL BE CHANGED; 2) ACCUMULATED SEDIMENT SHALL BE REMOVED; OR 3) OTHER PRACTICES SHALL BE INSTALLED.

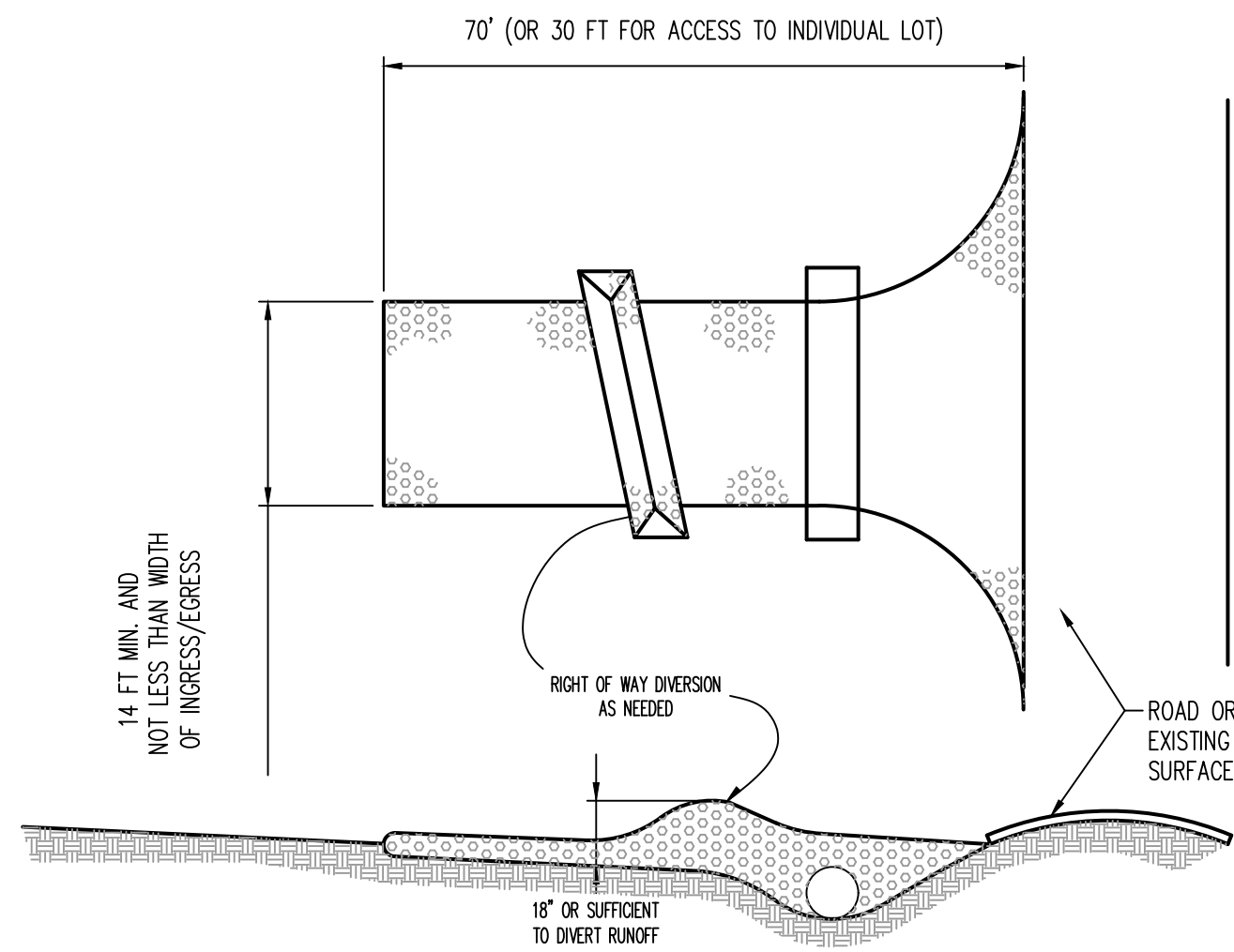
SEDIMENT DEPOSITS SHALL BE ROUTINELY REMOVED WHEN THE DEPOSIT REACHES APPROXIMATELY ONE-HALF OF THE HEIGHT OF THE SILT FENCE. SILT FENCES SHALL BE INSPECTED AFTER EACH RAINFALL AND AT LEAST DAILY DURING A PROLONGED RAINFALL. THE LOCATION OF EXISTING SILT FENCE SHALL BE REVIEWED DAILY TO ENSURE ITS PROPER LOCATION AND EFFECTIVENESS. IF DAMAGED, THE SILT FENCE SHALL BE REPAIRED IMMEDIATELY.

CRITERIA FOR SILT FENCE MATERIALS

1. FENCE POST - THE LENGTH SHALL BE A MINIMUM OF 32 INCHES. WOOD POSTS WILL BE 2-BY-2-IN. NOMINAL DIMENSIONED HARDWOOD OF SOUND QUALITY. THEY SHALL BE FREE OF KNOTS, SPLITS AND OTHER VISIBLE IMPERFECTIONS, THAT WILL WEAKEN THE POSTS. THE MAXIMUM SPACING BETWEEN POSTS SHALL BE 10 FT. POSTS SHALL BE DRIVEN A MINIMUM 16 INCHES INTO THE GROUND, WHERE POSSIBLE. IF NOT POSSIBLE, THE POSTS SHALL BE ADEQUATELY SECURED TO PREVENT OVERTURNING OF THE FENCE DUE TO SEDIMENT/WATER LOADING.
2. SILT FENCE FABRIC - SEE CHART BELOW.

FABRIC PROPERTIES	VALUES	TEST METHOD
MINIMUM TENSILE STRENGTH	120 LBS. (5335 N)	ASTM D 4832
MINIMUM ELONGATION AT 60 LBS.	5%	ASTM D 4832
MINIMUM PUNCTURE STRENGTH	50 LBS. (2220 N)	ASTM D 4833
MINIMUM TEAR STRENGTH	40 LBS. (1780 N)	ASTM D 4533
APPARENT OPENING SIZE	0.075 MM	ASTM D 4751
MINIMUM PERMITTIVITY	1X10 ⁻² SEC-1	ASTM D 4491
UV EXPOSURE STRENGTH RETENTION	70%	ASTM G 4355

1
XX
SILT FENCE DETAIL
N.T.S.

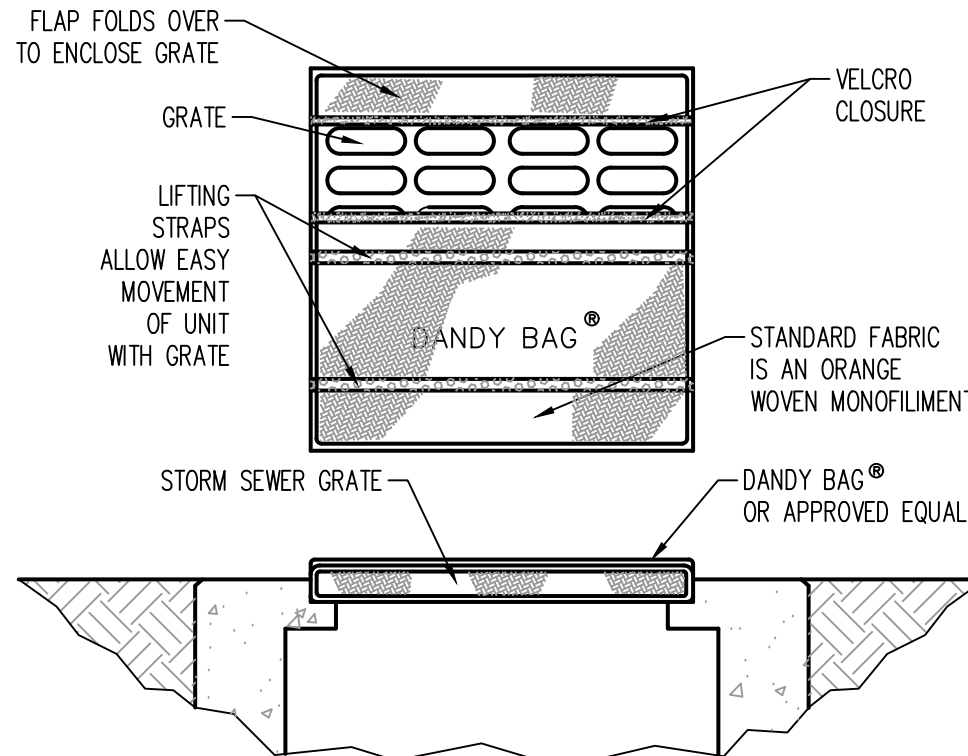


- NOTES:
1. STONE SIZE - ODOT #2 (1.5-2.5 INCH) STONE SHALL BE USED, OR RECYCLED CONCRETE EQUIVALENT.
 2. LENGTH - THE CONSTRUCTION ENTRANCE SHALL BE AS LONG AS REQUIRED TO STABILIZE HIGH TRAFFIC AREAS BUT NOT LESS THAN 70 FT. (EXCEPTION: APPLY 30 FT. MINIMUM TO SINGLE RESIDENCE LOTS).
 3. THICKNESS - THE STONE LAYER SHALL BE AT LEAST 6 INCHES THICK FOR LIGHT DUTY ENTRANCES OR AT LEAST 10 INCHES FOR HEAVY DUTY USE.
 4. WIDTH - THE ENTRANCE SHALL BE AT LEAST 14 FEET WIDE, BUT NOT LESS THAN THE FULL WIDTH AT POINTS WHERE INGRESS OR EGRESS OCCURS.
 5. GEOTEXTILE - A GEOTEXTILE SHALL BE LAID OVER THE ENTIRE AREA PRIOR TO PLACING STONE. IT SHALL BE COMPOSED OF STRONG ROT-PROOF POLYMERIC FIBERS AND MEET THE FOLLOWING SPECIFICATIONS:

MINIMUM TENSILE STRENGTH.....	200 LBS
MINIMUM PUNCTURE STRENGTH.....	40 LBS
MINIMUM TEAR STRENGTH.....	50 LBS
MINIMUM BURST STRENGTH.....	320 PSF
MINIMUM ELONGATION.....	20%
EQUIVALENT OPENING SIZE.....	0.075-MM
PERMITTIVITY.....	1X10 ⁻² SEC

6. TIMING - THE CONSTRUCTION ENTRANCE SHALL BE INSTALLED AS SOON AS IS PRACTICABLE BEFORE MAJOR GRADING ACTIVITIES.
7. CULVERT - A PIPE OR CULVERT SHALL BE CONSTRUCTED UNDER THE ENTRANCE IF NEEDED TO PREVENT SURFACE WATER FROM FLOWING ACROSS THE ENTRANCE OR TO PREVENT RUNOFF FROM BEING DIRECTED OUT ONTO PAVED SURFACES.

2
XX
CONSTRUCTION ENTRANCE DETAIL
N.T.S.

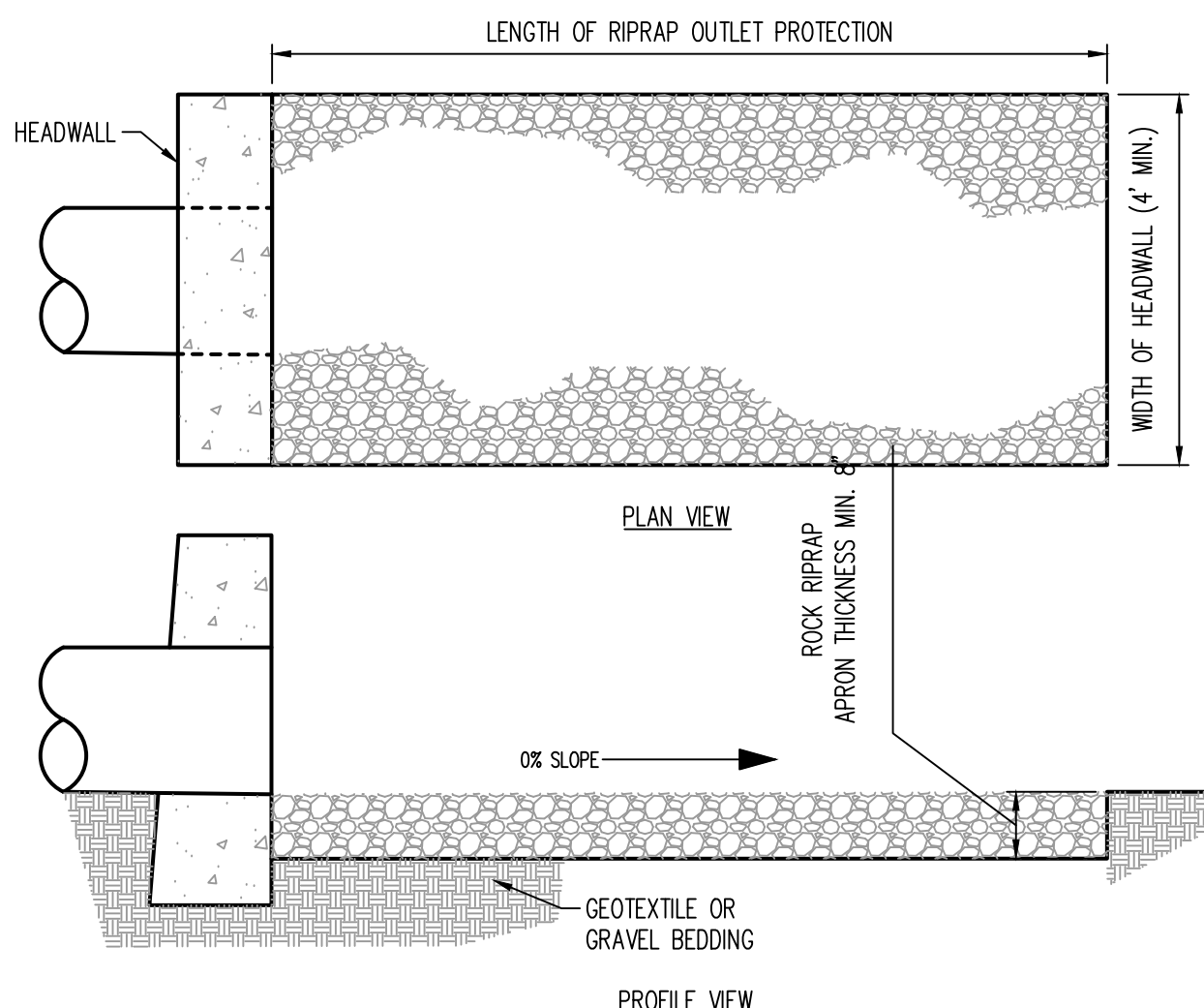


MECHANICAL PROPERTIES	TEST METHOD	UNITS	MINIMUM
GRAB TENSILE STRENGTH	ASTM D 4832	KN (LBS)	1.62 (365) X 0.89 (200)
GRAB TENSILE ELONGATION	ASTM D 4832	%	24 X 10
PUNCTURE STRENGTH	ASTM D 4833	KPA (PSI)	2.40 (350)
MULLER BURST STRENGTH	ASTM D 3786	KPA (PSI)	3097 (450)
TRAPEZOID TEAR STRENGTH	ASTM D 4533	KN (LBS)	0.51 (115) X 0.33 (75)
UV RESISTANCE	ASTM D 4355	%	90
APPARENT OPENING SIZE	ASTM D 4751	MM (US STD. SIEVE)	0.425 (40)
FLOW RATE	ASTM D 4491	1/MIN/IN ² (GAL/MIN/FT ²)	3807 (145)
PERMITTIVITY	ASTM D 4491	SEC ⁻¹	2.1

INSTALLATION: THE EMPTY DANDY BAG SHOULD BE PLACED OVER THE GRATE AS THE GRATE STANDS ON END. IF USING OPTIONAL OIL ABSORBENTS, PLACE ABSORBENT PILL IN POUCH ON THE BOTTOM (BELOW-GRADE SIDE) OF THE UNIT. ATTACH ABSORBENT PILL TO TETHER LOOP. TUCK THE ENCLOSURE FLAP INSIDE TO COMPLETELY ENCLOSE THE GRATE. HOLDING THE LIFTING DEVICES (DO NOT RELY ON LIFTING DEVICES TO SUPPORT THE ENTIRE WEIGHT OF THE GRATE), PLACE THE GRATE INTO ITS FRAME.

MAINTENANCE: REMOVE ALL ACCUMULATED SEDIMENT AND DEBRIS FROM SURFACE AND VICINITY OF UNIT AFTER EACH STORM EVENT. REMOVE SEDIMENT THAT HAS ACCUMULATED WITHIN THE CONTAINMENT AREA OF THE DANDY BAG AS NEEDED. IF USING OPTIONAL OIL ABSORBENTS, REMOVE AND REPLACE ABSORBENT PILL WHEN NEAR SATURATION.

6
XX
DANDY BAG DETAIL
N.T.S.



5. GRAVEL BEDDING SHALL BE ODOT NO. 67S OR 57S UNLESS SHOWN DIFFERENTLY ON THE DRAWINGS.
6. RIPRAP MAY BE PLACED BY EQUIPMENT BUT SHALL BE PLACED IN A MANNER TO PREVENT SLIPPAGE OR DAMAGE TO THE GEOTEXTILE.
7. RIPRAP SHALL BE PLACED BY A METHOD THAT DOES NOT CAUSE SEGREGATION OF SIZES. EXTENSIVE PUSHING WITH A DOZER CAUSES SEGREGATION AND SHALL BE AVOIDED BY DELIVERING RIPRAP NEAR ITS FINAL LOCATION WITHIN THE CHANNEL.
8. CONSTRUCTION SHALL BE SEQUENCED SO THAT OUTLET PROTECTION IS PLACED AND FUNCTIONAL WHEN THE STORM DRAIN, CULVERT, OR OPEN CHANNEL ABOVE IT BECOMES OPERATIONAL.
9. ALL DISTURBED AREAS WILL BE VEGETATED AS SOON AS PRACTICAL.

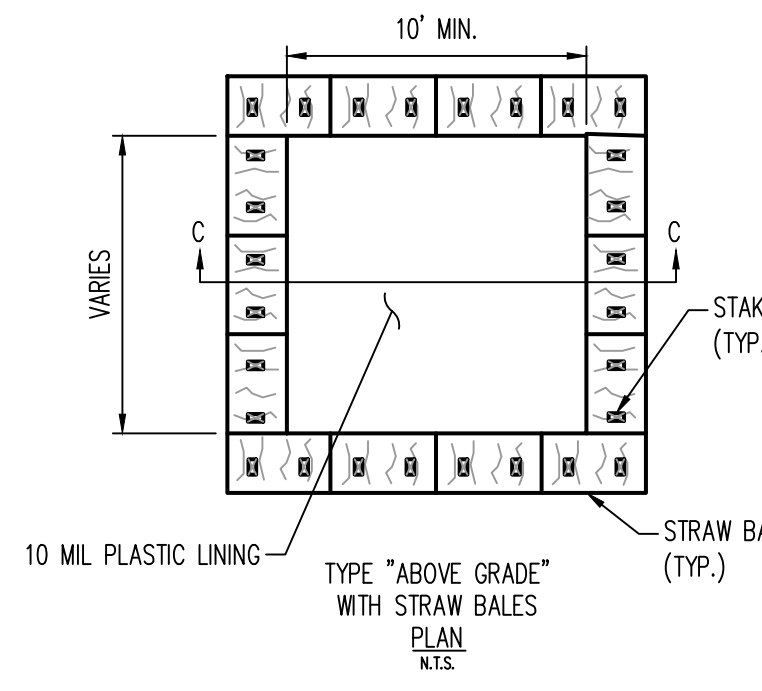
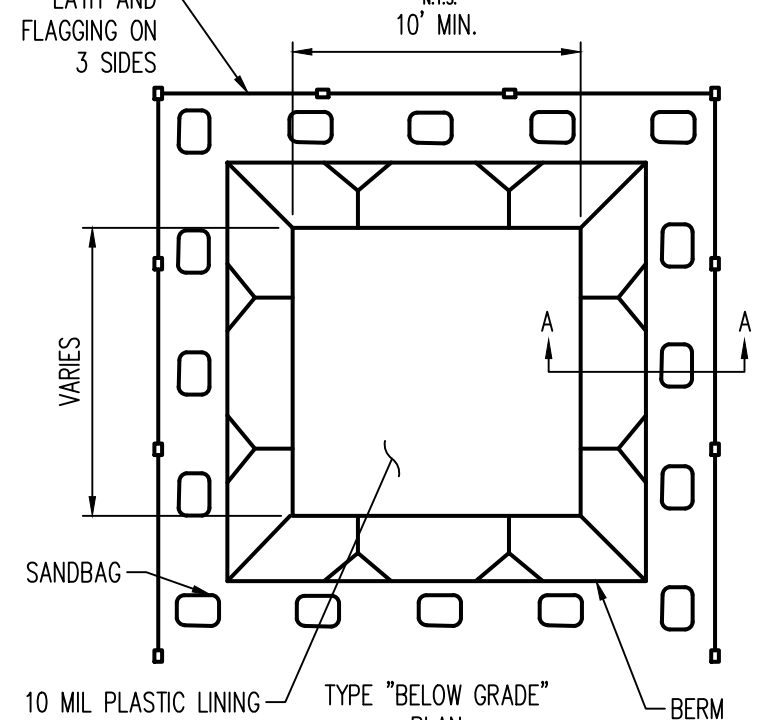
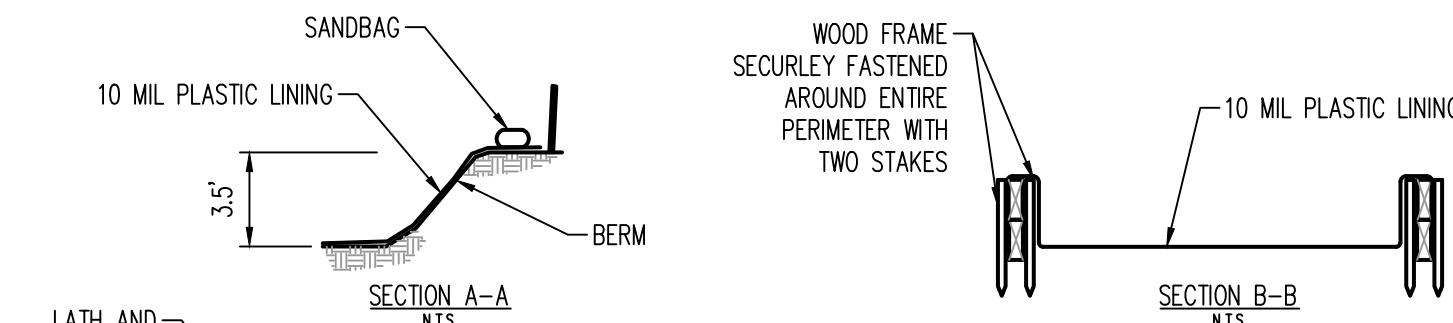
8
XX
ROCK OUTLET PROTECTION DETAIL
N.T.S.

PROPOSED POST CONSTRUCTION BMP INSPECTION AND MAINTENANCE SCHEDULE:

ACTIVITY	FREQUENCY
MOW EMBANKMENT, REDUCE MOWING FREQUENCY OF THE EMBANKMENTS TO A SINGLE MONTHLY MOWING AT A HEIGHT OF 6-8 INCHES DURING THE MONTHS OF MAY THROUGH SEPTEMBER. ELIMINATE ANY USE OF COMMERCIAL FERTILIZERS AND PESTICIDES IN FACILITY.	MONTHLY
CLEAR INLETS AND OUTLETS OF DEBRIS AND LITTER TO PREVENT OBSTRUCTIONS AND REDUCED EFFICIENCY OF SYSTEM	MONTHLY
MONITOR AND DOCUMENT ANY SEDIMENT ACCUMULATION IN THE FACILITY	MONTHLY
REPAIR UNDERCUT OR ERODED AREAS	MONTHLY
CLEAN OUT SUMP ON OUTLET STRUCTURE 1	QUARTERLY AND AFTER HEAVY RAIN
DOCUMENT EROSION OF EMBANKMENT	SEMI-ANNUALLY
SEED OR SOD TO RESTORE DEAD OR DAMAGED GROUND COVER	SEMI-ANNUALLY
INSPECT EMBANKMENT FOR DAMAGE CAUSED BY EROSION	MONTHLY
ENSURE THAT INLET AND OUTLET DEVICES ARE FREE OF DEBRIS AND OPERATIONAL	MONTHLY
INSPECT SEDIMENT LEVELS IN THE DETENTION BASIN*	MONTHLY

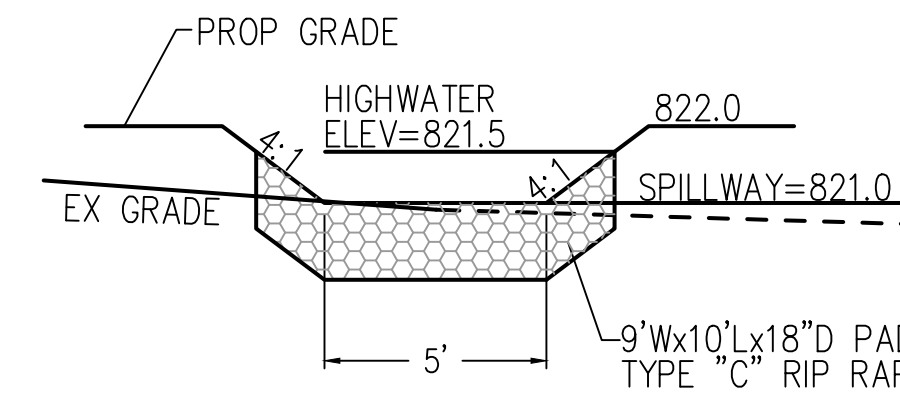
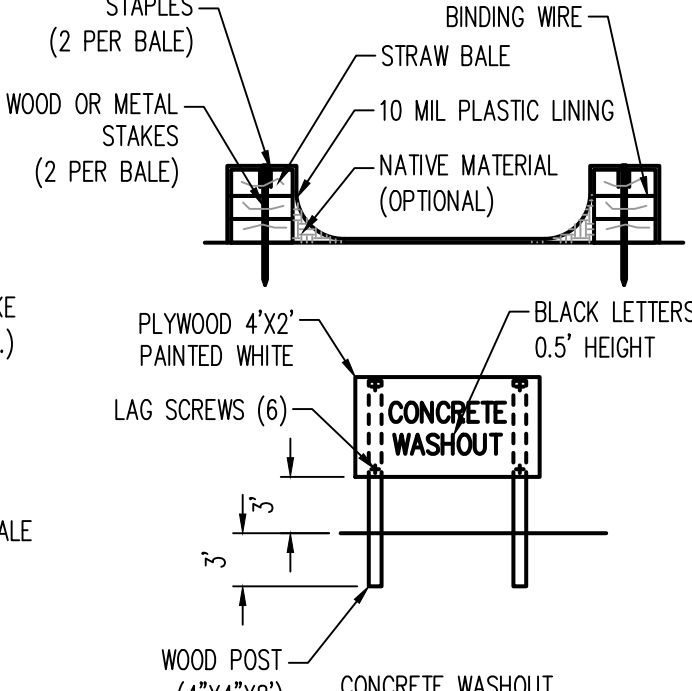
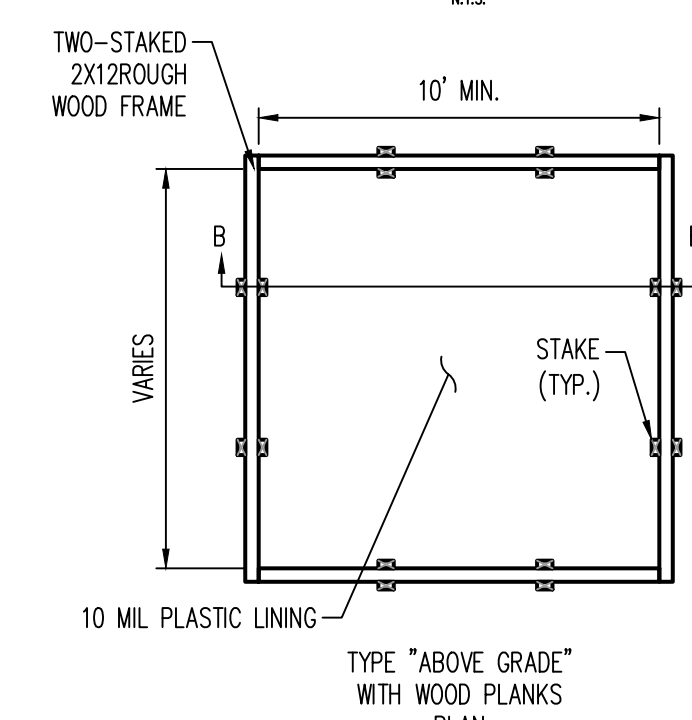
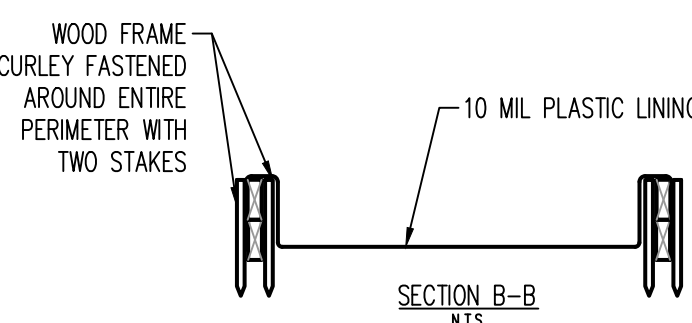
*WHEN SEDIMENT LEVEL IN THE BASIN ACCUMULATES TO 6" ABOVE DESIGN ELEVATIONS PER PLAN, SEDIMENT IS TO BE REMOVED AND DESIGN DEPTH IS TO BE RESTORED.

TO DETERMINE WHEN SEDIMENT LEVEL ACCUMULATES TO 6" ABOVE DESIGN ELEVATION, TWO 4"x4" WOODEN MONITOR POSTS SHALL BE INSTALLED IN THE BASIN. POSTS ARE TO BE LOCATED AT LEAST 40' APART FROM EACH OTHER TO ACCOUNT FOR IRREGULAR SEDIMENTATION. THE POSTS WILL BE MARKED WITH BOTH THE DESIGN ELEVATION, AS WELL AS THE ELEVATION CORRESPONDING TO 6" ABOVE THE DESIGN ELEVATION. SEE DETAIL FOR MONITOR POST ON THIS SHEET.

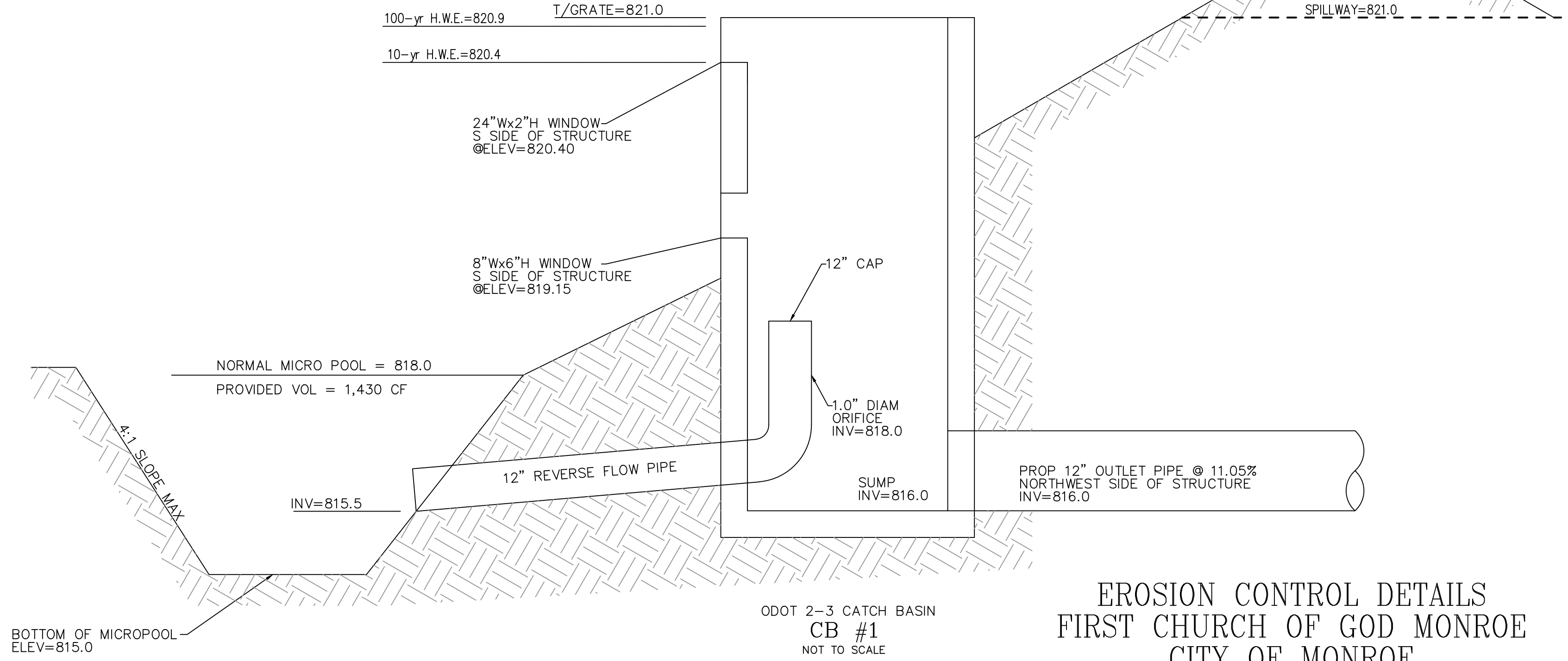


- NOTES:
1. ACTUAL LAYOUT DETERMINED IN FIELD.
 2. THE CONCRETE WASHOUT SIGN SHALL BE INSTALLED WITHIN 30' OF THE TEMPORARY CONCRETE WASHOUT FACILITY.

9
XX
CONCRETE WASHOUT DETAIL
N.T.S.



SPILLWAY DETAIL
NOT TO SCALE



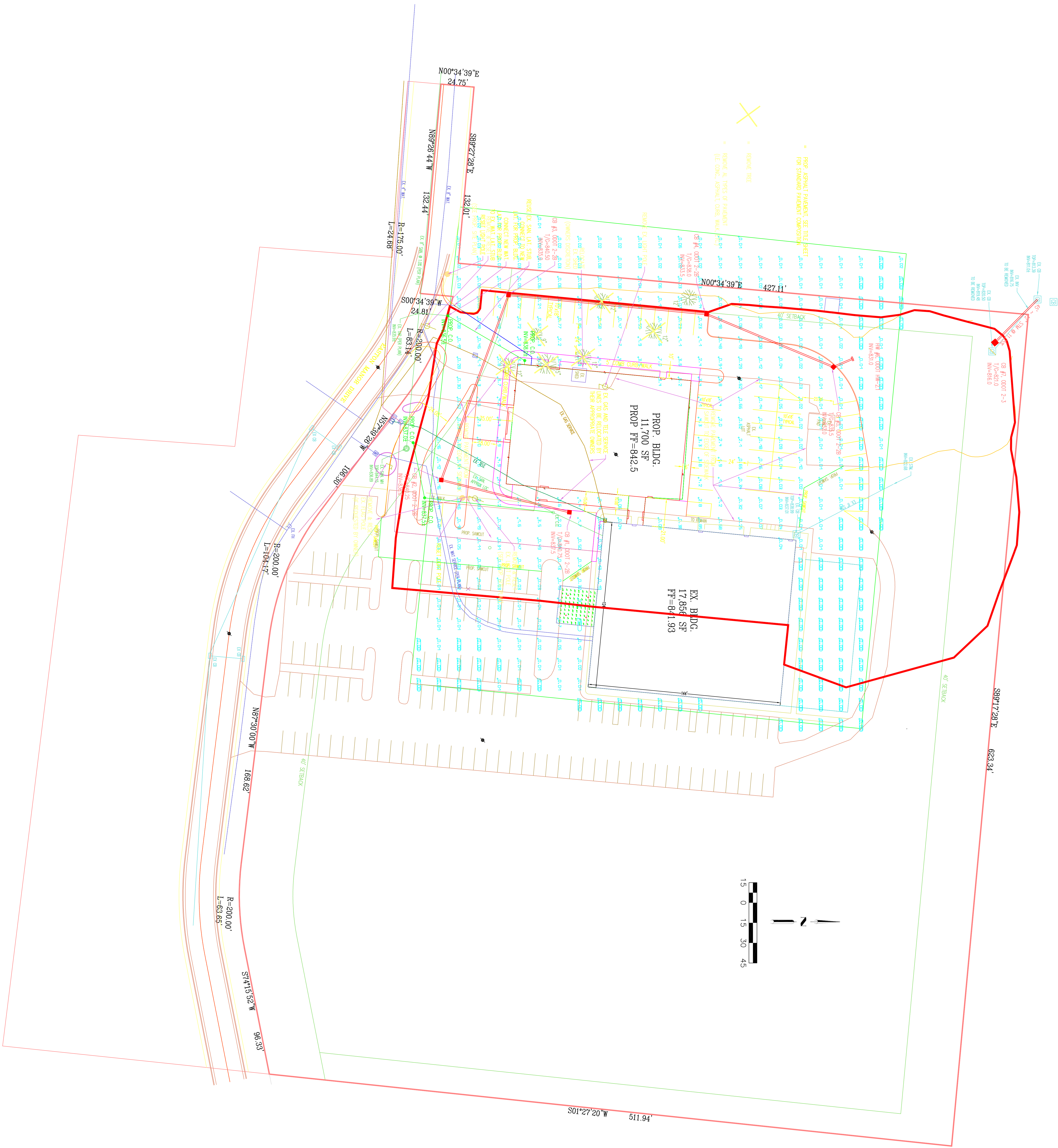
EROSION CONTROL DETAILS FIRST CHURCH OF GOD MONROE CITY OF MONROE BUTLER COUNTY, OHIO

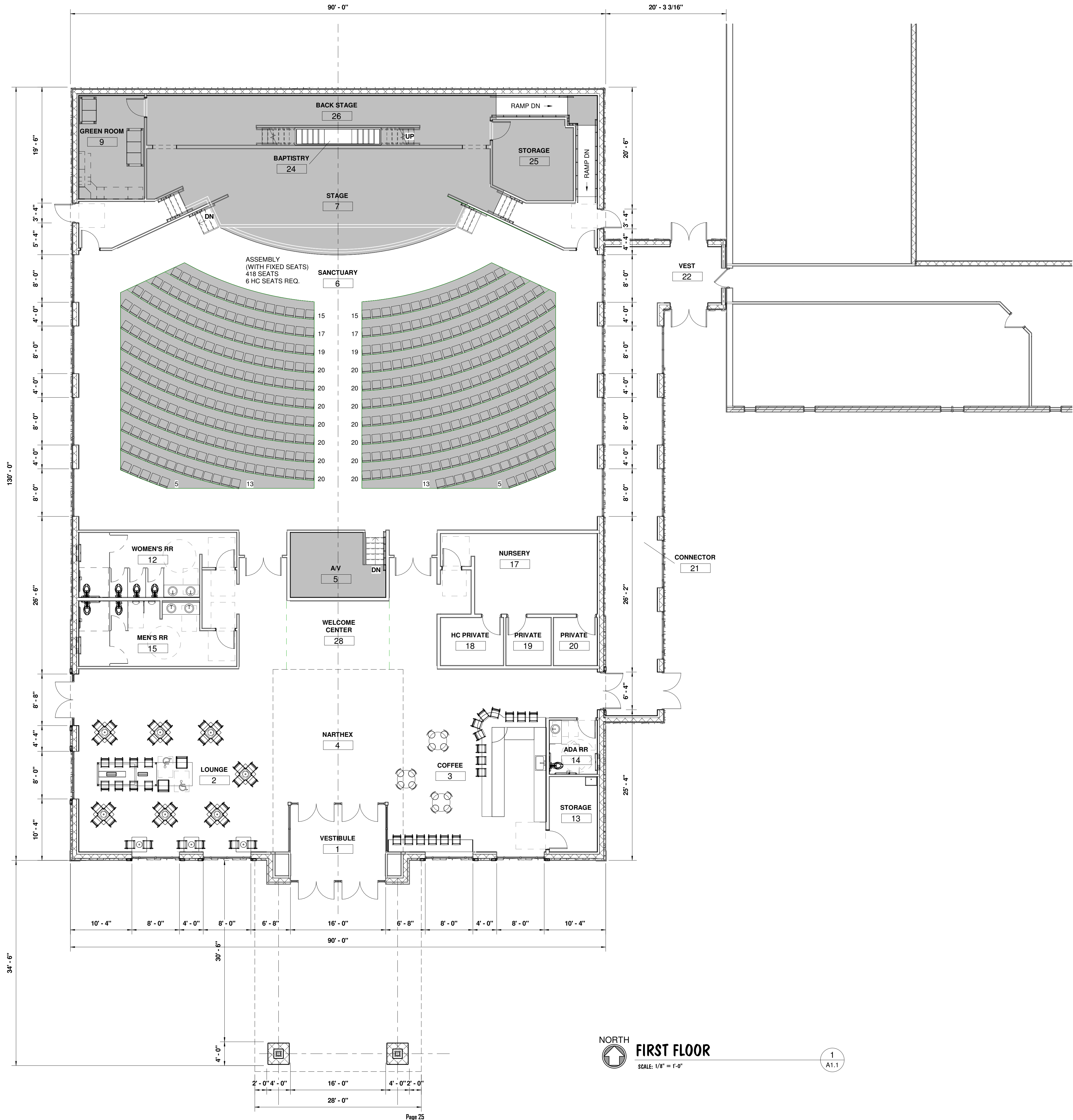
2 WORKING DAYS
BEFORE YOU DIG
OHIO811.org
CALL TOLL FREE 800-362-2764
OHIO UTILITIES PROTECTION SERVICE

SCALE: N/A
DATE: 10-10-24
DRAWN: DES
DESIGNED: JLL
CHECKED:

APEX
ENGINEERING & SURVEYING, INC.
1068 N. UNIVERSITY BLVD. MIDDLETOWN, OHIO 45042
PH: (513) 424-5202 OR (513) 832-8981 FAX: (513) 424-5202

REVISIONS:
1.
2.
3.
4.
PROJECT: 240960
DRAWING: 240960BC
SHEET
7 OF 7





PROPOSED NEW BUILDING FOR:
MONROE FIRST CHURCH OF GOD
100 Easton Manor Dr.
Monroe, OH 45050

REV. DATE CK'D

Drawn By: TAY Checked By: MDB

Preliminary
Not For
Construction

Date: 08/21/24 Job No: 24.093

A1.1

NORTH
FIRST FLOOR
SCALE: 1/8" = 1'-0"

1
A1.1

PROPOSED NEW BUILDING FOR:
MONROE FIRST CHURCH OF GOD
100 Easton Manor Dr.
Monroe, OH 45050

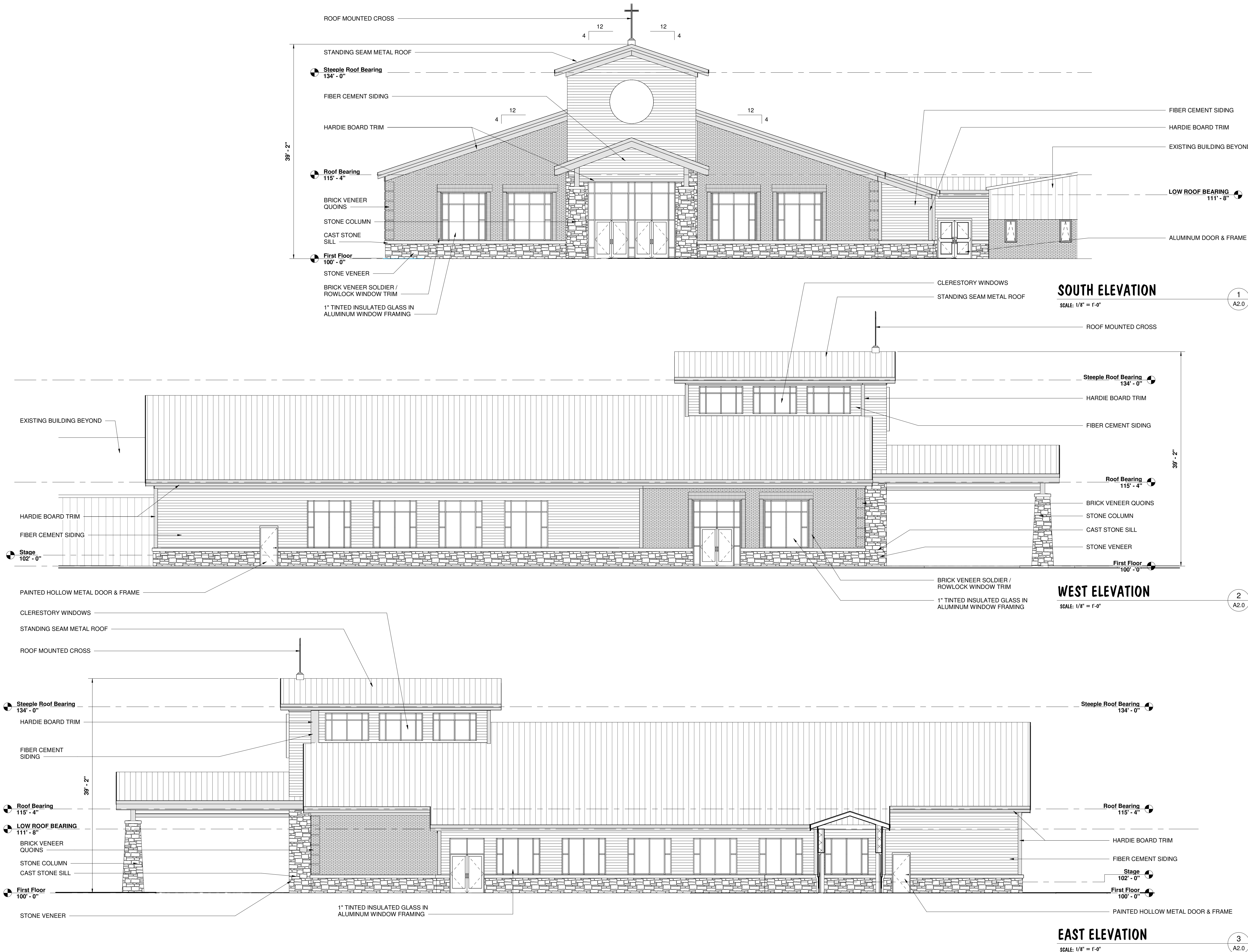
REV. DATE CK'D

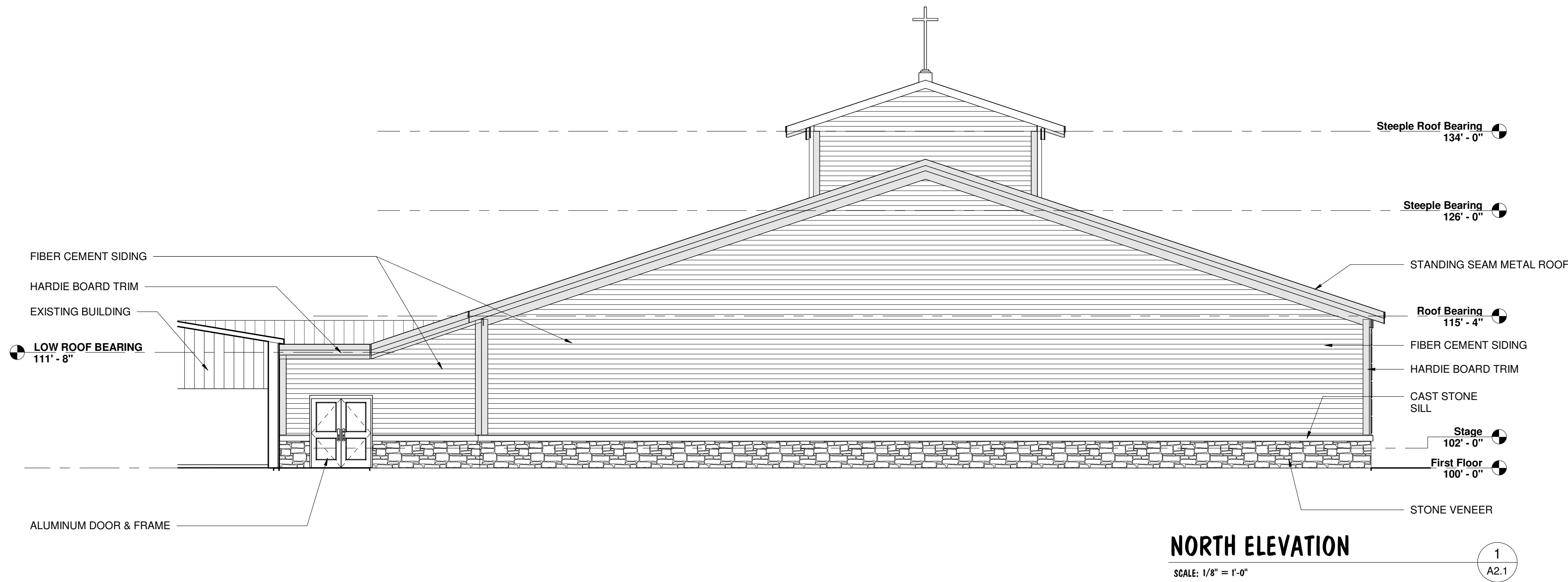
Drawn By:TAY Checked By:MDB

Preliminary
Not For
Construction

Date:08/21/24 Job No:24.093

A2.0





PROPOSED NEW BUILDING FOR:
MONROE FIRST CHURCH OF GOD
100 Easton Manor Dr.
Monroe, OH 45050

REV. DATE CK'D

Drawn By:TAY Checked By:MDB

Preliminary
Not For
Construction

Date:08/21/24 Job No:24.093

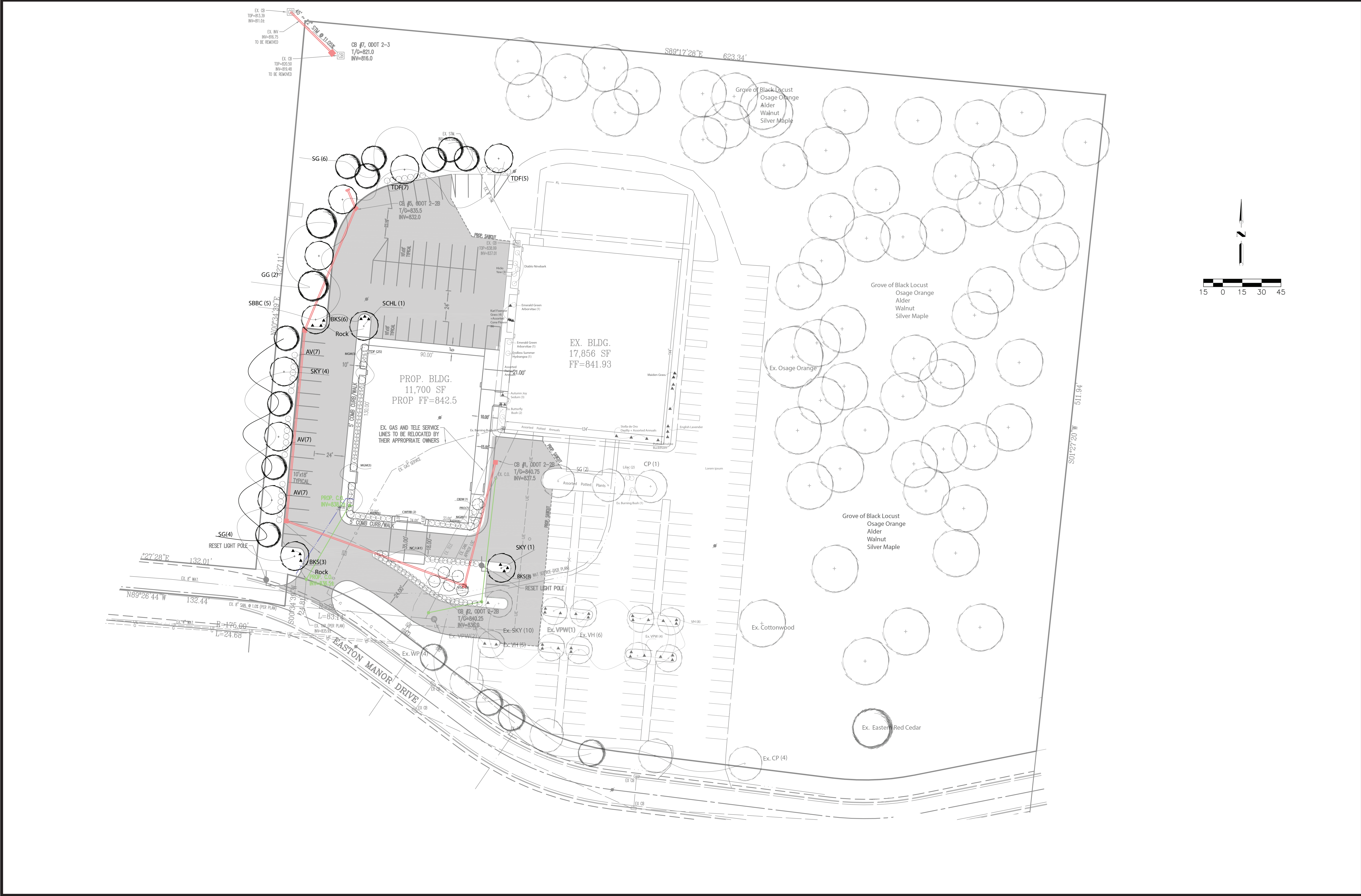
A2.1

- General Notes**
- Contractor and their subs should have five years proven experience with projects of similar scope and quality. No exceptions.
 - Contractor shall obtain all necessary permits for construction of this project.
 - Contractor is responsible for verifying or surveying the site to determine accuracy of proposed work relative to the construction intent illustrated on drawing by Civil Engineer.
 - Contractor shall adhere to all applicable codes, regulations, guidelines and standard details for construction including application of materials.
 - Contractor shall provide Owner with current certificates of liability insurance, current workman's compensation certificates including Sub-contractors and proof of bonding that the Project may require.
 - Contractor is to provide itemized unit cost estimates as required to successfully implement this design and communicate understanding of the full scope of work proposed by the Owner in entirety or in phases.
 - Contractor shall report to the Owner any discrepancy between site conditions, the survey, grading plan and this design. Work shall pause in the area until the discrepancy has been resolved by the Owner.
 - Contractor to provide all labor, materials and equipment as necessary to successfully implement this project in a timely manner and with budget as negotiated by the Owner.
 - Contractor to submit at Owner's request a list of all Subcontractors working on the project, along with the description of the work they are to perform.
 - Locate and protect all existing public and private, below or above grade utilities. Call utility protection service to mark all utilities prior to work commencing.
 - Contractor is responsible for excavation engineering, shoring and safety.
 - The site shall be kept clear of all obstacles and debris, maintaining full and safe access to the site and surrounding structures at all time
 - All materials to be approved by Owner via sign submittal, unless otherwise requested by Owner.
 - Subsurface and finished grades to provide positive drainage away from all buildings, structures, planting areas and stand-alone plants into natural or man-made drainage ways.
 - Verify all layout dimensions and grading elevations on site prior to installation of work to assure conformity with design intent and to provide positive drainage away from built improvements.
 - Protect all existing and new structures and site improvements from damage.
 - Contractor is responsible for general maintenance of construction site erosion control, weeding, watering, pest and disease control during construction and for a period of one month after substantial completion.
 - All materials, equipment and labor to be warranted for a period of one year following Owner agreed completion date. Any materials or workmanship falling below the specified standards herein and/or locally accepted standards if unspecified will be replaced or reworked until it meets the standard and is approved by the Owner.
 - Sediment and erosion control is required while under construction and thereafter.

- Construction Notes**
- See General Notes:
 - The goal of this planting is to establish a healthy, sustainable and vital landscape true to the specified plants natural character, habit and/or intended purpose.
 - All work to be verified on site to be suitable with existing conditions.
 - Final layouts to be clearly identified by staking or marking and approved by Owner prior to installation of construction improvements.
 - Beds - Remove all topsoil from areas to be graded and stockpile. Rough grade subsoil to accommodate a minimum of twelve (12) inches of redistributed or purchased topsoil for areas supporting planting beds or tree rings. Scarify subsoil prior to placement of topsoil. Work subsoil and topsoil in optimal moisture conditions to create required horticultural growing medium; never work when wet or powdery.
 - Turf - Remove all topsoil from areas to be graded from areas to be graded and stockpile. Rough grade subsoil to accommodate a minimum of four (4) inches of redistributed or purchased topsoil for areas supporting turf. Scarify subsoil prior to placement of topsoil. Work subsoil and topsoil in optimal moisture conditions to create required horticultural growing medium; never work when wet or powdery.
 - Planting Soil - Amend existing or purchase topsoil to provide a well-draining planting medium that meets the optimum growing requirements of the specified plants. Amendments to be specified by certified soil scientist specializing in amending and modifying soils for ornamental and turf planting.
 - Planting soil should have a PH range of 5.5 to 7.
 - Plants - Contractor is to evaluate the suitability of specified plant material to determine if the specified plants, their known horticultural needs and the environment they are being placed will establish a healthy vigorous landscape.
 - It is best practice to supply dated purchased order or delivery slips for all materials to Owner. All plant to have grower tags verifying botanical name.

- Plant Notes**
- Quantities shown are required. The plan shall be followed. The Contractor is responsible for verifying their own quantities as required to implement the design intent shown on the plans.
 - Repetitious planting and mass planting groups to align with adjacent geometries conforming to the lines and layout of the building, roads and other structures they are intended to relate to.
 - In line with the Plan, hedge material to be equally spaced, in straight unwavering rows, conforming and parallel to adjacent edges and geometries.
 - Bed edges to be true simple lines, unwavering and neat appearance. Bed edges to be laid out in field for approval of the Owner prior to implementation. All bed edges adjacent to turf to be sod cut edge of 5" deep and 5" wide.
- Plant Selection, Layouts and Implementation**
- Plants to be selected at the nursery of origin by the landscape contractor.
 - For less extensive zoning codes, a single source supplier for each plant specified is required. Although in this case, due to the high complexity of the zoning code related to landscaping, multiple suppliers is permissible if necessary - but specimens must be matching and symmetrical. Contractor is to ensure availability of replacement stock from same source or risk replacing all plants to match new source. In other words, specimens must be like, matching and symmetrical.
 - It is best practice to submit plant photos to Owner prior to purchase. The plants must be healthy, vigorous and of professional landscape quality.
 - Plant substitutions shall be approved by the government official and the Landscape Site Arrangement Professional.
 - All plant locations to be staked or laid out for approval by Owner prior to planting.
 - See this sheet, Civil Documents and Architectural Documents for additional project requirements and full understanding of the project's intent.
 - Contractor is responsible to meet the design intent and is encouraged to arrange periodic meetings with the Owner and the landscape site arrangement specialist for continued understand and to confirm design and project intent. Follow the plan and do not be afraid to ask questions if unsure.
 - This planting is being installed on a new construction site. Expect over compacted and poor draining subsoils. Deep scarification of subsoil is likely required. Soil compaction and drainage problems encountered through testing plant pits as described in the details are to be corrected and reported to the Owner with remedies prior to planting plants.

- Turf**
- All turf to be seed for turf type tall fescue at a rate of 10lbs/1000sf, provide soil stabilization and seed mulch as required for germination. Overseed bare areas as required after initial seeding.
 - Establish grass lawn in areas not shown as planting. Bed lines to be approved prior to seeding.
 - Seed must be of a professional quality. Please consult a turf specialist.















1068 North University Boulevard
Middletown, Ohio 45042
PH. (513) 424- 5202
FAX (513) 424-6202
E-Mail - apexengineering@sbcglobal.net

Detention Calculations for:

MONROE FIRST CHURCH OF GOD SITE DEVELOPMENT

100 Easton Manor Drive, Monroe, OH 45050

Date: September 16, 2024

prepared by:

Apex Engineering & Surveying, Inc.
Joshua Liles, P.E.

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Drainage Overview	page 1-3
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Appendix A – Watershed Drainage Maps
Appendix B – Water Quality Calculations
Appendix C – Modified Rational Calculations
Appendix D – Local Storm Calculations

INTRODUCTION

The proposed addition to the Monroe First Church of God is located at 100 Easton Manor Drive within the City of Lebanon. This proposed site is currently partially developed zoned for residential use. This project consists of a new 11,700 SF church and related parking lot and utilities, along with a proposed redesign of the existing detention/water quality basins for storm runoff.

This report and calculations address all proposed work in this area.

STRATEGY

City of Lebanon technical design standards for drainage design were used when designing the storm water management system for this site. Section 8 lists the general design criteria and methods for stormwater requirements. As noted in this section, the Modified Rational method shall be used for purposes of sizing stormwater management systems/detention basins, and the detention of stormwater shall be regulated by determining the critical storm for a 1-year 24-hour storm. Storage facilities and control structures shall be designed such that the post development runoff rate is equal to a one-year predevelopment runoff rate up to the critical year storm. The rate of runoff for all storms greater than or equal to the critical storm shall be controlled to limit the peak rate of runoff to the predevelopment peak rate from the same frequency storm.

The calculations and hydraulic modeling were performed using the excel spreadsheets per City of Lebanon standards.

DRAINAGE OVERVIEW

There is an existing detention basin on site in the existing developed condition. This basin catches the western half of the existing site. All of the new development will take place on the half of the site. For calculations the existing conditions was assumed to be a grass field and the proposed condition is all of the existing and proposed impervious area that drains to the redesigned basin.

The runoff coefficients (C) were calculated using Lebanon standards section 8. See hydrograph reports in Appendix C.

The times of concentration (Tc) were assumed to be 30 min for the assumed existing condition.

Per the City of Lebanon design manual, a rainfall depth of 2.33" was used for the 1-yr 24-hour storm.

The stormwater approach will be discussed in depth in each of the following sections of this report.

Pre-Developed Conditions West

This drainage area represents the on-site watershed for the existing condition. See Appendix A “Drainage Map”.

	Area (AC)	Runoff Coeff (C)
Open Space, Fair Condition (grass cover >50%)	2.50	0.40
Total Area	2.50	0.40

Runoff Volume = 8458 CF (See Appendix C Page 3)

Total Pre-Developed Runoff Volume = 8458 CF

Post-Developed Conditions West

This drainage area represents the on-site east watershed for the proposed condition. See Appendix A “Post-Developed Drainage Map”.

	Area (AC)	Curve Number (CN)
Open Space, Fair Condition (grass cover >75%)	0.95	0.35
Impervious Area	1.55	0.95
Total Area	2.50	0.72

Runoff Volume = 15,267 CF (See Appendix C Page 3)

Total Post-Developed Runoff Volume = 15,267 CF

Determination of Critical Year Storm

Volume_{Pre}= 8,458 CF

Volume_{Post}= 15,267 CF

% Increase = $[(V_{\text{post}} - V_{\text{pre}}) / V_{\text{pre}}] * 100 = [(11,765 - 5,430) / 5,430] * 100 = 117\%$

If the percent of increase in runoff volume is		Critical storm for peak rate control will be
equal to or greater than	and less than	
-	10	1 year
10	20	2 year
20	50	5 year
50	100	10 year
100	250	25 year
250	500	50 year
500	-	100 year

<=81%

Water Quality

Post-Construction water quality is being provided in the retention basins as required under Ohio NPDES Construction General Permit No. OHC000005. The water quality calculations per the City of Lebanon and OEPA standards were used to determine the necessary water quality volume and size the outlet orifice.

The design strategy for water quality treatment includes the use of a retention basin and control outlet structure. See Appendix D.

The summarized results are as follows for this watershed:

- Required WQv = 1816 CF
- Design Orifice Diameter =1" sized to achieve the 48-hour minimum draw-down time required by the OEPA)

Calculations for water quality can be found in Appendix B.

RESULTS

A summary of the results is included in this section. Supplementary calculations and details can be found in the appendices.

Determination of Allowable Flow West

Year Storm	Post-Developed Flow (cfs)	Critical Year Allowable Flow (cfs)
10	3.54	1.72
25	6.62	3.97
50	7.35	4.32
100	6.73	4.95

Retention Basin West

The proposed surface retention basin will achieve the volume and release rate requirements. Within the required storage volume, a volume of 1,900 cu-ft is being provided in the basin for water quality purposes. A total volume of 8155 cu-ft is being provided in the basin at the spillway elevation of 821.0. The detention system is proposed to provide a storage volume of 5,970 cu-ft up to elevation 820.40' for the 10-year event, and 7,777 cu-ft at an elevation of 820.90' for the 100-year event. See Appendices B & C.

The outlet structure is a modified ODOT 2-3 Catch Basin. A 1" diameter orifice is proposed to be drilled into an orifice plate on the side of the outlet structure at elevation 818.00' to control the water quality volume, one 8"W x 6"H window on the south side of the outlet structure at elevation 819.15' and a second 24"Wx2"H window on the south side of the outlet structure at elevation 820.40' . The structure grate will be set at elevation 861.50'. The spillway will be 5' wide and set at an elevation of 821.00'. A 12" outlet pipe will convey stormwater to the existing catch basin on the City's property. See Appendices C & D.

CONCLUSIONS

The allowable release rates from the basin are compared to the design release rates from the basin in the table:

Detention Basin

Year Storm	Critical Year Allowable Flow (cfs)	Design Flow from the Basin (cfs)
10	1.72	1.60
25	3.97	3.38
50	4.32	3.78
100	4.95	4.35

Design flows can be found in Appendix C.

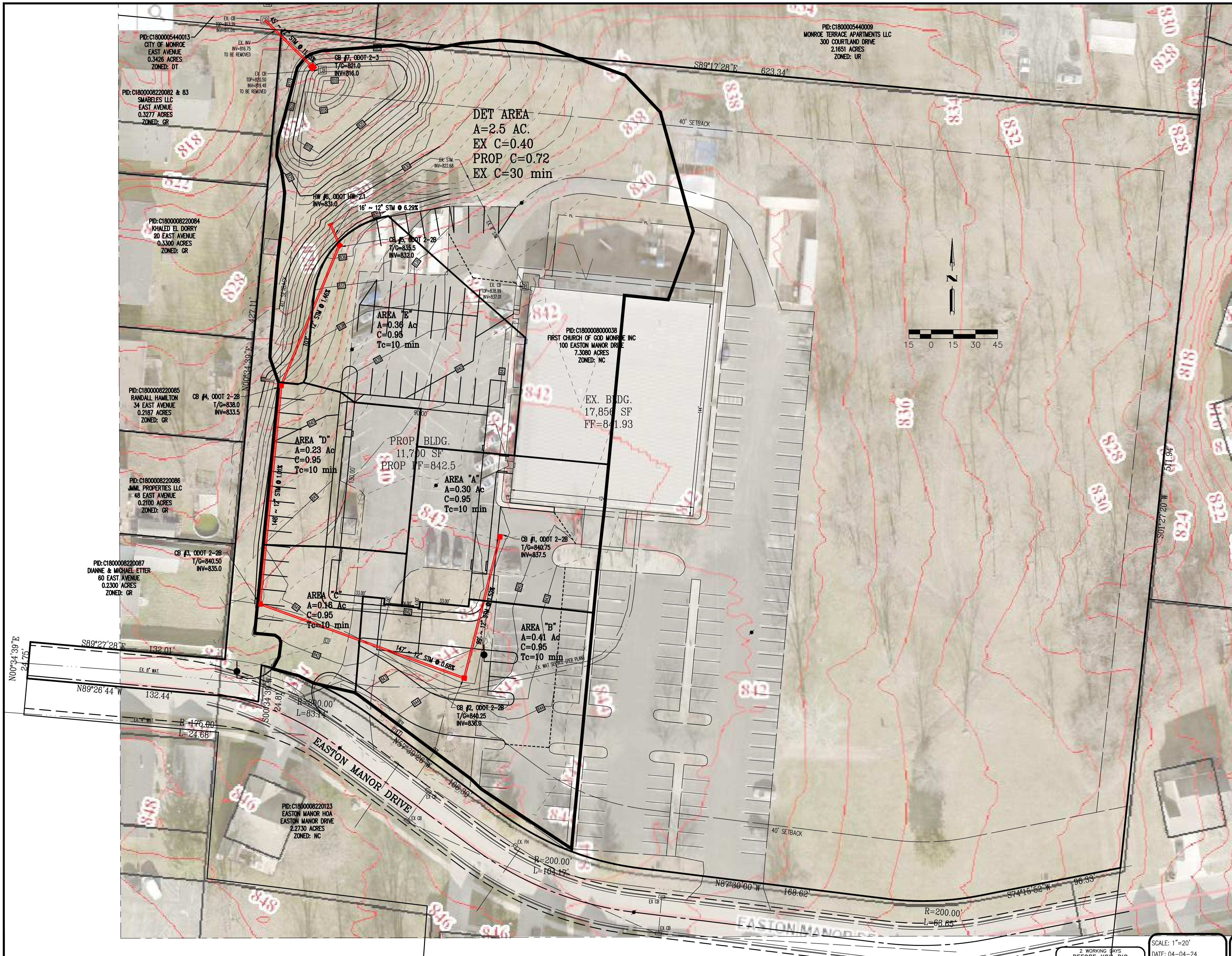
Since the design release rates from the basin are less than the allowable release rates from the basin, this watershed is in compliance with the detention regulations.



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Appendix A

Watershed Drainage Maps



PROPOSED DRAINAGE MAP
FIRST CHURCH OF GOD MONROE
CITY OF MONROE
BUTLER COUNTY, OHIO

2 WORKING DAYS
BEFORE YOU DIG
OHIO811.org
CALL TOLL FREE 800-362-2764
OHIO UTILITIES PROTECTION SERVICE

SCALE: 1"=20'
DATE: 04-04-24
DRAWN: DES
DESIGNED: JLL
CHECKED:

APEX
ENGINEERING & SURVEYING, INC.
1068 N. UNIVERSITY BLVD. MIDDLETOWN, OHIO 45042
PH: (513) 424-5202 OR (513) 932-8991 FAX: (513) 424-6202

REVISIONS:
1.
2.
3.
4.
PROJECT: 240960
DRAWING: 240960BA
SHEET
4 OF 6



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Appendix B

Watershed Quality Calculations

**AS-BUILT DETENTION VOLUME CALCULATION
MONROE 1ST CHURCH OF GOD
PROJECT: 240960**

Calculate Water Quality Volume

$$WQv = T(P \cdot A \cdot Cq) / 12$$

Drainage area, A =			2.50	acres
			x	
Runoff coefficient, Rv =	0.05 + 0.9i		0.44	
	i = % imperv area (1.6/2.5)	=	0.64	
			x	
Precipitaion, P =			0.75	
Treatment Percent, T =			0.40	
	T = ((Aix * 20) + (Ain * 100)) / (Aix + Ain)			
	Aix = 1.2	Ain = 0.4		
			=	

Water Quality Volume,

WQv=

1816 c.f.

Water Quality Specifications

	Type of Pond: DETENTION	Specify Retention or Detention
Required Drawdown Time, hrs.:	48	
Water Quality Volume:	1,816 C.F.	An additional 20% of WQv must be added to the basin for sediment storage.
48 hr. Drawdown Volume:	1,816 C.F.	
Normal Water Elevation:	818.00	
Surface Area at Normal Water Elevation:	606 S.F.	
Water Quality Elevation:	819.07	
Surface Area at Water Quality Elevation:	2,644 S.F.	
Volume at Water Quality Elevation:	1,816 C.F.	
Allowable Water Quality Discharge Rate:	0.01 C.F.S.	
Diameter of Water Quality Orifice:	1 inches at ELEV. 818.00	



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Appendix C

Modified Rational Calculations

STORMWATER CALCULATIONS
MONROE 1ST CHURCH OF GOD
CITY OF MONROE

13-Jun-24

**CRITICAL STORM CALCULATION
MONROE 1ST CHURCH OF GOD
PROJECT: 240960**

Calculate existing 1-yr runoff	Runoff = (A*43560)*C*(R/12)	
Drainage area, A =		2.50 acres
		x
Runoff coefficient, C =	2.5 AC OPEN SPACE (0.40)	0.40
		x
1-yr, 24-hr event rainfall, R =		2.33
		=
The existing 1-yr runoff is		8458 c.f.

Calculate proposed 1-yr runoff	Runoff = (A*43560)*C*(R/12)	
Drainage area, A =		2.50 acres
		x
Runoff coefficient, C =	0.95 Ac. GRASS (0.35)	0.72
	1.55 Ac. IMPERVIOUS (0.95)	
		x
1-yr, 24-hr event rainfall, R =		2.33
		=
The proposed 1-yr runoff is		15267 c.f.

Calculate Critical Year Storm	Critical Stm= (Prop 1yr - Ex 1yr)/Ex 1yr * 100
	Critical Stm= 81 %
	Critical Stm= 10 yr

**ORIFICE SIZING CALCULATION
MONROE 1ST CHURCH OF GOD
PROJECT: 240960**

Total Detention Volume Provided:

Total Provided: 8,155 c.f.
Volume Required: 5,660 c.f.
Excess Volume: 2,495 c.f.

WATER QUALITY ORIFICE

High water elevation = 819.15
Lower Orifice Inv. = 818.00
Maximum Depth = 1.15

$$Q = c \times a \times \sqrt{2gh}$$

c = 0.61 h = depth - 1/2D
depth = h + 1/2D

Diam (in)	Diam (ft)	area	h	velocity	q
1	0.0833	0.00545	1.1083	5.1536	0.03

<= @ water quality volume

SIZE CRITICAL (10-YR) OUTFLOW ORIFICE

Allowable Outflow = 1.72 cfs

High water elevation = 820.40
Lower Orifice Inv. = 819.15
Maximum Depth = 1.25

$Q = AV$ $V = c \sqrt{2gh}$ c = 0.6

$h = \text{HWE} - \text{Inv. Out} - d/2$

WIDOW	h (ft)	V (ft/s)	A (s.f.)	Q (cfs)
8"Wx6"T	1.00	4.81	0.33	1.60

<= Use 8" wide X 6" high window
bottom elev=819.0

TOTAL PROPOSED 10-YR FLOW = 1.63 CFS => LESS THAN ALLOWABLE

OVERFLOW STRUCTURE CHECK:

$Q_{100} = 3.73$

$L = Q_{100} / (C_w H^{3/2})$ $C_w = 2.7$
= 3.91 H = 0.5

L = 5' WIDE

**DETENTION VOLUME CALCULATION
MONROE 1ST CHURCH OF GOD
PROJECT: 240960**

	Elevation	Area (s.f.)	Volume (c.f.)	Volume (c.f.)
BOTTOM	818	606		0
			1600.5	
	819	2595	2929	1601
	820	3263	3625	4530
SPILLWAY	821	3987	4377.5	8155
TOP	822	4768		12532

STORM	Volume (CF)	WQV	Total Vol	H.W.E
10-YR	4154	1816	5970	820.40
25-YR	5476	1816	7292	820.76
50-YR	5678	1816	7494	820.82
100-YR	5961	1816	7777	820.90

**10-YR RUNOFF CALCULATION
MONROE 1ST CHURCH OF GOD
PROJECT: 240960**

Calculate 1-yr existing flow

$$q_o = ACi$$

Drainage area, A =

2.50 acres

x

Runoff coefficient, C =

0.40

x

Calculate intensity, i

$$i = a / (b + t_c)^d$$

$$a = 55.977$$

$$b = 15.4$$

$$d = 0.912$$

$$t_c = \mathbf{30} \text{ min.}$$

$$i = 55.977 / (15.4 + 30)^{0.912}$$

$$i =$$

1.72

=

The existing 1-yr runoff rate is, q_o

1.72 c.f.s.

The allowable release rate, q_o , is

1.72 c.f.s.

Calculate the 10-yr proposed flow

$$Q_o = ACI_{\max}$$

Drainage area, A =

2.50 acres

Runoff coefficient, C =

0.72

Calculate maximum time of concentration, $T_{C\max}$

$$a = 112.172$$

$$b = 16.8$$

$$T_{C\max} = \sqrt{\frac{A \times C \times a \times b}{\frac{2 \times q_o}{3} - \frac{q_o^2 \times t_c}{6 \times C \times A \times a}}} - b$$

$$T_{C\max} = \sqrt{\frac{2.5 \times 0.722 \times 112.2 \times 16.80}{\frac{2 \times 1.72}{3} - \frac{1.72^2 \times 30.0}{6 \times 0.722 \times 2.5 \times 112.2}}} - 16.8$$

$$T_{C\max} = \mathbf{39.41} \text{ min.}$$

**10-YR RUNOFF CALCULATION
MONROE 1ST CHURCH OF GOD
PROJECT: 240960**

Calculate maximum intensity, $I_{\max}$

$$I_{\max} = \frac{a}{(b + T_{\max})^d}$$

$$a = 112.172$$

$$b = 16.8$$

$$d = 1.004$$

$$T_{\max} = 39.41$$

$$I_{\max} = \frac{112.17}{(16.8 + 39.41)^{1.004}}$$

$$A = 2.5 \text{ acres}$$

$$C = 0.722$$

$$I_{\max} = 1.96$$

$$=$$

$$=$$

The flow at maximum duration, Q_o is

$$\boxed{3.54} \text{ c.f.s.}$$

CALCULATE STORAGE VOLUME NEEDED

$$t_c = 30.0 \text{ min.}$$

$$\text{Vol} = 60 \times Q_o \times T_{\max} - \frac{2 \times q_o \times (T_{\max} + t_c) \times 60}{3} + \frac{q_o^2 \times t_c \times 60}{6 \times Q_o}$$

$$\text{Vol} = 60 \times 3.54 \times 39.41 - 2 \times 1.72 \times \left(\frac{39.41 + 30.0}{3} \right) \times 60$$

$$+ \frac{1.72^2 \times 30.0 \times 60}{6 \times 3.54}$$

$$\text{Vol} = \boxed{3,844} \text{ c.f.}$$

**25-YR RUNOFF CALCULATION
MONROE 1ST CHURCH OF GOD
PROJECT: 240960**

Calculate 25-yr existing flow

$$q_o = ACi$$

Drainage area, A =

2.50 acres

Runoff coefficient, C =

0.40

Calculate intensity, i

$$i = a / (b + t_c)^d$$

$$a = 198.920$$

$$b = 19.3$$

$$d = 1.004$$

$$t_c = \mathbf{30} \text{ min.}$$

$$i = 198.920 / (19.3 + 30)^{1.004}$$

$$i =$$

3.97

=

The existing 25-yr runoff rate is, q_o

3.97 c.f.s.

The allowable release rate, q_o , is

3.97 c.f.s.

Calculate the 25-yr proposed flow

$$Q_o = ACI_{\max}$$

Drainage area, A =

2.50 acres

Runoff coefficient, C =

0.72

Calculate maximum time of concentration, $T_{C\max}$

$$a = 198.92$$

$$b = 19.3$$

$$T_{C\max} = \sqrt{\frac{A \times C \times a \times b}{\frac{2 \times q_o}{3} - \frac{q_o^2 \times t_c}{6 \times C \times A \times a}}} - b$$

$$T_{C\max} = \sqrt{\frac{2.5 \times 0.722 \times 198.9 \times 19.30}{2 \times \frac{3.97}{3} - \frac{3.97^2 \times 30.0}{6 \times 0.722 \times 2.5 \times 198.9}}} - 19.3$$

$$T_{C\max} = \mathbf{34.12} \text{ min.}$$

**25-YR RUNOFF CALCULATION
MONROE 1ST CHURCH OF GOD
PROJECT: 240960**

Calculate maximum intensity, $I_{\max}$

$$I_{\max} = \frac{a}{(b + T_{\max})^d}$$

$$a = 198.920$$

$$b = 19.3$$

$$d = 1.004$$

$$T_{\max} = 34.12$$

$$I_{\max} = \frac{198.92}{(19.3 + 34.12)^{1.004}}$$

$$A = 2.5 \text{ acres}$$

$$C = 0.722$$

$$I_{\max} = 3.67$$

$$=$$

$$=$$

The flow at maximum duration, Q_o is

$$\boxed{6.62} \text{ c.f.s.}$$

CALCULATE STORAGE VOLUME NEEDED

$$t_c = 30.0 \text{ min.}$$

$$\text{Vol} = 60 \times Q_o \times T_{\max} - \frac{2 \times q_o \times (T_{\max} + t_c) \times 60}{3} + \frac{q_o^2 \times t_c \times 60}{6 \times Q_o}$$

$$\text{Vol} = 60 \times 6.62 \times 34.12 - 2 \times 3.97 \times \left(\frac{34.12 + 30.0}{3} \right) \times 60$$

$$+ \frac{3.97^2 \times 30.0 \times 60}{6 \times 6.62}$$

$$\text{Vol} = \boxed{4,070} \text{ c.f.}$$

**50-YR RUNOFF CALCULATION
MONROE 1ST CHURCH OF GOD
PROJECT: 240960**

Calculate 50-yr existing flow

$$q_o = ACi$$

Drainage area, A =

2.50 acres

Runoff coefficient, C =

0.40

Calculate intensity, i

$$i = a / (b + t_c)^d$$

$$a = 206.025$$

$$b = 19.6$$

$$d = 0.99$$

$$t_c = 30 \text{ min.}$$

$$i = 206.025 / (19.6 + 30)^{0.99}$$

$$i =$$

4.32

=

The existing 50-yr runoff rate is, q_o

4.32 c.f.s.

The allowable release rate, q_o , is

4.32 c.f.s.

Calculate the 50-yr proposed flow

$$Q_o = ACI_{\max}$$

Drainage area, A =

2.50 acres

Runoff coefficient, C =

0.72

Calculate maximum time of concentration, $T_{C\max}$

$$a = 206.025$$

$$b = 19.6$$

$$T_{C\max} = \sqrt{\frac{A \times C \times a \times b}{\frac{2 \times q_o}{3} - \frac{q_o^2 \times t_c}{6 \times C \times A \times a}}} - b$$

$$T_{C\max} = \sqrt{\frac{2.5 \times 0.722 \times 206 \times 19.60}{2 \times \frac{4.32}{3} - \frac{4.32^2 \times 30.0}{6 \times 0.722 \times 2.5 \times 206}}} - 19.6$$

$$T_{C\max} = 33.06 \text{ min.}$$

**50-YR RUNOFF CALCULATION
MONROE 1ST CHURCH OF GOD
PROJECT: 240960**

Calculate maximum intensity, $I_{\max}$

$$I_{\max} = \frac{a}{(b + T_{\max})^d}$$

$$a = 206.025$$

$$b = 19.6$$

$$d = 0.99$$

$$T_{\max} = 33.06$$

$$I_{\max} = \frac{206.03}{(19.6 + 33.06)^{0.99}}$$

$$A = 2.5 \text{ acres}$$

$$\times$$

$$C = 0.722$$

$$\times$$

$$I_{\max} = 4.07$$

$$=$$

The flow at maximum duration, Q_o is

$$\boxed{7.35} \text{ c.f.s.}$$

CALCULATE STORAGE VOLUME NEEDED

$$t_c = 30.0 \text{ min.}$$

$$\text{Vol} = 60 \times Q_o \times T_{\max} - \frac{2 \times q_o \times (T_{\max} + t_c) \times 60}{3} + \frac{q_o^2 \times t_c \times 60}{6 \times Q_o}$$

$$\text{Vol} = 60 \times 7.35 \times 33.06 - 2 \times 4.32 \times \left(\frac{33.06 + 30.0}{3} \right) \times 60$$

$$+ \frac{4.32^2 \times 30.0 \times 60}{6 \times 7.35}$$

$$\text{Vol} = \boxed{4,441} \text{ c.f.}$$

**100-YR RUNOFF CALCULATION
MONROE 1ST CHURCH OF GOD
PROJECT: 240960**

Calculate 100-yr existing flow

$$q_o = ACi$$

Drainage area, A =

2.50 acres

x

Runoff coefficient, C =

0.40

x

Calculate intensity, i

$$i = a / (b + t_c)^d$$

$$a = 355.551$$

$$b = 23.119$$

$$d = 1.076$$

$$t_c = 30 \text{ min.}$$

$$i = 355.551 / (23.1 + 30)^{1.076}$$

$$i =$$

4.95

=

The existing 100-yr runoff rate is, q_o

4.95 c.f.s.

The allowable release rate, q_o , is

4.95 c.f.s.

Calculate the 100-yr proposed flow

$$Q_o = ACI_{\max}$$

Drainage area, A =

2.50 acres

Runoff coefficient, C =

0.72

Calculate maximum time of concentration, $T_{C\max}$

$$a = 355.551$$

$$b = 23.119$$

$$T_{C\max} = \sqrt{\frac{A \times C \times a \times b}{\frac{2 \times q_o}{3} - \frac{q_o^2 \times t_c}{6 \times C \times A \times a}}} - b$$

$$T_{C\max} = \sqrt{\frac{2.5 \times 0.722 \times 355.6 \times 23.12}{2 \times \frac{4.95}{3} - \frac{4.95^2 \times 30.0}{6 \times 0.722 \times 2.5 \times 355.6}}} - 23.1$$

$$T_{C\max} = 45.97 \text{ min.}$$

**100-YR RUNOFF CALCULATION
MONROE 1ST CHURCH OF GOD
PROJECT: 240960**

Calculate maximum intensity, $I_{\max}$

$$I_{\max} = \frac{a}{(b + T_{\max})^d}$$

$$a = 355.551$$

$$b = 23.119$$

$$d = 1.076$$

$$T_{\max} = 45.97$$

$$I_{\max} = \frac{355.55}{(23.1 + 45.97)^{1.076}}$$

$$A = 2.5 \text{ acres}$$

$$C = 0.722$$

$$I_{\max} = 3.73$$

$$=$$

$$=$$

The flow at maximum duration, Q_o is

$$\boxed{6.73} \text{ c.f.s.}$$

CALCULATE STORAGE VOLUME NEEDED

$$t_c = 30.0 \text{ min.}$$

$$\text{Vol} = 60 \times Q_o \times T_{\max} - \frac{2 \times q_o \times (T_{\max} + t_c) \times 60}{3} + \frac{q_o^2 \times t_c \times 60}{6 \times Q_o}$$

$$\text{Vol} = 60 \times 6.73 \times 45.97 - 2 \times 4.95 \times \left(\frac{45.97 + 30.0}{3} \right) \times 60$$

$$+ \frac{4.95^2 \times 30.0 \times 60}{6 \times 6.73}$$

$$\text{Vol} = \boxed{4,622} \text{ c.f.}$$

**HIGH WATER ELEVATION CALCULATIONS
MONROE 1ST CHURCH OF GOD
PROJECT: 240960**

25-YR H.W.E.

Allowable Outflow = 3.97 cfs

High water elevation = 820.76
Lower Orifice Inv. = **819.15**
Maximum Depth = 1.61

$$Q = AV$$

c= 0.6

$$V = c \sqrt{2gh}$$

h= HWE- Inv out -d/2

<u>WIDOW</u>	<u>h (ft)</u>	<u>V (ft/s)</u>	<u>A (s.f.)</u>	<u>Q (cfs)</u>	
8"Wx6"T	1.36	5.62	0.33	1.87	<= @ HWE

<u>WIDOW</u>	<u>h (ft)</u>	<u>V (ft/s)</u>	<u>A (s.f.)</u>	<u>Q (cfs)</u>	
24"Wx7.2"H	0.18	2.05	0.72	1.48	High water elevation = 820.76 Lower Orifice Inv. = 820.40 Maximum Depth = 0.36

TOTAL PROPOSED 25-YR FLOW= 3.36 **CFS** =>LESS THAN ALLOWABLE

50-YR H.W.E.

Allowable Outflow = 4.32 cfs

High water elevation = 820.82
Lower Orifice Inv. = **819.15**
Maximum Depth = 1.67

$$Q = AV$$

c= 0.6

$$V = c \sqrt{2gh}$$

h= HWE- Inv out -d/2

<u>WIDOW</u>	<u>h (ft)</u>	<u>V (ft/s)</u>	<u>A (s.f.)</u>	<u>Q (cfs)</u>	
8"Wx6"T	1.42	5.74	0.33	1.91	<= @ HWE

<u>WIDOW</u>	<u>h (ft)</u>	<u>V (ft/s)</u>	<u>A (s.f.)</u>	<u>Q (cfs)</u>	
24"Wx7.2"H	0.21	2.21	0.84	1.87	High water elevation = 820.82 Lower Orifice Inv. = 820.40 Maximum Depth = 0.42

**HIGH WATER ELEVATION CALCULATIONS
MONROE 1ST CHURCH OF GOD
PROJECT: 240960**

TOTAL PROPOSED 50-YR FLOW= 3.78 **CFS** =>LESS THAN ALLOWABLE

100-YR H.W.E.

Allwable Outflow = 4.95 cfs

High water elevation = 820.90
Lower Orifice Inv. = **819.15**
Maximum Depth = 1.75

$$Q = AV \quad V = c \sqrt{2gh}$$

c= 0.6 h= HWE- Inv out -d/2

<u>WIDOW</u>	<u>h (ft)</u>	<u>V (ft/s)</u>	<u>A (s.f.)</u>	<u>Q (cfs)</u>	
8"Wx6"T	1.50	5.89	0.33	1.96	<= @ HWE

<u>WIDOW</u>	<u>h (ft)</u>	<u>V (ft/s)</u>	<u>A (s.f.)</u>	<u>Q (cfs)</u>	
24"Wx7.2"H	0.25	2.40	0.99	2.39	High water elevation = 820.90 Lower Orifice Inv. = <u>820.40</u> Maximum Depth = 0.50

TOTAL PROPOSED 100-YR FLOW= 4.35 **CFS** =>LESS THAN ALLOWABLE

**10-YR-VOLUME @ H.W.E. CALCULATION
MONROE 1ST CHURCH OF GOD
PROJECT: 240960**

Calculate 10-yr H.W.E.

Outflow from CB#1 @ H.W.E.= **1.60** CFS

EX t_c = **30** min.

Calculate the 10-yr proposed flow $Q_o = ACI_{max}$

Drainage area, A = **2.50** acres

Runoff coefficient, C = **0.72**

Calculate maximum time of concentration, T_{Cmax}

$$a = 112.172$$

$$b = 16.8$$

$$T_{Cmax} = \sqrt{\frac{A \times C \times a \times b}{\frac{2 \times q_o}{3} - \frac{q_o^2 \times t_c}{6 \times C \times A \times a}}} - b$$

$$T_{Cmax} = \sqrt{\frac{2.5 \times 0.722 \times 112.2 \times 16.80}{\frac{2 \times 1.60}{3} - \frac{1.60^2 \times 30.0}{6 \times 0.722 \times 2.5 \times 112.2}}} - 16.8$$

$$T_{Cmax} = \mathbf{41.41} \text{ min.}$$

**10-YR-VOLUME @ H.W.E. CALCULATION
MONROE 1ST CHURCH OF GOD
PROJECT: 240960**

Calculate maximum intensity, $I_{\max}$

$$I_{\max} = \frac{a}{(b + T_{\max})^d}$$

$$a = 112.172$$

$$b = 16.8$$

$$d = 1.004$$

$$T_{\max} = 41.41$$

$$I_{\max} = \frac{112.17}{(16.8 + 41.41)^{1.004}}$$

$$A = 2.5 \text{ acres}$$

$$C = 0.722$$

$$I_{\max} = 1.90$$

$$= 3.42 \text{ c.f.s.}$$

The flow at maximum duration, Q_o is

CALCULATE STORAGE VOLUME NEEDED

$$t_c = 30.0 \text{ min.}$$

$$\text{Vol} = 60 \times Q_o \times T_{\max} - \frac{2 \times q_o \times (T_{\max} + t_c) \times 60}{3} + \frac{q_o^2 \times t_c \times 60}{6 \times Q_o}$$

$$\text{Vol} = 60 \times 3.42 \times 41.41 - 2 \times 1.60 \times \left(\frac{41.41 + 30.0}{3} \right) \times 60$$

$$+ \frac{1.60^2 \times 30.0 \times 60}{6 \times 3.42}$$

$$\text{Vol} = 4,154 \text{ c.f.}$$

25-YR-VOLUME @ H.W.E. CALCULATION
MONROE 1ST CHURCH OF GOD
PROJECT: 240960

Calculate 25-yr H.W.E.

Outflow from CB#1 @ H.W.E.= **3.36** CFS

EX t_c = **30** min.

Calculate the 25-yr proposed flow $Q_o = ACI_{max}$

Drainage area, A = **2.50** acres

Runoff coefficient, C = **0.72**

Calculate maximum time of concentration, T_{Cmax}

$$a = 198.920$$

$$b = 19.3$$

$$T_{Cmax} = \sqrt{\frac{A \times C \times a \times b}{\frac{2 \times q_o}{3} - \frac{q_o^2 \times t_c}{6 \times C \times A \times a}}} - b$$

$$T_{Cmax} = \sqrt{\frac{2.5 \times 0.722 \times 198.9 \times 19.30}{\frac{2 \times 3.36}{3} - \frac{3.36^2 \times 30.0}{6 \times 0.722 \times 2.5 \times 198.9}}} - 19.3$$

$$T_{Cmax} = \mathbf{38.41} \text{ min.}$$

**25-YR-VOLUME @ H.W.E. CALCULATION
MONROE 1ST CHURCH OF GOD
PROJECT: 240960**

Calculate maximum intensity, $I_{\max}$

$$I_{\max} = \frac{a}{(b + T_{\max})^d}$$

$$a = 198.920$$

$$b = 19.3$$

$$d = 1.004$$

$$T_{\max} = 38.41$$

$$I_{\max} = \frac{198.92}{(19.3 + 38.41)^{1.004}}$$

$$A = 2.5 \text{ acres}$$

$$C = 0.722$$

$$I_{\max} = 3.39$$

$$= \boxed{6.12} \text{ c.f.s.}$$

The flow at maximum duration, Q_o is

CALCULATE STORAGE VOLUME NEEDED

$$t_c = 30.0 \text{ min.}$$

$$\text{Vol} = 60 \times Q_o \times T_{\max} - \frac{2 \times q_o \times (T_{\max} + t_c) \times 60}{3} + \frac{q_o^2 \times t_c \times 60}{6 \times Q_o}$$

$$\text{Vol} = 60 \times 6.12 \times 38.41 - 2 \times 3.36 \times \left(\frac{38.41 + 30.0}{3} \right) \times 60$$

$$+ \frac{3.36^2 \times 30.0 \times 60}{6 \times 6.12}$$

$$\text{Vol} = \boxed{5,476} \text{ c.f.}$$

**50-YR-VOLUME @ H.W.E. CALCULATION
MONROE 1ST CHURCH OF GOD
PROJECT: 240960**

Calculate 50-yr H.W.E.

Outflow from CB#1 @ H.W.E. = **3.78 CFS**

EX t_c = **30** min.

Calculate the 50-yr proposed flow $Q_o = ACI_{max}$

Drainage area, A = **2.50** acres

Runoff coefficient, C = **0.72**

Calculate maximum time of concentration, T_{Cmax}

a = 206.030

b = 19.6

$$T_{Cmax} = \sqrt{\frac{A \times C \times a \times b}{\frac{2 \times q_o}{3} - \frac{q_o^2 \times t_c}{6 \times C \times A \times a}}} - b$$

$$T_{Cmax} = \sqrt{\frac{2.5 \times 0.722 \times 206 \times 19.60}{\frac{2 \times 3.78}{3} - \frac{3.78^2 \times 30.0}{6 \times 0.722 \times 2.5 \times 206}}} - 19.6$$

T_{Cmax} = **36.35** min.

**50-YR-VOLUME @ H.W.E. CALCULATION
MONROE 1ST CHURCH OF GOD
PROJECT: 240960**

Calculate maximum intensity, $I_{\max}$

$$I_{\max} = \frac{a}{(b + T_{\max})^d}$$

$$a = 206.030$$

$$b = 19.6$$

$$d = 0.99$$

$$T_{\max} = 36.35$$

$$I_{\max} = \frac{206.03}{(19.6 + 36.35)^{0.99}}$$

$$A = 2.5 \text{ acres}$$

$$\times$$

$$C = 0.722$$

$$\times$$

$$I_{\max} = 3.83$$

$$=$$

The flow at maximum duration, Q_o is

$$\boxed{6.92} \text{ c.f.s.}$$

CALCULATE STORAGE VOLUME NEEDED

$$t_c = 30.0 \text{ min.}$$

$$\text{Vol} = 60 \times Q_o \times T_{\max} - \frac{2 \times q_o \times (T_{\max} + t_c) \times 60}{3} + \frac{q_o^2 \times t_c \times 60}{6 \times Q_o}$$

$$\text{Vol} = 60 \times 6.92 \times 36.35 - 2 \times 3.78 \times \left(\frac{36.35 + 30.0}{3} \right) \times 60$$

$$+ \frac{3.78^2 \times 30.0 \times 60}{6 \times 6.92}$$

$$\text{Vol} = \boxed{5,678} \text{ c.f.}$$

**100-YR-VOLUME @ H.W.E. CALCULATION
MONROE 1ST CHURCH OF GOD
PROJECT: 240960**

Calculate 100-yr H.W.E.

Outflow from CB#1 @ H.W.E.= **4.35 CFS**

EX t_c = **30** min.

Calculate the 100-yr proposed flow $Q_o = ACI_{max}$

Drainage area, A = **2.50** acres

Runoff coefficient, C = **0.72**

Calculate maximum time of concentration, T_{Cmax}

$$a = 355.550$$

$$b = 23.119$$

$$T_{Cmax} = \sqrt{\frac{A \times C \times a \times b}{\frac{2 \times q_o}{3} - \frac{q_o^2 \times t_c}{6 \times C \times A \times a}}} - b$$

$$T_{Cmax} = \sqrt{\frac{2.5 \times 0.722 \times 355.6 \times 23.12}{\frac{2 \times 4.35}{3} - \frac{4.35^2 \times 30.0}{6 \times 0.722 \times 2.5 \times 355.6}}} - 23.1$$

$$T_{Cmax} = \mathbf{50.30 \text{ min.}}$$

**100-YR-VOLUME @ H.W.E. CALCULATION
MONROE 1ST CHURCH OF GOD
PROJECT: 240960**

Calculate maximum intensity, $I_{\max}$

$$I_{\max} = \frac{a}{(b + T_{\max})^d}$$

$$a = 355.550$$

$$b = 23.119$$

$$d = 1.076$$

$$T_{\max} = 50.30$$

$$I_{\max} = \frac{355.55}{(23.1 + 50.30)^{1.076}}$$

$$A = 2.5 \text{ acres}$$

$$\times$$

$$C = 0.722$$

$$\times$$

$$I_{\max} = 3.49$$

$$=$$

The flow at maximum duration, Q_o is

$$\boxed{6.31} \text{ c.f.s.}$$

CALCULATE STORAGE VOLUME NEEDED

$$t_c = 30.0 \text{ min.}$$

$$\text{Vol} = 60 \times Q_o \times T_{\max} - \frac{2 \times q_o \times (T_{\max} + t_c) \times 60}{3} + \frac{q_o^2 \times t_c \times 60}{6 \times Q_o}$$

$$\text{Vol} = 60 \times 6.31 \times 50.30 - 2 \times 4.35 \times \left(\frac{50.30 + 30.0}{3} \right) \times 60$$

$$+ \frac{4.35^2 \times 30.0 \times 60}{6 \times 6.31}$$

$$\text{Vol} = \boxed{5,961} \text{ c.f.}$$



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Middletown, Ohio 45042
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Appendix D

Local Storm Calculations

Date: 9/17/2024
Designed: JLL
Reviewed:

MONROE FIRST CHURCH OF GOD
JOB #240960
Storm Sewer Computation Sheet

Intensity = $112.1752(T_c+16.8)^{0.923}$
10-YR

LOCATION		AREA					TIME					DESIGN					PROFILE			
INLET or MH #	AREA REF #	INCR ACRES	TOTAL ACRES	C	INCR C*A	SUM OF C*A	TO INLET Ti (min.)	IN PIPE Tp (min.)	TOTAL Tc (min.)	INTENSITY I (in/hr)	Q REQ'D (cfs)	PIPE SIZE (inches)	n VALUE	SLOPE IN %	VEL (ft/sec)	Q PROVIDED	PIPE LENGTH	INV OUT	INV IN	T/C
CB #1	A	0.31	0.31	0.95	0.29	0.29	33.00	0.30	33.00	3.04	0.90	12	0.013	1.52	5.57	4.38	99	837.50	836.00	840.75
CB #2	B	0.41	0.72	0.95	0.39	0.68	10.00	0.66	33.30	3.03	2.07	12	0.013	0.68	3.73	2.93	147	836.00	835.00	840.25
CB #3	C	0.16	0.88	0.95	0.15	0.84	5.00	0.54	33.95	2.99	2.50	12	0.013	1.01	4.56	3.58	148	835.00	833.50	840.50
CB #4	D	0.23	1.11	0.95	0.22	1.05	5.00	0.31	34.49	2.96	3.12	12	0.013	1.46	5.46	4.29	103	833.50	832.00	838.00
CB #5	E	0.36	1.47	0.95	0.34	1.40	5.00	0.02	34.81	2.94	4.11	12	0.013	6.25	11.32	8.89	16	832.00	831.00	835.50
HW #6			1.47			1.40			34.83											



Mirada Small Silicone (XWS SIL)

Outdoor Wall Sconce



OVERVIEW

Lumen Package (lm)	1,000 - 8,000
Wattage Range (W)	10 - 61
Efficacy Range (LPW)	126 - 162
Weight lbs (kg)	10 (4.5)
Control Options	IMSBT, ALB, ALS, PCI

QUICK LINKS

[Ordering Guide](#)[Performance](#)[Photometrics](#)[Dimensions](#)

FEATURES & SPECIFICATIONS

Construction

- Rugged die-cast aluminum housing.
- Fixtures are finished with LSI's DuraGrip® polyester powder coat finishing process. The DuraGrip finish withstands extreme weather changes without cracking or peeling. Other standard LSI finishes available. Consult factory.
- Extended housing available with 1/2" threaded hubs for surface conduit and rated wire.
- Standard luminaire shipping weight: TBD lbs in carton.
- Max luminaire shipping weight: 12 lbs in carton (20 lbs w/EH option)

Optical System

- State-of-the-Art one piece silicone optic provides industry leading optical control while also acting as an integrated gasket reducing system complexity and improving fixture reliability.
- Proprietary silicone refractor optics provide exceptional coverage and uniformity in distribution types 2, 3, and FT.
- Silicone optical material does not yellow or crack with age and provides a typical light transmittance of 93%.
- Zero uplight.
- Available in 5000K, 4000K, and 3000K color temperatures per ANSI C78.377. Also available in Phosphor Converted Amber with peak intensity at 610nm.
- Minimum CRI of 70

Electrical

- High-performance programmable driver features over-voltage, under-voltage, short circuit and over temperature protection. Custom lumen and wattage packages available.
- 0-10V dimming (10% - 100%) standard.

- Standard Universal Voltage (120-277 VAC) Input 50/60 Hz or optional High Voltage (347-480 VAC).
- L80 Calculated Life: >100k Hours
- Total harmonic distortion (THD): <20%
- 3L to 12L operating temperature: -40°C to +50°C (-40°F to +122°F)
- 15L operating temperature: -40°C to +45°C (-40°F to +113°F).
- 18L operating temperature: -40°C to +40°C (-40°F to +104°F).
- 21L operating temperature: -40°C to +35°C (-40°F to + 95°F).
- Power factor (PF): >.90
- Input power stays constant over life.
- Optional 10kV surge protection device meets a minimum Category C Low operation (per ANSI/IEEE C62.41.2).
- High-efficacy LEDs mounted to metal-core circuit board to maximize heat dissipation
- Components are fully encased in potting material for moisture resistance. Driver complies with FCC standards. Driver and key electronic components can easily be accessed via hinged door.
- Optional integral emergency battery pack provides 90-minutes of constant power to the LED system, ensuring code compliance. A test switch/indicator button is installed on the housing for ease of maintenance. The fixture delivers 1500 lumens during emergency mode.

Controls

- Integral passive infrared Bluetooth™ motion sensor options. Fixtures operate independently and can be commissioned via an iOS or Android configuration app. Updates and modifications to the control strategy are easily implemented via an intuitive app.
- LSI's AirLink™ Blue lighting control system is a simple feature rich wireless Bluetooth

mesh network. The integrated fixture sensor module provides wireless control of grouped fixtures based on motion sensors, daylight or a fully customizable schedule.

Installation

- Universal wall mounting plate easily mounts directly to 4" octagonal or square junction box.
- 2 fasteners secure the hinged door underneath the housing and provide quick & easy access to the electrical compartment for installing/servicing.
- Optional terminal block accepts up to 12 ga wire.

Warranty

- LSI luminaires carry a 5-year limited warranty. Refer to <https://www.lsicorp.com/resources/terms-conditions-warranty/> for more information.

Listings

- Listed to UL 1598 and UL 8750.
- Meets Buy American Act requirements.
- IDA compliant; with 3000K color temperature selection.
- Title 24 Compliant; see local ordinance for qualification information.
- Suitable for wet locations.
- IP65 rated luminaire per IEC 60598-1.
- 3G rated for ANSI C136.31 high vibration applications when pole mounted (using optional XPMa bracket) or wall mounted.
- IK08 rated luminaire per IEC 66262 mechanical impact code.
- DesignLights Consortium® (DLC) Premium qualified product. Not all versions of this product may be DLC Premium qualified. Please check the DLC Qualified Products List at www.designlights.org/QPL to confirm which versions are qualified.

Mirada Small Silicone (XWS SIL)

Type : _____

Have questions? Call us at (800) 436-7800

ORDERING GUIDE

[Back to Quick Links](#)

TYPICAL ORDER EXAMPLE: XWS LED 6L SIL FT UNV DIM 40 70CRI ALBCS1 BLK CWBB						
Prefix	Light Source	Lumen Package	Lens	Distribution	Voltage	Driver
XWS - Mirada Small Wall Sconce	LED	1L - 1,000 (10w) UNV Only 2L - 2,000 (15w) 3L - 3,000 (26w) 5L - 5,000 (39w) 6L - 6,000 (52w) 8L - 8,000 (63w) Custom Lumen Packages ¹	SIL - Silicone	2 - Type 2 3 - Type 3 FT - Forward Throw	UNV - Universal Voltage (120-277V) HV - High Voltage (347-480V)	DIM - 0-10v Dimming (0-10%)
Color Temperature	Color Rendering	Controls			Finish	Options
50 - 5000K 40 - 4000K 30 - 3000K	70CRI - 70 CRI	Blank - None <u>Wireless Controls</u> ALBMR1LR - AirLink Blue Wireless Motion & Photo Sensor Controller (8-15' mounting height) ² ALBCS1 - AirLink Blue Wireless Motion & Photo Sensor Controller (8-24' mounting height) ² <u>Standalone Controls</u> EXT - 0-10v Dimming leads extended to housing exterior IMSBT1L - Integral Bluetooth™ Motion Sensor 8-24' MH ^{2,3} <u>Button Type Photocells</u> PCI120 - 120V PCI208-277 - 208 -277V PCI347 - 347V			BLK - Black BRZ - Dark Bronze GMG - Gun Metal Gray GPT - Graphite MSV - Metallic Silver PLP - Platinum Plus SVG - Satin Verde Green WHT - White	Blank - None BB - 10w Battery Back-up (0°C) ⁴ CWBB - 10w Cold Weather Battery Backup (-20°C) ⁴ BB20 - 20W Battery Back-up (0°C) ⁴ EH - Extended Housing ⁵ SP1 - 10kV Surge Protection Device



Need more information?
[Click here for our glossary](#)

Have additional questions?
Call us at (800) 436-7800



ACCESSORY ORDERING INFORMATION*

Part Number	Description
758274CLR	XWS Extended Housing/Surface Conduit Wiring Box
760159CLR	XWS Spacer Plate/Wiring Box

*Accessories are shipped separately and field installed.

Battery Backup

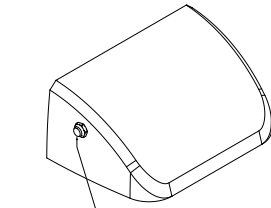
- Emergency battery system provides 90-minutes of constant power to the LED system, ensuring code compliance.
- A test switch/indicator button is installed on the housing for ease of maintenance.
- 10w battery delivers ~1,500 lumens during emergency mode.
- 20w battery delivers ~3,000 lumens during emergency mode.



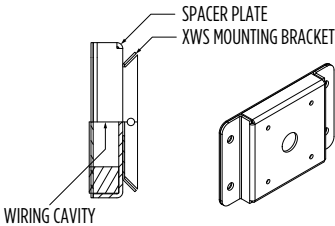
Luminaire shown with battery backup



AirLink Wireless Control Luminaire shown with ALBMR1LR



BUTTON PHOTOCELL LUMINAIRE SHOWN WITH PCI



1 Custom lumen and wattage packages available, consult factory. Values are within industry standard tolerances but not DLC listed.
2 When high voltage (HV) is specified, IMSBT, ALBCS ALBMRxLR control options are limited to 6L and 8L lumen packages.
3 IMSBTxL is field configurable via the LSI app that can be downloaded from your smartphone's native app store.
4 Universal Voltage Only (120-277V). 20W Battery Backup only available 1L - 6L.
5 For applications with surface conduit.

PERFORMANCE

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Delivered Lumens¹												
Lumen Package	Distribution	CRI	3000K CCT			4000K CCT			5000K CCT			Wattage
			Delivered Lumens	Efficacy	Bug Rating	Delivered Lumens	Efficacy	Bug Rating	Delivered Lumens	Efficacy	Bug Rating	
1L	2	70	1,429	143	B1-U0-G1	1,524	152	B1-U0-G1	1,526	153	B1-U0-G1	10
	3		1,491	149	B0-U0-G1	1,590	159	B0-U0-G1	1,592	159	B0-U0-G1	
	FT		1,459	146	B0-U0-G1	1,556	156	B1-U0-G1	1,557	156	B1-U0-G1	
2L	2	70	1,851	142	B1-U0-G1	1,974	152	B1-U0-G1	1,976	152	B1-U0-G1	13
	3		1,930	148	B1-U0-G1	2,058	158	B1-U0-G1	2,060	158	B1-U0-G1	
	FT		1,889	145	B1-U0-G1	2,015	155	B1-U0-G1	2,017	155	B1-U0-G1	
3L	2	70	2,765	146	B1-U0-G1	2,950	155	B1-U0-G1	2,953	155	B1-U0-G1	19
	3		2,884	152	B1-U0-G1	3,077	162	B1-U0-G1	3,079	162	B1-U0-G1	
	FT		2,822	149	B1-U0-G1	3,010	158	B1-U0-G1	3,012	159	B1-U0-G1	
5L	2	70	4,655	133	B2-U0-G1	4,965	142	B2-U0-G1	4,970	142	B2-U0-G1	35
	3		4,855	139	B1-U0-G1	5,179	148	B1-U0-G1	5,184	148	B1-U0-G1	
	FT		4,750	136	B1-U0-G2	5,067	145	B1-U0-G2	5,072	145	B1-U0-G2	
6L	2	70	5,578	130	B2-U0-G1	5,950	138	B2-U0-G2	5,956	139	B2-U0-G2	43
	3		5,819	135	B1-U0-G2	6,207	144	B1-U0-G2	6,214	145	B1-U0-G2	
	FT		5,693	132	B1-U0-G2	6,073	141	B1-U0-G2	6,079	141	B1-U0-G2	
8L	2	70	7,531	123	B2-U0-G2	8,034	132	B2-U0-G2	8,041	132	B2-U0-G2	61
	3		7,856	129	B2-U0-G2	8,380	137	B2-U0-G2	8,388	138	B2-U0-G2	
	FT		7,687	126	B2-U0-G2	8,199	134	B2-U0-G2	8,207	135	B2-U0-G2	

Electrical Data - Current Draw AMPS ²						
Lumen Package	120V	208V	240V	277V	347V	480V
1L	0.08	0.05	0.04	0.04	0.03	0.02
2L	0.11	0.06	0.05	0.05	0.04	0.03
3L	0.16	0.09	0.08	0.07	0.05	0.04
5L	0.29	0.17	0.15	0.13	0.10	0.07
6L	0.36	0.21	0.18	0.16	0.12	0.09
8L	0.51	0.29	0.25	0.22	0.18	0.13

Recommended Lumen Maintenance - XWS ³					
Ambient Temperature C°	Initial ⁴	25K hrs. ⁴	50K hrs. ⁴	75K hrs. ⁵	100K hrs. ⁵
25	100%	95%	90%	85%	80%
40	100%	91%	82%	73%	65%

1 1L not available in HV
2 1L not available with controls.
3 Lumen maintenance values at 25°C are calculated per TM-21 based on LM-80 data and in-situ luminaire testing.
4 In accordance with IESNA TM-21-11, Projected Values represent interpolated value based on time durations that are within six times (6X) the IESNA LM-80-08 total test duration (in hours) for the device under testing ((DUT) i.e. the packaged LED chip).
5 In accordance with IESNA TM-21-11, Calculated Values represent time durations that exceed six times NA LM-80-08 total test duration (in hours) for the device under testing ((DUT) i.e. the packaged LED chip).

Mirada Small Silicone (XWS SIL)

Type : _____

Have questions? Call us at (800) 436-7800

PHOTOMETRICS

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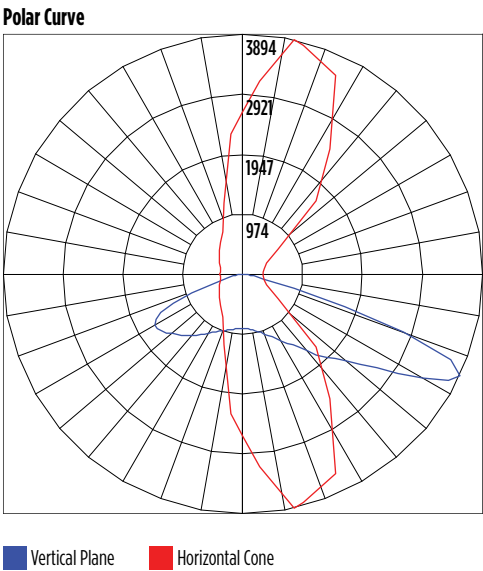
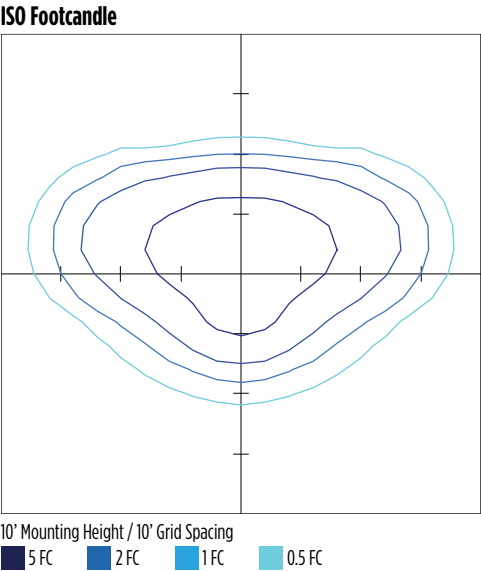
Luminaire photometry has been conducted by a NVLAP accredited testing laboratory in accordance with IESNA LM-79-08. As specified by IESNA LM-79-08 the entire luminaire is tested as the source resulting in a luminaire efficiency of 100%.

See the individual product page on <https://www.lsicorp.com/> for detailed photometric data.

XWS-LED-6L-SIL-2-40-70CRI

Luminaire Data		
Type 2 Distribution		
Description	4000 Kelvin, 70 CRI	
Delivered Lumens	5,951	
Watts	42.5	
Efficacy	138	
IES Type	Type II - Short	
BUG Rating	B1-U0-G1	

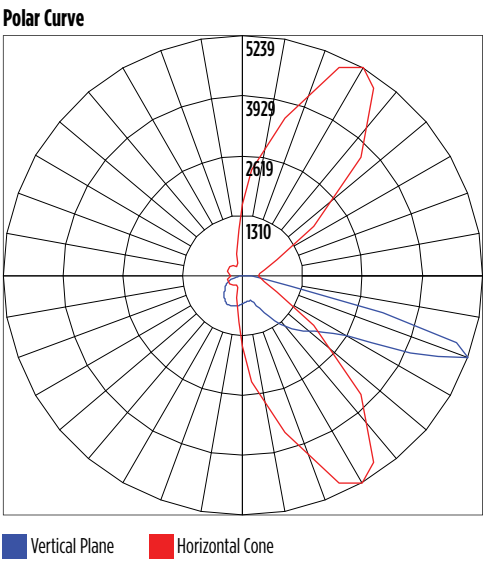
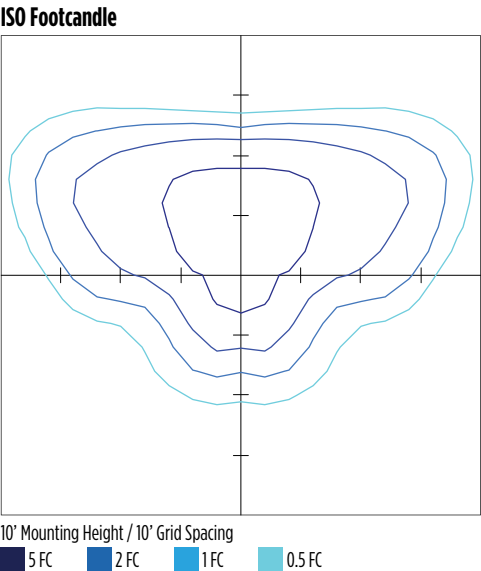
Zonal Lumen Summary		
Zone	Lumens	% Luminaire
Low (0-30°)	834	20%
Medium (30-60°)	3,379	50%
High (60-80°)	1,647	28%
Very High (80-90°)	91	1%
Uplight (90-180°)	0	0%
Total Flux	5,951	100%



XWS-LED-6L-SIL-3-40-70CRI

Luminaire Data		
Type 3 Distribution		
Description	4000 Kelvin, 70 CRI	
Delivered Lumens	6,208	
Watts	42.5	
Efficacy	146	
IES Type	Type III - Medium	
BUG Rating	B1-U0-G2	

Zonal Lumen Summary		
Zone	Lumens	% Luminaire
Low (0-30°)	582	9%
Medium (30-60°)	2,997	48%
High (60-80°)	2,506	40%
Very High (80-90°)	124	2%
Uplight (90-180°)	0	0%
Total Flux	6,208	100%



PHOTOMETRICS

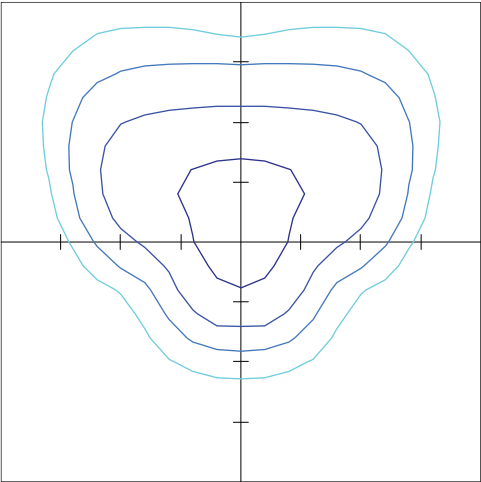
[Back to Quick Links](#)

XWS-LED-6L-SIL-FT-40-70CRI

Luminaire Data	
Type FT Distribution	
Description	4000 Kelvin, 70 CRI
Delivered Lumens	6,073
Watts	42.5
Efficacy	143
IES Type	Type IV - Short
BUG Rating	B1-U0-G2

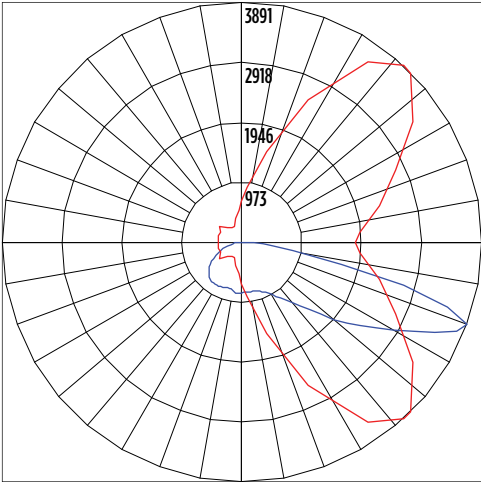
Zonal Lumen Summary		
Zone	Lumens	% Luminaire
Low (0-30°)	708.3	12%
Medium (30-60°)	2,715.5	45%
High (60-80°)	2,475.4	41%
Very High (80-90°)	173.6	3%
Uplight (90-180°)	0	0%
Total Flux	6,073	100%

ISO Footcandle



10' Mounting Height / 10' Grid Spacing
5 FC 2 FC 1 FC 0.5 FC

Polar Curve

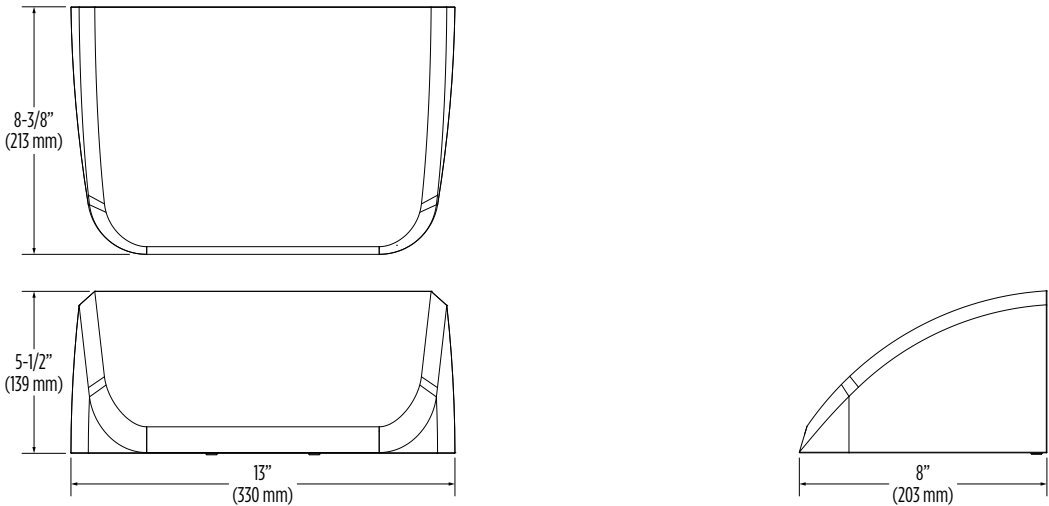


Vertical Plane Horizontal Cone

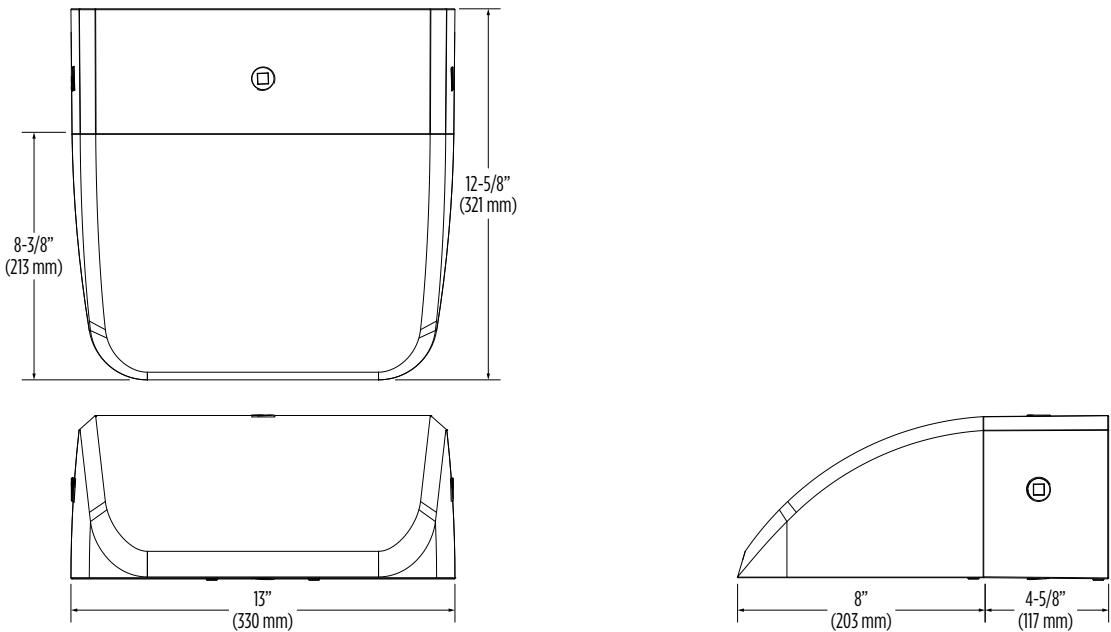
PRODUCT DIMENSIONS

[Back to Quick Links](#)

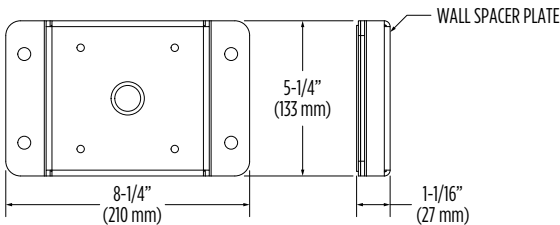
STANDARD HOUSING
(XWS)



SCWB EXTENDED HOUSING
(XWS 758274CLR)



XWS SPACER PLATE/WIRING BOX
(XWS 760159CLR)



NOTE: Wall spacer plate allows the luminaire to float off the wall and provides space for securing wires (8.25" X 5.25" X 1.07").

CONTROLS

[Back to Quick Links](#)

Integral Bluetooth™ Motion and Photocell Sensor (IMSBTxL)

Slim low profile sensor provides multi-level control based on motion and/or daylight. Sensor controls 0-10 VDC LED drivers and is IP66 rated for cold and wet locations (-40°F to 167°F). Two unique PIR lenses are available and used based on fixture mounting height. All control parameters are adjustable via an iOS or Android App capable of storing and transmitting sensor profiles.

[Click here to learn more details about IMSBT](#)



LEVITON App



Apple



Android

AirLink Wireless Lighting Controller (ALSC, ALSCS)

The AirLink integrated controller is a California Title 24 compliant lighting controller that provides real-time light monitoring and control with utility-grade power monitoring. It includes a 24V sensor input and power supply to connect a sensor into the outdoor AirLink wireless lighting system. The wireless integrated controller is compatible with this fixture.

[Click here to learn more details about AirLink](#)

AirLink Blue (ALBMRxLR, ALBCSx)

Wireless Bluetooth Mesh Outdoor Lighting Control System that provides energy savings, code compliance and enhanced safety/security for parking lots and parking garages. Three key components; Bluetooth wireless radio/sensor controller, Time Keeper and an iOS App. Capable of grouping multiple fixtures and sensors as well as scheduling time-based events by zone. Radio/Sensor Controller is factory integrated into Area/ Site, Wall Mounted, Parking Garage and Canopy luminaires.

[Click here to learn more details about AirLink Blue](#)



AirLink Blue App



Apple

Sensor Sequence of Operations

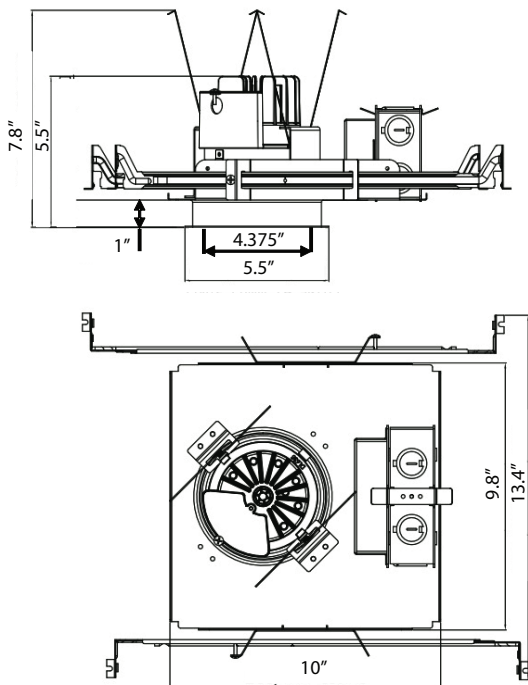
Standard Programming	On Event	Off Event	On Light Level	Dim Light Level	Daylight Harvesting	Delay To Off	Sensitivity
IMSBTxL	Motion	No Motion	100%	N/A	On; Auto Calibration	20 minutes	High

Operation	Description
On Event	Trigger that activates lights to turn on; either automatic via motion detected or manually activated via push of button.
Off Event	Trigger that activates lights to turn off; either automatic via no motion detected or manually activated via push of button.
On Light Level	The light level that the fixtures will turn on to when ON EVENT occurs.
Dim Light Level	The light level that the fixtures will dim down to when no motion is detected.
Delay to Dim	The amount of time after which no motion is detected that the fixtures will be triggered to dim down. This sequence is optional, and sensor can be programmed to only trigger the fixture to turn off by entering 100% in this field.
Delay to Off	The amount of time after which no motion is detected that the fixtures will be triggered to turn off. If delay to dim is part of the programmed functionality, this is the amount of time after which no motion is detected after the fixture have already dimmed down.
Sensitivity	The sensitivity can be set to high, medium, low, or auto where applicable. High will detect smaller, simple motions. Low will only detect larger more complex motions. Auto temperature calibration adjusts the PIR sensitivity as ambient temperature rises to increase detection of heat movement through the field of view.

PRODUCT IMAGES



Standard Dimensions:



SPECIFICATIONS

Applications:

- New Construction Recessed Downlight suitable for Commercial and Architectural Applications.
- Suitable for ambient temperatures up to 35C (95F) with free airflow around fixture.

Key Dimensions

- Aperture – 4.375"
- Ceiling Cutout – 4.875"
- Overlap Flange – 5.50"

Construction:

- Galvanized Steel New Construction Housing
- Telescoping Bar Hangers Included (up to 24" grid)
- Light Engine and Driver Can Extend below the ceiling for ease of accessibility

Optical System:

- Self Flanged Aluminum Reflector with Semi-Diffuse Anodized Finish
- 80+ CRI / 3 SDCM Color Consistency
- 70% Lumen Maintenance at 50,000+ Hours
- 80 to 100 Lumens Per Watt
- Lensed Wall Wash Option Available, may be orientated in 90 degree increments to housing

Electrical:

- 120 thru 277v 50/60hz Input Power
- <20% THD; PF > 0.9
- EMI FCC 47CFR Part 15, Class A
- Standard 0-10v dimming to 10%, 1% dimming available,
- Driver Sources up to 2ma of current to the dimming circuit
- FCC Part15, Class A

Certifications:

- UL listed for Non-IC applications:
- Wet Location under covered ceilings with Downlight Option
- Energy Star Listed

Battery Back Up

- EMR option supplied with a pre-wired 7watt LED battery that is UL Listed for Field Installation. Remote Test Switch included.
- Top access required to service battery
- EMI Option supplied with a pre-wired 6watt, self-diagnostic, LED battery that is UL Listed for field installation. Test switch is supplied pre-installed integral with the reflector. Not suitable for use with Wall Wash reflector.

Warranty:

- Standard 5 Year Limited Warranty
- See www.heliosltg.com/warranty for Details.

See Page 3 for additional dimensioned Line Art

ORDERING INFORMATION

ORDERING EXAMPLE: 6R15L35KAN

Aperture	Output	Kelvin	Reflector	Function	Dimming	Emergency
4R - 4" Round	05L - 500 lumens	30K	AN - Semi-Diffuse Anodized Cone and Flange	Blank - 70° Wide Beam Downlight	Blank - 10%, 0-10V	Blank - No Battery
	10L - 1000 lumens	35K	WF - Anodized Cone and White Flange	MED - 50° Medium Beam Downlight	DM1- 1%, 0-10V	EMR - Battery Back Up with Remote Test Switch
	15L - 1500 lumens	40K	WH - White Cone & Trim	NRW - 25° Narrow Beam Downlight		EMI - Battery Back Up with Integral Test Switch
	20L - 2000 lumens		BF - Anodized Cone & Black Flange	SPT - 15° Spot Beam Downlight		GTD - Generator Transfer Device, 0-10v compatible
	25L - 2500 lumens		BL - Black Cone and Black Flange	WW - Lens Wall Wash (not available with 2500 lumen or AMB reflector)		
			AMB - Nano AntiMicrobial White Paint			

Housing and Reflector Ship Separately

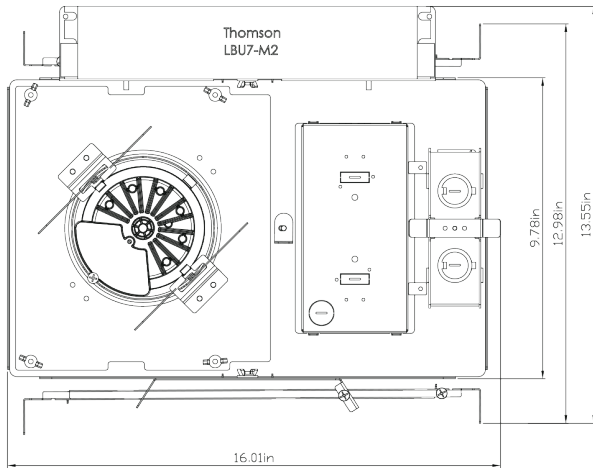
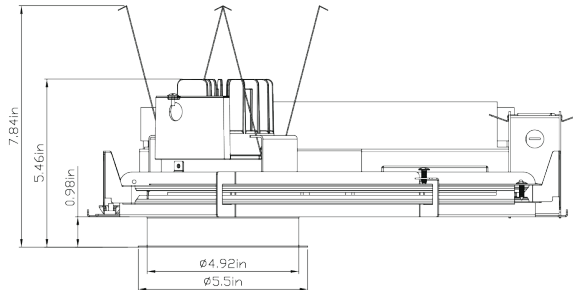
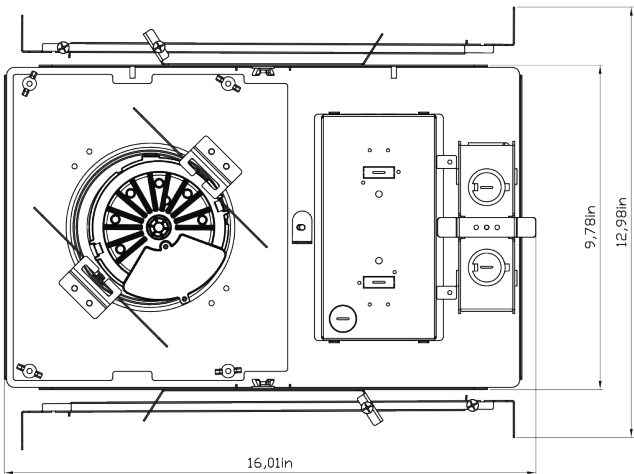
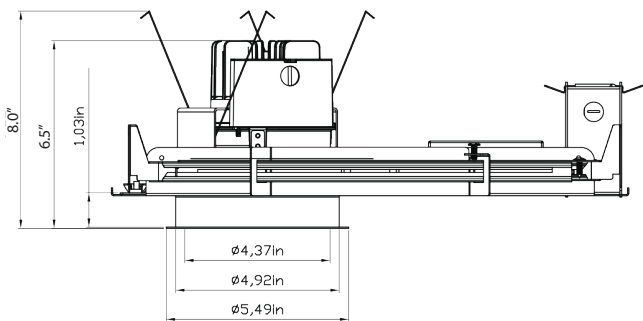
Due to our continued efforts to improve our products, product specifications are subject to change without notice.

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Revision: 08/17/23

BEAM SUMMARY

4R		Wide	Medium	Narrow	Spot
10L	Lumens	923	1086	1150	1213
	CBCP	913	1505	4479	7282
	Wattage	11	11	11	11
15L	Lumens	1450	1508	1606	1679
	CBCP	1427	2099	6246	10033
	Wattage	15	16	16	16
20L	Lumens	2027	2023	2155	2247
	CBCP	1673	2818	8375	13657
	Wattage	23	22	22	22
25L	Lumens	2513	2479	2639	2796
	CBCP	3325	3439	10286	17053
	Wattage	30	30	30	30
Beam Full Width, Half Max		70	50	23	18
Cut Off 10% Max, Half Angle		47	38	24	18
Spacing		1.00	0.80	0.40	0.30



CHAPTER 874: CANNABIS USES

Section

874.01 Purpose

874.02 Definitions

874.03 Permitting of Cannabis Facilities

874.04 Location Change

874.05 Inspections; Records; Notifications

874.06 Enforcement

874.07 Appeal

874.99 Penalty

874.01 PURPOSE

The purpose of this chapter is to establish regulations for Cannabis Facilities and Operators.

874.02 DEFINITIONS.

For the purpose of this chapter, the definitions, words and phrases defined in the sections hereunder shall have the meaning therein respectively ascribed to them unless the context clearly indicates or requires a different meaning.

CANNABIS. Marijuana or cannabis that is cultivated, processed, dispensed, tested, possessed, or used as authorized by R.C. Chapters 3780 and/or 3796.

CANNABIS CULTIVATOR. The holder of a current and valid cultivator license to cultivate, distribute, transfer, or sell Cannabis to a Cannabis Operator as authorized by R.C. Chapters 3780 and/or 3796.

CANNABIS FACILITY. A Cannabis cultivator, processor, or retail dispensary as authorized by R.C. Chapters 3780 and/or 3796.

CANNABIS OPERATOR. The individual or entity licensed to operate a Cannabis Facility.

CANNABIS PROCESSOR. The holder of a current and Valid processor license to manufacture, distribute, transfer, or sell Cannabis to a Cannabis Operator as authorized under R.C. Chapters 3780 and/or 3796.

CANNABIS RETAIL DISPENSARY. The holder of a current and valid dispensary license to sell Cannabis and Cannabis paraphernalia to a consumer as authorized under R.C. Chapters 3780 and/or 3796.

CANNABIS TESTING FACILITY, RESEARCH FACILITY or LABORATORY. The holder of a current and valid testing facility license to conduct research for scientific purposes, instruction,

research, and analysis, including but not limited to testing for potency, homogeneity, and contamination and the preparation of reports from test results.

DIRECTOR. As defined in the City of Monroe Planning and Zoning Code.

MARIJUANA. As defined in R.C. 3719.01.

ZONING PERMIT. As defined in the City of Monroe Planning and Zoning Code.

874.03 PERMITTING OF CANNABIS FACILITIES.

(A) Cannabis Operators shall not operate in the City without a valid Cannabis Operator business license issued by the City.

(B) An application for a business license shall be made to the Director and shall include:

(1) The legal name of the applicant.

(2) The type of business organization of the applicant, such as an individual, corporation partnership, limited liability company, association, cooperative, joint venture, or any other business organization.

(3) The mailing address, email address, and phone number of the applicant, if the applicant is an individual, or the name, mailing address, email address, and phone number of a designated representative of the applicant, if the applicant is not an individual.

(4) Confirmation that the applicant is registered with the Ohio Division of Cannabis Control as the type of business submitted pursuant to this rule and a copy of the applicable business documents governing the operations and administration of the business.

(5) A copy of the City-issued conditional use or zoning permit authorizing the Cannabis Facility's operation at a particular address in the City.

(6) A copy of the license, provisional or otherwise, granted by the Ohio Division of Cannabis Control under R.C. Chapters 3780 or 3796 to the Cannabis Facility, and Cannabis Testing Facilities for the address of which the facility is to be located;

(7) Confirmation that the Cannabis Facility, or Cannabis Testing Facility, is conforming to all requirements under this chapter and R.C. Chapters 3780 and 3796 as may be relevant;

(8) If the applicant is currently, was previously, or has applied to be licensed or authorized in another state or jurisdiction to cultivate, produce, dispense, or otherwise deal in the distribution of Cannabis in any form, the following:

(a) A copy of each licensing/authorizing document verifying licensure in that state or jurisdiction; and

(b) A statement summarizing any warning, fine, sanction, or license denial, suspension or revocation, the applicant has received related to its Cannabis business operations. This includes notification of any pending proceedings regarding warnings, fines, denials, suspensions, revocations, or other sanctions. The City's reasonable belief that a prior warning, fine, sanction, or license denial, suspension or revocation, demonstrates a disregard for any governmental laws, regulations, rules or

orders on behalf of the applicant, or other otherwise reflects poorly on the applicant's fitness to operate a Cannabis business, shall be grounds for the City to deny the applicant's license application.

(8) Any other information requested by the Director.

(9) A non-refundable application fee of \$300.

(C) An application for a business license shall be approved if the City determines, in its discretion, that the applicant has satisfied all conditions and requirements set forth in this Chapter.

874.04 LOCATION CHANGE

(A) A business license to operate a Cannabis Facility is only valid as to the particular address listed in the initial application.

(B) A Cannabis Operator seeking a location change under this chapter must re-apply for a business license as required in section 874.03.

(F) If the ownership of a Cannabis Facility changes, the Cannabis Operator must notify the City of the change in ownership and the new owner must submit a new business license application in accordance with this Chapter.

874.05 INSPECTIONS; RECORDS; NOTIFICATIONS

(A) As part of the submission of an application that results in the issuance of a business license to operate a Cannabis Facility in the City, the applicant irrevocably consents to the following:

(1) Any inspection by the City that is deemed necessary to ensure compliance of a Cannabis Facility, and Cannabis Testing Facilities with this chapter and R.C. Chapter 3780 and/or 3796. An inspection may be conducted with or without notice. During an inspection, a representative of the City may:

(a) Review all records maintained;

(b) Enter any area in the facility (including those areas which are locked against access);

(c) Inspect facility vehicles;

(d) Review the policies and procedures of the Cannabis Operator, including methods of operating;

(e) Survey the premises;

(f) Inspect all equipment, instruments, tools, materials, machinery, or any other resource used to cultivate, process, test, or dispense Cannabis;

(g) Question employees at the location; and

(i) Obtain samples for testing any form of Cannabis at the facility, any labels or containers for Cannabis, or any raw packaged Cannabis.

(B) Notifications.

(1) If, at any time, a Cannabis Facility is subject to any enforcement action by the State of Ohio under R.C. Chapter 3780 or 3796, the Cannabis Facility must immediately notify the City of Monroe and provide any relevant information or documentation requested by the City.

(2) If, at any time, any information listed in a Cannabis Operator's original business license application changes, the Cannabis Operator must immediately notify the City of the change in information. In the event of any changes in information which are material to the application and/or the City's prior grant of the Cannabis Operator's business license (as determined by the City in its discretion), the City shall have the right to revoke the Cannabis Operator's business license and/or require the Cannabis Operator to apply for a new business license pursuant to this Chapter with respect to the Cannabis Facility.

874.06 ENFORCEMENT

(A) If, at any time, the City becomes aware that a Cannabis Operator possessing a business license has engaged in, is engaged in, or is about to engage in, any act or practice declared to be prohibited by this Chapter, R.C. Chapters 3780 or 3796, or any other local, state, or federal law, with the exception of acts that are permitted under state law but are federal law violations stemming from the classification of Marijuana as a controlled substance under 21 U.S.C. § 812(c), the Director may do any of the following:

- (1) Refer such violations to the Ohio Division of Cannabis Control;
- (2) Issue a warning to the Cannabis Operator, which may include possible corrective action(s);
- (3) Suspend the business license issued hereunder, and require any violations to be resolved and corrective actions to be taken as conditions to the reinstatement of the suspended license; and/or
- (4) Revoke the Cannabis Operator's business license.

(B) Notice.

(1) A warning, suspension, or revocation issued by the City under this Chapter shall be served upon a Cannabis Operator at the address for which a business license was granted, by personal service, by certified and regular mail, or by posting in a conspicuous location.

(2) Notice by certified mail shall be effective upon delivery. In the event that notice by certified mail is returned unclaimed or refused, mailing of the notice by regular mail shall be deemed effective upon mailing. Notice by personal service or by posting shall be deemed effective at the time of personal service or posting, respectively.

(C) In the event a Cannabis Operator's conditional use permit and/or zoning permit issued under the City's Planning and Zoning Code is suspended or revoked, the Cannabis Operator must immediately cease operations at the Cannabis Facility, unless otherwise instructed by the City, until the suspension is lifted, or a new conditional use and/or the zoning permit is obtained.

(D) Suspension of Business License.

(1) Suspension of a Cannabis Operator's business license shall only be accomplished through the procedures outlined in this Chapter. Suspension shall be accomplished after a public hearing is held thereon by the Director, which hearing shall be held within 30 days after notice is given to the Cannabis Operator of such hearing, by certified mail and regular mail. The Cannabis Operator shall

have the right to appear at such a hearing, to be represented by counsel, and to examine and cross examine witnesses.

(2) Suspension may take place without a prior hearing if the Director finds clear and convincing evidence that the Cannabis Operator's continued operation of a Cannabis Facility presents a danger of immediate and serious harm to others. Notice of the suspension shall be made as provided in this section and a hearing on the merits of the suspension will take place within five days of the suspension.

(3) The suspension will remain in effect, unless lifted by the Director, pending the results of the hearing. If the Director does not issue an order within 90 days after the hearing, the suspension shall be lifted on the 91st day following the hearing.

(4) As a condition of the reinstatement of a suspended license, the Director may require any violations to be resolved and reasonable corrective actions to be taken.

(E) Revocation of Business License.

(1) Revocation of a Cannabis Operator's business license shall only be accomplished through the procedures outlined in this Chapter. Revocation shall be accomplished only after a public hearing is held thereon by the Director, which hearing shall be held within 30 days after notice is given to the Cannabis Operator of such hearing, by certified mail and regular mail. The Cannabis Operator shall have the right to appear at such a hearing, to be represented by counsel, and to examine and cross-examine witnesses.

874.07 APPEAL.

(A) In the event of a decision or ruling adverse to a business license holder or applicant regarding a denial, revocation, or suspension of a license, the license holder or applicant shall have the right to appeal such decision and ruling to a court of competent jurisdiction, per R.C. Chapter 2506.

870.99 PENALTY.

Whoever violates any provision of this Chapter shall be deemed guilty of a misdemeanor of the first degree.

Add Cannabis Facilities to **Table 1204-3** in districts where Cannabis Uses are to be allowed

Add to Definitions 1217.02

CANNABIS FACILITY. A Cannabis cultivator, processor, or retail dispensary as authorized and properly licensed under R.C. Chapters 3780 and/or 3796.

CANNABIS OPERATOR. The individual or entity authorized and properly licensed under R.C. Chapters 3780 and/or 3796 to operate a Cannabis Facility.

1204.04 Use Specific Standards

(D)(20) Cannabis Facilities

- a) No Cannabis Facility shall be located within the proximity of one mile of any other Cannabis Operator.
- b) No Cannabis Facility shall be located within 500 feet of a school, church, public park, public playground or public library.
- c) The exterior structure of any Cannabis Facility shall be properly screened so that its activities involving the handling of cannabis plants or products cannot be seen by the public on adjacent private or public property.
- d) Cannabis Facilities seeking to obtain a zoning permit under this Chapter must first apply for a conditional use permit. Cannabis Facilities may not receive a certificate of occupancy unless they possess both a valid conditional use permit and a valid zoning permit.
- e) In addition to any other application requirements set forth in Section 1203.02(C) of this Chapter, and/or established by the Development Department, Cannabis Facilities conditional use applications must include:

(1) The type of business organization of the applicant, such as an individual, corporation partnership, limited liability company, association, cooperative, joint venture, or any other business organization.

(2) Confirmation that the applicant is licensed by the Ohio Division of Cannabis Control as a Cannabis Facility and a copy of the applicable documents governing the licensing, operations, and administration of the business. Provisional licenses will be sufficient for the purposes of the conditional use application; however, the certificate of occupancy will not be issued until the applicant provides the City with the non-provisional, official license issued by the Ohio Division of Cannabis Control to operate at the property proposed for the use.

(3) A location area map for the proposed Cannabis Facility which shows with sufficient certainty (as determined in the City's discretion) that each lot line of the parcel on which the proposed facility will be located is at least 500 feet from the lot line of any other parcel containing a school, church, public park, public playground or public library.

(4) Any other information requested by the City.

- f) See Chapter 874 of the Business Regulation and Taxation Code for additional regulations applicable to Cannabis Facilities and Operators.