

Agenda
City of Springboro Planning Commission Meeting
Wednesday, September 8, 2021, 6:00 p.m.
Council Chambers, Springboro City Building, 320 West Central Avenue

- I. Call to Order
- II. Approval of Minutes
 - A. August 18, 2021 Planning Commission Meeting
- III. Agenda Items
 - A. Formal Approval, Site Plan Review, 95 West Central Avenue (SR 73), proposed vehicle service facility for Foreign Exchange
- IV. Guest Comments
- V. Planning Commission and Staff Comments
- VI. Adjournment

APPLICATION—SITE PLANS, SUBDIVISIONS & RECORD PLANS

CITY OF SPRINGBORO PLANNING COMMISSION

SITE PLAN REVISION TO APPROVED SITE PLAN CONCEPT PLAN PRELIMINARY SUBDIVISION RECORD PLAN

The undersigned requests the approval identified above. Site Plan Review approvals subject to expiration provided for in Section 1284.18 of the Planning and Zoning Code. For all approvals under this application, it is understood that it shall only authorize the approval described in this application, subject to any conditions or safeguards required by the Planning Commission, and/or City Council.

Owner **APPLICANT NAME:** Dryden Builders, Inc.
 Agent
 Lessee **Address:** 1741 Thomas Paine Parkway
 Signed Purchase
Contract Centerville, Ohio 45459
Telephone No. (937) 439-2728
Fax No. (937) 439-2729
Email Address chris@drydenbuilders.com

PROPERTY OWNER NAME (IF OTHER): Anthony Bors (Ann M. Weiskircher, ETAL)

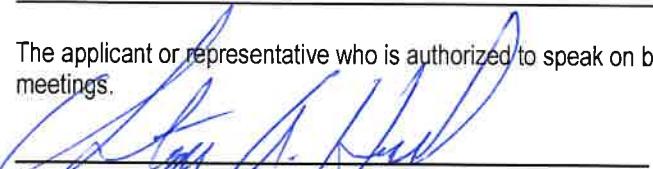
Address: 1997 Hart Road
Lebanon, Ohio 45036
Telephone No. () _____

Property Address or General Location: 95 W. Central Avenue

Parcel Number(s): 0413229024 **Zoning District:** UVD

Proposed Use: New location for Foreign Exchange - Vehicle Service Center

The applicant or representative who is authorized to speak on behalf of the request must also be present at all meetings.


(Signature of Applicant and/or Agent)

Dryden Builders, Inc.
Christopher A. Hinkel, President

Printed Name

August 20, 2021

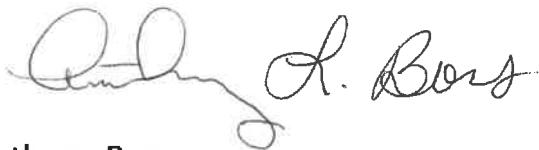
(Date)

July 22, 2021

Anthony Bors
1997 Hart Road
Lebanon, Ohio 45036

I authorize Rick's Foreign Exchange, LLC and Dryden Builders, Inc. permission to present plans to the City of Springboro Planning Commission for property located at 95 W. Central Avenue.

Sincerely,

A handwritten signature in black ink, appearing to read "Anthony R. Bors".

Anthony Bors

Background Information & Staff Comments
City of Springboro Planning Commission Meeting
Wednesday, September 8, 2021, 6:00 p.m.

III. Agenda Items

A. Final Review

Site Plan Review, 95 West Central Avenue (SR 73), proposed vehicle service facility for Foreign Exchange

Background Information

This agenda item is an application for site plan review filed by Dryden Builders, Inc., on behalf of Foreign Exchange, to permit the construction of a vehicle repair facility at 95 West Central Avenue (SR 73). The subject property is located southeast of the intersection of West Central Avenue and South Main Street. Foreign Exchange proposes to relocate their operation located in Clearcreek Township to the subject property. In addition to the Clearcreek Township location, the company operates other locations in West Chester, Centerville, and Moraine.

The subject property is located in the UVD, Urban Village District. While the applicant has been advised that the proposed use is permitted, the redevelopment of the site and any other in the UVD will need to comply with the high design and development standards of the UVD and the standard site plan review requirements.

Existing land uses include to the east the soon to open Latin Arepas restaurant at 85 West Central Avenue, to the south the former site of Jonathan Wright Elementary School, to the west a single-family residence at 105 West Central Avenue, and to the north on the north side of West Central Avenue, Kleather's pumpkin patch and single-family residence, the small commercial building that houses Scotty's barber shop, and the developing Wright Station development on the former IGA shopping center site.

Existing zoning in the vicinity of the subject property is UVD to the west, north on the north side of West Central Avenue, and east. To the south existing zoning is R-2, Low-Density Residential District, on the former site of Jonathan Wright Elementary School.

The City is in receipt of a letter from the existing property owner indicating authorization to proceed through the development review process prior to sale.

This item was reviewed on a preliminary basis at the August 18th Planning Commission meeting.

Staff Recommendation

City staff recommends APPROVAL of the site plan for 95 West Central Avenue contingent on complying with the following comments following action by the Planning Commission:

1. The proposed use to comply with Section 1264.26, Development Standards for Specific Uses, Major and Minor Vehicle Repair that are included here for reference purposes:

- (a) Lot Area. The minimum lot area shall be 12,000 square feet.
- (b) Parking Location. The site plan shall be designed to locate vehicles awaiting or undergoing repair, employee parking, and customer parking behind the building setback line.
- (c) Screening. In addition to the screening requirements in Chapter 1280 (Landscaping), outdoor storage of vehicles awaiting or undergoing repair shall be screened on all sides by a solid wood fence or brick or stone wall 6feet in height. Such fence or wall shall be maintained in good repair and attractive condition at all times.
- (d) Petroleum Containment. Tracking of oil or other petroleum-based substances onto the public right- of-way shall be avoided by proper management of such materials.
- (e) Parking Duration. Storage of vehicles overnight at a Minor Vehicle Repair facility is prohibited. Any motor vehicle that is being repaired at a Major Vehicle Repair facility shall not remain on the premises for more than 10 days.
- (f) Dismantling Prohibited. No vehicle shall be dismantled unless said vehicle is being repaired inside the garage and said repair shall be accompanied by a repair order showing the description of the automobile, owner and the description of the work required. A valid and current license plate shall be displayed on all vehicles.
- (g) Enclosed Building. All activities shall take place inside the building. All lubrication equipment, automobile wash equipment, hoists, and pits shall be enclosed entirely within a building.
- (h) Sales and Rentals Prohibited. The sale or rental of vehicles or utility trailers of any kind shall be prohibited. No vehicle parked on the property shall be dismantled for the purposes of selling, bartering, swapping or giving of any part or parts of said vehicle.
- (i) Large Vehicles. No trucks with a capacity over one ton, buses, camping trailers, truck or trailers shall be permitted on the property at any time unless the said vehicles are being repaired in the garage.
- (j) Trash Containers and Rubbish. There shall be trash containers of sufficient size and capacity to contain any and all wastes generated by the operation of business. The premises shall be devoid of all rubbish, litter, debris, automobile parts, etc.
- (k) Parking for Quick Oil Change Facilities. Quick oil change facilities shall provide off-street waiting spaces equal to five (5) times the number of oil change stalls for automobiles awaiting entrance. Each off-street waiting space shall be 10 feet wide by 20 feet long.
- (l) Storage or Impounding. Storage or impounding of vehicles at a Minor Vehicle Repair facility is prohibited. Any motor vehicle that is being stored or impounded at a Major Vehicle Repair facility shall not remain on the premises for more than 10 days.
- (m) Hours of Operation. In addition to all of the above standards, any vehicle repair facility adjacent to any residential district may only be open between the hours of 7:00 a.m. and 10:00 p.m.

2. For proposed lighting plan, address the following:
 - (a) Include ratios for maximum to minimum and average to minimum.
 - (b) Verify that proposed light fixtures are 3500° degrees Kelvin or less. Fixtures A and B appear to not comply.
 - (c) Verify that proposed fixture C complies with flush-mounting provides of code.
3. Indicate plans (timetable, setbacks, size and other details) for implementing future building areas shown on sheet CP-2.0. If not concurrent with proposed building/site proposed under this application, remove and revise site plan to comply with screening and landscaping and other provisions including the vehicle storage portion of the pavement. If the proposed building are to be developed at this time, building plans and design/development information is needed at this time that comply with UVD/Planning & Zoning Code standards.

4. Per UVD Section 1267.08(a)(1), Four-Sided Consistency, staff recommends the following:
 - (a) Extend proposed awning across front/north elevation façade.
 - (b) Provide window openings on the west and south elevations
5. Proposed signage and mural to be reviewed by City staff outside of Planning Commission site plan review process per sign code, UVD standards.
6. Per UVD Section 1267.08(a)(2), Orientation to Street, the front/north elevation needs to be architecturally enhanced to address this requirement with respect to the proposed building entrance.
7. Provide a record plan dedicating 60 Ft. right of way across frontage of SR 73 as well as a 10 Ft. utility easement.
8. Provide a 1" minimum "K" copper water service tap to the new building along with a new 6" sanitary sewer lateral (SDR 35 or SCH 40) to the existing 8" sewer main. Maintain a min 2% slope on sewer lateral to the building and indicate on plans.
9. Water meter to be located inside building with remote reader.
10. Based upon future plan, how will the water and sewer laterals reach future buildings? Should an 8" water main and 8" sewer main be installed in the middle of the property to provide the laterals? Each new building will require a separate water and sewer lateral.
11. Provide side yard swale slope information into basin with spot elevations.
12. Label storm structures on plan view.
13. Provide a 5 foot wide sidewalk along the frontage, including through the 7" concrete driveway apron, with a 2 foot tree lawn.
14. Provide details for the emergency overflow for detention basin.
15. Identify benchmark.
16. Detention calculation currently under review.
17. Dimension the parking lot stalls; to be min 9 feet wide by 18 feet long.
18. Provide building setbacks on plans (measured from overhang).
19. Provide rip-rap details at all storm sewer outlets, and clearly state the headwall locations.
20. Provide proposed contours in parking/drive aisle and spot elevations throughout.
21. Clearly show the limits of the curbing for the parking lot and drive aisle.
22. Provide roof drain invert at detention basin and slope information.
23. Provide details that show the existing curb and gutter along SR 73 to be removed and replaced with ODOT type 2 depressed curb and gutter. Provide 7" concrete apron and sidewalk details.
24. Verify the location of the building on C-2.0 Layout Plan on the 70 foot dimensional arrow.
25. Final revised and approved site plan shall be submitted to include all comments by staff and planning commission to have signature of the owner or duly authorized officer and stamped certified by a professional engineer.
26. An "As Built" drawing showing as built location and elevations of all improvements shall be submitted prior to the issuance of an occupancy permit.
27. The Clearcreek Fire District has no comments at this time.

The information contained in this report is based on material provided to the City of Springboro as of Thursday, September 2, 2021 at 12:00 p.m.

Keynote Legend	
Key Value	Keynote Text
1	ALUM. DOWNSPOUT; COLOR: TO MATCH SIDING OR MASONRY
2	METAL PARTS SHELVING BY OWNER
3	METAL PARTS COUNTER
4	SINGLE TIER METAL LOCKERS
5	CAST IRON TRENCH DRAIN
6	2'X2' CATCH BASIN
7	FIRE EXTINGUISHER, BRACKET MTD.



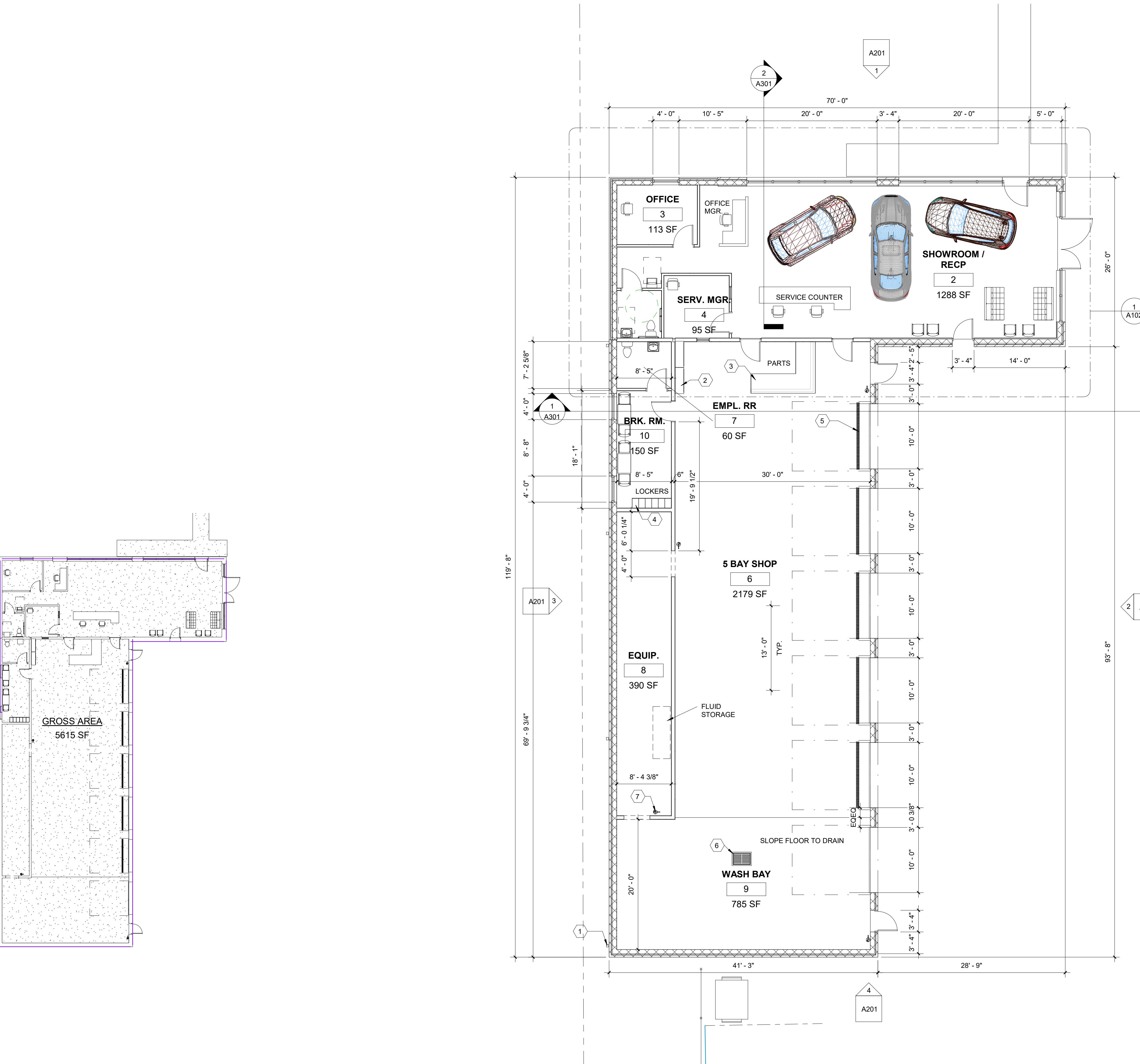
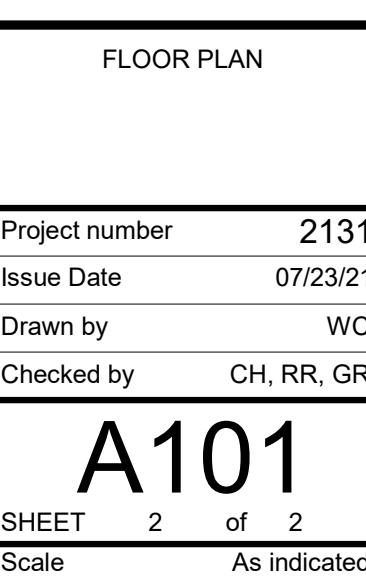
DRYDEN BUILDERS

NOT FOR
REGULATORY
APPROVAL,
PERMITTING OR
CONSTRUCTION



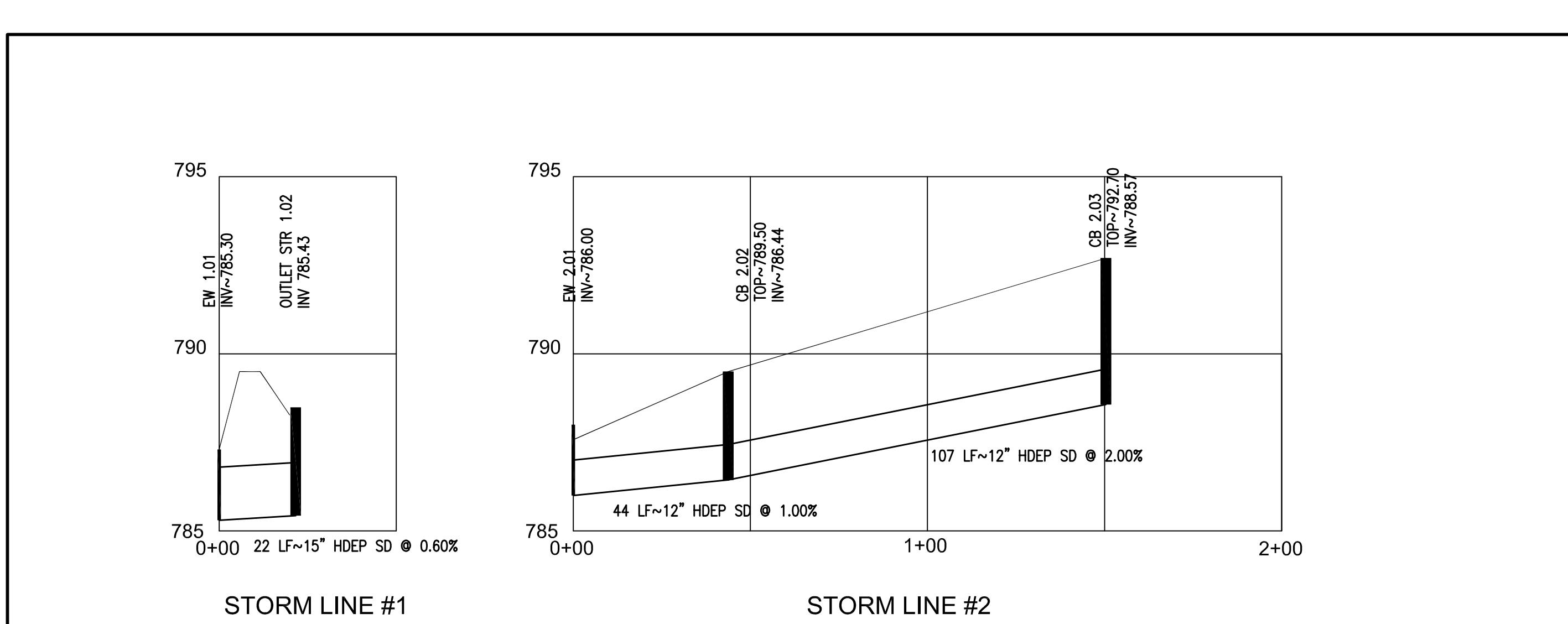
RICK'S FOREIGN EXCHANGE, LLC -REPOSED AUTO REPAIR SHOP FOR

FOREIGN EXCHANGE #5, LLC
SPRINGBORO LOCATION
95 W. CENTRAL AVE.
SPRINGBORO, OH 45066
WARREN COUNTY



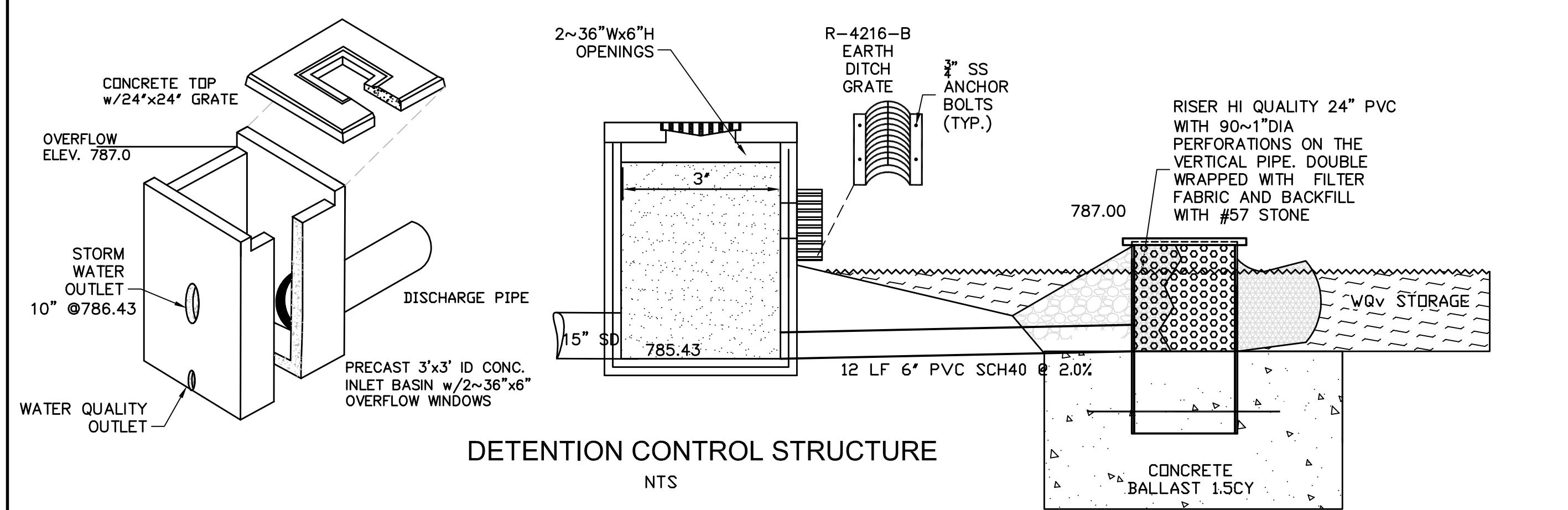
2	GROSS AREA PLAN	
A201	A101	1/16" = 1'-0"

1	Level 1
A201	A101



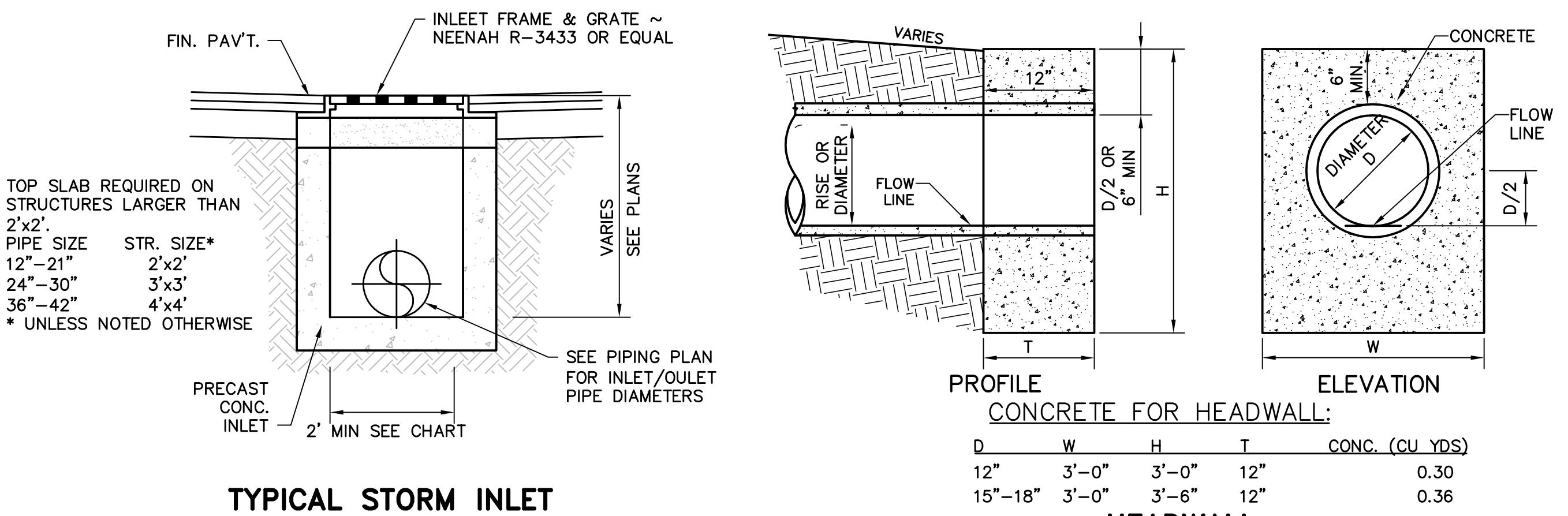
STORM LINE #1

STORM LINE #2



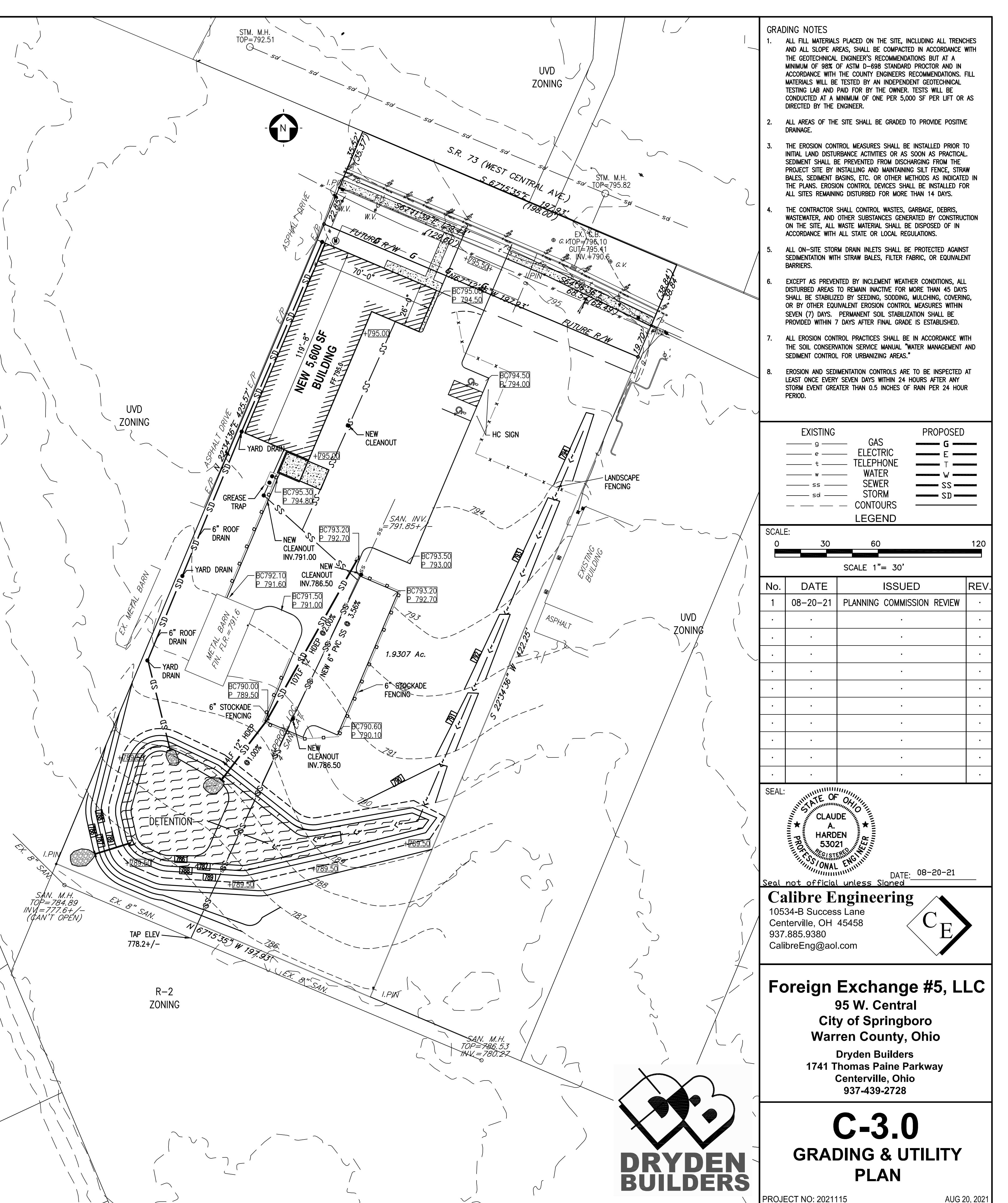
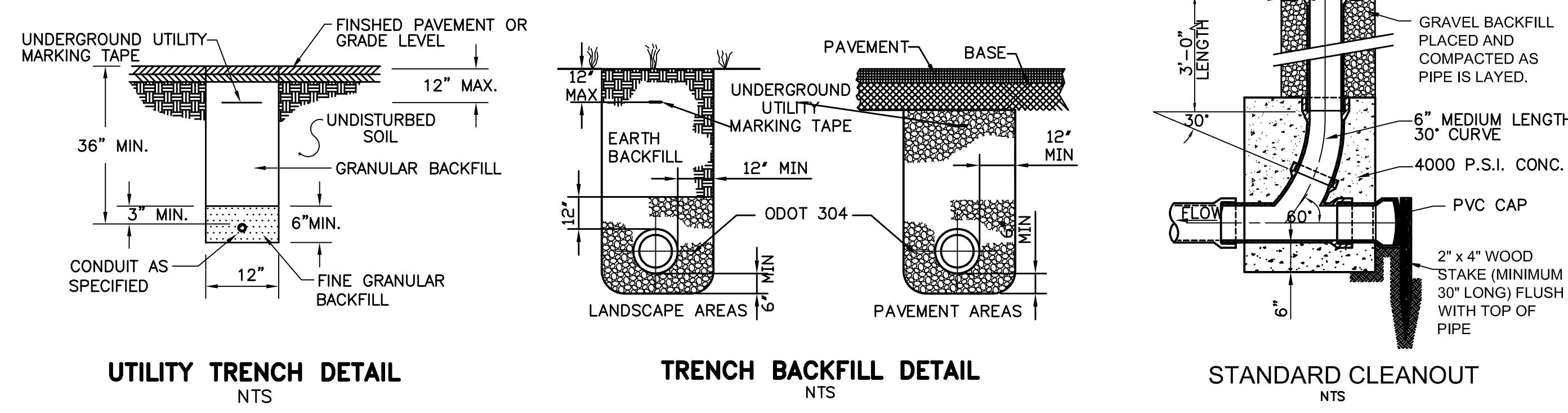
DETENTION CONTROL STRUCTURE

NTS



TYPICAL STORM INLET

NTS



ALL FILL MATERIALS PLACED ON THE SITE, INCLUDING ALL TRENCHES AND ALL SLOPE AREAS, SHALL BE COMPACTED IN ACCORDANCE WITH THE GEOTECHNICAL ENGINEER'S RECOMMENDATIONS BUT AT A MINIMUM OF 98% OF ASTM D-698 STANDARD PROCTOR AND IN ACCORDANCE WITH THE COUNTY ENGINEERS RECOMMENDATIONS. FILL MATERIALS WILL BE TESTED BY AN INDEPENDENT GEOTECHNICAL TESTING LAB AND PAID FOR BY THE OWNER. TESTS WILL BE CONDUCTED AT A MINIMUM OF ONE PER 5,000 SF PER LIFT OR AS DIRECTED BY THE ENGINEER.

ALL AREAS OF THE SITE SHALL BE GRADED TO PROVIDE POSITIVE DRAINAGE.

THE EROSION CONTROL MEASURES SHALL BE INSTALLED PRIOR TO INITIAL LAND DISTURBANCE ACTIVITIES OR AS SOON AS PRACTICAL. SEDIMENT SHALL BE PREVENTED FROM DISCHARGING FROM THE PROJECT SITE BY INSTALLING AND MAINTAINING SILT FENCE, STRAW BALES, SEDIMENT BASINS, ETC. OR OTHER METHODS AS INDICATED IN THE PLANS. EROSION CONTROL DEVICES SHALL BE INSTALLED FOR ALL SITES REMAINING DISTURBED FOR MORE THAN 14 DAYS.

THE CONTRACTOR SHALL CONTROL WASTES, GARBAGE, DEBRIS, WASTEWATER, AND OTHER SUBSTANCES GENERATED BY CONSTRUCTION ON THE SITE, ALL WASTE MATERIAL SHALL BE DISPOSED OF IN ACCORDANCE WITH ALL STATE OR LOCAL REGULATIONS.

ALL ON-SITE STORM DRAIN INLETS SHALL BE PROTECTED AGAINST SEDIMENTATION WITH STRAW BALES, FILTER FABRIC, OR EQUIVALENT BARRIERS.

EXCEPT AS PREVENTED BY INCLEMENT WEATHER CONDITIONS, ALL DISTURBED AREAS TO REMAIN INACTIVE FOR MORE THAN 45 DAYS SHALL BE STABILIZED BY SEEDING, SODDING, MULCHING, COVERING, OR BY OTHER EQUIVALENT EROSION CONTROL MEASURES WITHIN SEVEN (7) DAYS. PERMANENT SOIL STABILIZATION SHALL BE PROVIDED WITHIN 7 DAYS AFTER FINAL GRADE IS ESTABLISHED.

ALL EROSION CONTROL PRACTICES SHALL BE IN ACCORDANCE WITH THE SOIL CONSERVATION SERVICE MANUAL "WATER MANAGEMENT AND SEDIMENT CONTROL FOR URBANIZING AREAS."

EROSION AND SEDIMENTATION CONTROLS ARE TO BE INSPECTED AT LEAST ONCE EVERY SEVEN DAYS WITHIN 24 HOURS AFTER ANY STORM EVENT GREATER THAN 0.5 INCHES OF RAIN PER 24 HOUR PERIOD.

EXISTING		PROPOSED
9	G	
e	E	
t	T	
w	W	
ss	SS	
sd	SD	
—	—	—
	CONTOURS	
	LEGEND	



SCALE: 0 30 60 120
SCALE 1" = 30'

The seal is circular with a double-lined outer border. The top half of the inner border contains the words "STATE OF OHIO" in a bold, sans-serif font. The bottom half contains "PROFESSIONAL ENGINEER" in a similar font. The center of the seal features the name "CLAUDE A. HARDEN" above the number "53021". Above the name is a five-pointed star, and below the number is another five-pointed star. The bottom portion of the seal contains the word "REGISTERED" vertically. To the left of the seal, the word "SEAL:" is printed vertically. To the right, the date "08-20-21" is written in a box. Below the date, the text "is not official unless Signed" is printed.

The image contains two diamond-shaped boxes. The top one is larger and contains the company name 'Calibre Engineering' in a large serif font, the address '10534-B Success Lane', the city 'Centerville, OH 45458', and the phone number '937.885.9380'. The bottom one is smaller and contains the email 'CalibreEng@aol.com'.

Foreign Exchange #5, LLC
95 W. Central
City of Springboro
Warren County, Ohio

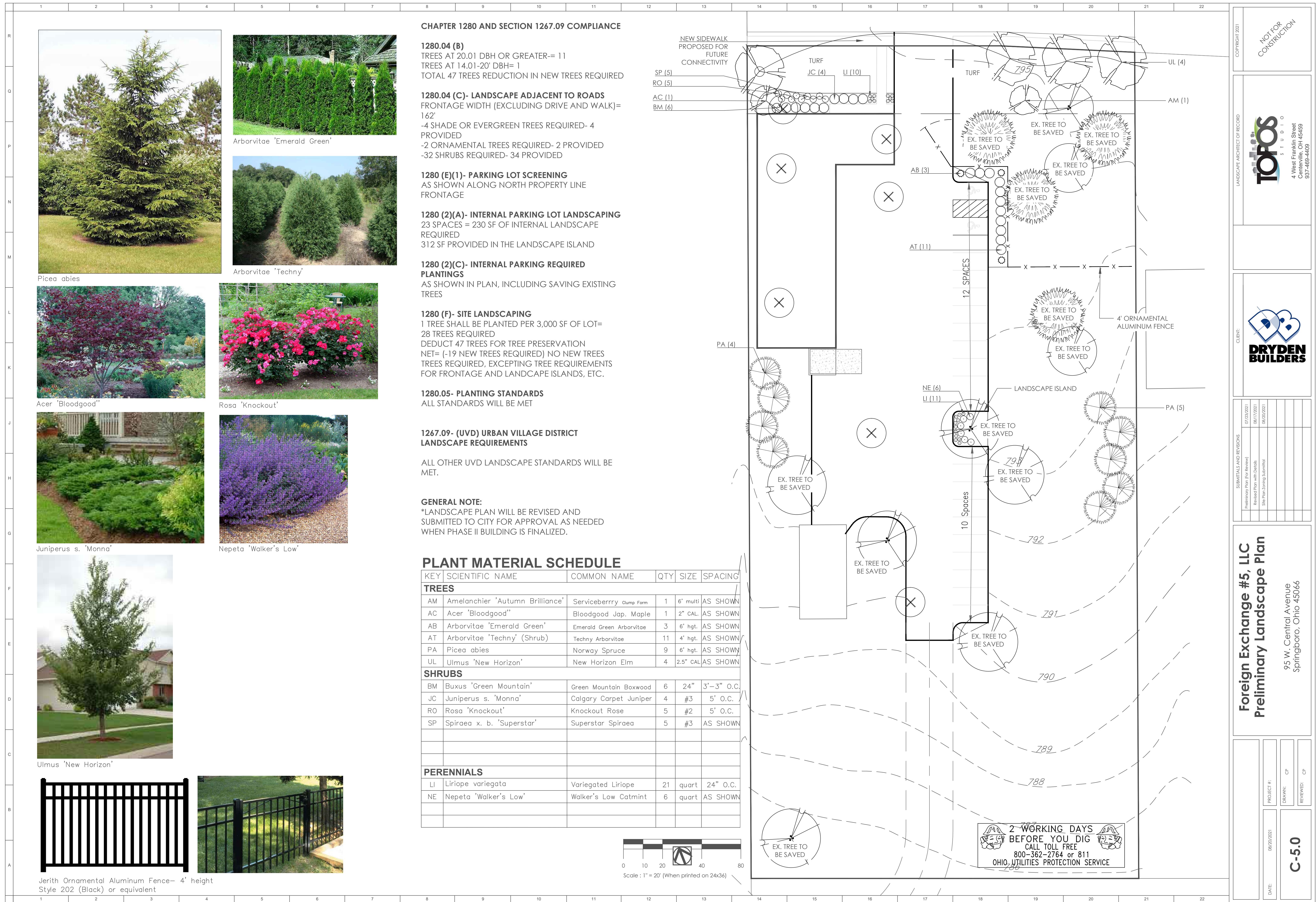
**Dryden Builders
1741 Thomas Paine Parkway
Centerville, Ohio
937-439-2728**

887-188-2729

C-3.0

GRADING & UTILITY PLAN

PROJECT NO: 2021115 AUG 20, 2021



	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
R	LANDSCAPE CONSTRUCTION GENERAL NOTES:																					
Q	<p>1. CONTRACTOR IS RESPONSIBLE FOR ACQUIRING ALL PERMITS AS REQUIRED FOR PROJECT IMPLEMENTATION. CONTRACTOR SHALL COMPLY WITH ALL FEDERAL, STATE, AND LOCAL LAWS APPLICABLE TO THE EXECUTION OF THIS PROJECT. THE OWNER AND LANDSCAPE ARCHITECT ASSUME NO LIABILITY FOR THE MISMANAGEMENT OF CONSTRUCTION.</p> <p>2. CONTRACTOR SHALL KEEP ALL ORIGINAL PERMITS ON SITE AT ALL TIMES.</p> <p>3. CONTRACTOR IS RESPONSIBLE FOR BECOMING TOTALLY FAMILIAR WITH THE SITE PRIOR TO CONSTRUCTION OR ESTIMATING.</p> <p>4. ALL WORK IS TO BE COMPLETED PER DRAWINGS AND SPECIFICATIONS. MINOR VARIATIONS DUE TO SITE DISCREPANCIES WILL BE ACCEPTED WITH APPROVAL FROM THE LANDSCAPE ARCHITECT.</p> <p>5. DIMENSIONS AND QUANTITIES ON DRAWINGS SHALL TAKE PRECEDENCE OVER SCALE, DETAILS AND ENLARGEMENTS OVER SITE PLANS, AND CALLOUTS OVER KEYS AND SCHEDULES. CONTRACTOR IS RESPONSIBLE FOR ENSURING ALL MATERIALS AND SYMBOLS ARE ACCOUNTED FOR AND ARE CONSISTENT WITH MATERIAL SCHEDULES. IF DISCREPANCIES ARE DETECTED IN THESE PLANS, THE CONTRACTOR SHALL CONTACT THE LANDSCAPE ARCHITECT IMMEDIATELY.</p> <p>6. CONTRACTOR WILL BE RESPONSIBLE FOR COORDINATION AND INSTALLATION OF WATER AND ELECTRICAL HOOKUPS INCLUDING IRRIGATION AND LIGHTING.</p> <p>7. CONTRACTOR IS TO MAINTAIN ALL EROSION CONTROL DEVICES REQUIRED BY LOCAL AUTHORITIES WITHIN THE PROJECT LIMITS UNTIL PROJECT ACCEPTANCE.</p> <p>8. THE CONTRACTOR SHALL ERECT AND MAINTAIN BARRICADES AND LIGHTS AT ALL OPEN EXCAVATIONS AS REQUIRED BY THE LOCAL AUTHORITIES.</p> <p>9. CONSTRUCTION STAKING AND LAYOUT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. ELECTRONIC FILES FOR ASSISTANCE IN FIELD LAYOUT AND CONTROL AVAILABLE FROM TOPOS STUDIO 937-469-4409.</p> <p>10. CONTRACTOR SHALL CONTACT OHIO UTILITIES PROTECTION SERVICE (OUPS) A MINIMUM OF 48 HOURS PRIOR TO ANY CONSTRUCTION OPERATIONS. OUPS CAN BE CONTACTED BY DIALING 811, OR 1-800-362-2764.</p> <p>11. DO NOT REMOVE ANYTHING THAT MAY COMPROMISE EXISTING UTILITIES OR STRUCTURES. IF ANY REMOVALS NOTED ON THE PLAN PUT STRUCTURES, UTILITIES, OR THE PUBLIC AT RISK, CONTACT THE LANDSCAPE ARCHITECT.</p> <p>12. AFTER PROJECT HAS BEEN AWARDED TO THE CONTRACTOR, THE CONTRACTOR, OWNER, AND LANDSCAPE ARCHITECT SHALL CONDUCT A PRE-CONSTRUCTION MEETING TO ENSURE A CLEAR UNDERSTANDING OF THE INTENDED DESIGN AND IMPLEMENTATION OF THE PROJECT.</p> <p>13. PROJECT COMPLETION: CONTRACTOR IS RESPONSIBLE TO CONDUCT A FINAL REVIEW OF THE PROJECT, UPON COMPLETION, WITH THE LANDSCAPE ARCHITECT TO ANSWER QUESTIONS, PROVIDE WRITTEN CARE INSTRUCTIONS FOR NEW PLANTINGS AND TURF, AND ENSURE THAT ALL SPECIFICATIONS HAVE BEEN MET.</p>																					
P	LAYOUT, DIMENSIONING & QUANTITIES																					
N	<p>1. CONTRACTOR IS TO VERIFY ALL DIMENSIONS AND QUANTITIES ON SITE. TOPOS STUDIO ASSUMES NO LIABILITY FOR THE MISMANAGEMENT OF ESTIMATING PRACTICES.</p> <p>2. WRITTEN DIMENSIONS ARE BASED ON BUILDING FOUNDATION, BACK OF CURB, OR EDGE OF PAVEMENT AND ARE IN FEET.</p> <p>3. OBJECTS NOTED AS "O.C." (ON CENTER) SHALL BE SPACED ACCORDING TO THE NOTED O.C. DIMENSION.</p>																					
M	SITE PREPARATION AND DEMOLITION																					
L	<p>1. CONTRACTOR SHALL REMOVE AND STOCKPILE ALL ITEMS AS NOTED ON PLAN.</p> <p>2. IF ADDITIONAL REMOVALS ARE NECESSARY FOR PROJECT SUCCESS, CONTRACTOR SHALL NOTIFY THE ENGINEER PRIOR TO THE EXECUTION OF THE ADDITIONAL REMOVALS.</p> <p>4. ADDITIONAL: DO NOT REMOVE ANYTHING THAT MAY COMPROMISE EXISTING UTILITIES OR STRUCTURES. IF ANY REMOVALS NOTED ON THE PLAN PUT STRUCTURES, UTILITIES, OR THE PUBLIC AT RISK, CONTACT THE ENGINEER.</p>																					
K	PLANT BED PREPARATION AND PLANT INSTALLATION																					
J	<p>1. ALL PLANTING BEDS SHALL BE PREPARED FOR PLANTS BY REMOVING ALL EXISTING TURF, GRAVEL, AND OTHER DEBRIS AND DISPOSING SPOILS DEBRIS IN AN ENVIRONMENTALLY RESPONSIBLE MANNER. CONTRACTOR SHALL ADD A MINIMUM OF 2 INCHES OF LEAF COMPOST AND ROTO-TILL LEAF COMPOST INTO EXISTING TOPSOIL. REMOVE AS MUCH GRAVEL AND OTHER DEBRIS FROM EXISTING TOPSOIL AS POSSIBLE.</p> <p>2. IF SOIL ANALYSIS REVEALS THE SOIL REQUIRES AMENDMENTS OR REPLACEMENT, CONTRACTOR SHALL FOLLOW ALL SOIL AMENDMENT RECOMMENDATIONS BASED ON THE SOIL ANALYSIS, AND PRESCRIBED SOIL USE. ONCE SOIL HAS BEEN PROPERLY AMENDED AND PREPARED, CONTRACTOR SHALL NOTIFY THE OWNER OR LANDSCAPE ARCHITECT FOR REVIEW OF PLANT STOCK, AND APPROVAL OF BED PREPARATION AND SOIL AMENDMENTS.</p> <p>3. ONE TO TWO WEEKS BEFORE MULCHING, EXISTING TREES SHALL BE PREPARED FOR MULCH RINGS BY SPRAYING HERBICIDE TO A DISTANCE OF 24" FROM BASE OF THE TRUNK. BED OF TREE RING WILL BE EDGED ACCORDING TO SPECIFICATIONS DESCRIBED IN MULCH NOTES. DO NOT CUT THROUGH ANY SURFACE ROOTS FROM EXISTING TREE. MULCH MAY BE APPLIED ON TOP OF THOROUGHLY DEAD GRASS</p> <p>4. AFTER OWNER APPROVAL OF PLANT STOCK AND BED PREPARATION CONTRACTOR MAY INSTALL PLANTINGS ACCORDING TO THE STANDARDS SET FORTH BY THE AMERICAN STANDARD FOR NURSERY</p>																					
H	ADDITIONAL NOTES:																					
G	<p>1. STOCK AND THE SPECIFICATIONS FOUND HEREIN.</p> <p>5. AFTER PLANTS HAVE BEEN INSTALLED, PRIOR TO MULCH PLACEMENT OR WATERING, CONTRACTOR SHALL PLACE A BALANCED SLOW RELEASE FERTILIZER AND A PRE-EMERGENT HERBICIDE ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.</p> <p>6. AFTER MULCH PLACEMENT AND CLEANUP, CONTRACTOR SHALL THEN WATER PLANTS IN TO ACHIEVE THOROUGH ROOT TO SOIL CONTACT. SEE MULCH NOTES FOR MULCH SPECIFICATIONS.</p> <p>7. TEMPORARY IRRIGATION EQUIPMENT MAY BE USED FOR UP TO 18 MONTHS</p>																					
F	MULCH																					
E	<p>1. MULCH BEDS SHALL BE EDGED AGAINST OTHER TYPES OF GROUND COVER AREAS SUCH AS GRAVEL OR LAWN. LAWN EDGES SHALL BE EDGED USING A SPADE OR MECHANICAL EDGER TO A DEPTH OF 3 INCHES AND LINES SHALL BE CLEARLY DEFINED WHEN FINISHED. BED EDGES ALONG PAVEMENT OR OTHER HARD SURFACE WILL HAVE SOIL REMOVED TO A DEPTH OF 3 INCHES TO ACCOMMODATE PROPER MULCH DEPTH.</p> <p>2. PROVIDE MULCH THAT CONSISTS OF SHREDDED BARK AND SHREDDED WOOD FREE OF SOIL, ROCKS, WEEDS, DEBRIS, RUBBISH, OR ENVIRONMENTALLY HAZARDOUS MATERIALS. WOOD PALETTES, TREATED LUMBER, WOOD CHIPS, AND OTHER TYPES OF NON-ORGANIC MATERIALS ARE NOT AN ACCEPTABLE MULCH MEDIUM. THE LENGTH OF ANY INDIVIDUAL COMPONENTS CANNOT EXCEED 2 INCHES, (THIS MAY BE CALLED TRIPLE SHREDDED). ENSURE THAT AT LEAST 75 PERCENT OF THE MULCH CAN PASS THROUGH A 1-INCH SCREEN. LANDSCAPE MULCH MAY CONTAIN UP TO 50 PERCENT SHREDDED WOOD. ENSURE MULCH HAS BEEN AGED AT LEAST ONE YEAR BEFORE INSTALLATION.</p> <p>3. MULCH COLOR SHALL BE BROWN.</p> <p>4. SPREAD MULCH IN PLANT BED AREAS AND TREE RINGS WITH A 2 TO 3 INCH LAYER OF LANDSCAPE MULCH UNIFORM IN TEXTURE AND SIZE. DO NOT PLACE MULCH IN DIRECT CONTACT WITH THE TRUNKS OF ANY TREES, SHRUBS, OR PERENNIALS. RAKE AND SMOOTH ALL PLANTING BEDS UPON COMPLETION OF THE WORK.</p>																					
D	GRAVEL BEDS																					
C	<p>1. GRAVEL BEDS SHALL BE EDGED USING AN APPROVED STEEL EDGING ACCORDING TO THE GRAVEL BED CONSTRUCTION & EDGE DETAIL IN THE LANDSCAPE DETAILS. STEEL EDGING SHALL BE PLACED ANYWHERE THAT GRAVEL MEETS A DIFFERENT GROUND COVER. STEEL EDGING IS NOT NECESSARY AGAINST HARDCAPE OR CONSTRUCTED EDGES SUCH AS CURBS, SIDEWALKS, OR BUILDING FOUNDATIONS. FILTER FABRIC SHALL BE PLACED BETWEEN SOIL AND GRAVEL IN ALL GRAVEL BEDS.</p>																					
B	SEED																					
A	<p>1. BARE SOIL/NEW BUILD</p> <p>1.1. AREAS CALLED OUT AS "SEED" ON THE DRAWINGS SHALL BE PREPARED BY REMOVING ALL ROCKS AND GRAVEL FROM TOP SOIL. IF SOIL IS AN UNACCEPTABLE GROWTH MEDIUM, A MINIMUM OF 2" OF ORGANIC TOPSOIL SHALL BE ADDED TO ALL SEED AREAS AFTER FINE GRADING AND ROCK/DEBRIS REMOVAL. RECOMMENDED SEED MIXTURE SHALL BE GREEN VELVET "HYBRID POWER 90/10 TALL FESCUE." 90% ELITE TALL FESCUE, 10% HYBRID BLUEGRASS. SEED SHALL BE APPLIED AT A RATE OF 8-10 POUNDS PER 1000 SQUARE FEET AND SHALL NOT BE MOWED FOR A MINIMUM OF 21 DAYS. DO NOT SPREAD SEED IN NEW PLANT BEDS OR GRAVEL AREAS.</p> <p>2. OVERSEEDING</p> <p>2.1. AREAS CALLED OUT AS "OVERSEED" ON THE DRAWINGS SHALL BE PREPARED BY MOWING THE EXISTING LAWN AREAS TO BE OVERSEED DOWN TO 2 INCHES OR LESS AND BAG THE CLIPPINGS. AFTER MOWING, USE A METAL THATCH RAKE TO REMOVE ANY REMAINING CLIPPINGS OR DEBRIS. RECOMMENDED SEED MIXTURE SHALL BE GREEN VELVET "HYBRID POWER 90/10 TALL FESCUE." 90% ELITE TALL FESCUE, 10% HYBRID BLUEGRASS. TAKE TIME TO DETHATCH AND CORE AERATE COMPACTED LAWNS. DO NOT SPREAD SEED IN NEW PLANT BEDS OR GRAVEL AREAS.</p> <p>3. FERTILIZATION & WATERING</p> <p>3.1. APPROPRIATE STARTER FERTILIZER SHALL BE APPLIED FOR SEDED AREAS ONLY ACCORDING TO MANUFACTURER'S RECOMMENDATIONS TO STIMULATE GERMINATION AND ROOT ESTABLISHMENT. DO NOT PLACE PRE-EMERGENT HERBICIDES IN SEDED AREAS. ENSURE THAT THE SELECTED FERTILIZER IS IN COMPLIANCE WITH LOCAL ENVIRONMENTAL LAWS.</p> <p>3.2. CONTRACTOR IS RESPONSIBLE FOR WATERING, FOR SEDED APPLICATIONS, ENSURE SEED AND SOIL STAYS MOIST THROUGH GERMINATION/ESTABLISHMENT PERIOD. WATER LIGHTLY TWICE DAILY FIRST FOUR DAYS. WATER MORE HEAVILY EVERY OTHER DAY FOR THE NEXT FIVE DAYS, THEN WATER AS NEEDED TO PREVENT WILTING. ONCE LAWN HAS RETURNED TO NORMAL THICKNESS AND MATURITY, RETURN TO REGULAR MAINTENANCE PRACTICES.</p> <p>FOR SOD APPLICATIONS, ENSURE SOD STAYS MOIST DURING INSTALLATION, WATERING HEAVILY IMMEDIATELY UPON COMPLETION. WATER FOUR TIMES DAILY FOR FIFTEEN MINUTES AT A TIME ON ALL AREAS WITH A WAVE SPRINKLER OR COMPARABLE METHOD FOR THE NEXT TWO WEEKS. FOR THE REST OF THE GROWING SEASON, ENSURE TURF RECEIVES AT LEAST ONE INCH OF WATER PER WEEK THROUGH RAIN OR IRRIGATION. TEMPORARY IRRIGATION EQUIPMENT MY BE USED FOR UP TO 18 MONTHS</p>																					
ADDITIONAL NOTES:																						
	<p>PROVIDE 3 SLOW RELEASE FERTILIZER PACKETS BLENDED INTO BACKFILL MIX.</p> <p>AFTER PLANTING, WATER IN SO THAT SOIL BACK FILL THOROUGHLY FILLS Voids AND CREATES CONSISTENT ROOT TO SOIL CONTACT.</p> <p>CROWN OF ROOT BALL SHALL BEAR SAME RELATION (OR SLIGHTLY ABOVE) TO FINISHED GRADE AS IT BORE TO PREVIOUS GRADE. PLACE ON SUBGRADE PEDESTAL.</p> <p>SLOW RELEASE WATERING RING AS SPECIFIED</p> <p>SHREDDED BARK MULCH 75mm (3") MIN. DEPTH</p> <p>CREATE SOIL SAUCER WITH TOPSOIL 150mm (6") MIN.</p> <p>FOLD DOWN OR CUT AND REMOVE TOP 1/3 OF BURLAP IF NON-Biodegradable WRAP IS USED. REMOVE TOTALLY.</p> <p>BACKFILL AS SPECIFIED</p> <p>TAMPED SUBGRADE PEDESTAL</p>																					
A - EVERGREEN TREE PLANTING																						
B - DECIDUOUS TREE PLANTING																						
C - SHRUB PLANTING																						
D - CONTAINER PLANTING																						
E - MULCH BED EDGE																						
NOT FOR CONSTRUCTION																						
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SOIL EROSION/SEDIMENTATION CONTROL TIME SCHEDULE

Note: General Contractor to Complete Table with Their Specific Project Schedule												
Construction Sequence	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan
ROUGH GRADE / SEDIMENT CONTROL	*											
TEMPORARY CONTROL MEASURES		*										
STRIP & STOCKPILE TOPSOIL		*										
STORM FACILITIES				*								
TEMPORARY CONSTRUCTION ROADS			*									
FOUNDATION / BUILDING CONSTRUCTION		*	*	*	*							
SITE CONSTRUCTION												
PERMANENT CONTROL STRUCTURES					*							
FINISH GRADING							*					
LANDSCAPING/SEED/FINAL STABALIZATION								*	*			

SEQUENCE OF CONSTRUCTION PHASE II:

1. TEMPORARILY SEED DENUDED AREAS.
2. START CONSTRUCTION OF BUILDING PAD AND STRUCTURES.
3. INSTALL UTILITIES (SANITARY, WATER, ETC.) INCLUDING UNDERDRAINS AND STORM SEWERS.
4. INSTALL SEDIMENT CONTROLS AROUND DRAINAGE STRUCTURES, INCLUDING EROSION CONTROL BLANKETS AND RIP RAP.
5. START GRADING, CONSTRUCT CURBS AND GUTTERS, AND PREPARE SITE FOR PAVING.
6. BARRICADE UNUSED ENTRANCES TO THE SITE UNTIL SITE IS PAVED.
7. INSTALL INLET PROTECTION DEVICES.
8. COMPLETE GRADING AND INSTALL PERMANENT SEEDING AND PLANTING.
9. REMOVE ALL TEMPORARY EROSION AND SEDIMENT CONTROL DEVICES (ONLY IF SITE IS STABILIZED)

NO

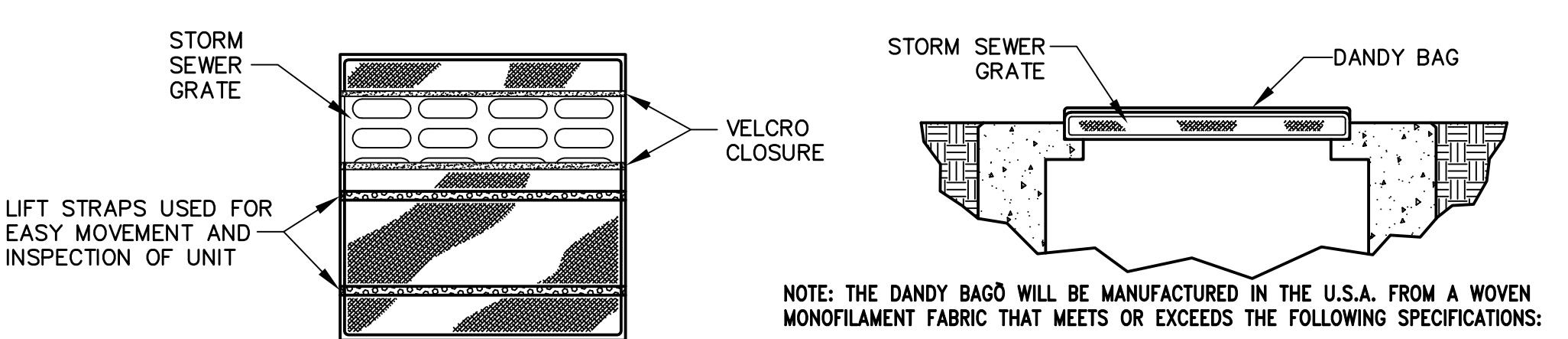
NOTE:

1. STREET CLEANING (ON AN AS-NEEDED BASIS) IS REQUIRED THROUGH THE DURATION OF THIS CONSTRUCTION PROJECT. THIS INCLUDES SWEEPING, POWER CLEANING AND (IF NECESSARY) MANUAL REMOVAL OF DIRT OR MUD IN THE STREET GUTTERS.
2. THIS PLAN MUST BE POSTED ON-SITE. A COPY OF THE SWPPP PLAN AND THE APPROVED EPA STORMWATER PERMIT (WITH THE SITE-SPECIFIC NOI NUMBER) SHALL BE KEPT ON-SITE AT ALL TIMES.
3. ANY EXISTING STORM INLETS IMPACTED BY THE NEW CONSTRUCTION ACTIVITY WILL NEED THE APPROPRIATE INLET PROTECTION FOR SEDIMENT CONTROL. PARTICULARLY NEEDED DURING DEMOLITION TIME.
4. UPPER BANK ABOVE NORMAL WATER ELEVATION SHOULD BE STABILIZED QUICKLY WITH STRAW BLANKETS, JUTTE MATTING OR SIMILAR GEO-TEXTILE.

Post Construction Detention Basin Maintenance

The owner shall be responsible for the maintenance and operation of the detention basin throughout the life of the project. Water quality shall be visually monitored on a periodic basis to ensure compliance with design standards. The maintenance activity

Maintenance Activity	Schedule
Inspect for sediment accumulation	Annually
Remove sediment accumulation when it exceeds 1/2 the outlet control orifice depth or 6" whichever is greater	Every 5–10 years as needed
Inspect for debris (dead vegetation and trash)	Early spring, fall and after Major Storms
Clean debris	As needed
Inspect for erosion on banks and bottom	Early spring, fall and after Major Storms
Reestablish permanent vegetation on eroded slopes	As needed
Rake out dead vegetation	Annually – early spring
Replace stone rip–rap	Every 3–5 years as needed
Mowing	0 to 2 times per year
Inspect structural elements during wet weather and compare to as–built plans	Annually
Make adjustments or replacements as determined by annual wet weather inspection	As needed
Keep records of all inspections and maintenance activities	Annually
Keep records of all costs for inspections, maintenance, and repairs	Annually
Have a professional engineer carry out emergency inspections upon identification of severe problems	As needed
Inspections shall include detention basin side slopes, outlets and outlet control structures, basin inlets sumps and storm sewer systems.	

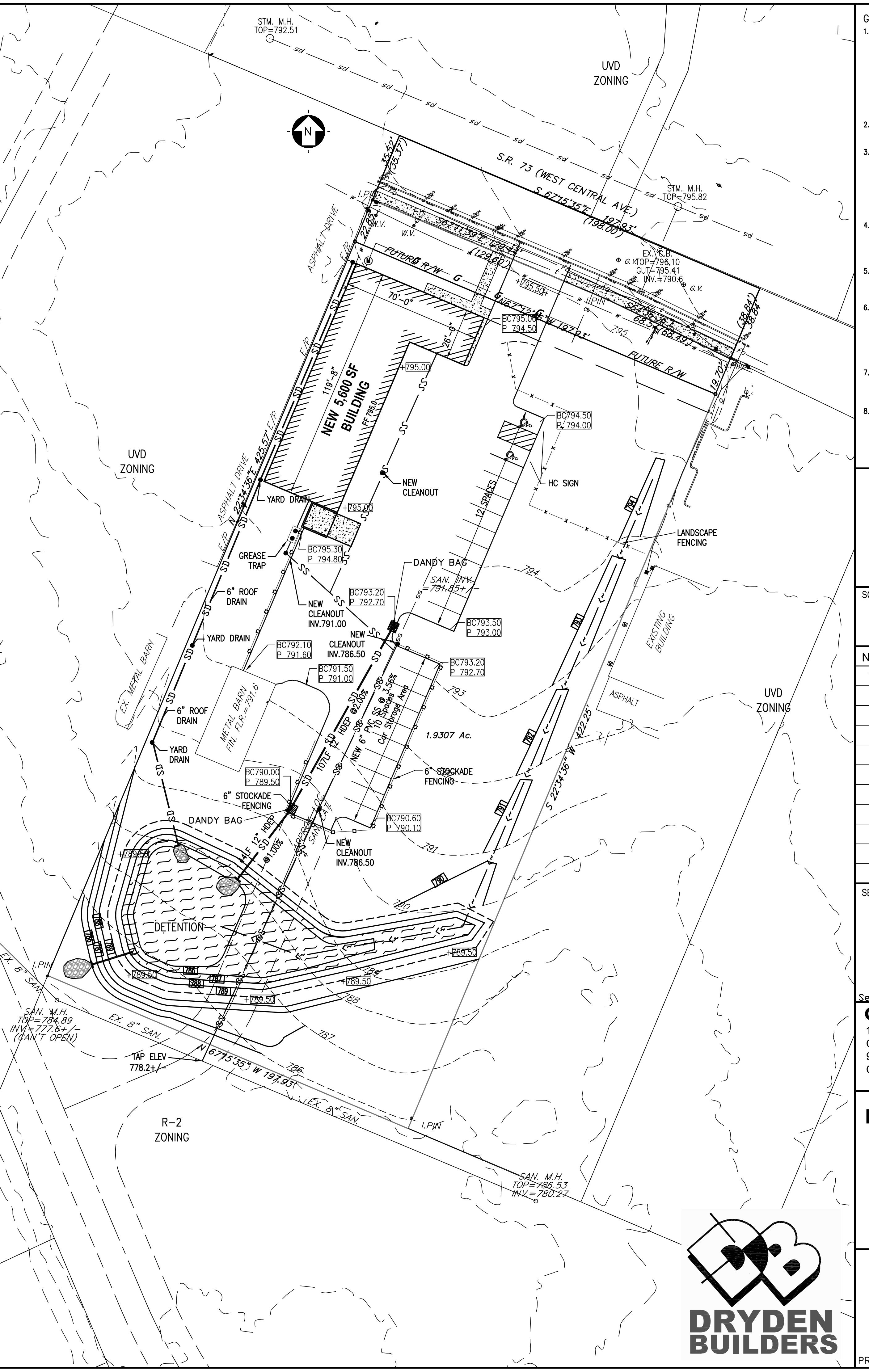


NOTE: THE DANDY BAG® WILL BE MANUFACTURED IN THE U.S.A. FROM A WOVEN MONOFILAMENT FABRIC THAT MEETS OR EXCEEDS THE FOLLOWING SPECIFICATIONS:

MECHANICAL PROPERTIES	TEST METHOD	UNITS	MARV
GRAB TENSILE STRENGTH	ASTM D 4632	kN (lbs)	1.62 (365) X 0.89 (200)
GRAB TENSILE ELONGATION	ASTM D 4632	%	24 X 10
PUNCTURE STRENGTH	ASTM D 4833	kN (lbs)	0.40 X (90)
MULLEN 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 RESISTENCE	ASTM D 4355	%	90
APPARENT OPENING SIZE	ASTM D 4751	Mm (US STD SIEVE)	0.425 (40)
FLOW RATE	ASTM D 4491	1/min/m ² (gal/min/ft ²)	5907 (145)
PERMITTIVITY	ASTM D 4491	SEC ⁻¹	2.1

NOTE: ALL DANDY BAGS® CAN BE ORDERED WITH OUR OPTIONAL OIL ABSORBENT PILLOWS
INLET SEDIMENT CONTROL DEVICE DETAIL

NOTE!
EXISTING UNDERGROUND UTILITIES AND SERVICES ARE SHOWN IN
THEIR APPROXIMATE LOCATIONS ACCORDING TO THE BEST INFORMATION
AVAILABLE. THE LOCATIONS SHOWN ARE INTENDED ONLY AS A GUIDE
AND CANNOT BE GUARANTEED ACCURATE. NOTIFY THE FOLLOWING
48 HOURS PRIOR TO CONSTRUCTION TO FIELD LOCATE UTILITIES.



ADING NOTES

ALL FILL MATERIALS PLACED ON THE SITE, INCLUDING ALL TRENCHES AND ALL SLOPE AREAS, SHALL BE COMPAKTED IN ACCORDANCE WITH THE GEOTECHNICAL ENGINEER'S RECOMMENDATIONS BUT AT A MINIMUM OF 98% OF ASTM D-698 STANDARD PROCTOR AND IN ACCORDANCE WITH THE COUNTY ENGINEERS RECOMMENDATIONS. FILL MATERIALS WILL BE TESTED BY AN INDEPENDENT GEOTECHNICAL TESTING LAB AND PAID FOR BY THE OWNER. TESTS WILL BE CONDUCTED AT A MINIMUM OF ONE PER 5,000 SF PER LIFT OR AS DIRECTED BY THE ENGINEER.

ALL AREAS OF THE SITE SHALL BE GRADED TO PROVIDE POSITIVE DRAINAGE.

THE EROSION CONTROL MEASURES SHALL BE INSTALLED PRIOR TO INITIAL LAND DISTURBANCE ACTIVITIES OR AS SOON AS PRACTICAL. SEDIMENT SHALL BE PREVENTED FROM DISCHARGING FROM THE PROJECT SITE BY INSTALLING AND MAINTAINING SILT FENCE, STRAW BALES, SEDIMENT BASINS, ETC. OR OTHER METHODS AS INDICATED IN THE PLANS. EROSION CONTROL DEVICES SHALL BE INSTALLED FOR ALL SITES REMAINING DISTURBED FOR MORE THAN 14 DAYS.

THE CONTRACTOR SHALL CONTROL WASTES, GARBAGE, DEBRIS, WASTEWATER, AND OTHER SUBSTANCES GENERATED BY CONSTRUCTION ON THE SITE, ALL WASTE MATERIAL SHALL BE DISPOSED OF IN ACCORDANCE WITH ALL STATE OR LOCAL REGULATIONS.

ALL ON-SITE STORM DRAIN INLETS SHALL BE PROTECTED AGAINST SEDIMENTATION WITH STRAW BALES, FILTER FABRIC, OR EQUIVALENT BARRIERS.

EXCEPT AS PREVENTED BY INCLEMENT WEATHER CONDITIONS, ALL DISTURBED AREAS TO REMAIN INACTIVE FOR MORE THAN 45 DAYS SHALL BE STABILIZED BY SEEDING, SODDING, MULCHING, COVERING, OR BY OTHER EQUIVALENT EROSION CONTROL MEASURES WITHIN SEVEN (7) DAYS. PERMANENT SOIL STABILIZATION SHALL BE PROVIDED WITHIN 7 DAYS AFTER FINAL GRADE IS ESTABLISHED.

ALL EROSION CONTROL PRACTICES SHALL BE IN ACCORDANCE WITH THE SOIL CONSERVATION SERVICE MANUAL "WATER MANAGEMENT AND SEDIMENT CONTROL FOR URBANIZING AREAS."

EROSION AND SEDIMENTATION CONTROLS ARE TO BE INSPECTED AT LEAST ONCE EVERY SEVEN DAYS WITHIN 24 HOURS AFTER ANY STORM EVENT GREATER THAN 0.5 INCHES OF RAIN PER 24 HOUR PERIOD.

EXISTING		PROPOSED
— 9 —	GAS	— G —
— e —	ELECTRIC	— E —
— t —	TELEPHONE	— T —
— w —	WATER	— W —
— ss —	SEWER	— SS —
— sd —	STORM	— SD —
— — — —	CONTOURS	
	LEGEND	



SCALE: 0 30 60 120
SCALE 1" = 30'

The seal is circular with a serrated outer edge. The words "STATE OF OHIO" are at the top, "PROFESSIONAL ENGINEER" are at the bottom, and "REGISTERED" is on the left. The center contains "CLAUDE A. HARDEN" and "53021" with two stars on the sides.

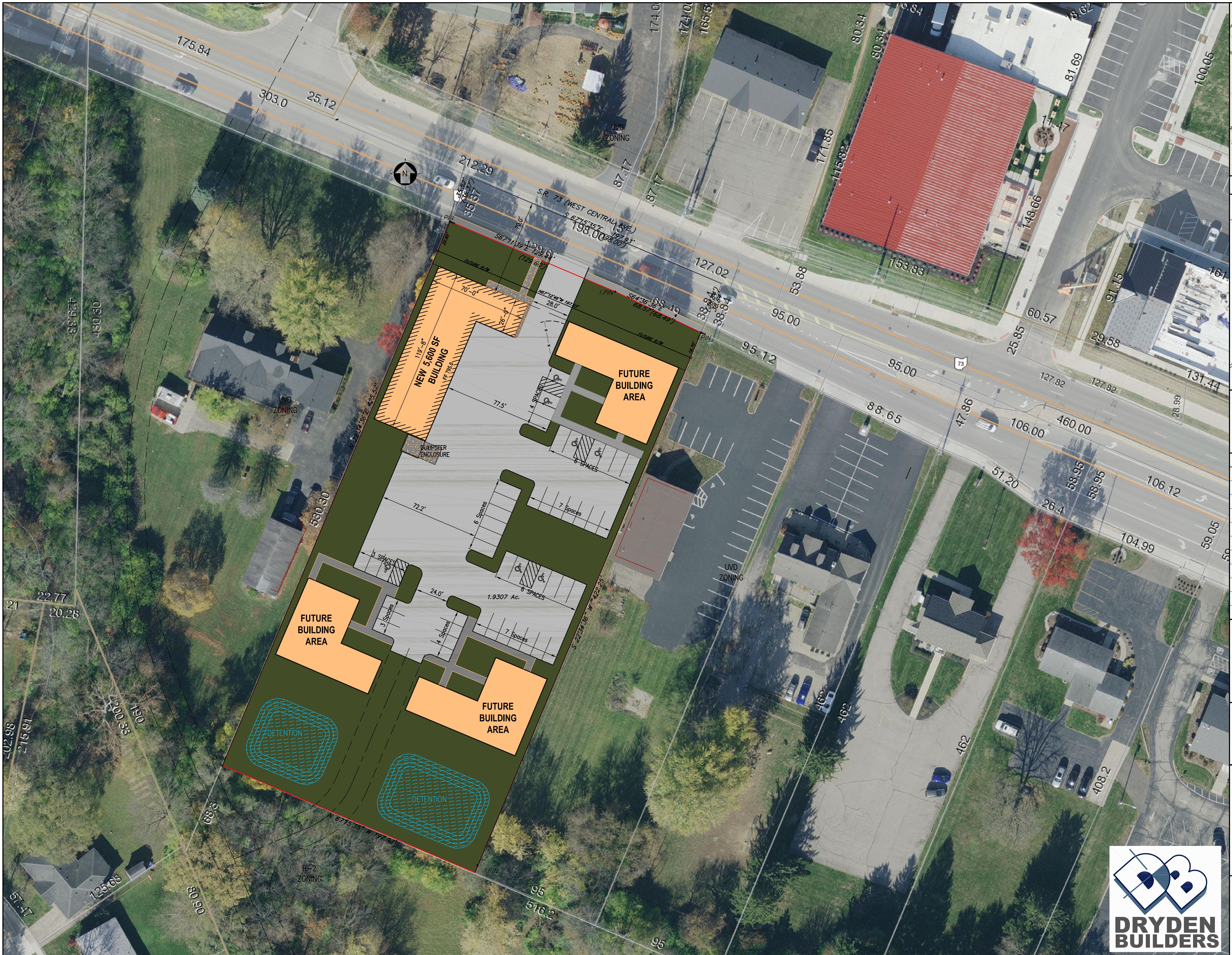
Calibre Engineering
10534-B Success Lane
Centerville, OH 45458
937.885.9380
CalibreEng@aol.com

Foreign Exchange #5, LLC
95 W. Central
City of Springboro
Warren County, Ohio

Dryden Builders
1741 Thomas Paine Parkway
Centerville, Ohio
937-439-2728

SWP-3.2

EROSION CONTROL PLAN PHASE 2



SCALE:

0 30 60 120

SCALE 1" = 30'

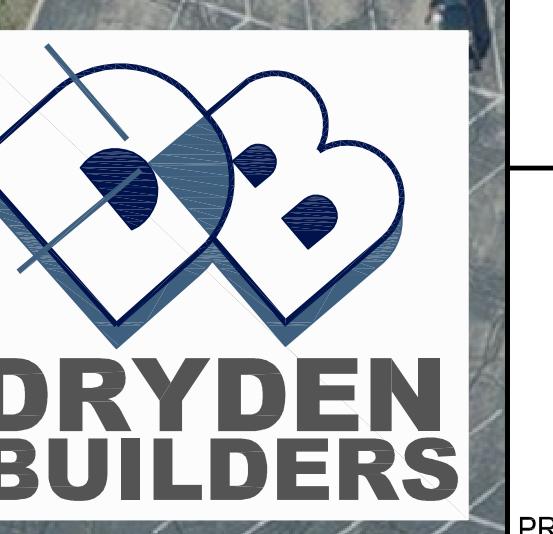
A circular seal for a registered professional engineer in the State of Ohio. The outer ring contains the text "STATE OF OHIO" at the top and "PROFESSIONAL ENGINEER" at the bottom, separated by a horizontal line. The inner circle contains "CLAUDE" on top, "A." in the middle, and "HARDEN" on the bottom. Below "HARDEN" is the number "53021". The word "REGISTERED" is written vertically along the left side of the inner circle. Two five-pointed stars are positioned on the left and right sides of the inner circle.

Calibre Engineering
10534-B Success Lane
Centerville, OH 45458
937.885.9380

CE

Foreign Exchange #5, LLC
95 W. Central
City of Springboro
Warren County, Ohio

**Dryden Builders
1741 Thomas Paine Parkway
Centerville, Ohio
937-439-2728**



CP-2.0

MASTER PLAN

LAYOUT



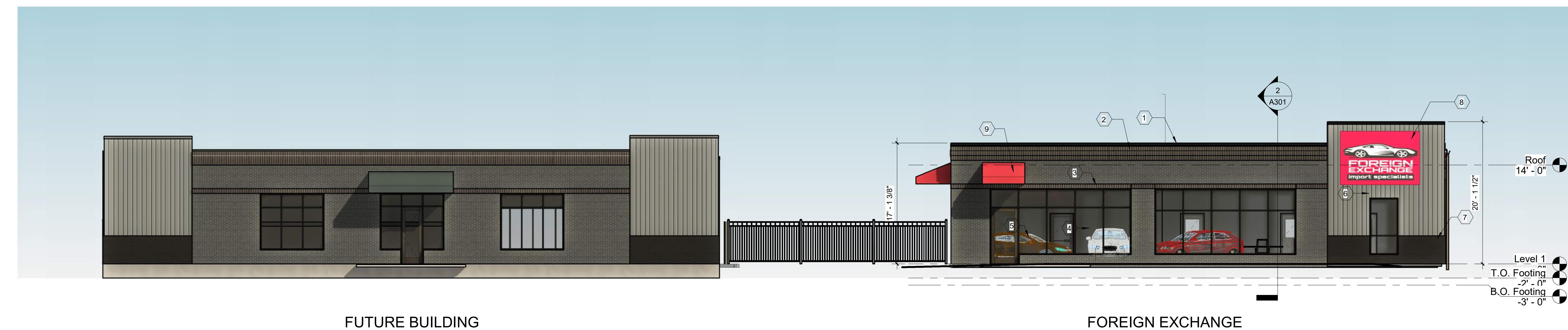
Keynote Legend	
Key Value	Keynote Text
1	ALUM. WALL COPING; COLOR: BLACK ANODIZED
2	BRICK SOLDIER COURSE - TRIPLE; COLOR: ESPRESSO
3	BRICK SOLDIER COURSE - SINGLE; COLOR: ESPRESSO
4	ALUM. STOREFRONT SYSTEM; 2.5" X 5"; COLOR: BLACK ANODIZED
5	INSULATED GLAZING; COLOR: CLEAR, LOW-E
6	VERT. FLUSH METAL SIDING PANELS; MED. GREY COLOR
7	BURNISHED JUMBO BRICK; COLOR: DK. GREY
8	CUSTOM LOGOTYPE SIGNAGE
9	FABRIC AWNING ON ALUM. FRAMEWORK; COLOR: RED

NOT FOR
REGULATORY
APPROVAL OR
CONSTRUCTION

DESCRIPTION	REVISION SCHEDULE



EXTERIOR ELEVATIONS	
Project number	2131
Issue Date	08/19/21
Drawn by	Author
Checked by	Checker
A202	
Scale	1/8" = 1'-0"
Copyright © 2020 BC3D Design. All rights reserved.	



FUTURE BUILDING

FOREIGN EXCHANGE

1 NORTH - FRONT ELEVATION -
Phase II
1/8" = 1'-0"



Schedule

Symbol	Label	Quantity	Manufacturer	Catalog Number	Description	Number Lamps	Lumens Per Lamp	Light Loss Factor	Wattage
	A	3	Industrial Lighting Products Inc	AL-110W-U-40-T3-BLK	Medium Area Light, Pole Fixture	1	16601	0.9	112.667
	B	5	Industrial Lighting Products, LLC	SWP-3L-U-CCTS-BLK	SWP-3L-U-CCTS-BLK, Slim Wall Pack	1	3310	0.9	22.8
	C	3	GREEN CREATIVE LTD	led downlight	SLFT6/80CCTS/DIM120V, Under Awnings	1	1000	0.9	14.97

Statistics

Description	Symbol	Avg	Max	Min	Max/Min	Avg/Min
Entrance	+	4.9 fc	5.0 fc	4.8 fc	1.0:1	1.0:1
Entrance	+	3.0 fc	3.0 fc	3.0 fc	1.0:1	1.0:1
Entrance	+	2.6 fc	2.8 fc	2.5 fc	1.1:1	1.0:1
Parking Lot/Loading	+	2.1 fc	5.7 fc	0.4 fc	14.3:1	5.3:1
Walkway	+	0.9 fc	2.0 fc	0.2 fc	10.0:1	4.5:1
Property Line	+	0.0 fc	0.1 fc	0.0 fc	N/A	N/A

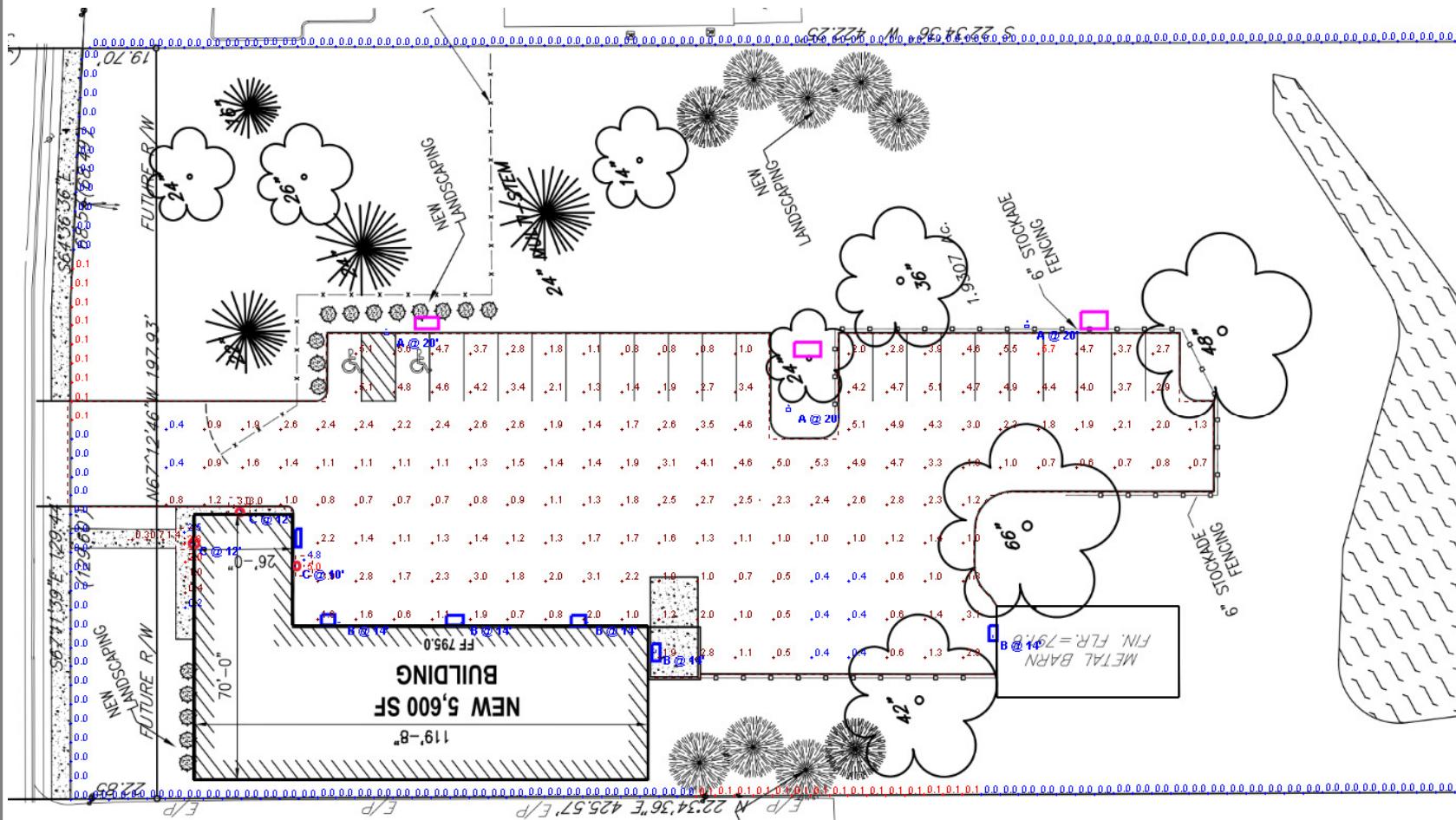
Note

1. Dimensions:
2. Mounting Height: 20, 14, 12, 10
3. Calc Zone: 0
4. Reflectances:

Calculations provided are estimates only.

Designer
Bryan Schneider
Date
08/25/2021
Scale
Not to Scale
Drawing No.

Summary



Foreign Exchange - Springboro Site Lighting Photometric

Designer
Bryan Schneider
Date
08/24/2021
Scale
Not to Scale
Drawing No.

Summary



Project Foreign Exchange - LEE21-44355
Quote# LEE21-44355
Location Springboro Oh
To LYONS ELECTRICAL SUPPLY
 PO BOX 96
 DAYTON OH 45401
 Contact: Tom Lyons

Transmittal
 LEESMAN LIGHTING
 130 W. ROSS AVE
 CINCINNATI OH 45217
 Phone: (513) 693-4060
From: Dennis Leesman

ATTACHED WE ARE SENDING YOU 1 COPY OF THE FOLLOWING ITEM:

<input type="checkbox"/> Drawings	<input type="checkbox"/> Specifications	Other:
<input type="checkbox"/> Prints	<input type="checkbox"/> Information	
<input type="checkbox"/> Plans	<input checked="" type="checkbox"/> Submittals	

THESE ARE TRANSMITTED FOR:

<input type="checkbox"/> Prior Approval	<input type="checkbox"/> Resubmittal for Approval	<input type="checkbox"/> Record
<input checked="" type="checkbox"/> Approval	<input type="checkbox"/> Corrections	Bids due on:
<input type="checkbox"/> Approval as Submitted	<input type="checkbox"/> Your Use	Other:
<input type="checkbox"/> Approval as Noted	<input type="checkbox"/> Review and Comment	

Type	MFG	Part
A	ILP	AL-110W-U-40-T3-UPMB-BLK
A	ILP	ILPOLE-SS-4-20-11-1-BLK
B	ILP	SWP3LUCCTSBLK
C	Green Creative	SLFT6/80CCTS/DIM010UNV



Job Name:
Foreign Exchange - LEE21-44355

Catalog Number:

AL-110W-U-40-T3-UPMB-BLK

Type:**A**

Notes:

LEE21-44355

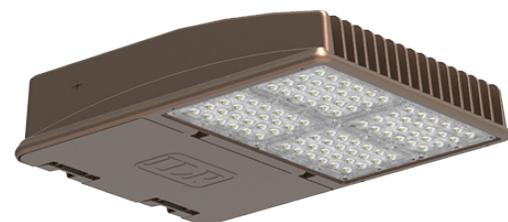
Project Name:

Part Number:

Type:

MEDIUM AREA LIGHT - 110W, 150W, 190W & 225W**OUTDOOR****FEATURES**

- Bronze die-cast aluminum housing
- Custom and factory select colors available (Contact factory for pricing)
- Type II, III, IV, & VS optics available
- Toolless hinged drop down driver access
- Universal Pole Mounting Bracket (UPMB) or Fixed Arm (ARM6-S) (std.)
- 3G ANSI C136.31-2010 with HTMA Bracket
- Swappable driver cover
- IP66 Rated
- 3000K, 4000K, & 5000K CCT
- 0-10V Dimmable Driver
- Dark Sky Compliant^{1,2}
- 5 Year Warranty
- DesignLights Consortium® Premium Qualified Luminaire

¹3000K is IDA Listed²Must select UPMB, ARM6, or HTMA mounting options to qualify**SUITABLE APPLICATIONS**

- Parking Lots
- Car Dealerships
- Roadways
- Shopping Centers

LED INFO	T3	T4	110W	T3	T4	150W	T3	T4	190W	T3	T4	225W	T3	T4
Calculated L ₇₀ (TM-21)	>100K	>100K		>100K	>100K									
Calculated L ₉₀	50K	50K		50K	50K									
Delivered Lumens	17,390 lm	17,031 lm		21,849 lm	20,989 lm		26,329 lm	25,825 lm		30,229 lm	29,372 lm		32,229 lm	30,372 lm
Total Input Watts	113W	113W		149W	149W		188W	188W		232W	232W		232W	232W
Efficacy	154 lm/W	151 lm/W		146 lm/W	141 lm/W		140 lm/W	137 lm/W		131 lm/W	127 lm/W		131 lm/W	127 lm/W
CCT	4000K	4000K		4000K	4000K									
CRI	>70	>70		>70	>70		>70	>70		>70	>70		>70	>70
BUG Rating	B3-U0-G3	B3-U0-G3		B3-U0-G3	B3-U0-G3		B3-U0-G3	B3-U0-G4		B3-U0-G4	B3-U0-G4		B3-U0-G4	B3-U0-G4
Ambient Temp Range	-40°F-118°F	-40°F-118°F		-40°F-118°F	-40°F-118°F		-40°F-118°F	-40°F-118°F		-40°F-113°F	-40°F-113°F		-40°F-113°F	-40°F-113°F
Universal Driver	120-277 V	120-277 V		120-277 V	120-277 V									

LED System data for other optics located on second page. LED System data above based on AL-110W-U-40-T3, AL-110W-U-40-T4, AL-150W-U-40-T3, AL-150W-U-40-T4, AL-190W-U-40-T3, AL-190W-U-40-T4, AL-225W-U-40-T3 & AL-225W-U-40-T4. LED Lumen maintenance estimates based on TM-21 projections for the light source at 25°C ambient.

ORDERING GUIDE:

Series	Watts	Driver	Color	Optics	Options
AL Med Area Light	110W	U 120-277V Driver	50	T2	HSS* House Side Shield (Excludes T5S)
	150W	HV 347-480V Driver	40	T3	GS Glare Shield
	190W		30	T4	TPS/L Tamperproof Screws Latches Only
	225W			T5S	TPS/FF Tamperproof Screws Full Fixture
					WLOS Wet Location Rated Occupancy Sensor
					USBD User Select Bi-Level Dim w/ Occupancy Sensor
					BDxx Preset Bi-Level Dim Sensor (xx=% eg. 20, 30)
					BDxxPC Preset Bi-Level Dim Sensor w/ Photocell (xx=% eg. 20, 30)
					FSIR/100 Remote Configuration Tool (WLOS, USBD, BDxx & BDxxPC)
					TLPC Twist lock receptacle w/ field installed photocell
					TLPC/480V Twist lock receptacle w/ field installed 347-480VAC photocell
					7PIN/PC/R 7 pin twist lock receptacle w/ field installed photocell
					SMI xxxx Specified Max Lumen Output (xxxx = lumen output)
					UPMB Universal Pole Mounting Bracket
					UPMB/R Universal Pole Mounting Bracket w/ Round Pole Adapter 4"-5"
					ARM6-S 6" Straight Arm Adaptor for Square Pole
					ARM6-Rx 6" Straight Arm Adaptor for Round Pole (x = diameter)
					WMB Wall Mount Bracket
					AL-SLPF Adjustable Slip Fitter
					AL-SB Adjustable Swivel Bracket
					HTMA Horizontal Tenon Mount Adaptor
					FUSE/SXXX Single-line Voltage Fuse (120, 277, 347)
					FUSE/DXXX Dual-line Voltage Fuse (208, 240, 480)
					SP1 10kA Max Univolt Surge Protector
					SP2 22kA Max Univolt Surge Protector
					SP480V2 20kA Max 480V Surge Protector
					SD480V 480V Step Down Transformer (Excludes 225W)
					SD347V 347V Step Down Transformer (Excludes 225W)



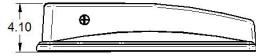
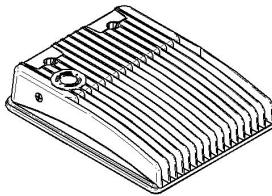
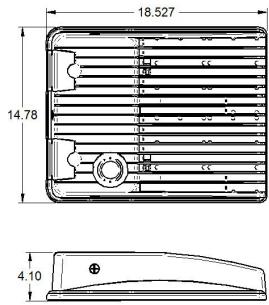
MEDIUM AREA LIGHT - 110W, 150W, 190W & 225W

OUTDOOR

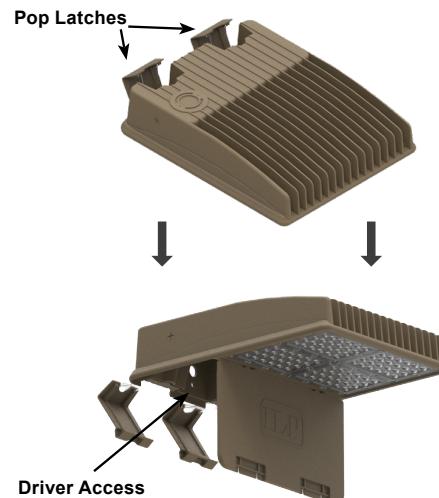
LED INFO	T2	T5S	110W	T2	T5S	150W	T2	T5S	190W	T2	T5S	225W	T2	T5S
Calculated L ₇₀ (TM-21)	>100K	>100K		>100K	>100K									
Calculated L ₉₀	50K	50K		>60K	>60K									
Delivered Lumens	17,489 lm	17,316 lm		21,715 lm	21,738 lm		26,479 lm	26,222 lm		30,326 lm	30,135 lm		232W	232W
Total Input Watts	113W	113W		147W	149W		188W	188W		131 lm/W	130 lm/W		4000K	4000K
Efficacy	155 lm/W	154 lm/W		148 lm/W	146 lm/W		141 lm/W	139 lm/W		4000K	4000K		4000K	4000K
CCT	4000K	4000K		>70	>70									
CRI	>70	>70		>70	>70		>70	>70		B3-U0-G3	B4-U0-G2		B4-U0-G4	B5-U0-G3
BUG Rating	B3-U0-G3	B4-U0-G2		B3-U0-G3	B4-U0-G2		B4-U0-G4	B5-U0-G3		B4-U0-G4	B5-U0-G3		40°F-113°F	40°F-113°F
Ambient Temp Range	-40°F-118°F	-40°F-118°F		-40°F-118°F	-40°F-118°F		-40°F-118°F	-40°F-118°F		-40°F-113°F	-40°F-113°F		120-277 V	120-277 V
Universal Driver	120-277 V	120-277 V		120-277 V	120-277 V									

LED System data for other optics located on second page. LED System data above based on AL-110W-U-40-T2, AL-110W-U-40-T5S, AL-150W-U-40-T2, AL-150W-U-40-T5S, AL-190W-U-40-T2, AL-190W-U-40-T5S, AL-225W-U-40-T2 & AL-225W-U-40-T5S. LED Lumen maintenance estimates based on TM-21 projections for the light source at 25°C ambient.

LINE DRAWING



TOOL-LESS DRIVER ACCESS





Job Name:
Foreign Exchange - LEE21-44355

Catalog Number:

AL-110W-U-40-T3-UPMB-BLK

Notes:

Type:**A**

LEE21-44355

MEDIUM AREA LIGHT - 110W, 150W, 190W & 225W

OUTDOOR

MOUNTING OPTIONS

- **UPMB** - Universal Pole Mounting Bracket
- **UPMB/R** - Universal Pole Mounting Bracket
- **WMB** - Wall Mount Bracket
- **AL-SLPF** - Adjustable Slip Fitter
- **AL-SB** - Swivel Bracket
- **HTMA** - Horizontal Tenon Mount Adaptor
- **ARM6-S** - 6" Straight Arm Adaptor For Square Pole
- **ARM6-Rx** - 6" Straight Arm Adaptor For Round Pole (x = Ø)

EPA RATINGS	ARM6-S	UPMB	HTMA	AL-SLPF	AL-SB
AL-110W, 150W, 190W, & 225W	0.77 ft ²	0.92 ft ²	0.73 ft ²	0.84 ft ²	0.76 ft ²

WEIGHT

23lb - 26lb

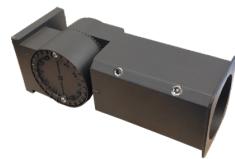
* EPA Ratings listed assume fixture is mounted horizontally.
For adjustable mounting options, EPA will vary with selected angle.



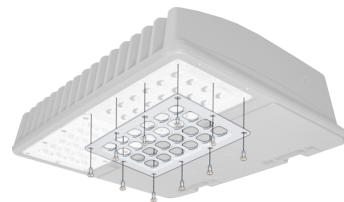
UPMB



WMB



AL-SLPF

HSS
(House Side Shield)

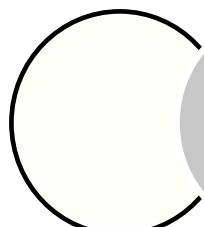
AL-SB



HTMA

ARM6-S
(Available for Square or Round Pole)GS
(Glare Shield)

FACTORY SELECT COLOR GUIDE



White



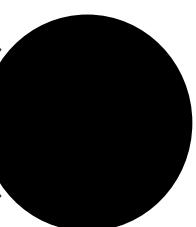
Silver



Bronze



Brown



Black

COLOR NAME AND DESCRIPTION	SHEEN	PRODUCT	VENDOR	PRICING
WHT - ILP White	SEMI GLOSS	POLANE T	SHERWIN-WILLIAMS	Contact Factory for Pricing
SLV - ILP Silver - Ultrasonic Chrome	GLOSS	POLANE T	SHERWIN-WILLIAMS	Contact Factory for Pricing
BRZ - ILP Bronze - std. & in stock	SEMI GLOSS	POLANE T	SHERWIN-WILLIAMS	Standard
BRN - ILP Brown	SEMI GLOSS	POLANE T	SHERWIN-WILLIAMS	Contact Factory for Pricing
BLK - ILP Black	SEMI GLOSS	POLANE T	SHERWIN-WILLIAMS	Contact Factory for Pricing

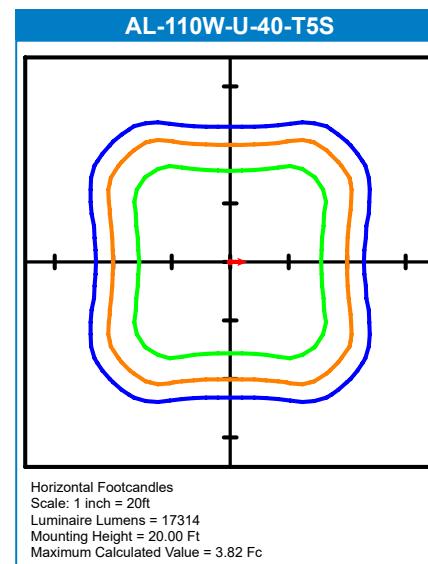
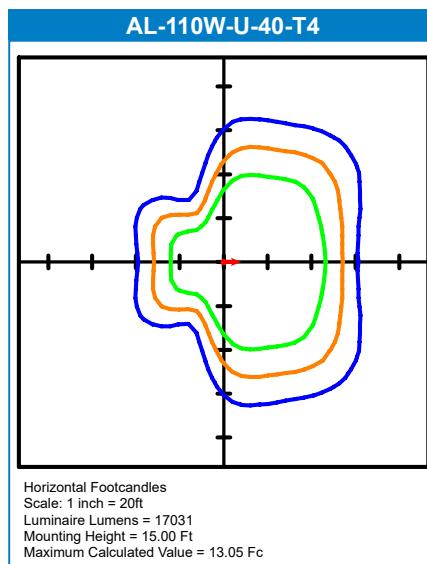
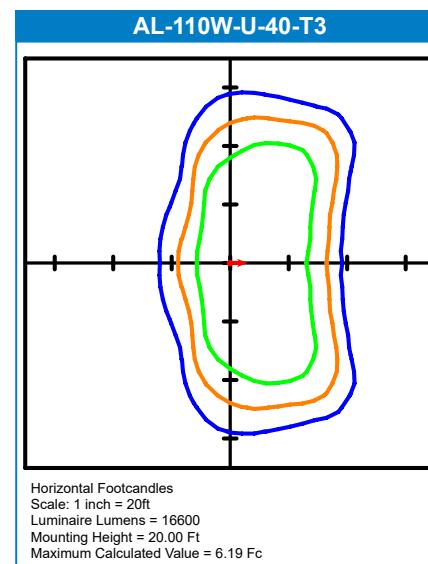
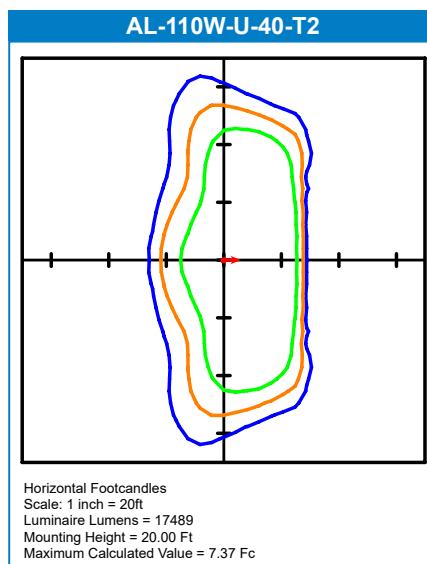
COLORS SHOWN ABOVE ARE TO BE USED AS REFERENCE, NOT EXACT MATCH.
PLEASE REQUEST PAINT CHIPS FOR EXACT MATCH.

MEDIUM AREA LIGHT - 110W, 150W, 190W & 225W

OUTDOOR

PHOTOMETRIC REPORTS

Photometric values based upon tests performed in compliance with LM-79. IES files can be downloaded at www.ipi-inc.com
Blue = .5 fc, Orange = 1 fc, & Green = 2 fc

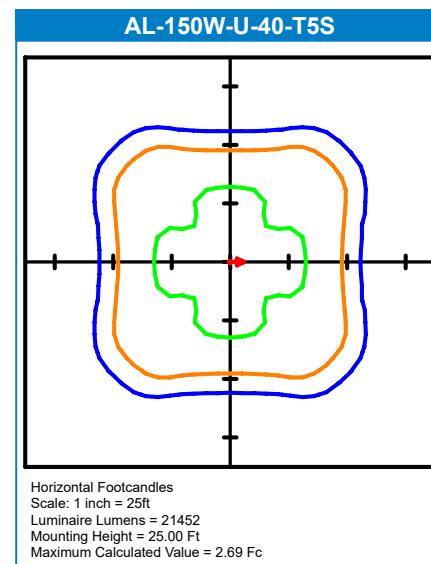
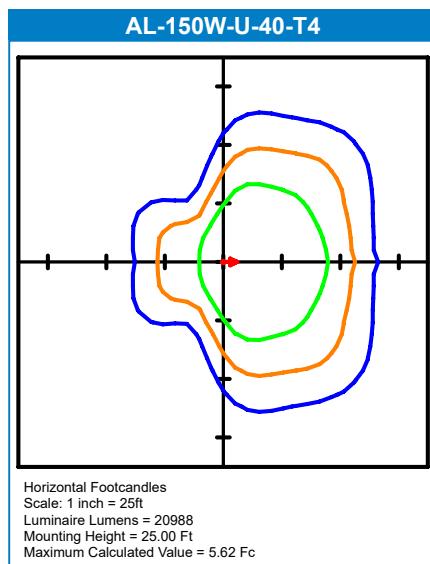
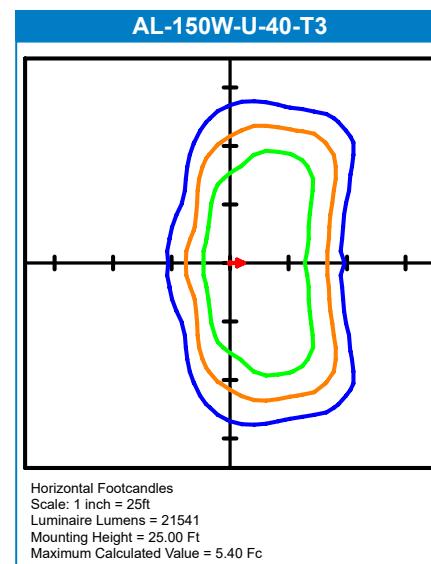
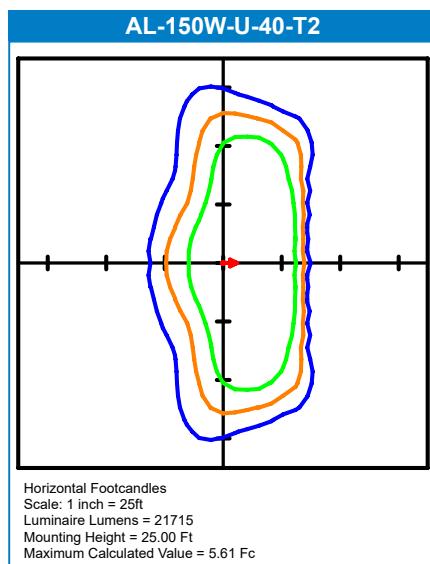


MEDIUM AREA LIGHT - 110W, 150W, 190W & 225W

OUTDOOR

PHOTOMETRIC REPORTS

Photometric values based upon tests performed in compliance with LM-79. IES files can be downloaded at www.ipi-inc.com
Blue = 2 fc, Orange = 1 fc, & Green = .5 fc



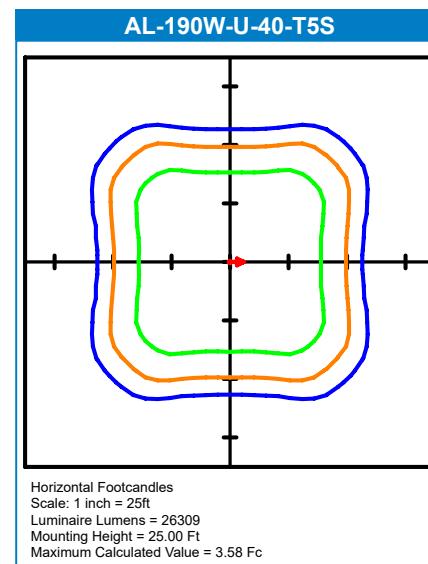
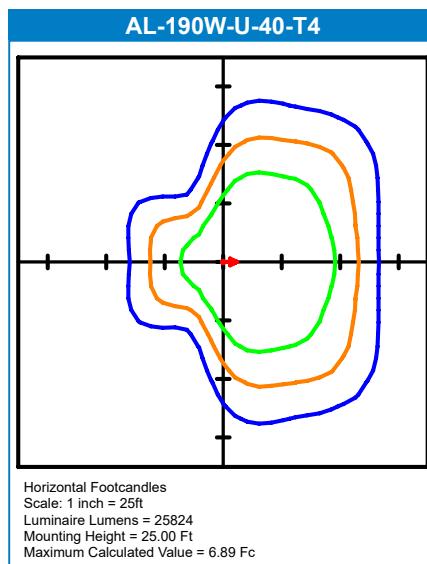
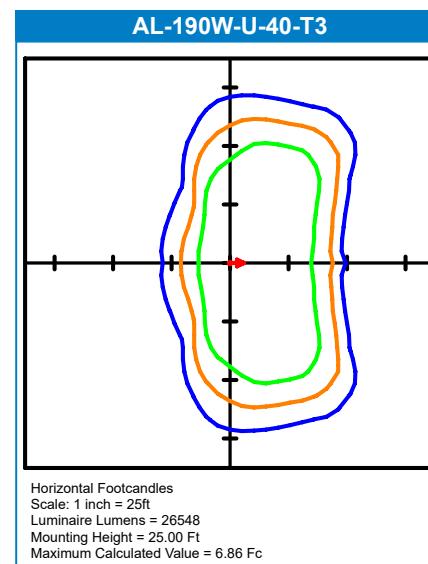
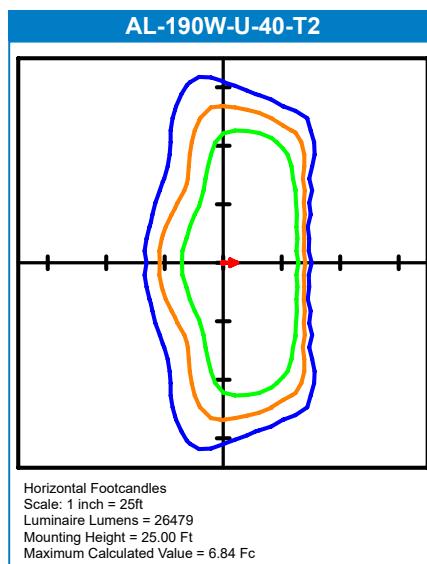


MEDIUM AREA LIGHT - 110W, 150W, 190W & 225W

OUTDOOR

PHOTOMETRIC REPORTS

Photometric values based upon tests performed in compliance with LM-79. IES files can be downloaded at www.ipi-inc.com
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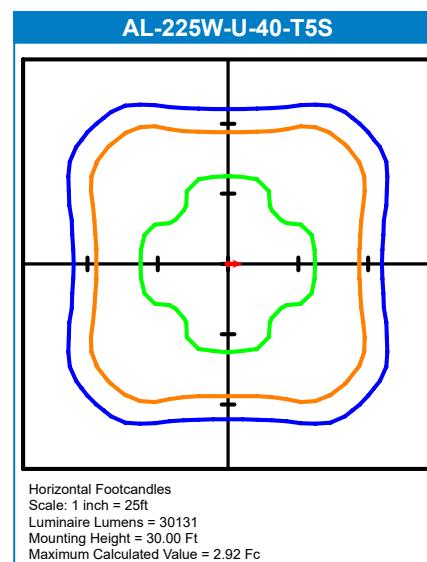
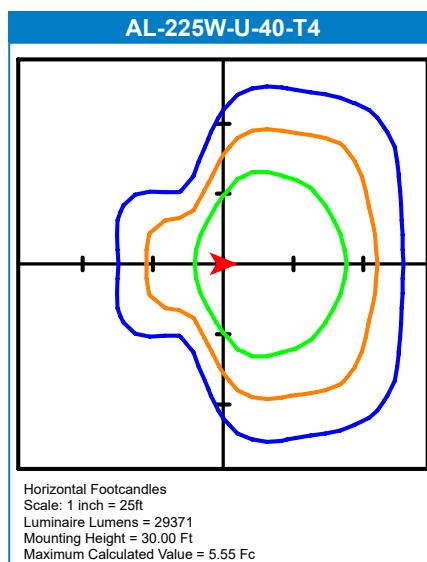
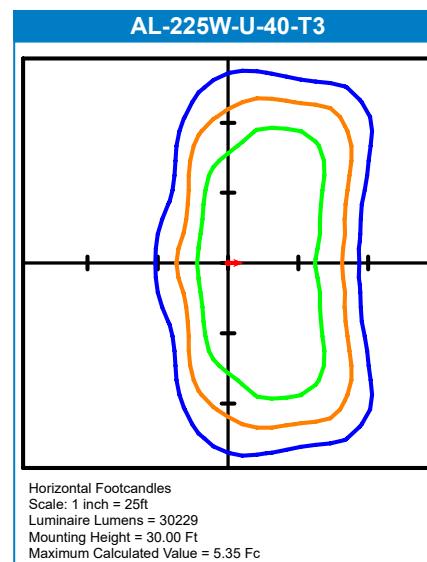
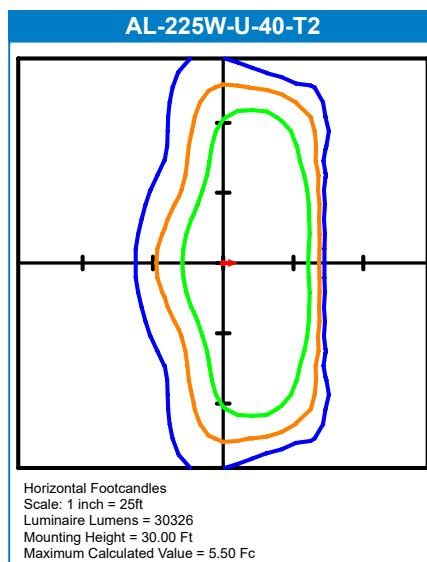


MEDIUM AREA LIGHT - 110W, 150W, 190W & 225W

OUTDOOR

PHOTOMETRIC REPORTS

Photometric values based upon tests performed in compliance with LM-79. IES files can be downloaded at www.ipi-inc.com
Blue = 2 fc, Orange = 1 fc, & Green = .5 fc





SQUARE STEEL POLES

Engineering provided for poles, PE Stamp available for additional cost.

SERIES	POLE TYPE	SIZE (in)	HEIGHT(ft)	GAUGE	DRILL LEGEND OR TENON
ILPOLE	SS	4	20	11	-1
	DB	5	25	7	-2
			30		-2L
					-3T
					-4

Example: ILPOLE-SS-4-20-11-2L

- ILP Pole, Square Steel, 4", 20', 11 gauge, 2 fixtures at 90° drill pattern

407-478-3759
www.ilp-inc.com

DRILL LEGEND

-1	Single Fixture Drill Pattern		-3T	Three Fixture Drill Pattern	
-2	Two Fixtures at 180° Drill Pattern				
-2L	Two Fixtures at 90° Drill Pattern		-4	Four Fixtures Drill Pattern	

POLE TOP FEATURES

- Shaft - 55,000 p.s.i minimum yield
- Base Covers
- Base Plates - 36,000 p.s.i. minimum yield
- Reinforced handholes with grounding lug and removable cover
- Top tenon or drill pattern with removable pole cap
- Four galvanized anchor bolts w/ galvanized hardware
- Anchor bolt templates included
- Pre-ship anchor bolts with template - Prepay & Add
- Standard Pole Color - ILP Bronze (BRZ)
- Optional Pole Colors Black (BLK), Silver (SLV), & White (WHT) & custom colors upon request.
- Pole Vibration Dampeners available upon request
- Limited Lifetime Warranty

FIXTURES PER POLE: AL-56/70/90/100W

Wind Speed (mph) #Fix/Pole	≤ 110				120 mph				130 mph				140 mph				150 mph				
	1	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3
ILPOLE-XX-4-20-11-X	✓		✓	✓	✓	✓	✓	✓	✓	✓	✗	✓	✓	✓	✗	✗	✓	✓	✗	✗	✗
ILPOLE-XX-4-20-7-X	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
ILPOLE-XX-4-25-11-X	✓		✓	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
ILPOLE-XX-4-25-7-X	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
ILPOLE-XX-4-30-7-X	✓		✓	✓	✓	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
ILPOLE-XX-5-25-7-X	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
ILPOLE-XX-5-30-7-X	✓		✓	✓	✓	✓	✓	✓	✓	✓	✗	✓	✓	✓	✗	✗	✗	✗	✗	✗	✗

FIXTURES PER POLE: AL-110/140/150/180/190/225W

Wind Speed (mph) #Fix/Pole	≤ 110				120 mph				130 mph				140 mph				150 mph				
	1	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3
ILPOLE-XX-4-20-11-X	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
ILPOLE-XX-4-20-7-X	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
ILPOLE-XX-4-25-11-X	✓		✓	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
ILPOLE-XX-4-25-7-X	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
ILPOLE-XX-4-30-7-X	✓		✓	✓	✓	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
ILPOLE-XX-5-25-7-X	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
ILPOLE-XX-5-30-7-X	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

FIXTURES PER POLE: AL-270/320/375W

Wind Speed (mph) #Fix/Pole	≤ 110				120 mph				130 mph				140 mph				150 mph				
	1	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3
ILPOLE-XX-4-20-11-X	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
ILPOLE-XX-4-20-7-X	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
ILPOLE-XX-4-25-11-X	✓		✓	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
ILPOLE-XX-4-25-7-X	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
ILPOLE-XX-4-30-7-X	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
ILPOLE-XX-5-25-7-X	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
ILPOLE-XX-5-30-7-X	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

PROJECTION DRAWING LEGEND

SQUARE SHAFT SIZE [S]	SQUARE BASE SIZE [A]	BOLT CIRCLE DIAMETER [C]	SLOT SIZE [D]	SLOT RANGE	ANCHOR BOLTS	PROJECTION [P]	PLATE THICKNESS [T]
4"	10"	9"	1" x 2"	8"-10"	3/4" x 20" x 3"	2"	3/4"
5"	12"	11"	1 1/4" x 2 1/4"	10" - 12"	1" x 36" x 3"	2 1/2"	1"

NOTE: ILP POLES ARE NON-RETURNABLE

Submitted by LEESMAN LIGHTING		Catalog Number: SWP3LUCCTSBLK	Type: B
	Job Name: Foreign Exchange - LEE21-44355	Notes:	LEE21-44355

Project Name:	Part Number:	Type:
---------------	--------------	-------



VALUE SLIM WALL PACK

LED SLIM PROFILE WALL PACK

FEATURES

- Low profile die-cast aluminum housing
- Bronze polyester powder coat finish (std.)
- Custom and factory select colors available¹
- Isolated optical compartment with tempered glass lens and silicone gaskets
- 90° adjustable Type IV distribution or Optional IDA fixed model²
- Quick mount bracket standard for easy surface mount installation
- Three 1/2" coin plugs on sides for conduit or electronic photocell
- 120-277V Universal Voltage or 347V-480V High Voltage³
- 0-10V Dimmable Driver (std.)
- Deep box 10W CEC Title 20 compliant battery backup & cold weather battery¹
- Optional Field Adjustable Output device (FAO) allows individual luminaire lumen output control
- 3000K, 4000K & 5000K CCT Selectable via Integral selector
- >70 Color Rendering Index (CRI)
- Calculated L₇₀ >100,000 hrs @ 25°C per TM-21-11
- IP65 Rated Luminaire
- 5 Year Warranty
- ETL Listed for Wet Locations
- DesignLights Consortium® Premium Qualified Luminaire

¹Contact factory for pricing and availability

²Fixed 3000K CCT model only

³347-480V available in 5L, 8L, 10L Lumen Packages Only



Small



Large



SUITABLE APPLICATIONS

- Pedestrian Walkways
- Building Entrances
- Multi-use Facilities
- Industrial Facilities
- Parking Lots
- Storage Facilities
- Institutions
- Schools
- Loading Docks

ORDERING GUIDE:

SERIES	LUMENS	DRIVER	CCT	FINISH
SWP Value Slim Wall Pack	2L	U 120-277V	CCTS Selectable CCT (5000K, 4000K, 3000K)	BRZ Bronze
	3L	HV ⁴ 347-480V	30° ³	BLK ⁴ Black
	5L			WHT ⁴ White
	8L			SLV ⁴ Silver
	10L			

OPTIONS

Factory Installed

SP1	10kA Max Univolt Surge Protection
SP2	22kA Max 120-277V Surge Protector
IDA ³	Dark Sky IDA Fixture Seal of Approval
LEDBB ^{1,2}	10W UNIV Battery Backup (32°-100°F)
LEDBBCT ^{1,2}	20W UNIV CT Battery Backup (-22°-122°F)

SWP-FAO10V

SWP-ARM3-xxx

SWP-BPS-xxx

SWP-BPL-xxx

Ship with Accessories

Field Adjustable Output via 0-10V Wires

Pole Mount Arm Kit, 3" long (xxx=BRZ, BLK, WHT, SLV)

18x9 Beauty Plate Kit, Small (xxx=BRZ, BLK, WHT, SLV)

18x9 Beauty Plate Kit, Large (xxx=BRZ, BLK, WHT, SLV)

Controls

PCU² Electronic UNIV Photocell (120-277V)

¹5L, 8L, 10L Lumen Packages Only

²Not available with HV option

³Fixed to 3000K CCT and no angle adjustability for

IDA Compliance. Must choose 30 CCT and IDA option to qualify

⁴Contact Factory for pricing and availability



QUICK SHIP ITEMS:

SERIES	LUMENS	DRIVER	COLOR	FINISH
SWP Value Slim Wall Pack	2L	U 120-277V	CCTS Selectable CCT (5000K, 4000K, 3000K)	BRZ Bronze
	3L			
	5L			
	8L			
	10L			

Submitted by LEESMAN LIGHTING		Catalog Number: SWP3LUCCTSBLK	Type: B
	Job Name: Foreign Exchange - LEE21-44355	Notes:	LEE21-44355



VALUE SLIM WALL PACK

LED SLIM PROFILE WALL PACK

LED SYSTEMS INFORMATION ¹	3000K		4000K		5000K		Watts ²	Replaces
	Part Numbers	Lumens	Efficacy	Lumens	Efficacy	Lumens	Efficacy	
SWP-2L-U-CCTS	2,465 lm	122 lm/W	2,649 lm	139 lm/W	2,493 lm	125 lm/W	20 W	100W MH
SWP-3L-U-CCTS	3,160 lm	134 lm/W	3,310 lm	145 lm/W	3,226 lm	136 lm/W	24 W	150W MH
SWP-5L-U-CCTS	5,396 lm	135 lm/W	5,669 lm	147 lm/W	5,515 lm	137 lm/W	40 W	175W MH
SWP-8L-U-CCTS	8,254 lm	138 lm/W	8,678 lm	150 lm/W	8,455 lm	141 lm/W	60 W	250W MH
SWP-10L-U-CCTS	10,141 lm	136 lm/W	10,581 lm	147 lm/W	10,335 lm	138 lm/W	75 W	320W MH

¹LED Chips are frequently updated therefore values are nominal

²Electrical data at 25C (77F). Actual wattage may differ by +/-10%.

SPECIFICATIONS

CONSTRUCTION

Value Slim Wall Pack luminaire features a sleek low-profile die-cast aluminum housing with matching housing styles for both a small and medium size housings. Value Slim is protected with a durable Bronze polyester powder coat finish to withstand extreme weather changes without cracking or peeling (Consult factory for availability of alternate finishes). The Adjustable head pivots up to 90° to allow for more forward throw illumination (IDA option eliminates the adjustability). Universal quick mount bracket eliminates the need to drill through the luminaire housing ensuring reliable IP65 ingress protection and fast hands-free mounting via hanging mechanism. One-piece silicone gasket seals door and back box.

ELECTRICAL

High-performance driver features over-voltage, under-voltage, short circuit and over temperature protection. 0-10V dimming (10% - 100%) standard. Standard Universal Voltage (120-277 Vac) Input 50/60 Hz or optional High Voltage (347-480 Vac). L70 >100,000 hrs. in accordance of IESNA TM-21-11 Projected values at 25°C Ambient temperature. Total harmonic distortion: <20%. Power factor: >0.90. Input power stays constant over life. Minimum 2.5kV surge rating. Optional Field Adjustable Output (FAO) accessory allows for individual lumen output control with 7 adjustable light levels per lumen package. 10W CEC Title 20 compliant battery backup & cold weather battery option available. 120-277V 10W CEC Title 20 compliant battery backup & cold weather battery options provide 90 minutes of constant power to the LED system, ensuring code compliance.

INSTALLATION

The Value Slim Wall Pack features a universal quick mount bracket, allowing for effortless installation to standard 3½" to 4" round/octagonal, 4" square, single gang, masonry junction boxes or vertical surface mounting (secured by four lag bolts (supplied by others)). ½" NPT conduit entry points allow for surface-conduit or thru-branch wiring. Back box is an authorized electrical wiring compartment. Fixture leads exit the back of the casting through a poke-in water-tight grommet. Integral CCT selector allows for toolless CCT tuning at installation.

OPTICS

The isolated silicone sealed optical chamber utilizes a proprietary high-reflective white molded baffle. Optical assembly features an impact-resistant tempered glass lens and meets IESNA requirements for full cutoff compliance. Available in five lumen packages and CCT selectable via an integral CCT selector switch (3000K, 4000K, & 5000K). The Adjustable head pivots up to 90° to allow for more forward throw illumination. IDA option is fixed 3000K and does not allow for head pivoting (full-cutoff).

THERMAL

The Value Slim Wall Pack features an array of High-efficacy mid-power LED's on a metal core circuit board. The LED board is mounted directly to a cast aluminum housing with heat dissipating fins to provide excellent thermal performance extending the life of electronic components. Operating Ambient Temperature: -40°C to +40°C (-40°F to 104°F) Operating temperature for standard battery backup: -0°C to +50°C (-32°F to +122°F), Cold Weather battery backup: -30°C to +50°C (-22°F to +122°F).

CONTROLS

Three ½" NPT apertures allow for field or factory installed 120-277V universal electronic photocell.

CERTIFICATIONS

UL Listed for wet locations. Tested in accordance with IESNA LM-79 and LM-80 standards.

WARRANTY

5 Year Warranty (Terms and Conditions apply). See Website for more details. <https://www.ilp-inc.com/documents/>



VALUE SLIM WALL PACK

LED SLIM PROFILE WALL PACK

ADDITIONAL FEATURES & OPTIONS



Quick Mount Bracket



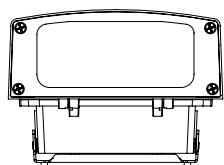
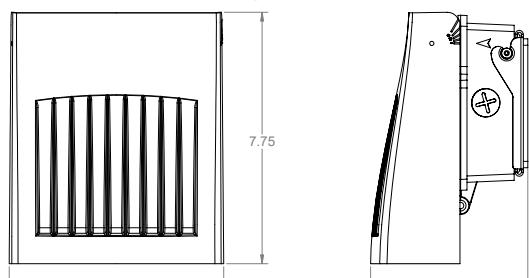
90° Adjustable Type IV Distribution



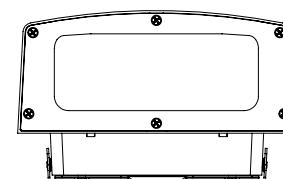
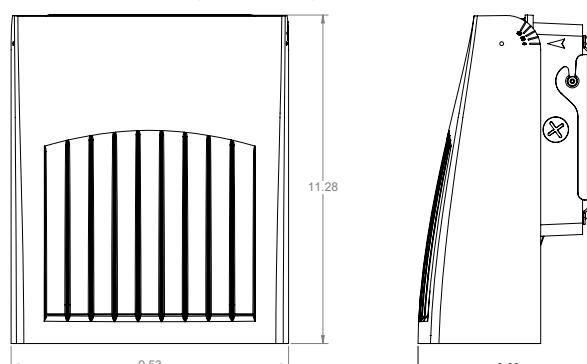
Optional Beauty Plate

LINE DRAWINGS

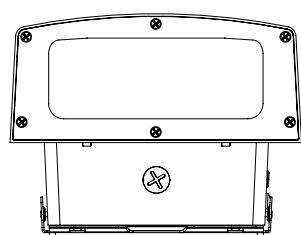
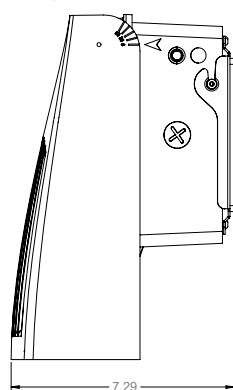
2L & 3L Small Housing



5L, 8L & 10L Large Housing



Large with Deep Box Cold Temp Battery Backup





Project Name:

Type:

Part Number:

Date:



GREENCREATIVE

SELECTFIT 6" RETROFIT DOWNLIGHT

SPECIFICATION FEATURES

- Mechanical** - SELECTFIT, with integrated driver, retrofits existing commercial housings and is field accessible from below the ceiling. Stainless steel spring action clips accommodate 1/2" to 2" ceiling thicknesses.
- Electrical** - Field select from three lumen outputs using SelectDrive technology. Universal 120-277V or 120V only, 50/60 Hz drivers available. Universal 0-10V drivers dimmable to 5% with low end cutoff. 120V drivers are dimmable to 10% using TRIAC or ELV dimmers.
- Optical** - Self flanged spun aluminum reflector, painted matte white. Optional clear aluminum trim insert available. High resistance polycarbonate optical lens, with smooth diffusion. 90° beam angle. Field select color temperature between either 3000K/3500K/4000K or 2700/5000K. Minimum 80 CRI.
- Thermal** - Die cast heat sink maximizes passive thermal management and achieves a L70 rated lifetime of 50,000 hours. Ambient temperature rated from -13°F to 95°F (-25°C to 35°C).
- Compliance and Warranty** - ETL Classified and Listed for wet locations. Certified air-tight per ASTM 283-04. IC Rated for direct contact with insulation. Complies with FCC 47CFR Part 15B consumer limits for EMI/RFI emissions. 5 year parts warranty for complete fixture. Optional 10 Year Extended Warranty available, subject to same terms, conditions and installation requirements as standard 5 Year Warranty.



BENEFITS

- Field select lumen output
- Field select CCT
- Quick and easy installation
- 0-10V or 120V dimmable
- Long life time, L70 Rated for 50,000 hours

APPLICATIONS

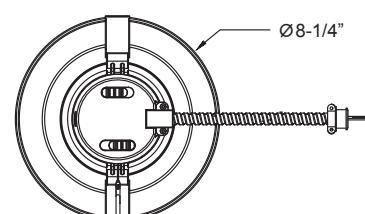
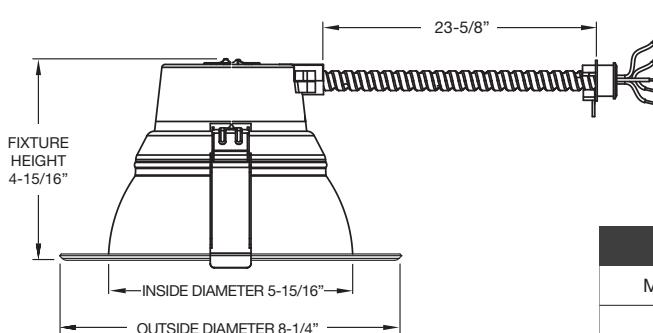
- Commercial
- Educational
- Retail
- Hospitality
- Outdoor Under Covered Ceilings

ORDERING INFORMATION

Series	Size	CRI	CCT	Dimming
<input checked="" type="checkbox"/> SLFT SELECTFIT	<input checked="" type="checkbox"/> 6 6" 700 / 1,000 / 1,500lm	<input checked="" type="checkbox"/> 80 CRI 80	<input type="checkbox"/> CCTS Selectable CCT 3000 / 3500 / 4000K	<input type="checkbox"/> DIM120V 120V - Line voltage dimming
			<input type="checkbox"/> CCT2750* Selectable CCT 2700 / 5000K	<input type="checkbox"/> DIM010UNV 120-277V - 0-10V dimming

*Available in DIM010UNV only

LINE DRAWINGS



Ceiling Cutout	
Minimum	Maximum
Ø 6"	Ø 7-1/2"

New Construction Frame Ceiling Cutout	
Minimum	Maximum
Ø 6-1/2"	Ø 7-1/4"



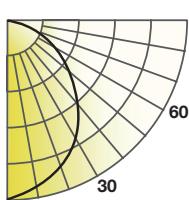
SELECTFIT 6" RETROFIT DOWNLIGHT

TECHNICAL INFORMATION

Dimming	Input Voltage	Input Frequency	Input Current	Input Power	THD Power	Power Factor
DIM120	120V	50 / 60Hz	0.07 / 0.09 / 0.13A	8 / 10 / 15W	<20%	>0.9
DIM010UNV	120V	50 / 60Hz	0.06 / 0.08 / 0.13A	8 / 10 / 15W	<20%	>0.9
	277V		0.03 / 0.04 / 0.06A			

PHOTOMETRY

SLFT6/80CCTS/DIM120V (3500K Selected, High)



Lumens: 1696 lm
 Power: 15 W
 Efficacy: 112 lm/W
 CRI: 80+
 Spacing Criteria: 1.25
 Beam Angle: 89°

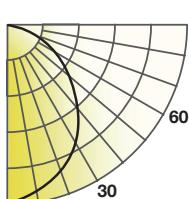
Candlepower Distribution	
Angle (°)	Average (cd)
0	850
5	845
15	807
25	725
35	507
45	415
55	231
65	101
75	45
85	7
90	0

Initial Footcandles		
Height (ft)	Fc	Diameter (ft)
8	13	15
9	10	17
10	9	19
12	6	23
15	4	29

Zonal Lumen Summary		
Zone	Lumens	%Fixt
0-30	639	38
0-40	1007	59
0-60	1540	91
0-90	1696	100

Lumen Output Coefficient			
CCT	3000K	3500K	4000K
Low Lumen output	0.50	0.53	0.51
Med Lumen output	0.63	0.67	0.65
High Lumen output	0.95	1.00	0.97

SLFT6/80CCT2750/DIM010UNV (5000K Selected, High)



Lumens: 1573 lm
 Power: 15 W
 Efficacy: 107 lm/W
 CRI: 80+
 Spacing Criteria: 1.25
 Beam Angle: 90°

Candlepower Distribution	
Angle (°)	Average (cd)
0	784
5	779
15	745
25	668
35	547
45	387
55	213
65	85
75	43
85	6
90	0

Initial Footcandles		
Height (ft)	Fc	Diameter (ft)
8	12	16
9	10	18
10	8	20
12	5	24
15	3	29

Zonal Lumen Summary		
Zone	Lumens	%Fixt
0-30	590	38
0-40	931	59
0-60	1427	91
0-90	1573	100

Lumen Output Coefficient		
CCT	2700K	5000K
Low Lumen output	0.52	0.54
Med Lumen output	0.65	0.68
High Lumen output	0.98	1.00



SELECTFIT 6" RETROFIT DOWNLIGHT

PERFORMANCE

SLFT6/80CCTS/DIMxxx - LOW/MEDIUM/HIGH - 8 / 10 / 15W - NOMINAL*

CCT	3000K			3500K			4000K		
Output	Low	Med	High	Low	Med	High	Low	Med	High
Lumens	803	1019	1529	851	1075	1605	819	1043	1557
LPW	100	102	102	106	108	107	102	104	104

SLFT6/80CCT2750/DIMxxx - LOW/MEDIUM/HIGH - 8 / 10 / 15W - NOMINAL*

CCT2750	2700K			5000K		
Output	Low	Med	High	Low	Med	High
Lumens	803	1004	1514	834	1051	1545
LPW	100	100	101	104	105	103

*The above values are nominal only and may vary slightly depending on the dimming and voltage applied

ACCESSORY ORDERING INFORMATION

Product	Model	Description	Pictures	Dimensions
35158	SLFT/TRIM6/CC	6" Clear Trim Insert (Field Installation)		
98568	GOOFRING6	6" Goof Ring - Outer Diameter 10-1/2"		
35122	NCFJB6	New construction frame for T-Grid ceilings and stud/joist mounting		
35126	NCFBFB	Field Installable Butterfly Brackets For New Construction Frame		
35125	NCFEMB	Field Installable Emergency Bracket For New Construction Frame		
98501	NCPLATE/T4689	New Construction Plate for T-Grid ceilings		
98502	NCPLATE468	New Construction Plate for Stud/Joist ceilings		



GREENCREATIVE

SELECTFIT 6" RETROFIT DOWNLIGHT

ACCESSORY ORDERING INFORMATION

Product	Model	Description	Pictures	Dimensions
98583	NCPLATEJB	Junction box for New Construction Plates		
58012	35EMINVERTER	35W Emergency Inverter (Field Installation)		
58013	35EMINVERTER/CEC	California Title 20 Compliant 35W Emergency Inverter (Field Installation)		
98003	23EMDRIVER	California Title 20 Compliant 23W Emergency LED Driver (Field Installation)		

10 YEAR EXTENDED WARRANTY

Model	SLFT6/10YEARWARRANTY
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Drainage Analysis

for

**Foreign Exchange #5
City of Springboro
Warren County, OH
CE# 2021115
August 20, 2021**

Calibre Engineering
10534-B Success Lane
Centerville, OH 45458
Phone/Fax: 937885.9380
CalibreEng@AOL.COM



Table of Content

1. PROJECT SUMMARY

- Design Description
- Reference Exhibits
 - Regional Aerial
 - Existing Drainage Area Map
 - Proposed Drainage Area Map
 - C-3.0 Grading Plan

2. ANALYSIS CALCULATIONS

Summary

(2-year, 5-year, 10-year, 100-year)

- Existing Conditions
 - Pre-Developed Hydrology
 - Allowable
 - Discharge
- Developed Conditions
 - Pre-Dev. Hydrology
 - Post Dev. Hydrographs
 - Storage Calculations
- Pond A
 - Stage Storage Discharge
- Basin Exhibit



Claude A. Harden

3. ANALYSIS REFERENCE

- ODOT Location and Design Manual
Volume Two Drainage Design

Section One

PROJECT SUMMARY

Design Description
Reference Exhibits
 Regional Aerial
 Existing Drainage Area Map
 Proposed Drainage Area Map
 C-3.0 Grading Plan
 SCS Map Data

**Foreign Exchange #5
City of Springboro
Warren County, OH**

Overview:

The following report identifies the storm water systems for the referenced project. This report is based on the City of Springboro and Warren County Storm Water Regulations and generally accepted engineering standards and practices. It is intended to provide a theoretical analysis of the system's operation. Many factors, such as debris in catch basins, construction materials, and quality of construction can relate to the system's ultimate performance.

Project Description:

Dryden Builders is proposing to develop a Foreign Exchange auto service center at 95 W. Central, Springboro County, OH. The property is identified as Parcel ID D2020136000026 in the Butler County, Ohio records. They have asked for preliminary and final site design documents to facilitate site construction. Utilities are immediately adjacent to the site and only onsite utility service extensions are anticipated. However, waivers for the number of parking spaces and stacking have been applied for and granted by the Township BZA. The property is currently zoned to accommodate the proposed use and no additional zoning will be required. The disturbed area of the property will exceed one acre, and therefore, will require an NPDES permit. The global position of the development is Latitude **N 39° 33' 25"** and Longitude **W 84° 14' 09"**

c

Original Site Characteristics:

The property's original condition is developed as a single family residential lot.



Figure 1

Methodology:

The size of the drainage basin allows for the utilization of the Rational Formula methodology. This method is used for basins smaller than five acres and time of concentration is less than 20 minutes.

The rational formula estimates the peak rate of runoff at any location in a watershed as a function of the drainage area, runoff coefficient, and mean rainfall intensity for a duration equal to the time of concentration (the time required for water to flow from the most remote point of the basin to the location being analyzed). The rational formula, to account for higher intensity storms, is expressed as $Q = CAI$ where:

Q = maximum rate of runoff, cfs

C = runoff coefficient representing a ratio of runoff to rainfall

A = drainage area tributary to the design location, acres

I = average rainfall intensity for a duration equal to the time of concentration, for a selected return period, in/hr. $i = a/(t_c + b)^c$

Reference

ODOT L&D MANUAL

VOLUME TWO DRAINAGE DESIGN

t = time of concentration (minutes)

a = constant

b = constant

c = constant

		a	b	c
Area C	2 yr	56.299	10.00	0.876
	5 yr	67.933	11.00	0.869
	10 yr	84.550	13.00	0.882
	25 yr	95.736	14.00	0.871
	50 yr	96.783	14.00	0.850
	100 yr	80.436	11.50	0.794

Existing Conditions:

The drainage areas and patterns are based on field elevations and field observations. Currently, stormwater from the property sheet flows to the north and east. The site is located at the highpoint of the drainage area and no offsite flows are anticipated. Existing drainage from the site flows to two open ditches along north and east property lines.

Basin Analysis ~ Basin A

Existing Area Conditions

<i>Ex. Pavement</i>	
area	0.177
<i>Ex. Grassed Area</i>	1.559
<i>Farm Area</i>	
Total	1.736023

(A) Calculation for 2 year existing flow

$$\text{Area} \quad [\frac{1.736}{\text{Acres}}]$$

"A" [1.736] Acres

Intensity, $I = \frac{5.25}{\text{inches/hr}}$

$$\begin{aligned} \text{Acres} @ C &= 0.950 \\ \text{Acres} @ C &= 0.300 \\ \text{Acres} @ C &= 0.000 \\ \text{Acres} @ C &= 0.300 \\ \text{Acres} @ C &= \mathbf{0.366} \end{aligned}$$

$$q = Aci$$

$$\begin{aligned} \text{Runoff Coefficient,} \\ "C" &= [\frac{0.366}{\text{] }}] \\ tc &= [\frac{5.00}{\text{ minutes }}] \end{aligned}$$

"q" (total allowable release rate) $A \times C \times I = \text{c.f.s.}$

$$A [\frac{1.736}{\text{ }}] \times C [\frac{0.366}{\text{ }}] \times i [\frac{5.25}{\text{ }}] = [\mathbf{3.34}] \text{ c.f.s.}$$

Pond Bypass

<i>Ex. Pavement</i>	
area	0.000
<i>Bypassed Grass</i>	0.195
<i>Chanel Rip Rap</i>	0.000
<i>Farm Area</i>	
Total	0.195

(A) Calculation for 2 year existing flow

$$\text{Area} \quad [\frac{0.195}{\text{Acres}}]$$

"A" [0.195] Acres

Intensity, $I = \frac{5.25}{\text{inches/hr}}$

$$\begin{aligned} \text{Acres} @ C &= 0.950 \\ \text{Acres} @ C &= 0.300 \\ \text{Acres} @ C &= 0.750 \\ \text{Acres} @ C &= 0.300 \\ \text{Acres} @ C &= \mathbf{0.300} \end{aligned}$$

$$q = Aci$$

$$\begin{aligned} \text{Runoff Coefficient,} \\ "C" &= [\frac{0.300}{\text{] }}] \\ tc &= [\frac{5.00}{\text{ minutes }}] \end{aligned}$$

"q" (bypassed release rate) $A \times C \times I = \text{c.f.s.}$

$$A [\frac{0.195}{\text{ }}] \times C [\frac{0.300}{\text{ }}] \times i [\frac{5.25}{\text{ }}] = [\mathbf{0.31}] \text{ c.f.s.}$$

Adjusted Allowable Release Rate = (Total Allowable) - (Bypass Flow)

<i>Adjusted allowable pond release rate</i>	3.03	c.f.s.
---	-------------	---------------

Developed Conditions:

The site will be developed as a single project with a dedicated portion of the land for a single detention basin. This report will address the detention facilities used for the current development program only.

Developed Basin Conditions

Pavement area	0.598
Grassed Area	1.138
Total	1.736

Acres @ C =	0.950
Acres @ C =	0.300
Acres @ C =	0.950
Acres @ C =	0.300
Acres @ C =	0.524

(A) Calculation for year developed flow

Area

"A"

[1.736] Acres

Intensity,

I= 5.25] inches/hr

q=Aci

Runoff

Coefficient,

"C"=[0.524]

tc=[5.00 minutes

Developed Basin Conditions

Pavement area	0.598
Grassed Area	1.138
Total	1.736

Acres @ C =	0.950
Acres @ C =	0.300
Acres @ C =	0.950
Acres @ C =	0.300
Acres @ C =	0.524

(A) Calculation for year developed flow

Area

"A"

[1.736] Acres

Intensity,

I= 5.25] inches/hr

q=Aci

Runoff

Coefficient,

"C"=[0.524]

tc=[5.00 minutes

"q" Developed flow rate) A x C x I =

c.f.s.

A [1.736] x C [0.524] x i [5.25] = [4.78] c.f.s.

Based on the pre and post developed runoff, the design storm is identified as a 2-year event.

Design Storm Table

Pre Development Runoff	0.603 Inches	Post Development	0.689 Inches	14% Increase in Runoff Volume
equal or greater than (percent)	less than (percent)		Storm Frequency (year)	Design Criteria Frequency
0	10		1	***
10	20		2	Design Storm
20	50		5	***
50	100		10	***
100	250		25	***
200	500		50	***
500	-		100	***

Flows from the detention basin will be controlled through an outlet structure with a 10" diameter orifice at an elevation of 789.43 and an overflow at 787.00. Based on the configuration of the pond and the outlet structure, the stage storage is as follows:

STAGE STORAGE DISCHARGE ANALYSIS

Elev.	Height	Contour		Incremental	Storage		Combined Discharge
		Area			Accumulated		
785.43		Ft.	0 SF	0 CFT	0 CFT		0.000 CFS
786.00	0.57	Ft.	2,531 SF	721 CFT	721 CFT		0.000 CFS
787.00	1.57	Ft.	4,772 SF	3,652 CFT	4,373 CFT		1.131 CFS
788.00	2.57	Ft.	6,304 SF	5,538 CFT	9,911 CFT		3.102 CFS
789.00	3.57	Ft.	7,619 SF	6,962 CFT	16,872 CFT		4.239 CFS
789.50	4.07	Ft.	9,449 SF	4,267 CFT	21,139 CFT		4.705 CFS

OUTLET STRUCTURE ANALYSIS

Inv. El.	785.43	Inv. El.	787.00	Overflow	
Dia. (in)	8.00	Weir	6.00 Ft.	Elevation	
		Length=		788.00	
		Primary Outlet	Secondary Outlet	Combined Flows	
		$Q=C \cdot A \cdot (2 \cdot g \cdot H)^{0.5}$	$Q=C \cdot L \cdot (H^{0.66})$		
		$C = 0.66$	$C = 4.00$		
Elev.	Height				
785.43	0.00 Ft.	0.000 CFS	785.43	0.000 CFS	0.000 CFS
786.00	0.57 Ft.	0.000 CFS	786.00	0.000 CFS	0.000 CFS
787.00	1.57 Ft.	1.131 CFS	787.00	0.000 CFS	1.131 CFS
788.00	2.57 Ft.	3.102 CFS	788.00	0.000 CFS	3.102 CFS
789.00	3.57 Ft.	4.239 CFS	789.00	0.000 CFS	4.239 CFS
789.50	4.07 Ft.	4.705 CFS	789.50	0.000 CFS	4.705 CFS

Summary:

		(A) Calculation for With a		2 year	existing flow		
Required	Storage	1,867	CFT		@ an allowable flow of	3.03	CFS
Storage provided		721				0.00	CFS
786.00	0.57					0.35	CFS
786.31	0.88	1867	CFT Prov.	100%	@ a discharge flow of		
787.00	1.57	4373				1.13	CFS
						Allowable	
						Discharge	3.03 CFS
						Difference	-2.68 CFS
		100%	Required storage provided			3.19	Ft. of Freeboard
		(A) Calculation for With a		2 year	existing flow		
				5 year	developed flow		
Required	Storage	2,770	CFT		@ an allowable flow of	3.03	CFS
Storage provided		721				0.00	CFS
786.00	0.57					0.63	CFS
786.56	1.13	2770	CFT Prov.	100%	@ a discharge flow of		
787.00	1.57	4373				1.13	CFS
						Allowable	
						Discharge	3.03 CFS
						Difference	-2.40 CFS
		100%	Required storage provided			2.94	Ft. of Freeboard
		(A) Calculation for With a		2 year	existing flow		
				10 year	developed flow		
Required	Storage	3,408	CFT		@ an allowable flow of	3.03	CFS
Storage provided		721				0.00	CFS
786.00	0.57					0.83	CFS
786.74	1.31	3408	CFT Prov.	100%	@ a discharge flow of		
787.00	1.57	4373				1.13	CFS
						Allowable	
						Discharge	3.03 CFS
						Difference	-2.20 CFS
		0.00"	0			2.76	Ft. of Freeboard
		(A) Calculation for With a		100 year	existing flow		
				100 year	developed flow		
Required	Storage	3,138	CFT		@ an allowable flow of	4.95	CFS
Storage provided		4373				1.13	CFS
787.00	1.57					4.95	CFS
787.15	1.72	5186	CFT Prov.	165%	@ a discharge flow of		
788.00	2.57	9911				27.10	CFS
						Allowable	
						Discharge	4.95 CFS
						Difference	0.00 CFS
		165%	Required storage provided			2.35	Ft. of Freeboard

The allowable discharge does not exceed the flow required during the 2, 5, 10, 25 and 100 Year Design Storm Events.

Reference Materials:

OHIO DEPARTMENT OF TRANSPORTATION

LOCATION AND DESIGN MANUAL VOLUME TWO DRAINAGE DESIGN

General Notes – Figures 1101-2 through 1101-3

Soil Map—Warren County, Ohio
(Foreign Exchange, Springboro, OH)



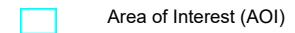
Natural Resources
Conservation Service

Web Soil Survey
National Cooperative Soil Survey

8/20/2021
Page 1 of 3

MAP LEGEND

Area of Interest (AOI)



Area of Interest (AOI)

Soils



Soil Map Unit Polygons



Soil Map Unit Lines



Soil Map Unit Points

Special Point Features



Blowout



Borrow Pit



Clay Spot



Closed Depression



Gravel Pit



Gravelly Spot



Landfill



Lava Flow



Marsh or swamp



Mine or Quarry



Miscellaneous Water



Perennial Water



Rock Outcrop



Saline Spot



Sandy Spot



Severely Eroded Spot



Sinkhole



Slide or Slip



Sodic Spot

Spoil Area

Stony Spot

Very Stony Spot

Wet Spot

Other

Special Line Features

Water Features

Streams and Canals

Transportation

Rails

Interstate Highways

US Routes

Major Roads

Local Roads

Background

Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service

Web Soil Survey URL:

Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Warren County, Ohio

Survey Area Data: Version 19, Jun 11, 2020

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

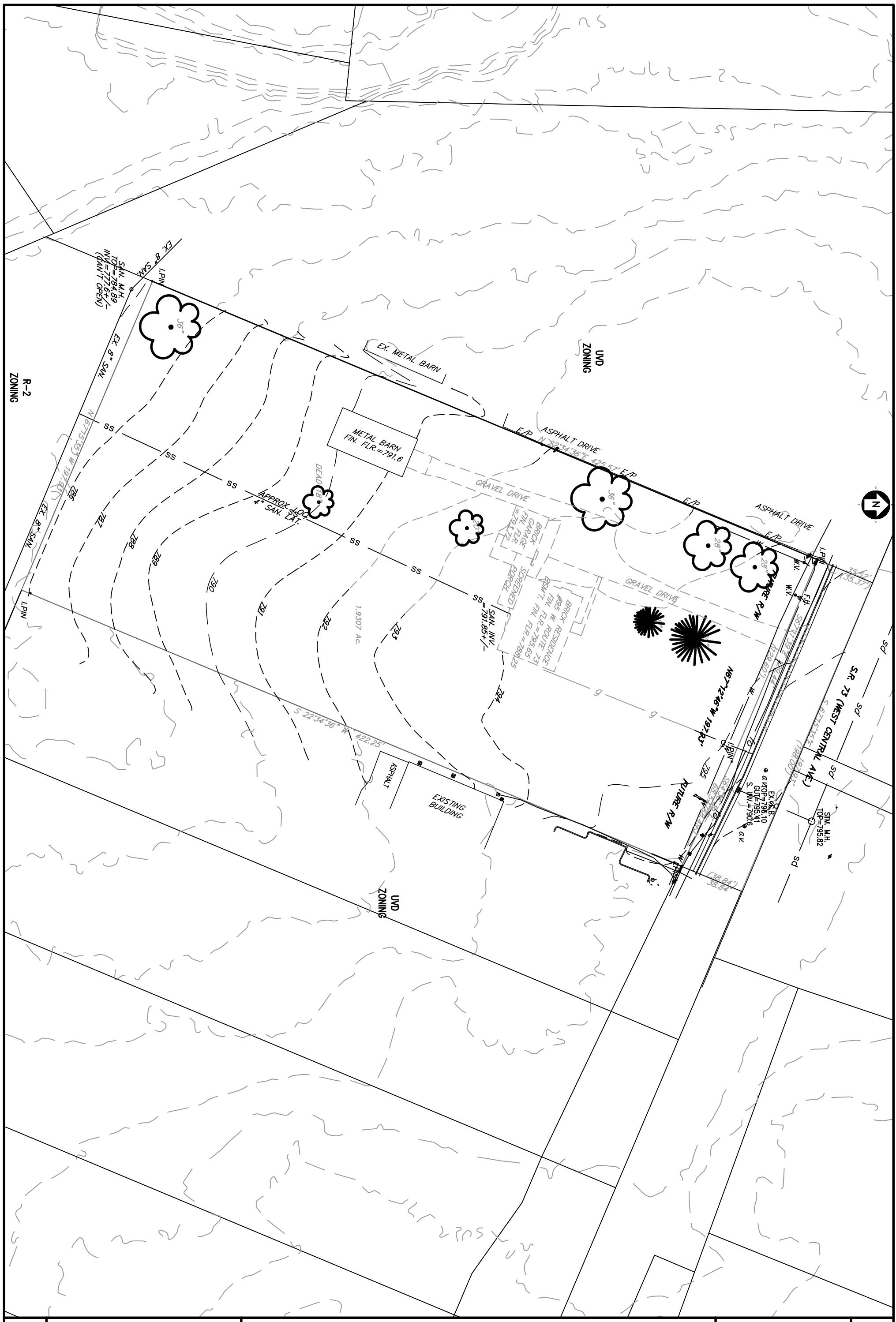
Date(s) aerial images were photographed: Oct 28, 2019—Dec 5, 2019

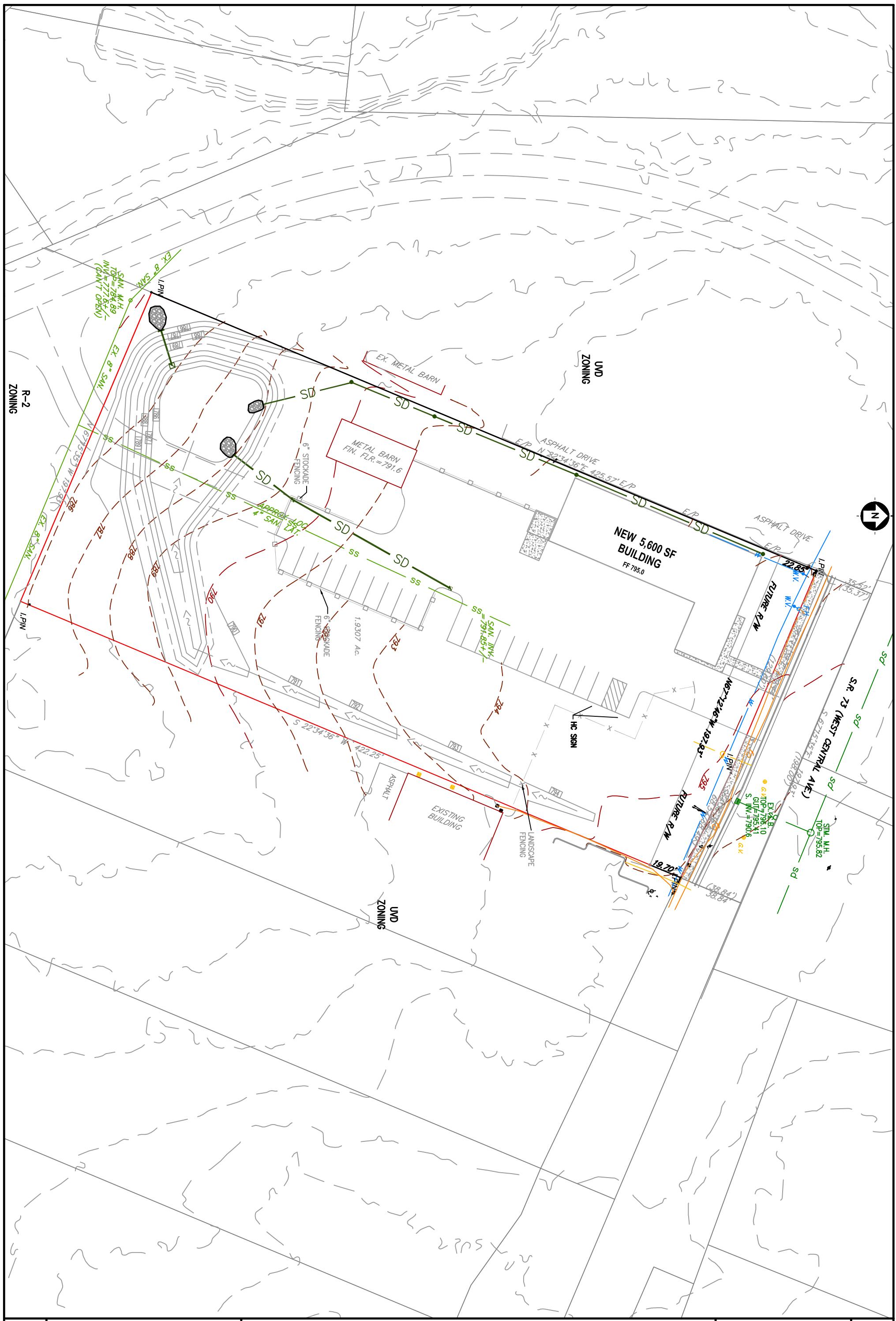
The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.



Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
RvB	Russell-Miamian silt loams, 2 to 6 percent slopes	1.0	49.5%
RvB2	Russell-Miamian silt loams, 2 to 6 percent slopes, moderately eroded	1.0	50.5%
Totals for Area of Interest		2.1	100.0%





Section Two

ANALYSIS CALCULATIONS

Summary
(2-year, 5-year, 10-year, 100-year)

Existing Conditions
Pre-Developed Hydrology
Allowable Discharge

Developed Conditions
Pre-Dev. Hydrology
Post Dev. Hydrographs
Storage Calculations

Pond A
Stage Storage Discharge

Basin Exhibit

Worksheet 4 Graphical Peak Discharge Method

Project	Foreign Exchange	Date:	20-Aug-21
Location	95 W Central, Springboro, Warren Co, OH		
Condition	Predeveloped		

1. Data	Drainage Area	1.74	S=	0.00271 mi ²
	Offsite Pmnt	98.00	3.8888888889	
	Offsite Grass	69.00		
	Ex Imp	98.00		
	Ex. Field	69.00		
	Weighted	Cn Value		
		71.955		
	Runoff Curve Number (CN)	72.000	Pasture	
	Time of Concentration (TC)	0.10		
	Rainfall Distribution Type	II	For all Cals in this sheet	
2.	Frequency	1 Year	10 Year	100 Year
3.	Precipitation	2.64 In.	4.08 In.	5.76 In.
4.	Initial Abstraction ~ Ia	0.778	0.778	0.778 Ia= 0.2*S
5.	Computed ~ Ia/P	0.295	0.191	0.135
6.	qu	938.60	938.60	938.60 From Exhibit 4
7.	Runoff Q in inches	0.603	1.516	2.798 $Q = (P-Ia)^2 / (P-Ia)+S$
8.	Pond Factor ~ Fp	1.00	1.00	1.00 Pond Swamp & Adj. Factor
9.	Peak Discharge qp	1.54 CFS	3.86 CFS	7.13 CFS qp = qu * Am * Q * Fq

Exhibit 4

log(qu)=	C0 +	C1*log(Tc) +	C2*log(Tc)^2
2.97248	2.46769	0.62264	-0.11785
Ia/P	C0	C1	C2
0.10	2.55323	-0.62512	-0.16403
0.29	2.46769	-0.62264	-0.11785
0.30	2.46532	-0.62257	-0.11657

Table F-1 Type II Storm

Ia/P	C0	C1	C2
0.10	2.55323	-0.62512	-0.16403
0.30	2.46532	-0.62257	-0.11657
0.35	2.41896	-0.61594	-0.08820
0.40	2.36409	-0.59857	-0.05621
0.45	2.29238	-0.57005	-0.02281
0.50	2.20282	-0.51599	-0.12590

Design Storm Table

Pre Development Runoff	0.603	Inches	
Post Development	0.689	Inches	14% Increase in Runoff Volume
equal or greater than (percent)	less than (percent)	Storm Frequency (year)	Design Criteria Frequency
0	10	1	***
10	20	2	Design Storm
20	50	5	***
50	100	10	***
100	250	25	***
200	500	50	***
500	-	100	***

Worksheet 4 Graphical Peak Discharge Method

Project	Foreign Exchange	Date:	20-Aug-21
Location	95 W Central, Springboro, Warren Co, OH		
Condition	Developed Condition		

1.	Data			0.00271 mi ²
	Drainage Area	1.74	S=	3.513513514
	Offsite Pvmr	98.00		0.000
	Offsite Grass	69.00		0.000
	Dev. Imp	98.00		0.598
	Dev Grass	61.00		1.138
	Weighted	Cn Value		73.745
	Runoff Curve Number (CN)	74.000	Developed Condition	
	Time of Concentration (TC)	0.10		
	Rainfall Distribution Type	II	For all Cals in this sheet	
2.	Frequency	1 Year	10 Year	100 Year
3.	Precipitation	2.64 In.	4.08 In.	5.76 In.
4.	Initial Abstraction ~ Ia	0.703	0.703	0.703 Ia= 0.2*S
5.	Computed ~ Ia/P	0.266	0.172	0.122
6.	qu	951.90	951.90	951.90 From Exhibit 4
7.	Runoff Q in inches	0.689	1.655	2.984 $Q = \frac{(P-Ia)^2}{(P-Ia)+S}$
8.	Pond Factor ~ Fp	1.00	1.00	1.00 Pond Swamp & Adj. Factor
9.	Peak Discharge qp	1.78 CFS	4.27 CFS	7.71 CFS $qp = qu * Am * Q * Fq$

Exhibit 4

log(qu)=	C ₀ +	C ₁ *log(Tc) +	C ₂ *log(Tc) ²
2.97859	2.48019	0.62300	-0.12460
Ia/P	C ₀	C ₁	C ₂
0.10	2.55323	-0.62512	-0.16403
0.27	2.48019	-0.62300	-0.12460
0.30	2.46532	-0.62257	-0.11657

Table F-1 Type II Storm

Ia/P	C ₀	C ₁	C ₂
0.10	2.55323	-0.62512	-0.16403
0.30	2.46532	-0.62257	-0.11657
0.35	2.41896	-0.61594	-0.08820
0.40	2.36409	-0.59857	-0.05621
0.45	2.29238	-0.57005	-0.02281
0.50	2.20282	-0.51599	-0.12590

Design Storm Table

Pre Development Runoff	0.603	Inches	
Post Development	0.689	Inches	14% Increase in Runoff Volume
equal or greater than (percent)	less than (percent)	Storm Frequency (year)	Design Criteria Frequency
0	10	1	***
10	20	2	Design Storm
20	50	5	***
50	100	10	***
100	250	25	***
200	500	50	***
500	-	100	***

Storm Water Detention Analysis Summary

Project: Foregin Exchange **Date:** 20-Aug-21
Location: 95 W Central, Springboro, Warren Co, OH **Design By:** CAH

(A) Calculation for 2 year existing flow With a 2 year developed flow					
Required Storage	1,867 CFT	@ an allowable flow of			3.03 CFS
Storage provided					
786.00	0.57	721 -----			0.00 CFS
786.31	0.88	1867 CFT Prov.	100%	@ a discharge flow of	0.35 CFS
787.00	1.57	4373 -----			1.13 CFS
				Allowable Discharge Difference	3.03 CFS -2.68 CFS
100% Required storage provided					
(A) Calculation for 2 year existing flow With a 5 year developed flow					
Required Storage	2,770 CFT	@ an allowable flow of			3.03 CFS
Storage provided					
786.00	0.57	721 -----			0.00 CFS
786.56	1.13	2770 CFT Prov.	100%	@ a discharge flow of	0.63 CFS
787.00	1.57	4373 -----			1.13 CFS
				Allowable Discharge Difference	3.03 CFS -2.40 CFS
100% Required storage provided					
(A) Calculation for 2 year existing flow With a 10 year developed flow					
Required Storage	3,408 CFT	@ an allowable flow of			3.03 CFS
Storage provided					
786.00	0.57	721 -----			0.00 CFS
786.74	1.31	3408 CFT Prov.	100%	@ a discharge flow of	0.83 CFS
787.00	1.57	4373 -----			1.13 CFS
0	0.00"	0		Allowable Discharge Difference	3.03 CFS -2.20 CFS
100% Required storage provided					
(A) Calculation for 100 year existing flow With a 100 year developed flow					
Required Storage	3,138 CFT	@ an allowable flow of			4.95 CFS
Storage provided					
787.00	1.57	4373 -----			1.13 CFS
787.15	1.72	5186 CFT Prov.	165%	@ a discharge flow of	4.95 CFS
788.00	2.57	9911 -----			27.10 CFS
				Allowable Discharge Difference	4.95 CFS 0.00 CFS
165% Required storage provided					
2.35 Ft. of Freeboard					

Storm Water Detention Analysis

Project: Foreign Exchange

Date: 20-Aug-21

Location: 95 W Central, Springboro, Warren Co, OH

Design By: CAH

Basin Analysis ~ Basin A

WORKSHEET 3: TIME OF CONCENTRATION (Tc) OR TRAVEL TIME (Tt)

Date: 20-Aug-21

Sheet Flow (Applicable to Tc only)

Storm #1

Segment ID

1. Surface description (table 3-1).....
2. Manning's roughness coeff., n (table 3-1)
3. Flow length, L (total L < 300 ft) ft
4. Two-yr , I..... in/hr
5. Land slope, s..... ft/ft
6. $Tt = \frac{0.93(nL)^{0.6}}{I^{0.4} s^{0.3}}$ Compute Tt-hr

Short Grass	
0.1	
50	
3.06	
0.1	
3.11584884	+
	0
	0.05

Shallow Concentrated Flow

Segment ID

7. Surface description (paved or unpaved).....
8. Flow length, L..... ft
9. Watercourse slope, s..... ft/ft
10. Average velocity, V (fig 3-1)..... ft/s
11. $Tt = \frac{L}{(3600V)}$ Compute Tt..... hr

Grassed	
300	
0.04	
2	
0.04166667	+
	0
	0.04167

Channel Flow

Segment ID

12. Cross sectional flow area, a..... ft²
13. Wetted perimeter, Pw..... ft
14. Hydraulic radius, r = a/Pw..... ft
15. Channel slope, s..... ft/ft
16. Manning's roughness coeff., n.....
17. $V = (1.49)r^{0.67}s^{0.5}/n$ ft/s
18. Flow length, L..... ft
19. $Tt = \frac{L}{(3600V)}$ Compute Tt..... hr
20. Watershed or subarea Tc or Tt (add Tt in steps 6, 11 and 19)..... hr

0	+	0	0
			0.09 HR
			6 Min

Storm Water Detention Analysis

Project: Foreign Exchange

Date: 20-Aug-21

Location: 95 W Central, Springboro, Warren Co, OH

Design By: CAH

0

Basin Analysis ~ Basin A

Existing Area Conditions

Ex. Pavement area	0.177
Ex. Grassed Area	1.559
Farm Area	
Total	1.7360226

(A) Calculation for 2 year existing flow $q = Aci$

Area "A" [1.736] Acres Runoff Coefficient, "C"=[0.366]
Intensity, I= 5.25] inches/hr $tc=[\frac{5.00}{5.00}]$ minutes

"q" (total allowable release rate) $A \times C \times I = c.f.s.$

$$A [1.736] \times C [0.366] \times i [5.25] = [3.34] c.f.s.$$

Pond Bypass

Ex. Pavement area	0.000
Bypassed Grass	0.195
Chanel Rip Rap	0.000
Farm Area	
Total	0.195

(A) Calculation for 2 year existing flow $q = Aci$

Area "A" [0.195] Acres Runoff Coefficient, "C"=[0.300]
Intensity, I= 5.25] inches/hr $tc=[\frac{5.00}{5.00}]$ minutes

"q" (bypassed release rate) $A \times C \times I = c.f.s.$

$$A [0.195] \times C [0.300] \times i [5.25] = [0.31] c.f.s.$$

Adjusted Allowable Release Rate = (Total Allowable) - (Bypass Flow)

Adjusted allowable pond release rate **3.03 c.f.s.**

Developed Basin Conditions

Pavement area	0.598
Grassed Area	1.138
Total	1.736

(A) Calculation for 2 year developed flow $q = Aci$

Area "A" [1.736] Acres Runoff Coefficient, "C"=[0.524]
Intensity, I= 5.25] inches/hr $tc=[\frac{5.00}{5.00}]$ minutes

"q" Developed flow rate $A \times C \times I = c.f.s.$

$$A [1.736] \times C [0.524] \times i [5.25] = [4.78] c.f.s.$$

Time	Intensity		
5 Min	5.25 In/Hr	2 year	Post Development
5 Min	5.25 In/Hr	2 year	Pre Development

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

Where: i = rainfall intensity (inches/hour)

t = time of concentration (minutes)

a = constant

b = constant

c = constant

Reference

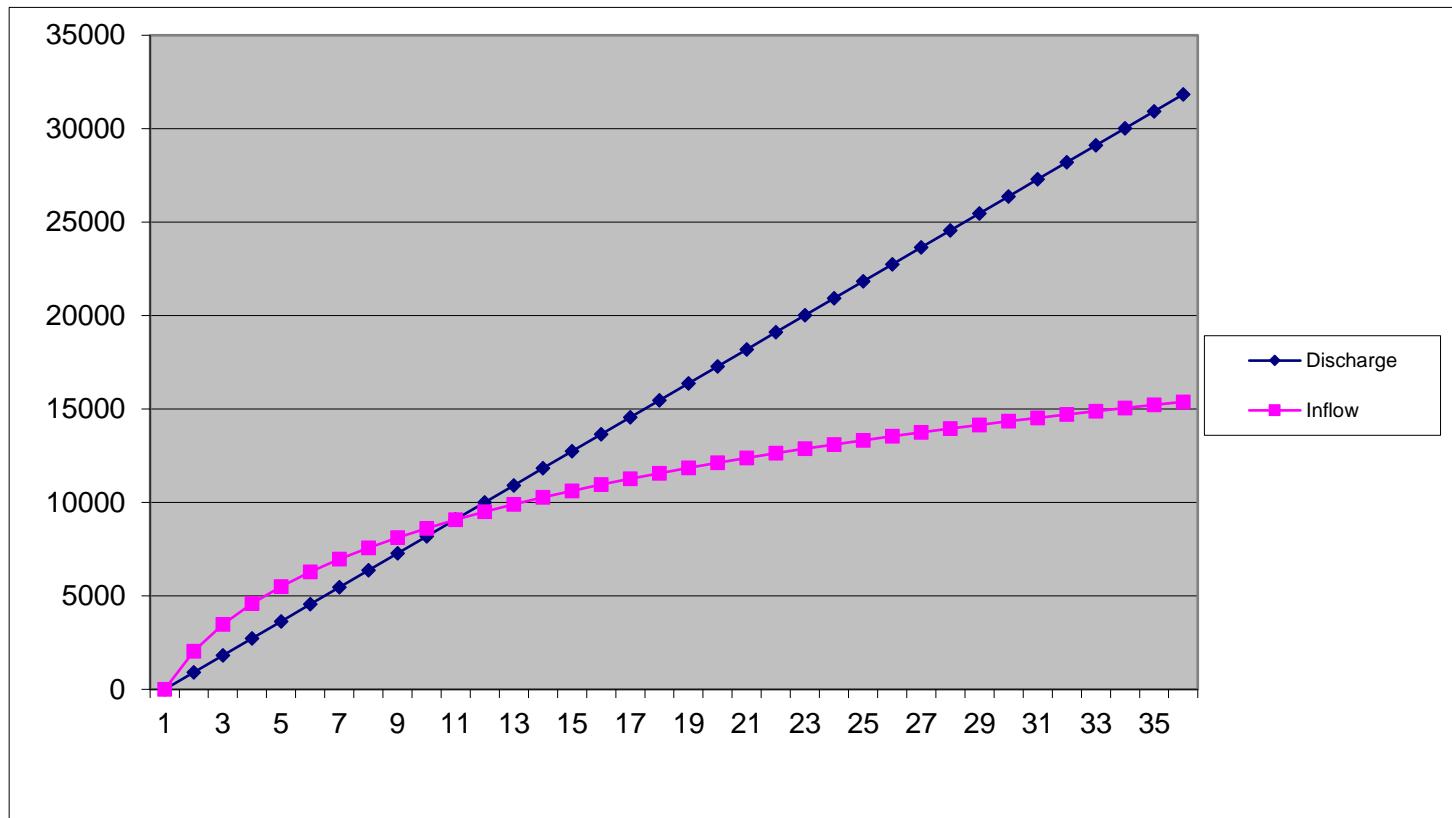
ODOT L&D MANUAL

VOLUME TWO DRAINAGE DESIGN

		a	b	c
Area C	2 yr	56.299	10.00	0.876
	5 yr	67.933	11.00	0.869
	10 yr	84.550	13.00	0.882
	25 yr	95.736	14.00	0.871
	50 yr	96.783	14.00	0.850
	100 yr	80.436	11.50	0.794

Time	Intensity		Allowable	Developed	Stored	Stored	Storage	
			Flow	Flow	Flow	Volume	Cft.	Acre Ft.
1	0	7.49	3.03	6.81	3.78	1,134	1,134	0.0260
2	5	5.25	3.03	4.78	1.74	523	1,657	0.0380
3	10	4.08	3.03	3.71	0.68	204	1,861	0.0427
4	15	3.36	3.03	3.05	0.02	6	1,867	0.0429
5	20	2.86	3.03	2.60	-0.43	-129	1,738	0.0399
6	25	2.50	3.03	2.27	-0.76	-228	1,511	0.0347
7	30	2.22	3.03	2.02	-1.01	-303	1,208	0.0277
8	35	2.01	3.03	1.82	-1.21	-362	846	0.0194
9	40	1.83	3.03	1.66	-1.37	-411	435	0.0100
10	45	1.68	3.03	1.53	-1.50	-451	-16	-0.0004
11	50	1.56	3.03	1.42	-1.61	-484	-500	-0.0115
12	55	1.45	3.03	1.32	-1.71	-513	-1,013	-0.0233
13	60	1.36	3.03	1.24	-1.79	-538	-1,551	-0.0356
14	65	1.28	3.03	1.17	-1.87	-560	-2,111	-0.0485
15	70	1.21	3.03	1.10	-1.93	-579	-2,690	-0.0618
16	75	1.15	3.03	1.05	-1.99	-596	-3,286	-0.0754
17	80	1.09	3.03	0.99	-2.04	-611	-3,897	-0.0895
18	85	1.04	3.03	0.95	-2.08	-625	-4,523	-0.1038
19	90	1.00	3.03	0.91	-2.13	-638	-5,160	-0.1185
20	95	0.95	3.03	0.87	-2.16	-649	-5,810	-0.1334
21	100	0.92	3.03	0.83	-2.20	-660	-6,469	-0.1485
22	105	0.88	3.03	0.80	-2.23	-669	-7,138	-0.1639
23	110	0.85	3.03	0.77	-2.26	-678	-7,816	-0.1794
24	115	0.82	3.03	0.75	-2.29	-686	-8,502	-0.1952
25	120	0.79	3.03	0.72	-2.31	-694	-9,196	-0.2111
26	125	0.77	3.03	0.70	-2.34	-701	-9,896	-0.2272
27	130	0.74	3.03	0.67	-2.36	-707	-10,603	-0.2434

28	135	0.72	3.03	0.65	-2.38	-713	-11,317	-0.2598
29	140	0.70	3.03	0.64	-2.40	-719	-12,036	-0.2763
30	145	0.68	3.03	0.62	-2.41	-724	-12,760	-0.2929
31	150	0.66	3.03	0.60	-2.43	-730	-13,490	-0.3097
32	155	0.64	3.03	0.58	-2.45	-734	-14,224	-0.3265
33	160	0.63	3.03	0.57	-2.46	-739	-14,963	-0.3435
34	165	0.61	3.03	0.56	-2.48	-743	-15,706	-0.3606
35	170	0.60	3.03	0.54	-2.49	-747	-16,453	-0.3777
36	175	0.58						



Storm Water Detention Analysis

Date: 20-Aug-21

Design By: CAH

Project: Foreign Exchange

Location: 95 W Central, Springboro, Warren Co, OH

0

STAGE STORAGE DISCHARGE ANALYSIS

Elev.	Height	Contour	Storage			Combined Discharge
			Area	Incremental	Accumulated	
785.43	Ft.	0 SF		0 CFT	0 CFT	0.000 CFS
786.00	0.57 Ft.	2,531 SF		721 CFT	721 CFT	0.000 CFS
787.00	1.57 Ft.	4,772 SF		3,652 CFT	4,373 CFT	1.131 CFS
788.00	2.57 Ft.	6,304 SF		5,538 CFT	9,911 CFT	27.102 CFS
789.00	3.57 Ft.	7,619 SF		6,962 CFT	16,872 CFT	42.161 CFS
789.50	4.07 Ft.	9,449 SF		4,267 CFT	21,139 CFT	48.645 CFS

Required Storage 1,867 CFT @ an allowable flow of 3.03 CFS

Storage provided

786.00	0.57	721 -----	0.00 CFS
786.31	0.88	1867 CFT Prov. 100%	@ a discharge flow of 0.35 CFS
787.00	1.57	4373 -----	1.13 CFS
Allowable Discharge Difference			3.03 CFS
100% Required storage provided			-2.68 CFS
100% Required storage provided			3.19 Ft. of Freeboard

Basin Analysis ~ Basin A

OUTLET STRUCTURE ANALYSIS

Inv. El. 785.43	Inv. El. 787.00	Overflow
Dia. (in) 8.00	Weir Length= 6.00 Ft.	Elevation 788.00
Primary Outlet	Secondary Outlet	Combined Flows
Q=C*A*(2*G*H)^.5	Rec. Weir	Q=C*L*(H^.66)
C = 0.66	C = 4.00	
Elev. Height		
785.43 0.00 Ft.	0.000 CFS	0.00 0.000 CFS 0.000 CFS
786.00 0.57 Ft.	0.000 CFS	0.00 0.000 CFS 0.000 CFS
787.00 1.57 Ft.	1.131 CFS	0.00 0.000 CFS 1.131 CFS
788.00 2.57 Ft.	3.102 CFS	1.00 24.000 CFS 27.102 CFS
789.00 3.57 Ft.	4.239 CFS	2.00 37.922 CFS 42.161 CFS
789.50 4.07 Ft.	4.705 CFS	2.50 43.939 CFS 48.645 CFS

Storm Water Detention Analysis

Project: Foreign Exchange

Date: 20-Aug-21

Location: 95 W Central, Springboro, Warren Co, OH

Design By: CAH

Basin Analysis ~ Basin A

WORKSHEET 3: TIME OF CONCENTRATION (Tc) OR TRAVEL TIME (Tt)

Date: 20-Aug-21

Sheet Flow (Applicable to Tc only)

Storm #1

Segment ID

1. Surface description (table 3-1).....
2. Manning's roughness coeff., n (table 3-1)
3. Flow length, L (total L < 300 ft) ft
4. Two-yr , I..... in/hr
5. Land slope, s..... ft/ft
6. $Tt = \frac{0.93(nL)^{0.6}}{I^{0.4} s^{0.3}}$ Compute Tt-hr

Short Grass	
0.1	
50	
3.06	
0.1	
3.11584884	+
	0
	0.05

Shallow Concentrated Flow

Segment ID

7. Surface description (paved or unpaved).....
8. Flow length, L..... ft
9. Watercourse slope, s..... ft/ft
10. Average velocity, V (fig 3-1)..... ft/s
11. $Tt = \frac{L}{(3600V)}$ Compute Tt..... hr

Grassed	
300	
0.04	
2	
0.04166667	+
	0
	0.04167

Channel Flow

Segment ID

12. Cross sectional flow area, a..... ft²
13. Wetted perimeter, Pw..... ft
14. Hydraulic radius, r = a/Pw..... ft
15. Channel slope, s..... ft/ft
16. Manning's roughness coeff., n.....
17. $V = (1.49)r^{0.67}s^{0.5}/n$ ft/s
18. Flow length, L..... ft
19. $Tt = \frac{L}{(3600V)}$ Compute Tt..... hr
20. Watershed or subarea Tc or Tt (add Tt in steps 6, 11 and 19)..... hr

0	+	0	0
			0.09 HR
			6 Min

Storm Water Detention Analysis

Project: Foreign Exchange

Date: 20-Aug-21

Location: 95 W Central, Springboro, Warren Co, OH

Design By: CAH

0

Basin Analysis ~ Basin A

Existing Area Conditions

Pavement area	0.177
Grassed Area	1.559
	0.000
Farm Area	0.000
Total	1.736

Acres @ C =	0.950
Acres @ C =	0.300
Acres @ C =	0.000
Acres @ C =	0.300
Acres @ C =	0.366

(A) Calculation for 2 year existing flow q=Aci

Area "A" [1.736] Acres Runoff Coefficient, "C"=[0.366]

Intensity, I= 5.25] inches/hr tc=[5.00] minutes

"q" (total allowable release rate) A x C x I = c.f.s.

A [1.736] x C [0.366] x i [5.25] = [3.34] c.f.s.

Pond Bypass

Pavement area	0.000
Grassed Area	0.195
Chanel Rip Rap	0.000
Farm Area	0.000
Total	0.195

Acres @ C =	0.950
Acres @ C =	0.300
Acres @ C =	0.750
Acres @ C =	0.300
Acres @ C =	0.300

(A) Calculation for 2 year existing flow q=Aci

Area "A" [0.195] Acres Runoff Coefficient, "C"=[0.300]

Intensity, I= 5.25] inches/hr tc=[5.00] minutes

"q" (bypassed release rate) A x C x I = c.f.s.

A [0.195] x C [0.300] x i [5.25] = [0.31] c.f.s.

Adjusted Allowable Release Rate = (Total Allowable) - (Bypass Flow)

Adjusted allowable pond release rate **3.03 c.f.s.**

Developed Basin Conditions

Pavement area	0.598
Grassed Area	1.138
Bypass Area	0.000
Bypass Area	0.000
Total	1.736

Acres @ C =	0.950
Acres @ C =	0.300
Acres @ C =	0.950
Acres @ C =	0.300
Acres @ C =	0.524

(A) Calculation for 5 year developed flow q=Aci

Area "A" [1.736] Acres Runoff Coefficient, "C"=[0.524]

Intensity, I= 6.11] inches/hr tc=[5.00] minutes

"q" Developed flow rate) A x C x I = c.f.s.

A [1.736] x C [0.524] x i [6.11] = [5.55] c.f.s.

Time	Intensity		
5 Min	6.11 In/Hr	5 year	Post Development
5 Min	5.25 In/Hr	2 year	Pre Development

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

Where: i = rainfall intensity (inches/hour)

t = time of concentration (minutes)

a = constant

b = constant

c = constant

Reference

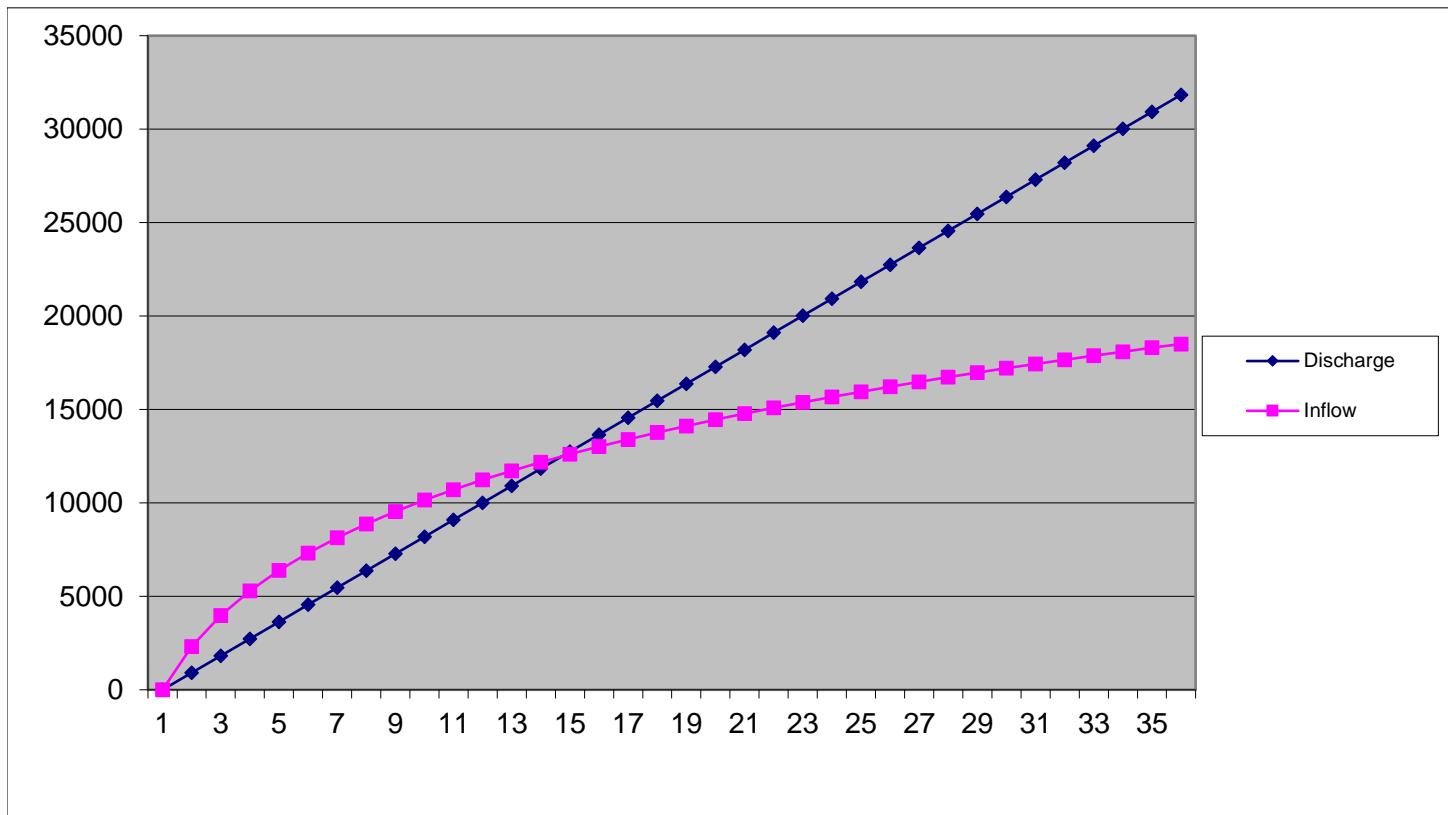
ODOT L&D MANUAL

VOLUME TWO DRAINAGE DESIGN

		a	b	c
Area C	2 yr	56.299	10.00	0.876
	5 yr	67.933	11.00	0.869
	10 yr	84.550	13.00	0.882
	25 yr	95.736	14.00	0.871
	50 yr	96.783	14.00	0.850
	100 yr	80.436	11.50	0.794

Time	Intensity		Allowable	Developed	Stored	Stored	Storage	
			Flow	Flow	Flow	Volume	Cft.	Acre Ft.
1	0	8.45	3.03	7.69	4.66	1,397	1,397	0.0321
2	5	6.11	3.03	5.55	2.52	756	2,153	0.0494
3	10	4.82	3.03	4.38	1.35	406	2,559	0.0587
4	15	4.00	3.03	3.64	0.61	183	2,742	0.0629
5	20	3.44	3.03	3.13	0.09	28	2,770	0.0636
6	25	3.02	3.03	2.74	-0.29	-86	2,683	0.0616
7	30	2.70	3.03	2.45	-0.58	-174	2,509	0.0576
8	35	2.44	3.03	2.22	-0.81	-244	2,265	0.0520
9	40	2.23	3.03	2.03	-1.00	-301	1,964	0.0451
10	45	2.06	3.03	1.87	-1.16	-349	1,615	0.0371
11	50	1.91	3.03	1.74	-1.30	-389	1,226	0.0281
12	55	1.78	3.03	1.62	-1.41	-423	802	0.0184
13	60	1.67	3.03	1.52	-1.51	-453	349	0.0080
14	65	1.58	3.03	1.43	-1.60	-480	-131	-0.0030
15	70	1.49	3.03	1.36	-1.68	-503	-633	-0.0145
16	75	1.42	3.03	1.29	-1.74	-523	-1,157	-0.0266
17	80	1.35	3.03	1.23	-1.81	-542	-1,698	-0.0390
18	85	1.29	3.03	1.17	-1.86	-559	-2,257	-0.0518
19	90	1.23	3.03	1.12	-1.91	-574	-2,831	-0.0650
20	95	1.18	3.03	1.07	-1.96	-588	-3,418	-0.0785
21	100	1.13	3.03	1.03	-2.00	-600	-4,018	-0.0923
22	105	1.09	3.03	0.99	-2.04	-612	-4,630	-0.1063
23	110	1.05	3.03	0.96	-2.08	-623	-5,253	-0.1206
24	115	1.02	3.03	0.92	-2.11	-632	-5,885	-0.1351
25	120	0.98	3.03	0.89	-2.14	-642	-6,527	-0.1498
26	125	0.95	3.03	0.86	-2.17	-650	-7,177	-0.1648
27	130	0.92	3.03	0.84	-2.19	-658	-7,835	-0.1799

28	135	0.89	3.03	0.81	-2.22	-666	-8,501	-0.1952
29	140	0.87	3.03	0.79	-2.24	-673	-9,174	-0.2106
30	145	0.84	3.03	0.77	-2.26	-679	-9,853	-0.2262
31	150	0.82	3.03	0.75	-2.29	-686	-10,539	-0.2419
32	155	0.80	3.03	0.73	-2.31	-692	-11,231	-0.2578
33	160	0.78	3.03	0.71	-2.32	-697	-11,928	-0.2738
34	165	0.76	3.03	0.69	-2.34	-702	-12,630	-0.2899
35	170	0.74	3.03	0.67	-2.36	-707	-13,337	-0.3062
36	175	0.72						



Storm Water Detention Analysis

Date: 20-Aug-21

Design By: CAH

Project: Foreign Exchange

Location: 95 W Central, Springboro, Warren Co, OH

0

STAGE STORAGE DISCHARGE ANALYSIS

Elev.	Height	Area	Storage			Combined Discharge
			Incremental	Accumulated		
785.43	Ft.	0 SF	0 CFT	0 CFT		0.000 CFS
786.00	0.57 Ft.	2531 SF	721 CFT	721 CFT		0.000 CFS
787.00	1.57 Ft.	4772 SF	3,652 CFT	4,373 CFT		1.131 CFS
788.00	2.57 Ft.	6304 SF	5,538 CFT	9,911 CFT		27.102 CFS
789.00	3.57 Ft.	7619 SF	6,962 CFT	16,872 CFT		42.161 CFS
789.50	4.07 Ft.	9449 SF	4,267 CFT	21,139 CFT		48.645 CFS
0.00	-785.43 Ft.	0 SF	0 CFT	21,139 CFT		0.000 CFS
0.00	-785.43 Ft.	0 SF	0 CFT	21,139 CFT		0.000 CFS
0.00	-785.43 Ft.	0 SF	0 CFT	21,139 CFT		0.000 CFS
0.00	-785.43 Ft.	0 SF	0 CFT	16,872 CFT		0.000 CFS
0.00	-785.43 Ft.	0 SF	0 CFT	16,872 CFT		0.000 CFS

Required Storage 2,770 CFT @ an allowable flow of 3.03 CFS

Storage provided

786.00 0.57 721 ----- 0.00 CFS

786.56 1.13 2770 CFT Prov. 100% @ a discharge flow of 0.63 CFS

787.00 1.57 4373 ----- 1.13 CFS

Allowable Discharge

Difference

3.03 CFS

-2.40 CFS

100% Required storage provided 2.94 Ft. of Freeboard

Basin Analysis ~ Basin A

OUTLET STRUCTURE ANALYSIS

Inv. El. 785.43

Dia. (in) 8.00

Primary Outlet

$Q=C*A*(2*G*H)^{.5}$

C = 0.66

Inv. El. 787.00

Overflow Weir Length= **6.00 Ft.** Elevation 788.00

Secondary Outlet

Combined Flows

Rec. Weir $Q=C*L*(H^{.66})$

C = 4.00

Elev. Height

785.43	0.00 Ft.	0.000	CFS	0.00	0.000	CFS	0.000	CFS
786.00	0.57 Ft.	0.000	CFS	0.00	0.000	CFS	0.000	CFS
787.00	1.57 Ft.	1.131	CFS	0.00	0.000	CFS	1.131	CFS
788.00	2.57 Ft.	3.102	CFS	1.00	24.000	CFS	27.102	CFS
789.00	3.57 Ft.	4.239	CFS	2.00	37.922	CFS	42.161	CFS
789.50	4.07 Ft.	4.705	CFS	2.50	43.939	CFS	48.645	CFS
0.00	-785.43 Ft.	0.000	CFS	0.00	0.000	CFS	0.000	CFS
0.00	-785.43 Ft.	0.000	CFS	0.00	0.000	CFS	0.000	CFS
0.00	-785.43 Ft.	0.000	CFS	0.00	0.000	CFS	0.000	CFS
0.00	-785.43 Ft.	0.000	CFS	0.00	0.000	CFS	0.000	CFS
0.00	-785.43 Ft.	0.000	CFS	0.00	0.000	CFS	0.000	CFS

Storm Water Detention Analysis

Project: Foreign Exchange

Date: 14-Aug-20

Location: 95 W Central, Springboro, Warren Co, OH

Design By: CAH

Basin Analysis ~ Basin A

WORKSHEET 3: TIME OF CONCENTRATION (Tc) OR TRAVEL TIME (Tt)

Date: 20-Aug-21

Sheet Flow (Applicable to Tc only)

Storm #1

Segment ID

1. Surface description (table 3-1).....
2. Manning's roughness coeff., n (table 3-1)
3. Flow length, L (total L < 300 ft) ft
4. Two-yr , I..... in/hr
5. Land slope, s..... ft/ft
6. $Tt = \frac{0.93(nL)^{0.6}}{I^{0.4} s^{0.3}}$ Compute Tt-hr

Short Grass	
0.1	
50	
3.06	
0.1	
3.11584884	+
	0
	0.05

Shallow Concentrated Flow

Segment ID

7. Surface description (paved or unpaved).....
8. Flow length, L..... ft
9. Watercourse slope, s..... ft/ft
10. Average velocity, V (fig 3-1)..... ft/s
11. $Tt = \frac{L}{(3600V)}$ Compute Tt..... hr

Grassed	
300	
0.04	
2	
0.04166667	+
	0
	0.04167

Channel Flow

Segment ID

12. Cross sectional flow area, a..... ft²
13. Wetted perimeter, Pw..... ft
14. Hydraulic radius, r = a/Pw..... ft
15. Channel slope, s..... ft/ft
16. Manning's roughness coeff., n.....
17. $V = (1.49)r^{0.67}s^{0.5}/n$ ft/s
18. Flow length, L..... ft
19. $Tt = \frac{L}{(3600V)}$ Compute Tt..... hr
20. Watershed or subarea Tc or Tt (add Tt in steps 6, 11 and 19)..... hr

0	+	0	0
			0.09 HR
			6 Min

Storm Water Detention Analysis

Project: Foreign Exchange

Date: 14-Aug-20

Location: 95 W Central, Springboro, Warren Co, OH

Design By: CAH

0

Basin Analysis ~ Basin A

Existing Area Conditions

Pavement area	0.177	Acres @ C =	0.950
Grassed Area	1.559	Acres @ C =	0.300
	0.000		0.000
Farm Area	0.000	Acres @ C =	0.300
Total	1.7360226	Acres @ C =	0.366

(A) Calculation for 2 year existing flow q=Aci

Area "A" [1.736] Acres

Runoff Coefficient, "C"=[0.366]

Intensity, I= 5.25] inches/hr

tc=[5.00] minutes

"q" (total allowable release rate) A x C x I = c.f.s.

$$A [1.736] \times C [0.366] \times i [5.25] = [3.34] \text{ c.f.s.}$$

Pond Bypass

Pavement area	0.000	Acres @ C =	0.950
Grassed Area	0.195	Acres @ C =	0.300
Chanel Rip Rap	0.000	Acres @ C =	0.750
Farm Area	0.000	Acres @ C =	0.300
Total	0.19471	Acres @ C =	0.300

(A) Calculation for 2 year existing flow q=Aci

Area "A" [0.195] Acres

Runoff Coefficient, "C"=[0.300]

Intensity, I= 5.25] inches/hr

tc=[5.00] minutes

"q" (bypassed release rate) A x C x I = c.f.s.

$$A [0.195] \times C [0.300] \times i [5.25] = [0.31] \text{ c.f.s.}$$

Adjusted Allowable Release Rate = (Total Allowable) - (Bypass Flow)

Adjusted allowable pond release rate 3.03 c.f.s.

Developed Basin Conditions

Pavement area	0.598	Acres @ C =	0.950
Grassed Area	1.138	Acres @ C =	0.300
Bypass Area	0.000	Acres @ C =	0.950
Bypass Area	0.000	Acres @ C =	0.300
Total	1.736	Acres @ C =	0.524

(A) Calculation for 10 year developed flow q=Aci

Area "A" [1.736] Acres

Runoff Coefficient, "C"=[0.524]

Intensity, I= 6.61] inches/hr

tc=[5.00] minutes

"q" Developed flow rate) A x C x I = c.f.s.

$$A [1.736] \times C [0.524] \times i [6.61] = [6.01] \text{ c.f.s.}$$

Time	Intensity		
5 Min	6.61 In/Hr	10 year	Post Development
5 Min	5.25 In/Hr	2 year	Pre Development

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

Where: i = rainfall intensity (inches/hour)

t = time of concentration (minutes)

a = constant

b = constant

c = constant

Reference

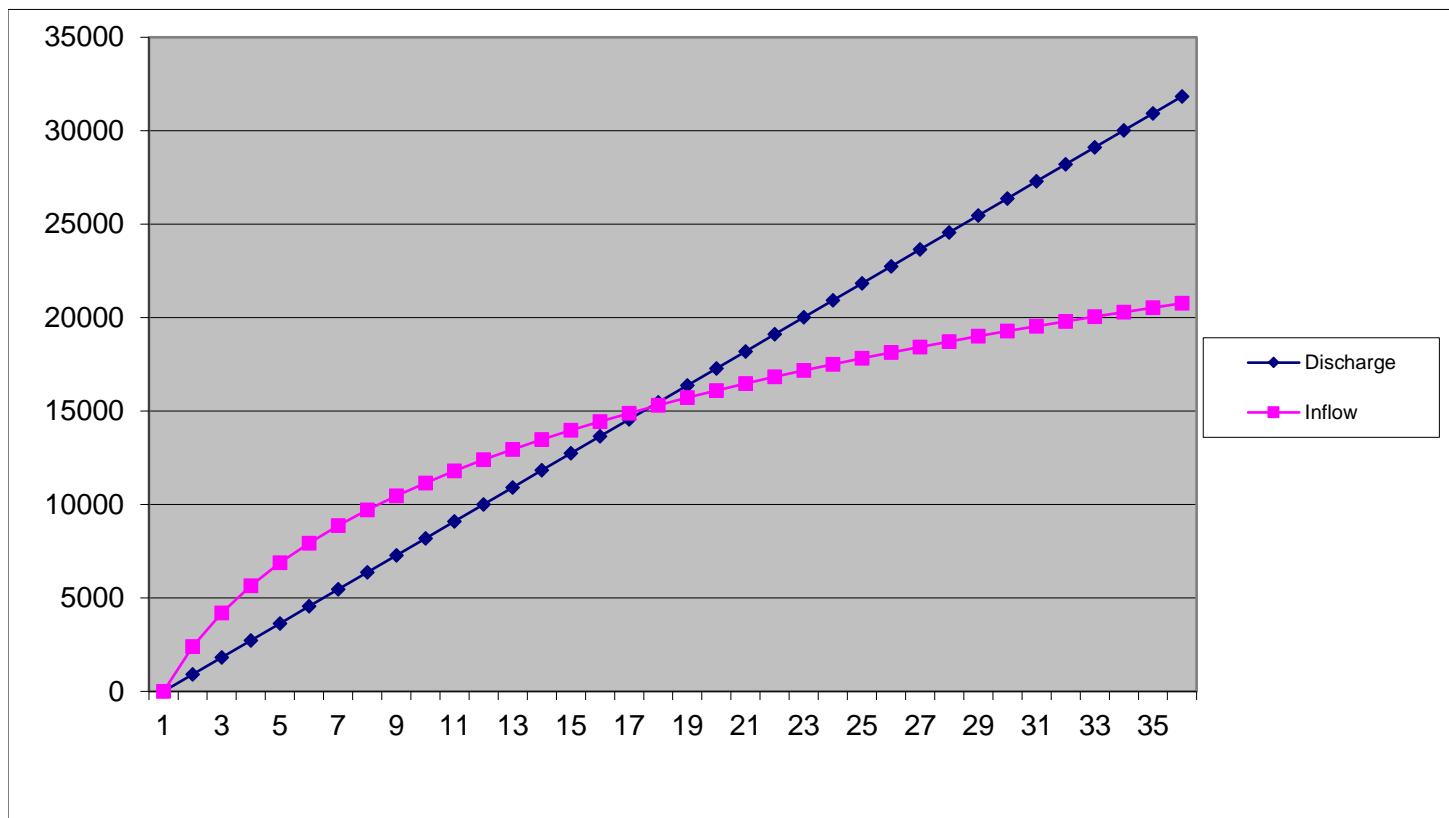
ODOT L&D MANUAL

VOLUME TWO DRAINAGE DESIGN

		a	b	c
Area C	2 yr	56.299	10.00	0.876
	5 yr	67.933	11.00	0.869
	10 yr	84.550	13.00	0.882
	25 yr	95.736	14.00	0.871
	50 yr	96.783	14.00	0.850
	100 yr	80.436	11.50	0.794

Time	Intensity	Allowable	Developed	Stored	Stored	Storage	
		Flow	Flow	Flow	Volume	Cft.	Acre Ft.
1	0	8.80	3.03	8.01	4.97	1,492	1,492 0.0343
2	5	6.61	3.03	6.01	2.98	893	2,385 0.0548
3	10	5.32	3.03	4.84	1.81	542	2,928 0.0672
4	15	4.47	3.03	4.07	1.04	311	3,239 0.0743
5	20	3.87	3.03	3.52	0.49	146	3,385 0.0777
6	25	3.42	3.03	3.11	0.08	23	3,408 0.0782
7	30	3.06	3.03	2.79	-0.24	-73	3,335 0.0766
8	35	2.78	3.03	2.53	-0.50	-151	3,184 0.0731
9	40	2.55	3.03	2.32	-0.71	-214	2,970 0.0682
10	45	2.35	3.03	2.14	-0.89	-267	2,702 0.0620
11	50	2.19	3.03	1.99	-1.04	-313	2,390 0.0549
12	55	2.05	3.03	1.86	-1.17	-351	2,038 0.0468
13	60	1.92	3.03	1.75	-1.28	-385	1,653 0.0379
14	65	1.81	3.03	1.65	-1.38	-415	1,238 0.0284
15	70	1.72	3.03	1.56	-1.47	-441	796 0.0183
16	75	1.63	3.03	1.48	-1.55	-465	331 0.0076
17	80	1.55	3.03	1.41	-1.62	-486	-155 -0.0036
18	85	1.48	3.03	1.35	-1.68	-505	-660 -0.0152
19	90	1.42	3.03	1.29	-1.74	-523	-1,183 -0.0272
20	95	1.36	3.03	1.24	-1.79	-538	-1,721 -0.0395
21	100	1.31	3.03	1.19	-1.84	-553	-2,274 -0.0522
22	105	1.26	3.03	1.14	-1.89	-566	-2,841 -0.0652
23	110	1.21	3.03	1.10	-1.93	-579	-3,419 -0.0785
24	115	1.17	3.03	1.07	-1.97	-590	-4,010 -0.0920
25	120	1.13	3.03	1.03	-2.00	-601	-4,610 -0.1058
26	125	1.10	3.03	1.00	-2.04	-611	-5,221 -0.1199
27	130	1.06	3.03	0.97	-2.07	-620	-5,841 -0.1341

28	135	1.03	3.03	0.94	-2.10	-629	-6,469	-0.1485
29	140	1.00	3.03	0.91	-2.12	-637	-7,106	-0.1631
30	145	0.97	3.03	0.88	-2.15	-644	-7,750	-0.1779
31	150	0.95	3.03	0.86	-2.17	-651	-8,402	-0.1929
32	155	0.92	3.03	0.84	-2.19	-658	-9,060	-0.2080
33	160	0.90	3.03	0.82	-2.22	-665	-9,725	-0.2233
34	165	0.88	3.03	0.80	-2.24	-671	-10,396	-0.2387
35	170	0.85	3.03	0.78	-2.26	-677	-11,072	-0.2542
36	175	0.83						



Storm Water Detention Analysis

Date: 14-Aug-20

Design By: CAH

Project: Foreign Exchange

Location: 95 W Central, Springboro, Warren Co, OH

0

STAGE STORAGE DISCHARGE ANALYSIS

Elev.	Height	Area	Storage			Combined Discharge
			Incremental	Accumulated		
785.43	Ft.	0 SF	0 CFT	0 CFT		0.000 CFS
786.00	0.57 Ft.	2531 SF	721 CFT	721 CFT		0.000 CFS
787.00	1.57 Ft.	4772 SF	3,652 CFT	4,373 CFT		1.131 CFS
788.00	2.57 Ft.	6304 SF	5,538 CFT	9,911 CFT		27.102 CFS
789.00	3.57 Ft.	7619 SF	6,962 CFT	16,872 CFT		42.161 CFS
789.50	4.07 Ft.	9449 SF	4,267 CFT	21,139 CFT		48.645 CFS
0.00	-785.43 Ft.	0 SF	0 CFT	21,139 CFT		0.000 CFS
0.00	-785.43 Ft.	0 SF	0 CFT	21,139 CFT		0.000 CFS
0.00	-785.43 Ft.	0 SF	0 CFT	21,139 CFT		0.000 CFS
0.00	-785.43 Ft.	0 SF	0 CFT	16,872 CFT		0.000 CFS
0.00	-785.43 Ft.	0 SF	0 CFT	21,139 CFT		0.000 CFS

Required Storage 3,408 CFT @ an allowable flow of 3.03 CFS

Storage provided

786.00	0.57	721 -----		0.00 CFS
786.74	1.31	3408 CFT Prov.	100%	@ a discharge flow of 0.83 CFS
787.00	1.57	4373 -----		1.13 CFS
Allowable Discharge Difference				3.03 CFS
100% Required storage provided				-2.20 CFS
100% Required storage provided				2.76 Ft. of Freeboard

Basin Analysis ~ Basin A

OUTLET STRUCTURE ANALYSIS

Inv. El. 785.43	Inv. El. 787.00	Overflow
Dia. (in) 8.00	Weir Length= 6.00 Ft.	Elevation 788.00
Primary Outlet	Secondary Outlet	Combined Flows
Q=C*A*(2*G*H)^.5	Rec. Weir	Q=C*L*(H^.66)
C = 0.66	C = 4.00	
Elev. Height		
785.43 0.00 Ft.	0.000 CFS	0.000 CFS
786.00 0.57 Ft.	0.000 CFS	0.000 CFS
787.00 1.57 Ft.	1.131 CFS	1.131 CFS
788.00 2.57 Ft.	3.102 CFS	27.102 CFS
789.00 3.57 Ft.	4.239 CFS	42.161 CFS
789.50 4.07 Ft.	4.705 CFS	48.645 CFS
0.00 -785.43 Ft.	0.000 CFS	0.000 CFS
0.00 -785.43 Ft.	0.000 CFS	0.000 CFS
0.00 -785.43 Ft.	0.000 CFS	0.000 CFS
0.00 -785.43 Ft.	0.000 CFS	0.000 CFS
0.00 -785.43 Ft.	0.000 CFS	0.000 CFS

Storm Water Detention Analysis

Project: Foreign Exchange

Location: 95 W Central, Springboro, Warren Co, OH

Date: 14-Aug-20

Design By: CAH

Basin Analysis ~ Basin A

WORKSHEET 3: TIME OF CONCENTRATION (Tc) OR TRAVEL TIME (Tt)

Date: 20-Aug-21

Sheet Flow (Applicable to Tc only)

Storm #1

Segment ID

1. Surface description (table 3-1).....
2. Manning's roughness coeff., n (table 3-1)
3. Flow length, L (total L < 300 ft) ft
4. Two-yr , I..... in/hr
5. Land slope, s..... ft/ft
6. $Tt = \frac{0.93(nL)^{0.6}}{I^{0.4} s^{0.3}}$ Compute Tt-hr

Short Grass	
0.1	
50	
3.06	
0.1	
3.11584884	+
	0
	0.05

Shallow Concentrated Flow

Segment ID

7. Surface description (paved or unpaved).....
8. Flow length, L..... ft
9. Watercourse slope, s..... ft/ft
10. Average velocity, V (fig 3-1)..... ft/s
11. $Tt = \frac{L}{(3600V)}$ Compute Tt..... hr

Grassed	
300	
0.04	
2	
0.04166667	+
	0
	0.04167

Channel Flow

Segment ID

12. Cross sectional flow area, a..... ft²
13. Wetted perimeter, Pw..... ft
14. Hydraulic radius, r = a/Pw..... ft
15. Channel slope, s..... ft/ft
16. Manning's roughness coeff., n.....
17. $V = (1.49)r^{0.67}s^{0.5}/n$ ft/s
18. Flow length, L..... ft
19. $Tt = \frac{L}{(3600V)}$ Compute Tt..... hr
20. Watershed or subarea Tc or Tt (add Tt in steps 6, 11 and 19)..... hr

0	+	0	0
			0.09 HR
			6 Min

Storm Water Detention Analysis

Project: Foreign Exchange

Date: 14-Aug-20

Location: 95 W Central, Springboro, Warren Co, OH

Design By: CAH

0

Basin Analysis ~ Basin A

Existing Area Conditions

Pavement area	0.177	Acres @ C =	0.950
Grassed Area	1.559	Acres @ C =	0.300
	0.000		0.000
Farm Area	0.000	Acres @ C =	0.300
Total	1.7360226	Acres @ C =	0.366
(A) Calculation for 100 year existing flow		q=Aci	
Area "A" [<u>1.736</u>] Acres		Runoff Coefficient, "C"=[<u>0.366</u>]	
Intensity, I= <u>8.68</u>] inches/hr		tc=[<u>5.00</u>] minutes	
"q" (total allowable release rate) A x C x I = c.f.s.			
A [<u>1.736</u>] x C [<u>0.366</u>] x i [<u>8.68</u>] = [<u>5.52</u>] c.f.s.			

Pond Bypass

Pavement area	0.000	Acres @ C =	0.950
Grassed Area	0.195	Acres @ C =	0.300
Chanel Rip Rap	0.026	Acres @ C =	0.750
Farm Area	0.000	Acres @ C =	0.300
Total	0.2211004	Acres @ C =	0.300
(A) Calculation for 100 year existing flow		q=Aci	
Area "A" [<u>0.221</u>] Acres		Runoff Coefficient, "C"=[<u>0.300</u>]	
Intensity, I= <u>8.68</u>] inches/hr		tc=[<u>5.00</u>] minutes	
"q" (bypassed release rate) A x C x I = c.f.s.			
A [<u>0.221</u>] x C [<u>0.300</u>] x i [<u>8.68</u>] = [<u>0.58</u>] c.f.s.			

Adjusted Allowable Release Rate = (Total Allowable) - (Bypass Flow)

Adjusted allowable pond release rate	4.95	c.f.s.
--------------------------------------	------	--------

Developed Basin Conditions

Pavement area	0.598	Acres @ C =	0.950
Grassed Area	1.138	Acres @ C =	0.300
Bypass Area	0.000	Acres @ C =	0.950
Bypass Area	0.000	Acres @ C =	0.300
Total	1.736	Acres @ C =	0.524
(A) Calculation for 100 year developed flow		q=Aci	
Area "A" [<u>1.736</u>] Acres		Runoff Coefficient, "C"=[<u>0.524</u>]	
Intensity, I= <u>8.68</u>] inches/hr		tc=[<u>5.00</u>] minutes	
"q" Developed flow rate) A x C x I = c.f.s.			
A [<u>1.736</u>] x C [<u>0.524</u>] x i [<u>8.68</u>] = [<u>7.90</u>] c.f.s.			

Time	Intensity		
5 Min	8.68 In/Hr	100 year	Post Development
5 Min	8.68 In/Hr	100 year	Pre Development

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

Where: i = rainfall intensity (inches/hour)

t = time of concentration (minutes)

a = constant

b = constant

c = constant

Reference

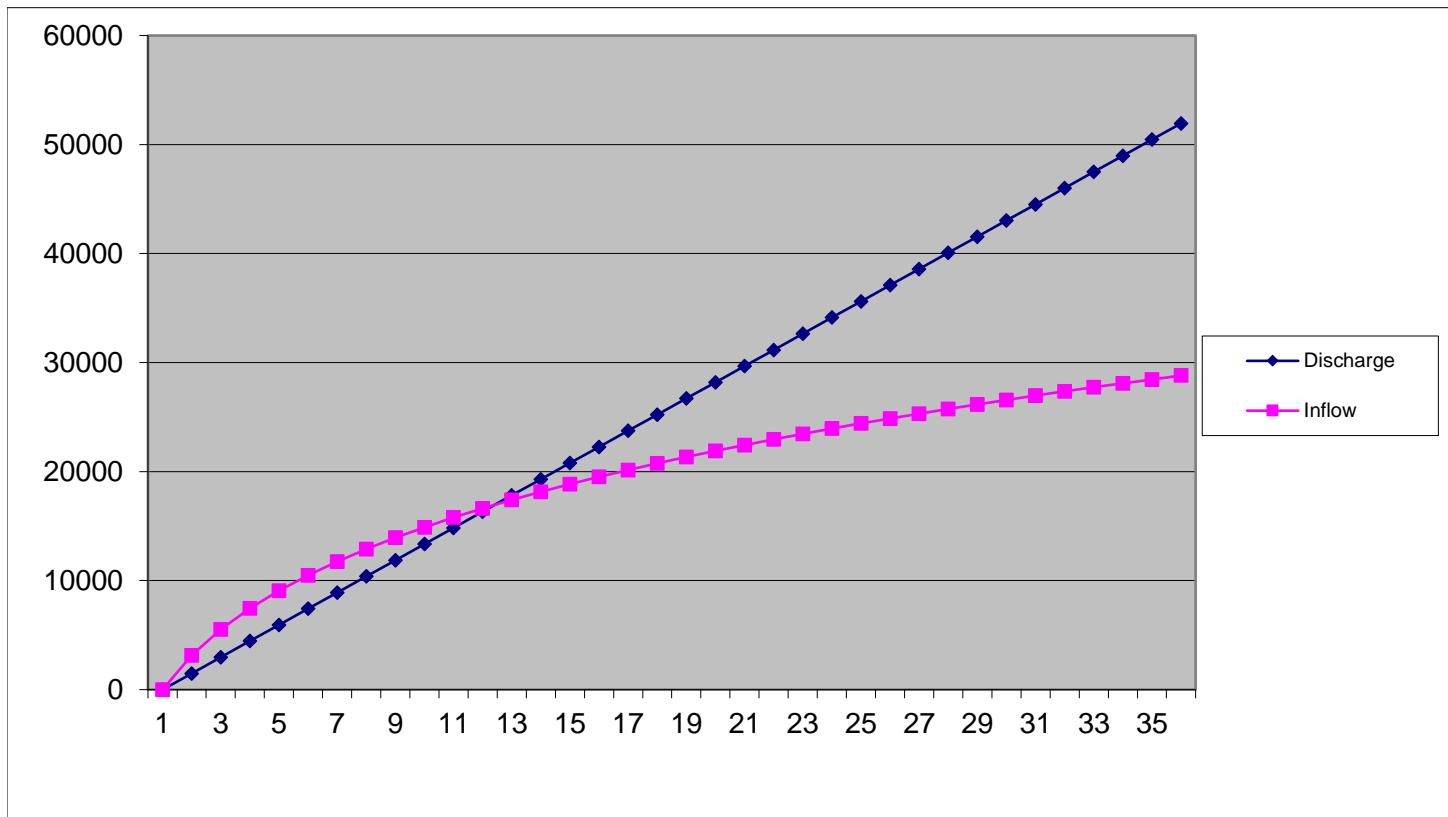
ODOT L&D MANUAL

VOLUME TWO DRAINAGE DESIGN

		a	b	c
Area C	2 yr	56.299	10.00	0.876
	5 yr	67.933	11.00	0.869
	10 yr	84.550	13.00	0.882
	25 yr	95.736	14.00	0.871
	50 yr	96.783	14.00	0.850
	100 yr	80.436	11.50	0.794

Time	Intensity	Allowable	Developed	Stored	Stored	Storage	
		Flow	Flow	Flow	Volume	Cft.	Acre Ft.
1	0	11.57	4.95	10.52	5.57	1,672	1,672 0.0384
2	5	8.68	4.95	7.90	2.95	886	2,558 0.0587
3	10	7.04	4.95	6.40	1.46	437	2,995 0.0688
4	15	5.96	4.95	5.42	0.48	143	3,138 0.0720
5	20	5.20	4.95	4.73	-0.22	-66	3,072 0.0705
6	25	4.62	4.95	4.21	-0.74	-222	2,850 0.0654
7	30	4.18	4.95	3.80	-1.15	-345	2,505 0.0575
8	35	3.81	4.95	3.47	-1.48	-443	2,062 0.0473
9	40	3.52	4.95	3.20	-1.75	-524	1,538 0.0353
10	45	3.27	4.95	2.97	-1.97	-592	946 0.0217
11	50	3.06	4.95	2.78	-2.17	-650	296 0.0068
12	55	2.87	4.95	2.61	-2.33	-700	-405 -0.0093
13	60	2.71	4.95	2.47	-2.48	-744	-1,149 -0.0264
14	65	2.57	4.95	2.34	-2.61	-783	-1,932 -0.0443
15	70	2.44	4.95	2.22	-2.72	-817	-2,749 -0.0631
16	75	2.33	4.95	2.12	-2.83	-848	-3,597 -0.0826
17	80	2.23	4.95	2.03	-2.92	-876	-4,473 -0.1027
18	85	2.14	4.95	1.94	-3.00	-901	-5,373 -0.1234
19	90	2.05	4.95	1.87	-3.08	-924	-6,297 -0.1446
20	95	1.98	4.95	1.80	-3.15	-945	-7,242 -0.1663
21	100	1.91	4.95	1.73	-3.21	-964	-8,206 -0.1884
22	105	1.84	4.95	1.67	-3.27	-982	-9,188 -0.2109
23	110	1.78	4.95	1.62	-3.33	-998	-10,186 -0.2338
24	115	1.72	4.95	1.57	-3.38	-1,014	-11,200 -0.2571
25	120	1.67	4.95	1.52	-3.43	-1,028	-12,228 -0.2807
26	125	1.62	4.95	1.48	-3.47	-1,041	-13,269 -0.3046
27	130	1.58	4.95	1.43	-3.51	-1,054	-14,323 -0.3288

28	135	1.53	4.95	1.40	-3.55	-1,065	-15,388	-0.3533
29	140	1.49	4.95	1.36	-3.59	-1,076	-16,465	-0.3780
30	145	1.46	4.95	1.32	-3.62	-1,087	-17,551	-0.4029
31	150	1.42	4.95	1.29	-3.66	-1,097	-18,648	-0.4281
32	155	1.39	4.95	1.26	-3.69	-1,106	-19,754	-0.4535
33	160	1.35	4.95	1.23	-3.72	-1,115	-20,868	-0.4791
34	165	1.32	4.95	1.20	-3.74	-1,123	-21,991	-0.5048
35	170	1.29	4.95	1.18	-3.77	-1,131	-23,122	-0.5308
36	175	1.27						



Storm Water Detention Analysis

Date: 14-Aug-20

Design By: CAH

Project: Foreign Exchange

Location: 95 W Central, Springboro, Warren Co, OH

0

STAGE STORAGE DISCHARGE ANALYSIS

Elev.	Height	Area	Storage			Combined Discharge
			Incremental	Accumulated		
785.43	Ft.	0 SF	0 CFT	0 CFT		0.000 CFS
786.00	0.57 Ft.	2531 SF	721 CFT	721 CFT		0.000 CFS
787.00	1.57 Ft.	4772 SF	3,652 CFT	4,373 CFT		1.131 CFS
788.00	2.57 Ft.	6304 SF	5,538 CFT	9,911 CFT		27.102 CFS
789.00	3.57 Ft.	7619 SF	6,962 CFT	16,872 CFT		42.161 CFS
789.50	4.07 Ft.	9449 SF	4,267 CFT	21,139 CFT		48.645 CFS
0.00	-785.43 Ft.	0 SF	0 CFT	21,139 CFT		0.000 CFS
0.00	-785.43 Ft.	0 SF	0 CFT	21,139 CFT		0.000 CFS
0.00	-785.43 Ft.	0 SF	0 CFT	21,139 CFT		0.000 CFS
0.00	-785.43 Ft.	0 SF	0 CFT	16,872 CFT		0.000 CFS
0.00	-785.43 Ft.	0 SF	0 CFT	21,139 CFT		0.000 CFS

Required Storage 3,138 CFT @ an allowable flow of 4.95 CFS

Storage provided

787.00 1.57 4373 ----- 1.13 CFS

787.15 1.72 5186 CFT Prov. 165% @ a discharge flow of 4.95 CFS

788.00 2.57 9911 ----- 27.10 CFS

Allowable Discharge

Difference

4.95 CFS

0.00 CFS

165% Required storage provided 2.35 Ft. of Freeboard

Basin Analysis ~ Basin A

OUTLET STRUCTURE ANALYSIS

Inv. El. 785.43

Dia. (in) 8.00

Primary Outlet

$Q=C*A*(2*G*H)^{.5}$

C = 0.66

Inv. El. 787.00

Overflow

Weir Length= **6.00 Ft.**

Elevation 788.00

Secondary Outlet

Combined Flows

Rec. Weir $Q=C*L*(H^{.66})$

C = 4.00

Elev. Height

785.43	0.00 Ft.	0.000	CFS	0.00	0.000	CFS	0.000	CFS
786.00	0.57 Ft.	0.000	CFS	0.00	0.000	CFS	0.000	CFS
787.00	1.57 Ft.	1.131	CFS	0.00	0.000	CFS	1.131	CFS
788.00	2.57 Ft.	3.102	CFS	1.00	24.000	CFS	27.102	CFS
789.00	3.57 Ft.	4.239	CFS	2.00	37.922	CFS	42.161	CFS
789.50	4.07 Ft.	4.705	CFS	2.50	43.939	CFS	48.645	CFS
0.00	-785.43 Ft.	0.000	CFS	0.00	0.000	CFS	0.000	CFS
0.00	-785.43 Ft.	0.000	CFS	0.00	0.000	CFS	0.000	CFS
0.00	-785.43 Ft.	0.000	CFS	0.00	0.000	CFS	0.000	CFS
0.00	-785.43 Ft.	0.000	CFS	0.00	0.000	CFS	0.000	CFS
0.00	-785.43 Ft.	0.000	CFS	0.00	0.000	CFS	0.000	CFS

Phase 1 Erosion & Settlement Schedule

Project: Foreign Exchange
Location: 95 W Central, Springboro, Warren Co, OH

Date: 20-Aug-21
Design By: CAH

Drainage Area A

Silt Basin #1

	Areas	C Value	Percent
Pavement area	0.60	0.95	
Grassed Area	1.14	0.30	65.553%
0.00	0.00	0.95	0.000%
0.00	0.00	0.30	0.000%
Totals	1.736	0.524	

Req. Volume	Storage	Elev.	Depth
-------------	---------	-------	-------

Storm Water Pollution Prevention Plan Checklist

(d)(ii) Sediment Settling Ponds

Sediment Storage	2.52 CY	Use 67.0 CY	67 CY	786.30	0.87 Ft
67 yd ³ or 1800 ft ³ per acre of drainage area					

OEPA CHAPTER 2 Post Construction Stormwater Management Practices

2.6 Water Quality Ponds

Page 30

WQv 0.008 AcFt 12.60 CY Use 12.6 CY 12.6 CY 785.70 0.27 Ft

$$0.007 \text{ AcFt} \quad WQv \text{ (ac-ft)} = Rv * 0.90 * A / 12 \text{ (Equation 1)}$$

Increase Vol. for Construction $WQv + 20\%$

0.050 Ry = volumetric runoff coefficient

1.736 Ac. A = area draining into the BMP in acres

0.050 Ry $\equiv 0.05 \pm 0.9$ (i) (Equation 2)

0.000 $i = \text{watershed imperviousness ratio, the percent imperviousness divided by 100}$

Section Three

ANALYSIS REFERENCE

ODOT Location and Design Manual
Volume Two Drainage Design

[LOCATION AND DESIGN MANUAL VOLUME TWO DRAINAGE DESIGN](#)

General Notes – Figures 1101-2 through 1101-3

General Notes – Figures 1101-2 through 1101-3

The Rainfall Intensity-Duration-Frequency (IDF) curves are based upon precipitation data obtained from the National Oceanic and Atmospheric Administration (NOAA) Atlas 14. The precipitation data was collected between 4/1863 to 12/2000.

Rainfall depth varies across the State with more rainfall depth present in the Southwest portion of the state and gradually decreasing towards the Northeast. IDF curves were developed for 4 regions across the State to simplify hydraulic design. The regions were determined by normalizing contours created from NOAA precipitation GIS data from the 10 year, 60 minute duration.

Federal Highway Administration Hydraulic Engineering Circular No. 12 Appendix A offers a methodology for converting I-D-F data points to an equation of the general form:

$$i = a/(t+b)^c$$

Where:
i = rainfall intensity (inches/hour)
t = time of concentration (minutes)
a = constant
b = constant
c = constant

Figure 1101-2 can be expressed using the above general equation utilizing the constants shown below.

Intensity Zone (Figure 1101-3)	Frequency (Years)	Constant "a"	Constant "b"	Constant "c"
A	2	46.184	9.000	0.859
	5	56.985	10.250	0.851
	10	64.167	11.000	0.842
	25	66.528	11.000	0.811
	50	65.702	10.750	0.782
	100	64.489	10.500	0.754
B	2	47.987	9.000	0.859
	5	60.684	10.500	0.858
	10	73.126	12.000	0.863
	25	75.841	12.000	0.833
	50	65.621	10.000	0.781
	100	85.047	13.250	0.806
C	2	56.299	10.000	0.876
	5	67.933	11.000	0.869
	10	84.550	13.000	0.882
	25	95.736	14.000	0.871
	50	96.783	14.000	0.850
	100	80.436	11.500	0.794
D	2	57.448	10.000	0.876
	5	67.933	11.000	0.869
	10	79.192	12.000	0.864
	25	87.886	12.750	0.849
	50	95.169	13.500	0.839
	100	91.982	13.000	0.810

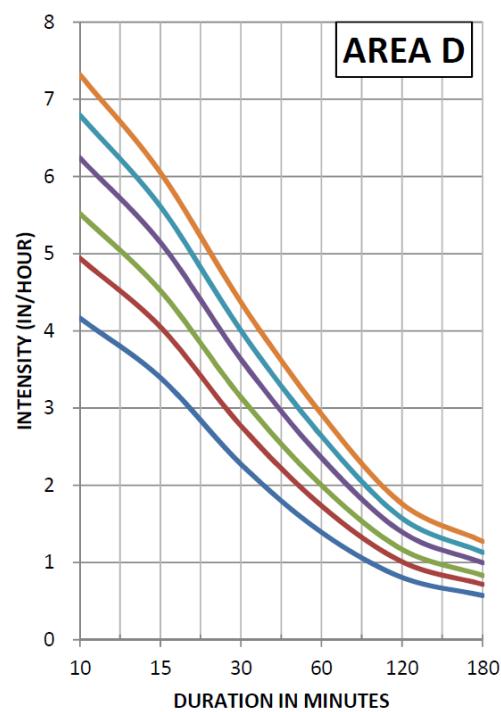
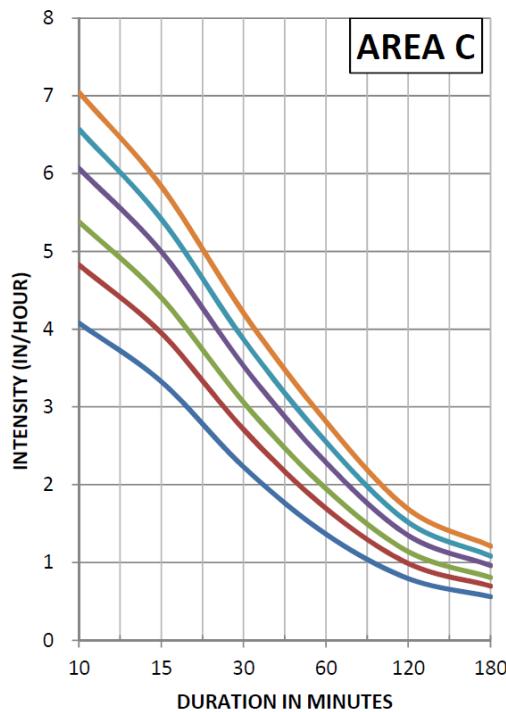
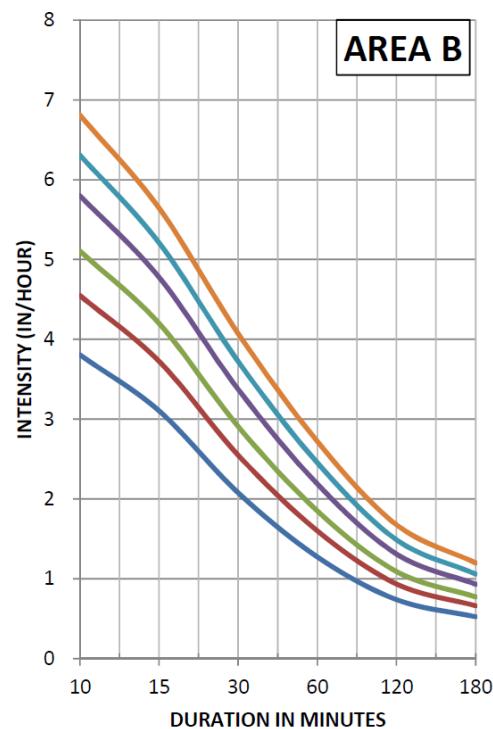
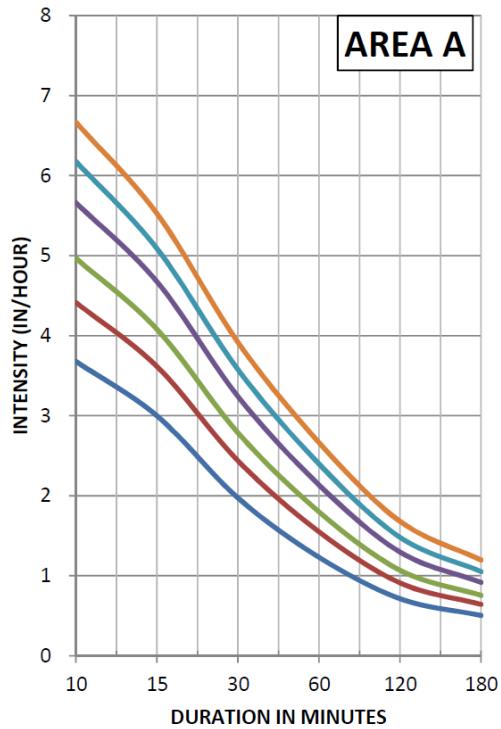
For any projects that have begun using the previous Rainfall Intensity-Duration-Frequency (IDF) curves, continue with their use through the completion of the project. The current Rainfall Intensity-Duration-Frequency (IDF) curves should be used at the start for all new projects.

Rainfall Intensity-Frequency-Duration Curves

1101-2

Reference Section

1101.2.4



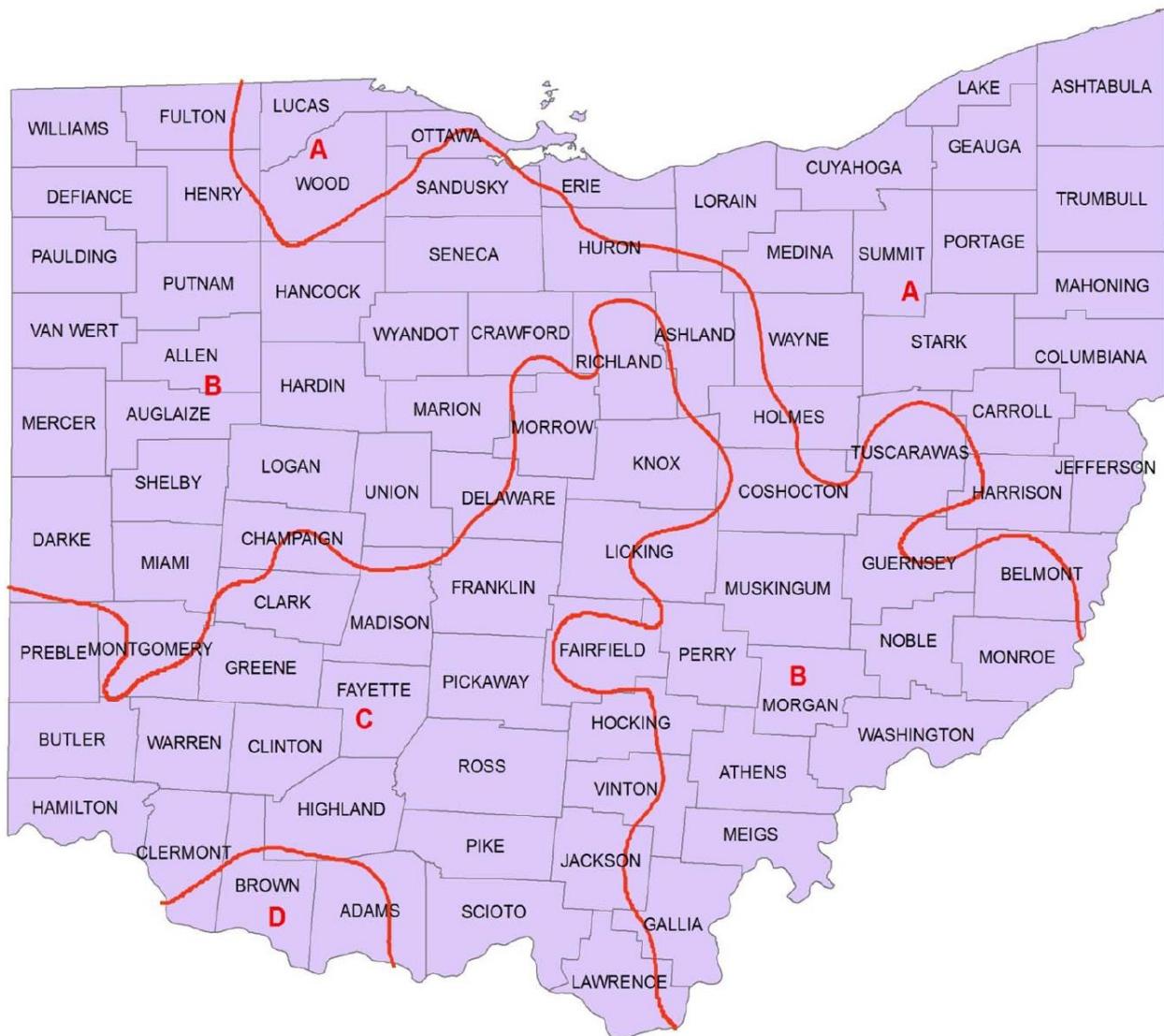
Refer to General Notes - Figures 1101-2 through 1101-3

1101-3

Reference Section

1101.2.4

Rainfall Intensity-Frequency-Duration Curves



Refer to General Notes - Figures 1101-2 through 1101-3

City of Springboro
320 West Central Avenue, Springboro, Ohio 45066
Planning Commission Meeting
Wednesday, August 18, 2021

I. Call to Order

Chairperson Becky Iverson called the Springboro Planning Commission Meeting to order at 6:00 p.m. at the Springboro Municipal Building, Council Chambers, 320 West Central Avenue, Springboro, Ohio.

Present: Becky Iverson, Chair, Chris Pearson, Vice-Chair, Mark Davis, Robert Dimmitt, Steve Harding, Mike Thompson, and John Sillies.

Staff: Dan Boron, City Planner; Elmer Dudas, Development Director; Chad Dixon, City Engineer, Ann Burns, Planning Commission Secretary.

II. Approval of Minutes

A. July 14, 2021 Planning Commission Minutes

Ms. Iverson asked for corrections or additions to the minutes. There were none

Mr. Harding motioned to approve the July 14, 2021 Planning Commission minutes. Mr. Pearson seconded the motion.

Vote: Harding, yes; Davis, yes; Sillies, yes; Dimmitt, yes; Iverson, yes; Pearson, yes; Thompson, yes (7-0)

III. Agenda Items

A. Final Review, Site Plan Review, 465 Victory Drive, new commercial building for B&E Plumbing

Background Information

This agenda item is a request for site plan review, filed by Burkhardt Engineering Co., representing B&E Plumbing, property owner, approval for the construction of a 3,605-square foot commercial building at 465 Victory Drive, southeast of the intersection of Victory Drive and South Pioneer Drive. The property is 3.29 acres in area and is currently vacant. The property/business owner has initiated clearing of the site, which is permitted prior to Planning Commission review and approval, to accommodate this development subject to staff review. The building/site is proposed to be used for a plumbing business to be constructed on the west end of the property. The subject property is zoned ED, Employment Center District, a zoning designation that allows the proposed use. This item was reviewed on a preliminary basis at the July 14, 2021 Planning Commission meeting at which time this agenda item was authorized for formal approval.

Adjacent land uses include Victory Wholesale to the east, to the south a large commercial building fronting South Pioneer Drive and occupied by Paper Systems and Trebnick Systems, to the west Total Cable Solutions, Inc., and to the north on the north side of Victory Drive, Hausfeld Classics and a commercial building owned and occupied by Sunstar along with an access drive to their campus to the north. Adjacent zoning is ED District for all adjacent properties.

Staff Comments

City staff recommends APPROVAL of the site plan for 465 Victory Drive contingent on complying with the following comments following action by the Planning Commission:

1. Provide materials board or samples prior to or at August 18th Planning Commission meeting.
2. For proposed dumpster screening and gate, provide exterior materials sample or board including color. Also, verify the dumpster pad size as it does not correspond with the dumpster enclosure detail.
3. For the landscaping plan the following comments apply:
 - a. Provide a schedule of proposed landscaping including number of trees proposed, scientific and common names, and size (measured as DBH), 2.5 inches minimum for shade trees, 2 inches for ornamental trees, 6 feet in height for evergreen trees.
 - b. Applicant to indicate existing trees 4 inches DBH and larger for credit against landscaping requirements for this proposal. This would apply to site landscaping requirement. Please coordinate with City staff on both the credit and site landscaping requirement prior to August 18th meeting.
 - c. Provide 1 additional shade tree on Victory Drive frontage (4 required, 3 provided), 3 additional trees on south property line buffer (5 required, 2 provided), Less credit indicated in b. above, provide 6
 - d. Landscaping plan to be provided for site plan consistent with Chapter 1280 of Planning and Zoning Code following preliminary plan review. Plan to include proposed location of new landscaping, existing landscaping to be retained, and a schedule of landscaping materials including number, size and species. Existing landscaping 4 inches DBH or greater may count as credit against landscaping requirements for parking areas, site, and buffer yards.
4. Lighting plan to be provided for site plan consistent with Chapter 1273 of Planning and Zoning Code to staff prior to August 18th meeting. Plan to include photometric analysis, specs for proposed lighting fixtures for site and building, and indication of compliance with color-temperature of lighting (not to exceed 3500° Kelvin) among other design requirements.
5. Final revised and approved site plan shall be submitted to include all comments by staff and planning commission and to have signature of the owner or duly authorized officer and stamped certified by a professional engineer.
6. An "As Built" drawing showing as built location and elevations of all improvements shall be submitted prior to the issuance of an occupancy permit.
7. The Clearcreek Fire District has no comments at this time.

Discussion:

Kurt Zeissler from Burkhart Engineering and Ben Hood from B&E Plumbing were present to address any questions on the application. Mr. Zeissler noted that they have reviewed the staff comments, and are working on a few final details to complete the requirements.

Mr. Boron stated that the lighting plan was received, and any remaining details are minor and can be resolved between staff and the applicant.

Ms. Iverson asked for a motion for approval of the Site Plan for 465 Victory Drive, new commercial building for B & E Plumbing

Mr. Thompson motioned to approve. Mr. Sillies seconded the motion.

Vote: Davis, yes; Sillies, yes; Dimmitt, yes; Iverson, yes; Pearson, yes; Thompson, yes; Harding, yes; (7-0)

B. Preliminary Review, Site Plan Review, 95 West Central Avenue (SR 73), proposed vehicle service facility for Foreign Exchange

Background Information

This agenda item is an application for site plan review filed by Dryden Builders, Inc., on behalf of Foreign Exchange, to permit the construction of a vehicle repair facility at 95 West Central Avenue (SR 73). The subject property is located southeast of the intersection of West Central Avenue and South Main Street. Foreign Exchange proposes to relocate their operation located in Clearcreek Township to the subject property. In addition to the Clearcreek Township location, the company operates other locations in West Chester, Centerville, and Moraine.

The subject property is located in the UVD, Urban Village District. While the applicant has been advised that the proposed use is permitted, the redevelopment of the site and any other in the UVD will need to comply with the high design and development standards of the UVD and the standard site plan review requirements.

Existing land uses include to the east the soon to open Latin Arepas restaurant at 85 West Central Avenue, to the south the former site of Jonathan Wright Elementary School, to the west a single-family residence at 105 West Central Avenue, and to the north on the north side of West Central Avenue, Kleather's pumpkin patch and single-family residence, the small commercial building that houses Scotty's barber shop, and the developing Wright Station development on the former IGA shopping center site.

Existing zoning in the vicinity of the subject property is UVD to the west, north on the north side of West Central Avenue, and east. To the south existing zoning is R-2, Low-Density Residential District, on the former site of Jonathan Wright Elementary School.

The City is in receipt of a letter from the existing property owner indicating authorization to proceed through the development review process prior to sale.

Staff Comments

City staff has the following comments regarding this agenda item:

1. The proposed use to comply with Section 1264.26, Development Standards for Specific Uses, Major and Minor Vehicle Repair.
2. Car washes are not a permitted use in the UVD.
3. Provide justification for volume of parking area proposed for the use. Also the paved area in rear of building is storage and needs to be screened per UVD design and development standards.
4. Build-to lines in the UVD are zero. Provide justification for the build-to lines shown on sheet CP-2.0.

5. What is the timetable for the proposed future building area and its use? What is the timetable for the future potential development area proposed for the southeast corner of the site?
6. Per UVD Section 1267.08(a)(1), Four-Sided Consistency, the west and south elevations do not comply with this requirement. Elevations need to relate to the style of the front elevations. Complexity and level of ornamentation may be reduced on the sides/rear elevations, but no ornamentation or interest is provided.
7. Proposed mural to be reviewed by Zoning Inspector for compliance with sign code and UVD standards.
8. Per UVD Section 1267.08(a)(2), Orientation to Street, the front/north elevation needs to be architecturally enhanced to address this requirement with respect to building entrance(s).
9. Per UVD Section 1267.08(a)(4), Glass Materials, verify that glass proposed is translucent.
10. Per UVD Section 1267.08(a)(6), Rooflines, indicate how proposed building complies with this section's requirements.
11. Per UVD Section 1267.08(a)(9), Building Massing, indicate how proposed building complies with this section's requirements.
12. Per UVD Section 1267.08(a)(10), Opacity, indicate how proposed building complies with this section's requirements.
13. City staff reserves the opportunity to review the proposed landscaping plan in light of UVD requirements, see Section 1267.09, and those of Chapter 1280.
14. Provide an engineered surveyed site plan to include, but not limited to, boundary dimensions and bearings, existing curbing, utilities, natural features, etc.
15. Provide existing and proposed grades and drainage systems and structures with one-foot contours. Elevations and contours shall be based upon USGS datum and identify the benchmark utilized.
16. Provide a record plan dedicating 60 feet of right-of-way across frontage of SR 73 as well as a 10-foot utility easement.
17. Provide a storm water management plan with erosion and sediment control measures including operation and maintenance procedures.
18. Provide storm water detention design/water quality for review.
19. Provide site design details including, but not limited to the following: water and sanitary sewer service, storm sewers, proposed streets, driveways, parking spaces, loading spaces and sidewalks, section and geometric, parking lot pavement typical, and spot elevations throughout parking lot. Provide parking stall dimensions not less than 9 feet wide by 18 feet deep.
20. Provide dumpster enclosure details.
21. Existing curb and gutter along SR 73 to be removed and replaced with ODOT type 2 depressed curb and gutter. Provide concrete apron and sidewalk details.
22. What is the purpose of the 72 foot-wide drive aisle? Vehicle storage?
23. Is the purpose of the showroom to have vehicle sales?
24. Provide location, intensity and orientation and catalog cuttings of all exterior lighting. All exterior lighting shall have a maximum 3500° Kelvin color-temperature. Provide in foot-candles the luminance level produced by the proposed lighting, and also lighting specifications.
25. Final revised and approved site plan shall be submitted to include all comments by staff and Planning Commission to have signature of the owner or duly authorized officer and stamped certified by a professional engineer.
26. An "As Built" drawing showing as built location and elevations of all improvements shall be submitted prior to the issuance of an occupancy permit.
27. The Clearcreek Fire District has no comments at this time.

Discussion:

The applicants who attended the meeting were Chris Hinkel with Dryden buildings, Rick and Gayle Reilich with Foreign Exchange, Chris Papakirk, Topos Studio, Bill Cullen, BC3D Design, and Art Harden, Calibre Engineering.

Mr. Boron reviewed the background and staff comments explaining this item is an application for site plan review filed by Dryden Builders, Inc., on behalf of Foreign Exchange, to permit the construction of a vehicle repair facility at 95 West Central Avenue (SR 73). He stated that the core use of the application is permitted, referring to the long list of staff comments that apply to a UVD zoned property.

Mr. Reilich provided some background on the Foreign Exchange Company that has been in business for over 45 years, and he has owned and operated since 1990. He shared plans to support Springboro development by being a good neighbor and drawing more visitors to the community.

Mr. Hinkel stated that they have reviewed the staff comments and needed clarification on a few items. He explained that they have no intentions of having a car wash, mentioned in comment 2, and provided his justification of the 22-27 parking spaces as requested in comment #3.

Mr. Boron questioned what the percent of overnight parking could be. Mr. Hinkel explained it was minimal and they try to keep the vehicles in a bay or behind the building, away from the street if they are there overnight.

Mr. Boron also reviewed addition screening requirements that are part of the UVD zoning.

Mr. Hinkel shared plans for the possibility of a second L-shaped building on the property in the future.

Mr. Harding noted there were also landscape requirements around the customer parking in the front.

Mr. Hinkel explained that they were confident they could meet all the landscaping and fencing requirements and other site design details as noted in item #19.

Mr. Sillies asked what the plans were for the existing shed on the property.

Mr. Hinkel shared plans to repair and paint the shed which will match the color scheme.

Mr. Dimmit asked if there were any environmental issue with this type of business.

Mr. Hinkel explained that underground drains and oil separators will be regulated by the EPA.

Ms. Reilich also noted that they have a recycle program for the motor oil.

Mr. Boron reviewed other requirements that were noted in the staff comments including setbacks and build-to restrictions for UVD zoned property.

There was a discussion about options for the property, which included additional buildings, splitting the property and leasing portions of the property in the future.

Mr. Hinkel acknowledged the need for a master plan in order to propose additional future development. He shared concerns about the zero build-to requirement and asked if it could be adjusted to 5 or 10 ft.

Ms. Iverson said she would be comfortable with a change to 5 ft.

Mr. Thompson also stated he did not think 10 ft. would be too excessive as well.

Mr. Sillies expressed concern that those setbacks would not work for an urban look.

Mr. Pearson asked for some clarification on the elevations and materials on the building.

Mr. Hinkel further reviewed the proposed drawings explaining details of the elevations, site plan and the materials that will be used.

Mr. Boron explained that the deadline for the September 8th meeting is Friday, August 24th. He felt that this was a good first step to review the project and the applicant is welcome to address the concerns discussed here today and submit a review for the September meeting.

IV. Guest Comments

None.

V. Planning Commission and Staff Comments

Mr. Boron stated that the Public Hearing before City Council for the Easton Farm Development is August 19, 2021 at 7:00.

Mr. Boron stated that next Planning Commission meeting is scheduled for September 8th.

Adjournment

Mr. Harding motioned to adjourn the August 18, 2021 Planning Commission Regular Meeting at 8:10 p.m. Mr. Pearson seconded the motion.

Vote: Sillies, yes; Dimmitt, yes; Iverson, yes; Pearson, yes; Harding, yes; Thompson, yes; Davis, yes. (7-0)

Becky Iverson, Planning Commission Chairperson

Dan Boron, Planning Consultant

Ann Burns, Planning Commission Secretary