BERLIN MIXED USE DEVELOPMENT

BIO

Preliminary Development Plan

And Zoning Submittal

Berlin Township, Delaware County, Ohio

January 2023



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3271 Cheshire Rd Delaware, OH 43015 740-548-6350 www.berlintwp.us

Application #
Date received
Township Fee* \$ Make Check Payable to Berlin Township
*Fee is \$3,000 plus \$150 per acre (500 acre max). Additional fees may be required to cover actual cost as per section 15,06(G) and 19,06(G)

Application for Berlin Business Park/Circle one: Article 15 (BCO) -

Article	19	(BIO)	ĺ
(\- · - j	/

Name of applicant T&R Properties	
Address of applicant _ 3895 Stoneridge Lane	
City Dublin	StateOHZip43017
Phone (614) 923-4000 Email	rjsabatino@trprop.com
Name of Property owner T&R Properties	
Address of property owner 3895 Stoneridge Lane	
City Dublin	StateOH Zip43017
Phone (614) 923-4000 Email	rjsabatino@trprop.com
Location/address of property to be rezoned	
Parcel number(s) <u>41821002004000</u>	
Current zoning BIO Current use Farmi	ng/Agriculture Total acres Farming/Agriculture
NCAIS Code No Proposed UseInd	ustrial Acres to rezone 30.85
The applicant(s) shall hold pre-application meet and provide three (3) draft copies for consideration.	ings with the Berlin Township Zoning Inspector
Once the Zoning Inspector confirms completen (20) copies of this application, the Development Plan, applicable fees to the Berlin Township Zoning Inspector and all owners of property included in the application the copies to the Architectural Review Board upon received	T. The application shall be signed by the applicant on. The Berlin Township Zoning Inspector will provide
The undersigned hereby certify that the information are true, correct, and complete. The undersigned agree Zoning, and also gives Berlin Township permission to hearings.	
Property Owner:	Date:
Property Owner:	Date:
Applicant:	Date:

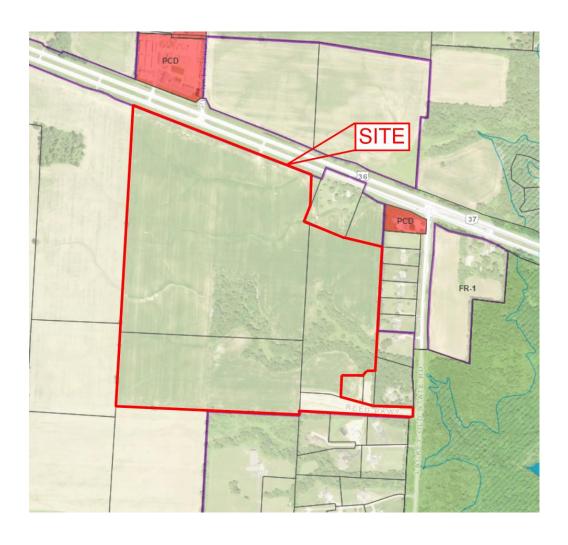
SITE NARRATIVE

for

BERLIN MIXED USE DEVELOPMENT

January 2023

The proposed Berlin Mixed Use Development BIO development is located on 30.85 acres of undeveloped land at the southwest corner of Lackey Old State Road and US 36/37 in Berlin Township and Delaware County, Ohio. Currently the property is used as farm land/agriculture and residential, but falls within the planned Berlin Industrial Overlay district designated in Article 19.



Development Text January 2023

ARTICLE 19 Berlin Industrial Overlay (BIO)

Each item is addressed below as it will relate to The Berlin Mixed Use Development. "N/A" is used where the item is not applicable to or not proposed within the development. "PER CODE" is used where the item is to be included exactly as written, thereby reflecting the current zoning resolution standard. Edited text since the initial BIO text submittal is shown in this format.

SECTION 19.06: PROCESS FOR PLAN APPROVAL

A.) **Pre-Application Meeting.** The Applicant shall engage in informal consultations with the Township Zoning Inspector and any other township staff as determined by the Board of Township Trustees at each year's organizational meeting. Such consultations may also include the Delaware County Regional Planning Commission, ODOT, the Delaware County Engineer, and other departments prior to submission of an application for approval of a Development Plan. No statement or action by Township or County officials in the course of these informal consultations shall be construed to be a waiver of any legal obligation of the Applicant or of any procedure or formal approval required by Township or County statutes or rules. Ohio's Open Meetings Law (Section 121.22 of the Ohio Revised Code) is required to be observed at all meetings involving a quorum of members of the Zoning Commission or Board of Township Trustees.

The application should provide a conceptual layout of the proposed development to allow discussion of the existing features of the site, environmental limitations of the site, and any utility and transportation-related issues.

At the conclusion of the pre-application meeting, the applicant may submit three copies of a "draft" application for the Zoning Inspector to review for completeness. Once the application is determined by the Zoning Inspector to be complete, then the applicant may move forward with a formal application per 19.06(B) below.

B.) Application and Development Plan: Applicant shall prepare and submit a formal application including a Development Plan, with twenty (20) copies and one pdf digital copy along with the required fees, to the Zoning Inspector. Upon the submission of a completed application, the Zoning Inspector shall forward the application and Development Plan to the Architectural Review Board (ARB) who shall serve in an advisory capacity to the Zoning Commission and Board of Township Trustees. The application and development plan will be reviewed in accordance with the process identified in Section 19.06(D) below. The Zoning Commission shall request the DCRPC and may request other entities as it deems necessary to review and provide comments regarding the proposed Development Plan.

The Development Plan shall include in text and map form the following:

- 1.) A survey plat and legal description signed by a registered Ohio surveyor showing the size and location of the proposed development. See Development Plan
- 2.) A finished grading plan drawn at a scale of 1"=100' or other scale acceptable to the Zoning Inspector, showing all information pertaining to surface drainage. See Development Plan

- 3.) An exhibit demonstrating environmentally-sensitive areas such as the 100-year floodplain, wetlands, and slopes greater than 20%. See Development Plan
- 4.) A Development Plan drawn to a scale of at least 1"=100' or other scale acceptable to the Zoning Inspector demonstrating the details listed herein. See Development Plan
- C.) Development Plan Contents: The Development Plan shall include in text and map form the following
 - 1.) The general development character and all permitted uses, identified by NAICS code, and accessory uses to be located on the tract including the limitations or controls to be placed on all uses, densities if applicable, proposed lot sizes, and minimum setback requirements. Other development features, including landscaping, entrance features, signage, pathways, sidewalks, recreational facilities, common open space areas, and all commonly owned structures shall be shown in detail identifying the quantity and type and typical section of each. See Development Plan
 - Architectural design criteria including materials, colors, and renderings for all structures including proposed signs that comply with the architectural requirements of this code.
 See "Architectural Design Guidelines" included with zoning application.
 - 3.) Building heights and dimensions. See "Architectural Design Guidelines" included with zoning application.
 - 4.) Off-street parking. PER CODE
 - 5.) Landscape Plan identifying each plant, shrub, or tree by name, its size at planting, and rendering of how that area of the development would look in elevation. See "Architectural Design Guidelines" included with zoning application.
 - 6.) Signage plan, showing all proposed signage and dimensions. See Development Plan
 - 7.) Exterior Lighting Plan to show how exterior lighting fixtures will be shaded whenever necessary to avoid casting direct light upon any adjoining property. See "Architectural Design Guidelines" included with zoning application.
 - 8.) The proposed provisions for water, fire hydrants, sanitary sewer, and surface drainage with engineering feasibility studies or other evidence of reasonableness. Line sizes and locations, detention basins and drainage structures shall be drawn. A copy of letters from the County Engineer and Sanitary Engineer stating general feasibility road geometries, surface drainage, and the provision of sewer shall be included. See Development Plan
 - 9.) A Traffic Impact Analysis by a competent traffic engineer, based upon new trip generation as estimated by the Delaware County Engineer's standards and showing the proposed traffic patterns, public and private streets, and other transportation facilities, including their relationship to existing conditions, topographical and otherwise. An internal traffic flow diagram showing the vehicle movements and circulations internal to the site (including any private roads) shall also be submitted. See "Traffic Analysis" included with zoning application.
 - 10.) The relationship of the proposed development to existing and probable uses of surrounding areas during the development timetable. **See Development Plan**
 - 11.) Location of all uses within the site and the location of schools, parks and other public facility sites within or adjacent to the site. See "Public Facilities Context" included with zoning application.

12.) The proposed time schedule for development of the site including streets, buildings, utilities and other facilities.

First phase to be constructed over 1-1.5 year time period after final development plan approval.

13.) If the proposed timetable for development includes developing the land (including open space) in phases, all phases developed after the first, which in no event shall be less than five (5) acres or the whole tract (whichever is smaller), shall be fully described in textual form in a manner calculated to give township officials definitive guidelines for approval of future phases. This schedule shall include a detailed list of all items to be constructed in each phase of the development, including but not limited to any amenities such as fountains, tot lots, etc. This information must also include a set of documents for establishing any proposed Homeowners' Association including the proposed time frames for turning said association over to the residents. The phasing plan must also include information to clearly indicate that the requirements of Section 19.05(A)(5)(e) are being met.

The First Phase includes the northwestern most 2, 120,000 square foot buildings. Later, the southern 2 120,000 square foot buildings will be developed. Depending on market conditions and absorption of the First Phase and subsequent building, Applicant will return to develop and

14.) The ability of the applicant to carry forth this plan by control of the land and the engineering feasibility of the plan.

Applicant, T&R Properties, represents that they are in contract to purchase this property and have the right to carry forth this application.

apply for Development Plan for Industrial development on the east side of the future S Plunkett

15.) Evidence of the applicant's ability to post a bond or an irrevocable letter of credit if the plan is approved assuring completion of public service facilities to be constructed within the project by the developer.

The cost of the public improvements is to be determined and therefore the bond/letter of credit cannot be determined. Application is an experienced developer who has history of completing and dedicating public improvements along with posting bonds/letters of credit.

- 16) All drawings that are a part of the Development Plan shall respectively bear the seals of the preparing architect, landscape architect, and/or professional engineer. The respective professional attaching his or her seal to the drawings must be licensed to practice in the state of Ohio.
- 17.) The manner and method to be utilized in order to achieve and maintain compliance with the general criteria for the BIO district.
- 18.) The manner in which the applicant will mitigate any nuisance effects of the proposed uses such as, but not limited to:
 - a.) Fire and Explosion Hazards: All activities, including storage, involving flammable or explosive materials shall include the provision of adequate safety devices against the hazard of fire and explosion. All standards enforced by the Occupational Safety and Health Administration shall be adhered to. Burning of waste materials in open fire is prohibited, as enforced by the Ohio Environmental Protection Agency.
 - b.) Air Pollution: No emission of air pollutants shall be permitted which violate the Clean Air Act Amendments of 1977 or later amendments as enforced by the Ohio Environmental Protection Agency.

Road.

- c.) Glare, Heat and Exterior Lighting: Any operation producing intense light or heat, such as high temperature processing, combustion, welding, or other, shall be performed within an enclosed building and not be visible beyond any lot line bounding the property whereon the use is conducted.
- d.) **Dust and Erosion**: Dust or silt shall be minimized through landscaping or paving in such a manner as to prevent their transfer in objectionable quantities by wind or water to points off the lot.
- e.) **Liquid or Solid Wastes**: No discharge at any point into any public sewer, private sewage disposal system, or stream, or into the ground, of any materials of such nature or temperature as can contaminate any water supply or interfere with bacterial processes in sewage treatment, shall be permitted. The standards of the Ohio Environmental Protection Agency shall apply.
- f.) **Vibrations and Noise**: No uses shall be located and no equipment shall be installed in such a way as to produce intense, earth shaking vibrations which are discernible without instruments at or beyond the property line of the subject premises.
- g.) **Odors**: No use shall be operated so as to produce the continuous, frequent, or repetitive emission of odors or odor-causing substances in such concentrations as to be readily perceptible at any point at or beyond the lot line of the property on which the use is located. The applicable standards of the Environmental Protection Agency and all other applicable government agencies shall be met.

Applicant will use best efforts and practices to mitigate any nuisance effects referenced as it relates to fire, air pollution, glare, heat, lighting, dust/erosion, liquid/solid waste, noise, and odors.

- The proposed locations of any proposed cluster mailbox units, associated off-street parking spaces, and proposed methods for maintaining said units and parking spaces.
 Mailboxes will be located inside of the buildings.
- 20. The Township Zoning Commission and Board of Township Trustees may impose special additional conditions relating to the development with regard to type and extent of public improvements to be installed. This includes but is not limited to, landscaping, development, improvement, and maintenance of common open space as well as any other pertinent development characteristics.

BERLIN MIXED USE DEVELOPMENT At BERLIN TOWNSHIP DELWARE COUNTY, OHIO

ENGINEERING PLANS

BERLIN MIXED USE DEVELOPMENT

INDUSTRIAL WAREHOUSE DEVELOPMENT BERLIN TOWNSHIP, DELAWARE COUNTY, OHIO 2022

UTILITY CONTACTS

6658 OLENTANGY RIVER ROAD

DELAWARE, OHIO 43015-8872 ATTN: RUSTY GRIFFITH DELAWARE, OHIO 43015 ATTN: TIFFANY MAAG (740) 548-7746 (740) 833-2240 CHARTER COMMUNICATIONS ENGINEER'S OFFICE STORM SEWERS (SPECTRUM/TIME WARNER) 50 CHANNING STREET P.O. BOX 2553 DELAWARE, OHIO 43015 COLUMBUS, OHIO 43216 ATTN: JOHN PICCIN ATTN: DAVID HOLSTEIN (740) 833-2400 (614) 975-7468 FRONTIER COMMUNICATIONS 2626 LEWIS CENTER ROAD 2780 LIBERTY ROAD LEWIS CENTER, OHIO 43035 DELAWARE, OHIO 43015 ATTN: AARON ROLL ATTN: ROBERT CHANDLER (740) 548-2450 (740) 369-0826 OR ATTN: IRA (CHRIS) AVERY ELECTRIC AMERICAN ELECTRIC POWER (740) 383-0551 700 MORRISON ROAD GAHANNA, OHIO 43230-6605 ATTN: ANDREW L. WAINWRIGH 111 NORTH 4TH STREET, (614) 883-6821

SEWERS

SANITARY DELAWARE COUNTY REGIONAL

SEWER DISTRICT

ROOM 802 COLUMBUS, OHIO

(614) 223-7276

ATTN: GARY VANALMSICK

	A ==	
	BENCH MARKS	
	BASED ON NAVD 1988 DATUM.	
SITE B.M.#1	RAILROAD SPIKE SET IN A UTILITY POLE LOCATED 51'± SOUTH OF THE EDGE OF PAVEMENT OF US 36/37 AND 545'± WEST OF THE C/L OF PLUNKETT ROAD.	
	N: 224253.2160 Elev.=944 E: 1830848.1680	4.49
SITE B.M.#2	CAPPED REBAR LOCATED 47 \pm SOUTH OF THE EDGE OF PAVEMENT OF U 36/37 AND 849 \pm EAST OF THE C/L OF PLUNKETT ROAD.	SC
	N: 223748.0800 Elev.=928 E: 1832147.6360	3.34
	Tabasa asan sa	
SITE B.M.#3	CAPPED REBAR LOCATED 35± SOUTH OF THE EDGE OF PAVEMENT OF REED PARKWAY AND 2± EAST OF THE EAST EDGE OF THE R/W OF PARCEL 41821002005000.	
	N: 221560.0100 Elev.=928 E: 1832284.6880	3.38

SITE DATA TABLE:

TOTAL BUILDING AREA: 480,000 SQ FT OF WAREHOUSE

NUMBER OF BUILDINGS:

OPEN SPACE: ±9.65 ACRES % OPEN SPACE: 31.28% ±11.02 ACRES LOT COVERAGE:

% LOT COVERAGE: 35.72%

PARKING LOT COVERAGE: ±9.69 ACRES % PARKINGLOT COVERAGE: 31.41%

PARKING SPACES: 20'x9' (TYP) PARKING SPACES REQUIRED: 240 SPACES PARKING SPACES PROVIDED: 480 SURFACE

PARKING RATIO: 1 SPACES/1,000 SQ FT OF BUILDING AREA

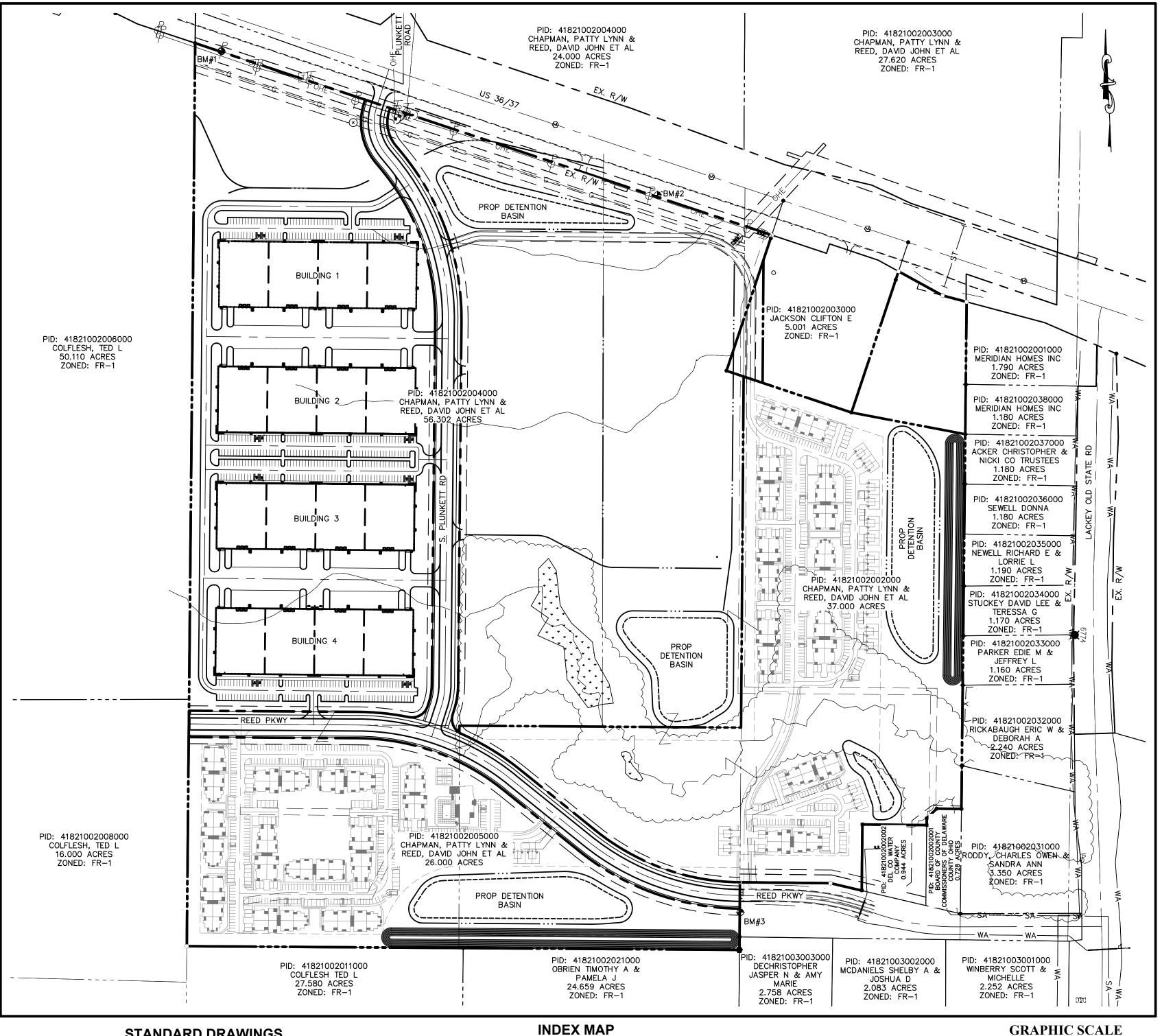
HCP SPACES REQUIRED: 9 SPACES

PARKING SPACES TOTAL: 480

HCP SPACES PROVIDED: 16 SPACES (INCLUDES 8 VAN ACCESSIBLE)

FLOOD DESIGNATION

By graphic plotting only this property is located in Zone "x" (Areas determined to be outside of the 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile) by the Federal Emergency Management Agency on Flood Insurance Rate Map, Community Panel No. 39049C0145K, with an effective date of April 16 2009, in Franklin County, Ohio. No field surveying was performed to



SCALE: 1" = 200'

STANDARD DRAWINGS

THE STANDARD CONSTRUCTION DRAWINGS LISTED ON THESE PLANS SHALL BE CONSIDERED A PART THEREOF.

	DELAWA	RE COUNTY STD. DWG	ò.	
DCED-R100	DCED-R103	DCED-R2010	DCED-R2030 (DITCH ONLY)	DCED-R2175
DCED-R2185	DCED-S100	DCED-S102A&B	DCED-S106	DCED-S107
DCED-S112	DCED-S114A&B	DCED-S115	DCED-S117	DCED-S119
DCED-S125	DCED-S128	DCED-S133A,C&D	DCED-S139	DCED-S149
DCED-S150	DCED-S151	DCED-S154	DCED-S155	DCED-S168

THESE DRAWINGS ARE AVAILABLE AT THE FOLLOWING WEBPAGES: HTTP: //WWW.CO.DELAWARE.OH.US/ENGINEER/DEVELOPMENT/STDROADWAYDRAWINGS.HTM HTTP://WWW.CO.DELAWARE.OH.US/ENGINEER/DEVELOPMENT/STDSEWERDRAWINGS.HTM CITY OF COLUMBUS STD. DWG.

AA-S121 ODOT STD. DWG. MT-97.10

ENGINEER ADVANCED CIVIL DESIGN, INC.

781 SCIENCE BOULEVARD, SUITE 100 GAHANNA, OH 43230 PHONE (614) 428-7750 CONTACT: THOMAS M. WARNER, P.E. EMAIL: TWARNER@ADVANCEDCIVILDESIGN.COM EMAIL: RJSABATINO@TRPROP.COM

DEVELOPER - APPLICANT **T&R PROPERTIES** 3895 STONERIDGE LANE DUBLIN, OH 43017 PHONE (614) 923-4000 CONTACT: RJ SABATINO

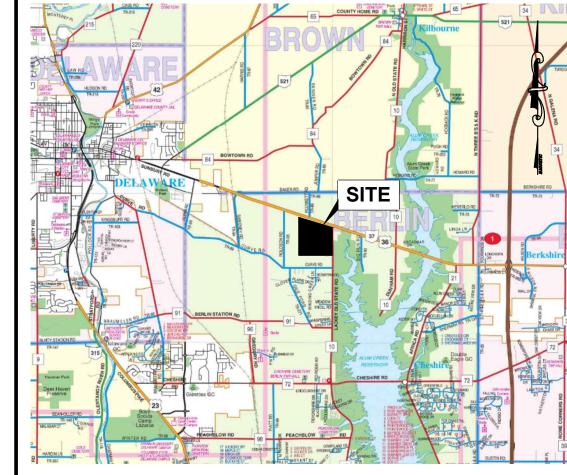
1 inch = 200 feet

SIGNATURE AND SEAL **Utilities Protection** SERVICE

PROFESSIONAL ENGINEER'S

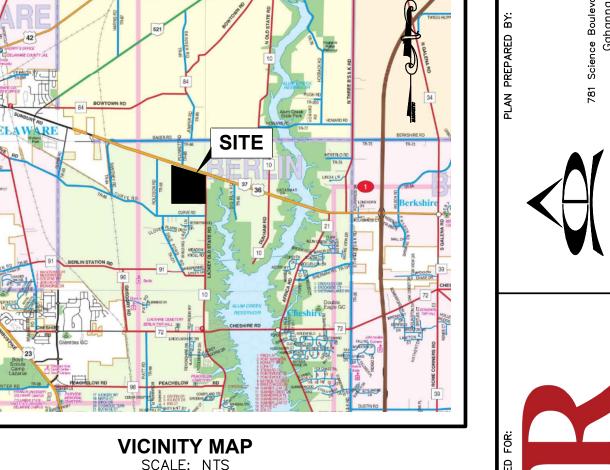
Call Before You Dig 800-362-2764 or 8-1-1 www.oups.org

DATE

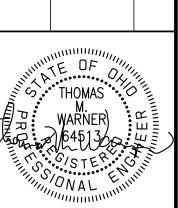


INDEX OF DRAWINGS

EET NUMBER	SHEET TITLE
1	TITLE SHEET
2	EXISTING CONDITIONS PLAN
3–5	PRELIMINARY PLAT
6-7	SITE DIMENSION PLAN
8	TYPICAL SECTION
9-10	UTILITY PLAN
11-12	GRADING & DRAINAGE PLAN



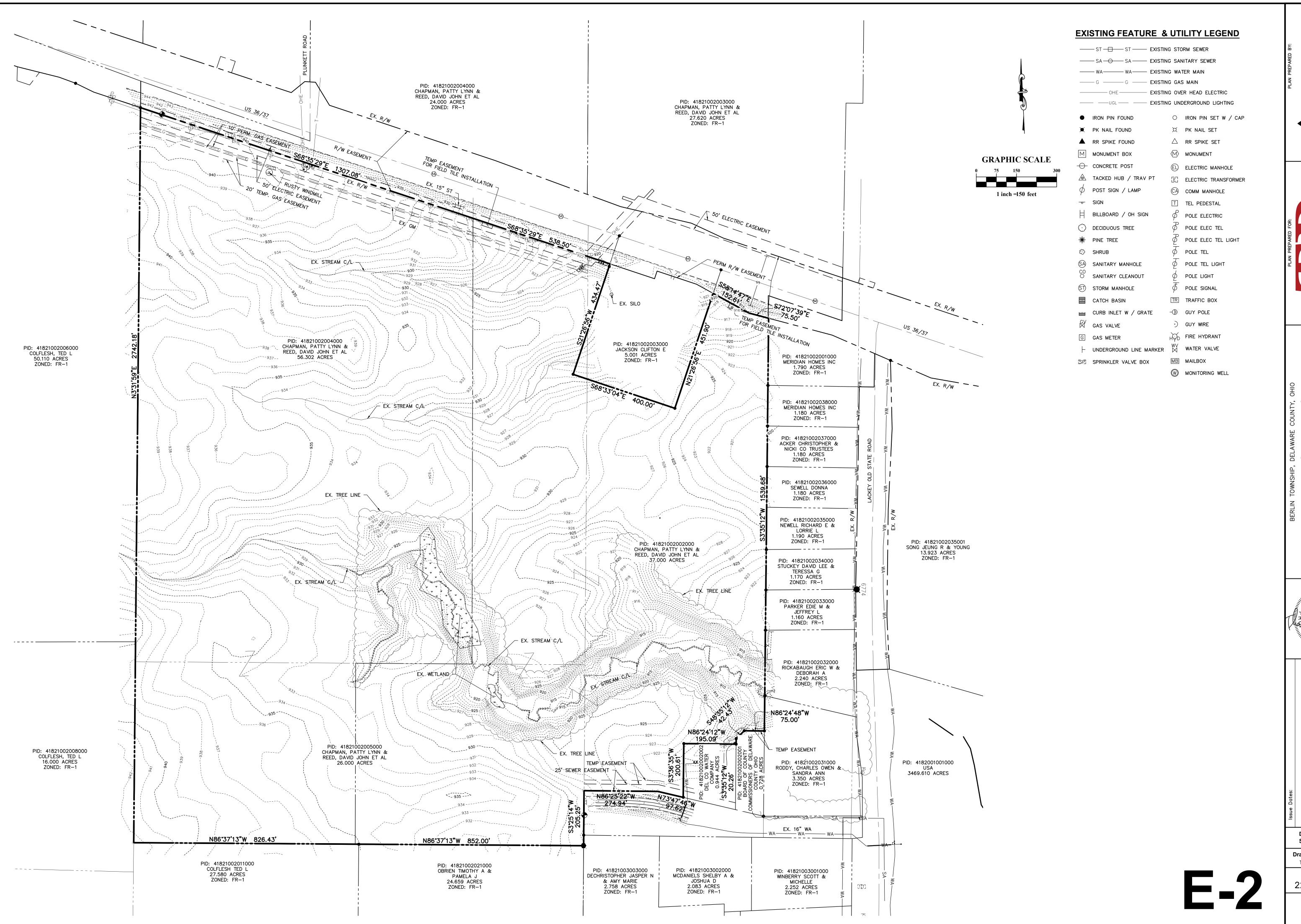
Ō MIXE



Date: 01/03/2022 **Scale:** 1" = 200'

Drawn By: | Checked B **Project Number:** 22-0014-1044

Drawing Number:



p Ja



DEVELOI Ü MIXE

NOT FOR CONSTRUCTION

Date: 01/03/2022 **Scale:** 1" = 150'

Drawn By: Checked B TLM **Project Number:**

22-0014-1044 **Drawing Number:** 2/12

SITUATED IN THE STATE OF OHIO, COUNTY OF FRANKLIN, TOWNSHIP OF BERLIN, LYING IN FARM LOT 2, 3 AND 4, QUARTER TOWNSHIP 4, TOWNSHIP 1, RANGE 16, UNITED STATES MILITARY LANDS, TRACTS AS CONVEYED TO TO PATTY LYNN CHAPMAN, DAVID JOHN REED, JAMES EDWARD REED AND WILLIAM PATRICK REED (3/4% OWNERSHIP) IN OFFICIAL RECORD 598, PAGE 443 AND WILLIAM PATRICK REED (1/4% OWNERSHIP), DELAWARE COUNTY RECORDER'S OFFICE.

THE UNDERSIGNED, PATTY LYNN CHAPMAN, DAVID JOHN REED, JAMES EDWARD REED AND WILLIAM PATRICK REED, BEING THE OWNERS OF THE LAND PLATTED HEREON, DULY AUTHORIZED IN THE PREMISES, DOES HEREBY CERTIFY THAT THIS PLAT CORRECTLY REPRESENTS BERLIN MIXED USE DEVELOPMENT, A SUBDIVISION CONTAINING LOTS 1, 2, 3 AND 4 AND DOES HEREBY ACCEPT THIS PLAT AND DOES VOLUNTARILY DEDICATE TO PUBLIC USE, AS SUCH, ALL OF THE ROADS (6.924 ACRES, MORE OR LESS) AS SHOWN HEREON AND NOT HERETOFORE DEDICATED.

EASEMENTS ARE RESERVED IN, OVER AND UNDER AREAS DESIGNATED ON THIS PLAT AS "UTILITY EASEMENT" OR "DRAINAGE AND UTILITY EASEMENT" FOR THE CONSTRUCTION, OPERATION AND MAINTENANCE OF ALL PUBLIC AND QUASI-PUBLIC UTILITIES ABOVE AND BENEATH THE SURFACE OF THE GROUND AND WHERE NECESSARY, FOR THE CONSTRUCTION, OPERATION AND MAINTENANCE OF SERVICE CONNECTIONS TO ALL ADJACENT LOTS AND LANDS, AND FOR STORM WATER DRAINAGE.

THE UNDERSIGNED FURTHER AGREES THAT ANY USE OF IMPROVEMENTS MADE ON THIS LAND SHALL BE IN CONFORMITY WITH ALL EXISTING VALID ZONING, PLATTING, HEALTH, OR OTHER LAWFUL RULES AND REGULATIONS INCLUDING THE APPLICABLE OFF-STREET PARKING AND LOADING REQUIREMENTS OF DELAWARE COUNTY, OHIO, FOR THE BENEFIT OF BERLIN MIXED USE DEVELOPMENT, AND ALL OTHER SUBSEQUENT OWNERS OR ASSIGNS TAKING TITLE FROM, UNDER, OR THROUGH THE UNDERSIGNED.

IN WITNESS WHEREOF PATTY LYNN CHAPMAN, DAVID JOHN REED, JAMES EDWARD REED AND WILLIAM PATRICK REED HAS HEREUNTO SET THEIR HAND THIS _____ DAY OF

OWNERS	
NAME	NAME
NAME SIGNED AND ACKNOWLEDGED IN	NAME
THE PRESENCE OF:	
SIGNATURE	SIGNATURE
DDINITED	DDINTED

Notary for Owner

NOTARY PUBLIC, STATE OF OHIO

BEFORE ME, A NOTARY PUBLIC IN AND FOR SAID COUNTY AND STATE, PERSONALLY APPEARED PATTY LYNN CHAPMAN, DAVID JOHN REED, JAMES EDWARD REED AND WILLIAM PATRICK REED WHO ACKNOWLEDGED THE SIGNING OF THE FOREGOING INSTRUMENT TO BE THEIR FREE AND VOLUNTARY ACT AND DEED FOR THE PURPOSES THEREIN EXPRESSED.

IN WITNESS THEREOF, I HAVE HEREUNTO SET MY HAND AND AFFIXED MY OFFICIAL SEAL

THIS DAY OF	, 20	
MY COMMISSION EXPIRES		

APPROVED THIS DAY OF, 20	BERLIN TOWNSHIP ZONING OFFICIAL
APPROVED THIS DAY OF, 20	DEPUTY GENERAL MANAGER, DEL-CO WATER
APPROVED THIS DAY OF, 20	DELAWARE COUNTY SANITARY ENGINEER
APPROVED THIS DAY OF, 20	DELAWARE COUNTY ENGINEER
APPROVED THIS DAY OF, 20	DELAWARE COUNTY REGIONAL PLANNING COMMISSION

20___ RIGHT-OF-WAY FOR PUBLIC ROAD AND PARKWAY HEREIN DEDICATED TO PUBLIC USE ARE HEREBY DEDICATED FOR THE COUNTY OF DELAWARE, STATE OF OHIO. STREET IMPROVEMENTS WITHIN SAID DEDICATED RIGHT-OF-WAY SHALL NOT BE ACCEPTED FOR PUBLIC USE AND/OR MAINTENANCE UNLESS AND UNTIL CONSTRUCTION IS COMPLETE AND STREETS ARE FORMALLY ACCEPTED BY DELAWARE COUNTY, OHIO

DELAWARE COUNTY COMMISSIONERS

APPROVED THIS DAY OF, 20	COMMISSIONER
APPROVED THIS DAY OF, 20	COMMISSIONER
APPROVED THIS DAY OF, 20	COMMISSIONER
TRANSFERRED THIS DAY OF	, 20 AUDITOR, DELAWARE COUNTY, OHIO
RECORDED THIS DAY OF PAGE(S) ; PLAT CABINET	, 20 AT A.M./P.M. IN BOOK, , SLIDE FEE \$

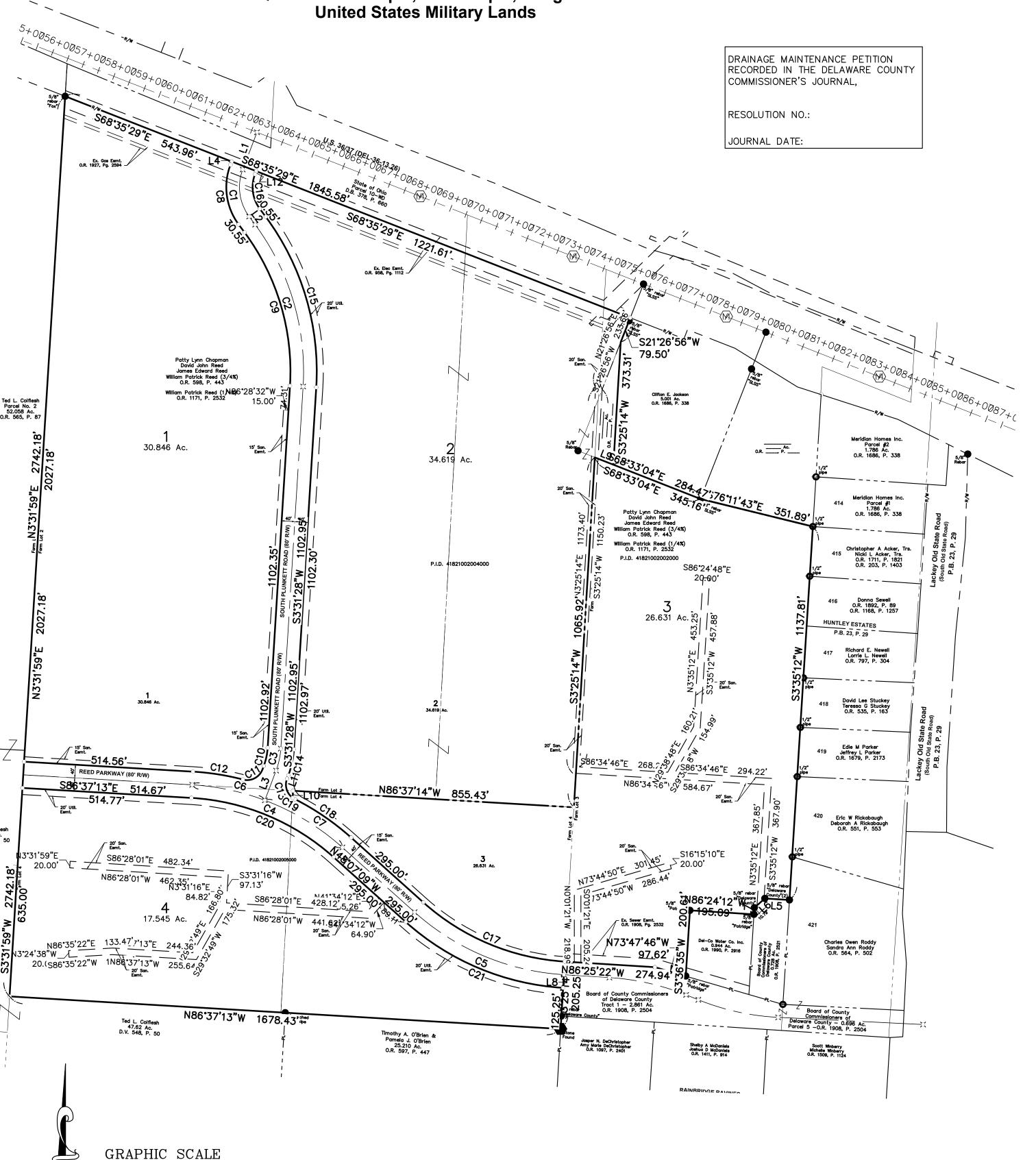
RECORDER, DELAWARE COUNTY, OHIO

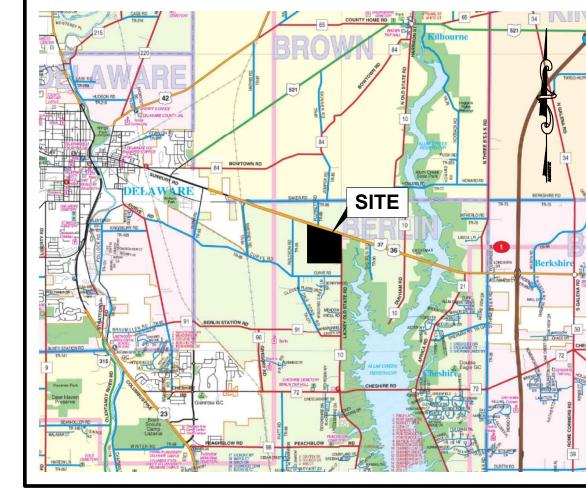
(IN FEET)

1 inch = 200 ft.

BERLIN MIXED USE DEVELOPMENT

State of Ohio, County of Franklin, City of Reynoldsburg Township of Berlin, being in Farm Lot 2, 3 & 4 Quarter Township 4, Township 1, Range 16





VICINITY MAP

SOURCE DATA

THE SOURCES OF RECORDED SURVEY DATA ARE THE RECORDS OF THE DELAWARE COUNTY, OHIO, RECORDER, REFERENCED IN THE PLAN AND TEXT OF THIS PLAT.

IRON PINS, WHERE INDICATED, ARE TO BE SET AND ARE IRON PIPES, THIRTEEN-SIXTEENTHS INCH INSIDE DIAMETER, THIRTY INCHES LONG WITH A PLASTIC CAP PLACED IN THE TOP BEARING THE INSCRIPTION "ADVANCED 7661". THESE MARKERS SHALL BE SET FOLLOWING THE COMPLETION OF THE CONSTRUCTION/INSTALLATION OF THE STREET PAVEMENT AND UTILITIES.

PERMANENT MARKERS, WHERE INDICATED, ARE TO BE SET AND ARE ONE-INCH DIAMETER, THIRTY-INCH LONG, SOLID IRON PINS, WITH THE TOP END FLUSH WITH THE SURFACE OF THE GROUND AND THEN CAPPED WITH AN ALUMINUM CAP STAMPED "ADVANCED". ONCE INSTALLED, THE TOP OF THE CAP SHALL BE MARKED (PUNCHED) TO RECORD THE ACTUAL LOCATION OF THE POINT. THESE MARKERS SHALL BE SET FOLLOWING THE COMPLETION OF THE CONSTRUCTION/INSTALLATION OF THE STREET PAVEMENT AND UTILITIES.

FLOOD DESIGNATION

By graphic plotting only this property is located in Zone "x" (Areas determined to be outside of the 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile) by the Federal Emergency Management Agency on Flood Insurance Rate Map, Community Panel No. 39049C0145K, with an effective date of April 16, 2009, in Franklin County, Ohio. No field surveying was performed to determine this zone.

BASIS OF BEARINGS

Bearings are based on the Ohio State Plane Coordinate System, North Zone, NAD83 (2011). Said bearings were derived from GPS observation and determined a bearing of North 04°09'04" East, for the westerly limited access right-of-way line of Interstate 71.

OWNERSHIP INFORMATION

Board of County Commissioners of Delaware County Tract 1 — 2.861 Ac. O.R. 1908, P. 2504

B Board of County Commissioners of Delaware County 0.728 Ac. O.R. 1908, P. 2521

Board of County Commissioners of Delaware County 0.696 Ac. Parcel 5 - O.R. 1908, P. 2504

SITE STATISTICS

TOTAL AREA:
TOTAL R/W AREA:
BUILDABLE LOTS (4) AREA:

116.565 ACRES 6.924 ACRES 109.641 ACRES

BASED ON ACTUAL FIELD MEASUREMENTS AND IS CORRECT TO THE BEST OF MY KNOWLEDGE. ALL DIMENSIONS ARE IN FEET AND DECIMAL PARTS THEREOF.

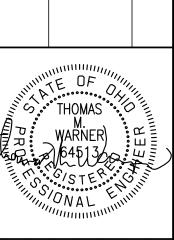
I HEREBY STATE THAT THIS SURVEY IS

DATE JONATHAN E. PHELPS, P.S. **REGISTRATION NUMBER 8241**





MIXE

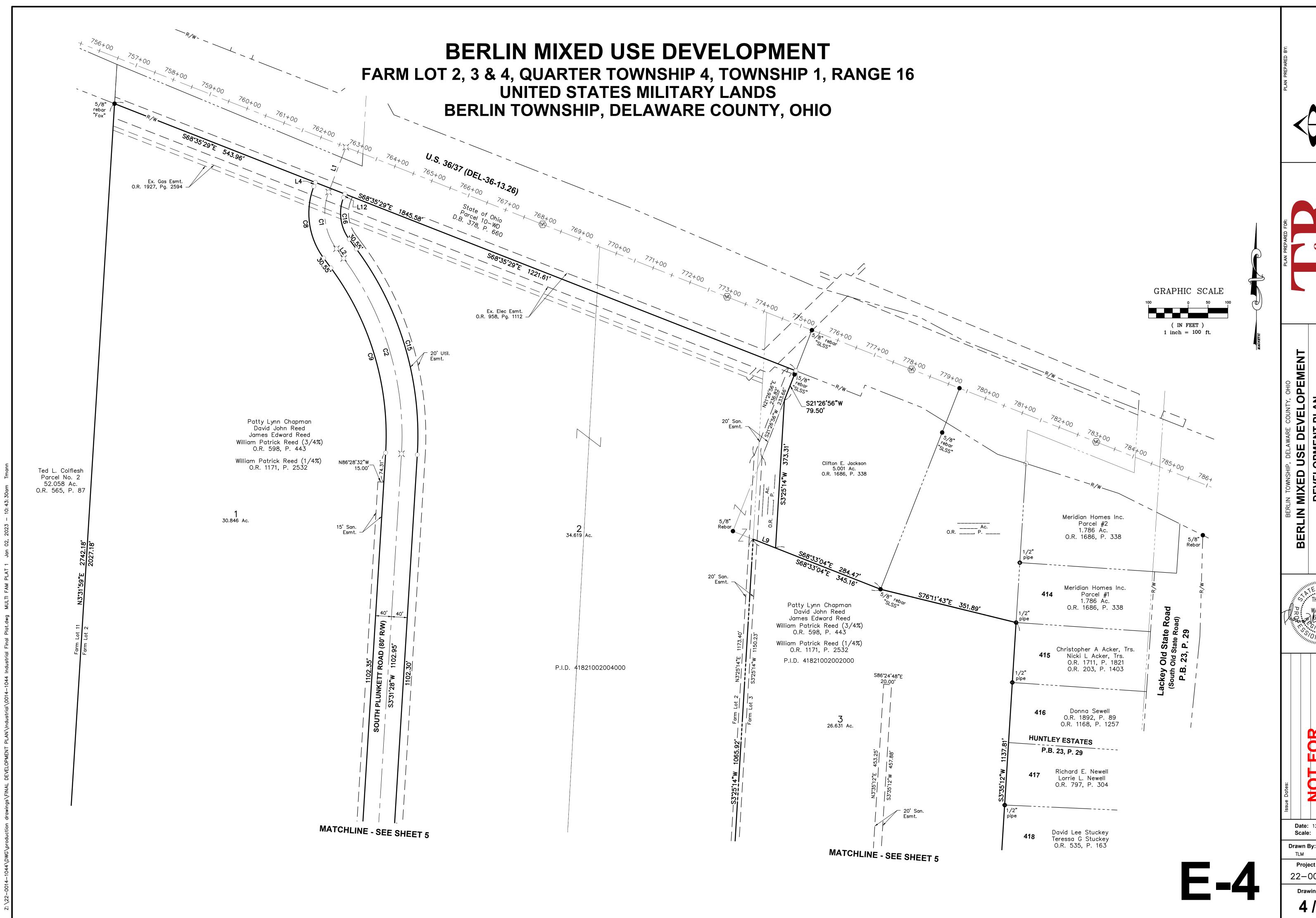


TRUCTION

Date: 12/23/2022 **Scale:** 1" = 200'

Drawn By: Checked B **Project Number:**

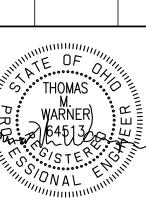
22-0014-1044 **Drawing Number:**



ADVANCED
CIVIL DESIGN
ENGINEERS SUR



RLIN MIXED USE DEVELOPEME
DEVELOPMENT PLAN
FOR
T&R PROPERTIES



NOT FOR CONSTRUCTION

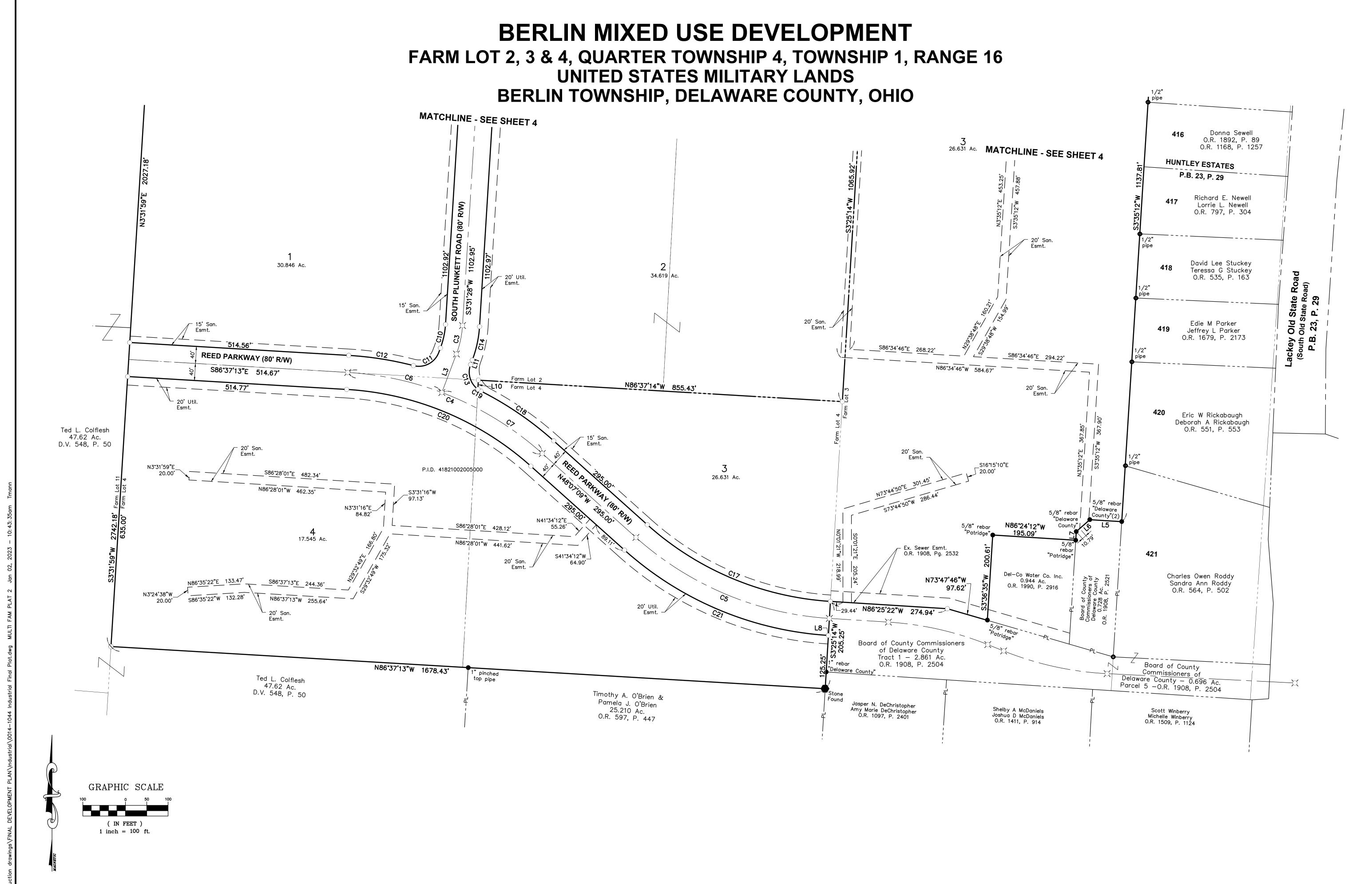
Date: 12/23/2022 Scale: 1" = 100'

Drawn By: Checked B
TLM MIM

Project Number:

22-0014-1044

Drawing Number:



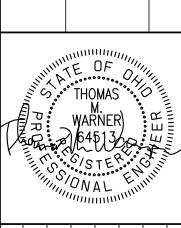
ADVANCED
IVIL DESIGN
FOR BY E Y



DEVELOPMENT PLAN

T&R PROPERTIES

DETERMINARY PLAT



NOT FOR CONSTRUCTION

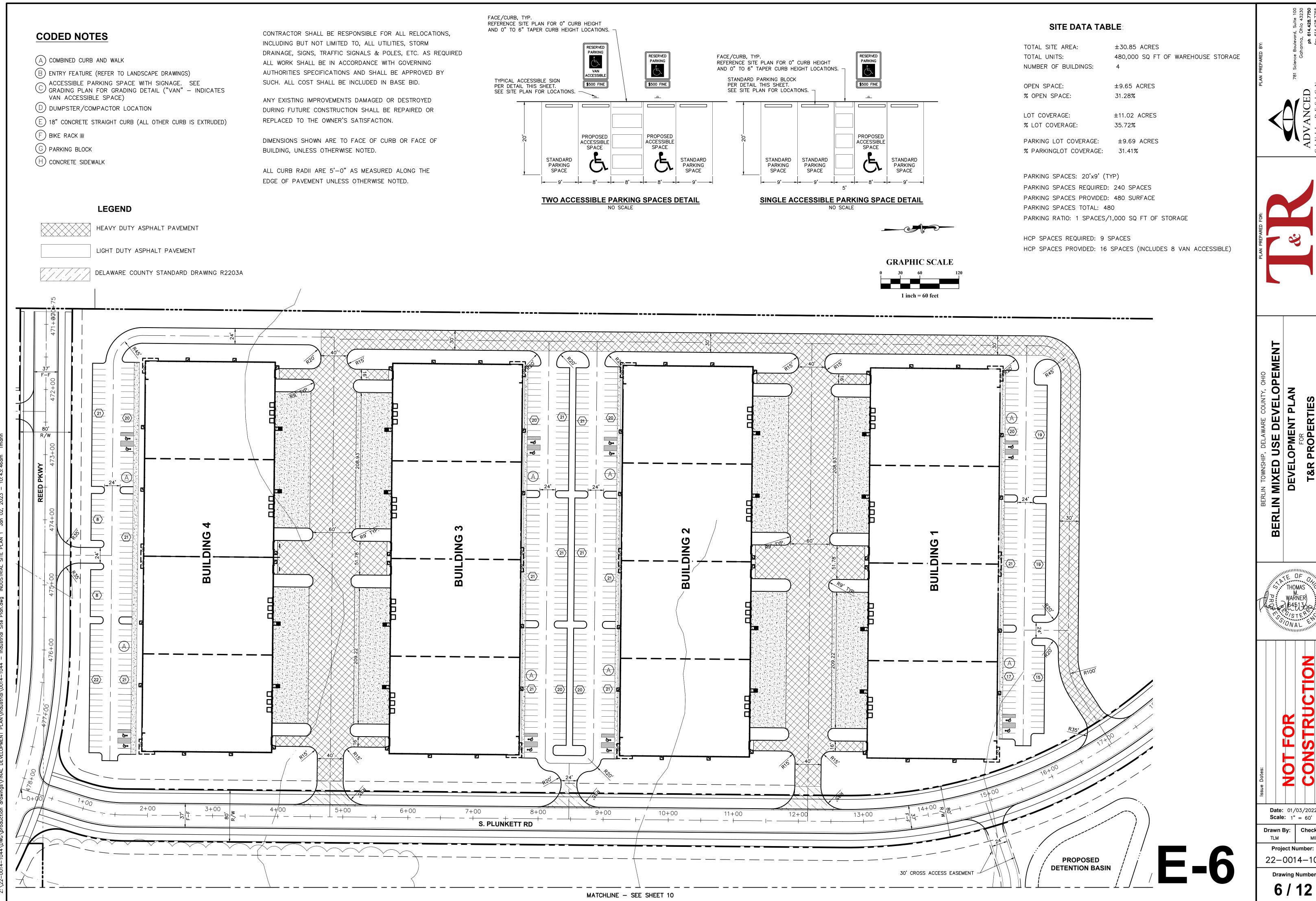
Date: 12/23/2022 Scale: 1" = 100'

Scale: 1" = 100'

Drawn By: Checked B

Project Number: 22-0014-1044

Drawing Number: 5 / 12



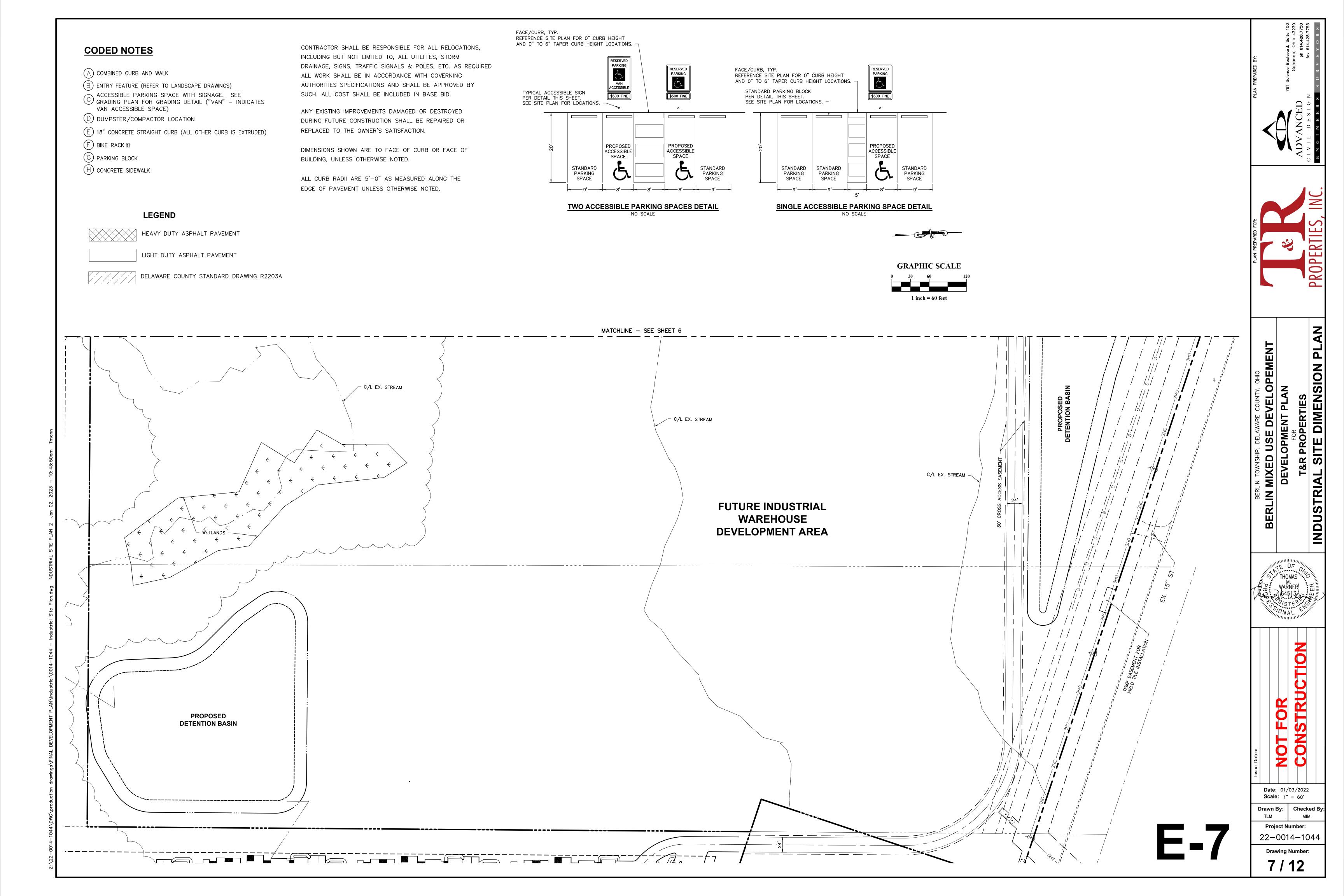
p July

Date: 01/03/2022

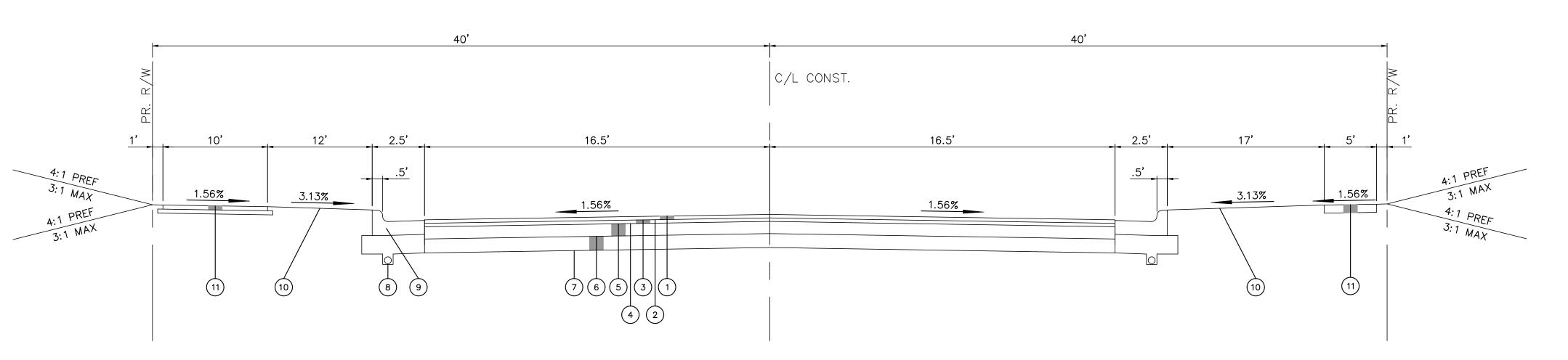
Drawn By: Checked E

Project Number: 22-0014-104

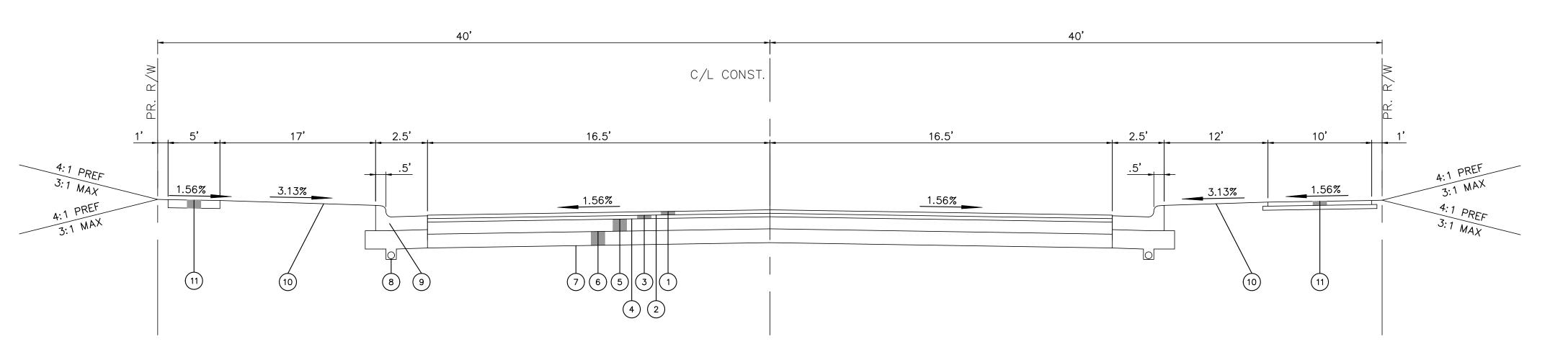
Drawing Number:



- 1 ITEM 441 1.5" ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (448), PG70-22M
- 2 ITEM 407 NON-TRACKING TACK COAT
- 3 ITEM 441 1.5" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, (448)
- 4 ITEM 407 TACK COAT, 702.13 ASPHALT EMULSION
- (5) ITEM 301 9" ASPHALT CONCRETE BASE (IN TWO 4.5" LIFTS)
- 6 ITEM 304 6" AGGREGATE BASE
- 7) ITEM 204 SUBGRADE COMPACTION
- 8 ITEM 605 4" SHALLOW PIPE UNDERDRAIN
- 9 ITEM 609 COMBINATION CURB & GUTTER, TYPE 2
- 10 ITEM 659 SEEDING & MULCHING
- (11) ITEM 608 4" CONCRETE WALK



<u>TYPICAL SECTION — REED PKWY</u> 470+75.50 — STA. 489+00.00 = 1824.50 FT (NO SCALE)



<u>TYPICAL SECTION — S. PLUNKETT DR</u>
STA. 0+42.31 — STA. 20+37.35 = 1995.04 FT
(NO SCALE)

ADVANCED
CIVIL DESIGN



BERLIN MIXED USE DEVELOPEN

DEVELOPMENT PLAN
FOR

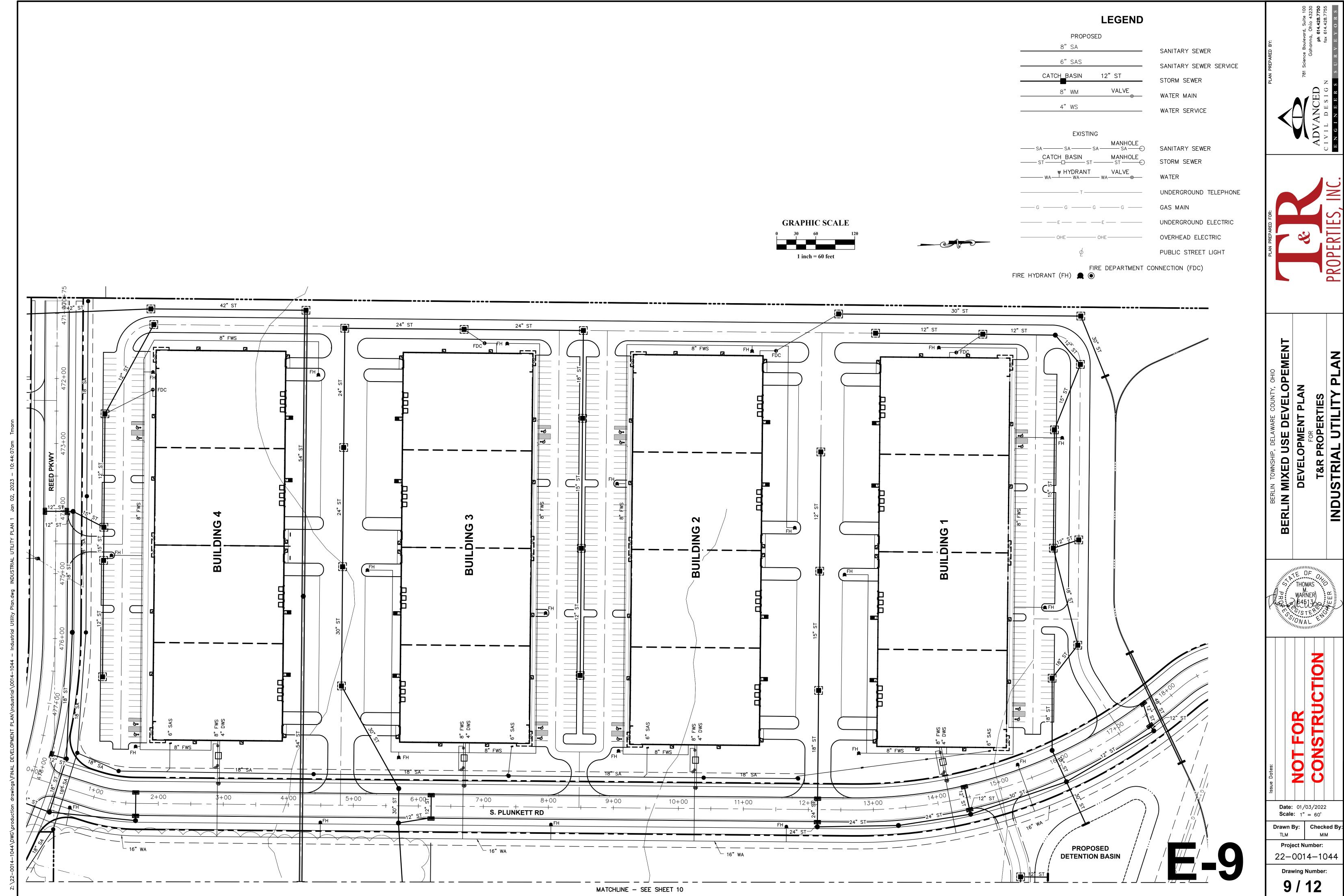
T&R PROPERTIES

TYPICAL SECTION

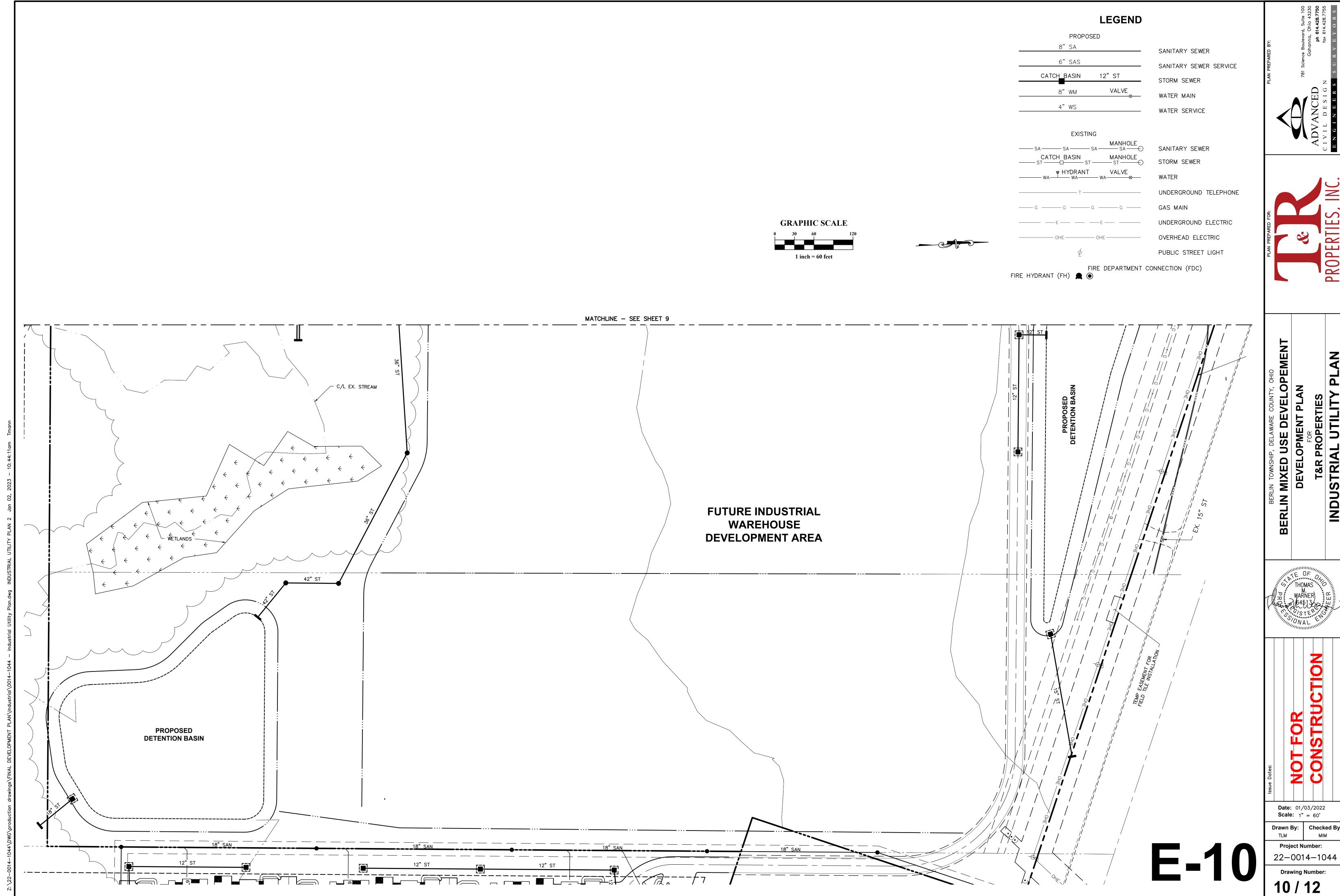
Project Number: 22-0014-1044

Drawing Number: 8 / 12

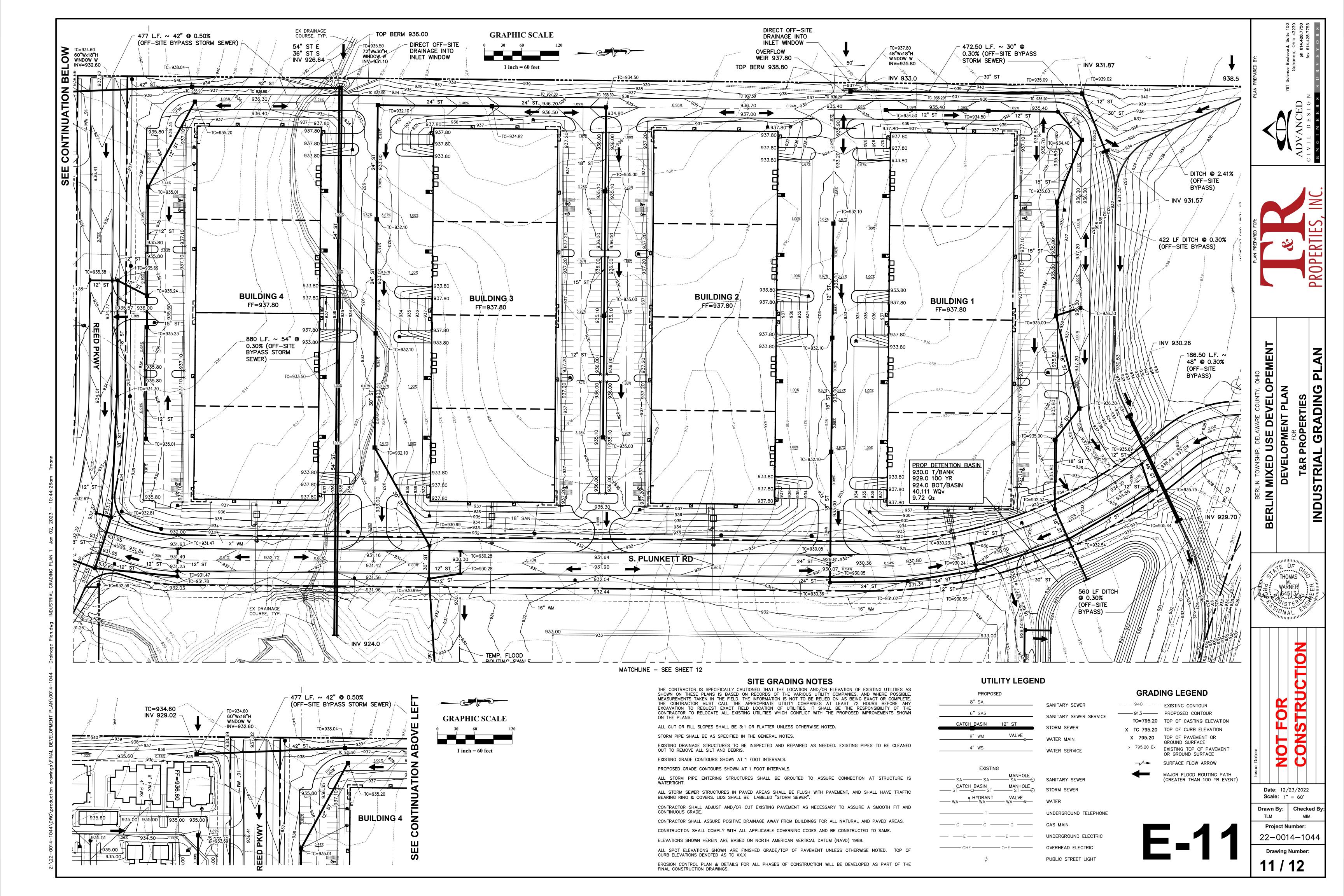
CURB & GUTTER DETAIL (NO SCALE)

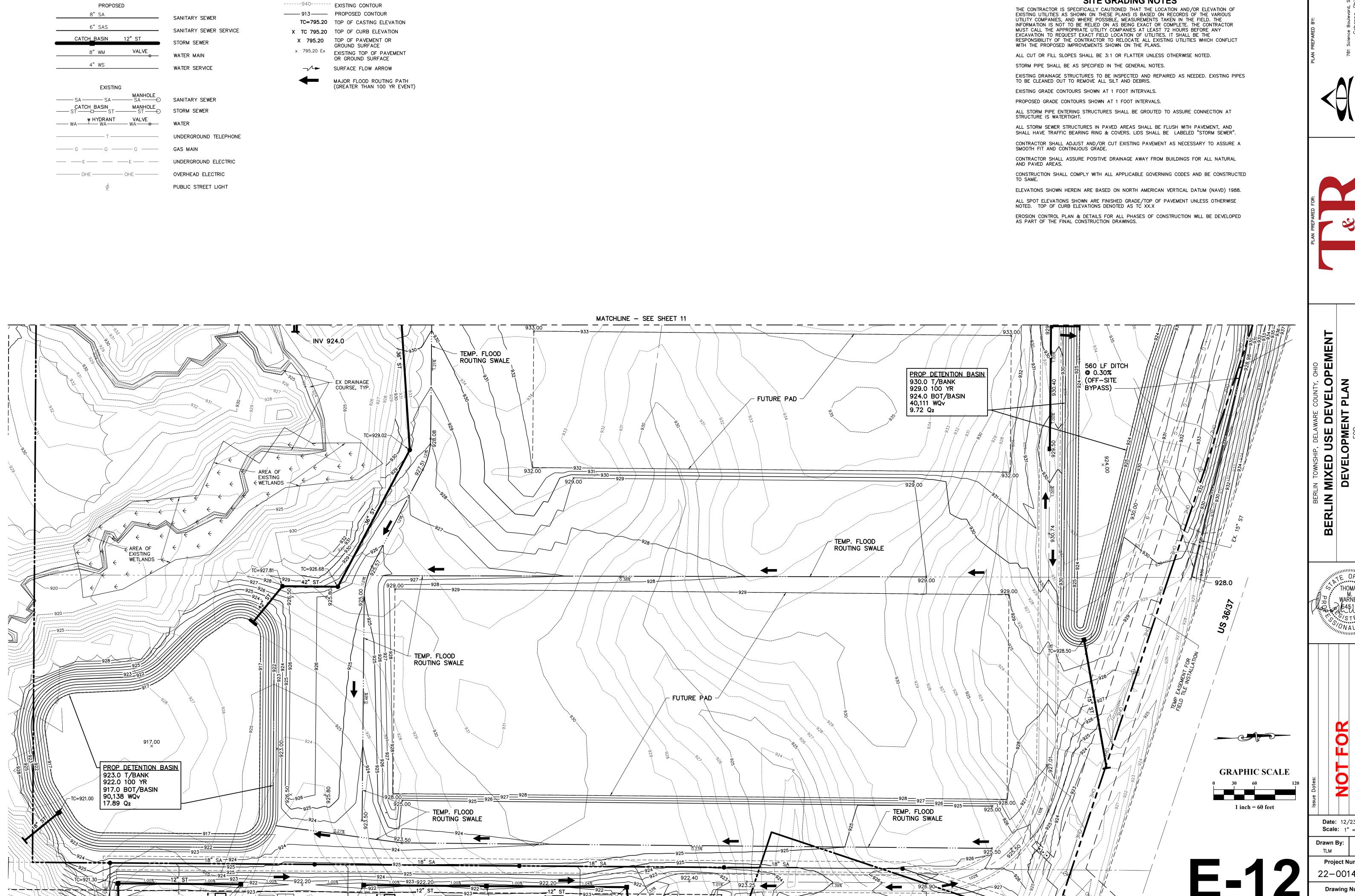












UTILITY LEGEND

GRADING LEGEND

P P

SITE GRADING NOTES

PERTIES RADIN

Date: 12/23/2022

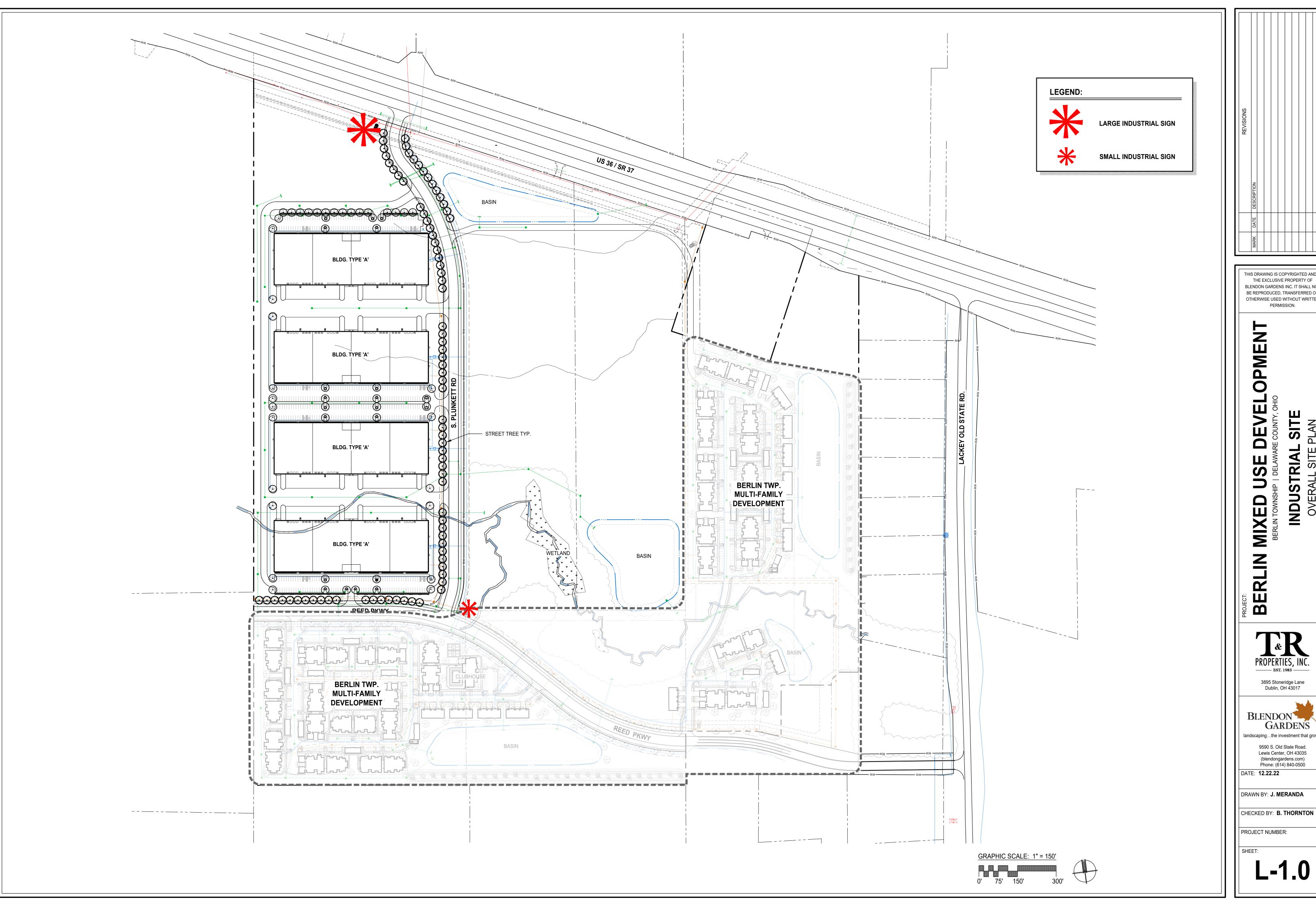
Drawn By: Checked E

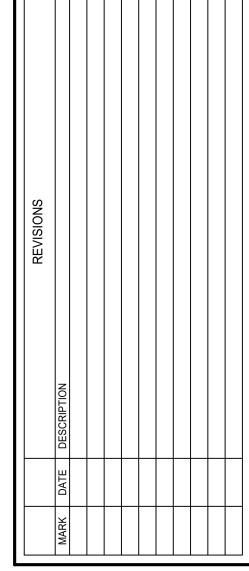
Project Number:

22-0014-104

BERLIN MIXED USE DEVELOPMENT At BERLIN TOWNSHIP DELWARE COUNTY, OHIO

LANDSCAPE PLANS



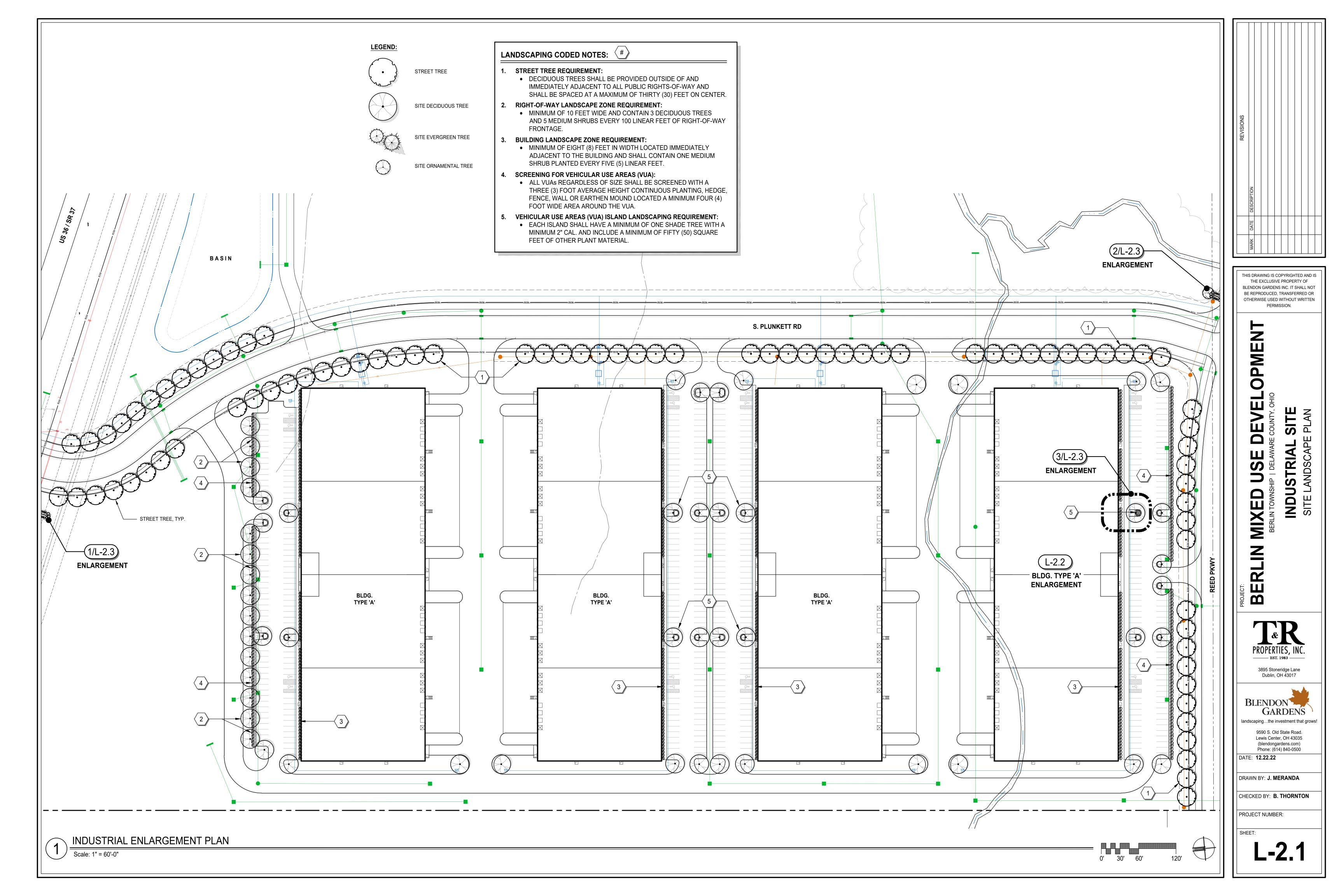


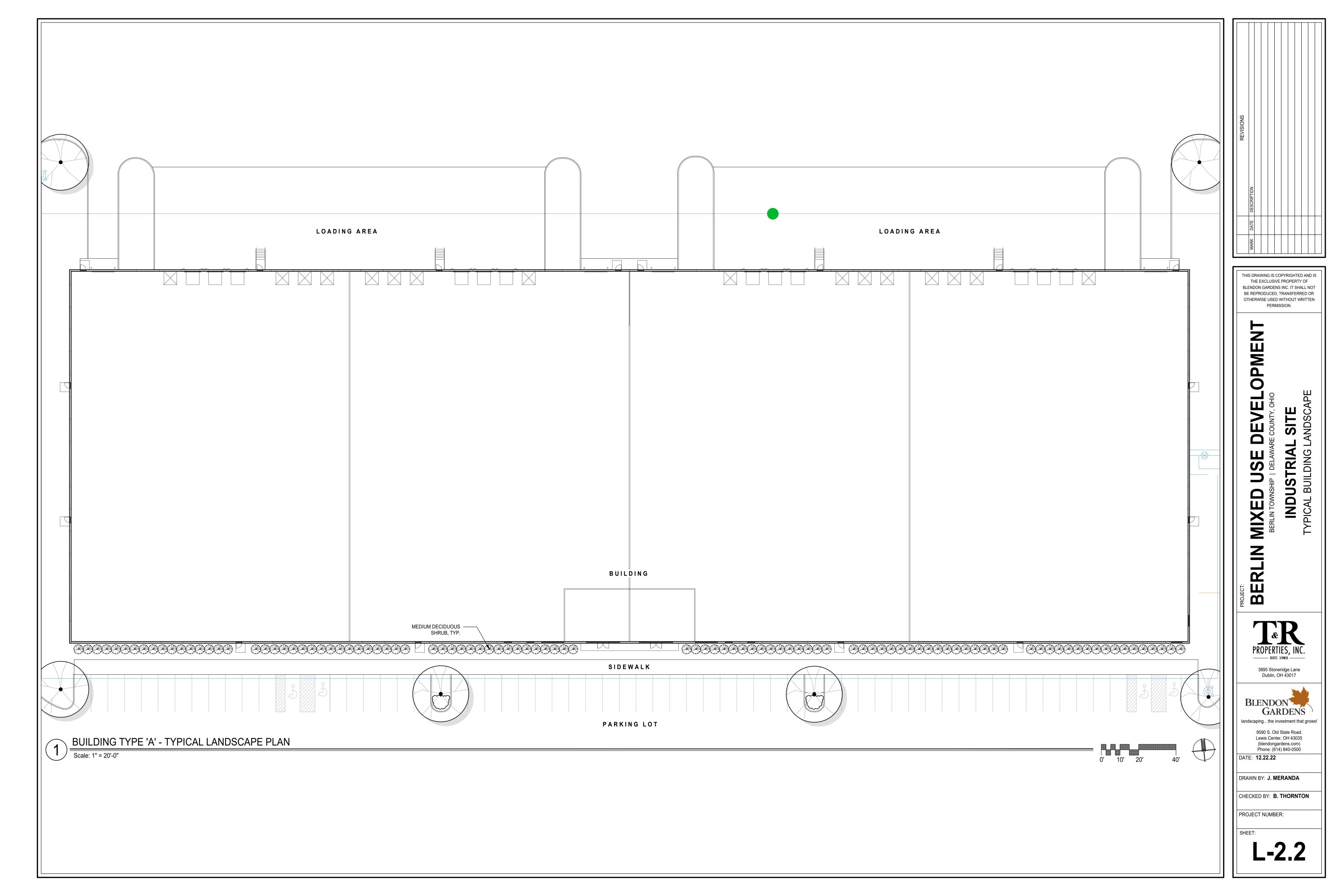
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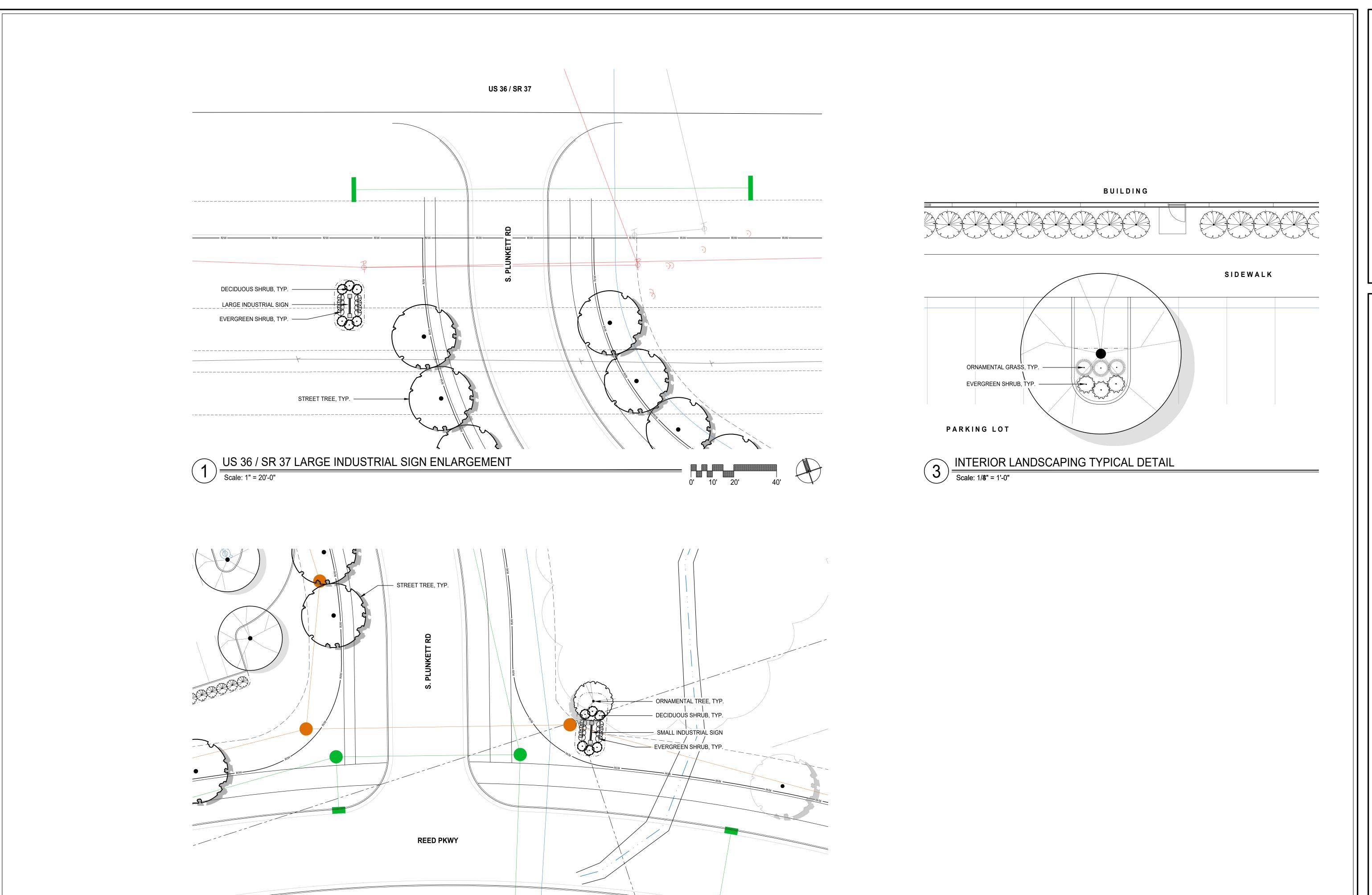




landscaping...the investment that grows! 9590 S. Old State Road. Lewis Center, OH 43035 (blendongardens.com) Phone: (614) 840-0500

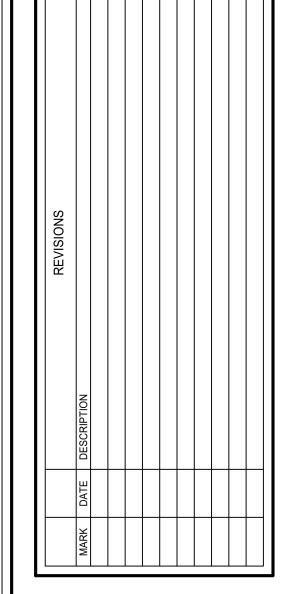






SMALL INDUSTRIAL SIGN ENLARGEMENT

Scale: 1" = 20'-0"



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D USE DEVELOPMENT
MNSHIP | DELAWARE COUNTY, OHIO
DUSTRIAL SITE

BERLIN MIXED

BERLIN TOWNS



3895 Stoneridge Lane Dublin, OH 43017



9590 S. Old State Road. Lewis Center, OH 43035 (blendongardens.com) Phone: (614) 840-0500

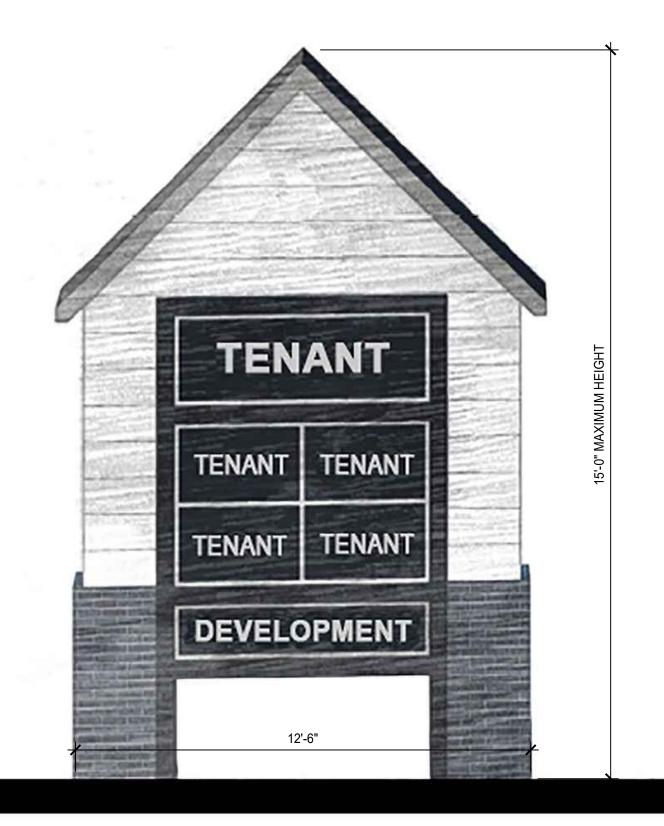
DATE: **12.22.22**

DRAWN BY: **J. MERANDA**

CHECKED BY: B. THORNTON

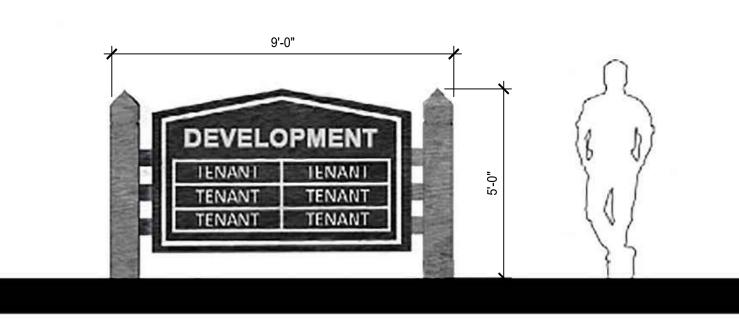
PROJECT NUMBER:

L-2.



NOTE:

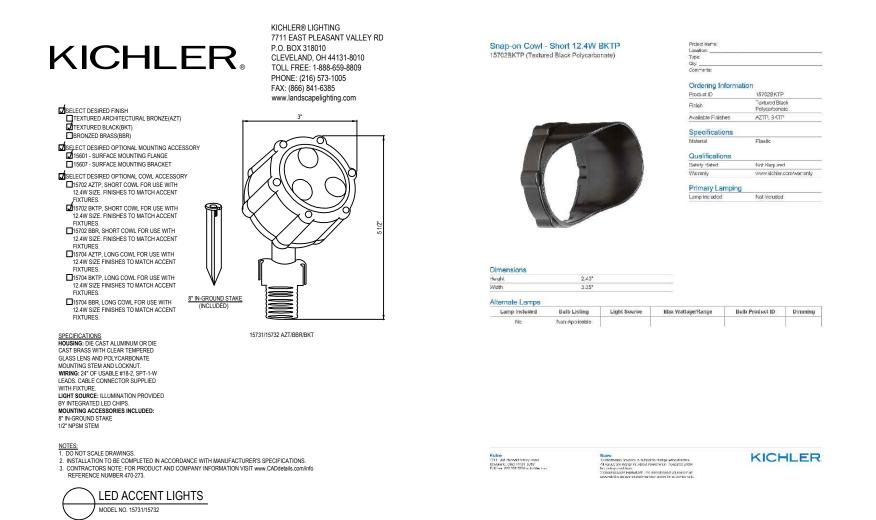
DEVELOPMENT SIGNS DEPICTED ARE PRELIMINARY IN NATURE. FINAL DESIGN OF SIGNS WILL BE COORDINATED AND APPROVED WITH BERLIN TOWNSHIP



LARGE INDUSTRIAL SIGN

NOT TO SCALE



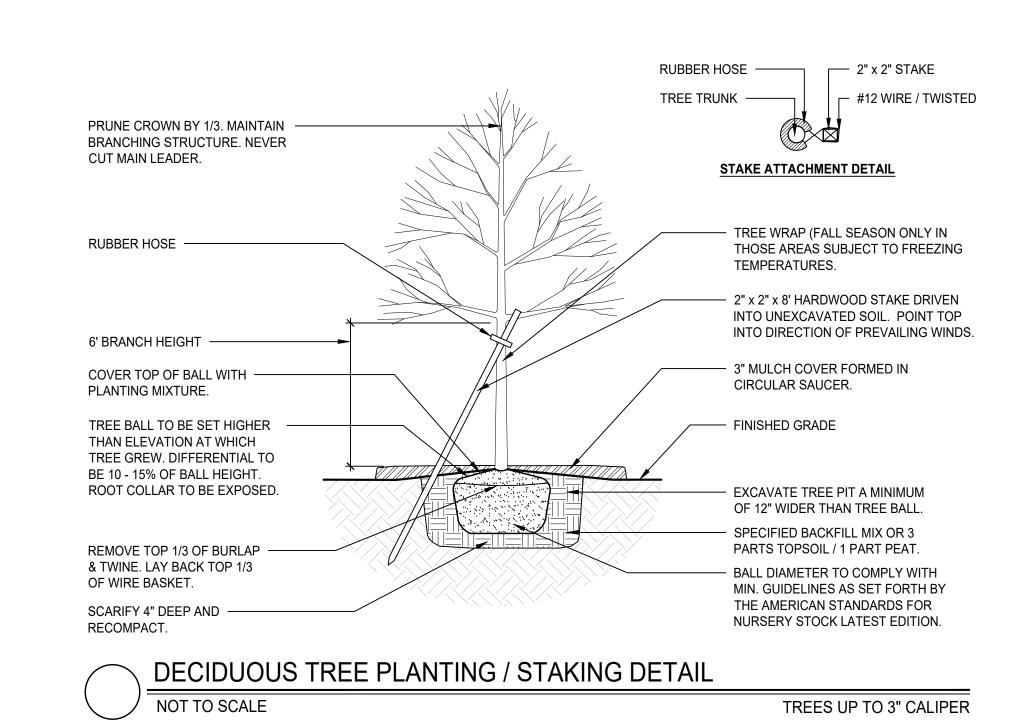


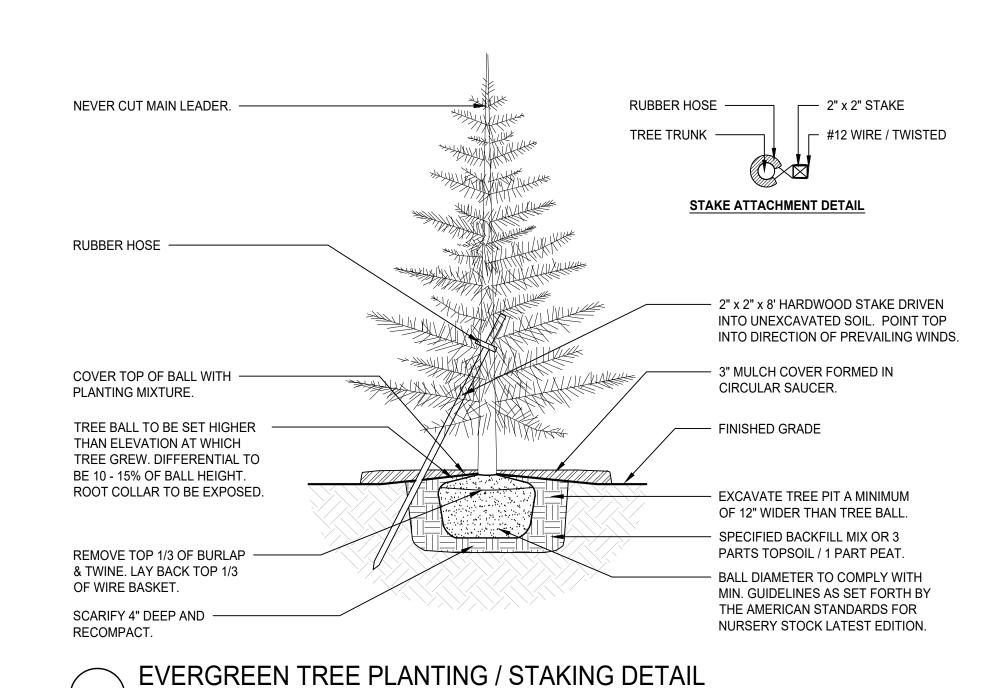
NOTES: ENTRY LIGHTING LOCATIONS TO BE DETERMINED COLOR TEMPERATURE OF EXTERIOR LED LIGHT SHALL NOT EXCEED 2700-3000 KELVIN

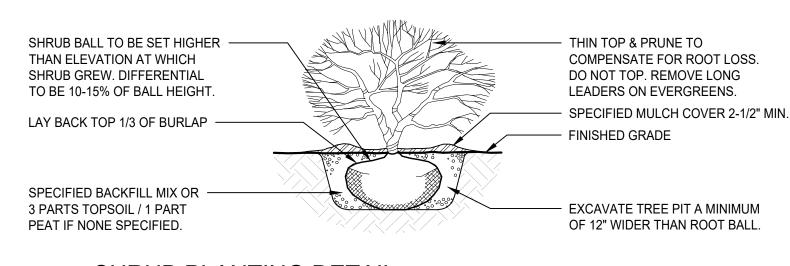


GENERAL PLANTING NOTES:

- 1. CONTRACTOR TO VERIFY WITH OWNER AND UTILITY COMPANIES THE LOCATIONS OF ALL UTILITIES PRIOR TO CONSTRUCTION, TO DETERMINE, IN THE FIELD, THE ACTUAL LOCATIONS AND ELEVATIONS OF ALL EXISTING UTILITIES WHETHER SHOWN ON THE PLANS OR NOT. THE CONTRACTOR SHALL CALL UTILITY PROTECTION SERVICE 72 HOURS PRIOR TO CONSTRUCTION.
- 2. EXAMINE FINISH SURFACE, GRADES, TOPSOIL QUALITY AND DEPTH. DO NOT START ANY WORK UNTIL UNSATISFACTORY CONDITIONS HAVE BEEN CORRECTED. VERIFY LIMITS OF WORK BEFORE STARTING.
- 3. CONTRACTOR TO REPAIR ALL DAMAGES TO EXISTING CONDITIONS AND BEARS RESPONSIBILITY FOR SATISFACTORY PERFORMANCE.
- 4. ALL PLANT MASSES TO BE CONTAINED WITHIN BARK MULCH BED.
- 5. BED LINE TO BE NO LESS THAN 18" AND NO MORE THAN 24" FROM OUTER EDGE OF PLANT MATERIAL BRANCHING.
- 6. ALL SHRUBS TO BE A MINIMUM OF 4'-O" FROM PAVEMENT EDGE UNLESS SPECIFICALLY NOTED OTHERWISE.
- 7. CONTRACTOR SHALL MAINTAIN POSITIVE DRAINAGE IN LAWN AREAS.
- 8. FINE GRADE LAWN AREAS TO PROVIDE A SMOOTH AND CONTINUAL GRADE, FREE OF IRREGULARITIES OR DEPRESSIONS.
- 9. IN AREAS DESIGNATED "ANNUALS". LANDSCAPE CONTRACTOR TO PREPARE SOIL WITH MINIMUM 8" DEEP PLANT MIXTURE AND A MINIMUM 2" DEEP BARK MULCH FOR SUBSEQUENT PLANTING BY OWNER,
- 10. QUANTITIES SHOWN ARE INTENDED TO ASSIST CONTRACTOR IN EVALUATING THEIR OWN TAKE-OFFS AND ARE NOT GUARANTEED AS ACCURATE REPRESENTATIONS OF REQUIRED MATERIALS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR HIS BID QUANTITIES AS REQUIRED BY THE PLAN AND SPECIFICATIONS.
- 11. COORDINATE LANDSCAPE INSTALLATION WITH INSTALLATION OF UNDERGROUND SPRINKLER, SYSTEM (IF APPLICABLE).
- 12. WHERE PROPOSED TREE LOCATIONS OCCUR UNDER EXISTING OVERHEAD UTILITIES OR CROWD EXISTING TREES, NOTIFY THE CONSULTANT TO ADJUST TREE LOCATIONS.







SHRUB PLANTING DETAIL

NOT TO SCALE

NOT TO SCALE

MARK DATE DESCRIPTION

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ED USE DEVEL (TOWNSHIP | DELAWARE COUNTY, OHIO

BERLIN TOW



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TREES UP TO 8' HEIGHT



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Lewis Center, OH 43035
(blendongardens.com)
Phone: (614) 840-0500

DATE: 12.22.22

DRAWN BY: **J. MERANDA**

CHECKED BY: **B. THORNTON**

PROJECT NUMBER:

SHEET:

L-3.

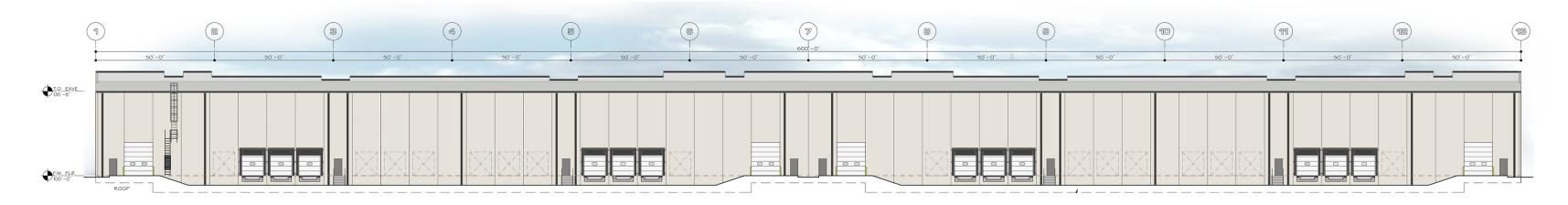
BERLIN MIXED USE DEVELOPMENT At BERLIN TOWNSHIP DELWARE COUNTY, OHIO

ARCHITECTURAL PLANS

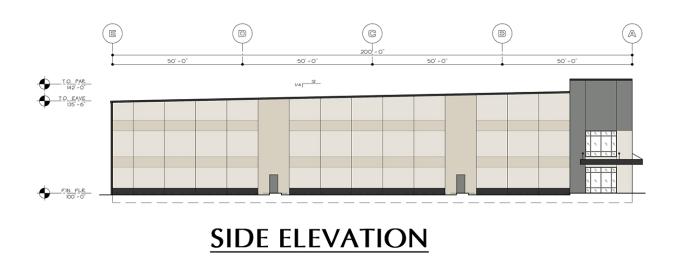
Conceptual Renderings - Architectural Elevations

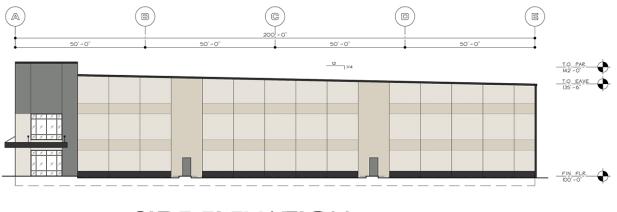


FRONT ELEVATION

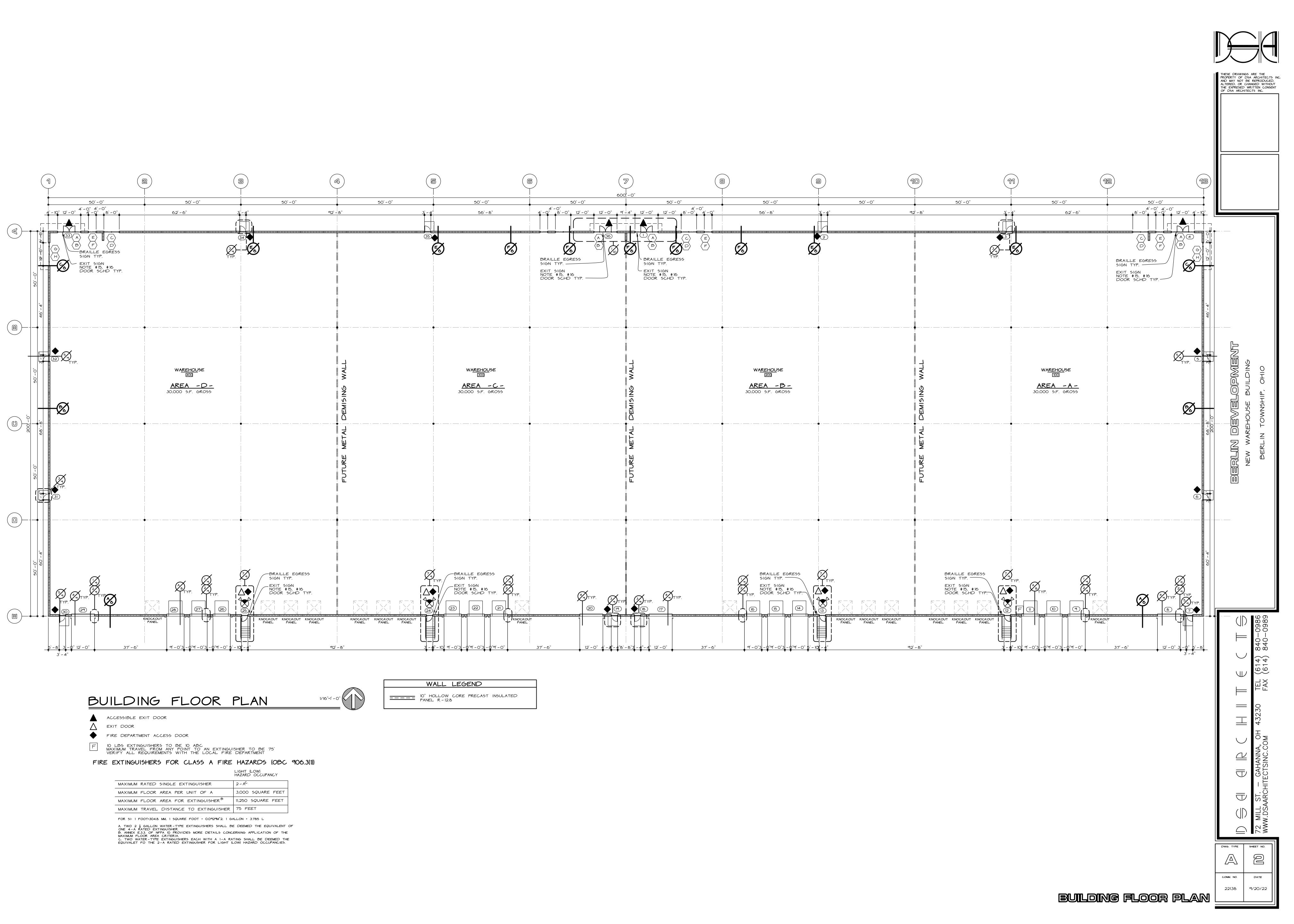


REAR ELEVATION





SIDE ELEVATION



Schedul	e									Statistics							LIGHTING SYSTEMS OF COLUMBUS
Symbol	Label	QTY	Manufacturer	Catalog	Description	Number Lamps	Output	LLF	Input Power	Description	Symbol	Avg	Max	Min	Max/Min	Avg/Min	
	PL5-D	4	Lithonia Lighting	RSX2 LED P4 40K R5	RSX Area Fixture Size 2 P4 Lumen Package 4000K CCT Type R5 Distribution	1	25667	0.95	379.08	BLDG 1 - DOCK DOORS	+	1.6 fc	4.8 fc	0.3 fc	16.0:1	5.3:1	
	WP1A	32	Luminoso Inc	EFC2-90W-Y-40K-IES	LED WALL PACK 90W	1	12056	0.95	89.58	BLDG 1 - PARKING SPACES	+	1.3 fc	5.5 fc	0.1 fc	55.0:1	13.0:1	
	WILL	4.4	L	FFC2 12FW V 40V IFC	LED WALL DACK 12EW	1	10024	0.95	124.6	BLDG 2 - DOCK DOORS	+	1.6 fc	4.8 fc	0.2 fc	24.0:1	8.0:1	
	WP1B	11	Luminoso Inc	EFC2-135W-Y-40K-IES	LED WALL PACK 135W	1	18034	0.93	134.6	BLDG 2 - PARKING SPACES BLDG 3 - DOCK DOORS	+ +	1.8 fc 1.6 fc	3.7 fc 4.7 fc	0.6 fc 0.3 fc	6.2:1 15.7:1	3.0:1 5.3:1	
Note										BLDG 3 - PARKING SPACES	+	1.8 fc	3.7 fc	0.5 fc	6.2:1	3.0:1	
1. AREA	LIGHTS MOUI	NTED AT	27' AFG							BLDG 4 - DOCK DOORS	+	1.7 fc	4.7 fc	0.2 fc	23.5:1	8.5:1	
2. 25' PC	DLE ON A 2' PO	OLE BAS	E							BLDG 4 - PARKING SPACES	+	1.1 fc	4.1 fc	0.0 fc	N/A	N/A	
3. WP1A	WALL PACKS	MOUNT	ED AT 22' AFG														
4. WP1B	WALL PACKS	MOUNT	ED AT 25' AFG														
+900																	1
471				_///						· d				0			l⊨
		To the state of th		20 40' - C			B	Pa									
37'	+0.0+0.2+0.6+1 +0.1+0.2+0.6+1	30° 1 °C 8000	WP1A		WP1A	+1.3 ⁺ 1.6	+2.0 ⁺ 2.4 ⁺ 2.8 +2.2 ⁺ 2.4 ⁺ 2.4 +2.8 ⁺ 2.3 ⁺	+1.8 ⁺ 1.5 ⁺ 1.1		WP1A 40°	- RIS	\B_	WP1A		*3.0 ⁺ 1.8 ⁺ 0.9	5))	Σ
= F-F0 + 72 + 72	+0.1+0.2+0.7+1. +0.1+0.3+0.7+1.	.4 ⁺ 2.9 .2 ⁺ 2.1				+1.6 ⁺ 2.0	$^{+}2.6^{+}3.4^{+}3.6$ $^{+}3.4^{+}2.7^{+}$	+2.1+1.6+1.2 +2.2+1.7+1.2							+4.0 ⁺ 2.0 ⁺ 1.0 - wp 41 ⁺ B2.0 ⁺ 1.0 ⁺ 0.4 ⁺ 0.1		
7	+0.1+0.3+0.6+1 +0.1+0.3+0.6+1			*4. W.P.d *A.0*0.9*0.4	†0.3 [†] 0.7 [†] 1.5 [†] 3.0 [†] 4.5 †0.3 [†] 0.7 [†] 1.5 [†] 2.9 [†] 4.2 WP1A	1.5 1.9	2 1 2 6 3 0	⁺ 2.0 ⁺ 1.6 ⁺ 1.1		$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	*0.3*0.7*1.6*3.1*4.7 *0.3*0.7*1.4*2.6*3.3	P1A			+3.4 ⁺ 1.9 ⁺ 1.0 ⁺ 0.4 ⁺ 0.1 +2.3 ⁺ 1.5 ⁺ 0.9 ⁺ 0.4 ⁺ 0.2		WE
+	0.1 ⁺ 0.3 ⁺ 0.6 ⁺ 1 +0.1 ⁺ 0.3 ⁺ 0.7 ⁺ 1 + + + + + + + + + + + + + + + + + + +	.2 + 1.7		2.7 2.6 1.7 0.8 0.4 +1.6 1.7 1.3 0.8 0.4 +1.6 1.7 1.3 0.8 0.4	10.3 0.6 1.3 2.2 2.7 10.3 0.6 1.1 1.6 1.7 15.0 1.0 1.1 1.6 1.7	†1.2 ⁺ 1.5	$^{+}1.8^{+}2.1^{+}2.3$ $^{+}2.0^{+}1.8^{+}$	1.7 ¹ 1.4 ¹ 1.0 +1.5 ⁺ 1.2 ⁺ 0.9 +1.3 ⁺ 1.0 ⁺ 0.8		+2.0 ⁺ 2.0 ⁺ 1.5 ⁺ 0.8 ⁺ 0.4 +1.3 ⁺ 1.5 ⁺ 1.2 ⁺ 0.8 ⁺ 0.4	†0.3 [†] 0.6 [†] 1.2 [†] 1.9 [†] 2.0 †0.3 [†] 0.7 [†] 1.1 [†] 1.4 [†] 1.4				$^{+}1.5^{+}1.2^{+}0.8^{+}0.4^{+}0.2$ $^{+}1.1^{+}1.0^{+}0.7^{+}0.4^{+}0.2$		
80'0	0.1 0.3 0.7 1. +0.1 +0.3 +0.8 +1. +0.1 +0.2 +0.8 +1.	.6 ⁺ 3.3		1.3 1.4 1 2 0.8 0.4 +1.6 1.7 1.3 0.8 0.4 +2.5 2.4 1,5 0.8 0.4	0.3 0.6 1.1 1.4 1.3 +0.3 0.7 1.2 1.6 1.7 +0.3 0.7 1.3 2.3 2.7	0.6 0.8 1.0	1.3 ⁺ 1.4 ⁺ 1.5 +1.1 ⁺ 1.2 ⁺ 1.2 +1.2 ⁺ 1.1	⁺ 1.1 ⁺ 0.9 ⁺ 0.6		1.4 [±] 1.5 [±] 1.2 [±] 0.8 [±] 0.4 +2.0 [±] 2.0 [±] 1.4 [±] 0.8 [‡] 0.4	+0.3+0.7+1.1+1.5 1.4 +0.3+0.7+1.3+1.9+2.1				1.1 1.0 0.7 0.4 0.2 +1.4 1.1 0.8 0.4 0.2 +2.4 1.7 +2.8 +2.4 +2.2		
R/W2+ +123+ 123+ 123+ 123+ 123+ 123+ 123+ 1	+0.1 +0.2 +0.8 +1. +0.1 +0.3 +0.8 +1. +0.1 +0.3 +0.8 +1.	.6 ⁺ 3.4 WP1B		$^{+}4.1^{+}3.3^{+}1.8^{+}0.9^{+}0.4$	10.3 10.8 1.6 3.0 4.2 10.3 10.8 1.6 3.2 4.5 WP1/A	0.6 0.9 1.1	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	+1.0 ⁺ 0.8 ⁺ 0.6		*3.4*2.9*1\7*0.8*0.4 *4.8*3.5*1.9*0.9*0.4	$^{+}0.3^{+}0.7^{+}1.5^{+}2.7^{+}3.5$ $^{+}0.3^{+}0.8^{+}1.7^{+}3.2^{+}4.8$				$\begin{array}{c} 2.1^{+}1.5^{+}0.9^{+}0.4^{+}0.2 \\ & +3.2^{+}1.9^{+}1.0^{+}0.5^{+}0.1 \\ & +4.1^{+}2.1^{+}1.0^{+}0.4^{+}0.1 \end{array}$		US
PKW	+0.1+0.3+0.7+1 +0.1+0.3+0.7+1	2+1.8		$^{+}3.2^{+}2.8^{+}1.7^{+}0.9^{+}0.4$ $^{+}2.0^{+}2.0^{+}1.4^{+}0.8^{+}0.4$	10.3 0.8 1.5 2.6 3 2 0 0.3 0.7 3 1.9 2 0	0.9 ⁺ 1.2 ⁺ 1.5	$^{\dagger}1.8^{\dagger}2.0^{\dagger}2.2$ $^{+}2.2^{+}1.9^{\dagger}$	+1.4 1.1 +0.8 +1.6 +1.3 +0.9		*3.9*3.2*1/8*0.9*0.4 *2.5*2.3*1.5*0.8*0.4	*0.3*0.8*1.6*2.9*3.9 *0.3*0.7*1.4*2.2*2.5				WP41B 2.1 1.0 0.4 0.1 3.3 1.9 1.0 0.4 0.1		
EED	+0.1+0.4+0.7+1 +0.1+0.3+0.7+1	.0 ⁺ 1.2 .1 ⁺ 1.5			†0.3 [†] 0.7 [†] 1.2 [†] 1.7 [‡] 1.6 †0.3 [†] 0.7 [†] 1.3 [†] 2.0 [†] 2.0	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	$^{+}2.1^{+}2.5^{+}2.9$ $^{+}2.8^{+}2.3^{+}$ $^{+}2.5^{+}3.2^{+}3.5$ $^{+}3.6^{+}3.4^{+}2.7^{+}$ $^{+}2.8^{+}3.5^{+}3.6$ $^{+}3.7^{+}3.5^{+}2.9^{+}$	$^{+}1.8^{+}1.5^{+}1.0$ $^{+}2.0^{+}1.6^{+}1.1$		1.7 1.8 1.4 0.8 0.4 1.7 1.8 1.4 0.8 0.4 1.5 1.4 0.8 0.4 1.5 2.4 1.5 0.8 1.4	10.3 0.7 1.3 1.7 1.7 1.7 1.3 0.3 0.7 1.3 1.8 1.8 1.8 1.8 1.3 1.4 1.2 1.3 1.6 1.8 1.8 1.8 1.8 1.8 1.8 1.8 1.8 1.8 1.8				+1.4 ⁺ 1.1 ⁺ 0.8 ⁺ 0.4 ⁺ 0.2		
00	+0.1+0.3+0.8+1. +0.1+0.3+0.8+1.	.7 ⁺ 3.2		*3.1*2.8*1\6*0.8*0.4 -*4.6*3.4*1.8*0.8*0.4 *4\ 2 *8.2*4\7*0.8*0.3	$^{+}0.3^{+}0.7^{+}1.5^{+}2.7^{+}3.2$ $^{+}0.8^{+}0.8^{+}1.7^{+}3.2^{+}4.6$	1.1 1.6 2.1	2.8 3.5 3.7 3.5 2.9 2.8 2.5 3.3 3.5 2.9 2.8 2.5 3.3 3.5 3.7 3.4 3.1 2.4 2.5 3.5 2.9 3.4 3.1 2.4 2.5 3.5 2.8 2.8 2.8 2.8 2.8 2.8 2.8 2.8 2.8 2.8	+0 4+4 6+4 4		4.9 ⁺ 3.2 ⁺ 1.8 ⁺ 0.8 ⁺ 0.4 4.7 ⁺ 3.4 ⁺ 1.8 ⁺ 0.8 ⁺ 0.3 4.7 ⁺ 3.4 ⁺ 1.8 ⁺ 0.8 ⁺ 0.3	$^{+}0.3^{+}0.8^{+}1.6^{+}3.0^{+}4.1$ $^{+}0.3^{+}0.7^{+}1.6^{+}3.2^{+}4.7$				+1.1+1.0+0.7+0.4+0.2 +1.1+0.9+0.7+0.4+0.2		ĮΨ
+74+	21	.8 ⁺ 3.9 WP1B	4	42.5 2.3 1.3 0.6 0.3	*0.3*0.7*1.5*3.0*4 1 WP1/A *0.3*0.6*1.2*2.1*2.5	1.0 1.4 1.6 +0.9 1.2 1.5	2.2 2.6 3.0 +2.7 +2.4 +2.0 + +1.8 +2.1 +2.3 +2.4 +2.2 +4.2 +4.2 +4.2 +4.2 +4.2 +4.2	⁺ 1.7 ⁺ 1.4 ⁺ 1.0		$^{+}$ 3.2 $^{+}$ 2.7 $^{+}$ 3.5 $^{+}$ 0.7 $^{+}$ 0.3 $^{+}$ 1.8 $^{+}$ 1.7 $^{+}$ 1.1 $^{+}$ 0.5 $^{+}$ 0.3	+0.2+0.5+1.0+1.6+1.7	/ I	_		+1.4 ⁺ 1.1 ⁺ 0.7 ⁺ 0.4 ⁺ 0.2 +2.0 ⁺ 1.4 ⁺ 0.8 ⁺ 0.4 ⁺ 0.1 +2.0 ⁺ 1.4 ⁺ 0.9 ⁺ 0.4 ⁺ 0.4		ZIS
		21781	S S		R9 S	0.8 1.1 1.3	1.0 1.8 1.9 + 1.8 1.7 1.5	⁺ 1.2 ⁺ 1.0 ⁺ 0.7		S R9 TVP. 60'		′	9	-	*3.0 ⁺ 1.7 ⁺ 0.9 ⁺ 0.4 ⁺ 0.1 *5.4 ⁺ 3.7 ⁺ 1.8 ⁺ 0.9 ⁺ 0.4 ⁺ 0.1 *\$\begin{align*} \pmo \begin{align*} \pm		
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	0.1 ⁺ 0.3 ⁺ 0.9 ⁺ 1.	.9 ⁺ 3.6 .6 ⁺ 2.5		13873.0 4√.5 ⁺ 0.7 ⁺ 0.3	*0.4*0.8*1.8*3.4*4.5 *0.4*0.8*1.8*3.4*4.3 WP1A *0.4*0.8*1.5*2.5*2.7	1.5 1.0 2.2	$^{+}$ 2.7 $^{+}$ 3.4 $^{+}$ 3.6 $^{+}$ 3.6 $^{+}$ 3.6 $^{+}$ 3.3 $^{+}$ 2.5 $^{+}$ 3.0 $^{+}$ 3.5 $^{+}$ 3.7 $^{+}$ 3.3 $^{+}$ 2.6 $^{+}$	†o o†4 =	(**\begin{align*} \begin{align*} \beg	⁺ 0.4 ⁺ 0.8 ⁺ 1.8 ⁺ 3.4 ⁺ 4.8.	P1A			+2.2 ⁺ 2.0 ⁺ 1,3 ⁺ 0.7 ⁺ 0.4 ⁺ 0.1 +3.8 ⁺ 2.9 ⁺ 1.6 ⁺ 0.8 ⁺ 0.3 ⁺ 0.1		
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	+0.1 +0.4 +0.8 +1. +0.2 +0.4 +0.7 +1.	.3 ⁺ 1.9		⁷⁺ 2.0 1.9 1.3 0.7	+0.4+0.9+1.4+1.7+ 6 +0.4+0.9+1.5+2.0+1.9	1.0 ⁺ 1.0 ⁺ 1.3 ⁺ 1.6	$^{1.0}_{+}$ $^{1.0}_{-}$ $^{1.0}_{-}$ $^{1.0}_{-}$ $^{1.0}_{-}$ $^{1.0}_{-}$ $^{1.0}_{-}$	+1.4 1.1 +1.6 +1.2		$^{+}$ 1.8 1.7 1.2 0.7 $^{+}$ 1.8 1.7 1.2 0.7 $^{+}$ 2.5 2.2 1.3 0.7	+0.4+0.9+1.4+1.8 1.6 +0.4+0.9+1.4+1.8 7 +0.4+0.9+1.7+2.5+2.5				+3.5 ⁺ 2.6 ⁺ 1.4 ⁺ 0.7 ⁺ 0.3 +5.1 ⁺ 3.3 ⁺ 1.6 ⁺ 0.8 ⁺ 0.3		
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1 of 1

BERLIN MIXED USE DEVELOPMENT At BERLIN TOWNSHIP DELWARE COUNTY, OHIO

TRAFFIC STUDY

Traffic Impact Study

Berlin Township Mixed Use Development – T&R Properties

Prepared for Delaware County Engineer's Office

By



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Mark I. Mann, P.E.

Wark 4. 1

Director – Transportation Services

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Introduction

The 120 acre development by T&R Properties in located in the Berlin Township Industrial Overlay District, in the south-west quadrant of the US 36/ SR37 & S, Old State Road intersection in Delaware County, Ohio. This development will consist of 368 apartment units in two sections, one on either side of Reed Road and 890,000 square feet of industrial warehousing of which 480,000 square feet will be in the initial development phase and the remainder built in some future year with surface level parking.

Access to the development will be from two access point, an existing east access from S. Old State Road, on to Reed Road and a proposed left-in, right-in/ right-out from US 36/ SR 37 based on the location shown for an access to the property in the ODOT D6 Access Management Plan for this portion of 36/37. Both accesses will be stop sign controlled on the minor roadway. The access from 36/ 37 will be studied as an R-Cut for northbound traffic wanting to make the left turn to go westbound.

The scope of this study was developed from correspondence with ODOT District 6 and the DCEO. The following will be studied and evaluated as part of this study:

- Right turn lane warrant at S. Old State and Reed Road.
- Right turn lane warrant at US 36/ SR 37 and S. Plunkett Rd.
- Operational analysis for the R-Cut intersection of US 36/ SR 37 & Old State Road
- Operational analysis for the R-Cut intersection of US 36/ SR 37 & S. Plunkett Road
- LOS analysis at S. Old State Road & Reed Road

Delaware County requires a left turn lane to be constructed for any development that generates more than 10 new left turn trips during any hour of the day. With this requirement in mind no left turn warrants were investigated for roadways under the DCEO jurisdiction. The analyses for this study will be for the Opening Year of 2024, the 10 year design year of 2034 and for those intersections in ODOT's jurisdiction 2044. The "Build" condition will be evaluated, and the background traffic will have a growth factor applied derived from recent ODOT studies on US 36/SR 37. (see appendices).

Figure 1. Location Map & Site Plan

Existing/ No Build Conditions

US 36/ ST 37 is a 4 lane divided highway with a speed limit of 55 MPH. Access is controlled by ODOT. Plunkett Road (north) intersects 36/ 37 approximately 2,250 feet west of the Old State intersection. Plunkett Road will be extended south as part of this development.

South Old State is a two lane major collector roadway with a 55 MPH speed limit. The roadway is under the jurisdiction of the DCEO. Reed Road is a stub roadway that intersects with Old State approximately 1900 feet south of 36/37. Reed Road will be extended to the west as part of this development.

Traffic Volumes and Trip Generation

Traffic volume data for this study was collected by Smart Services and provided by ODOT and DCEO (see appendix).

To determine total entering and exiting volumes land use code (LUC 220) was used for the multifamily portion of the development and LUC 150 for the Industrial warehousing portion of the development. The ITE Trip Generation Manual was used to calculate total trips (see appendix).

All industrial trips were assigned to the S. Plunkett intersection and all multi-family trips were assigned to the Reed Road intersection.

The in-bound and out-bound trip volumes for the external roadway system are shown in the figure below.

Trip Generation Land Use Total Code Enter Exit Pass-By Primary Pass-By Total IN Primary Pass-By Total OUT Description Trips (LUC) Multi-Family 24% 76% Residential - North 220 96 63% 37% (176 units) Multi-Family 76% 20 62 82 24% AM 62 Residential - South 220 103 63% 37% 38 38 65 65 (192 units) 151 77% 23% ΑM 116 116 35 35 Warehousing -150 Industrial 890k S.F 160 28% PM 45 45 115 72% 115

Table 1. Site Trip Generation

All traffic volume exhibits are contained in the appendix.

No-Build Capacity Analysis – Un-Signalized Intersections

Capacity analyses were performed utilizing HCM module in Synchro 11 for signalized intersections and HCS 2023 for Two-Way Stop Controlled intersections, in this case as an R-CUT. The Opening Year (2024) No-Build, ODOT Design Year (2044) No-Build were both analyzed. Detailed print outs are contained in the Appendices.

Table 2. Traffic Study Un-Signalized Intersections LOS, No Build

				ι	Jn-Signa	alized I	nterse	ction Lev	el of Se	rvice (I	LOS/ se	c. delay	<i>ı</i>)			
lutana ati an								No I	Build							
Intersection				20)24							20	144			
		AM				Р	М			А	M			Р	М	
	NBRT	SB	EB	WBLT	NBRT	SB	EB	WBLT	NBRT	SB	EB	WBLT	NBRT	SB	EB	WBLT
		NBRI SB EB WBLI														
US36/ SR37 & Old State Road	C/17.6	-	-	B/12.6	C/22.6	-	-	B/12.4	F/60.0	-	-	C/24.3	F/198.3	-	-	C/24.8

In the Existing Conditions No-Build scenarios un-signalized movements LOS and delays are shown above.

Build Conditions

Build Capacity Analyses – Un-Signalized Intersections

Capacity analyses were performed utilizing HCM module in Synchro 11 for signalized intersections and HCS 2023 for Two-Way Stop Controlled intersections, in this case as an R-CUT. The Opening Year (2024) Build, Design Year (2044) Build were both analyzed. Detailed print outs are contained in the Appendices.

Table 3. Traffic Study Un-Signalized Intersections LOS, Build

				ι	Jn-Signa	alized I	nterse	ction Lev	el of Se	rvice (I	OS/ se	ec. delay	<i>(</i>)			
Intercetion								Bu	ild							
Intersection				20	24							20)44			
		AM				Р	M			Α	M			Р	М	
	NBRT					SB	EB	WBLT	NBRT	SB	EB	WBLT	NBRT	SB	EB	WBLT
		NBRI SB EB WBLI														
US36/ SR37 & Old State Road	D/27.2	-	-	B/13.8	E/47.4	-	-	C/18.0	F/189.8	-	-	D/33.6	F/402.1	-	-	F/51.4

				Ų	Jn-Signa	alized I	ntersec	tion Lev	el of Se	rvice (l	OS/ se	c. delay	·)			
lutana ati an								Bu	ild							
Intersection				20	24							20	44			
		Α	М			Р	M			Α	M			Р	М	
	NBRT	SB	EB	WBLT	NBRT	SB	EB	WBLT	NBRT	SB	EB	WBLT	NBRT	SB	EB	WBLT
US 36/ SR 37 & S. Plunkett Road	B/14.3	-	-	B/11.6	C/16.6	-	-	B/12.3	C/20.6	-	-	C/16.4	D/28.0	-	-	C/18.4

				·	Jn-Signa	alized I	ntersec	tion Lev	el of Se	rvice (LOS/ se	c. delay	')			
Intersection								Βι	iild							
intersection				20	24							20	44			
		Α	М			Р	М			Α	М			Р	М	
	NBLT					SB	EBLT	EBRT	NBLT	SB	EBLT	EBRT	NBLT	SB	EBLT	EBRT
Old State Road & Reed Road	A/7.8	-	B/13.6	B/10.2	A/8.4	-	D/25.9	A/9.7	A/8.1	-	C/16.7	B/11.0	A/8.8	-	E/40.6	B/10.3

In the Existing Conditions Build scenarios un-signalized movements LOS and delays are shown above.

Turn Lane Warrants and Storage Length Calculations

The Ohio Department of Transportation has a warrant process for the determination of turn lanes at un-signalized intersections. These warrants are based on the number of lanes on the roadways, the speed limits, and the volume of traffic.

An ODOT warrant study was completed to determine if a right turn lane is warranted for the site access 1 on 36/37 at the LiRiRo, and the southbound right turn movement from Old State on to Reed Road.

The warrant for site access 1 is based on the warrant for a 4-lane roadway with a posted speed limit of 45 MPH or greater.

The warrant for the Reed Road intersection is based on the warrant for a 42lane roadway with a posted speed limit of 40 MPH or less.

As a result of the analyses, right turn lanes are warranted at both locations. (see appendix)

Delaware County requires the construction of a left turn lane when there are 10 or more vehicles making a left turn during the peak hour.

A left turn lane on northbound Old State Road at the Reed Road intersection is required. (see exhibit)

Turn lane lengths for warranted turn lanes were calculated based on ODOT design criteria. Calculation can be found in the appendix

Conclusions and Recommendations

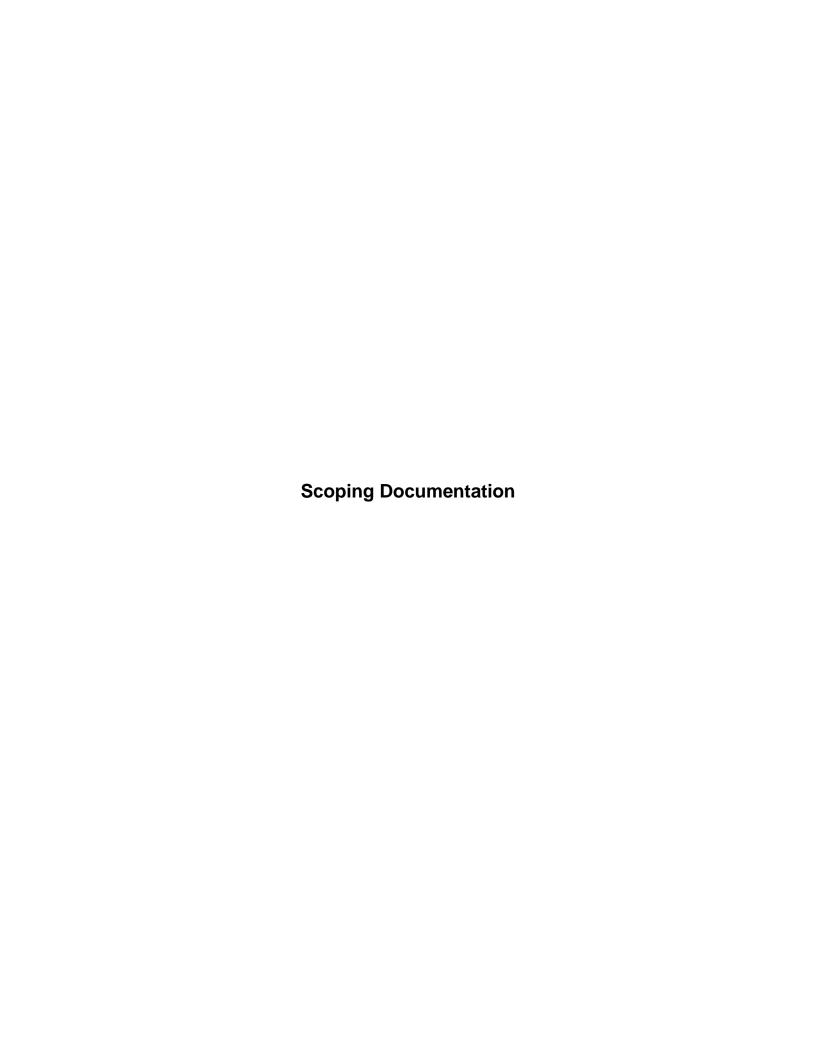
Using the 2044 Build traffic, we have calculated, based on ODOT design criteria, that an eastbound right turn lane is warranted at the unsignalized intersection of S. Plunkett Rd & US 36/SR37. The calculations show that for 2044 PM Build traffic a 150-foot-long left turn lane, including the 50 feet of taper is required. (see appendix)

For the un-signalized intersection of Old State Road and Reed Road, based on ODOT design criteria, a 315 feet northbound left turn lane, including the 50 feet taper, and a 285 feet southbound right turn lane, including the 50 taper are required. (See Appendix).

HCS 2023 results show that the northbound right turn at the unsignalized intersection of US 36/SR 37 and Old State Road operates at LOS F in the 2044 No Build and the 2044 Build conditions with the current geometry.

The 2044 Build LOS is considerably worse in the PM Peak hour. However, a current ODOT study is underway for US 36/ SR 37 to study the accesses. It's likely that the results from this ODOT study will influence the future geometry at this intersection, therefore, no mitigation is recommended at this time.







November 4, 2022

Andrew Hurst, P.E. (ODOT D6)
Jessica Ormeroid, PE, PTOE (ODOT D6)
Michael Love, PE PTOE (Delaware County)

Subject: Berlin Township Mixed Use Development – Traffic Impact Study

Memorandum of Understanding

All,

We submit this Memorandum of Understanding (MOU) to document the scope of the above captioned traffic study as discussed in a meeting with the staff of Delaware County and ODOT District 6 on October 24, 2022. This submission also adds our detailed traffic assignment for your review.

Proposed Development & Access Plan

Figure 1 shows the development concept for site layout and access points. Proposed access includes one full movement access point on Lackey Old State and one Right-in/Right-out access on US 36/ SR 37 from the ODOT Access Management Plan for US 36/ SR 37.

Figure 1: Site Concept Plan

Site Design for 2024 Opening Year and 2034 and 2044 Design Year

- 368 multi-family units north & south of Reed Road
- 890,000 square feet Industrial Warehousing 2 Phases

Study Area

The Study Area of this TIS is limited to the following intersections:

- 1. US 36 / SR 37 & Lackey Old State Road (LiRiRo, ODOT)
- 2. US 36 / SR 37 & Site Access (S. Plunkett Road) (LiRiRo, ODOT)
- 3. Lackey Old State Road & Reed Road (County)

Data Collection

Traffic data was collected on October 18, 2022 at the US 36/SR 37 & Lackey Old State intersection, including the U-Turn data for the R-CUT. Additional data was provided by the DCEO and from recently completed traffic studies in the area. These data provide turning and thru movement volumes at Study Area intersections.

Future traffic growth rates will be derived from ODOT studies and from the Mid-Ohio Regional Planning Commission (MORPC) if required.

Trip Generation and Distribution

This study will estimate new trips generated by development according to the data and procedures contained in the <u>Trip Generation Manual</u>, 11th ed. (Institute of Transportation Engineers, 2021). We will use land use code 220 for the Multi-Family portions of the development and land use code 150 for the industrial warehousing portions of the site. The trips generated for the proposed land uses are shown in **Table 1**.

Table 1: Trip Generation

					Trip Gen	eration						
Description	Land Use Code (LUC)	Total Trips	Enter	Exit	Pass-By		Primary	Pass-By	Total IN	Primary	Pass-By	Total OUT
Multi-Family Residential - North	220	77	24%	76%	-	AM	18	-	18	59	-	59
(176 units)	220	96	63%	37%	-	PM	64	-	64	32	-	32
Multi-Family Residential - South	220	82	24%	76%	-	AM	20	-	20	62	-	62
(192 units)	220	103	63%	37%	-	PM	38	-	38	65	-	65
Warehousing -	150	151	77%	23%	-	AM	116	-	116	35	-	35
Industrial 890k S.F	130	160	28%	72%	-	PM	45	-	45	115	-	115

Traffic Assignment and Volume Balancing

This study developed AM and PM peak hour volumes for the following scenarios and the attached volume exhibits are submitted for review with this submission:

- 2024 No-Build Site
- 2024 Build Site
- 2034 No-Build Site
- 2034 Build Site
- 2044 No-Build Site
- 2044 Build Site

The attached volume exhibits increase counts to design year No-Build conditions based on calculated growth rates. The attached volume exhibits show the straight mathematical application of growth rates to each intersection approach.

Traffic Analyses

Intersection Capacity Analyses

Advanced Civil Design will use Synchro (v.11) and HCS software to evaluate intersection capacity at Study Area intersections that are under the control of the DCEO. We will use HCS for intersections under the control of the ODOT.

ODOT and DCEO performance criteria for the overall intersection Level of Service (LOS) is LOS D with individual movements also at LOS D or better. City of Columbus performance criteria for the overall intersection is LOS D with approach LOS D and LOS E in any individual movement. The Sawmill Road corridor is severely congested under background conditions and the <u>Sawmill Road Corridor Study</u> and Tuller Road/Emerald Parkway connector study are regional initiatives intended to address multiple existing deficiencies in the area road network. If improvements required to meet traditional agency performance criteria are not practical, this study will consider alternate goals such as restoring pre-development performance and/or mitigating queues where background conditions are severely deficient. Agency concurrence is required in the event that alternate criteria are used as the basis for study recommendations.

Turn Lane Warrant Analysis

We will analyze right turn lane warrants at proposed site access points for the locations controlled by DCEO. Left turn lane warrants are generally not applicable because DCEO requires left turn lane additions to the street being accessed when 10 or more left turn movements are made in the peak hour.

We will analyze left and right turn lane warrants at proposed site access points and intersections for the locations controlled by ODOT D6.

Delaware County, Ohio Berlin Township Mixed Use Development MOU

We will evaluate the length of existing and proposed Study Area turn lanes impacted by site generated traffic. We will prepare our turn lane analysis in accordance with the <u>Location and Design Manual</u> § 401 (Ohio Department of Transportation).

We will determine lane length based on the maximum volume for the design year Build condition for either AM or PM peak conditions considering both L&D methodology.

Signal Warrant Analysis

If signalization is considered to meet performance criteria at a location that is not currently signalized, we will evaluate traffic signal warrants. Traffic signal warrant evaluation will use thresholds established by the Ohio Manual of Uniform Traffic Control Devices §4C (Ohio Department of Transportation).

This study is limited to analysis of Warrants 1, 2 and 3. We will remove a portion of minor street right turns in accordance with the <u>Traffic Engineering Manual</u> §402-5 (Ohio Department of Transportation). We will consider roundabouts as an alternative to signalization where applicable.

Traffic Impact Study Report

A report including applicable figures and tables will be prepared to summarize study methodologies, analysis, findings and recommendations. We will provide the report to ODOT and DCEO for review.

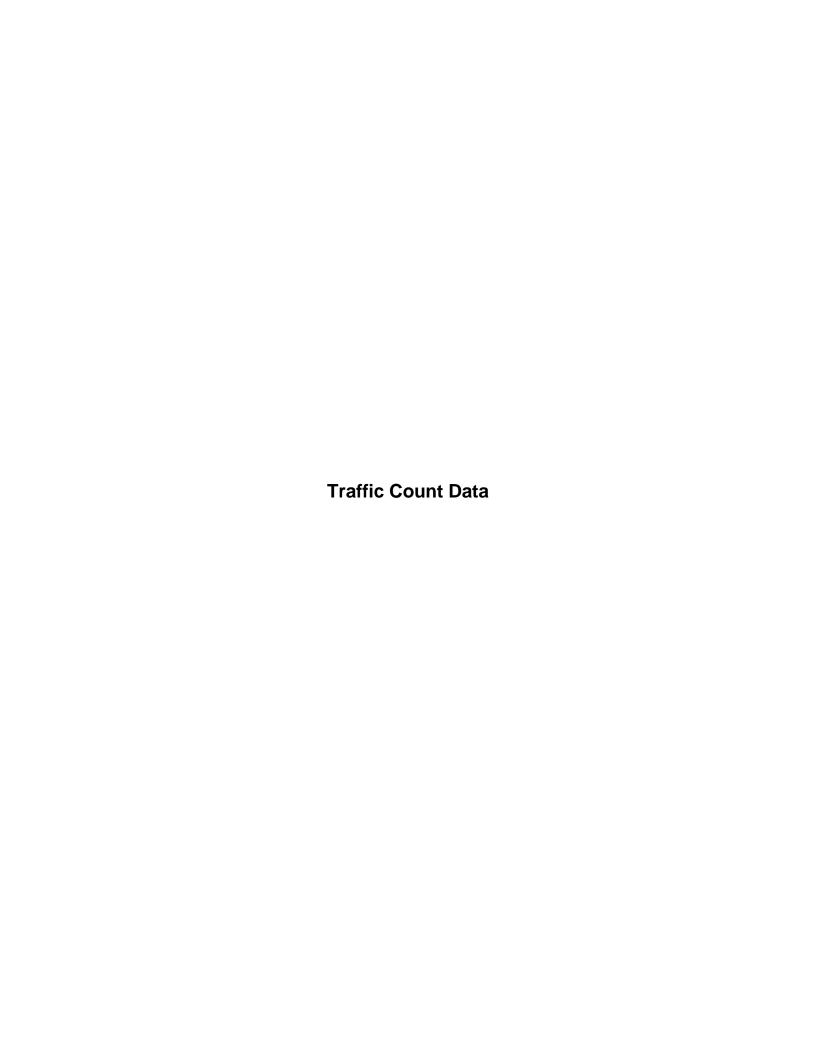
Please signify your concurrence with the scope of services outlined herein by signing below and returning this Memorandum of Understanding to me. Please feel free to contact me by email at mmann@advancecivildesign.com or by calling me at (614) 944-5035.

Sincerely,

Mark I. Mann, PE Director - Transportation Services

ACCEPTANCE AND APPROVAL OF MEMORANDUM OF UNDERSTANDING

By:	
•	For Delaware County Engineer's Office
By:	
-	For ODOT District 6



Tue Oct 4, 2022

Full Length (6 AM-8 PM)

All Classes (Lights and Motorcycles, Heavy, Pedestrians)

All Movements

ID: 997819, Location: 40.278627, -82.983901



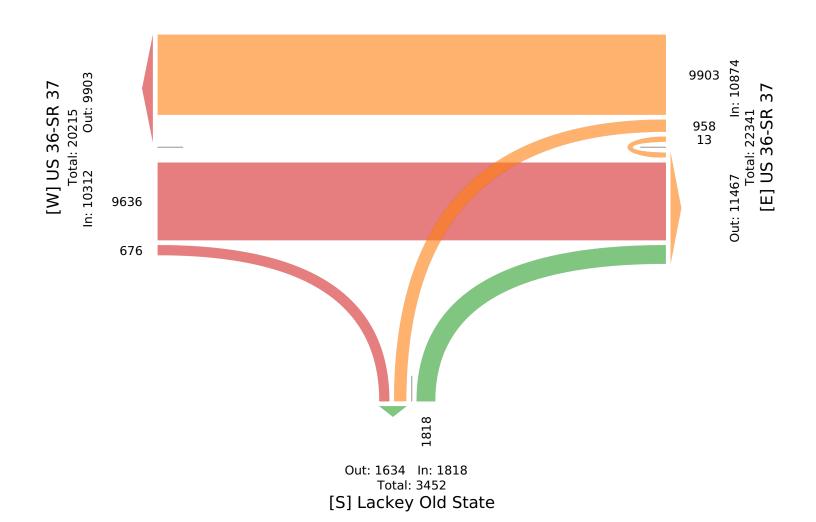
Leg		US 36-SR 37					US 36-SR 37	7				Lackey	Old State	2			
Direction		Eastbound					Westbound					Northbo	ound				
Time		T	R	U	App	Ped*	L	T	U	App	Ped*	L	R	U	App	Ped*	Int
	2022-10-04 6:00AM	97	2	0	99	0	7	60	0	67	0	0	5	0	5	0	171
	6:15AM	168	10	0	178	0	7	110	0	117	0	0	7	0	7	0	302
	6:30AM	175	6	0	181	0	22	126	0	148	0	0	22	0	22	0	351
	6:45AM	188	18	0	206	0	23	159	0	182	0	0	20	0	20	0	408
	Hourly Total	628	36	0	664	0	59	455	0	514	0	0	54	0	54	0	1232
	7:00AM	196	15	0	211	0	27	150	0	177	0	0	41	0	41	0	429
	7:15AM	247	27	0	274	0	25	167	1	193	0	0	43	0	43	0	510
	7:30AM	256	19	0	275	0	31	189	1	221	0	0	36	0	36	0	532
	7:45AM	228	21	0	249	0	23	196	1	220	0	0	46	0	46	0	515
	Hourly Total	927	82	0	1009	0	106	702	3	811	0	0	166	0	166	0	1986
	8:00AM	223	15	0	238	0	19	148	0	167	0	0	34	0	34	0	439
	8:15AM	193	19	0	212	0	23	155	0	178	0	0	30	0	30	0	420
	8:30AM	209	11	0	220	0	20	184	1	205	0	0	31	0	31	0	456
	8:45AM	191	12	0	203	0	23	150	0	173	0	0	24	0	24	0	400
	Hourly Total	816	57	0	873	0	85	637	1	723	0	0	119	0	119	0	1715
	9:00AM	155	11	0	166	0	19	163	0	182	0	0	39	0	39	0	387
	9:15AM	157	9	0	166	0	15	166	0	181	0	0	21	0	21	0	368
	9:30AM	154	18	0	172	0	11	171	0	182	0	0	26	0	26	0	380
	9:45AM	129	10	0	139	0	17	148	1	166	0	0	24	0	24	0	329
	Hourly Total	595	48	0	643	0	62	648	1	711	0	0	110	0	110	0	1464
	10:00AM	135	3	0	138	0		139	0	151	0	0	23	0	23	0	312
	10:15AM	131	13	0	144	0		121	0	128	0	0	27	0	27	0	299
	10:30AM	150	11	0	161	0		159	0	176	0	0	17	0	17	0	354
	10:45AM	159	6	0	165	0	16	148	0	164	0	0	26	0	26	0	355
	Hourly Total	575	33	0	608	0		567	0	619	0	0	93	0	93	0	1320
	11:00AM	155	5	0	160	0		125	0	138	0	0	25	0	25	0	323
	11:15AM	135	3	0	138	0		140	0	151	0	0	20	0	20	0	309
	11:30AM	148	13	0	161	0		156	0	166	0	0	33	0	33	0	360
	11:45AM	139	12	0	151	0	_	144	2	162	0	0	28	0	28	0	341
	Hourly Total	577	33	0	610	0		565	2	617	0	0	106	0	106	0	1333
	12:00PM	148	17	0	165	0		150	0	169	0	0	26	0	26	0	360
	12:15PM	148	10	0	158	0		163	0	177	0	0	27	0	27	0	362
	12:30PM	160	16	0	176	0		186	0	193	0	0	28	0	28	0	397
	12:45PM	140	16	0	156	0		160	0	170	0	0	23	0	23	0	349
	Hourly Total		59	0	655	0		659	0	709	0	0	104	0	104	0	1468
	1:00PM		11	0	172	0		174	0	185	0	0	25	0	25	0	382
	1:15PM		18	0	187	0		146	1	162	0	0	34	0	34	0	383
	1:30PM		14	0	167	0	_	186	0	200	0	0	25	0	25	0	392
	1:45PM	150	15	0	165	0	+	165	0	179	0	0	29	0	29	0	373
	Hourly Total		58	0	691	0		671	1	726	0	0	113	0	113	0	
	2:00PM	-	7	0	165	0		173	0	183	0	0	29	0	29	0	377
	2:15PM		10	0	184	0		182	0	198	0	0	23	0	23	0	405
	2:30PM		7	0	156	0		194	1	207	0	0	40	0	40	0	403
	2:45PM		9	0	197	0		174	0	187	0	0	51	0	51	0	435
	Hourly Total		33	0	702	0		723	1	775	0	0	143	0	143	0	
	<u> </u>		10			0		177	0	197	0	0	38	0	38	0	417
	3:00PM 3:15PM		14	0	182 226	0	+	225	0	240	0	0	32	0	38	0	417
	3:30PM		12	0		0		225	0	237	0	0	27	0	27	0	522
					258		_										
	3:45PM		13	0	243	0		208	0	230	0	0	141	0	141	0	517
	Hourly Total		49	0	909	0		827	0	904	0	0	141	0	141	0	1954
	4:00PM		11	0	254	0		239	0	264	0	0	47	0	47	0	565
	4:15PM		12	0	230	0		273	0	286	0	0	58	0	58	0	574
	4:30PM		20	0	270	0		263	0	284	0	0	62	0	62	0	616
	4:45PM	205	15	0	220	0	31	287	0	318	0	0	70	0	70	0	608

Leg Direction	US 36-SR Eastbound	37				US 36-SR 3 Westbound					Lacke Northl	y Old Sta	te			
Time	T	R	U	Арр	Ped*	L	T	U	Арр	Ped*	L	R	U	Арр	Ped*	Int
Hourly Total	916	58	0	974	0	90	1062	0	1152	0	0	237	0	237	0	2363
5:00PM	233	16	0	249	0	28	271	1	300	0	0	56	0	56	0	605
5:15PM	235	17	0	252	0	28	276	0	304	0	0	59	0	59	0	615
5:30PM	197	8	0	205	0	31	295	1	327	0	0	61	0	61	0	593
5:45PM	177	7	0	184	0	21	250	0	271	0	0	58	0	58	0	513
Hourly Total	842	48	0	890	0	108	1092	2	1202	0	0	234	0	234	0	2326
6:00PM	150	11	0	161	0	24	195	0	219	0	0	39	0	39	0	419
6:15PM	169	17	0	186	0	14	199	1	214	0	0	25	0	25	0	425
6:30PM	147	5	0	152	0	8	199	1	208	0	0	38	0	38	0	398
6:45PM	138	16	0	154	0	14	166	0	180	0	0	12	0	12	0	346
Hourly Total	604	49	0	653	0	60	759	2	821	0	0	114	0	114	0	1588
7:00PM	113	13	0	126	0	15	148	0	163	0	0	15	0	15	0	304
7:15PM	107	10	0	117	0	8	136	0	144	0	0	17	0	17	0	278
7:30PM	95	6	0	101	0	17	131	0	148	0	0	32	0	32	0	281
7:45PM	83	4	0	87	0	14	121	0	135	0	0	20	0	20	0	242
Hourly Total	398	33	0	431	0	54	536	0	590	0	0	84	0	84	0	1105
Total	9636	676	0	10312	0	958	9903	13	10874	0	0	1818	0	1818	0	23004
% Approach	93.4%	6.6%	0%	_	-	8.8%	91.1%	0.1%	-	-	0%	100%	0%	-	-	-
% Total	41.9%	2.9%	0%	44.8%	-	4.2%	43.0%	0.1%	47.3%	-	0%	7.9%	0%	7.9%	-	-
Lights and Motorcycles	8479	654	0	9133	-	866	8663	13	9542	-	0	1715	0	1715	-	20390
% Lights and Motorcycles	88.0%	96.7%	0%	88.6%	-	90.4%	87.5%	100%	87.8%	-	0%	94.3%	0%	94.3%	-	88.6%
Heavy	1157	22	0	1179	-	92	1240	0	1332	-	0	103	0	103	-	2614
% Heavy	12.0%	3.3%	0%	11.4%	-	9.6%	12.5%	0%	12.2%	-	0%	5.7%	0%	5.7%	-	11.4%
Pedestrians	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

^{*}Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

Tue Oct 4, 2022
Full Length (6 AM-8 PM)
All Classes (Lights and Motorcycles, Heavy, Pedestrians)
All Movements
ID: 997819, Location: 40.278627, -82.983901





Tue Oct 4, 2022

AM Peak (7:15 AM - 8:15 AM)

All Classes (Lights and Motorcycles, Heavy, Pedestrians)

All Movements

ID: 997819, Location: 40.278627, -82.983901

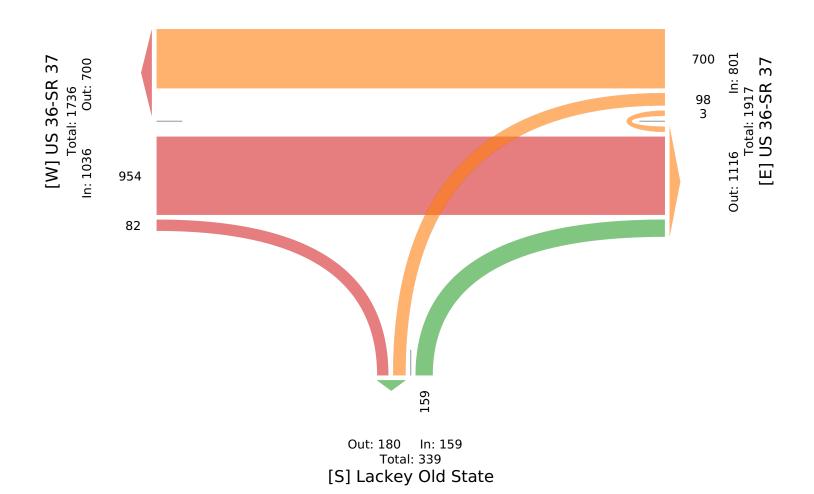


Leg	US 36-SR	37				US 36-SR	37				Lacke	y Old Sta	te			
Direction	Eastbound					Westbound	d				North	oound				l
Time	Т	R	U	App	Ped*	L	T	U	App	Ped*	L	R	U	Арр	Ped*	Int
2022-10-04 7:15AM	247	27	0	274	0	25	167	1	193	0	0	43	0	43	0	510
7:30AM	256	19	0	275	0	31	189	1	221	0	0	36	0	36	0	532
7:45AM	228	21	0	249	0	23	196	1	220	0	0	46	0	46	0	515
8:00AM	223	15	0	238	0	19	148	0	167	0	0	34	0	34	0	439
Total	954	82	0	1036	0	98	700	3	801	0	0	159	0	159	0	1996
% Approach	92.1%	7.9%	0%	-	-	12.2%	87.4%	0.4%	-	-	0%	100%	0%	-	-	-
% Total	47.8%	4.1%	0%	51.9%	-	4.9%	35.1%	0.2%	40.1%	-	0%	8.0%	0%	8.0%	-	-
PHF	0.932	0.759	-	0.942	-	0.790	0.893	0.750	0.906	-	-	0.864	-	0.864	-	0.938
Lights and Motorcycles	856	78	0	934	-	90	591	3	684	-	0	155	0	155	-	1773
% Lights and Motorcycles	89.7%	95.1%	0%	90.2%	-	91.8%	84.4%	100%	85.4%	-	0%	97.5%	0%	97.5%	-	88.8%
Heavy	98	4	0	102	-	8	109	0	117	-	0	4	0	4	-	223
% Heavy	10.3%	4.9%	0%	9.8%	-	8.2%	15.6%	0%	14.6%	-	0%	2.5%	0%	2.5%	-	11.2%
Pedestrians	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

^{*}Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

Tue Oct 4, 2022 AM Peak (7:15 AM - 8:15 AM) All Classes (Lights and Motorcycles, Heavy, Pedestrians) All Movements ID: 997819, Location: 40.278627, -82.983901





Tue Oct 4, 2022 Midday Peak (1 PM - 2 PM)

All Classes (Lights and Motorcycles, Heavy, Pedestrians)

All Movements

ID: 997819, Location: 40.278627, -82.983901

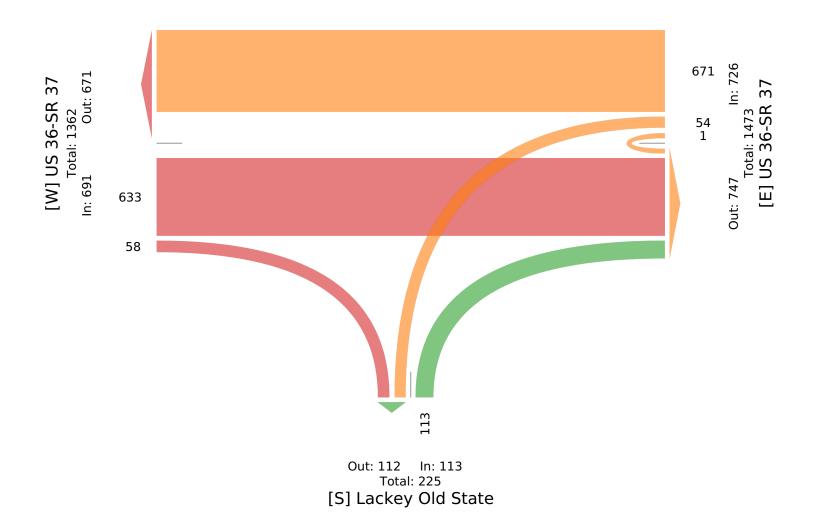


Leg	US 36-SR	37				US 36-SR	37				Lacke	y Old Sta	te			
Direction	Eastbound					Westbound	d				Northl	oound				
Time	T	R	U	App	Ped*	L	T	U	App	Ped*	L	R	U	Арр	Ped*	Int
2022-10-04 1:00PM	161	11	0	172	0	11	174	0	185	0	0	25	0	25	0	382
1:15PM	169	18	0	187	0	15	146	1	162	0	0	34	0	34	0	383
1:30PM	153	14	0	167	0	14	186	0	200	0	0	25	0	25	0	392
1:45PM	150	15	0	165	0	14	165	0	179	0	0	29	0	29	0	373
Total	633	58	0	691	0	54	671	1	726	0	0	113	0	113	0	1530
% Approach	91.6%	8.4%	0%	-	-	7.4%	92.4%	0.1%	-	-	0%	100%	0%	-	-	-
% Total	41.4%	3.8%	0%	45.2%	-	3.5%	43.9%	0.1%	47.5%	-	0%	7.4%	0%	7.4%	-	-
PHF	0.936	0.806	-	0.924	-	0.900	0.902	0.250	0.908	-	-	0.831	-	0.831	-	0.976
Lights and Motorcycles	515	57	0	572	-	48	561	1	610	-	0	106	0	106	-	1288
% Lights and Motorcycles	81.4%	98.3%	0%	82.8%	-	88.9%	83.6%	100%	84.0%	-	0%	93.8%	0%	93.8%	-	84.2%
Heavy	118	1	0	119	-	6	110	0	116	-	0	7	0	7	-	242
% Heavy	18.6%	1.7%	0%	17.2%	-	11.1%	16.4%	0%	16.0%	-	0%	6.2%	0%	6.2%	-	15.8%
Pedestrians	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	·
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

^{*}Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

Tue Oct 4, 2022 Midday Peak (1 PM - 2 PM) All Classes (Lights and Motorcycles, Heavy, Pedestrians) All Movements ID: 997819, Location: 40.278627, -82.983901





Tue Oct 4, 2022

PM Peak (4:30 PM - 5:30 PM) - Overall Peak Hour

All Classes (Lights and Motorcycles, Heavy, Pedestrians)

All Movements

ID: 997819, Location: 40.278627, -82.983901

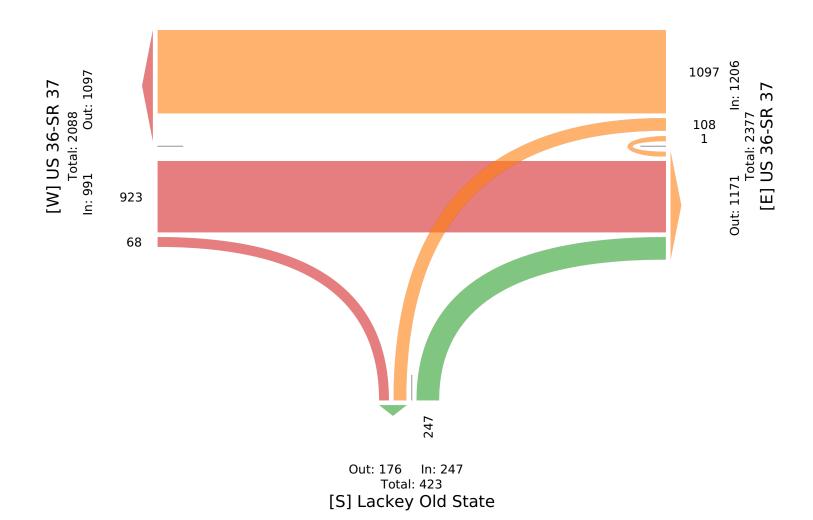


Leg	US 36-SR	37				US 36-SR	37				Lacke	y Old Sta	te			
Direction	Eastbound					Westboun	d				North	oound				l
Time	T	R	U	App	Ped*	L	T	U	App	Ped*	L	R	U	App	Ped*	Int
2022-10-04 4:30PM	250	20	0	270	0	21	263	0	284	0	0	62	0	62	0	616
4:45PM	205	15	0	220	0	31	287	0	318	0	0	70	0	70	0	608
5:00PM	233	16	0	249	0	28	271	1	300	0	0	56	0	56	0	605
5:15PM	235	17	0	252	0	28	276	0	304	0	0	59	0	59	0	615
Total	923	68	0	991	0	108	1097	1	1206	0	0	247	0	247	0	2444
% Approach	93.1%	6.9%	0%	-	-	9.0%	91.0%	0.1%	-	-	0%	100%	0%	-	-	-
% Total	37.8%	2.8%	0%	40.5%	-	4.4%	44.9%	0%	49.3%	-	0%	10.1%	0%	10.1%	-	-
PHF	0.923	0.850	-	0.918	-	0.871	0.956	0.250	0.948	-	-	0.882	-	0.882	-	0.992
Lights and Motorcycles	853	68	0	921	-	105	1042	1	1148	-	0	244	0	244	-	2313
% Lights and Motorcycles	92.4%	100%	0%	92.9%	-	97.2%	95.0%	100%	95.2%	-	0%	98.8%	0%	98.8%	-	94.6%
Heavy	70	0	0	70	-	3	55	0	58	-	0	3	0	3	-	131
% Heavy	7.6%	0%	0%	7.1%	-	2.8%	5.0%	0%	4.8%	-	0%	1.2%	0%	1.2%	-	5.4%
Pedestrians	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	

^{*}Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

Tue Oct 4, 2022 PM Peak (4:30 PM - 5:30 PM) - Overall Peak Hour All Classes (Lights and Motorcycles, Heavy, Pedestrians) All Movements ID: 997819, Location: 40.278627, -82.983901





Tue Oct 4, 2022 Full Length (6 AM-8 PM) All Classes (Lights and Motorcycles, Heavy) All Channels ID: 997824, Location: 40.278088, -82.982033



Leg	South	
Direction	Northbound	-
Time	Т Арр	
2022-10-04 6:00AM	1 1	
6:15AM	1 1	1
6:30AM 6:45AM	12 12 6 6	
6:43AM Hourly Total	20 20	
7:00AM	8 8	
7:00AM 7:15AM	15 15	
7.13AM 7:30AM	11 11	
7.30AN 7:45AM	16 16	
Hourly Total	50 50	
8:00AM	11 11	
8:15AM	7 7	
8:30AM	6 6	
8:45AM	4 4	
Hourly Total	28 28	
9:00AM	9 9	
9:15AM	1 1	
9:30AM	8 8	
9:45AM	10 10	
Hourly Total	28 28	
10:00AM	5 5	
10:15AM	7 7	
10:30AM	8 8	
10:45AM	5 5	
Hourly Total	25 25	
11:00AM	8 8	
11:15AM	7 7	
11:30AM	11 11	11
11:45AM	10 10	
Hourly Total	36 36	36
12:00PM	10 10	
12:15PM	9 9	9
12:30PM	11 11	11
12:45PM	8 8	
Hourly Total	38 38	38
1:00PM	13 13	13
1:15PM	9 9	
1:30PM	11 11	
1:45PM		
Hourly Total	45 45	
2:00PM	8 8	8
2:15PM	8 8	
2:30PM	14 14	
2:45PM	17 17	
Hourly Total	47 47	
3:00PM		
3:15PM		
3:30PM	1	
3:45PM		
Hourly Total	44 44	
4:00PM	1	
4:15PM		
4:30PM	17 17	
4:45PM	17 17	17

Leg	South		
Direction	Northbound		
Time	T	Арр	Int
Hourly Total	58	58	58
5:00PM	20	20	20
5:15PM	20	20	20
5:30PM	20	20	20
5:45PM	13	13	13
Hourly Total	73	73	73
6:00PM	12	12	12
6:15PM	8	8	8
6:30PM	13	13	13
6:45PM	7	7	7
Hourly Total	40	40	40
7:00PM	6	6	6
7:15PM	4	4	4
7:30PM	6	6	6
7:45PM	5	5	5
Hourly Total	21	21	21
Total	553	553	553
% Approach	100%	-	-
% Total	100%	100%	-
Lights and Motorcycles	543	543	543
% Lights and Motorcycles	98.2%	98.2%	98.2%
Heavy	10	10	10
% Heavy	1.8%	1.8%	1.8%

^{*}T: Thru

Tue Oct 4, 2022 Full Length (6 AM-8 PM) All Classes (Lights and Motorcycles, Heavy) All Channels ID: 997824, Location: 40.278088, -82.982033



N Total: 553

In: 0 Out: 553



Out: 0 In: 553 Total: 553 S

Tue Oct 4, 2022 AM Peak (7:15 AM - 8:15 AM)

All Classes (Lights and Motorcycles, Heavy)

All Channels

ID: 997824, Location: 40.278088, -82.982033



Leg	South		
Direction	Northbound		
Time	T	Арр	Int
2022-10-04 7:15AM	15	15	15
7:30AM	11	11	11
7:45AM	16	16	16
8:00AM	11	11	11
Total	53	53	53
% Approach	100%	-	-
% Total	100%	100%	-
PHF	0.828	0.828	0.828
Lights and Motorcycles	52	52	52
% Lights and Motorcycles	98.1%	98.1%	98.1%
Heavy	1	1	1
% Heavy	1.9%	1.9%	1.9%

^{*}T: Thru

Tue Oct 4, 2022 AM Peak (7:15 AM - 8:15 AM) All Classes (Lights and Motorcycles, Heavy) All Channels ID: 997824, Location: 40.278088, -82.982033



N Total: 53 In: 0 Out: 53



Out: 0 In: 53 Total: 53

Tue Oct 4, 2022 Midday Peak (1 PM - 2 PM) All Classes (Lights and Motorcycles, Heavy) All Channels

ID: 997824, Location: 40.278088, -82.982033



88 W. Church Street, Newark, OH, 43055, US

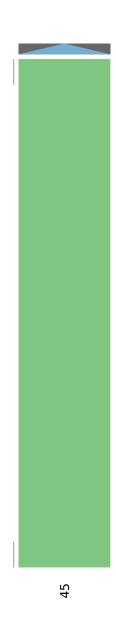
Leg	South		
Direction	Northbound		
Time	T	Арр	Int
2022-10-04 1:00PM	13	13	13
1:15PM	9	9	9
1:30PM	11	11	11
1:45PM	12	12	12
Total	45	45	45
% Approach	100%	-	-
% Total	100%	100%	-
PHF	0.865	0.865	0.865
Lights and Motorcycles	44	44	44
% Lights and Motorcycles	97.8%	97.8%	97.8%
Heavy	1	1	1
% Heavy	2.2%	2.2%	2.2%

^{*}T: Thru

Tue Oct 4, 2022 Midday Peak (1 PM - 2 PM) All Classes (Lights and Motorcycles, Heavy) All Channels ID: 997824, Location: 40.278088, -82.982033



N Total: 45 In: 0 Out: 45



Out: 0 In: 45 Total: 45 S

Tue Oct 4, 2022

PM Peak (4:45 PM - 5:45 PM) - Overall Peak Hour

All Classes (Lights and Motorcycles, Heavy)

All Channels

ID: 997824, Location: 40.278088, -82.982033



Leg	South		
Direction	Northbound		
Time	T	Арр	Int
2022-10-04 4:45PM	17	17	17
5:00PM	20	20	20
5:15PM	20	20	20
5:30PM	20	20	20
Total	77	77	77
% Approach	100%	-	-
% Total	100%	100%	-
PHF	0.963	0.963	0.963
Lights and Motorcycles	77	77	77
% Lights and Motorcycles	100%	100%	100%
Heavy	0	0	0
% Heavy	0%	0%	0%

^{*}T: Thru

Tue Oct 4, 2022

PM Peak (4:45 PM - 5:45 PM) - Overall Peak Hour

All Classes (Lights and Motorcycles, Heavy)

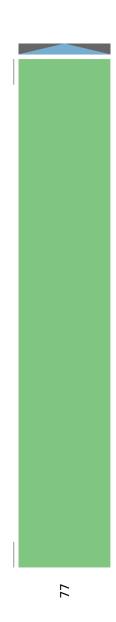
All Channels

ID: 997824, Location: 40.278088, -82.982033



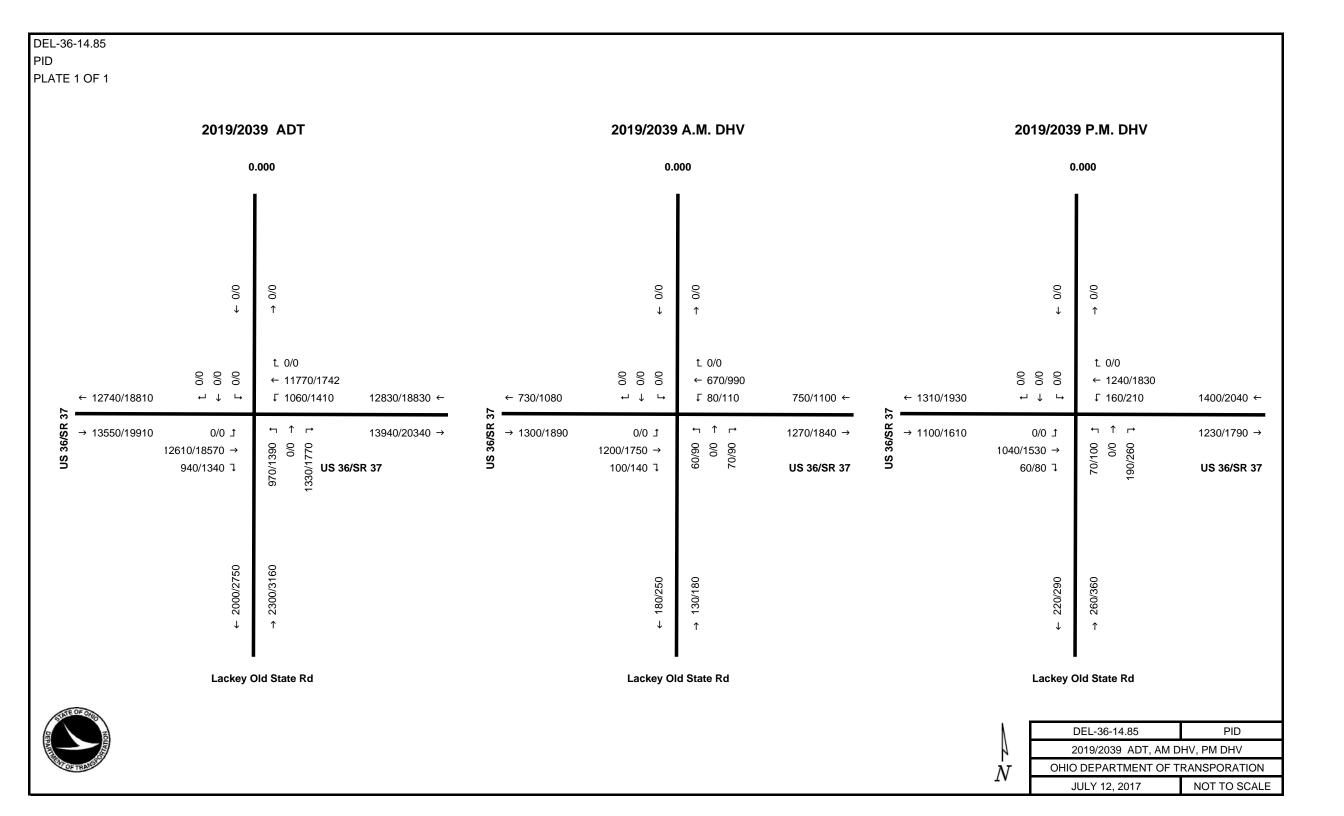
N Total: 77

In: 0 Out: 77



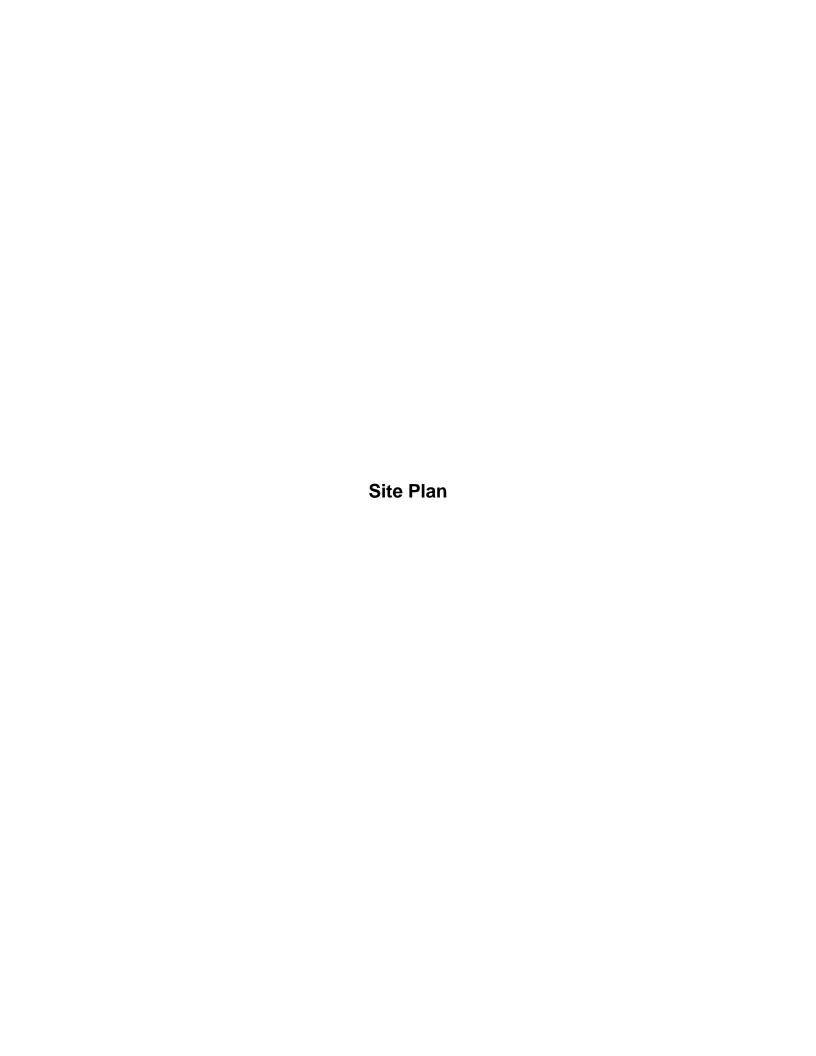
Out: 0 In: 77 Total: 77

S



NOT TO SCALE

JULY 12, 2017



BERLIN MIXED USE DEVELOPMENT

INDUSTRIAL WAREHOUSE DEVELOPMENT BERLIN TOWNSHIP, DELAWARE COUNTY, OHIO 2022

UTILITY CONTACTS SANITARY DELAWARE COUNTY REGIONAL 6658 OLENTANGY RIVER ROAD SEWERS SEWER DISTRICT DELAWARE, OHIO 43015-8872 ATTN: RUSTY GRIFFITH DELAWARE, OHIO 43015 ATTN: TIFFANY MAAG (740) 548-7746 (740) 833-2240 CHARTER COMMUNICATIONS ENGINEER'S OFFICE STORM SEWERS (SPECTRUM/TIME WARNER) 50 CHANNING STREET P.O. BOX 2553

DELAWARE, OHIO 43015

700 MORRISON ROAD GAHANNA, OHIO 43230-6605 ATTN: ANDREW L. WAINWRIGH

(614) 883-6821

ATTN: JOHN PICCIN ATTN: DAVID HOLSTEIN (740) 833-2400 (614) 975-7468 FRONTIER COMMUNICATIONS 2626 LEWIS CENTER ROAD 2780 LIBERTY ROAD LEWIS CENTER, OHIO 43035 DELAWARE, OHIO 43015 ATTN: AARON ROLL ATTN: ROBERT CHANDLER (740) 548-2450 (740) 369-0826 OR ATTN: IRA (CHRIS) AVERY ELECTRIC AMERICAN ELECTRIC POWER (740) 383-0551

> 111 NORTH 4TH STREET, ROOM 802 COLUMBUS, OHIO ATTN: GARY VANALMSICK (614) 223-7276

COLUMBUS, OHIO 43216

	BENCH MARKS	
	BASED ON NAVD 1988 DATUM.	
SITE B.M.#1	RAILROAD SPIKE SET IN A UTILITY POLE LOCATED 5 EDGE OF PAVEMENT OF US 36/37 AND 545'± WEST PLUNKETT ROAD.	
	N: 224253.2160 E: 1830848.1680	Elev.=944.49
SITE B.M.#2	CAPPED REBAR LOCATED 47± SOUTH OF THE EDGE 36/37 AND 849± EAST OF THE C/L OF PLUNKETT	
	N: 223748.0800 E: 1832147.6360	Elev.=928.3
	T	
SITE B.M.#3	CAPPED REBAR LOCATED 35± SOUTH OF THE EDGE REED PARKWAY AND 2± EAST OF THE EAST EDGE (PARCEL 41821002005000.	
	N: 221560.0100	Elev.=928.3

SITE DATA TABLE:

TOTAL BUILDING AREA: 480,000 SQ FT OF WAREHOUSE

NUMBER OF BUILDINGS:

OPEN SPACE: ±9.65 ACRES % OPEN SPACE: 31.28% ±11.02 ACRES LOT COVERAGE: % LOT COVERAGE: 35.72%

PARKING LOT COVERAGE: ±9.69 ACRES % PARKINGLOT COVERAGE: 31.41%

PARKING SPACES: 20'x9' (TYP) PARKING SPACES REQUIRED: 240 SPACES

PARKING SPACES PROVIDED: 480 SURFACE PARKING SPACES TOTAL: 480

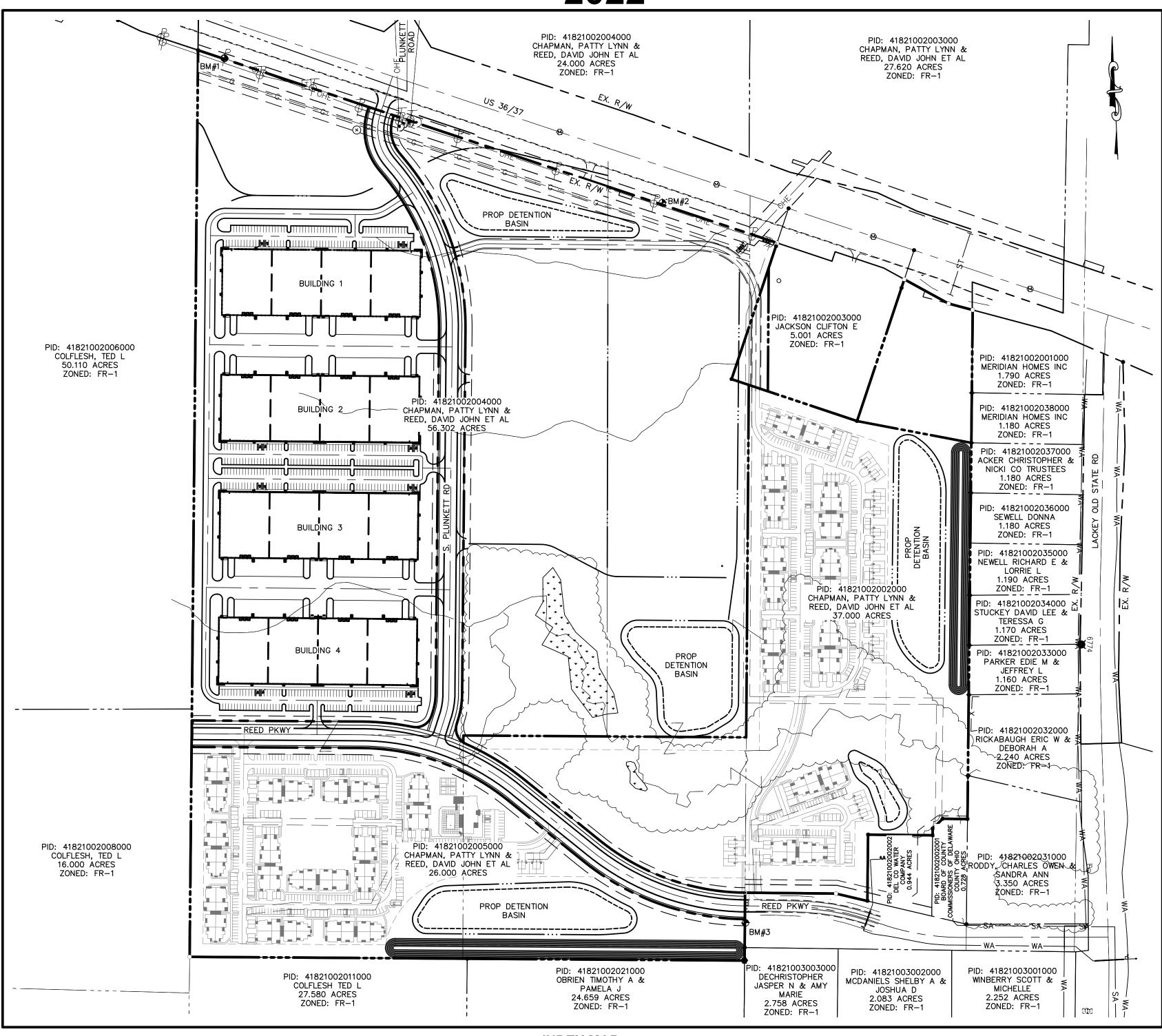
PARKING RATIO: 1 SPACES/1,000 SQ FT OF BUILDING AREA

HCP SPACES REQUIRED: 9 SPACES

HCP SPACES PROVIDED: 16 SPACES (INCLUDES 8 VAN ACCESSIBLE)

FLOOD DESIGNATION

By graphic plotting only this property is located in Zone "x" (Areas determined to be outside of the 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile) by the Federal Emergency Management Agency on Flood Insurance Rate Map, Community Panel No. 39049C0145K, with an effective date of April 16 2009, in Franklin County, Ohio. No field surveying was performed to



STANDARD DRAWINGS

THE STANDARD CONSTRUCTION DRAWINGS LISTED ON THESE PLANS SHALL BE CONSIDERED A PART THEREOF.

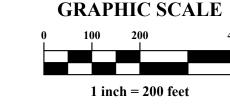
DELAWARE COUNTY STD. DWG.				
DCED-R100	DCED-R103	DCED-R2010	DCED-R2030 (DITCH ONLY)	DCED-R2175
DCED-R2185	DCED-S100	DCED-S102A&B	DCED-S106	DCED-S107
DCED-S112	DCED-S114A&B	DCED-S115	DCED-S117	DCED-S119
DCED-S125	DCED-S128	DCED-S133A,C&D	DCED-S139	DCED-S149
DCED-S150 DCED-S440A&B	DCED-S151	DCED-S154	DCED-S155	DCED-S168

THESE DRAWINGS ARE AVAILABLE AT THE FOLLOWING WEBPAGES: HTTP: //WWW.CO.DELAWARE.OH.US/ENGINEER/DEVELOPMENT/STDROADWAYDRAWINGS.HTM HTTP://WWW.CO.DELAWARE.OH.US/ENGINEER/DEVELOPMENT/STDSEWERDRAWINGS.HTM CITY OF COLUMBUS STD. DWG.

AA-S121 ODOT STD. DWG. MT-97.10

INDEX MAP

SCALE: 1" = 200'



ENGINEER ADVANCED CIVIL DESIGN, INC. 781 SCIENCE BOULEVARD, SUITE 100 GAHANNA, OH 43230 PHONE (614) 428-7750 CONTACT: THOMAS M. WARNER, P.E.

EMAIL: TWARNER@ADVANCEDCIVILDESIGN.COM

DEVELOPER - APPLICANT **T&R PROPERTIES** 3895 STONERIDGE LANE DUBLIN, OH 43017 PHONE (614) 923-4000 CONTACT: RJ SABATINO

EMAIL: RJSABATINO@TRPROP.COM

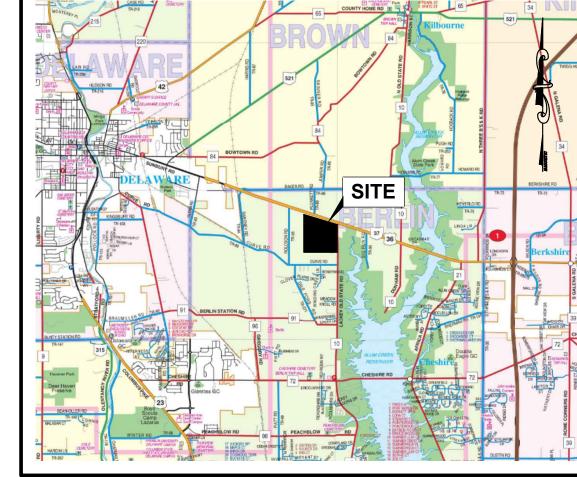


www.oups.org

PROFESSIONAL ENGINEER'S SIGNATURE AND SEAL

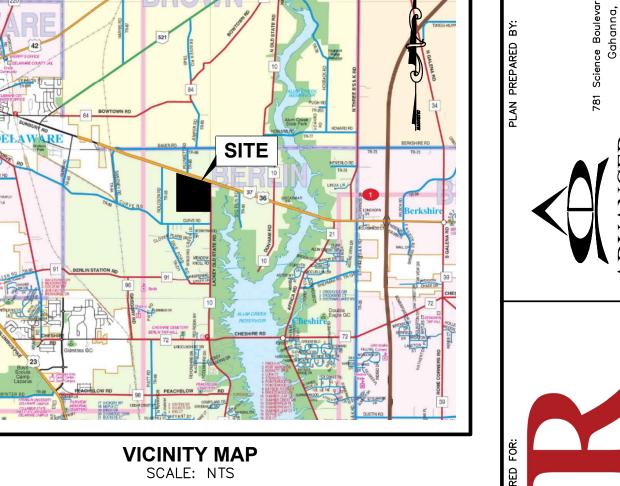


DATE

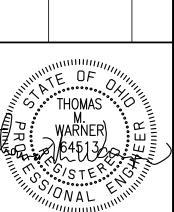


INDEX OF DRAWINGS

IEET NUMBER	SHEET TITLE
1	TITLE SHEET
2	EXISTING CONDITIONS PLAN
3–5	PRELIMINARY PLAT
6-7	SITE DIMENSION PLAN
8	TYPICAL SECTION
9–10	UTILITY PLAN
11-12	GRADING & DRAINAGE PLAN



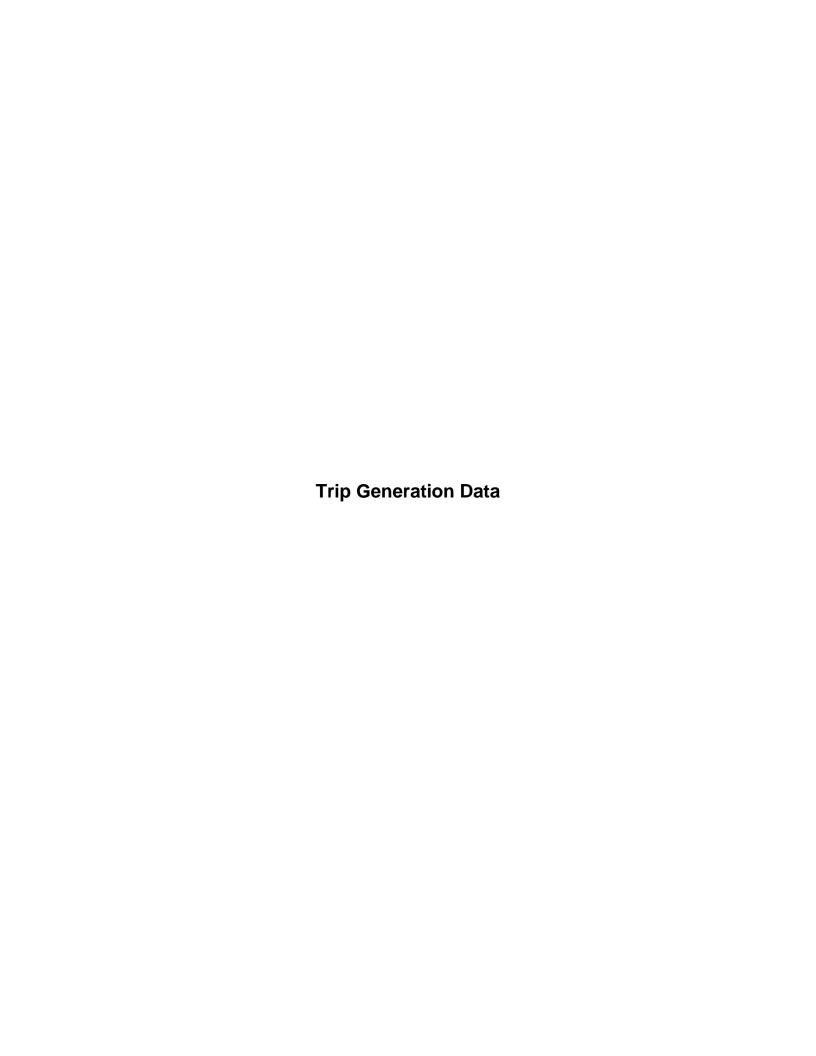
Ō MIXE



Date: 01/03/2022 **Scale:** 1" = 200'

Drawn By: | Checked B **Project Number:** 22-0014-1044

Drawing Number:



Warehousing (150)

Vehicle Trip Ends vs: 1000 Sq. Ft. GFA

On a: Weekday,

Peak Hour of Adjacent Street Traffic, One Hour Between 7 and 9 a.m.

Setting/Location: General Urban/Suburban

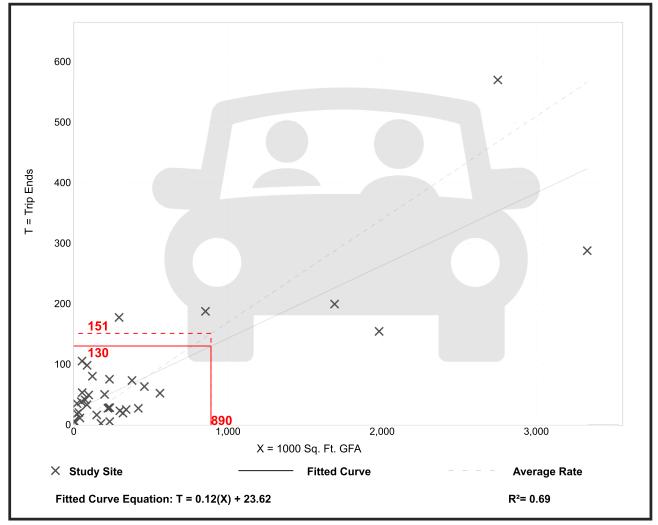
Number of Studies: Avg. 1000 Sq. Ft. GFA: 448

Directional Distribution: 77% entering, 23% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
0.17	0.02 - 1.93	0.19

Data Plot and Equation



Trip Gen Manual, 11th Edition

• Institute of Transportation Engineers

https://itetripgen.org/printGraph 1/1

Warehousing (150)

Vehicle Trip Ends vs: 1000 Sq. Ft. GFA

On a: Weekday,

Peak Hour of Adjacent Street Traffic, One Hour Between 4 and 6 p.m.

Setting/Location: General Urban/Suburban

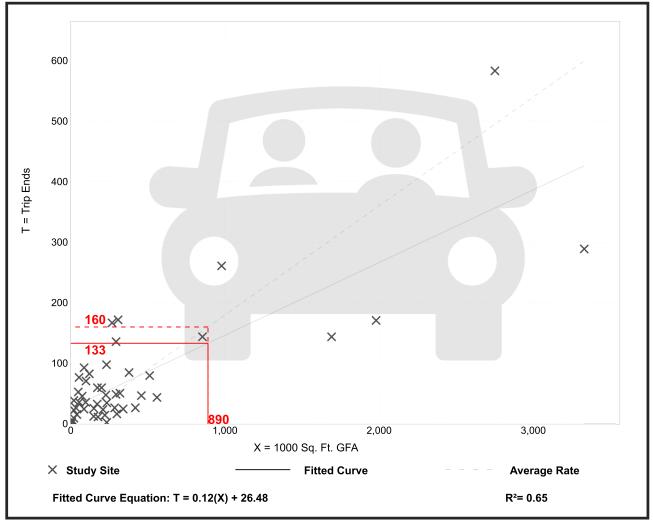
Number of Studies: 49 Avg. 1000 Sq. Ft. GFA: 400

Directional Distribution: 28% entering, 72% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
0.18	0.01 - 1.80	0.18

Data Plot and Equation



Trip Gen Manual, 11th Edition

• Institute of Transportation Engineers

https://itetripgen.org/printGraph 1/1

Multifamily Housing (Low-Rise)

Not Close to Rail Transit (220)

Vehicle Trip Ends vs: Dwelling Units

On a: Weekday,

Peak Hour of Adjacent Street Traffic, One Hour Between 7 and 9 a.m.

Setting/Location: General Urban/Suburban

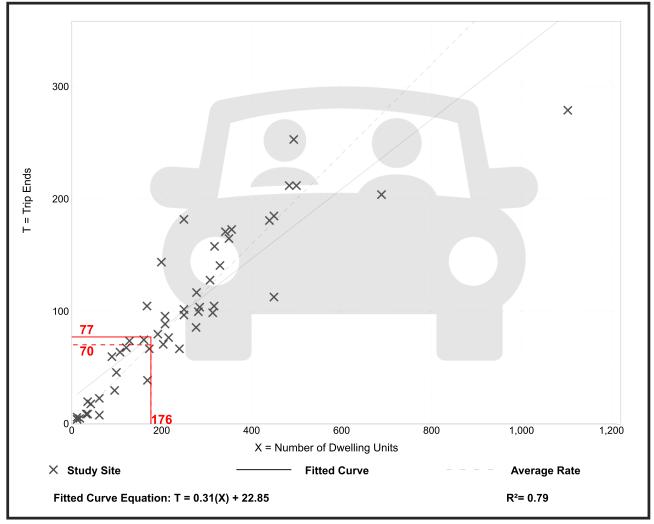
Number of Studies: 49 Avg. Num. of Dwelling Units: 249

Directional Distribution: 24% entering, 76% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.40	0.13 - 0.73	0.12

Data Plot and Equation



Trip Gen Manual, 11.1 Ed

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https://itetripgen.org/printGraph 1/1

Multifamily Housing (Low-Rise)

Not Close to Rail Transit (220)

Vehicle Trip Ends vs: Dwelling Units

On a: Weekday,

Peak Hour of Adjacent Street Traffic, One Hour Between 4 and 6 p.m.

Setting/Location: General Urban/Suburban

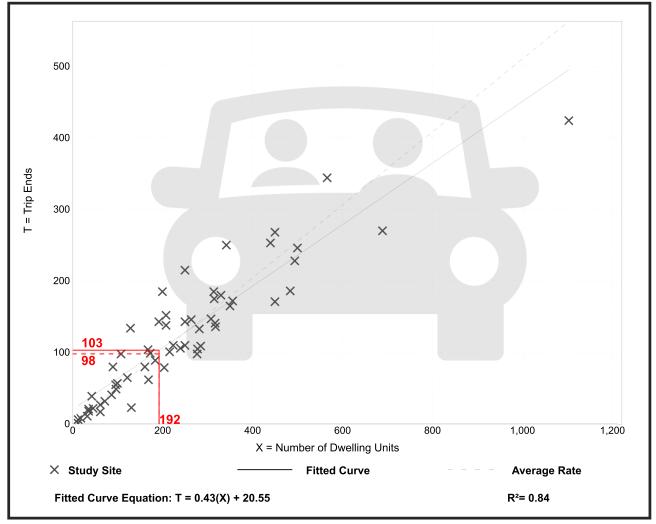
Number of Studies: 59 Avg. Num. of Dwelling Units: 241

Directional Distribution: 63% entering, 37% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.51	0.08 - 1.04	0.15

Data Plot and Equation



Trip Gen Manual, 11.1 Ed

• Institute of Transportation Engineers

https://itetripgen.org/printGraph 1/1

Multifamily Housing (Low-Rise)

Not Close to Rail Transit (220)

Vehicle Trip Ends vs: Dwelling Units

On a: Weekday,

Peak Hour of Adjacent Street Traffic, One Hour Between 7 and 9 a.m.

Setting/Location: General Urban/Suburban

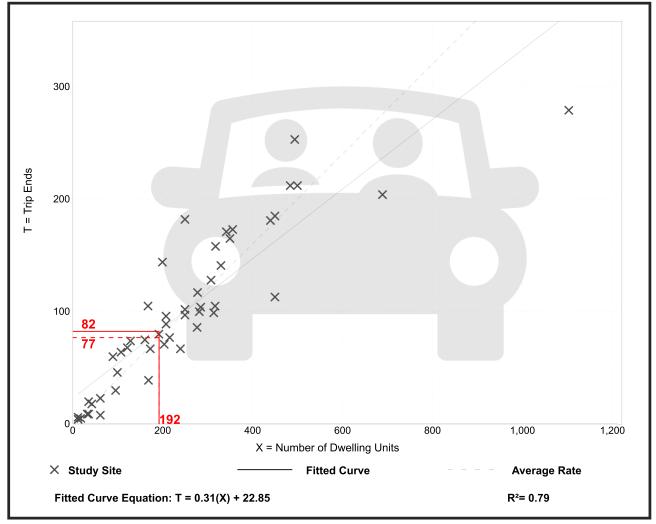
Number of Studies: 49 Avg. Num. of Dwelling Units: 249

Directional Distribution: 24% entering, 76% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.40	0.13 - 0.73	0.12

Data Plot and Equation



Trip Gen Manual, 11.1 Ed

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Multifamily Housing (Low-Rise)

Not Close to Rail Transit (220)

Vehicle Trip Ends vs: Dwelling Units

On a: Weekday,

Peak Hour of Adjacent Street Traffic, One Hour Between 4 and 6 p.m.

Setting/Location: General Urban/Suburban

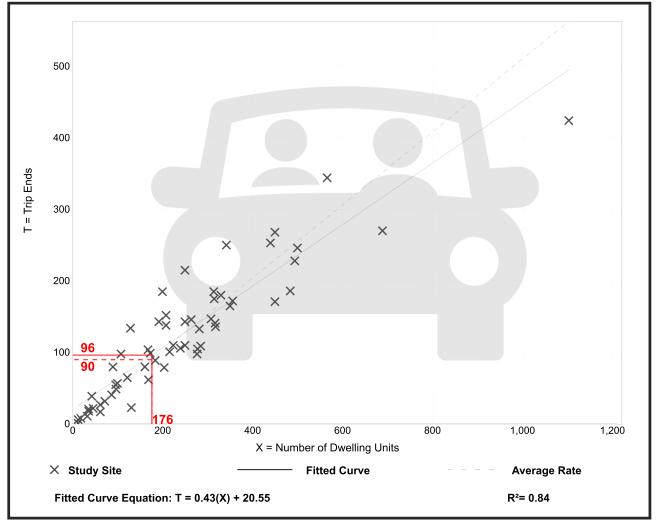
Number of Studies: 59 Avg. Num. of Dwelling Units: 241

Directional Distribution: 63% entering, 37% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.51	0.08 - 1.04	0.15

Data Plot and Equation



Trip Gen Manual, 11.1 Ed

• Institute of Transportation Engineers

https://itetripgen.org/printGraph 1/1

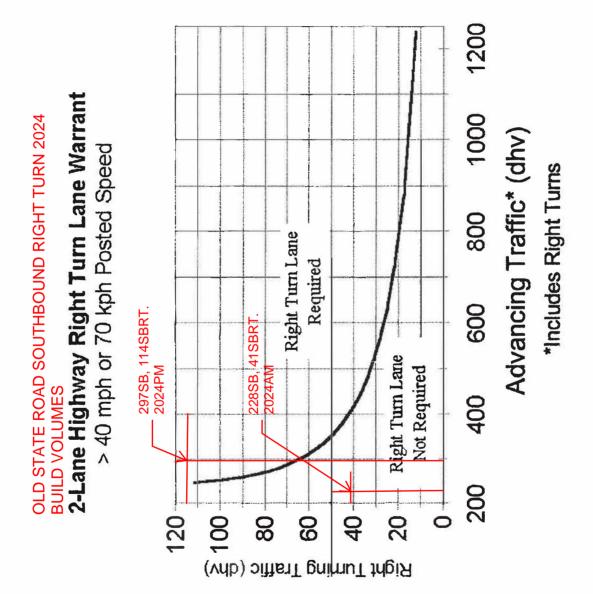




2-LANE RIGHT TURN LANE WARRANT (HIGH SPEED)

401-6b

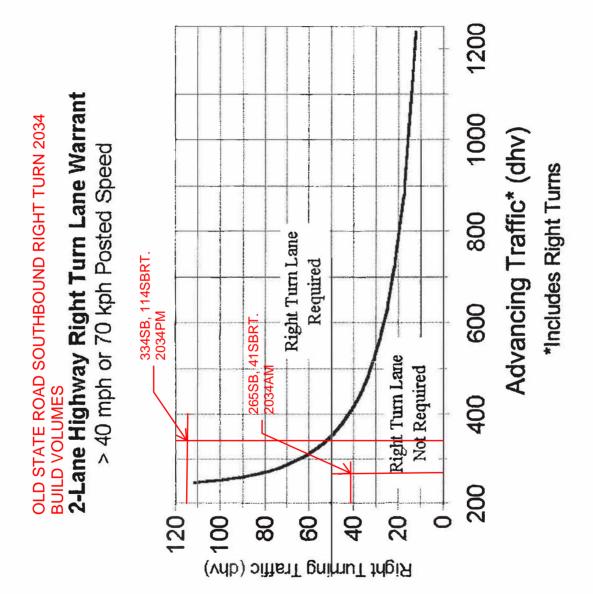
REFERENCE SECTION 401.6.3



2-LANE RIGHT TURN LANE WARRANT (HIGH SPEED)

401-6b

REFERENCE SECTION 401.6.3



Turn Lane Length Computation Worksheet (Based on ODOT's Location Design Manual)

oject Name:	Berlin Mixed Use Development		Intersecti		& Reed Road				
oject Number:			Year:	2034 Build					
mpiled By:	MIM - ACD		Condition	n: Peak Hou	r Design Year				
General	l Information:								
	Approach		Old State	Old State					
	Movement		NBLT	SBRT					
	Peak Hour		PM	PM					
Type of	Traffic Control					•			
	Signalized		NO	NO	NO	NO			
	Unsignalized Stopped Cross	road	NO	NO	NO	NO			
	Unsignalized Through Road		YES	YES	YES	YES			
Design .	Parameters					-			
	Design Speed		55	55					
	Turn Volume (vph)		171	114					
	Approach Volume (vph)		479	334					
	Turn Percentage		36%	34%	#DIV/0!	#DIV/0!			
	High or Low		HIGH	HIGH	#DIV/0!	#DIV/0!			
	Applicable Design Condition	(A, B or C)	Greater of B or C	Greater of B or C	А	А			
	Cycle Length (sec)		60	60	60	60			
	Cycles/Hour		60	60	60	60			
	Average Number of Vehicles	/Cycle	3	2	0	0			
	Storage Length (ft)		150	100	#N/A	#N/A			
Design	Method								
	Condition A	Taper	-	-	50	50			
	(Storage Only)	Storage	-	-	#N/A	#N/A			
	(====0,	Total	-	-	#N/A	#N/A			
	Condition B	Taper	50	50	-	-			
	(High Speed Decel Only)	Decel Length	235	235	-	-			
	,,	Total	285	285	-	-			
	Condition C	Taper	50	50	-	-			
	Condition C (Moderate Speed Deceleration & Storage) Condition C Decel Length Storage			115	-	-			
				100	-	-			
		Total	315	265	-	-			
	Required Storage and/or Dece		265	235	#N/A	#N/A			

315

Note: EB - Eastbound, WB - Westbound, NB - Northbound, SB - Southbound

Source: January 2006 ODOT L& D Manual-Volume I: 401 - 9E, 401 -10E

Required Turn Lane Length, including 50' taper (ft/lane) =

#N/A

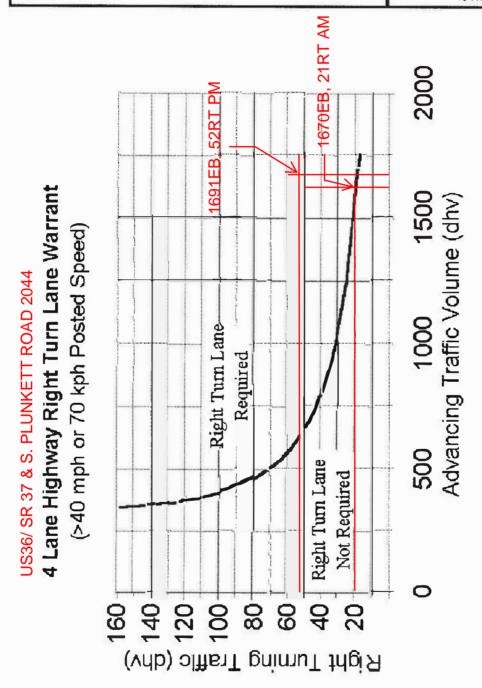
#N/A

285

4-LANE RIGHT TURN LANE WARRANT (HIGH SPEED)

401-6d

REFERENCE SECTION 401.6.3



Turn Lane Length Computation Worksheet (Based on ODOT's Location Design Manual)

ject Name: ject Number:	Berlin Mixed Use Development		Intersecti Year:	2044 Build	R 37 & Plunkett			
mpiled By:	MIM - ACD		Conditior		r Design Year			
пірпец Бу.	WIIW - ACD		Condition	reak nou	T Design Teal			
Genera	I Information:							
	Approach		US 36/ SR 37	US 36/ SR 37	US 36/ SR 37			
	Movement		E R-CUT	WBLT	EBRT			
	Peak Hour		PM	PM	PM			
Type of	Traffic Control							
	Signalized		NO	NO	NO	NO		
	Unsignalized Stopped Crossr	oad	NO	NO) NO			
	Unsignalized Through Road		YES	YES	YES	YES		
Design	Parameters							
	Design Speed		55	55	55			
	Turn Volume (vph)		36	63	52			
	Approach Volume (vph)		1755	1907	1691			
	Turn Percentage		2%	3%	3%	#DIV/0!		
	High or Low		LOW	LOW	LOW	#DIV/0!		
	Applicable Design Condition	(A, B or C)	В	В	В	Α		
	Cycle Length (sec)		60	60	60			
	Cycles/Hour		60	60	60	#DIV/0!		
	Average Number of Vehicles/	Cycle	1	2	1	#DIV/0!		
	Storage Length (ft)		50	100	50	#DIV/0!		
Design	Method							
		Taper	-	-	-	50		
	Condition A (Storage Only)	Storage	-	-	-	#DIV/0!		
	(eterage emy)	Total	-	-	-	#DIV/0!		
	Condition B	Taper	50	50	50	-		
	(High Speed Decel Only)	Decel Length	235	235	235	-		
	, , , , , , , , , , , , , , , , , , , ,	Total	285	285	285	-		
	Condition C	Taper	-	-	-	-		
	(Moderate Speed	Decel Length	-	-	-	-		
	Deceleration & Storage)	Storage	-	-	-	-		
		Total	-	-	-	-		

285

285

Note: EB - Eastbound, WB - Westbound, NB - Northbound, SB - Southbound

Source: January 2006 ODOT L& D Manual-Volume I: 401 - 9E, 401 -10E

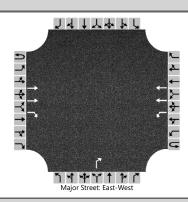
Required Turn Lane Length, including 50' taper (ft/lane) =

285

#DIV/0!



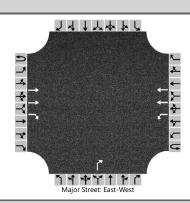
HCS Two-Way Stop-Control Report									
General Information		Site Information							
Analyst	MIM -ACD	Intersection	US36/ SR37 & Old State						
Agency/Co.		Jurisdiction	ODOT D6						
Date Performed	12/27/22	East/West Street	US 36/ SR 37						
Analysis Year	2024	North/South Street	Old State						
Time Analyzed	AM Peak No Build	Peak Hour Factor	0.92						
Intersection Orientation	East-West Analysis Time Period (hrs) 0.25								
Project Description	Berlin Twp Mixed Use Development								



Vehicle Volumes and Adj	ustme	nts														
Approach		Eastb	ound			Westl	oound			North	bound			South	bound	
Movement	U	L	Т	R	U	L	Т	R	U	L	Т	R	U	L	Т	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	2	1	0	1	2	0		0	0	1		0	0	0
Configuration			Т	R		L	Т					R				
Volume (veh/h)			998	85	0	102	732					165				
Percent Heavy Vehicles (%)					3	3						10				
Proportion Time Blocked																
Percent Grade (%)										()					
Right Turn Channelized		Ν	10							Ν	lo					
Median Type Storage				Left	Only							!	9			
Critical and Follow-up H	eadwa	ys														
Base Critical Headway (sec)						4.1						6.9				
Critical Headway (sec)						4.16						7.10				
Base Follow-Up Headway (sec)						2.2						3.3				
Follow-Up Headway (sec)						2.23						3.40				
Delay, Queue Length, an	d Leve	l of Se	ervice													
Flow Rate, v (veh/h)						111						179				
Capacity, c (veh/h)						583						464				
v/c Ratio						0.19						0.39				
95% Queue Length, Q ₉₅ (veh)						0.7						1.8				
Control Delay (s/veh)						12.6						17.6				
Level of Service (LOS)						В						С				
Approach Delay (s/veh)						1	.5		17.6							
Approach LOS						,	4			(<u> </u>					

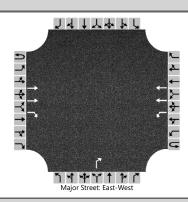
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HCS Two-Way Stop-Control Report										
General Information		Site Information								
Analyst	MIM -ACD	Intersection	US36/ SR37 & Old State							
Agency/Co.		Jurisdiction	ODOT D6							
Date Performed	12/27/22	East/West Street	US 36/ SR 37							
Analysis Year	2024	North/South Street	Old State							
Time Analyzed	PM Peak No Build	Peak Hour Factor	0.92							
Intersection Orientation	East-West	East-West Analysis Time Period (hrs) 0.25								
Project Description	Berlin Twp Mixed Use Development									



Vehicle Volumes and Ad	justme	nts															
Approach	T	Eastk	oound			Westl	bound			North	bound			South	bound		
Movement	U	L	Т	R	U	L	Т	R	U	L	Т	R	U	L	Т	R	
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12	
Number of Lanes	0	0	2	1	0	1	2	0		0	0	1		0	0	0	
Configuration			Т	R		L	Т					R					
Volume (veh/h)			965	71	0	112	1147					257					
Percent Heavy Vehicles (%)					3	3						10					
Proportion Time Blocked																	
Percent Grade (%)											0						
Right Turn Channelized		١	10							١	lo						
Median Type Storage				Left	Only								9				
Critical and Follow-up H	eadwa	ys															
Base Critical Headway (sec)						4.1						6.9					
Critical Headway (sec)						4.16						7.10					
Base Follow-Up Headway (sec)						2.2						3.3					
Follow-Up Headway (sec)						2.23						3.40					
Delay, Queue Length, an	d Leve	l of S	ervice														
Flow Rate, v (veh/h)						122						279					
Capacity, c (veh/h)						610						477					
v/c Ratio						0.20						0.59					
95% Queue Length, Q ₉₅ (veh)						0.7						3.7					
Control Delay (s/veh)						12.4						22.6					
Level of Service (LOS)						В						С					
Approach Delay (s/veh)						1	.1			22	2.6						
Approach LOS						,	A				С						

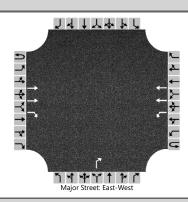
HCS Two-Way Stop-Control Report										
General Information		Site Information								
Analyst	MIM -ACD	Intersection	US36/ SR37 & Old State							
Agency/Co.		Jurisdiction	ODOT D6							
Date Performed	12/27/22	East/West Street	US 36/ SR 37							
Analysis Year	2044	North/South Street	Old State							
Time Analyzed	AM Peak No Build	Peak Hour Factor	0.92							
Intersection Orientation	East-West Analysis Time Period (hrs) 0.25									
Project Description	Berlin Twp Mixed Use Development									



Vehicle Volumes and Adj	ustme	nts														
Approach		Eastk	ound			Westl	oound			North	bound			South	bound	
Movement	U	L	Т	R	U	L	Т	R	U	L	Т	R	U	L	Т	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	2	1	0	1	2	0		0	0	1		0	0	0
Configuration			Т	R		L	Т					R				
Volume (veh/h)			1510	123	0	146	1107					238				
Percent Heavy Vehicles (%)					3	3						10				
Proportion Time Blocked																
Percent Grade (%)										()					
Right Turn Channelized		N	10							Ν	lo					
Median Type Storage				Left	Only							!	9			
Critical and Follow-up H	eadwa	ys														
Base Critical Headway (sec)						4.1						6.9				
Critical Headway (sec)						4.16						7.10				
Base Follow-Up Headway (sec)						2.2						3.3				
Follow-Up Headway (sec)						2.23						3.40				
Delay, Queue Length, an	d Leve	l of S	ervice													
Flow Rate, v (veh/h)	Τ					159						259				
Capacity, c (veh/h)						342						302				
v/c Ratio						0.46						0.86				
95% Queue Length, Q ₉₅ (veh)						2.4						7.5				
Control Delay (s/veh)						24.3						60.0				
Level of Service (LOS)						С						F				
Approach Delay (s/veh)						2	.8		60.0							
Approach LOS						,	4				=					

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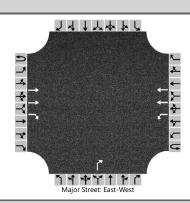
HCS Two-Way Stop-Control Report									
General Information		Site Information							
Analyst	MIM -ACD	Intersection	US36/ SR37 & Old State						
Agency/Co.		Jurisdiction	ODOT D6						
Date Performed	12/27/22	East/West Street	US 36/ SR 37						
Analysis Year	2044	North/South Street	Old State						
Time Analyzed	PM Peak No Build	Peak Hour Factor	0.92						
Intersection Orientation	East-West Analysis Time Period (hrs) 0.25								
Project Description	Berlin Twp Mixed Use Development								



Vehicle Volumes and Adj	ustme	nts														
Approach		Eastk	ound			Westl	oound			North	bound			South	bound	
Movement	U	L	Т	R	U	L	Т	R	U	L	Т	R	U	L	Т	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	2	1	0	1	2	0		0	0	1		0	0	0
Configuration			Т	R		L	Т					R				
Volume (veh/h)			1496	102	0	162	1777					370				
Percent Heavy Vehicles (%)					3	3						10				
Proportion Time Blocked																
Percent Grade (%)										()					
Right Turn Channelized		١	10							Ν	lo					
Median Type Storage				Left	Only								9			
Critical and Follow-up H	eadwa	ys														
Base Critical Headway (sec)						4.1						6.9				
Critical Headway (sec)						4.16						7.10				
Base Follow-Up Headway (sec)						2.2						3.3				
Follow-Up Headway (sec)						2.23						3.40				
Delay, Queue Length, an	d Leve	l of S	ervice													
Flow Rate, v (veh/h)						176						402				
Capacity, c (veh/h)						354						305				
v/c Ratio						0.50						1.32				
95% Queue Length, Q ₉₅ (veh)						2.7						19.8				
Control Delay (s/veh)						24.8						198.3				
Level of Service (LOS)						С						F				
Approach Delay (s/veh)		2.1 198.3														
Approach LOS						,	4				=					

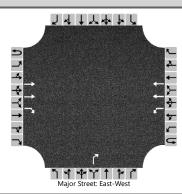
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	HCS Two-Way Stop	-Control Report	
General Information		Site Information	
Analyst	MIM -ACD	Intersection	US36/ SR37 & Old State
Agency/Co.		Jurisdiction	ODOT D6
Date Performed	12/27/22	East/West Street	US 36/ SR 37
Analysis Year	2024	North/South Street	Old State
Time Analyzed	AM Peak Build	Peak Hour Factor	0.92
Intersection Orientation	East-West	Analysis Time Period (hrs)	0.25
Project Description	Berlin Twp Mixed Use Development		



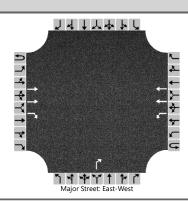
Vehicle Volumes and Ad	justme	nts														
Approach	T	Eastk	oound			Westl	bound			North	bound			South	bound	
Movement	U	L	Т	R	U	L	Т	R	U	L	Т	R	U	L	Т	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	2	1	0	1	2	0		0	0	1		0	0	0
Configuration			Т	R		L	Т					R				
Volume (veh/h)			1020	101	0	141	784					279				
Percent Heavy Vehicles (%)					3	3						10				
Proportion Time Blocked																
Percent Grade (%)											0					
Right Turn Channelized		١	10							١	lo					
Median Type Storage				Left	Only								9			
Critical and Follow-up H	eadwa	ys														
Base Critical Headway (sec)						4.1						6.9				
Critical Headway (sec)						4.16						7.10				
Base Follow-Up Headway (sec)						2.2						3.3				
Follow-Up Headway (sec)						2.23						3.40				
Delay, Queue Length, an	d Leve	l of S	ervice													
Flow Rate, v (veh/h)	T					153						303				
Capacity, c (veh/h)						563						456				
v/c Ratio						0.27						0.67				
95% Queue Length, Q ₉₅ (veh)						1.1						4.8				
Control Delay (s/veh)						13.8						27.2				
Level of Service (LOS)						В						D				
Approach Delay (s/veh)						2	.1			2	7.2					
Approach LOS						,	A				D					

	HCS Two-Way Stop	-Control Report	
General Information		Site Information	
Analyst	MIM -ACD	Intersection	US36/ SR37 & Old State
Agency/Co.		Jurisdiction	ODOT D6
Date Performed	12/27/22	East/West Street	US 36/ SR 37
Analysis Year	2024	North/South Street	Old State
Time Analyzed	PM Peak Build	Peak Hour Factor	0.92
Intersection Orientation	East-West	Analysis Time Period (hrs)	0.25
Project Description	Berlin Twp Mixed Use Development		



Vehicle Volumes and Ad	justme	nts														
Approach		Eastl	oound			Westl	bound			North	bound			South	bound	
Movement	U	L	Т	R	U	L	Т	R	U	L	Т	R	U	L	Т	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	2	1	0	1	2	0		0	0	1		0	0	0
Configuration			Т	R		L	Т					R				
Volume (veh/h)			1045	112	0	248	1241					358				
Percent Heavy Vehicles (%)					3	3						10				
Proportion Time Blocked																
Percent Grade (%)											0	•				
Right Turn Channelized		١	No.							١	lo					
Median Type Storage				Left	Only								9			
Critical and Follow-up H	leadwa	ys														
Base Critical Headway (sec)						4.1						6.9				
Critical Headway (sec)						4.16						7.10				
Base Follow-Up Headway (sec)						2.2						3.3				
Follow-Up Headway (sec)						2.23						3.40				
Delay, Queue Length, an	d Leve	l of S	ervice													
Flow Rate, v (veh/h)	T					270						389				
Capacity, c (veh/h)						543						446				
v/c Ratio						0.50						0.87				
95% Queue Length, Q ₉₅ (veh)						2.7						9.0				
Control Delay (s/veh)						18.0						47.4				
Level of Service (LOS)						С		Ì				Е	Ì		Ì	
Approach Delay (s/veh)						3	.0			4	7.4					
Approach LOS						,	A				E					

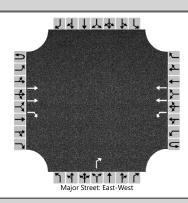
	HCS Two-Way Stop	-Control Report	
General Information		Site Information	
Analyst	MIM -ACD	Intersection	US36/ SR37 & Old State
Agency/Co.		Jurisdiction	ODOT D6
Date Performed	12/27/22	East/West Street	US 36/ SR 37
Analysis Year	2044	North/South Street	Old State
Time Analyzed	AM Peak Build	Peak Hour Factor	0.92
Intersection Orientation	East-West	Analysis Time Period (hrs)	0.25
Project Description	Berlin Twp Mixed Use Development		



Vehicle Volumes and Ad	justme	nts														
Approach		Eastk	oound			Westl	oound			North	bound			South	bound	
Movement	U	L	Т	R	U	L	Т	R	U	L	Т	R	U	L	Т	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	2	1	0	1	2	0		0	0	1		0	0	0
Configuration			Т	R		L	Т					R				
Volume (veh/h)			1532	139	0	195	1159					352				
Percent Heavy Vehicles (%)					3	3						10				
Proportion Time Blocked																
Percent Grade (%)										(0					
Right Turn Channelized		١	10							Ν	lo					
Median Type Storage				Left	Only							!	9			
Critical and Follow-up H	eadwa	ys														
Base Critical Headway (sec)						4.1						6.9				
Critical Headway (sec)						4.16						7.10				
Base Follow-Up Headway (sec)						2.2						3.3				
Follow-Up Headway (sec)						2.23						3.40				
Delay, Queue Length, an	d Leve	l of S	ervice													
Flow Rate, v (veh/h)	T					212						383				
Capacity, c (veh/h)						330						296				
v/c Ratio						0.64						1.29				
95% Queue Length, Q ₉₅ (veh)						4.2						18.6				
Control Delay (s/veh)						33.6						189.8				
Level of Service (LOS)						D						F				
Approach Delay (s/veh)		4.8								18	9.8					
Approach LOS						,	Ą				F					

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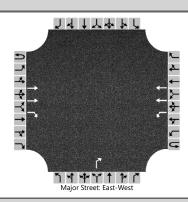
	HCS Two-Way Stop	-Control Report	
General Information		Site Information	
Analyst	MIM -ACD	Intersection	US36/ SR37 & Old State
Agency/Co.		Jurisdiction	ODOT D6
Date Performed	10/20/2022	East/West Street	US 36/ SR 37
Analysis Year	2044	North/South Street	Old State
Time Analyzed	PM Peak	Peak Hour Factor	0.92
Intersection Orientation	East-West	Analysis Time Period (hrs)	0.25
Project Description	Berlin Twp Mixed Use Development		



Approach		Eastk	oound			Westl	oound			North	bound			South	bound	
Movement	U	L	Т	R	U	L	T	R	U	L	Т	R	U	L	Т	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	2	1	0	1	2	0		0	0	1		0	0	0
Configuration			Т	R		L	Т					R				
Volume (veh/h)			1576	143	0	235	1871					471				
Percent Heavy Vehicles (%)					3	3						10				
Proportion Time Blocked																
Percent Grade (%)										()					
Right Turn Channelized		١	10							N	o					
Median Type Storage				Left	Only							9	9			
Critical and Follow-up H	eadwa	ys														
Base Critical Headway (sec)						4.1						6.9				
Critical Headway (sec)						4.16						7.10				
Base Follow-Up Headway (sec)						2.2						3.3				
Follow-Up Headway (sec)						2.23						3.40				
Delay, Queue Length, an	d Leve	l of S	ervice													
Flow Rate, v (veh/h)						255						512				
Capacity, c (veh/h)						315						285				
v/c Ratio						0.81						1.80				
95% Queue Length, Q ₉₅ (veh)						6.8						34.0				
Control Delay (s/veh)						51.4						402.1				
Level of Service (LOS)						F						F				
Approach Delay (s/veh)		5.7 402.1														
Approach LOS						,	4			ı	=					

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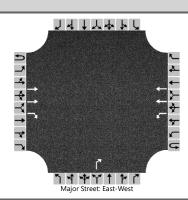
	HCS Two-Way Stop	-Control Report	
General Information		Site Information	
Analyst	MIM -ACD	Intersection	US36/ SR37 & S. Plunkett (Site Access)
Agency/Co.		Jurisdiction	ODOT D6
Date Performed	12/27/2022	East/West Street	US 36/ SR 37
Analysis Year	2024	North/South Street	S. Plunkett
Time Analyzed	AM Peak Build	Peak Hour Factor	0.92
Intersection Orientation	East-West	Analysis Time Period (hrs)	0.25
Project Description	Berlin Twp Mixed Use Development		



Vehicle Volumes and Adj	ustme	nts														
Approach		Eastk	ound			Westl	oound			North	bound			South	bound	
Movement	U	L	Т	R	U	L	Т	R	U	L	Т	R	U	L	Т	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	2	1	0	1	2	0		0	0	1		0	0	0
Configuration			Т	R		L	Т					R				
Volume (veh/h)			1099	21	0	14	783					35				
Percent Heavy Vehicles (%)					3	3						10				
Proportion Time Blocked																
Percent Grade (%)										()					
Right Turn Channelized		Ν	10							Ν	lo					
Median Type Storage				Left	Only								5			
Critical and Follow-up H	eadwa	ys														
Base Critical Headway (sec)						4.1						6.9				
Critical Headway (sec)						4.16						7.10				
Base Follow-Up Headway (sec)						2.2						3.3				
Follow-Up Headway (sec)						2.23						3.40				
Delay, Queue Length, an	d Leve	l of S	ervice													
Flow Rate, v (veh/h)						15						38				
Capacity, c (veh/h)						563						427				
v/c Ratio						0.03						0.09				
95% Queue Length, Q ₉₅ (veh)						0.1						0.3				
Control Delay (s/veh)						11.6						14.3				
Level of Service (LOS)						В						В				
Approach Delay (s/veh)		0.2 14.3														
Approach LOS						,	Α				В					

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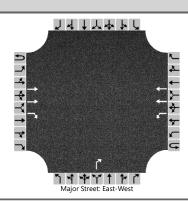
	HCS Two-Way Stop	-Control Report	
General Information		Site Information	
Analyst	MIM -ACD	Intersection	US36/ SR37 & S. Plunkett (Site Access)
Agency/Co.		Jurisdiction	ODOT D6
Date Performed	10/20/2022	East/West Street	US 36/ SR 37
Analysis Year	2024	North/South Street	S. Plunkett
Time Analyzed	PM Peak	Peak Hour Factor	0.92
Intersection Orientation	East-West	Analysis Time Period (hrs)	0.25
Project Description	Berlin Twp Mixed Use Development		



Vehicle Volumes and Ad	justme	nts														
Approach		Eastk	ound			Westl	oound			North	bound			South	bound	
Movement	U	L	Т	R	U	L	Т	R	U	L	Т	R	U	L	Т	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	2	1	0	1	2	0		0	0	1		0	0	0
Configuration			Т	R		L	Т					R				
Volume (veh/h)			1077	52	0	63	1214					116				
Percent Heavy Vehicles (%)					3	3						10				
Proportion Time Blocked																
Percent Grade (%)											0					
Right Turn Channelized		١	10							١	lo					
Median Type Storage				Left	Only							!	5			
Critical and Follow-up H	eadwa	ys														
Base Critical Headway (sec)	T					4.1						6.9				
Critical Headway (sec)						4.16						7.10				
Base Follow-Up Headway (sec)						2.2						3.3				
Follow-Up Headway (sec)						2.23						3.40				
Delay, Queue Length, an	d Leve	l of S	ervice													
Flow Rate, v (veh/h)	T					68						126				
Capacity, c (veh/h)						558						435				
v/c Ratio						0.12						0.29				
95% Queue Length, Q ₉₅ (veh)						0.4						1.2				
Control Delay (s/veh)						12.3						16.6				
Level of Service (LOS)		Ì			Ì	В						С	Ì			
Approach Delay (s/veh)		0.6							16.6							
Approach LOS		A							С							

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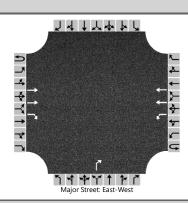
	HCS Two-Way Stop	-Control Report	
General Information		Site Information	
Analyst	MIM -ACD	Intersection	US36/ SR37 & S. Plunkett (Site Access)
Agency/Co.		Jurisdiction	ODOT D6
Date Performed	12/27/2022	East/West Street	US 36/ SR 37
Analysis Year	2044	North/South Street	S. Plunkett
Time Analyzed	AM Peak Build	Peak Hour Factor	0.92
Intersection Orientation	East-West	Analysis Time Period (hrs)	0.25
Project Description	Berlin Twp Mixed Use Development		



Vehicle Volumes and Ad	justme	nts														
Approach		Eastk	ound			Westl	oound			North	bound			South	bound	
Movement	U	L	Т	R	U	L	Т	R	U	L	Т	R	U	L	Т	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	2	1	0	1	2	0		0	0	1		0	0	0
Configuration			Т	R		L	Т					R				
Volume (veh/h)			1649	21	0	14	1158					35				
Percent Heavy Vehicles (%)					3	3						10				
Proportion Time Blocked																
Percent Grade (%)										(0					
Right Turn Channelized		١	10							Ν	lo					
Median Type Storage				Left	Only								5			
Critical and Follow-up H	eadwa	ys														
Base Critical Headway (sec)						4.1						6.9				
Critical Headway (sec)						4.16						7.10				
Base Follow-Up Headway (sec)						2.2						3.3				
Follow-Up Headway (sec)						2.23						3.40				
Delay, Queue Length, an	d Leve	l of S	ervice													
Flow Rate, v (veh/h)	T					15						38				
Capacity, c (veh/h)						330						268				
v/c Ratio						0.05						0.14				
95% Queue Length, Q ₉₅ (veh)						0.1						0.5				
Control Delay (s/veh)						16.4						20.6				
Level of Service (LOS)						С						С				
Approach Delay (s/veh)					0.2			20.6								
Approach LOS						,	Ą			(С					

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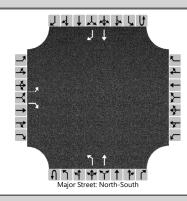
	HCS Two-Way Stop	-Control Report	
General Information		Site Information	
Analyst	MIM -ACD	Intersection	US36/ SR37 & S. Plunkett (Site Access)
Agency/Co.		Jurisdiction	ODOT D6
Date Performed	10/20/2022	East/West Street	US 36/ SR 37
Analysis Year	2044	North/South Street	S. Plunkett
Time Analyzed	PM Peak	Peak Hour Factor	0.92
Intersection Orientation	East-West	Analysis Time Period (hrs)	0.25
Project Description	Berlin Twp Mixed Use Development		



Vehicle Volumes and Ad	justme	nts														
Approach		Eastk	oound			Westl	oound			North	bound			South	bound	
Movement	U	L	Т	R	U	L	Т	R	U	L	Т	R	U	L	Т	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	2	1	0	1	2	0		0	0	1		0	0	0
Configuration			Т	R		L	Т					R				
Volume (veh/h)			1598	52	0	63	1844					116				
Percent Heavy Vehicles (%)					3	3						10				
Proportion Time Blocked																
Percent Grade (%)										(0					
Right Turn Channelized		١	10							Ν	lo					
Median Type Storage				Left	Only								5			
Critical and Follow-up H	leadwa	ys														
Base Critical Headway (sec)						4.1						6.9				
Critical Headway (sec)						4.16						7.10				
Base Follow-Up Headway (sec)						2.2						3.3				
Follow-Up Headway (sec)						2.23						3.40				
Delay, Queue Length, an	d Leve	l of S	ervice													
Flow Rate, v (veh/h)	T					68						126				
Capacity, c (veh/h)						337						280				
v/c Ratio						0.20						0.45				
95% Queue Length, Q ₉₅ (veh)						0.7						2.2				
Control Delay (s/veh)						18.4						28.0				
Level of Service (LOS)						С						D				
Approach Delay (s/veh)					0.6				28.0							
Approach LOS						,	4			ı	D .					

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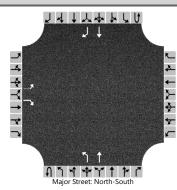
	HCS Two-Way Stop	-Control Report	
General Information		Site Information	
Analyst	MIM - ACD	Intersection	Old State Road & Reed Road
Agency/Co.		Jurisdiction	
Date Performed	12/22/2022	East/West Street	Reed Road
Analysis Year	2024	North/South Street	Old State Road
Time Analyzed	AM Peak Build	Peak Hour Factor	0.92
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25
Project Description	Berlin Mixed Use Development		



Vehicle Volumes and Adj	ustme	nts														
Approach		Eastb	ound			Westl	oound			North	bound			South	bound	
Movement	U	L	Т	R	U	L	Т	R	U	L	Т	R	U	L	Т	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		1	0	1		0	0	0	0	1	1	0	0	0	1	1
Configuration		L		R						L	Т				Т	R
Volume (veh/h)		114		129						36	165				187	41
Percent Heavy Vehicles (%)		3		3						3						
Proportion Time Blocked																
Percent Grade (%)		(0													
Right Turn Channelized		Ν	10											١	10	
Median Type Storage				Undi	vided											
Critical and Follow-up H	eadwa	ys														
Base Critical Headway (sec)		7.1		6.2						4.1						
Critical Headway (sec)		6.43		6.23						4.13						
Base Follow-Up Headway (sec)		3.5		3.3						2.2						
Follow-Up Headway (sec)		3.53		3.33						2.23						
Delay, Queue Length, an	d Leve	l of S	ervice													
Flow Rate, v (veh/h)	T	124		140						39						
Capacity, c (veh/h)		540		835						1312						
v/c Ratio		0.23		0.17						0.03						
95% Queue Length, Q ₉₅ (veh)		0.9		0.6						0.1						
Control Delay (s/veh)		13.6		10.2						7.8						
Level of Service (LOS)		В		В						Α						
Approach Delay (s/veh)	11.8							•		1	.4	-		•		
Approach LOS		В								,	4					

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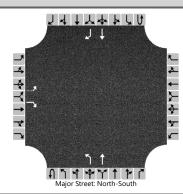
	HCS Two-Way Stop	-Control Report	
General Information		Site Information	
Analyst	MIM - ACD	Intersection	Old State Road & Reed Road
Agency/Co.		Jurisdiction	
Date Performed	12/22/2022	East/West Street	Reed Road
Analysis Year	2024	North/South Street	Old State Road
Time Analyzed	PM Peak Build	Peak Hour Factor	0.92
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25
Project Description	Berlin Mixed Use Development		



Approach		Eastb	ound			Westl	oound		Northbound					South	bound	
Movement	U	L	Т	R	U	L	Т	R	U	L	Т	R	U	L	Т	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		1	0	1		0	0	0	0	1	1	0	0	0	1	1
Configuration		L		R						L	Т				Т	R
Volume (veh/h)		101		67						171	257				183	114
Percent Heavy Vehicles (%)		3		3						3						
Proportion Time Blocked																
Percent Grade (%)			0													
Right Turn Channelized		Ν	lo						No					lo		
Median Type Storage				Undi	vided											
Critical and Follow-up H	eadwa	ys														
Base Critical Headway (sec)	T	7.1		6.2						4.1						
Critical Headway (sec)		6.43		6.23						4.13						
Base Follow-Up Headway (sec)		3.5		3.3						2.2						
Follow-Up Headway (sec)		3.53		3.33						2.23						
Delay, Queue Length, an	d Leve	l of S	ervice	•												
Flow Rate, v (veh/h)		110		73						186						
Capacity, c (veh/h)		280		840						1231						
v/c Ratio		0.39		0.09						0.15						
95% Queue Length, Q ₉₅ (veh)		1.8		0.3						0.5						
Control Delay (s/veh)		25.9		9.7						8.4						
Level of Service (LOS)		D		А						Α						
Approach Delay (s/veh)		19.5					-		3.4			•				
Approach LOS		(С						A							

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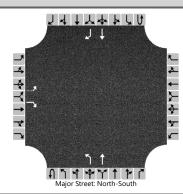
	HCS Two-Way Stop	-Control Report	
General Information		Site Information	
Analyst	MIM - ACD	Intersection	Old State Road & Reed Road
Agency/Co.		Jurisdiction	
Date Performed	12/22/2022	East/West Street	Reed Road
Analysis Year	2044	North/South Street	Old State Road
Time Analyzed	AM Peak Build	Peak Hour Factor	0.92
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25
Project Description	Berlin Mixed Use Development		



Vehicle Volumes and Ad	justme	nts														
Approach		Eastb	ound			Westl	oound			North	bound			South	bound	
Movement	U	L	Т	R	U	L	Т	R	U	L	Т	R	U	L	Т	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		1	0	1		0	0	0	0	1	1	0	0	0	1	1
Configuration		L		R						L	Т				Т	R
Volume (veh/h)		114		129						36	238				269	41
Percent Heavy Vehicles (%)		3		3						3						
Proportion Time Blocked																
Percent Grade (%)			0													
Right Turn Channelized		N	10											N	10	
Median Type Storage				Undi	vided											
Critical and Follow-up H	eadwa	ys														
Base Critical Headway (sec)		7.1		6.2						4.1						
Critical Headway (sec)		6.43		6.23						4.13						
Base Follow-Up Headway (sec)		3.5		3.3						2.2						
Follow-Up Headway (sec)		3.53		3.33						2.23						
Delay, Queue Length, an	d Leve	l of S	ervice	•												
Flow Rate, v (veh/h)	T	124		140						39						
Capacity, c (veh/h)		430		744						1217						
v/c Ratio		0.29		0.19						0.03						
95% Queue Length, Q ₉₅ (veh)		1.2		0.7						0.1						
Control Delay (s/veh)		16.7		11.0						8.1						
Level of Service (LOS)		С		В						А						
Approach Delay (s/veh)		13	3.7						1.1							
Approach LOS			В							,	4					

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HCS Two-Way Stop-Control Report									
General Information		Site Information							
Analyst	MIM - ACD	Intersection	Old State Road & Reed Road						
Agency/Co.		Jurisdiction							
Date Performed	12/22/2022	East/West Street	Reed Road						
Analysis Year	2044	North/South Street	Old State Road						
Time Analyzed	PM Peak Build	Peak Hour Factor	0.92						
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25						
Project Description	Berlin Mixed Use Development								



Vehicle Volumes and Ad	justme	nts														
Approach		Eastbound			Westbound			Northbound			Southbound					
Movement	U	L	Т	R	U	L	Т	R	U	L	Т	R	U	L	Т	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		1	0	1		0	0	0	0	1	1	0	0	0	1	1
Configuration		L		R						L	Т				Т	R
Volume (veh/h)		101		67						171	370				264	114
Percent Heavy Vehicles (%)		3		3						3						
Proportion Time Blocked																
Percent Grade (%)		0														
Right Turn Channelized		No												No		
Median Type Storage		Undivided														
Critical and Follow-up H	eadwa	ys														
Base Critical Headway (sec)	Τ	7.1		6.2						4.1						
Critical Headway (sec)		6.43		6.23						4.13						
Base Follow-Up Headway (sec)		3.5		3.3						2.2						
Follow-Up Headway (sec)		3.53		3.33						2.23						
Delay, Queue Length, an	d Leve	l of S	ervice													
Flow Rate, v (veh/h)	Т	110		73						186						
Capacity, c (veh/h)		207		750						1143						
v/c Ratio		0.53		0.10						0.16						
95% Queue Length, Q ₉₅ (veh)		2.8		0.3						0.6						
Control Delay (s/veh)		40.6		10.3						8.8						
Level of Service (LOS)		Е		В						А						
Approach Delay (s/veh)		28.5						2.8								
Approach LOS		D							А							

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LOCATION OF SCHOOLS, PARKS & OTHER PUBLIC FACILITIES WITHIN ONE (1) MILE



Drawn By: Checked B

Project Number:

22-0014-1044 Drawing Number:

BOND/LETTER of CREDIT STATEMENT

Bond or Irrevocable Letter of Credit Assurance Statement Concerning Public Services Facilities Completion

T & R Properties will comply with item 9.0 of the application. Please advise them of process, timing, and typical protocols Berlin Township utilizes.

T & R Properties is a large Real Estate Development firm located in Delaware, Ohio.

They have developed residential, commercial, industrial, and retail projects in many states including Ohio, Pennsylvania and Florida.

Please contact the following person with the current protocols to be met for 9.0 in the application packet:

R.J. Sabatino 3093 Stoneridge Lane Dublin, Ohio 43017 614-923-4000 rjsabatino@trprop.com

CONSTRUCTION SCHEDULE STATEMENT

Project Schedule

1. Development & Zoning: Summer 2022 - Winter 2023

2. Final Building and

Construction Documents: Winter 2023 – Summer 2023

3. Construction Start: Summer 2023

4. Berlin Mixed Use Development will be Constructed Continuously in One Phase

UTILITY LETTERS



Berlin Township Fire Department Fire Prevention Bureau

2708 Lackey Old State Road Delaware, Ohio 43015 (740) 548-6031

Fire Chief AJ Miller Lt. Craig A. Hall, Fire Prevention

December 28, 2022

Taylor Mann Advanced Civil Designs, Inc. 781 Science Blvd. # 100 Gahana, Ohio, 43230

I am writing in response to your request regarding the proposed land use development know as Reed Parkway Development. This Section of land is located in Berlin Township and Berlin Township Fire Department does provide fire protection for this area. Berlin Twp. FD has reviewed the **Preliminary Project Drawings**, that were forward for review.

The following drawings, have passed my review for both the Industrial and Mix use plans: With one exception, under the Industrial & Mixed, use hydrant plan? I need to make sure that all hydrants will flow 1000 GPM if a structure fire was to occur? Please provide me with that documentation? I'm not sure it will, due to not being a lopped system.

- 1. Fire Truck turning radius
- 2. Hydrant spacing, FDC and water line size
- 3. Preliminary utility's

We appreciate the opportunity to work with you in the future and thank you for your interest in Berlin Township. If we can be of any further assistance please do not hesitate to call or visit our 2708 Lackey Old State location.

Respectfully,

Lt. Craig A. Hall, CFSI



Delaware County

Regional Sewer District

Director/Sanitary Engineer Tiffany M. Maag, P.E.

sent via email: tmann@advancedcivildesign.com

November 17, 2022

Thomas M. Warner Advanced Civil Design, Inc. 781 Science Boulevard, Suite 100 Gahanna, Ohio 43230

Re: Serviceability Request

Berlin Business Park

Parcels: 41821002005000, 41821002004000, 41821002002000

Dear Mr. Warner:

Pursuant to your request dated November 16, 2022, for a sanitary sewer service letter for the aforementioned parcels, we offer the following conditional sanitary sewer availability:

Availability

The Delaware County Sanitary Engineer's Office can confirm that public sanitary sewer will be available to serve the above referenced parcels provided that the development obtain sanitary service via the proposed 18" sanitary sewer on parcel 41821002002001 adjacent to the subject parcel. Extensions from the existing sanitary sewer will be necessary to provide service to the proposed development.

Capacity

Capacity is available to serve the proposed development. Capacity for the proposed development **is not reserved** until such time that all the requirements for the sewer extension or commercial tap permit have been fulfilled. Sewer capacity is dynamic and subject to decrease pending ongoing development.

If you should have any questions or concerns about this correspondence, please feel free to contact me.

Sincerely,

Kelly Thiel Staff Engineer III

cc: Correspondence File

SUBURBAN NATURAL GAS COMPANY

ESTABLISHED 1882

211 FRONT STREET, P.O. BOX 130 CYGNET, OHIO 43413-0130 (419) 655-2345 FAX: (419) 655-2274 2626 LEWIS CENTER ROAD LEWIS CENTER, OHIO 43035-9206 (740) 548-2450 FAX: (740) 549-4939

November 21, 2022

Thomas M. Warner Advanced Civil Design, Inc. 781 Science Boulevard, Suite 100 Gahanna, Ohio 43230 VIA EMAIL: tmann@advancedcivildesign.com

L Rall

RE: Parcels: 41821002004000, 41821002005000, 41821002002000

Dear Thomas:

In response to your request for natural gas service availability to the approximately 118.83 acres located south of 36/37 and west of Lackey Old State Road, Delaware County, Ohio, Suburban Natural Gas Company does have natural gas service available to the above described location.

Natural gas is located on the northwest corner of the property. Suburban Natural Gas Company will provide all the natural gas mains to said property at no cost. Application requirements can be coordinated with the Suburban Natural Gas office.

As always, natural gas service to the area as well as any other served or to be served by Suburban Natural Gas Company is subject to the terms and conditions of our PUCO tariff.

We look forward to working with you on the proposed project. If you have any questions, feel free to contact me directly.

Cordially,

Aaron Roll Vice President

System Development

AR/hc

cc: D. Joseph Pemberton

Officers
BRIAN P. COGHLAN
President
PAMALA L. HAWK
Vice President
ROBERT W. JENKINS
Secretary
G. MICHAEL DICKEY
Treasurer
GLENN MARZLUF
General Manager/CEO
SHANE CLARK
Deputy General Manager



6658 OLENTANGY RIVER ROAD

DELAWARE, OHIO 43015

www.delcowater.org

Phone (740) 548-7746 • (800) 521-6779

Directors

DAVID A. BENDER

BRUCE A. BLACKSTON

DOUGLAS D. DAWSON

TIMOTHY D. MCNAMARA

PERRY K. TUDOR

Via Email: tmann@advancedcivildesign.com

Mr. Thomas M. Warner Advanced Civil Design, Inc. 781 Science Boulevard, Suite 100 Gahanna, Ohio 43230

RE: Water Availability Chapman Property, US 36 Industrial & Residential Development

Dear Mr. Warner:

Please know that Del-Co Water can provide water service to the site described below upon plan approval and payment of the required fees:

Proposed Land Use: ±889 multi-family units and industrial warehouses

Location: Southwest corner of US 36 and Lackey Old State Road

Land Size: ±118.83 acres

This site can be served from a planned transmission along Reed Road extended. Construction of the transmission line will be coordinated with the developer. Construction of a new elevated water tank on Reed Road is currently under way and will be necessary to provide long-term water supply to the development.

This letter of water availability is valid for a period of one year from the date of this letter. Del-Co makes no guarantee of water availability beyond this period. Contact our Engineering Department if you have any questions on the plan review process, or our Customer Service Department for information on tap fees.

Sincerely,

DEL-CO WATER COMPANY, INC.

Shane F. Clark, P.E.

Deputy General Manager



AEP Ohio

700 Morrison Rd Gahanna, OH 43230 AEPOhio.com

12/23/2022

Thomas M. Warner Advanced Civil Design, Inc. 781 Science Boulevard, Suite 100 Gahanna, Ohio 43230

RE: AVAILABILITY OF ELECTRICAL SERVICE

Berlin Business Park and Multi-Family Residential (PID 41821002002000, 41821002004000, & 41821002005000)

To Whom It May Concern:

This letter will confirm that American Electric Power has electric service facilities adjacent to your new project. These facilities will be made available to serve your project with some Contribution-In-Aid-To-Construction charged to the project developer.

Our records indicate your project, a residential and commercial development on approximately 118.83 acres, is located south of State Route-37 and west of Lackey Old State Rd in Berlin Township, Delaware County, Ohio.

American Electric Power anticipates providing your new project the best possible service. I look forward to working with you and remain available to coordinate your project needs. Please contact me to discuss any questions you may have or other assistance you may require.

Sincerely,

Erik Schaas

Customer Design Supervisor