ONYX+EAST

THE GREENERY

303 SHANAHAN ROAD

Emergency Kno Emergency Fire Existing Trees/V Preserved to Gri Possible (typ.)

BERLIN TOWNSHIP

APPLICATION FOR FINAL DEVELOPMENT PLAN

AUGUST 30, 2022

Onyx and East Properties, LLC

www.onyxandeast.com

Jake Dietrich

Jake.Dietrich@OnyxAndEast.com

10' Multi-u

HANAHAN ROAD

ONYX+EAST -

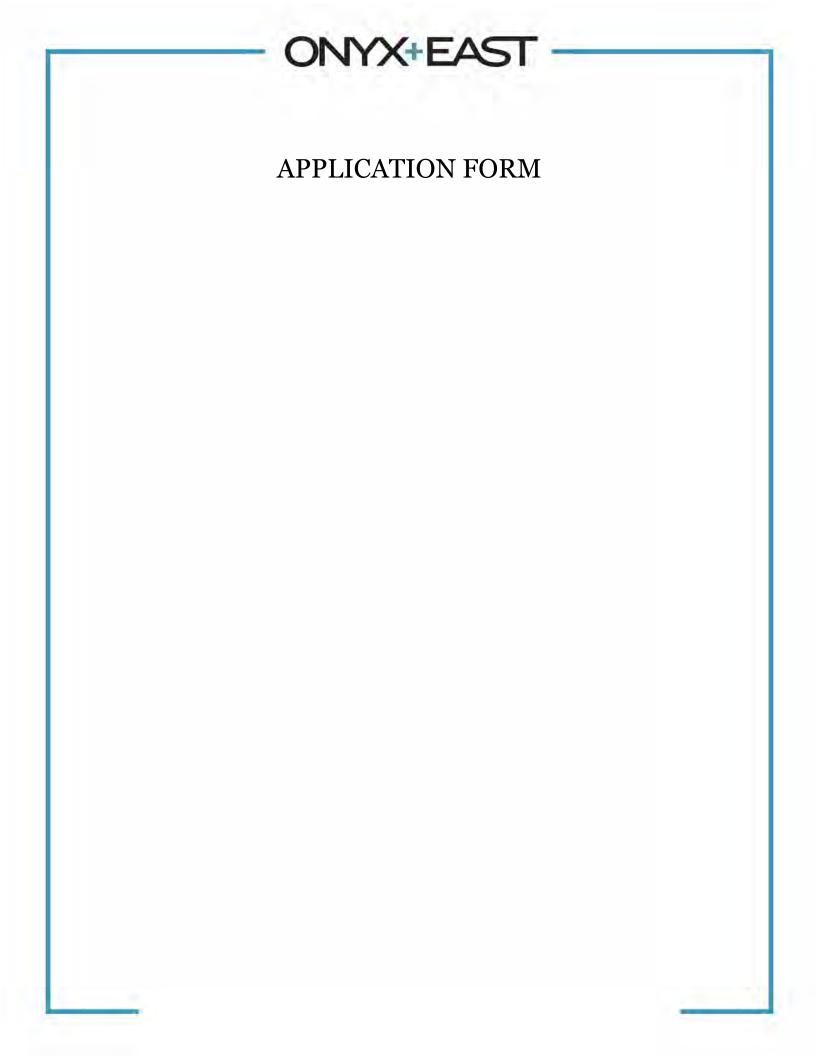
Contents:

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- 8) TRAFFIC STUDY
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LOCATION MAP





www.berlintwp.us

	ZONING OFFICE		Date		
3271 CHESHIR			BZC#		
DELAWARE, O			Fee: \$Rec#		
740.548.5217 – P	PHONE / 740.548.745	58 – FAX	Hearing Date:		
	APPLICATIO	N FOR FINAL DEVEL	OPMENT PLAN		
Name of Owner:	NCJLT Company, LL	C, 303 Shanahan, LLC, 371	Shanahan, LLC, and B & N	<u>1 2005, LL</u> C	
Mailing Address:	236 West Centra	al Avenue, Delaware	, Ohio 43015		
Email Address:	mrs@ss-dta.cor	n			
Business Telepho	one: N/A	Home Tele	ephone: N/A		
_ Address of Pro	pert <u>y:</u> 303 Shanah	nan Road			
Parcel (s): 4183300	1087000, 41833001086000, an 1075000 and 41833001074000	Acreage: <u>3</u>	6.9 Present Zoni	ng: <u>TPUD</u> & PCD	
Range: N/A	Twp: Berlin	Section: <u>N/A</u>	Farm Lot No: <u>N/A</u>		
Subdivision Nam	e: <u>To be named "Greene</u>	ry"	×		
Proposed Plan: o	nyx + East is seeking fina	l development plan approval t	o develop 121 single family ho	ome <u>s on</u>	
th	e described 36.9 acre site	e. Homes will be 3-4 bedrooms	and 2 stories tall. All roads ar	e to be	
pa	aid for and maintained priv	vately. Additional details are il	lustrated in the attached docu	iments.	
			s		
required by the Zo submitted to induc	ning Resolution and the the the amendment of the the amendment of the	ation and the attachments hat all information contain e Zoning Map. Applicant erlin Township, Delaware	ed herein is true and accur agrees to be bound by the		
	Agent/A	pplicant Signature:	luterch		
Agent/Applicant A	Address: 243 N. 5th	n Street, Col <u>umbus,</u>	^{F2D9EE49A} OH 432 <u>15</u>		
Phone: <u>614.324</u>	.0595	Fax: N/A			
Email address: <u>J</u>	ake.Dietrich@On	yxAndEast.com			
Date:	Zoning l	Inspector Signature:			

INCOMPLETE APPLICATIONS WILL NOT BE PROCESSED

ONYX+EAST -

APPROVED DEVELOPMENT PLAN TEXT

Additional Requirements per Board of Trustees Meeting – 08/08/2022

- Configuration of ponds will not interrupt or encroach on multi-use paths or active green space
 - a. Active green space shall not be less in size than what is shown on preliminary development plan (08/01/2022)
 - b. Configuration may change based on final engineering as long as equivalent square footage is met

Response: Final layout is show on plans.

• Surface materials of multi-use paths will be ADA compliant. In addition, all good faith efforts will be made to meet ADA standards for multi-use paths.

Response: See Section 6, Exhibit D5, Detail E for multi-use path details.

• In the PCD and TPUD portions of the plan, no uses other than residential or home occupations shall be permitted unless a modification of the preliminary development plan is approved in accordance with the zoning resolution.

Response: Residential homes and subsequent home occupations are the only uses to be constructed.

• Minimum building separation is 12' except eaves which may be no closer than 10'.

Response: Homes are designed and configured to comply with this requirement.

• CBU mailboxes shall be located on ADA accessible surface, grading, and meet all other compliance requirements. In addition, mailboxes shall remain plumb at all times.

Response: See Section 6, Exhibit D2, Detail A and Section 6, Exhibit D4, Detail H for mailbox details.

• Any developer of the approved preliminary plan, as approved on 8/8/2022, shall negotiate in good faith with the Township in its efforts to create a JEDD that includes the property.

Response: Negotiations to take place following the finalization of JEDD.

• Fenced dog park shall be provided at a size no less than 1500 square feet.

Response: See Section 6, Exhibit D5, Detail A for dog park details.

• Buffering and landscaping shall be enhanced along property lines abutting existing residential homes. Existing trees will remain. Additional details will be provided at submission of Final Development Plan.

Response: See Section 6, Exhibit D3, Details A & B for buffering details.

• Developer shall construct a west-bound right turn lane into the development or pay the required fee in lieu of to relevant authority.

Response: County currently requests a fee paid in lieu.

• Private road asphalt to be constructed to withstand 75,000 lbs. as required by fire department.

Response: Roads are designed to withstand 75,000 lbs.

• Multi-use path along Shanahan to be constructed by developer at 10' in width. The word "proposed" to be removed from plans.

Response: "Proposed" has been removed from plans. Path to be constructed.

THE GREENERY Amended Preliminary Development Plans Text Updated August 8, 2022

Introduction and Summary.

The property that is the subject of this text consists of $36.90\pm$ acres that are located generally to the northeast of the intersection of U.S. Route 23 and Shanahan Road in the extreme southwestern potion of Berlin Township. The subject property has two zoning classifications: 21.6+/- acres are designated PCD, Planned Commercial on the north, and the remaining 15.3+/- acres are designated TPUD, Transitional Planned Unit Development on the south. The zonings have been in place for roughly 10 years, but no development of the property has occurred because sanitary sewer infrastructure has been installed only recently to provide service to the site. Previously approved preliminary development plans for the two zoning districts on this property have been extended several times over the years in order to maintain their legal validity until such times as the infrastructure was able to be extended to the site. However, the passage of such a long amount of time has caused those previously approved plans not to be viable for development in the current market.

This text accompanies an application requesting a modification of the two approved preliminary development plans to incorporate them into a single plan. The modified development plan proposes a total of 125 homes, 119 units of which will be single-family dwelling units and 6 units of which shall be attached twin-single units. All units will be for-rent as part of a community that is commonly owned and maintained. Internal vehicular routes will be private. The plan includes 22.44+/- acres of open space, or 60.81% of the site's gross acreage.

The development standards contained within this text and the plans that accompany it are intended to govern the proposed development and replace and supersede the previously approved texts and preliminary development plans for the PCD and TPUD, respectively. By consolidating the texts and preliminary development plans into a single document, administration of zoning requirements and standards will be easier and more efficient. In the event of a conflict between the standards in this text and those found within the Zoning Resolution, the standards in this text shall govern. To the extent that a development standard is not contained herein, then the provisions of the Zoning Resolution shall govern.

<u>Transitional Planned Unit Development (TPUD) – 15.3+/- acres:</u>

ARTICLE 13 TRANSITIONAL PLANNED UNIT DEVELOPMENT (TPUD)

SECTION 13.01: PURPOSE: SEE SECTION 5.057

SECTION 13.02: PERMITTED USES

Within the Transitional Planned Unit Development (TPUD) the following uses, when approved by the development plan process and developed in strict compliance with the approved development plan and standards shall be permitted:

A.) Multi-family residential structures of any type, attached or detached units, including but not limited to attached, modular, patio, common wall or any reasonable variation on the same theme.

Response: No divergence. A total of 121 residential units are proposed for the property, which includes both the TPUD and PCD portions of the site.

B.) Accessory buildings and accessory uses incidental to the principal building or use.

Response: No divergence.

C.) Multi-family cluster housing. For purposes of this section, "cluster housing" shall mean a residential development wherein the overall density is consistent with the TPUD standards but modifications are permitted in lot size and shape to concentrate residential development in a portion of the overall tract, thereby retaining the remainder of the tract as permanent, common open space.

Response: No divergence. The community will consist of clustered single-family housing to preserve open space.

D.) Non-residential uses of a religious, cultural, education or recreational nature or character to the extent that they are designed and intended to serve the residents of the Transitional Planned Unit Development. Said facilities may be designed to serve adjoining neighborhoods or residents if they are located in such proximity to the major thoroughfares as to permit access without burdening residential streets.

Response: No divergence. A private community pavilion and playground will be located within the TPUD portion of the site and will serve all portions f the development (i.e., those within the TPUD and PCD portions).

E.) Temporary structures such as manufactured/mobile offices and temporary buildings of a non-residential character may be used incidental to construction work on the premises or on adjacent public projects or during a period while the permanent structure is being constructed. The user of saidstructure shall obtain a permit for such temporary use. This permit shall be valid for six (6) months and may be renewed not more than twice for a total combined period of time under all issued permits notexceeding eighteen (18) months. Renewal of the permit shall be at the discretion of the Zoning Inspector on finding of reasonable progress toward completion of the permanent structure or project. The Zoning Inspector may require provisions for sanitary waste disposal, solid waste disposal, and water supply, as he/she deems necessary. The fees for such permit and renewals thereof shall be established by the Board of Township Trustees. Said temporary structure shall be removed not later than ten (10) days after expiration of said permit.

Response: No divergence.

SECTION 13.03: CONDITIONAL USES

Within this zoning district the following uses may be permitted, subject to the conditions and restrictions imposed by the Board of Zoning Appeals pursuant to the provisions of Article 32 of this Resolution. Conditionally permitted uses shall be considered abandoned if said use or uses are not commenced within oneyear from the date of Board of Zoning Appeals approval, or if said use is discontinued for a period in excess oftwo (2) years. Unless the conditional use permit specifically provides that the grant shall be permanent and shall run with the land, the sale or conveyance of the land and/or structure wherein the same is located or upon which the same is granted shall void the conditional use permit, and the subsequent owner(s) or lessee shall be required to reapply for a continuation and/or modification of such use(s) to the Board of Zoning Appeals. Failure to comply with the terms of a conditional use permit shall result in a zoning violation. No conditional use shall be implemented until a permit of compliance is issued by the Zoning Inspector.

A.) Model homes in subdivisions, the same being defined as residential-type structures used as sales offices by builders/developers and to display the builder's/developer's product. The same may be furnished within, since its purpose is to display to prospective buyers the builder's/developer's features (such as exterior siding treatment, roofing materials, interior trim, moldings, floor covering, etc.), in the environment of a completed home. Model homes may be staffed by thebuilder's/developer's sales force. Model homes shall be subject to the following

restrictions:

1.) Lighting: All exterior lighting must be down lighting, so that no light shall be cast onto adjoining residential properties. All off-street parking areas must be illuminated. All exterior lighting (except security lighting) shall be extinguished at the closing time of the model home.

Response: No divergence.

2.) Parking: All model homes shall provide off-street paved parking for the public. Such off-streetpaved parking shall be located as directed by the Board of Zoning Appeals. The number of required parking spaces shall be a minimum of six (6) per model home. The driveway of the model home may be utilized for not more than two (2) parking places.

Response: No divergence.

3.) Screening and Trash Receptacles: Landscape drawing shall be required and shall show adequate landscaping and screening from adjoining residential lots, together with the clear marking of the boundaries of the model home lot. Trash receptacles shall be provided around the model home for use by visitors to the home.

Response: No divergence.

4.) Termination of Use: A temporary showroom or display model that is used for marketing purposes by a commercial homebuilder during the sales period of a new residential development. For the purposes of this resolution, a model home loses its status as a marketingtool after five (5) years from its opening date, or when 90% of total zoning permits within thedevelopment are issued or whichever comes first. However, the model home usage may continue if it is a permitted use within a commercial zoning district. Model homes may be converted to permanent residences at the end of their use as a marketing location, provided they meet all zoning and building codes for occupancy.

Response: No divergence.

5.) No building equipment or materials may be stored at the model home.

Response: No divergence.

6.) Model Home Signs: Allowed as approved by the Board of Zoning Appeals and not to exceed sixteen (16) square feet per side with thirty-two (32) square feet maximum total display and an overall height of four (4) feet above grade.

Response: No divergence.

B.) Rental Complex Offices: One (1) rental office shall be allowed within a rental complex. The office maybe the rental manager's dwelling. Rental complex offices shall be subject to the following restrictions:

1.) Hours of operation: All rental complex offices shall close prior to 9:00 p.m. during the spring, summer and fall seasons, and prior to 8:00 p.m. during the winter season. No rental complex office shall be open on Sunday before 12:00 noon.

Response: No divergence. No rental offices are currently planned for this development, but should one be provided in the future, it shall adhere to these requirements and shall be subject to the review and approval of the Zoning Commission as part of a minor amendment to a final development plan.

2.) Lighting: All exterior lighting must be "down-lighting", so that absolutely no light shall be cast onto adjoining residential properties. All off-street parking areas must be illuminated. All exterior lighting shall be extinguished at the closing time of the rental complex office, except that which is in character with those found on surrounding homes.

Response: See prior response.

3.) Parking: All rental complex offices shall provide off-street paved parking for the public. An area contiguous to the structure within which the rental complex office is located shall be utilized for the off-street paved parking lot for public use. The number of required parking spaces shallbe six (6) per rental complex office. Such parking spaces shall be in addition to those otherwiserequired in Article 24.

Response: See prior response.

4.) Trash Receptacles: Trash receptacles shall be provided around the rental complex office foruse by the public.

Response: See prior response.

C.) Telecommunication towers pursuant to Section 6.04.

Response: No divergence.

SECTION 13.04: PROHIBITED USES

A.) Uses not specifically authorized by the express terms of this article of the Zoning Resolution shall be prohibited.

Response: No divergence.

B.) Outdoor storage of inoperable, unlicensed or unused vehicles, including trailers detached from semi- tractors, for a period exceeding fourteen consecutive (14) days is prohibited. Said vehicles, if stored on the premises, shall be enclosed within a building so as not to be visible from any adjoining property orpublic road. This prohibition shall not apply to new or used motor vehicles stored or displayed pursuant to a legal sales or repair activity if such activities are carried out in compliance with the approved plan.

Response: No divergence.

C.) Except as provided in the development plan no trailer of any type; no boats, no motor homes and no equipment of any type shall be parked in front of the established front building line on any lot within this district. If a structure is located on the tract of land or lot, the building line shall be considered to be the front wall of the structure, even if said structure is located behind the minimum setback line established by this code, the restrictions in the plat or deed or the development plan.

Response: No divergence.

D.) Except as specifically permitted in the approved development plan, no manufactured home, mobile home, or mobile office structure shall be permanently placed or occupied in this district. This does not apply to permanently-sited manufactured homes.

Response: No divergence.

E.) No trash, debris, unused property, or discarded materials which create an eyesore, hazard, or nuisanceto the neighborhood or general public shall be permitted to accumulate on any lot or parcel.

Response: No divergence.

F.) No commercial or business activity shall be conducted in a unit designed for residential use except forLimited Home Occupations as provided in Section 24.15.

Response: No divergence.

G.) No temporary structure or unit shall be occupied as a residence without approval of the Board of Zoning Appeals as granted in compliance with Article 32 of this Resolution.

Response: No divergence.

SECTION 13.05: INITIAL DISCUSSIONS

The applicant is encouraged to engage in informal consultations with the Zoning Commission and the Delaware County Regional Planning Commission prior to formal submission of a development plan and application to amend the zoning map to TPUD.

No statement by officials of the Township or County made prior to formal submission of a development plan and application to the Zoning Commission under 13.09 shall be binding. Any and/or all such informal consultations may be subject to Ohio's open meeting laws (ORC §121.22) and may be required to be held in an open public meeting.

SECTION 13.06: TPUD DESIGN STANDARDS

A development plan shall be submitted that meets all the standards and requirements of this Article, and which demonstrates that the design proposes buildings grouped together with a defined center, a network of open space and connecting sidewalks or pathways, resident parking provided off street, and a tree lawn adjacent to the street with trees located behind the sidewalk. The development plan shall incorporate the following standards:

A.) Density: Maximum of four (4) dwelling units per net developable acre.

Response: Divergence requested from Zoning Resolution. The presently existing TPUD zoning for the southern portion of the site permits age-restricted rental housing at a density of 5 units per net developable acre, while the existing PCD zoning for the northern portion of the site permits the same housing at 6 units per net developable acre. This proposal is for 4.85+/- units per net developable acre on rental housing that is not age-restricted. This is a divergence from the Zoning Resolution but is less than 5-6 units per net developable acre which applies throughout the site pursuant to the approved zonings and preliminary development plans that exist prior to the approval of this text.

B.) Common Open Space: Not less than 10% of the total tract acreage must be set aside as useable common open space, meaning areas exclusive of landscape islands and berms for parking lots and yards or courts immediately adjacent to the dwelling units. The township shall determine if the open space configuration meets the intent of these standards during preliminary development plan review. Open spaces may be used for the retention, detention and disposal of storm water drainage. Featureswhich are likely to cause erosion or flooding shall not be permitted.

Response: No divergence. This proposal in incudes 22.44+/- acres of open space across a site with a total of 36.9 acres. This represents 60.81% of the site.

C.) Minimum Tract Size: 10 acres or as approved on the final development plan.

Response: No divergence. The TPUD portion of the site is 15.3+/- acres in size, and the total acreage of the site is 36.9+/- acres.

D.) Arrangement of Structures:

1.) Setbacks: The physical relationships of dwelling units, non-dwelling structures and their minimum yard spaces shall be developed in strict compliance with the approved plan or the provisions of Article 24 unless a variance is approved.

Response: No divergence. These improvements and spaces shall be developed in accordance with the development plan that accompanies this text. The following setbacks shall apply within the TPUD and PCD areas of the site:

- (A) Perimeters: Minimum 25-foot building and pavement setback from all perimeter boundaries of the site which are not adjacent to Shanahan Road, except that a zero setback for pavement and buildings shall apply to the shared zoning boundary line of the TPUD and PCD portions of the site.
- (B) Front Loaded Units: 61 units within the entire site shall have front-loaded garages. On lots containing these units:
 - There shall be a minimum building setback of 20 feet from the edge of private street pavement. Porches may encroach up to 2.5 feet into this setback. A sidewalk connecting porches and/or front doors to the sidewalk along the private street shall be permitted within the setback.
 - Homes will be subject to a condominium form of ownership and therefore will not be located on individually platted lots. There shall be a minimum building separation of 12 feet between homes.
 - There shall be a minimum building setback of 25 feet to the rear property line.
- (C) Rear Load Single Units: 66 units within the entire site shall have rear-loaded garages served by private alleys. On lots containing these units:
 - There shall be a minimum building setback of 13 feet from the edge of private street pavement.
 Porches may encroach up to 6 feet into this setback. A sidewalk connecting porches and/or front doors to the sidewalk adjacent to and along the fronts of these lots shall be permitted within the setback.
 - Homes will be subject to a condominium form of ownership and therefore will not be located on individually platted lots. There shall be a minimum building separation of 12 feet between homes.
 - There shall be a minimum building setback of 5 feet to the edge of pavement of an alley.

2.) Building Height Limits: No buildings in this district shall exceed thirty-five (35) feet in height measured from the elevation of the threshold plate at the front door to the highest point of the roof. Chimneys, barns, silos, grain handling conveyors, church spires, domes, flag poles, and elevator shafts are exempted from the height regulation and may be erected to any safe height, not to exceed one-hundred (100) feet in height. No windmills, antennas, or towers shallbe constructed to a height greater than the distance from the center of the base thereof to the nearest property line of said tract and not to exceed one hundred (100) feet in height.

Response: No divergence.

E.) Building Dimensions: All structures constructed within this district shall contain the following minimum living area:

- 1.) One (1) bedroom unit: 800 square feet
- 2.) Two (2) bedroom unit: 900 square feet
- 3.) Three or more bedroom units: 1000 square feet

Response: No divergence.

F.) Landscaping: All yards, front, side and rear, shall be landscaped in accordance with Article 26. All openspaces or non-residential use areas shall be landscaped and shall meet the landscaping requirements of this resolution, unless a variation from these standards is specifically approved as part of the final development plan. A landscape plan prepared by a licensed landscape architect showing the caliper, height, numbers, name and placement of all material, shall be submitted and is subject to approval asa part of the final development plan. Natural foliage shall be retained as buffers where practicable. The Township may require establishment of such tree cover and /or other foliage to buffer adjacent uses.

Response: No divergence. Landscaping shall be provided in accordance with accompanying plans.

G.) Environmentally Sensitive Areas: Jurisdictional wetlands, slopes greater than 20% and 100-year floodplains shall be preserved to the greatest extent possible. No structures shall be constructed within the 100-year floodplain of any stream or river. To the maximum extent possible, all natural drainage courses, vegetation and contours in excess of 6% shall be maintained.

Response: No divergence.

H.) Parking: Off-street parking shall be provided at the time of construction of the main structure or building, with adequate provisions for ingress and egress according to the final development plan. In preparing and approving the parking plan, the parking provisions of Section 24.01 of this Resolution shall be incorporated, or a divergence requested.

Response: No divergence.

I.) Signs: Signs shall conform to Article 25 of this resolution, or a divergence requested and approved as part of the final development plan.

Response: No divergence, except as follows: One entry feature sign has been provided within the entry boulevard the vehicular entrance into the site from Shanahan Road, see Exhibit D1. The sign shall be a double sided monument sign with composite wood facing and offset sign panel with backlit raised lettering on both sides. A dry laid stone wall with raised plant bed shall encompass the perimeter of the sign base.

J.) Supplemental Conditions and Safeguards: The Zoning Commission and/or Board of Trustees may require additional conditions be met with regard to the type and extent of the public improvements to be installed; landscaping; improvements and maintenance of open space areas; and other development characteristics.

Response: No divergence.

K.) Rental units: No more than 20% of multi-family units may be either designated as rental units or held back by the developer for lease; all other dwelling units must be for sale to individual owners. Assurance of compliance with this requirement shall be shown on the development plan or plat or through deed restriction.

Response: Divergence requested from Zoning Resolution. A divergence from this requirement already applies to the TPUD and PCD portions of the site, and this amendment seeks to maintain that divergence.

L.) Materials: All exterior sides of all units shall be sheathed in brick, stucco, stucco-stone, stone, wood, or cementitious lap siding.

Response: No divergence.

M.) Roof Pitch: All residential roofs shall be a minimum of 6/12 pitch, or as otherwise approved by plan.

Response: No divergence.

N.) Walkways and Street Trees: The Township may require walkways to connect all dwelling areas with open space and to interconnect the open spaces. Where sidewalks or bike paths are required, they shall be separated from the paved street or parking lot surface by at least five feet (5') of landscaped or grassed tree lawn with trees planted behind the sidewalk.

Response: No divergence.

O.) Pavement Width Standards for Intra Development Streets, Drives and Parking Lots: All private streets, roads and driveways shall be constructed to a pavement width and cross section that meets the average daily traffic and weights anticipated in the Delaware County Engineer's Location and Design Manual, or shall have a design life of 20 years. Parking lot pavement does not have to meet street cross sectional standards, but parking lot drive aisles that connect to the public streets shall beconstructed to public street cross-sectional and design life standards within 50 feet of the edge of the public paved road.

Response: No divergence. See proposed private road widths and standards in accompanying plans.

P.) Underground Utilities: All utility lines constructed to service the proposed commercial uses shall be located underground.

Response: No divergence.

Q.) Architectural Details are Desirable: examples are wide corner boards or quoins, lintels, columns, window boxes, shutters, round louvers, etc.

Response: No divergence. See accompanying architectural drawings and plans, which provide character images for the architecture of homes within this community.

R.) Water and Sewer: Centralized water and sewer service shall be provided unless otherwise approved per development plan. The appropriate state and/or county agencies with jurisdiction shall indicate feasibility of water supply and wastewater disposal systems at the time of the preliminary development plan review.

Response: No divergence.

S.) Building Design: The project architect shall give due regard to the footprints, building orientation, massing, roof shape, pitch and exterior materials to blend with other traditional or historic architecturein the community or with the site.

Response: No divergence.

T.) Exterior Lighting: All exterior lighting shall be as specifically approved as part of the final developmentplan in accordance with Article 24, Section 24.13 of this resolution.

Response: No divergence.

ARTICLE 17 PLANNED COMMERCIAL AND OFFICE DISTRICT (PCD)

SECTION 17.01: PURPOSE: SEE SECTION 5.059 SECTION 17.02: PERMITTED USES

A.) NAICS Listed Uses

Within the Planned Commercial and Office District (PCD) the following uses, according to their North American Industrial Classification System (NAICS) code number, when approved by the development plan process and developed in strict compliance with the approved development plan and standards shall be permitted.

The full text of the listings in the 2002 NAICS or subsequent edition as specifically referenced and subsequently adopted shall be used to define the uses permitted within the PCD as set forth below and is hereby adopted as part of Article 27.

The precise use or type of use of the tract shall be specified in the plan as submitted and approved.

Note: The NAICS code numbers are inclusive in ascending order. All two digits sector numbers listed in the left hand column below include as permitted uses all 3-6 digit numbers beginning with those two digits. All three digit codes include all 4-6-digit codes beginning with those three digits, and so on. If aspecific six-digit code is used, it refers to only one permitted use. For example, Code 52 means that any use listed in the 2002 or subsequently referenced and adopted NAICS code under Sector 52 (suchas 52212 Savings Institutions) is permitted.

2002 U.S.	PERMITTED USES
NAICS CODE #	
1114	Greenhouse, Nursery, and Floriculture Production
311811	Retail Bakeries
441210	Recreational Vehicle Dealers
441221	Motorcycle Dealers
441222	Boat Dealers
441229	All other Motor Vehicle Dealers
4413	Automotive Parts, Accessories, and Tire Stores except 441310 Auto Used Parts Sales
442	Furniture and Home Furnishings Stores
443	Electronics and Appliance Stores
444	Building Material and Garden Centers
445	Food and Beverage Stores
446	Health and Personal Care Stores
447	Gasoline Stations (except 447109 Truck Stops)
448	Clothing and Clothing Accessories Stores
451	Sporting Goods, Hobby, Book (except Adult-Related Entertainment) and Music Stores
452	General Merchandise Stores
453	Miscellaneous Store Retailers, (except Adult-Related Entertainment establishments and 45393 Manufactured Home Dealers)
491	Postal Service
511	Publishers
5133	Telecommunications
5135	Information and Data Processing Services
516110	Internet Publishing
517110	Wired Telecommunications Carriers
517212	Cellular and other Wireless Telecommunications
518111	Internet Service Providers
52	Finance and Insurance
531130	Lessors of Mini-Warehouses and Self-Storage Units
531210	Offices of Real Estate Agents and Brokers
531390	Other activities related to Real Estate
53211	Passenger Car Rental and Leasing

532120	Truck and Utility Trailer Rental and Leasing
5322	Consumer Goods Rental
54	Professional, Scientific and Technical Services (includes Medical, Veterinarians Computer and Related Hardware and Research and Development etc.)
55	Management of Companies and Enterprises
561110	Office Administrative Support Services
561431	Private Mail Services
561439	Other Business Service Centers (including Copy Shops)
561510	Travel Agencies
61	Educational Services
621111	Offices of Physicians
621112	Offices of Mental Health Specialists
621210	Offices of Dentists
621310	Offices of Chiropractor
621320	Offices of Optometrists
621330	Mental Health Practitioners
621340	Physical, Occupational, and Speech Therapists and Audiologists
621391	Podiatrists
621399	Miscellaneous Health Care Practitioners
621491	HMO Medical Centers
621492	Kidney Dialysis Centers
621493	Ambulatory Surgical and Emergency Centers
621511	Medical Laboratories
621512	Diagnostic Imaging Centers
621610	Home Health Care Services
621910	Ambulance Services
(22	
622	Hospitals
623110	Nursing Care Facilities
623311	Continuing Care Retirement Communities
623312	Homes for the Elderly
624410	Child Day Care Services
711110	Theater Companies and Dinner Theaters
711120	Dance Companies
711190	Other Performing Arts Companies (except Adult-Related Entertainment)
712110	Museums
713940	Fitness and Recreational Centers
721110	Hotels (except 72112 casino) and Motels
721191	Bed and Breakfast Inns
_	

722	Food Services and Drinking Places (except those establishments offering or featuring entertainment including totally nude, topless, bottomless, strippers, male or female impersonators, or similar adult entertainment or services), provided that there shall be a minimum of 300 feet of setback from the property line of any Food and Drink service place and the nearest residential property line or residential zoning district.
812	Personal and Laundry Services (except Adult-Related Entertainment)
813	Religious, Grant making, Civil, Professional and Similar Organizations
92	Public Administration (except 922150 Parole and Probation Offices)

Response: Divergence requested from Zoning Resolution, but not from existing approved plans. A divergence to allow residential uses in the PCD portion of the site was approved and applies to the existing approved preliminary development plan for that portion of the site which applies prior to the approval of this text. The applicant requests that this divergence continue to apply to this site for the purposes and types of units described through this text.

B.) Other Permitted Uses that do not have a listed NAICS Number:

Temporary structures such as manufactured/mobile offices and temporary buildings may be used incidental to construction work on the premises or on adjacent public projects or during a period whilethe permanent structure is being constructed. The user of said structure shall obtain a permit for suchtemporary use, which permit shall be valid for six (6) months and may be renewed not more than twicefor a total combined period of time under all issued permits not exceeding eighteen (18) months. Renewal of the permit shall be at the discretion of the Zoning Inspector on finding of reasonable progress toward completion of the permanent structure or project. The Zoning Inspector may require provisions for sanitary waste disposal, solid waste disposal, and water supply, as he/she deems necessary. The fees for such permit and renewals thereof shall be established by the Board of Township Trustees. Said temporary structure shall be removed not later than ten (10) days after expiration of said permit.

Response: No divergence.

C.) Adult-Related Uses in accordance with Article 27.

Response: No divergence. None are proposed.

SECTION 17.03: PROHIBITED USES

A.) Uses not specifically authorized by the express terms of this article of the Zoning Resolution shall be prohibited.

Response: Divergence requested from Zoning Resolution, but not from existing approved plans. A divergence to allow residential uses in the PCD portion of the site was approved and applies to the existing approved preliminary development plan for that portion of the site which applies prior to the approval of this text. The applicant requests that this divergence continue to apply to this site for the purposes and types of units described through this text.

B.) Outdoor storage of inoperable, unlicensed or unused vehicles, including trailers detached from semi- tractors, for a period exceeding fourteen consecutive (14) days is prohibited. Said vehicles, if stored on the premises, shall be enclosed within a building so as not to be visible from any adjoining property or public road. This prohibition shall not apply to new or used motor vehicles stored or displayed pursuant to a legal sales or repair activity if such

activities are carried out in compliance with the approved plan.

Response: No divergence.

C.) Except as provided in the development plan no trailer of any type; no boats, no motor homes and no equipment of any type shall be parked in front of the established front building line on any lot within this district. If a structure is located on the tract of land or lot, the building line shall be considered to be the front wall of the structure, even if said structure is located behind the minimum setback line established by this code, the restrictions in the plat or deed or the development plan.

Response: No divergence.

D.) Except as specifically permitted in the approved development plan, no manufactured home, mobile home, or mobile office structure shall be permanently placed or occupied in this district.

Response: No divergence.

E.) No trash, debris, unused property, or discarded materials which create an eyesore, hazard, or nuisanceto the neighborhood or general public shall be permitted to accumulate on any lot or parcel.

Response: No divergence.

F.) Uses pursuant to NAICS code #711310, Promoters of Performing Arts, Sports, and Similar Events with Outdoor Open Air Facilities are prohibited.

Response: No divergence.

G.) No commercial or business activity shall be conducted in a unit designed for residential use except forHome Occupations as provided in Section 24.15 and 24.16.

Response: No divergence.

H.) No temporary structure or unit shall be occupied as a residence without approval of the Board of Zoning Appeals as granted in compliance with Article 32 of this Resolution.

Response: No divergence.

SECTION 17.04: INITIAL DISCUSSIONS

The applicant is encouraged to engage in informal consultations with the Zoning Inspector and the Delaware County Regional Planning Commission prior to formal submission of a development plan and application to amend the zoning map to PCD.

No statement by officials of the Township or County made prior to formal submission of a development plan and application to the Zoning Commission shall be binding. Any and/or all such informal consultations may besubject to Ohio's open meeting laws (ORC §121.22) and may be required to be held in an open public meeting.

SECTION 17.05: REQUIRED PCD DESIGN STANDARDS

- A.) The development plan shall incorporate the following standards for all permitted uses:
 - 1.) Access: Requires frontage on or direct access to one or more dedicated and improved public arterial

roads as shown on the Delaware County Thoroughfare Plan, or to an access road thatruns parallel to an arterial road. Provision for future connections to other public roads may berequired by the Township, the County Engineer, and/or the Regional Planning Commission.

Response: No divergence. Access to and from this site is provided using Shanahan Road.

2.) Minimum Tract Size: 10 acres or as approved on the final development plan.

Response: No divergence. The PCD portion of this site consists of 21.6+/- acres.

3.) Maximum Commercial Ground Coverage by Buildings and Parking (All Impervious Surfaces): No more than 80% of the total tract acreage of a commercial development, exclusive of public street rights of way shall be covered by impervious surfaces, which includes all parking and commercial buildings (not multi-family dwellings). Land underneath overhead high voltage electric transmission lines may be used for open space, landscaping, parking, androads with the permission of the electric utility company.

Response: No divergence.

4.) Minimum Required Open Space for Commercial Developments: Not less than 20% of the total tract acreage of a commercial development shall remain open space. Open spaces may be used for the retention, detention and disposal of storm water drainage. Features which arelikely to cause erosion or flooding shall not be permitted. A 15-foot wide "green belt" shall beprovided between the edge of any parking area and the adjacent public street right of way andshall be landscaped in accordance with Article 26.

Response: No divergence.

5.) Minimum Lot Width: At the building line shall be as approved per plan.

Response: No divergence.

6.) Minimum Side Yards: Shall equal one-third (1/3) the sum of the height and depth of the structure, but in no case shall be less than one hundred (100) feet from any Residential Zoning District or Planned Residential District, or as approved per plan.

Response: Divergence requested. This standard applies to commercial uses and does not make sense to apply in the context of the proposed use. Setbacks are being provided as described in the response to Section 13.06.D.

7.) Minimum Rear Yard: Shall equal one-third (1/3) the sum of the height and width of the structure, but in no case shall be less than one hundred (100) feet from any Residential ZoningDistrict or Planned Residential District, or as approved per plan.

Response: Divergence requested. This standard applies to commercial uses and does not make sense to apply in the context of the proposed use. Setbacks are being provided as described in the response to Section 13.06.D.

8.) Perimeter Area: No parking shall be constructed within 25 feet of the lot line of an existing orproposed single family home, or a residentially zoned district.

Response: Divergence requested. The TPUD portion of the site allows residential uses. A divergence to allow a zero setback from that zoning district is requested in order to allow for a cohesive development

across the TPUD and PCD portions of the site.

9.) Water and Sewer: Centralized water and centralized sewer service shall be provided unless otherwise approved per development plan. The appropriate state and/or county agencies withjurisdiction shall indicate feasibility of water supply and wastewater disposal systems at the time of the preliminary development plan review.

Response: No divergence.

10.) Walkways and Street Trees: The Township may require walkways to connect parking areas with buildings. Where sidewalks or bike paths are required, they shall be separated from the paved street or parking lot surface by at least five feet (5') of landscaped area with trees placedbehind the sidewalk.

Response: No divergence.

11.) Pavement Width Standards for Interior Development Streets, Drives and Parking Lots: All private streets, roads and driveways shall be constructed to a pavement width and cross section that meets the Average Daily Traffic and weights anticipated in the Delaware County Engineer's Location and Design Manual, or shall have a design life of 20 years. Parking lot pavement does not have to meet street cross section standards, but parking lot drive aisles that connect to the public streets shall be constructed to public street cross sectional and design life standards within 50 feet of the edge of the public paved road.

Response: No divergence. See proposed private road widths and standards in accompanying plans.

12.) Underground Utilities: All utility lines constructed to service the proposed commercial uses shall be located underground.

Response: No divergence.

13.) Environmentally Sensitive Areas: Jurisdictional wetlands, slopes greater than 20%, and 100- year floodplains shall be preserved to the greatest extent possible. No commercial or office structures shall be constructed within the 100-year floodplain of any stream or river. To the maximum extent possible, all natural drainage courses, vegetation and contours in excess of 6% shall be maintained.

Response: No divergence.

14.) Building Design: The project architect shall give due regard to the footprints, building orientation, massing, roof shape, pitch and exterior materials to blend with other traditional or historic architecture in the community or with the site.

Response: No divergence. See accompanying architectural drawings and plans, which provide character images for the architecture of homes within this community.

15.) Building Height Limits: No building or structure in this district shall exceed thirty-five (35) feetin height measured from the front door threshold to the highest point on the roof. Chimneys, spires, domes, flag poles, and elevator shafts may be constructed to any safe height, but shallnot exceed one-hundred (100) feet in height. No windmill, aerial, antenna, or tower shall be constructed to a height greater than the distance from the center of the base to the nearest property line of said tract and shall not exceed one-hundred (100) feet in height.

Response: No divergence.

16.) Landscaping: All yards, front, side and rear, shall be landscaped in accordance with Article 23.All open spaces or non-residential use areas shall be landscaped and shall meet the landscaping requirements of this

resolution, unless a variation from these standards is specifically approved as part of the final development plan. A landscape plan prepared by a licensed landscape architect showing the caliper, height, numbers, name and placement of allmaterial, shall be submitted and is subject to approval as a part of the final development plan. Natural foliage shall be retained as buffers where practicable. The Township may require establishment of such tree cover and/or other foliage to buffer adjacent uses.

Response: No divergence.

17.) Parking: Off-street parking shall be provided at the time of construction of the main structureor building, with adequate provisions for ingress and egress according to the final developmentplan. In preparing and approving the parking plan, the parking provisions of Article 24, Section 24.01 of this Resolution shall be incorporated, or a divergence requested.

Response: No divergence.

18.) Signs: Signs shall conform to Article 25 of this resolution, or a divergence requested and approved as part of the final development plan.

Response: No divergence, except as follows: One entry feature sign has been provided within the entry boulevard the vehicular entrance into the site from Shanahan Road, see Exhibit D1. The sign shall be a double sided monument sign with composite wood facing and offset sign panel with backlit raised lettering on both sides. A dry laid stone wall with raised plant bed shall encompass the perimeter of the sign base.

19.) Exterior Lighting: All exterior lighting shall be as specifically approved as part of the final development plan in accordance with Article 24, Section 24.13 of this resolution.

Response: No divergence, except as follows: One entry feature sign has been provided within the entry boulevard the vehicular entrance into the site from Shanahan Road, see Exhibit D1. The sign shall be a double sided monument sign with composite wood facing and offset sign panel with backlit raised lettering on both sides. A dry laid stone wall with raised plant bed shall encompass the perimeter of the sign base.

20.) Building Size Limits: Retail or office buildings, including but not limited to NAICS Codes 114, 311811, 442, 443, 444, 445, 446, 447 448 451, 452, 453, 51, 52, 5312, 5313, 53211, 5322, 53242, 54, 55, and 561 shall contain no more than 65,000 square feet under one roof for any individual use.

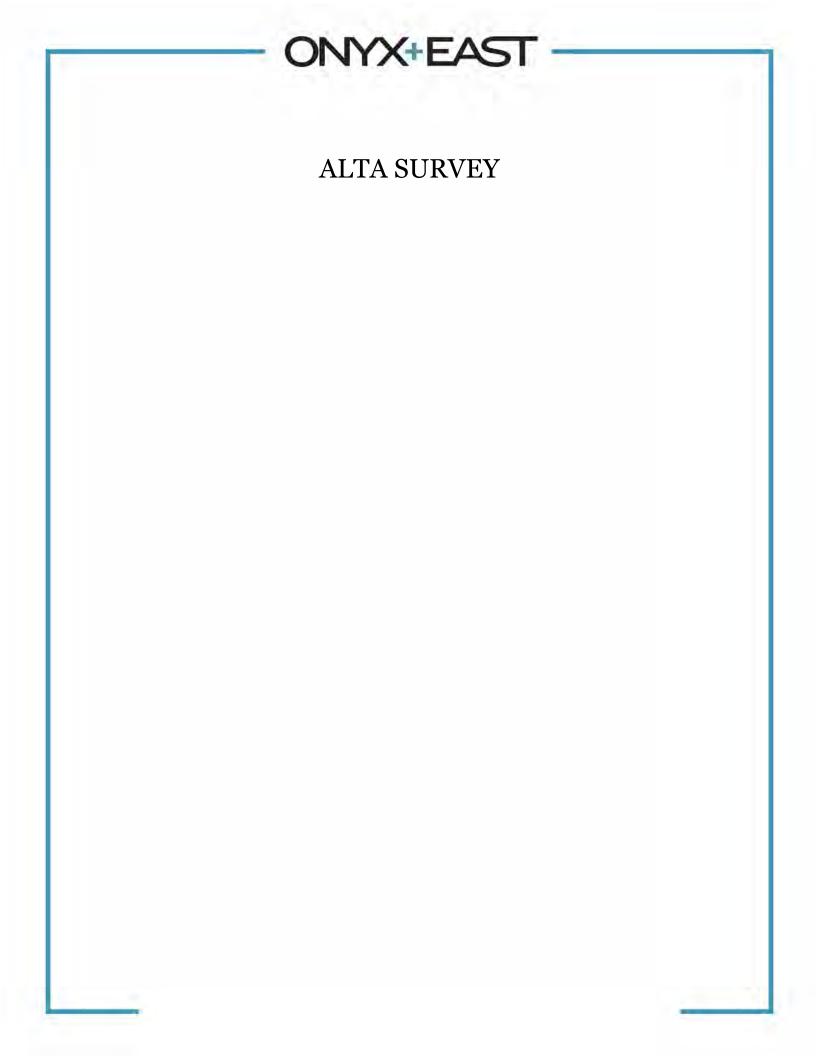
Response: Not applicable.

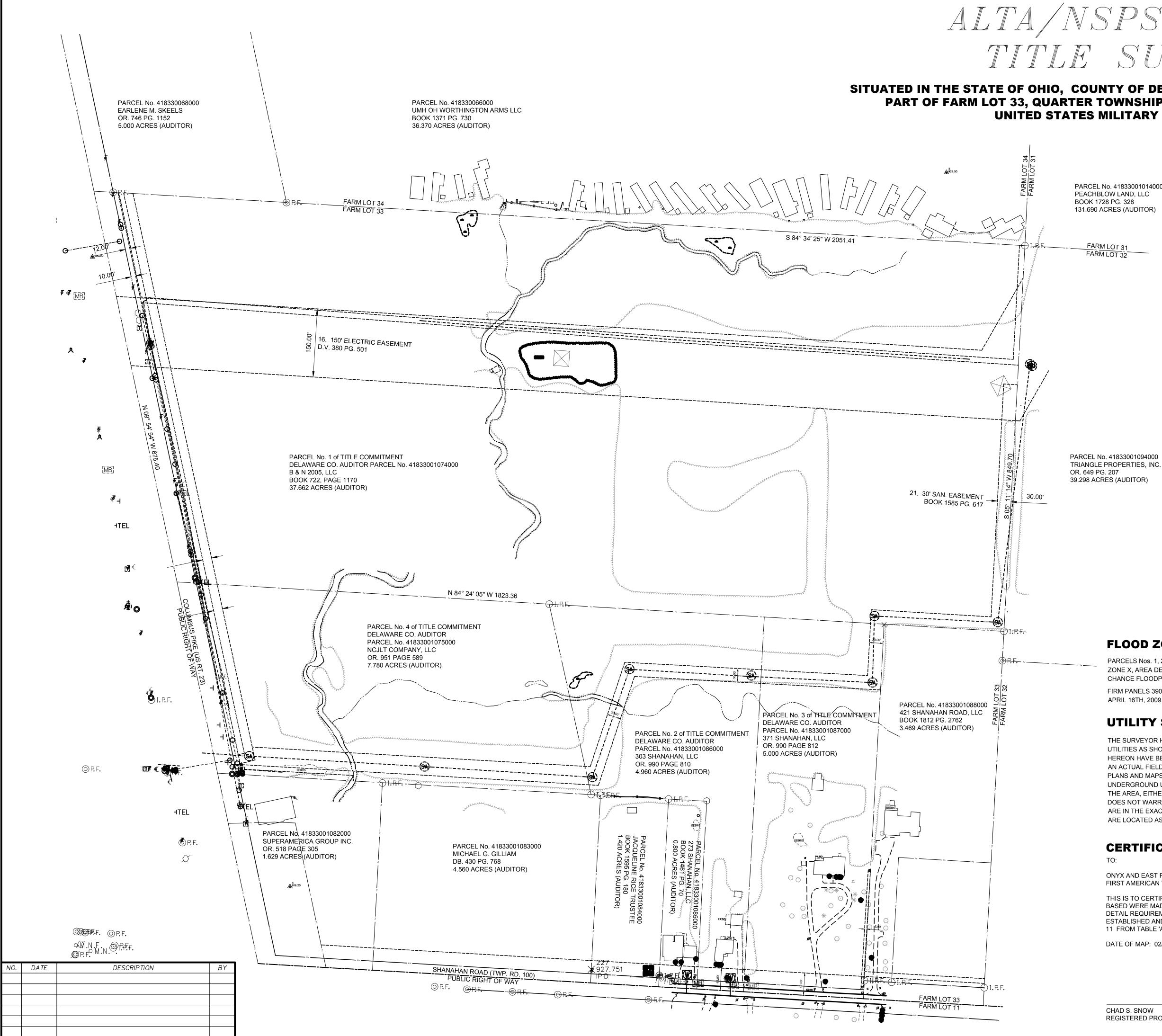
21.) Exception to Retail and Office Building Size Limits: Retail and office uses permitted in Section15.02, and NAICS code 441 (Motor Vehicle and Parts Dealers) with an individual commercial or office that exceeds 65,000 square feet under one roof for any individual use may be approved at the discretion of the township provided they have direct access to or access to a commercial frontage road located parallel to and within 500 feet of U.S. 23 or U.S 36.

Response: Not applicable.

22.) Supplemental Conditions and Safeguards: The Zoning Commission and/or Board of Trustees may require additional conditions be met with regard to the type and extent of the public improvements to be installed; landscaping; improvements and maintenance of open space areas; and other development characteristics.

Response: No divergence.





ALTA/NSPS LAND TITLE SURVEY

SITUATED IN THE STATE OF OHIO, COUNTY OF DELAWARE, TOWNSHIP OF BERLIN PART OF FARM LOT 33, QUARTER TOWNSHIP 3, TOWNSHIP 4, RANGE 18 **UNITED STATES MILITARY DISRTICT**

PARCEL No. 41833001014000

FLOOD ZONE:

PARCELS Nos. 1, 2, 3 AND 4 OF THE TITLE COMMITMENT ARE WITHIN ZONE X, AREA DETERMINED TO BE OUTSIDE OF THE 0.2% ANNUAL CHANCE FLOODPLAIN.

FIRM PANELS 39041C0233K & 39041C0234K WITH AN EFFECTIVE DATE APRIL 16TH, 2009.

UTILITY STATEMENT:

THE SURVEYOR HAS NOT PHYSICALLY LOCATED THE UNDERGROUND UTILITIES AS SHOWN HEREON. THE UNDERGROUND UTILITIES SHOWN HEREON HAVE BEEN APPROXIMATELY PLATTED BASED ON LOCATIONS FROM AN ACTUAL FIELD SURVEY, AND/OR INFORMATION OBTAINED FROM RECORD PLANS AND MAPS. THE SURVEYOR MAKES NO GUARANTEE THAT THE UNDERGROUND UTILITIES SHOWN HEREON COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. THE SURVEYOR FURTHER DOES NOT WARRANT THAT THE UNDERGROUND UTILITIES SHOWN HEREON ARE IN THE EXACT LOCATION INDICATED, ALTHOUGH DOES STATE THAT THEY ARE LOCATED AS ACCURATELY AS POSSIBLE FROM INFORMATION AVAILABLE.

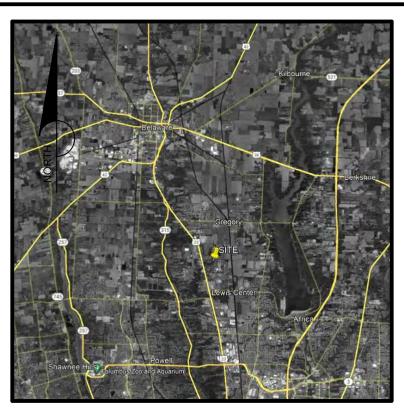
CERTIFICATION:

ONYX AND EAST PROPERTIES, LLC FIRST AMERICAN TITLE INSURANCE COMPANY

THIS IS TO CERTIFY THAT THIS MAP OR PLAT AND THE SURVEY ON WHICH IT IS BASED WERE MADE IN ACCORDANCE WITH THE 2021 MINIMUM STANDARD DETAIL REQUIREMENTS FOR ALTA/NSPS LAND TITLE SURVEYS, JOINTLY ESTABLISHED AND ADOPTED BY ALTA AND NSPS, AND INCLUDES ITEMS 3 AND 11 FROM TABLE 'A'. THE FIELD WORK WAS COMPLETED ON JANUARY 7, 2022.

DATE OF MAP: 02/02/2022.

CHAD S. SNOW **REGISTERED PROFESSIONAL SURVEYOR NO. 8559**



LOCATION MAP

LEGEND

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(<u>₩</u>)	WATER VALVE MAILBOX	
œ	CATCH BASIN (ROUND)	
	UNKNOWN MANHOLE $(\overline{\underline{1}})$ TELEPHONE MANHOLE	
\bigcirc	LANDSCAPING ROCK $\overline{\phi}$ TELEPHONE POLE	
	G TREE 🥝 BUSH 🕂 ANTENNA 🗖 STUMF)
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	EDGE OF PAVEMENT	
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ע	1 inch = 100 feet	
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	'NORTH' FOR THIS MAP ARE BASED ON THE OHIO STATE PLANE COORDINATE SYSTEM, NORTH ZONE	

AND REFERENCED THE NORTH AMERICAN DATUM OF 1983 (2011) BY A VRS/GNSS SURVEY PERFORMED ON DECEMBER 22, 2021.

DESCRIPTION				
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			NGINEERS & PLAN ad, columbus, ohio 43	INERS 3229
	• I	PHONE (614) 898	-7100 FAX (614) 898-7	570
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MDK

1" = 100'

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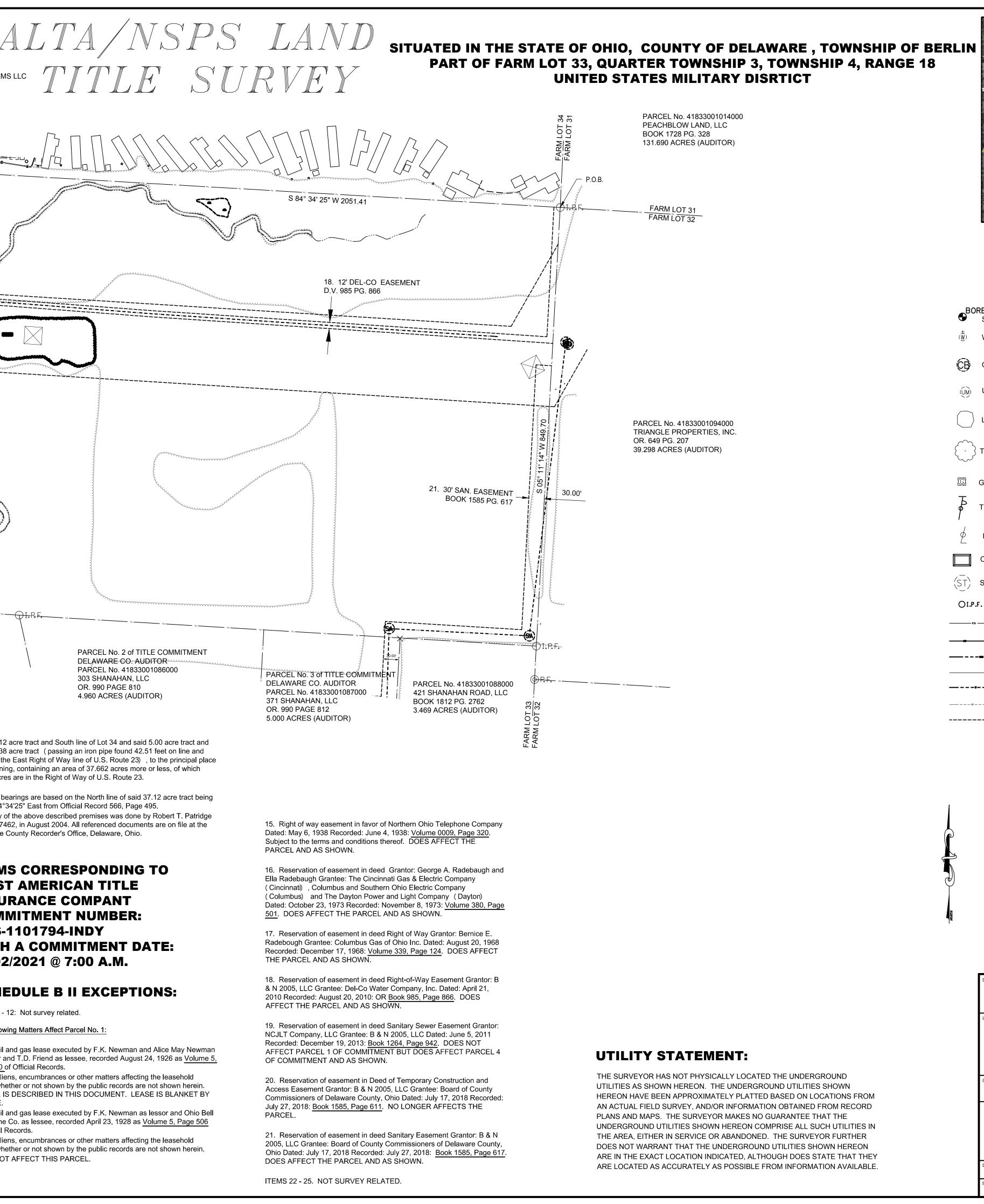
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01/31/2022

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PARCEL No. 418330068000 EARLENE M. SKEELS OR. 746 PG. 1152 5.000 ACRES (AUDITOR)	PARCEL No. 418330066000 UMH OH WORTHINGTON ARMS BOOK 1371 PG. 730 36.370 ACRES (AUDITOR)
B C T T T T T T T T T T T T T	BRF. FARM LOT 34 FARM LOT 33 18. 12' DEL-CO EASEMENT D.V. 985 PG. 866 16. 150' ELECTRIC EASEMENT D.V. 380 PG. 501
MB 	PARCEL No. 1 of TITLE COMMITMENT DELAWARE CO. AUDITOR PARCEL No. 41833001074000 B & N 2005, LLC BOOK 722, PAGE 1170 37.662 ACRES (AUDITOR) HONE EASEMENT 50 N. EASEMENT 55 PG. 617
	A Star PG. 617 3. 20' SAN. EASEMENT 3. 20' SAN. EASEMENT PARCEL NO. 4 OF TITLE COMMITMENT DELAWARE CO. AUDITOR PARCEL NO. 41833001075000 NCJLT COMPANY, LLC OR. 951 PAGE 589 7.780 ACRES (AUDITOR) LEGAL DESCRIPTION:
(j	EXHIBIT "A"said 37.12 aThe Land referred to herein below is situated in the County of Delaware, State of Ohio, and is described as follows: Parcel No. 1 Legal Description of 37.662 Acre Tractsaid 36.38 aSituated in the State of Ohio, County of Delaware, Township of Berlin, located in Lot 33, Section 3, Township 4, Range 18, United States Military Lands, and being all of the 37.12 acre tract (37.662 by survey) conveyed to George A. Radebaugh (Peter J. Manos (Trustee), as recorded in Official Record 0210, Page 1143, Delaware County Recorder's Office, and being more particularly described as follows:Bais of bea said 36.38 a being in the of beginning 0.824 acres
	being more particularly described as follows: Beginning at a stone found marking the Northeast corner of said 37.12 acre tract, also being the Northeast corner of said Lot 33, the Southeast corner of Lot 34, the Southwest corner of Lot 31, and the Northwest corner Lot 32, said corner also being the Southeast corner of a 36.38 acre tract conveyed to Sun Financing LLC. in Official <u>Record 566, page 495</u> , the Southwest corner of a 102.62 acre tract conveyed to Donald R. Kenney Trs., the Northwest corner of a 39.281 acre tract conveyed to Triangle Properties Inc. in Official <u>Record</u> 649, Page 211; thence South 05° 11' 14" West 849.70 feet, in the East line of
	 said 37.12 acre tract and Lot 33 and the West line of said 39.281 acre tract and Lot 32, to a 5/8 rebar found marking the Southeast corner of said 37.12 acre tract and the Northeast corner of Lot 460 of Shanahan Acres Subdivision, as delineated and recorded in Plat Cabinet 1, Slide 131; thence North 84° 24' 05" West 1823.36 feet, in the South line said 37.12 acre tract and in the North line of said Shanahan Acres Subdivision and a 5.00 acre tract and a 4.96 acre tract conveyed to Noma Huston in Official Record 567, Page 046, and the North line of a 7.78 acre tract conveyed to Hedrick Auto Radiator, Inc. in Official Record 549, Page 283, to a point in the old centerline of U.S. Route 23 marking the Southwest corner of said 37.12 acre tract (passing a rebar found in the East Right of Way of U.S. Route 23 at 1780.81 feet and being South 12° 58' 32" East 8.79 feet, from a concrete Highway monument with a brass plate slightly disturbed at Station 293+53.84; 54.53 feet right) ;
NO. DATE DESCRIPTION BY Image: Second structure Image: Second structure Image: Second structure Image: Second structure Image: Second structure Image: Second structure Image: Second structure Image: Second structure Image: Second structure Image: Second structure Image: Second structure Image: Second structure Image: Second structure Image: Second structure Image: Second structure Image: Second structure Image: Second structure Image: Second structure Image: Second structure Image: Second structure Image: Second structure Image: Second structure Image: Second structure Image: Second structure Image: Second structure Image: Second structure Image: Second structure Image: Second structure Image: Second structure Image: Second structure Image: Second structure Image: Second structure Image: Second structure Image: Second structure Image: Second structure Image: Second structure Image: Second structure Image: Second structure Image: Second structure Image: Second structure Image: Second structure Image: Second structure Image: Second structure Image: Second structure Image: Second structure Image: Second structure Image: Seco	293+33.64, 54.53 leet light),thence North 09° 54' 54" West 875.40 feet, in the old centerline of U.S.Route 23 and West line of said 37.12 acre tract, to a point being the Northwest corner of said 37.12 acre tract, also being the Southwest corner of a 5.00 acre tract conveyed to Harold and Earlene Skeels in Deed Book 445, page 456, and in the North line of said 37.12 acre tract and Lot 33 and in the South line of Lot 34;thence South 84° 34' 25" East 2051.41 feet, in the North line of Lot 33 and

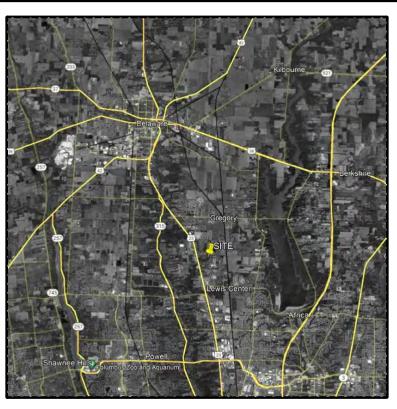


PART OF FARM LOT 33, QUARTER TOWNSHIP 3, TOWNSHIP 4, RANGE 18 **UNITED STATES MILITARY DISRTICT**

PARCEL No. 41833001014000 PEACHBLOW LAND, LLC BOOK 1728 PG. 328 131.690 ACRES (AUDITOR

FARM LOT 31 FARM LOT 32

PARCEL No. 41833001094000 TRIANGLE PROPERTIES, INC. OR. 649 PG. 207 39.298 ACRES (AUDITOR)



LOCATION MAP

LEGEND

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OF 1983 (2011) BY A VRS/GNSS SURVEY PERFORMED ON DECEMBER 22, 2021.

DESCRIPTION	A/NSP	S LAN	d title	SURV	/EY
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	X AND	EAST	PROPER	RTIES,	LLC
		NSULTING EI 221 SCHROCK RO	NGINEERS & P. AD, COLUMBUS, OHIO -7100 PAX (614) 85	LANNERS 43229	_
DRAWN BY:	CHECKED BY:	CREW CHIEF:	PROJECT No.	SHEET	

01/31/2022

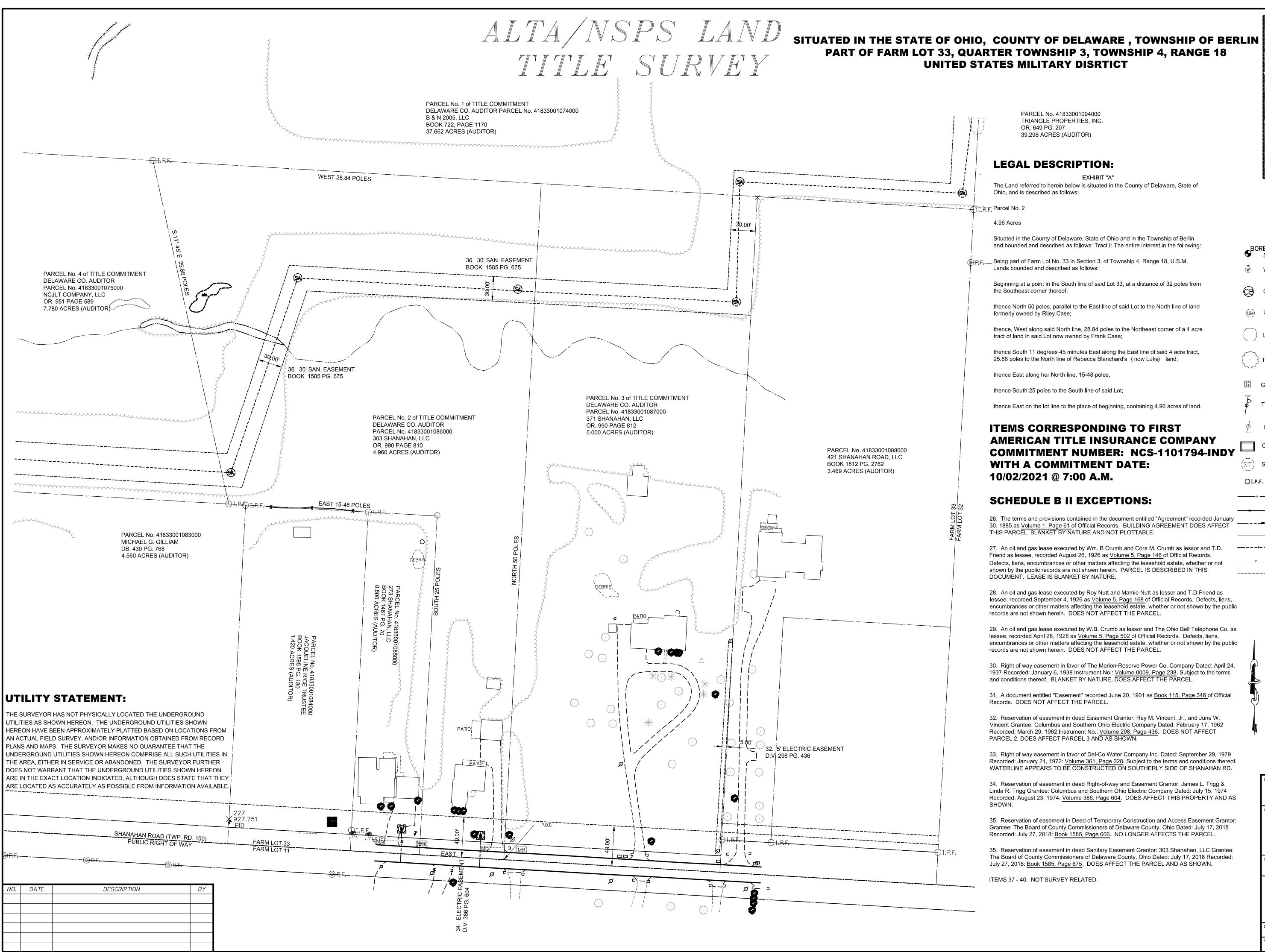
1" = 100'

67-26609-00

2/5

UTILITY STATEMENT:

THE SURVEYOR HAS NOT PHYSICALLY LOCATED THE UNDERGROUND UTILITIES AS SHOWN HEREON. THE UNDERGROUND UTILITIES SHOWN HEREON HAVE BEEN APPROXIMATELY PLATTED BASED ON LOCATIONS FROM AN ACTUAL FIELD SURVEY, AND/OR INFORMATION OBTAINED FROM RECORD PLANS AND MAPS. THE SURVEYOR MAKES NO GUARANTEE THAT THE UNDERGROUND UTILITIES SHOWN HEREON COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. THE SURVEYOR FURTHER DOES NOT WARRANT THAT THE UNDERGROUND UTILITIES SHOWN HEREON ARE IN THE EXACT LOCATION INDICATED, ALTHOUGH DOES STATE THAT THEY ARE LOCATED AS ACCURATELY AS POSSIBLE FROM INFORMATION AVAILABLE.



PART OF FARM LOT 33, QUARTER TOWNSHIP 3, TOWNSHIP 4, RANGE 18 UNITED STATES MILITARY DISRTICT

PARCEL No. 41833001094000 TRIANGLE PROPERTIES, INC. OR. 649 PG. 207 39.298 ACRES (AUDITOR)

LEGAL DESCRIPTION:

EXHIBIT "A" The Land referred to herein below is situated in the County of Delaware, State of Ohio, and is described as follows:

Situated in the County of Delaware, State of Ohio and in the Township of Berlin and bounded and described as follows: Tract I: The entire interest in the following:

_ Being part of Farm Lot No. 33 in Section 3, of Township 4, Range 18, U.S.M.

Beginning at a point in the South line of said Lot 33, at a distance of 32 poles from the Southeast corner thereof;

thence North 50 poles, parallel to the East line of said Lot to the North line of land formerly owned by Riley Case;

thence, West along said North line, 28.84 poles to the Northeast corner of a 4 acre tract of land in said Lot now owned by Frank Case;

thence South 11 degrees 45 minutes East along the East line of said 4 acre tract, 25.88 poles to the North line of Rebecca Blanchard's (now Luke) land;

thence East along her North line, 15-48 poles;

thence South 25 poles to the South line of said Lot;

thence East on the lot line to the place of beginning, containing 4.96 acres of land.

ITEMS CORRESPONDING TO FIRST AMERICAN TITLE INSURANCE COMPANY **COMMITMENT NUMBER: NCS-1101794-INDY** WITH A COMMITMENT DATE: 10/02/2021 @ 7:00 A.M.

SCHEDULE B II EXCEPTIONS:

26. The terms and provisions contained in the document entitled "Agreement" recorded January 30, 1885 as Volume 1, Page 61 of Official Records. BUILDING AGREEMENT DOES AFFECT THIS PARCEL, BLANKET BY NATURE AND NOT PLOTTABLE.

27. An oil and gas lease executed by Wm. B Crumb and Cora M. Crumb as lessor and T.D. Friend as lessee, recorded August 26, 1926 as <u>Volume 5, Page 146 of Official Records</u>. Defects, liens, encumbrances or other matters affecting the leasehold estate, whether or not shown by the public records are not shown herein. PARCEL IS DESCRIBED IN THIS DOCUMENT. LEASE IS BLANKET BY NATURE.

28. An oil and gas lease executed by Roy Nutt and Mamie Nutt as lessor and T.D.Friend as lessee, recorded September 4, 1926 as <u>Volume 5, Page 168</u> of Official Records. Defects, liens, encumbrances or other matters affecting the leasehold estate, whether or not shown by the public records are not shown herein. DOES NOT AFFECT THE PARCEL.

29. An oil and gas lease executed by W.B. Crumb as lessor and The Ohio Bell Telephone Co. as lessee, recorded April 28, 1928 as Volume 5, Page 502 of Official Records. Defects, liens, encumbrances or other matters affecting the leasehold estate, whether or not shown by the public records are not shown herein. DOES NOT AFFECT THE PARCEL.

30. Right of way easement in favor of The Marion-Reserve Power Co. Company Dated: April 24, 1937 Recorded: January 6, 1938 Instrument No.: Volume 0009, Page 238. Subject to the terms and conditions thereof. BLANKET BY NATURE, DOES AFFECT THE PARCEL.

31. A document entitled "Easement" recorded June 20, 1901 as Book 115, Page 346 of Official Records. DOES NOT AFFECT THE PARCEL.

32. Reservation of easement in deed Easement Grantor: Ray M. Vincent, Jr., and June W. Vincent Grantee: Columbus and Southern Ohio Electric Company Dated: February 17, 1962 Recorded: March 29, 1962 Instrument No.: Volume 298, Page 436. DOES NOT AFFECT PARCEL 2, DOES AFFECT PARCEL 3 AND AS SHOWN.

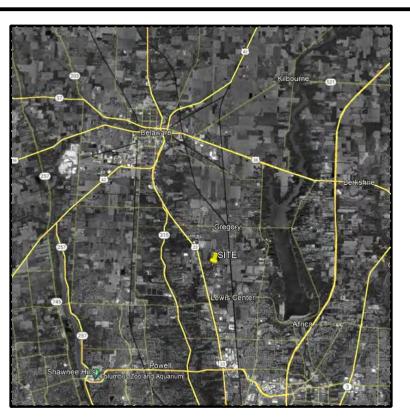
33. Right of way easement in favor of Del-Co Water Company Inc. Dated: September 29, 1979 Recorded: January 21, 1972: Volume 361, Page 328. Subject to the terms and conditions thereof. WATERLINE APPEARS TO BE CONSTRUCTED ON SOUTHERLY SIDE OF SHANAHAN RD.

34. Reservation of easement in deed Right-of-way and Easement Grantor: James L. Trigg & Linda R. Trigg Grantee: Columbus and Southern Ohio Electric Company Dated: July 15, 1974 Recorded: August 23, 1974: Volume 386, Page 604. DOES AFFECT THIS PROPERTY AND AS

35. Reservation of easement in Deed of Temporary Construction and Access Easement Grantor: Grantee: The Board of County Commissioners of Delaware County, Ohio Dated: July 17, 2018 Recorded: July 27, 2018: Book 1585, Page 606. NO LONGER AFFECTS THE PARCEL.

35. Reservation of easement in deed Sanitary Easement Grantor: 303 Shanahan, LLC Grantee: The Board of County Commissioners of Delaware County, Ohio Dated: July 17, 2018 Recorded: July 27, 2018: Book 1585, Page 675. DOES AFFECT THE PARCEL AND AS SHOWN.

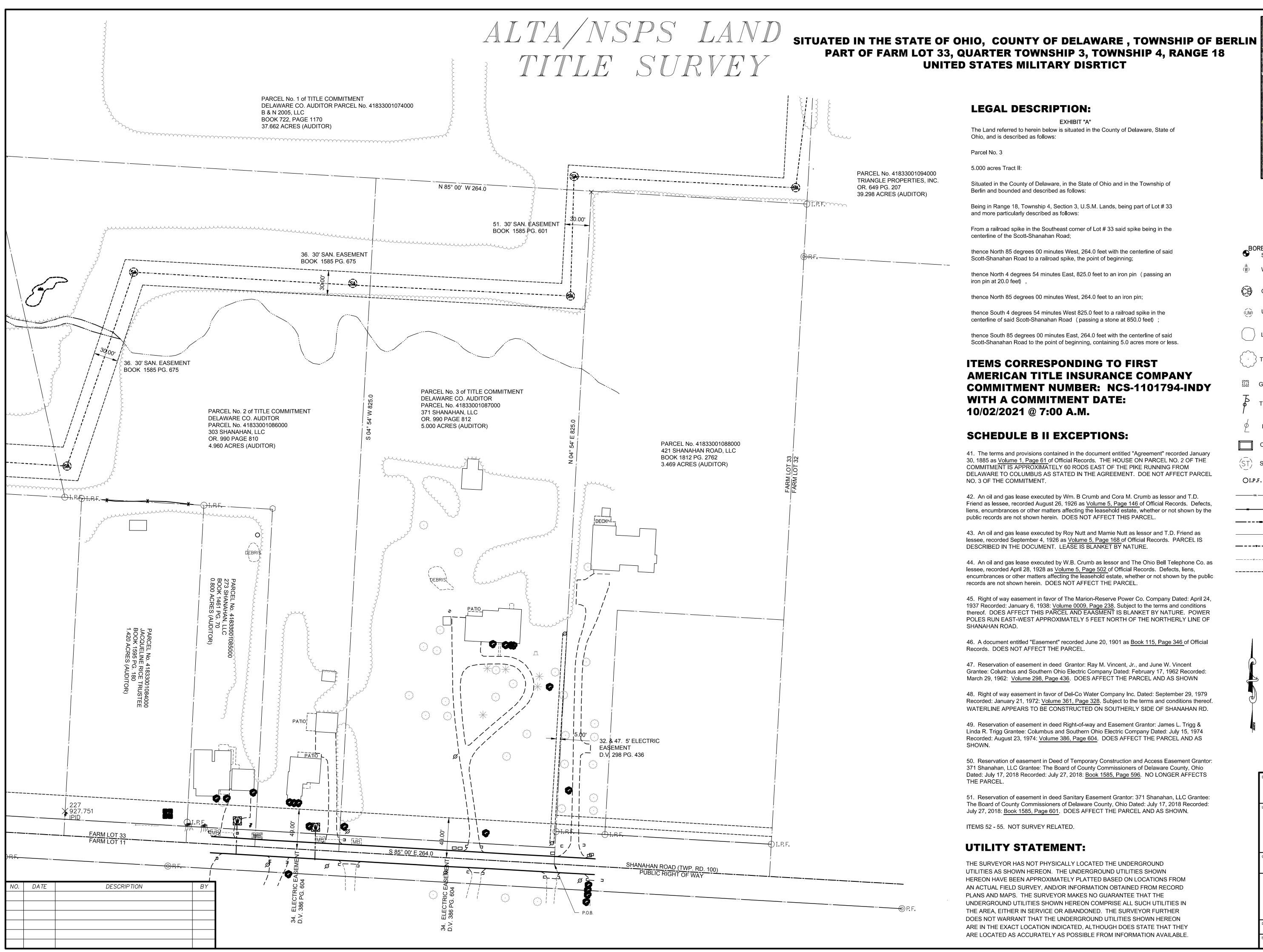
ITEMS 37 - 40. NOT SURVEY RELATED.



LOCATION MAP

LEGEND

BORE_ID SOIL BORING (G) GAS VALVE	
CATCH BASIN (ROUND)	
(\widehat{UM}) UNKNOWN MANHOLE $(\widehat{\underline{T}})$ TELEPHONE MANHOLE	
\bigcirc LANDSCAPING ROCK $\overrightarrow{\phi}$ TELEPHONE POLE	
🕞 TREE 🚱 BUSH 🕂 ANTENNA 🕅 STUM	D
GAS METER MELECTRIC METER OFLAG	
TELEPHONE/POWER POLE	
ϕ light pole ${}_{ ilde{{}}}$ guy wire ϕ power po	LE
CATCH BASIN - SIGN 🗘 POST	
(ST) STORM MANHOLE (SA) SANITARY MANHOLE	
OI.P.F. IRON PIN FD. OP.F. IRON PIPE FD.	
PROPERTY LINE	
RIGHT OF WAY	
EDGE OF PAVEMENT	
EASEMENT LINE	
ic s	
GRAPHIC SCALE	
, ⁰ 25 50 100	
1 inch = 50 feet	
BASIS OF BEARING	
'NORTH' FOR THIS MAP ARE BASED ON THE OHIO	
STATE PLANE COORDINATE SYSTEM, NORTH ZONE AND REFERENCED THE NORTH AMERICAN DATUM	
OF 1983 (2011) BY A VRS/GNSS SURVEY PERFORMED ON DECEMBER 22, 2021.	
f.	
DESCRIPTION	
ALTA/NSPS LAND TITLE SURVEY	•
r: COLUMBUS PIKE & SHANAHAN R	D.
BERLIN TOWNSHIP	
DELAWARE CO., OHIO	
ONYX AND EAST PROPERTIES, LL	.C
ms consultants, inc.	
CONSULTING ENGINEERS & PLANNERS 2221 SCHROCK ROAD, COLUMBUS, OHIO 43229 PHONE (614) 598-7100 FAX (614) 598-7570	
DRAWN BY: CHECKED BY: CREW CHIEF: PROJECT No. SHEET	
MDK CSS MDK	
SCALE: DATE: 67-26609-00 3/5 1" = 50' 01/31/2022 3/5	



PART OF FARM LOT 33, QUARTER TOWNSHIP 3, TOWNSHIP 4, RANGE 18 **UNITED STATES MILITARY DISRTICT**

LEGAL DESCRIPTION:

EXHIBIT "A" The Land referred to herein below is situated in the County of Delaware, State of Ohio, and is described as follows:

Situated in the County of Delaware, in the State of Ohio and in the Township of Berlin and bounded and described as follows:

Being in Range 18, Township 4, Section 3, U.S.M. Lands, being part of Lot # 33 and more particularly described as follows:

From a railroad spike in the Southeast corner of Lot # 33 said spike being in the centerline of the Scott-Shanahan Road;

thence North 85 degrees 00 minutes West, 264.0 feet with the centerline of said Scott-Shanahan Road to a railroad spike, the point of beginning;

thence North 4 degrees 54 minutes East, 825.0 feet to an iron pin (passing an

thence North 85 degrees 00 minutes West, 264.0 feet to an iron pin;

thence South 4 degrees 54 minutes West 825.0 feet to a railroad spike in the centerline of said Scott-Shanahan Road (passing a stone at 850.0 feet);

thence South 85 degrees 00 minutes East, 264.0 feet with the centerline of said Scott-Shanahan Road to the point of beginning, containing 5.0 acres more or less.

ITEMS CORRESPONDING TO FIRST AMERICAN TITLE INSURANCE COMPANY **COMMITMENT NUMBER: NCS-1101794-INDY** WITH A COMMITMENT DATE: 10/02/2021 @ 7:00 A.M.

SCHEDULE B II EXCEPTIONS:

41. The terms and provisions contained in the document entitled "Agreement" recorded January 30, 1885 as Volume 1, Page 61 of Official Records. THE HOUSE ON PARCEL NO. 2 OF THE COMMITMENT IS APPROXIMATELY 60 RODS EAST OF THE PIKE RUNNING FROM DELAWARE TO COLUMBUS AS STATED IN THE AGREEMENT. DOE NOT AFFECT PARCEL

42. An oil and gas lease executed by Wm. B Crumb and Cora M. Crumb as lessor and T.D. Friend as lessee, recorded August 26, 1926 as Volume 5, Page 146 of Official Records. Defects, liens, encumbrances or other matters affecting the leasehold estate, whether or not shown by the public records are not shown herein. DOES NOT AFFECT THIS PARCEL.

43. An oil and gas lease executed by Roy Nutt and Mamie Nutt as lessor and T.D. Friend as lessee, recorded September 4, 1926 as Volume 5, Page 168 of Official Records. PARCEL IS DESCRIBED IN THE DOCUMENT. LEASE IS BLANKET BY NATURE.

44. An oil and gas lease executed by W.B. Crumb as lessor and The Ohio Bell Telephone Co. as lessee, recorded April 28, 1928 as Volume 5, Page 502 of Official Records. Defects, liens, encumbrances or other matters affecting the leasehold estate, whether or not shown by the public records are not shown herein. DOES NOT AFFECT THE PARCEL.

45. Right of way easement in favor of The Marion-Reserve Power Co. Company Dated: April 24, 1937 Recorded: January 6, 1938: Volume 0009, Page 238. Subject to the terms and conditions thereof. DOES AFFECT THIS PARCEL AND EAASMENT IS BLANKET BY NATURE. POWER POLES RUN EAST-WEST APPROXIMATELY 5 FEET NORTH OF THE NORTHERLY LINE OF

46. A document entitled "Easement" recorded June 20, 1901 as Book 115, Page 346 of Official Records. DOES NOT AFFECT THE PARCEL.

47. Reservation of easement in deed Grantor: Ray M. Vincent, Jr., and June W. Vincent Grantee: Columbus and Southern Ohio Electric Company Dated: February 17, 1962 Recorded: March 29, 1962: Volume 298, Page 436. DOES AFFECT THE PARCEL AND AS SHOWN

48. Right of way easement in favor of Del-Co Water Company Inc. Dated: September 29, 1979 Recorded: January 21, 1972: Volume 361, Page 328. Subject to the terms and conditions thereof. WATERLINE APPEARS TO BE CONSTRUCTED ON SOUTHERLY SIDE OF SHANAHAN RD.

49. Reservation of easement in deed Right-of-way and Easement Grantor: James L. Trigg & Linda R. Trigg Grantee: Columbus and Southern Ohio Electric Company Dated: July 15, 1974 Recorded: August 23, 1974: Volume 386, Page 604. DOES AFFECT THE PARCEL AND AS

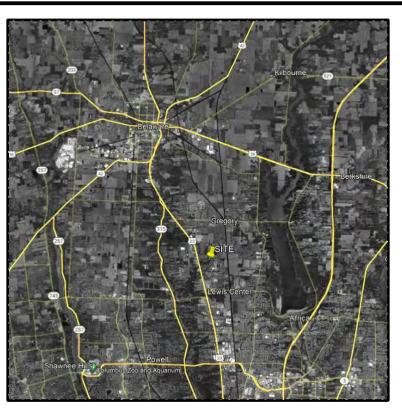
50. Reservation of easement in Deed of Temporary Construction and Access Easement Grantor: 371 Shanahan, LLC Grantee: The Board of County Commissioners of Delaware County, Ohio Dated: July 17, 2018 Recorded: July 27, 2018: Book 1585, Page 596. NO LONGER AFFECTS

51. Reservation of easement in deed Sanitary Easement Grantor: 371 Shanahan, LLC Grantee: The Board of County Commissioners of Delaware County, Ohio Dated: July 17, 2018 Recorded: July 27, 2018: Book 1585, Page 601. DOES AFFECT THE PARCEL AND AS SHOWN.

ITEMS 52 - 55. NOT SURVEY RELATED.

UTILITY STATEMENT:

THE SURVEYOR HAS NOT PHYSICALLY LOCATED THE UNDERGROUND UTILITIES AS SHOWN HEREON. THE UNDERGROUND UTILITIES SHOWN HEREON HAVE BEEN APPROXIMATELY PLATTED BASED ON LOCATIONS FROM AN ACTUAL FIELD SURVEY, AND/OR INFORMATION OBTAINED FROM RECORD PLANS AND MAPS. THE SURVEYOR MAKES NO GUARANTEE THAT THE UNDERGROUND UTILITIES SHOWN HEREON COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. THE SURVEYOR FURTHER DOES NOT WARRANT THAT THE UNDERGROUND UTILITIES SHOWN HEREON ARE IN THE EXACT LOCATION INDICATED, ALTHOUGH DOES STATE THAT THEY ARE LOCATED AS ACCURATELY AS POSSIBLE FROM INFORMATION AVAILABLE.



LOCATION MAP

LEGEND

	RE_ID to the soil boring to the soil boring to the solution of	GAS VAL	VE	
(∰)	WATER VALVE	MAILBOX		CONIFER
œ	CATCH BASIN (ROUND) ⊣G	GAS MARK	ER
(M)	UNKNOWN MANHOLE	(<u>1</u>) t e	LEPHONE M	ANHOLE
\bigcirc	LANDSCAPING ROCK	ϕ te	LEPHONE PC	DLE
$\left(\cdot \right)$	tree 😔 bush		ENNA)	STUMP
G	GAS METER	ELECTRIC	METER	OFLAG
F	TELEPHONE/POWER PO	DLE	FIRE	HYDRANT
¢	LIGHT POLE	GUY WIRE	Þ	POWER POLE
	CATCH BASIN -	SIGN	O POS	Т
(ST)	STORM MANHOLE	(\widehat{SA}) s	ANITARY MA	NHOLE
OI.P.	F. IRON PIN FD. OP.	F. IRON F	PIPE FD.	
——— РЛ.		P/L	PROPERTY	LINE
			RIGHT OF V	VAY
			SANITARY L	INE
			EDGE OF P	AVEMENT
•			WATER LIN	E
	- — — ST — — — —		STORM SEV	
			EASEMENT	LINE



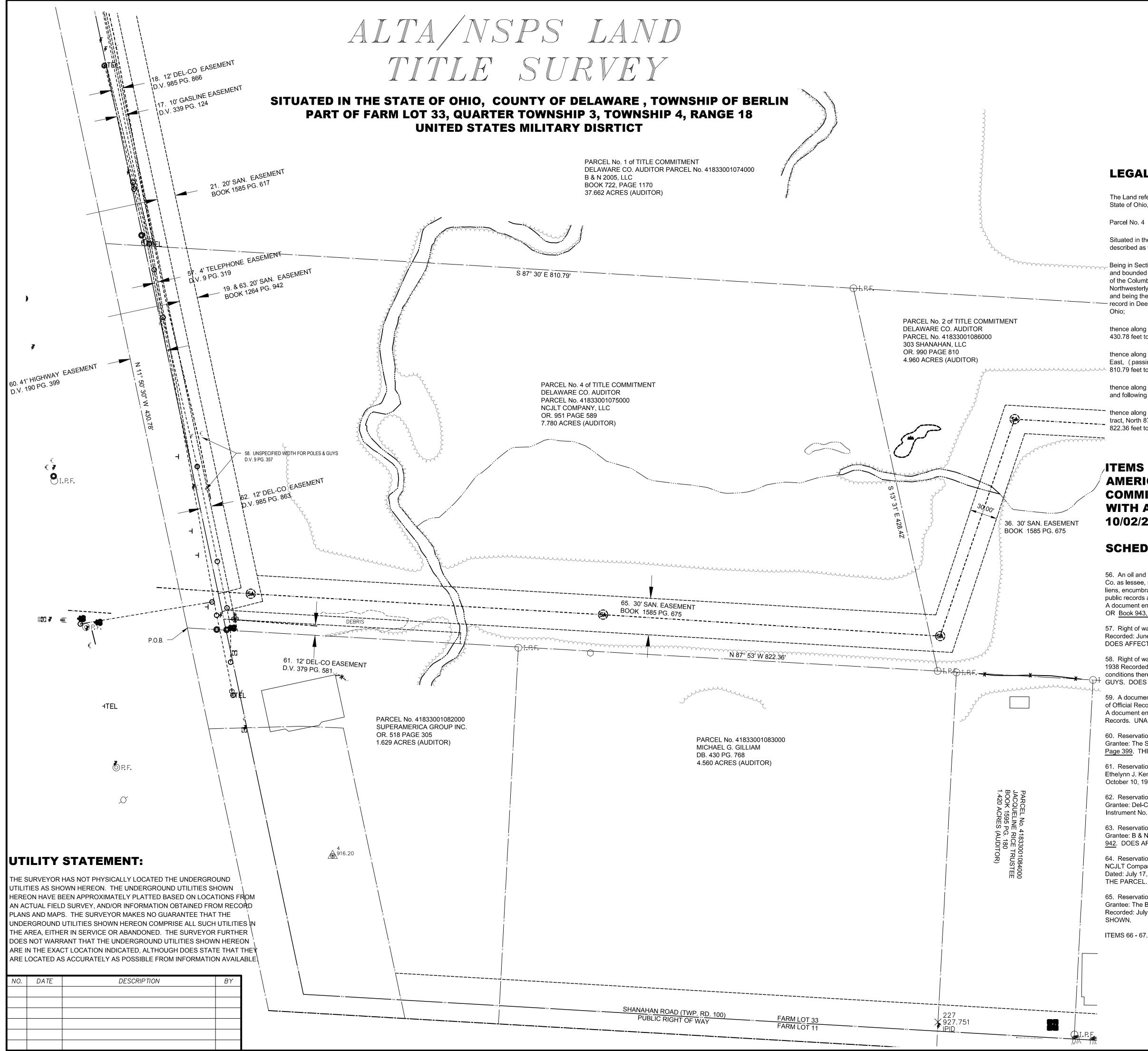
BASIS OF BEARING

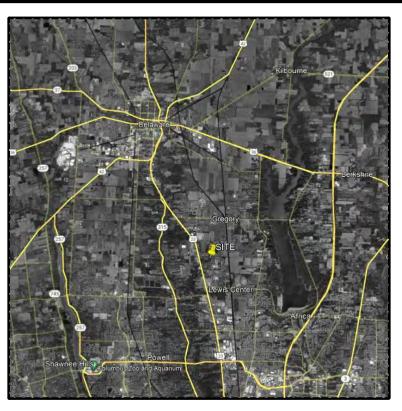
GRAPHIC SCAL

'NORTH' FOR THIS MAP ARE BASED ON THE OHIO STATE PLANE COORDINATE SYSTEM, NORTH ZONE AND REFERENCED THE NORTH AMERICAN DATUM OF 1983 (2011) BY A VRS/GNSS SURVEY PERFORMED ON DECEMBER 22, 2021.

DESCRIPTION
ALTA/NSPS LAND TITLE SURVEY
OCATION
COLUMBUS PIKE & SHANAHAN RD.
BERLIN TOWNSHIP
DERLIN IOWNSHIF
DELAWARE CO., OHIO
ONYX AND EAST PROPERTIES, LLC

ms consultants, inc. CONSULTING ENGINEERS & PLANNERS 2221 SCHROCK ROAD, COLUMBUS, OHIO 43229 PHONE (614) 898-7100 FAX (614) 898-7570 CHECKED BY: CREW CHIEF: RAWN BY ROJECT No. MDK CSS MDK 67-26609-00 4/5 1" = 50' 01/31/2022





LOCATION MAP

LEGEND

	● ^{BOI}	RE_ID SOIL BORING (G) GAS VALVE
		WATER VALVE MAILBOX CONIFER
	(CB)	CATCH BASIN (ROUND) +G GAS MARKER
		UNKNOWN MANHOLE $(\widehat{\underline{1}})$ TELEPHONE MANHOLE
	\bigcirc	LANDSCAPING ROCK $\overline{\phi}$ TELEPHONE POLE
	$\left\{ \cdot \right\}$	TREE 😔 BUSH 🥂 ANTENNA 🕅 STUMP
	G	GAS METER MELECTRIC METER OFLAG
	F	TELEPHONE/POWER POLE
	Ŕ	LIGHT POLE \triangleleft GUY WIRE ϕ POWER POLE
Y		CATCH BASIN - SIGN O POST
•	(ST)	STORM MANHOLE
	OI.P.	F. IRON PIN FD. OP.F. IRON PIPE FD.
	PA -	PROPERTY LINE
r ·		SANITARY LINE
cts, the		EDGE OF PAVEMENT
9 as 	st	
3.		EASEMENT LINE
16, d ND 54 ial VN. LC age	HUNN	<figure><section-header><section-header><section-header><section-header><text></text></section-header></section-header></section-header></section-header></figure>
tor: nio S		ALTA/NSPS LAND TITLE SURVEY
}		COLUMBUS PIKE & SHANAHAN RD BERLIN TOWNSHIP DELAWARE CO., OHIO
		ONYX AND EAST PROPERTIES, LLC
		`
		CONSULTING ENGINEERS & PLANNERS 2221 SCHROCK ROAD, COLUMBUS, OHIO 43229 PHONE (614) 698-7100 FAX (614) 898-7570
		DRAWN BY: CHECKED BY: CREW CHIEF: PROJECT №. SHEET MDK CSS MDK 67-26609-00 5/5 SCALE: 01/31/2022 01/31/2022 67-26609-00 5/5

LEGAL DESCRIPTION:

EXHIBIT "A" The Land referred to herein below is situated in the County of Delaware, State of Ohio, and is described as follows:

Situated in the Township of Berlin, County of Delaware, State of Ohio, and is described as follows:

Being in Section 3, Township 4, Range 18, in the South middle part of Lot 33, and bounded and described as follows: Beginning at a point in the centerline of the Columbus-Delaware Road (U.S. Route #23), said point being Northwesterly 430.5 feet, more or less, from the Berlin-Orange Township line and being the Southwest corner of the Ernest W. Mauglin tract, as shown of record in Deed Book 232, page 294, Recorder's Office, Delaware County,

thence along the old centerline of U.S. Route #23, North 11° 50' 30" West, 430.78 feet to a point;

thence along the South line of the Bernice E. Radebaugh tract, South 87° 30' East, (passing an iron pin at 30.97 feet and following an old fence line) 810.79 feet to an iron pin;

thence along the West line of the John W. Shifley tract, South 13° 31' East and following an old fence line, 428.42 feet to an iron pin;

thence along the North lines of the Thelma Milton tract and the L.P. Hines tract, North 87° 53' West, (passing a concrete monument at the second se

ITEMS CORRESPONDING TO FIRST AMERICAN TITLE INSURANCE COMPANY COMMITMENT NUMBER: NCS-1101794-IND WITH A COMMITMENT DATE: 10/02/2021 @ 7:00 A.M.

SCHEDULE B II EXCEPTIONS:

56. An oil and gas lease executed by WM. Reeder as lessor and The Suburban Light & Power Co. as lessee, recorded September 4, 1926 as Volume 5, Page 166 of Official Records. Defect liens, encumbrances or other matters affecting the leasehold estate, whether or not shown by the public records are not shown herein.

A document entitled "Affidavit of Forfeiture of Oil and Gas Lease" recorded December 22, 2009 OR Book 943, Page 2705 of Official Records. LEASE NO LONGER AFFECTS THE PARCEL

57. Right of way easement in favor of Northern Ohio Telephone Company Dated: May 6, 1938 Recorded: June 4, 1938: Volume 09, Page 319. Subject to the terms and conditions thereof. DOES AFFECT THE PARCEL AND AS SHOWN.

58. Right of way easement in favor of The Marion Reserve Power Company Dated: February 1938 Recorded: July 8, 1938 Instrument No.: Volume 0009, Page 357. Subject to the terms and conditions thereof. UNSPECIFIED WIDTH ADJACENT TO ROUTE 23 ALLOWING POLES AN $^+$ GUYS. DOES AFFECT THE PARCEL AND POLES AND GUYS SHOWN.

59. A document entitled "Partition Fence" recorded November 04, 1939 as Volume 01, Page 5 of Official Records.

A document entitled "Partition Fence" recorded June 29, 1955 as Volume 01, Page 78 of Officia Records. UNABLE TO DETERMINE THE FENCE.

60. Reservation of easement in deed Easement for Highway Purposes Grantor: Berne Davis Grantee: The State of Ohio Dated: October 24, 1936 Recorded: March 26, 1937 in Book 190, Page 399. THIS ESTABLISHES THE EASTERLY RIGHT OF WAY OF US 23 AND AS SHOW

61. Reservation of easement in deed Right-of-way Easement Grantor: Donald E. Kendrick Ethelynn J. Kendrick Grantee: Del-Co Water Company Inc. Dated: April 7, 1973 Recorded: October 10, 1973: Volume 379, Page 581. DOES AFFECT THE PARCEL AND AS SHOWN.

62. Reservation of easement in deed Right-of-way Easement Grantor: NCJLT Company, LLC Grantee: Del-Co Water Company Inc. Dated: April 21, 2010 Recorded: August 20, 2010 Instrument No.: OR Book 985, Page 863. DOES AFFECT THE PARCEL AND AS SHOWN.

63. Reservation of easement in deed Sanitary Sewer Easement Grantor: NCJLT Company, Ll Grantee: B & N 2005, LLC Dated: June 5, 2011 Recorded: December 19, 2013: Book 1264, Pa 942. DOES AFFECT THE PARCEL AND AS SHOWN.

64. Reservation of easement in Deed of Temporary Construction and Access Easement Grant NCJLT Company, LLC Grantee: The Board of County Commissioners of Delaware County, Oh Dated: July 17, 2018 Recorded: July 27, 2018: Book 1585, Page 623. NO LONGER AFFECTS

65. Reservation of easement in deed Sanitary Easement Grantor: NCJLT Company, LLC Grantee: The Board of County Commissioners of Delaware County, Ohio Dated: July 17, 2018 Recorded: July 27, 2018: Book 1585, Page 628. DOES AFFECT THE PARCEL AND AS

ITEMS 66 - 67. NOT SURVEY RELATED.



SITE PLAN

GRADING & DRAINAGE PLAN

ms consultants, inc.

engineers, architects, planners

2221 Schrock Road Columbus, Ohio 43229-1547 p 614.898.7100 f 614.898.7570 www.msconsultants.com



August 26, 2022

Berlin Township Board of Trustees 3271 Cheshire Rd. Delaware, Ohio 43015

Re: "Greenery", Shanahan Rd., Engineering Feasibility Letter

To Whom It May Concern:

ms consultants has reviewed record planning and engineering documents for the proposed residential community development known as "Greenery" in Berlin Township, Delaware County, Ohio. Our review included existing engineering plans for water service, sanitary sewer service, stormwater management and roadway patterns.

It is our understanding that sanitary sewer and water services will be provided through service agreements with Delaware County. An existing sanitary main is located through the middle of the site at a depth adequate to service the development via gravity sewer. An existing water main to tap for water service is located towards the north portion of the site from east to west and will and will provide sufficient flow rates for the build out.

Stormwater management will be provided for the project site through the use of three proposed detention basins that will be design to meet the regulations of the county and Ohio EPA. The stormwater detention basins all outlet towards the existing stream on-site.

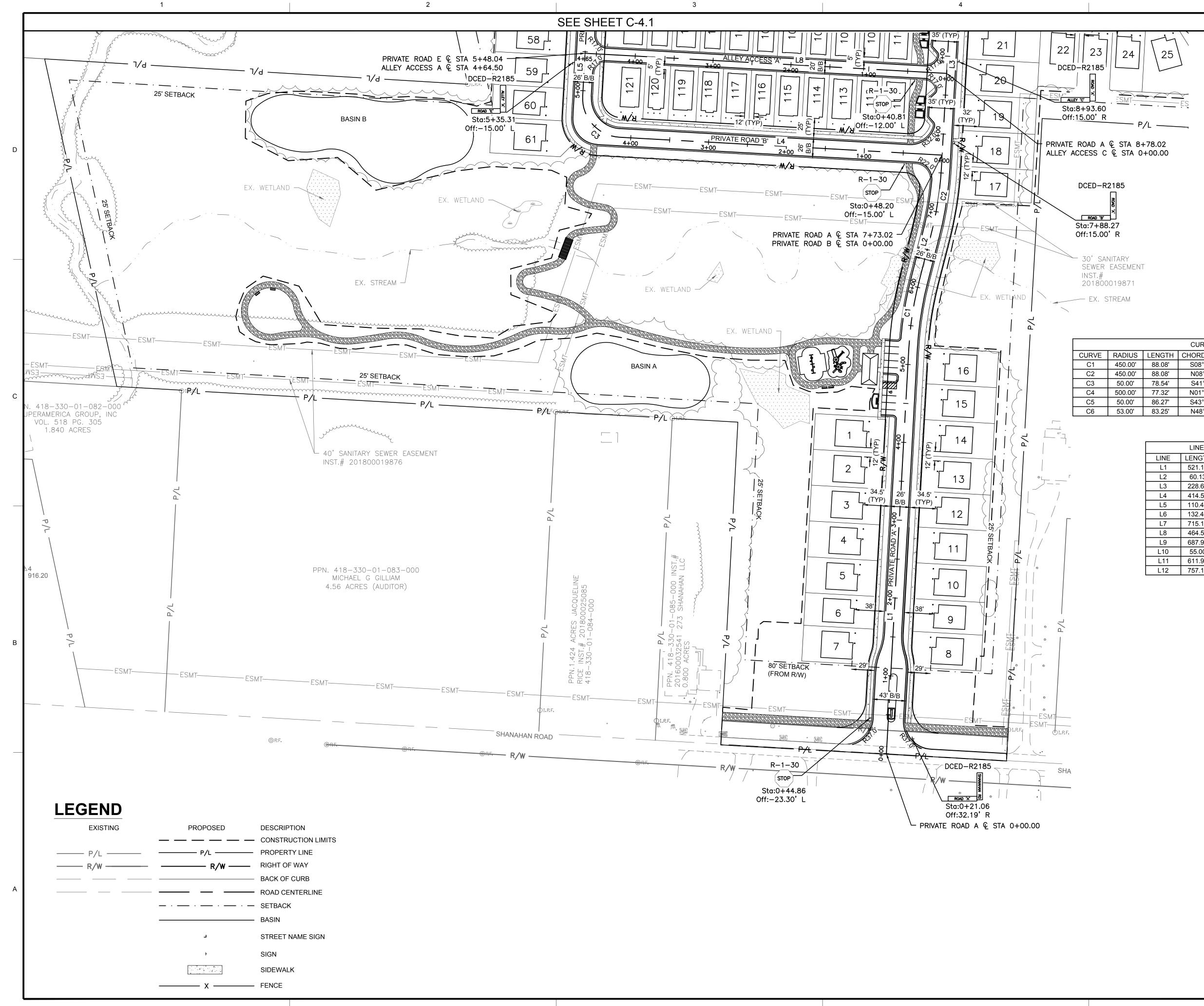
Access to the site will be via one (1) driveway off the north side of Shanahan Road. The site will include an emergency access drive to the north leading to the Worthington Arms development. Streets within the subdivision will be private and maintained by an association of owners.

Should you have any questions or require additional information, feel free to contact me at your convenience.

Sincerely,

Gesse Lee

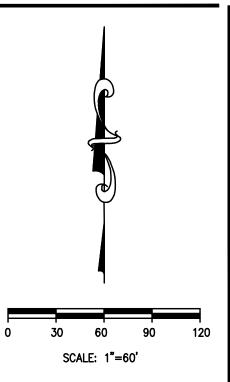
Jesse Lee, PE Civil Engineer





		CURVE TABLE			
RADIUS	LENGTH	CHORD BEARING	CHORD	DELTA	TANGENT
450.00'	88.08'	S08°46'43"W	87.94'	11°12'52"	44.18'
450.00'	88.08'	N08°46'43"E	87.94'	11°12'52"	44.18'
50.00'	78.54'	S41°49'43"E	70.71'	90°00'00"	50.00'
500.00'	77.32'	N01°15'31"W	77.24'	08°51'36"	38.74'
50.00'	86.27'	S43°44'29"W	75.96'	98°51'36"	58.40'
53.00'	83.25'	N48°10'17"E	74.95'	90°00'00"	53.00'

	LINE TABLE				
LINE	LENGTH	BEARING			
L1	521.14'	S03°10'17"W			
L2	60.13'	S14°23'09"W			
L3	228.60'	S03°10'17"W			
L4	414.50'	N86°46'43"W			
L5	110.40'	N03°10'17"E			
L6	132.47'	N05°41'19"W			
L7	715.15'	S86°49'43"E			
L8	464.50'	N86°49'43"W			
L9	687.95'	N86°49'43"W			
L10	55.00'	S03°10'17"W			
L11	611.93'	S03°10'17"W			
L12	757.18'	S86°49'43"E			

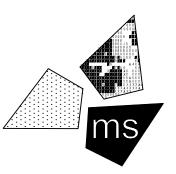


ISSUED:	DATE:
COUNTY REVIEW	08/26/22

NOTICE

THIS ARCHITECTURAL AND ENGINEERING DRAWING IS GIVEN IN CONFIDENCE AND SHALL BE USED ONLY PURSUANT TO THE AGREEMENT WITH THE ARCHITECT. NO OTHER USE, DISSEMINATION, OR DUPLICATION MAY BE MADE WITHOUT PRIOR WRITTEN CONSENT OF THE ARCHITECT. ALL COMMON LAW RIGHTS OF COPYRIGHT AND OTHERWISE ARE HEREBY SPECIFICALLY RESERVED.

CLIENT



ms consultants, inc. engineers, architects, planners 2221 Schrock Road Columbus, Ohio 43229-1547 phone 614.898.7100 fax 614.898.7570

PROJECT

GREENERY RESIDENTIAL

BERLIN TOWNSHIP DELAWARE COUNTY, OHIO 43045

SHEET TITLE SITE PLAN

SEAL

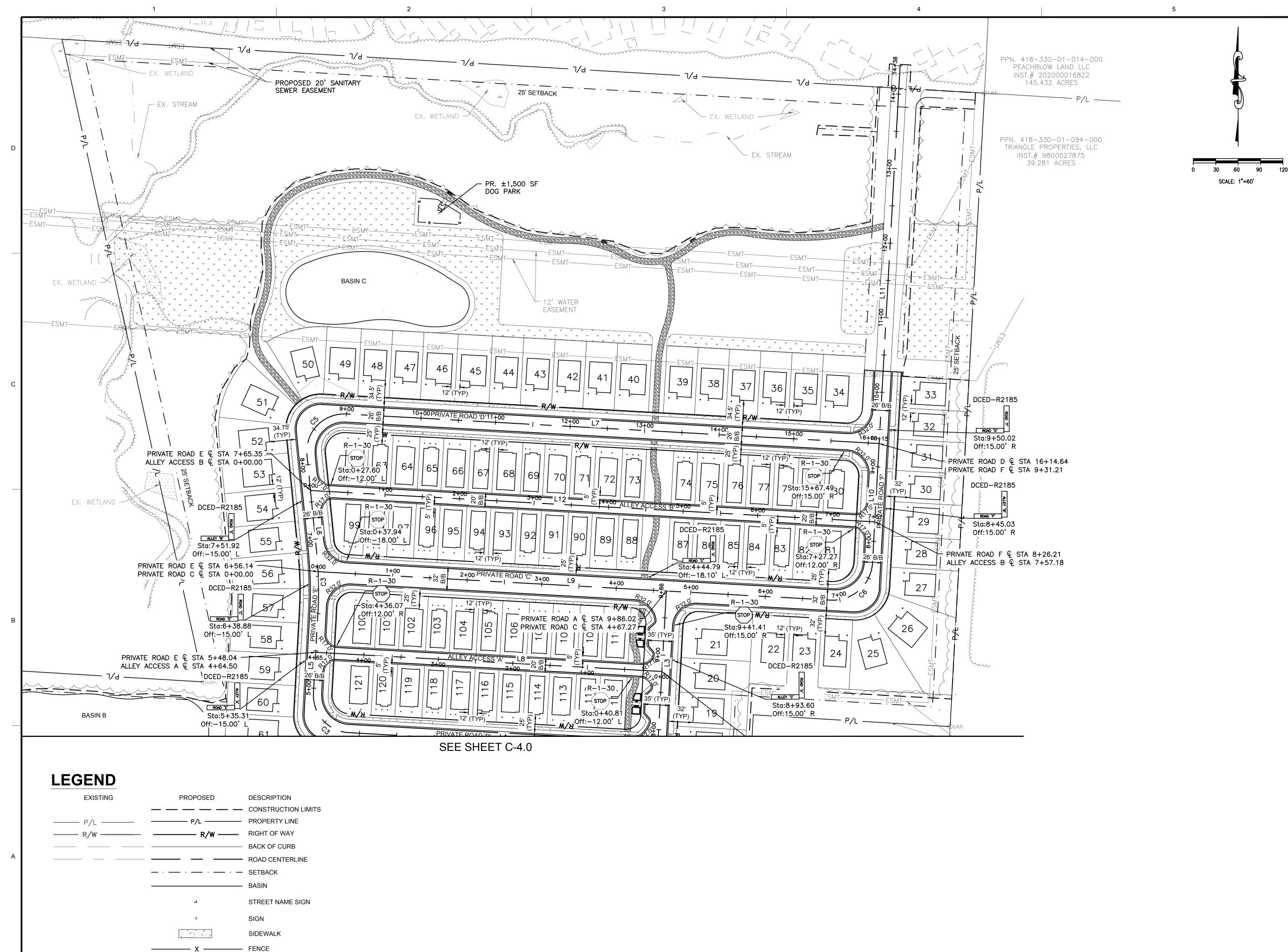
DRAWN BY: MHA

CHECKED BY: IA PROJECT NO: 67-26609

SCALE: AS NOTED

DRAWING

C-4.0



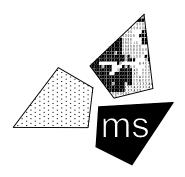
03\67\26609 Onyx - Greenery\Docs\CAD\Civil\C4.0 - Site Plan.dwg, 8/24/2022 2:54 PM, aleman, m

ISSUED:	DATE:
COUNTY REVIEW	08/26/22

NOTICE

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CLIENT



ms consultants, inc. engineers, architects, planners 2221 Schrock Road Columbus, Ohio 43229-1547 phone 614.898.7100 fax 614.898.7570

PROJECT GREENERY RESIDENTIAL

BERLIN TOWNSHIP DELAWARE COUNTY, OHIO 43045

SHEET TITLE SITE PLAN

SEAL

DRAWN BY: MHA

PROJECT NO: 67-26609

SCALE: AS NOTED

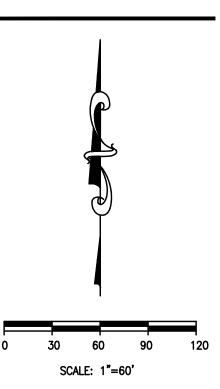
DRAWING

C-4.1



LOT FINI	SHED GRADE	LOT FINISHED GRADE			
LOT #	LOT # FG ELEV		FG ELEV		
1	934.02	12	934.43		
2	933.76	13	934.40		
3	933.79	14	934.66		
4	934.17	15	935.42		
5	934.71	16	936.28		
6	935.27	17	935.57		
7	935.66	18	935.56		
8	936.30	19	935.86		
9	935.91	20	936.53		
10	935.35	21	937.23		
11	934.81				

5	



SITE NOTES:

THE FINISHED GROUND ELEVATION HAS BEEN ESTABLISHED AS THE MINIMUM GRADE AROUND THE FINISHED STRUCTURE TO ENSURE PROPER DRAINAGE. ENGINEERS FROM THE BUILDER MAY SET AN ELEVATION HIGHER THAN THIS MINIMUM DEPENDING ON THE TYPE OF STRUCTURE TO BE BUILT AND THE AMOUNT OF BASEMENT EXCAVATION TO BE GENERATED. ALL EARTHWORK (STREET EXCAVATION AND OVERLOT GRADING) SHALL BE WITHIN ±0.1 FEET. OVERLOT GRADING SHALL BE TO PROPERTY LINE GRADES (NOT PAD ELEVATIONS). SURVEYOR SHALL GIVE A CUT OR FILL TO THIS ELEVATION FROM ONE OR MORE STAKES.

DRIVEWAY SLOPES SHALL MAINTAIN A SLOPE OF NOT LESS THAN 3% AND NO GREATER THAN 10%.

MAXIMUM SLOPE AWAY FROM HOUSE IS 3:1.EXPOSE BLOCK AS NECESSARY.

ALL FILL IN THE AREA OF RIGHT-OF-WAY SHALL BE MADE IN ACCORDANCE WITH ITEM 203.

CONTRACTOR IS RESPONSIBLE FOR REVIEWING GEOTECHNICAL REPORT SPECIFIC TO THE PROJECT SITE AND FOLLOWING THE SITE PREPARATION RECOMMENDATIONS, INCLUDING THE REMOVAL AND MITIGATION OF UNSUITABLE MATERIAL. IF A GEOTECHNICAL REPORT WAS NOT PREPARED FOR THE PROJECT SITE, CONTRACTOR SHALL TAKE ALL RISKS ASSOCIATED WITH SUBSURFACE FINDINGS.

THE CONTRACTOR, BUILDER AND/OR HOME OWNER SHALL MAINTAIN DITCH FOR SIDE YARD FLOOD ROUTING AT ELEVATIONS INDICATED BETWEEN HOUSES AT ALL TIMES, EVEN DURING HOUSE CONSTRUCTION. NO ABOVE GRADE STRUCTURES, DAMS OR OTHER OBSTRUCTIONS TO THE FLOW OF STORM WATER RUNOFF ARE PERMITTED WITHIN THE DRAINAGE EASEMENT

IT SHALL BE THE RESPONSIBILITY OF THE EARTHWORK CONTRACTOR TO MAINTAIN DRAINAGE OR PROVIDE DRAINAGE DIVERSIONS AT ALL TIMES DURING EARTHWORK OPERATIONS. THE COST FOR ALL MATERIALS REQUIRED FOR THIS WORK (I.E. TEMPORARY PIPES, TEMPORARY SWALES) IS TO BE INCLUDED IN THE BID.

COMPACTED GRANULAR BACKFILL PER STANDARD DRAWING DCED-R100 INDICATED ON PLANS USING *.

CONTRACTOR IS RESPONSIBLE TO INSTALL UNDERDRAIN AT BACK OF CURB ONLY. STRUCTURES TO BE CORED FOR ALL PROPOSED CONNECTIONS. 10. HOME BUILDER TO DIRECT ALL BUILDING RUNOFF TO BASINS.

ING	PROPOSED	DESCRIPTION
		CONSTRUCTION LIMITS
	——— P/L ——	PROPERTY LINE
		RIGHT OF WAY
		ROAD CENTERLINE
·		PAVEMENT EDGE
0 — — —	900	MAJOR CONTOUR
1	901	MINOR CONTOUR
-830.00 EX	× ^{840.00}	GRADE SPOT ELEVATION
	FG=900.00	FINISHED GRADE ELEVATION AROUND HOUSE
	HPHP	HIGH POINT
	W	WATER LINE
	Д	FIRE HYDRANT
	SAN	SANITARY SEWER
	s	SANITARY MANHOLE
	ST	STORM SEWER LINE
	•	CATCH BASIN
	\checkmark	CURB INLET
	—	HEADWALL
	۲	MANHOLE
		FLOOD ROUTING ARROW
	r -	

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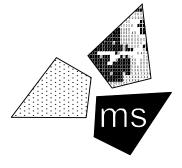
FLOW ARROW	1

ISSUED:	DATE:
COUNTY REVIEW	08/26/22

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CLIENT



ms consultants, inc. engineers, architects, planners 2221 Schrock Road Columbus, Ohio 43229-1547 phone 614.898.7100 fax 614.898.7570

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BERLIN TOWNSHIP DELAWARE COUNTY, OHIO 43045

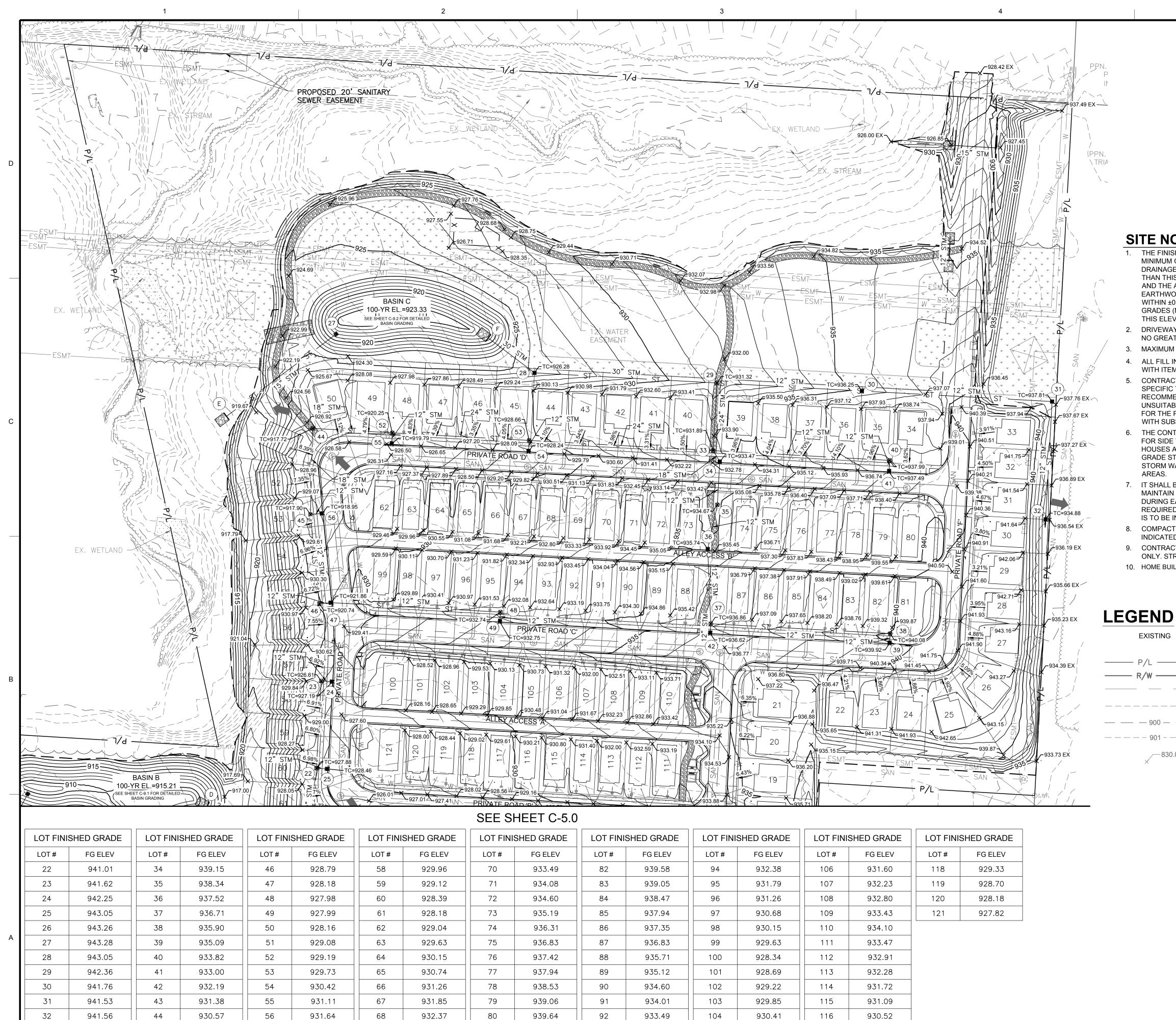
SHEET TITLE GRADING PLAN

SEAL

DRAWN BY: MHA CHECKED BY: IA PROJECT NO: 67-26609 SCALE: AS NOTED

DRAWING

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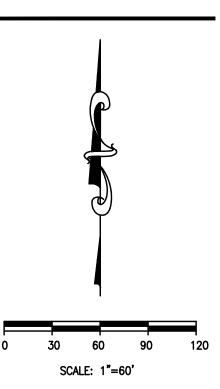
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IED GRADE	LOT FINISHED GRADE		LOT FINI	SHED GRADE	LOT FI	NISHED GRADE	LOT FINI	SHED GRADE
FG ELEV	LOT #	FG ELEV	LOT #	FG ELEV	LOT #	FG ELEV	LOT #	FG ELEV
933.49	82	939.58	94	932.38	106	931.60	118	929.33
934.08	83	939.05	95	931.79	107	932.23	119	928.70
934.60	84	938.47	96	931.26	108	932.80	120	928.18
935.19	85	937.94	97	930.68	109	933.43	121	927.82
936.31	86	937.35	98	930.15	110	934.10		
936.83	87	936.83	99	929.63	111	933.47		
937.42	88	935.71	100	928.34	112	932.91		
937.94	89	935.12	101	928.69	113	932.28		
938.53	90	934.60	102	929.22	114	931.72		
939.06	91	934.01	103	929.85	115	931.09		
939.64	92	933.49	104	930.41	116	930.52		
940.17	93	932.90	105	931.04	117	929.89		

5	



SITE NOTES:

THE FINISHED GROUND ELEVATION HAS BEEN ESTABLISHED AS THE MINIMUM GRADE AROUND THE FINISHED STRUCTURE TO ENSURE PROPER DRAINAGE. ENGINEERS FROM THE BUILDER MAY SET AN ELEVATION HIGHER THAN THIS MINIMUM DEPENDING ON THE TYPE OF STRUCTURE TO BE BUILT AND THE AMOUNT OF BASEMENT EXCAVATION TO BE GENERATED. ALL EARTHWORK (STREET EXCAVATION AND OVERLOT GRADING) SHALL BE WITHIN ±0.1 FEET. OVERLOT GRADING SHALL BE TO PROPERTY LINE GRADES (NOT PAD ELEVATIONS). SURVEYOR SHALL GIVE A CUT OR FILL TO THIS ELEVATION FROM ONE OR MORE STAKES.

DRIVEWAY SLOPES SHALL MAINTAIN A SLOPE OF NOT LESS THAN 3% AND NO GREATER THAN 10%.

MAXIMUM SLOPE AWAY FROM HOUSE IS 3:1.EXPOSE BLOCK AS NECESSARY

ALL FILL IN THE AREA OF RIGHT-OF-WAY SHALL BE MADE IN ACCORDANCE WITH ITEM 203.

CONTRACTOR IS RESPONSIBLE FOR REVIEWING GEOTECHNICAL REPORT SPECIFIC TO THE PROJECT SITE AND FOLLOWING THE SITE PREPARATION RECOMMENDATIONS, INCLUDING THE REMOVAL AND MITIGATION OF UNSUITABLE MATERIAL. IF A GEOTECHNICAL REPORT WAS NOT PREPARED FOR THE PROJECT SITE, CONTRACTOR SHALL TAKE ALL RISKS ASSOCIATED WITH SUBSURFACE FINDINGS.

THE CONTRACTOR, BUILDER AND/OR HOME OWNER SHALL MAINTAIN DITCH FOR SIDE YARD FLOOD ROUTING AT ELEVATIONS INDICATED BETWEEN HOUSES AT ALL TIMES, EVEN DURING HOUSE CONSTRUCTION. NO ABOVE GRADE STRUCTURES, DAMS OR OTHER OBSTRUCTIONS TO THE FLOW OF STORM WATER RUNOFF ARE PERMITTED WITHIN THE DRAINAGE EASEMENT

IT SHALL BE THE RESPONSIBILITY OF THE EARTHWORK CONTRACTOR TO MAINTAIN DRAINAGE OR PROVIDE DRAINAGE DIVERSIONS AT ALL TIMES DURING EARTHWORK OPERATIONS. THE COST FOR ALL MATERIALS REQUIRED FOR THIS WORK (I.E. TEMPORARY PIPES, TEMPORARY SWALES) IS TO BE INCLUDED IN THE BID.

COMPACTED GRANULAR BACKFILL PER STANDARD DRAWING DCED-R100 INDICATED ON PLANS USING *.

CONTRACTOR IS RESPONSIBLE TO INSTALL UNDERDRAIN AT BACK OF CURB ONLY. STRUCTURES TO BE CORED FOR ALL PROPOSED CONNECTIONS. 10. HOME BUILDER TO DIRECT ALL BUILDING RUNOFF TO BASINS.

ING	PROPOSED	DESCRIPTION
		CONSTRUCTION LIMITS
	——— P/L ——	PROPERTY LINE
		RIGHT OF WAY
		ROAD CENTERLINE
		PAVEMENT EDGE
0 — — —	900 ———	MAJOR CONTOUR
1	901	MINOR CONTOUR
-830.00 EX	× ^{840.00}	GRADE SPOT ELEVATION
	FG=900.00	FINISHED GRADE ELEVATION AROUND HOUSE
	HPHP	HIGH POINT
	W	WATER LINE
	A	FIRE HYDRANT
	SAN	SANITARY SEWER
	S	SANITARY MANHOLE
	ST	STORM SEWER LINE
	•	CATCH BASIN
	\checkmark	CURB INLET
	—	HEADWALL
	۲	MANHOLE
		FLOOD ROUTING ARROW

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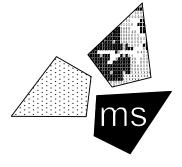
FLOW ARROW

ISSUED: DATE: COUNTY REVIEW 08/26/22 		
COUNTY REVIEW 08/26/22	ISSUED:	DATE:
	COUNTY REVIEW	08/26/22

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PROJECT GREENERY RESIDENTIAL

BERLIN TOWNSHIP DELAWARE COUNTY, OHIO 43045

SHEET TITLE GRADING PLAN

SEAL

DRAWN BY: MHA CHECKED BY: IA PROJECT NO: 67-26609 SCALE: AS NOTED

DRAWING

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SITE EVALUATION, ASSESSMENT, AND PLANNING		PERMIS
PROJECT/SITE INFORMATION THE GREENERY RESIDENTIAL,		FOR OU LANDSC
BERLIN TOWNSHIP, OHIO 43045 DELAWARE COUNTY		WRITTE
		DUST C
ONYX AND EAST 243 N. 5TH STREET		CONTRO IN A MA
COLUMBUS, OHIO 43215		FROM B (EXCLU
GENERAL SCOPE OF PROJECT		FORECA USED W
CONSTRUCT PROPOSED SINGLE-FAMILY RESIDEN SYSTEM.	TIAL SUBDIVISION ALONG WITH ADEQUATE DRAINAGE	AIR PER THAT CI
NATURE OF CONSTRUCTION ACTIVITY (CHECK ALL	THAT APPLY)	INCLUDI
SUBDIVISION <u>X</u> COMMERCIAL		INSTALL
INDUSTRIAL P.U.D.		TO OHIO REQUIR
OTHER		WASTE
CONSTRUCTION SITE ESTIMATES		WITHIN CHEMIC STANDA
TOTAL SITE AREA: CONSTRUCTION SITE AREA TO BE DISTURBED:	$\frac{36.92 \pm AC}{22.70 \pm AC}$	BE DISP
RUNOFF COEFFICIENT BEFORE CONSTRUCTION: RUNOFF COEFFICIENT AFTER CONSTRUCTION:	0.30	<u>OFFSITE</u> MATERI
		MONITO CONTRO
RECEIVING WATERS		SANITA
UN-NAMED TRIBUTARY TO THE OLENTANGY RIVER		FACILITI CONTRA
SEQUENCE OF MAJOR ACTIVITIES:		<u>FERTILIZ</u> SPECIFI
WATER POLLUTION PREVENTION PLAN (SWPP	DL BMPS AT THE LOCATIONS INDICATED ON THE STORM P) PRIOR TO ANY EARTH DISTURBANCE.	A MANN INSTALL
 CLEAR AND GRUB. FULL SITE GRADING. 		MAINTEI
	WITHIN 14 DAYS OF LAST CONSTRUCTION ACTIVITY IN	THE COL
THAT AREA. 6. INSTALL PROPOSED UTILITIES. 7. BUILDING CONSTRUCTION.		CONTRO NOTICE
 BUILDING CONSTRUCTION. FINAL GRADING AND INSTALL PERMANENT SEI RESEED ANY DISTURBED AREAS AND LANDSC 		THE CO REGULA
10. ONCE 70% VEGETATIVE COVERAGE IS ACHIEV		PROVIDI
POTENTIAL SOURCES OF POLLUTION		THE FOL CONTRO
CONCRETE		A. PRC
DETERGENTS WOOD FERTILIZERS		B. PRC
PERTICIZERS PAINTS (ENAMEL AND LATEX) CLEANING SOLVENTS		DAT C. REV
PETROLEUM BASED PRODUCTS		THE MUL
EROSION AND SEDIMENT CONTROLS		GR0 THF
BMP DESCRIPTION: MAINTENANCE AND INSPECTION:	CLEARING AND GRUBBING AS NEEDED	D. ONC
REFERENCE: BMP DESCRIPTION:	TECHNICAL SPECIFICATION DUST CONTROL	ARE EST
MAINTENANCE AND INSPECTION: REFERENCE:	AS NEEDED E&S DETAILS	E. REV MEA
BMP DESCRIPTION:	CONSTRUCTION ENTRANCE	FEN THE
MAINTENANCE AND INSPECTION: REFERENCE:	AS NEEDED E&S DETAILS	CUL
BMP DESCRIPTION:	TEMPORARY SEEDING AND MULCHING	F. AN 24 F
MAINTENANCE AND INSPECTION: HEAVY RAIN REFERENCE:	EVERY SEVEN DAYS AND AFTER E&S DETAILS	
BMP DESCRIPTION:	PERMANENT SEEDING AND MULCHING	G. IF T SITE
MAINTENANCE AND INSPECTION: HEAVY RAIN	EVERY SEVEN DAYS AND AFTER	SHA TO I
REFERENCE:		PEF
BMP DESCRIPTION: MAINTENANCE AND INSPECTION: RAIN EVENT	INLET PROTECTION EVERY SEVEN DAYS AND AFTER EACH	<u>INSPEC</u> QUALIFI
REFERENCE:	E&S DETAILS	SITE AN
OTHER SEDIMENT AND EROSION CONTROL NOTES		DISTURI BE INSP
TEMPORARY EROSION CONTROLS WILL BE AP	PLIED PRIOR TO ONSET OF WINTER WEATHER FOR	MANAGE CONTRO
 DISTURBED AREAS THAT WILL BE LEFT IDLE O PERMANENT EROSION CONTROLS WILL BE AP REMAINING DORMANT FOR OVER 1 YEAR OR A 	PLIED WITHIN 7 DAYS FOR DISTURBED AREAS	INSPEC ⁻ A RAINF
	AT FINAL GRADE. /IENTED FOR ALL AREAS REMAINING DISTURBED OVER 7	ALLOWA
POST CONSTRUCTION BMP'S		ALLOWA AND TO
BASED ON THE OHIO GENERAL CONSTRUCTION PE	RMIT, THE PROJECT IS REQUIRED TO PROVIDE A WATER	1. WA 2. WA
QUALITY BMP FOR THE SITE.		3. POT 4. ROU
ADDITIONAL BMP'S		5. PAV OCC
	VHICH CONTAIN RUBBER, GREASE, ASPHALT, OR JTO PARTS, PLASTICS OR PLASTIC COATED WIRE. (SEE RESTRICTED AREAS. RESTRICTED AREAS ARE DEFINED	ARE 6. UNC
AC 3745-19) OPEN BURNING IS NOT ALLOWED IN I AS:	NEGINIGIED AREAG. REGIRIGIED AREAG ARE DEFINED	7. UNC 8. FOL
A3.		
 WITHIN CORPORATION LIMITS WITHIN 1,000 FEET OF A MUNICIPAL CORPORA 	TION	9. UNC 10. LAN
1. WITHIN CORPORATION LIMITS		9. UNC 10. LAN <u>ESTABLI</u>

SIBLE IN A RESTRICTED AREA FOR THE FOLLOWING ACTIVITIES: HEATING TAR, WELDING AND ENE TORCHES, SMUDGE POTS AND SIMILAR OCCUPATIONAL NEEDS, AND HEATING OR WARMTH TDOOR BARBEQUES. OUTSIDE OF RESTRICTED AREAS, OPEN BURNING IS PERMISSIBLE FOR APE WASTES (PLANT MATERIAL), LAND-CLEARING WASTES (PLANT MATERIAL, WITH PRIOR N PERMISSION FROM OHIO EPA), AND AGRICULTURAL WASTES (MATERIAL GENERATED BY CROP, ULTURAL, OR LIVESTOCK PRODUCTION PRACTICES.

ONTROL/SUPPRESSANTS: DUST CONTROL IS REQUIRED TO PREVENT NUISANCE CONDITIONS. DUST DLS MUST BE USED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATION AND NOT BE APPLIED NNER, WHICH WOULD RESULT IN A DISCHARGE TO WATERS OF THE STATE. ISOLATION DISTANCES RIDGES, CATCH BASINS, AND OTHER DRAINAGE WAYS MUST BE OBSERVED. APPLICATION DING WATER) MAY NOT OCCUR WHEN PRECIPITATION IS IMMINENT AS NOTED IN THE SHORT TERM AST. USED OIL MAY NOT BE APPLIED FOR DUST CONTROL. CHEMICAL STABILIZERS MAY ONLY BE ITH AEP PERMISSION.

MITTING REQUIREMENTS: ALL CONTRACTORS AND SUB CONTRACTORS MUST BE MADE AWARE RTAIN ACTIVITIES ASSOCIATED WITH CONSTRUCTION WILL REQUIRE AIR PERMITS. ACTIVITIES NG BUT NOT LIMITED TO MOBILE CONCRETE BATCH PLANTS, MOBILE ASPHALT PLANTS, CONCRETE ERS, LARGE GENERATORS, ETC., WILL REQUIRE SPECIFIC OHIO EPA AIR PERMITS FOR ATION AND OPERATION. THESE ACTIVITIES MUST SEE AUTHORIZATION FROM THE SPONDING OF OHIO EPA. NOTIFICATION FOR RESTORATION AND DEMOLITION MUST BE SUBMITTED EPA FOR ALL COMMERCIAL SITES TO DETERMINE IF ASBESTOS CORRECTIVE ACTIONS ARE

DISPOSAL: THE CONTRACTOR SHALL PROVIDE LITTER CONTROL AND COLLECTION OF MATERIALS THE PROJECT BOUNDARIES DURING CONSTRUCTION. ALL FERTILIZER, HYDROCARBON, OR OTHER AL CONTAINERS SHALL BE DISPOSED OF BY THE CONTRACTOR IN ACCORDANCE WITH THE EPA'S RD PRACTICES. NO SOLID MATERIAL INCLUDING BUILDING AND CONSTRUCTION MATERIAL SHALL. OSED OF, DISCHARGED OR BURIED ONSITE.

VEHICLE TRACKING: LOADED HAUL TRUCKS SHALL BE COVERED WITH A TARPAULIN. EXCESS DIRT AL ON THE ROADS SHALL BE REMOVED IMMEDIATELY. HAULING ON UNPAVED SURFACES SHALL BE RED TO MINIMIZE DUST AND CONTROL EROSION. HAUL ROADS SHALL BE WATERED OR OTHER DLS PROVIDED AS NECESSARY TO REDUCE DUST AND CONTROL SEDIMENTS.

RY WASTE: THE CONTRACTOR SHALL PROVIDE PORTABLE SANITARY WASTE FACILITIES. THESE ES SHALL BE COLLECTED OR EMPTIED BY A LICENSED SANITARY WASTE MANAGEMENT ACTOR AS REQUIRED BY STATE REGULATIONS.

ERS AND PESTICIDES: FERTILIZER SHALL BE APPLIED AT A RATE SPECIFIED BY THE CATIONS OR THE MANUFACTURER. THE APPLICATION OF FERTILIZERS SHALL BE ACCOMPLISHED IN ER AS DESCRIBED BY THE SPECIFICATION OR MANUFACTURER TO ENSURE THE PROPER ATION AND TO AVOID OVER FERTILIZING. PESTICIDES ARE NOT ANTICIPATED FOR THIS PROJECT.

<u>NANCE</u>

NTRACTOR WILL BE RESPONSIBLE FOR MAINTENANCE AND REPAIRS OF EROSION AND SEDIMENT OL DEVICES AND THE REMOVAL OF THE EROSION AND SEDIMENT CONTROL DEVICES AFTER THE OF TERMINATION IS EXECUTED.

NTRACTOR SHALL REVIEW THE PROJECT AND ALL EROSION AND SEDIMENT CONTROLS ON A R BASIS AND DURING AND FOLLOWING RAINFALL EVENTS. AN INSPECTION FORM HAS BEEN ED IN THE SPECIFICATIONS. THE CONTRACTOR SHALL BE REQUIRED TO KEEP A LOG OF ALL THE TION REPORTS, GRADING AND STABILIZATION ACTIVITIES, AND SWPPP AMENDMENTS AT THE SITE LOWING PRACTICES WILL BE IMPLEMENTED TO MAINTAIN AND MONITOR EROSION AND SEDIMENT

DJECT REVIEW ON A REGULAR BASIS.

)VIDE AND MAINTAIN RAIN GAUGES ONSITE (IF NOT AVAILABLE IN THE AREA) TO RECORD RAINFALL A DAILY.

/IEW STABILIZATION PRACTICES AND CONTROLS ON A REGULAR BASIS AND MAINTAIN AND REPAIR ESE MEASURES AND CONTROLS AS NECESSARY. TEMPORARY AND/OR PERMANENT SEEDING. CHING AND SODDING SHALL BE REPAIRED IN BARE SPOTS AND WASHOUTS, AND HEALTHY OWTH ESTABLISHED. LINE AND GRADE OF SWALES AND CULVERTS SHALL BE MAINTAINED ROUGHOUT.

CE HEALTHY GROWTH OF TURF IS ESTABLISHED, THE CONTRACTOR SHALL MAINTAIN THESE EAS TO INSURE THE HEIGHT OF THE GRASS DOES NOT REACH MORE THAN 6 INCHES ABOVE THE ABLISHED GRADE.

/IEW EROSION CONTROL MEASURES ON A REGULAR BASIS AND MAINTAIN AND REPAIR THESE ASURES AND CONTROLS AS NECESSARY. BUILT UP SEDIMENTS SHALL BE REMOVED FROM SILT ICES AND FILTER CLOTH SHALL BE REPLACED AS NECESSARY AND WHEN THEY HAVE SERVED EIR USEFULNESS. ACCUMULATED SEDIMENT SHALL BE REMOVED FROM DRAINAGE SWALES AND VERTS.

INSPECTION AND MAINTENANCE REPORT SHALL BE COMPLETED EVERY SEVEN DAYS AND WITHIN HOURS OF A RAINFALL EVENT OF 0.5 INCHES OR MORE. THE CONTRACTOR SHALL CREATE AN PECTION AND MAINTENANCE REPORT LOG AND NOTE ANY AMENDMENTS TO THE SWPPP THAT CUR DURING CONSTRUCTION.

HE CONTRACTOR ELECTS TO APPLY FOR PERMITS FOR DISCHARGE OF STORMWATER FROM THE E DURING CONSTRUCTION, ALL POINTS OF DISCHARGE OF STORMWATER RUNOFF FROM THE SITE ALL BE INSPECTED ON A DAILY BASIS AND CONTROLS AND MEASURES REPAIRED AS NECESSARY MAINTAIN ACCEPTABLE WATER QUALITY AND DISCHARGE VOLUMES IN ACCORDANCE WITH THE RMIT

<u>FIONS</u>

ED PERSONNEL SHALL INSPECT ALL POINTS OF DISCHARGE, AS APPLICABLE, FROM THE PROJECT D ALL DISTURBED AREAS OF THE CONSTRUCTION SITE THAT HAVE NOT BEEN STABILIZED.

BED AREAS AND AREAS USED FOR STORAGE OF MATERIALS EXPOSED TO PRECIPITATION SHALL ECTED FOR EVIDENCE OF, OR POTENTIAL FOR POLLUTANTS ENTERING THE STORMWATER EMENT SYSTEM. THE STORMWATER MANAGEMENT SYSTEM AND EROSION AND SEDIMENT OL MEASURES SHALL BE OBSERVED TO ENSURE THAT THEY ARE OPERATING CORRECTLY. FION AND MAINTENANCE REPORTS SHALL BE COMPLETED AT LEAST EVERY WEEK AND FOLLOWING ALL EVENT OF 0.5 INCHES OF WATER OR GREATER.

ABLE NON-STORMWATER DISCHARGE MANAGEMENT

ABLE NON-STORMWATER DISCHARGES AND THE MEASURES USED TO ELIMINATE OR REDUCE THEM PREVENT THEM FROM BECOMING CONTAMINATED MAY INCLUDE DEPENDING ON THE PERMIT: TERS USED TO WASH VEHICLES WHERE DETERGENTS ARE NOT USED TER USED TO CONTROL DUST

ABLE WATER INCLUDING UNCONTAMINATED WATER LINE FLUSHINGS

JTINE EXTERNAL BUILDING WASH DOWN THAT DOES NOT USE DETERGENTS /EMENT WASH WATER WHERE SPILLS OR LEAKS OF TOXIC OR HAZARDOUS MATERIALS HAVE NOT CURRED (UNLESS ALL SPILLED MATERIAL HAS BEEN REMOVED) AND WHERE DETERGENTS E NOT USED

CONTAMINATED AIR CONDITIONING OR COMPRESSOR CONDENSATE

CONTAMINATED GROUND WATER OR SPRING WATER

INDATION OR FOOTING DRAINS WHERE FLOWS ARE NOT CONTAMINATED WITH PROCESS MATERIALS SUCH AS SOLVENTS CONTAMINATED EXCAVATION DEWATERING

IDSCAPE IRRIGATION

SH PROPER EQUIPMENT/VEHICLE FUELING AND MAINTENANCE PRACTICES

ENT FUELING AND MAINTENANCE, OIL CHANGING, ETC., SHALL BE PERFORMED AWAY FROM

WATERCOURSES, DITCHES, OR STORM DRAINS, IN AN AREA DESIGNATED FOR THAT PURPOSE. THE DESIGNATED AREA SHALL BE EQUIPPED FOR RECYCLING OIL AND CATCHING SPILLS. SECONDARY CONTAINMENT SHALL BE PROVIDED FOR ALL FUEL OIL STORAGE TANKS. THESE AREAS MUST BE INSPECTED EVERY SEVEN DAYS AND WITHIN 24 HOURS OF A 0.5 INCH OR GREATER RAIN EVENT TO ENSURE THERE ARE NO EXPOSED MATERIALS WHICH WOULD CONTAMINATE STORM WATER.

SPILL PREVENTION CONTROL PLAN

SITE OPERATORS MUST BE AWARE THAT SPILL PREVENTION CONTROL AND COUNTERMEASURES (SPCC) REQUIREMENTS APPLY. AN SPCC PLAN IS REQUIRED FOR SITES WITH ONE SINGLE ABOVEGROUND STORAGE OF 1,320 GALLONS OR MORE, OR 42,000 GALLONS OF UNDERGROUND STORAGE. SOILS THAT HAVE BEEN CONTAMINATED MUST BE DISPOSED OF IN ACCORDANCE WITH SECTION "CONTAMINATED SOILS" FOUND BELOW.

SPILLS ON PAVEMENT SHALL BE ABSORBED WITH SAWDUST, CAT LITTER OR OTHER ABSORBENT MATERIAL AND DISPOSED OF WITH THE TRASH AT A LICENSED SANITARY LANDFILL. HAZARDOUS OR INDUSTRIAL WASTES SUCH AS MOST SOLVENTS, GASOLINE, OIL-BASED PAINTS, AND CEMENT CURING COMPOUNDS REQUIRE SPECIAL HANDLING. SPILLS SHALL BE REPORTED TO THE OHIO EPA (1-800-282-9378). SPILLS OF 25 GALLONS OR MORE OF PETROLEUM PRODUCTS SHALL BE REPORTED TO OHIO EPA (1-800-282-9378), THE LOCAL FIRE DEPARTMENT, AND THE LOCAL EMERGENCY PLANNING COMMITTEE WITHIN 30 MINUTES OF THE DISCOVERY OF THE RELEASE. ALL SPILLS, WHICH RESULT IN CONTACT WITH WATER OF THE STATE, MUST BE REPORTED TO OHIO EPA'S HOTLINE. VAUGHN KAUFMANN, AEP REGIONAL ENVIRONMENTAL COORDINATOR (REC) SHALL BE CONTACTED AT (740) 779-5252.

CONTAMINATED SOILS

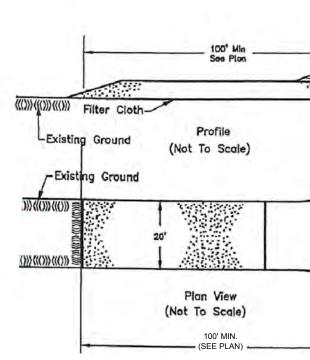
IF SUBSTANCES SUCH AS OIL, DIESEL FUEL, HYDRAULIC FLUID, ANTIFREEZE, ETC., ARE SPILLED, LEAKED, OR RELEASED ONTO THE SOIL, THE SOIL SHOULD BE DUG UP AND DISPOSED OF AT A LICENSED SANITARY LANDFILL OR OTHER APPROVED PETROLEUM CONTAMINATED SOIL REMEDIATION FACILITY (NOT A CONSTRUCTION/DEMOLITION DEBRIS LANDFILL). PLEASE BE AWARE THAT STORM WATER RUN OFF ASSOCIATED WITH CONTAMINATED SOILS ARE NOT BEING AUTHORIZED UNDER OHIO EPA'S GENERAL STORMWATER PERMIT ASSOCIATED WITH CONSTRUCTION ACTIVITIES. IN THE EVENT THERE ARE LARGE EXTENSIVE AREAS OF CONTAMINATED SOILS ADDITIONAL MEASURES ABOVE AND BEYOND THE CONDITIONS OF OHIO EPA'S GENERAL CONSTRUCTION STORMWATER PERMIT WILL BE REQUIRED. DEPENDING ON THE EXTENT OF CONTAMINATION, ADDITIONAL TREATMENT AND/OR COLLECTION AND DISPOSAL MAY BE REQUIRED. ALL STORMWATER DISCHARGES ASSOCIATED WITH CONTAMINATED SOILS MUST BE AUTHORIZED UNDER AN ALTERNATE NPDES PERMIT.

CONSTRUCTION ENTRANCE (CE)

DESCRIPTION

A CONSTRUCTION ENTRANCE IS A STABILIZED PAD OF STONE UNDERLAIN WITH GEOTEXTILE AND IS USED TO REDUCE THE AMOUNT OF MUD TRACKED OFF-SITE WITH CONSTRUCTION TRAFFIC. LOCATED AT POINTS OF INGRESS/EGRESS, THE PRACTICE IS USED TO REDUCE THE AMOUNT OF MUD TRACKED OFF-SITE WITH CONSTRUCTION TRAFFIC.

SPECIFICATIONS FOR CONSTRUCTION ENTRANCE



- STONE SIZE USE 2" STONE. ITEM 304 TO CHOKE STONE IS NOT PERMITTED.
- LENGTH AS REQUIRED.
- THICKNESS NOT LESS THAN SIX (6) INCHES.
- EGRESS OCCURS.
- FILTER CLOTH WILL BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING OF STONE.
- CONSTRUCTION ENTRANCE.
- MUST BE REMOVED IMMEDIATELY.
- AND WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE.
- 10. THE CITY ENGINEER WHEN SEDIMENT BECOMES DISCHARGED TO PUBLIC STREETS.



Mountable Berr optional

Existing

WIDTH - TWENTY (20) FOOT MINIMUM, BUT NOT LESS THAN THE FULL WIDTH AT POINTS WHERE INGRESS OR

SURFACE WATER - ALL SURFACE WATER FLOWING OR DIVERTED TOWARD CONSTRUCTION ENTRANCE SHALL BE PIPED ACROSS THE ENTRANCE. IF PIPING IS IMPRACTICAL, A MOUNTABLE BERM WITH 5:1 SLOPES WILL BE PERMITTED. COST OF PIPE SHALL BE INCLUDED IN THE PRICE BID FOR THE STABILIZED

MAINTENANCE - THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHT-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHTS-OF-WAY

WASHING - WHEELS SHALL BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO PUBLIC RIGHTS-OF-WAYS. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH STONE

PERIODIC INSPECTION AND NEEDED MAINTENANCE SHALL BE PROVIDED AFTER EACH RAIN.

CONTRACTOR SHALL PERFORM VACUUM STREET SWEEPING AT NO EXPENSE TO THE CITY AS DIRECTED BY

DATE: 08/26/22
AWING IS GIVEN IN RUANT TO THE ER USE, ADE WITHOUT PRIC COMMON LAW E HEREBY
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nners 17
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ERAL

CHECKED BY: IA PROJECT NO: 67-26609

SCALE: AS NOTED

DRAWING

TEMPORARY SEEDING (TS)

DESCRIPTION

TEMPORARY SEEDINGS ESTABLISH TEMPORARY COVER ON DISTURBED AREAS BY PLANTING APPROPRIATE RAPIDLY GROWING ANNUAL GRASSES OR SMALL GRAINS. TEMPORARY SEEDING PROVIDES EROSION CONTROL ON AREAS IN BETWEEN CONSTRUCTION OPERATIONS. GRASSES, WHICH ARE QUICK GROWING, ARE SEEDED AND USUALLY MULCHED TO PROVIDE PROMPT, TEMPORARY SOIL STABILIZATION. IT EFFECTIVELY MINIMIZES THE AREA OF A CONSTRUCTION SITE PRONE TO EROSION AND SHOULD BE USED EVERYWHERE THE SEQUENCE OF CONSTRUCTION OPERATIONS ALLOWS VEGETATION TO BE ESTABLISHED.

SPECIFICATIONS FOR TEMPORARY SEEDING

LBS/AC. BOTANICAL NAME

AVENA SATIVA SEED OATS LOLIUM MULTIFLORUM ANNUAL RYEGRASS 10

COMMON NAME

TEMPORARY SEEDING SPECIES SELECTION					
SEEDING DATES	SPECIES	LB/1000 SF	LB/ACREA		
MAR 1 TO AUG 15	OATS	3	128-4 BUSHEL		
	TALL FESCUE	1	40		
	ANNUAL RYEGRASS	1	40		
	PERENNIAL RYGRASS	1	40		
	TALL FESCUE	1	40		
	ANNUAL RYEGRASS	1	40		
	ANNUAL RYEGRASS	1.25	55		
	PERENNIAL RYEGRASS	3.25	142		
	CREEPING RED FESCUE	0.40	17		
	KENTUCKY BLUEGRASS	RASS 0.40 17			
	OATS	3	128-3 BUSHEL		
	TALL FESCUE	1	40		
	ANNUAL RYEGRASS	1	40		
AUG 16 TO NOV	RYE	3	112-3 BUSHEL		
	TALL FESCUE	1	40		
	ANNUAL RYEGRASS	1	40		
	WHEAT	3	120-2 BUSHEL		
	TALL FESCUE	1	40		
	ANNUAL RYEGRASS	1	40		
	PERENNIAL RYE	1	40		
	TALL FESCUE	1	40		
	ANNUAL RYEGRASS	1	40		
	ANNUAL RYEGRASS	1.25	40		
	PERENNIAL RYEGRASS	3.25	40		
	CREEPING RED FESCUE	0.40	40		
	KENTUCKY BLUEGRASS	KENTUCKY BLUEGRASS 0.40			
NOV 1 TO FEB 29	USE MULCH ONLY OR DOR	MANT SEEDING			

STRUCTURAL EROSION AND SEDIMENT CONTROL PRACTICES SUCH AS DIVERSIONS AND SEDIMENT TRAPS SHALL BE INSTALLED AND STABILIZED WITH TEMPORARY SEEDING PRIOR TO GRADING THE REST OF THE CONSTRUCTION SITE.

TEMPORARY SEED SHALL BE APPLIED BETWEEN CONSTRUCTION OPERATIONS ON SOIL THAT WILL NOT 2. BE GRADED OR REWORKED FOR 21 DAYS OR GREATER. THESE IDLE AREAS SHALL BE SEEDED WITHIN 7 DAYS AFTER GRADING.

3. THE SEEDBED SHOULD BE PULVERIZED AND LOOSE TO ENSURE THE SUCCESS OF ESTABLISHING VEGETATION. TEMPORARY SEEDING SHOULD NOT BE POSTPONED IF IDEAL SEEDBED PREPARATION IS NOT POSSIBLE

SOIL AMENDMENTS—TEMPORARY VEGETATION SEEDING RATES SHALL ESTABLISH ADEQUATE STANDS OF VEGETATION, WHICH MAY REQUIRE THE USE OF SOIL AMENDMENTS. BASE RATES FOR LIME AND FERTILIZER SHALL BE USED.

SEEDING METHOD—SEED SHALL BE APPLIED UNIFORMLY WITH A CYCLONE SPREADER. DRILL. CULTIPACKER SEEDER, OR HYDROSEEDER. WHEN FEASIBLE, SEED THAT HAS BEEN BROADCAST SHALL BE COVERED BY RAKING OR DRAGGING AND THEN LIGHTLY TAMPED INTO PLACE USING A ROLLER OR CULTIPACKER. IF HYDROSEEDING IS USED, THE SEED AND FERTILIZER WILL BE MIXED ON-SITE AND THE SEEDING SHALL BE DONE IMMEDIATELY AND WITHOUT INTERRUPTION.

MULCHING TEMPORARY SEEDING:

APPLICATIONS OF TEMPORARY SEEDING SHALL INCLUDE MULCH. WHICH SHALL BE APPLIED DURING OR IMMEDIATELY AFTER SEEDING. SEEDINGS MADE DURING OPTIMUM SEEDING DATES ON FAVORABLE, VERY FLAT SOIL CONDITIONS MAY NOT NEED MULCH TO ACHIEVE ADEQUATE STABILIZATION.

- 2.1. STRAW—IF STRAW IS USED, IT SHALL BE UNROTTED SMALL-GRAIN STRAW APPLIED AT A RATE OF 2 TONS PER ACRE OR 90 LBS./ 1,000 SQ. FT. (2-3 BALES) HYDROSEEDERS—IF WOOD CELLULOSE FIBER IS USED, IT SHALL BE USED AT 2000 LBS./ AC. OR 46 2.2.
- LB./ 1,000-SQ.-FT. OTHER—OTHER ACCEPTABLE MULCHES INCLUDE MULCH MATTINGS APPLIED ACCORDING TO 2.3.
- MANUFACTURER FS RECOMMENDATIONS OR WOOD CHIPS APPLIED AT 6 TON/ AC. STRAW MULCH SHALL BE ANCHORED IMMEDIATELY TO MINIMIZE LOSS BY WIND OR WATER.

ANCHORING METHODS:

3.1. MECHANICAL—A DISK, CRIMPER, OR SIMILAR TYPE TOOL SHALL BE SET STRAIGHT TO PUNCH OR ANCHOR THE MULCH MATERIAL INTO THE SOIL. STRAW MECHANICALLY ANCHORED SHALL NOT BE FINELY CHOPPED BUT LEFT TO A LENGTH OF APPROXIMATELY 6 INCHES. 3.2. MULCH NETTING—NETTING SHALL BE USED ACCORDING TO THE MANUFACTURERS

RECOMMENDATIONS. NETTING MAY BE NECESSARY TO HOLD MULCH IN PLACE IN AREAS OF CONCENTRATED RUNOFF AND ON CRITICAL SLOPES. 3.3. SYNTHETIC BINDERS—SYNTHETIC BINDERS SUCH AS ACRYLIC DLR (AGRI-TAC), DCA-70,

PETROSET, TERRA TRACK OR EQUIVALENT MAY BE USED AT RATES RECOMMENDED BY THE MANUFACTURER. 3.4. WOOD-CELLULOSE FIBER—WOOD-CELLULOSE FIBER BINDER SHALL BE APPLIED AT A NET DRY

WT. OF 750 LB./AC. THE WOOD-CELLULOSE FIBER SHALL BE MIXED WITH WATER AND THE MIXTURE SHALL CONTAIN A MAXIMUM OF 50 LB. / 100 GAL.

PERMANENT SEEDING (PS)

DESCRIPTION

PERENNIAL VEGETATION IS ESTABLISHED ON AREAS THAT WILL NOT BE RE-DISTURBED FOR PERIODS LONGER THAN 12 MONTHS. PERMANENT SEEDING INCLUDES SITE PREPARATION, SEEDBED PREPARATION PLANTING SEED. MULCHING. IRRIGATION AND MAINTENANCE.

PERMANENT VEGETATION IS USED TO STABILIZE SOIL, REDUCE EROSION, PREVENT SEDIMENT POLLUTION, REDUCE RUNOFF BY PROMOTING INFILTRATION, AND PROVIDE STORMWATER QUALITY BENEFITS OFFERED BY DENSE GRASS COVER.

SITE PREPARATION: 1. SUBSOILER, PLOW, OR OTHER IMPLEMENT SHALL BE USED TO REDUCE SOIL COMPACTION AND ALLOW MAXIMUM INFILTRATION. (MAXIMIZING INFILTRATION WILL HELP CONTROL BOTH RUNOFF RATE AND WATER QUALITY.) SUBSOILING SHOULD BE DONE WHEN THE SOIL MOISTURE IS LOW ENOUGH TO ALLOW THE SOIL TO CRACK OR FRACTURE. SUBSOILING SHALL NOT BE DONE ON SLIP-PRONE AREAS WHERE SOIL PREPARATION SHOULD BE LIMITED TO WHAT IS NECESSARY FOR ESTABLISHING VEGETATION. 2. THE SITE SHALL BE GRADED AS NEEDED TO PERMIT THE USE OF CONVENTIONAL EQUIPMENT FOR SEEDBED PREPARATION AND SEEDING.

SEEDBED PREPARATION:

- TEST THE SOIL CONDITIONS FOR FEEDING BEFORE STARTING SEEDING AND MULCHING. LIME—AGRICULTURAL GROUND LIMESTONE SHALL BE APPLIED TO ACID SOIL AS RECOMMENDED BY A SOIL TEST. IN LIEU OF A SOIL TEST, LIME SHALL BE APPLIED AT THE RATE OF 100 POUNDS PER 1,000-SQ.
- FT. OR 2 TONS PER ACRE.
- 3. FERTILIZER—FERTILIZER SHALL BE APPLIED AS RECOMMENDED BY A SOIL TEST. CONTRACTOR SHALL PERFORM LAB TESTING ON SOIL AND PROVIDE A CERTIFIED FERTILIZER RATIO FOR THE SITE SOILS AND
- SPECIFIED SEED MIX.

SEEDING DATES AND SOIL CONDITIONS:

DORMANT SEEDINGS:

MULCHING:

- MULCHED. 100% OF THE GROUND SURFACE SHALL BE COVERED WITH AN APPROVED MATERIAL. 2. MATERIALS 2.1. STRAW—IF STRAW IS USED IT SHALL BE UNROTTED SMALL-GRAIN STRAW APPLIED AT THE RATE OF 2 TONS PER ACRE OR 90 POUNDS (TWO TO THREE BALES) PER 1,000-SQ. FT. THE MULCH SHALL BE SPREAD UNIFORMLY BY HAND OR MECHANICALLY APPLIED SO THE SOIL SURFACE IS COVERED. FOR UNIFORM DISTRIBUTION OF HAND-SPREAD MULCH, DIVIDE AREA INTO APPROXIMATELY 1,000-SQ.-FT. SECTIONS AND SPREAD TWO 45-LB. BALES OF STRAW IN EACH SECTION. 2.2. HYDROSEEDERS—IF WOOD CELLULOSE FIBER IS USED, IT SHALL BE APPLIED AT 2,000 LB./AC. OR 46 LB./1,000 SQ. FT. 2.3. OTHER—OTHER ACCEPTABLE MULCHES INCLUDE ROLLED EROSION CONTROL MATTINGS OR
- BLANKETS APPLIED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS OR WOOD CHIPS APPLIED AT 6 TONS PER ACRE. 3
- STRAW AND MULCH ANCHORING METHODS-STRAW MULCH SHALL BE ANCHORED IMMEDIATELY TO MINIMIZE LOSS BY WIND OR WATER: 3.1. MECHANICAL—A DISK, CRIMPER, OR SIMILAR TYPE TOOL SHALL BE SET STRAIGHT TO PUNCH OR
- ANCHOR THE MULCH MATERIAL INTO THE SOIL. STRAW MECHANICALLY ANCHORED SHALL NOT BE FINELY CHOPPED BUT, GENERALLY, BE LEFT LONGER THAN 6 INCHES. MULCH NETTING—NETTING SHALL BE USED ACCORDING TO THE MANUFACTURER IFS 3.2. RECOMMENDATIONS. NETTING MAY BE NECESSARY TO HOLD MULCH IN PLACE IN AREAS OF CONCENTRATED RUNOFF AND ON CRITICAL SLOPES. ASPHALT EMULSION—ASPHALT SHALL BE APPLIED AS RECOMMENDED BY THE MANUFACTURE OR 3.3.
- AT THE RATE OF 160 GALLONS PER ACRE. SYNTHETIC BINDERS—SYNTHETIC BINDERS SUCH AS ACRYLIC DLR (AGRI-TAC), DCA-70, PETROSET. 3.4. TERRA TACK OR EQUIVALENT MAY BE USED AT RATES SPECIFIED BY THE MANUFACTURER. WOOD CELLULOSE FIBER—WOOD CELLULOSE FIBER SHALL BE APPLIED AT A NET DRY WEIGHT OF 3.5. 750 POUNDS PER ACRE. THE WOOD CELLULOSE FIBER SHALL BE MIXED WITH WATER WITH THE MIXTURE CONTAINING A MAXIMUM OF 50 POUNDS CELLULOSE PER 100 GALLONS OF WATER.

IRRIGATION:

DESCRIPTION

SPECIFICATIONS FOR DUST CONTROL

- VEGETATIVE COVER AND/MULCH APPLY TEMPORARY OR PERMANENT SEEDING AND MULCH TO AREAS THAT WILL REMAIN IDLE FOR OVER 21 DAYS. SAVING EXISTING TREES AND LARGE SHRUBS WILL ALSO REDUCE SOIL AND AIR MOVEMENT ACROSS DISTURBED AREAS. SEE TEMPORARY SEEDING; PERMANENT SEEDING; MULCHING PRACTICES; AND TREE AND NATURAL AREA PROTECTION PRACTICES.
- WATERING SPRAY SITE WITH WATER UNTIL THE SURFACE IS WET BEFORE AND DURING GRADING AND REPEAT AS NEEDED, ESPECIALLY ON HAUL ROADS AND OTHER HEAVY TRAFFIC ROUTES. WATERING SHALL BE DONE AT A RATE THAT PREVENTS DUST BUT DOES NOT CAUSE SOIL EROSION. WETTING AGENTS SHALL BE UTILIZED ACCORDING TO MANUFACTURERS INSTRUCTIONS.

- 4. STONE GRADED ROADWAYS AND OTHER SUITABLE AREAS WILL BE STABILIZED USING CRUSHED CRUSHED STONE OR COARSE GRAVEL CAN BE USED AS A PERMANENT COVER TO PROVIDE CONTROL OF SOIL EMISSIONS.
- 5. BARRIERS EXISTING WINDBREAK VEGETATION SHALL BE MARKED AND PRESERVED. SNOW FENCING OR OTHER SUITABLE BARRIER MAY BE PLACED PERPENDICULAR TO PREVAILING AIR CURRENTS AT INTERVALS OF ABOUT 15 TIMES THE BARRIER HEIGHT TO CONTROL AIR CURRENTS AND BLOWING SOIL
- 6. OPERATION AND MAINTENANCE WHEN TEMPORARY DUST CONTROL MEASURES ARE USED; REPETITIVE TREATMENT SHOULD BE APPLIED AS NEEDED TO ACCOMPLISH CONTROL. STREET CLEANING - PAVED AREAS THAT HAVE ACCUMULATED SEDIMENT FROM CONSTRUCTION SHOULD BE CLEANED DAILY, OR AS NEEDED, UTILIZING A STREET SWEEPER OR BUCKET -TYPE END LOADER OR SCRAPER.

	SEEDING RATE		NOTES				
SEED MIX	LBS/ACRE	LBS/1,000 SF	NOTES				
GENERAL USE							
CREEPING RED FESCUE	20-40	½-1	FOR CLOSE MOWING AND FOR WATERWAYS WITH <2.0 FT/SEC				
DOMESTIC RYEGRASS	10-20	1⁄4-1⁄2	VELOCITY				
KENTUCKY BLUEGRASS	20-40	½-1					
TALL FESCUE	40-50	1-1¼					
TURF-TYPE (DWARF) FESCUE	90	21⁄4					
	STEEP BAN	KS OR CUT SLOPES					
TALL FESCUE	40-50	1-11⁄4					
CROWN VETCH	10-20	1⁄4-1⁄2	DO NOT SEED LATER THAN				
TALL FESCUE	20-30	1/2-3/4	AUGUST				
FLAT PEA	20-25	1/2-3/4	DO NOT SEED LATER THAN AUGUST				
TALL FESCUE	20-30	1/2-3/4	AUGUST				
	ROAD DITC	HES AND SWALES					
TALL FESCUE	40-50	1- ¹ ¼					
TURF-TYPE (DWARF) FESCUE	90	21⁄4					
KENTUCKY BLUE GRASS	5	\mathcal{Y}_{10}					
LAWNS							
KENTUCKY BLUEGRASS	100-120	2					
PERENNIAL RYEGRASS		2					
KENTUCKY BLUEGRASS	100-120	2	FOR SHADED AREAS				
CREEPING RED FESCUE		1-1⁄2					

POST CONSTRUCTION INSPECTION AND MAINTENANCE SCHEDULE

	MAINTENANCE PROCEDURES	FREQUENCY OF INSPECTION	
OUTLET CONTROL STRUCTURE	REMOVE ACCUMULATED SEDIMENT AND DEBRIS FROM OUTLET CONTROL STRUCTURE/ORIFICE.	EVERY 6 MONTHS	
STORM SEWER SYSTEM	REMOVE DEBRIS FROM THE SEWER SYSTEM TO ENSURE POSITIVE FLOW TO THE BMP.	EVERY 6 MONTHS	

THE PROPERTY OWNER, ITS ADMINISTRATORS, EXECUTORS, SUCCESSORS, HEIRS OR ASSIGNS SHALL MAINTAIN THE STORMWATER CONTROL FACILITY OR FACILITIES IN GOOD WORKING CONDITION ACCEPTABLE TO THE CITY AND IN ACCORDANCE WITH THE SCHEDULE OF LONG TERM MAINTENANCE ACTIVITIES IN THE STORMWATER CONTROL FACILITY MAINTENANCE PLAN.

ALL MAINTENANCE AND INSPECTIONS SHALL BE PERFORMED IN ACCORDANCE WITH ALL APPLICABLE LOCAL, STATE AND FEDERAL REGULATIONS INCLUDING, BUT NOT LIMITED TO CONFINED SPACE ENTRY.

A COPY OF THE APPROVED PLANS FOR THE STORMWATER MANAGEMENT SYSTEM SHALL BE KEPT AT THE SITE FOR REFERENCE DURING ANY INSPECTIONS OR MAINTENANCE ACTIVITIES.

THE PROPERTY OWNER SHALL MAINTAIN COPIES OF COMPLETE DATED AND SIGNED INSPECTIONS CHECKLISTS IN A MAINTENANCE INSPECTION LOG, ALONG WITH RECORDED DATES AND DESCRIPTIONS OF MAINTENANCE ACTIVITIES PERFORMED BY THE PROPERTY OWNER TO REMEDY THE DEFICIENCIES OBSERVED DURING PRIOR INSPECTIONS. SAMPLE LOG SHEETS FOR STORMWATER BMPS ARE FOUND IN THE COLUMBUS STORMWATER DRAINAGE MANUAL (SWDM) APPENDIX E (USING ONLY SECTION THAT WOULD APPLY TO UNDERGROUND DETENTION/WATER QUALITY FEATURES) THE MAINTENANCE INSPECTION LOG SHALL BE KEPT ON THE PROPERTY AND SHALL BE MADE AVAILABLE TO THE CITY UPON REQUEST. A COPY OF THE MAINTENANCE INSPECTION LOG SHALL BE SUBMITTED ANNUALLY BY DECEMBER 31ST OF EACH YEAR TO THE CITY OF GRANDVIEW HEIGHTS.

UNDERGROUND DETENTION SYSTEMS NATURALLY COLLECT SEDIMENT, INCLUDING GRAVEL, SAND, AND MUD, AS WELL AS OTHER DEBRIS, SUCH AS LITTER. TO MAINTAIN ITS CAPACITY AND FUNCTION, AN UNDERGROUND DETENTION SYSTEM SHOULD BE KEPT FREE OF EXCESSIVE DEBRIS, LITTER, AND SEDIMENT. THE UNDERGROUND DETENTION SYSTEM SHOULD BE INSPECTED ANNUALLY (BY VISUAL OR CAMERA INSPECTION) TO ENSURE THE SYSTEM IS FREE OF SEDIMENT AND DEBRIS. THE OUTLET CONTROL STRUCTURE SHOULD BE VISUALLY INSPECTED BIANNUALLY AS MOST OF THE SEDIMENT AND DEBRIS WILL COLLECT WITHIN THIS STRUCTURE. SEDIMENT AND DEBRIS REMOVED FROM THE UNDERGROUND DETENTION SYSTEM SHOULD BE STORED PROPERLY UNTIL DISPOSAL, ACCORDING TO LOCAL OR OTHER GOVERNING REGULATIONS, TO ENSURE NO EXPOSURE TO STORMWATER RUNOFF.

SPECIFICATION FOR PERMANENT SEEDING

3. TOPSOIL SHALL BE APPLIED WHERE NEEDED TO ESTABLISH VEGETATION.

- THE LIME AND FERTILIZER SHALL BE WORKED INTO THE SOIL WITH A DISK HARROW, SPRING-TOOTH HARROW. OR OTHER SUITABLE FIELD IMPLEMENT TO A DEPTH OF 3 INCHES. ON SLOPING LAND, THE SOIL SHALL BE WORKED ON THE CONTOUR.
- SEEDING SHOULD BE DONE MARCH 1 TO MAY 31 OR AUGUST 1 TO SEPTEMBER 30. IF SEEDING OCCURS OUTSIDE OF THE ABOVE SPECIFIED DATES, ADDITIONAL MULCH AND IRRIGATION MAY BE REQUIRED TO ENSURE A MINIMUM OF 80% GERMINATION. TILLAGE FOR SEEDBED PREPARATION SHOULD BE DONE WHEN THE SOIL IS DRY ENOUGH TO CRUMBLE AND NOT FORM RIBBONS WHEN COMPRESSED BY HAND. FOR WINTER SEEDING, SEE THE FOLLOWING SECTION ON DORMANT SEEDING.

- SEEDINGS SHOULD NOT BE MADE FROM OCTOBER 1 THROUGH NOVEMBER 20. DURING THIS PERIOD, THE SEEDS ARE LIKELY TO GERMINATE BUT PROBABLY WILL NOT BE ABLE TO SURVIVE THE WINTER. 2. THE FOLLOWING METHODS MAY BE USED FOR "DORMANT SEEDING":
- 2.1. FROM OCTOBER 1 THROUGH NOVEMBER 20, PREPARE THE SEEDBED, ADD THE REQUIRED AMOUNTS OF LIME AND FERTILIZER, THEN MULCH AND ANCHOR. AFTER NOVEMBER 20, AND BEFORE MARCH 15, BROADCAST THE SELECTED SEED MIXTURE. INCREASE THE SEEDING RATES BY 50% FOR THIS TYPE OF SEEDING.
- 2.2. FROM NOVEMBER 20 THROUGH MARCH 15, WHEN SOIL CONDITIONS PERMIT, PREPARE THE SEEDBED, LIME AND FERTILIZE, APPLY THE SELECTED SEED MIXTURE, MULCH AND ANCHOR. INCREASE THE SEEDING RATES BY 50% FOR THIS TYPE OF SEEDING.
- 2.3. APPLY SEED UNIFORMLY WITH A CYCLONE SEEDER, DRILL, CULTIPACKER SEEDER, OR HYDRO-SEEDER (SLURRY MAY INCLUDE SEED AND FERTILIZER) ON A FIRM, MOIST SEEDBED 2.4. WHERE FEASIBLE, EXCEPT WHEN A CULTIPACKER TYPE SEEDER IS USED, THE SEEDBED SHOULD BE FIRMED FOLLOWING SEEDING OPERATIONS WITH A CULTIPACKER, ROLLER, OR LIGHT DRAG. ON SLOPING LAND, SEEDING OPERATIONS SHOULD BE ON THE CONTOUR WHERE FEASIBLE.
- 1. MULCH MATERIAL SHALL BE APPLIED IMMEDIATELY AFTER SEEDING, DORMANT SEEDING SHALL BE

PERMANENT SEEDING SHALL INCLUDE IRRIGATION TO ESTABLISH VEGETATION DURING DRY WEATHER OR ON ADVERSE SITE CONDITIONS, WHICH REQUIRE ADEQUATE MOISTURE FOR SEED GERMINATION AND PLANT GROWTH. IRRIGATION RATES SHALL BE MONITORED TO PREVENT EROSION AND DAMAGE TO SEEDED AREAS FROM EXCESSIVE RUNOFF. CONTRACTOR SHALL MAINTAIN PERMANENT SEEDING FOR UP TO ONE YEAR FROM SUBSTANTIAL COMPLETION TO FIX, REPAIR, WATER, REFERTILIZE AND/OR RESEED GRASSED AREAS.



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

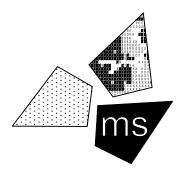
STONE OR COARSE GRAVEL AS SOON AS PRACTICABLE AFTER REACHING AN INTERIM OR FINAL GRADE.

ISSUED:	DATE:
COUNTY REVIEW	08/26/22

NOTICE

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CLIENT



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PROJECT

GREENERY RESIDENTIAL

BERLIN TOWNSHIP DELAWARE COUNTY, OHIO 43045

SHEET TITLE SWPPP - GENERAL NOTES AND DETAILS

SEAL

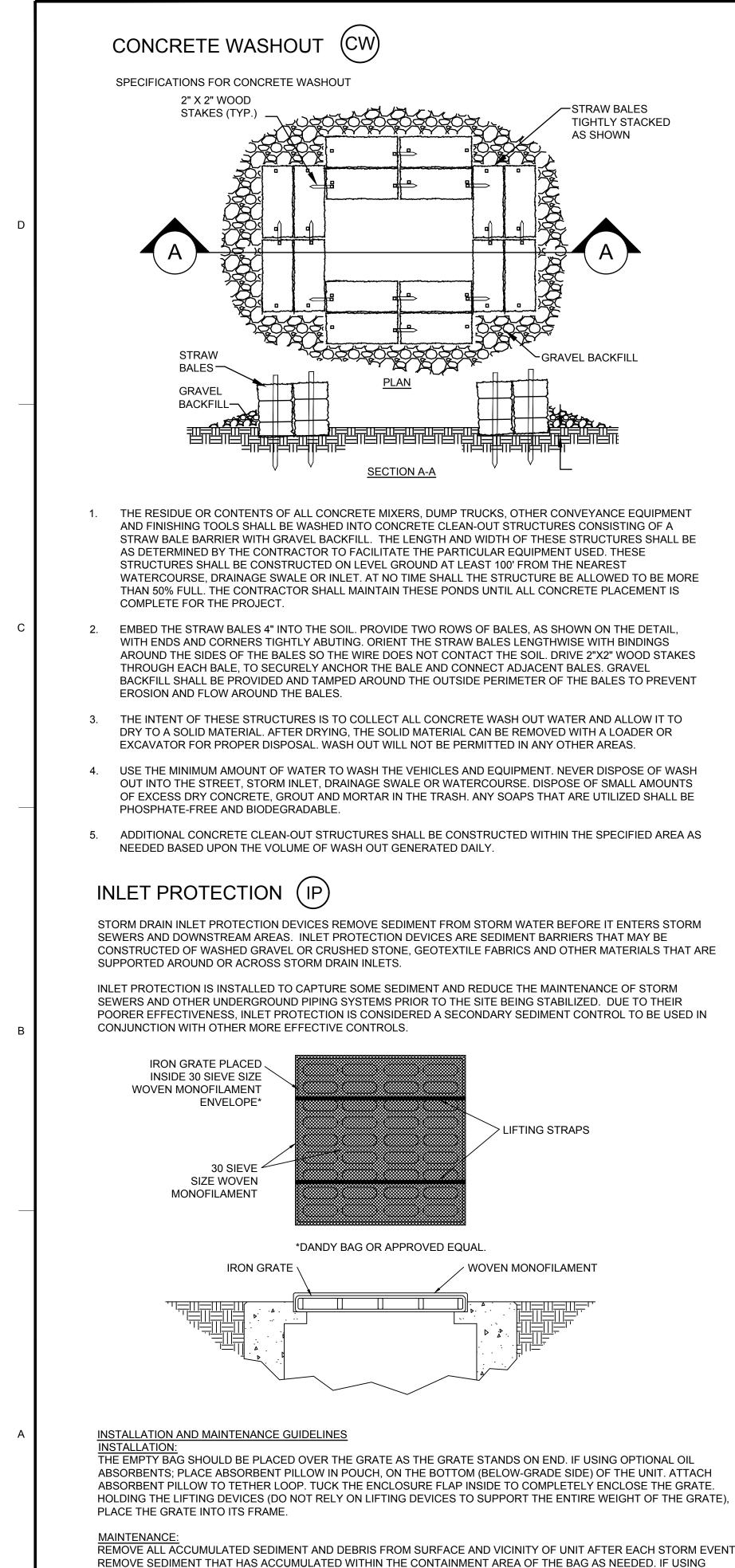
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CHECKED BY: IA PROJECT NO: 67-26609

SCALE: AS NOTED

DRAWING

^{2.} MATERIALS:



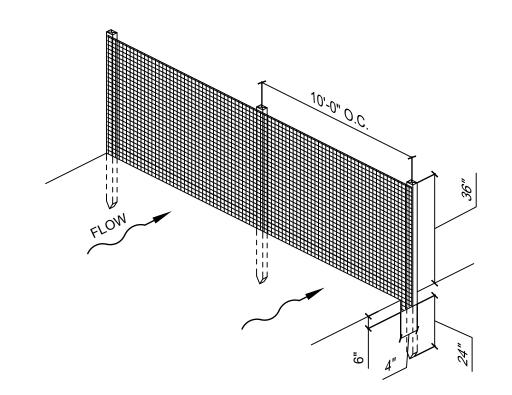
REMOVE ALL ACCUMULATED SEDIMENT AND DEBRIS FROM SURFACE AND VICINITY OF UNIT AFTER EACH STORM EVENT. OPTIONAL OIL ABSORBENTS; REMOVE AND REPLACE ABSORBENT PILLOW WHEN NEAR SATURATION.

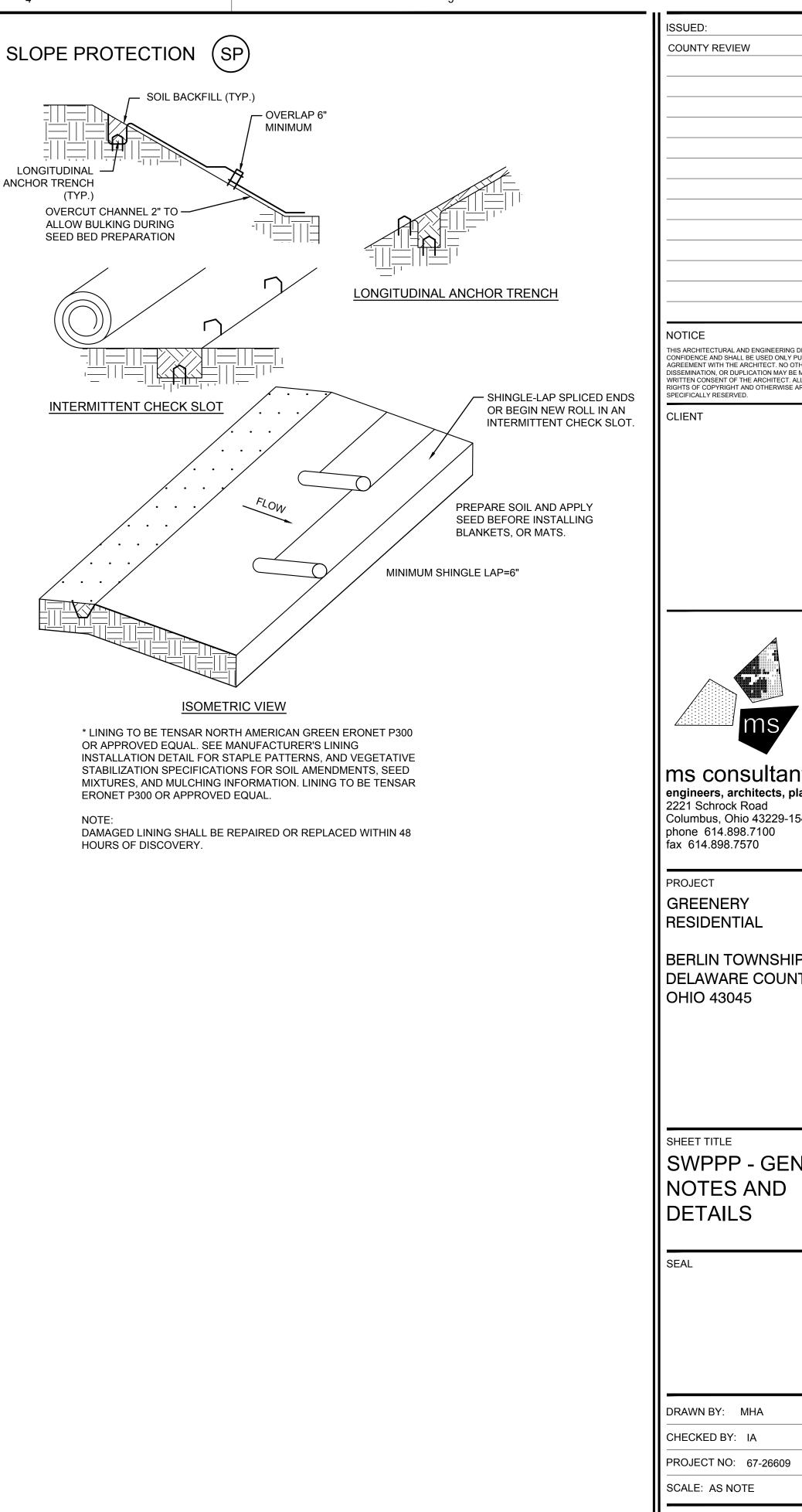
TEMPORARY SILT FENCE

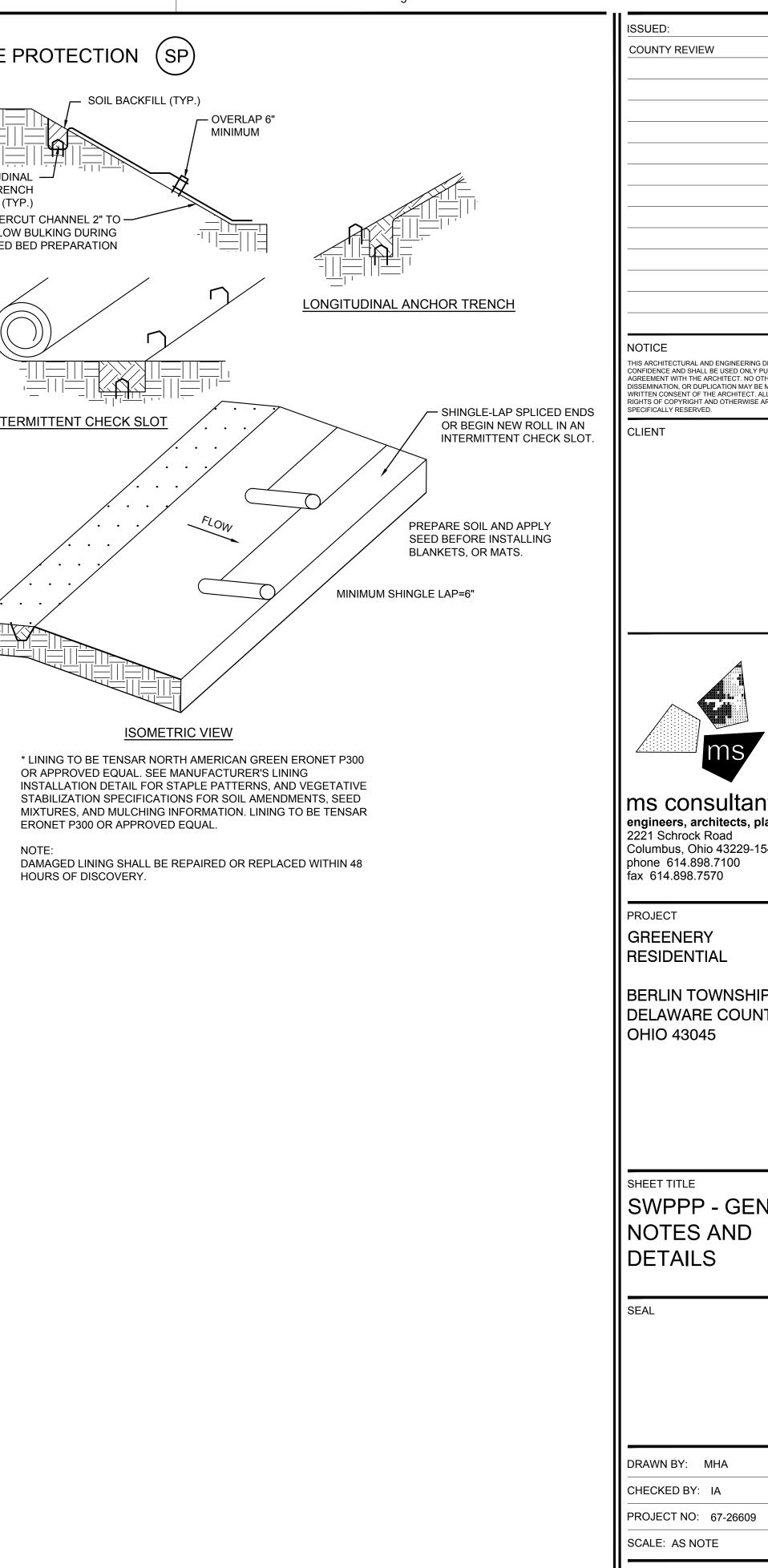
1. THIS SEDIMENT BARRIER UTILIZES STANDARD STRENGTH OR EXTRA STRENGTH SYNTHETIC FILTER FABRICS. IT IS DESIGNED FOR SITUATIONS IN WHICH ONLY SHEET OR OVERLAND FLOWS ARE EXPECTED.

SF

- 2. THE HEIGHT OF A SEDIMENT FENCE SHALL NOT EXCEED 36-INCHES (HIGHER FENCES MAY IMPOUND VOLUMES OF WATER SUFFICIENT TO CAUSE FAILURE OF THE STRUCTURE).
- THE FILTER FABRIC SHALL BE PURCHASED IN A CONTINUOUS ROLL CUT TO THE LENGTH OF THE BARRIER TO AVOID THE USE OF JOINTS. WHEN JOINTS ARE NECESSARY, FILTER CLOTH SHALL BE SPLICED TOGETHER ONLY AT A SUPPORT POST, WITH A MINIMUM 6-INCH OVERLAP, AND SECURELY SEALED.
- 4. POSTS SHALL BE SPACED A MAXIMUM OF 10 FEET APART AT THE BARRIER LOCATION AND DRIVEN SECURELY INTO THE GROUND (MINIMUM OF 12 INCHES). WHEN EXTRA STRENGTH FABRIC IS USED WITHOUT THE WIRE SUPPORT FENCE, POST SPACING SHALL NOT EXCEED 6 FEET.
- A TRENCH SHALL BE EXCAVATED APPROXIMATELY 4 INCHES WIDE AND 4 INCHES DEEP ALONG THE LINE OF POSTS AND UPSLOPE FROM THE BARRIER.
- WHEN STANDARD STRENGTH FILTER FABRIC IS USED, A WIRE MESH SUPPORT FENCE 6 SHALL BE FASTENED SECURELY TO THE UPSLOPE SIDE OF THE POSTS USING HEAVY DUTY WIRE STAPLES AT LEAST 1-INCH LONG, TIE WIRES OR HOG RINGS. THE WIRE SHALL EXTEND INTO THE TRENCH A MINIMUM OF 2 INCHES AND SHALL NOT EXTEND MORE THAN 36 INCHES ABOVE THE ORIGINAL GROUND SURFACE.
- 7. THE STANDARD STRENGTH FILTER FABRIC SHALL BE STAPLED OR WIRED TO THE FENCE, AND 8-INCHES OF THE FABRIC SHALL BE EXTENDED INTO THE TRENCH. THE FABRIC SHALL NOT EXTEND MORE THAN 36 INCHES ABOVE THE ORIGINAL GROUND SURFACE. FILTER FABRIC SHALL NOT BE STAPLED TO EXISTING TREES.
- WHEN EXTRA STRENGTH FILTER FABRIC AND CLOSURE POST SPACING ARE USED, THE WIRE MESH SUPPORT FENCE MAY BE ELIMINATED IN SUCH A CASE, THE FILTER FABRIC IS STAPLED OR WIRED DIRECTLY TO THE POSTS WITH ALL OTHER PROVISIONS OF ITEM NO. 6 APPLYING.
- 9. THE TRENCH SHALL BE BACKFILLED AND SOIL COMPACTED OVER THE FILTER FABRIC
- 10. SEDIMENT FENCES SHALL BE REMOVED WHEN THEY HAVE SERVED THEIR USEFUL PURPOSE, BUT NOT BEFORE THE UPSLOPE AREA HAS BEEN PERMANENTLY STABILIZED.
- 11. FILTER SOCKS ARE AN ACCEPTABLE ALTERNATIVE TO SILT FENCING.
- MAINTENANCE
- 1. SEDIMENT FENCES AND FILTER BARRIERS SHALL BE INSPECTED IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL. ANY REQUIRED REPAIRS SHALL BE MADE IMMEDIATELY.
- 2. SHOULD THE FABRIC ON A SEDIMENT FENCE OR FILTER BARRIER DECOMPOSE OR BECOME INEFFECTIVE PRIOR TO THE END OF THE EXPECTED USABLE LIFE AND THE BARRIER IS STILL NECESSARY, THE FABRIC SHALL BE REPLACED PROMPTLY.
- SEDIMENT DEPOSITS SHOULD BE REMOVED AFTER EACH STORM EVENT. THEY MUST BE REMOVED WHEN DEPOSITS REACH APPROXIMATELY ONE-HALF THE HEIGHT OF THE BARRIER
- 4. ANY SEDIMENT DEPOSITS REMAINING IN PLACE AFTER THE SEDIMENT FENCE OR FILTER BARRIER IS NO LONGER REQUIRED SHALL BE DRESSED TO CONFORM WITH THE EXISTING GRADE, PREPARED, AND SEEDED.







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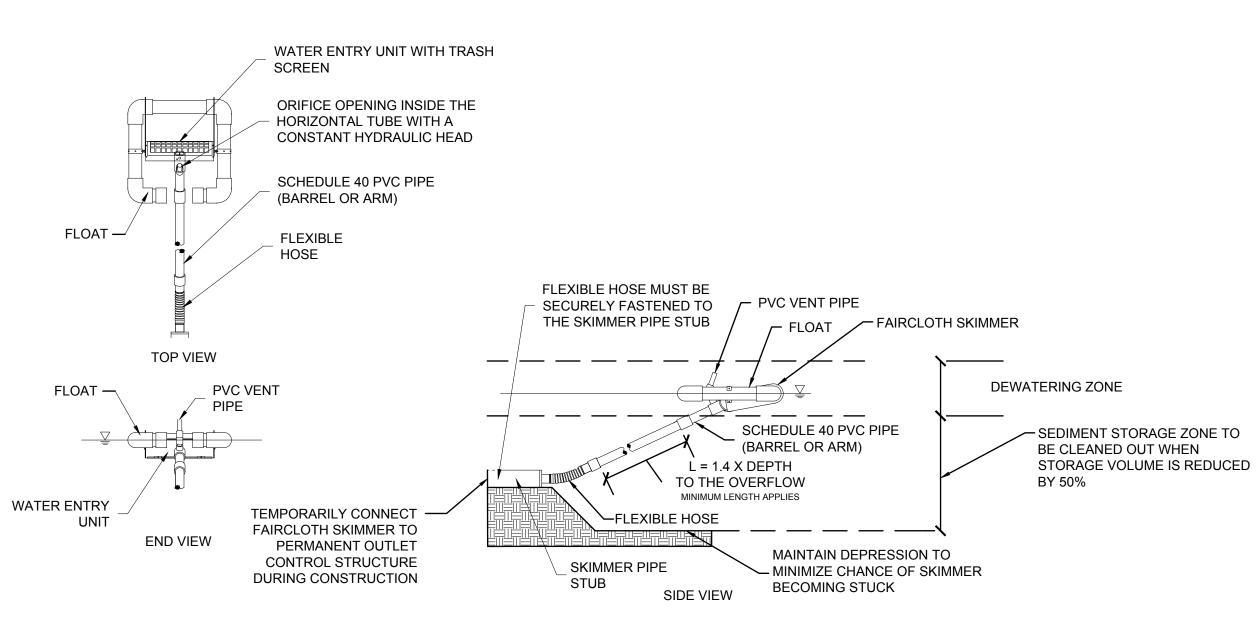
BERLIN TOWNSHIP DELAWARE COUNTY,

SWPPP - GENERAL

DRAWING

	EROSION AND SEDIMENTATION CONTROL NOTES
	 SILTATION AND EROSION SHALL BE CONTROLLED BY MINIMIZING THE TIME THE SITE IS DENUDED BY TEMPORARY SEEDING, PERMANENT SEEDING, AND THE USE OF VARIOUS EROSION AND SEDIMENT CONTROL BEST MANAGEMENT PRACTICES (BMP'S). THESE DEVICES ARE TO BE MAINTAINED THROUGHOUT THE CONSTRUCTION PHASE OF THIS PROJECT. ONCE THE SITE AREA HAS BEEN STABILIZED, BEST MANAGEMENT PRACTICES SHALL BE REMOVED WITH THE APPROVAL OF THE COUNTY ENGINEER.
	2. ALL MEASURES SHALL BE MAINTAINED UNTIL ALL CONSTRUCTION UNDER THE CONTRACT HAS BEEN COMPLETED AND ACCEPTED BY THE COUNTY ENGINEER. MAINTENANCE SHALL BE COMPLETED AND ACCEPTED BY THE COUNTY ENGINEER. MAINTENANCE SHALL INCLUDE ALL REPAIRS TO THOSE AREAS AND MEASURES DAMAGED BY EROSION, CONSTRUCTION EQUIPMENT, WEATHER, FIRE, AND/OR OTHER CAUSES INCLUDING "ACTS OF GOD."
D	3. THE TEMPORARY CONSTRUCTION ENTRANCE SHALL BE MAINTAINED IN A STATE THAT SHALL PREVENT TRACKING OR FLOW OF MUD ONTO THE PUBLIC RIGHT-OF-WAY. THIS WILL BE ACCOMPLISHED BY USE OF A GRAVEL CONSTRUCTION ENTRANCE AND THE REPAIR AND/OR CLEANOUT OF ANY DEVICES USED TO TRAP THE SEDIMENT. ANY MATERIALS SPILLED, DROPPED, OR TRACKED FROM THE CONSTRUCTION SITE ONTO THE ROADWAYS OR INTO THE STORM SEWER SYSTEM MUST BE REMOVED IMMEDIATELY.
	4. SEDIMENT DEPOSITS IN SEDIMENT TRAPS SHALL BE REMOVED AND THE MEASURES RESTORED TO THEIR ORIGINAL DESIGN PRIOR TO THE SEDIMENT REACHING ONE-HALF THE DESIGN HEIGHT OF THE DEVICE. ALL SEDIMENT MATERIAL SHALL BE DISPOSED OF BY AN ACCEPTABLE MEANS. ANY SEDIMENT DEPOSITS REMAINING IN PLACE AFTER THE MEASURES ARE NO LONGER REQUIRED SHALL BE PREPARED TO CONFORM TO THE FINAL GRADING PLANS, SEEDED AND MULCHED.
	5. THE CONTRACTOR SHALL PLACE INLET PROTECTION FOR SEDIMENT CONTROL AT CATCH BASINS IMMEDIATELY AFTER THEIR CONSTRUCTION. COST FOR THIS WORK SHALL BE INCLUDED UNDER EROSION CONTROL ITEMS. THE CONTRACTOR SHALL REMOVE INLET PROTECTION WHEN GRASS ESTABLISHMENT REACHES A MINIMUM OF 70% GROWTH DENSITY OVER THE ENTIRE DRAINAGE AREA FLOWING TO CATCH BASINS. THE COUNTY ENGINEER SHALL DIRECT SEDIMENT CONTROL AT ALL CATCH BASINS IF REQUIRED.
	 TOPSOIL SHALL BE REMOVED FROM PROPOSED RIGHT-OF-WAY, MOUNDING AND EMBANKMENT AREAS PRIOR TO CONSTRUCTION OF PAVEMENT, MOUNDING, AND EMBANKMENT AREA. TOPSOIL SHALL BE STOCKPILED FOR RESPREADING AS DIRECTED BY THE COUNTY AS DIRECTED BY THE COUNTY ENGINEER.
	7. THE CONTRACTOR SHALL NOT DISTURB AREAS OUTSIDE CONSTRUCTION LIMITS UNLESS AUTHORIZED BY THE PROPERTY OWNER.
	8. THE CONTRACTOR SHALL DISPOSE OF STREET, STOCKPILE, AND OVERLOT EXCAVATION AS DIRECTED BY THE COUNTY ENGINEER.
С	9. THE SITE SHALL BE INSPECTED ON A WEEKLY BASIS FOR COMPLIANCE WITH THE SWPPP. FURTHERMORE, SEDIMENT CONTROL BMP'S SHALL BE INSPECTED IMMEDIATELY FOLLOWING EACH RAINFALL EVENT GREATER THAN 1/2 INCH AND AT LEAST DAILY DURING PERIODS OF PROLONGED RAINFALL. INSPECTION LOGS SHALL BE FURNISHED TO DELAWARE COUNTY FOR EACH INSPECTION.
	10. CLOSE ATTENTION SHALL BE PAID TO THE PROPER INSTALLATION AND REPAIR OF PERIMETER CONTROLS TO PREVENT FAILURE.
	11. NECESSARY REPAIRS TO BARRIERS OR REPLACEMENT OF PERIMETER CONTROLS SHALL BE ACCOMPLISHED PROMPTLY.
	 ANY SEDIMENT DEPOSITS REMAINING IN PLACE AFTER THE PERIMETER CONTROLS ARE NO LONGER REQUIRED SHALL BE DRESSED TO CONFORM TO THE EXISTING GRADE, PREPARED AND SEEDED. ADDITIONAL EROSION AND SEDIMENT CONTROL BMP'S SHALL BE INSTALLED AS DIRECTED BY DELAWARE COUNTY.
	14. THE CONSTRUCTION ENTRANCE, SEDIMENT BASIN (TEMPORARY AND/OR PERMANENT), AND PERIMETER CONTROLS SHALL BE INSTALLED AS THE FIRST STEP OF THE CONSTRUCTION SEQUENCE.
	15. NO SITE WORK SHALL COMMENCE UNTIL THE EROSION AND SEDIMENT CONTROLS ARE APPROVED BY DELAWARE COUNTY.
	SITE CLEANUP
	 DURING CONSTRICTION AND PRIOR TO ACCEPTANCE OF ANY PUBLIC IMPROVEMENTS, THE OWNER/DEVELOPER SHALL REMOVE OR CAUSE TO BE REMOVED ALL REFUSE, RUBBISH, UNUSED MATERIALS, EXCESS EARTH, FILL, ROCK, DEBRIS, AND FOREIGN MATTER FROM ALL PUBLIC RIGHTS OF WAY, IMPROVEMENTS OF ANY NATURE WITHIN THE DEVELOPMENT. SUCH REMOVAL SHALL TAKE PLACE WITHIN TWENTY-FOUR (24) HOURS AFTER BEING NOTIFIED BY THE COUNTY ENGINEER THAT SUCH WORK IS REQUIRED, AND SHALL BE COMPLETED TOT HE SATISFACTION OF THE COUNTY ENGINEER.
В	2. THIS WORK SHALL BE PERFORMED IN A MANNER WHICH PREVENTS EROSION AS WELL AS PREVENTS STORM WATER FROM ACCUMULATING OR PONDING ON THE SITE. THE WORK SHALL ALSO BE PERFORMED IN A MANNER THAT PREVENTS DISRUPTING OR IMPEDING SURFACE DRAINAGE FROM ONSITE OF OFFSITE SOURCES AND PREVENTS ANY NEGATIVE EFFECTS ON ADJACENT PROPERTIES. A SIX-INCH OVERLAY OF TOPSOIL SHALL BE PROVIDED AND SHALL BE SEEDED PER DELAWARE COUNTY STANDARDS.
	ADDITIONAL NOTES
	 ANY STOCKPILING OF EARTHWORK MATERIALS SHALL BE COMPLETED IN SUCH A MANNER AS TO DIRECT RUNOFF TO A SEDIMENT BASIN.
A	

1

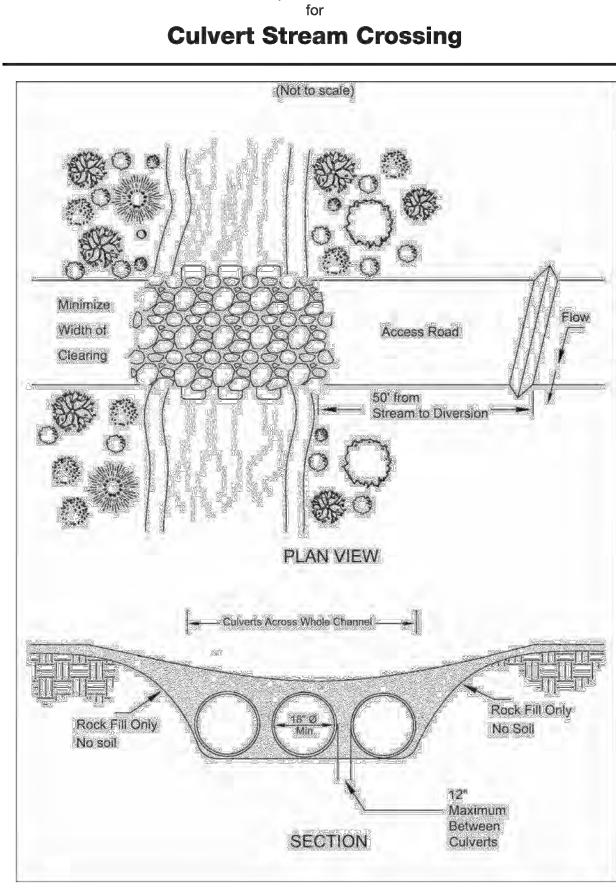


4

SEDIMENT BASIN OUTLET RISE WITH FAIRCLOTH SKIMMER

Specifications

N.T.S.



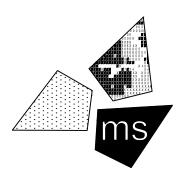
28 CHAPTER 5 Temporary Runoff Control

ISSUED:	DATE:
COUNTY REVIEW	08/26/22

NOTICE

THIS ARCHITECTURAL AND ENGINEERING DRAWING IS GIVEN IN CONFIDENCE AND SHALL BE USED ONLY PURSUANT TO THE AGREEMENT WITH THE ARCHITECT. NO OTHER USE, DISSEMINATION, OR DUPLICATION MAY BE MADE WITHOUT PRIOR WRITTEN CONSENT OF THE ARCHITECT. ALL COMMON LAW RIGHTS OF COPYRIGHT AND OTHERWISE ARE HEREBY SPECIFICALLY RESERVED.

CLIENT



ms consultants, inc. engineers, architects, planners 2221 Schrock Road Columbus, Ohio 43229-1547 phone 614.898.7100 fax 614.898.7570

PROJECT GREENERY RESIDENTIAL

BERLIN TOWNSHIP DELAWARE COUNTY, OHIO 43045

SHEET TITLE SWPPP - GENERAL NOTES AND DETAILS

SEAL

DRAWN BY: MHA CHECKED BY: IA

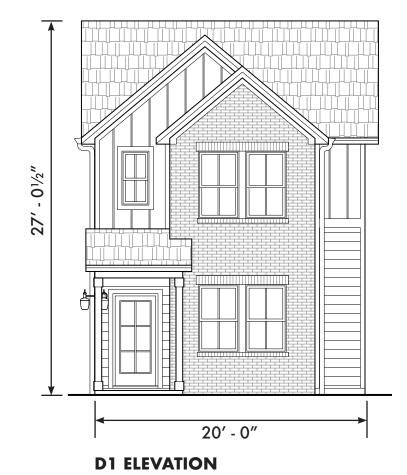
PROJECT NO: 67-26609

SCALE: AS NOTED

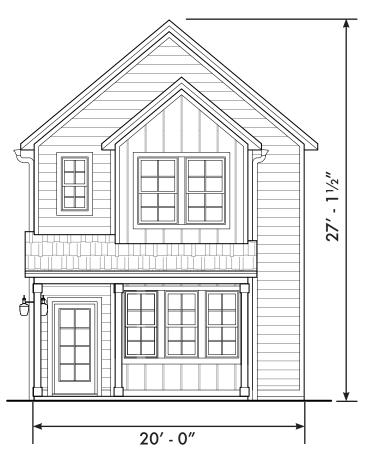
DRAWING

ARCHITECTURAL DESIGN CRITERIA

- A. <u>Architectural Character</u>. The architectural character of the buildings to be constructed in this zoning district shall be consistent with the exhibits that accompany this text.
- B. <u>Exterior Finish Materials.</u> Cementitious siding, smart siding, brick, brick veneer, vinyl, stone, and stone veneer shall be permitted as primary exterior façade materials. Permitted trim materials include wood, PVC, vinyl, cementitious trim and aluminum.
- C. <u>Maximum building height</u>. Buildings may be up to two stories and shall not exceed 35 feet in height.
- D. <u>Accessory Improvements</u>. Patios, decks, and privacy fencing around patios shall be permitted for each dwelling unit.











D3 ELEVATION

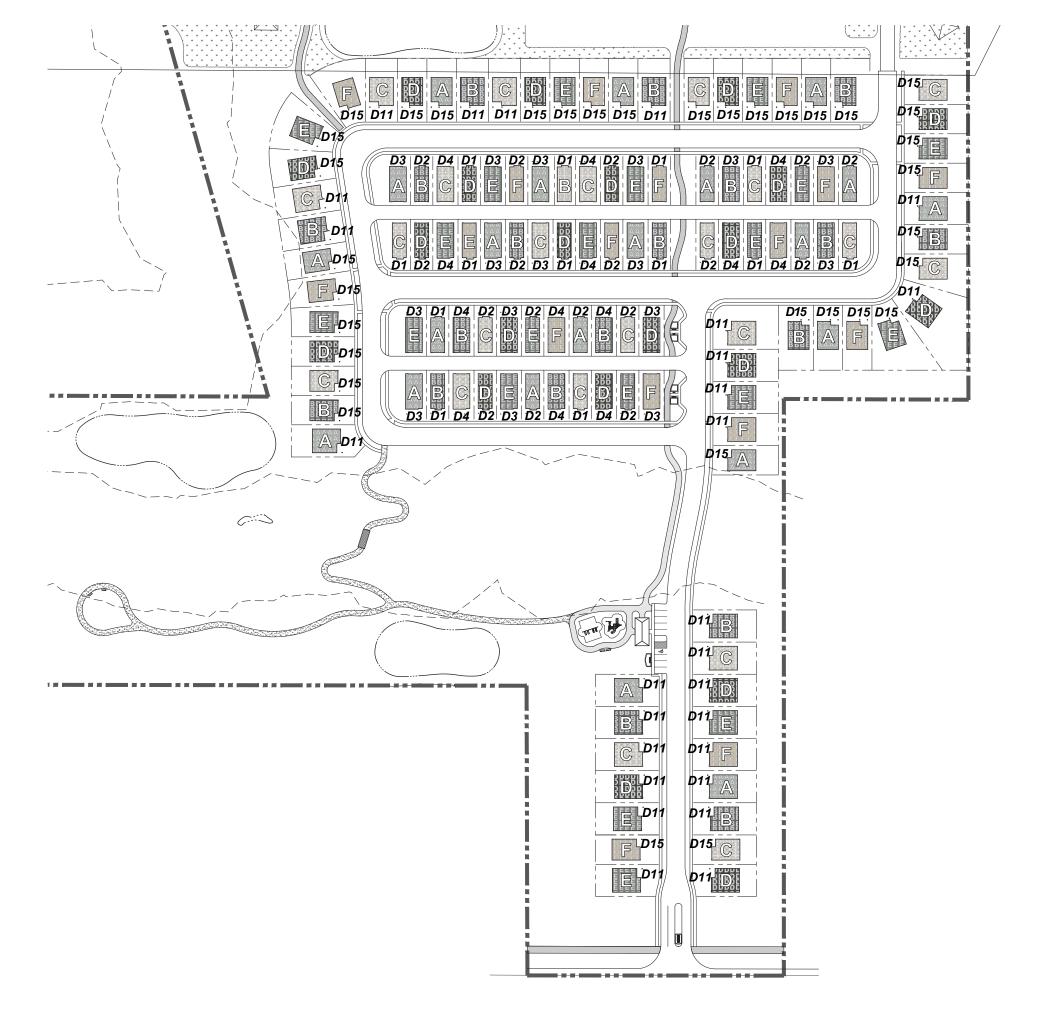
D4 ELEVATION

D11 ELEVATION

D15 ELEVATION



ONYX+EAST



KEYPLAN REFERENCE FOLLOWING PAGES FOR ADDITIONAL MATERIAL INFORMATION

PALETTE A:

















GREENERY KEY PLAN CONCEPT MATERIALS AUGUST 17, 2022 NR PROJECT NO: 22-037

DELAWARE COUNTY, OH GREENERY

PALETTE A





GUTTERS:

PUTTY DMI

ROOF:

BLACK GRANITE

RED BARN

TRIM: **SHOJI WHITE** SW7042, 254-C4

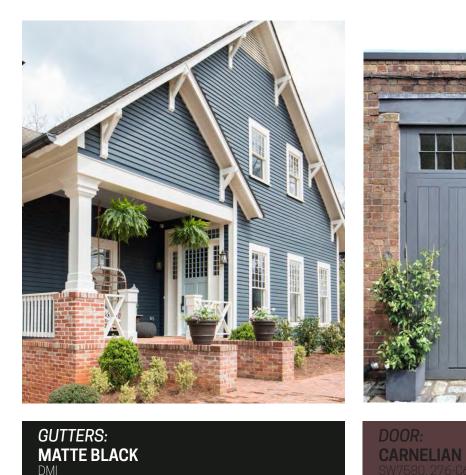
DOOR:



CERTAINTEED BELMONT SHINGLES

SIDING: **SW OYSTER BAY** SW6206, 217-C3

PALETTE B



ROOF: **BLACK GRANITE CERTAINTEED BELMONT SHINGLES**

SIDING: SW7043, 245-C1



SIDING: WATERLOO SW9141, 221-C6









GREENERY

DELAWARE COUNTY, OH

GREENERY KEY PLAN CONCEPT MATERIALS AUGUST 17, 2022 NR PROJECT NO: 22-037

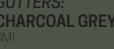


PALETTE C





GUTTERS: **CHARCOAL GREY**



DOOR: **SOFT APRICOT** SW6352, 126-C2

ROOF: **STONEGATE GRAY CERTAINTEED BELMONT SHINGLES**

TRIM: WATERLOO



SIDING: **SHOJI WHITE** SW7042, 254-C4

PALETTE D



GUTTERS: MATTE BLACK

ROOF: STONEGATE GRAY **CERTAINTEED BELMONT SHINGLES**

TRIM: GREENBLACK SW6994, 251-C6



SIDING: **RIPE OLIVE**











GREENERY KEY PLAN CONCEPT MATERIALS AUGUST 17, 2022 NR PROJECT NO: 22-037

GREENERY

DELAWARE COUNTY, OH

PALETTE E





GUTTERS: **SLATE GREY**



DOOR:

ROOF: **STONEGATE GRAY CERTAINTEED BELMONT SHINGLES**

TRIM: **OYSTER BAY** SW6206, 217-C3



SIDING: RETREAT

PALETTE F



GUTTERS: **PUTTY** DMI

ROOF: **BLACK GRANITE CERTAINTEED BELMONT SHINGLES**

TRIM: SHOJI WHITE SW7042, 254-C4



SIDING: SW7043, 245-C1



ANTIQUITY SW6402, 143-C4

WORLDLY GRAY



GREENERY KEY PLAN CONCEPT MATERIALS AUGUST 17, 2022 NR PROJECT NO: 22-037

GREENERY

DELAWARE COUNTY, OH

EXAMPLE REAR-LOADED STREETSCAPE



UNIT D4 COLOR PALETTE C UNIT D2 COLOR PALETTE A

UNIT D1 COLOR PALETTE B

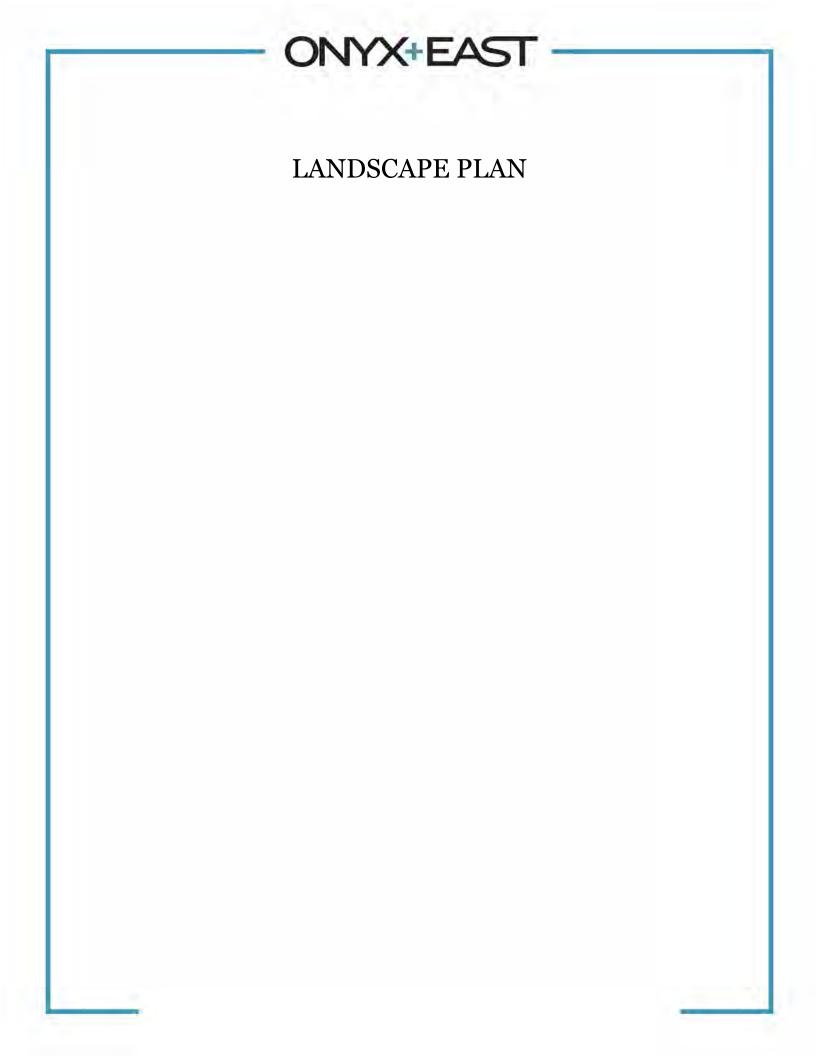
EXAMPLE FRONT-LOADED STREETSCAPE

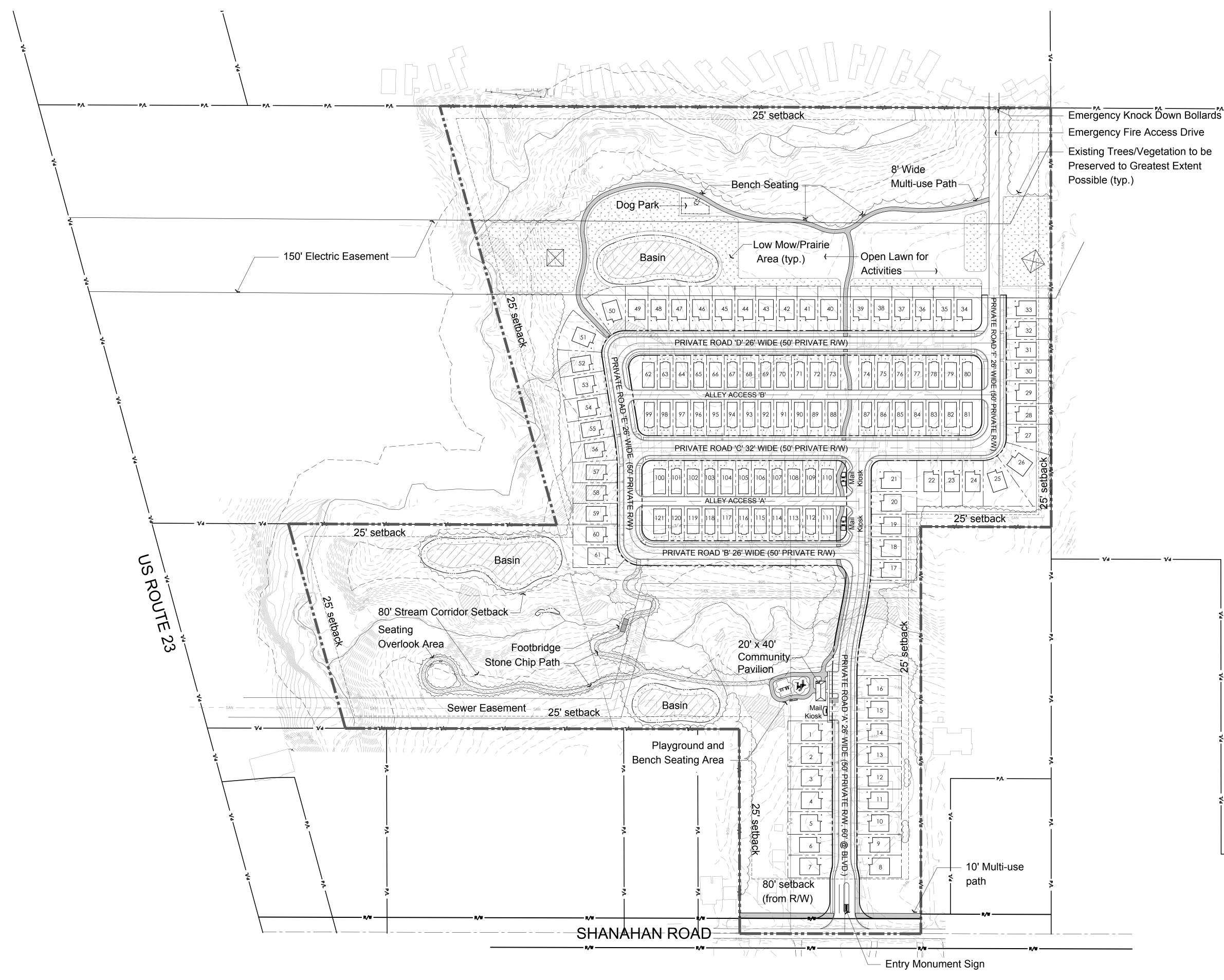


UNIT D15 COLOR PALETTE B

UNIT D15 COLOR PALETTE F UNIT D11 COLOR PALETTE A

UNIT D4 COLOR PALETTE D





GREENERY-Site Plan

Berlin Township, Delaware County, Ohio, 08-30-2022

0

Site Data:

Total Site: Net Developable:

± 24.77 Net Acres (± 36.90 - 5.54 Acres) Gross minus 15% = - (± 0.41 Acres) Minus Wetlands Minus Ex. OHE easement - (± 4.13 Acres) - (± 2.05 Acres)

(±60.81% of Gross)

± 36.90 Gross Acres

Minus Ex. 20% slopes Total Dwelling Units: 121 Units -Front Load Units: 61 Units -Rear Load Alley Units: 60 Units Gross Residential Density: ± 3.23 Du/Acre ± 4.85 Du/Acre Net Residential Density: Open Space: ± 22.44 Acres

NOTE: FINAL LAYOUT, SITE IMPACTS, AND LANDSCAPING ARE SUBJECT TO CHANGE BASED UPON FINAL ENGINEERING.







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GREENERY-Illustrative Site Plan

Berlin Township, Delaware County, Ohio, 08-30-2022

Site Data:

Total Site: Net Developable:

Gross minus 15% = Minus Wetlands Minus Ex. OHE easement - (± 4.13 Acres) Minus Ex. 20% slopes

± 36.90 Gross Acres ± 24.77 Net Acres (± 36.90 - 5.54 Acres) - (± 0.41 Acres) - (± 2.05 Acres)

Total Dwelling Units:

-Front Load Units:

-Rear Load Alley Units:

Gross Residential Density: Net Residential Density:

Open Space:

121 Units

61 Units

60 Units

± 3.23 Du/Acre ± 4.85 Du/Acre

± 22.44 Acres (±60.81% of Gross)





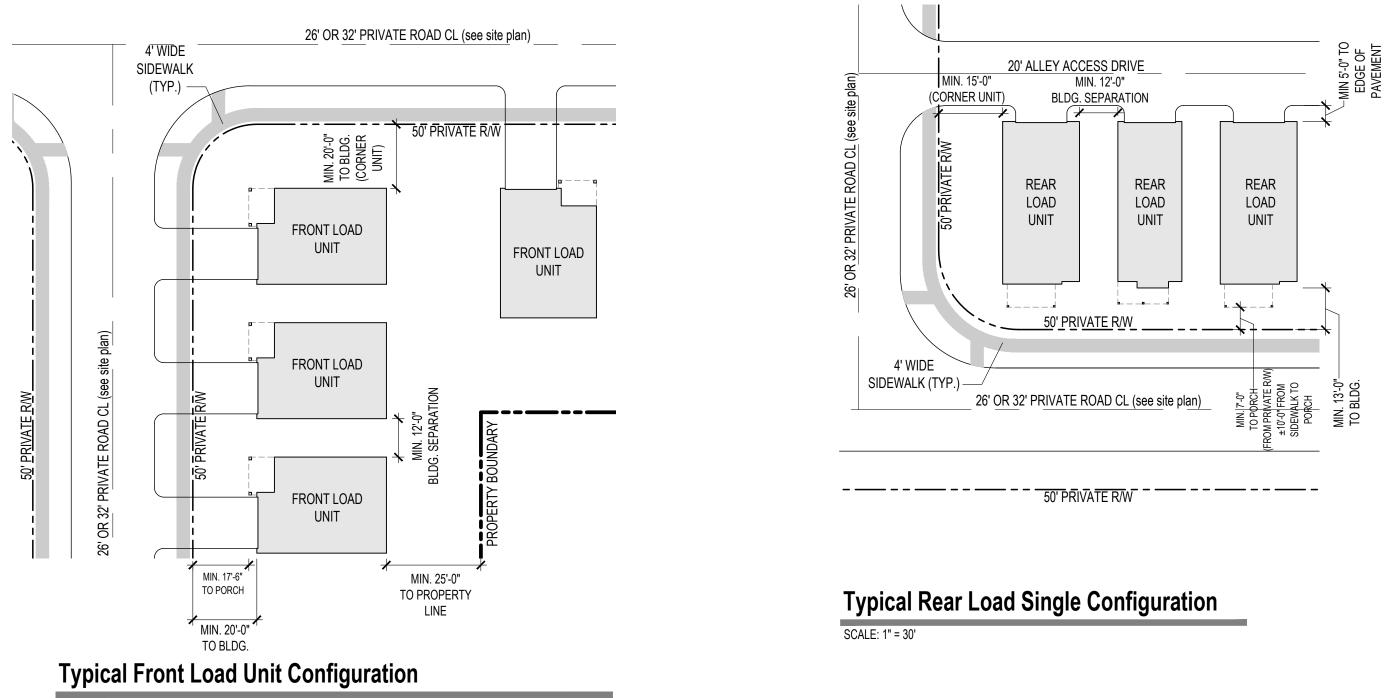
ALL A











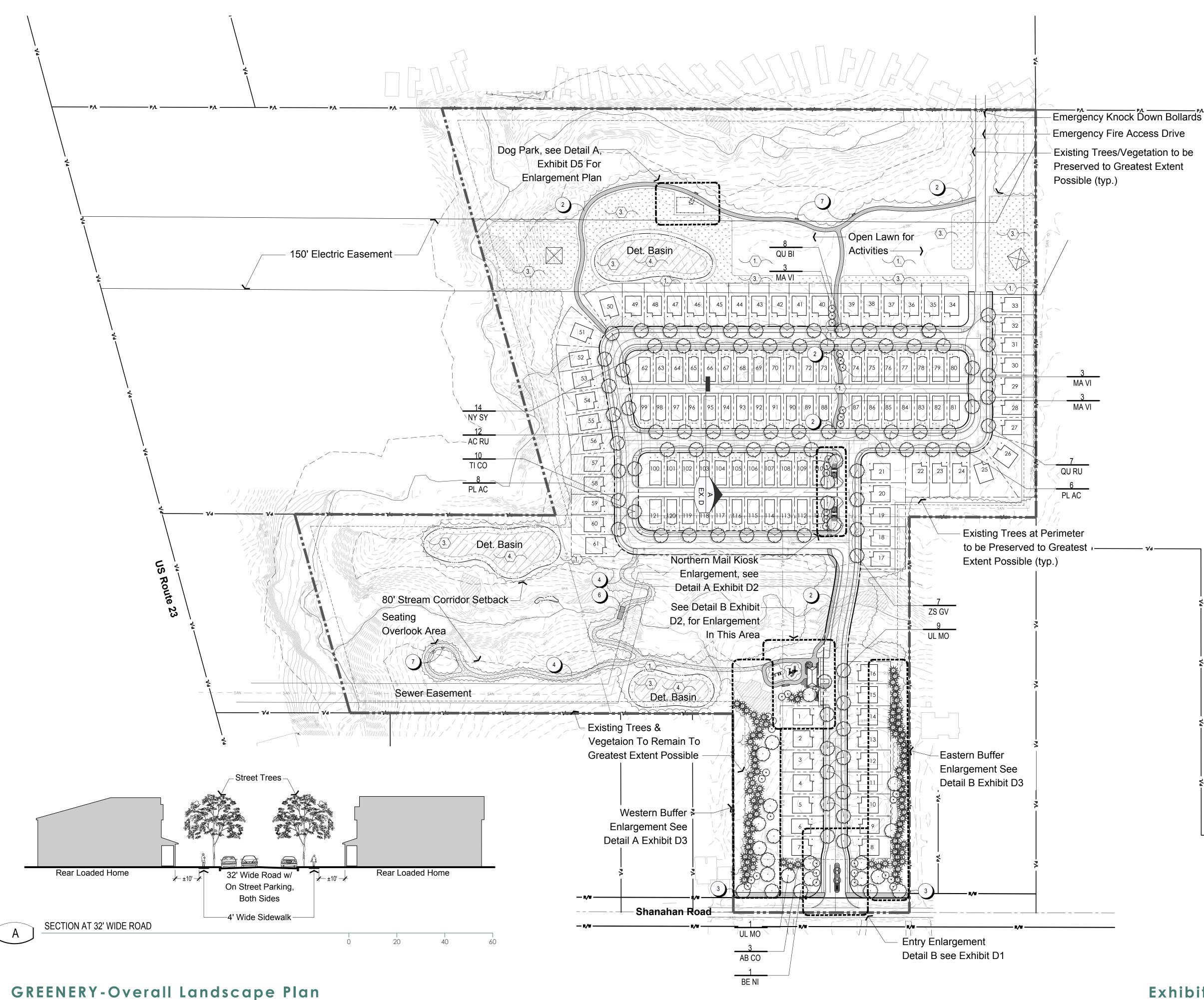
SCALE: 1" = 30'





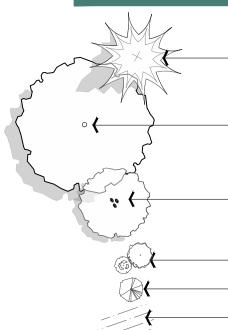






Berlin Township, Delaware County, Ohio, 08-30-2022

LANDSCAPE KEY PLAN



EVERGREEN TREE @ MIN. 5' HEIGHT INSTALL

MED. TO LARGE DECIDUOUS TREE @ MIN. 2" CAL. INSTALL

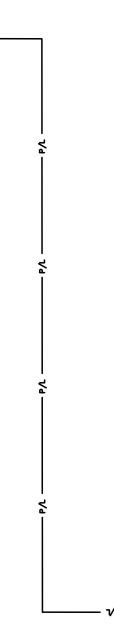
ORNAMENTAL TREE @ MIN. 1.75" CAL. INSTALL

DECIDUOUS SHRUB - EVERGREEN SHRUB - PERENNIALS/ORNAMENTAL GRASSES

PLANT LIST

CODE	BOT. NAME/COMMON NAME	SIZE	COND.	SPACING	NOTES		
DECIDUO	DECIDUOUS SHADE TREES / STREET TREES						
AC RU	Acer rubrum 'Armstrong' Armstrong Red Maple	2" CAL.	B&B	AS SHOWN	Match Form		
PL AC	Platanus x acerifolia 'Bloodgood' Bloodgood London Planetree	2" CAL.	B&B	AS SHOWN			
NY SY	Nyssa sylvatica 'Wildfire' Wildfire Blackgum	2" CAL.	B&B	AS SHOWN			
QU RU	Quercus rubra Red Oak	2" CAL.	B&B	AS SHOWN			
QU BI	Quercus bicolor Swamp White Oak	2" CAL.	B&B	AS SHOWN			
UL MO	Ulmus x 'Morton' Accolade Elm	2" CAL.	B&B	AS SHOWN			
BE NI	Betula nigra 'Heritage' Heritage River Birch	2" CAL.	B&B	AS SHOWN			
TI CO	Tilia cordata 'Greenspire' Greenspire Littleleaf Linden	2" CAL.	B&B	AS SHOWN	Match Form		
ZS GV	Zelkova serrata 'Green Vase' Green Vase Zelkova	2" CAL.	B&B	AS SHOWN	Match Form		
SMALL / O	RNAMENTAL TREES						
MA VI	Magnolia virginiana Sweetbay Magnolia	1.75" CAL.	B&B	AS SHOWN	Match Form		
EVERGRE	EVERGREEN TREES						
AB CO	Abies Concolor White Fir	5' HT.	B&B	PER PLAN			

CODED LAYOUT AND MATERIALS NOTES



KEY ITEM

- 2 8' WIDE ASPHALT MULTI-USE PATH
- (3) 10' WIDE ASPHALT MULTI-USE PATH

8' WIDE STONE CHIP PATH, SEE DETAIL E, EXHIBIT D5. FINAL

- 4 LOCATION TO BE ADJUSTED AT TIME OF INSTALL TO MINIMIZE IMPACT ON EXISTING NATURAL FEATURES.
- 6 WOODEN FOOTBRIDGE, SEE DETAIL F, EXHIBIT D5. FINAL LOCATION TO BE ADJUSTED AT TIME OF INSTALL TO MINIMIZE IMPACT ON EXISTING NATURAL FEATURES.
- OBENCH SEATING, DUMOR 168-60 6' CAST BENCH IN "ARGENTO" COLOR,
OR OWNER APPROVED EQUAL. SEE DETAIL G, EXHIBIT D4. AVAILABLE
THROUGH DUMOR SITE FURNISHINGS, WWW.DUMOR.COM

CODED LANDSCAPE NOTES

- $\langle 1. \rangle$ Turf
- $\langle 2. \rangle$ Landscape BED provide 3" depth hardwood mulch.
- $\langle 3. \rangle$ ECONOMY PRAIRIE SEED MIX, OR OWNER APPROVED EQUAL. AVAILABLE THROUGH CARDNO/STANTEC NATIVE PLANT NURSERY, WWW.CARDNONATIVEPLANTNURSERY.COM
- $\langle 4. \rangle$ STORMWATER SEED MIX, OR OWNER APPROVED EQUAL. AVAILABLE THROUGH CARDNO/STANTEC NATIVE PLANT NURSERY, WWW.CARDNONATIVEPLANTNURSERY.COM

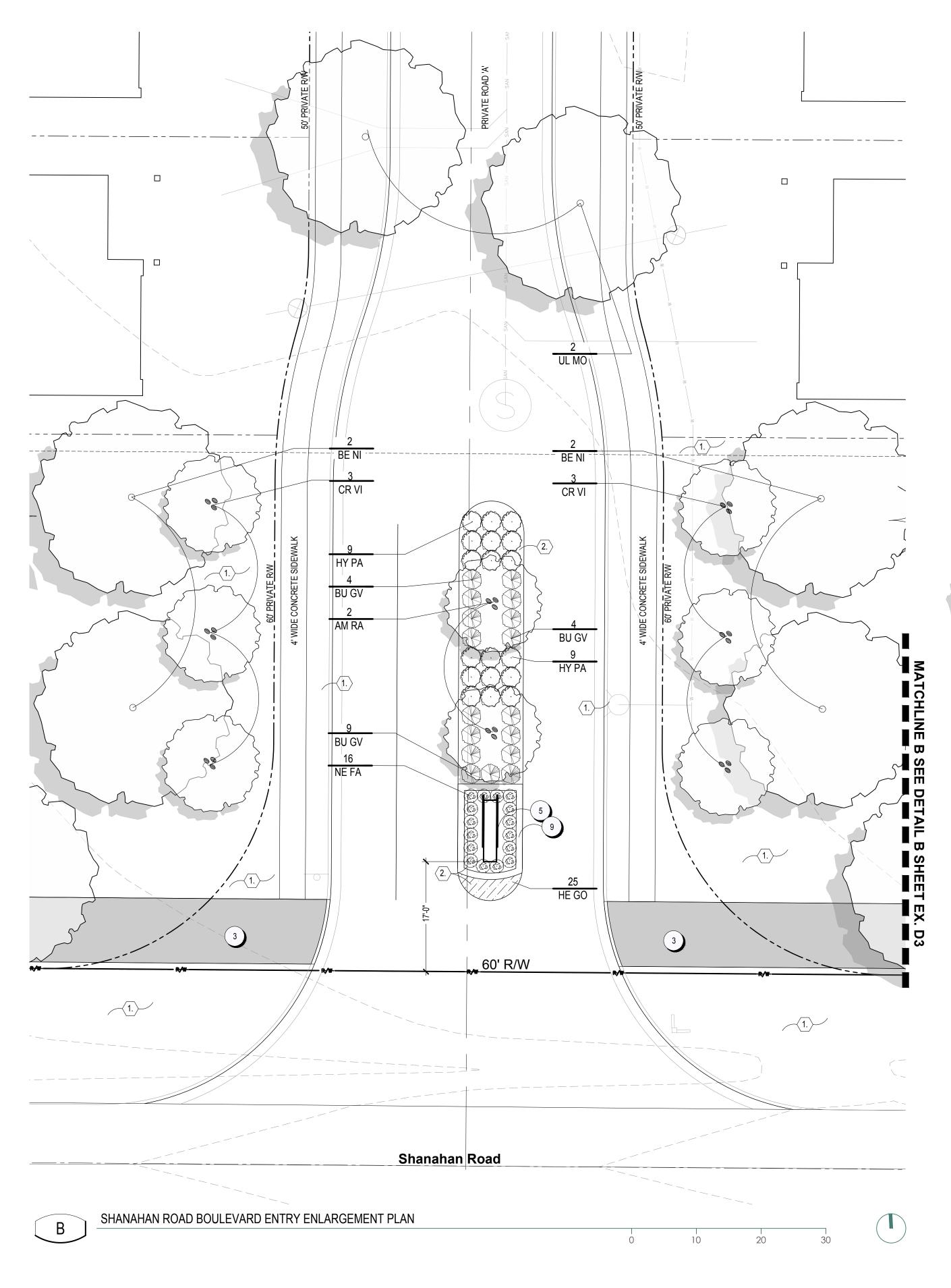
NOTE: FINAL LAYOUT, SITE IMPACTS, AND LANDSCAPING ARE SUBJECT TO CHANGE BASED UPON FINAL ENGINEERING.

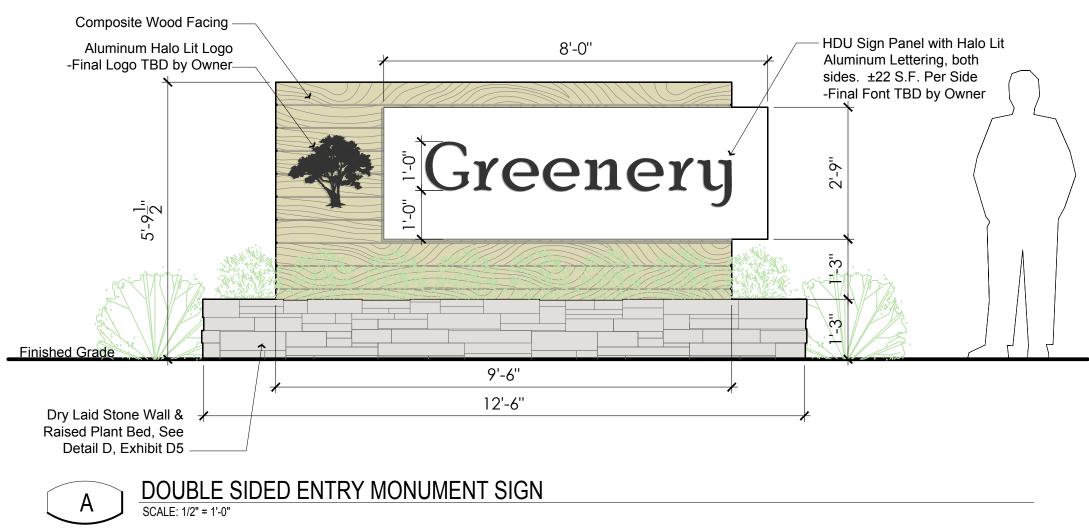




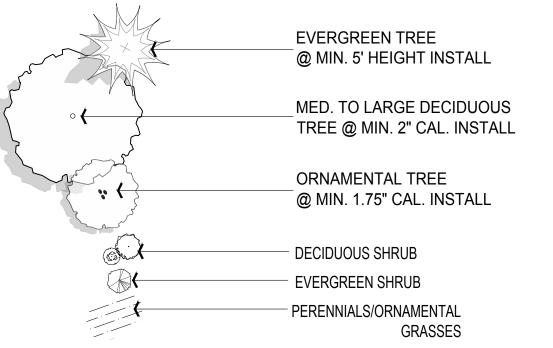








LANDSCAPE KEY PLAN



CODED LANDSCAPE NOTES

 $\langle 1. \rangle$ Turf

2. LANDSCAPE BED - PROVIDE 3" DEPTH HARDWOOD MULCH, POSITIVE DRAINAGE IN ALL DIRECTIONS. HAND SPADE EDGE.

PLANT LIST

CODE	BOT. NAME/COMMON NAME	SIZE	COND.	SPACING	NOTES		
DECIDUOUS SHADE TREES / STREET TREES							
UL MO	Ulmus x 'Morton' Accolade Elm	2" CAL.	B&B	AS SHOWN			
BE NI	Betula nigra 'Heritage' Heritage River Birch	2" CAL.	B&B	AS SHOWN	MATCH FORM		
SMALL / C	DRNAMENTAL TREES						
AM RA	Amelanchier canadensis 'Glennform' Rainbow Pillar Serviceberry	1.75" CAL.	B&B	AS SHOWN	MATCH FORM		
CR VI	Crataegus viridus 'Winter King' Winter King Hawthorn	1.75" CAL.	B&B	AS SHOWN	MATCH FORM		
EVERG	REEN SHRUBS						
BU GV	Buxus x 'Green Velvet' Green Velvet Boxwood	24" HT.	B&B	PER PLAN			
SMALL F	FLOWERING / DECIDUOUS SHRUBS						
HY PA	Hydrangea paniculata 'Jane' PP #22,330 Little Lime Hydrangea	24" HT.	#3 Cont.	PER PLAN			
GRASSES, PERENNIALS, GROUNDCOVERS, & VINES							
NE FA	Nepeta x faassenii 'Walker's Low' Walker's Low Catmint	-	#1 Cont.	PER PLAN			
HE GO	Hemerocallis 'Going Bananas' Going Bananas Daylily	-	#1 Cont.	Plant @ 18" O.C.			

CODED LAYOUT AND MATERIALS NOTES

KEY ITEM



3 10' WIDE ASPHALT MULTI-USE PATH

5 ENTRY SIGN, SEE DETAIL A, EXHIBIT D1

9 DRY-LAID STONE WALL, SEE DETAIL D, EXHIBIT D5

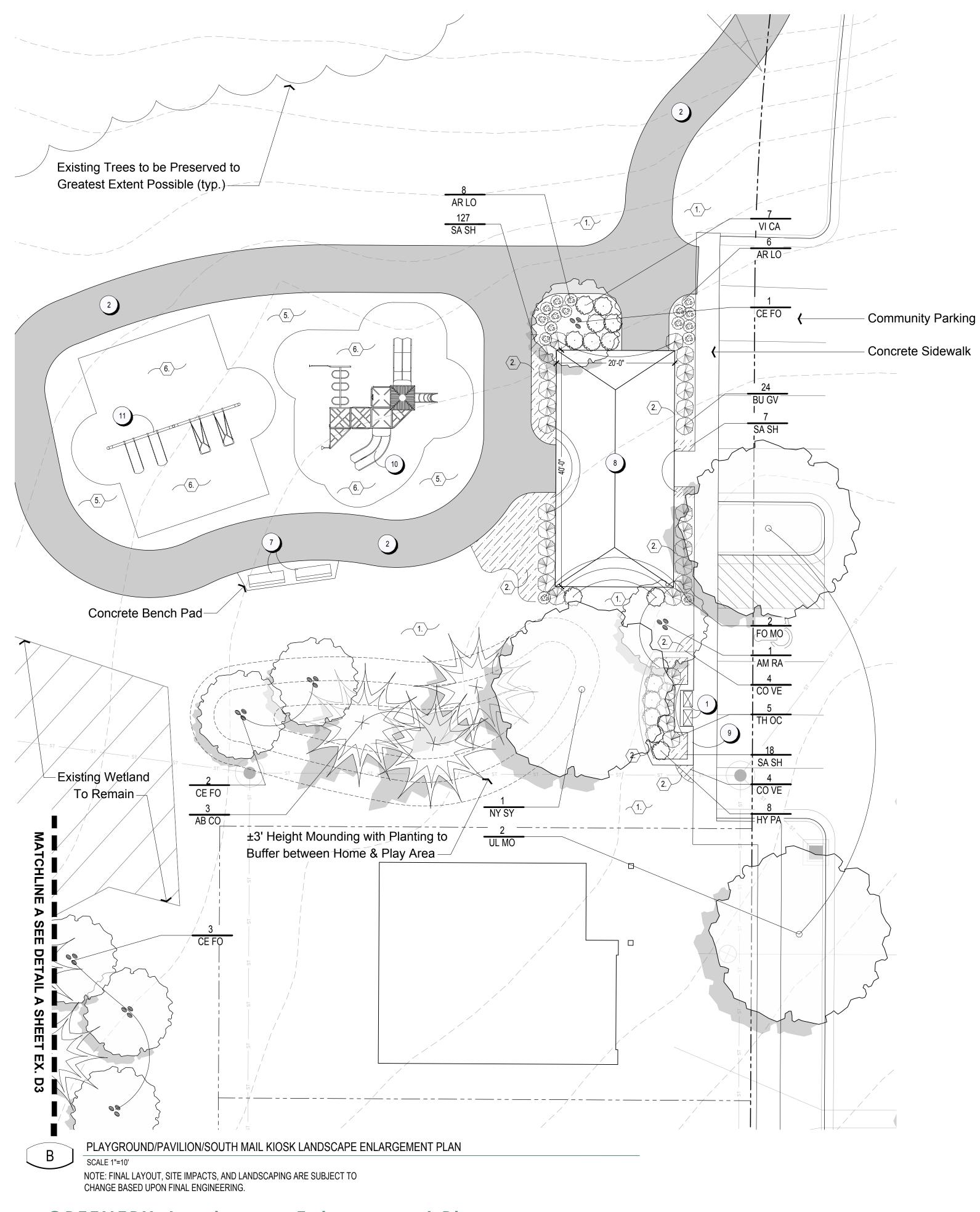
NOTE: FINAL LAYOUT, SITE IMPACTS, AND LANDSCAPING ARE SUBJECT TO CHANGE BASED UPON FINAL ENGINEERING.











GREENERY - Landscape Enlargement Plans

Berlin Township, Delaware County, Ohio, 08-30-2022



А

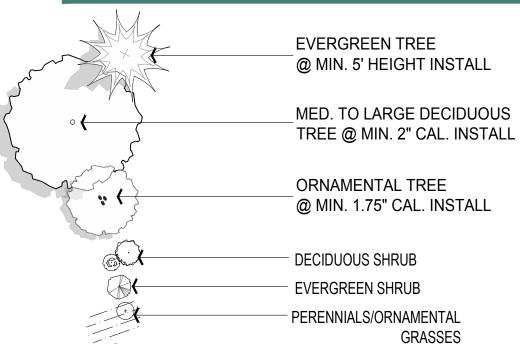
SCALE 1"=10'

Exhibit D2 10 0

20

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CODED LANDSCAPE NOTES

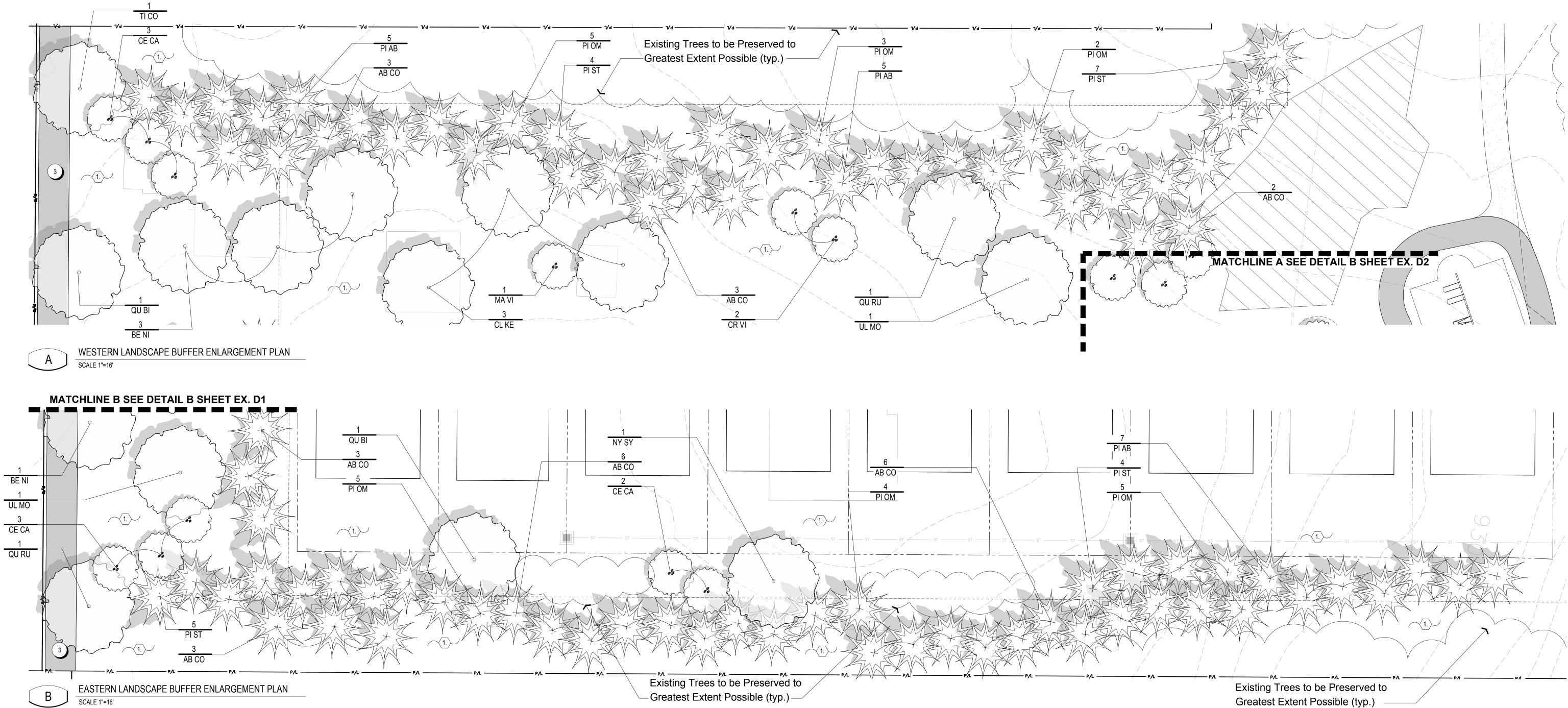
- $\langle 1. \rangle$ TURF
- $\label{eq:landscape bed provide 3" depth hardwood mulch, positive drainage in all directions. Hand spade edge.$
- (5.) PLAYGROUND AREA PROVIDE 4" DEPTH MULCH
- $\langle 6. \rangle$ PLAYGROUND "DROP ZONE" PROVIDE 12" DEPTH MULCH

T21 I TIA A IG

PLA	NT LIST				NOTES
CODE	BOT. NAME/COMMON NAME	SIZE	COND.	SPACING	
DECIDU	OUS SHADE TREES / STREET TREES				
UL MO	Ulmus x 'Morton' Accolade Elm	2" CAL.	B&B	AS SHOWN	
NY SY	Nyssa sylvatica 'Wildfire' Wildfire Blackgum	2" CAL.	B&B	AS SHOWN	
ZS GV	Zelkova serrata 'Green Vase' Green Vase Zelkova	2" CAL.	B&B	AS SHOWN	MATCH FORM
SMALL /	ORNAMENTAL TREES				
MA VI	Magnolia virginiana Sweetbay Magnolia	1.75" CAL.	B&B	AS SHOWN	MATCH FORM
AM RA	Amelanchier canadensis 'Glennform' Rainbow Pillar Serviceberry	1.75" CAL.	B&B	AS SHOWN	MATCH FORM
CE FO	Cercis canadensis 'Forest Pansy' Forest Pansy Eastern Redbud	1.75" CAL.	B&B	AS SHOWN	MATCH FORM
EVERG	REEN TREES				
AB CO	Abies Concolor White Fir	5' HT.	B&B	PER PLAN	
EVERG	REEN SHRUBS				
BU GM	Buxus x 'Green Mountain' Green Mountain Boxwood	30" HT.	B&B	PER PLAN	
TH OC	Thuja occidentalis 'Bobozam' Mr. Bowling Ball Arborvitae	18" HT.	B&B	PER PLAN	
BU GV	Buxus x 'Green Velvet' Green Velvet Boxwood	24" HT.	B&B	PER PLAN	
LARGE F	FLOWERING / DECIDUOUS SHRUBS				
VI CA	Viburnum carlesii Koreanspice Viburnum	30" HT.	B&B	PER PLAN	
SMALL F	LOWERING / DECIDUOUS SHRUBS				
FO MO	Fothergilla x 'Mount Airy' Mount Airy Fothergilla	24" HT.	#3 Cont.	PER PLAN	
HY PA	Hydrangea paniculata 'Jane' PP #22,330 Little Lime Hydrangea	24" HT.	#3 Cont.	PER PLAN	
AR LO	Aronia melanocarpa Low Scape Hedger Low Scape Hedger Chokeberry	18" HT.	#2 Cont.		
SMALL G	RASSES, PERENNIALS, GROUNDCOVERS, & V	/INES			
CO VE	Coreopsis verticillata Moonbeam Moonbeam Tickseed	-	#1 Cont.	Plant @ 18" O.C.	
SA SH	Salvia x sylvestris 'Snow Hill' Snow Hill Meadow Sage	-	#1 Cont.	Plant @ 12" O.C.	
PE AL	Pennisetum alopecuroides 'Hameln' Hameln Dwarf Fountain Grass	-	#1 Cont.	Plant @ 24" O.C.	

CODED LAYOUT AND MATERIALS NOTES

KEY	ITEM
	MAIL KIOSK, SEE DETAIL H, EXHIBIT D4
2	8' WIDE ASPHALT MULTI-USE PATH
7	BENCH SEATING, DUMOR 168-60 6' CAST BENCH IN "ARGENTO" COLOR, OR OWNER APPROVED EQUAL. SEE DETAIL G, EXHIBIT D4. AVAILABLE THROUGH DUMOR SITE FURNISHINGS, WWW.DUMOR.COM
8	20' X 40' GABLE PAVILION, CEDAR FINISH WITH STANDING SEAM METAL ROOF IN CHARCOAL COLOR, OR OWNER APPROVED EQUAL. SEE DETAIL E, EXHIBIT D4. AVAILABLE THROUGH BALDWIN PERGOLAS, WWW.BALDWINPERGOLAS.COM
9	DRY-LAID STONE WALL, SEE DETAIL D, EXHIBIT D5
10	PLAYGROUND PLAY STRUCTURE, LANDSCAPE STRUCTURES DESIGN 402, MODEL #176165 OR OWNER APPROVED EQUAL. SEE DETAIL F, EXHIBIT D4. FINAL COLOR TBD BY OWNER. WWW.PLAYLSI.COM
11	PLAYGROUND SWING STRUCTURE, LANDSCAPE STRUCTURES SINGLE POST SWING FRAME WITH ADDITIONAL BAYS, MODEL #'S 177332 AND 177333, OR OWNER APPROVED EQUAL. SEE DETAIL F, EXHIBIT D4. FINAL COLOR AND SWING SELECTION TBD BY OWNER
(



PLANT LIST

DECIDUOUS SHADE TREES / STREET TREESCL KECladrastis kentuckea American Yellowwood2" CAL.B&BAS SHOWNNY SYNyssa sylvatica 'Wildfire' Wildfire Blackgum2" CAL.B&BAS SHOWNQU RUQuercus rubra Red Oak2" CAL.B&BAS SHOWNQU BIQuercus bicolor Swamp White Oak2" CAL.B&BAS SHOWNUL MOUlmus x 'Morton' Accolade Elm2" CAL.B&BAS SHOWNBE NIBetula nigra 'Heritage' Heritage River Birch2" CAL.B&BAS SHOWN						
CL KECladrastis kentuckea American Yellowwood2" CAL.B&BAS SHOWNNY SYNyssa sylvatica 'Wildfire' Wildfire Blackgum2" CAL.B&BAS SHOWNQU RUQuercus rubra Red Oak2" CAL.B&BAS SHOWNQU BIQuercus bicolor Swamp White Oak2" CAL.B&BAS SHOWNUL MOUlmus x 'Morton' Accolade Elm2" CAL.B&BAS SHOWNBE NIBetula nigra 'Heritage' Heritage River Birch2" CAL.B&BAS SHOWNTI COTilia cordata 'Greenspire'2" CAL.B&BAS SHOWN	CODE	BOT. NAME/COMMON NAME	SIZE	COND.	SPACING	NOTES
American YellowwoodZ" CAL.B&BAS SHOWNNY SYNyssa sylvatica 'Wildfire' Wildfire Blackgum2" CAL.B&BAS SHOWNQU RUQuercus rubra Red Oak2" CAL.B&BAS SHOWNQU BIQuercus bicolor Swamp White Oak2" CAL.B&BAS SHOWNUL MOUlmus x 'Morton' Accolade Elm2" CAL.B&BAS SHOWNBE NIBetula nigra 'Heritage' Heritage River Birch2" CAL.B&BAS SHOWNTI COTilia cordata 'Greenspire'2" CAL.B&BAS SHOWN	DECIDUO	US SHADE TREES / STREET TREES				
QU RUQuercus rubra Red Oak2" CAL.B&BAS SHOWNQU BIQuercus bicolor Swamp White Oak2" CAL.B&BAS SHOWNUL MOUlmus x 'Morton' Accolade Elm2" CAL.B&BAS SHOWNBE NIBetula nigra 'Heritage' Heritage River Birch2" CAL.B&BAS SHOWNTI COTilia cordata 'Greenspire'2" CAL.B&BAS SHOWN	CL KE		2" CAL.	B&B	AS SHOWN	
Red Oak2" CAL.B&BAS SHOWNQU BIQuercus bicolor Swamp White Oak2" CAL.B&BAS SHOWNUL MOUlmus x 'Morton' Accolade Elm2" CAL.B&BAS SHOWNBE NIBetula nigra 'Heritage' Heritage River Birch2" CAL.B&BAS SHOWNTI COTilia cordata 'Greenspire'2" CAL.B&BAS SHOWN	NY SY		2" CAL.	B&B	AS SHOWN	
Swamp White Oak UL MO Ulmus x 'Morton' Accolade Elm BE NI Betula nigra 'Heritage' Heritage River Birch TI CO Tilia cordata 'Greenspire' 2" CAL. B&B AS SHOWN Match	QU RU		2" CAL.	B&B	AS SHOWN	
Accolade Elm 2" CAL. B&B AS SHOWN BE NI Betula nigra 'Heritage' 2" CAL. B&B AS SHOWN Heritage River Birch 2" CAL. B&B AS SHOWN TI CO Tilia cordata 'Greenspire' 2" CAL. B&B AS SHOWN	QU BI		2" CAL.	B&B	AS SHOWN	
Heritage River Birch TI CO Tilia cordata 'Greenspire' 2" CAL. B&B AS SHOWN	UL MO		2" CAL.	B&B	AS SHOWN	
	BE NI	a b	2" CAL.	B&B	AS SHOWN	
	TI CO	•	2" CAL.	B&B	AS SHOWN	Match Form

CODE	BOT. NAME/COMMON NAME	SIZE	COND.	SPACING	NOTES
SMALL / O	RNAMENTAL TREES				
MA VI	Magnolia virginiana Sweetbay Magnolia	1.75" CAL.	B&B	AS SHOWN	
CE CA	Cercis canadensis Eastern Redbud	1.75" CAL.	B&B	AS SHOWN	
CR VI	Crataegus viridus 'Winter King' Winter King Hawthorn	1.75" CAL.	B&B	AS SHOWN	
EVERGRE	EEN TREES				
AB CO	Abies Concolor White Fir	5' HT.	B&B	PER PLAN	
PI AB	Picea abies Norway Spruce	5' HT.	B&B	PER PLAN	
PI OM	Picea omorika Serbian Spruce	5' HT.	B&B	PER PLAN	
PI ST	Pinus strobus White Pine	5' HT.	B&B	PER PLAN	

GREENERY-Buffer Landscape Enlargement Plan



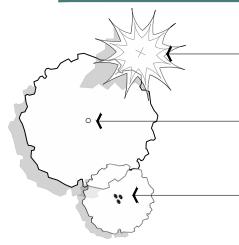
KEY ITEM

3 10' WIDE ASPHALT MULTI-USE PATH

CODED LANDSCAPE NOTES

- $\langle 1. \rangle$ Turf
- 2. LANDSCAPE BED PROVIDE 3" DEPTH HARDWOOD MULCH, POSITIVE DRAINAGE IN ALL DIRECTIONS. HAND SPADE EDGE.

LANDSCAPE KEY PLAN



EVERGREEN TREE @ MIN. 5' HEIGHT INSTALL

_MED. TO LARGE DECIDUOUS TREE @ MIN. 2" CAL. INSTALL

ORNAMENTAL TREE @ MIN. 1.75" CAL. INSTALL

NOTE: FINAL LAYOUT, SITE IMPACTS, AND LANDSCAPING ARE SUBJECT TO CHANGE BASED UPON FINAL ENGINEERING.

















PLAY EQUIPMENT

PLAY STRUCTURE: LANDSCAPE STRUCTURES DESIGN 402, MODEL #176165, OR OWNER APPROVED EQUAL SWING STRUCTURE, LANDSCAPE STRUCTURES SINGLE POST SWING FRAME WITH ADDITIONAL BAYS, MODEL #'S 177332 AND 177333, OR OWNER APPROVED EQUAL.



DUMOR 168-60 6' CAST BENCH IN "ARGENTO" COLOR, OR OWNER APPROVED EQUAL.





MAIL KIOSK - DECORATIVE CLUSTER BOX UNIT TRADITIONAL DECORATIVE 16 TENANT DOOR CLUSTER BOX UNIT IN BLACK, AVAILABLE

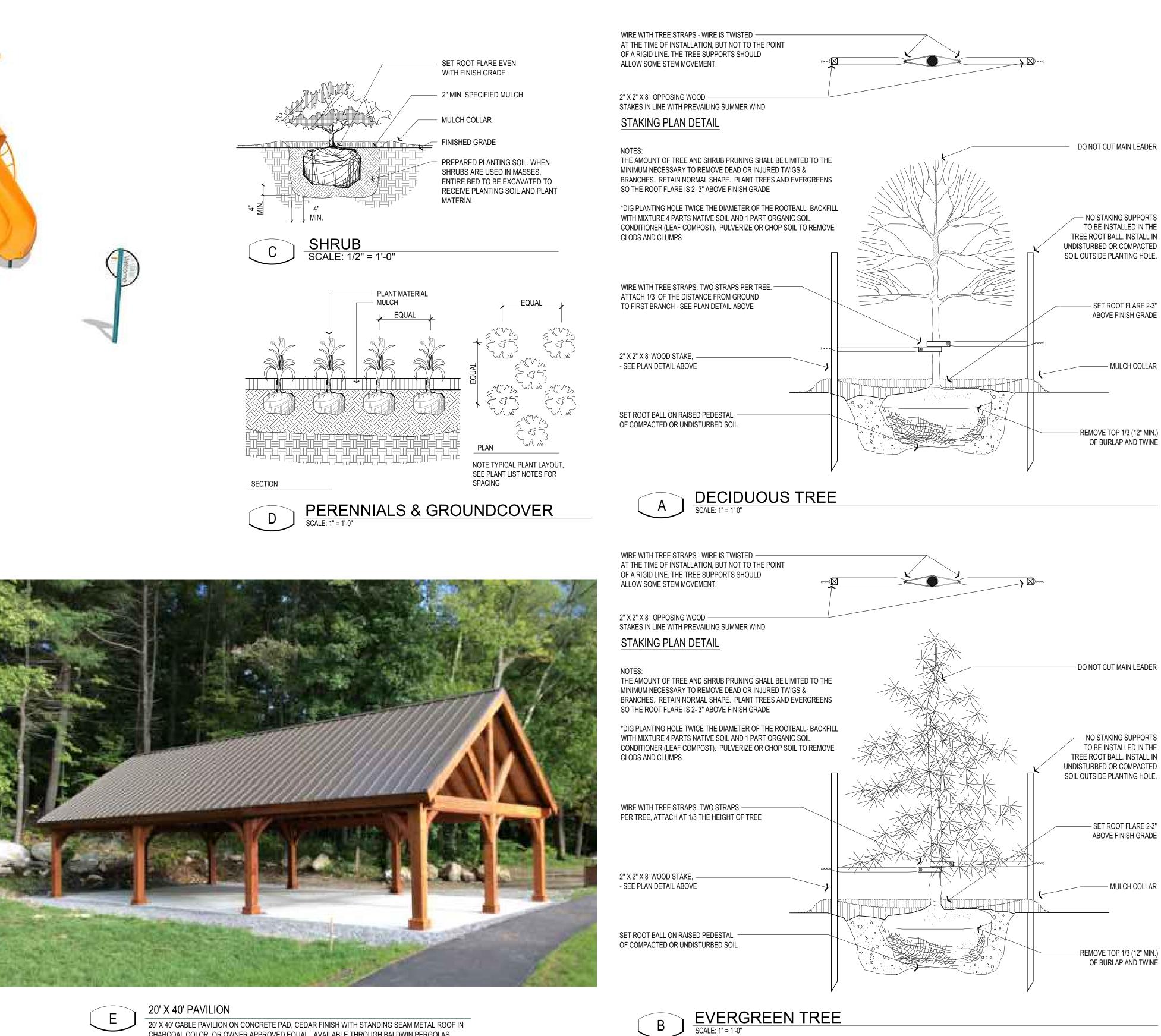
THROUGH WWW.USMAILSUPPLY.COM, OR OWNER APPROVED EQUAL NOTE: • CBU MAILBOXES SHALL BE LOCATED ON ADA ACCESSIBLE SURFACE & GRADE, AND MEET ALL OTHER

ADA COMPLIANCE REQUIREMENTS. • MAILBOXES SHALL REMAIN PLUMB AT ALL TIMES.

• CBU SHOWN HEREON IS PRELIMINARY IN NATURE. FINAL LOCATION AND CONFIGURATION TO BE COORDINATED WITH AND APPROVED BY THE LOCAL U.S.P.S. GROWTH MANAGER.

GREENERY - Site Details I

Berlin Township, Delaware County, Ohio, 08-30-2022







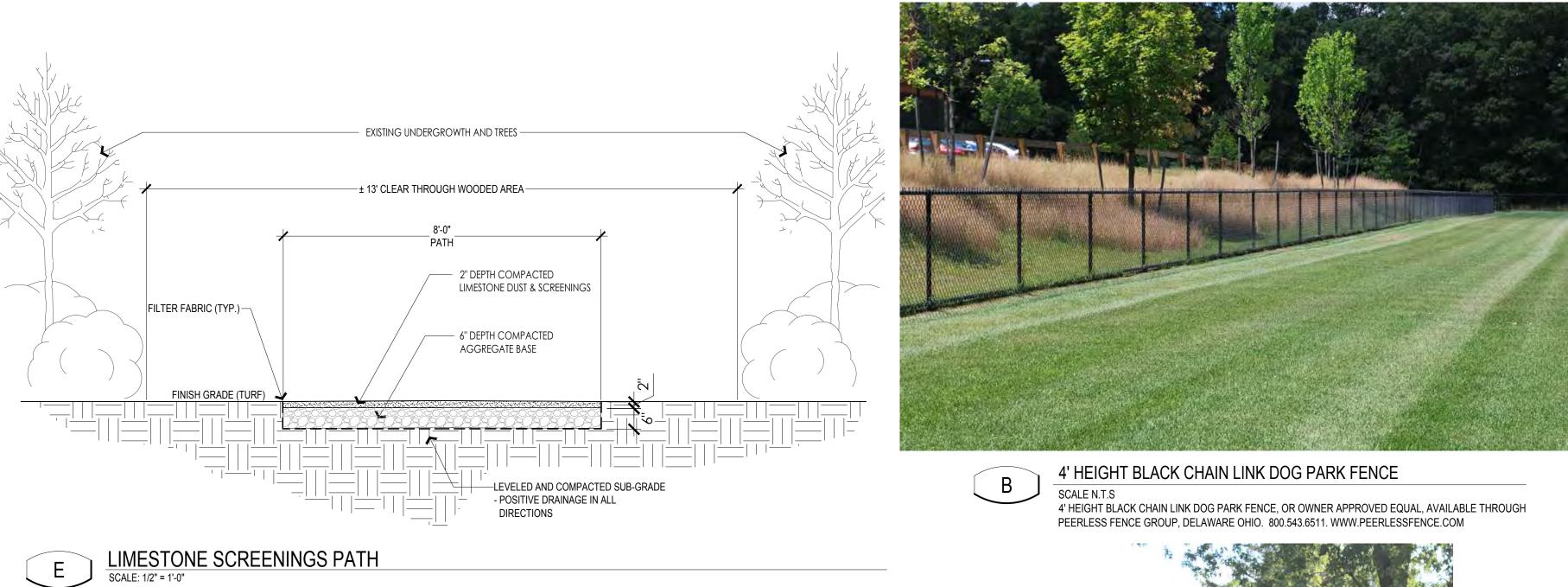
20' X 40' GABLE PAVILION ON CONCRETE PAD, CEDAR FINISH WITH STANDING SEAM METAL ROOF IN CHARCOAL COLOR, OR OWNER APPROVED EQUAL. AVAILABLE THROUGH BALDWIN PERGOLAS, WWW.BALDWINPERGOLAS.COM

В











WOOD FOOTBRIDGE OR OWNER APPROVED EQUAL

F

С

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SECTION

D

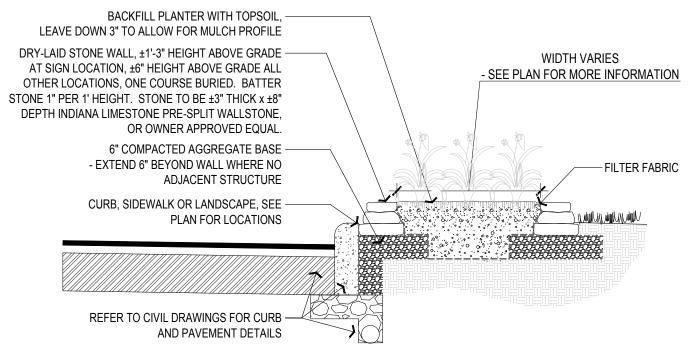
GREENERY-Site Details II

Berlin Township, Delaware County, Ohio, 08-30-2022

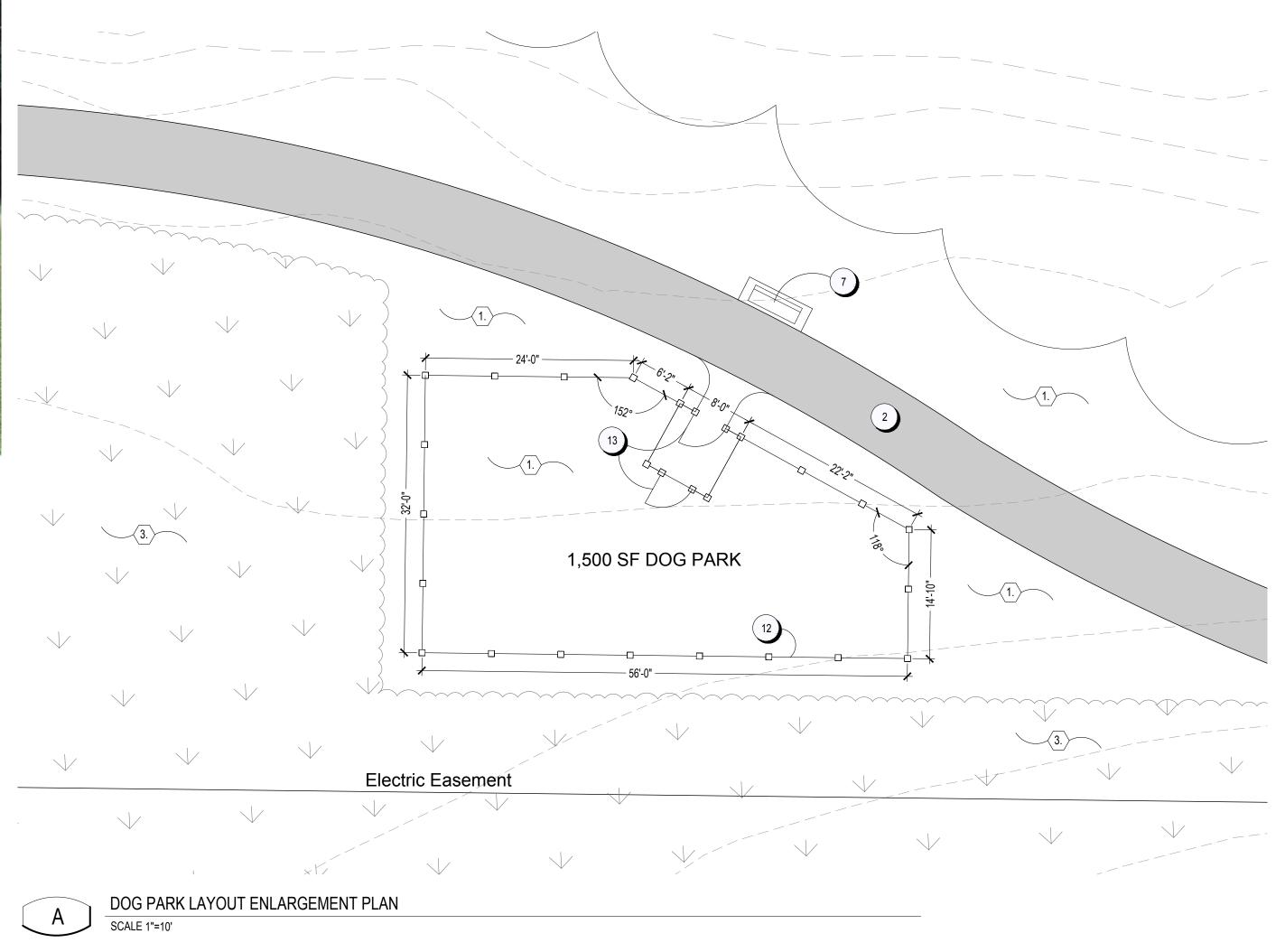


4' HEIGHT X 42" WIDE ALUMINUM DOG PARK GATE SCALE N.T.S.

4' HEIGHT, 42" WIDE BLACK CHAIN LINK DOG PARK FENCE GATE, OR OWNER APPROVED EQUAL, AVAILABLE THROUGH PEERLESS FENCE GROUP, DELAWARE OHIO. 800.543.6511. WWW.PEERLESSFENCE.COM



DRY-LAID STONE PLANTER SCALE: 1/2" = 1'-0"



CODED LANDSCAPE NOTES

 $\langle 1. \rangle$ Turf

 $\overline{\langle 3.
angle}$ Economy prairie seed Mix, or owner approved equal. Available THROUGH CARDNO/STANTEC NATIVE PLANT NURSERY, WWW.CARDNONATIVEPLANTNURSERY.COM

CODED LAYOUT AND MATERIALS NOTES

KEY ITEM

2 8' WIDE ASPHALT MULTI-USE PATH

BENCH SEATING, DUMOR 168-60 6' CAST BENCH IN "ARGENTO" COLOR, 7 BENCH SEATING, DUMOR 108-00 0 CAST DEINOLTHIN ANGENTE COLOUR, OR OWNER APPROVED EQUAL. SEE DETAIL G, EXHIBIT D4. AVAILABLE THROUGH DUMOR SITE FURNISHINGS, WWW.DUMOR.COM



4' HEIGHT BLACK CHAIN LINK DOG PARK FENCE, OR OWNER APPROVED EQUAL, AVAILABLE 4' HEIGHT BLACK CHAIN LINK DOG PARK FENCE, OR OWNER APPROVED THROUGH PEERLESS FENCE GROUP, DELAWARE OHIO. 800.543.6511 WWW.PEERLESSFENCE.COM. SEE DETAIL B, THIS SHEET

4' HEIGHT, 42" WIDE BLACK CHAIN LINK DOG PARK FENCE GATE, OR OWNER APPROVED EQUAL, AVAILABLE THROUGH PEERLESS FENCE GROUP, DELAWARE OHIO. 800.543.6511. WWW.PEERLESSFENCE.COM. SEE DETAIL C, THIS SHEET















GREENERY-Open Space Plan

Berlin Township, Delaware County, Ohio, 08-30-2022

Open Space Data:

Multi-Use Path:

Stone Chip Path:

Total Site:

Open Space:

Proposed Path:

± 36.90 Gross Acres

± 22.44 Acres (±60.81% of Gross

±3,800 Lineal Feet

±2,530 LF ±1,270 LF













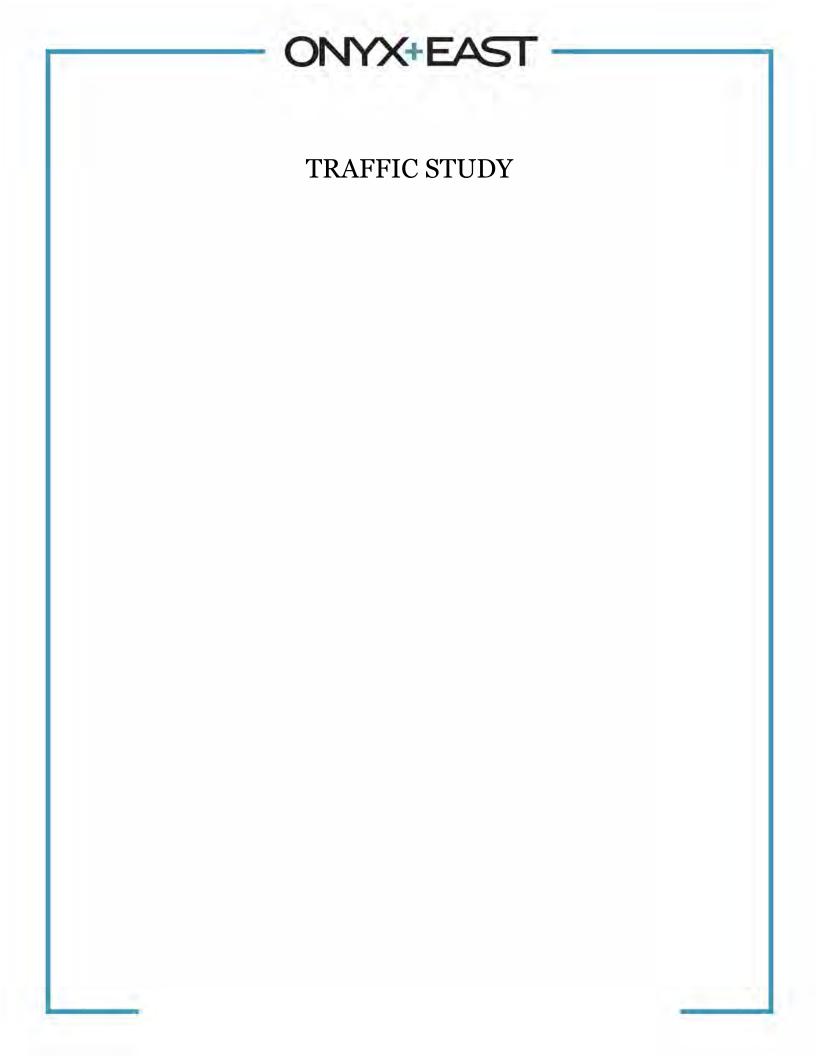
ONYX+EAST -

DEVELOPMENT DETAILS + SCHEDULE

Proposed Use: The Greenery development will consist of 121 single-family homes situated along a network of private access roads with a main entrance off Shanahan Road. All homes will be situated to respect the overall lot setbacks and minimum building separation set forth in the approved zoning text. The development is to be constructed in (1) single phase.

Proposed Schedule:

- County engineering submissions are underway, and once the Final Development Plan receives approval, final engineering approvals will be finalized.
- Environmental Permitting will tentatively be complete by mid-November
- **Sanitary Engineering Plans** will tentatively be approved by Delaware County by mid-November.
- **Final Engineering Plans** will tentatively be approved by Delaware County by the end of November.
- Once all submittals are complete and signatures/approvals are obtained, site work and construction activities will commence.
- Construction to tentatively begin at the start of December.



[EXTERNAL MESSAGE] This message has originated outside of ms consultants. Do not open attachments or click on links from unknown or unexpected senders.

Josh

If you go the condo route, then the internal roads will be private and are not required to be built to DCEO standards, so we will not review the internal road design. Our review authority is limited when the condo route is chosen.

Let me know if you need anything else

Thanks



Michael Love P.E., PTOE Deputy Development Engineer Delaware County Engineer's Office a: 50 Channing St., Delaware, OH 43015 p: (740) 833-2428 e: mlove@co.delaware.oh.us w: www.delaware.outyengineer.org

From: Martin, Joshua [mailto:jmartin@msconsultants.com]
Sent: Thursday, July 14, 2022 3:38 PM
To: Love, Michael <mlove@co.delaware.oh.us>
Cc: Howdyshell, Jennifer <jhowdyshell@msconsultants.com>; Lee, Jesse

Subject: Onyx + East The Greenery TIS and Road Design

CAUTION EXTERNAL EMAIL

DO NOT open attachments or click on links from unknown senders or unexpected emails I just left you a brief voicemail. For the Onyx + East Greenery site, Jen passed your comments along. The required changes to the drive entrance certainly won't be an issue but I did want to follow up on the overall County road standards. Based on our preliminary design meeting, Onyx + East has opted to go with the condo option as opposed to fee simple lots. It is our understanding that they won't then be held to exact County road standards.

The Township made a similar comment on Tuesday night and asked that we get a letter from the County acknowledging conformance or stating the roads aren't subject to County standards.

If we are correct in our understanding about the condo option, can you respond to this email in the affirmative so that we can address the Township's comment?

Thanks again Mike,

Joshua Martin, PE

ms consultants, inc | engineers, architects, planners 2221 Schrock Road, Columbus, Ohio 43229

p: 614-898-7100 Ext. 10213 f: 614-898-7570 e: jmartin@msconsultants.com Connect: Facebook | Twitter | LinkedIn | ms Blog



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The layout (as shown on the sketch plan) appears to be single family with fee simple lots.

-The entrance to the subdivision is required to be two exit lanes and one receiving lane

-Internal street layout does not appear to meet DCEO design standards

Since DCEO has a CIP project for widening Shanahan Road, fee in lieu of will be required (currently, this is \$291,000)

Onyx Greenery Residential Development

Traffic Study Berlin Township, Ohio

May 11, 2022



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, introduction	
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APPENDIX

Appendix A – Background Traffic Calculations Appendix B – Trip Generation Calculations Appendix C – Turn Lane Warrants & Sizing Appendix D – HCS Reports



EXECUTIVE SUMMARY

This document serves as a traffic study for a proposed residential development on the north side of Shanahan Road in Berlin Township, Ohio. A map of the site location is provided as Figure 1. This report will document the impact of the proposed new land use on the surrounding roadway system and will identify the mitigative improvements, if any, that the developer should be responsible for providing.

The proposed site consists of 125 single-family detached dwelling units. A single access to the site is proposed on Shanahan Road, approximately 1,200' east of US 23. An emergency-only access is proposed onto Dogwood Terrace.

The proposed development would provide similar Design Year traffic operations as the No-Build condition. The US 23 The US 23/Hyatts Road/Shanahan Road intersection operates at LOS F in both the No-Build and Build conditions. The proposed site drive warrants an eastbound left turn lane. The proposed site drive operates at LOS C. It is recommended to build the 175' eastbound left turn lane or that the developer pay the fee in lieu. No other improvements are recommended.



INTRODUCTION

This document serves as a traffic study for a proposed residential development on the north side of Shanahan Road, east of US 23 in Berlin Township, Ohio. A map of the site location is provided as **Figure 1**. This report will document the impact of the proposed new land use on the surrounding roadway system and will identify the mitigative improvements, if any, that the developer should be responsible for providing.

STUDY AREA

The study area for this traffic study includes the following locations:

- US 23 & Hyatts Road/Shanahan Road
- Shanahan Road & proposed site drive

A summary of the existing conditions is provided below:

US 23 is a north-south major arterial roadway with two through lanes in each direction. The posted speed limit is 55 miles per hour. North of the Hyatts Road/Shanahan Road intersection, US 23 has a grass median. South of Hyatts Road/Shanahan Road, US 23 has a striped median. Shanahan Road is an east-west major collector. Shanahan Road has one through lane in each direction with a 45-mph speed limit.

The US 23/Hyatts Road/Shanahan Road intersection is a signalized intersection. The approaches have the following lane configurations:

- Northbound L, T, T, R
- Southbound L, T, TR

- Eastbound L, T, R
- Westbound L, T, R

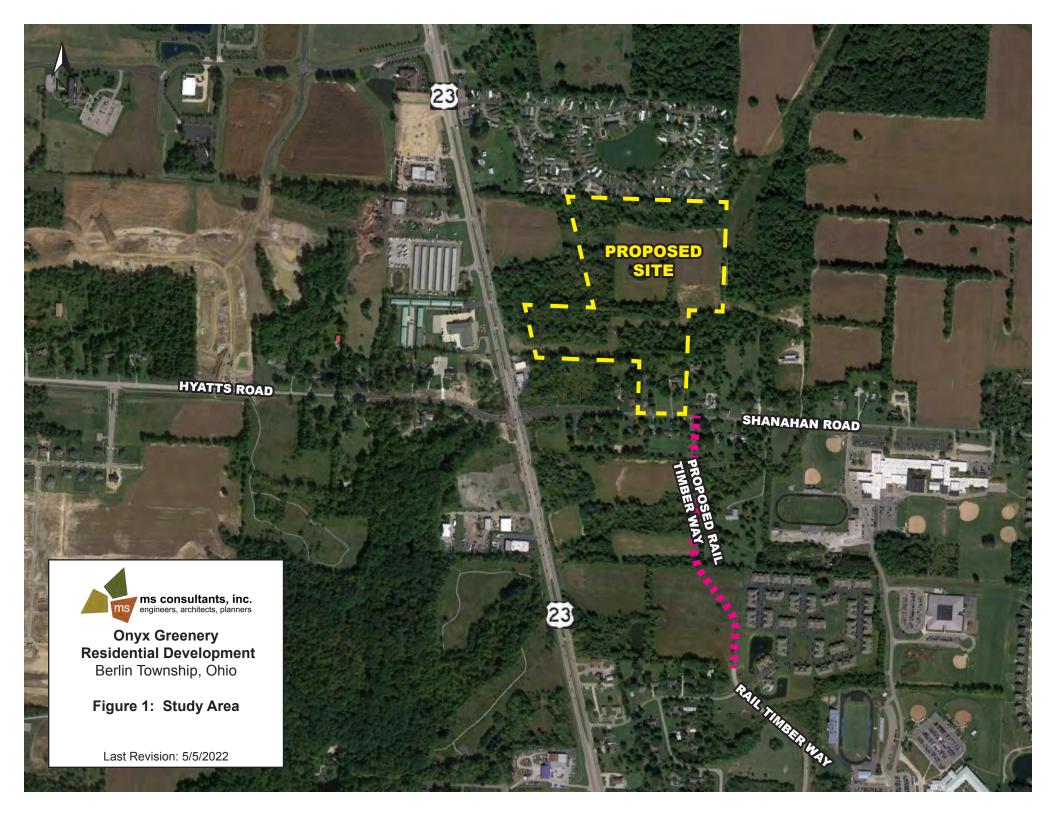
PROPOSED BUILD CONDITION

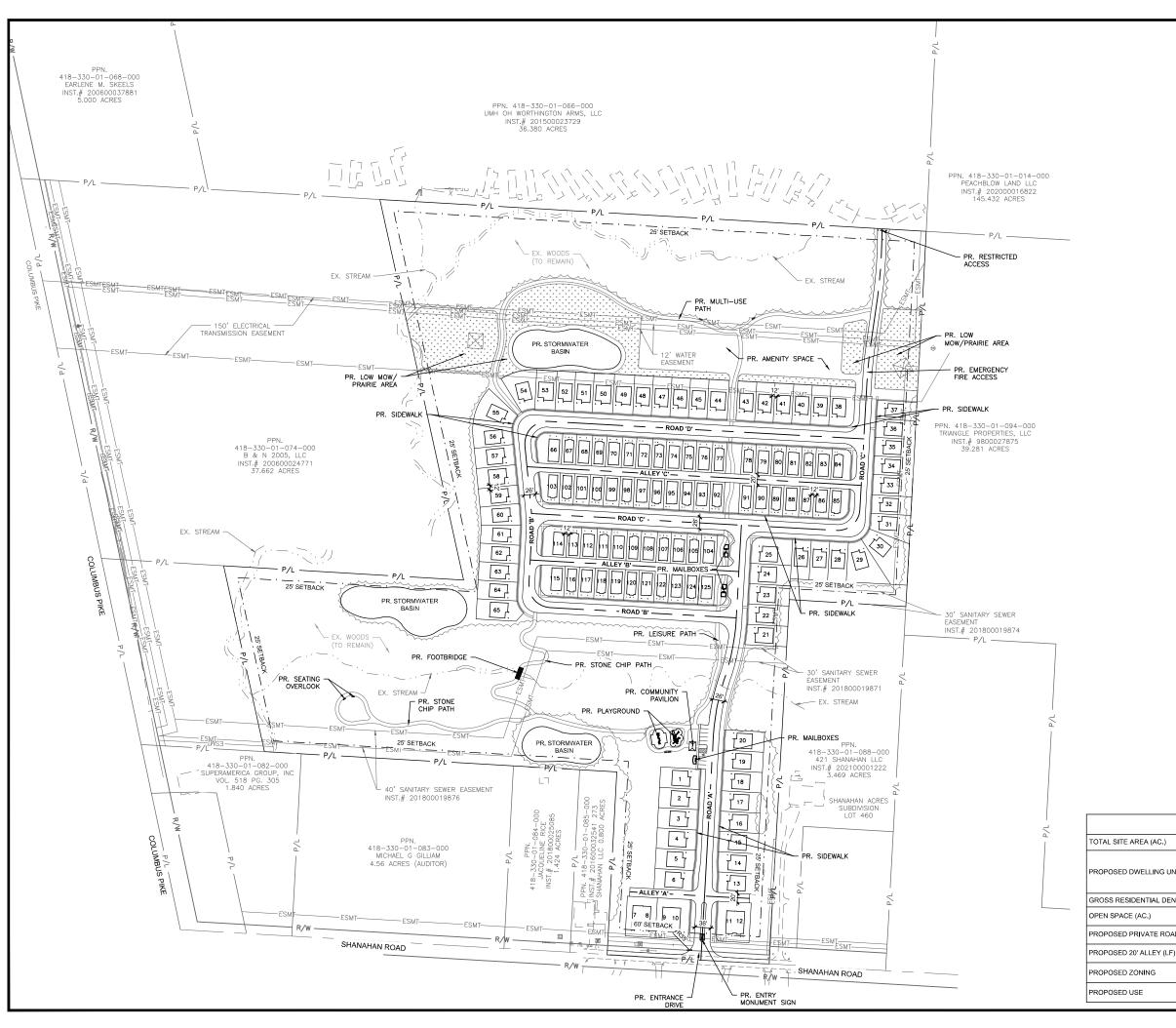
The proposed development consists of 125 single-family detached residences. The proposed site drive will intersect Shanahan Road approximately 1,200' east of US 23. The access drive will be 36' and will provide one inbound and one outbound lane. There is also an emergency-only access connection to Dogwood Terrance, the neighborhood to the north. A conceptual site layout is shown in **Figure 2**.

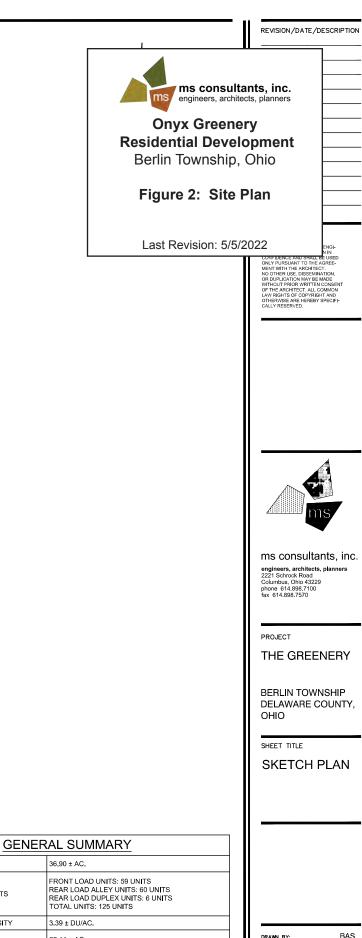
BACKGROUND TRAFFIC VOLUMES

Background traffic volumes were developed using the Build traffic volumes from the Orange Summit Communities Traffic Impact Study (Rev. 1 11/2021). No-Build volumes from the Orange Summit Communities TIS were adjusted to Design Year 2033 and then the Build/site traffic was added to calculate background traffic for this (Onyx Greenery) study. A summary of the background trip calculations can be found in **Appendix A**.









DRAWN BY:	BAS
CHECKED BY:	JML
PROJECT NO:	67-26609
DRAWING	2.0

A (AC.)	36.90 ± AC.
LLING UNITS	FRONT LOAD UNITS: 59 UNITS REAR LOAD ALLEY UNITS: 60 UNITS REAR LOAD DUPLEX UNITS: 6 UNITS TOTAL UNITS: 125 UNITS
TIAL DENSITY	3.39 ± DU/AC.
.)	22.11 ± AC.
ATE ROAD (LF)	4,105 ± LF.

SINGLE FAMILY PLANNED RESIDENTIAL DISTRICT

SINGLE FAMILY DETACHED CONDOMINIUMS

1,505 ± LF.

(SFPRD)

TRIP GENERATION/DISTRIBUTION

Trip generation has been performed using the ITE *Trip Generation Manual (11th Edition)*. The site trip generation information is shown on **Table 1**. Additional information is shown in **Appendix B**.

		AM Peak			PM Peak		
Land Use	Size	In	Out	Total	In	Out	Total
Single-Family Detached Housing (LU 210) 125 units		24	67	91	77	46	123
	TOTAL	24	67	91	77	46	123

Table 1: Site Trip Generation – Traffic Volumes

The proposed trip distribution was developed based on the *Orange Summit Communities Traffic Impact Study*. The distribution was slightly adjusted to take into account for the possibility that some drivers will choose US 23 versus Rail Timber Way to travel to/from shopping destinations (i.e. Olentangy Crossing plaza) to the south.

- 17% to/from the north on US 23
- 47% to/from the south on US 23
- 4% to/from the west on Hyatts Road
- 32% to/from the east on Shanahan Road

The site-generated trips were added to the background volumes to obtain the Build condition volumes. These total volumes can be found on **Figure 3**.

TURN LANE ANALYSIS

The Shanahan Road/proposed site drive intersection was evaluated to determine whether turn lanes are warranted. Turn lane warrants were evaluated using the warrant graphs and criteria from the Delaware County/City of Delaware's *Traffic Impact Study (TIS) Standards* and ODOT's *Location and Design Manual, Volume One* (L&D). Copies of the turn lane warrant analyses are located in **Appendix C**.

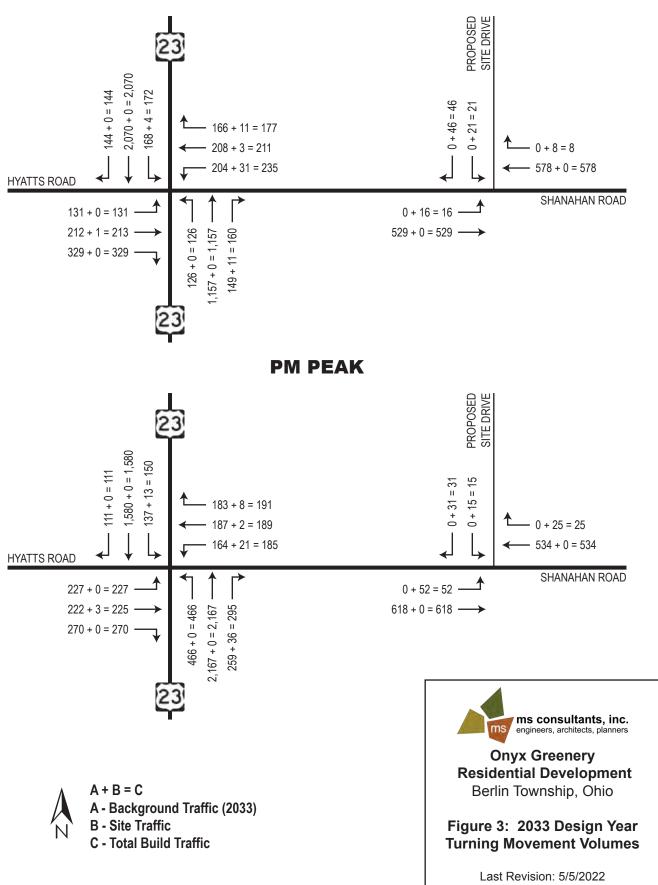
The eastbound left turn lane is warranted because Shanahan Road is a major collector with a speed limit above 40-mph and there are more than 10 left turning vehicles in the peak hour. The westbound right turn lane is not warranted per L&D Manual Figure 401-6b.

Intersection	Movement	No-Build Condition	Build Condition				
Shanahan Road &	EBLT		Warranted				
Proposed Site Drive	WBRT		Not Warranted				

Table 2: Turn Lane Warrant Summary



AM PEAK



Turn lane sizing was calculated based on methods from ODOT's L&D Manual. Only the eastbound left turn at the site drive was sized. A summary of the turn lane calculations can be found in **Table 3**.

-	All turn la	ane lengths include 5	0' taper
Intersection	Movement	Build Condition	Recommended
Shanahan Road &	FBLT	175'	Construct 175' left turn lane or
Proposed Site Drive	LDLI	175	pay fee in lieu

 Table 3: Turn Lane Sizing

 All turn lane lengths include 50' tape

TRAFFIC ANALYSIS

Capacity analyses were performed to determine whether the proposed development would degrade the traffic operations at the study area intersections. These intersections were analyzed using Highway Capacity Software (HCS 7). For suburban/urban locations such as this, LOS D or better is typically considered acceptable traffic operations.

As **Table 4** shows, the US 23/Hyatts Road/Shanahan Road intersection operates at LOS F in both the No-Build and Build conditions. The site traffic increases the intersection delay by 4 seconds. There are no practical improvements that could be made to the intersection to mitigate this minimal delay. The proposed site drive is anticipated to operate at LOS C. The HCS reports can be found in **Appendix D**.

		No-E	Build	Bu	ild
		AM Peak	PM Peak	AM Peak	PM Peak
US 23 & Hyatts Road/ Shanahan Road	Existing Turn Lanes	E 78.7	F 102.2	F 82.7	F 104.5
Shanahan Road &	No Turn Lanes			C 19.5	C 20.8
Proposed Site Drive*	Eastbound Left Turn Lane			C 19.4	C 20.4

Table 4: Level-of-Service (LOS) and Delays

*unsignalized location – delays shown are for the stopped approach



CONCLUSIONS AND RECOMMENDATIONS

This document evaluated the impact of the proposed residential development on the north side of Shanahan Road in Berlin Township. The development includes 125 single-family detached dwelling units. The proposed site includes a single access point on Shanahan Road and an emergency access drive to Dogwood Terrace.

The proposed development would provide similar Design Year traffic operations as the No-Build condition. The US 23/Hyatts Road/Shanahan Road intersection operates at LOS F in both the No-Build and Build conditions. The proposed site drive warrants an eastbound left turn lane. The proposed site drive operates at LOS C. It is recommended that the developer build a 175' eastbound left turn lane at the site drive or pay the fee in lieu. No other improvements are recommended.

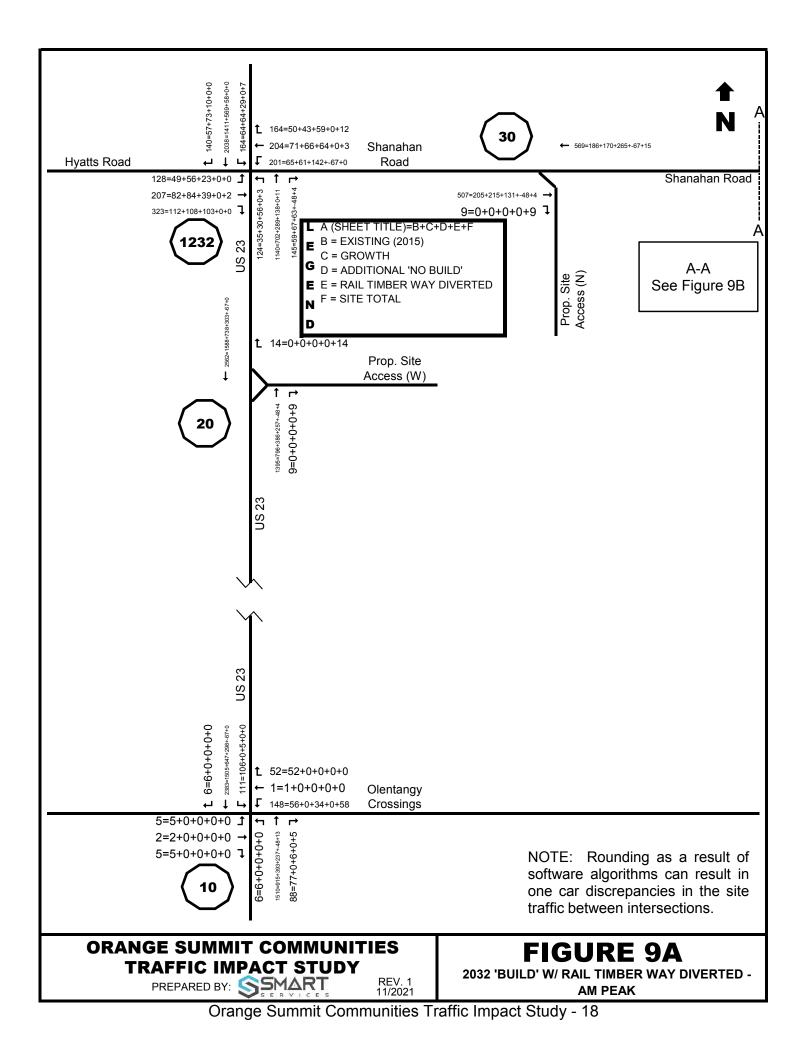
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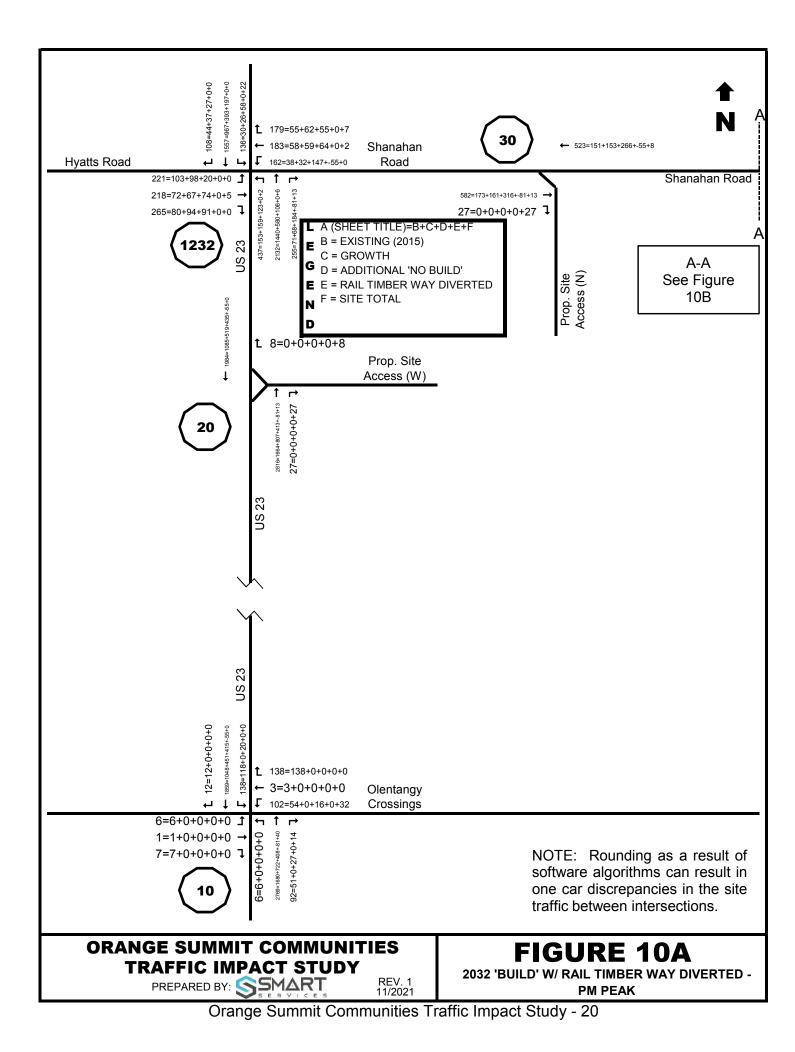


Appendix A

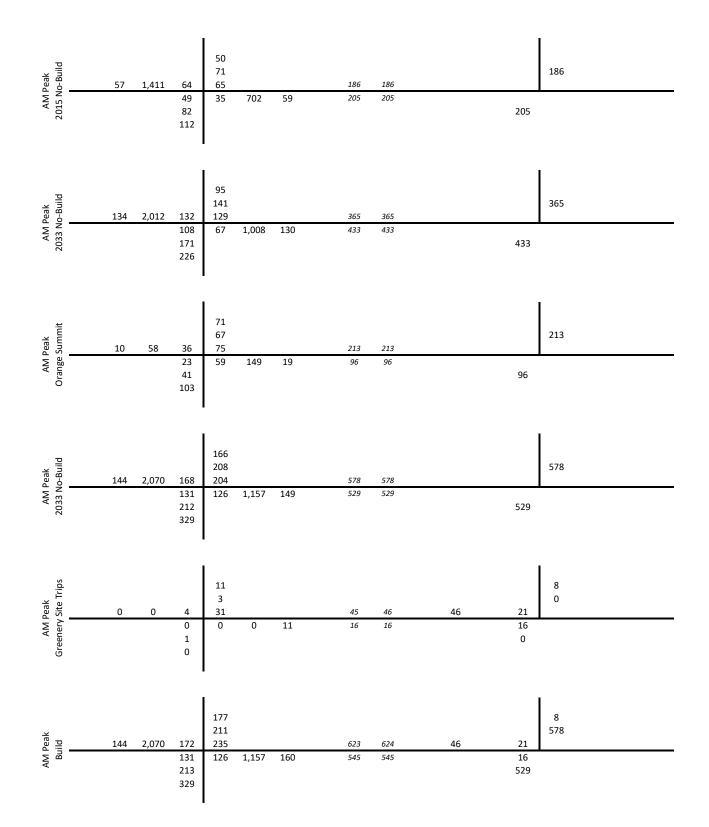
Background Traffic Calculations

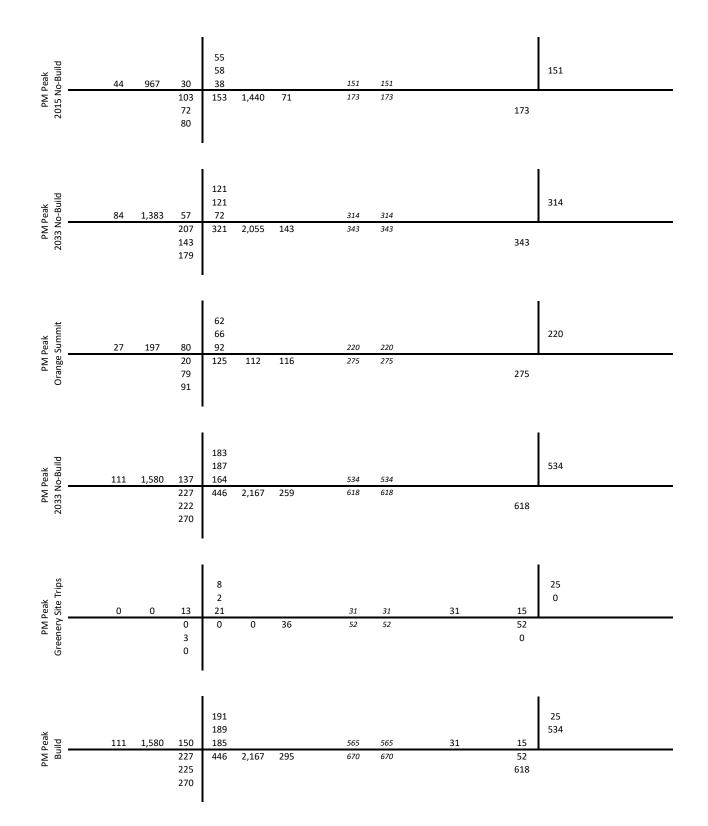






			AM Peak					PM Peak		
Movement	2015 Peak Hour Count	2035 Peak Hour Count	Linear Annual Growth Rate	2015 to 2023 Factor	2015 to 2033 Factor	2015 Peak Hour Count			2015 to 2023 Factor	2015 to 2033 Factor
EBL	60	140	6.67%	1.533	2.200	80	170	5.63%	1.450	2.013
EBT	190	420	6.05%	1.484	2.089	110	230	5.45%	1.436	1.982
EBR	150	320	5.67%	1.453	2.020	80	190	6.88%	1.550	2.238
WBL	100	210	5.50%	1.440	1.990	30	60	5.00%	1.400	1.900
WBT	100	210	5.50%	1.440	1.990	50	110	6.00%	1.480	2.080
WBR	50	100	5.00%	1.400	1.900	30	70	6.67%	1.533	2.200
NBL	50	100	5.00%	1.400	1.900	180	400	6.11%	1.489	2.100
NBT	990	1470	2.42%	1.194	1.436	1940	2860	2.37%	1.190	1.427
NBR	60	140	6.67%	1.533	2.200	80	170	5.63%	1.450	2.013
SBL	110	240	5.91%	1.473	2.064	30	60	5.00%	1.400	1.900
SBT	1710	2520	2.37%	1.189	1.426	1340	1980	2.39%	1.191	1.430
SBR	40	100	7.50%	1.600	2.350	50	100	5.00%	1.400	1.900





Appendix B

Trip Generation Calculations



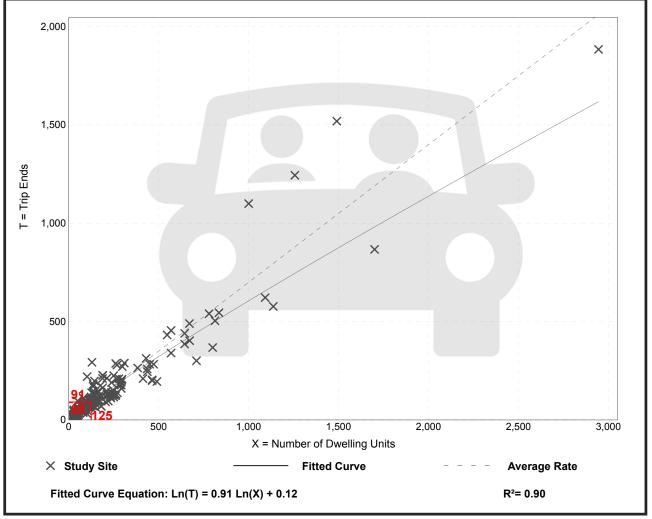
Single-Family Detached Housing (210)

Setting/Location:General Urban/SuburbanNumber of Studies:192Avg. Num. of Dwelling Units:226Directional Distribution:26% entering, 74% exiting	Vehicle Trip Ends vs: On a:	Dwelling Units Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 7 and 9 a.m.
Avg. Num. of Dwelling Units: 226	Setting/Location:	General Urban/Suburban
	Number of Studies:	192
Directional Distribution: 26% entering, 74% exiting	Avg. Num. of Dwelling Units:	226
	Directional Distribution:	26% entering, 74% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.70	0.27 - 2.27	0.24

Data Plot and Equation



Trip Gen Manual, 11th Edition

• Institute of Transportation Engineers

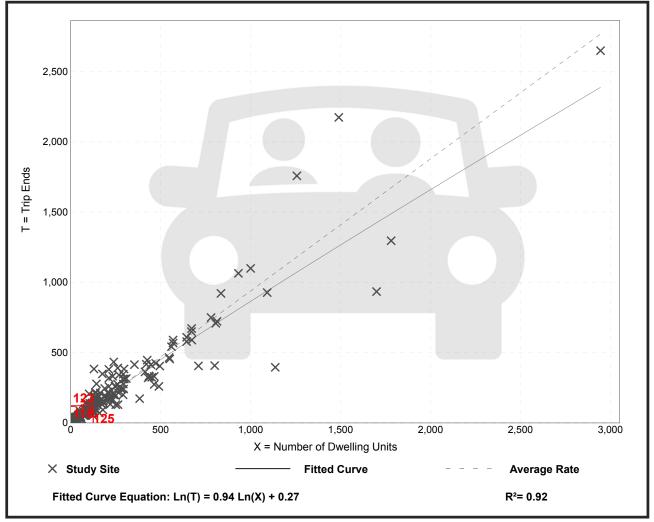
Single-Family Detached Housing (210)

Setting/Location:General Urban/SuburbanNumber of Studies:208Avg. Num. of Dwelling Units:248Directional Distribution:63% entering, 37% exiting	Vehicle Trip Ends vs: On a:	Dwelling Units Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 4 and 6 p.m.
Avg. Num. of Dwelling Units: 248	Setting/Location:	General Urban/Suburban
	Number of Studies:	208
Directional Distribution: 63% entering 37% exiting	Avg. Num. of Dwelling Units:	248
	Directional Distribution:	63% entering, 37% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.94	0.35 - 2.98	0.31

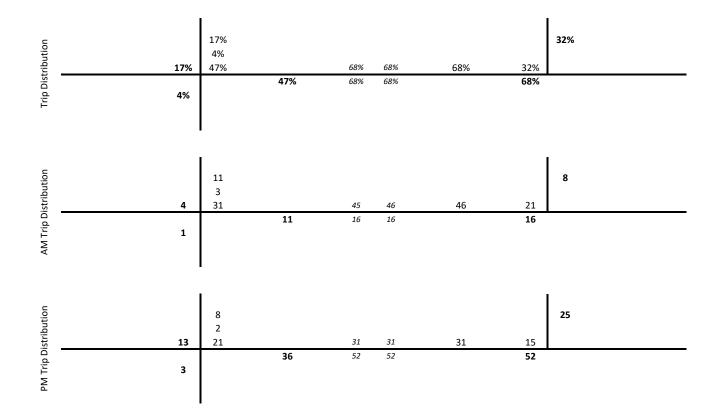
Data Plot and Equation



Trip Gen Manual, 11th Edition

• Institute of Transportation Engineers

ITE Code	Land Use	Verieble	Units	Time of Day	Rate	Total Trips	E	ntering	Exiting	
TTE Coue	Land Ose	variable					%	Total Trips	%	Total Trips
210 Single-Family Detached Housing	125	DU I	AM Peak	Eqn	91	26%	24	74%	67	
	Single-Failing Detached Housing	125	DU	PM Peak	Eqn	123	63%	77	37%	46
	TOTALS	AM Peak		91		24		67		
	TOTALS	PM Peak		123		77		46		



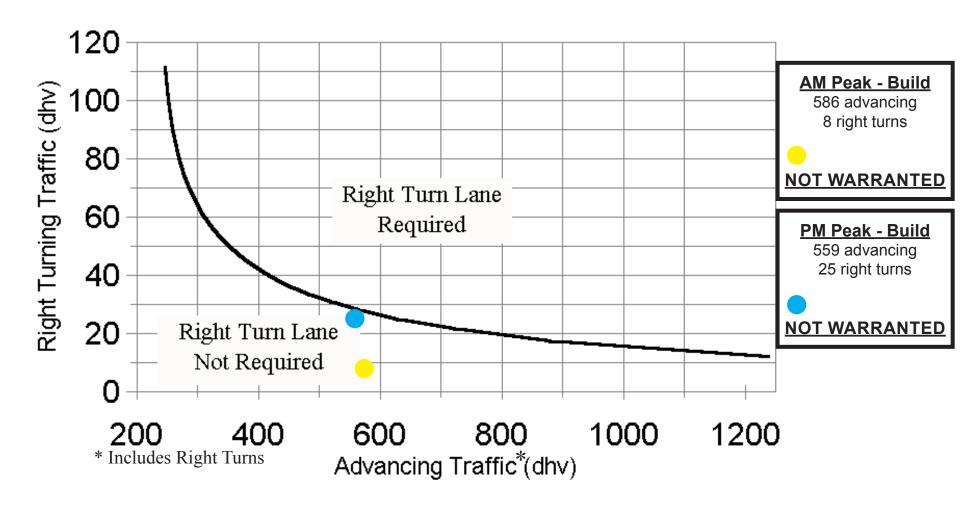
Appendix C

Turn Lane Warrants & Turn Lane Sizing



Shanahan Road @ Proposed Site Drive Westbound Right Turn 2-Lane Highway Right Turn Lane Warrant

> 40 mph or 70 kph Posted Speed







Onyx Greenery ODOT L&D Manual Turn Lane Sizing Calculation Worksheet 5/11/2022

Shanahan Road - Proposed Site Drive

	EBLT	EBLT	
	AM Peak	PM Peak	
Intersection Control	Thru	Thru	
Design Speed (mph)	45	45	
Cycle Length (seconds)	60	60	
Number of Turn Lanes	1	1	
Turn Lane Volume (vph)	16	52	
Approach Volume (vph)	545	670	
Volume in Adjacent Thru Lane (vph)	529	618	
Turning Percentage	3%	8%	
Vehicles/Cycle	1	1	
Taper Length (feet)	50	50	
Deceleration Length (feet) (L1 if dual TLs)	125	125	
Total Storage Length (feet)	0	0	
Total Turn Lane Length (feet)	175	175	
No-Block Storage Length (feet)	N/A	N/A	

Intersection Control				
Design Speed (mph)				
Cycle Length (seconds)				
Number of Turn Lanes				
Turn Lane Volume (vph)				
Approach Volume (vph)				
Volume in Adjacent Thru Lane (vph)				
Turning Percentage				
Vehicles/Cycle				
Taper Length (feet)				
Deceleration Length (feet)				
Storage Length (feet)				
Total Turn Lane Length (feet)				
No-Block Storage Length (feet)				

Appendix D

Capacity Analysis Reports



		HCS	7 Sig	nalize	ea int	ersec		kesu	Its Sur	nmar	У				
General Inform	nation								Intersec	tion Inf		4 사라 + 1	- L		
	nation										1		- 1	411	
Agency		ms consultants							Duration		0.250		_1		
Analyst		JRH					3, 2022 Area Type								~_
Jurisdiction				Time Period AM Pe			eak		PHF		0.92			W Ì E 8	4
Urban Street		US 23		Analys	sis Year				Analysis	Period	1> 7:(00	7		K
Intersection						1-Sha	nahan-l	NB-AN	/l.xus					httr	
Project Descrip	otion	No-Build											7	14144	*
Demand Infor	mation				EB			W	B		NB			SB	
Approach Mov	Approach Movement			L	Т	R	L	Т	R	L	Т	R	L	Т	R
Demand (v), veh/h			131	212	329	204	20	8 166	126	1157	' 149	168	2070	144	
Signal Informa	ation				5	22	R alla		2		l	L		11	-
Cycle, s	90.0	Reference Phase	2	1.1	20		51	- R	8			>	Y	3	÷
Offset, s	0	Reference Point	End	Green	6.8	0.2	48.1	17.	0.0	0.0	_				K
Uncoordinated	No	Simult. Gap E/W	On	Yellow	4.0	0.0	4.0	4.0	0.0	0.0		$\langle \langle \langle \rangle \rangle$			7
Force Mode	Fixed	Simult. Gap N/S	On	Red	2.0	0.0	2.0	2.0	0.0	0.0		5	6	7	8
Timer Results				EBI		EBT	WB	1	WBT	NB		NBT	SBI		SBT
Assigned Phase					-	4			8	5		2	1	-	6
						5.0		\rightarrow	5.0	1.1		3.0			4.0
Case Number						23.0	<u> </u>		23.0	12.8		54.1	1.1		4.0 54.2
Phase Duration, s						6.0			6.0				12.9 6.0		6.0
Change Period, (Y+R c), s Max Allow Headway (MAH), s												6.0			
		·		<u> </u>					3.2 2.9 19.0 4.9			0.0			0.0
Queue Clearance Time (g_s), s Green Extension Time (g_e), s				<u> </u>		19.0 0.0			0.0 0.1			0.0			0.0
		(<i>g</i> e), s			_	1.00							0.2		0.0
Phase Call Pro									1.00	0.97					
Max Out Proba	adility					1.00	i a constante de la constante		1.00	0.04			0.01		
Movement Gr	oup Res	sults			EB			WB			NB			SB	
Approach Mov	ement			L	Т	R	L	Т	R	L	Т	R	L	Т	R
Assigned Move	ement			7	4	14	3	8	18	5	2	12	1	6	16
Adjusted Flow	Rate (v), veh/h		142	230	358	222	226	180	137	1258	162	183	1203	1203
Adjusted Satur	ation Flo	ow Rate (<i>s</i>), veh/h/l	n	1155	1870	1585	1150	1870) 1585	1781	1781	1585	1781	1870	1828
Queue Service	Time (g	g s), s		7.0	10.3	17.0	6.7	10.0	8.5	2.9	22.9	4.8	4.0	48.2	48.2
Cycle Queue C	Clearanc	e Time (<i>g c</i>), s		17.0	10.3	17.0	17.0	10.0	8.5	2.9	22.9	4.8	4.0	48.2	48.2
Green Ratio (g	g/C)	i		0.19	0.19	0.26	0.19	0.19	0.27	0.61	0.53	0.53	0.61	0.54	0.54
Capacity (c),	veh/h			169	353	419	166	353	421	214	1902	847	341	1002	979
Volume-to-Cap	acity Ra	atio (X)		0.841	0.652	0.854	1.335	0.640	0 0.428	0.640	0.661	0.191	0.536	1.201	1.229
Back of Queue	e (Q), ft/	/In (95 th percentile))	198.6	210.2	340.3	511.6	205.6	6 139	67.1	317.9	68.3	55	1604.4	1677
	. ,	eh/In (95 th percenti		7.8	8.3	13.4	20.1	8.1	5.5	2.6	12.5	2.7	2.2	63.2	67.1
	, ,	RQ) (95 th percent	· ·	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00
Uniform Delay		,,		42.8	33.8	31.5	43.3	33.7	27.4	20.3	15.1	10.9	12.6	20.9	20.9
Incremental De	· ,			28.5	3.4	15.0	185.6	3.0	0.3	3.2	1.8	0.5	0.5	100.0	112.0
Initial Queue Delay (<i>d</i> 3), s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (<i>d</i>), s/veh				71.3	37.1	46.5	228.8	36.7	_	23.5	16.9	11.4	13.0	120.8	132.8
Level of Service (LOS)			E	D	D	F	D	C	С	В	В	В	F	F	
Approach Delay, s/veh / LOS			48.4		D	101.		F	16.9		BB		8	F	
Intersection De							3.7						E		
Multimodal Re	esults				EB			WB			NB		SB		
Pedestrian LO				2.45		В	2.29	9	В	2.08	3	В	2.08	3	В
Bicycle LOS So	core / LC	DS		1.69	9	В	1.52	2	В	1.77	7	В	2.62	2	С

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HCS[™] Streets Version 7.9.5

		HCS	7 Sig	nalize	ed In	tersec	tion F	Resu	Its Sur	nmar	y					
									Intersection Information							
General Inform	nation										17		_	444	da la	
Agency		ms consultants							Duration		0.250		_		L.	
Analyst		JRH		-		te May 3							≯ ≯		~_≻	
Jurisdiction				Time Period PM P			eak		PHF	0.92			*	WÌE 8	+ -	
Urban Street		US 23		-		ar 2033			Analysis	Period	1> 7:(00	7		7 7	
Intersection				File Na	ame	2-Sha	nahan-l	NB-PI	M.xus					httr		
Project Descrip	ct Description No-Build												5	* 1 *****	<u>*1 *1</u>	
Demand Inform	nation				EB			W	B		NB		SB			
Approach Move				L	T	R	L	Т		L	T	R	L T		R	
Demand (v), v				227	222		164	18		446	2167	_	137	1580	111	
						_		1		<u> </u>				i and		
Signal Informa	-				5	R	1	.3	2			L	-+-		-	
Cycle, s	90.0	Reference Phase	2		20	VST	2 51	- B	8			1	Y	3	€ 4	
Offset, s	0	Reference Point	End	Green	6.8	2.2	41.0	16	.0 0.0	0.0	-			1	5	
Uncoordinated	No	Simult. Gap E/W	On	Yellow	4.0	4.0	4.0	4.0	0.0	0.0	^	5 4			Y	
Force Mode	Fixed	Simult. Gap N/S	On	Red	2.0	2.0	2.0	2.0	0.0	0.0	1	5	6	7	8	
Timer Results				EBI		EBT	WB	L	WBT	NBL	_	NBT	SBI		SBT	
Assigned Phase					4			8	5		2	1		6		
Case Number					5.0			5.0	1.1		3.0	1.1		4.0		
Phase Duration, s					22.0			22.0	21.0	,	55.2	12.8		47.0		
Change Period, ($Y+Rc$), s					6.0			6.0	6.0		6.0	6.0		6.0		
Max Allow Headway (<i>MAH</i>), s					3.2	3.2		3.2	2.9		0.0 2.9		9 0.0			
Queue Clearance Time (g_s), s					18.0			18.0	17.0			5.8				
Green Extension Time ($g e$), s					0.0			0.0	0.0		0.0			0.0		
Phase Call Probability					1.00			1.00	1.00			0.98				
Max Out Proba	bility					1.00			1.00	1.00)		0.07	·		
Movement Gro	oup Res	sults		EB			WB			NB			SB			
Approach Move				L	Т	R	L	Т	R	L	Т	R	L	Т	R	
Assigned Move				7	4	14	3	8	18	5	2	12	1	6	16	
Adjusted Flow	Rate (v), veh/h		247	241	293	178	203	199	485	2355	282	149	921	917	
-		ow Rate (<i>s</i>), veh/h/l	n	1179	1870	_	1139	187	_	1781	1781	1585	1781	1870	1827	
Queue Service				7.0	11.0	13.4	5.0	9.0	9.6	15.0	49.2	8.8	3.8	41.0	41.0	
Cycle Queue C	learance	e Time (<i>g</i> c), s		16.0	11.0	13.4	16.0	9.0	9.6	15.0	49.2	8.8	3.8	41.0	41.0	
Green Ratio (g	ı/C)	i		0.18	0.18	0.34	0.18	0.18	3 0.25	0.64	0.55	0.55	0.53	0.46	0.46	
Capacity (c), v	/eh/h			171	333	546	144	333	402	377	1946	866	215	852	832	
Volume-to-Cap	acity Ra	itio(X)		1.440	0.726	6 0.538	1.240	0.61	1 0.495	1.286	1.211	0.325	0.692	1.081	1.101	
Back of Queue	(Q), ft/	/In (95 th percentile))	609.5	231.2	2 209.7	394.4	186.	9 158.8	723.7	1564. 4	125.7	61	990.1	1020.1	
Back of Queue	(Q), ve	eh/In (95 th percenti	ile)	24.0	9.1	8.3	15.5	7.4	6.3	28.5	4 61.6	5.0	2.4	39.0	40.8	
	():	RQ) (95 th percent		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	Uniform Delay (d_1), s/veh			43.1	34.9	23.7	43.9	34.1	1 28.7	29.1	20.4	11.3	20.1	24.5	24.5	
Incremental Delay (d_2), s/veh				227.7	6.7	0.6	153.5	2.4	0.4	147.6	99.9	1.0	1.5	55.2	62.7	
Initial Queue Delay ($d 3$), s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Control Delay (d), s/veh			270.8	41.7	24.3	197.4	36.5	5 29.0	176.7	120.3	12.3	21.6	79.7	87.2		
Level of Service (LOS)			F	D	С	F	D	С	F			С	F	F		
Approach Delay, s/veh / LOS		107.	5	F	83.4	1	F	119.3	3	F	78.8	3	E			
Intersection De						10	2.2						F			
Multimedal De	oulto				ED			\\/)				S P			
Multimodal Re		/1.08		0.45	EB	В	0.00	WE		0.00	NB 18 B		2.09		В	
				2.45 1.78			2.29	_	B	2.08		C	2.09		B	
Bicycle LOS So	Jore / LC	<i>J</i> 3		1.78	,	В	1.45	_ ر	A	3.06	,	U	2.13	,	D	

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		HCS	nalize	ed Int	ersec	tion F	Resu	Its Sur	nmar	у					
	C.													al J. da I .	
General Inform	nation	r							Intersec				_	411	2 . La
Agency		ms consultants							Duration		0.250		_1		1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1
Analyst		JRH				e May 3			Area Typ	e	Other		≯≯		~_ <mark>∛</mark>
Jurisdiction				Time F		AM P	eak		PHF		0.92		* →	w + e 8	↓ ↓ ↓
Urban Street		US 23				2033			Analysis	Period	1> 7:(00	7		* -
Intersection		US 23/Hyatts/Shan	ahan	File Na	ame	3-Sha	nahan-l	B-AM.	xus					httr	
Project Descrip	otion	Build											¥.	14144	۳ _] ۲
Demand Inform	mation				EB			W	R		NB			SB	
Approach Move				1	Т	R		Т		L	T	R	L	T	R
Demand (v), v				131	213	329	235	_	_	126	1157	_	172	2070	144
Bomana (V), V	UN/II			101	210	020	200			120	TIO	100	112	2010	
Signal Informa	ation				5	24	R .		5			t			
Cycle, s	90.0	Reference Phase	2		NR		51	-	£			2	Y		4
Offset, s	0	Reference Point	End	Green		0.2	49.1	16.	0 0.0	0.0	_	1		3	Y 4
Uncoordinated	No	Simult. Gap E/W	On	Yellow		0.0	4.0	4.0		0.0	_				\rightarrow
Force Mode	Fixed	Simult. Gap N/S	On	Red	2.0	0.0	2.0	2.0		0.0		5	6	7	8
Timer Results				EBI	-	EBT	WB	L	WBT	NB		NBT	SBI	-	SBT
Assigned Phas	e					4			8	5		2	1		6
Case Number						5.0			5.0	1.1		3.0	1.1		4.0
Phase Duration						22.0			22.0	12.8	3	55.1	12.9)	55.2
Change Period		,				6.0			6.0	6.0		6.0	6.0		6.0
Max Allow Hea		,				3.2			3.2	2.9		0.0	2.9		0.0
Queue Clearan		, = ,				18.0			18.0				6.0		
Green Extension		(g _e), s				0.0			0.0	0.1		0.0	0.1		0.0
Phase Call Pro	bability					1.00			1.00	0.97	7		0.99)	
Max Out Proba	bility					1.00			1.00	0.00)		0.10)	
Movement Gro	oun Ros	ulte			EB			WB			NB			SB	
Approach Move	-	Suits		1	T	R	L	T	R	L	T	R		T	R
Assigned Move				7	4	14	3	8	18	5	2	12	1	6	16
Adjusted Flow) veh/h		142	232	358	255	229		137	1258	174	187	1203	1203
		ow Rate (s), veh/h/l	n	1151	1870	1585	1149	1870		1781	1781	1585	1781	1870	1828
Queue Service			11	5.7	10.5	16.0	5.5	10.3	_	2.8	22.3	5.0	4.0	49.2	49.2
Cycle Queue C		- ,		16.0	10.5	16.0	16.0	10.3		2.8	22.3	5.0	4.0	49.2	49.2
Green Ratio (g		c mile (<i>g c</i>), 3		0.18	0.18	0.25	0.18	0.18	_	0.62	0.55	0.55	0.62	0.55	0.55
Capacity (c), v	. ,			152	333	401	151	333		214	1941	864	348	1023	1000
Volume-to-Cap		tio(X)		0.935	<u> </u>	0.892	1.694	0.69		0.640	0.648	0.201	0.537	1.176	1.204
	-	/In (95 th percentile)		230.1		362.8	743.5	216.	_	63.4	308.4	71.6	53.6	-	1585.1
	. ,	eh/ln (95 th percenti		9.1	8.6	14.3	29.3	8.5		2.5	12.1	2.8	2.1	59.5	63.4
	. ,	RQ) (95 th percent		0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00
Uniform Delay		,, .		43.6	34.7	32.4	43.7	34.7		20.4	14.4	10.5	12.0	20.4	20.4
Incremental De	· ,			53.0	5.3	20.7	339.1	5.0		1.2	1.7	0.5	0.5	89.7	101.3
Initial Queue D	• (0.0	0.0	0.0	0.0	0.0	_	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (96.6	40.0	53.2	382.8	39.7		21.6	16.1	11.0	12.5	110.0	121.7
Level of Service				50.0	-40.0	D	F	D	20.0	C	B	B	B	F	F
Approach Dela	. ,	/105		57.4		E	166.		F	16.0		B	108.	<u> </u>	F
Intersection De				07.5			2.7	-		10.0			F		
						52									
Multimodal Re	sults				EB			WB			NB			SB	
Pedestrian LOS		/ LOS		2.45		В	2.29	-	В	2.08		В	2.08		В
Bicycle LOS So				1.69		В	1.60		В	1.78	_	В	2.63	_	С

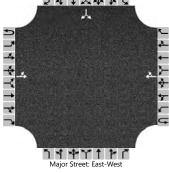
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HCS™ Streets Version 7.9.5

		HCS	7 Sig	nalize	d In	tersec	tion F	Resi	ilts Sur	nmar	У				
General Inform	ation								Intersec	tion Inf	ormatic			47441	b L
	nation	ms consultants							Duration		0.250		- 1	414	
Agency Analyst		JRH		Analys	ie Det	te May 3	2022		Area Typ		Other		_1		2
Jurisdiction				Time F		PM Pe			PHF		0.92		→	w↓e	~ _}
Urban Street		US 23		Analys			ean		Analysis	Poriod	1> 7:0	0	1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1		<u>ج</u>
Intersection		US 23/Hyatts/Shana	aban	File Na			nahan-l			Fenou	1-1.0				, <u> </u>
Project Descrip	tion	Build	anan	File IN	ame	4-311a			.xus				_	<u>ो ।</u> जनकण	tr (*
Floject Descrip	lion	Bulla													
Demand Inform	nation				EB	;		W	′B		NB			SB	
Approach Move	ement			L	Т	R	L		r R	L	Т	R	L	Т	R
Demand (v), v	/eh/h			227	225	5 270	185	18	39 191	446	2167	295	150	1580	111
Signal Informa	-				5	R	144	3	5			L	-+-		-
Cycle, s	90.0	Reference Phase	6		20	VST	2 51	-B	8			1	Y	3	€ ₄
Offset, s	0	Reference Point	End	Green	6.9	2.1	41.0	16	.0 0.0	0.0				1	5
Uncoordinated	No	Simult. Gap E/W	On	Yellow		4.0	4.0	4.(0.0	`	<u>ר</u> א א			Y
Force Mode	Fixed	Simult. Gap N/S	On	Red	2.0	2.0	2.0	2.0	0.0	0.0	1	5	6	7	8
Timer Results				EDI		EDT	WB			NBI		NBT	SBI		CDT
Assigned Phas	e			EBL		EBT 4	VVB		WBT 8	5		2	1	-	SBT 6
Case Number	6				-	5.0		\rightarrow	5.0	1.1		3.0	1.1		4.0
Phase Duration					-	22.0		-+-	22.0	21.0		55.1	12.9	2	47.0
Change Period		~) c				6.0		\rightarrow	6.0	6.0		6.0	6.0		6.0
					-	3.2		-+	3.2	2.9		0.0	2.9		0.0
Max Allow Headway (<i>MAH</i>), s Queue Clearance Time (<i>g</i> s), s					-	18.0		18.0		17.0		0.0	6.2		0.0
	Green Extension Time (g_e), s					0.0				0.0	0.0		0.1		0.0
Phase Call Pro		(3,),-			-	1.00		-	0.0	1.00			0.98	3	
Max Out Proba						1.00			1.00	1.00			0.12		
Movement Gro	oup Res	ults			EB			WE	3		NB			SB	
Approach Move	ement			L	Т	R	L	Т	R	L	Т	R	L	Т	R
Assigned Move	ment			7	4	14	3	8	18	5	2	12	1	6	16
Adjusted Flow	Rate(<i>v</i>), veh/h		247	245	293	201	205	5 208	485	2355	321	163	921	917
Adjusted Satura	ation Flo	ow Rate (<i>s</i>), veh/h/l	n	1177	1870) 1585	1135	187	0 1585	1781	1781	1585	1781	1870	1827
Queue Service		- ,		6.9	11.1	13.4	4.9	9.1	10.1	15.0	49.1	10.4	4.2	41.0	41.0
Cycle Queue C		e Time (<i>g c</i>), s		16.0	11.1	13.4	16.0	9.1		15.0	49.1	10.4	4.2	41.0	41.0
Green Ratio (g				0.18	0.18	_	0.18	0.18		0.64	0.55	0.55	0.53	0.46	0.46
Capacity (c), v				170	333	_	141	333		377	1944	865	216	852	832
Volume-to-Cap		, ,		1.453			1.422	0.61		1.286	1.212	0.371	0.754	1.081	1.101
Back of Queue	(Q), ft/	In (95 th percentile)		616.2	235.6	6 209.7	511.9	189.	.8 167.2	723.7	1568. 7	148.2	74.1	990.1	1020.1
Back of Queue	(Q), ve	eh/ln (95 th percenti	le)	24.3	9.3	8.3	20.2	7.5		28.5	61.8	5.8	2.9	39.0	40.8
-		RQ) (95 th percent	ile)	0.00	0.00	0.00	0.00	0.0		0.00	0.00	0.00	0.00	0.00	0.00
Uniform Delay	. ,			43.2	35.0	23.7	43.9	34.2	2 28.8	29.1	20.4	11.6	20.2	24.5	24.5
Incremental De		•		233.6	7.3	0.6	225.9	2.6		147.6	100.4	1.2	4.1	55.2	62.7
Initial Queue D	• •			0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (eh		276.8	42.3		269.9	36.		176.7	120.8	12.9	24.3	79.7	87.2
Level of Service	· ,			F	D	С	F	D	С	F	F	B	С	F	F
Approach Dela				109.3	3	F	110.	6	F	118.4	4	F	78.6	5	E
Intersection De	lay, s/ve	en / LOS				10	4.5						F		
Multimodal Re	sulte				EB			WE	3		NB			SB	
Pedestrian LOS		/105		2.45		В	2.29		B	2.08	8	В	2.09		В
Bicycle LOS So				1.78		B	1.50	_	B	3.10		C	2.14		B
2.0,00 200 00						-		-	-	0.10		-			-

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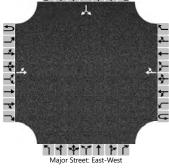
General Information		Site Information	
Analyst	JRH	Intersection	Shanahan-Site Drive
Agency/Co.	ms consultants	Jurisdiction	
Date Performed	5/4/2022	East/West Street	Shanahan Road
Analysis Year	2033	North/South Street	Proposed Site Drive
Time Analyzed	AM Peak	Peak Hour Factor	0.92
Intersection Orientation	East-West	Analysis Time Period (hrs)	0.25
Project Description	Build w/o TL		
Lanes			



venicie volumes and Adj	ustine															
Approach		Eastb	ound			West	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	1	0	0	0	1	0		0	0	0		0	1	0
Configuration		LT						TR							LR	
Volume (veh/h)		16	529				578	8						21		46
Percent Heavy Vehicles (%)		3												3		3
Proportion Time Blocked																
Percent Grade (%)															0	
Right Turn Channelized																
Median Type Storage				Undi	vided											
Critical and Follow-up H	eadwa	ys														
Base Critical Headway (sec)		4.1												7.1		6.2
Critical Headway (sec)		4.13												6.43		6.23
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.23												3.53		3.33
Delay, Queue Length, an	d Leve	l of Se	ervice													
Flow Rate, v (veh/h)		17													73	
Capacity, c (veh/h)		942													321	
v/c Ratio		0.02													0.23	
95% Queue Length, Q ₉₅ (veh)		0.1													0.9	
Control Delay (s/veh)		8.9													19.5	
Level of Service (LOS)		A													С	
Approach Delay (s/veh)	0.5 19.5															
Approach LOS															С	

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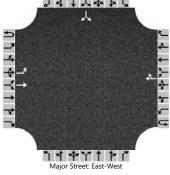
General Information Site Information								
Analyst	JRH	Intersection	Shanahan-Site Drive					
Agency/Co.	ms consultants	Jurisdiction						
Date Performed	5/4/2022	East/West Street	Shanahan Road					
Analysis Year	2033	North/South Street	Proposed Site Drive					
Time Analyzed	PM Peak	Peak Hour Factor	0.92					
Intersection Orientation	East-West	Analysis Time Period (hrs)	0.25					
Project Description	Build w/o TL		<u>^</u>					
.anes								



Approach		Eastb	ound			West	bound			North	bound			South	bound	
Movement	U	L	Т	R	U	L	Т	R	U	L	Т	R	U	L	Т	R
Priority	10	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	0	0		0	1	0
Configuration		LT						TR							LR	
Volume (veh/h)		52	618				534	25						15		31
Percent Heavy Vehicles (%)		3												3		3
Proportion Time Blocked																
Percent Grade (%)															0	
Right Turn Channelized																
Median Type Storage				Undi	vided											
Critical and Follow-up H	eadwa	ys														
Base Critical Headway (sec)		4.1												7.1		6.2
Critical Headway (sec)		4.13												6.43		6.23
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.23												3.53		3.33
Delay, Queue Length, an	d Leve	l of Se	ervice													
Flow Rate, v (veh/h)	Τ	57													50	
Capacity, c (veh/h)		966													277	
v/c Ratio		0.06													0.18	
95% Queue Length, Q ₉₅ (veh)		0.2													0.6	
Control Delay (s/veh)		9.0													20.8	
Level of Service (LOS)		A													С	
Approach Delay (s/veh)	1.5 20.8															
Approach LOS													İ		С	

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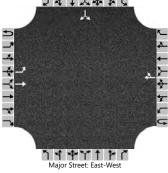
HCS7 Two-Way Stop-Control Report									
General Information		Site Information							
Analyst	JRH	Intersection	Shanahan-Site Drive						
Agency/Co.	ms consultants	Jurisdiction							
Date Performed	5/4/2022	East/West Street	Shanahan Road						
Analysis Year	2033	North/South Street	Proposed Site Drive						
Time Analyzed	AM Peak	Peak Hour Factor	0.92						
Intersection Orientation	East-West	Analysis Time Period (hrs)	0.25						
Project Description	Build w/ TL	<u>.</u>	·						
Lanes									
24 J A B L A									



Approach		Eastb	ound			West	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	1	1	0	0	0	1	0		0	0	0		0	1	0
Configuration		L	Т					TR							LR	
Volume (veh/h)		16	529				578	8						21		46
Percent Heavy Vehicles (%)		3												3		3
Proportion Time Blocked																
Percent Grade (%)														(0	
Right Turn Channelized																
Median Type Storage				Undi	vided											
Critical and Follow-up H	eadwa	ys														
Base Critical Headway (sec)		4.1												7.1		6.2
Critical Headway (sec)		4.13												6.43		6.23
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.23												3.53		3.33
Delay, Queue Length, an	d Leve	l of Se	ervice													
Flow Rate, v (veh/h)		17													73	
Capacity, c (veh/h)		942													323	
v/c Ratio		0.02													0.23	
95% Queue Length, Q ₉₅ (veh)		0.1													0.9	
Control Delay (s/veh)		8.9													19.4	
Level of Service (LOS)		A													С	
Approach Delay (s/veh)	0.3 19.4															
Approach LOS														(С	

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General Information		Site Information	
Analyst	JRH	Intersection	Shanahan-Site Drive
Agency/Co.	ms consultants	Jurisdiction	
Date Performed	5/4/2022	East/West Street	Shanahan Road
Analysis Year	2033	North/South Street	Proposed Site Drive
Time Analyzed	PM Peak	Peak Hour Factor	0.92
Intersection Orientation	East-West	Analysis Time Period (hrs)	0.25
Project Description	Build w/ TL		
Lanes			

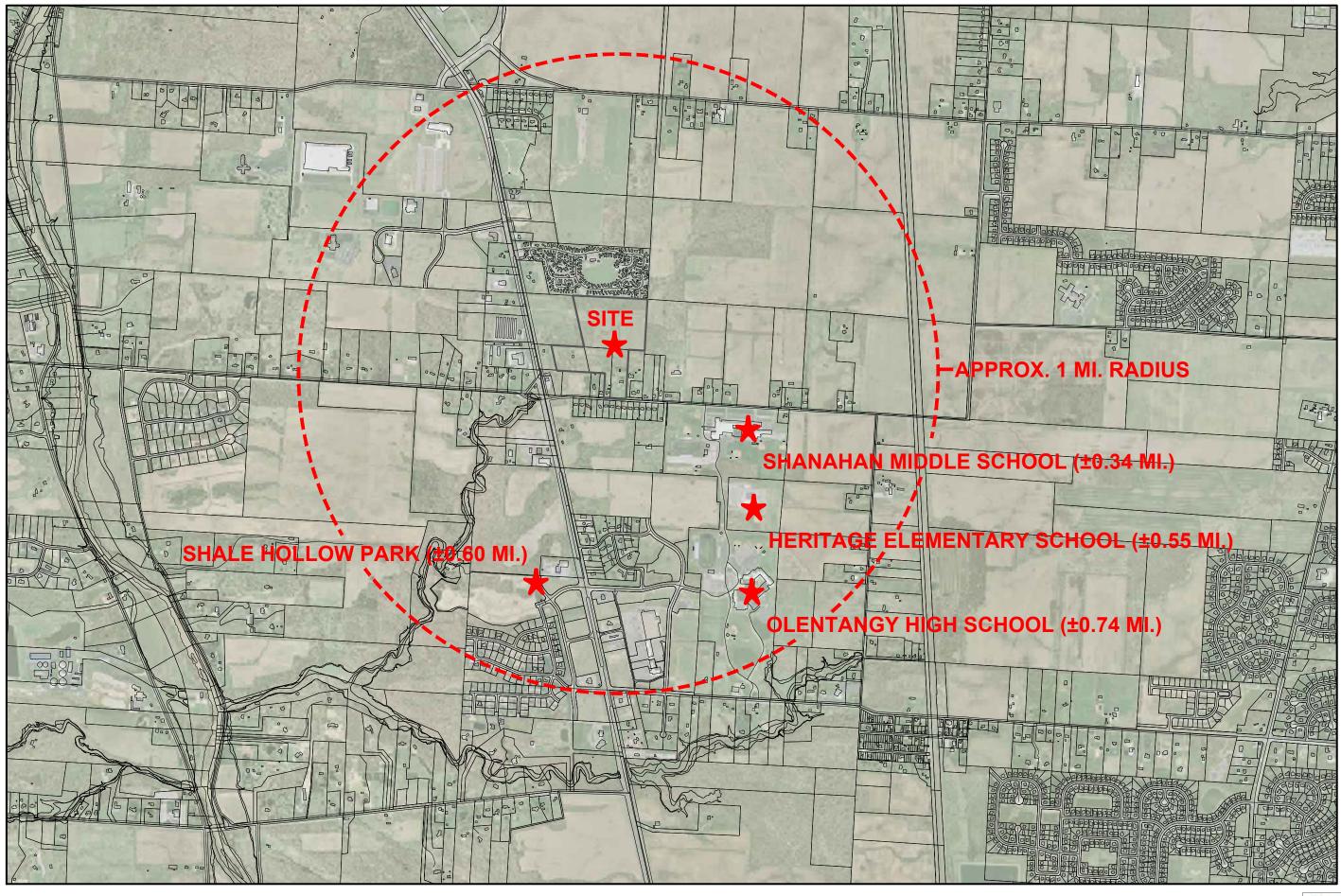


Approach		Eastb	ound			West	bound			North	bound			South	bound	
Movement	U	L	Т	R	U	L	Т	R	U	L	Т	R	U	L	Т	R
Priority	10	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	0	0	0	1	0		0	0	0		0	1	0
Configuration		L	Т					TR							LR	
Volume (veh/h)		52	618				534	25						15		31
Percent Heavy Vehicles (%)		3												3		3
Proportion Time Blocked																
Percent Grade (%)									0							
Right Turn Channelized																
Median Type Storage				Undi	vided											
Critical and Follow-up H	eadwa	ys														
Base Critical Headway (sec)		4.1												7.1		6.2
Critical Headway (sec)		4.13												6.43		6.23
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.23												3.53		3.33
Delay, Queue Length, an	d Leve	l of Se	ervice													
Flow Rate, v (veh/h)		57													50	
Capacity, c (veh/h)		966													284	
v/c Ratio		0.06													0.18	
95% Queue Length, Q ₉₅ (veh)		0.2													0.6	
Control Delay (s/veh)		9.0													20.4	
Level of Service (LOS)		А													С	
Approach Delay (s/veh)	0.7 20.4															
Approach LOS															c	

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ONYX+EAST -

LOCATION OF PUBLIC FACILITIES



wnship, Delaware County, Ohio, 03-11-2022

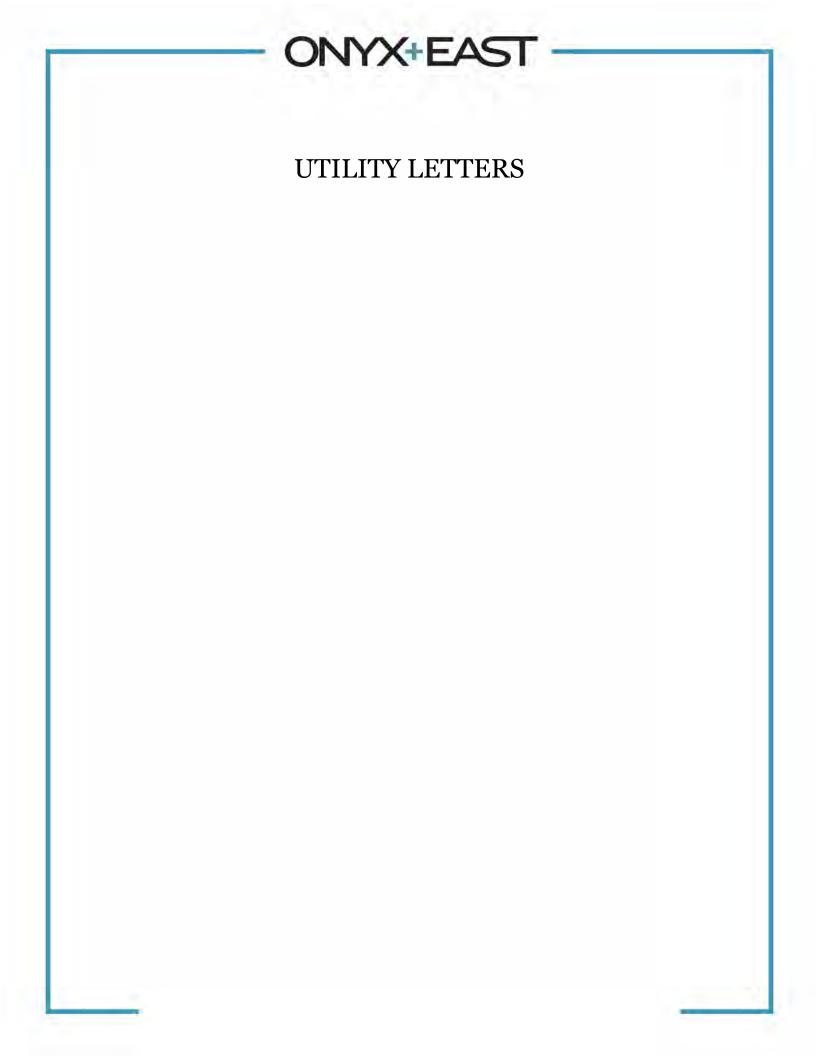












Officers DAVID A. BENDER President PERRY K. TUDOR Vice President ROBERT W. JENKINS Secretary G. MICHAEL DICKEY Treasurer GLENN MARZLUF General Manager/CEO SHANE CLARK Deputy General Manager



6658 OLENTANGY RIVER ROAD DELAWARE, OHIO 43015 www.delcowater.org Phone (740) 548-7746 • Fax (740) 548-6203 Directors BRUCE A. BLACKSTON BRIAN P. COGHLAN WILLIAM E. COLE DOUGLAS D. DAWSON PAMALA L. HAWK TIMOTHY D. MCNAMARA

February 16, 2022

Mr. Manuel Aleman MS Consultants, Inc. 2221 Schrock Rd. Columbus, Ohio 43229 Via Email: MAleman@msconsultants.com

RE: Water Availability – The Greenery

Dear Mr. Aleman:

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

Development: The Greenery Proposed Land Use: ±125 single and multi-family homes Location: North side of Shanahan Road, ±1,100 feet east of US 23 Land Size: ±36.9 acres

This site can be served from an existing 8-inch waterline located on Shanahan Road and an existing 16-inch waterline crossing the northern part of the site.

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.

Mane 7. Curk

Shane F. Clark, P.E. Deputy General Manager



Delaware County

Regional Sewer District

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

February 17, 2022

Manuel Aleman ms consultants, inc 2221 Schrock Road Columbus, OH 43229

sent via email: maleman@msconsultants.com

Re: Serviceability Request

The Greenery, Berlin Township Parcels: 41833001074000, 41833001086000, 41833001087000

Dear Mr. Aleman:

Pursuant to your request dated February 15, 2022, for a sanitary sewer service letter for the aforementioned parcel, we offer the following conditional sanitary sewer availability:

Availability

The Delaware County Sanitary Engineer's Office can confirm that public sanitary sewer is available to serve the above referenced parcel provided that the development obtain sanitary service via the existing 15" sanitary sewer on the site. Extensions from the existing sanitary sewer will be necessary to provide service to the proposed facility.

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 Thie **Kelly Thiel**

Staff Engineer III

cc: Correspondence File

Delaware County Regional Sewer District, 50 Channing Street, Delaware, Ohio 43015 PHONE: (740) 833-2240 FAX: (740) 833-2239 WEB: regionalsewer.co.delaware.oh.us/



Berlin Township Fire Department 2708 Lackey Old State Road Delaware, Ohio 43015 (740) 548-6031

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

Date: August 2, 2022

To: Jesse Lee, MS Consultants

From: Lt. Craig A. Hall

Subject: Berlin Twp. Fire Department Final Plan Review

I am writing in response to your request regarding the proposed land use development known as The Greenery – Final Engineering Plan. This Section of land is located in Berlin Township and Berlin Township Fire Department does provide fire protection for this area.

I have reviewed, the final plan that was sent to me for review. That plan showed, that all of the below following concerns had been addressed.

- 1) 8" Water Mains shall flow 1000 GPM.
- 2) Fire Department hydrant spacing
- 3) Alley access, would be no parking on both sides
- 4) Signage "Fire Lane No Parking "shall be installed on the Fire Hydrant side of the street.
- 5) Accessibility for fire truck passage on primary streets. (OVERLAY was provided)

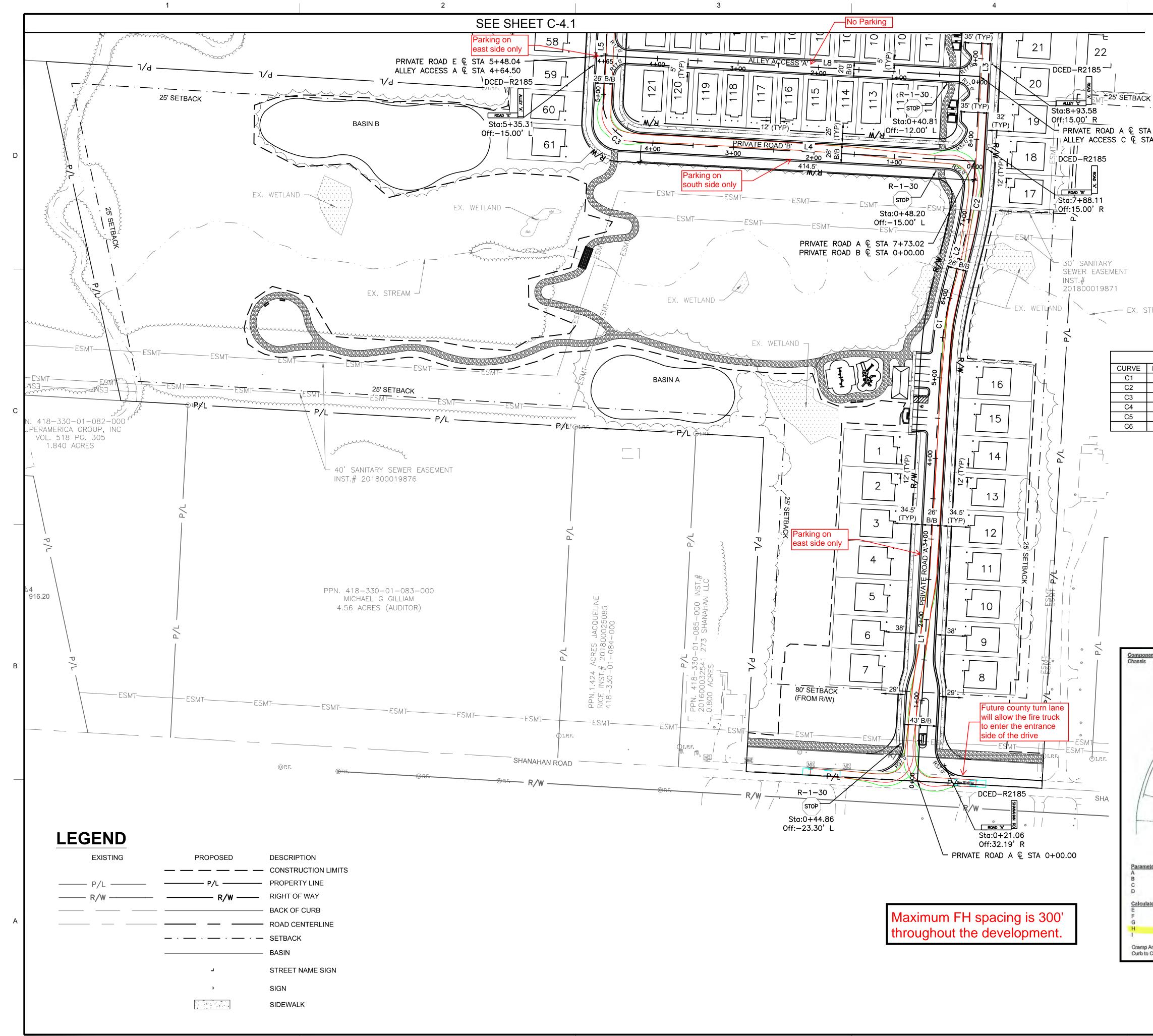
I have approved said plans dated July 29, 2022, With the following exception:

Need documentation that all roadways and emergency access drive will be built to hold a hold a 75,00 lbs. vehicle?

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.

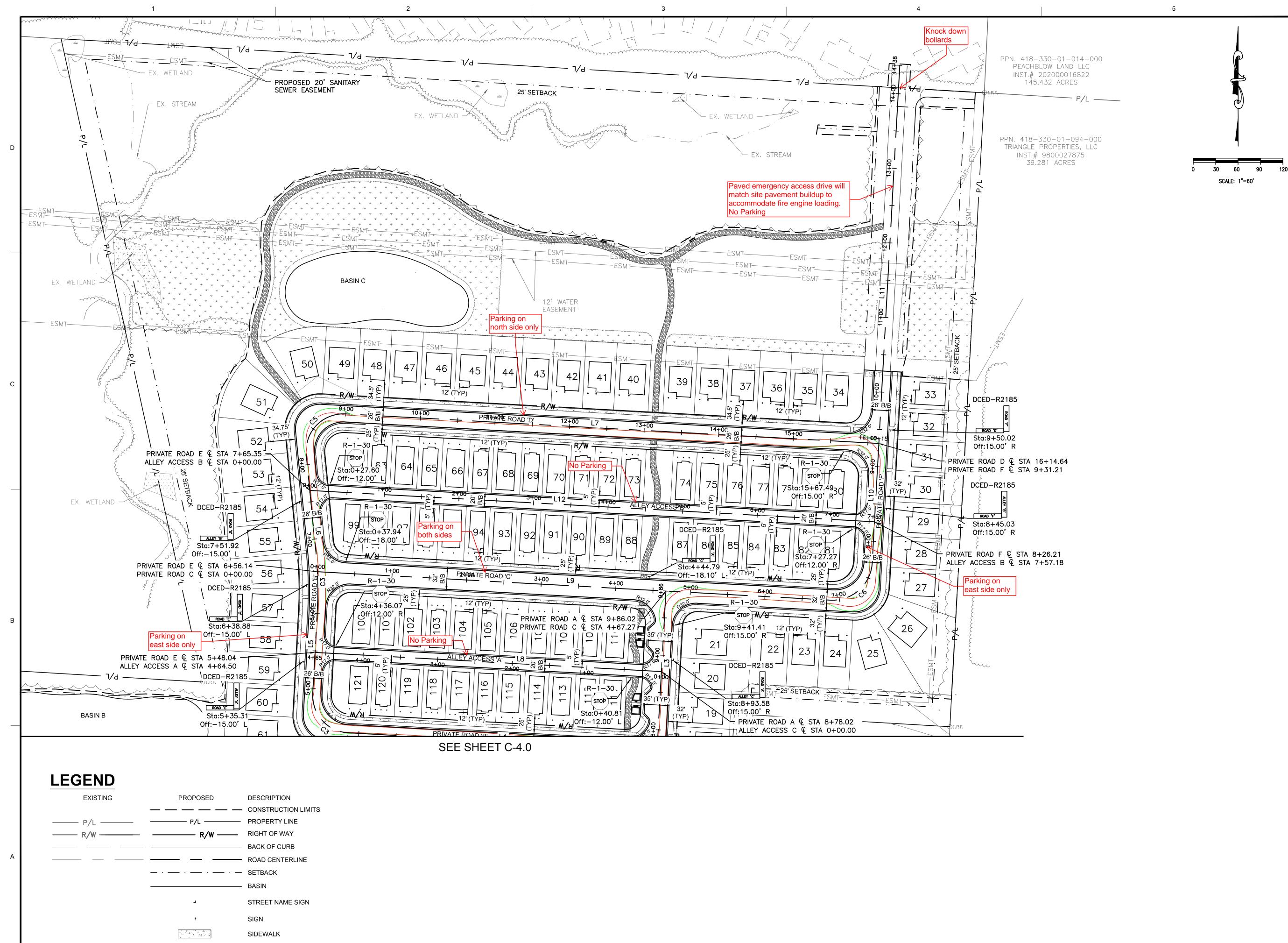
Respectfully,

Lt. Craig A. Hall, CFSI



67\26609 Onyx - Greenery\Docs\CAD\Civil\C4.0 - Site Plan.dwg, 7/29/2022 9:44 AM, aleman

5			
A 8+78.02 A 0+00.00	$\int \int $	ISSUED:	NLY PURSUANT TO THE NO OTHER USE, AY BE MADE WITHOUT PRIOR CT. ALL COMMON LAW
REAM		CLIENT	
RADIUS LENGTH CHORD BEARING 450.00' 88.08' S08°46'43"W 450.00' 88.08' N08°46'43"E 50.00' 78.54' S41°49'43"E 500.00' 77.32' N01°15'31"W 50.00' 86.27' S43°44'29"W 53.00' 83.25' N48°10'17"E	CHORDDELTATANGENT87.94'11°12'52"44.18'87.94'11°12'52"44.18'70.71'90°00'00"50.00'77.24'08°51'36"38.74'75.96'98°51'36"58.40'74.95'90°00'00"53.00'		
L1 521.14' S03° L2 60.13' S14° L3 228.60' S03° L4 414.50' N86° L5 110.40' N03° L6 132.47' N05° L7 715.15' S86° L8 464.50' N86° L9 687.95' N86° L10 55.00' S03°	ARING 10'17"W 23'09"W 10'17"W 46'43"W 210'17"E 41'19"W 249'43"E 49'43"W 49'43"W 10'17"W 10'17"W	ms consulta engineers, architects 2221 Schrock Road Columbus, Ohio 43228 phone 614.898.7100 fax 614.898.7570 PROJECT GREENERY	ants, inc. , planners
nts Sutphen 2011 Aerial Tower		RESIDENTIAL BERLIN TOWNS DELAWARE COU OHIO 43045	
CHARTER CLARE CLAR	HEAR OVERWARS	SHEET TITLE SITE PLAN	
ers Cramp Angle (maximum) 42 deg. 425 Front Overhang 6" Bumper 76" Front Overhang 24" Bumper 94" Wheelbase 236"	Tires	SEAL	
Wheelbase 236" ed Results Inside Turning Radius 20'-11" Curb to Curb 34'-4" Wall to Wall 6" Bumper 39'-3" Wall to Wall 24" Bumper 40'-3" Rear Overhang Swing 35'		DRAWN BY: MHA CHECKED BY: IA PROJECT NO: 67-2660 SCALE: AS NOTED	09
		drawing C-4	.0

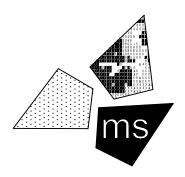


ISSUED:	DATE:

NOTICE

THIS ARCHITECTURAL AND ENGINEERING DRAWING IS GIVEN IN CONFIDENCE AND SHALL BE USED ONLY PURSUANT TO THE AGREEMENT WITH THE ARCHITECT. NO OTHER USE, DISSEMINATION, OR DUPLICATION MAY BE MADE WITHOUT PRIOR WRITTEN CONSENT OF THE ARCHITECT. ALL COMMON LAW RIGHTS OF COPYRIGHT AND OTHERWISE ARE HEREBY SPECIFICALLY RESERVED.

CLIENT



ms consultants, inc. engineers, architects, planners 2221 Schrock Road Columbus, Ohio 43229-1547 phone 614.898.7100 fax 614.898.7570

PROJECT

THE GRENERY RESIDENTIAL

BERLIN TOWNSHIP DELAWARE COUNTY, OHIO 43045

SHEET TITLE SITE PLAN

SEAL

DRAWN BY: MHA

CHECKED BY: IA PROJECT NO: 67-26609

SCALE: AS NOTED

DRAWING

C-4.1

ms consultants, inc. engineers, architects, planners 2221 Schrock Road Columbus, Ohio 43229-1547 p 614.898.7100 f 614.898.7570 www.msconsultants.com



August 4, 2022

Lt. Craig Hall Berlin Township Fire Department 2708 Lackey Old State Road Delaware, Ohio 43015

Re: The Greenery

I am writing in response to comments received via email for the above referenced project on August 2, 2022.

Berlin Fire Department Review

Need documentation that all roadways and emergency access drive will be built to hold a hold a 75,000 lbs. vehicle? The roadways and emergency access drive designed by ms consultants will all be designed to support a 75,000 lbs. A cross section of this roadway buildup will be provided when complete.

Should you have any questions or comments, please do not hesitate to contact me at (614)-898-7100, <u>ilee@msconsultants.com</u>.

Regards,

Jesse Lee, PE

ONYX+EAST

LIST OF PROPERTY OWNERS WITHIN 200 FT

Address labels included in binder.

244 SHANAHAN RD 318-220-01-017-000 JONES MICHAEL A & BOSEENBROCK KRISTEN M 218 SHANAHAN RD LEWIS CENTER OH 43035 RES VACANT

274 SHANAHAN RD 318-220-01-016-000 PUGLIESE LAWRENCE & NICOLE 274 SHANAHAN RD LEWIS CENTER OH 43035 SF DWELLING

300 SHANAHAN RD 318-220-01-015-000 LAWSON STEFANIE B & JAMES 300 SHANAHAN RD LEWIS CENTER OH 43035 SF DWELLING

338 SHANAHAN RD 318-220-01-014-000 PIPER ROBERTA V 338 SHANAHAN RD LEWIS CENTER OH 43035 SF DWELLING 364 SHANAHAN RD 318-220-01-013-000 ALLAUDDIN MOHAMMED JAFFER & KHATOON AMMENA 364 SHANAHAN RD LEWIS CENTER OH 43035 SF DWELLING

421 SHANAHAN RD 418-330-01-088-000 421 SHANAHAN ROAD LLC 421 SHANAHAN RD LEWIS CENTER OH 43035 SF UNPLATTED

455 SHANAHAN RD 418-330-01-089-000 FITZGERALD PATRICK M JR 455 SHANAHAN RD LEWIS CENTER OH 43035 SF DWELLING

663 SHANAHAN RD 418-330-01-094-000 TRIANGLE PROPERTIES INC SUITE 120 470 OLDE WORTHINGTON RD WESTERVILLE OH 43082-8913 OTHER RESIDENTIAL 5277 COLUMBUS PIKE 418-330-01-066-000 UMH OH WORTHINGTON ARMS LLC 5277 COLUMBUS PIKE LEWIS CENTER OH 43035 MANUFACTURED HOME PARK

COLUMBUS PIKE LEWIS CENTER OH 43035 418-330-01-074-000 B & N 2005 LLC 102 HIDDEN PASTURES DR CRAMERTON, NC 28032 RES UNPLATTED

5539 COLUMBUS PIKE 418-330-01-075-000 NCJLT COMPANY LLC 102 HIDDEN PASTURES DR CRAMERTON NC 28032 RES UNPLATTED

303 SHANAHAN RD 418-330-01-086-000 303 SHANAHAN LLC 102 HIDDEN PASTURES DR CRAMERTON NC 28032 SF UNPLATTED

371 SHANAHAN RD 418-330-01-087-000 371 SHANAHAN LLC 102 HIDDEN PASTURES DR CRAMERTON NC 28032 SF UNPLATTED