



**Agenda**  
**Athens Planning Commission**  
**Wednesday, June 17, 2026 at 1:00PM**

Streaming is available <https://www.ci.athens.oh.us/video>

**Establish Quorum**

**Disposition of Minutes**

- Minutes from the May 6, 2026 meeting

**Cases**

**Communications**

- Title 21 Application- Avanelle Crossing

**Reports**

**Opportunity for Citizens to Speak About Items Not Covered on the Agenda**

**Announcements & Other Business**

**Adjournment**

# Athens City Planning Commission

A regular meeting of the Athens City Planning Commission was held in the City Council Chambers, third floor of City Hall, on May 6, 2026, at 12:00 PM.

## 1. Call to Order

Chair John Kotowski called the meeting to order at 12:02 PM and administered the oath to those in the audience intending to speak before the Commission. A quorum was established.

### Planning Commission Members

- Chris Knisely, Vice Chair-Present
- John Kotowski, Chair-Present
- Steve Patterson, Mayor-Absent
- Andy Stone, Service-Safety Director-Present
- Ally Rapp Lee-Present

### Staff Present:

- Tom Pyle-Director of Development and Code Enforcement
  - Meghan Jenning-City Planner
- 

## 2. Approval of the minutes from the March 4, 2026, meeting.

**Motion:** Ms. Knisely moved to approve the minutes as presented.

**Second:** Ms. Rapp Lee seconded the motion.

**Vote:** Motion passed unanimously.

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## 3. Cases

No cases were presented.

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## 4. Communications

### Ohio Recovery Housing Presentation and Q & A

Ms. Rapp Lee recused herself.

### Overview

Mr. Pyle introduced Kelly Manns, Interim Co-Director of Ohio Recovery Housing. He explained that he had recently attended a meeting that included a presentation regarding the operation and regulation of recovery housing in the State of Ohio. Believing the information would be beneficial to both the community and the Planning Commission, he invited Ms. Manns to provide a presentation and answer questions.

### **Presentation: Ohio Recovery Housing**

Kelly Manns, Interim Co-Director of Ohio Recovery Housing (ORH), provided a presentation regarding recovery housing standards, certification requirements, and regulatory oversight in Ohio. Key points included:

- Ohio Recovery Housing is the state affiliate of the National Alliance for Recovery Residences (NARR) and works to increase access to affordable, high-quality recovery housing for individuals recovering from substance use disorders.
- Recovery housing is defined in Ohio Revised Code as alcohol and drug-free housing that provides peer support and recovery assistance but is not a treatment facility.
- Recovery housing operates under landlord-tenant principles and provides a resident-driven length of stay based on individual recovery needs and compliance with house rules.
- ORH promotes recovery housing as an evidence-based practice and provides certification, training, technical assistance, and educational resources.
- Recovery residences must maintain a homelike environment and support residents through peer engagement, recovery planning, and leadership development.
- Ohio recognizes four levels of recovery housing:
  - Level I – Peer-run housing
  - Level II – Monitored housing
  - Level III – Supervised housing
  - Level IV – Residential treatment facilities regulated separately by the Ohio Department of Behavioral Health
- ORH reported that data indicate recovery housing is associated with increased employment, improved family relationships, reduced substance use, and decreased public expenditures.
- ORH reported that recovery housing generates economic benefits through workforce participation, tax contributions, and local spending.
- Recovery housing operators must comply with landlord-tenant laws, fair housing laws, building and safety codes, employment laws, and applicable tax regulations.
- Legislative changes enacted through House Bill 33 require recovery homes to register with the Ohio Department of Behavioral Health and obtain approved credentialing to operate legally.

- Effective January 1, 2025, recovery homes must be credentialed or have an active ORH application to operate in Ohio.
- Behavioral health providers may only refer individuals to recovery residences listed on the statewide registry.
- ORH's certification process includes policy and procedure review, operational assessment, on-site inspections, interviews, and compliance verification.
- ORH receives and investigates complaints involving certified recovery residences and coordinates with state agencies regarding enforcement actions when necessary.
- Information regarding complaint procedures and ORH resources was provided.

## Questions and Discussion

- Mr. Stone asked how recovery housing operators are funded and whether residents sign leases.
- Ms. Manns explained that residents sign leases and pay rent directly to the operator. Recovery housing does not receive funding through Medicaid or insurance, although some local boards or organizations may provide temporary financial assistance to residents.
- Mr. Stone asked how operators enforce drug and alcohol-free policies.
- Ms. Manns stated that certified homes are required to have policies and procedures addressing resident relapse and disruption. Staff may administer drug tests, refer residents to higher levels of care, or address safety concerns as necessary.
- Mr. Stone asked if there was a way the local government could find out what level the recovery house is registered under.
- Ms. Manns explained that once an application is submitted, the recovery home's level appears on the Ohio Recovery Housing registry but not before when they originally file registration with the Ohio Department of Behavioral Health.
- Mr. Kotowski Asked why some recovery housing residents are brought to Athens from other areas of Ohio.
- Ms. Manns stated that some individuals benefit from leaving environments that may negatively affect their recovery, while others may choose to remain near supportive family and community networks. She noted that resident placement should be a resident driven choice.
- Mr. Pyle asked whether ORH accepts complaints from community members regarding recovery homes and whether continued violations could affect a home's certification status.
- Ms. Manns confirmed that complaints regarding occupancy, parking, noise, property maintenance, and other concerns may be submitted to ORH. She stated that complaints may result in investigations and unannounced site visits, and that ongoing issues could jeopardize a home's certification.
- Mr. Pyle noted that the Code Office will involve ORH when complaints are received and encouraged residents to submit complaints directly to ORH as well.

- Mr. Pyle asked whether a properly operated recovery home should have little impact on neighboring properties.
- Ms. Manns responded that properly operated recovery homes generally blend into neighborhoods and often develop positive relationships with nearby residents.
- Mr. Swank asked whether recovery homes are more successful in certain zoning districts or locations.
- Ms. Manns stated that success depends primarily on the quality of the operator and management practices rather than the location of the property.
- Mr. Swank asked how House Bill 58 could affect recovery housing operations and communities.
- Ms. Manns explained that the bill remains under consideration but may eliminate the current 18-month certification window and strengthen enforcement if enacted.
- Mr. Swank asked whether residents generally achieve better recovery outcomes close to home or farther away.
- Ms. Manns stated that outcomes vary by individual circumstances and family support systems.
- Mr. Swank asked how Nex Level Recovery Housing was able to begin operating in Athens without certification.
- Ms. Manns explained that Ohio Recovery Housing was unaware of the operation until complaints were received and emphasized the importance of community reporting.
- Ms. Olson shared concerns about the former recovery housing operation in her neighborhood, including resident turnover, neighborhood impacts, and lack of communication.
- Mr. Stone stated that the Commission is seeking to better understand the factors driving the growth of recovery housing and whether local regulations may be needed.
- Ms. Rubin asked about the complaint and enforcement process for uncertified recovery housing facilities.
- Ms. Manns explained that complaints involving uncertified facilities are referred to the Ohio Department of Behavioral Health, which oversees enforcement. Ohio Recovery Housing does not control that process.
- Ms. Rubin asked whether operators face consequences for operating before becoming certified.
- Ms. Manns stated that Ohio Recovery Housing may consider such conduct during the certification review process and could deny certification, but state registration enforcement falls under the authority of the state agency.
- Ms. Rubin asked when House Bill 58 would become effective if enacted.
- Ms. Manns stated that legislation typically takes effect approximately one year after enactment unless emergency provisions are included.
- Mr. Stone asked whether Ohio Recovery Housing reviews lease provisions related to responsibilities such as snow removal.
- Ms. Manns stated that residents cannot be required to perform maintenance duties such as snow removal as a condition of their lease, although separate paid work agreements are permitted.

- Ms. Bain expressed concerns about the impact of recovery housing on neighborhoods and encouraged the Commission to consider resident input, occupancy limits, and enforcement issues.
  - Mr. Stauffer expressed concerns about recovery housing occupancy, density, and impacts on R-1 neighborhoods, and encouraged additional oversight and information gathering.
- 

## **5. Reports**

### **Meghan Jennings, City Planner**

- Ms. Jennings reported on the Comprehensive Plan update, including upcoming public engagement opportunities, stakeholder outreach, and the anticipated timeline for plan development and adoption.

### **Tom Pyle, Director of Development and Code Enforcement**

- Nothing to report
- 

## **6. Opportunity for Citizens to Speak About Items Not Listed on the Agenda**

- Ms. Hartwick expressed concerns about the possible Avanelle Crossing major subdivision, citing limited access to transportation and essential services. While supporting affordable housing, she questioned whether the location would be suitable for residents who rely on those resources.
- Mr. Kotowski stated that the property is located within the City's three-mile extraterritorial subdivision review area and noted that, if determined to be a major subdivision, the proposal would be subject to the applicable review process.
- Mr. Stone reported that staff currently considers the proposal a major subdivision and that it would require Planning Commission review if that determination remains unchanged.
- Mr. Pyle confirmed that the plans currently submitted are considered a major subdivision and noted that the developer is exploring revisions to the proposal.
- Ms. Hartwick asked whether residents of the affected communities would have an opportunity to attend future meetings and participate in discussions regarding the project.
- Mr. Stone explained that meetings between staff and developers are administrative in nature and not public meetings. He also noted that plans on file with the Code Office are public records available for review.
- Ms. Hartwick reiterated concerns about access to essential services and transportation, and asked to be notified of future developments regarding the project.

- Mr. Swank asked how concerned residents should communicate questions and concerns regarding the project and sought clarification on which governmental body has jurisdiction, given that the property is located outside the city limits.
  - Mr. Stone received clarification from Mr. Swank that the property is located in Athens Township and advised residents to direct concerns to the Athens Township Trustees or Athens County Commissioners. He also noted that the county planner is involved in the meetings with the developers for the possible subdivision.
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## **7. Announcements & Other Business**

- No announcements or other business
- 

## **8. Adjournment**

**Motion:** Mr. Stone motioned to adjourn.

**Second:** Ms. Knisely seconded the motion.

**Vote:** Motion passed unanimously.



# TITLE 21 APPLICATION

## Preliminary Subdivision Plan

*(For Office Use Only)*

Permit # LS26-000003

Date Rec'd 5-21

**Required Prior to Preliminary Plan Submission:**

- A. Pre-Sketch meeting completed on 4/29/26
- B. Sketch Plan Submission approved on 9/27/25

**For Official Use Only**

Code Administrator concurrence  Complete  Incomplete

Code Administrator concurrence  Complete  Incomplete

*Applicant shall comply with all sections of Athens City Code Title 21 particularly Title 21.03.09. All required information shall be attached to this application, including but not limited to all items on attached checklist.*

**Contact Information:**

- 1. Applicant Sunset Development and Investment, LLC Phone 614-220-8575
- 2. Mailing Address 692 North High Street, Suite 204, Columbus State Ohio Zip 43215
- 3. Email Address jhunley@sunsetdev.com
- 4. Address of Project/ Site: 6251 Avanelle Drive, Athens, Ohio 45701
- 5. Parcel Number: A010010031200 Zoning Designation: Not Zoned
- 6. Project Description: Construction of two multi-family buildings, two townhouse buildings, and an management office building.

**I HEREBY SWEAR OR AFFIRM THAT ALL THE INFORMATION PROVIDED AND ATTACHED REQUIRED DOCUMENTATION ARE TO THE BEST OF MY KNOWLEDGE TRUTHFUL AND ACCURATE.**

**By signing this application, the applicant agrees to comply with all facets of Athens City Code Title 21.**

Applicant Signature James A. Hunley Digitally signed by James A. Hunley  
DN: cn=James A. Hunley, o=Sunset Development, ou, email=jhunley@sunsetdev.com, c=US  
Date: 2026.05.16 12:04:27 -0400' Date \_\_\_\_\_

Owner Signature David L. Funk Digitally signed by David L. Funk  
Date: 2026.05.16 21:58:32 -04'00' Date \_\_\_\_\_

**For Official Use Only**

1. **Code Enforcement Admin:** Signature \_\_\_\_\_ Date: \_\_\_\_\_

Attached Checklist Complete  Fee Paid Amount \$ \_\_\_\_\_

2. **Code Directors Review:**  Approve  Refused  Missing Documentation

Remarks: \_\_\_\_\_

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

3. **City Engineer Review:**  Approved  Refused  Missing Documentation

Remarks: \_\_\_\_\_

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

4. **Service Safety Director:**  Approved  Refused  Missing Documentation

Remarks: \_\_\_\_\_

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

## TITLE 21 - Preliminary Subdivision Application Checklist

### Approved pre-application sketch plan for major subdivision

### Preliminary plan requirements for major subdivision

- Complete application form available from the planning commission.
- Signed variance application form and fee set forth in the appendix (if applicable).
- Five copies of the preliminary plan containing all required information.
- The preliminary plan shall be submitted in the following form:
  - Drawn at a scale between 100 feet to the inch and ten feet to the inch.
  - On one or more sheets 24 by 36 inches or 18 by 24 inches in size, clearly and legibly drawn.
  - The original shall be drawn on mylar material. Copies shall be blue or black line paper prints. Additionally, a PDF file of the plans shall be submitted.
- The preliminary plan shall contain the following information:
  - Proposed name of the subdivision, location by section, range, township, or other survey.
  - Boundaries and acreage.
  - Name, address, and telephone number of the owner, developer, professional, surveyor and professional engineer with appropriate numbers and seals.
  - Scale of the plat, north point legend and a vicinity map of a scale not less than 2,000 feet to an inch, and date of survey.
- Name of adjacent subdivisions, owners of adjoining parcels and location of common boundary lines extended to 200 feet beyond the boundary of the subdivision.
- Topographic contours with intervals no greater than two feet at five percent slope, no greater than five feet for slopes over five percent and less than or equal to 15 percent, and no greater than ten feet for slopes greater than 15 percent.
- Location, width, and names of existing streets, railroad rights-of-way, easements, parks, buildings, corporation and township lines; wooded areas, orthophoto of the subdivision at a scale acceptable to the service-safety director, location and species of all trees over six inches diameter at breast height in areas proposed to be disturbed, water courses, drainage patterns, water bodies, and topographic features.
- Location of floodways, floodplains, and other areas, natural or human-made, that may be hazardous.
- Location of environmentally sensitive areas.
- Soil types, derived from the USDA Soil Survey for Athens County. An interpretive soil report, prepared by the Athens Soil and Water Conservation District is recommended.
- Layout, number, dimensions of each lot, and setback lines (a note listing setback dimensions may be added in lieu of showing setback lines if the plan will be made more legible).
- Parcels of land reserved for public use or reserved by covenant for residents of the subdivision.
- Point of ingress/egress or driveway locations and the distance to any existing driveway(s); potential streets or common access drive layouts for adjacent land intended for future development.
- Type of water supply and wastewater disposal proposed, approximate locations and dimensions of all proposed utilities and sewer lines, easements, drainage tiles, water mains, culverts, or other underground utilities within the tract or adjacent thereto.
- Known cemeteries, historical or archeological sites.
- Copy of proposed covenants and restrictions, and a schedule outlining the order of development of each section of phase of the subdivision. If a homeowners association or an improvements maintenance agreement is proposed, include sample copies of each agreement.
- Planning commission preliminary review fee: \$600.00 and \$30.00 per lot.

**Additional information for the preliminary plan.** The following information does not apply to all projects and may be requested during the site review or required during review and approval of applications (check all that apply):

- Statements of proposed use of lots, giving type and number of dwelling units and/or type of business or industry.

## TITLE 21 - Preliminary Subdivision Application Checklist

- Conceptual plan for commercial and industrial development, showing proposed parking, loading areas, alleys, pedestrian walkways, streets, points of vehicular ingress/egress to the development and landscape features.
- A drawing of all present and proposed grades and facilities for storm water drainage in cases where natural drainage is altered and proposals to abate erosion and storm water damage.
- A feasibility study on sewer and water facilities for land developments of two or more dwelling units.
- Screening, buffering and/or noise abatement measures.
- Preliminary engineering designs of any new bridges or culverts proposed in the project.
- Other information, impact studies, items, or provisions deemed necessary or prudent to create buildable sites and to promote the public health, safety, and welfare.

Note: The developer shall be responsible to cover the costs of inspection, processing, and review that are incurred by the planning commission, and said fee shall be paid prior to approval by the city council. Reimbursed funds shall be deposited into the general fund and credited into the engineering expense line provided the reimbursement is a current year expenditure.

**PROJECT DESCRIPTION**

THIS PROJECT CONSISTS OF THE CONSTRUCTION OF TWO MULTI-FAMILY BUILDINGS, TWO TOWNHOUSE BUILDINGS, AND A MANAGEMENT/MAINTENANCE OFFICE, INCLUDING ASSOCIATED PARKING, DRIVES, UTILITIES, AND STORMWATER MANAGEMENT.

**BASIS OF BEARINGS**

BEARINGS ARE BASED UPON THE GRID AZIMUTH (AZ 193 57' 50.6") BETWEEN NATIONAL GEODETIC SURVEY CORRS STATION "STKR" AND MCCARTY ASSOCIATES GEODETIC SURVEY CONTROL MONUMENT "2001" AND DERIVED FROM GNSS OBSERVATIONS TAKEN AUGUST 25, 2025, UTILIZING THE OHIO REAL TIME NETWORK (TRIMBLE VIRTUAL REFERENCE SYSTEM). TRIMBLE FILE: (25221 08-06-25)

**SITE SETTINGS**

SITE SETTINGS ARE BASED ON THE OHIO STATE PLANE COORDINATE SYSTEM, SOUTH ZONE, NAD 83 (2011) AND NAVD 88.

**NATIONAL GEODETIC SURVEY CONTROL MONUMENTS**

NAME	LATITUDE	LONGITUDE	HEIGHT	NORTHING	EASTING	ELEVATION
01 110	39°18'01.70805"N	82°05'52.05858"W	607.478	473906.430	2082317.222	710.645
				RESIDUALS	#N=0.038	#W=0.440

NAME	LATITUDE	LONGITUDE	HEIGHT	NORTHING	EASTING	ELEVATION
STOCKER OHIO UNIV CORRS (STKR)	39°19'33.82493"N	82°06'25.82970"W	584.106	483211.193	2079847.888	896.285

**LOCAL CONTROL MONUMENT "2001"**

NAME	LATITUDE	LONGITUDE	HEIGHT	NORTHING	EASTING	ELEVATION
LOCAL CONTROL MONUMENT "2001"	39°17'22.37555"N	82°07'08.47461"W	896.643	469801.072	2079847.122	808.784

**LOCAL SITE SETTINGS**

LOCAL GROUND COORDINATES	NAVD 88	GROUND SCALE FACTOR:	1,00096504922691
NORTHING	EASTING	ELEVATION	
469801.072	2076327.122	808.784	
GEOD MODEL:	GEOD18 (CONUS)		

UNITS ARE IN U.S. SURVEY FEET (SFT).

**CONTROL POINTS AND BENCH MARKS**

CONTROL POINTS AND BENCHMARKS ARE BASED ON THE OHIO STATE PLANE COORDINATE SYSTEM, SOUTH ZONE, NAD 83 (2011) AND NAVD 88.

**CP #1**

5/8" IRON PIN SET (LOCAL CONTROL MONUMENT "2001")  
NORTHING = 469901.07  
EASTING = 2076327.12  
ELEVATION = 808.78"

**CP #2**

MAG NAIL SET  
NORTHING = 469692.50  
EASTING = 2076218.52  
ELEVATION = 783.79

**CP #3**

MAG NAIL SET  
NORTHING = 469081.35  
EASTING = 2075926.24  
ELEVATION = 697.14

**CP #4**

MAG NAIL SET  
NORTHING = 469344.39  
EASTING = 2075263.585  
ELEVATION = 686.44

**FLOOD ZONE**

THE SUBJECT SITE IS LOCATED IN ZONE "X", AREAS OF MINIMAL FLOOD HAZARD, ACCORDING TO THE FLOOD INSURANCE RATE MAP COMMUNITY PANEL NO. 39009C0240C, DATED DECEMBER 18, 2009.

**SPECIFICATIONS**

THE STANDARD SPECIFICATIONS OF THE OHIO DEPARTMENT OF TRANSPORTATION (ODOT), 2023 VERSION & REVISIONS, INCLUDING SUPPLEMENTAL SPECIFICATIONS LISTED IN THE PLANS SHALL GOVERN THIS IMPROVEMENT.

**UTILITY CONTACTS**

**WATER**  
LE-AX WATER DISTRICT  
6000 INDUSTRIAL DRIVE  
ATHENS, OHIO 45701  
(740) 594-0123

**SANITARY SEWER**  
ATHENS COUNTY WATER & SEWER  
15 S. COURT STREET  
ATHENS, OHIO 45701  
(740) 592-3219

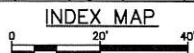
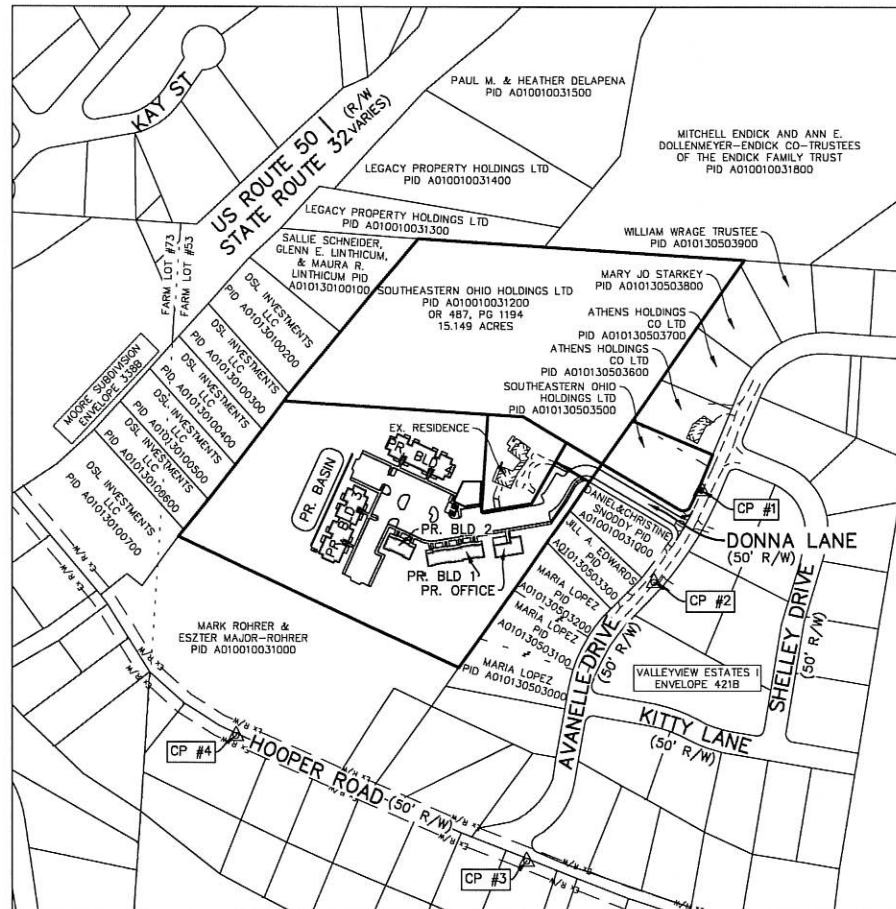
**ELECTRIC**  
AEP ATHENS  
9135 STATE ROUTE 682  
ATHENS, OHIO 45701  
(740) 594-1662

**TELECOMM**  
FRONTIER COMMUNICATIONS  
754 W. UNION STREET  
ATHENS, OHIO 45701  
(740) 245-6633

**GAS**  
COLUMBIA GAS OF OHIO, INC.  
290 W. NATIONWIDE BLVD.  
COLUMBUS, OH 43215  
(614) 738-4395

# CONSTRUCTION DOCUMENTS FOR AVANELLE CROSSING

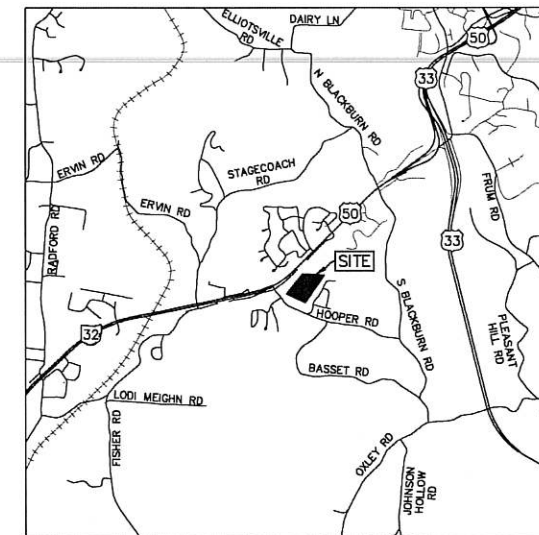
6251 AVANELLE DRIVE  
ATHENS, OH 45701  
ATHENS TOWNSHIP, ATHENS COUNTY  
FARM LOT 53, SECTION 13, TOWN 9, RANGE 14



**OWNER/DEVELOPER**  
SUNSET DEVELOPMENT AND INVESTMENT LLC  
692 NORTH HIGH STREET, SUITE 204  
COLUMBUS, OHIO 43215  
JAMES HUNLEY  
JHUNLEY@SUNSETDEV.COM  
614-220-8575

**DESIGN CONSULTANT**  
MCCARTY ASSOCIATES, LLC  
213 NORTH HIGH STREET  
HILLSBORO, OHIO 45133  
GARRETT SPARGUR  
GSPARGUR@MCCARTYASSOCIATES.COM  
937-393-9971

**SURVEYOR**  
MCCARTY ASSOCIATES, LLC  
213 NORTH HIGH STREET  
HILLSBORO, OHIO 45133  
JASON MCCONNAUGHEY  
JMCC@MCCARTYASSOCIATES.COM  
937-393-9971



VICINITY MAP  
SCALE: 1" = 3000'

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**APPROVALS**

SIGNATURES BELOW SIGNIFY CONCURRENCE WITH THE GENERAL PURPOSE AND LOCATION OF THE PROPOSED PROJECT. ALL TECHNICAL DETAILS REMAIN THE RESPONSIBILITY OF THE DESIGN ENGINEER PREPARING THE PLANS.

SIGNATURE \_\_\_\_\_ DATE \_\_\_\_\_

SIGNATURE \_\_\_\_\_ DATE \_\_\_\_\_

SIGNATURE \_\_\_\_\_ DATE \_\_\_\_\_

SIGNATURE \_\_\_\_\_ DATE \_\_\_\_\_

REVISIONS

NO.	DATE	DESCRIPTION

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**MCCARTY ASSOCIATES, LLC.**  
ARCHITECTS | ENGINEERS | SURVEYORS  
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937.393.9971  
MCCARTYASSOCIATES.COM

CONSTRUCTION DOCUMENTS FOR  
**AVANELLE CROSSING**

6251 AVANELLE DRIVE  
ATHENS, OHIO 45701  
ATHENS TOWNSHIP, ATHENS COUNTY  
FARM LOT 53, SECTION 13, TOWN 9, RANGE 14

PROJECT NUMBER  
25-221

COVER SHEET

DRAWING NUMBER

C001



GENERAL CONSTRUCTION NOTES

- 1. THE REQUIREMENTS OF THE MOST CURRENT VERSION OF THE OHIO DEPARTMENT OF TRANSPORTATION CONSTRUCTION AND MATERIAL SPECIFICATION (ODOT CIMS)...

- 21. THE CONTRACTOR SHALL PROVIDE AS-BUILT RECORDS OF ALL CONSTRUCTION (INCLUDING UNDERGROUND UTILITIES) TO THE OWNER FOLLOWING COMPLETION OF CONSTRUCTION ACTIVITIES.

- 2. THE CONTRACTOR SHALL EXERCISE EXTREME CAUTION WHEN EXCAVATING AROUND EXISTING UTILITIES. CONTRACTOR TO COORDINATE ANY RELOCATION OR DISTURBANCE WITH THE RESPECTIVE UTILITY OWNER.

- 12. THE CONTRACTOR SHALL FURNISH AND INSTALL ALL PAVEMENT MARKINGS AS SHOWN ON THE PLANS. PAVEMENT MARKINGS SHALL BE IN ACCORDANCE WITH THE ODOT CIMS AND SHALL BE EITHER COLD LAID PLASTIC TAPE OR PAINTED.

- 16. ROOF DRAINS, FOUNDATION DRAINS, AND OTHER CLEAN WATER CONNECTIONS TO THE SANITARY SEWER SYSTEM ARE PROHIBITED.

REVISIONS table, MCCARTY ASSOCIATES, L.L.C. ARCHITECTS/ENGINEERS/SURVEYORS, AVANELLE CROSSING CONSTRUCTION DOCUMENTS FOR AVANELLE CROSSING, PROJECT NUMBER 25-221, DRAWING NUMBER C002



**METAL PIPE END TREATMENT 'A' W/ ANCHOR BOLT OPTION**

**METAL PIPE END TREATMENT 'B' W/ ANCHOR BOLT OPTION**

CAST-IN-PLACE HW FOR CORRUGATED METAL PIPE & PLASTIC PIPE (English)																
CIRCULAR				PIPE ARCH				PIPE ARCH								
D	W	H	T	CONC. CO. USE	SPAN	RISE	W	H	T	CONC. CO. USE	SPAN	RISE	W	H	T	CONC. CO. USE
12"	2'-0"	3'-0"	0"	0.31	11'	11'	3'-0"	3'-0"	0"	0.31	11'	11'	3'-0"	3'-0"	0"	0.31
15"	2'-0"	3'-0"	0"	0.31	11'	11'	3'-0"	3'-0"	0"	0.31	11'	11'	3'-0"	3'-0"	0"	0.31
18"	2'-0"	3'-0"	0"	0.31	11'	11'	3'-0"	3'-0"	0"	0.31	11'	11'	3'-0"	3'-0"	0"	0.31
24"	2'-0"	3'-0"	0"	0.31	11'	11'	3'-0"	3'-0"	0"	0.31	11'	11'	3'-0"	3'-0"	0"	0.31
30"	2'-0"	3'-0"	0"	0.31	11'	11'	3'-0"	3'-0"	0"	0.31	11'	11'	3'-0"	3'-0"	0"	0.31
36"	2'-0"	3'-0"	0"	0.31	11'	11'	3'-0"	3'-0"	0"	0.31	11'	11'	3'-0"	3'-0"	0"	0.31
42"	2'-0"	3'-0"	0"	0.31	11'	11'	3'-0"	3'-0"	0"	0.31	11'	11'	3'-0"	3'-0"	0"	0.31
48"	2'-0"	3'-0"	0"	0.31	11'	11'	3'-0"	3'-0"	0"	0.31	11'	11'	3'-0"	3'-0"	0"	0.31
54"	2'-0"	3'-0"	0"	0.31	11'	11'	3'-0"	3'-0"	0"	0.31	11'	11'	3'-0"	3'-0"	0"	0.31
60"	2'-0"	3'-0"	0"	0.31	11'	11'	3'-0"	3'-0"	0"	0.31	11'	11'	3'-0"	3'-0"	0"	0.31
66"	2'-0"	3'-0"	0"	0.31	11'	11'	3'-0"	3'-0"	0"	0.31	11'	11'	3'-0"	3'-0"	0"	0.31
72"	2'-0"	3'-0"	0"	0.31	11'	11'	3'-0"	3'-0"	0"	0.31	11'	11'	3'-0"	3'-0"	0"	0.31
78"	2'-0"	3'-0"	0"	0.31	11'	11'	3'-0"	3'-0"	0"	0.31	11'	11'	3'-0"	3'-0"	0"	0.31
84"	2'-0"	3'-0"	0"	0.31	11'	11'	3'-0"	3'-0"	0"	0.31	11'	11'	3'-0"	3'-0"	0"	0.31
90"	2'-0"	3'-0"	0"	0.31	11'	11'	3'-0"	3'-0"	0"	0.31	11'	11'	3'-0"	3'-0"	0"	0.31
96"	2'-0"	3'-0"	0"	0.31	11'	11'	3'-0"	3'-0"	0"	0.31	11'	11'	3'-0"	3'-0"	0"	0.31
102"	2'-0"	3'-0"	0"	0.31	11'	11'	3'-0"	3'-0"	0"	0.31	11'	11'	3'-0"	3'-0"	0"	0.31
108"	2'-0"	3'-0"	0"	0.31	11'	11'	3'-0"	3'-0"	0"	0.31	11'	11'	3'-0"	3'-0"	0"	0.31
114"	2'-0"	3'-0"	0"	0.31	11'	11'	3'-0"	3'-0"	0"	0.31	11'	11'	3'-0"	3'-0"	0"	0.31
120"	2'-0"	3'-0"	0"	0.31	11'	11'	3'-0"	3'-0"	0"	0.31	11'	11'	3'-0"	3'-0"	0"	0.31
126"	2'-0"	3'-0"	0"	0.31	11'	11'	3'-0"	3'-0"	0"	0.31	11'	11'	3'-0"	3'-0"	0"	0.31
132"	2'-0"	3'-0"	0"	0.31	11'	11'	3'-0"	3'-0"	0"	0.31	11'	11'	3'-0"	3'-0"	0"	0.31
138"	2'-0"	3'-0"	0"	0.31	11'	11'	3'-0"	3'-0"	0"	0.31	11'	11'	3'-0"	3'-0"	0"	0.31
144"	2'-0"	3'-0"	0"	0.31	11'	11'	3'-0"	3'-0"	0"	0.31	11'	11'	3'-0"	3'-0"	0"	0.31
150"	2'-0"	3'-0"	0"	0.31	11'	11'	3'-0"	3'-0"	0"	0.31	11'	11'	3'-0"	3'-0"	0"	0.31
156"	2'-0"	3'-0"	0"	0.31	11'	11'	3'-0"	3'-0"	0"	0.31	11'	11'	3'-0"	3'-0"	0"	0.31
162"	2'-0"	3'-0"	0"	0.31	11'	11'	3'-0"	3'-0"	0"	0.31	11'	11'	3'-0"	3'-0"	0"	0.31
168"	2'-0"	3'-0"	0"	0.31	11'	11'	3'-0"	3'-0"	0"	0.31	11'	11'	3'-0"	3'-0"	0"	0.31
174"	2'-0"	3'-0"	0"	0.31	11'	11'	3'-0"	3'-0"	0"	0.31	11'	11'	3'-0"	3'-0"	0"	0.31
180"	2'-0"	3'-0"	0"	0.31	11'	11'	3'-0"	3'-0"	0"	0.31	11'	11'	3'-0"	3'-0"	0"	0.31
186"	2'-0"	3'-0"	0"	0.31	11'	11'	3'-0"	3'-0"	0"	0.31	11'	11'	3'-0"	3'-0"	0"	0.31
192"	2'-0"	3'-0"	0"	0.31	11'	11'	3'-0"	3'-0"	0"	0.31	11'	11'	3'-0"	3'-0"	0"	0.31
198"	2'-0"	3'-0"	0"	0.31	11'	11'	3'-0"	3'-0"	0"	0.31	11'	11'	3'-0"	3'-0"	0"	0.31
204"	2'-0"	3'-0"	0"	0.31	11'	11'	3'-0"	3'-0"	0"	0.31	11'	11'	3'-0"	3'-0"	0"	0.31
210"	2'-0"	3'-0"	0"	0.31	11'	11'	3'-0"	3'-0"	0"	0.31	11'	11'	3'-0"	3'-0"	0"	0.31
216"	2'-0"	3'-0"	0"	0.31	11'	11'	3'-0"	3'-0"	0"	0.31	11'	11'	3'-0"	3'-0"	0"	0.31
222"	2'-0"	3'-0"	0"	0.31	11'	11'	3'-0"	3'-0"	0"	0.31	11'	11'	3'-0"	3'-0"	0"	0.31
228"	2'-0"	3'-0"	0"	0.31	11'	11'	3'-0"	3'-0"	0"	0.31	11'	11'	3'-0"	3'-0"	0"	0.31
234"	2'-0"	3'-0"	0"	0.31	11'	11'	3'-0"	3'-0"	0"	0.31	11'	11'	3'-0"	3'-0"	0"	0.31
240"	2'-0"	3'-0"	0"	0.31	11'	11'	3'-0"	3'-0"	0"	0.31	11'	11'	3'-0"	3'-0"	0"	0.31
246"	2'-0"	3'-0"	0"	0.31	11'	11'	3'-0"	3'-0"	0"	0.31	11'	11'	3'-0"	3'-0"	0"	0.31
252"	2'-0"	3'-0"	0"	0.31	11'	11'	3'-0"	3'-0"	0"	0.31	11'	11'	3'-0"	3'-0"	0"	0.31

**NOTES**

Determine channel configuration for pipe sizes between end treatment 'A' and end treatment 'B' by an appraiser passing through a pipe. The top and end of each side of the headwall. For end treatment 'B' the slopes are tangent to pipe.

Tightly wrap galvanized anchor cable one time completely around the circumference of the conduit. Furnish hook of least 4" long at the end of the anchor cable as shown above.

Cut galvanized anchor cable to length required.

Form or fill 1/2" diameter openings for anchor cable at locations shown. Alternatively, place anchor cable in wet concrete at the locations shown above to secure conduit to headwall.

Fill any openings made for anchor cables with grout after the cables are placed to a full fill.

Secure cables such that they are taut after the grout or concrete has cured.

**METAL PIPE END TREATMENT 'A' W/ ANCHOR CABLE EYE BOLT OPTION**

**METAL PIPE END TREATMENT 'B' W/ ANCHOR CABLE EYE BOLT OPTION**

**ANCHOR CABLE DETAIL FOR EYEBOLT OPTION**

**NOTES**

Drill openings a min. of 3" deep for eyebolts at the locations shown. Insert nutting length of bolt through nut opening. Fill grout and allow to harden before securing anchor cable. Alternatively, place eyebolts in wet concrete at the locations shown above.

Tightly wrap galvanized anchor cable one time completely around the circumference of the conduit.

Cut galvanized anchor cable to length required.

Place cable through eyebolt and form a loop as shown in the above detail. Ensure the cable is pulled to a tight fit and secured with a galvanized wire rope clip.

**PLASTIC & METAL PIPE END TREATMENT 'A' W/ ANCHOR CABLE OPTION**

**METAL PIPE END TREATMENT 'B' W/ ANCHOR CABLE OPTION**

**ANCHOR CABLE DETAIL**

**NOTES**

Tightly wrap galvanized anchor cable one time completely around the circumference of the conduit. Furnish hook of least 4" long at the end of the anchor cable as shown above.

Cut galvanized anchor cable to length required.

Form or fill 1/2" diameter openings for anchor cable at locations shown. Alternatively, place anchor cable in wet concrete at the locations shown above to secure conduit to headwall.

Fill any openings made for anchor cables with grout after the cables are placed to a full fill.

Secure cables such that they are taut after the grout or concrete has cured.

**ANCHOR BOLT**

**NUT**  
ASTM A 305 and A 307

**INLET CHANNEL PROTECTION DETAIL**

**OUTLET CHANNEL PROTECTION DETAIL**

**NOTES**

**GENERAL:** Provide a rigid reinforced concrete slab according to SCC DM-1. If the pipe is depressed or if a channel is to be provided, the slab is to be made per square yard of Item 601 Riprap using 6" Reinforced Concrete Slab and includes the cost of the cutoff wall.

This drawing is for cast-in-place half-height concrete headwalls. Precast half-height headwalls are only approved for rigid conduits with a maximum conduit diameter of 78" when precast headwalls are furnished, provide openings for the anchor cable as shown and fill with grout after placement of the anchor cable. If anchor bolts are to be used with a precast headwall, fill the anchor cable openings with grout.

**CONCRETE:** Use 4000 psi compressive strength concrete for headwall. Concrete quantities are based on headwalls without the 6" extension under the channel protection.

**ANCHOR BOLTS:** Furnish bolts (see detail sheet 2/4) that meet ASTM A 307 for anchoring both ends of metal pipe. The top 6" min. of the bolt must be galvanized according to ASTM A 53. Cost of anchors is included in the price bid per foot of Item 611.

Headwall dimensions are based on end treatment 'A' for pipe sizes up to and including 18", 12"-24"-42", and 7"-24"-31".

**PLASTIC PIPE:** Plastic pipe may not be available in all the sizes specified on this drawing.

**ANCHOR CABLE:** Furnish galvanized anchor cable (see detail sheet 2/4 & 2/4) that meets ASTM A 1021 for anchoring both ends of plastic or metal pipe. Wire rope clip must be galvanized according to ASTM A 53. Cost of anchor cables and wire rope clip is included in the price bid per foot of Item 611.

**EYEBOLTS:** Furnish eyebolts (see detail sheet 2/4) that meet ASTM A 489 for anchoring both ends of metal or plastic pipe. The eyebolts must be galvanized according to ASTM A 53. Furnish eyebolts with a min. 1/2" eye of 1/2" and a min. shank length of 3". Cost of eyebolts is included in the price bid per foot of Item 611.

STATE OF OHIO DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
CONSTRUCTION DOCUMENTS FOR  
**AVANELLE CROSSING**

PROJECT NUMBER: 25-221  
SITE DETAILS  
DRAWING NUMBER: C004

CONSTRUCTION DOCUMENTS FOR  
**AVANELLE CROSSING**

6251 AVANELLE DRIVE  
ATHENS, OHIO 45701  
ATHENS TOWNSHIP, ATHENS COUNTY  
FARM LOT 83, SECTION 13, TOWN 9, RANGE 14

MCCARTY ASSOCIATES, LLC  
ARCHITECTS | ENGINEERS | SURVEYORS  
213 N. High St., Hillsboro, Oh 45133  
P: 614.932.3933  
WWW.MCCARTYASSOCIATES.COM



US ROUTE 50 / STATE ROUTE 32 (R/W VARIES)

MOORE SUBDIVISION ENVELOPE 3388

DSL INVESTMENTS LLC LOT 3 PID A010130100300

DSL INVESTMENTS LLC LOT 4 PID A010130100400

DSL INVESTMENTS LLC LOT 5 PID A010130100500

DSL INVESTMENTS LLC LOT 6 PID A010130100600

SALLIE SCHNEIDER, GLENN E. LINTHICUM, & MAURA R. LINTHICUM LOT 1 PID A010130100100

LEGACY PROPERTY HOLDINGS LTD PID A010010031300

MITCHELL ENDICK AND ANN E. DOLLEMEYER-ENDICK CO-TRUSTEES OF THE ENDICK FAMILY TRUST PID A010010031800

SOUTHEASTERN OHIO HOLDINGS LTD PID A010010031200 OR 487, PG 1194 15.149 ACRES

MARY JO STARKEY PID LOT 10 A010130503800

ATHENS HOLDINGS CO LTD LOT 9 PID A010130503700

ATHENS HOLDINGS CO LTD LOT 8 PID A010130503600

SOUTHEASTERN OHIO HOLDINGS LTD PID A010130503501

DANIEL & CHRISTINE SNOODY LOT 6 PID A010010031000

OLVIA D. PARROTTI & NICKOLAS B. DIUGUARDI LOT 23 PID A010130505200

JILL A. EDWARDS LOT 5 PID A010130503300

MARIA LOPEZ LOT 4 PID A010130503200

MARIA LOPEZ LOT 3 PID A010130503100

MARIA LOPEZ LOT 2 PID A010130503000

REBECCA SUE H. & MITCHELL E. FARLEY LOT 1 PID A010130503000

DARRELL A. ADKINS LOT 2 PID A010130502700

DARRELL A. ADKINS LOT 1 PID A010130502800

JAMIE A. & JUSTIN C. BLICK LOT 34 PID A010130506000

JAMIE A. & JUSTIN C. BLICK LOT 31 PID A010130505900

VALLEYVIEW ESTATES I ENVELOPE 421B

CHRISTOPHER M. & MELISSA M. HAYES LOT 24 PID A010130505300

CHRISTOPHER M. & MELISSA M. HAYES LOT 25 PID A010130505900



REVISIONS

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CONSTRUCTION DOCUMENTS FOR  
**AVANELLE CROSSING**

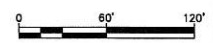
6251 AVANELLE DRIVE  
 ATHENS, OHIO 45701  
 ATHENS TOWNSHIP, ATHENS COUNTY  
 FARM LOT 53, SECTION 13, TOWN 9, RANGE 14

PROJECT NUMBER  
 25-221

OVERALL  
 EXISTING  
 CONDITIONS

DRAWING NUMBER

C101





**EXISTING CONDITIONS LEGEND**

○	1" IRON PIPE (FOUND)
○	5/8" IRON PIN (FOUND) UNLESS NOTED OTHERWISE
△	STONE (FOUND), SIZE NOTED
●	5/8" IRON PIN (SET) WITH PLASTIC CAP STAMPED "MCCARTY ASSOCIATES"
▲	LOCAL CONTROL MONUMENT (2001)
▲	CONTROL POINT
⌵	EX. LIGHT POLE
⌵	EX. UTILITY POLE
●	EX. GUY
⊙	EX. SANITARY MANHOLE
---	EX. PROPERTY LINE
-750-	EX. CONTOUR
-EC-	EX. OVERHEAD ELECTRIC AND COMMUNICATIONS
-G-	EX. GAS
-W-	EX. WATER MAIN
-SAN-	EX. SANITARY SEWER
-X-X-X-X-X-X-	LINEAR LIMITS OF REMOVAL
●	PR. LIMITS OF DISTURBANCE
▨	EX. GRAVEL TO BE REMOVED

**ABBREVIATIONS**  
 EX. EXISTING  
 MH MANHOLE

- EXISTING CONDITION NOTES**
1. THE ABOVE LISTED DEED REFERENCES WERE USED AS A BASIS FOR CARRYING OUT THE WORK.
  2. NO EVIDENCE OF OCCUPATION EXISTS ALONG PROPERTY LINES INDICATED BY SOLID LINES.
  3. ALL MONUMENTS FOUND OR SET ARE IN GOOD CONDITION UNLESS OTHERWISE INDICATED.
  4. THE SIZE AND/OR LOCATION OF UNDERGROUND UTILITIES WAS PROVIDED BY THE UTILITY COMPANIES AND IS NOT WARRANTED CORRECT OR COMPLETE BY THE SURVEYOR.
  5. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY ENGINEER OF ANY DISCREPANCIES FOUND BETWEEN THE PLANS OR FIELD CONDITIONS PRIOR TO THE START OF CONSTRUCTION.
  6. CONTRACTOR SHALL EXERCISE EXTREME CAUTION WHEN EXCAVATING AROUND EXISTING UTILITIES. CONTRACTOR TO COORDINATE ANY RELOCATION OR DISTURBANCE WITH THE RESPECTIVE UTILITY OWNER.
  7. ALL UTILITIES SHALL BE PROTECTED AND REMAIN IN PLACE UNDISTURBED UNLESS SPECIFICALLY LISTED FOR ABANDONMENT OR REMOVAL.

**REVISIONS**

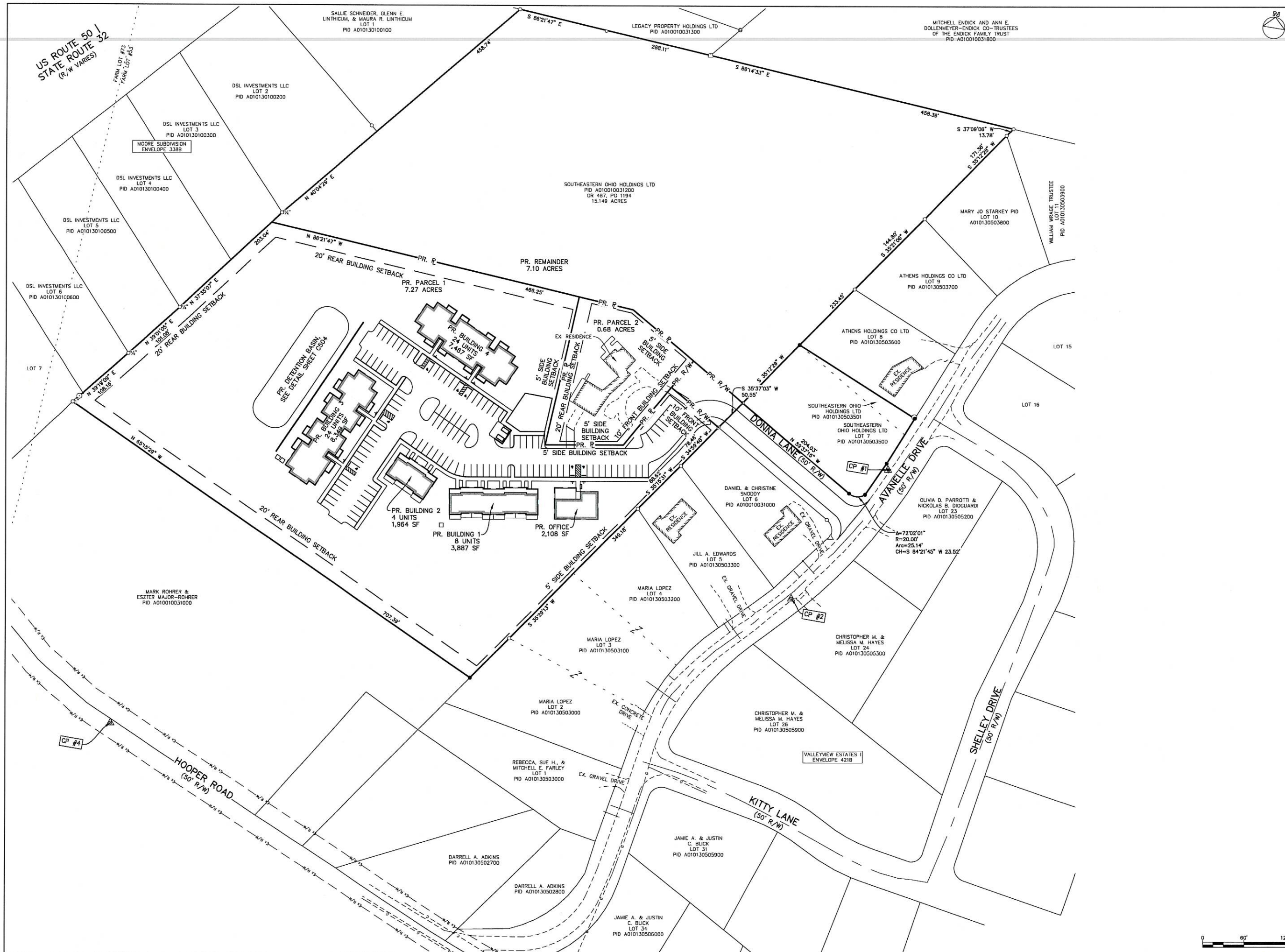
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 M: 937.393.9971  
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CONSTRUCTION DOCUMENTS FOR  
**AVANELLE CROSSING**  
 6251 AVANELLE DRIVE  
 ATHENS, OHIO 45701  
 ATHENS TOWNSHIP, ATHENS COUNTY  
 FARM LOT 53, SECTION 13, TOWN 9, RANGE 14

PROJECT NUMBER	25-221
EXISTING CONDITIONS & DEMOLITION PLAN	
DRAWING NUMBER	C102





US ROUTE 50 / STATE ROUTE 32 (R/W VARIES)

MOORE SUBDIVISION ENVELOPE 3388

PR. OBSERVATION BARN, SEE DETAIL SHEET C504

MARK ROHRER & ESZTER MAJOR-ROHRER PID A010010031000

HOOPER ROAD (50' R/W)

KITTY LANE (50' R/W)

SHELLEY DRIVE (50' R/W)

DONNA LANE (50' R/W)

AVANELLE DRIVE (50' R/W)



NO.	DESCRIPTION

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


CONSTRUCTION DOCUMENTS FOR  
**AVANELLE CROSSING**  
 6251 AVANELLE DRIVE  
 ATHENS, OHIO 45701  
 ATHENS TOWNSHIP, ATHENS COUNTY  
 FARM LOT 53, SECTION 13, TOWN 9, RANGE 14

PROJECT NUMBER  
 25-221

OVERALL SITE PLAN

DRAWING NUMBER  
 C201

**SITE LEGEND**

-  PARKING COUNT
-  PR. LIGHT DUTY ASPHALT PAVEMENT, SEE DETAIL ON SHEET C003
-  PR. HEAVY DUTY ASPHALT PAVEMENT, SEE DETAIL ON SHEET C003
-  PR. CONCRETE PAVEMENT, SEE DETAIL ON SHEET C003
-  PR. GRAVEL PAVEMENT, SEE DETAIL ON SHEET C003
-  PR. SIDEWALK, SEE DETAIL ON SHEET C003

**ABBREVIATIONS**

PR. PROPOSED

**NOTE**

1. SEE SHEET C102 FOR EXISTING LEGEND.

**KEYNOTES**

1. PR. ADA PARKING SPACE, VAN ACCESSIBLE
2. PR. ADA PARKING SPACE, CAR ACCESSIBLE
3. PR. ADA PARKING SIGN, SEE DETAIL ON SHEET C003
4. PR. DUMPSTER ENCLOSURE, SEE ARCHITECTURAL PLANS
5. PR. INTEGRAL SIDEWALK AND CURB, SEE DETAIL ON SHEET C003
6. PR. SIDEWALK IN GRASS, SEE DETAIL ON SHEET C003
7. PR. TRANSVERSE PAVEMENT MARKING, SEE DETAIL ON SHEET C003
8. PR. TRANSFORMER PAD, CONTRACTOR TO COORDINATE SIZE AND LOCATION WITH UTILITY COMPANY
9. PR. PARKING BLOCK, SEE DETAIL ON SHEET C003

**SITE NOTES**

1. ALL DIMENSIONS ARE TO BUILDING FACE, FACE OF CURB, OR EDGE OF SIDEWALK UNLESS NOTED OTHERWISE.
2. CONTRACTOR SHALL REFER TO ARCHITECTURAL PLANS FOR EXACT LOCATIONS OF UTILITY ENTRANCES, BUILDING DIMENSIONS, AND EXIT DOORS AND RAMPS.
3. ALL PAVEMENT RADII ARE 5' UNLESS OTHERWISE NOTED.
4. ALL PARKING STRIPES ARE TO BE 4" WHITE PER ODOT ITEM 640.

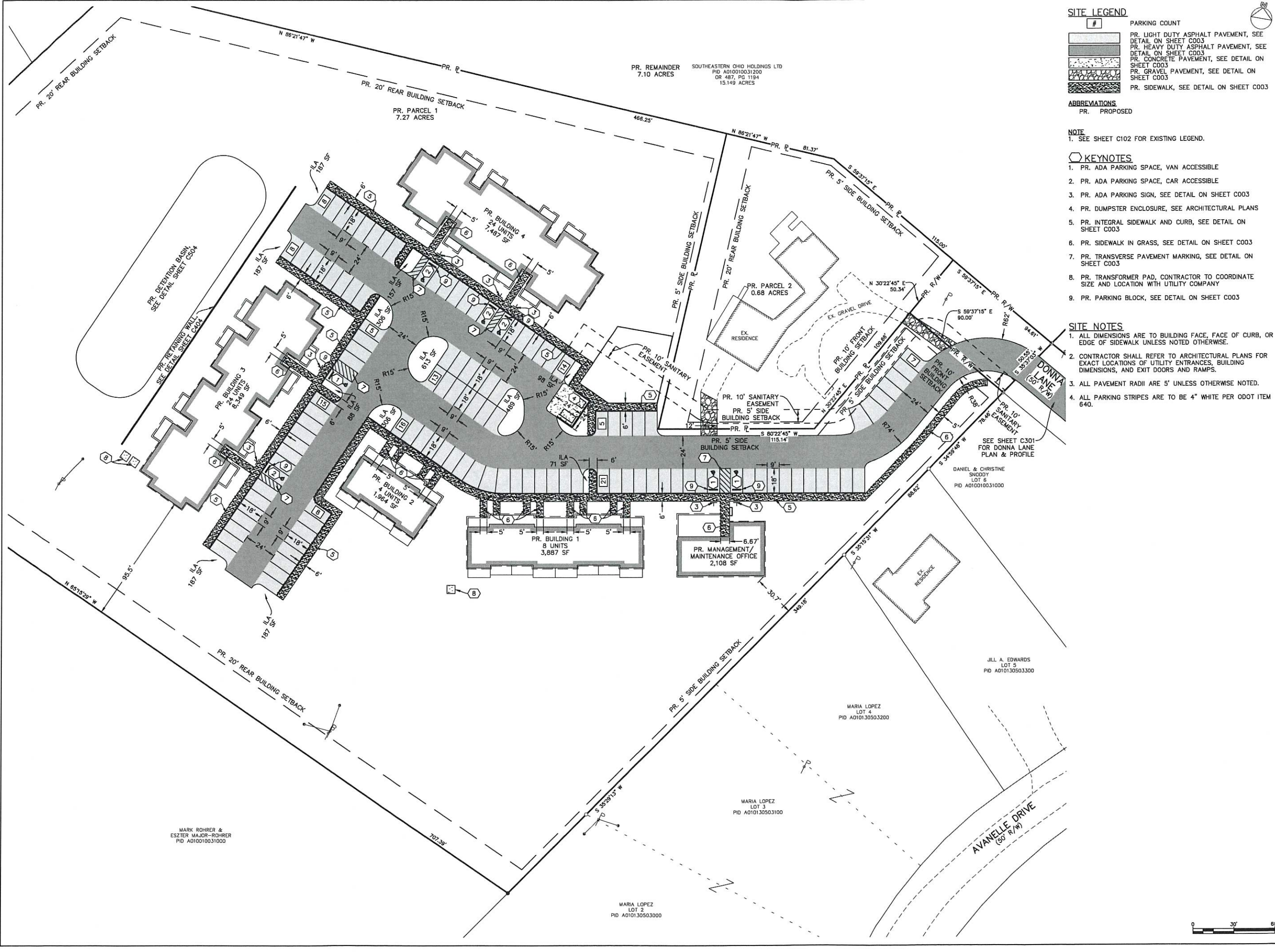
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CONSTRUCTION DOCUMENTS FOR  
**AVANELLE CROSSING**

6251 AVANELLE DRIVE  
ATHENS, OHIO 45701  
ATHENS TOWNSHIP, ATHENS COUNTY  
FARM LOT 53, SECTION 13, TOWN 9, RANGE 14

PROJECT NUMBER	25-221
SITE PLAN	
DRAWING NUMBER	C202



MARK ROHRER & ESZTER MAJOR-ROHRER  
PID A010010031000

MARIA LOPEZ  
LOT 2  
PID A010130503000

MARIA LOPEZ  
LOT 3  
PID A010130503100

MARIA LOPEZ  
LOT 4  
PID A010130503200

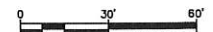
JILL A. EDWARDS  
LOT 5  
PID A010130503300

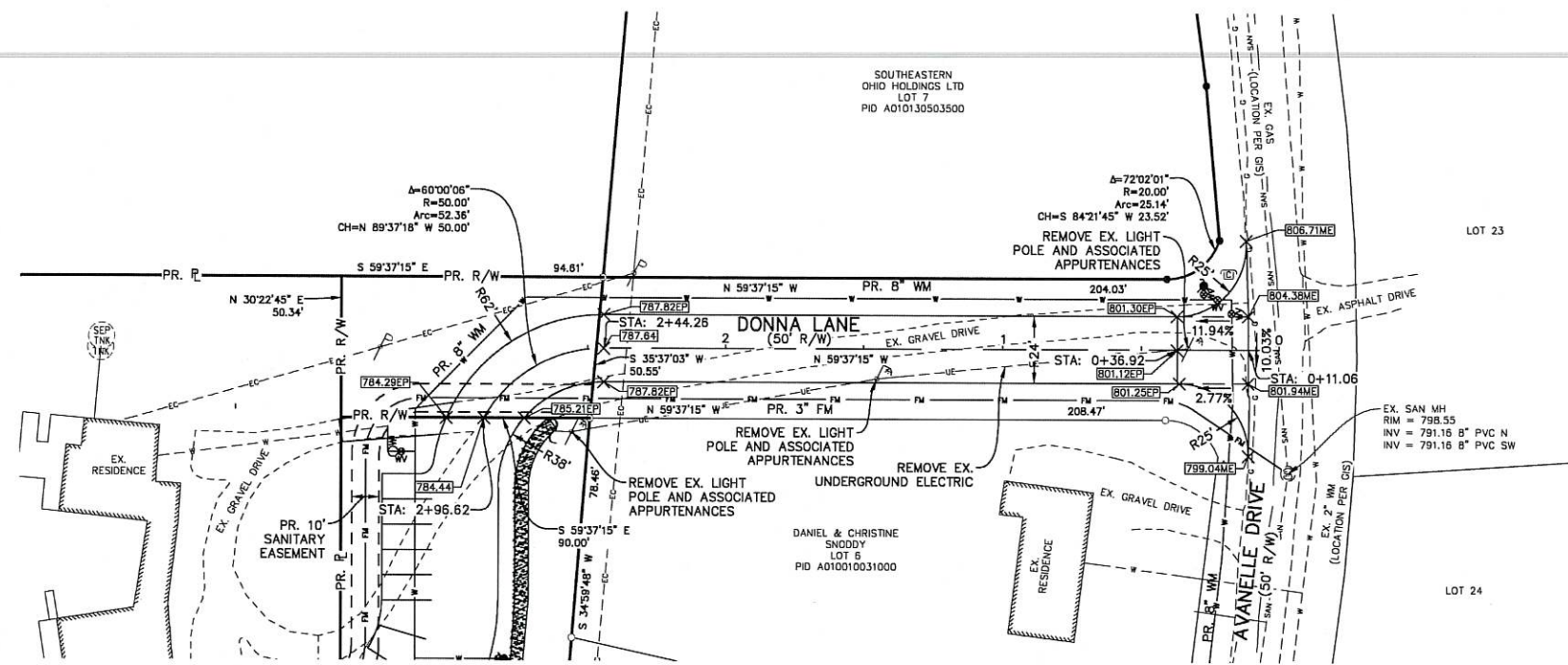
DANIEL & CHRISTINE  
SHODDY  
LOT 6  
PID A010010031000

PR. REMAINDER  
7.10 ACRES  
SOUTHEASTERN OHIO HOLDINGS LTD  
PID A010010031200  
OR 487, PG. 1134  
15,149 ACRES

PR. PARCEL 1  
7.27 ACRES

PR. PARCEL 2  
0.68 ACRES



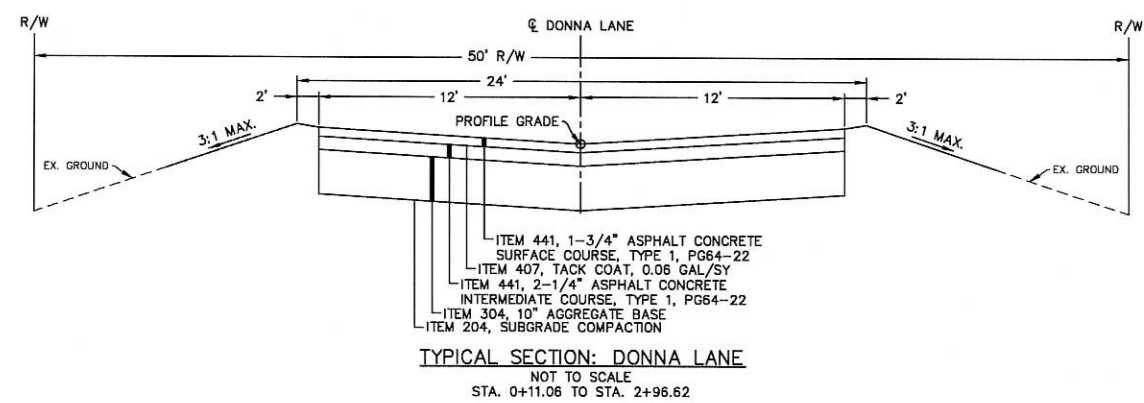
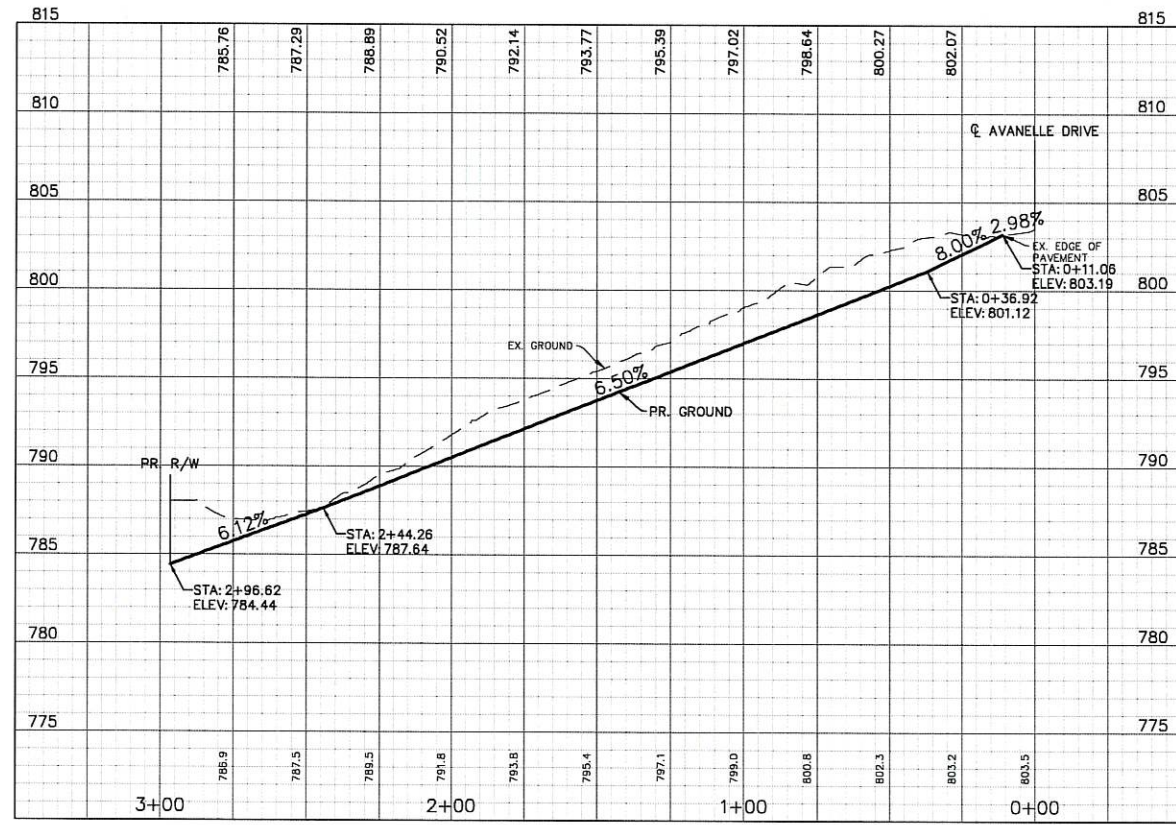


- LEGEND**
- 5/8" IRON PIN (FOUND) UNLESS NOTED OTHERWISE
  - 5/8" IRON PIN (SET) WITH PLASTIC CAP STAMPED "MCCARTY ASSOCIATES"
  - EX. LIGHT POLE
  - EX. UTILITY POLE
  - EX. GUY
  - EX. SANITARY MANHOLE
  - EX. PROPERTY LINE
  - EC — EX. OVERHEAD ELECTRIC AND COMMUNICATIONS
  - G — EX. GAS
  - W — EX. WATER MAIN
  - SAN — EX. SANITARY SEWER
  - PR — PR. LIMITS OF DISTURBANCE
  - × (760.00) PR. SPOT ELEVATION
- ABBREVIATIONS**
- EP — EDGE OF PAVEMENT
  - ME — MATCH EXISTING

**REVISIONS**

NO.	DESCRIPTION

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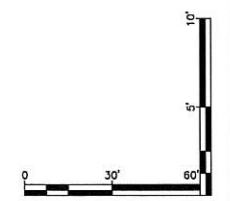
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CONSTRUCTION DOCUMENTS FOR  
**AVANELLE CROSSING**  
6251 AVANELLE DRIVE  
ATHENS, OHIO 45701  
ATHENS TOWNSHIP, ATHENS COUNTY  
FARM LOT 53, SECTION 13, TOWN 9, RANGE 14

PROJECT NUMBER  
25-221

**DONNA LANE  
PLAN & PROFILE**

DRAWING NUMBER  
C301





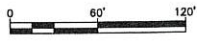
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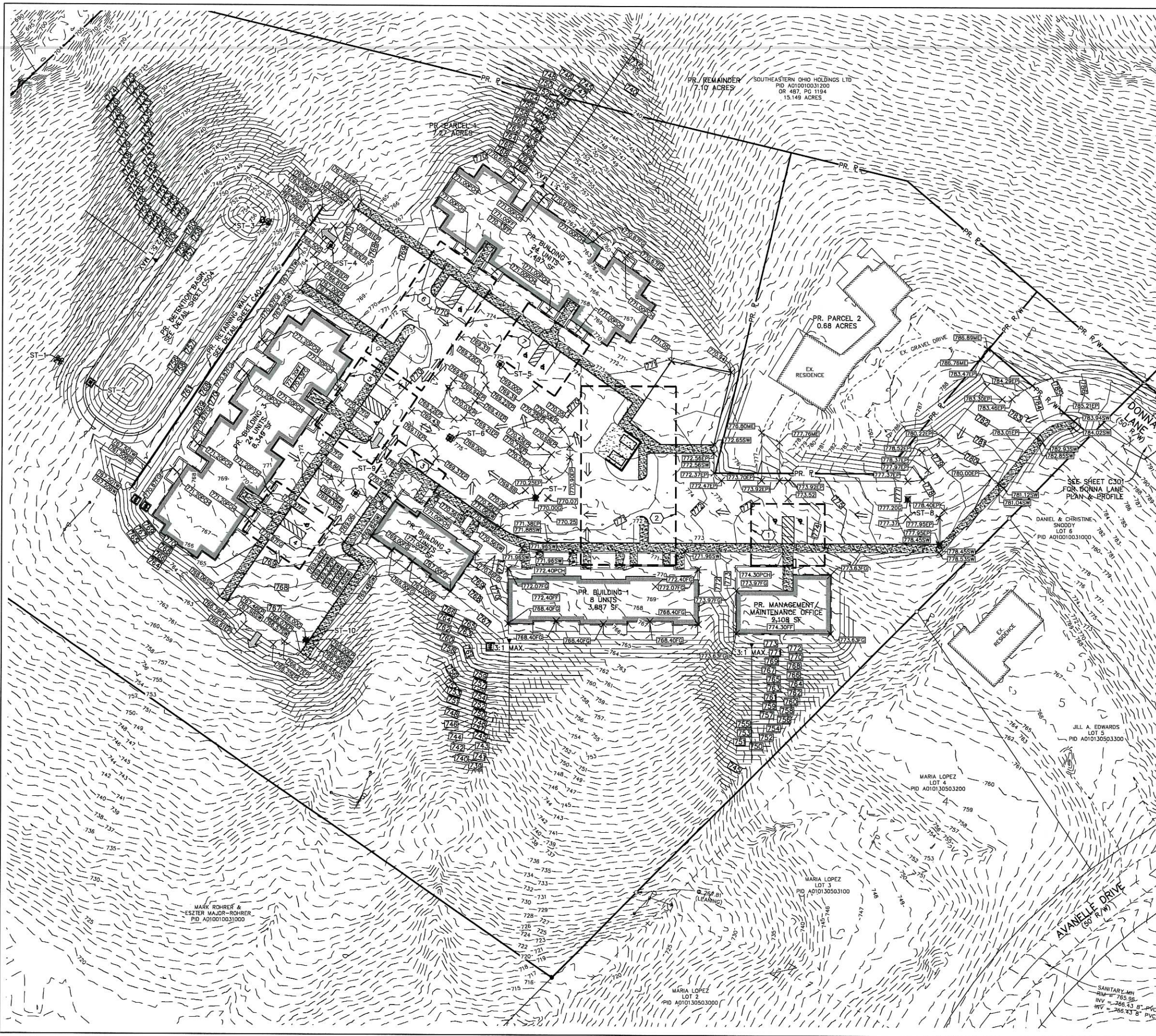
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CONSTRUCTION DOCUMENTS FOR  
**AVANELLE CROSSING**  
 6251 AVANELLE DRIVE  
 ATHENS, OHIO 45701  
 ATHENS TOWNSHIP, ATHENS COUNTY  
 FARM LOT 53, SECTION 13, TOWN 9, RANGE 14

PROJECT NUMBER	25-221
OVERALL GRADING PLAN	
DRAWING NUMBER	C401





**GRADING LEGEND**

- ST-1 PR. STORM STRUCTURE NUMBER
- ▣ PR. CATCH BASIN
- PR. RUNOFF FLOW
- ➔ PR. MAJOR FLOOD ROUTE
- X 760.00 PR. SPOT ELEVATION
- 760 PR. CONTOUR
- PR. STORM SEWER
- - - PR. DITCH/SWALE
- PR. LIMITS OF DISTURBANCE

- ABBREVIATIONS**
- FF FINISH FLOOR
  - FG FINISH GRADE
  - EP EDGE OF PAVEMENT
  - EC EDGE OF CONCRETE
  - BW BOTTOM OF WALL
  - TW TOP OF WALL
  - SW SIDEWALK
  - PCH PORCH
  - ME MATCH EXISTING
  - G GRATE

- NOTE**
- SEE SHEET C102 FOR EXISTING LEGEND.
  - SEE SHEET C202 FOR SITE LEGEND.

- KEYNOTES**
- SEE OFFICE ADA PARKING DETAIL ON SHEET C403
  - SEE DUMPSTER ADA ACCESS DETAIL ON SHEET C403
  - SEE BUILDING 2 ADA RAMP DETAIL ON SHEET C403
  - SEE BUILDING 3 SOUTH ADA PARKING DETAIL ON SHEET C403
  - SEE BUILDING 3 NORTH ADA PARKING DETAIL ON SHEET C403
  - SEE NORTHWEST PARKING LOT CROSSING DETAIL ON SHEET C403
  - SEE BUILDING 4 ADA PARKING DETAIL ON SHEET C403

- GRADING PLAN NOTES**
- CONTRACTOR TO VERIFY EXISTING TOPOGRAPHY, STRUCTURES, AND UTILITIES ON-SITE AND NOTIFY ENGINEER OF DISCREPANCIES PRIOR TO START OF WORK
  - THE CONTRACTOR SHALL EXERCISE EXTREME CARE WHEN ESTABLISHING ALL GRADES IN THE VICINITY OF ADA ACCESS AREAS. ADA ACCESS AREAS SHALL COMPLY WITH FEDERAL, STATE, AND LOCAL CODES.
  - THE CONTRACTOR SHALL PROVIDE FOR POSITIVE DRAINAGE IN ALL AREAS. PAVEMENT SHALL BE TESTED FOR ANY PONDING CONDITIONS FOLLOWING CONSTRUCTION.
  - CONTRACTOR SHALL EXERCISE EXTREME CAUTION WHEN EXCAVATING AROUND EXISTING UTILITIES. CONTRACTOR TO COORDINATE ANY RELOCATION OR DISTURBANCE WITH THE RESPECTIVE UTILITY OWNER.

REVISIONS

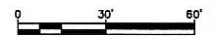

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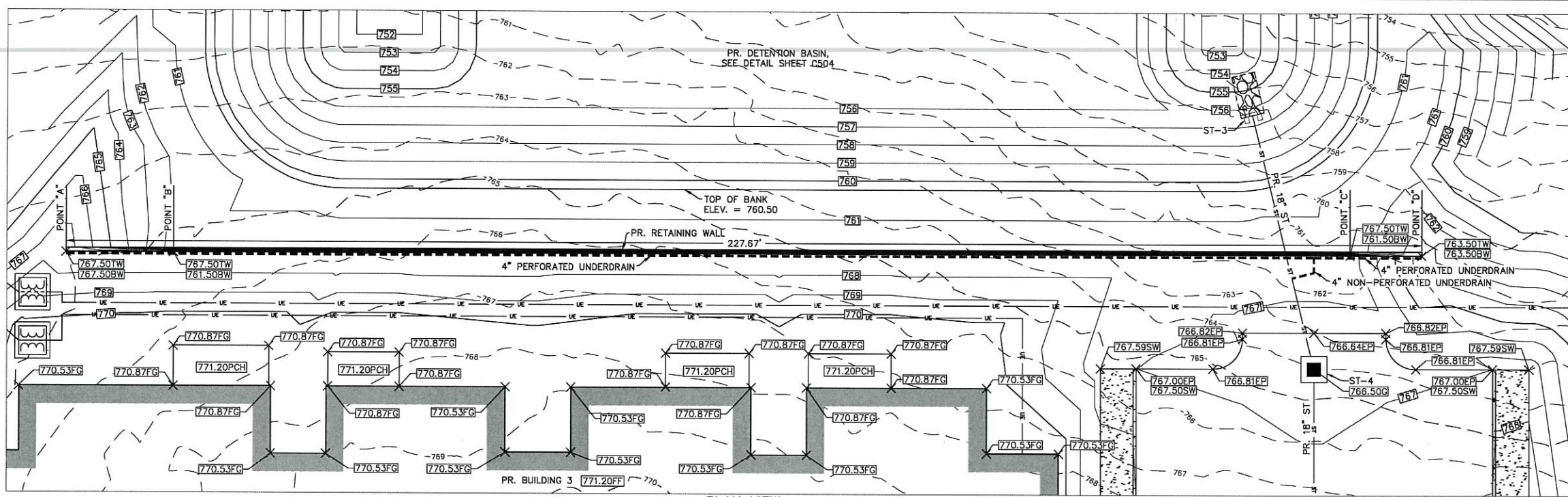
CONSTRUCTION DOCUMENTS FOR  
**AVANELLE CROSSING**

6251 AVANELLE DRIVE  
ATHENS, OHIO 45701  
ATHENS TOWNSHIP, ATHENS COUNTY  
FARM LOT 53, SECTION 13, TOWN 9, RANGE 14

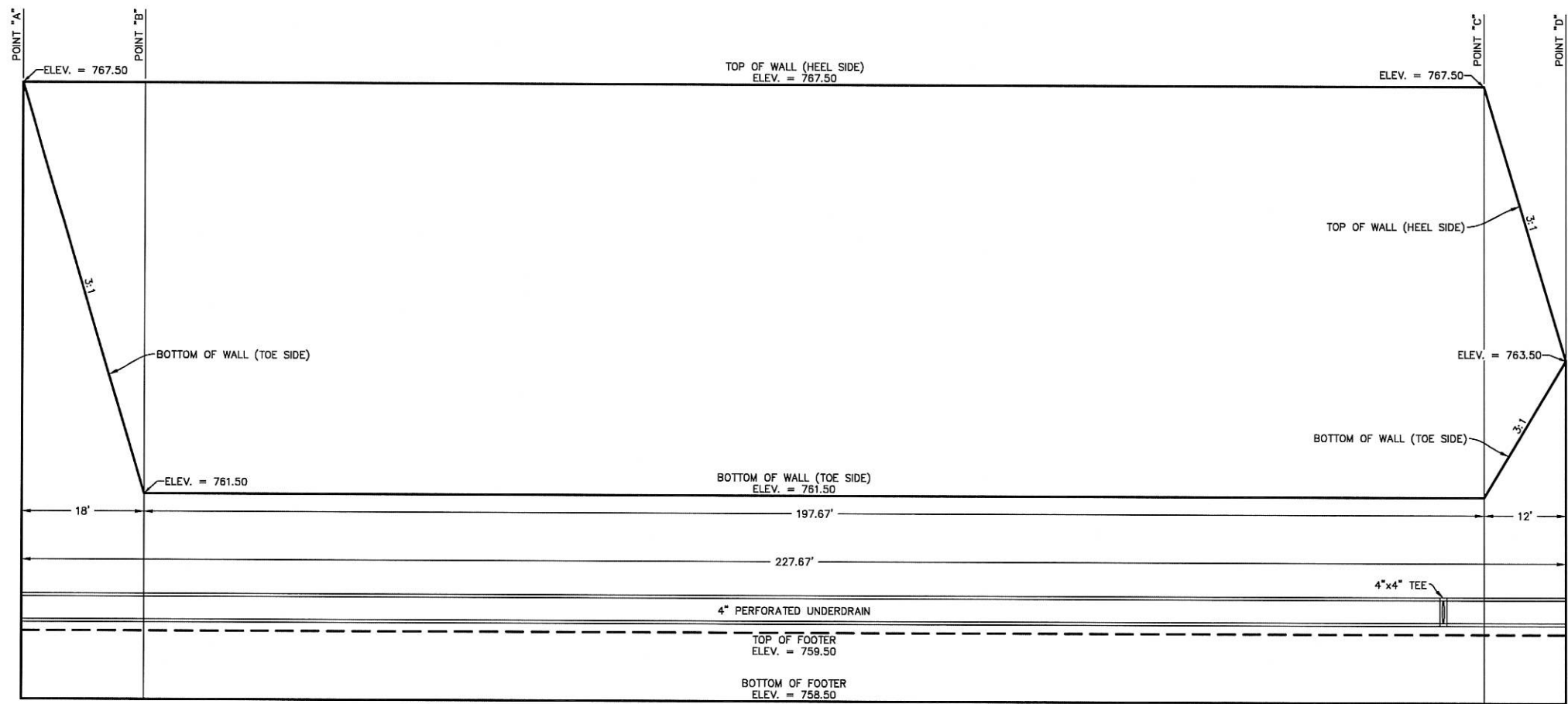
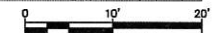
PROJECT NUMBER	25-221
GRADING PLAN	
DRAWING NUMBER	C402



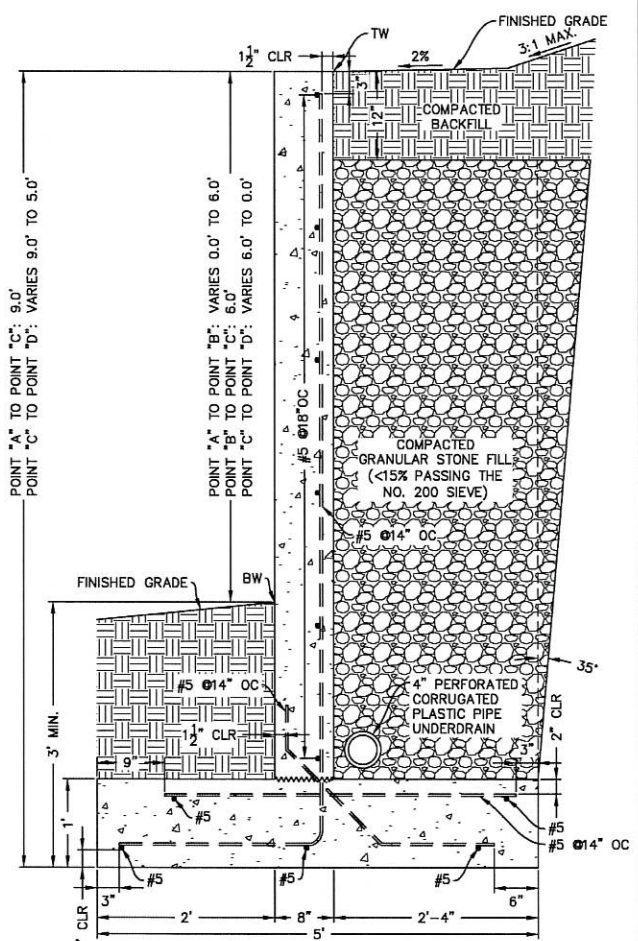




PLAN VIEW



PROFILE VIEW  
NOT TO SCALE



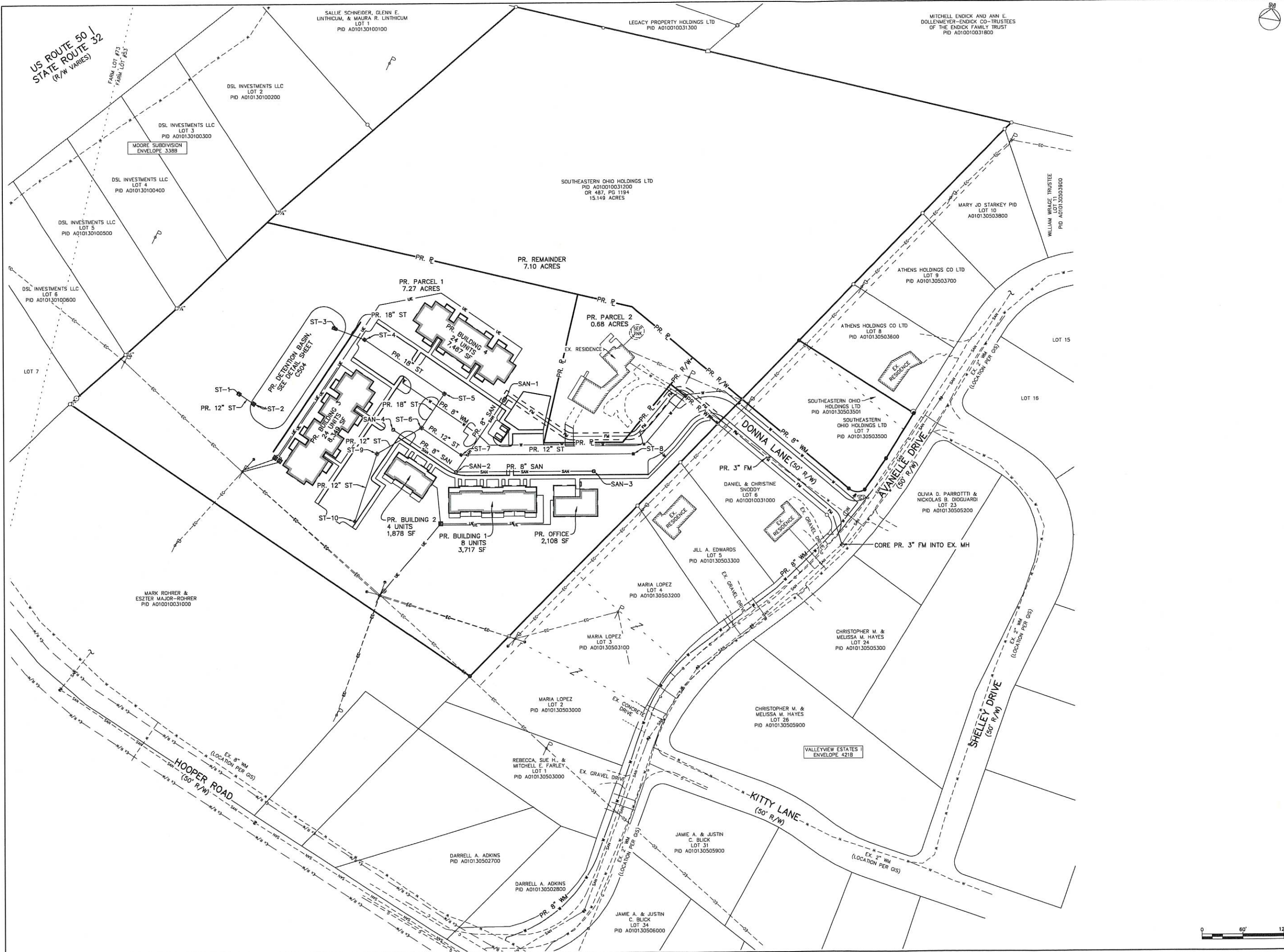
RETAINING WALL SECTION A-A  
NOT TO SCALE

- RETAINING WALL NOTES**
1. CONCRETE FOR THE RETAINING WALL SHALL BE 6% (±1 1/2%) AIR ENTRAINED, 3/4" AGGREGATE AND CONFORM TO A MINIMUM 28 DAY STRENGTH OF 3,000 PSI AND SHALL HAVE A MAXIMUM WATER CONTENT OF 0.50. THE CONCRETE SHALL BE MADE OF TYPE I OR TYPE II CEMENT
  2. STEEL REINFORCEMENT SHALL BE A GRADE 60 MINIMUM YIELD STRENGTH 60,000 PSI AND MEET THE REQUIREMENTS OF ASTM A615.
  3. COHESIVE SOILS AND SHALE SHALL NOT BE USED FOR WALL BACKFILL.

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ATHENS TOWNSHIP, ATHENS COUNTY  
FARM LOT 53, SECTION 13, TOWN 9, RANGE 14

PROJECT NUMBER	25-221
DRAWING NUMBER	C404



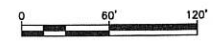
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CONSTRUCTION DOCUMENTS FOR  
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 ATHENS, OHIO 45701  
 ATHENS TOWNSHIP, ATHENS COUNTY  
 FARM LOT 53, SECTION 13, TOWN 9, RANGE 14

PROJECT NUMBER	25-221
OVERALL UTILITY PLAN	
DRAWING NUMBER	C501



UTILITY LEGEND

- PR. FIRE HYDRANT
- PR. WATER VALVE
- SAN-1 SANITARY STRUCTURE NUMBER
- PR. MANHOLE
- PR. CLEANOUT
- ST-1 PR. STORM STRUCTURE NUMBER
- PR. CATCH BASIN
- PR. UNDERGROUND ELECTRIC
- PR. WATER MAIN/LATERAL
- PR. SANITARY SEWER
- PR. SANITARY LATERAL
- PR. FORCE MAIN
- PR. STORM SEWER
- PR. DOWNSPOUT DRAIN

ABBREVIATIONS

- WLAT WATER LATERAL
- SLAT SANITARY LATERAL
- DSD DOWNSPOUT DRAIN
- FH FIRE HYDRANT
- GV GATE VALVE

NOTE

1. SEE SHEET C102 FOR EXISTING LEGEND.
2. SEE SHEET C202 FOR SITE LEGEND.

KEYNOTES

1. PR. WATER TAP, SIZE NOTED
2. PR. WATER LATERAL, SIZE NOTED
3. PR. CURB STOP AND CURB BOX, SIZE NOTED
4. METER TO BE PROVIDED WITHIN THE BUILDING, SEE MEP PLANS
5. PR. 6" WATER LATERAL
6. PR. 6" GATE VALVE
7. PR. 8"x6" SANITARY WYE CONNECTION
8. PR. 6" SDR-35 SANITARY LATERAL, MAINTAIN MINIMUM 2.08% SLOPE
9. PR. CLEANOUT, SEE DETAIL ON SHEET C003
10. PR. 6" DOWNSPOUT DRAIN, MAINTAIN MINIMUM 1.04% SLOPE
11. PR. DOWNSPOUT WITH ADAPTER, SEE DETAIL ON SHEET C003
12. PR. DOWNSPOUT WITH SPLASH BLOCK
13. PR. PAD MOUNTED TRANSFORMER, CONTRACTOR TO COORDINATE SIZE AND LOCATION WITH UTILITY COMPANY
14. PR. ELECTRIC METER BANK, SEE MEP PLANS FOR DETAILS
15. PR. ELECTRIC SERVICE IN CONDUITS, CONTRACTOR TO COORDINATE CONDUIT SIZE WITH MEP PLANS AND UTILITY COMPANY. LOCATION SHOWN ON THESE PLANS IS SCHEMATIC ONLY

UTILITY NOTES

1. CONTRACTOR SHALL EXERCISE EXTREME CAUTION WHEN EXCAVATING AROUND EXISTING UTILITIES. CONTRACTOR TO COORDINATE ANY RELOCATION OR DISTURBANCE WITH THE RESPECTIVE UTILITY OWNER.
2. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY ENGINEER OF ANY DISCREPANCIES FOUND BETWEEN THE PLANS OR FIELD CONDITIONS PRIOR TO THE START OF CONSTRUCTION.
3. THE CONTRACTOR SHALL CALL THE OHIO UTILITIES PROTECTION SERVICES, OUPS, AT 811 OR 1-800-362-2764 AT LEAST FORTY-EIGHT (48) HOURS PRIOR TO THE START OF CONSTRUCTION.
4. THE INFORMATION SHOWN CONCERNING EXISTING UTILITIES IS NOT REPRESENTED, WARRANTED, OR GUARANTEED TO BE COMPLETE OR ACCURATE. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PHYSICALLY LOCATE AND VERIFY IN THE FIELD, ALL UTILITY LOCATIONS AND ELEVATIONS, WHETHER SHOWN ON THE PLAN OR NOT, PRIOR TO BEGINNING CONSTRUCTION. THE CONTRACTOR SHALL SUPPORT, PROTECT, AND RESTORE ALL EXISTING UTILITIES AND APPURTENANCES TO THE SATISFACTION OF THE UTILITY OWNER.
5. SANITARY SEWERS AND LATERALS AND STORM SEWERS SHALL MAINTAIN A MINIMUM 10' HORIZONTAL AND A MINIMUM 1'-6" VERTICAL SEPARATION (OUTSIDE OF PIPE TO OUTSIDE OF PIPE) FROM WATER MAINS AND SERVICES. OTHER UTILITIES, INCLUDING ELECTRIC, GAS, AND TELECOMMUNICATION, SHALL MAINTAIN A MINIMUM 3' HORIZONTAL AND A MINIMUM 1' VERTICAL (OUTSIDE OF PIPE TO OUTSIDE OF PIPE) FROM WATER MAINS AND SERVICES, SANITARY SEWERS AND LATERALS, AND/OR STORM SEWERS. ADDITIONAL PROTECTION MEASURES INCLUDING, BUT NOT LIMITED TO, CONCRETE ENCASUREMENT MAY BE REQUIRED IF THE INDICATED CLEARANCES CAN NOT BE MET.

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CONSTRUCTION DOCUMENTS FOR  
**AVANELLE CROSSING**

6251 AVANELLE DRIVE  
 ATHENS, OHIO 45701  
 ATHENS TOWNSHIP, ATHENS COUNTY  
 FARM LOT 53, SECTION 13, TOWN 9, RANGE 14

PROJECT NUMBER

25-221

UTILITY PLAN

DRAWING NUMBER

C502

PR. REMAINDER 7.10 ACRES  
 SOUTHEASTERN OHIO HOLDINGS LTD  
 PID A010010031200  
 OR 487, PG 1194  
 15.149 ACRES

PR. PARCEL 1  
 7.27 ACRES

PR. PARCEL 2  
 0.68 ACRES

PR. DETENTION BASIN,  
 SEE DETAIL SHEET C504

SAN-1  
 PR. LIFT STATION,  
 SEE DETAIL SHEET C602

DANIEL & CHRISTINE  
 SMOODY  
 LOT 5  
 PID A010010031000

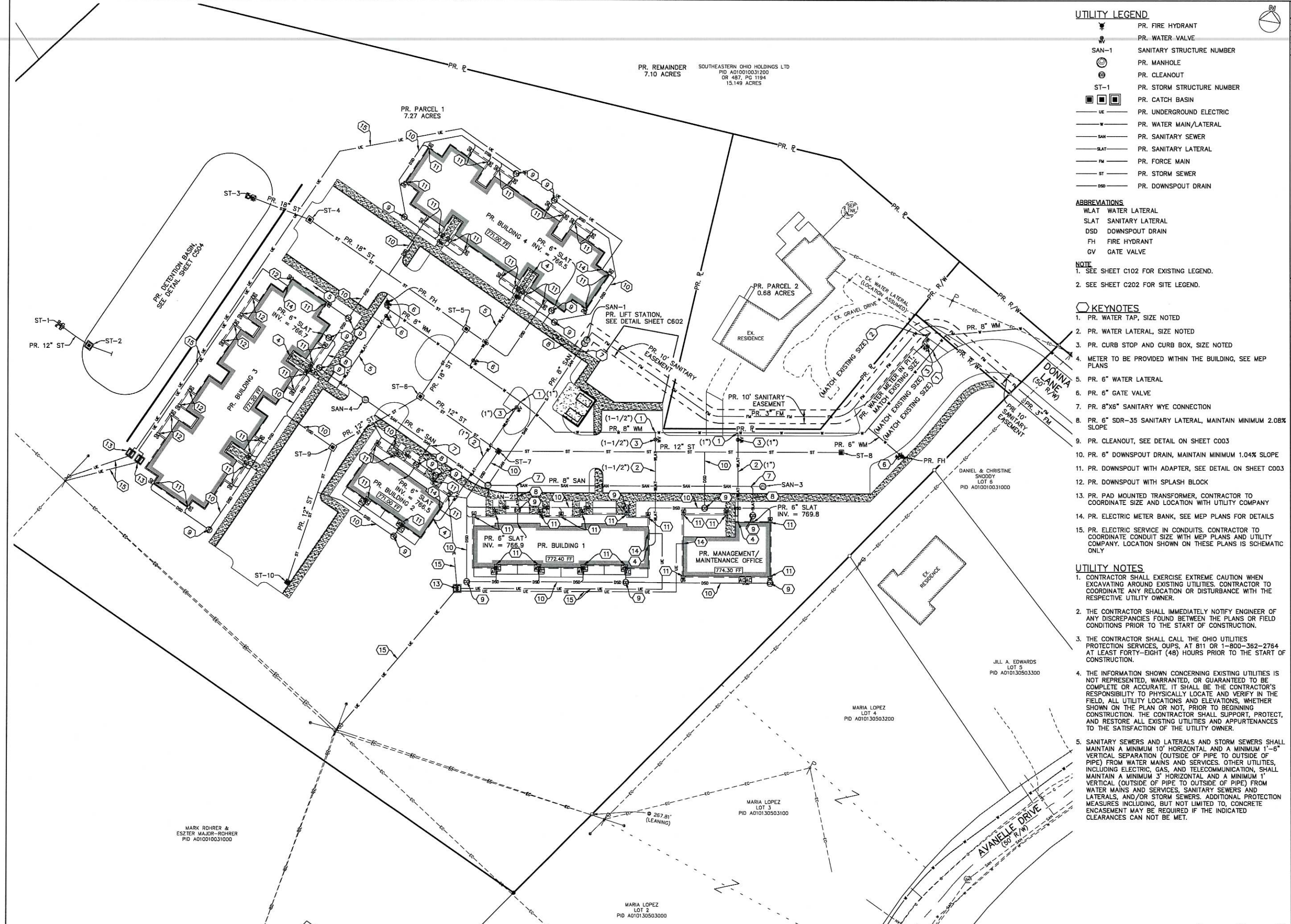
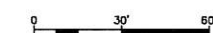
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 PID A010130503300

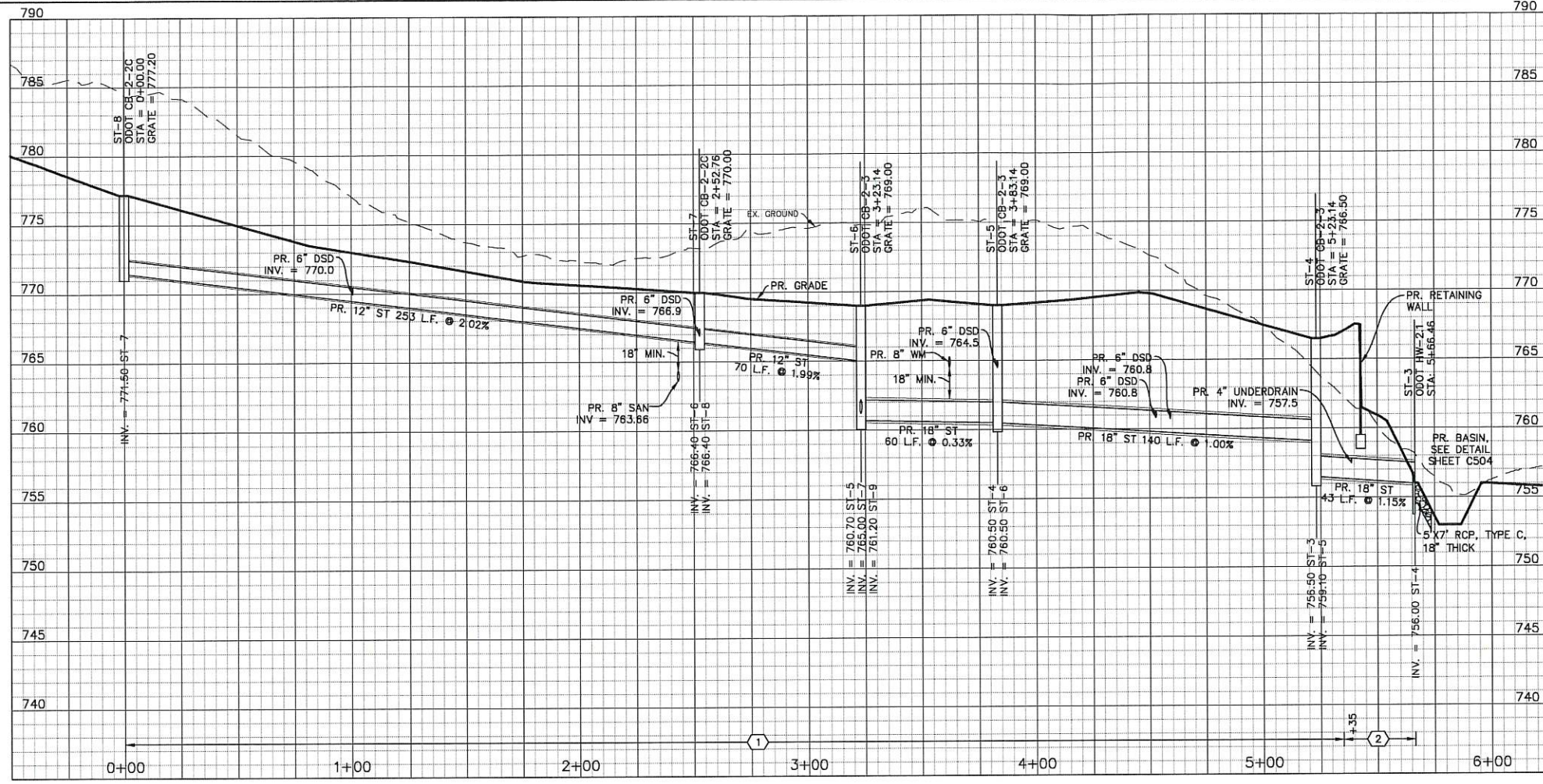
MARIA LOPEZ  
 LOT 4  
 PID A010130503200

MARIA LOPEZ  
 LOT 3  
 PID A010130503100

MARIA LOPEZ  
 LOT 2  
 PID A010130503000

MARK ROHRER &  
 ESZTER MAJOR-ROHRER  
 PID A010010031000



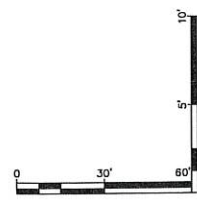
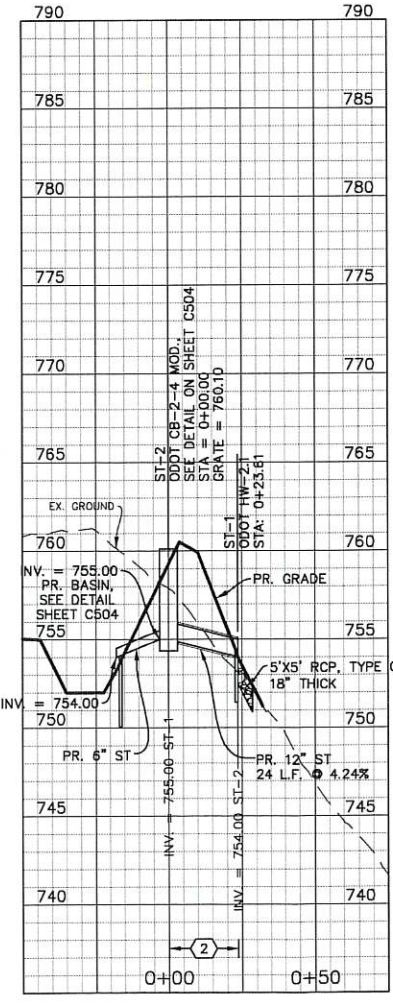
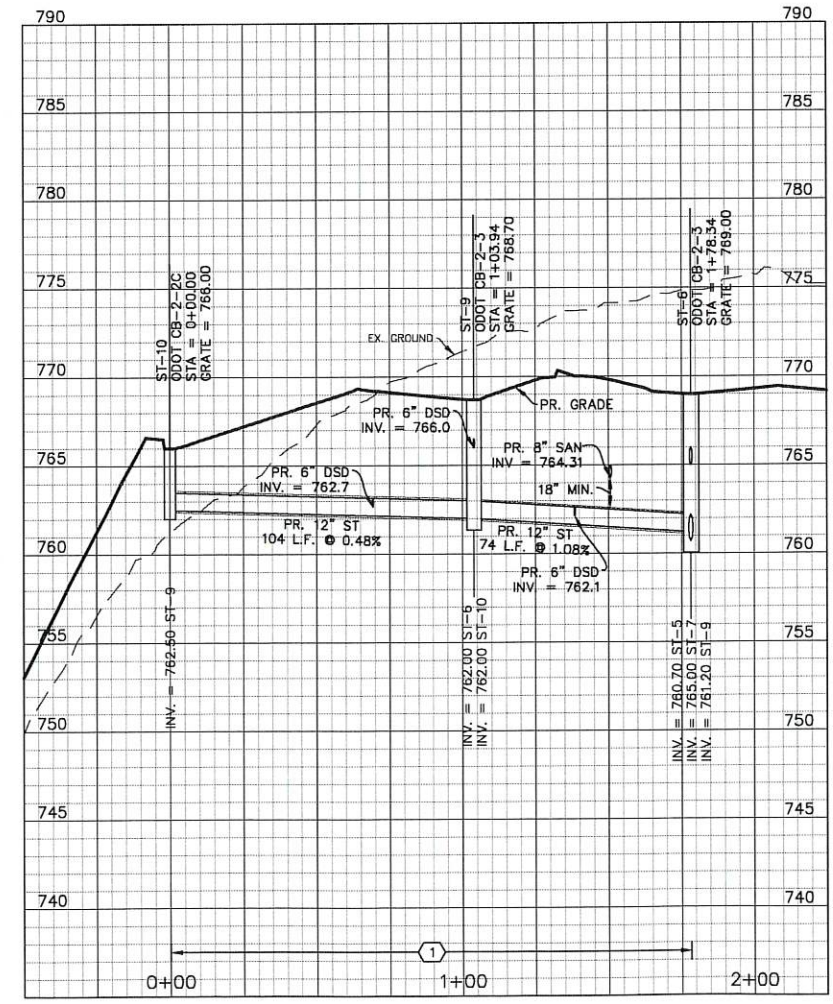


- KEYNOTES**
1. COMPACTED GRANULAR BACKFILL PER ODOT ITEM 703.11.
  2. COMPACTED SOIL BACKFILL PER ODOT ITEM 703.16A.
- STORM STRUCTURE NOTES**
1. NORTHINGS AND EASTINGS FOR CATCH BASINS, CURB INLETS, AND MANHOLES ARE UNDERSTOOD TO BE AT THE CENTER OF THE STRUCTURE.
  2. ELEVATIONS FOR CATCH BASIN GRATES AND MANHOLE RIMS ARE UNDERSTOOD TO BE AT THE CENTER OF THE CASTING. ELEVATIONS FOR THE GRATE OF CURB INLETS ARE UNDERSTOOD TO BE AT THE GUTTER LINE.
  3. ALL STORM SEWERS, CATCH BASINS, AREA DRAINS, MANHOLES, AND CURB INLETS SHALL BE CLEANED AFTER CONSTRUCTION COMPLETION AND PRIOR TO ACCEPTANCE.

NO.	DESCRIPTION

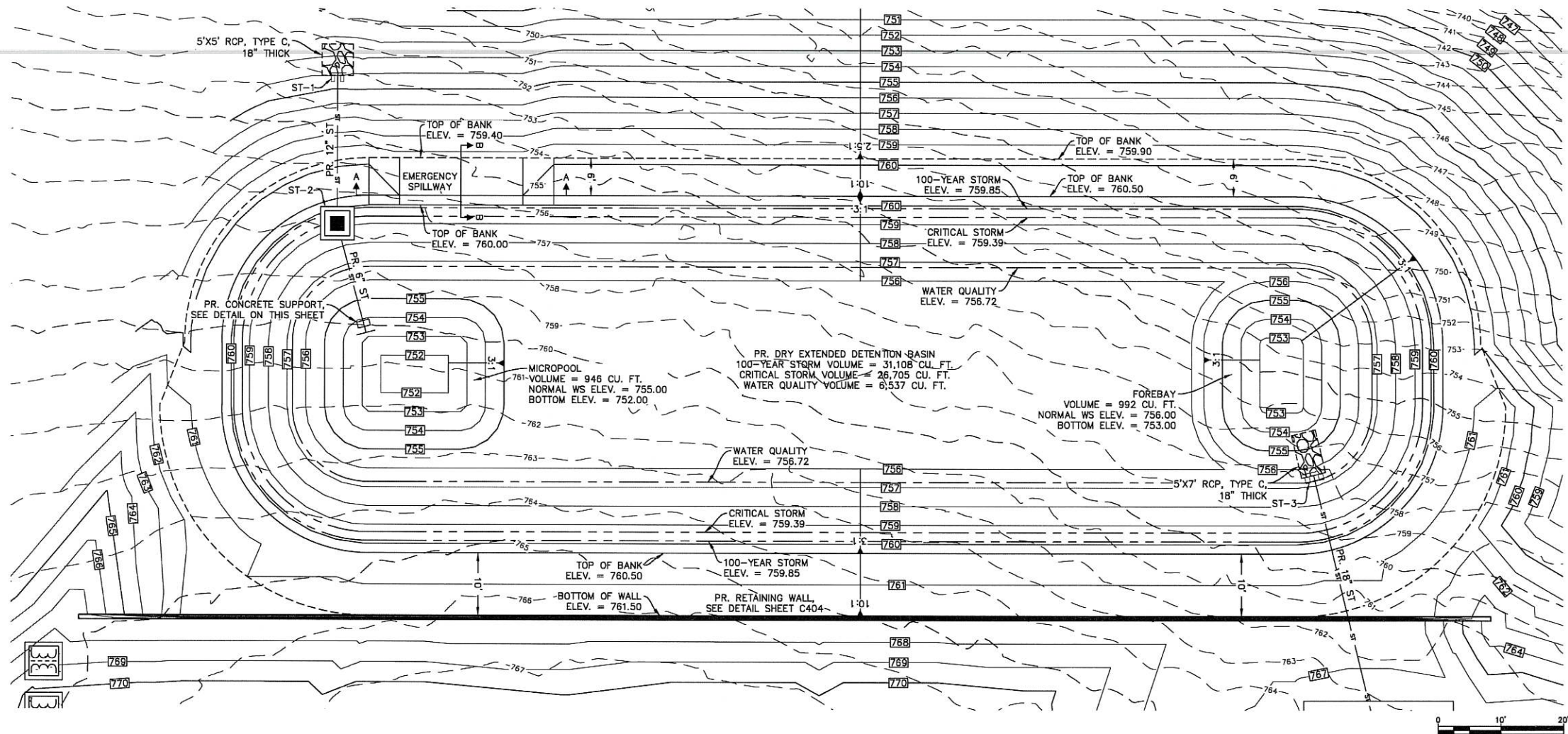
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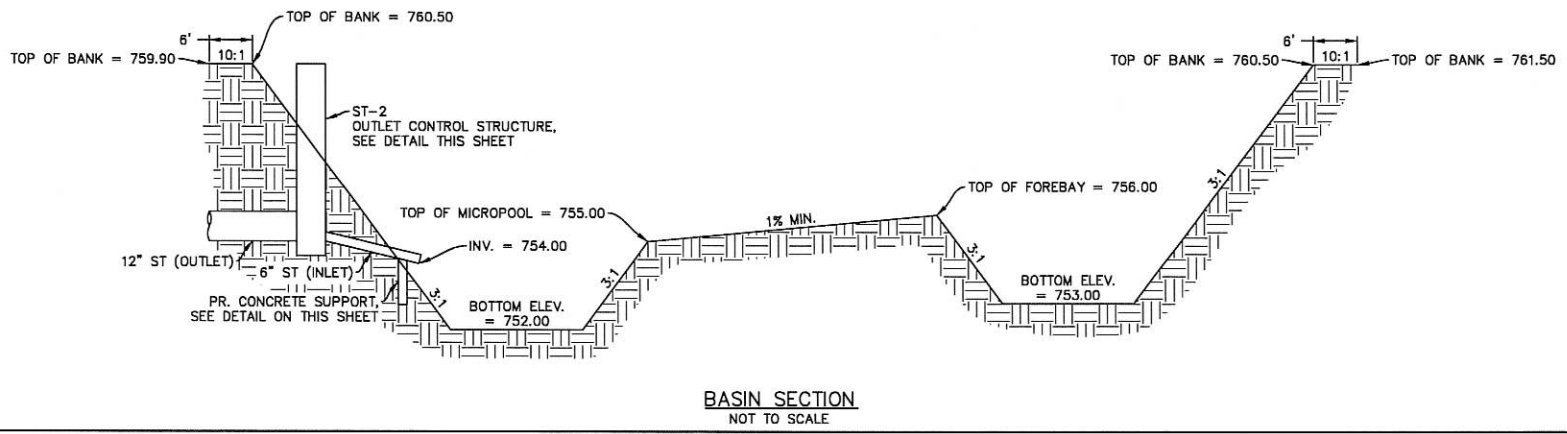
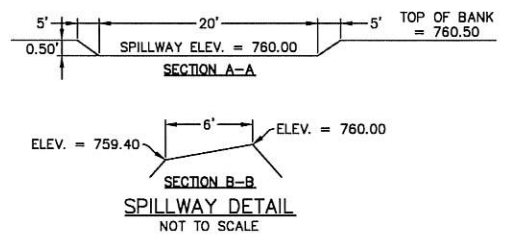
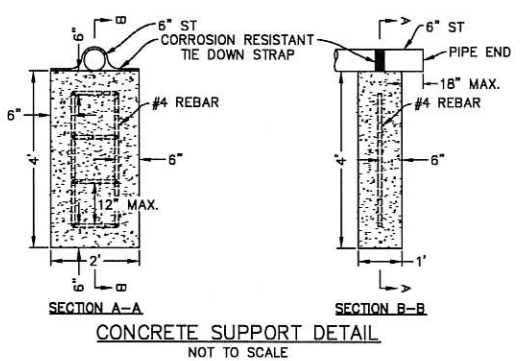
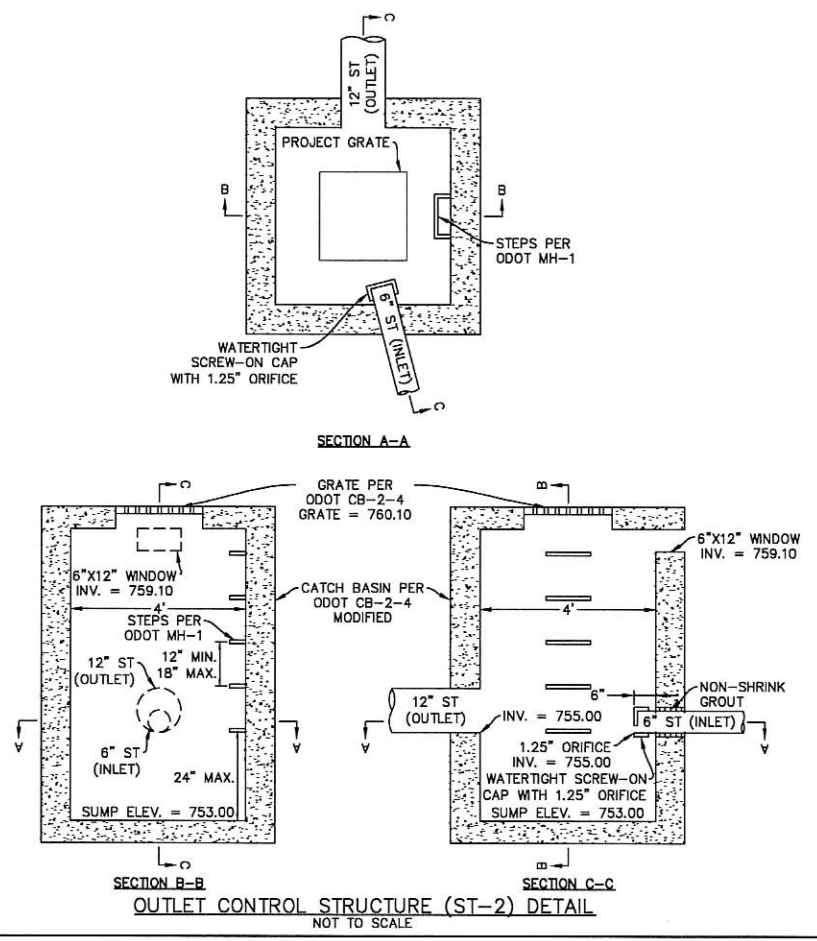
PROJECT NUMBER	25-221
DRAWING NUMBER	C503



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6251 AVANELLE DRIVE  
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 ATHENS TOWNSHIP, ATHENS COUNTY  
 FARM LOT 53, SECTION 13, TOWN 9, RANGE 14

PROJECT NUMBER	25-221
DRAWING NUMBER	C504

**SANITARY SEWER NOTES**

1. MATERIALS. THE MATERIALS USED IN THIS WORK SHALL ALL BE NEW. A COPY OF THE MANUFACTURER'S INSTALLATION RECOMMENDATIONS FOR EACH KIND OF PIPE USED MUST BE PROVIDED TO EACH FOREMAN AND INSPECTOR PRIOR TO CONSTRUCTION AND MUST BE FOLLOWED DURING CONSTRUCTION UNLESS OTHERWISE INSTRUCTED.

- A. PVC PIPE.
  - 1. PVC (POLY-VINYL CHLORIDE) PIPE SHALL BE USED IN ALL MAINS AND SERVICE CONNECTIONS.
  - 2. PVC PIPE SHALL CONFORM TO THE REQUIREMENTS OF ASTM D-3034 RIGID PVC (SDR-35) AND/OR ASTM F6791-1 SDR 35 OR PVC EQUIVALENT. THE PIPE SHALL HAVE BELL AND SPIGOT JOINTS WITH AN APPROVED GASKETED JOINT PER ASTM D3212. THE SPIGOT END SHALL BE MARKED SO THAT THE INSTALLER AND THE INSPECTOR CAN DETERMINE WHEN THE PIPE IS PROPERLY INSTALLED.
  - 3. PIPE ENTRANCES TO MANHOLES SHALL BE SEALED WATERTIGHT WITH O-RING GASKETS OR OTHER METHOD AS SPECIFIED AND APPROVED BY THE COUNTY AND MUST MEET ASTM F-477 OR PVC EQUIVALENT.
  - 4. SERVICES SHALL BE OF MATERIALS SPECIFIED. WHERE THE SERVICE MATERIAL IS NOT DESIGNED TO FIT THE PVC PIPE WYE TIGHTLY, AN APPROVED COMMERCIAL ADAPTOR JOINT SHALL BE USED TO CONNECT THE SERVICE PIPE TO THE PVC PIPE AND MUST MEET ASTM D-3212 OR PVC EQUIVALENT.
- B. SERVICE PIPE. SERVICE PIPE MATERIALS SHALL BE PVC SEWER PIPE (ASTM D-3034 OR SCHEDULE 40 OR PVC EQUIVALENT).
- C. MANHOLES.
  - 1. ALL MANHOLES SHALL BE CONSTRUCTED WITH PRECAST SECTIONS UNLESS OTHERWISE APPROVED.
  - 2. PRECAST CONCRETE MANHOLE SECTIONS SHALL BE MANUFACTURED TO STANDARDS AT LEAST EQUAL TO OR GREATER THAN THE REQUIREMENTS OF THE STANDARD SPECIFICATIONS FOR PRECAST REINFORCED CONCRETE MANHOLE SECTIONS, ASTM DESIGNATION C478. THE INTERNAL DIAMETER FOR SANITARY MANHOLES SHALL BE 48 INCHES UNLESS SHOWN OTHERWISE. MANHOLES SHALL CONFORM TO ALL REQUIREMENTS AS SHOWN ON THE DETAIL DRAWINGS. MANHOLES SHALL HAVE STEPS UNLESS OTHERWISE SPECIFIED. PRECAST MANHOLE JOINTS SHALL BE MADE WATERTIGHT WITH RAM-NEK MATERIAL OR APPROVED O-RING GASKET AT EACH JOINT. THE RAM-NEK AND PRIMER MUST BE USED IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS.
  - 3. RUBBER O-RINGS USED FOR PRECAST MANHOLE JOINTS SHOULD BE R-4 JOINT OR SHALL BE DESIGNED IN ACCORDANCE WITH ASTM DESIGNATION C443.
  - 4. THE CONCRETE BASE SHALL BE CAST-IN-PLACE CONCRETE OF THE SIZE AND DEPTH SHOWN ON THE DRAWINGS. CONCRETE USED FOR BASES SHALL HAVE A 28-DAY COMPRESSIVE STRENGTH OF AT LEAST 3,000 POUNDS PER SQUARE INCH. APPROVED PRECAST CONCRETE BASES WILL BE ALLOWED IF PLACED IN AN APPROVED MANNER.
  - 5. MANHOLE FRAMES AND COVERS. MANHOLE FRAMES AND COVERS SHALL HAVE A ROUND BASE, 22-INCH OPENING NON-LOCKING TYPE, WITH FRAME AND COVER WEIGHING APPROXIMATELY 327 POUNDS. COVER AND FRAME SEAT SHALL BE MACHINE FINISHED TO PREVENT ANY ROCKING OF COVER IN ITS ASSOCIATED FRAME. COVER SHALL HAVE THE WORD SEWER CLEARLY CAST ON ITS SURFACE.
  - 6. MANHOLE STEPS. ALL MANHOLE STEPS SHALL BE CAST-IRON OR POLYPROPYLENE COVERED ALLOY, STEEL OR WROUGHT IRON STEPS OF ANY KIND WILL NOT BE PERMITTED. STEPS SHALL BE DROP-FRONT DESIGN WITH MINIMUM TREAD WIDTH OF NINE INCHES. RUBBER-COVERED "WEDGLOK" MANHOLE STEPS MAY BE USED IN LIEU OF THE ABOVE.
- D. GRANULAR MATERIALS. GRANULAR MATERIALS FURNISHED FOR FOUNDATION, BEDDING, ENCASEMENT OR OTHER PURPOSES SHALL CONSIST OF ANY MATERIAL OR SYNTHETIC MINERAL AGGREGATE SUCH AS SAND, GRAVEL, CRUSHED ROCK, CRUSHED STONE OR SLAG, THAT SHALL BE SO GRADED AS TO MEET THE GRADATION REQUIREMENTS SPECIFIED HEREIN FOR EACH PARTICULAR USE.
- E. SELECT BACKFILL. JOB EXCAVATED SELECT BACKFILL MATERIAL SHALL BE FREE FROM DEBRIS, ORGANIC MATERIAL, AND STONES LARGER THAN THREE INCHES IN DIAMETER.
- 2. ALIGNMENT AND GRADES.
  - A. ALL ROADWAYS SHALL BE CONSTRUCTED IN ACCORDANCE WITH LINES AND GRADES SHOWN ON THE APPROVED DRAWINGS.
  - B. THE CONTRACTOR SHALL PROVIDE AN EXPERIENCED INSTRUMENT MAN, COMPETENT ASSISTANTS AND SUCH INSTRUMENTS, TOOLS, STAKES, AND OTHER MATERIALS REQUIRED TO COMPLETE THE SURVEY, LAYOUT, AND MEASUREMENT WORK.
  - C. ANY WORK DONE WITHOUT BEING PROPERLY LOCATED MAY BE ORDERED REMOVED AND REPLACED AT THE DEVELOPER'S EXPENSE.
- 3. DETOUR - TRAFFIC CONTROL - TEMPORARY CROSSINGS AND BARRICADES.
  - A. TRAFFIC WILL BE PERMITTED TO USE THE STREET AT ALL TIMES, UNLESS A DETOUR IS SPECIFICALLY PERMITTED ON THE DRAWINGS OR BY THE COUNTY. SAFE ACCESS TO ALL ABUTTING RESIDENCES AND PROPERTIES SHALL BE MAINTAINED TO THE MAXIMUM EXTENT POSSIBLE.
  - B. THE CONTRACTOR SHALL CONSTRUCT AND MAINTAIN TEMPORARY CROSSINGS, COMPLETE WITH FLAGGERS, WHENEVER NECESSARY TO EXPEDITE THE WORK OR TO MAINTAIN TRAFFIC. TEMPORARY CROSSINGS SHALL BE OF AMPLE SIZE TO SAFELY CARRY THE LOAD WHICH COMES UPON THEM. THE CONTRACTOR SHALL FURNISH SUFFICIENT SIGNS AND BARRICADES TO FACILITATE THE DIRECTING OF TRAFFIC.
- 4. LAYING OF PIPE.
  - A. ALL FOREIGN MATTER OR DIRT SHALL BE REMOVED FROM THE INSIDE OF THE PIPE BEFORE IT IS LOWERED INTO ITS POSITION IN THE TRENCH, AND IT SHALL BE KEPT CLEAN BY APPROVED MEANS DURING AND AFTER LAYING. ALL OPENINGS ALONG THE LINE OF THE SEWER SHALL BE SECURELY CLOSED AS DIRECTED AND, IN THE SUSPENSION OF WORK AT ANY TIE, SUITABLE WATERTIGHT STOPPERS SHALL BE PLACED TO PREVENT EARTH, WATER OR OTHER SUBSTANCES FROM ENTERING THE SEWER.
  - B. PIPING SHALL BE LAID TO THE LINES AND GRADES INDICATED ON THE DRAWINGS.
  - C. FINE GRADING TO THE BOTTOM OF THE BARREL SHALL PROCEED AHEAD OF THE PIPE LAYING AND, SHOULD ANY OVER-EXCAVATION EXCEEDING TWO INCHES BE ENCOUNTERED, THE MATERIAL ADDED SHALL BE MOISTENED AND COMPACTED TO THE SATISFACTION OF THE COUNTY OR FOUNDATION MATERIAL SHALL BE ADDED.

- D. HOLES SHALL BE DUG FOR THE PIPE BELLS AND THE MATERIAL PLACED ALONG THE PRECEDING PIPE LAID. THE PIPE SHALL BE SUPPORTED FOR THE BOTTOM 90° AND THROUGHOUT ITS LENGTH (EXCEPT FOR THE MINIMUM DISTANCE NECESSARY AT THE BELL HOLES) AS SHOWN ON THE DRAWINGS. BELL HOLES SHALL BE ADEQUATE TO MAKE THE JOINT, BUT NO LARGER THAN NECESSARY SO THAT MAXIMUM SUPPORT ON UNDISTURBED GROUND WILL BE PROVIDED FOR THE PIPE. THE REMAINDER OF THE PIPE SHALL BE SURROUNDED TO AT LEAST THE MID-POINT OF THE PIPE BY GRANULAR BEDDING, SHOVEL PLACED AND HAND STAMPED, TO FILL COMPLETELY ALL SPACES UNDER AND ADJACENT TO THE PIPE. NON-GRANULAR MATERIALS MUST BE USED FOR PVC PIPE.
- E. PIPE LAYING SHOULD PROCEED UPGRADE WITH THE SPIGOT ENDS POINTED IN THE DIRECTION OF FLOW. NO PIPE SHALL BE LAID IN WATER OR WHEN THE TRENCH CONDITIONS ARE UNSUITABLE FOR SUCH WORK. THE CONTRACTOR SHALL MAKE ALL CONNECTIONS OF PIPE TO THE MANHOLES WHICH HAVE PREVIOUSLY BEEN CONSTRUCTED.
- F. WHEN CONNECTING TO EXISTING SEWERS, THE CONTRACTOR SHALL TAKE EVERY PRECAUTION NECESSARY TO PREVENT DIRT OR DEBRIS FROM ENTERING THE EXISTING LINES. THE CONTRACTOR SHALL USE AN APPROVED WATERTIGHT PLUG TO SECURELY PLUG THE NEW SEWER AT THE CONNECTION TO THE EXISTING SEWER IMMEDIATELY AFTER THE CONNECTION HAS BEEN MADE. THE PLUG SHALL BE BRACED AS NECESSARY AND TIED TO THE MANHOLE BY A ROPE OR CHAIN. THIS PLUG SHALL REMAIN UNTIL THE NEW SEWER SYSTEM HAS BEEN ACCEPTED BY THE COUNTY.
- 5. CONSTRUCTION OF MANHOLES.
  - A. EXCAVATION SHALL BE TO A DEPTH AND SIZE TO PROVIDE FOR CONSTRUCTION OF THE MANHOLE AS SHOWN IN DETAIL ON THE DRAWINGS.
  - B. CONCRETE BASES SHALL BE POURED ON UNDISTURBED GROUND. PRECAST CONCRETE BASES SHALL BE CAREFULLY LOWERED ONTO SIX INCHES MINIMUM LAYER OF WELL COMPACTED SAND ACCURATELY LAID TO A SMOOTH LEVEL SURFACE USING A STRAIGHT EDGE AND HAND LEVEL OR THREE INCHES OF CONCRETE POURED ON UNDISTURBED SOIL.
  - C. WALLS SHALL BE OF PRECAST CONCRETE AS SHOWN ON THE DRAWINGS AND SHALL BE CONSTRUCTED TO FORM A COMPLETE WATERTIGHT STRUCTURE.
  - D. PROVIDE A MINIMUM OF SIX INCHES AND A MAXIMUM OF 18 INCHES IN TWO-INCH LAYERS OF SEWER BRICK OR PRECAST CONCRETE ADJUSTING RINGS BETWEEN THE CAST IRON FRAME AND THE MANHOLE TOP SECTION. EACH RING OR BRICK SHALL BE SET ON A FULL BED OF MORTAR AND SHALL BE MADE WATERTIGHT. WOOD OR OTHER FOREIGN MATERIAL WILL NOT BE ALLOWED. ADJUSTING RINGS SHALL CONFORM TO THE SIZE AND SHAPE OF THE CASTING FRAME. FRAMES AND COVERS SHALL BE SET TO THE DESIGNATED ELEVATION IN A FULL MORTAR BED.
  - E. ON STREETS THAT ARE NOT AT DESIGN GRADE, SEWER MANHOLES SHALL BE BUILT WITH SUCH ADDITIONAL ADJUSTING RINGS OR SHORT MANHOLE SECTIONS AS NECESSARY TO ALLOW FOR ADJUSTMENT OF THE STREET TO THE PROPOSED GRADE AS SHOWN ON THE DRAWINGS. MANHOLE CASTING TOPS SHALL BE 1/4-INCH BELOW THE STREET SURFACING.
  - F. WHEN MANHOLES ARE TO BE CONSTRUCTED IN NEW STREETS, MANHOLE RINGS SHALL BE SET TO FINAL GRADE BEFORE STREET WEARING COURSE IS LAID. IN UNPAVED ROADWAYS, THE MANHOLE RING SHALL BE BROUGHT TO GRADE AND SURROUNDED BY A THREE-INCH THICK ASPHALT APRON AT LEAST FIVE FEET IN DIAMETER.
  - G. THE BOTTOM OF ALL MANHOLES SHALL BE SMOOTHLY SHAPED TO CONFORM TO THE PIPE SO AS TO ALLOW A FREE, UNINTERRUPTED FLOW OF SANITARY SEWAGE.
  - H. UNLESS SHOWN OTHERWISE ON THE DRAWINGS, THE SANITARY SEWER PIPE SHOULD BE LAID CONTINUOUSLY THROUGH THE MANHOLES AND BROKEN OR CUT OUT WHEN THE MANHOLE BASE IS FINISHED. MANHOLE COUPLINGS OR RUBBER RING STOPPS MUST BE USED WHERE THE PIPE JOINS THE MANHOLES.
- 6. BACKFILLING AND GRADING.
  - A. ALL EXCAVATION IN TRENCHES SHALL BE BACKFILLED TO THE ORIGINAL GROUND SURFACE OR TO SUCH GRADES AS SPECIFIED OR SHOWN ON THE DRAWINGS. THE BACKFILL SHALL BEGIN AS SOON AS PRACTICAL AFTER THE PIPE HAS BEEN PLACED AND SHALL THEREAFTER BE CARRIED ON AS RAPIDLY AS THE PROTECTION OF THE BALANCE OF THE WORK SHALL PERMIT.
  - B. BACKFILLING AND COMPACTING SHALL BE DONE AS THOROUGHLY AS POSSIBLE SO AS TO PREVENT AFTER-SSETTLEMENT. DEPOSITING OF THE BACKFILL SHALL BE DONE SO THE IMPACT OF FALLING MATERIAL WILL NOT INJURE THE PIPE OR STRUCTURES.
  - C. GRANULAR BEDDING SHALL BE DEPOSITED IN THE TRENCH SIMULTANEOUSLY ON BOTH SIDES OF THE PIPE FOR THE FULL WIDTH OF THE TRENCH TO A HEIGHT AT LEAST TO THE MID-POINT OF THE PIPE, SHOVEL PLACED, AND HAND STAMPED TO FILL COMPLETELY ALL SPACES UNDER AND ADJACENT TO THE PIPE. ENCASEMENT MATERIAL WILL THEN BE PLACED AROUND AND OVER THE PIPE TO A HEIGHT OF AT LEAST 12 INCHES ABOVE THE TOP OF THE PIPE BUT NEED NOT BE HAND PLACED. NONGRANULAR MATERIALS MAY BE USED FOR ENCASEMENT EXCEPT FOR PVC PIPE.
  - D. IN THE EVENT THAT NATURAL, SUITABLE, GRANULAR MATERIAL IS NOT ENCOUNTERED DURING THE NORMAL EXCAVATION OF THE SEWER TRENCH, OR WHEN THE MATERIAL ENCOUNTERED IS DETERMINED UNSUITABLE BY THE COUNTY FOR ENCASEMENT AROUND THE PIPE AS REQUIRED, THE CONTRACTOR SHALL PROVIDE AND PLACE SUCH APPROVED MATERIAL FOR PVC PIPE, APPROVED GRANULAR ENCASEMENT MATERIAL MUST BE PLACED AND HAND STAMPED TO AT LEAST SIX INCHES OVER THE TOP OF THE PIPE. THE REMAINING SIX INCHES MAY BE NONGRANULAR MATERIAL IF SPECIFICALLY APPROVED BY THE COUNTY.
  - E. SUCCEEDING LAYERS OF BACKFILL ABOVE THE 12-INCH LEVEL MAY CONTAIN COARSE MATERIALS NOT EXCEEDING THREE INCHES IN THE LARGEST DIMENSION, BUT SHALL BE FREE FROM LARGE PIECES OF ROCK, FROZEN MATERIAL, CONCRETE, ROOTS, STUMPS, TIN CANS, RUBBISH, AND OTHER SIMILAR ARTICLES WHOSE PRESENCE IN THE BACKFILL WOULD CAUSE SETTLEMENT OF THE TRENCH OR DAMAGE TO THE PIPE.
  - F. WHENEVER SELECT MATERIAL THAT EXISTS IN PLACE IN THE UPPER FOUR FEET OF THE FINISHED GRADE OF THE PAVED OR TRAVELED PORTIONS OF THE STREET OR ROADWAY, IS REMOVED BY THE TRENCH EXCAVATION, THE CONTRACTOR SHALL REPLACE THE MATERIAL (OR MATERIAL OF EQUAL QUALITY) AS BACKFILL IN THE UPPER FOUR FEET OF THE FINISHED GRADE. WHERE SELECT MATERIAL DOES NOT EXIST IN PLACE AS DESCRIBED ABOVE, PROVIDE AND PLACE SUFFICIENT SELECT BACKFILL TO STABILIZE THE FINISHED GRADE.

- G. BACKFILLING SHALL BE DONE IN LIFTS OF UNIFORM LAYERS WHICH WILL PRODUCE THE REQUIRED COMPACTION. EACH LIFT SHALL BE COMPLETELY COMPACTED OVER THE FULL-WIDTH OF THE EXCAVATED AREA. COMPACTING SHALL CONTINUE UNTIL THE SPECIFIED RELATIVE COMPACTION HAS BEEN ATTAINED OR UNTIL NO MORE SETTLEMENT OCCURS. WATER JETTING OF BACKFILL SHALL NOT BE PERMITTED.
- H. SPECIAL COMPACTION SHALL BE PERFORMED AROUND ALL MANHOLES, VALVE BOXES, CURB BOXES, OTHER STRUCTURES, AND UTILITIES BY THE USE OF PNEUMATIC TAMPERS, PLATE TAMPERS, OR PLATE VIBRATORS.
- I. SEWER SERVICE TRENCHES IN THE RIGHT-OF-WAY MUST BE COMPACTED IN THE SAME MANNER AS THE MAIN TRENCHES. IN STREETS OPEN TO TRAFFIC, SERVICE TRENCHES MUST NOT BE LEFT OPEN OVERNIGHT. IN AREAS WHERE CURB AND GUTTER EXIST, SUFFICIENT CURBING SHALL BE REMOVED TO ALLOW THIS COMPACTION OVER THE ENTIRE DISTURBED AREA.
- J. THE RELATIVE COMPACTION OF THE SOILS IN PLACE SHALL BE DETERMINED BY USING EITHER THE SAND-CONE METHOD ASTM STANDARD TEST DESIGNATION D1556-64, OR NUCLEAR METHODS, ASTM STANDARD TEST DESIGNATION D2922-71. RELATIVE COMPACTION OF ALL BACKFILL MATERIALS MUST MEET THE FOLLOWING REQUIREMENTS AS DETERMINED BY AASHO T-99 (ASTM D-698) METHOD A OR C. THE COMPACTION REQUIRED IN PAVED AREAS, AREAS TO BE PAVED, OR GRAVELED AREAS SHALL BE AS FOLLOWS:
  - 1. NINETY-FIVE PERCENT COMPACTION FROM 24 INCHES ABOVE TOP OF PIPE TO THE FINISHED SURFACE, EXCEPT THAT IN NO CASE SHALL THIS 95% COMPACTION ZONE BE LESS THAN 48 INCHES DEEP. NINETY PERCENT COMPACTION FROM PIPE ZONE TO START OF 95% COMPACTION ZONE.
  - 2. THE COMPACTION REQUIRED OUTSIDE PAVED AREAS, OUTSIDE AREAS TO BE PAVED OR OUTSIDE GRAVELED AREAS SHALL BE 90%.
- K. THE CONTRACTOR IS RESPONSIBLE FOR THE COMPLETE MAINTENANCE OF HIS WORK AT ALL TIMES.
- L. THE CONTRACTOR SHALL REMEDY AT HIS OWN EXPENSE ANY DEFECTS THAT APPEAR IN THE BACKFILL FOLLOWING COMPLETION AND DURING THE ONE-YEAR GUARANTEE PERIOD.
- 7. SERVICE CONNECTIONS.
  - A. IT SHALL BE THE DUTY OF THE CONTRACTOR TO KEEP AN ACCURATE RECORD OF SERVICE CONNECTIONS AS TO THE LOCATION, ELEVATION OF THE SERVICE AT THE PROPERTY LINE, TYPE OF CONNECTION PROVIDED, AND THE LIKE. LOCATION SHALL BE MADE IN RESPECT TO THE SURVEY LINE STATIONING AND HOUSE CORNERS OR LOT CORNERS. ALL SERVICES MUST BE APPROVED BY THE INSPECTOR PRIOR TO BACKFILL.
  - B. GENERALLY, A FOUR-INCH OR SIX-INCH WYE SHALL BE USED IN THE MAIN LINE. AN APPROVED ADAPTOR OR OTHER APPROVED METHOD OF CONNECTION TO THE WYE SHALL BE INSTALLED.
  - C. ALL HOUSE CONNECTIONS SHALL BE CAPPED WITH STOPPERS RECOMMENDED BY THE PIPE MANUFACTURER, SEALED FIRMLY IN PLACE, OR BY OTHER METHODS ACCEPTED BY THE COUNTY, WHICH SHALL EFFECTIVELY PREVENT WATER FROM ENTERING THE SEWER UNTIL THE CONNECTION IS PLACED IN SERVICE. THE HOUSE CONNECTION END SHALL BE CLEARLY MARKED BY A REBAR EXTENDING FROM THE PIPE END TO AT LEAST THREE FEET ABOVE THE GROUND.
  - D. RISERS ARE TO BE CONSTRUCTED AT ALL POINTS WHERE THE DEPTH OF COVER OVER THE INVERT OF THE SEWER LINE IS 15 FEET OR MORE AT OTHER LOCATIONS AS DETERMINED BY THE ENGINEER.
  - E. ROOF DRAINS, FOUNDATION DRAINS, AND OTHER CLEAN WATER CONNECTIONS TO THE SANITARY SEWER SYSTEM ARE PROHIBITED.
- 8. TESTING - SANITARY SEWER.
  - A. UPON COMPLETION OF ALL UTILITY CONSTRUCTION BY THIS CONTRACT AND BEFORE ANY HOUSE SERVICES ARE CONNECTED, TESTS WILL BE REQUIRED OF ALL SANITARY SEWER LINES.
  - B. THE CONTRACTOR HAS THE OPTION OF PERFORMING EITHER AN AIR TEST OR AN EXFILTRATION TEST.

TEST SHALL BE PERFORMED AFTER COMPLETE COMPACTION AND BACKFILL AND COMPLETION OF MANHOLES, BUT MAY BE PERFORMED BEFORE PAVING.

- 9. AIR TESTS.
  - A. THE CONTRACTOR SHALL PERFORM THESE TESTS WITH SUITABLE EQUIPMENT SPECIFICALLY DESIGNED FOR AIR TESTING SEWERS.
  - B. THE AIR TEST SHALL BE MADE WHEN THE SEWER IS CLEAN. SECTIONS OF SEWER PIPE TO BE TESTED, MAY BE WETTED BEFORE THE AIR TEST. THE LINE SHALL BE PLUGGED AT EACH MANHOLE WITH PNEUMATIC BALLS. LOW PRESSURE AIR SHALL BE INTRODUCED INTO THE PLUGGED LINE UNTIL THE INTERNAL PRESSURE REACHES (4.0) PSIG GREATER THAN THE AVERAGE BACK PRESSURE OF ANY GROUND WATER PRESSURE THAT MAY SUBMERGE THE PIPE. AT LEAST TWO MINUTES SHALL BE ALLOWED FOR THE AIR TEMPERATURE TO STABILIZE BEFORE READINGS ARE TAKEN AND THE TIME STARTED.
  - C. THE PORTION BEING TESTED SHALL PASS IF IT DOES NOT LOSE AIR AT A RATE TO CAUSE THE PRESSURE TO DROP FROM 3.6 TO 3.0 PSIG (GREATER THAN THE AVERAGE BACK PRESSURE OF ANY GROUND WATER THAT MAY SUBMERGE THE PIPE) IN LESS TIME THAN LISTED BELOW.

PIPE DIAMETER (INCHES)	MINIMUM ALLOWABLE MINUTES 3.6 - 3.0 PSIG PRESSURE
4	2.0
6	3.0
8	4.0
10	5.0
12	6.0
15	7.5
18	9.0
21	10.5
24	12.0

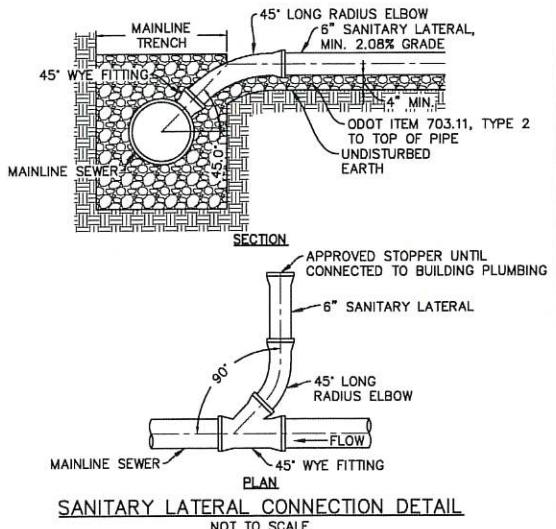
- D. IF THE INSTALLATION FAILS THIS TEST, THE TESTING EQUIPMENT MAY BE USED TO DETERMINE THE LOCATION OF THE PIPE LEAK.
- E. ALL SERVICE PLUGS SHALL BE SECURED IN PLACE TO PREVENT DISPLACEMENT DURING TESTING OPERATIONS.
- 10. EXFILTRATION TEST.
  - A. IN LIEU OF THE STANDARD SANITARY SEWER AIR TEST, THE CONTRACTOR MAY MAKE EXFILTRATION TESTS ON SEWERS.

- B. THE TEST SECTION SHALL BE BULKHEADED AT BOTH ENDS AND THE PIPE SUBJECTED TO A HYDROSTATIC PRESSURE PRODUCED BY A HEAD OF WATER AT A DEPTH OF THREE FEET ABOVE THE TOP OF THE SEWER AT THE UPPER MANHOLE UNDER TEST. IN AREAS WHERE GROUND WATER EXISTS, THIS HEAD OF WATER SHALL BE THREE FEET ABOVE THE EXISTING WATER TABLE.
- C. THE HEAD OF WATER SHALL BE OBTAINED BY MEANS OF AN OPEN ENDED STANDPIPE PROJECTING FROM TEST PLUG ON UPPER MANHOLE. PLACING WATER IN THE UPPER MANHOLE IS NOT PERMISSIBLE AS A MEANS OF OBTAINING THE NECESSARY PRESSURE HEAD OF WATER.
- D. THIS HEAD OF WATER SHALL BE MAINTAINED FOR A PERIOD OF ONE HOUR DURING WHICH IT IS PRESUMED THAT FULL ABSORPTION OF THE PIPE BODY HAS TAKEN PLACE, AND THEREAFTER FOR A FURTHER PERIOD OF ONE HOUR FOR THE ACTUAL TEST OF LEAKAGE. DURING THIS ONE HOUR TEST PERIOD, THE MEASURED MAXIMUM ALLOWABLE RATE OF EXFILTRATION FOR ANY SECTION OF SEWER, INCLUDING SERVICE STUBS, SHALL BE AS LISTED BELOW:

MAIN SEWER DIAMETER (INCHES)	MINIMUM ALLOWABLE EXFILTRATION GALLONS PER HOUR PER 100 FEET
4	0.6
6	0.9
8	1.2
10	1.5
12	1.9
15	2.3
18	2.8
21	3.3
24 AND LARGER	3.8

- E. IN CASE MEASUREMENTS INDICATE AN EXFILTRATION GREATER THAN THE MAXIMUM ALLOWABLE LEAKAGE, ADDITIONAL MEASUREMENTS SHALL BE TAKEN AND CONTINUED UNTIL ALL LEADS ARE LOCATED AND THE NECESSARY REPAIRS AND CORRECTIVE WORK HAVE REDUCED THE LEAKAGE IN THE SECTION BEING TESTED BELOW THE MAXIMUM ALLOWABLE BY THE SPECIFICATIONS. FOR PURPOSES OF THE TEST, THE LINE BETWEEN ADJOINING MANHOLES WILL BE CONSIDERED A SECTION AND WILL BE TESTED AS SUCH.
- F. THE INTRODUCTION OF ANY SUBSTANCE INTO THE WATER USED FOR TESTING WITH THE INTENT OF SEALING SUCH LEAKS AS MAY BE INDICATED WILL NOT BE PERMITTED.
- G. IF RESULTS OF EITHER OF THESE TESTS ARE NOT SATISFACTORY, REPAIRS OR PIPE REPLACEMENT WILL BE REQUIRED UNTIL THE COUNTY IS SATISFIED THAT THE LEAKAGE REQUIREMENTS ARE BEING MET. ALL REPAIR METHODS AND MATERIALS USED MUST BE ACCEPTED BY THE COUNTY.
- 11. PVC DEFLECTION TEST.
  - A. ALL PVC PIPE SHALL BE SUBJECT TO A DEFLECTION TEST BY USE OF CAGE TYPE APPROVED MANDREL.
  - B. IN PAVED AREAS OR AREAS TO BE PAVED, EITHER:
    - 1. TESTING PVC SEWER LINES WITH A 4% DEFLECTION MANDREL AFTER COMPLETE BACKFILL AND COMPACTION OF TRENCH BUT BEFORE PAVING; OR
    - 2. TESTING PVC SEWER LINES WITH A 5% DEFLECTION MANDREL AFTER PAVING IS COMPLETE.
  - C. IN NON-PAVED AREAS CONTRACTOR HAS THE OPTION OF:
    - 1. TESTING PVC SEWER LINES WITH A 4% DEFLECTION MANDREL AFTER COMPLETE BACKFILL AND COMPACTION OF TRENCH BUT BEFORE PLACING AND SPREADING TOP SOIL; OR
    - 2. TESTING PVC SEWER LINES WITH A 5% DEFLECTION MANDREL AFTER PLACING AND SPREADING TOP SOIL (BUT BEFORE SEEDING).
  - D. ALL MANDREL OUTER DIAMETERS SHALL BE EQUAL TO 96% OF THE INSIDE DIAMETER OF THE PIPE FOR A 4% DEFLECTION TEST OR 95% OF THE INSIDE DIAMETER OF THE PIPE FOR A 5% DEFLECTION TEST.
- 12. MANHOLE VACUUM TEST
  - A. ALL MANHOLES SHALL BE VACUUM TESTED USING THE FOLLOWING PROCEDURES PER ASTM C-1244.
    - 1. ALL LIFT HOLES SHALL BE PLUGGED.
    - 2. ALL PIPES ENTERING THE MANHOLE SHALL BE TEMPORARILY PLUGGED, TAKING CARE TO SECURELY BRACE THE PIPES AND PLUGS TO PREVENT THEM FROM BEING DRAWN INTO THE MANHOLE.
  - B. PROCEDURE
    - 1. THE TEST HEAD SHALL BE PLACED AT THE TOP OF THE MANHOLE IN THE CASTING AND THE SEAL INFLATED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
    - 2. A VACUUM OF 10 IN. OF MERCURY (4.9 PSI) SHALL BE DRAWN ON THE VACUUM LINE OF THE TEST HEAD SHALL BE CLOSED AND THE VACUUM PUMP SHUT OFF. THE TIME SHALL BE MEASURED FOR THE VACUUM TO DROP TO 9 IN. OF MERCURY (4.4 PSI).
    - 3. THE MANHOLE SHALL PASS IF THE TIME FOR THE VACUUM READING TO DROP FROM 10 IN. OF MERCURY (4.9 PSI) TO 9 IN. OF MERCURY (4.4 PSI) MEETS OR EXCEEDS THE VALUES INDICATED IN THE BELOW TABLE.
    - 4. IF THE MANHOLE FAILS THE INITIAL TEST, THE CONTRACTOR SHALL COORDINATE WITH THE AUTHORITY HAVING JURISDICTION ON THE NECESSARY REPAIRS TO BE MADE. THE MANHOLE SHALL THEN BE RETESTED UNTIL A SATISFACTORY TEST IS OBTAINED.

DEPTH (FEET)	MANHOLE DIAMETER (INCHES)		
	48	60	72
B OR LESS	20	26	33
10	25	33	41
12	30	39	49
14	35	46	57
16	40	52	67
18	45	59	73
20	50	65	81
22	55	72	89
24	59	78	97
26	64	85	105
28	69	91	113
30	74	98	121



REVISIONS


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**MCCARTY ASSOCIATES, LLC.**  
ARCHITECTS | ENGINEERS | SURVEYORS

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CONSTRUCTION DOCUMENTS FOR  
**AVANELLE CROSSING**

6251 AVANELLE DRIVE  
ATHENS, OHIO 45701  
ATHENS TOWNSHIP, ATHENS COUNTY  
FARM LOT 63, SECTION 13, TOWN 9, RANGE 14

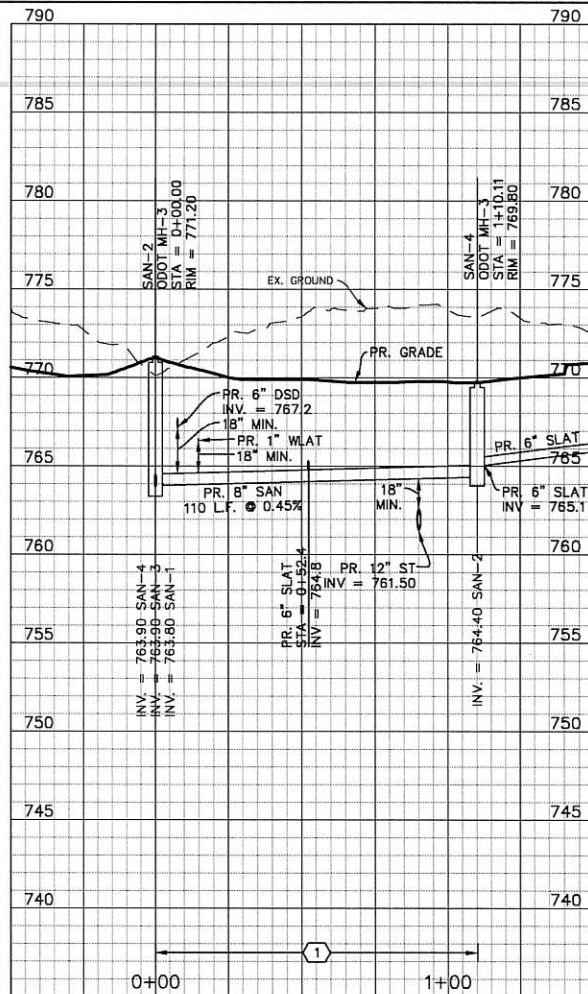
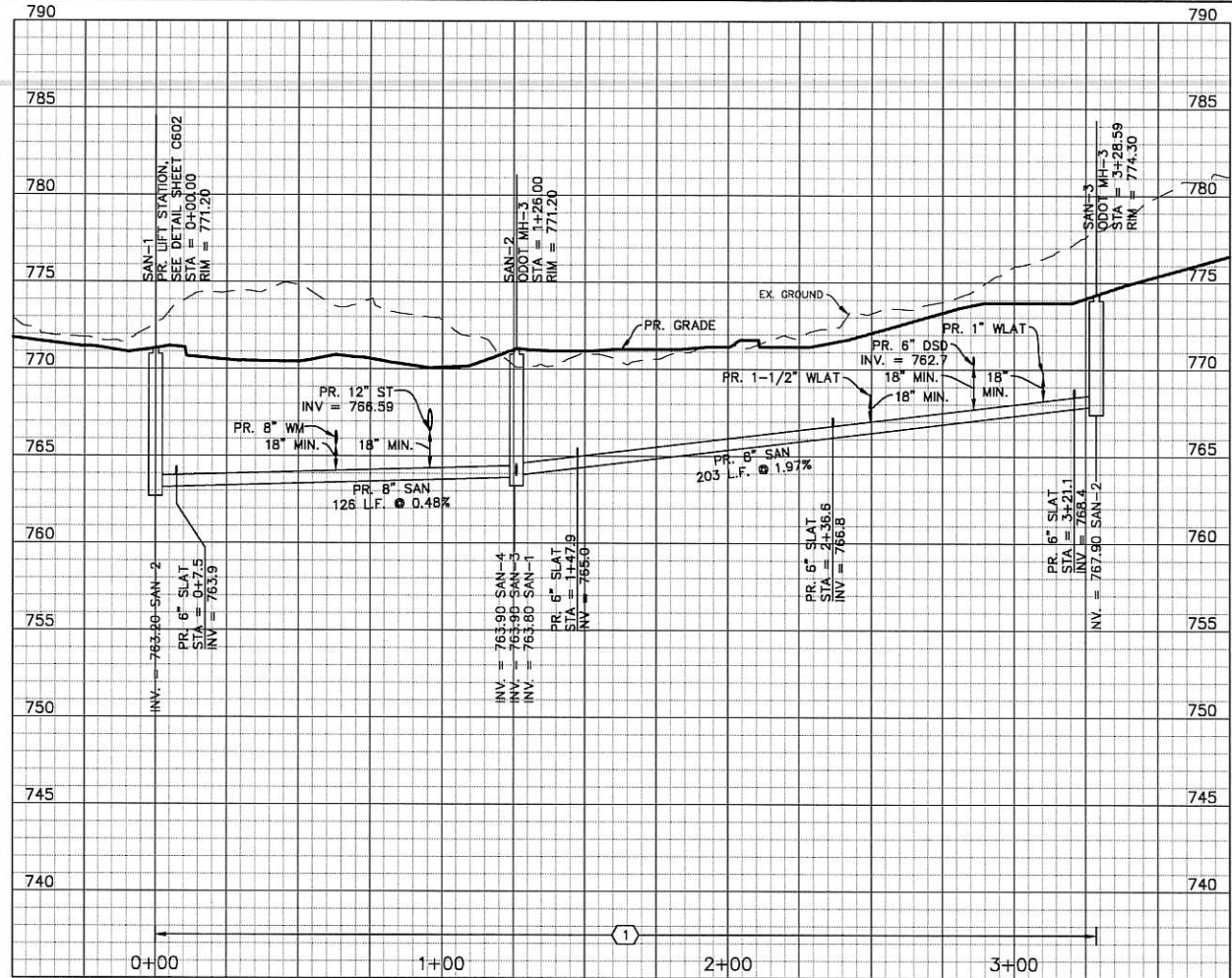
PROJECT NUMBER  
25-221

SANITARY SEWER  
NOTES & DETAILS

DRAWING NUMBER  
C601







**KEYNOTES**

1. COMPACTED GRANULAR BACKFILL PER ODOT ITEM 703.11.
2. COMPACTED SOIL BACKFILL PER ODOT ITEM 703.16A.

**SANITARY STRUCTURE NOTES**

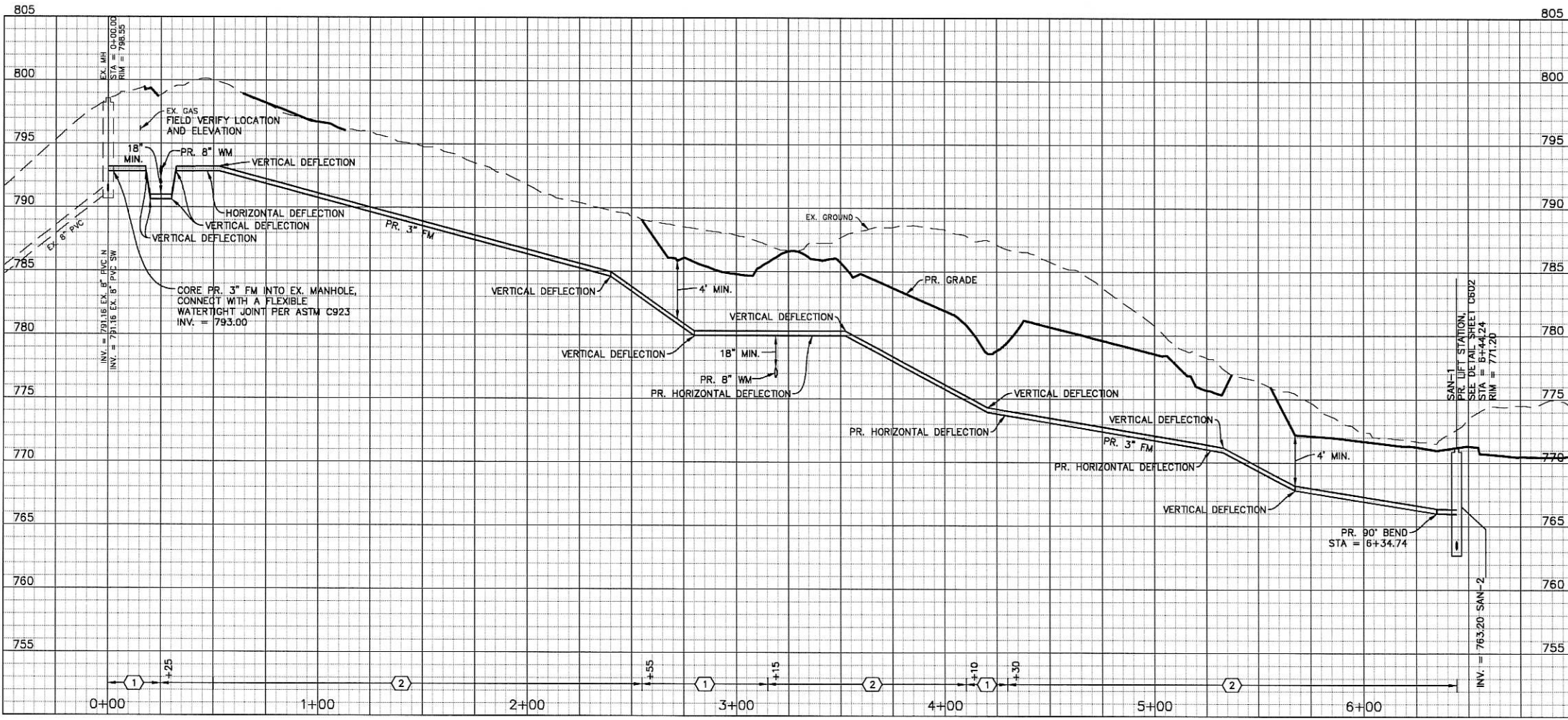
1. NORTHINGS AND EASTINGS FOR MANHOLES ARE UNDERSTOOD TO BE AT THE CENTER OF THE STRUCTURE.
2. ELEVATIONS FOR MANHOLE RIMS ARE UNDERSTOOD TO BE AT THE CENTER OF THE CASTING.

**SANITARY PIPE NOTES**

- A. PVC PIPE.
1. PVC (POLY-VINYL CHLORIDE) PIPE SHALL BE USED IN ALL MAINS AND SERVICE CONNECTIONS.
  2. PVC PIPE SHALL CONFORM TO THE REQUIREMENTS OF ASTM D-3034 RIGID PVC (SDR-35) AND/OR ASTM F6791-1 SDR 35 OR PVC EQUIVALENT. THE PIPE SHALL HAVE BELL AND SPIGOT JOINTS WITH AN APPROVED GASKETED JOINT PER ASTM D3212. THE SPIGOT END SHALL BE MARKED SO THAT THE INSTALLER AND THE INSPECTOR CAN DETERMINE WHEN THE PIPE IS PROPERLY INSTALLED.
  3. PIPE ENTRANCES TO MANHOLES SHALL BE SEALED WATERTIGHT WITH O-RING GASKETS OR OTHER METHOD AS SPECIFIED AND APPROVED BY THE COUNTY AND MUST MEET ASTM F-477 OR PVC EQUIVALENT.
  4. SERVICES SHALL BE OF MATERIALS SPECIFIED. WHERE THE SERVICE MATERIAL IS NOT DESIGNED TO FIT THE PVC PIPE WYE TIGHTLY, AN APPROVED COMMERCIAL ADAPTOR JOINT SHALL BE USED TO CONNECT THE SERVICE PIPE TO THE PVC PIPE AND MUST MEET ASTM D-3212 OR PVC EQUIVALENT.
- B. SERVICE PIPE. SERVICE PIPE MATERIALS SHALL BE PVC SEWER PIPE (ASTM D-3034 OR SCHEDULE 40 OR PVC EQUIVALENT).

**FORCE MAIN NOTES**

1. FORCE MAINS SHALL BE A MINIMUM 48" BELOW FINISHED GRADE.
2. HIGH-DENSITY POLYETHYLENE (HDPE) PE 4710 PIPE SHALL BE USED FOR ALL FORCE MAINS.
3. HDPE PIPE SHALL CONFORM TO THE REQUIREMENTS OF ASTM F714 DR11.
4. JOINTS FOR PE 4710 PIPE SHALL BE HEAT FUSION PER ASTM F2620. HDPE PIPE SHALL BE INSTALLED IN ACCORDANCE WITH THESE PLANS, ASTM D2321, AND MANUFACTURER'S RECOMMENDED PROCEDURE.



**REVISIONS**

NO.	DESCRIPTION

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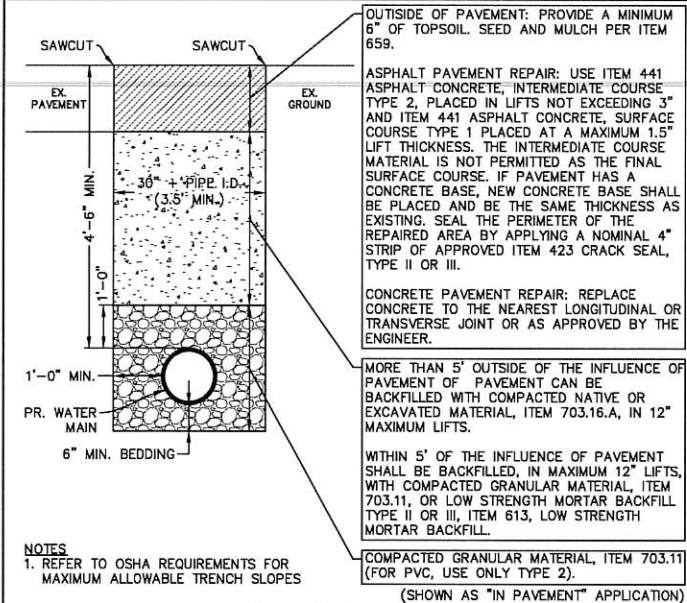
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**CONSTRUCTION DOCUMENTS FOR  
AVANELLE CROSSING**

6251 AVANELLE DRIVE  
ATHENS, OHIO 45701  
ATHENS TOWNSHIP, ATHENS COUNTY  
FARM LOT 53, SECTION 13, TOWN 9, RANGE 14

PROJECT NUMBER	25-221
DRAWING NUMBER	C604





OUTSIDE OF PAVEMENT: PROVIDE A MINIMUM 6" OF TOPSOIL, SEED AND MULCH PER ITEM 659.

ASPHALT PAVEMENT REPAIR: USE ITEM 441 ASPHALT CONCRETE, INTERMEDIATE COURSE TYPE 2, PLACED IN LIFTS NOT EXCEEDING 3" AND ITEM 441 ASPHALT CONCRETE, SURFACE COURSE TYPE 1 PLACED AT A MAXIMUM 1.5" LIFT THICKNESS. THE INTERMEDIATE COURSE MATERIAL IS NOT PERMITTED AS THE FINAL SURFACE COURSE. IF PAVEMENT HAS A CONCRETE BASE, NEW CONCRETE BASE SHALL BE PLACED AND BE THE SAME THICKNESS AS EXISTING. SEAL THE PERIMETER OF THE REPAIRED AREA BY APPLYING A NOMINAL 4" STRIP OF APPROVED ITEM 423 CRACK SEAL, TYPE II OR III.

CONCRETE PAVEMENT REPAIR: REPLACE CONCRETE TO THE NEAREST LONGITUDINAL OR TRANSVERSE JOINT OR AS APPROVED BY THE ENGINEER.

MORE THAN 5' OUTSIDE OF THE INFLUENCE OF PAVEMENT OF PAVEMENT CAN BE BACKFILLED WITH COMPACTED NATIVE OR EXCAVATED MATERIAL, ITEM 703.16.A, IN 12" MAXIMUM LIFTS.

WITHIN 5' OF THE INFLUENCE OF PAVEMENT SHALL BE BACKFILLED, IN MAXIMUM 12" LIFTS, WITH COMPACTED GRANULAR MATERIAL, ITEM 703.11, OR LOW STRENGTH MORTAR BACKFILL TYPE II OR III, ITEM 613, LOW STRENGTH MORTAR BACKFILL.

COMPACTED GRANULAR MATERIAL, ITEM 703.11 (FOR PVC, USE ONLY TYPE 2).

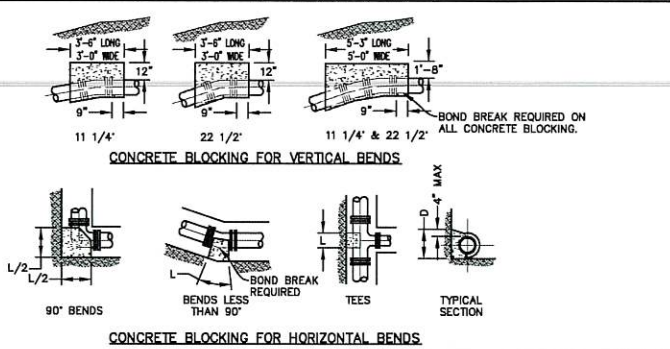
(SHOWN AS "IN PAVEMENT" APPLICATION)

NOTES  
1. REFER TO OSHA REQUIREMENTS FOR MAXIMUM ALLOWABLE TRENCH SLOPES

**MCCARTY ASSOCIATES, L.L.C.**

WATER MAIN TRENCH DETAIL

N.T.S. 1



**CONCRETE BLOCKING FOR VERTICAL BENDS**

**CONCRETE BLOCKING FOR HORIZONTAL BENDS**

1. CARE SHALL BE TAKEN TO KEEP CONCRETE AWAY FROM MECHANICAL JOINTS BY PLACING VISQUEEN OR OTHER APPROVED MATERIAL OVER PIPE BEFORE PLACING OF CONCRETE. BOLTS MUST NOT BE ENCASED IN CONCRETE.

2. CONCRETE FOR BLOCKING VALVES AND FITTINGS SHALL CONFORM TO SECTION 0007 QC MISC.

3. CONCRETE THRUST BLOCKING MAY ONLY BE USED IN SPECIAL CASES WITH PRIOR APPROVAL BY THE ENGINEER. RESTRAINED JOINTS SHALL BE THE STANDARD MEANS OF THRUST RESTRAINT, PER DETAIL 800-10.

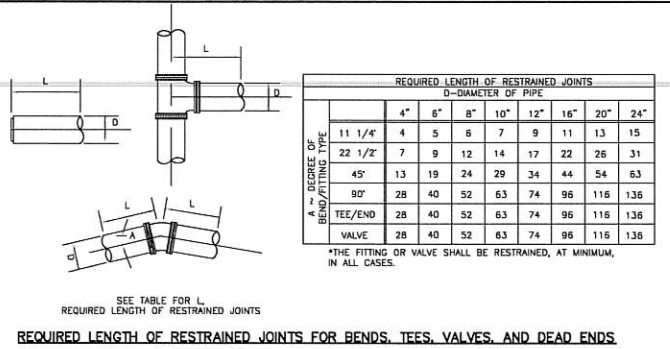
BENDS		DEGREE OF BENDS	
SIZE OF PIPE	DEGREE OF BEND	11 1/4"	22 1/2"
3", 4", 6"	L D L D L D L D	11 1/4"	22 1/2"
8"	9" 6" 10" 6" 20" 6" 36" 6"		
12"	14" 12" 22" 12" 30" 16" 60" 16"		
18"	18" 16" 24" 18" 33" 30" 70" 22"		

TEES		BRANCH	
SIZE OF PIPE	BRANCH	3", 4", 6"	8", 12", 16"
3", 4", 6"	L D L D L D L D	3", 4", 6"	8", 12", 16"
8"	8" 8" 12" 8" 16" 12"		
12"	12" 12" 18" 12" 24" 18"		
18"	18" 18" 24" 18" 30" 24"		

**MCCARTY ASSOCIATES, L.L.C.**

CONCRETE BLOCKING FOR WATER MAINS DETAIL

N.T.S. 2



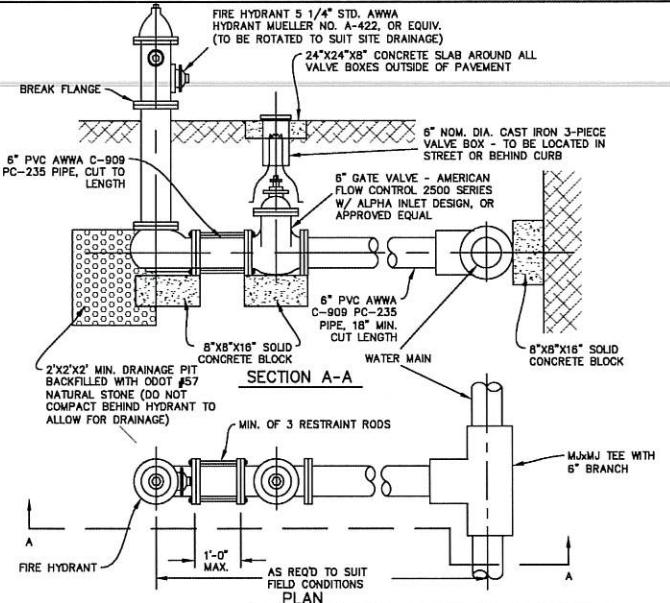
**REQUIRED LENGTH OF RESTRAINED JOINTS FOR REDUCERS**

REQUIRED LENGTH OF RESTRAINED JOINTS FOR REDUCERS (L)		DIAMETER OF SMALLER PIPE (D)	
DIAMETER OF LARGER PIPE (D')	4"	6"	8"
6"	21"	8"	22"
8"	38"	10"	31"
10"	51"	12"	39"
12"	64"	14"	47"
14"	77"	16"	55"
16"	90"	18"	63"
18"	103"	20"	71"
20"	116"	22"	79"
22"	129"	24"	87"

**MCCARTY ASSOCIATES, L.L.C.**

RESTRAINED JOINT DETAIL

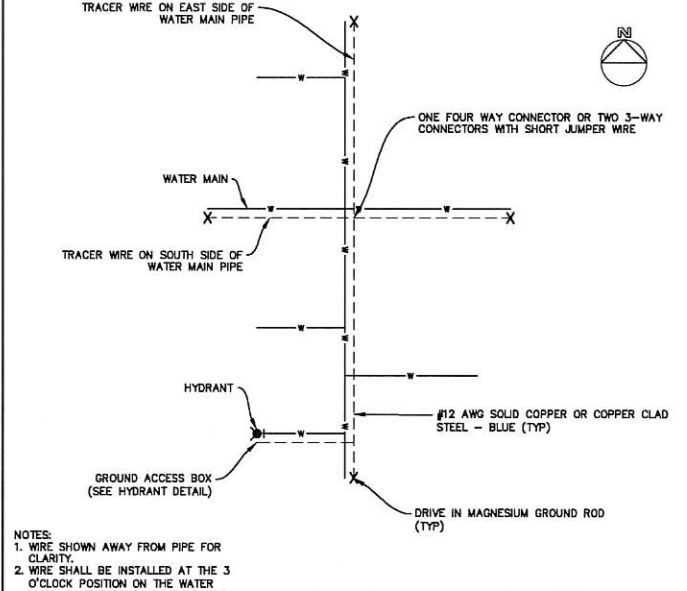
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**MCCARTY ASSOCIATES, L.L.C.**

FIRE HYDRANT DETAIL

N.T.S. 4

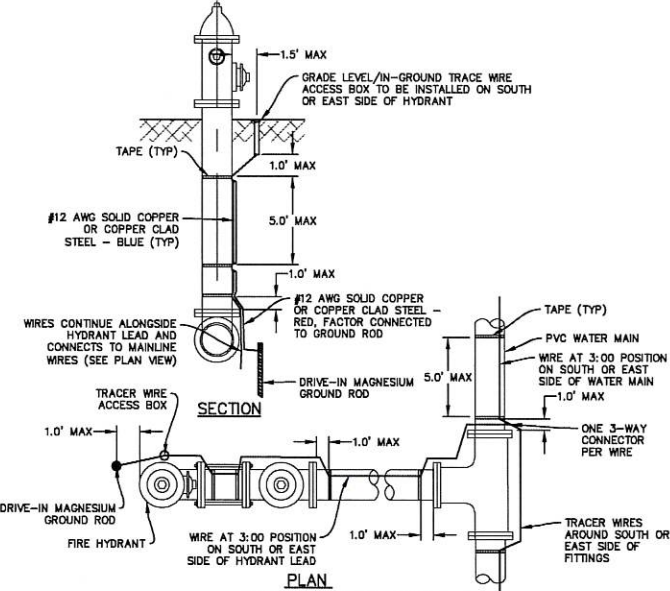


NOTES  
1. WIRE SHOWN AWAY FROM PIPE FOR CLARITY.  
2. WIRE SHALL BE INSTALLED AT THE 3 O'CLOCK POSITION ON THE WATER MAIN, ON THE SOUTH OR EAST SIDE OF THE PIPE.  
3. THE WIRE SHALL BE FASTENED TO THE PIPE WITH TAPE AT 10' INTERVALS.  
4. GROUND RODS SHALL BE INSTALLED AT ALL TRACER WIRE DEAD-ENDS.

**MCCARTY ASSOCIATES, L.L.C.**

TRACER WIRE DETAIL

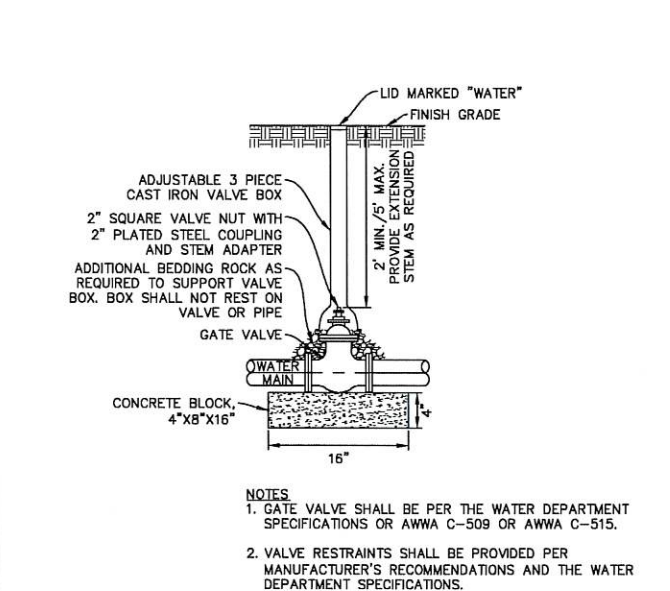
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TRACER WIRE HYDRANT DETAIL

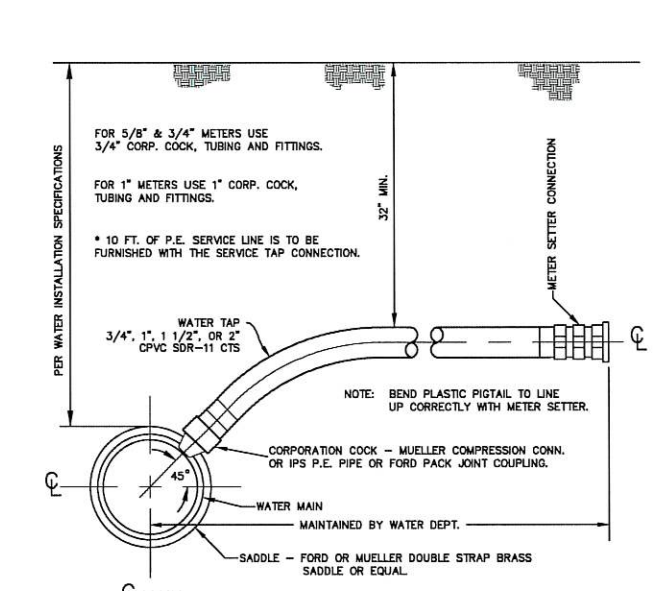
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**MCCARTY ASSOCIATES, L.L.C.**

GATE VALVE & VALVE BOX DETAIL

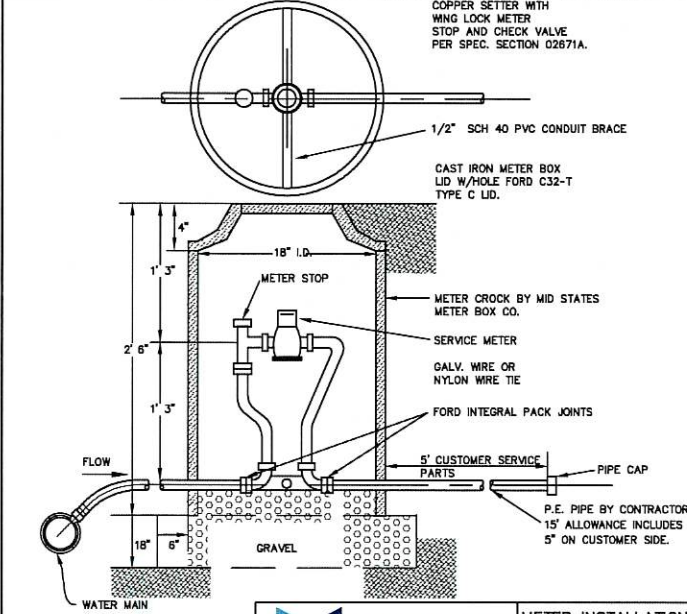
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**MCCARTY ASSOCIATES, L.L.C.**

PVC MAIN SERVICE TAP DETAIL

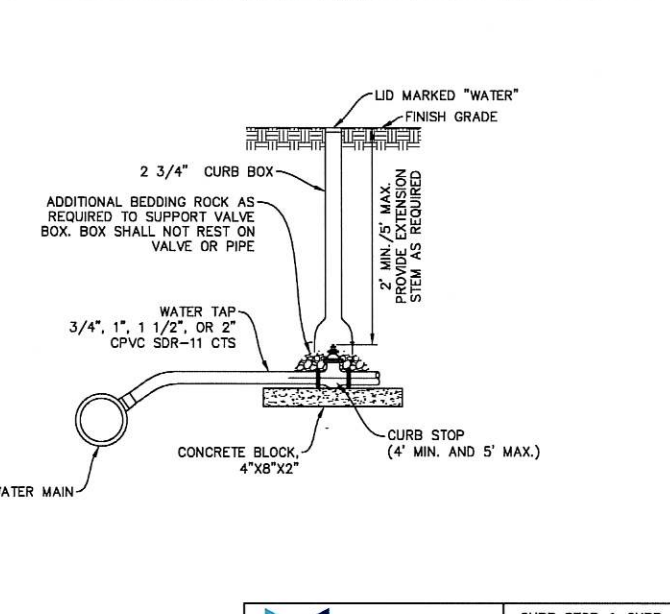
N.T.S. 8



**MCCARTY ASSOCIATES, L.L.C.**

METER INSTALLATION DETAIL

N.T.S. 9



**MCCARTY ASSOCIATES, L.L.C.**

CURB STOP & CURB BOX DETAIL

N.T.S. 10

**SANITARY LEGEND**

- EX. COMMUNICATIONS PEDESTAL
- EX. UTILITY POLE
- EX. GUY
- EX. SANITARY MANHOLE
- EX. PROPERTY LINE
- EX. OVERHEAD ELECTRIC AND COMMUNICATIONS
- EX. GAS
- EX. WATER MAIN
- EX. SANITARY SEWER
- PR. FIRE HYDRANT
- PR. WATER VALVE
- SAN-1 SANITARY STRUCTURE NUMBER
- PR. MANHOLE
- PR. CLEANOUT
- ST-1 PR. STORM STRUCTURE NUMBER
- PR. CATCH BASIN
- UE PR. UNDERGROUND ELECTRIC
- W PR. WATER MAIN
- WAT PR. WATER LATERAL
- SAN PR. SANITARY SEWER
- SAT PR. SANITARY LATERAL
- FM PR. FORCE MAIN
- ST PR. STORM SEWER
- DD PR. DOWNSPOUT DRAIN

REVISIONS

CONSTRUCTION DOCUMENTS FOR  
**AVANELLE CROSSING**

ARCHITECTS/ENGINEERS/SURVEYORS  
**MCCARTY ASSOCIATES, L.L.C.**

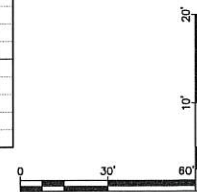
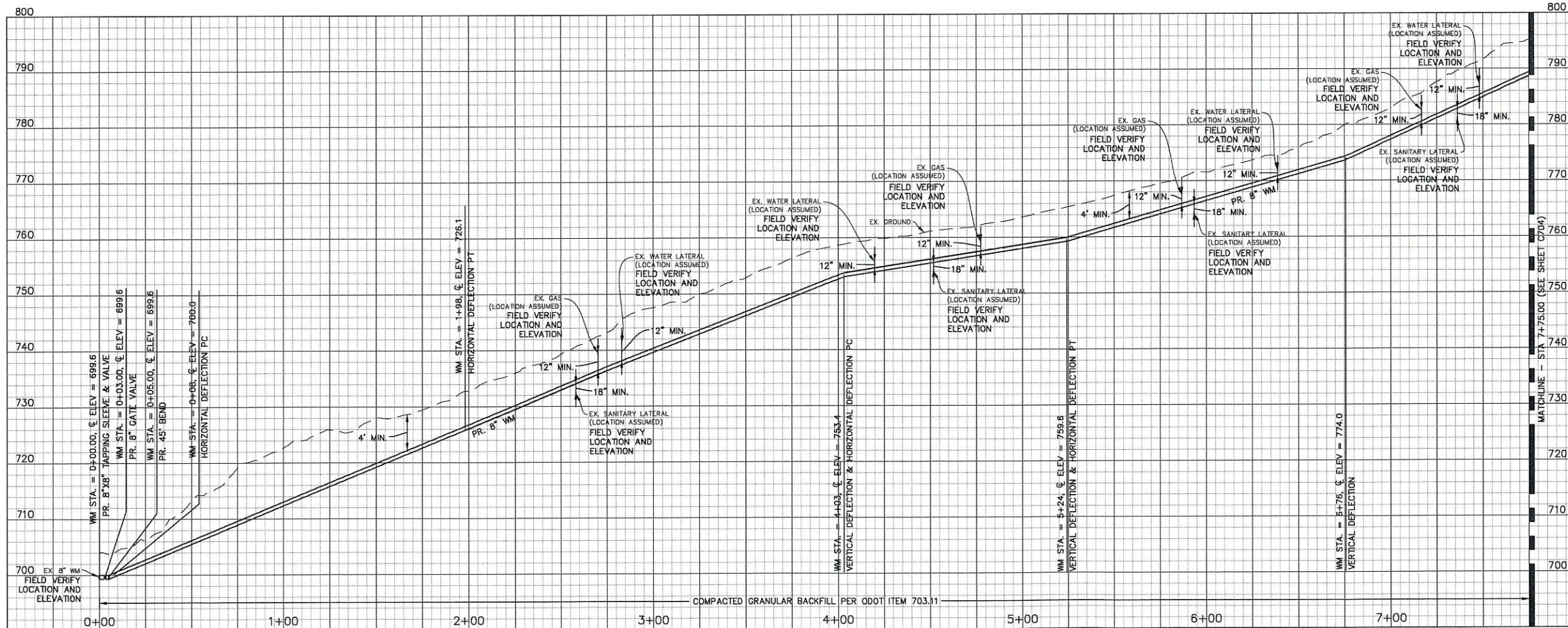
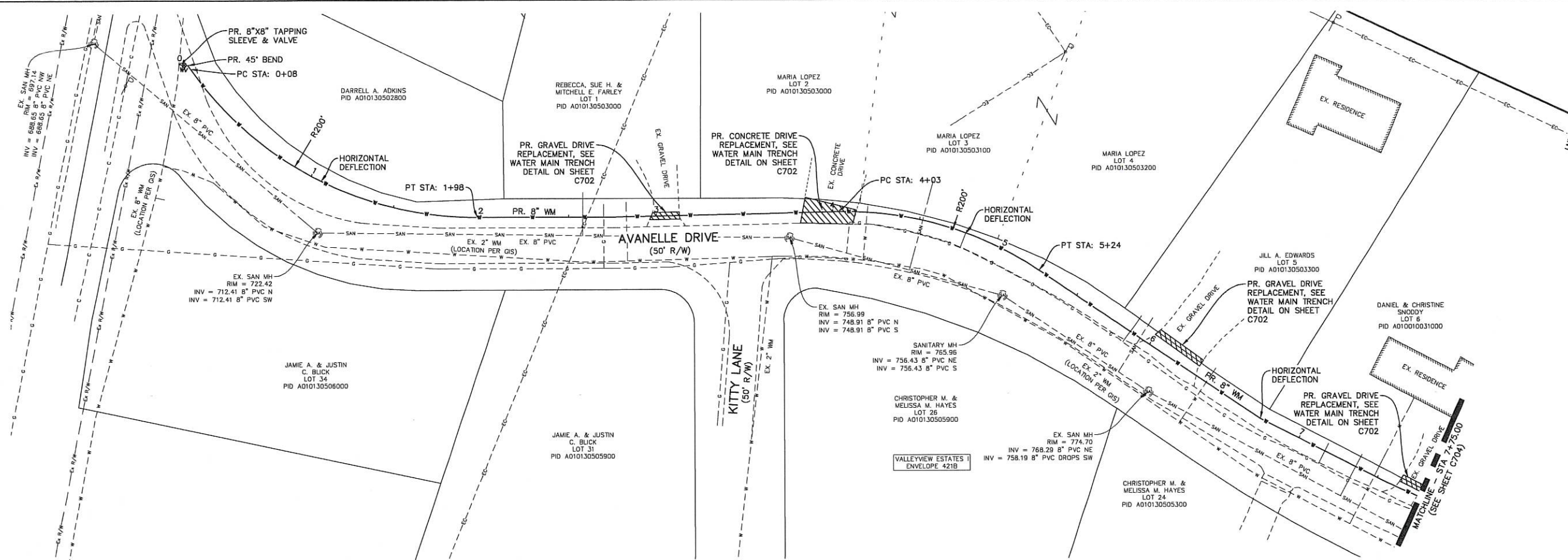
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6251 AVANELLE DRIVE  
ATHENS, OHIO 45701  
ATHENS TOWNSHIP, ATHENS COUNTY  
FARM LOT 53, SECTION 13, TOWN 9, RANGE 14

PROJECT NUMBER  
25-221

**WATER MAIN**  
NOTES & DETAILS

DRAWING NUMBER  
**C702**



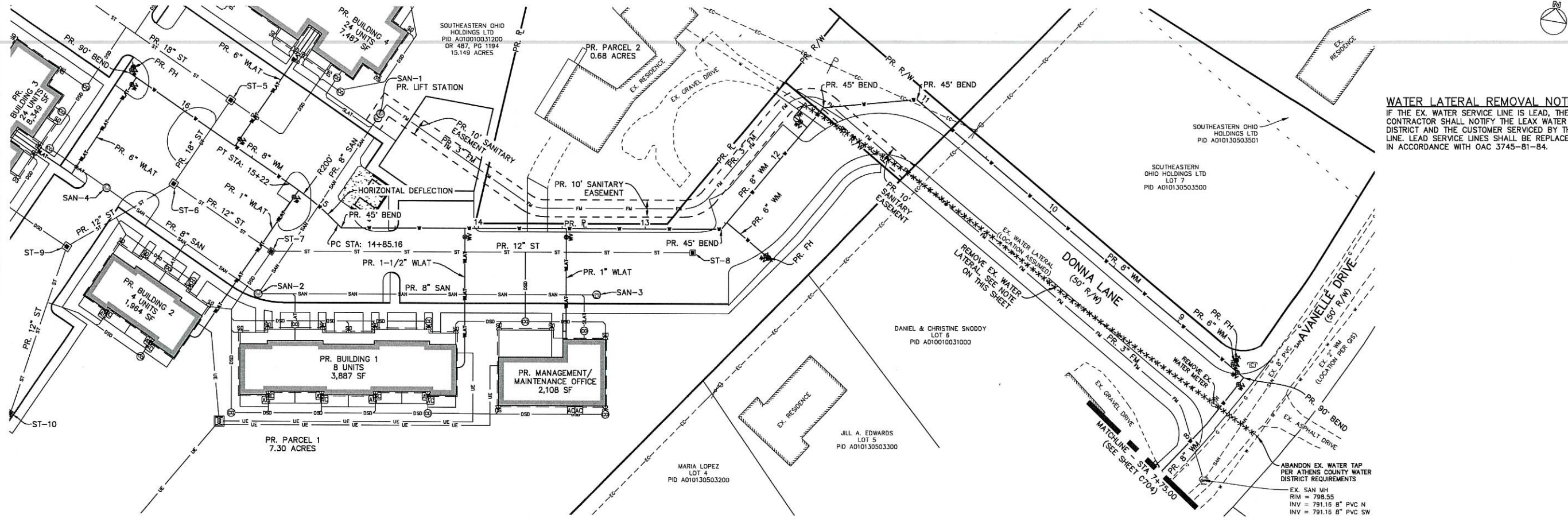
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CONSTRUCTION DOCUMENTS FOR  
**AVANELLE CROSSING**  
 6251 AVANELLE DRIVE  
 ATHENS, OHIO 45701  
 ATHENS TOWNSHIP, ATHENS COUNTY  
 FARM LOT 53, SECTION 13, TOWN 9, RANGE 14

PROJECT NUMBER	25-221
DRAWING NUMBER	C703

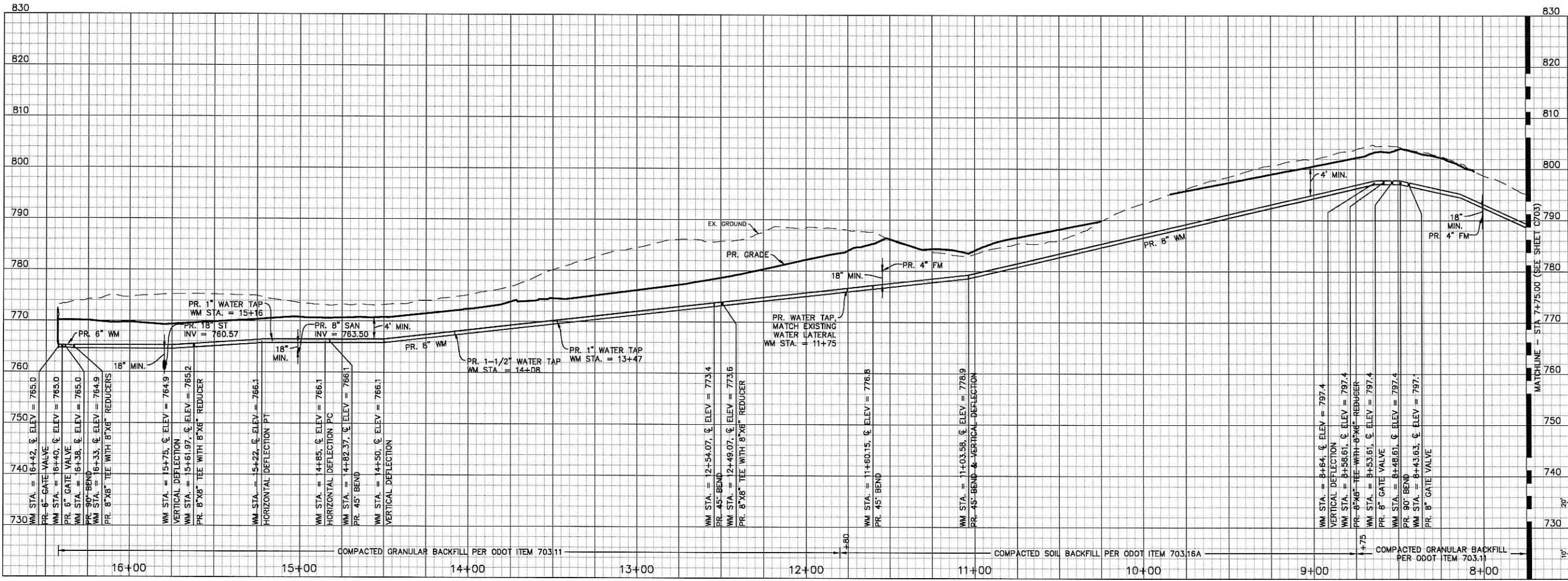


**WATER LATERAL REMOVAL NOTE**  
 IF THE EX. WATER SERVICE LINE IS LEAD, THE CONTRACTOR SHALL NOTIFY THE LEAK WATER DISTRICT AND THE CUSTOMER SERVICED BY THE LINE. LEAD SERVICE LINES SHALL BE REPLACED IN ACCORDANCE WITH OAC 3745-81-84.

REVISIONS

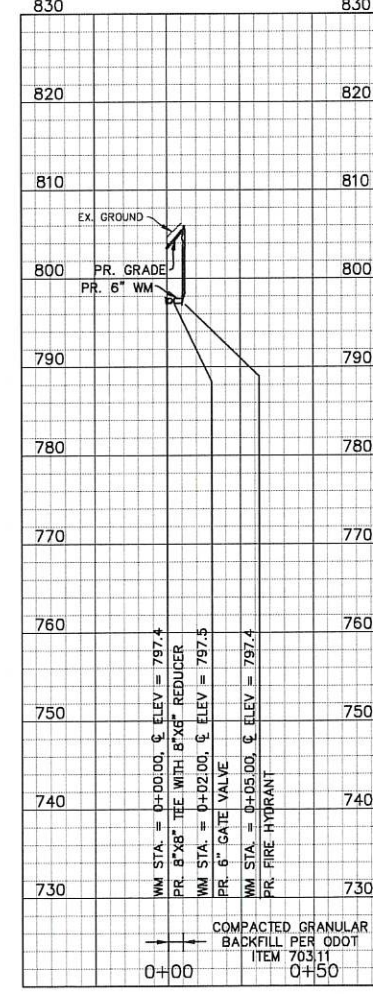
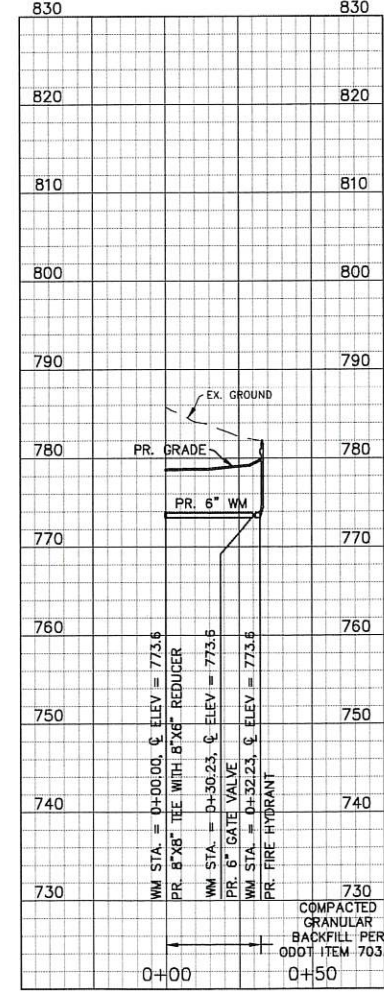
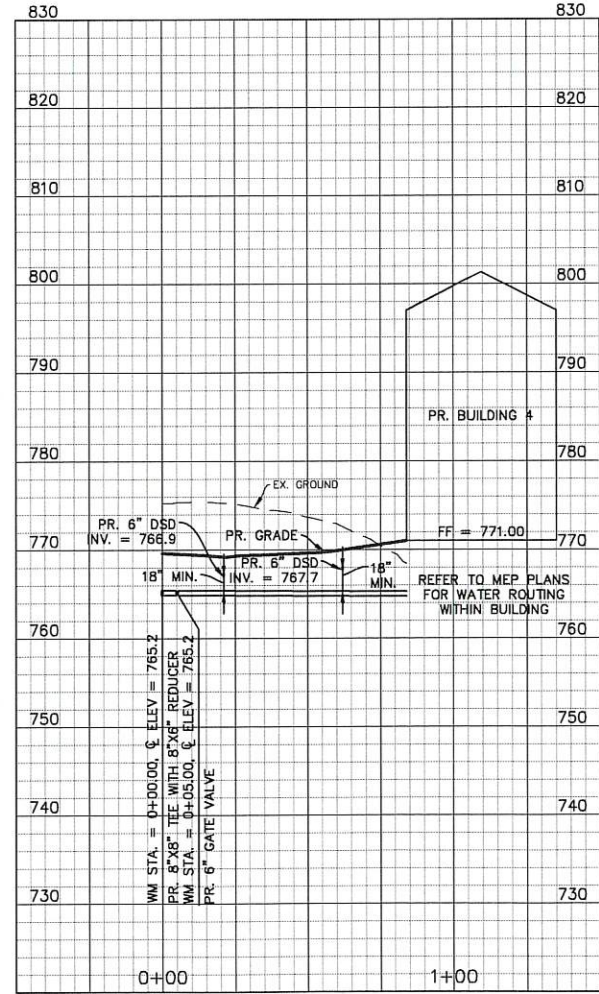
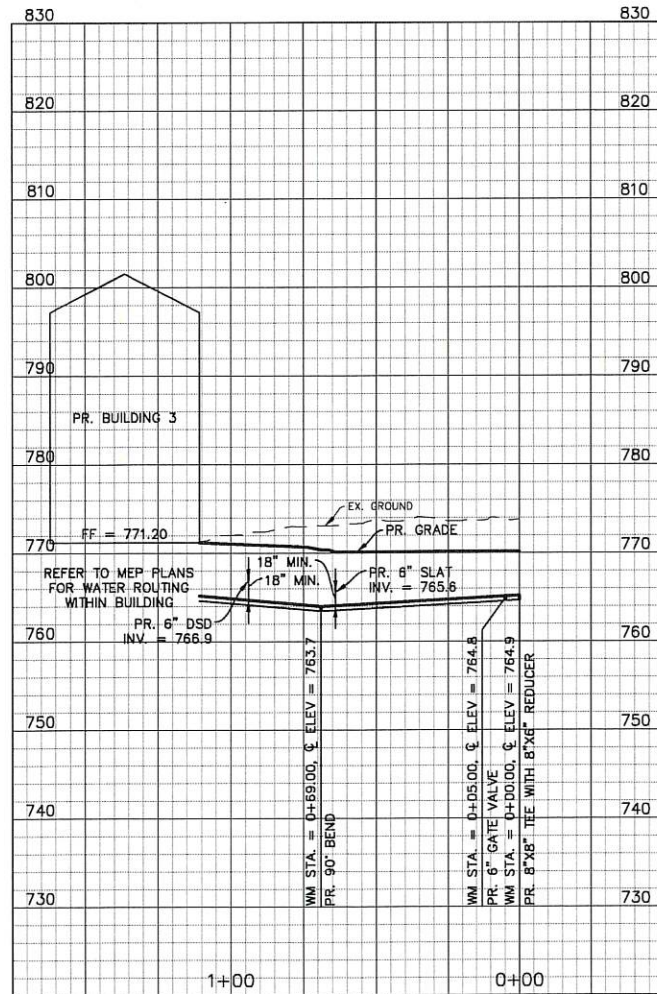
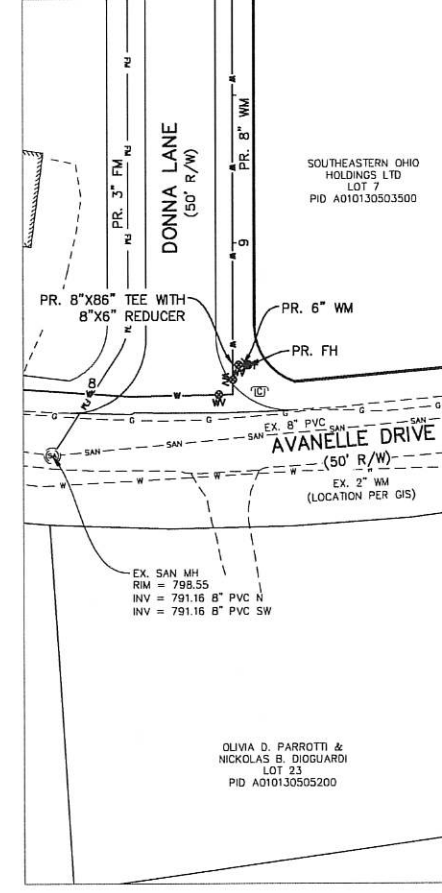
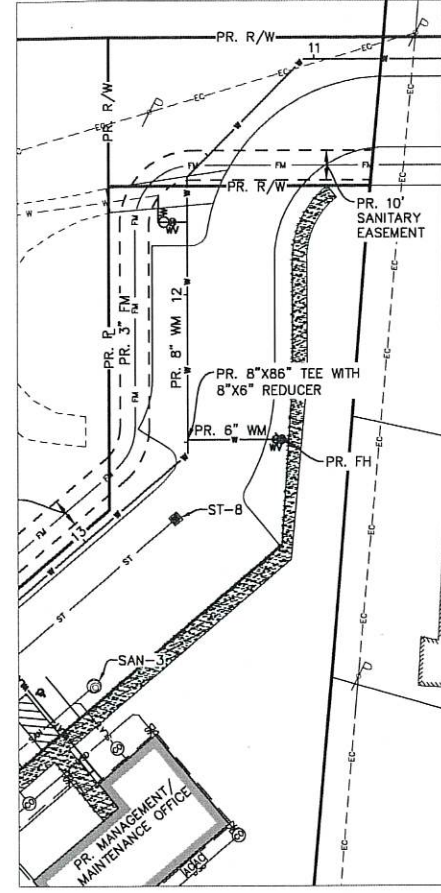
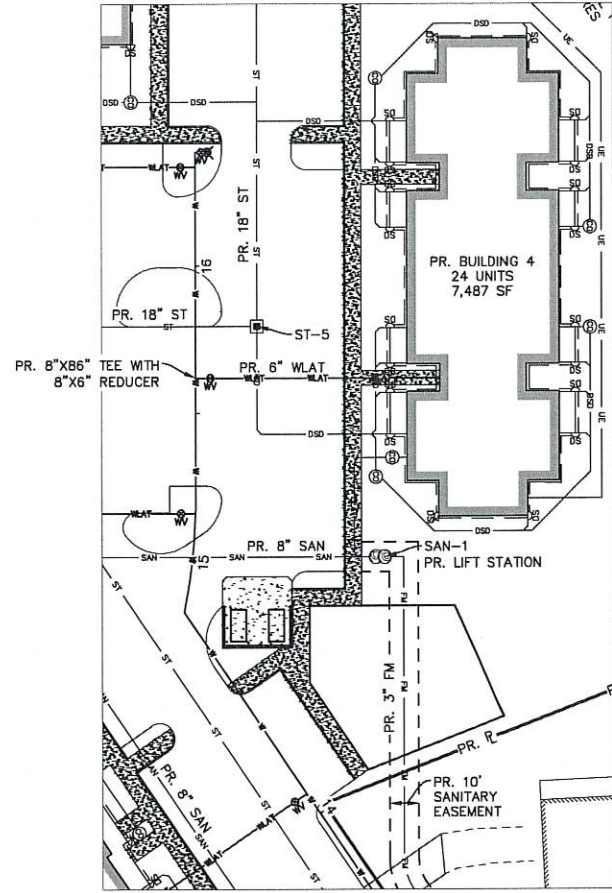
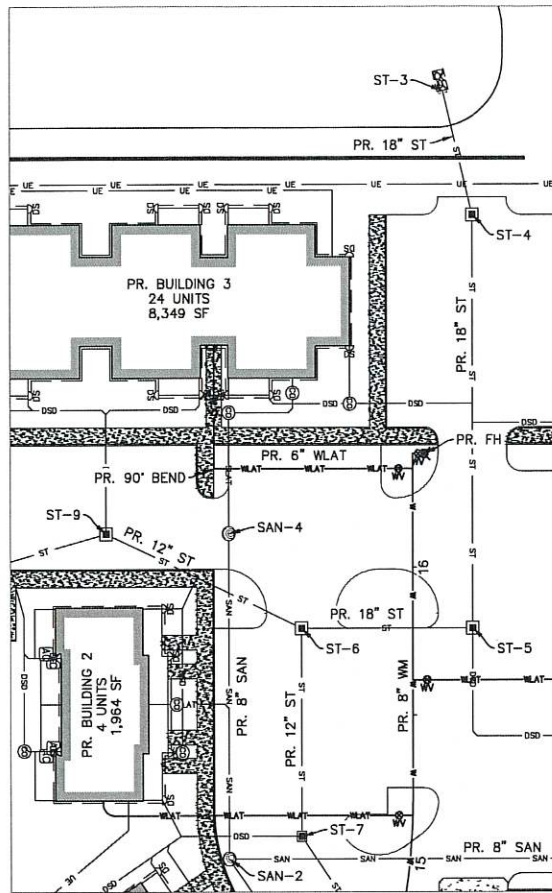
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CONSTRUCTION DOCUMENTS FOR  
**AVANELLE CROSSING**  
 6251 AVANELLE DRIVE  
 ATHENS, OHIO 45701  
 ATHENS TOWNSHIP, ATHENS COUNTY  
 FARM LOT 53, SECTION 13, TOWN 9, RANGE 14

PROJECT NUMBER  
 25-221  
**WATER MAIN  
 PLAN & PROFILE**  
 DRAWING NUMBER  
**C704**



REVISIONS

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CONSTRUCTION DOCUMENTS FOR  
**AVANELLE CROSSING**  
 6251 AVANELLE DRIVE  
 ATHENS, OHIO 45701  
 ATHENS TOWNSHIP, ATHENS COUNTY  
 FARM LOT 53, SECTION 13, TOWN 9, RANGE 14

PROJECT NUMBER  
 25-221  
**WATER MAIN  
 PLAN & PROFILE**  
 DRAWING NUMBER  
**C705**



**SWPPP LEGEND**

- PR. CATCH BASIN
- ST-1 PR. STORM STRUCTURE NUMBER
- - - EX. CONTOUR
- 760 PR. CONTOUR
- ST PR. STORM SEWER
- LIMITS OF DISTURBANCE
- INLET PROTECTION
- CONCRETE WASHOUT
- SILT FENCE
- CONSTRUCTION ENTRANCE
- SEEDING AND MULCHING
- AREA FOR STORAGE OR DISPOSAL OF SOLID, SANITARY, OR TOXIC WASTES (INCLUDING DUMPSTER AREAS) AND VEHICLE FUELING. LOCATION IS APPROXIMATE, CONTRACTOR TO DETERMINE FINAL PLACEMENT.

**KEYNOTES**

1. DANDY BAG INLET PROTECTION, SEE DETAIL ON SHEET C803
2. CONCRETE WASHOUT, CONTRACTOR TO DETERMINE FINAL PLACEMENT. SEE DETAIL ON SHEET C802
3. CONSTRUCTION ENTRANCE, SEE DETAIL ON SHEET C802
4. PROVIDE TEMPORARY FAIRCLOTH SKIMMER ON END OF 6" ST DURING CONSTRUCTION, SEE DETAIL ON SHEET C803
5. PROVIDE REQUIRED SEDIMENT STORAGE SHOWN ON SHEET C803

**STOCKPILE NOTE**

ANY WASTE OR EXCAVATED MATERIAL STORED ON SITE FOR MORE THAN 2 DAYS SHALL BE PROTECTED BY PERIMETER SILT FENCE. LOCATION OF STOCKPILE CAN BE PLACED ANYWHERE ON PROPERTY AS LONG AS ITS PROTECTED BY PERIMETER SILT FENCE.

**MAINTENANCE AND INSPECTION**

ALL TEMPORARY AND PERMANENT CONTROL PRACTICES SHALL BE MAINTAINED AND REPAIRED AS NEEDED TO ENSURE CONTINUED PERFORMANCE OF THEIR INTENDED FUNCTION. THE CONTRACTOR SHALL DESIGNATE A QUALIFIED PERSON WHO SHALL INSPECT ALL SEDIMENT CONTROLS ON THE SITE. THE SITE SHOULD BE INSPECTED AT LEAST ONCE EVERY SEVEN DAYS AND WITHIN 24 HOURS AFTER ANY RAINFALL EVENT GREATER THAN 0.5 INCHES IN 24 HOURS. EACH INSPECTION SHALL RESULT IN A REPORT INDICATING THE NAME OF THE SITE, THE CONDITION OF EROSION CONTROL MEASURES, WHETHER SAID MEASURES ARE FUNCTIONING AS INTENDED, NAME AND QUALIFICATIONS OF INSPECTING PERSONNEL. COPIES OF THE INSPECTION REPORT SHALL BE AVAILABLE TO OWNER, ENGINEER, AND PUBLIC AUTHORITIES.

**REVISIONS**

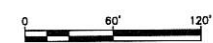
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CONSTRUCTION DOCUMENTS FOR  
**AVANELLE CROSSING**  
6251 AVANELLE DRIVE  
ATHENS, OHIO 45701  
ATHENS TOWNSHIP, ATHENS COUNTY  
FARM LOT 53, SECTION 13, TOWN 9, RANGE 14

PROJECT NUMBER	25-221
STORMWATER POLLUTION PREVENTION PLAN	
DRAWING NUMBER	C801



**SITE DESCRIPTION**

**PROJECT NAME AND LOCATION**

AVANELLE CROSSING  
6251 AVANELLE DRIVE  
ATHENS, OHIO 45701  
LATITUDE: 39.289000  
LONGITUDE: -82.122000

**OWNER/DEVELOPER**

SUNSET DEVELOPMENT  
682 NORTH HIGH STREET, SUITE 204  
COLUMBUS, OHIO 43215  
CONTACT: JAMES HUNLEY  
PHONE: (614) 220-8575  
EMAIL: JHUNLEY@SUNSETDEV.COM

**SITE CONTACT**

CONTACT: JAMES HUNLEY  
PHONE: (614) 220-8575  
EMAIL: JHUNLEY@SUNSETDEV.COM

**PROJECT DESCRIPTION**

THIS PROJECT CONSISTS OF THE CONSTRUCTION OF TWO MULTI-FAMILY BUILDINGS, TWO TOWNHOUSE BUILDINGS, AND A COMMUNITY BUILDING, INCLUDING ASSOCIATED PARKING, DRIVES, UTILITIES, AND STORMWATER MANAGEMENT. SOIL DISTURBING ACTIVITIES WILL INCLUDE: CLEARING AND GRUBBING; PERIMETER, AND OTHER EROSION AND SEDIMENT CONTROLS; GRADING; EXCAVATION AND EMBANKMENT, STORM SEWER, UTILITIES, ASPHALT AND CONCRETE PAVING AND FINAL PLANTING AND SEEDING.

**EXISTING SITE DESCRIPTION**

THE SUBJECT PROPERTY CONTAINS AN EXISTING SINGLE-FAMILY HOUSE WITH WOODED AREAS.

**SITE AREA**

THE SITE IS APPROXIMATELY 5.39 ACRES OF WHICH 5.39 ACRES WILL BE DISTURBED BY CONSTRUCTION ACTIVITIES.

**RUNOFF COEFFICIENT**

PRE-DEVELOPMENT RUNOFF COEFFICIENT - 0.07  
POST-DEVELOPMENT RUNOFF COEFFICIENT - 0.39

**SOIL TYPES**

G1C - GUERNSEY-UPSHUR COMPLEX, 8 TO 15 PERCENT SLOPES, HSG C  
G1D - GUERNSEY-UPSHUR COMPLEX, 15 TO 25 PERCENT SLOPES, HSG C  
K1L1AF - KINNICK-LINDSIDE SILT LOAMS, 0 TO 3 PERCENT SLOPES, HSG B  
U1C - UPSHUR SILTY CLAY LOAM, 8 TO 15 PERCENT SLOPES, HSG C  
W1mE - WESTMORELAND-UPSHUR COMPLEX, 25 TO 40 PERCENT SLOPES, HSG B

**SEQUENCE OF CONSTRUCTION OPERATIONS**

THE ORDER OF ACTIVITIES WILL BE AS FOLLOWS:

- 1. ESTABLISH A CONSTRUCTION ENTRANCE/EXIT
- 2. INSTALL PERIMETER CONTROLS
- 3. CLEAR AND GRUB
- 4. FULL SITE GRADING
- 5. PILE TOPSOIL WITHIN SILT FENCE PERIMETER
- 6. INSTALL DETENTION BASIN AND OUTLET CONTROL STRUCTURE
- 7. INSTALL PERMANENT STORM SEWER AND INLET PROTECTION
- 8. INSTALL REMAINING UTILITIES
- 9. CONSTRUCT CURBS, PAVEMENT, SIDEWALKS, AND BUILDING
- 10. FINAL GRADING AND INSTALL PERMANENT SEEDING
- 11. REMOVE PERIMETER CONTROLS
- 12. INSPECT AND REMOVE ANY ACCUMULATED SEDIMENT FROM THE BASIN.

**NAME OF RECEIVING SURFACE WATER BODY**

UNNAMED TRIBUTARY TO MARGARET CREEK

**GENERAL NOTES**

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

ALL EROSION AND SEDIMENT CONTROL PRACTICES MUST MEET THE STANDARDS AND SPECIFICATIONS OF THE OHIO RAINWATER AND LAND DEVELOPMENT HANDBOOK (2006).

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

REGULAR INSPECTION AND MAINTENANCE WILL BE PROVIDED FOR ALL EROSION AND SEDIMENT CONTROL PRACTICES.

THE CONTRACTOR SHALL USE EROSION CONTROL MEASURES AS NECESSARY TO PREVENT SEDIMENT MOVEMENT INTO AREAS DESIGNATED AS WETLANDS.

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

ADDITIONAL EROSION AND SEDIMENT CONTROL BMP'S MAY BE REQUIRED AS IDENTIFIED BY THE SWPPP INSPECTOR.

SWPPP INSPECTOR: OWNER/CONTRACTOR SHALL SUBMIT INSPECTOR NAME AND RESUME

**EROSION AND SEDIMENT CONTROLS**

**STABILIZATION PRACTICES**

TEMPORARY STABILIZATION: TOP SOIL STOCK PILES AND DISTURBED PORTIONS OF THE SITE WHERE CONSTRUCTION ACTIVITY TEMPORARILY CEASES FOR OVER 14 DAYS WILL BE STABILIZED WITH TEMPORARY SEED AND MULCH NO LATER THAN 7 DAYS OR WITHIN 2 DAYS FOR AREAS WITHIN 50 FEET OF A STREAM. THE TEMPORARY SEED SHALL BE APPLIED AS PER THE TEMPORARY SEEDING SPECIFICATIONS. AREAS OF THE SITE WHICH ARE TO BE PAVED WILL BE TEMPORARILY STABILIZED BY APPLYING GEOTEXTILE AND STONE SUB-BASE UNTIL ASPHALT PAVEMENT CAN BE APPLIED.

PERMANENT STABILIZATION: DISTURBED PORTIONS OF THE SITE WHERE CONSTRUCTION ACTIVITIES PERMANENTLY CEASES SHALL BE STABILIZED WITH PERMANENT SEED NO LATER THAN 7 DAYS AFTER THE LAST CONSTRUCTION ACTIVITY OR WITHIN 2 DAYS FOR AREAS WITHIN 50 FEET OF A STREAM.

Table with columns for Stabilization Type and months J through D. Rows include Permanent Seeding, Dormant Seeding, Temporary Seeding, Sodding, and Mulching.

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

**STORMWATER MANAGEMENT**

STORMWATER DRAINAGE WILL BE PROVIDED THROUGH CATCH BASINS ROUTED TO AN EXTENDED WET DETENTION BASIN. THE BASIN UTILIZES AN OUTLET STRUCTURE TO RELEASE THE STORMWATER TO THE UNNAMED TRIBUTARY ULTIMATELY INTO PAINT CREEK.

Table with columns: WATER QUALITY VOLUME, REQUIRED, PROVIDED. Row: 6,537, 6,537

**OTHER CONTROLS**

**WASTE DISPOSAL**

ALL WASTE MATERIALS WILL BE COLLECTED AND STORED IN A SECURELY LIDDED METAL DUMPSTER RENTED FROM A LICENSED SOLID WASTE MANAGEMENT COMPANY. THE DUMPSTER WILL MEET ALL LOCAL, CITY AND STATE SOLID WASTE MANAGEMENT REGULATIONS. ALL TRASH AND CONSTRUCTION DEBRIS FROM THE SITE WILL BE DEPOSITED IN THE DUMPSTER. THE DUMPSTER WILL BE EMPTIED A MINIMUM OF TWICE PER WEEK OR MORE OFTEN IF NECESSARY, AND THE TRASH WILL BE HAULED OFF-SITE. NO CONSTRUCTION WASTE MATERIALS WILL BE BURIED ON-SITE. ALL PERSONNEL WILL BE INSTRUCTED REGARDING THE CORRECT PROCEDURE FOR WASTE DISPOSAL. NOTICES STATING THESE PRACTICES WILL BE POSTED IN THE OFFICE TRAILER. THE INDIVIDUAL WHO MANAGES THE DAY-TO-DAY SITE OPERATIONS WILL BE RESPONSIBLE FOR SEEING THAT THESE PROCEDURES ARE FOLLOWED. ALL CONSTRUCTION AND DEMOLITION DEBRIS (C&DD) WASTE WILL BE DISPOSED OF IN AN OHIO EPA APPROVED C&DD LANDFILL AS REQUIRED BY ORC 3714.

**HAZARDOUS WASTE**

ALL HAZARDOUS WASTE MATERIALS WILL BE DISPOSED OF IN THE MANNER SPECIFIED BY LOCAL OR STATE REGULATION OR BY THE MANUFACTURER. SITE PERSONNEL WILL BE INSTRUCTED IN THESE PRACTICES. THE INDIVIDUAL WHO MANAGES DAY-TO-DAY SITE OPERATIONS WILL BE RESPONSIBLE FOR SEEING THAT THESE PRACTICES ARE FOLLOWED.

**SANITARY WASTE**

ALL SANITARY WASTE WILL BE COLLECTED FROM THE PORTABLE UNITS A MINIMUM OF THREE TIMES PER WEEK BY A LICENSED SANITARY WASTE MANAGEMENT CONTRACTOR, AS REQUIRED BY LOCAL REGULATION.

**OFF-SITE VEHICLE TRACKING**

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

**DEWATERING ACTIVITIES**

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

**PROCESS WASTEWATER**

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

**TIMING OF CONTROLS/MEASURES**

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

**INVENTORY FOR POLLUTION PREVENTION PLAN**

Table with columns: CONSTRUCTION ENTRANCE, CONCRETE WASHOUT, SILT FENCE, TEMPORARY SEDIMENT BASIN, DANDY BAG, TEMPORARY SEEDING & MULCHING. Corresponding items: PERMANENT SEEDING & MULCHING, DANDY DEWATERING BAG.

**SPILL PREVENTION**

**MATERIAL MANAGEMENT PRACTICES**

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

GOOD HOUSEKEEPING: THESE GOOD HOUSEKEEPING PRACTICES WILL BE FOLLOWED ON-SITE DURING THE CONSTRUCTION PROJECT.

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

HAZARDOUS PRODUCTS: THESE PRACTICES ARE USED TO REDUCE THE RISKS ASSOCIATED WITH HAZARDOUS MATERIALS.

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

**PRODUCT SPECIFIC PRACTICES**

THE FOLLOWING PRODUCT SPECIFIC PRACTICES WILL BE FOLLOWED ON-SITE:

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

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

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

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

CONCRETE TRUCKS: CONCRETE TRUCKS WILL NOT BE ALLOWED TO WASH OUT OR DISCHARGE SURPLUS CONCRETE OR DRUM WASH WATER ON THE SITE.

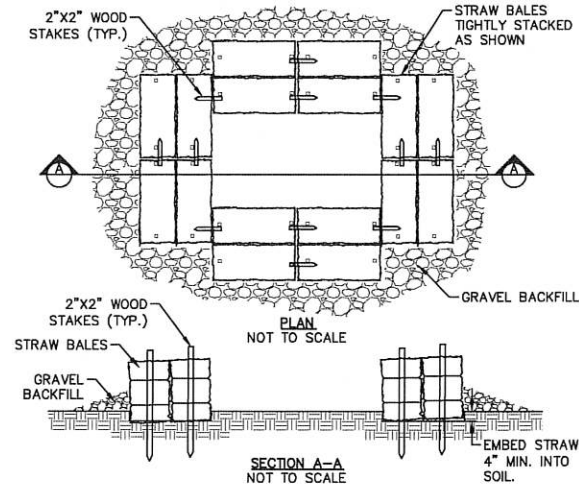
**DUST CONTROL**

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

THE FOLLOWING SPECIFICATIONS FOR DUST CONTROL SHALL BE FOLLOWED ON-SITE:

- 1. 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.
  - 2. 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.
  - 3. SPRAY-ON ADHESIVES: APPLY ADHESIVE ACCORDING TO THE FOLLOWING TABLE OR MANUFACTURERS' INSTRUCTIONS.
- | ADHESIVE                                     | WATER DILUTION (ADHESIVE:WATER) | NOZZLE TYPE | APPLICATION RATE GAL./AC. |
|--|---------------------------------|-------------|---------------------------|
| LATEX EMULSION                               | 12.5:1                          | FINE        | 235                       |
| RESIN IN WATER ACRYLIC EMULSION (NO-TRAFFIC) | 4:1                             | FINE        | 300                       |
| ACRYLIC EMULSION (NO-TRAFFIC)                | 7:1                             | COARSE      | 450                       |
| ACRYLIC EMULSION (TRAFFIC)                   | 3.5:1                           | COARSE      | 350                       |
- 4. STONE: GRADED ROADWAYS AND OTHER SUITABLE AREAS WILL BE STABILIZED USING CRUSHED STONE OR COARSE GRAVEL AS SOON AS PRACTICABLE AFTER REACHING AN INTERIM OR FINAL GRADE. 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. CALCIUM CHLORIDE: THIS CHEMICAL MAY BE APPLIED BY MECHANICAL SPREADER AS LOOSE, DRY GRANULES OR FLAKES AT A RATE THAT KEEPS THE SURFACE MOIST BUT NOT SO HIGH AS TO CAUSE WATER POLLUTION OR PLANT DAMAGE. APPLICATION RATES SHOULD BE STRICTLY IN ACCORDANCE WITH SUPPLIERS' SPECIFIED RATES.
  - 7. OPERATION AND MAINTENANCE: WHEN TEMPORARY DUST CONTROL MEASURES ARE USED, REPETITIVE TREATMENT SHOULD BE APPLIED AS NEEDED TO ACCOMPLISH CONTROL.
  - 8. STREET CLEANING: PAVED AREAS THAT HAVE ACCUMULATED SEDIMENT FROM CONSTRUCTION SHOULD BE CLEANED DAILY, OR AS NEEDED, UTILIZING A STREET SWEEPER OR BUCKET - TYPE ENDLOADER OR SCRAPER.

**CONCRETE WASHOUT**



**CONSTRUCTION SPECIFICATIONS:**

- 1. THE RESIDUE OR CONTENTS OF ALL CONCRETE MIXERS, DUMP TRUCKS, OTHER CONVEYANCE EQUIPMENT AND FINISHING TOOLS SHALL BE WASHED INTO CONCRETE CLEAN-OUT STRUCTURES CONSISTING OF A STRAW BALE BARRIER WITH GRAVEL BACKFILL. THE LENGTH AND WIDTH OF THESE STRUCTURES SHALL BE AS DETERMINED BY THE CONTRACTOR TO FACILITATE THE PARTICULAR EQUIPMENT USED. THESE STRUCTURES SHALL BE CONSTRUCTED ON LEVEL GROUND AT LEAST 100' FROM THE NEAREST WATERCOURSE, DRAINAGE SWALE OR INLET. AT NO TIME SHALL THE STRUCTURE BE ALLOWED TO BE MORE THAN 50% FULL. THE CONTRACTOR SHALL MAINTAIN THESE PONDS UNTIL ALL CONCRETE PLACEMENT IS COMPLETE FOR THE PROJECT.
- 2. EMBED THE STRAW BALES 4" INTO THE SOIL. PROVIDE TWO ROWS OF BALES, AS SHOWN ON THE DETAIL, WITH ENDS AND CORNERS TIGHTLY ABUTTING. ORIENT THE STRAW BALES LENGTHWISE WITH BINDINGS AROUND THE SIDES OF THE BALES SO THE WIRE DOES NOT CONTACT THE SOIL. DRIVE 2\"x2\" WOOD STAKES THROUGH EACH BALE, TO SECURELY ANCHOR THE BALE AND CONNECT ADJACENT BALES. GRAVEL BACKFILL SHALL BE PROVIDED AND TAMPED AROUND THE OUTSIDE PERIMETER OF THE BALES TO PREVENT EROSION AND FLOW AROUND THE BALES.
- 3. THE INTENT OF THESE STRUCTURES IS TO COLLECT ALL CONCRETE WASH OUT WATER AND ALLOW IT TO DRY TO A SOLID MATERIAL. AFTER DRYING, THE SOLID MATERIAL CAN BE REMOVED WITH A LOADER OR EXCAVATOR FOR PROPER DISPOSAL. WASH OUT WILL NOT BE PERMITTED IN ANY OTHER AREAS.
- 4. USE THE MINIMUM AMOUNT OF WATER TO WASH THE VEHICLES AND EQUIPMENT. NEVER DISPOSE OF WASH OUT INTO THE STREET, STORM INLET, DRAINAGE SWALE OR WATERCOURSE. DISPOSE OF SMALL AMOUNTS OF EXCESS DRY CONCRETE, GROUT AND MORTAR IN THE TRASH. ANY SOAPS THAT ARE UTILIZED SHALL BE PHOSPHATE-FREE AND BIODEGRADABLE.
- 5. ADDITIONAL CONCRETE CLEAN-OUT STRUCTURES SHALL BE CONSTRUCTED WITHIN THE SPECIFIED AREA AS NEEDED BASED UPON THE VOLUME OF WASH OUT GENERATED DAILY.

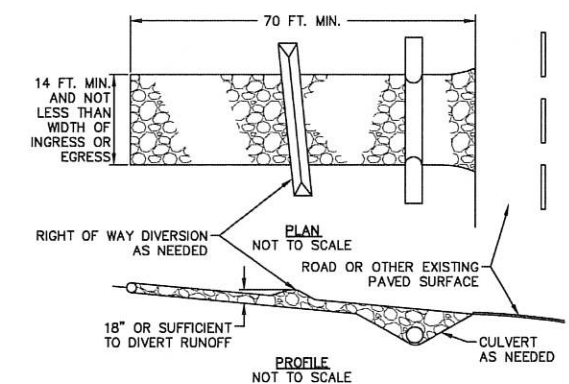
**SPILL CONTROL PRACTICES**

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

- 1. ALL SPILLS SHALL BE CLEANED UP IMMEDIATELY AFTER DISCOVERY. MANUFACTURERS' RECOMMENDED METHODS FOR SPILL CLEANUP POSTED AND SITE PERSONNEL WILL BE MADE AWARE OF THE PROCEDURES AND THE LOCATION OF THE INFORMATION AND CLEANUP SUPPLIES.
- 2. MATERIALS AND EQUIPMENT NECESSARY FOR SPILL CLEANUP WILL BE KEPT IN THE MATERIAL STORAGE AREA ON-SITE. EQUIPMENT AND MATERIALS WILL INCLUDE BUT NOT BE LIMITED TO BROOMS, DUST PANS, MOPS, RAGS, GLOVES, GOGGLES, KITTY LITTER, SAND, SAWDUST, AND PLASTIC AND METAL TRASH CONTAINERS SPECIFICALLY FOR THIS PURPOSE.
- 3. THE SPILL AREA WILL BE KEPT WELL VENTILATED AND PERSONNEL WILL WEAR APPROPRIATE PROTECTIVE CLOTHING TO PREVENT INJURY FROM CONTACT WITH A HAZARDOUS SUBSTANCE.
- 4. SPILLS OF TOXIC OR HAZARDOUS MATERIAL WILL BE REPORTED TO THE APPROPRIATE STATE OR LOCAL GOVERNMENT AGENCY, REGARDLESS OF THE SIZE. SPILLS OF 25 OR MORE GALLONS OF PETROLEUM WASTE MUST BE REPORTED TO OHIO EPA (1-800-282-9378), THE LOCAL FIRE DEPARTMENT, AND THE LOCAL EMERGENCY PLANNING COMMITTEE WITHIN 30 MINUTES OF THE SPILL.
- 5. SPILLS CONTAMINATED BY PETROLEUM OR OTHER CHEMICAL SPILLS MUST BE TREATED/DISPOSED AT AN OHIO EPA APPROVED SOLID WASTE MANAGEMENT FACILITY OR HAZARDOUS WASTE TREATMENT, STORAGE OR DISPOSAL FACILITY (TSDF).
- 6. THE SPILL PREVENTION PLAN WILL BE ADJUSTED TO INCLUDE MEASURES TO PREVENT THIS TYPE OF SPILL FROM REOCCURRING AND HOW TO CLEAN UP THE SPILL IF THERE IS ANOTHER ONE. A DESCRIPTION OF THE SPILL, WHAT CAUSED IT, AND THE CLEANUP MEASURES WILL ALSO BE INCLUDED.
- 7. THE SITE SUPERINTENDENT RESPONSIBLE FOR THE DAY-TO-DAY SITE OPERATIONS, WILL BE THE SPILL PREVENTION AND CLEANUP COORDINATOR. THEY WILL DESIGNATE SITE PERSONNEL WHO WILL RECEIVE SPILL PREVENTION AND CLEANUP TRAINING. THESE INDIVIDUALS WILL EACH BECOME RESPONSIBLE FOR A PARTICULAR PHASE OF PREVENTION AND CLEANUP. THE NAMES OF RESPONSIBLE SPILL PERSONNEL WILL BE POSTED IN THE MATERIAL STORAGE AREA AND IN THE OFFICE TRAILER ON-SITE.

**CONSTRUCTION ENTRANCE**

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.



**CONSTRUCTION SPECIFICATIONS:**

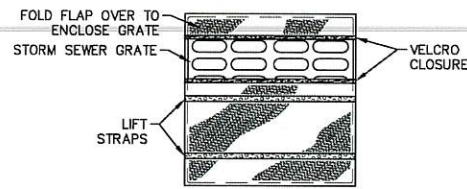
- 1. STONE SIZE: ODOT #2 (1.5-2.5 INCH) STONE SHALL BE USED, OR RECYCLED CONCRETE EQUIVALENT.
- 2. LENGTH: THE CONSTRUCTION ENTRANCE SHALL BE AS LONG AS REQUIRED TO STABILIZE HIGH TRAFFIC AREAS BUT NOT LESS THAN 70 FT.
- 3. THICKNESS: THE STONE LAYER SHALL BE AT LEAST 6 INCHES THICK FOR LIGHT DUTY ENTRANCES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

Table: GEOTEXTILE SPECIFICATION FOR CONSTRUCTION ENTRANCE. Columns: MINIMUM TENSILE STRENGTH (200 LBS.), MINIMUM PUNCTURE STRENGTH (80 PSI), MINIMUM TEAR STRENGTH (50 LBS.), MINIMUM BURST STRENGTH (320 PSI), MINIMUM ELONGATION (20%), EQUIVALENT OPENING SIZE (<0.6 MM.), PERMITTIVITY (1X10^-3 CM/SEC).

- 6. TIMING: THE CONSTRUCTION ENTRANCE SHALL BE INSTALLED AS SOON AS IS PRACTICABLE BEFORE MAJOR GRADING ACTIVITIES.
- 7. CULVERT: A PIPE OR CULVERT SHALL BE CONSTRUCTED UNDER THE ENTRANCE IF NEEDED TO PREVENT SURFACE WATER FROM FLOWING ACROSS THE ENTRANCE OR TO PREVENT RUNOFF FROM BEING DIRECTED OUT ONTO PAVED SURFACES.
- 8. WATER BAR: A WATER BAR SHALL BE CONSTRUCTED AS PART OF THE CONSTRUCTION ENTRANCE IF NEEDED TO PREVENT SURFACE RUNOFF FROM FLOWING THE LENGTH OF THE CONSTRUCTION ENTRANCE AND OUT ONTO PAVED SURFACES.
- 9. MAINTENANCE: TOP DRESSING OF ADDITIONAL STONE SHALL BE APPLIED AS CONDITIONS DEMAND. MUD SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC ROADS, OR ANY SURFACE WHERE RUNOFF IS NOT CHECKED BY SEDIMENT CONTROLS, SHALL BE REMOVED IMMEDIATELY. REMOVAL SHALL BE ACCOMPLISHED BY SCRAPING OR SWEEPING.
- 10. VEHICLES: CONSTRUCTION ENTRANCES SHALL NOT BE RELIED UPON TO REMOVE MUD FROM VEHICLES AND PREVENT OFF-SITE TRACKING. VEHICLES THAT ENTER AND LEAVE THE CONSTRUCTION-SITE SHALL BE RESTRICTED FROM MUDDY AREAS.
- 11. REMOVAL: THE ENTRANCE SHALL REMAIN IN PLACE UNTIL THE DISTURBED AREA IS STABILIZED OR REPLACED WITH A PERMANENT ROADWAY OR ENTRANCE.

REVISIONS table, PROJECT NUMBER 25-221, STORMWATER POLLUTION PREVENTION PLAN, DRAWING NUMBER C802. Vertical text: CONSTRUCTION DOCUMENTS FOR AVANELLE CROSSING. Vertical text: MCCARTY ASSOCIATES, I.L.C. ARCHITECTS/ENGINEERS/SURVEYORS. 213 N. High St., Hillsboro, Oh 45133. 6251 AVANELLE DRIVE ATHENS, OHIO 45701 ATHENS TOWNSHIP, ATHENS COUNTY FARM LOT 53, SECTION 13, TOWN 9, RANGE 14. Page 38 of 57

**INLET PROJECTION - DANDY BAG®**



**INSTALLATION**

1. PLACE THE EMPTY DANDY BAG OVER THE GRATE AS THE GRATE STANDS ON END. PULL UP SLACK.
2. TUCK THE ENCLOSURE FLAP INSIDE TO COMPLETELY ENCLOSE THE GRATE.
3. HOLDING THE LIFT STRAPS, INSERT THE GRATE INTO THE INLET BEING CAREFUL NOT TO DAMAGE THE DANDY BAG UNIT.

**MAINTENANCE**

1. THE CONTRACTOR SHALL REMOVE ALL ACCUMULATED SEDIMENT AND DEBRIS FROM SURFACE AND VICINITY OF UNIT AFTER EACH RAIN EVENT OR AS DIRECTED BY ENGINEER/INSPECTOR. DISPOSE OF UNIT NO LONGER IN USE AT AN APPROPRIATE RECYCLING OR SOLID WASTE FACILITY.

**TEMPORARY SEEDING**

**CONSTRUCTION SPECIFICATIONS**

TEMPORARY SEEDING SPECIES SELECTION			
SEEDING DATES	SPECIES	LB./1000 FT <sup>2</sup>	LB./ACRE
MARCH 1 TO AUGUST 15	OATS	3	128 (4 BU.)
	TALL FESCUE	1	40
	ANNUAL RYEGRASS	1	40
	PERENNIAL RYEGRASS	1	40
	TALL FESCUE	1	40
	ANNUAL RYEGRASS	1	40
	ANNUAL RYEGRASS	1.25	55
	PERENNIAL RYEGRASS	3.25	142
	CREeping RED FESCUE	0.4	17
	KENTUCKY BLUEGRASS	0.4	17
AUGUST 16 TO NOVEMBER 1	RYE	3	112 (2 BU.)
	TALL FESCUE	1	40
	ANNUAL RYEGRASS	1	40
	WHEAT	3	120 (2 BU.)
	TALL FESCUE	1	40
	ANNUAL RYEGRASS	1	40
	PERENNIAL RYE	1	40
	TALL FESCUE	1	40
	ANNUAL RYEGRASS	1	40
	ANNUAL RYEGRASS	1.25	55
PERENNIAL RYEGRASS	3.25	142	
CREeping RED FESCUE	0.4	17	
KENTUCKY BLUEGRASS	0.4	17	
NOVEMBER 1 TO FEB. 28 USE MULCH ONLY OR DORMANT SEEDING			

- NOTE: OTHER APPROVED SEED SPECIES MAY BE SUBSTITUTED.
1. 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.
  2. TEMPORARY SEED SHALL BE APPLIED BETWEEN CONSTRUCTION OPERATIONS ON SOIL THAT WILL NOT BE GRADED OR REWORKED FOR 21 DAYS OR GREATER. THESE IDLE AREAS SHALL BE SEEDDED WITHIN 7 DAYS AFTER GRADING.
  3. THE SEEDBED SHOULD BE PULVERIZED AND LOOSE TO ENSURE THE SUCCESS OF ESTABLISHING VEGETATION. TEMPORARY SEEDING SHALL NOT BE POSTPONED IF IDEAL SEEDBED PREPARATION IS NOT POSSIBLE.
  4. SOIL AMENDMENTS--TEMPORARY VEGETATION SEEDING RATE SHALL ESTABLISH ADEQUATE STANDS OF VEGETATION WHICH MAY REQUIRE THE USE OF SOIL AMENDMENTS. BASE RATE FOR LIME AND FERTILIZER SHALL BE USED.
  5. 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**

1. 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. MATERIALS
  - STRAW: IF STRAW IS USED, IT SHALL BE UNROTTED SMALL-GRAIN STRAW APPLIED AT THE RATE OF 2 TONS PER ACRE OR 90 LB. PER 1,000 SQUARE FEET (TWO TO THREE BALES).
  - HYDROSEEDERS: IF WOOD-CELLULOSE FIBER IS USED, IT SHALL BE USED AT 2,000 LB. PER ACRE OR 46 LB. PER 1,000 SQUARE FEET.
  - OTHER: OTHER ACCEPTABLE MULCHES INCLUDE MULCH MATTINGS APPLIED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS OR WOOD CHIPS APPLIED AT 6 TONS PER ACRE.
3. STRAW MULCH SHALL BE ANCHORED IMMEDIATELY TO MINIMIZE LOSS BY WIND OR WATER. ANCHORING METHODS
  - 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.
  - MULCH NETTING: NETTINGS SHALL BE USED ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS. NETTING MAY BE NECESSARY TO HOLD MULCH IN PLACE IN AREAS OF CONCENTRATION RUNOFF AND ON CRITICAL SLOPES.
  - SYNTHETIC BINDERS: SYNTHETIC BINDERS SUCH AS ACRYLIC DLR (AGRI-TAC), DCA-70, PETROSET, TERRA TACK OR EQUIVALENT MAY BE USED AT RATES RECOMMENDED BY THE MANUFACTURER.
  - WOOD-CELLULOSE FIBER: WOOD-CELLULOSE FIBER BINDER SHALL BE APPLIED AT A NET DRY WEIGHT OF 750 LB. PER ACRE. THE WOOD-CELLULOSE FIBER SHALL BE MIXED WITH WATER, AND THE MIXTURE SHALL CONTAIN A MAXIMUM OF 50 LB. PER 100 GALLONS.

**PERMANENT SEEDING**

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

**SEEDBED PREPARATION**

1. 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.
2. FERTILIZER: FERTILIZER SHALL BE APPLIED AS RECOMMENDED BY A SOIL TEST. IN PLACE OF A SOIL TEST, FERTILIZER SHALL BE APPLIED AT A RATE OF 25 POUNDS PER 1,000-SQ. FT. OR 1000 POUNDS PER ACRE OF A 10-10-10 OR 12-12-12 ANALYSES.
3. 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 DATES AND SOIL CONDITIONS**

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.

**DORMANT SEEDINGS**

1. 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":
  - FROM OCTOBER 1 THROUGH NOVEMBER 20, PREPARE THE SEEDBED, ADD THE REQUIRED AMOUNTS OF LIME AND FERTILIZER, THEN MULCH AND ANCHOR. BEFORE MARCH 15, BROADCAST THE SELECTED SEED MIXTURE. INCREASE THE SEEDING RATES BY 50% FOR THIS TYPE OF SEEDING.
  - 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.
  - APPLY SEED UNIFORMLY WITH A CYCLONE SEEDER, DRILL, CULTIPACKER SEEDER, OR HYDROSEEDER (SLURRY MAY INCLUDE SEED AND FERTILIZER) ON A FIRM, MOIST SEEDBED.
  - 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.

**MULCHING**

1. MULCH MATERIAL SHALL BE APPLIED IMMEDIATELY AFTER SEEDING. DORMANT SEEDING SHALL BE MULCHED. 100% OF THE GROUND SURFACE SHALL BE COVERED WITH AN APPROVED MATERIAL.
2. MATERIALS
  - 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.
  - HYDROSEEDERS: IF WOOD CELLULOSE FIBER IS USED, IT SHALL BE APPLIED AT 2,000 LB./AC. OR 46 LB./1,000 SQ. FT.
  - 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.
  - 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'S 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 MANUFACTURER OR AT THE RATE OF 160 GALLONS PER ACRE.
  - SYNTHETIC BINDERS: SYNTHETIC BINDERS SUCH AS ACRYLIC DLR (AGRI-TAC), DCA-70, PETROSET, 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 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.

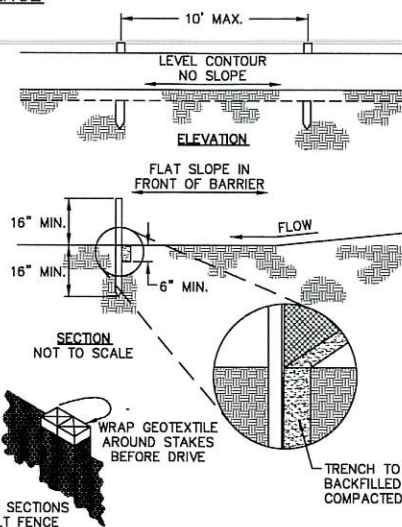
**IRRIGATION**

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 SEEDDED AREAS FROM EXCESSIVE RUNOFF.

PERMANENT SEEDING SPECIES SELECTION			
SEED MIX	SEEDING RATE		NOTES
	LB./1000 FT <sup>2</sup>	LB./ACRE	
GENERAL USE			
OATS	1 1/2 - 2	20-40	FOR CLOSE MOWING & WATERWAYS WITH <2.0 FT/SEC VELOCITY
TALL FESCUE	1 1/4 - 1 1/2	20-40	
ANNUAL RYEGRASS	1/2 - 1	40-50	
TALL FESCUE	1 - 1 1/4	40-50	
TURF-TYPE FESCUE	2 1/4	90	
STEEP BANKS OR CUT SLOPES			
TALL FESCUE	1 - 1 1/4	40-50	
CROWN VETCH	1/4 - 1/2	10-20	DO NOT SEED LATER THAN AUGUST
TALL FESCUE	1/2 - 3/4	20-30	
FLAT PEA	1/2 - 3/4	20-25	DO NOT SEED LATER THAN AUGUST
TALL FESCUE	1/2 - 3/4	20-30	
ROAD DITCHES AND SWALES			
TALL FESCUE	1 - 1 1/4	40-50	
TURF-TYPE FESCUE	2 1/4	90	
KENTUCKY BLUEGRASS	0.1	5	
LAWNS			
KENTUCKY BLUEGRASS	2	100-120	
PERENNIAL BLUEGRASS	2	100-120	
KENTUCKY BLUEGRASS	2	100-120	FOR SHADED AREAS
CREeping RED FESCUE	1 - 1 1/2		

NOTE: OTHER APPROVED SEED SPECIES MAY BE SUBSTITUTED.

**SILT FENCE**



**CONSTRUCTION SPECIFICATIONS**

1. SILT FENCE SHALL BE CONSTRUCTED BEFORE UPSLOPE LAND DISTURBANCE BEGINS.
2. ALL SILT FENCE SHALL BE PLACED AS CLOSE TO THE CONTOUR AS POSSIBLE SO THAT WATER WILL NOT CONCENTRATE AT LOW POINTS IN THE FENCE AND SO THAT SMALL SWALES OR DEPRESSIONS WHICH MAY CARRY SMALL CONCENTRATED FLOWS TO THE SILT FENCE ARE DISSIPATED ALONG ITS LENGTH.
3. ENDS OF THE SILT FENCES SHALL BE BROUGHT UPSLOPE SLIGHTLY SO THAT WATER PONDED BY THE SILT FENCE WILL BE PREVENTED FROM FLOWING AROUND THE ENDS.
4. SILT FENCE SHALL BE PLACED ON THE FLATTEST AREA AVAILABLE.
5. WHERE POSSIBLE, VEGETATION SHALL BE PRESERVED FOR 5 FEET (OR AS MUCH AS POSSIBLE) UPSLOPE FROM THE SILT FENCE. IF VEGETATION IS REMOVED, IT SHALL BE REESTABLISHED WITHIN 7 DAYS FROM THE INSTALLATION OF THE SILT FENCE.
6. THE HEIGHT OF THE SILT FENCE SHALL BE A MINIMUM OF 16 INCHES ABOVE THE ORIGINAL GROUND SURFACE.
7. THE SILT FENCE SHALL BE PLACED IN AN EXCAVATED OR SLICED TRENCH CUT A MINIMUM OF 6 INCHES DEEP. THE TRENCH SHALL BE MADE WITH A TRENCHER, CABLE LAYING MACHINE, SLICING MACHINE, OR OTHER SUITABLE DEVICE THAT WILL ENSURE AN ADEQUATELY UNIFORM TRENCH DEPTH.
8. THE SILT FENCE SHALL BE PLACED WITH THE STAKES ON THE DOWNSLOPE SIDE OF THE GEOTEXTILE AND SO THAT 8 INCHES OF GEOTEXTILE MUST BE BELOW THE GROUND SURFACE. EXCESS MATERIAL SHALL LAY ON THE BOTTOM OF THE 6 INCH DEEP TRENCH. THE TRENCH SHALL BE BACKFILLED AND COMPACTED ON BOTH SIDES OF THE FABRIC.
9. SEAMS BETWEEN SECTION OF SILT FENCE SHALL BE SPliced TOGETHER ONLY AT A SUPPORT POST WITH A MINIMUM 6 INCHES OVERLAP PRIOR TO DRIVING INTO THE GROUND. (SEE DETAILS)
10. MAINTENANCE: SILT FENCE SHALL ALLOW RUNOFF TO PASS ONLY AS DIFFUSE FLOW THROUGH THE GEOTEXTILE. IF RUNOFF OVERTOPS THE SILT FENCE, FLOWS UNDER OR AROUND THE ENDS, OR IN ANY OTHER WAY BECOMES A CONCENTRATED FLOW DISCHARGE, ONE OF THE FOLLOWING SHALL BE PERFORMED, AS APPROPRIATE: 1) THE LAYOUT OF THE SILT FENCE SHALL BE CHANGED; 2) ACCUMULATED SEDIMENT SHALL BE REMOVED; OR 3) OTHER PRACTICES SHALL BE INSTALLED. SILT FENCE SHALL BE INSPECTED AFTER EACH RAINFALL AND AT LEAST DAILY DURING A PROLONGED RAINFALL. THE LOCATION OF EXISTING SILT FENCE SHALL BE REVIEWED DAILY TO ENSURE ITS PROPER LOCATION AND EFFECTIVENESS. IF DAMAGED, THE SILT FENCE SHALL BE REPAIRED IMMEDIATELY.

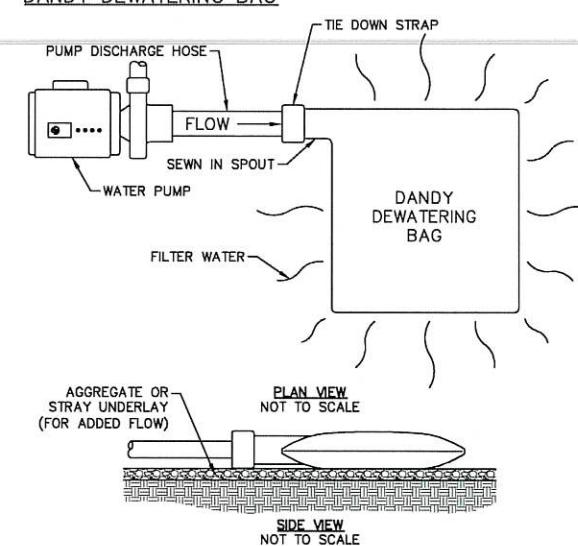
**CRITERIA FOR SILT FENCE MATERIALS**

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

FABRIC PROPERTIES	VALUES	TEST METHOD
MINIMUM TENSILE STRENGTH	120 LBS. (535 N)	ASTM D 4832
MAXIMUM ELONGATION AT 80 LBS	50%	ASTM D 4832
MINIMUM PUNCTURE STRENGTH	50 LBS (220 N)	ASTM D 4833
MINIMUM TEAR STRENGTH	40 LBS (180 N)	ASTM D 4533
APPARENT OPENING SIZE	≤0.84 MM	ASTM D4751
MINIMUM PERMITTIVITY	1X10 <sup>-2</sup> SEC <sup>-1</sup>	ASTM D 4491
UV EXPOSURE STRENGTH RETENTION	70%	ASTM G 4355

NOTE: THE USE OF STRAW WATTLE, OR FILTER SOCK, HAS BEEN PROVEN TO BE AN EFFECTIVE ESC BMP. STRAW WATTLES MAY BE SUBSTITUTED FOR SILT FENCE IN LINEAR INSTALLATIONS.

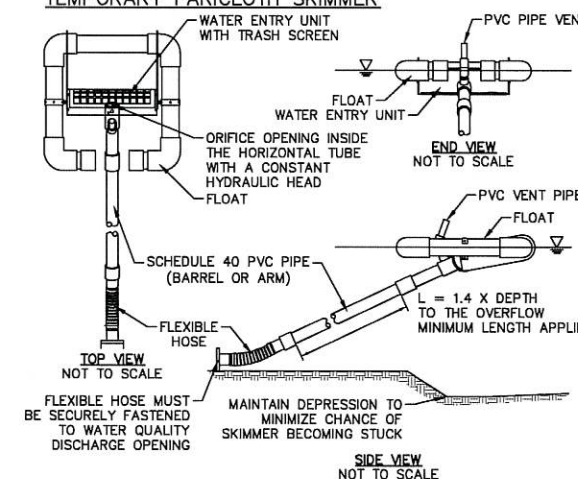
**DANDY DEWATERING BAG®**



**NOTE**

DISCHARGE HOSES USED DURING PUMPING ACTIVITIES SHALL BE FITTED WITH SEDIMENT BAGS THAT ARE PROPERLY SIZED PER MANUFACTURER'S RECOMMENDATIONS REGARDLESS OF WHAT OTHER SEDIMENT CONTROLS ARE IN PLACE FURTHER DOWNSTREAM. SEDIMENT BAGS MUST BE PROPERLY SECURED TO THE DISCHARGE HOSE AND PLACED OVER VEGETATED AREAS, WHERE FEASIBLE, DURING DISCHARGE. INSTALL AND MAINTAIN SYSTEM PER MANUFACTURER'S RECOMMENDATION.

**TEMPORARY FASCLOTH SKIMMER**



SKIMMER SPECIFICATIONS		
SKIMMER DIAMETER (INCHES)	ORIFICE PERCENTAGE	PVC PIPE LENGTH (FEET)
1.5	95%	5.8

**NOTES**

1. PROPER DESIGN MUST BE COMPLETED TO MINIMIZE PIPING AROUND DISCHARGE PIPE.
2. PROPER ORIFICE OPENING MUST BE SELECTED TO ENSURE POND DRAINS IN CORRECT AMOUNT OF TIME. MODIFICATIONS MAY BE REQUIRED IF FIELD CONDITIONS WARRANT A CHANGE.
3. EMBANKMENT MUST BE COMPACTED TO DESIGN SPECIFICATIONS.
4. EMERGENCY SPILLWAY MUST BE CORRECTLY SIZED AND EROSION PROTECTION INSTALLED.
5. EROSION PROTECTION MUST BE INSTALLED ALONG THE EMBANKMENT AND AT THE DISCHARGE END OF THE PIPE.
6. INSPECT SYSTEM REGULARLY TO ENSURE IT IS FUNCTIONING IN A CORRECT MANNER.
7. INSTALL SKIMMER PER MANUFACTURER'S RECOMMENDATIONS.
8. BARREL PIPE SHOULD BE 1.4 X DEPTH OF BASIN TO ENSURE PROPER FUNCTION.

**TEMPORARY SEDIMENT CONTROL**

TEMPORARY SEDIMENT BASIN SIZING	
DRAINAGE AREA	2.94 ACRES
DRAINAGE AREA DISTURBED	2.94 ACRES
DEWATERING VOLUME REQUIRED (1800 FT <sup>3</sup> /ACRE DRAINAGE AREA)	5,292 FT <sup>3</sup>
DEWATERING VOLUME PROVIDED	23,864 FT <sup>3</sup>
SEDIMENT STORAGE REQUIRED (1000 FT <sup>3</sup> /ACRE DISTURBED AREA)	2,940 FT <sup>3</sup>
SEDIMENT STORAGE PROVIDED	9,030 FT <sup>3</sup>

**NOTE**

CONTRACTOR MAY USE A FREESTANDING TEMPORARY RISER WITH TRASH RACK AND CONCRETE BASE AS APPROVED BY THE ENGINEER.

**REVISIONS**

NO.	DATE	DESCRIPTION

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**CONSTRUCTION DOCUMENTS FOR AVANELLE CROSSING**

6251 AVANELLE DRIVE  
 ATHENS, OHIO 45701  
 ATHENS TOWNSHIP, ATHENS COUNTY  
 FARM LOT 63, SECTION 13, TOWN 9, RANGE 14

PROJECT NUMBER  
25-221

**STORMWATER POLLUTION PREVENTION PLAN**

DRAWING NUMBER

C803





REVISIONS

**PRELIMINARY  
NOT FOR  
CONSTRUCTION**

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**CONSTRUCTION DOCUMENTS FOR  
AVANELLE CROSSING**

6251 AVANELLE DRIVE  
ATHENS, OHIO 45701  
ATHENS TOWNSHIP, ATHENS COUNTY

PROJECT NUMBER  
25-221

**SANITARY SEWER  
TRIBUTARY MAP**

DRAWING NUMBER  
**1 OF 1**



May 20, 2026

Athens County Sewer District  
36 North Plains Road  
The Plains, Ohio 45780

RE: Avanelle Crossing – Sanitary Sewer Design

Avanelle Crossing is located at 6251 Avanelle Drive in Athens Township, Athens County, Ohio. Sunset Development and Investment LLC is planning to construct two multi-family residential buildings, two townhome buildings, and a community building with associated parking, drives, open space, utilities, and stormwater management. The project will include a private sanitary sewer main extension which connects to a proposed lift station. The lift station will outlet to a proposed force main connecting to public sanitary sewer along Avanelle Drive.

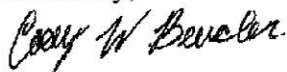
Sanitary sewer was designed utilizing the Recommended Standards for Wastewater Facilities, 2014 edition. The development will consist of 60 residential units (18 1-bedroom units, 37 2-bedroom units, and 5 3-bedroom units) and a community building (assumed 4 equivalent bedrooms). The site will be assumed to have a total of 111 bedrooms. The average daily flow was assumed to be 120 GPD per bedroom, required by Ohio Administrative Code Rule 3745-42-05. Peak flow was determined utilizing a runoff period of 16 hours, resulting in a peak factor of 5.0.

The required minimum sanitary sewer size is eight (8) inches with a minimum design slope of 0.45% and a Manning's n of 0.013. A minimum velocity of two (2) feet per second was maintained in the sanitary sewer. The sanitary sewer was determined to be less than 50% full with the flows from the proposed development.

The lift station will be a duplex submersible station with an integrated fiberglass wet well and dry well. The station will outlet through a 3" force main with a minimum velocity of two (2) feet per second. The design of the station was coordinated with StreamKey.

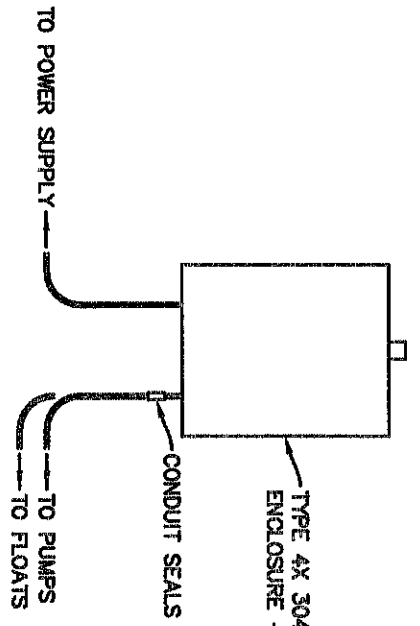
The Sanitary Sewer Tributary Map and Calculation Spreadsheet are provided in the exhibits.

Sincerely,



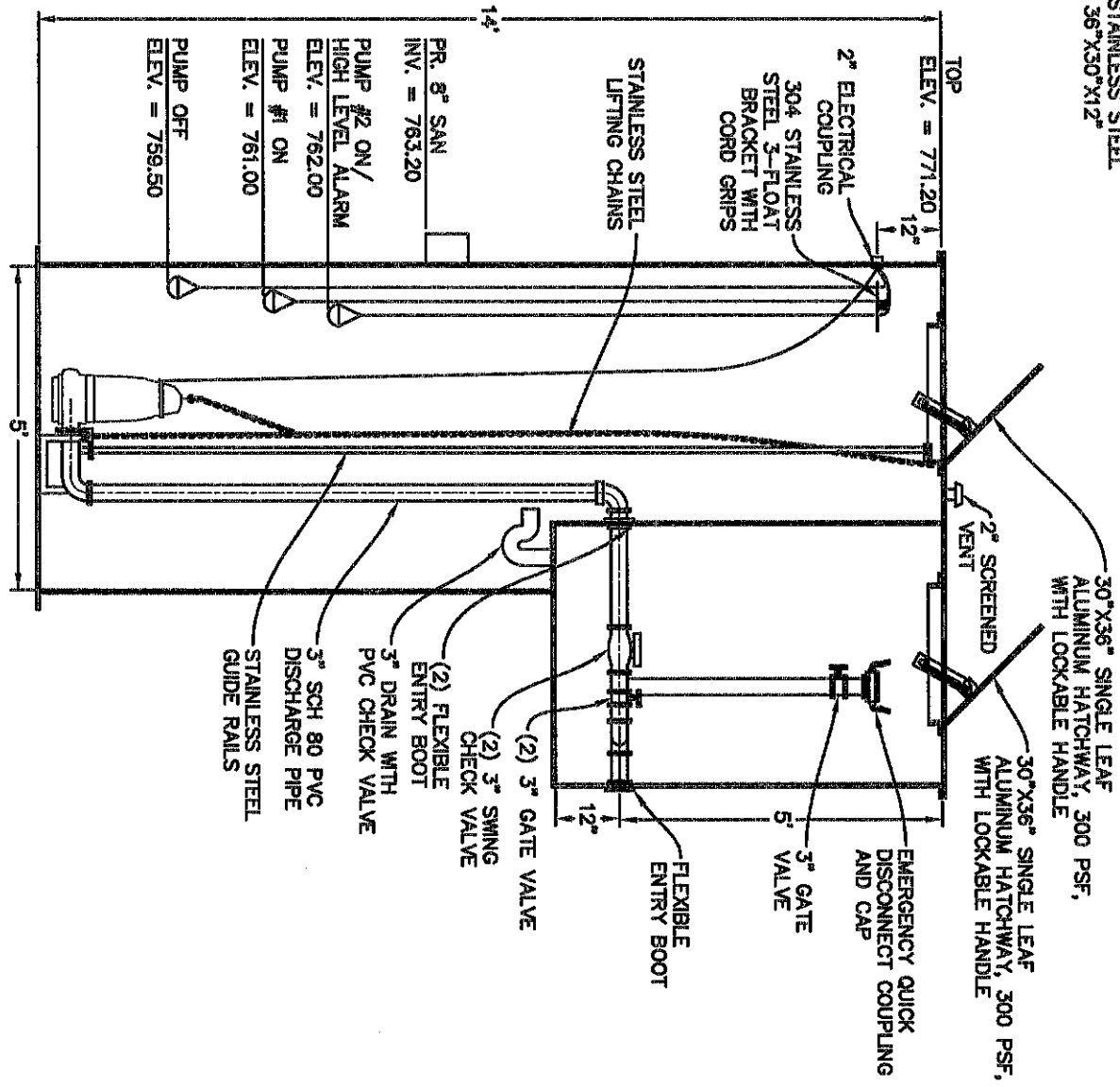
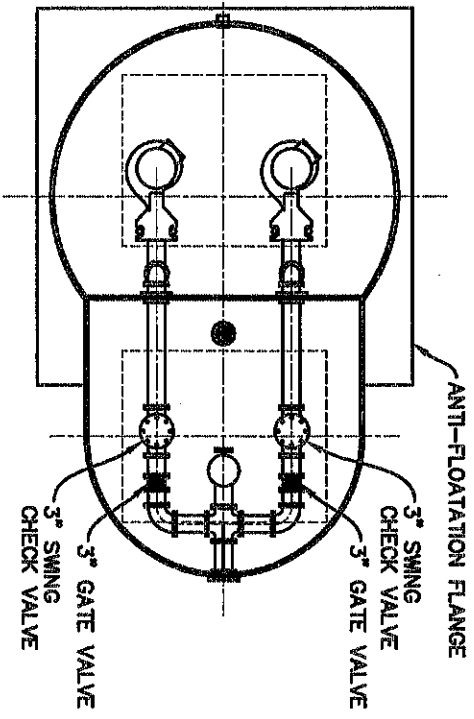
Cody Beucler  
McCarty Associates, LLC

## Exhibits



**LIFT STATION NOTES**

1. ALTERNATE LIFT STATION AND APPURTENANCES MAY BE USED AS APPROVED BY THE ENGINEER.
2. PUMPS SHALL BE PENTAIR MYERS VS30 SUBMERSIBLE GRINDER PUMP, OR APPROVED EQUAL, WITH A RATING OF 46 GPM AT 42 TDH.
3. CONTROL PANEL SHALL BE NEMA TYPE 4X STAINLESS STEEL ENCLOSURE. THE PANEL SHALL BE EQUIPPED WITH A FLASHING ALARM LIGHT AND HIGH LEVEL ALARM BUZZER. A GENERATOR RECEPTACLE SHALL BE PROVIDED TO ACCOMMODATE A PORTABLE GENERATOR FOR EMERGENCES.



**LIFT STATION DETAIL**  
NOT TO SCALE

SANITARY SEWER LOADING CALCULATIONS

PROJECT: 25-221  
 PROJECT NO Avanelle Crossing

DATE: 1/24/2025  
 CALC: GLS  
 CHK: CWB

LOCATION	POPULATION			SEWER LOADING								
	Use	Unit Amount	Measuring Unit	Flow per Unit (gpd)	Average Daily Flow (gpd) (3) x (5)	Run off Period (hrs)	Peaking Factor <small>3.33 x 24/(7)</small>	Peak Flow (gpd) <small>(6) x (8)</small>	Peak Flow (cfs)	Cumulative Ave. Flow (gdp)	Cumulative Peak Flow (gdp)	Cumulative Design-Flow (cfs)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
SAN-4	Residential	55	Bedrooms	120	6600	16	5.0	33000	0.051	6600	33000	0.051
SAN-2												
SAN-3	Com Bld	4	Equivalent Bedrooms	120	480	16	5.0	2400	0.004	480	2400	0.004
	Residential	16	Bedrooms	120	1920	16	5.0	9600	0.015	2400	12000	0.019
SAN-2	Residential	36	Bedrooms	120	4320	16	5.0	21600	0.033	13320	66600	0.103
SAN-1												

SANITARY SEWER CAPACITY CALCULATIONS

PROJECT: 25-221  
 PROJECT NO: Avanelle Crossing

DATE: 5/14/2025  
 CALC: GLS  
 CHK: CWB

Location	Profile Data						Sewer Data						
	Manhole Station	Manhole Rim Elevation	Manhole Depth	Inlet Invert	Manhole Drop	Outlet Invert	Pipe Diameter	Pipe Length	Pipe Slope	Velocity	Just Full Capacity	Design Flow	Pipe % Full
	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(in)	(ft)	(%)	(fps)	(cfs)	(cfs)	(%)
SAN-4	1+10.11	769.80	5.40	-	-	764.40							
SAN-2	0+00.00	771.20	7.40	763.90	0.1	763.80	8	110.1	0.45	2.33	0.81	0.051	6.3%
SAN-3	3+28.59	774.30	6.40	-	-	767.90							
SAN-2	1+26.00	771.20	7.40	763.90	0.1	763.80	8	202.6	1.97	4.87	1.70	0.019	1.1%
SAN-1	0+00.00	771.20	8.00	763.20	-	-	8	126.0	0.48	2.39	0.83	0.103	12.4%

LIFT STATION DESIGN CALCULATIONS

PROJECT: 25-221  
 PROJECT NO: Avanelle Crossing

DATE: 1/29/2025  
 CALC: GLS  
 CHK: CWB

Pump Station ID	FLOW DATA				PUMP DATA	WET WELL DATA				CYCLE DATA				
	Average Daily Flow		Peak Flow		Pump Rate	Diameter	Cycle Height	Volume in Cycle		Drain Time	Ave. Flow Fill Time	Ave. Flow Cycle Time	Peak Flow Fill Time	Peak Flow Cycle Time
	gpd	gpm	gpd	gpm	gpm			ft <sup>3</sup>	gal					
SAN-1	13320	9	66600	46	46	5.0	1.5	29	220	4.79	23.82	28.61	4.76	9.55

FORCE MAIN DESIGN CALCULATIONS

PROJECT:	25-221		DATE:	1/29/2025
PROJECT NO:	Avanelle Crossing	Hazen-Williams C:	CALC:	GLS
			CHK:	CWB

Pump Station ID	Peak Flow	Pipe Diameter	Peak Velocity	Pipe Length	Friction Loss Factor	Friction Loss	Maximum Main Elevation	Low Level Shutoff	Static Head	Total Dynamic Head	Pressure in Pipe
	gpm	in	fps	ft	ft/100 ft	ft	ft	ft	ft	ft	psig
SAN-1	46	2.83	2.35	641	1.12	7.18	793.0	759.50	33.50	40.68	17.61



**VS30/50 & VSX30/50**

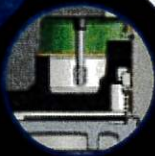
STANDARD AND HAZARDOUS LOCATION  
3 & 5 HP SUBMERSIBLE GRINDER PUMPS

# SHREDDING WASTEWATER CHALLENGES

IN COMMERCIAL, INDUSTRIAL  
& MUNICIPAL APPLICATIONS



**PATENTED  
AXIAL CUTTER  
TECHNOLOGY**



**LEGENDARY SEAL  
LEAK DETECTION**

Hazardous Location  
Models Only



# MYERS® VS(X)30/50 SERIES

## SHREDDING WASTEWATER CHALLENGES

The Myers VS(X)30/50 grinders feature a patented axial cutter design to effectively macerate challenging sewage solids into a fine slurry.

These rugged 3 & 5 HP submersible centrifugal grinder pumps are available in standard and hazardous location construction making them ideal for commercial, industrial and municipal applications.

VS(X)30/50 grinder pumps can be installed in a variety of packaged systems.

Factory-assembled simplex or duplex packages with guide rail systems are available. Individual rail components are also available for installation in on-site concrete systems.



Watch the Axial Cutter in action at [www.femyers.com](http://www.femyers.com)



POLY ROPE



SHOP RAG



SWIFFERS®



MOP HEAD

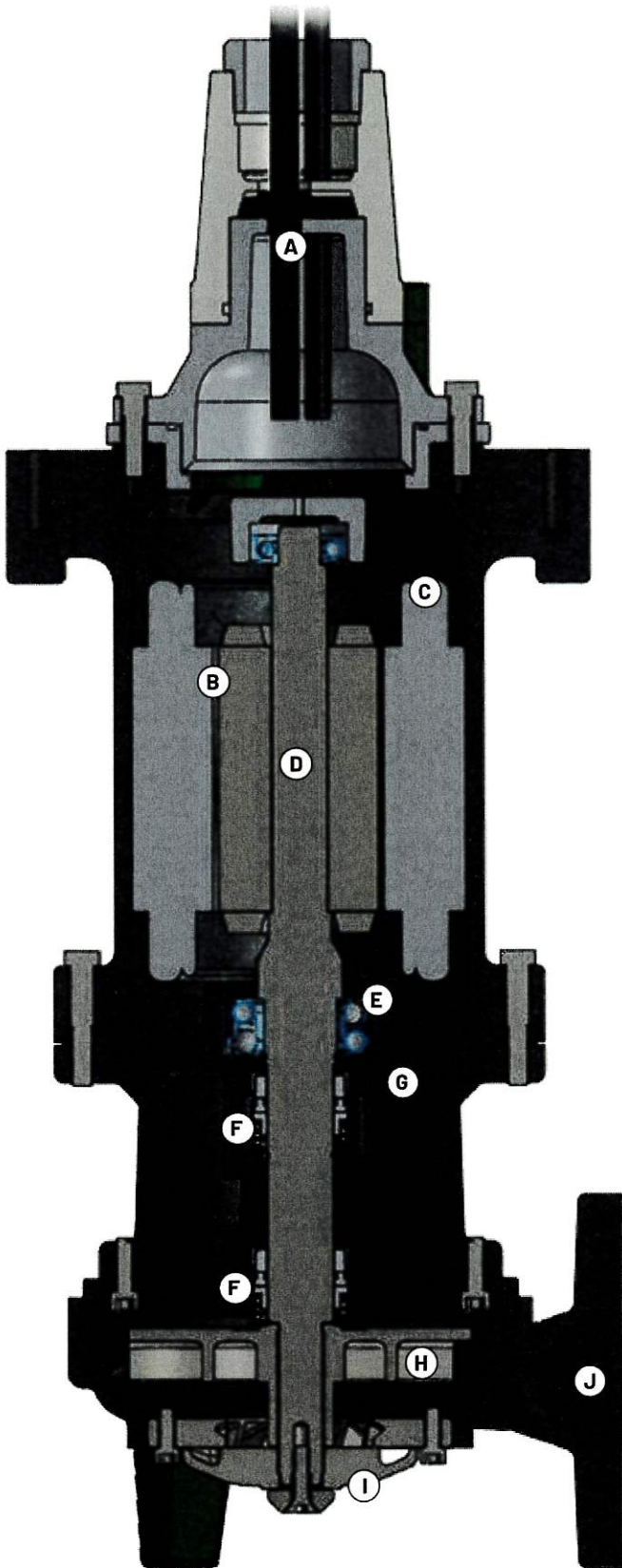
### Product Capabilities

Capacities To:	140 gpm	530 lpm
Heads To:	104 ft.	28.04 m
Liquids Handling	domestic raw sewage	
Intermittent Liquid Temp.	up to 140°F	up to 60°C
Winding Insulation Temp. (Class F)	311°F	155°C
Motor Electrical Data <small>(Single phase motors are capacitor start type. Myers control panels or capacitor kits are recommended for proper operation and warranty.)</small>	3-5 hp, 3450 rpm 1 ph - 230 volts; 60 Hz 3 ph - 200, 230, 460, 575 volts; 60 Hz	
Std. Third Party Approvals	CSA	
Optional Approvals	Class I, Groups C & D (VSX30-50)	
Acceptable pH Range	6 - 9	
Specific Gravity	.9 - 1.1	
Viscosity	28 - 35 SSU	
Discharge (Flange Dia.)	2-1/2 in.	63.5 mm
Min. Sump Diameter		
Simplex	36 in.	91.4 cm
Duplex	48 in.	121.9 cm

### Construction Materials

Motor Housing, Seal Housing, Cord Cap and Volute Case	Cast Iron, Class 30, ASTM A48
Impeller	Semi-open, SST
Power Cord	S00W, W
Control Cord	S00W
Mechanical Seals:	
Standard	Double Tandem Carbon and Ceramic
Optional	Lower Tungsten Carbide
Pump, Motor Shaft	416 SST
Fasteners	300 Series SST
Cutting Mechanism	440 SST 58-60 Rockwell

# FEATURES



## A. Cable Entry System

- Cable jacket sealed by compression fitting and individual wires sealed by epoxy potting for double seal protection against water ingress

## B. Oil-Filled Motor

- Maximizes heat dissipation and provides constant bearing lubrication for long life
- High torque single phase motor with start/run capacitor or three-phase motors for assured starting under heavy loads

## C. Heat Sensor

- Protects motor from burnout due to excessive heat from any overload condition
- Automatically resets when motor has cooled

## D. Heavy 416 SST Shaft

- Corrosion resistant and reduces shaft deflection for long life

## E. Double Row Ball Bearings

- Lower double row angular ball bearings absorbs both axial and radial loads for increased durability

## F. Shaft Seals

- Located in oil-filled seal chamber for continuous lubrication
- Dual mechanical shaft seals for superior motor protection

## G. Seal Leak Probe

- Located in seal chamber instead of motor area for true early warning of water leaks. Allows corrective action before costly motor or bearing failure occurs
- Activates warning light in control panel

## H. Impeller

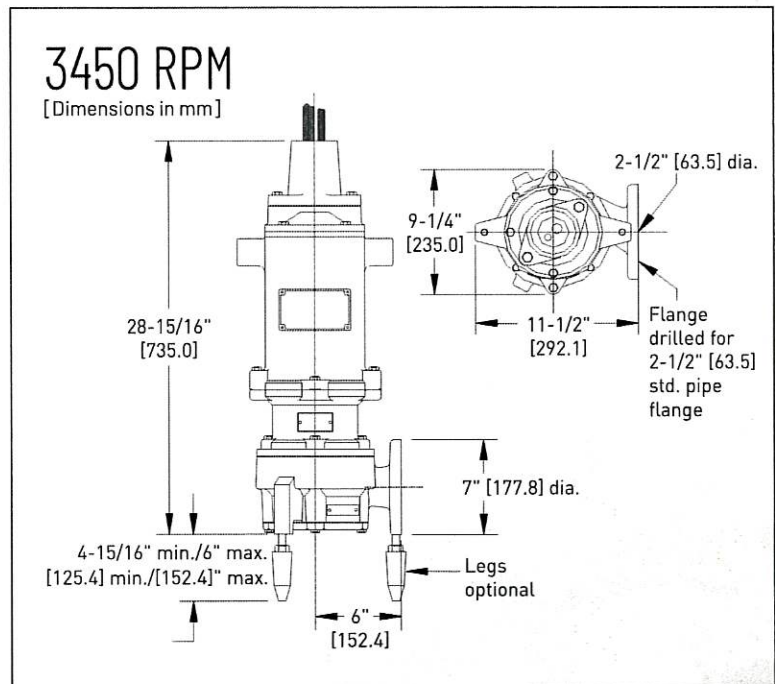
- SST, semi-open impeller provides improved performance and resists clogging
- Pump-out vanes help keep trash from seal and reduces pressure at seal face for longer life

## I. Axial Cutter System

- Constructed of 440 SST hardened to 57-60Rc for long life
- Easily replaceable without dismantling pump

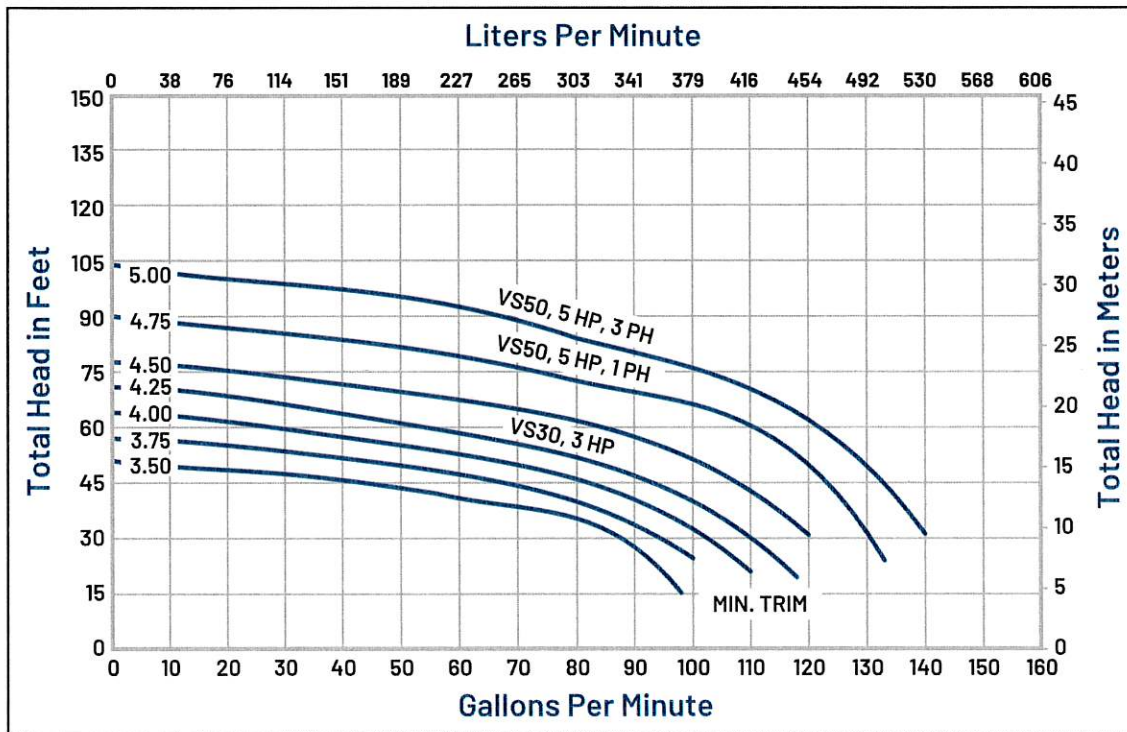
## J. Volute Case

- Cast iron, horizontal discharge
- Drilled for 2-1/2 pipe flange



# PERFORMANCE AND ELECTRICAL DATA

## VS50 – VS30 Performance



	V/Ph/Hz	HP	Start Amps	FL Amps	Full Load kW	Start KVA	FL KVA	NEC Code Letter	Service Factor	Model
Standard Flow	230/1/60	3	145	30.5	6.5	33.4	7.0	M	2.0	VS(X)30-21
	208/3/60	3	126	19.6	6.0	45.3	7.1	R	2.0	VS(X)30-03
	230/3/60	3	150	17.8	6.0	59.7	7.1	T	2.0	VS(X)30-23
	460/3/60	3	75	8.9	6.0	59.7	7.1	T	2.0	VS(X)30-43
	575/3/60	3	43	7.1	6.0	42.8	7.1	R	2.0	VS(X)30-53
	230/1/60	5	145	35	8.0	33.4	8.1	H	1.7	VS(X)50-21
	208/3/60	5	126	24.2	8.0	45.3	8.7	L	1.7	VS(X)50-03
	230/3/60	5	150	21.9	8.0	59.7	8.7	N	1.7	VS(X)50-23
	460/3/60	5	75	10.9	8.0	59.7	8.7	N	1.7	VS(X)50-43
	575/3/60	5	43	8.8	8.0	42.8	8.8	K	1.7	VS(X)50-53



1101 Myers Parkway  
Ashland, OH 44805  
USA  
PH: 855.274.8947

490 Pinebush Road  
Unit 4  
Cambridge, Ontario N1T 0A5  
Canada  
PH: 800.387.4386  
Orders Fax: 888.606.5484

[www.femyers.com](http://www.femyers.com)

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Item Number / Tags	: Default	Size	: Myers - VS30
Service	:	Stages	: 1
Quantity	: 1	Based on curve number	: SUB_G_O_AH_00010_B_2 Rev
Quote number	:		2025-11-12
		Date last saved	: 26 Jan 2026 9:10 AM

**Operating Conditions**

Flow, rated	: 46.00 USgpm
Head, rated (requested)	: 41.00 ft
Head, rated (actual)	: 41.74 ft
Suction pressure, rated / max	: 0.00 / 0.00 psi.g
NPSH available	: Ample
Site Supply Frequency	: 60 Hz

**Performance**

Speed criteria	: Synchronous
Speed	: 3500 rpm
Impeller dia.	: 3.75 in
Impeller diameter, maximum	: 4.25 in
Impeller diameter, minimum	: 3.50 in
Efficiency	: -
NPSH required / margin required	: - / 0.00 ft
nq (imp. eye flow) / S (imp. eye flow)	: 35 / - Metric units
Minimum Continuous Stable Flow	: -
Head max.	: 48.34 ft
Head rise to shutoff	: 17.91 %
Flow, best eff. point	: -
Flow ratio, rated / BEP	: -
Diameter ratio (rated / max)	: 88.24 %
Head ratio (rated dia / max dia)	: 65.97 %
Cq/Ch/Ce/Cn [ANSI/HI 9.6.7-2010]	: 1.00 / 1.00 / 1.00 / 1.00
Selection status	: Acceptable

**Liquid**

Liquid type	: Water
Additional liquid description	:
Solids diameter, max	: 0.00 in
Solids size limit	: 0.00 in
Solids concentration, by volume	: 0.00 %
Temperature	: 68.00 deg F
Fluid density	: 1.000 / 1.000 SG
Viscosity	: 1.00 cP
Vapor pressure, rated	: 0.34 psi.a

**Material**

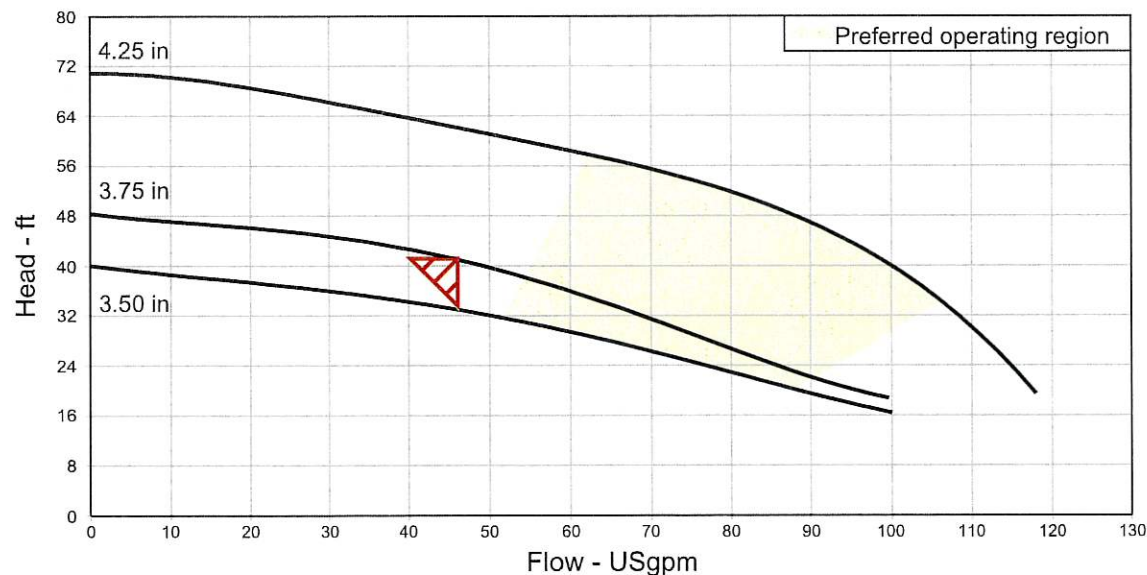
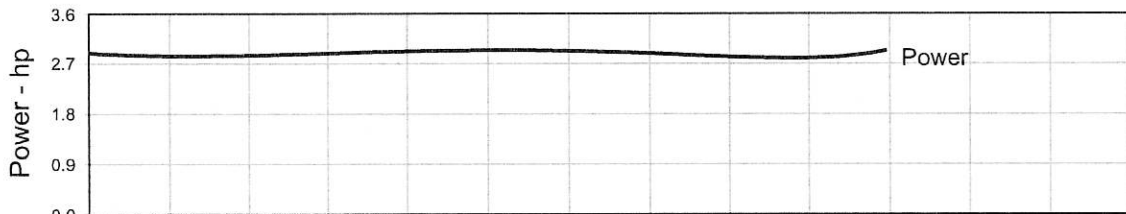
Material selected	: Standard
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**Pressure Data**

Maximum working pressure	: 20.92 psi.g
Maximum allowable working pressure	: N/A
Maximum allowable suction pressure	: N/A
Hydrostatic test pressure	: N/A

**Driver & Power Data (@Max density)**

Driver sizing specification	: Max Power
Margin over specification	: 0.00 %
Service factor	: 1.00
Power, hydraulic	: 0.48 hp
Power, rated	: 2.94 hp
Power, maximum	: 2.94 hp
Motor rating	: 3.00 hp / 2.24 kW (Fixed)





September 25, 2025

Sunset Development and Investment LLC  
692 North High Street, Suite 204  
Columbus, OH 43215  
[jhunley@sunsetdev.com](mailto:jhunley@sunsetdev.com)

Re: **Avanelle Crossing Water Supply Report**  
Avanelle Drive, Athens, Ohio  
Our No. E25-221

## **FORWARD:**

Sunset Development and Investment LLC (Sunset) retained an interest in an approximately 15.5 acres tract on Avanelle Drive in Athens Township, Athens County. Sunset intends to develop the site into a multifamily residential project. Sunset has been advised by the development's architectural team that the project will require fire suppression sprinklers in one or more of the proposed buildings. The required sprinklers will need a water supply sufficient for the sprinklers to function in accordance with codes. Sunset architectural plans are still in the design phase, and the project architect has not completed the fire protection plans. At the request of Sunset, McCarty Associates, LLC (McCarty) retained SILCO Fire Protection Company (SILCO) to estimate fire flow demand for the proposed project. They advised that the fire protection sprinklers and hose stream will require a water supply flow of about 500 g.p.m. at a residual pressure of 50 p.s.i.

McCarty has been retained to prepare site/civil plans that are consistent with Sunset's architectural plans. McCarty has determined that the site has water service from Le-Ax rural water district which has a 2-inch water main along the development's frontage. McCarty determined that the existing water supply is not adequate. This study, the **Avanelle Crossing Water Supply Report**, is to determine the feasibility of upgrading water supply to the site to meet the required flow and residual pressure.

## **LE-AX WATER EXISTING SYSTEM**

SILCO coordinated with Le-Ax and performed a flow test on the existing system at a fire hydrant near the existing township fire station on Hooper Road just northwest of the Avanelle Drive intersection. The test indicated that the system flow at that point was 1,156 g.p.m. at 90

The analysis indicates that the system must be upgraded with an 8" PVC SDR 21 main along Avenelle Drive. That upgrade will permit the Le-Ax water system to provide a flow of 500 gpm with a residual pressure of 66 psig. This flow will meet the expected requirements for proposed building sprinkler systems.

## LIST OF APPENDICES

Appendix 1 – AWWA Diurnal Curve for residential water meters

Appendix 2 - Hydraulic Profile from Tank #4 to the Project Site



*Michael Lowell McCarty*  
9/26/25

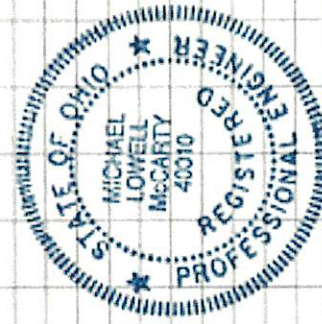
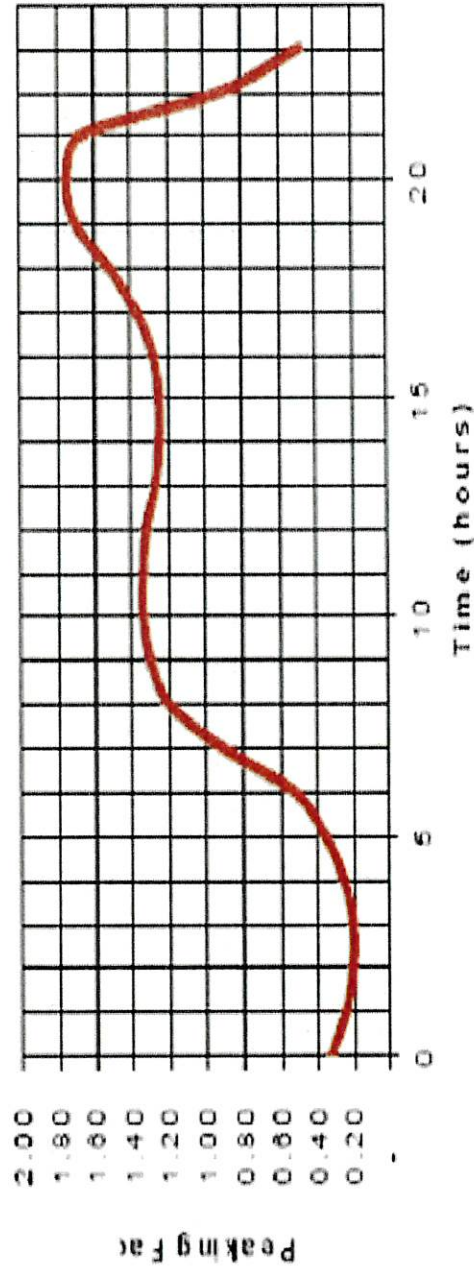
Domestic Flow Estimates  
 Avanelle Road Area  
 Le-Ax Rural Water

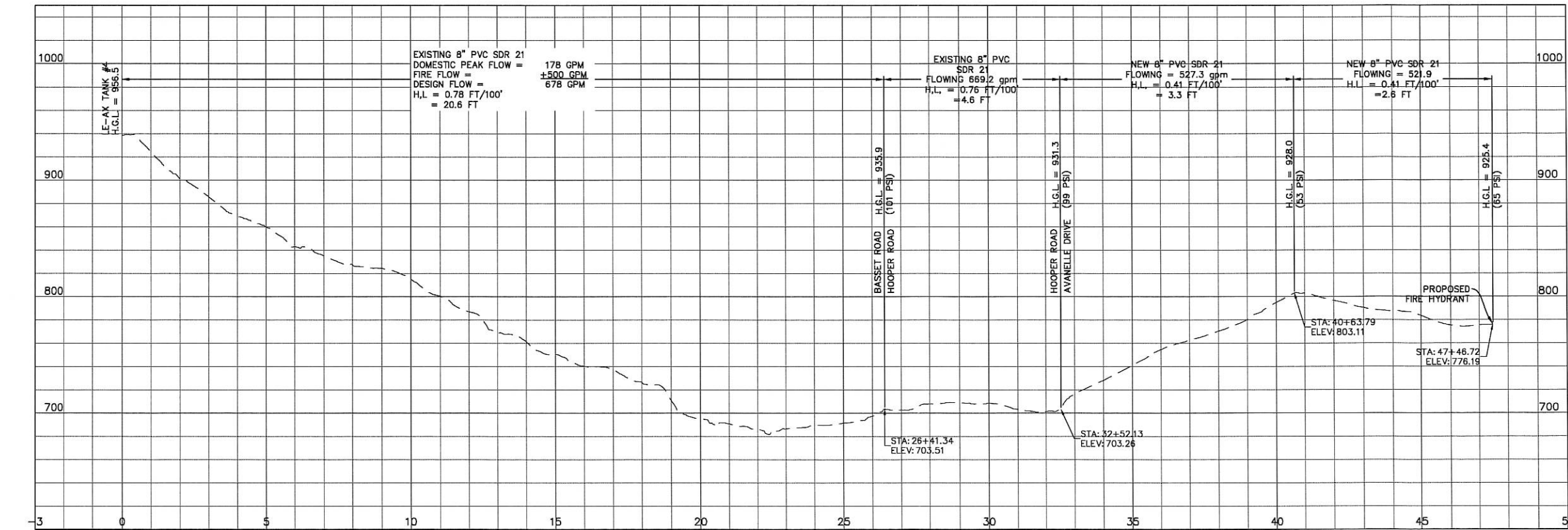
AWWA Diurnal Curve for Residential Water Meters		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
Hour		0.25	0.21	0.21	0.26	0.36	0.53	0.91	1.2	1.3	1.34	1.34	1.32	1.27	1.25	1.25	1.28	1.37	1.52	1.7	1.75	1.67	0.9	0.48	0.33	24

**Study Area Assumptions and Summary**

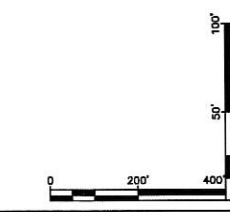
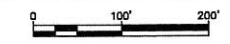
Average Daily Consumption per domestic meter	300 GPD
Average Hourly Consumption	12.5 GPH
Average Consumption Rate	0.208 GPM
Peak Hour Consumption Rate	0.365 GPM (Hour 20)
Total residential taps from LeAx Tank 4 northwest on Bassett Road	489 * .365 = 178.3
Peak domestic flow Hooper Road east of Bassett Road (approx 25 meters)	25 * .365 = 9.1
Peak domestic flow Hooper between Bassett and Avanelle	484 * .365 = 169.2
Peak domestic flow to project site (approx. 15 existing and 60 new meters)	75 * .365 = 27.3
Peak flow to project most distant proposed hydrant	60 * .365 = 21.9

AWWA Average Day Flow Diurnal Curve





WATERMAIN FROM TOWER



REVISIONS

THESE DRAWINGS ARE THE PROPERTY OF MCCARTY ASSOCIATES, LLC AND SHALL NOT BE USED OR REPRODUCED WITHOUT WRITTEN CONSENT OF MCCARTY ASSOCIATES, LLC

**MCCARTY ASSOCIATES, LLC.**  
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 MCCARTYASSOCIATES.COM

AVANELLE CROSSING WATER SUPPLY REPORT

**AVANELLE CROSSING**

6251 AVANELLE DRIVE  
 ATHENS, OHIO 45701  
 ATHENS TOWNSHIP, ATHENS COUNTY

PROJECT NUMBER  
25-221

HYDRAULIC  
PROFILE  
APPENDIX 2

DRAWING NUMBER  
1