



## Memo

**To:** Mrs. Ashley Neale  
Verona Planning Board Secretary

**From:** Plan Review Committee of the Verona Environmental Commission

**c:** Verona Environmental Commission Chair

**Date:** August 3, 2022

**Re:** **Case # 2022-04: Major Development**  
1 Sunset Avenue [Block 303, Lot 4]  
Verona, New Jersey

**Zone:** R-100 (Very Low-Density Single Family)

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The Plan Review Committee of the Verona Environmental Commission (VEC) reviewed the application for 1 Sunset Avenue in Verona, submitted by Verona Sunset Urban Renewal, LLC, represented by Mr. John Inglesino, which we received on June 10, 2022. We understand that the Applicant is seeking to demolish the existing building, regrade much of the lot and construct a 200-unit residential building with associated parking, driveways, walkways, recreational and other amenities. The comments below are provided for the Board's consideration:

### **Stormwater Review**

#### ***Preexisting Conditions:***

1. The preexisting conditions describe that beyond the masonry building and associated infrastructure, the remainder of the site is "mostly a combination of woods with grass," or, areas in where recharge and infiltration would naturally occur. There are many existing forested areas of site that would provide some recharge. The existing sheet flows and substantial tree cover on the existing site also suggests that there is a measurable amount of recharge that occurs on this lot.
2. The report also describes that stormwater runoff is not currently maintained on site and rather, is conveyed to off-site municipal and county stormwater systems surrounding the site. In general, the surrounding area, including Verona, has experienced extensive and more frequent flooding events in recent years. This site was developed well before the Stormwater Management Rules had set strict limitations on stormwater runoff (2004). Those rules were made even more strict in 2021, and upon redevelopment, must meet the requirements of the newer rules.

#### ***Stormwater Management Plan for Post-Construction Development:***

1. According to the new Stormwater Management Rules, the Applicant must maintain preexisting and proposed runoff on site. This does not appear to be attempted or

achieved. Past documentation and agreements, including the January 17, 2022, (redated February 3, 2022) Redeveloper Agreement, defines the term environmental laws to include “federal, state, local, municipal or other”:

**Environmental Laws** shall mean any applicable federal, state, local, municipal or other statutes, laws, ordinances, rules, regulations or other legally enforceable requirement, whether presently existing or hereinafter enacted, promulgated or otherwise created for the protection of the environment or human health from Hazardous Substances, as the same may be amended or supplemented from time to time, including, without limitation, (a) the New Jersey Spill Compensation and Control Act, as amended, *N.J.S.A. 58:10-23.11, et seq.*; (b) the New Jersey Industrial Site Recovery Act, as amended, *N.J.S.A. 13:1K-6, et seq.*; (c) the New Jersey Leaking Underground Storage Tank Act, as amended, *N.J.S.A. 58:10-21, et seq.*; (d) The New Jersey Site Remediation Reform Act, *N.J.S.A. 58:10C-1, et seq.*; (e) the Comprehensive Environmental Response, Compensation & Liability Act, as amended, 42 *U.S.C. Section 9601, et seq.*; (f) the Resource Conservation and Recovery Act, as amended, 42 *U.S.C. Section 6901, et seq.*; (g) the Hazardous Material Transportation Act, as amended, 49 *U.S.C. Section 180, et seq.*; or (h) the Occupational Safety and Health Act, as amended, 29 *U.S.C. Section 651, et seq.*

In the same Redeveloper Agreement, and on page 25, under Section 9 Redeveloper Covenants, paragraph (e), the Agreement states:

“Redeveloper shall design, implement, complete, and operate the Redevelopment Project in compliance with this Agreement and all other Applicable Laws, ordinances, Approvals, rules, regulations, and requirements applicable thereto including, but not limited to, such zoning, sanitary, pollution, health, environmental and safety ordinances, laws and such rules and regulations thereunder as shall be binding upon Redeveloper under Applicable Laws. Without limiting the foregoing, Redeveloper shall comply at its own expense with all stormwater regulations, including but not limited to, those pertaining to detention, recharge, and water quality.”

Due to the foregoing, “all stormwater regulations” must necessarily include Verona’s Stormwater Ordinance.

2. The Applicant has granted itself waiver from Verona’s Stormwater Ordinance and most of its requirements. This includes waivers/variances from the use of green infrastructure, from water quality, and from infiltration and recharge responsibilities; the entire basis of the new 2021 Stormwater Rules. Verona does not have an adopted mitigation plan and therefore does not have the ability, legally or otherwise, to grant exemptions, waivers, or variances from strict adherence to the rules. From NJAC 7:8-4.6, variance from the design and performance standards for stormwater management measures:

“A municipality may grant a variance from the design and performance standards for stormwater management measures set forth in its approved municipal stormwater management plan and stormwater control ordinance(s), provided the municipal plan includes a mitigation plan in accordance with N.J.A.C. 7:8-4.2(c)11...”

- A. Infiltration and Recharge: Page 7 of the Stormwater Management Report states that the developer need not adhere to infiltration and recharge.

“Infiltration and recharge are both not utilized in their stormwater design as the geotechnical tests which were conducted show that the soil is poorly drained.”

The “project” is proposed on 5 acres within Verona and although six boreholes were drilled, only two permeability tests (PT 1 and 2) were performed. Both permeability tests were performed at 4 feet below grade directly at or within 1 foot of the top of bedrock. These test locations do not suggest an ample testing of the soils’ ability to infiltrate or conduct recharge. Additionally, the preponderance of this site is in a Planning Area 5, which is not automatically exempt from recharge. Even if the site was wholly in Metropolitan Planning Area 1, much of it would require recharge because of its established wooded character.

- B. The Applicant has seemingly waived its responsibility to rely upon green infrastructure for stormwater management on this site, as none is proposed. Verona’s stormwater ordinance, § 455-14-A states:

“The developer design shall use low impact development techniques to achieve the minimum of stormwater runoff that must be managed through green infrastructure and other stormwater management measures. Retention of natural landscape features shall be emphasized in the design.”

- C. The Applicant has waived its responsibility to meet even the minimum stormwater runoff quality standards. According to the Verona Stormwater Ordinance, Stormwater quality standards are applicable “when the project meets the definition of a major development”. (§455-14 R).

Verona defines a Major Development as:

An individual development, redevelopment, as well as multiple developments that individually or collectively result in:

- i. The disturbance of 0.5 acre or more of land since February 2, 2004.
- ii. The creation of 5,000 ft<sup>2</sup> or more of “regulated impervious surface” since February 2, 2004
- iii. The creation of 5,000 ft<sup>2</sup> or more of “regulated motor vehicle surface” since February 2, 2004.

Verona defines “regulated impervious surface” as:

- i. A net increase of impervious surface.
- ii. The total area of impervious surface collected by a new stormwater conveyance system (for the purpose of this definition, a “new stormwater conveyance system” is a stormwater conveyance system that is constructed where one did not exist immediately prior to its construction or an existing system for which a new discharge location is created);
- iii. The total area of impervious surface proposed to be newly collected by an existing stormwater conveyance system; and/or
- iv. The total area of impervious surface collected by an existing stormwater

conveyance system where the capacity of that conveyance system is increased.

The Verona Stormwater Ordinance makes clear that a simple increase in impervious surface, and not regulated motor vehicle surface specifically, requires the Applicant to meet the design and performance standards for water quality control. According to the Applicant's stormwater report, one full acre of new impervious surface is proposed, which certainly exceeds the 5,000 ft<sup>2</sup>.

3. It is for the above reasons that the Applicant is required achieve water quantity and quality standards and groundwater recharge through the utilization of green infrastructure. The VEC PRC has provided the following list of feasible green infrastructure installations that have not been proposed or attempted, and that may be used in varying combinations on this site to provide water quantity, and quality control and groundwater recharge.
  - Green Roof
  - Pervious Paving Systems with liners
  - Bioretention Basins with liners
  - Infiltration Basins with liners
  - Grass Swales in appropriate downstream areas
  - Vegetative Filter Strips
4. The Applicant's reported test boring program prompts concerns from the VEC PRC.
  - A. The first concern is due to the time of the year that the test borings and infiltration testing was performed. The seasonal high water table (SHWT) is best documented during the months of January through April, inclusive as indicated by Chapter 12 of the NJ Stormwater BMP Manual. The Applicant's tests were performed on September 16 and 17, 2019, during a time of the year when the water table is seasonally lower.
  - B. The second concern is there were no explorations performed within the footprint of the proposed stormwater BMP basin, where a minimum of two test pits per 10,000 ft<sup>2</sup> of infiltration basin area is recommended by NJDEP. The third concern is that additional test borings were not performed in the northwest corner of the site where bedrock was relatively deeper (near test boring B-1). There appears to be limited effort by the Applicant to define an area of the site that could be well-suited for green infrastructure implementation that could possibly support infiltration BMPs.
5. Another area of concern surrounds the size of the pipes that will be handling 100% of the runoff, to be directed off site, to Sunset and Bloomfield Avenues. It appears that the entirety of the proposed on-site stormwater management system is conveyed to one manhole in the Right-of-Way (ROW) on Sunset Avenue. This manhole is connected to the catch basins in Sunset Avenue, although these connections are not clearly illustrated on the Applicant's utility plan. The conveying pipe systems are all 15-inch RCPs. Have these 15-inch RCPs been rated for the water coming off the site? Have the off-site RCPs been rated for existing conveyances from the ROW?

We recommend that the Applicant conduct a capacity analysis to include the site as well as the ROW contributory areas of both Sunset and Bloomfield Avenues to make sure that there is sufficient capacity to convey stormwater runoff. As per the Developer's Agreement, Section 4.3:

"Redeveloper, at Redeveloper's sole cost and expense, shall provide all necessary engineering studies for, and construct and install all municipal infrastructure and capacity enhancements or upgrades required in connection with the provision of water, sanitary sewer, and stormwater sewer service to the Project, in addition to all required tie-in or connection fees, that may be required in connection with the Project, but only as may be required in accordance with Applicable Law and the Redevelopment Plan."

6. The proposed StormTank system to be installed under the garage area (Proposed Basin A) only has two observation ports, which seems too few based on StormTank Design Guidelines from the manufacturers web site, which indicates a minimum on-center spacing of 30 feet. Should this system become clogged or fail to properly manage the stormwater, there is no way to reach the majority of the system except for to remove the garage flooring, leaving the remainder of the parking inaccessible until it is repaired or replaced. As per the maintenance manual, how will this 210-foot by 42.5- or 24-foot wide system be reached through only two observation ports for maintenance?
7. The Applicant's stormwater management report states that the post-developed site will contribute stormwater to the Bloomfield Avenue stormwater systems. Has the Applicant obtained a County Drainage Permit?

#### **Geotechnical Issues:**

1. The Applicant has not provided any reports that discuss how this site will be prepared for the construction of all the buildings and appurtenant structures. How will foundations of the parking garage interact with the Proposed Basin A stormwater BMP? What are the blasting recommendations? Is there a geotechnical engineering report that can be provided for review?
2. There were only six subsurface explorations provided in the application and we understand bedrock is very shallow at this site, which can be very problematic for all structures and utilities that are designed to be below top of rock elevations (as depicted in attached Sheets 7 and 8 annotated by the VEC). Bedrock was encountered in five of the six test borings with depths ranging from 2 to 9 feet below existing grades. NJ Building Code §1803.3.1 requires a minimum of one exploratory test boring to rock for every 2,500 ft<sup>2</sup> of built-over area; base on the size of this development we would expect a minimum of 432 test borings be documented or a justification from the Applicant's engineer as to why the minimum number was not completed.
3. Does the Applicant plan to blast to excavate rock at the site? If so, how will the Applicant secure the face of the rock wall at the rear of the site that hovers over the homes that exist in Montclair? How will the developer protect the surrounding site in Verona from the dangers involved in this process?
4. We recommend that the Applicant be required to submit a Blasting Plan for review and approval by the planning board. While not currently specified by the town ordinance, a

blast monitoring plan should also be prepared by a qualified blaster on behalf of the Applicant for review and approval by the planning board. The blast monitoring plan should also provide appropriate threshold criteria/action levels, if exceeded, of ground/structure vibrations at various levels of frequencies as well as blast air overpressures, per NJAC 12:190-7.25 and 7.26.

### **Landscaping Plan:**

1. The only type of evergreen tree planned for planting is the American Arborvitae. Evergreen trees can provide year-round buffering and privacy; however, the American Arborvitae is a tree that is highly susceptible to deer browsing, leaving many throughout the area bare and badly damaged. The PRC highly recommends that the Applicant diversify their planting schedule with other types of evergreens that are more deer resistant to provide a more adequate and reliable buffer zone.

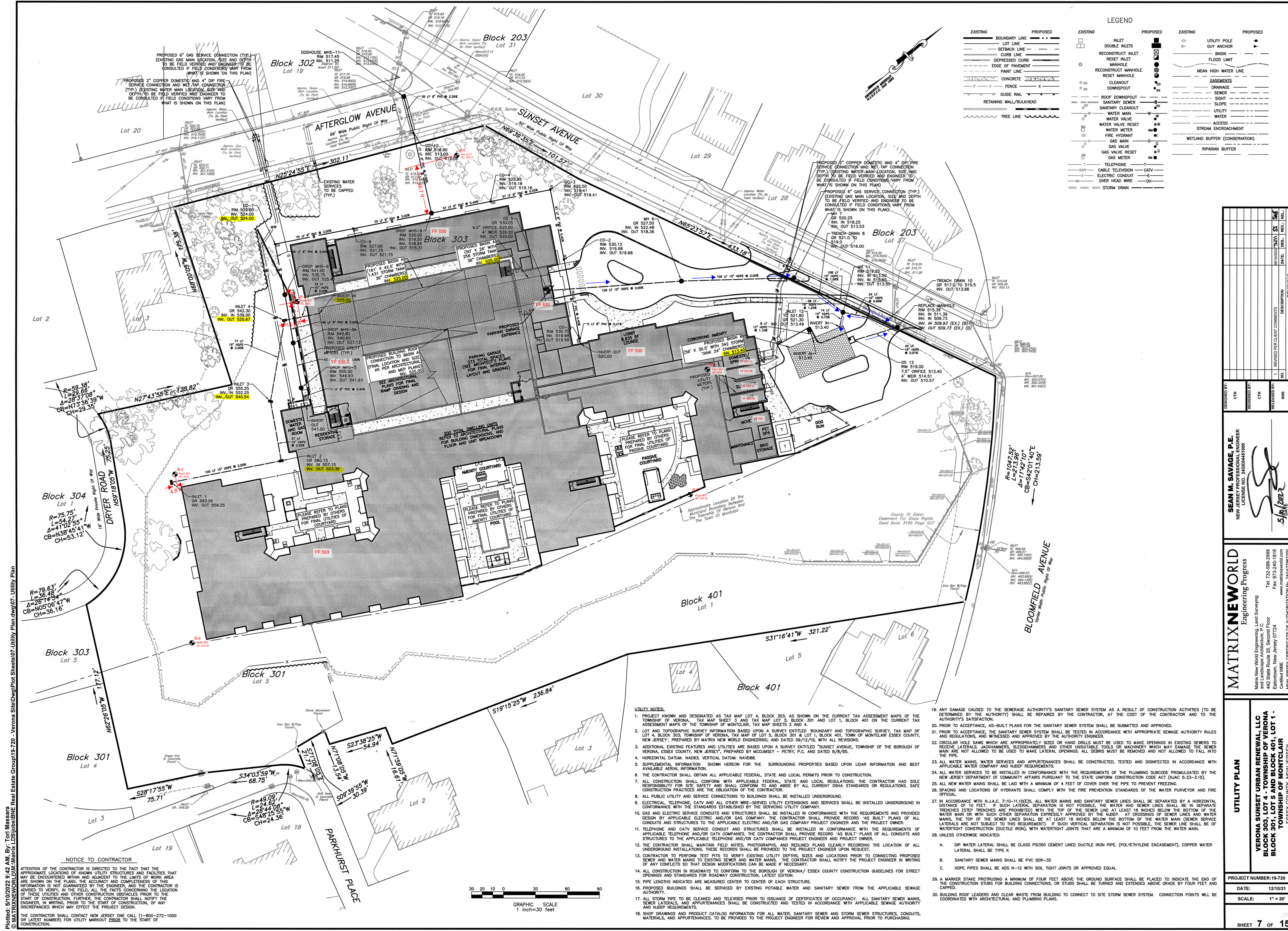
With that, we suggest American Holly, Juniper, Cypress, Spruce, and Pine varieties. Additionally, the buffer zones appear to be planted in a way which will not provide the intended privacy. We therefore suggest increasing some of the plantings which would provide for proper buffering of noise and activity while affording the neighboring properties with peace and privacy.

2. Most of the tree and plant selections require full sun (6 hours or more of daily sun). We question whether many of the selections will receive ample sunlight, especially when planted in the understory of other species or near species that will grow at faster rates.
3. The Tree Location and Removal Plan (Sheet 4) submitted by Matrix New World on May 10, 2022 established tree replacement types and numbers which do not agree with the Landscape Plan Planting Details, (Sheet 14) submitted by Linda Tycher & Associates. The Applicant should provide testimony on these conflicts and prepare consistent details.
4. "Seasonal Cover" should be determined and better described (4,080 planned for planting).
5. The PRC finds that two plantings on the Planting Detail table, (Linda Tycher Sheet 14), appear on either the NJ Invasive Species 2019 'Do Not Plant List' or on the Invasive Plant Atlas of the United States. The Applicant should replace these species with more hearty, non-invasive types.
  - i. Grasses: Dwarf Fountain Grass; Pennisetum Alopecuroides (184 planned for planting) (Source: 2022 FoHVOS New Jersey Invasive Species Strike Team).
  - ii. Groundcover: Japanese Pachysandra; Pachysandra Terminalis (420 planned for planting) (Source: 2022 FoHVOS New Jersey Invasive Species Strike Team).
6. The Applicant should provide testimony on how areas of the site will be prepared for planned tree plantings in areas where there is not ample depth clearance between the ground surface and the rock.
7. Please see VEC-1 Sunset Planting Schedule attachment.

**Other Comments:**

1. On Drawing No. A-07 and A-06, the FFEs (Finished Floor Elevations) of the parking decks do not appear to have changed between levels. Please address.
2. In addition, please see the attached Low Impact Planning and Construction Checklist. This suggested list was compiled by the VEC based on best available practices.

[STD/JP]  
VEC\_2022-08-03 Comments 1 Sunset Avenue.docx



**LEGEND**

EXISTING	PROPOSED	EXISTING	PROPOSED
BOUNDARY LINE	BOUNDARY LINE	UTILITY POLE	UTILITY POLE
SETBACK LINE	SETBACK LINE	GUY ANCHOR	GUY ANCHOR
DEPRESSED CURB	DEPRESSED CURB	BASIN	BASIN
EDGE OF PAVEMENT	EDGE OF PAVEMENT	FLOOD LIMIT	FLOOD LIMIT
PAINT LINE	PAINT LINE	MEAN HIGH WATER LINE	MEAN HIGH WATER LINE
CONCRETE	CONCRETE	EASEMENTS	EASEMENTS
FENCE	FENCE	DRAINAGE	DRAINAGE
GUIDE RAIL	GUIDE RAIL	SEWER	SEWER
RETAINING WALL/BULKHEAD	RETAINING WALL/BULKHEAD	SIGHT	SIGHT
TREE LINE	TREE LINE	SLOPE	SLOPE
		UTILITY	UTILITY
		WATER	WATER
		ACCESS	ACCESS
		STREAM ENCROACHMENT	STREAM ENCROACHMENT
		WETLAND BUFFER (CONSERVATION)	WETLAND BUFFER (CONSERVATION)
		RIPARIAN BUFFER	RIPARIAN BUFFER

**REVISIONS**

NO.	DATE	DESCRIPTION
1	REVISED PER CLIENT COMMENTS	

DESIGNED BY: CTR  
 CHECKED BY: CTR  
 RELEASED BY: SWS

**SEAN M. SAVAGE, P.E.**  
 NEW JERSEY PROFESSIONAL ENGINEER  
 LICENSE NO.: 24064481000

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 NEW JERSEY CERTIFICATE OF AUTHORIZATION NO. Z6462786230

**UTILITY PLAN**

**VERONA SUNSET URBAN RENEWAL, LLC**  
 BLOCK 303, LOT 4 - TOWNSHIP OF VERONA  
 BLOCK 304, LOT 5 AND BLOCK 401, LOT 1 -  
 TOWNSHIP OF MONTCLAIR  
 ESSEX COUNTY, NEW JERSEY

PROJECT NUMBER: 19-720  
 DATE: 12/10/21  
 SCALE: 1" = 30'  
 SHEET 7 OF 15

Plotted: 5/10/2022 9:42 AM. By: Tori Massara  
 © MATRIXNEWORLD, Matrix LDS/LS/BS/ME/Real Estate Group/19-720 - Verona Steel/Plot Sheets/Utility Plan.dwg/07 - Utility Plan

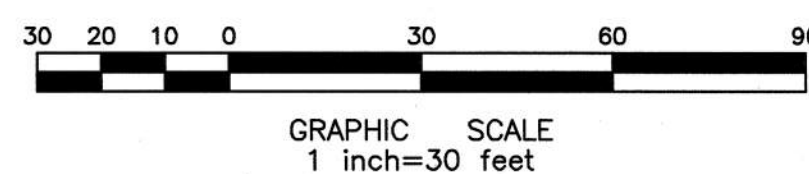
**NOTICE TO CONTRACTOR**

ATTENTION OF THE CONTRACTOR IS DIRECTED TO THE APPROXIMATE LOCATIONS OF KNOWN UTILITY STRUCTURES AND FACILITIES THAT MAY BE ENCOUNTERED WITHIN AND ADJACENT TO THE LIMITS OF WORK AREA ARE SHOWN ON THE PLANS. THE ACCURACY AND COMPLETENESS OF THIS INFORMATION IS NOT GUARANTEED BY THE ENGINEER, AND THE CONTRACTOR IS ADVISED TO VERIFY, IN THE FIELD, ALL THE FACTS CONCERNING THE LOCATION OF THESE UTILITIES OTHER THAN CONSTRUCTION OBSTACLES PRIOR TO THE START OF CONSTRUCTION. FURTHER, THE CONTRACTOR SHALL NOTIFY THE ENGINEER, IN WRITING, PRIOR TO THE START OF CONSTRUCTION, OF ANY DISCREPANCIES WHICH MAY AFFECT THE PROJECT DESIGN.

THE CONTRACTOR SHALL CONTACT NEW JERSEY ONE CALL (1-800-272-1000 OR LATEST NUMBER) FOR UTILITY MARKOUT PRIOR TO THE START OF CONSTRUCTION.

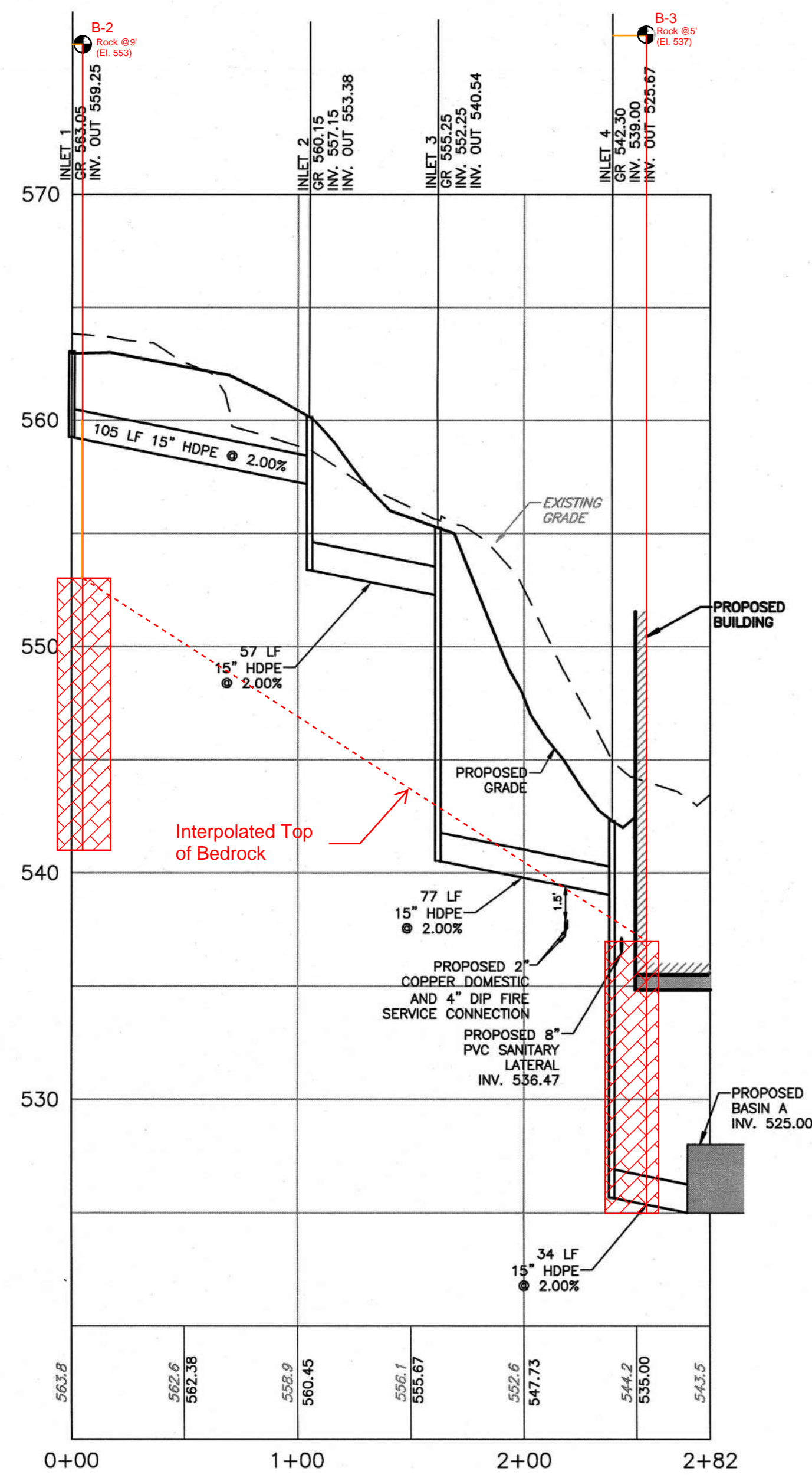
- UTILITY NOTES:**
- PROJECT KNOWN AND DESIGNATED AS TAX MAP LOT 4, BLOCK 303, AS SHOWN ON THE CURRENT TAX ASSESSMENT MAPS OF THE TOWNSHIP OF VERONA, TAX MAP SHEET 3 AND TAX MAP SHEET 5, BLOCK 301 AND LOT 1, BLOCK 401 ON THE CURRENT TAX ASSESSMENT MAPS OF THE TOWNSHIP OF MONTCLAIR, TAX MAP SHEETS 3 AND 4.
  - LOT AND TOPOGRAPHIC SURVEY INFORMATION BASED UPON A SURVEY ENTITLED "BOUNDARY AND TOPOGRAPHIC SURVEY, TAX MAP OF LOT 4, BLOCK 303, TOWNSHIP OF VERONA, TAX MAP SHEET 3 AND LOT 1, BLOCK 401, TOWN OF MONTCLAIR, ESSEX COUNTY, NEW JERSEY," PREPARED BY MATRIX NEW WORLD ENGINEERING, AND DATED 09/12/19, WITH ALL REVISIONS.
  - ADDITIONAL EXISTING FEATURES AND UTILITIES ARE BASED UPON A SURVEY ENTITLED "SUNSET AVENUE, TOWNSHIP OF THE BOROUGH OF VERONA, ESSEX COUNTY, NEW JERSEY," PREPARED BY MCMURSEY - PEIRY, P.C. AND DATED 8/8/95.
  - HORIZONTAL DATUM: NAD83; VERTICAL DATUM: NAVD83.
  - SUPPLEMENTAL INFORMATION SHOWN HEREON FOR THE SURROUNDING PROPERTIES BASED UPON LIDAR INFORMATION AND BEST AVAILABLE AERIAL INFORMATION.
  - THE CONTRACTOR SHALL OBTAIN ALL APPLICABLE FEDERAL, STATE AND LOCAL PERMITS PRIOR TO CONSTRUCTION.
  - ALL CONSTRUCTION SHALL CONFORM WITH APPLICABLE FEDERAL, STATE AND LOCAL REGULATIONS. THE CONTRACTOR HAS SOLE RESPONSIBILITY FOR SITE SAFETY AND SHALL CONFORM TO AND ABIDE BY ALL CURRENT OSHA STANDARDS OR REGULATIONS. SAFE CONSTRUCTION PRACTICES ARE THE OBLIGATION OF THE CONTRACTOR.
  - ALL PUBLIC UTILITY AND SERVICE CONNECTIONS TO BUILDINGS SHALL BE INSTALLED UNDERGROUND.
  - ELECTRICAL, TELEPHONE, CATV AND ALL OTHER WIRE-SERVED UTILITY EXTENSIONS AND SERVICES SHALL BE INSTALLED UNDERGROUND IN CONFORMANCE WITH THE STANDARDS ESTABLISHED BY THE SERVING UTILITY COMPANY.
  - GAS AND ELECTRIC SERVICE CONDUITS AND STRUCTURES SHALL BE INSTALLED IN CONFORMANCE WITH THE REQUIREMENTS AND PROVIDED DESIGN BY APPLICABLE ELECTRIC AND/OR GAS COMPANY. THE CONTRACTOR SHALL PROVIDE RECORD "AS BUILT" PLANS OF ALL CONDUITS AND STRUCTURES TO THE APPLICABLE ELECTRIC AND/OR GAS COMPANY PROJECT ENGINEER AND PROJECT OWNER.
  - TELEPHONE AND CATV SERVICE CONDUIT AND STRUCTURES SHALL BE INSTALLED IN CONFORMANCE WITH THE REQUIREMENTS OF APPLICABLE TELEPHONE AND/OR CATV COMPANIES. THE CONTRACTOR SHALL PROVIDE RECORD "AS BUILT" PLANS OF ALL CONDUITS AND STRUCTURES TO THE APPLICABLE TELEPHONE AND/OR CATV COMPANIES PROJECT ENGINEER AND PROJECT OWNER.
  - THE CONTRACTOR SHALL MAINTAIN FIELD NOTES, PHOTOGRAPHS, AND REDLINED PLANS CLEARLY RECORDING THE LOCATION OF ALL UNDERGROUND INSTALLATIONS. THESE RECORDS SHALL BE PROVIDED TO THE PROJECT ENGINEER UPON REQUEST.
  - CONTRACTOR TO PERFORM TEST PITS TO VERIFY EXISTING UTILITY DEPTHS, SIZES AND LOCATIONS PRIOR TO CONNECTING PROPOSED SEWER AND WATER MAINS TO EXISTING SEWER AND WATER MAINS. THE CONTRACTOR SHALL NOTIFY THE PROJECT ENGINEER IN WRITING OF ANY CONFLICTS SO THAT DESIGN MODIFICATIONS CAN BE MADE IF NECESSARY.
  - ALL CONSTRUCTION IN ROADWAYS TO CONFORM TO THE BOROUGH OF VERONA/ ESSEX COUNTY CONSTRUCTION GUIDELINES FOR STREET OPENINGS AND STANDARDS FOR ROADWAY CONSTRUCTION, LATEST EDITION.
  - PIPE LENGTHS INDICATED ARE MEASURED CENTER TO CENTER OF EACH STRUCTURE.
  - PROPOSED BUILDINGS SHALL BE SERVICED BY EXISTING POTABLE WATER AND SANITARY SEWER FROM THE APPLICABLE SEWAGE AUTHORITY.
  - ALL STORM PIPE TO BE CLEANED AND TELEVISION PRIOR TO ISSUANCE OF CERTIFICATES OF OCCUPANCY. ALL SANITARY SEWER MAINS, SEWER LATERALS, AND APPURTENANCES SHALL BE CONSTRUCTED AND TESTED IN ACCORDANCE WITH APPLICABLE SEWAGE AUTHORITY AND MADEY REQUIREMENTS.
  - SHOP DRAWINGS AND PRODUCT CATALOG INFORMATION FOR ALL WATER, SANITARY SEWER AND STORM SEWER STRUCTURES, CONDUITS, MATERIALS, AND APPURTENANCES, TO BE PROVIDED TO THE PROJECT ENGINEER FOR REVIEW AND APPROVAL PRIOR TO PURCHASING.

- ANY DAMAGE CAUSED TO THE SEWERAGE AUTHORITY'S SANITARY SEWER SYSTEM AS A RESULT OF CONSTRUCTION ACTIVITIES (TO BE DETERMINED BY THE AUTHORITY) SHALL BE REPAIRED BY THE CONTRACTOR, AT THE COST OF THE CONTRACTOR AND TO THE AUTHORITY'S SATISFACTION.
- PRIOR TO ACCEPTANCE, AS-BUILT PLANS FOR THE SANITARY SEWER SYSTEM SHALL BE SUBMITTED AND APPROVED.
- PRIOR TO ACCEPTANCE, THE SANITARY SEWER SYSTEM SHALL BE TESTED IN ACCORDANCE WITH APPROPRIATE SEWAGE AUTHORITY RULES AND REGULATIONS, AND WITNESSED AND APPROVED BY THE AUTHORITY ENGINEER.
- CIRCULAR HOLE SAWS WHICH ARE APPROPRIATELY SIZED OR HAND DRILLS MUST BE USED TO MAKE OPENINGS IN EXISTING SEWERS TO RECEIVE LATERALS, JACKHAMMERS, SLEDGEMHAMMERS AND OTHER UNSUITABLE TOOLS OR MACHINERY WHICH MAY DAMAGE THE SEWER MAIN ARE NOT ALLOWED TO BE USED TO MAKE LATERAL OPENINGS. ALL DEBRIS MUST BE REMOVED AND NOT ALLOWED TO FALL INTO THE PIPE.
- ALL WATER MAINS, WATER SERVICES AND APPURTENANCES SHALL BE CONSTRUCTED, TESTED AND DISINFECTED IN ACCORDANCE WITH APPLICABLE WATER COMPANY AND NJDEP REQUIREMENTS.
- ALL WATER SERVICES TO BE INSTALLED IN CONFORMANCE WITH THE REQUIREMENTS OF THE PLUMBING SUBCODE PROMULGATED BY THE NEW JERSEY DEPARTMENT OF COMMUNITY AFFAIRS PURSUANT TO THE STATE UNIFORM CONSTRUCTION CODE ACT (N.J.A.C. 5:23-3.15).
- ALL NEW WATER MAINS SHALL BE LAID WITH A MINIMUM OF 4 FEET OF COVER OVER THE PIPE TO PREVENT FREEZING.
- SPACING AND LOCATIONS OF HYDRANTS SHALL COMPLY WITH THE FIRE PREVENTION STANDARDS OF THE WATER PURVEYOR AND FIRE OFFICIAL.
- IN ACCORDANCE WITH N.J.A.C. 7:10-11.10(3), ALL WATER MAINS AND SANITARY SEWER LINES SHALL BE SEPARATED BY A HORIZONTAL DISTANCE OF 10 FEET. IF SUCH LATERAL SEPARATION IS NOT POSSIBLE, THE WATER AND SEWER LINES SHALL BE IN SEPARATE TRENCHES (STEP TRENCHES ARE PROHIBITED) WITH THE TOP OF THE SEWER LINE AT LEAST 18 INCHES BELOW THE BOTTOM OF THE WATER MAIN OR WITH SUCH OTHER SEPARATION EXPRESSLY APPROVED BY THE NJDEP. AT CROSSINGS OF SEWER LINES AND WATER MAINS, THE TOP OF THE SEWER LINES SHALL BE AT LEAST 18 INCHES BELOW THE BOTTOM OF THE WATER MAIN (SEWER SERVICE LATERALS ARE NOT SUBJECT TO THIS REQUIREMENT). IF SUCH VERTICAL SEPARATION IS NOT POSSIBLE, THE SEWER LINE SHALL BE OF WATER-TIGHT CONSTRUCTION (DUCTILE IRON), WITH WATER-TIGHT JOINTS THAT ARE A MINIMUM OF 10 FEET FROM THE WATER MAIN.
- UNLESS OTHERWISE INDICATED:
  - DIP WATER LATERAL SHALL BE CLASS PS3500 CEMENT LINED DUCTILE IRON PIPE. (POLYETHYLENE ENCASEMENT). COPPER WATER LATERAL SHALL BE TYPE K
  - SANITARY SEWER MAINS SHALL BE PVC SDR-35
  - HDPE PIPES SHALL BE ADS N-12 WITH SOIL TIGHT JOINTS OR APPROVED EQUAL.
- A MARKER STAKE PROTRUDING A MINIMUM OF FOUR FEET ABOVE THE GROUND SURFACE SHALL BE PLACED TO INDICATE THE END OF THE CONSTRUCTION STUBS FOR BUILDING CONNECTIONS, OR STUBS SHALL BE TURNED AND EXTENDED ABOVE GRADE BY FOUR FEET AND CAPPED.
- BUILDING ROOF LEADERS AND CLEAR WASTE FROM BUILDING TO CONNECT TO SITE STORM SEWER SYSTEM. CONNECTION POINTS WILL BE COORDINATED WITH ARCHITECTURAL AND PLUMBING PLANS.

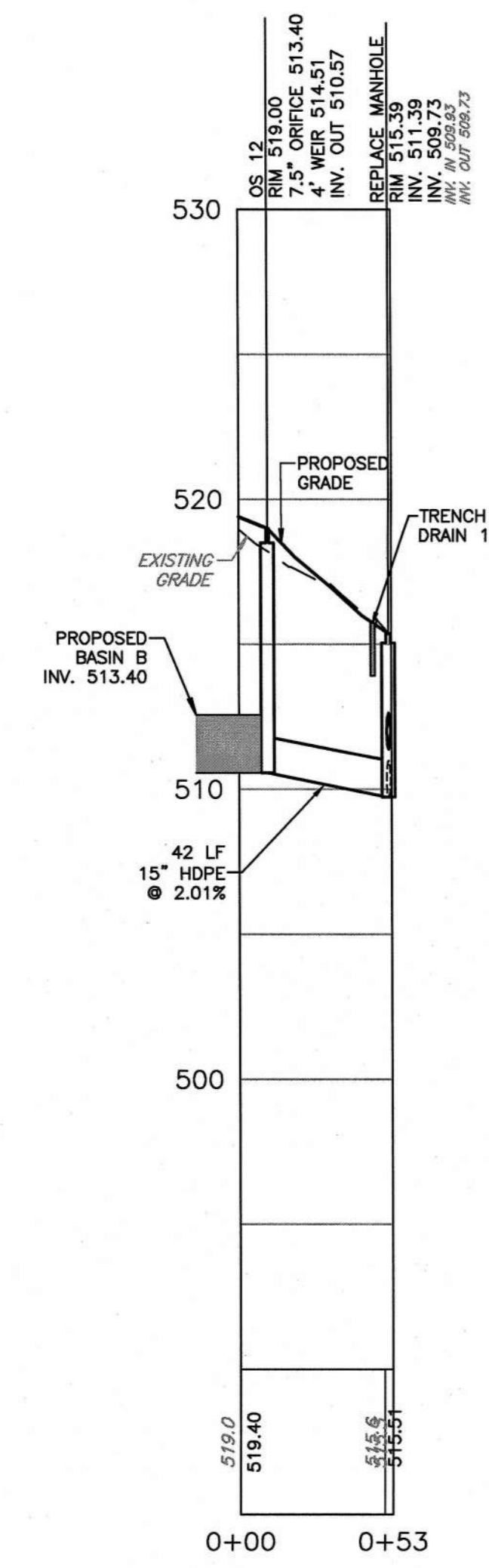




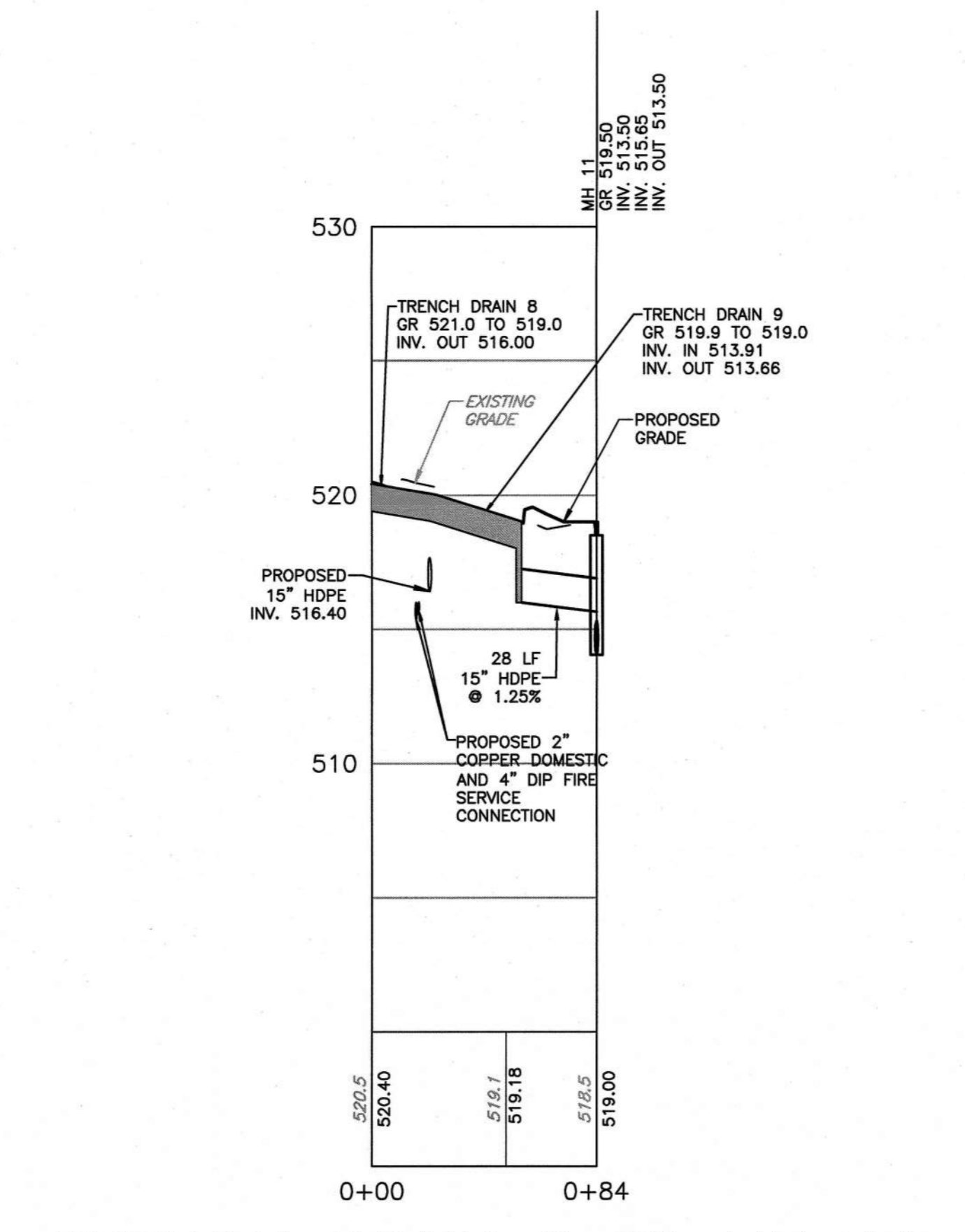
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 © MATRIXNEWORLD\Matrix LDS\Jobs\BNE Real Estate Group\19-720 -Verona Site\Down\Plot Sheets\08-Profiles.dwg\08-Profiles



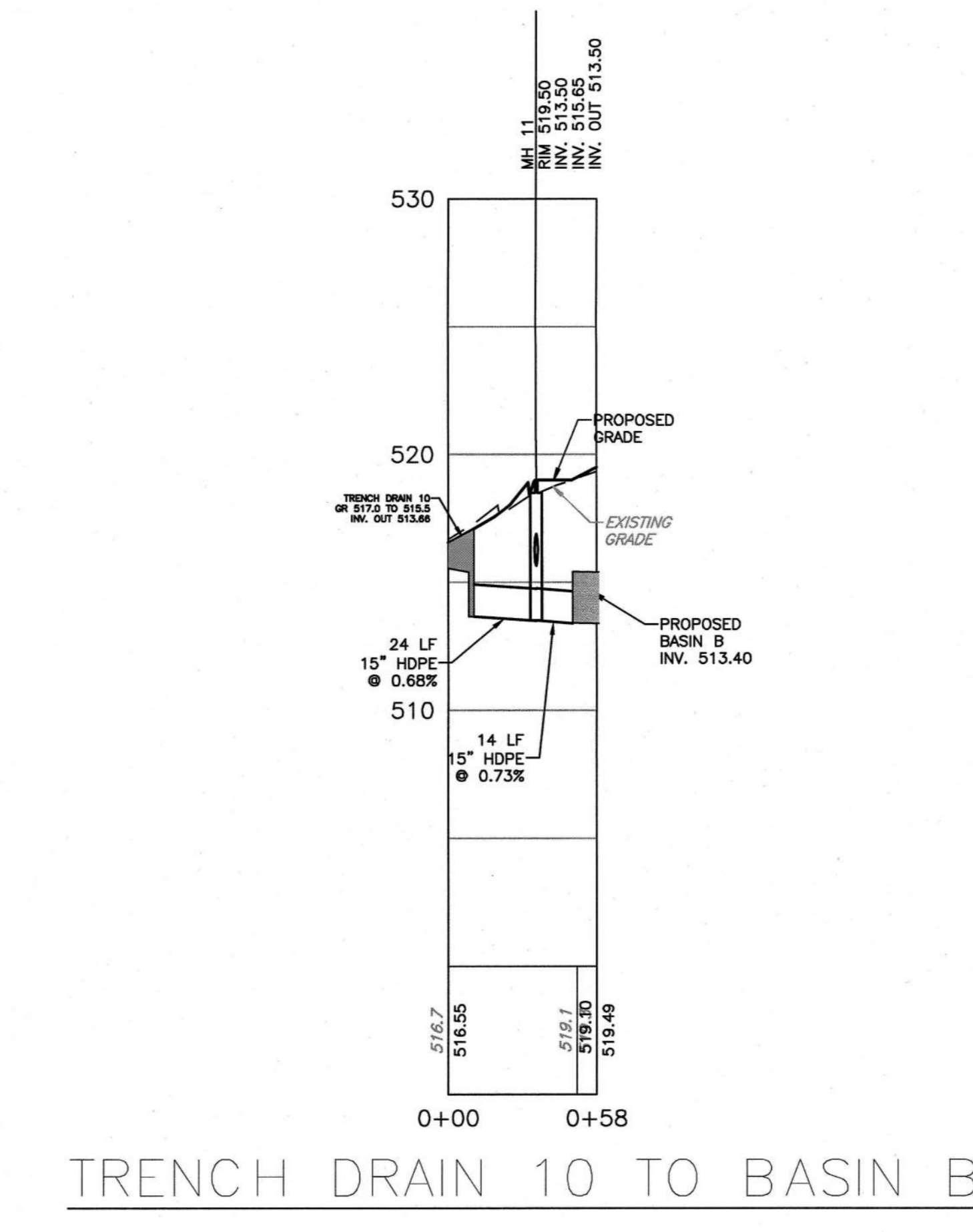
INLET 1 TO BASIN A



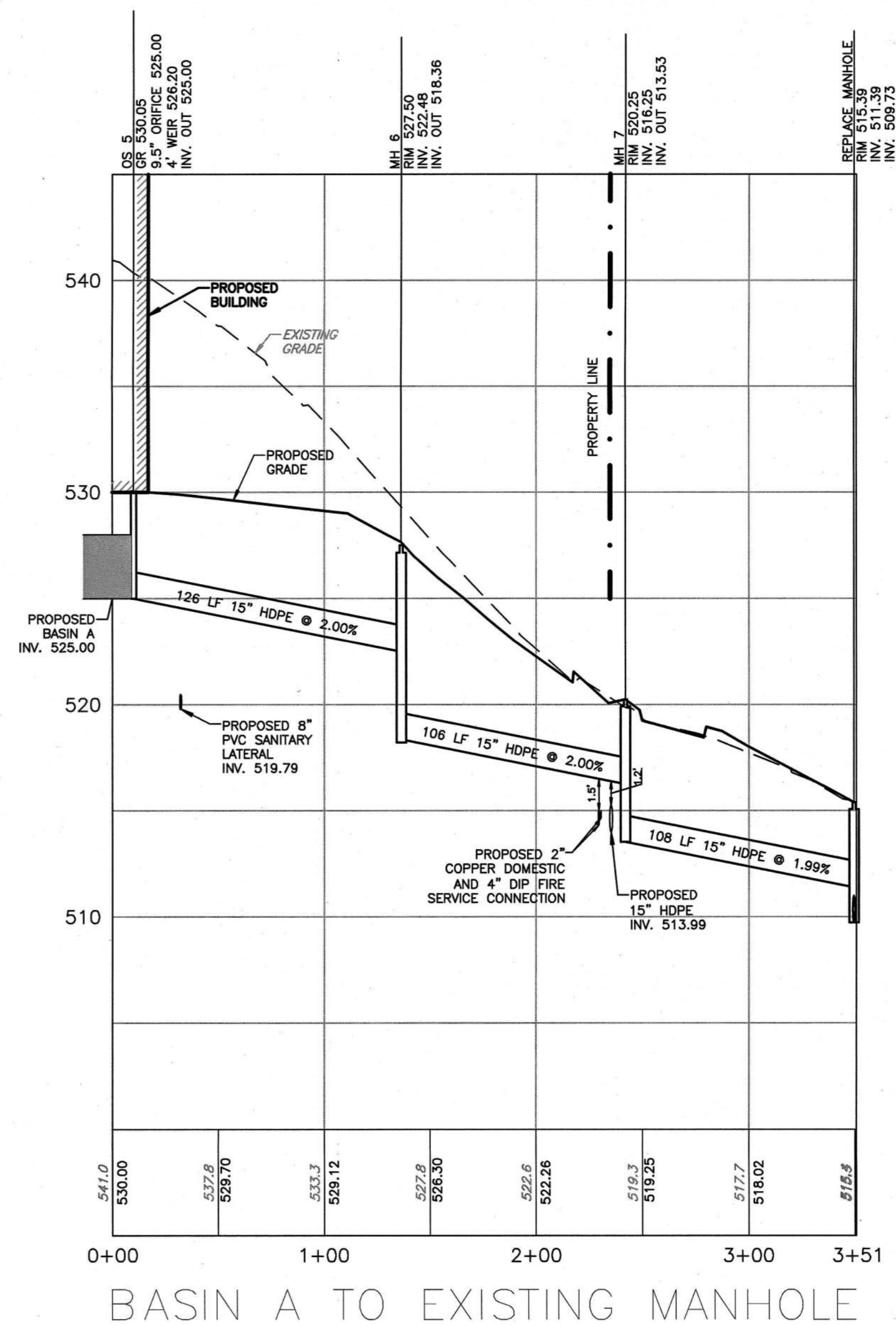
BASIN B TO EXISTING MANHOLE



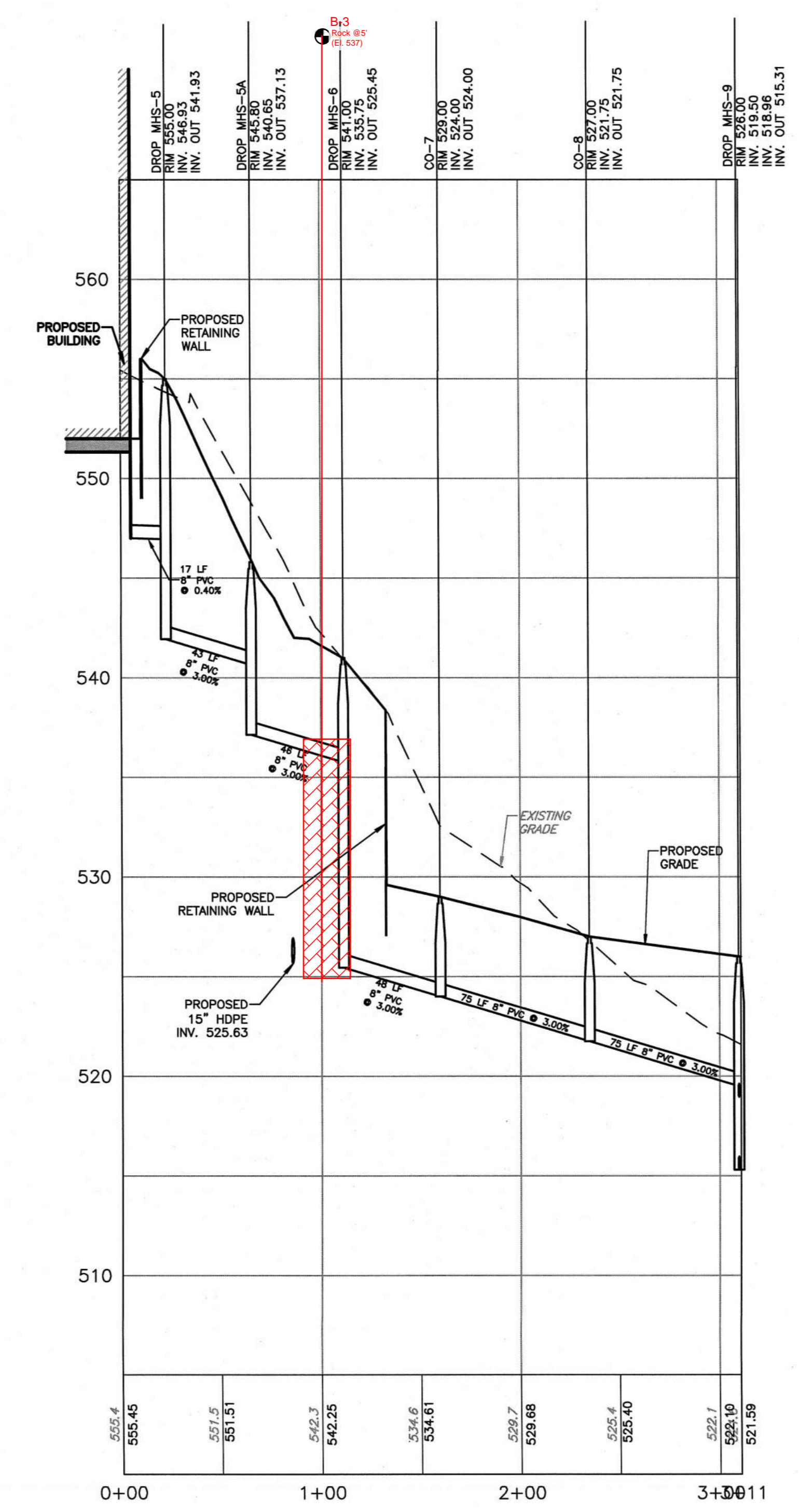
TRENCH DRAIN 8 TO MH 11



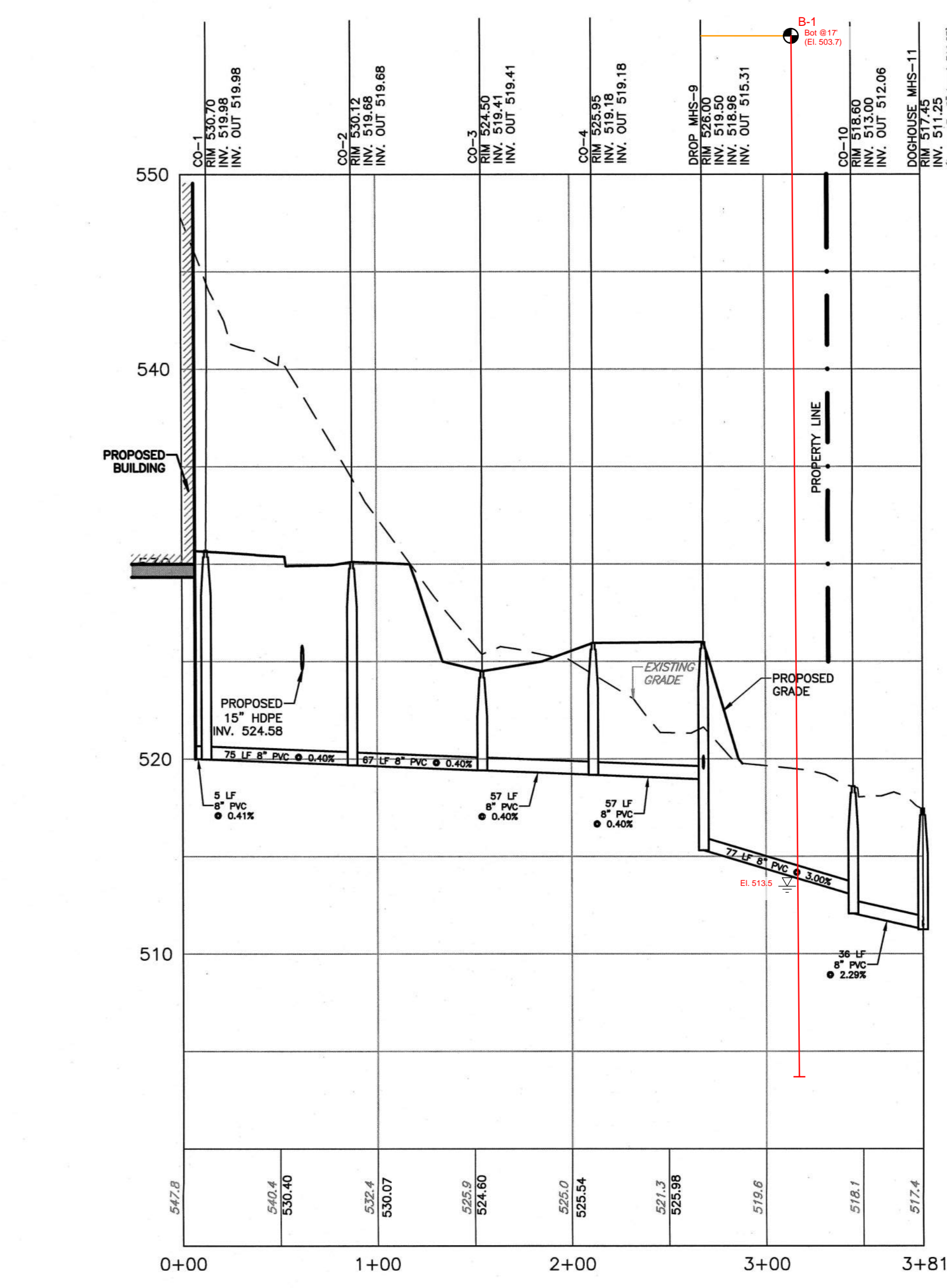
TRENCH DRAIN 10 TO BASIN B



BASIN A TO EXISTING MANHOLE



SANITARY SEWER DROP MHS-5 TO DROP MHS-9

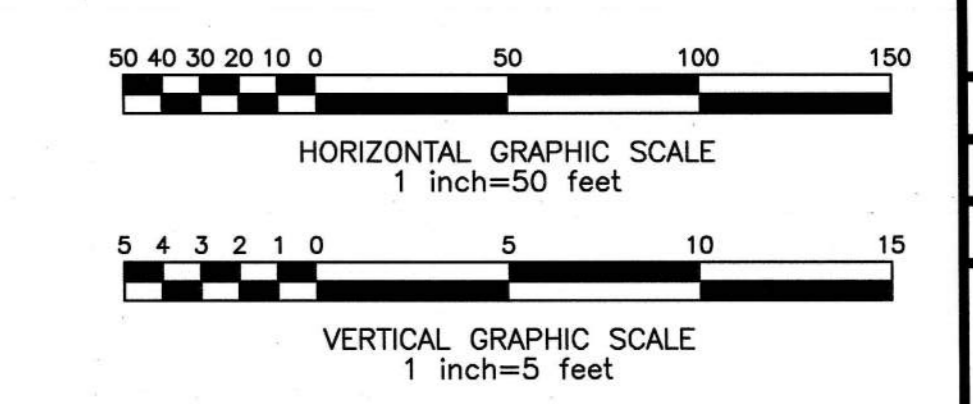


SANITARY SEWER CO-1 TO DOGHOUSE MH-11

NOTICE TO CONTRACTOR

ATTENTION OF THE CONTRACTOR IS DIRECTED TO THE FACT THAT THE APPROXIMATE LOCATIONS OF KNOWN UTILITY STRUCTURES AND FACILITIES THAT MAY BE ENCOUNTERED WITHIN AND ADJACENT TO THE LIMITS OF WORK AREA ARE SHOWN ON THE PLANS. THE ACCURACY AND COMPLETENESS OF THIS INFORMATION IS NOT GUARANTEED BY THE ENGINEER, AND THE CONTRACTOR IS ADVISED TO VERIFY, IN THE FIELD, ALL THE FACTS CONCERNING THE LOCATION OF THESE UTILITIES AND OTHER CONSTRUCTION OBSTACLES PRIOR TO THE START OF CONSTRUCTION. FURTHER, THE CONTRACTOR SHALL NOTIFY THE ENGINEER, IN WRITING, PRIOR TO THE START OF CONSTRUCTION, OF ANY DISCREPANCIES WHICH MAY AFFECT THE PROJECT DESIGN.

THE CONTRACTOR SHALL CONTACT NEW JERSEY ONE CALL (1-800-272-1000 OR LATEST NUMBER) FOR UTILITY MARKOUT BEFORE THE START OF CONSTRUCTION.



NO.	DATE	DESCRIPTION	BY	CHK
1	05/10/2022	REVISED PER CLIENT COMMENTS	SM	SM

DESIGNED BY: CTR  
 REVIEWED BY: CTR  
 RELEASED BY: SMS  
 DATE: 5/10/2022

**MATRIXNEWORLD**  
 Engineering Progress  
 Matrix New World Engineering, Land Surveying and Landscape Architecture, P.C.  
 442 State Route 35, Second Floor  
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 Tel: 732-688-2999  
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 Certified WBE  
 NEW JERSEY CERTIFICATE OF AUTHORIZATION No. 24G427962200

**PROFILES**  
**VERONA SUNSET URBAN RENEWAL, LLC**  
**BLOCK 303, LOT 4 - TOWNSHIP OF VERONA**  
**BLOCK 301, LOT 5 AND BLOCK 401, LOT 1 - TOWNSHIP OF MONTCLAIR**  
 ESSEX COUNTY, NEW JERSEY

PROJECT NUMBER: 19-720  
 DATE: 12/10/21  
 SCALE: AS SHOWN

SHEET 8 OF 15



## Low Impact Checklist: Construction

This suggested list has been compiled by the Verona Environmental Commission based on best available practices. This is not a requirement of the uniform construction code. It is intended to be beneficial to all residents considering renovations and new construction. The purposes of this list are to 1) assist those planning construction projects to do so in a manner that causes the least disruption to the environment; 2) establish a healthy setting for those occupying the new or renovated space; and 3) reduce waste and save resources. Implementing environmentally friendly practices can be economical when considered at pre-construction stages and are often beneficial in the long term.

### General Construction

- Recycle and/or salvage non-hazardous construction and demolition debris
- Use renewable building material and products
- Incorporate renewable energy (i.e. geothermal, solar)
- Use local products (i.e. local and sustainable woods)
- Use local construction products and companies
- Conserve energy and reduce electricity use as much as possible

### Grounds & Landscaping

- Create a sedimentation control plan to prevent sediment from moving off site.
- Use native plantings (Native plants are adapted to thrive in local conditions)
- Use captured rainwater or recycled grey water for irrigation
- Provide bicycle parking to help reduce overcrowded streets and CO2 emissions.

### Storm Water Management

- Avoid runoff to other properties by installing an underground cistern or rain garden. This will keep water on your own property and out of the sewer system.
- Limit impervious surfaces – use an open grid pavement system (at least 50% pervious)
- Promote infiltration that captures and treats storm water runoff from rainfall
- Use a water retention system (i.e. rain barrel) to collect rainwater for non-potable uses

### Lighting

- Choose LED lights (the most environmentally-efficient option)
- Purchase renewable electricity, either directly from your power supplier, from an independent clean power generator, or through renewable energy certificates.
- Use skylights or solo tubes for natural daytime lighting. Use sensor controls in commercial or industrial settings and solar lighting outdoors.

## Foundation & Basement

- Use environmentally friendly foundation sealants (rather than black tar)
- Prevent sump pump water from flowing into the sewer system

## Roofing

- Use light color roofing materials to limit heat absorption created by darker roofs
- Use roofing material with a solar reflectance index (SRI) equal to or greater than 78 for low roofs and 29 for steep-sloped roofs
- Install tile or metal roofs
- Consider installing a vegetated roof

## Heating & Cooling

- Use 2 x 6 studs instead of 2 x 4 to increase amount of insulation
- Install programmable thermostats that adjust temperatures throughout the day
- Use occupant sensing and/or remote control thermostat technologies
- Install heat pumps to transfer energy heat and cold Use high-efficiency boilers/furnaces
- Use attic fans to regulate heating and cooling

## Windows

- Choose ultraviolet window protection to protect against sun damage
- Install triple pane windows or windows with Argon or Kryton gas between panes

## Products

- Choose products with low VOCs (VOCs are found in adhesives, interior paints, cabinets, etc)
- Avoid products that contain hazardous chemicals such as formaldehyde and cyanide
- Choose ENERGY STAR® appliances
- Install dual flush toilets Install low flow shower heads
- Avoid garbage disposals and make provisions for composting

Verona Environmental Commission

## Low Impact Checklist: Planning

This suggested list has been compiled by the Verona Environmental Commission based on best available practices. This list is intended to assist individuals involved in planning and building projects in Verona Township towards submitting low impact plans. The goal of a low impact plan is not only to increase cost savings and add value to your project but to make environmentally responsible choices and eliminate project delays in early stages of the planning process.

### General Construction & Design

- Provide occupants with connection to outdoor space through increased natural light and views
- Orient buildings facing southwest to maximize potential solar installation
- Use orientation and design to maximize passive solar heat/cooling
- Use proper planning to prevent damage to surrounding properties and public spaces
- Minimize disturbance to soils and vegetation
- Recycle and/or salvage non-hazardous construction and demolition debris
- Use renewable building materials and products
- Use local and sustainable woods
- Incorporate renewable energy and reduce energy use

### Grounds & Landscaping

- Create a sedimentation control plan Limit altering steep slope areas
- Encourage landscaping that requires limited moving, trimming, and watering
- Create landscapes that limit the need for lawn chemicals and maintenance
- Position evergreens to the north to shield wind/ Position deciduous trees to the south to cool buildings
- Use native plantings (Native plants are adapted to thrive in local conditions)
- Place parking spaces in shaded areas
- Place bicycle parking racks in secure areas near entrances
- Use paving materials with an SRI value >29. This will reflect, not absorb solar heat.

### Storm Water Management

- Limit impervious surfaces – use an open grid pavement system (at least 50% pervious)
- Reduce impervious cover to promote infiltration that captures and treats storm water
- Use a water retention system (i.e. rain barrel) to collect rainwater or recycled gray water for non-potable uses

## Foundation & Basement

- Use alternative practices (rather than black tar) for foundation sealants
- Encourage aeration and ventilation
- Draw sunlight into basement areas through access windows

## Roofing

- Use light color roofing materials to limit heat absorbed by dark colored roofs
- Use roofing material with a solar reflectance index (SRI) equal to or greater than 78 for low roofs and 29 for steep sloped roofs
- Consider Tile or Metal roofs
- Construct roofs that can support solar installations

## Lighting

- Use solar lighting outdoors
- Use skylights or solo tubes for natural daytime lighting
- Use motion sensor lighting where applicable
- Choose energy-efficient light bulbs

## Products

- Avoid products that contain hazardous chemicals such as formaldehyde and cyanide
- Use local products (i.e. local and sustainable woods)
- Use local construction equipment and companies when possible

For more information and resources please see:

The Native Plant Society of New Jersey - <http://www.npsnj.org>

The Association of New Jersey Environmental Commissions - <http://www.anjec.org>

US Green Building Council NJ Chapter - <http://usgbc.org>

New Jersey Green Building Manual - <http://greenmanual.rutgers.edu>

The New Jersey Department of Transportation Master Plan - <http://njbikepedplan.com>

Rutgers Center for Green Building - <http://greenbuilding.rutgers.edu>

The Verona Environmental Commission - <http://www.veronaec.org>