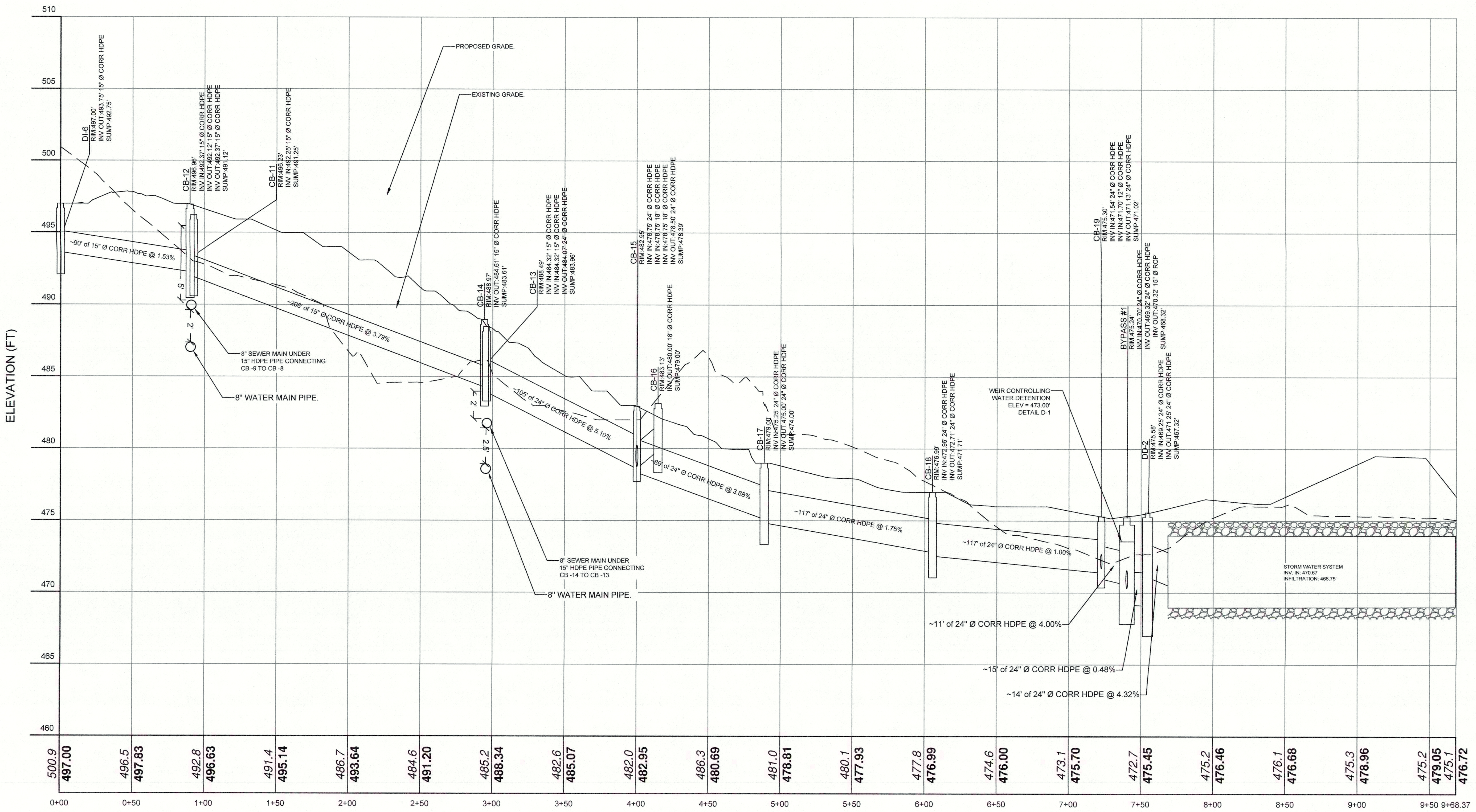
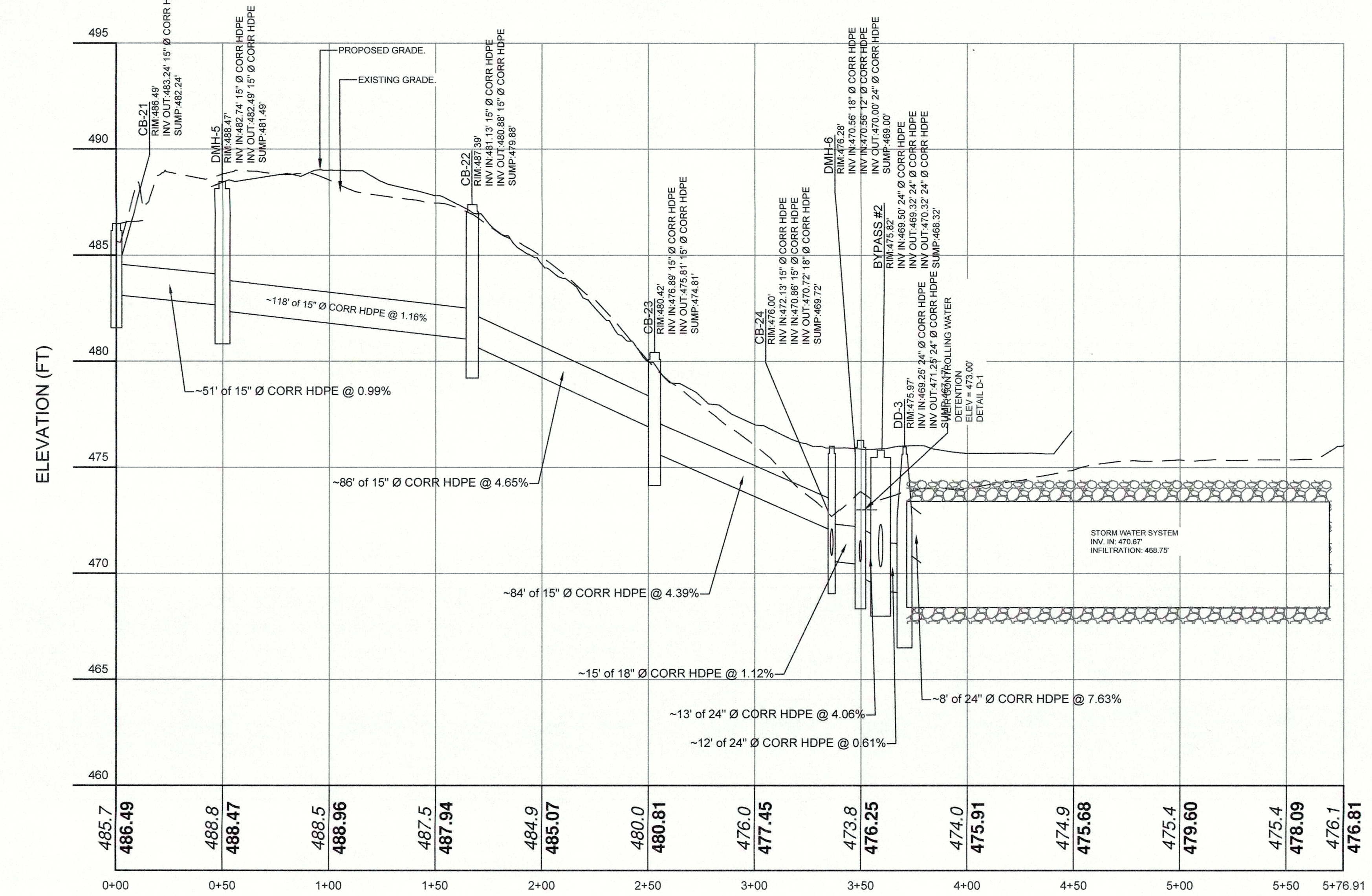


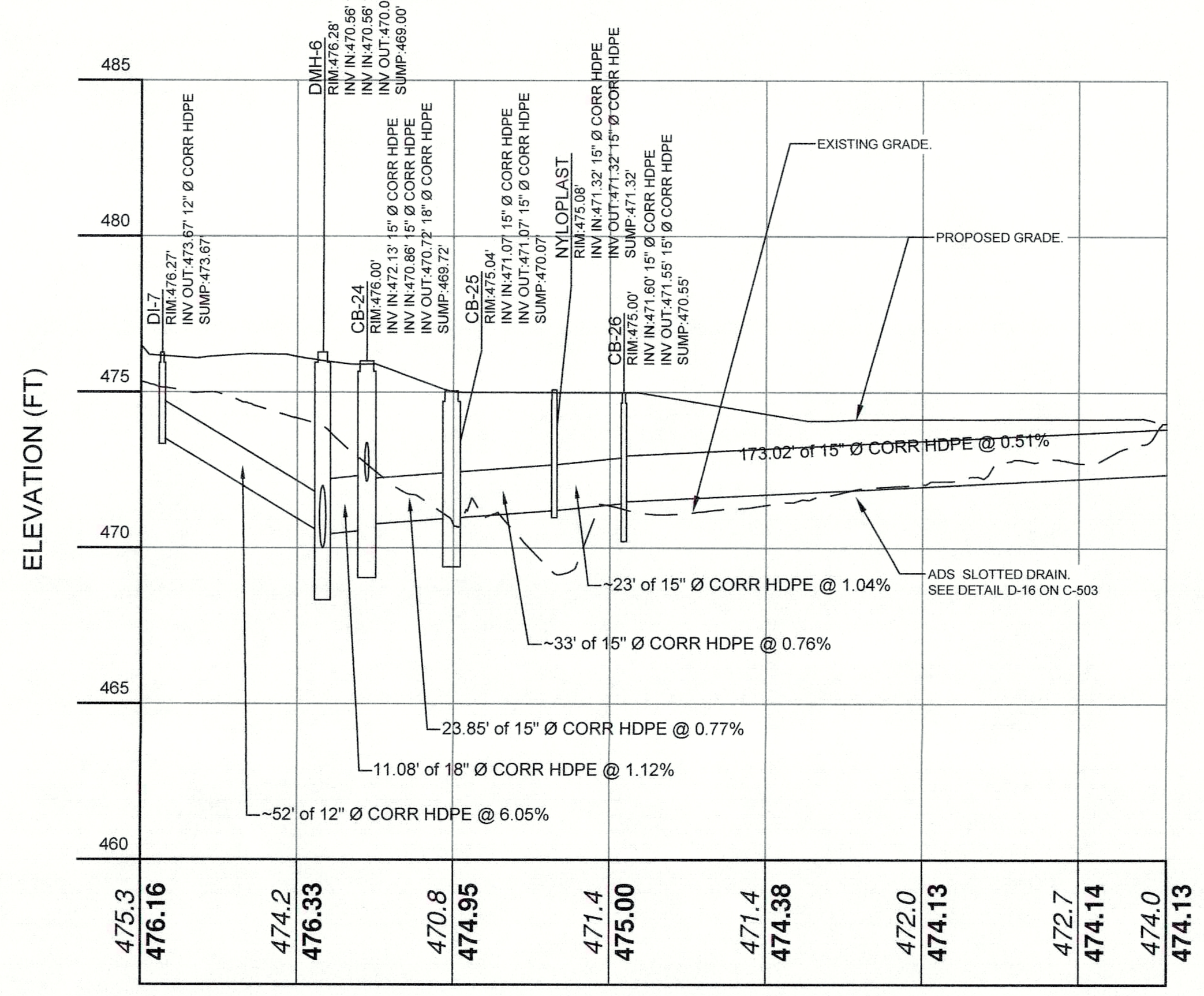
DISTANCE ALONG BASELINE (FT)

BUILDING PARKING LOT DRAINAGE PROFILE
VERT. SCALE: 1" = 4
HORIZ. SCALE: 1" = 40



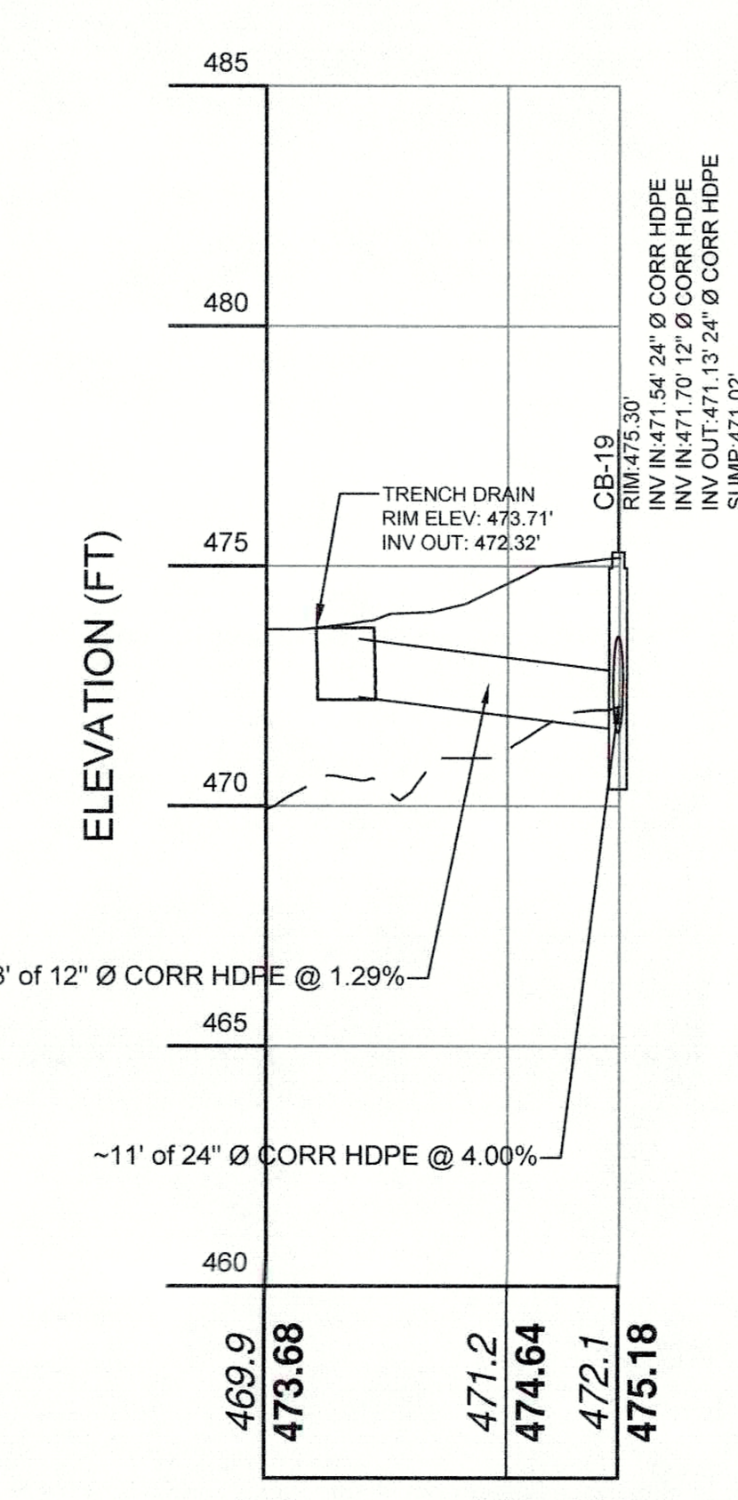
DISTANCE ALONG BASELINE (FT)

EXISTING HOUSE DRAINAGE
VERT. SCALE: 1" = 4
HORIZ. SCALE: 1" = 40



DISTANCE ALONG BASELINE (FT)

SIDE PARKING LOT DRAINAGE PROFILE
VERT. SCALE: 1" = 4
HORIZ. SCALE: 1" = 40



DISTANCE ALONG BASELINE (FT)

BACK OF PARKING LOT PROFILE
VERT. SCALE: 1" = 4
HORIZ. SCALE: 1" = 40

APPROVED
Resolution Number 23-13
Date July 17, 2023

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Civil Engineers • Land Planners
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(914) 962-4488 - Fax: (914) 962-7386
www.sitedesignconsultants.com

PROJECT - 20-20

Engineer:
Joseph C. Riina, P.E.
NYS Lic. No. 64431

Revisions:

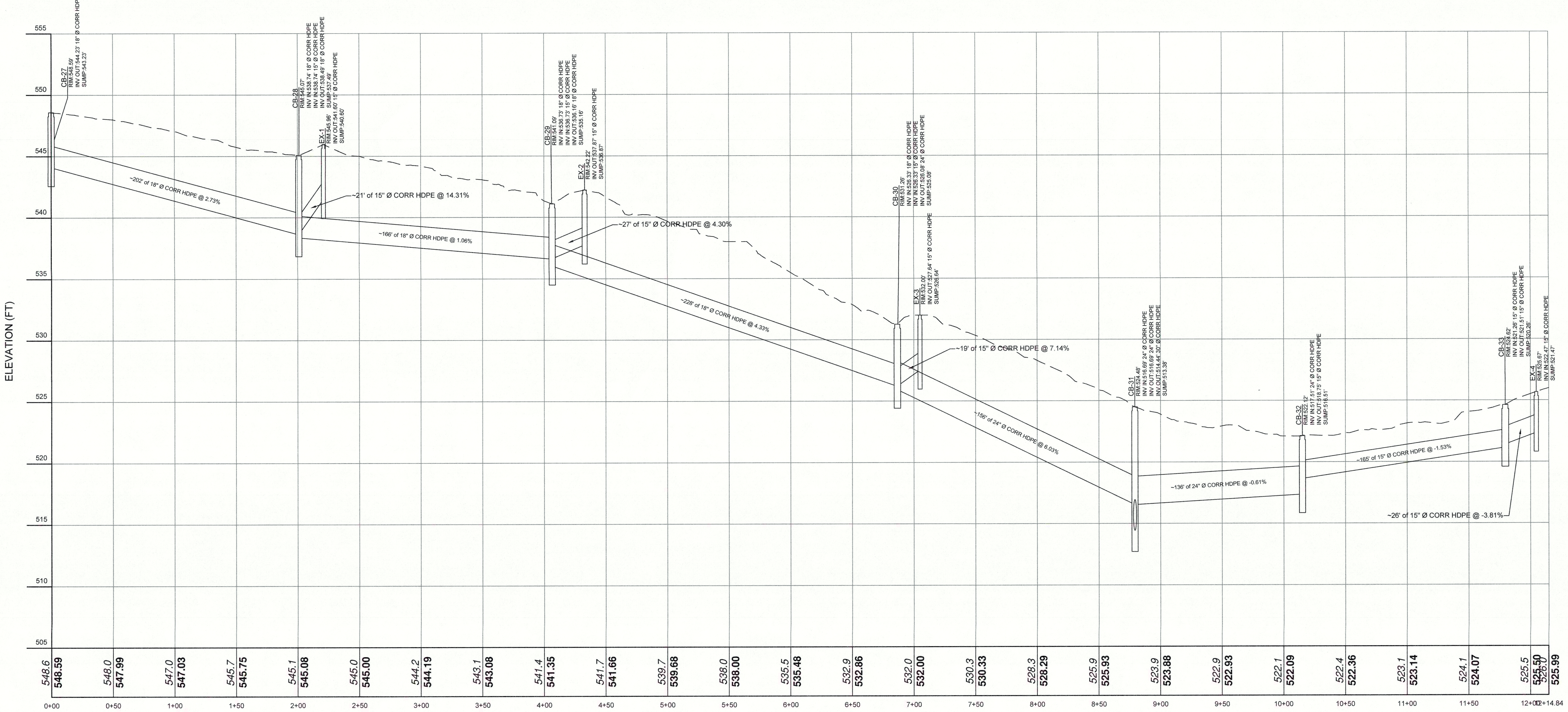
No.	Date	Comments:
1.	6/30/20	R-3 Zone Schedule
2.	7/13/20	Zone Schedule Rev Floor Areas
3.	12/3/20	Updated Grading and Utility Plans
4.	1/21/21	Pedestrian Access Revisions
5.	1/12/22	Site Plan Revisions
6.	3/16/22	Site Plan Revisions
7.	10/24/22	Site Plan Revisions
8.	3/06/23	Udated wetland boundary
9.	3/31/23	Parking update
10.	4/12/23	Site Plan update
11.	5/08/23	Site Plan update
12.	8/18/23	Site Plan update
13.	9/8/2023	Site Plan update
14.	10/11/23	DEP Comments
15.	2/2/2024	DEP Comments
16.	2/14/2024	WCHD Comments
17.	3/12/2024	DEP Sewer Comments
18.	3/21/2024	DEP Comments
19.	4/22/2024	WCHD Comments
20.	5/10/2024	DEP Comments
21.	5/22/2024	WCHD Comments
22.	5/30/2024	WCHD Comments

SCALE: 1" = 40'
DRAWN BY: TK
DATE: 6-22-20

DRAINAGE PROFILE

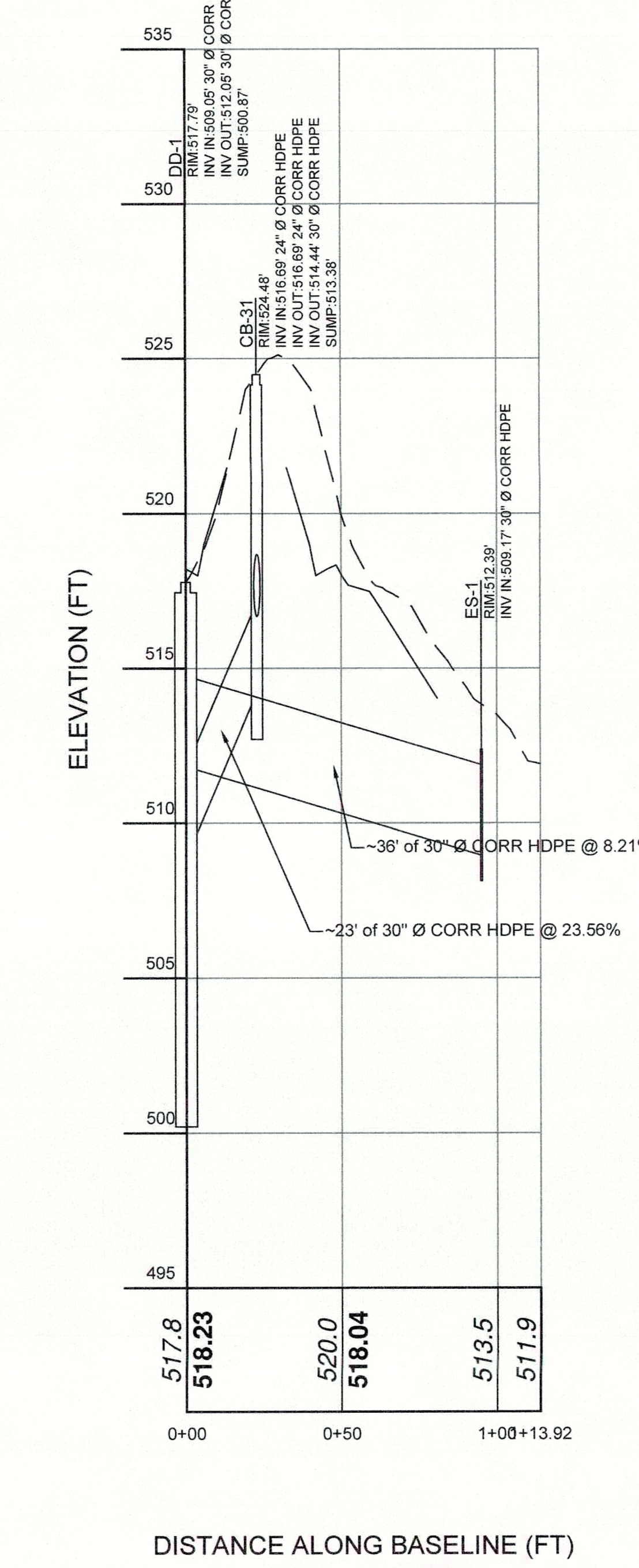
SITE PLAN
PREPARED FOR
UNDERHILL FARM
UNDERHILL AVENUE
Town of Yorktown
Westchester County, New York

Sheet C-303



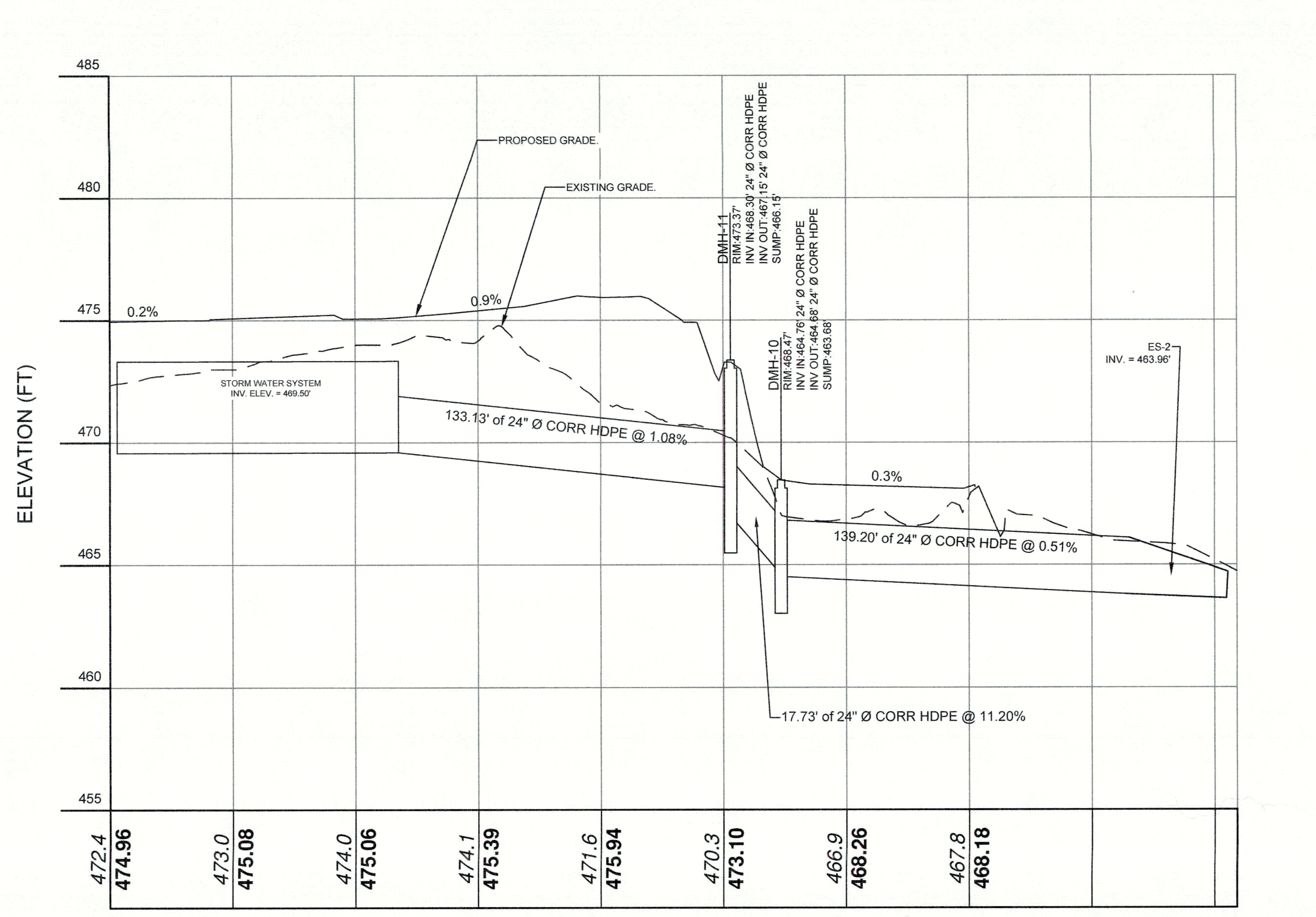
DISTANCE ALONG BASELINE (FT)

GLENROCK ST. DRAINAGE PROFILE
VERT. SCALE: 1" = 4
HORIZ. SCALE: 1" = 40



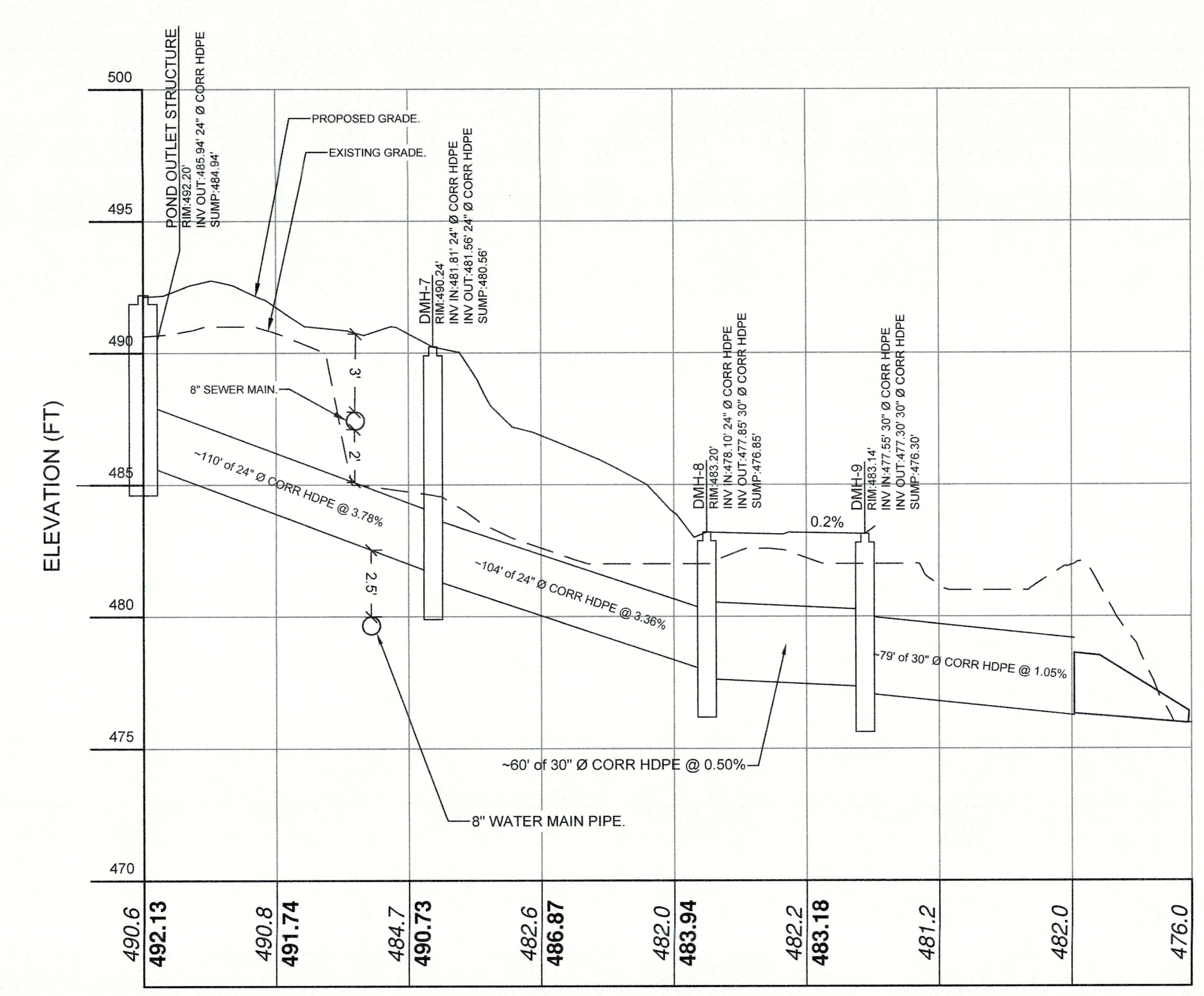
DISTANCE ALONG BASELINE (FT)

DRAINAGE BETWEEN WALL
VERT. SCALE: 1" = 4
HORIZ. SCALE: 1" = 40



DISTANCE ALONG BASELINE (FT)

DETENTION CHAMBERS TO ES-2
VERT. SCALE: 1" = 4
HORIZ. SCALE: 1" = 40



DISTANCE ALONG BASELINE (FT)

POND OUTLET TO DMH-9
VERT. SCALE: 1" = 4
HORIZ. SCALE: 1" = 40

APPROVED
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PROJECT - 20-20

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Engineer:
STATE OF NEW YORK · JOSEPH CARLO RIINA · No. 64431 · LICENSED PROFESSIONAL ENGINEER
Joseph C. Riina, P.E.
NYS Lic. No. 64431

Revisions:

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21.	5/22/2024	WCHD Comments
22.	5/30/2024	WCHD Comments

SCALE:

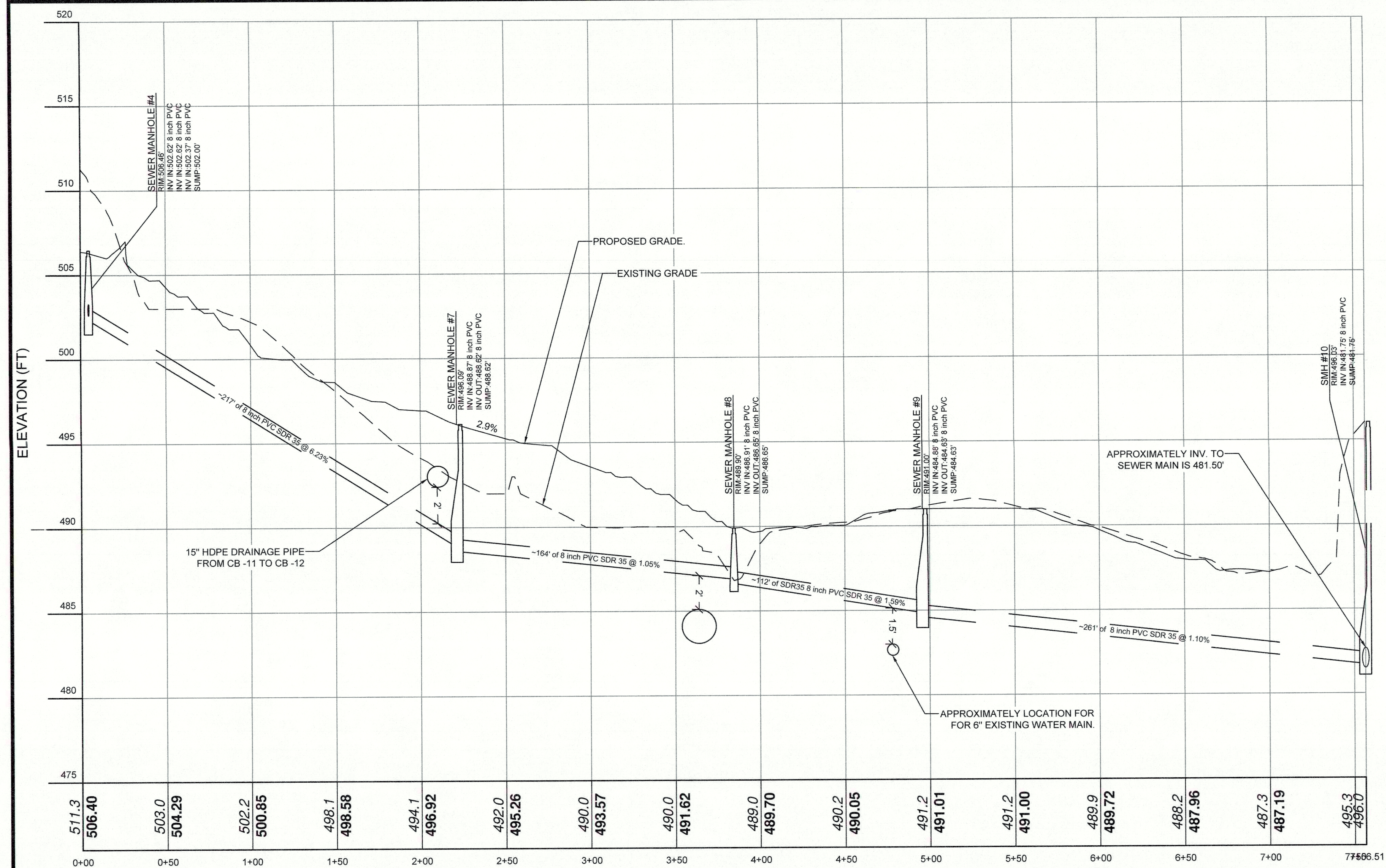
DRAWN BY: TK

DATE: 6-22-20

DRAINAGE PROFILE

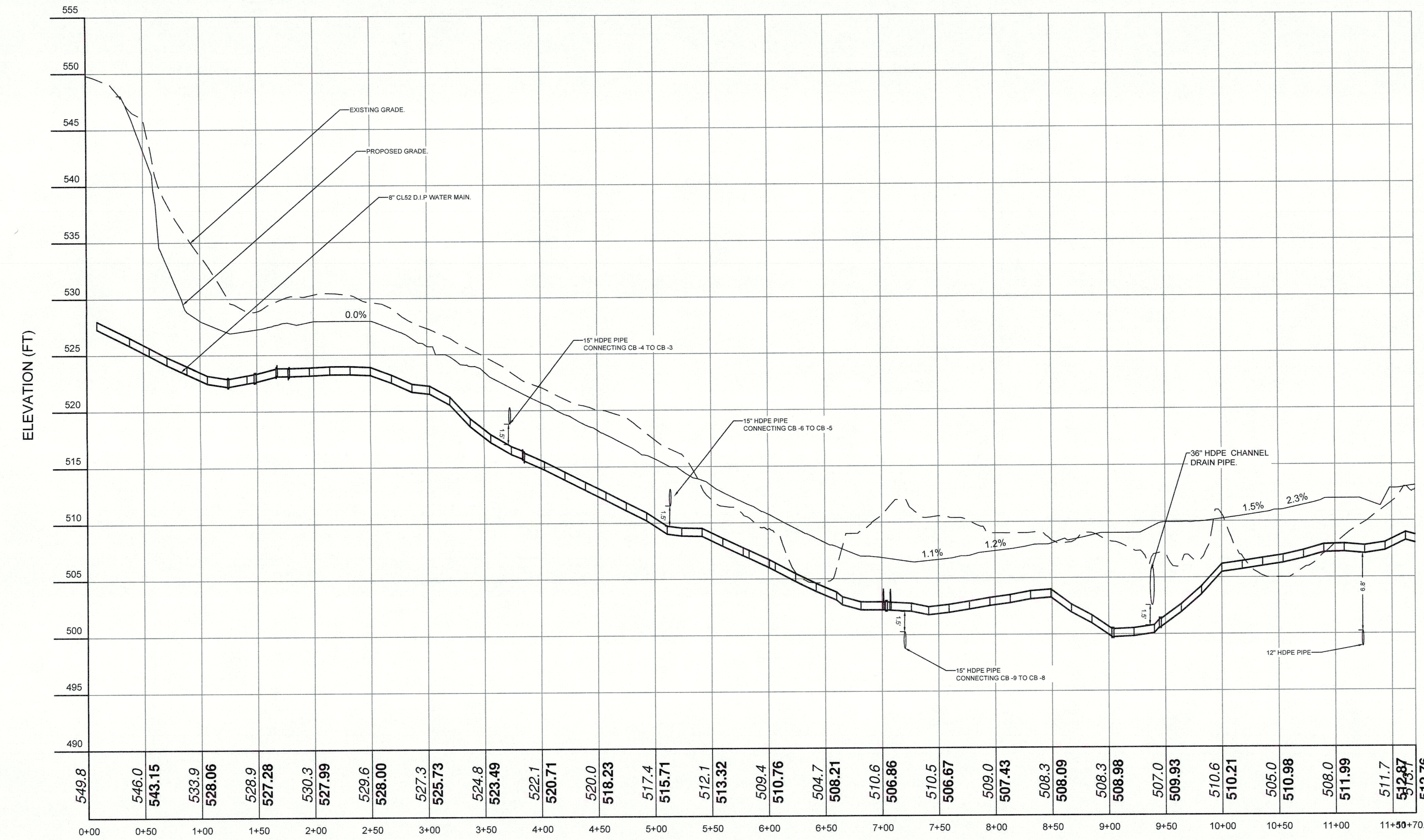
SITE PLAN
PREPARED FOR
UNDERHILL FARM
UNDERHILL AVENUE
Town of Yorktown
Westchester County, New York

Sheet C-304

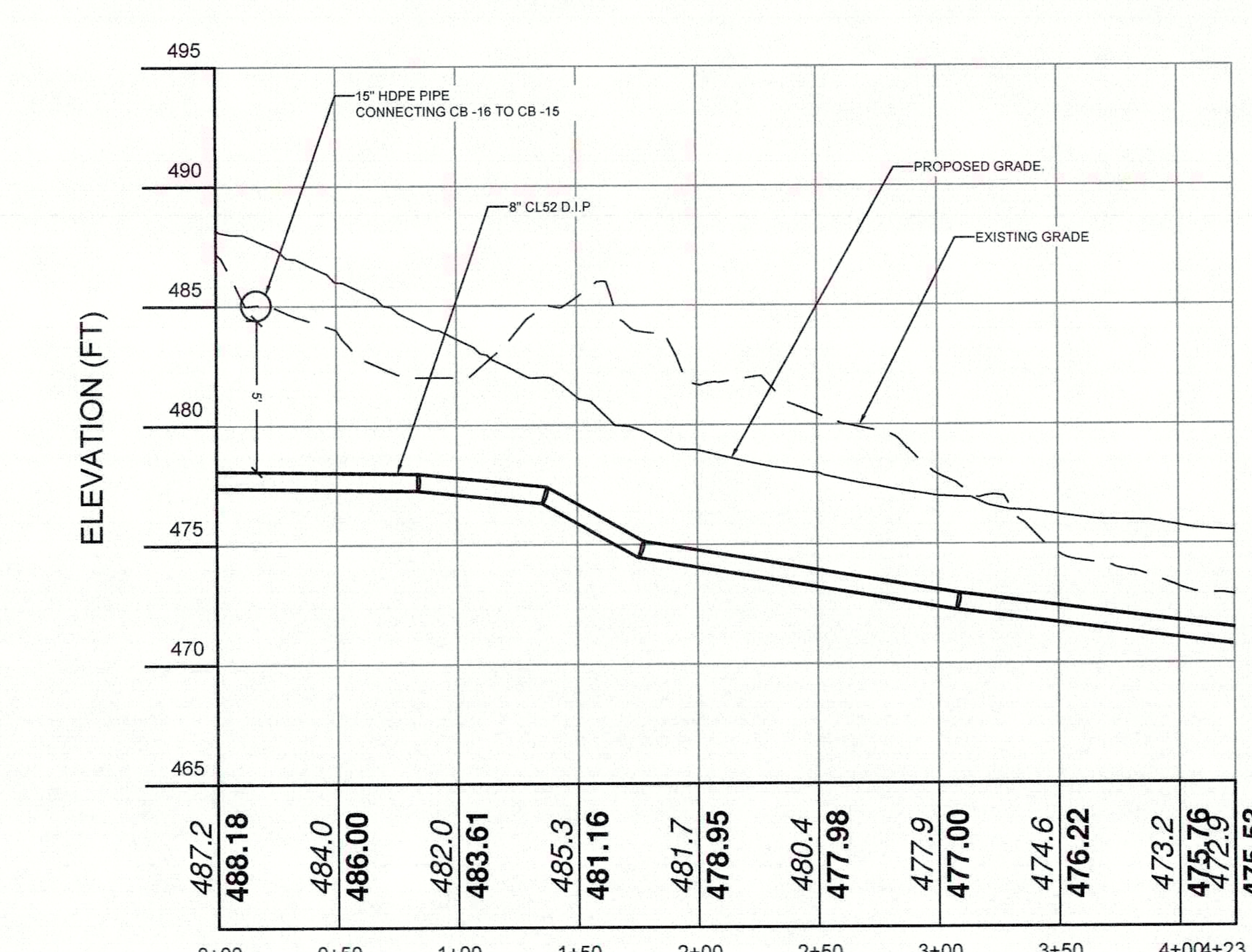


DISTANCE ALONG BASELINE (FT)

SEWER LINE BUILDING
VERT. SCALE: 1" = 4
HORIZ. SCALE: 1" = 40

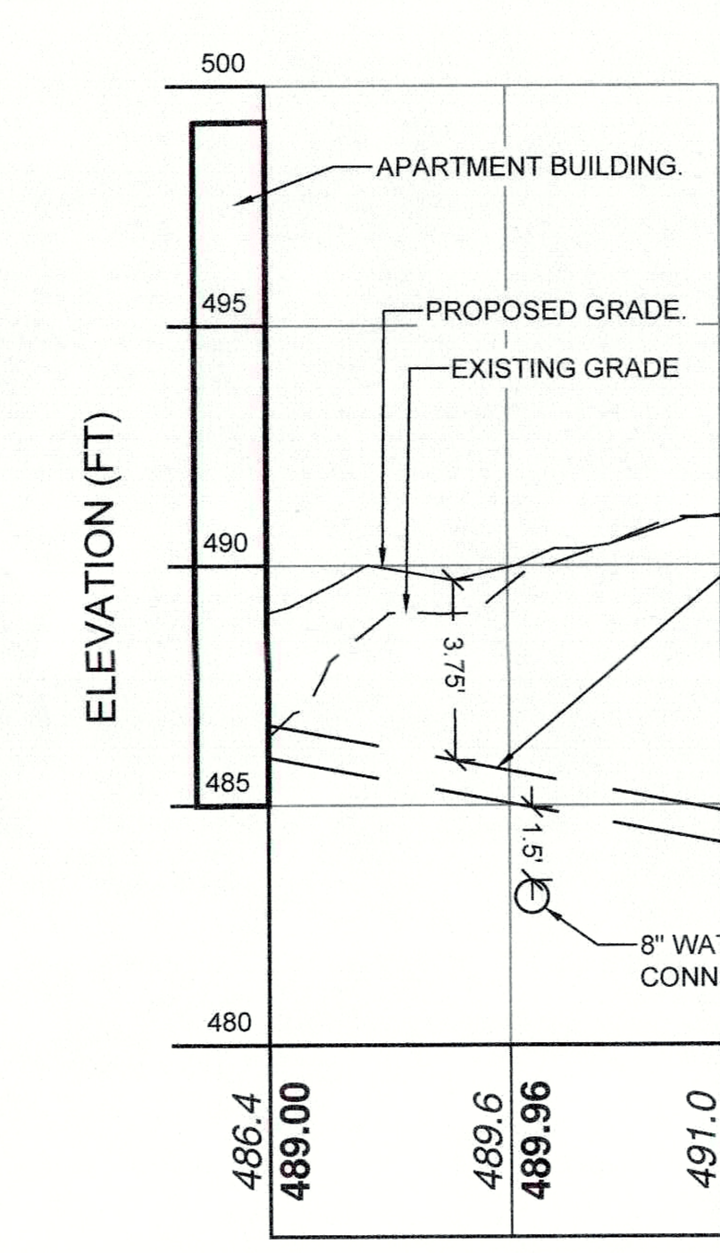


DISTANCE ALONG BASELINE (FT)
TOWNHOUSE UNITS WATER MAIN
VERT. SCALE: 1" = 4
HORIZ. SCALE: 1" = 60



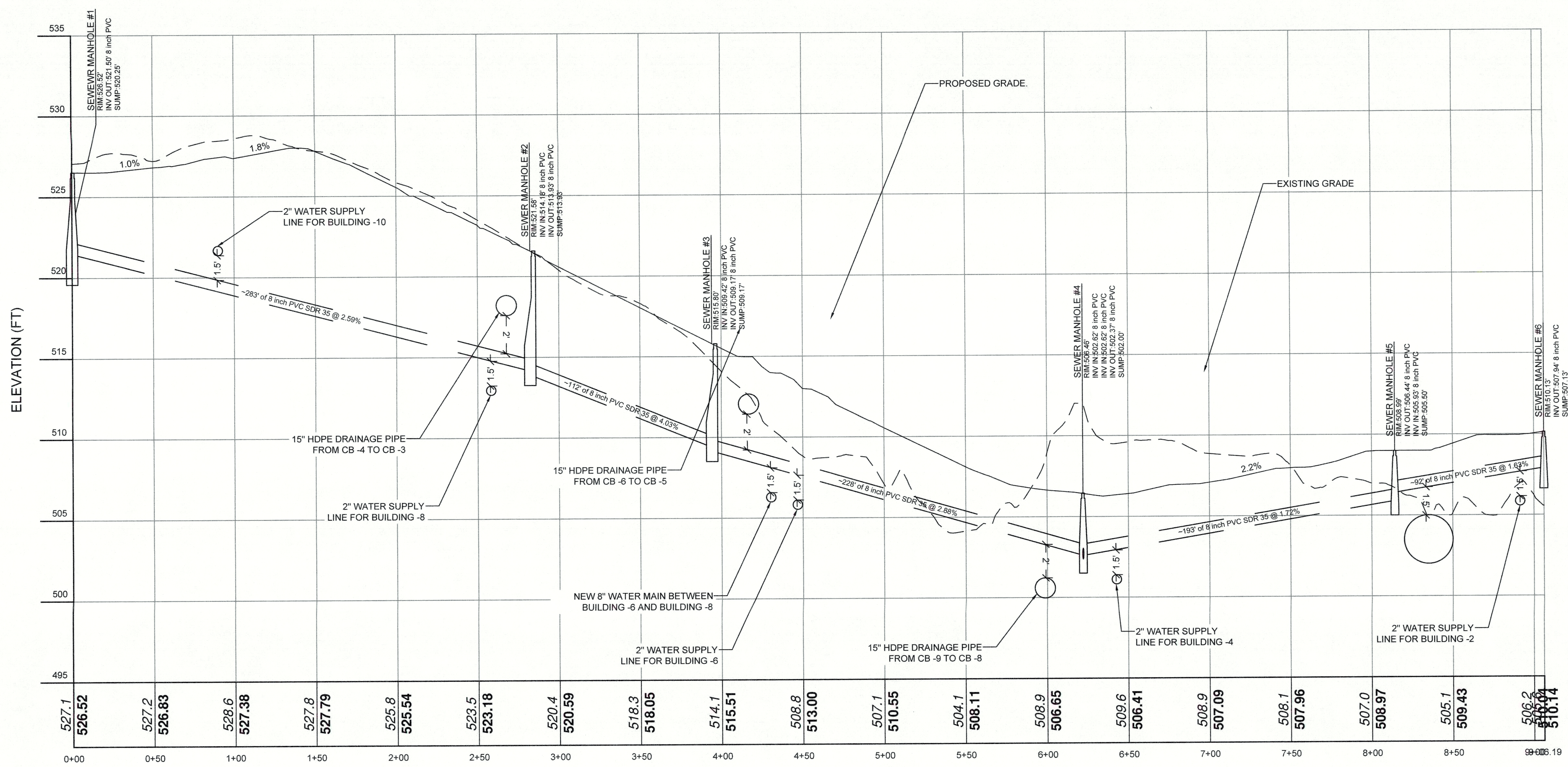
DISTANCE ALONG BASELINE (FT)
WATER MAIN BEHIND
APARTMENT BLDG
VERT. SCALE: 1" = 4
HORIZ. SCALE: 1" = 60

APPROVED
Resolution Number 23-13
Date July 17, 2023



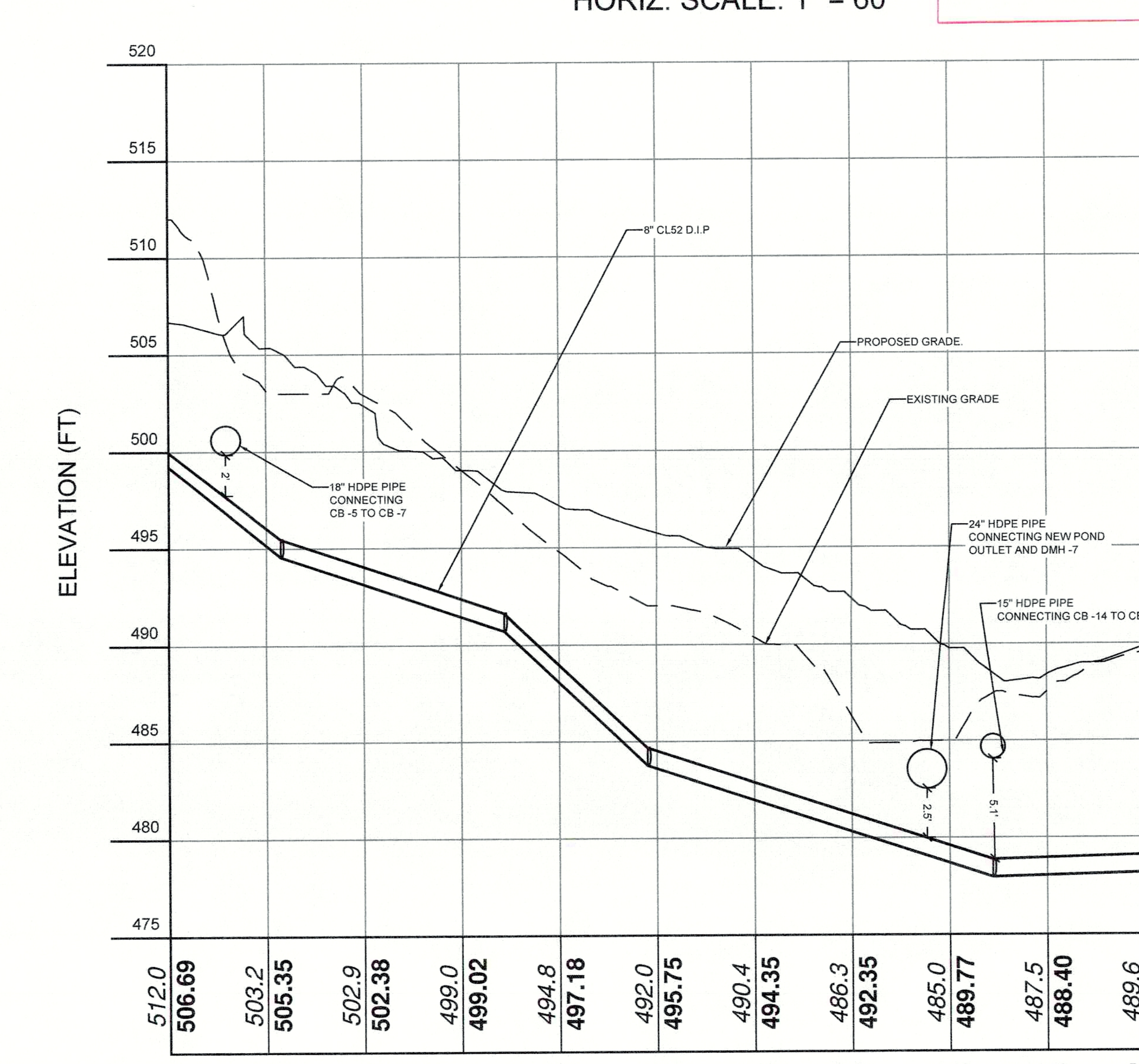
DISTANCE ALONG BASELINE (FT)

SEWER SERVICE APT BUILDING
VERT. SCALE: 1" = 4
HORIZ. SCALE: 1" = 40



DISTANCE ALONG BASELINE (FT)

TOWNHOUSES SEWER LINE PROFILE
VERT. SCALE: 1" = 4
HORIZ. SCALE: 1" = 40



DISTANCE ALONG BASELINE (FT)
WATER SERVICE MAIN
VERT. SCALE: 1" = 4
HORIZ. SCALE: 1" = 60

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PROJECT - 20-20

Joseph C. Riina, P.E.
NYS Lic. No. 64431

DRAWN BY: TK
DATE: 6-22-20

ULTITIES PROFILE

SITE PLAN PREPARED FOR
UNDERHILL FARM
UNDERHILL AVENUE
Town of Yorktown, Westchester County, New York

Sheet C-305

GENERAL NOTES:

1. THE ENGINEER WHOSE SEAL APPEARS HEREON HAS NOT BEEN RETAINED FOR SUPERVISION OF CONSTRUCTION, SUBSEQUENTLY,HE IS NOT RESPONSIBLE FOR CONSTRUCTION AND THEREFORE ASSUMES NO RESPONSIBILITY FOR CONSTRUCTION PRACTICES, PROCEDURES, AND RESULTS THEREFROM.
2. THE ENGINEER SHALL NOT BE HELD RESPONSIBLE OR HELD ACCOUNTABLE FOR THE INTEGRITY OF ANY STRUCTURES CONSTRUCTED OR UNDER CONSTRUCTION PRIOR TO THE APPROVAL OF THE PLANS.
3. THE TOWN ENGINEER'S OFFICE AND WATER DISTRICT OFFICE IS TO BE NOTIFIED 24 HOURS BEFORE COMMENCING SITE CONSTRUCTION OR WATER MAIN CONNECTION.
4. ALL WORK IS TO BE IN ACCORDANCE WITH THE TOWN CODE OF PRACTICE AND SPECIFICATIONS.
5. ALL CONDITIONS, LOCATIONS, AND DIMENSIONS SHALL BE FIELD VERIFIED AND THE ENGINEER SHALL BE IMMEDIATELY NOTIFIED OF ANY DISCREPANCIES.
6. ALL CHANGES MADE TO THE PLANS SHALL BE APPROVED BY THE ENGINEER WHOSE SEALAPPEARS ON THESE DRAWINGS. ANY SUCH CHANGES SHALL BE FILED AS AMENDMENTS TO THE ORIGINAL BUILDING PERMIT.
7. ALL WRITTEN DIMENSIONS ON THE DRAWINGS SHALL TAKE PRECEDENCE OVER ANY SCALED DIMENSIONS.
8. IT IS THE CONTRACTOR'S RESPONSIBILITY TO CALL IN A "CODE 53" PRIOR TO CONSTRUCTION FOR UNDERGROUND UTILITY LOCATIONS. 9. SUBSTRUCTURES AND THEIR ENCROACHMENTS BELOW GRADE, IF ANY, ARE NOT SHOWN.
9. ANY PROPOSED ELECTRIC AND/OR TELEPHONE SERVICE LINES ARE TO BE PLACED UNDERGROUND.
10. THE DESIGN ENGINEER DISCLAIMS ANY LIABILITY FOR DAMAGE OR LOSS INCURRED DURING OR AFTER CONSTRUCTION.
11. ALL CONDITIONS, LOCATIONS AND DIMENSIONS SHALL BE FIELD VERIFIED BY THE CONTRACTOR AND THE OWNER/ENGINEER NOTIFIED IN WRITING OF ANY DISCREPANCIES PRIOR TO THE START OF WORK. THE OWNER/ENGINEER WILL EVALUATE THE SITUATION AND MODIFY THE PLAN AS NECESSARY.
12. MAINTENANCE OF EASEMENTS ON SITE ARE THE RESPONSIBILITY OF THE GRANTOR.

CONTRACTOR RESPONSIBILITIES:

1. ALL WORK ON THE PROJECT SHALL BE PERFORMED IN A WORKMAN LIKE MANNER AND SHALL BE IN ACCORDANCE WITH THE STANDARDS OF THE INDUSTRY. THE OWNER WILL BE THE SOLE JUDGE OF THE ACCEPTABILITY OF THE WORK. MATERIALS AND WORK DEEMED UNACCEPTABLE WILL BE REMOVED AND REDONE AT THE SOLE COST AND RESPONSIBILITY OF THE CONTRACTOR.
2. THE CONTRACTOR SHALL BE RESPONSIBLE TO PROTECT HIS WORK AND WILL BE HELD RESPONSIBLE FOR CONSEQUENTIAL DAMAGES DUE TO HIS ACTIVITIES. THE CONTRACTOR SHALL BE RESPONSIBLE TO THE OWNER FOR THE ACTS AND OMISSIONS OF HIS EMPLOYEE, AND THEIR AGENTS AND EMPLOYEES, AND ANY OTHER PERSONS PERFORMING ANY THE WORK UNDER A SEPARATE CONTRACT WITH THE CONTRACTOR.
3. IT IS THE CONTRACTOR'S RESPONSIBILITY TO PROPERLY SHORE EXISTING UTILITIES IF REQUIRED BY CONSTRUCTION.
4. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO NOTIFY THE BUILDING INSPECTOR IN ADVANCE OF HIS WORK OR AS THE INSPECTOR DEEMS APPROPRIATE.
5. ALL CONDITIONS, LOCATIONS AND DIMENSIONS SHALL BE FIELD VERIFIED BY THE CONTRACTOR AND THE OWNER/ENGINEER NOTIFIED IN WRITING OF ANY DISCREPANCIES PRIOR TO THE START OF WORK. THE OWNER/ENGINEER WILL EVALUATE THE SITUATION AND MODIFY THE PLAN AS NECESSARY.
6. ALL CHANGES MADE TO THIS PLAN SHALL BE APPROVED BY THE ENGINEER WHOSE SEAL APPEARS ON THESE DRAWINGS. ANY UNAUTHORIZED ALTERATION OR ADDITIONS TO THIS DRAWING IS A VIOLATION OF SECTION 7209 (2) OF THE NEW YORK STATE EDUCATION LAW.
7. THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE WORK USING HIS BEST SKILL AND ATTENTION. HE SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, AND PROCEDURES AND FOR COORDINATING ALL PORTIONS OF THE WORK UNDER THIS CONTRACT.
8. THE CONTRACTOR SHALL BE RESPONSIBLE TO THE OWNER FOR THE ACTS AND OMISSIONS OF HIS EMPLOYEES, SUBCONTRACTORS, AND THEIR AGENTS AND EMPLOYEES, AND ANY OTHER PERSONS PERFORMING ANY OF THE WORK UNDER A CONTRACT WITH THE CONTRACTOR.
9. THE CONTRACTOR SHALL VERIFY ALL SUBSTRUCTURES ENCOUNTERED DURING CONSTRUCTION.
10. THE CONTRACTOR SHALL SECURE & PAY FOR A BUILDERS RISK POLICY TO COVER THE PERIOD OF CONSTRUCTION. THE ENGINEER & OWNER SHALL BE NAMED AS ADDITIONAL INSURED. ALL CONTRACTORS EMPLOYED AT THE SITE SHALL BE COVERED BY WORKMAN'S COMPENSATION.
11. THE CONTRACTOR SHALL PREPARE SPECIFIC MEASURES NECESSARY TO PREVENT AND CLEAN UP CHEMICAL AND PETROLEUM PRODUCT SPILLS THAT MAY OCCUR DURING ALL PHASES OF WORK ON THE PROJECT SITE.

GENERAL CONSTRUCTION NOTES:

1. BENCH MARKS USING U.S.G.S. DATUM SHALL BE OF SUCH ELEVATION THAT THE GROUND WILL SLOPE AWAY FROM IT IN ALL DIRECTIONS.
2. CONSTRUCTION ACTIVITY SHALL BE LIMITED FROM 8:00 A.M. TO 6 P.M., AND NO CONSTRUCTION ACTIVITY SHALL OCCUR ON SUNDAYS OR LEGAL NEW YORK STATE HOLIDAYS. WHERE BLASTING IS NECESSARY, IT SHALL OCCUR FROM MONDAY THROUGH FRIDAY BETWEEN THE HOURS OF 8:00 A.M. AND 6:00 P.M. NO BLASTING SHALL OCCUR ON HOLIDAYS, SATURDAY OR SUNDAY. ALL BLASTING SHALL ALSO BE COMPLETED IN ACCORDANCE WITH THE TOWN OF YORKTOWN AND NEW YORK STATE BLASTING ORDINANCES.
3. ANY SOIL THAT IS UNSUITABLE FOR DEVELOPMENT OF BUILDINGS OR ROADWAYS SHALL BE REMOVED FROM AREAS TO BE DEVELOPED AND SHALL BE DISPOSED OF WITHIN THE SITE IN NEW EMBANKMENTS WHERE STRUCTURAL LOADING, I.E. A BUILDING OR ROADWAY, WILL NOT TAKE PLACE. WHEN CONSTRUCTION IS PROPOSED TO OCCUR IN SPECIFIC AREAS WHERE SOILS ARE OF QUESTIONABLE SUITABILITY, THE APPLICANT SHALL PROVIDE SOILS ENGINEERING REPORTS AS REQUIRED BY THE PLANNING BOARD ENGINEER, PRIOR TO THE CONSTRUCTION OF ROADWAYS AND, AS REQUIRED BY THE BUILDING INSPECTOR, PRIOR TO THE ISSUANCE OF A BUILDING PERMIT.
4. NO TOPSOIL SHALL BE REMOVED FROM THE SITE.
5. ROCK CUT STABILITY IS TO BE FIELD VERIFIED BY GEOTECHNICAL ENGINEER AND SHALL BE MODIFIED IF REQUIRED.
6. NO CRUSHING/PROCESSING IS PERMITTED ON THE SITE WITHOUT PRIOR APPROVAL BY THE TOWN OF YORKTOWN PLANNING BOARD.

GENERAL STORM DRAINAGE & UTILITY NOTES

1. ALL UTILITIES, INCLUDING ELECTRIC LINES, TELEPHONE, WATER, SANITARY SEWER LINES, AND STORM SEWER LINES SHALL BE LOCATED UNDERGROUND AND SHALL BE INSTALLED IN ACCORDANCE WITH THE REQUIREMENTS OF THE TOWN OF YORKTOWN AND THE UTILITY COMPANIES HAVING JURISDICTION.
2. LOCATION OF GAS AND WATER VALVES, ELECTRIC AND TELEPHONE POLES ARE TO BE DETERMINED BY PROPER AUTHORITIES AND APPROVED, AS TO LOCATION, BY THE TOWN ENGINEER.
3. EACH BUILDING CONSTRUCTED HEREON SHALL BE OF SUCH AN ELEVATION THAT THE GROUND WILL SLOPE AWAY FROM IT IN ALL DIRECTIONS. IN THE EVENT THAT THIS IS NOT FEASIBLE, THE CONTRACTOR SHALL INSTALL TYPICAL YARD DRAINS AS REQUIRED AND CONNECT THEM TO THE STORM DRAINAGE SYSTEM OR AS DIRECTED BY THE PROJECT ENGINEER.
4. ROOF LEADERS AND FOOTING DRAINS SHALL EMPTY INTO THE STORM DRAINAGE SYSTEM OR DISCHARGE DIRECTLY TO STORMWATER MANAGEMENT SYSTEMS IF GRADES PERMIT, AND CONNECTION TO THE STORM SYSTEM IS NOT FEASIBLE, FOOTING DRAINS ONLY MAY DISCHARGE TO DAYLIGHT AT THE REAR OF BUILDINGS. FOOTING DRAINS SHALL EXTEND A MINIMUM OF 30 FT. FROM THE REAR FACE OF THE BUILDING WHEN POSSIBLE. UNDER NO CIRCUMSTANCES SHALL THE DISCHARGE OF GROUND WATER OR STORM WATER, EITHER BY GRAVITY OR BY PUMPING, BE DISCHARGED TO ANY SANITARY SEWER SYSTEM.
5. ANY REVISIONS AND/OR ADDITIONS TO THE ROAD STORM DRAINAGE SYSTEMS CURRENTLY SHOWN ON THE PLANS WHICH ARE DEEMED NECESSARY DURING CONSTRUCTION MUST BE MADE BY THE CONTRACTOR AS REQUIRED BY THE TOWN AND SHALL BE SHOWN ON THE AS-BUILT DRAWINGS.
6. STORM DRAIN PIPING TO BE HIGH DENSITY POLYETHYLENE AS SHOWN ON THE CONSTRUCTION DRAWINGS. MINIMUM COVER TO BE 2' UNLESS OTHERWISE NOTED.
7. INTERCEPTOR DRAINS ARE TO BE INSTALLED WHERE REQUIRED BY THE TOWN OR PROJECT ENGINEER DURING ROAD CONSTRUCTION.
8. ALL EXISTING UNDERGROUND DRAINS ENCOUNTERED DURING CONSTRUCTION OF PROPOSED ROADS ARE TO BE CONNECTED TO PROPOSED DRAINAGE IMPROVEMENTS. CONNECTIONS TO BE APPROVED BY THE TOWN ENGINEER.
9. PRIOR TO FINAL APPROVAL AND OPERATION OF DRAINAGE SYSTEM, CONTRACTOR SHALL CLEAR ALL ACCUMULATED SEDIMENT AND/OR DEBRIS FROM DRAINAGE STRUCTURES, MANHOLES, CULVERTS, OUTLETS AND DRAIN INLETS. ENGINEER SHALL BE NOTIFIED FOR FINAL INSPECTION.
10. ALL STRUCTURES SHALL BE SET ONE INCH BELOW PAVEMENT.
11. STREET OPENING PERMIT FROM THE TOWN OF YORKTOWN D.P.W. MAY BE REQUIRED FOR INSTALLATIONS IN PUBLIC ROADS.

WALL NOTES:

1. EXCAVATION IN GENERAL SHALL CONFORM TO THE LINES AND GRADES SHOWN ON THE CONTRACT DRAWINGS.
2. THE ENGINEER SHALL BE NOTIFIED OF UNSUITABLE SUB-GRADE SOILS PRIOR TO PLACEMENT OF WALL.
3. WALLS TO BE CONSTRUCTED ON VIRGIN IN-SITU SOIL SHALL HAVE A MINIMUM ALLOWABLE BEARING CAPACITY OF 2 TSF. ALL OTHER CONDITIONS SHALL BE APPROVED BY THE GEOTECHINICAL ENGINEER.
4. TO INSURE A PROPER BEARING SURFACE, THE WALL SHALL BE CONSTRUCTED ON NATURAL IN-SITU SOIL, THE CONTRACTOR SHALL STRIP ALL TOP SOIL. THE AREA SHALL THEN BE COMPACTED USING SUITABLE COMPACTION EQUIPMENT. A MINIMUM OF 3 PASSES SHALL BE MADE.
5. WALLS SHALL NOT BE CONSTRUCTED ON WET OR FROZEN GROUND.
6. SOILS USED AS BACKFILL SHALL CONSIST OF CLEAN DRY SOIL. THE MATERIAL SHALL BE GRANULAR AND FREE OF ORGANIC OR OTHER DELETERIOUS MATERIAL. IN GENERAL THE SOIL SHALL BE NON-PLASTIC WITH A PLASTICITY INDEX LESS THAN 5 AND SHALL CONFORM TO THE AASHTO SOIL CLASSIFICATION SYSTEM FOR AN "A-1-A" SOIL . HOWEVER THE MAXIMUM SIZE SHALL BE 6". IN GENERAL ALL FILL SHALL BE APPROVED BY THE ENGINEER PRIOR TO IT'S USE. WET MATERIAL OR UNSUITABLE MATERIAL SHOULD NOT BE USED.
7. BACKFILL SHALL BE PLACED AND COMPACTED IN A MAXIMUM 12" LIFTS.
8. ALL BOULDER RETAINING WALLS SHALL HAVE A GEOTEXTILE FABRIC BACKING FOR THE FULL HIEGHT OF THE WALL AS MANUFACTURED BY MIRAFI OR APPROVED EQUAL.
9. IF GROUNDWATER IS ENCOUNTERED, THE ENGINEER SHALL BE NOTIFIED IMMEDIATELY TO DETERMINE IF THE ADDITION OF AN UNDERDRAIN MAY BE REQUIRED.
10. THE CONTRACTOR SHALL NOT USE LARGE OR HEAVY CONSTRICTION EQUIPMENT WITHIN 5' OF THE RETAINING WALLS OR NEW FOUNDATION WALLS. HAND OPERATED COMPACTING EQUIPMENT SHALL BE USED WITHIN 5' OF THE WALL FACE.
11. ALTERNATE WALL DESIGNS MUST BE SEALED BY A NEW YORK STATE LICENSED PROFESSIONAL ENGINEER THE MINIMUM FACTORS OF SAFETY FOR SLIDING AND OVERTURNING SHALL BE 2.0.
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WATERMAIN NOTES

I. DISTRIBUTION SYSTEM - WATERMAIN

A. GENERAL

THE CONTRACTOR SHALL PERFORM THE NECESSARY EXCAVATION, BACKFILLING, CLEARING, GRUBBING, SHEETING, SHORING, DO ALL SHAPING OF TRENCHES, PUMPING AND BAILING, LAYING AND JOINING OF ALL PIPES, PROTECT AND SUPPORT EXISTING STRUCTURES AND REPAIR THEM, IF DAMAGED, AND ALL ELSE NECESSARY TO COMPLETE THE WORK.

THE CONTRACTOR SHALL FURNISH ALL MATERIALS, EQUIPMENT, LABOR, AND TOOLS NECESSARY TO COMPLETE THE WORK IN A SAFE, NEAT, AND WORKMANLIKE MANNER.

B. SITE AND ACCESS CLEARING (WITHIN EASEMENTS)

THE CONTRACTOR SHALL CONFINE ALL CLEARING OPERATIONS TO WITHIN THE IMMEDIATE AREAS THAT ARE ESSENTIAL FOR CONSTRUCTION OF THE WORK.

C. STOCKPILING OF SUITABLE BACKFILL MATERIAL

THE CONTRACTOR SHALL BE PREPARED WHEN EXCAVATING THE TRENCH TO SEPARATE SUITABLE BACKFILL MATERIAL FROM UNSUITABLE MATERIAL FOR USE AS BACKFILL ADJACENT TO THE PIPE.

D. PROTECTION OF EXISTING STRUCTURES AND UTILITIES
SPECIAL PRECAUTIONS SHALL BE TAKEN BY THE CONTRACTOR TO PROTECT OVERHEAD POWER LINES, WATERMAINS, GAS MAINS, ELECTRIC AND TELEPHONE CONDUITS, STORM AND SANITARY SEWERS, CULVERTS, BUILDINGS AND OTHER EXISTING STRUCTURES IN AND NEAR THE EXCAVATION. IN ALL CASES, WHETHER UNDERGROUND STRUCTURES HAVE OR HAVE NOT BEEN DELINEATED, THE TOWN ENGINEER, WATER SUPERINTENDENT, OR AUTHORIZED REPRESENTATIVE ACCEPTS NO RESPONSIBILITY FOR THEIR LOCATION. 'UNDERGROUND UTILITIES" LOCATES EXISTING UNDERGROUND UTILITIES FREE OF CHARGE. THE PHONE NUMBER IS 1-800-245-2828.

GUTTERS, SEWERS, DRAINS AND DITCHES SHALL BE KEPT OPEN AT ALL TIMES FOR SURFACE DRAINAGE. NO DAMMING OR PONDING OF WATER IN GUTTERS OR OTHER WATERWAYS WILL BE PERMITTED EXCEPT WHERE STREAM CROSSINGS ARE NECESSARY AND THEN ONLY TO AN EXTENT WHICH THE TOWN ENGINEER, WATER SUPERINTENDENT, OR AUTHORIZED REPRESENTATIVE SHALL CONSIDER NECESSARY. THE CONTRACTOR SHALL NOT DIRECT ANY FLOW OF WATER ACROSS OR OVER PAVEMENTS EXCEPT THROUGH APPROVED PIPES OR PROPERLY CONSTRUCTED TROUGHS OF SUCH SIZES AND LENGTHS AS MAY BE REQUIRED, AND PLACE THE SAME AS DIRECTED. THE GRADING IN THE VICINITY OF TRENCHES SHALL BE CONTROLLED SO THAT THE GROUND SURFACE IS PROPERLY PITCHED TO PREVENT WATER RUNNING IN THE TRENCHING. THE CONTRACTOR SHALL NOT COMMENCE OPERATIONS INVOLVING ANY PUBLIC UTILITY BEFORE HAVING GIVEN WRITTEN NOTICE TO THE COMPANY OR OWNER, OR ITS AGENTS, AND SHALL COOPERATE WITH THE COMPANY'S OR OWNER'S FORCES IN PROTECTING AND PREVENTING DAMAGE TO THE PROPERTY.

THE CONTRACTOR WILL, AT HIS OWN EXPENSE, BE RESPONSIBLE FOR DIRECT OR INDIRECT DAMAGE THAT MAY BE DONE TO ANY UTILITY OR STRUCTURE IN THE PROSECUTION OF HIS WORK. THE LIABILITY OF THE CONTRACTOR IS ABSOLUTE AND IS NOT DEPENDENT UPON ANY QUESTIONS OF NEGLIGENCE ON HIS PART OR ON THE PART OF HIS AGENT, OR EMPLOYEES, AND THE NEGLECT OF THE TOWN ENGINEER, WATER SUPERINTENDENT, OR AUTHORIZED REPRESENTATIVE TO DIRECT THE CONTRACTOR TO TAKE ANY PARTICULAR PRECAUTION OR TO REFRAIN FROM DOING SUCH DAMAGE.

SHOULD THE POSITION OF ANY PIPE, CONDUIT, POLE OR OTHER STRUCTURES, ABOVE OR BELOW THE GROUND, BE SUCH AS TO REQUIRE ITS REMOVAL, REALIGNMENT, OR CHANGE DUE TO WORK TO BE DONE, REALIGNMENT OR CHANGE WILL BE DONE BY OR UNDER SUPERVISION OF THE OWNER OF THE OBSTRUCTIONS. THE CONTRACTOR SHALL UNCOVER AND SUSTAIN THE STRUCTURES, AFTER SUCH REALIGNMENT OR CHANGE.

THE CONTACTOR SHALL NOT INTERFERE WITH ANY PERSONS, OR WITH THE OWNER IN PROTECTING, REMOVING, CHANGING OR REPLACING THEIR PIPES, CONDUITS, POLES OR OTHER STRUCTURES; BUT HE SHALL SUFFER SAID PERSONS OR THE OWNER TO TAKE ALL SUCH MEASURES AS THEY MAY DEEM NECESSARY OR ADVISABLE FOR THE PURPOSE AFORESAID, AND THE CONTRACTOR SHALL THEREBY BE IN NO WAY RELIEVED OF ANY OF HIS RESPONSIBILITIES.

THE CONTRACTOR SHALL MAKE ALL NECESSARY ARRANGEMENTS WITH THE OWNER OF THE RESPECTIVE UTILITY PRIOR TO RELOCATION OR INTERRUPTION OF SERVICE. ALL WORK NECESSARY FOR THE RELOCATION SHALL BE PERFORMED BY THE CONTRACTOR, OR BY THE OWNER AT THE OWNER'S OPTION, AND TO THE SATISFACTION OF THE OWNER. WHERE SERVICE IS INTERRUPTED, THE CONTRACTOR SHALL COOPERATE IN RESTORING SERVICE PROMPTLY. ALL CHARGES FOR DAMAGES DONE TO UTILITIES SHALL BE PAID BY THE CONTRACTOR.

E. CONSTRUCTION OF ROAD RIGHT-OF-WAY
CONSTRUCTION IN THE ROAD RIGHT-OF-WAY SHALL AT ALL TIMES BE PERFORMED WITH MINIMUM DISTURBANCE TO TRAFFIC WITH SUFFICIENT BARRICADES AND DIRECTION. DETOURS CAN BE INSTITUTED WITH APPROVAL OF THE TOWN ENGINEER, WATER SUPERINTENDENT, OR AUTHORIZED REPRESENTATIVE, OR STATE, COUNTY, OR LOCAL AUTHORITIES. PAVEMENT SHALL BE CUT PRIOR TO REMOVAL. HOLES AND SETTLEMENTS IN THE TRENCHES SHALL BE IMMEDIATELY FILLED TO THE ORIGINAL GRADE ELEVATION WITH THE SPECIFIED MATERIALS.

F. EXCAVATION AND PREPARATION OF TRENCH
THE CONTRACTOR SHALL PROCEED WITH CAUTION IN THE EXCAVATION AND PREPARATION OF THE TRENCH SO THAT THE EXACT LOCATION OF UNDERGROUND STRUCTURES, BOTH KNOWN AND UNKNOWN, MAY BE DETERMINED. THE TRENCH SHALL BE EXCAVATED SO THAT THE PIPE CAN BE LAID TO THE ALIGNMENT AND DEPTH REQUIRED. MINIMUM DEPTH OF COVER FROM SURFACE OF GROUND TO TOP OF PIPE BARREL SHALL BE FOUR FEET (4'). NO TRENCH SHALL BE EXCAVATED MORE THAN FIVE HUNDRED LINEAL FEET (500 LF) IN ADVANCE OF PIPE LAYING UNLESS AUTHORIZED BY THE TOWN ENGINEER, WATER SUPERINTENDENT, OR AUTHORIZED REPRESENTATIVE. THE TRENCH SHALL BE SO BRACED AND DRAINED THAT THE WORKMEN MAY WORK THEREIN SAFELY AND EFFICIENTLY. IT IS ESSENTIAL THAT THE DISCHARGE OF THE TRENCH DEWATERING PUMPS BE CONDUCTED TO NATURAL DRAINAGE CHANNELS OR DRAINS, AS IN ACCORDANCE WITH OSHA REQUIREMENTS.

THE WIDTH OF THE TRENCH SHALL BE OF ADEQUATE SIZE TO PERMIT THE PIPE TO BE LAID AND JOINTED PROPERLY, BUT SHALL NOT EXCEED THE SUM OF TWENTY-FOUR INCHES(24") PLUS THE PIPE OUTSIDE DIAMETER, AND THE BACKFILL TO BE PLACED AND COMPACTED AS SPECIFIED.

LEDGE ROCK, BOULDERS AND LARGE STONES SHALL BE REMOVED TO PROVIDE A CLEARANCE OF AT LEAST SIX INCHES (6") BELOW AND ON EACH SIDE OF ALL PIPES AND FITTINGS.

THE TRENCH SHALL BE EXCAVATED TO THE DEPTH REQUIRED SO AS TO PROVIDE A UNIFORM AND CONTINUOUS BEARING AND SUPPORT FOR THE PIPE ON SOLID AND UNDISTURBED GROUND AT EVERY POINT. WHERE THE BOTTOM OF THE TRENCH AT A SUBGRADE IS FOUND TO BE UNSTABLE, OR TO INCLUDE ASHES, CINDERS, ALL TYPES OF REFUSE, VEGETABLE OR OTHER ORGANIC MATERIAL OR LARGE PICES OF FRAGMENTS OR INORGANIC MATERIAL WHICH IN THE JUDGEMENT OF THE TOWN ENGINEER, WATER SUPERINTENDENT, OR AUTHORIZED REPRESENTATIVE SHOULD BE REMOVED, THE CONTRACTOR SHALL EXCAVATE AND REMOVE SUCH UNSUITABLE MATERIAL TO THE WIDTH AND DEPTH ORDERED BY THE TOWN ENGINEER, WATER SUPERINTENDENT, OR AUTHORIZED REPRESENTATIVE.

ANY PART OF THE BOTTOM OF THE TRENCH EXCAVATED BELOW THE SPECIFIED GRADE SHALL BE CORRECTED WITH APPROVED BEDDING MATERIAL, SUCH AS THOROUGHLY COMPACTED CRUSHED STONE, GRAVEL, OR CONCRETE AS DIRECTED BY THE TOWN ENGINEER, WATER SUPERINTENDENT, OR AUTHORIZED REPRESENTATIVE. THE FINISHED SUBGRADE SHALL BE PREPARED ACCURATELY BY MEANS OF HAND TOOLS.

GENERAL WATER MAIN NOTES:

1. ALL PROPOSED WATERMAIN MATERIALS, CONSTRUCTION AND INSTALLATION SHALL CONFORM TO ALL APPLICABLE RULES AND REGULATIONS OF THE TOWN OF YORKTOWN WATER DEPARTMENT AND THE WESTCHESTER COUNTY HEALTH DEPARTMENT STANDARDS AND SPECIFICATIONS. CONSTRUCTION MUST BE UNDER THE SUPERVISION OF A LICENSED AND REGISTERED PROFESSIONAL ENGINEER IN THE STATE OF NEW YORK WHO SHALL FURNISH A CERTIFICATE OF CONSTRUCTION COMPLIANCE AND TWO (2) SETS OF AS-BUILT PLANS AFTER THE COMPLETION OF THE PROJECT.
2. THE RECORDS OF THE TOWN OF YORKTOWN INDICATE THAT THERE IS ADEQUATE WATER PRESSURE AND CAPACITY AS REQURIED TO SERVE THIS PROJECT.
3. ALL BACKFLOW PREVENTION DEVICES ASSOCIATED WITH THE FIRE AND DOMESTIC SERVICES FOR EACH OF THE PROPOSED OFFICE SPACES IN THE TYPE "B" UNITS SHALL BE LOCATED INTERNAL TO THE BUILDING AND SHALL REQUIRE SEPARATE APPROVAL BY THE WESTCHESTER COUNTY DEPARTMENT OF HEALTH.
4. ALL FIRE AND DOMESTIC SERVICE CONNECTIONS FROM THE PROPOSED WATER MAIN SHALL BE INSTALLED WITH WET TAPS AFTER THE CONTRACTOR HAS INSTALLED THE MAIN AND IT HAS BEEN APPROVED BY THE TOWN OF YORKTOWN WATER DEPARTMENT AND THE WESTCHESTER COUNTY DEPARTMENT OF HEALTH.
5. THE CONTRACTOR IS ADVISED THAT BEFORE HE CONNECTS TO THE EXISTING WATER SYSTEM, HE MUST ADVISE AND COORDINATE HIS OPERATIONS WITH THE TOWN OF YORKTOWN WATER DEPARTMENT'S SUPERINTENDENT. MEANS AND METHODS USED TO CONNECT TO THE EXISTING SERVICE SHALL BE APPROVED BY THE TOWN AND SHALL INCLUDE BUT NOT BE LIMITED TO WET TAPS OR OTHERWISE.
6. THE CONTRACTOR IS TO MAINTAIN CONSTANT FLOW AND PRESSURE IN ALL WATER MAINS AT ALL TIMES. IF THE NEED SHOULD ARISE THAT WATER SERVICE IS TO BE INTERRUPTED FOR A SHORT PERIOD, IT MUST BE COORDINATED WITH AND APPROVED BY THE ENGINEER AND THE TOWN OF YORKTOWN SUPERINTENDENT OF WATER.
7. WATER MAINS CROSSING HOUSE SEWERS, STORM SEWERS OR SANITARY SEWERS SHALL BE LAID TO PROVIDE A VERTICAL SEPARATION OF A MINIMUM OF 18" BETWEEN THE BOTTOM OF WATER MAIN AND TOP OF SEWER.
8. WATER MAINS PASSING UNDER HOUSE SEWERS, IN ADDITION, SHALL BE PROTECTED BY PROVIDING A VERTICAL SEPARATION OF 18" MINIMUM FROM THE BOTTOM OF THE SEWER TO THE TOP OF THE WATER MAIN AND ADEQUATE STRUCTURAL SUPPORT FOR THE SEWER TO PREVENT EXCESSIVE DEFLECTION OF THE JOINTS AND THE SEWER SETTLING AND BREAKING THE WATER MAIN. IN ADDITION THE LENGTH OF WATER PIPE IS TO BE CENTERED AT THE POINT OF CROSSING SO THAT THE JOINTS WILL BE EQUIDISTANT AND AS FAR AS POSSIBLE FROM THE SEWER. NO WATER MAIN SHALL PASS THROUGH OR COME IN CONTACT WITH ANY PART OF A SEWER OR SEWER MANHOLE.
9. THE COVER OVER THE TOP OF THE WATER MAIN SHALL BE A MINIMUM OF 4 FEET TO A MAXIMUM OF 5.5 FT.
10. WATER MAINS SHALL BE CLASS 52 DUCTILE IRON PIPES (DIP) TYTON JOINT TYPE AND FITTINGS SHALL BE FACTORY CEMENT LINED CLASS 52. ALL FITTINGS SHALL HAVE MECHANICAL JOINTS AND SHALL BE PRESSURE RATED AT 250 PSI. ALL NECESSARY JOINT MATERIALS SHALL BE FURNISHED. WATER MAINS SHALL BE INSTALLED IN ACCORDANCE WITH AWWA STANDARDS, LATEST REVISION.
11. ALL GATE VALVES SHALL BE MUELLER RESILIENT WEDGE (TURN LEFT OPEN) TYPE AND SHALL MEET AWWA STANDARDS, LATEST REVISION.
12. ALL SERVICE CONNECTIONS AND SMALL DIAMETER EXTENSIONS SHALL CONFORM TO AWWA C-151.
13. RETAINER GLANDS AND CONCRETE THRUST BLOCKS OR RODS SHALL BE USED AT ALL LOCATIONS WHERE RESTRAINTS EXIST.
14. INSTALLATION AND TESTING OF THE WATER MAIN SHALL BE INSPECTED BY THE WESTCHESTER COUNTY DEPARTMENT OF HEALTH. THE CONTRACTOR SHALL PROVIDE THE HEALTH DEPARTMENT A MINIMUM 48 HOURS NOTICE PRIOR TO ANY PRESSURE/LEAKAGE TESTS AND/OR DISINFECTION AND BACTERIOLOGICAL TESTS PERFORMED ON THE PROPOSED WATER MAIN. THE RESULTS OF THE ABOVE TESTS MUST BE ACCEPTED BY THE WCHD PRIOR TO USE OF THE MAIN.
15. ASBUILT DRAWINGS SHALL SHOW DIMENSIONS BETWEEN ALL VALVE TURNING NUTS AND FINISH GRADE.
16. INSTALLATION, DISINFECTION AND TESTING TO BE WITNESSED AND CERTIFIED BY A LICENSED PROFESSIONAL ENGINEER OR TOWN OF YORKTOWN ENGINEER.
17. ALL HYDRANTS AND VALVES SHALL BE AS MANUFACTURED BY THE MUELLER COMPANY.
18. THE FINAL LOCATIONS OF FIRE HYDRANTS AND SIAMESE CONNECTIONS SHALL BE DETERMINED BY AND COORDINATED WITH THE TOWN OF YORKTOWN FIRE DEPARTMENT.
19. IF, DURING CONSTRUCTION, IT IS FOUND THAT THE REQUIRED SEPARATION OF WATER MAINS, SANITARY SEWERS, STORM SEWERS, AND BUILDING SEWERS CANNOT BE MET, THE DEVELOPER OR HIS AUTHORIZED REPRESENTATIVE SHALL CONTACT THE WESTCHESTER COUNTY DEPARTMENT OF HEALTH. APPROVAL BY THE WCHD IS REQUIRED PRIOR TO ANY FIELD CHANGES THAT WILL AFFECT MINIMUM WATER/SEWER SEPARATION DISTANCES.
20. ALL TYPES OF INSTALLED PIPE SHALL BE PRESSURE TESTED AND LEAKAGE TESTED IN ACCORDANCE WITH THE LATEST EDITION OF AWWA STANDARD C-600.
21. ALL NEW, CLEANED OR REPAIRED WATER MAINS SHALL BE DISINFECTED AND BACTERIOLOGICAL TESTING PERFORMED IN ACCORDANCE WITH THE LATEST EDITION OF AWWA STANDARD C-651-05 (EXCEPT FOR SECTION 4.4.2 WHICH IS NOT APPROVABLE). THE SPECIFICATIONS INCLUDE DETAILED PROCEDURES FOR THE ADEQUATE FLUSHING, DISINFECTION, AND MICRO- BIOLOGICAL TESTING OF ALL WATER MAINS.
22. ROAD OPENINGS SHALL BE DONE IN ACCORDANCE WITH CONDITIONS OF PERMIT, AND COORDINATED WITH THE TOWN OF YORKTOWN.
23. UPON COMPLETION AND PRIOR TO USE, TWO (2) SETS OF AS-BUILT PLANS AND ACCEPTABLE BACTERIOLOGICAL SAMPLE AND WATER MAIN HYDROSTATIC TEST RESULTS MUST BE SUBMITTED ALONG WITH THE DESIGN PROFESSIONAL'S CERTIFICATION OF CONSTRUCTION TO THE WESTCHESTER COUNTY DEPARTMENT OF HEALTH.

SANITARY SEWER TESTING

PROCEDURE AND METHOD OF TESTING - THE TEST LENGTH INTERVALS AND TYPE OF LEAKAGE TEST SHALL BE APPROVED BY THE OWNER'S FIELD REPRESENTATIVE AND SITE ENGINEER. IN THE CASE OF SEWERS LAID ON STEEP GRADES, THE LENGTH OF LINE TO BE TESTED BY EXFILTRATION AT ANY ONE TIME MAY BE LIMITED BY THE MAXIMUM ALLOWABLE INTERNAL PRESSURE ON THE PIPE AND JOINTS AT THE LOWER END OF THE LINE. THE WCHD SHALL BE NOTIFIED 48 HRS IN ADVANCE SO THEY MAY WITHNESS THE TESTING DEPENDING ON FIELD CONDITIONS AND/OR DESIRE OF THE CONTRACTOR, THE FOLLOWING TESTS FOR LEAKAGE MAY BE EMPLOYED:

1. HYDROSTATIC TEST
THE TEST PERIOD, WHEREIN THE MEASUREMENTS ARE TAKEN SHALL NOT BE LESS THAN FOUR (4) HOURS IN EITHER TYPE OF TEST. THE TOTAL LEAKAGE OF ANY SECTION TESTED SHALL NOT EXCEED THE RATE OF 100 GALLONS PER MILE OF PIPE PER 24 HOURS PER INCH OF NOMINAL PIPE DIAMETER. FOR PURPOSES OF DETERMINING THE MAXIMUM ALLOWABLE LEAKAGE, MANHOLES SHALL BE CONSIDERED AS SECTIONS OF PIPE AND SHALL BE TESTED AT A LEVEL ABOVE THE HIGHEST JOINT PRIOR TO THE CONCRETE/RIM CONNECTION.
   (I) INFILTRATION TEST -
   THIS TEST MAY BE USED ONLY WHEN GROUND WATER LEVELS ARE AT LEAST TWO (2) FEET ABOVE THE TOP OF THE PIPE FOR THE ENTIRE LENGTH OF THE SECTION TO BE TESTED DURING THE ENTIRE PERIOD OF THE TEST. GROUND WATER LEVELS MAY BE MEASURED IN AN OPEN TRENCH OR IN STANDPIPES PREVIOUSLY PLACED IN BACKFILLED TRENCHES DURING THE BACKFILLING OPERATIONS. WHEN STANDPIPES ARE INSTALLED IN THE BACKFILL FOR GROUND WATER MEASUREMENT, THE LOWER ENDS OF THESE SHALL BE SATISFACTORILY EMBEDDED IN A MASS OF CRUSHED STONE OR GRAVEL TO MAINTAIN FREE PERCOLATION AND DRAINAGE. INFILTRATION THROUGH JOINTS SHALL BE MEASURED BY USING A WATERTIGHT WEIR OR ANY OTHER APPROVED DEVICE FOR VOLUMETRIC MEASUREMENT INSTALLED AT THE LOWER END OF THE SECTION UNDER TEST.
   (II) EXFILTRATION TEST -
   THIS TEST CONSISTS OF FILLING THE PIPE WITH WATER TO PROVIDE A HEAD OF AT LEAST TWO (2) FEET ABOVE THE TOP OF THE PIPE OR TWO (2) FEET ABOVE GROUND WATER, WHICHEVER IS HIGHER, AT THE HIGHEST POINT OF THE PIPE LINE UNDER TEST, AND THEN MEASURING THE LOSS OF WATER FROM THE LINE BY THE AMOUNT WHICH MUST BE ADDED TO MAINTAIN THE ORIGINAL LEVEL. IN THIS TEST THE LINE MUST REMAIN FILLED WITH WATER FOR AT LEAST TWENTY-FOUR (24) HOURS PRIOR TO THE TAKING OF MEASUREMENTS. EXFILTRATION SHALL BE MEASURED BY THE DROP OF WATER LEVEL IN A CLOSED-END STANDPIPE OR IN ONE OF THE SEWER MANHOLES AVAILABLE FOR CONVENIENT MEASURING.

   WHEN A STANDPIPE AND PLUG ARRANGEMENT IS USED IN THE UPPER MANHOLE OF A LINE UNDER TEST, THERE MUST BE SOME POSITIVE METHOD OF RELEASING ENTRAPPED AIR IN THE SEWER PRIOR TO TAKING MEASUREMENTS.

2. VACUUM TESTING OF MANHOLES - TESTED AS PER ASTM STANDARD - C-1244
THIS TEST METHOD IS ONLY APPLICABLE TO PRECAST CONCRETE MANHOLES. ALL LIFTING HOLES AND EXTERIOR JOINTS SHALL BE FILLED AND POINTED WITH AN APPROVED NON-SHRINKING MORTAR. NO STANDING WATER SHALL BE ALLOWED IN THE MANHOLE EXCAVATION WHICH MAY AFFECT THE ACCURACY OF THE TEST. ALL PIPES AND OTHER OPENINGS INTO THE MANHOLE SHALL BE SUITABLY PLUGGED IN SUCH A MANNER AS TO PREVENT DISPLACEMENT OF THE PLUGS WHILE THE VACUUM IS DRAWN. INSTALLATION AND OPERATION OF THE VACUUM EQUIPMENT AND INDICATING DEVICES SHALL BE IN ACCORDANCE WITH EQUIPMENT SPECIFICATIONS AND INSTRUCTIONS PROVIDED BY THE MANUFACTURER.
THE TEST HEAD MAY BE PLACED IN THE CONE SECTION OF THE MANHOLE. THE RIM-CONE JOINT IS NOT USUALLY TESTED. A VACUUM OF 10 INCHES OF MERCURY SHALL BE DRAWN. THE TIME FOR THE VACUUM TO DROP TO 9 INCHES OF MERCURY SHALL BE RECORDED. ACCEPTANCE FOR 4 FT. DIAMETER MANHOLES SHALL BE DEFINED AS WHEN THE TIME TO DROP TO 9 INCHES OF MERCURY MEETS OR EXCEEDS THE FOLLOWING:
   FOR MANHOLES 5 FT. IN DIAMETER, ADD AN ADDITIONAL 15 SECONDS;
   FOR MANHOLES 6 FT. IN DIAMETER, ADD AN ADDITIONAL 30 SECONDS
   TO THE TIME REQUIREMENTS FOR FOUR FOOT DIAMETER MANHOLES.

3. LOW-PRESSURE AIR TEST OF PIPE LINES - TESTED PER ASTM STANDARD F-1417
PLUG ALL OPENINGS IN THE TEST SECTION. ADD AIR UNTIL THE INTERNAL PRESSURE OF THE LINE IS RAISED TO APPROXIMATELY 4.0 PSI. AFTER THIS PRESSURE IS REACHED, ALLOW THE PRESSURE TO STABILIZE. THE PRESSURE WILL NORMALLY DROP AS THE AIR TEMPERATURE STABILIZES. THIS USUALLY TAKES 2 TO 5 MIN. DEPENDING ON THE PIPE SIZE. THE PRESSURE MAY BE REDUCED TO 3.5 PSI BEFORE STARTING THE TEST.

WHEN THE PRESSURE HAS STABILIZED AND IS AT OR ABOVE THE STARTING TEST PRESSURE OF 3.5 PSI, START THE TEST. IF THE PRESSURE DROPS MORE THAN 1.0 PSI DURING THE TEST TIME, THE LINE IS PRESUMED TO HAVE FAILED THE TEST. IF A 1.0-PSI DROP DOES NOT OCCUR WITHIN THE TEST TIME, THE LINE HAS PASSED THE TEST.

TEST TIMES ARE FOR A 1.0 PSI PRESSURE DROP FROM 3.5 TO 2.5 PSI. IF THE SECTION OF LINE TO BE TESTED INCLUDES MORE THAN ONE PIPE SIZE, CALCULATE THE TEST TIME FOR EACH SIZE AND ADD THE TEST TIMES TO ARRIVE AT THE TOTAL TEST TIME FOR THE SECTION. MINIMUM TEST TIMES FOR VARIOUS PIPE SIZES IN INCHES ARE AS FOLLOWS:

SIZE (INCHES)	TIME (MIN./100 FT.)
UP TO 8	1.2
10	1.5
12	1.8

4. DEFLECTION TESTING OF PIPES-
IN ACCORDANCE WITH THE TEN STATES "RECOMMENDED STANDARDS FOR WASTEWATER FACILITIES - SECTION 33.85"-LATEST EDITION.

A. DEFLECTION TESTS SHALL BE PERFORMED ON ALL FLEXIBLE PIPE. THE TEST SHALL BE CONDUCTED AFTER THE FINAL BACKFILL HAS BEEN IN PLACE AT LEAST 30 DAYS TO PERMIT STABILIZATION OF THE SOIL-PIPE SYSTEM.

B. NO PIPE SHALL EXCEED A DEFLECTION OF 5 PERCENT. IF DEFLECTION EXCEEDS 5 PERCENT, THE PIPE SHALL BE EXCAVATED. REPLACEMENT OR CORRECTION SHALL BE ACCOMPLISHED IN ACCORDANCE WITH REQUIREMENTS IN THE APPROVED SPECIFICATIONS.

C. THE RIGID BALL OR MANDREL USED FOR THE DEFLECTION TEST SHALL HAVE A DIAMETER NOT LESS THAN 95 PERCENT OF THE BASE INSIDE DIAMETER OR AVERAGE INSIDE DIAMETER OF THE PIPE DEPENDING ON WHICH IS SPECIFIED IN THE ASTM SPECIFICATION, INCLUDING THE APPENDIX, TO WHICH THE PIPE IS MANUFACTURED. THE TEST SHALL BE PERFORMED WITHOUT MECHANICAL PULLING DEVICES.

SANITARY SEWER NOTES:

1. ALL WORK TO BE DONE IN ACCORDANCE WITH THE CODE OF THE TOWN OF YORKTOWN AND THE REGULATIONS OF THE WESTCHESTER COUNTY DEPARTMENT OF HEALTH.
2. SANITARY MANHOLES/CLEANOUT MANHOLES SHALL BE PRECAST CONCRETE.
3. ALL WORK SHALL BE MANUFACTURED IN ACCORDANCE WITH APPROVED STANDARDS AND SHALL BE SPACED A MAXIMUM DISTANCE OF 300' ON STRAIGHT RUNS AND INSTALLED AT EVERY CHANGE IN ALIGNMENT. MANHOLE POSITIONING SHALL BE AS TO PREVENT THE ENTRANCE OF SURFACE WATER DURING STORMS. MANHOLE RIMS ARE TO BE WATER TIGHT IN AREAS SUBJECT TO POSSIBLE FLOODING CONDITIONS.
4. ALL BUILDING LATERALS TO BE INSTALLED BY PLUMBERS, LICENSED IN THE TOWN OF YORKTOWN ACCORDING TO THE REQUIREMENTS OF THE TOWN OF YORKTOWN.
5. SANITARY SEWER CONSTRUCTION SHALL MEET ALL SEWER CONSTRUCTION SPECIFICATIONS FOR THE TOWN OF YORKTOWN.
6. THE TOWN ENGINEER SHALL BE NOTIFIED 48 HOURS PRIOR TO THE START OF ANY WORK.
7. A CODE 53 SHALL BE CALLED BEFORE THE START OF ANY EXCAVATION WORK.
8. A STREET OPENING PERMIT SHALL BE OBTAINED BY THE CONTRACTOR PRIOR TO ANY WORK BEING STARTED IN PUBLIC ROADS.
9. ALL SEWERS SHALL BE LAID AT LEAST 10 FT HORIZONTALLY FROM ANY EXISTING OR PROPOSED WATER MAIN. THE DISTANCE SHALL BE MEASURED EDGE TO EDGE. IN CASES WHERE IT IS IMPRACTICAL TO MAINTAIN A 10 FOOT SEPARATION, THE WESTCHESTER COUNTY DEPARTMENT OF HEALTH MAY ALLOW DEVIATION ON A CASE-BY-CASE BASIS, IF SUPPORTED BY DATA FROM THE DESIGN ENGINEER.
10. MANHOLE STEPS SHALL BE CAST IRON NEENAH NO. R-1981-0 OR CAMPBELL FOUNDRY NO. 2588-1 OR POLYPROPYLENE COATED STEEL (SEE SPECIFICATIONS) OR APPROVED EQUAL.
11. UNLESS OTHERWISE SPECIFIED, SANITARY SEWER MANHOLES SHALL HAVE THE LETTERS "SEWER" CAST ON THE COVER.
12. MANHOLE COVERS AND STRUCTURES SHALL MEET OR EXCEED A.S.T.M. AND O.S.H.A. REQUIREMENTS AND MUST BE RATED FOR H-20 LOADING. MANHOLES MUST BE MIN. 48" DIAMETER.
13. ALL SANITARY STRUCTURES SHALL RECEIVE 2 MIL COATS OF BITUMINOUS MATERIAL "INERTOL NO. 49" KOPPERS SUPPER SERVICE BLACK OR APPROVED EQUAL, APPLIED IN ACCORDANCE WITH MANUFACTURE'S SPECIFICATIONS.
14. 0-RING JOINTS TO CONFORM TO A.S.T.M. DESIGNATION C-443 LATEST REVISION. JOINTS TO BE MORTARED INSIDE AND OUT USING NON-SHRINKING MORTAR.
15. PRE-CAST MANHOLE SECTIONS TO BE IN ACCORDANCE WITH "PRE-CAST REINFORCED CONCRETE MANHOLE SECTIONS" A.S.T.M. DESIGNATION C-478, LATEST REVISION, MINIMUM COMPRESSIVE STRENGTH TO BE 4000 P.S.I. 22. WHERE SEWER MAIN IS TO BE INSTALLED 10' DEEP OR GREATER, PVC SDR-26 SHALL BE USED.
16. WHEN SEWER IS TO BE INSTALLED IN FILL MATERIAL, THE SUPPORTING FILL IS TO BE COMPACTED TO MINIMUM STANDARD PROCTOR DENSITY OF 95%, AND SHALL BE CERTIFIED TO THE TOWN.
17. WATER MAINS CROSSING HOUSE SEWERS, STORM SEWERS OR SANITARY SEWERS SHALL BE LAID TO PROVIDE A VERTICAL SEPARATION OF A MINIMUM OF 18" BETWEEN THE BOTTOM OF WATER MAIN AND TOP OF SEWER. IN ADDITION, ADEQUATE STRUCTURAL SUPPORT SHALL BE PROVIDED FOR THE SEWER TO PREVENT EXCESSIVE DEFLECTION OF THE JOINTS AND THE SEWER SETTLING AND BREAKING THE WATER MAIN. IN ADDITION THE LENGTH OF WATER PIPE IS TO BE CENTERED AT THE POINT OF CROSSING SO THAT THE JOINTS WILL BE EQUIDISTANT AND AS FAR AS POSSIBLE FROM THE SEWER. NO WATER MAIN SHALL PASS THROUGH OR COME IN CONTACT WITH ANY PART OF A SEWER OR SEWER MANHOLE.
18. MANHOLES AND SANITARY SEWER LINES SHALL BE TESTED TO CONFORM WITH WESTCHESTER COUNTY DEPARTMENT OF HEALTH RULES AND REGULATIONS AND AS PER SANITARY SEWER TESTING NOTES BELOW.
19. THE WESTCHESTER COUNTY DEPARTMENT OF HEALTH SHALL BE PROVIDED A 48 HOUR NOTICE PRIOR TO THE TESTING OF THE INSTALLED UTILITIES TO ALLOW WITNESSING OF TESTING BY THE DEPARTMENT.
20. ALL INSTALLATIONS AND TESTING SHALL BE IN ACCORDANCE WITH ASTM STANDARDS F-1417, C-1244 AND THE TEN STATES STANDARDS, LATEST VERSION.

WCHD NOTES:

1. UPON COMPLETION AND PRIOR USE, TWO SETS OF AS-BUILT PLANS MUST BE SUBMITTED ALONG WITH P.E. CERTIFICATION OF CONSTRUCTION AND ACCEPTABLE RESULTS OF AIR OR WATER TESTING OF SEWER AND MANHOLES.
2. WCHD MUST NE NOTIFIED A MINIMUM OF 48 HOURS PRIOR TO ANY LEAKAGE TEST.

OWNER/OPERATOR CERTIFICATION:

"I hereby certify under penalty of law that I understand and agree to comply with the terms and conditions of the SWPPP and agree to implement any corrective actions identified by the qualified inspector during a site inspection. I also understand that the owner or operator must comply with the terms and conditions of the most current version of the New York State Pollutant Discharge Elimination System ("SPDES") general permit for stormwater discharges from construction activities and that it is unlawful for any person to cause or contribute to a violation of water quality standards. Furthermore, I am aware that there are significant penalties for submitting false information, that I do not believe to be true, including the possibility of fine and imprisonment for knowing violations"

Name (please print): ______________________

Title: ______________________

Date: ______________________

Address: ______________________

Phone: ______________________

E-mail: ______________________

Signature: ______________________

Name of Trained Individual: ______________________

CONTRACTOR CERTIFICATION:

Contractor Certification Statement - All contractors and subcontractors identified in a SWPPP in accordance with Part III.A.6 (SPDES General Permit for Stormwater Runoff from Construction Activity, GP-0-20-001, January 2020) of this permit shall sign a copy of the following certification statement before undertaking any construction activity at the site identified in the SWPPP:

"I hereby certify that I understand and agree to comply with the terms and conditions of the SWPPP and agree to implement any corrective actions identified by the qualified inspector during a site inspection. I also understand that the Owner or Operator must comply with the terms and conditions of the New York State Pollutant Discharge Elimination System ("SPDES") general permit for stormwater discharges from construction activities and that it is unlawful for any person to cause or contribute to a violation of water quality standards. Furthermore, I understand that certifying false, incorrect or inaccurate information is a violation of the referenced permit and the laws of the State of New York and could subject me to criminal, civil and/or administrative proceedings."

Individual Contractor:

Name and Title (please print) ______________________

Signature of Contractor ______________________

Name of Trained Individual ______________________

Company / Contracting Firm:

Name of Company ______________________

Address of Company ______________________

Telephone / Cell Number ______________________

Site Information: ______________________

Address of Site ______________________

Tody's Date: ______________________

GENERAL EROSION CONTROL NOTES:

1. CONTRACTOR SHALL BE RESPONSIBLE FOR COMPLIANCE WITH ALL SEDIMENT AND EROSION CONTROL PRACTICES. THE SEDIMENT AND EROSION CONTROL PRACTICES ARE TO BE INSTALLED PRIOR TO ANY MAJOR SOIL DISTURBANCES, AND MAINTAINED UNTIL PERMANENT PROTECTION IS ESTABLISHED. ROAD SURFACE FLOWS FROM THE SITE SHOULD BE DISSIPATED WITH TRACKING PAD OR APPROPRIATE MEASURES DURING ADJACENT ROAD SHOULDER REGRADING. CONTRACTOR IS RESPONSIBLE FOR THE INSTALLATION AND MAINTENANCE OF ALL SOIL EROSION AND SEDIMENTATION CONTROL DEVICES THROUGHOUT THE COURSE OF CONSTRUCTION.
2. CATCH BASIN INLET PROTECTION MUST BE INSTALLED AND OPERATING AT ALL TIMES UNTIL TRIBUTARY AREAS HAVE BEEN STABILIZED. WHEN POSSIBLE FLOWS SHOULD BE STABILIZED BEFORE REACHING INLET PROTECTION STRUCTURE. TIMELY MAINTENANCE OF SEDIMENT CONTROL STRUCTURES IS THE RESPONSIBILITY OF THE CONTRACTOR.
3. ALL STRUCTURES SHALL BE MAINTAINED IN GOOD WORKING ORDER AT ALL TIMES. THE SEDIMENT LEVEL IN ALL SEDIMENT TRAPS SHALL BE CLOSELY MONITORED AND SEDIMENT REMOVED PROMPTLY WHEN MAXIMUM LEVELS ARE REACHED OR AS ORDERED BY THE ENGINEER. ALL SEDIMENT CONTROL STRUCTURES SHALL BE INSPECTED ON A REGULAR BASIS, AND AFTER EACH HEAVY RAIN TO INSURE PROPER OPERATION AS DESIGNED. AN INSPECTION SCHEDULE SHALL BE SET FORTH PRIOR TO THE START OF CONSTRUCTION.
4. THE LOCATIONS AND THE INSTALLATION TIMES OF THE SEDIMENT CAPTURING STANDARDS SHALL BE AS SPECIFIED IN THESE PLANS, AS ORDERED BY THE ENGINEER, AND IN ACCORDANCE WITH THE LATEST EDITION OF THE "NEW YORK STANDARDS AND SPECIFICATIONS FOR EROSION AND SEDIMENT CONTROL" (NYSSESC).
5. ALL TOPSOIL SHALL BE PLACED IN A STABILIZED STOCKPILE FOR REUSE ON THE SITE. ALL STOCKPILE MATERIAL REQUIRED FOR FINAL GRADING AND STORED ON SITE SHALL BE TEMPORARILY SEEDED AND MULCHED WITHIN 7 DAYS. REFER TO SOIL STOCKPILE DETAILS.
6. ANY DISTURBED AREAS THAT WILL BE LEFT EXPOSED MORE THAN 7 DAYS AND NOT SUBJECT TO CONSTRUCTION TRAFFIC, SHALL IMMEDIATELY RECEIVE TEMPORARY SEEDING. MULCH SHALL BE USED IF THE SEASON PREVENTS THE ESTABLISHMENT OF A TEMPORARY COVER. DISTURBED AREAS SHALL NOT BE LIMED AND FERTILIZED PRIOR TO TEMPORARY SEEDING.
7. IN AREAS WHERE SOIL DISTURBANCE ACTIVITY HAS TEMPORARILY OR PERMANENTLY CEASED, THE APPLICATION OF SOIL STABILIZATION MEASURES MUST BE INITIATED BY THE END OF THE NEXT BUSINESS DAY AND COMPLETED WITHIN SEVEN (7) DAYS FROM THE DATE THE CURRENT SOIL DISTURBANCE ACTIVITY CEASED.
8. ALL DISTURBED AREAS WITHIN 500 FEET OF AN INHABITED DWELLING SHALL BE WETTED AS NECESSARY TO PROVIDE DUST CONTROL.
9. THE CONTRACTOR SHALL KEEP THE ROADWAYS WITHIN THE PROJECT CLEAR OF SOIL AND DEBRIS AND IS RESPONSIBLE FOR ANY STREET CLEANING NECESSARY DURING THE COURSE OF THE PROJECT.
10. SEDIMENT AND EROSION CONTROL STRUCTURES SHALL BE REMOVED AND THE AREA STABILIZED WHEN THE DRAINAGE AREA HAS BEEN PROPERLY STABILIZED BY PERMANENT MEASURES.
11. ALL SEDIMENT AND EROSION CONTROL MEASURES SHALL BE INSTALLED IN ACCORDANCE WITH CURRENT EDITION OF NYSSESC.
12. ALL REGRADED AREAS MUST BE STABILIZED APPROPRIATELY PRIOR TO ANY ROCK BLASTING, CUTTING, AND/OR FILLING OF SOILS. SPECIAL CARE SHOULD BE TAKEN DURING CONSTRUCTION TO INSURE STABILITY DURING MAINTENANCE AND INTEGRITY OF CONTROL STRUCTURES.
13. ANY SLOPES GRADED AT 3:1 OR GREATER SHALL BE STABILIZED WITH EROSION BLANKETS TO BE STAKED INTO PLACE IN ACCORDANCE WITH THE MANUFACTURES REQUIREMENTS. EROSION BLANKETS MAY ALSO BE REQUIRED AT THE DISCRETION OF TOWN OFFICIALS OR PROJECT ENGINEER. WHEN STABILIZED BLANKET IS UTILIZED FOR CHANNEL STABILIZATION, PLACE ALL OF THE VOLUME OF SEED MIX PRIOR TO LAYING NET, OR AS RECOMMENDED BY THE MANUFACTURER.
14. TO PREVENT HEAVY CONSTRUCTION EQUIPMENT AND TRUCKS FROM TRACKING SOIL OFF-SITE, CONSTRUCT A PERVIOUS CRUSHED STONE PAD. LOCATE AND CONSTRUCT PADS AS DETAILED IN THESE PLANS.
15. CONTRACTOR IS RESPONSIBLE FOR CONTROLLING DUST BY SPRINKLING EXPOSED SOIL AREAS PERIODICALLY WITH WATER AS REQUIRED. CONTRACTOR TO SUPPLY ALL EQUIPMENT AND WATER.
16. CONTRACTOR SHALL BE RESPONSIBLE FOR CONSTRUCTION INSPECTIONS AS PER NYSDEC GP-0-20-001 AND TOWN OF YORKTOWN CODE.
17. ALL HYDRAULIC LINES ON ALL CONSTRUCTION EQUIPMENT AND VEHICLES MUST BE CHECKED AT THE END OF EACH WORKDAY TO MINIMIZE THE POSSIBILITY OF ACCIDENTAL LEAKAGE OF ANY HYDRAULIC FLUIDS.

MAINTENANCE OF TEMPORARY EROSION AND SEDIMENT CONTROL STRUCTURES:

N.Y.S.D.E.C. GP-0-20-001 EXPOSURE RESTRICTIONS - STATES THAT ANY EXPOSED EARTHWORK SHALL BE STABILIZED IN ACCORDANCE WITH THE GUIDELINES OF THIS PLAN.

1. TREES AND VEGETATION SHALL BE PROTECTED AT ALL TIMES AS SHOWN ON THE DETAIL DRAWING AND AS DIRECTED BY THE ENGINEER.
2. CARE SHOULD BE TAKEN SO AS NOT TO CHANNEL CONCENTRATED RUNOFF THROUGH THE AREAS OF CONSTRUCTION ACTIVITY ON THE SITE.
3. FILL AND SITE DISTURBANCES SHOULD NOT BE CREATED WHICH CAUSES WATER TO POND OFF SITE OR ON ADJACENT PROPERTIES.
4. RUNOFF FROM LAND DISTURBANCES SHALL NOT BE DISCHARGED OR HAVE THE POTENTIAL TO DISCHARGE OFF SITE WITHOUT FIRST BEING INTERCEPTED BY A CONTROL STRUCTURE, SUCH AS A SEDIMENT TRAP OR SILT FENCE. SEDIMENT SHALL BE REMOVED BEFORE EXCEEDING 50% OF THE RETENTION STRUCTURE'S CAPACITY.
5. FOR FINISHED GRADING, ADEQUATE GRADE SHALL BE PROVIDED SO THAT WATER WILL NOT POND ON LAWNS FOR MORE THAN 24 HOURS AFTER RAINFALL, EXCEPT IN SWALE FLOW AREAS WHICH MAY DRAIN FOR AS LONG AS 48 HOURS AFTER RAINFALL.
6. ALL SWALES AND OTHER AREAS OF CONCENTRATED FLOW SHALL BE PROPERLY STABILIZED WITH TEMPORARY CONTROL MEASURES TO PREVENT EROSION AND SEDIMENT TRAVEL. SURFACE FLOWS OVER CUT AND FILL AREAS SHALL BE STABILIZED AT ALL TIMES.
7. ALL SITES SHALL BE STABILIZED WITH EROSION CONTROL MATERIALS WITHIN 7 DAYS OF FINAL GRADING.
8. TEMPORARY SEDIMENT TRAPPING DEVICES SHALL BE REMOVED FROM THE SITE WITHIN 30 DAYS OF FINAL STABILIZATION.

MAINTENANCE SCHEDULE:

	DAILY	WEEKLY	MONTHLY	AFTER RAINFALL	NECESSARY TO MAINTAIN FUNCTION	AFTER APPROVAL OF INSPECTOR
SILT FENCE	---	----	INSP.	INSP.	CLEAN OF SEDIMENT/ REPLACE IF BULGES FORM	REMOVE
STABILIZED CONST. ENT.	CLEAN OF SEDIMENT	INSP.	----	----	MAINTAIN CONDITION TO PREVENT SEDIMENT TRACKING	REMOVE
SEDIMENT BASIN	---	INSP.	INSP.	INSP.	REMOVE SEDIMENT AT 50% STORAGE CAPACITY	REMOVE
SOIL STOCKPILE	---	INSP.	INSP.	INSP.	MAINTAIN VEGETATIVE COVER WITH SEEDING	REMOVE
DEWATERING PIT	---	INSP.	INSP.	INSP.	REMOVE ACCUMULATED SEDIMENT IN PIT AND FILTER CLOTH	REMOVE
OUTLET/ INLET STRUCTURES & PROTECTION	---	INSP.	INSP.	INSP.	REMOVE SEDIMENT AT 50% STORAGE CAPACITY	REMOVE
CONCRETE WASHOUT	INSPECTION (INSP.)	INSP.	INSP.	INSP.	REMOVE HARDENED CONCRETE WHEN 75% FULL	REMOVE
EROSION CONTROL BLANKET	---	INSP.	INSP.	INSP.	MAINTAIN COVER WITH SEEDING AND ANCHORING	REMOVE AFTER 80% UNIFORM VEGETATION GROWTH
WATER BARS	---	INSP.	----	INSP.	REMOVE SEDIMENT BUILD UP OR DAMAGE	REMOVE
CONSTRUCTION FENCE	---	----	INSP.	INSP.	REPLACE DAMAGED AREAS AND REMOVE SEDIMENT	REMOVE

POST CONSTRUCTION MAINTENANCE SCHEDULE:

Control to be Inspected	Inspection Frequency	Maintenance Threshold Criteria	Maintenance Procedure
Drain Inlets	Quarterly	3"+ accumulated sediment	Remove debris and sediment annually.
Detention Chamber	Annually	3"+ accumulated sediment	Remove debris and sediment annually.
Bypass Structures	Quarterly	3"+ accumulated sediment	Remove debris and sediment annually.
MC-7200 Chambers	Bi-Annually	3"+ accumulated sediment	Remove debris and sediment.
Downstream Defender	Every Six Months	3"+ accumulated sediment	Remove debris and sediment if at 75% capacity.
Pond and Wetlands/Outlet Structure	Bi-Annually	3"+ accumulated sediment	Remove debris and sediment.
Tree Planting	Quarterly	Ponding for more than 48 hours	Remove accumulated sediment and debris; weed and replace dead trees with new ones and mulch as needed.
Vegetated Filter Strip	Bi-Annually	Ponding for more than 48 hours	Remove accumulated sediment and debris; weed and replace as needed.

POND DRAIN NOTES:

1. THERE IS NO POND DRAIN PROVIDED FOR THE EXISTING STORMWATER POND. FOR EMERGENCY AND MAINTENANCE NEEDS, A PORTABLE PUMP WITH SUCTION HOUSE, FILTER SOCK AND DISCHARGE HOSE SHALL BE USED FOR DRAINING.

TOPSOIL:

Existing topsoil will be removed and stored in piles sufficiently as to avoid mixing with other excavation. Stockpiles shall be surrounded by erosion control as outlined on these plans. The furnishing of new topsoil shall be of a better or equal to the following criteria (SS713.01 NYSDOT):

1. The pH of the material shall be 5.5 to 7.6.
2. The organic content shall not be less than 2% or more than 70%.
3. Gradation:

SIEVE SIZE	% PASSING BY WGT.
2 INCH	100
1 INCH	85 TO 100
1/4 INCH	65 TO 100
NO. 200 MESH	20 TO 80

PERMANENT VEGETATIVE COVER:

1. Site preparation:
   - 1.1. Install erosion control measures.
   - 1.2. Scarify compacted soil areas.
   - 1.3. Lime as required to ph 6.5.
   - 1.4. Fertilize with 10-6-4 4 lbs/1,000 S.F.
   - 1.5. Incorporate amendments into soil with disc harrow.
2. Seed mixtures for use on swales and cut and fill areas.

MIXTURE		LBS./ACRE
ALT. A	KENTUCKY BLUE GRASS	20
	CREEPING RED FESCUE	28
	RYE GRASS OR REDTOP	5
ALT. B	CREEPING RED FESCUE	20
	REDTOP	2
	TALL FESCUE/SMOOTH BLOOMGRASS	20

3. SEEDING
   - 3.1. Prepare seed bed by raking to remove stones, twigs, roots and other foreign material.
   - 3.2. Apply soil amendments and integrate into soil.
   - 3.3. Apply seed uniformly by cyclone seeder culti-packer or hydro-seeder at rate indicated.
   - 3.4. Stabilize seeded areas in drainage swales.
   - 3.5. Irrigate to fully saturate soil layer, but not to dislodge planting soil.
   - 3.6. Seed between April 1st and May 15th or August 15th and October 15th.
   - 3.7. Seeding may occur May 15th and August 15th if adequate irrigation is provided.

TEMPORARY VEGETATIVE COVER:

SITE PREPARATION:
1. Install erosion control measures.
2. Scarify areas of compacted soil.
3. Fertilize with 10-10-10 at 400/acre.
4. Lime as required to ph 6.5.

SEED SPECIES:

MIXTURE	LBS./ACRE
Rapidly germinating annual ryegrass (or approved equal)	20
Perennial ryegrass	20
Cereal oats	36

SEEDING:
Same as permanent vegetative cover

CONSTRUCTION SEQUENCE

RECOMMENDED SEQUENCE OF CONSTRUCTION

USE OF EROSION AND SEDIMENT CONTROL STRUCTURES AND PRACTICES ARE IMPORTANT FOR MAINTAINING SITE STABILITY UNDER RUNOFF AND DURING DAILY CONSTRUCTION ACTIVITIES. THE CONSTRUCTION SEQUENCE SHOULD BE STAGED WITH EROSION AND SEDIMENT CONTROLS, AS FOLLOWS, WITH ALL CONTROLS IN PLACE AND IMPLEMENTED PRIOR TO RESPECTIVE INFRASTRUCTURE CONSTRUCTION. AS CONSTRUCTION PROCEEDS, THE CONTROLS SHOULD BE MONITORED, MAINTAINED AND REPLACED AS NEEDED. ADDITIONAL CONTROLS MAY BE REQUIRED AS NEEDED TO ADDRESS UNFORESEEN SITUATIONS.

REFER TO THE CONSTRUCTION DRAWINGS FOR ALL PLANS AND DETAILS WHICH RELATE TO THE CONSTRUCTION SEQUENCE. THIS SEQUENCE SHOULD BE FOLLOWED IN CONJUNCTION WITH ALL PLANS, NOTES, AND THE STORMWATER POLLUTION PREVENTION PLAN. PRIOR TO THE COMMENCEMENT OF WORK, THE OWNER AND GENERAL CONTRACTOR SHALL READ AND UNDERSTAND THE SEQUENCE FOR CONSTRUCTION. THE SEQUENCE SHALL BE DISCUSSED AT THE TIME OF THE PRE-CONSTRUCTION MEETING.

DURING CONSTRUCTION OF THE PROJECT, THE CONTRACTOR IS RESPONSIBLE TO COORDINATE ALL REQUIRED INSPECTIONS WITH VARIOUS AGENCIES AND THE PROJECT ENGINEER.

GENERAL SEQUENCE: THE GENERAL SEQUENCE APPLIES TO THE START OF ALL WORK FOR THE PROJECT. THE REQUIREMENTS IN SUCH SHALL BE APPLIED AS APPROPRIATE AND SHALL BE ASSUMED IN PLACE PRIOR TO THE START OF THE WORK OUTLINED IN THE SEQUENCE.

1. PRIOR TO THE BEGINNING OF ANY SITE WORK THE MAJOR FEATURES OF THE CONSTRUCTION MUST BE FIELD STAKED BY A LICENSED SURVEYOR. THESE INCLUDE THE BUILDINGS, ROADS, LIMITS OF DISTURBANCE, UTILITY LINES, AND STORMWATER PRACTICES.
2. PRIOR TO THE START OF THE PROJECT, AN ON-SITE PRE-CONSTRUCTION MEETING WILL BE HELD. THIS WILL BE ATTENDED BY THE PROJECT OWNER, THE OPERATOR RESPONSIBLE FOR COMPLYING WITH THE APPROVED CONSTRUCTION DRAWINGS INCLUDING THE EROSION AND SEDIMENT CONTROL (E&SC) PLAN AND DETAILS, THE DESIGN ENGINEER, THE ENGINEER RESPONSIBLE FOR E&SC MONITORING DURING CONSTRUCTION, TOWN REPRESENTATIVES FROM THE ENGINEERING DEPARTMENT AND CODE ENFORCEMENT, AND REPRESENTATIVES FROM THE NYC DEP. THE DEP SHALL BE NOTIFIED 48HRS PRIOR TO THE PRECONSTRUCTION MEETING.
3. CUT AND CLEAR TREES WITHIN THE WORK LIMITS AS NECESSARY FOR THE AREAS TO BE DISTURBED. INSTALL TREE PROTECTIVE MEASURE AT MARKED LOCATIONS ON E&SC PLAN.
4. INSTALL ALL TEMPORARY EROSION CONTROL MEASURES AS SHOWN ON THE EROSION AND SEDIMENT CONTROL PLAN FOR THE PROJECT'S IMMEDIATE DISTURBANCE AREAS. THIS SHALL INCLUDE, BUT NOT LIMITED TO SILT FENCE, STABILIZED CONSTRUCTION ENTRANCES, CONSTRUCTION FENCE, ETCTHIS SEQUENCE MUST BE FOLLOWED TO INSURE PROPER IMPLEMENTATION OF THE EROSION AND SEDIMENT CONTROL PLAN (E&SC) AND STORMWATER POLLUTION PREVENTION PLAN (SWPPP). CORDON OFF STORMWATER PRACTICES AS SHOWN ON THE E&SC PLAN TO PREVENT COMPACTION OF UNDERLYING SOILS. DURING CONSTRUCTION, RUNOFF WILL SHEET FLOW ACROSS THE SITE TO THE PERIMETER WHERE IT WILL BE PASS THROUGH SILT FENCING.
5. TIMBERED TREES AND WOODCHIPS SHALL BE TEMPORARILY STORED IN THE STOCKPILE AND/OR STAGING AREA IF NECESSARY, BEFORE BEING REMOVED OFF-SITE. WOODCHIPS MAY BE USED FOR MULCH TO STABILIZE DISTURBED AREAS. WOODCHIP MULCH SHALL BE APPLIED AT A MINIMUM RATE OF 500 LBS. PER 1000 SF (2" THICK MINIMUM).
6. REMOVE EXISTING VEGETATIVE COVER, CUT AND CLEAR TREES, GRUB, REMOVE STUMPS AND OTHER SURFACE FEATURES IN THE LIMIT OF CONSTRUCTION ONLY. ANY DISTURBANCE THAT RESULTS FROM TREE CLEARING AND GRUBBING SHALL BE IMMEDIATELY STABILIZED WITH WOODCHIPS MULCH, HYDRO-MULCH, OR STRAW AND SEED. TIMBERED TREES, WOOD CHIPS, AND STUMPS SHALL BE REMOVED OFF-SITE UNLESS OTHERWISE DIRECTED. AS STATED, WOODCHIPS MAY BE STOCKPILED FOR USE AS STABILIZING GROUND COVER. DEMOLISH AND/OR REMOVE EXISTING FEATURES, I.E.: FENCE, CONCRETE SLAB, ASPHALT ETC., AND DISPOSE OF OR STOCKPILE AS REQUIRED BY THE OWNER. ALL CONSTRUCTION DEBRIS SHALL BE PROPERLY DISPOSED OF IN ACCORDANCE WITH ALL FEDERAL, STATE, AND LOCAL REQUIREMENTS.
7. NO MORE THAN FIVE ACRES SHALL BE DISTURBED ON SITE AT ONE TIME.

THE FOLLOWING IS THE GENERAL ORDER FOR CONSTRUCTION OF THE PROJECT AND MAY BE MODIFIED AFTER APPROVED BY THE SUPERVISING ENGINEER. THIS IS MEANT TO MINIMIZE THE AMOUNT OF OPEN DISTURBANCE. UNDER NO CIRCUMSTANCES SHALL MORE THAN FIVE (5) ACRES OR GREATER BE DISTURBED DURING THE SAME PERIOD OF TIME. IN THE EVENT GREATER DISTURBANCE IS NECESSARY OUTSIDE OF THE LIMIT OF DISTURBANCE SHOWN ON THE EROSION AND SEDIMENT CONTROL PLAN, THE CONTRACTOR SHALL COORDINATE WITH THE ENGINEER OF RECORD, AND MUNICIPALITY FOR AN ON-SITE MEETING TO DISCUSS THE ALTERNATIVE APPROACH TO THE CONSTRUCTION.

PHASE I: CONSTRUCTION OF TOWNHOUSE MODELS AND APARTMENT COMPLEX - 4.96 ACRES

THIS PHASE WILL CONSTRUCT THE INITIAL PORTION OF THE TOWNHOUSE ROAD UP TO THE CONDO ROAD, THE CONDO ROAD, THEN CONTINUE AROUND AND CONSTRUCT THE ROADWAY AND PARKING INFRASTRUCTURE FOR THE MAIN ACCESS ROAD AND APARTMENT BUILDING.

8. THE SURVEYOR SHALL STAKE-OUT THE PROPOSED ROADWAY CENTERLINES, PARKING LOT LIMITS, LIMITS OF CUT AND BUILDINGS.
9. IMPLEMENT THE GENERAL SEQUENCE NOTES 1 THROUGH 6 WHERE APPLICABLE PRIOR TO CONTINUING.
10. ONCE THE TREE REMOVAL OPERATION IS COMPLETE, STRIP THE TOPSOIL WITHIN THE WORK BOUNDARY AND PLACE EXCAVATED TOPSOIL WITHIN THE IDENTIFIED STOCKPILE LOCATIONS. ANY SOILS SO DEEMED BY THE DESIGN OR MONITORING ENGINEER SHALL BE STOCKPILED FOR FUTURE USE AS LANDSCAPED AREA TOPSOIL. CONTRACTOR SHALL TAKE EVERY PRECAUTION FEASIBLE TO REDUCE THE AMOUNT OF DISTURBED/EXPOSED SOILS DURING CONSTRUCTION.
11. ANY DISTURBED AREA THAT WILL NOT BE FURTHER DISTURBED WITHIN SEVEN (7) DAYS SHALL BE IMMEDIATELY STABILIZED WITH WOODCHIPS, HYDRO-MULCH, OR STRAW AND SEED IN ACCORDANCE WITH SOIL STABILIZATION REQUIREMENT FOR EAST OF HUDSON WATERSHED SPECIFIED IN PART 1.B.1. B OF THE SPDES GENERAL PERMIT GP-015-002.
12. INSTALL GLENROCK STREET DRAINAGE AND CURBING. STABILIZE SOILS BEFORE PROCEEDING TO ENSURE NO MORE THAN 5 ACRES IS DISTURBED AT A TIME.
13. PRIOR TO STARTING THE WORK INSTALL ALL EROSION AND SEDIMENT CONTROLS INCLUDING THE INSTALLATION OF THE STABILIZED CONSTRUCTION ENTRANCE, SILT FENCE, STAGING AREA, AND CONCRETE WASHOUT AS PER THE PLAN.
14. BEGIN THE DEMOLITION OF THE EXISTING BUILDINGS, ASPHALT DRIVEWAY AND PARKING, AND UTILITIES. MATERIAL SHALL BE PROPERLY DISPOSED OF OFFSITE AT A LOCATION PERMITTED BY THE NYS DEC TO RECEIVE SUCH DEBRIS. THIS AREA SHALL BE UTILIZED AS THE STAGING AREA FOR STOCKPILES, DUMPSTERS, AND MATERIALS TO BE EXPORTED AND IMPORTED.
15. BEGIN ROUGH GRADING OF ROADWAYS WITHIN WORK LIMITS AND ADJACENT AREAS. SLOPES IN EXCESS OF 3H:1V SHALL NOT BE LEFT EXPOSED AND MUST BE STABILIZED. INSTALL WATER BARS AS PER PLAN. ONCE SUBGRADE ELEVATION IS SET, INSTALL ITEM BASE COURSE. BEGIN GRADING WORKING FROM INSIDE THE SITE. ONCE GRADES HAVE BEEN ESTABLISHED, INSTALL OR REPLACE THE CONSTRUCTION ENTRANCE.
16. CUT MATERIAL SHALL FIRST BE MOVED TO THE FILL LOCATIONS REQUIRED TO COMPLETE THE ACCESS DRIVE AND STAGING AREA AND BRING THE AREA UP TO FINAL GRADES. BLASTED ROCK THAT IS NOT SUITABLE TO REMAIN ON SITE SHALL BE HAULED AWAY AND PROPERLY DISPOSED OF.
17. BEGIN ROUGH GRADING THE BUILDING PADS FOR THE BUILDINGS. ALL COMPACTION REQUIREMENTS SHALL BE MET WITHIN THE FILL SECTIONS. (THIS WORK SHALL INCLUDE THE COMMENCEMENT OF THE RETAINING WALLS AROUND THE PROPOSED BUILDING CONSTRUCTION.) UPON COMPLETION OF THE GRADING, TEMPORARY SEED OR HYDRO-MULCH THE EMBANKMENT AND INSTALL EROSION CONTROL BLANKETS AS SHOWN ON THE PLANS ALONG THE NORTHERN PERIMETER OF THE FILL SECTION. DURING BUILDING AND SITE CONSTRUCTION, MAINTAIN AND RE-ESTABLISH AS REQUIRED, EROSION CONTROL AND STABILIZATION MEASURES AS REQUIRED BY THE SITE PLAN AND DETAILS. AREAS WHICH ARE TO REMAIN UNDISTURBED FOR MORE THAN SEVEN (7) DAYS SHALL BE STABILIZED WITH TEMPORARY SEEDING OR MULCH.
18. A LICENSED SURVEYOR MUST DEFINE THE BUILDING LOCATIONS.
19. INSTALL OR CHECK THE CONDITION OF ALL TEMPORARY EROSION CONTROL MEASURES AS SHOWN ON THE EROSION AND SEDIMENT CONTROL PLAN.
20. BEGIN PREPARATION OF THE BUILDING SITE AND EXCAVATION OF THE BUILDING FOUNDATION AS WELL AS CONSTRUCTION OF ALL RETAINING WALLS. REBAR AND FOOTINGS OF ALL RETAINING WALLS SHALL BE INSPECTED BY THE DESIGN ENGINEER OR TOWN PRIOR TO CONCRETE POUR. AREAS IN WHICH FINAL GRADE IS ACHIEVED SHALL BE IMMEDIATELY STABILIZED WITH PERMANENT VEGETATIVE COVER. PERMANENT SLOPES OF 3:1 OR GREATER SHALL RECEIVE EROSION BLANKETS.
21. BEGIN CONSTRUCTION OF THE FOUNDATION. UPON COMPLETION AND AFTER PROPER CURING TIME IS ACHIEVED, BACKFILL THE FOUNDATION AND BRING SITE TO ROUGH GRADE. IN AREAS WHERE SOIL DISTURBANCE ACTIVITY HAS TEMPORARILY OR PERMANENTLY CEASED, THE APPLICATION OF SOIL STABILIZATION MEASURES MUST BE INITIATED BY THE END OF THE NEXT BUSINESS DAY AND COMPLETED WITHIN SEVEN (7) DAYS FROM THE DATE THE CURRENT SOIL DISTURBANCE ACTIVITY CEASED.
22. ONCE BUILDING FOUNDATIONS AND RETAINING WALLS HAVE BEEN COMPLETED, BRING THE SITE TO THE FINAL SUBGRADE ELEVATION.
23. PROCEED WITH THE CONSTRUCTION OF THE BUILDINGS. THIS INCLUDES THE BUILDING STRUCTURE ITSELF, RETAINING WALLS, AND ROUGH GRADES. AT ANY POINT DURING THIS BEGIN INSTALLATION OF THE UTILITIES INCLUDING THE WATER AND SEWER CONNECTIONS, DRAINAGE AND POWER UTILITIES. CONCRETE TRUCKS SHALL BE WASHED OUT IN THE LOCATION SHOWN ON THE PLANS.
24. STAKE-OUT THE LOCATION OF UTILITIES AND UTILITY STRUCTURES. BEGIN INSTALLATION OF SUBSURFACE INFILTRATION AND DETENTION CHAMBERS.
25. WHEN THE SUBSURFACE UNITS ARE INSTALLED, THE UPSTREAM DRAINAGE STRUCTURE SHALL BE BLOCKED TO NOT ALLOW SEDIMENT LADEN WATER FROM REACHING THE SUBSURFACE CHAMBERS.
26. BACKFILL AS INSTALLATION IS COMPLETE AND STABILIZE THE AREA. IF TRENCHES ARE TO BE LEFT OPEN, PLACE EXCAVATED MATERIAL ON THE UP-SLOPE SIDES OF THE TRENCH AND PROTECT AND STABILIZE IF IT IS TO REMAIN OPEN FOR AN EXTENDED PERIOD OF SEVEN (7) DAYS OR MORE.
27. UPON COMPLETION OF THE SUBSURFACE CHAMBERS, REINSTALL CONSTRUCTION FENCING AROUND CHAMBERS TO PREVENT LARGE CONSTRUCTION VEHICLES FROM DRIVING OVER THE CHAMBERS UNTIL THE MINIMUM COVER REQUIREMENT IS MET.
28. BEGIN INSTALLATION OF PROPOSED BYPASS AND OUTLET STRUCTURES.
29. INSTALL STORM SEWER PIPING, CATCH BASINS AND MANHOLES, WORKING DOWNSTREAM TO UPSTREAM. DURING THE INSTALLATION OF CATCH BASINS, INSTALL INLET PROTECTION AND WATER BAR AS PER E&SC PLAN TO ASSURE THAT SEDIMENT LADEN WATER WILL NOT ENTER THE STORM SYSTEM. ONCE THE FINAL GRADE ABOVE THE SYSTEM IS ACHIEVED, PUT INTO PLACE THE FINAL TOPSOIL COVER, SEED MIX, AND EROSION CONTROL BLANKET, OR HYDRO-MULCH. REFER TO THE LANDSCAPE PLAN FOR THE SEED MIX REQUIREMENTS.

NOTE: NO STORMWATER IS PERMITTED TO ENTER THE INFILTRATION SYSTEM FROM THE UPSTREAM CONVEYANCE SYSTEM AND SHALL BE BLOCKED UNTIL THE COMPLETION AND STABILIZATION OF ALL AREAS TRIBUTARY TO THE SYSTEM. AN AREA SHALL BE CONSIDERED TO HAVE ACHIEVED FINAL STABILIZATION WHEN IT HAS A MINIMUM UNIFORM 80% PERENNIAL VEGETATIVE COVER OR OTHER PERMANENT NON-VEGETATIVE COVER WITH A DENSITY SUFFICIENT TO RESIST ACCELERATED SURFACE EROSION AND SUBSURFACE CHARACTERISTICS SUFFICIENT TO RESIST SLIDING AND OTHER MOVEMENTS.

30. NEW POND OUTLET STRUCTURE: THE NEW PRECAST CONCRETE OUTLET STRUCTURE WILL OCCUR AT THIS POINT OF THE CONSTRUCTION. FIRST THE CONTRACTOR SHALL INSTALL A COFFERDAM AND TURBIDITY CURTAIN AROUND THE WORK AREA. THE AREA WILL INITIALLY BE DEWATERED BEFORE ANY EXCAVATION WORK WILL BEGIN AND THE DEWATERING PIT INSTALLED. ONCE THE DEWATERING PIT AND PUMP IS INSTALLED THE INSTALLATION OF THE STRUCTURE CAN OCCUR. THE PUMP WILL DISCHARGE BACK TO THE POND. UPON COMPLETION THE PUMP WILL BE REMOVED FOLLOWED BY THE COFFERDAM. INSTALL OUTLET PIPE TO FIRST DRAINAGE STRUCTURE AS PER PLAN AND BLOCK FLOW UNTIL COMPLETION OF OUTLET PIPE.
31. STAKE OUT AND INSTALL CURBING AS PER PLAN. ONCE CURBING IS COMPLETED AROUND CATCH BASINS, RE-INSTALL INLET PROTECTION WITHIN CATCH BASINS. AS CURBING IS COMPLETE, BACKFILL WITH TOPSOIL. AREAS THAT ARE FILLED WITH TOPSOIL ARE TO BE RAKED, SEEDED, AND HAY MULCHED.
32. UPON COMPLETION OF THE MAJORITY OF THE INFRASTRUCTURE, INSTALL PAVEMENT BASE AND BINDER COURSE TO THE THICKNESS AND ELEVATION AS PER THE CONSTRUCTION PLANS.
33. AS WORK IS AT THE COMPLETION STAGE INSTALL FINAL ASPHALT SURFACE.
34. INSTALL HARDSCAPE SUCH AS PATIOS, WALKS STEPS ETC., AND FINAL VEGETATION INCLUDING SOD AND LANDSCAPING. REFER TO LANDSCAPE PLANS FOR LOCATION AND IDENTIFICATION OF GROUND COVER AND PLANTINGS. CLEAR SITE OF DEBRIS AND ALL UNWANTED MATERIALS. DISPOSAL SHALL BE IN ACCORDANCE WITH ALL FEDERAL, STATE, AND LOCAL REQUIREMENTS.
35. DURING THE FINAL PHASE OF BUILDING CONSTRUCTION, FINISH GRADE, PERFORM SOIL RESTORATION REQUIREMENTS (SEE FIGURE 8.1), TOPSOIL, RAKE, AND SEED ALL AREAS AS REQUIRED. WHERE REQUIRED OR RECOMMENDED, HYDRO-MULCH OR INSTALL EROSION CONTROL BLANKETS.
36. UPON COMPLETION, THE CONTRACTOR SHALL BE REQUIRED TO STABILIZE DISTURBED SOILS IN THE EVENT THE DISTURBED AREA WILL REMAIN NOT WORKED FOR GREATER THAN SEVEN (7) DAYS, AT THE DIRECTION OF THE ENGINEER OF RECORD OR PERMITTING ENTITY INSPECTOR, AND WHEN SIGNIFICANT PRECIPITATION IS IN THE IMMEDIATE FORECAST. ALL DISTURBED AREAS SHALL BE TEMPORARILY STABILIZED WITH HYDRO-MULCH OR WHERE APPROPRIATE WOODCHIPS. IT IS RECOMMENDED THAT ANY GRADING THAT IS AT THE FINISH STAGE WILL RECEIVE NO FURTHER DISTURBANCE AND THAT PERMANENT STABILIZATION SUCH AS TOPSOIL, SEED, MULCHING OR BLANKETS AS PER THE PLAN BE INSTALLED.

NOTE: IT IS NOT PERMITTED TO DISTURB ANOTHER PHASE UNLESS THE PRIOR PHASE IS FULLY STABILIZED.

PHASE II: TOWNHOUSE UNIT BUILDING 4, WETLAND MITIGATION, AND PATHWAY AROUND POND-2.65 ACRES
THIS WILL INVOLVE THE CONSTRUCTION OF TOWNHOUSE BUILDING #4 AND THE AREA AROUND THE POND WHICH WILL INCLUDE THE WETLAND MITIGATION AREA, POCKET WETLAND AND PATHWAY WHILE ESTABLISHING THE FINAL LANDSCAPING OF THESE AREAS.

37. CONSTRUCT AND STABILIZE SEDIMENT BASIN AND OUTLET PIPE AS PER PLAN. INSTALL TEMPORARY PIPE FROM CATCH BASIN AS PER PLAN.DETERMINE SEASONAL GROUNDWATER ELEVATION BEFORE CONSTRUCTION TO ENSURE THE BOTTOM OF BASIN IS ABOVE GROUNDWATER.
38. FOLLOW STEPS OUTLINED IN GENERAL SEQUENCE AND PHASE I EXCEPT FOR 23-27.
39. BEGIN POND DREDGING AS PER PLAN.
40. BEGIN CONSTRUCTION OF POCKET WETLAND. ONCE THE ROADWAY AND DRIVEWAYS HAVE BEEN COMPLETED AND ALL DISTURBED AREA'S TRIBUTARY TO THE POCKET WETLAND STABILIZED AS PER THE DETAIL. CLEAN OUT THE ACCUMULATED SEDIMENT AND GRADE OUT FOREBAYS, MICRO POOLS, AND AREAS OF HIGH AND LOW MARSH. INSTALL IMPERVIOUS LINER IN FOREBAY AND MICRO POOL, POCKET WETLAND VEGETATION, AND OUTLET STRUCTURES. ONCE COMPLETED AND STABILIZED, ALLOW RUNOFF TO ENTER POCKET WETLAND FOREBAY.

NOTE: NO STORMWATER IS PERMITTED TO ENTER THE POCKET WETLAND SYSTEM FROM THE UPSTREAM CONVEYANCE SYSTEM AND SHALL BE BLOCKED UNTIL THE COMPLETION AND STABILIZATION OF ALL AREAS TRIBUTARY TO THE BASIN. AN AREA SHALL BE CONSIDERED TO HAVE ACHIEVED FINAL STABILIZATION WHEN IT HAS A MINIMUM UNIFORM 80% PERENNIAL VEGETATIVE COVER OR OTHER PERMANENT NON-VEGETATIVE COVER WITH A DENSITY SUFFICIENT TO RESIST ACCELERATED SURFACE EROSION AND SUBSURFACE CHARACTERISTICS SUFFICIENT TO RESIST SLIDING AND OTHER MOVEMENTS.
NOTE: IT IS NOT PERMITTED TO DISTURB ANOTHER PHASE UNLESS THE PRIOR PHASE IS FULLY STABILIZED.

PHASE IIIA: CONDOMINIUM BUILDING - 0.86 ACRES
THIS PHASE WILL REVOLVE AROUND THE CONSTRUCTION OF THE CONDOMINIUM BUILDING.

41. FOLLOW STEPS OUTLINED IN GENERAL SEQUENCE AND PHASE I EXCEPT FOR 23-27.
42. THE BUILDING PAD FOR TOWNHOUSE BUILDING 6 WILL BE UTILIZED AS THE STAGING AREA. INSTALL ALL EROSION AND SEDIMENT CONTROLS WITHIN THE WORK LIMITS AS PER PLAN.
43. BEGIN ROUGH GRADING THE BUILDING PAD FOR THE CONDOMINIUM.
44. BEGIN PREPARATION OF THE BUILDING SITE AND EXCAVATION AS WELL AS THE CONSTRUCTION OF THE RETAINING WALL TO THE NORTH OF THE BUILDING.
45. BEGIN CONSTRUCTION OF THE FOUNDATION. ONCE COMPLETED, BRING THE AREA TO FINAL ELEVATION.
46. BEGIN INSTALLATION OF SUBSURFACE UTILITIES. COMPLETE POND OUTLET PIPE INSTALLATION AND REMOVE BLOCK.
47. BEGIN CONSTRUCTION OF THE POOL AREA AND HARDSCAPE.
48. INSTALL HARDSCAPE AND FINAL VEGETATION AS PER PLAN.

NOTE: IT IS NOT PERMITTED TO DISTURB ANOTHER PHASE UNLESS THE PRIOR PHASE IS FULLY STABILIZED.

PHASE IIIB: REMAINDER OF TOWNHOUSE ROAD AND TOWNHOUSE BUILDINGS - 4.41 ACRES
THIS PHASE WILL INITIALLY START BY ESTABLISHING THE REMAINDER OF THE ROADWAY FOR THE TOWNHOUSE BUILDINGS.

49. FOLLOW STEPS OUTLINED IN GENERAL SEQUENCE AND PHASE I EXCEPT FOR 23-27.
50. INSTALL WATERBARS PER PLAN, ONCE SUBGRADE ELEVATION IS SET, INSTALL ITEM BASE COURSE.
51. AFTER INITIAL ROAD GRADES ARE ESTABLISHED, INSTALL RETAINING WALLS ON THE EAST AND WEST SIDE OF THE WORK LIMITS IN ORDER TO ESTABLISH THE BUILDING PADS. SLOPES IN EXCESS OF 3H:1V SHALL NOT BE LEFT EXPOSED AND MUST BE STABILIZED.
52. BEGIN ROUGH GRADING FOR THE NORTHMOST BLOCK OF TOWNHOMES AND CUL-DE-SAC AREA.
53. BEGIN INSTALLATION OF SUBSURFACE UTILITIES.
54. ONCE BUILDING PAD GRADES ARE ESTABLISHED, BEGIN THE CONSTRUCTION OF TOWNHOMES.
55. INSTALL FINAL STABILIZATION AND LANDSCAPING AS EACH TOWNHOUSE BUILDING IS COMPLETED.

NOTE: IT IS NOT PERMITTED TO DISTURB ANOTHER PHASE UNLESS THE PRIOR PHASE IS FULLY STABILIZED.

FINAL SITE STABILIZATION AND COMPLETION OF NEW CONSTRUCTION:

56. REMOVE SEDIMENT BASIN AND TEMPORARY PIPES, BRING AREA TO FINAL GRADE BY LEVELING SEDIMENT DEPOSITS AND BACKFILLING. STABILIZE SOILS AND INSTALL VEGETATED FILTER STRIPS.
57. UPON COMPLETION OF ALL WORK, THE SITE SHALL BE INSPECTED BY THE SUPERVISING ENGINEER AND TOWN INSPECTOR TO DETERMINE COMPLETION OF ALL WORK AND PERMANENT STABILIZATION OF THE SITE.
58. ANY AREAS DEEMED INCOMPLETE OR NOT PROPERLY STABILIZED SHALL BE DONE SO TO THE SATISFACTION TO THE SUPERVISING ENGINEER AND TOWN INSPECTOR.
59. ONCE THE SITE IS DEEMED ADEQUATELY STABLE THE TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES CAN BE REMOVED. AT THAT TIME IF DEEMED APPROPRIATE DRAINAGE STRUCTURES UPSTREAM FROM THE SUBSURFACE STORMWATER MANAGEMENT SYSTEMS SHALL BE CLEANED OF SEDIMENT AND DEBRIS. THEY CAN THEN BE UNBLOCKED TO ALLOW FOR FLOW OF COLLECTED SURFACE RUNOFF.

APPROVED
Resolution Number 23-13
Date July 17, 2023

Site Design Consultants
Civil Engineers • Land Planners
251-F Underhill Avenue, Yorktown Heights, NY 10598
(914) 962-4488 - Fax: (914) 962-7386
www.sitedesignconsultants.com

PROJECT # 20-20

Engineer:
STATE OF NEW YORK JOSEPH CARLO RIINA 064431 LICENSED PROFESSIONAL ENGINEER
Joseph C. Riina, P.E.
NYS Lic. No. 64431

Revisions:

No.	Date	Comments:
1.	6/30/20	R-3 Zone Schedule
2.	7/13/20	Zone Schedule Rev Floor Areas
3.	12/3/20	Updated Grading and Utility Plans
4.	1/21/21	Pedestrian Access Revisions
5.	1/12/22	Site Plan Revisions
6.	3/16/22	Site Plan Revisions
7.	10/24/22	Site Plan Revisions
8.	3/06/23	Udated wetland boundary
9.	3/31/23	Parking update
10.	4/12/23	Site Plan update
11.	5/08/23	Site Plan update

Revisions:

No.	Date	Comments:
12.	8/18/23	Site Plan update
13.	9/8/2023	Site Plan update
14.	10/11/23	DEP Comments
15.	2/2/2024	DEP Comments
16.	2/14/2024	WCHD Comments
17.	3/12/2024	DEP Sewer Comments
18.	3/21/2024	DEP Comments
19.	4/22/2024	WCHD Comments
20.	5/10/2024	DEP Comments
21.	5/22/2024	WCHD Comments
22.	5/30/2024	WCHD Comments

SCALE:

DRAWN BY: TK

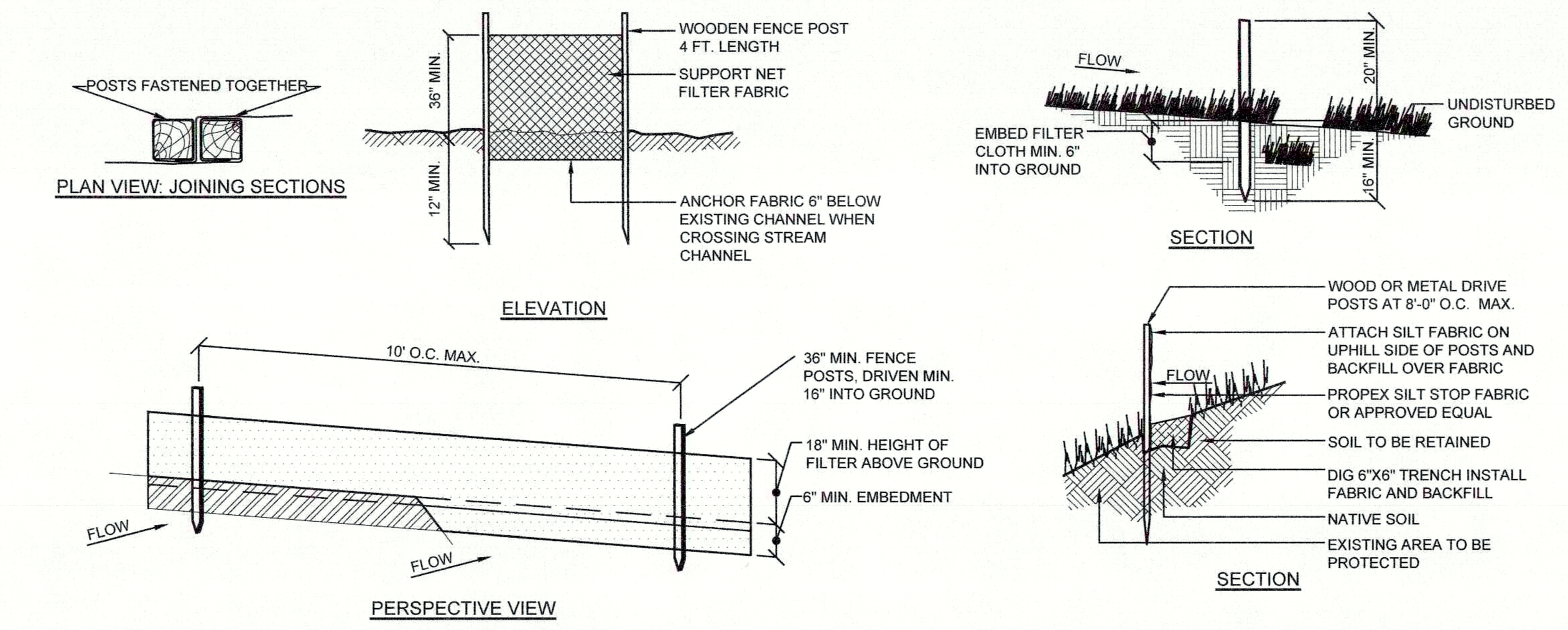
DATE: 6-22-20

NOTES

SITE PLAN
PREPARED FOR
UNDERHILL FARM
UNDERHILL AVENUE
Town of Yorktown Westchester County, New York

Sheet G-101

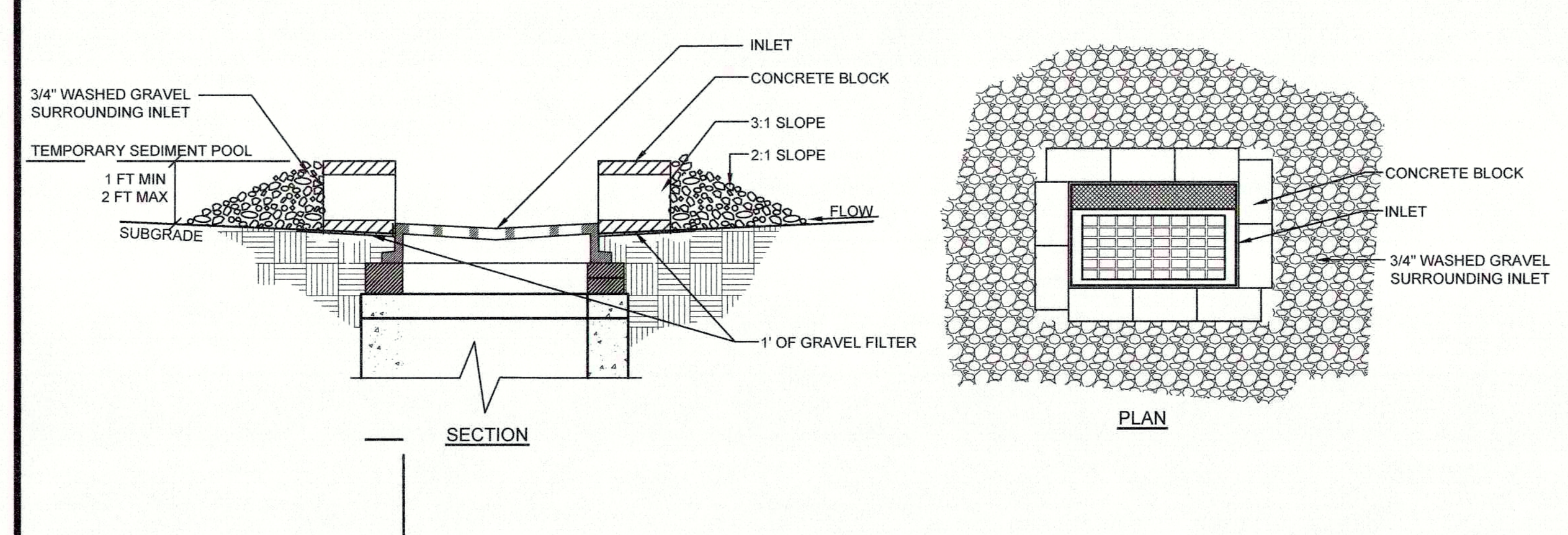
F:\2020\20-20 UNICORN - SOUNDVIEW\ENGINEERING\CAD\C3D-20-20 UNICORN - SOUNDVIEW\DWG\20-20 SOUNDVIEW SITE PLAN DETAILS 5-2-23.DWG 4/12/2023 11:41:20 AM



NOTES:
1. Filter cloth to be fastened securely to post: steel either t or u type or 2" hardwood posts at top and mid section.
2. When two sections of filter cloth adjoin each other they shall be overlapped by 6 inches and folded. Filter cloth shall be mirafi 100x, stabilinka t140n or approved equal
3. Maintenance shall be performed as needed and material removed when "bulges" develop in the silt fence.
4. Excavate 4 inch trench along the lower perimeter of the site.
5. Unroll a section at a time and position the post against the back (downstream) wall of the trench (net side away from direction of flow).
6. Drive the post into the ground until the netting is approximately 2 inches from the trench bottom.
7. Lay the toe-in flap of fabric onto the undisturbed bottom of the trench, backfill the trench and tamp the soil. Steeper slopes require an intercept trench.
8. Join sections as shown above.

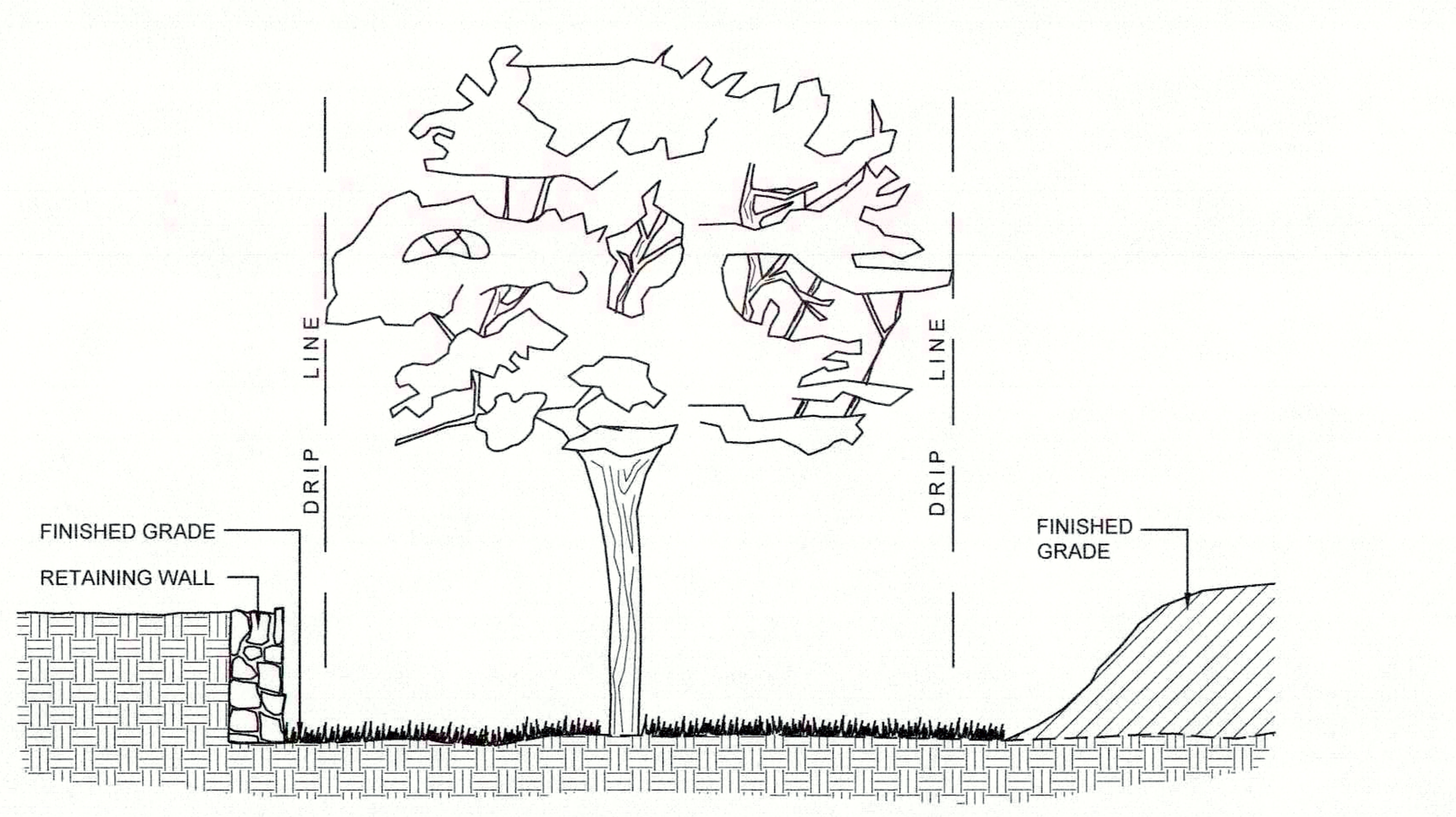
SYMBOL

E-1 SILT FENCE DETAIL
NOT TO SCALE

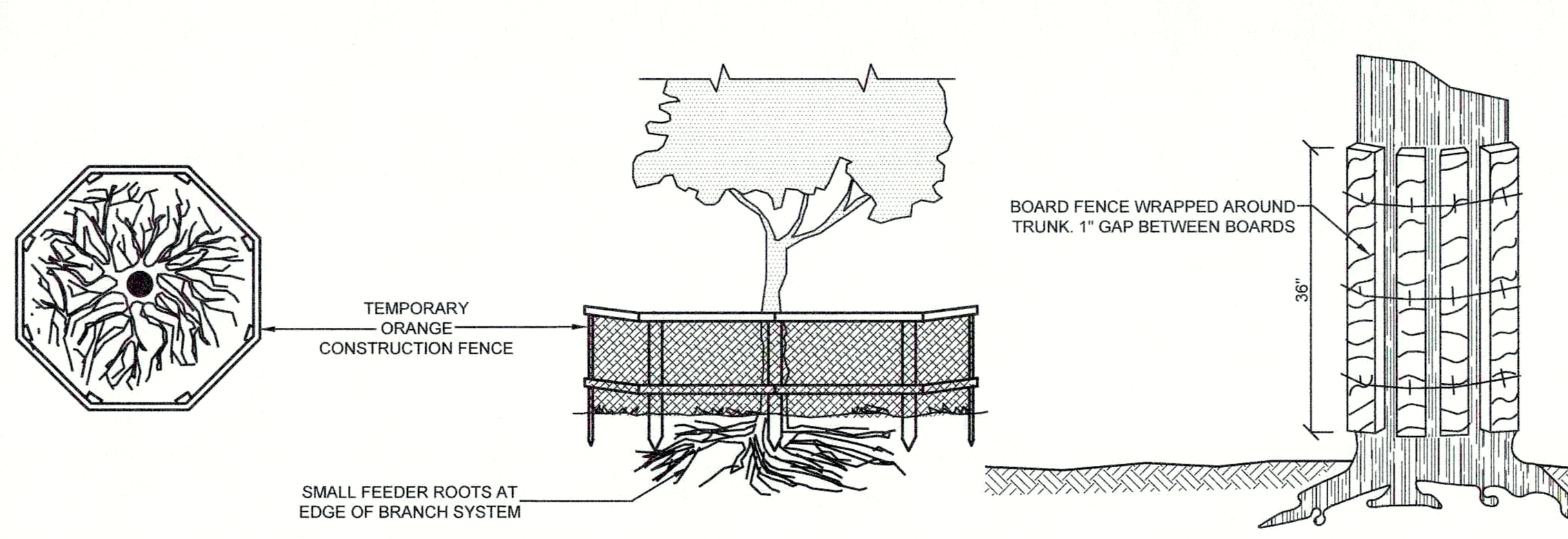


SYMBOL

E-2 STONE & BLOCK INLET PROTECTION DETAIL
NOT TO SCALE

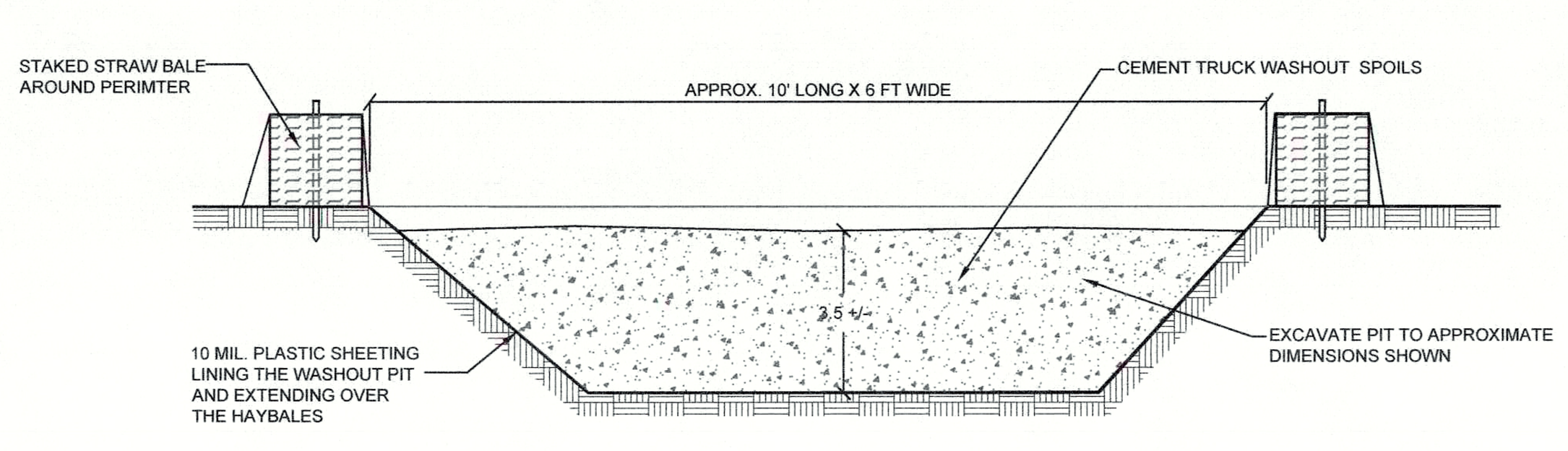


E-3 TREE PROTECTION PLAN FOR GRADE CHANGE DETAIL
NOT TO SCALE

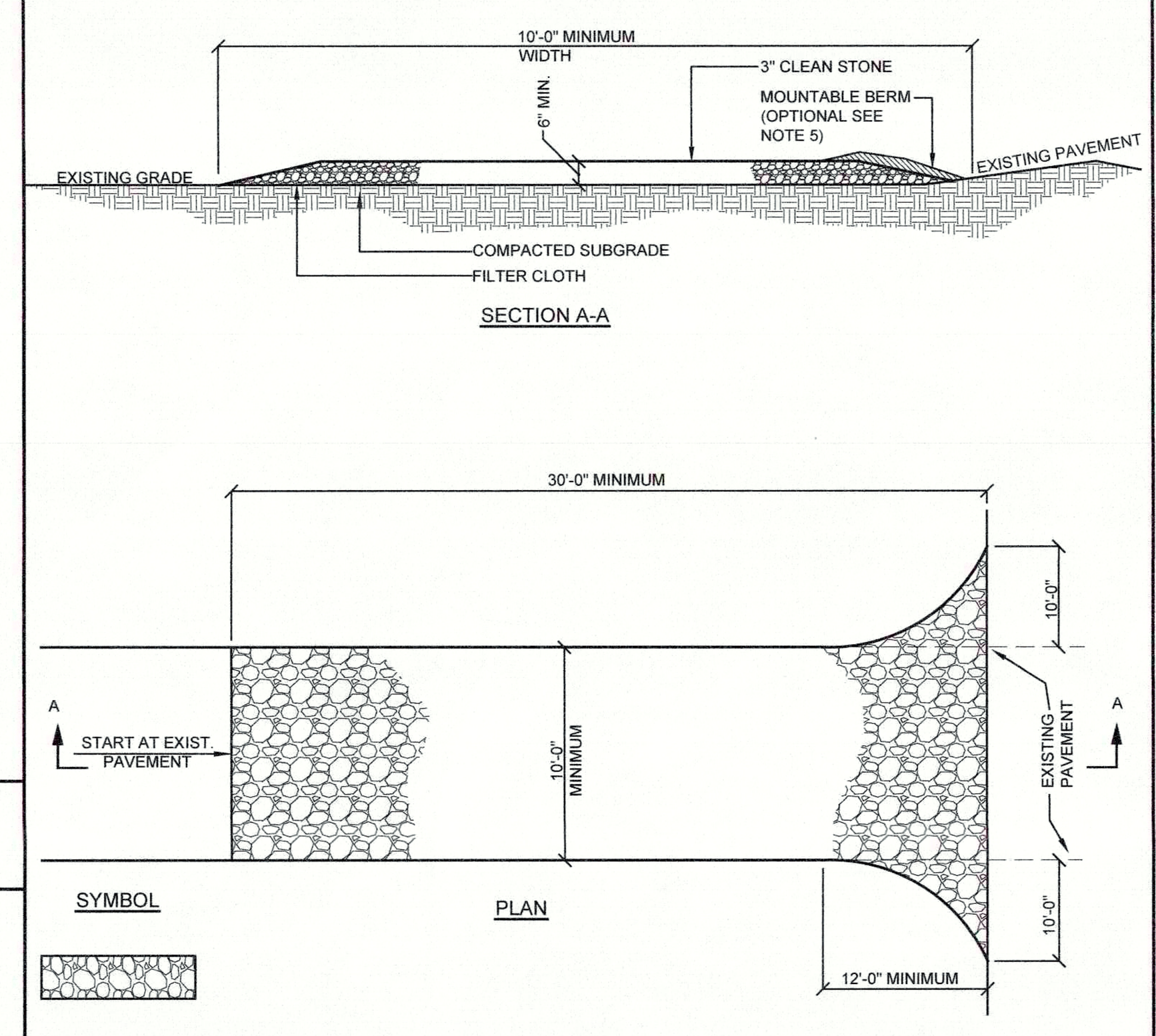


SYMBOL

E-4 TREE TRUNK ARMOR / TREE PROTECTION DETAIL
NOT TO SCALE



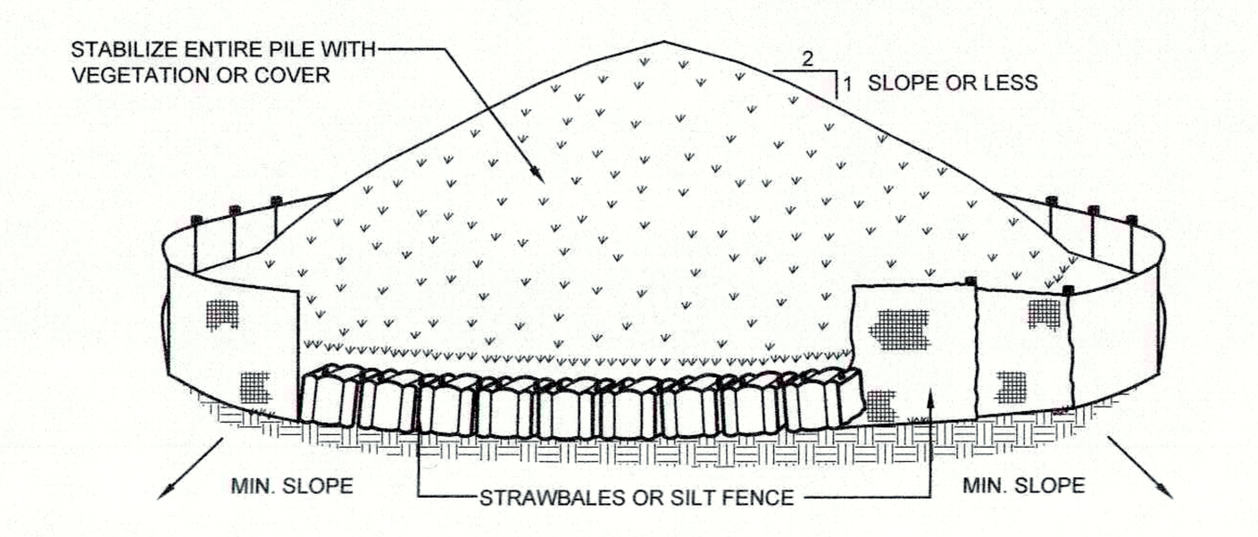
E-5 CEMENT TRUCK WASHOUT PIT DETAIL
NOT TO SCALE



SYMBOL

INSTALLATION NOTES:

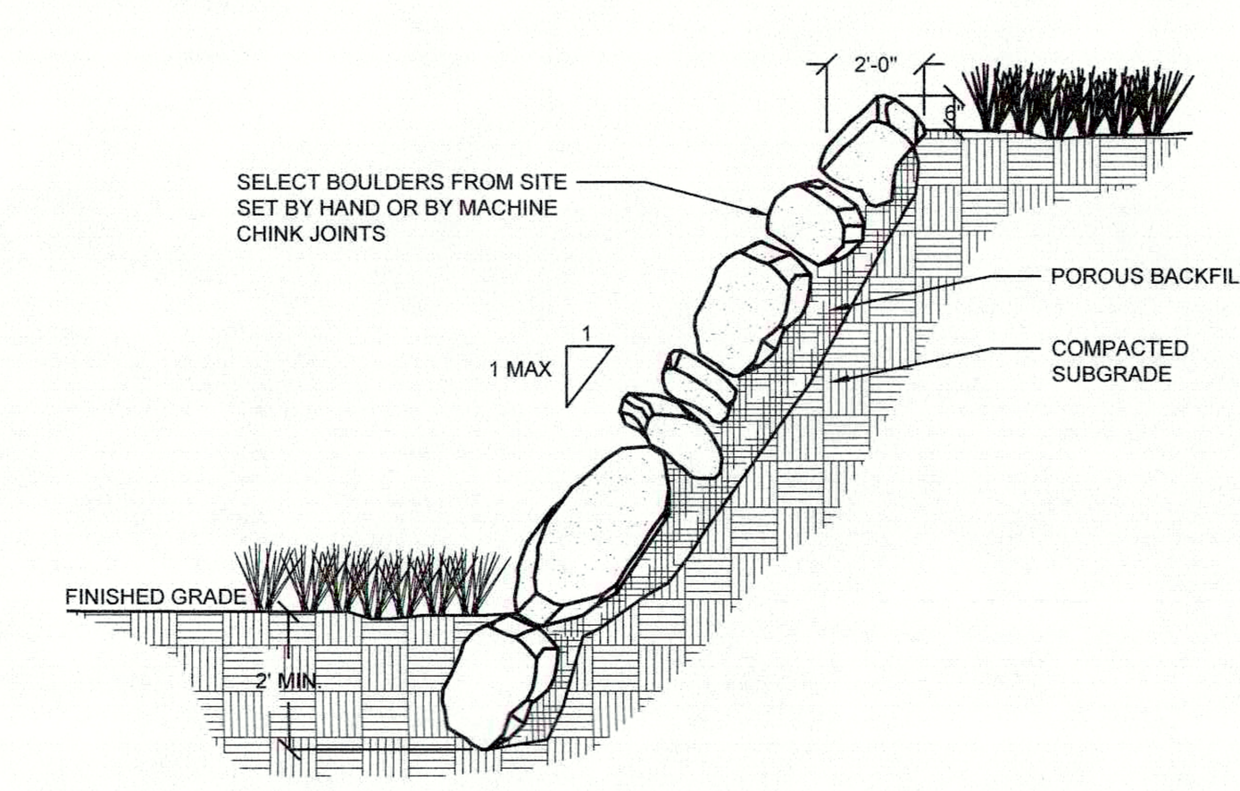
E-6 STABILIZED CONSTRUCTION ENTRANCE DETAIL
NOT TO SCALE



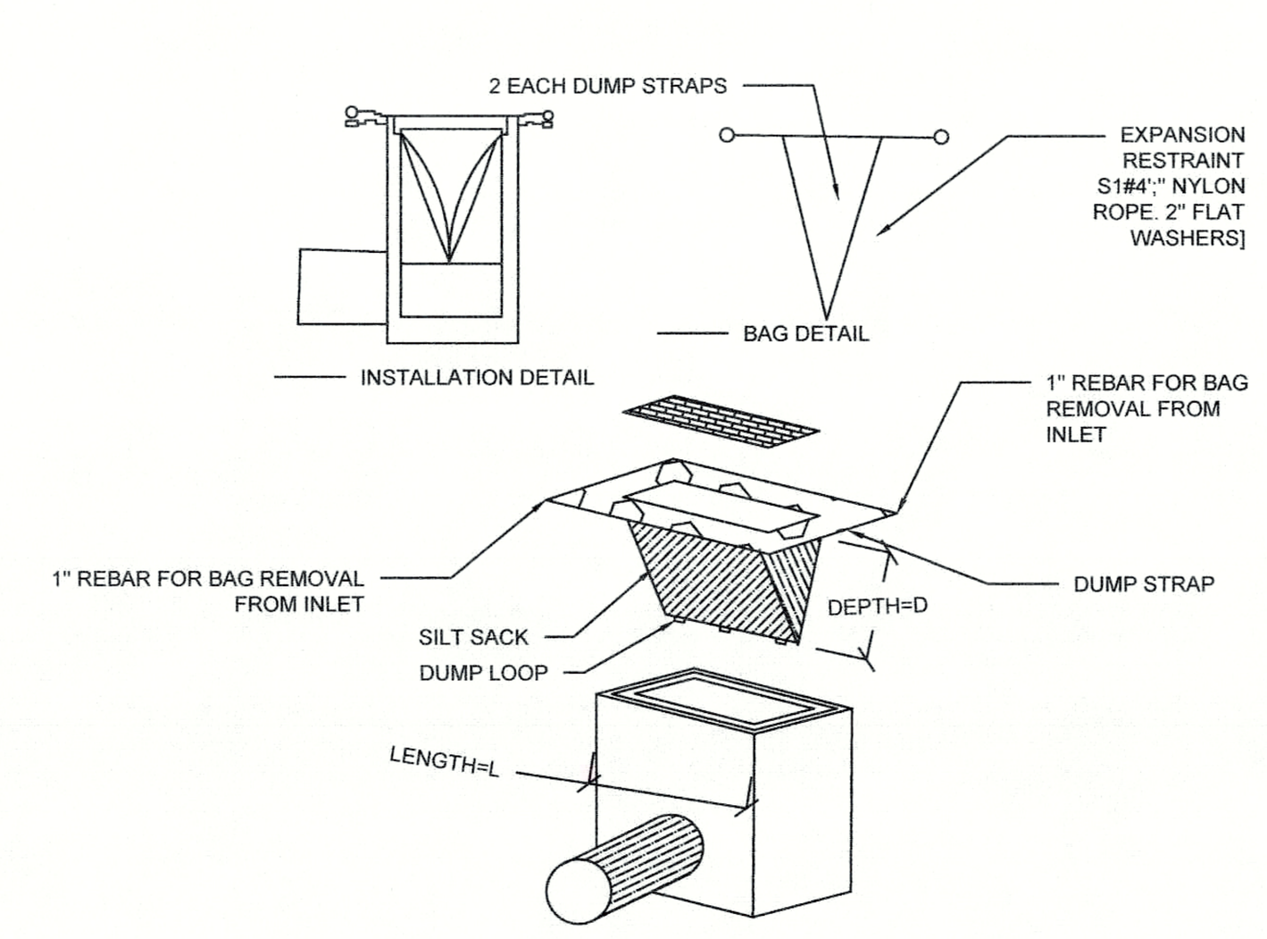
SYMBOL

NOTES:

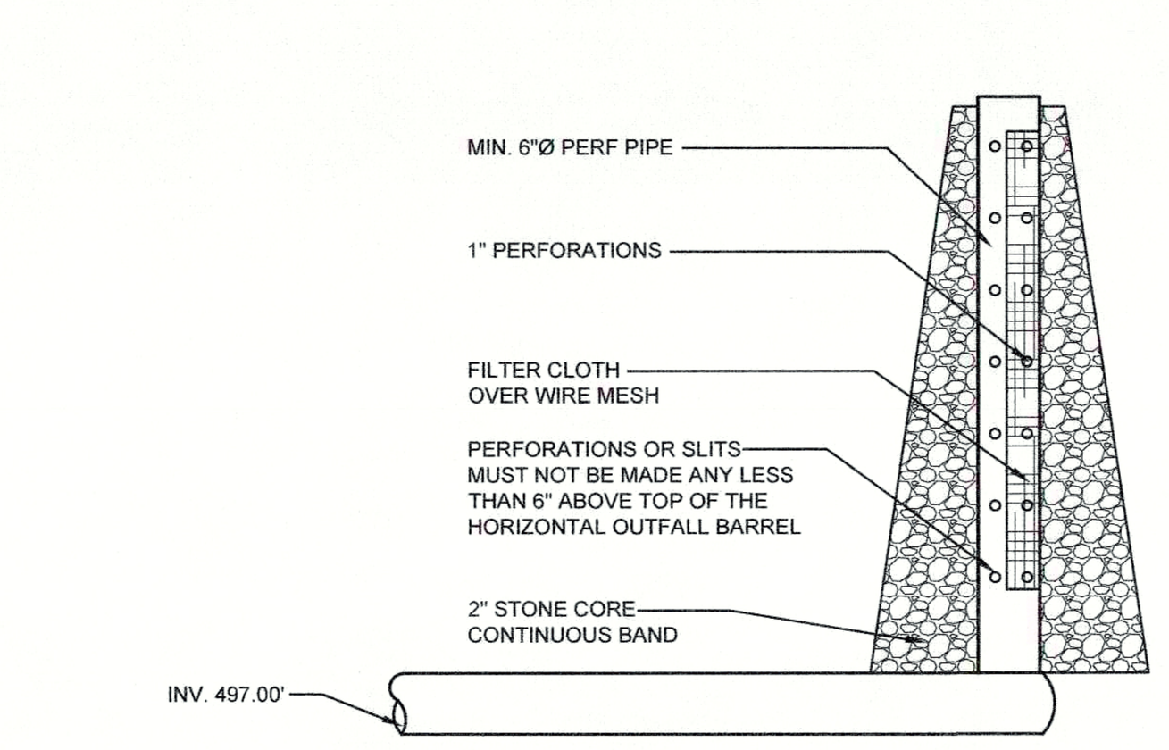
E-7 SOIL STOCKPILE DETAIL
NOT TO SCALE



E-8 RIP RAP SLOPE DETAIL
NOT TO SCALE

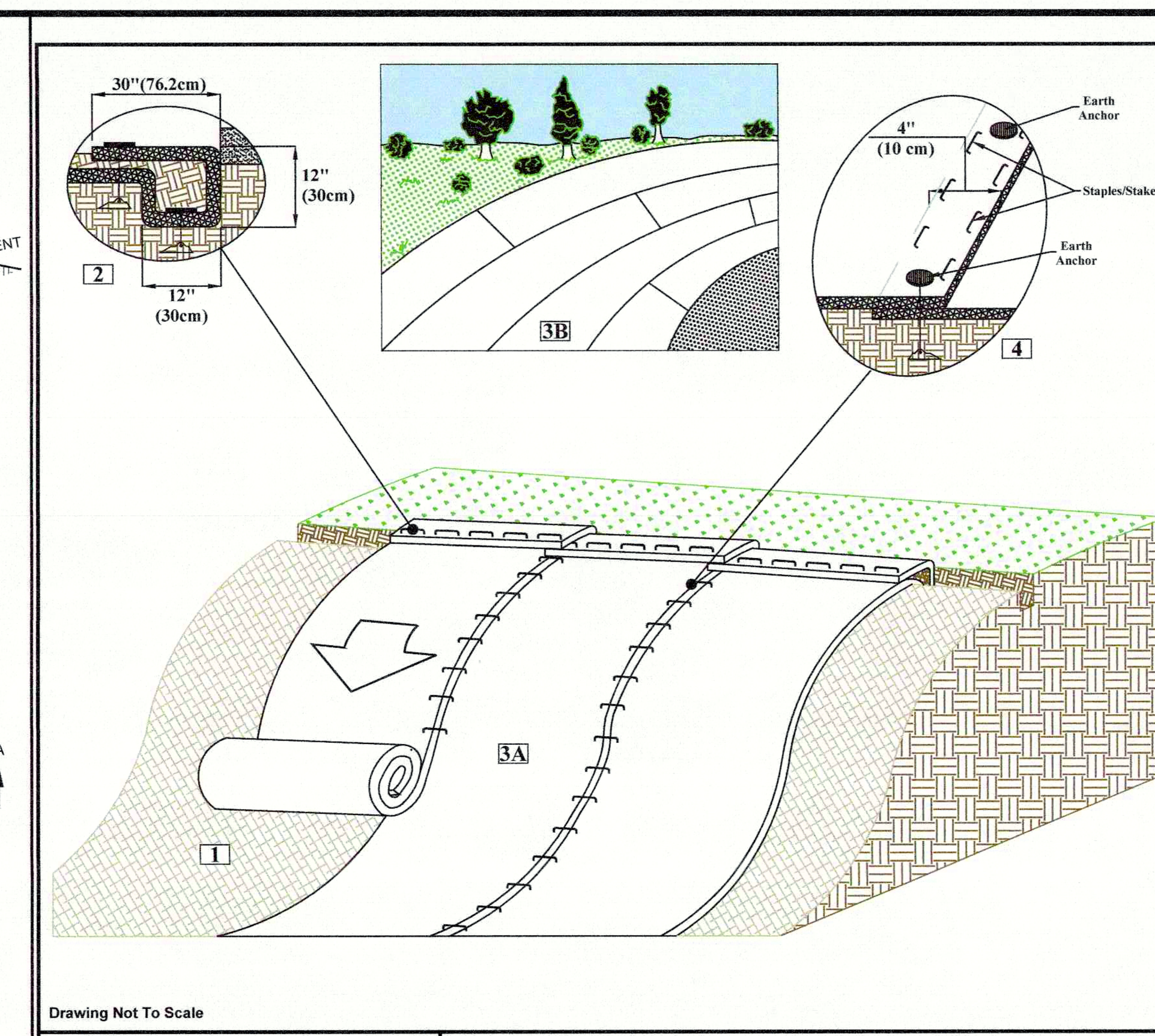


E-9 SILTSACK DETAIL
NOT TO SCALE



SYMBOL

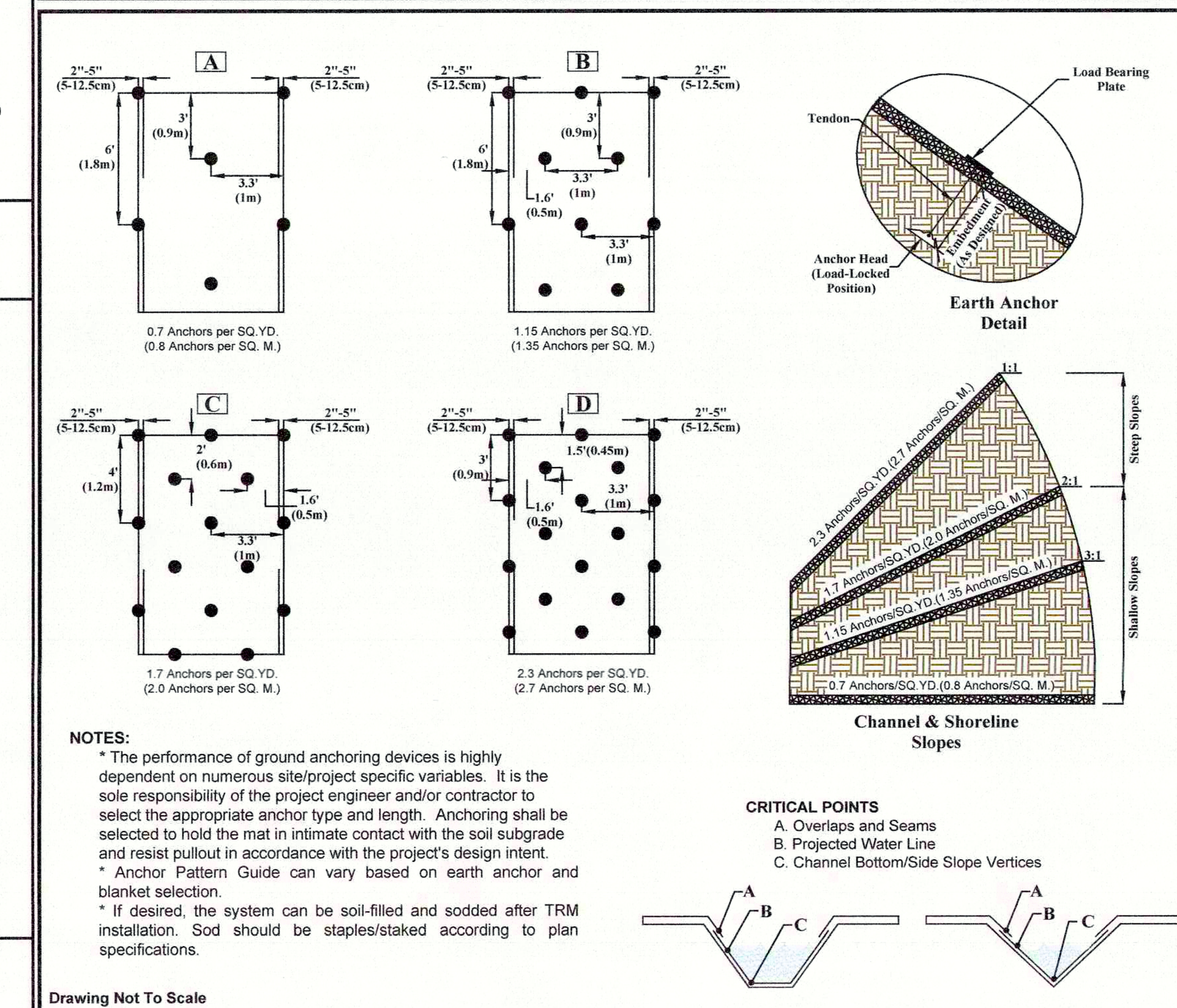
E-10 TEMPORARY SEDIMENT BASIN OUTLET DETAIL
NOT TO SCALE



SLOPE INSTALLATION EARTH ANCHOR (EA) DETAIL

Drawing Not To Scale

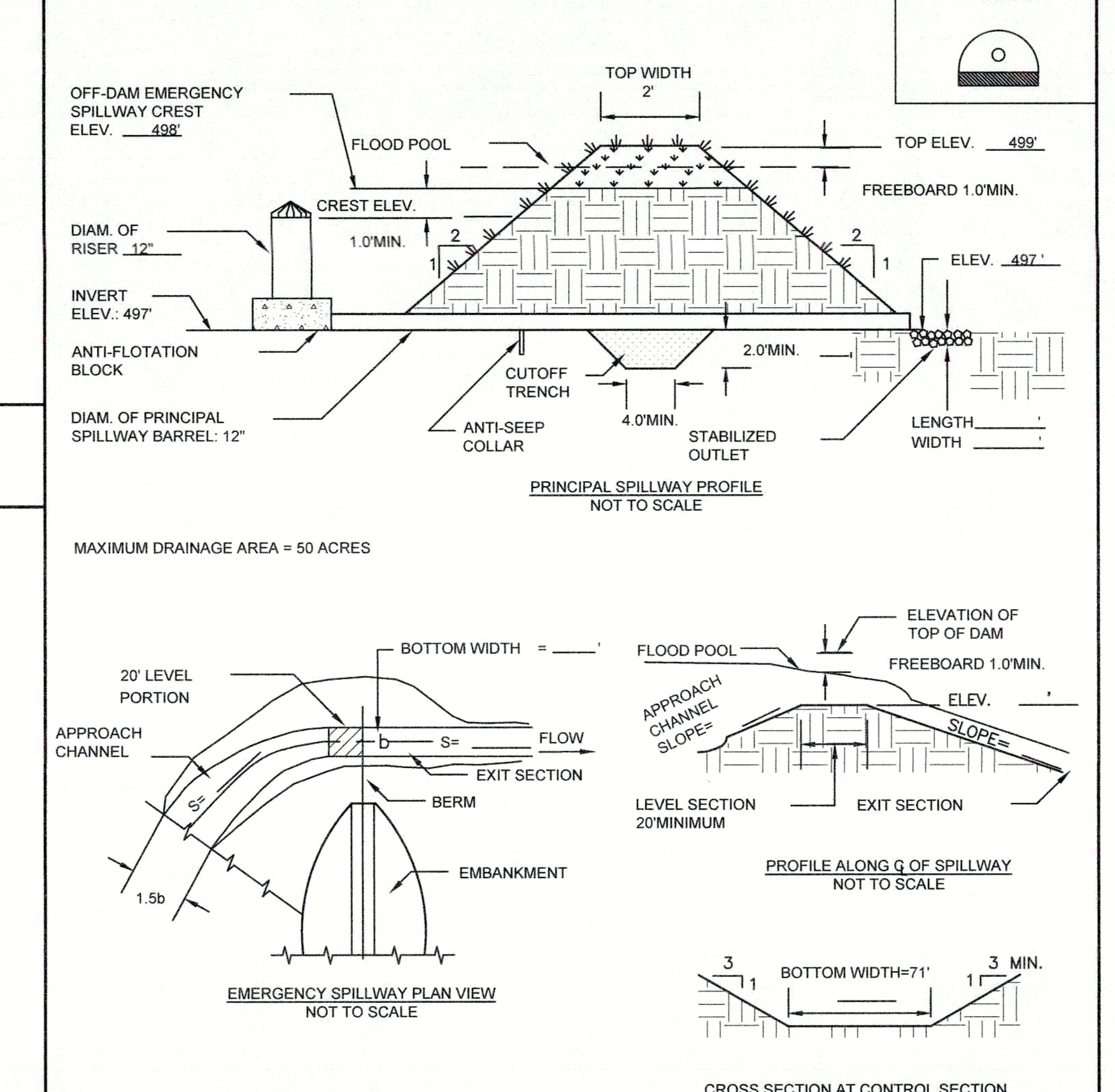
Tensar. NORTH AMERICAN GREEN



SLOPE INSTALLATION EARTH ANCHOR (EA) DETAIL

Drawing Not To Scale

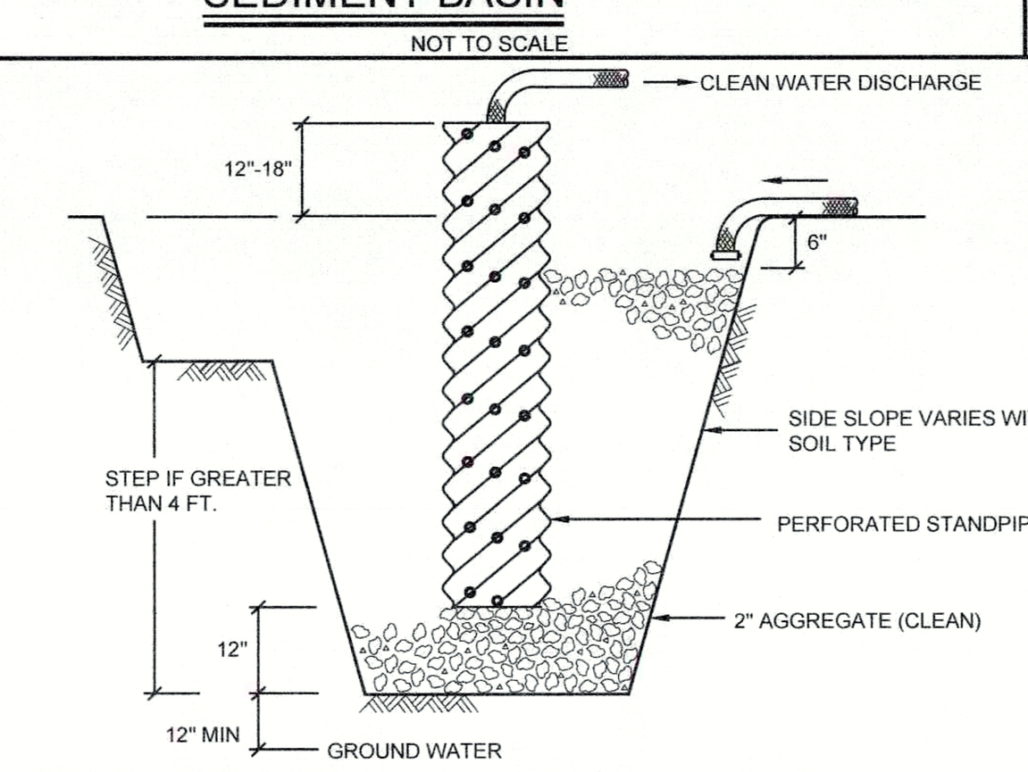
E-11 EROSION BLANKET SLOPE STABILIZATION DETAIL
NOT TO SCALE



NOTE: BOTTOM OF SEDIMENT BASIN TO BE ABOVE GROUNDWATER ELEVATION

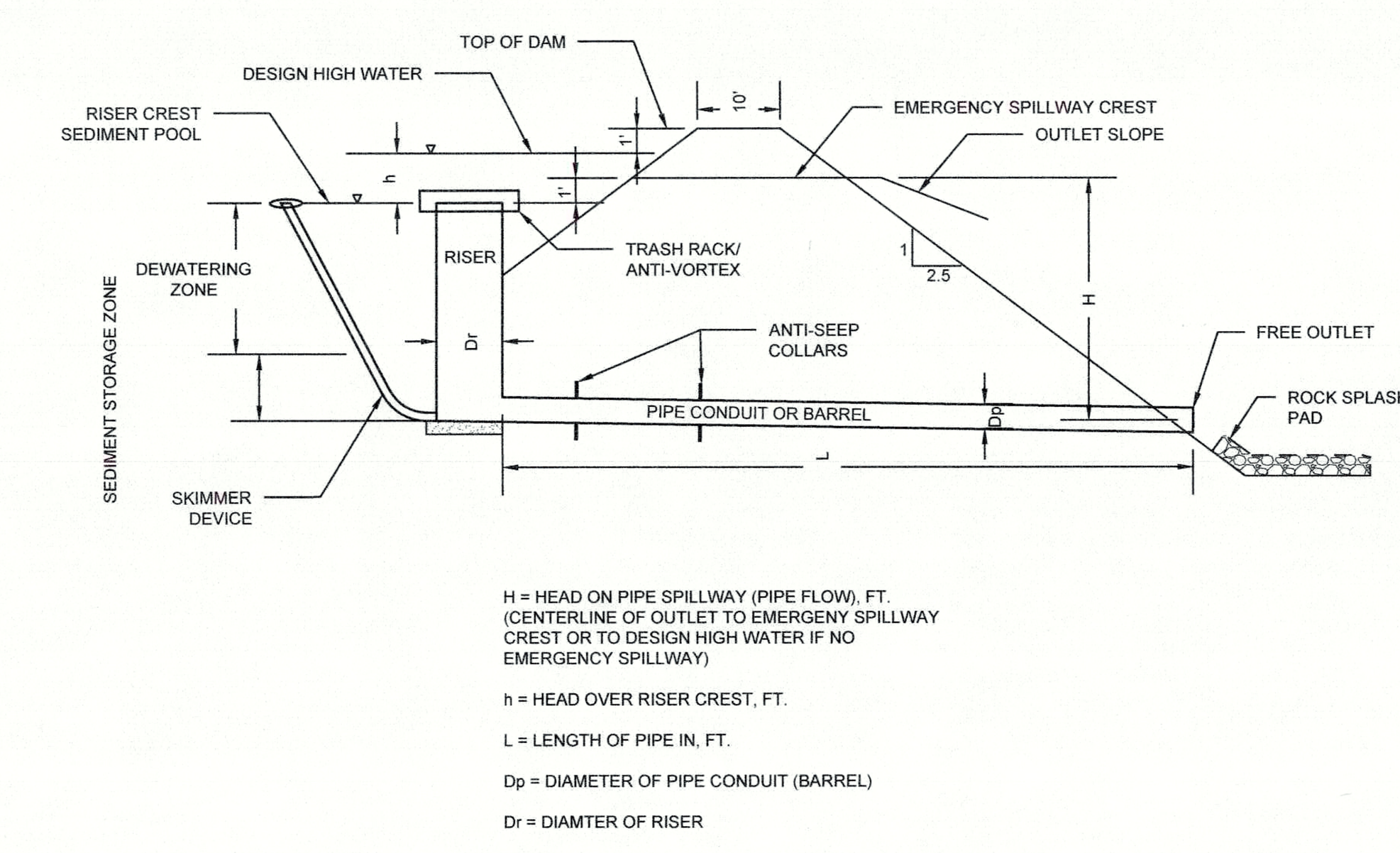
Sediment Trap #	Drainage Area (Ac.)	Required Storage Volume (CF)	Provided Storage Volume (CF)
1	3.21	14,766	14,942

E-12 SEDIMENT BASIN
NOT TO SCALE

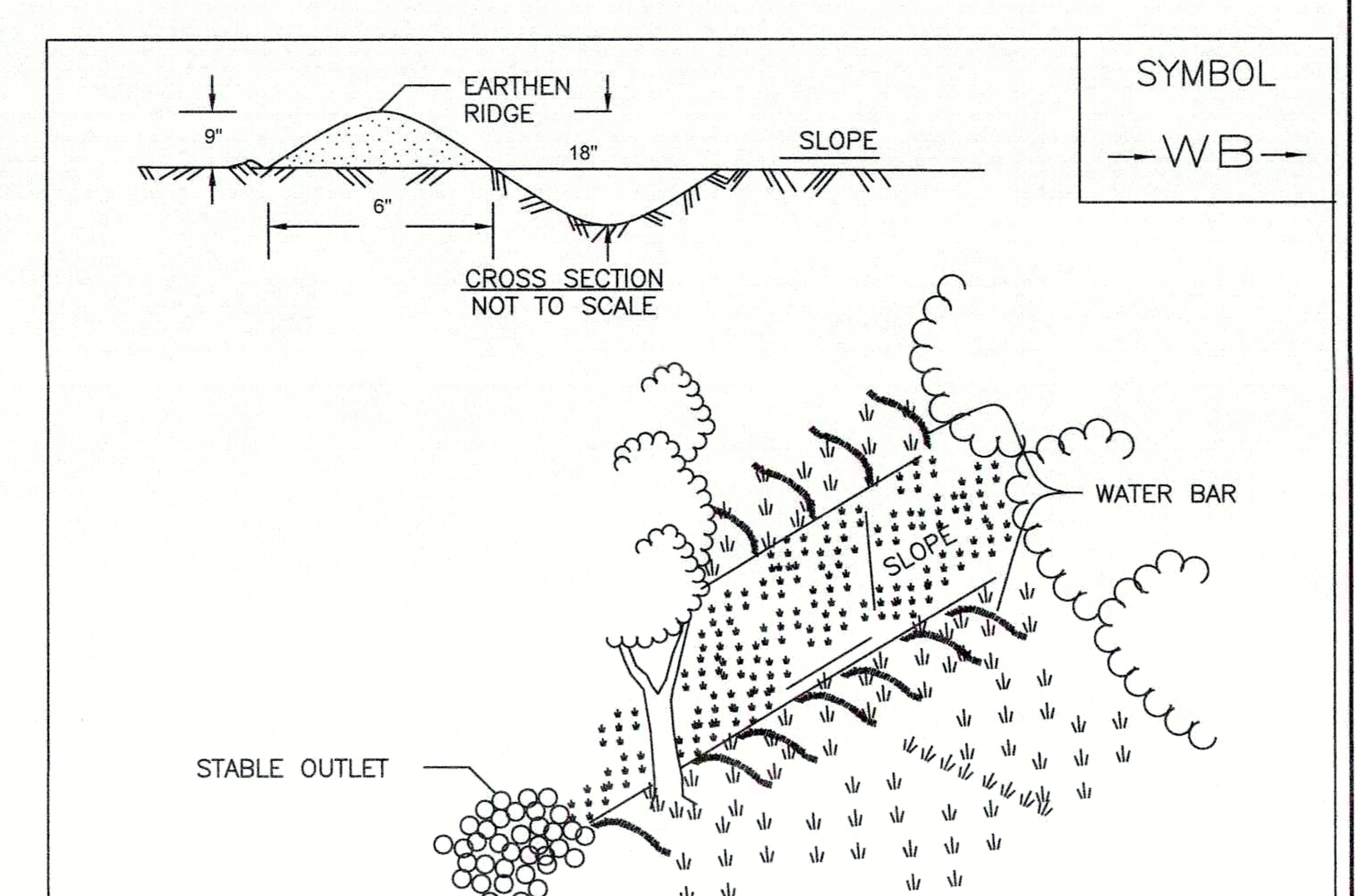


INSTALLATION NOTES:

E-13 DEWATERING PIT DETAIL
NOT TO SCALE



E-14 PIPE SPILLWAY DESIGN
NOT TO SCALE



CONSTRUCTION SPECIFICATIONS

1. INSTALL THE WATER BAR AS SOON AS THE RIGHT OF WAY IS CLEARED AND GRADED.
2. DISK OR STRIP THE SOD FROM THE BASE FOR THE CONSTRUCTED RIDGE BEFORE PLACING FILL.
3. TRACK THE RIDGE TO COMPACT IT TO THE DESIGN CROSS SECTION.
4. THE OUTLET SHALL BE LOCATED ON AN UNDISTURBED AREA. FIELD SPACING WILL BE ADJUSTED TO USE THE MOST STABLE OUTLET AREAS. OUTLET PROTECTION WILL BE PROVIDED WHEN NATURAL AREAS ARE NOT ADEQUATE.
5. VEHICLE CROSSING SHALL BE STABILIZED WITH GRAVEL. EXPOSED AREAS SHALL BE IMMEDIATELY SEEDED AND MULCHED.
6. PERIODICALLY INSPECT WATER BARS FOR EROSION DAMAGE AND SEDIMENT. CHECK OUTLET AREAS AND MAKE REPAIRS AS NEEDED TO RESTORE OPERATION.

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE
NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
NEW YORK STATE SOIL & WATER CONSERVATION COMMITTEE

WATER BARS

E-14 WATER BAR DETAIL
NOT TO SCALE

APPROVED
Resolution Number 23-13
Date July 17, 2023

NOTE: WHERE GEOTEXTILE MATERIAL IS USED, IT IS TO BE 100% NON-SYNTHETIC BIODEGRADABLE MATERIAL

Site Design Consultants
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PROJECT # 20-20

Engineer:
Joseph C. Riina, P.E.
NYS Lic. No. 64431

Revisions:

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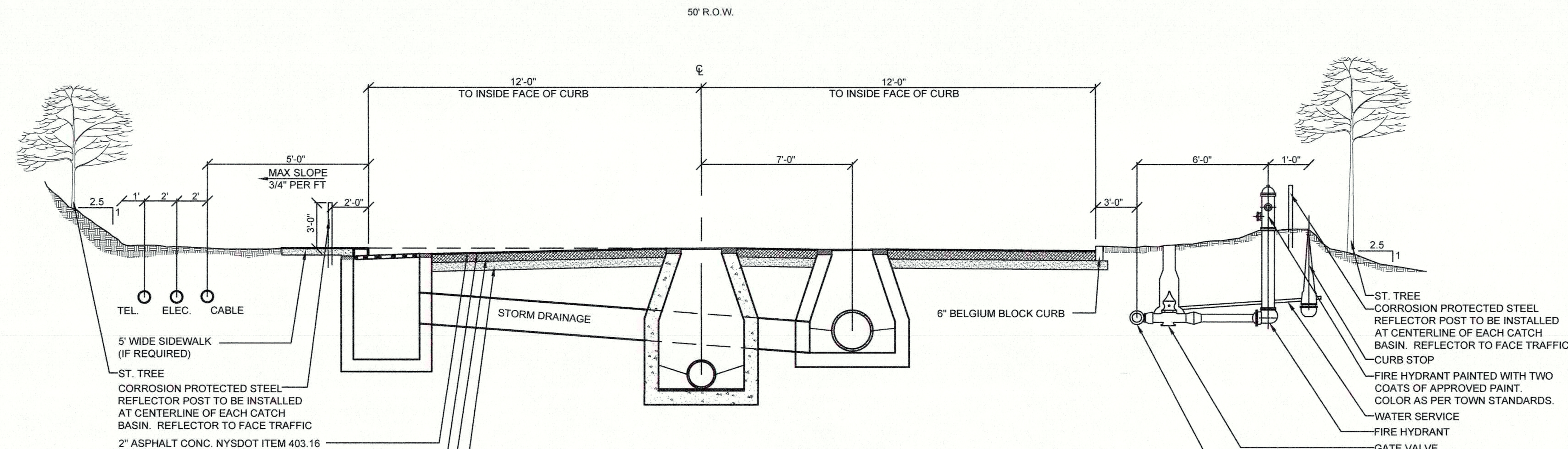
20.	5/10/2024	DEP Comments
21.	5/22/2024	WCHD Comments
22.	5/30/2024	WCHD Comments

SCALE:
DRAWN BY: TK
DATE: 6-22-20

E&SC DETAILS

SITE PLAN
PREPARED FOR
UNDERHILL FARM
UNDERHILL AVENUE
Town of Yorktown
Westchester County, New York

Sheet C-501

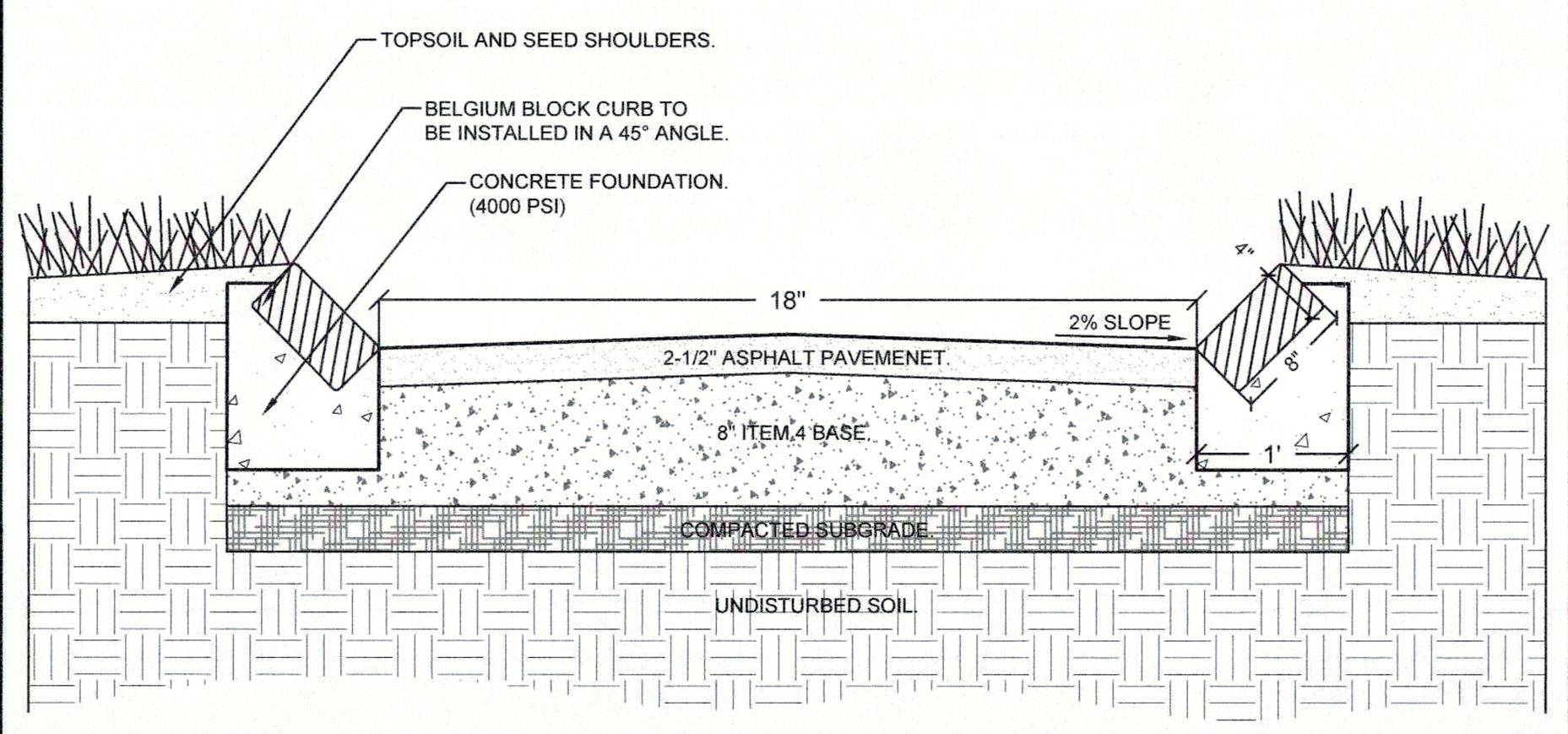


NOTES:
1. Rock cut & fill - treatment to be determined by the Design Engineer and or Town Engineer.
2. All rock fill shall be top soiled, seeded and mulched.
3. Catch basin to be in line with traveled way.
4. Gas line to be installed on opposite side of traveled way from water main and 5' behind curb line.
5. Invert to be installed in all storm manholes.
6. Where sidewalks are installed, mailboxes shall be placed on opposite side of road.
7. See subdrain detail for subdrain location.

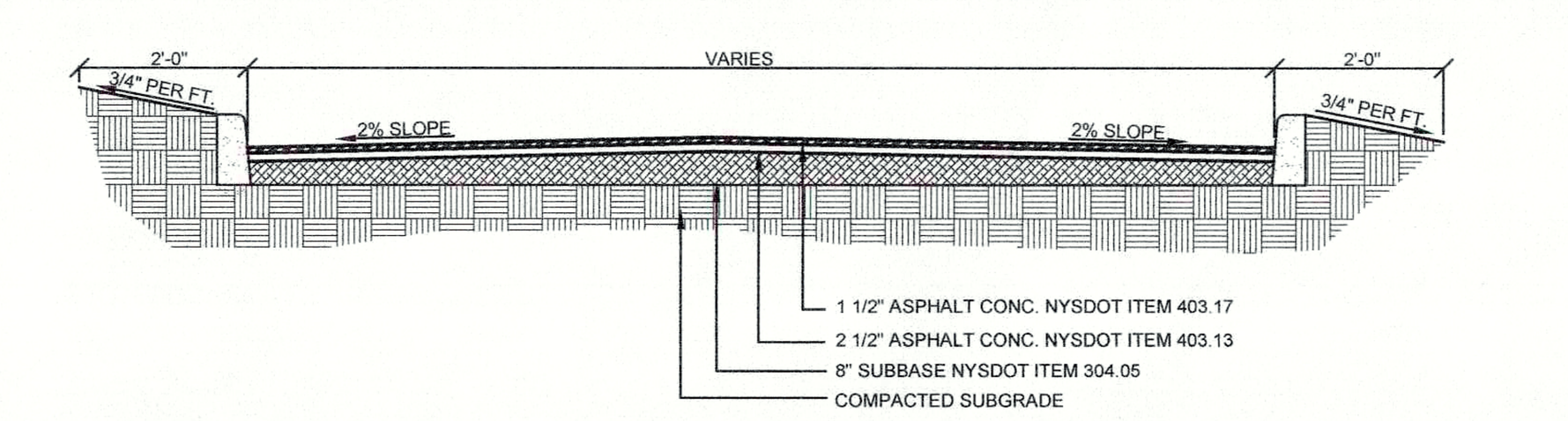
SLOPES:
SUBBASE 3/8" PER FT.
PAVEMENT: 3/8" PER FT.
SHOULDER: 3/4" PER FT.

COMPACTION NOTE:
1. The Contractor shall be responsible to ensure that all road courses meet the following NYSDOT compaction specifications:
Subbase Compaction: Item 203-3.12.
Asphalt Compaction: Item 401-3.12.

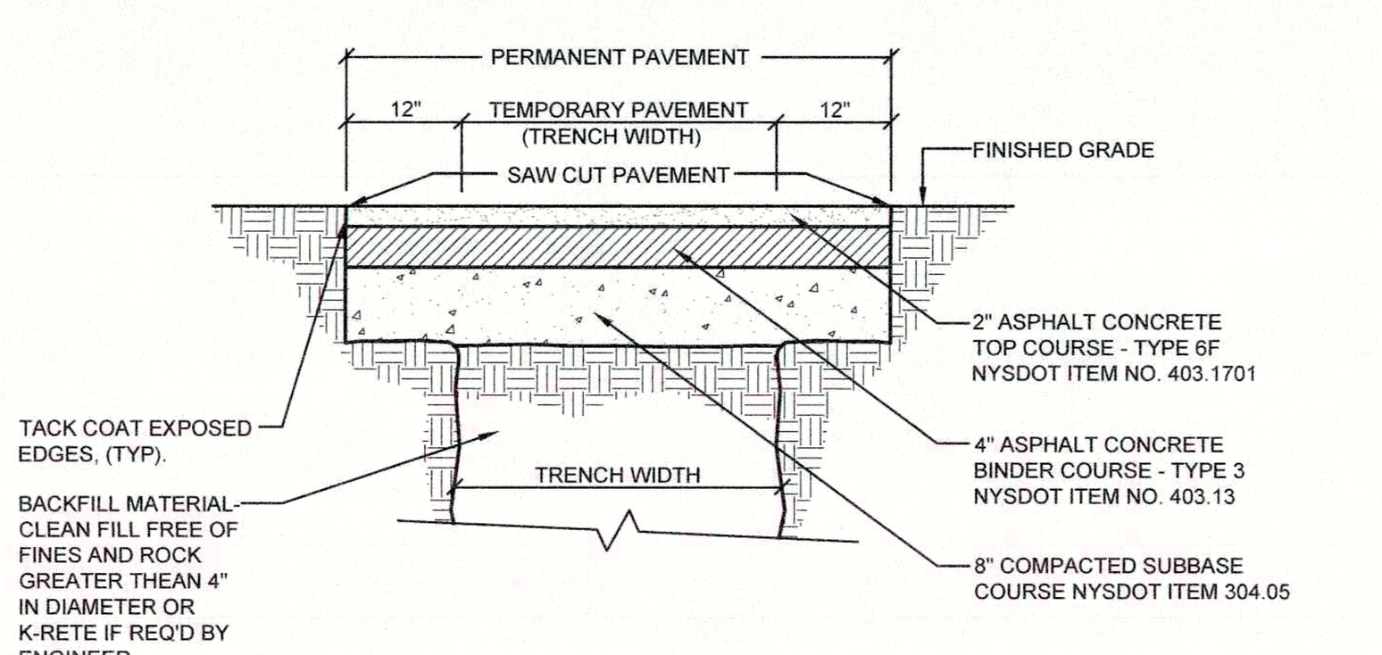
R-1 TYPICAL 24 FT ROAD SECTION
NOT TO SCALE



R-2 RESIDENTIAL DRIVEWAY/ STONE CURB DETAIL
NOT TO SCALE

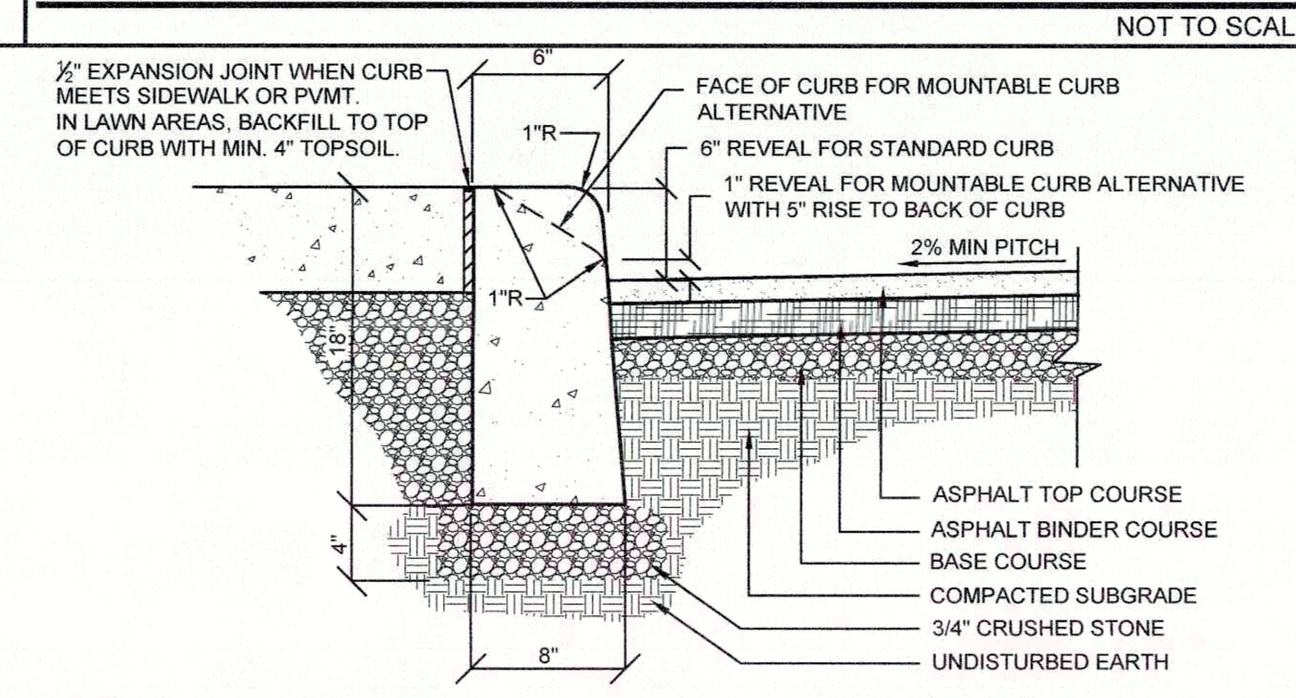


R-3 TYPICAL DRIVEWAY AND PARKING LOT SECTION
NOT TO SCALE



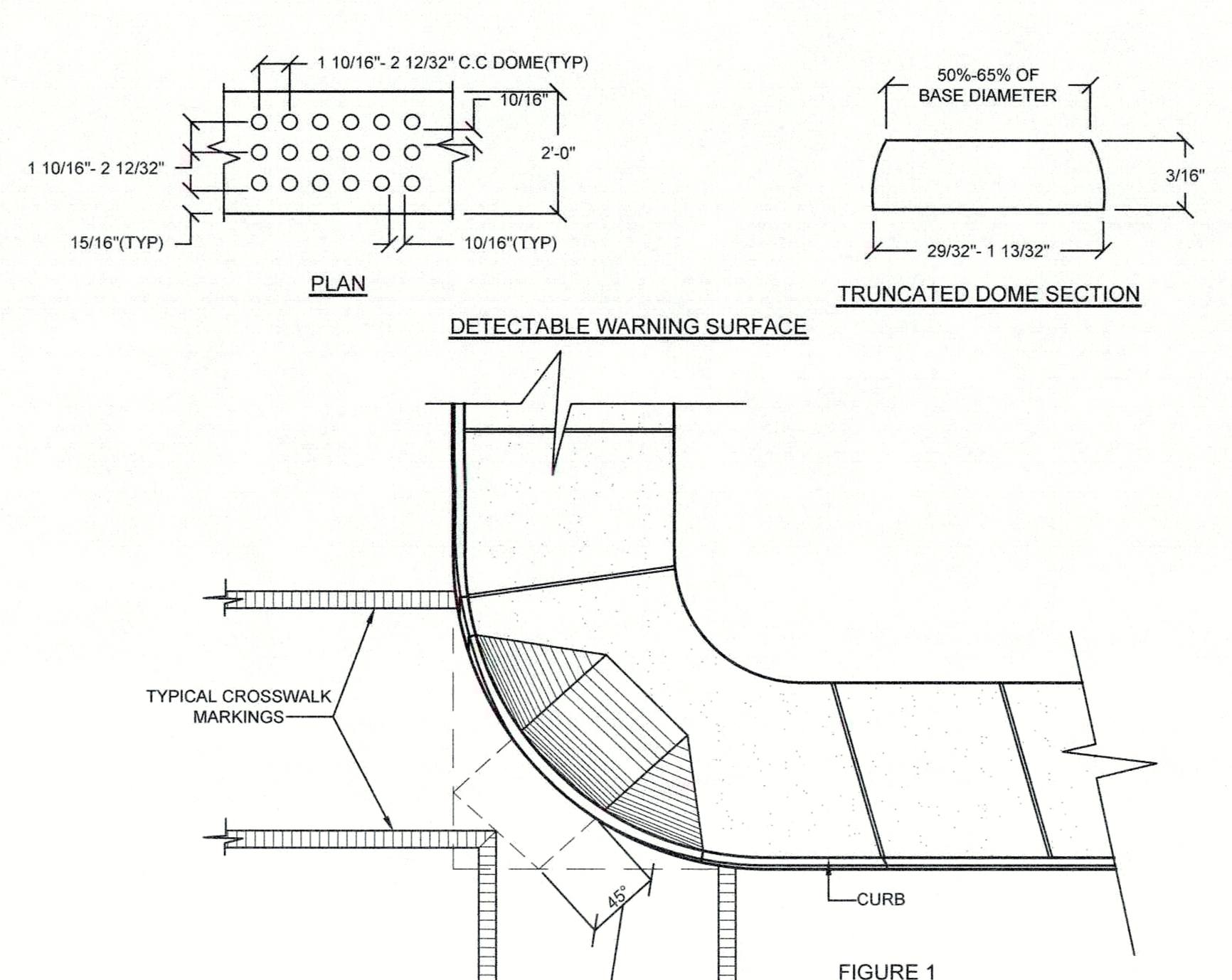
NOTE:
1. Pavement layer thickness shown are minimum values and shall match existing if greater.

R-4 PAVEMENT REPLACEMENT DETAIL
NOT TO SCALE



NOTE:
1. Provide 1/2" expansion joint in concrete curb every ten feet. Construct curb with class a concrete (3000 psi).
2. Mountable curb alternative shall be installed at locations shown on the plan.
3. Transition from standard to mountable curb sections shall be smooth and tapered.

R-5 STANDARD AND MOUNTABLE CONCRETE CURB DETAIL
NOT TO SCALE



NOTES:

GENERAL:
1. Sidewalk curb ramp type and location are as shown on the plans or as directed.
2. All sidewalk curb ramp types may be used as straight or curved curb sections.
3. Sidewalk curb ramp types may be different at each location within an intersection.

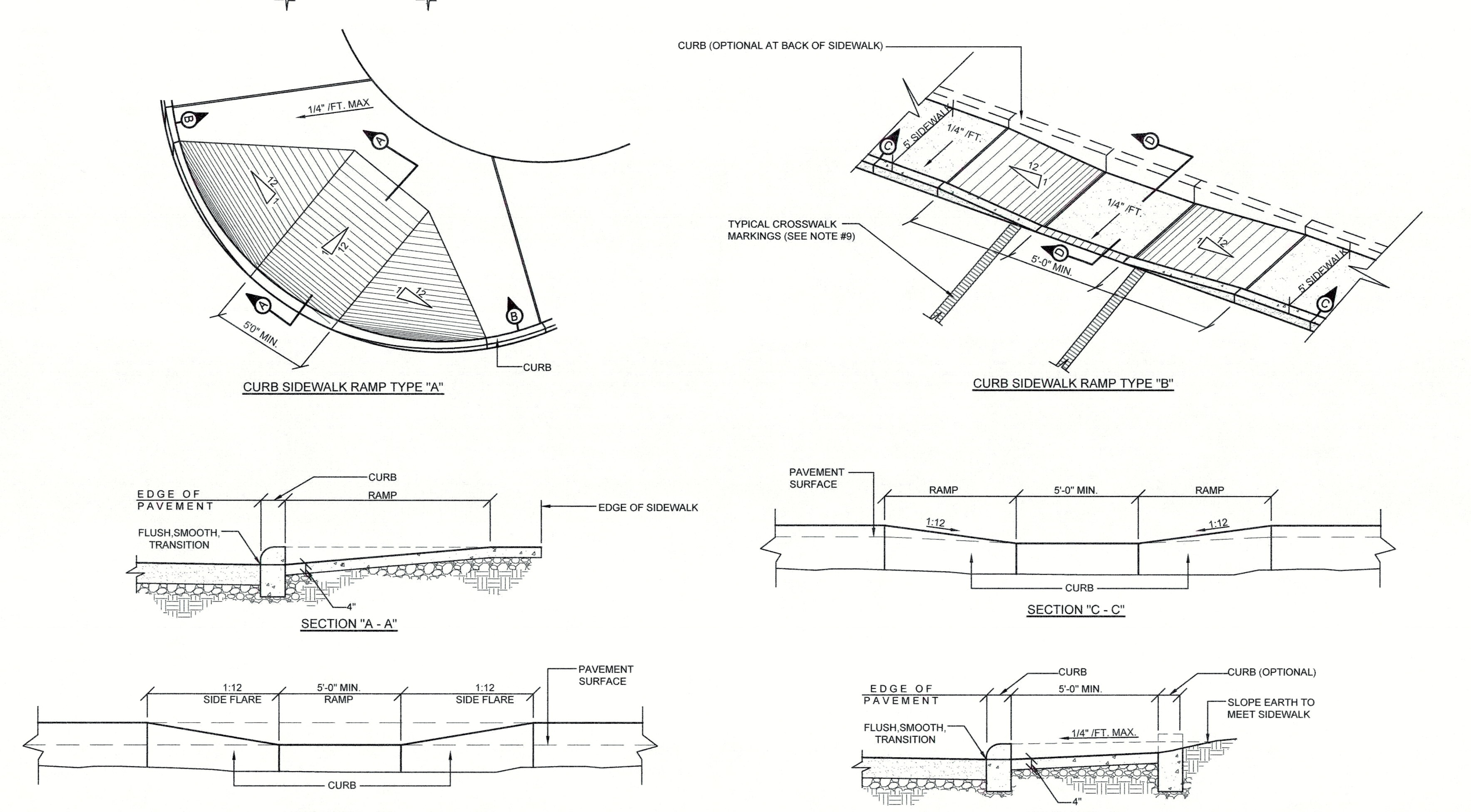
SIDEWALK CURB RAMP CRITERIA:
4. The maximum slope of a sidewalk curb ramp shall be 1:12.
5. The maximum width of a sidewalk curb ramp shall be five feet. Exclusive of flared sides.
6. All sidewalk curb ramps shall have flush, smooth transitions to the adjacent street or highway surface.

SURFACE FINISH:
7. The surface of all sidewalk curb ramps shall be stable, firm, and slip resistant (E.G. A coarse broom finish perpendicular to the ramp slope is acceptable on cement concrete curb ramps.)
8. All proposed sidewalk curb ramps shall have a detectable warning surface installed from the back of the curb for a distance of 2 feet in the direction of travel on the ramp and extending the full width of the ramp, excluding the ramp sides or flares. The detectable warning surface shall comply with the requirements of section 4.29.2 of the Americans with Disabilities Act accessibility guidelines (ADAAG).

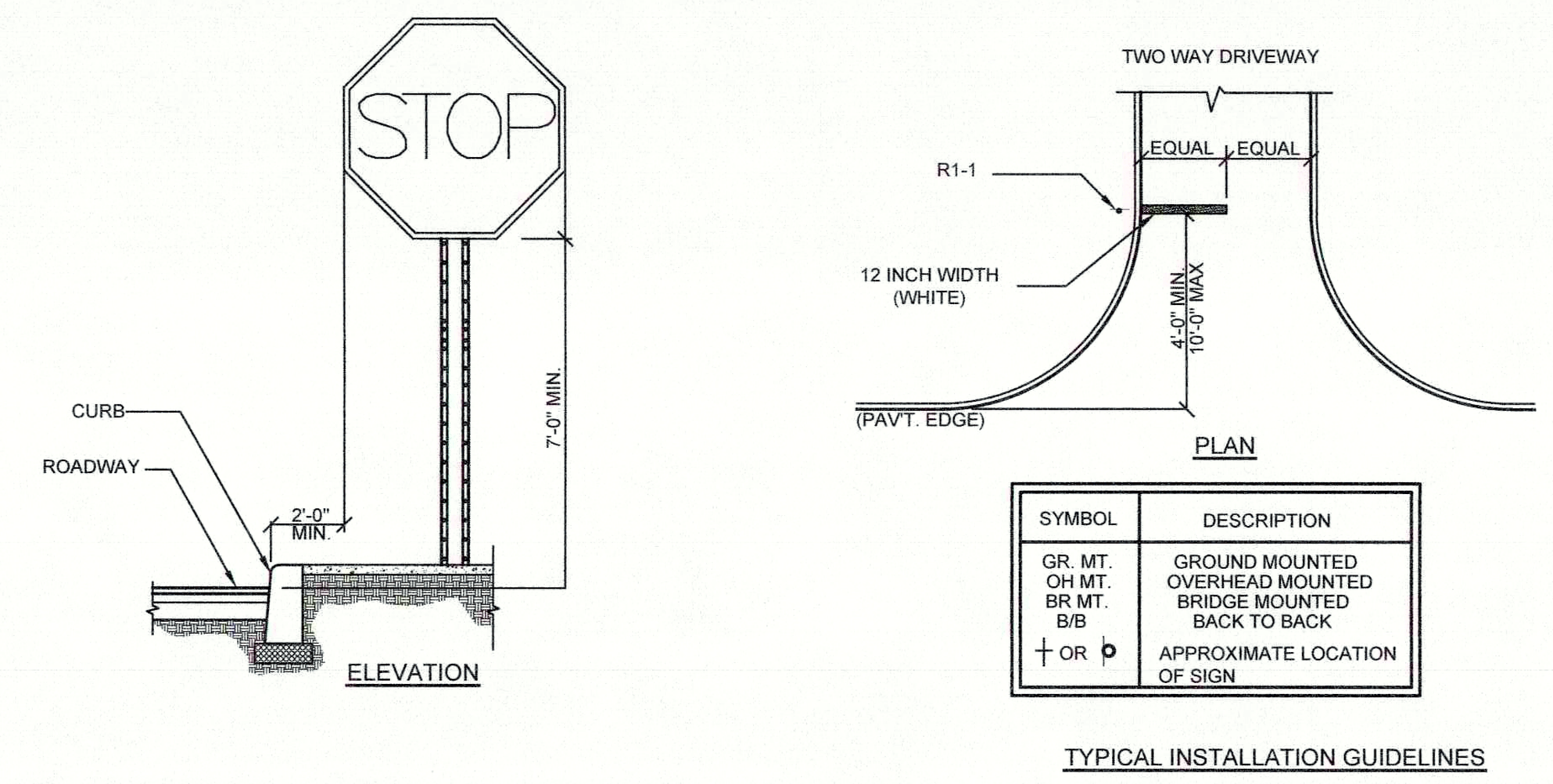
SIDEWALK CURB RAMP PLACEMENT:
9. At a corner, where the curb radius is 25-feet or less, a single ramp (either type a or b) located diagonally can often serve crosswalks in two directions. However, a single ramp shall only be used where there is a minimum clear space of 48" falling entirely within the projection of the intersection curbs (see figure 1). Where the radius exceeds 25' or the minimum 48" clear space is not achievable, then separate ramps should be provided for each crosswalk.

PAVEMENT MARKINGS AT CROSSWALKS:
10. Sidewalk curb ramps at marked crossings shall be wholly contained within the markings excluding any flared sides.
11. At a corner where a single ramp (either type a or b; located diagonally serves two crosswalks, this shall be a 48" minimum clear space at the ramp bottom wholly contained within the intersection crosswalk markings (see figure 1).
12. Where stop lines are necessary, they shall be located in advance of sidewalk curb ramps.

UTILITIES - DRAINAGE INLETS OR GRATES:
13. Where feasible, provide for drainage inlets or grates immediately upstream from the curb ramps. Reticuline or rectangular drainage grates are to be used in the area of curb ramps.
14. Do not place signal poles, sign posts, utility poles, fire hydrants, etc., within the ramp or side flare areas.



R-6 SIDEWALK CURB-RAMP DETAIL
NOT TO SCALE



SYMBOL	DESCRIPTION
GR. MT.	GROUND MOUNTED
OH MT.	OVERHEAD MOUNTED
BR MT.	BRIDGE MOUNTED
B/B	BACK TO BACK
┼ OR	APPROXIMATE LOCATION OF SIGN

TYPICAL INSTALLATION GUIDELINES

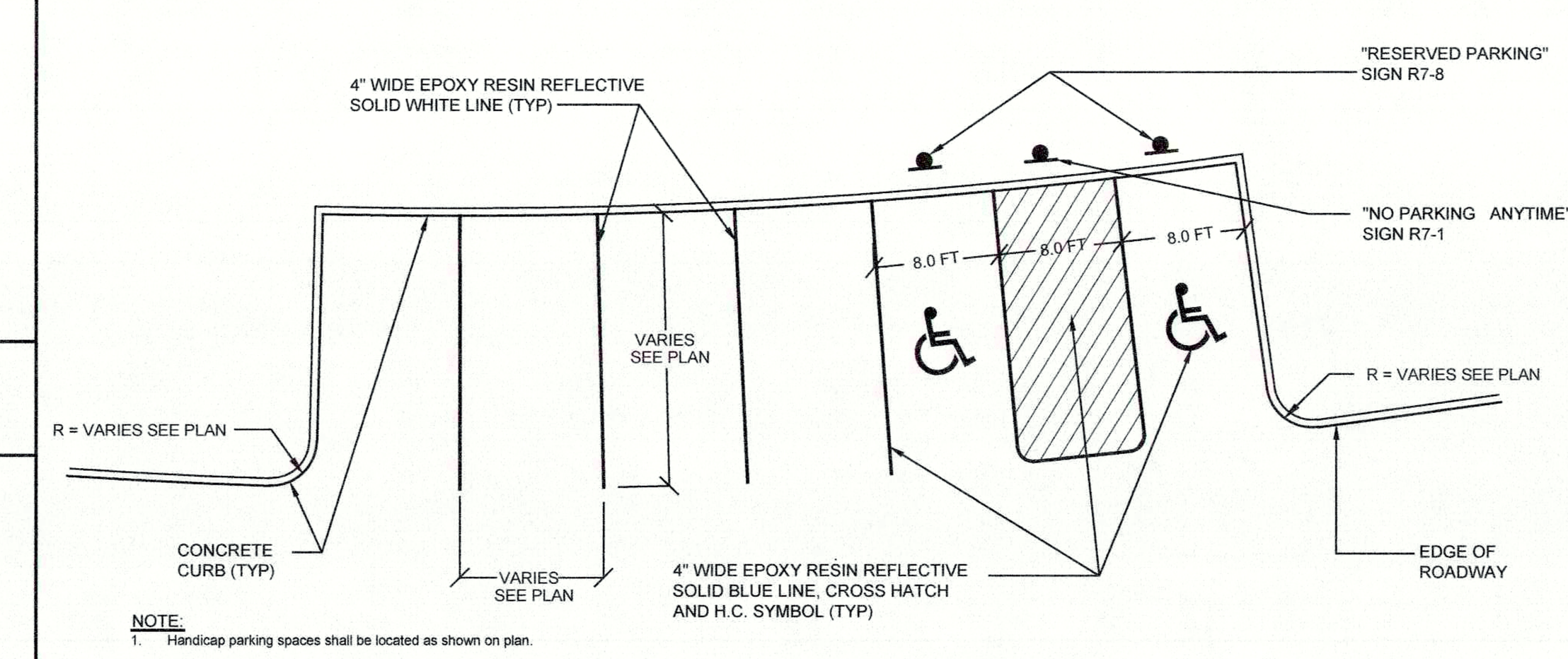
SIGN	M.U.T.C.D. NUMBER	SIZE OF SIGN	TYPE OF MOUNT
STOP	R1-1	30" X 30"	GR. MT.
NO PARKING ANY TIME	P1-2 (SEE NOTE 4)	12" X 18"	GR. MT.
RESERVED PARKING	R7-8	12" X 18"	GR. MT.

GENERAL NOTES:
1. All signage shall be in accordance with the latest edition of the national MUTCD and the N.Y.S Supplement (MUTCD), September 2007, including the following:
A. Letter size and series
B. Legend and background color
C. Reflectivity
D. Size of sign
2. The type of characters as specified in the standard specifications shall be as follows:

MUTCD CODE LETTER	TYPE OF CHARACTER
G.I.	TYPE IV
R.P.W.M.	TYPE IV OR V.

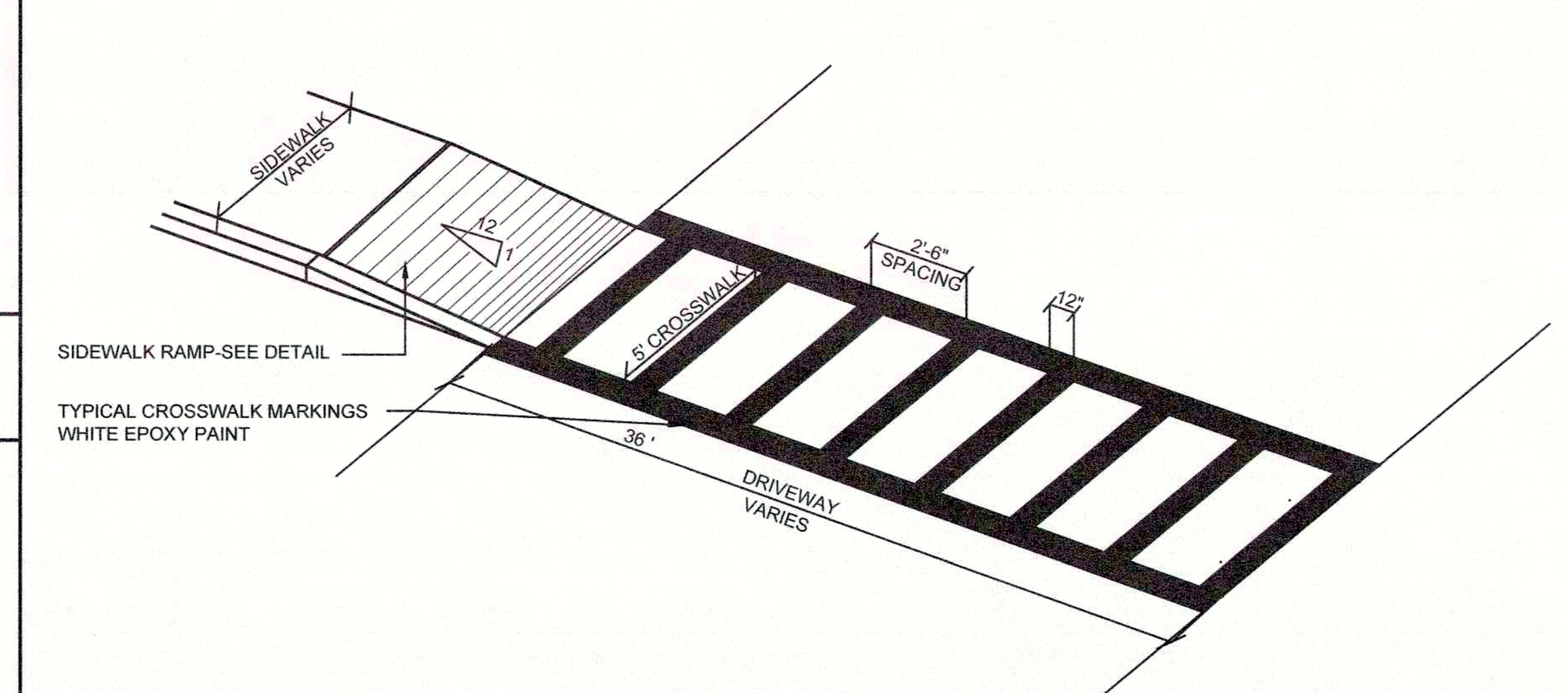
3. Sign locations as shown on plans are approximate. The Contractor shall relocate existing signs and install new signs in accordance with the MUTCD, latest edition. The Contractor shall contact the Town Engineer to discuss/resolve problem areas.
4. Except where otherwise specified, parking signs shall be placed facing approaching traffic at an angle of between 30 and 45 degrees with the line of traffic flow. Parking signs shall be placed at each end of a regulation (single-headed arrows) and, within the regulation (double-headed arrows), at intervals not to exceed 200 ft
5. Where new signs are installed the Contractor shall affix a label to the back of the sign panel. This label will show the date of installation and identification numbers.
6. Placement of W3-17 sign is prescribed in the General Municipal Law.

R-7 TRAFFIC SIGN DETAIL
NOT TO SCALE

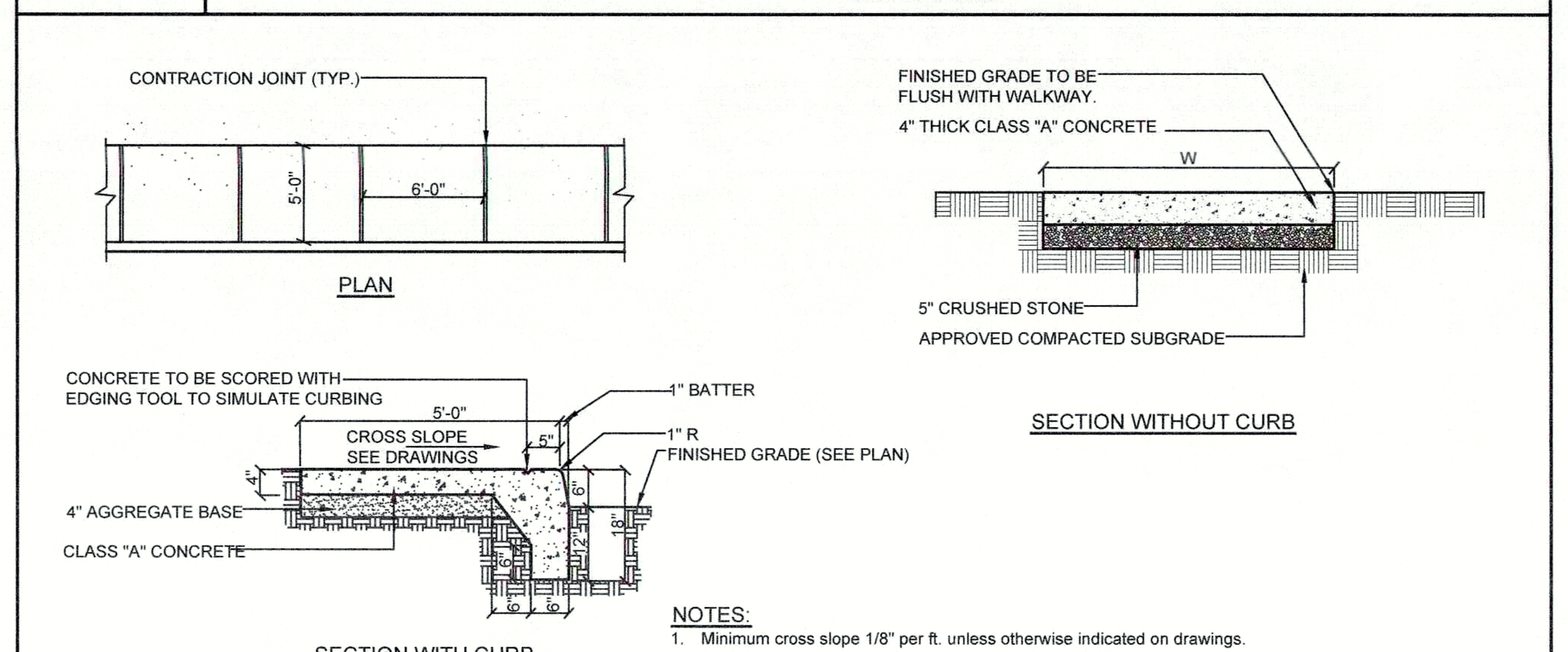


NOTE:
1. Handicap parking spaces shall be located as shown on plan.

R-8 TYPICAL PARKING STALL LAYOUT
NOT TO SCALE

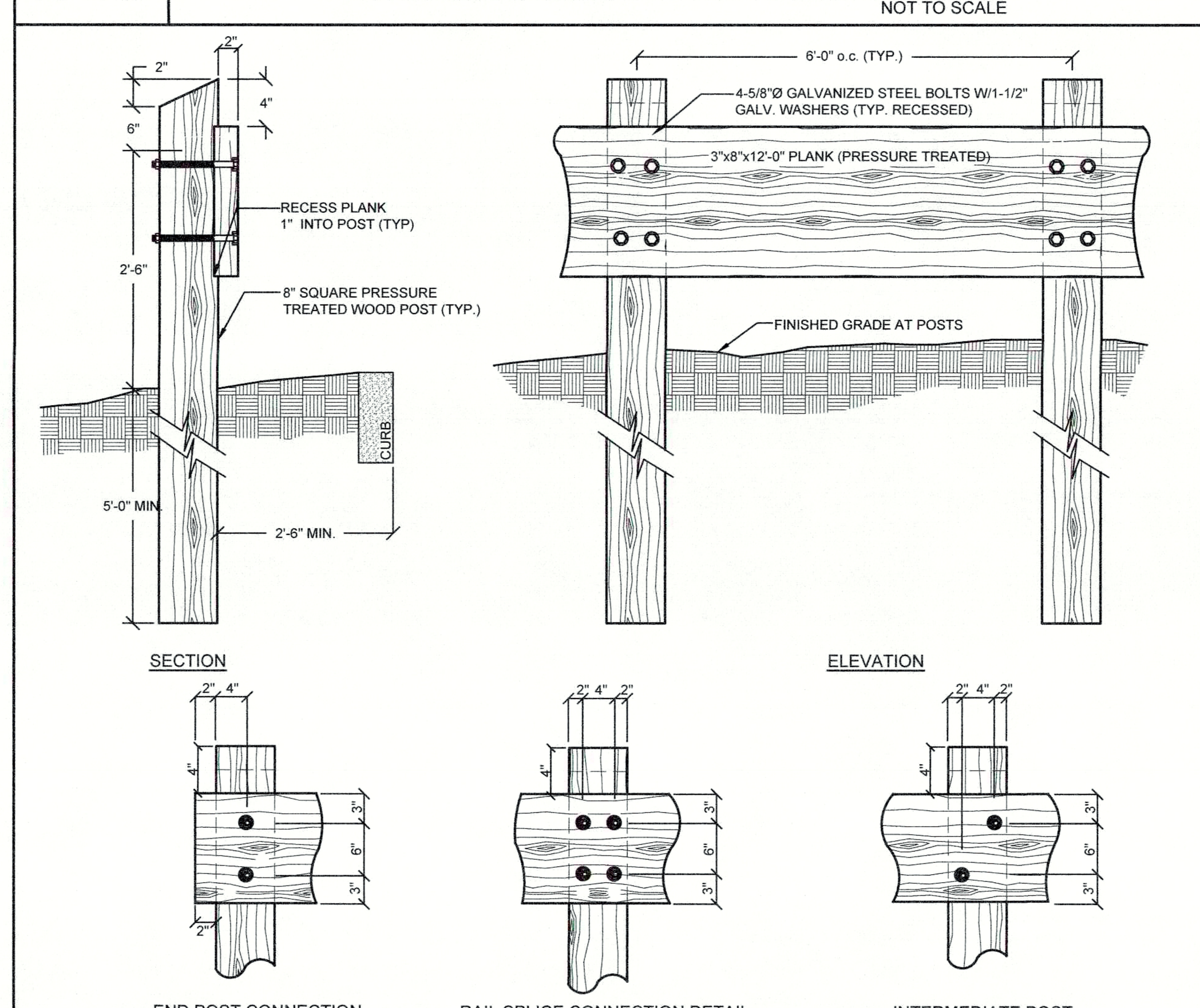


R-9 PAINTED CROSS WALK
NOT TO SCALE

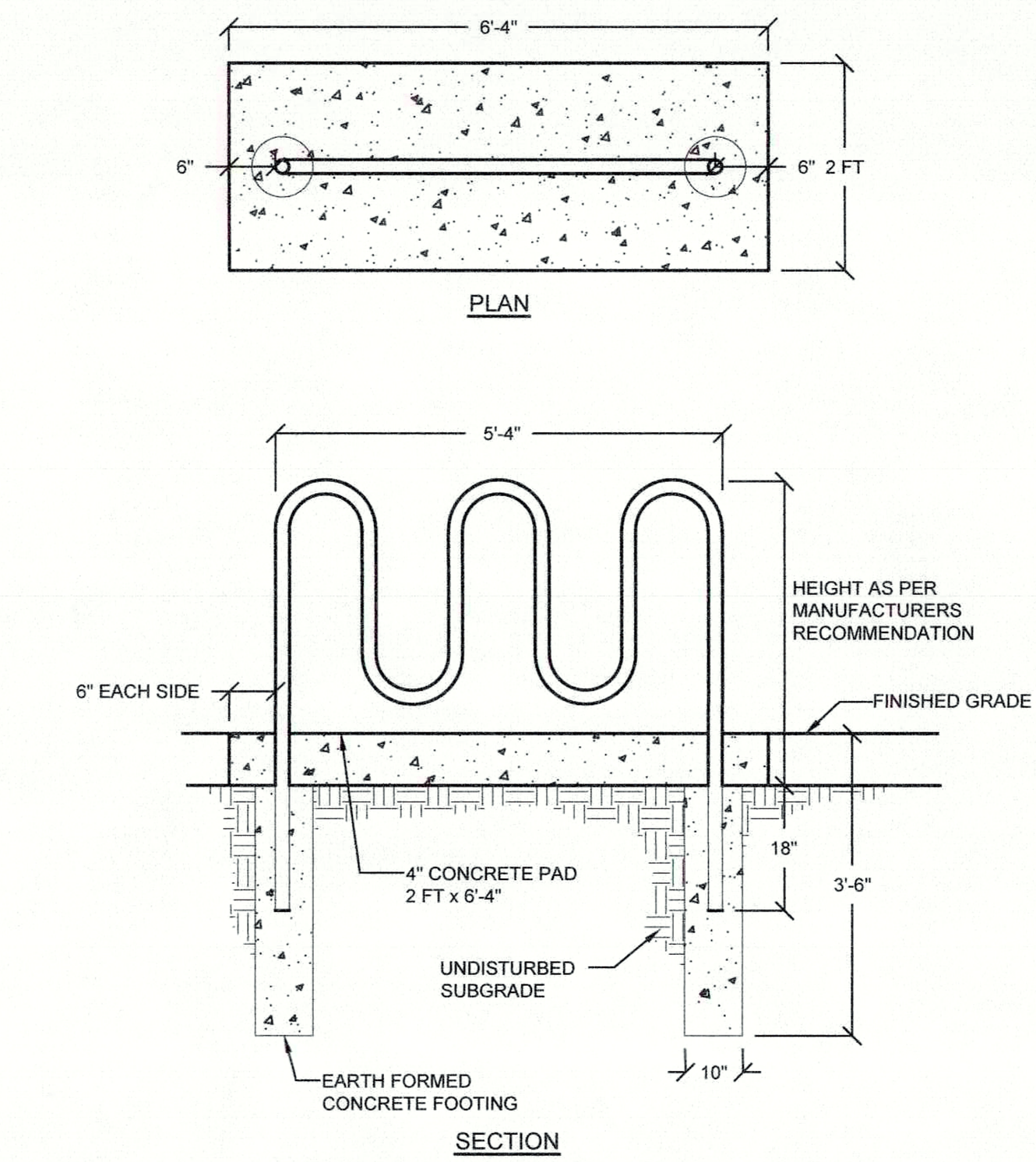


NOTES:
1. Minimum cross slope 1/8" per ft. unless otherwise indicated on drawings.
2. Provide 1/4" premolded expansion joints at 6' intervals.
3. At the juncture of driveways and sidewalks, one-half (1/2") inch, premolded bituminous joints shall be installed

R-10 CONCRETE CURB & SIDEWALK DETAIL
NOT TO SCALE

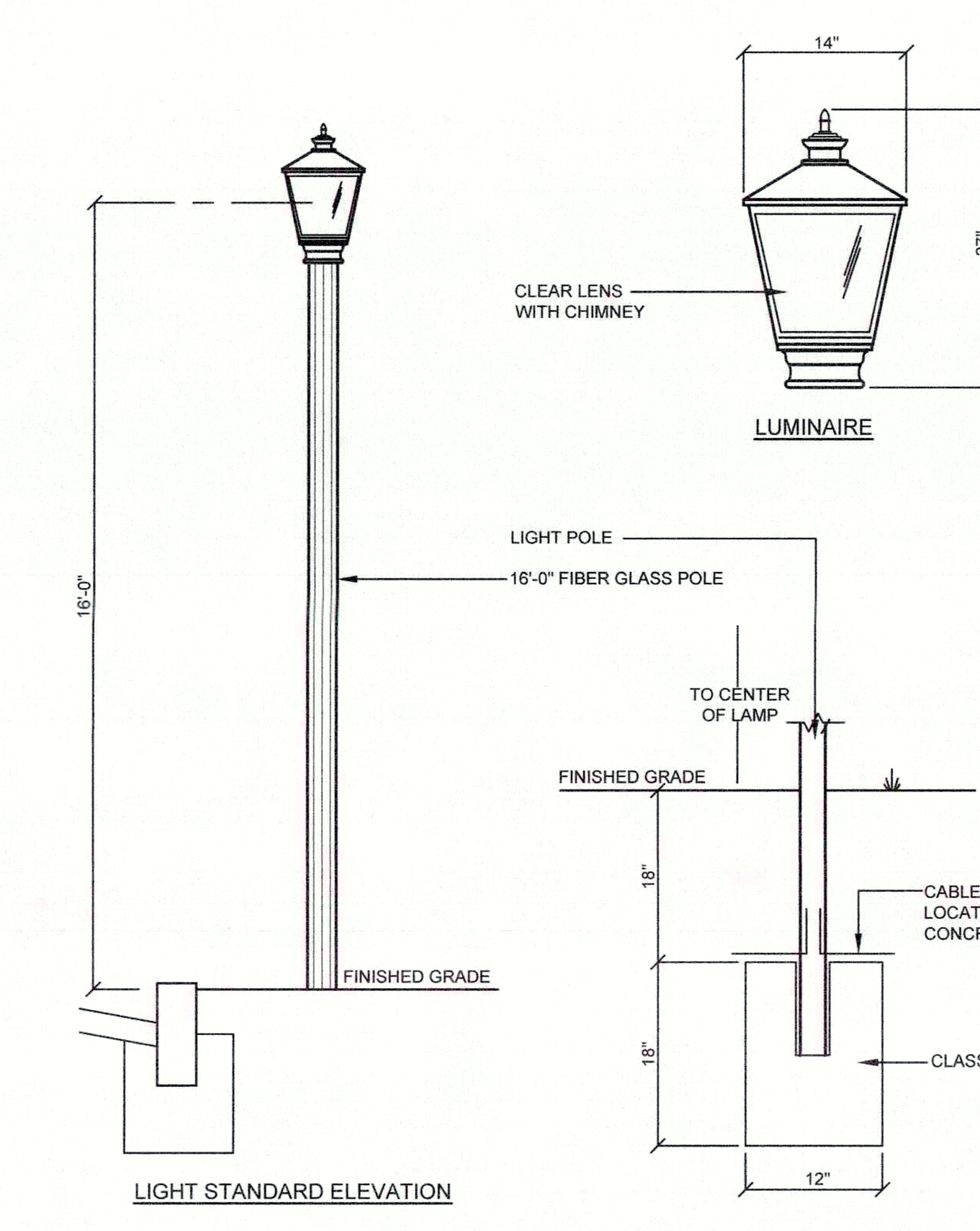


R-11 TIMBER GUARDRAIL DETAIL
NOT TO SCALE

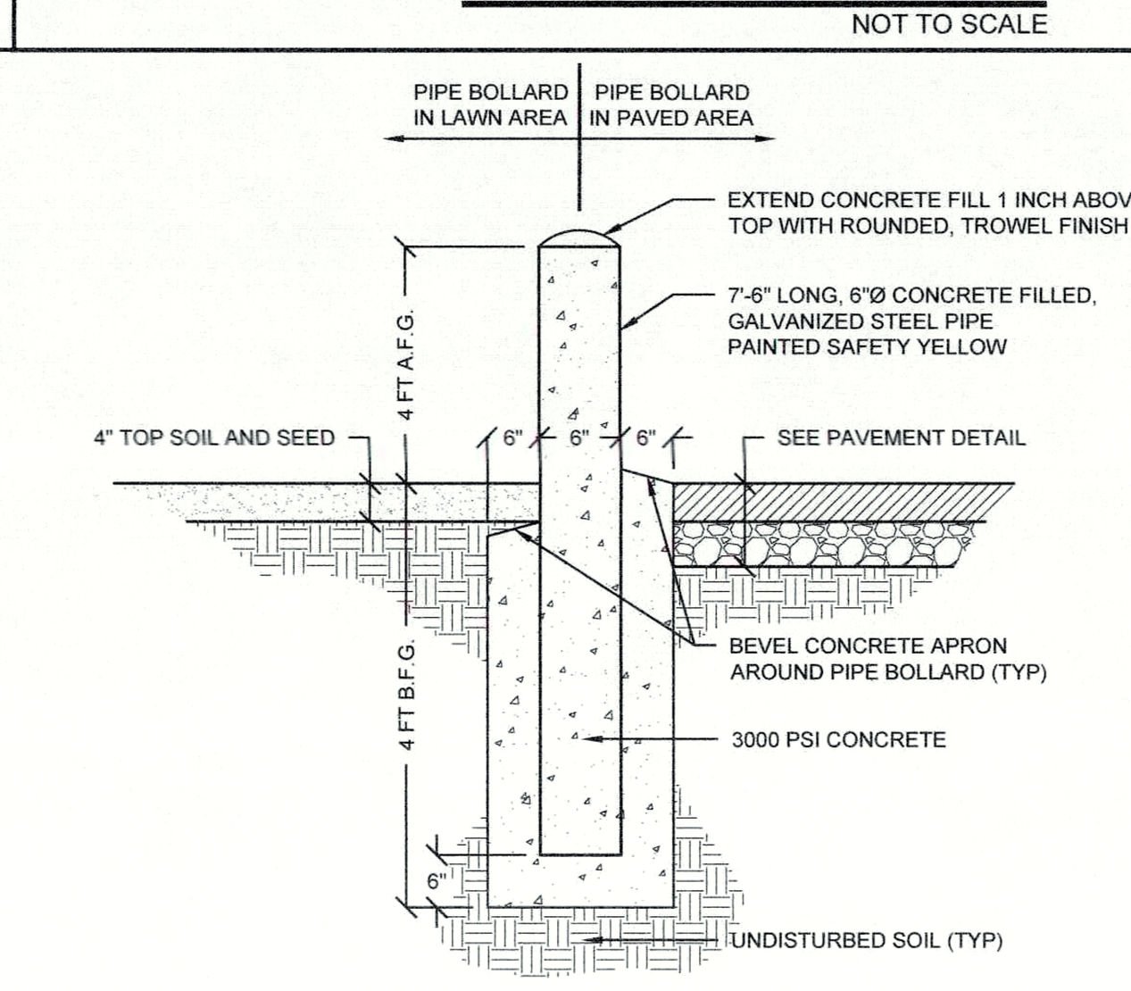


NOTE:
1. Install "Loop Rack" bicycle rack by Landscape Structures, c/o General Recreation, Newtown Sq. PA, 215-353-3332, Model No. 887-0040, yellow, or approved equivalent.

R-12 BIKE RACK DETAIL
NOT TO SCALE

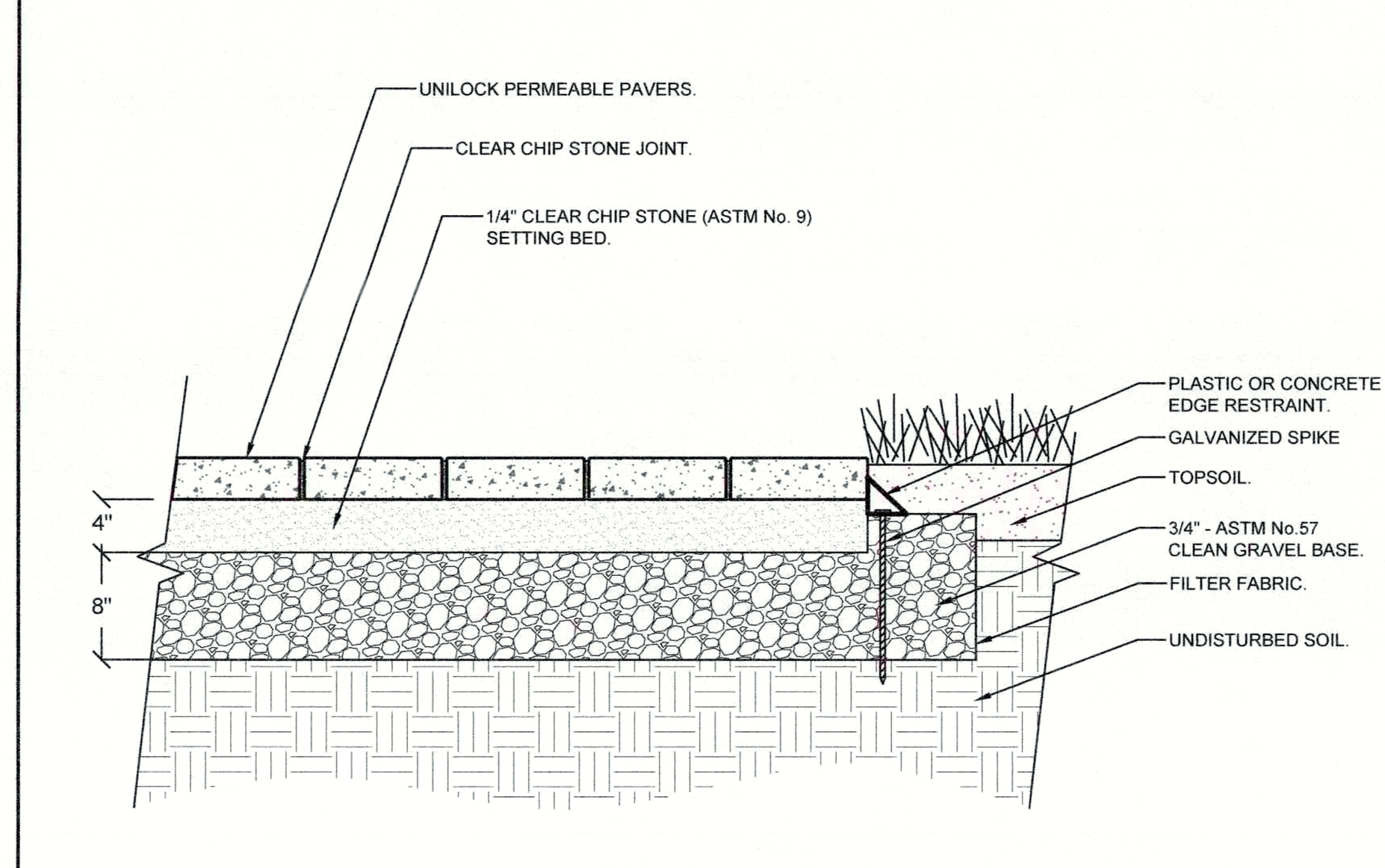


R-13 STREET LIGHT DETAIL
NOT TO SCALE



NOTE:
1. Pipe bollards shall be installed at locations shown on the plan.
2. In no case shall bollards be placed in such a way as to hinder the proper access, maintenance and operation of the structure, utility or other feature intended to be protected.
3. Contractor shall coordinate placement of bollards at fire hydrants with the local Fire or Water Department as appropriate.

R-14 PIPE BOLLARD DETAIL
NOT TO SCALE



R-15 PERMEABLE PAVER DETAIL
NOT TO SCALE

APPROVED
Resolution Number 23-13
Date July 13, 2023

NOTE: UNAUTHORIZED ALTERATIONS OR ADDITIONS TO THIS DRAWING IS A VIOLATION OF SECTION 7209 (2) OF THE NEW YORK STATE EDUCATION LAW.

PROJECT # 20-20

Site Design Consultants
Civil Engineers • Land Planners
251-F Underhill Avenue, Yorktown Heights, NY 10598
(914) 962-4488 - Fax: (914) 962-7386
www.sitedesignconsultants.com

Engineer:
STATE OF NEW YORK · JOSEPH CARLO RIINA · LICENSED PROFESSIONAL ENGINEER · No. 64431
Joseph C. Riina, P.E.
NYS Lic. No. 64431

No.	Date	Comments:
1.	6/30/20	R-3 Zone Schedule
2.	7/13/20	Zone Schedule Rev Floor Areas
3.	12/3/20	Updated Grading and Utility Plans
4.	1/21/21	Pedestrian Access Revisions
5.	1/12/22	Site Plan Revisions
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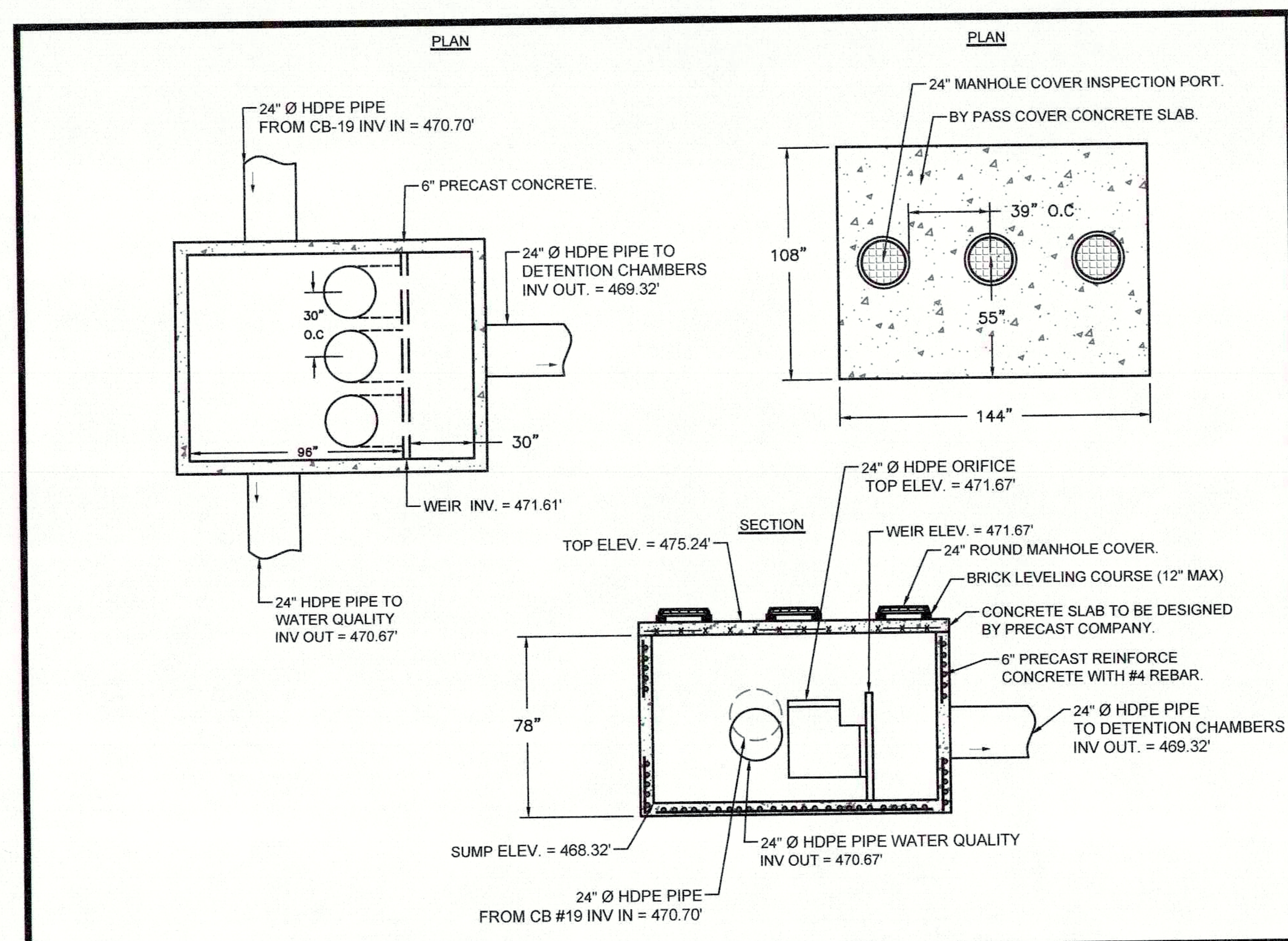
14.	10/11/23	DEP Comments
15.	2/2/2024	DEP Comments
16.	2/14/2024	WCHD Comments
17.	3/12/2024	DEP Sewer Comments
18.	3/21/2024	DEP Comments
19.	4/22/2024	WCHD Comments
20.	5/10/2024	DEP Comments
21.	5/22/2024	WCHD Comments
22.	5/30/2024	WCHD Comments

SCALE:
DRAWN BY: TK
DATE: 6-22-20

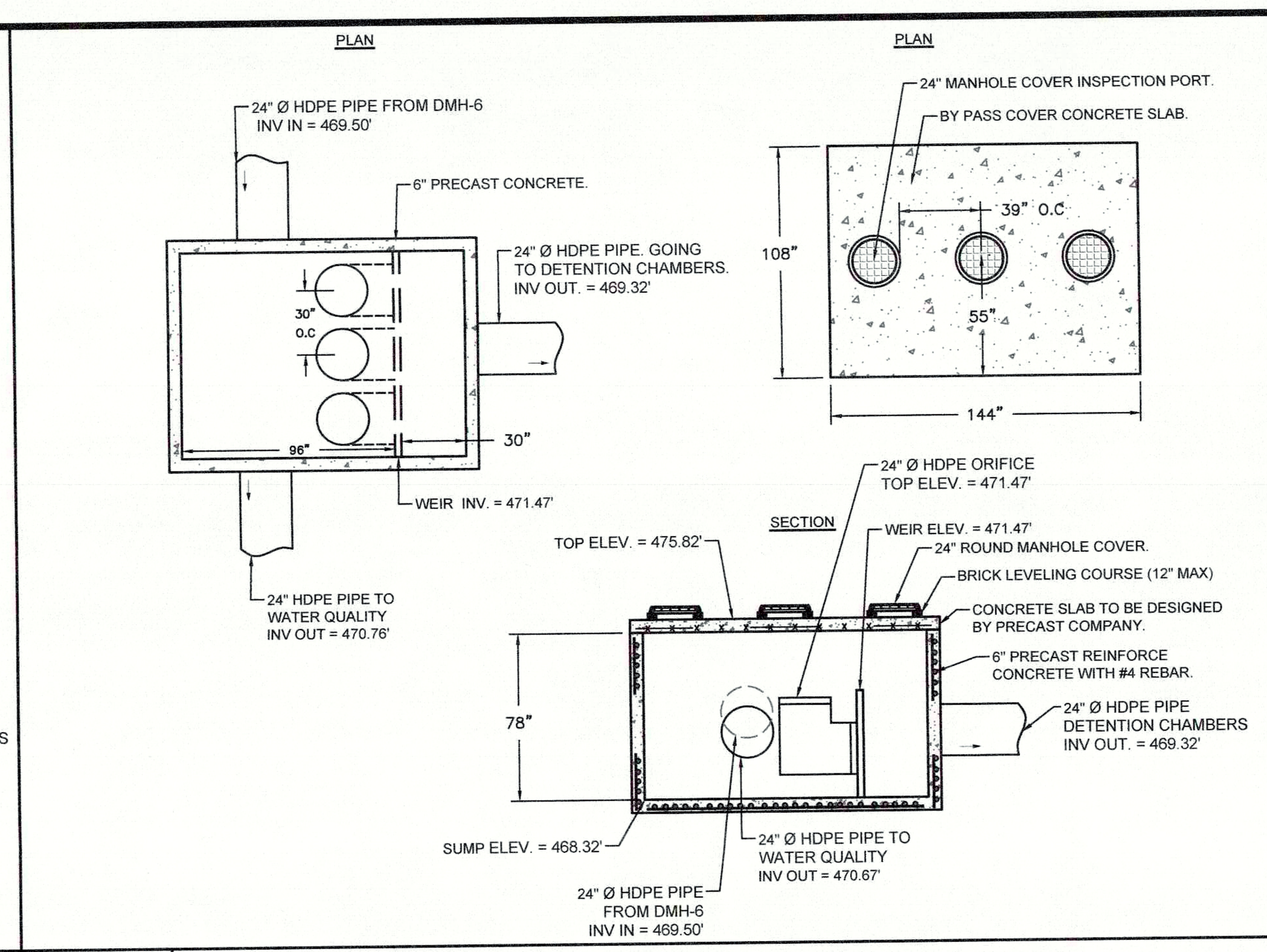
SITE DETAILS

SITE PLAN
PREPARED FOR
UNDERHILL FARM
UNDERHILL AVENUE
Town of Yorktown
Westchester County, New York

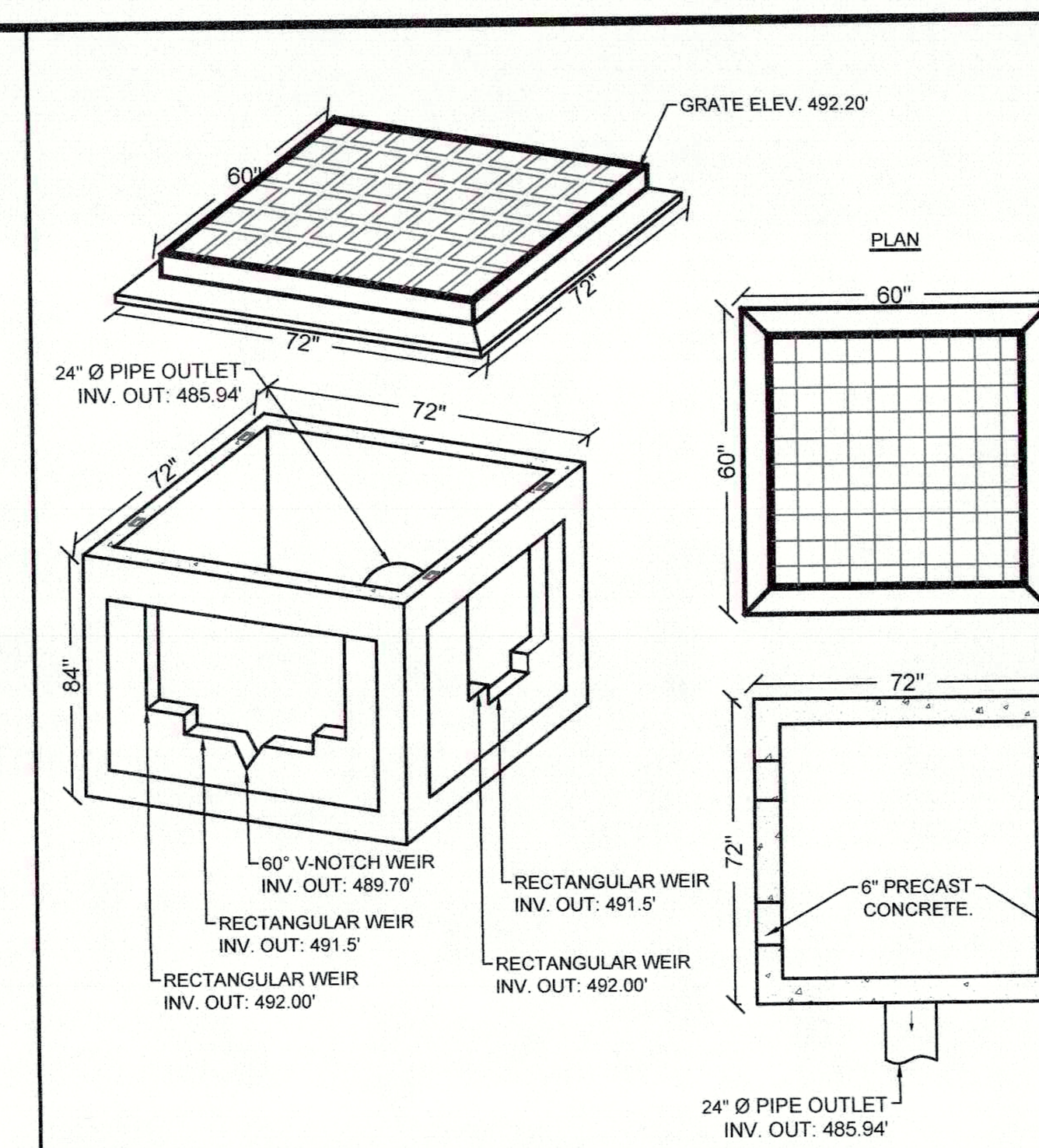
Sheet C-502



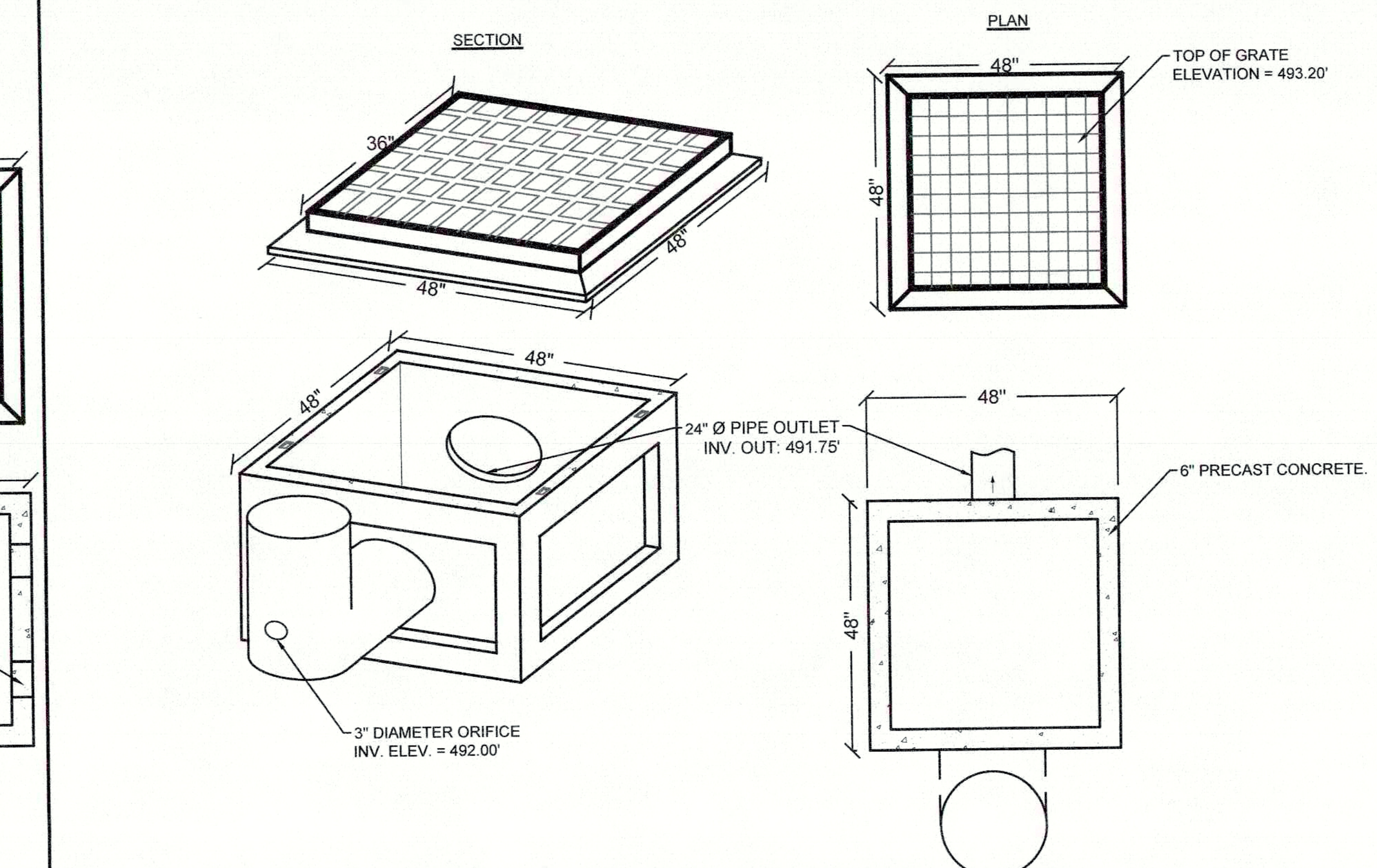
D-1 **STORM BYPASS #1 STRUCTURE DETAIL**
NOT TO SCALE



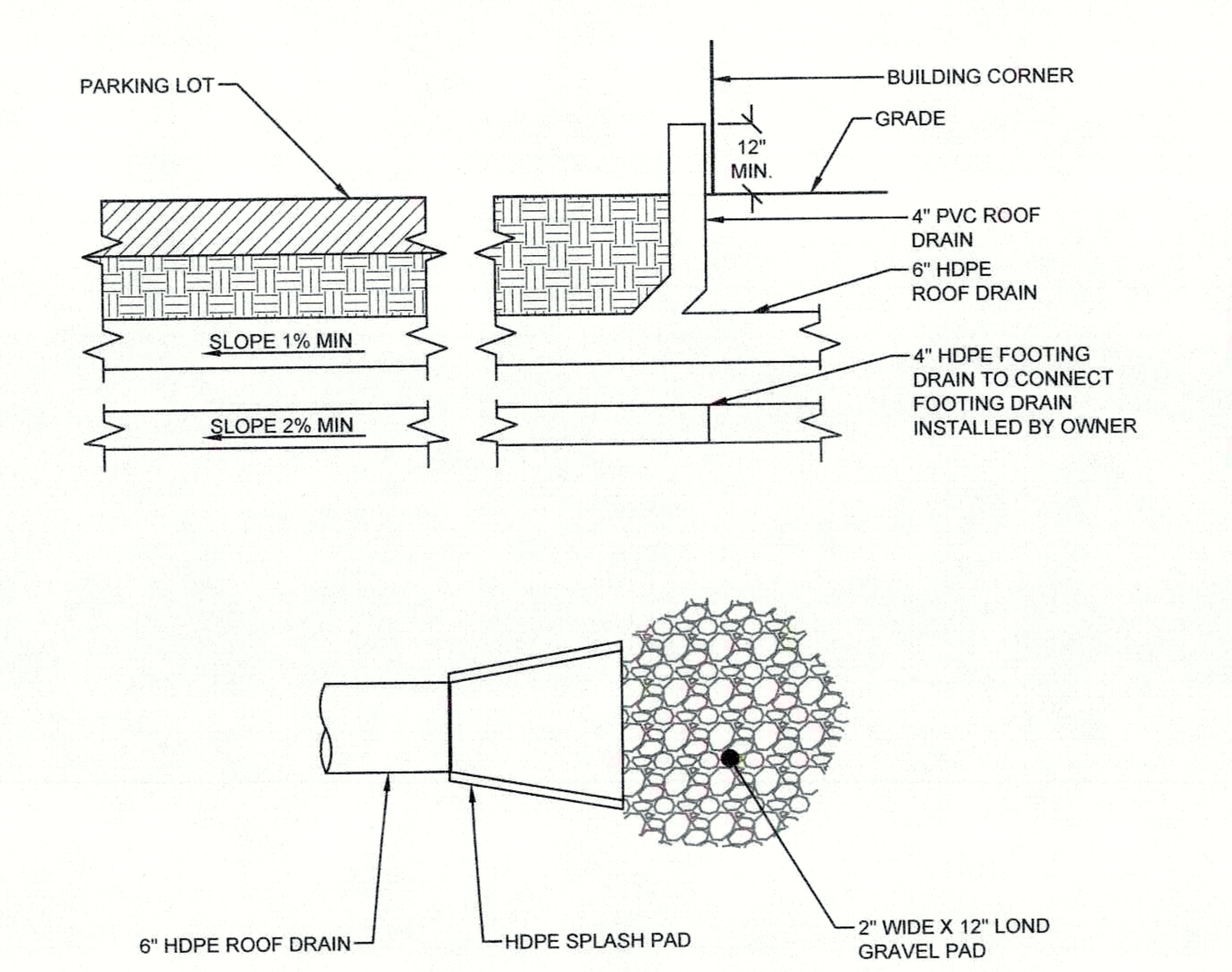
D-2 **STORM BYPASS #2 STRUCTURE DETAIL**



D-5 **POND OUTLET STRUCTURE**
NOT TO SCALE

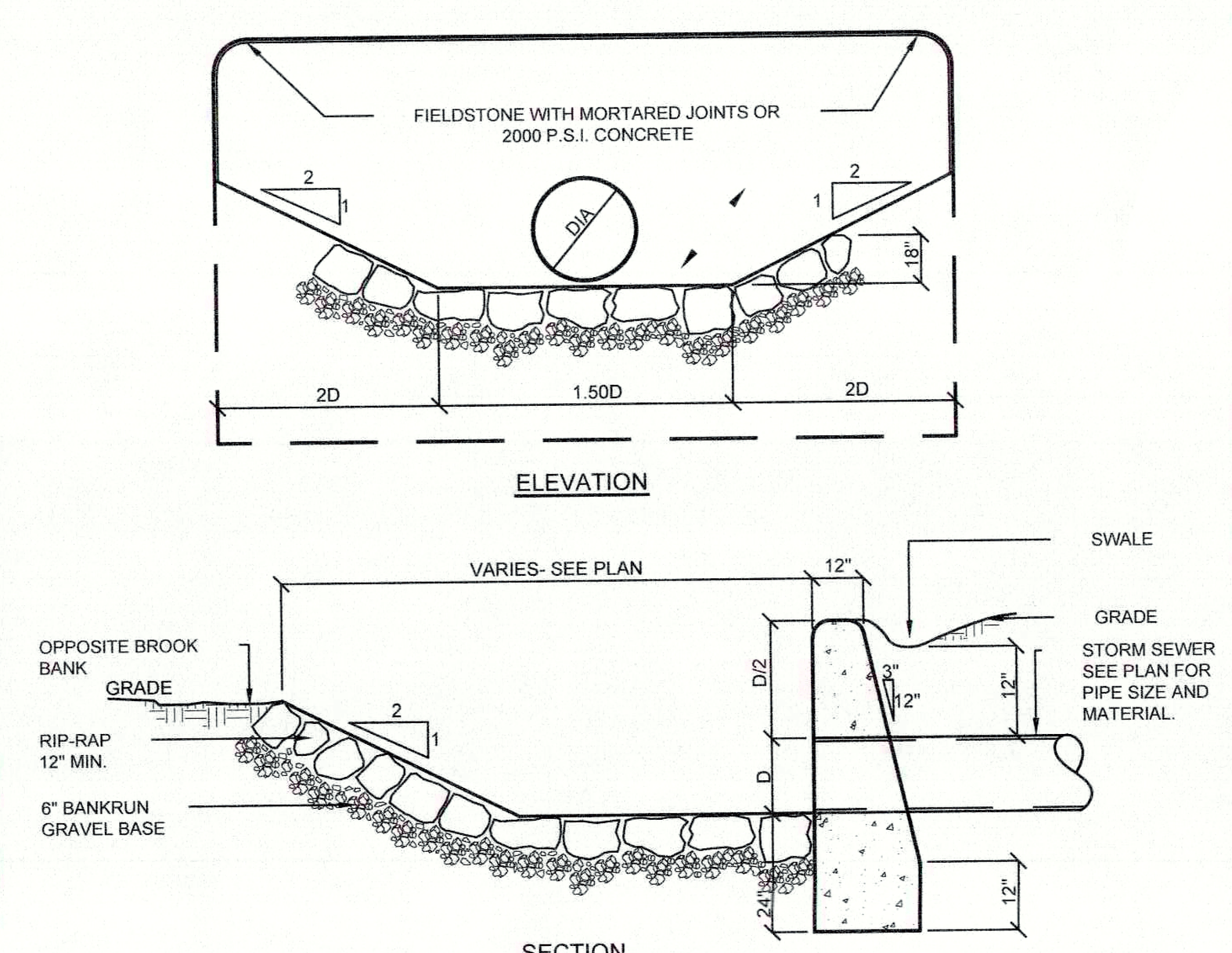


D-6 **FILTER STAND PIPE OUTLET**
NOT TO SCALE



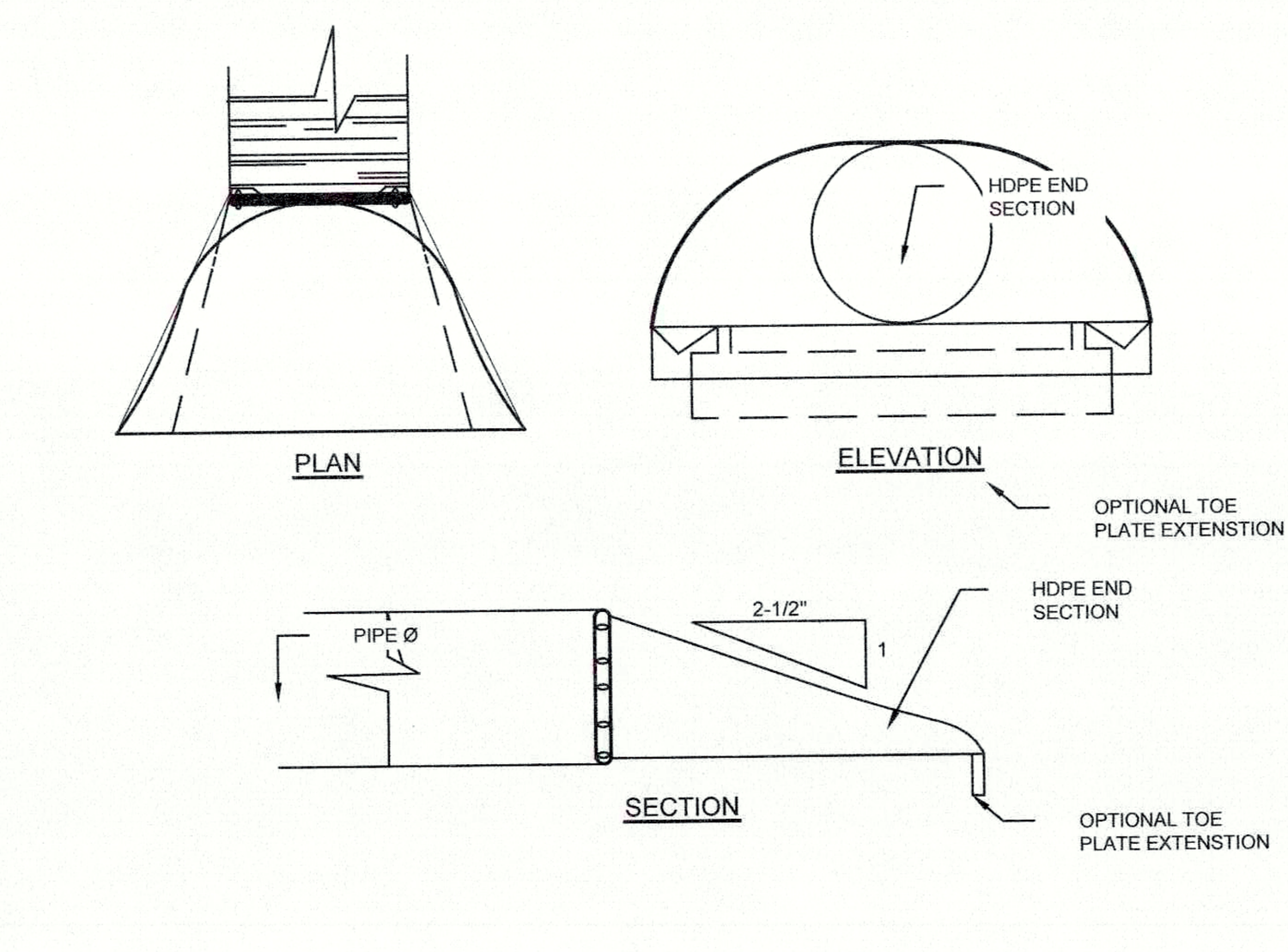
FOOTING DRAIN SPLASH PAD

D-7 **ROOF & FOOTING DRAIN CONNECTION DETAIL**
NOT TO SCALE



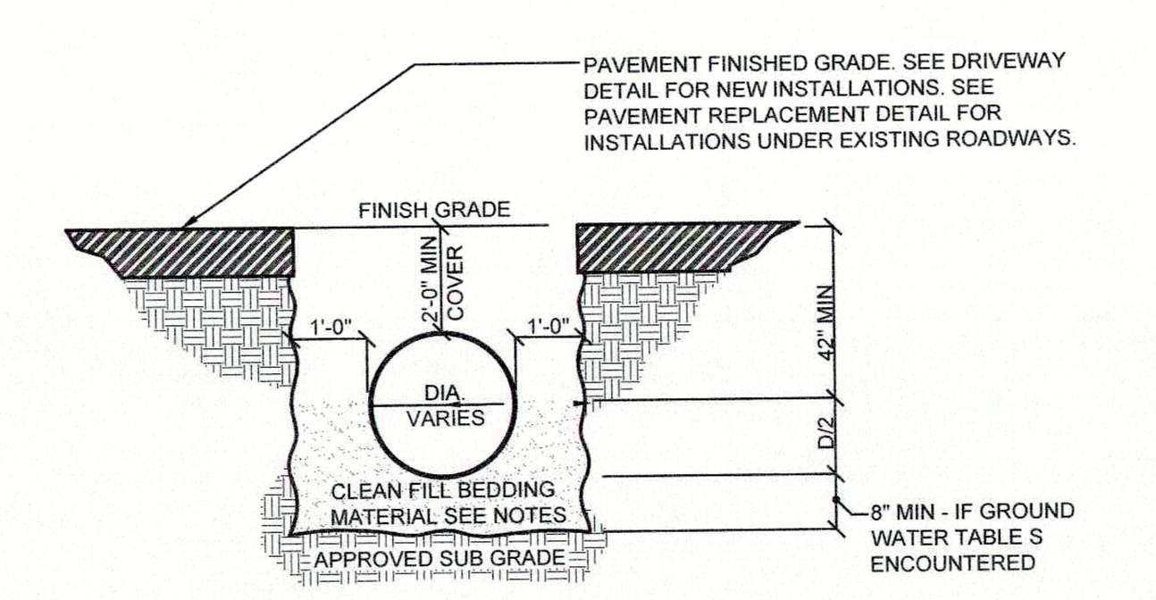
NOTE:
1. At least 50% of stone shall weigh in excess of 300lbs. and the remainder shall weigh between 1550lbs. and 300lbs.; the minimum dimension of any stone is 12".

D-8 **FIELDSTONE HEADWALL DETAIL**
NOT TO SCALE



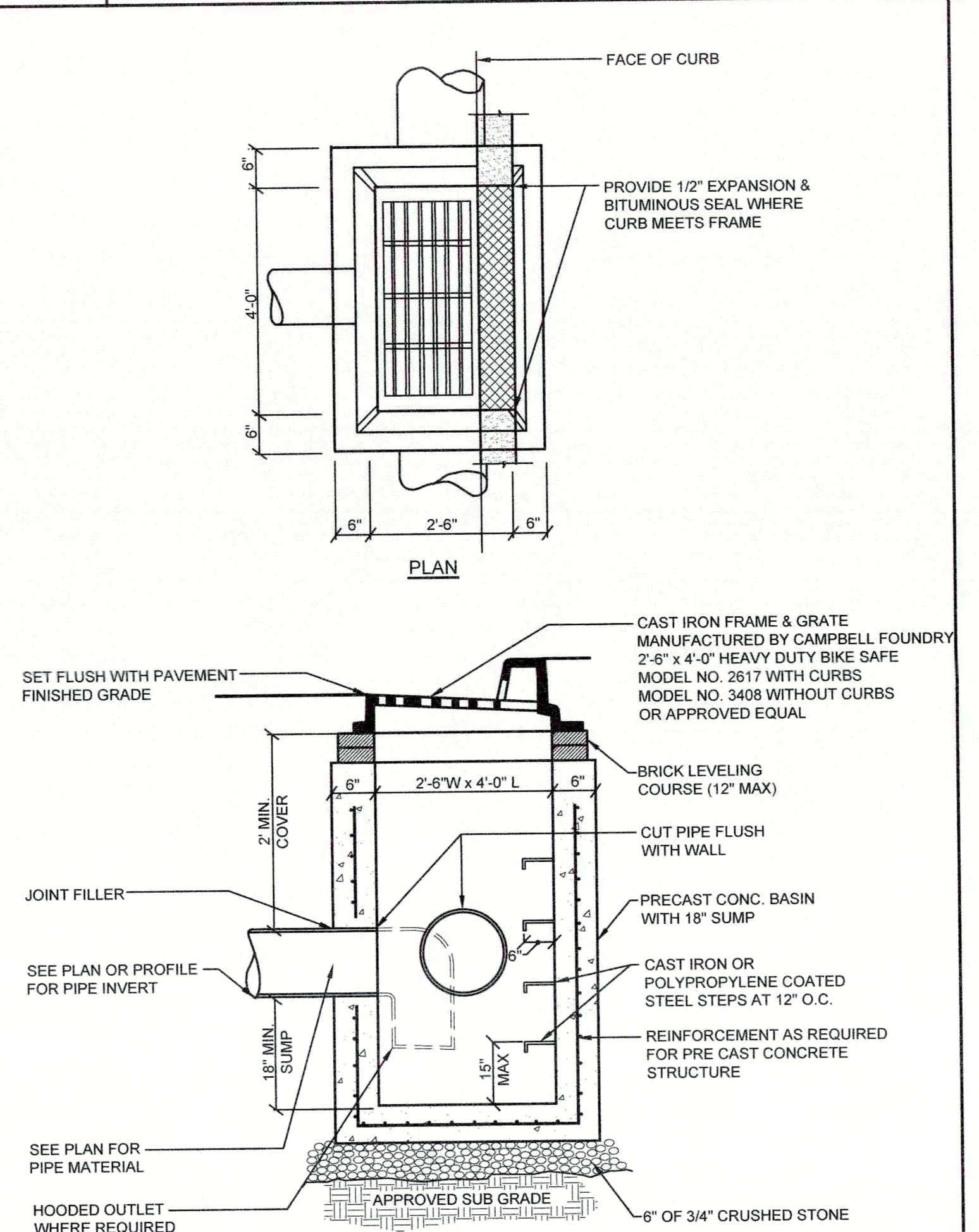
NOTE:
1. HDPE END SECTION SHALL BE FITTED AND FASTENED TO PROPOSED PIPE AS PER MANUFACTURER RECOMMENDATIONS.

D-9 **HDPE PIPE END SECTION DETAIL**
NOT TO SCALE



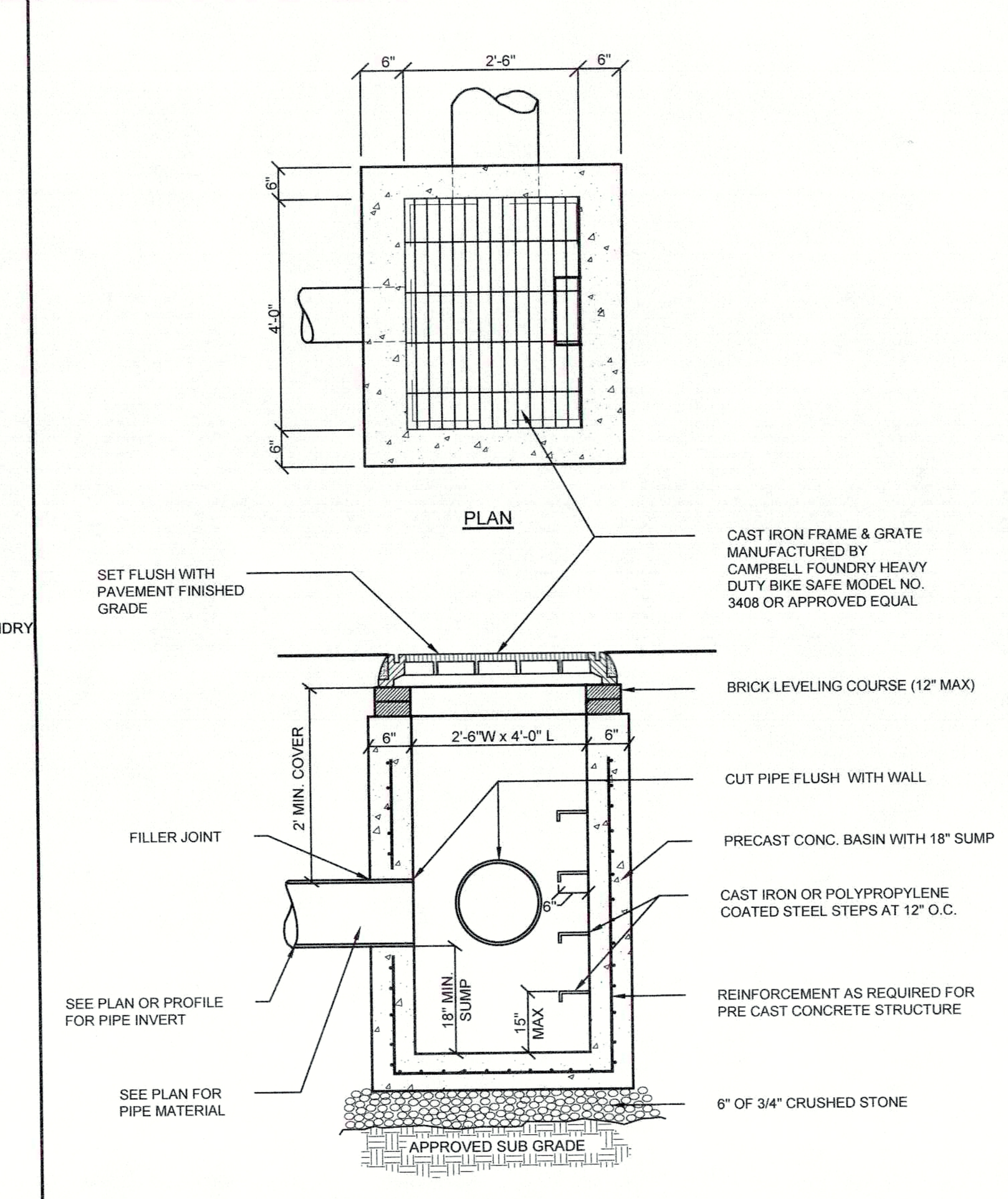
NOTES:
1. Pipe shall be laid and connected in the bedding which shall consist of:
   A. Compacted existing subsoil when laid above ground water or;
   B. 3/4" crushed stone when laid below ground water.
2. If subsoil is determined to be unsuitable by the Engineer, all unsuitable material shall be removed for at least 2'-6" below the pipe invert or twice the pipe diameter, whichever is greater, and replaced with compacted bedding material.

D-10 **STORM PIPE BEDDING DETAIL**
NOT TO SCALE



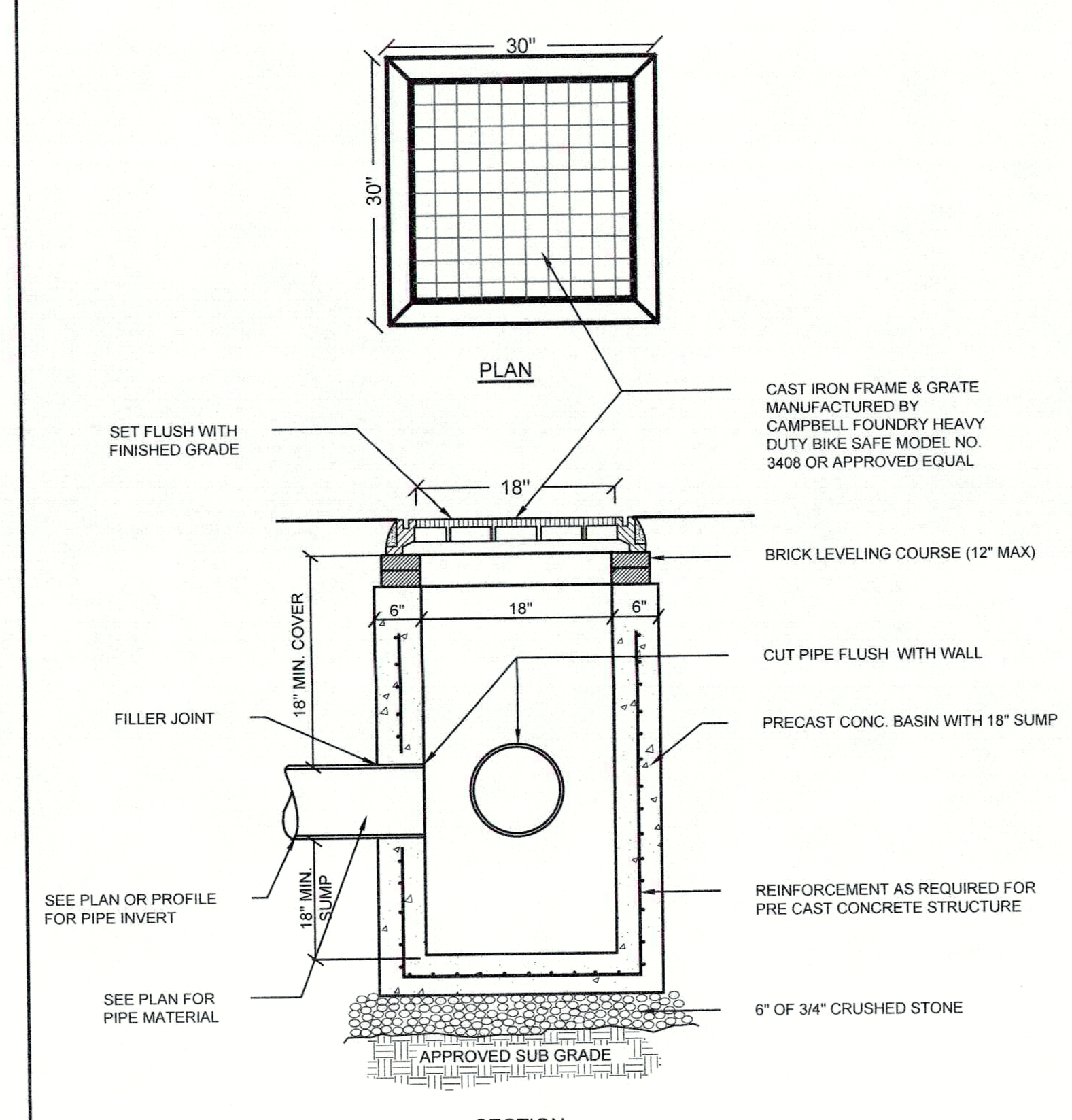
NOTES:
1. Where depth of catch basin exceeds 10 ft, inside dimensions shall be 48" x 48".
2. Catch basin covers and structures shall meet or exceed A.S.T.M. and O.S.H.A. requirements.
3. Pre-cast sections shall be in accordance with "Pre-cast Reinforced Manhole Sections", A.S.T.M. Designation C-478, latest revision. Minimum compressive strength shall be 4000 psi. Structures shall be rated for H-20 vehicle loading.

D-11 **TYPICAL CATCH BASIN DETAIL**
NOT TO SCALE



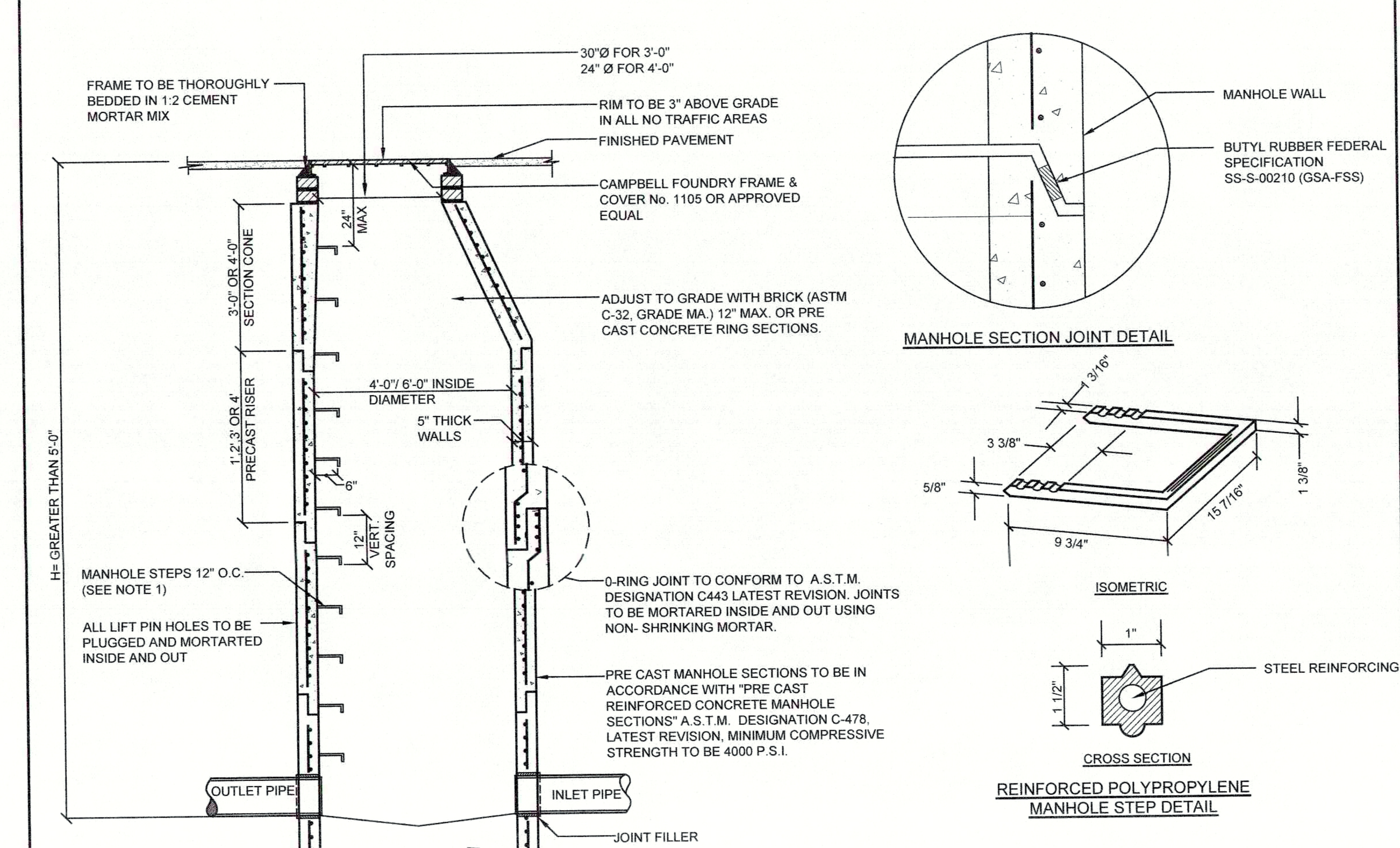
NOTES:
1. Where depth of catch basin exceeds 10 ft, inside dimensions shall be 48" x 48".
2. Top of basin shall be built with precast concrete structural slab designed for H-20 loading.

D-12 **PRECAST CATCH BASIN - NO CURB DETAIL**
NOT TO SCALE



NOTES:
1. Where depth of catch basin exceeds 10 ft, inside dimensions shall be 48" x 48".
2. Top of basin shall be built with precast concrete structural slab designed for H-20 loading.

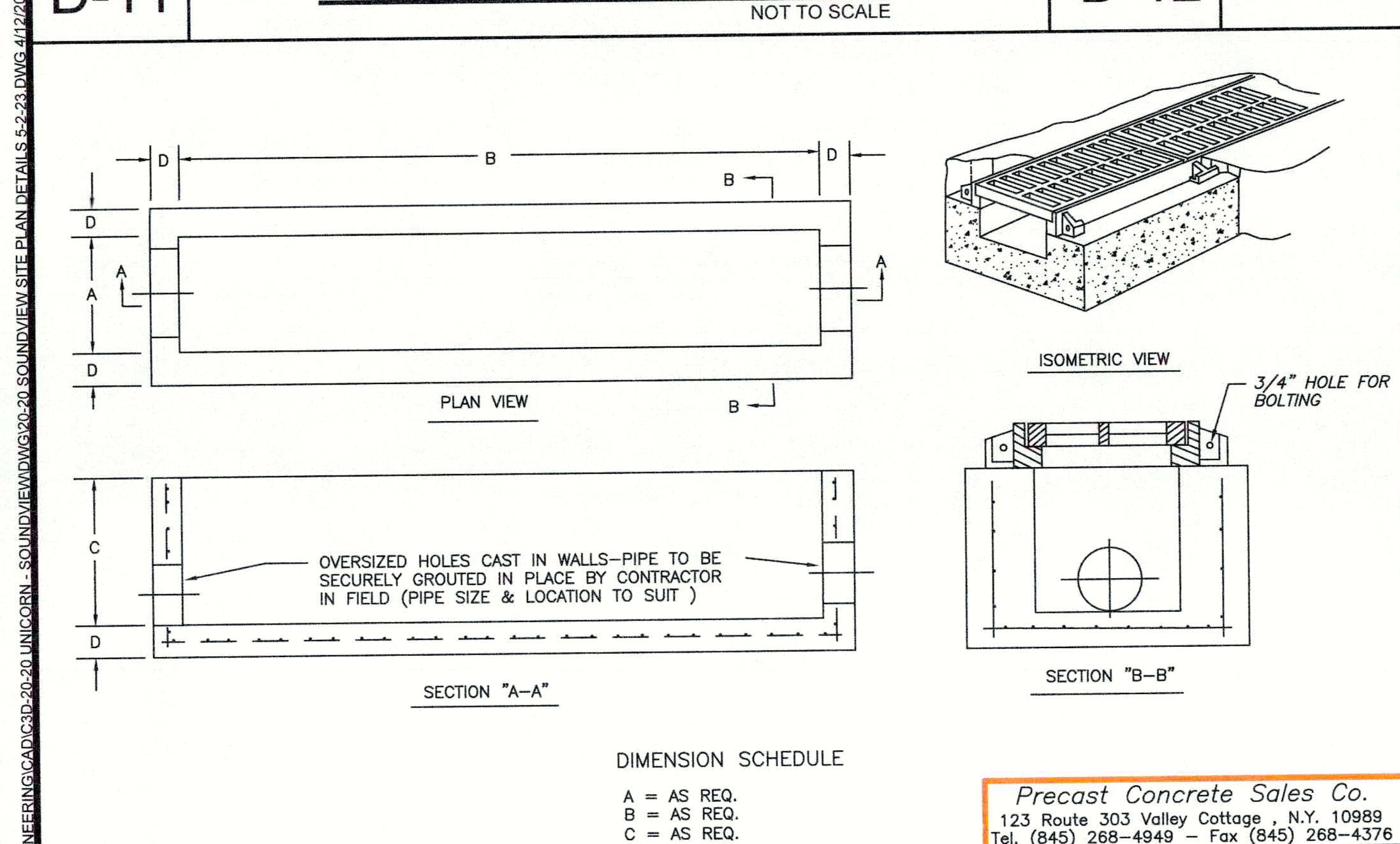
D-13 **DRAIN INLET CATCH BASIN**
NOT TO SCALE



REINFORCED POLYPROPYLENE MANHOLE STEP DETAIL

NOTES:
1. Manhole steps shall be cast iron Neenah No. R-1981-0 or Campbell Foundry no. 2588-1 or polypropylene coated steel (see specifications) or approved equal.
2. Unless otherwise specified, storm manholes shall have letters "DRAIN" cast on cover. The covers shall have vent holes.
3. Manholes shall meet or exceed A.S.T.M. and O.S.H.A. requirements and be rated for H-20 vehicle design loading.
4. All pipes shall be cut flush with inside walls.
5. Where depth of manhole exceeds 10 ft, inside diameter shall be 60 ".

D-14 **PRECAST CONCRETE STORM DRAIN MANHOLE DETAIL**
NOT TO SCALE



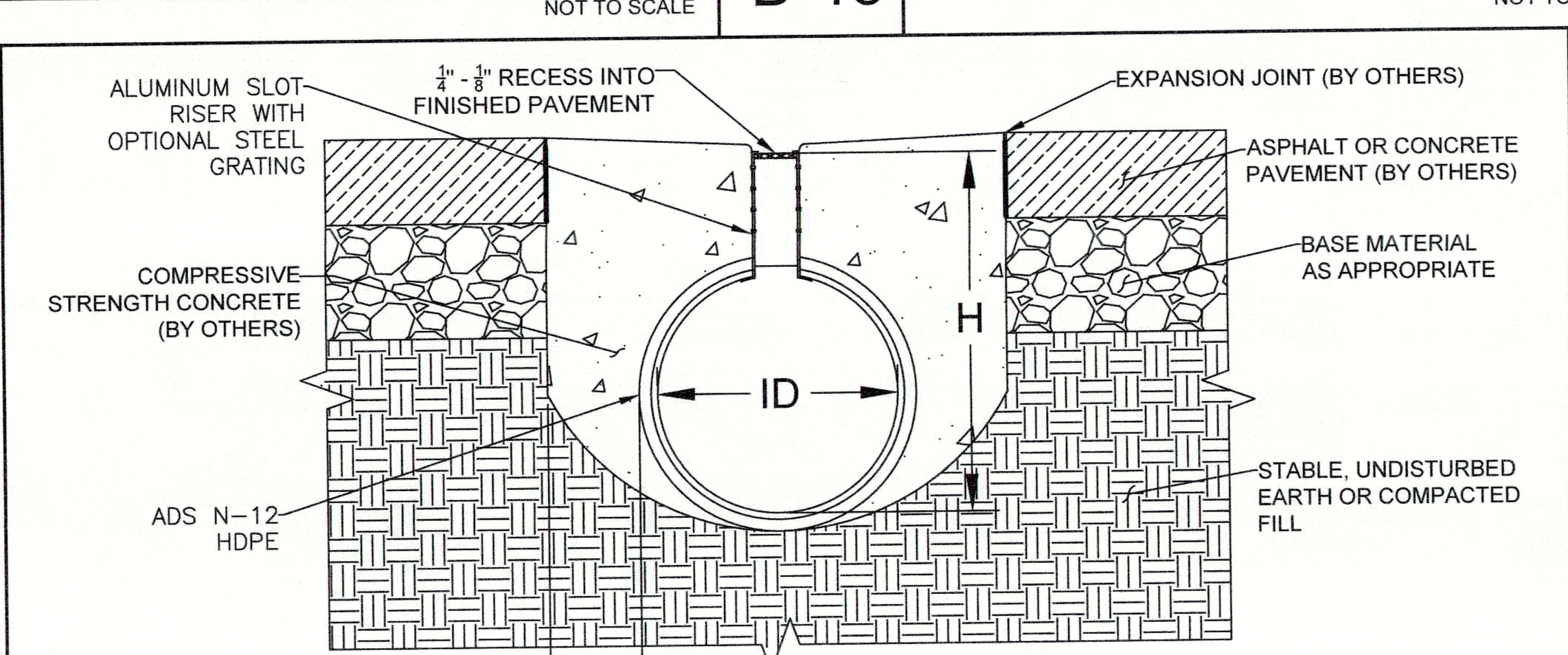
NOTE :
* GALVANIZED STEEL GRATING ALSO AVAILABLE
* CONCRETE TO TEST 4000 PSI @ 28 DAYS
* REINFORCEMENT :

Precast Concrete Sales Co.
123 Route 303 Valley Cottage, N.Y. 10989
Tel. (845) 268-4949 – Fax (845) 268-4376

TRENCH DRAIN

DATE	DRAWN BY	DRAWING NO.
1/16	CLASSIC DESIGN	1144-12

D-15 **TRENCH DRAIN DETAIL**
NOT TO SCALE

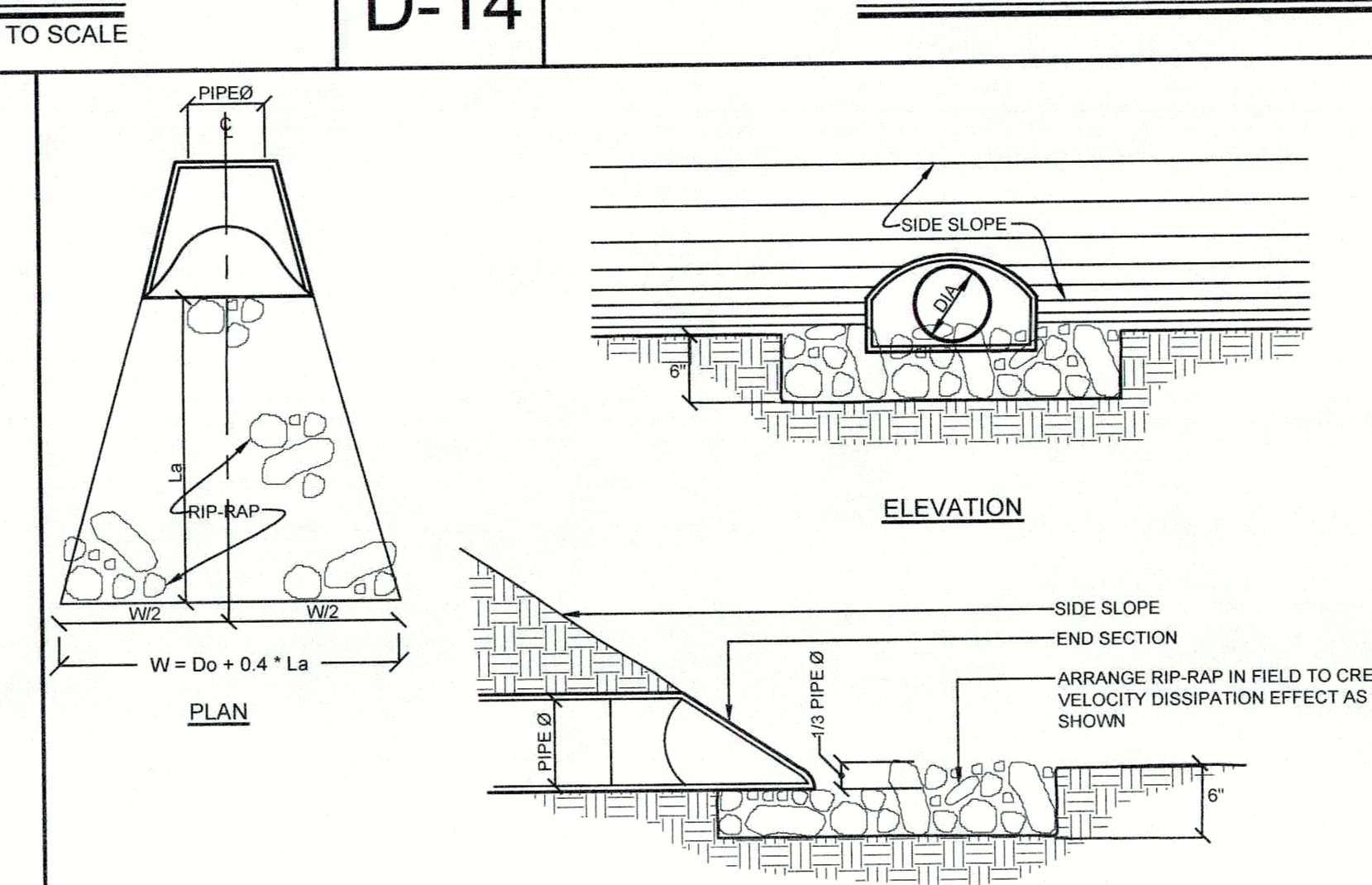


Nominal Diameter, ID, in. (mm)	Depth of Invert, H, in. (mm)	
	Minimum	Maximum
6 (150)	12.50 (318)	30.00 (762)
8 (200)	14.50 (368)	32.00 (813)
10 (250)	16.50 (419)	34.00 (864)
12 (300)	19.00 (483)	48.00 (1219)
15 (375)	22.00 (559)	51.00 (1295)
18 (450)	25.00 (635)	54.00 (1372)
24 (600)	31.25 (794)	60.00 (1524)
30 (750)	38.25 (972)	66.00 (1676)
36 (900)	44.25 (1024)	72.00 (1829)

ADS Advanced Drainage Systems, Inc.

NOTES:
1. BACKFILL DESIGN MAY BE USED FOR LIGHT TO MODERATE TRAFFIC LOADS (I.E. RETAIL PARKING LOTS, AGAINST A CURB, ETC.).
2. CONCRETE BACKFILL SHOULD EXTEND DOWNWARD TO AT LEAST THE SPRING LINE OF THE PIPE. SOIL BELOW THE PIPE AND CONCRETE SHALL BE A LEAN CLAY OR SIMILAR AT 95% COMPACTION.
4. SITE ENGINEER TO PROVIDE SITE SPECIFIC DETAILS, SUCH AS CONCRETE STRENGTH OR BACKFILL DESIGN ALTERATIONS.
5. COUPLER BANDS ARE SOIL–TIGHT. FOR A TIGHTER SEAL, A FULL CONCRETE INSTALLATION, NEOPRENE SHEET, OR MASTIC FILLER (PROVIDED BY OTHER) MAY BE USED.
6. REFER TO ADS TECH NOTE 2.11 FOR ADDITIONAL DESIGN INFORMATION.
7. SLOT RECESS IS NOT INCLUDED IN DEPTH OF INVERT TABLES.

D-16 **SLOTTED DRAIN PIPE DETAIL**
NOT TO SCALE



OUTLET PROTECTION DESIGN PARAMETERS

STRUCTURE ID	Do (IN)	La (FT)	W (FT)	D50 (IN)	DMAX (IN)	MIN. BLANKET THINCKNESS (IN)
SPLASH PADS	4	6	2.9	4.8	6	9
ES-1	30	16	18.5	4.8	6	9
ES-3	15	8	9.3	3.0	6	9
ES-4	36	20	23	7.2	6	9
ES-5	12	12	13	4.8	6	9
ES-6	12	12	13	4.8	6	9
SEDIMENT BASIN	12	12	13	4.8	6	9
ES-9	24	12	14	4.8	6	9
ES-10	24	12	14	4.8	6	9

D-17 **RIP-RAP APRON/ENERGY DISSIPATOR DETAIL**
NOT TO SCALE

APPROVED
Resolution Number 23 13
Date July 17 2023

Site Design Consultants
Civil Engineers • Land Planners
251-F Underhill Avenue, Yorktown Heights, NY 10598
(914) 962-4488 - Fax: (914) 962-7386
www.sitedesignconsultants.com

PROJECT # 20-20

Engineer:
Joseph C. Riina, P.E.
NYS Lic. No. 64431

Revisions:

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20.	5/10/2024	DEP Comments
21.	5/22/2024	WCHD Comments
22.	5/30/2024	WCHD Comments

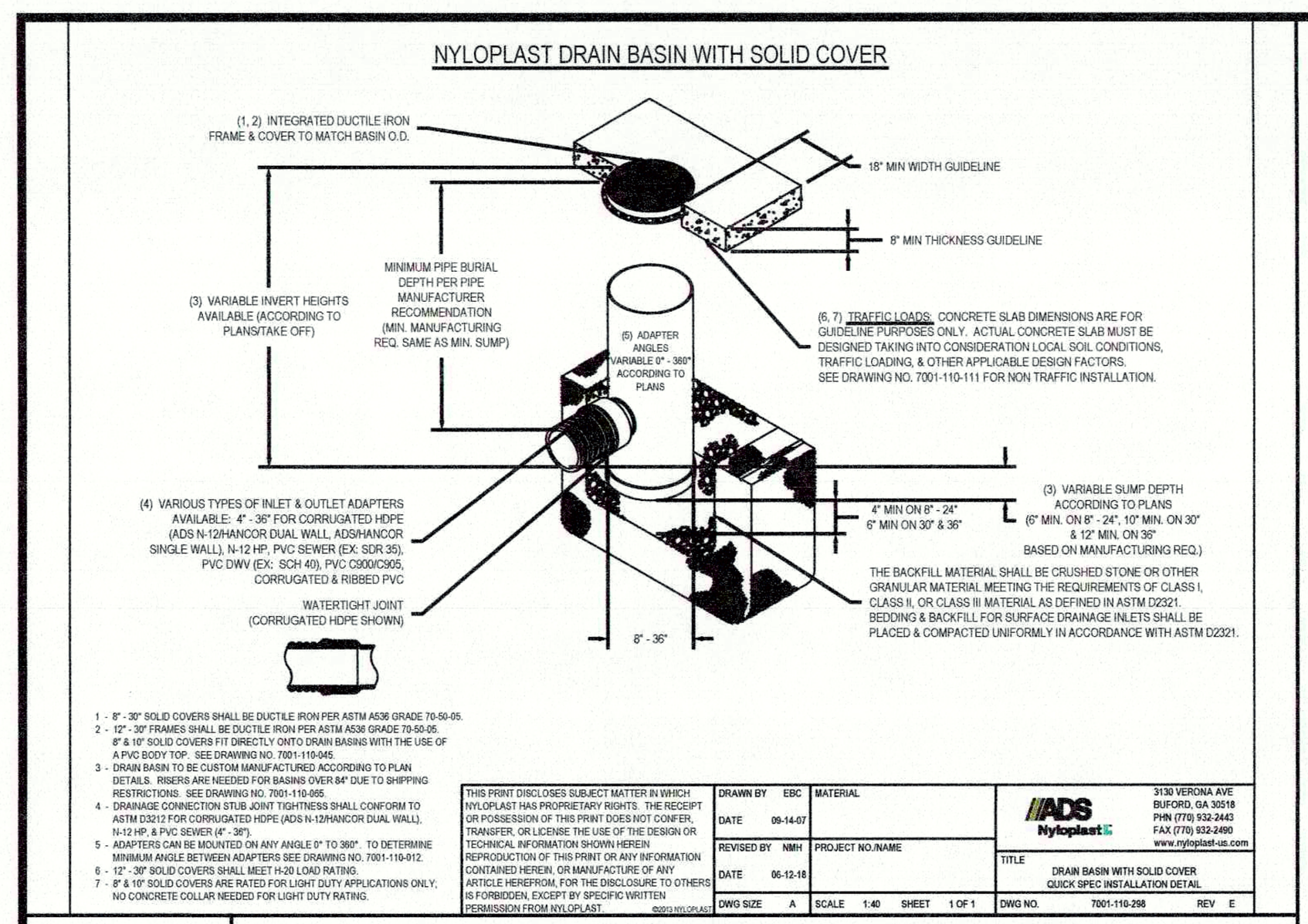
SCALE:
DRAWN BY: TK
DATE: 6-22-20

DRAINAGE DETAILS

SITE PLAN
PREPARED FOR
UNDERHILL FARM
UNDERHILL AVENUE
Town of Yorktown
Westchester County, New York

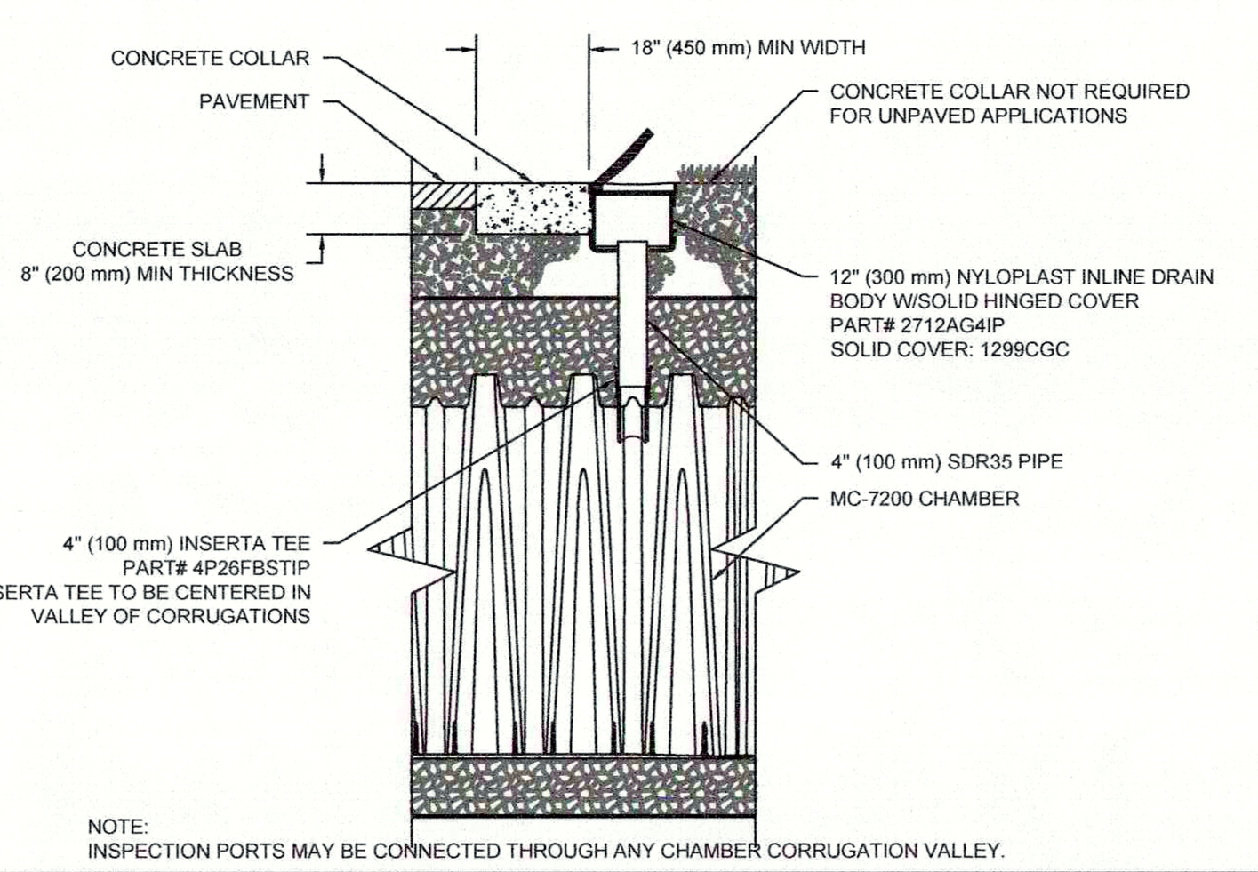
Sheet C-503

SW-1 NYLOPLAST DRAIN DETAIL



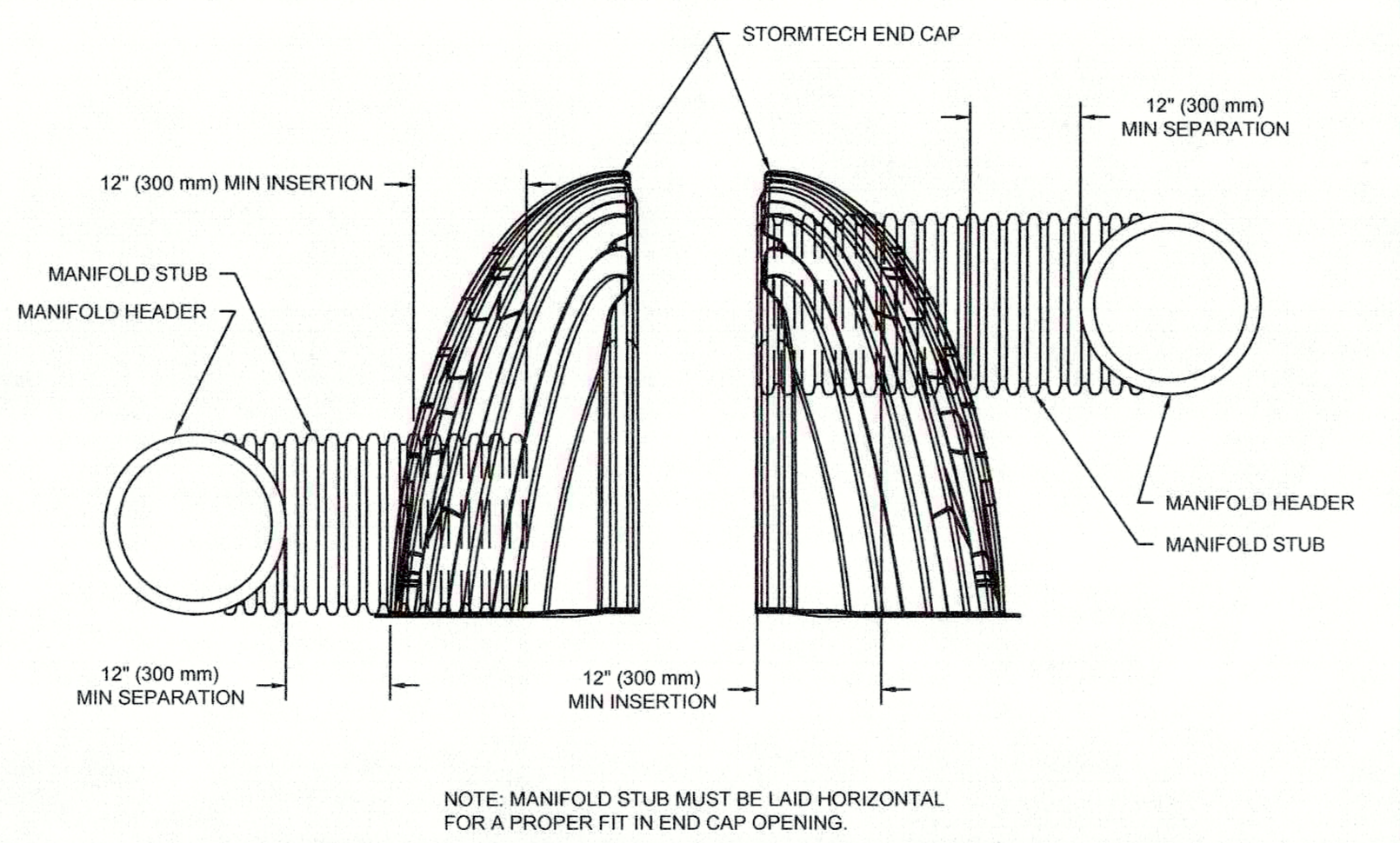
SW-1 **NYLOPLAST DRAIN DETAIL**
NOT TO SCALE

SW-2 4" PVC INSPECTION PORT DETAIL



SW-2 **4" PVC INSPECTION PORT DETAIL**
NOT TO SCALE

SW-3 END CAP INSERTION DETAIL

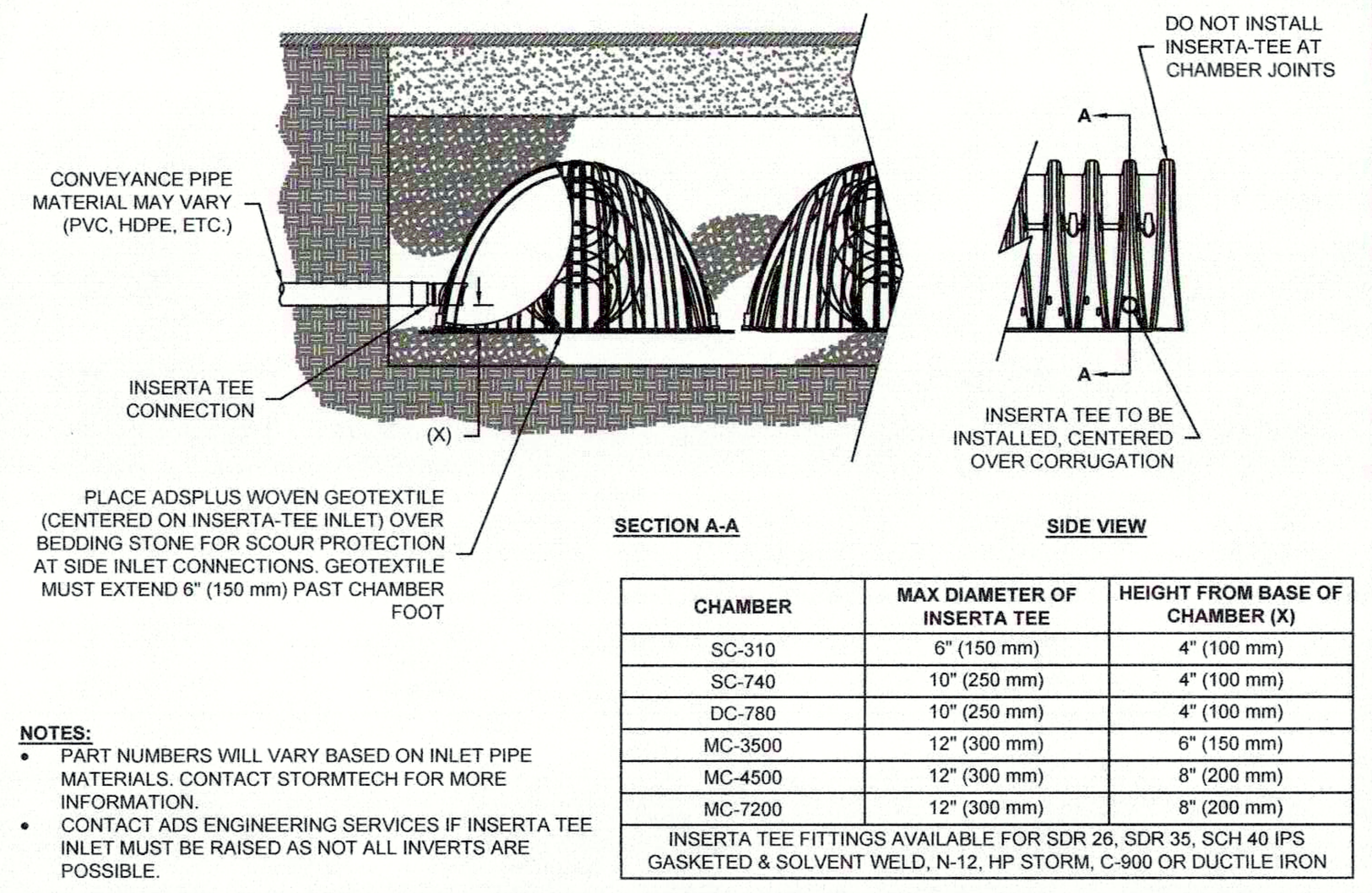


SW-3 **END CAP INSERTION DETAIL**
NOT TO SCALE

TEST PIT DESCRIPTION

TEST HOLE NO.	DEEP TEST PIT DESCRIPTION	TOTAL DEPTH	WATER LAVEL DROP IN INCHES	SOIL RATE (INCH/HR)
TP - #1	6" T.SOIL, 12" - 36" GREY FILL SANDY LOAM WELL GRADED, 42" - 48" LIGHT BROWN SILTY LAOM, 54" - 78" GREY / BROWN SANDY LOAM, WATER AT 8'	8'	.8 INCHES	.8
TP - #2	6" T.SOIL, 12" - 44" DARK BROWN SANDY SILTY LOAM, 42" -54" LIGHT BROWN SANDY LOAM, 54" - 78" COBBLES	8'	2 INCHES	2
TP - #3	6" T.SOIL, 12" - 36" DARK GREY ORGANIC, 30" LIGHT BROWN, 36" - 42" SILTY BROWN, SOME GRAVEL	8'	2 INCHES	2
TP - #4	6" TRACE TOPSOIL, 12" - 48" BROWN SANDY LOAM, WATER THROUGHOUT, WATER @ 2'	4'	17 INCHES	17
TP - #5	6" TOPSOIL, 12" - 18" ? , 24" - 54" BROWN SILTY LOAM MOTTLING, 60" GWT , 66" - 96" COBBLE'S GRAVEL			
TP - #6	6" TOPSOIL, 6" - 30" LIGHT BROWN SANDY LOAM, 30" - 96" MOTTLING.			
TP - #7	2" TOPSOIL, 4" BANK RUN, 15" SANDY LOAM, 31" ASPHALT, 36" - 48" BANK RUN, 50" - 96" SANDY LOAM WITH SOME SILT, SEEP @ 72".			
TP - #8	6" TOP SOIL, 6" - 96" SILT LOAM MOTTLED, GWT @ 60"			

SW-5 INSERTA-TEE SIDE INLET DETAIL



CHAMBER	MAX DIAMETER OF INSERTA TEE	HEIGHT FROM BASE OF CHAMBER (X)
SC-310	6" (150 mm)	4" (100 mm)
SC-740	10" (250 mm)	4" (100 mm)
DC-780	10" (250 mm)	4" (100 mm)
MC-3500	12" (300 mm)	6" (150 mm)
MC-4500	12" (300 mm)	8" (200 mm)
MC-7200	12" (300 mm)	8" (200 mm)

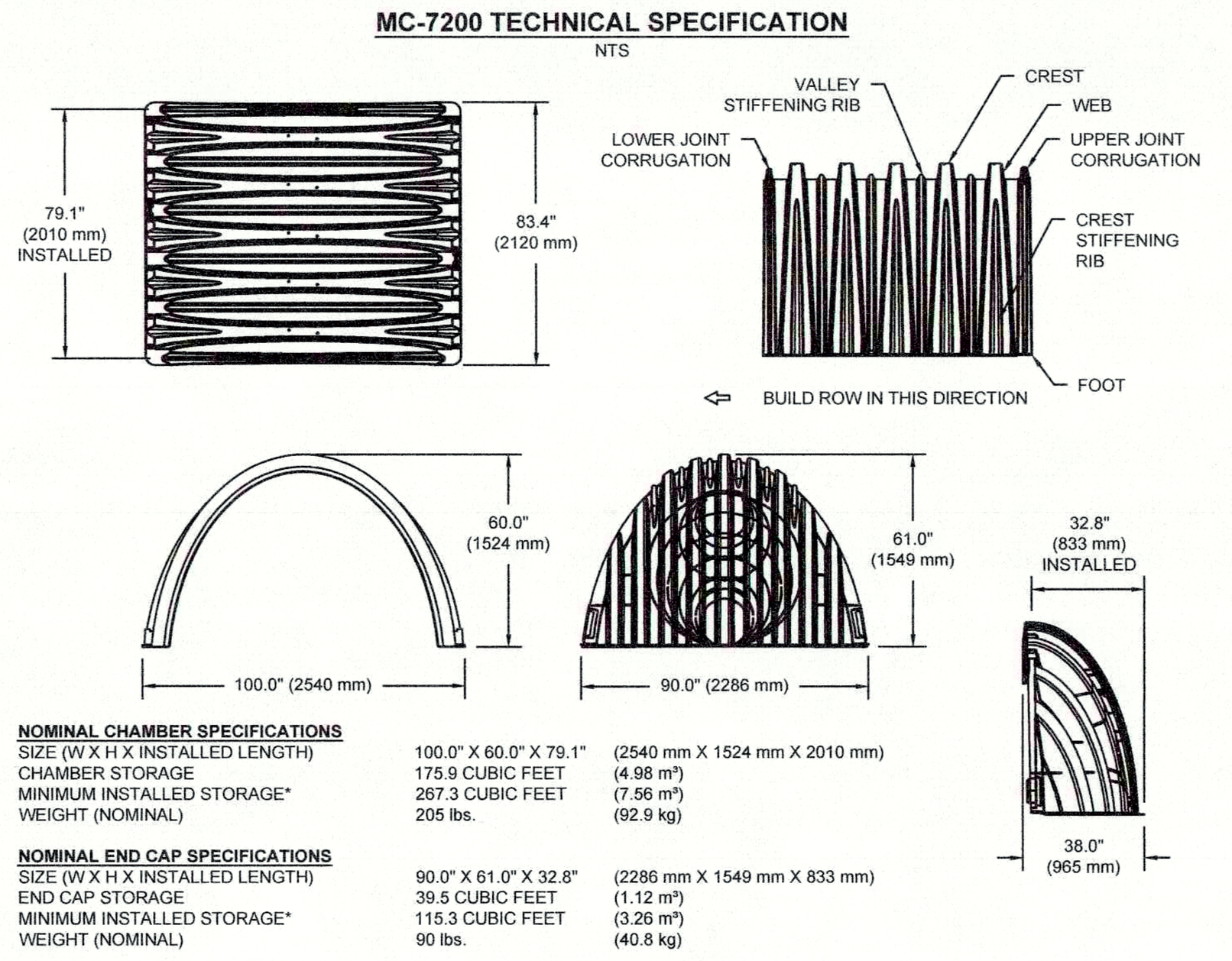
INSERTA TEE FITTINGS AVAILABLE FOR SDR 26, SDR 35, SCH 40 IPS GASKETED & SOLVENT WELD, N-12, HP STORM, C-900 OR DUCTILE IRON

NOTES:
- PART NUMBERS WILL VARY BASED ON INLET PIPE MATERIALS. CONTACT STORMTECH FOR MORE INFORMATION.
- CONTACT ADS ENGINEERING SERVICES IF INSERTA TEE INLET MUST BE RAISED AS NOT ALL INVERTS ARE POSSIBLE.

SW-5 **INSERTA-TEE SIDE INLET DETAIL**
NOT TO SCALE

SW-6 MC-7200 TECHNICAL SPECIFICATIONS

MC-7200 TECHNICAL SPECIFICATION
NTS



NOMINAL CHAMBER SPECIFICATIONS
SIZE (W X H X INSTALLED LENGTH) 100.0" X 60.0" X 79.1" (2540 mm X 1524 mm X 2010 mm)
CHAMBER STORAGE 175.9 CUBIC FEET (4.98 m³)
MINIMUM INSTALLED STORAGE* 267.3 CUBIC FEET (7.56 m³)
WEIGHT (NOMINAL) 205 lbs. (92.9 kg)

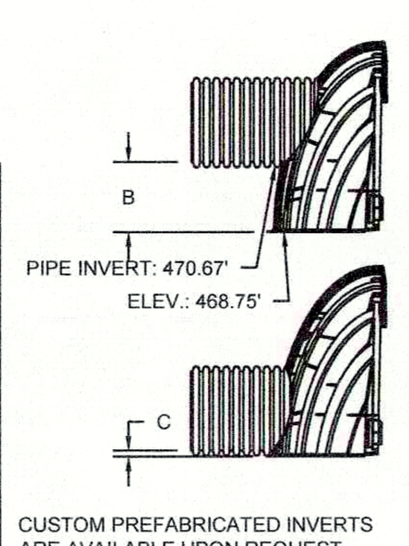
NOMINAL END CAP SPECIFICATIONS
SIZE (W X H X INSTALLED LENGTH) 90.0" X 61.0" X 32.8" (2286 mm X 1549 mm X 833 mm)
END CAP STORAGE 39.5 CUBIC FEET (1.12 m³)
MINIMUM INSTALLED STORAGE* 115.3 CUBIC FEET (3.26 m³)
WEIGHT (NOMINAL) 90 lbs. (40.8 kg)

*ASSUMES 12" (305 mm) STONE ABOVE, 9" (229 mm) STONE FOUNDATION AND BETWEEN CHAMBERS, 12" (305 mm) STONE PERIMETER IN FRONT OF END CAPS AND 40% STONE POROSITY.

PARTIAL CUT HOLES AT BOTTOM OF END CAP FOR PART NUMBERS ENDING WITH "B"
PARTIAL CUT HOLES AT TOP OF END CAP FOR PART NUMBERS ENDING WITH "T"
END CAPS WITH A PREFABRICATED WELDED STUB END WITH "W"

PART #	STUB	B	C
MC7200IEPP06T	6" (150 mm)	42.54" (1081 mm)	---
MC7200IEPP06B		---	0.86" (22 mm)
MC7200IEPP08T	8" (200 mm)	40.50" (1029 mm)	---
MC7200IEPP08B		---	1.01" (26 mm)
MC7200IEPP10T	10" (250 mm)	38.37" (975 mm)	---
MC7200IEPP10B		---	1.33" (34 mm)
MC7200IEPP12T	12" (300 mm)	35.69" (907 mm)	---
MC7200IEPP12B		---	1.55" (39 mm)
MC7200IEPP15T	15" (375 mm)	32.72" (831 mm)	---
MC7200IEPP15B		---	1.70" (43 mm)
MC7200IEPP18T / MC7200IEPP18TW	18" (450 mm)	29.36" (746 mm)	---
MC7200IEPP18B / MC7200IEPP18BW		---	1.97" (50 mm)
MC7200IEPP24T / MC7200IEPP24TW	24" (600 mm)	23.05" (585 mm)	---
MC7200IEPP24B / MC7200IEPP24BW		---	2.26" (57 mm)
MC7200IEPP30BW	30" (750 mm)	---	2.95" (75 mm)
MC7200IEPP36BW	36" (900 mm)	---	3.25" (83 mm)
MC7200IEPP42BW	42" (1050 mm)	---	3.55" (90 mm)

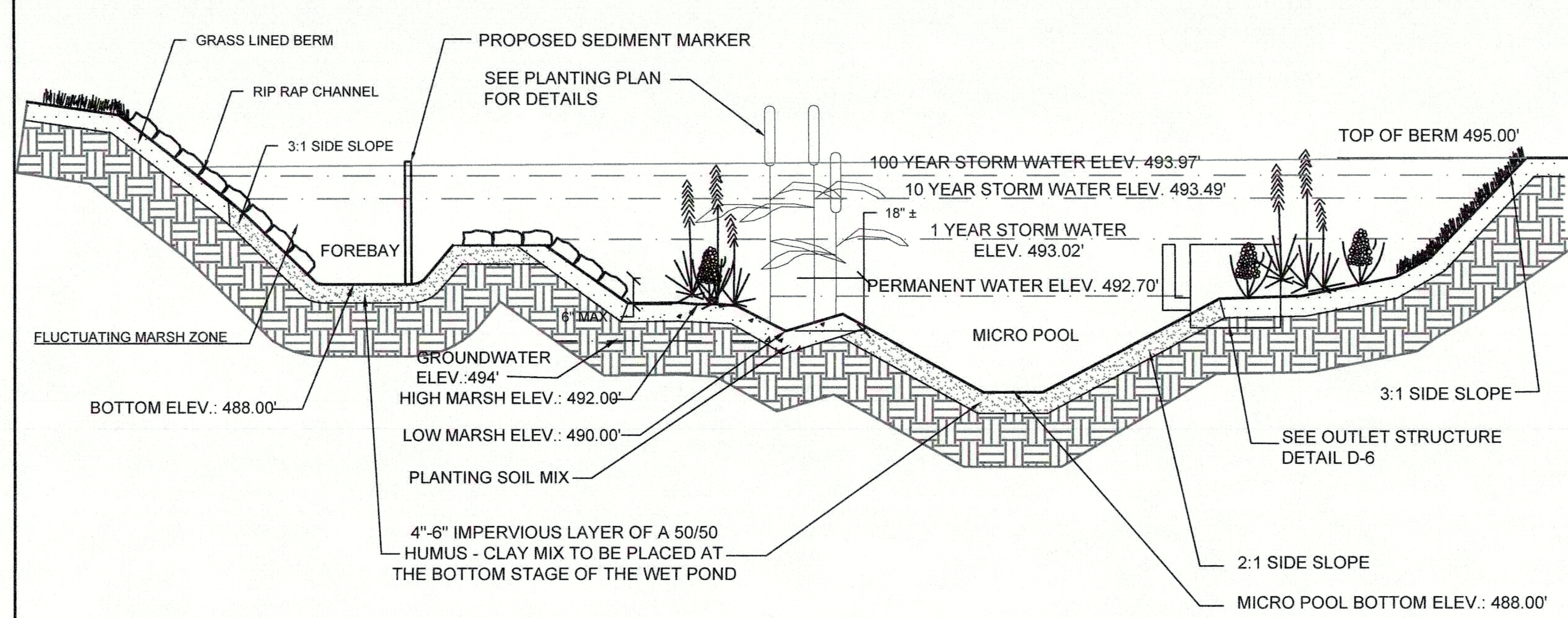
NOTE: ALL DIMENSIONS ARE NOMINAL



CUSTOM PREFABRICATED INVERTS ARE AVAILABLE UPON REQUEST. INVENTORIED MANIFOLDS INCLUDE 12-24" (300-600 mm) SIZE ON SIZE AND 15-48" (375-1200 mm) ECCENTRIC MANIFOLDS. CUSTOM INVERT LOCATIONS ON THE MC-7200 END CAP CUT IN THE FIELD ARE NOT RECOMMENDED FOR PIPE SIZES GREATER THAN 10" (250 mm). THE INVERT LOCATION IN COLUMN 'B' ARE THE HIGHEST POSSIBLE FOR THE PIPE SIZE.

SW-6 **MC-7200 TECHNICAL SPECIFICATIONS**
NOT TO SCALE

SW-9 POCKET WETLAND (W-4) TYPICAL SECTION



NOTES:
1. THE BASIN SHOULD BE SEEDED WITH THE TEMPORARY SEED MIX DURING THE CONSTRUCTION PHASE WHEN IT IS BEING USED AS A SEDIMENT TRAP. ONCE THE ENTIRE SITE IS STABLE, THE FINAL SHAPING AND PREPARATION OF THE POCKET POND SHALL BE COMPLETED. THE PLANTINGS SHALL BE DONE AT THE START OF SPRING OR FALL WET SEASONS TO INSURE SURVIVAL OF PLANT MATERIALS.
2. ALL PLUGS SHALL BE SPACED 18" O.C. FOR HIGH AND LOW MARSH
3. BUFFER FRINGE SHRUBS SHALL BE PLACED 5' O.C.
4. BUFFER UPLAND PLANTINGS SHALL BE PER THE PLAN SPACED 20' O.C
5. SHRUBS PLANTINGS SHALL BE OF MATURE PLANTS.
6. IF A MINIMUM COVERAGE OF 50% IS NOT ACHIEVED IN THE PLANTED WETLAND ZONES AFTER THE SECOND GROWING SEASON, A REINFORCEMENT PLANTING IS REQUIRED.

SUGGESTED POCKET WETLAND PLANTINGS

PLANTINGS

LOW & HIGH MARSH
Narrowleaf Cattail (Typha angustifolia)
Lizard's Tail (Saururus cernuus)
Pickerel Weed (Pontederia cordata)
Swamp Milkweed (Asclepias incarnata)
Soft Stem Bulrush (Scirpus validus)
Arrow arum (Peltandra virginica)
Smartweed (Polygonum spp.)

HIGH MARSH
Blue Flag (Iris Versicolor)
Blue Joint (Calamagrotis canadensis)
Marsh Marigold (Caltha Palustris)
Yellow Flag (Iris Pseudocorus)

BUFFER FRINGE
Meadowsweet (Spirea latifolia)
Rose-Rugosa (Rosa rugosa)
Flowering Dogwood (Cornus florida)
Shadblow (Amelanchier canadensis)
Black Chokeberry (Aronia melanocarpa)
Redosier Dogwood (Cornus sericea)
Buttonbush (Cephalanthus occidentalis)
Inkberry (Ilex glabra)
Silky Dogwood (Cornus amomum)

BUFFER UPLAND
White Ash (Fraxinus americana)
White Oak (Quercus alba)
Tulip Poplar (Lirodendron tulipifera)

TEMPORARY VEGETATIVE COVER SPECIFICATIONS FOR DETENTION BASIN SIDE SLOPES

NORTHEAST WETLAND GRASS SEED MIX
AS SUPPLIED BY SOUTHERN TIER CONSULTING, INC. WEST CLARKSVILLE NY (716) 968-8120

AGROSTIS STOLONIFERA	CREEPING BENTGRASS APPLY AT 1 LB/3000 SF
POA TRIVIALS	ROUGHBLUEGRASS
ALOPECURUS ARUNDINACEUS	MEADOW FOXTAIL
PANICUM CLANDESTINUM	DEERTONGUE

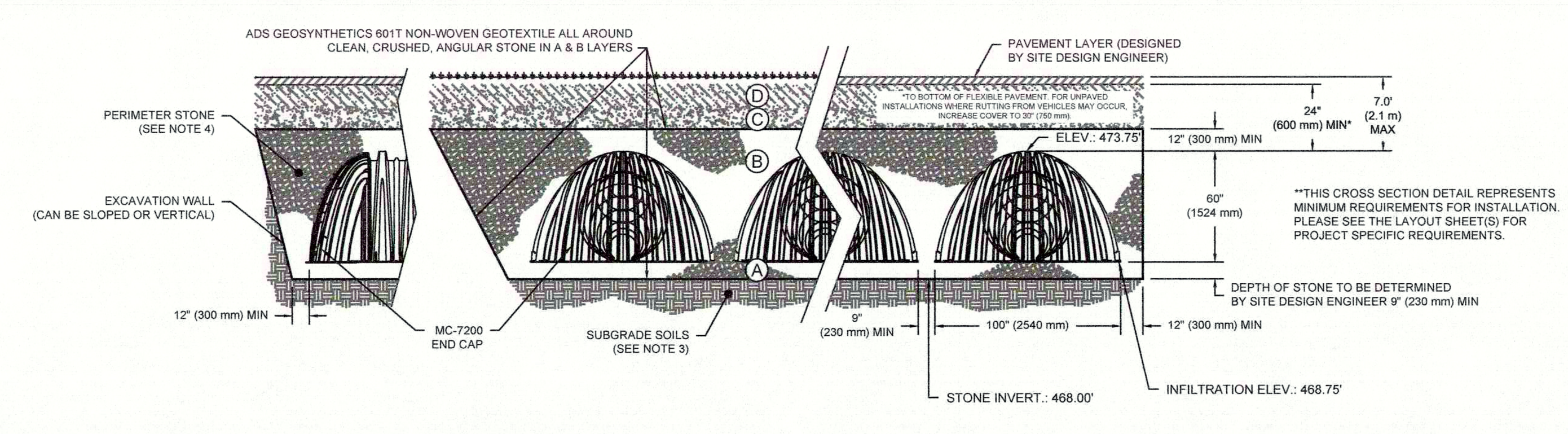
SW-9 **POCKET WETLAND (W-4) TYPICAL SECTION**
NOT TO SCALE

SW-7 MC-7200 CROSS SECTION DETAIL

ACCEPTABLE FILL MATERIALS: STORMTECH MC-7200 CHAMBER SYSTEMS

MATERIAL LOCATION		DESCRIPTION	AASHTO MATERIAL CLASSIFICATIONS	COMPACTION / DENSITY REQUIREMENT
D	**FINAL FILL:** FILL MATERIAL FOR LAYER 'D' STARTS FROM THE TOP OF THE 'C' LAYER TO THE BOTTOM OF FLEXIBLE PAVEMENT OR UNPAVED FINISHED GRADE ABOVE. NOTE THAT PAVEMENT SUBBASE MAY BE PART OF THE 'D' LAYER	ANY SOIL/ROCK MATERIALS, NATIVE SOILS, OR PER ENGINEER'S PLANS. CHECK PLANS FOR PAVEMENT SUBGRADE REQUIREMENTS.	N/A	PREPARE PER SITE DESIGN ENGINEER'S PLANS. PAVED INSTALLATIONS MAY HAVE STRINGENT MATERIAL AND PREPARATION REQUIREMENTS.
C	**INITIAL FILL:** FILL MATERIAL FOR LAYER 'C' STARTS FROM THE TOP OF THE EMBEDMENT STONE ('B' LAYER) TO 24" (600 mm) ABOVE THE TOP OF THE CHAMBER. NOTE THAT PAVEMENT SUBBASE MAY BE A PART OF THE 'C' LAYER.	GRANULAR WELL-GRADED SOIL/AGGREGATE MIXTURES, <35% FINES OR PROCESSED AGGREGATE. MOST PAVEMENT SUBBASE MATERIALS CAN BE USED IN LIEU OF THIS LAYER.	AASHTO M145[1] A-1, A-2-4, A-3 OR AASHTO M43[1] 3, 357, 4, 467, 5, 56, 57, 6, 67, 68, 7, 78, 8, 89, 9, 10	BEGIN COMPACTIONS AFTER 24" (600 mm) OF MATERIAL OVER THE CHAMBERS IS REACHED. COMPACT ADDITIONAL LAYERS IN 12" (300 mm) MAX LIFTS TO A MIN. 95% PROCTOR DENSITY FOR WELL GRADED MATERIAL AND 95% RELATIVE DENSITY FOR PROCESSED AGGREGATE MATERIALS.
B	**EMBEDMENT STONE:** FILL SURROUNDING THE CHAMBERS FROM THE FOUNDATION STONE ('A' LAYER) TO THE 'C' LAYER ABOVE.	CLEAN, CRUSHED, ANGULAR STONE OR RECYCLED CONCRETE[5]	AASHTO M43[1] 3, 357, 4, 467, 5, 56, 57	NO COMPACTION REQUIRED.
A	**FOUNDATION STONE:** FILL BELOW CHAMBERS FROM THE SUBGRADE UP TO THE FOOT (BOTTOM) OF THE CHAMBER.	CLEAN, CRUSHED, ANGULAR STONE OR RECYCLED CONCRETE[5]	AASHTO M43[1] 3, 357, 4, 467, 5, 56, 57	PLATE COMPACT OR ROLL TO ACHIEVE A FLAT SURFACE.[2,3]

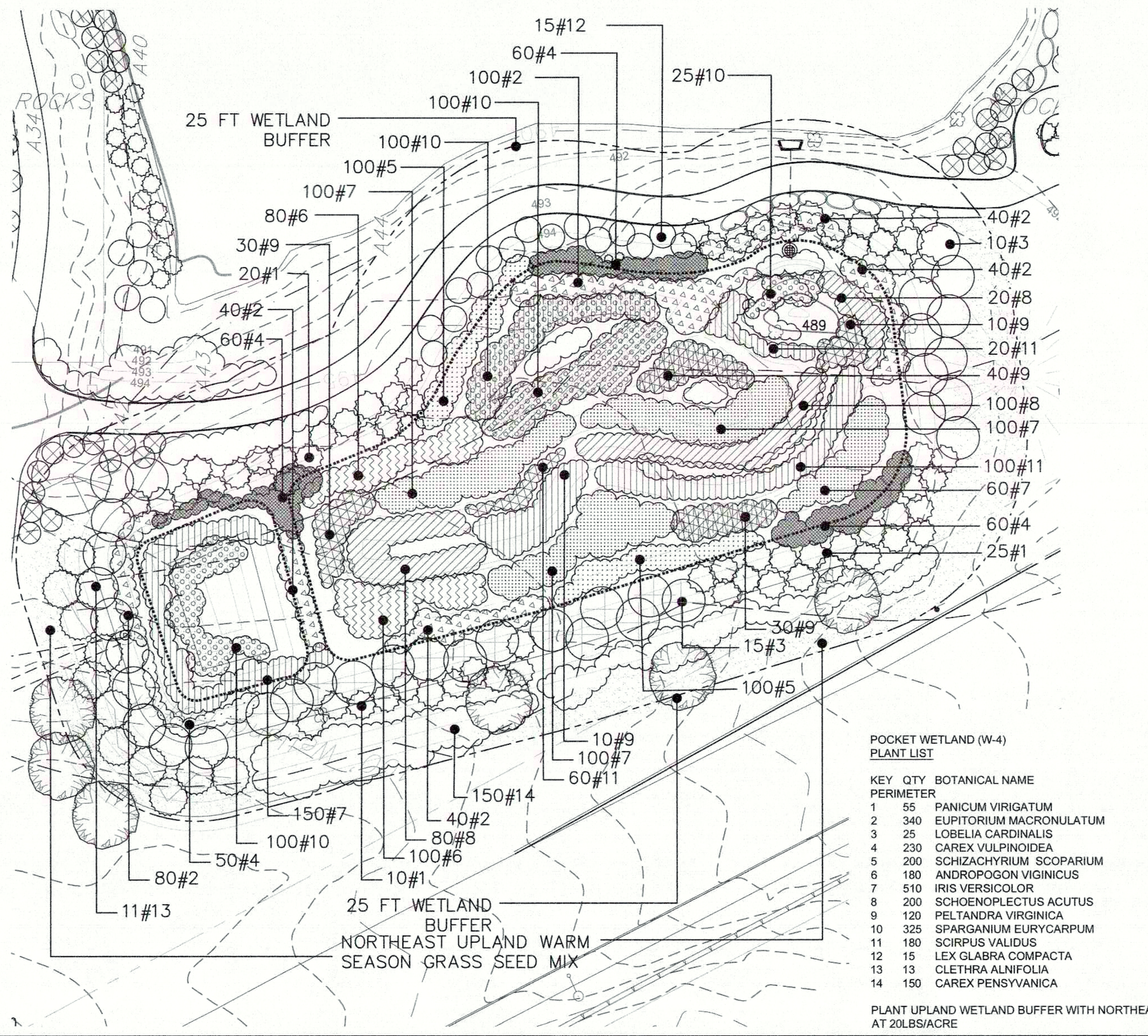
PLEASE NOTE:
1. THE LISTED AASHTO DESIGNATIONS ARE FOR GRADATIONS ONLY. THE STONE MUST ALSO BE CLEAN, CRUSHED, ANGULAR. FOR EXAMPLE, A SPECIFICATION FOR #4 STONE WOULD STATE: "CLEAN, CRUSHED, ANGULAR NO. 4 (AASHTO M43) STONE".
2. STORMTECH COMPACTION REQUIREMENTS ARE MET FOR 'A' LOCATION MATERIALS WHEN PLACED AND COMPACTED IN 9" (230 mm) (MAX) LIFTS USING TWO FULL COVERAGES WITH A VIBRATORY COMPACTOR.
3. WHERE INFILTRATION SURFACES MAY BE COMPROMISED BY COMPACTION, FOR STANDARD DESIGN LOAD CONDITIONS, A FLAT SURFACE MAY BE ACHIEVED BY RAKING OR DRAGGING WITHOUT COMPACTION EQUIPMENT. FOR SPECIAL LOAD DESIGNS, CONTACT STORMTECH FOR COMPACTION REQUIREMENTS.
4. ONCE LAYER 'C' IS PLACED, ANY SOIL/MATERIAL CAN BE PLACED IN LAYER 'D' UP TO THE FINISHED GRADE. MOST PAVEMENT SUBBASE SOILS CAN BE USED TO REPLACE THE MATERIAL REQUIREMENTS OF LAYER 'C' OR 'D' AT THE SITE DESIGN ENGINEER'S DISCRETION.
5. WHERE RECYCLED CONCRETE AGGREGATE IS USED IN LAYERS 'A' OR 'B' THE MATERIAL SHOULD ALSO MEET THE ACCEPTABILITY CRITERIA OUTLINED IN TECHNICAL NOTE 6.20 "RECYCLED CONCRETE STRUCTURAL BACKFILL".



NOTES:
1. CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2418, "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS" CHAMBER CLASSIFICATION 60x101
2. MC-7200 CHAMBERS SHALL BE DESIGNED IN ACCORDANCE WITH ASTM F2787 "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
3. THE SITE DESIGN ENGINEER IS RESPONSIBLE FOR ASSESSING THE BEARING RESISTANCE (ALLOWABLE BEARING CAPACITY) OF THE SUBGRADE SOILS AND THE DEPTH OF FOUNDATION STONE WITH CONSIDERATION FOR THE RANGE OF EXPECTED SOIL MOISTURE CONDITIONS.
4. PERIMETER STONE MUST BE EXTENDED HORIZONTALLY TO THE EXCAVATION WALL FOR BOTH VERTICAL AND SLOPED EXCAVATION WALLS.
5. REQUIREMENTS FOR HANDLING AND INSTALLATION:
   - TO MAINTAIN THE WIDTH OF CHAMBERS DURING SHIPPING AND HANDLING, CHAMBERS SHALL HAVE INTEGRAL, INTERLOCKING STACKING LUGS.
   - TO ENSURE A SECURE JOINT DURING INSTALLATION AND BACKFILL, THE HEIGHT OF THE CHAMBER JOINT SHALL NOT BE LESS THAN 3".
   - TO ENSURE THE INTEGRITY OF THE ARCH SHAPE DURING INSTALLATION, a) THE ARCH STIFFNESS CONSTANT AS DEFINED IN SECTION 6.2.8 OF ASTM F2418 SHALL BE GREATER THAN OR EQUAL TO 500 LBS/FT/%. AND b) TO RESIST CHAMBER DEFORMATION DURING INSTALLATION AT ELEVATED TEMPERATURES (ABOVE 73° F / 23° C), CHAMBERS SHALL BE PRODUCED FROM REFLECTIVE GOLD OR YELLOW COLORS.

SW-7 **MC-7200 CROSS SECTION DETAIL**
NOT TO SCALE

SW-12 POCKET WETLAND PLANTING ZONES



POCKET WETLAND (W-4)
PLANT LIST

KEY	QTY	BOTANICAL NAME	COMMON NAME	SIZE
PERIMETER				
1	55	PANICUM VIRIGATUM	SWITHCGRASS	1 GAL
2	340	EUPITORIUM MACRONULATUM	GATEWAY JOE PYEWEED	1 GAL
3	25	LOBELIA CARDINALIS	CARDINAL FLOWER	1 GAL
4	230	CAREX VULPINOIDEA	FOX SEDGE	4" POT
5	200	SCHIZACHYRIUM SCOPARIUM	LITTLE BLUESTEM	4"POT
6	180	ANDROPOGON VIGINICUS	BROOMSEDGE BLUESTEM	4" POT
7	510	IRIS VERSICOLOR	BLUEFLAG BLUE IRIS	2" PLUG
8	200	SCHOENOPLECTUS ACUTUS	HARDSTEM BULLRUSH	2" PLUG
9	120	PELTANDRA VIRGINICA	ARROW ARUM	2" PLUG
10	325	SPARGANIUM EURYCARPUM	GIANT BULLRUSH	2" PLUG
11	180	SCIRPUS VALIDUS	SOFTSTEM BULRUSH	2" PLUG
12	15	LEX GLABRA COMPACTA	COMPACT INLBERRY	2 GAL
13	13	CLETHRA ALNIFOLIA	SUMMERSWEET CLETHRA	2 GAL
14	150	CAREX PENSYVANICA	PENNSYLVANIA SEDGE	4" POT

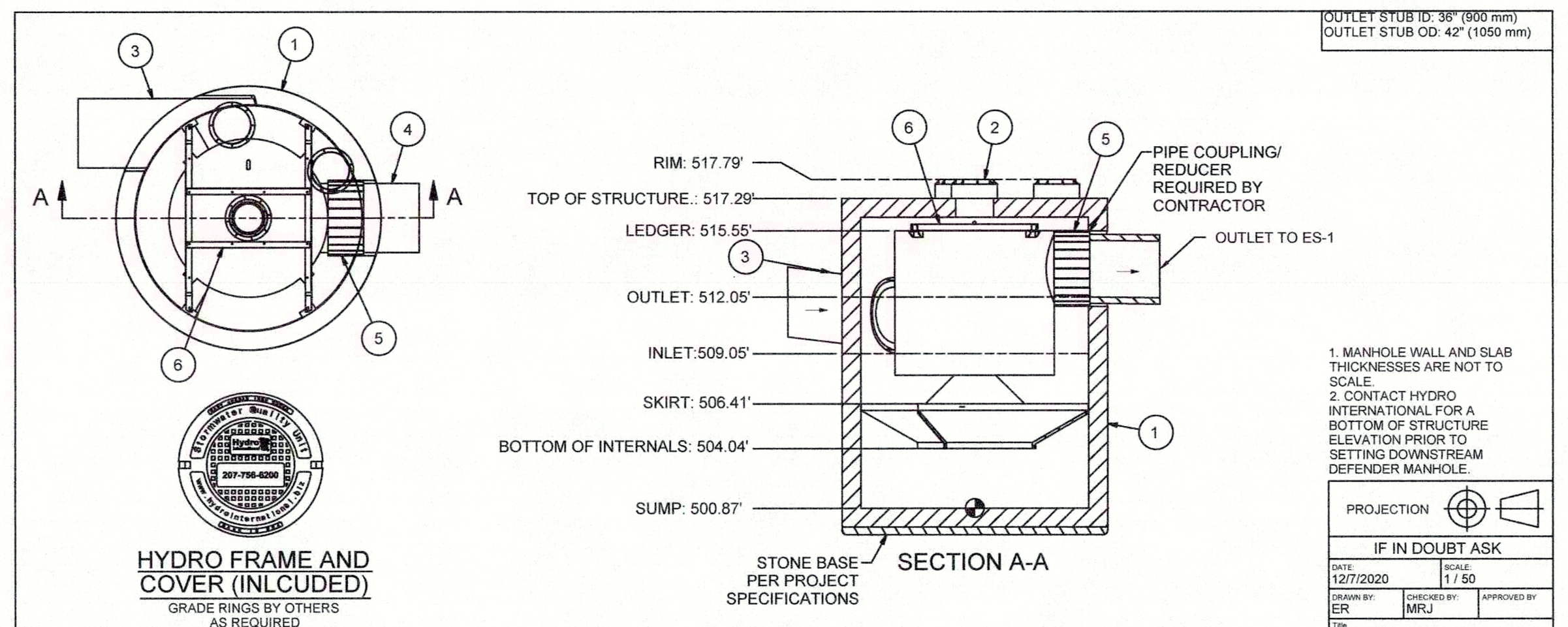
PLANT UPLAND WETLAND BUFFER WITH NORTHEAST UPLAND NATIVE WARM SEASON GRASS MIX AT 20LBS/ACRE

PROJECT TITLE: UNDERHILL FARMS SUBDISION
GREENWICH CT
DWG. TITLE: POCKET WETLAND W-4
SCALE: 1"=20'
SHEET: LSP-3.1
DATE: 3/18/24
REVISED: XXXX
Blades & Goven LANDSCAPE ARCHITECTS P.O. BOX 1381 - FAIRFIELD, CT 06825 (OFFICE) 203.254.8830

SW-12 **POCKET WETLAND PLANTING ZONES**
NOT TO SCALE

SW-10 DOWNSTREAM DEFENDER (DD-1) DETAIL

OUTLET STUB ID: 36" (900 mm)
OUTLET STUB OD: 42" (1050 mm)



1. MANHOLE WALL AND SLAB THICKNESSES ARE NOT TO SCALE.
2. CONTACT HYDRO INTERNATIONAL FOR A BOTTOM OF STRUCTURE ELEVATION PRIOR TO SETTING DOWNSTREAM DEFENDER MANHOLE.

PROJECTION
IF IN DOUBT ASK
DATE: 12/7/2020 SCALE: 1 / 50
DRAWN BY: ER CHECKED BY: MRJ APPROVED BY:
Title 12ft-DIAMETER DOWNSTREAM DEFENDER
GENERAL ARRANGEMENT
Hydro International
hydro-int.com
HYDRO INTERNATIONAL
WEIGHT: N/A MATERIAL:
STOCK NUMBER:
DRAWING NO.: DD GA-12
SHEET SIZE: B SHEET: 1 OF 1 Rev: A

NOTE: NOT FOR CONSTRUCTION.
CONTACT HYDRO FOR SITE SPECIFIC DETAIL

EQUIPMENT PERFORMANCE
The stormwater treatment unit shall adhere to the hydraulic parameters given in the chart below and provide the removal efficiencies and storage capacities as follows:
1. The treatment system shall use an induced vortex to separate pollutants from stormwater runoff.
2. Peak Hydraulic Capacity: 38.0 cfs (1076 l/s)
3. Sediment Storage Capacity: 14.70cu. yd. (11.24 cu. m)
4. Continuous Oil Storage Capacity: 1770 gal. (6700 liters)
5. Sediment shall be stored in a zone that is isolated from the main flow path and protected from reintrainment by a benching skirt.
6. For more product information including regulatory acceptances, please visit https://hydro-int.com/en/products/downstream-defender

PARTS LIST

ITEM	QTY	SIZE (in)	DESCRIPTION
1	1	144	PRECAST MANHOLE (BY HYDRO VIA PRECASTER)
2	3	24	FRAME AND COVER (QTY 3)
3	1	30	INLET PIPE
4	1	30	OUTLET PIPE
5	1		PIPE COUPLING
6	1		INTERNAL COMPONENTS (PRE-INSTALLED)

SW-10 **DOWNSTREAM DEFENDER (DD-1) DETAIL**
NOT TO SCALE

SW-8 DOWNSTREAM DEFENDER

Page | 5 Downstream Defender® Operation and Maintenance Manual

The Downstream Defender® allows for easy and safe inspection, monitoring and clean-out procedures. A commercially or municipally owned sump-vac is used to remove captured sediment and floatables. Access ports are located in the top of the manhole. On the 6-ft (1.8m), 8-ft (2.4m), 10-ft (3.0m) and 12-ft (3.7m) units, the floatables access port is above the outlet pipe between the concrete manhole wall and the dip plate. The sediment removal access ports for all Downstream Defender® models are located directly over the hollow center shaft.

Maintenance events may include Inspection, Oil & Floatables Removal, and Sediment Removal. Maintenance events do not require entry into the Downstream Defender®, nor do they require the internal components of the Downstream Defender® to be removed. In the case of inspection and floatables removal, a vactor truck is not required. However, a vactor truck is required if the maintenance event is to include oil removal and/or sediment removal.

Determining Your Maintenance Schedule

The frequency of cleanout is determined in the field after installation. During the first year of operation, the unit should be inspected every six months to determine the rate of sediment and floatables accumulation. A simple probe such as a Sludge Judge® can be used to determine the level of accumulated solids stored in the sump. This information can be recorded in the maintenance log (see page 9) to establish a routine maintenance schedule.

The vactor procedure, including both sediment and oil/floatables removal, for a 6-ft (1.8m) Downstream Defender® typically takes less than 30 minutes and removes a combined water/oil volume of about 500 gallons (1900 liters).

Inspection Procedures

Inspection is a simple process that does not involve entry into the Downstream Defender®. Maintenance crews should be familiar with the Downstream Defender® and its components prior to inspection.

Scheduling
- It is important to inspect your Downstream Defender® every six months during the first year of operation to determine your site-specific rate of pollutant accumulation
- Typically, inspection may be conducted during any season of the year
- Sediment removal is not required unless sediment depths exceed 75% of maximum clean-out depths stated in Table 1

Recommended Equipment
- Safety Equipment and Personal Protective Equipment (traffic cones, work gloves, etc.)
- Crow bar or other tool to remove grate or lid
- Pole with skimmer or net
- Sediment probe (such as a Sludge Judge®)
- Trash bag for removed floatables
- Downstream Defender® Maintenance Log

Table 1. Downstream Defender® Pollutant Storage Capacities and Max. Cleanout Depths.

Unit Diameter		Total Oil Storage		Oil Clean-out Depth		Total Sediment Storage		Sediment Clean-out Depth		Max. Liquid Volume Removed	
(ft)	(m)	(gal)	(L)	(in)	(cm)	(yd³)	(m³)	(in)	(cm)	(gal)	(L)
4	1.2	70	265	<16	<41	0.70	0.53	<18	<45	384	1,454
6	1.8	216	818	<23	<58	2.10	1.61	<24	<61	1,239	4,690
8	2.4	540	2,044	<33	<84	4.65	3.56	<30	<76	2,884	10,917
10	3.0	1,050	3,975	<42	<107	8.70	6.65	<36	<91	5,546	20,994
12	3.7	1,770	6,700	<49	<125	14.70	11.24	<42	<107	9,460	35,810

NOTES
1. Refer to Dowmstream Defender® Clean-out Detail (Fig.2) for measurement of depths.
2. Oil accumulation is typically less than sediment, however, removal of oil and sediment during the same service is recommended.
3. Remove floatables first, then remove sediment storage volume.
4. Sediment removal is not required unless sediment depths exceed 75% of maximum clean-out depths stated in Table 1.

Page | 6 Downstream Defender® Operation and Maintenance Manual

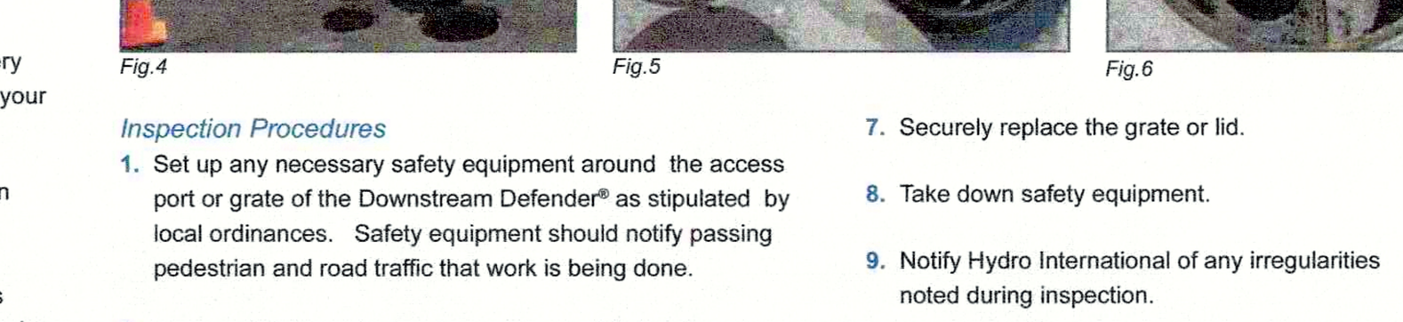


Fig.4 Fig.5 Fig.6

Inspection Procedures
1. Set up any necessary safety equipment around the access port or grate of the Downstream Defender® as stipulated by local ordinances. Safety equipment should notify passing pedestrian and road traffic that work is being done.
2. Remove the lids to the manhole (Fig. 4). NOTE: The 4-ft (1.2m) Downstream Defender® will only have one lid.
3. Without entering the vessel, look down into the chamber to inspect the inside. Make note of any irregularities. See Fig.7 and 8 for typical inspection views.
4. Without entering the vessel, use the pole with the skimmer net to remove floatables and loose debris from the outer annulus of the chamber.
5. Using a sediment probe such as a Sludge Judge®, measure the depth of sediment that has collected in the sump of the vessel (Fig.5).
6. On the Maintenance Log (see page 9), record the date, unit location, estimated volume of floatables and gross debris removed, and the depth of sediment measured. Also note any apparent irregularities such as damaged components or blockages.
7. Securely replace the grate or lid.
8. Take down safety equipment.
9. Notify Hydro International of any irregularities noted during inspection.

Floatables and Sediment Cleanout

Floatables cleanout is typically done in conjunction with sediment removal. A commercially or municipally owned sump-vac is used to remove captured sediment and floatables (Fig.6).

Floatables and loose debris can also be netted with a skimmer and pole. The access port located at the top of the manhole provides unobstructed access for a vactor hose and skimmer pole to be lowered to the base of the sump.

Scheduling
- Floatables and sump cleanout are typically conducted once a year during any season.
- If sediment depths are greater than 75% of maximum clean-out depths stated in Table 1, sediment removal is required.
- Floatables and sump cleanout should occur as soon as possible following a spill in the contributing drainage area.


Fig.7 View over center shaft into sediment storage zone.
Fig.8 View of outer annulus of floatables and oil collection zone.

Hydro International (Stormwater), 94 Hutchins Drive, Portland ME 04102
Tel: (207) 756-6200 Fax: (207) 756-6212 Web: www.hydro-int.com

Page | 7 Downstream Defender® Operation and Maintenance Manual

Recommended Equipment
- Safety Equipment (traffic cones, etc)
- Crow bar or other tool to remove grate or lid
- Pole with skimmer or net (if only floatables are being removed)
- Sediment probe (such as a Sludge Judge®)
- Vactor truck (6-inch/150mm diameter flexible hose recommended)
- Downstream Defender® Maintenance Log

Floatables and Sediment Clean Out Procedures
1. Set up any necessary safety equipment around the access port or grate of the Downstream Defender® as stipulated by local ordinances. Safety equipment should notify passing pedestrian and road traffic that work is being done.
2. Remove the lids to the manhole NOTE: The 4-ft (1.2m) Downstream Defender® will only have one lid.
3. Without entering the vessel, look down into the chamber to inspect the inside. Make note of any irregularities.
4. Using the Floatables Port for access, remove oil and floatables stored on the surface of the water with the vactor hose or the skimmer net (Fig.9, top).
5. Using a sediment probe such as a Sludge Judge®, measure the depth of sediment that has collected in the sump of the vessel and record it in the Maintenance Log (Pg.9).
6. Once all floatables have been removed, drop the vactor hose to the base of the sump via the Central Access Port. Vactor out the sediment and gross debris off the sump floor (Fig.6 and 9).
7. Retract the vactor hose from the vessel.
8. On the Maintenance Log provided by Hydro International, record the date, unit location, estimated volume of floatables and gross debris removed, and the depth of sediment measured. Also note any apparent irregularities such as damaged components or blockages.
9. Securely replace the grate or lid.

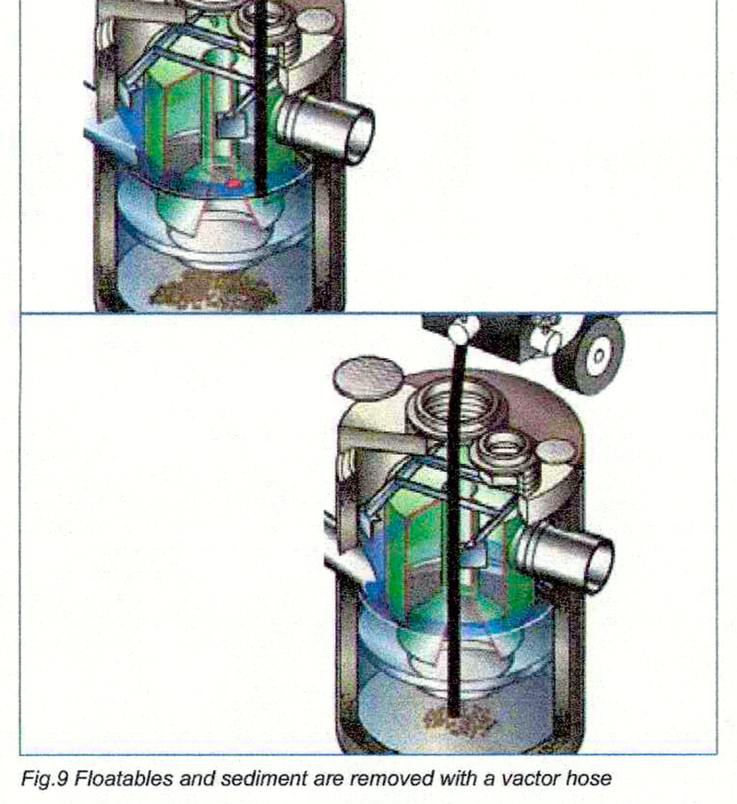


Fig.9 Floatables and sediment are removed with a vactor hose

Maintenance at a Glance

Activity	Frequency
Inspection	- Regularly during first year of installation - Every 6 months after the first year of installation
Oil and Floatables Removal	- Once per year, with sediment removal - Following a spill in the drainage area
Sediment Removal	- Once per year or as needed - Following a spill in the drainage area

NOTE: For most cleanouts it is not necessary to remove the entire volume of liquid in the vessel. Only removing the first few inches of oils/floatables and the sediment storage volume is required.

Page | 4 Downstream Defender® Operation and Maintenance Manual

Operation

Introduction
The Downstream Defender® operates on simple fluid hydraulics. It is self-activating, has no moving parts, no external power requirement and is manufactured from durable non-corrosive components. No manual procedures are required to operate the unit and maintenance is limited to monitoring accumulations of stored pollutants and periodic clean-outs. The Downstream Defender® has been designed to allow for easy and safe access for inspection/monitoring and clean-out procedures. Entry into the unit or removal of the internal components is not necessary for maintenance, thus safety concerns related to confined-space-entry are avoided.

Pollutant Capture and Retention
The internal components of the Downstream Defender® have been designed to protect the oil/floatables and sediment storage volumes so that separator performance is not reduced as pollutants accumulate between clean-outs (Fig.2). The Downstream Defender® vessel remains wet between storm events. Oil and floatables are stored on the water surface in the outer annulus separate from the sediment storage volume in the sump of the unit providing the option for separate oil disposal, and accessories such as adsorbant pads. Since the oil/floatables and sediment storage volumes are isolated from the active separation region, the potential for re-suspension and washout of stored pollutants between clean-outs is minimized.

Wet Sump
The sump of the Downstream Defender® retains a standing water level between storm events. The water in the sump prevents stored sediment from solidifying in the base of the unit. (The clean-out procedure becomes more difficult and labor intensive if the system allows fine sediment to dry-out and consolidate. Dried sediment must be manually removed by maintenance crews. This is a labor intensive operation in a hazardous environment.)

Blockage Protection
The Downstream Defender® has large clear openings and no internal restrictions or weirs, minimizing the risk of blockage and hydraulic losses. In addition to increasing the system headloss, orifices and internal weirs can increase the risk of blockage within the unit.

Maintenance

Overview
The Downstream Defender® protects the environment by removing a wide range of pollutants from stormwater runoff. Periodic removal of these captured pollutants is essential to the continuous, long-term functioning of the Downstream Defender®. The Downstream Defender® will capture and retain sediment and oil until the sediment and oil storage volumes are full to capacity. When sediment and oil storage capacities are reached, the Downstream Defender® will no longer be able to store removed sediment and oil. Maximum pollutant storage capacities are provided in Table 1.

Hydro International recommends that maintenance crews watch the Downstream Defender® maintenance training video at www.hydro-int.com/us/products/downstream-defender. Maintenance providers are also encouraged to participate in Hydro International's Maintenance Contractor Certification Program (see page 12).

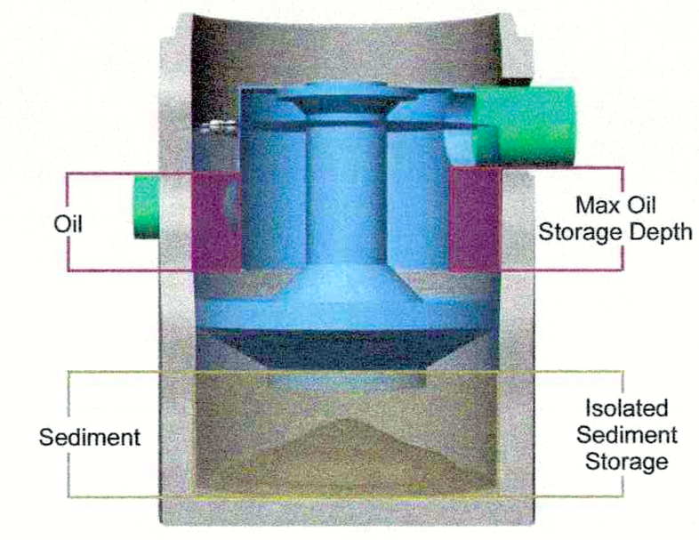


Fig.2 Pollutant storage volumes of the Downstream Defender®.

Fig.3 Watch the Downstream Defender® instructional maintenance video at www.hydro-int.com/us/products/downstream-defender.

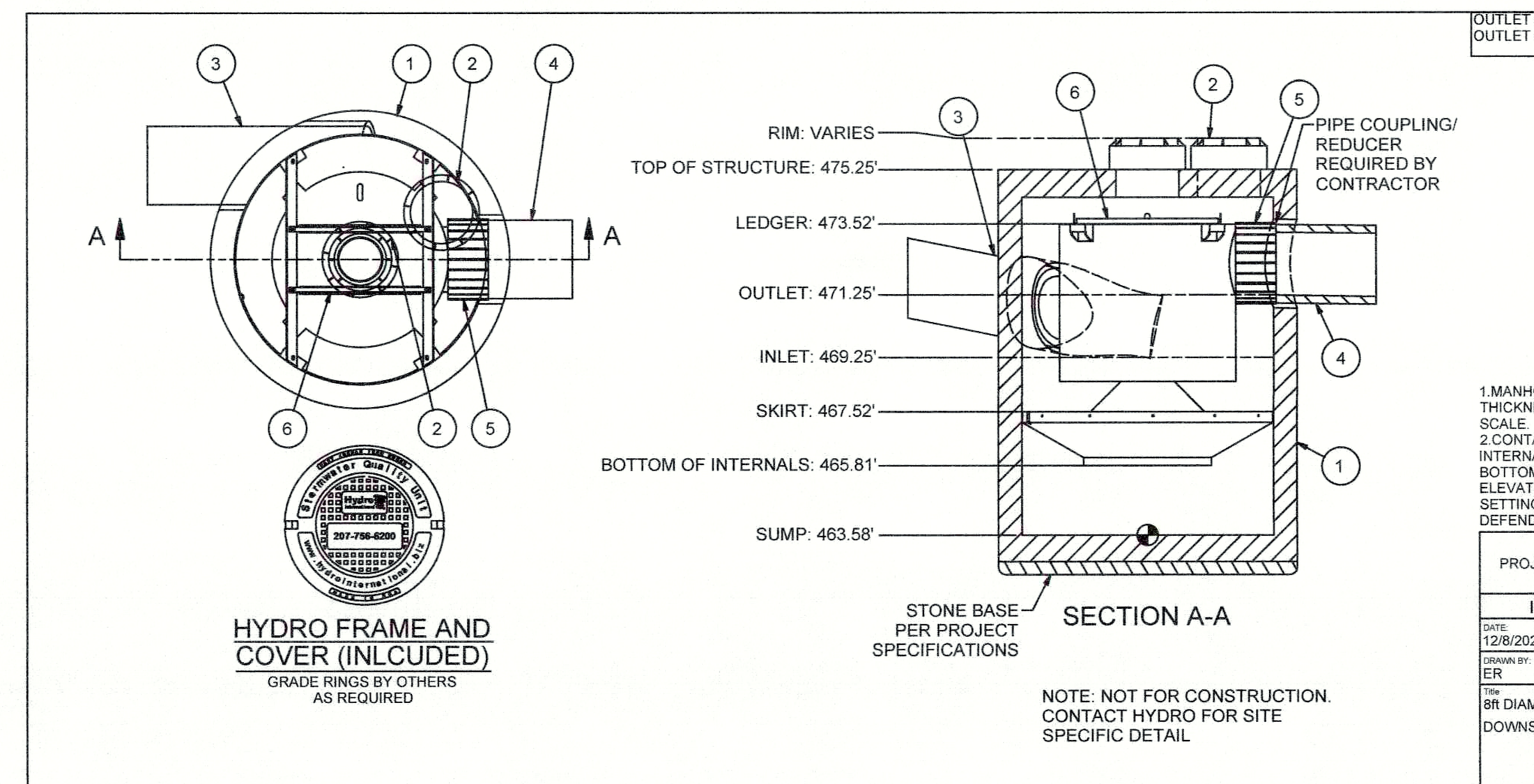
Hydro International (Stormwater), 94 Hutchins Drive, Portland ME 04102
Tel: (207) 756-6200 Fax: (207) 756-6212 Web: www.hydro-int.com

NOTE: THESE PAGES HAVE BEEN TAKE FROM THE DOWNSTREAM DEFENDER MAINTENANCE AND OPERATIONS MANUAL. THEY ILLUSTRATE THE INPSECTION AND MAINTENANCE PROCEDURE FOR THE SYSTEM

SW-8 **DOWNSTREAM DEFENDER**
NOT TO SCALE

SW-11 DOWNSTREAM DEFENDER (DD-2 AND DD-3) DETAIL

OUTLET STUB ID: 24" (600 mm)
OUTLET STUB OD: 24.8" (630 mm)



1.MANHOLE WALL AND SLAB THICKNESSES ARE NOT TO SCALE.
2.CONTACT HYDRO INTERNATIONAL FOR A BOTTOM OF STRUCTURE ELEVATION PRIOR TO SETTING DOWNSTREAM DEFENDER MANHOLE.

PROJECTION
IF IN DOUBT ASK
DATE: 12/8/2020 SCALE: 1 / 50
DRAWN BY: ER CHECKED BY: MRJ APPROVED BY:
Title 8ft DIAMETER DOWNSTREAM DEFENDEER
GENERAL ARRANGEMENT
hydro-int.com
HYDRO INTERNATIONAL
WEIGHT: N/A MATERIAL:
STOCK NUMBER:
DRAWING NO.: DD GA-8
SHEET SIZE: B SHEET: 1 OF 1 Rev: B

NOTE: NOT FOR CONSTRUCTION.
CONTACT HYDRO FOR SITE SPECIFIC DETAIL

EQUIPMENT PERFORMANCE
The stormwater treatment unit shall adhere to the hydraulic parameters given in the chart below and provide the removal efficiencies and storage capacities as follows:
1.The treatment system shall use an induced vortex to separate pollutants from stormwater runoff.
2.Peak Hydraulic Capacity: 15.0 cfs 425 l/s)
3.Sediment Storage Capacity: 4.65 cu. yd. (3.56 cu. m)
4.Continuous Oil Storage Capacity: 540 gal. (2044 liters)
5.Sediment shall be stored in a zone that is isolated from the main flow path and protected from reintrainment by a benching skirt.
6.For more product information including regulatory acceptances, please visit https://hydro-int.com/en/products/downstream-defender

PARTS LIST

ITEM	QTY	SIZE (in)	SIZE (mm)	DESCRIPTION
1	1	96	2400	PRECAST MANHOLE (BY HYDRO VIA PRECASTER)
2	2	24	600	FRAME AND COVER
3	1	24 (MAX)	600 (MAX)	INLET PIPE (BY OTHERS)
4	1	24 (MAX)	600 (MAX)	OUTLET PIPE (BY OTHERS)
5	1			PIPE COUPLING (BY OTHERS)
6	1			INTERNAL COMPONENTS (PRE-INTALLED)

SW-11 **DOWNSTREAM DEFENDER (DD-2 AND DD-3) DETAIL**
NOT TO SCALE

APPROVED
Resolution Number 23 - 13
Date July 17, 2023

Site Design Consultants
Civil Engineers • Land Planners
251-F Underhill Avenue, Yorktown Heights, NY 10598
(914) 962-4488 - Fax: (914) 962-7386
www.sitedesignconsultants.com

PROJECT # 20-20

Engineer:
STATE OF NEW YORK · JOSEPH CARLO RIINA · No. 064431 · LICENSED PROFESSIONAL ENGINEER
Joseph C. Riina, P.E.
NYS Lic. No. 64431

Revisions:

No.	Date	Comments:
12.	8/18/23	Site Plan update
13.	9/8/2023	Site Plan update
14.	10/11/23	DEP Comments
15.	2/2/2024	DEP Comments
16.	2/14/2024	WCHD Comments
17.	3/12/2024	DEP Sewer Comments
18.	3/21/2024	DEP Comments
19.	4/22/2024	WCHD Comments
20.	5/10/2024	DEP Comments
21.	5/22/2024	WCHD Comments
22.	5/30/2024	WCHD Comments

Revisions:

No.	Date	Comments:
1.	6/30/20	R-3 Zone Schedule
2.	7/13/20	Zone Schedule Rev Floor Areas
3.	12/3/20	Updated Grading and Utility Plans
4.	1/21/21	Pedestrian Access Revisions
5.	1/12/22	Site Plan Revisions
6.	3/16/22	Site Plan Revisions
7.	10/24/22	Site Plan Revisions
8.	3/06/23	Udated wetland boundary
9.	3/31/23	Parking update
10.	4/12/23	Site Plan update
11.	5/08/23	Site Plan update

SCALE:
DRAWN BY: TK
DATE: 6-22-20

STORMWATER DETAILS

SITE PLAN
PREPARED FOR
UNDERHILL FARM
UNDERHILL AVENUE
Town of Yorktown Westchester County, New York

Sheet C-504

F:\2020\20-20 UNICORN - SOUNDVIEW\ENGINEERING\CAD\C3D-20-20 UNICORN - SOUNDVIEW SITE PLAN DETAILS 5-2-23.DWG 4/12/2023 11:41:20 AM

ADS
Advanced Drainage Systems, Inc.

ADS RETENTION/DETENTION PIPE SYSTEM SPECIFICATION

SCOPE
THIS SPECIFICATION DESCRIBES ADS RETENTION/DETENTION PIPE SYSTEMS FOR USE IN NON-PRESSURE GRAVITY-FLOW STORM WATER COLLECTION SYSTEMS UTILIZING A CONTINUOUS OUTFALL STRUCTURE.

PIPE REQUIREMENTS
ADS RETENTION/DETENTION SYSTEMS MAY UTILIZE ANY OF THE VARIOUS PIPE PRODUCTS BELOW:

- N-12 WTIB PIPE (PER AASHTO) SHALL MEET AASHTO M 294, TYPE S OR ASTM F2306
- N-12 WTIB PIPE (PER ASTM F2648) SHALL MEET ASTM F2648
- N-12 MEGA GREEN WTIB SHALL MEET ASTM F2648

ALL PRODUCTS SHALL HAVE A SMOOTH INTERIOR AND ANNULAR EXTERIOR CORRUGATIONS. ALL STIB PIPE PRODUCTS ARE AVAILABLE AS PERFORATED OR NON-PERFORATED. WTIB PIPE PRODUCTS ARE ONLY AVAILABLE AS NON-PERFORATED. PRODUCT-SPECIFIC PIPE SPECIFICATIONS ARE AVAILABLE IN THE DRAINAGE HANDBOOK SECTION 1 "SPECIFICATIONS".

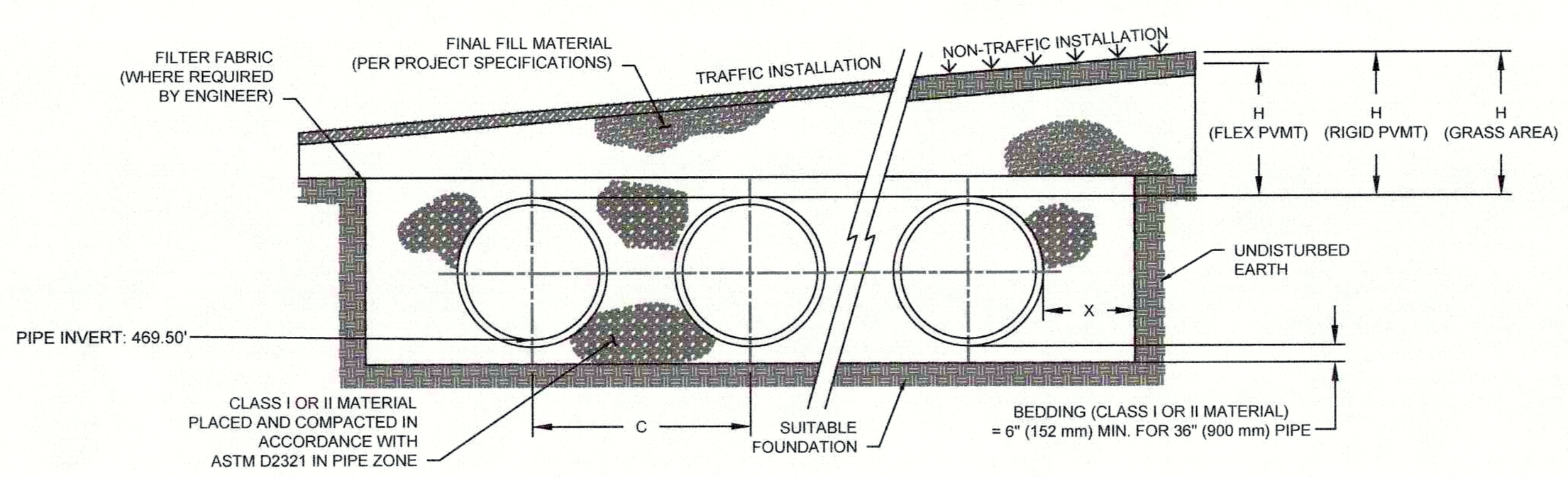
JOINT PERFORMANCE
WATERTIGHT (WTIB):
WTIB PIPE SHALL BE JOINED USING A BELL AND SPIGOT JOINT. THE JOINT SHALL BE WATERTIGHT ACCORDING TO THE REQUIREMENTS OF ASTM D3212. GASKETS SHALL MEET THE REQUIREMENTS OF ASTM F477. 12-60 INCH (300-1500 mm) DIAMETERS SHALL HAVE A BELL REINFORCED WITH A POLYMER COMPOSITE BAND. THE BELL TOLERANCE DEVICE SHALL BE INSTALLED BY THE MANUFACTURER.

PIPE AND FITTING CONNECTIONS SHALL BE WITH A BELL AND SPIGOT CONNECTION UTILIZING A SPUN-ON OR WELDED BELL AND VALLEY OR SADDLE GASKET. THE JOINT SHALL MEET THE WATERTIGHT REQUIREMENTS OF ASTM D3212, AND GASKETS SHALL MEET THE REQUIREMENTS OF ASTM F477. DETENTION SYSTEMS ARE SUBJECT TO GREATER LEAKAGE THAN TYPICAL SINGLE RUN STORM SEWER APPLICATIONS AND THEREFORE ARE NOT APPROPRIATE FOR APPLICATIONS REQUIRING LONG-TERM FLUID CONTAINMENT OR HYDROSTATIC PRESSURE. FOR ADDITIONAL DETAILS REFER TO TECHNICAL NOTE 7.01 "RAINWATER HARVESTING WITH HDPE PIPE CISTERNS".

FITTINGS
FITTINGS SHALL CONFORM TO ASTM F2306 AND MEET JOINT PERFORMANCE INDICATED ABOVE FOR FITTINGS CONNECTIONS. CUSTOM FITTINGS ARE AVAILABLE AND MAY REQUIRE SPECIAL INSTALLATION CRITERION.

INSTALLATION
INSTALLATION SHALL BE IN ACCORDANCE WITH ASTM D2321 AND ADS RECOMMENDED INSTALLATION GUIDELINES, WITH THE EXCEPTION THAT MINIMUM COVER IN NON-TRAFFIC AREAS FOR 12-60 INCH (300-1500 mm) DIAMETERS SHALL BE 1 FT (0.3 m). MINIMUM COVER IN TRAFFICKED AREAS FOR 12-36 INCH (300-900 mm) DIAMETERS SHALL BE 1 FT (0.3 m) AND FOR 42-60 INCH (1050-1500 mm) DIAMETERS, THE MINIMUM COVER SHALL BE 2 FT (0.6 m). BACKFILL SHALL CONSIST OF CLASS I (COMPACTED) OR CLASS II (MINIMUM 95% SPD) MATERIAL, WITH THE EXCEPTION THAT 60 INCH (1500 mm) SYSTEMS SHALL USE CLASS I MATERIAL ONLY. MINIMUM COVER HEIGHTS DO NOT ACCOUNT FOR PIPE BUOYANCY. REFER TO ADS TECHNICAL NOTE 5.05 "PIPE FLOTATION" FOR BUOYANCY DESIGN CONSIDERATIONS. MAXIMUM COVER OVER SYSTEM USING STANDARD BACKFILL IS 8 FT (2.4 m); CONTACT A REPRESENTATIVE WHEN MAXIMUM FILL HEIGHT MAY BE EXCEEDED. ADDITIONAL INSTALLATION REQUIREMENTS ARE PROVIDED IN THE DRAINAGE HANDBOOK SECTION 6 "RETENTION/DETENTION".

ADS RECOMMENDS THE USE OF "FLEXSTORM CATCH IT" INSERTS DURING CONSTRUCTION FOR ALL INLETS TO PROTECT THE SUBSURFACE STORMWATER MANAGEMENT SYSTEM FROM CONSTRUCTION SITE RUNOFF.



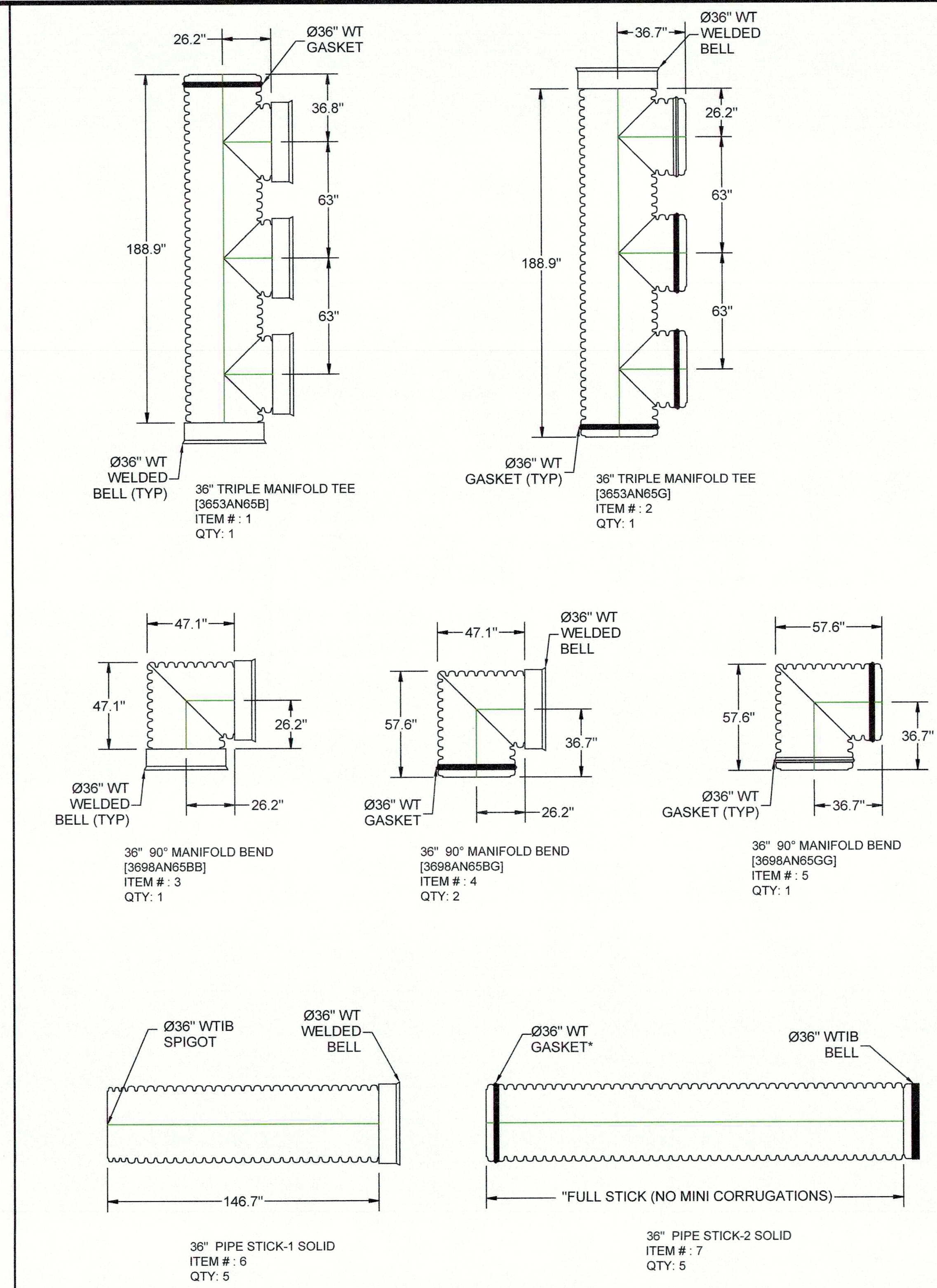
NOMINAL DIAMETER	NOMINAL O.D.	TYPICAL SPACING "C"	TYPICAL SIDE WALL "X"	MIN. H (NON-TRAFFIC)	MIN. H (TRAFFIC)	MAX. H*
36" (900 mm)	42" (1067 mm)	63" (1600 mm)	18" (457 mm)	12" (305 mm)	12" (305 mm)	8' (2.4 m)

* MAXIMUM FILL HEIGHTS OVER MANIFOLD FITTINGS. CONTACT MANUFACTURER'S REPRESENTATIVE FOR INSTALLATION CONSIDERATIONS WHEN COVER EXCEEDS 8 FT (2.4 m).

NOTES:

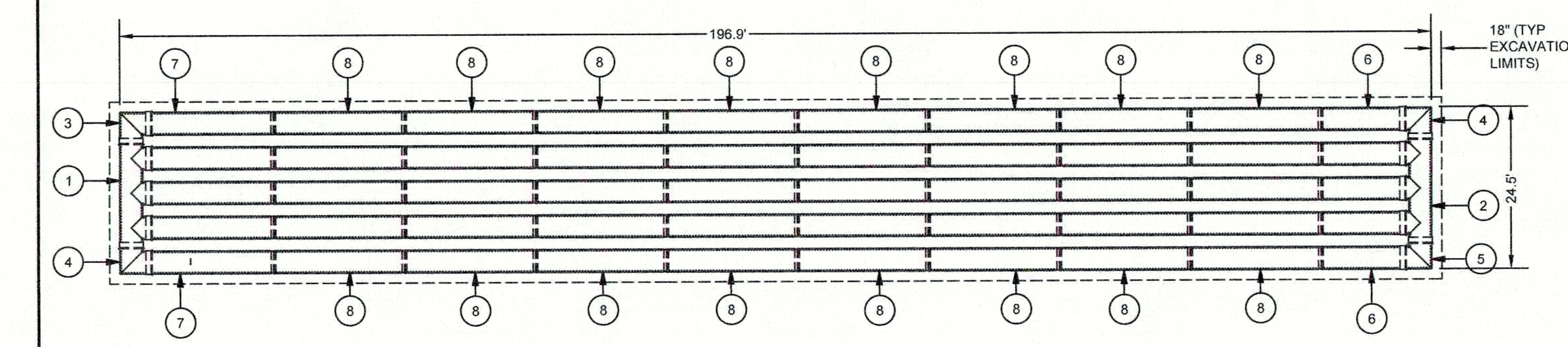
1. ALL REFERENCES TO CLASS I OR II MATERIAL ARE PER ASTM D2321 "STANDARD PRACTICE FOR UNDERGROUND INSTALLATION OF THERMOPLASTIC PIPE FOR SEWERS AND OTHER GRAVITY FLOW APPLICATIONS", LATEST EDITION.
2. ALL RETENTION AND DETENTION SYSTEMS SHALL BE INSTALLED IN ACCORDANCE WITH ASTM D2321, LATEST EDITION AND THE MANUFACTURER'S PUBLISHED INSTALLATION GUIDELINES.
3. MEASURES SHOULD BE TAKEN TO PREVENT THE MIGRATION OF NATIVE FINES INTO THE BACKFILL MATERIAL, WHEN REQUIRED. SEE ASTM D2321.
4. FILTER FABRIC: A GEOTEXTILE FABRIC MAY BE USED AS SPECIFIED BY THE ENGINEER TO PREVENT THE MIGRATION OF FINES FROM THE NATIVE SOIL INTO THE SELECT BACKFILL MATERIAL.
5. FOUNDATION: WHERE THE TRENCH BOTTOM IS UNSTABLE. THE CONTRACTOR SHALL EXCAVATE TO A DEPTH REQUIRED BY THE ENGINEER AND REPLACE WITH SUITABLE MATERIAL AS SPECIFIED BY THE ENGINEER. AS AN ALTERNATIVE AND AT THE DISCRETION OF THE DESIGN ENGINEER, THE TRENCH BOTTOM MAY BE STABILIZED USING A GEOTEXTILE MATERIAL.
6. BEDDING: SUITABLE MATERIAL SHALL BE CLASS I OR II. THE CONTRACTOR SHALL PROVIDE DOCUMENTATION FOR MATERIAL SPECIFICATION TO ENGINEER. UNLESS OTHERWISE NOTED BY THE ENGINEER, MINIMUM BEDDING THICKNESS SHALL BE 4" (102 mm) FOR 4"-24" (100-600 mm); 6" (152 mm) FOR 30-60" (750-900 mm).
7. INITIAL BACKFILL: SUITABLE MATERIAL SHALL BE CLASS I OR II IN THE PIPE ZONE EXTENDING NOT LESS THAN 6" (152 mm) ABOVE CROWN OF PIPE. THE CONTRACTOR SHALL PROVIDE DOCUMENTATION FOR MATERIAL SPECIFICATION TO ENGINEER. MATERIAL SHALL BE INSTALLED AS REQUIRED IN ASTM D2321, LATEST EDITION.
8. COVER: MINIMUM COVER OVER ALL RETENTION/DETENTION SYSTEMS IN NON-TRAFFIC APPLICATIONS (GRASS OR LANDSCAPE AREAS) IS 12" (305 mm) FROM TOP OF PIPE TO GROUND SURFACE. ADDITIONAL COVER MAY BE REQUIRED TO PREVENT FLOATATION. FOR TRAFFIC APPLICATIONS, MINIMUM COVER IS 12" (305 mm) UP TO 36" (900 mm) DIAMETER PIPE AND 24" (610 mm) OF COVER FOR 42-60" (1050-1500 mm) DIAMETER PIPE, MEASURED FROM TOP OF PIPE TO BOTTOM OF FLEXIBLE PAVEMENT OR TO TOP OF RIGID PAVEMENT. MAXIMUM FILL HEIGHT LIMITED TO 8 FT (2.4 m) OVER FITTINGS FOR STANDARD INSTALLATIONS. CONTACT A SALES REPRESENTATIVE WHEN MAXIMUM FILL HEIGHTS EXCEED 8 FT (2.4 m) FOR INSTALLATION CONSIDERATIONS.

DC-1 **DETENTION CHAMBER SECTION DETAIL**
NOT TO SCALE



DC-2 **DETENTION CHAMBER DETAIL**
NOT TO SCALE

ITEM	QTY	ALT. QTY	PART #	DESCRIPTION	STAN.	VENDOR	NOTE
1	1		3652AN65B	36" WT.DOUBLE MANIFOLD TEE (BxBxBxG)	STAN	ADS	SEE DETAIL
2	1		3652AN65G	36" WT.DOUBLE MANIFOLD TEE (GxGxGxB)	STAN	ADS	SEE DETAIL
3	3		3653AN65B	36" WT TRIPLE MANIFOLD.TEE (BxBxBxBxG)	STAN	ADS	SEE DETAIL
4	3		3653AN65G	36" WT TRIPLE MANIFOLD TEE.(GxGxGxGxB)	STAN	ADS	SEE DETAIL
5	1		3698AN65BB	36".WT MANIFOLD 90 DEG BEND (BxB)	STAN	ADS	SEE DETAIL
6	2		3698AN65BG	36".MNFD 90 WT (BELL-GASKET)	STAN	ADS	SEE DETAIL
7	1		3698AN65GG	36".WT MANIFOLD 90 DEG BEND (GxG)	STAN	ADS	SEE DETAIL
8	13 STICKS		STICK-1	36".N12 HWY.WTIB.SOLID.20'	CUS	ADS	SEE DETAIL
9	13 STICKS		STICK-2	36".N12 HWY.WTIB.SOLID.20'	CUS	ADS	SEE DETAIL
10	26 STICKS	512 LF	36650020IB	36".N12 HWY.WTIB.SOLID.20'	STAN	ADS	AS SHOWN
11	4 ROLLS	2000 SY	0601TG	601.15' X 300'.(500 SY).(NTPEP SCAN) (20% OVERAGE)	STAN	ADS	SEE DETAIL
12	26352 CF	976 CY	NA	EXCAVATION	NA	NA	NOT SHOWN



NOTES

- THE SITE DESIGN ENGINEER MUST REVIEW ELEVATIONS AND IF NECESSARY ADJUST GRADING TO ENSURE THE PIPE COVER REQUIREMENTS ARE MET.
- STUB SIZES AND INVERTS TO BE VERIFIED BY THE SITE DESIGN ENGINEER PRIOR TO FABRICATION.
- ADS RISERS ARE FABRICATED 36" (900 mm) FROM TOP OF PIPE TO TOP OF RISER DUE TO SHIPPING LIMITATIONS. ADDITIONAL PIPE AND COUPLERS CAN BE USED TO EXTEND THE RISERS TO GRADE.
- LAYOUT SHOWN DOES NOT INCLUDE ADDITIONAL PIPE & MANIFOLD NEEDED FOR PROPER PIPE INSERTION INTO STRUCTURES.
- **NOT FOR CONSTRUCTION:** THIS LAYOUT IS FOR DIMENSIONAL PURPOSES ONLY TO PROVE CONCEPT & THE REQUIRED STORAGE VOLUME CAN BE ACHIEVED ON SITE.

DC-3 **DETENTION CHAMBER LAYOUT**
NOT TO SCALE

Underhill Farm - 10 Year Storm Pipe Calculations

Start Node	Stop Node	Invert (Start) (ft)	Invert (Stop) (ft)	Length (User Defined) (ft)	Slope (Calculated) (%)	Diameter (in)	Manning's n	Flow (cfs)	Velocity (ft/s)	Depth (Out) (ft)	Flow / Capacity (Design) (%)	Capacity (Design) (cfs)
POCKET WETLAND	ES-9	491.75	491.5		0.59	24	0.012	10.19	6.12	1.05	18.87	54
TD-1	CB-19	472.38	471.7	52.3	1.29	12	0.012	0	0	0.58	4.38	0
DI-4	DI-5	507.55	493.82	227.6	6.04	15	0.012	0.31	5.39	0.22	17.19	1.8
DI-5	DMH-3	493.56	480.34	169.3	7.81	15	0.012	0.78	7.75	0.37	19.55	4
DMH-3	CB-15	480.32	478.75	118.1	1.33	18	0.012	0.77	4.07	0.48	13.13	5.9
CB-14	CB-13	484.61	484.32	38.2	0.75	15	0.012	0.29	2.53	0.3	6.06	4.7
DI-6	CB-12	493.75	492.37	89.9	1.53	15	0.012	0.31	3.33	0.16	8.67	3.6
CB-12	CB-11	492.37	492.25	24.4	0.50	15	0.012	0.15	0.12	0.19	4.95	2.9
CB-12	CB-13	492.12	484.32	206.1	3.79	15	0.012	0.75	5.95	0.2	13.61	5.5
CB-13	CB-15	484.07	478.75	104.4	5.09	24	0.012	1.03	6.81	0.48	55.31	1.9
CB-15	CB-16	480	478.75	22.7	5.50	18	0.012	0.08	0.05	0.1	26.69	0.3
CB-15	CB-17	478.5	475.25	88.5	3.68	24	0.012	3.05	8.42	0.34	46.98	6.5
CB-17	CB-18	475	472.96	116.8	1.75	24	0.012	3.04	6.48	0.62	32.42	9.4
CB-18	CB-19	472.71	471.54	117	1.00	24	0.012	3.48	5.52	0.74	24.51	14.2
CB-19	BYPASS #1	471.13	470.7	10.7	4.00	24	0.012	4.3	9.6	1.41	48.99	8.8
BYPASS #1	DD-2	469.32	469.25	14.7	0.48	24	0.012	4.3	1.37	2.81	16.91	25.5
DD-2	INFILTRATION IN	471.25	470.67	13.5	4.31	24	0.012	4.3	9.86	0.47	50.88	8.5
DI-7	DMH-6	473.67	470.56	51.5	6.04	12	0.012	0.08	3.75	1.44	9.48	0.9
CB-26	CB-25	471.55	471.07	55.2	0.87	15	0.012	0.77	3.56	1.51	6.52	11.7
CB-25	CB-24	471.07	470.86	27.2	0.77	15	0.012	0.76	0.62	1.71	6.15	12.4
CB-21	DMH-5	483.24	482.74	50.1	0.99	15	0.012	0.35	2.96	0.19	6.97	5
DMH-5	CB-22	482.49	481.13	117.4	1.16	15	0.012	0.35	3.12	0.24	7.53	4.6
CB-22	CB-23	480.88	476.89	85.8	4.65	15	0.012	1.02	7.01	0.22	15.09	6.8
CB-23	CB-24	475.81	472.13	83.8	4.39	15	0.012	2.21	8.6	0.33	14.66	15
CB-24	DMH-6	470.72	470.56	14.1	1.12	18	0.012	2.96	5.63	1.44	12.02	24.7
DMH-6	BYPASS #2	470	469.5	12.3	4.06	24	0.012	3.05	8.73	2.44	49.39	6.2
BYPASS #2	DD-3	469.32	469.25	11.5	0.61	24	0.012	3.05	0.97	2.67	19.08	16
DD-3	INFILTRATION IN	471.25	470.67	7.6	7.61	24	0.012	3.04	10.87	0.37	67.59	4.5
POND OUTLET	DMH-7	485.94	481.81	109.4	3.78	24	0.012	26.41	15.55	2.65	47.63	55.4
DMH-7	DMH-8	481.56	478.1	103.2	3.36	24	0.012	26.41	14.87	3.11	44.89	58.8
DMH-8	DMH-9	477.85	477.55	59.7	0.50	30	0.012	26.41	7.17	2.24	31.42	84.1
DMH-9	EXISTING POND OUTLET	477.3	476.47	78.9	1.05	30	0.012	26.41	9.63	1.41	45.59	57.9
CL-14	CL-13	514.93	504.43	147.6	7.12	12	0.012	0.35	6.09	0.35	10.3	3.4
CL-13	CL-12	504.43	496.76	161.7	4.74	12	0.012	0.7	6.47	0.41	8.4	8.3
CL-12	CL-11	496.74	495.86	175.2	0.50	12	0.012	1.04	3.24	0.5	2.73	38.2
CL-11	CL-10	495.86	495.58	55.8	0.50	12	0.012	1.38	3.49	0.6	2.73	50.7
CL-10	DMH-2A	495.58	495.26	72.6	0.44	12	0.012	1.73	3.5	0.74	2.56	67.5
DMH-2A	ES-5	495.26	494.79	95.3	0.50	12	0.012	1.73	3.68	0.56	2.73	63.3
DETENTION OUT	DMH-11	469.75	468.3	135.1	1.08	24	0.012	0	0	0	25.42	0
DMH-11	DMH-10	467.15	464.76	21.5	11.13	24	0.012	0	0	0	81.77	0
DMH-10	ES-10	464.69	463.96	141.7	0.51	24	0.012	0	0	0	17.54	0
CB-6	CB-5	511.74	511.12	20.2	3.04	15	0.012	0.89	5.79	0.23	12.21	7.3
CB-4	CB-3	519.04	518.39	20.9	3.10	15	0.012	0.21	3.78	0.11	12.31	1.7
CB-1	CB-2	520.01	519.52	99	0.50	15	0.012	0.79	2.94	0.34	4.93	15.9
CB-2	CB-3	519.06	517.54	165.2	0.92	18	0.012	0.98	3.83	0.93	10.94	9
CB-3	CB-5	517.34	508.88	141	6.00	18	0.012	1.18	7.84	0.49	27.86	4.2
CB-5	CB-7	508.74	499.79	196.7	4.55	18	0.012	2.06	8.37	0.3	24.27	8.5
CB-7	CB-8	499.04	498.84	24	0.83	24	0.012	2.06	4.44	0.42	22.36	9.2
DI-1	DI-2	530.5	522.17	203	4.10	15	0.012	0.09	3.26	0.07	14.17	0.7
DI-2	DI-3	521.42	511.17	200.7	5.11	15	0.012	0.31	5.07	0.12	15.81	2
DI-3	CB-9	507.24	500.88	80.7	7.89	15	0.012	0.56	7.05	0.15	19.66	2.9
CB-9	CB-8	499.02	498.1	35.8	2.60	15	0.012	0.56	4.78	1.02	11.28	5
CB-8	CB-10	497.93	496.56	193.5	0.71	30	0.012	3.71	4.86	0.64	37.39	9.9
CB-10	DMH-1	496.26	494.96	146.5	0.88	30	0.012	4.46	5.55	0.72	41.77	10.7
DMH-1	ES-8	494.69	489	202.8	2.80	30	0.012	4.45	8.34	0.41	74.4	6
CL-0	CL-1	520.8	519.01	195.2	0.92	12	0.012	0.35	2.96	0.21	3.7	9.4
CL-1	CL-2	518.87	516.55	30.1	7.72	12	0.012	0.69	7.69	0.43	10.72	6.5
CL-2	CL-3	516.55	508.24	94.3	8.81	12	0.012	1.04	9.07	0.5	11.46	9.1
CL-3	CL-4	508.24	505.4	106.9	2.66	12	0.012	1.39	6.43	0.56	6.3	22
CL-4	CL-5	505.4	502.11	219.2	1.50	12	0.012	1.73	5.55	0.65	4.73	36.6
CL-5	CL-6	502.11	501.31	160.5	0.50	12	0.012	2.07	3.82	0.66	2.73	75.9
CL-6	CL-7	501.31	500.04	75.9	1.66	12	0.012	2.41	6.29	0.83	4.98	48.4
CL-7	CL-8	500.04	499.16	177.6	0.50	12	0.012	2.75	3.96	0.75	2.73	100.9
CL-8	CL-9	499.16	498.01	114.1	1.00	12	0.012	3.09	5.46	0.79	3.86	80
CL-9	DMH-2	498.01	496.97	104.5	1.00	12	0.012	3.43	5.55	1.13	3.86	88.8
DMH-2	ES-6	496.97	496.66	64.1	0.49	15	0.012	3.42	4.32	0.75	4.9	69.8
EX-3	CB-30	527.64	526.33	18.4	7.12	15	0.012	1.68	9.43	0.77	18.67	9
EX-2	CB-29	537.87	536.73	26.5	4.30	15	0.012	1.12	7.01	0.47	14.51	7.7
EX-1	CB-28	541.6	538.74	20.2	14.16	15	0.012	0.75	9.45	0.51	26.33	2.8
CB-27	CB-28	544.23	538.74	201.1	2.73	18	0.012	1.87	6.8	0.32	18.81	9.9
CB-28	CB-29	538.49	536.73	165.6	1.06	18	0.012	2.57	5.32	0.48	11.73	21.9
CB-29	CB-30	536.17	526.34	227.4	4.32	18	0.012	3.62	9.69	0.76	23.66	15.3
CB-30	CB-31	526.08	516.69	156.1	6.02	24	0.012	5.22	11.74	0.4	60.1	8.7
CB-33	EX-4	521.51	522.47	25.2	-3.80	15	0.012	1.92	7.85	0.56	13.65	14.1
CB-32	CB-33	518.75	521.26	164.6	-1.53	15	0.012	1.92	5.66	0.4	8.64	22.2
CB-31	CB-32	516.69	517.52	135.9	-0.61	24	0.012	1.92	3.89	0.49	19.09	10
CB-31	DD-1	514.44	509.05	23.5	22.93	30	0.012	9.27	21.68	4.15	212.78	4.4
DD-1	ES-1	512.05	509.17	35.2	8.18	30	0.012	9.27	15.09	0.51	127.11	7.3
ES-7	ES-3	509.73	507.53	144.4	1.52	15	0.012	0.79	4.38	0.37	8.63	9.1
ES-2	ES-4	503	502.05	47.7	2.00	36	0.012	9.9	9.16	0.67	102.17	9.7

STORM DRAIN CALCULATIONS

APPROVED
Resolution Number 23-13
Date July 17, 2023

Site Design Consultants
Civil Engineers • Land Planners
251-F Underhill Avenue, Yorktown Heights, NY 10598
(914) 962-4488 - Fax: (914) 962-7386
www.sitedesignconsultants.com

PROJECT # 20-20

Engineer:
STATE OF NEW YORK · JOSEPH CARLO RIINA · NO. 64431 · LICENSED PROFESSIONAL ENGINEER
Joseph C. Riina, P.E.
NYS Lic. No. 64431

Revisions:

No.	Date	Comments:
1.	6/30/20	R-3 Zone Schedule
2.	7/13/20	Zone Schedule Rev Floor Areas
3.	12/3/20	Updated Grading and Utility Plans
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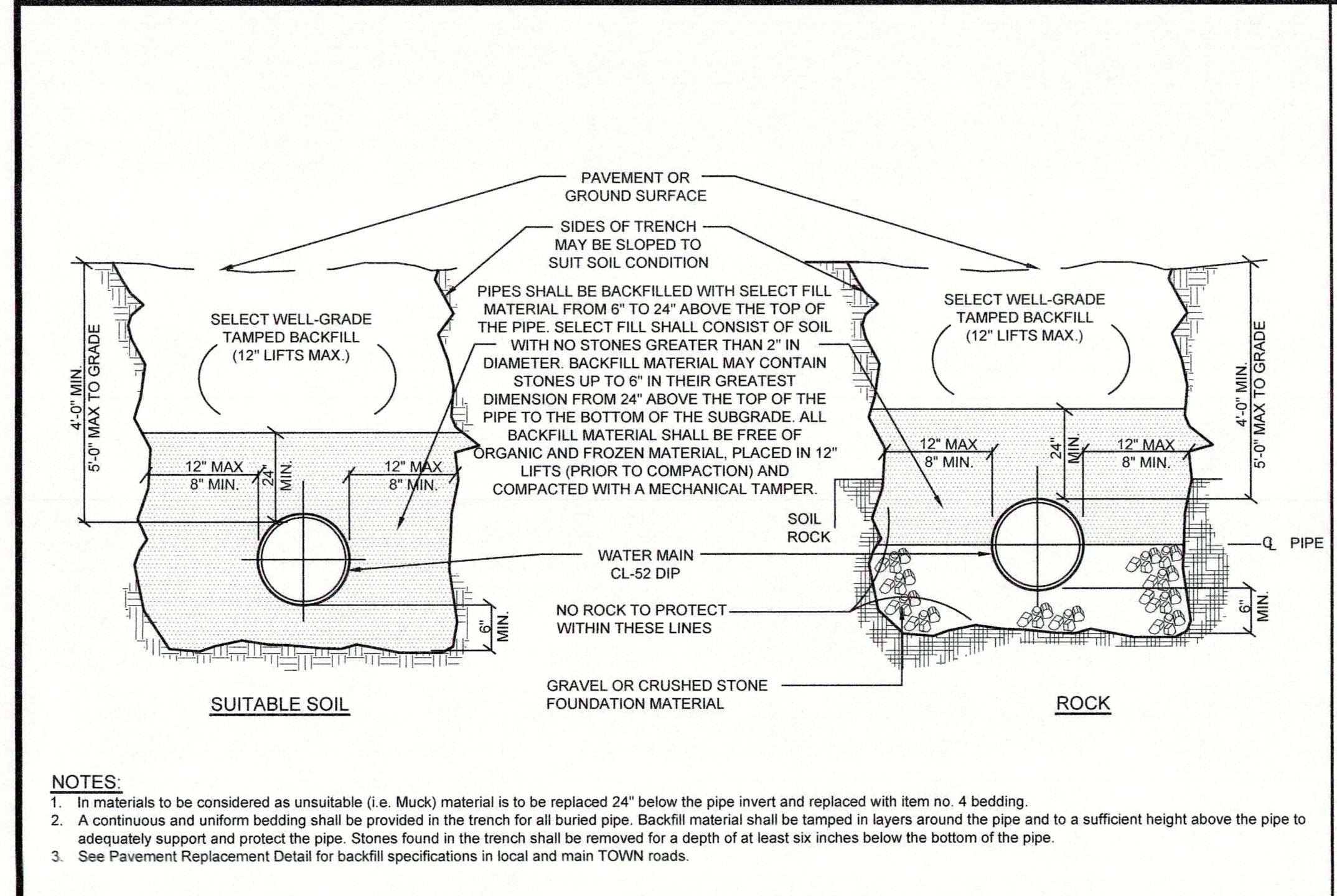
No.	Date	Comments:
12.	8/18/23	Site Plan update
13.	9/8/2023	Site Plan update
14.	10/11/23	DEP Comments
15.	2/2/2024	DEP Comments
16.	2/14/2024	WCHD Comments
17.	3/12/2024	DEP Sewer Comments
18.	3/21/2024	DEP Comments
19.	4/22/2024	WCHD Comments
20.	5/10/2024	DEP Comments
21.	5/22/2024	WCHD Comments
22.	5/30/2024	WCHD Comments

SCALE:
DRAWN BY: TK
DATE: 6-22-20

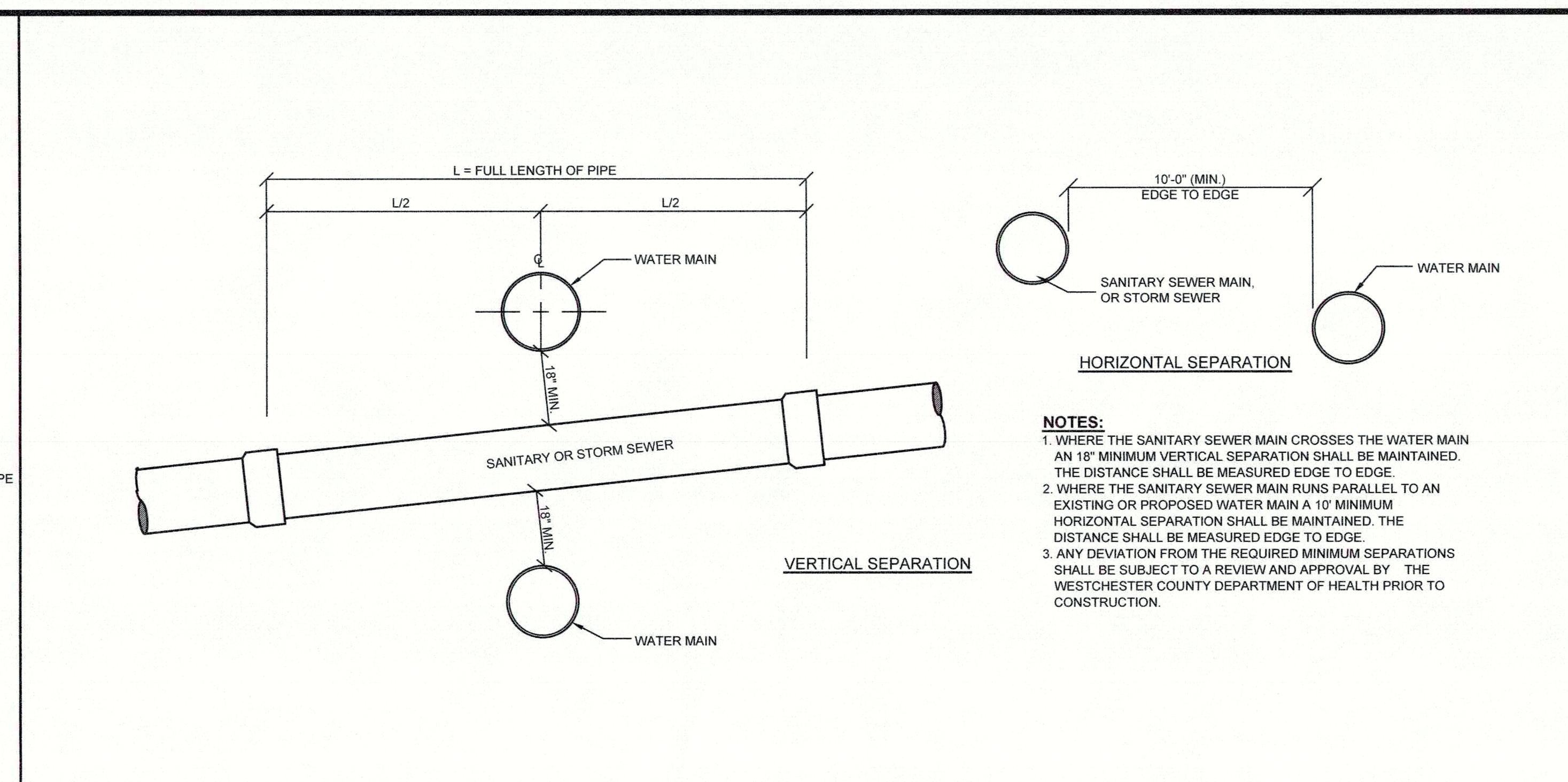
STORMWATER DETAILS

SITE PLAN
PREPARED FOR
UNDERHILL FARM
UNDERHILL AVENUE
Town of Yorktown
Westchester County, New York

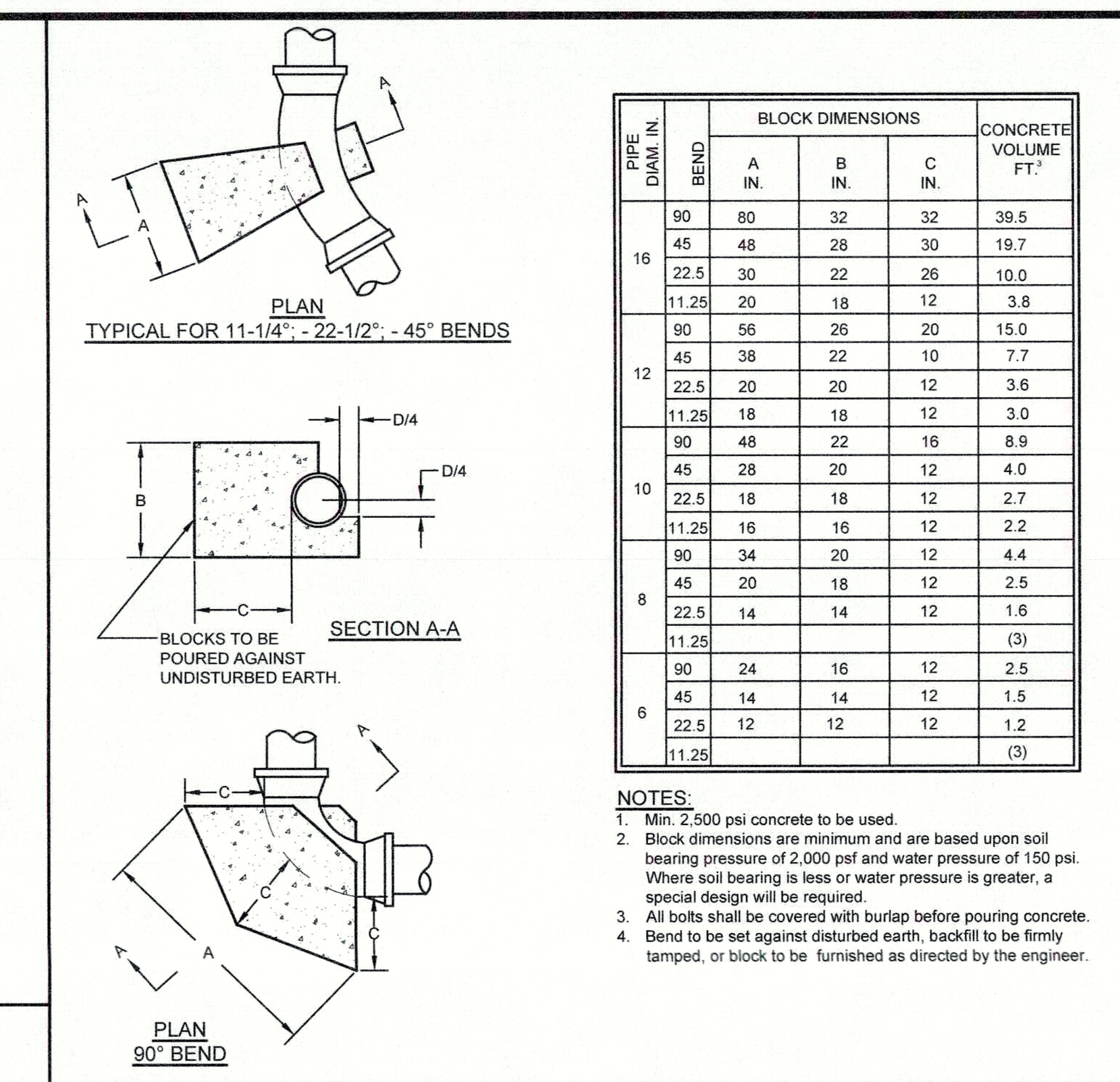
Sheet C-505



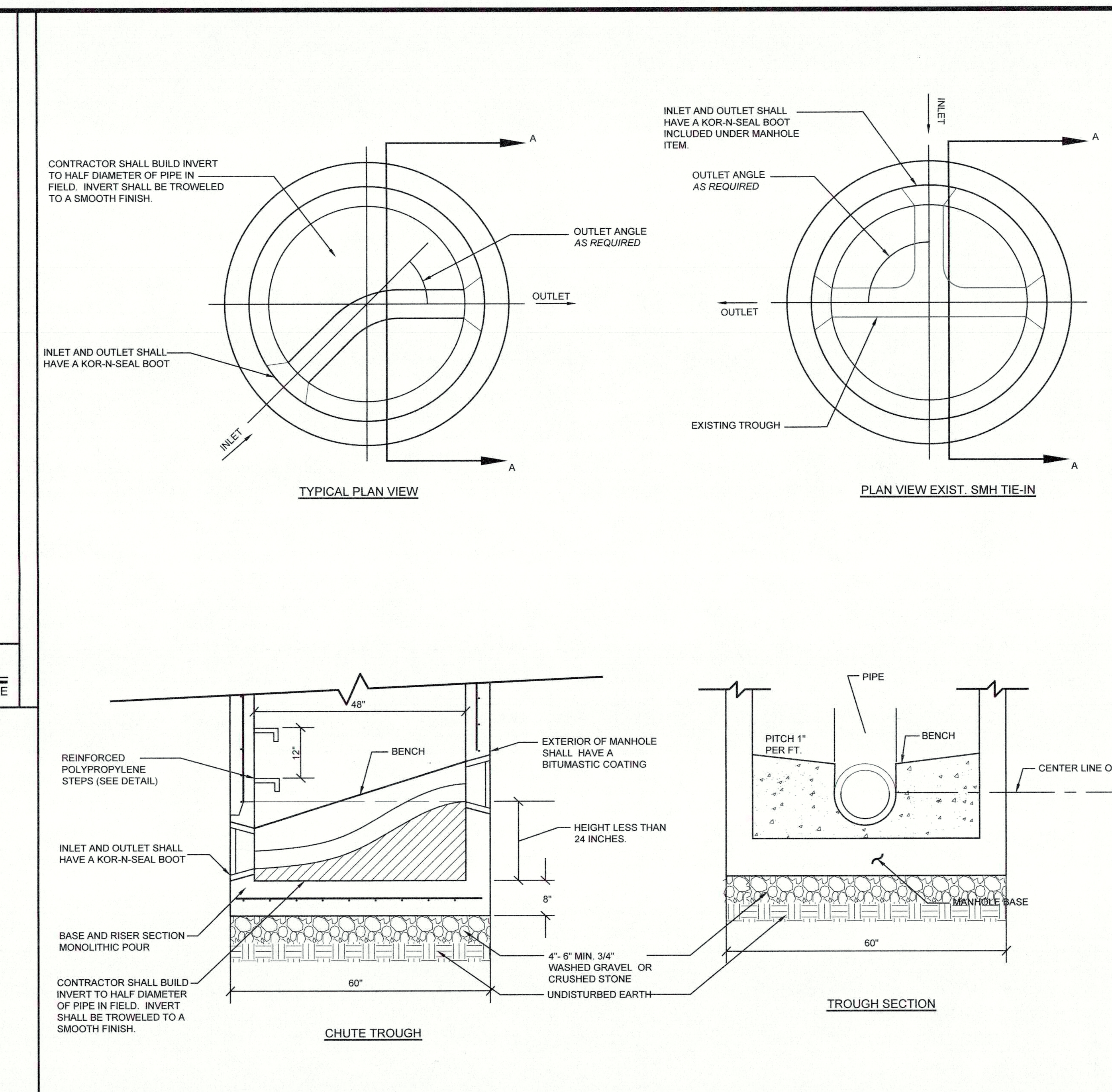
W-1 WATER MAIN BEDDING DETAIL
NOT TO SCALE



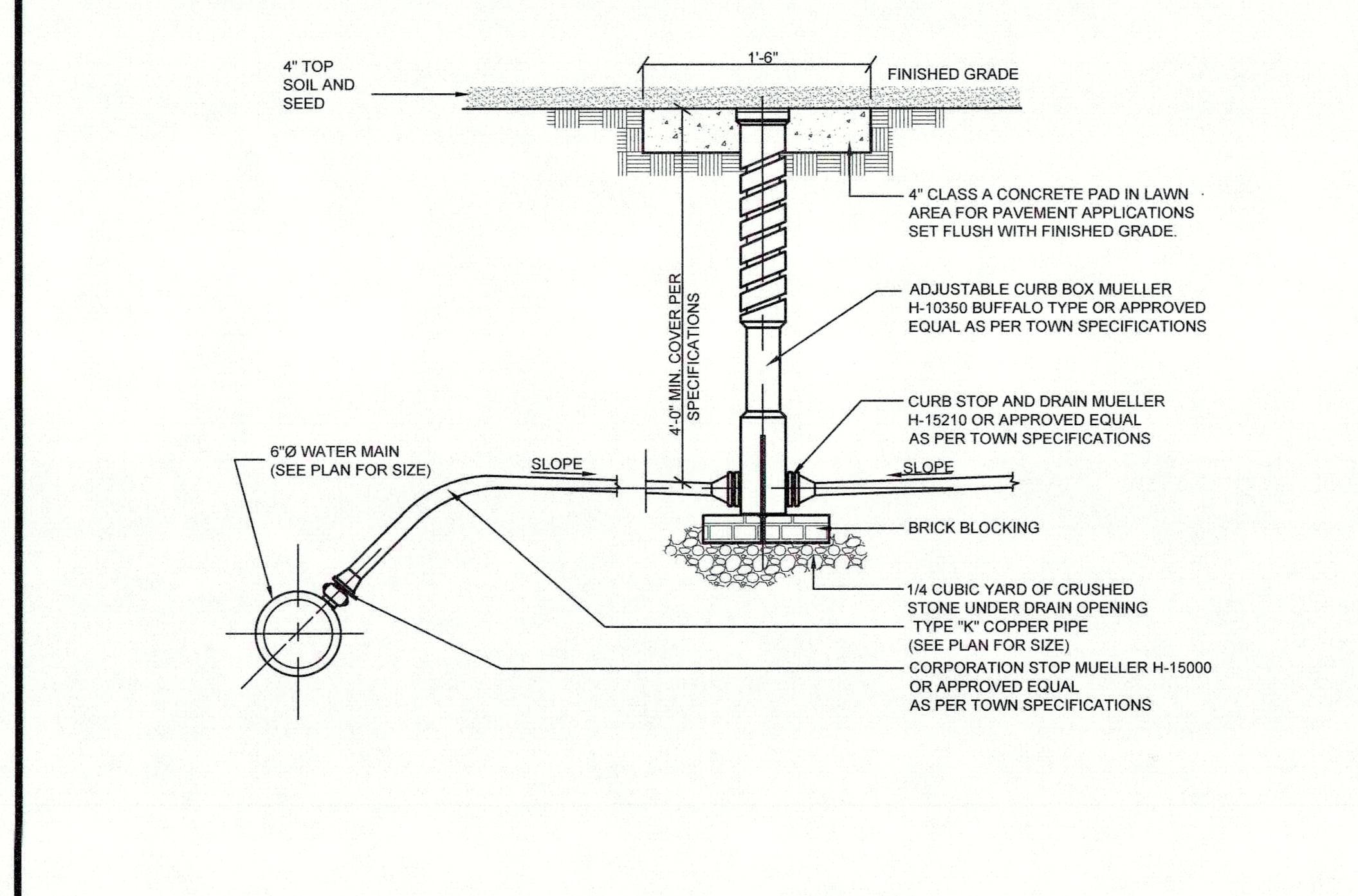
W-4 SEPARATION OF WATER MAINS, SANITARY SEWERS OR STORM SEWERS
NOT TO SCALE



W-8 THRUST BLOCKING FOR HORIZONTAL BENDS
NOT TO SCALE



S-5 TYPICAL DETAIL OF TIE-IN TO EXISTING SEWER MANHOLE
NOT TO SCALE



W-2 WATER SERVICE CONNECTION DETAIL
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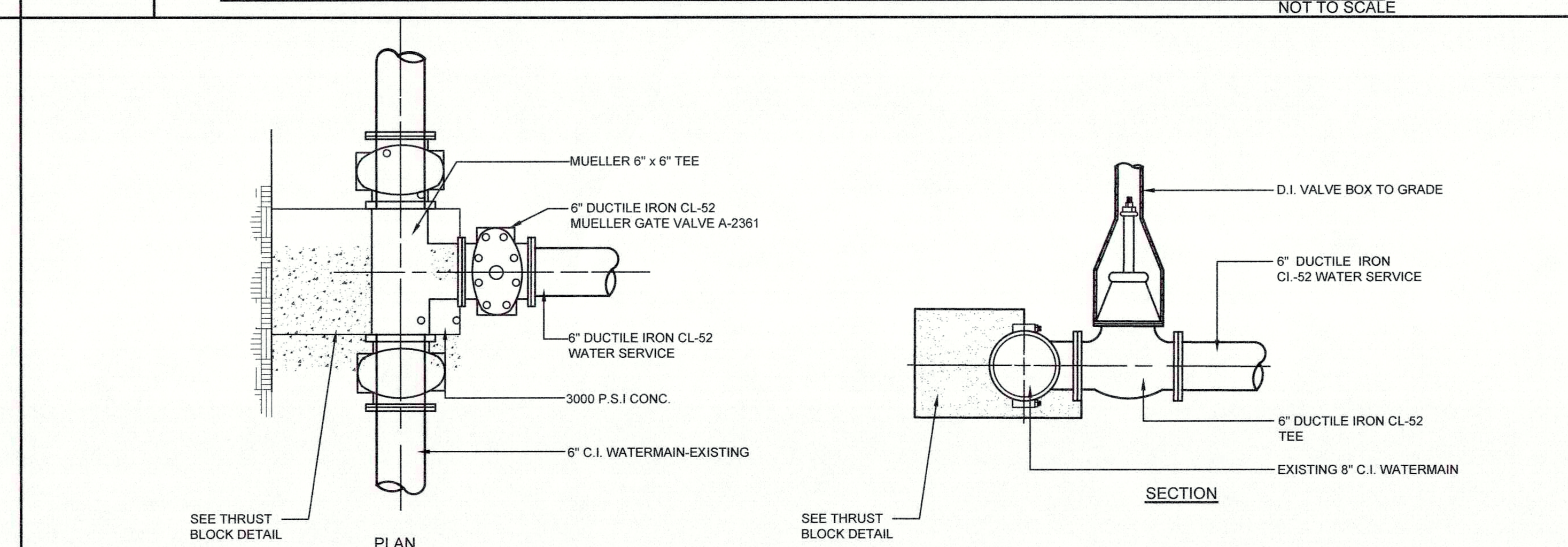
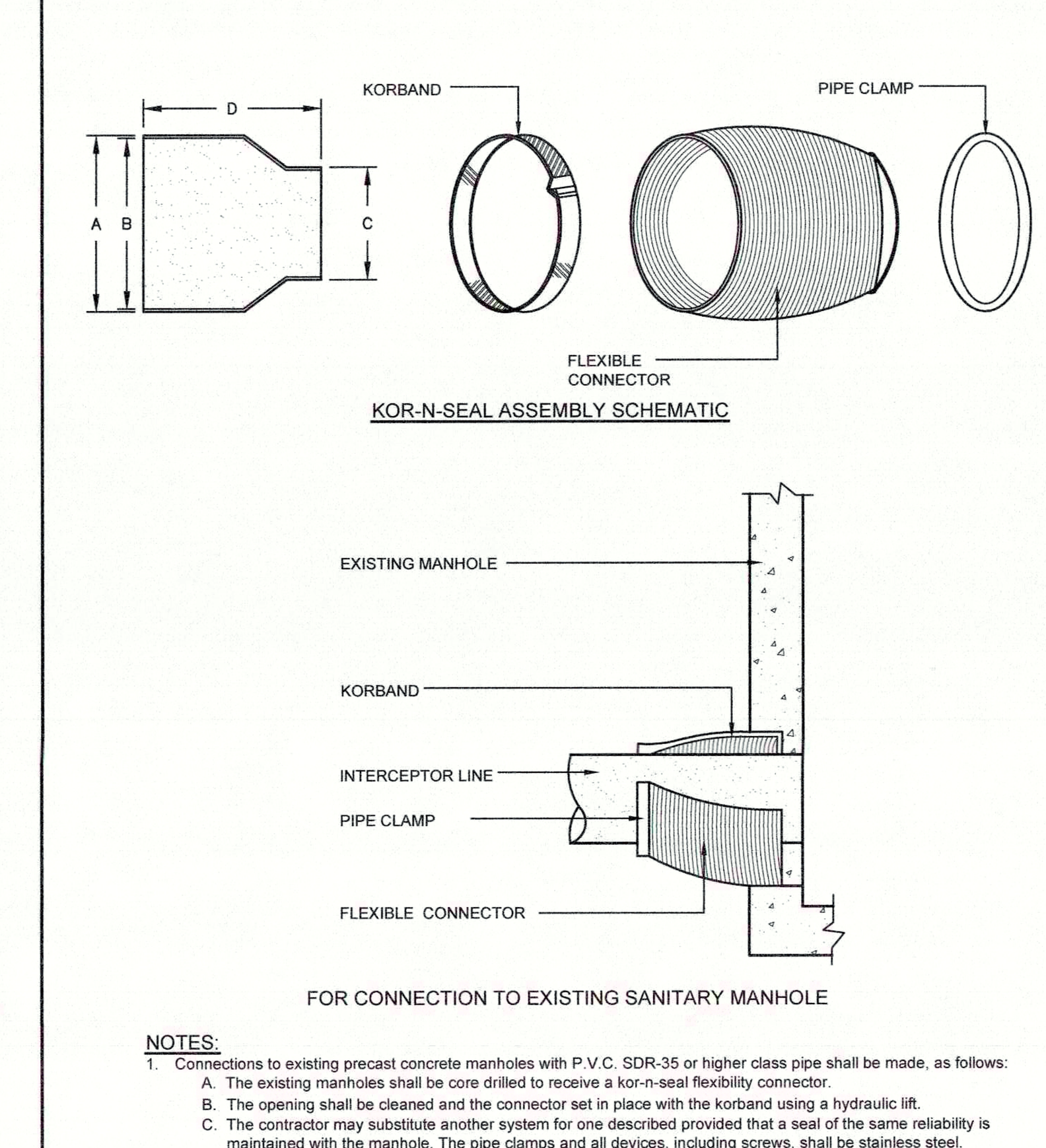
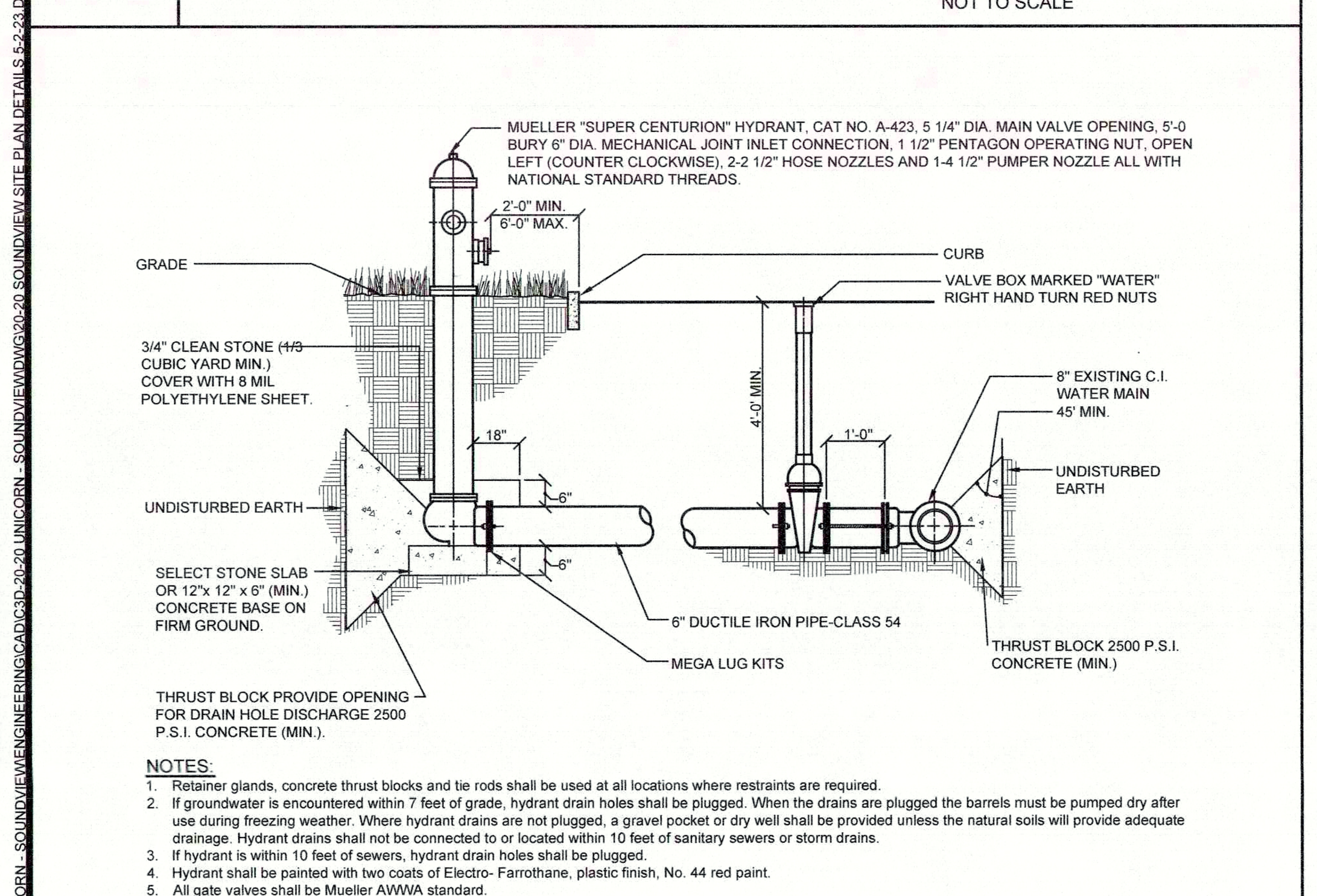


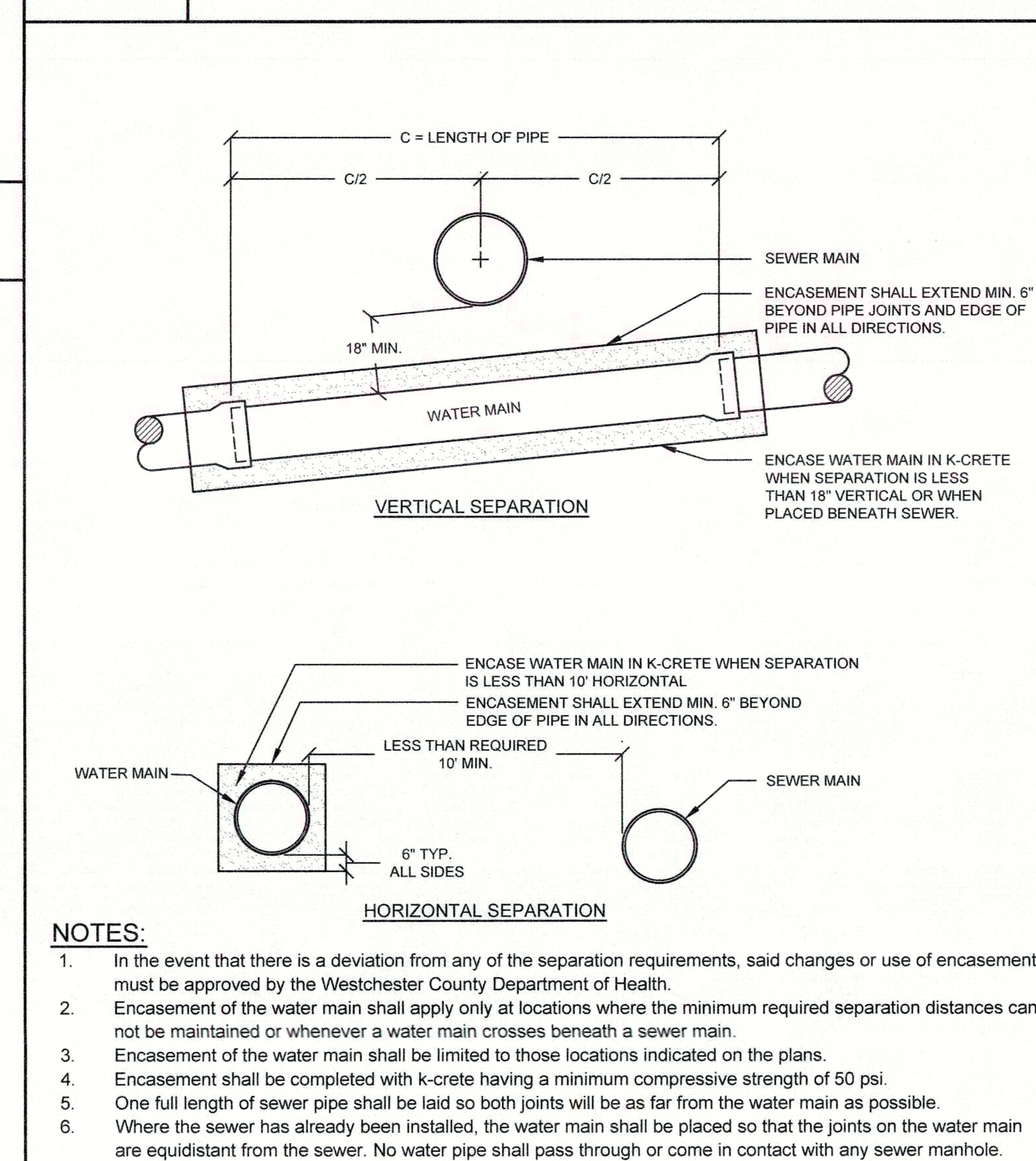
W-5 TEE AND GATE VALVE CONNECTION DETAIL
NOT TO SCALE



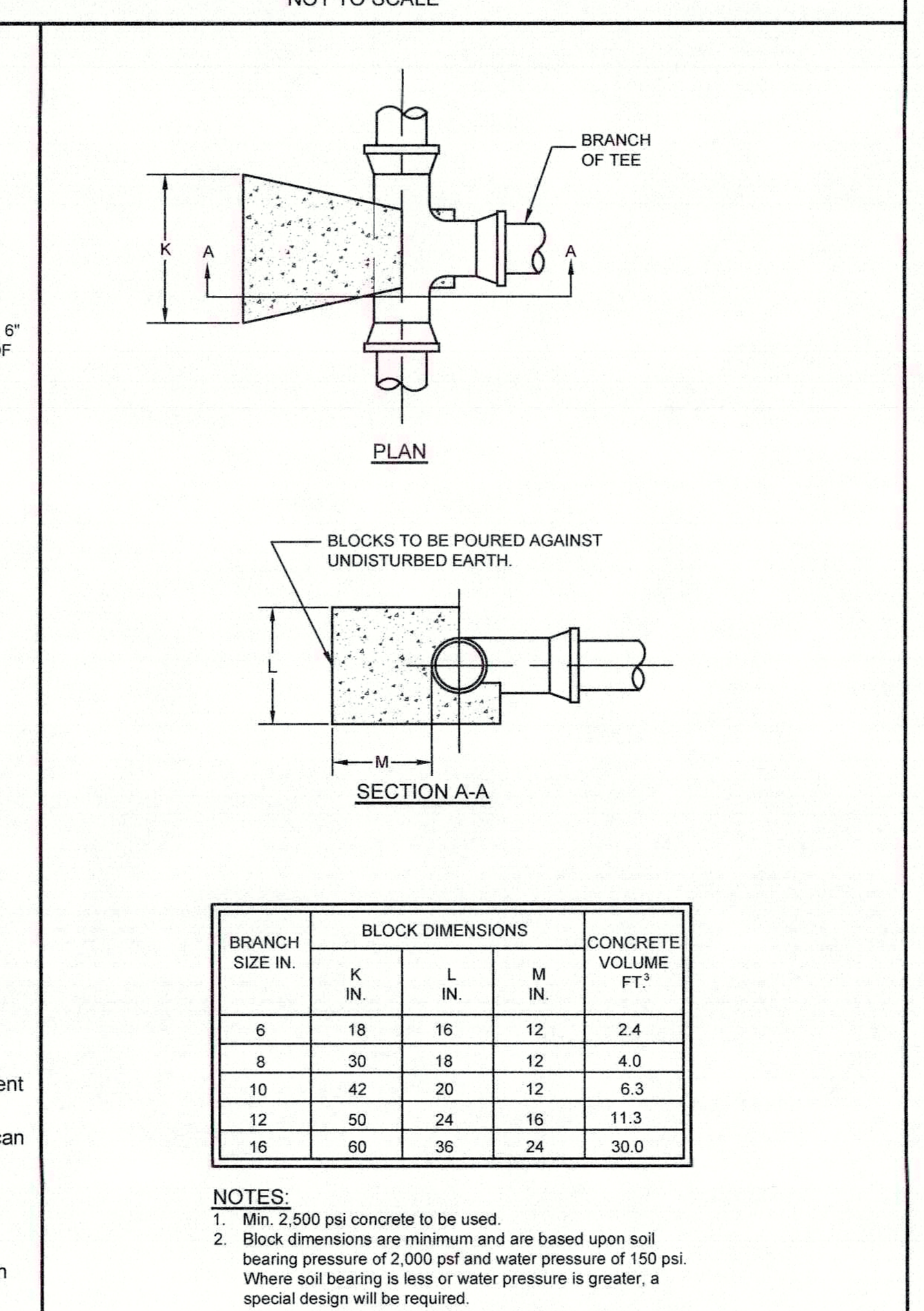
S-1 EXISTING SANITARY FLEXIBLE CONNECTION
NOT TO SCALE



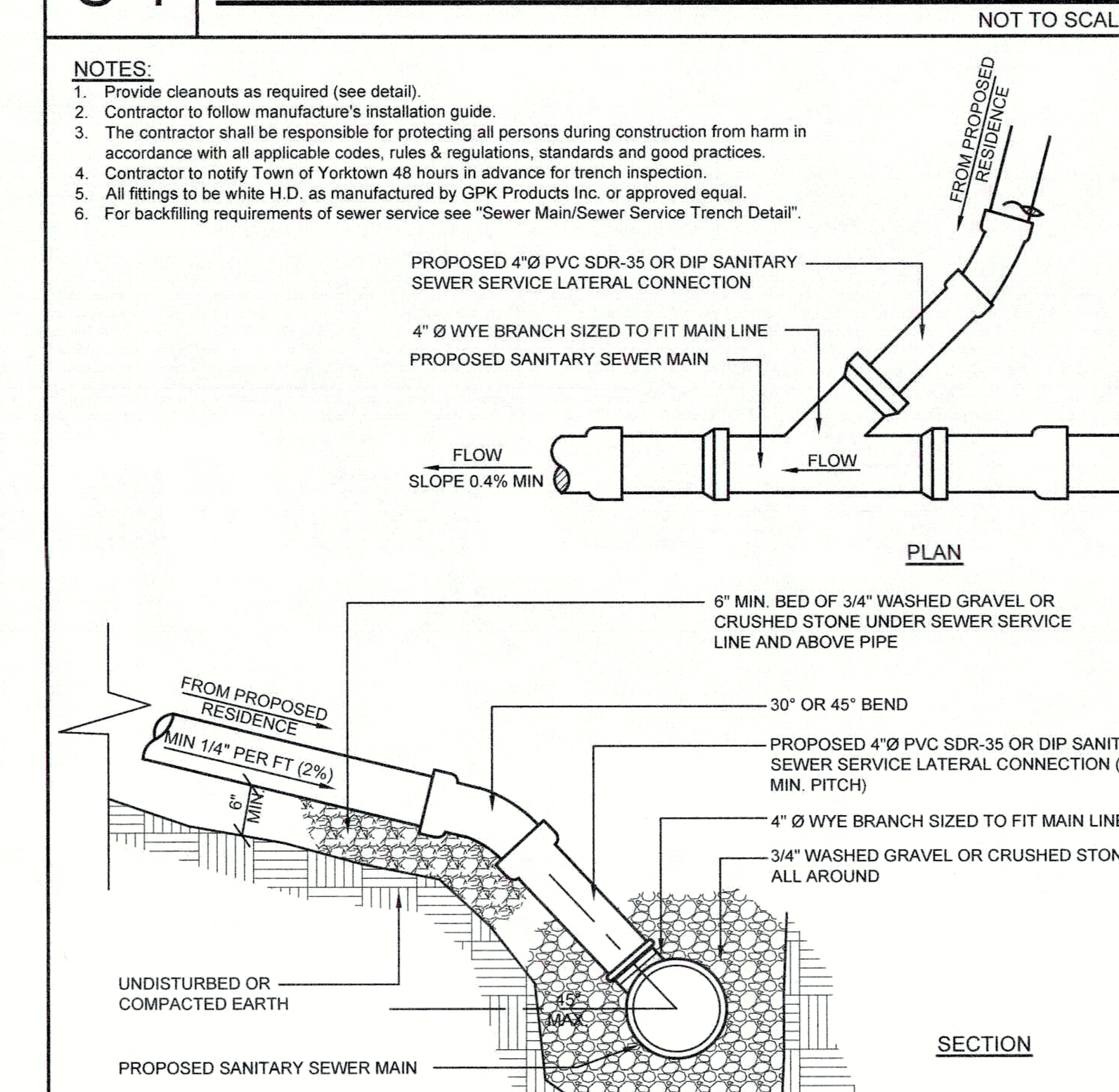
W-3 FIRE HYDRANT DETAIL
NOT TO SCALE



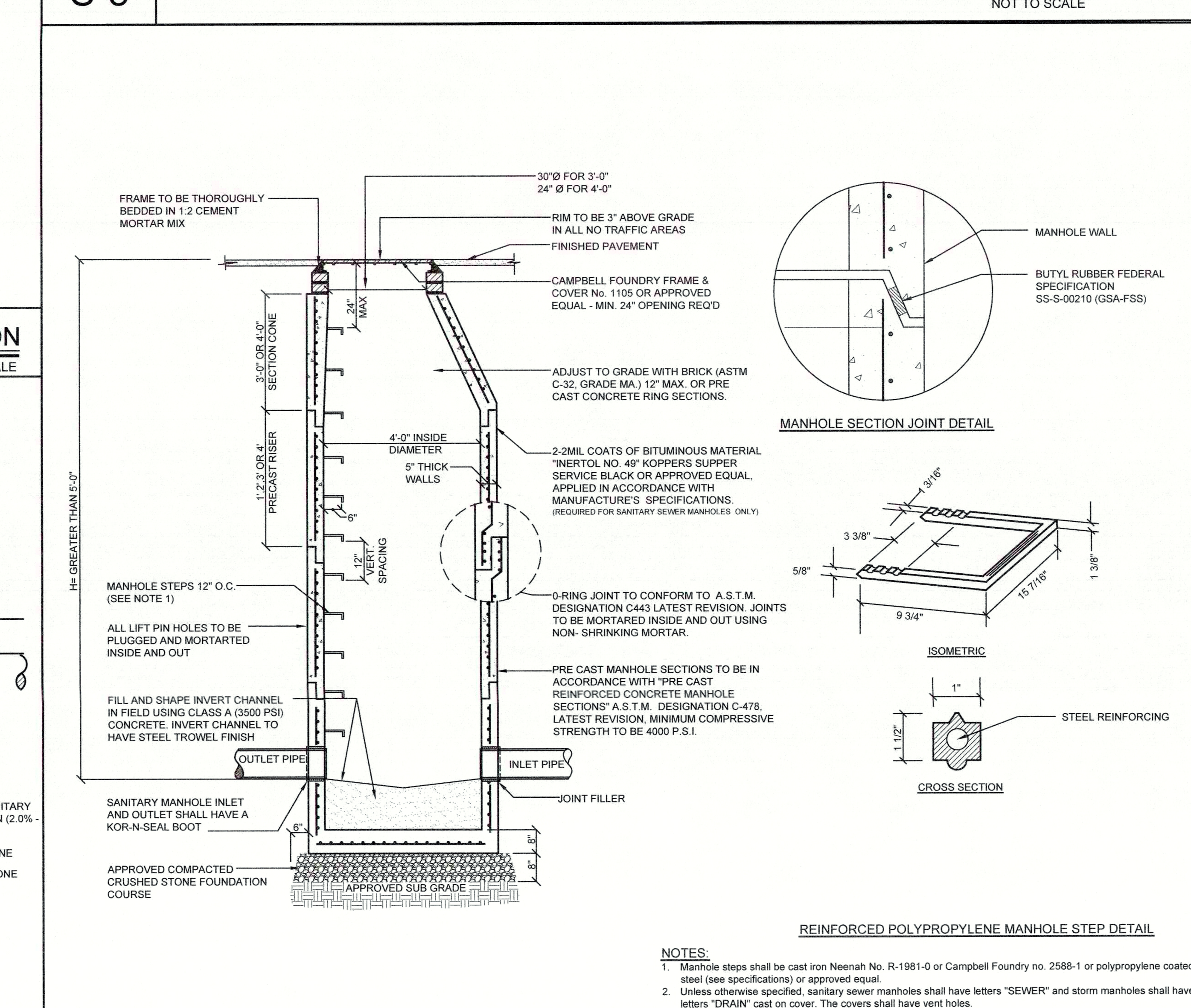
W-6 WATER MAIN ENCASEMENT DETAIL
NOT TO SCALE



W-7 THRUST BLOCKING FOR TEES
NOT TO SCALE



S-2 SEWER CONNECTION TO PROPOSED MAIN-LINE DETAIL
NOT TO SCALE



S-6 PRECAST CONCRETE SEWER MANHOLE DETAIL
NOT TO SCALE

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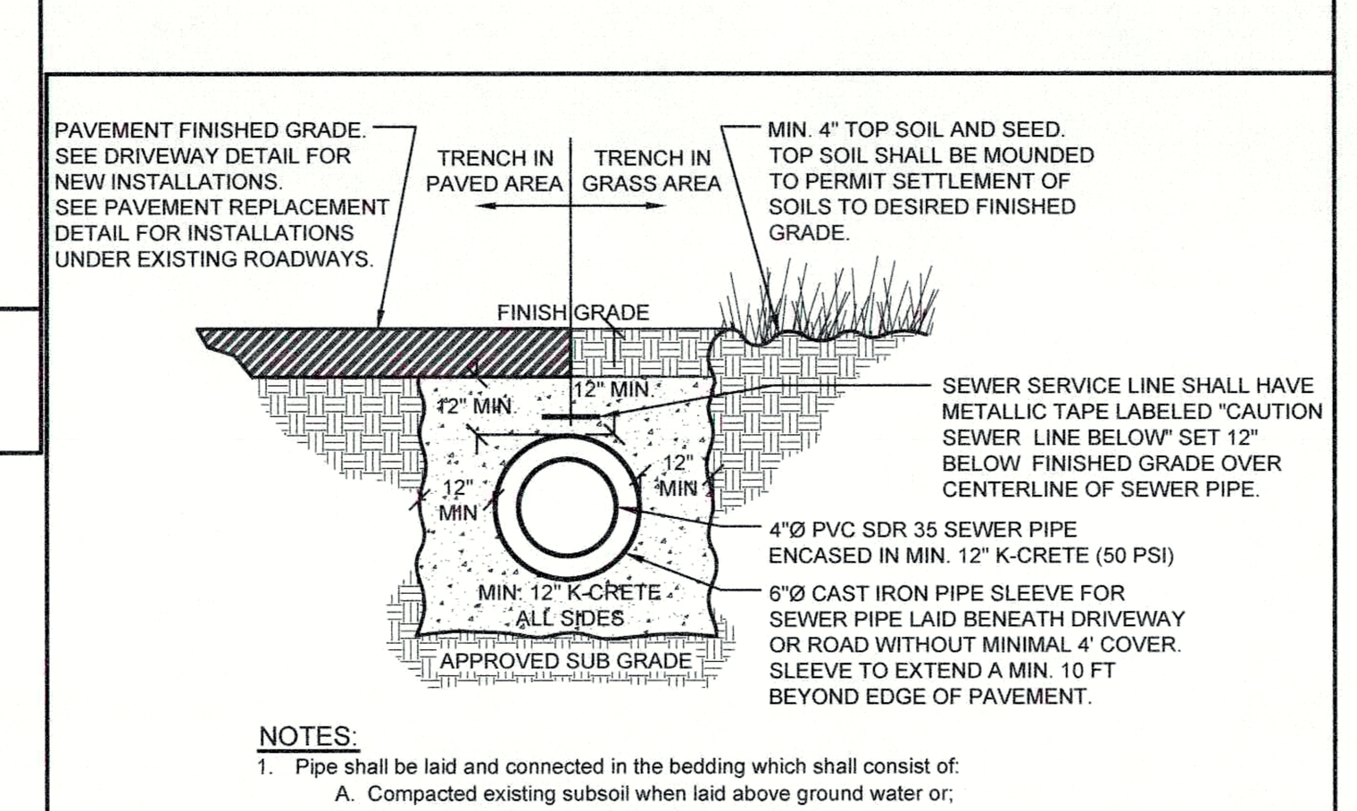
SANITARY SEWER DESIGN SHEET

PROJECT: Underhill Farm
JOB NO. 20-20
LOC: 650 Underhill Avenue Yorktown
DATE: 10/4/2021 REV 5/22/2024
SHEET: 1 OF 1

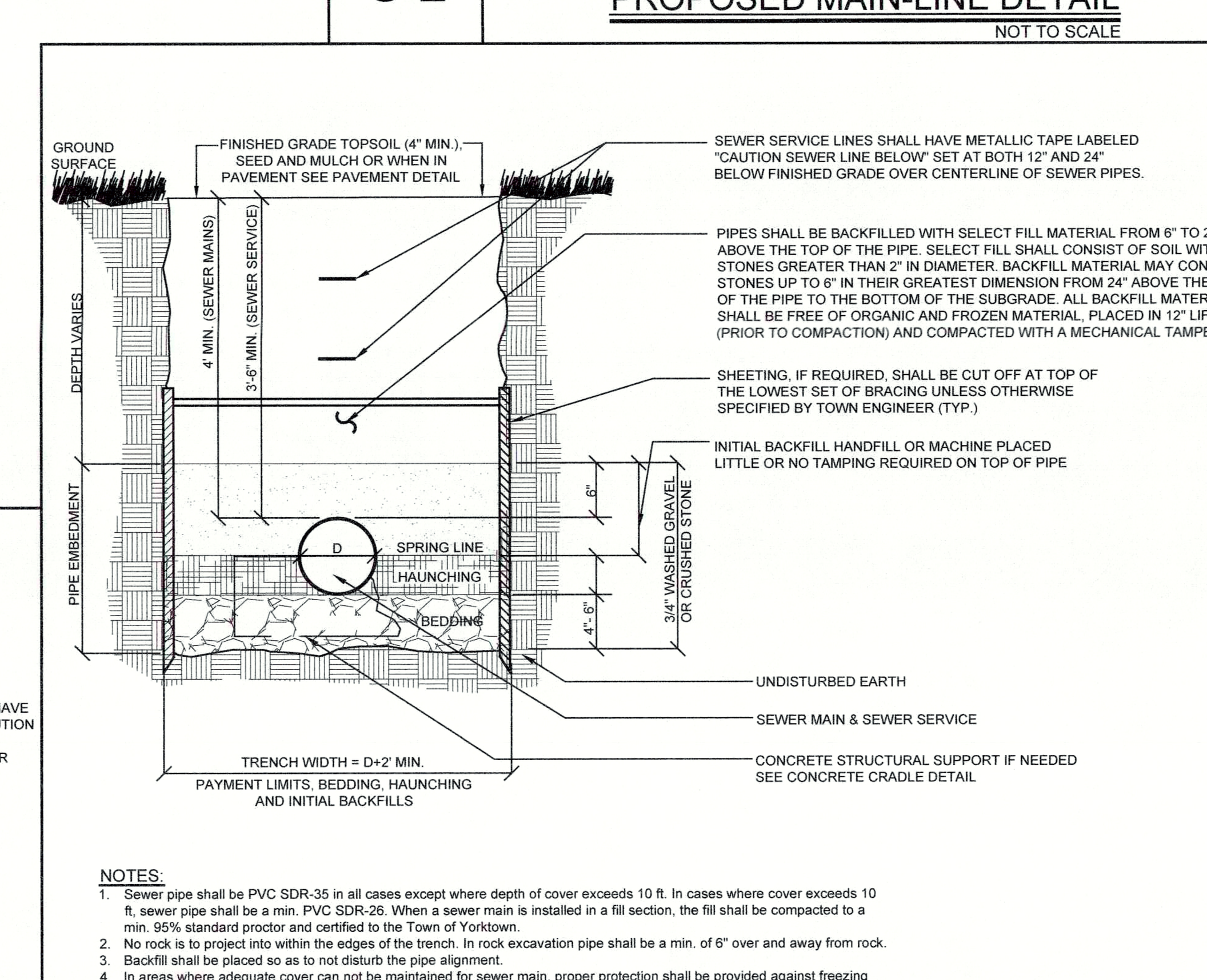
Basis for Sewage Design Flow: Single Family Residence 110 gpd per bedroom; Office Space 15 gpd per employee; Restaurant 35 gpd per seat; Retail Space 0.1 gpd per sf; Swimming Pool 10 gpd per swimmer; Pipe Design Manning Formula for n = 0.10

LOCATION	MANHOLE NO. FROM	MANHOLE NO. TO	LENGTH (FT)	Employees	Swim Guests	Square Feet	# of Seats	NUMBER OF BEDROOMS INCREMENT	NUMBER OF BEDROOMS TOTAL	TOTAL SEWAGE FLOW (GPD) AVERAGE	PEAK FLOW FACTOR	PEAK	SLOPE (%)	PIPE DIA. (IN)	CAPACITY FULL (CFS)	VELOCITY (FPS) FULL	AVERAGE	PEAK
Building 11	-	SMH #1	77						14	1,540	4	6,160	2	8	0.64	1.83	0.007	0.027
Building 9 and 10	SMH #1	SMH #2	283					35	49	5,390	4	21,560	2.6	8	0.73	2.08	0.024	0.096
Building 7 and 8	SMH #2	SMH #3	112					27	76	8,360	4	33,440	4.03	8	0.91	2.60	0.037	0.148
Building 5 and 6	SMH #3	SMH #4	228					34	110	12,100	4	48,400	2.88	8	0.77	2.19	0.054	0.215
Building 1 and 2	SMH #6	SMH #5	92						20	2,200	4	8,800	1.63	8	0.58	1.65	0.23	0.039
Building 3 and 4	SMH #5	SMH #4	193					34	54	5,940	4	23,760	1.74	8	0.60	1.71	0.29	0.105
Townhomes and Condo Pool	SMH #4	SMH #7	217		23			0	164	18,266	4	73,064	6.23	8	1.13	3.23	0.081	0.324
Condominium Building	SMH #7	SMH #8	164					62	226	24,860	4	99,440	1.05	8	0.46	1.32	0.110	0.441
Apartments, Pool, and Retail	SMH #8	SMH #9	112		13	8,100		126	352	39,656	4	158,624	1.59	8	0.57	1.63	0.176	0.703
Existing House to Tie-In	SMH #9	SMH #10	261	50			100	0	352	42,970	4	171,880	1.10	8	0.47	1.36	0.190	0.762

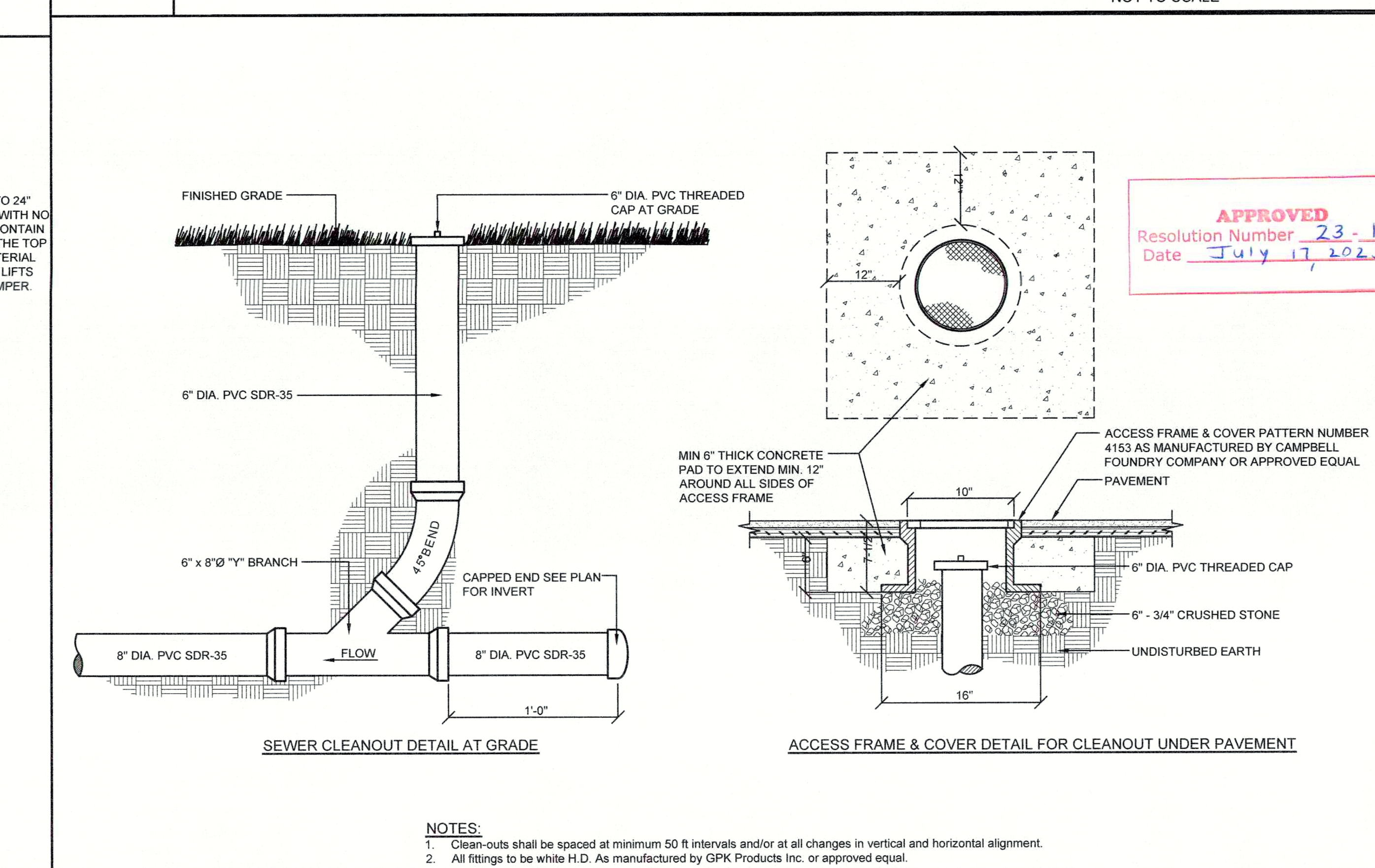
CT-1 SANITARY SEWER DESIGN



S-3 SANITARY SEWER BEDDING DETAIL
NOT TO SCALE



S-4 SEWER MAIN / SEWER SERVICE TRENCH DETAIL
NOT TO SCALE



APPROVED
Resolution Number 23-13
Date July 17, 2023

S-7 GRAVITY SEWER LATERAL CLEAN-OUT DETAIL
NOT TO SCALE

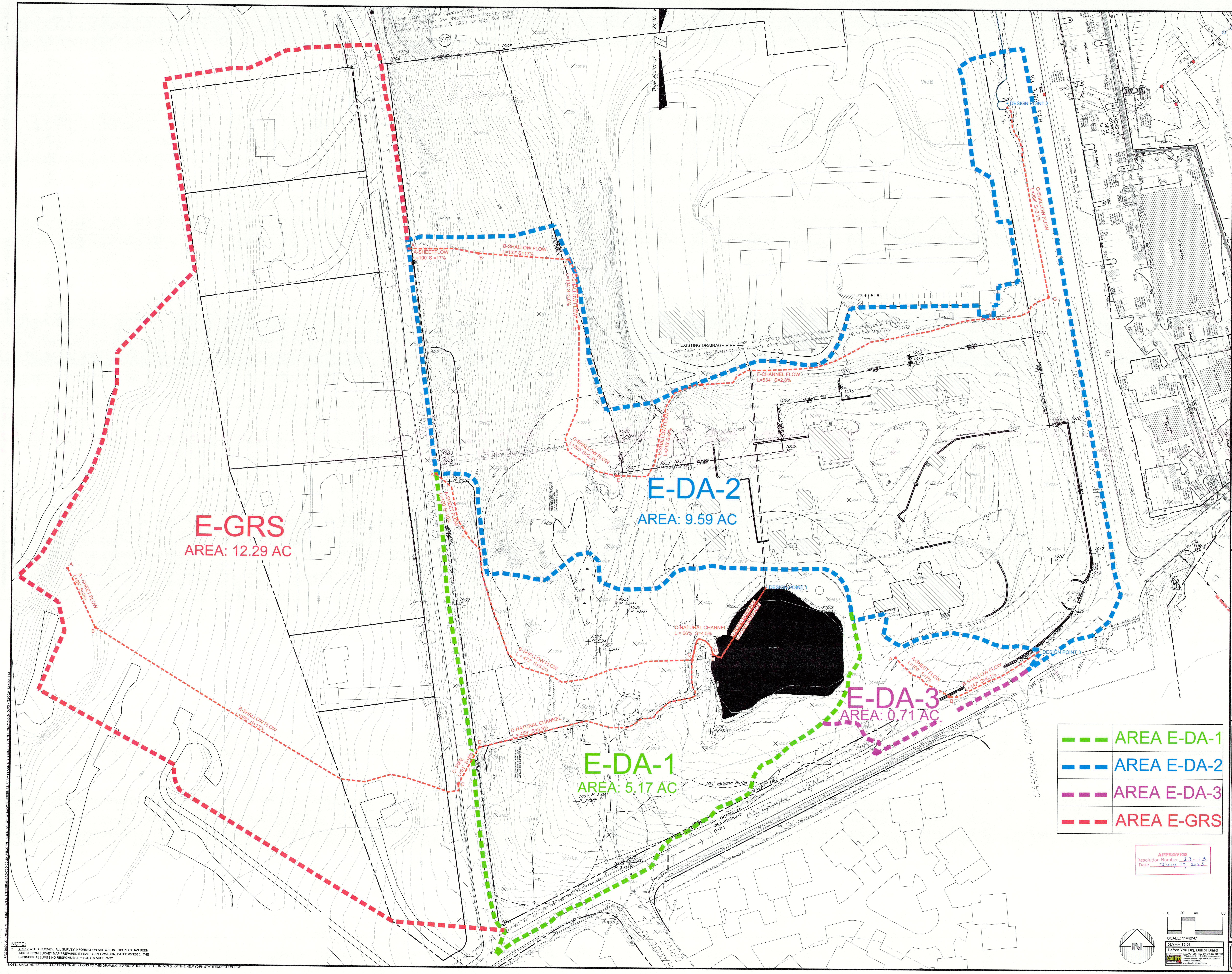
Site Design Consultants
Civil Engineers • Land Planners
251-F Underhill Avenue, Yorktown Heights, NY 10598
(914) 962-4488 - Fax: (914) 962-7386
www.sitedesignconsultants.com
PROJECT # 20-20
Engineer: Joseph C. Riina, P.E.
NYS Lic. No. 64431

DRAWN BY: TK
DATE: 6-22-20

WATER SEWER DETAILS

SITE PLAN
PREPARED FOR
UNDERHILL FARM
UNDERHILL AVENUE
Town of Yorktown Westchester County, New York

Sheet C-506



NOTE:
1. THIS IS NOT A SURVEY. ALL SURVEY INFORMATION SHOWN ON THIS PLAN HAS BEEN TAKEN FROM SURVEY MAP PREPARED BY BADEY AND WATSON, DATED 06/12/20. THE ENGINEER ASSUMES NO RESPONSIBILITY FOR ITS ACCURACY.

NOTE: UNAUTHORIZED ALTERATIONS OR ADDITIONS TO THIS DRAWING IS A VIOLATION OF SECTION 7209 (2) OF THE NEW YORK STATE EDUCATION LAW

APPROVED
Resolution Number 23-13
Date July 17 2023

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PROJECT - 20-20

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Engineer:
Joseph C. Riina, P.E.
NYS Lic. No. 64431

Revisions:		
No.	Date	Comments:
1.	6/30/20	R-3 Zone Schedule
2.	7/13/20	Zone Schedule Rev Floor Areas
3.	12/3/20	Updated Grading and Utility Plans
4.	1/21/21	Pedestrian Access Revisions
5.	1/12/22	Site Plan Revisions
6.	3/16/22	Site Plan Revisions
7.	10/24/22	Site Plan Revisions
8.	3/06/23	Udated wetland boundary
9.	3/31/23	Parking update
10.	4/13/23	Site Plan update
11.	5/08/23	Site Plan update
12.	8/18/23	Site Plan update
13.	9/8/2023	Site Plan update
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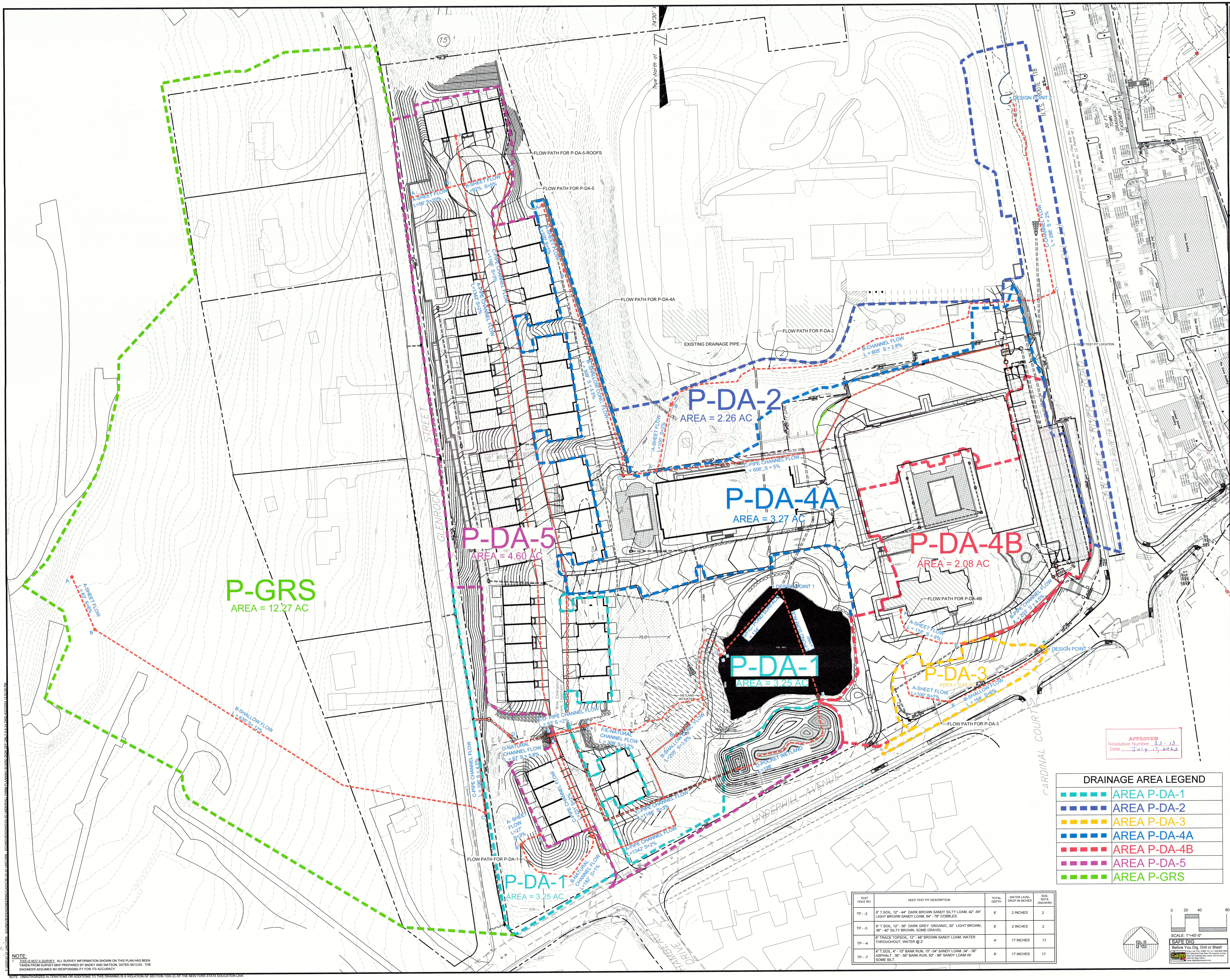
20.	5/10/2024	DEP Comments
21.	5/22/2024	WCHD Comments
22.	5/30/2024	WCHD Comments

SCALE: 1" = 40'
DRAWN BY: TK
DATE: 6-22-20

PRE DEV WATERSHED

SITE PLAN
PREPARED FOR
UNDERHILL FARM
UNDERHILL AVENUE
Town of Yorktown
Westchester County, New York

Sheet WS-1



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TEST HOLE NO.	DEEP TEST PIT DESCRIPTION	TOTAL DEPTH	WATER LAVEL DROP IN INCHES	SOIL RATE (INCH/HR)
TP - -2	6" T.SOIL, 12" - 44" DARK BROWN SANDY SILTY LOAM, 42" -54" LIGHT BROWN SANDY LOAM, 54" - 78" COBBLES	8'	2 INCHES	2
TP - -3	6" T.SOIL, 12" - 36" DARK GREY ORGANIC, 30" LIGHT BROWN, 36" - 42" SILTY BROWN, SOME GRAVEL	8'	2 INCHES	2
TP - -4	6" TRACE TOPSOIL, 12" - 48" BROWN SANDY LOAM, WATER THROUGHOUT, WATER @ 2'	4'	17 INCHES	17
TP - -7	4" T.SOIL, 4" - 15" BANK RUN, 15" -34" SANDY LOAM, 34" - 36" ASPHALT , 36" - 50" BANK RUN, 50" - 96" SANDY LOAM W/ SOME SILT.	8'	17 INCHES	17

DRAINAGE AREA LEGEND

- AREA P-DA-1
- AREA P-DA-2
- AREA P-DA-3
- AREA P-DA-4A
- AREA P-DA-4B
- AREA P-DA-5
- AREA P-GRS

APPROVED
Resolution Number 23-13
Date July 17, 2023

SCALE: 1"=40'-0"

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PROJECT - 20-20

Engineer:
STATE OF NEW YORK · JOSEPH CARLO RIINA · LICENSED PROFESSIONAL ENGINEER · NO. 64431
Joseph C. Riina, P.E.
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SCALE: 1" = 40'
DRAWN BY: TK
DATE: 6-22-20

POST DEV WATERSHED

SITE PLAN
PREPARED FOR
UNDERHILL FARM
UNDERHILL AVENUE
Town of Yorktown Westchester County, New York

Sheet WS-2