

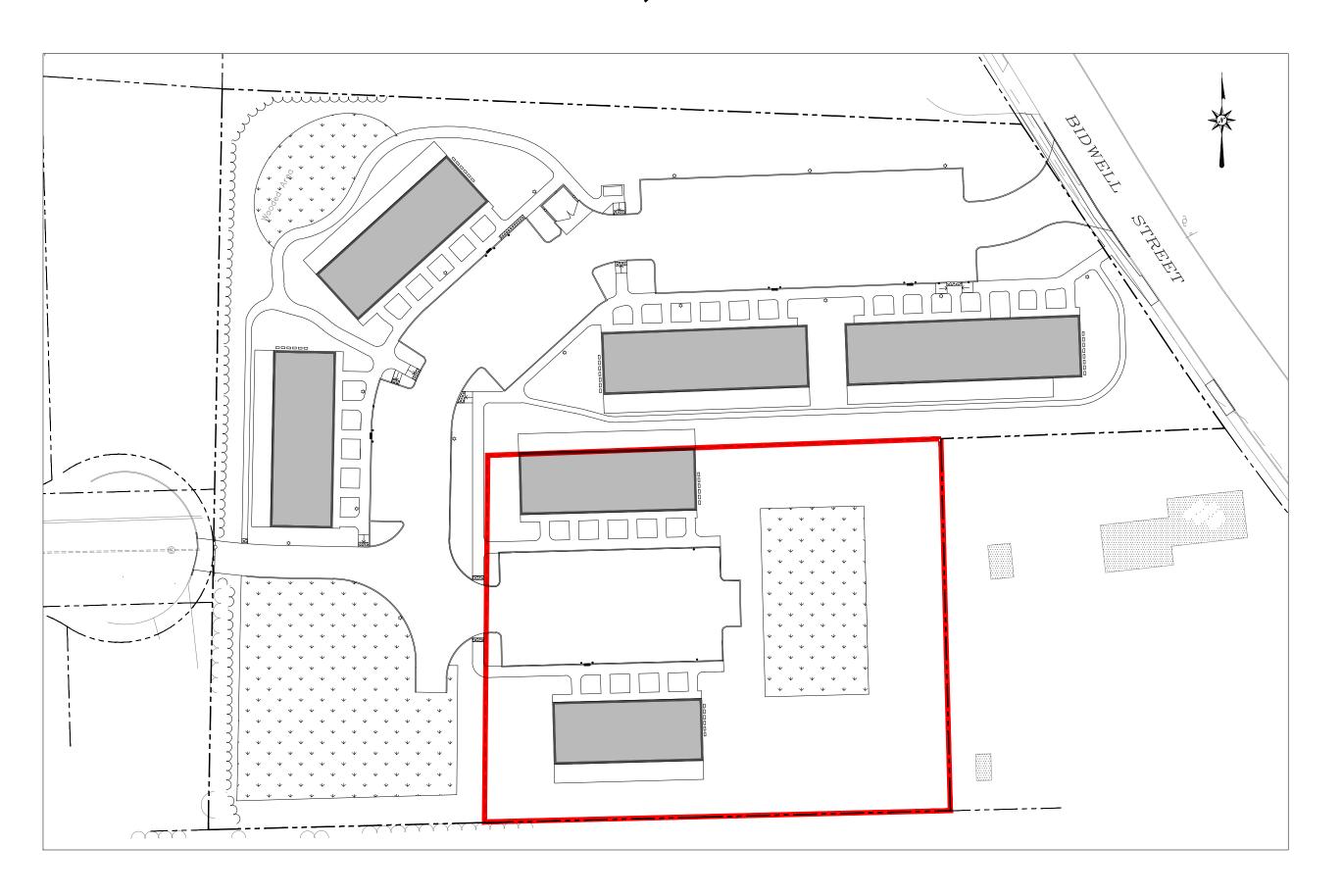
LOCATION MAP

# SITE PLAN APPLICATION & ZONE CHANGE TOWN OF MANCHESTER PLANNING & ZONING COMMISSION

JUNE, 2025

LOCATION:

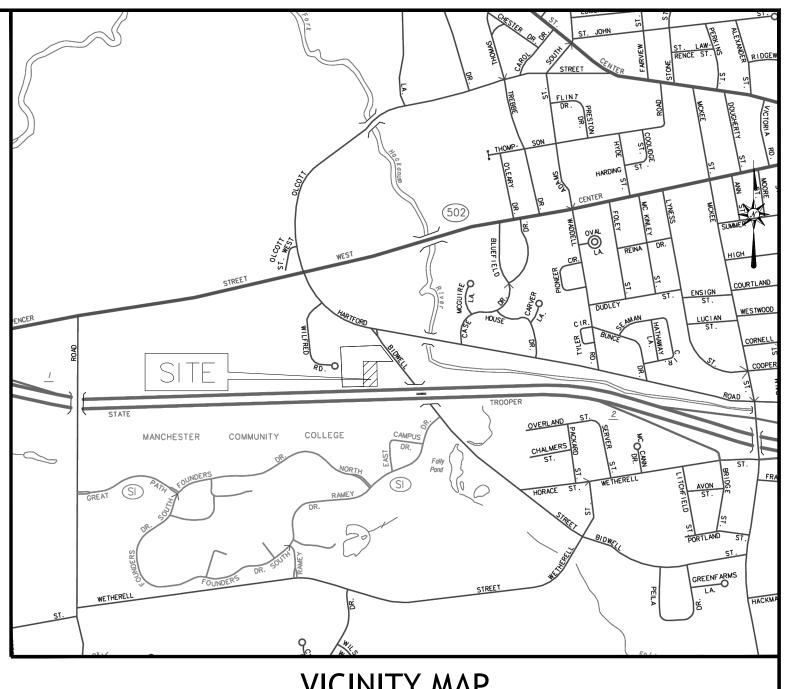
30 BIDWELL STREET MANCHESTER, CONNECTICUT



PROJECT MAP SCALE: 1" = 50'

PREPARED FOR:

TRIVIK BUILDERS, LLC 77 CHAPONIS WAY SOUTH WINDSOR, CONNECTICUT



VICINITY MAP

DRAWING LIST

**COVER SHEET BOUNDARY SURVEY GENERAL NOTES** SITE DEMOLITION PLAN **GRADING PLAN** C-107 LANDSCAPE PLAN TURNING MOVEMENT & SIGHT DISTANCE PLAN C-109 TO C-115 SITE DETAILS

ARCHITECTURAL PLANS

ARCHITECTURAL ELEVATIONS

**DATES** 

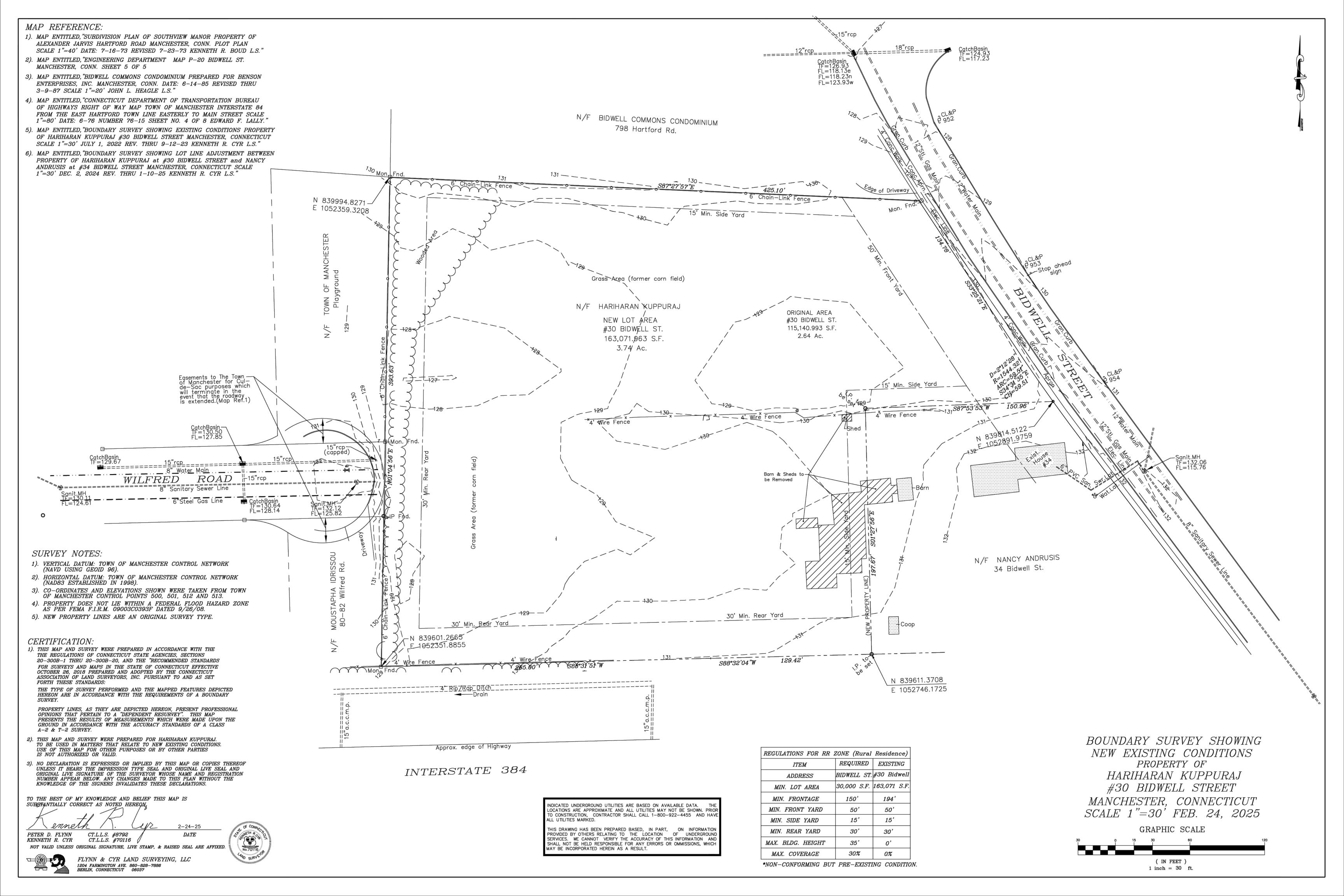
JUNE 26, 2025 **ISSUE DATE:** 

PREPARED BY:

CIVIL | GEOTECHNICAL SURVEY | ENVIRONMENTAL

FREEMAN COMPANIES, LLC

**36 JOHN STREET** HARTFORD, CT 06103 TEL: 860-251-9550 FAX: 860-986-7161 WWW.FREEMANCOS.COM **ELEVATE YOUR EXPECTATIONS** 



### **ZONING TABLE**

LOCAT	LOCATION: MANCHESTER, CT							
ZONE:	ZONE: PRD - PLANNED RESIDENCE DEVELOPMENT							
USE:	ISE: TOWNHOUSE / ROWHOUSE DEVELOPMENT ±162,914 S.F. ±3.74 ACRES							
ITEM #	ITEM	REQUIREMENTS	PROPOSED	VARIANCE				
1	MAXIMUM BUILDING DENSITY	THE TOTAL NUMBER OF MULTI-FAMILY DWELLING UNITS SHALL NOT EXCEED TEN (10) PER ACRE OF THE MULTI-FAMILY DWELLING SITE EXCLUDING WETLANDS AND SLOPES GREATER THAN 15%, EXCEPT FOR MULTI-FAMILY ELDERLY UNITS WHICH SHALL BE DEVELOPED IN ACCORDANCE WITH ARTICLE II, SECTION 20.04.01 (B).	TEN (10) PER ACRE	NO				
2	MINIMUM LOT AREA FOR EACH UNIT	2,000 SQUARE FEET	~ 4,403 SQFT	NO				
3	MINIMUM LOT FRONTAGE FOR EACH UNIT	WIDTH OF THE UNIT	101FT > 32FT	NO				
4	MINIMUM FRONT YARD	30 FEET	N/A	NO				
5	MINIMUM SIDE YARD (INTERIOR)	0 FEET		NO				
6	MINIMUM SIDE YARD (END UNIT)	10 FEET	30 FEET	NO				

### PARKING INFORMATION

ITEM #	ITEM	REQUIREMENTS	PROPOSED
1	NUMBER OF BUILDINGS/UNITS	3 UNITS PER BUILDING MINIMUM 9 UNITS PER BUILDING MAXIMUM	5,6 & 7 UNITS/BLDG 37 UNITS TOTAL
2	PARKING SPACE REQUIREMENTS	RESIDENTS: 2 SPACES PER UNIT VISITOR: 1 SPACES PER 4 UNITS =74+9.25=83.25 SPACES MINIMUM	85 SPACES
3	MINIMUM PARKING DIMENSIONS	9 FEET WIDE/18 FEET LONG	9 FEET x 18 FEET
4	MINIMUM AISLE WIDTH	24 FEET	24 FEET
5	MINIMUM NUMBER OF ACCESSIBLE SPACES (ADA PARKING GUIDELINES)	5 SPACES	6 SPACES
6	MINIMUM NUMBER OF E.V. SPACES (PA 22-25 CT CLEAN AIR ACT)	10% OF SPACES	10 SPACES

# SEDIMENT AND EROSION CONTROL NOTES

GENERAL INFORMATION AND OTHER CONTRACT PLANS FOR APPROPRIATE INFORMATION.

- THE CONTRACTOR SHALL CONSTRUCT ALL SEDIMENT AND EROSION CONTROLS IN ACCORDANCE WITH THE 2002 CONNECTICUT GUIDELINES FOR SOIL EROSION AND SEDIMENT CONTROL, LATEST EDITION, IN ACCORDANCE WITH THE CONTRACT DOCUMENTS, AND AS DIRECTED BY THE TOWN OF MANCHESTER. THE CONTRACTOR SHALL KEEP A COPY OF THE CURRENT GUIDELINES ON-SITE FOR REFERENCE DURING CONSTRUCTION. ALL SEDIMENTATION AND EROSION CONTROL MEASURES, INCLUDING THE CONSTRUCTION OF TEMPORARY SEDIMENTATION TRAPS, TEMPORARY DIVERSION SWALES AND ANTI-TRACKING PADS, SHALL BE INSTALLED PRIOR TO THE START OF CLEARING AND GRUBBING AND DEMOLITION OPERATIONS.
- THESE DRAWINGS ARE ONLY INTENDED TO DESCRIBE THE SEDIMENT AND EROSION CONTROL MEASURES FOR THIS SITE. ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHOWN ON THE EROSION & SEDIMENT CONTROL PLAN ARE SHOWN IN A GENERAL SIZE AND LOCATION ONLY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ENSURING THAT ALL EROSION CONTROL MEASURES ARE CONFIGURED AND CONSTRUCTED IN A MANNER THAT WILL MINIMIZE EROSION OF SOILS AND PREVENT THE TRANSPORT OF SEDIMENTS AND OTHER POLLUTANTS TO STORM DRAINAGE SYSTEMS AND/OR WATERCOURSES. ACTUAL SITE CONDITIONS OR SEASONAL AND CLIMATIC CONDITIONS MAY WARRANT ADDITIONAL CONTROLS OR CONFIGURATIONS WHEN DIRECTED BY THE ENGINEER.SEE SEDIMENT AND EROSION CONTROL DETAILS AND SUGGESTED CONSTRUCTION SEQUENCE FOR MORE INFORMATION. REFER TO SITE PLAN FOR
- THE CONTRACTOR IS RESPONSIBLE FOR IMPLEMENTING THE SEDIMENT AND EROSION CONTROL PLAN. THIS RESPONSIBILITY INCLUDES THE PROPER INSTALLATION AND MAINTENANCE OF CONTROL MEASURES, INFORMING ALL PARTIES ENGAGED WITH CONSTRUCTION ON THE SITE OF THE REQUIREMENTS AND OBJECTIVES OF THIS PLAN. INFORMING THE GOVERNING AUTHORITY OR INLAND WETLANDS AGENCY OF ANY TRANSFER OF THIS RESPONSIBILITY. AND FOR CONVEYING A COPY OF THE SEDIMENT & EROSION CONTROL PLAN IF THE TITLE TO THE LAND IS TRANSFERRED. COMPLY WITH REQUIREMENTS OF CGS SECTION 22A, 430B FOR STORMWATER DISCHARGE FROM CONSTRUCTION ACTIVITIES AND WITH DEEP RECORD KEEPING AND INSPECTION REQUIREMENTS.
- A BOND MAY BE REQUIRED TO BE POSTED WITH THE GOVERNING AUTHORITY FOR THE EROSION CONTROL INSTALLATION AND MAINTENANCE.
- THE CONTRACTOR SHALL APPLY THE MINIMUM EROSION & SEDIMENT CONTROL MEASURES SHOWN ON THE PLAN IN CONJUNCTION WITH CONSTRUCTION SEQUENCING, SUCH THAT ALL ACTIVE WORK ZONES ARE PROTECTED. ADDITIONAL AND/OR ALTERNATIVE SEDIMENT AND EROSION CONTROL MEASURES MAY BE INSTALLED DURING THE CONSTRUCTION PERIOD IF FOUND NECESSARY BY THE CONTRACTOR, OWNER, SITE ENGINEER, MUNICIPAL OFFICIALS, OR ANY GOVERNING AGENCY. THE CONTRACTOR SHALL CONTACT THE OWNER AND APPROPRIATE GOVERNING AGENCIES FOR APPROVAL IF ALTERNATIVE CONTROLS OTHER THAN THOSE SHOWN ON THE PLANS ARE PROPOSED BY THE CONTRACTOR.
- THE CONTRACTOR SHALL TAKE EXTREME CARE DURING CONSTRUCTION SO AS NOT TO DISTURB UNPROTECTED WETLAND AREAS OR SEDIMENTATION AND EROSION CONTROL MEASURES. THE CONTRACTOR SHALL INSPECT ALL SEDIMENT AND EROSION CONTROLS WEEKLY AND WITHIN 24 HOURS OF A STORM WITH A RAINFALL AMOUNT OF 0.2 INCHES OR GREATER TO VERIFY THAT THE CONTROLS ARE OPERATING PROPERLY AND MAKE REPAIRS WHERE NECESSARY.
- THE CONTRACTOR SHALL KEEP A SUPPLY OF EROSION CONTROL MATERIAL (HAY BALES, SILT FENCE, ETC.) ON-SITE FOR PERIODIC MAINTENANCE AND
- PROTECT EXISTING TREES THAT ARE TO BE SAVED BY FENCING AT THE DRIP LINE, OR AS DETAILED, WITH SNOW FENCE, ORANGE SAFETY FENCE, OR EQUIVALENT FENCING. ANY LIMB TRIMMING SHOULD BE DONE AFTER CONSULTATION WITH AN ARBORIST AND BEFORE CONSTRUCTION BEGINS IN THAT AREA; FENCING SHALL BE MAINTAINED AND REPAIRED DURING CONSTRUCTION.
- CONSTRUCTION ENTRANCE SHALL BE INSTALLED PRIOR TO ANY SITE EXCAVATION OR CONSTRUCTION ACTIVITY AND SHALL BE MAINTAINED THROUGHOUT

# DEMOLITION NOTES

- 1. THE CONTRACTOR SHALL SECURE ANY PERMITS, PAY ALL FEES AND PERFORM CLEARING AND GRUBBING AND DEBRIS REMOVAL PRIOR TO COMMENCEMENT OF GRADING OPERATIONS.
- 2. SEDIMENT AND EROSION CONTROLS AS SHOWN ON THE SEDIMENT AND EROSION CONTROL PLAN AND/OR DEMOLITION PLAN SHALL BE INSTALLED BY THE CONTRACTOR PRIOR TO START OF DEMOLITION AND CLEARING AND GRUBBING
- 3. REMOVE AND DISPOSE OF ANY SIDEWALKS, FENCES, STAIRS, WALLS, DEBRIS AND RUBBISH REQUIRING REMOVAL FROM THE WORK AREA IN AN APPROVED OFF-SITE LANDFILL, BY AN APPROVED HAULER. THE HAULER SHALL COMPLY WITH ALL LOCAL, STATE AND FEDERAL REGULATORY REQUIREMENTS. ANY GRANITE CURBING REMOVED OR REPLACED FROM THE TOWN RIGHT-OF-WAY IS TO BE SALVAGED AND RETURNED TO THE PUBLIC WORKS DEPARTMENT YARD AT 321
- 4. THE CONTRACTOR SHALL SECURE ALL PERMITS FOR HIS DEMOLITION WORK AND DISPOSAL OF HIS DEMOLITION MATERIAL TO BE REMOVED FROM THE SITE. THE CONTRACTOR SHALL POST BONDS AND PAY PERMIT FEES AS REQUIRED.
- 5. THE CONTRACTOR SHALL PREPARE ALL MANIFEST DOCUMENTS AS REQUIRED PRIOR TO COMMENCEMENT OF
- 6. THE CONTRACTOR SHALL PROTECT ALL IRON PINS, MONUMENTS AND PROPERTY CORNERS DURING DEMOLITION ACTIVITIES. ANY CONTRACTOR DISTURBED PINS, MONUMENTS, AND OR PROPERTY CORNERS, ETC. SHALL BE RESET BY A LICENSED LAND SURVEYOR AT THE EXPENSE OF THE CONTRACTOR.
- 7. THE CONTRACTOR SHALL STABILIZE THE SITE AND KEEP EROSION AND SEDIMENT CONTROL MEASURES IN PLACE UNTIL THE COMPLETION OF THEIR WORK. THE CONTRACTOR IS RESPONSIBLE FOR THE MAINTENANCE OF EROSION AND SEDIMENT CONTROLS AND FOR INSTALLATION OF ANY NEW EROSION AND SEDIMENTATION CONTROLS AS NEEDED.
- 8. THE CONTRACTOR SHALL CONTACT "CALL BEFORE YOU DIG" AT (800) 922-4455 72 HOURS PRIOR TO CONSTRUCTION AND VERIFY ALL UNDERGROUND AND OVERHEAD UTILITY AND STORM DRAINAGE LOCATIONS. THE CONTRACTOR SHALL EMPLOY THE USE OF A UTILITY LOCATING COMPANY TO PROVIDE SUBSURFACE UTILITY ENGINEERING CONSISTING OF DESIGNATING UTILITIES AND STORM PIPING ON PRIVATE PROPERTY WITHIN THE CONTRACT LIMIT AND CONSISTING OF DESIGNATING AND LOCATING WHERE PROPOSED UTILITIES AND STORM PIPING CROSS EXISTING UTILITIES AND STORM PIPING WITHIN THE CONTRACT LIMITS.
- 9. THE CONTRACTOR SHALL REPAIR PAVEMENTS BY INSTALLING TEMPORARY AND PERMANENT PAVEMENTS IN PUBLIC RIGHTS-OF-WAY AS REQUIRED BY LOCAL GOVERNING AUTHORITIES AND THE AND PER PERMIT REQUIREMENTS DUE TO DEMOLITION AND PIPE REMOVAL ACTIVITIES.
- 10. THE CONTRACTOR SHALL ARRANGE FOR AND INSTALL TEMPORARY OR PERMANENT UTILITY CONNECTIONS WHERE INDICATED ON PLAN OR AS REQUIRED. MAINTAIN UTILITY SERVICES TO BUILDINGS TO REMAIN. CONTRACTOR TO COORDINATE WITH UTILITY PROVIDERS FOR INSTALLATION AND PAY UTILITY PROVIDER FEES.
- 11. THE CONTRACTOR OR DEMOLITION CONTRACTOR SHALL INSTALL TEMPORARY SHEETING OR SHORING AS NECESSARY TO PROTECT EXISTING AND NEW BUILDINGS AND UTILITIES DURING CONSTRUCTION AND DEMOLITION. SHEETING OR SHORING SHALL BE DESIGNED BY A PROFESSIONAL ENGINEER, LICENSED IN CONNECTICUT AND EVIDENCE OF SUCH SUBMITTED TO THE OWNER PRIOR TO INSTALLATION.
- 12. THE CONTRACTOR SHALL COMPLY WITH OSHA CFR29 PART 1926 FOR EXCAVATION, TRENCHING, AND TRENCH

# **GRADING AND DRAINAGE NOTES**

- 1. THIS DRAWING IS INTENDED TO DESCRIBE GRADING AND DRAINAGE ONLY. REFER TO SITE PLAN FOR GENERAL INFORMATION, AND DETAIL SHEETS FOR DETAILS. SEE MEP AND ARCHITECTURAL DRAWINGS, PREPARED BY OTHERS, FOR BUILDING CONNECTION LOCATIONS AND DETAIL:
- 2. THE CONTRACTOR SHALL PRESERVE EXISTING VEGETATION WHERE POSSIBLE AND/OR AS NOTED ON THE DRAWINGS. REFER TO EROSION CONTROL PLANS FOR LIMIT OF DISTURBANCE AND EROSION CONTROL NOTES.
- 3. TOPSOIL SHALL BE STRIPPED AND STOCKPILED ON SITE FOR USE IN FINAL LANDSCAPING.
- 4. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL NECESSARY CONSTRUCTION PERMITS REQUIRED BY FEDERAL. STATE AND LOCAL AGENCIES PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL OBTAIN ALL NECESSARY CONSTRUCTION PERMITS FROM THE TOWN OF MANCHESTER REQUIRED TO PERFORM ALL REQUIRED WORK, INCLUDING STREET CUTS AND CONNECTIONS TO EXISTING UTILITIES. THE CONTRACTOR SHALL POST ALL BONDS, PAY ALL FEES, PROVIDE PROOF OF INSURANCE AND PROVIDE TRAFFIC CONTROL NECESSARY FOR THIS WORK
- 5. THE CONTRACTOR SHALL PROVIDE AND MAINTAIN TRAFFIC CONTROL DEVICES FOR PROTECTION OF VEHICLES AND PEDESTRIANS CONSISTING OF DRUMS, SARRIERS, SIGNS, LIGHTS, FENCES AND UNIFORMED TRAFFICMEN/OFFICERS AS REQUIRED, ORDERED BY THE ENGINEER OR REQUIRED BY THE STATE AND LOCAL
- 6. PROPER CONSTRUCTION PROCEDURES SHALL BE FOLLOWED ON ALL IMPROVEMENTS WITHIN THIS PARCEL SO AS TO PREVENT THE SILTING OF ANY WATERCOURSE OR WETLANDS IN ACCORDANCE WITH THE REGULATIONS OF THE DEPARTMENT OF ENVIRONMENTAL PROTECTION GUIDELINES FOR SOIL EROSION AND SEDIMENT POLLUTION CONTROL. IN ADDITION, THE CONTRACTOR SHALL STRICTLY ADHERE TO THE "SEDIMENT AND EROSION CONTROL PLAN" CONTAINED HEREIN. THE CONTRACTOR SHALL BE RESPONSIBLE TO POST ALL BONDS AS REQUIRED BY THE LOCAL MUNICIPALITY, WHICH WOULD GUARANTEE
- 7. ALL CONSTRUCTION SHALL COMPLY WITH THE PROJECT SPECIFICATIONS MANUAL AND THE LOCAL MUNICIPALITY'S STANDARDS AND COUNTY STANDARDS AND STATE CONNECTICUT DOT SPECIFICATIONS AS APPLICABLE FOR THE LOCATION OF THE WORK. ALL CONSTRUCTION WITHIN A DOT RIGHT OF WAY SHALL COMPLY WITH ALL DEPARTMENT OF TRANSPORTATION STANDARDS. WHERE SPECIFICATIONS OR STANDARDS ARE IN CONFLICT, THE MORE STRINGENT SPECIFICATION OR STANDARD SHALL BE SUPERIOR

8. IF IMPACTED OR CONTAMINATED SOIL IS ENCOUNTERED BY THE CONTRACTOR, THE CONTRACTOR SHALL SUSPEND EXCAVATION WORK OF IMPACTED SOIL AND

- NOTIFY THE OWNER AND/OR OWNER'S ENVIRONMENTAL CONSULTANT PRIOR TO PROCEEDING WITH FURTHER WORK IN THE IMPACTED SOIL LOCATION UNTIL FURTHER INSTRUCTED BY THE OWNER AND/OR OWNER'S ENVIRONMENTAL CONSULTANT.
- 9. MANHOLE RIMS AND CATCH BASIN GRATES SHALL BE SET TO ELEVATIONS SHOWN. SET ALL EXISTING MANHOLE RIMS AND VALVE COVERS TO BE RAISED OR ERED FLUSH WITH FINAL GRADE AS NECESSAR'
- 10. ALL PROPOSED STORMWATER COLLECTION SYSTEM, UNDERGROUND DETENTION SYSTEM, AND TREATMENT SYSTEM(S) ARE PRIVATELY OWNED, AND THAT MAINTENANCE WILL BE THE RESPONSIBILITY OF THE PROPERTY OWNER.

- THE DURATION OF ALL CONSTRUCTION. THE LOCATION OF THE TRACKING PADS MAY CHANGE AS VARIOUS PHASES OF CONSTRUCTION ARE COMPLETED. 10. ALL CONSTRUCTION SHALL BE CONTAINED WITHIN THE LIMIT OF DISTURBANCE, WHICH SHALL BE MARKED WITH SILT FENCE, SAFETY FENCE, HAY BALES, RIBBONS, OR OTHER MEANS PRIOR TO CLEARING. CONSTRUCTION ACTIVITY SHALL REMAIN ON THE UPHILL SIDE OF THE SEDIMENT BARRIER UNLESS WORK IS SPECIFICALLY CALLED FOR ON THE DOWNHILL SIDE OF THE BARRIER. STAKED HAY BALES OR SILT FENCES SHALL ALSO BE INSTALLED AT THE DOWNHILL SIDES
- 11. CLEAN ACCUMULATED SEDIMENT FROM CATCH BASIN SUMPS AS NECESSARY. REMOVE ACCUMULATED SEDIMENT FROM BEHIND HAY BALES AND SILT FENCE. EXCAVATED MATERIAL FROM TEMPORARY SEDIMENT TRAPS/BASINS MUST BE STOCKPILED ON UPHILL SIDE OF SILT FENCE.

OF BUILDING EXCAVATIONS, DEWATERING PUMP DISCHARGES, AND MATERIAL STOCKPILES.

TEMPORARY CONSTRUCTION STAGING AREAS MAY BE HYDROSEEDED WITH TACKIFIER.

- 12. TOPSOIL SHALL BE STRIPPED AND STOCKPILED FOR USE IN FINAL LANDSCAPING. ALL EARTH STOCKPILES SHALL HAVE HAY BALES OR SILT FENCE AROUND THE LIMIT OF PILE. PILES SHALL BE TEMPORARILY SEEDED IF PILE IS TO REMAIN IN PLACE AND UNDISTURBED FOR MORE THAN 30 DAYS.
- 13. THE CONTRACTOR SHALL MAINTAIN A CLEAN CONSTRUCTION SITE AND SHALL NOT ALLOW THE ACCUMULATION OF RUBBISH OR CONSTRUCTION DEBRIS ON THE SITE. PROPER SANITARY DEVICES SHALL BE MAINTAINED ON-SITE AT ALL TIMES. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO AVOID THE SPILLAGE OF FUEL OR OTHER POLLUTANTS ON THE CONSTRUCTION SITE AND SHALL ADHERE TO ALL APPLICABLE POLICIES AND REGULATIONS RELATED TO SPILL PREVENTION AND RESPONSE/CONTAINMENT.
- 14. COVERED METAL WASTE CONTAINERS SHALL BE PROVIDED AT THE SITE TO FACILITATE THE COLLECTION OF REFUSE MATERIAL GENERATED FROM CONSTRUCTION ACTIVITIES. SUCH MATERIAL SHALL NOT BE BURIED OR BURNED AT THE SITE.
- 15. MINIMIZE LAND DISTURBANCES. SEED AND MULCH DISTURBED AREAS WITH TEMPORARY MIX AS SOON AS PRACTICABLE (2 WEEK MAXIMUM UNSTABILIZED PERIOD) USING PERENNIAL RYEGRASS AT 40 LBS PER ACRE. MULCH ALL CUT AND FILL SLOPES AND SWALES WITH LOOSE HAY AT A RATE OF 2 TONS PER ACRE. IF NECESSARY, REPLACE LOOSE HAY ON SLOPES WITH EROSION CONTROL BLANKETS OR JUTE CLOTH. MODERATELY GRADED AREAS, ISLANDS, AND
- 16. MAINTAIN EXISTING PAVED AREAS FOR CONSTRUCTION STAGING FOR AS LONG AS POSSIBLE. UPON REMOVAL OF ALL PAVEMENT, THE CONTRACTOR SHALL PLACE STONE OVER DISTURBED AREAS TO SERVE AS STAGING AREAS TO THE SATISFACTION OF THE ENGINEER.
- SWEEP AFFECTED PORTIONS OF OFF SITE ROADS ONE OR MORE TIMES A DAY (OR LESS FREQUENTLY IF TRACKING IS NOT A PROBLEM) DURING CONSTRUCTION. FOR DUST CONTROL, PERIODICALLY MOISTEN EXPOSED SOIL SURFACES WITH WATER ON UNPAVED TRAVEL WAYS TO KEEP THE TRAVEL WAYS DAMP. CALCIUM CHLORIDE MAY ALSO BE APPLIED TO ACCESS ROADS. DUMP TRUCK LOADS EXITING THE SITE SHALL BE COVERED.
- 18. TURF ESTABLISHMENT SHALL BE PERFORMED OVER ALL DISTURBED SOIL, UNLESS THE AREA IS UNDER ACTIVE CONSTRUCTION, IT IS COVERED IN STONE OR SCHEDULED FOR PAVING WITHIN 30 DAYS. TEMPORARY SEEDING OR NON-LIVING SOIL PROTECTION OF ALL EXPOSED SOILS AND SLOPES SHALL BE INITIATED WITHIN THE FIRST 7 DAYS OF SUSPENDING WORK IN AREAS TO BE LEFT LONGER THAN 30 DAYS.
- 19. MAINTAIN ALL PERMANENT AND TEMPORARY SEDIMENT CONTROL DEVICES IN EFFECTIVE CONDITION THROUGHOUT THE CONSTRUCTION PERIOD. UPON COMPLETION OF WORK SWEEP PARKING LOTS, CLEAN THE STORM DRAINAGE SYSTEMS AND REMOVE ALL TEMPORARY SEDIMENT CONTROLS ONCE THE SITE IS FULLY STABILIZED AND APPROVAL HAS BEEN RECEIVED FROM TOWN OF MANCHESTER AND/OR ENGINEER.

### **UTILITIES NOTES**

- 1. THE CONTRACTOR IS RESPONSIBLE FOR CONTACTING THE TOWN OF MANCHESTER TO SECURE CONSTRUCTION PERMITS AND FOR PAYMENT OF FEES FOR STREET CUTS AND CONNECTIONS TO
- 2. THE CONTRACTOR SHALL PROVIDE AND MAINTAIN TRAFFIC CONTROL DEVICES FOR PROTECTION OF VEHICLES AND PEDESTRIANS CONSISTING OF DRUMS, BARRIERS, SIGNS, LIGHTS, FENCES AND UNIFORMED TRAFFIC CONTROLLERS AND UNIFORMED TRAFFIC MEN AS REQUIRED, OR AS ORDERED BY THE ENGINEER OR AS REQUIRED BY THE LOCAL GOVERNING AUTHORITIES OR AS REQUIRED BY PERMIT STIPULATIONS.
- 3. THIS PLAN DETAILS SITE INSTALLED PIPES UP TO 5' FROM THE BUILDING FACE. REFER TO ARCHITECTURAL AND MEP DRAWINGS, PREPARED BY OTHERS, FOR BUILDING CONNECTIONS. THE CONTRACTOR SHALL SUPPLY AND INSTALL PIPE ADAPTERS AS NECESSARY AT BUILDING CONNECTION POINT OR AT EXISTING UTILITY OR PIPE CONNECTION POINT.
- 4. UTILITY CONNECTION DESIGN AS REFLECTED ON THE PLAN MAY CHANGE SUBJECT TO UTILITY PROVIDER AND GOVERNING AUTHORITY STAFF REVIEW.
- 5. THE CONTRACTOR SHALL ENSURE THAT ALL UTILITY PROVIDERS AND GOVERNING AUTHORITY STANDARDS FOR MATERIALS AND CONSTRUCTION METHODS ARE MET. THE CONTRACTOR SHALL PERFORM PROPER COORDINATION WITH THE RESPECTIVE UTILITY PROVIDER.
- 6. THE CONTRACTOR SHALL ARRANGE FOR AND COORDINATE WITH THE RESPECTIVE UTILITY PROVIDERS FOR SERVICE INSTALLATIONS AND CONNECTIONS. THE CONTRACTOR SHALL COORDINATE WORK TO BE PERFORMED BY THE VARIOUS UTILITY PROVIDERS AND SHALL PAY ALL FEES FOR CONNECTIONS, DISCONNECTIONS, RELOCATIONS, INSPECTIONS, AND DEMOLITION UNLESS OTHERWISE STATED IN THE PROJECT SPECIFICATIONS MANUAL AND/OR GENERAL CONDITIONS OF THE CONTRACT.
- 7. ALL EXISTING PAVEMENT WHERE UTILITY PIPING IS TO BE INSTALLED SHALL BE SAW CUT. AFTER UTILITY INSTALLATION IS COMPLETED, THE CONTRACTOR SHALL INSTALL TEMPORARY AND/OR PERMANENT PAVEMENT REPAIR AS DETAILED ON THE DRAWINGS OR AS REQUIRED BY THE OWNER HAVING JURISDICTION.
- 8. ALL PIPES SHALL BE LAID ON STRAIGHT ALIGNMENTS AND EVEN GRADES USING A PIPE LASER OR OTHER ACCURATE METHOD.

1. A PRE-CONSTRUCTION MEETING WITH TOWN STAFF IS REQUIRED PRIOR TO THE START OF ANY

2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL OF THE REQUIRED PERMITS PRIOR TO

3. THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES DEPICTED ON THESE DRAWINGS ARE FROM

4. THE CONTRACTOR SHALL CONTACT "CALL BEFORE YOU DIG" AT 1-800-922-4455 AT LEAST 48 HOURS

5. THE LOCATIONS OF ALL PROPOSED UNDERGROUND UTILITIES (I.E. GAS. TELEPHONE. CABLE TV.

6. ALL MATERIALS AND METHODS OF CONSTRUCTION SHALL CONFORM TO THE REQUIREMENTS OF

THE LATEST REVISION OF THE TOWN OF MANCHESTER "PUBLIC IMPROVEMENT STANDARD".

7. AT ALL UTILITY CROSSINGS A MINIMUM 18" VERTICAL SEPARATION DISTANCE SHALL BE PROVIDED

SEPARATION DISTANCE OF 10' SHALL BE PROVIDED BETWEEN WATER AND SEWER UTILITIES.

8. THRUST RESTRAINT FOR ALL MECHANICAL JOINTS AND VALVES AND FITTINGS SHALL BE PROVIDED

BY MEANS OF DUCTILE IRON RESTRAINER GLANDS. WEDGE-ACTION JOINT RESTRAINERS OR

BY THE TOWN. A CONCRETE CRADLE SHALL BE UTILIZED IF A MINIMUM VERTICAL SEPARATION

DISTANCE OF LESS THAN OR EQUAL TO 12" IS ALLOWED BY THE TOWN. A MINIMUM HORIZONTAL

PROVIDED 5' MINIMUM SEPARATION DISTANCE BETWEEN WATER OR SEWER UTILITIES AND GAS

MAINS. PROVIDE 5' MINIMUM SEPARATION DISTANCE BETWEEN WATER AND SEWER UTILITIES AND

STORM DRAIN LINES. PROVIDE 2' MINIMUM SEPARATION DISTANCE BETWEEN WATER MAINS AND

GASKET-TYPE JOINT RESTRAINT SHALL BE USED TO RESTRAIN ALL DUCTILE IRON PIPE JOINTS FOR A

DISTANCE OF AT LEAST 27 FEET ON EACH SIDE OF ALL VALVES OR FITTINGS. NO MORE THAN ONE

FROM WATER OR SEWER UTILITIES UNLESS INDICATED OTHERWISE ON THE PLANS OR AS APPROVED

ELECTRIC, ETC.) SHALL BE APPROVED BY THE TOWN PRIOR TO CONSTRUCTION.

THE BEST AVAILABLE SOURCES. SUCH INFORMATION IS FURNISHED ONLY FOR THE INFORMATION OF

CONSTRUCTION ACTIVITY.

ANY CONSTRUCTION ACTIVITY

THE CONTRACTOR AND IS NOT GUARANTEED.

PRIOR TO THE START OF ANY CONSTRUCTION ACTIVITY.

TOWN OF MANCHESTER WATER AND SANITARY SEWER CONSTRUCTION NOTES

PIPE JOINT SHALL BE ALLOWED WITHIN THAT 27 FEET OF PIPE.

INDICATED OTHERWISE ON PLANS.

RESILIENT WEDGE GATE VALVES.

SET FORTH BY THE TOWN.

THAT MAY BE REQUIRED.

INSULATED.

9. ALL VALVE BOXES AND CURB COXES SHALL BE ADJUSTED TO THE FINAL GRADES. ALL CURB BOXES

10. ALL VALVE AND HYDRANTS SHALL BE LEFT-OPENING (COUNTERCLOCKWISE). THE CONTRACTOR

SHALL VERIFY THE DIRECTION OF OPENING PRIOR TO ORDERING MATERIALS AND BEGINNING

CONSTRUCTION. ALL MAIN LINE AND AUXILIARY VALVES (4" TO AND INCLUDING 12") SHALL BE

11. ALL WATER MAINS SHALL HAVE 4.5 FEET OF COVER UNLESS OTHERWISE INDICATED ON THE PLANS.

OR APPROVED BY THE TOWN. WATER MAINS HAVING COVER LESS THAN 4.5 FEET SHALL BE

12. ALL EXISTING WATER OR SANITARY SEWER SERVICES THAT WILL NOT BE REUSED AS PART OF THE

13. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE TEMPORARY HANDLING OF SANITARY SEWAGE

14. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ANY TEMPORARY THRUST RESTRAINT

15. WHEN DOMESTIC OR FIRE WATER SERVICES GREATER THAN OR EQUAL TO 4" IN DIAMETER ARE

TAP CONTRACTOR PRE-APPROVED BY THE TOWN SHALL BE USED.

PROPOSED TO BE CONNECTED TO THE WATER MAIN USING A TAPPING SLEEVE AND VALVE, A WET

FUTURE DEVELOPMENT SHALL BE ABANDONED AT THE MAIN IN ACCORDANCE WITH PROCEDURES

FLOWS DURING CONSTRUCTION. METHODS OF HANDLING SEWAGE FLOWS SHALL BE APPROVED BY

COVER LESS THAN OR IN EXCESS OF 4.5 FEET SHALL BE ALLOWED ONLY AS INDICATED ON THE PLANS

SHALL BE LOCATED IN GRASSED AREAS AT THE STREET LINE FRONTING THE PROPERTY UNLESS

9. ALL UTILITY CONSTRUCTION IS SUBJECT TO INSPECTION FOR APPROVAL PRIOR TO BACKFILLING, IN ACCORDANCE WITH THE APPROPRIATE UTILITY PROVIDER REQUIREMENTS.

### APPROVED

PLANNING AND ZONING COMMISSION MANCHESTER, CT

TRIVIK BUILDERS 77 CHAPONIS WAY

SOUTH WINDSOR, CT 06074

(860) 208-0902

DBE | DAS | MBE | GNMSDC CERTIFIED CIVIL ENGINEERS | LAND SURVEYORS ENVIRONMENTAL SCIENTISTS

36 JOHN STREET HARTFORD, CT 06106 WWW.FREEMANCOS.COM (860)251-9550 FAX: (860)986-7161

FREEMAN COMPANIES, LLC

ELEVATE YOUR EXPECTATION

BID

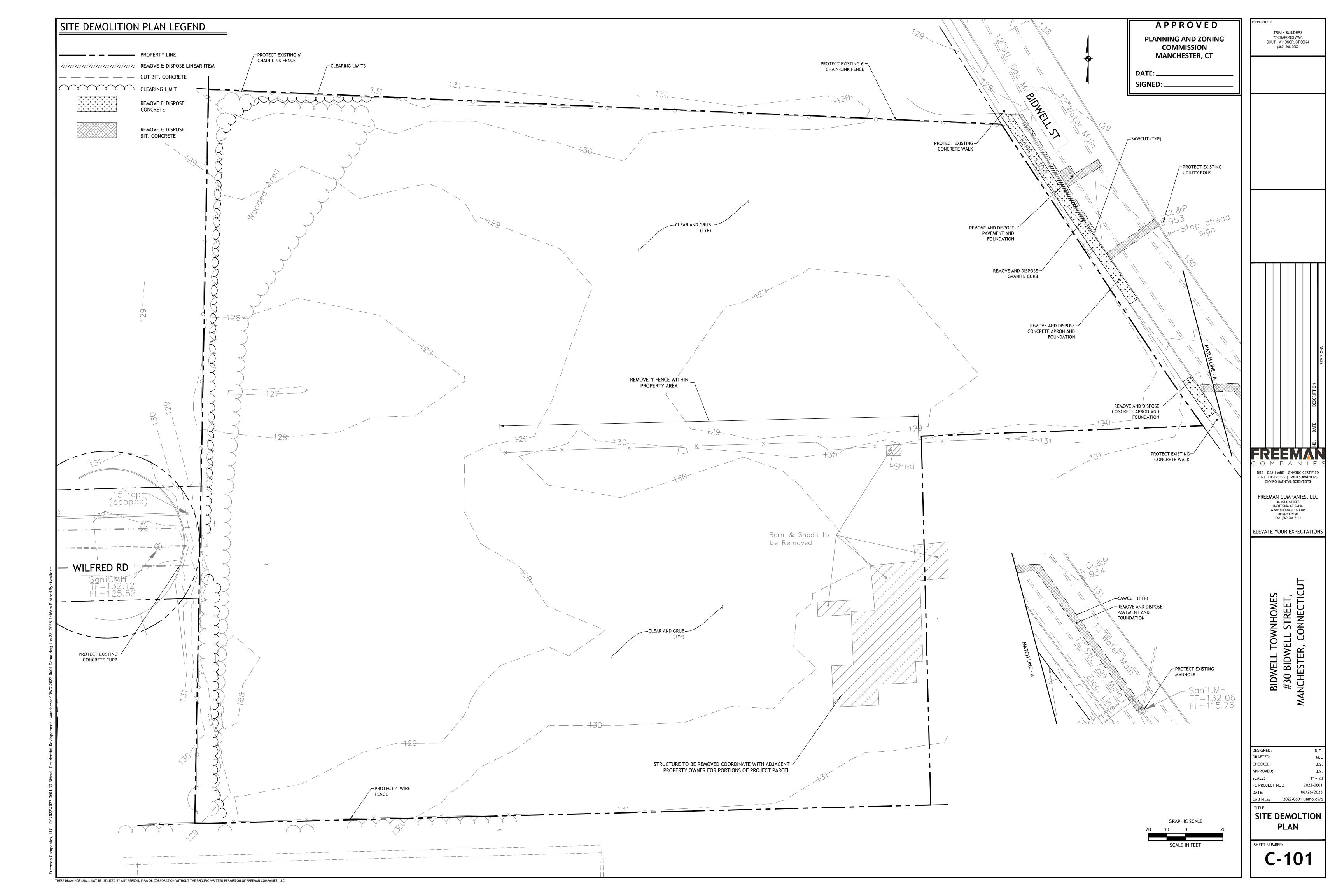
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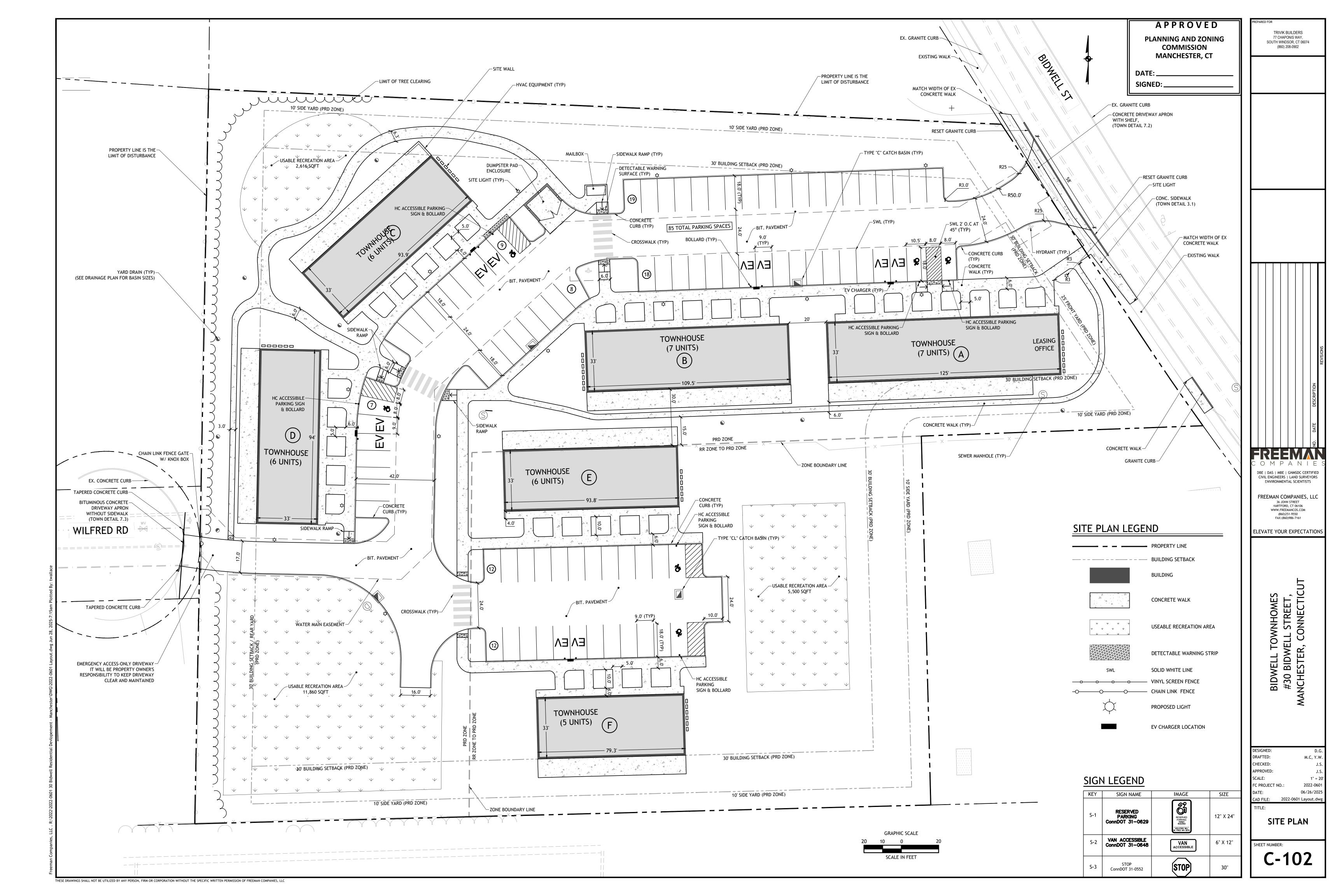
DRAFTED: M.C, Y.W. CHECKED: APPROVED: NOT TO SCALE FC PROJECT NO. 2022-0601 06/26/2025

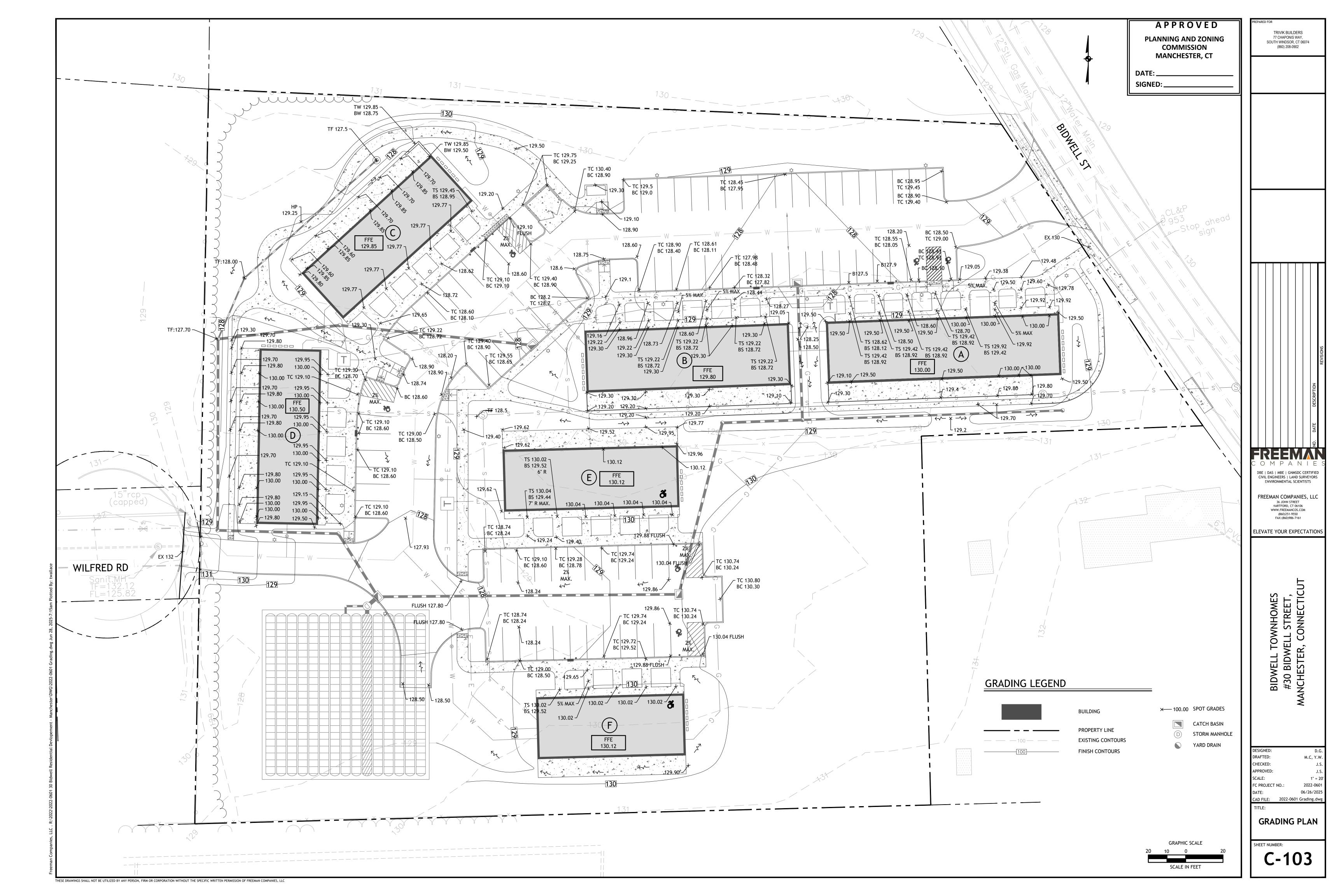
GENERAL NOTES

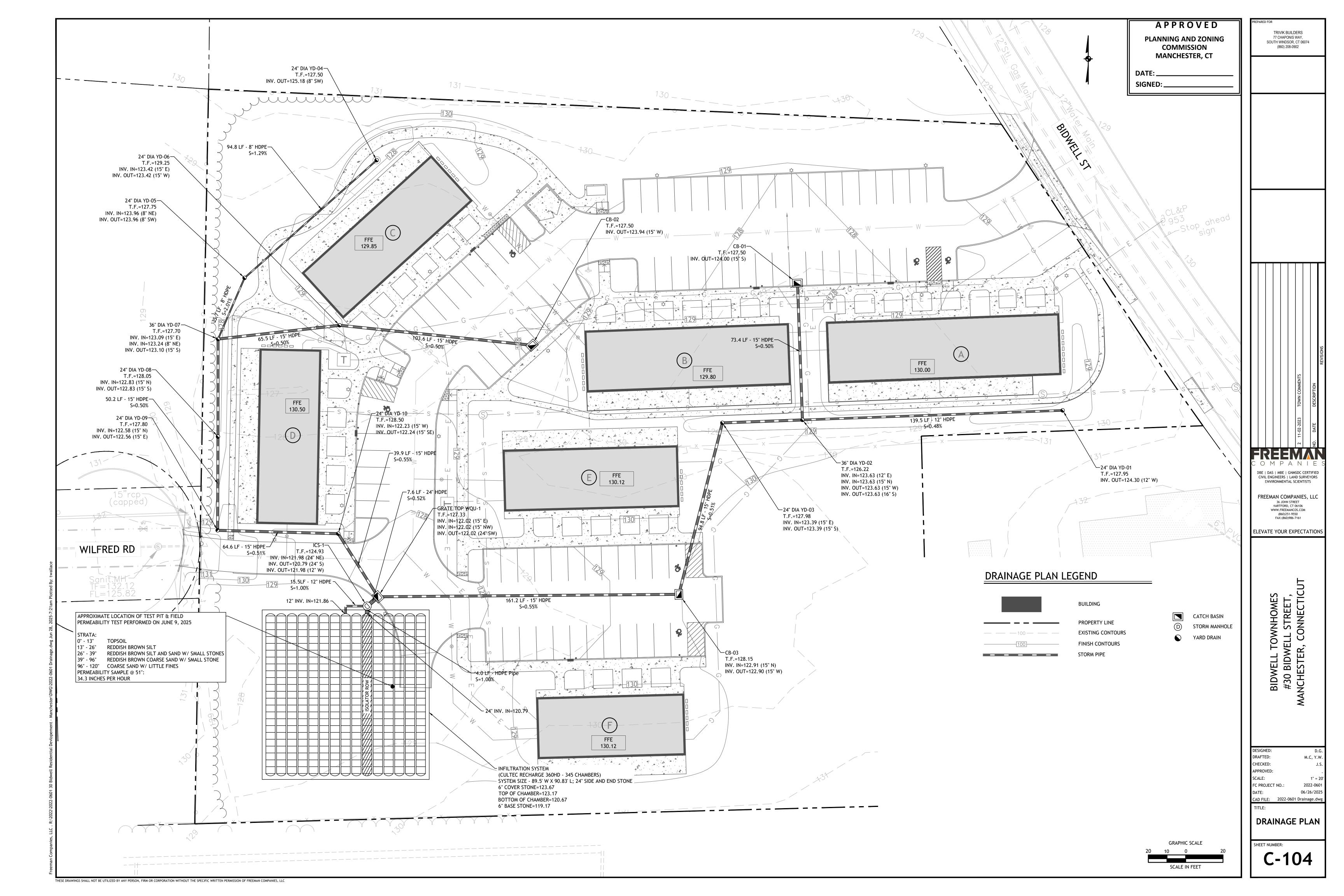
CAD **202**2-0601 General Notes-01.dv

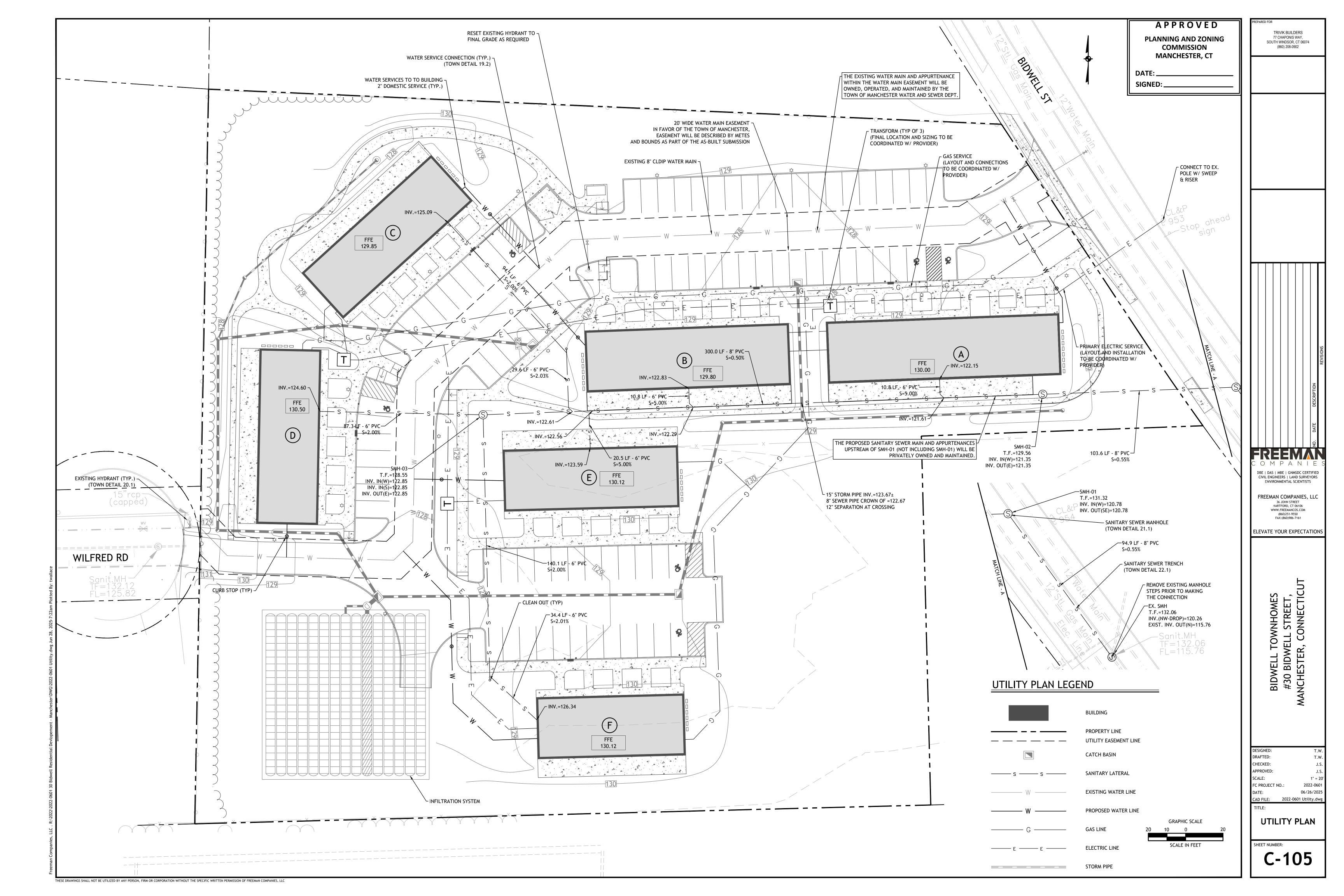
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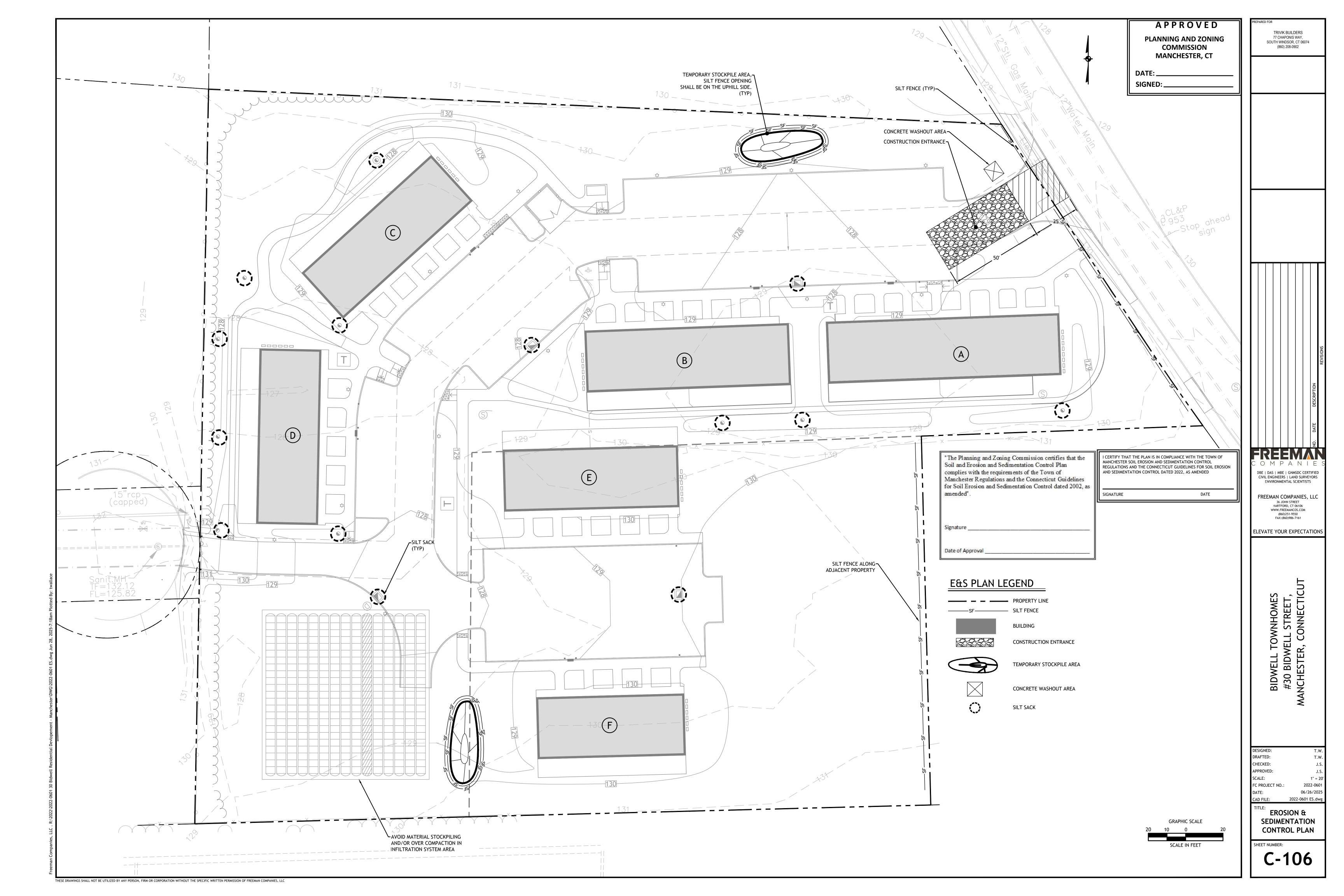


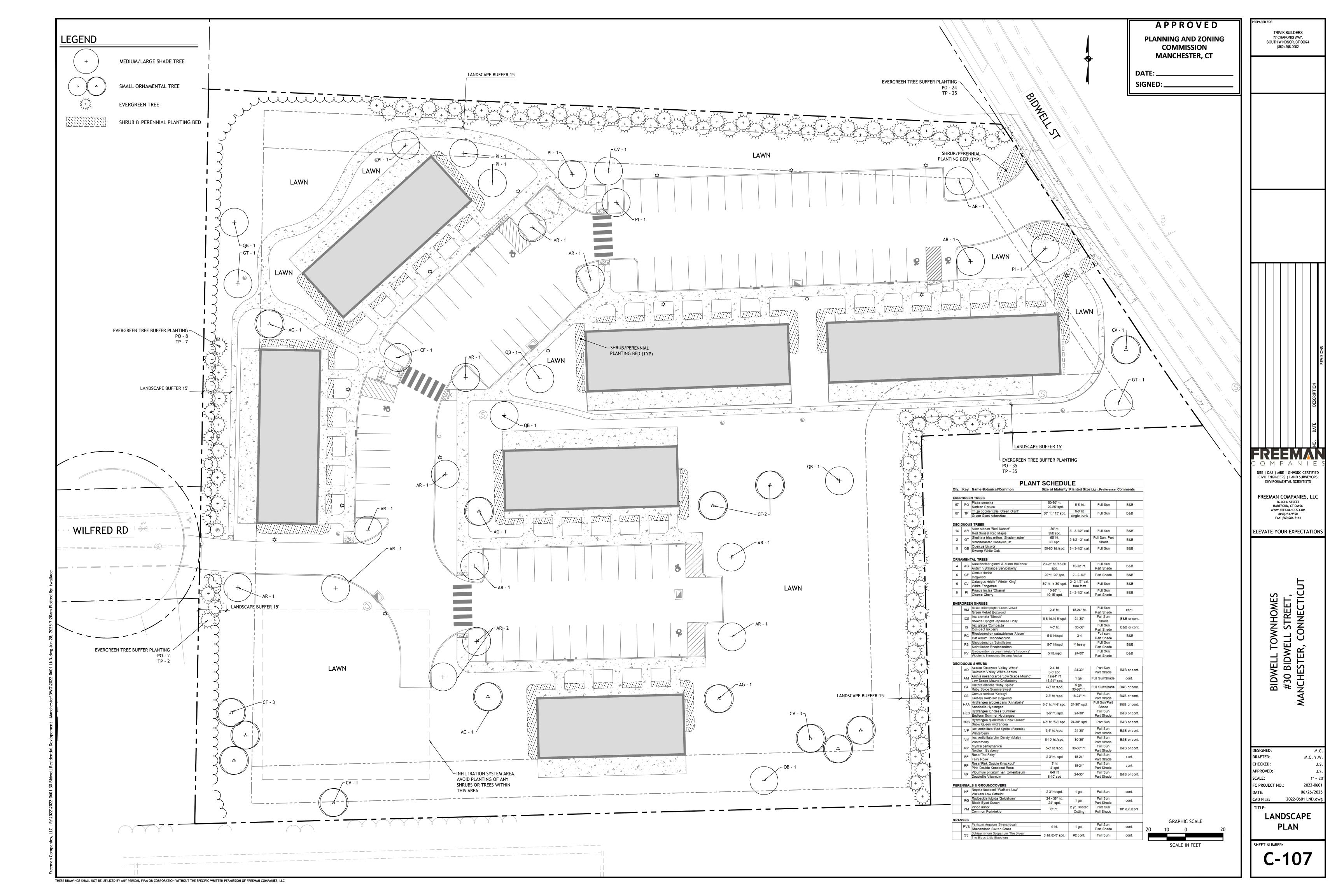


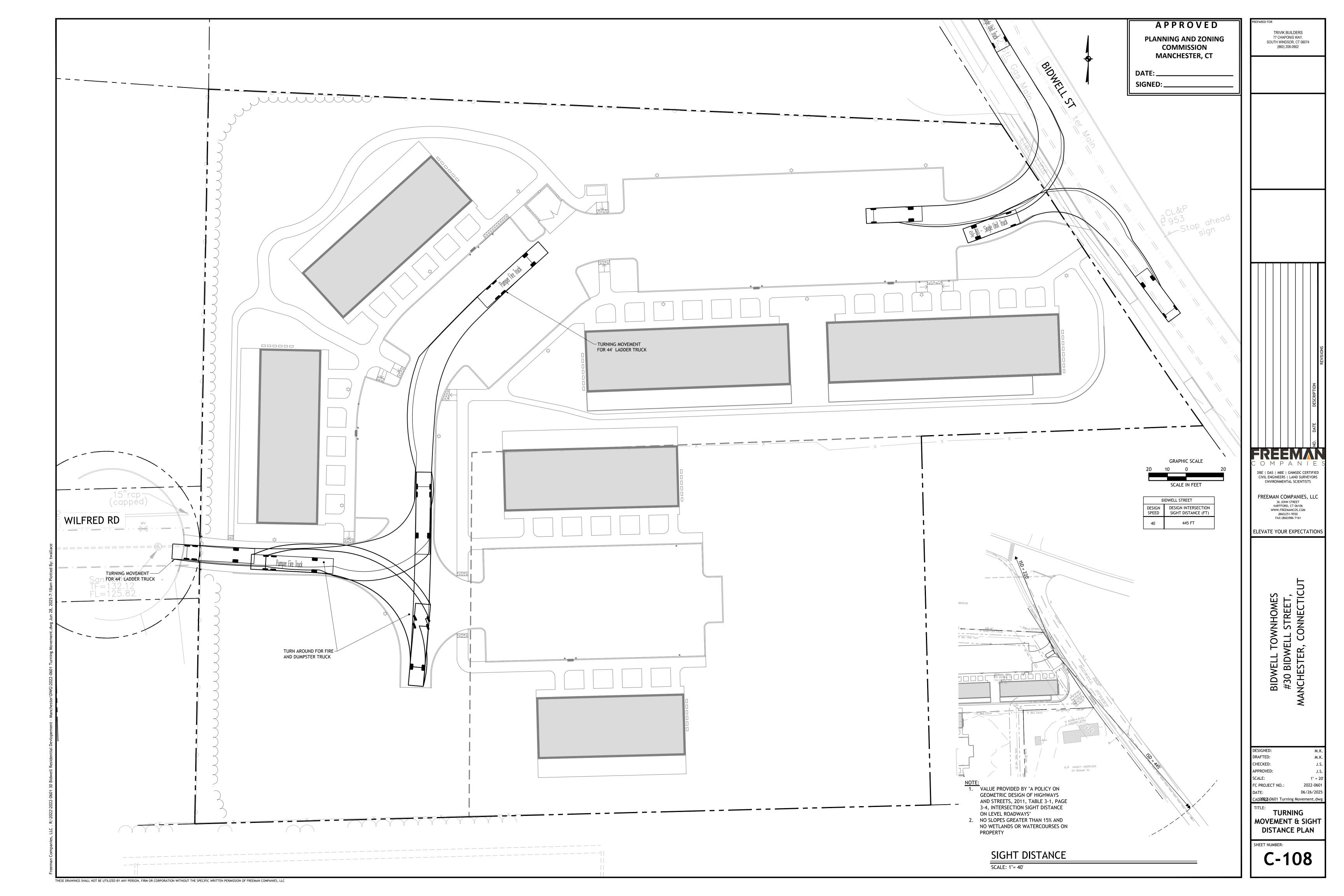












APPROVED PLANNING AND ZONING COMMISSION MANCHESTER, CT

77 CHAPONIS WAY, SOUTH WINDSOR, CT 06074 (860) 208-0902

TRIVIK BUILDERS

CURB INLET-CURB DEFLECTOR-SILTSACK —

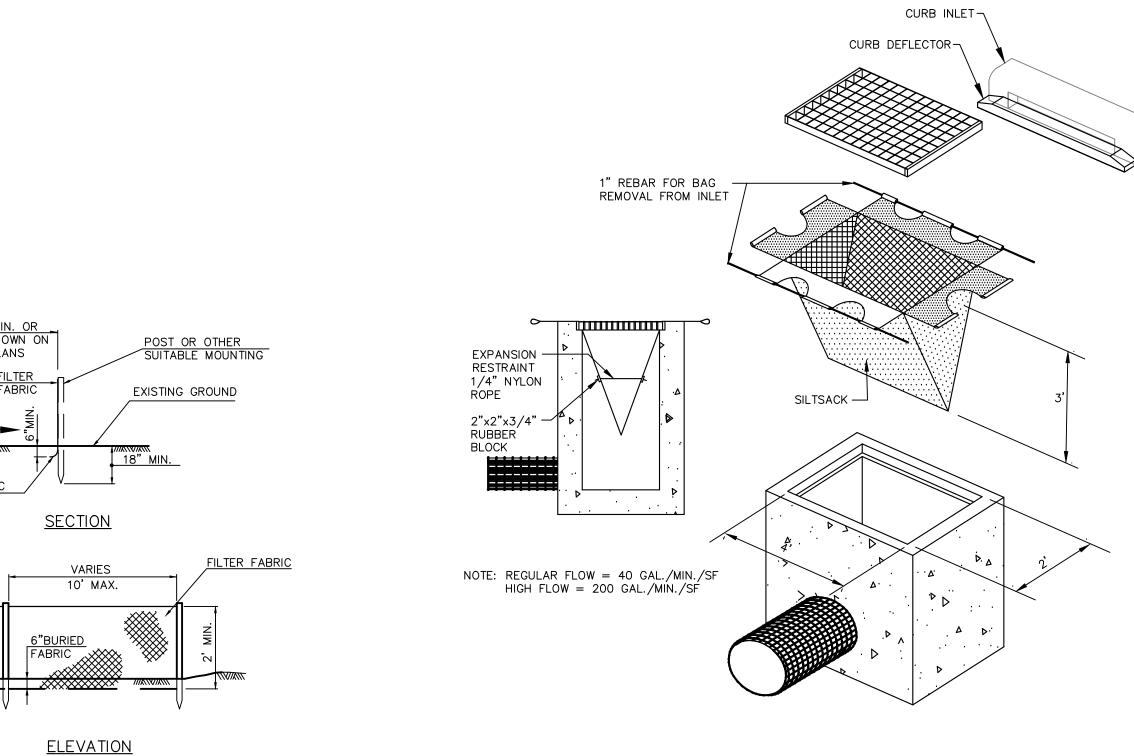
1. PREPARE SOIL BEFORE INSTALLING BLANKETS, INCLUDING APPLICATION OF LIME, FERTILIZER, AND SEED.

2. BEGIN AT THE TOP OF THE SLOPE BY ANCHORING THE BLANKET IN 6" DEEP X 6" WIDE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING. 3. ROLL THE BLANKETS (A.) DOWN OR (B.) HORIZONTALLY ACROSS THE SLOPE. 4. THE EDGES OF PARALLEL BLANKETS MUST BE STAPLED WITH APPROXIMATELY 2" OVERLAP.

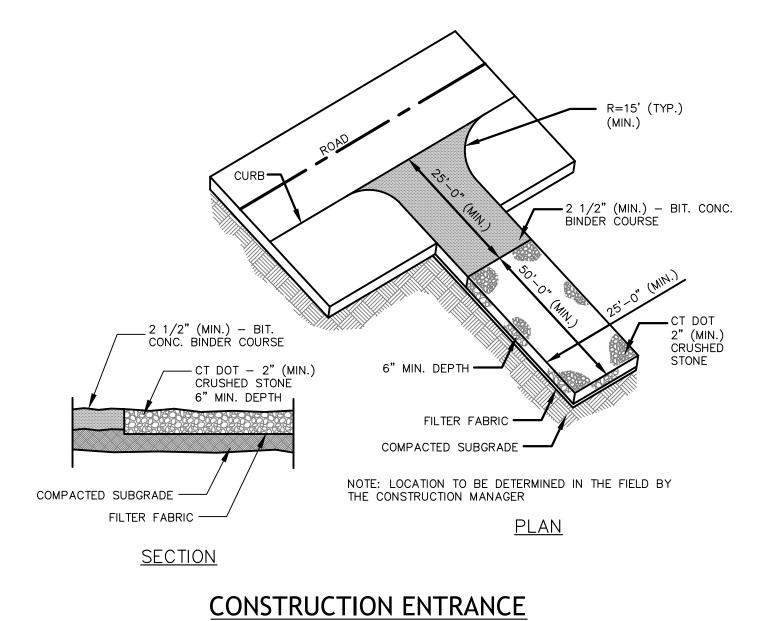
5. WHEN BLANKETS MUST BE SPLICED DOWN THE SLOPE, PLACE BLANKETS END OVER END (SHINGLE STYLE) WITH APPROXIMATELY 4" OVERLAP. STAPLE THROUGH OVERLAPPED AREA, APPROXIMATELY 12" APART.

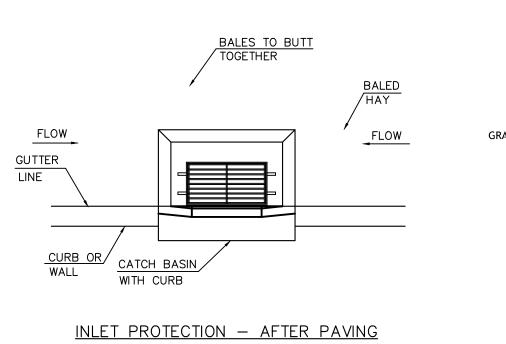
6. EROSION CONTROL MATTING SHALL BE TENSAR NORTH AMERICAN GREEN S150BN OR EQUIVALENT.

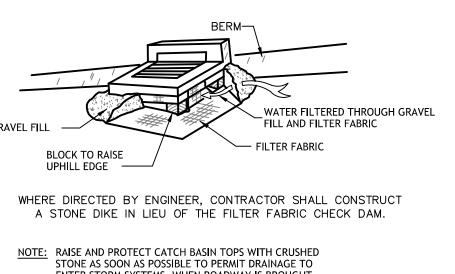
EROSION CONTROL BLANKET N.T.S.



SILT FENCE SILT SACK DETAIL



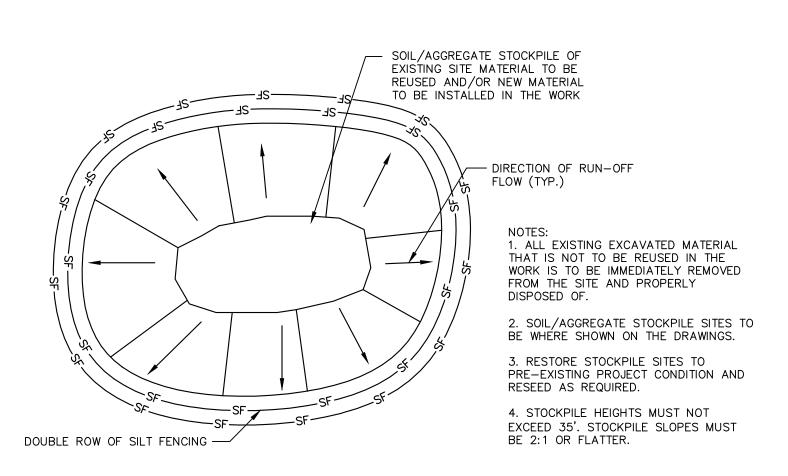




ENTER STORM SYSTEMS, WHEN ROADWAY IS BROUGHT UP TO SUBBASE BEFORE PAVING.

<u>INLET PROTECTION — BEFORE PAVING</u>

INLET PROTECTION



TEMPORARY STOCKPILE AREA

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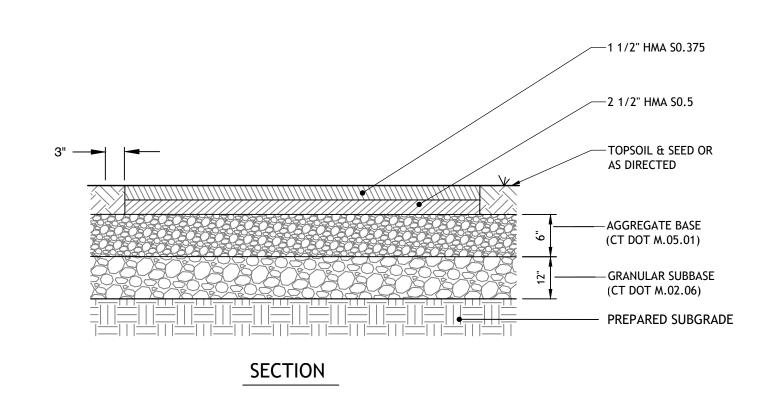
BIDWELL TOWNHOMES #30 BIDWELL STREET, MANCHESTER, CONNECTICUT

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SITE DETAILS

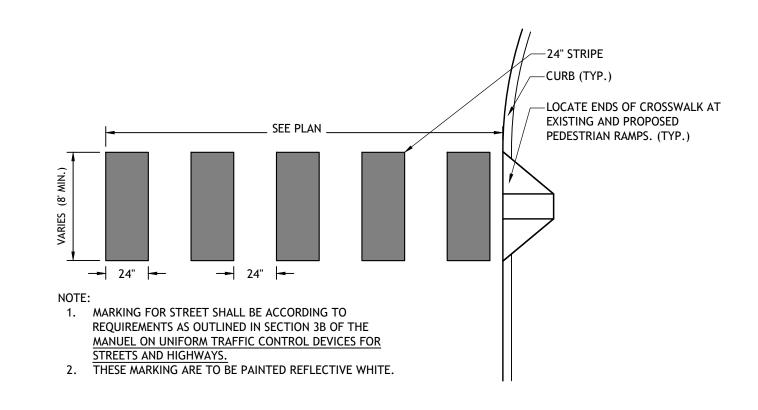
C-109

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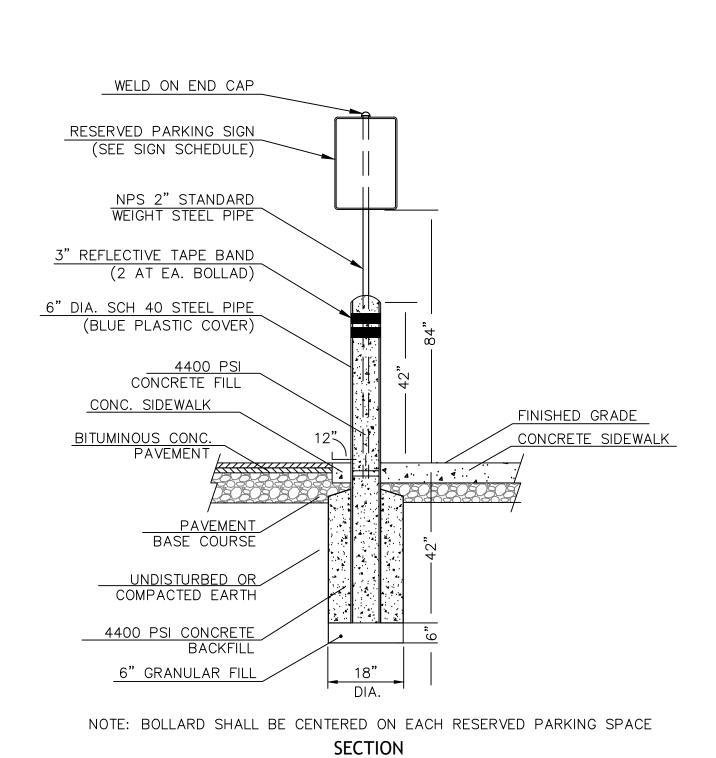


# BITUMINOUS PAVEMENT

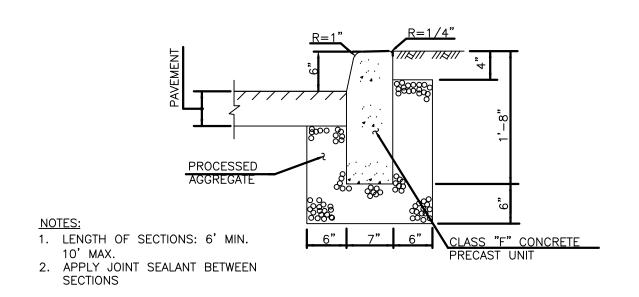
N.T.S.



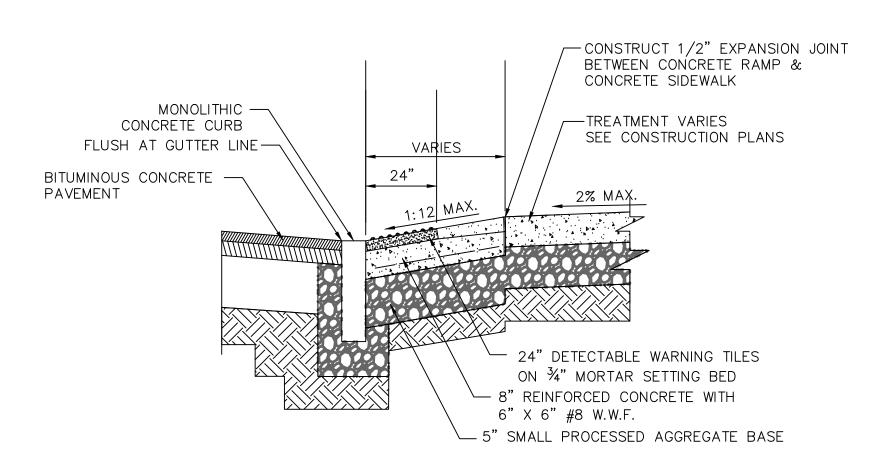
# CROSSWALK



# RESERVED PARKING SIGN BOLLARD

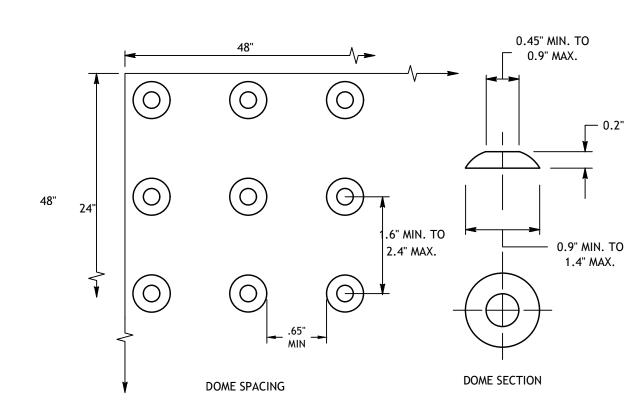


# PRECAST CONCRETE CURBING



SIDEWALK RAMP

N.T.S.



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**COMMISSION** 

MANCHESTER, CT

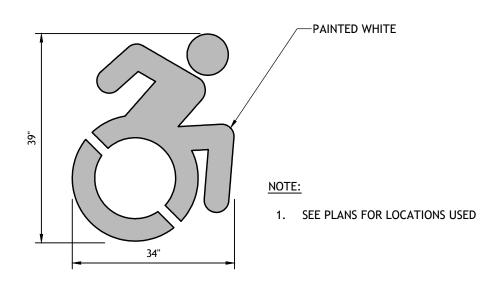
TRIVIK BUILDERS 77 CHAPONIS WAY,

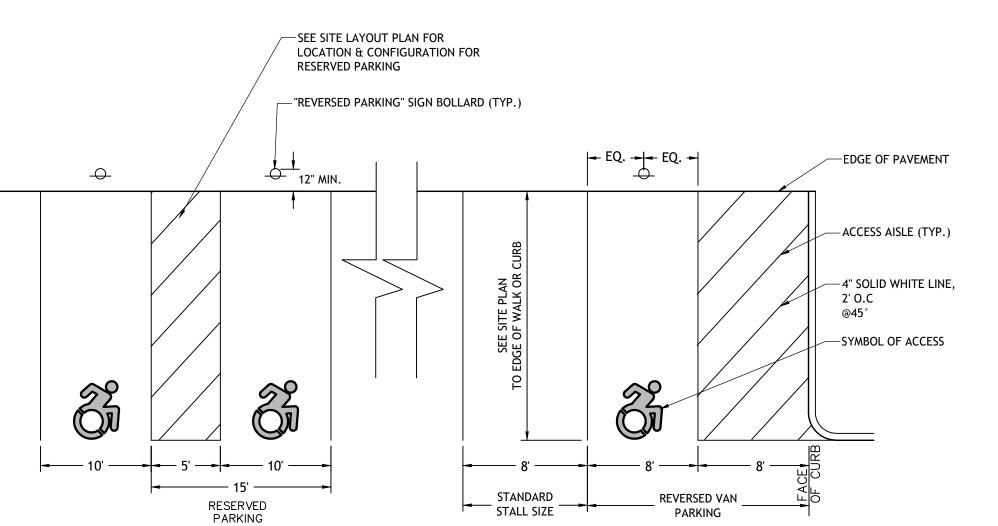
SOUTH WINDSOR, CT 06074

(860) 208-0902

DOME SECTION

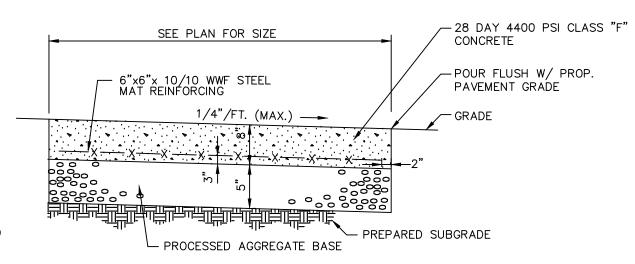
N.T.S.





RESERVED PARKING

UNIVERSAL



SECTION VIEW

CONCRETE DUMPSTER PAD

N.T.S.

BIDWELL TOWNHOMES #30 BIDWELL STREET, MANCHESTER, CONNECTICUT

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SCALE: NOT TO SCALE
FC PROJECT NO.: 2022-0601
DATE: 06/26/2025
CAD FILE: 2022-0601 DETAILS.dwg

SITE DETAILS

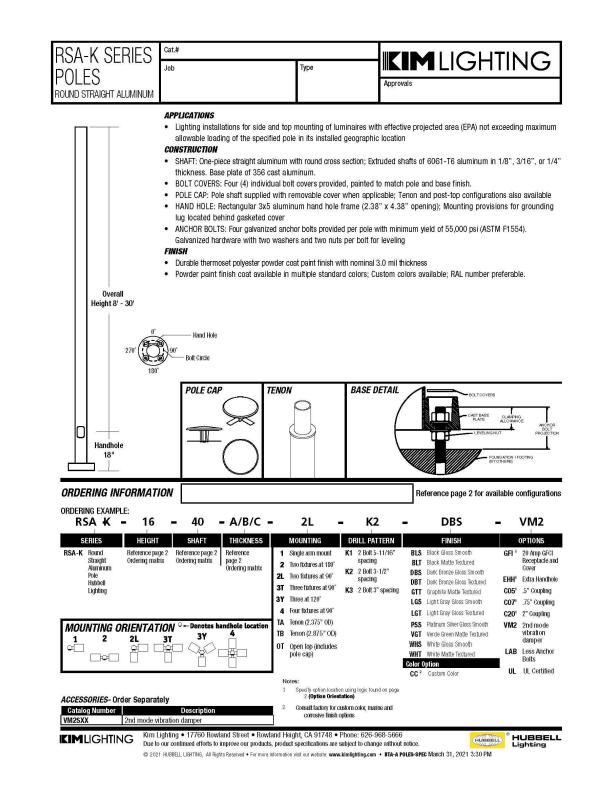
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C-110

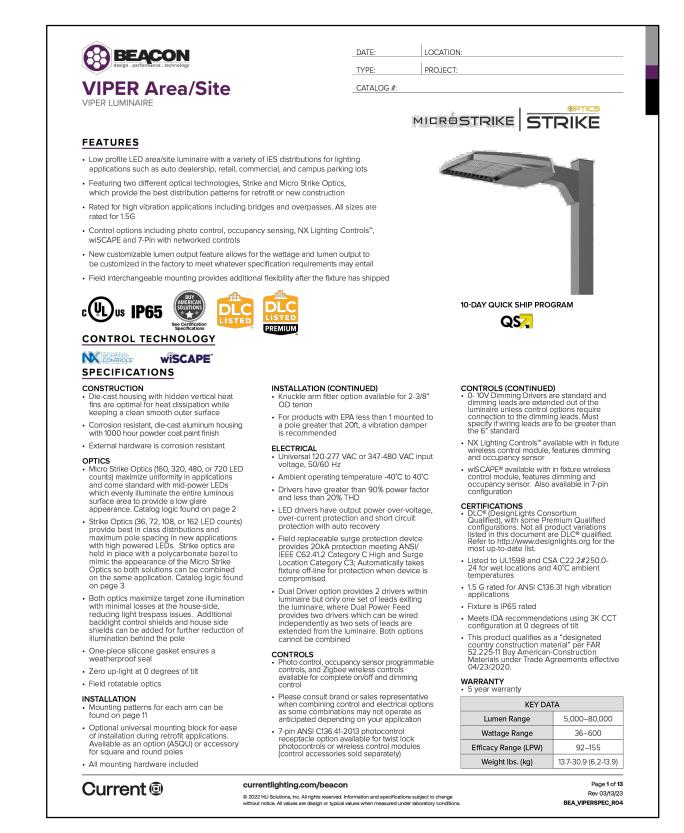


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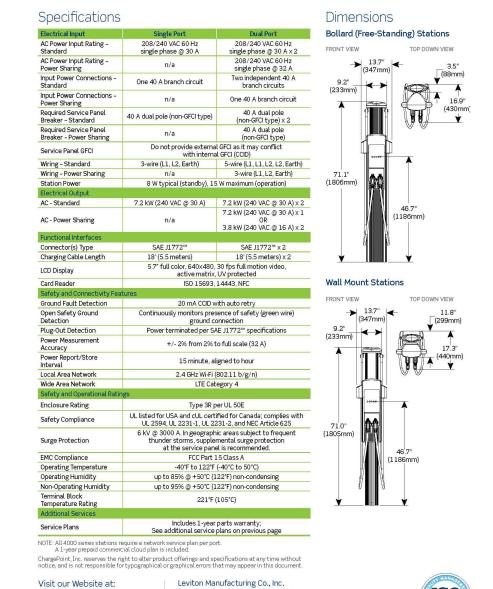


LIGHT POLE









201 N Service Rd, Melville, NY 11747

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email: evrgreen@leviton.com Tech Line: 1-800-824-3005 (M-F 8AM-10PM; Sat 9AM-7PM; Sun 9AM-5PM)

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Q-860F

ELECTRIC VEHICLE CHARGING STATION

N.T.S.

N.T.S.

LIGHT FIXTURE

CUT BURLAP FROM 3" SOIL SAUCER TOP 1/3 OF ROOTÉALL — 3" SOIL SAUCER (IN LAWN AREAS) 6" TOPSOIL -- GEOTEXTILE FABRIC (IN PLANTING AREAS) · VERTICAL CUT OF SURFACE ROOTS DIAMETER OF ROOTBALL OF CONTAINER OF PIT

SHRUB PLANTING

DIAMETER OF PIT IS

TWICE DIAMETER OF

CONTAINER GROWN MATERIAL

CONTAINER

1. SET CROWN OF ROOT

BALL 2" ABOVE

FINISHED GRADE.

2. MULCH SAUCER OF

INDIVIDUAL SHRUBS.

MULCH ENTIRE AREA OF

MASSED SHRUBS OR

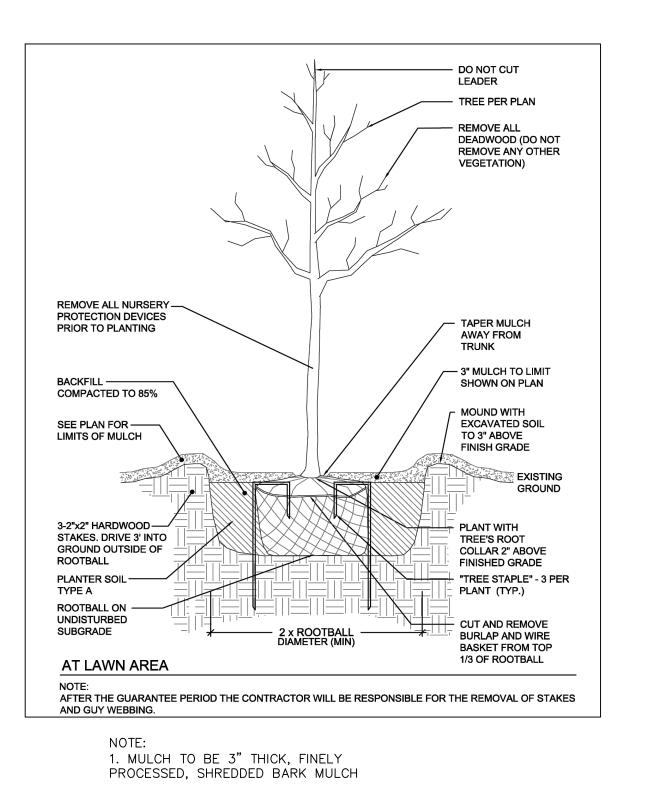
- UNDISTURBED

DIAMETER OF PIT I

TWICE DIAMETER OF

ROOTBALL

BALLED AND BURLAPPED MATERIAL



TREE PLANTING

Crown drip line or other limit of Tree 1. See specifications for additional Protection area. See demolition plan for tree protection requirements. fence alignment. 2. If there is no existing irrigation, see specifications for watering requirements. 3. No pruning shall be performed except by approved arborist. 4. No equipment shall operate inside the protective fencing including during fence installation and removal. 5. Fencing shall remain in place & be maintained throughout construction and the removed completely as directed by Owner to complete loaming and seeding activities. Tree Protection Fence: Install fence as specified. Avoid posts or stakes into major roots. Loam and seed work in this area shall be hand 8.5" x 11" sign work only. laminated in plastic spaced or approved equal. every 50' along the fence. 4" avg. thickness TREE layer of mulch. **PROTECTION** AREA 4'-0" MIN. Maintain existing **KEEP OUT** grade with the tree protection fence unless otherwise indicated on the plans. SECTION VIEW TREE PROTECTION URBAN TREE FOUNDATION © 2014 OPEN SOURCE FREE TO USE MODIFIED BY FREEMAN COMPANIES

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BIDWELL TOW #30 BIDWELL !

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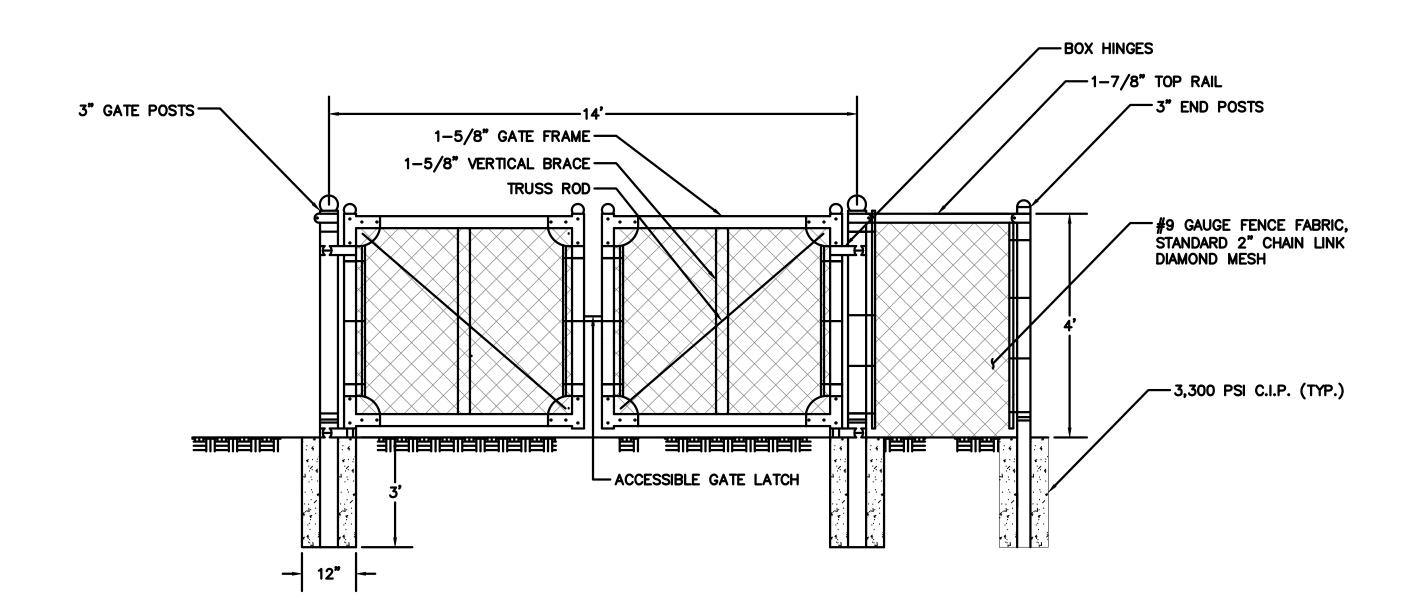
SITE DETAILS

C-111

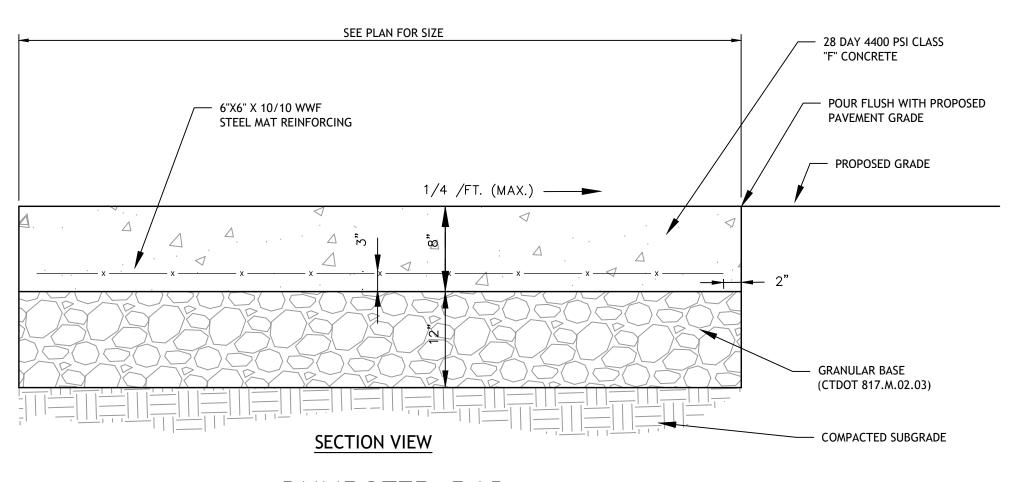
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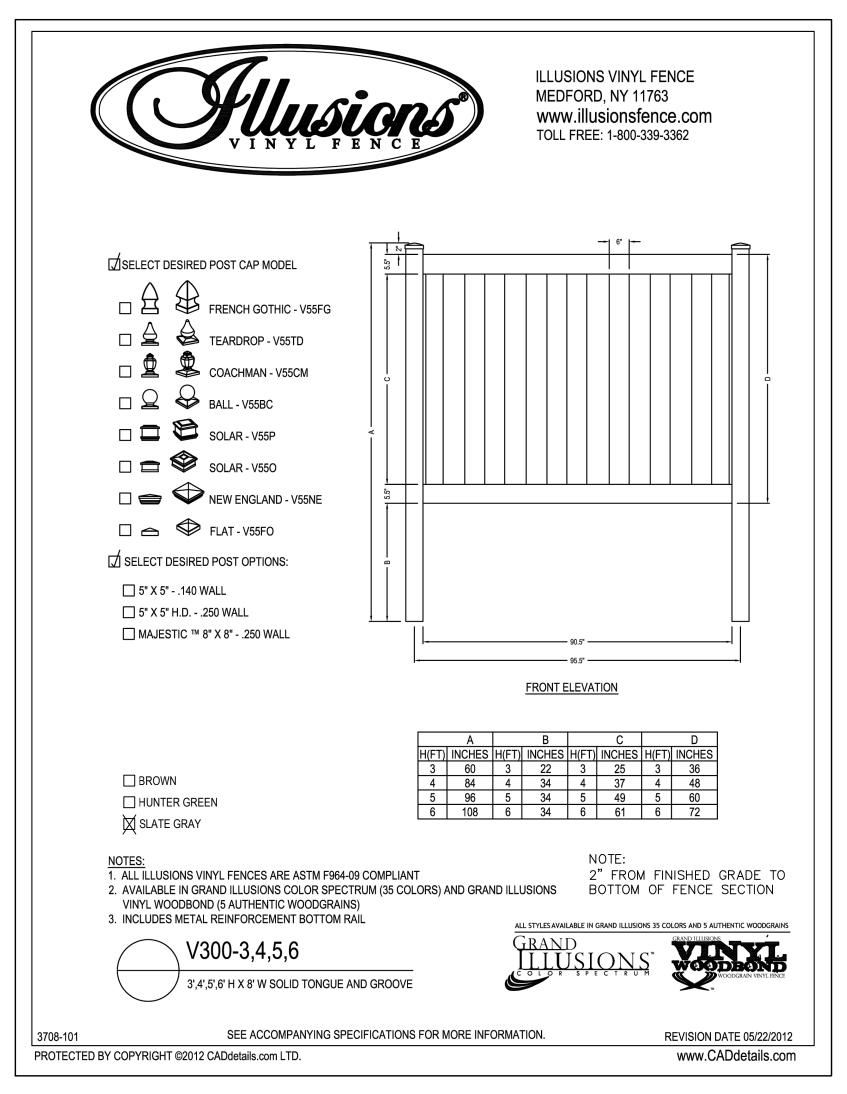
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# CHAIN LINK FENCE GATE



DUMPSTER PAD



# VINYL SCREEN FENCE

1. 4' (PEDESTRIAN) GATE HARDWARE: HINGES: ILLUSIONS (CPH55S) - BK LATCH: ILLUSIONS HATCHET LATCH (HLSS) — BK EXTERIOR HANDLE: ILLUSIONS (VHDL) — BK 2. DUMPSTER GATES HARDWARE: DROP ROD: ILLUSIONS (DRAS) — BK (ONE ON EACH GATE)
PROVIDE DROP ROD HOLES IN OPEN & CLOSED POSITIONS. LINE HOLE WITH STEEL PIPE. 16" DIAMETER X 48" DEPTH MINIMUM CONCRETE FOOTINGS

DUMPSTER PAD & ENCLOSURE

BIDWELL TOWNHOMES #30 BIDWELL STREET, MANCHESTER, CONNECTICUT

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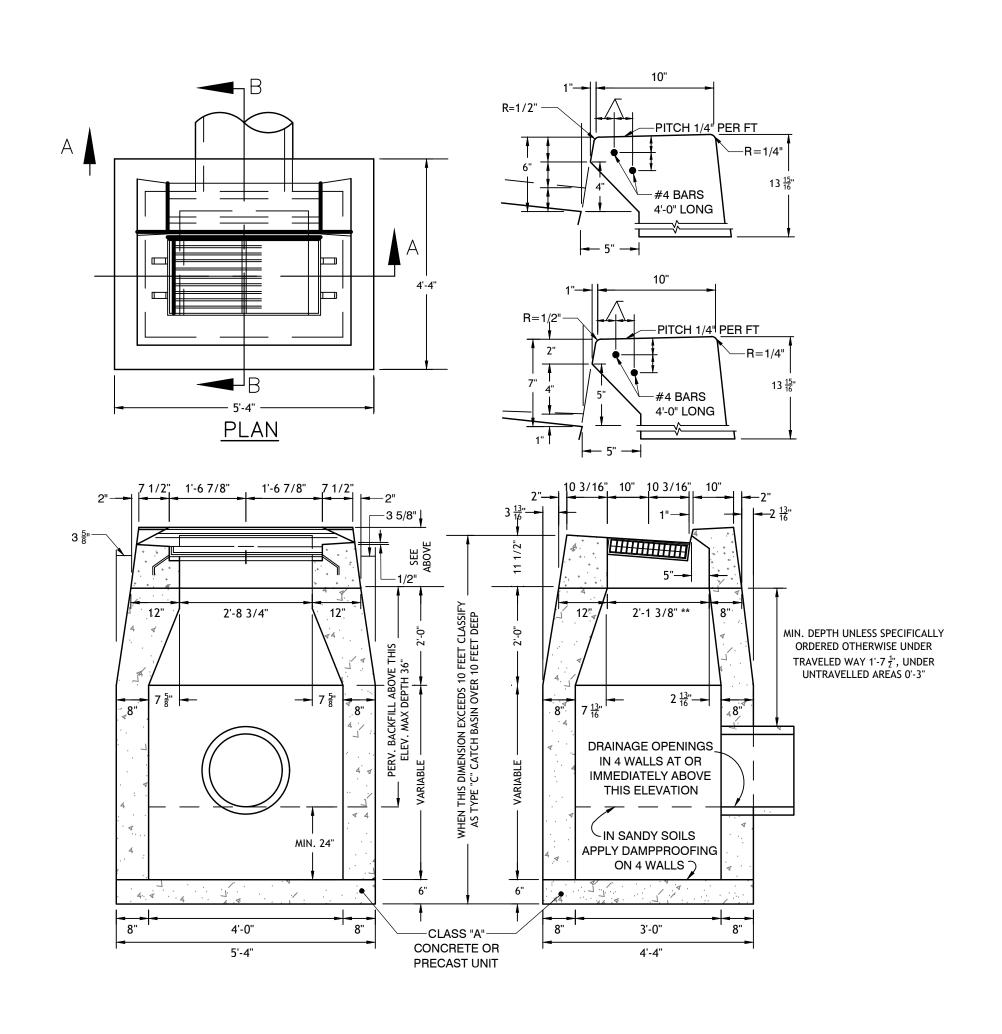
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HARTFORD, CT 06106
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(860)251-9550
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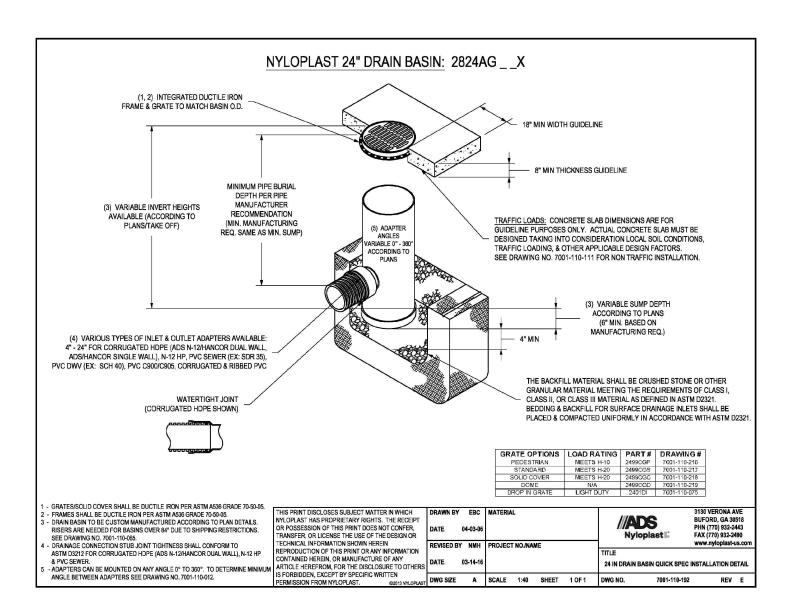
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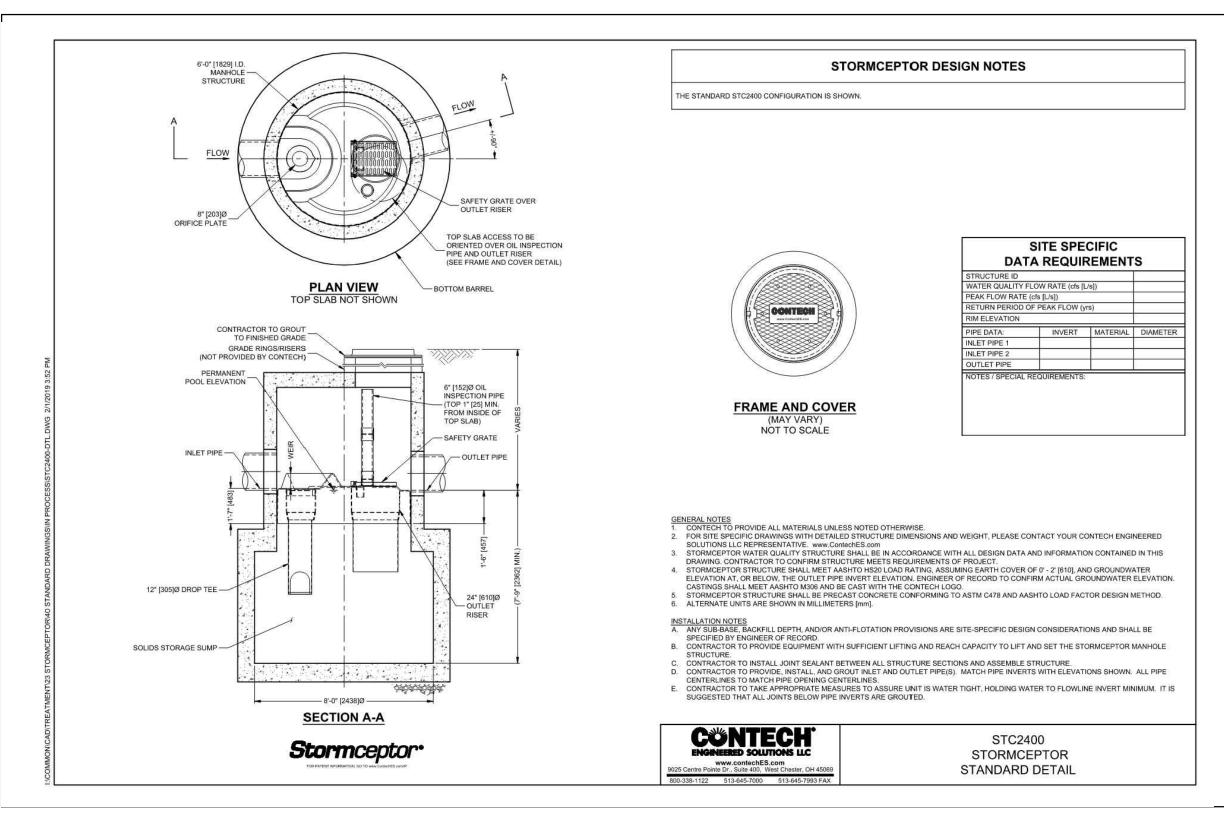
C-112



TYPE "C" CATCH BASIN

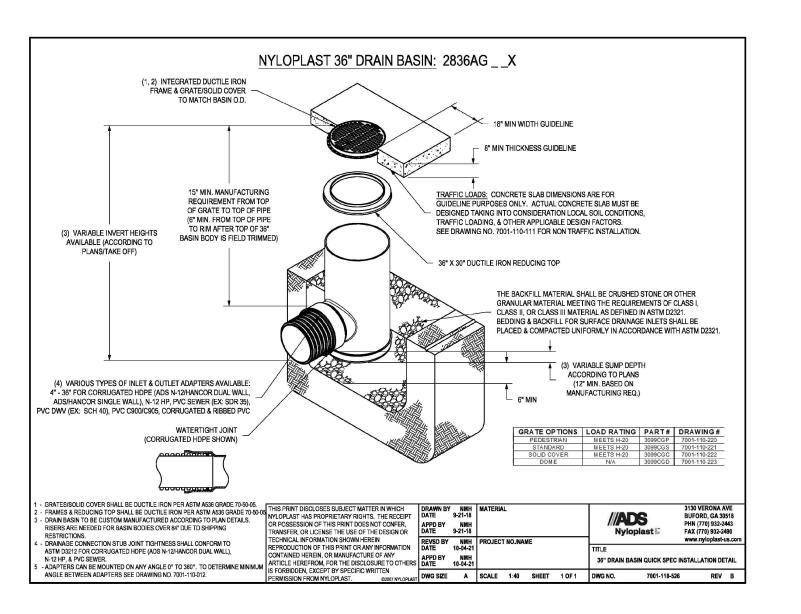


NYLOPLAST 24" DRAIN BASIN



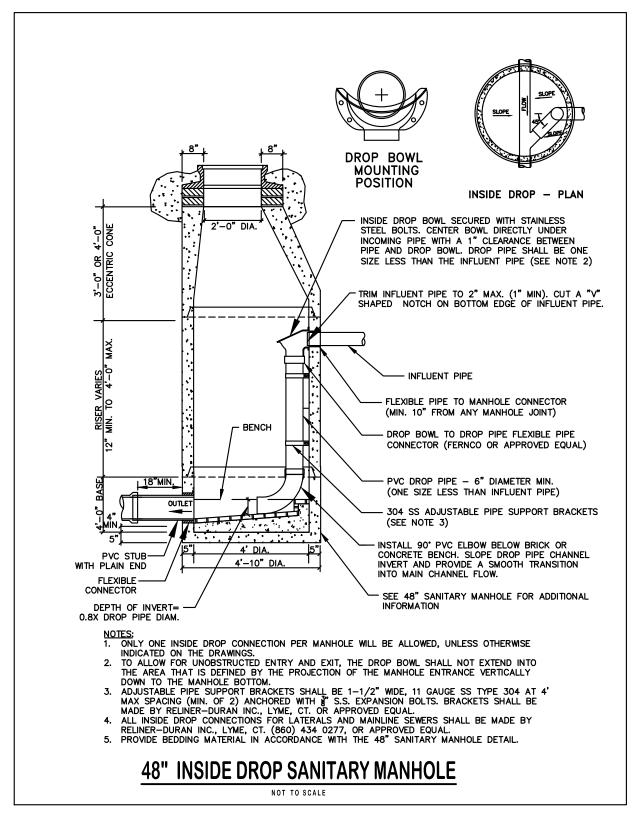
- 1. THE STORMWATER TREATMENT SYSTEM UNIT MUST BE DESIGNED TO REMOVE A MINIMUM OF 80% OF THE TOTAL SUSPENDED SOLIDS FROM THE WATER QUALITY FLOW OF 1.58 CFS WITH INTERNAL BYPASS OF THE 25-YEAR DESIGN STORM FLOW OF 6.28 CFS. THE SYSTEM MUST BE INSPECTED AND CLEANED EVERY SIX (6) MONTHS OR PER MANUFACTURERS' RECOMMENDATIONS, WHICHEVER IS MORE FREQUENT. SHOP DRAWINGS OF THE PROPOSED SYSTEM MUST BE FIRST APPROVED BY THE DESIGN ENGINEER AND THEN SUBMITTED TO THE TOWN FOR REVIEW PRIOR TO FABRICATION. SHOP DRAWING SUBMITTALS MUST INCLUDE:
- "TREATED" FLOW FOR THE SPECIFIED SYSTEM AND MODEL, WHICH MUST EQUAL OR EXCEED THE WATER QUALITY FLOW.
- "CONVEYED" FLOW FOR THE SPECIFIED SYSTEM AND MODEL, WHICH MUST EQUAL OR EXCEED THE DESIGN STORM FLOW.
- CALCULATIONS OR DOCUMENTATION VERIFYING THAT 80% (MIN.) OF THE AVERAGE ANNUAL TOTAL SUSPENDED SOLIDS WILL BE REMOVED FROM THE WATER QUALITY FLOW.
- CALCULATIONS OF THE HYDRAULIC GRADE LINE ELEVATIONS FOR THE DESIGN STORM EVENT IN THE FIRST STRUCTURE LOCATED UPSTREAM OF THE SYSTEM AND ANY OTHER CRITICAL LOCATIONS.
- ORIENTATION OF THE SYSTEM IN PLAN VIEW WITH RESPECT TO THE APPROVED SITE PLAN (IF DIFFERENT THAN SHOWN ON THE APPROVED PLANS).
- PROPOSED SIZE AND ELEVATION OF CRITICAL WEIR, ORIFICE, PIPE INVERT ELEVATIONS, AND OTHER DESIGN ELEMENTS THAT CORRESPOND TO THE HYDRAULIC CHARACTERISTICS OF THE SYSTEM.

# STORMWATER TREATMENT SYSTEM



NYLOPLAST 36" DRAIN BASIN N.T.S.





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SITE DETAILS

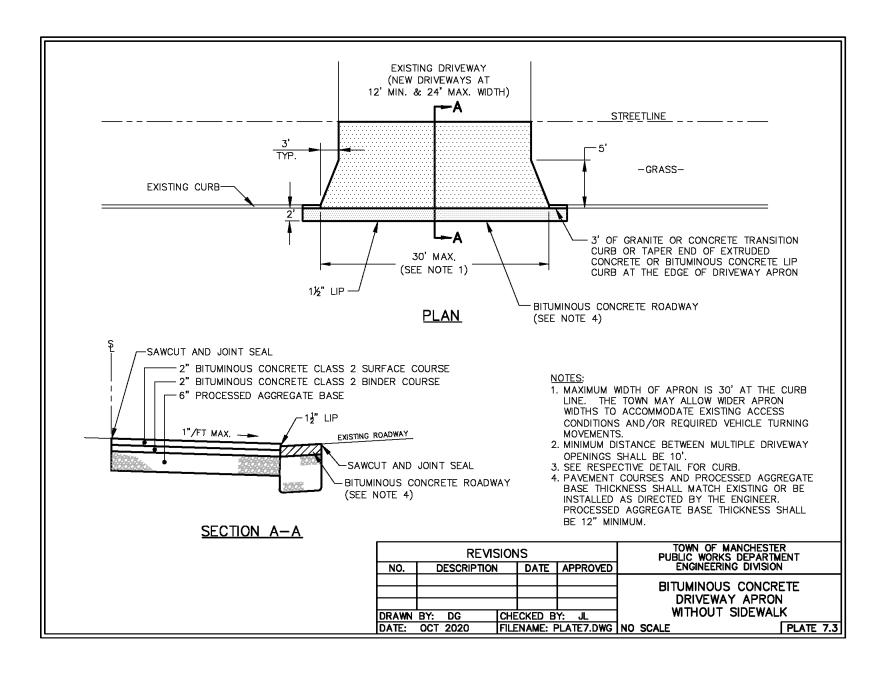
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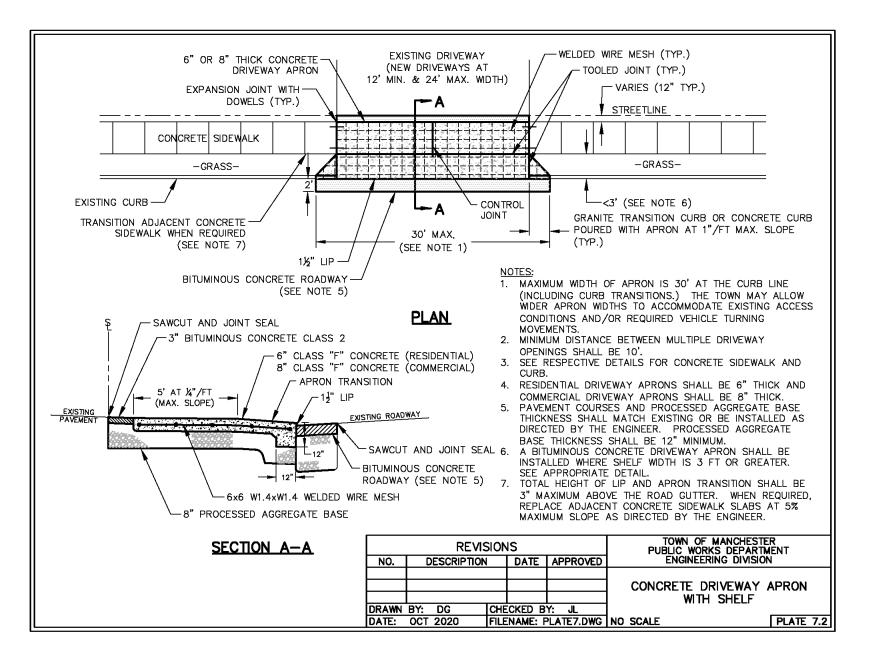
PLASTIC HOOD -MOUNTING FLANGE OUTLET PIPE FRONT VIEW SIDE VIEW

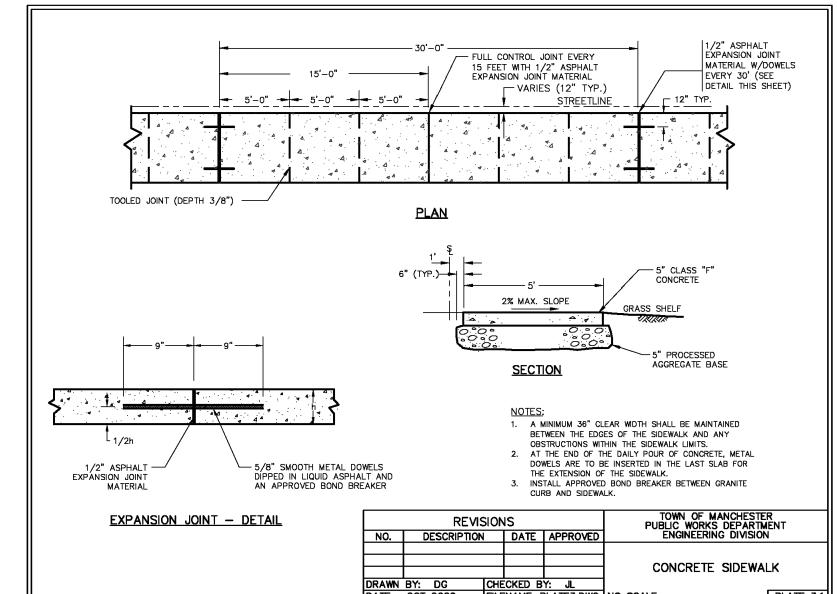
HOOD

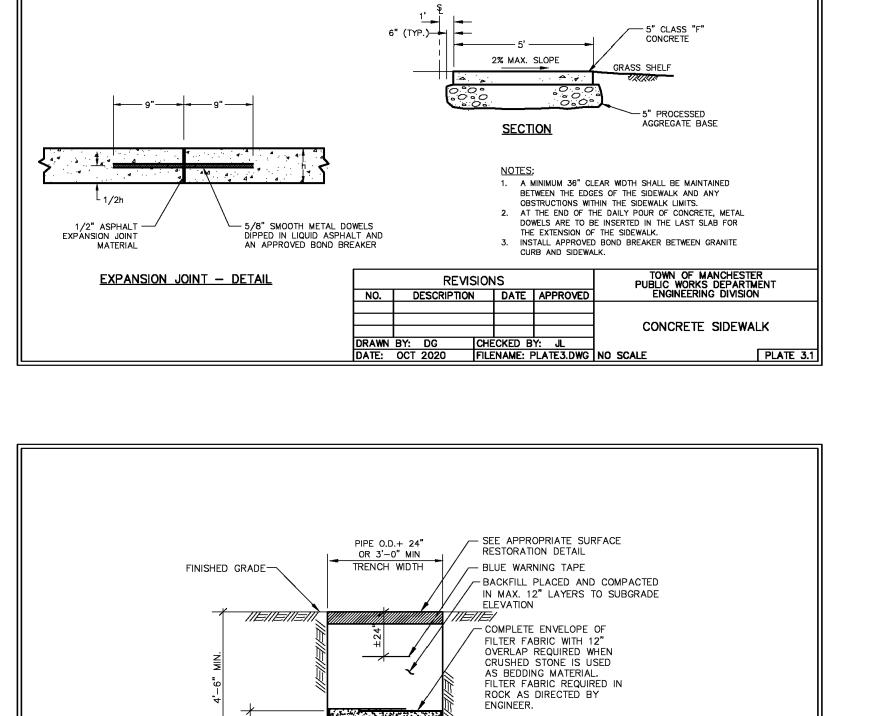
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**C-113** 









- BEDDING MATERIAL SHALL BE BANK RUN

SAND OR 3/8" TO 3/4" CRUSHED STONE, PLACED AND COMPACTED IN

- GRANULAR FILL SHALL BE BANK GRAVEL

OR CRUSHED STONE AS DIRECTED BY

THE ENGINEER WHEN UNSUITABLE

MATERIAL IS ENCOUNTERED

REVISIONS

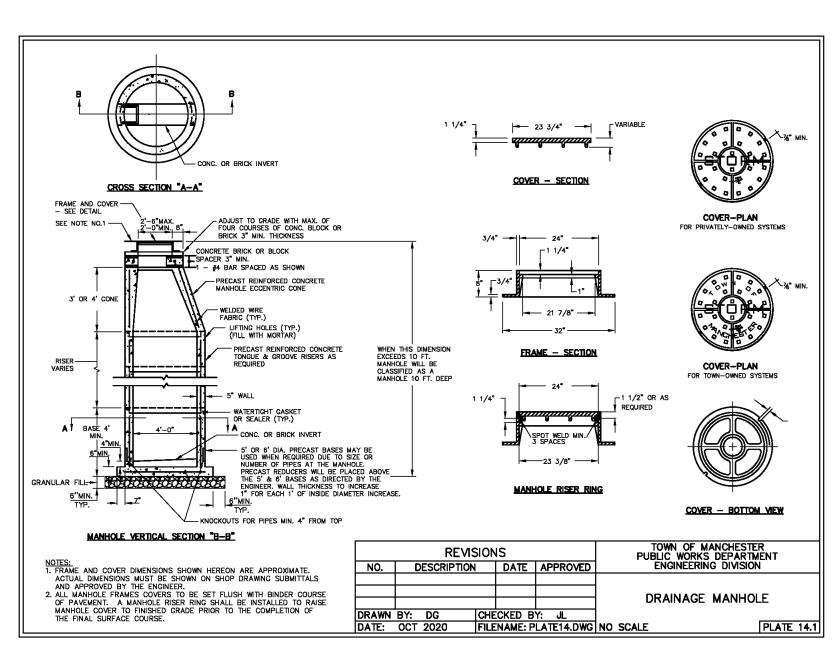
NO. DESCRIPTION DATE APPROVED

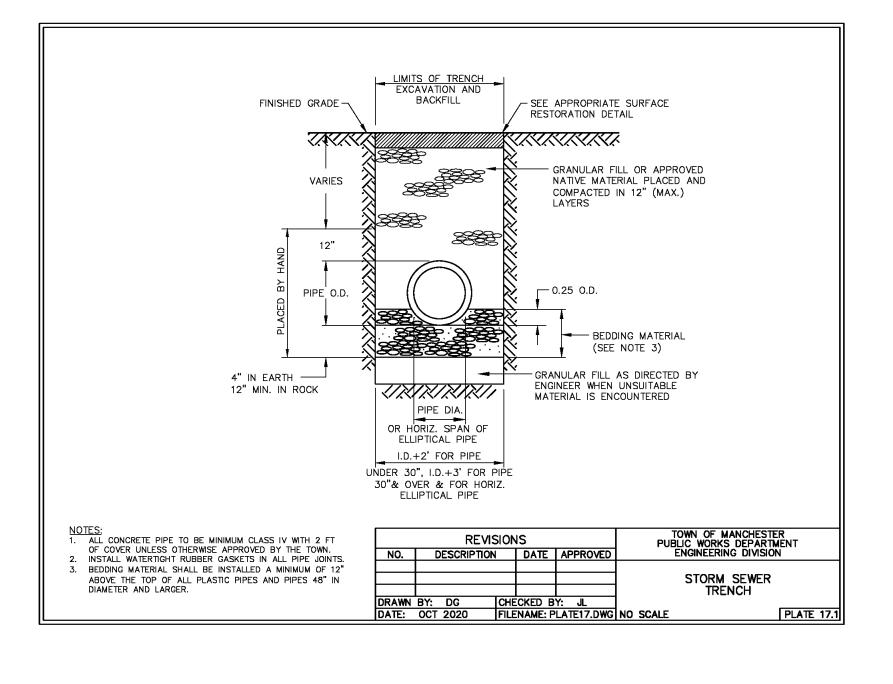
MAX. 3" LAYERS TO Q OF PIPE

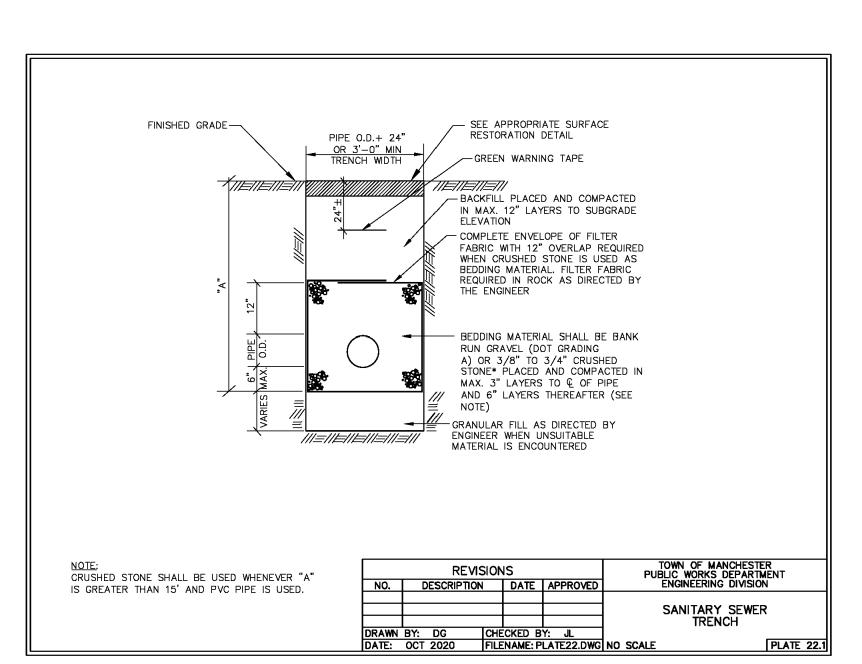
GRAVEL (DOT GRADING C), WELL GRADED

AND 6" LAYERS THEREAFTER (SEE NOTE 1)

TOWN OF MANCHESTER
PUBLIC WORKS DEPARTMENT
ENGINEERING DIVISION







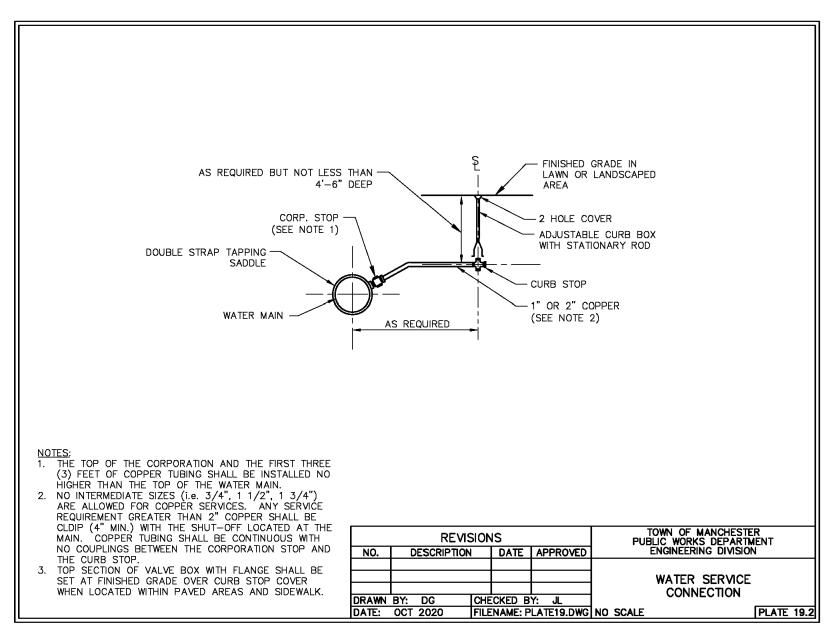
NOTES:

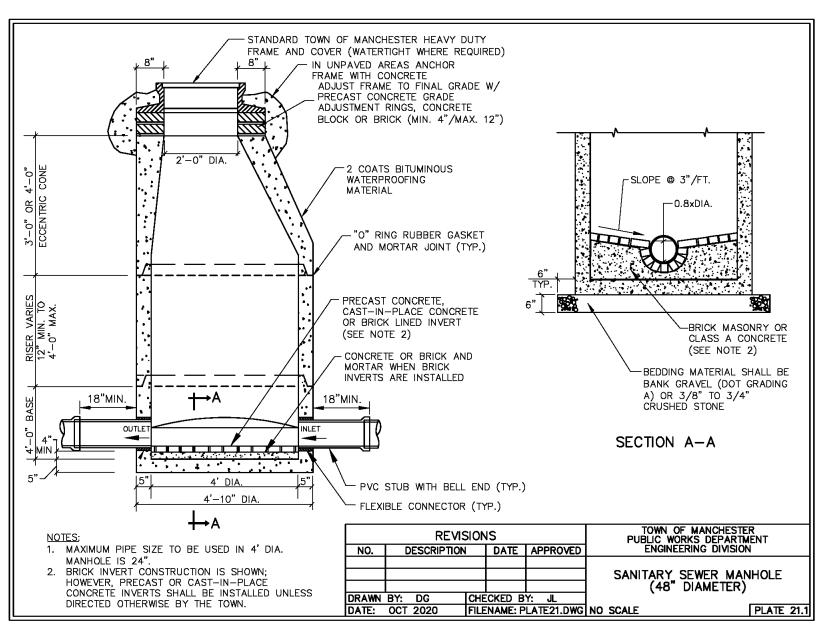
1. CRUSHED STONE SHALL ONLY BE USED IN HIGH GROUNDWATER CONDITIONS AS DIRECTED BY

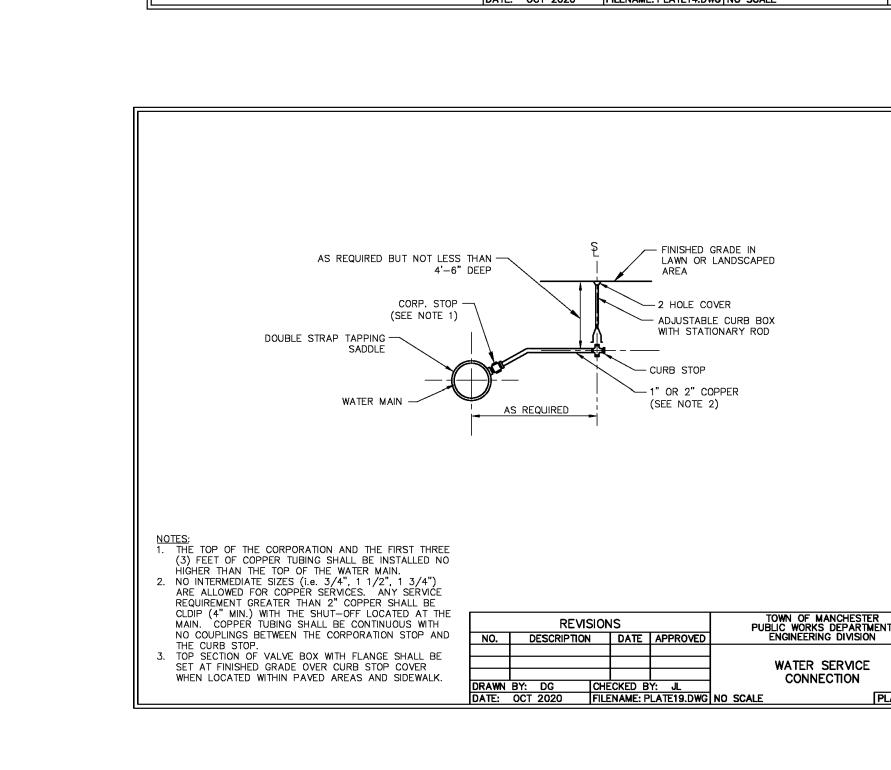
2. ALL WATER MAIN WITH LESS THAN 4'-6" OF

TRENCH DETAIL (INSULATED WATER) FOR

COVER SHALL BE INSULATED UNLESS APPROVED OTHERWISE BY THE ENGINEER. SEE TYPICAL







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BIDWELL TOWNHOMES #30 BIDWELL STREET, ANCHESTER, CONNECTION

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SITE DETAILS

SHEET NUMBER: C-114

---- 60.0" [1523mm] -----

15.0" [381mm] INSTALLED

END CAP STORAGE = 6.46 CF / UNIT (5.17 CF/FT) [0.48m<sup>3</sup>/m]

**CULTEC RECHARGER 360HD** 

**HEAVY DUTY END CAP THREE VIEW** 

HIDDEN END

MODEL 360HD END CAP

INSTALLED LENGTH ADJUSTMENT = 0.25' [0.08m]

CULTEC RECHARGER 360HD

TRIVIK BUILDERS SOUTH WINDSOR, CT 06074 (860) 208-0902

### **CULTEC RECHARGER® 360HD PRODUCT SPECIFICATIONS**

CULTEC RECHARGER® 360HD CHAMBERS ARE DESIGNED FOR UNDERGROUND STORMWATER IANAGEMENT. THE CHAMBERS MAY BE USED FOR RETENTION, RECHARGING, DETENTION OR CONTROLLING THE FLOW OF ON-SITE STORMWATER RUNOFF.

COLLECTION CHAMBERS

FOLLOWING:

- 1. THE CHAMBERS SHALL BE MANUFACTURED IN THE U.S.A. BY CULTEC, OF BROOKFIELD, CT (CULTEC.COM, 203-775-4416).
- 2. THE CHAMBERS SHALL BE DESIGNED AND TESTED IN ACCORDANCE WITH ASTM F2787 "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS". THE LOAD CONFIGURATION SHALL INCLUDE:
- A. INSTANTANEOUS AASHTO DESIGN TRUCK LIVE LOAD AT MINIMUM COVER
- B. MAXIMUM PERMANENT (50-YEAR) COVER LOAD C. 1-WEEK PARKED AASHTO DESIGN TRUCK LOAD
- 3. THE CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F3430-20 "STANDARD SPECIFICATION FOR CELLULAR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER
- 4.THE INSTALLED CHAMBER SYSTEM SHALL PROVIDE RESISTANCE TO THE LOADS AND LOAD FACTORS AS DEFINED IN THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS SECTION 12.12, WHEN INSTALLED ACCORDING TO CULTEC'S RECOMMENDED INSTALLATION INSTRUCTIONS. THE STRUCTURAL DESIGN OF THE CHAMBERS SHALL INCLUDE THE
- A. THE CREEP MODULUS SHALL BE 50-YEAR AS SPECIFIED IN ASTM F3430
- B. THE MINIMUM SAFETY FACTOR FOR LIVE LOADS SHALL BE 1.75 C. THE MINIMUM SAFETY FACTOR FOR DEAD LOADS SHALL BE 1.95
- 5. THE INSTALLED CHAMBER SYSTEM SHALL BE STRUCTURALLY DESIGNED TO PROVIDE RESISTANCE TO LIVE LOADS AS DEFINED BY THE AASHTO H-20/HL-93 SPECIFICATION WHEN INSTALLED ACCORDING TO CULTEC'S RECOMMENDED INSTALLATION INSTRUCTIONS. 6. THE CHAMBER SHALL BE STRUCTURAL FOAM INJECTION MOLDED OF BLUE VIRGIN HIGH
- MOLECULAR WEIGHT IMPACT-MODIFIED POLYPROPYLENE. 7. THE CHAMBER SHALL BE ARCHED IN SHAPE.
- 8. THE CHAMBER SHALL BE OPEN-BOTTOMED.
- 9. THE CHAMBER SHALL BE JOINED USING AN INTERLOCKING OVERLAPPING RIB METHOD. CONNECTIONS MUST BE FULLY SHOULDERED OVERLAPPING RIBS, HAVING NO SEPARATE
- $10.\ \mathsf{THE}\ \mathsf{NOMINAL}\ \mathsf{CHAMBER}\ \mathsf{DIMENSIONS}\ \mathsf{OF}\ \mathsf{THE}\ \mathsf{CULTEC}\ \mathsf{RECHARGER}^{ ext{@}}360\mathsf{HD}\ \mathsf{SHALL}\ \mathsf{BE}\ 36$ INCHES (914 MM) TALL, 60 INCHES (1525 MM) WIDE AND 50 INCHES (1275 MM) LONG. THE INSTALLED LENGTH OF A JOINED RECHARGER 360HD SHALL BE 3.67 FEET (1.12 M).
- 11. MULTIPLE CHAMBERS MAY BE CONNECTED TO FORM DIFFERENT LENGTH ROWS. EACH ROW SHALL BEGIN AND END WITH A SEPARATELY FORMED CULTEC RECHARGER® 360HD END CAP. MAXIMUM INLET OPENING ON THE END CAP IS 24 INCHES (600 MM) HDPE OR 30 INCHES (750 MM) PVC.
- 12. THE CHAMBER SHALL HAVE TWO SIDE PORTALS TO ACCEPT CULTEC HVLV™ FC-48 FEED CONNECTORS TO CREATE AN INTERNAL MANIFOLD. MAXIMUM ALLOWABLE PIPE SIZE IN THE SIDE PORTAL IS 10 INCHES (250 MM) HDPE AND 12 INCHES (300 MM) PVC. 13. THE NOMINAL CHAMBER DIMENSIONS OF THE CULTEC HVLV™ FC-48 FEED CONNECTOR
- SHALL BE 12 INCHES (305 MM) TALL, 16 INCHES (406 MM) WIDE AND 49 INCHES (1245 14. THE NOMINAL STORAGE VOLUME OF THE RECHARGER 360HD CHAMBER SHALL BE 10.0
- FT<sup>3</sup>/ FT (.928 M<sup>3</sup> / M) WITHOUT STONE. THE NOMINAL STORAGE VOLUME OF A JOINED RECHARGER 360HD SHALL BE 36.67 FT<sup>3</sup> / UNIT (1.038 M<sup>3</sup> / UNIT) - WITHOUT STONE. 15. THE NOMINAL STORAGE VOLUME OF THE HVLV™ FC-48 FEED CONNECTOR SHALL BE 0.913 FT<sup>3</sup> / FT (0.085 M<sup>3</sup> / M) - WITHOUT STONE 16. THE RECHARGER 360HD CHAMBER SHALL HAVE 7 CORRUGATIONS.
- 17. THE CHAMBER SHALL BE CAPABLE OF ACCEPTING A 6 INCH (150 MM) INSPECTION PORT OPENING AT THE TOP CENTER OF EACH CHAMBER, CENTERED ON THE CORRUGATION
- 18. THE UNITS MAY BE TRIMMED TO CUSTOM LENGTHS BY CUTTING BACK TO ANY CORRUGATION. 19. THE CHAMBER SHALL BE MANUFACTURED IN A FACILITY EMPLOYING CULTEC'S QUALITY
- 20. MAXIMUM ALLOWABLE COVER OVER THE TOP OF THE CHAMBER SHALL BE 12.0 FEET (3.66

# END CAP PARAMETERS

CONTROL AND ASSURANCE PROCEDURES.

- 1. THE CULTEC RECHARGER<sup>(R)</sup> 360HD END CAP (REFERRED TO AS 'END CAP') SHALL BE MANUFACTURED IN THE U.S.A. BY CULTEC, OF BROOKFIELD, CT (CULTEC.COM, 203-775-4416).
- 2. THE END CAP SHALL BE STRUCTURAL FOAM INJECTION MOLDED OF BLUE VIRGIN HIGH MOLECULAR WEIGHT IMPACT-MODIFIED POLYPROPYLENE. 3. THE END CAP SHALL BE ARCHED IN SHAPE.
- 4. THE END CAP SHALL BE JOINED AT THE BEGINNING AND END OF EACH ROW OF CHAMBERS USING AN INTERLOCKING OVERLAPPING RIB METHOD. CONNECTIONS MUST BE FULLY SHOULDERED OVERLAPPING RIBS, HAVING NO SEPARATE COUPLINGS.
- 5. THE END CAP SHALL HAVE 5 CORRUGATIONS. 6. THE NOMINAL DIMENSIONS OF THE END CAP SHALL BE 36.5 INCHES (927 MM) TALL, 60 INCHES (1525 MM) WIDE AND 18 INCHES (457 MM) LONG. WHEN JOINED WITH A RECHARGER 360HD CHAMBER, THE INSTALLED LENGTH OF THE END CAP SHALL BE 15
- 7. THE NOMINAL STORAGE VOLUME OF THE END CAP SHALL BE 5.17 FT $^3$ / FT (0.48 M $^3$  / M) -WITHOUT STONE. THE NOMINAL STORAGE VOLUME OF AN INTERLOCKED END CAP SHALL
- BE 6.46  $\text{FT}^3$  / UNIT (0.183  $\text{M}^3$  / UNIT) WITHOUT STONE. 8.MAXIMUM INLET OPENING ON THE END CAP IS 24 INCHES (600 MM) HDPE OR 30 INCHES

IN THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS SECTION 12.12.

9. THE END CAP SHALL PROVIDE RESISTANCE TO THE LOADS AND LOAD FACTORS AS DEFINED

# **CULTEC HVLV FC-48 FEED CONNECTOR PRODUCT SPECIFICATIONS**

### CULTEC RECHARGER MODEL 360HD STORMWATER CHAMBERS

# 1. THE FEED CONNECTOR SHALL BE MANUFACTURED BY CULTEC, OF BROOKFIELD, CT.

- 3. THE FEED CONNECTOR SHALL BE ARCHED IN SHAPE.
- 4. THE FEED CONNECTOR SHALL BE OPEN-BOTTOMED.
- INCHES (305 mm) TALL, 16 INCHES (406 mm) WIDE AND 49 INCHES (1245 mm) LONG.
- 6. THE NOMINAL STORAGE VOLUME OF THE HVLV FC-48 FEED CONNECTOR SHALL BE 0.913 FT³ / FT (0.085 m<sup>3</sup> / m) - WITHOUT STONE.
- 8. THE HVLV FC-48 FEED CONNECTOR MUST BE FORMED AS A WHOLE UNIT HAVING TWO OPEN END WALLS AND HAVING NO SEPARATE END PLATES OR SEPARATE END WALLS. THE UNIT HALL FIT INTO THE SIDE PORTALS OF THE CULTEC RECHARGER STORMWATER CHAMBER
- 9. THE FEED CONNECTOR SHALL BE DESIGNED TO WITHSTAND AASHTO HS-25 DEFINED LOADS
- 10. THE FEED CONNECTOR SHALL BE MANUFACTURED IN AN ISO 9001:2008 CERTIFIED FACILITY.
- CULTEC NO. 410™ NON-WOVEN GEOTEXTILE MAY BE USED WITH CULTEC CONTACTOR® AND RECHARGER STORMWATER INSTALLATIONS TO PROVIDE A BARRIER THAT

- (203-775-4416 OR 1-800-428-5832)
- 4. THE GEOTEXTILE SHALL HAVE A TENSILE STRENGTH VALUE OF 120 LBS (533 N) PER
- D4632 TESTING METHOD.
- 6. THE GEOTEXTILE SHALL HAVE A MULLEN BURST VALUE OF 225 PSI (1551 KPA) PER ASTM D3786 TESTING METHOD.
- ASTM D4833 TESTING METHOD.
- 8. THE GEOTEXTILE SHALL HAVE A CBR PUNCTURE VALUE OF 340 LBS (1513 N) PER ASTM D6241 TESTING METHOD.
- 9. THE GEOTEXTILE SHALL HAVE A TRAPEZOID TEAR VALUE OF 50 LBS (222 N) PER ASTM D4533 TESTING METHOD
- D4751 TESTING METHOD.
- TESTING METHOD.
- (5500 L/MIN/SM) PER ASTM D4491 TESTING METHOD.
- ASTM D4355 TESTING METHOD.

# **CULTEC AFAB-HPF™ WOVEN GEOTEXTILE**

CULTEC AFAB-HPF WOVEN GEOTEXTILE IS DESIGNED AS A UNDERLAYMENT TO PREVENT SCOURING CAUSED BY WATER MOVEMENT WITHIN THE CULTEC CHAMBERS AND FEE CONNECTORS UTILIZING THE CULTEC MANIFOLD FEATURE. IT MAY ALSO BE USED AS A COMPONENT OF THE CULTEC SEPARATOR ROW TO ACT AS A BARRIER TO PREVENT SOIL/CONTAMINANT INTRUSION INTO THE STONE WHILE ALLOWING FOR MAINTENANCE

- 1. THE GEOTEXTILE SHALL BE PROVIDED BY CULTEC OF BROOKFIELD, CT.
- 1,420 N) PER ASTM D4632 TESTING METHOD. 4. THE GEOTEXTILE SHALL HAVE A ELONGATION @ BREAK RESISTANCE OF 15 X 15%
- PER ASTM D4632 TESTING METHOD. 5. THE GEOTEXTILE SHALL HAVE A WIDE WIDTH TENSILE RESISTANCE OF 3,563 X
- 6. THE GEOTEXTILE SHALL HAVE A CBR PUNCTURE RESISTANCE OF 1,500 LBS (6,670 N) PER ASTM D6241 TESTING METHOD. 7. THE GEOTEXTILE SHALL HAVE A TRAPEZOIDAL TEAR RESISTANCE OF 120 X 120 LBS
- 8. THE GEOTEXTILE SHALL HAVE AN APPARENT OPENING SIZE OF 30 US STD. SIEVE (0.60 MM) PER ASTM D4751 TESTING METHOD.
- D4491 TESTING METHOD. 10. THE GEOTEXTILE SHALL HAVE A WATER FLOW RATING OF 22 GPM/FT2 (900 LPM/M2)
- PER ASTM D4491 TESTING METHOD. 11. THE GEOTEXTILE SHALL HAVE A UV RESISTANCE OF 70% @ 500 HRS. PER ASTM D4355 TESTING METHOD

# CULTEC HVLV FC-48 FEED CONNECTORS ARE DESIGNED TO CREATE AN INTERNAL MANIFOLD FOR

- (203-775-4416 OR 1-800-428-5832)
- 2. THE FEED CONNECTOR SHALL BE VACUUM THERMOFORMED OF HIGH MOLECULAR WEIGHT HIGH DENSITY POLYETHYLENE (HMWHDPE) WITH A BLACK INTERIOR AND BLUE EXTERIOR.
- 5. THE NOMINAL DIMENSIONS OF THE CULTEC HVLV FC-48 FEED CONNECTOR SHALL BE 12
- 7. THE HVLV FC-48 FEED CONNECTOR SHALL HAVE 4 CORRUGATIONS.
- AND ACT AS CROSS FEED CONNECTIONS CREATING AN INTERNAL MANIFOLD.
- WHEN INSTALLED ACCORDING TO CULTEC'S RECOMMENDED INSTALLATION INSTRUCTIONS.
- **CULTEC NO. 410™ NON-WOVEN GEOTEXTILE**
- PREVENTS SOIL INTRUSION INTO THE STONE.

- 1. THE GEOTEXTILE SHALL BE PROVIDED BY CULTEC, OF BROOKFIELD, CT.
- 2. THE GEOTEXTILE SHALL BE BLACK IN APPEARANCE.
- 3. THE GEOTEXTILE SHALL HAVE A TYPICAL WEIGHT OF 4.5 OZ/SY (142 G/M).
- ASTM D4632 TESTING METHOD. 5. THE GEOTEXTILE SHALL HAVE AN ELONGATION @ BREAK VALUE OF 50% PER ASTM
- 7. THE GEOTEXTILE SHALL HAVE A PUNCTURE STRENGTH VALUE OF 65 LBS (289 N) PER
- 10. THE GEOTEXTILE SHALL HAVE A AOS VALUE OF 70 U.S. SIEVE (0.212 MM) PER ASTM
- 11. THE GEOTEXTILE SHALL HAVE A PERMITTIVITY VALUE OF 1.7 SEC-1 PER ASTM D4491
- 12. THE GEOTEXTILE SHALL HAVE A WATER FLOW RATE VALUE OF 135 GAL/MIN/SF
- 13. THE GEOTEXTILE SHALL HAVE A UV STABILITY @ 500 HOURS VALUE OF 70% PER

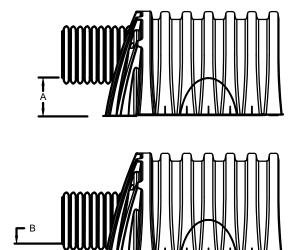
- (203-775-4416 OR 1-800-428-5832) THE GEOTEXTILE SHALL BE BLACK IN APPEARANCE.
- 3. THE GEOTEXTILE SHALL HAVE A TENSILE STRENGTH OF 320 X 320 LBS (1,420 X
- 3,563 LBS/FT (52 X 52 KN/M) PER ASTM D4595 TESTING METHOD.
- (540 X 540 N) PER ASTM D4533 TESTING METHOD.
- 9. THE GEOTEXTILE SHALL HAVE A PERMITTIVITY RATING OF 0.2 SEC-1 PER ASTM

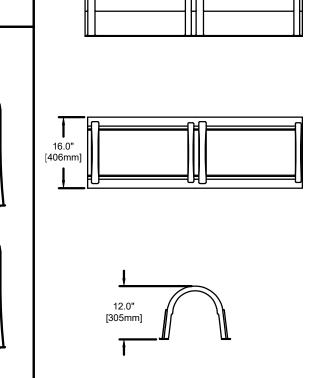
# **GENERAL NOTES**

**CULTEC RECHARGER 360HD TYPICAL PIPE INVERTS** 

PIPE	Α	В
6" [150 mm]	26.50" [673 mm]	1.00" [25 mm]
8" [200 mm]	24.50" [622 mm]	1.00" [25 mm]
10" [250 mm]	22.25" [565 mm]	1.25" [32 mm]
12" [300 mm]	19.75" [502 mm]	1.75" [45 mm]
15" [375 mm]	16.50" [419 mm]	2.00" [50 mm]
18" [450 mm]	13.00" [330 mm]	2.50" [64 mm]
21" [525 mm]	10.00" [254 mm]	2.50" [64 mm]
24" [600 mm]	7.00" [178 mm]	2.50" [64 mm]
30" [750 mm]	N/A	3.50" [89 mm]

\*THE TYPICAL INVERT TABLE ABOVE IS BASED ON THE INSIDE DIAMETER OF STANDARD CORRUGATED PLASTIC PIPE. THE HEAVY DUTY END CAP HAS PRE-MARKED TRIM LINES FOR PIPE DIAMETERS 12" (300mm), 15" (375mm), 18" (450mm) AND 24" (600mm). PIPES OF ANY SIZE AND MATERIAL UP TO 24" (600mm) MAY BE PLACED AT CUSTOM LOCATIONS AND CUSTOM INVERTS. 30" (750 mm) SMOOTH-WALL SDR-35 PVC PIPE MAY BE USED AT THE BOTTOM OF THE END CAP. THE CROWN OF THE PIPE MUST REMAIN A MINIMUM OF 3" (75mm) FROM THE EDGE OF THE HEAVY DUTY END CAP





CULTEC HVLV FC-48

**FEED CONNECTOR THREE VIEW** 

FINAL ASSEMBLY

CULTEC 12" [300mm] DUCTILE IRON SQUARE BASIN COVER

CULTEC 12" [300mm] PVC UNIVERSAL INLINE DRAIN BOD

[PART #1299CGC - SOLID]

[PART #1299CGS - SLOTTED]

SDR-35 RISER PIPE CUT TO LENGTH

BASED ON SYSTEM DEPTH. PIPE SHALL

SDR-35 RISER PIPE MAY BE 6" [150 mm],

8" [200 mm] OR 10" [250 mm] DIAMETER

[PART NOT PROVIDED BY CULTEC]

[PART NOT PROVIDED BY CULTEC]

SDR-35 BELL END INSERTED

6" [150mm] INTO CHAMBER

STONE SURROUNDING CHAMBER

(IF APPLICABLE)

COLLECTION CHAMBERS." THE LOAD CONFIGURATION SHALL INCLUDE:

1.a. INSTANTANEOUS AASHTO DESIGN TRUCK LIVE LOAD AT MINIMUM COVER

THE CREEP MODULUS SHALL BE 50-YEAR AS SPECIFIED IN ASTM F3430

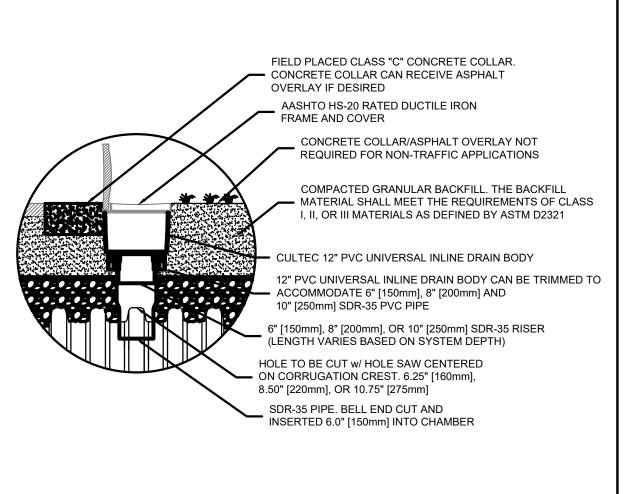
3.c. THE MINIMUM SAFETY FACTOR FOR DEAD LOADS SHALL BE 1.95

MAXIMUM PERMANENT (50-YEAR) COVER LOAD

1-WEEK PARKED AASHTO DESIGN TRUCK LOAD

18.0" [457mm] MIN. FOR UNPAV

BE INSERTED INTO SDR-35 BELL END.



**OPTIONAL CULTEC INSPECTION PORT - ZOOM DETAIL** 

SOLID COVER OPTION

---- 13.6" [346 mm] ----

**PVC BODY PLAN VIEW** 

STANDARD OPENING FOR

6" [150 mm] SDR-35 RISER PIF

PVC BODY CAN BE TRIMMED IN FIELD -

TO ACCOMMODATE 8" [200 mm] AND 10" [250 mm] SDR-35 RISER PIPE SIZES

MIN. 95% COMPACTED FILL 4

WHERE SPECIFIED

FINISHED GRADE -

**CULTEC UNIVERSAL INSPECTION PORT KIT DETAIL** 

THE DESIGN ENGINEER IS RESPONSIBLE FOR ENSURING THAT THE REQUIRED BEARING CAPACITY OF SUB-GRADE SOILS HAVE BEEN MET

NOTES:
1. THE CHAMBERS SHALL BE DESIGNED AND TESTED IN ACCORDANCE WITH ASTM F2787 "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER

ACCORDING TO CULTEC'S RECOMMENDED INSTALLATION INSTRUCTIONS. THE STRUCTURAL DESIGN OF THE CHAMBERS SHALL INCLUDE THE FOLLOWING:

THE CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F3430-20 "STANDARD SPECIFICATION FOR CELLULAR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS"

THE INSTALLED CHAMBER SYSTEM SHALL PROVIDE RESISTANCE TO THE LOADS AND LOAD FACTORS AS DEFINED IN THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS SECTION 12.12. WHEN INSTALLED

**CULTEC RECHARGER 360HD CROSS SECTION** 

DUCTILE IRON FRAME

HINGE FOR EASY ACCESS

SOLID DUCTILE IRON COVER

SLOTTED COVER OPTION

DUCTILE IRON FRAME

**PVC BODY ELEVATION VIEW** 

NON-WOVEN GEOTEXTILE AROUND STONE, TOP AND

SCOUR PROTECTION)

12.0" [305mm] MIN. FOR RIGID PAVEMENT

12.0" [305mm] MIN. FOR FLEXIBLE PAVEMENT

MANIFOLD FEATURE AND BENEATH ALL INLET/OUTLET PIPES (FC

HINGE FOR EASY ACCESS

SLOTTED DUCTILE IRON COVI

TOTAL OPEN AREA = 60.62 IN<sup>2</sup>

6.0" [150mm] DIA. INSPECTION PORT KNOCK-OUT •

36.0" [916mm]

INSTALLED LENGTH

50.0" [1271mm] **—** 

BEGINNING OF RUN -

MODEL 360HD END CAP

THE MINIMUM SAFETY FACTOR FOR DEAD LOADS SHALL BE 1.95

60.0" [1524mm

SIDE PORTAL FOR OPTIONAL INTERNAL MANIFOLD

INSTALLED LENGTH ADJUSTMENT = 0.50' [0.15m]

**CULTEC RECHARGER 360HD HEAVY DUTY THREE VIEW** 

MAXIMUM PIPE SIZE:

50.0" [1271mm] —

(ACCOMMODATES CULTEC HVLV FC-48 FEED CONNECTOR OR STORM PIPE)

CULTEC RECHARGER 360HD CHAMBER STORAGE = 10.00 CF/FT [0.93 m<sup>3</sup>/m]

PIPE TO BE INSERTED 12.0" MIN. INTO CHAMBER MAXIMUM PIPE SIZE: TYPICAL CULTEC SEPARATOR ROW TO BE COVERED WITH NON-WOVEN GEOTEXTILE MIN. 95% COMPACTED F OR GRANULAR SUB-BAS STONE SURROUNDING CHAMBERS ■ INLET STRUCTURE CULTEC INSPECTION POR 1 LAYER OF WOVEN GEOTEXTILE — TO BE PLACED BENEATH ENTIRE SEPARATOR ROW THE DESIGN ENGINEER IS RESPONSIBLE FOR ENSURING THAT THE REQUIRED -BEARING CAPACITY OF SUB-GRADE SOILS HAS BEEN MET

TRIM CUT-OUT TO UTILIZE

INTERNAL MANIFOLD FEATURE

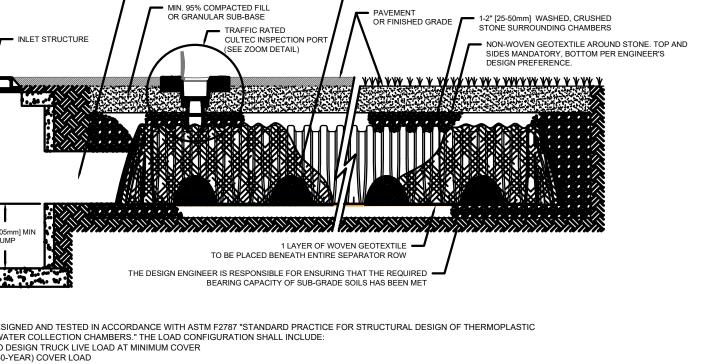
**CULTEC RECHARGER 360HD HEAVY DUTY TYPICAL INTERLOCK** 

FEED CONNECTOR

THE CHAMBERS SHALL BE DESIGNED AND TESTED IN ACCORDANCE WITH ASTM F2787 "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC INSTANTANEOUS AASHTO DESIGN TRUCK LIVE LOAD AT MINIMUM COVER MAXIMUM PERMANENT (50-YEAR) COVER LOAD 1-WEEK PARKED AASHTO DESIGN TRUCK LOAD

THE CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F3430-20 "STANDARD SPECIFICATION FOR CELLULAR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS" THE INSTALLED CHAMBER SYSTEM SHALL PROVIDE RESISTANCE TO THE LOADS AND LOAD FACTORS AS DEFINED IN THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS SECTION 12.12, WHEN INSTALLED ACCORDING TO CULTEC'S RECOMMENDED INSTALLATION INSTRUCTIONS. THE STRUCTURAL DESIGN OF THE THE CREEP MODULUS SHALL BE 50-YEAR AS SPECIFIED IN ASTM F3430

**CULTEC SEPARATOR ROW - CULTEC INSPECTION PORT DETAIL (IF APPLICABLE)** 



C-115

CAD FILE: 2022-0601 DETAILS.dw

SITE DETAILS

DRAFTED:

CHECKED:

APPROVED:

FC PROJECT NO.

SCALE:

DBE | DAS | MBE | GNMSDC CERTIFIED

CIVIL ENGINEERS | LAND SURVEYORS

ENVIRONMENTAL SCIENTISTS

FREEMAN COMPANIES, LLC

HARTFORD, CT 06106

WWW.FREEMANCOS.COM

(860)251-9550

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