DEFINITIVE SUBDIVISION PLANS
FOR:
PROPOSED

CENTECH PARK NORTH
SUB-DISTRICT A

LOCATION OF SITE:
384-386 SOUTH STREET, TOWN OF SHREWSBURY
WORCESTER COUNTY, MASSACHUSETTS
MAP #42, LOT #11
GENERAL NOTES

- No dimensions or quantities are included in the General Notes. It is suggested that the dimensions and quantities are obtained from external sources or other referenced documents.

- References to specific areas or documents are indicated, such as "in the event of discrepancies..." and "boundary & topographic survey...".

GENERAL GRADING & UTILITY PLAN NOTES

- Notes are provided for grading and utility plan details, including directions on how to handle specific utility components or conditions.

GENERAL DEMOLITION NOTES

- Instructions are given for demolition work, including the proper methods and precautions to be taken.

TYPICAL ABBREVIATIONS

- A list of abbreviations is included, providing a concise reference for common abbreviations used throughout the document.

TYPICAL LEGEND

- A legend is provided to help identify different elements or symbols used in plans or diagrams, such as symbols for utility lines or building components.

ADA INSTRUCTIONS TO CONTRACTOR:

- Special instructions are given for ADA compliance, ensuring that the project meets accessibility standards.

Refer to overall site index and Zoning Plan for Zoning, Use and Applicable Notes.

Refer to Soil Erosion Control Notes & Details Sheet for typical erosion notes and details.
SUBGRADE PREPARATION
1. INCH DEEP RIGHT-ANGLED VERTICAL CHAMFER SHALL BE CREATED.

A. RETAINING WALLS SHALL BE STOCKPILED ON-SITE AT LOCATIONS IN-SITU MATERIALS EXCAVATED FROM THE LOCATION OF THE STRUCTURE, AND SHALL NOT BE DISTURBED ON RETAINING WALLS.

B. RETAINING WALLS SHALL BE REVIEWED BY THE ENGINEER WITH WRITTEN CERTIFICATION THAT ALL GEOTEXTILE USED FOR CONSTRUCTION MEETS OR EXCEEDS THE MINIMUM PROPERTIES REQUIRED.

C. SUBDRAIN - A COMBINED SYSTEM OF SLOTTED PIPE, SOLID PIPE, GEOTEXTILE FABRIC, AND CRUSHED STONE, PROVIDED FOR INTERNAL DRAINAGE BEHIND OR BELOW THE RETAINING WALL. DRAIN PIPE SHALL BE 4-INCH DIAMETER SCHEDULE-40 SLOTTED PVC OR HDPE.

B. CONCRETE
A. CONCRETE SHALL HAVE A MINIMUM 28-DAY COMpressive STRENGTH OF 3,000 PSI AND AN ENTRAINED AIR CONTENT OF 5% ±1.5%.

B. FOLLOW “HOT WEATHER CONCRETING” ACI 305R AND “COLD WEATHER CONCRETING” ACI 306R (LATEST EDITION), AS REQUIRED.

C. USE OF ADDITIVES SHALL NOT BE PERMITTED UNLESS SPECIFICALLY APPROVED BY THE ENGINEER. USE OF ADDITIVES CONTAINING CALCIUM CHLORIDE SHALL NOT BE PERMITTED.

D. REINFORCING STEEL - ASTM A615, GRADE 60.

E. WEEP HOLE - SHALL BE SLEEVED WITH 3-INCH DIAMETER PVC PIPE.

SECTION 2: EXECUTION

2.1 CONSTRUCTION
A. ALL EXCAVATIONS SHALL BE CONDUCTED IN ACCORDANCE WITH OSHA STANDARDS.

B. EXCAVATIONS SHALL BE MADE IN A MANNER THAT WILL NOT DISTURB THE EXISTING CONSTRUCTION ON THE SITE OR NEIGHBORING PROPERTIES. CONTRACTOR SHALL PROVIDE PROTECTION AND CONSTRUCT THE WALLS IN SUCH A MANNER TO MAINTAIN THE INTEGRITY OF ANY IMPROVEMENTS DURING CONSTRUCTION.

C. IN-SITU MATERIALS EXCAVATED FROM THE LOCATION OF THE RETAINING WALLS SHALL BE STOCKPILED ON-SITE AT LOCATIONS DESIGNATED BY THE OWNER AND IN LOCATIONS THAT WILL NOT INTERFERE WITH THE EXECUTION OF THE WORK. Stockpile MUST BE AT LEAST TWO TIMES THE WALL HEIGHT AWAY FROM THE FACE OF THE WALL.

2.2 SUBGRADE PREPARATION
A. SUBGRADE SHALL BE EXCAVATED AS REQUIRED FOR PLACEMENT OF THE WALLS AND FREE DRAINING BACKFILL.

B. SUBGRADE SHALL BE REVIEWED BY THE ENGINEER TO CONFIRM THAT THE ACTUAL FOUNDATION CONDITIONS MEET OR EXCEED THE MINIMUM 3% ORGANIC MATERIAL BY WEIGHT. MAXIMUM PARTICLE SIZE 1”. 80% BY WEIGHT PASSING THE #4 SIEVE AND 30% BY WEIGHT PASSING THE #200 SIEVE.

C. FOUNDATION SUBGRADES ARE EXPECTED TO BE IN EITHER SOIL, COMPETENT BEDROCK, OR CRUSHED STONE PLACED OVER EXCAVATED BEDROCK.

D. PROOF-COMPACT SOIL SUBGRADE WITH MULTIPLE PASSES OF A VIBRATORY PLATE COMPACTOR PRIOR TO PLACING FORMWORK AND REINFORCING STEEL.

2.3 FOOTING DRN A CONSTRUCTION
A. THE FOOTING DRN A SHALL BE PLACED UPON THE CRUSHED STONE THAT IS ENCAPSULATED IN A GEOTEXTILE SEPARATION FABRIC AT THE INSIDE BOTTOM OF WALL STEM ABOVE FOOTING (AS SHOWN ON DETAIL Sheet 6) AND PITCHED TO DRN A TO THE END OF THE WALL.

B. DRAIN PIPE SHALL BE PITCHED FOR POSITIVE WATER FLOW.

C. DRAIN PIPE SHALL BE DIRECTED TO DETENTION POND OR CONNECTED TO A SUITABLE CATCH BASIN OR MANHOLE, PER LOCAL CODE.

2.4 BACKFILL
A. ALL BACKFILL MATERIALS, WHETHER ON SITE OR IMPORTED, SHALL BE APPROVED BY THE ENGINEER PRIOR TO CONSTRUCTION.

B. TEST RESULTS OF ALL PROPOSED BACKFILL MATERIALS, WHETHER ON SITE OR IMPORTED, SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PRIOR TO CONSTRUCTION.

C. BACKFILL SHALL BE PLACED IN 8-INCH THICK LIFTS MEASURED LOOSE AND COMPACTED WITH MULTIPLE PASSES OF A SMALL VIBRATORY PLATE COMPACTOR.

D. BACKFILL SHALL BE COMPACTED TO AT LEAST 95% OF THE MODIFIED PROCTOR MAXIMUM LABORATORY DENSITY (ASTM D1557) WITH A VIBRATORY PLATE COMPACTOR.

2.5 SITE DRAINAGE
A. AT THE END OF EACH DAY’S OPERATION, THE CONTRACTOR SHALL SLOPE THE LAST LIFT OF BACKFILL AWAY FROM THE WALL TO RAPIDLY DIRECT RUNOFF AWAY FROM THE WALL.

B. THE CONTRACTOR SHALL NOT ALLOW SURFACE RUNOFF FROM ADJACENT AREAS TO ENTER THE WALL CONSTRUCTION SITE.

C. FINISHED GRADING AT THE TOP OF THE WALL SHALL PROVIDE DRAINAGE AWAY FROM THE RETAINING WALL TO PREVENT INFILTRATION OF WATER INTO RETAINED SOILS WHICH MAY INCREASE LATERAL PRESSURES ON THE STRUCTURE.

2.6 REINFORCING STEEL
A. REINFORCING STEEL TO BE PLACE IN ACCORDANCE WITH CRSI AND LOCAL REGULATIONS.

B. CAST-IN-PLACE CONCRETE
A. ALL CONCRETE SHALL BE PLACED IN ACCORDANCE WITH ACI 304 RECOMMENDATIONS.

B. FORMWORK SHALL REMAIN IN PLACE FOR AT LEAST 24 HOURS AFTER PLACEMENT.

C. 1-INCH DEEP RIGHT-ANGLED VERTICAL CHAMFER SHALL BE CREATED FOR FULL WALL HEIGHT ON BACK AND FRONT FACES OF WALL AT LOCATION OF EACH WEEP HOLE. AS SHOWN ON DETAIL Sheet 3. CONCRETE SHALL BE SAW CUT FOR DEPTH OF 1.25 INCHES FROM BASE OF CHAMFER ON FRONT OF WALL ONLY.

SECTION 3: DESIGN PARAMETERS

3.1 DESIGN OF THE RETAINING WALLS IS BASED ON THE 9TH EDITION 780 CMR MASSACHUSETTS BUILDING CODE AND THE FOLLOWING PARAMETERS:

WALL SEGMENT FRICTION ANGLE COHESION UNIT WT
RETAINED SOIL 34° 0 PSF 135 PCF (WET)

STABILITY OF WALLS
A. MINIMUM FACTOR OF SAFETY AGAINST BASE SLIDING: 1.5
B. MINIMUM FACTOR OF SAFETY AGAINST OVERTURNING: 1.5
C. MINIMUM FACTOR OF SAFETY GLOBAL STABILITY: 1.5
D. ALLOWABLE BEARING PRESSURE: 4,000 PSF (TO BE FIELD CONFIRMED BY ENGINEER DURING CONSTRUCTION).
PROPOSED CAST-IN-PLACE CONCRETE RETAINING WALL 1 ALIGNMENT.

PROPOSED CAST-IN-PLACE CONCRETE RETAINING WALL 2 ALIGNMENT.

PLAN VIEW WALL

1" = 30'
ELEVATION WALL 2

1" = 10'

MATCH WALL SECTION DETAIL ON SHEET 6 TO WALL HEIGHT