

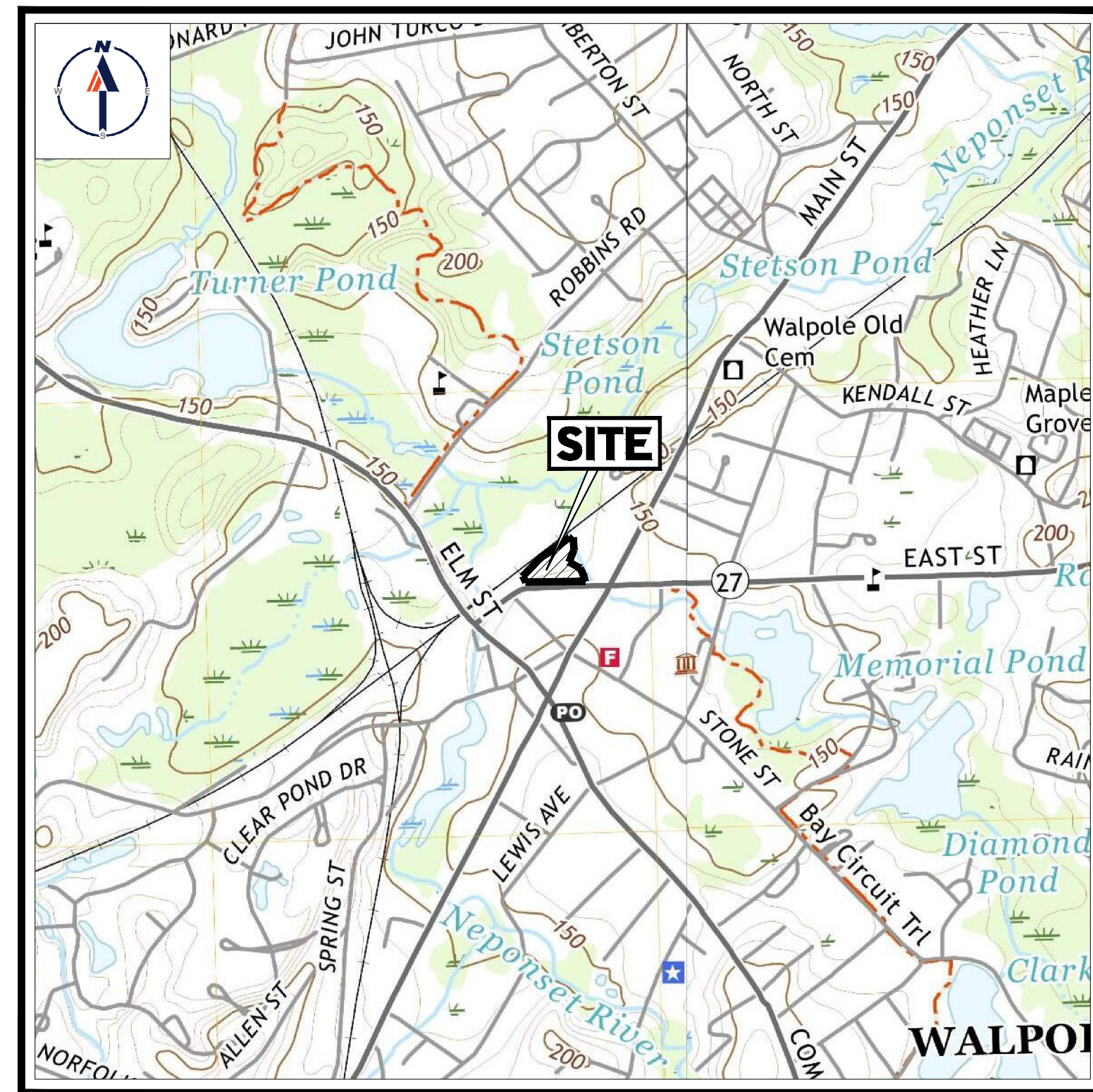
PRELIMINARY CIVIL ENGINEERING PLAN SET

FOR



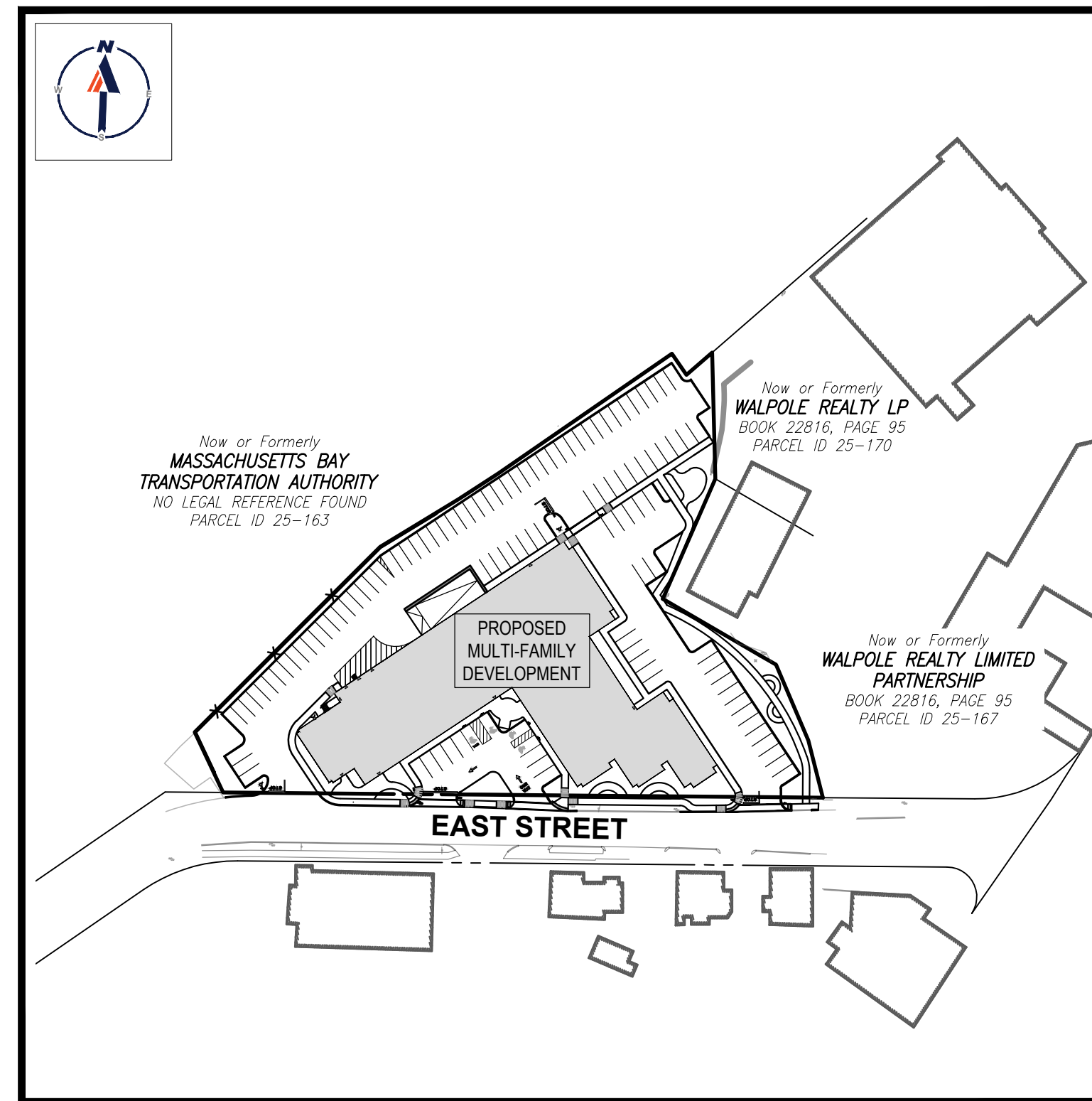
PROPOSED MULTI-FAMILY DEVELOPMENT

LOCATION OF SITE:
981, 989, & 1015 EAST STREET, TOWN OF WALPOLE,
NORFOLK COUNTY, MASSACHUSETTS



USGS MAP

SCALE: 1" = 1,000'
SOURCE: MEDFIELD AND NORWOOD MASSACHUSETTS USGS QUADRANGLE



SITE MAP

SCALE: 1" = 100'

DRAWING SHEET INDEX

SHEET TITLE	SHEET NUMBER
COVER SHEET	C-101
GENERAL NOTES SHEET	C-102
DEMOLITION PLAN	C-201
SITE LAYOUT PLAN	C-301
GRADING & DRAINAGE PLAN	C-401
UTILITY PLAN	C-501
EROSION AND SEDIMENT CONTROL PLAN	C-601
EROSION AND SEDIMENT CONTROL NOTES & DETAILS	C-602
LANDSCAPE PLAN	C-701
LANDSCAPE NOTES & DETAILS	C-702
LIGHTING PLAN	C-703
DETAIL SHEET	C-901
DETAIL SHEET	C-902
DETAIL SHEET	C-903
DETAIL SHEET	C-904
EXISTING CONDITIONS PLAN (BY OTHERS)	1 SHEET

PREPARED BY

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REVISIONS

REV	DATE	COMMENT	DRAWN BY
1	08/30/2023		CMC EDJ/JAK



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PROJECT No.:	W211283
DRAWN BY:	CMC/LC
CHECKED BY:	EDJ/JAK
DATE:	08/30/2023
CAD ID:	W211283-SPPD-2B.DWG

PRELIMINARY CIVIL ENGINEERING PLAN SET

FOR
**KIG SILVERSTRAND
WALPOLE, LLC**
PROPOSED
MULTI-FAMILY DEVELOPMENT
MAP 25, BLOCK 164, 165 & 166
981, 989 & 1015 EAST STREET
TOWN OF WALPOLE
NORFOLK COUNTY,
MASSACHUSETTS



352 TURNPIKE ROAD
SOUTHBOROUGH, MA 01772
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J.A. KUCICH

PROFESSIONAL ENGINEER
MASSACHUSETTS LICENSE No. 41530
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CONNECTICUT LICENSE No. 28177
RHODE ISLAND LICENSE No. 3616
MAINE LICENSE No. 12553

SHEET TITLE:

COVER SHEET

SHEET NUMBER:

C-101

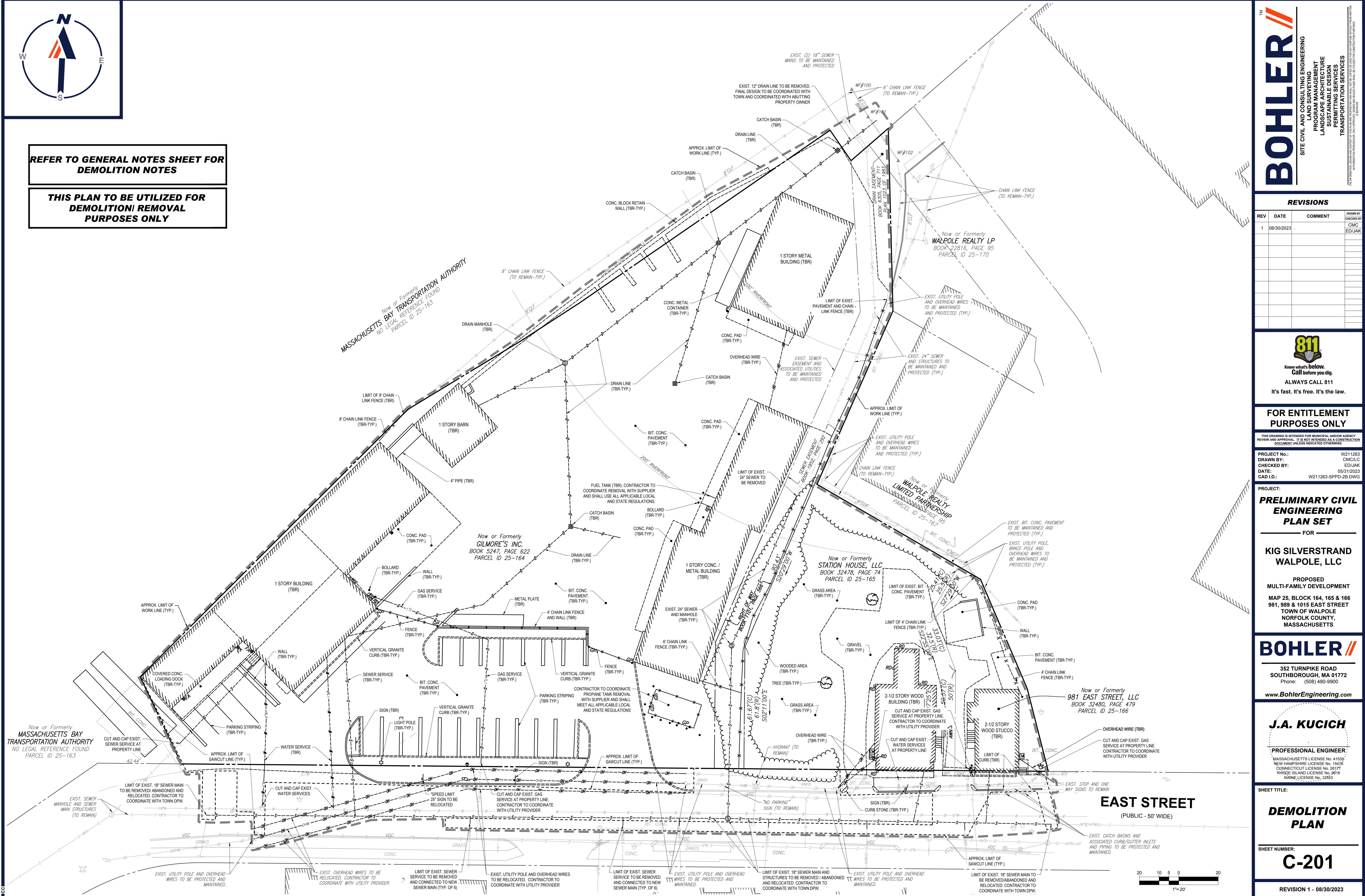
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REFER TO GENERAL NOTES SHEET FOR DEMOLITION NOTES

THIS PLAN TO BE UTILIZED FOR DEMOLITION/ REMOVAL PURPOSES ONLY



BOHLER
 SITE CIVIL AND CONSULTING ENGINEERING
 PROGRAM MANAGEMENT
 LANDSCAPE ARCHITECTURE
 SUSTAINABLE DESIGN
 TRANSPORTATION SERVICES

REVISIONS

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PROJECT No.: W211263
 DRAWN BY: CMCLC
 CHECKED BY: EDJAK
 DATE: 08/11/2023
 CAD ID.: W211263-SPPD-2B DWG

PROJECT:
PRELIMINARY CIVIL ENGINEERING PLAN SET
 FOR

KIG SILVERSTRAND WALPOLE, LLC

PROPOSED
 MULTI-FAMILY DEVELOPMENT
 MAP 25, BLOCK 164, 165 & 166
 981, 989 & 1015 EAST STREET
 TOWN OF WALPOLE
 NORFOLK COUNTY,
 MASSACHUSETTS

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DEMOLITION PLAN

SHEET NUMBER: **C-201**

REVISION 1 - 08/30/2023

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SITE INFORMATION

- APPLICANT:
KIG SILVERSTRAND WALPOLE, LLC
257 HILLSIDE AVENUE
NEEDHAM, MA 02494
- OWNERS:
GILMORE'S INC.
1015 EAST STREET
WALPOLE, MA 02081

STATION HOUSE, LLC
989 EAST STREET
WALPOLE, MA 02081

981 EAST STREET, LLC
981 EAST STREET
WALPOLE, MA 02081
- PARCELS:
25-164, 25-165 & 25-166
981, 989 & 1015 EAST STREET
TOWN OF WALPOLE
NORFOLK COUNTY, MASSACHUSETTS

ZONING ANALYSIS TABLE			
ZONING DISTRICT	CENTRAL BUSINESS DISTRICT		
OVERLAY DISTRICT	N/A		
REQUIRED PERMIT	408 COMPREHENSIVE PERMIT FROM ZBA		
ZONE CRITERIA	REQUIRED	EXISTING	PROPOSED
MIN. LOT AREA	5,000 SF	83,070 SF ±	NO CHANGE
MIN. LOT WIDTH	N/S	NO CHANGE	NO CHANGE
MAX. BLDG COVERAGE	90%	20.7%	29.7%
MIN. FRONT SETBACK	0' MIN. / 25' MAX.	0'	5.6' ± MIN. 78.7' ± MAX.
MIN. SIDE SETBACK	0'	0.6' ±	38.7' ±
MIN. REAR SETBACK	10'	0.4' ±	52.0' ±
MAX. BUILDING HEIGHT	52'	< 52%	69'-11" (W) (3)
MAX. IMPER. COVERAGE	100%	81.9%	90.6%
PARKING SPACES (1)	296	21	171 (2)
ACCESS. PARKING SPACES	7	0	6 (4)
DRIVEWAY AISLE CRITERIA	26' WIDE (90° PARKING ANGLE)	-	TWO WAY: 24' WIDE (W) ONE WAY: 20' WIDE (W)
PARKING STALL CRITERIA	9' WIDE, 18.5' LONG (90° PARKING ANGLE)	-	STANDARD: 9'W x 18L (W) COMPACT: 8'W x 18L (W) ACCESSIBLE: 8'W x 18L (W)
PARKING SPACE CRITERIA	USE/CATEGORY: PARKING CODE 1 REQUIRED PARKING: TWO (2) PARKING SPACES FOR EACH UNIT ON PREMISES CALCULATION: 148 UNITS X 2 SPACES/UNIT = 296 SPACES REQUIRED		
MA ACCESSIBLE PARKING CRITERIA	1-25 SPACES = 1 MIN. ACCESSIBLE SPACE 26-50 SPACES = 2 MIN. ACCESSIBLE SPACES 51-75 SPACES = 3 MIN. ACCESSIBLE SPACES 76-100 SPACES = 4 MIN. ACCESSIBLE SPACES 101-150 SPACES = 5 MIN. ACCESSIBLE SPACES 151-200 SPACES = 6 MIN. ACCESSIBLE SPACES 201-300 SPACES = 7 MIN. ACCESSIBLE SPACES 301-400 SPACES = 8 MIN. ACCESSIBLE SPACES	401-500 SPACES = 9 MIN. ACCESSIBLE SPACES 501-1,000 SPACES = MIN. 2% OF TOTAL 1001+ SPACES = MIN. 2% + 1 FOR EACH 100 SPACES OVER 1,000	1 ACCESSIBLE VAN SPACE PER 6 STANDARD ACCESSIBLE SPACES (MIN.)

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SUSTAINABLE DESIGN
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PROJECT No.: W211263
DRAWN BY: CM/CLC
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DATE: 05/12/2023
CAD ID: W211263-SPPD-2B DWG

PRELIMINARY CIVIL ENGINEERING PLAN SET

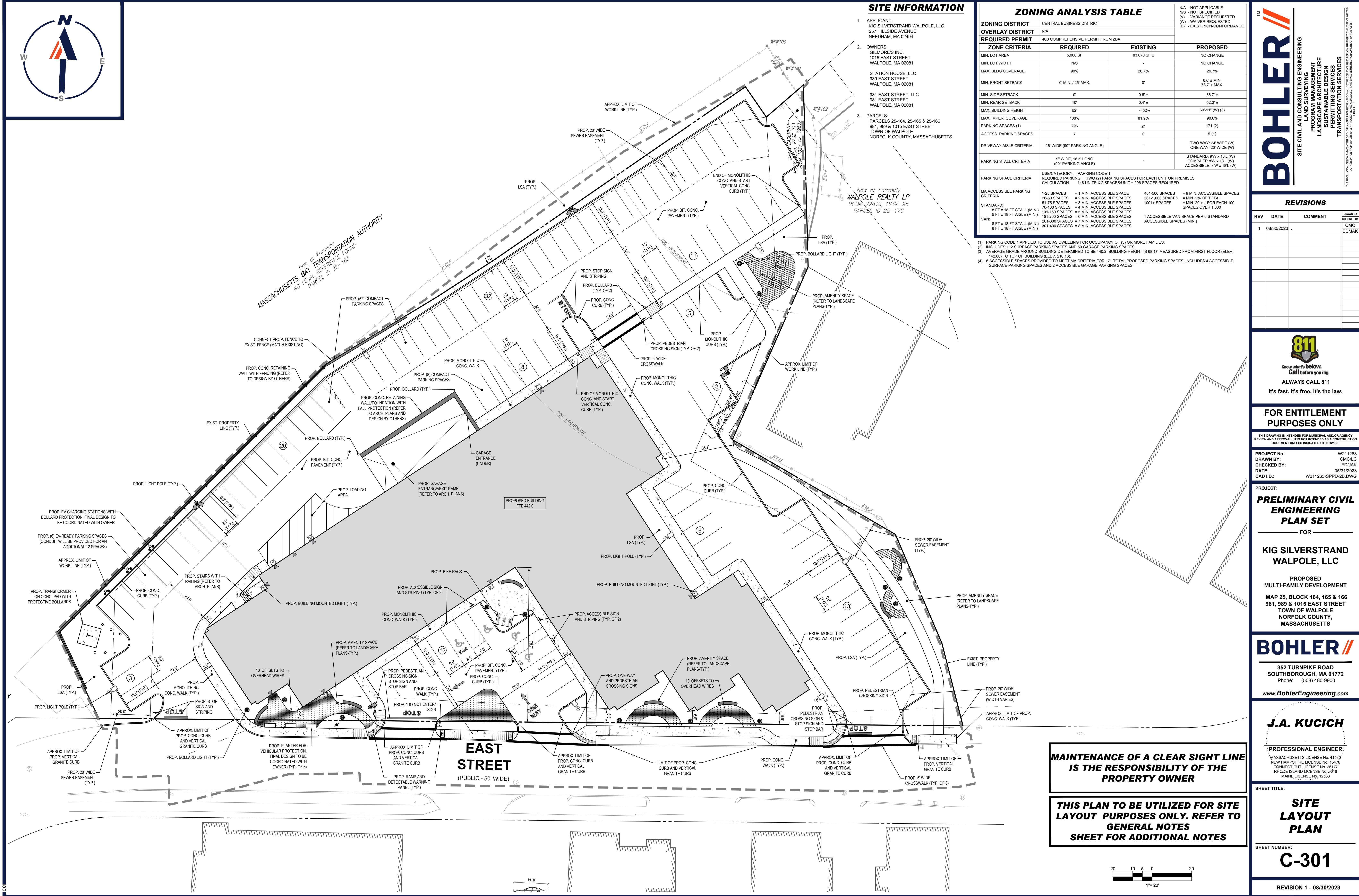
FOR
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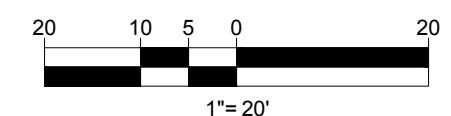
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CONNECTICUT LICENSE No. 26177
RHODE ISLAND LICENSE No. 3616
MAINE LICENSE No. 12553

SHEET TITLE:
SITE LAYOUT PLAN
SHEET NUMBER:
C-301
REVISION 1 - 08/30/2023



MAINTENANCE OF A CLEAR SIGHT LINE IS THE RESPONSIBILITY OF THE PROPERTY OWNER

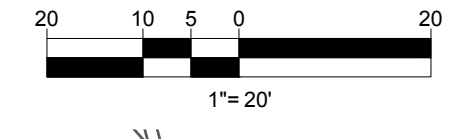
THIS PLAN TO BE UTILIZED FOR SITE LAYOUT PURPOSES ONLY. REFER TO GENERAL NOTES SHEET FOR ADDITIONAL NOTES



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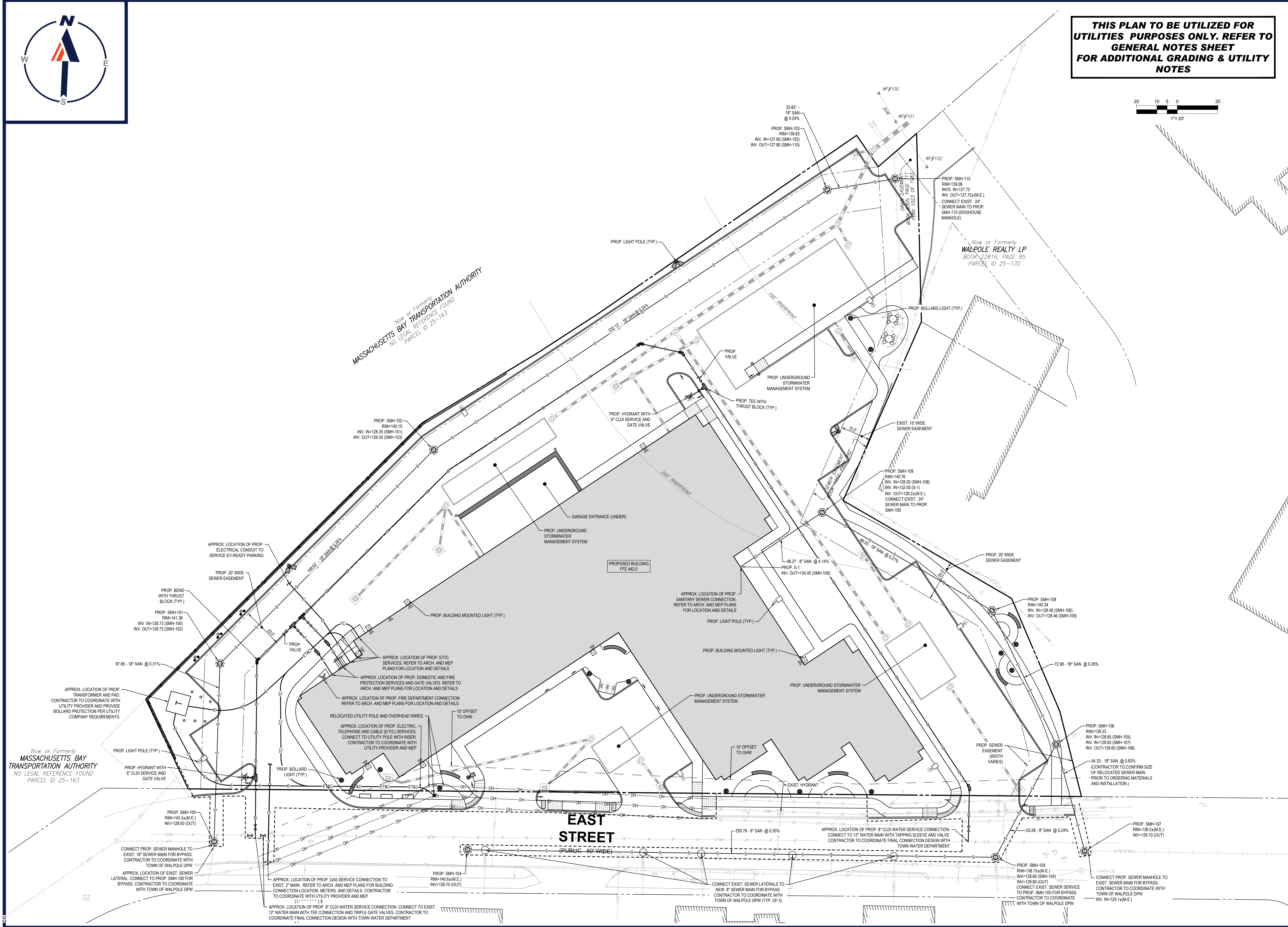
PROJECT No.: W211263
 DRAWN BY: CMCLC
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 DATE: 05/12/2023
 CAD ID: W211263-SPPD-2B DWG

PROJECT:
PRELIMINARY CIVIL ENGINEERING PLAN SET
 FOR
KIG SILVERSTRAND WALPOLE, LLC
 PROPOSED MULTI-FAMILY DEVELOPMENT
 MAP 25, BLOCK 164, 165 & 166
 981, 989 & 1015 EAST STREET
 TOWN OF WALPOLE
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SHEET TITLE:
UTILITY PLAN
 SHEET NUMBER:
C-501
 REVISION 1 - 08/30/2023

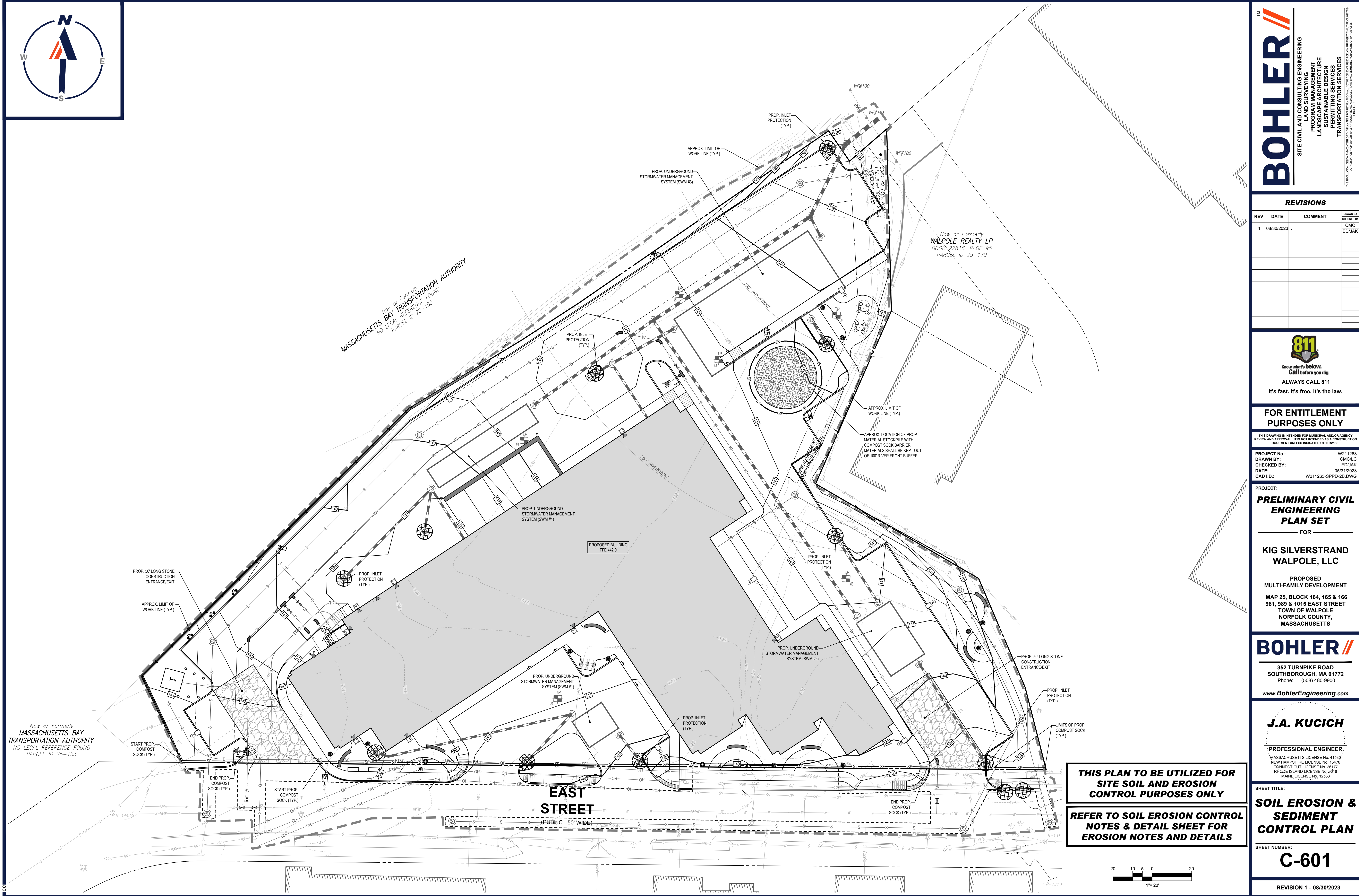


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Now or Formerly
MASSACHUSETTS BAY TRANSPORTATION AUTHORITY
 NO LEGAL REFERENCE FOUND
 PARCEL ID 25-163

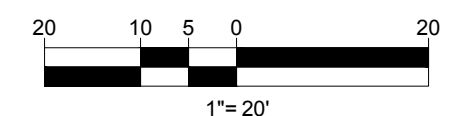
Now or Formerly
WALPOLE REALTY LP
 BOOK 22816, PAGE 95
 PARCEL ID 25-170



Now or Formerly
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 NO LEGAL REFERENCE FOUND
 PARCEL ID 25-163

**THIS PLAN TO BE UTILIZED FOR
 SITE SOIL AND EROSION
 CONTROL PURPOSES ONLY**

**REFER TO SOIL EROSION CONTROL
 NOTES & DETAIL SHEET FOR
 EROSION NOTES AND DETAILS**



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PROJECT No.: W211283
 DRAWN BY: CMCLC
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 DATE: 05/12/2023
 CAD ID: W211283-SPPD-2B.DWG

PROJECT:
**PRELIMINARY CIVIL
 ENGINEERING
 PLAN SET**
 FOR
**KIG SILVERSTRAND
 WALPOLE, LLC**
 PROPOSED
 MULTI-FAMILY DEVELOPMENT
 MAP 25, BLOCK 164, 165 & 166
 981, 989 & 1015 EAST STREET
 TOWN OF WALPOLE
 NORFOLK COUNTY,
 MASSACHUSETTS

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SHEET TITLE:
**SOIL EROSION &
 SEDIMENT
 CONTROL PLAN**

SHEET NUMBER:
C-601

REVISION 1 - 08/30/2023

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EROSION AND SEDIMENT CONTROL NOTES

- ALL SEDIMENT AND EROSION CONTROL MEASURES SHALL BE DONE AS SET FORTH IN THE MOST CURRENT STATE SEDIMENT AND EROSION CONTROL MANUAL.
- THOSE AREAS UNDERGOING ACTUAL CONSTRUCTION WILL BE LEFT IN AN UNTREATED OR UNVEGETATED CONDITION FOR A MINIMUM TIME. AREAS SHALL BE PERMANENTLY STABILIZED IN ACCORDANCE WITH LOCAL, STATE, AND FEDERAL REQUIREMENTS. AT A MINIMUM, AREAS SHALL BE PERMANENTLY STABILIZED ACCORDING TO THE CURRENT EDITION OF THE STORMWATER POLLUTION PREVENTION PLAN (SWPPP), OR IN THE ABSENCE OF A SWPPP, THEY SHALL BE PERMANENTLY STABILIZED WITHIN 14 DAYS OF FINAL GRADING AND TEMPORARILY STABILIZED WITHIN 30 DAYS OF INITIAL DISTURBANCE OF THE SOIL. IF THE DISTURBANCE IS WITHIN 100 FEET OF A STREAM OR POND, THE AREA SHALL BE STABILIZED WITHIN 7 DAYS OR PRIOR TO ANY STORM EVENT (THIS WOULD INCLUDE WETLANDS).
- SEDIMENT BARRIERS (SILT FENCE, STRAW BARRIERS, ETC.) SHOULD BE INSTALLED PRIOR TO ANY SOIL DISTURBANCE OF THE CONTRIBUTING DRAINAGE AREA ABOVE THEM. MULCH NETTING SHALL BE USED TO ANCHOR MULCH IN ALL AREAS WITH SLOPES GREATER THAN 8%.
- INSTALL SILTATION BARRIER AT TOE OF SLOPE TO FILTER SILT FROM RUNOFF. SEE SILTATION BARRIER DETAILS FOR PROPER INSTALLATION. SILTATION BARRIER WILL REMAIN IN PLACE PER NOTE #5.
- ALL EROSION CONTROL STRUCTURES WILL BE INSPECTED, REPLACED AND/OR REPAIRED EVERY 7 DAYS AND IMMEDIATELY FOLLOWING ANY SIGNIFICANT FLOOD OR SNOW MELT OR WHEN NO LONGER SERVICEABLE DUE TO SEDIMENT ACCUMULATION OR DECOMPOSITION. SEDIMENT DEPOSITS SHOULD BE REMOVED AFTER EACH STORM EVENT. THEY MUST BE REMOVED WHEN DEPOSITS REACH APPROXIMATELY ONE HALF THE HEIGHT OF THE BARRIER. SEDIMENT CONTROL DEVICES SHALL REMAIN IN PLACE AND BE MAINTAINED BY THE CONTRACTOR UNTIL AREAS UPSLOPE ARE PERMANENTLY STABILIZED. FOR SEDIMENT CONTROL DEVICES THAT ARE WITHIN AREAS SUBJECT TO CONSERVATION COMMISSION JURISDICTION, THE DEVICES SHALL REMAIN IN PLACE AND BE REMOVED IN ACCORDANCE WITH THE ORDER OF CONDITIONS.
- NO SLOPES, EITHER PERMANENT OR TEMPORARY, SHALL BE STEEPER THAN TWO TO ONE (2:1) UNLESS OTHERWISE INDICATED ON THE PLANS. SLOPE PROTECTION FOR SLOPES GREATER THAN 2:1 SHALL BE DESIGNED BY A GEOTECHNICAL ENGINEER.
- IF FINAL SEEDING OF THE DISTURBED AREAS IS NOT COMPLETED 45 DAYS PRIOR TO THE FIRST KILLING FROST, USE TEMPORARY MULCH (DORMANT SEEDING MAY BE ATTEMPTED AS WELL) TO PROTECT THE SITE AND DELAY SEEDING UNTIL THE NEXT RECOMMENDED SEEDING PERIOD.
- TEMPORARY SEEDING OF DISTURBED AREAS THAT HAVE NOT BEEN FINAL GRADED SHALL BE COMPLETED 45 DAYS PRIOR TO THE FIRST KILLING FROST TO PROTECT FROM SPRING RUNOFF PROBLEMS.
- DURING THE CONSTRUCTION PHASE, INTERCEPTED SEDIMENT SHALL BE REMOVED AND DISPOSED OF IN ACCORDANCE WITH LOCAL, STATE, AND FEDERAL STANDARDS.
- REVEGETATION MEASURES WILL COMMENCE UPON COMPLETION OF CONSTRUCTION EXCEPT AS NOTED ABOVE. ALL DISTURBED AREAS NOT OTHERWISE STABILIZED WILL BE GRADED, SMOOTHED, AND PREPARED FOR FINAL SEEDING AS FOLLOWS:
 - SIX INCHES, OR DEPTH SPECIFIED ON THE LANDSCAPE PLAN, OF LOAM WILL BE SPREAD OVER DISTURBED AREAS AND SMOOTHED TO A UNIFORM SURFACE.
 - APPLY LIMESTONE AND FERTILIZER ACCORDING TO SOIL TEST. IF SOIL TESTING IS NOT FEASIBLE ON SMALL OR VARIABLE SITES, OR WHERE TIMING IS CRITICAL, FERTILIZER MAY BE APPLIED AT THE RATE OF 800 LB PER ACRE OR 18.4 LB PER 1,000 SF USING 10-20-20 OR EQUIVALENT. APPLY GROUND LIME (EQUIVALENT TO 50% CALCIUM PLUS MAGNESIUM OXIDE) AT A RATE OF 3 TONS PER ACRE (138 LB PER 1,000 SF).
 - FOLLOWING SEED BED PREPARATION, DITCHES AND BACK SLOPES WILL BE SEEDDED TO A MIXTURE OF 47% CREEPING RED FESCUE, 5% REDTOP, AND 48% TALL FESCUE. THE LAWN AREAS WILL BE SEEDDED TO A PREMIUM TURF MIXTURE OF 44% KENTUCKY BLUEGRASS, 44% CREEPING RED FESCUE, AND 12% PERENNIAL RYEGRASS. SEEDING RATE IS 1.03 LBS PER 1,000 SF LAWN. QUALITY SOO MAY BE SUBSTITUTED FOR SEED WHERE SLOPES DO NOT EXCEED 2:1. SOO ON SLOPES STEEPER THAN 3:1 SHOULD BE PEGGED.
 - HYDRO MULCH AT THE RATE OF 70-90 LBS PER 1,000 SF. A HYDRO-APPLICATION OF WOOD OR PAPER FIBER SHALL BE APPLIED FOLLOWING SEEDING. A SUITABLE NON-TOXIC BINDER WILL BE USED ON STRAW MULCH FOR WIND CONTROL.
- ALL TEMPORARY EROSION CONTROL MEASURES SHALL BE REMOVED ONCE THE SITE IS 70% STABILIZED. FOR EROSION CONTROL MEASURES THAT ARE WITHIN AREAS SUBJECT TO CONSERVATION COMMISSION JURISDICTION, THE MEASURES SHALL REMAIN IN PLACE AND BE REMOVED IN ACCORDANCE WITH THE ORDER OF CONDITIONS.
- WETLANDS WILL BE PROTECTED WITH BARRIERS CONSISTING OF STRAW BALES, COMPOST TUBES, SILT FENCE OR A COMBINATION THEREOF.
- ALL AREAS WITHIN 100 FEET OF A FLAGGED WETLAND OR STREAM SHALL HAVE AN EXPOSURE WINDOW OF NOT MORE THAN 7 DAYS.
- ALL AREAS WITHIN 100 FEET OF A FLAGGED WETLAND OR STREAM SHALL FOLLOW APPROPRIATE EROSION CONTROL MEASURES PRIOR TO EACH STORM IF NOT BEING ACTIVELY WORKED.

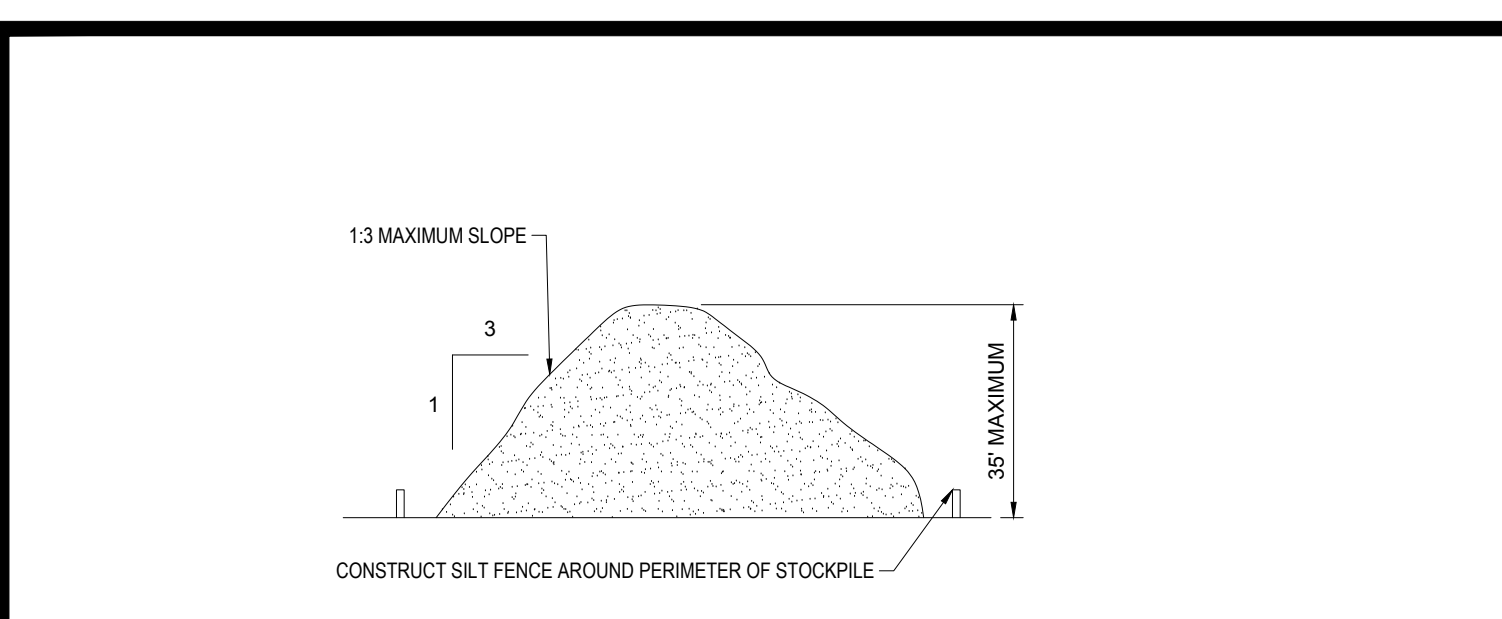
LOCATION PROTECTED AREA	MULCH STRAW	MULCH RATE (1000 SF)
WINDY AREA	SHREDDED OR CHOPPED CORNSTALKS STRAW (ANCHORED)*	185-275 POUNDS 100 POUNDS
MODERATE TO HIGH VELOCITY AREAS OR STEEP SLOPES GREATER THAN 3:1	JUTE MESH OR EXCELSIOR MAT	AS REQUIRED
GREATER THAN 3:1	(REFER TO GEOTECHNICAL REPORT FOR FINAL DESIGN REQUIREMENT)	

* A HYDRO APPLICATION OF WOOD OR PAPER FIBER MAY BE APPLIED FOLLOWING SEEDING. A SUITABLE NON-TOXIC BINDER SHALL BE USED TO ADDITIONAL WIND CONTROL.
 * MULCH ANCHORING: ANCHOR MULCH WITH PEG AND TWINE (1 SO, YD/BLCK), MULCH NETTING (AS PER MANUFACTURER); WOOD CELLULOSE FIBER (750 LBS/ACRE); CHEMICAL TACK (AS PER MANUFACTURER'S SPECIFICATIONS); USE OF A SERRATED STRAIGHT DISK WETTING FOR SMALL AREAS AND ROAD DITCHES MAY BE PERMITTED.

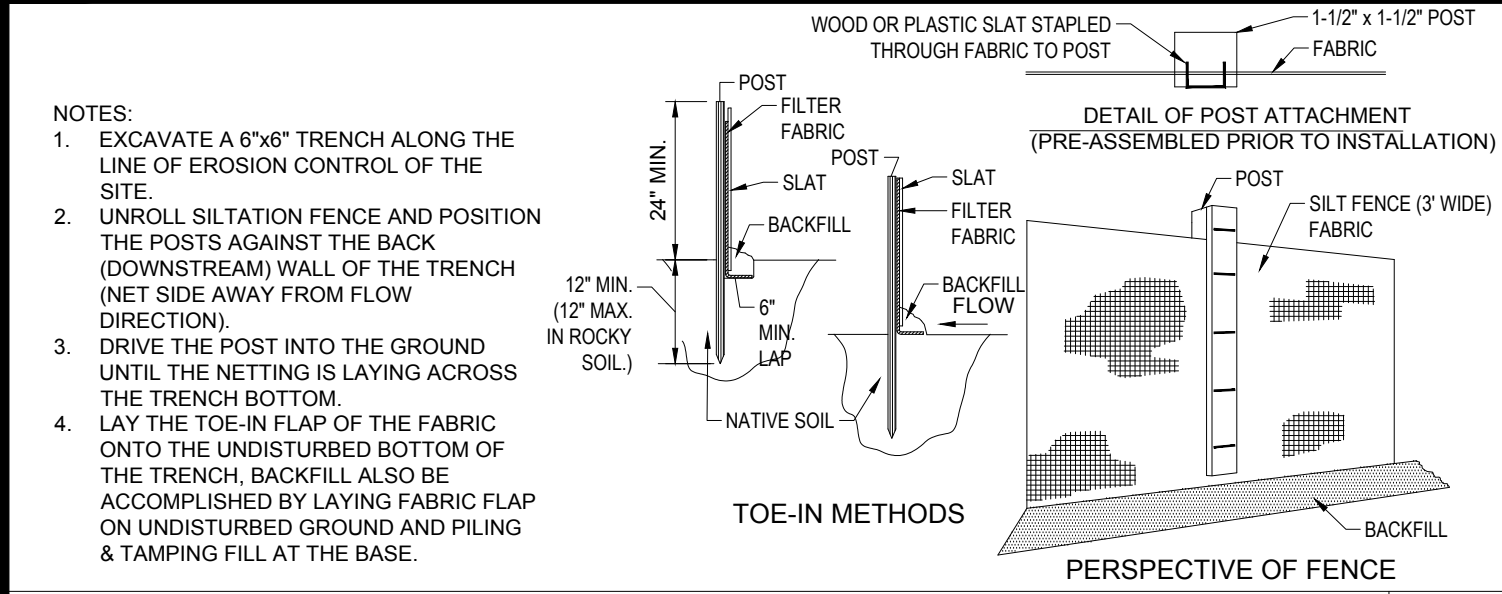
- PROPOSED LOCATIONS OF SURFACE STORMWATER MANAGEMENT BASINS CAN BE UTILIZED AS A TEMPORARY SEDIMENT TRAP DURING CONSTRUCTION. SEDIMENT TRAPS SHALL BE SIZED AND CONSTRUCTED IN ACCORDANCE WITH ALL LOCAL, STATE, AND FEDERAL REQUIREMENTS.
- TEMPORARY SEDIMENT TRAPS SHALL BE SIZED PER THE CURRENT EDITION OF THE MASSACHUSETTS EROSION AND SEDIMENT CONTROL GUIDELINES FOR URBAN AND SUBURBAN AREAS* AND PROVIDE A MINIMUM OF 1,800 CF PER ACRE OF TRIBUTARY AREA WITH A MAXIMUM TRIBUTARY AREA OF 5 ACRES, MAINTAIN A 2:1 LENGTH TO WIDTH RATIO, AND NOT EXCEED 5 FT IN HEIGHT. UPON SITE STABILIZATION, ACCUMULATED SEDIMENT SHALL BE REMOVED AND THE TEMPORARY SEDIMENT TRAP EXCAVATED TO 1 FOOT BELOW THE TRAP. THE AREA SHALL THEN BE SCARIFIED TO PREVENT COMPACTION AND PROMOTE INFILTRATION, AND GRADED AND STABILIZED IN ACCORDANCE WITH THE GRADING AND LANDSCAPE PLANS.
- STOCKPILING OF MATERIALS (DIRT, WOOD, CONSTRUCTION MATERIALS, ETC.) MUST REMAIN COVERED AT ALL TIMES TO MINIMIZE ANY DUST PROBLEMS THAT MAY OCCUR WITH ADJACENT PROPERTIES AND TO PROVIDE MAXIMUM PROTECTION AGAINST EROSION RUNOFF.
- EXISTING CATCH BASIN STRUCTURES SHALL BE PROTECTED UNTIL SUCH TIME AS THEY ARE REMOVED.
- THE CONTRACTOR MUST PERFORM DEWATERING (IF REQUIRED), IN ACCORDANCE WITH STATE AND LOCAL REGULATIONS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN AND PAY FOR THE COSTS ASSOCIATED WITH ANY AND ALL NECESSARY DISCHARGE PERMITS ASSOCIATED WITH SAME.
- THE CONTRACTOR MUST LOCATE CONSTRUCTION WASTE MATERIAL STORAGE AREAS TO MINIMIZE EXPOSURE TO STORMWATER. THE CONTRACTOR MUST IMMEDIATELY PLACE CONSTRUCTION WASTE IN ON-SITE STORAGE CONTAINERS UNTIL THAT CONSTRUCTION WASTE IS READY FOR OFF-SITE DISPOSAL. THE CONTRACTOR MUST MAINTAIN SPILL PREVENTION AND RESPONSE EQUIPMENT AND MAKE SAME CONTINUOUSLY AVAILABLE ON-SITE FOR USE BY THE CONTRACTOR'S EMPLOYEES WHO MUST BE PROPERLY TRAINED IN THE APPLICATION OF SPILL PREVENTION AND RESPONSE PROCEDURES.
- EROSION CONTROL NOTES DURING WINTER CONSTRUCTION
 - WINTER CONSTRUCTION PERIOD: NOVEMBER 1 THROUGH APRIL 15.
 - WINTER EXCAVATION AND EARTHWORK SHALL BE DONE SUCH THAT THE AMOUNT OF AREA OPEN AT ONE TIME IS MINIMIZED TO THE MAXIMUM EXTENT PRACTICABLE AND IN CONFORMANCE WITH THE STORMWATER POLLUTION PREVENTION PLAN SUCH THAT ADEQUATE PROVISIONS ARE EMPLOYED TO CONTROL STORMWATER RUNOFF.
 - CONTINUATION OF EARTHWORK OPERATION ON ADDITIONAL AREAS SHALL NOT BEGIN UNTIL THE EXPOSED SOIL SURFACE ON THE AREA BEING WORKED HAS BEEN STABILIZED SUCH THAT NO LARGER AREA OF THE SITE IS WITHOUT EROSION CONTROL PROTECTION AS LISTED IN ITEM 2 ABOVE.
 - AN AREA SHALL BE CONSIDERED TO HAVE BEEN TEMPORARILY STABILIZED WHEN EXPOSED SURFACES HAVE BEEN EITHER MULCHED WITH STRAW OR STRAW AT A RATE OF 100 LB PER 1,000 SQUARE FEET (WITH OR WITHOUT SEEDING) OR DORMANT SEED, MULCHED AND ADEQUATELY ANCHORED BY AN APPROVED ANCHORING TECHNIQUE.
 - FOR AREAS WHERE CONSTRUCTION ACTIVITIES HAVE CEASED FOR A PERIOD EXCEEDING 14 DAYS BETWEEN THE DATES OF NOVEMBER 1ST AND APRIL 1ST, LOAM OR SEED WILL NOT BE REQUIRED. THE SLOPES SHALL BE FINE GRADED AND EITHER PROTECTED WITH MULCH OR TEMPORARILY SEEDDED. IF THE EXPOSED AREA HAS BEEN LOAMED, FINAL GRADING AND IS SMOOTH, THEN THE AREA MAY BE DORMANT SEEDDED AT A RATE OF 200-300% HIGHER THAN SPECIFIED FOR PERMANENT SEED AND THEN MULCHED AS APPLICABLE. SLOPES SHALL NOT BE LEFT UNSTABILIZED OVER THE WINTER OR IN AREAS WHERE WORK HAS CEASED FOR MORE THAN 14 DAYS UNLESS TREATED IN THE ABOVE MANNER. UNTIL SUCH TIME AS WEATHER CONDITIONS ALLOW DITCHES TO BE FINISHED WITH THE PERMANENT SURFACE TREATMENT, EROSION SHALL BE CONTROLLED BY THE INSTALLATION OF SEDIMENT BARRIERS OR STONE CHECK DAMS IN ACCORDANCE WITH THE STANDARD DETAILS.
 - MULCHING REQUIREMENTS:
 - BETWEEN THE DATES OF NOVEMBER 1ST AND APRIL 15TH ALL MULCH SHALL BE ANCHORED BY EITHER PEG LINE, MULCH NETTING OR WOOD CELLULOSE FIBER.
 - MULCH NETTING SHALL BE USED TO ANCHOR MULCH IN ALL DRAINAGE WAYS WITH A SLOPE GREATER THAN 3% FOR SLOPE EXPOSED TO DIRECT WINDS AND FOR ALL OTHER SLOPES GREATER THAN 8%.
 - MULCH NETTING SHALL BE USED TO ANCHOR MULCH IN ALL AREAS WITH SLOPES GREATER THAN 15%. AFTER OCTOBER 1ST THE SAME APPLIES FOR ALL SLOPES GREATER THAN 8%.
 - ALL DISTURBED AREAS SHALL BE STABILIZED IN ACCORDANCE WITH THE STORMWATER PREVENTION PLAN.
 - DURING THE WINTER CONSTRUCTION PERIOD ALL SNOW SHALL BE REMOVED FROM AREAS OF SEEDING AND MULCHING PRIOR TO PLACEMENT.

GENERAL EROSION AND SEDIMENT CONTROL NOTES

- THE GENERAL NOTES MUST BE INCLUDED AS PART OF THIS ENTIRE DOCUMENT PACKAGE AND ARE PART OF THE CONTRACT DOCUMENTS. THE GENERAL NOTES ARE REFERENCED HEREIN, AND THE CONTRACTOR MUST REFER TO THEM AND FULLY COMPLY WITH THESE NOTES, IN THEIR ENTIRETY. THE CONTRACTOR MUST BE FAMILIAR WITH AND ACKNOWLEDGE FAMILIARITY WITH ALL OF THE GENERAL NOTES AND ALL OF THE PLANS' SPECIFIC NOTES.
- EROSION CONTROL MEASURES MUST CONFORM TO THE STATE, LOCAL, AND FEDERAL GUIDELINES FOR URBAN EROSION AND SEDIMENT CONTROL UNLESS OTHERWISE NOTED, OR UNLESS THE PROFESSIONAL OF RECORD CLEARLY AND SPECIFICALLY, IN WRITING, DIRECTS OTHERWISE. INSTALLATION OF EROSION CONTROL, CLEANING, AND SITE WORK MUST BE PERFORMED EXACTLY AS INDICATED IN THE EROSION CONTROL CONSTRUCTION NOTES.
- THE DISTURBED LAND AREA OF THIS SITE IS APPROXIMATELY XXXXX ACRES.
- THE FOLLOWING EROSION CONTROL MEASURES ARE PROPOSED FOR THIS SITE:
 - STABILIZED CONSTRUCTION ENTRANCE/EXIT - A TEMPORARY GRAVEL CONSTRUCTION ENTRANCE/EXIT IS TO BE INSTALLED AT THE DESIGNATED LOCATION SHOWN ON THE PLAN. THIS AREA MUST BE GRADED SO THAT RUNOFF WATER WILL BE RETAINED ON-SITE.
 - SEDIMENT FENCE - INSTALL SILT FENCE(S) AND/OR SILT SOCK AROUND ALL OF THE DOWNSLOPE PERIMETERS OF THE SITE, TEMPORARY FILL AND SOIL STOCKPILES.
 - INSTALL FILTER FABRIC DROP INLET PROTECTION AROUND EACH DRAINAGE INLET AS DRAINAGE STRUCTURES ARE INSTALLED TO REDUCE THE QUANTITY OF SEDIMENT. INSTALL TEMPORARY INLET PROTECTION ON INLETS DOWNSLOPE FROM DISTURBANCE, WHICH MAY BE BEYOND THE LIMITS OF DISTURBED AREA.
 - INSTALLATION OF EROSION CONTROL DEVICES MUST BE IN ACCORDANCE WITH ALL OF THE MANUFACTURER'S RECOMMENDATIONS.
 - THE CONTRACTOR MUST INSPECT EROSION CONTROL MEASURES WEEKLY. THE CONTRACTOR MUST REMOVE ANY SILT DEPOSITS GREATER THAN 6 INCHES OR HALF THE EROSION CONTROL BARRIER'S HEIGHT COLLECTED ON THE FILTER FABRIC AND/OR SILT SOCK BARRIERS AND EXCAVATE AND REMOVE ANY SILT FROM DROP INLET PROTECTION.
 - THE CONTRACTOR MUST APPLY TEMPORARY SEED AND MULCH TO ALL DISTURBED AREAS THAT WILL NOT BE BROUGHT TO FINISHED GRADE AND VEGETATED WITHIN 7 DAYS. WHEN AREAS ARE DISTURBED AFTER THE GROWING SEASON, THE CONTRACTOR MUST STABILIZE SAME WITH GEOTEXTILE FABRIC AND MAINTAIN SAME IN STRICT ACCORDANCE WITH BEST MANAGEMENT PRACTICES.
 - THE CONTRACTOR MUST INSTALL ADDITIONAL EROSION CONTROL MEASURES IF THE PROFESSIONAL OF RECORD SO REQUIRES, TO PREVENT ANY, INCLUDING THE INCIDENTAL DISCHARGE OF SILT-LADEN RUNOFF FROM EXITING THE SITE.
 - THE CONTRACTOR MUST BE RESPONSIBLE FOR INSPECTING AND MAINTAINING ALL EROSION CONTROL MEASURES ON THE SITE UNTIL PERMANENT PAVING AND TURF/LANDSCAPING IS ESTABLISHED. THE COSTS OF INSTALLING AND MAINTAINING THE EROSION CONTROL MEASURES MUST BE INCLUDED IN THE BID PRICE FOR THE SITE WORK AND THE CONTRACTOR IS RESPONSIBLE FOR ALL SUCH COSTS.
 - THE CONTRACTOR MUST CONTINUE TO MAINTAIN ALL EROSION CONTROL MEASURES UNTIL THE COMPLETION OF CONSTRUCTION AND THE ESTABLISHMENT OF VEGETATION.
 - THE CONTRACTOR MUST REMOVE EROSION CONTROL MEASURES, SILT AND DEBRIS AFTER ESTABLISHING PERMANENT VEGETATION COVER OR OTHER INSTALLING A DIFFERENT, SPECIFIED METHOD OF STABILIZATION.
 - THIS PLAN REPRESENTS THE MINIMUM LEVEL OF IMPLEMENTATION OF TEMPORARY EROSION AND SEDIMENTATION CONTROL FACILITIES, MEASURES AND STRUCTURES. ADDITIONAL FACILITIES, MEASURES AND STRUCTURES MUST BE INSTALLED WHERE NECESSARY TO COMPLY WITH ALL APPLICABLE CODES AND STANDARDS AND/OR TO PREVENT ANY, INCLUDING THE INCIDENTAL DISCHARGE OF SILT-LADEN RUNOFF FROM EXITING THE SITE.
 - THE CONTRACTOR MUST PROTECT ALL EXISTING TREES AND SHRUBS. THE CONTRACTOR MUST REFER TO THE LANDSCAPE AND/OR DEMOLITION PLAN(S) FOR TREE PROTECTION, FENCE LOCATIONS AND DETAILS.
 - THE CONTRACTOR MUST REFER TO GRADING PLANS FOR ADDITIONAL INFORMATION.
 - THE CONTRACTOR MUST CLEAN EXISTING AND PROPOSED DRAINAGE STRUCTURES AND INTERCONNECTING PIPES ON OR OFF-SITE AS THE JURISDICTIONAL AGENCY REQUIRES, BOTH AT THE TIME OF SITE STABILIZATION AND AT END OF PROJECT.
 - SOIL EROSION CONTROL MEASURES MUST BE ADJUSTED OR RELOCATED BY THE CONTRACTOR AS IDENTIFIED DURING SITE OBSERVATION IN ORDER TO MAINTAIN THE COMPLETE EFFECTIVENESS OF ALL CONTROL MEASURES.
 - THE CONTRACTOR MUST IDENTIFY, ON THE PLAN, THE LOCATION OF WASTE CONTAINERS, FUEL STORAGE TANKS, CONCRETE WASHOUT AREAS AND ANY OTHER LOCATIONS WHERE HAZARDOUS MATERIALS ARE STORED.



TEMPORARY STOCKPILE N.T.S.

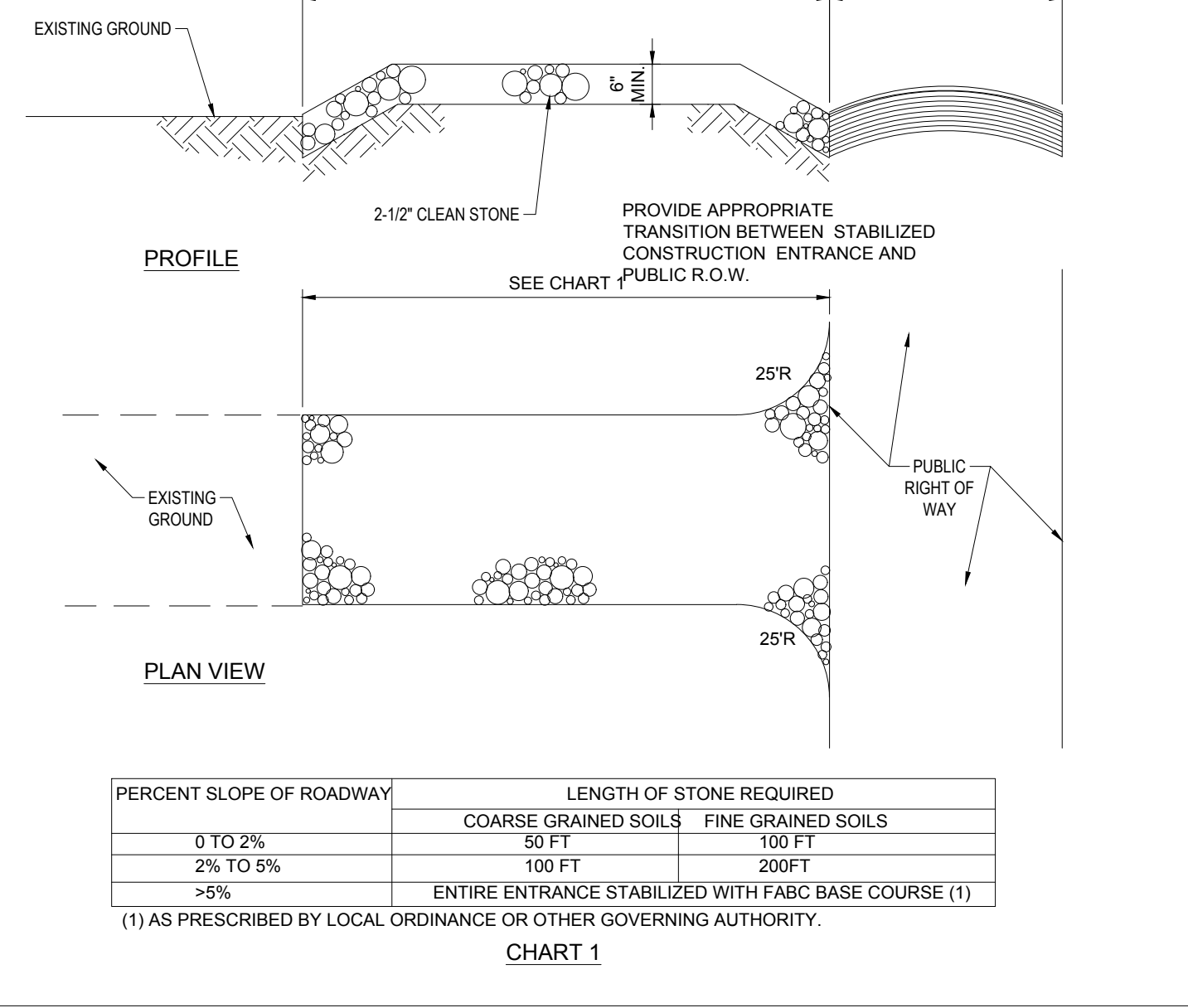


TYP. SILTATION FENCE N.T.S.

RECOMMENDED CONSTRUCTION SEQUENCE

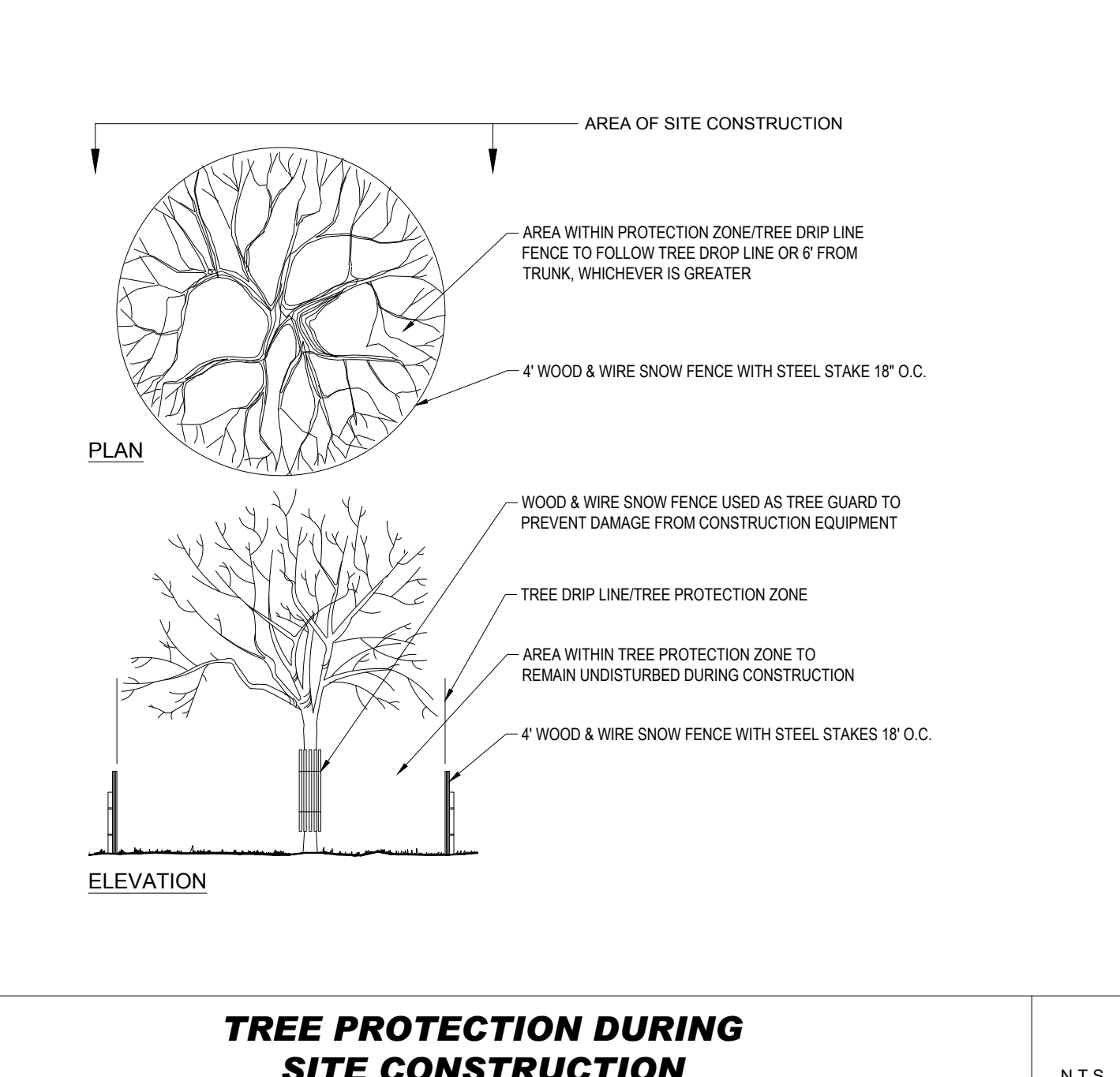
- THE FOLLOWING CONSTRUCTION SEQUENCE IS RECOMMENDED:
- INSTALLATION OF STABILIZED CONSTRUCTION ENTRANCE/EXIT (AS SHOWN)
 - INSTALLATION OF EROSION CONTROL BARRIER (STRAW BALES AND SILT FENCE) (AS SHOWN)
 - INSTALLATION OF INLET PROTECTION IN STREET (AS SHOWN)
 - DEMOLITION OF EXISTING SITE STRUCTURES (SEE DEMOLITION PLAN)
 - DEMOLITION OF EXISTING SITE PAVEMENT AND AMENITIES (SEE DEMOLITION PLAN)
 - CLEARING AND GRUBBING
 - INSTALLATION OF TEMPORARY SWALES AND SEDIMENT BASINS
 - EARTHWORK AND EXCAVATION/FILLING AS NECESSARY
 - CONSTRUCTION OF UTILITIES
 - STABILIZE PERMANENT LAWN AREAS AND SLOPES WITH TEMPORARY SEEDING
 - INSTALLATION OF INLET PROTECTION OF ON-SITE UTILITIES (AS SHOWN)
 - CONSTRUCTION OF BUILDINGS
 - CONSTRUCTION OF ALL CURBING AND LANDSCAPE ISLANDS AS INDICATED ON THE PLANS
 - SPREAD TOPSOIL ON SLOPED AREAS AND SEED AND MULCH
 - FINAL GRADING OF ALL SLOPED AREAS
 - PLACE 6" TOPSOIL ON SLOPES AFTER FINAL GRADING COMPLETED. FERTILIZE, SEED, AND MULCH SEED MIXTURE TO BE INSTALLED AS REQUIRED.
 - REMOVAL OF THE TEMPORARY SEDIMENT BASINS
 - PAVE PARKING LOT
 - LANDSCAPING PER LANDSCAPING PLAN
 - REMOVE EROSION CONTROLS AS DISTURBED AREAS BECOME STABILIZED TO 70% STABILIZATION OR GREATER

RECOMMENDED CONSTRUCTION SEQUENCE N.T.S.

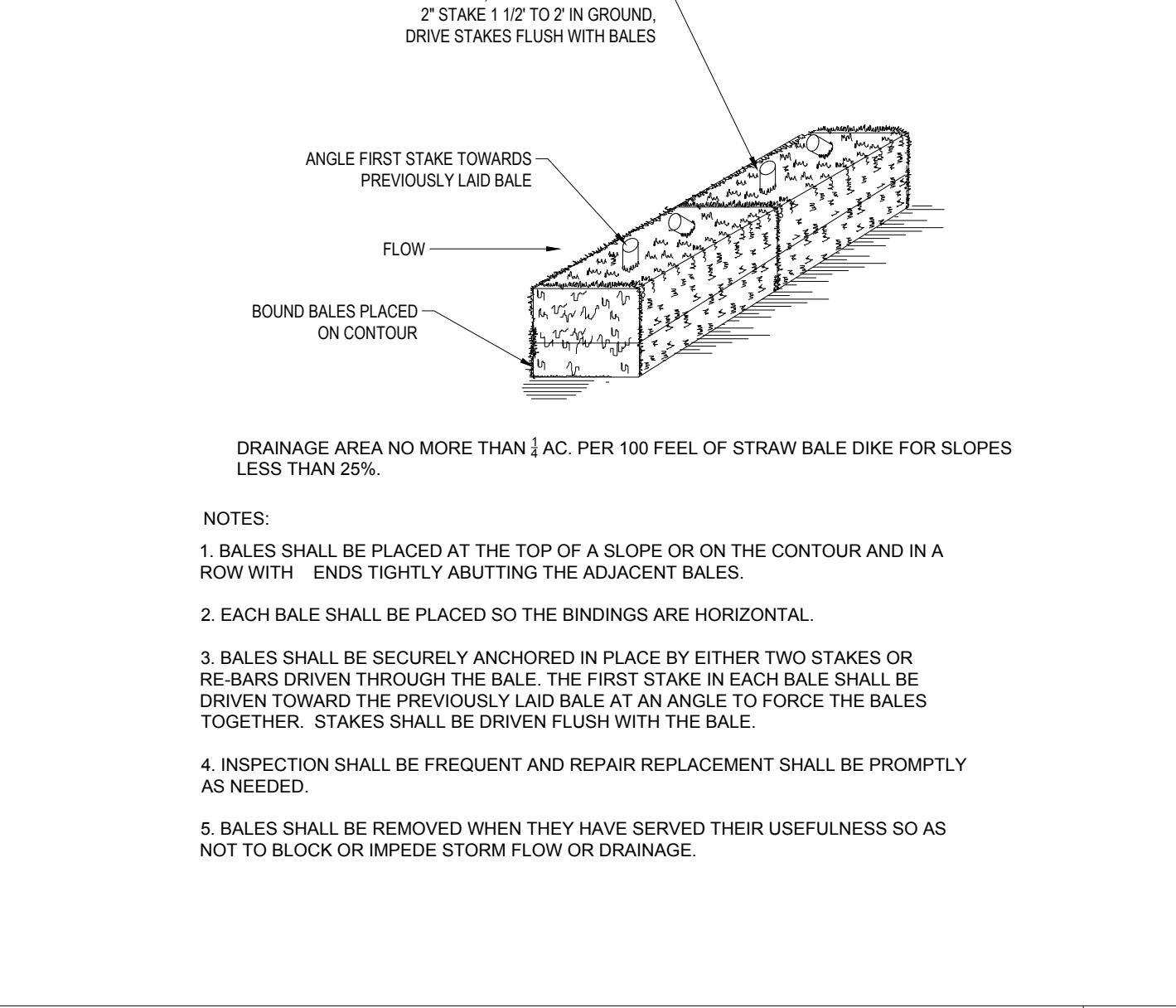


STABILIZED CONSTRUCTION ENTRANCE N.T.S.

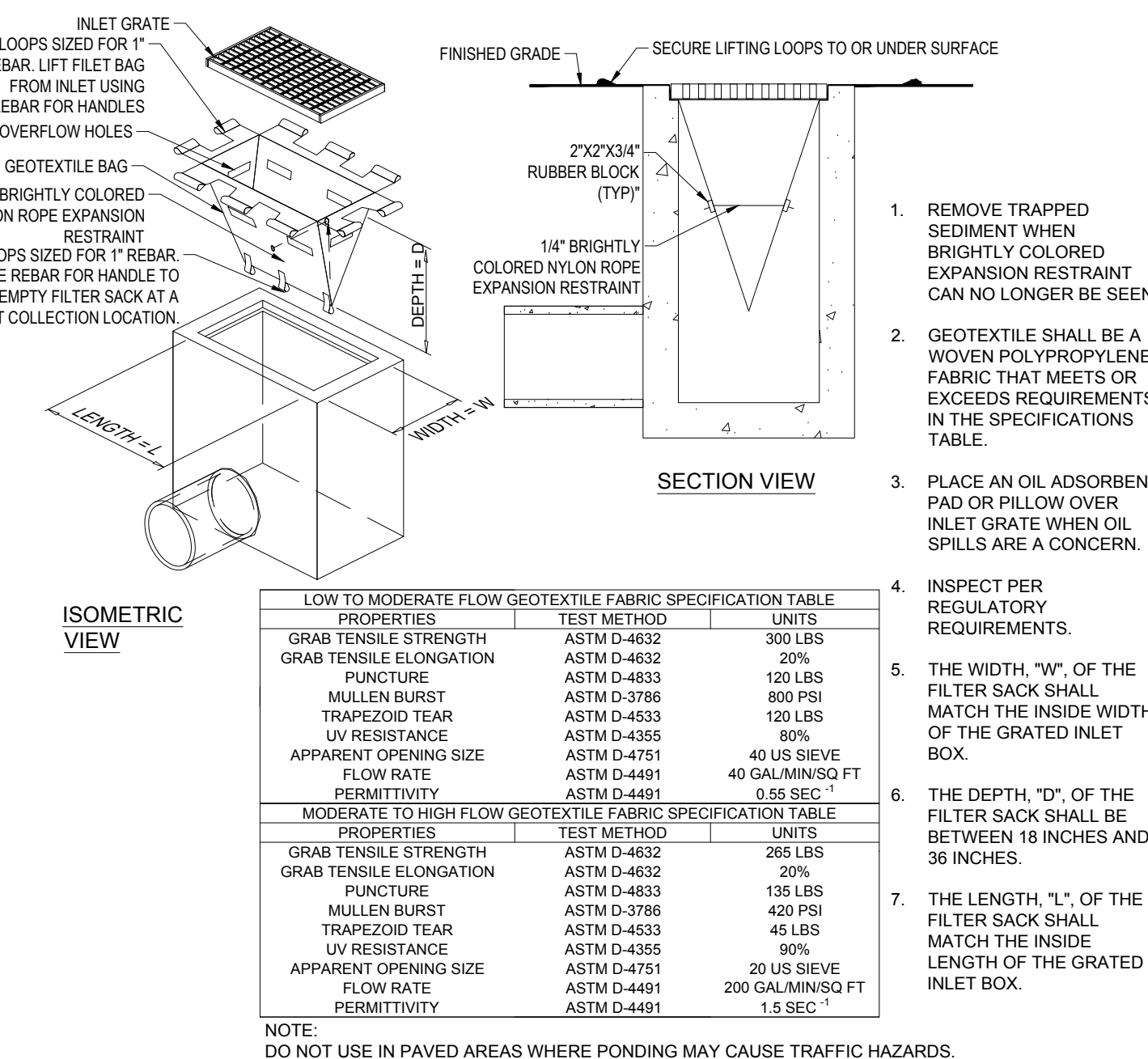
TREE PROTECTION DURING SITE CONSTRUCTION



TREE PROTECTION DURING SITE CONSTRUCTION N.T.S.



COMPOST SOCK N.T.S.



FILTER SACKS (GRADED INLETS) N.T.S.

BOHLER
 SITE CIVIL AND CONSULTING ENGINEERING
 PROGRAM MANAGEMENT
 LANDSCAPE ARCHITECTURE
 SUSTAINABLE DESIGN
 PERMITTING SERVICES
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REVISIONS

REV	DATE	COMMENT	DRAWN BY	CHECKED BY
1	08/30/2023		CMC	EDJAK

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PROJECT No.: W21263
 DRAWN BY: CMCLBC
 CHECKED BY: EDJAK
 DATE: 05/12/23
 CAD ID: W21263-SPPD-2B DWG

PRELIMINARY CIVIL ENGINEERING PLAN SET
 FOR
KIG SILVERSTRAND WALPOLE, LLC

PROPOSED MULTI-FAMILY DEVELOPMENT
 MAP 25, BLOCK 164, 165 & 166
 981, 989 & 1015 EAST STREET
 TOWN OF WALPOLE
 NORFOLK COUNTY,
 MASSACHUSETTS

BOHLER
 352 TURNPIKE ROAD
 SOUTHBOROUGH, MA 01772
 Phone: (508) 480-9900
 www.BohlerEngineering.com

J.A. KUCICH
 PROFESSIONAL ENGINEER
 MASSACHUSETTS LICENSE No. 41530
 NEW HAMPSHIRE LICENSE No. 15476
 CONNECTICUT LICENSE No. 26177
 RHODE ISLAND LICENSE No. 2616
 MAINE LICENSE No. 12553

SHEET TITLE:
EROSION AND SEDIMENT CONTROL NOTES AND DETAILS
 SHEET NUMBER:
C-602

P:\11\21183\CADD\DRAWINGS\PLAN SET\ICIVIL SITE PLANS\21183-SPPD-2B-LAYOUT-C-602.RVT



PLANT SCHEDULE					
CANOPY TREES	QTY	BOTANICAL NAME	COMMON NAME	SIZE	CONTAINER
AO	4	ACER RUBRUM 'OCTOBER GLORY'	OCTOBER GLORY RED MAPLE	3" CAL.	B&B
GD	4	GLEDITSIA TRIACANTHOS 'INERMIS DRAVES'	STREET KEEPER HONEY LOCUST	2.5" CAL.	B&B
QP	3	QUERCUS PALUSTRIS	PIN OAK	3" CAL.	B&B
QPP	1	QUERCUS PALUSTRIS 'PRINGREEN'	GREEN PILLAR PIN OAK	2" CAL.	B&B
EVERGREEN TREES	QTY	BOTANICAL NAME	COMMON NAME	SIZE	CONTAINER
TOE	18	THUJA OCCIDENTALIS 'SMARAGO'	EMERALD GREEN ARBORVITAE	5-6'	CONT. B&B
ORNAMENTAL TREES	QTY	BOTANICAL NAME	COMMON NAME	SIZE	CONTAINER
CF	1	CORNUS FLORIDA	EASTERN DOGWOOD	2.5" CAL.	B&B
CST	3	CORNUS KOUSA 'SNOW TOWER'	SNOW TOWER KOUSA DOGWOOD	2.5" CAL.	B&B
PL	3	PYRUS CALLERYANA 'CHANTICLEER'	CHANTICLEER CALLERY PEAR	2.5" CAL.	B&B
PXO	2	PRUNUS X 'OKAME'	OKAME FLOWERING CHERRY	8-10'	B&B
SHRUBS	QTY	BOTANICAL NAME	COMMON NAME	SIZE	CONTAINER
AMH	12	ARONIA MELANOCARPA 'L'CONNAM166'	LOW SCAPE HEDGER® BLACK CHOKEBERRY	18-24"	CONTAINER
CSC	37	CLETHRA ALNIFOLIA 'SIXTEEN CANDLES'	SIXTEEN CANDLES SUMMERSWEET	24-30"	CONTAINER
HME	11	HYDRANGEA MACROPHYLLA 'ENDLESS SUMMER'	ENDLESS SUMMER HYDRANGEA	24-30"	CONTAINER
IG	9	ILEX GLABRA	INKBERRY HOLLY	30-36"	CONTAINER
IGC	42	ILEX GLABRA 'COMPACTA'	COMPACT INKBERRY	24-30"	CONTAINER
KE2	23	KALMIA LATIFOLIA 'ELF'	ELF DWARF MOUNTAIN LAUREL	18-24" HT.	CONTAINER
PXOL	9	PRUNUS LAUROCERASUS 'OTTO LUYKEN'	OTTO LUYKEN CHERRY LAUREL	24-30"	CONTAINER
GRASSES	QTY	BOTANICAL NAME	COMMON NAME	SIZE	CONTAINER
PAH	50	PENNISETUM ALOPECUROIDES 'HAMELN'	HAMELN FOUNTAIN GRASS	1 GAL.	CONTAINER
PVS	92	PANICUM VIRGATUM 'SHENANDOAH'	SHENANDOAH SWITCH GRASS	1 GAL.	CONTAINER
GROUND COVERS	QTY	BOTANICAL NAME	COMMON NAME	SIZE	CONTAINER
HB2	9	HOSTA X 'BLUEBERRY MUFFIN'	BLUEBERRY MUFFIN HOSTA	1 GAL.	CONTAINER
PERENNIALS	QTY	BOTANICAL NAME	COMMON NAME	SIZE	CONTAINER
LMB	39	LIRIOPE MUSCARI 'BIG BLUE'	BIG BLUE LILYTURF	1 GAL.	CONTAINER
NW	95	NEPETA X 'WALKER'S LOW'	WALKER'S LOW CATMINT	1 GAL.	CONTAINER
RF	100	RUDEBECKIA FULGIDA	CONEFLOWER	1 GAL.	CONTAINER
SSAJ	111	SEDUM SPECTABILE 'AUTUMN JOY'	AUTUMN JOY STONECROP	1 GAL.	CONTAINER

Now or Formerly
MASSACHUSETTS BAY TRANSPORTATION AUTHORITY
NO LEGAL REFERENCE FOUND
PARCEL ID 25-163

TOWN OF WALPOLE, MA LANDSCAPE REQUIREMENTS

SECTION	REQUIREMENTS	CALCULATIONS/PROPOSED
7. LOCATION OF SPACES	C. GROUND LEVEL PARKING FACING STREETS OR OPEN SPACES SHALL BE SCREENED FROM THE SIDEWALK AND THE OPEN SPACE. SCREENING MAY INCLUDE BUILDINGS AND/OR LANDSCAPING.	PROVIDED
8. PARKING LOT DESIGN	B. LANDSCAPING REQUIREMENTS	
	(1) AMOUNT. DEVELOPMENTS WITH PROPOSED PARKING AREAS OF SIX (6) SPACES OR MORE SHALL PROVIDE A MINIMUM OF TEN PERCENT (10%) OF LANDSCAPED OPEN SPACE WITHIN THE AREA DESIGNATED FOR PARKING INCLUDING ANY LANDSCAPED BORDERS SURROUNDING THE PARKING LOT.	REQUIRED: 35,060 SF x 10% = 3,506 SF LANDSCAPE AREA PROVIDED
	(3) PARKING LOT ENTRANCES. PARKING LOT ENTRANCES SHALL BE LANDSCAPED WITH A COMBINATION OF TREES, SHRUBS, WALLS AND OTHER LANDSCAPE FEATURES. NO TREES, SHRUBS, FENCES, WALLS OR OTHER LANDSCAPE FEATURE SHALL BE PLANTED IN A MANNER TO OBSTRUCT SIGHT LINES OF MOTORISTS.	PROVIDED
	(3) PARKING AISLES. THE ENDS OF PARKING AISLES THAT ARE MORE THAN FIFTEEN (15) SPACES IN LENGTH SHALL INCORPORATE LANDSCAPE ISLANDS AT EITHER END OF THE ROW, WHERE THE LENGTH OF A PARKING AISLE EXCEEDS TWENTY-FIVE (25) SPACES. ADDITIONAL LANDSCAPED ISLANDS SHALL BE INSTALLED AT REGULAR INTERVALS. THIS INTERVAL SHALL NOT BE MORE THAN EVERY THIRTEEN (13) SPACES. THE WIDTH OF LANDSCAPED ISLANDS PERPENDICULAR TO ADJACENT SPACES SHALL BE NO LESS THAN EIGHT (8) FEET AT THEIR WIDEST POINT.	NOT PROVIDED
SECTION 8: PARKING REGULATIONS	(4) PLANT SELECTION. NO TREE, SHRUB OR PLANT SHALL BE PROPOSED FOR USE WITHIN A PARKING AREA THAT HAS BEEN IDENTIFIED AS AN INVASIVE SPECIES BY THE MASSACHUSETTS PLANT ADVISORY GROUP IN THE LATEST VERSION OF THE EVALUATION OF NON-NATIVE PLANT SPECIES FOR INVASIVENESS IN MASSACHUSETTS (WITH ANNOTATED LIST). HAS BEEN IDENTIFIED AS INVASIVE OR BANNED ON THE MASSACHUSETTS PROHIBITED PLANT LIST AS PERIODICALLY UPDATED BY THE MASSACHUSETTS DEPARTMENT OF AGRICULTURAL RESOURCES, OR IN ANY OTHER REPUTABLE SCIENTIFIC PUBLICATION THAT MAY BE ACCEPTABLE TO THE BOARD. ALL SIZE AND LOCATION DESIGN ELEMENTS SHALL COMPLY WITH THE FOLLOWING SPECIFICATIONS: (A) SHADE OR CANOPY TREES SHALL HAVE AT LEAST ONE AND A HALF (1.5) INCH CALIPER WITH A MATURE HEIGHT OF NOT LESS THAN TWELVE (12) FEET ABOVE GRADE. (B) SMALL OR MINOR SHADE TREES SHALL HAVE A CALIPER OF AT LEAST ONE AND A HALF (1.5) INCHES WITH A MATURE HEIGHT OF NOT LESS THAN NINE (9) FEET ABOVE GRADE. (C) ORNAMENTAL OR FLOWERING FRUIT TREES SHALL HAVE A CALIPER OF AT LEAST ONE AND A HALF (1.5) INCHES WITH A MATURE HEIGHT OF NOT LESS THAN SEVEN (7) FEET ABOVE GRADE. (D) EVERGREEN TREES USED FOR SCREENING SHALL BE NOT LESS THAN SIX (6) FEET IN HEIGHT ABOVE GRADE AT MATURITY. FENCING MAY BE USED IN CONJUNCTION WITH VEGETATED SCREENING BUT CHAIN LINK, VINYL, OR OTHER FENCE MATERIAL THAT IS INCONGRUENT WITH TRADITIONAL NEW ENGLAND ARCHITECTURE SHALL NOT BE ALLOWED IN THE CENTRAL BUSINESS DISTRICT. (E) SHRUBS SHALL BE NOT LESS THAN ONE AND ONE-HALF (1.5) FEET IN HEIGHT ABOVE GRADE, AND (F) GRASS TURF MAY BE USED BUT SHALL NOT BE INSTALLED IN STRIPS LESS THAN SIX (6) FEET IN WIDTH.	PROVIDED PROVIDED PROVIDED PROVIDED PROVIDED PROVIDED

SEED MIX KEY	
	PROPOSED HYDROSEED

OWNER MAINTENANCE RESPONSIBILITIES

UPON OWNERS (OR OWNER CONTRACTOR'S) COMPLETION OF LANDSCAPING WORK, THE OWNER IS FULLY RESPONSIBLE FOR ALL FUTURE MAINTENANCE, CARE, WATERING, AND TRIMMING OF ALL INSTALLED VEGETATION, PLANTS, TREES, BUSHES, SHRUBS, GRASSES, ORNAMENTAL PLANTS AND FLOWERS, GROUND COVERS, AND LANDSCAPING, INCLUDING ALL LANDSCAPE ISLANDS AND AREAS ADJACENT OR PART OF THE LANDSCAPED AREAS. THIS RESPONSIBILITY INCLUDES, BUT IS NOT LIMITED TO, THE FOLLOWING:

- TREES ADJACENT TO WALKWAYS AND AREAS OF PEDESTRIAN TRAFFIC MUST BE MAINTAINED TO ASSURE THAT ANY BRANCHES MUST BE LIMBED UP TO A CLEARANCE HEIGHT OF 7 FT. (FROM ALL PEDESTRIAN SURFACES) OR PRUNED BACK TO AVOID ANY INTERFERENCE WITH THE TYPICAL PATH OF TRAVEL.
- TREES WITHIN VEHICULAR SIGHT LINES, AS ILLUSTRATED ON THE LANDSCAPE PLAN, ARE TO BE TRIMMED TO A CLEARANCE HEIGHT OF 7 FT. FROM ALL PAVED, TRAVELED SURFACES, OR AS OTHERWISE INDICATED ON THE PLANS.
- VEGETATIVE GROUND COVER, SHRUBS AND ORNAMENTAL PLANTS AND GRASSES MUST BE TRIMMED SO THAT NO PORTION OF THE PLANT EXCEEDS 30 INCHES ABOVE GRADE, (OF ALL PAVED, TRAVELED SURFACES) ALONG AND WITHIN THE SIGHT LINES OF PARKING LOTS AND HIGHWAYS.
- FALLEN PLANT FLOWERS, FRUIT, SEEDS AND DEBRIS DROPPINGS ARE TO BE REMOVED IMMEDIATELY FROM VEHICULAR AND PEDESTRIAN TRAFFIC AREAS TO PREVENT TRIPPING, SLIPPING OR ANY OTHER HAZARDS.

THESE REQUIREMENTS DO NOT AFFECT THE PLANT LIFE GUARANTEE THE LANDSCAPE CONTRACTOR IS REQUIRED TO PROVIDE.

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PROGRAM MANAGEMENT
LANDSCAPE ARCHITECTURE
SUSTAINABLE DESIGN
PERMITTING SERVICES
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1	08/30/2023		CMC EDJ/AK

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PROJECT No.:	W211263
DRAWN BY:	CMC/LC
DATE:	EDJ/AK
CAD ID:	65/12/23
CHECKED BY:	W211263-LSCP-2B DWG

PRELIMINARY CIVIL ENGINEERING PLAN SET

FOR
KIG SILVERSTRAND WALPOLE, LLC
PROPOSED MULTI-FAMILY DEVELOPMENT
MAP 25, BLOCK 164, 165 & 166
981, 989 & 1015 EAST STREET
TOWN OF WALPOLE
NORFOLK COUNTY,
MASSACHUSETTS

BOHLER
352 TURNPIKE ROAD
SOUTHBOROUGH, MA 01772
Phone: (508) 480-9900
www.BohlerEngineering.com

M.J. MRVA
REGISTERED LANDSCAPE ARCHITECT
MASSACHUSETTS No. 1217
RHODE ISLAND No. 419
NEW YORK No. 00259
NEW HAMPSHIRE No. 559
CONNECTICUT No. 1399
VIRGINIA No. 4400
MAY 25, 2004

LANDSCAPE PLAN

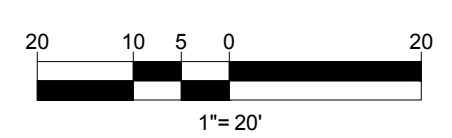
SHEET NUMBER:
C-701
REVISION 1 - 08/30/2023

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Now or Formerly
MASSACHUSETTS BAY TRANSPORTATION AUTHORITY
NO LEGAL REFERENCE FOUND
PARCEL ID 25-163

THIS PLAN TO BE UTILIZED FOR LANDSCAPE PURPOSES ONLY

REFER LANDSCAPE NOTES & DETAILS SHEET FOR LANDSCAPE NOTES AND DETAILS



LANDSCAPE SPECIFICATIONS

1. SCOPE OF WORK

1.1. THE LANDSCAPE CONTRACTOR SHALL BE REQUIRED TO PERFORM ALL CLEARING, FINISHED GRADING, SOIL PREPARATION, PERMANENT SEEDING OR SODDING, PLANTING AND MULCHING INCLUDING ALL LABOR, MATERIALS, TOOLS AND EQUIPMENT NECESSARY FOR THE COMPLETION OF THIS PROJECT, UNLESS OTHERWISE CONTRACTED BY THE GENERAL CONTRACTOR.

2. MATERIALS

2.1. GENERAL - ALL HARDSCAPE MATERIALS SHALL MEET OR EXCEED SPECIFICATIONS AS OUTLINED IN THE STATE DEPARTMENT OF TRANSPORTATION'S SPECIFICATIONS.

2.2. TOPSOIL - NATURAL, FRIABLE, LOAMY SILT SOIL HAVING AN ORGANIC CONTENT NOT LESS THAN 5%, A PH RANGE BETWEEN 4.5-7.0. IT SHALL BE FREE OF DEBRIS, ROCKS LARGER THAN ONE INCH (1"), WOOD, ROOTS, VEGETABLE MATTER AND CLAY CLODS.

2.3. LAWN - ALL DISTURBED AREAS ARE TO BE TREATED WITH A MINIMUM 6" THICK LAYER OF TOPSOIL, OR AS DIRECTED BY THE LOCAL ORDINANCE OR CLIENT, AND SEEDED OR SODDED IN ACCORDANCE WITH THE PERMANENT STABILIZATION METHODS INDICATED ON THE LANDSCAPE PLAN

2.3.1. LAWN SEED MIXTURE SHALL BE FRESH, CLEAN NEW CROP SEED.

2.3.2. SOD SHALL BE STRONGLY ROOTED, WEED AND DISEASE-FREE WITH A UNIFORM THICKNESS. SOD INSTALLED ON SLOPES GREATER THAN 4:1 SHALL BE PEGGED TO HOLD SOD IN PLACE.

2.4. MULCH - ALL PLANTING BEDS SHALL BE MULCHED WITH A 3" THICK LAYER OF DOUBLE SHREDDED HARDWOOD BARK MULCH, UNLESS OTHERWISE STATED ON THE LANDSCAPE PLAN AND/OR LANDSCAPE PLAN NOTES/DETAILS.

2.5. FERTILIZER

2.5.1. FERTILIZER SHALL BE DELIVERED TO THE SITE MIXED AS SPECIFIED IN THE ORIGINAL UNOPENED STANDARD BAGS SHOWING WEIGHT, ANALYSIS AND NAME OF MANUFACTURER. FERTILIZER SHALL BE STORED IN A WEATHERPROOF PLACE SO THAT IT CAN BE KEPT DRY PRIOR TO USE.

2.5.2. FOR THE PURPOSE OF BIDDING, ASSUME THAT FERTILIZER SHALL BE 10% NITROGEN, 6% PHOSPHORUS AND 4% POTASSIUM BY WEIGHT. A FERTILIZER SHOULD NOT BE SELECTED WITHOUT A SOIL TEST PERFORMED BY A CERTIFIED SOIL LABORATORY.

2.6. PLANT MATERIAL

2.6.1. ALL PLANTS SHALL IN ALL CASES CONFORM TO THE REQUIREMENTS OF THE "AMERICAN STANDARD FOR NURSERY STOCK" (ANSI Z60.1), LATEST EDITION, AS PUBLISHED BY THE AMERICAN NURSERY & LANDSCAPE ASSOCIATION (FORMERLY THE AMERICAN ASSOCIATION OF NURSERMEN).

2.6.2. IN ALL CASES, BOTANICAL NAMES SHALL TAKE PRECEDENCE OVER COMMON NAMES FOR ANY AND ALL PLANT MATERIAL.

2.6.3. PLANTS SHALL BE LEGIBLY TAGGED WITH THE PROPER NAME AND SIZE. TAGS ARE TO REMAIN ON AT LEAST ONE PLANT OF EACH SPECIES FOR VERIFICATION PURPOSES DURING THE FINAL INSPECTION.

2.6.4. TREES WITH ABRASION OF THE BARK, SUN SCALDS, DISFIGURATION OR FRESH CUTS OF LIMBS OVER 1/2", WHICH HAVE NOT BEEN COMPLETELY CALLEDUS, SHALL BE REJECTED. PLANTS SHALL NOT BE BOUND WITH WIRE OR ROPE AT ANY TIME SO AS TO DAMAGE THE BARK OR BREAK BRANCHES.

2.6.5. ALL PLANTS SHALL BE TYPICAL OF THEIR SPECIES OR VARIETY AND SHALL HAVE A NORMAL HABIT OF GROWTH; WELL DEVELOPED BRANCHES, DENSELY FOLIATED, VIGOROUS ROOT SYSTEMS AND BE FREE OF DISEASE, INSECTS, PESTS, EGGS OR LARVAE.

2.6.6. CALIPER MEASUREMENTS OF NURSERY GROWN TREES SHALL BE TAKEN AT A POINT ON THE TRUNK SIX INCHES (6") ABOVE THE NATURAL GRADE FOR TREES UP TO AND INCLUDING A FOUR INCH (4") CALIPER SIZE. IF THE CALIPER AT SIX INCHES (6") ABOVE THE GROUND EXCEEDS FOUR INCHES (4") IN CALIPER, THE CALIPER SHOULD BE MEASURED AT A POINT 12" ABOVE THE NATURAL GRADE.

2.6.7. SHRUBS SHALL BE MEASURED TO THE AVERAGE HEIGHT OR SPREAD OF THE SHRUB, AND NOT TO THE LONGEST BRANCH.

2.6.8. TREES AND SHRUBS SHALL BE HANDLED WITH CARE BY THE ROOT BALL.

3. GENERAL WORK PROCEDURES

3.1. CONTRACTOR TO UTILIZE WORKMANLIKE INDUSTRY STANDARDS IN PERFORMING ALL LANDSCAPE CONSTRUCTION. THE SITE IS TO BE LEFT IN A CLEAN STATE AT THE END OF EACH WORKDAY. ALL DEBRIS, MATERIALS AND TOOLS SHALL BE PROPERLY STORED, STOCKPILED OR DISPOSED OF.

3.2. WASTE MATERIALS AND DEBRIS SHALL BE COMPLETELY DISPOSED OF AT THE CONTRACTOR'S EXPENSE. DEBRIS SHALL NOT BE BURIED, INCLUDING ORGANIC MATERIALS, BUT SHALL BE REMOVED COMPLETELY FROM THE SITE.

4. SITE PREPARATIONS

4.1. BEFORE AND DURING PRELIMINARY GRADING AND FINISHED GRADING, ALL WEEDS AND GRASSES SHALL BE DUG OUT BY THE ROOTS AND DISPOSED OF IN ACCORDANCE WITH GENERAL WORK PROCEDURES OUTLINED HEREIN.

4.2. ALL EXISTING TREES TO REMAIN SHALL BE PRUNED TO REMOVE ANY DAMAGED BRANCHES. THE ENTIRE LIMB OF ANY DAMAGED BRANCH SHALL BE CUT OFF AT THE BRANCH COLLAR. CONTRACTOR SHALL ENSURE THAT CUTS ARE SMOOTH AND STRAIGHT. ANY EXPOSED ROOTS SHALL BE CUT BACK WITH CLEAN, SHARP TOOLS AND TOPSOIL SHALL BE PLACED AROUND THE REMAINDER OF THE ROOTS. EXISTING TREES SHALL BE MONITORED ON A REGULAR BASIS FOR ADDITIONAL ROOT OR BRANCH DAMAGE AS A RESULT OF CONSTRUCTION. ROOTS SHALL NOT BE LEFT EXPOSED FOR MORE THAN ONE (1) DAY. CONTRACTOR SHALL WATER EXISTING TREES AS NEEDED TO PREVENT SHOCK OR DECLINE.

4.3. CONTRACTOR SHALL ARRANGE TO HAVE A UTILITY STAKE-OUT TO LOCATE ALL UNDERGROUND UTILITIES PRIOR TO INSTALLATION OF ANY LANDSCAPE MATERIAL. UTILITY COMPANIES SHALL BE CONTACTED THREE (3) DAYS PRIOR TO THE BEGINNING OF WORK.

5. TREE PROTECTION

5.1. CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL EXISTING TREES TO REMAIN. A TREE PROTECTION ZONE SHALL BE ESTABLISHED AT THE DRIP LINE OR AT THE LIMIT OF CONSTRUCTION DISTURBANCE, WHICHEVER IS GREATER. LOCAL STANDARDS THAT MAY REQUIRE A MORE STRICT TREE PROTECTION ZONE SHALL BE HONORED.

5.2. A FORTY-EIGHT INCH (48") HIGH WOODEN SNOW FENCE OR ORANGE COLORED HIGH-DENSITY VISI-FENCE, OR APPROVED EQUAL, MOUNTED ON STEEL POSTS SHALL BE PLACED ALONG THE BOUNDARY OF THE TREE PROTECTION ZONE. POSTS SHALL BE LOCATED AT A MAXIMUM OF EIGHT FEET (8') ON CENTER OR AS INDICATED WITHIN THE TREE PROTECTION DETAIL.

5.3. WHEN THE TREE PROTECTION FENCING HAS BEEN INSTALLED, IT SHALL BE INSPECTED BY THE APPROVING AGENCY PRIOR TO DEMOLITION, GRADING, TREE CLEARING OR ANY OTHER CONSTRUCTION. THE FENCING ALONG THE TREE PROTECTION ZONE SHALL BE REGULARLY INSPECTED BY THE LANDSCAPE CONTRACTOR AND MAINTAINED UNTIL ALL CONSTRUCTION ACTIVITY HAS BEEN COMPLETED.

5.4. AT NO TIME SHALL MACHINERY, DEBRIS, FALLEN TREES OR OTHER MATERIALS BE PLACED, STOCKPILED OR LEFT STANDING IN THE TREE PROTECTION ZONE.

6. SOIL MODIFICATIONS

6.1. CONTRACTOR SHALL ATTAIN A SOIL TEST FOR ALL AREAS OF THE SITE PRIOR TO CONDUCTING ANY PLANTING. SOIL TESTS SHALL BE PERFORMED BY A CERTIFIED SOIL LABORATORY.

6.2. LANDSCAPE CONTRACTOR SHALL REPORT ANY SOIL OR DRAINAGE CONDITIONS CONSIDERED DETRIMENTAL TO THE GROWTH OF PLANT MATERIAL. SOIL MODIFICATIONS, AS SPECIFIED HEREIN, MAY NEED TO BE CONDUCTED BY THE LANDSCAPE CONTRACTOR DEPENDING ON SITE CONDITIONS.

6.3. THE FOLLOWING AMENDMENTS AND QUANTITIES ARE APPROXIMATE AND ARE FOR BIDDING PURPOSES ONLY. COMPOSITION OF AMENDMENTS SHOULD BE REVISED DEPENDING ON THE OUTCOME OF A TOPSOIL ANALYSIS PERFORMED BY A CERTIFIED SOIL LABORATORY.

6.3.1. TO INCREASE A SANDY SOIL'S ABILITY TO RETAIN WATER AND NUTRIENTS, THOROUGHLY TILL ORGANIC MATTER INTO THE TOP 6-12". USE COMPOSTED BARK, COMPOSTED LEAF MULCH OR PEAT MOSS. ALL PRODUCTS SHOULD BE COMPOSTED TO A DARK COLOR AND BE FREE OF PIECES WITH IDENTIFIABLE LEAF OR WOOD STRUCTURE. AVOID MATERIAL WITH A PH HIGHER THAN 7.5.

6.3.2. TO INCREASE DRAINAGE, MODIFY HEAVY CLAY OR SILT (MORE THAN 40% CLAY OR SILT) BY ADDING COMPOSTED PINE BARK (UP TO 30% BY VOLUME) AND/OR AGRICULTURAL GYPSUM. COARSE SAND MAY BE USED IF ENOUGH IS ADDED TO BRING THE SAND CONTENT TO MORE THAN 60% OF THE TOTAL MIX. SUBSURFACE DRAINAGE LINES MAY NEED TO BE ADDED TO INCREASE DRAINAGE.

6.3.3. MODIFY EXTREMELY SANDY SOILS (MORE THAN 85%) BY ADDING ORGANIC MATTER AND/OR DRY, SHREDDED CLAY LOAM UP TO 30% OF THE TOTAL MIX.

7. FINISHED GRADING

7.1. UNLESS OTHERWISE CONTRACTED, THE LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR THE INSTALLATION OF TOPSOIL AND THE ESTABLISHMENT OF FINE-GRADING WITHIN THE DISTURBANCE AREA OF THE SITE.

7.2. LANDSCAPE CONTRACTOR SHALL VERIFY THAT SUBGRADE FOR INSTALLATION OF TOPSOIL HAS BEEN ESTABLISHED. THE SUBGRADE OF THE SITE MUST MEET THE FINISHED GRADE LESS THE REQUIRED TOPSOIL THICKNESS (1").

7.3. ALL LAWN AND PLANTING AREAS SHALL BE GRADED TO A SMOOTH, EVEN AND UNIFORM PLANE WITH NO ABRUPT CHANGE OF SURFACE AS DEPICTED WITHIN THIS SET OF CONSTRUCTION PLANS, UNLESS OTHERWISE DIRECTED BY THE PROJECT ENGINEER OR LANDSCAPE ARCHITECT.

7.4. ALL PLANTING AREAS SHALL BE GRADED AND MAINTAINED TO ALLOW FREE FLOW OF SURFACE WATER IN AND AROUND THE PLANTING BEDS. STANDING WATER SHALL NOT BE PERMITTED IN PLANTING BEDS.

8. TOPSOILING

8.1. CONTRACTOR SHALL PROVIDE A 6" THICK MINIMUM LAYER OF TOPSOIL, OR AS DIRECTED BY THE LOCAL ORDINANCE OR CLIENT, IN ALL PLANTING AREAS. TOPSOIL SHOULD BE SPREAD OVER A PREPARED SURFACE IN A UNIFORM LAYER TO ACHIEVE THE DESIRED COMPACTED THICKNESS.

8.2. ON-SITE TOPSOIL MAY BE USED TO SUPPLEMENT THE TOTAL AMOUNT REQUIRED. TOPSOIL FROM THE SITE MAY BE REJECTED IF IT HAS NOT BEEN PROPERLY REMOVED, STORED AND PROTECTED PRIOR TO CONSTRUCTION.

8.3. CONTRACTOR SHALL FURNISH TO THE APPROVING AGENCY AN ANALYSIS OF BOTH IMPORTED AND ON-SITE TOPSOIL TO BE UTILIZED IN ALL PLANTING AREAS. THE PH AND NUTRIENT LEVELS MAY NEED TO BE ADJUSTED THROUGH SOIL MODIFICATIONS AS NEEDED TO ACHIEVE THE REQUIRED LEVELS AS SPECIFIED IN THE MATERIALS SECTION ABOVE.

8.4. ALL LAWN AREAS ARE TO BE CULTIVATED TO A DEPTH OF SIX INCHES (6"). ALL DEBRIS EXPOSED FROM EXCAVATION AND CULTIVATION SHALL BE DISPOSED OF IN ACCORDANCE WITH GENERAL WORK PROCEDURES SECTION ABOVE. THE FOLLOWING SHALL BE FILLED INTO THE TOP FOUR INCHES (4") IN TWO DIRECTIONS (QUANTITIES BASED ON A 1,000 SQUARE FOOT AREA - FOR BID PURPOSES ONLY [SEE SPECIFICATION 6.A.]):

8.4.1. 20 POUNDS 'GRO-POWER' OR APPROVED SOIL CONDITIONER/FERTILIZER

8.4.2. 20 POUNDS NITRO-FORM (COURSE) 38-0-0 BLUE CHIP OR APPROVED NITROGEN FERTILIZER

9. PLANTING

9.1. INsofar THAT IT IS FEASIBLE, PLANT MATERIAL SHALL BE PLANTED ON THE DAY OF DELIVERY. IN THE EVENT THAT THIS IS NOT POSSIBLE, LANDSCAPE CONTRACTOR SHALL PROTECT UNINSTALLED PLANT MATERIAL. PLANTS SHALL NOT REMAIN UNPLANTED FOR LONGER THAN A THREE DAY PERIOD AFTER DELIVERY. PLANTS THAT WILL NOT BE PLANTED FOR A PERIOD OF TIME GREATER THAN THREE DAYS SHALL BE HEALED IN WITH TOPSOIL OR MULCH TO HELP PRESERVE ROOT MOISTURE.

9.2. PLANTING OPERATIONS SHALL BE PERFORMED DURING PERIODS WITHIN THE PLANTING SEASON WHEN WEATHER AND SOIL CONDITIONS ARE SUITABLE AND IN ACCORDANCE WITH ACCEPTED LOCAL PRACTICE. PLANTS SHALL NOT BE INSTALLED IN TOPSOIL THAT IS IN A MUDDY OR FROZEN CONDITION.

9.3. ANY INJURED ROOTS OR BRANCHES SHALL BE PRUNED TO MAKE CLEAN-CUT ENDS PRIOR TO PLANTING UTILIZING CLEAN, SHARP TOOLS. ONLY INJURED OR DISEASED BRANCHING SHALL BE REMOVED.

9.4. ALL PLANTING CONTAINERS, BASKETS AND NON-BIODEGRADABLE MATERIALS SHALL BE REMOVED FROM ROOT BALLS DURING PLANTING. NATURAL FIBER BURLAP MUST BE CUT FROM AROUND THE TRUNK OF THE TREE AND FOLDED DOWN AGAINST THE ROOT BALL PRIOR TO BACKFILLING.

9.5. POSITION TREES AND SHRUBS AT THEIR INTENDED LOCATIONS AS PER THE PLANS AND SECURE THE APPROVAL OF THE LANDSCAPE ARCHITECT PRIOR TO EXCAVATING PITS, MAKING NECESSARY ADJUSTMENTS AS DIRECTED.

9.6. PRIOR TO THE ISSUANCE OF ANY CERTIFICATE OF OCCUPANCY, THE PROPOSED LANDSCAPE, AS SHOWN ON THE APPROVED LANDSCAPE PLAN, MUST BE INSTALLED, INSPECTED AND APPROVED BY THE APPROVING AGENCY. THE APPROVING AGENCY SHALL TAKE INTO ACCOUNT SEASONAL CONSIDERATIONS IN THIS REGARD AS FOLLOWS. THE PLANTING OF TREES, SHRUBS, VINES OR GROUND COVER SHALL OCCUR ONLY DURING THE FOLLOWING PLANTING SEASONS:

9.6.1. PLANTS: MARCH 15 TO DECEMBER 15

9.6.2. LAWN: MARCH 15 TO JUNE 15 OR SEPT. 1 TO DECEMBER 1

9.6.3. PLANTINGS REQUIRED FOR A CERTIFICATE OF OCCUPANCY SHALL BE PROVIDED DURING THE NEXT APPROPRIATE SEASON AT THE MUNICIPALITY'S DISCRETION. CONTRACTOR SHOULD CONTACT APPROVING AGENCY FOR POTENTIAL SUBSTITUTIONS.

9.7. FURTHERMORE, THE FOLLOWING TREE VARIETIES ARE UNUSUALLY SUSCEPTIBLE TO WINTER DAMAGE. WITH TRANSPLANT SHOCK AND THE SEASONAL LACK OF NITROGEN AVAILABILITY, THE RISK OF PLANT DEATH IS GREATLY INCREASED. IT IS NOT RECOMMENDED THAT THESE SPECIES BE PLANTED DURING THE FALL PLANTING SEASON:

ACER RUBRUM PLATANUS X ACERIFOLIA
BETULA VARIETIES POPULUS VARIETIES
CARPINUS VARIETIES PRUNUS VARIETIES
CRATAEGUS VARIETIES PYRUS VARIETIES
KOELREUTERA QUERCUS VARIETIES
LIQUIDAMBAR STRYACIFLUA TILIA TOMENTOSA
LIRIODENDRON TULIPIFERA ZELKOVA VARIETIES

9.8. PLANTING PITS SHALL BE DUG WITH LEVEL BOTTOMS, WITH THE WIDTH TWICE THE DIAMETER OF ROOT BALL. THE ROOT BALL SHALL REST ON UNDISTURBED GRADE. EACH PLANT PIT SHALL BE BACKFILLED IN LAYERS WITH THE FOLLOWING PREPARED SOIL MIXED THOROUGHLY:

9.8.1. 1 PART PEAT MOSS
9.8.2. 1 PART COMPOSTED COW MANURE BY VOLUME
9.8.3. 3 PARTS TOPSOIL BY VOLUME

9.8.4. 21 GRAMS 'AGRIFORM' PLANTING TABLETS (OR APPROVED EQUAL) AS FOLLOWS:
9.8.4.1. 2 TABLETS PER 1 GALLON PLANT
9.8.4.2. 3 TABLETS PER 5 GALLON PLANT
9.8.4.3. 4 TABLETS PER 15 GALLON PLANT
9.8.4.4. LARGER PLANTS: 2 TABLETS PER 1/2" CALIPER OF TRUNK

9.9. FILL PREPARED SOIL AROUND BALL OF PLANT HALF-WAY AND INSERT PLANT TABLETS. COMPLETE BACKFILL AND WATER THOROUGHLY.

9.10. ALL PLANTS SHALL BE PLANTED SO THAT THE TOP OF THE ROOT BALL, THE POINT AT WHICH THE ROOT FLARE BEGINS, IS SET AT GROUND LEVEL AND IN THE CENTER OF THE PIT. NO SOIL IS TO BE PLACED DIRECTLY ON TOP OF THE ROOT BALL.

9.11. ALL PROPOSED TREES DIRECTLY ADJACENT TO WALKWAYS OR DRIVEWAYS SHALL BE PRUNED AND MAINTAINED TO A MINIMUM BRANCHING HEIGHT OF 7' FROM GRADE.

9.12. GROUND COVER AREAS SHALL RECEIVE A 1/2" LAYER OF HUMUS RAKED INTO THE TOP 1" OF PREPARED SOIL PRIOR TO PLANTING. ALL GROUND COVER AREAS SHALL BE WEDED AND TREATED WITH A PRE-EMERGENT CHEMICAL AS PER MANUFACTURER'S RECOMMENDATION.

9.13. NO PLANT, EXCEPT GROUND COVERS, GRASSES OR VINES, SHALL BE PLANTED LESS THAN TWO FEET (2') FROM EXISTING STRUCTURES AND SIDEWALKS.

9.14. ALL PLANTING AREAS AND PLANTING PITS SHALL BE MULCHED AS SPECIFIED HEREIN TO FILL THE ENTIRE BED AREA OR SAUCER. NO MULCH IS TO TOUCH THE TRUNK OF THE TREE OR SHRUB.

9.15. ALL PLANTING AREAS SHALL BE WATERED IMMEDIATELY UPON INSTALLATION IN ACCORDANCE WITH THE WATERING SPECIFICATIONS AS LISTED HEREIN.

10. TRANSPLANTING (WHEN REQUIRED)
10.1. ALL TRANSPLANTS SHALL BE DUG WITH INTACT ROOT BALLS CAPABLE OF SUSTAINING THE PLANT.
10.2. IF PLANTS ARE TO BE STOCKPILED BEFORE PLANTING, THEY SHALL BE HEALED IN WITH MULCH OR SOIL, ADEQUATELY WATERED AND PROTECTED FROM EXTREME HEAT, SUN AND WIND.
10.3. PLANTS SHALL NOT BE DUG FOR TRANSPLANTING BETWEEN APRIL 10 AND JUNE 30.
10.4. UPON REPLANTING, BACKFILL SOIL SHALL BE AMENDED WITH FERTILIZER AND ROOT GROWTH HORMONE.
10.5. TRANSPLANTS SHALL BE GUARANTEED FOR THE LENGTH OF THE GUARANTEE PERIOD SPECIFIED HEREIN.
10.6. IF TRANSPLANTS DIE, SHRUBS AND TREES LESS THAN SIX INCHES (6") DBH SHALL BE REPLACED IN KIND. TREES GREATER THAN SIX INCHES (6") DBH MAY BE REQUIRED TO BE REPLACED IN ACCORDANCE WITH THE MUNICIPALITY'S TREE REPLACEMENT GUIDELINES.

11. WATERING
11.1. NEW PLANTINGS OR LAWN AREAS SHALL BE ADEQUATELY IRRIGATED BEGINNING IMMEDIATELY AFTER PLANTING. WATER SHALL BE APPLIED TO EACH TREE AND SHRUB IN SUCH MANNER AS NOT TO DISTURB BACKFILL AND TO THE EXTENT THAT ALL MATERIALS IN THE PLANTING HOLE ARE THOROUGHLY SATURATED. WATERING SHALL CONTINUE AT LEAST UNTIL PLANTS ARE ESTABLISHED.
11.2. SITE OWNER SHALL PROVIDE WATER IF AVAILABLE ON SITE AT TIME OF PLANTING. IF WATER IS NOT AVAILABLE ON SITE, CONTRACTOR SHALL SUPPLY ALL NECESSARY WATER. THE USE OF WATERING BAGS IS RECOMMENDED FOR ALL NEWLY PLANTED TREES.
11.3. IF AN IRRIGATION SYSTEM HAS BEEN INSTALLED ON THE SITE, IT SHALL BE USED TO WATER PROPOSED PLANT MATERIAL, BUT ANY FAILURE OF THE SYSTEM DOES NOT ELIMINATE THE CONTRACTOR'S RESPONSIBILITY OF MAINTAINING THE DESIRED MOISTURE LEVEL FOR VIGOROUS, HEALTHY GROWTH.

12. GUARANTEE
12.1. THE LANDSCAPE CONTRACTOR SHALL GUARANTEE ALL PLANTS FOR A PERIOD OF 1 YEAR FROM APPROVAL OF LANDSCAPE INSTALLATION BY THE APPROVING AGENCY. CONTRACTOR SHALL SUPPLY THE OWNER WITH A MAINTENANCE BOND FOR TEN PERCENT (10%) OF THE VALUE OF THE LANDSCAPE INSTALLATION WHICH WILL BE RELEASED AT THE CONCLUSION OF THE GUARANTEE PERIOD AND WHEN A FINAL INSPECTION HAS BEEN COMPLETED AND APPROVED BY THE OWNER OR AUTHORIZED REPRESENTATIVE.
12.2. ANY DEAD OR DYING PLANT MATERIAL SHALL BE REPLACED FOR THE LENGTH OF THE GUARANTEE PERIOD. REPLACEMENT OF PLANT MATERIAL SHALL BE CONDUCTED AT THE FIRST SUCCEEDING PLANTING SEASON. ANY DEBRIS SHALL BE DISPOSED OF OFF-SITE, WITHOUT EXCEPTION.
12.3. TREES AND SHRUBS SHALL BE MAINTAINED BY THE CONTRACTOR DURING CONSTRUCTION AND THROUGHOUT THE 90 DAY MAINTENANCE PERIOD AS SPECIFIED HEREIN. CULTIVATION, WEEDING, WATERING AND THE PREVENTATIVE TREATMENTS SHALL BE PERFORMED AS NECESSARY TO KEEP PLANT MATERIAL IN GOOD CONDITION AND FREE OF INSECTS AND DISEASE.
12.4. LAWNS SHALL BE MAINTAINED THROUGH WATERING, FERTILIZING, WEEDING, MOWING, TRIMMING AND OTHER OPERATIONS SUCH AS ROLLING, REGARDING AND REPLANTING AS REQUIRED TO ESTABLISH A SMOOTH, ACCEPTABLE LAWN, FREE OF ERODED OR BARE AREAS.

13. CLEANUP
13.1. UPON THE COMPLETION OF ALL LANDSCAPE INSTALLATION AND BEFORE THE FINAL ACCEPTANCE, THE CONTRACTOR SHALL REMOVE ALL UNUSED MATERIALS, EQUIPMENT AND DEBRIS FROM THE SITE. ALL PAVED AREAS ARE TO BE CLEANED.
13.2. THE SITE SHALL BE CLEANED AND LEFT IN A NEAT AND ACCEPTABLE CONDITION AS APPROVED BY THE OWNER OR AUTHORIZED REPRESENTATIVE.
14. MAINTENANCE (ALTERNATIVE BID)
14.1. A 90 DAY MAINTENANCE PERIOD SHALL COMMENCE AT THE END OF ALL LANDSCAPE INSTALLATION OPERATIONS. THE 90 DAY MAINTENANCE PERIOD ENSURES TO THE OWNER/OPERATOR THAT THE NEWLY INSTALLED LANDSCAPING HAS BEEN MAINTAINED AS SPECIFIED ON THE APPROVED LANDSCAPE PLAN. ONCE THE INITIAL 90 DAY MAINTENANCE PERIOD HAS EXPIRED, THE OWNER/OPERATOR MAY REQUEST THAT BIDDERS SUBMIT AN ALTERNATE MAINTENANCE BID FOR A MONTHLY MAINTENANCE CONTRACT. THE ALTERNATE MAINTENANCE CONTRACT WILL ENCOMPASS ANY WORK THAT IS CONSIDERED APPROPRIATE TO ENSURE THAT PLANT AND LAWN AREAS ARE HEALTHY AND MANICURED TO THE APPROVAL OF THE OWNER/OPERATOR.

NOTES:
1.) NO SOIL OR MULCH SHALL BE PLACED AGAINST ROOT COLLAR OF PLANT.
2.) REMOVE ALL NON-BIODEGRADABLE MATERIAL AND ROPE FROM TRUNK & TOP OF ROOT BALL. FOLD BURLAP BACK 13" FROM ROOT BALL.
3.) PLANTING DEPTH SHALL BE THE SAME AS GROWN IN NURSERY.
4.) THOROUGHLY SOAK THE TREE ROOT BALL AND ADJACENT PREPARED SOIL SEVERAL TIMES DURING THE FIRST MONTH AFTER PLANTING AND REGULARLY THROUGHOUT THE FOLLOWING TWO SUMMERS.
5.) THE BOTTOM OF PLANTING PIT EXCAVATIONS SHOULD BE ROUGH TO AVOID MATING OF SOIL LAYERS AS NEW SOIL IS ADDED. IT IS PREFERABLE TO TILL THE FIRST LIFT (2 TO 3 IN.) OF PLANTING SOIL INTO THE SUBSOIL.
6.) REFER TO THE CHART "GENERAL RANGE OF SOIL MODIFICATIONS & VOLUMES FOR VARIOUS SOIL CONDITIONS" TO DETERMINE MINIMUM WIDTH OF PREPARED SOIL.
7.) SUBSTITUTE ARBORVITAE STAKING SYSTEM WHEN SPECIFIED.

REINFORCED RUBBER HOSE (1/2" DIA. BLACK)
FOLD BURLAP AWAY FROM TOP OF ROOT BALL
12 GAUGE GALVANIZED WIRE GUY'S TWISTED
2" DIA. HARDWOOD STAKES 2/3 TREE HT. 3 PER TREE
TWICE THE WIDTH OF ROOTBALL FOR PREPARED SOIL FOR TREES.
PREPARED SOIL FOR TREES:
1 PART PEAT MOSS
1 PART COW MANURE
3 PARTS TOPSOIL
(RECOMMENDATION ONLY. SEE SOIL MOD. CHART)
UNDISTURBED SUBGRADE
DIG WIDE, SHALLOW HOLE WITH TAMPED SIDES
TAMP SOIL SOLIDLY AROUND BASE OF ROOT BALL

SET ROOT BALL FLUSH TO GRADE OR SEVERAL INCHES HIGHER IN POORLY DRAINING SOILS.
4" BUILT-UP EARTH SAUCER
3" DOUBLE SHREDDED HARDWOOD BARK MULCH (UNLESS OTHERWISE SPECIFIED) (DO NOT PLACE MULCH IN CONTACT WITH TREE TRUNK)
LANDSCAPE FABRIC AS SPECIFIED.

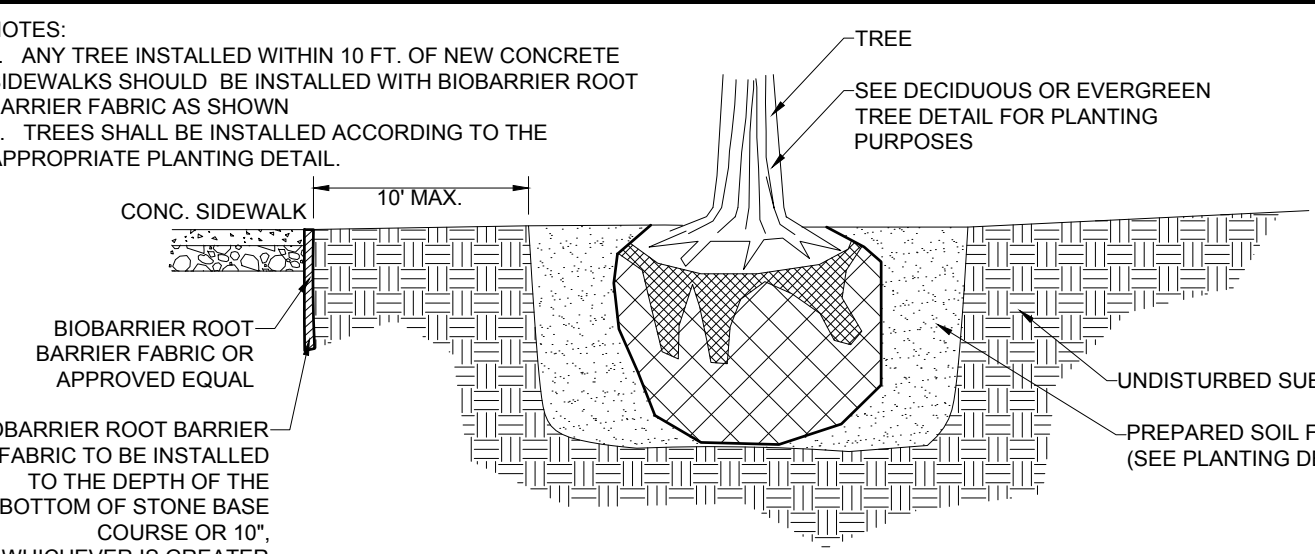
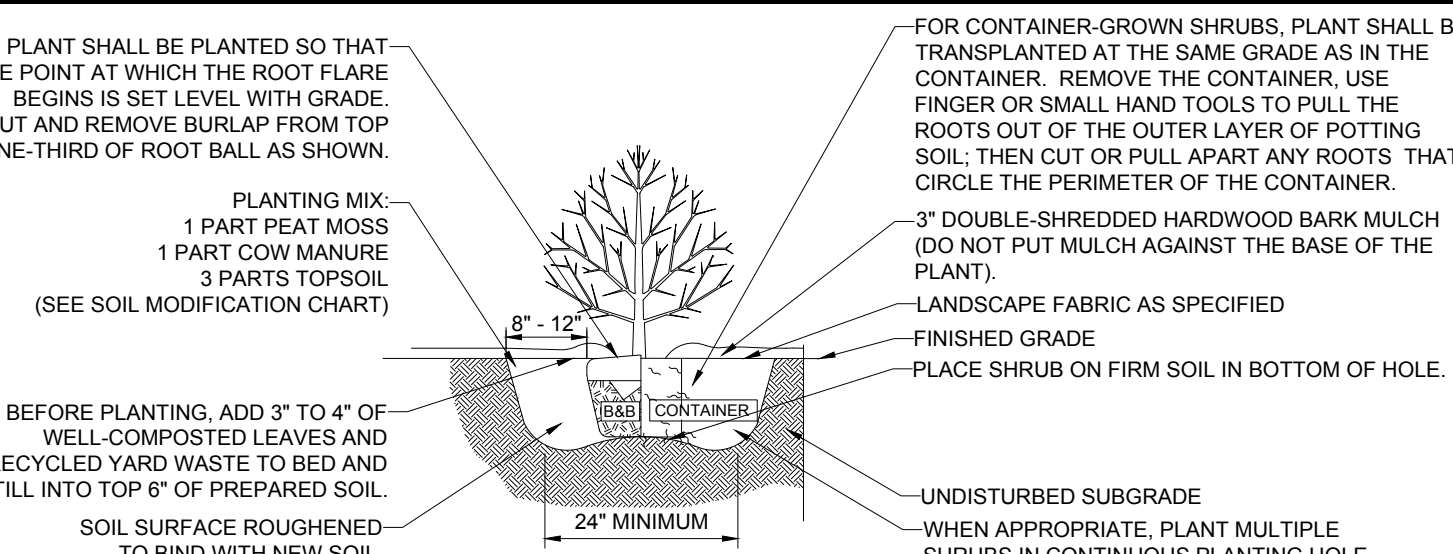
AVOID PURCHASING TREES WITH TWO LEADERS OR REMOVE ONE AT PLANTING; OTHERWISE, DO NOT PRUNE TREE AT PLANTING EXCEPT FOR SPECIFIC STRUCTURAL CORRECTIONS.
WOOD & WIRE SNOW FENCE USED AS TREE GUARD TO PREVENT DAMAGE FROM CONSTRUCTION EQUIPMENT.

TREE DRIP LINE/TREE PROTECTION ZONE AREA WITHIN TREE PROTECTION ZONE TO REMAIN UNDISTURBED DURING CONSTRUCTION.
6" WOOD OR STEEL FENCE POSTS AT 8' MAXIMUM CENTER TO CENTER (MINIMUM 2' BELOW GRADE).

ALL PLANTING CONTAINERS, BASKETS AND NON-BIODEGRADABLE MATERIALS SHALL BE REMOVED FROM ROOT BALLS.
SET ROOT BALL ON UNDISTURBED SOIL IN BOTTOM OF HOLE.

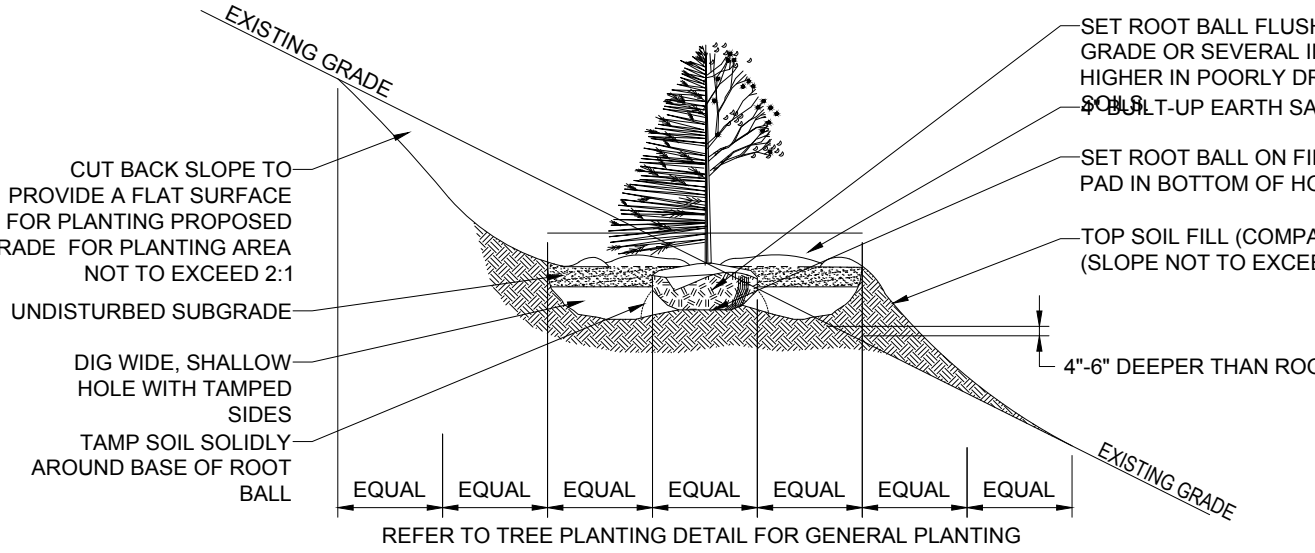
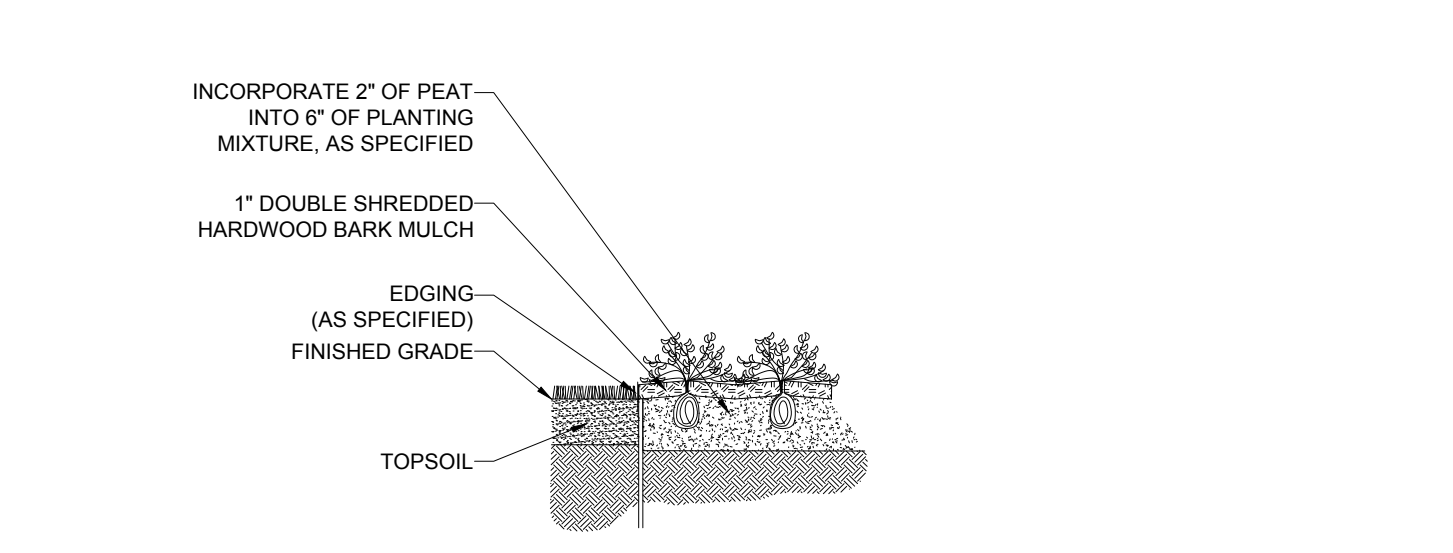
TREE PLANTING DETAIL

TREE PROTECTION DURING SITE CONSTRUCTION



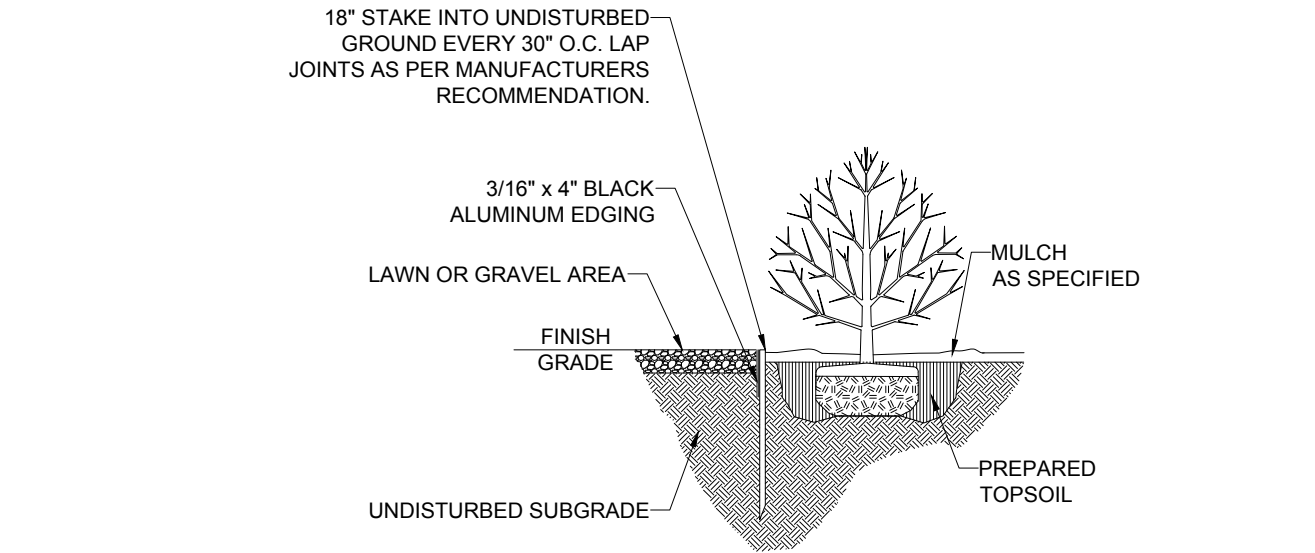
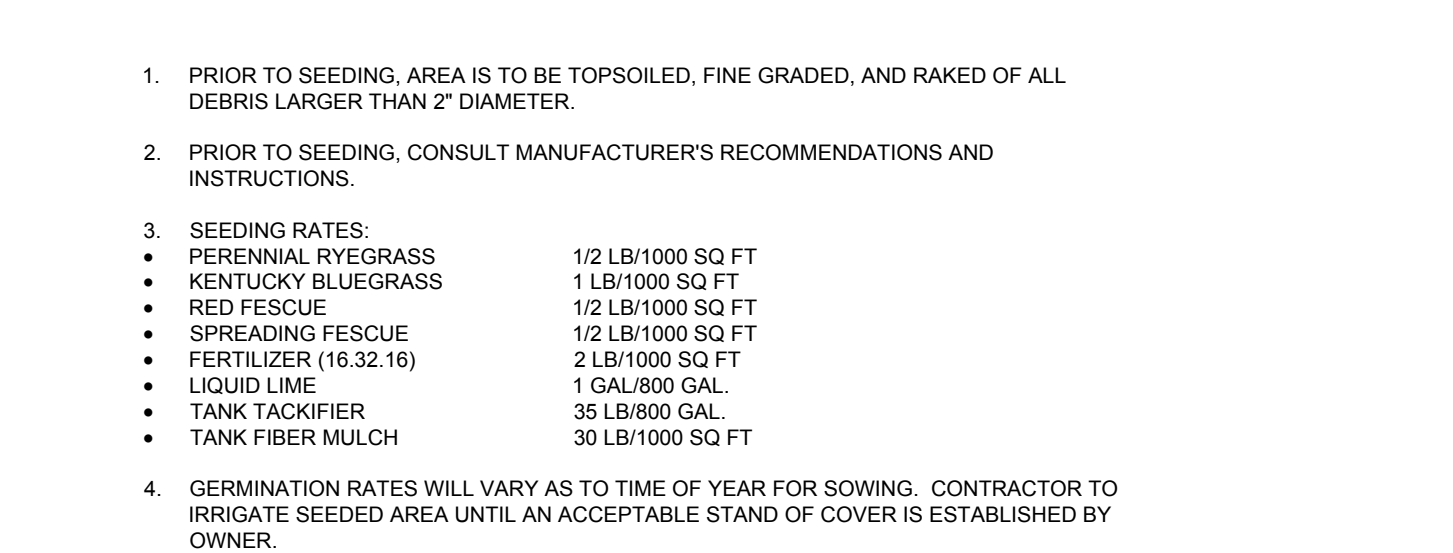
SHRUB PLANTING DETAIL

BIOBARRIER ROOT BARRIER DETAIL



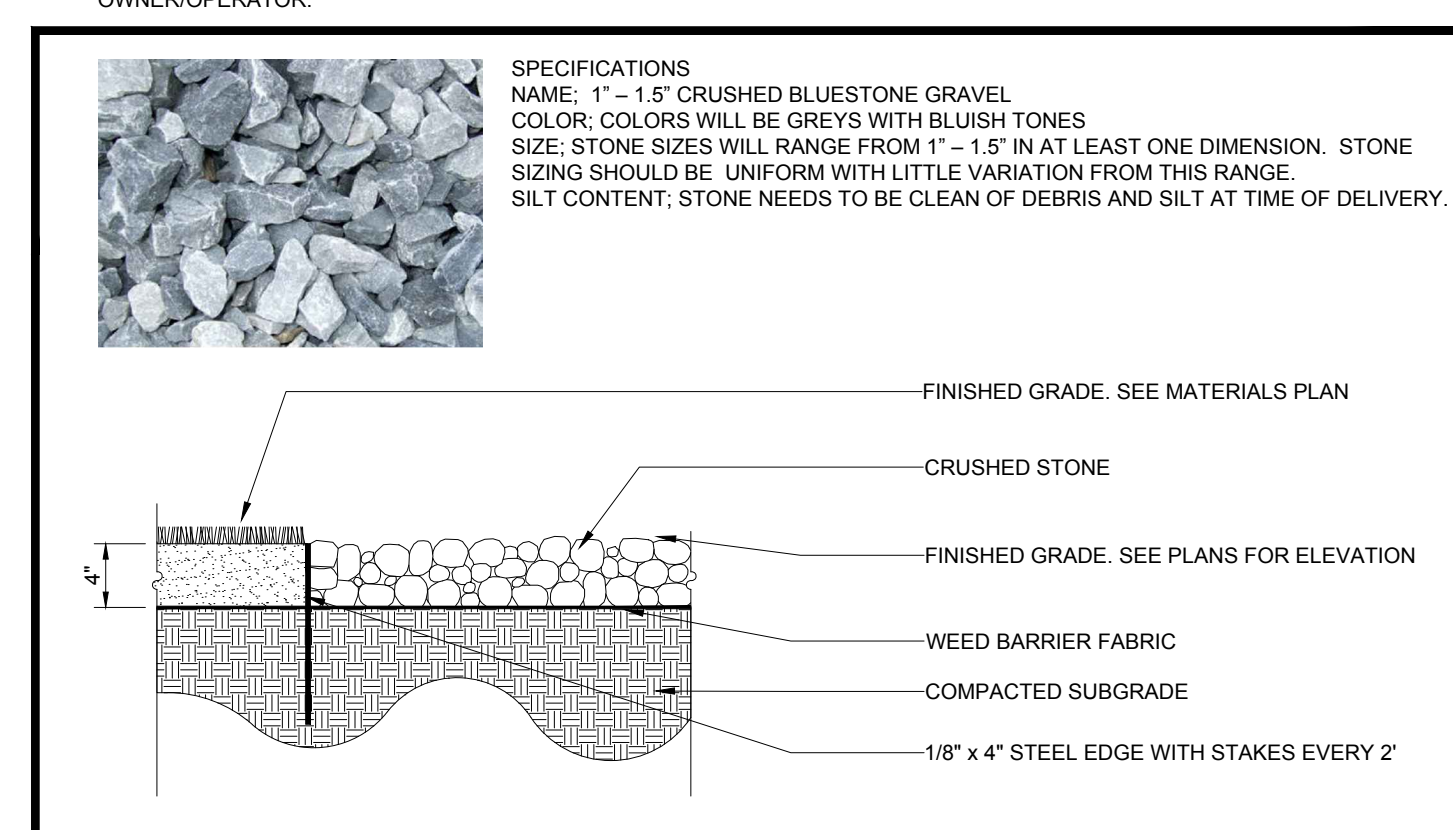
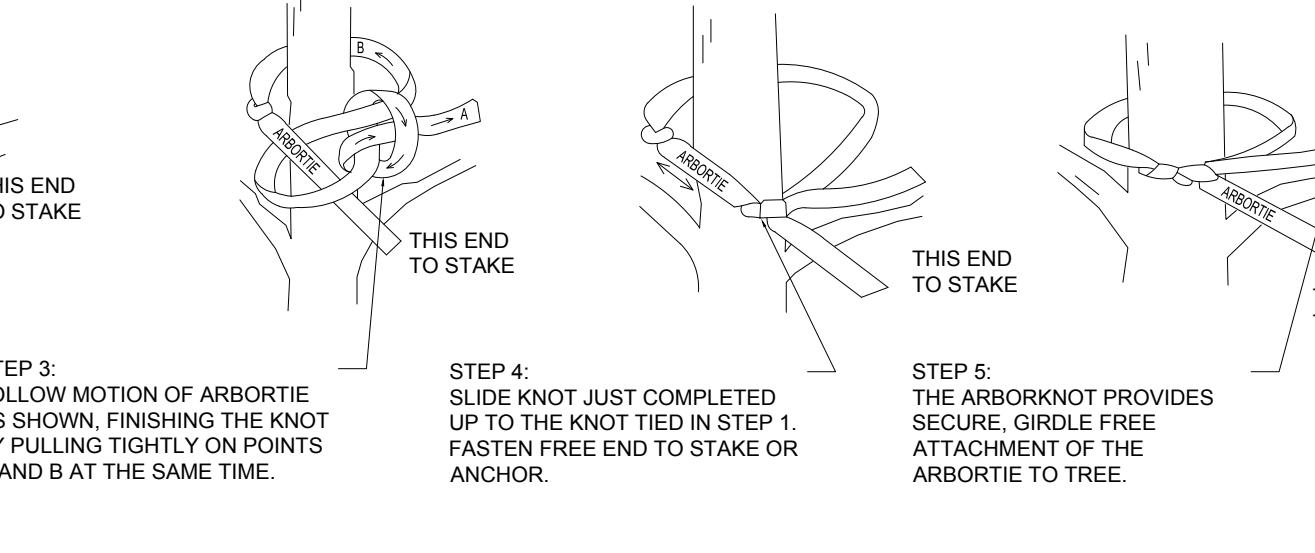
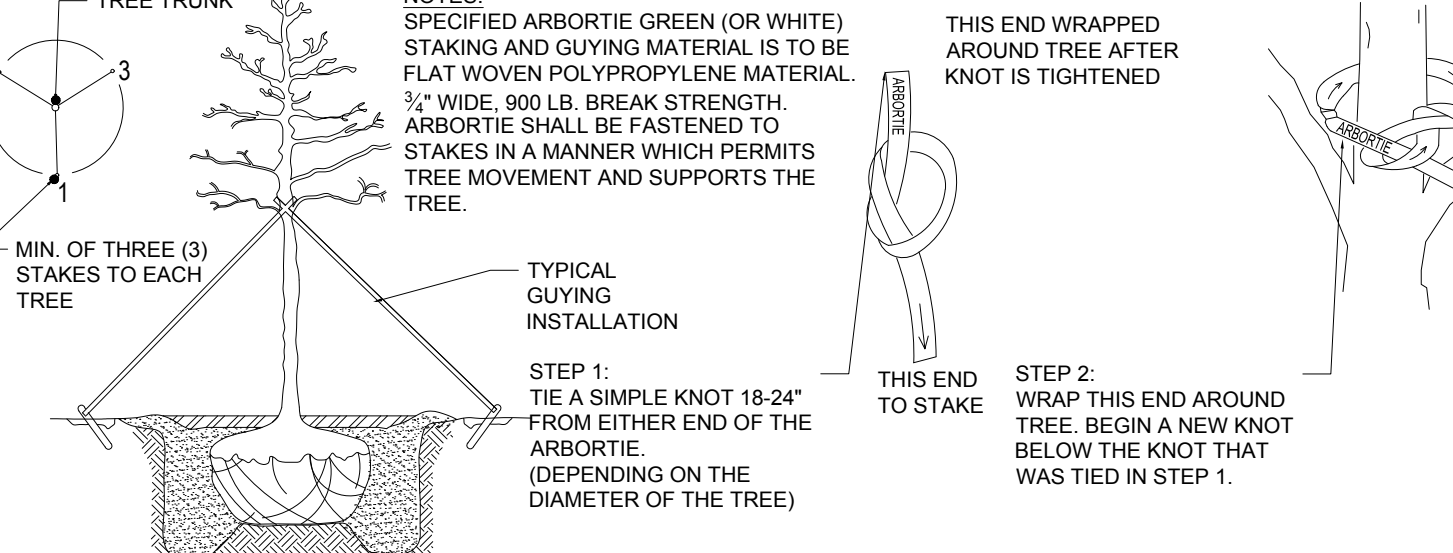
GROUND COVER PLANTING

TREE PLANTING DETAIL - ON SLOPE



HYDROSEED SPECIFICATIONS

BLACK ALUMINUM EDGING



CRUSHED STONE MULCH

ARBORVITAE STAKING DETAIL



ARBORVITAE STAKING DETAIL

BOHLER ENGINEERING SITE CIVIL AND CONSULTING ENGINEERING PROGRAM MANAGEMENT LANDSCAPE ARCHITECTURE SUSTAINABLE DESIGN TRANSPORTATION SERVICES

REVISIONS				
REV	DATE	COMMENT	DRWN BY	CHKD BY
1	08/30/2023			

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FOR ENTITLEMENT PURPOSES ONLY

PROJECT No.: W211263
DRAWN BY: CMCLC
CHECKED BY: EDJAK
DATE: 08/22/2023
CAD ID: W211263-LSCP-2B.DWG
PROJECT: PRELIMINARY CIVIL ENGINEERING PLAN SET FOR KIG SILVERSTRAND WALPOLE, LLC

PROPOSED MULTI-FAMILY DEVELOPMENT
MAP 25, BLOCK 164, 165 & 166
981, 989 & 1015 EAST STREET
TOWN OF WALPOLE
NORFOLK COUNTY, MASSACHUSETTS

BOHLER ENGINEERING 352 TURNPIKE ROAD SOUTHBOROUGH, MA 01772 Phone: (508) 480-9900 www.BohlerEngineering.com

M.J. MRVA REGISTERED LANDSCAPE ARCHITECT MASSACHUSETTS No. 1517 RHODE ISLAND No. 419 NEW YORK No. 002639 THE VIRGINIA BOARD OF PROFESSIONAL LANDSCAPE ARCHITECTURE No. 1359 NEW HAMPSHIRE No. 4468 VERMONT No. 2244

SHEET TITLE: LANDSCAPE NOTES & DETAILS SHEET NUMBER: C-702 REVISION 1 - 08/30/2023

P:\121021\121021\DRAWINGS\PLAN SET\121021-121021-121021-LSCP-2B.dwg - LAYOUT: C-702-121021



Mirada Bollard (MRB)
Low level lighting



QUICK LINKS

Category	Performance	Photometrics	Drawings
Lighting Data	Performance	Photometrics	Drawings

FEATURES & SPECIFICATIONS

Construction:

- 100% die-cast aluminum housing
- High performance polycarbonate lens
- High performance polycarbonate lens
- High performance polycarbonate lens

Installation:

- 100% die-cast aluminum housing
- High performance polycarbonate lens
- High performance polycarbonate lens

Warranty:

- 5 Year Limited Warranty
- 5 Year Limited Warranty

Mirada Medium (MRM)
Outdoor LED Area Light



QUICK LINKS

Category	Performance	Photometrics	Drawings
Lighting Data	Performance	Photometrics	Drawings

FEATURES & SPECIFICATIONS

Construction:

- 100% die-cast aluminum housing
- High performance polycarbonate lens
- High performance polycarbonate lens


Installation:

- 100% die-cast aluminum housing
- High performance polycarbonate lens
- High performance polycarbonate lens

Warranty:

- 5 Year Limited Warranty
- 5 Year Limited Warranty

Mirada Small Wall Sconce Silicone (XWS SIL)
Outdoor LED Wall Light



QUICK LINKS

Category	Performance	Photometrics	Drawings
Lighting Data	Performance	Photometrics	Drawings

FEATURES & SPECIFICATIONS

Construction:

- 100% die-cast aluminum housing
- High performance polycarbonate lens
- High performance polycarbonate lens

Installation:

- 100% die-cast aluminum housing
- High performance polycarbonate lens
- High performance polycarbonate lens

Warranty:

- 5 Year Limited Warranty
- 5 Year Limited Warranty



LIGHTING NOTES

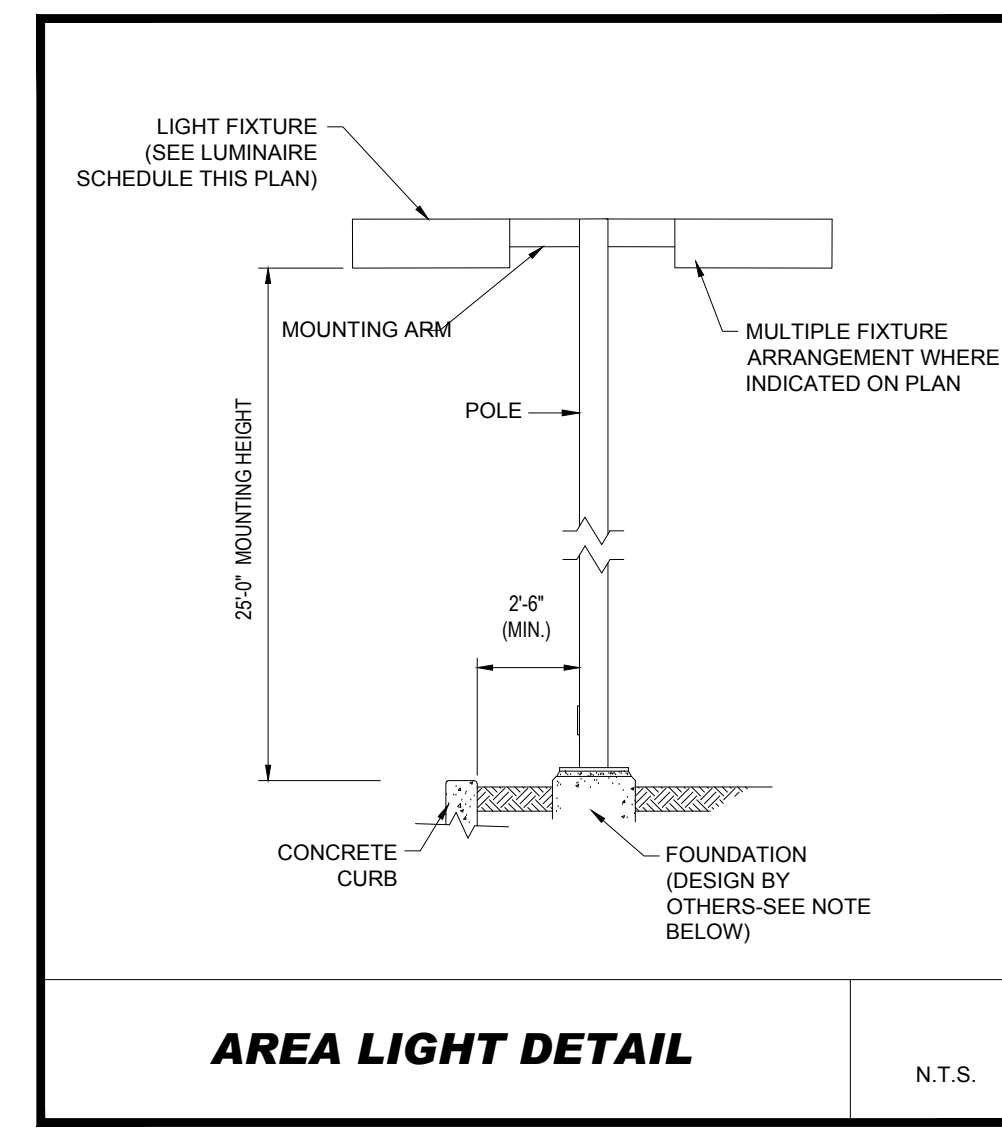
1. THIS LIGHTING PLAN DEPICTS PROPOSED SUSTAINED ILLUMINATION LEVELS CALCULATED USING DATA PROVIDED BY THE NOTED MANUFACTURER(S). ACTUAL SUSTAINED SITE ILLUMINATION LEVELS AND PERFORMANCE OF LUMINAIRES MAY VARY DUE TO VARIATIONS IN WEATHER, ELECTRICAL VOLTAGE TOLERANCE IN LAMPS, THE SERVICE LIFE OF EQUIPMENT AND LUMINAIRES AND OTHER RELATED VARIABLE FIELD CONDITIONS.
2. THE LIGHT LOSS FACTORS USED IN THESE LIGHTING CALCULATIONS ARE 0.80 FOR ALL LED LUMINAIRES, 0.80 FOR ALL HIGH PRESSURE SODIUM LUMINAIRES OR 0.72 FOR ALL METAL HALIDE LUMINAIRES UNLESS OTHERWISE SPECIFIED. THESE FACTORS ARE INDICATIVE OF TYPICAL LIGHTING INDUSTRY MODELING STANDARDS.
3. THE LIGHTING VALUES AND CALCULATION POINTS DEPICTED ON THIS PLAN ARE ALL ANALYZED ON A HORIZONTAL GEOMETRIC PLANE AT ELEVATION ZERO (GROUND LEVEL) UNLESS OTHERWISE NOTED. THE VALUES DEPICTED ON THIS PLAN ARE IN FOOT-CANDELS.
4. THE LUMINAIRES, LAMPS AND LENSES MUST BE REGULARLY INSPECTED/MAINTAINED TO ENSURE THAT THEY FUNCTION PROPERLY. THIS WORK SHOULD INCLUDE, BUT NOT BE LIMITED TO, FREQUENT VISUAL INSPECTIONS, CLEANING OF LENSES, AND REPLACING (IF NECESSARY) AT LEAST ONCE EVERY SIX (6) MONTHS. FAILURE TO FOLLOW THE ABOVE STEPS COULD CAUSE THE LUMINAIRES, LAMPS AND LENSES TO FAIL PROPERLY TO FUNCTION.
5. WHERE APPLICABLE, THE EXISTING CONDITION LIGHT LEVELS ILLUSTRATED ARE REPRESENTATIVE OF AN APPROXIMATION UTILIZING LABORATORY DATA FOR SIMILAR FIXTURES, UNLESS ACTUAL FIELD MEASUREMENTS ARE TAKEN WITH A LIGHT METER AND ARE, CONSEQUENTLY, APPROXIMATIONS ONLY. DUE TO FACTORS SUCH AS FIXTURE MAINTENANCE, EQUIPMENT TOLERANCES, WEATHER CONDITIONS, ETC, ACTUAL LIGHT LEVELS MAY DIFFER. EXISTING LIGHT LEVELS DEPICTED ON THIS PLAN SHOULD BE CONSIDERED APPROXIMATE.
6. THIS LIGHTING PLAN IS INTENDED TO SHOW THE LOCATIONS AND TYPE OF LUMINAIRES ONLY. POWER SYSTEM, CONDUITS, WIRING, VOLTAGES AND OTHER ELECTRICAL COMPONENTS ARE THE RESPONSIBILITY OF THE ARCHITECT, MEP AND/OR LIGHTING CONTRACTOR, AS INDICATED IN THE CONSTRUCTION CONTRACT DOCUMENTS. THESE ITEMS MUST BE INSTALLED AS REQUIRED BY STATE AND LOCAL REGULATIONS. LIGHT POLE BASES ARE THE RESPONSIBILITY OF THE STRUCTURAL ENGINEER, AS INDICATED IN THE CONSTRUCTION CONTRACT DOCUMENTS. CONTRACTOR IS RESPONSIBLE FOR INSTALLING LIGHTING FIXTURES AND APPURTENANCES IN ACCORDANCE WITH ALL APPLICABLE BUILDING AND ELECTRICAL CODES AND ALL OTHER APPLICABLE RULES, REGULATIONS, LAWS AND STATUTES.
7. CONTRACTOR MUST BRING TO DESIGNER'S ATTENTION PRIOR TO THE COMMENCEMENT OF CONSTRUCTION, ANY LIGHT LOCATIONS THAT CONFLICT WITH DRAINAGE, UTILITIES, OR OTHER STRUCTURES.
8. IT IS THE LIGHTING CONTRACTOR'S RESPONSIBILITY TO COORDINATE WITH THE PROJECT ARCHITECT OR OWNER REGARDING THE POWER SOURCE(S) FROM WITHIN THE BUILDING, AND TIMING DEVICES NECESSARY TO MEET THE DESIGN INTENT.
9. THE LIGHTING CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE CONTRACTOR REQUIREMENTS INDICATED IN THE SITE PLAN, INCLUDING BUT NOT LIMITED TO, GENERAL NOTES, GRADING AND UTILITY NOTES, SITE SAFETY, AND ALL GOVERNMENTAL RULES, LAWS, ORDINANCES, REGULATIONS AND THE LIKE.
10. THE CONTRACTOR MUST VERIFY THAT INSTALLATION OF LIGHTING FIXTURES COMPLIES WITH THE REQUIREMENTS FOR SEPARATION FROM OVERHEAD ELECTRICAL WIRES PER STATE REGULATIONS.
11. WHEN A BANK ATM IS INCLUDED IN THE PLAN, THE LIGHTING DESIGN REPRESENTS BOHLER'S UNDERSTANDING AND INTERPRETATION OF THE REGULATORY LIGHTING LEVELS INTENDED BY PUBLISHED STANDARDS.
12. UPON OWNER'S ACCEPTANCE OF THE COMPLETED PROJECT, THE OWNER SHALL BE RESPONSIBLE FOR ALL MAINTENANCE, SERVICING, REPAIR AND INSPECTION OF THE LIGHTING SYSTEM AND ALL OF ITS COMPONENTS AND RELATED SYSTEMS, TO ENSURE ADEQUATE LIGHTING LEVELS ARE PRESENT AND FUNCTIONING AT ALL TIMES.

NUMERIC SUMMARY

LABEL	CALC TYPE	UNITS	AVG	MAX	MIN	AVG/MIN	MAX/MIN
ALL POINTS	ILLUMINANCE	FC	1.26	12.7	0.0	N.A.	N.A.
LEFT PARKING LOT	ILLUMINANCE	FC	1.74	12.7	0.2	8.70	63.50
RIGHT PARKING LOT	ILLUMINANCE	FC	1.83	11.1	0.2	9.15	55.50
FRONT OF BUILDING	ILLUMINANCE	FC	3.20	10.3	0.4	8.00	25.75

LUMINAIRE SCHEDULE

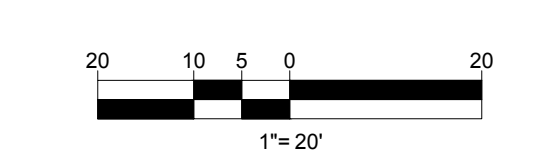
SYMBOL	QTY	MOUNTING HEIGHTS	ARRANGEMENT	LUMENS	LLF	DESCRIPTION
⊗ A	8	25'-0" AFG	SINGLE	13135	0.90	MRM-LED-12L-SIL-2-30-70CRI
⊗ B	8	12'-0" AFG	WALL MOUNTED	3063	0.90	XWS-LED-05L-FTW-40-80CRI
⊗ C	13	3'-6" AFG	BOLLARD	5454	0.90	MRB-LED-3L-ACR-5-40
⊗ D	3	25'-0" AFG	DOUBLE	26270	0.90	MRM-LED-12L-SIL-2-30-70CRI



NOTE: THIS DETAIL IS FOR BID AND BUDGETARY PURPOSES ONLY. CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING A FOUNDATION DESIGN PREPARED BY A QUALIFIED STRUCTURAL ENGINEER CONSIDERING LIGHTING MANUFACTURER REQUIREMENTS, LOCAL WIND LOADS AND SITE SPECIFIC SOIL PARAMETERS.

- SOME SITE CONDITIONS AND/OR LOCATIONS MAY REQUIRE VIBRATION DAMPENING MEASURES AS DETERMINED BY A STRUCTURAL ENGINEER.
- THE STRUCTURAL ENGINEER SHALL BE NOTIFIED OF THE INTENT TO MOUNT ANYTHING TO THE POLE, ASIDE FROM THE LIGHT FIXTURES, INCLUDING BUT NOT LIMITED TO CAMERAS, BANNERS, FLAGS, SIGNAGE, ETC. AS IT WILL IMPACT THE POLE AND FOUNDATION DESIGN.

THIS PLAN TO BE UTILIZED FOR LIGHTING PURPOSES ONLY



BOHLER

SITE CIVIL AND CONSULTING ENGINEERING
PROGRAM MANAGEMENT
LANDSCAPE ARCHITECTURE
SUSTAINABLE DESIGN
PERMITTING SERVICES
TRANSPORTATION SERVICES

REVISIONS

REV	DATE	COMMENT	DRAWN BY
1	08/30/2023		CMC EDJAK

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PROJECT No.: W211263
DRAWN BY: CMCLC
CHECKED BY: EDJAK
DATE: 08/30/2023
CAD ID: W211263-LIGHT-2B DWG

PRELIMINARY CIVIL ENGINEERING PLAN SET

FOR

KIG SILVERSTRAND WALPOLE, LLC

PROPOSED MULTI-FAMILY DEVELOPMENT
MAP 25, BLOCK 164, 165 & 166
981, 989 & 1015 EAST STREET
TOWN OF WALPOLE
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MASSACHUSETTS No. 1517
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NEW YORK No. 00269
NEW HAMPSHIRE No. 159
CONNECTICUT No. 1399
#00212672004

SHEET TITLE:

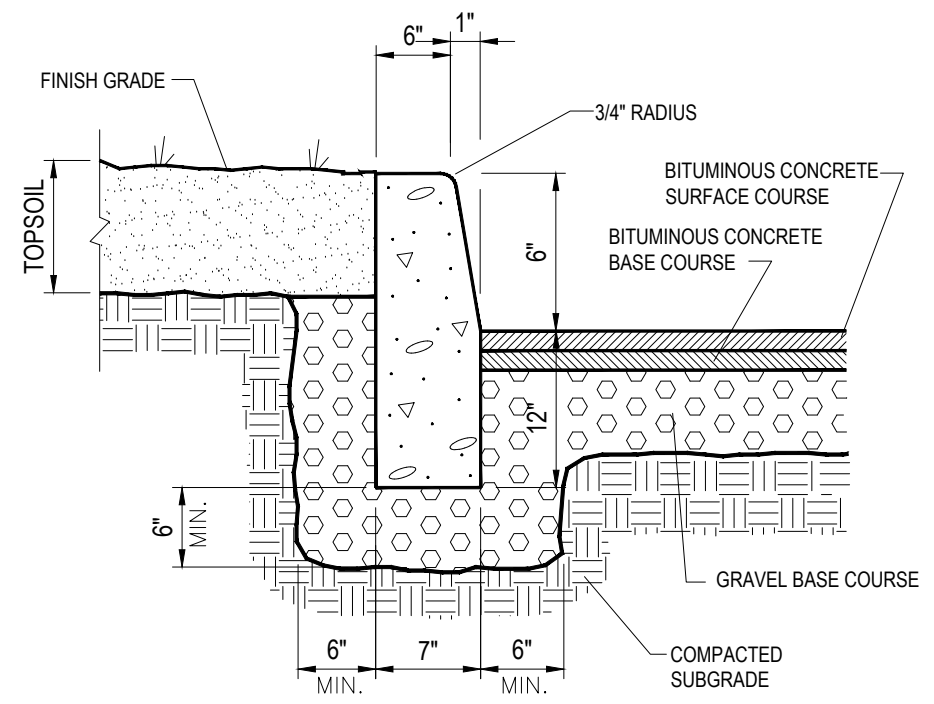
LIGHTING PLAN

SHEET NUMBER:

C-703

REVISION 1 - 08/30/2023

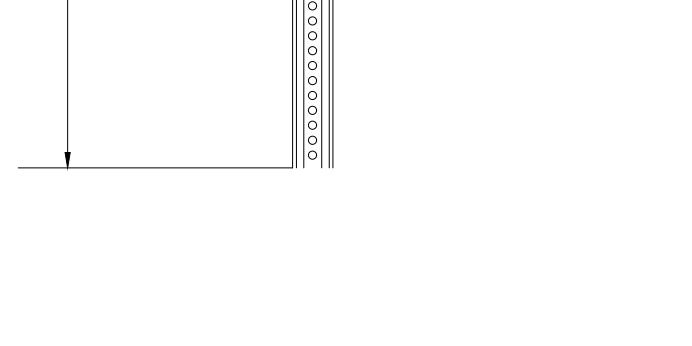
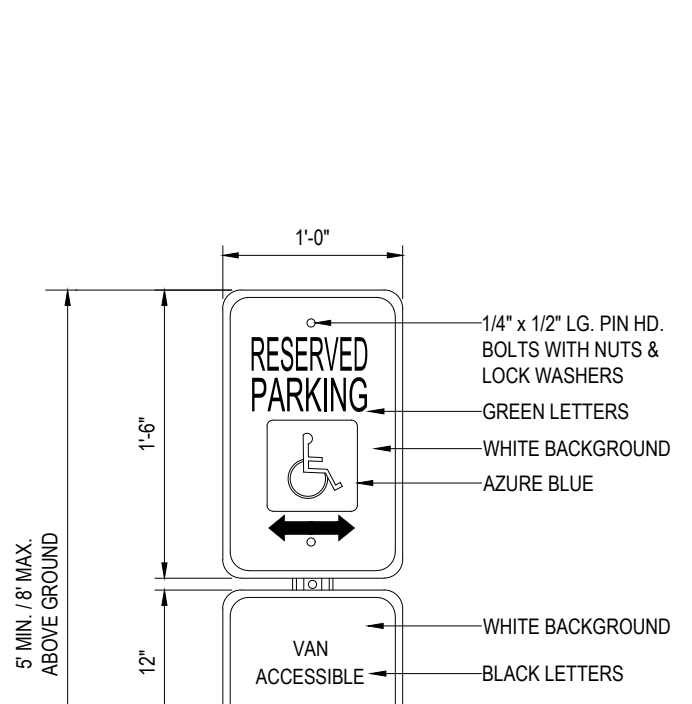
I:\BOHLER\NET\SHARES\MAP\PROJECTS\2023\CAD\DRAWINGS\PLAN SETS\CIVIL SITE PLAN\B211263-LIGHT-2B---LAYOUT-C-703-LIGHT



NOTES:
CURB SHALL CONSIST OF 4000 PSI AIR ENTRAINED CONCRETE. EXPOSED EDGES TO HAVE RUBBED FINISH AND SURFACE SHALL BE TREATED WITH A CONCRETE PENETRANT/SEALER.
THE ENDS OF CURB SECTIONS SHALL BE CHAMFERED 1/4 INCH.
THE CORNERS OF CURB SECTIONS SHALL MATCH THE ADJACENT CURB IN SIZE, COLOR AND FINISH.
CURBS, CURB CORNERS OR EDGING SHALL BE FITTED TOGETHER AS CLOSELY AS POSSIBLE.
EXPANSION JOINTS SHALL BE INSTALLED AT A MAXIMUM OF TWENTY FEET (20') ON CENTER USING PREFORMED EXPANSION JOINT FILLER HAVING A THICKNESS OF 1/2 INCH.

PRECAST CONCRETE CURB DETAIL

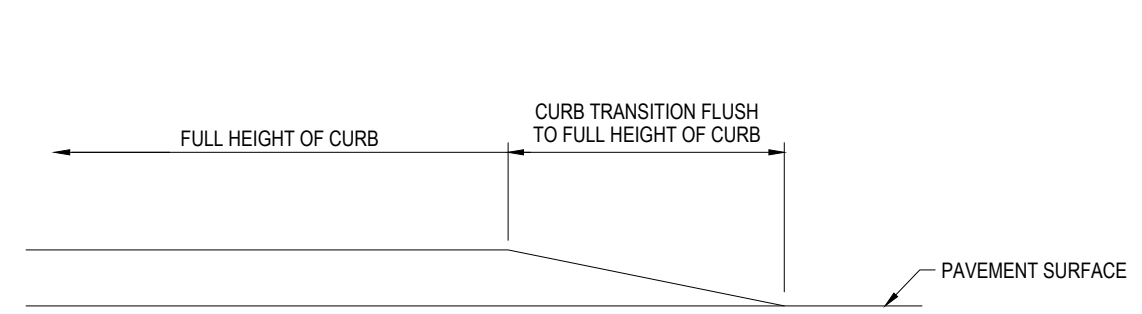
N.T.S.



NOTE: ALL TRAFFIC FLOW ARROWS TO BE REFLECTIVE WHITE PAINT PER SPECS.

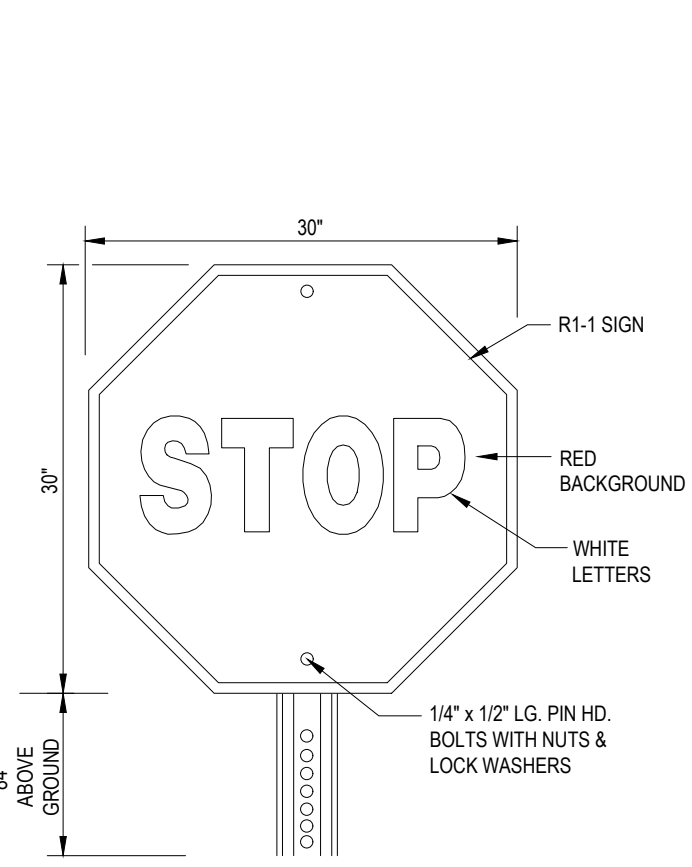
ACCESSIBLE PARKING SIGN DETAIL

N.T.S.



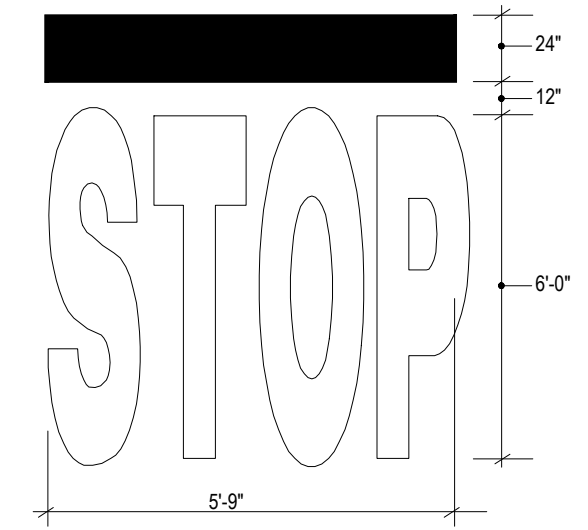
TRANSITION CURB DETAIL

N.T.S.



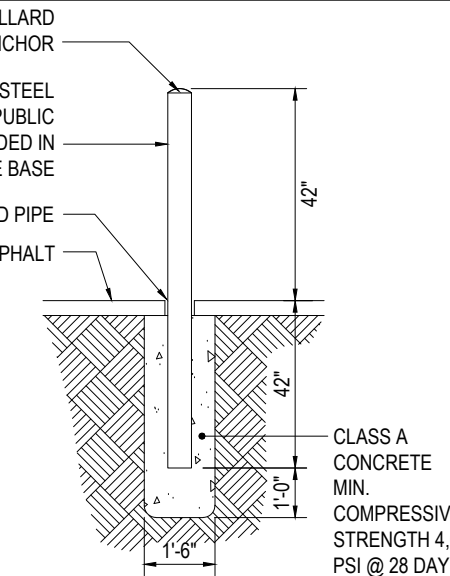
'STOP' SIGN

N.T.S.



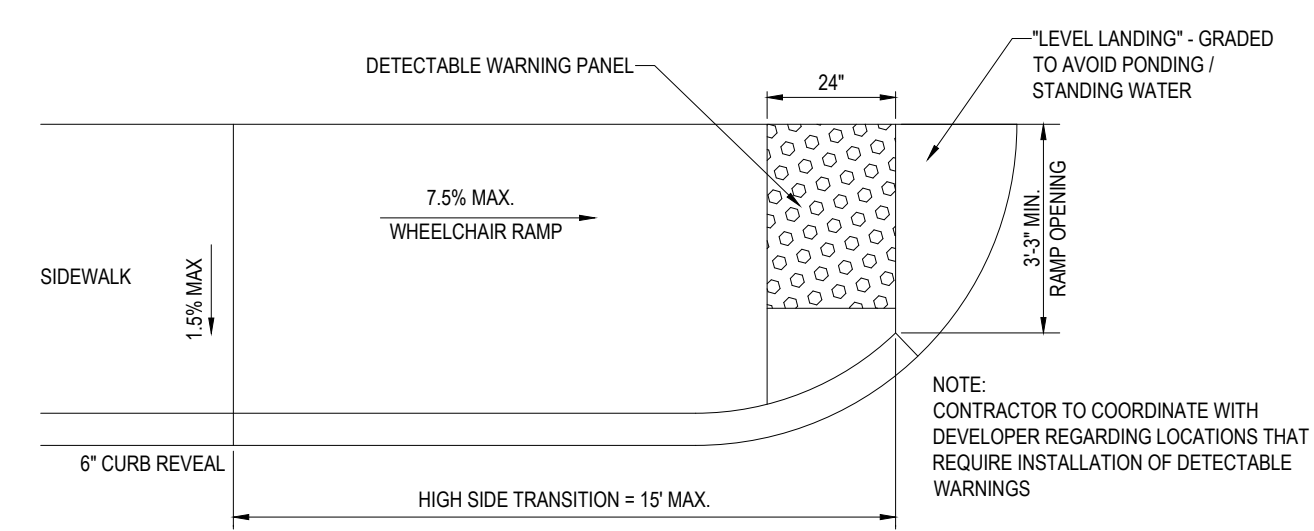
'STOP' BAR DETAIL

N.T.S.



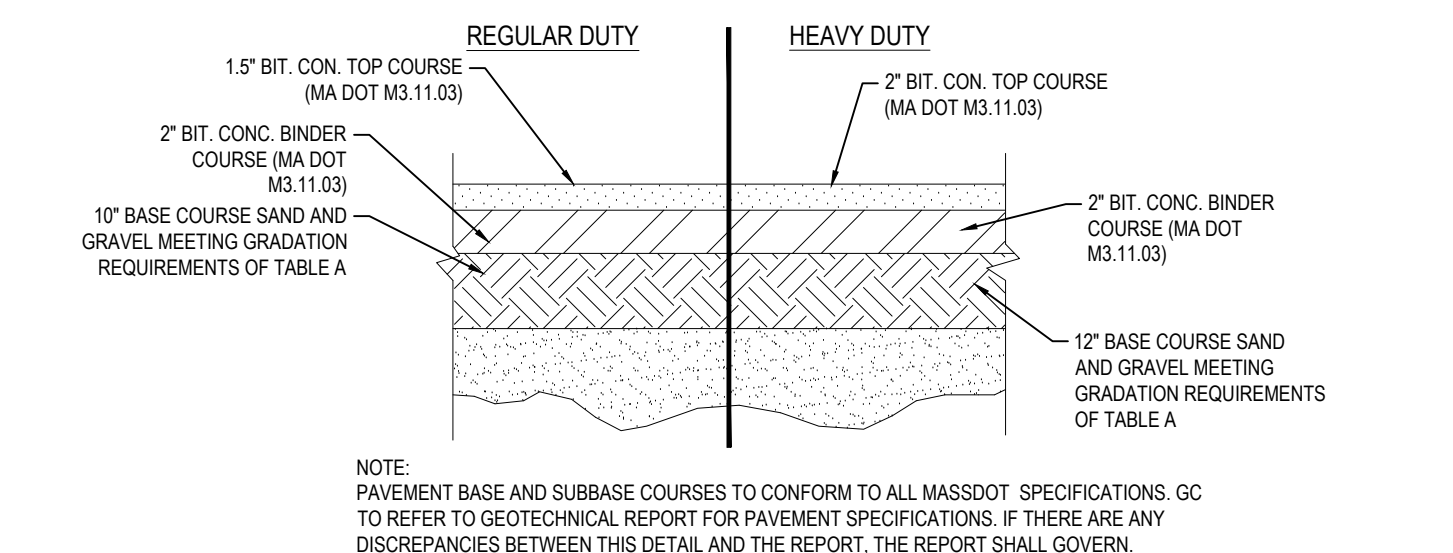
BOLLARD DETAIL

N.T.S.



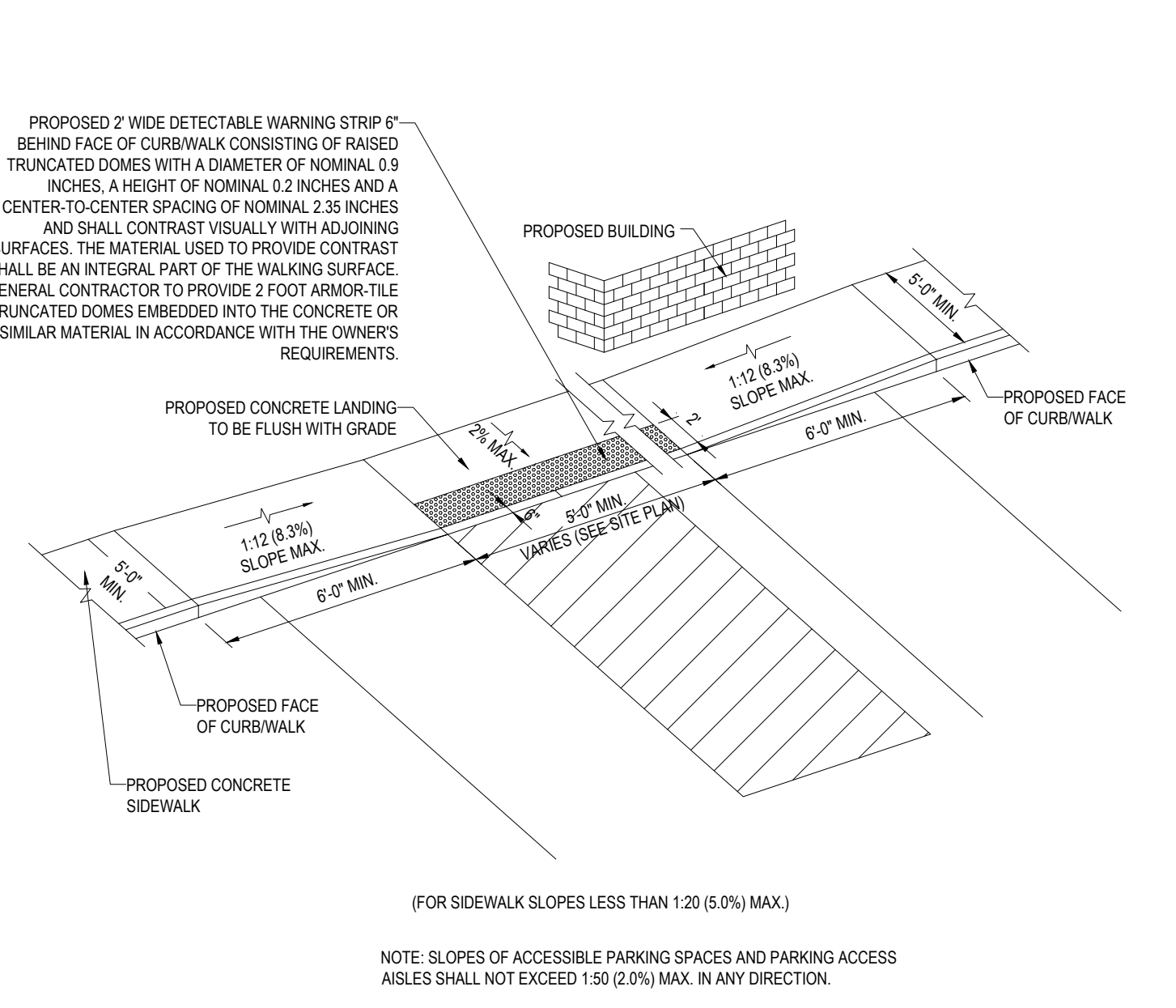
TYPICAL WHEELCHAIR RAMP

N.T.S.



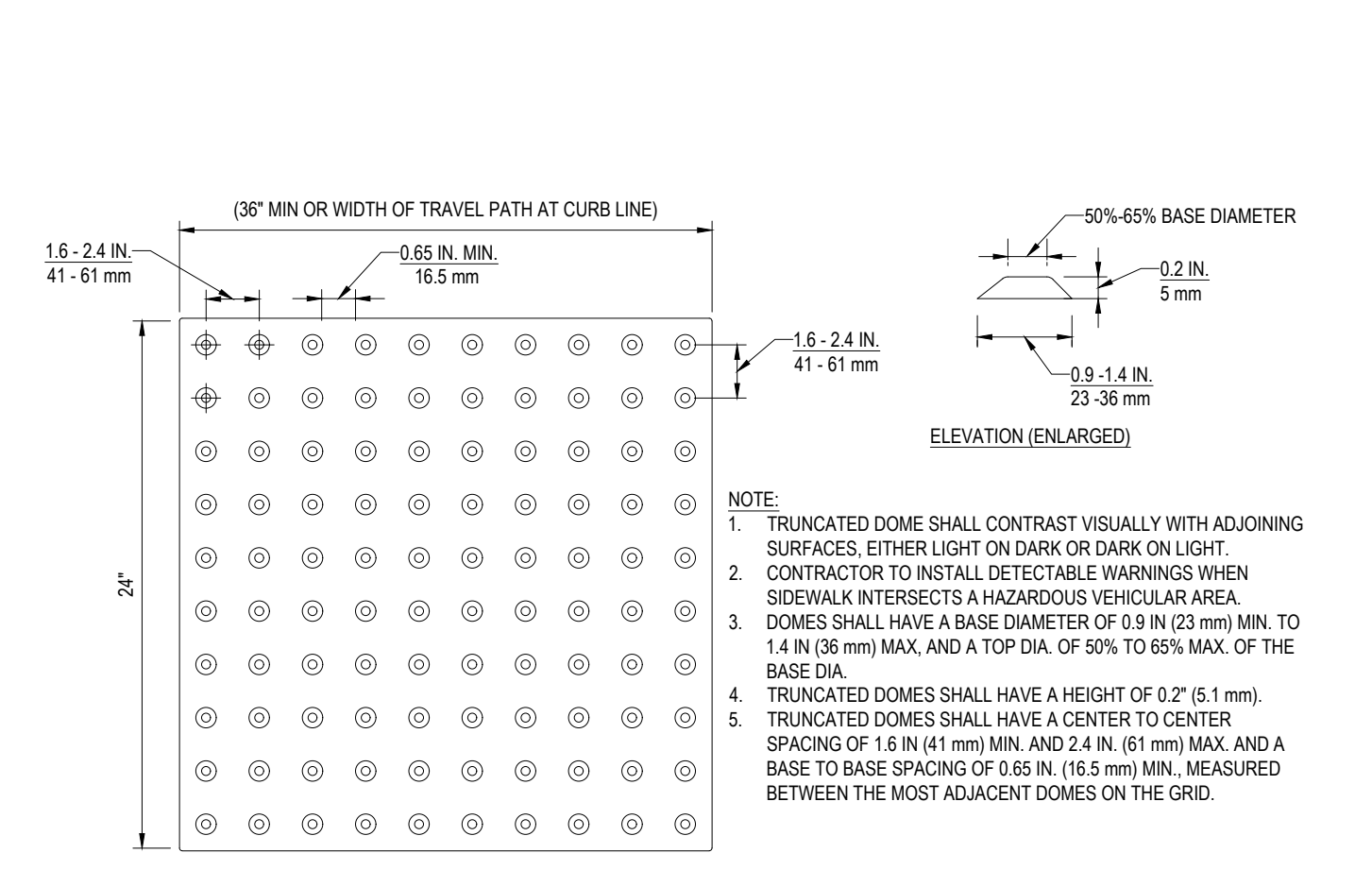
TYPICAL PAVEMENT SECTION

N.T.S.



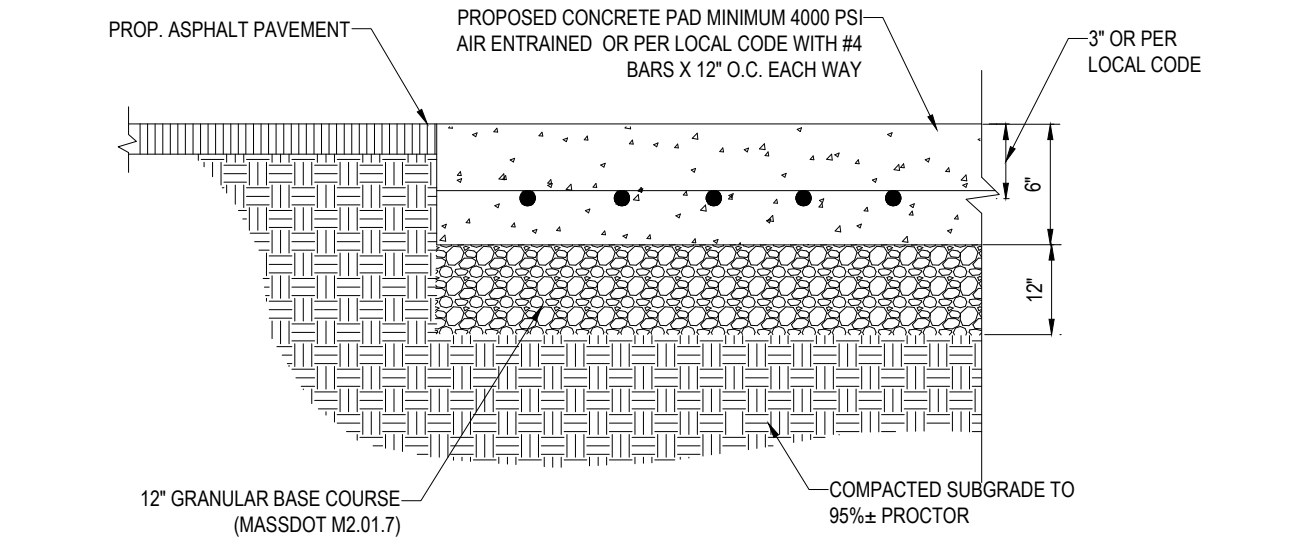
SLOPED WALK DETAIL

N.T.S.



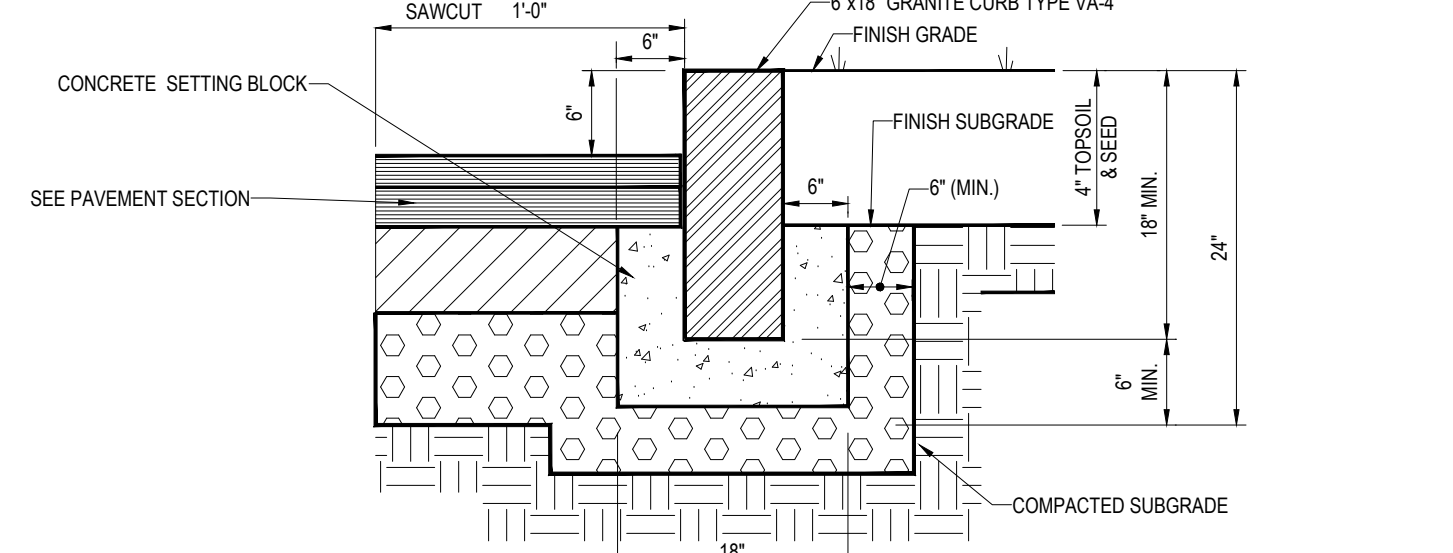
TRUNCATED DOME PATTERN

N.T.S.



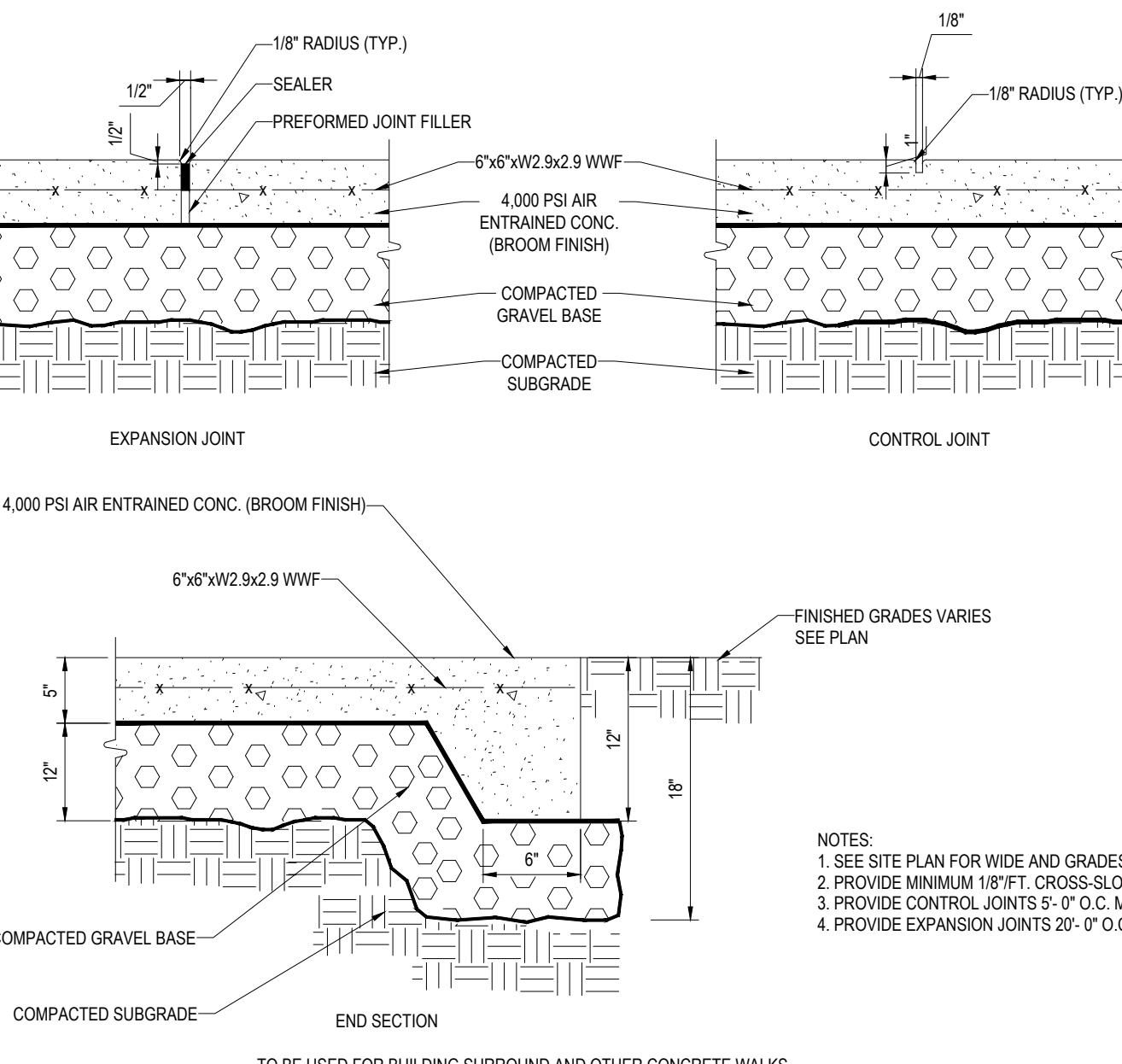
CONCRETE PAD DETAIL

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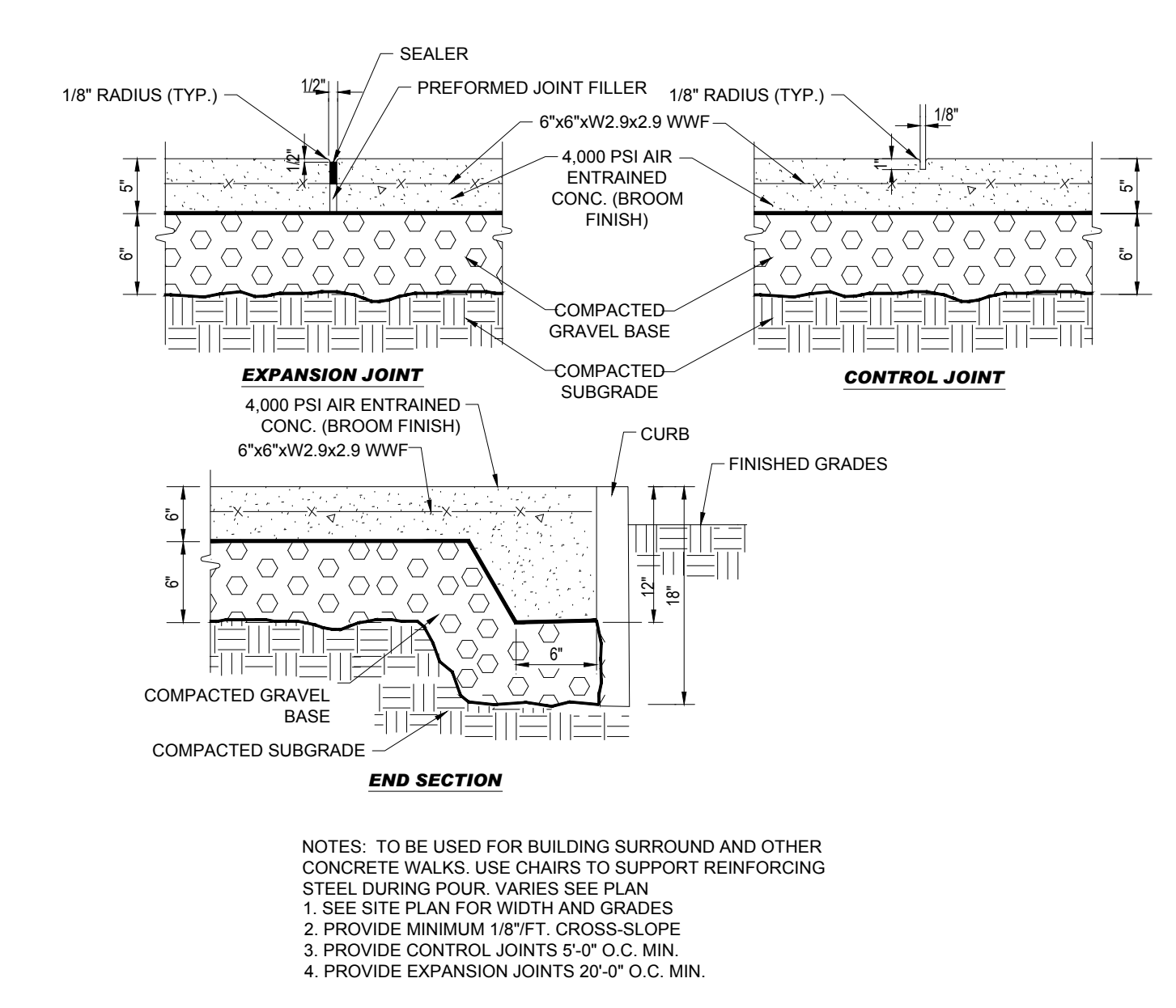
VERTICAL GRANITE CURB DETAIL

N.T.S.



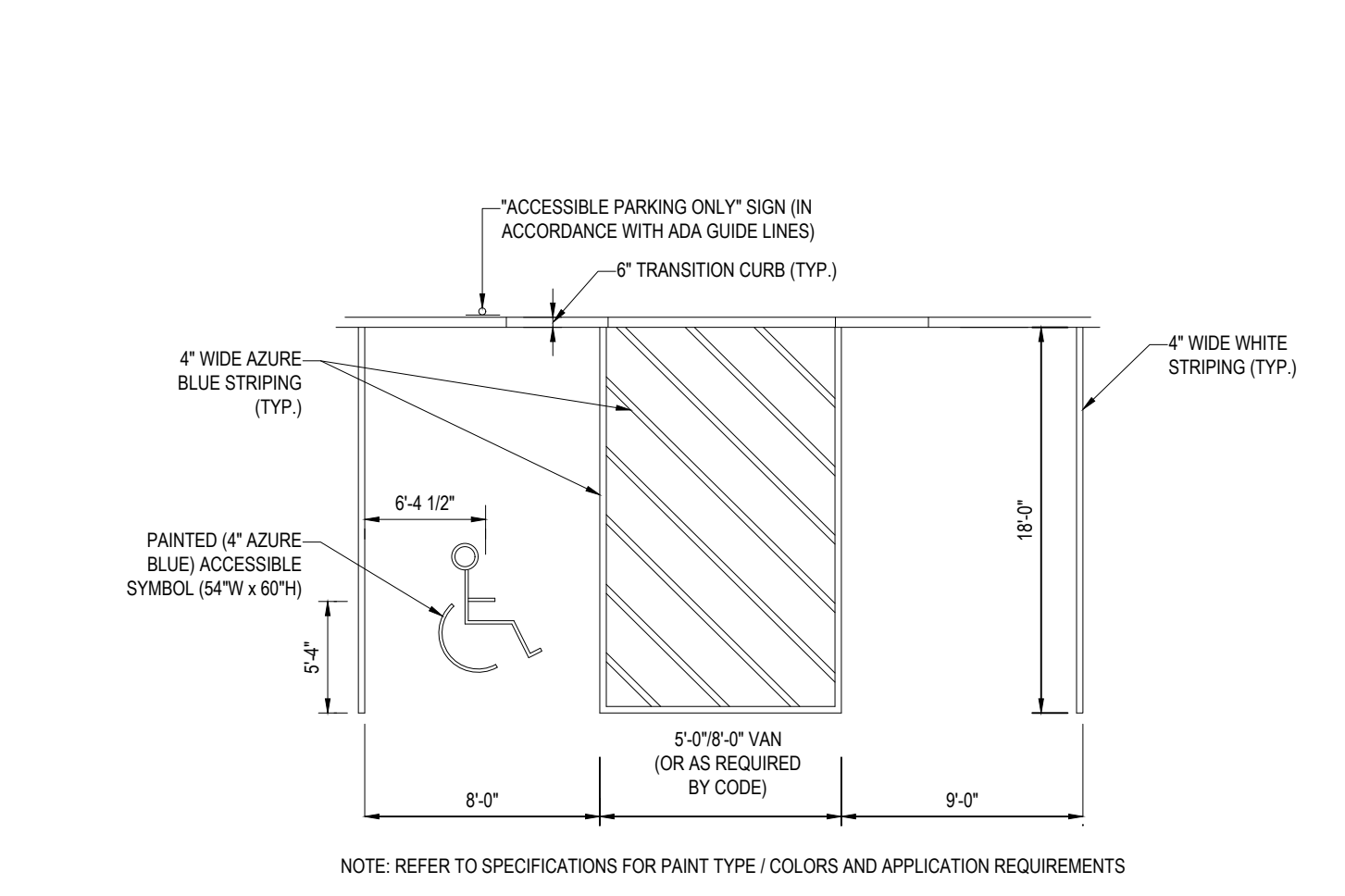
MONOLITHIC CONC. SIDEWALK DETAILS

N.T.S.



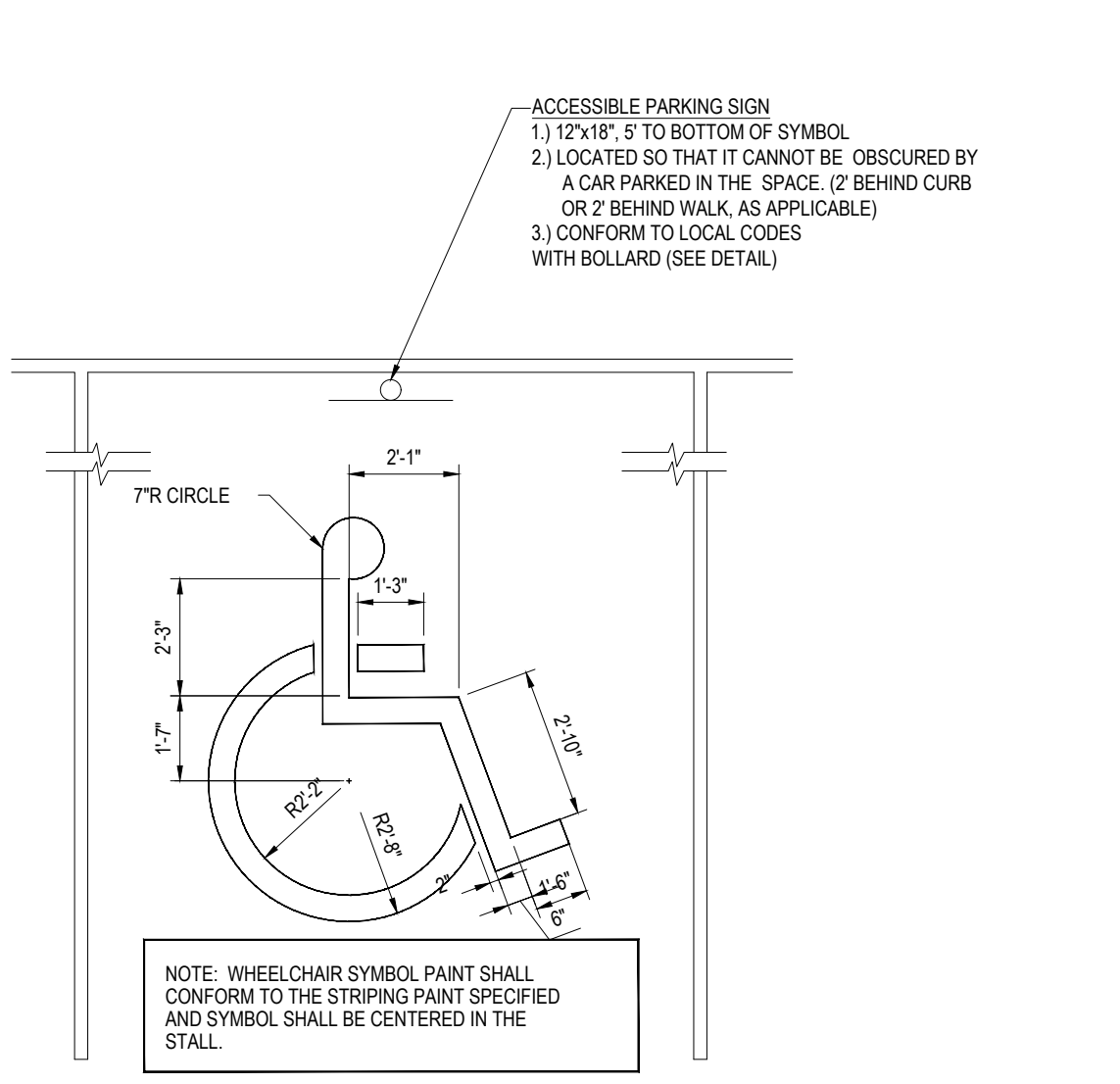
CONCRETE SIDEWALK

N.T.S.



ACCESSIBLE STALL MARKINGS & PARKING LOT STRIPING DETAIL

N.T.S.



ACCESSIBLE PARKING STALL PAINTING DETAIL

N.T.S.

BOHLER
SITE CIVIL AND CONSULTING ENGINEERING
PROGRAM MANAGEMENT
LANDSCAPE ARCHITECTURE
SUSTAINABLE DESIGN
PERMITTING SERVICES
TRANSPORTATION SERVICES

REVISIONS

REV	DATE	COMMENT	CHECKED BY
1	08/30/2023		CMC EDJ/ACK

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PROJECT NO.: W211263
DRAWN BY: CMC/LC
DATE: 08/12/23
CHECKED BY: EDJ/ACK
CAD ID: W211263-SPPD-2B DWG

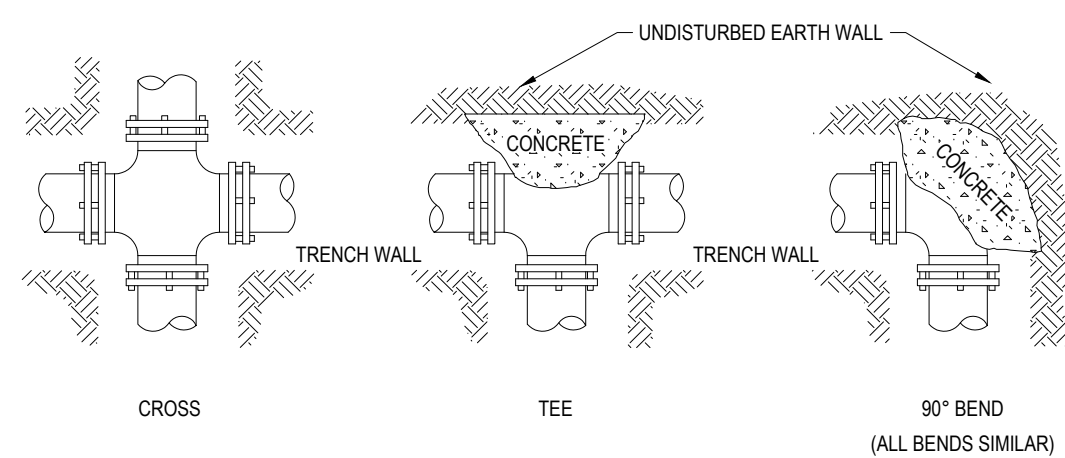
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FOR
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J.A. KUCICH
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CONNECTICUT LICENSE NO. 26177
RHODE ISLAND LICENSE NO. 3616
MAINE LICENSE NO. 12553

SHEET TITLE:
DETAIL SHEET
SHEET NUMBER:
C-901
REVISION 1 - 08/30/2023



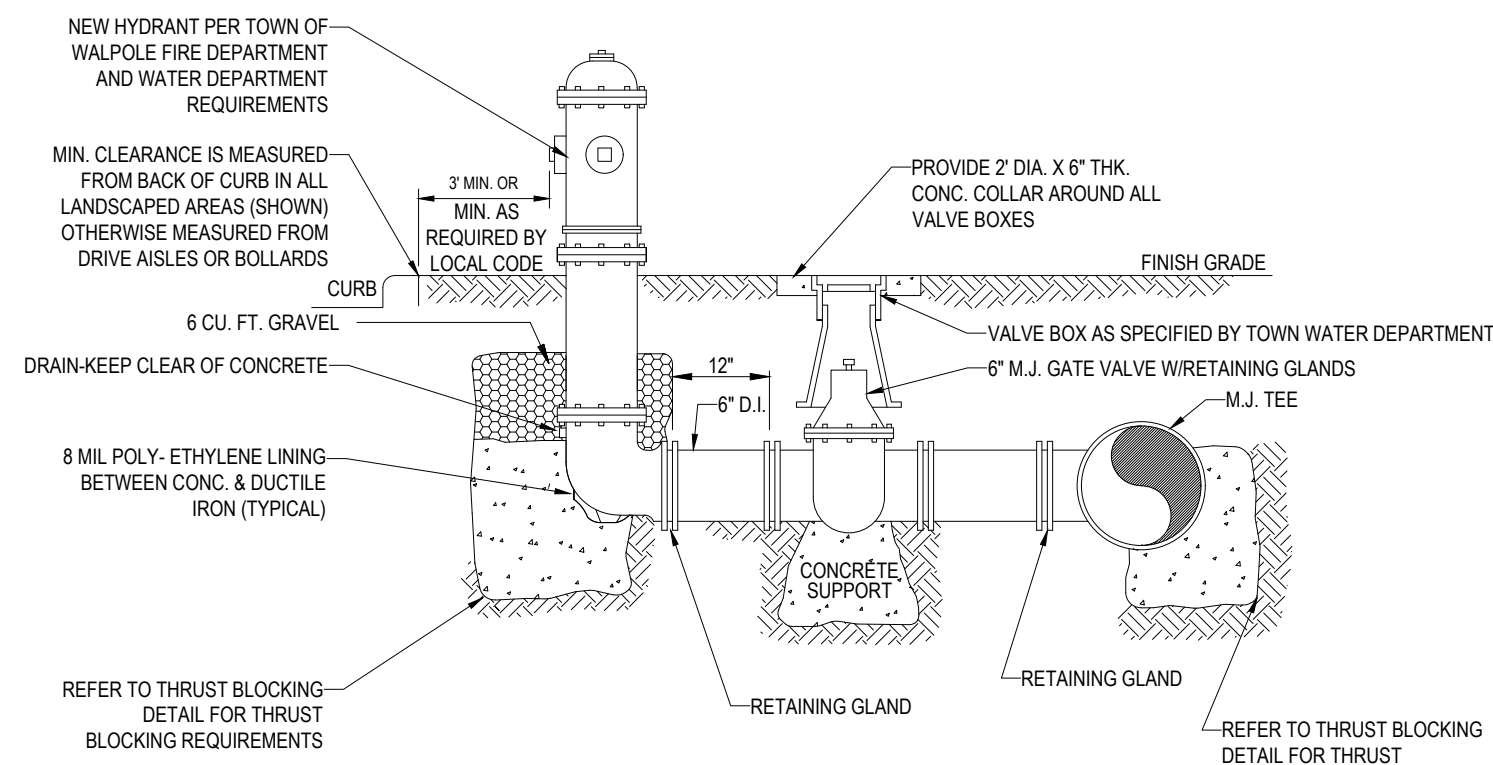
HORIZONTAL THRUST BLOCKING
(BLOCKING HEIGHT GREATER THAN PIPE O.D.)
(BLOCKING WIDTH BETWEEN 1 & 2 TIMES HEIGHT)
REQUIRED SQ. FT. OF UNDISTURBED EARTH WALL FOR REACTION BACKING

PIPE SIZE	TYPE OF FITTINGS			
	TEE & PLUG	BENDS		
3"	1.0	1.0	1.0	1.0
4"	1.0	1.0	1.0	1.0
6"	1.5	2.0	1.0	1.0
8"	2.5	3.5	1.8	1.0
10"	4.0	5.5	2.8	1.5
12"	6.0	8.0	4.0	2.0

- NOTE:
1. DO NOT COVER BELLS OR FLANGES WITH CONCRETE
2. WRAP ALL FITTINGS WITH VISQUEEN
3. BACK ALL TEES ACCORDING TO SIZE OF BRANCH
4. BACKING FUTURE LINE EXTENSIONS SHALL BE SUCH THAT LATER REMOVAL IS POSSIBLE
5. ALL BENDS WHERE FITTINGS ARE USED, BOTH HORIZONTAL OR VERTICAL SHALL BE BACKED
6. REACTION BACKING TABLE IS BASED ON 100 P.S.I. AND SOIL BEARING PRESSURE OF 2000 LB./SQ.FT.
7. ALL CONCRETE SHALL BE 2500 P.S.I.
8. 18" AND LARGER REQUIRES SPECIFIC ANTI-THRUST DESIGN.

HORIZONTAL THRUST BLOCKING DETAIL

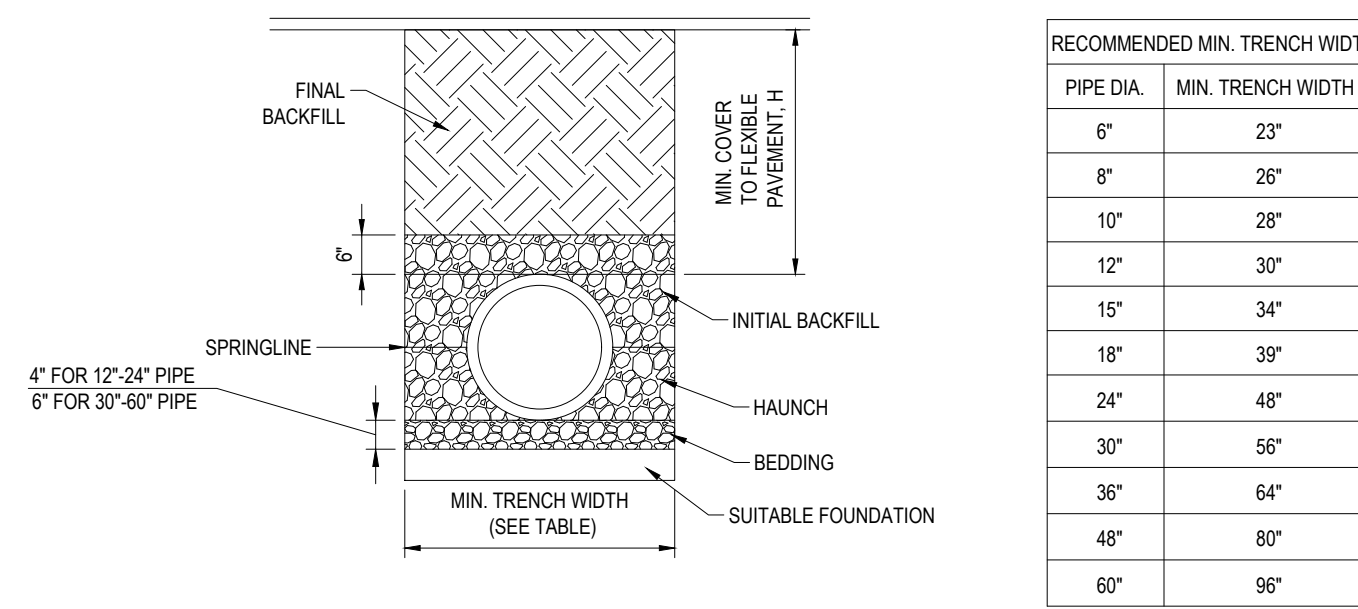
N.T.S.



- NOTE:
1. ALL HYDRANTS TO BE SET PLUMB W/ NOZZLE FACING STREET UNLESS OTHERWISE SPECIFIED BY FIRE DEPARTMENT.
2. ALL CONCRETE TO BE 2500 PSI P.C. CONCRETE.
3. FIRE HYDRANT ASSEMBLY INCLUDES GATE VALVE AND APPURTENANCES.

TYPICAL HYDRANT & VALVE INSTALLATION

N.T.S.



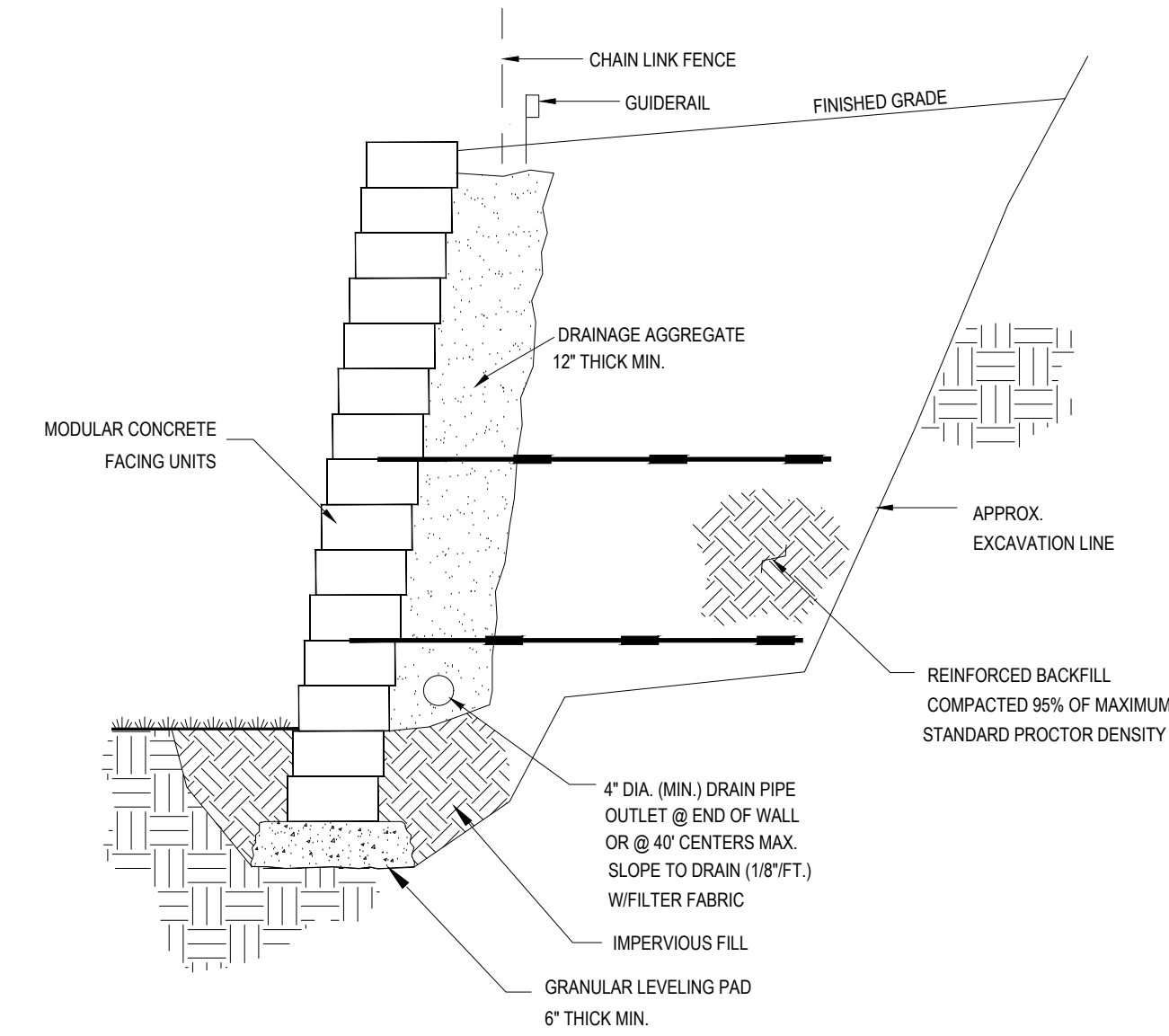
RECOMMENDED MIN. TRENCH WIDTH

PIPE DIA.	MIN. TRENCH WIDTH
6"	23"
8"	26"
10"	28"
12"	30"
15"	34"
18"	39"
24"	48"
30"	56"
36"	64"
48"	80"
60"	96"

- NOTES:
1. ALL PIPE SYSTEMS SHALL BE INSTALLED IN ACCORDANCE WITH ASTM D2321, "STANDARD PRACTICE FOR UNDERGROUND INSTALLATION OF THERMOPLASTIC PIPE FOR SEWERS AND OTHER GRAVITY FLOW APPLICATIONS", LATEST EDITION.
2. MEASURES SHOULD BE TAKEN TO PREVENT MIGRATION OF NATIVE FINES INTO BACKFILL MATERIAL, WHEN REQUIRED.
3. 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.
4. BEDDING: SUITABLE MATERIAL SHALL BE CLASS I, II OR III. THE CONTRACTOR SHALL PROVIDE DOCUMENTATION FOR MATERIAL SPECIFICATION TO ENGINEER. UNLESS OTHERWISE NOTED BY THE ENGINEER, MINIMUM BEDDING THICKNESS SHALL BE 4" (100mm) FOR 4" 24" (100mm-600mm), 6" (150mm) FOR 30"-60" (750mm-900mm).
5. INITIAL BACKFILL: SUITABLE MATERIAL SHALL BE CLASS I, II OR III IN THE PIPE ZONE EXTENDING NOT LESS THAN 6' 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.
6. MINIMUM COVER: MINIMUM COVER, H, IN NON-TRAFFIC APPLICATIONS (GRASS OR LANDSCAPE AREAS) IS 12" FROM THE TOP OF PIPE TO GROUND SURFACE. ADDITIONAL COVER MAY BE REQUIRED TO PREVENT FLOATATION. FOR TRAFFIC APPLICATIONS, MINIMUM COVER, H, IS 12" UP TO 48" DIAMETER PIPE AND 24" OF COVER FOR 54"-60" DIAMETER PIPE. MEASURED FROM TOP OF PIPE TO BOTTOM OF FLEXIBLE PAVEMENT OR TO TOP OF RIGID PAVEMENT.

HDPE STORM DRAINAGE TRENCH

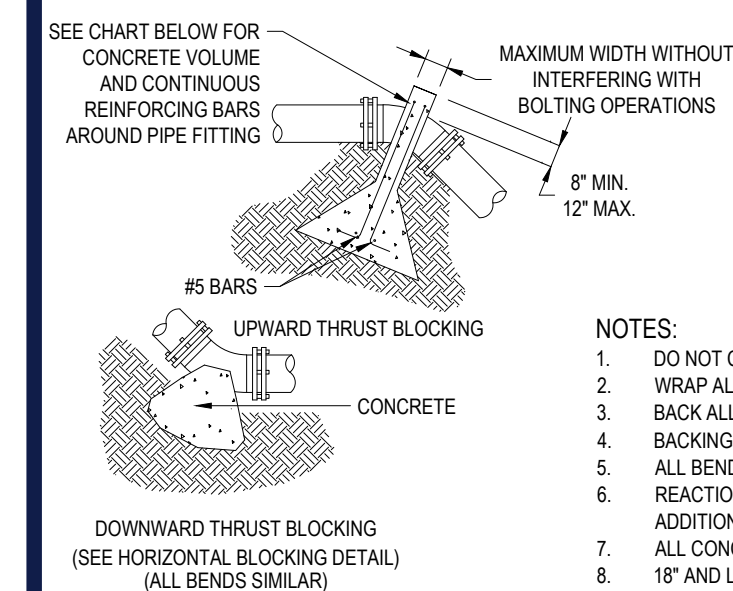
N.T.S.



NOTE: DETAIL IS SHOWN FOR ILLUSTRATIVE PURPOSES ONLY. CONTRACTOR SHALL OBTAIN STAMPED ENGINEER WALL DESIGN BY WALL MANUFACTURER.

TYPICAL SECTION REINFORCED RETAINING WALL

N.T.S.



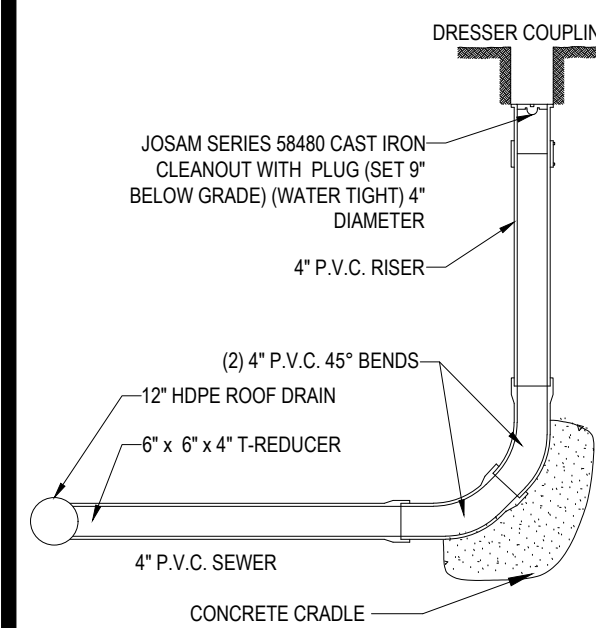
UPWARD THRUST BLOCKING
(REQUIRED REINFORCING BARS & CUBIC YARDS OF P.C. CONCRETE)

PIPE SIZE	90° BEND				45° BEND				22 1/2° BEND				11 1/4° BEND				
	CONC. C.Y.	REINF. QTY.	SIZE	REIN. QTY.	CONC. C.Y.	REINF. QTY.	SIZE	REIN. QTY.	CONC. C.Y.	REINF. QTY.	SIZE	CONC. C.Y.	REINF. QTY.	SIZE	CONC. C.Y.	REINF. QTY.	SIZE
6"	1.5	3	5	1.5	3	5	1.25	2	5	1.25	2	5	2	5	5	2	5
8"	2	3	5	2	3	5	1.5	2	5	1.5	2	5	2	5	5	2	5
10"	2.5	3	5	2.5	3	5	2	3	5	2	3	5	2	3	5	2	3
12"	3	3	5	3	3	5	2.5	3	5	2.5	3	5	2.5	3	5	2.5	3

- NOTE:
1. DO NOT COVER BELLS OR FLANGES WITH CONCRETE
2. WRAP ALL FITTINGS WITH VISQUEEN
3. BACK ALL TEES ACCORDING TO SIZE OF BRANCH
4. BACKING FUTURE LINE EXTENSIONS SHALL BE SUCH THAT LATER REMOVAL IS POSSIBLE
5. ALL BENDS WHERE FITTINGS ARE USED, BOTH HORIZONTAL OR VERTICAL SHALL BE BACKED
6. REACTION BACKING TABLE IS BASED ON 100 P.S.I. AND SOIL BEARING PRESSURE OF 2000 LB./SQ.FT.
7. ALL CONCRETE SHALL BE 2500 P.S.I.
8. 18" AND LARGER REQUIRES SPECIFIC ANTI-THRUST DESIGN.

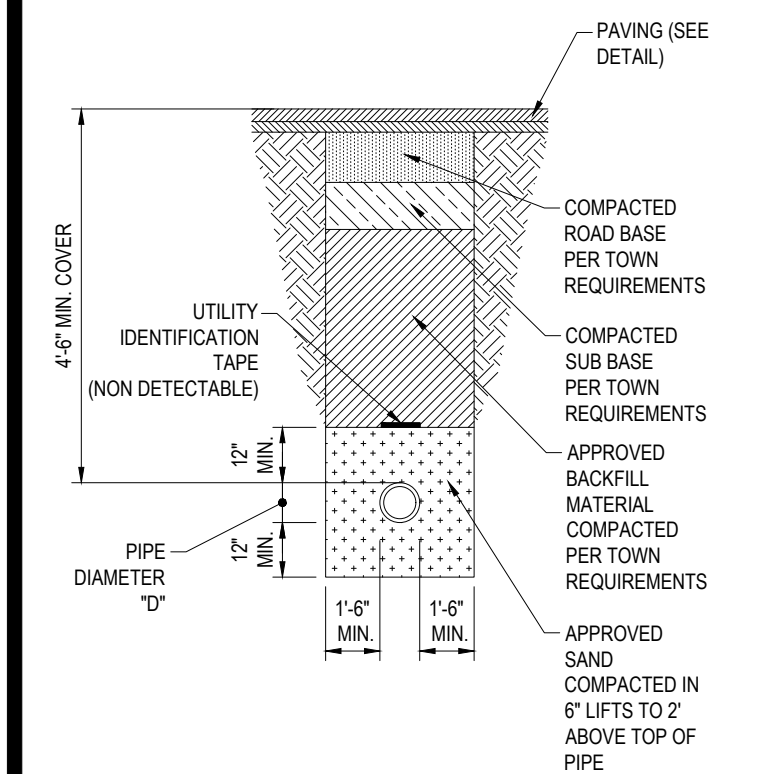
VERTICAL THRUST BLOCKING DETAIL

N.T.S.



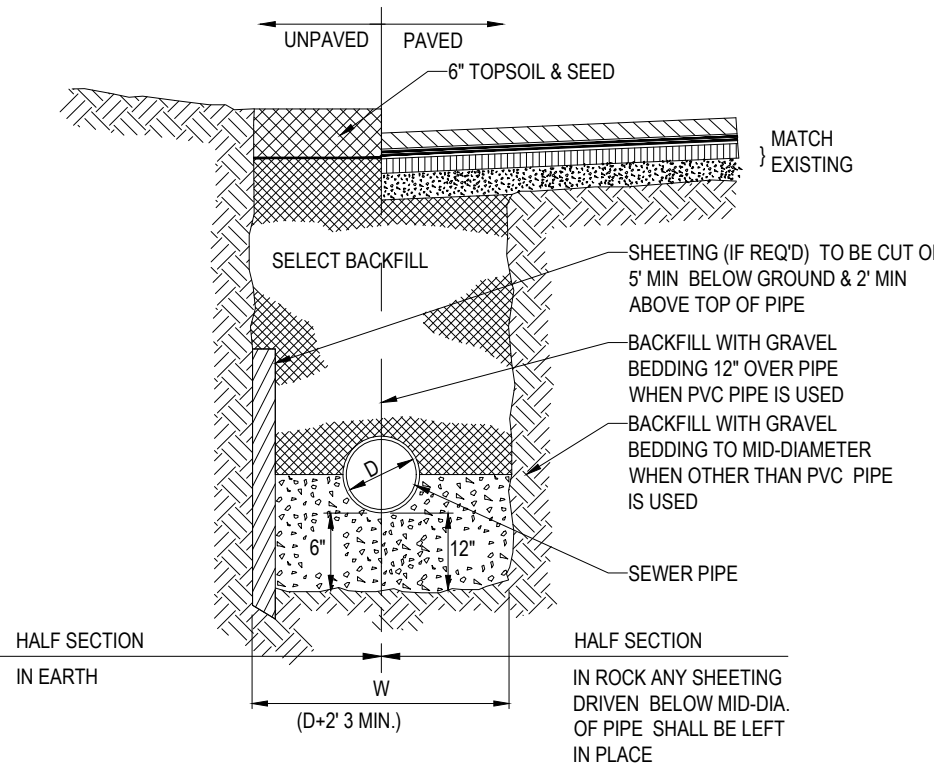
CLEANOUT DETAIL

N.T.S.



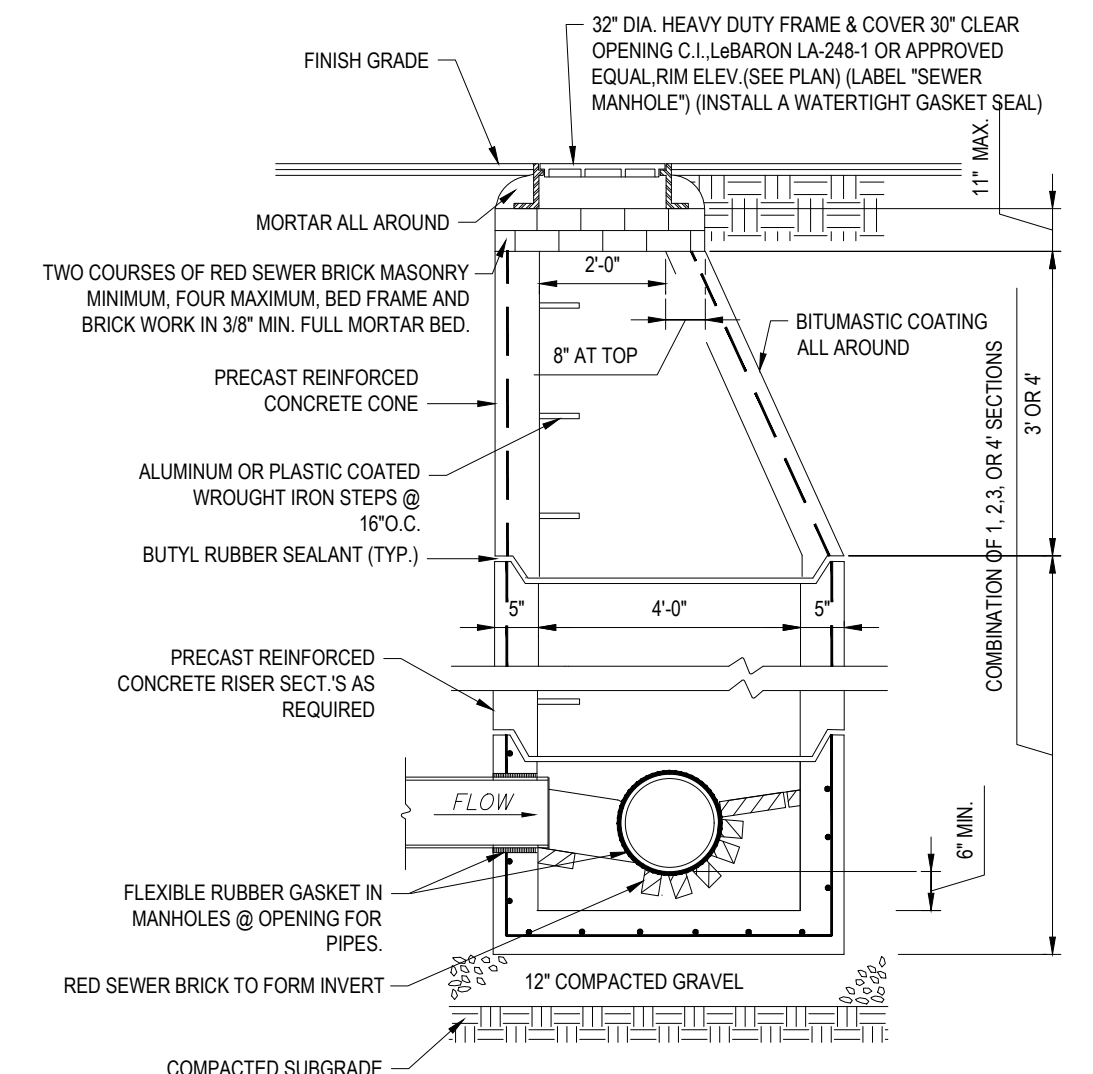
TYPICAL WATER TRENCH

N.T.S.



TYPICAL UTILITY TRENCH

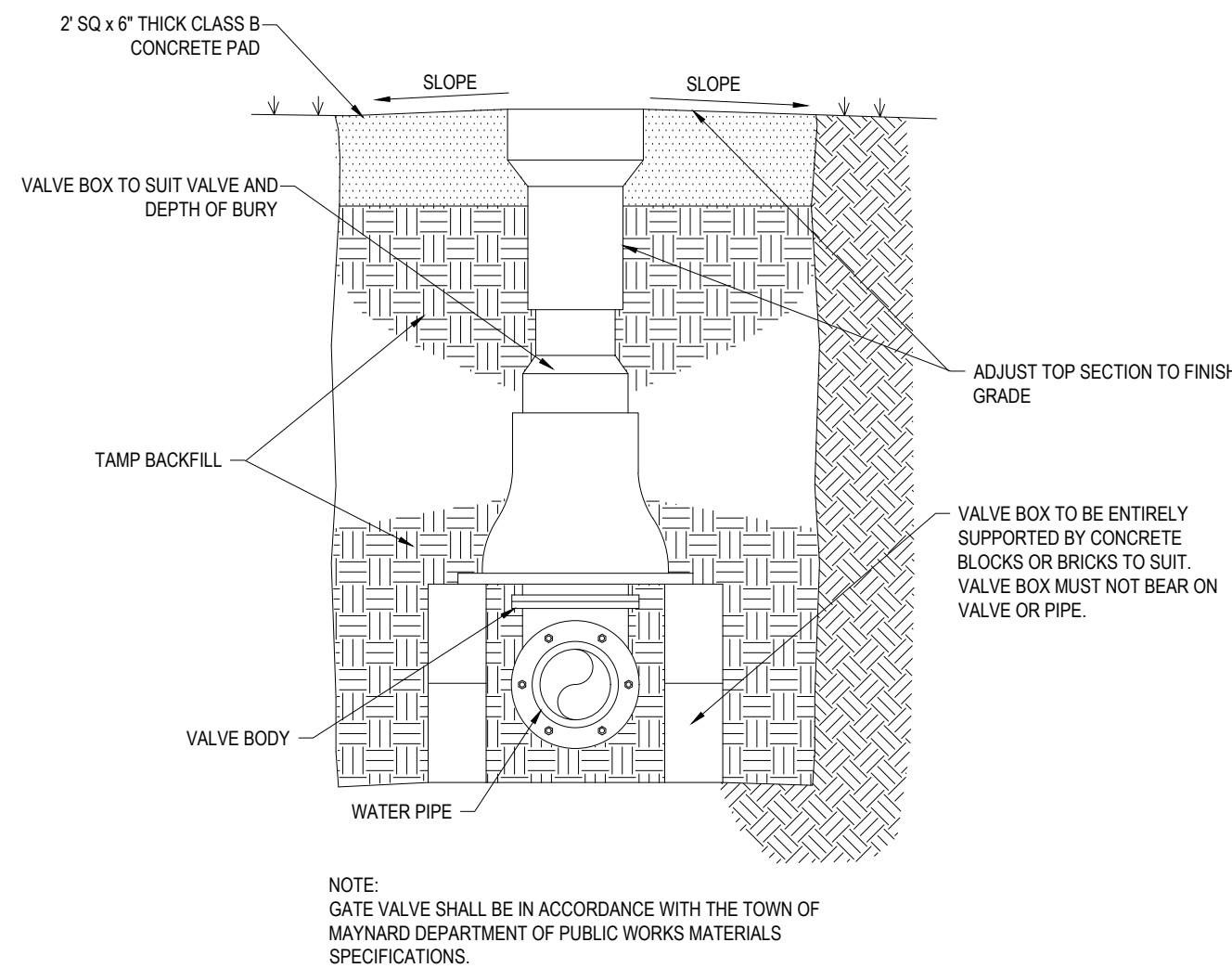
N.T.S.



NOTE: ALL STRUCTURES SHALL BE SUITABLE FOR H-20 LOADING AND SHALL MEET THE REQUIREMENTS OF ASTM C478.

TYP. PRECAST CONCRETE SANITARY MANHOLE

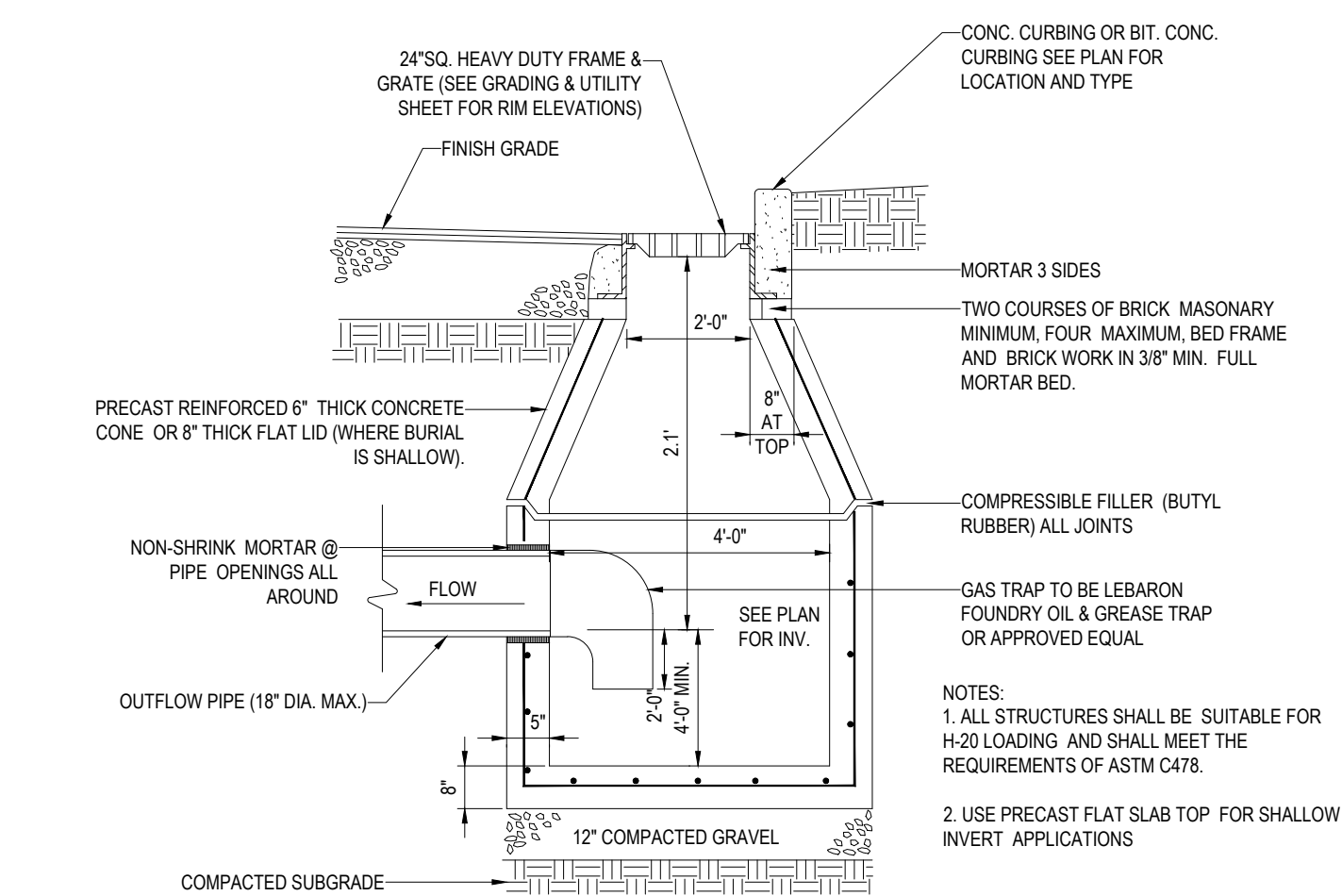
N.T.S.



NOTE: GATE VALVE SHALL BE IN ACCORDANCE WITH THE TOWN OF MAYNARD DEPARTMENT OF PUBLIC WORKS MATERIALS SPECIFICATIONS.

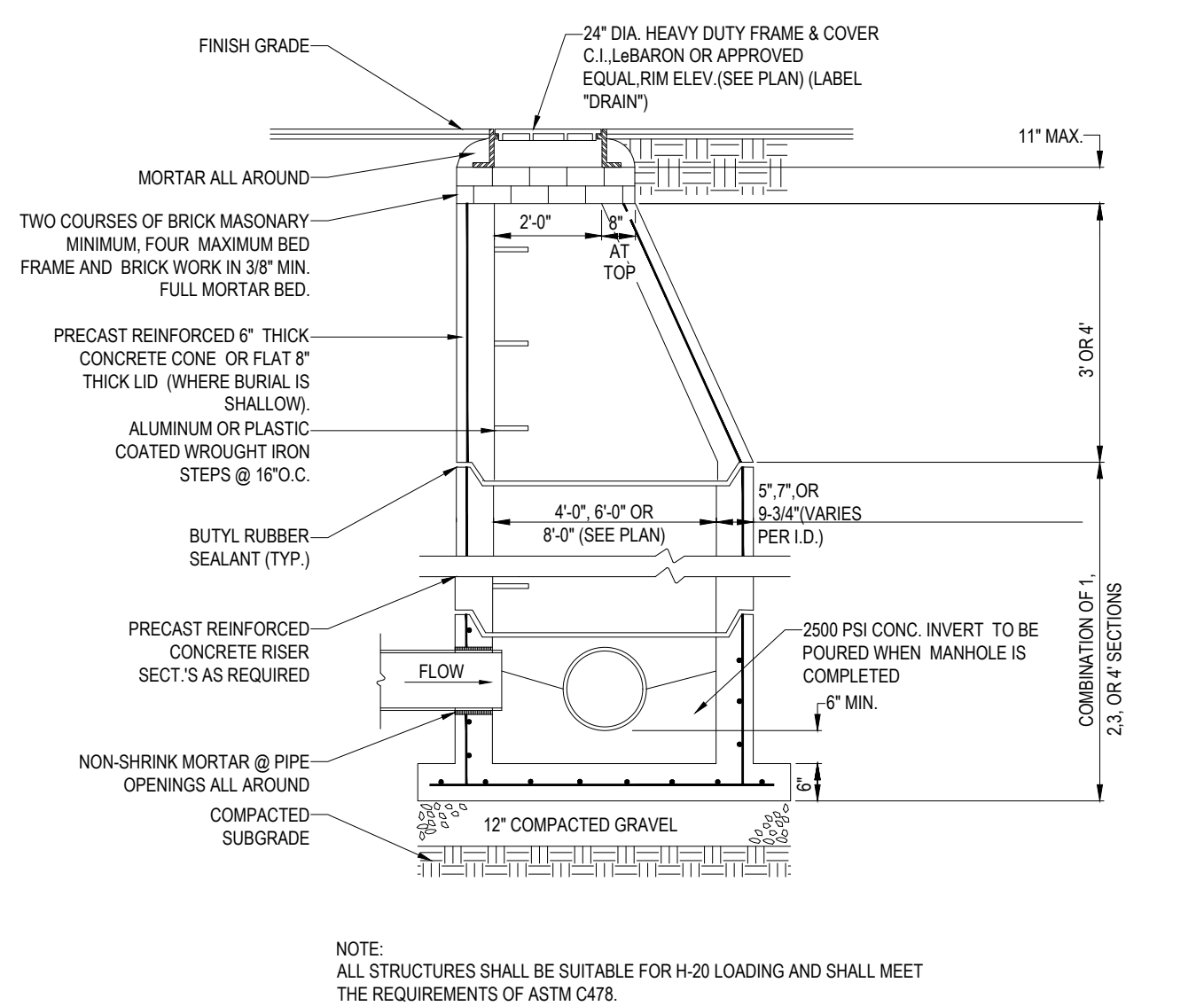
GATE VALVE

N.T.S.



PRECAST CONCRETE DEEP SUMP CATCH BASIN DETAIL

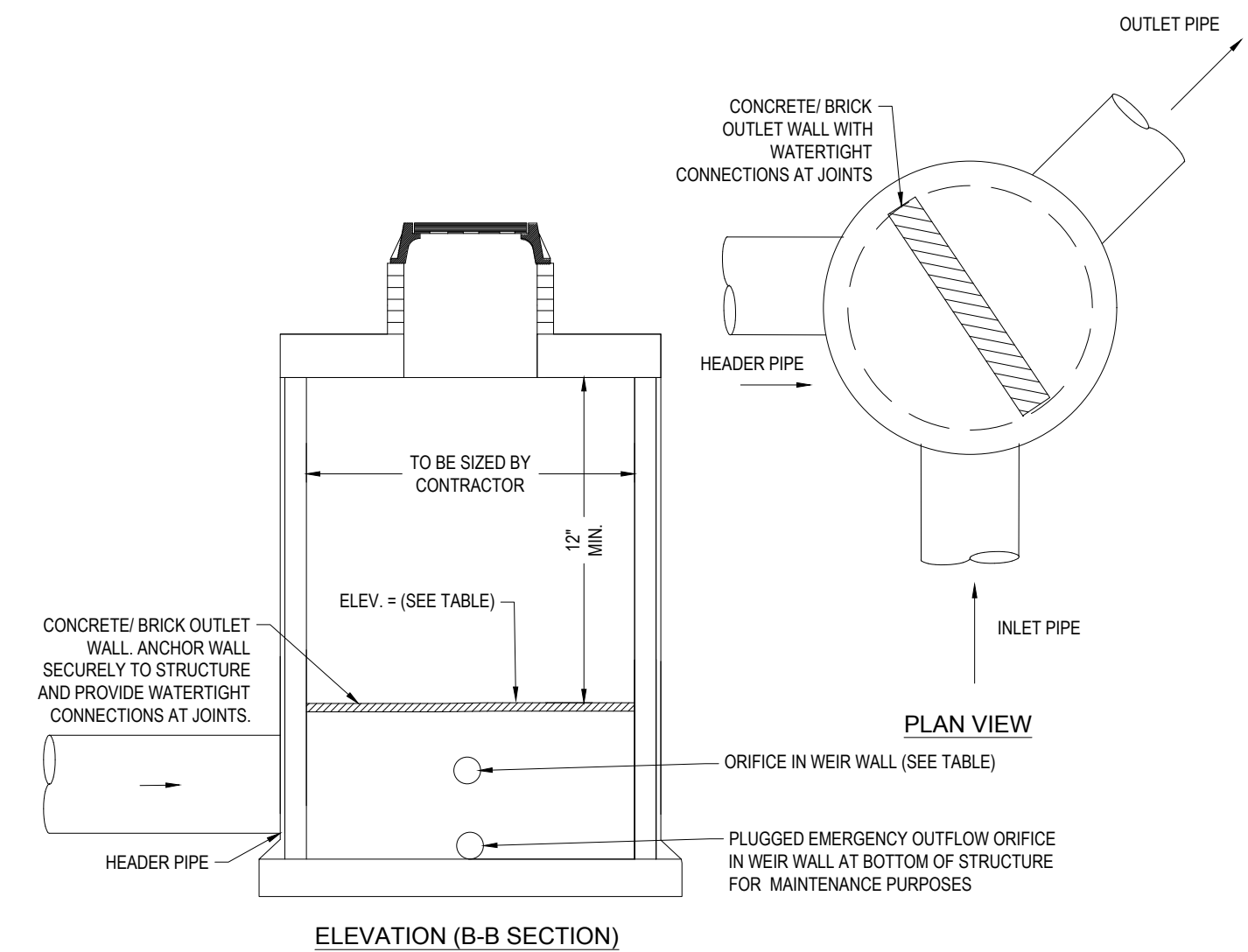
N.T.S.



NOTE: ALL STRUCTURES SHALL BE SUITABLE FOR H-20 LOADING AND SHALL MEET THE REQUIREMENTS OF ASTM C478.

TYP. PRECAST CONCRETE STORM DRAIN

N.T.S.



SUBSURFACE SYSTEM OUTLET CONTROL STRUCTURE DETAIL

N.T.S.

BOHLER
SITE CIVIL AND CONSULTING ENGINEERING
PROGRAM MANAGEMENT
LANDSCAPE ARCHITECTURE
SUSTAINABLE DESIGN
PERMITTING SERVICES
TRANSPORTATION SERVICES

REVISIONS

REV	DATE	COMMENT	CHECKED BY	DRAWN BY
1	08/30/2023		CMC	EDJ/AK

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PROJECT No.: W211263
DRAWN BY: CMC/LC
CHECKED BY: EDJ/AK
DATE: 08/30/2023
CAD ID: W211263-SPPD-2B DWG

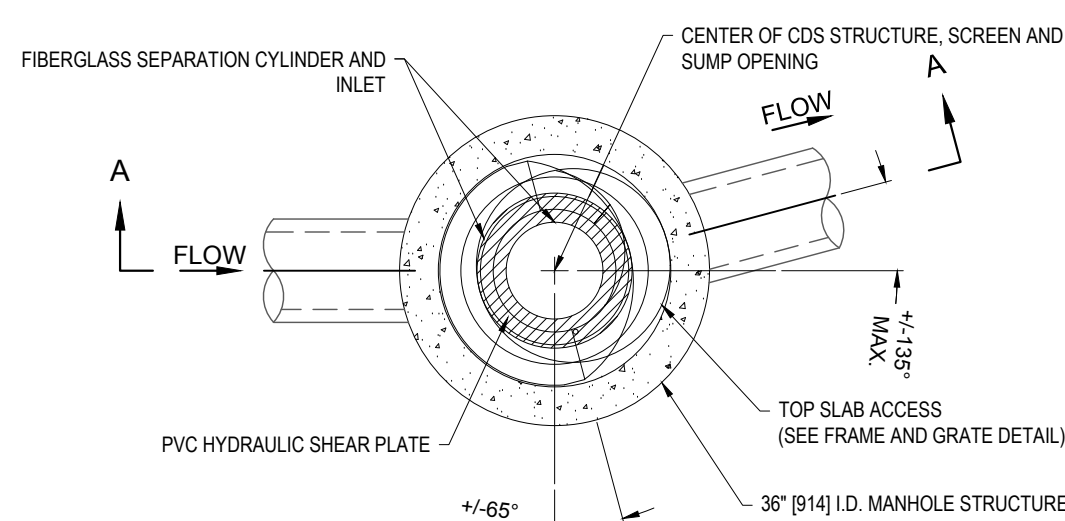
PROJECT:
PRELIMINARY CIVIL ENGINEERING PLAN SET
FOR
KIG SILVERSTRAND WALPOLE, LLC

PROPOSED MULTI-FAMILY DEVELOPMENT
MAP 25, BLOCK 164, 165 & 166
981, 989 & 1015 EAST STREET
TOWN OF WALPOLE
NORFOLK COUNTY,
MASSACHUSETTS

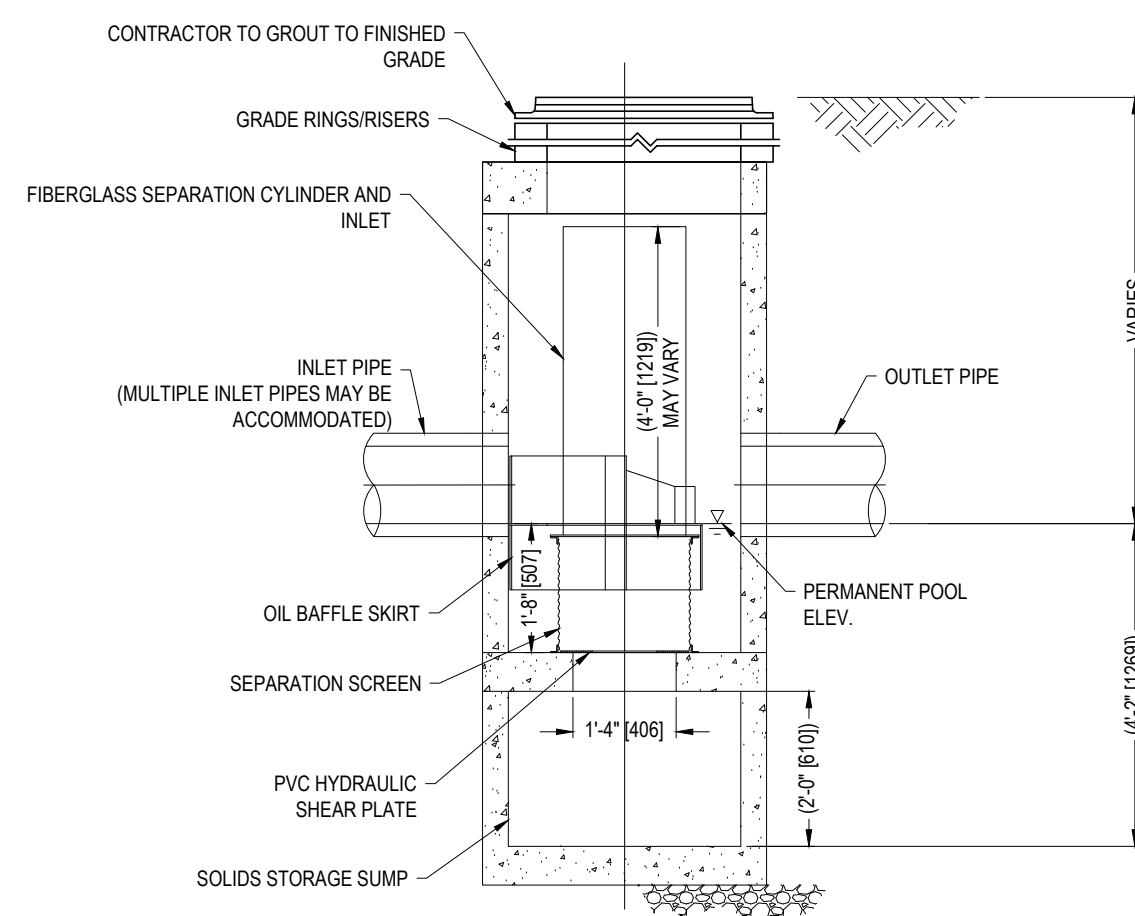
BOHLER
352 TURNPIKE ROAD
SOUTHBOROUGH, MA 01772
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www.BohlerEngineering.com

J.A. KUCICH
PROFESSIONAL ENGINEER
MASSACHUSETTS LICENSE No. 41530
NEW HAMPSHIRE LICENSE No. 15476
CONNECTICUT LICENSE No. 26177
RHODE ISLAND LICENSE No. 3616
MAINE LICENSE No. 12553

SHEET TITLE:
DETAIL SHEET
SHEET NUMBER:
C-902
REVISION 1 - 08/30/2023



PLAN VIEW B-B
N.T.S.



ELEVATION A-A
N.T.S.

CDS1515-3-C DESIGN NOTES	
CDS1515-3-C RATED TREATMENT CAPACITY IS 1.0 CFS, OR PER LOCAL REGULATIONS.	
THE STANDARD CDS1515-3-C CONFIGURATION IS SHOWN.	

SITE SPECIFIC DATA REQUIREMENTS			
STRUCTURE ID			
WATER QUALITY FLOW RATE (CFS OR L/s)			
PEAK FLOW RATE (CFS OR L/s)			
RETURN PERIOD OF PEAK FLOW (YRS)			
SCREEN APERTURE (2400 OR 4700)			
PIPE DATA	I.E.	MATERIAL	DIAMETER
INLET PIPE 1	*	*	*
INLET PIPE 2	*	*	*
OUTLET PIPE	*	*	*
RIM ELEVATION			
ANTI-FLOTATION BALLAST	WIDTH	HEIGHT	
NOTES/SPECIAL REQUIREMENTS:			
* PER ENGINEER OF RECORD			

- GENERAL NOTES
- CONTECH TO PROVIDE ALL MATERIALS UNLESS NOTED OTHERWISE.
 - FOR SITE SPECIFIC DRAWINGS WITH DETAILED STRUCTURE DIMENSIONS AND WEIGHT, PLEASE CONTACT YOUR CONTECH ENGINEERED SOLUTIONS LLC REPRESENTATIVE. www.ContechES.com
 - CDS WATER QUALITY STRUCTURE SHALL BE IN ACCORDANCE WITH ALL DESIGN DATA AND INFORMATION CONTAINED IN THIS DRAWING. CONTRACTOR TO CONFIRM STRUCTURE MEETS REQUIREMENTS OF PROJECT.
 - STRUCTURE SHALL MEET AASHTO HS20 LOAD RATING, ASSUMING EARTH COVER OF 0'-2" AND GROUNDWATER ELEVATION AT OR BELOW THE OUTLET PIPE INVERT ELEVATION. ENGINEER OF RECORD TO CONFIRM ACTUAL GROUNDWATER ELEVATION. CASTINGS SHALL MEET AASHTO M306 AND BE CAST WITH THE CONTECH LOGO.
 - IF REQUIRED, PVC HYDRAULIC SHEAR PLATE IS PLACED ON SHELF AT BOTTOM OF SCREEN CYLINDER. REMOVE AND REPLACE AS NECESSARY DURING MAINTENANCE CLEANING.
 - CDS STRUCTURE SHALL BE PRECAST CONCRETE CONFORMING TO ASTM C-478 AND AASHTO LOAD FACTOR DESIGN METHOD.
- INSTALLATION NOTES
- ANY SUB-BASE, BACKFILL DEPTH, AND/OR ANTI-FLOTATION PROVISIONS ARE SITE SPECIFIC DESIGN CONSIDERATIONS AND SHALL BE SPECIFIED BY ENGINEER OF RECORD.
 - CONTRACTOR TO PROVIDE EQUIPMENT WITH SUFFICIENT LIFTING AND REACH CAPACITY TO LIFT AND SET THE CDS MANHOLE STRUCTURE.
 - CONTRACTOR TO INSTALL JOINT SEALANT BETWEEN ALL STRUCTURE SECTIONS AND ASSEMBLY STRUCTURE.
 - CONTRACTOR TO PROVIDE, INSTALL, AND GROUT INLET AND OUTLET PIPE(S). MATCH PIPE INVERTS WITH ELEVATIONS SHOWN. ALL PIPE CENTERLINES TO MATCH PIPE OPENING CENTERLINES.
 - CONTRACTOR TO TAKE APPROPRIATE MEASURES TO ASSURE UNIT IS WATER TIGHT, HOLDING WATER TO FLOWLINE INVERT MINIMUM. IT IS SUGGESTED THAT ALL JOINTS BELOW PIPE INVERTS ARE GROUTED.

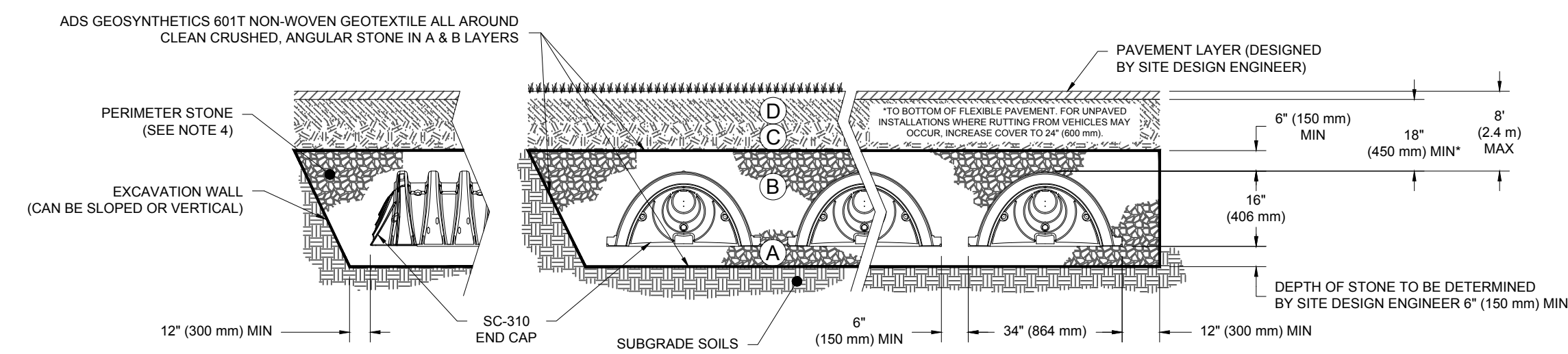
CDS1515-3-C ONLINE CDS STANDARD DETAIL

N.T.S.

ACCEPTABLE FILL MATERIALS: STORMTECH SC-310 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	
C	INITIAL FILL: FILL MATERIAL FOR LAYER 'C' STARTS FROM THE TOP OF THE EMBEDMENT STONE ('B' LAYER) TO 18" (450 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. OR MOST PAVEMENT SUBBASE MATERIALS CAN BE USED IN LIEU OF THIS LAYER.	AASHTO M145* A-1, A-2.4, A-3 OR AASHTO M43* 3, 357, 4, 467, 5, 56, 57, 6, 67, 68, 7, 78, 8, 89, 9, 10	BEGIN COMPACTIONS AFTER 12" (300 mm) OF MATERIAL OVER THE CHAMBERS IS REACHED. COMPACT ADDITIONAL LAYERS IN 6" (150 mm) MAX LIFTS TO A MIN. 95% PROCTOR DENSITY FOR WELL GRADED MATERIAL AND 95% RELATIVE DENSITY FOR PROCESSED AGGREGATE MATERIALS. ROLLER GROSS VEHICLE WEIGHT NOT TO EXCEED 12,000 lbs (53 kN). DYNAMIC FORCE NOT TO EXCEED 20,000 lbs (89 kN).
B	EMBODIMENT STONE: FILL SURROUNDING THE CHAMBERS FROM THE FOUNDATION STONE ('A' LAYER) TO THE 'C' LAYER ABOVE.	CLEAN, CRUSHED, ANGULAR STONE	AASHTO M43* 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	AASHTO M43* 3, 357, 4, 467, 5, 56, 57	PLATE COMPACT OR ROLL TO ACHIEVE A FLAT SURFACE. ^{2,3}

- PLEASE NOTE:
- 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".
 - STORMTECH COMPACTION REQUIREMENTS ARE MET FOR 'A' LOCATION MATERIALS WHEN PLACED AND COMPACTED IN 6" (150 mm) (MAX) LIFTS USING TWO FULL COVERAGES WITH A VIBRATORY COMPACTOR.
 - 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.
 - 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.



NOTES:

- CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2922 (POLETHYLENE) OR ASTM F2418 (POLYPROPYLENE), "STANDARD SPECIFICATION FOR CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
- SC-310 CHAMBERS SHALL BE DESIGNED IN ACCORDANCE WITH ASTM F2787 "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
- 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.
- PERIMETER STONE MUST BE EXTENDED HORIZONTALLY TO THE EXCAVATION WALL FOR BOTH VERTICAL AND SLOPED EXCAVATION WALLS.
- 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 2".
 - TO ENSURE THE INTEGRITY OF THE ARCH SHAPE DURING INSTALLATION, a) THE ARCH STIFFNESS CONSTANT AS DEFINED IN SECTION 8.2.8 OF ASTM F2922 SHALL BE GREATER THAN OR EQUAL TO 400 LBS/FT², 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.

STORMTECH SC-310 STANDARD CROSS SECTION

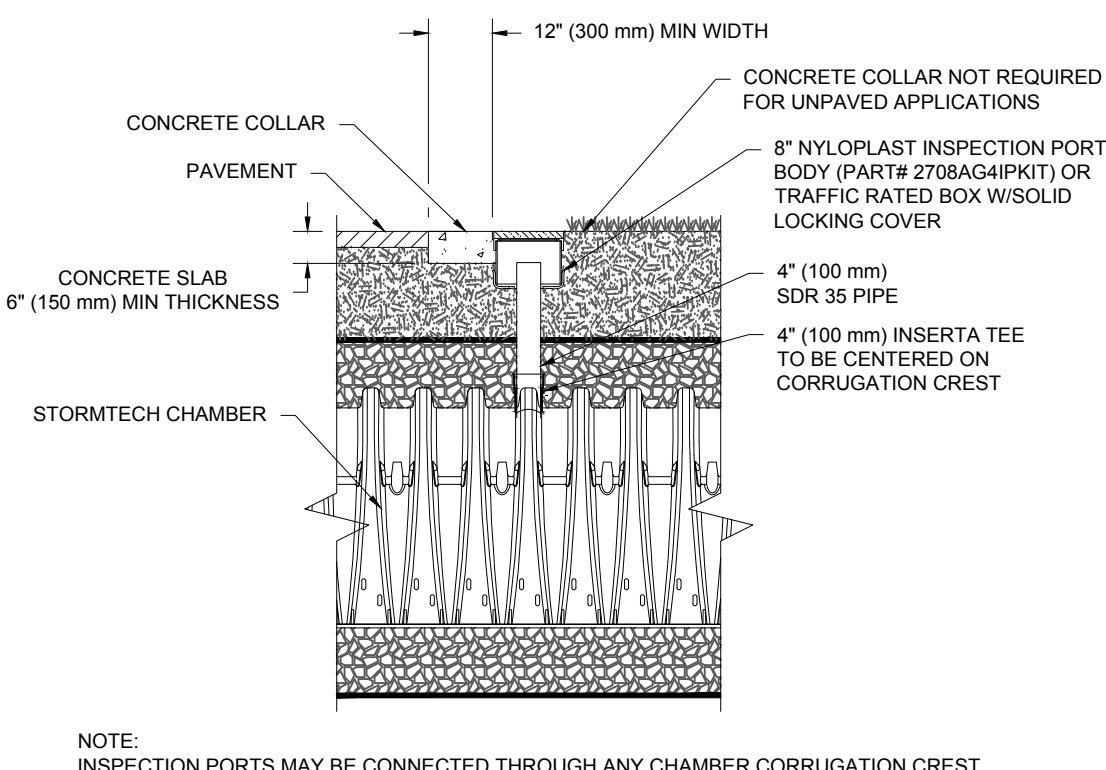
N.T.S.

INSPECTION & MAINTENANCE

- STEP 1) INSPECT ISOLATOR ROW PLUS FOR SEDIMENT
- INSPECTION PORTS (IF PRESENT)
 - REMOVE/OPEN LID ON NYLOPLAST INLINE DRAIN
 - REMOVE AND CLEAN FLEXSTORM FILTER IF INSTALLED
 - USING A FLASHLIGHT AND STADIA ROD, MEASURE DEPTH OF SEDIMENT AND RECORD ON MAINTENANCE LOG
 - LOWER A CAMERA INTO ISOLATOR ROW PLUS FOR VISUAL INSPECTION OF SEDIMENT LEVELS (OPTIONAL)
 - IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.
 - ALL ISOLATOR PLUS ROWS
 - REMOVE COVER FROM STRUCTURE AT UPSTREAM END OF ISOLATOR ROW PLUS
 - USING A FLASHLIGHT, INSPECT DOWN THE ISOLATOR ROW PLUS THROUGH OUTLET PIPE
 - MIRRORS OR POLES OR CAMERAS MAY BE USED TO AVOID A CONFINED SPACE ENTRY
 - FOLLOW OSHA REGULATIONS FOR CONFINED SPACE ENTRY IF ENTERING MANHOLE
 - IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.
- STEP 2) CLEAN OUT ISOLATOR ROW PLUS USING THE JETVAC PROCESS
- A FIXED CULVERT CLEANING NOZZLE WITH REAR FACING SPRAY OF 45° (1.1 m) OR MORE IS PREFERRED
 - APPLY MULTIPLE PASSES OF JETVAC UNTIL BACKFLUSH WATER IS CLEAN
 - VACUUM STRUCTURE SUMP AS REQUIRED
- STEP 3) REPLACE ALL COVERS, GRATES, FILTERS, AND LIDS; RECORD OBSERVATIONS AND ACTIONS.
- STEP 4) INSPECT AND CLEAN BASINS AND MANHOLES UPSTREAM OF THE STORMTECH SYSTEM.

NOTES

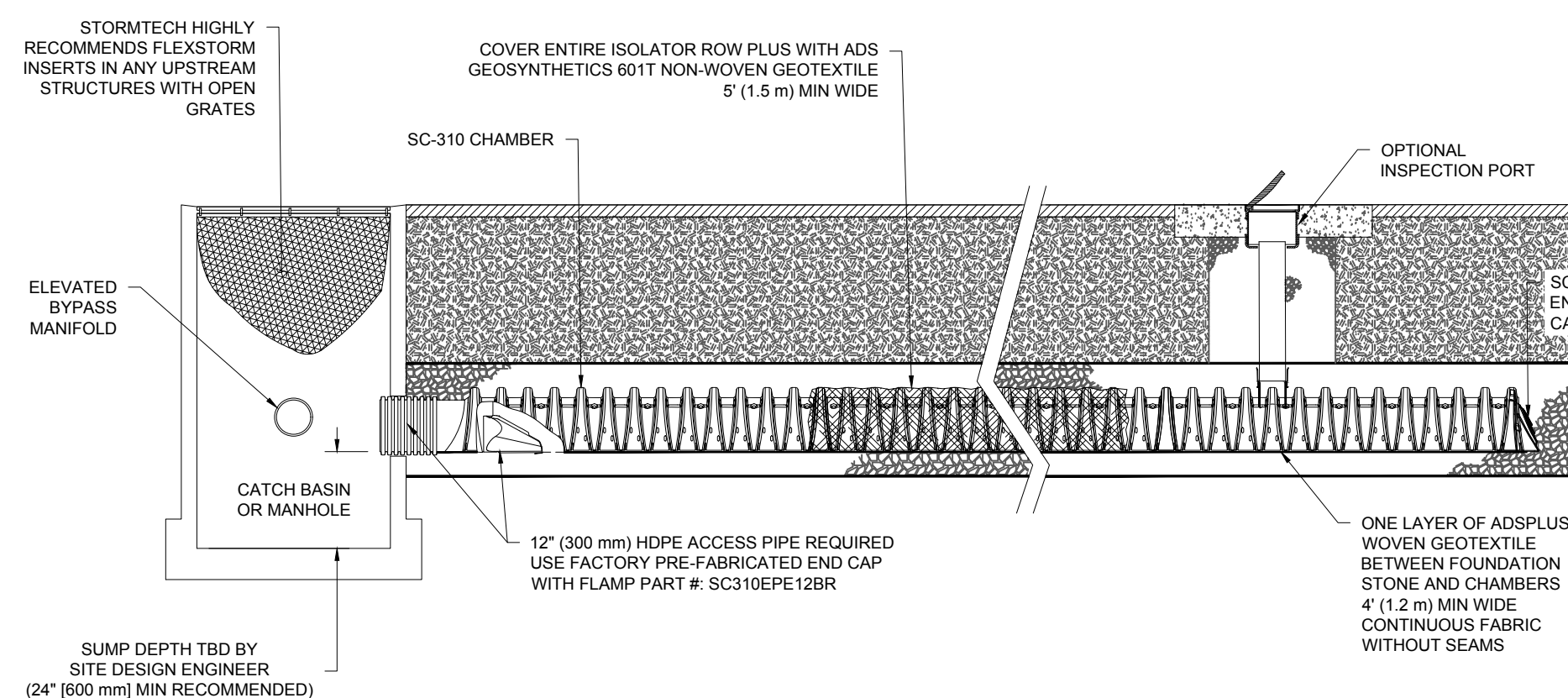
- INSPECT EVERY 6 MONTHS DURING THE FIRST YEAR OF OPERATION. ADJUST THE INSPECTION INTERVAL BASED ON PREVIOUS OBSERVATIONS OF SEDIMENT ACCUMULATION AND HIGH WATER ELEVATIONS.
- CONDUCT JETTING AND VACTORING ANNUALLY OR WHEN INSPECTION SHOWS THAT MAINTENANCE IS NECESSARY.



NOTE: INSPECTION PORTS MAY BE CONNECTED THROUGH ANY CHAMBER CORRUGATION CREST.

STORMTECH SC-310
4" INSPECTION PORT DETAIL

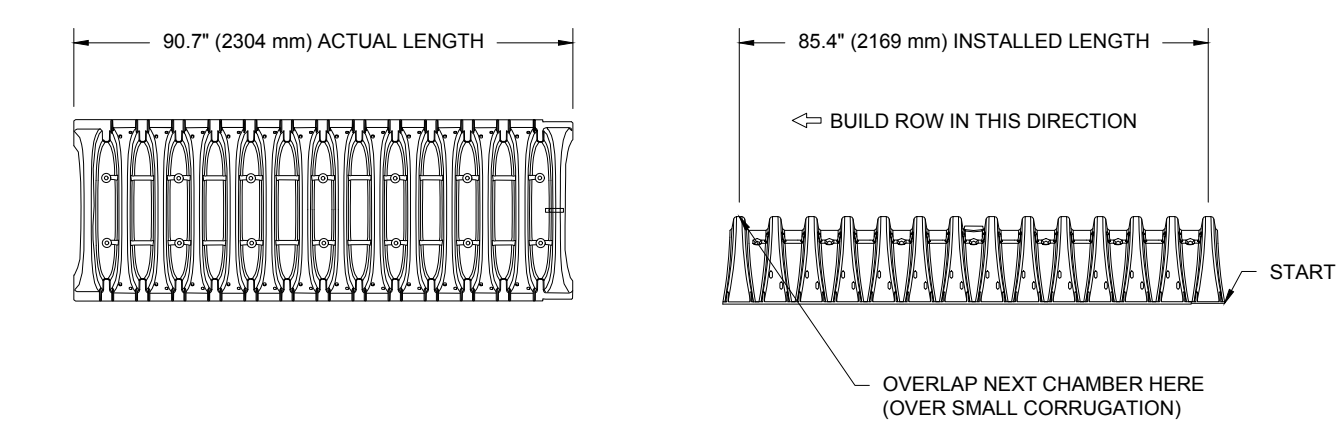
STORMTECH SC-310 ISOLATOR ROW DETAIL



SUMP DEPTH TBD BY SITE DESIGN ENGINEER (24" (600 mm) MIN RECOMMENDED)

N.T.S.

SC-310 TECHNICAL SPECIFICATION



NOMINAL CHAMBER SPECIFICATIONS	SIZE (W X H X INSTALLED LENGTH)	CHAMBER STORAGE	MINIMUM INSTALLED STORAGE*	WEIGHT
	34.0" X 16.0" X 85.4"	14.7 CUBIC FEET	31.0 CUBIC FEET	35.0 lbs.
	(864 mm X 406 mm X 2169 mm)	(0.42 m ³)	(0.88 m ³)	(16.8 kg)

*ASSUMES 6" (152 mm) ABOVE, BELOW, AND BETWEEN CHAMBERS

PART #	STUB	A	B	C
SC310EPE06T / SC310EPE06TPC	6" (150 mm)	9.6" (244 mm)	5.8" (147 mm)	---
SC310EPE06B / SC310EPE06BPC	---	---	---	0.5" (13 mm)
SC310EPE08T / SC310EPE08TPC	8" (200 mm)	11.9" (302 mm)	3.5" (89 mm)	---
SC310EPE08B / SC310EPE08BPC	---	---	---	0.6" (15 mm)
SC310EPE10T / SC310EPE10TPC	10" (250 mm)	12.7" (323 mm)	1.4" (36 mm)	---
SC310EPE10B / SC310EPE10BPC	---	---	---	0.7" (18 mm)
SC310EPE12B	12" (300 mm)	13.5" (343 mm)	---	0.9" (23 mm)

ALL STUBS, EXCEPT FOR THE SC310EPE12B ARE PLACED AT BOTTOM OF END CAP SUCH THAT THE OUTSIDE DIAMETER OF THE STUB IS FLUSH WITH THE BOTTOM OF THE END CAP. FOR ADDITIONAL INFORMATION CONTACT STORMTECH AT 1-888-892-2894.

* FOR THE SC310EPE12B THE 12" (300 mm) STUB LIES BELOW THE BOTTOM OF THE END CAP APPROXIMATELY 0.25" (6 mm). BACKFILL MATERIAL SHOULD BE REMOVED FROM BELOW THE N-12 STUB SO THAT THE FITTING SITS LEVEL.

NOTE: ALL DIMENSIONS ARE NOMINAL

STORMTECH SC-310 TECHNICAL SPECIFICATION

N.T.S.

REVISIONS

REV	DATE	COMMENT	CHECKED BY	DRAWN BY
1	08/30/2023		CMC	EDJAK



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THIS DRAWING IS INTENDED FOR MUNICIPAL AND/OR AGENCY REVIEW AND APPROVAL. IT IS NOT INTENDED AS A CONSTRUCTION DOCUMENT UNLESS INDICATED OTHERWISE.

PROJECT No.:	W211283
DRAWN BY:	CMC/LC
CHECKED BY:	EDJAK
DATE:	05/12/2023
CAD ID:	W211283-SPPD-2B DWG

PROJECT:

PRELIMINARY CIVIL ENGINEERING PLAN SET

FOR KIG SILVERSTRAND WALPOLE, LLC

PROPOSED MULTI-FAMILY DEVELOPMENT
MAP 25, BLOCK 164, 165 & 166
981, 989 & 1015 EAST STREET
TOWN OF WALPOLE
NORFOLK COUNTY,
MASSACHUSETTS

BOHLER

352 TURNPIKE ROAD
SOUTHBOROUGH, MA 01772
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CONNECTICUT LICENSE No. 26177
RHODE ISLAND LICENSE No. 3616
MAINE LICENSE No. 12553

SHEET TITLE:

DETAIL SHEET

SHEET NUMBER:

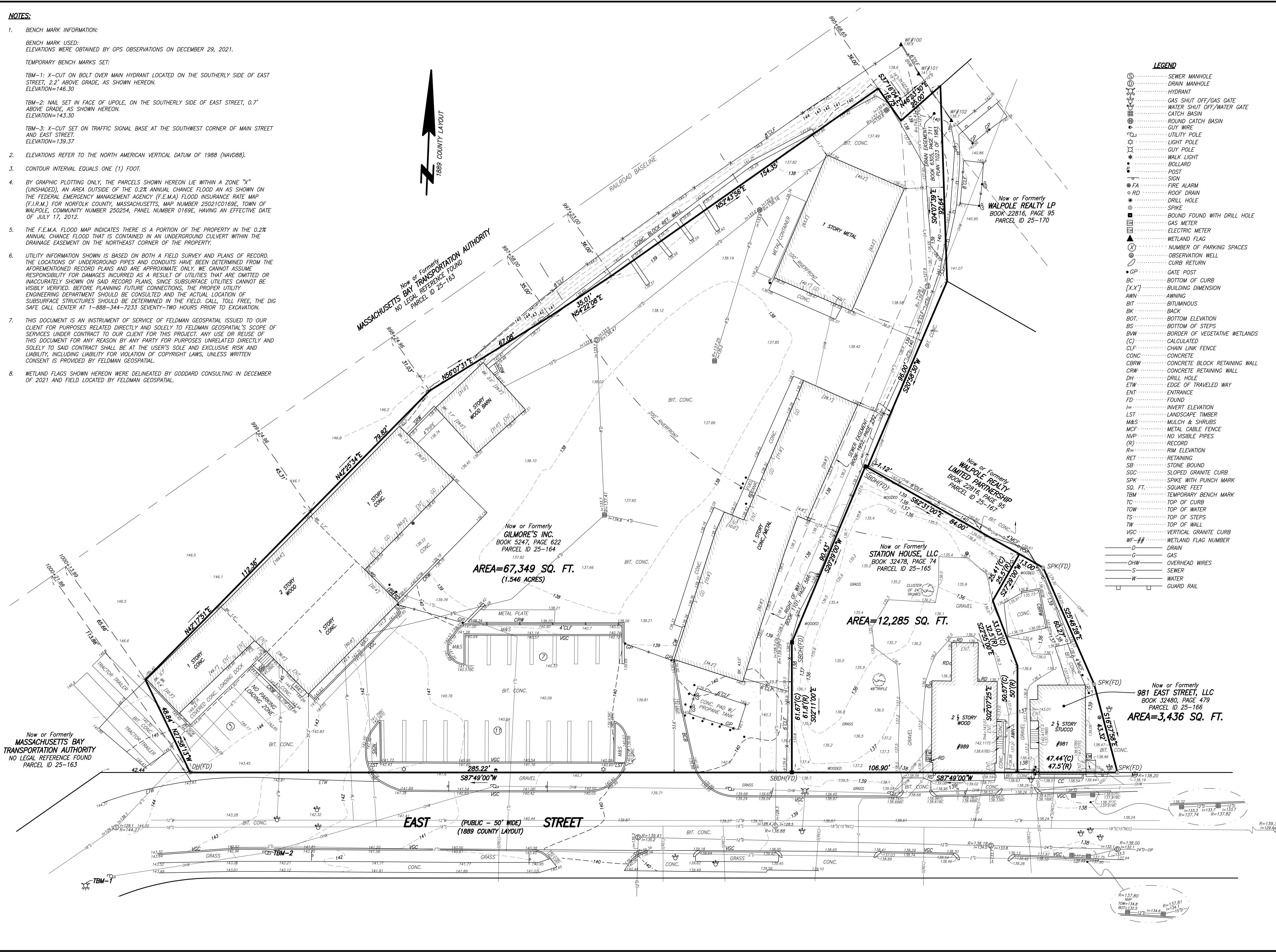
C-904

REVISION 1 - 08/30/2023

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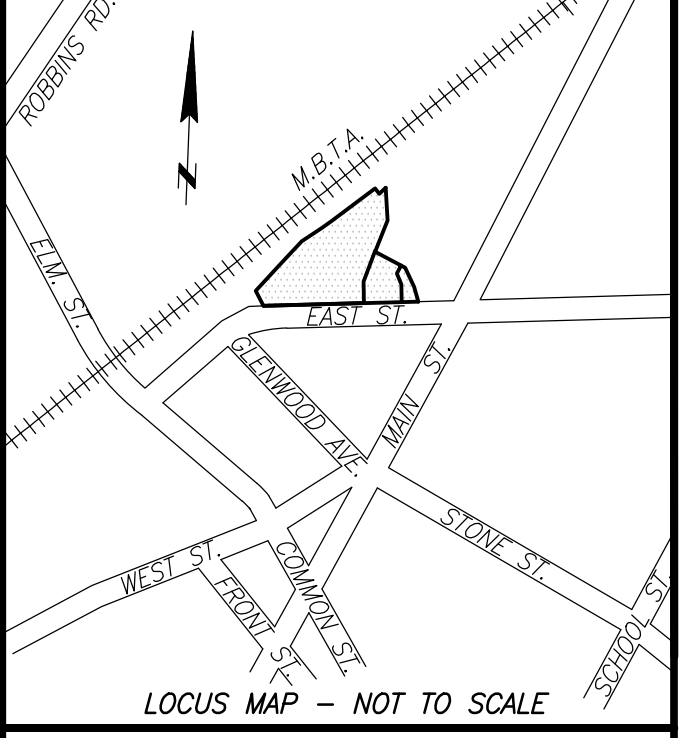
NOTES:

- 1. BENCH MARK INFORMATION:
BENCH MARK USED: ELEVATIONS WERE OBTAINED BY GPS OBSERVATIONS ON DECEMBER 29, 2021.
TEMPORARY BENCH MARKS SET:
TBM-1: X-CUT ON BOLT OVER MAIN HYDRANT LOCATED ON THE SOUTHERLY SIDE OF EAST STREET, 2.2' ABOVE GRADE, AS SHOWN HEREON. ELEVATION=146.30
TBM-2: NAIL SET IN FACE OF UPOLE, ON THE SOUTHERLY SIDE OF EAST STREET, 0.7' ABOVE GRADE, AS SHOWN HEREON. ELEVATION=143.30
TBM-3: X-CUT SET ON TRAFFIC SIGNAL BASE AT THE SOUTHWEST CORNER OF MAIN STREET AND EAST STREET. ELEVATION=139.37
2. ELEVATIONS REFER TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88).
3. CONTOUR INTERVAL EQUALS ONE (1) FOOT.
4. BY GRAPHIC PLOTTING ONLY, THE PARCELS SHOWN HEREON LIE WITHIN A ZONE 'X' (UNSHADED), AN AREA OUTSIDE OF THE 0.2% ANNUAL CHANCE FLOOD AS SHOWN ON THE FEDERAL EMERGENCY MANAGEMENT AGENCY (F.E.M.A) FLOOD INSURANCE RATE MAP (F.I.R.M.) FOR NORFOLK COUNTY, MASSACHUSETTS, MAP NUMBER 250210169E, TOWN OF WALPOLE, COMMUNITY NUMBER 250254, PANEL NUMBER 0169E, HAVING AN EFFECTIVE DATE OF JULY 17, 2012.
5. THE F.E.M.A. FLOOD MAP INDICATES THERE IS A PORTION OF THE PROPERTY IN THE 0.2% ANNUAL CHANCE FLOOD THAT IS CONTAINED IN AN UNDERGROUND CULVERT WITHIN THE DRAINAGE EASEMENT ON THE NORTHEAST CORNER OF THE PROPERTY.
6. UTILITY INFORMATION SHOWN IS BASED ON BOTH A FIELD SURVEY AND PLANS OF RECORD. THE LOCATIONS OF UNDERGROUND PIPES AND CONDUITS HAVE BEEN DETERMINED FROM THE AFOREMENTIONED RECORD PLANS AND ARE APPROXIMATE ONLY. WE CANNOT ASSUME RESPONSIBILITY FOR DAMAGES INCURRED AS A RESULT OF UTILITIES THAT ARE OMITTED OR INACCURATELY SHOWN ON SAID RECORD PLANS, SINCE SUBSURFACE UTILITIES CANNOT BE VISIBLY VERIFIED. BEFORE PLANNING FUTURE CONNECTIONS, THE PROPER UTILITY ENGINEERING DEPARTMENT SHOULD BE CONSULTED AND THE ACTUAL LOCATION OF SUBSURFACE STRUCTURES SHOULD BE DETERMINED IN THE FIELD. CALL TOLL FREE, THE DIG SAFE CALL CENTER AT 1-888-344-7233 SEVENTY-TWO HOURS PRIOR TO EXCAVATION.
7. THIS DOCUMENT IS AN INSTRUMENT OF SERVICE OF FELDMAN GEOSPATIAL ISSUED TO OUR CLIENT FOR PURPOSES RELATED DIRECTLY AND SOLELY TO FELDMAN GEOSPATIAL'S SCOPE OF SERVICES UNDER CONTRACT TO OUR CLIENT FOR THIS PROJECT. ANY USE OR REUSE OF THIS DOCUMENT FOR ANY REASON BY ANY PARTY FOR PURPOSES UNRELATED DIRECTLY AND SOLELY TO SAID CONTRACT SHALL BE AT THE USER'S SOLE AND EXCLUSIVE RISK AND LIABILITY, INCLUDING LIABILITY FOR VIOLATION OF COPYRIGHT LAWS, UNLESS WRITTEN CONSENT IS PROVIDED BY FELDMAN GEOSPATIAL.
8. WETLAND FLAGS SHOWN HEREON WERE DELINEATED BY GODDARD CONSULTING IN DECEMBER OF 2021 AND FIELD LOCATED BY FELDMAN GEOSPATIAL.



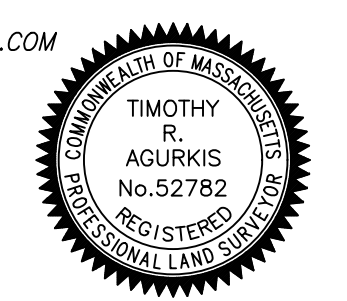
- LEGEND
Sewer Manhole, Drain Manhole, Hydrant, Gas Shut Off/Gas Gate, Water Shut Off/Water Gate, Catch Basin, Round Catch Basin, Guy Wire, Utility Pole, Light Pole, Guy Pole, Walk Light, Bollard, Post, Sign, Fire Alarm, Roof Drain, Drill Hole, Spike, Bound Found with Drill Hole, Gas Meter, Electric Meter, Wetland Flag, Number of Parking Spaces, Observation Well, Curb Return, Gate Post, Bottom of Curb, Building Dimension, Awning, Bituminous, Back, Bottom Elevation, Bottom of Steps, Border of Vegetative Wetlands, Calculated, Chain Link Fence, Concrete, Concrete Block Retaining Wall, Concrete Retaining Wall, Drill Hole, Edge of Traveled Way, Entrance, Found, Invert Elevation, Landscape Timber, Mulch & Shrubs, Metal Cable Fence, No Visible Pipes, Record, Rim Elevation, Retaining, Stone Bound, Sloped Granite Curb, Spike with Punch Mark, Square Feet, Temporary Bench Mark, Top of Curb, Top of Water, Top of Steps, Top of Wall, Vertical Granite Curb, Wetland Flag Number, Drain, Gas, Overhead Wires, Sewer, Water, Guard Rail

BOSTON HEADQUARTERS
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BOSTON, MA 02119
WORCESTER OFFICE
27 MECHANIC STREET
WORCESTER, MA 01608
(617)357-9740
www.feldmangeo.com



I CERTIFY THAT THIS PLAN IS BASED ON AN ACTUAL FIELD SURVEY AND THE LATEST PLANS AND DEEDS OF RECORD.

TIMOTHY R. AGURKIS, PLS
1/10/2023
DATE
TAGURKIS@FELDMANGEO.COM



EXISTING CONDITIONS PLAN OF LAND
981-1015 EAST STREET WALPOLE, MASS.

Table with columns for DATE (DECEMBER 28, 2022), REVISIONS (12/01/22: 981-989 EAST STREET ADDED), FILENAME (2201402-EC.dwg), RESEARCH (TRA), FIELD CHIEF (CLZ), PROJ MGR (TRA), APPROVED, CALC (TRA), CADD (TRA/MJB), FIELD CHK, CRD FILE (2201402)



FILENAME: S:\PROJECTS\2022\2201402\DWG\2201402-EC.dwg