

PROPOSED SITE PLAN DOCUMENTS

FOR
**RTE 85
REALTY CORP.**

PROPOSED
RETAIL DEVELOPMENT

LOCATION OF SITE
190, 194 & 198 HARTFORD AVENUE, TOWN OF BELLINGHAM
NORFOLK COUNTY, MA
MAP 24, LOTS 7, 8 & 9

REFERENCES AND CONTACTS

REFERENCES

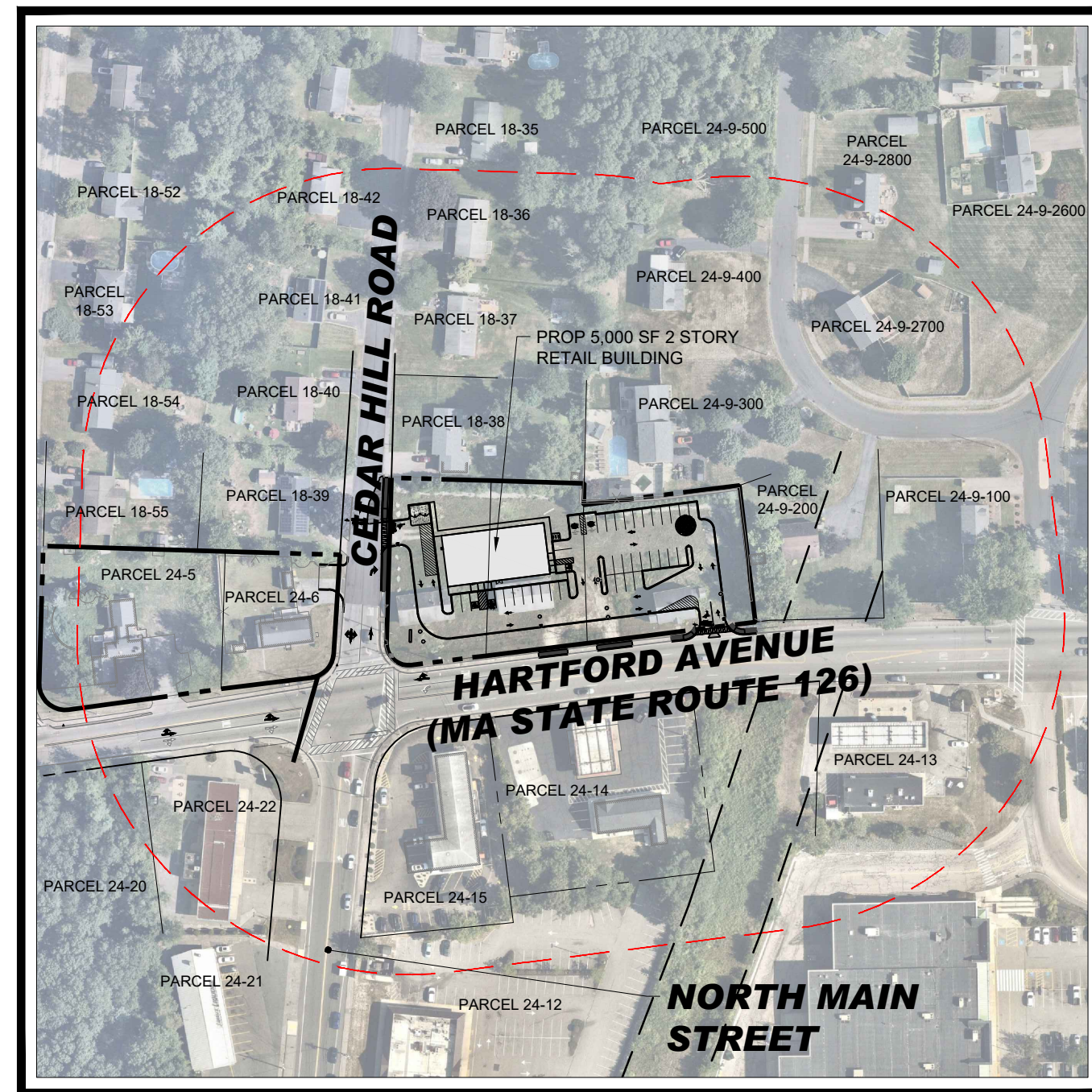
♦EXISTING CONDITIONS PLAN OF LAND:
GUERIERRE & HAYDON, INC.
333 WEST STREET
MILFORD, MA 01757
DATED: 02/10/2025
SURVEY JOB #: G-9957-1
ELEVATIONS: NAVD 1988

♦SPECIAL PERMIT PLANS
TETRA TECH
100 NICKERSON ROAD
MARLBORO, MA 01752
DATED: 02/08/2024

THE ABOVE REFERENCED DOCUMENTS ARE INCORPORATED BY REFERENCE AS PART OF THESE PLANS, HOWEVER, BOHLER ENGINEERING DOES NOT CERTIFY THE ACCURACY OF THE WORK REFERENCED OR DERIVED FROM THESE DOCUMENTS, BY OTHERS.



USGS MAP
SCALE: 1" = 1,000'
SOURCE: USGS FRANKLIN, MA,
RI QUADRANGLE, 2024



AERIAL MAP
SCALE: 1" = 150'
SOURCE: NEARMAP AERIAL IMAGERY

PREPARED BY

BOHLER

IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO REVIEW ALL OF THE DRAWINGS AND SPECIFICATIONS ASSOCIATED WITH THIS PROJECT. WORK SCOPE PRIOR TO THE INITIATION OF CONSTRUCTION SHOULD THE CONTRACTOR FIND A CONFLICT WITH THE DOCUMENTS RELATIVE TO THE SPECIFICATIONS OR APPLICABLE CODES. IT IS THE CONTRACTOR'S RESPONSIBILITY TO NOTIFY THE PROJECT ENGINEER OF RECORD IN WRITING PRIOR TO THE START OF CONSTRUCTION. FAILURE BY THE CONTRACTOR TO NOTIFY THE PROJECT ENGINEER SHALL CONSTITUTE ACCEPTANCE OF FULL RESPONSIBILITY BY THE CONTRACTOR TO COMPLETE THE SCOPE OF THE WORK AS DEFINED BY THE DRAWINGS AND IN FULL CONFORMANCE WITH LOCAL REGULATIONS AND CODES.

TM

BOHLER

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

REVISIONS

REV	DATE	COMMENT	CHECKED BY
1	07/01/2025	SITE LAYOUT REVISIONS	CPB
2	08/22/2025	SITE LAYOUT REVISIONS	CPB
3	09/25/2025	PEER REVIEW COMMENTS	JAK



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PERMIT SET

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.: MAA240490-00-3A
DRAWN BY: SBB
DATE: 02/05/2025
CAD ID: P-CIVL-CNDS

PROJECT:

**SITE
DEVELOPMENT
PLANS**

FOR

**RTE 85
REALTY CORP.**

PROPOSED
MIXED-USE DEVELOPMENT

MAP: 24 | LOTS: 7, 8 & 9
190, 194 & 198 HARTFORD AVENUE
NORFOLK COUNTY
BELLINGHAM, MA

BOHLER

352 TURNPIKE ROAD, 3rd FLOOR
SOUTHBOROUGH, MA 01772
Phone: (508) 480-9900

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SHEET TITLE:

**COVER
SHEET**

SHEET NUMBER:

C-101

REVISION 3 - 09/25/2025



N/F
KURT D. LOVELL
AND
DEBORAH A. LOVELL
BOOK: 31626 PAGE: 504
HOUSE 11

N/F
TIMOTHY M. &
SHARON M. NORTON
BOOK: 35441 PAGE: 441
7 CEDAR HILL RD

N/F
KIMBERLY A. LADOUCEUR
BOOK: 40692 PAGE: 279
4 SAGAMORE RD

N/F
LINDO F. MONTEIRO &
MICHELLE A. MONTEIRO
BOOK: 37725 PAGE: 550
4 CEDAR HILL RD

N/F
IBRAHIM T. &
NAWAL MORKOS
BOOK: 13872 PAGE: 493
202 HARTFORD AV
HAAD

N/F
296 MAIN LLC
BOOK: 38212 PAGE: 274
186 HARTFORD AV
A.M. 24 LOT 6
AREA=13,502.55'
(0.31+AC)
HAAD

N/F
217 RIVER ROAD LLC
BOOK: 35064 PAGE: 365
190 HARTFORD AV

N/F
217 RIVER ROAD LLC
BOOK: 35064 PAGE: 365
194 HARTFORD AV
A.M. 24 LOT 8
AREA=13,169.55'
(0.35+AC)
HAAD

N/F
217 RIVER ROAD LLC
BOOK: 35064 PAGE: 365
198 HARTFORD AV
A.M. 24 LOT 9
AREA=21,179.55'
(0.49+AC)
HAAD

N/F
193 HARTFORD AVE. REALTY LLC
BOOK: 41251 PAGE: 74
193 HARTFORD AV

N/F
BELLINGHAM N MAIN ST II LLC
BOOK: 22912 PAGE: 459
217 HARTFORD AV

THIS PLAN TO BE UTILIZED
FOR DEMOLITION PURPOSES
ONLY

SCALE: 1" = 20'

MASSACHUSETTS DEMOLITION NOTES

(Rev. 1/2023)

- THE CONTRACTOR MUST LOCATE AND CLEARLY DEFINE VERTICALLY AND HORIZONTALLY ALL ACTIVE AND INACTIVE UTILITY AND/OR SERVICE SYSTEMS THAT ARE TO BE REMOVED. THE CONTRACTOR IS RESPONSIBLE TO PROTECT AND MAINTAIN ALL ACTIVE SYSTEMS THAT ARE NOT BEING REMOVED/RELOCATED DURING SITE ACTIVITY.
- CONTRACTOR SHALL FIELD LOCATE EXISTING UTILITIES PRIOR TO CONSTRUCTION AND IF REQUIRED, DIG EXPLORATORY TEST PITS TO CONFIRM EXACT LOCATION AND DEPTH OF UTILITIES. CONTRACTOR SHALL NOTIFY DESIGN ENGINEER WITH ANY CONFLICTS AS NEEDED TO COORDINATE FINAL LOCATION OF ALL PROPOSED IMPROVEMENTS.
- CONTRACTOR SHALL INSPECT ALL EXISTING UTILITY STRUCTURES THAT ARE TO REMAIN FOR THE PROJECTS RE-USE TO VERIFY SUITABILITY FOR SAME. IF STRUCTURES CAN NOT BE REUSED THEN THE CONTRACTOR SHALL PROVIDE A NEW STRUCTURE. THE CONTRACTOR SHALL COORDINATE SUCH WORK WITH THE APPLICABLE UTILITY PROVIDER.
- CONTRACTOR TO REMOVE ANY BUILDING FOUNDATION REMAINS OR ASSOCIATED IMPROVEMENTS, DELETERIOUS MATERIALS, AND/OR DEBRIS THAT IMPEDE THE WORK SHOWN ON THESE PLANS.
- THE CONTRACTOR SHALL REVIEW THE PLANS VERSUS THE LOCATION OF EXISTING STRUCTURES, UTILITIES AND APPURTENANCES IN THE FIELD TO CONFIRM ACCURACY OF SAME AND VERIFY ITEMS TO BE REMOVED. THE CONTRACTOR SHALL CARRY COSTS FOR REMOVAL OF ANY EXISTING STRUCTURES, APPURTENANCES, AND UNDERGROUND UTILITIES, INCLUDING BUT NOT LIMITED TO, DRAIN, WATER, SEWER, STEAM, IRRIGATION, GAS, TELECOM AND ELECTRIC.
- THE CONTRACTOR SHALL MAINTAIN, ADJUST OR ABANDON EXISTING MONITORING WELLS IN ACCORDANCE WITH THE DIRECTION OF THE ENVIRONMENTAL CONSULTANT (TYP.).
- WHERE THE LIMIT OF WORK COINCIDES WITH PROPERTY LINE, TREE LINE, PROPOSED SAWCUT OR COMBINATION THEREOF IT IS SHOWN ADJACENT TO THESE FEATURES FOR GRAPHICAL CLARITY.
- EXISTING TREES TO REMAIN ARE TO BE PROTECTED DURING CONSTRUCTION UNLESS CLEARLY INDICATED OTHERWISE. REASONABLE CARE AND CAUTION SHALL BE TAKEN DURING CONSTRUCTION TO PREVENT DAMAGE AND SELECTIVE PRUNING MAY BE REQUIRED TO ENSURE THAT TREES DO NOT CONFLICT WITH THE DEVELOPMENT.
- CONTRACTOR SHALL REPAIR/REPLACE ANY TRAFFIC LOOP DETECTORS THAT ARE DAMAGED DURING CONSTRUCTION WITHIN EXISTING OR PROPOSED RIGHTS OF WAYS. ANY SUCH WORK SHALL BE PERFORMED BY A LICENSED / DOT APPROVED SIGNAL CONTRACTOR. ANY DAMAGED LOOPS OR OTHER SIGNAL EQUIPMENT SHALL BE REPAIRED IMMEDIATELY AFTER THE WORK IS COMPLETE. THE SIGNAL CONTRACTOR SHALL BE AVAILABLE TO MAKE ANY TEMPORARY SIGNAL CHANGES IF REQUESTED BY DOT AND/OR THE MUNICIPALITY.
- THE CONTRACTOR MUST FIELD VERIFY THE LOCATIONS WHERE PROPOSED UTILITIES CROSS EXISTING UNDERGROUND UTILITIES BY USING A TEST PIT TO DETERMINE THE EXACT SIZE, DEPTH AND LOCATION, PRIOR TO COMMENCEMENT OF CONSTRUCTION.
- CONTRACTOR SHALL LOCATE ANY EXISTING UTILITY SERVICES THAT ARE TO BE TERMINATED AT THE EXISTING MAIN AND/OR PROPERTY LINE. THESE SERVICES ARE TO BE TERMINATED IN ACCORDANCE WITH MUNICIPAL, STATE TRANSPORTATION DEPARTMENT REQUIREMENTS.

REVISIONS

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2	08/22/2025	SITE LAYOUT REVISIONS	CPB
3	09/25/2025	PEER REVIEW COMMENTS	JAK



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DRAWN BY: SBB
CHECKED BY: CPB
DATE: 02/05/2025
CAD ID: P-CIVIL-PROP

PROJECT:

SITE DEVELOPMENT PLANS FOR

RTE 85
REALTY CORP.

PROPOSED
MIXED-USE DEVELOPMENT
MAP: 24 LOTS: 7, 8 & 9
190, 194 & 198 HARTFORD AVENUE
NORFOLK COUNTY
BELLINGHAM, MA

BOHLER

352 TURNPIKE ROAD, 3rd FLOOR
SOUTHBOROUGH, MA 01772
Phone: (508) 480-9900

www.BohlerEngineering.com

SHEET TITLE:

EXISTING CONDITIONS/ DEMOLITION PLAN

SHEET NUMBER:

C-201

REVISION 3 - 09/25/2025



N/F
KURT D. LOVELL
AND
DEBORAH A. LOVELL
BOOK 31626 PAGE 504
HOUSE 11

N/F
TIMOTHY M. &
SHARON M. NORTON
BOOK: 35441 PAGE: 441
7 CEDAR HILL RD

N/F
KIMBERLY A. LADOUCEUR
BOOK: 40692 PAGE: 279
4 SAGAMORE RD

N/F
LINDO F. MONTEIRO &
MICHELLE A. MONTEIRO
BOOK: 37725 PAGE: 550
4 CEDAR HILL RD

N/F
296 MAIN LLC
BOOK: 38212 PAGE: 274
186 HARTFORD AV
A.M. 24 LOT 6
AREA: 13,507.25 SF
(0.3134 AC)
HAAD

N/F
IBRAHIM T. &
NAVAL MORKOS
BOOK: 13572 PAGE: 493
202 HARTFORD AV
HAAD

N/F
BELLINGHAM N MAIN ST II LLC
BOOK: 22912 PAGE: 459
217 HARTFORD AV

N/F
193 HARTFORD AVE REALTY LLC
BOOK: 41251 PAGE: 74
193 HARTFORD AV

N/F
M A REALTY ACQUISITION LLC
BOOK: 26834 PAGE: 118
189 HARTFORD AV

ZONING TABLE

ZONE: RESIDENTIAL, HARTFORD AVENUE ADAPTIVE USE OVERLAY DISTRICT (AUOD)
USE: FREESTANDING GENERAL RETAIL & OFFICE
MAP: 24 LOTS: 7, 8 & 9

BULK REQUIREMENTS

ITEM	CODE	PERMITTED	EXISTING	PROPOSED
MIN LOT AREA	\$ 240-40	40,000 SF (0.92 AC)	53,400 SF (1.23 AC)	NO CHANGE
MIN LOT FRONTAGE	\$ 240-40	150.0'	336.5'	NO CHANGE
MIN YARD SETBACKS				
FRONT YARD	\$ 240-40	20.0'	10.8'	50.2'
SIDE YARD	\$ 240-40	10.0'	44.6'	39.3'
REAR YARD	\$ 240-40	20.0'	N/A	N/A
MAX PERMITTED HEIGHT	\$ 240-40	35.0'	<35.0'	<35.0'
PARKING SETBACK	\$ 240-61	20.0' FROM STREET R/W	N/A	21.0'
MIN PARKING AREA LANDSCAPING	\$ 240-67	5.0%	N/A	7.4%

KEY = EX NON-CONFORMITY

PARKING REQUIREMENTS

ITEM	CODE	PERMITTED	EXISTING	PROPOSED
MIN STALL SIZE	\$ 240-64	9.0' X 18.0'	N/A	9.0' X 18.0'
MIN NUMBER OF STALLS	\$ 240-59	40	N/A	41

FREESTANDING GENERAL RETAIL & OFFICE:
REQUIRED FOR RETAIL USE = 4 SPACES PER 1000 SF
REQUIRED FOR OFFICE USE = 4 SPACES PER 1,000 SF
10,000 SF (4 SPACES/1,000 SF) = 40 STALLS

KEY = EX NON-CONFORMITY

MASSACHUSETTS SITE NOTES

(Rev. 5/2024)

- WHEN APPLICABLE, OWNER/ OPERATOR MUST FILE THE NOI FOR NPDES PERMITS AT APPROPRIATE AND/OR REQUIRED TIME FRAMES BASED UPON THE DESIRED START OF CONSTRUCTION. LAND DISTURBING ACTIVITIES MUST NOT COMMENCE UNTIL APPROVAL TO DO SO HAS BEEN RECEIVED FROM GOVERNING AUTHORITIES (INCLUDING STORMWATER POLLUTION PREVENTION PLAN). THE CONTRACTOR MUST STRICTLY ADHERE TO THE APPROVED SWPPP PLAN DURING CONSTRUCTION OPERATIONS (IF PROVIDED).
- ALL CONCRETE MUST BE AIR ENTRAINED AND INCLUDE THE MINIMUM COMPRESSIVE STRENGTH OF JURISDICTIONAL STANDARD PSI AT 28 DAYS (OR 4,000 PSI) UNLESS OTHERWISE NOTED ON THE PLANS, DETAILS AND GEOTECHNICAL REPORT. IF THERE ARE ANY DISCREPANCIES BETWEEN THE PLANS, DETAILS AND GEOTECHNICAL REPORT THEN THE GEOTECHNICAL REPORT SHALL GOVERN.
- THE CONTRACTOR MUST FILE SITE SIGNAGE APPLICATION OR PERMIT UNDER SEPARATE APPLICATION UNLESS DONE SO AS PART OF JURISDICTIONAL PERMITTING PROCEDURES.
- THE CONTRACTOR MUST REPAIR OR REPLACE, AT THE CONTRACTOR'S SOLE COST AND EXPENSE, ALL SIDEWALKS, CURBS, PAVEMENT MARKINGS, AND PAVEMENT DAMAGED BY CONSTRUCTION ACTIVITIES WHETHER SPECIFIED ON THIS PLAN OR NOT.
- WORK WITHIN THE RIGHT-OF-WAY MUST BE PERFORMED IN ACCORDANCE WITH ALL APPLICABLE REQUIREMENTS AND STANDARDS OF THE DEPARTMENT OF PUBLIC WORKS, ENGINEERING DEPARTMENT, HIGHWAY DIVISION, AND/OR STATE DOT HIGHWAY DEPARTMENT.
- WHERE RETAINING WALLS ARE IDENTIFIED ON THE PLANS, TOP AND BOTTOM OF WALL WIDTHS DO NOT REPRESENT THE ACTUAL WIDTH OF THE PROPOSED WALL, RATHER THEY ARE AN ASSUMPTION BASED ON WALL TYPE AND WALL HEIGHT. WALL FOOTINGS AND/OR FOUNDATIONS ARE NOT IDENTIFIED HEREIN AND ARE TO BE SET/DETERMINED BY THE CONTRACTOR OR WALL DESIGNER, AND MUST BE SET BASED UPON FINAL STRUCTURAL DESIGN SHOP DRAWINGS PREPARED BY THE APPROPRIATE PROFESSIONAL LICENSED IN THE STATE WHERE THE CONSTRUCTION OCCURS. THE CONTRACTOR MUST ENSURE THAT AN APPROPRIATELY LICENSED PROFESSIONAL DESIGNS ALL WALLS SHOWN HEREON AND PRIOR TO CONSTRUCTION. REFER TO GRADING NOTES REGARDING RETAINING WALL DESIGN.
- CONTRACTOR IS CAUTIONED OF EXISTING UTILITY SERVICES TO REMAIN IN PROXIMITY TO PROPOSED BOLLARDS AND SIGNS. CONTRACTOR SHALL PROVIDE FIELD MODIFICATION LOCATIONS OF BOLLARDS AND BOLLARDS WITH SIGNAGE AS NEEDED TO AVOID CONFLICTS WITH EXISTING UTILITY SERVICES TO REMAIN.

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PROGRAM MANAGEMENT
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REVISIONS

REV	DATE	COMMENT	DRAWN BY
1	07/01/2025	SITE LAYOUT REVISIONS	CPB
2	08/22/2025	SITE LAYOUT REVISIONS	CPB
3	09/25/2025	PEER REVIEW COMMENTS	JAK



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PROJECT No.: MAA240490.00-3A
DRAWN BY: SBB
CHECKED BY: CPB
DATE: 02/05/2025
CAD I.D.: P-CIVIL-PROP

PROJECT:

SITE DEVELOPMENT PLANS FOR

RTE 85
REALTY CORP.

PROPOSED
MIXED-USE DEVELOPMENT
MAP: 24 | LOTS: 7, 8 & 9
190, 194 & 198 HARTFORD AVENUE
NORFOLK COUNTY
BELLINGHAM, MA

BOHLER

352 TURNPIKE ROAD, 3rd FLOOR
SOUTHBOROUGH, MA 01772
Phone: (508) 480-9900

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SHEET TITLE:

SITE PLAN

SHEET NUMBER:

C-301

REVISION 3 - 09/25/2025

THIS PLAN TO BE UTILIZED
FOR SITE LAYOUT PURPOSES
ONLY

SCALE: 1" = 20'



N/F
KURT D. LOVELL
AND
DEBORAH A. LOVELL
BOOK 31626 PAGE 504
HOUSE 11

N/F
TIMOTHY M. &
SHARON M. NORTON
BOOK: 35441 PAGE: 441
7 CEDAR HILL RD

N/F
LINDO F MONTEIRO &
MICHELLE A MONTEIRO
BOOK: 37725 PAGE: 550
4 CEDAR HILL RD

N/F
IBRAHIM T. &
NAWAL MORKOS
BOOK: 13572 PAGE: 493
202 HARTFORD AV

N/F
193 HARTFORD AVE REALTY LLC
BOOK: 41251 PAGE: 74
193 HARTFORD AV

N/F
M A REALTY ACQUISITION LLC
BOOK: 26834 PAGE: 118
189 HARTFORD AV

MASSACHUSETTS DRAINAGE NOTES

(Rev. 1/2023)

- WHEN THESE PLANS INVOLVE MULTIPLE BUILDINGS, SOME OF WHICH MAY BE BUILT AT A LATER DATE, THE CONTRACTOR MUST EXTEND ALL UTILITY SERVICES, INCLUDING BUT NOT LIMITED TO STORM, SANITARY, UTILITIES, AND IRRIGATION LINES, TO A POINT AT LEAST FIVE (5) FEET BEYOND THE PAVED AREAS FOR WHICH THE CONTRACTOR IS RESPONSIBLE. THE CONTRACTOR MUST CAP ENDS OF INSTALLED UTILITIES AS APPROPRIATE. MARK UTILITY ENDS WITH MAGNETIC TRACER TAPE. MARK TERMINUS LOCATIONS WITH A 2X4 STAKE, AND MUST NOTE THE LOCATION OF ALL UTILITY STUBS ON A CLEAN COPY OF THE PLAN. THIS RECORD DOCUMENT MUST BE PREPARED IN A NEAT AND WORKMAN-LIKE MANNER AND TURNED OVER TO THE OWNER/DEVELOPER UPON COMPLETION OF THE WORK, ALL OF WHICH IS AT THE CONTRACTOR'S SOLE COST.
- STORM AND SANITARY PIPE LENGTHS INDICATED ARE NOMINAL AND ARE MEASURED FROM CENTER OF STRUCTURE TO CENTER OF STRUCTURE UNLESS INDICATED ON THE PLANS OTHERWISE.
- UNLESS CLEARLY INDICATED OTHERWISE, ALL STORM PIPE MUST BE REINFORCED CONCRETE PIPE (RCP) CLASS III WITH SILT/SOIL TIGHT JOINTS. WHEN HIGH-DENSITY POLYETHYLENE PIPE (HDPE) IS CALLED FOR ON THE PLANS, IT MUST CONFORM TO AASHTO M252 FOR PIPES 4" TO 10" AND TO AASHTO M284 FOR PIPES 12" TO 60" AND TYPE S (SMOOTH INTERIOR WITH ANGULAR CORRUGATIONS) WITH GASKET FOR SILT/SOIL TIGHT JOINT. PIPE FOR ROOF DRAIN CONNECTION MUST BE SDR 26 PVC OR SCHEDULE 40 UNLESS INDICATED OTHERWISE. HDPE PIPE JOINT GASKETS MUST BE PROVIDED AND CONFORM TO ASTM F477. DRAIN PIPE INSTALLED WITH OVER TEN (10) FEET OVER COVER AND/OR IN HIGH GROUNDWATER CONDITIONS SHALL BE SANITITE HP POLYPROPYLENE PIPE (PP), OR APPROVED EQUIVALENT.

MASSACHUSETTS GRADING NOTES

(Rev. 5/2024)

- PROPOSED TOP OF CURB ELEVATIONS ARE GENERALLY 6" ABOVE PAVEMENT GRADE UNLESS OTHERWISE NOTED.
- THE CONTRACTOR MUST CONFIRM AND ENSURE THAT AS CONSTRUCTED IMPROVEMENTS CREATE THE FOLLOWING MINIMUM SLOPES (EXCEPT WHERE ADA REQUIREMENTS LIMIT THEM): 1.0% ON ALL CONCRETE SURFACES, 1.5% ON ASPHALT SURFACES, 1.5% IN LANDSCAPED AREAS AND 0.75% SLOPE AGAINST ALL ISLANDS, GUTTERS, AND CURBS TO PROVIDE POSITIVE DRAINAGE.
- WHERE RETAINING WALLS ARE IDENTIFIED ON THE PLANS, TOP AND BOTTOM OF WALL ELEVATIONS (GH & GL) REPRESENT THE PROPOSED FINISHED GRADE AT THE FACE OF THE TOP AND THE BOTTOM OF THE WALL AND SET BASED UPON FINAL STRUCTURAL DESIGN SHOP DRAWINGS PREPARED BY THE APPROPRIATE PROFESSIONAL LICENSED IN THE STATE WHERE THE CONSTRUCTION OCCURS. THE CONTRACTOR MUST ENSURE THAT THERE ARE NO UTILITIES ON THE PASSIVE SIDE OF THE RETAINING WALL. NO EXCAVATION MAY BE PERFORMED ON THE PASSIVE SIDE OF THE RETAINING WALL WITHOUT APPROPRIATELY AND SAFELY SUPPORTING THE WALL IN ACCORDANCE WITH THE STANDARD OF CARE AND ALL APPLICABLE RULES, REGULATIONS, CODES, ORDINANCES, LAWS AND STATUTES.
- USE OR GRAVITY BLOCK WALLS SHALL BE CONSTRUCTED SUCH THAT UPON COMPLETION OF CONSTRUCTION THERE IS NO UNFINISHED SURFACE OR LIFTING RINGS VISIBLE (E.G. USE OF FINISHED TOP BLOCK OR CAP STONES).
- STORMWATER RUNOFF WITHIN PROPERTY MUST BE COLLECTED ON-SITE WITH NO OVERLAND RUNOFF ONTO THE RIGHT-OF-WAY OR ADJACENT PROPERTIES TO THE MAXIMUM EXTENT POSSIBLE OR IN THE MANNER SHOWN ON THE CONSTRUCTION DRAWINGS. STORMWATER RUNOFF ONTO ADJACENT PROPERTIES SHALL BE CONTROLLED AS TO NOT ADVERSELY IMPACT SAID PROPERTIES.
- BEFORE COMMENCING GRADING WORK, CONTRACTOR SHALL SUBMIT SAMPLES OF ALL NATIVE AND IMPORTED MATERIALS WITH THEIR INTENDED FOR STRUCTURAL USES TO THE GEOTECHNICAL ENGINEER OF RECORD.
- REFER TO GENERAL NOTES SHEET FOR ADDITIONAL ADA GUIDELINES AND REQUIREMENTS.
- FOR ALL RETAINING WALLS 4 FEET OR GREATER IN HEIGHT:
 - THE OWNER OR THE OWNERS CONTRACTOR IS TO PROVIDE A SITE-SPECIFIC RETAINING WALL DESIGN PREPARED BY THE APPROPRIATE PROFESSIONAL LICENSED (E.G. STRUCTURAL ENGINEER) IN THE STATE WHERE THE CONSTRUCTION OCCURS. SOIL TYPES, WATER TABLE ELEVATION, EXISTING & PROPOSED SURROUNDING IMPROVEMENTS/CONDITIONS (INCLUDING BUT NOT LIMITED TO SLOPES, DRIVE AISLES, ROADS, FENCING, GUIDERAILS, UTILITIES, DRAINAGE FACILITIES, STRUCTURES, FOUNDATIONS), LIVE LOADS AND OTHER SITE AMENITIES THAT COULD HAVE AN INFLUENCE OR IMPACT ON THE RETAINING WALL(S) CONSTRUCTABILITY AND/OR LONGEVITY SHALL BE CONSIDERED AND INCORPORATED INTO THE RETAINING WALL DESIGN AS WELL AS THE GLOBAL STABILITY ANALYSIS.
 - PEER REVIEW AND GLOBAL STABILITY ANALYSIS OF THE RETAINING WALL DESIGN MUST BE COMPLETED BY THE OWNERS GEOTECHNICAL ENGINEER TO CERTIFY THE DESIGN MEETS INDUSTRY STANDARDS FOR FACTOR OF SAFETY. SOIL TYPES, WATER TABLE ELEVATION AND DESIGN PROPERTIES AS NOTED ABOVE SHALL BE FIELD CONFIRMED AND APPROVED BY THE GEOTECHNICAL ENGINEER PRIOR TO WALL CONSTRUCTION.
- CONTRACTOR SHALL INSTALL CONCRETE CURB ALONG FACE OF BUILDING / WALL AS SHOWN TO PROVIDE CONSISTENT WIDTH ALONG LENGTH OF PROPOSED ACCESSIBLE RAMP AND RAMP LANDING TO MEET ADA/AB REQUIREMENTS.
- CONTRACTOR SHALL REVIEW RETAINING WALL LOCATIONS VERSUS APPLICABLE STATE AND LOCAL CODES AND PROVIDE FALL PROTECTION (E.G. FENCING OR RAILING) IN ACCORDANCE WITH SAID CODE.
- CONTRACTOR SHALL COORDINATE WITH OWNER/OPERATOR TO REVIEW EXISTING DEPRESSIONS WITHIN EXISTING PAVEMENT AREAS TO REMAIN AND SHALL CONFIRM THAT THE SCOPE OF WORK SHALL PROVIDE POSITIVE DRAINAGE BY FIXING ANY EXISTING AREAS OF PONDING.
- BEFORE COMMENCING GRADING WORK, CONTRACTOR SHALL SUBMIT SAMPLES OF ALL NATIVE AND IMPORTED MATERIALS WITH THEIR INTENDED FOR STRUCTURAL USES TO THE GEOTECHNICAL ENGINEER OF RECORD.

MASSACHUSETTS ACCESSIBILITY DESIGN

GUIDELINES

(Rev. 5/2024)

- IN ADDITION TO THE ACCESSIBILITY DESIGN GUIDELINES ON SHEET C-102, THE CONTRACTOR MUST ALSO ENSURE THAT ALL ACCESSIBLE COMPONENTS AND ACCESSIBLE ROUTES ARE CONSTRUCTED IN STRICT ACCORDANCE WITH THE MASSACHUSETTS ARCHITECTURAL ACCESS BOARD REGULATIONS 521 CMR. THE CONTRACTOR MUST IMMEDIATELY NOTIFY THE ENGINEER OF RECORD, IN WRITING, OF ANY DISCREPANCIES BETWEEN THE "AMERICANS WITH DISABILITIES ACT" (ADA) CODE AND STATE BUILDING CODE AS IT RELATES TO ANY ACCESSIBLE IMPROVEMENTS BEING CONSTRUCTED PRIOR TO COMMENCING THE WORK.

BOHLER

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RTE 85
REALTY CORP.

PROPOSED
MIXED-USE DEVELOPMENT

MAP: 24 | LOTS: 7, 8 & 9
190, 194 & 198 HARTFORD AVENUE
NORFOLK COUNTY
BELLINGHAM, MA

BOHLER

352 TURNPIKE ROAD, 3rd FLOOR
SOUTHBOROUGH, MA 01772
Phone: (508) 480-9900

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SHEET TITLE:

GRADING AND DRAINAGE PLAN

SHEET NUMBER:

C-401

REVISION 3 - 09/25/2025

**THIS PLAN TO BE UTILIZED
FOR GRADING, DRAINAGE AND
UTILITIES PURPOSES ONLY**

SCALE: 1" = 20'



N/F
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AND
DEBORAH A. LOVELL
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SHARON M. NORTON
BOOK: 35441 PAGE: 441
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N/F
KIMBERLY A. LADOUCEUR
BOOK: 40692 PAGE: 279
4 SAGAMORE RD

N/F
LINDO F. MONTEIRO &
MICHELLE A. MONTEIRO
BOOK: 37725 PAGE: 550
4 CEDAR HILL RD

N/F
296 MAIN LLC
BOOK: 38212 PAGE: 274
186 HARTFORD AV
A.M. 24 LOT 6
AREA=13,502.55
(0.31342)

PROP APPROX LOCATION OF WATER AND FIRE
SERVICE TEE CONNECTIONS WITH GATE VALVES. GC TO
CONFIRM LOCATION/ELEVATION OF ALL UTILITIES
IN AREA OF PROP CONNECTION. GC TO COORDINATE
WORK WITH BELLINGHAM WATER DEPARTMENT.

CEDAR HILL ROAD
PUBLIC

PROP APPROX LOCATION OF DOMESTIC
WATER SERVICE PENETRATION. GC TO
COORD W/ ARCHMEP PLANS
PROP APPROX LOCATION OF
ELECTRIC AND TELECOM
SERVICE PENETRATION. GC TO
COORD W/ ARCHMEP PLANS
PROP APPROX LOCATION OF
GAS METER. GC TO COORD
W/ ARCHMEP PLANS

PROP ELECTRIC AND TELECOM
COMMUNICATIONS LINE. GC TO
COORD SIZE W/ GAS PROVIDER
PRIOR TO ORDERING OF MATERIALS
PROP GAS LINE. GC TO COORD
SIZE W/ UTILITY PROVIDER PRIOR
TO ORDERING OF MATERIALS

PROP APPROX LOCATION OF GAS SERVICE
CONNECTION. EX GAS LINE IN ROW TO BE
LOCATED BY GC. GC TO COORD W/ UTILITY
PROVIDER PRIOR TO CONSTRUCTION.

N/F
217 RIVER ROAD LLC
BOOK: 35064 PAGE: 365
198 HARTFORD AV
A.M. 24 LOT 9
AREA=21,179.57
(0.49142)

**ALL WET UTILITIES WITHIN 10-FT OF THE
BUILDING, INCLUDING OIL/WATER SEPARATOR (IF
APPLICABLE), ARE GOVERNED BY THE
MASSACHUSETTS UNIFORM STATE PLUMBING
CODE (248 CMR 10.00). SEE PLUMBING PLANS FOR
PIPE MATERIAL WITHIN 10-FT OF THE BUILDING.
WET UTILITIES ARE DRAWN TO THE BUILDING
FACE FOR COORDINATION PURPOSES ONLY.**

INFILTRATION BASIN
10 ROWS - 14 CHAMBERS PER ROW
STORMTECH SC-740 CHAMBERS
(140 CHAMBERS)
BOTTOM OF STONE ELEV=269.80
BOTTOM OF CHAMBER ELEV=267.30
TOP OF CHAMBER ELEV=269.80
TOP OF STONE ELEV=270.20
ESHW=263.30±

HARTFORD AVENUE (ROUTE 126)
1920 COUNTY
LAYOUT

N/F
BELLINGHAM N MAIN ST II LLC
BOOK: 22912 PAGE: 459
217 HARTFORD AV

N/F
M A REALTY ACQUISITION LLC
BOOK: 26834 PAGE: 118
189 HARTFORD AV

**THIS PLAN TO BE UTILIZED
FOR UTILITIES PURPOSES
ONLY**

SCALE: 1" = 20'

MASSACHUSETTS UTILITY NOTES

(Rev. 7/2024)

- THE CONTRACTOR'S PRICE FOR WATER AND SEWER SERVICE INSTALLATIONS MUST INCLUDE ALL FEES, COSTS, AND APPURTENANCES REQUIRED BY THE UTILITY PROVIDER (AND OTHER AGENCIES HAVING JURISDICTION OVER THE WORK) TO PROVIDE FULL AND COMPLETE WORKING SERVICE, INCLUDING (BUT NOT LIMITED TO) NECESSARY FEES, TESTING, DISINFECTING, INSPECTIONS, ROAD OPENING & BACKFILL REQUIREMENTS, TRAFFIC CONTROL AND SURETY BONDS AS DEFINED BY THE PROVIDER (AND OTHER AGENCIES HAVING JURISDICTION OVER THE WORK).
- ALL WORK ASSOCIATED WITH UTILITY POLES, OVERHEAD WIRES AND ANYALL APPURTENANCES SHALL BE COORDINATED BY THE GC WITH THE LOCAL UTILITY COMPANIES PRIOR TO THE ORDERING OF ANY MATERIALS. THIS MAY INCLUDE BUT IS NOT LIMITED TO THE REMOVAL, INSTALLATION, RELOCATION OR PROTECTION OF ANY BRACING, GUY WIRES, OVERHEAD WIRES, ETC. AS MAY BE REQUIRED TO ACCOMMODATE THE PROJECT.
- SEWERS CONVEYING SANITARY FLOW, OR INDUSTRIAL FLOW MUST BE SEPARATED FROM WATER MAINS BY A DISTANCE OF AT LEAST 10 FEET HORIZONTALLY. IF SUCH LATERAL SEPARATION IS NOT POSSIBLE, THE PIPES MUST, AT A MINIMUM, BE IN SEPARATE TRENCHES WITH THE AT LEAST 18 INCHES OF VERTICAL SEPARATION FROM THE BOTTOM OF THE WATER MAIN TO THE TOP OF THE SEWER LINE. WHERE APPROPRIATE SEPARATION FROM A WATER MAIN IS NOT POSSIBLE, THE SEWER MUST BE ENCASED IN CONCRETE, OR CONSTRUCTED OF DUCTILE IRON PIPE USING MECHANICAL OR SLIP-ON JOINTS FOR A DISTANCE OF AT LEAST 10 FEET ON EITHER SIDE OF THE CROSSING. IN ADDITION, ONE FULL LENGTH OF SEWER PIPE SHOULD BE LOCATED SO BOTH JOINTS WILL BE AS FAR FROM THE WATER LINE AS POSSIBLE. WHERE A WATER MAIN CROSSES UNDER A SANITARY SEWER, ADEQUATE STRUCTURAL SUPPORT FOR THE SANITARY SEWER MUST BE PROVIDED. ALL CROSSINGS SHALL BE IN ACCORDANCE WITH JURISDICTIONAL PERMITTING/UTILITY AUTHORITIES REGULATIONS.
- WHEN THESE PLANS INVOLVE MULTIPLE BUILDINGS, SOME OF WHICH MAY BE BUILT AT A LATER DATE, THE CONTRACTOR MUST EXTEND ALL UTILITY SERVICES, INCLUDING BUT NOT LIMITED TO STORM, SANITARY UTILITIES, AND IRRIGATION LINES, TO A POINT AT LEAST FIVE (5) FEET BEYOND THE PAVED AREAS FOR WHICH THE CONTRACTOR IS RESPONSIBLE. THE CONTRACTOR MUST CAP ENDS OF INSTALLED UTILITIES AS APPROPRIATE, MARK UTILITY ENDS WITH MAGNETIC TRACER TAPE, MARK TERMINUS LOCATIONS WITH A 24x STAKE, AND MUST NOTE THE LOCATION OF ALL UTILITY STUDS ON A CLEAN COPY OF THE PLAN. THIS RECORD DOCUMENT MUST BE PREPARED IN A NEAT AND WORKMAN-LIKE MANNER AND TURNED OVER TO THE OWNER/DEVELOPER UPON COMPLETION OF THE WORK, ALL OF WHICH IS AT THE CONTRACTOR'S SOLE COST.
- UNLESS INDICATED OTHERWISE, ALL NEW UTILITIES/SERVICES, INCLUDING ELECTRIC, TELEPHONE, CABLE TV, ETC., MUST BE INSTALLED UNDERGROUND. ALL NEW UTILITY SERVICES MUST BE INSTALLED IN ACCORDANCE WITH THE UTILITY SERVICE PROVIDER INSTALLATION SPECIFICATIONS AND STANDARDS.
- SANITARY PIPE MUST BE POLYVINYL CHLORIDE (PVC) SDR 35 EXCEPT WHERE CLEARLY INDICATED OTHERWISE. SANITARY LATERALS(S) MUST BE PVC SDR 26 UNLESS CLEARLY INDICATED OTHERWISE.
- UNLESS CLEARLY INDICATED OTHERWISE ALL SANITARY PIPE MUST BE:
 - FOR PIPES LESS THAN 12 FEET DEEP: POLYVINYL CHLORIDE (PVC) SDR 35 PER ASTM D3034.
 - FOR PIPES GREATER THAN 12 FEET DEEP: POLYVINYL CHLORIDE (PVC) SDR 26 PER ASTM D3034.
 - UNLESS LOCAL OR STATE BUILDING / PLUMBING CODE CLEARLY SPECIFIES DIFFERENTLY, SANITARY LATERALS MUST BE PVC SDR 26.
 - FOR ALL UTILITY PIPING (INCLUDING DRAIN) WITHIN 10 FT OF A BUILDING, PIPE MATERIAL SHALL COMPLY WITH APPLICABLE LOCAL OR STATE BUILDING AND PLUMBING CODES. CONTRACTOR SHALL REFER TO PLUMBING ENGINEERING PLANS AND VERIFY PIPE MATERIAL WITH LOCAL OFFICIALS PRIOR TO ORDERING OF MATERIALS.
 - CONTRACTOR SHALL VERIFY THE CONNECTION OF EXTERIOR PIPING TO ANY FIXTURES (SUCH AS AN EXTERIOR GREASE INTERCEPTOR) OR OTHER DRAINAGE SYSTEMS WITH LOCAL OFFICIALS FOR COMPLIANCE WITH APPLICABLE LOCAL OR STATE BUILDING AND PLUMBING CODES PRIOR TO ORDERING OF MATERIALS.
- WATER MAIN PIPING MUST BE INSTALLED IN ACCORDANCE WITH THE REQUIREMENTS AND SPECIFICATIONS OF THE LOCAL WATER COMPANY. IN THE ABSENCE OF SUCH REQUIREMENTS, WATER MAIN PIPING MUST BE CEMENT-LINED DUCTILE IRON (DI) MINIMUM CLASS 52 THICKNESS. ALL PIPE AND APPURTENANCES MUST COMPLY WITH THE APPLICABLE AWWA STANDARDS IN EFFECT AT THE TIME OF APPLICATION.
- GAS METERS MUST BE PROTECTED AS REQUIRED BY THE JURISDICTIONAL GAS PROVIDER.
- TRANSFORMERS AND SWITCH GEARS: GC SHALL PROVIDE ALL APPURTENANCES IN ACCORDANCE WITH UTILITY COMPANY SPECIFICATIONS AND CARRY SAME IN BASE BID. APPURTENANCES SHALL INCLUDE, BUT NOT BE LIMITED TO, THE CONCRETE PAD, SPILL CONTAINMENT AREAS (IF REQUIRED), BOLLARD / VEHICULAR PROTECTION, AND OTHER ITEMS AS MAY BE REQUIRED BY THE UTILITY PROVIDER FOR INSTALLATION OF THE TRANSFORMER AND SWITCH GEAR (IF REQUIRED). GC SHALL COORDINATE ALL ASPECTS OF INSTALLATION WITH UTILITY PROVIDER PRIOR TO ORDERING OF MATERIALS AND NOTIFY DESIGN ENGINEER OF ANY CONFLICTS IN WRITING.



REVISIONS

REV	DATE	COMMENT	DRAWN BY
1	07/01/2025	SITE LAYOUT REVISIONS	CPB
2	08/22/2025	SITE LAYOUT REVISIONS	CPB
3	09/25/2025	PEER REVIEW COMMENTS	JAK



PERMIT SET

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.: MAA240490-00-3A
DRAWN BY: SBB
CHECKED BY: CPB
DATE: 02/05/2025
CAD ID: P-CIVL-PROP

PROJECT:

SITE DEVELOPMENT PLANS FOR

RTE 85
REALTY CORP.

PROPOSED
MIXED-USE DEVELOPMENT
MAP: 24 | LOTS: 7, 8 & 9
190, 194 & 198 HARTFORD AVENUE
NORFOLK COUNTY
BELLINGHAM, MA



352 TURNPIKE ROAD, 3rd FLOOR
SOUTHBOROUGH, MA 01772
Phone: (508) 480-9900

www.BohlerEngineering.com

SHEET TITLE:

UTILITY PLAN

SHEET NUMBER:

C-501

REVISION 3 - 09/25/2025



N/F
KURT D. LOVELL
AND
DEBORAH A. LOVELL
BOOK: 31626 PAGE: 504
HOUSE 11

N/F
TIMOTHY M. &
SHARON M. NORTON
BOOK: 35441 PAGE: 441
7 CEDAR HILL RD

N/F
KIMBERLY A. LADOUCEUR
BOOK: 40692 PAGE: 279
4 SAGAMORE RD

N/F
LINDO F. MONTEIRO &
MICHELLE A. MONTEIRO
BOOK: 37725 PAGE: 550
4 CEDAR HILL RD

N/F
296 MAIN LLC
BOOK: 38212 PAGE: 274
186 HARTFORD AV
A.M. 24 LOT 6
AREA=13,502.55
(0.314AC)

N/F
IBRAHIM T. &
NAWAL MORKOS
BOOK: 13872 PAGE: 493
202 HARTFORD AV

N/F
217 RIVER ROAD LLC
BOOK: 35064 PAGE: 365
198 HARTFORD AV
A.M. 24 LOT 9
AREA=21,179.45
(0.491AC)

PROP 5,000 SF 2
STORY RETAIL
(10,000 SF TOTAL)

HARTFORD AVENUE (ROUTE 126)

1920 COUNTY
LAYOUT

N/F
BELLINGHAM N MAIN ST II LLC
BOOK: 22912 PAGE: 459
217 HARTFORD AV

N/F
M A REALTY ACQUISITION LLC
BOOK: 26834 PAGE: 118
189 HARTFORD AV

N/F
193 HARTFORD AVE REALTY LLC
BOOK: 41251 PAGE: 74
193 HARTFORD AV

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

SCALE: 1" = 20'

BOHLER

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

REVISIONS

REV	DATE	COMMENT	CHECKED BY
1	07/01/2025	SITE LAYOUT REVISIONS	CPB
2	08/22/2025	SITE LAYOUT REVISIONS	CPB
3	09/25/2025	PEER REVIEW COMMENTS	JAK



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PERMIT SET

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PROJECT No.: MAA240490-00-3A
DRAWN BY: SBB
DATE: 02/05/2025
CAD ID: P-CIVL-PROP

PROJECT:

SITE DEVELOPMENT PLANS FOR

RTE 85
REALTY CORP.

PROPOSED
MIXED-USE DEVELOPMENT
MAP: 24 | LOTS: 7, 8 & 9
190, 194 & 198 HARTFORD AVENUE
NORFOLK COUNTY
BELLINGHAM, MA

BOHLER

352 TURNPIKE ROAD, 3rd FLOOR
SOUTHBOROUGH, MA 01772
Phone: (508) 480-9900

www.BohlerEngineering.com

SHEET TITLE:

SOIL EROSION AND SEDIMENT CONTROL PLAN

SHEET NUMBER:

C-801

REVISION 3 - 09/25/2025

MASSACHUSETTS EROSION AND SEDIMENT CONTROL NOTES

1. ALL SEDIMENT AND EROSION CONTROL MEASURES SHALL BE DONE AS SET FORTH IN THE MOST CURRENT STATE SEDIMENT AND EROSION CONTROL MANUAL.
2. 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).
3. 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%.
4. 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.
5. ALL EROSION CONTROL STRUCTURES WILL BE INSPECTED, REPLACED AND/OR REPAIRED EVERY 7 DAYS AND IMMEDIATELY FOLLOWING ANY SIGNIFICANT RAINFALL 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.
6. 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.
7. 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.
8. 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.
9. DURING THE CONSTRUCTION PHASE, INTERCEPTED SEDIMENT SHALL BE REMOVED AND DISPOSED OF IN ACCORDANCE WITH LOCAL, STATE, AND FEDERAL STANDARDS.
10. 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:
 - a) SIX INCHES, OR DEPTH SPECIFIED ON THE LANDSCAPE PLAN, OF LOAM WILL BE SPREAD OVER DISTURBED AREAS AND SMOOTHED TO A UNIFORM SURFACE.
 - b) APPLY LIME/STONE 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 LIMESTONE (EQUIVALENT TO 50% CALCIUM PLUS MAGNESIUM OXIDE) AT A RATE OF 3 TONS PER ACRE (138 LBS PER 1,000 SF).
 - c) FOLLOWING SEED BED PREPARATION, DITCHES AND BACK SLOPES WILL BE SEED TO A MIXTURE OF 47% CREEPING RED FESCUE, 5% REDTOP, AND 48% TALL FESCUE. THE LAWN AREAS WILL BE SEED TO A PREMIUM TURF MIXTURE OF 44% KENTUCKY BLUE-GRASS, 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.
 - d) STRAW 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.
11. 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.
12. WETLANDS WILL BE PROTECTED WITH BARRIERS CONSISTING OF STRAW BALES, COMPOST TUBES, SILT FENCE OR A COMBINATION THEREOF.
13. ALL AREAS WITHIN 100 FEET OF A FLAGGED WETLAND OR STREAM SHALL HAVE AN EXPOSURE WINDOW OF NOT MORE THAN 7 DAYS.
14. 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) 100 POUNDS
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)	

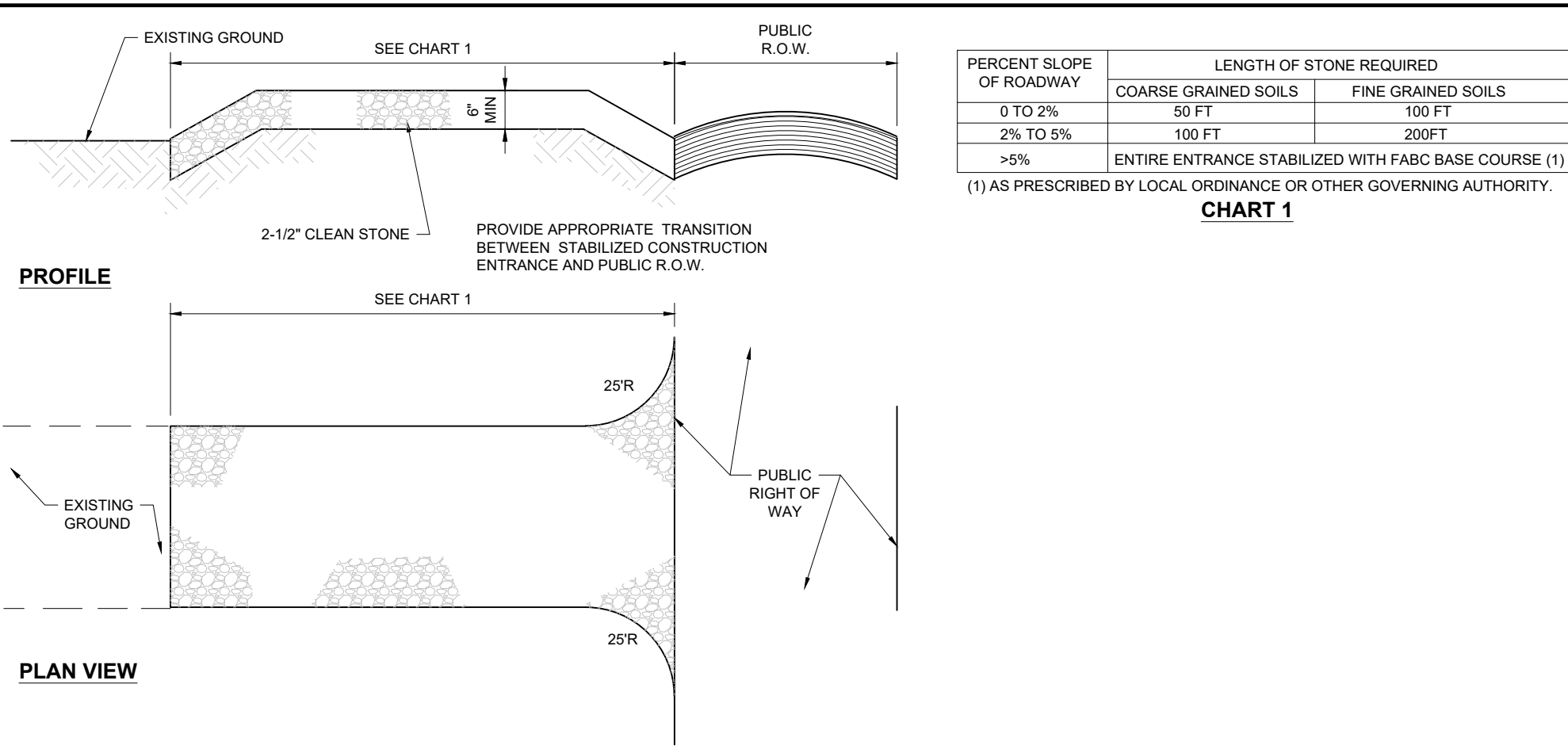
- * A HYDRO-APPLICATION OF WOOD OR PAPER FIBER MAY BE APPLIED FOLLOWING SEEDING. A SUITABLE NON-TOXIC BINDER SHALL BE USED TO ADDITIONAL WIND CONTROL.
- * MULCH ANCHORING: ANCHOR MULCH WITH PEG AND TWINE (1 SQ. YD/BLOCK); MULCH NETTING (AS PER MANUFACTURER); WOOD CELLULOSE FIBER (750 LBS/ACRE); CHEMICAL TACK (AS PER MANUFACTURER'S SPECIFICATIONS); USE OF A SERRATED STRAIGHT DISK WETTING FOR SMALL AREAS AND ROAD DITCHES MAY BE PERMITTED.
15. 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.
 - a) TEMPORARY SEDIMENT TRAPS SHALL BE SIZED PER THE CURRENT EDITION OF THE MASSACHUSETTS EROSION AND SEDIMENT CONTROL GUIDELINES FOR URBAN AREAS AND PROVIDE A MINIMUM OF 1,000 CF PER ACRE OF TRIBUTARY AREA.
 - b) 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.
 16. 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.
 17. EXISTING CATCH BASIN STRUCTURES SHALL BE PROTECTED UNTIL SUCH TIME AS THEY ARE REMOVED.
 18. 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.
 19. 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.
 20. EROSION CONTROL NOTES DURING WINTER CONSTRUCTION
 21. WINTER CONSTRUCTION PERIOD: NOVEMBER 1 THROUGH APRIL 15.
 22. 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.
 23. 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.
 24. 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.
 25. 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 SEED. IF THE EXPOSED AREA HAS BEEN LOAMED, FINAL GRADED AND IS SMOOTH, THEN THE AREA MAY BE DORMANT SEED. 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.
 26. MULCHING REQUIREMENTS:
 - a) BETWEEN THE DATES OF NOVEMBER 1ST AND APRIL 15TH ALL MULCH SHALL BE ANCHORED BY EITHER PEG LINE, MULCH NETTING OR WOOD CELLULOSE FIBER.
 - b) 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%.
 - c) 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%.
 27. ALL DISTURBED AREAS SHALL BE STABILIZED IN ACCORDANCE WITH THE STORMWATER PREVENTION PLAN.
 28. 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

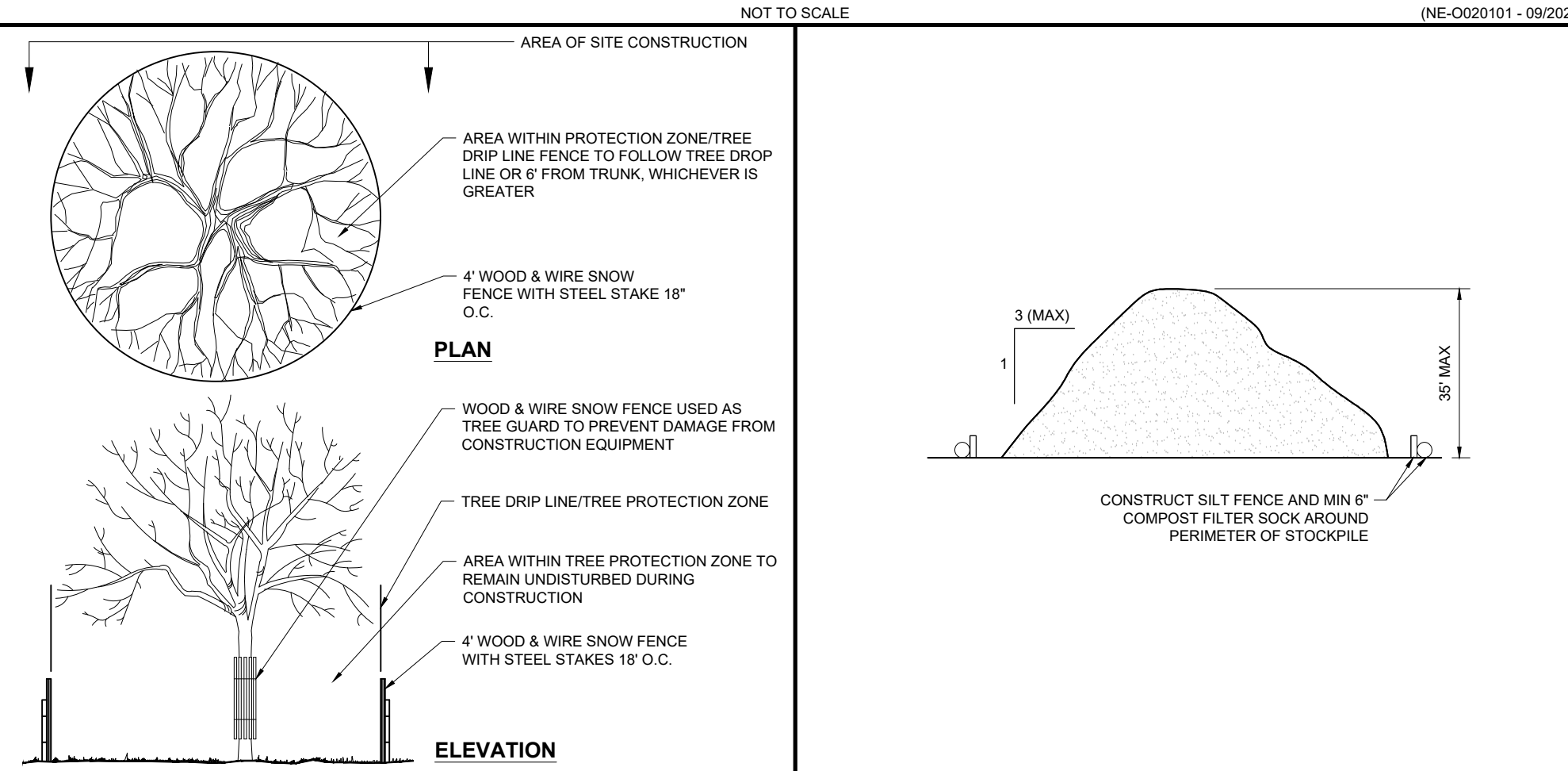
1. THE GENERAL NOTES MUST BE INCLUDED AS PART OF THIS ENTIRE DOCUMENT PACKAGE AND ARE PART OF THE CONTRACT DOCUMENTS. THE GENERAL NOTES ARE REFERENCED HEREIN, AND THE CONTRACTOR MUST REFER TO THEM AND FULLY COMPLY WITH THESE NOTES, IN THEIR ENTIRETY. THE CONTRACTOR MUST BE FAMILIAR WITH AND ACKNOWLEDGE FAMILIARITY WITH ALL OF THE GENERAL NOTES AND ALL OF THE PLANS' SPECIFIC NOTES.
2. 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, CLEARING, AND SITE WORK MUST BE PERFORMED EXACTLY AS INDICATED IN THE EROSION CONTROL CONSTRUCTION NOTES.
3. THE DISTURBED LAND AREA OF THIS SITE IS APPROXIMATELY 1.181 ACRES.
4. THE FOLLOWING EROSION CONTROL MEASURES ARE PROPOSED FOR THIS SITE:
 - a) 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.
 - b) SEDIMENT FENCE - INSTALL SILT FENCE(S) AND/OR SILT SOCK AROUND ALL OF THE DOWNSLOPE PERIMETERS OF THE SITE, TEMPORARY FILL AND SOIL STOCKPILES.
 - c) 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.
5. INSTALLATION OF EROSION CONTROL DEVICES MUST BE IN ACCORDANCE WITH ALL OF THE MANUFACTURER'S RECOMMENDATIONS.
6. 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.
7. 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.
8. 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.
9. 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.
10. THE CONTRACTOR MUST CONTINUE TO MAINTAIN ALL EROSION CONTROL MEASURES UNTIL THE COMPLETION OF CONSTRUCTION AND THE ESTABLISHMENT OF VEGETATION.
11. THE CONTRACTOR MUST REMOVE EROSION CONTROL MEASURES, SILT AND DEBRIS AFTER ESTABLISHING PERMANENT VEGETATION COVER OR OTHER INSTALLING A DIFFERENT, SPECIFIED METHOD OF STABILIZATION.
12. 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.
13. 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.
14. THE CONTRACTOR MUST REFER TO GRADING PLANS FOR ADDITIONAL INFORMATION.
15. 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.
16. 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.
17. 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.

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)
- 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



STABILIZED CONSTRUCTION ENTRANCE

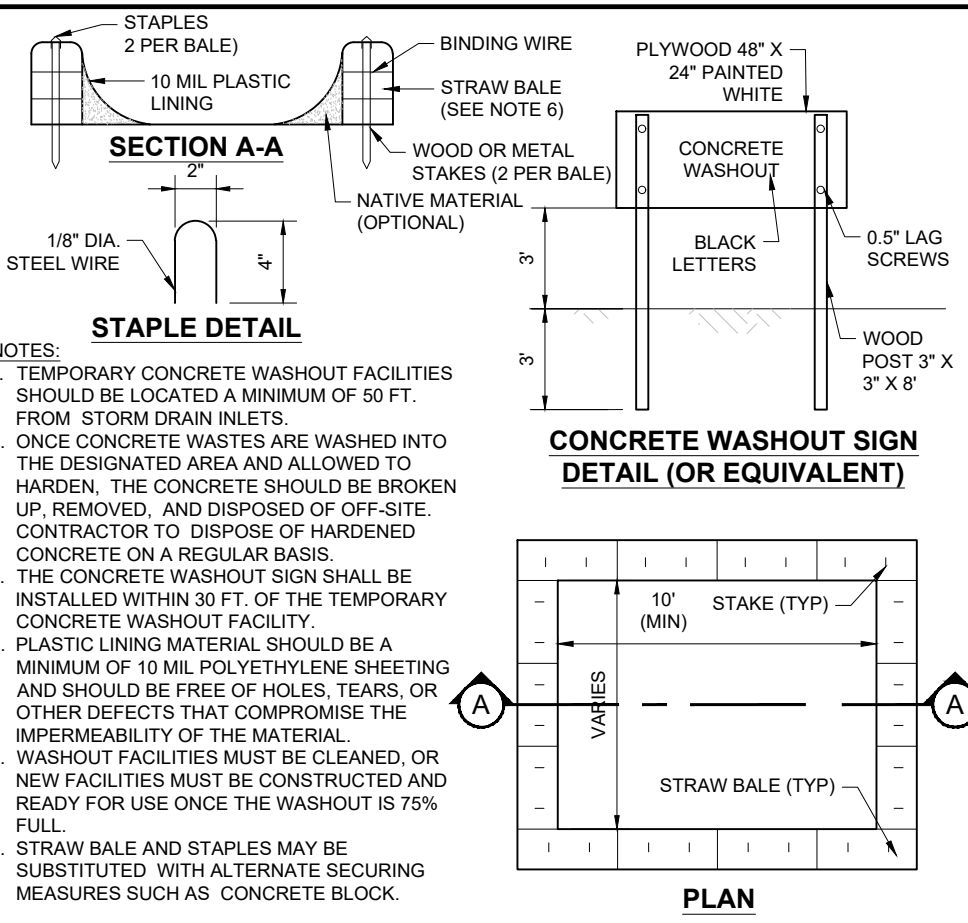


TREE PROTECTION DURING SITE CONSTRUCTION

TEMPORARY STOCK PILE WITH SILT FENCE AND FILTER SOCK

NOT TO SCALE (NE-0030201 - 09/2023)

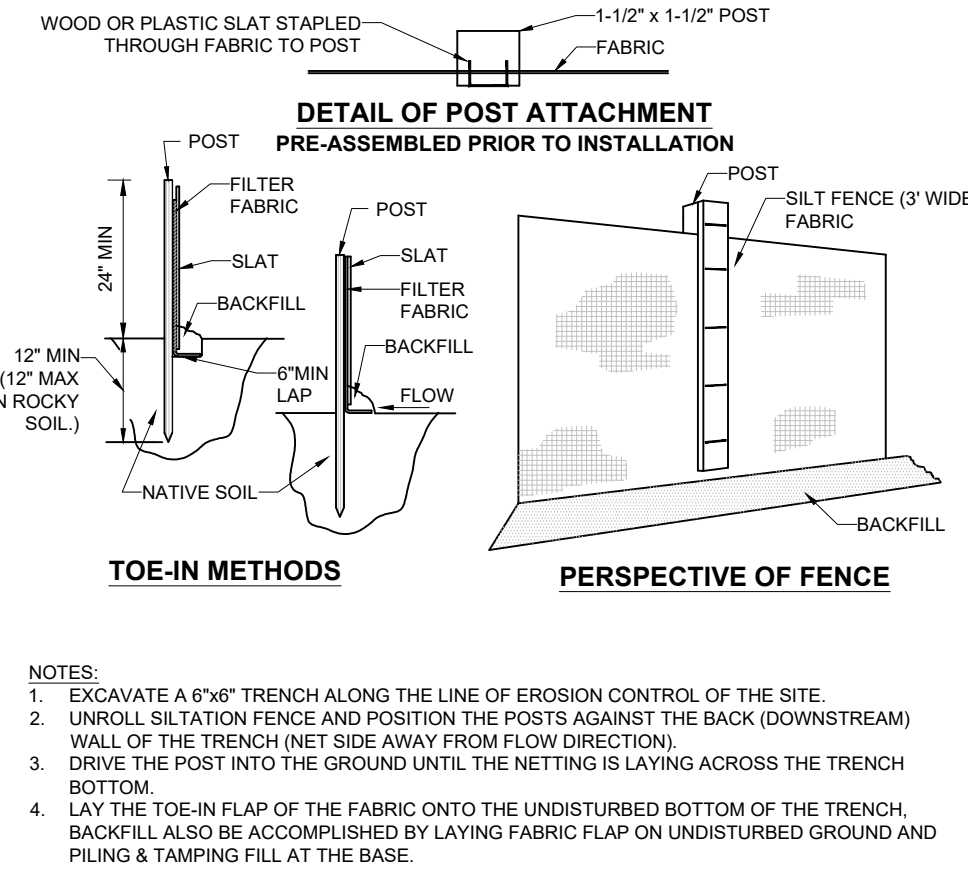
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CONCRETE WASTE MANAGEMENT AREA

NOT TO SCALE (NE-0020101 - 09/2023)

NOT TO SCALE (NE-0020201 - 09/2023)



NOT TO SCALE (NE-0040101 - 09/2023)

SILT FENCE

NOT TO SCALE (NE-0040101 - 09/2023)

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BOHLER

SITE CIVIL AND CONSULTING ENGINEERING

PROGRAM MANAGEMENT

LANDSCAPE ARCHITECTURE

SUSTAINABLE DESIGN

PERMITTING SERVICES

TRANSPORTATION SERVICES

REVISIONS

REV	DATE	COMMENT	DRAWN BY
1	07/01/2025	SITE LAYOUT REVISIONS	CPB
2	08/22/2025	SITE LAYOUT REVISIONS	CPB
3	09/25/2025	PEER REVIEW COMMENTS	JAK

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PROJECT No.:	MAA240490-00-3A
DRAWN BY:	SBB
CHECKED BY:	CPB
DATE:	02/20/2025
CAD ID:	P-CIVL-CND5

PROJECT:

SITE DEVELOPMENT PLANS

RTE 85 REALTY CORP.

PROPOSED MIXED-USE DEVELOPMENT

MAP: 24 LOTS: 7, 8 & 9

190, 194 & 198 HARTFORD AVENUE

NORFOLK COUNTY

BELLINGHAM, MA

BOHLER

352 TURNPIKE ROAD, 3rd FLOOR

SOUTHBOROUGH, MA 01772

Phone: (508) 480-9900

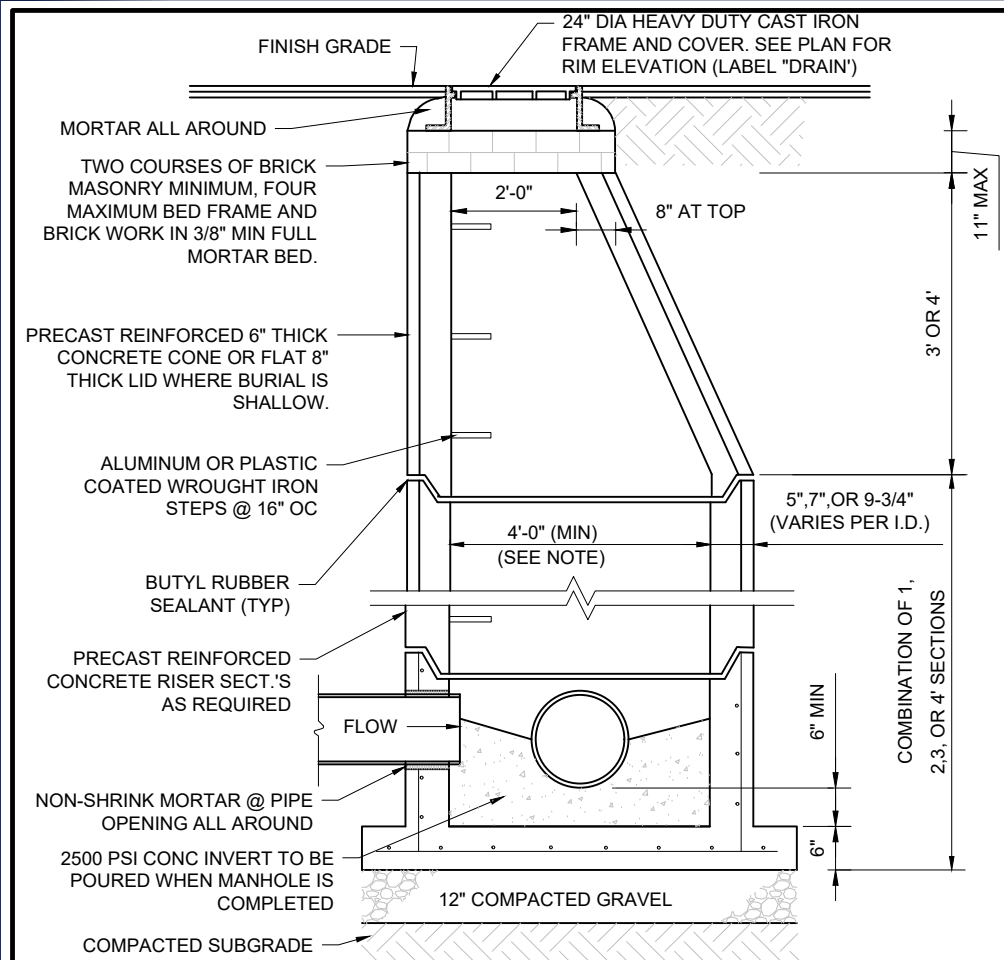
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SHEET TITLE:

EROSION AND SEDIMENT CONTROL NOTES AND DETAILS

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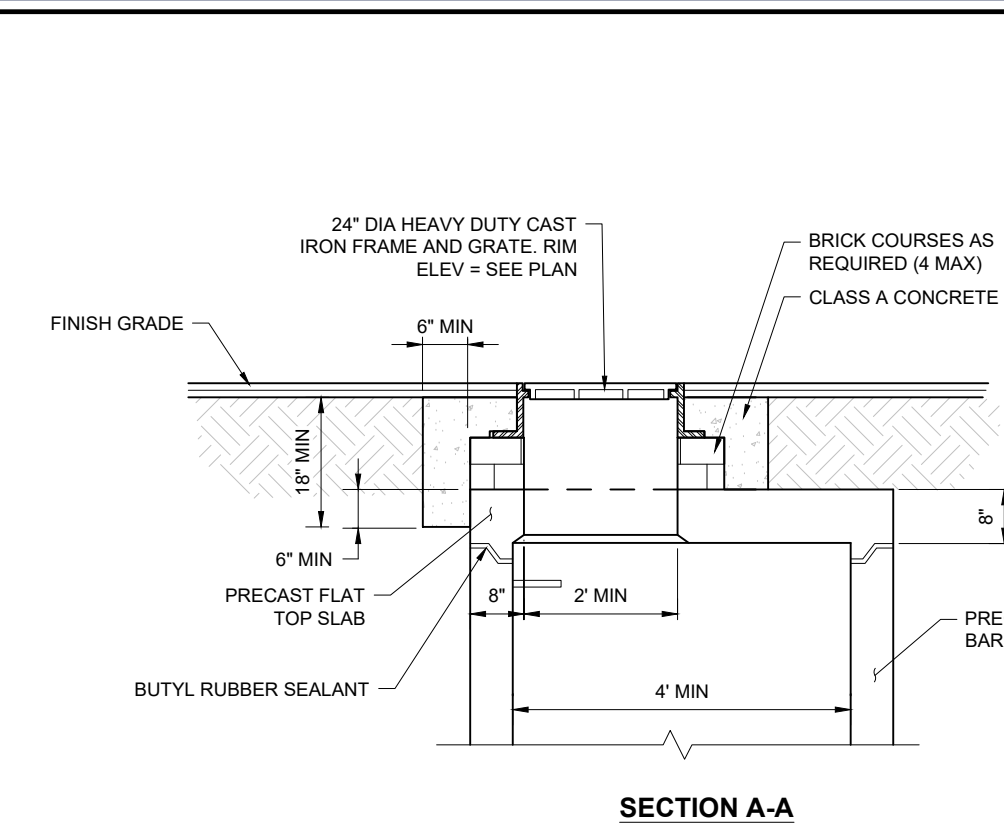
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- NOTES:
1. ALL STRUCTURES SHALL BE SUITABLE FOR H-20 LOADING AND SHALL MEET THE REQUIREMENTS OF ASTM C478.
 2. CONTRACTOR SHALL SIZE MANHOLE AS NECESSARY TO ACCOMMODATE THE PIPE SIZING AND ORIENTATION USING THE GEOMETRY SHOWN ON THE GRADING AND DRAINAGE PLANS.
 3. CONCRETE SHALL BE 4,000 PSI AFTER 28 DAYS.
 4. REINFORCED STEEL CONFORMS TO ASTM A185 SPEC. 0.12 SQ IN/LINEAL FT AND 0.12 SQ IN (BOTH WAYS) BASE BOTTOM.
 5. MANHOLE DESIGN SPECS CONFORM TO ASTM C478 SPEC FOR "PRECAST REINFORCED CONCRETE MANHOLE SECTIONS".

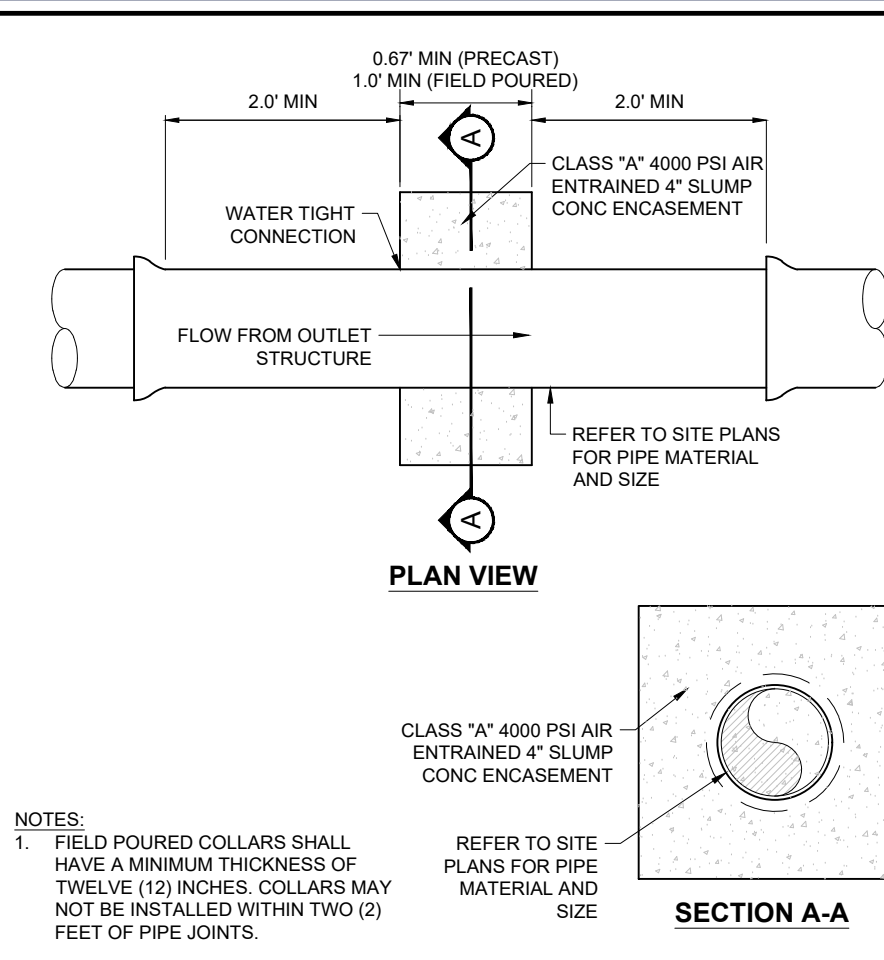
PRECAST CONCRETE STORM DRAIN MANHOLE

(NE-U010101 - 11/2024)



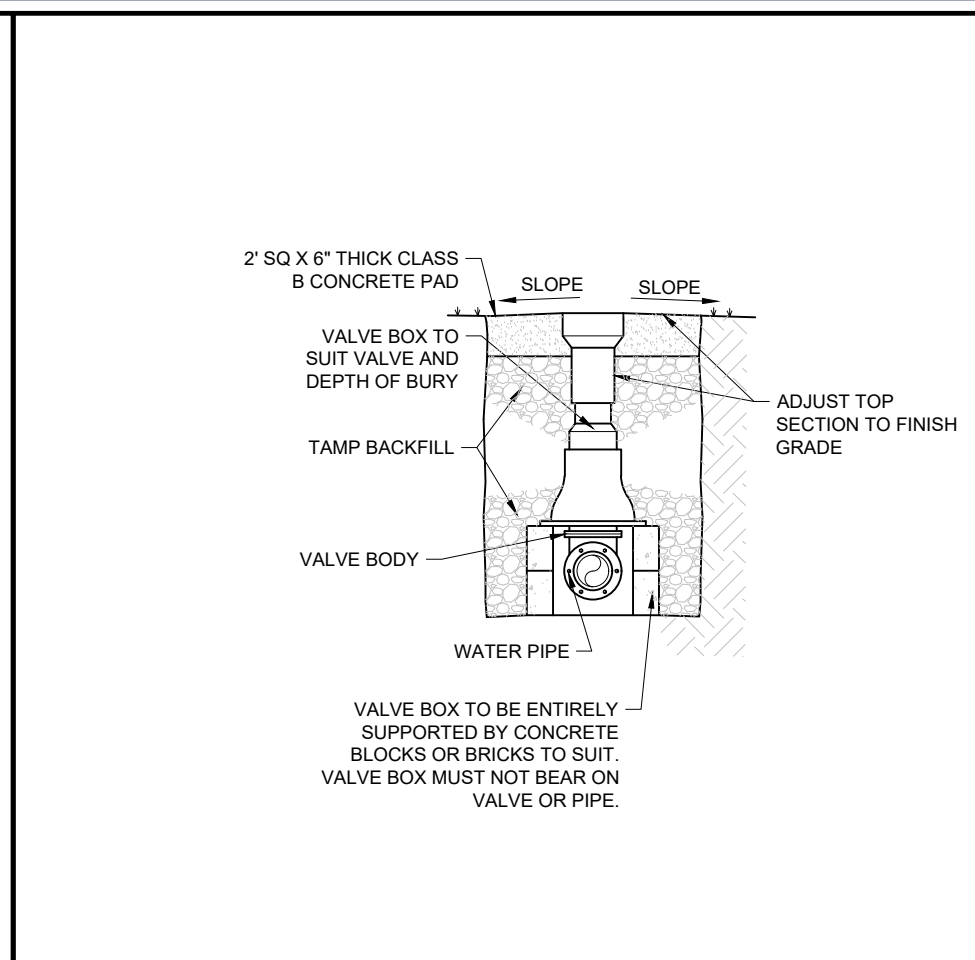
PRECAST FLAT SLAB TOP FOR SHALLOW MANHOLE

(NE-U010107 - 11/2024)



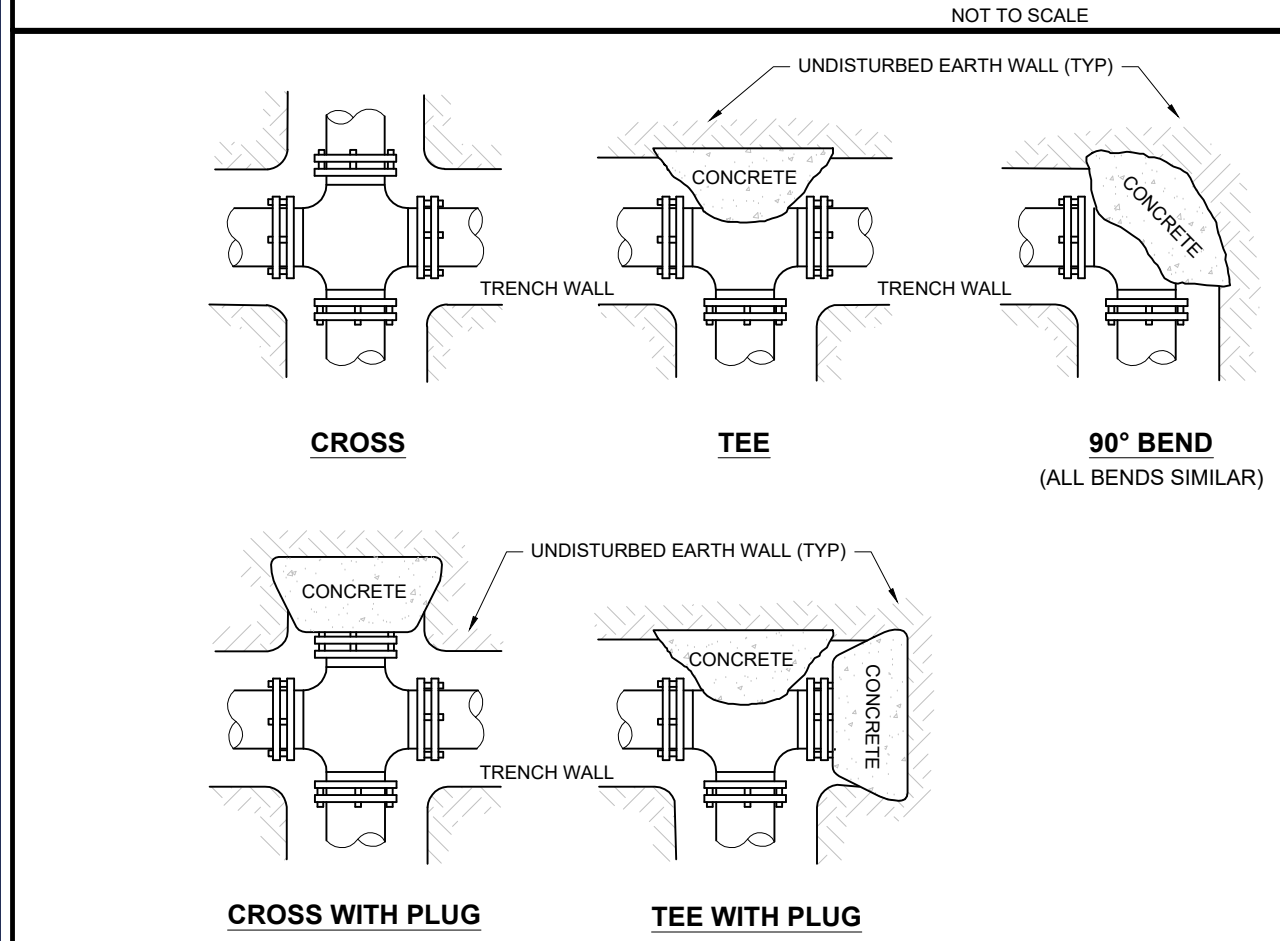
ANTI-SEEP COLLAR

(NE-U019813 - 09/2023)

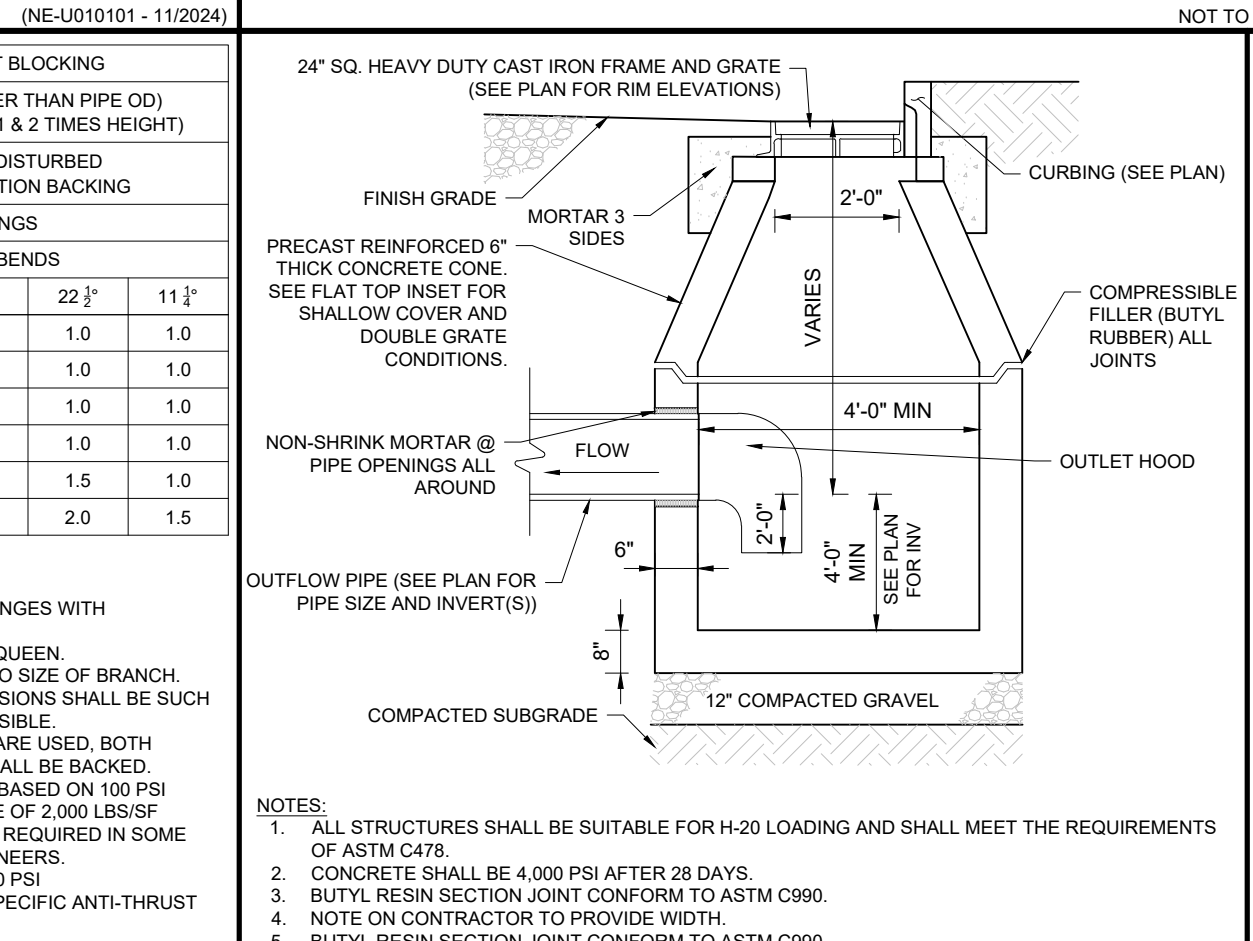


GATE VALVE

(NE-U030201 - 09/2023)

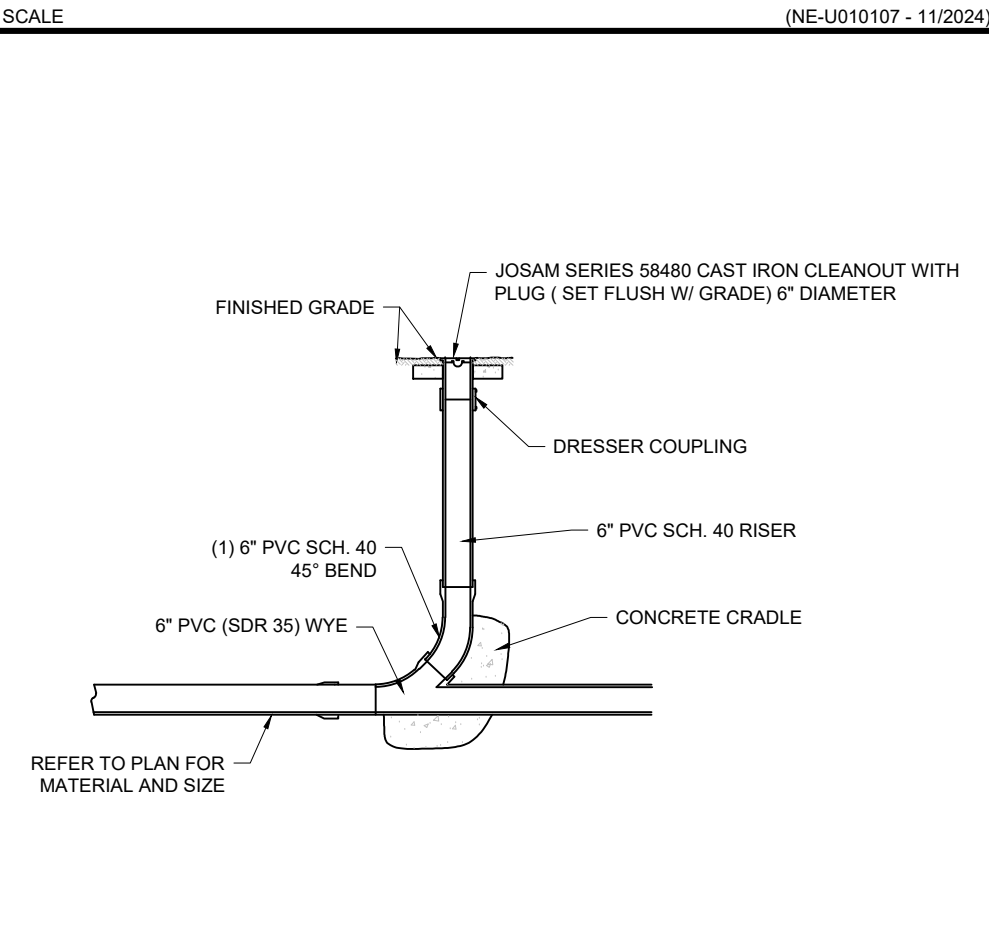


HORIZONTAL THRUST BLOCKING



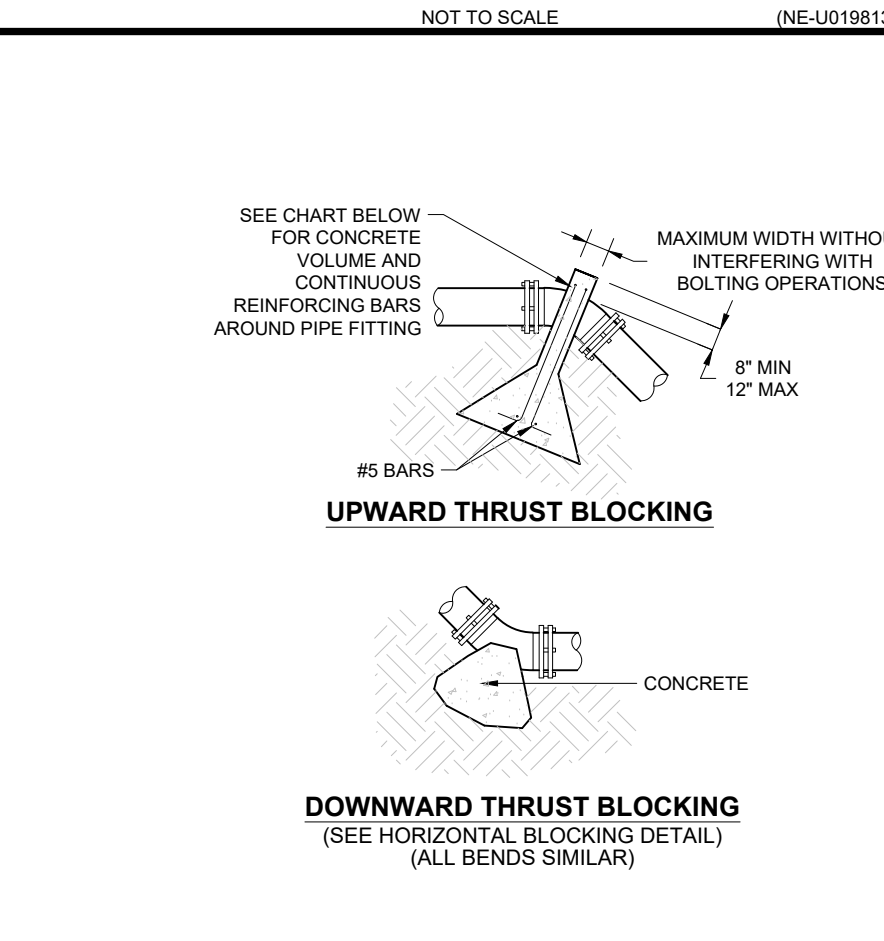
PRECAST CONCRETE DEEP SUMP CATCH BASIN

(NE-U010201 - 10/2024)



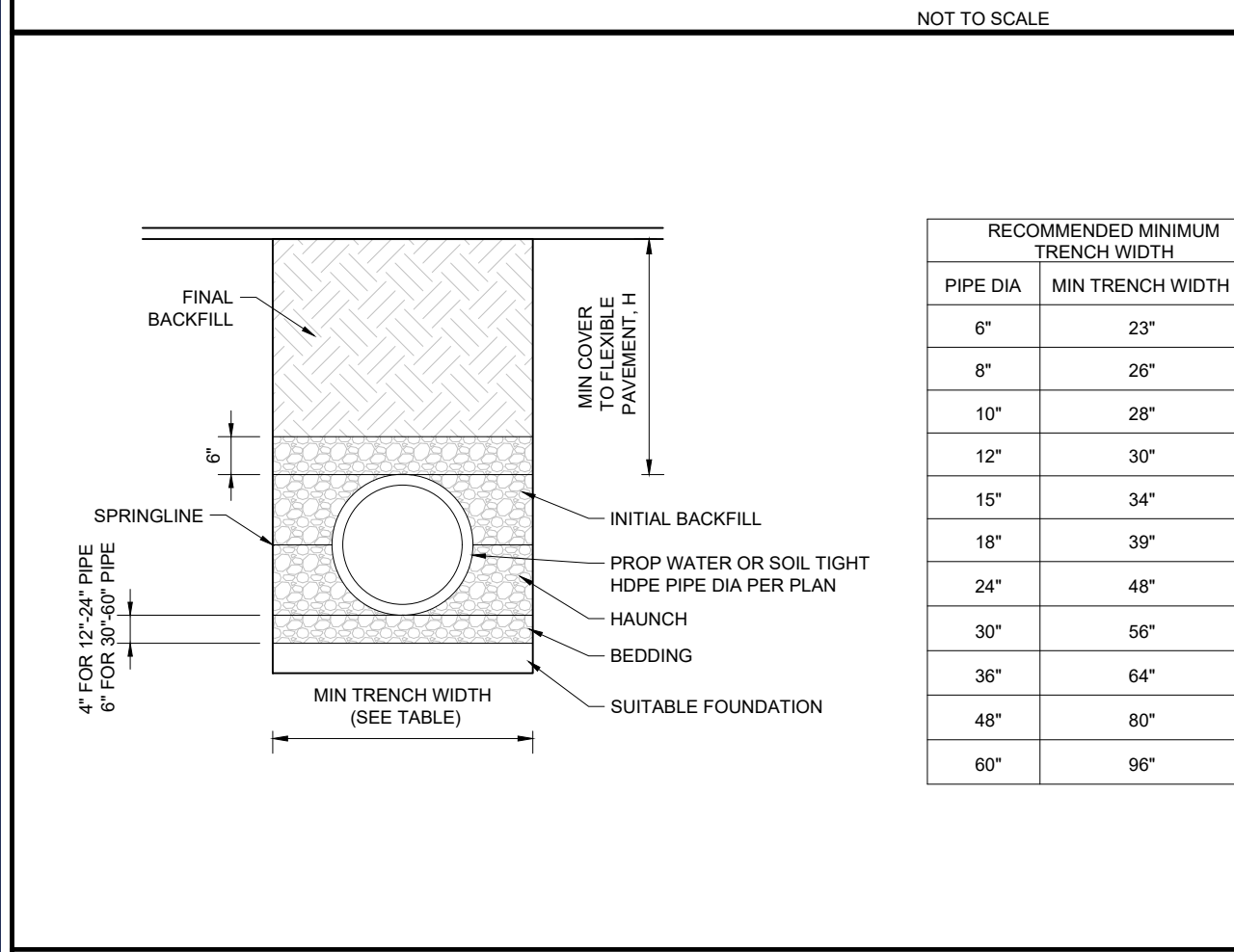
CLEANOUT (IN-LINE)

(NE-U010302 - 11/2024)



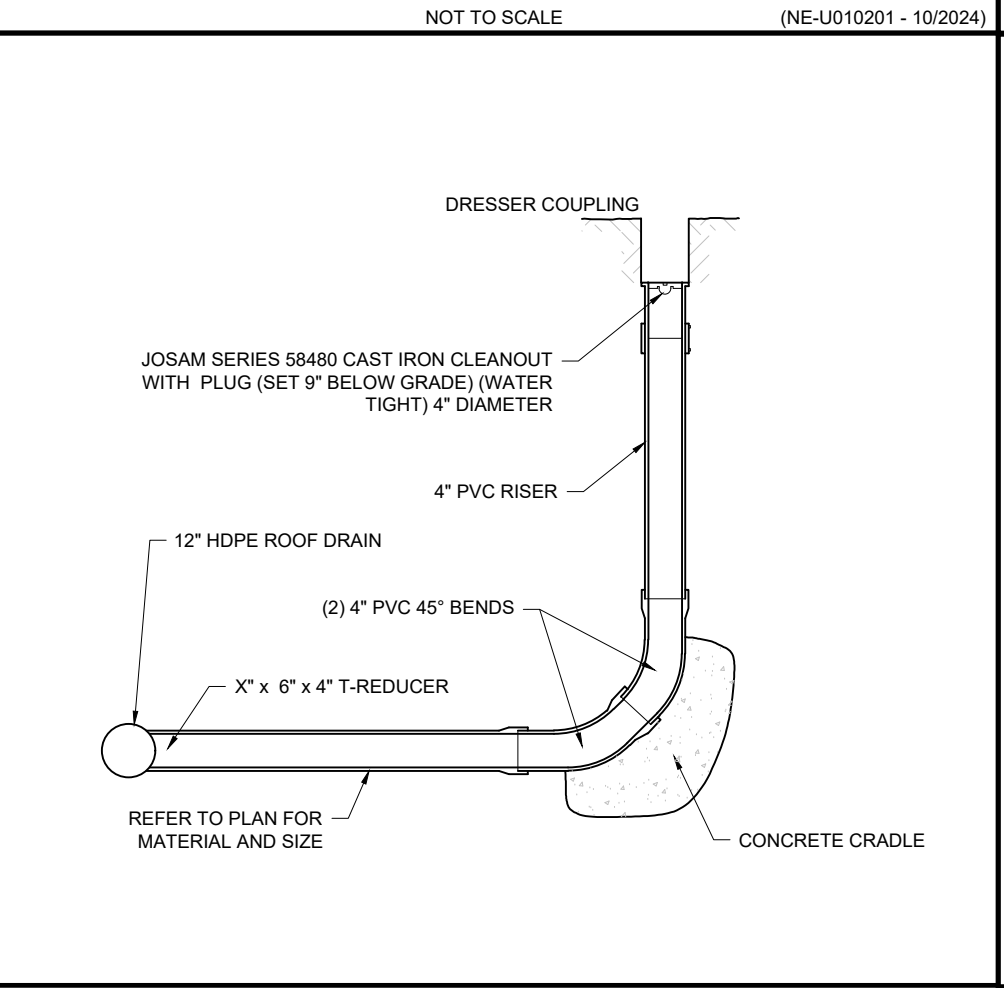
VERTICAL THRUST BLOCKING

(NE-U030502 - 11/2024)



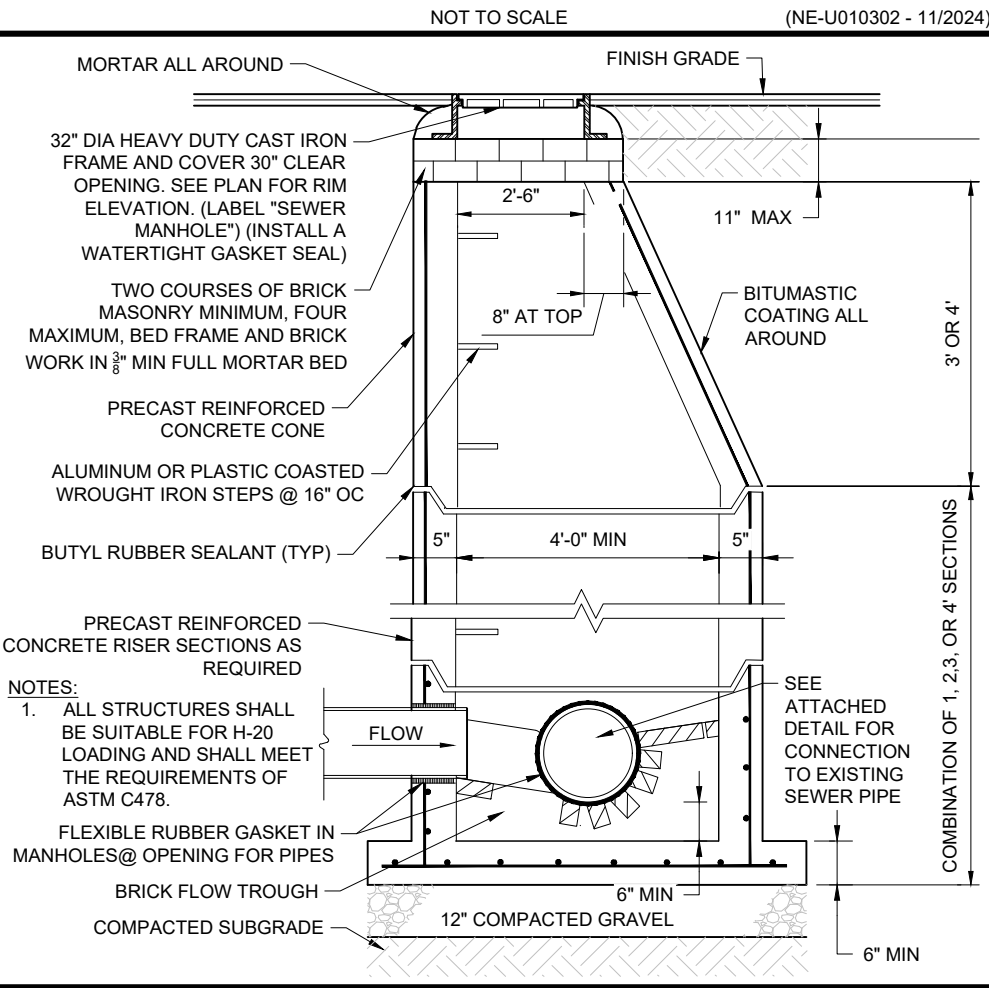
HDPE STORM PIPE TRENCH

(NE-U019812 - 11/2024)



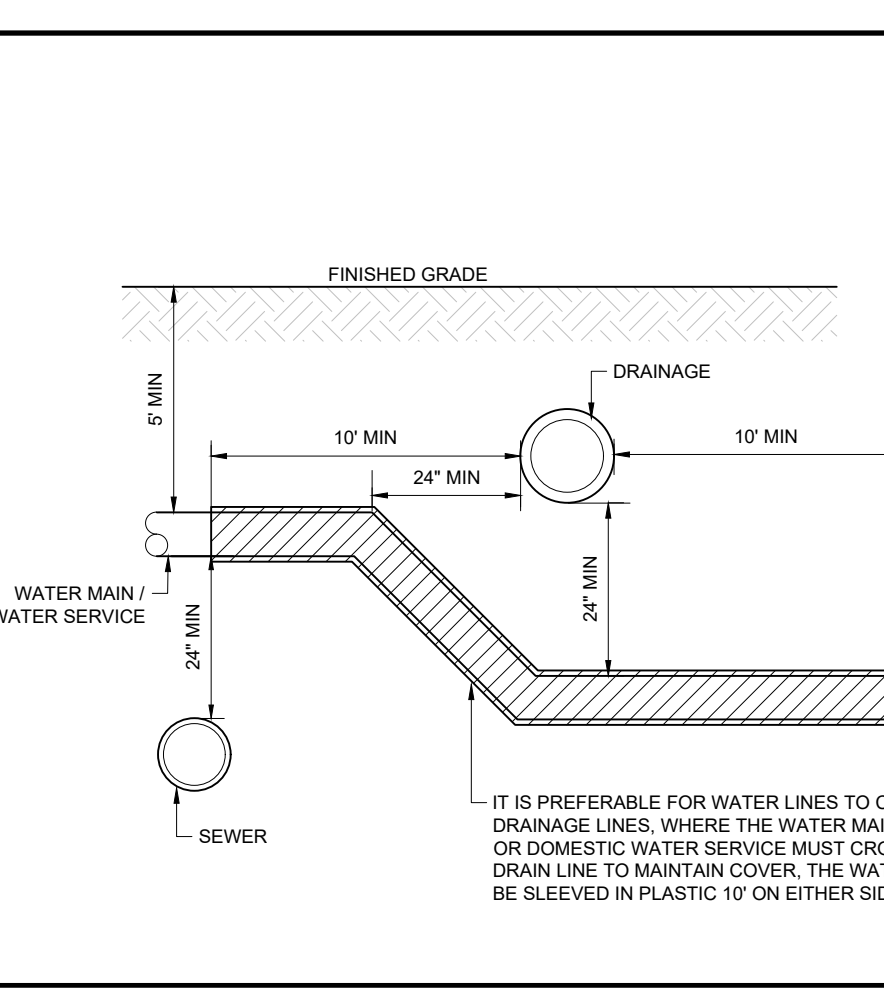
CLEANOUT (TERMINAL)

(NE-U010301 - 11/2024)



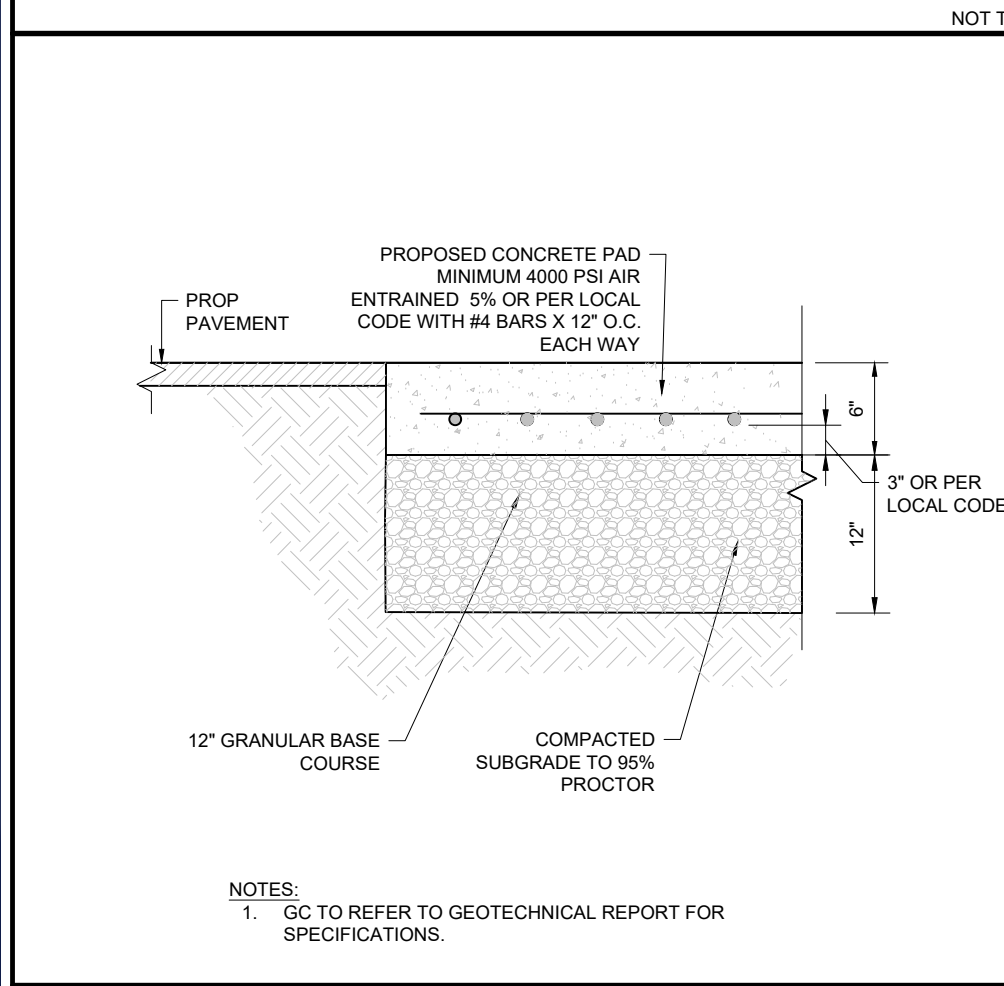
PRECAST CONCRETE SANITARY MANHOLE

(NE-U020101 - 11/2024)



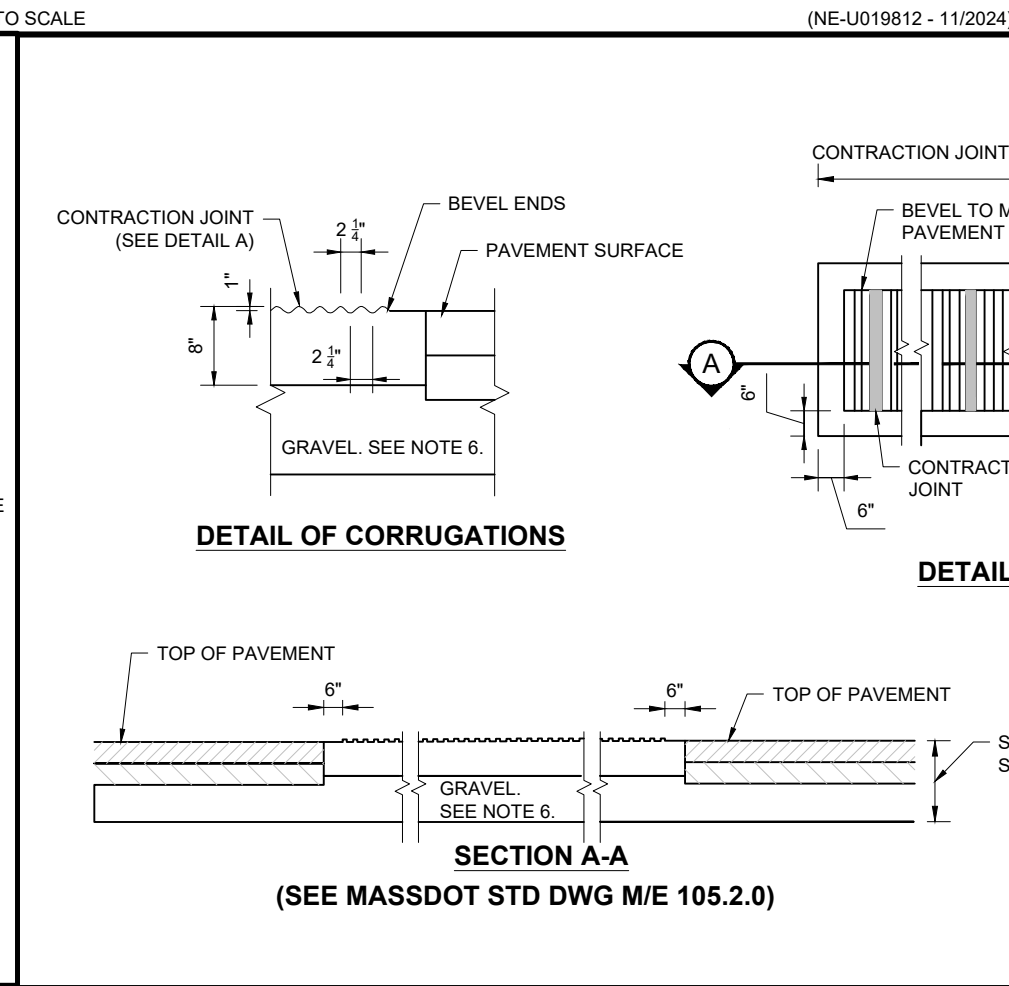
WATER SERVICE OR MAIN AT UTILITY CROSSING

(NE-U050102 - 09/2023)



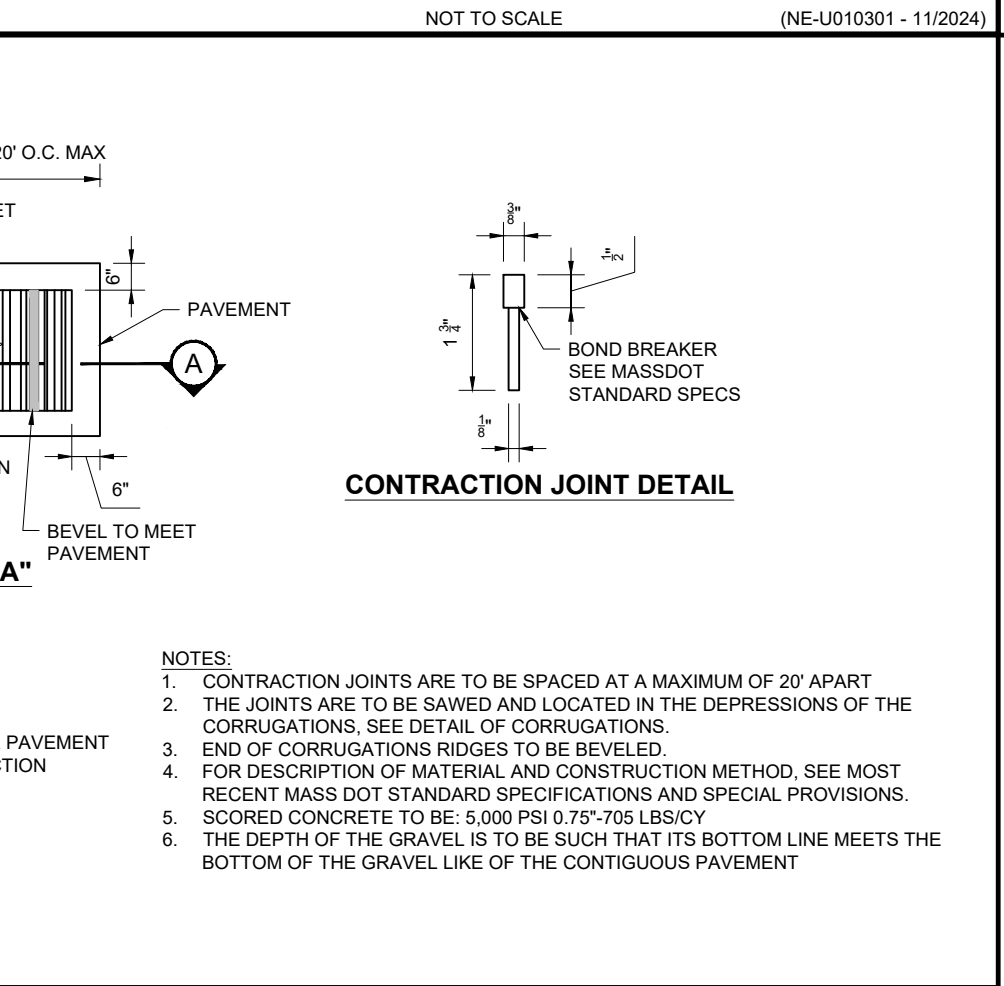
CONCRETE PAD

(NE-S010701 - 09/2024)



FLUSH SCORED CONCRETE ISLAND

(NE-S010702 - 12/2024)



TAPPING SLEEVE AND GATE VALVE

(NE-U030401 - 11/2024)

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REVISIONS				
REV	DATE	COMMENT	CHECKED BY	DRAWN BY
1	07/01/2025	SITE LAYOUT REVISIONS	CPB	LMD
2	08/22/2025	SITE LAYOUT REVISIONS	CPB	JAK
3	09/25/2025	PEER REVIEW COMMENTS	CPB	JAK

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PROJECT No.: MAA24049-00-3A
DRAWN BY: SBB
CHECKED BY: CPB
DATE: 02/05/2025
CAD LID: P-CIVIL-CND5

PROJECT:

SITE DEVELOPMENT PLANS
FOR
RTE 85 REALTY CORP.

PROPOSED MIXED-USE DEVELOPMENT

MAP: 24 | LOTS: 7, 8 & 9
190, 194 & 198 HARTFORD AVENUE
NORFOLK COUNTY
BELLINGHAM, MA

BOHLER

352 TURNPIKE ROAD, 3rd FLOOR
SOUTHBOROUGH, MA 01772
Phone: (508) 480-9900

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SHEET TITLE:

CONSTRUCTION DETAILS

SHEET NUMBER:

C-902

REVISION 3 - 09/25/2025



SC-740 STORMTECH CHAMBER SPECIFICATIONS

- CHAMBERS SHALL BE STORMTECH SC-740.
- CHAMBERS SHALL BE ARCH-SHAPED AND SHALL BE MANUFACTURED FROM VIRGIN, IMPACT-MODIFIED POLYPROPYLENE COPOLYMERS.
- CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2418, "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
- CHAMBER ROWS SHALL PROVIDE CONTINUOUS, UNOBSTRUCTED INTERNAL SPACE WITH NO INTERNAL SUPPORTS THAT WOULD IMPEDE FLOW OR LIMIT ACCESS FOR INSPECTION.
- THE STRUCTURAL DESIGN OF THE CHAMBERS, THE STRUCTURAL BACKFILL, AND THE INSTALLATION REQUIREMENTS SHALL ENSURE THAT THE LOAD FACTORS SPECIFIED IN THE AASHTO LFD BRIDGE DESIGN SPECIFICATIONS, SECTION 12.12, ARE MET FOR: 1) LONG-DURATION DEAD LOADS AND 2) SHORT-DURATION LIVE LOADS, BASED ON THE AASHTO DESIGN TRUCK WITH CONSIDERATION FOR IMPACT AND MULTIPLE VEHICLE PRESENCES.
- CHAMBERS SHALL BE DESIGNED, TESTED AND ALLOWABLE LOAD CONFIGURATIONS DETERMINED IN ACCORDANCE WITH ASTM F2787, "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS". LOAD CONFIGURATIONS SHALL INCLUDE: 1) INSTANTANEOUS (<1 MIN) AASHTO DESIGN TRUCK LIVE LOAD ON MINIMUM COVER 2) MAXIMUM PERMANENT (75-YR) COVER LOAD AND 3) ALLOWABLE COVER WITH PARKED (1-WEEK) AASHTO DESIGN TRUCK.
- 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 SHALL BE GREATER THAN OR EQUAL TO 800 LB/FT². THE ASC IS DEFINED IN SECTION 6.2.8 OF ASTM F2418, 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.
- ONLY CHAMBERS THAT ARE APPROVED BY THE SITE DESIGN ENGINEER WILL BE ALLOWED. UPON REQUEST BY THE SITE DESIGN ENGINEER OR OWNER, THE CHAMBER MANUFACTURER SHALL SUBMIT A STRUCTURAL EVALUATION FOR APPROVAL BEFORE DELIVERING CHAMBERS TO THE PROJECT SITE AS FOLLOWS:
 - THE STRUCTURAL EVALUATION SHALL BE SEALED BY A REGISTERED PROFESSIONAL ENGINEER.
 - THE STRUCTURAL EVALUATION SHALL DEMONSTRATE THAT THE SAFETY FACTORS ARE GREATER THAN OR EQUAL TO 1.95 FOR DEAD LOAD AND 1.75 FOR LIVE LOAD, THE MINIMUM REQUIRED BY ASTM F2787 AND BY SECTIONS 3 AND 12.12 OF THE AASHTO LFD BRIDGE DESIGN SPECIFICATIONS FOR THERMOPLASTIC PIPE.
 - THE TEST DERIVED CREEP MODULUS AS SPECIFIED IN ASTM F2418 SHALL BE USED FOR PERMANENT DEAD LOAD DESIGN EXCEPT THAT IT SHALL BE THE 75-YEAR MODULUS USED FOR DESIGN.
- CHAMBERS AND END CAPS SHALL BE PRODUCED AT AN ISO 9001 CERTIFIED MANUFACTURING FACILITY.
- MANIFOLD SIZE TO BE DETERMINED BY THE SITE DESIGN ENGINEER. SEE TECHNICAL NOTE 6.32 FOR MANIFOLD SIZING GUIDANCE. DUE TO THE ADAPTATION OF THIS CHAMBER SYSTEM TO SPECIFIC SITE AND DESIGN CONSTRAINTS, IT MAY BE NECESSARY TO CUT AND COUPLE ADDITIONAL PIPE TO STANDARD MANIFOLD COMPONENTS IN THE FIELD.
- ADS DOES NOT DESIGN OR PROVIDE MEMBRANE LINER SYSTEMS. TO MINIMIZE THE LEAKAGE POTENTIAL OF LINER SYSTEMS, THE MEMBRANE LINER SYSTEM SHOULD BE DESIGNED BY A KNOWLEDGEABLE GEOTECHNICAL PROFESSIONAL AND INSTALLED BY A QUALIFIED CONTRACTOR.

IMPORTANT - NOTES FOR THE BIDDING AND INSTALLATION OF THE SC-740 SYSTEM

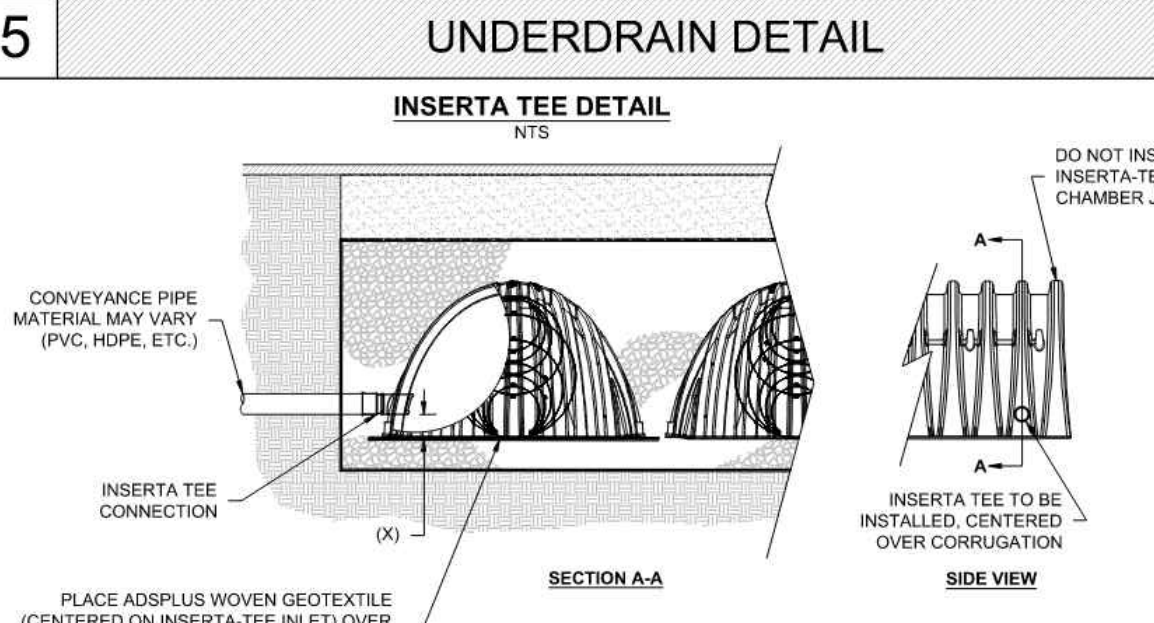
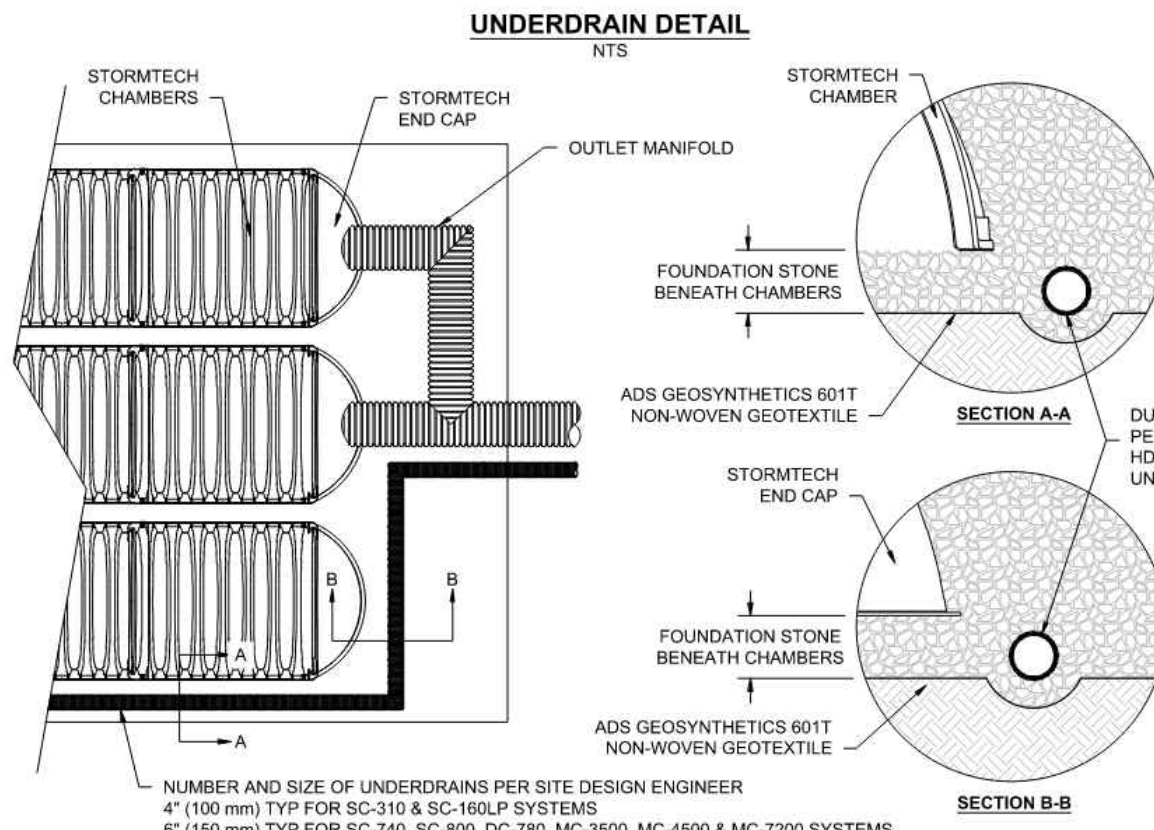
- STORMTECH SC-740 CHAMBERS SHALL NOT BE INSTALLED UNTIL THE MANUFACTURER'S REPRESENTATIVE HAS COMPLETED A PRE-CONSTRUCTION MEETING WITH THE INSTALLERS.
- STORMTECH SC-740 CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH THE "STORMTECH SC-310/SC-740/SC-800/DC-780 CONSTRUCTION GUIDE".
- CHAMBERS ARE NOT TO BE BACKFILLED WITH A DOZER OR AN EXCAVATOR SITUATED OVER THE CHAMBERS. STORMTECH RECOMMENDS 3 BACKFILL METHODS:
 - STONES/ROCKS LOCATED OFF THE CHAMBER BED.
 - BACKFILL AS ROWS ARE BUILT USING AN EXCAVATOR ON THE FOUNDATION STONE OR SUBGRADE.
 - BACKFILL FROM OUTSIDE THE EXCAVATION USING A LONG-BOOM HOE OR EXCAVATOR.
- THE FOUNDATION STONE SHALL BE LEVELED AND COMPACTED PRIOR TO PLACING CHAMBERS.
- JOINTS BETWEEN CHAMBERS SHALL BE PROPERLY SEATED PRIOR TO PLACING STONE.
- MAINTAIN MINIMUM - 6" (150 mm) SPACING BETWEEN THE CHAMBER ROWS.
- EMBEDMENT STONE SURROUNDING CHAMBERS MUST BE A CLEAN, CRUSHED, ANGULAR STONE OR RECYCLED CONCRETE: AASHTO M43 #3, 357, 4, 467, 5, 56, OR 57.
- THE CONTRACTOR MUST REPORT ANY DISCREPANCIES WITH CHAMBER FOUNDATION MATERIALS BEARING CAPACITIES TO THE SITE DESIGN ENGINEER.
- ADS RECOMMENDS THE USE OF "FLEXITORM CATCH IT" INSERTS DURING CONSTRUCTION FOR ALL INLETS TO PROTECT THE SUBSURFACE STORMWATER MANAGEMENT SYSTEM FROM CONSTRUCTION SITE RUNOFF.
- ADS RECOMMENDS THE USE OF "FLEXITORM CATCH IT" INSERTS DURING CONSTRUCTION FOR ALL INLETS TO PROTECT THE SUBSURFACE STORMWATER MANAGEMENT SYSTEM FROM CONSTRUCTION SITE RUNOFF.

NOTES FOR CONSTRUCTION EQUIPMENT

- STORMTECH SC-740 CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH THE "STORMTECH SC-310/SC-740/SC-800/DC-780 CONSTRUCTION GUIDE".
- THE USE OF CONSTRUCTION EQUIPMENT OVER SC-740 CHAMBERS IS LIMITED:
 - NO EQUIPMENT IS ALLOWED ON SAME CHAMBERS.
 - NO RUBBER Tired LOADERS, DUMP TRUCKS, OR EXCAVATORS ARE ALLOWED UNTIL PROPER FILL DEPTHS ARE REACHED IN ACCORDANCE WITH THE "STORMTECH SC-310/SC-740/SC-800/DC-780 CONSTRUCTION GUIDE".
 - WEIGHT LIMITS FOR CONSTRUCTION EQUIPMENT CAN BE FOUND IN THE "STORMTECH SC-310/SC-740/SC-800/DC-780 CONSTRUCTION GUIDE".
- FULL 36" (900 mm) OF STABILIZED COVER MATERIALS OVER THE CHAMBERS IS REQUIRED FOR DUMP TRUCK TRAVEL OR DUMPING.

USE OF A DOZER TO PUSH EMBEDMENT STONE BETWEEN THE ROWS OF CHAMBERS MAY CAUSE DAMAGE TO THE CHAMBERS AND IS NOT AN ACCEPTABLE BACKFILL METHOD. ANY CHAMBERS DAMAGED BY THE "DUMP AND PUSH" METHOD ARE NOT COVERED UNDER THE STORMTECH STANDARD WARRANTY.

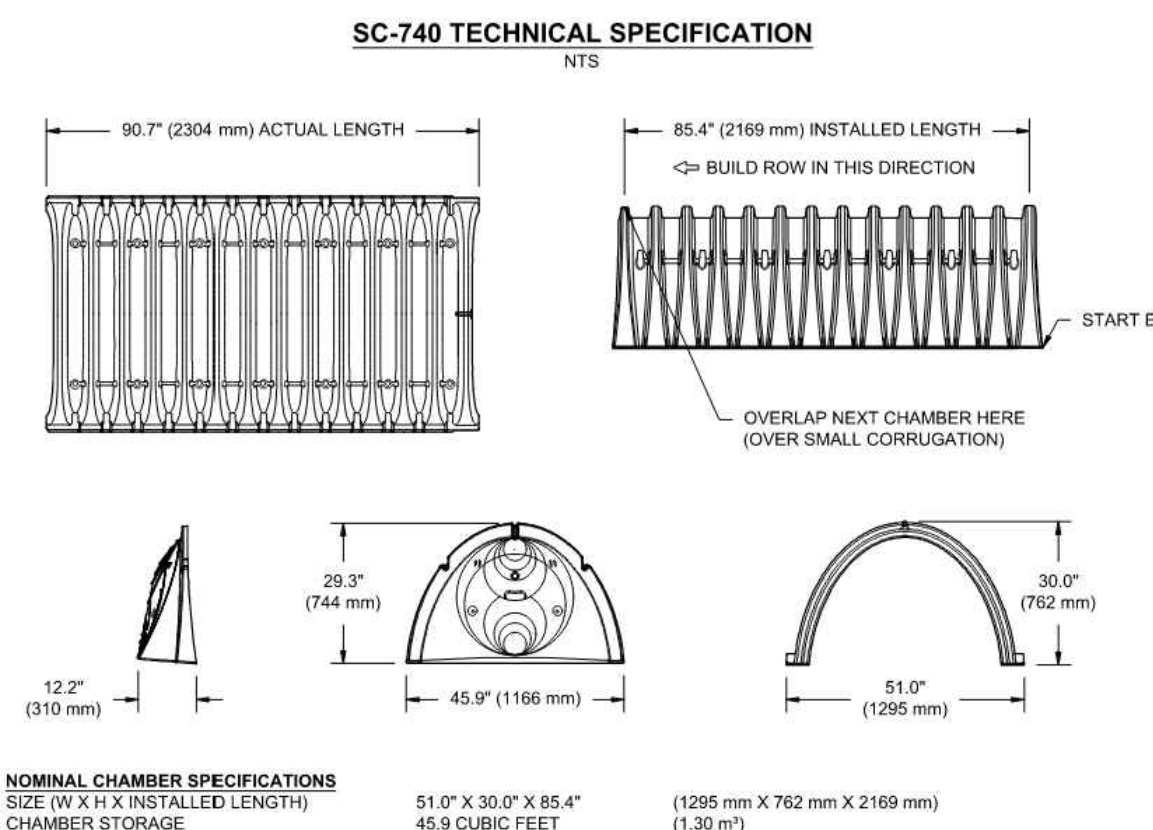
CONTACT STORMTECH AT 1-800-821-6710 WITH ANY QUESTIONS ON INSTALLATION REQUIREMENTS OR WEIGHT LIMITS FOR CONSTRUCTION EQUIPMENT.



CHAMBER	MAX DIAMETER OF INSERTA TEE	HEIGHT FROM BASE OF CHAMBER (X)
SC-310	6" (150 mm)	4" (100 mm)
SC-740	10" (250 mm)	4" (100 mm)
SC-800	10" (250 mm)	4" (100 mm)
DC-780	10" (250 mm)	4" (100 mm)
MC-3500	12" (300 mm)	6" (150 mm)
MC-4500	12" (300 mm)	8" (200 mm)
MC-7200	12" (300 mm)	8" (200 mm)

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

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



NOMINAL CHAMBER SPECIFICATIONS		
SIZE (W X H X INSTALLED LENGTH)	45.9" X 30.0" X 85.4"	(1295 mm X 762 mm X 2169 mm)
CHAMBER STORAGE	45.9 CUBIC FEET	(1.30 m ³)
MINIMUM INSTALLED STORAGE*	74.9 CUBIC FEET	(2.12 m ³)
WEIGHT	75.0 lbs.	(33.6 kg)

NOMINAL END CAP SPECIFICATIONS		
SIZE (W X H X INSTALLED LENGTH)	45.9" X 29.3" X 9.6"	(1166 mm X 744 mm X 244 mm)
END CAP STORAGE	2.6 CUBIC FEET	(0.07 m ³)
MINIMUM INSTALLED STORAGE**	13.5 CUBIC FEET	(0.38 m ³)
WEIGHT	11.7 lbs.	(5.3 kg)

* ASSUMES 6" (152 mm) STONE ABOVE, BELOW, AND BETWEEN CHAMBERS
** ASSUMES 6" (152 mm) STONE ABOVE AND BELOW END CAPS, 12" (305 mm) BEYOND END CAPS

* ASSUMES 6" (152 mm) STONE ABOVE, BELOW, AND BETWEEN CHAMBERS
** ASSUMES 6" (152 mm) STONE ABOVE AND BELOW END CAPS, 6" (152 mm) BETWEEN ROWS, 12" (305 mm) BEYOND END CAPS

PART #	STUB	B	C
SC740EPE06TPC	6" (150 mm)	18.5" (470 mm)	---
SC740EPE06BPC	---	---	0.9" (13 mm)
SC740EPE06TPC	8" (200 mm)	16.5" (419 mm)	---
SC740EPE06BPC	---	---	0.6" (15 mm)
SC740EPE10TPC	10" (250 mm)	14.5" (368 mm)	---
SC740EPE10BPC	---	---	0.7" (18 mm)
SC740EPE12TPC	12" (300 mm)	12.5" (318 mm)	---
SC740EPE12BPC	---	---	1.2" (30 mm)
SC740EPE15TPC	15" (375 mm)	9.0" (229 mm)	---
SC740EPE15BPC	---	---	1.3" (33 mm)
SC740EPE18TPC	18" (450 mm)	5.0" (127 mm)	---
SC740EPE18BPC	---	---	1.6" (41 mm)
SC740ECEZ	24" (600 mm)	---	0.1" (3 mm)

ALL STUBS, EXCEPT FOR THE SC740ECEZ 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 1-888-892-2694.

* FOR THE SC740ECEZ THE 24" (600 mm) STUB LIES BELOW THE BOTTOM OF THE END CAP APPROXIMATELY 1.75" (44 mm). BACKFILL MATERIAL SHOULD BE REMOVED FROM BELOW THE N-12 STUB SO THAT THE FITTING SITS LEVEL.

NOTE: ALL DIMENSIONS ARE NOMINAL. PRE-CORED END CAPS END WITH "PC"

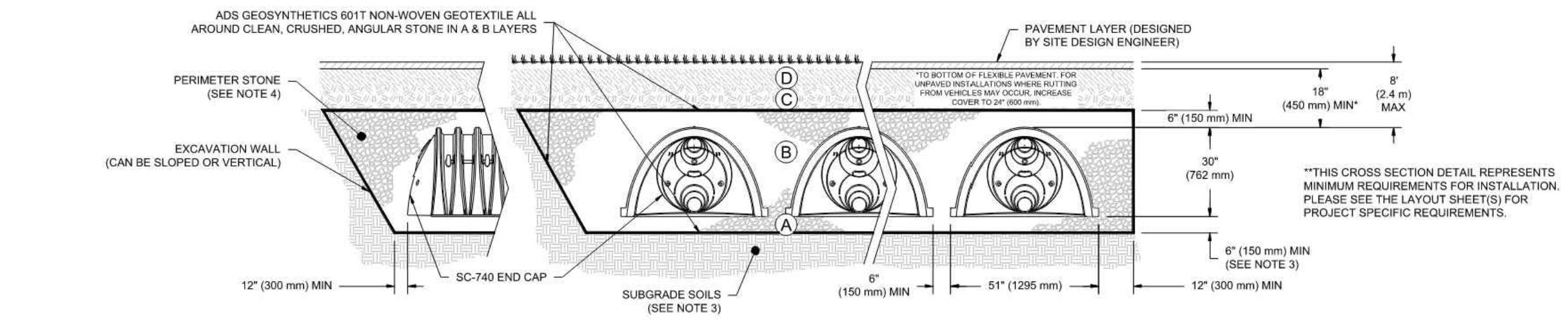
6 INSERTA-TEE SIDE INLET DETAIL

2 SC-740 TECHNICAL SPECIFICATIONS

ACCEPTABLE FILL MATERIALS: STORMTECH SC-740 CHAMBER SYSTEMS

MATERIAL LOCATION	DESCRIPTION	AASHTO MATERIAL CLASSIFICATIONS	COMPACTION / DENSITY REQUIREMENT
D FINAL FILL: FILL MATERIAL FOR LAYER 'D' STARTS FROM THE TOP OF THE 'C' LAYER TO THE BOTTOM OF FLEXIBLE PAVEMENT OR UNPAVED FINISHED GRADE ABOVE. NOTE THAT PAVEMENT SUBBASE MAY BE PART OF THE 'D' LAYER.	ANY SOIL/ROCK MATERIALS, NATIVE SOILS, OR PER ENGINEER'S PLANS. CHECK PLANS FOR PAVEMENT SUBGRADE REQUIREMENTS.	N/A	PREPARE PER SITE DESIGN ENGINEER'S PLANS. PAVED INSTALLATIONS MAY HAVE STRINGENT MATERIAL AND PREPARATION REQUIREMENTS.
C INITIAL FILL: FILL MATERIAL FOR LAYER 'C' STARTS FROM THE TOP OF THE EMBEDMENT STONE ('B' LAYER) TO 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. MOST PAVEMENT SUBBASE MATERIALS CAN BE USED IN LIEU OF THE LAYER.	AASHTO M145 ¹ A-1, A-2, A-3 OR AASHTO M43 ¹ 3, 357, 4, 467, 5, 56, 57, 6, 67, 68, 7, 78, 8, 89, 9, 10	BEGIN COMPACTIONS AFTER 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 (63 kN). DYNAMIC FORCE NOT TO EXCEED 20,000 lbs (89 kN).
B EMBEDMENT STONE: FILL SURROUNDING THE CHAMBERS FROM THE FOUNDATION STONE ('A' LAYER) TO THE 'C' LAYER ABOVE.	CLEAN, CRUSHED, ANGULAR STONE OR RECYCLED CONCRETE ¹	AASHTO M43 ¹ 3, 357, 4, 467, 5, 56, 57	NO COMPACTION REQUIRED.
A FOUNDATION STONE: FILL BELOW CHAMBERS FROM THE SUBGRADE UP TO THE FOOT (BOTTOM) OF THE CHAMBER.	CLEAN, CRUSHED, ANGULAR STONE OR RECYCLED CONCRETE ¹	AASHTO M43 ¹ 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 SOLID MATERIAL CAN BE PLACED IN LAYER 'D' UP TO THE FINISHED GRADE. MOST PAVEMENT SUBBASE SOLIDS CAN BE USED TO REPLACE THE MATERIAL REQUIREMENTS OF LAYER 'C' OR 'D' AT THE SITE DESIGN ENGINEER'S DISCRETION.
 - WHERE RECYCLED CONCRETE AGGREGATE IS USED IN LAYERS 'A' OR 'B' THE MATERIAL SHOULD ALSO MEET THE ACCEPTABILITY CRITERIA OUTLINED IN TECHNICAL NOTE 6.20 "RECYCLED CONCRETE STRUCTURAL BACKFILL".

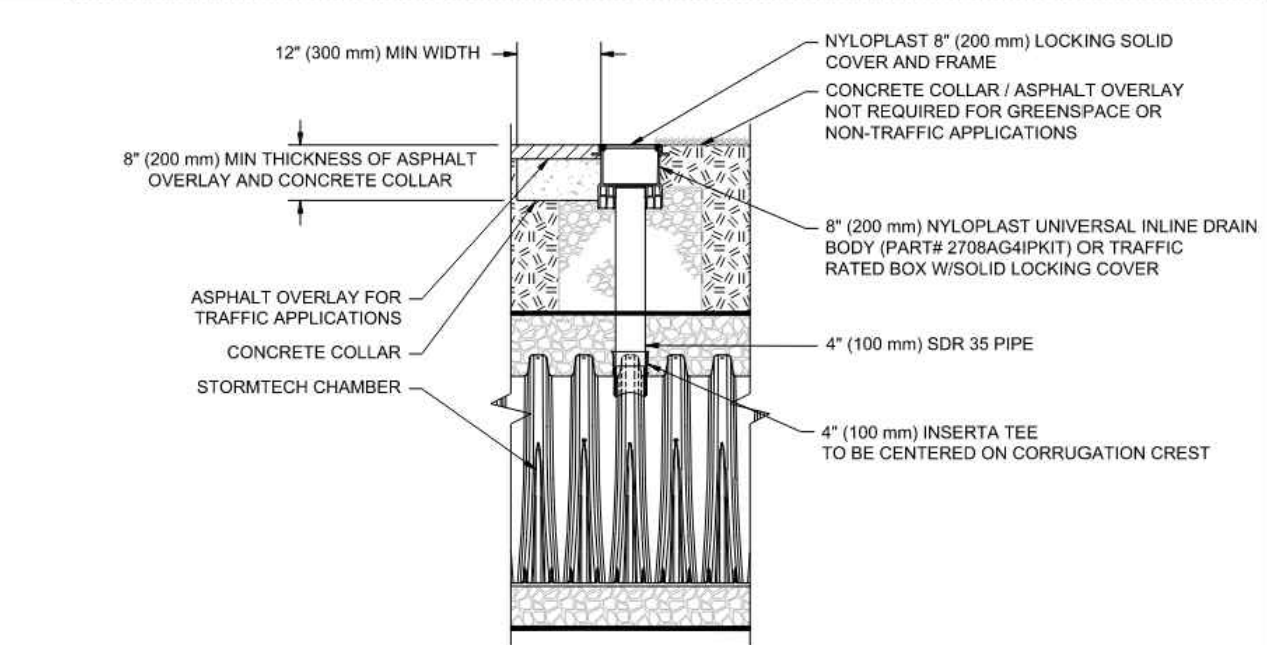


NOTES:

- CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2418, "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
- SC-740 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. REFERENCE STORMTECH DESIGN MANUAL FOR BEARING CAPACITY GUIDANCE.
- 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 6.2.8 OF ASTM F2418 SHALL BE GREATER THAN OR EQUAL TO 800 LB/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.

1 SC-740 CROSS SECTION DETAIL

3 SC-740 ISOLATOR ROW PLUS DETAIL



INSPECTION & MAINTENANCE

- STEP 1) INSPECT ISOLATOR ROW PLUS FOR SEDIMENT
- A. INSPECTION PORTS (IF PRESENT)
- A.1. REMOVE OPEN LID ON NYLOPLAST INLINE DRAIN BODY (PART# 2708AGAPKIT) IF INSTALLED
- A.2. REMOVE AND CLEAN FLEXSTORM FILTER IF INSTALLED
- A.3. USING A FLASHLIGHT AND STADIA ROD, MEASURE DEPTH OF SEDIMENT AND RECORD ON MAINTENANCE LOG
- A.4. LOWER A CAMERA INTO ISOLATOR ROW PLUS FOR VISUAL INSPECTION OF SEDIMENT LEVELS (OPTIONAL)
- A.5. IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.
- B. ALL ISOLATOR PLUS ROWS
- B.1. REMOVE COVER FROM STRUCTURE AT UPSTREAM END OF ISOLATOR ROW PLUS
- B.2. USING A FLASHLIGHT, INSPECT DOWN THE ISOLATOR ROW PLUS THROUGH OUTLET PIPE
- B.3. IF MIRRORS OR POLES OR CAMERAS MAY BE USED TO AVOID A CONFINED SPACE ENTRY
- B.3.1. FOLLOW OSHA REGULATIONS FOR CONFINED SPACE ENTRY IF ENTERING MANHOLE
- B.3.2. 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. A FIXED CULVERT CLEANING NOZZLE WITH REAR FACING SPREAD OF 45° (1.1 m) OR MORE IS PREFERRED
- B. APPLY MULTIPLE PASSES OF JETVAC UNTIL BACKLUSH WATER IS CLEAN
- C. 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 VACUUMING ANNUALLY OR WHEN INSPECTION SHOWS THAT MAINTENANCE IS NECESSARY.

4 4" PVC INSPECTION PORT DETAIL (SC SERIES CHAMBER)

4 4" PVC INSPECTION PORT DETAIL (SC SERIES CHAMBER)

SC-740 STANDARD DETAILS

StormTech® Chamber System

4640 TRUEMAN BLVD
HILLIARD, OH 43026



SHEET 1



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

REVISIONS

REV	DATE	COMMENT	DRAWN BY
1	07/01/2025	SITE LAYOUT REVISIONS	CPB
2	08/22/2025	SITE LAYOUT REVISIONS	CPB
3	09/25/2025	PEER REVIEW COMMENTS	JAK



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PROJECT No.: MAA240490-00-3A
DRAWN BY: SBB
CHECKED BY: CPB
DATE: 02/05/2025
CAD ID: P-CIVL-CNDS

SITE DEVELOPMENT PLANS FOR

RTE 85
REALTY CORP.

PROPOSED
MIXED-USE DEVELOPMENT
MAP: 24 LOTS: 7, 8 & 9
190, 194 & 198 HARTFORD AVENUE
NORFOLK COUNTY
BELLINGHAM, MA



352 TURNPIKE ROAD, 3rd FLOOR
SOUTHBOROUGH, MA 01772
Phone: (508) 480-9900

www.BohlerEngineering.com

CONSTRUCTION DETAILS

SHEET NUMBER:
C-903

REVISION 3 - 09/25/2025



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DRAWN BY:	SBB
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PROJECT:

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— FOR

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BOHLER //

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SHEET TITLE:

CONSTRUCTION DETAILS

SHEET NUMBER:

C-904

REVISION 3 - 09/25/2025



N/F
KURT D. LOVELL
AND
DEBORAH A. LOVELL
BOOK: 31626 PAGE: 504
HOUSE 11

N/F
TIMOTHY M. &
SHARON M. NORTON
BOOK: 35441 PAGE: 441
7 CEDAR HILL RD

N/F
KIMBERLY A. LADOUCEUR
BOOK: 40692 PAGE: 279
4 SAGAMORE RD

N/F
LINDO F. MONTEIRO &
MICHELLE A. MONTEIRO
BOOK: 37725 PAGE: 550
4 CEDAR HILL RD

N/F
296 MAIN LLC
BOOK: 38212 PAGE: 274
186 HARTFORD AV
A.M. 24 LOT 9
AREA: 12,381.25 SF
(0.31240) (HA00)

N/F
IBRAHIM T. &
NANAL MORRIS
BOOK: 13572 PAGE: 493
202 HARTFORD AV
HA00

HARTFORD AVENUE (ROUTE 126)
1920 COUNTY LAYOUT

1972 TOWN LAYOUT
BUSINESS 2

N/F
193 HARTFORD AVE. REALTY LLC
BOOK: 41251 PAGE: 74
193 HARTFORD AV

N/F
M A REALTY ACQUISITION LLC
BOOK: 26834 PAGE: 118
189 HARTFORD AV

N/F
BELLINGHAM N MAIN ST II LLC
BOOK: 22912 PAGE: 459
217 HARTFORD AV

1929 LO
1920 LO

THIS PLAN TO BE UTILIZED
FOR LANDSCAPE
PURPOSES ONLY

SCALE: 1" = 20'

PLANT SCHEDULE					
CODE	QTY	BOTANICAL NAME	COMMON NAME	SIZE	CONTAINER
CANOPY TREES					
LT	3	LIRIODENDRON TULIPIFERA	TULIP TREE	2.5'-3" CAL.	B&B
QP	5	QUERCUS PALUSTRIS	PIN OAK	2.5'-3" CAL.	B&B
TAB	5	TILIA AMERICANA 'BOULEVARD'	BOULEVARD AMERICAN LINDEN	2.5'-3" CAL.	B&B
EVERGREEN TREES					
CLY	3	X CUPRESSOCYPARIS LEYLANDII	LEYLANDI CYPRESS	6-8'	B&B
PPG	2	PICEA PUNGENS 'GLAUCO'	COLORADO BLUE SPRUCE	6-8'	B&B
TOE	11	THUJA OCCIDENTALIS 'SMARAGD'	EMERALD GREEN ARBORVITAE	6-8'	B&B
TOG	4	THUJA OCCIDENTALIS 'GREEN GIANT'	GREEN GIANT ARBORVITAE	6-8'	B&B
SHRUBS					
AA	4	ARONIA ARBUTIFOLIA 'BRILLIANTISSIMA'	BRILLIANT RED CHOKEBERRY	3 GAL.	CONTAINER
CS	6	CORNUS SERICEA	RED TWIG DOGWOOD	2-3'	B&B
CSF	2	CORNUS STOLONIFERA 'FARROW'	ARCTIC FIRE RED TWIG DOGWOOD	2-3'	CONTAINER
HF	2	HYPERICUM FRONDOSUM 'SUNBURST'	SUNBURST ST. JOHN'S WORT	18-24"	CONTAINER
IWR	5	ILEX VERTICILLATA 'WINTER RED'	WINTER RED WINTERBERRY	30-36"	CONTAINER
JJ	10	JUNIPERUS COMMUNIS	COMMON JUNIFER	15-18"	CONTAINER
RAG	8	RHUS AROMATICA 'GRO-LOW'	GRO-LOW FRAGRANT SUMAC	15-18"	CONTAINER
RXR	6	ROSA X 'RADRAZZ'	KNOCK OUT SHRUB ROSE	18-24"	CONTAINER
VA	4	VACCINIUM ANGUSTIFOLIUM	LOWBUSH BLUEBERRY	1 GAL.	CONTAINER
GRASSES					
CAKF	25	CALAMAGROSTIS X ACUTIFLORA 'KARL FOERSTER'	FEATHER REED GRASS	1 GAL.	CONTAINER
GROUND COVER					
SJ	7	SPIRAEA JAPONICA	JAPANESE SPIREA	---	---

PLANTING LEGEND
PROPOSED HYDROSEED

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PROGRAM MANAGEMENT
LANDSCAPE ARCHITECTURE
SUSTAINABLE DESIGN
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PROJECT No.: MAA240490.00-3A
DRAWN BY: MB
CHECKED BY: JE
DATE: 02/05/2025
CAD ID: P-CIVIL-LSCP

PROJECT:
SITE
DEVELOPMENT
PLANS
FOR

RTE 85
REALTY CORP.

PROPOSED
MIXED-USE DEVELOPMENT
MAP: 24 | LOTS: 7, 8 & 9
190, 194 & 198 HARTFORD AVENUE
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BOHLER
352 TURNPIKE ROAD, 3rd FLOOR
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Phone: (508) 480-9900
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SHEET TITLE:
LANDSCAPE
PLAN

SHEET NUMBER:
L-101

REVISION 3 - 09/25/2025

P:\2024\MAA240490.00\CADD\DRAWINGS\PLAN SET\CIVIL\LSCP\MAA240490.00-3A\...LAYOUT L-101 LSCP



LUMINAIRE SCHEDULE						
LABEL	QTY	MOUNTING HEIGHT	ARRANGEMENT	LUM. LUMENS	LLF	DESCRIPTION
P-BLC3	1	20'-0" AFG	SINGLE	7100	0.900	LITHONIA D-SERIES SIZE 1 LED AREA LUMINAIRE, TYPE BLC3, ZERO UP-LIGHT (DSX1-LED-P2-40K-70CRI-BLC3)
P2M-S	2	20'-0" AFG	SINGLE	8373	0.900	LITHONIA D-SERIES SIZE 1 LED AREA LUMINAIRE, TYPE 2M, WITH HOUSE-SIDE SHIELD, ZERO UP-LIGHT (DSX1-LED-P2-40K-70CRI-T2M-S)
P3-S	1	20'-0" AFG	SINGLE	8462	0.900	LITHONIA D-SERIES SIZE 1 LED AREA LUMINAIRE, TYPE 3M, WITH HOUSE-SIDE SHIELD, ZERO UP-LIGHT (DSX1-LED-P2-40K-70CRI-T3M-S)
WPX0	7	10'-0" AFF	SINGLE	1645	1.000	LITHONIA WPX0 LED WALL PACK, ZERO UP-LIGHT (WPX0-LED-AL0-SWW2-X)
P4M-S	2	20'-0" AFG	SINGLE	8523	0.900	LITHONIA D-SERIES SIZE 1 LED AREA LUMINAIRE, TYPE 4M, WITH HOUSE-SIDE SHIELD, ZERO UP-LIGHT (DSX1-LED-P2-40K-70CRI-T4M-S)
P3-S 90	1	20'-0" AFG	2 @ 90 DEGREES	8462	0.900	LITHONIA D-SERIES SIZE 1 LED AREA LUMINAIRE, TYPE 3M, WITH HOUSE-SIDE SHIELD, ZERO UP-LIGHT (DSX1-LED-P2-40K-70CRI-T3M-S)

*REFER TO ARCHITECTURAL PLANS FOR FINAL MOUNTING HEIGHTS AND LOCATIONS

CALCULATION SUMMARY							
LABEL	CALCTYPE	UNITS	AVG	MAX	MIN	AVGMIN	MAXMIN
ALL POINTS	ILLUMINANCE	FC	0.73	5.8	0.0	N.A.	N.A.
ENTRANCE DRIVE	ILLUMINANCE	FC	1.80	3.8	0.7	2.57	5.43
PARKING COURT	ILLUMINANCE	FC	1.65	4.1	0.8	2.06	5.13

GENERAL LIGHTING NOTES:

- THE GENERAL NOTES, FOUND ON THE NOTES PAGE OF THIS PLAN SET, MUST BE INCLUDED AS PART OF THIS ENTIRE DOCUMENT PACKAGE AND ARE PART OF THE CONTRACT DOCUMENTS. THE ELECTRICAL CONTRACTOR MUST BECOME FAMILIAR WITH, REFER TO AND FULLY COMPLY WITH THESE NOTES, IN THEIR ENTIRETY.
- THE ELECTRICAL CONTRACTOR MUST COMPLY WITH ALL APPLICABLE CONTRACTOR REQUIREMENTS INDICATED IN THIS LIGHTING PLAN, INCLUDING BUT NOT LIMITED TO GENERAL NOTES, GRADING AND UTILITY NOTES, SITE SAFETY, AND ALL APPLICABLE AGENCY AND GOVERNMENTAL REGULATIONS. THE 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, MAINTENANCE, THE SERVICE LIFE OF EQUIPMENT AND LUMINAIRES AND OTHER RELATED VARIABLE FIELD CONDITIONS.
- THE LIGHTING VALUES AND CALCULATION POINTS DEPICTED ON THIS PLAN ARE ANALYZED ON A HORIZONTAL GEOMETRIC PLANE AT GROUND LEVEL UNLESS OTHERWISE NOTED. ILLUMINATION LEVELS ARE SHOWN IN FOOT-CANDELS (FC).
- THE LIGHTING PLAN IS INTENDED TO SHOW THE LOCATIONS AND TYPE OF LUMINAIRES. POWER SYSTEM, CONDUITS, WIRING, CONTROLS, AND OTHER ELECTRICAL COMPONENTS ARE SOLELY THE ARCHITECT'S, ELECTRICAL ENGINEER'S AND/OR ELECTRICAL CONTRACTOR'S RESPONSIBILITY, AS INDICATED IN THE CONSTRUCTION CONTRACT DOCUMENTS. THE CONTRACTOR MUST COORDINATE WITH THE PROJECT ARCHITECT AND/OR ELECTRICAL ENGINEER REGARDING ANY AND ALL POWER SOURCES AND TIMING DEVICES NECESSARY TO MEET THE DESIGN INTENT. THESE ITEMS MUST BE INSTALLED AS REQUIRED BY FEDERAL, STATE AND LOCAL REGULATIONS. CONTRACTOR IS RESPONSIBLE FOR THE INSTALLATION OF LIGHTING FIXTURES AND APPURTENANCES IN ACCORDANCE WITH THE NATIONAL ELECTRIC CODE (NEC) AND ALL APPLICABLE BUILDING AND LOCAL ELECTRICAL CODES.
- THE ELECTRICAL CONTRACTOR MUST BRING IMMEDIATELY, IN WRITING, ANY LIGHT LOCATIONS THAT CONFLICT WITH DRAINAGE, UTILITIES, OR OTHER STRUCTURE(S) TO THE PROFESSIONAL OF RECORD'S ATTENTION, PRIOR TO THE START OF CONSTRUCTION.
- THE ELECTRICAL CONTRACTOR IS RESPONSIBLE TO ENSURE THAT ALL LIGHTING IS INSTALLED PER THIS LIGHTING PLAN, INCLUDING THE LOCATION, ORIENTATION, SHIELDING, AND/OR ROTATED OPTICS ARE INSTALLED AS INDICATED ON THE PLAN IN ORDER TO ACHIEVE THE LIGHTING LEVELS DEPICTED ON THIS PLAN. EXISTING POLES AND FOUNDATIONS ARE NOT TO BE REUSED.
- 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. THE LUMINAIRES, LAMPS AND LENSES MUST BE REGULARLY INSPECTED/MAINTAINED TO ENSURE THAT THEY FUNCTION PROPERLY. THIS WORK SHOULD INCLUDE, BUT IS NOT LIMITED TO, VISUAL OBSERVATION, CLEANING OF LENSES, AND OTHER MAINTENANCE SPECIFIED BY THE MANUFACTURER. FAILURE TO FOLLOW THE ABOVE STEPS COULD RESULT IN IMPROPER LIGHT DISTRIBUTION AND FAILURE TO COMPLY WITH THE APPROVED DESIGN.
- THE LIGHT LOSS FACTORS (LLF) DEPICTED IN THE LUMINAIRE SCHEDULE ON THIS PLAN ARE BASED ON DATA PROVIDED BY THE MANUFACTURER FOLLOWING IES LM-80-21 TESTING (OR MOST RECENT EDITION). THE LIGHT LEVELS DEPICTED ON THIS PLAN WERE CALCULATED BASED ON THE LLF LISTED IN THE LUMINAIRE SCHEDULE.
- PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL PROVIDE SUBMITTALS TO BOHLER FOR REVIEW AND APPROVAL. SUBSTITUTION REQUESTS MUST BE ACCOMPANIED BY A HORIZONTAL PHOTOMETRIC STUDY DEMONSTRATING THAT THE LUMINAIRE(S) IN QUESTION WILL MEET THE DESIGN INTENT OF THIS PLAN. SUBSTITUTION REQUESTS WITHOUT A PHOTOMETRIC STUDY WILL BE REJECTED.
- LIGHT POLE FOUNDATIONS ARE SHOWN ON THE PLAN IN THE INTENDED LOCATION BASED ON THE LIGHTING POLE LOCATIONS, UNLESS OTHERWISE NOTED. LIGHT SYMBOLS ARE SHOWN LARGER THAN ACTUAL SIZE, HOWEVER FOUNDATION SIZE IS SHOWN AT ACTUAL SIZE.

REVISIONS

REV	DATE	COMMENT	CHECKED BY
1	07/01/2025	SITE LAYOUT REVISIONS	CPB
2	08/22/2025	SITE LAYOUT REVISIONS	CPB
3	09/25/2025	PEER REVIEW COMMENTS	JAK



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PERMIT SET

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.: MAA240490.00-3A
DRAWN BY: DT
DATE: 02/05/2025
CAD ID: P-CIVL-LGHT

PROJECT:

SITE DEVELOPMENT PLANS FOR

RTE 85
REALTY CORP.

PROPOSED
MIXED-USE DEVELOPMENT

MAP: 24 | LOTS: 7, 8 & 9
190, 194 & 198 HARTFORD AVENUE
NORFOLK COUNTY
BELLINGHAM, MA

BOHLER

352 TURNPIKE ROAD, 3rd FLOOR
SOUTHBOROUGH, MA 01772
Phone: (508) 480-9900

www.BohlerEngineering.com

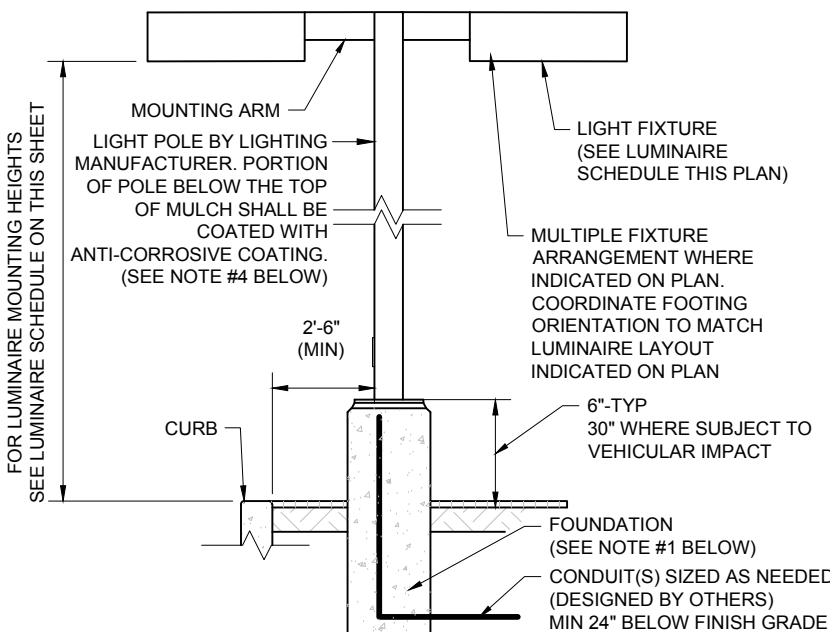
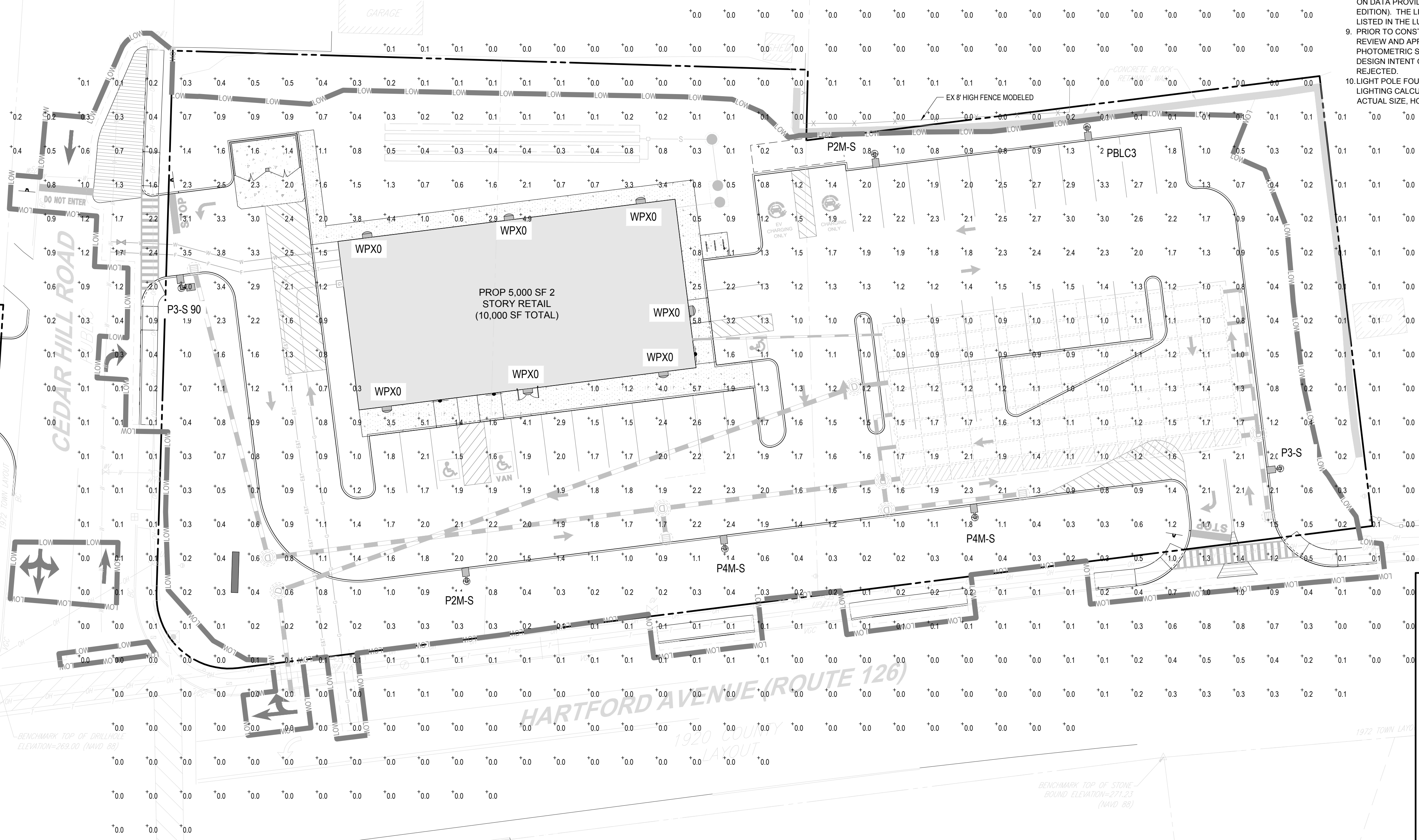
SHEET TITLE:

LIGHTING PLAN

SHEET NUMBER:

L-201

REVISION 3 - 09/25/2025



- NOTES:
- THIS DETAIL IS FOR GRAPHICAL PURPOSES ONLY. CONTRACTOR SHALL BE RESPONSIBLE FOR HAVING 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.
 - CONTRACTOR TO ADJUST LENGTH OF POLE DEPENDENT ON FOUNDATION HEIGHT IN DIFFERENT LOCATIONS, AS NECESSARY TO SET LUMINAIRES AT MOUNTING HEIGHT INDICATED IN LIGHTING SCHEDULE. MOUNTING HEIGHT IS TO BE MEASURED FROM GROUND SURFACE ELEVATION ADJACENT TO POLE FOUNDATION TO LUMINAIRE.

AREA LIGHT

NOT TO SCALE

(NE-L020101 - 04/2025)

**THIS PLAN TO BE UTILIZED
FOR LIGHTING PURPOSES
ONLY**



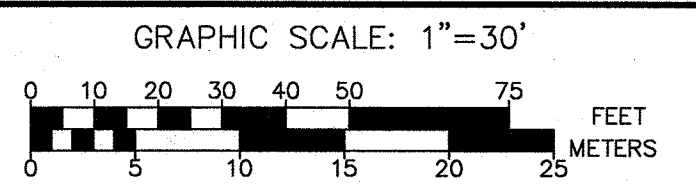
\\BOHLER\NET\SHARED\PROJECTS\2024\MAA240490.00-3A-1\LAYOUT\L-201.LGHT



NOTES

- 1) SEE THE FOLLOWING PLANS RECORDED AT THE NORFOLK DISTRICT REGISTRY OF DEEDS--
PLAN 71 OF 1996
PLAN 591 OF 1992
PLAN 369 OF 1992
PLAN 796 OF 1987
PLAN 328 OF 1985
- 2) THE VERTICAL DATUM IS NAVD88.

EXISTING CONDITIONS
PLAN OF LAND
182-198 HARTFORD AVENUE
BELLINGHAM, MASS.
SCALE: 1"=30'
DATE: FEBRUARY 10, 2025



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ENGINEERING & LAND SURVEYING
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MILFORD, MA 01757 FX. (508) 473-8243
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