

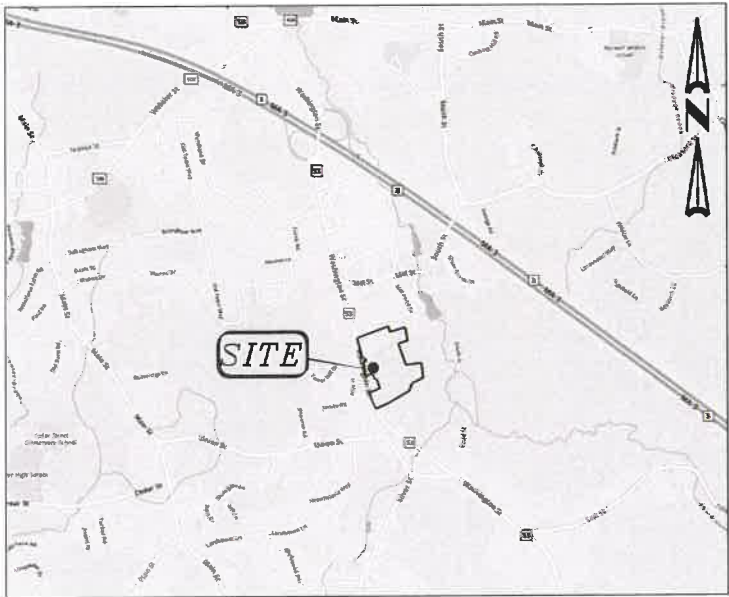
SITE DEVELOPMENT PLANS

FOR
1143 WASHINGTON ST.
HANOVER, MA

TOWN OF HANOVER
2019 OCT 16 PM 1:37
TOWN CLERK

OCTOBER 10, 2019

SHEET INDEX					
SHEET No.	DESCRIPTION	LATEST REVISED DATE	CONSTRUCTION	REVISIONS	
1	COVER SHEET				
2	OVERALL LAYOUT PLAN				
3	EXISTING CONDITIONS PLAN				
4	LAYOUT PLAN				
5	GRADING PLAN				
6	SEWER & DRAIN PLAN				
7	UTILITY PLAN				
8	DETAIL SHEET				
9	DETAIL SHEET				
10	DETAIL SHEET				



LOCATION MAP

APPLICANT:
BSL HANOVER DEVELOPMENT LLC
201 JONES ROAD, SUITE 300 WEST
WALTHAM, MA 02451

OWNER:
HANOVER WASHINGTON LIMITED PARTNERSHIP
625 MT. AUBURN ST.
SUITE 210
CAMBRIDGE, MA 02138

CIVIL ENGINEERS:
KELLY ENGINEERING GROUP, INC.
0 CAMPANELLI DRIVE
BRAINTREE, MA 02184

LANDSCAPE ARCHITECTS:
HAWK DESIGN, INC.
P.O. BOX 1309
SANDWICH, MA 02563

ARCHITECTS:
UDELSMAN ASSOCIATES
161 FEDERAL HILL ROAD
HOLLIS, NH 03049

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DAVID NOEL KELLY CIVIL NO. 37542 REGISTERED PROFESSIONAL ENGINEER

Digitally signed by David Noel Kelly P.E., DN: cn=David Noel Kelly P.E., o=Kelly Engineering Group, Inc., ou=00000000000000000000, email=dkelly@kellyengr.com, c=US

SCALE
NA

DATE
10/10/19

SHEET
1 of 10

FILE #
2019-041-TS00

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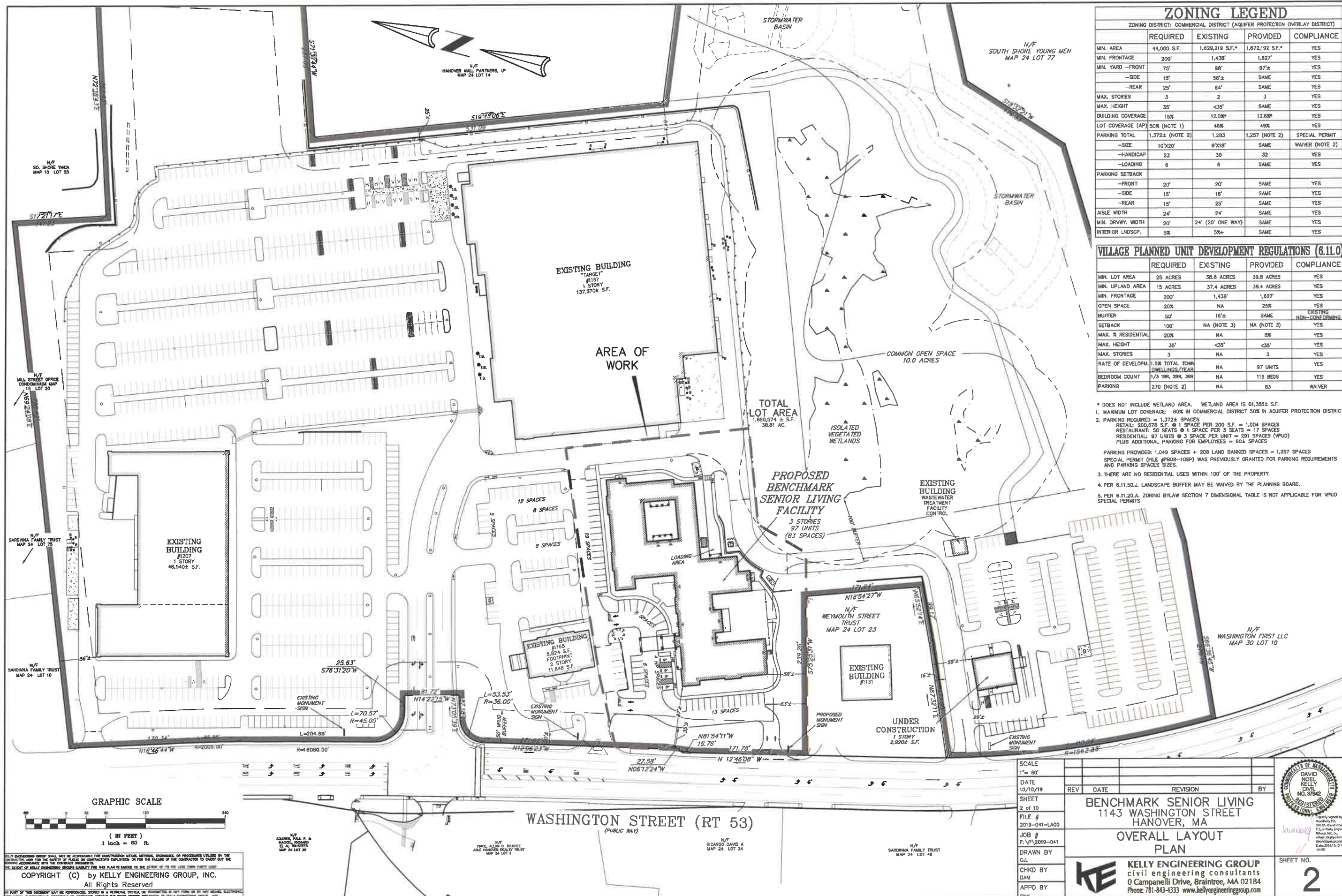
WASHINGTON STREET
HANOVER, MA

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0 Campanelli Drive, Braintree, MA 02184
Phone: 781-843-4333 www.kellyengineeringgroup.com

SHEET NO.

1



ZONING LEGEND				
ZONING DISTRICT: COMMERCIAL DISTRICT (AQUIFER PROTECTION OVERLAY DISTRICT)				
	REQUIRED	EXISTING	PROVIDED	COMPLIANCE
MIN. AREA	44,000 S.F.	1,829,219 S.F.*	1,872,192 S.F.*	YES
MIN. FRONTAGE	200'	1,438'	1,827'	YES
MIN. YARD - FRONT	75'	98'	97'±	YES
-SIDE	15'	86'±	SAME	YES
-REAR	25'	84'	SAME	YES
MAX. STORIES	3	2	3	YES
MAX. HEIGHT	35'	<35'	SAME	YES
BUILDING COVERAGE	15%	12.0%	13.6%	YES
LOT COVERAGE (AP)	50% (NOTE 1)	46%	49%	YES
PARKING TOTAL	1,372± (NOTE 2)	1,283	1,257 (NOTE 2)	SPECIAL PERMIT
-SIZE	10'x20'	9'x18'	SAME	WAIVER (NOTE 2)
-HANDICAP	23	30	32	YES
-LOADING	6	6	SAME	YES
PARKING SETBACK				
-FRONT	20'	20'	SAME	YES
-SIDE	15'	16'	SAME	YES
-REAR	15'	25'	SAME	YES
aisle width	24'	24'	SAME	YES
MIN. DRIVEWAY WIDTH	20'	24' (20' ONE WAY)	SAME	YES
INTERIOR LANDSCAPING	5%	5%±	SAME	YES

VILLAGE PLANNED UNIT DEVELOPMENT REGULATIONS (6.11.0)				
	REQUIRED	EXISTING	PROVIDED	COMPLIANCE
MIN. LOT AREA	25 ACRES	38.8 ACRES	39.8 ACRES	YES
MIN. UPLAND AREA	15 ACRES	37.4 ACRES	38.4 ACRES	YES
MIN. FRONTAGE	200'	1,438'	1,827'	YES
OPEN SPACE	20%	NA	25%	YES
BUFFER	50'	16'±	SAME	EXISTING NON-CONFORMING
SETBACK	100'	NA (NOTE 3)	NA (NOTE 3)	YES
MAX. % RESIDENTIAL	20%	NA	8%	YES
MAX. HEIGHT	35'	<35'	<35'	YES
MAX. STORIES	3	NA	3	YES
RATE OF DEVELOPMENT	1.5% TOTAL TOWN DWELLINGS/ACRE	NA	97 UNITS	YES
BEDROOM COUNT	1/3 1BR, 2BR, 3BR	NA	115 BEDS	YES
PARKING	270 (NOTE 2)	NA	83	WAIVER

- * DOES NOT INCLUDE WETLAND AREA. WETLAND AREA IS 61,355± S.F.
1. MAXIMUM LOT COVERAGE: 60% IN COMMERCIAL DISTRICT 50% IN AQUIFER PROTECTION DISTRICT
2. PARKING REQUIRED = 1,372± SPACES
RETAIL: 200,578 S.F. @ 1 SPACE PER 200 S.F. = 1,004 SPACES
RESTAURANT: 50 SEATS @ 1 SPACE PER 3 SEATS = 17 SPACES
RESIDENTIAL: 97 UNITS @ 3 SPACE PER UNIT = 291 SPACES (VPUD)
PLUS ADDITIONAL PARKING FOR EMPLOYEES = 60± SPACES
- PARKING PROVIDED: 1,049 SPACES + 208 LAND BANKED SPACES = 1,257 SPACES
SPECIAL PERMIT (FILE #P08-10SP) WAS PREVIOUSLY GRANTED FOR PARKING REQUIREMENTS AND PARKING SPACES SIZES.
3. THERE ARE NO RESIDENTIAL USES WITHIN 100' OF THE PROPERTY.
4. PER 6.11.50.J. LANDSCAPE BUFFER MAY BE WAIVED BY THE PLANNING BOARD.
5. PER 6.11.20.A. ZONING BYLAW SECTION 7 DIMENSIONAL TABLE IS NOT APPLICABLE FOR VPUD SPECIAL PERMITS

SCALE
1" = 60'
DATE
10/10/19
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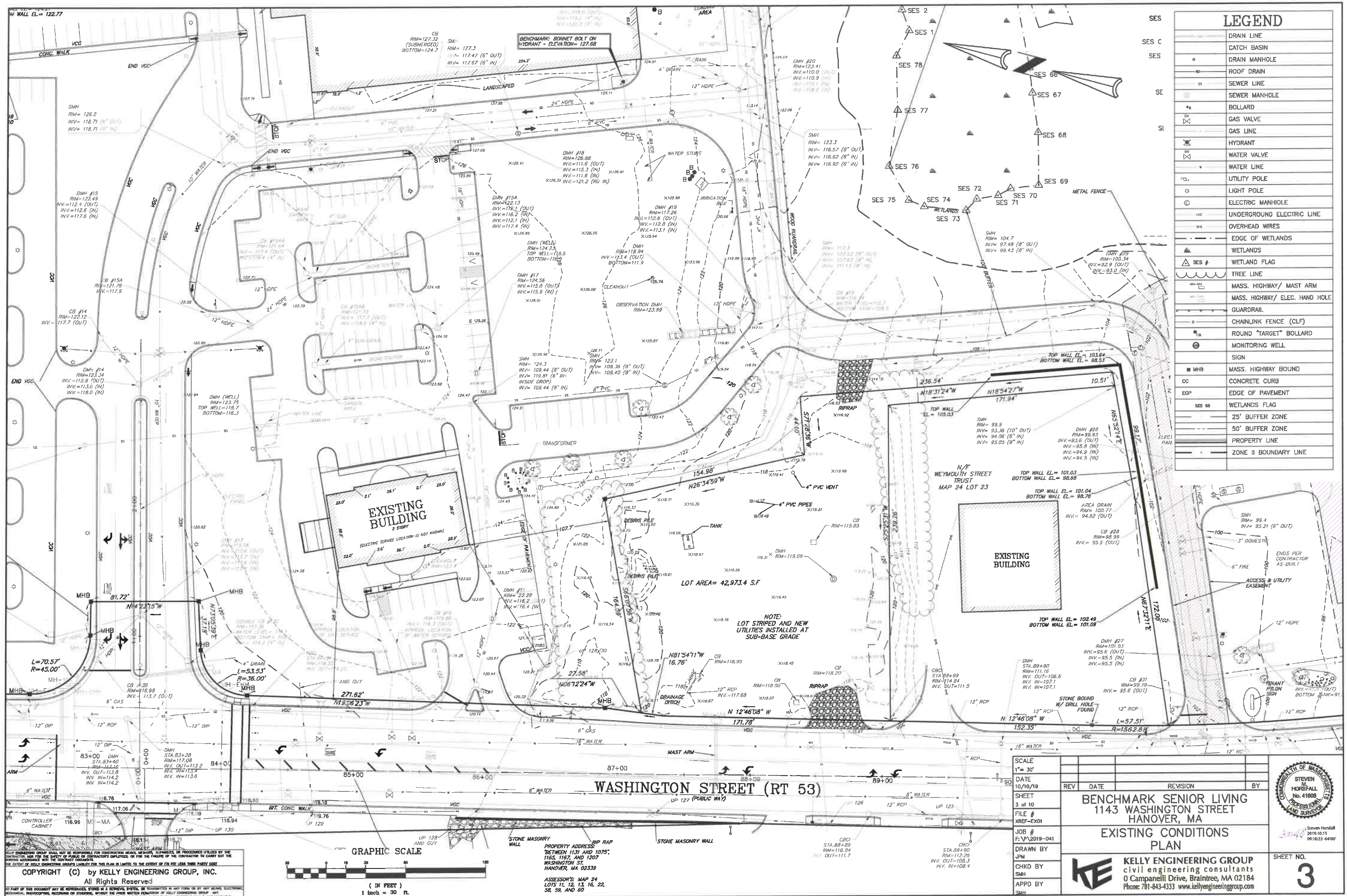
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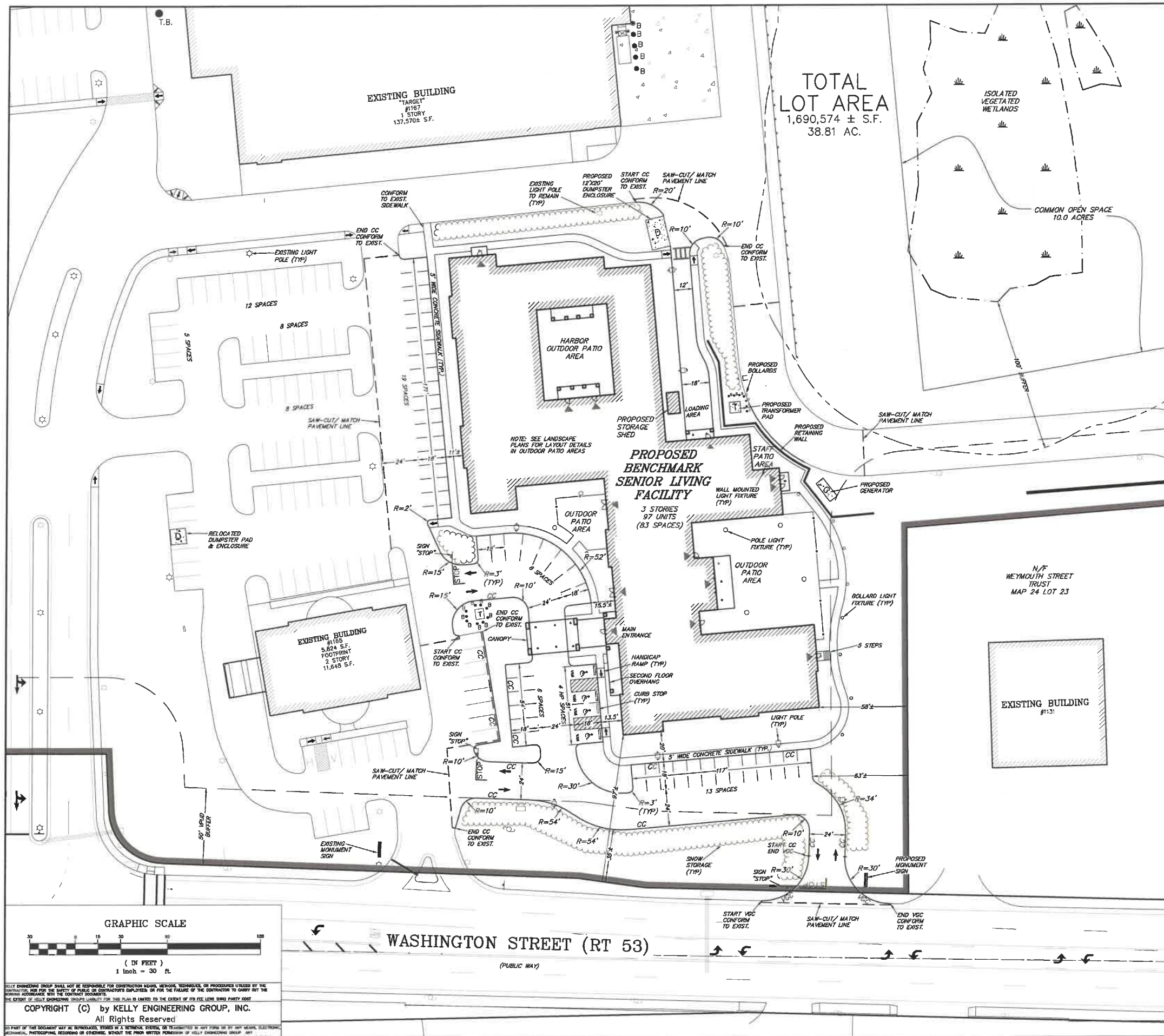
BENCHMARK SENIOR LIVING
1143 WASHINGTON STREET
HANOVER, MA
OVERALL LAYOUT
PLAN

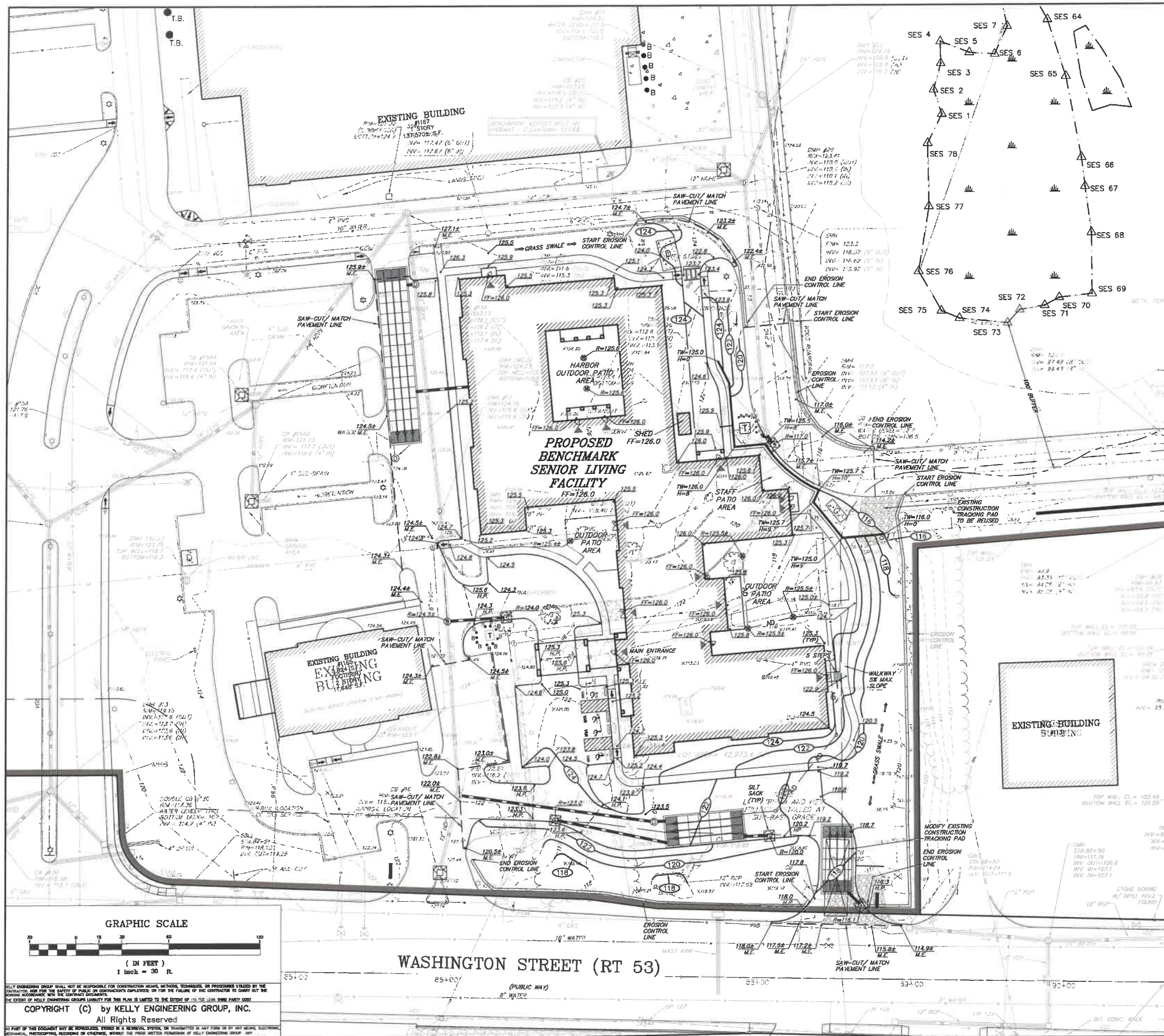
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REGISTERED
PROFESSIONAL ENGINEER

SHEET NO.
2







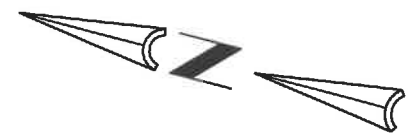
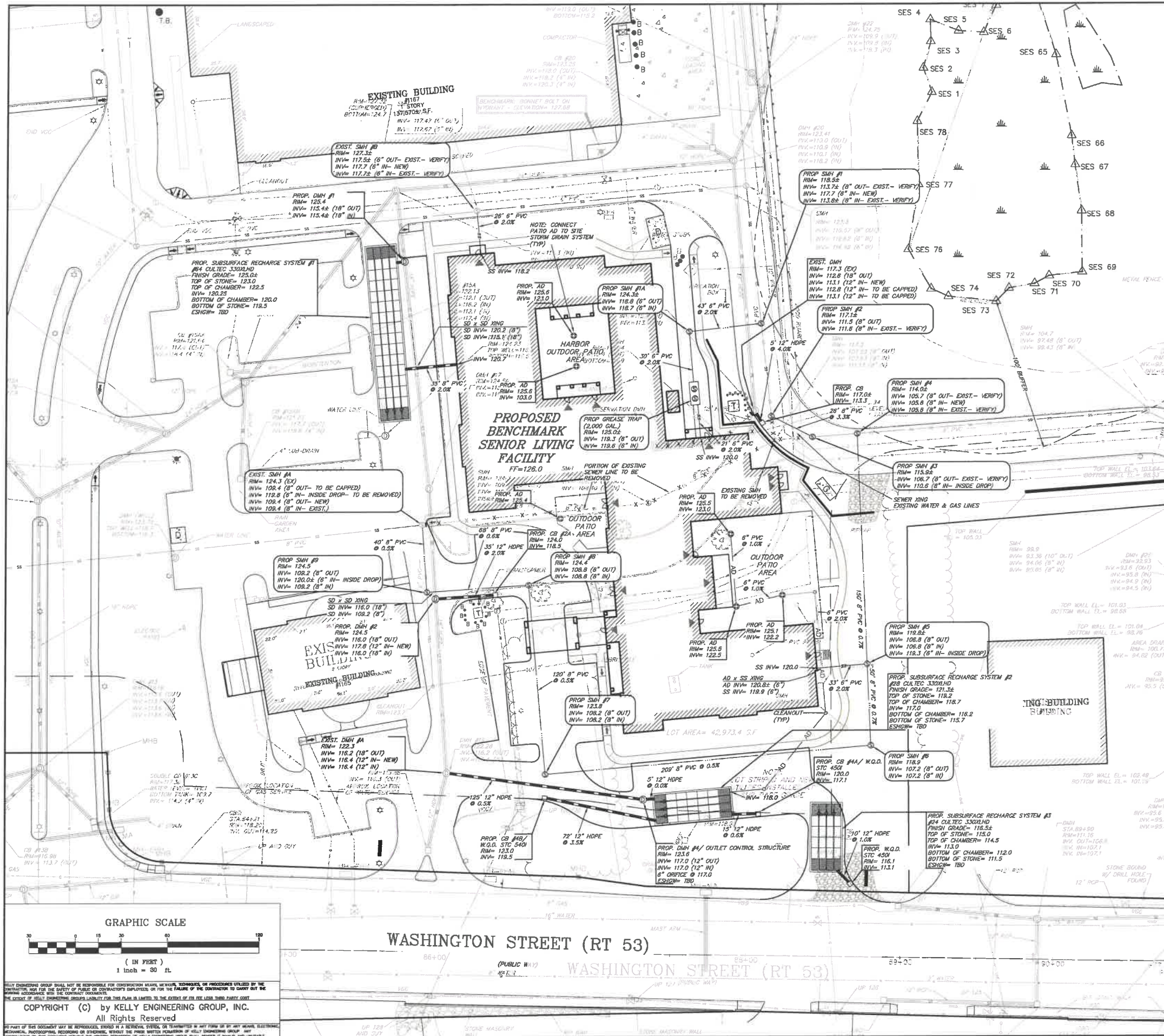
PROPOSED LEGEND	
	RIP RAP
	FLARED END SECTION
	CATCH BASIN
	AREA DRAIN
	DRAIN MANHOLE
	DRAIN LINE
	SAW CUT/ MATCH PAVEMENT LINE
	CONTOUR LINE
	SPOT GRADE
	MATCH EXISTING
	HIGH POINT
	HIGH POINT LINE
	EROSION CONTROL LINE
	SILT SACK

NOTES:
1. FOR EXISTING SYMBOL LEGEND SEE SHEET 03

SCALE 1" = 30'	REV	DATE	REVISION	BY
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CHKD BY DAM				
APPD BY DNK				
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GRADING PLAN				
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DAVID KELLY
REGISTERED PROFESSIONAL ENGINEER
NO. 37942
MASSACHUSETTS

SHEET NO.
5



PROPOSED LEGEND

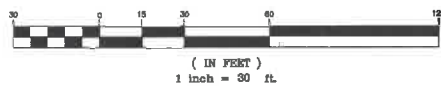
	CATCH BASIN
	AREA DRAIN
	DRAIN MANHOLE
	INSPECTION PORT
	DRAIN CLEAN OUT
	DRAIN LINE
	ROOF DRAIN LINE
	AREA DRAIN LINE
	SEWER MANHOLE
	SEWER LINE
	GAS VALVE
	GAS LINE
	WATER VALVE
	WATER LINE
	ELECTRIC MANHOLE
	UNDERGROUND ELECTRIC LINE
	TELEPHONE MANHOLE
	TELEPHONE LINE
	SAW CUT/ MATCH PAVEMENT LINE

- NOTES:
1. ALL STRUCTURE INVERTS ARE LISTED WITH OUTLET FIRST THEN CLOCKWISE AROUND STRUCTURE.
 2. FOR EXISTING SYMBOL LEGEND SEE SHEET 03

DEMO LEGEND

	UTILITY TO BE REMOVED
	STRUCTURE TO BE REMOVED

GRAPHIC SCALE



WASHINGTON STREET (RT 53)

WASHINGTON STREET (RT 53)

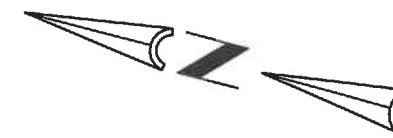
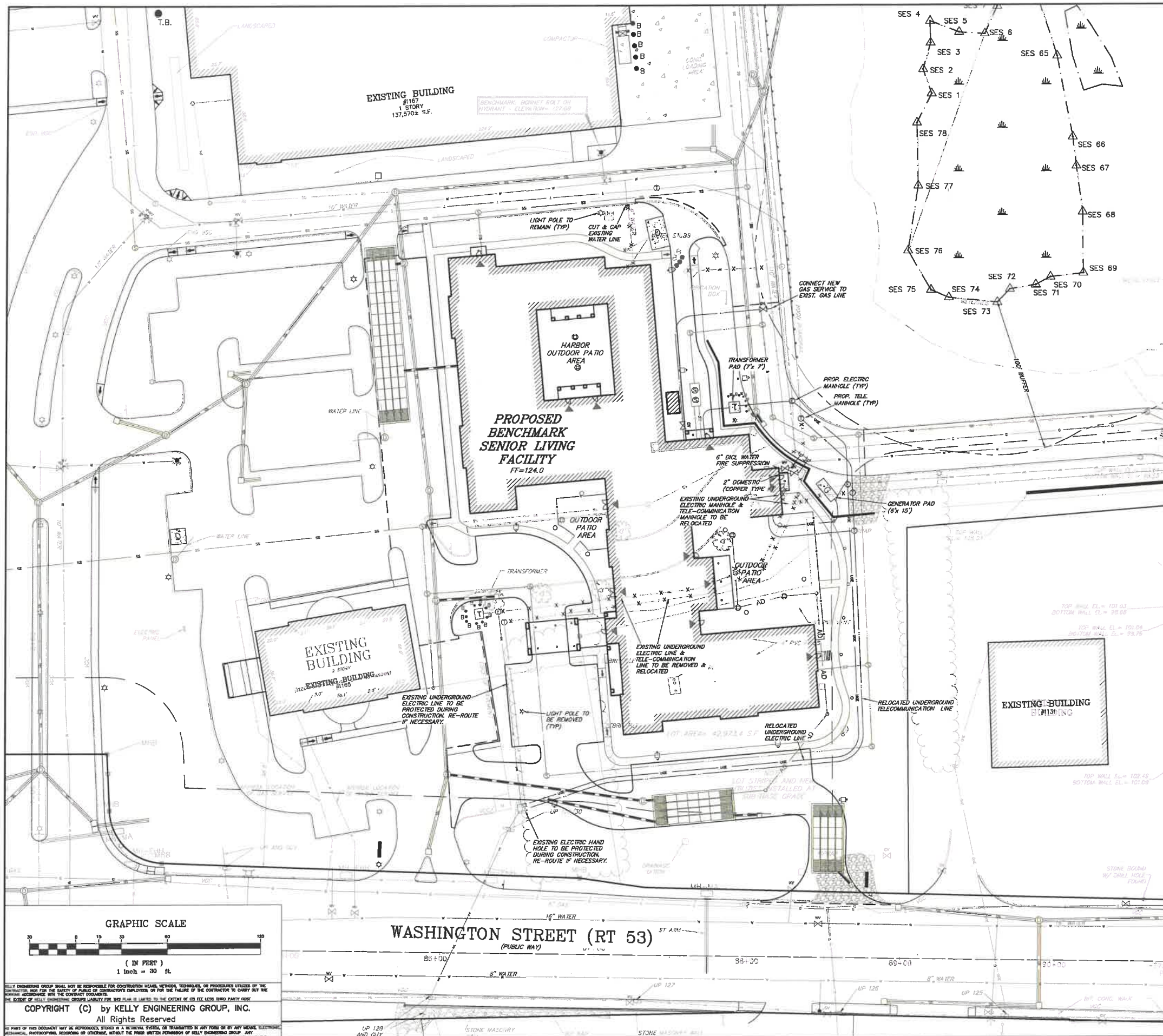
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MASSACHUSETTS

SHEET NO.
6

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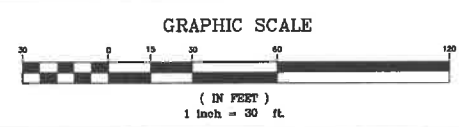
PROPOSED LEGEND

	CATCH BASIN
	AREA DRAIN
	DRAIN MANHOLE
	INSPECTION PORT
	DRAIN CLEAN OUT
	DRAIN LINE
	ROOF DRAIN LINE
	AREA DRAIN LINE
	SEWER MANHOLE
	SEWER LINE
	GAS VALVE
	GAS LINE
	WATER VALVE
	WATER LINE
	ELECTRIC MANHOLE
	UNDERGROUND ELECTRIC LINE
	TELEPHONE MANHOLE
	TELEPHONE LINE
	SAW CUT/ MATCH PAVEMENT LINE

- NOTES:
1. ALL STRUCTURE INVERTS ARE LISTED WITH OUTLET FIRST THEN CLOCKWISE AROUND STRUCTURE.
 2. FOR EXISTING SYMBOL LEGEND SEE SHEET ____

DEMO LEGEND

	UTILITY TO BE REMOVED
	STRUCTURE TO BE REMOVED



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HANOVER, MA

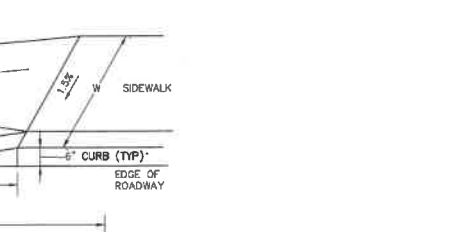
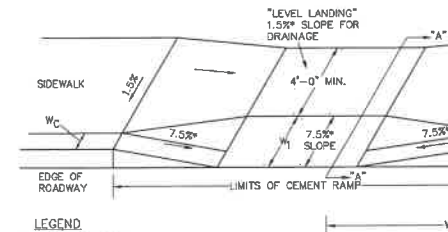
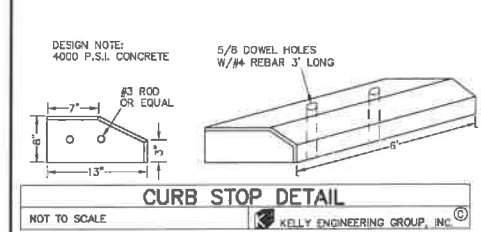
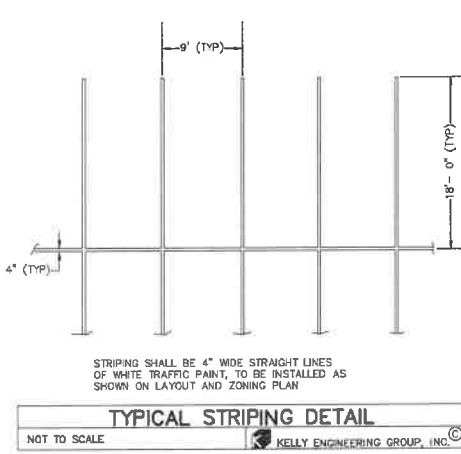
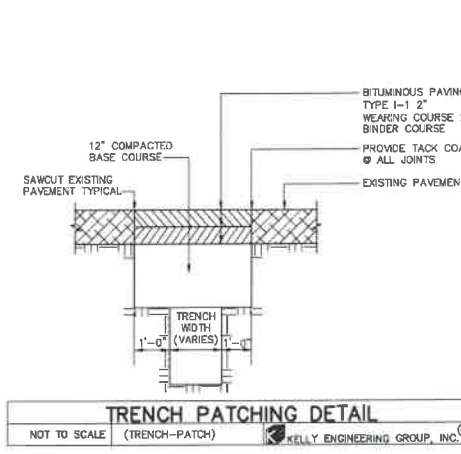
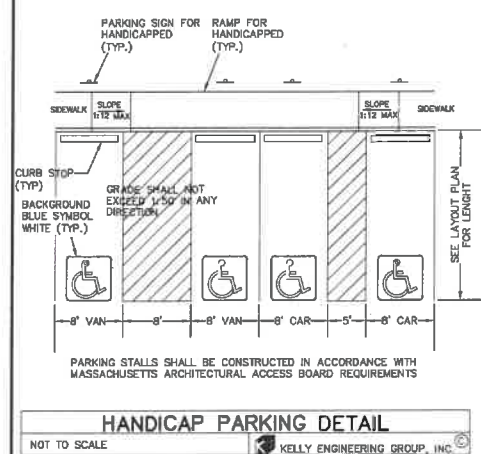
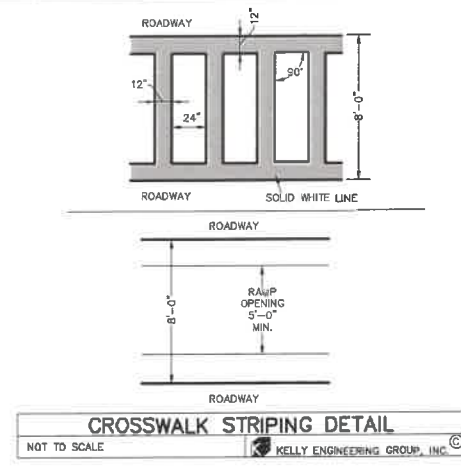
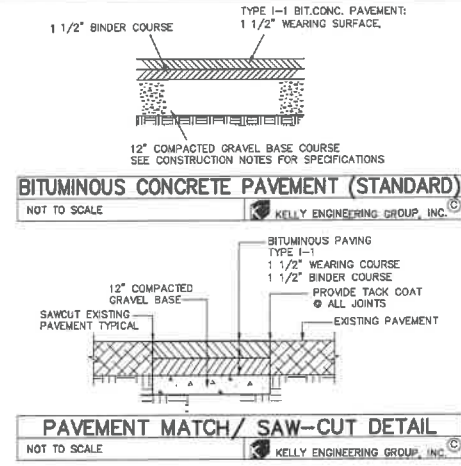
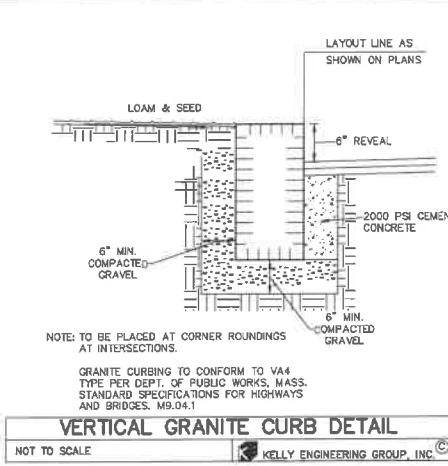
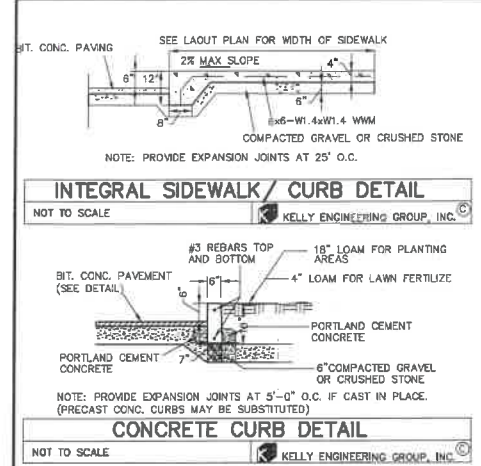
UTILITY PLAN

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DAVID
KELLY
NO. 37542
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DN: cn=David Kelly, o=Kelly Engineering Group, Inc., email=dkelly@kellyeng.com, c=US
Date: 2019.10.10 15:05:00 -0400

SHEET NO.
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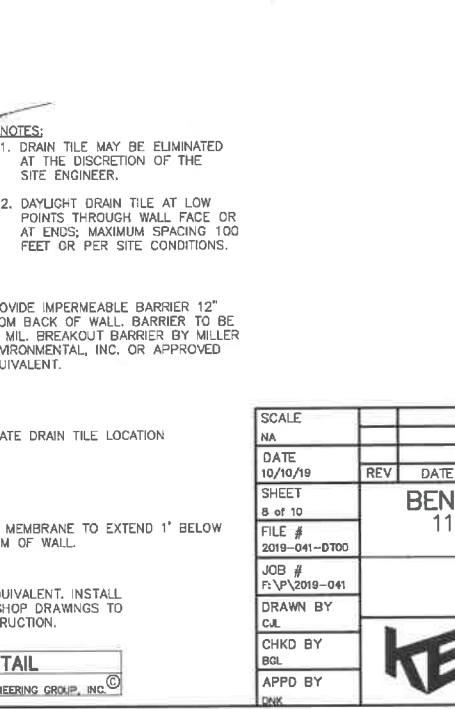
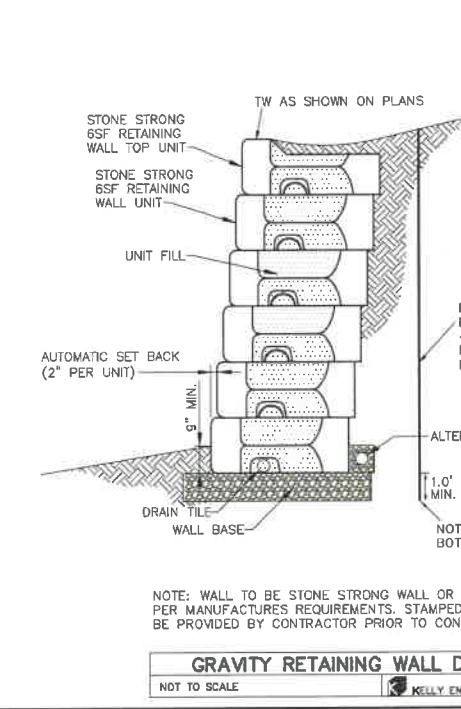
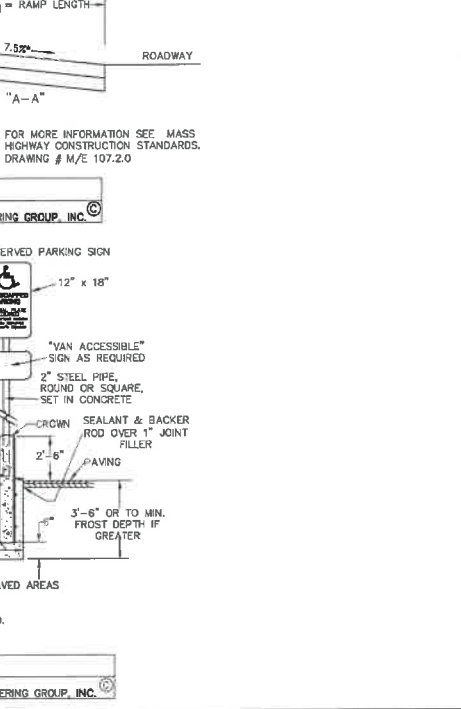
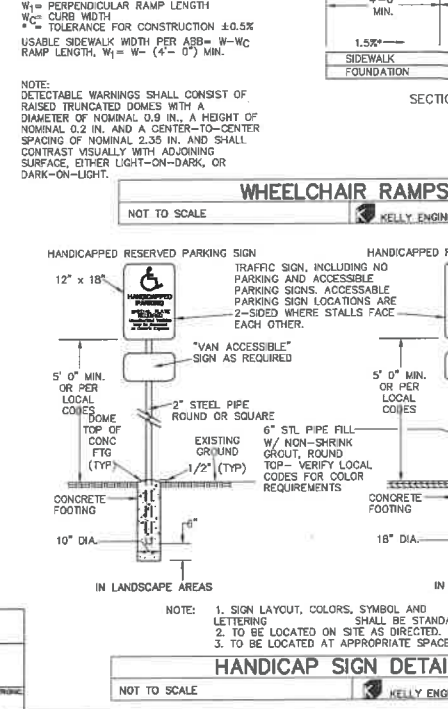
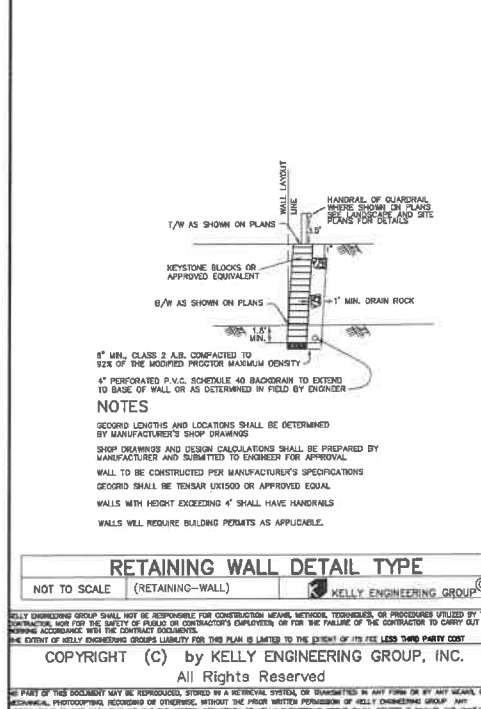
CONSTRUCTION NOTES

- THE CONTRACTOR SHALL REPORT TO THE OWNER AND ENGINEER OF ANY SIGNIFICANT VARIATIONS IN EXISTING SITE CONDITIONS FROM THOSE SHOWN ON THESE PLANS. ANY PROPOSED REVISIONS TO THE WORK, IF REQUIRED BY THESE SITE CONDITIONS, SHALL NOT BE UNDERTAKEN UNTIL REVIEWED AND APPROVED BY THE OWNER AND THE ENGINEER.
- THE CONTRACTOR SHALL NOTIFY THE TOWN OF HANOVER DEPARTMENT OF PUBLIC WORKS AT LEAST 48 HOURS IN ADVANCE OF ANY REQUIRED INSPECTIONS.
- IN ORDER TO PROTECT THE PUBLIC SAFETY DURING CONSTRUCTION, THE CONTRACTOR IS RESPONSIBLE FOR INSTALLING AND MAINTAINING AT ALL TIMES ALL NECESSARY SAFETY DEVICES AND PERSONNEL, WARNING LIGHTS, BARRICADES, AND POLICE OFFICERS.
- ALL WORK SHALL CONFORM TO A SPECIAL PERMIT TO BE ISSUED BY THE TOWN OF HANOVER.
- FOR ANY PROJECT THAT INVOLVES 1 ACRE OR MORE OF DISTURBANCE, THE CONTRACTOR SHALL SECURE A NPDES PERMIT PRIOR TO BEGINNING ANY GRADING ACTIVITIES.
- ALL WORK SHALL CONFORM TO AN ORDER OF CONDITIONS TO BE ISSUED BY THE TOWN OF HANOVER.
- ALL WORK SHALL CONFORM TO THE GEOTECHNICAL REPORT BY OTHERS.
- THE LOCATION OF UNDERGROUND UTILITIES AS REPRESENTED ON THESE PLANS IS BASED UPON PLANS AND INFORMATION PROVIDED BY THE RESPECTIVE UTILITY COMPANIES OR MUNICIPAL DEPARTMENTS SUPPLEMENTED BY FIELD IDENTIFICATION WHEREVER POSSIBLE. NO WARRANTY IS MADE AS TO THE ACCURACY OF THESE LOCATIONS OR THAT ALL UNDERGROUND UTILITIES ARE SHOWN. THE CONTRACTOR SHALL CONTRACT DIG SAFE AT LEAST 72 HOURS PRIOR TO THE START OF CONSTRUCTION. DIG SAFE TELEPHONE NUMBER IS 1-888-344-7233.
- THE CONTRACTOR SHALL VERIFY THE LOCATION, SIZE AND DEPTH OF EXISTING UTILITIES PRIOR TO TAPPING INTO, CROSSING OR EXTENDING THEM. IF THE NEW WORK POSES A CONFLICT WITH EXISTING UTILITIES, THE ENGINEER SHALL BE NOTIFIED PRIOR TO THE CONTRACTOR CONTINUING.
- REFER TO ARCHITECTURAL PLANS FOR EXACT BUILDING DIMENSION AND DOOR LOCATIONS.
- ALL PROPOSED SITE GAS, ELECTRIC, TELEPHONE, CATV FEATURES SHOWN ON SITE DEVELOPMENT PLANS ARE INTENDED AS A GUIDE ONLY. FINAL CONFIGURATION TO BE CONFIRMED WITH PROJECT MEP ENGINEER AND UTILITY PROVIDER.
- REFER TO PLUMBING PLANS FOR EXACT SIZE AND LOCATION OF SANITARY AND WATER CONNECTIONS.
- REFER TO ELECTRICAL PLANS FOR THE LIGHTING CIRCUITS, FIXTURE DETAIL AND BUILDING CONNECTION LOCATION.
- ALL H.D.P.E. HIGH DENSITY POLYETHYLENE PIPE SHALL BE AOS N-12 OR APPROVED EQUAL. SEWER SHALL BE SDR 35 WITH RUBBER RING JOINTS. WATER LINES SHALL BE CL 52 D.I.P. (DUCTILE IRON PIPE), REINFORCED CONCRETE PIPE RCP SHALL BE CLASS III.
- NO LEDGE, BOULDERS, OR OTHER UNYIELDING MATERIALS ARE TO BE LEFT WITHIN 6" OF THE SEWER IN THE TRENCH, NOR ARE THEY TO BE USED FOR BACKFILL FOR THE FIRST 12" ABOVE THE PIPES.
- WALKS SHALL BE 4" THICK AND SHALL BE CONSTRUCTED ON 6" OF COMPACTED BANK GRAVEL. CONCRETE FOR WALKS SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 4000 PSI. WALKS SHALL BE REINFORCED WITH WMM #6 @ 12" O.C. CONFORMING TO ASTM A184.
- BASE MATERIAL SHALL BE CLEAN BANK RUN GRAVEL, CONFORMING TO M.D.P.W. M1.03.1 WITH NO STONES LARGER THAN THREE (3) INCHES IN DIAMETER AND SHALL BE PLACED AND ROLLED WITH AT LEAST A TEN TON ROLLER. THE SURFACES SHALL BE WET DURING ROLLING TO BIND THE MATERIAL. ALL STONES OF 4" DIAMETER OR LARGER SHALL BE REMOVED FROM THE SUB-BASE PRIOR TO PLACING BASE MATERIAL. PULVERIZED MATERIAL MAY BE USED AS BASE MATERIAL PROVIDING IT MEETS THIS SPECIFICATIONS. AREAS TO BE REPAVED SHALL BE PULVERIZED AND REGRADED TO PROVIDE POSITIVE FLOW TO DRAINAGE AND AWAY FROM BUILDING. PAVE WITH 1 1/2" WEARING COURSE ON 1 1/2" BINDER COURSE. ALL VALVES BOXES, MANHOLES AND OTHER UTILITIES APPURTENANCES SHALL BE ADJUSTED TO CONFORM TO FINAL GRADE.
- TRANSFORMER PAD SHALL BE INSTALLED PER PROVIDER'S SPECIFICATIONS. GENERATOR PADS SHALL BE INSTALLED PER MANUFACTURING SPECIFICATIONS.
- PAVEMENT AREA SHALL BE PAVED TO A THICKNESS AS SHOWN ON THE PLANS MEASURED AFTER COMPACTION, WITH A BINDER COURSE AND TOP COURSE OF CLASS I BITUMINOUS CONCRETE PAVEMENT, TYPE I-1.
- THE AGGREGATE SHALL BE COMPOSED, MIXED AND LAID HOT IN TWO COURSES AS SPECIFIED IN THE "COMMONWEALTH OF MASSACHUSETTS STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES", 1988 EDITION, SECTION 460 FOR CLASS I BITUMINOUS CONCRETE PAVEMENT, AS SPECIFICALLY SET FORTH IN SECTION 460.20 AND 460.82.

- DUMPSTER PAD SHALL BE 8" THICK REINFORCED CONCRETE SLAB WITH CONTROL JOINTS EVERY 10'. THE PAD SHALL BE CONSTRUCTED OVER 6" OF GRAVEL BASE, COMPACT TO 95% RECOMFEMENT SHALL BE WVF 6x6 - W1.4 x W1.4 PLACED AT THE CENTER OF THE SLAB, THE FRONT END OF COMPACTOR PAD SHALL HAVE EMBEDDED A 6"x 3/8" STEEL ANGLE.
- ALL EXISTING PAVING TO BE DISTURBED SHALL BE CUT ALONG A STRAIGHT LINE THROUGHOUT ITS ENTIRE THICKNESS. PUT NEW PAVING INTO THE EXISTING PAVEMENT TO REMAIN AND TACK COAT THE JOINT.
- ANY PAVEMENT REMOVED FOR UTILITY TRENCH EXCAVATION OR OTHERWISE DAMAGED DURING CONSTRUCTION SHALL BE REPLACED WITH A PAVEMENT SECTION CONSISTING OF 1 1/2" WEARING COURSE OVERLAYING A 1 1/2" BINDER COURSE OVERLAYING A 12" COMPACTED GRAVEL BASE COURSE.
- ALL AREAS TO BE PLANTED WITH GRASS SHALL BE TREATED WITH 100 POUNDS OF GROUND LIME/STONE PER 1,000 S.F. OF AREA PLANTED. ALL AREAS TO BE PLANTED WITH GRASS SHALL BE FERTILIZED WITH 10-10-10 AT THE RATE OF 1,000 POUNDS PER ACRE OR AS REQUIRED BY SOIL TEST. 40% OF THE NITROGEN SHALL BE ORGANIC FORM.
- ALL LANDSCAPED AREAS TO BE LOAMED AND SEEDED SHALL HAVE THE FOLLOWING MIX:

PERENNIAL RYE	25%
KENTUCKY BLUE	25%
OREGON RED FESCUE OR	50%
PENNSYLVANIA FESCUE	

 SEED AT THE RATE OF 5#/1,000 S.F.
- ALL AREAS INDICATED TO BE LOAMED AND SEEDED SHALL HAVE A MINIMUM OF 4 INCHES OF TOPSOIL, SPREAD EVENLY THROUGHOUT. PROVIDE EROSION CONTROL MEASURES AS NECESSARY TO PROVIDE SLOPE STABILITY UNTIL VEGETATION IS ESTABLISHED. (NOTE: IF THERE IS A CONFLICT BETWEEN THESE PLANS AND LANDSCAPE PLANS THE LANDSCAPE PLANS SHALL DICTATE.)
- THE CONTRACTOR SHALL REGULARLY INSPECT THE PERIMETER OF THE PROPERTY TO CLEANUP AND REMOVE LOOSE CONSTRUCTION DEBRIS BEFORE IT LEAVES THE SITE. ALL DEMOLITION DEBRIS SHALL BE PROMPTLY REMOVED FROM THE SITE TO A LEGAL DUMP SITE. ALL TRUCKS LEAVING THE SITE SHALL BE COVERED.
- IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO INSTITUTE EROSION CONTROL MEASURES ON AN AS NECESSARY BASIS, SUCH THAT EXCESSIVE SOIL EROSION DOES NOT OCCUR. MEASURES SHALL INCLUDE SILT SACKS IN DRAINAGE INLETS, MULCHING AND PLANTING OF DISTURBED AREAS.
- PRIOR TO THE COMMENCEMENT OF ANY OTHER WORK A SILT SACK SHALL BE INSTALLED IN EACH EXISTING DRAINAGE INLET.
- AFTER INSTALLATION OF EACH DRAINAGE INLET A SILT SACK SHALL BE INSTALLED IN EACH INLET TO PREVENT SEDIMENT FROM ENTERING THE STORM DRAIN SYSTEM.
- AT THE END OF CONSTRUCTION ALL DRAINAGE STRUCTURES ARE TO BE CLEANED OF SILT, STONES AND OTHER DEBRIS.
- DURING CONSTRUCTION THE EROSION CONTROL MEASURES SHALL BE INSPECTED ONCE PER WEEK AND WITHIN 24 HOURS OF ANY STORM EVENT GENERATING MORE THAN 1/2" OF RAINFALL. THE EROSION CONTROL MEASURES SHALL BE CLEANED REGULARLY AND ADJUSTED IF NECESSARY TO ENSURE THAT NO SILT OR DEBRIS LEAVES THE SITE.
- STABILIZATION MEASURES (SEEDING OR PLANTING, APPLYING MULCH OR OTHER NON-VEGETATIVE PRODUCT) OF EXPOSED SOILS SHALL BEGIN AS SOON AS PRACTICABLE AND IMMEDIATELY AFTER EARTH-DISTURBING ACTIVITIES HAVE PERMANENTLY OR TEMPORARILY CEASED. STABILIZATION TO BE COMPLETED WITHIN 14 DAYS.
- SILT SOCKS SHALL BE INSTALLED ON THE DOWNSTREAM SIDE OF ALL STOCK PILES.
- SPARE EROSION/SEDIMENT CONTROL MATERIALS SHALL BE AVAILABLE ON SITE FOR USE IN CONTINGENCY CONDITIONS OR AT THE DIRECTION OF HANOVER'S CODE ENFORCEMENT PERSONNEL.
- ALL STORM DRAIN INLETS SHOWN TO BE ABANDONED SHALL BE ABANDONED AS FOLLOWS SUCH THAT THE TOPS ARE NO LESS THAN 3" FROM FINISHED GRADE:
 - PRECAST DRAINAGE INLETS SHALL HAVE THE GRATE, FRAME AND CONE SECTION REMOVED. THE STORM DRAIN PIPE SHALL BE PLUGGED USING BRICK AND MORTAR AND THE REMAINING STRUCTURE SHALL BE BACK FILLED AND COMPACTED, OR THE ENTIRE STRUCTURE SHALL BE REMOVED AND REMAINING VOID SHALL BE BACKFILLED AND COMPACTED.
 - BLOCK DRAINAGE INLETS SHALL BE GRATE AND FRAME REMOVED AND THE STORM DRAIN PLUGGED AS IN (A) ABOVE. THE STRUCTURE SHALL THEN BE CRUSHED, BACKFILLED AND COMPACTED.
- ALL STORM DRAINS TO BE ABANDONED WHICH ARE WITHIN 3' OF FINISHED GRADE SHALL BE REMOVED. ALL OTHERS SHALL BE PLUGGED AT EACH END.



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8 of 10

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2019-041-DT00

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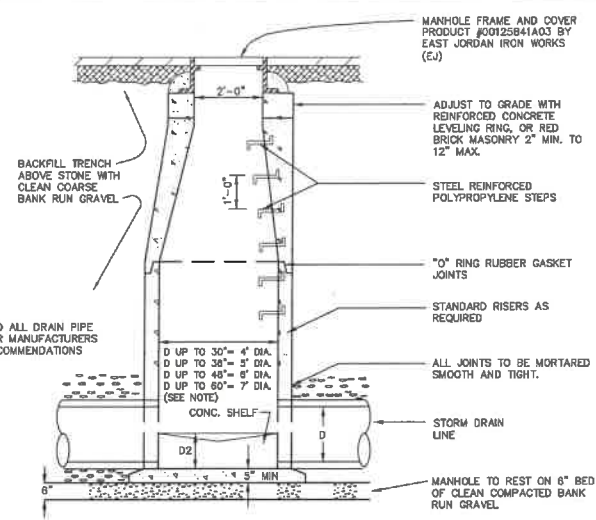
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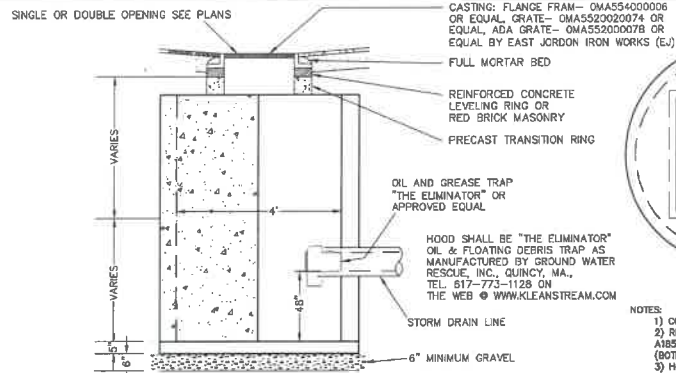


- NOTES:
- 1) CONCRETE, 4,000 PSI MINIMUM AFTER 28 DAYS.
 - 2) REINFORCED STEEL TO CONFORM TO LATEST ASTM A185 SPEC. 0.12 SQ. IN./LINEAL FT. AND 0.12 SQ. IN. (BOTH WAYS) BASE BOTTOM.
 - 3) H-20 DESIGN LOADING PER AASHTO HS-20-44; ASTM C478 SPEC. FOR "PRECAST REINFORCED CONCRETE MANHOLE SECTIONS".
 - 4) STEEL REINFORCED COPOLYMER POLYPROPYLENE PLASTIC STEP TO CONFORM TO LATEST ASTM C478 SPEC.
- NOTE: CONFIGURATIONS W/ MULTIPLE INLETS MAY REQUIRE LARGER STRUCTURES.

PRECAST DRAIN MANHOLE DETAIL

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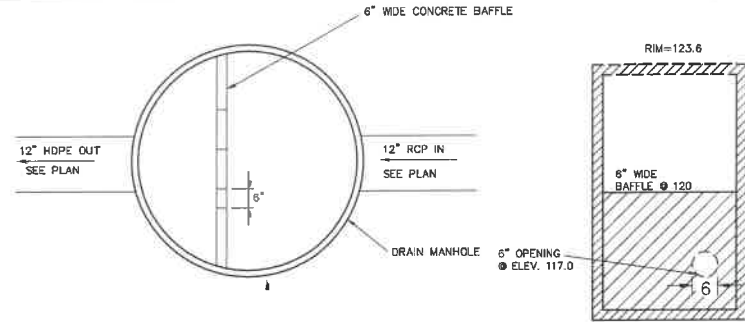


PRECAST CATCH BASIN DETAIL

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- NOTES:
- 1) CONCRETE, 4,000 PSI MINIMUM AFTER 28 DAYS.
 - 2) REINFORCED STEEL TO CONFORM TO LATEST ASTM A185 SPEC. 0.12 SQ. IN./LINEAL FT. AND 0.12 SQ. IN. (BOTH WAYS) BASE BOTTOM.
 - 3) H-20 DESIGN LOADING PER AASHTO HS-20-44; ASTM C478 SPEC. FOR "PRECAST REINFORCED CONCRETE MANHOLE SECTIONS".



TOP VIEW

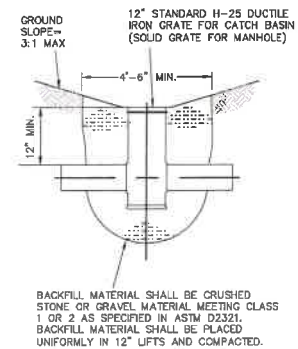
SECTION

NOTE: FOR OTHER NOTES AND DETAILS SEE TYPICAL DRAIN MANHOLE DETAIL.

CONTROL STRUCTURE MANHOLE

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CATCH BASIN AND DRAIN MANHOLES SHALL BE SUPPLIED BY NYLOPIAST OR APPROVED EQUIVALENT.

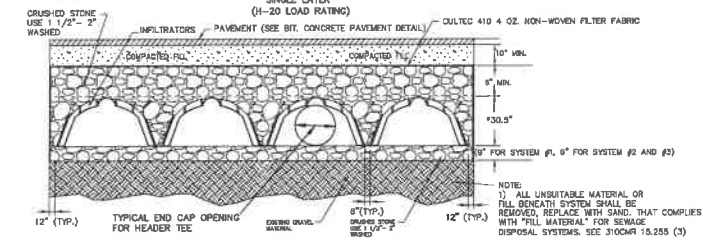
YARD DRAIN DETAIL

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TYPICAL SUBSURFACE RECHARGE AREA (CULTEC 330XLHD) PLAN VIEW (INFILTRATION TO BE CULTEC OR APPROVED EQUAL)

*SEE CULTEC RECHARGER 330XLHD STORMWATER MANAGEMENT SYSTEM DESIGN FOR INSTALLATION INSTRUCTIONS PROPRIETARY SHOP DRAWINGS TO BE PROVIDED PRIOR TO INSTALLATION



NOTE: 1) ALL UNSUITABLE MATERIAL, OR FILL BENEATH SYSTEM SHALL BE REMOVED, REPLACE WITH SAND, THAT COMPLES WITH FILL MATERIAL FOR SERVICE DISPOSAL SYSTEMS. SEE 31004R 15.255 (3)

SECTION 1-1 (PARTIAL)

STORMWATER MANAGEMENT SYSTEM CONSTRUCTION OPERATION & MAINTENANCE NOTES:

1. EXTREME CARE SHALL BE TAKEN DURING CONSTRUCTION TO AVOID SILTATION DURING THE CONSTRUCTION PROCESS. SILT CAGES AND HAYBALE DIKES SHALL BE INSPECTED DAILY AND REPLACED IF NECESSARY.
2. EXTREME CARE SHALL BE TAKEN TO PREVENT COMPACTION OF UNDISTURBED SOILS BENEATH RECHARGE SYSTEM.
3. THERE SHALL BE NO DISCHARGE OF WATER FOR CONSTRUCTION DEWATERING ACTIVITIES INTO THE STORMWATER MANAGEMENT SYSTEM.
4. THERE SHALL BE NO DISCHARGE OF STORMWATER INTO THE RECHARGE SYSTEM UNTIL THE SITE HAS BEEN STABILIZED.

CONSTRUCTION INSPECTION AND MAINTENANCE SCHEDULE:

CONSTRUCTION SCHEDULE

1. WEEKLY INSPECTIONS SHALL BE PERFORMED BY THE APPLICANTS ENGINEER AND A REPRESENTATIVE FROM THE TOWN'S ENGINEERING DEPARTMENT.
2. INSPECTIONS SHALL INCLUDE THE PAYMENT TO DETERMINE IF ACCUMULATED SEDIMENT IS TO BE REMOVED, OF THE CATCH BASINS TO DETERMINE DEPTH OF SEDIMENTS AND REQUIRED CLEANING, INSPECTION OF THE STORMCEPTOR TO DETERMINE IF CLEANING IS NECESSARY AND INSPECTION OF THE LEACHING SYSTEM SHALL BE CONDUCTED BY THE ENGINEER AND THE TOWN'S ENGINEERING DEPARTMENT.
3. AN INSPECTION OF THE EXCAVATION OF THE LEACHING SYSTEM SHALL BE CONDUCTED BY THE ENGINEER AND A REPRESENTATIVE OF THE TOWN'S ENGINEERING DEPARTMENT PRIOR TO PLACEMENT OF ANY MATERIAL OR CHAMBERS.

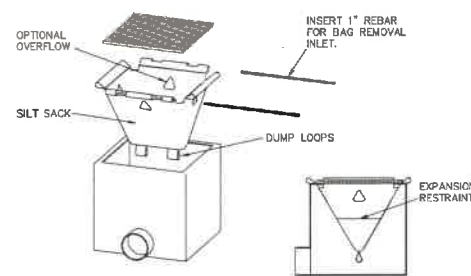
CONSTRUCTION MAINTENANCE SCHEDULE

1. WHEN THE BINDER COURSE HAS BEEN INSTALLED THE PAVEMENT SHALL BE KEPT CLEAR OF ACCUMULATED SEDIMENTS. IF ACCUMULATED SEDIMENTS ARE DEPOSITED ON THE PAVEMENT THE SEDIMENT SHALL BE CLEANED IMMEDIATELY. THE PAVEMENT SHALL BE SWEEP AS NECESSARY BASED ON THE WEEKLY INSPECTIONS. THE CONTRACTOR SHALL INSPECT THE PAVEMENT ON A DAILY BASIS AND REMOVE ACCUMULATED SEDIMENTS AS NECESSARY.
2. "SILT SAKS" SHALL BE INSTALLED AT ALL CATCH BASIN AND DROP INLET LOCATIONS. THE CONTRACTOR SHALL INSPECT THE "SILT SAKS" ON A WEEKLY BASIS AND AFTER HEAVY RAINSTORMS AND EMPTIED BASED ON MANUFACTURERS RECOMMENDATIONS.
3. THE CATCH BASINS SHALL BE INSPECTED ON A WEEKLY BASIS AND AFTER HEAVY RAINSTORMS. THE CATCH BASINS SHALL BE CLEANED WHEN 6" OF SEDIMENT HAS ACCUMULATED IN THE SUMP.
4. THE STORMCEPTOR SHALL BE INSPECTED ON A WEEKLY BASIS AND AFTER HEAVY RAINSTORMS. THE STORMCEPTOR SHALL BE CLEANED BASED ON THE MANUFACTURERS RECOMMENDATIONS.
5. THE INFILTRATION GALLEYS SHALL BE INSPECTED ON A WEEKLY BASIS AND AFTER HEAVY RAINSTORMS AND SHALL BE CLEANED WHEN 2" OF SEDIMENT HAS ACCUMULATED IN THE INLET CHAMBER.

INFILTRATOR SUBSURFACE DETENTION AREA PLAN VIEW

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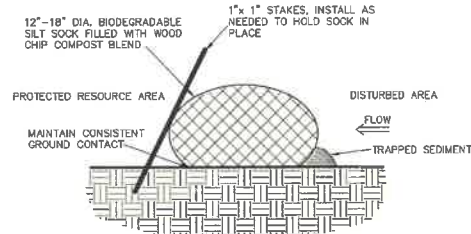
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SILT SACK- TYPE A DETAIL

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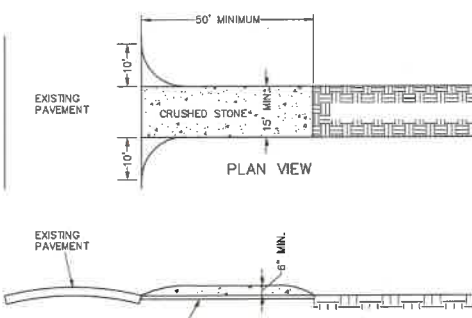
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SILT SOCK LINE DETAIL

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CROSS SECTION

CONSTRUCTION TRACKING PAD

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- TRACKING PAD NOTES:
1. STONE SIZE - USE 2" CRUSHED STONE
 2. FILTER CLOTH - SHALL BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING OF STONE.
 3. SURFACE WATER - ALL SURFACE WATER FLOWING OR DIVERTED TOWARD CONSTRUCTION ENTRANCES SHOULD BE PIPED ACROSS THE ENTRANCE. IF PIPING IS IMPRACTICAL, A MOUNTABLE BERM SHOULD BE PERMITTED.
 4. MAINTENANCE - THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH PREVENTS TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR OR CLEANING OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHTS-OF-WAY MUST BE REMOVED IMMEDIATELY.

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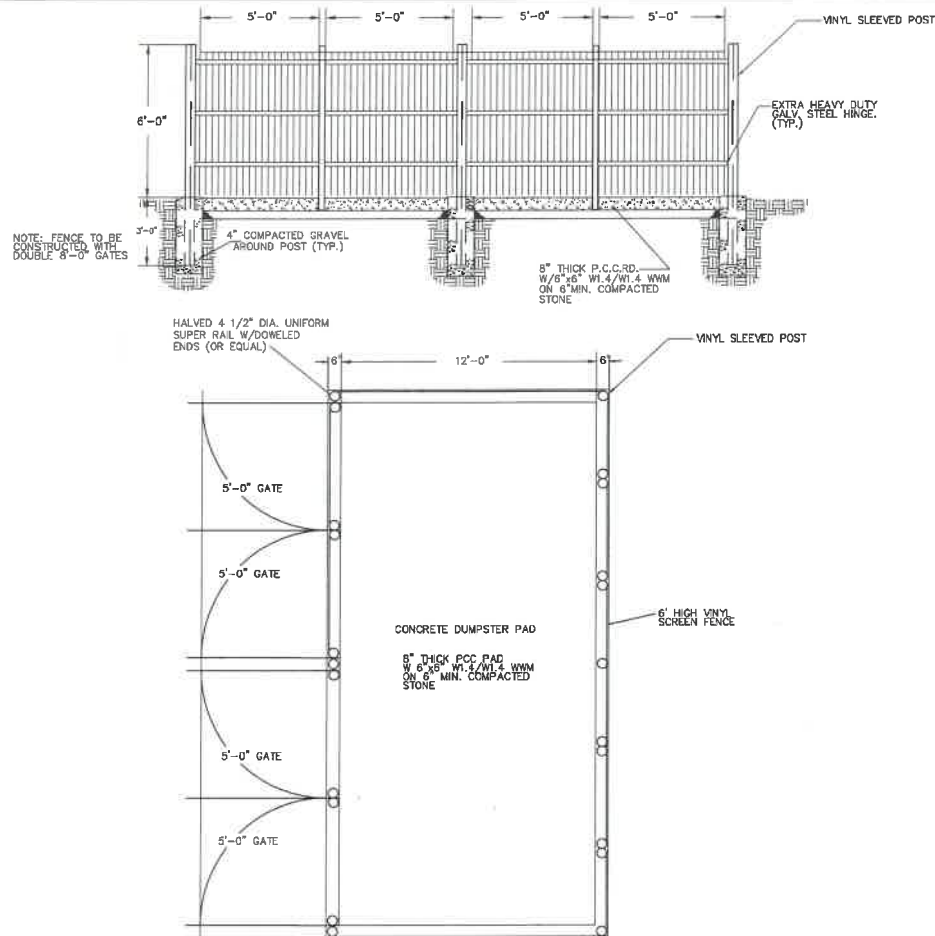
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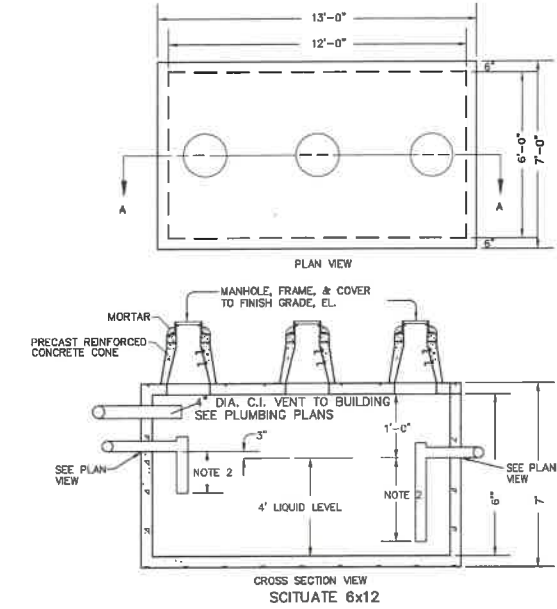
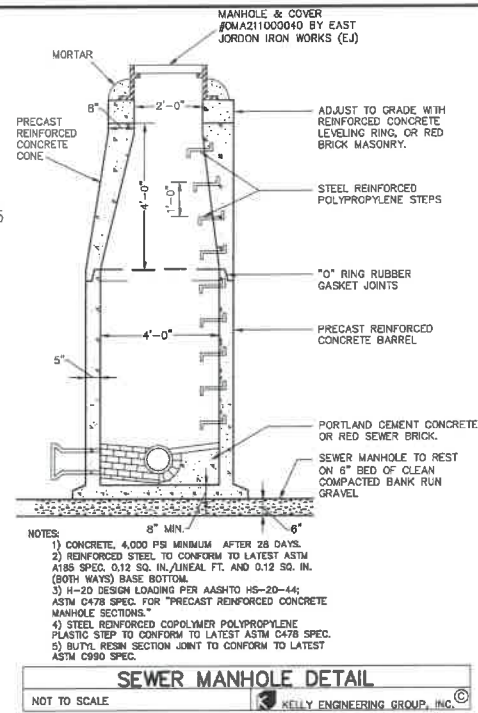
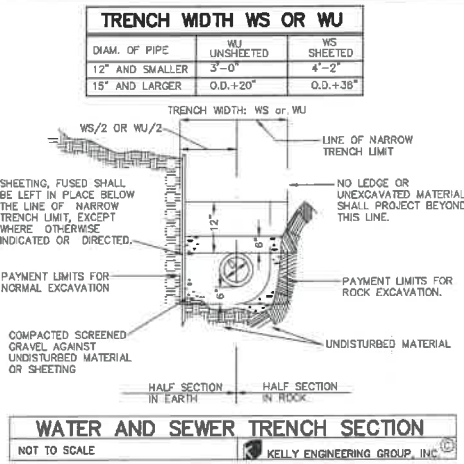
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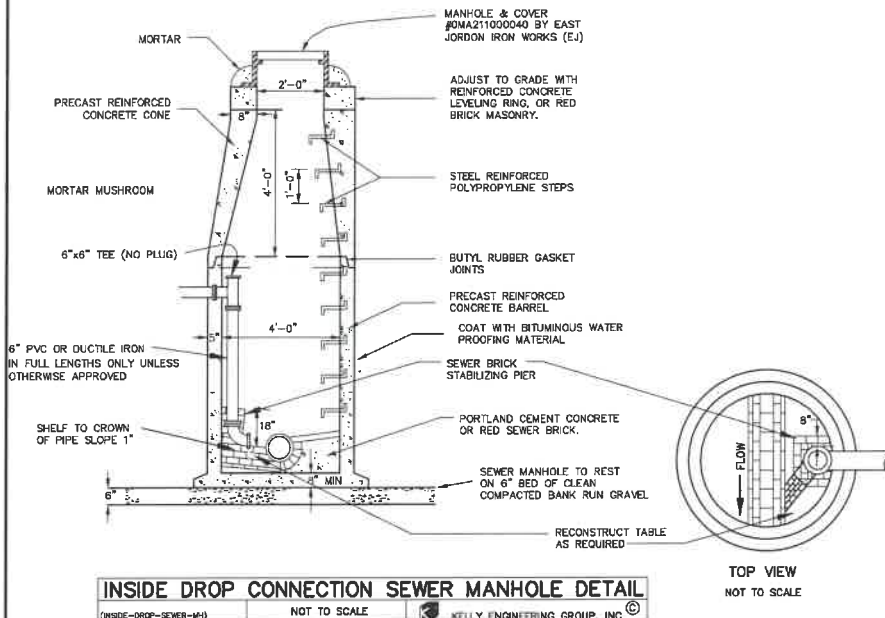


DUMPSTER SCREEN GATE /DUMPSTER PAD DETAIL
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- NOTE:
1. VENT SHALL BE PIPED TO THE INSIDE OF THE BUILDING IN COMPLIANCE WITH 248 CMR 10.16(5)(e). VENT SHALL BE ABOVE WATER LEVEL AND INVERTS.
 2. THE INLET TEE SHALL EXTEND TO THE MID DEPTH OF THE TANK. THE OUTLET TEE SHALL EXTEND TO WITHIN 12 INCHES OF THE BOTTOM OF THE TANK. TEES SHALL BE SCHEDULE 40 PVC AND PROPERLY SUPPORTED BY A HANGER, STRAP OR OTHER DEVICE. (310 CMR 15.230(5))
 3. SHALL BE INSTALLED ON A LEVEL STABLE BASE THAT HAS BEEN MECHANICALLY COMPACTED AND ONTO WHICH 6 INCHES OF CRUSHED STONE HAS BEEN PLACED TO MINIMIZE UNEVEN SETTLING.
 4. THE INLET AND OUTLET SHALL BE LOCATED AT THE CENTER LINE OF THE TANK, AND AT LEAST 12 INCHES ABOVE THE HIGH GROUNDWATER ELEVATION.

2,000 GALLONS PRECAST GREASE TRAP
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