

LOCATION MAP

# SITE DEVELOPMENT PLANS

FOR  
ONE KIDDIE DRIVE  
AVON, MA

AUGUST 10, 2020

SHEET INDEX			
SHEET No.	DESCRIPTION	LATEST REVISED DATE	CONSTRUCTION REVISIONS
1	COVER SHEET	09/24/20	
2	EXISTING CONDITIONS PLAN	09/24/20	
3	LAYOUT PLAN	09/24/20	
4	GRADING PLAN	09/24/20	
5	SEWER, DRAIN & UTILITY PLAN	09/24/20	
6	DETAIL SHEET	09/24/20	
7	DETAIL SHEET	09/24/20	
8	DETAIL SHEET	09/24/20	



LOCATION MAP  
SCALE 1" = 100'

## OWNER/APPLICANT:

KRUPA/LZK PROPERTIES LLC  
455 DORCHESTER AVENUE  
BOSTON, MA 02127

## CIVIL ENGINEERS:

KELLY ENGINEERING GROUP, INC.  
0 CAMPANELLI DRIVE  
BRAintree, MA 02184

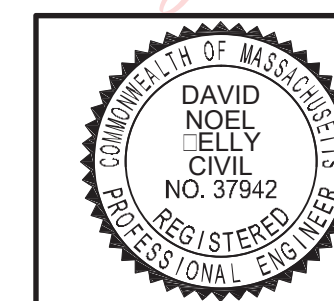
## ARCHITECT:

RKB ARCHITECTS, INC.  
0 CAMPANELLI DRIVE  
BRAintree, MA 02184

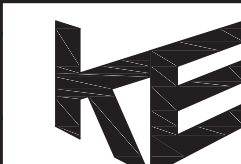
## ATTORNEY:

FRANK MARINELLI  
439 WASHINGTON STREET  
BRAintree, MA 02184

Digitally signed by David Noel  
Kelly P.E.  
DN: cn=David Noel Kelly P.E.,  
o=Kelly Engineering Group, Inc.,  
email=dkelly@kellyengineering  
group.com, c=US  
Date: 2020.09.25 08:28:44 -0400



SCALE NA	JOB # F:\P\2020-017
DATE 08/10/20	DRAWN BY C.J.L.
SHEET 1 OF 8	CHKD BY GSH
FILE # 2020-017-TS01	APPD BY DNK



ONE KIDDIE DRIVE  
AVON, MA  
KELLY ENGINEERING GROUP  
civil engineering consultants  
0 Campanelli Drive, Braintree, MA 02184  
Phone: 781-843-4333 www.kellyengineeringgroup.com

SHEET NO.  
**1**

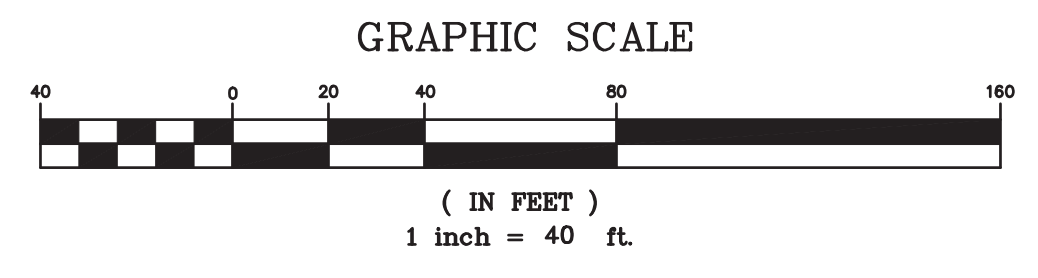
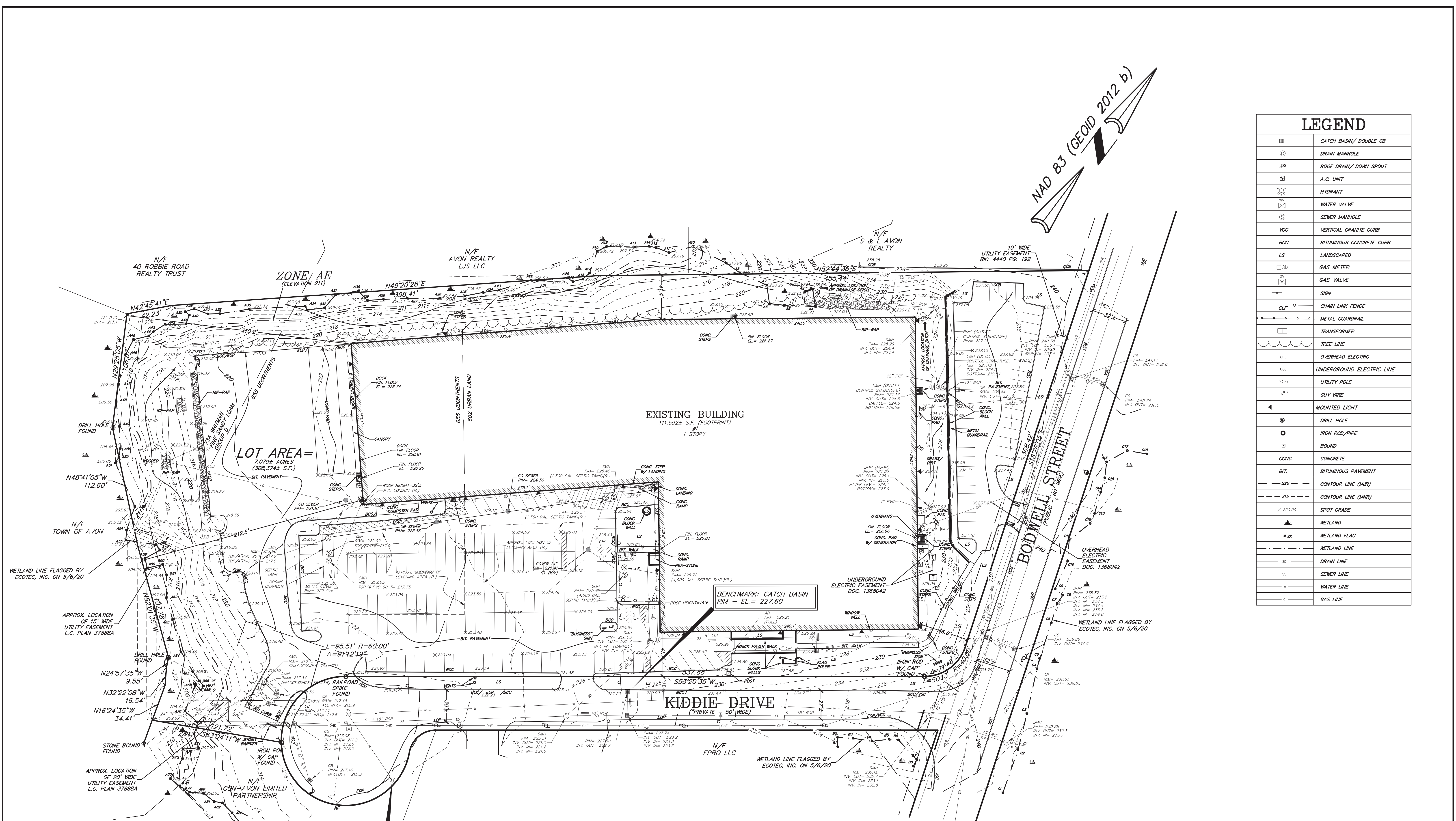
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LEGEND	
	CATCH BASIN/ DOUBLE CB
	DRAIN MANHOLE
	ROOF DRAIN/ DOWN SPOUT
	A.C. UNIT
	HYDRANT
	WATER VALVE
	SEWER MANHOLE
	VERTICAL GRANITE CURB
	BITUMINOUS CONCRETE CURB
	LANDSCAPED
	GAS METER
	GAS VALVE
	SIGN
	CHAIN LINK FENCE
	METAL GUARDRAIL
	TRANSFORMER
	TREE LINE
	OVERHEAD ELECTRIC
	UNDERGROUND ELECTRIC LINE
	UTILITY POLE
	GUY WIRE
	MOUNTED LIGHT
	DRILL HOLE
	IRON ROD/PIPE
	BOUND
	CONCRETE
	BITUMINOUS PAVEMENT
	CONTOUR LINE (MNR)
	SPOT GRADE
	WETLAND
	WETLAND FLAG
	WETLAND LINE
	DRAIN LINE
	SEWER LINE
	WATER LINE
	GAS LINE



**PLAN REFERENCES:**  
1.) LC Plan 37888A

- NOTES:**
- 1.) UNDERGROUND FEATURES HAVE BEEN COMPILED, IN PART, BASED UPON INFORMATION FURNISHED BY OTHERS. THIS INFORMATION IS TO BE CONSIDERED APPROXIMATE AND KELLY ENGINEERING GROUP, INC. DOES NOT TAKE RESPONSIBILITY FOR SUBSEQUENT ERRORS OR OMISSIONS WHICH MAY HAVE BEEN INCORPORATED INTO THIS PLAN AS A RESULT. ADDITIONALLY, OTHER SUCH FEATURES MAY EXIST ON THE SITE, THE EXISTENCE OF WHICH ARE UNKNOWN TO KELLY ENGINEERING GROUP, INC. THE SIZE, LOCATION, AND EXISTENCE OF ALL SUCH FEATURES MUST BE VERIFIED BY THE APPROPRIATE AUTHORITIES PRIOR TO CONSTRUCTION.
  - 2.) THE LOCATION OF ALL UTILITIES SHOWN HEREON HAVE BEEN ESTABLISHED USING ASCE 38-02 (STANDARD GUIDELINES FOR THE COLLECTION AND DEPICTION OF EXISTING SUBSURFACE UTILITY DATA) QUALITY LEVEL C.
  - 3.) THE SITE DETAIL AND SURFACE IMPROVEMENTS DEPICTED HEREON WERE OBTAINED FROM AN ON THE GROUND SURVEY PERFORMED BY KELLY ENGINEERING GROUP, INC. IN FEBRUARY, MARCH AND MAY OF 2020.
  - 4.) ELEVATIONS SHOWN ARE BASED ON THE NORTH AMERICAN DATUM OF 1988 (NAVD88). VERTICAL CONTROL WAS PROVIDED BY GPS RTK SURVEY PERFORMED BY KELLY ENGINEERING GROUP, INC.

**CURRENT OWNER:**  
OUTRI III, LLC  
LAND COURT DOC. # 1187598  
ASSESSOR'S PARCEL ID # B6/1/1

SCALE	1" = 40'
DATE	08/10/20
REV	1. 09/24/20
SHEET	2 OF 8
FILE #	XREF-EX00
JOB #	F:\P\2020-017
DRAWN BY	JPM
CHKD BY	SMH
APPD BY	SMH

**KARAS & KARAS GLASS**  
1 KIDDIE DRIVE  
AVON, MA  
**EXISTING CONDITIONS PLAN**



STEVEN HORSFALL  
2020.09.25  
09:23:39  
-04'00"

SHEET NO.  
**2**

KELLY ENGINEERING GROUP SHALL NOT BE RESPONSIBLE FOR CONSTRUCTION METHODS, MEASUREMENTS, OR PROCEDURES UTILIZED BY THE CONTRACTOR. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE SAFETY OF PUBLICS OR CONTRACTOR'S EMPLOYEES; OR FOR THE FAILURE OF THE CONTRACTOR TO CARRY OUT THE WORKING ACCORDING WITH THE CONTRACT DOCUMENTS.  
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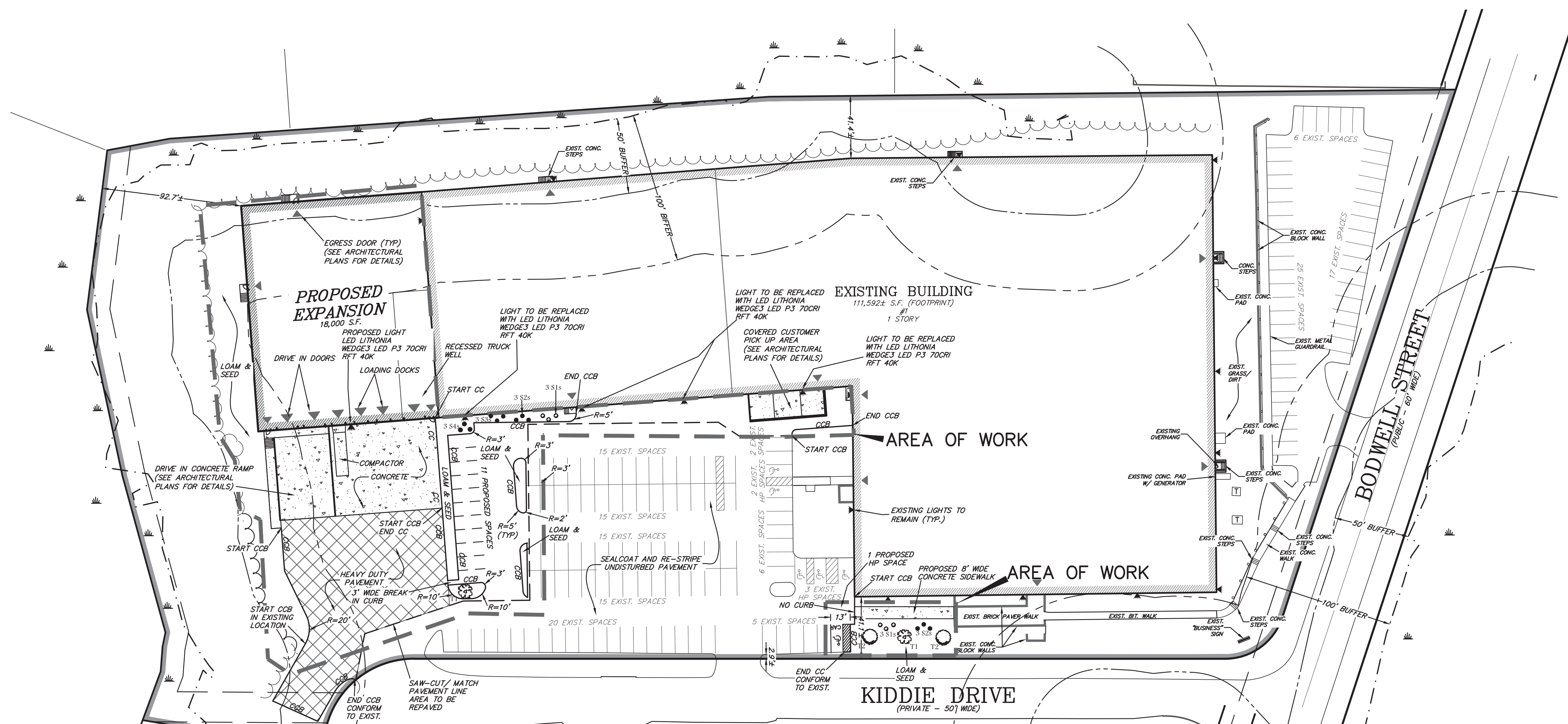
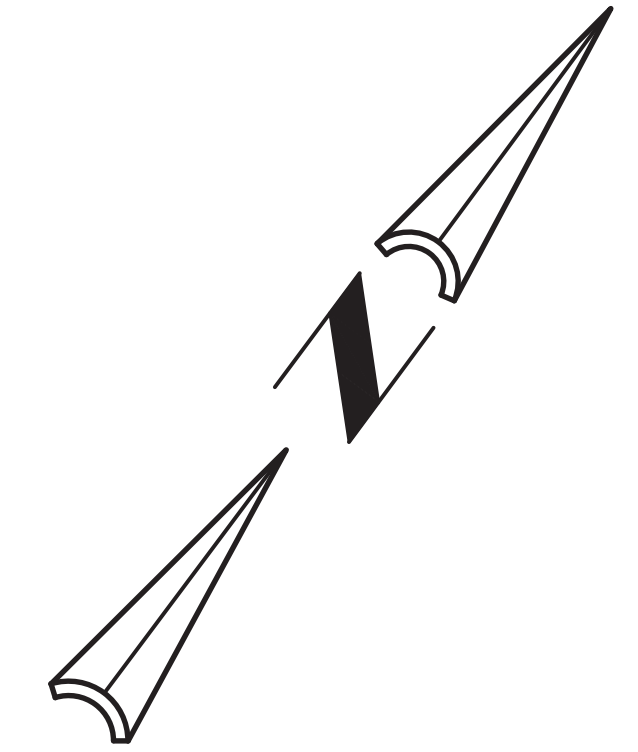
# ZONING LEGEND

ZONING DISTRICT: INDUSTRIAL (OVERLAY: WATER SUPPLY PROTECTION DISTRICT)

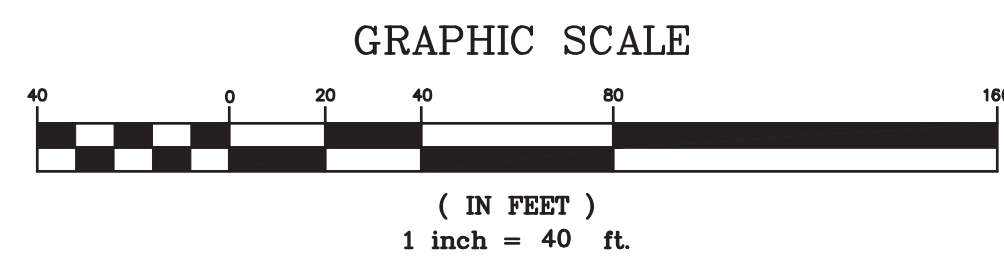
	REQUIRED	EXISTING	PROVIDED	COMPLIANCE
MIN. AREA	40,000 S.F.	308,374 S.F.	308,374 S.F.	YES
MIN. FRONTAGE	200'	>200'	>200'	YES
MIN. YARD -FRONT	40' (NOTE 1,2)	41.1'±	41.1'±	YES
-SIDE	25'	>25'	92.7'±	YES
-REAR	40'	41.4'±	41.4'±	YES
MAX. HEIGHT	40'	<40'	<40'	YES
MAX. BLD COVERAGE	60%	36.3% ±	42.1% ±	YES
PARKING TOTAL	132 (NOTE 3)	198	158	YES
-SIZE	ADEQUATE	ADEQUATE	ADEQUATE	COMPLIES
-HANDICAP	6	5	6	YES
-LOADING	4 (NOTE 4)	8	6	YES
PARKING SETBACK				
-FRONT	40'	2.9'±	2.9'±	EXISTING NON-COMFORMING
-SIDE	NONE	COMPLIES	COMPLIES	COMPLIES
-REAR	NONE	COMPLIES	COMPLIES	COMPLIES
AISLE WIDTH	ADEQUATE	ADEQUATE	ADEQUATE	COMPLIES
MAX. DRVWY. WIDTH	24'	>24'	EXISTING	EXISTING NON-COMFORMING

- NOTES:
- CORNER LOT, FRONT LOT LINE IS DESIGNATED AS STREET LINE ALONG KIDDIE DRIVE
  - ON LOTS ABUTTING STREETS ON MORE THAN ONE SIDE, THE FRONT YARD REQUIREMENTS SHALL APPLY TO EACH OF THE ABUTTING STREETS.
  - PARKING REQUIRED:  
WHOLESALE ESTABLISHMENT WITH 18,000 S.F. ACCESSORY WAREHOUSE, 33,280 S.F. ACCESSORY OFFICE & 1,722 S.F. MEZZANINE  
REQUIRED = 1 SPACE / 1,000 S.F.  
131,434 S.F. / 1,000 S.F. = 132 SPACES
  - LOADING REQUIRED:  
TOTAL S.F. 129,592 S.F.  
2 DOCKS FOR FIRST 40,000 S.F. & 1 PER EACH ADDITIONAL 60,000 S.F.  
131,434-40,000 = 91,434 S.F. / 60,000 S.F. = 1.5 DOCKS  
TOTAL REQUIRED = 4 DOCKS
  - LOT COVERAGE OVER 15% REQUIRES SPECIAL PERMIT WITHIN WATER SUPPLY PROTECTION DISTRICT. THIS IS AN EXISTING NON-COMFORMING ISSUE BEING IMPROVED AS A RESULT OF THE PROPOSED PROJECT. EXISTING LOT COVERAGE = 68.7%. PROPOSED LOT COVERAGE = 67.1%

HAZARDOUS MATERIAL NOTE:  
PER KARAS GLASS THE FOLLOWING WILL BE STORED ON THE SITE: PROPANE FOR FORK LIFTS, CERIUM OXIDE AND GLASS CLEANER. ALL OF THESE MATERIALS ARE STORED PER ALL APPLICABLE LOCAL AND STATE REGULATIONS.



CCB	CAPE COD BERM
CC	CONCRETE CURB
♿	HANDICAP SPACE
---	SAW CUT/ MATCH PAVEMENT LINE
XXXX	HEAVY DUTY PAVEMENT



KEY	QUANTITY	COMMON NAME	BOTANICAL NAME	SIZE	SPEC
T1	2	OCTOBER GLORY RED MAPLE	ACER RUBRUM VAR OCTOBER GLORY	3" CALIPER	B & B
T2	2	BRADYBOND GALEY	PYRUS CALLERYANA 'BRADYBOND'	2 1/2" - 3"	B & B
<b>SHRUBS</b>					
S1	6	SHAMROCK INKBERRY	LIX GLABRA VAR. SHAMROCK	#2 POT	B & B
S2	6	SPIREA GOLD MOUND	GOLD MOUND SPIREA	#2 POT	B & B
S3	3	AZALEA BIXBY	BIXBY AZALEA	18" - 24"	B & B
S4	3	INKBERRY	HEX GLABRA	18" - 24"	B & B

SCALE 1" = 40'	DATE 08/10/20	REV 1	DATE 09/24/20	REVISION PEER REVIEW	BY
SHEET 3 OF 8	FILE # LA00	<b>KARAS &amp; KARAS GLASS</b> 1 KIDDIE DRIVE AVON, MA <b>LAYOUT AND ZONING PLAN</b>			
JOB # F:\P\2020-017	DRAWN BY C.L.	<b>KELLY ENGINEERING GROUP</b> civil engineering consultants 0 Campanelli Drive, Braintree, MA 02184 Phone: 781-843-4333 www.kellyengineeringgroup.com			
CHKD BY GSH	APPD BY DNK	SHEET NO. <h1>3</h1>			

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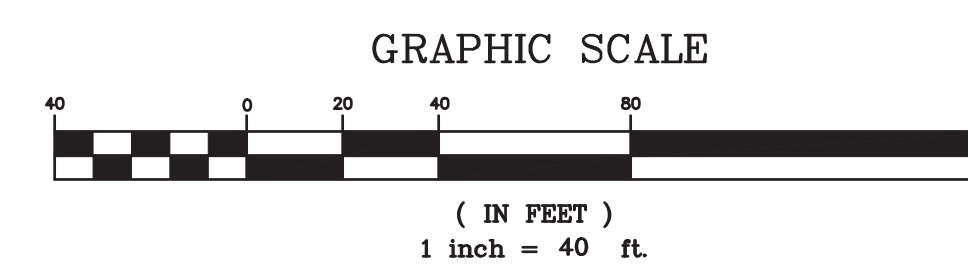
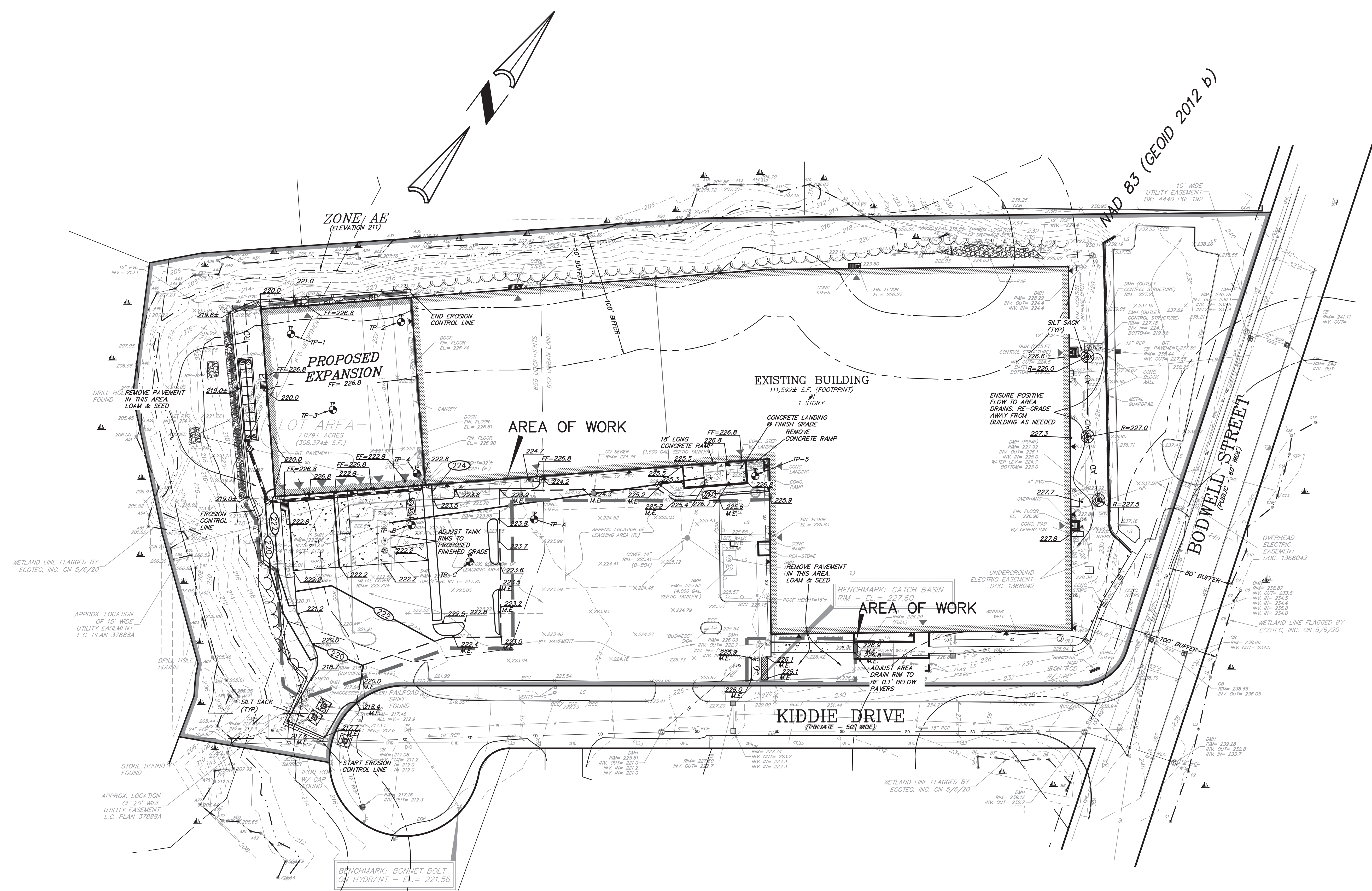
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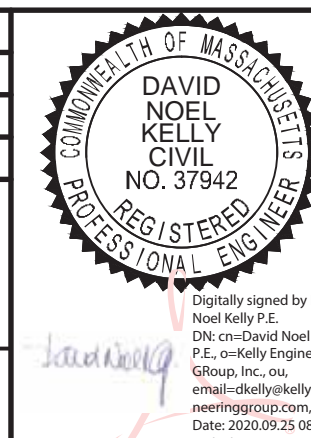
**PROPOSED LEGEND**

	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
	SILT SACK

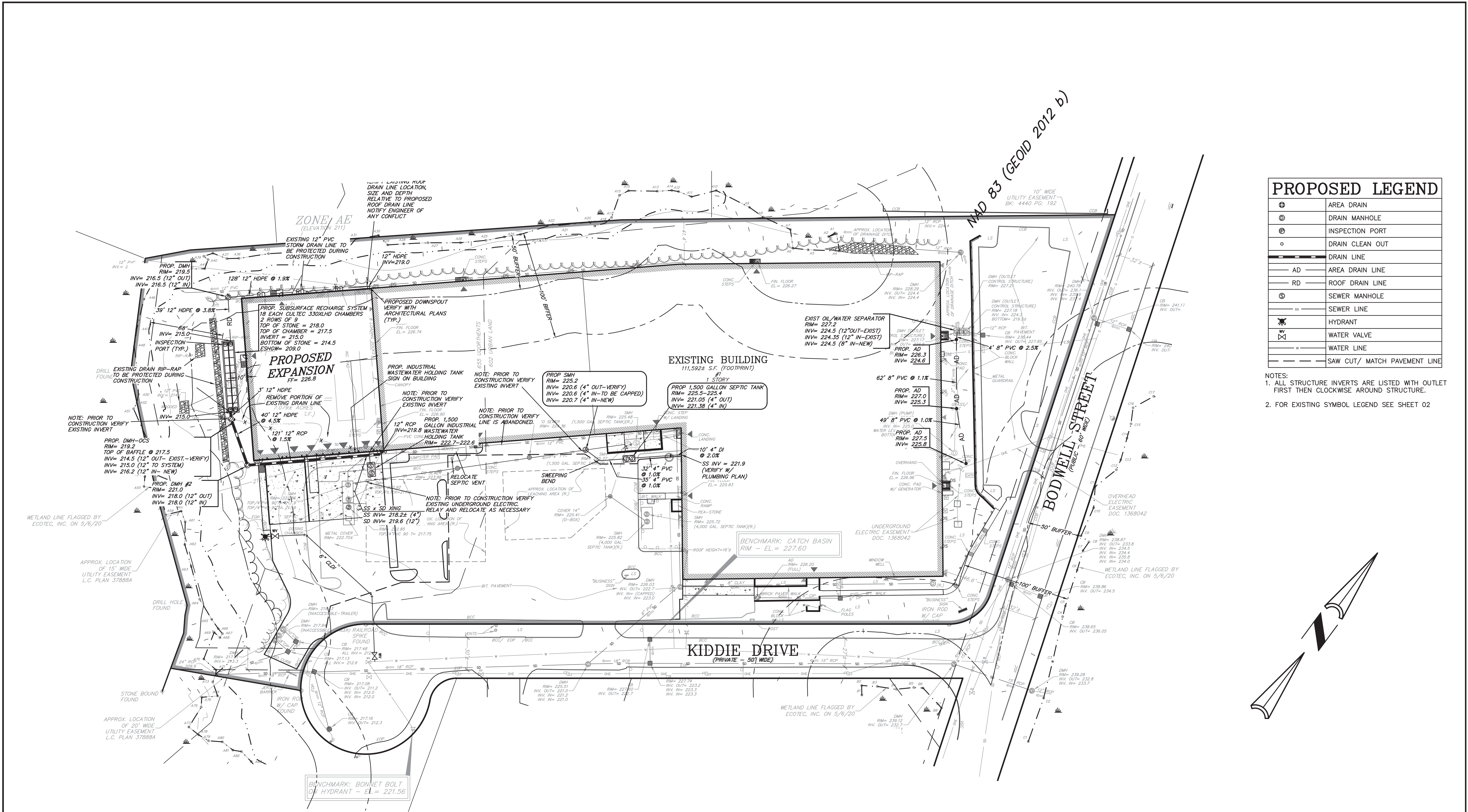
NOTES:  
 1. ALL STRUCTURE INVERTS ARE LISTED WITH OUTLET FIRST THEN CLOCKWISE AROUND STRUCTURE.  
 2. FOR EXISTING SYMBOL LEGEND SEE SHEET 2



SCALE	1" = 40'
DATE	08/10/20
REV	1. 09/24/20
SHEET	4 OF 8
FILE #	GD01
JOB #	F:\P\2020-017
DRAWN BY	C.L.
CHKD BY	GSH
APPD BY	DNK
DATE	09/24/20
REVISION	PEER REVIEW
BY	
<b>KARAS &amp; KARAS GLASS</b> 1 KIDDIE DRIVE AVON, MA <b>GRADING PLAN</b>	
<b>KELLY ENGINEERING GROUP</b> civil engineering consultants 0 Campanelli Drive, Braintree, MA 02184 Phone: 781-843-4333 www.kellyengineeringgroup.com	
SHEET NO. <b>4</b>	

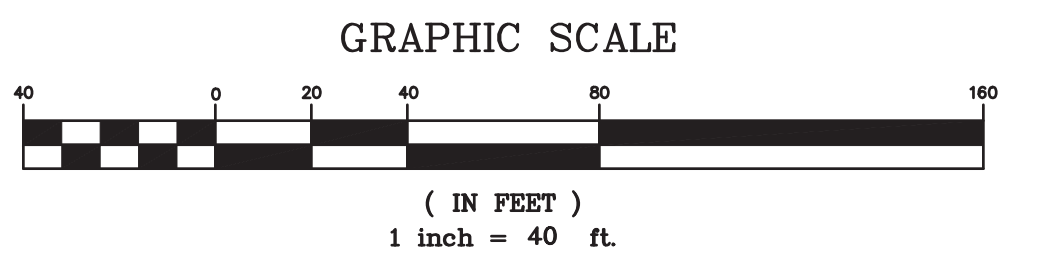
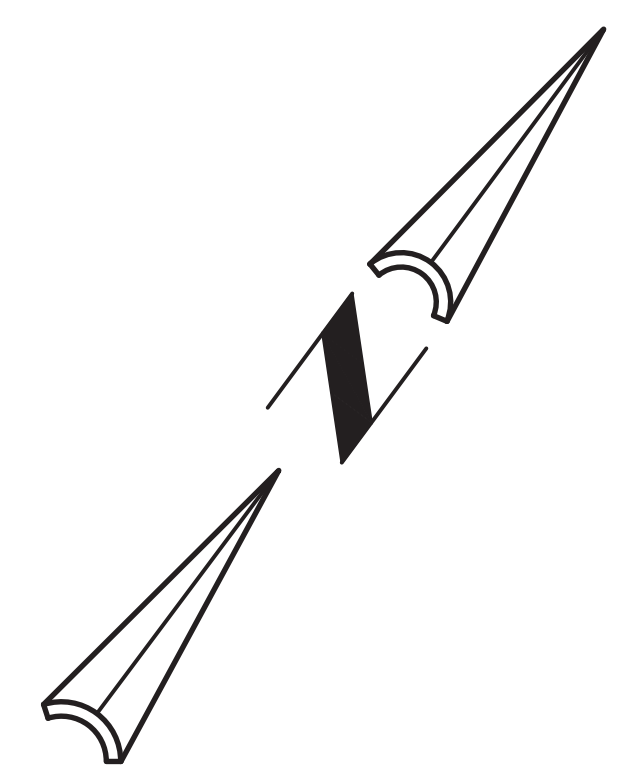


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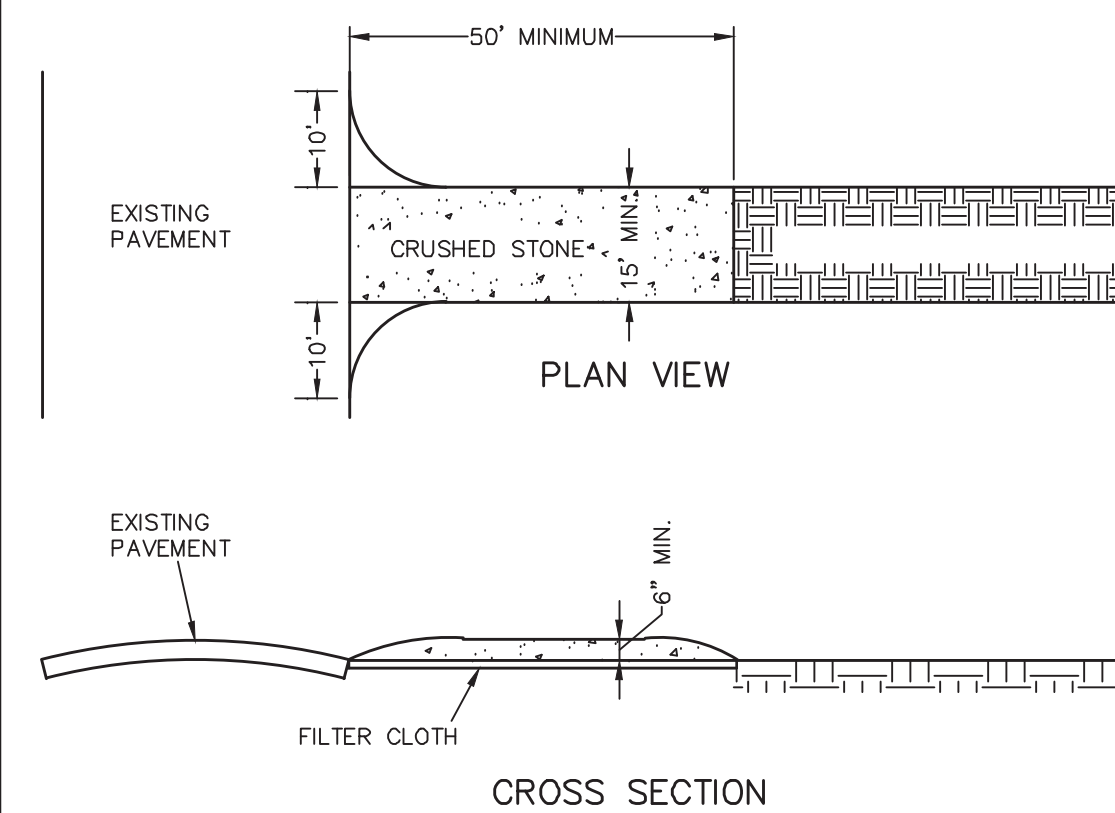
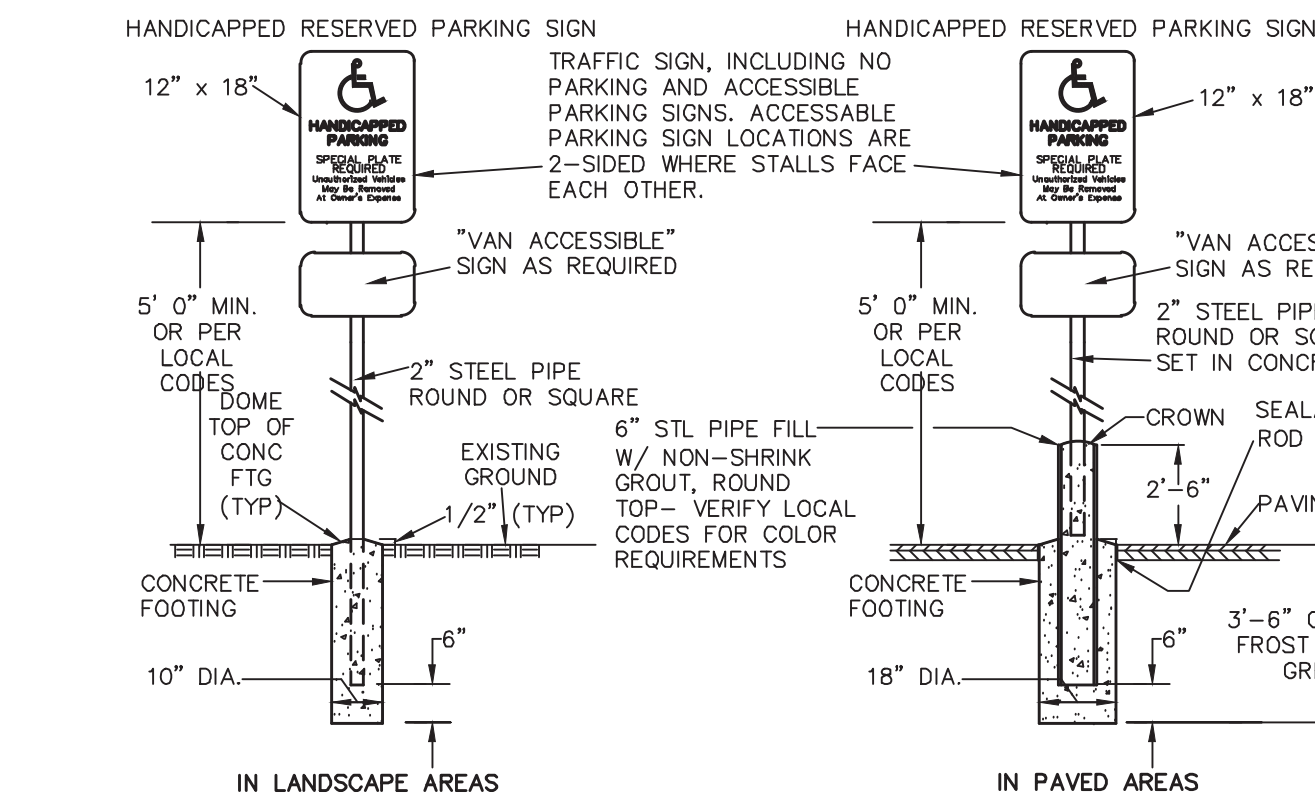
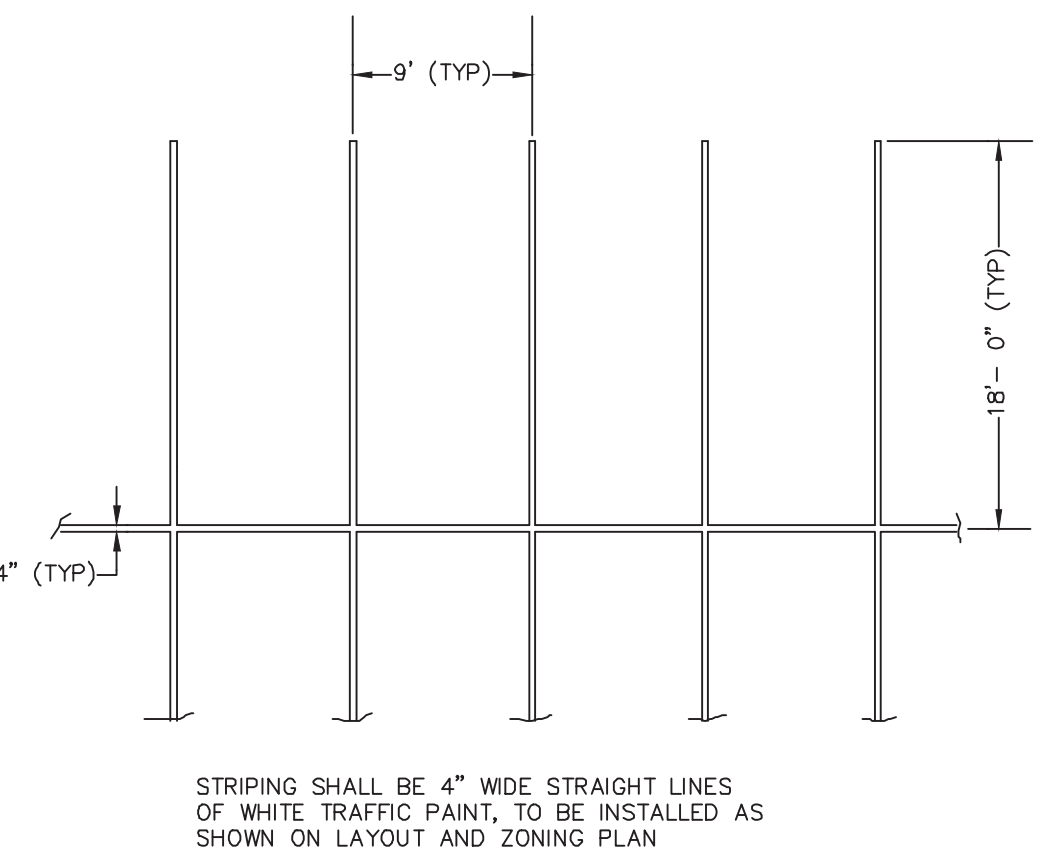
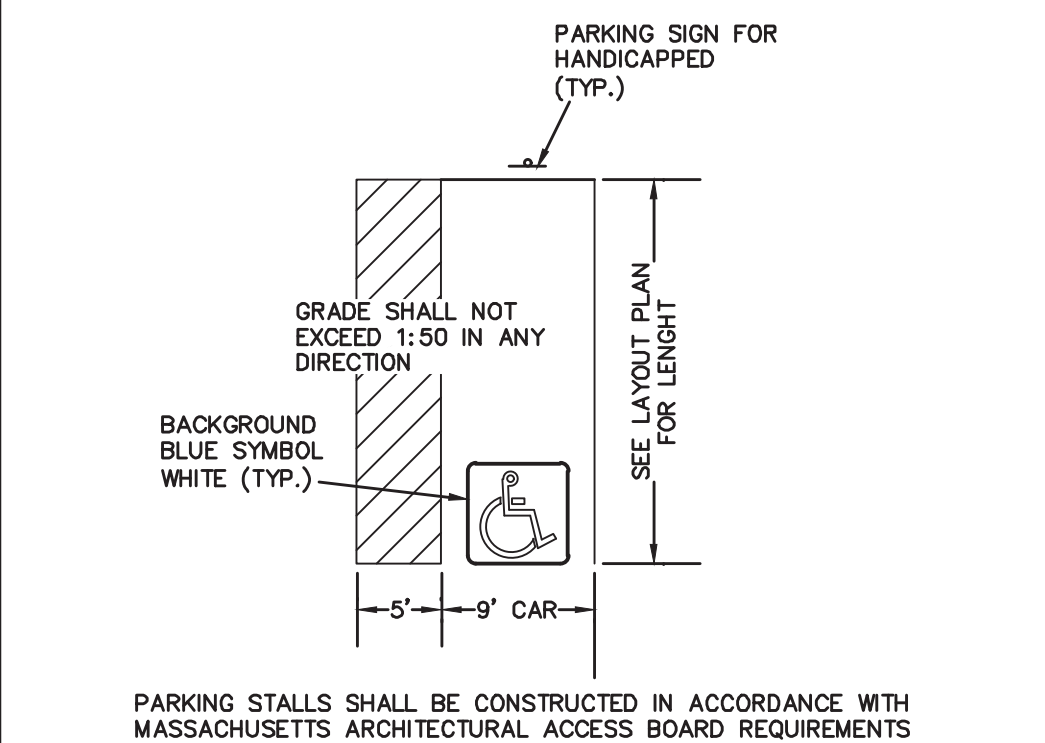
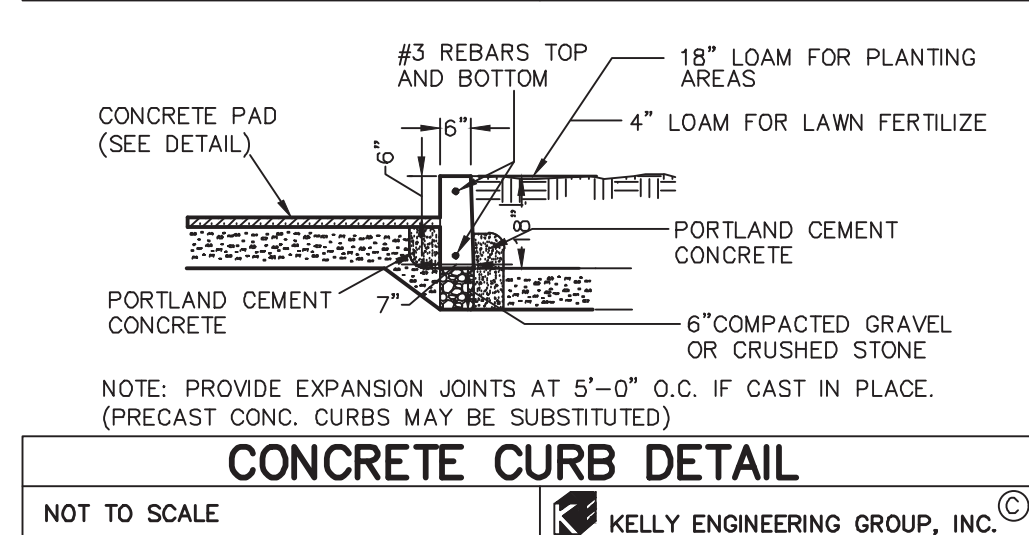
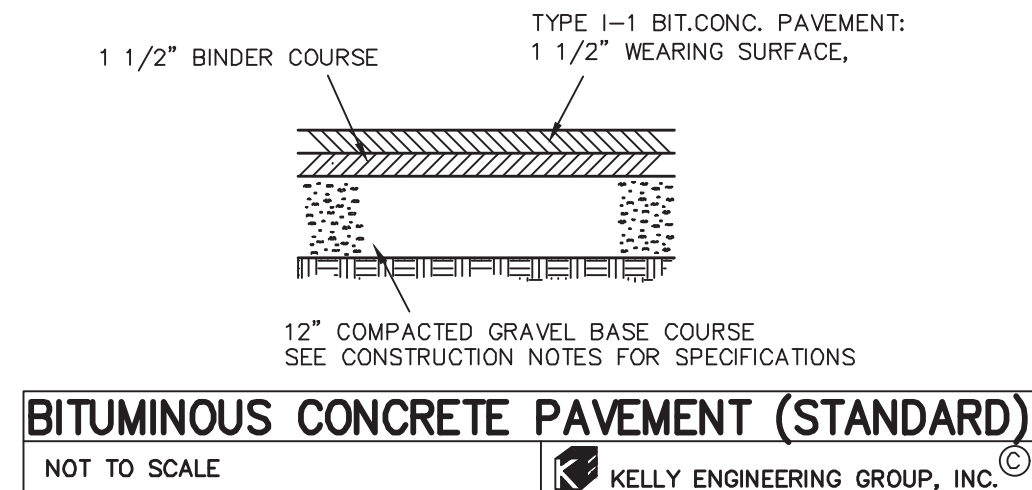
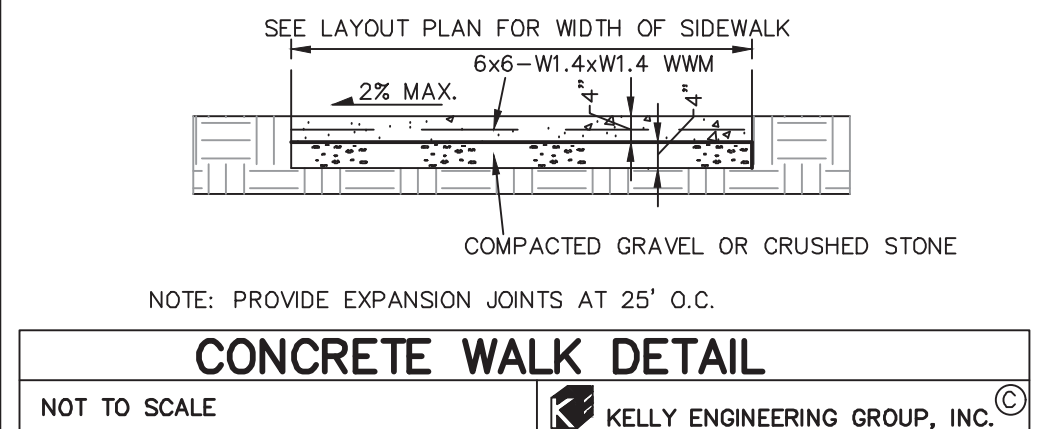
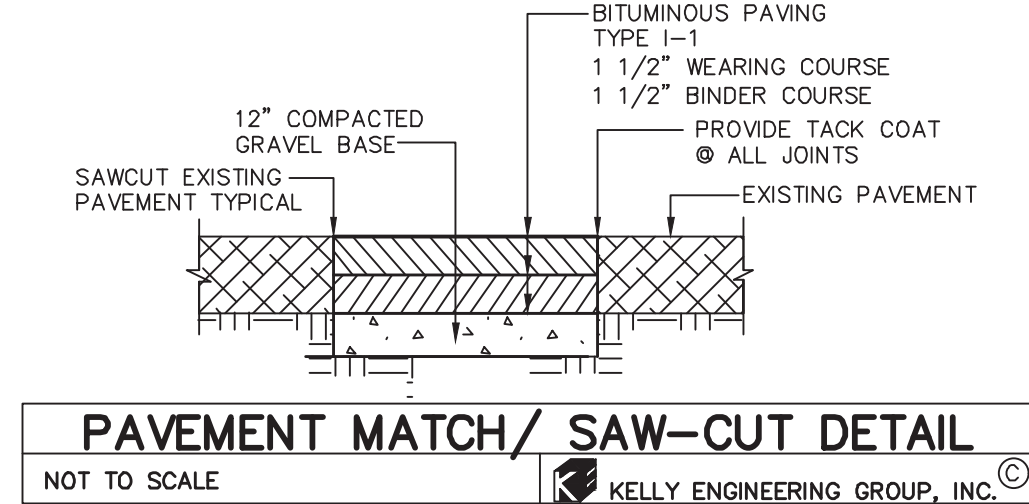
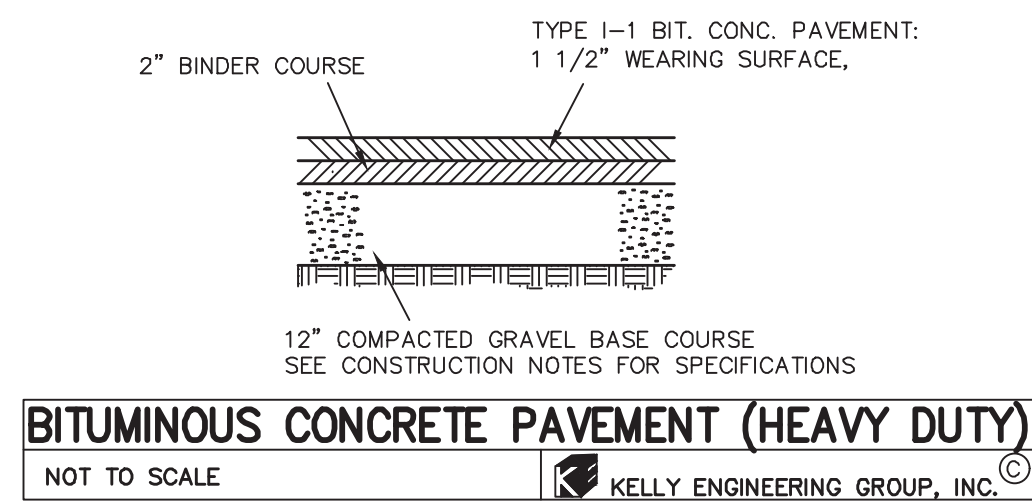
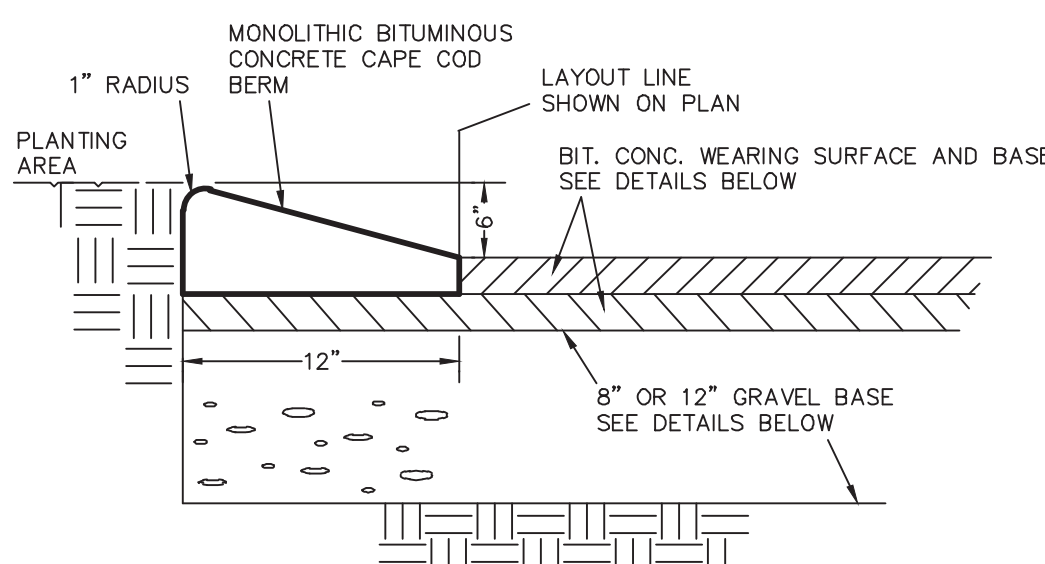
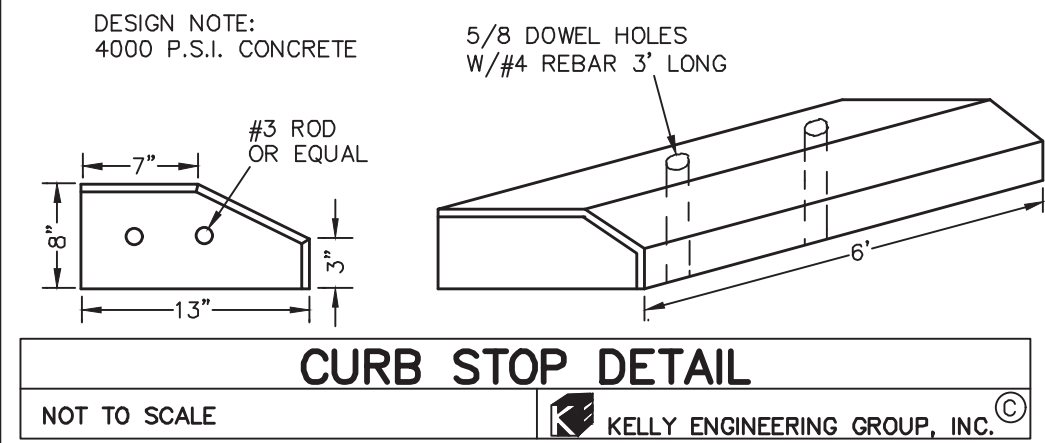
PROPOSED LEGEND	
⊕	AREA DRAIN
⊙	DRAIN MANHOLE
⊖	INSPECTION PORT
○	DRAIN CLEAN OUT
—	DRAIN LINE
AD	AREA DRAIN LINE
RD	ROOF DRAIN LINE
⊙	SEWER MANHOLE
—	SEWER LINE
⊕	HYDRANT
⊕	WATER VALVE
—	WATER LINE
—	SAW CUT/ MATCH PAVEMENT LINE

NOTES:  
 1. ALL STRUCTURE INVERTS ARE LISTED WITH OUTLET FIRST THEN CLOCKWISE AROUND STRUCTURE.  
 2. FOR EXISTING SYMBOL LEGEND SEE SHEET 02

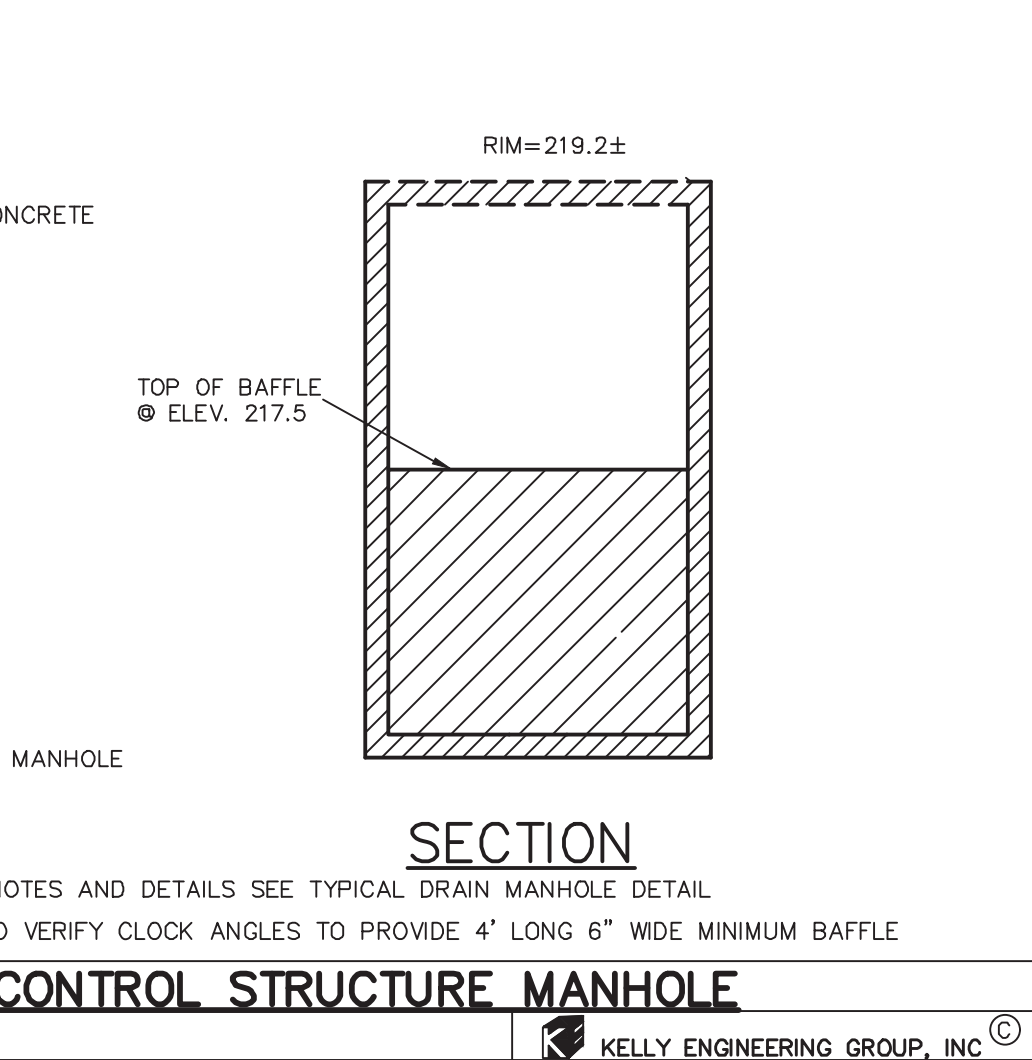
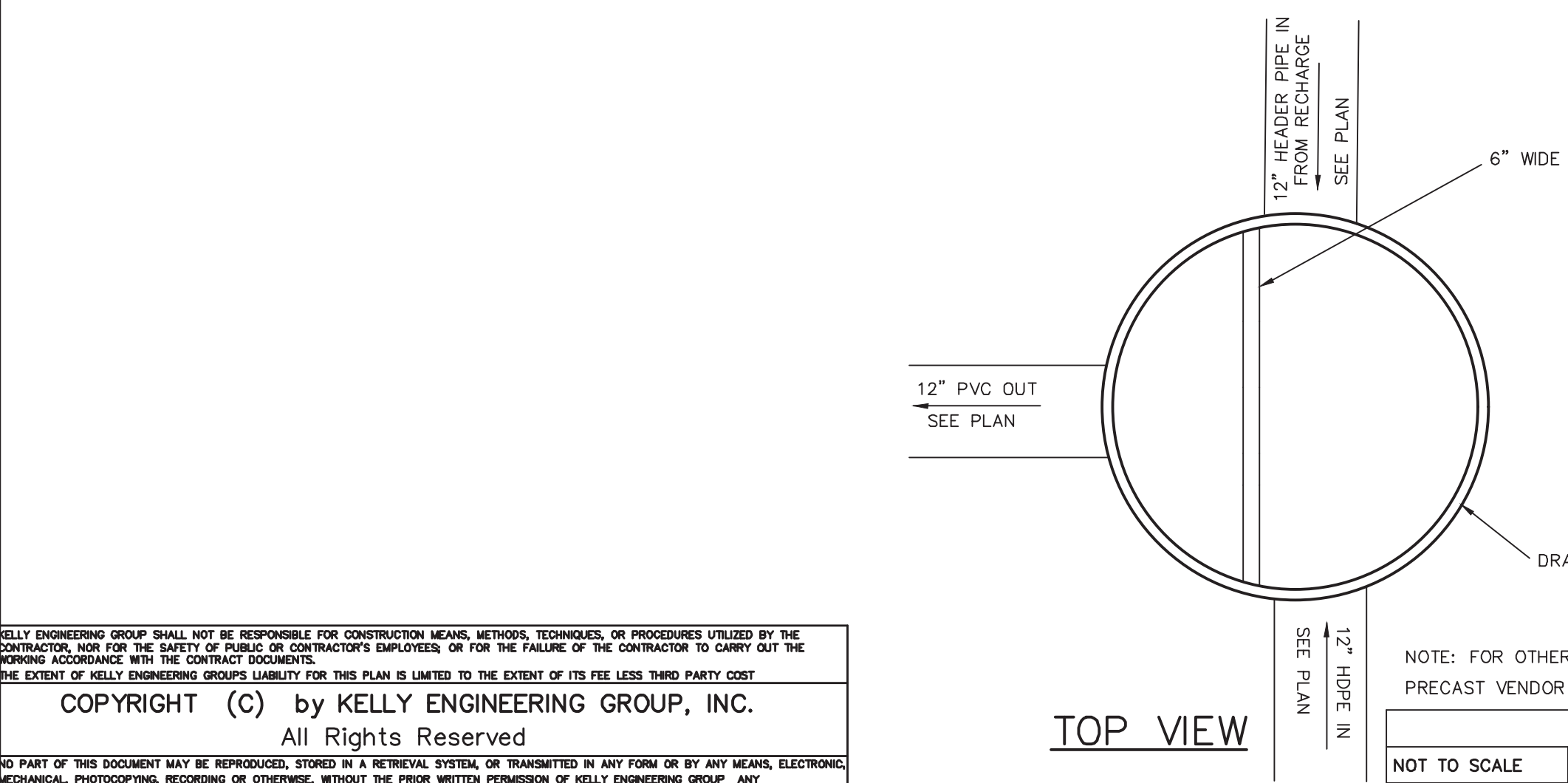
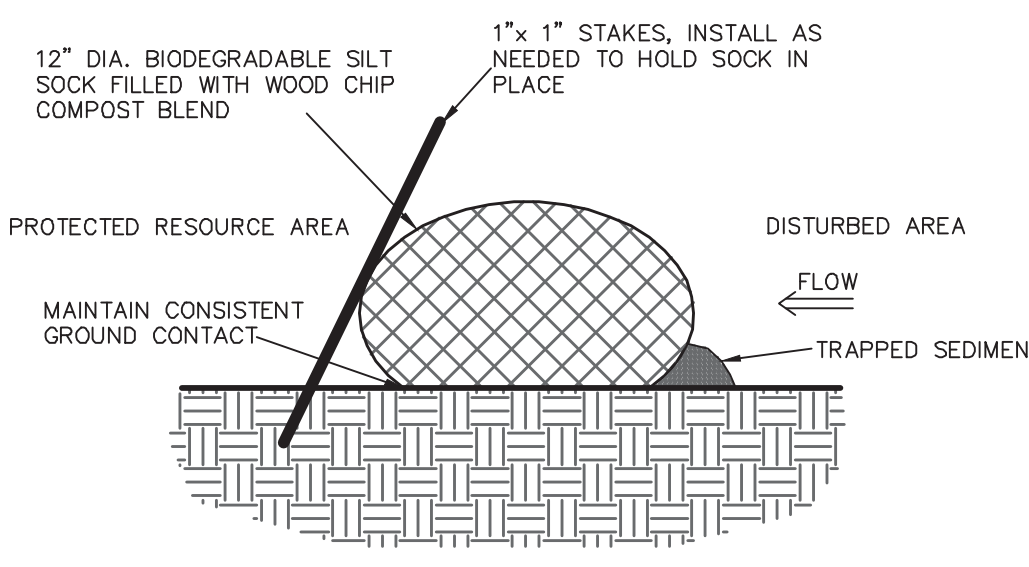
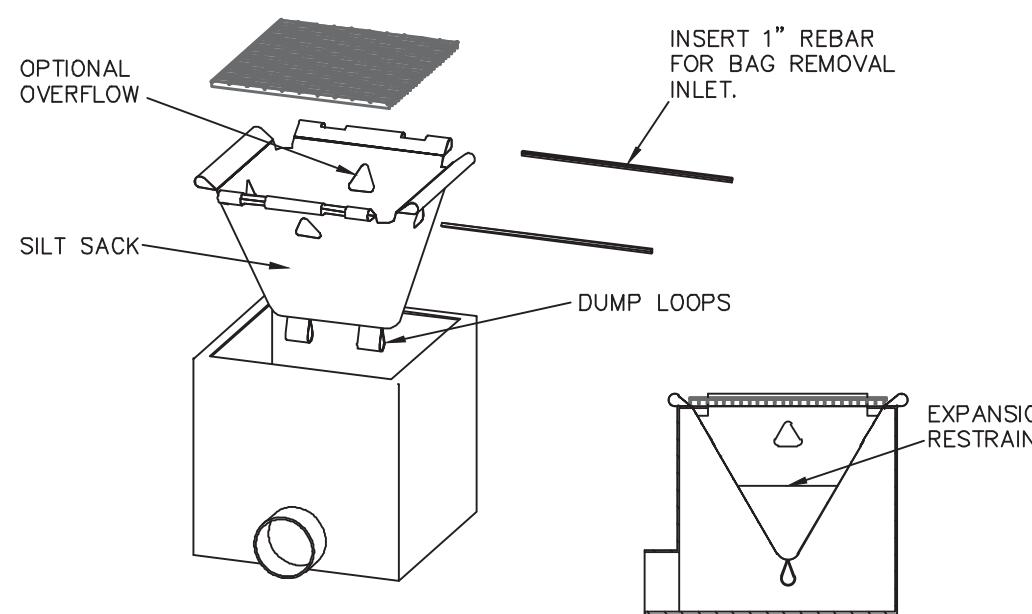


SCALE 1" = 40'			
DATE 08/10/20	REV	DATE	REVISION
SHEET 5 of 8			
FILE # 2020-017-SP01	<b>KARAS &amp; KARAS GLASS</b> 1 KIDDIE DRIVE AVON, MA		
JOB # F:\P\2020-017	<b>SEWER, DRAIN &amp; UTILITY          PLAN</b>		
DRAWN BY C.L.	<b>KELLY ENGINEERING GROUP</b> civil engineering consultants 0 Campanelli Drive, Braintree, MA 02184 Phone: 781-843-4333 www.kellyengineeringgroup.com		
CHKD BY GSH			
APPD BY DNK	SHEET NO. <h1>5</h1>		

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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.



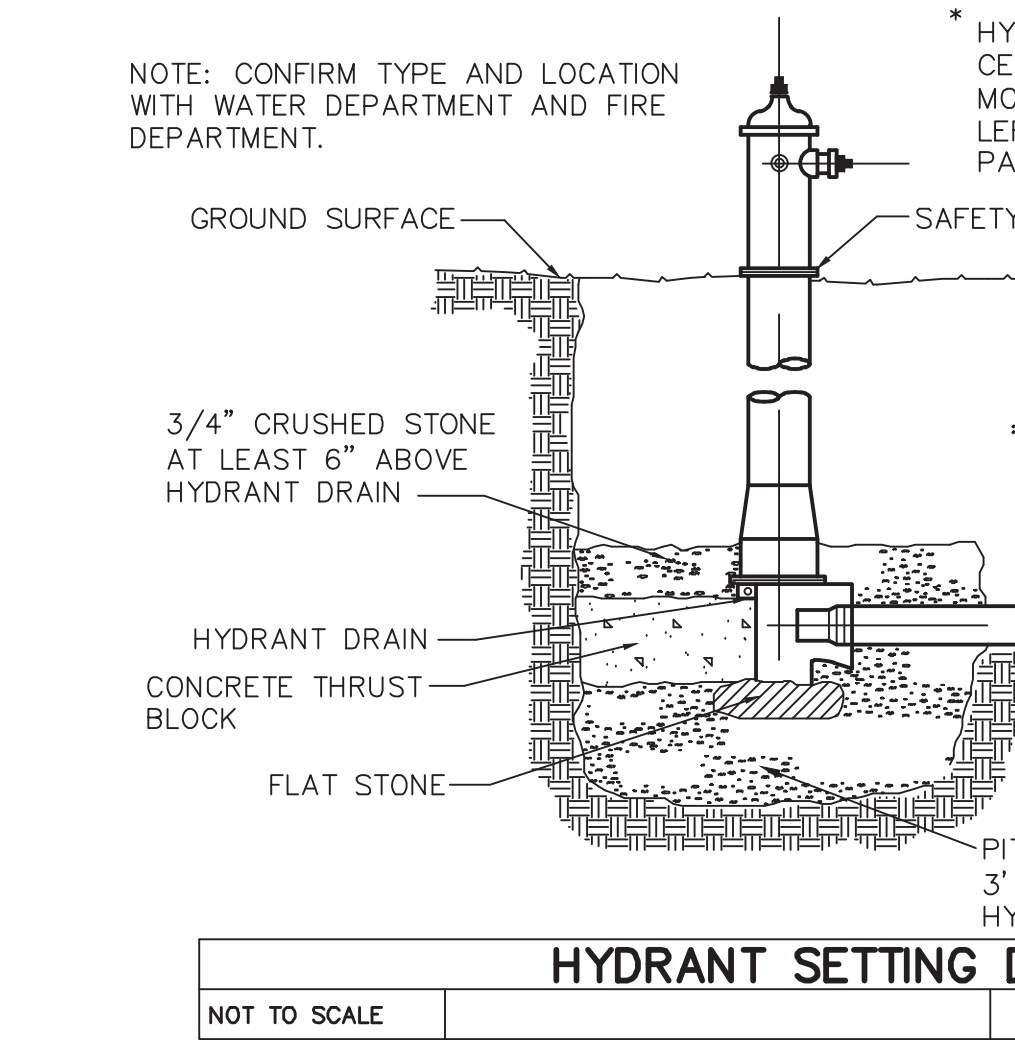
## CONSTRUCTION NOTES

1. 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.
2. THE CONTRACTOR SHALL NOTIFY THE TOWN OF AVON DEPARTMENT OF PUBLIC WORKS AT LEAST 48 HOURS IN ADVANCE OF ANY REQUIRED INSPECTIONS.
3. 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.
4. ALL WORK SHALL CONFORM TO A PERMIT TO BE ISSUED BY THE TOWN OF AVON.
5. FOR ANY PROJECT THAT INVOLVES 1 ACRE OR MORE OF DISTURBANCE, THE CONTRACTOR SHALL SECURE A PERMIT PRIOR TO BEGINNING ANY GRADING ACTIVITIES.
6. ALL WORK SHALL CONFORM TO AN ORDER OF CONDITIONS TO BE ISSUED BY THE TOWN OF AVON.
7. ALL WORK SHALL CONFORM TO THE GEOTECHNICAL REPORT.

8. 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 TO AT LEAST 72 HOURS PRIOR TO THE START OF CONSTRUCTION, DIG SAFE TELEPHONE NUMBER IS 1-888-344-7233.
9. 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.
10. REFER TO ARCHITECTURAL PLANS FOR EXACT BUILDING DIMENSION AND DOOR LOCATIONS.
11. BENCHMARK ELEVATION IS SHOWN ON SHEET 2. DATUM IS NAVD.
12. 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.
13. REFER TO PLUMBING PLANS FOR EXACT SIZE AND LOCATION OF SANITARY AND WATER CONNECTIONS.
14. REFER TO ELECTRICAL PLANS FOR THE LIGHTING CIRCUITS, FIXTURE DETAIL AND BUILDING CONNECTION LOCATION.
15. ALL H.D.P.E. HIGH DENSITY POLYETHYLENE PIPE SHALL BE ADS 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.
16. 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.

17. WALKS SHALL BE 4" THICK AND SHALL BE CONSTRUCTED ON 6" OF COMPACTED BANK GRAVEL. CONCRETE FOR WALKS SHALL HAVE A MINIMUM 28 DAY COMPRESSION STRENGTH OF 4,000 PSI. WALKS SHALL BE REINFORCED WITH WMM 6x6 W1.4/W1.4 CONFORMING TO ASTM A184.
18. 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 AND 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 REPAVED 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.
19. TRANSFORMER PAD SHALL BE INSTALLED PER PROVIDERS SPECIFICATIONS. GENERATOR PADS SHALL BE INSTALLED PER MANUFACTURING SPECIFICATIONS.
20. 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 1-1.
21. THE AGGREGATE SHALL BE COMPOSED, MIXED AND LAID HOT IN TWO COURSES AS SPECIFIED IN THE "COMMONWEALTH OF MASSACHUSETTS STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGE", 1988 EDITION, SECTION 460 FOR CLASS I BITUMINOUS CONCRETE PAVEMENT, AS SPECIFICALLY SET FORTH IN SECTION 460.20 AND 460.82.

22. 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.
23. SILT SOCKS SHALL BE INSTALLED ON THE DOWNSTREAM SIDE OF ALL STOCK PILES.
24. SPARE EROSION/SEDIMENT CONTROL MATERIALS SHALL BE AVAILABLE ON SITE FOR USE IN CONTINGENCY CONDITIONS OR AT THE DIRECTION OF CODE ENFORCEMENT PERSONNEL.
25. 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: (A) 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. (B) BLOCK DRAINAGE INLETS SHALL BE GRATE AND FRAMED REMOVED AND THE STORM DRAIN PLUGGED AS IN (A) ABOVE. THE STRUCTURE SHALL THEN BE CRUSHED, BACKFILLED AND COMPACTED.
26. ALL STORM DRAINS TO BE ABANDONED WHICH ARE WITHIN 3' OF FINISHED GRADE SHALL BE REMOVED. ALL OTHERS SHALL BE PLUGGED AT EACH END.



SCALE	DATE	REVISION	DATE	BY
NA	08/10/20	1.	09/24/20	PEER REVIEW
SHEET 6 of 8				REVISION
FILE # 2020-017-DT01				
JOB # F:\P\2020-017				
DRAWN BY C.J.				
CHKD BY GSH				
APPD BY DPK				
<b>KARAS &amp; KARAS GLASS</b>				
1 KIDDIE DRIVE AVON, MA				
<b>DETAIL SHEET</b>				
<b>KELLY ENGINEERING GROUP</b>				
civil engineering consultants 0 Campanelli Drive, Braintree, MA 02184 Phone: 781-843-4333 www.kellyengineeringgroup.com				
SHEET NO.				<b>6</b>

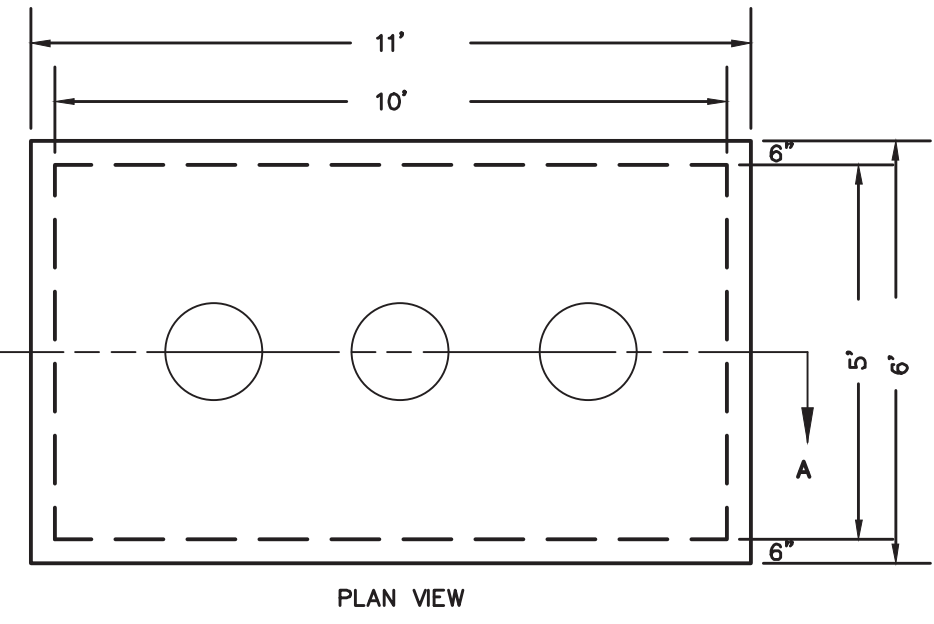
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NOTE: FOR OTHER NOTES AND DETAILS SEE TYPICAL MANHOLE DETAIL.  
 PRECAST VENDOR TO VERIFY CLOCK ANGLES TO PROVIDE 4' LONG 6" WIDE MINIMUM BAFFLE

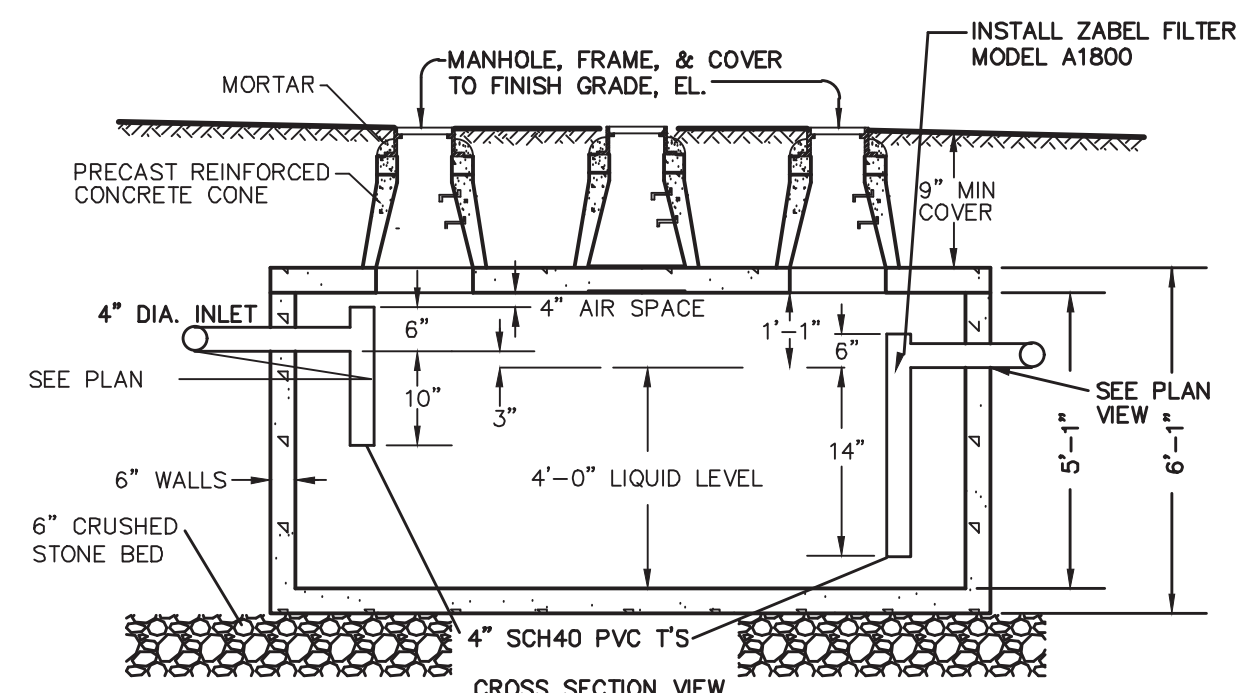
BACKFILL MATERIAL SHALL BE CRUSHED STONE OR GRAVEL MATERIAL MEETING CLASS 1 OR 2 AS SPECIFIED IN ASTM D2321. BACKFILL MATERIAL SHALL BE PLACED UNIFORMLY IN 12" LIFTS AND COMPACTED.

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

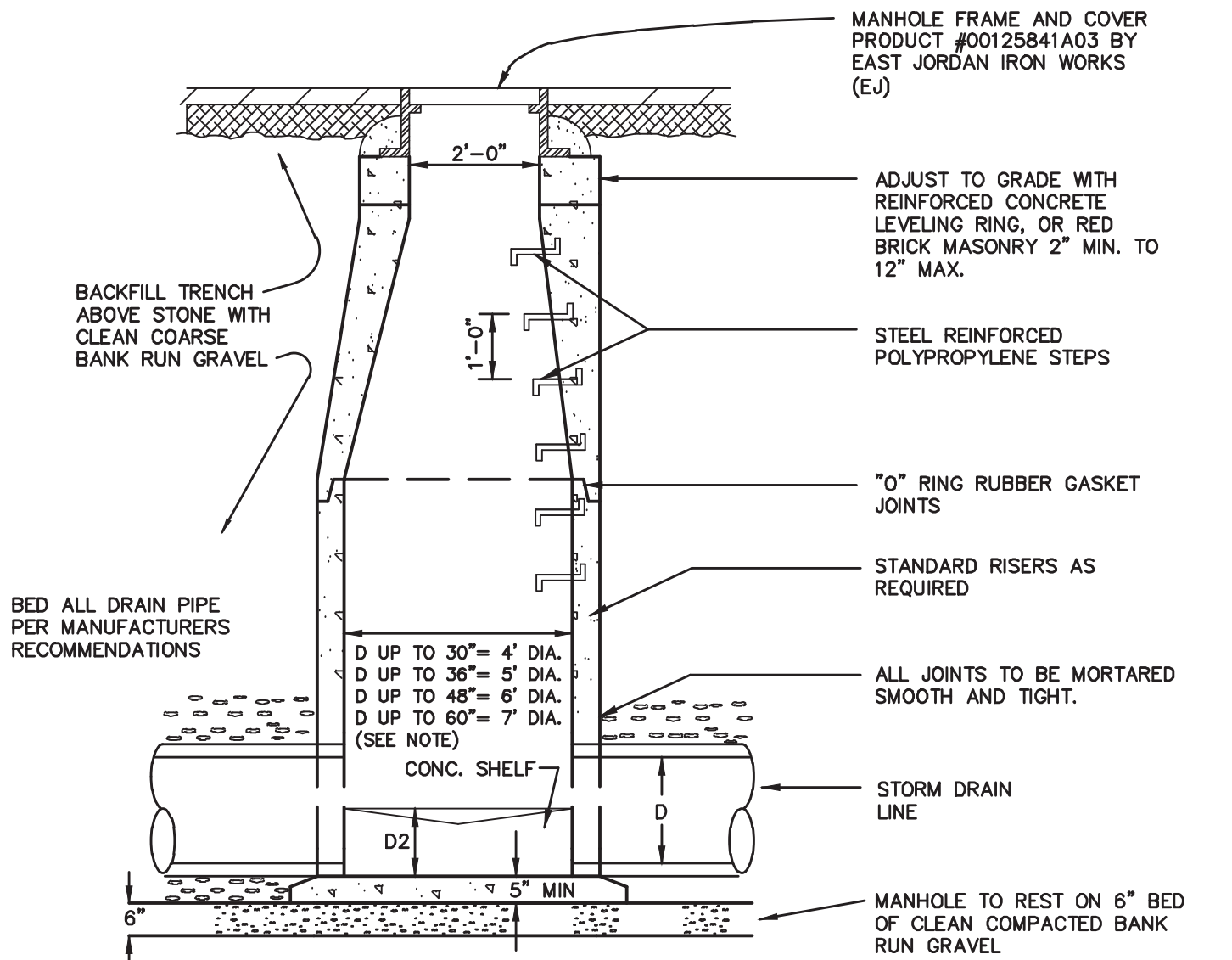
REGISTERED PROFESSIONAL ENGINEER  
 DAVID NOEL KELLY  
 CIVIL ENGINEER  
 NO. 37942  
 STATE OF MASSACHUSETTS



PLAN VIEW



CROSS SECTION VIEW  
TANK SHALL BE SET LEVEL AND STABLE.  
TANK SHALL BE DESIGNED FOR H2O LOADING.



- 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**  
NOT TO SCALE

### ACME PRECAST CO., INC.

PLANT ADDRESS: 590 THOMAS B. LANDERS RD. WEST FALMOUTH MA. 02536 MAILING ADDRESS: P.O. BOX 2034 TEATICKET MA. 02536  
PHONE: (508) 548-9607 FAX: (508) 548-1664 TOLL FREE: 1-800-560-9949

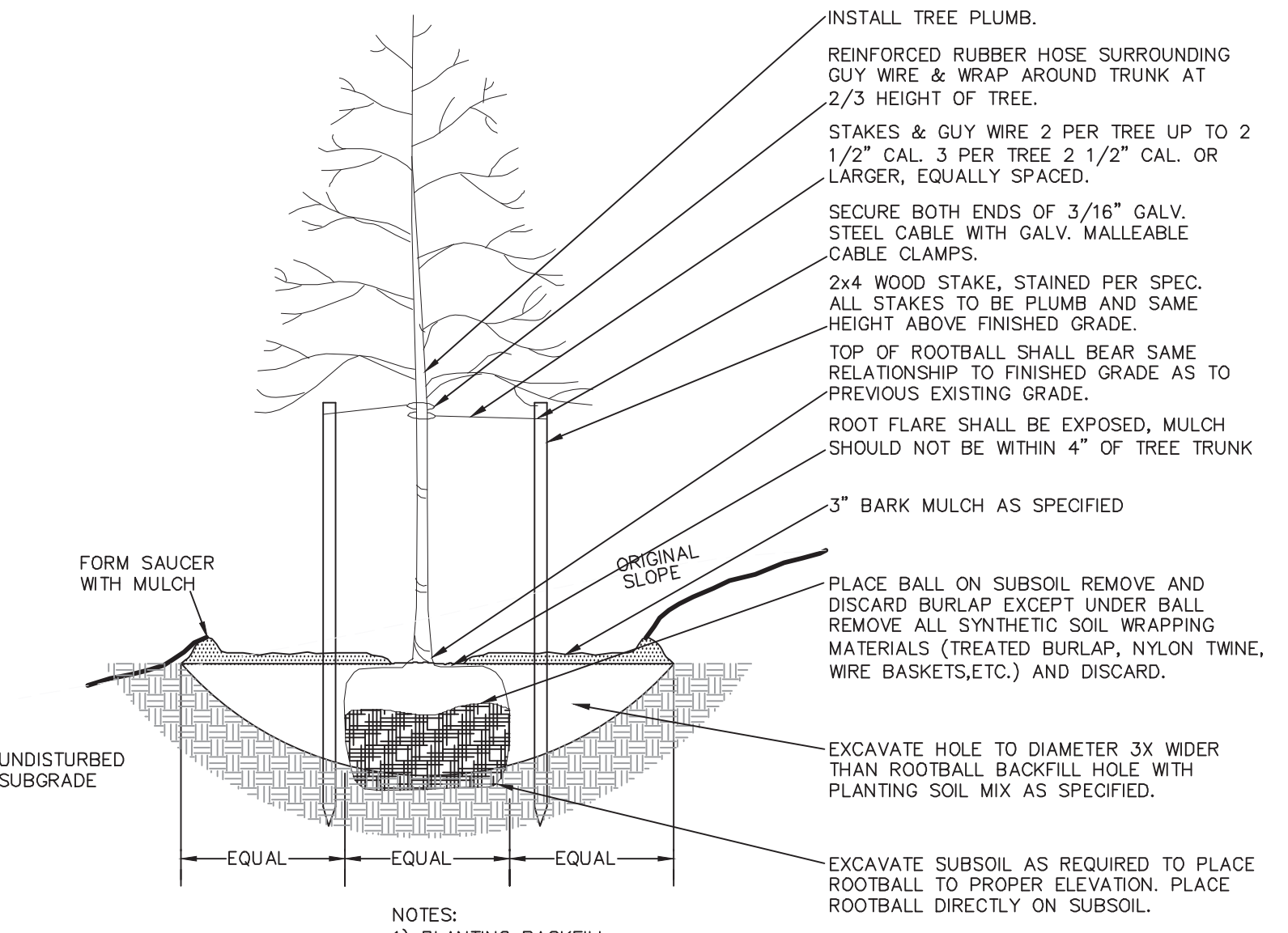
#### H-20 PRECAST NON-HAZARDOUS 1500 GALLON SALON WASTE WATER TANK

INNER TANK IS A 1500 GALLON MONOLITHIC TANK  
OUTER TANK IS A 2500 GALLON H-20 TANK

ACME PRECAST STANDARD DESIGN SPECIFICATIONS

CONCRETE MINIMUM STRENGTH: 5,000 p.s.i. @ 28 DAYS  
STEEL REINFORCEMENT: ASTM - A-615 - 68, GRADE 60  
DESIGN LOADING: STANDARD UNITS: AASHO - H-20

310 CMR 15.228:(1) Septic tanks shall be installed level and true to grade on a level stable base that has been mechanically compacted and on to which six inches of crushed stone has been placed.



- INSTALL TREE PLUMB.  
REINFORCED RUBBER HOSE SURROUNDING GUY WIRE & WRAP AROUND TRUNK AT 2/3 HEIGHT OF TREE.  
STAKES & GUY WIRE 2 PER TREE UP TO 2 1/2" CAL. 3 PER TREE 2 1/2" CAL. OR LARGER, EQUALLY SPACED.  
SECURE BOTH ENDS OF 3/16" GALV. STEEL CABLE WITH GALV. MALLEABLE CABLE CLAMPS.  
TOP OF ROOTBALL SHALL BEAR SAME RELATIONSHIP TO FINISHED GRADE AS TO PREVIOUS EXISTING GRADE.  
ROOT FLARE SHALL BE EXPOSED, MULCH SHOULD NOT BE WITHIN 4" OF TREE TRUNK  
3" BARK MULCH AS SPECIFIED  
PLACE BALL ON SUBSOIL REMOVE AND DISCARD BURLAP EXCEPT UNDER BALL REMOVE ALL SYNTHETIC SOIL WRAPPING MATERIALS (TREATED BURLAP, NYLON TWINE, WIRE BASKETS, ETC.) AND DISCARD.  
EXCAVATE HOLE TO DIAMETER 3X WIDER THAN ROOTBALL BACKFILL HOLE WITH PLANTING SOIL MIX AS SPECIFIED.  
EXCAVATE SUBSOIL AS REQUIRED TO PLACE ROOTBALL TO PROPER ELEVATION. PLACE ROOTBALL DIRECTLY ON SUBSOIL.
- NOTES:
- 1) PLANTING BACKFILL: 1/3 LOAM, 1/3 SAND, 1/3 PEAT, BY VOLUME.
  - 2) WHEN PLANTING ON SLOPE-MODIFY SLOPE AS SHOWN-NOTE PARTICULARLY BUILT-UP SAUCER ON LOW SIDE SHALL BE EQUAL TO 1 ROOT BALL DIA. FROM PLANT CENTER.
  - 3) STAKE ONLY THOSE TREES SUBJECT TO HIGH WIND CONDITIONS.

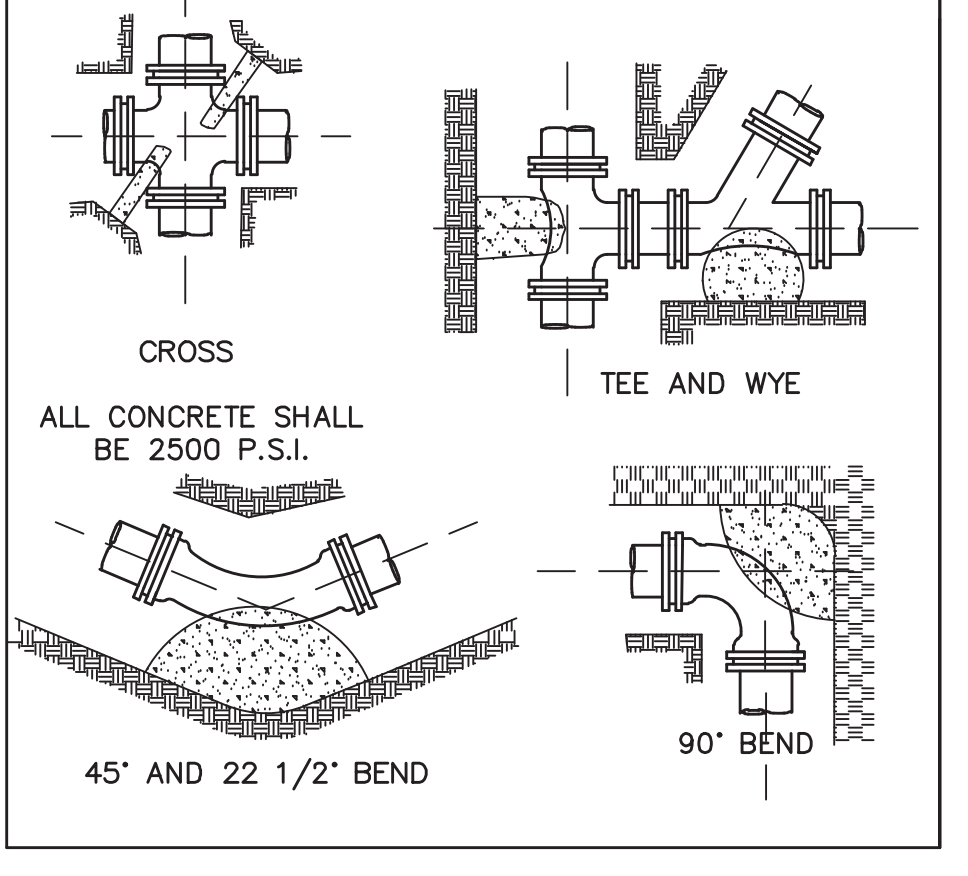
**DECIDUOUS TREE PLANTING DETAIL**  
NOT TO SCALE

**1,500 GALLONS COMMERCIAL SEPTIC TANK**  
NOT TO SCALE

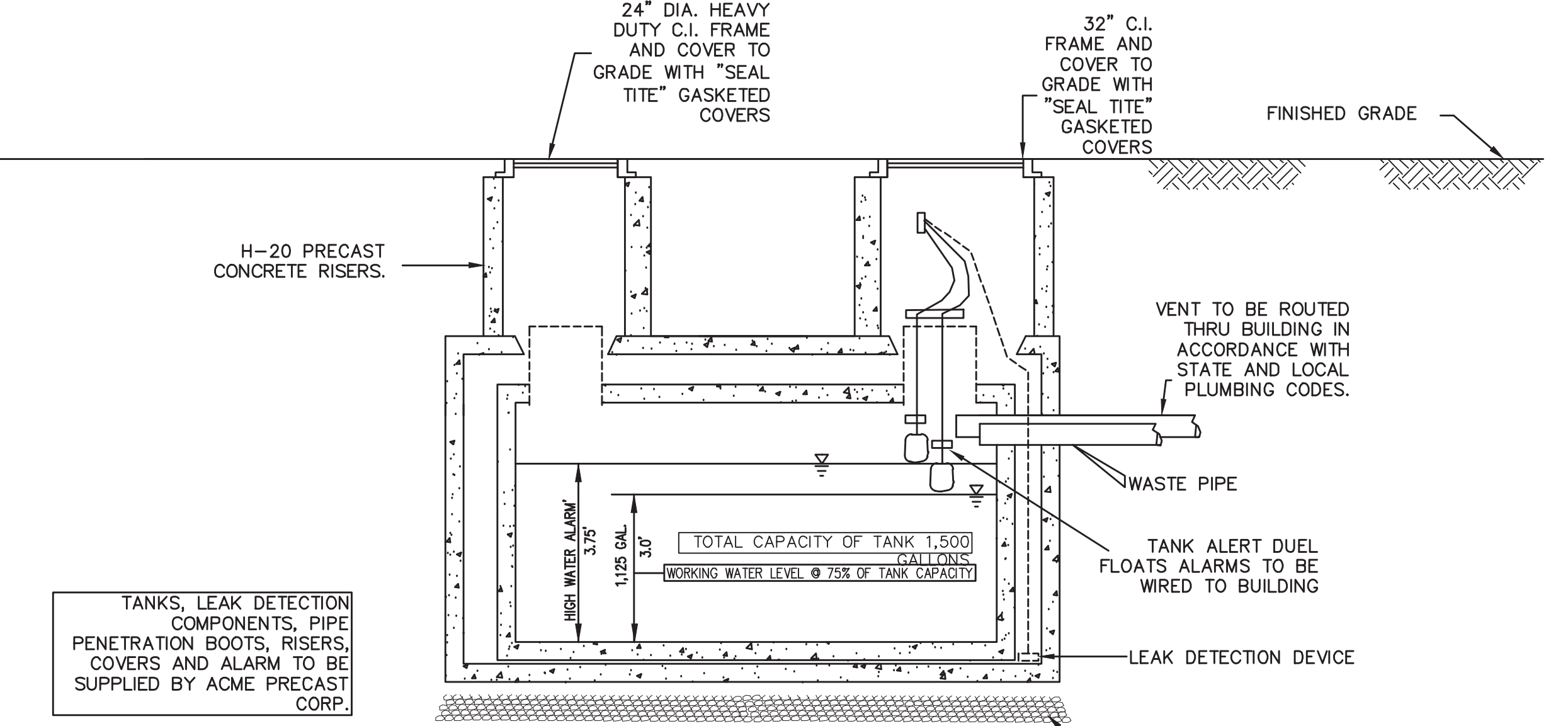
TRENCH WIDTH WS OR WU		
DIAM. OF PIPE	UNSHIELDED	SHIELDED
12" AND SMALLER	3'-0"	4'-2"
15" AND LARGER	0.0+20"	0.0+36"

THRUST BLOCK SCHEDULE			
TABLE OF MINIMUM BEARING AREA IN SQ. IN. AGAINST UNDISTURBED SOIL FOR 8 IN. DIA. PIPE			
SOIL BEARING CAPACITY (PSF)	90 DEGREE BEND	TEE	45 DEGREE BEND
1000	945	674	516
1500	630	450	344
2000	473	337	258
3000	315	225	172

NOTE: FOR FITTINGS W/ LESS THAN 45° DEFLECTION USE BEARING AREA FOR 45° BEND BASED ON INTERNAL PRESSURE OF 80 PSI

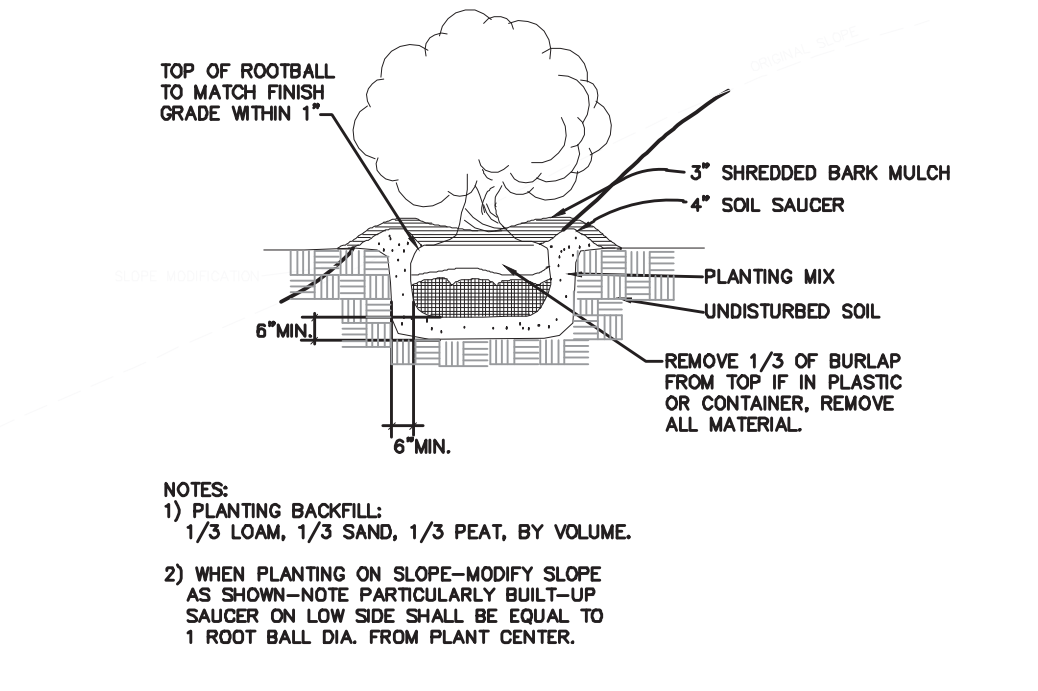


**THRUST BLOCK**  
NOT TO SCALE



**1,500 GALLON INDUSTRIAL WASTEWATER HOLDING TANK**  
NOT TO SCALE

- TANKS, LEAK DETECTION COMPONENTS, PIPE PENETRATION BOOTS, RISERS, COVERS AND ALARM TO BE SUPPLIED BY ACME PRECAST CORP.
- CONSTRUCTION NOTES:
1. INSTALLER TO ARRANGE A PRE-CONSTRUCTION CONFERENCE WITH ENGINEER PRIOR TO CONSTRUCTION.
  2. THE LOCATION AND ELEVATION OF EXISTING TREATMENT ROOM BUILDING OUTLET PIPE ARE TO BE VERIFIED PRIOR TO INSTALLATION OF THE PROPOSED WASTEWATER HOLDING TANK.
  3. ENGINEER SHALL INSPECT WHEN THE COMPONENTS OF THE SYSTEM HAVE BEEN INSTALLED (PRIOR TO BACKFILL).
  4. INSTALLER TO PERFORM A WATERTIGHT TEST ON LINED I.W.H.T. TEST TO BE WITNESSED BY ENGINEER AND PERFORMED AS FOLLOWS:  
- INSTALLER TO FILL TANK WITH WATER AND ENGINEER TO MEASURE WATER LEVEL.  
- ENGINEER TO RE-MEASURE WATER LEVEL 24 HOURS AFTER START OF TEST.  
- TANK TO BE PUMPED DRY UPON COMPLETION OF TEST BY INSTALLER.
  5. ALARMS TO BE TESTED AT TIME OF COMPLETION OF INSTALLATION
  6. A SIGN SHALL BE INSTALLED ADJACENT TO THE HOLDING TANK THAT READS "NON-HAZARDOUS INDUSTRIAL WASTEWATER HOLDING TANK"
  7. TANK TO BE CERTIFIED PER 314 CMR 18.00 AFTER INSTALLATION.
- COMPLIANCE NOTE:
- OWNER SHALL MAINTAIN I.W.H.T. IN ACCORDANCE WITH DEPARTMENT OF ENVIRONMENTAL PROTECTION 314 CMR 18.00 INDUSTRIAL WASTEWATER HOLDING TANK AND CONTAINER CONSTRUCTION, OPERATION, AND RECORD KEEPING REQUIREMENTS AND LOCAL REGULATIONS.
- TANK SHALL BE INSPECTED WEEKLY BY FACILITY OPERATOR. INSPECTION AND PUMPING RECORDS SHALL BE MAINTAINED ON SITE.
- NOTES:
- 1) THE INSTALLER IS RESPONSIBLE FOR ASSURING THAT COMPONENTS OF THE SEWAGE DISPOSAL SYSTEM ARE DESIGNED WITH SUFFICIENT STRENGTH TO SUSTAIN ALL LOADS TO BE IMPOSED ON THEM. ANY COMPONENT OF THE SYSTEM SUBJECT TO VEHICULAR TRAFFIC MUST COMPLY WITH A MINIMUM STANDARD OF A.A.S.H.T.O. H-20 WHEEL LOADS.
  - 2) PRIOR TO SETTING ANY SYSTEM COMPONENT, INSTALLER SHALL VERIFY EXISTING CONDITIONS, INCLUDING ELEVATIONS OF EXIST INVERTS, AND REPORT ANY DISCREPANCIES TO THE DESIGN ENGINEER.
  - 3) NO PART OF THIS DESIGN SHALL BE ALTERED WITHOUT PRIOR APPROVAL FROM THE DESIGN ENGINEER AND THE AGENT OF THE LOCAL BOARD OF HEALTH. ALL REQUESTS FOR CHANGES SHALL BE MADE IN WRITING PRIOR TO CONSTRUCTION.
  - 4) THE USE OF ALTERNATE MANUFACTURERS FOR SYSTEM COMPONENTS SHALL NOT BE APPROVED IF THE USE OF THEIR EQUIPMENT REQUIRES CHANGES IN DESIGN.
  - 5) THE INSTALLER SHALL ASCERTAIN THE LOCATION OF EXISTING UNDERGROUND UTILITIES PRIOR TO EXCAVATION, AND SHALL PROTECT UTILITIES WITHIN THE WORK AREA DURING CONSTRUCTION.
  - 6) LEAK DETECTION DEVICE TO BE INSTALLED WITHIN VOID AREA OUTSIDE OF INNER TANK WORKING LEVEL FLOAT/ALARM AND HIGH WATER FLOAT/ALARM TO BE INSTALLED AT 75% AND 90% OF INNER TANK CAPACITY
  - 7) THE ALARM PANEL SHALL BE INSTALLED IN A STAFFED LOCATION WITHIN THE BUILDING. LOCATION TO BE COORDINATED WITH OWNER ALARMS TO BE BOTH AUDIBLE AND VISIBLE.
  - 8) CONTRACTOR TO PROVIDE BUOYANCY CALCULATIONS



**SHRUB PLANTING DETAIL**  
NOT TO SCALE

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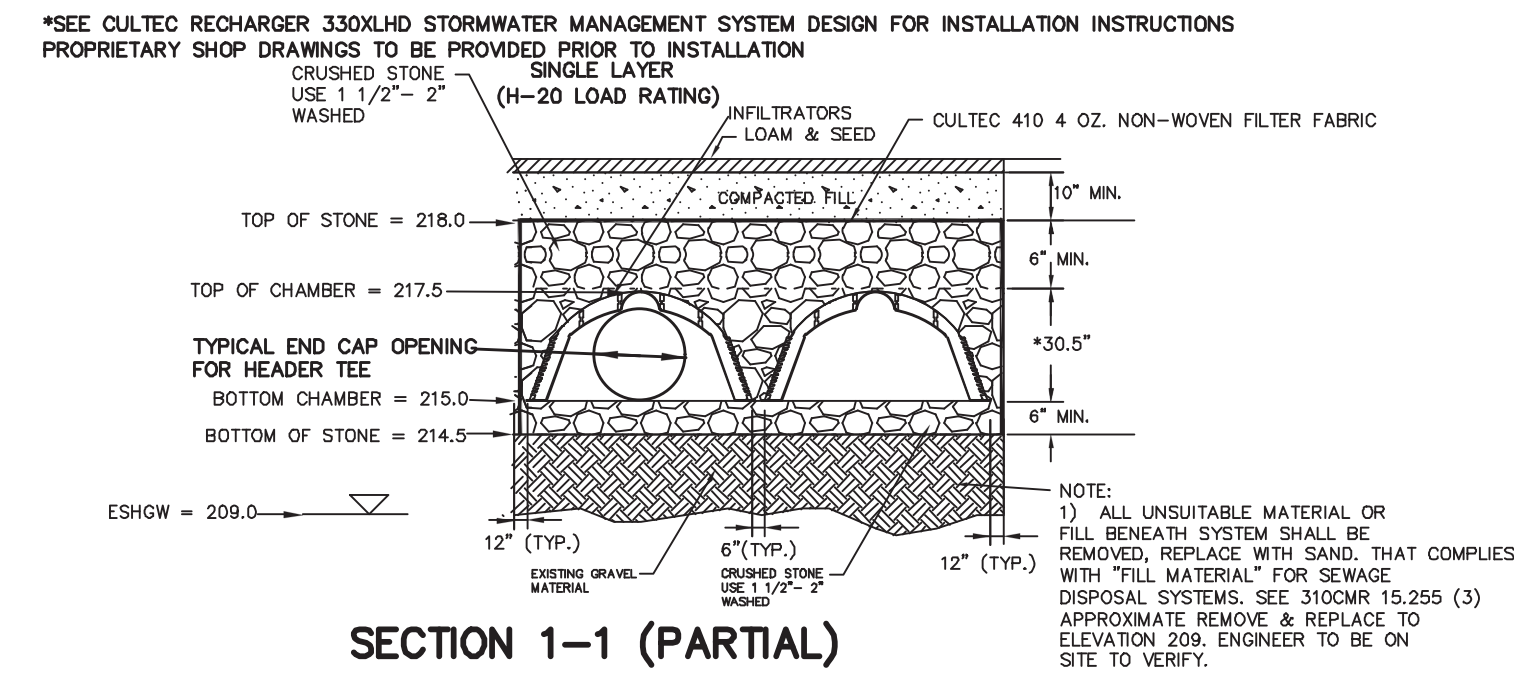
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SCALE					
DATE	1.	09/24/20	PEER REVIEW		
REV		DATE	REVISION	BY	
SHEET	7	of 8	<b>KARAS &amp; KARAS GLASS</b> 1 KIDDIE DRIVE AVON, MA <b>DETAIL SHEET</b>		
FILE #	2020-017-DT01				
JOB #	F:\P\2020-017				
DRAWN BY	C.L.				
CHKD BY	SSH		<b>KELLY ENGINEERING GROUP</b> civil engineering consultants 0 Campanelli Drive, Braintree, MA 02184 Phone: 781-843-4333 www.kellyengineeringgroup.com	SHEET NO.	<b>7</b>
APPD BY	DNK				

DAVID NOEL KELLY P.E.  
NOEL KELLY CIVIL ENGINEERING GROUP, INC.  
PROFESSIONAL ENGINEER  
No. 37942

Digitally signed by David Noel Kelly P.E., DN: cn=David Noel Kelly P.E., o=Kelly Engineering Group, Inc., email=dkelly@kellyeng.com, c=US, Date: 2020.09.25 09:33:12 -0400

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



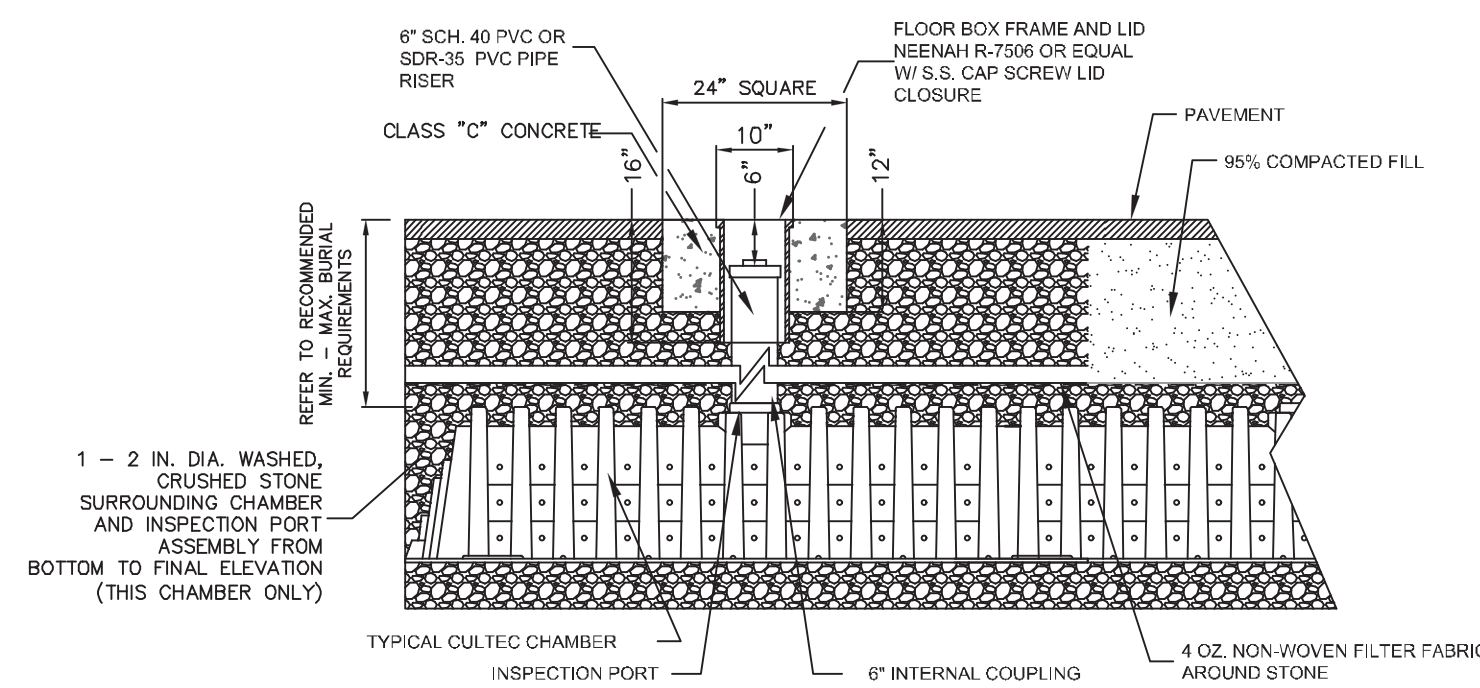
**STORMWATER MANAGEMENT SYSTEM CONSTRUCTION OPERATION + MAINTENANCE NOTES:**

1. EXTREME CARE SHALL BE TAKEN DURING CONSTRUCTION TO AVOID SILTATION DURING THE CONSTRUCTION PROCESS.
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.

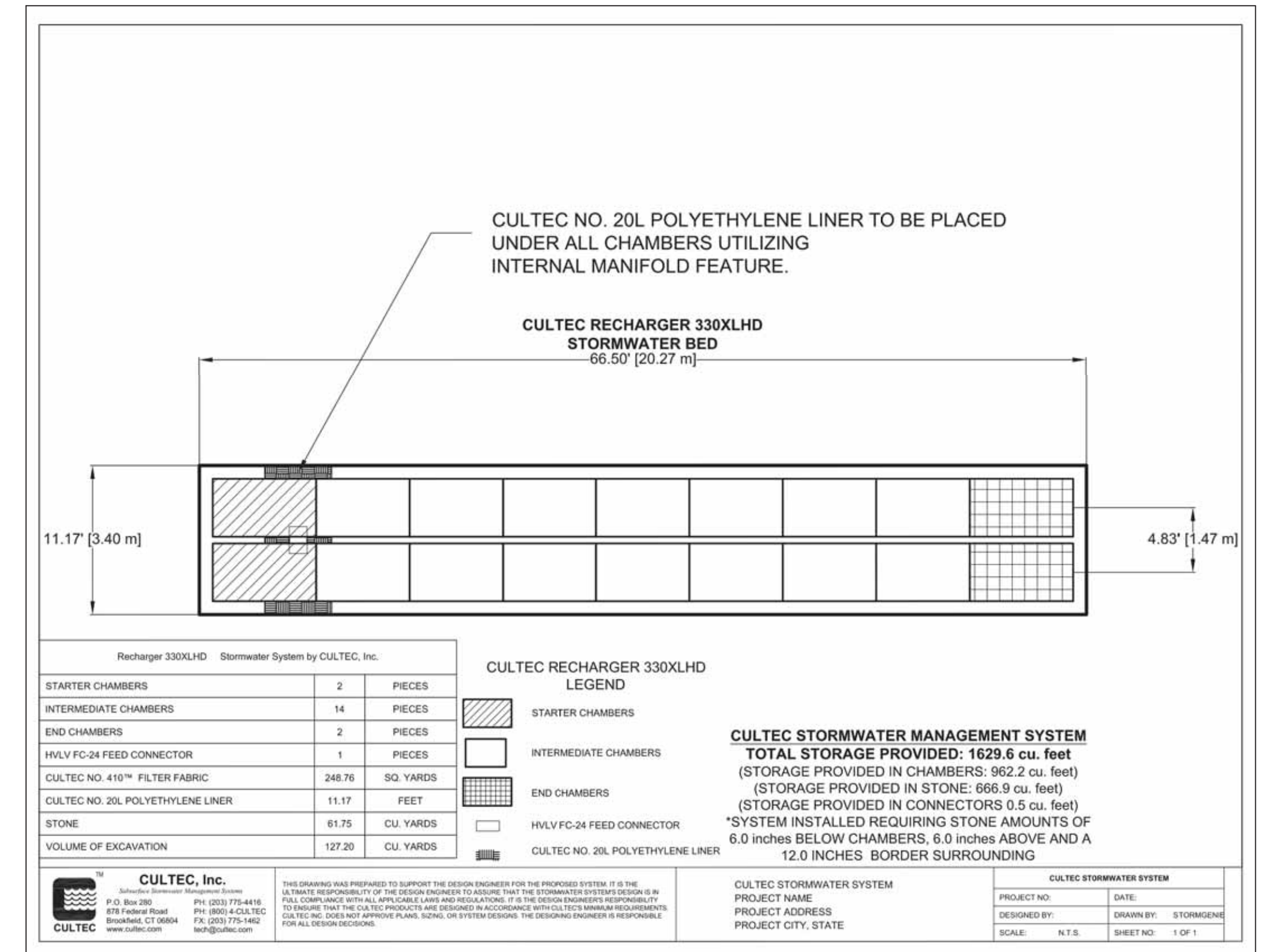
**CONSTRUCTION INSPECTION SCHEDULE**

1. SILT SACKS AND SILT SOCKS SHALL BE INSPECTED AND REPLACED AS NECESSARY.
2. INSPECTIONS SHALL INCLUDE THE PAVEMENT TO DETERMINE IF ACCUMULATED SEDIMENT IS TO BE REMOVED, OF THE CATCH BASINS TO DETERMINE DEPTH OF SEDIMENTS AND REQUIRED CLEANING, AND INSPECTION OF THE RECHARGE SYSTEM TO DETERMINE IF CLEANING IS NECESSARY.
3. AN INSPECTION OF THE EXCAVATION OF THE RECHARGE SYSTEM SHALL BE CONDUCTED BY THE ENGINEER AND A REPRESENTATIVE THE TOWN'S ENGINEERING DEPARTMENT PRIOR TO PLACEMENT OF ANY CHAMBERS.

INFILTRATOR SUBSURFACE DETENTION AREA PLAN VIEW	
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**TYPICAL H2O INSPECTION PORT DETAIL**



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DATE	08/10/20
SHEET	8 of 8
FILE #	2020-017-DT01
JOB #	F:\P\2020-017
DRAWN BY	C.L.
CHKD BY	GSB
APPD BY	DNK

1.	09/24/20	PEER REVIEW	
REV	DATE	REVISION	BY

**KARAS & KARAS GLASS**  
 1 KIDDIE DRIVE  
 AVON, MA

**DETAIL SHEET**

**KELLY ENGINEERING GROUP**  
 civil engineering consultants  
 0 Campanelli Drive, Braintree, MA 02184  
 Phone: 781-843-4333 www.kellyengineeringgroup.com

COMMONWEALTH OF MASSACHUSETTS  
 DAVID NOEL KELLY  
 NO. 37542  
 REGISTERED PROFESSIONAL ENGINEER

SHEET NO. **8**