SITE DEVELOPMENT PLAN

FOR

ADESA HOLLISTON

ADESA, INC.

194 LOWLAND STREET
HOLLISTON, MA 01746

ZONING DATA: INDUSTRIAL		
USE: WHOLESALE OFFICE OR SHOWROOM (PERMITTED)		
	REQUIRED	PROVIDED
MIN. AREA	20,000 SF	1,876,373 SF
MIN. FRONTAGE	100 FT	895 FT
MIN. DEPTH	150 FT	> 150 FT
MIN. SETBACKS		
FRONT	30 FT	30 FT
SIDE	20 FT	20 FT
REAR	30 FT	30 FT
MAX. STORIES	3	N/A
MAX. HEIGHT	40 FT	N/A
BUILDING AREA	N/A	N/A
MAX. COVERAGE	40%	0%
F.A.R.	0.5	0.0

ASSESSOR'S REFERENCE:
MAP 12, BLOCK 4, PARCEL 33.1
MAP 9, BLOCK 2, PARCEL 57.1

DEED REFERENCE:
MIDDLESEX SOUTH DISTRICT REGISTRY OF DEEDS
BOOK 11451, 11294, 10554
PAGE 206, 344, 74

CONSTRUCTION SEQUENCE

1. INSTALL SILT FENCE
2. CLEAR AND GRUB
3. REMOVE EXISTING STRUCTURES
3. INSTALL REMAINING EROSION CONTROLS
4. STRIP TOPSOIL AND STOCKPILE
5. PREPARE SITE TO SUBGRADE
6. INSTALL DRAINAGE SYSTEM
7. GRADE SITE
8. INSTALL BINDER PAVEMENT
9. INSTALL CURBS
10. INSTALL TOP COURSE
11. LOAM AND SEED
12. CLEAN UP

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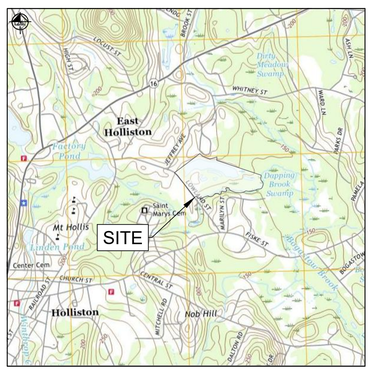


USGS MAP
(HOLLISTON QUADRANGLE)
SCALE: 1"=2,000'

APPLICANT | OWNER | ENGINEER OF RECORD

1. **APPLICANT:**
ADESA, INC.
13085 HAMILTON CROSSING BOULEVARD
CARMEL, IN 46032
317-617-2295
CONTACT: TERRI BENDES

2. **OWNER:**
DCAB, LLC
157 LOWLAND STREET
HOLLISTON, MA 01746
508-294-1513
CONTACT: MICHAEL BRUABER

3. **ENGINEER OF RECORD:**
KIMLEY-HORN AND ASSOCIATES, INC.
1700 WILLOW LAWN DRIVE, SUITE 200
RICHMOND, VA 23230
804-673-3882
CONTACT: BRIAN BREWER, P.E.

I ATTEST THAT THE PLAN BOARD VOTED _____ TO _____
TO APPROVE THIS SITE PLAN ON _____
DATE

_____
SIGNATURE OF PLANNING BOARD MEMBER

PROJECT DESCRIPTION NARRATIVE

THIS PROJECT INCLUDES THE DEMOLITION OF MOST EXISTING FEATURES ON SITE AND CONSTRUCTION OF AN ASPHALT-PAVED PARKING LOT FOR TEMPORARY STORAGE OF VEHICLES. THE EXISTING PROPERTY IS APPROXIMATELY **43.1** ACRES AND CONSISTS OF EXISTING WETLANDS, A LARGE POND, AND OVERGROWN VEGETATION. SMALL BUILDING STRUCTURES ARE ALSO LOCATED ON SITE AND WILL BE DEMOLISHED. ADDITIONAL IMPROVEMENTS WILL ALSO INCLUDE UPDATED LANDSCAPING AND IMPROVED STORMWATER MANAGEMENT FACILITIES. EXISTING OVERHEAD ELECTRIC AND UNDERGROUND GAS LINES ARE LOCATED ON THE PROPERTY.

IT'S THE LAW, 72 HOURS BEFORE YOU DIG CALL
"DIG SAFE SYSTEM, INC."
1-888-344-7233
WWW.DIGSAFE.COM

No.	REVISIONS	DATE	BY
1	PER CMG 7/24/20 SWM PEER REVIEW	9/25/20	TGK

Kimley»Horn
© 2020 KIMLEY-HORN AND ASSOCIATES, INC.
1700 WILLOW LAWN DR., SUITE 200, RICHMOND, VA 23230
PHONE: 804-673-3882
WWW.KIMLEY-HORN.COM

LICENSED PROFESSIONAL
COMMONWEALTH OF MASSACHUSETTS
BRIAN J. BREWER
CIVIL
No. 46948
10-06-20
REGISTERED PROFESSIONAL ENGINEER
DATE:

KHA PROJECT 113382001
DATE 10/06/2020
SCALE AS SHOWN
DESIGNED BY TGK
DRAWN BY TGK
CHECKED BY BJB

COVER SHEET

ADESA HOLLISTON
PREPARED FOR
ADESA, INC.
TOWN OF HOLLISTON MA

SHEET NUMBER
1 OF 23

Plotted By:Kciethon, Tom Sheet Set:KH\SHEETS\Plan Set\CIVIL\CADD\C-SITE-PLAN SUBMISSION\COVER SHEET.dwg
This document, together with the concepts and designs presented herein, as an instrument of service, is intended only for the specific purpose and client for which it was prepared. Reuse of and improper reliance on this document without written authorization and adaptation by Kimley-Horn and Associates, Inc. shall be without liability to Kimley-Horn and Associates, Inc.

Notes Corresponding to Schedule B

9. Water rights, claims or Title to water, whether or not shown by the Public Records. (affects site – plotted)

10. Mortgage and Security Agreement from DCAB, LLC to The Milford Bank and Trust Company in the original principal amount of $375,000.00 dated June 7, 2007, recorded in Book 69404, Page 69. (affects site – not plottable)

11. Assignment of Leases and Rents from DCAB, LLC to The Milford Bank and Trust Company dated June 7, 2007, recorded in Book 69404, Page 85. (affects site – not plottable)

12. Decision granting a Variance by the Town of Holliston Board of Appeals dated May 11, 1968, recorded in Book 11512, Page 508. (affects site – not plottable)

13. Decision granting a Variance by the Town of Holliston Board of Appeals dated August 12, 1968, recorded in Book 11587, Page 567. (affects site – not plottable)

14. Easement and Right of way set forth in Deed from Holliston Sand Company, Inc. to Earl C. Mann, Bernard Quitt, and Brendan J. Perry, as Trustees of Lowland Realty Trust dated December 18, 1969, recorded in Book 11782, Page 269. (affects site – plotted)

15. Easement and Right of way set forth in Deed from Holliston Sand Company, Inc. to Earl C. Mann, Bernard Quitt, and Brendan J. Perry, as Trustees of the Lowland Realty Trust dated February 20, 1970, recorded in Book 11813, Page 117. (affects site – plotted)

16. Decision granting a Variance by the Town of Holliston Board of Appeals dated July 27, 1971, recorded in Book 12046, Page 341. (affects site – not plottable)

17. Easement from Holliston Sand Company, Inc. to New England Telephone and Telegraph Company dated October 24, 1985, recorded in Book 18256, Page 122. (affects site – plotted)

18. Order of Conditions issued by the Town of Holliston (DEP File No. 185-451) recorded in Book 30054, Page 120. (affects site – not plottable)

19. Easement to Boston Edison Co. recorded in Book 6479, Page 219. (affects site – plotted)

Legend of Symbols & Abbreviations

STK	SURVEY STAKE
SB	STONE BOUND
WP	WOOD POST
BBQ	BARBEQUE STAND
IP	IRON PIPE
FND	FOUND
CB	CATCH BASIN
SMH	SEWER MANHOLE
EMH	ELECTRIC HANDHOLE
GG	GAS GATE
GM	GAS METER
TJB	LIGHT POLE
CATV	CABLE TELEVISION PEDESTAL
ICV	IRRIGATION CONTROL VALVE
	HYDRANT
6	REGULAR PARKING SPACES
T	TRANSFORMER
C	CABLE JUNCTION BOX
WSF	WOOD STOCKADE FENCE
PVC	POLYVINYL FENCE
OHW	OVERHEAD WIRES
S	SEWER PIPELINE
D	DRAIN PIPELINE
W	WATER PIPELINE
G	GAS CONDUIT
GS	GAS SERVICE CONDUIT
SS	SEWER SERVICE PIPELINE
WS	WATER SERVICE PIPELINE
UE	UNDERGROUND ELECTRIC CONDUIT
UT	UNDERGROUND TELEPHONE CONDUIT
AC	ASBESTOS CLAY
BIT. CONC.	BITUMINOUS CONCRETE
CC	CEMENT CONCRETE
BCW	BITUMINOUS CONCRETE WALK
CCW	CEMENT CONCRETE WALK
N/F	NOW OR FORMERLY
W.F.	WOOD FRAME
W.F.D.	WOOD FRAME DWELLING
RTG	ROOF TO GROUND
BFA	BUILDING FOOTPRINT AREA
LA	LANDING ABOVE
AC	AIR CONDITIONER
MB	MAIL BOX
WCR	WHEELCHAIR RAMP
CCC	CEMENT CONCRETE CURB
R.O.W.	RIGHT OF WAY

Record Legal Description

SCHEDULE A

The Land is described as follows: Real property in the City of Holliston, County of Middlesex, Commonwealth of Massachusetts, described as follows:

Three certain adjoining parcels of land, together with the buildings and improvements thereon, situated in the Town of Holliston, County of Middlesex, Commonwealth of Massachusetts, separately bounded and described as follows:

Parcel I

Beginning at the intersection of the northeasterly line of Lowland Street with the northwesterly line of the brook, sometimes called Bogastow Brook; thence northwesterly by said Lowland Street about one thousand one hundred twenty-five (1,125) feet to an iron pipe in the intersection of said northwesterly line of Lowland Street and the southeasterly line of an old town road known as Rogers Street; thence northeasterly starting in line with said southeasterly line of Rogers Street but continuing said course in a straight line by land now or formerly of Roy B. and Anne T. Hulbert, where said Rogers Street curves to the north about six hundred thirty-five (635) feet to an iron pipe; thence southeasterly by land now or formerly of said Hubert by a straight line roughly parallel with said Lowland Street, through an iron pipe driven in the northwesterly bank of said brook, about one thousand thirty (1,030) feet to said brook; thence southwesterly by said brook to the point of beginning.

Parcel II

Southwesterly: by land now or formerly of Finn Bros. four hundred sixty (460) feet, more or less;

Northeasterly: by land now or formerly of Benjamin Hildredth one thousand three hundred sixty-three and 4/100 (1,363.4) feet, more or less;

Northwesterly: by land now or formerly of Roy B. and Anne T. Hulbert two hundred thirty and 9/100 (230.0) feet, more or less;

Southwesterly: by Parcel No. I hereinabove described one thousand one hundred sixty and 5/10 (1,160.5) feet, more or less;

As shown on plan entitled "Plan of Land – Holliston, Mass. by Wm. R. Poole, dated April 1964" and recorded with Middlesex South District Registry of Deeds in Plan Book 10554, Page 74.

Parcel III

A certain parcel of land in Holliston, northwesterly of Lowland Street containing 15 acres, more or less, as shown on a plan of land entitled "Plan of Land – Holliston, Mass. Scale 1 inch equals 80 feet, Survey by Wm. R. Poole, August, 1967", which plan is recorded with Middlesex South District Registry of Deeds in Plan Book 11451, Page 206, and more particularly bounded and described as follows according to said plan:

Southwesterly: by Parcel No. II hereinabove described one thousand two hundred forty-one and 6/10 (1,241.6) feet;

Northerly: by land now or formerly of Benjamin A. Hildreth two hundred forty-one and 1/20 (241.2) feet;

Northerly again: by land now or formerly of Edward Serocki two hundred fifty-six (256) feet;

Northeasterly: by land now or formerly of Gardner Morse eighty-eight and 7/10 (88.7) feet; and

Northerly again: by land now or formerly of Gardner Morse one thousand two hundred forty-seven (1,247) feet; and

Northerly and Southerly: by Bogastow Brook one thousand (1,000) feet.

This same land is also depicted in a survey made by Stephen Stapinski for CreSurveys on November 2, 2019, last revised February 10, 2020, designated 19-4750-Site #001, more particularly described as follows:

A parcel of land located on the north side of Lowland Street, beginning at the southwest corner, at land of Robert Mann, at a point on the east side of Lowland Street, running:

North 36° – 43' – 58" West	810.70'	along Lowland Street to a point of curvature, thence
R = 416.50'	L = 159.21'	along a curve to the left along Lowland Street to a point at land of Abramo, thence
North 53° – 01' – 26" East	889.02'	along land of Abramo, land of Ftbrmg LLC, land of Jeffery Avenue LLC, land of Claymore Enterprises, LLC to a point at land of 29 Everett LLC, thence
South 42° – 19' – 58" East	120.55'	along land of 29 Everett LLC to a point, thence
South 67° – 17' – 19" East	217.79'	along land of 29 Everett LLC to a point, thence
North 70° – 44' – 49" East	258.81'	along land of Serocki to other land of Serocki, thence
South 05° – 14' – 17" East	88.19'	along land of Serocki to a point, thence
South 69° – 26' – 21" East	1,306.33'	along land of Serocki to a point at land of NSTAR Electric Company, said point being in the centerline of Bogastow Brook, thence

Southerly
and Southwesterly 2,640'± along the centerline of Bogastow Brook
along land of NSTAR Electric,
land of Oteri
land of Marrisson,
land of Fitch,
land of Shearer,
land of Daeider
land of Fitch,
land of Fosberg,
land of Lacroix,
land of Hafford to a point at land of Robert Mann, thence

South 50° – 01' – 12" West	50.54'	along land of Robert Mann to a point on the east side of Lowland Street, said point being the point of beginning

Said parcel contains 1,876,373± square feet or 43.0756± acres land area.

The property described above is the same property described in First American Title Insurance Company Title Commitment no. NCS-987018-BOS1 dated February 7, 2020.

Zoning

ZONE DISTRICT: I (INDUSTRIAL)		
STATUS	DATE: JANUARY 17, 2020	
ITEM	REQUIRED	OBSERVED
PERMITTED USE	VACANT LAND	VACCANT LAND
MIN. LOT AREA	20,000 S.F.	1,777,900 S.F.
MIN. FRONTAGE	100'	1,284.21'
MAX. BLDG. COVERAGE	40%	0.3%
MIN SETBACKS FRONT	30'	39'
MIN. SETBACKS SIDE	20'	174'/703'
MIN. SETBACKS REAR	30'	1,083'
MAX. BUILDING HEIGHT	3 STORIES/40'	2 STORIES/17'
PARKING REGULAR	PER APPROVED USE	0
PARKING HANDICAP	PER APPROVED USE	0
PARKING TOTAL	21 SPACES	0

ZONING SOURCE IS ANALYSIS REPORT DATED FEBRUARY 7, 2020 BY CREZONING, LTD, 24 N. HIGH ST., AKRON, OH 44308, PROJECT NO. 19-4750-001

Utility Notes

NO UNDERGROUND UTILITIES WERE MARKED ON THE SUBJECT PROPERTY.

Flood Note

By graphic plotting only, this property is in Zone X of the Flood Insurance Rate Map, Community Panel No. 25017C0633E, which bears an effective date of 6/4/2010 and is not in a Special Flood Hazard Area.

Encroachment Statement

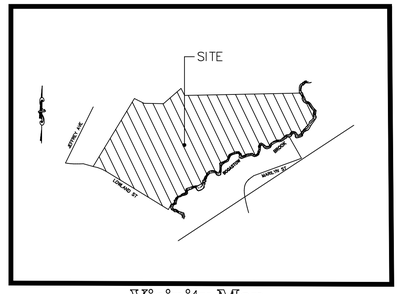
Ⓐ GUY WIRE ENCROACHES ONTO SUBJECT PROPERTY 6'

Ⓑ UTILITY POLE ENCROACHES ONTO SUBJECT PROPERTY 1'

Ⓒ UTILITY POLE ENCROACHES ONTO SUBJECT PROPERTY 3'

Miscellaneous Notes

1. THE BEARING BASE IS FROM PLAN ENTITLED N36°-43'-58"W ALONG LOWLAND STREET AS SHOWN ON PLAN RECORDED MIDDLESEX SOUTH DISTRICT REGISTRY OF DEEDS PLAN 453 OF 2017 DATED APRIL 5, 2017 HAMPSHIRE COUNTY REGISTRY OF DEEDS.
2. NO OBSERVABLE EVIDENCE OF BUILDING CONSTRUCTION OR BUILDING ADDITIONS WITHIN RECENT MONTHS, OBSERVED, BUT SITE IS AN OPEN EXCAVATED SOIL PIT.
3. NO OBSERVABLE EVIDENCE OF CHANGES IN STREET RIGHT OF WAY LINES COMPLETED, AND AVAILABLE FROM THE CONTROLLING JURISDICTION AND NO OBSERVABLE EVIDENCE OF RECENT STREET OR SIDEWALK CONSTRUCTION OR REPAIRS.
4. PROPERTY HAS DIRECT ACCESS TO LOWLAND STREET, DEDICATED A PUBLIC WAY.
5. ALL STATEMENTS WITHIN THE CERTIFICATION, AND OTHER REFERENCES LOCATED ELSEWHERE HEREON, RELATED TO: UTILITIES, IMPROVEMENTS, STRUCTURES, BUILDINGS, PARTY WALLS, PARKING, EASEMENTS, SERVITUDES, AND ENCROACHMENTS; ARE BASED SOLELY ON ABOVE GROUND, VISIBLE EVIDENCE, UNLESS ANOTHER SOURCE OF INFORMATION IS SPECIFICALLY REFERENCED HEREON.
6. THERE IS NO VISIBLE EVIDENCE OF CEMETERIES ON THE SUBJECT PROPERTY AT THE TIME OF SURVEY.
7. THERE WERE VISIBLE EVIDENCE OF WETLAND FIELD MARKERS ON THE SUBJECT PROPERTY AT THE TIME OF SURVEY AND NO WETLAND REPORT WAS PROVIDED TO THE SURVEYOR BY THE CLIENT.
8. TAX PARCEL ID #012.0004.0033.1 AND #009.0002.0057.1
9. THERE IS NO OBSERVABLE EVIDENCE OF ANY SHARED PARTY WALLS ON THE SUBJECT PROPERTY.
10. THE RECORD DESCRIPTION OF THE PROPERTY FORMS A MATHEMATICALLY CLOSED FIGURE AND ITS CONTIGUOUS WITHOUT ANY GAPS OR GORES.
11. AT THE TIME OF SURVEY THE PROPERTY ADDRESS FOR THE SUBJECT PROPERTY WAS POSTED.
12. THERE IS NO VISIBLE EVIDENCE OF STRIPED PARKING SPACES.
13. THERE IS NO VISIBLE EVIDENCE OF LOADING DOCKS.



Vicinity Map

ALTA/NSPS Land Title Survey

Adesa-Holliston

Project #19-4750-Site #001
194 Lowland Street
Holliston, MA 01746

County of Middlesex

To: McDermott Will & Emery LLP; Auto Dealers Exchange of Concord, LLC d/b/a ADESA Boston, a Massachusetts limited liability company; Near North Title Group; First American Title Insurance Company and CRESurveys, Ltd.

This is to certify that this map or plat and the survey on which it is based were made in accordance with the 2016 Minimum Standard Detail Requirements for ALTA/NSPS Land Title Surveys, jointly established and adopted by ALTA and NSPS, and includes Items 1, 2, 3, 4, 6a, 6b, 7a, 7b(1), 7c, 8, 9, 11, 13, 14, 16, 17, 18, 19, and 20 of Table A thereof. The field work was completed on November 2, 2019.

COMMONWEALTH OF MASSACHUSETTS
STEPHEN E. STAPINSKI
#29876
PROFESSIONAL LAND SURVEYOR

_____ Surveyor's signature

_____ 3/12/20 Date

Stephen Stapinski
66 Park Street
Andover, MA 01810
(978)475-3555

Surveyor License #: 29876
Date of last revision: March 12, 2020
Sheet 1 of 2

(330) 777-0502
CreSURVEYS

GRAPHIC SCALE

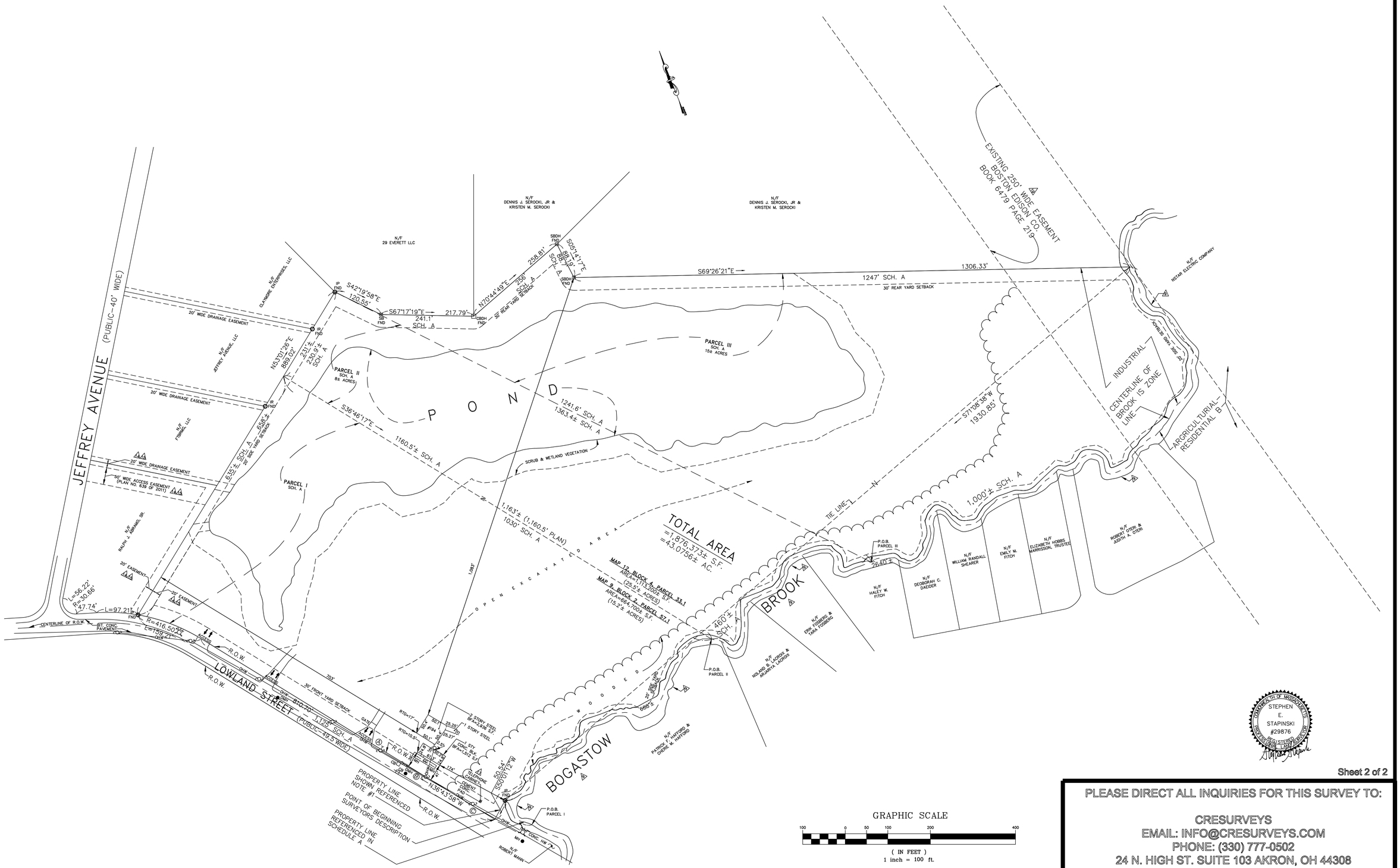
40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

PLEASE DIRECT ALL INQUIRIES FOR THIS SURVEY TO:

CRESURVEYS
EMAIL: INFO@CRESURVEYS.COM
PHONE: (330) 777-0502
24 N. HIGH ST. SUITE 103 AKRON, OH 44308

Y:\R14\DWGS\11884\AL\11884AL01.DWG 3/12/20



Sheet 2 of 2

PLEASE DIRECT ALL INQUIRIES FOR THIS SURVEY TO:

CRESURVEYS
EMAIL: INFO@CRESURVEYS.COM
PHONE: (330) 777-0502
24 N. HIGH ST. SUITE 103 AKRON, OH 44308

Y:\R14\DWGS\11884\AL\11884ALO1.DWG 3/12/20

KEY SHEET AND LOCUS MAP

NOTES:

1. BENCH MARK INFORMATION:

   TEMPORARY BENCH MARKS SET:

   TBM-TGS1: X-MARK SET ON RIGHT HYDRANT BOLT OVER MAIN OUTLET AS SHOWN HEREON.
   ELEVATION = 155.00

   TBM-TGS2: MAG NAIL SET ON UTILITY POLE #12A AS SHOWN HEREON.
   ELEVATION = 158.77

   TBM-TGS3: MAG NAIL SET ON UTILITY POLE #10 AS SHOWN HEREON.
   ELEVATION = 162.08

   TBM-TGS4: SPIKE SET ON A UTILITY POLE AS SHOWN HEREON.
   ELEVATION = 155.85

2. ELEVATIONS REFER TO NORTH AMERICAN VERTICAL DATUM OF 1988.

3. ELEVATIONS WERE OBTAINED BY GPS OBSERVATIONS ON DECEMBER 4, 2019.

4. CONTOUR INTERVAL EQUALS ONE (1) FOOT.

5. BOUNDARY RETRACEMENT WAS NOT PERFORMED TO PREPARE THIS SURVEY PLAN. BOUNDARY LINES SHOWN HEREON ARE BASED ON OLIVER/MASS GIS DATA LAYERS AND SHALL BE CONSIDERED APPROXIMATE.

6. THE WETLAND AND MEAN ANNUAL HIGH WATER FLAGS SHOWN HEREON ARE BASED ON A DELINEATION PERFORMED BY EPSILON ASSOCIATES, INC. IN NOVEMBER AND DECEMBER 2019.

7. DURING THE TOPOGRAPHIC SURVEY OF THE PROJECT SITE, EARTHWORK WAS INITIATED BY OTHERS TO RE-GRADE PORTIONS OF THE SITE IN THE AREA AS NOTED HEREON. TOPOGRAPHIC SURVEY FOR THIS PORTION OF THE SITE HAD ALREADY BEEN PERFORMED AS PART OF THIS SURVEY PRIOR TO RE-GRADING. SPOT ELEVATIONS AND LIMIT OF DISTURBANCE IN THESE AREAS WERE OBTAINED AFTER THE REGRADING, BUT MAY AFFECT CONTOUR LINES NEAR THE EDGE OF THE DISTURBED AREA.

8. BY GRAPHIC PLOTTING ONLY, THE PARCEL SHOWN HEREON LIES WITHIN ZONE "X" (UNSHADED) AN AREA OUTSIDE OF THE 0.2% ANNUAL CHANCE FLOOD, ZONE "X" (SHADED) AN AREA OF 0.2% ANNUAL CHANCE OF FLOOD; AREAS OF 1% ANNUAL CHANCE FLOOD WITH AVERAGE DEPTHS OF LESS THAN ONE FOOT OR WITH DRAINAGE AREAS LESS THAN ONE SQUARE MILE; AND AREAS PROTECTED BY LEVEES FROM 1% ANNUAL CHANCE FLOOD, ZONE "AE", A SPECIAL FLOOD HAZARD AREA SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE OF FLOOD WITH BASE FLOOD ELEVATIONS DETERMINED, AND A FLOODWAY AREA IN ZONE "AE", AS SHOWN ON THE FEDERAL EMERGENCY MANAGEMENT AGENCY (F.E.M.A) FLOOD INSURANCE RATE MAPS (F.I.R.M.) FOR MIDDLESEX COUNTY, MASSACHUSETTS, MAP NUMBERS 25017C0633E & 25017C0634E, TOWN OF HOLLISTON COMMUNITY NUMBER 250195, PANEL NUMBERS 0633 & 0634, RESPECTIVELY, BOTH HAVING AN EFFECTIVE DATE OF JUNE 4, 2010.

   *NOTE: THE BASE FLOOD ELEVATIONS FOR ZONE AE AND FLOODWAY AREA IN ZONE AE FOR WHICH THIS PARCEL IS SUBJECT TO ARE THE 154 AND 155 CONTOUR LINES AS SHOWN HEREON, AS DEFINED BY THE FEMA FIRM MAP LISTED ABOVE.

9. UTILITY INFORMATION SHOWN IS BASED ON BOTH A FIELD SURVEY AND AVAILABLE PLANS OF RECORD OBTAINED UP UNTIL THE TIME OF SURVEY. THE LOCATIONS OF UNDERGROUND PIPES AND CONDUITS HAVE BEEN DETERMINED FROM THE AFOREMENTIONED RECORD PLANS AND ARE APPROXIMATE ONLY. WE CANNOT ASSUME RESPONSIBILITY FOR DAMAGES INCURRED AS A RESULT OF UTILITIES THAT ARE OMITTED OR INACCURATELY SHOWN ON SAID RECORD PLANS, SINCE SUBSURFACE UTILITIES CANNOT BE VISIBLY VERIFIED. BEFORE PLANNING FUTURE CONNECTIONS, THE PROPER UTILITY ENGINEERING DEPARTMENT SHOULD BE CONSULTED AND THE ACTUAL LOCATION OF SUBSURFACE STRUCTURES SHOULD BE DETERMINED IN THE FIELD. CALL, TOLL FREE, THE DIG SAFE CALL CENTER AT 1-888-344-7233 SEVENTY-TWO HOURS PRIOR TO EXCAVATION.

10. THIS DOCUMENT IS AN INSTRUMENT OF SERVICE OF FELDMAN LAND SURVEYORS ISSUED TO OUR CLIENT FOR PURPOSES RELATED DIRECTLY AND SOLELY TO FELDMAN LAND SURVEYORS' SCOPE OF SERVICES UNDER CONTRACT TO OUR CLIENT FOR THIS PROJECT. ANY USE OR REUSE OF THIS DOCUMENT FOR ANY REASON BY ANY PARTY FOR PURPOSES UNRELATED DIRECTLY AND SOLELY TO SAID CONTRACT SHALL BE AT THE USER'S SOLE AND EXCLUSIVE RISK AND LIABILITY, INCLUDING LIABILITY FOR VIOLATION OF COPYRIGHT LAWS, UNLESS WRITTEN CONSENT IS PROVIDED BY FELDMAN LAND SURVEYORS.

COMMONWEALTH OF MASSACHUSETTS MARK J. GUERARD, JR. No.51815 REGISTERED PROFESSIONAL LAND SURVEYOR

I CERTIFY THAT THIS PLAN IS BASED ON AN ACTUAL FIELD SURVEY.

MARK J. GUERARD, JR., PLS (MA# 51815) — 4/22/2020 DATE

mguerard@feldmansurveyors.com

PARTIAL EXISTING CONDITIONS
194 LOWLAND STREET
HOLLISTON, MASS.

FELDMAN LAND SURVEYORS
152 HAMPDEN STREET
BOSTON, MASS. 02119

JANUARY 7, 2020
PHONE: (617)357-9740
www.feldmansurveyors.com

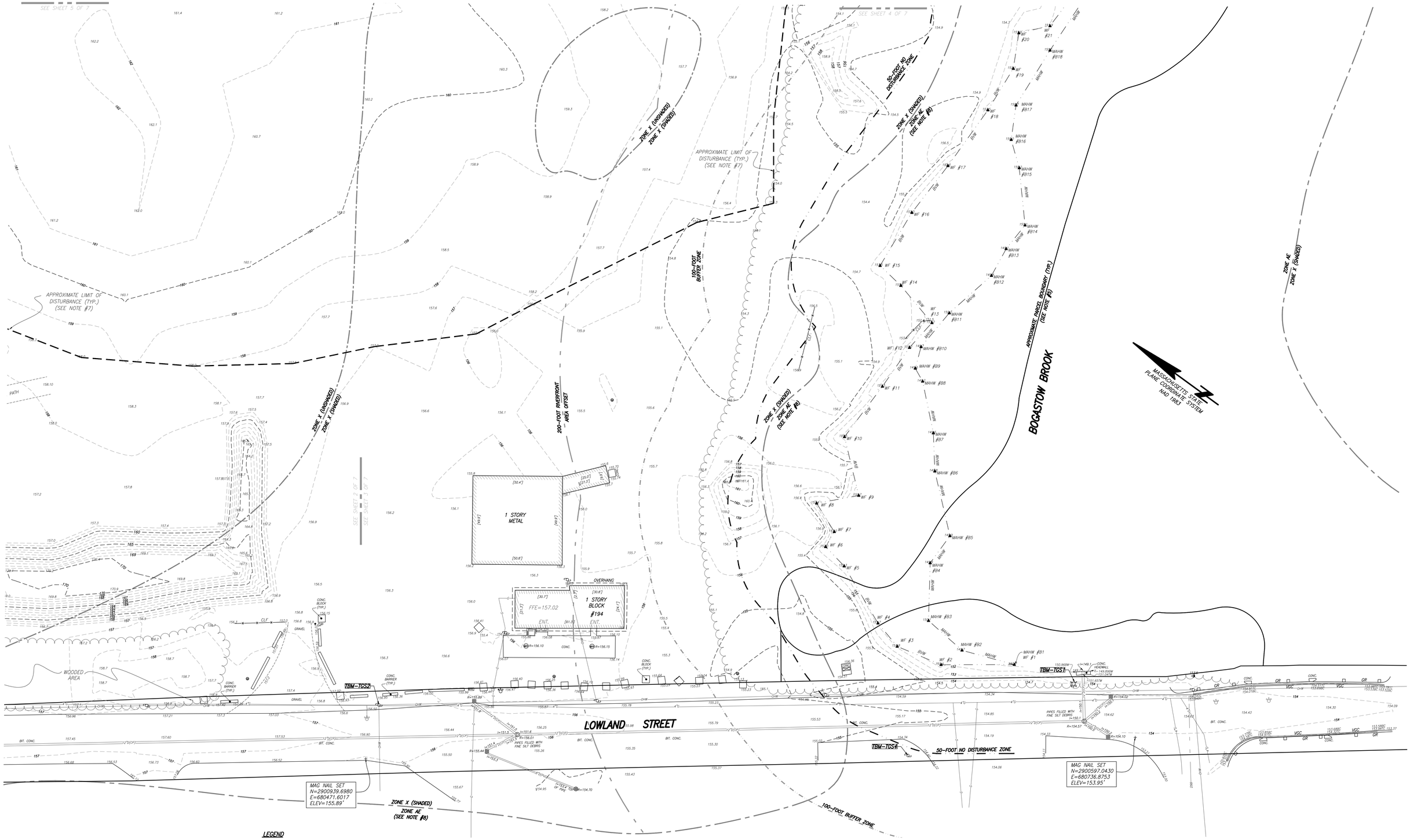
FELDMAN LAND SURVEYORS

100 0 50 100 200 400

SCALE: 1"=100'

RESEARCH OR	FIELD CHIEF TGS	PROJ MGR MJG	APPROVED	SHEET NO. 1 OF 7
CALC MJG	CADD MLM	FIELD CHECKED	CRD FILE 17192-PEX	JOB NO. 17192

FILENAME: S:\PROJECTS\17100s\17192\DWG\SUBMITTED\17192-PEX(SBMT2020-04-22).dwg



LEGEND

DRAIN MANHOLE	CLF ..... CHAIN LINK FENCE
MONITORING WELL	CONC ..... CONCRETE
TELEPHONE MANHOLE	FFE ..... FINISH FLOOR ELEVATION
MANHOLE	GFA ..... GROSS FLOOR AREA
HYDRANT	GR ..... GUARD RAIL
WATER SHUT OFF/WATER GATE	I= ..... INVERT ELEVATION
GAS SHUT OFF/GAS GATE	MAHW ..... MEAN ANNUAL HIGH WATER
CATCH BASIN	R= ..... RADIUS OR RIM ELEVATION
GUY WIRE	S ..... SET
UTILITY POLE	SQ. FT. ..... SQUARE FEET
MAIL BOX	TBM ..... TEMPORARY BENCH MARK
TRANSFORMER	TC ..... TOP OF CURB
WETLAND FLAG	TOW ..... TOP OF WATER
GP ..... GATE POST	VGC ..... VERTICAL GRANITE CURB
INDICATES COMMON OWNERSHIP	WF-## ..... WETLAND FLAG NUMBER
BC ..... BOTTOM OF CURB	D ..... DRAIN
[X.X'] ..... BUILDING DIMENSION	G ..... GAS
BFA ..... BUILDING FOOTPRINT AREA	OHW ..... OVERHEAD WIRES
BIT ..... BITUMINOUS	12"D(CP) ..... PIPE SIZE AND MATERIAL
BW ..... BOTTOM OF WALL	PVC ..... POLYVINYL CHLORIDE
CONC. ..... CONCRETE	CP ..... CONCRETE PIPE
CC ..... CONCRETE CURB	X ..... X ..... CHAINLINK FENCE
DECIDUOUS TREE	GUARD RAIL
CONIFEROUS TREE	

PARTIAL EXISTING CONDITIONS
194 LOWLAND STREET
HOLLISTON, MASS.

FELDMAN LAND SURVEYORS
152 HAMPDEN STREET
BOSTON, MASS. 02119

JANUARY 7, 2020
PHONE: (617)357-9740
www.feldmansurveyors.com

FELDMAN LAND SURVEYORS

20 0 10 20 40 80
SCALE: 1"=20'

RESEARCH OR	FIELD CHIEF TGS	PROJ MGR MJG	APPROVED	SHEET NO. 2 OF 7
CALC MJG	CADD MLM	FIELD CHECKED	CRD FILE 17192-PEX	JOB NO. 17192

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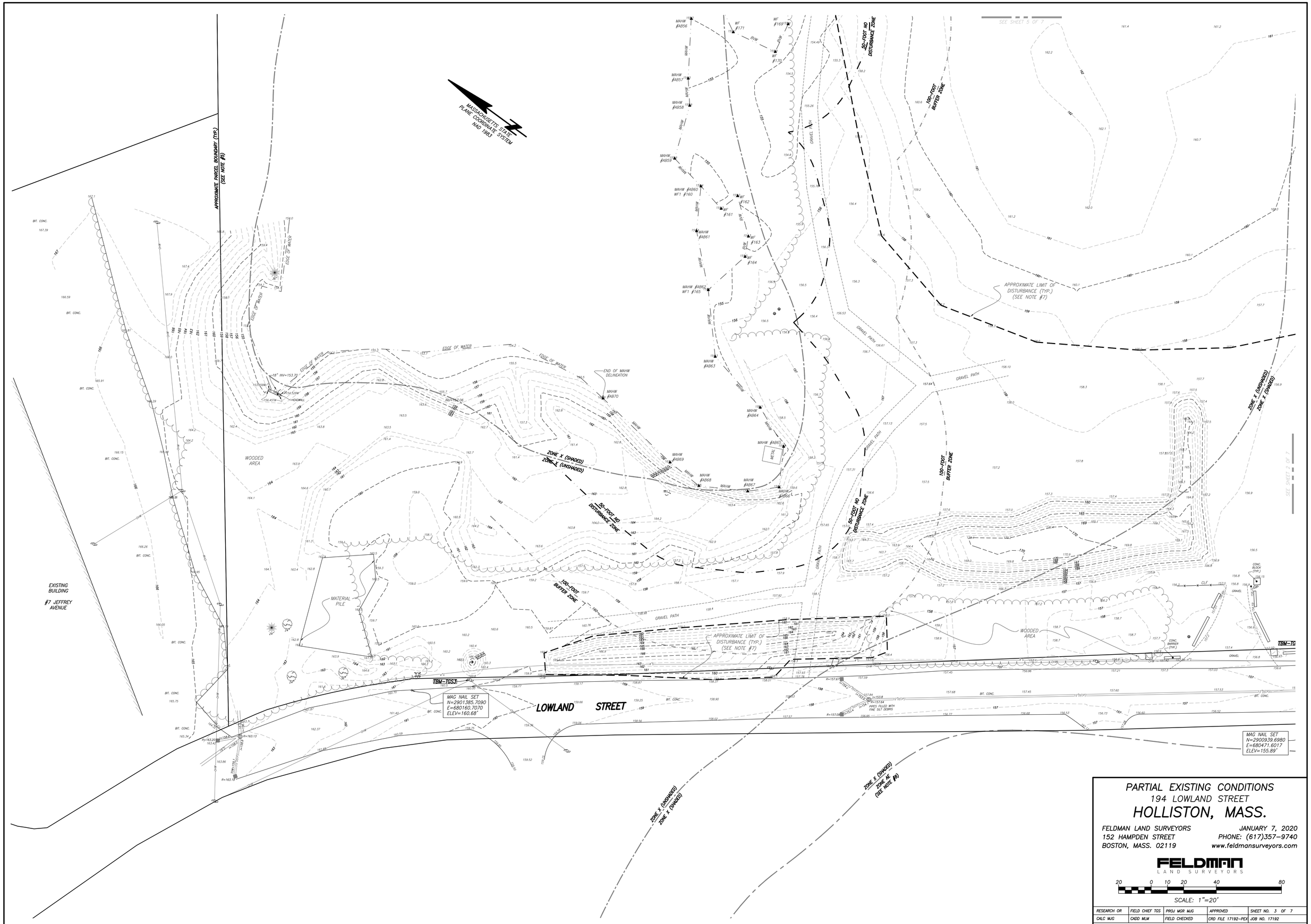

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20 0 10 20 40 80

SCALE: 1"=20'

RESEARCH OR	FIELD CHIEF TGS	PROJ MGR MJG	APPROVED	SHEET NO. 3 OF 7
CALC MJG	CADD MLM	FIELD CHECKED	CRD FILE 17192-PEX	JOB NO. 17192

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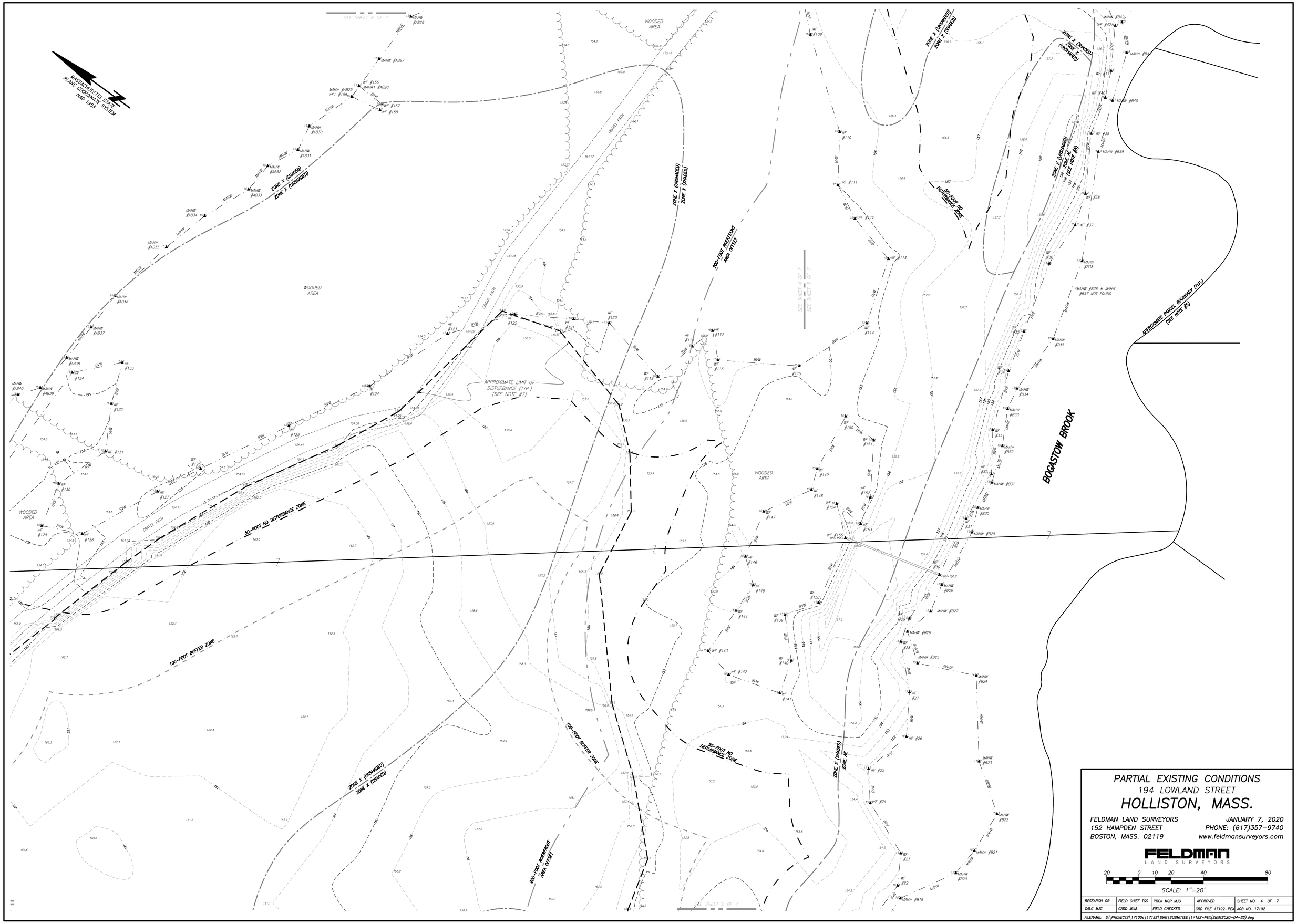

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20 0 10 20 40 80
SCALE: 1"=20'

RESEARCH OR	FIELD CHIEF TGS	PROJ MGR MJG	APPROVED	SHEET NO. 4 OF 7
CALC MJG	CADD MLM	FIELD CHECKED	CRD FILE 17192-PEX	JOB NO. 17192

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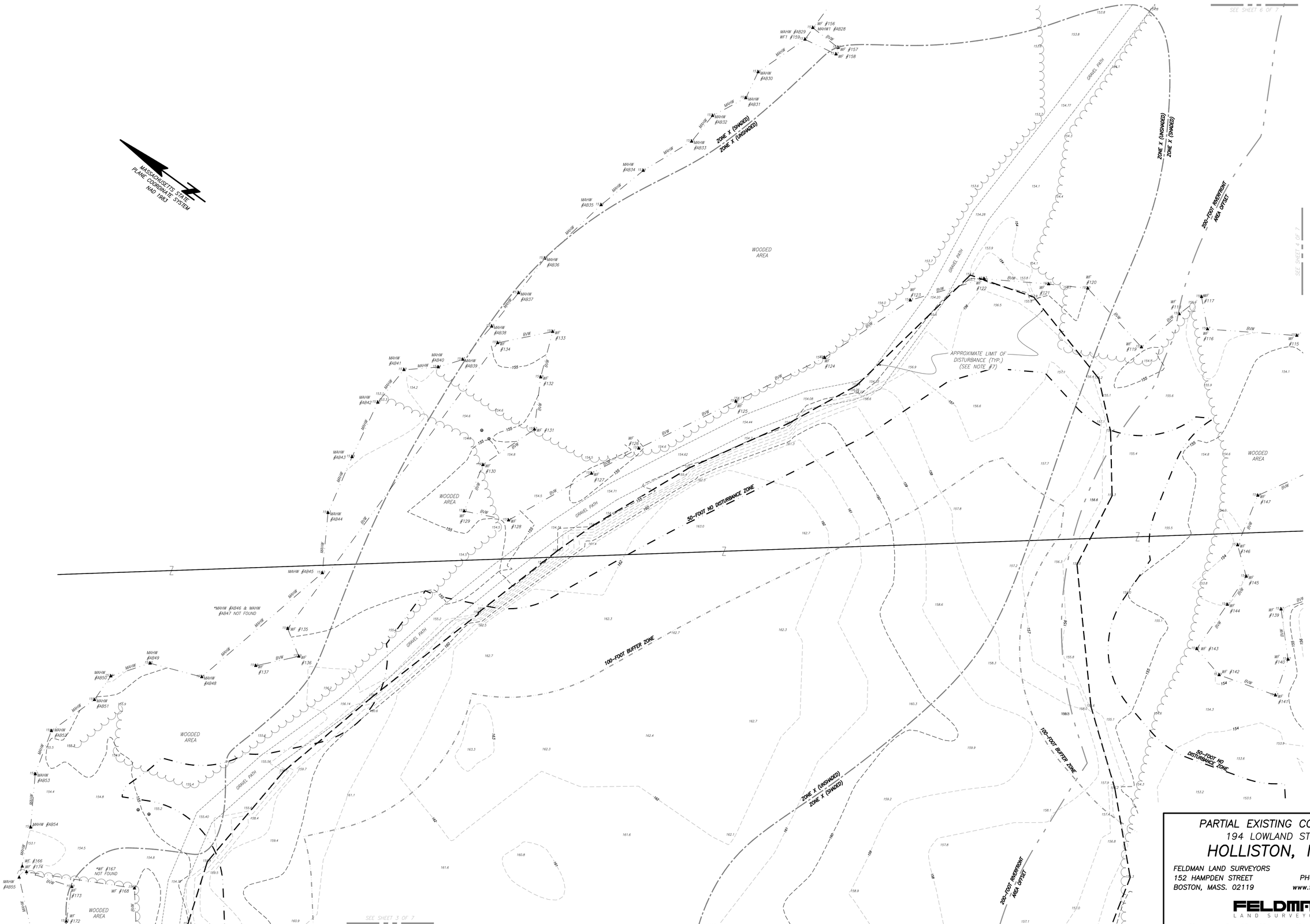

PARTIAL EXISTING CONDITIONS
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HOLLISTON, MASS.

FELDMAN LAND SURVEYORS
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BOSTON, MASS. 02119

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FELDMAN LAND SURVEYORS

20 0 10 20 40 80

SCALE: 1"=20'

RESEARCH OR	FIELD CHIEF TGS	PROJ MGR MJG	APPROVED	SHEET NO. 5 OF 7
CALC MJG	CADD MLM	FIELD CHECKED	CRD FILE 17192-PEX	JOB NO. 17192

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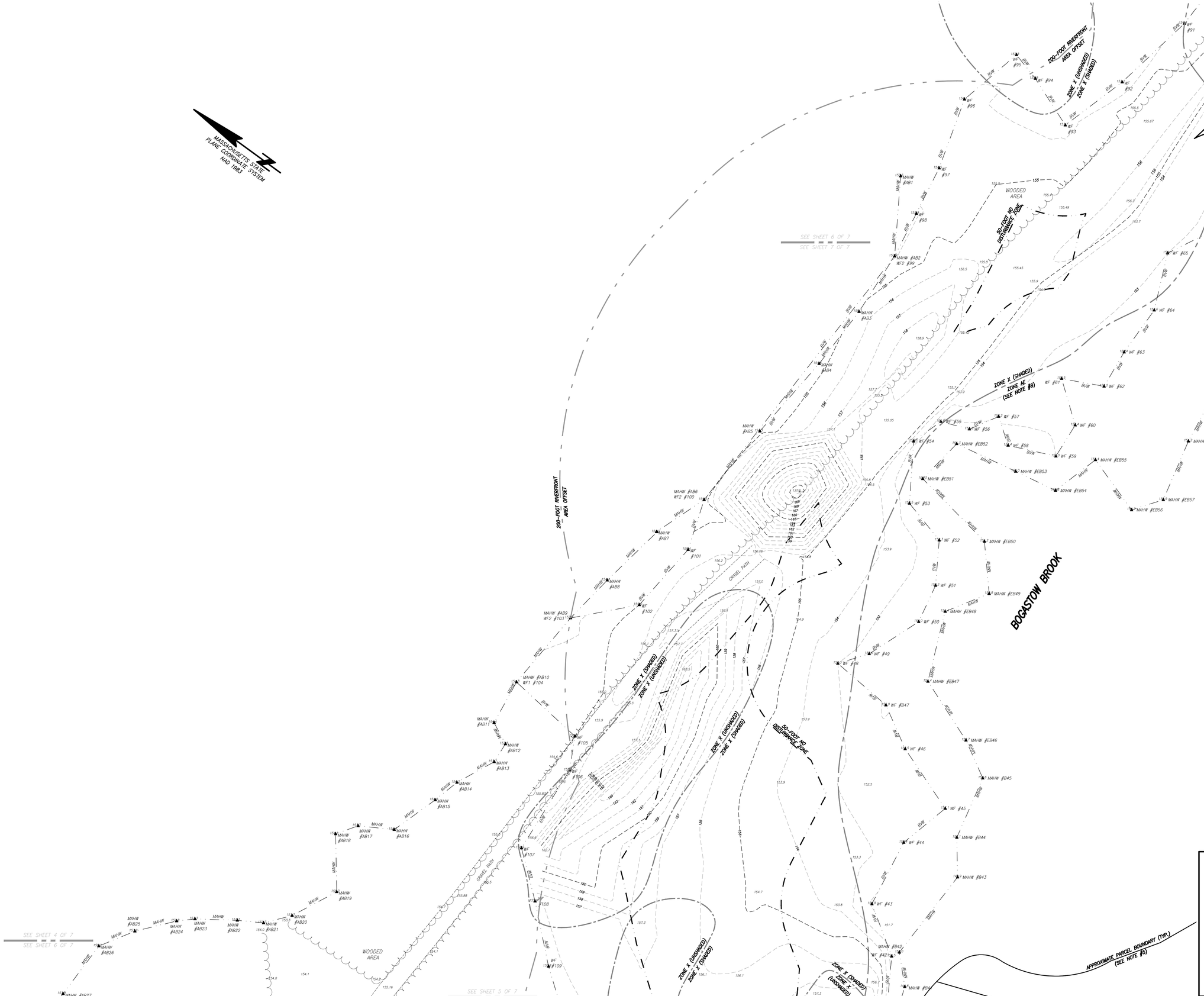

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SCALE: 1"=20'

RESEARCH OR	FIELD CHIEF TGS	PROJ MGR MJG	APPROVED	SHEET NO. 6 OF 7
CALC MJG	CADD MLM	FIELD CHECKED	CRD FILE 17192-PEX	JOB NO. 17192

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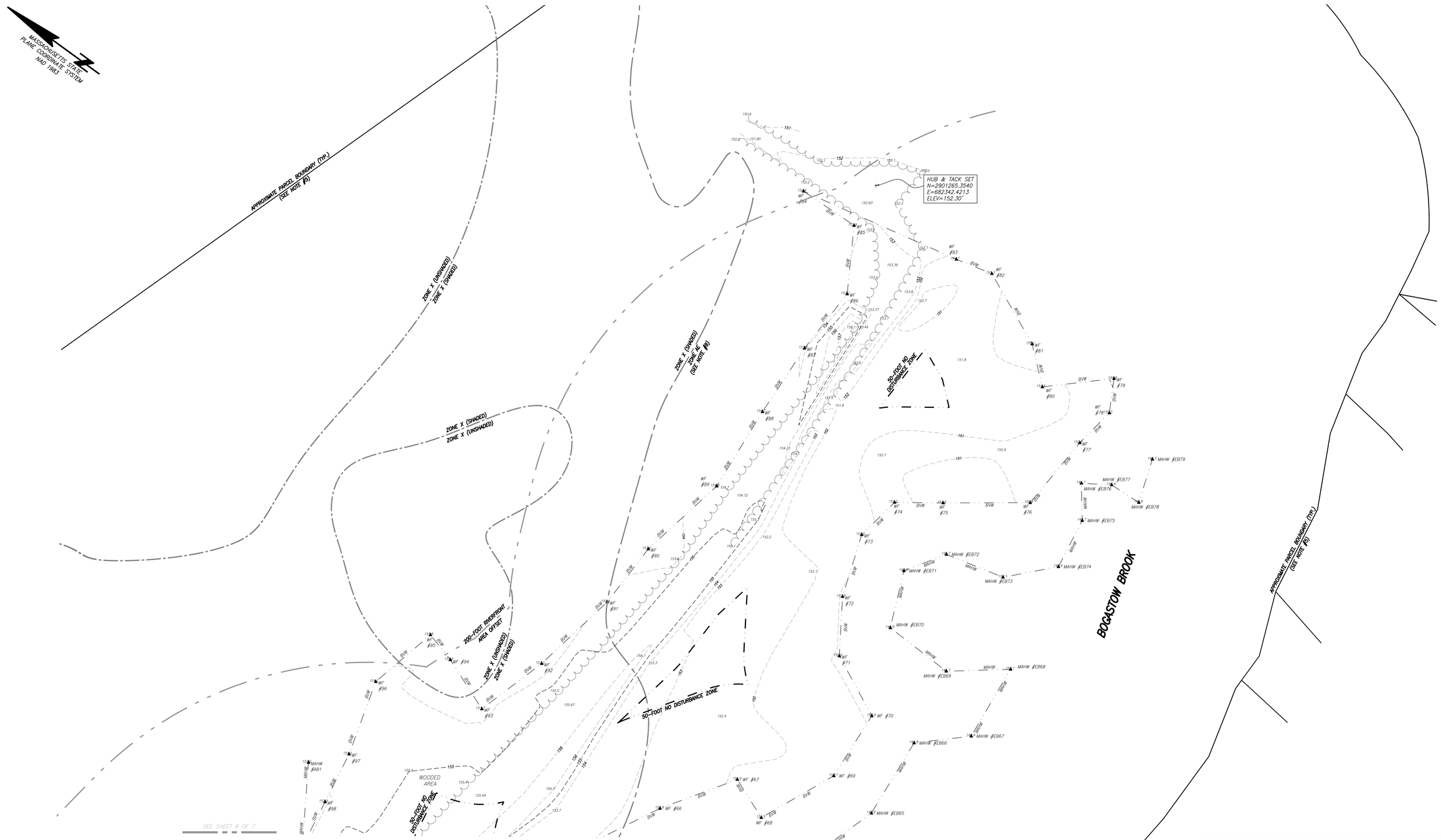

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SCALE: 1"=20'

RESEARCH OR	FIELD CHIEF TGS	PROJ MGR MJG	APPROVED	SHEET NO. 7 OF 7
CALC MJG	CADD MLM	FIELD CHECKED	CRD FILE 17192-PEX	JOB NO. 17192

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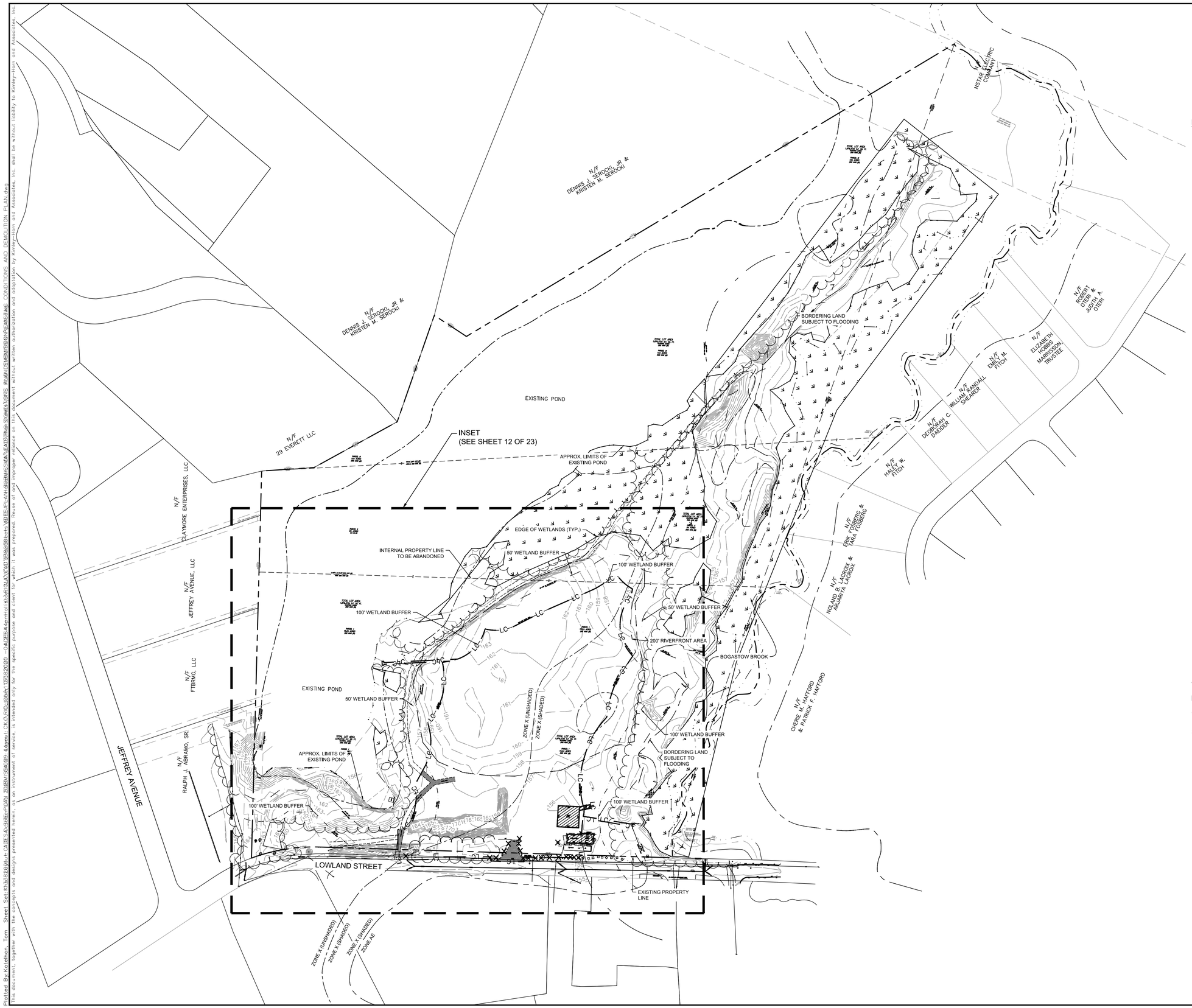

GRAPHIC SCALE IN FEET
0 50 100 200

NORTH

LEGEND

- EXISTING PROPERTY LINE
- LOC — PROPOSED LIMITS OF CONSTRUCTION
- EXISTING CONTOURS
- EXISTING FEATURE TO BE REMOVED
- EXISTING SITE FEATURE TO BE REMOVED
- EXISTING BUILDING TO BE DEMOLISHED
- WETLANDS
- TREE CLEARING AREA
- BORDERING LAND SUBJECT TO FLOODING
- 50' WETLAND BUFFER
- 100' WETLAND BUFFER
- 200' RIVERFRONT AREA
- DRAIN MANHOLE
- MONITORING WELL
- TELEPHONE MANHOLE
- MANHOLE
- HYDRANT
- WATER SHUT OFF/WATER GATE
- GAS SHUT OFF/GAS GATE
- CATCH BASIN
- GUY WIRE
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- MAIL BOX
- TRANSFORMER
- WETLAND FLAG
- GP — GATE POST
- I — INDICATES COMMON OWNERSHIP
- BC — BOTTOM OF CURB
- [X.X'] — BUILDING DIMENSION
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- D — DRAIN
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- OHW — OVERHEAD WIRES
- 12"D(CP) — PIPE SIZE AND MATERIAL
- PVC — POLYVINYL CHLORIDE
- CP — CONCRETE PIPE
- X — X — CHAINLINK FENCE
- GUARD RAIL

DEMOLITION NOTES

1. ALL MATERIAL REMOVED FROM THIS SITE BY THE CONTRACTOR SHALL BE DISPOSED OF BY THE CONTRACTOR IN A LEGAL MANNER.
2. REFER TO THE TOPOGRAPHIC SURVEY FOR ADDITIONAL DETAILS OF EXISTING STRUCTURES, ETC., LOCATED WITHIN THE PROJECT SITE. UNLESS OTHERWISE NOTED, ALL EXISTING BUILDINGS, STRUCTURES, FOUNDATIONS, SLABS, CONCRETE, ASPHALT, DEBRIS PILES, SIGNS, AND ALL APPURTENANCES ARE TO BE REMOVED FROM THE SITE BY THE FOUNDATIONS CONTRACTOR AND PROPERLY DISPOSED OF IN A LEGAL MANNER AS PART OF THIS CONTRACT. SOME ITEMS TO BE REMOVED MAY NOT BE DEPICTED ON THE TOPOGRAPHIC SURVEY. IT IS THE CONTRACTOR'S RESPONSIBILITY TO VISIT THE SITE AND DETERMINE THE FULL EXTENT OF ITEMS TO BE REMOVED. IF ANY ITEMS ARE IN QUESTION, THE CONTRACTOR SHALL CONTACT THE OWNER PRIOR TO REMOVAL OF SAID ITEMS.

No.	REVISIONS	DATE	BY
1	PER CMG 7/24/20 SWM PEER REVIEW	9/25/20	TGK

Kimley»Horn
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1700 WILLOW LAWN DR., SUITE 200, RICHMOND, VA 23230
PHONE: 804-673-3882
WWW.KIMLEY-HORN.COM

LICENSED PROFESSIONAL

COMMONWEALTH OF MASSACHUSETTS
BRIAN J. BREEDE
CIVIL
No. 46948
10-06-20
REGISTERED PROFESSIONAL ENGINEER

DATE:

KHA PROJECT	113382001
DATE	10/06/2020
SCALE	AS SHOWN
DESIGNED BY	TGK
DRAWN BY	TGK
CHECKED BY	BJB

OVERALL EXISTING CONDITIONS AND DEMOLITION PLAN

ADESA HOLLISTON

PREPARED FOR
ADESA, INC.

TOWN OF HOLLISTON MA

SHEET NUMBER
11 OF 23

Plotted By:Katelhon, Tom Sheet Set:R:\B\2020\Hol-CA\05-Civil\Plan\PDD 30\BM\1582303-4dpms1.CT\KHD-LOWA\10\25\2020 -04:23:44 pm:Holt\Kth\Civil\1582303\Sheets\VDTE\PI-AH-01\BM\1582303-4dpms1-PDD-01.dwg
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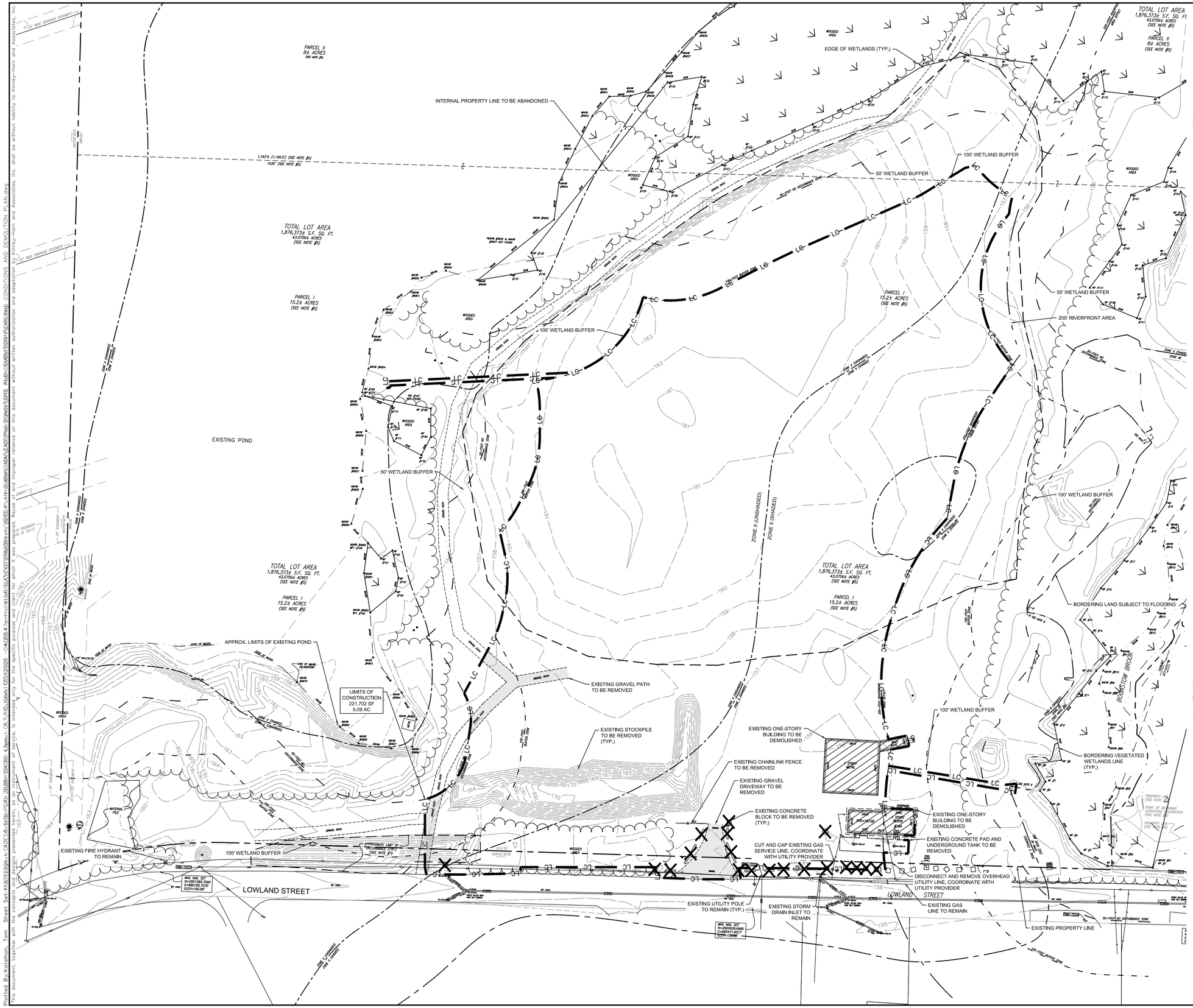

GRAPHIC SCALE IN FEET
0 20 40 80

LEGEND

- EXISTING PROPERTY LINE
- LOC — PROPOSED LIMITS OF CONSTRUCTION
- EXISTING CONTOURS
- X — EXISTING FEATURE TO BE REMOVED
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LICENSED PROFESSIONAL ENGINEER
COMMONWEALTH OF MASSACHUSETTS
BRIAN BREEN
CIVIL
No. 46948
10-06-20
REGISTERED PROFESSIONAL ENGINEER
DATE:

KHA PROJECT 113382001
DATE 10/06/2020
SCALE AS SHOWN
DESIGNED BY TGK
DRAWN BY BB
CHECKED BY BB

EXISTING CONDITIONS AND DEMOLITION PLAN

ADESA HOLLISTON
PREPARED FOR
ADESA, INC.
TOWN OF HOLLISTON MA

SHEET NUMBER
12 OF 23

Plotted By:ktelhon, Tom Sheet Set:\\KHSTORAGE\Projects\CA\TF\E\E-Settlement\PDN\20280\113382001\Civil\Plans\Demolition\Existing Conditions and Demolition Plan.dwg
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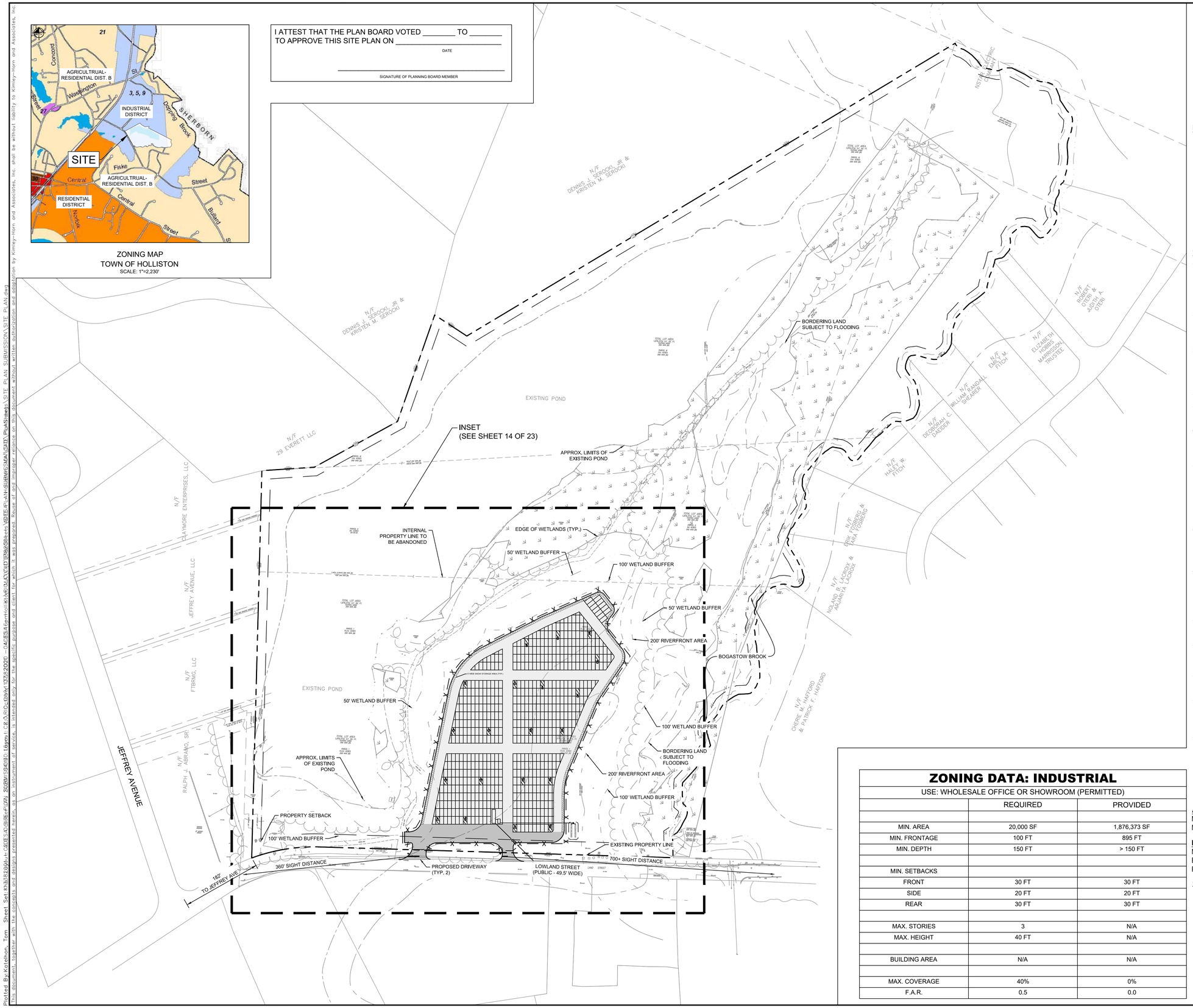
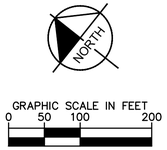
ZONING MAP
TOWN OF HOLLISTON
SCALE: 1"=2,230'

I ATTEST THAT THE PLAN BOARD VOTED _____ TO _____
TO APPROVE THIS SITE PLAN ON _____
DATE

_____
SIGNATURE OF PLANNING BOARD MEMBER





LEGEND

- EXISTING PROPERTY LINE
- PROPOSED CURB
- PROPOSED FENCE LINE
- PROPOSED TREE LINE
- PROPOSED STORMWATER STRUCTURES
- PROPOSED LIGHT FIXTURE
- PROPOSED STANDARD DUTY ASPHALT
- PROPOSED HEADY DUTY ASPHALT

GENERAL CONSTRUCTION NOTES

1. THESE PLANS ARE VALID FOR CONSTRUCTION ONLY WHEN USED IN CONJUNCTION WITH THE MASS HIGHWAY DESIGN GUIDELINES AND STANDARDS AND SPECIFICATIONS, CURRENT EDITION. ALL PRODUCTS AND MATERIALS USED IN THE RIGHT OF WAY MUST ADHERE TO CURRENT STANDARDS AND SPECIFICATIONS OF THE MASSACHUSETTS HIGHWAY DEPARTMENT, AND TOWN OF HOLLISTON DPW, AS SPECIFIED BY THE ABOVE ENTITY HAVING JURISDICTION.
2. THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE FEDERAL, STATE AND LOCAL SAFETY CODES, LEGAL REQUIREMENTS, ETC., IN THE CONSTRUCTION OF ALL IMPROVEMENTS. WORK WITHIN PUBLIC RIGHT OF WAY SHALL COMPLY WITH APPLICABLE MUNICIPAL AND STATE REQUIREMENTS.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVAL OF ALL EQUIPMENTS, MATERIAL, AND GENERAL CONSTRUCTION DEBRIS FROM THE CONSTRUCTION SITE AND ANY ADJACENT STREET, LOT, PUBLIC WAY, OR PROPERTY THEREIN OR ADJACENT THERETO. DUMPING OF SUCH DEBRIS INTO SEWERS, ONTO ADJACENT PROPERTY OR ONTO OTHER LAND IN THE TOWN IS PROHIBITED.
4. WRAP ALL STORM DRAIN JOINTS WITH FILTER FABRIC.
5. ALL UTILITY LINES SUCH AS ELECTRIC, TELEPHONE, CATV, GAS OR OTHER SIMILAR LINES SHALL BE INSTALLED UNDERGROUND UNLESS OTHERWISE NOTED.
6. COORDINATES, IN U.S. SURVEY FEET, ARE IN THE MASSACHUSETTS STATE PLANE COORDINATE SYSTEM (MCS), MAINLAND ZONE, REFERENCED TO THE NORTH AMERICAN DATUM OF 1983 (NAD 83). ELEVATIONS, IN U.S. SURVEY FEET, FOR THE PROJECT NETWORK, ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88).
7. EXISTING UTILITIES AND DRAINAGE STRUCTURES/PIPES, AS SHOWN ON THE PLANS, MAY NOT ACCURATELY REFLECT THE EXACT LOCATION OF ALL SYSTEMS. SPECIAL CARE SHOULD BE TAKEN WHEN EXCAVATING AROUND OR UNDER UTILITY LINES WHERE SHOWN ON PLANS, AND THE CONTRACTOR MUST COMPLY WITH MASSACHUSETTS "DIG SAFE" REQUIREMENTS. WHERE AN EXISTING UTILITY OR DRAINAGE STRUCTURE/PIPE IS FOUND TO CONFLICT WITH THE PROPOSED WORK, THE LOCATION, ELEVATION, AND SIZE OF THE UTILITY SHALL BE ACCURATELY DETERMINED BY THE CONTRACTOR AND THE INFORMATION FURNISHED TO THE ENGINEER PRIOR TO COMMENCING WORK.
8. UNLESS OTHERWISE NOTED, EXISTING UTILITIES CURRENTLY IN SERVICE SHALL CONTINUE TO BE IN SERVICE THROUGHOUT CONSTRUCTION UNLESS APPROVED BY THE ENGINEER. IF THE CONTRACTOR DAMAGES ANY EXISTING UTILITY SERVICES, THE RESPECTIVE UTILITY OWNERS MUST BE NOTIFIED IMMEDIATELY AND ALL DAMAGED UTILITY INFRASTRUCTURE WILL BE REPLACED AT THE CONTRACTOR'S EXPENSE.
9. TRAFFIC ON EXISTING ROADWAYS MUST BE MAINTAINED DURING CONSTRUCTION WHEN ANY WORK IS BEING PERFORMED WITHIN THE EXISTING RIGHT OF WAY. THE MAINTENANCE OF TRAFFIC PLAN FOR THIS WORK MUST BE IN CONFORMANCE WITH THE MASS HIGHWAY STANDARD DETAILS AND DRAWINGS FOR THE DEVELOPMENT OF TRAFFIC MANAGEMENT PLANS. CONTRACTOR IS RESPONSIBLE FOR COORDINATING WITH THE TOWN OF HOLLISTON DPW FOR ANY WORK IN RIGHT OF WAY.
10. THE CONTRACTOR SHALL TAKE ADEQUATE PRECAUTIONS TO PROTECT ALL WALKS AND STREETS, AND SHALL REPAIR AND REPLACE AT HIS/HER OWN EXPENSE, AS DIRECTED BY OWNER'S REPRESENTATIVE.
11. THE CONTRACTOR SHALL CONFIRM, PRIOR TO CONSTRUCTION, THE STATUS OF PROPERTY OWNERSHIP AND RIGHTS FOR ALL PROPERTIES UPON WHICH WORK IS PROPOSED. THE CONTRACTOR SHALL NOT PROCEED WITH ANY CONSTRUCTION UNTIL GIVEN AUTHORIZATION TO PROCEED BY THE OWNER.
12. THE DRAWINGS CONTAINED HEREIN ARE PROVIDED AS A DESIGN DOCUMENT ONLY AND SHOULD NOT BE USED FOR CONSTRUCTION UNLESS SO INSTRUCTED IN WRITING BY KIMLEY-HORN AND ASSOCIATES.
13. IT IS THE CONTRACTOR'S RESPONSIBILITY TO CONTACT THE VARIOUS UTILITY COMPANIES WHICH MAY HAVE BURIED OR AERIAL UTILITIES WITHIN OR NEAR THE CONSTRUCTION AREA BEFORE COMMENCING WORK. THE CONTRACTOR SHALL PROVIDE 3 BUSINESS DAYS MINIMUM NOTICE TO ALL UTILITY COMPANIES PRIOR TO BEGINNING CONSTRUCTION.
14. LIMITS OF CONSTRUCTION SHOWN ON THE PLANS ARE A GRAPHICAL REPRESENTATION ONLY. ACTUAL CONSTRUCTION LIMITS SHALL BE RESTRICTED TO WITHIN THE APPLICABLE PROPERTY BOUNDARIES. AT NO TIME SHALL THE CONTRACTOR VIOLATE DEDICATED MASSACHUSETTS WETLAND BOUNDARIES AS SHOWN ON THE PLANS. WETLANDS BOUNDARIES WITHIN THE PHASE 1A CONSTRUCTION LIMITS WERE DELINEATED BY EPSILON ASSOCIATES, INC. IN DECEMBER, 2019.

ZONING DATA: INDUSTRIAL

USE: WHOLESALE OFFICE OR SHOWROOM (PERMITTED)

	REQUIRED	PROVIDED
MIN. AREA	20,000 SF	1,876,373 SF
MIN. FRONTAGE	100 FT	895 FT
MIN. DEPTH	150 FT	> 150 FT
MIN. SETBACKS		
FRONT	30 FT	30 FT
SIDE	20 FT	20 FT
REAR	30 FT	30 FT
MAX. STORIES	3	N/A
MAX. HEIGHT	40 FT	N/A
BUILDING AREA	N/A	N/A
MAX. COVERAGE	40%	0%
F.A.R.	0.5	0.0

ASSESSOR'S REFERENCE:
MAP 12, BLOCK 4, PARCEL 33.1
MAP 9, BLOCK 2, PARCEL 57.1

DEED REFERENCE:
MIDDLESEX SOUTH DISTRICT REGISTRY OF DEEDS
BOOK 11451, 11294, 10554
PAGE 206, 344, 74

CONSTRUCTION SEQUENCE

1. INSTALL SILT FENCE
2. CLEAR AND GRUB
3. REMOVE EXISTING STRUCTURES
3. INSTALL REMAINING EROSION CONTROLS
4. STRIP TOPSOIL AND STOCKPILE
5. PREPARE SITE TO SUBGRADE
6. INSTALL DRAINAGE SYSTEM
7. GRADE SITE
8. INSTALL BINDER PAVEMENT
9. INSTALL CURBS
10. INSTALL TOP COURSE
11. LOAM AND SEED
12. CLEAN UP

No.	REVISIONS	DATE	BY
1	PER CMG 7/24/20 SWM PEER REVIEW	9/25/20	TGK

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1700 WILLOW LAWN DR., SUITE 200, RICHMOND, VA 23230
PHONE: 804-673-3882
WWW.KIMLEY-HORN.COM

LICENSED PROFESSIONAL
COMMONWEALTH OF MASSACHUSETTS
BRIAN BREDE
CIVIL
No. 46948
10-06-20
REGISTERED PROFESSIONAL ENGINEER
DATE:

KHA PROJECT 113382001
DATE 10/06/2020
SCALE AS SHOWN
DESIGNED BY TGK
DRAWN BY BB
CHECKED BY BB

OVERALL SITE PLAN

ADESA HOLLISTON
PREPARED FOR
ADESA, INC.
TOWN OF HOLLISTON MA

SHEET NUMBER
13 OF 23

Plotted By:Ketelhon, Tom Sheet Set:KHA\PROJ\Hollis-ADESA\CAD\Plots\Plots\SITE PLAN SUBMISSION\SITE PLAN.dwg
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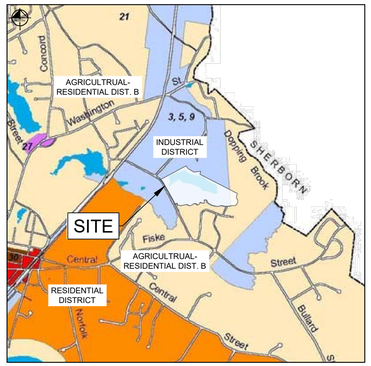
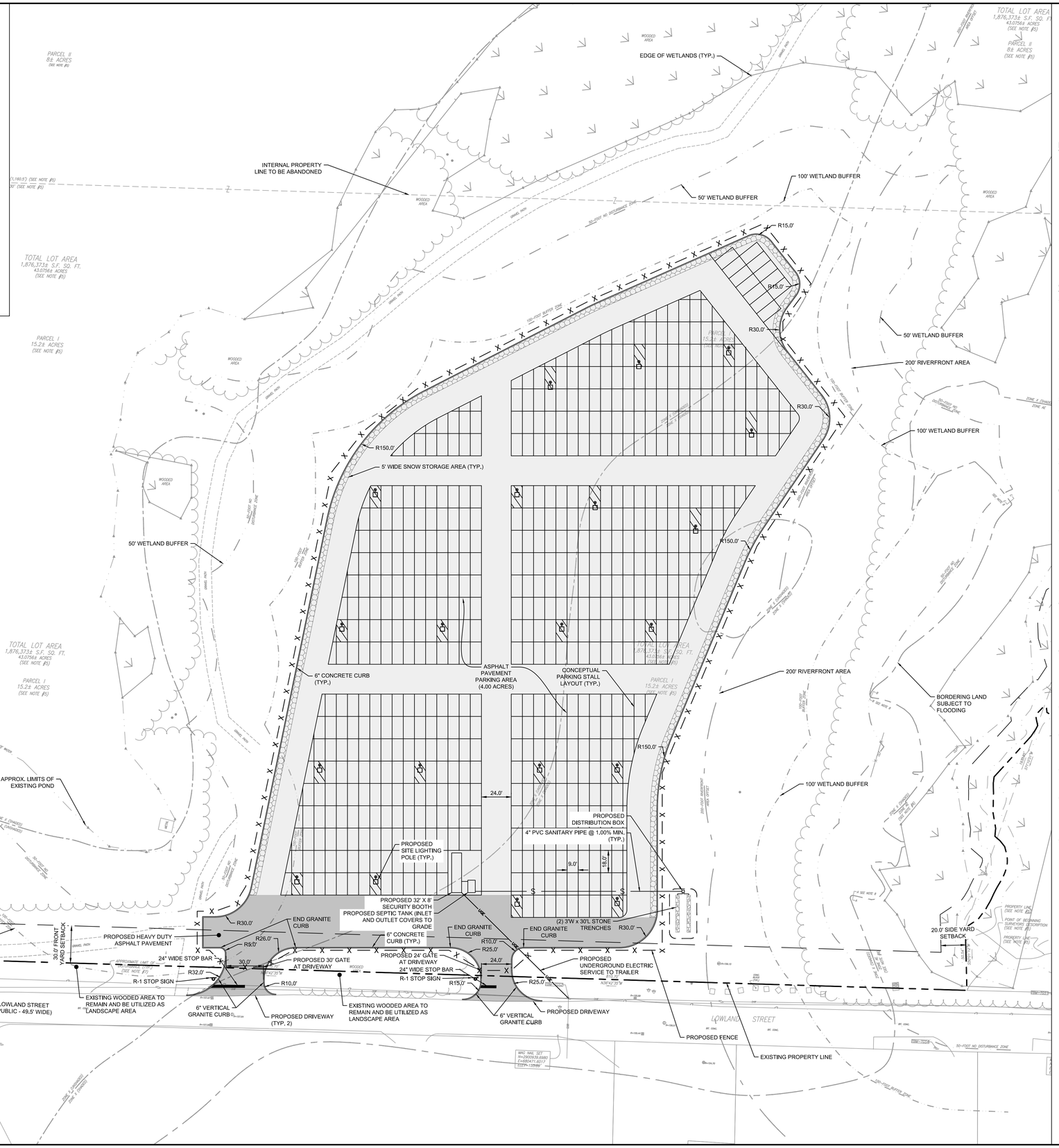


ZONING MAP
TOWN OF HOLLISTON
SCALE: 1"=2,230'



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GRAPHIC SCALE IN FEET
0 20 40 80

LEGEND

- EXISTING PROPERTY LINE
- PROPOSED CURB
- PROPOSED FENCE LINE
- PROPOSED TREE LINE
- PROPOSED STORMWATER STRUCTURES
- PROPOSED LIGHT FIXTURE
- PROPOSED STANDARD DUTY ASPHALT
- PROPOSED HEADY DUTY ASPHALT

GENERAL CONSTRUCTION NOTES

1. THESE PLANS ARE VALID FOR CONSTRUCTION ONLY WHEN USED IN CONJUNCTION WITH THE MASS HIGHWAY DESIGN GUIDELINES AND STANDARDS AND SPECIFICATIONS, CURRENT EDITION. ALL PRODUCTS AND MATERIALS USED IN THE RIGHT OF WAY MUST ADHERE TO CURRENT STANDARDS AND SPECIFICATIONS OF THE MASSACHUSETTS HIGHWAY DEPARTMENT, AND TOWN OF HOLLISTON DPW, AS SPECIFIED BY THE ABOVE ENTITY HAVING JURISDICTION.
2. THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE FEDERAL, STATE AND LOCAL SAFETY CODES, LEGAL REQUIREMENTS, ETC., IN THE CONSTRUCTION OF ALL IMPROVEMENTS. WORK WITHIN PUBLIC RIGHT OF WAY SHALL COMPLY WITH APPLICABLE MUNICIPAL AND STATE REQUIREMENTS.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVAL OF ALL EQUIPMENTS, MATERIAL, AND GENERAL CONSTRUCTION DEBRIS FROM THE CONSTRUCTION SITE AND ANY ADJACENT STREET, LOT, PUBLIC WAY, OR PROPERTY THEREIN OR ADJACENT THERETO. DUMPING OF SUCH DEBRIS INTO SEWERS, ONTO ADJACENT PROPERTY OR ONTO OTHER LAND IN THE TOWN IS PROHIBITED.
4. WRAP ALL STORM DRAIN JOINTS WITH FILTER FABRIC.
5. ALL UTILITY LINES SUCH AS ELECTRIC, TELEPHONE, CATV, GAS OR OTHER SIMILAR LINES SHALL BE INSTALLED UNDERGROUND UNLESS OTHERWISE NOTED.
6. COORDINATES, IN U.S. SURVEY FEET, ARE IN THE MASSACHUSETTS STATE PLANE COORDINATE SYSTEM (MCS), MAINLAND ZONE, REFERENCED TO THE NORTH AMERICAN DATUM OF 1983 (NAD 83). ELEVATIONS, IN U.S. SURVEY FEET, FOR THE PROJECT NETWORK, ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88).
7. EXISTING UTILITIES AND DRAINAGE STRUCTURES/PIPES, AS SHOWN ON THE PLANS, MAY NOT ACCURATELY REFLECT THE EXACT LOCATION OF ALL SYSTEMS. SPECIAL CARE SHOULD BE TAKEN WHEN EXCAVATING AROUND OR UNDER UTILITY LINES WHERE SHOWN ON PLANS, AND THE CONTRACTOR MUST COMPLY WITH MASSACHUSETTS "DIG SAFE" REQUIREMENTS. WHERE AN EXISTING UTILITY OR DRAINAGE STRUCTURE/PIPE IS FOUND TO CONFLICT WITH THE PROPOSED WORK, THE LOCATION, ELEVATION, AND SIZE OF THE UTILITY SHALL BE ACCURATELY DETERMINED BY THE CONTRACTOR AND THE INFORMATION FURNISHED TO THE ENGINEER PRIOR TO COMMENCING WORK.
8. UNLESS OTHERWISE NOTED, EXISTING UTILITIES CURRENTLY IN SERVICE SHALL CONTINUE TO BE IN SERVICE THROUGHOUT CONSTRUCTION UNLESS APPROVED BY THE ENGINEER. IF THE CONTRACTOR DAMAGES ANY EXISTING UTILITY SERVICES, THE RESPECTIVE UTILITY OWNERS MUST BE NOTIFIED IMMEDIATELY AND ALL DAMAGED UTILITY INFRASTRUCTURE WILL BE REPLACED AT THE CONTRACTOR'S EXPENSE.
9. TRAFFIC ON EXISTING ROADWAYS MUST BE MAINTAINED DURING CONSTRUCTION WHEN ANY WORK IS BEING PERFORMED WITHIN THE EXISTING RIGHT OF WAY. THE MAINTENANCE OF TRAFFIC PLAN FOR THIS WORK MUST BE IN CONFORMANCE WITH THE MASS HIGHWAY STANDARD DETAILS AND DRAWINGS FOR THE DEVELOPMENT OF TRAFFIC MANAGEMENT PLANS. CONTRACTOR IS RESPONSIBLE FOR COORDINATING WITH THE TOWN OF HOLLISTON DPW FOR ANY WORK IN RIGHT OF WAY.
10. THE CONTRACTOR SHALL TAKE ADEQUATE PRECAUTIONS TO PROTECT ALL WALKS AND STREETS, AND SHALL REPAIR AND REPLACE AT HIS/HER OWN EXPENSE, AS DIRECTED BY OWNER'S REPRESENTATIVE.
11. THE CONTRACTOR SHALL CONFIRM, PRIOR TO CONSTRUCTION, THE STATUS OF PROPERTY OWNERSHIP AND RIGHTS FOR ALL PROPERTIES UPON WHICH WORK IS PROPOSED. THE CONTRACTOR SHALL NOT PROCEED WITH ANY CONSTRUCTION UNTIL GIVEN AUTHORIZATION TO PROCEED BY THE OWNER.
12. THE DRAWINGS CONTAINED HEREIN ARE PROVIDED AS A DESIGN DOCUMENT ONLY AND SHOULD NOT BE USED FOR CONSTRUCTION UNLESS SO INSTRUCTED IN WRITING BY KIMLEY-HORN AND ASSOCIATES.
13. IT IS THE CONTRACTOR'S RESPONSIBILITY TO CONTACT THE VARIOUS UTILITY COMPANIES WHICH MAY HAVE BURIED OR AERIAL UTILITIES WITHIN OR NEAR THE CONSTRUCTION AREA BEFORE COMMENCING WORK. THE CONTRACTOR SHALL PROVIDE 3 BUSINESS DAYS MINIMUM NOTICE TO ALL UTILITY COMPANIES PRIOR TO BEGINNING CONSTRUCTION.
14. LIMITS OF CONSTRUCTION SHOWN ON THE PLANS ARE A GRAPHICAL REPRESENTATION ONLY. ACTUAL CONSTRUCTION LIMITS SHALL BE RESTRICTED TO WITHIN THE APPLICABLE PROPERTY BOUNDARIES. AT NO TIME SHALL THE CONTRACTOR VIOLATE DEDICATED MASSACHUSETTS WETLAND BOUNDARIES AS SHOWN ON THE PLANS. WETLANDS BOUNDARIES WITHIN THE PHASE 1A CONSTRUCTION LIMITS WERE DELINEATED BY EPSILON ASSOCIATES, INC. IN DECEMBER, 2019.

No.	REVISIONS	DATE	BY
1	PER CMG 7/24/20 SWM PEER REVIEW	9/25/20	TGK

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SITE PLAN

ADESA HOLLISTON
PREPARED FOR
ADESA, INC.

TOWN OF HOLLISTON MA

SHEET NUMBER
14 OF 23

STRUCTURE TABLE			
STRUCTURE NAME:	DETAILS:	PIPES IN:	PIPES OUT
A0	4' MANHOLE RIM: 160.76 INV IN: 155.88	FROM A1, 15" REINFORCED CONCRETE INV IN: 155.88 @ 0.50%	
A1	CURB INLET RIM: 159.00 INV OUT: 156.20		TO A0, 15" REINFORCED CONCRETE INV OUT: 156.20 @ 0.50%
B0	4' MANHOLE RIM: 160.76 INV IN: 155.88	FROM B1, 15" REINFORCED CONCRETE INV IN: 155.88 @ 0.50%	
B1	CURB INLET RIM: 159.00 INV OUT: 156.20		TO B0, 15" REINFORCED CONCRETE INV OUT: 156.20 @ 0.50%
C0	4' MANHOLE RIM: 160.88 INV IN: 155.88	FROM C1, 15" REINFORCED CONCRETE INV IN: 155.88 @ 0.50%	
C1	CB RIM: 159.04 INV OUT: 156.20		TO C0, 15" REINFORCED CONCRETE INV OUT: 156.20 @ 0.50%
D0	6' MANHOLE RIM: 161.65 INV IN: 155.88	FROM D1, 18" REINFORCED CONCRETE INV IN: 155.88 @ 1.16%	
D1	GRATE INLET RIM: 160.20 INV IN: 157.13 INV OUT: 157.13	FROM D2, 15" REINFORCED CONCRETE INV IN: 157.13 @ 0.53%	TO D0, 18" REINFORCED CONCRETE INV OUT: 157.13 @ 1.16%
D2	GRATE INLET RIM: 160.11 INV OUT: 157.77		TO D1, 15" REINFORCED CONCRETE INV OUT: 157.77 @ 0.53%
E0	4' MANHOLE RIM: 161.00 INV IN: 156.13	FROM E1, 18" REINFORCED CONCRETE INV IN: 156.13 @ 0.50%	
E1	GRATE INLET RIM: 160.21 INV IN: 156.52 INV OUT: 156.52	FROM E2, 15" REINFORCED CONCRETE INV IN: 156.52 @ 0.50%	TO E0, 18" REINFORCED CONCRETE INV OUT: 156.52 @ 0.50%
E2	GRATE INLET RIM: 160.25 INV OUT: 157.13		TO E1, 15" REINFORCED CONCRETE INV OUT: 157.13 @ 0.50%
F0	4' MANHOLE RIM: 160.56 INV IN: 156.13	FROM F1, 18" REINFORCED CONCRETE INV IN: 156.13 @ 0.50%	

STRUCTURE TABLE			
STRUCTURE NAME:	DETAILS:	PIPES IN:	PIPES OUT
F1	CURB INLET RIM: 159.55 INV OUT: 156.62		TO F0, 18" REINFORCED CONCRETE INV OUT: 156.62 @ 0.50%
G0	FES RIM: 156.94 INV IN: 155.00	FROM G1, 15" REINFORCED CONCRETE INV IN: 155.00 @ 0.50%	
G1	OUTLET CONTROL STRUCTURE RIM: 160.92 INV OUT: 155.86		TO G0, 15" REINFORCED CONCRETE INV OUT: 155.86 @ 0.50%
H0	FES RIM: 156.21 INV IN: 154.00	FROM H1, 18" REINFORCED CONCRETE INV IN: 154.00 @ 0.65%	
H1	OUTLET CONTROL STRUCTURE RIM: 161.48 INV OUT: 156.00		TO H0, 18" REINFORCED CONCRETE INV OUT: 156.00 @ 0.65%
J0	CONNECT TO EXIST STORM RIM: 157.95 INV IN: 154.30	FROM J1, 12" REINFORCED CONCRETE INV IN: 154.30 @ 0.50%	
J1	4' MANHOLE RIM: 158.37 INV IN: 154.32 INV OUT: 154.32	FROM J2, 12" REINFORCED CONCRETE INV IN: 154.32 @ 0.50%	TO J0, 12" REINFORCED CONCRETE INV OUT: 154.32 @ 0.50%
J2	GRATE INLET RIM: 157.91 INV OUT: 154.54		TO J1, 12" REINFORCED CONCRETE INV OUT: 154.54 @ 0.50%
K0	CONNECT TO EXIST STORM RIM: 156.00 INV IN: 151.90	FROM K1, 12" REINFORCED CONCRETE INV IN: 151.90 @ 0.50%	
K1	4' MANHOLE RIM: 156.00 INV IN: 151.94 INV OUT: 151.94	FROM K2, 12" REINFORCED CONCRETE INV IN: 151.94 @ 0.50%	TO K0, 12" REINFORCED CONCRETE INV OUT: 151.94 @ 0.50%

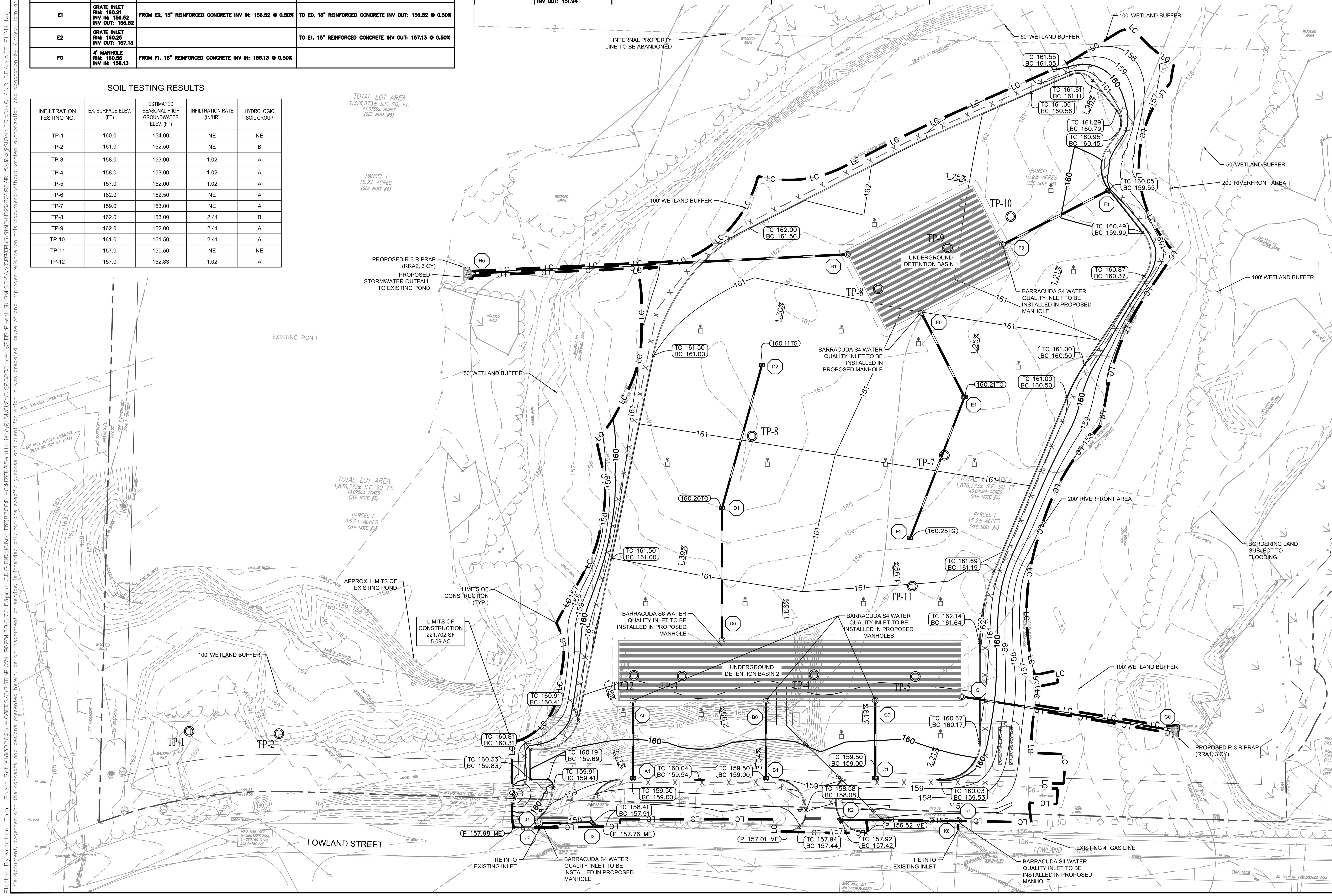
Pipe Table				
Pipe Name	Size	Length	Slope	MATERIAL
C1-C0	15"	64'	0.50%	REINFORCED CONCRETE
J2-J1	12"	44'	0.50%	REINFORCED CONCRETE
K2-K1	12"	95'	0.50%	REINFORCED CONCRETE
K1-K0	12"	7'	0.50%	REINFORCED CONCRETE
A1-A0	15"	64'	0.50%	REINFORCED CONCRETE
B1-B0	15"	64'	0.50%	REINFORCED CONCRETE
D2-D1	15"	121'	0.53%	REINFORCED CONCRETE
D1-D0	18"	108'	1.16%	REINFORCED CONCRETE
E2-E1	15"	123'	0.50%	REINFORCED CONCRETE
E1-E0	18"	77'	0.50%	REINFORCED CONCRETE
F1-F0	18"	97'	0.50%	REINFORCED CONCRETE
G1-G0	15"	172'	0.50%	REINFORCED CONCRETE
H1-H0	18"	306'	0.65%	REINFORCED CONCRETE
J1-J0	12"	5'	0.50%	REINFORCED CONCRETE

SPOT ELEVATION LEGEND

ME P	MATCH EXISTING PAVEMENT	TC BC	TOP OF CURB BOTTOM OF CURB

SOIL TESTING RESULTS

INFILTRATION TESTING NO.	EX. SURFACE ELEV. (FT)	ESTIMATED SEASONAL HIIGH GROUNDWATER ELEV. (FT)	INFILTRATION RATE (IN/HR)	HYDROLOGIC SOIL GROUP
TP-1	160.0	154.00	NE	NE
TP-2	161.0	152.50	NE	B
TP-3	158.0	153.00	1.02	A
TP-4	158.0	153.00	1.02	A
TP-5	157.0	152.00	1.02	A
TP-6	162.0	152.50	NE	A
TP-7	159.0	153.00	NE	A
TP-8	162.0	153.00	2.41	B
TP-9	162.0	152.00	2.41	A
TP-10	161.0	151.50	2.41	A
TP-11	157.0	150.50	NE	NE
TP-12	157.0	152.83	1.02	A



GRAPHIC SCALE IN FEET

0 20 40 80

LEGEND

	EXISTING PROPERTY LINE
	PROPOSED CURB
XXX	EXISTING CONTOUR
XXX	PROPOSED CONTOUR
	PROPOSED STORMWATER CONVEYANCE PIPE
	PROPOSED INLET
D	PROPOSED MANHOLE
	PROPOSED ENDWALL
XXX.XX __	PAVEMENT SPOT ELEVATION LABEL
TP-8	SOIL EVALUATION TEST PIT

PAVING, GRADING AND DRAINAGE NOTES

1. ALL PAVING, CONSTRUCTION, MATERIALS, AND WORKMANSHIP WITHIN STATE AND TOWN RIGHT-OF-WAY SHALL BE IN ACCORDANCE WITH LOCAL OR STATE SPECIFICATIONS AND STANDARDS (LATEST EDITION) OR MASS HIGHWAY SPECIFICATIONS AND STANDARDS (LATEST EDITION) IF NOT COVERED BY STATE OR TOWN REGULATIONS.
2. ALL UNPAVED AREAS IN EXISTING RIGHTS-OF-WAY DISTURBED BY CONSTRUCTION SHALL BE REGRADED AND SEEDED.
3. TRAFFIC CONTROL ON ALL RIGHTS-OF-WAY SHALL MEET THE REQUIREMENTS OF THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (U.S. DOT/FHA) AND THE REQUIREMENTS OF THE STATE AND ANY LOCAL AGENCY HAVING JURISDICTION. IN THE EVENT THAT THE CONTRACT DOCUMENTS AND THE JURISDICTIONAL AGENCY REQUIREMENTS ARE NOT IN AGREEMENT, THE MOST STRINGENT SHALL GOVERN.
4. THE CONTRACTOR SHALL GRADE THE SITE TO THE ELEVATIONS INDICATED AND SHALL REGRADE WASHOUTS WHERE THEY OCCUR AFTER EVERY RAINFALL UNTIL A GRASS STAND IS WELL ESTABLISHED OR ADEQUATE STABILIZATION OCCURS.
5. ALL OPEN AREAS WITHIN THE PROJECT SITE SHALL BE SEEDED UNLESS INDICATED OTHERWISE ON THE LANDSCAPE PLAN.
6. ALL AREAS INDICATED AS PAVEMENT SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE TYPICAL PAVEMENT SECTIONS AS INDICATED ON THE DRAWINGS.
7. WHERE EXISTING PAVEMENT IS INDICATED TO BE REMOVED AND REPLACED, THE CONTRACTOR SHALL SAW CUT A MINIMUM 2" DEEP FOR A SMOOTH AND STRAIGHT JOINT AND REPLACE THE PAVEMENT WITH THE SAME TYPE AND DEPTH OF MATERIAL AS EXISTING OR AS INDICATED.
8. WHERE NEW PAVEMENT MEETS THE EXISTING PAVEMENT, THE CONTRACTOR SHALL SAW CUT THE EXISTING PAVEMENT A MINIMUM 2" DEEP FOR A SMOOTH AND STRAIGHT JOINT AND MATCH THE EXISTING PAVEMENT ELEVATION WITH THE PROPOSED PAVEMENT UNLESS OTHERWISE INDICATED.
9. THE CONTRACTOR SHALL INSTALL FILTER FABRIC OVER ALL DRAINAGE STRUCTURES FOR THE DURATION OF CONSTRUCTION AND UNTIL ACCEPTANCE OF THE PROJECT BY THE OWNER. ALL DRAINAGE STRUCTURES SHALL BE CLEANED OF DEBRIS AS REQUIRED DURING AND AT THE END OF CONSTRUCTION TO PROVIDE POSITIVE DRAINAGE FLOWS.
10. IF DEWATERING IS REQUIRED, THE CONTRACTOR SHALL OBTAIN ANY APPLICABLE REQUIRED PERMITS. THE CONTRACTOR IS TO COORDINATE WITH THE OWNER AND THE DESIGN ENGINEER PRIOR TO ANY EXCAVATION.
11. STRIP TOPSOIL AND ORGANIC MATTER FROM ALL AREAS OF THE SITE AS REQUIRED. IN SOME CASES TOPSOIL MAY BE STOCKPILED ON SITE FOR PLACEMENT WITHIN LANDSCAPED AREAS BUT ONLY AS DIRECTED BY THE OWNER.
12. FIELD DENSITY TESTS SHALL BE TAKEN AT INTERVALS IN ACCORDANCE WITH THE LOCAL JURISDICTIONAL AGENCY OR TO MASS HIGHWAY STANDARDS. IN THE EVENT THAT THE CONTRACT DOCUMENTS AND THE JURISDICTIONAL AGENCY REQUIREMENTS ARE NOT IN AGREEMENT, THE MOST STRINGENT SHALL GOVERN.
13. ALL SLOPES AND AREAS DISTURBED BY CONSTRUCTION SHALL BE GRADED AS PER PLANS. THE AREAS SHALL THEN BE SODDED OR SEEDED AS SPECIFIED IN THE PLANS, FERTILIZED, MULCHED, WATERED AND MAINTAINED UNTIL HARDY GRASS GROWTH IS ESTABLISHED IN ALL AREAS. ANY AREAS DISTURBED FOR ANY REASON PRIOR TO FINAL ACCEPTANCE OF THE JOB SHALL BE CORRECTED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER. ALL EARTHEN AREAS WILL BE SODDED OR SEEDED AND MULCHED AS SHOWN ON THE LANDSCAPING PLAN.
14. ALL CUT OR FILL SLOPES SHALL BE 3 (HORIZONTAL) :1 (VERTICAL) OR FLATTER UNLESS OTHERWISE SHOWN.
15. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE CONTROL OF DUST AND DIRT RISING AND SCATTERING IN THE AIR DURING CONSTRUCTION AND SHALL PROVIDE WATER SPRINKLING OR OTHER SUITABLE METHODS OF CONTROL. THE CONTRACTOR SHALL COMPLY WITH ALL GOVERNING REGULATIONS PERTAINING TO ENVIRONMENTAL PROTECTION.
16. THE CONTRACTOR SHALL ENSURE THAT ISLAND PLANTING AREAS AND OTHER PLANTING AREAS ARE NOT COMPACTED AND DO NOT CONTAIN ROAD BASE MATERIALS. THE CONTRACTOR SHALL ALSO EXCAVATE AND REMOVE ALL UNDESIRABLE MATERIAL FROM ALL AREAS ON THE SITE TO BE PLANTED AND PROPERLY DISPOSED OF IN A LEGAL MANNER.
17. REFER TO SHEETS 19 OF 23 AND 20 OF 23 FOR STORMWATER MANAGEMENT DETAILS

No.	REVISIONS	DATE	BY
1	PER CMG 7/24/20 SWM PEER REVIEW	9/25/20	TGK

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LICENSED PROFESSIONAL
COMMONWEALTH OF MASSACHUSETTS BRIAN J. BREWER CIVIL No. 46948 REGISTERED PROFESSIONAL ENGINEER 10-06-20
DATE:

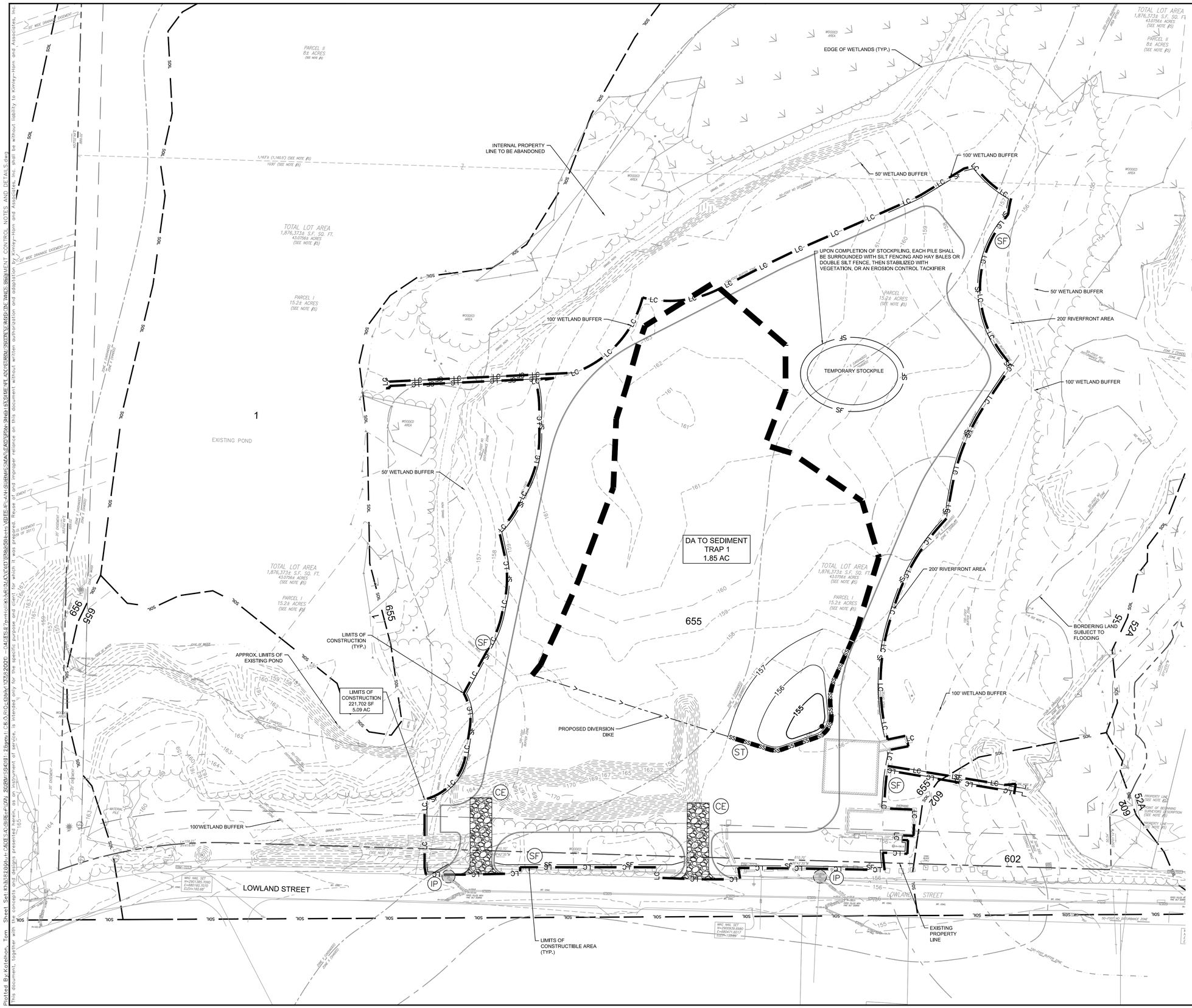
KHA PROJECT 113382001
DATE 10/06/2020
SCALE AS SHOWN
DESIGNED BY TGK
DRAWN BY BB
CHECKED BY BB

GRADING AND DRAINAGE PLAN

ADESA HOLLISTON

PREPARED FOR
ADESA, INC.

TOWN OF HOLLISTON MA



GRAPHIC SCALE IN FEET
0 ## ## ##

NORTH

LEGEND

— — —	EXISTING PROPERTY LINE
LC	LIMITS OF CONSTRUCTION
IP	INLET PROTECTION
CE	CONSTRUCTION ENTRANCE
SF	SILT FENCE
ST	SEDIMENT TRAP
SOIL 52A/655	SOIL BOUNDARY

EROSION & SEDIMENT CONTROL NOTES

1. SEE SHET 17 OF 23 FOR PROPOSED CONSTRUCTION SEQUENCE AND EROSION CONTROL NOTES AND DETAILS

No.	REVISIONS	DATE	BY
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LICENSED PROFESSIONAL ENGINEER
COMMONWEALTH OF MASSACHUSETTS
BRIAN BREDER
CIVIL
No. 46948
10-06-20
REGISTERED PROFESSIONAL ENGINEER

KHA PROJECT	113382001
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DATE:

EROSION AND SEDIMENT CONTROL PLAN

ADESA HOLLISTON

PREPARED FOR
ADESA, INC.

TOWN OF HOLLISTON MA

SHEET NUMBER
16 OF 23

Plotted By:Katelhon, Tom Sheet Set:K:\BOS\053\011-CADD\CIVIL\DWG\PDN\ 20200\113382001 Eliptus: C:\K:\IC-DDA\ 10/05/2020 - 04:15:32 Template:K:\BOS\053\011-CADD\CIVIL\DWG\Sheets\ VDTE-FI-AH-SUBMITTAL-EROSION AND SEDIMENT CONTROL NOTES AND DETAILS.dwg
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GENERAL STANDARD EROSION AND SEDIMENT CONTROL NOTES

1. THE CONTRACTOR SHALL APPLY PERMANENT OR TEMPORARY SOIL STABILIZATION TO ALL DENUDED OR DISTURBED AREAS WITHIN 7 DAYS AFTER FINAL GRADE IS REACHED ON ANY PORTION OF THE SITE. SOIL STABILIZATION MUST ALSO BE APPLIED TO DENUDED OR DISTURBED AREAS WHICH MAY NOT BE AT FINAL GRADE BUT WHICH WILL REMAIN UNDISTURBED FOR LONGER THAN 30 DAYS. SOIL STABILIZATION MEASURES INCLUDE VEGETATIVE ESTABLISHMENT, MULCHING, AND THE EARLY APPLICATION OF GRAVEL BASE MATERIAL ON AREAS TO BE PAVED.

2. ALL EROSION AND SEDIMENT CONTROL MEASURES ARE TO BE PLACED PRIOR TO OR AS THE FIRST STEP IN LAND DISTURBANCE. THE EROSION CONTROLS WITHIN 100 FEET OF ANY WETLAND RESOURCE SHALL BE INSPECTED AND APPROVED IN WRITING BY THE HOLLISTON CONSERVATION AGENT BEFORE ANY OTHER SITE WORK IS INITIATED.

3. THE CONTRACTOR SHALL INSPECT ALL EROSION CONTROL MEASURES PERIODICALLY AND AFTER EACH RUNOFF PRODUCING RAINFALL EVENT. ANY NECESSARY REPAIRS TO MAINTAIN THE EFFECTIVENESS OF THE EROSION CONTROL DEVICES AND CLEANUP OF SEDIMENTATION ARE THE RESPONSIBILITY OF THE CONTRACTOR AND SHALL BE MADE IMMEDIATELY.

5. THE CONTRACTOR SHALL LIMIT SITE ACCESS BY CONSTRUCTION VEHICLES TO ENTRANCES PROTECTED BY AN EXISTING PAVEMENT OR STONE STABILIZED CONSTRUCTION ENTRANCE OR AN APPROVED COMPARABLE CONTROL MEASURE. SEDIMENT SHALL BE REMOVED FROM PAVED AREAS ON A DAILY BASIS.

6. STOCKPILES OF SOIL AND OTHER ERODIBLE MATERIALS SHALL BE STABILIZED OR PROTECTED WITH SEDIMENT TRAPPING MEASURES. THE CONTRACTOR IS RESPONSIBLE FOR THE TEMPORARY PROTECTION AND PERMANENT STABILIZATION FOR STOCKPILES ON SITE AS WELL AS FOR MATERIALS TRANSPORTED FROM THE PROJECT SITE. STOCKPILES SHALL BE LOCATED AWAY FROM WETLAND RESOURCE BUFFER AREAS.

7. THE CONTRACTOR SHALL MONITOR AND TAKE PRECAUTIONS TO CONTROL DUST, INCLUDING (BUT NOT LIMITED TO) USE OF WATER, MULCH, OR CHEMICAL DUST ADHESIVES AND CONTROL OF CONSTRUCTION SITE TRAFFIC.

8. EFFLUENT FROM DEWATERING OPERATIONS SHALL BE FILTERED OR PASSED THROUGH AN APPROVED SEDIMENT TRAPPING DEVICE, OR BOTH, AND DISCHARGED IN A MANNER THAT DOES NOT ADVERSELY AFFECT ADJACENT PROPERTIES, WETLANDS, WATERWAYS OR THE STORM DRAINAGE SYSTEM.

9. THE CONTRACTOR IS RESPONSIBLE FOR INSTALLATION AND MAINTENANCE OF ANY ADDITIONAL CONTROL MEASURES NECESSARY TO PREVENT EROSION AND SEDIMENTATION AS DETERMINED NECESSARY BY THE PLAN APPROVING AUTHORITY.

10. TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES ARE NOT TO BE REMOVED UNTIL ALL DISTURBED AREAS ARE STABILIZED. AFTER STABILIZATION IS COMPLETE, ALL MEASURES SHALL BE REMOVED WITHIN 30 DAYS. TRAPPED SEDIMENT SHALL BE SPREAD AND SEEDED.

11. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO MAINTAIN ALL PROPOSED EROSION AND SEDIMENT CONTROL PRACTICES DURING CONSTRUCTION SUCH THAT THE CONDITION OF SAID CONTROL CONTINUES THE INTENDED FORM AND FUNCTION AS OUTLINED IN THESE PLANS.

THE FOLLOWING CONSTRUCTION SEQUENCE IS PROPOSED:

INITIAL EROSION & SEDIMENT CONTROL

1. INSTALL ALL PERIMETER COMBINATION AND SILT FENCE TO CLEARING/DISTURBANCE LIMITS SPECIFIED ON PLANS.
2. INSTALL ALL REQUIRED INLET PROTECTION AS SPECIFIED ON THE PLANS.

OVERALL CONSTRUCTION

1. BEGIN CLEARING AND DEMOLITION ACTIVITIES AND ROUGH GRADING OF SITE.
2. INSTALL STORM DRAINAGE SYSTEM AND UNDERGROUND UTILITIES.
3. INSTALL INLET PROTECTION ON ALL NEW INLET STRUCTURES AS THEY ARE CONSTRUCTED.
4. CLEAR AND GRUB SITE TO CLEARING LIMIT LINES OR PROPOSED TREE LINES AS SPECIFIED ON PLANS.
5. INSTALL CURB.
6. FINE GRADE SUBGRADE AND PLACE BASE STONE.
7. GRADE FROM BACK OF CURB TO RIGHT–OF–WAY OR TO PROPOSED SPOT ELEVATIONS/CONTOURS, WHERE INDICATED.
8. PAVE AND STRIPE.
9. DRESS AND OVERSEED ALL DISTURBED AREAS.
10. STABILIZE THE SITE.

FINAL EROSION & SEDIMENT CONTROL

1. REMOVE TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES WITHIN 30 DAYS OF SITE STABILIZATION.

DURING CONSTRUCTION, THE RESPONSIBLE LAND DISTURBER SHALL PERIODICALLY (EVERY SEVEN CALENDAR DAYS DURING CONSTRUCTION AND WITHIN 24 HOURS FOLLOWING A RAINFALL OF 0.5 INCHES OR GREATER) INSPECT THE SITE FOR EVIDENCE OF OFF–SITE SEDIMENT TRACKING. ALL DISTURBED AREAS SHALL BE EVALUATED TO DETERMINE IF THE MEASURES ARE FUNCTIONING PROPERLY. ANY DEFICIENCIES SHALL BE CORRECTED IMMEDIATELY. THE CONTRACTOR WILL BE RESPONSIBLE FOR SUBMITTING A WEEKLY EROSION CONTROL INSPECTION REPORT TO THE TOWN OF HOLLISTON FOLLOWING THEIR REVIEW OF THE SITE.

MANAGEMENT STRATEGIES AND SEQUENCE OF EROSION CONTROL MEASURES

UNLESS OTHERWISE INDICATED, ALL VEGETATIVE AND STRUCTURAL EROSION AND SEDIMENT CONTROL PRACTICES SHALL BE CONSTRUCTED AND MAINTAINED IN ACCORDANCE WITH THE MINIMUM STANDARDS AND SPECIFICATIONS OUTLINED IN THESE PLANS AND ACCORDING TO THE MASSACHUSETTS DOT DRAINAGE MANUAL.

THE FOLLOWING SEQUENCE OF EVENTS AND EROSION CONTROL MEASURES SHALL BE INCORPORATED INTO THE CONSTRUCTION SCHEDULE FOR THIS PROJECT AND SHALL APPLY TO ALL CONSTRUCTION ACTIVITIES WITHIN PROJECT LIMITS:

1. ALL EROSION AND SEDIMENT CONTROL MEASURES ARE TO BE PLACED PRIOR TO OR AS THE FIRST STEP IN LAND DISTURBANCE.

2. A. WHERE CONSTRUCTION VEHICLE ACCESS ROUTES INTERSECT PAVED PUBLIC ROADS, PROVISIONS SHALL BE MADE TO MINIMIZE THE TRANSPORT OF SEDIMENT ONTO THE PAVED SURFACE. WHERE SEDIMENT IS TRANSPORTED ONTO A PAVED PUBLIC ROAD SURFACE, THE ROAD SHALL BE CLEANED THOROUGHLY AT THE END OF EACH DAY. SEDIMENT SHALL BE REMOVED FROM THE ROADS BY SHOVELING OR SWEEPING AND TRANSPORTED TO A SEDIMENT CONTROL DISPOSAL AREA. STREET WASHING SHALL BE ALLOWED ONLY AFTER SEDIMENT IS REMOVED IN THIS MANNER. THIS PROVISION SHALL APPLY TO INDIVIDUAL SUBDIVISION LOTS AS WELL AS LARGER LAND DISTURBING ACTIVITIES.

   B. CONSTRUCTION TRAFFIC SHALL BE LIMITED TO ACCESS ROADS. ALL TRAFFIC IS PROHIBITED FROM CROSSING DRAINAGE SWALES AND STREAMS EXCEPT WHERE ABSOLUTELY NECESSARY.

3. SEDIMENT BARRIERS, CONSTRUCTION ENTRANCES, AND EROSION CONTROL STONE ARE TO BE PLACED PRIOR TO CLEARING AND GRUBBING AND PRIOR TO THE FIRST PHASE OF CONSTRUCTION.

4. ALL PERMANENT STORM WATER MANAGEMENT FACILITIES INCLUDING EROSION CONTROL MEASURES ARE TO BE BE INSTALLED AND MADE OPERATIONAL AT THE START OF CLEARING OPERATIONS INCLUDING APPROVED SEDIMENT BASINS.

5. THE CONTRACTOR SHALL COMPLETE DRAINAGE FACILITIES WITHIN THIRTY (30) DAYS FOLLOWING COMPLETION OF ROUGH GRADING AT ANY POINT WITHIN THE PROJECT.

6. CONSTRUCTION WILL BE SEQUENCED SO THAT GRADING OPERATIONS CAN BEGIN AND END AS QUICKLY AS POSSIBLE.

7. AREAS WHICH ARE NOT TO BE DISTURBED WILL BE CLEARLY MARKED BY FENCING, FLAGS, SIGNS, ETC.

8. A. PERMANENT OR TEMPORARY SOIL STABILIZATION SHALL BE APPLIED TO DENUDED AREAS WITHIN SEVEN (7) DAYS AFTER FINAL GRADE IS REACHED ON ANY PORTION OF THE SITE. TEMPORARY SOIL STABILIZATION SHALL BE APPLIED WITHIN SEVEN (7) DAYS TO DENUDED AREAS THAT MAY NOT BE AT FINAL GRADE BUT WILL REMAIN DORMANT (UNDISTURBED) FOR LONGER THAN THIRTY (30) DAYS. PERMANENT STABILIZATION SHALL BE APPLIED TO AREAS THAT ARE TO BE LEFT DORMANT FOR MORE THAN ONE (1) YEAR.

   B. DURING CONSTRUCTION OF THE PROJECT, SOIL STOCKPILES SHALL BE STABILIZED OR PROTECTED WITH SEDIMENT TRAPPING MEASURES. THE CONTRACTOR IS RESPONSIBLE FOR THE TEMPORARY PROTECTION AND PERMANENT STABILIZATION OF ALL SOIL STOCKPILES ON SITE AS WELL AS SOIL INTENTIONALLY TRANSPORTED FROM THE PROJECT SITE.

   C. A PERMANENT VEGETATIVE COVER SHALL BE ESTABLISHED ON DENUDED AREAS NOT OTHERWISE PERMANENTLY STABILIZED. PERMANENT VEGETATION SHALL NOT BE CONSIDERED ESTABLISHED UNTIL A GROUND COVER IS ACHIEVED THAT IN THE OPINION OF THE LOCAL PROGRAM ADMINISTRATOR OR HIS DESIGNATED AGENT, IS UNIFORM AND MATURE ENOUGH TO SURVIVE AND WILL INHIBIT EROSION. VEGETATIVE COVER SHALL BE ESTABLISHED ACCORDING TO THE SEEDING SCHEDULE. (HYDROSEEDING MAY BE USED IN PLACE OF MULCHING ON AREAS OTHER THAN DITCH BANKS.) STABILIZATION MEASURES SHALL BE APPLIED TO EARTHEN STRUCTURES SUCH AS DAMS, DIVERSIONS, AND DITCH OR WATERCOURSE BEDS AND BANKS IMMEDIATELY AFTER INSTALLATION.

9. A. ALL STORM SEWER INLETS THAT ARE TO BE USED FOR DRAINAGE DURING CONSTRUCTION SHALL BE PROTECTED SO THAT SEDIMENT–LADEN WATER CANNOT ENTER THE CONVEYANCE SYSTEM WITHOUT FIRST BEING FILTERED OR OTHERWISE TREATED TO REMOVE SEDIMENT. B. BEFORE NEWLY CONSTRUCTED CONVEYANCE CHANNELS ARE MADE OPERATIONAL, ADEQUATE OUTLET PROTECTION AND ANY REQUIRED TEMPORARY OR PERMANENT CHANNEL LINING SHALL BE INSTALLED IN BOTH THE CONVEYANCE CHANNEL AND RECEIVING CHANNEL.

10. A. CUT AND FILL SLOPES SHALL BE DESIGNED AND CONSTRUCTED IN A MANNER THAT WILL MINIMIZE EROSION. SLOPES THAT ARE FOUND TO BE ERODING EXCESSIVELY WITHIN ONE (1) YEAR OF PERMANENT STABILIZATION SHALL BE PROVIDED WITH ADDITIONAL SLOPE STABILIZATION MEASURES UNTIL THE PROBLEM IS CORRECTED. B. CONCENTRATED RUNOFF SHALL NOT FLOW DOWN CUT OR FILL SLOPES UNLESS CONTAINED WITHIN AN ADEQUATE TEMPORARY OR PERMANENT CHANNEL, FLUME, OR SLOPE DRAIN STRUCTURE.

11. THE CONTRACTOR SHALL LIMIT SITE ACCESS BY CONSTRUCTION VEHICLES TO ENTRANCES PROTECTED BY A STONE CONSTRUCTION ENTRANCE OR AN APPROVED COMPARABLE CONTROL MEASURE. SEDIMENT SHALL BE REMOVED FROM PAVED AREAS ON A DAILY BASIS.

12. THE PLAN APPROVING AUTHORITY MUST BE NOTIFIED ONE (1) WEEK PRIOR TO THE PRECONSTRUCTION CONFERENCE, ONE (1) WEEK PRIOR TO THE COMMENCEMENT OF LAND DISTURBING ACTIVITY, AND ONE (1) WEEK PRIOR TO THE FINAL INSPECTION.

13. ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHALL BE REMOVED WITHIN THIRTY (30) DAYS AFTER FINAL SITE STABILIZATION OR AFTER THE TEMPORARY MEASURES ARE NO LONGER NEEDED, UNLESS OTHERWISE AUTHORIZED BY THE LOCAL PROGRAM ADMINISTRATOR. TRAPPED SEDIMENT AND THE DISTURBED SOIL AREAS RESULTING FROM THE DISPOSITION OF TEMPORARY MEASURES SHALL BE PERMANENTLY STABILIZED TO PREVENT FURTHER EROSION AND SEDIMENTATION.

14. EFFLUENT FROM DE–WATERING OPERATIONS SHALL BE FILTERED OR PASSED THROUGH AN APPROVED SEDIMENT TRAPPING DEVICE, SEDIMENTATION TANK OR STRAW BALE/SILT FENC PIT, OR BOTH, AND DISCHARGED IN A MANNER THAT DOES NOT ADVERSELY AFFECT ADJACENT PROPERTIES, WETLANDS, WATERWAYS OR THE STORM DRAINAGE SYSTEM. CONTRACTOR IS RESPONSIBLE FOR SIZING TANK OR PITS BASED ON PROPOSED FLOWS FROM DEWATERING OPERATIONS. THIS INCLUDES THE USE OF MULTIPLE FACILITIES, IF NECESSARY. GRAVITY BAG FILTERS MAY BE USED IN LIEU OF SEDIMENTATION TANKS OR STRAW BALE/SILT FENCE PITS FOR MINOR DEWATERING OPERATIONS. THESE METHODS MUST BE APPROVED BY THE OWNER'S REPRESENTATIVE PRIOR TO INSTALLATION AND USE.

15. THE CONTRACTOR IS RESPONSIBLE FOR INSTALLATION AND MAINTENANCE OF ANY ADDITIONAL CONTROL MEASURES NECESSARY TO PREVENT EROSION AND SEDIMENTATION AS DETERMINED NECESSARY BY THE PLAN APPROVING AUTHORITY.

16. THE CONTRACTOR SHALL USE JUTE MESH OR APPROVED EQUIVALENT BETWEEN THE BACK OF CURB AND EDGE OF DISTURBED AREAS ON ALL SIDE SLOPES 4:1 OR GREATER

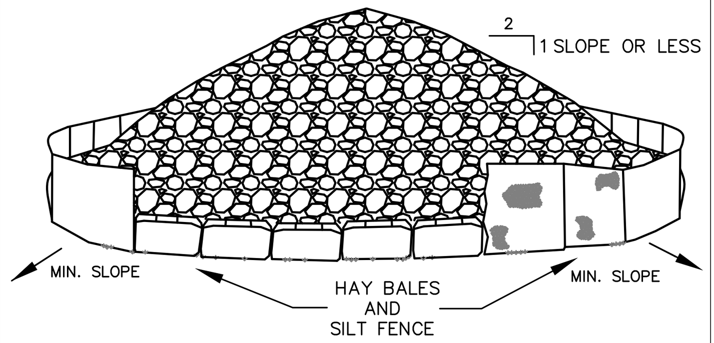
17. FAILURE OF THE CONTRACTOR TO PROVIDE THE ABOVE MENTIONED E & S MEASURES IS A BREECH OF CONTRACT.

MANAGEMENT STRATEGIES AND SEQUENCE OF EROSION CONTROL MEASURES

MAINTENANCE

IN GENERAL, ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE CHECKED AFTER EACH RAINFALL, OR WEEKLY, WHICHEVER IS MOST FREQUENT, AND SHOULD BE CLEANED AND REPAIRED ACCORDING TO THE FOLLOWING SCHEDULE.

1. EROSION AND SEDIMENT CONTROL MEASURES WILL BE CHECKED REGULARLY FOR UNDERMINING OR DETERIORATION AND BUILD–UP OR CLOGGING WITH SEDIMENT. CORRECTIVE ACTION WILL BE TAKEN IMMEDIATELY.
2. EROSION AND SEDIMENT CONTROL MEASURES WHICH HAVE FAILED AND ARE BEYOND REPAIR SHALL BE REMOVED AND REPLACED BY CONTRACTOR.
3. ALL SEEDED AREAS WILL BE CHECKED REGULARLY TO SEE THAT A GOOD STAND IS MAINTAINED. AREAS SHOULD BE FERTILIZED AND RE–SEEDED AS NECESSARY.
4. ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHALL BE DISPOSED OF WITHIN THIRTY (30) DAYS AFTER FINAL INSPECTION AND APPROVAL BY TOWN OF HOLLISTON CONSERVATION COMMISSION
5. STOCK PILES OF SOIL AND OTHER ERODIBLE MATERIALS SHALL BE STABILIZED OR PROTECTED WITH SEDIMENT TRAPPING MEASURES. THE CONTRACTOR IS RESPONSIBLE FOR THE TEMPORARY PROTECTION AND PERMANENT STABILIZATION FOR STOCKPILES ON SITE AS WELL AS FOR MATERIALS TRANSPORTED FROM THE PROJECT SITE.

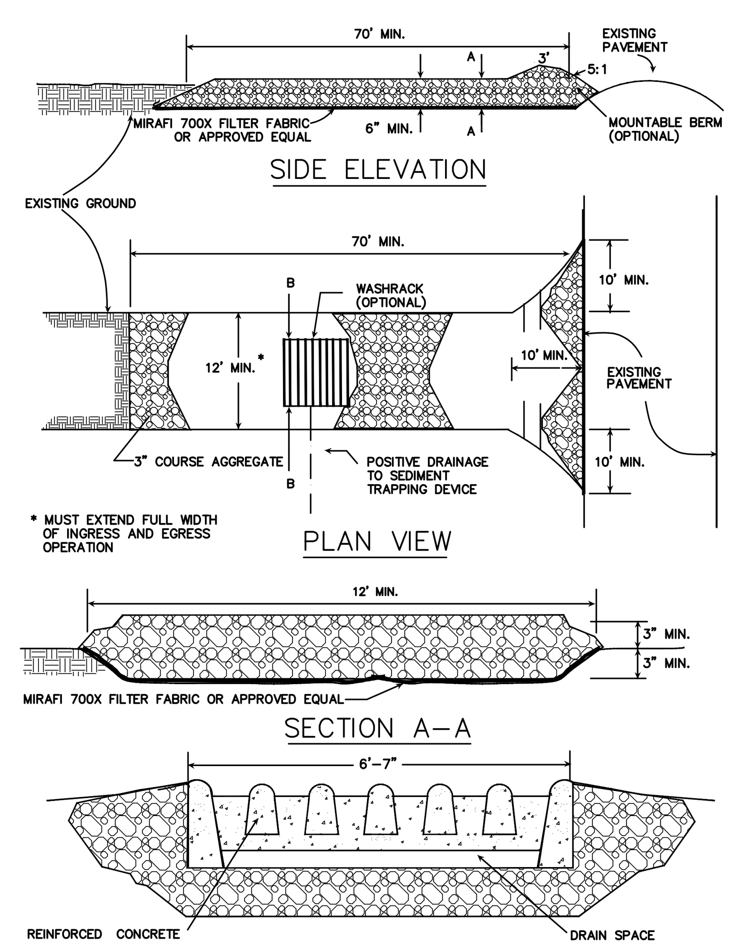


INSTALLATION NOTES:

1. AREA CHOSEN FOR STOCKPILING OPERATIONS SHALL BE DRY AND STABLE.
2. MAXIMUM SLOPE OF STOCKPILE SHALL BE 2 : 1.
3. UPON COMPLETION OF STOCKPILING, EACH PILE SHALL BE SURROUNDED WITH SILT FENCING AND HAY BALES OR DOUBLE SILT FENCE, THEN STABILIZED WITH VEGETATION, OR AN EROSION CONTROL TACKIFIER.
4. SEE SPECIFICATIONS FOR INSTALLATION OF SILT FENCE AND HAY BALES.

MATERIAL(S) STOCKPILE
NTS

STONE CONSTRUCTION ENTRANCE



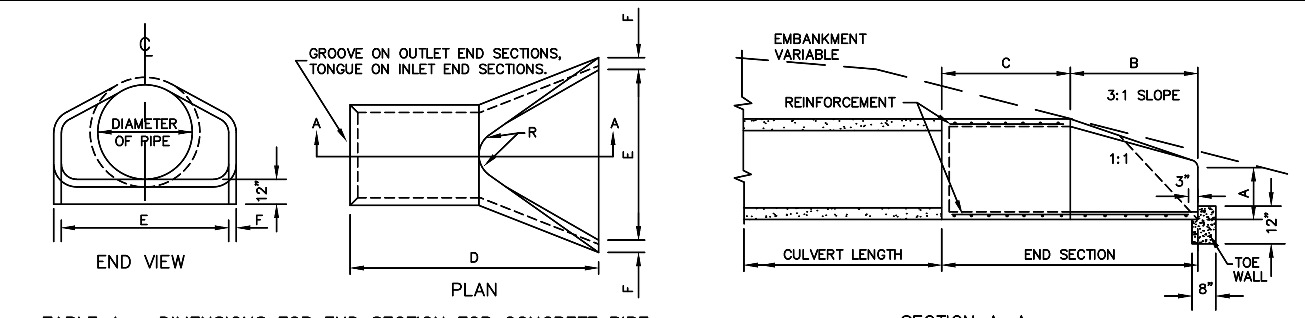
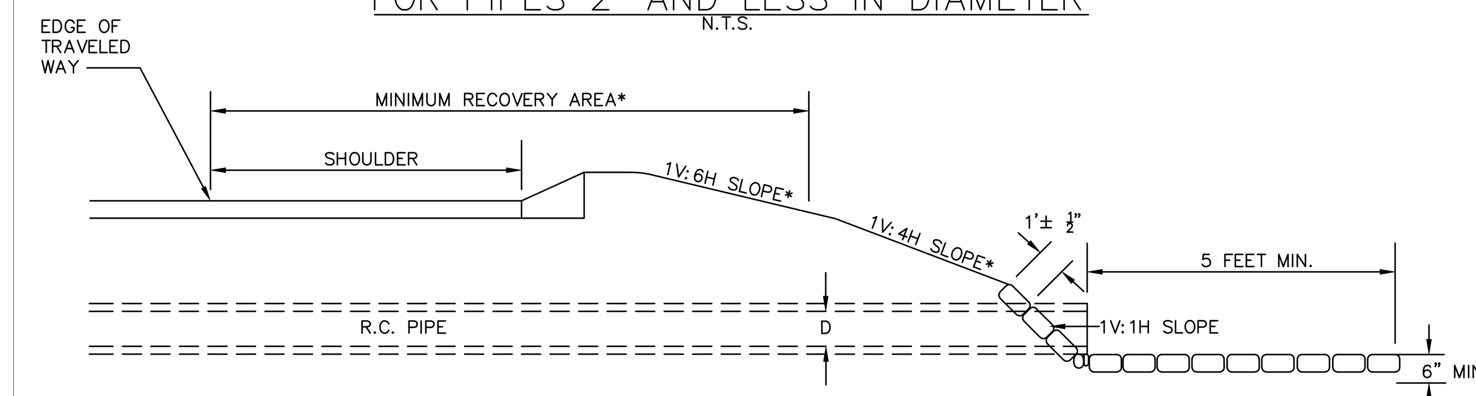


TABLE A – DIMENSIONS FOR END SECTION FOR CONCRETE PIPE

DIA.	A	B	C	D	E	F	R
18"	9"	2'–3"	3'–10"	6'–1"	3'–0"	2 1/2"	7 1/2"
21"	9"	3'–0"	3'–1"	6'–1"	3'–6"	2 3/4"	8"
24"	9 1/2"	3'–7 1/2"	2'–6"	6'–1 1/2"	4'–0"	3"	8"
27"	10 1/2"	4'–0"	2'–1 1/2"	6'–1 1/2"	4'–6"	3 1/4"	9"
30"	12"	4'–6"	1'–7 3/4"	6'–1 3/4"	5'–0"	3 1/2"	8"
33"	13 1/2"	4'–10 1/2"	3'–1 1/2"	8'–0"	5'–6"	3 3/4"	9"
36"	15"	5'–3"	2'–9"	8'–0"	6'–0"	4"	10"
42"	21"	5'–3"	2'–9"	8'–0"	6'–6"	4 1/2"	10"
48"	24"	6'–0"	2'–0"	8'–0"	7'–0"	5"	12"

FLARED END SECTION DETAIL
N.T.S.

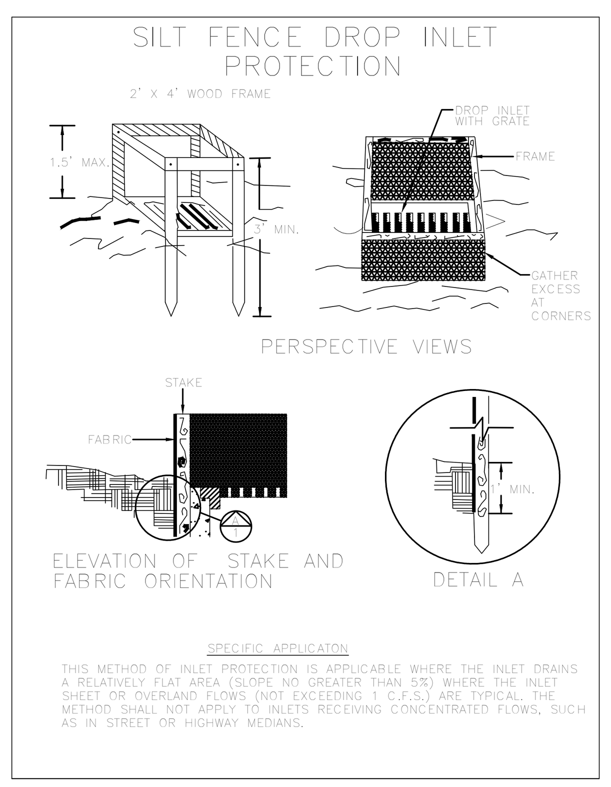
STONE PIPE ENDS
FOR PIPES 2' AND LESS IN DIAMETER
N.T.S.

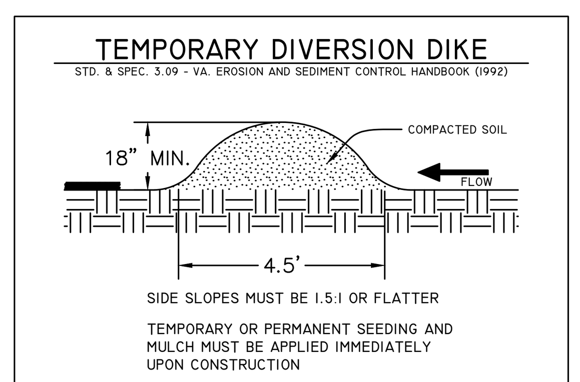


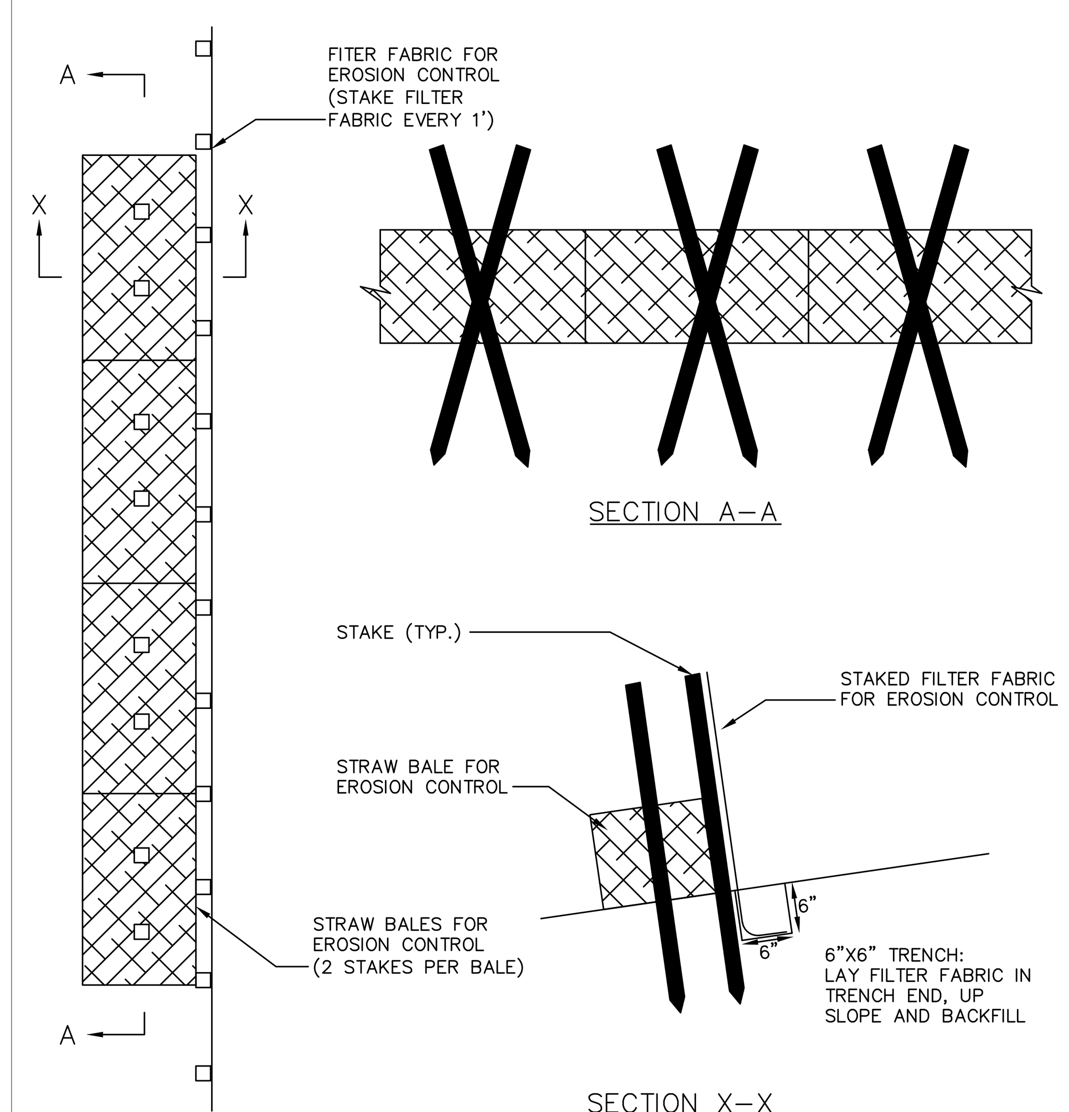
NOTES:
1. STONE TREATMENT FOR PIPE ENDS SHALL NOT BE USED IN THE VEHICLE RECOVERY AREA.
2. MINIMUM MASS PER STONE = 55 LBS; MAXIMUM MASS PER STONE = 132 LBS
3. FOR DESCRIPTION, MATERIALS AND CONSTRUCTION METHODS, SEE STANDARD SPECIFICATIONS.
* SEE TYPICAL SECTIONS.

Conservative Outlet Protection Design Specified on Plans

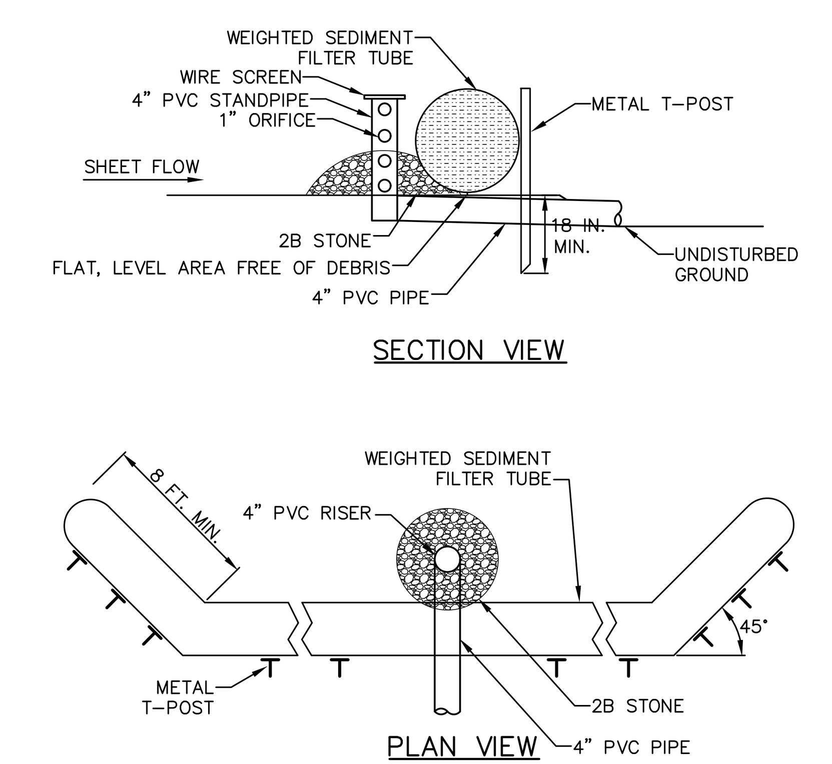
Outlet Structure	G0		H0	
Upstream Apron Width =	3.75 ft		4.5 ft	
Apron Length =	6 ft		7 ft	
Downstream Apron Width =	11.75 ft		8.5 ft	
Riprap Size, d_{50} =	6 in		6 in	
Riprap Depth, d =	18 in		18 in	
Amount of Riprap Required =	3	CY	3	CY







STRAW BALES AND SILT FENCES FOR EROSION CONTROL
N.T.S.



NOTES:
STANDPIPE RISER SHALL BE DRILLED WITH 2–1" HOLES PER VERTICAL FOOT

SEDIMENT TRAP OUTLET/RISER STRUCTURE
NOT TO SCALE

No.	REVISIONS	DATE	BY
1	PER CMG 7/24/20 SWM PEER REVIEW	9/25/20	TGK

Kimley»Horn
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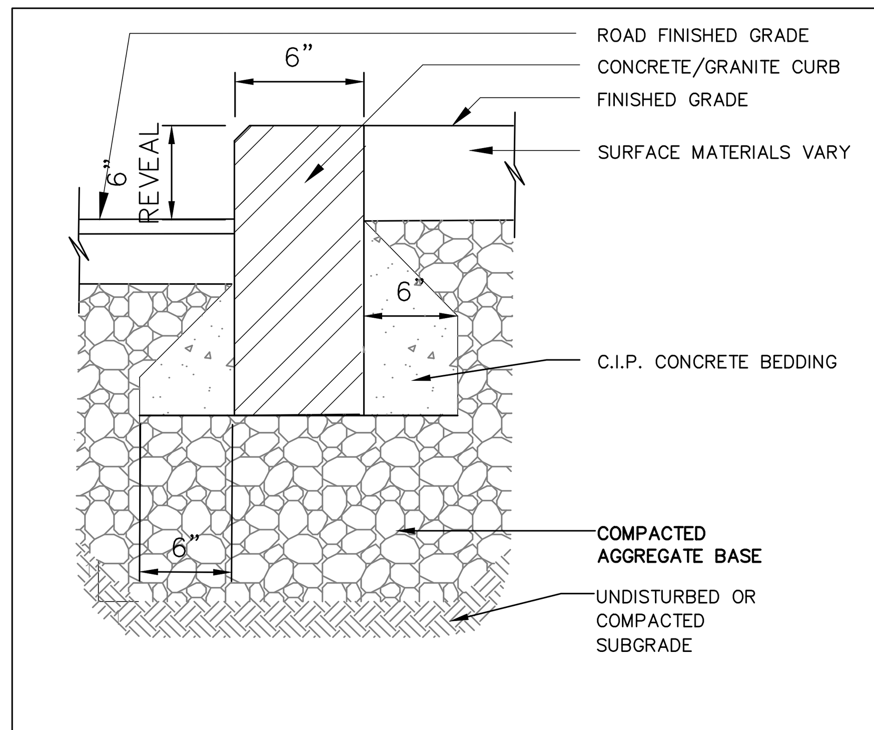
LICENSED PROFESSIONAL — COMMONWEALTH OF MASSACHUSETTS, CIVIL No. 46948, PROFESSIONAL ENGINEER

KHA PROJECT 113382001 | DATE 10/06/2020 | SCALE AS SHOWN | DESIGNED BY TGK | DRAWN BY BB | CHECKED BY BB

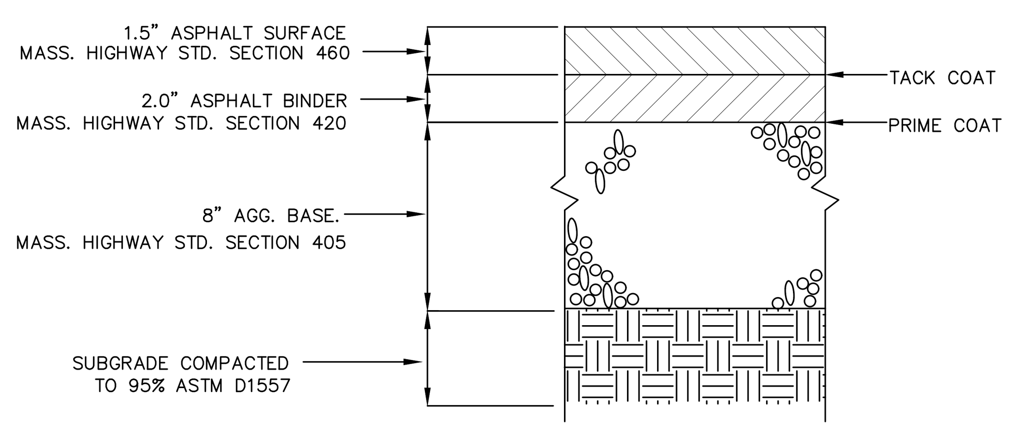
EROSION AND SEDIMENT CONTROL NOTES AND DETAILS

ADESA HOLLISTON
PREPARED FOR
ADESA, INC.
TOWN OF HOLLISTON MA



CONCRETE/GRANITE CURB, TYP.

N.T.S.

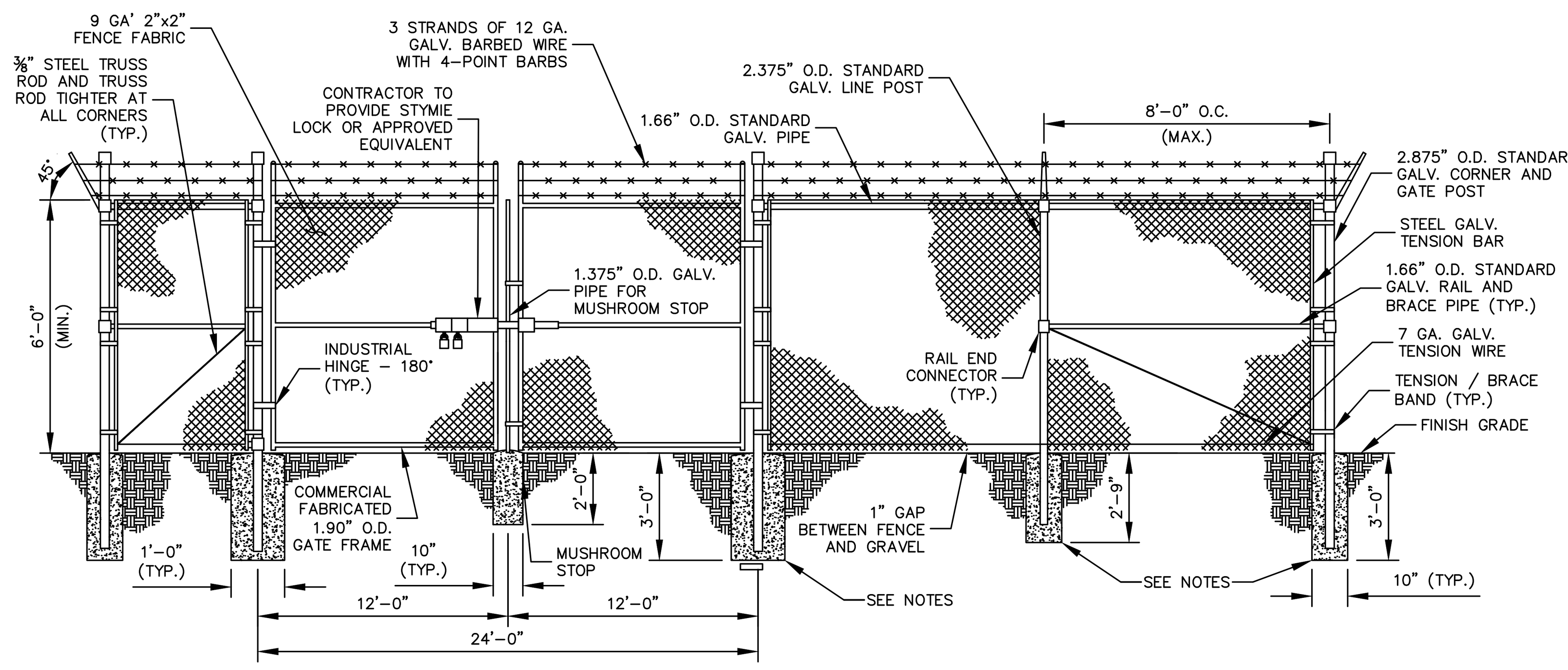


STANDARD DUTY PAVING SECTION

N.T.S.

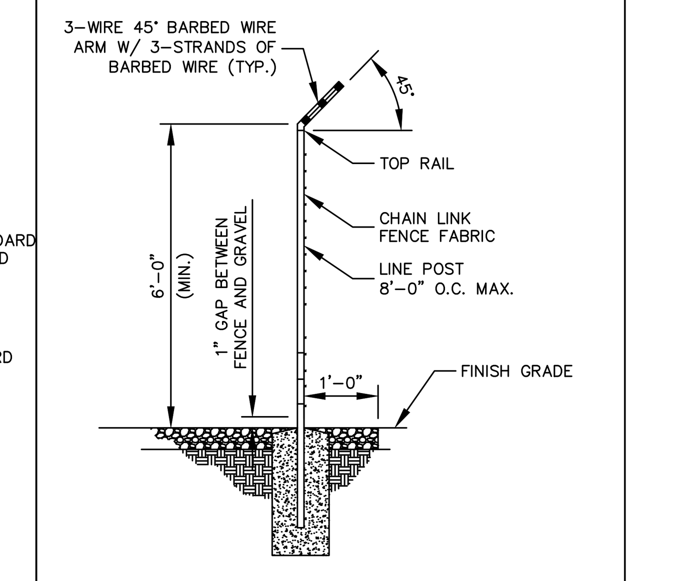
FENCE NOTES

1. USE 3,000-PSI CONCRETE, FULLY CONSOLIDATED AROUND THE POST.
2. WHERE THE POST IS SET IN ROCK OR CONCRETE, CORE A HOLE 12" DEEP AND 1" LARGER IN DIAMETER THAN THE POST. SET THE POST AND GROUT IN PLACE USING NON-SHRINK GROUT.
3. ALL POSTS MUST BE PLUMB AND ALIGNED WITH ONE ANOTHER IN BOTH HORIZONTAL AND VERTICAL PLANES.
4. CORNERS AND GATEPOSTS FOR CHAIN LINK FENCES SHALL EXTEND ABOVE THE TOP STRAND OF BARBED WIRE TO PROVIDE TENSIONING FOR THE BARBED WIRE.
5. PROVIDE MIDRAILS AND BRACING AT ALL CORNER POSTS WHERE THE FENCE CHANGES DIRECTION BY MORE THAN 30 DEGREES.
6. THE GRADE OF THE SITE AND INSTALLATION OF THE FENCE SHALL PROVIDE FOR NO MORE THAN A 1" GAP BETWEEN THE BOTTOM OF THE FENCE MATERIAL AND FINISH GRADE.
7. CONTRACTOR SHALL PROVIDE HOLD OPEN DEVICES FOR ALL GATES AT THE SPECIFIED OPEN POSITIONS, DRIVEN PIPE TYPE RECEIVERS ARE NOT AUTHORIZED.
8. CONTRACTOR SHALL ALSO PROVIDE A MUSHROOM TYPE RECEIVER AT THE CLOSE POSITION.



CHAIN LINK FENCE AND GATE ELEVATION

NOT TO SCALE



SECTION @ FENCE

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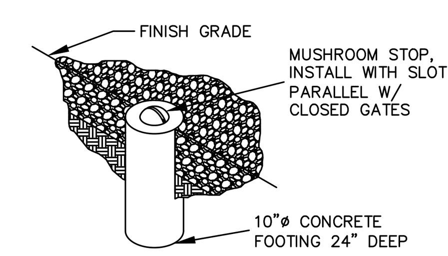

MUSHROOM STOP

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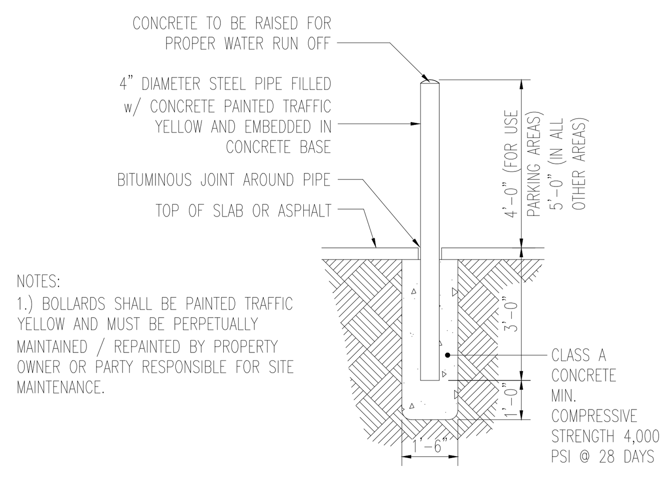
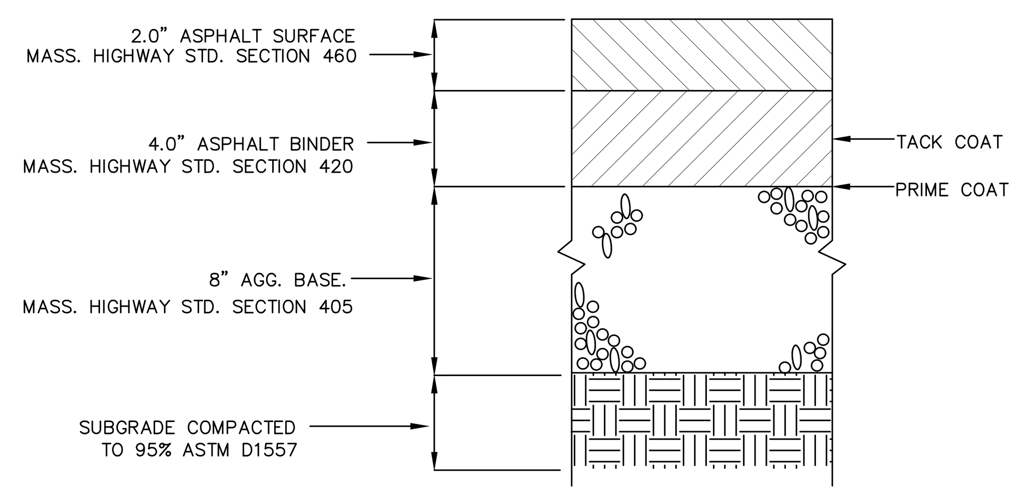


NOTES:

1.) BOLLARDS SHALL BE PAINTED TRAFFIC YELLOW AND MUST BE PERPETUALLY MAINTAINED / REPAINTED BY PROPERTY OWNER OR PARTY RESPONSIBLE FOR SITE MAINTENANCE.

BOLLARD DETAIL

N.T.S.



HEAVY DUTY PAVING SECTION

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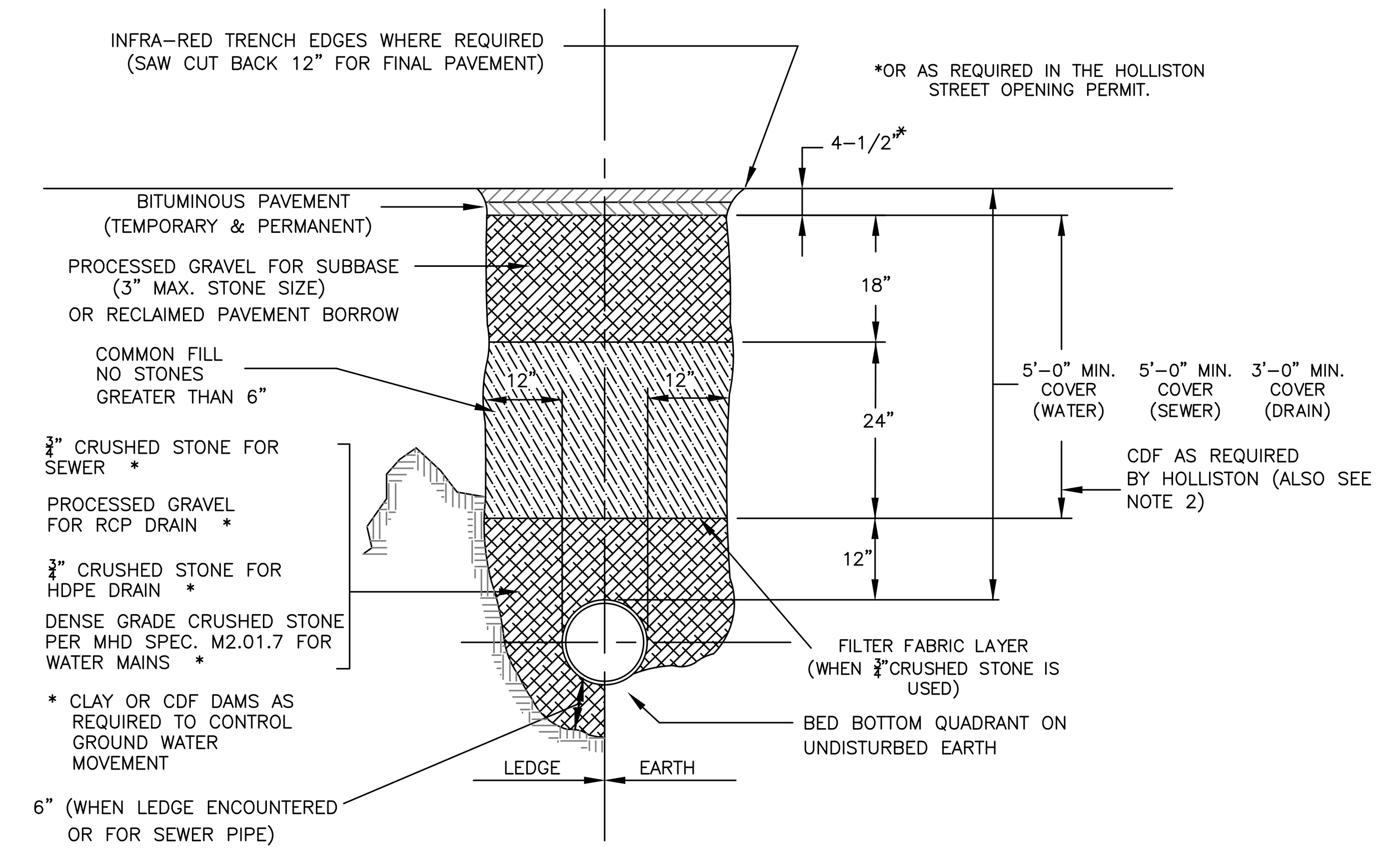
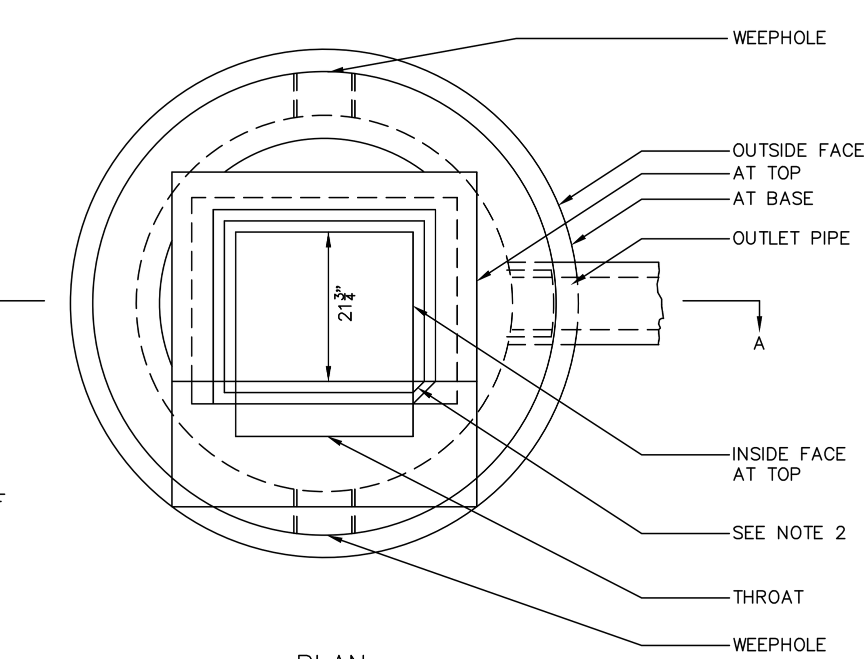


NOTES:

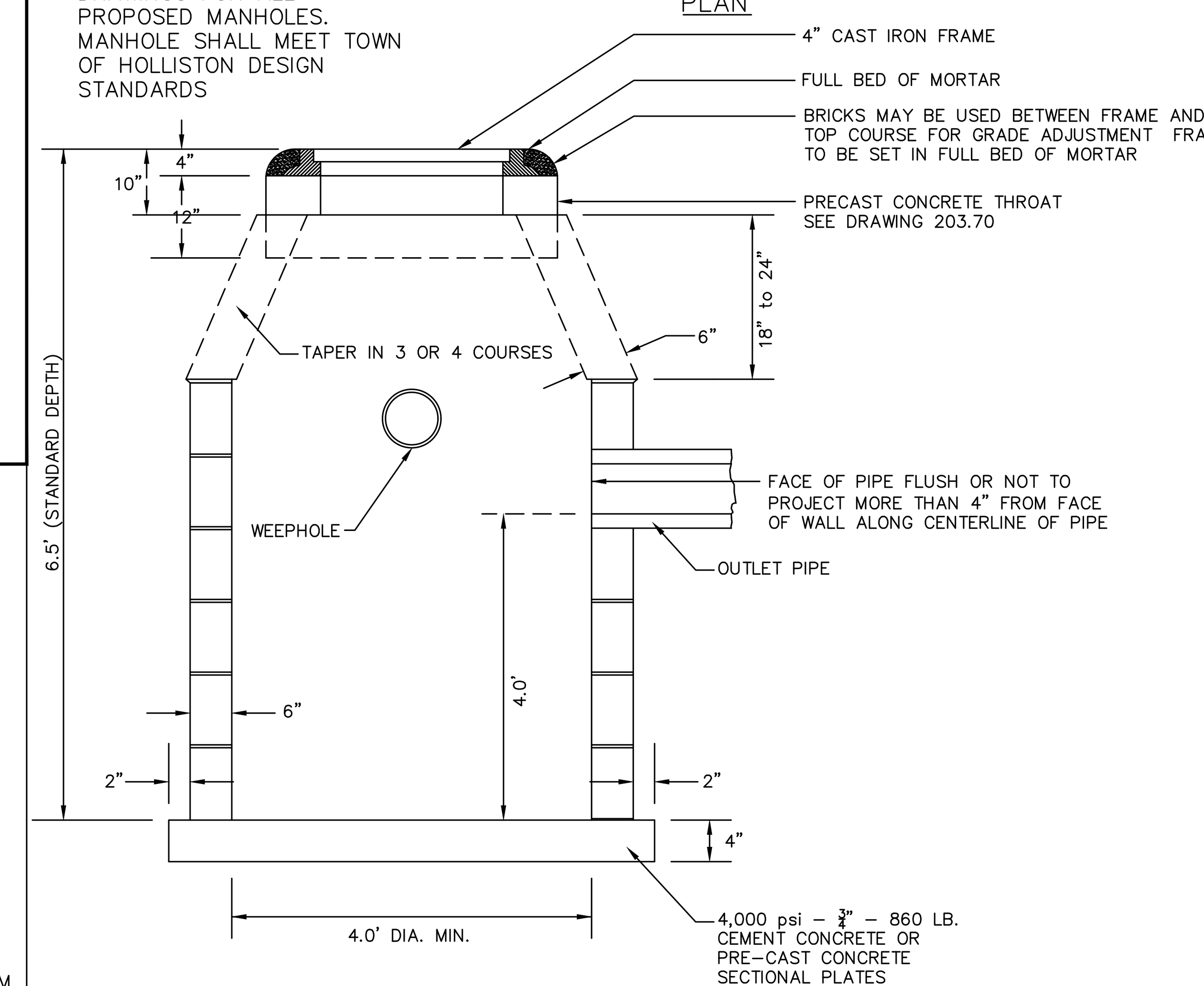
1. SHEETING OR TRENCH BOXES PER OSHA REQUIREMENTS.
2. WHEN CDF BACKFILL IS USED IN NON-STATE ROADS, BACKFILL MATERIALS SHALL BE AS NOTED ABOVE FOR THE FIRST 12 INCHES OVER THE PIPE.
3. DETAIL IS PROVIDED FOR GENERAL INFORMATION, CONTRACTOR SHALL FOLLOW TYPICAL REQUIREMENTS FROM HOLLISTON FOR ALL TRENCHING.

TYPICAL TRENCH DETAIL



NOTE: DRAINAGE MANHOLE DETAIL SHOWN IS INTENDED FOR PIPE SIZES UP TO 48-INCHES. BASED UPON THE ANGLE AND NUMBER OF PIPES ENTERING THE STRUCTURE, A LARGER MANHOLE MAY BE NECESSARY. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR ALL PROPOSED MANHOLES. MANHOLE SHALL MEET TOWN OF HOLLISTON DESIGN STANDARDS

PLAN



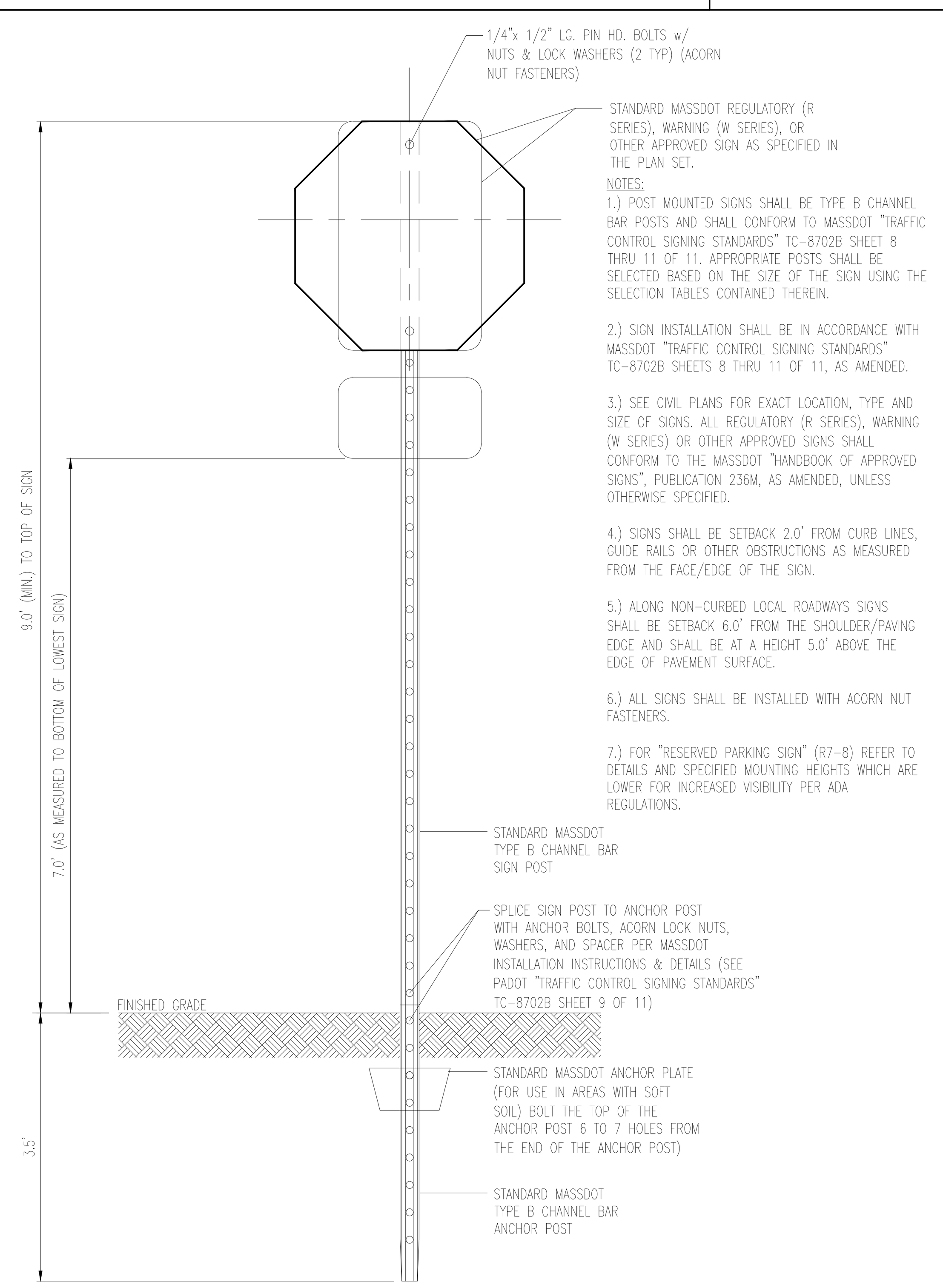
SECTION A-A

NOTES:

1. MINIMUM CAST IRON FRAME MASS- 205 LBS.
2. STANDARD PARALLEL BAR GRATE TO BE USED.
3. FOR DESCRIPTION, MATERIALS, AND CONSTRUCTION METHODS, SEE STANDARD SPECIFICATIONS.
4. TO BE USED IN MEDIANS AND DITCHES THAT ARE OUTSIDE OF VEHICULAR AREAS

DROP INLET TYPE - CF

N.T.S.



NOTES:

1.) POST MOUNTED SIGNS SHALL BE TYPE B CHANNEL BAR POSTS AND SHALL CONFORM TO MASSDOT "TRAFFIC CONTROL SIGNING STANDARDS" TC-8702B SHEET 8 THRU 11 OF 11. APPROPRIATE POSTS SHALL BE SELECTED BASED ON THE SIZE OF THE SIGN USING THE SELECTION TABLES CONTAINED THEREIN.

2.) SIGN INSTALLATION SHALL BE IN ACCORDANCE WITH MASSDOT "TRAFFIC CONTROL SIGNING STANDARDS" TC-8702B SHEETS 8 THRU 11 OF 11, AS AMENDED.

3.) SEE CIVIL PLANS FOR EXACT LOCATION, TYPE AND SIZE OF SIGNS. ALL REGULATORY (R SERIES), WARNING (W SERIES) OR OTHER APPROVED SIGNS SHALL CONFORM TO THE MASSDOT "HANDBOOK OF APPROVED SIGNS", PUBLICATION 236M, AS AMENDED, UNLESS OTHERWISE SPECIFIED.

4.) SIGNS SHALL BE SETBACK 2.0' FROM CURB LINES, GUIDE RAILS OR OTHER OBSTRUCTIONS AS MEASURED FROM THE FACE/EDGE OF THE SIGN.

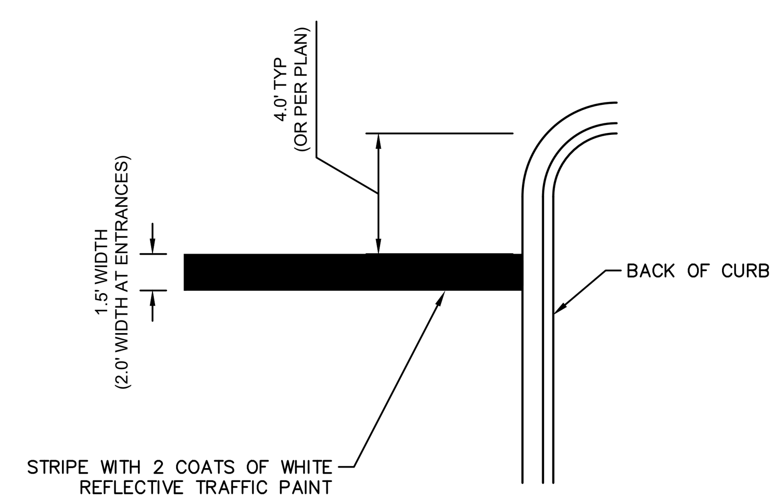
5.) ALONG NON-CURBED LOCAL ROADWAYS SIGNS SHALL BE SETBACK 6.0' FROM THE SHOULDER/PAVING EDGE AND SHALL BE AT A HEIGHT 5.0' ABOVE THE EDGE OF PAVEMENT SURFACE.

6.) ALL SIGNS SHALL BE INSTALLED WITH ACORN NUT FASTENERS.

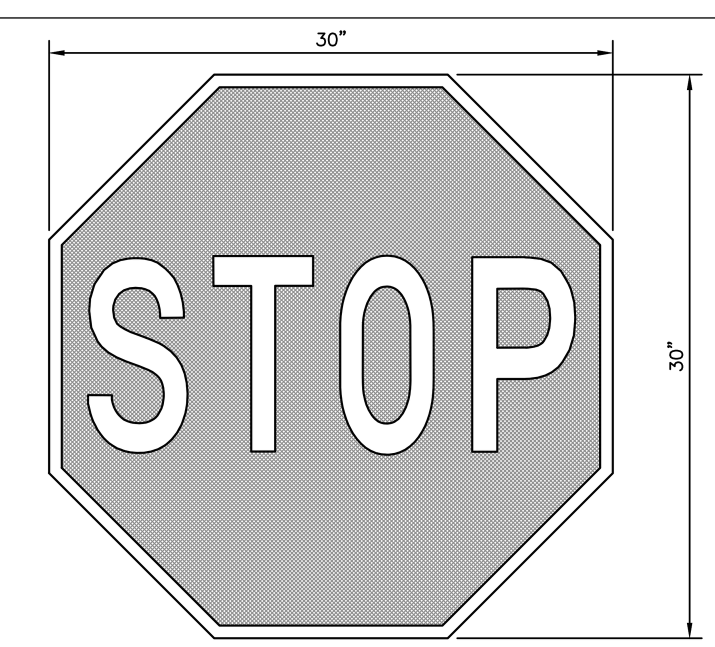
7.) FOR "RESERVED PARKING SIGN" (R7-8) REFER TO DETAILS AND SPECIFIED MOUNTING HEIGHTS WHICH ARE LOWER FOR INCREASED VISIBILITY PER ADA REGULATIONS.

STANDARD POLE MOUNTED SIGN

N.T.S.

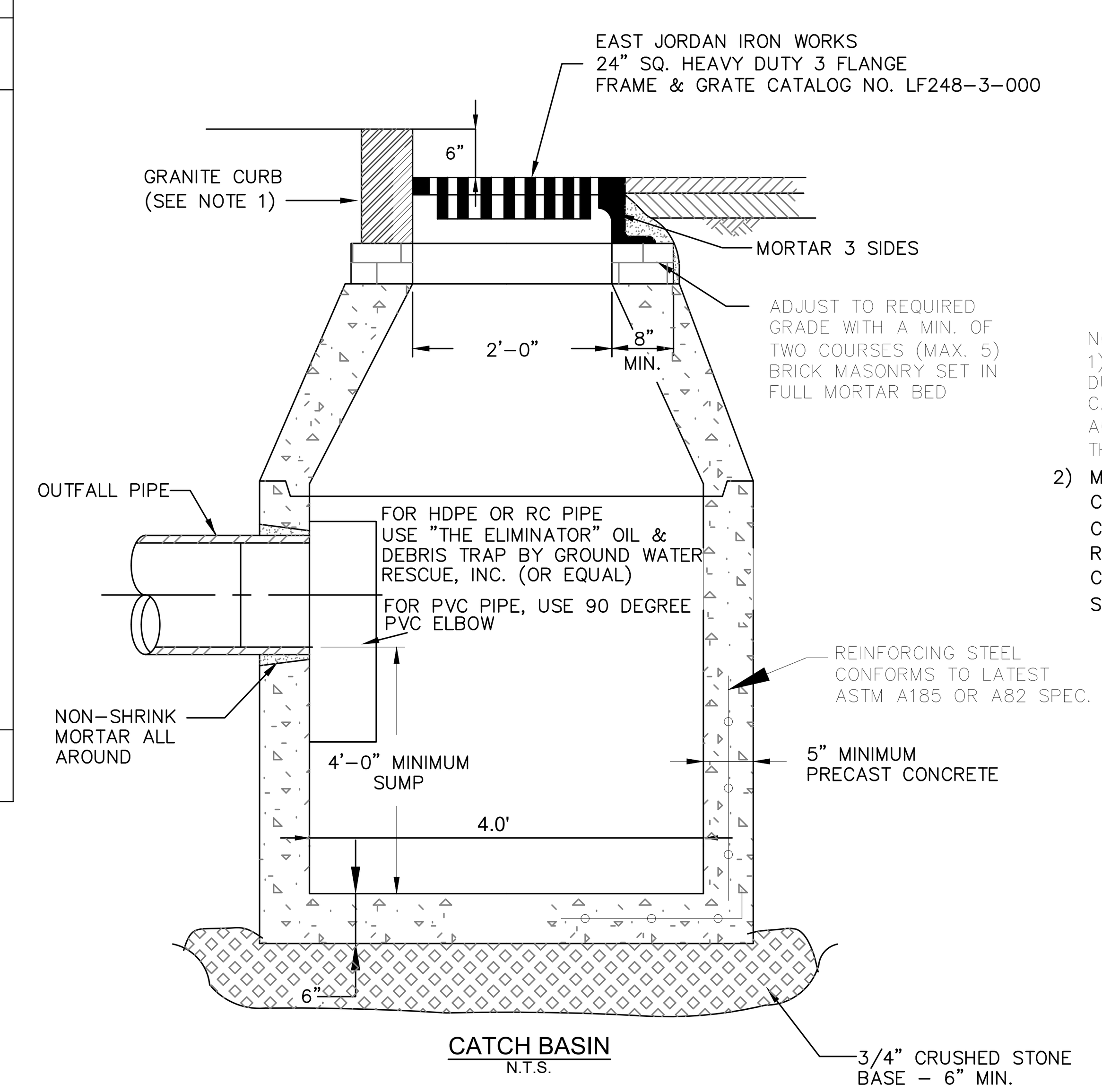


STOP BAR STRIPING



(WHITE LEGEND, RED BACKGROUND)

STOP SIGN (R1-1)



NOTES:

1) THREE FLANGE HEAVY DUTY FRAME WHERE CATCH BASIN IS PLACED AGAINST CURBING (NO THROATSTONES).
2) MANHOLE DESIGN TO CONFORM TO LATEST ASTM C478 SPEC. FOR "PRECAST REINFORCED CONCRETE MANHOLE SECTIONS"

CATCH BASIN

N.T.S.

No.	REVISIONS	DATE	BY
1	PER CMG 7/24/20 SWM PEER REVIEW	9/25/20	TGK

Kimley»Horn

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1700 WILLOW LAWN DR, SUITE 200, RICHMOND, VA 23230
PHONE: 804-673-3882
WWW.KIMLEY-HORN.COM

LICENSED PROFESSIONAL

COMMONWEALTH OF MASSACHUSETTS — BRIAN [illegible] — CIVIL No. 46948 — REGISTERED PROFESSIONAL ENGINEER

KHA PROJECT	113382001
DATE	10/06/2020
SCALE	AS SHOWN
DESIGNED BY	TGK
DRAWN BY	BB
CHECKED BY	BB

SITE DETAILS

ADESA HOLLISTON

PREPARED FOR

ADESA, INC.

TOWN OF HOLLISTON MA

SHEET NUMBER

18 OF 23

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Plotted By: Katelhon, Tom Sheet Set: [illegible]

PROJECT INFORMATION	
ENGINEERED PRODUCT MANAGER	
ADS SALES REP	
PROJECT NO.	

ADS®

ADVANCED DRAINAGE SYSTEMS, INC.

ADESA DET 1

HOLLISTON, MA

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SC-740 STORMTECH CHAMBER SPECIFICATIONS

1. CHAMBERS SHALL BE STORMTECH SC-740.
2. CHAMBERS SHALL BE ARCH-SHAPED AND SHALL BE MANUFACTURED FROM VIRGIN, IMPACT-MODIFIED POLYPROPYLENE COPOLYMERS.
3. CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2418-16a, "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
4. CHAMBER ROWS SHALL PROVIDE CONTINUOUS, UNOBSTRUCTED INTERNAL SPACE WITH NO INTERNAL SUPPORTS THAT WOULD IMPEDE FLOW OR LIMIT ACCESS FOR INSPECTION.
5. THE STRUCTURAL DESIGN OF THE CHAMBERS, THE STRUCTURAL BACKFILL, AND THE INSTALLATION REQUIREMENTS SHALL ENSURE THAT THE LOAD FACTORS SPECIFIED IN THE AASHTO LRFD 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.
6. 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.
7. 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 550 LBS/IN/IN. 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.
8. 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 LRFD 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.
9. CHAMBERS AND END CAPS SHALL BE PRODUCED AT AN ISO 9001 CERTIFIED MANUFACTURING FACILITY.

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

1. STORMTECH SC-740 CHAMBERS SHALL NOT BE INSTALLED UNTIL THE MANUFACTURER'S REPRESENTATIVE HAS COMPLETED A PRE-CONSTRUCTION MEETING WITH THE INSTALLERS.
2. STORMTECH SC-740 CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH THE "STORMTECH SC-310/SC-740/DC-780 CONSTRUCTION GUIDE".
3. CHAMBERS ARE NOT TO BE BACKFILLED WITH A DOZER OR AN EXCAVATOR SITUATED OVER THE CHAMBERS. STORMTECH RECOMMENDS 3 BACKFILL METHODS:
   - STONESHOOTER 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.
4. THE FOUNDATION STONE SHALL BE LEVELED AND COMPACTED PRIOR TO PLACING CHAMBERS.
5. JOINTS BETWEEN CHAMBERS SHALL BE PROPERLY SEATED PRIOR TO PLACING STONE.
6. MAINTAIN MINIMUM - 6" (150 mm) SPACING BETWEEN THE CHAMBER ROWS.
7. EMBEDMENT STONE SURROUNDING CHAMBERS MUST BE A CLEAN, CRUSHED, ANGULAR STONE 3/4-2" (20-50 mm).
8. THE CONTRACTOR MUST REPORT ANY DISCREPANCIES WITH CHAMBER FOUNDATION MATERIALS BEARING CAPACITIES TO THE SITE DESIGN ENGINEER.
9. ADS RECOMMENDS THE USE OF "FLEXSTORM CATCH IT" INSERTS DURING CONSTRUCTION FOR ALL INLETS TO PROTECT THE SUBSURFACE STORMWATER MANAGEMENT SYSTEM FROM CONSTRUCTION SITE RUNOFF.

NOTES FOR CONSTRUCTION EQUIPMENT

1. STORMTECH SC-740 CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH THE "STORMTECH SC-310/SC-740/DC-780 CONSTRUCTION GUIDE".
2. THE USE OF CONSTRUCTION EQUIPMENT OVER SC-740 CHAMBERS IS LIMITED:
   - NO EQUIPMENT IS ALLOWED ON BARE 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/DC-780 CONSTRUCTION GUIDE".
   - WEIGHT LIMITS FOR CONSTRUCTION EQUIPMENT CAN BE FOUND IN THE "STORMTECH SC-310/SC-740/DC-780 CONSTRUCTION GUIDE".
3. 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 INSTALL METHOD. ANY CHAMBERS DAMAGED BY THE "DUMP AND PUSH" METHOD ARE NOT COVERED UNDER THE STORMTECH STANDARD WARRANTY.

CONTACT STORMTECH AT 1-888-892-2694 WITH ANY QUESTIONS ON INSTALLATION REQUIREMENTS OR WEIGHT LIMITS FOR CONSTRUCTION EQUIPMENT.

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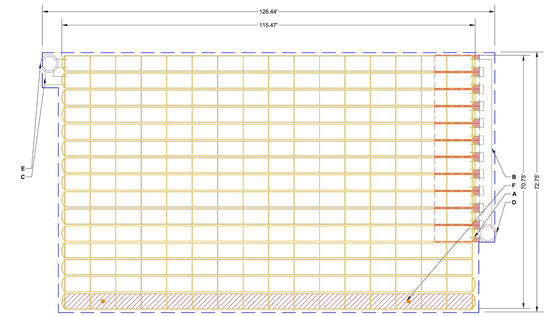
PROPOSED LAYOUT	
240	STORMTECH SC-740 CHAMBERS
28	STORMTECH SC-740 END CAPS
5	STONE ABOVE (in)
6	STONE BELOW (in)
40	STONE VOID (%)
18976	INSTALLED SYSTEM VOLUME (CF) (PERIMETER STONE INCLUDED) (COVER STONE INCLUDED) (BASE STONE INCLUDED)
8828	SYSTEM AREA (SF)
398.4	SYSTEM PERIMETER (ft)

CONCEPTUAL ELEVATIONS	
MAXIMUM ALLOWABLE GRADE (TOP OF PAVEMENT/UNPAVED)	11.00
MINIMUM ALLOWABLE GRADE (UNPAVED WITH TRAFFIC)	5.00
MINIMUM ALLOWABLE GRADE (UNPAVED NO TRAFFIC)	4.50
MINIMUM ALLOWABLE GRADE (UNDER FLEXIBLE PAVEMENT)	4.00
MINIMUM ALLOWABLE GRADE (BASE OF FLEXIBLE PAVEMENT)	4.00
TOP OF STONE	3.00
TOP OF SC-740 CHAMBER	3.00
24" x 24" BOTTOM MANIFOLD INVERT:	0.51
24" x 24" BOTTOM MANIFOLD INVERT:	0.51
24" ISOLATOR ROW PLUS INVERT	0.51
24" BOTTOM CONNECTION INVERT:	0.51
BOTTOM OF SC-740 CHAMBER:	0.50
BOTTOM OF STONE:	0.00

*INVERT ABOVE BASE OF CHAMBER			
PART TYPE	ITEM ON LAYOUT	DESCRIPTION	INVERT*	MAX FLOW
PREFABRICATED END CAP	A	24" BOTTOM PREFABRICATED END CAP, PART#: SC740EPE24B / TYP OF ALL 24" BOTTOM CONNECTIONS	0.10"	
MANIFOLD	B	24" x 24" BOTTOM MANIFOLD, ADS N-12	0.10"	
MANIFOLD	C	24" x 24" BOTTOM MANIFOLD, ADS N-12	0.10"	
CONCRETE STRUCTURE	D	DESIGN BY ENGINEER / PROVIDED BY OTHERS)		26.6 CFS IN
CONCRETE STRUCTURE	E	OCS (DESIGN BY ENGINEER / PROVIDED BY OTHERS)		14.0 CFS OUT
INSPECTION PORT	F	4" SEE DETAIL (TYP 2 PLACES)		



ISOLATOR ROW PLUS (SEE DETAIL)

PLACE MINIMUM 12.50' OF ADSPLUS125 WOVEN GEOTEXTILE OVER BEDDING STONE AND UNDERNEATH CHAMBER FEET FOR SCOUR PROTECTION AT ALL CHAMBER INLET ROWS

BED LIMITS

NOTES

- MANIFOLD SIZE TO BE DETERMINED BY SITE DESIGN ENGINEER. SEE TECH 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.
- THE SITE DESIGN ENGINEER MUST REVIEW ELEVATIONS AND IF NECESSARY ADJUST GRADING TO ENSURE THE CHAMBER COVER REQUIREMENTS ARE MET.
- THIS CHAMBER SYSTEM WAS DESIGNED WITHOUT SITE-SPECIFIC INFORMATION ON SOIL CONDITIONS OR BEARING CAPACITY. THE SITE DESIGN ENGINEER IS RESPONSIBLE FOR DETERMINING THE SUITABILITY OF THE SOIL AND PROVIDING THE BEARING CAPACITY OF THE INSITU SOILS. THE BASE STONE DEPTH MAY BE INCREASED OR DECREASED ONCE THIS INFORMATION IS PROVIDED.
- **NOT FOR CONSTRUCTION:** THIS LAYOUT IS FOR DIMENSIONAL PURPOSES ONLY TO PROVE CONCEPT & THE REQUIRED STORAGE VOLUME CAN BE ACHIEVED ON SITE.

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REV | DRAW | CHK | DESCRIPTION

STormtech — EQUIPMENT & SUPPLIES, 4640 TRUEMAN BLVD HILLIARD, OH 43026 1-800-733-7473

ADS — 4640 TRUEMAN BLVD HILLIARD, OH 43026 1-800-733-7473 — ADVANCED DRAINAGE SYSTEMS, INC.

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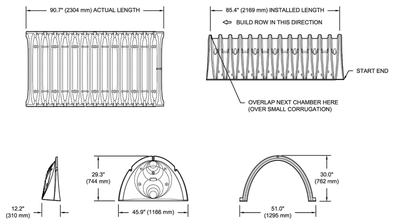
SHEET 2 OF 5

SC-740 TECHNICAL SPECIFICATION

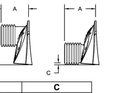
NTS



NOMINAL CHAMBER SPECIFICATIONS

SIZE (W X H X INSTALLED LENGTH)	51.0" 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)

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



PRE-FAB STUBS AT BOTTOM OF END CAP FOR PART NUMBERS ENDING WITH "B"
PRE-FAB STUBS AT TOP OF END CAP FOR PART NUMBERS ENDING WITH "T"
PRE-CORED END CAPS END WITH "PC"

PART #	STUB	A	B	C
SC740EPE06T / SC740EPE06TPC	6" (150 mm)	10.9" (277 mm)	18.5" (470 mm)	—
SC740EPE06B / SC740EPE06BPC				0.5" (13 mm)
SC740EPE06T / SC740EPE06TPC	6" (200 mm)	12.2" (310 mm)	16.5" (419 mm)	—
SC740EPE06B / SC740EPE06BPC			—	0.6" (15 mm)
SC740EPE10T / SC740EPE10TPC	10" (250 mm)	13.4" (340 mm)	14.5" (368 mm)	—
SC740EPE10B / SC740EPE10BPC			—	0.7" (18 mm)
SC740EPE12T / SC740EPE12TPC	12" (300 mm)	14.7" (373 mm)	12.5" (318 mm)	—
SC740EPE12B / SC740EPE12BPC			—	1.2" (30 mm)
SC740EPE15T / SC740EPE15TPC	15" (375 mm)	18.4" (467 mm)	9.0" (229 mm)	—
SC740EPE15B / SC740EPE15BPC			—	1.3" (33 mm)
SC740EPE18T / SC740EPE18TPC	18" (450 mm)	19.7" (500 mm)	5.0" (127 mm)	—
SC740EPE18B / SC740EPE18BPC			—	1.6" (41 mm)
SC740EPE24B	24" (600 mm)	18.5" (470 mm)	—	0.1" (3 mm)

ALL STUBS, EXCEPT FOR THE SC740EPE24B 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 SC740EPE24B 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

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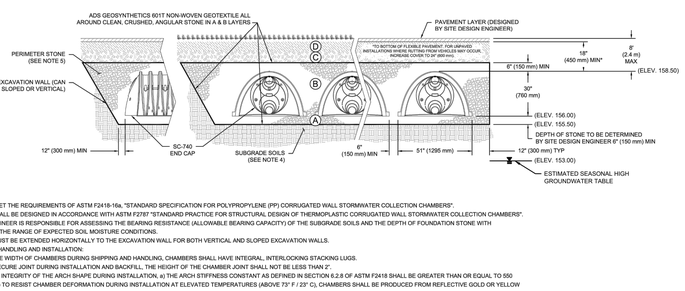
SHEET 3 OF 5

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 (9" 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 THIS LAYER.	AASHTO M145* A-1, A-2-4, A-3 OR AASHTO M43* 3, 357, 4, 467, 5, 56, 57, 6, 67, 68, 7, 78, 8, 89, 9, 10	BEGIN COMPACTIONS AFTER 12" (300 mm) OF MATERIAL OVER THE CHAMBERS IS REACHED. COMPACT ADDITIONAL LAYERS IN 6" (150 mm) MAX LIFTS TO A MIN. 95% PROCTOR DENSITY FOR WELL GRADED MATERIAL AND 95% RELATIVE DENSITY FOR PROCESSED AGGREGATE MATERIALS. ROLLER GROSS VEHICLE WEIGHT NOT TO EXCEED 12,000 lbs (89 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	AASHTO M43 3, 357, 4, 467, 5, 56, 57	NO COMPACTION REQUIRED.
A	**FOUNDATION STONE:** FILL BELOW CHAMBERS FROM THE SUBGRADE UP TO THE FOOT (BOTTOM) OF THE CHAMBER.	CLEAN, CRUSHED, ANGULAR STONE	AASHTO M43* 3, 357, 4, 467, 5, 56, 57	PLATE COMPACT OR ROLL TO ACHIEVE A FLAT SURFACE.[1,2]

PLEASE NOTE:
1. 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".
2. 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.
3. 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.
4. ONCE LAYER 'C' IS PLACED, ANY SOIL/MATERIAL CAN BE PLACED IN LAYER 'D' UP TO THE FINISHED GRADE. MOST PAVEMENT SUBBASE SOILS CAN BE USED TO REPLACE THE MATERIAL REQUIREMENTS OF LAYER 'C' OR 'D' AT THE SITE DESIGN ENGINEER'S DISCRETION.



NOTES:

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2. SC-740 CHAMBERS SHALL BE DESIGNED IN ACCORDANCE WITH ASTM F2787 "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
3. 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.
4. PERIMETER STONE MUST BE EXTENDED HORIZONTALLY TO THE EXCAVATION WALL FOR BOTH VERTICAL AND SLOPED EXCAVATION WALLS.
5. 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".
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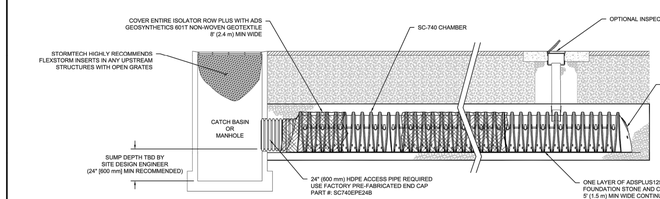
SHEET 4 OF 5



SC-740 ISOLATOR ROW PLUS DETAIL

NTS

INSPECTION & MAINTENANCE

STEP 1) INSPECT ISOLATOR ROW PLUS FOR SEDIMENT
- A. INSPECTION PORTS (IF PRESENT)
  - A.1. REMOVE/OPEN LID ON NYLOPLAST INLINE DRAIN
  - 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
    - i) MIRRORS ON POLES OR CAMERAS MAY BE USED TO AVOID A CONFINED SPACE ENTRY
    - ii) FOLLOW OSHA REGULATIONS FOR CONFINED SPACE ENTRY IF ENTERING MANHOLE
  - B.3. IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.

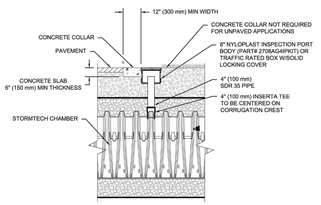
STEP 2) CLEAN OUT ISOLATOR ROW PLUS USING THE JETVAC PROCESS
- A. A FIXED CULVERT CLEANING NOZZLE WITH REAR FACING SPREAD OF 45" (1.1 m) OR MORE IS PREFERRED
- B. APPLY MULTIPLE PASSES OF JETVAC UNTIL BACKFLUSH WATER IS CLEAN
- C. VACUUM STRUCTURE SUMP AS REQUIRED

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

1. 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.
2. CONDUCT JETTING AND VACTORING ANNUALLY OR WHEN INSPECTION SHOWS THAT MAINTENANCE IS NECESSARY.



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

4" PVC INSPECTION PORT DETAIL (SC SERIES CHAMBER)

NTS

ADESA DET 1 | HOLLISTON, MA | DATE: | PROJECT #: | DRAWN: TK | CHECKED: N/A

REV | DRAW | CHK | DESCRIPTION

STormtech — EQUIPMENT & SUPPLIES, 4640 TRUEMAN BLVD HILLIARD, OH 43026 1-800-733-7473

ADS — 4640 TRUEMAN BLVD HILLIARD, OH 43026 1-800-733-7473 — ADVANCED DRAINAGE SYSTEMS, INC.

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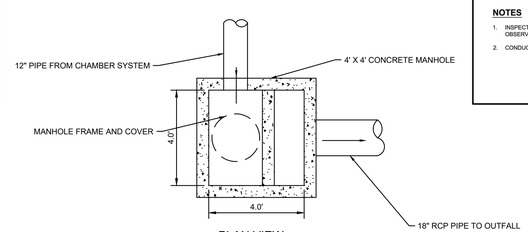
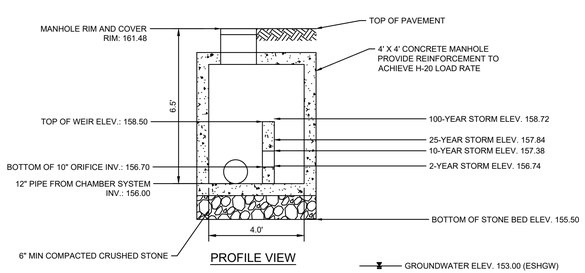
SHEET 4 OF 5



PLAN VIEW



PROFILE VIEW

OUTLET CONTROL STRUCTURE H1

SCALE:
1" = 3'

No.	REVISIONS	DATE	BY
1	PER CMG 7/24/20 SWM PEER REVIEW	9/25/20	TGK

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1700 WILLOW LAWN DR., SUITE 200, RICHMOND, VA 23230
PHONE: 804-673-3862
WWW.KIMLEY-HORN.COM

LICENSED PROFESSIONAL

COMMONWEALTH OF VIRGINIA
BRIAN JAMES BREEDE
No. 46948
10-06-20
PROFESSIONAL ENGINEER

DATE:

KHA PROJECT 113382001
DATE 10/06/2020
SCALE AS SHOWN
DESIGNED BY TGK
DRAWN BY TGK
CHECKED BY BJB

SITE DETAILS

ADESA HOLLISTON
PREPARED FOR
ADESA, INC.

TOWN OF HOLLISTON MA

SHEET NUMBER
19 OF 23

Plotted By:Kotelhon, Tom Sheet Set:ADESA:SWM\CAD\SITE PLANS SUBMISSION\SITE DETA

PROJECT INFORMATION

PROJECT INFORMATION	
ENGINEERED PRODUCT MANAGER	
ADS SALES REP	
PROJECT NO.	

ADVANCED DRAINAGE SYSTEMS, INC.

ADESA DET 2

HOLLISTON 2, MA

SiteASSIST FOR STORMTECH INSTRUCTIONS, DOWNLOAD THE INSTALLATION APP

SC-740 STORMTECH CHAMBER SPECIFICATIONS

1. CHAMBERS SHALL BE STORMTECH SC-740.
2. CHAMBERS SHALL BE ARCH-SHAPED AND SHALL BE MANUFACTURED FROM VIRGIN, IMPACT-MODIFIED POLYPROPYLENE COPOLYMERS.
3. CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2418-16a, "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
4. CHAMBER ROWS SHALL PROVIDE CONTINUOUS, UNOBSTRUCTED INTERNAL SPACE WITH NO INTERNAL SUPPORTS THAT WOULD IMPEDE FLOW OR LIMIT ACCESS FOR INSPECTION.
5. THE STRUCTURAL DESIGN OF THE CHAMBERS, THE STRUCTURAL BACKFILL, AND THE INSTALLATION REQUIREMENTS SHALL ENSURE THAT THE LOAD FACTORS SPECIFIED IN THE AASHTO LRFD 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.
6. 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.
7. 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 550 LBS/IN/IN. 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.
8. 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 LRFD 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.
9. CHAMBERS AND END CAPS SHALL BE PRODUCED AT AN ISO 9001 CERTIFIED MANUFACTURING FACILITY.

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

1. STORMTECH SC-740 CHAMBERS SHALL NOT BE INSTALLED UNTIL THE MANUFACTURER'S REPRESENTATIVE HAS COMPLETED A PRE-CONSTRUCTION MEETING WITH THE INSTALLERS.
2. STORMTECH SC-740 CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH THE "STORMTECH SC-310/SC-740/DC-780 CONSTRUCTION GUIDE".
3. CHAMBERS ARE NOT TO BE BACKFILLED WITH A DOZER OR AN EXCAVATOR SITUATED OVER THE CHAMBERS. STORMTECH RECOMMENDS 3 BACKFILL METHODS:
   - STONESHOOTER 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.
4. THE FOUNDATION STONE SHALL BE LEVELED AND COMPACTED PRIOR TO PLACING CHAMBERS.
5. JOINTS BETWEEN CHAMBERS SHALL BE PROPERLY SEATED PRIOR TO PLACING STONE.
6. MAINTAIN MINIMUM - 6" (150 mm) SPACING BETWEEN THE CHAMBER ROWS.
7. EMBEDMENT STONE SURROUNDING CHAMBERS MUST BE A CLEAN, CRUSHED, ANGULAR STONE 3/4-2" (20-50 mm).
8. THE CONTRACTOR MUST REPORT ANY DISCREPANCIES WITH CHAMBER FOUNDATION MATERIALS BEARING CAPACITIES TO THE SITE DESIGN ENGINEER.
9. ADS RECOMMENDS THE USE OF "FLEXSTORM CATCH IT" INSERTS DURING CONSTRUCTION FOR ALL INLETS TO PROTECT THE SUBSURFACE STORMWATER MANAGEMENT SYSTEM FROM CONSTRUCTION SITE RUNOFF.

NOTES FOR CONSTRUCTION EQUIPMENT

1. STORMTECH SC-740 CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH THE "STORMTECH SC-310/SC-740/DC-780 CONSTRUCTION GUIDE".
2. THE USE OF CONSTRUCTION EQUIPMENT OVER SC-740 CHAMBERS IS LIMITED:
   - NO EQUIPMENT IS ALLOWED ON BARE 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/DC-780 CONSTRUCTION GUIDE".
   - WEIGHT LIMITS FOR CONSTRUCTION EQUIPMENT CAN BE FOUND IN THE "STORMTECH SC-310/SC-740/DC-780 CONSTRUCTION GUIDE".
3. 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 1-888-892-2694 WITH ANY QUESTIONS ON INSTALLATION REQUIREMENTS OR WEIGHT LIMITS FOR CONSTRUCTION EQUIPMENT.

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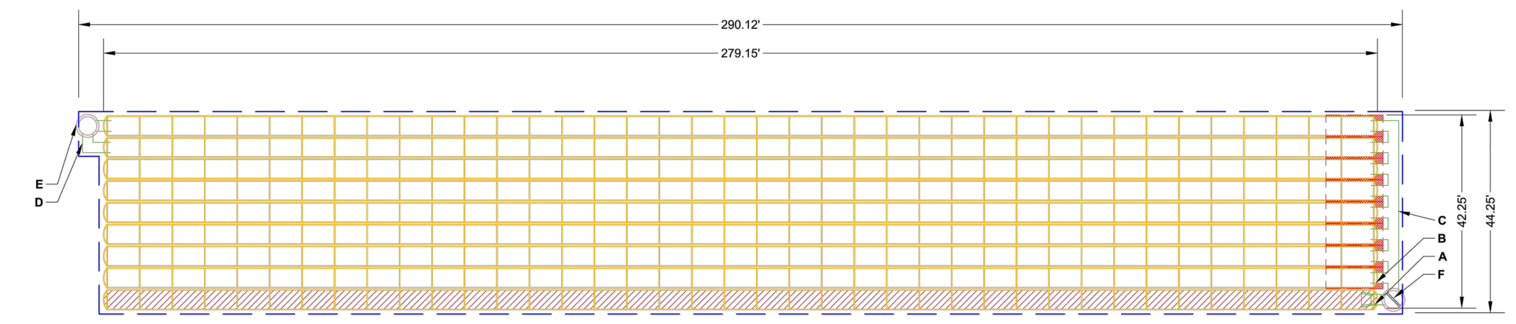
PROPOSED LAYOUT	
351	STORMTECH SC-740 CHAMBERS
18	STORMTECH SC-740 END CAPS
6	STONE ABOVE (in)
6	STONE BELOW (in)
40	STONE VOID
27434	INSTALLED SYSTEM VOLUME (CF) (PERIMETER STONE INCLUDED) (COVER STONE INCLUDED) (BASE STONE INCLUDED)
12684	SYSTEM AREA (SF)
668.8	SYSTEM PERIMETER (ft)

PROPOSED ELEVATIONS	
MAXIMUM ALLOWABLE GRADE (TOP OF PAVEMENT/UNPAVED):	166.75
MINIMUM ALLOWABLE GRADE (UNPAVED WITH TRAFFIC):	160.75
MINIMUM ALLOWABLE GRADE (UNPAVED NO TRAFFIC):	160.25
MINIMUM ALLOWABLE GRADE (TOP OF RIGID CONCRETE PAVEMENT):	160.25
MINIMUM ALLOWABLE GRADE (BASE OF FLEXIBLE PAVEMENT):	160.25
TOP OF STONE:	159.25
TOP OF SC-740 CHAMBER:	158.75
24" x 24" BOTTOM MANIFOLD INVERT:	156.26
24" x 24" BOTTOM MANIFOLD INVERT:	156.26
24" ISOLATOR ROW PLUS INVERT:	156.26
24" BOTTOM CONNECTION INVERT:	156.26
BOTTOM OF SC-740 CHAMBER:	156.25
BOTTOM OF STONE:	155.75

*INVERT ABOVE BASE OF CHAMBER

PART TYPE	ITEM ON LAYOUT	DESCRIPTION	INVERT*	MAX FLOW
PREFABRICATED END CAP	A	24" BOTTOM PREFABRICATED END CAP, PART#: SC740EPE24BR / TYP OF ALL 24" ISOLATOR ROW PLUS CONNECTIONS	0.10"	
PREFABRICATED END CAP	B	24" BOTTOM PREFABRICATED END CAP, PART#: SC740EPE24B / TYP OF ALL 24" BOTTOM CONNECTIONS	0.10"	
MANIFOLD	C	24" x 24" BOTTOM MANIFOLD, ADS N-12	0.10"	
MANIFOLD	D	24" x 24" BOTTOM MANIFOLD, ADS N-12	0.10"	
CONCRETE STRUCTURE	E	OCS (DESIGN BY ENGINEER / PROVIDED BY OTHERS)		14.0 CFS OUT
CONCRETE STRUCTURE W/WEIR	F	(DESIGN BY ENGINEER / PROVIDED BY OTHERS)		22.4 CFS IN



ISOLATOR ROW PLUS (SEE DETAIL)

PLACE MINIMUM 12.50' OF ADSPLUS125 WOVEN GEOTEXTILE OVER BEDDING STONE AND UNDERNEATH CHAMBER FEET FOR SCOUR PROTECTION AT ALL CHAMBER INLET ROWS

BED LIMITS

NOTES

- MANIFOLD SIZE TO BE DETERMINED BY SITE DESIGN ENGINEER. SEE TECH 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.
- THE SITE DESIGN ENGINEER MUST REVIEW ELEVATIONS AND IF NECESSARY ADJUST GRADING TO ENSURE THE CHAMBER COVER REQUIREMENTS ARE MET.
- THIS CHAMBER SYSTEM WAS DESIGNED WITHOUT SITE-SPECIFIC INFORMATION ON SOIL CONDITIONS OR BEARING CAPACITY. THE SITE DESIGN ENGINEER IS RESPONSIBLE FOR DETERMINING THE SUITABILITY OF THE SOIL AND PROVIDING THE BEARING CAPACITY OF THE INSITU SOILS. THE BASE STONE DEPTH MAY BE INCREASED OR DECREASED ONCE THIS INFORMATION IS PROVIDED.
- **NOT FOR CONSTRUCTION:** THIS LAYOUT IS FOR DIMENSIONAL PURPOSES ONLY TO PROVE CONCEPT & THE REQUIRED STORAGE VOLUME CAN BE ACHIEVED ON SITE.

ADESA DET 2 — HOLLISTON 2, MA — DATE: — DRAWN: TK — PROJECT #: — CHECKED: N/A

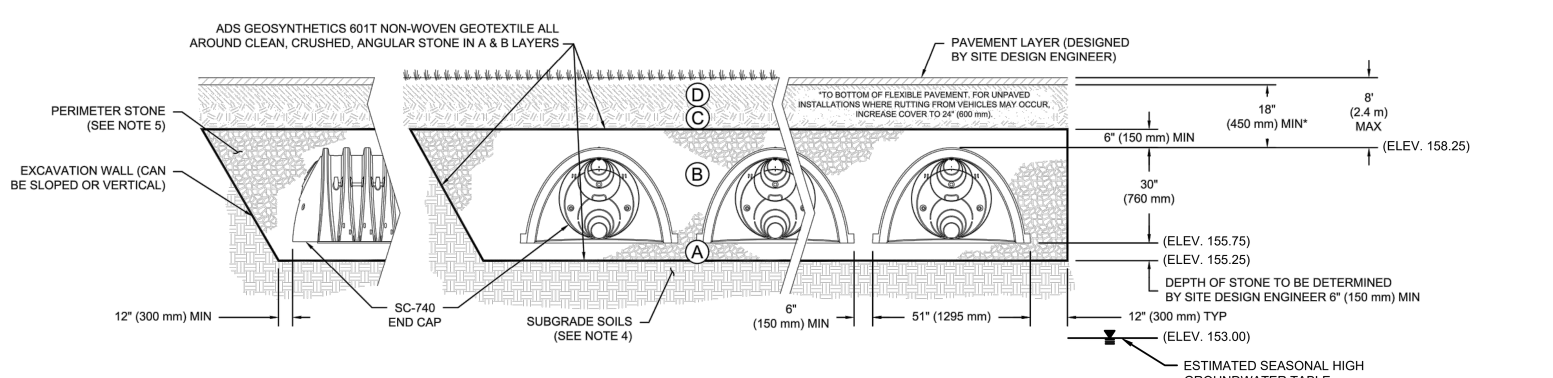
4640 TRUEMAN BLVD HILLIARD, OH 43026 1-800-733-7473 — ADVANCED DRAINAGE SYSTEMS, INC.

SHEET 2 OF 5

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 THIS LAYER.	AASHTO M145[1] A-1, A-2-4, 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 (53 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	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	AASHTO M43[1] 3, 357, 4, 467, 5, 56, 57	PLATE COMPACT OR ROLL TO ACHIEVE A FLAT SURFACE.[2,3]

PLEASE NOTE:
1. 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".
2. 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.
3. 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.
4. ONCE LAYER 'C' IS PLACED, ANY SOIL/MATERIAL CAN BE PLACED IN LAYER 'D' UP TO THE FINISHED GRADE. MOST PAVEMENT SUBBASE SOILS CAN BE USED TO REPLACE THE MATERIAL REQUIREMENTS OF LAYER 'C' OR 'D' AT THE SITE DESIGN ENGINEER'S DISCRETION.



NOTES:

1. CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2418-16a, "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
2. SC-740 CHAMBERS SHALL BE DESIGNED IN ACCORDANCE WITH ASTM F2787 "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
3. 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.
4. PERIMETER STONE MUST BE EXTENDED HORIZONTALLY TO THE EXCAVATION WALL FOR BOTH VERTICAL AND SLOPED EXCAVATION WALLS.
5. 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 550 LBS/IN/IN. 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.

ADESA DET 2 — HOLLISTON 2, MA — DATE: — DRAWN: TK — PROJECT #: — CHECKED: N/A

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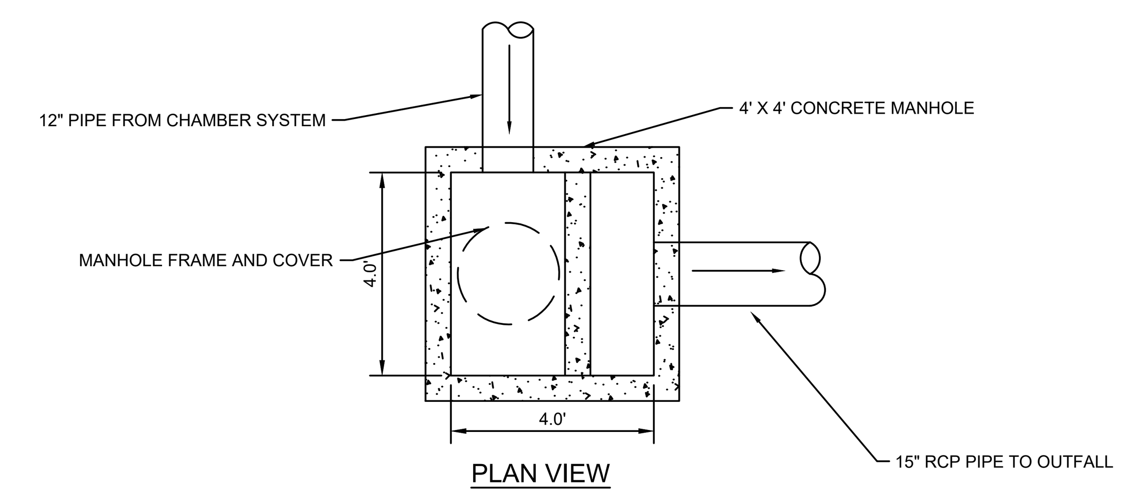
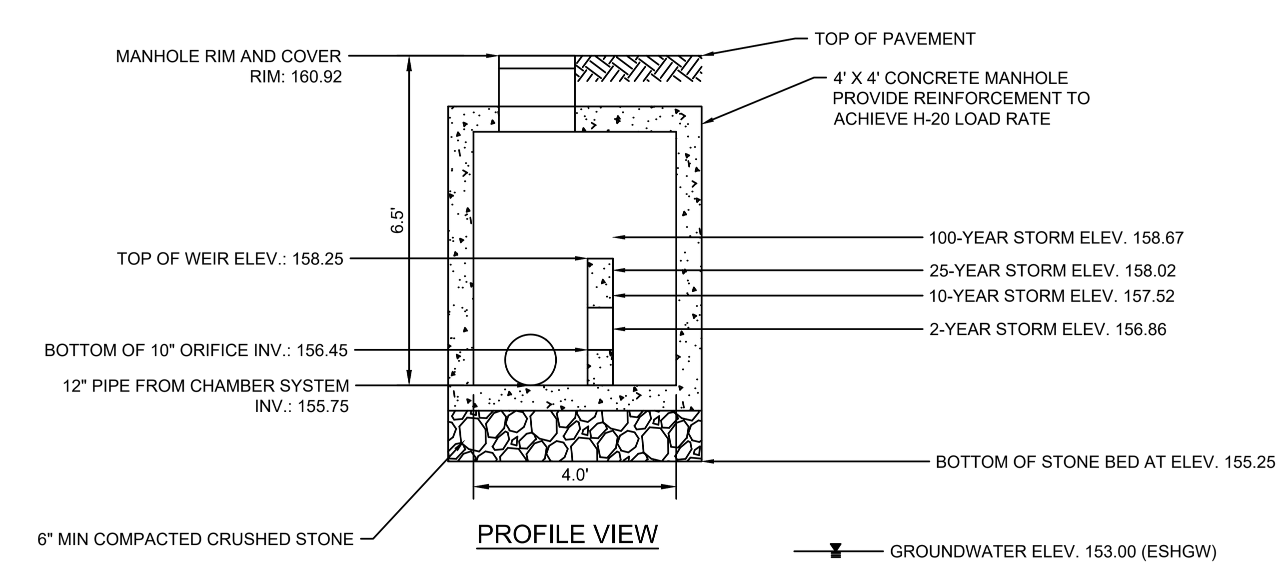
SHEET 3 OF 5



PLAN VIEW



PROFILE VIEW

OUTLET CONTROL STRUCTURE G1

SCALE: 1" = 3'

BAYSAVER TECHNOLOGIES

Barracuda

The Barracuda is a market-changing stormwater quality technology. This high performance vortex hydrodynamic separator is designed to remove total suspended solids in order to protect our precious receiving waters. The Barracuda is also an outstanding value that offers multiple pipe configurations, and quick installation.

FEATURES:

- Single manhole design
- No elevation loss between the inlet and outlet
- Variable inlet/outlet angle configurations (not just 180 degree orientation)
- Internal bypass for inline installation (where applicable)
- Revolutionary, patent pending "teeth" mitigate turbulence in the sump area to prevent resuspension of captured contaminants
- Available with grated drop inlet configuration
- Available with trash and/or oil capture add-ons

BENEFITS:

- Internal components are in stock for quick delivery
- The S3, S4, S6, and S8 can be installed in a standard 36" (900 m), 48" (1200 mm), 72" (1800 mm), and 96" (2400 mm) precast manhole, respectively
- The S3 and S4 can be provided factory installed within a 36" (0.91 m) and 48" (1.22 m) ADS HP manhole and delivered to the jobsite
- The Barracuda "teeth" apparatus is fabricated and designed for quick and easy field assembly
- Designed for easy maintenance using a vacuum truck or similar equipment.
- Inspection and maintenance are performed from the surface with no confined space entry

Variable inlet/outlet angle configurations

ADS Service: ADS representatives are committed to providing you with the answers to all your questions, including specifications, installation and more.

THE MOST ADVANCED NAME IN WATER MANAGEMENT SOLUTIONS®

BARRACUDA SPECIFICATION

MATERIALS AND DESIGN

- Concrete Structures: Designed for H-20 traffic loading and applicable soil loads or as otherwise determined by a Licensed Professional Engineer. The materials and structural design of the devices shall be per ASTM C857 and ASTM C858.
- The 36" and 48" HP Manhole Structures: Made from an impact modified copolymer polypropylene meeting the material requirements of ASTM F2764. The eccentric cone reducer shall be manufactured from polyethylene material meeting ASTM D3350 cell class 213320C. Gaskets shall be made of material meeting the requirements of ASTM F477.
- Separator internals shall be substantially constructed of stainless steel, polyethylene or other thermoplastic material approved by the manufacturer.

PERFORMANCE

- The stormwater treatment unit shall be an inline unit capable of conveying 100% of the design peak flow. If peak flow rates exceed maximum hydraulic rate, the unit shall be installed offline.
- The Barracuda unit shall be designed to remove at least 80% of the suspended solids on an annual aggregate removal basis. Said removal shall be based on full-scale third party testing using OK-110 media gradation or equivalent and 300 mg/L influent concentration. Said full scale testing shall have included sediment capture based on actual total mass collected by the stormwater treatment unit.

- OR -

The Barracuda unit shall be designed to remove at least 50% of TSS using a media mix with d_{50}=75 micron and 200 mg/L influent concentration.

- OR -

The Barracuda unit shall be designed to remove at least 50% of TSS per current NJDEP/NJCAT HDS protocol.

- The stormwater treatment unit internals shall consist of (1) separator cone assembly, and (1) sump assembly which includes (4) legs with "teeth".

Barracuda Model	Manhole Diameter	OK-110 (80% removal)	Pretreatment for infiltration[1]
S3	3 ft (0.91 m)	0.61 CFS	1.20 CFS
S4	4 ft (1.83 m)	1.08 CFS	2.13 CFS
S6	6 ft (1.83 m)	2.43 CFS	4.80 CFS
S8	8 ft (2.44 m)	4.32 CFS	8.54 CFS

* Peak bypass flows are dependent on final design.
[1] 50% removal of OK-110.

INSTALLATION

Installation of the stormwater treatment unit(s) shall be performed per manufacturer's installation instructions. Such instructions can be obtained by calling Advanced Drainage Systems at (800) 821-6710 or by logging on to www.ads-pipe.com or www.baysaver.com.

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Advanced Drainage Systems, Inc.
4640 Trueman Blvd., Hilliard, OH 43026
1-800-821-6710 www.ads-pipe.com

BARRACUDA WATER QUALITY FILTER

No.	REVISIONS	DATE	BY
1	PER CMG 7/24/20 SWM PEER REVIEW	9/25/20	TGK

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1700 WILLOW LAWN DR, SUITE 200, RICHMOND, VA 23230
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LICENSED PROFESSIONAL — COMMONWEALTH OF MASSACHUSETTS BRIAN J. BREWER CIVIL No. 46948 REGISTERED PROFESSIONAL ENGINEER 10-06-20 — DATE:

KHA PROJECT 113382001 — DATE 10/06/2020 — SCALE AS SHOWN — DESIGNED BY TGK — DRAWN BY TGK — CHECKED BY BJB

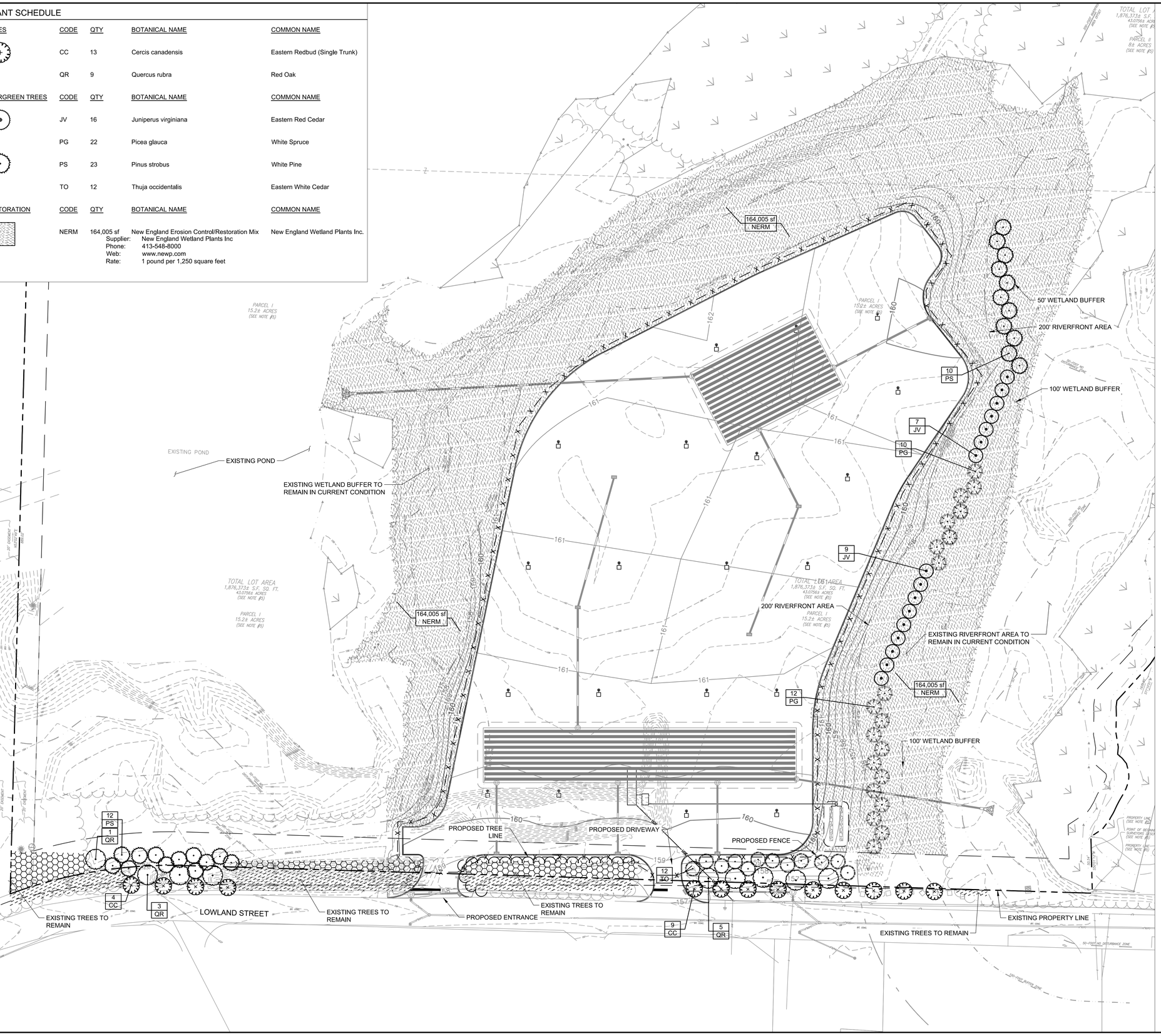
SITE DETAILS

ADESA HOLLISTON
PREPARED FOR
ADESA, INC.
TOWN OF HOLLISTON MA

SHEET NUMBER
20 OF 23

PLANT SCHEDULE

TREES	CODE	QTY	BOTANICAL NAME	COMMON NAME
	CC	13	Cercis canadensis	Eastern Redbud (Single Trunk)
	QR	9	Quercus rubra	Red Oak
EVERGREEN TREES	**CODE**	**QTY**	**BOTANICAL NAME**	**COMMON NAME**
	JV	16	Juniperus virginiana	Eastern Red Cedar
	PG	22	Picea glauca	White Spruce
	PS	23	Pinus strobus	White Pine
	TO	12	Thuja occidentalis	Eastern White Cedar
RESTORATION	**CODE**	**QTY**	**BOTANICAL NAME**	**COMMON NAME**
	NERM	164,005 sf	New England Erosion Control/Restoration Mix Supplier: New England Wetland Plants Inc Phone: 413-548-8000 Web: www.newp.com Rate: 1 pound per 1,250 square feet	New England Wetland Plants Inc.



NORTH

GRAPHIC SCALE IN FEET
0 20 40 80

LANDSCAPE LEGEND

- EXISTING TREELINE
- NEWLY ESTABLISHED TREELINE
- EXISTING TREES TO REMAIN - *STREET BUFFER STRIP*
- EXISTING TREES TO REMAIN - *PARKING AREA LANDSCAPE SPACE*

NOTES:

- ALL DISTURBED AREAS NOT COVERED BY LANDSCAPING SHALL BE SEEDED & ESTABLISHED PER THE MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION EROSION AND SEDIMENT CONTROL GUIDELINES AND SEEDING SPECIFICATIONS ON THIS PLAN

Street Buffer Strip *Art VII Sec 7.4.2(C)(1)*

Total Street Frontage	900 LF	
Existing Trees To Remain	445 LF *(See Note 1)*	
Proposed Driveway	80 LF	
Net Street Frontage	375 LF	
	REQUIRED	**PROVIDED**
Trees *(1 per 30 LF of Net Street Frontage)*	***13 Trees***	***13 Trees***

Notes:

1. Per Section 7.4.1(C) of Article VII, the Street Buffer Strip shall preserve and credit existing trees. The remaining street frontage shall be planted with deciduous trees at a rate of 1 tree per 30 LF per the requirements of Section 7.4.2(C)(1)
2. Trees in the Street Buffer Strip are underneath overhead utilities. Tree species in this location have been selected per the guidance of Eversource Recommended Trees under Utilities.

Large Parking Area *Art VII Sec 7.4.2(C)(3)*

Parking Area	201,202 SF	
	REQUIRED	**PROVIDED**
Landscape Space *(10% of Parking Area)*	***20,120 SF***	***20,967 SF*** *11,135 SF Ex. Trees* *33 Proposed Trees (See Note 2)*

Notes:

1. The use of this site is for temporary vehicle staging. Trees located within the staging area can damage vehicles by dropping debris, sap, etc. and interfering with operations; therefore, the required Landscape Space has been provided adjacent to Lowland Street in an effort to maximize tree preservation [Sec 7.4.2(E)(6)] and minimize site impacts [Sec 7.4.2(E)(4)(A) & [Sec 7.4.2(E)(7)]. Persuant to Article VII, Section 7.4.4 the applicant requests the Planning Board approve this revised location.
2. Per Section 7.4.1(C) of Article VII, the Large parking area shall preserve and credit existing trees. The remaining landscape space square footage shall be planted with a mix of evergreen and deciduous trees at a rate of 1 tree per 300 SF.

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LICENSED PROFESSIONAL

COMMONWEALTH OF MASSACHUSETTS
BRIAN BREDER
CIVIL
No. 46948
10-06-20
REGISTERED PROFESSIONAL ENGINEER

DATE:

KHA PROJECT 113382001
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SCALE AS SHOWN
DESIGNED BY DW
DRAWN BY DW
CHECKED BY BB

LANDSCAPE PLAN

ADESA HOLLISTON

PREPARED FOR
ADESA, INC.

TOWN OF HOLLISTON MA

SHEET NUMBER
21 OF 23

Plotted By:Katelhon, Tom Sheet Set:K:\BOS\069018011 ADESA HOLLISTON\CAD\DWG\SHEET SETS\PERMITTING\LANDSCAPE DETAILS & SPECIFICATIONS.dwg
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GENERAL NOTES

1. Plants shall be healthy, vigorous material, free of pests and diseases and are subject to approval/rejection of the Landscape Architect prior to, during and after installation.
2. Contractor shall identify all materials at growing location prior to purchase and submit digital photographs, and source list to the Landscape Architect for approval at a minimum of six (6) calendar weeks prior to installation. Plants not approved shall be resourced and resubmitted.
3. Planting beds and individual tree plantings shall be mulched continuously as specified.
4. Prior to construction the contractor shall be responsible for locating underground utilities and execute work in a manner that avoids damage to utilities during the course of work. Contractor shall be responsible or remedy of any damage to utilities, structures, site appurtenances that occur as a result of landscape related work.
5. Contractor is responsible for verifying quantities shown on documents. Field adjustments shall be approved by Landscape Architect prior to installation. Quantities indicated on drawings are for reference-it is the Contractor's responsibility to ensure full coverage of plants at the indicated spacing.
6. Contractor is responsible for maintenance of all plantings including, but not limited to watering, mowing, edging, spraying, mulching, fertilizing, of plantings and turf areas for one (1) calendar year from date of certificate of occupancy. Contractor is responsible for warranty of all plant material for a period of one (1) calendar year from date of certificate of occupancy. Warranty replacement planting shall meet or exceed the original specification identified on drawings. Replacement planting shall extend the same warranty as originally installed materials. Plantings and grass areas shall be flourishing and fully thriving at end of warranty period.
7. Plants identified for replacement by Owner, Landscape Architect shall be replaced immediately by the Contractor unless otherwise agreed upon. Plantings (trees, shrubs, groundcover) subject to replacement by warranty shall exhibit characteristics of 30% dead-per individual plant, non-contributing or disease compromised. Grass areas suitable for acceptance shall demonstrate 85% sustained/consistent and continuous, densely established coverage.
   Contractor shall perform a site review at end of warranty period and provide the Owner with written documentation of the site, including plant health, warranty replacement items, and conditions that may be influencing plant health. Contractor shall remove from plants and site, all staking and guying material at end of warranty period.
8. Contractor shall comply with all local, state and federal requirements, codes and regulations related to the work undertaken.
9. All material including planting operation appurtenances shall be of domestic origin manufacture and sourced within 100 miles of the project site.
10. Contractor is responsible for coordination among trades operating on site. Coordination and if necessary resulting modifications to schedules are responsibility of the Contractor.

PERFORMANCE SPECIFICATION

I. PLANTS

A. General
1. Live healthy plants free of dead branches and parts
2. Free of disease, insect, injury and damage
3. Unbroken, intact, dense and solid rootballs and containers, without cracks, flat sides or previously repaired damage.
4. Free of girdling roots or rootbound/circling container conditions
5. Plants of consistent in growth habit and healthy character
6. Free of compromising growth conditions such as weak crotch connections, crossed branches, snags and scars
7. Point of origin growing location within 100 miles of project site
8. Graded, standards, caliper, sizes and stock consistent with *ANSI Z60.1, American Standard for Nursery Stock* most current edition
9. Species identified consistent with *Hortus Third: Concise Dictionary of Plants Cultivated in the United States and Canada*, most current edition and *Manual of Woody Plants: Their Identification, Ornamental Characteristics, Culture, Propagation and Uses*, most current edition
10. All disturbed areas shall be grass seed unless otherwise identified on landscape plans

B. Trees:
1. Deciduous Single Trunk
   a. Full, straight and upright with consistent symmetrical natural branching pattern throughout
   b. Branching Height-seven (7) feet to lowest branch in two years unless otherwise required by local jurisdiction

2. Deciduous Multi-Trunk
   a. Full and upright with straight consistent symmetrical natural branching pattern throughout
   b. Canes evenly spaced and of similar growth habit
   c. Free of suckers and extraneous branching

3. Evergreen Single-Trunk
   a. Full and upright with continuous symmetrical dense natural habit
   b. Clear branching height twelve (12) inches above top of rootball
   c. Free of suckers and extraneous branching
   d. Do not shear or otherwise prune to shape plantings

C. Evergreen and Deciduous Shrubs
1. Full, dense and naturally symmetrical.
2. Consistent with container and/or balled and burlapped size
3. Free of suckers and extraneous branching
4. Do not shear or otherwise prune or shape plantings

D. Evergreen and Deciduous Groundcover
1. Full and dense in pots or flats

E. Perennials and Seasonal Color
1. Full and dense in pots or flats

F. Turf Grass
1. Subgrade
   a. Soil Mix-10% Compost, 90% topsoil by volume
   b. Preparation-loosen subgrade to a minimum depth of four (4) inches. Remove all non-natural materials including litter, stones, sticks and all items greater than ¾ inch in any dimension
   c. Preparation-spread soil mix at a depth of four (4) inches continuously to meet grade elevations shown on drawings. Allow for thickness of sod when applicable

2. Grass Sod
   a. Install not longer than twenty-four (24) hours from harvest
   b. Grass bed not less than two (2) inches in continuous thickness
   c. 100% continuous live sod coverage after first growing season and at end of warranty period.
   d. Of uniform non-varying density and continuous texture quality capable of growth and development immediately upon installation. Weed and noxious plant free
   e. Stagger installation rows and place aligned parallel to contours
   f. Fill joints solidly with planting bed preparation soil
   g. Provide anchor pins at twenty-four (24) inches on center for slopes greater than 4:1

3. Grass Seed
   a. Mix approved by the Landscape Architect
   b. Provide first and new of year seed crops in mix free of weed seeds and deleterious matter
   c. Provide seed mix not greater than 15% annual or perennial rye
   d. Coverage 85% continuous coverage live stand after first growing season and at end of warranty
   e. Replacement or overseeding mixes consistent with original application/installation
   f. Provide erosion blankets or other slope retention methods as noted on drawings

4. Erosion Control and Restoration Seed
   a. Preparation: The contractor is to limit subgrade preparation to areas that will be planted in the immediate future. The subgrade is to be loosened to a minimum depth of 4 inches, and the seeded areas are to be graded to a smooth, even surface with loose, uniformly fine texture. The areas to be seeded are to then be rolled and raked to remove ridges and fill depressions to meet finish grades. Fine grading will be limited to areas that can be planted in the immediate future. Prepared areas are to be moistened before seeding when soil is dry. Prior to planting, the surface is to be watered thoroughly and allowed to dry before planting with care not to create muddy soil. Prepared areas are to be restored if eroded or otherwise disturbed after fine grading and before planting.
   b. Installation: Seed is to be sown with a spreader or a seeding machine. Seed is not to be broadcast or dropped when wind velocity exceeds 5 mph (8 km/h). Seed is to be evenly distributed by sowing in two directions at right angles to each other. Wet seed or seed that is moldy or otherwise damaged in transit or stage is not to be used.
   c. After being sown, the seed is to be raked into the top 1/8 inch of the topsoil, lightly rolled and watered with fine spray.
   d. Seeded areas on slopes greater than 15% are to be protected with erosion control matting. All seeded areas are to be protected by spreading straw mulch or equivalent uniformly to form a continuous blanket over seed areas. Straw mulch is to be spread by hand, blower, or other suitable equipment, and anchored by crimping into the topsoil by suitable equipment or netting.

II. Materials and Appurtenances

A. Testing
1. Materials testing information/certificates/dated labels shall be current to the project and performed/certified not greater than 120 calendar previous days from current date of submittal for review

B. Top Soil
1. Neutral Ph balance 5.5 -7.5. Friable and containing 2.0-5.0% organic matter by dry weight. Continuously free of non-soil items such as stones, debris, sticks, trash, and deleterious matter greater than ¾ inch in any direction. Clay content shall not exceed 25%.Gravel content shall not exceed 10%. Silt shall not exceed 25%

C. Use of Existing Topsoil
1. Existing topsoil on-site may be repurposed with prior Owner approval. Contractor shall provide soil testing and additive program that demonstrates consistent performance and characteristics and composition as identified herein. Owner shall approve soil testing and soil amendment/additive methods and procedures

D. Shredded Hardwood Mulch
1. 100% organic shredded first year hardwood free of deleterious matter, rock, gravel and weed seed. Neutral Ph balance 5.5-7.5

E. Composted Pine Bark Fines
1. 100% organic ground pine bark with no particle dimension greater than ¾-inch and no greater than 10% wood content

F. Compost Ph
1. Balanced 5.0-8.5 mature, stable and weed free produced by natural aerobic decomposition. Free of visible contaminants and toxic substances. Not greater than 5% sand, silt, clay or rock by dry weight. Consistent with US-EPA CFR Title 40 Part 503 Standards for Class A biosolids

G. Compost Testing
1. Prior to delivery on-site, the following items are required for approval by Owner: Feedstock percentage in final compost product; statement that the products meets federal, state and local health safety requirements
2. Provide copy of lab analysis less than 120 calendar days old verifying that the product meets described physical requirements; chemical contaminants; Ph; physical contaminants; biological contaminants (including a statement that fecal coliform and salmonella testing and results comply with requirements of the US Composting Council Seal of Testing approval programs

H. Planting Mix
1. 85% topsoil and 15% Compost

I. Fertilizer
1. Granular 10% nitrogen, 6% Phosphorous, 4% Potassium granular form with 50% Nitrogen in organic form. Product and Material Safety Data as approved by Owner

J. Herbicide
1. Product and Material Safety Data as approved by Owner

K. Water
1. Potable only unless otherwise approved by Owner

L. Hardwood Stakes
1. 2 x 2 x 48 inch square of sound hardwood, painted flat black on all sides

M. Tree Ties
1. Villa Non-Abrasive Rubber Tree Ties or approved equal

N. Filter Fabric
1. Mirafi 140-N or approved equal

r.

III. Execution

A. Site Conditions
1. Inspect site and notify Owner in writing of acceptance with indication that project conditions are acceptable are suitable to proceed with work. Notify Owner of any existing damage and/or other conflicting conditions.
2. Do not proceed with work until unsatisfactory conditions have been satisfactorily remedied. Notify Owner of acceptance prior to commencement of work.
3. Notify Owner in writing of any conditions that may preclude successful completion of work including items such as coordination with other trades, incomplete work, drainage, soil temperature and/or composition, access to storage/work areas, damage to conditions, etc.
4. Notify Owner in writing immediately of any items that may influence work schedule, timing of tasks, materials delivery and/or installation and warranty responsibilities.
5. Coordinate and cooperate with other trades working in and adjacent to work areas. Examine drawings of other trades which show development of the entire project and become familiar with the scope of required work by others.

B. Planting Seasons
Recommended seasons are a general guide based on historical climatic data and typical performance of plantings, and which vary dependent on project-specific environmental conditions. Due to construction schedules, recommended planting seasons may/may not coincide with request(s) for certificate of occupancy for projects. Coordination of planting installation and seasons shall be reviewed with Owner on an individual project basis.

1. **Deciduous and Evergreen Trees**
   a. Do not install/plant the following trees between September 15 and March 15
      a.a. Oaks (Quercus Sp., Such as Q. rubra, Q. alba, Q. phellos, Q. coccinnea)
      a.b. Dogwood (Cornus Sp.)
      a.c. Sweetgum (Liquidambar Sp.)
      a.d. All Conifers and Evergreens except White Pine (Pinus strobus Sp.)

2. **Deciduous and Evergreen Shrubs**
   a. Install/plant between March 15 and June 15 and/or September 15 and November 30

3. **Perennials**
   a. Install/plant between March 15 and June 15 and/or September 15 and November 30

4. **Spring Flowering Bulbs**
   a. Install/plant between September 15 and December 15

5. **Seasonal Annuals**
   a. Install/plant in season per approved schedule

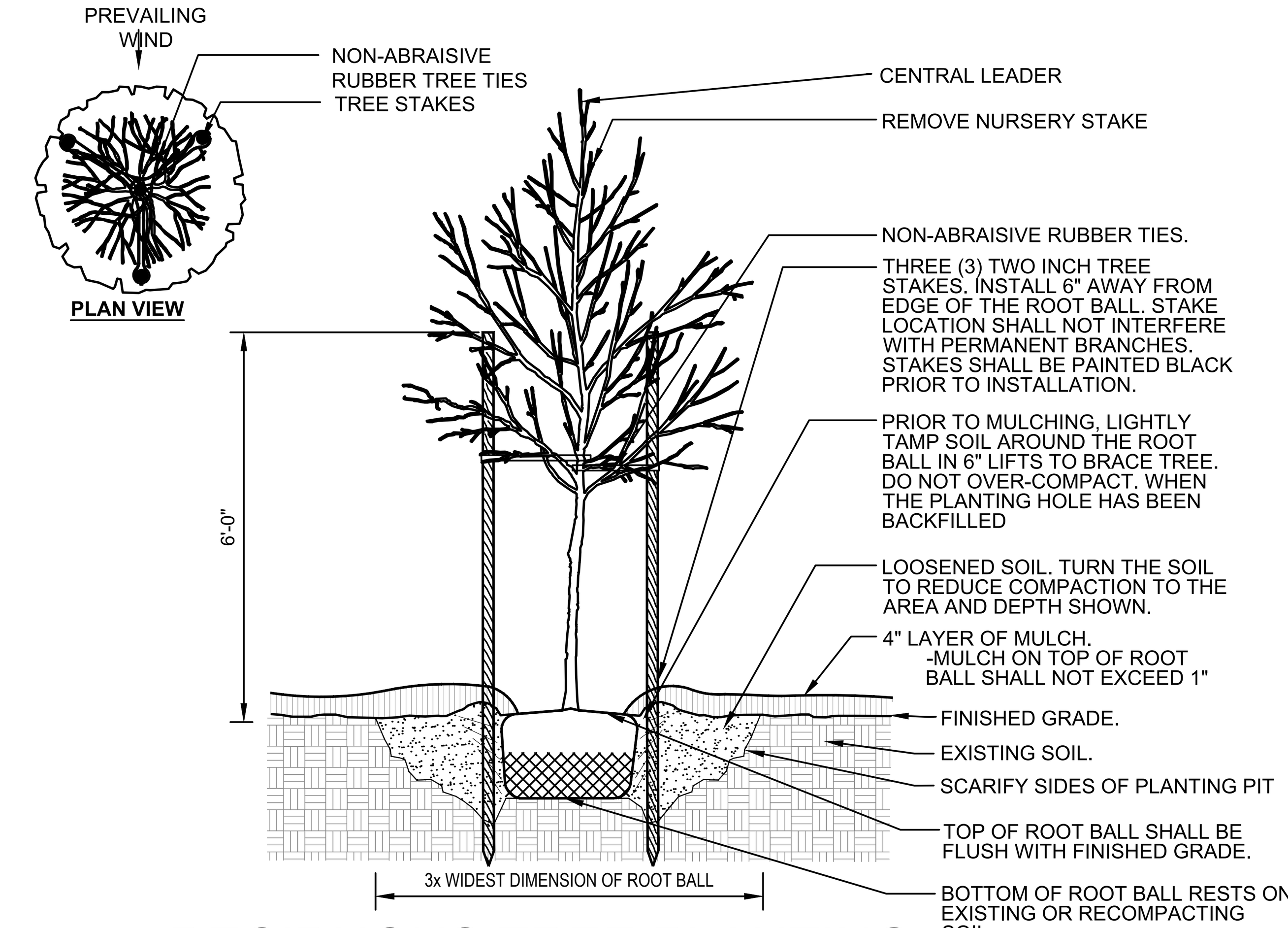
6. **Turf Grass**
   a. Install/plant between March 15 and May 15 and/or September 15 and November 30
   b. Do not install/plant seed or sod turf grass areas when ambient air temperature is below forty (40) degrees Fahrenheit, or forecast for a twelve (12) hour period after completion of work

7. **No Plant Installation**
   a. Do not install plantings or turf grass between June 15 and September 15, without approval by Owner

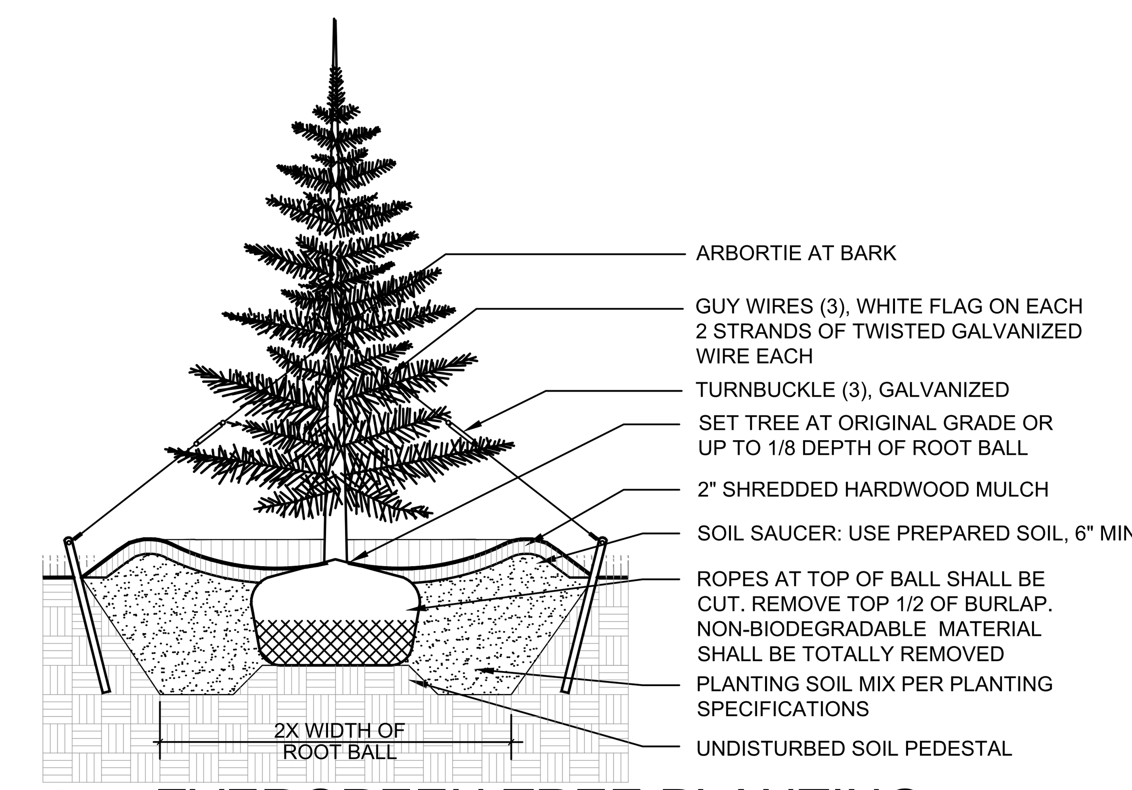
C. Positioning & Location of Plantings
1. Position plants to show the most-prominent and well-formed face to most-public view
2. Field locate plants and location/spacing/dimension of planting beds on project site prior to beginning installation
3. Verify location of individual plants and plant beds prior to beginning installation. Do not proceed without Owner approval

D. Implementation
1. Pursue work continuously without delay or interruption until completion unless notified otherwise by Owner
2. Provide project submittals ahead of commencement of work. Landscape Architect requires a minimum of ten (10) working days from date of receipt for review of submittals and response to Owner and Contractor. Plan accordingly for procurement of materials
3. Continuously update implementation schedule and notify Owner of progress. Delays related to material availability are not cause for non-completion of scheduled delivery of work
4. Report delays due to weather or site conditions immediately upon finding. Provide recommendation for remedy of schedule delays. Do not work, place or modify frozen soil
5. Report delays due to extraordinary natural or other conditions beyond control of Contractor

E. Clean Up
1. Remove trash, debris and work materials from site prior to request for substantial completion. Thoroughly clean surfaces impacted by work including building, parking areas, roadways, sidewalks, signs, lights, site furnishings, etc.
2. Repair any damage to existing conditions that occurred during execution of work.
3. All clean-up and demobilization procedures shall be performed to satisfaction of the Owner and Landscape Architect.



A DECIDUOUS TREE PLANTING
NOT TO SCALE



B EVERGREEN TREE PLANTING
NOT TO SCALE

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LANDSCAPE DETAILS & SPECIFICATIONS

ADESA HOLLISTON
PREPARED FOR
ADESA, INC.

TOWN OF HOLLISTON MA

SHEET NUMBER
22 OF 23

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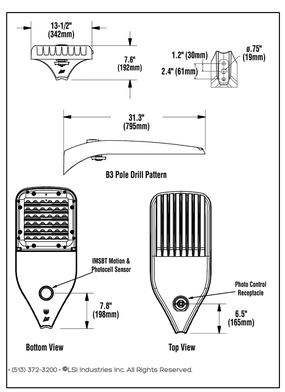
NOTES:

1. CONTRACTOR TO PROVIDE SHOP DRAWING FOR MANUFACTURER RECOMMENDED LIGHT POLE FOUNDATION FOR REVIEW PRIOR TO CONSTRUCTION. TOP OF FOUNDATION SHALL BE A MINIMUM 3' ABOVE GRADE AND 24" DIAMETER



LIGHT FIXTURE
N.T.S.

Luminaire Schedule							
Symbol	Qty	Label	Arrangement	Lum. Lumens	LLF	Lum. Watts	Description
	20	X-S5	SINGLE	24490	0.900	187	MRM-LED-24L-SIL-5W-50-70CRI

Calculation Summary							
Label	CalcType	Units	Avg	Max	Min	Avg/Min	Max/Min
Paved Areas & Drives	Illuminance	Fc	2.43	9.9	0.0	N.A.	N.A.
Property Line	Illuminance	Fc	0.01	0.3	0.0	N.A.	N.A.

LIGHTING NOTES:

- Mounting Height = 15'
- Light Loss Factor = 0.90
- Footcandle Values Calculated @ 3' A.F.F.
- Reflectance Values - 80/50/20 (office spaces)
  50/30/20 (warehouse areas)

National Lighting Vendor:

For pricing and technical assistance contact:
Matt Earles of CBMC INC, tel# 317-695-7840,
mearles@cbmcinc.com

All electrical work shall comply with National, State, and Local codes including and not limited to the National Electric Code, NFPA 101 Life Safety Code, ASHREA and /or IECC Energy Codes.

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SEE MORE

This lighting pattern represents illumination levels calculated from laboratory data taken under controlled conditions in accordance with IESNA approved methods. Actual performance of any manufacturer's luminaire may vary due to variation in electrical voltage, tolerance in lamps and LED lumen package, location adjustments, and other variable field conditions.

Contractor to check and verify all dimensions on site before commencing any work shown.

ADESA - Holliston, MA

SITE LAYOUT

Scale:	1" = 50'	Drawing No:	LP1
Date:	10/1/20	Project No:	CB16692-SITE-2
Drawn By:	SJM		

-