

SITE DEVELOPMENT PLANS

FOR ASHLAND RAIL TRANSIT APARTMENTS M.B.T.A. ACCESS ROAD ASHLAND, MA

SEPTEMBER 28, 2015

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TRAFFIC CONSULTANT

MDM TRANSPORTATION CONSULTANTS, INC.
28 LORD ROAD, SUITE 280
MARLBOROUGH, MA 01752

LANDSCAPE ARCHITECT

RYAN ASSOCIATES
144 MOODY STREET, BUILDING 4
WALTHAM, MA 02453

ENVIRONMENTAL CONSULTANT

ECOTEC, INC.
102 GROVE STREET
WORCESTER, MA 01605

OWNER:

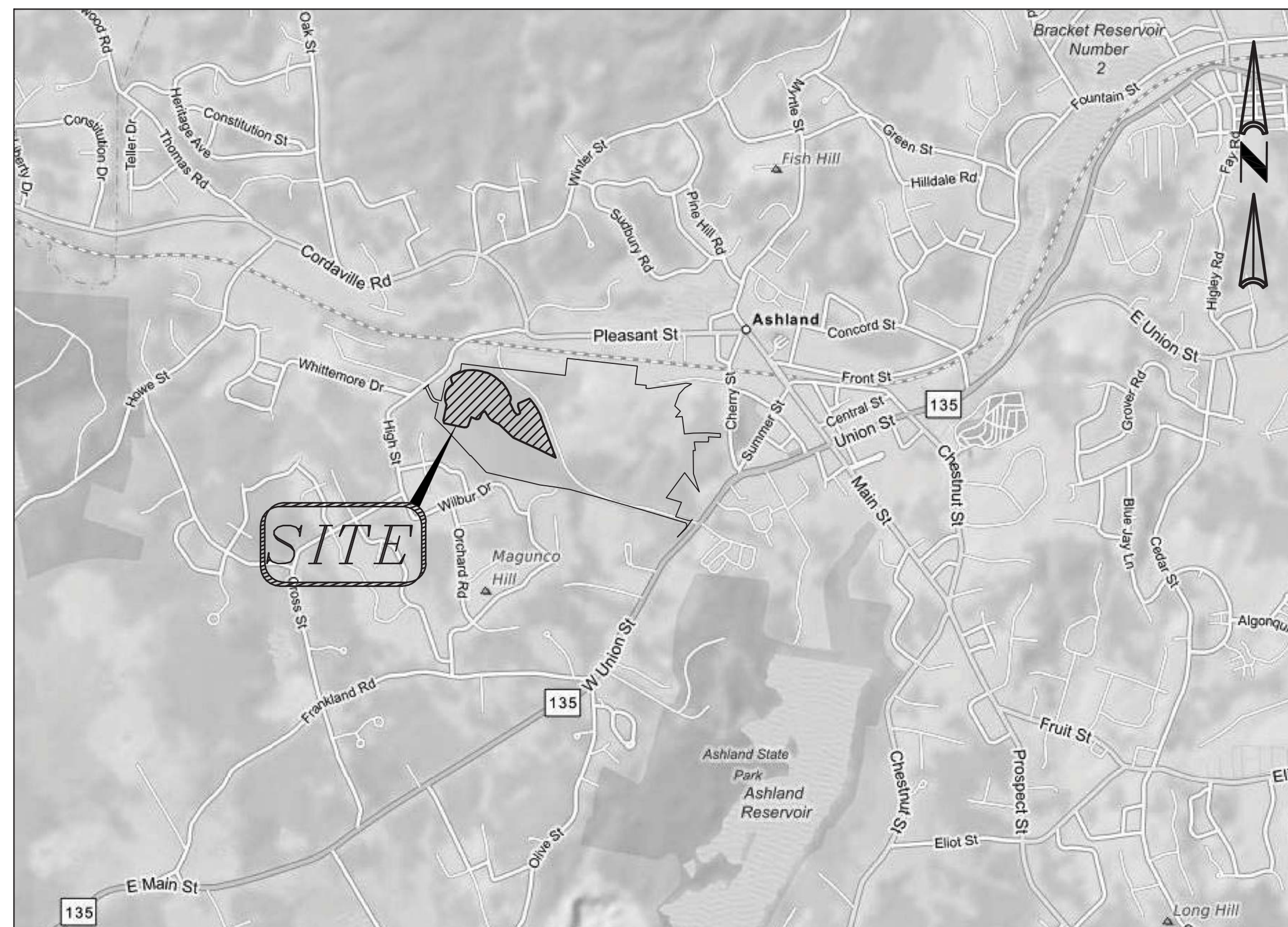
ROBERT GAYNER
P.O. BOX 300
ALTON, NH 03809

APPLICANT:

CAMPANELLI ACQUISITIONS II LLC.
C/O CAMPANELLI COMPANIES
10 CAMPANELLI DRIVE
BRAINTREE, MA 02184

CIVIL ENGINEERS:

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



LOCATION MAP

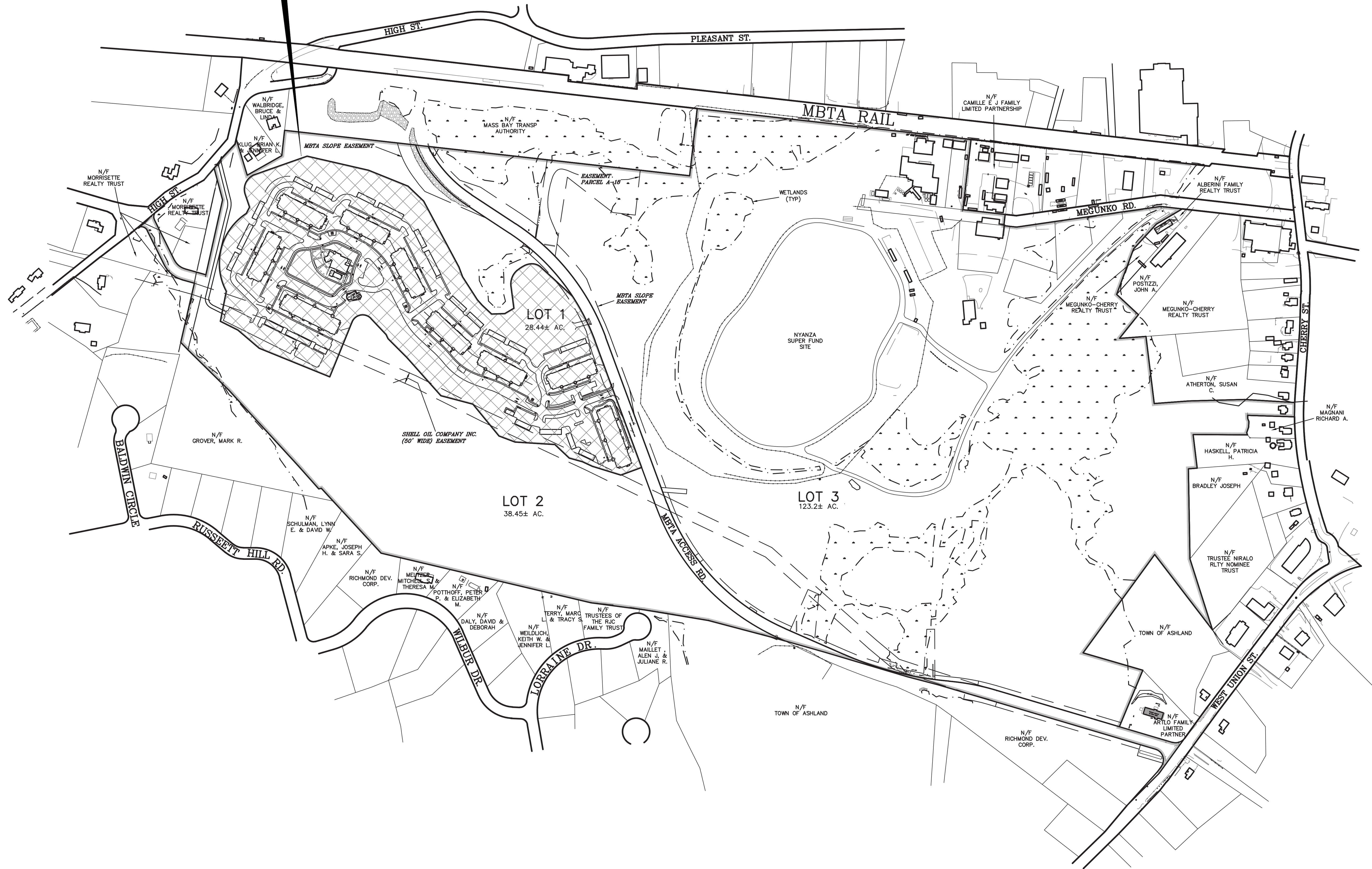
David Noel
Kelly
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	SCALE N/A	DISK REF. NO. F:\P\2015-042	M.B.T.A. ACCESS ROAD ASHLAND, MA  KELLY ENGINEERING GROUP, INC. CIVIL ENGINEERING CONSULTANTS 0 CAMPANELLI DRIVE • BRAINTREE MA • 02184 PHONE: 781 843 4333 FAX: 781 843 0028	SHEET NO. 1
	DATE 09/28/15	DRAWN BY C.L.		
	SHEET 1 OF 17	CHKD BY DAM		
	PLAN NO. 2015-042-TS00	APPD BY DNK		



SUBJECT
LOT

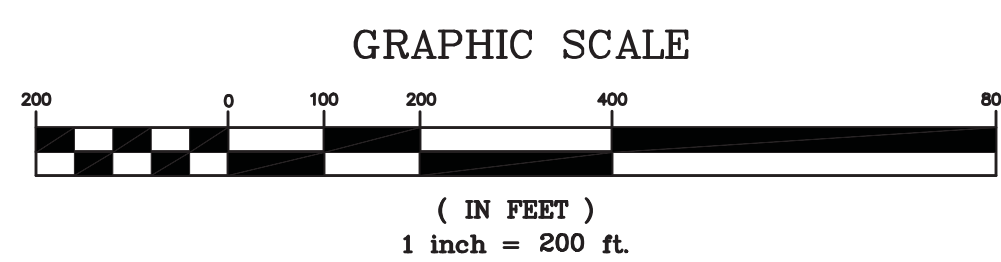


EXISTING LEGEND	
	EASEMENT
	EDGE OF WETLANDS
	WETLANDS
	PROPERTY LINE
	ZONE LINE

- PLAN REFERENCES:
1. SITE PLAN FOR JEFFERSON A ASHLAND STATION BY ALLEN & MAJON, INC. REVISED APRIL 15, 2008
 2. TOPOGRAPHIC PLAN OF LAND IN ASHLAND MA, JEFFERSON AT ASHLAND L.P. BY HANCOCK SURVEY, INC. REVISED APRIL 13, 2007

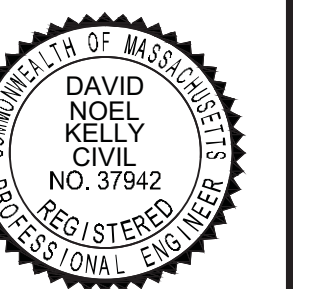
- NOTES:
1. SUBJECT PARCEL IS LOT 1 AND PORTIONS OF LOT 2 OF THE SITE PLAN FOR JEFFERSON AS ASHLAND. PARCELS SHOWN ON THE TOWN OF ASHLAND ASSESSORS MAP B LOT 156
 2. THE PROJECT IS LOCATED IN THE RAIL TRANSIT "E" ZONING DISTRICT.
 3. THE PROJECT SHOWN HERON REPRESENTS A MODIFICATION TO SITE PLAN APPROVAL DECISION- JEFFERSON AT ASHLAND STATION DATED JUNE 19, 2008

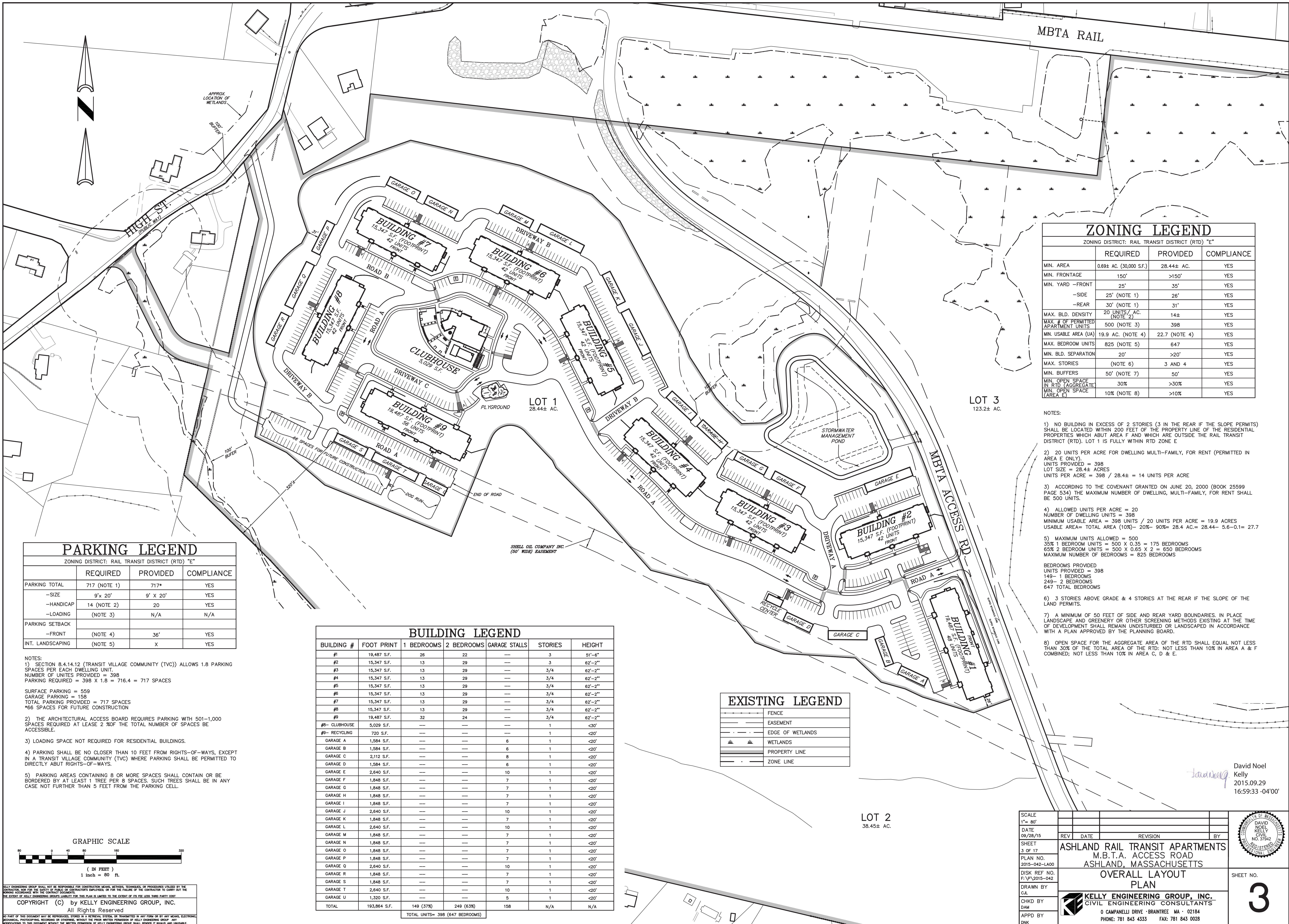
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SCALE 1" = 200'	REV	DATE	REVISION	BY
DATE 09/28/15				
SHEET 2 OF 17				
PLAN NO. 2015-042-LA00				
DISK REF NO. F:\P\2015-042				
DRAWN BY C.J.L.				
CHKD BY DAM				
APPD BY DNK				
ASHLAND RAIL TRANSIT APARTMENTS M.B.T.A. ACCESS ROAD ASHLAND, MASSACHUSETTS				
PARK PLAN				
KELLY ENGINEERING GROUP, INC. CIVIL ENGINEERING CONSULTANTS 0 CAMPANELLI DRIVE • BRAINTREE MA • 02184 PHONE: 781 843 4333 FAX: 781 843 0028				
SHEET NO.				2





ZONING LEGEND			
ZONING DISTRICT: RAIL TRANSIT DISTRICT (RTD) "E"			
	REQUIRED	PROVIDED	COMPLIANCE
MIN. AREA	0.69± AC. (30,000 S.F.)	28.44± AC.	YES
MIN. FRONTAGE	150'	>150'	YES
MIN. YARD -FRONT	25'	35'	YES
-SIDE	25' (NOTE 1)	26'	YES
-REAR	30' (NOTE 1)	31'	YES
MAX. BLD. DENSITY	20 UNITS / AC. (NOTE 2)	14±	YES
MAX. # OF PERMITTED APARTMENT UNITS	500 (NOTE 3)	398	YES
MIN. USABLE AREA (UA)	19.9 AC. (NOTE 4)	22.7 (NOTE 4)	YES
MAX. BEDROOM UNITS	825 (NOTE 5)	647	YES
MIN. BLD. SEPARATION	20'	>20'	YES
MAX. STORIES	(NOTE 6)	3 AND 4	YES
MIN. BUFFERS	50' (NOTE 7)	50'	YES
MIN. OPEN SPACE IN RTD (AGGREGATE)	30%	>30%	YES
MIN. OPEN SPACE (AREA E)	10% (NOTE 8)	>10%	YES

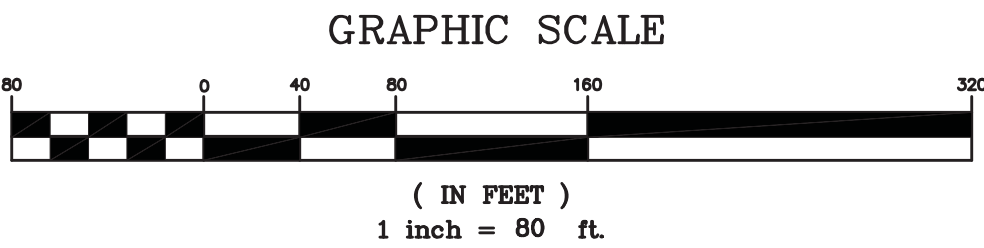
- NOTES:
- 1) NO BUILDING IN EXCESS OF 2 STORIES (3 IN THE REAR IF THE SLOPE PERMITS) SHALL BE LOCATED WITHIN 200 FEET OF THE PROPERTY LINE OF THE RESIDENTIAL PROPERTIES WHICH ADJUT AREA F AND WHICH ARE OUTSIDE THE RAIL TRANSIT DISTRICT (RTD). LOT 1 IS FULLY WITHIN RTD ZONE E
- 2) 20 UNITS PER ACRE FOR DWELLING MULTI-FAMILY, FOR RENT (PERMITTED IN AREA E ONLY).
UNITS PROVIDED = 398
LOT SIZE = 28.4± ACRES
UNITS PER ACRE = 398 / 28.4± = 14 UNITS PER ACRE
- 3) ACCORDING TO THE COVENANT GRANTED ON JUNE 20, 2000 (BOOK 25599 PAGE 534) THE MAXIMUM NUMBER OF DWELLING, MULTI-FAMILY, FOR RENT SHALL BE 500 UNITS.
- 4) ALLOWED UNITS PER ACRE = 20
NUMBER OF DWELLING UNITS = 398
MINIMUM USABLE AREA = 398 UNITS / 20 UNITS PER ACRE = 19.9 ACRES
USABLE AREA= TOTAL AREA (10%) - 20% - 90%= 28.4 AC. = 28.44 - 5.6 - 0.1= 27.7
- 5) MAXIMUM UNITS ALLOWED = 500
35% 1 BEDROOM UNITS = 500 X 0.35 = 175 BEDROOMS
65% 2 BEDROOM UNITS = 500 X 0.65 X 2 = 650 BEDROOMS
MAXIMUM NUMBER OF BEDROOMS = 825 BEDROOMS
- BEDROOMS PROVIDED
UNITS PROVIDED = 398
149 - 1 BEDROOMS
249 - 2 BEDROOMS
647 TOTAL BEDROOMS
- 6) 3 STORIES ABOVE GRADE & 4 STORIES AT THE REAR IF THE SLOPE OF THE LAND PERMITS.
- 7) A MINIMUM OF 50 FEET OF SIDE AND REAR YARD BOUNDARIES. IN PLACE LANDSCAPE AND GREENERY OR OTHER SCREENING METHODS EXISTING AT THE TIME OF DEVELOPMENT SHALL REMAIN UNDISTURBED OR LANDSCAPED IN ACCORDANCE WITH A PLAN APPROVED BY THE PLANNING BOARD.
- 8) OPEN SPACE FOR THE AGGREGATE AREA OF THE RTD SHALL EQUAL NOT LESS THAN 30% OF THE TOTAL AREA OF THE RTD; NOT LESS THAN 10% IN AREA A & F COMBINED; NOT LESS THAN 10% IN AREA C, D & E.

PARKING LEGEND			
ZONING DISTRICT: RAIL TRANSIT DISTRICT (RTD) "E"			
	REQUIRED	PROVIDED	COMPLIANCE
PARKING TOTAL	717 (NOTE 1)	717*	YES
-SIZE	9'x 20'	9' X 20'	YES
-HANDICAP	14 (NOTE 2)	20	YES
-LOADING	(NOTE 3)	N/A	N/A
PARKING SETBACK			
-FRONT	(NOTE 4)	36'	YES
INT. LANDSCAPING	(NOTE 5)	X	YES

- NOTES:
- 1) SECTION 8.4.14.12 (TRANSIT VILLAGE COMMUNITY (TVC)) ALLOWS 1.8 PARKING SPACES PER EACH DWELLING UNIT.
NUMBER OF UNITS PROVIDED = 398
PARKING REQUIRED = 398 X 1.8 = 716.4 = 717 SPACES
- SURFACE PARKING = 559
GARAGE PARKING = 158
TOTAL PARKING PROVIDED = 717 SPACES
*66 SPACES FOR FUTURE CONSTRUCTION
- 2) THE ARCHITECTURAL ACCESS BOARD REQUIRES PARKING WITH 501-1,000 SPACES REQUIRED AT LEASE 2 X OF THE TOTAL NUMBER OF SPACES BE ACCESSIBLE.
- 3) LOADING SPACE NOT REQUIRED FOR RESIDENTIAL BUILDINGS.
- 4) PARKING SHALL BE NO CLOSER THAN 10 FEET FROM RIGHTS-OF-WAYS, EXCEPT IN A TRANSIT VILLAGE COMMUNITY (TVC) WHERE PARKING SHALL BE PERMITTED TO DIRECTLY ADJUT RIGHTS-OF-WAYS.
- 5) PARKING AREAS CONTAINING 8 OR MORE SPACES SHALL CONTAIN OR BE BORDERED BY AT LEAST 1 TREE PER 8 SPACES. SUCH TREES SHALL BE IN ANY CASE NOT FURTHER THAN 5 FEET FROM THE PARKING CELL.

BUILDING LEGEND						
BUILDING #	FOOT PRINT	1 BEDROOMS	2 BEDROOMS	GARAGE STALLS	STORIES	HEIGHT
#1	19,487 S.F.	26	22	---	3	51'-6"
#2	15,347 S.F.	13	29	---	3	62'-2"
#3	15,347 S.F.	13	29	---	3/4	62'-2"
#4	15,347 S.F.	13	29	---	3/4	62'-2"
#5	15,347 S.F.	13	29	---	3/4	62'-2"
#6	15,347 S.F.	13	29	---	3/4	62'-2"
#7	15,347 S.F.	13	29	---	3/4	62'-2"
#8	15,347 S.F.	13	29	---	3/4	62'-2"
#9	19,487 S.F.	32	24	---	3/4	62'-2"
#8- CLUBHOUSE	5,029 S.F.	---	---	---	1	<30'
#9- RECYCLING	720 S.F.	---	---	---	1	<20'
GARAGE A	1,584 S.F.	---	---	6	1	<20'
GARAGE B	1,584 S.F.	---	---	6	1	<20'
GARAGE C	2,112 S.F.	---	---	8	1	<20'
GARAGE D	1,584 S.F.	---	---	6	1	<20'
GARAGE E	2,640 S.F.	---	---	10	1	<20'
GARAGE F	1,848 S.F.	---	---	7	1	<20'
GARAGE G	1,848 S.F.	---	---	7	1	<20'
GARAGE H	1,848 S.F.	---	---	7	1	<20'
GARAGE I	1,848 S.F.	---	---	7	1	<20'
GARAGE J	2,640 S.F.	---	---	10	1	<20'
GARAGE K	1,848 S.F.	---	---	7	1	<20'
GARAGE L	2,640 S.F.	---	---	10	1	<20'
GARAGE M	1,848 S.F.	---	---	7	1	<20'
GARAGE N	1,848 S.F.	---	---	7	1	<20'
GARAGE O	1,848 S.F.	---	---	7	1	<20'
GARAGE P	1,848 S.F.	---	---	7	1	<20'
GARAGE Q	2,640 S.F.	---	---	10	1	<20'
GARAGE R	1,848 S.F.	---	---	7	1	<20'
GARAGE S	1,848 S.F.	---	---	7	1	<20'
GARAGE T	2,640 S.F.	---	---	10	1	<20'
GARAGE U	1,320 S.F.	---	---	5	1	<20'
TOTAL	193,864 S.F.	149 (37%)	249 (63%)	158	N/A	N/A
		TOTAL UNITS= 398 (647 BEDROOMS)				

EXISTING LEGEND	
---	FENCE
---	EASEMENT
---	EDGE OF WETLANDS
---	WETLANDS
---	PROPERTY LINE
---	ZONE LINE



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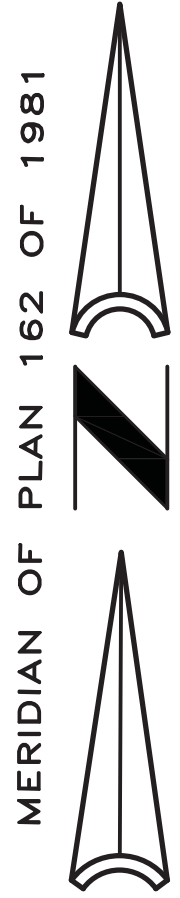
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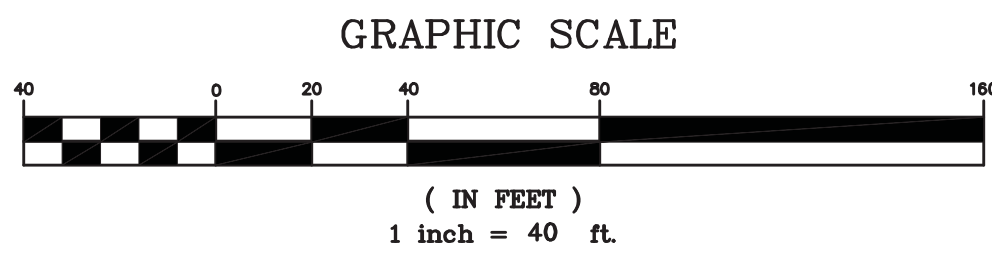
SCALE 1" = 80'				
DATE 09/28/15	REV	DATE	REVISION	BY
SHEET 3 OF 17				
PLAN NO. 2015-042-LA00				
DISK REF NO. F:\P\2015-042				
DRAWN BY C.J.L.				
CHKD BY DAM				
APPD BY DNK				
ASHLAND RAIL TRANSIT APARTMENTS M.B.T.A. ACCESS ROAD ASHLAND, MASSACHUSETTS				
OVERALL LAYOUT PLAN				
KELLY ENGINEERING GROUP, INC. CIVIL ENGINEERING CONSULTANTS 0 CAMPANELLI DRIVE • BRAINTREE MA • 02184 PHONE: 781 843 4333 FAX: 781 843 0028				
SHEET NO. 3				David Noel Kelly 2015.09.29 16:59:33 -04'00'



LEGEND	
	DRAIN MANHOLE
	CATCH BASIN
	DRAIN LINE
	SEWER MANHOLE
	SEWER LINE
	UTILITY POLE
	OVERHEAD WIRES
	LIGHT POLE
	WATER LINE
	WATER VALVE
	BOLLARD
	CONTOUR LINE (MAJOR)
	CONTOUR LINE (MINOR)
	TREE LINE
	TREE
	CCB
	CAPE COD BERM
	SLOPED GRANITE CURB
	DRILL HOLE
	DRILL HOLE/CONC. BOUND
	EDGE OF WETLAND
	FENCE
	STONEWALL
	GUARDRAIL



- NOTES:**
- 1.) UNDERGROUND FEATURES HAVE BEEN COMPILED, IN PART, BASED UPON INFORMATION FURNISHED BY OTHERS. THIS INFORMATION IS TO BE CONSIDERED APPROXIMATE AND KELLY ENGINEERING GROUP, INC. DOES NOT TAKE RESPONSIBILITY FOR SUBSEQUENT ERRORS OR OMISSIONS WHICH MAY HAVE BEEN INCORPORATED INTO THIS PLAN AS A RESULT. ADDITIONALLY, OTHER SUCH FEATURES MAY EXIST ON THE SITE, THE EXISTENCE OF WHICH ARE UNKNOWN TO KELLY ENGINEERING GROUP, INC. THE SIZE, LOCATION, AND EXISTENCE OF ALL SUCH FEATURES MUST BE VERIFIED BY THE APPROPRIATE AUTHORITIES PRIOR TO CONSTRUCTION.
 - 2.) THE SITE DETAIL AND SURFACE IMPROVEMENTS DEPICTED HEREON WERE COMPILED FROM RECORD PLANS PROVIDED BY THE CLIENT AND VERIFIED BY A FIELD SURVEY OF THE PROPERTY IN JUNE OF 2015 BY KELLY ENGINEERING GROUP, INC.
 - 3.) ELEVATIONS SHOWN HEREON ARE BASED ON NGVD OF 1929.
 - 4.) PROPERTY LINE TAKEN FROM A PLAN PREPARED BY HANCOCK SURVEY ASSOCIATES ENTITLED, "PLAN OF LAND IN ASHLAND, MA" DATED 1-3-03. TOPOGRAPHY TAKEN FROM A PLAN BY HANCOCK SURVEY ASSOCIATES ENTITLED, "TOPOGRAPHIC PLAN OF LAND IN ASHLAND, MA" DATED 1-30-02, REVISED 4-13-07.
 - 5.) WETLAND SHOWN HEREON WERE FLAGGED BY PRESERVATION INC. (WPD) IN NOVEMBER 2006 AND FIELD LOCATED BY KELLY ENGINEERING GROUP, INC.



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SCALE
1" = 40'

DATE
09/28/15

SHEET
4 OF 17

PLAN NO.
XREF-EX00

DISK REF NO.
F:\P\2015-042

DRAWN BY
JPM

CHKD BY
SMH

APPD BY
SMH

REV	DATE	REVISION	BY

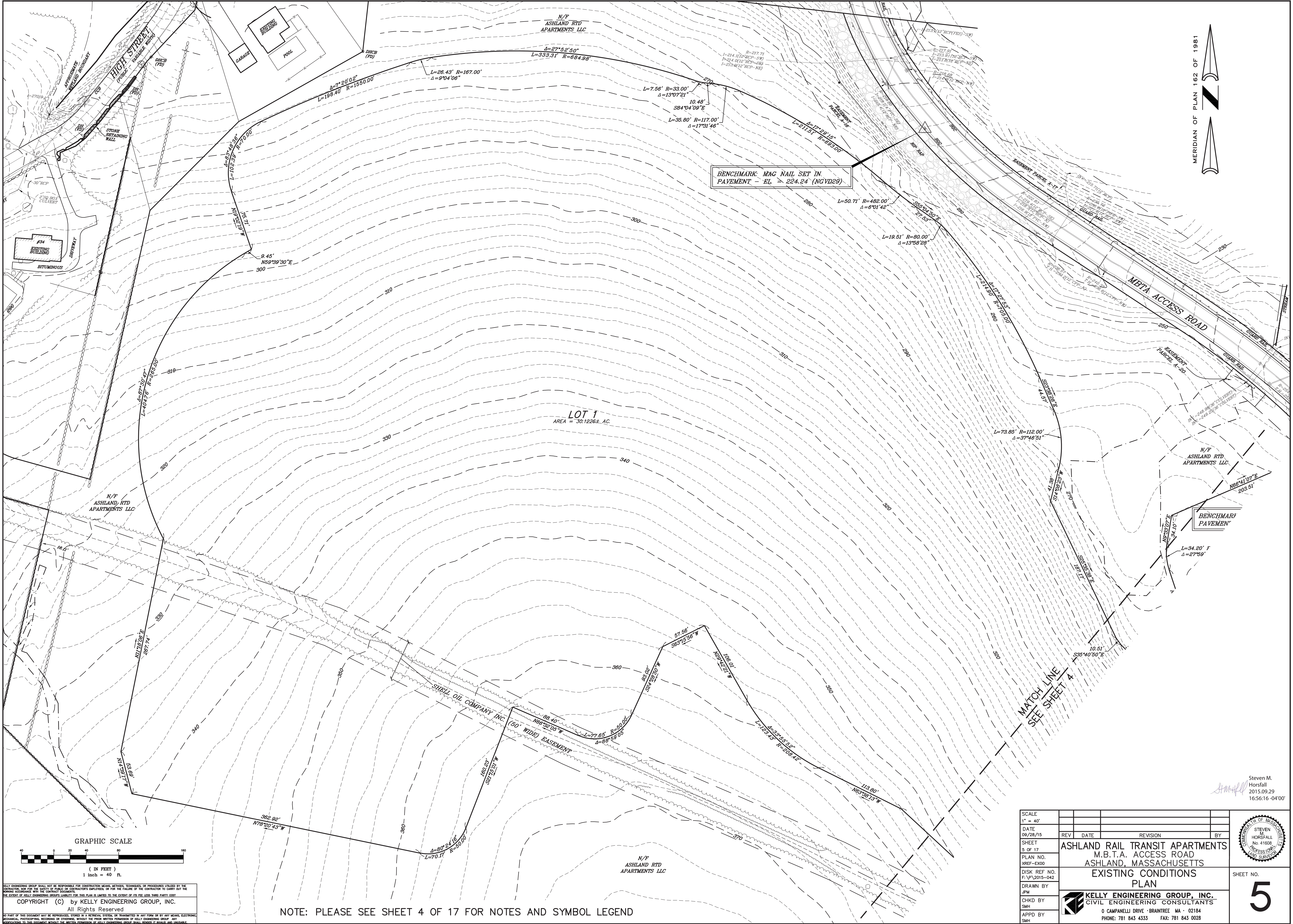
ASHLAND RAIL TRANSIT APARTMENTS
M.B.T.A. ACCESS ROAD
ASHLAND, MASSACHUSETTS
EXISTING CONDITIONS
PLAN

KELLY ENGINEERING GROUP, INC.
CIVIL ENGINEERING CONSULTANTS
0 CAMPANELLI DRIVE • BRAINTREE MA • 02184
PHONE: 781 843 4333 FAX: 781 843 0028

STEVEN
M.
HORSFALL
No. 41608
PROF. (CIVIL)
MASS. SURVEY

SHEET NO.
4

Steven M.
Horsfall
2015.09.29
16:55:33
-04'00"



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NOTE: PLEASE SEE SHEET 4 OF 17 FOR NOTES AND SYMBOL LEGEND

SCALE 1" = 40'	REV	DATE	REVISION	BY
DATE 09/28/15				
SHEET 5 OF 17				
PLAN NO. XREF-EX00				
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DRAWN BY JPM				
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APPD BY SMH				

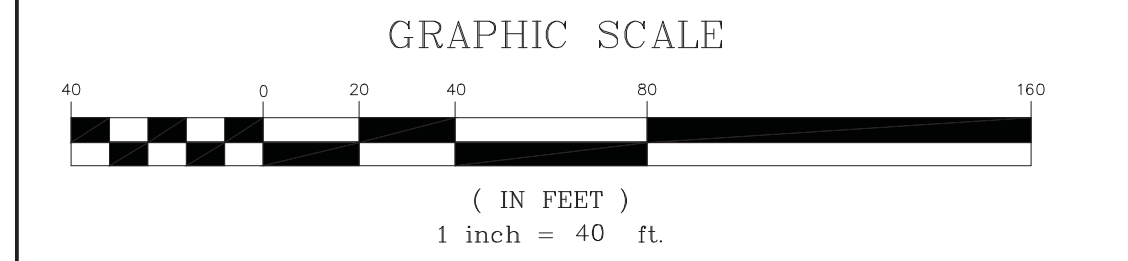
ASHLAND RAIL TRANSIT APARTMENTS M.B.T.A. ACCESS ROAD ASHLAND, MASSACHUSETTS EXISTING CONDITIONS PLAN	
KELLY ENGINEERING GROUP, INC. CIVIL ENGINEERING CONSULTANTS 0 CAMPANELLI DRIVE • BRAINTREE, MA • 02184 PHONE: 781 843 4333 FAX: 781 843 0028	

STEVEN M. HORSFALL No. 41608 PROFESSIONAL LAND SURVEYOR	SHEET NO. 5
--	-----------------------



EXISTING LEGEND	
	FENCE
	STONE WALL
	EASEMENT
	EDGE OF WETLANDS
	WETLANDS
	25' NO DISTURB LINE
	100' SETBACK
	PROPERTY LINE
	ZONE LINE

PROPOSED LEGEND	
	CAPE COD BERM
	VERTICAL GRANITE CURB
	CONCRETE CURB
	EDGE OF GRAVEL
	HANDICAP SPACE
	VAN HANDICAP SPACE
	HANDICAP RAMP
	CURB STOP
	HANDICAP ENTRANCE
	RETAINING WALL



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SCALE
1"= 40'
DATE
08/28/15
SHEET
6 OF 17
PLAN NO.
2015-042-LA00
DISK REF NO.
F:\P\2015-042
DRAWN BY
C.L.
CHKD BY
DAM
APPD BY
DNK

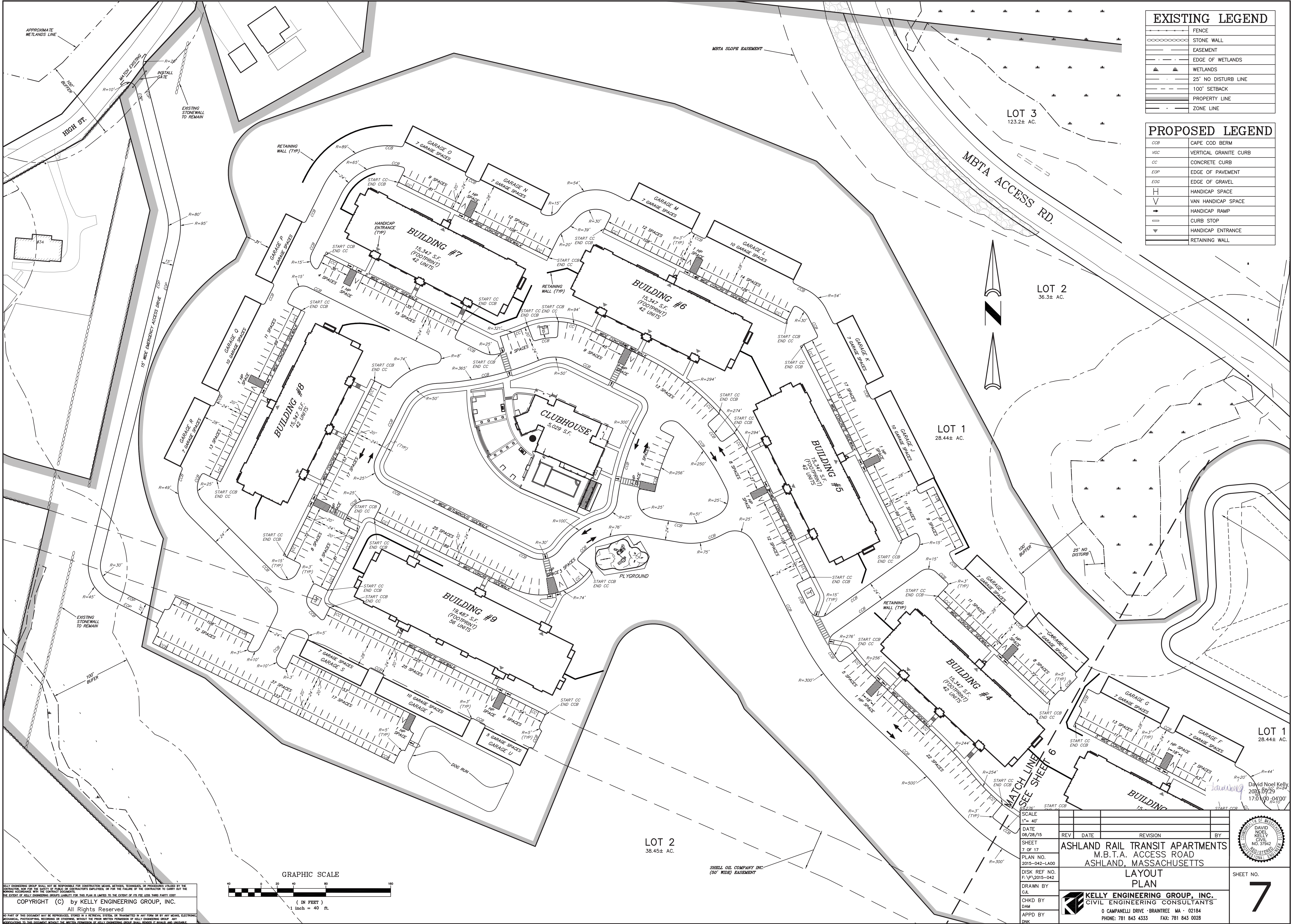
REV	DATE	REVISION	BY

ASHLAND RAIL TRANSIT APARTMENTS
M.B.T.A. ACCESS ROAD
ASHLAND, MASSACHUSETTS
LAYOUT
PLAN

KELLY ENGINEERING GROUP, INC.
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0 CAMPANELLI DRIVE • BRAINTREE, MA • 02184
PHONE: 781 843 4333 FAX: 781 843 0028

David Noel Kelly
2015.09.29
17:00:20 -04'00'

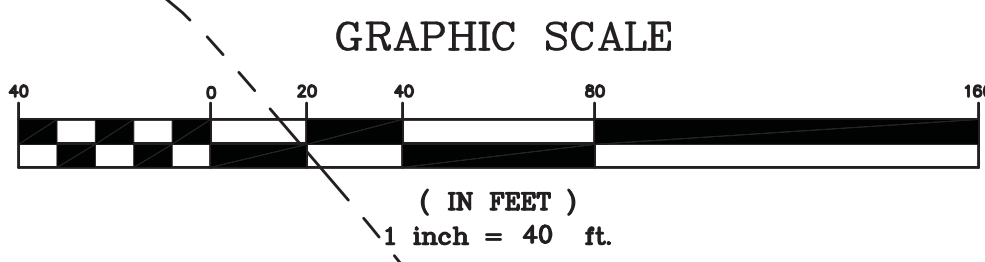
SHEET NO.
6



EXISTING LEGEND	
[Symbol]	FENCE
[Symbol]	STONE WALL
[Symbol]	EASEMENT
[Symbol]	EDGE OF WETLANDS
[Symbol]	WETLANDS
[Symbol]	25' NO DISTURB LINE
[Symbol]	100' SETBACK
[Symbol]	PROPERTY LINE
[Symbol]	ZONE LINE

PROPOSED LEGEND	
CCB	CAPE COD BERM
VGC	VERTICAL GRANITE CURB
CC	CONCRETE CURB
EOP	EDGE OF PAVEMENT
EOG	EDGE OF GRAVEL
H	HANDICAP SPACE
V	VAN HANDICAP SPACE
[Symbol]	HANDICAP RAMP
[Symbol]	CURB STOP
[Symbol]	HANDICAP ENTRANCE
[Symbol]	RETAINING WALL

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SHELL OIL COMPANY INC.
(60' WIDE) BASEMENT

SCALE
1" = 40'
DATE
08/28/15
SHEET
7 OF 17
PLAN NO.
2015-042-LA00
DISK REF NO.
F:\P\2015-042
DRAWN BY
C.J.L.
CHKD BY
DAM
APPD BY
DNK

REV	DATE	REVISION	BY

ASHLAND RAIL TRANSIT APARTMENTS
M.B.T.A. ACCESS ROAD
ASHLAND, MASSACHUSETTS
LAYOUT PLAN

KELLY ENGINEERING GROUP, INC.
CIVIL ENGINEERING CONSULTANTS
0 CAMPANELLI DRIVE • BRAINTREE, MA • 02184
PHONE: 781 843 4333 FAX: 781 843 0028

David Noel Kelly
2015.09.29
17:00:00 -04:00
R=84'
R=10'

SHEET NO.
7

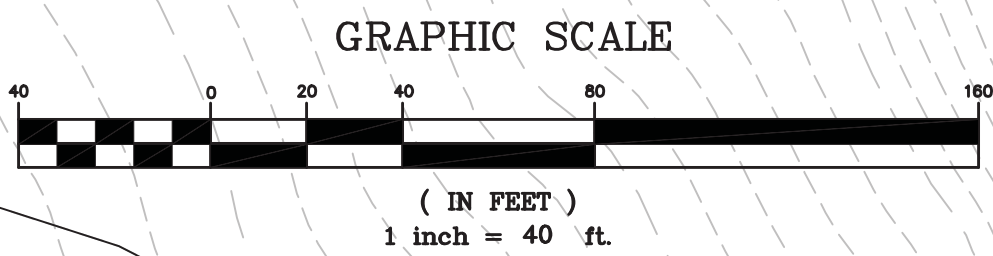


EXISTING LEGEND	
	DRAIN MANHOLE
	CATCH BASIN
	DRAIN LINE
	SEWER MANHOLE
	SEWER LINE
	UTILITY POLE
	OVERHEAD WIRES
	LIGHT POLE
	WATER LINE
	WATER VALVE
	BOLLARD
	CONTOUR LINE (MAJOR)
	CONTOUR LINE (MINOR)
	TREE LINE
	TREE
	CAPE COD BERM
	SLOPED GRANITE CURB
	DRILL HOLE
	DRILL HOLE/CONC. BOUND
	EDGE OF WETLAND
	FENCE
	STONEWALL
	GUARDRAIL

PROPOSED LEGEND	
	HANDICAP ENTRANCE
	RIP RAP
	FLARED END SECTION
	CATCH BASIN
	AREA DRAIN
	DRAIN MANHOLE
	DRAIN CLEAN OUT
	DRAIN LINE
	ROOF DRAIN LINE
	AREA DRAIN LINE
	UNDER DRAIN
	SEWER MANHOLE
	SEWER CLEAN OUT
	SEWER LINE
	TRANSFORMER
	CONTOUR LINE (10s)
	CONTOUR LINE (2s)
	CONTOUR LINE (1s)
	SPOT GRADE
	EROSION CONTROL LINE
	SILT SACK
	SILT SACK
	EDGE OF WETLANDS
	WETLANDS FLAG
	WETLANDS
	WETLANDS
	25' BUFFER ZONE
	100' BUFFER ZONE

NOTES:
1. ALL STRUCTURE INVERTS ARE LISTED WITH OUTLET
FIRST THEN CLOCKWISE AROUND STRUCTURE.

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SCALE
1" = 40'

DATE
09/28/15

SHEET
8 OF 17

PLAN NO.
2015-042-GD00

DISK REF NO.
F:\P\2015-042

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C.J.

CHKD BY
DAM

APPD BY
DNK

REV	DATE	REVISION	BY

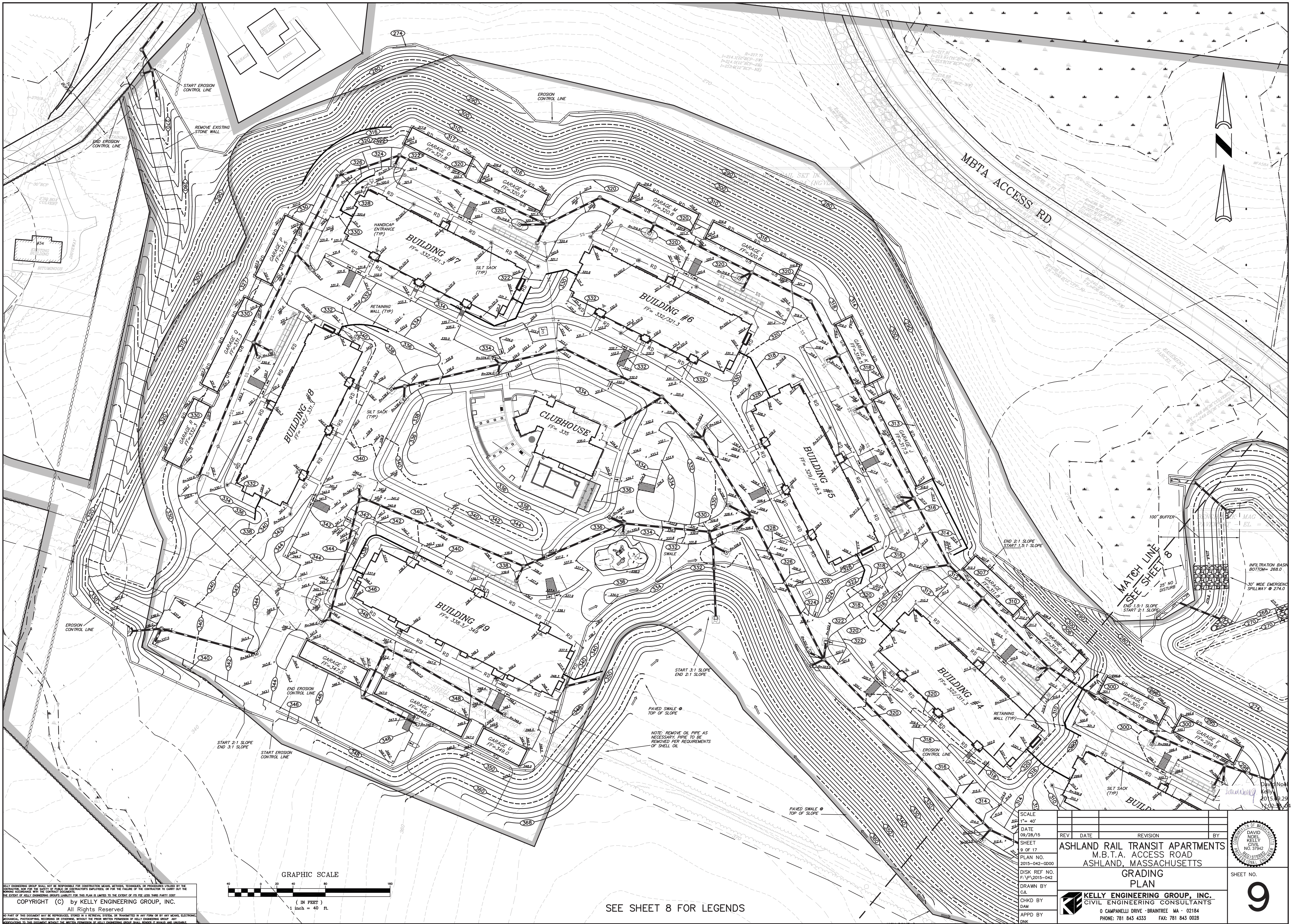
ASHLAND RAIL TRANSIT APARTMENTS
M.B.T.A. ACCESS ROAD
ASHLAND, MASSACHUSETTS

GRADING
PLAN

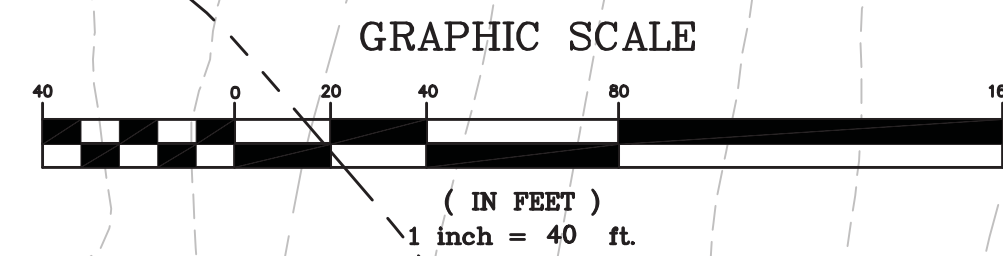
KELLY ENGINEERING GROUP, INC.
CIVIL ENGINEERING CONSULTANTS
0 CAMPANELLI DRIVE • BRAINTREE, MA • 02184
PHONE: 781 843 4333 FAX: 781 843 0028

DAVID NOEL
KELLY
2015.09.29
17:01:45 -0400

SHEET NO.
8



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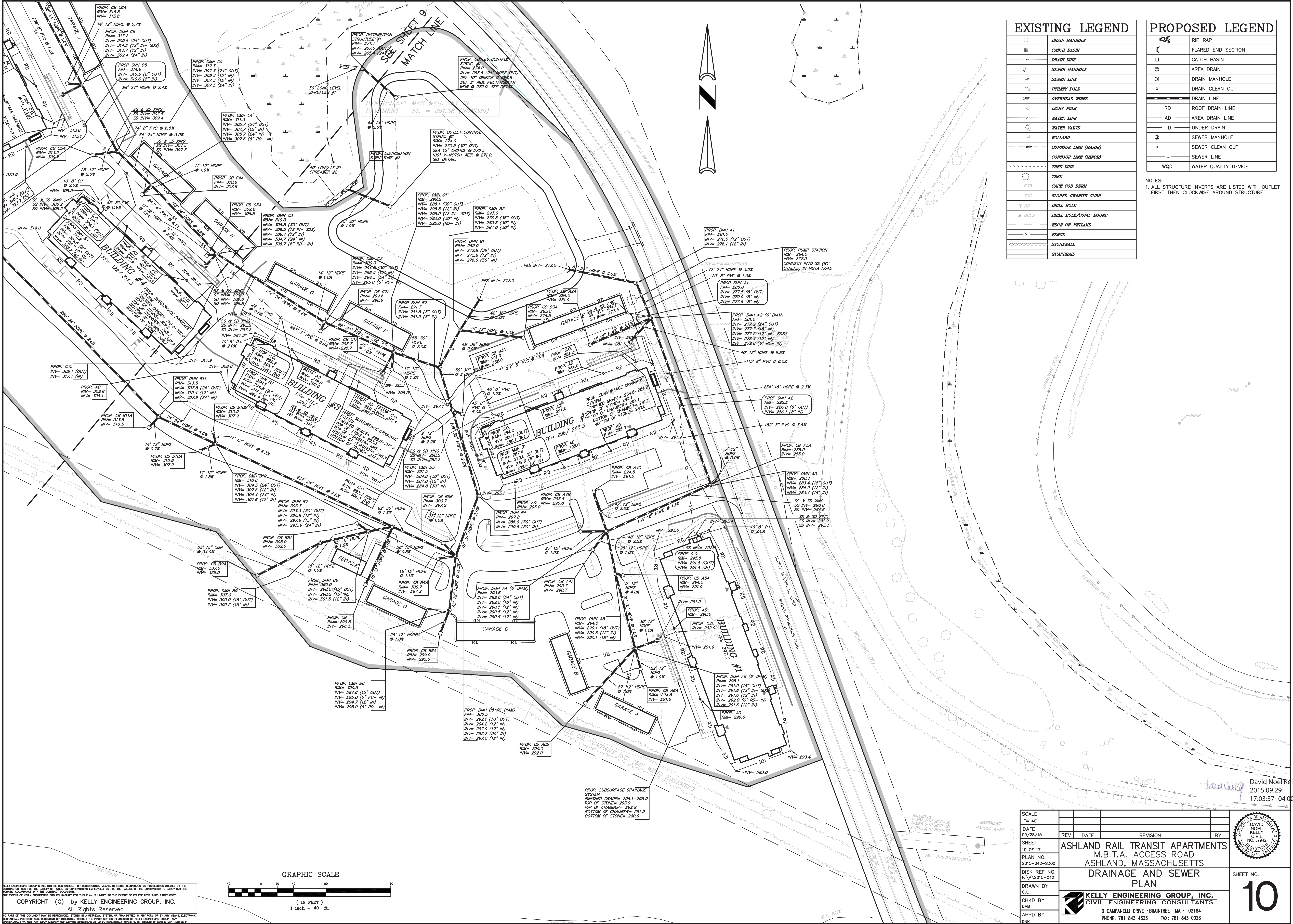
SEE SHEET 8 FOR LEGENDS

SCALE 1" = 40'	REV	DATE	REVISION	BY
DATE 09/28/15				
SHEET 9 OF 17				
PLAN NO. 2015-042-GD00				
DISK REF NO. F:\P\2015-042				
DRAWN BY C.J.				
CHKD BY DAM				
APPD BY DNK				

ASHLAND RAIL TRANSIT APARTMENTS M.B.T.A. ACCESS ROAD ASHLAND, MASSACHUSETTS	
GRADING PLAN	
KELLY ENGINEERING GROUP, INC. CIVIL ENGINEERING CONSULTANTS 0 CAMPANELLI DRIVE • BRAintree, MA • 02184 PHONE: 781 843 4333 FAX: 781 843 0028	

SHEET NO.

9

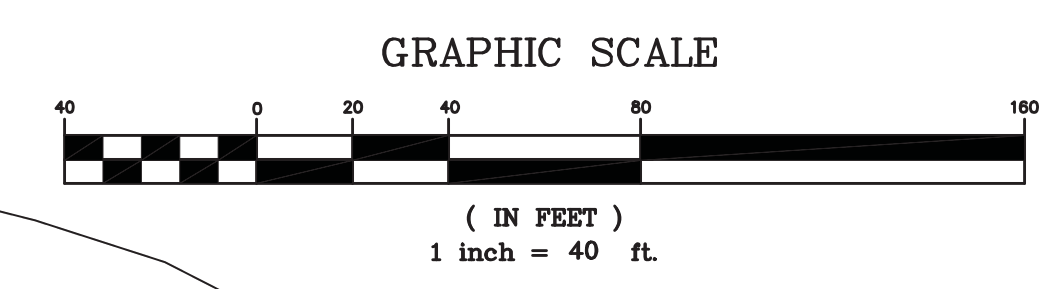


EXISTING LEGEND	
	DRAIN MANHOLE
	CATCH BASIN
	DRAIN LINE
	SEWER MANHOLE
	SEWER LINE
	UTILITY POLE
	OVERHEAD WIRES
	LIGHT POLE
	WATER LINE
	WATER VALVE
	BOLLARD
	CONTOUR LINE (MAJOR)
	CONTOUR LINE (MINOR)
	TREE LINE
	TREE
	CAPE COD BERM
	SLOPED GRANITE CURB
	DRILL HOLE
	DRILL HOLE/CONC. BOUND
	EDGE OF WETLAND
	FENCE
	STONEWALL
	GUARDRAIL

PROPOSED LEGEND	
	RIP RAP
	FLARED END SECTION
	CATCH BASIN
	AREA DRAIN
	DRAIN MANHOLE
	DRAIN CLEAN OUT
	DRAIN LINE
	ROOF DRAIN LINE
	AREA DRAIN LINE
	UNDER DRAIN
	SEWER MANHOLE
	SEWER CLEAN OUT
	SEWER LINE
	WATER QUALITY DEVICE

NOTES:
1. ALL STRUCTURE INVERTS ARE LISTED WITH OUTLET FIRST THEN CLOCKWISE AROUND STRUCTURE.

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SCALE
1" = 40'

DATE
09/28/15

SHEET
10 OF 17

PLAN NO.
2015-042-S000

DISK REF. NO.
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DNK

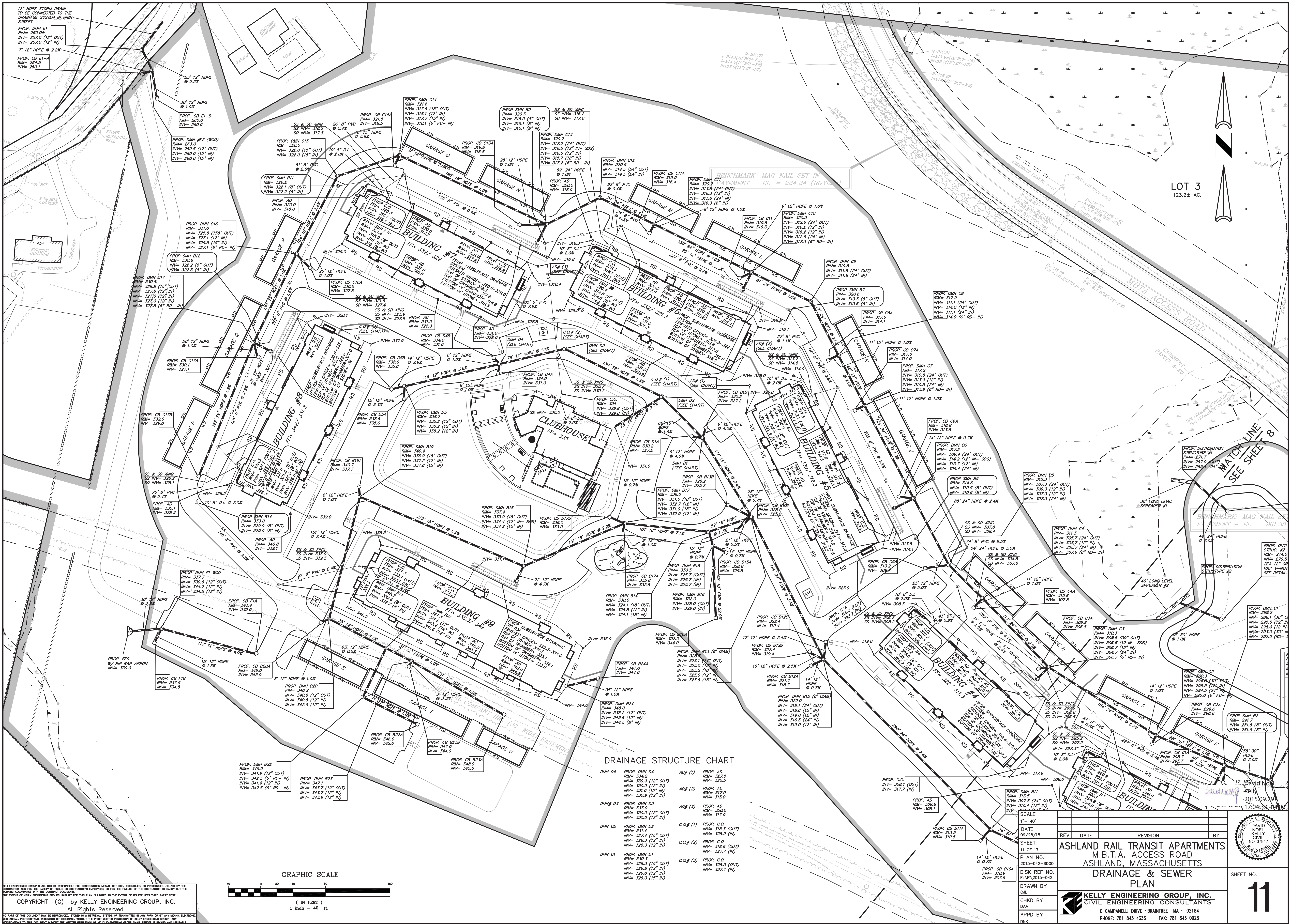
REV	DATE	REVISION	BY

ASHLAND RAIL TRANSIT APARTMENTS
M.B.T.A. ACCESS ROAD
ASHLAND, MASSACHUSETTS
DRAINAGE AND SEWER
PLAN

KELLY ENGINEERING GROUP, INC.
CIVIL ENGINEERING CONSULTANTS
0 CAMPANELLI DRIVE • BRAintree, MA • 02184
PHONE: 781 843 4333 FAX: 781 843 0028

David Noel Kelly
2015.09.29
17:03:37 -04'00'

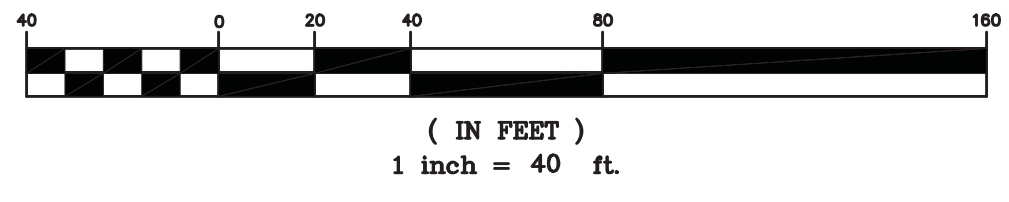
SHEET NO.
10



Drainage Structure Chart

DMH D4	PROP. DMH D4 RIM= 334.2 INV= 330.8 (12" OUT) INV= 330.2 (12" IN) INV= 330.9 (12" IN)	AD# (1)	PROP. AD RIM= 327.5 INV= 325.5
DMH D3	PROP. DMH D3 RIM= 330.0 (12" OUT) INV= 330.0 (12" IN)	AD# (2)	PROP. AD RIM= 317.0 INV= 315.0
DMH D2	PROP. DMH D2 RIM= 327.4 (15" OUT) INV= 328.3 (12" IN) INV= 328.3 (12" IN)	C.O.# (1)	PROP. C.O. RIM= 318.3 (OUT) INV= 328.9 (IN)
DMH D1	PROP. DMH D1 RIM= 332.0 INV= 326.3 (15" OUT) INV= 326.8 (12" IN) INV= 326.3 (15" IN)	C.O.# (2)	PROP. C.O. RIM= 318.6 (OUT) INV= 317.0 (IN)
		C.O.# (3)	PROP. C.O. RIM= 318.6 (OUT) INV= 327.7 (IN)

GRAPHIC SCALE



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DATE
09/28/15

PLAN NO.
2015-042-S000

DISK REF NO.
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DAM

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DNK

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DATE

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BY

ASHLAND RAIL TRANSIT APARTMENTS
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ASHLAND, MASSACHUSETTS
DRAINAGE & SEWER
PLAN

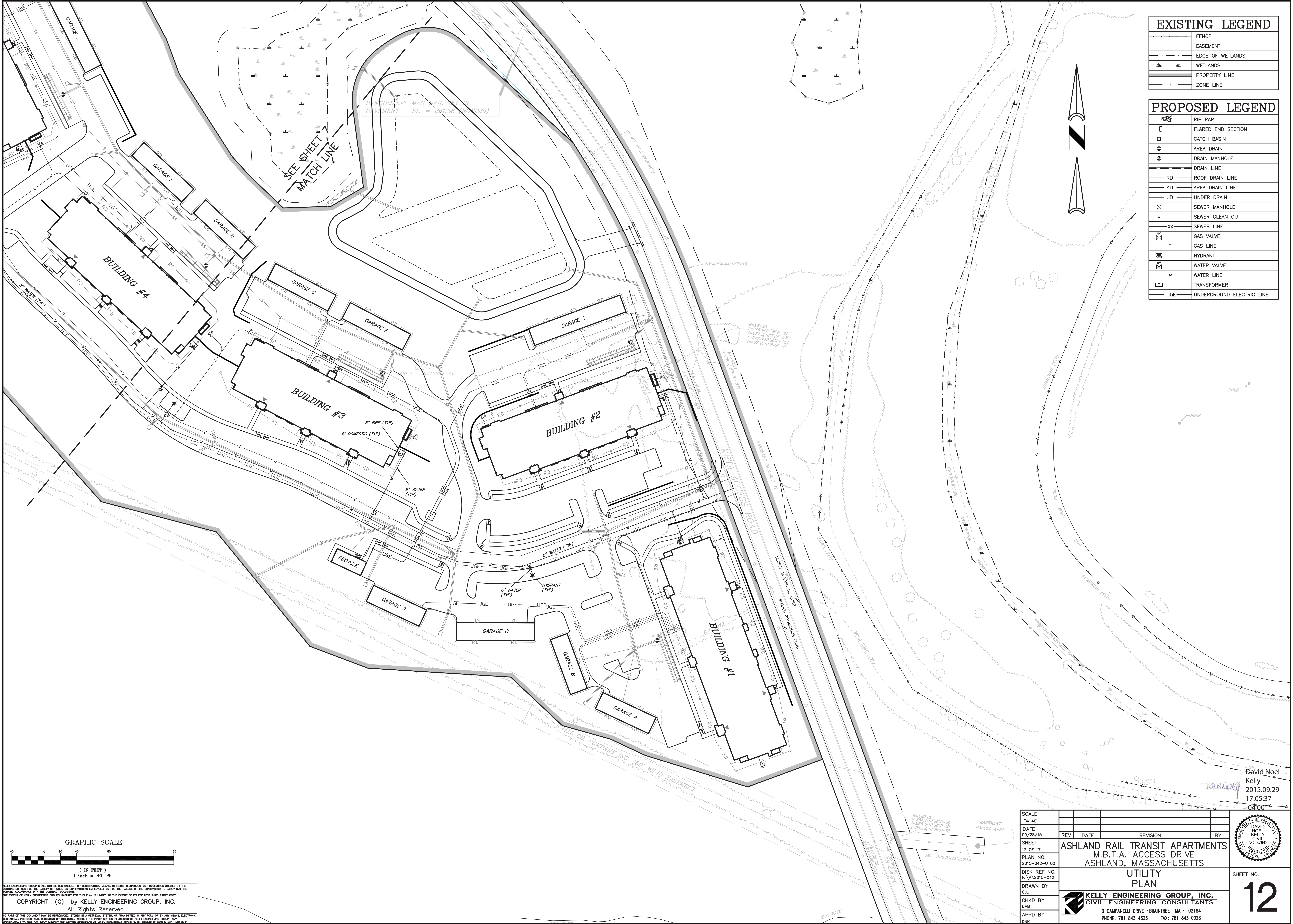
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0 CAMPANELLI DRIVE • BRAINTREE, MA • 02184
PHONE: 781 843 4333 FAX: 781 843 0028

DAVID NOEL
KELLY
CIVIL
NO. 37842
REGISTERED PROFESSIONAL ENGINEER

2015.09.29
17:04:33 - 04:00

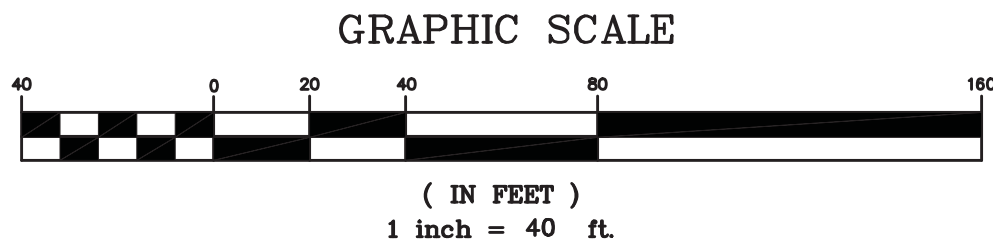
SHEET NO.

11



EXISTING LEGEND	
	FENCE
	EASEMENT
	EDGE OF WETLANDS
	WETLANDS
	PROPERTY LINE
	ZONE LINE

PROPOSED LEGEND	
	RIP RAP
	FLARED END SECTION
	CATCH BASIN
	AREA DRAIN
	DRAIN MANHOLE
	DRAIN LINE
	ROOF DRAIN LINE
	AREA DRAIN LINE
	UNDER DRAIN
	SEWER MANHOLE
	SEWER CLEAN OUT
	SEWER LINE
	GAS VALVE
	GAS LINE
	HYDRANT
	WATER VALVE
	WATER LINE
	TRANSFORMER
	UNDERGROUND ELECTRIC LINE



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SCALE
1" = 40'

DATE
09/28/15

SHEET
12 OF 17

PLAN NO.
2015-042-UT00

DISK REF NO.
F:\P\2015-042

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C.J.L.

CHKD BY
DAM

APPD BY
DNK

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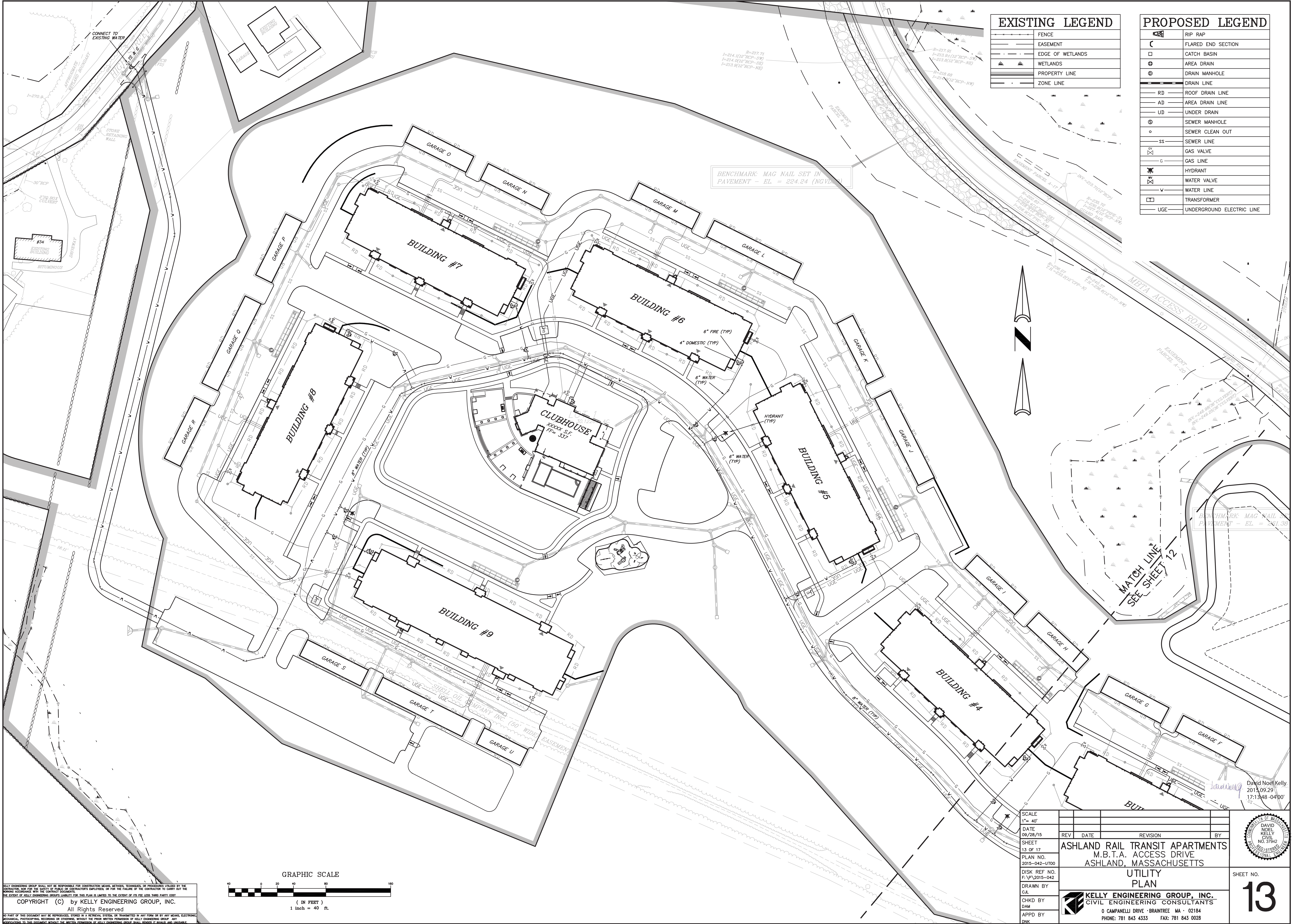
ASHLAND RAIL TRANSIT APARTMENTS
M.B.T.A. ACCESS DRIVE
ASHLAND, MASSACHUSETTS

UTILITY PLAN

KELLY ENGINEERING GROUP, INC.
CIVIL ENGINEERING CONSULTANTS
8 CAMPANELLI DRIVE • BRAintree, MA • 02184
PHONE: 781 843 4333 FAX: 781 843 0028

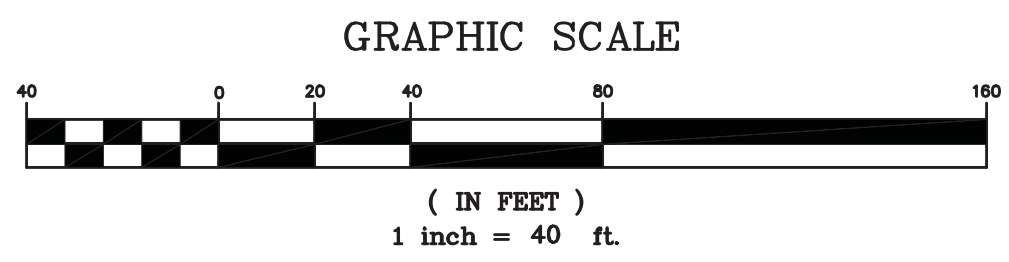
David Noel Kelly
2015.09.29
17:05:37
02'00"

SHEET NO.
12



EXISTING LEGEND	
	FENCE
	EASEMENT
	EDGE OF WETLANDS
	WETLANDS
	PROPERTY LINE
	ZONE LINE

PROPOSED LEGEND	
	RIP RAP
	FLARED END SECTION
	CATCH BASIN
	AREA DRAIN
	DRAIN MANHOLE
	DRAIN LINE
	ROOF DRAIN LINE
	AREA DRAIN LINE
	UNDER DRAIN
	SEWER MANHOLE
	SEWER CLEAN OUT
	SEWER LINE
	GAS VALVE
	GAS LINE
	HYDRANT
	WATER VALVE
	WATER LINE
	TRANSFORMER
	UNDERGROUND ELECTRIC LINE

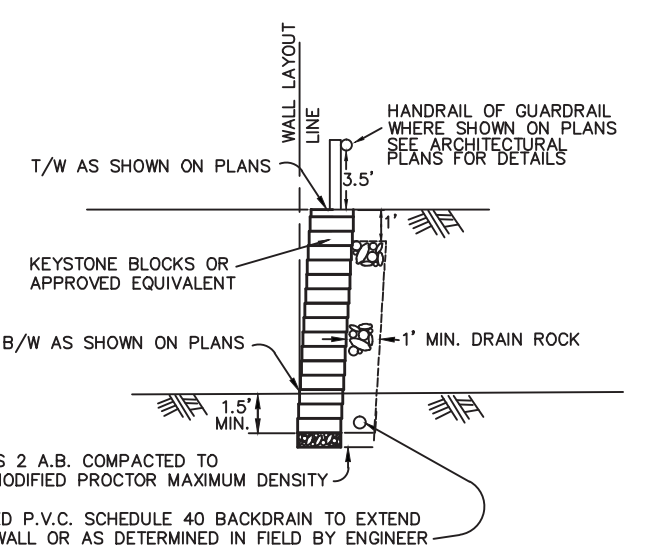
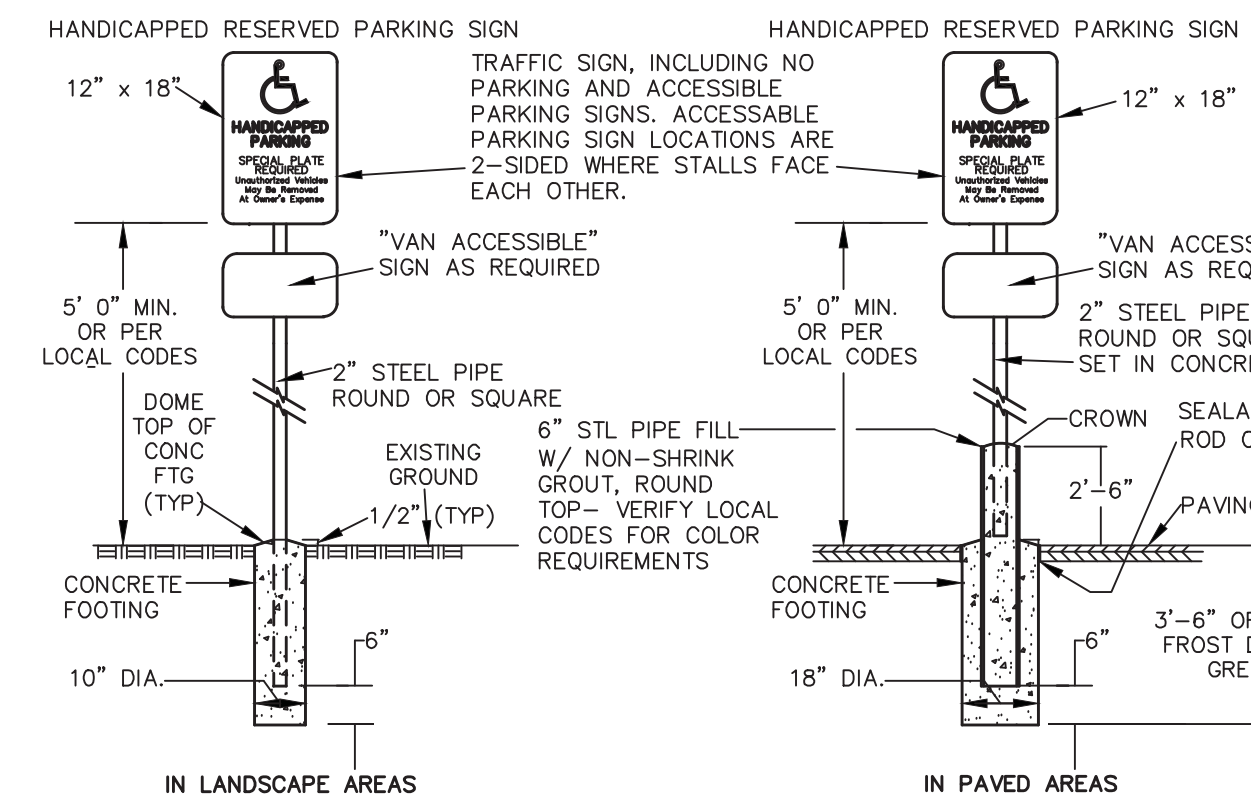
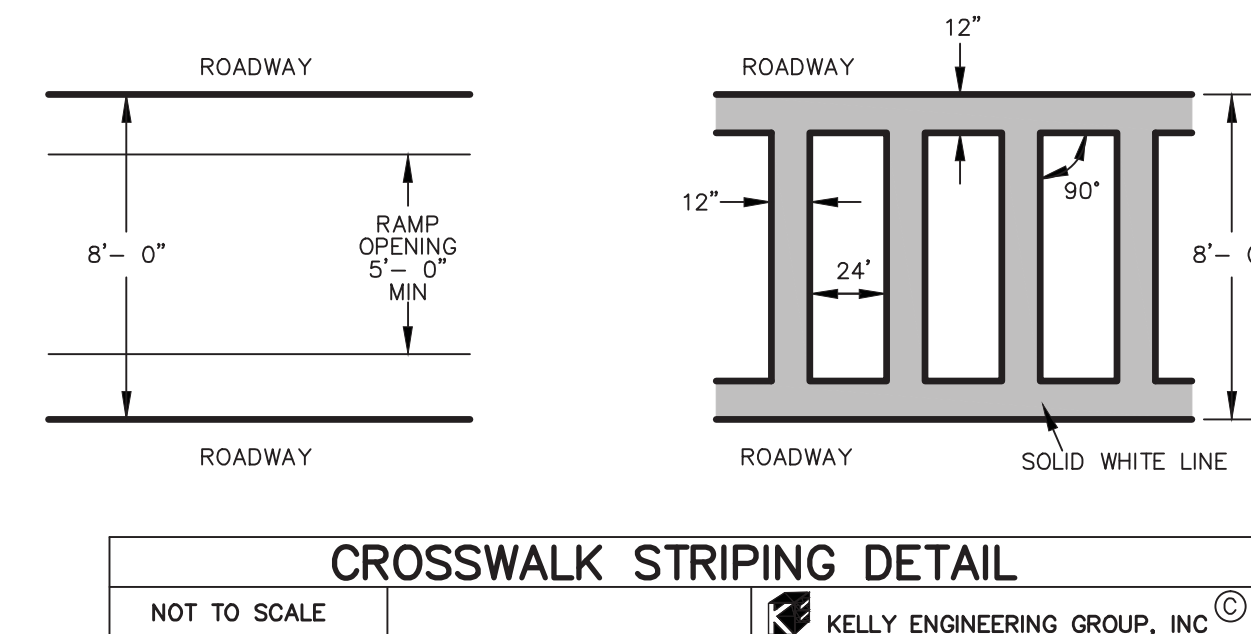
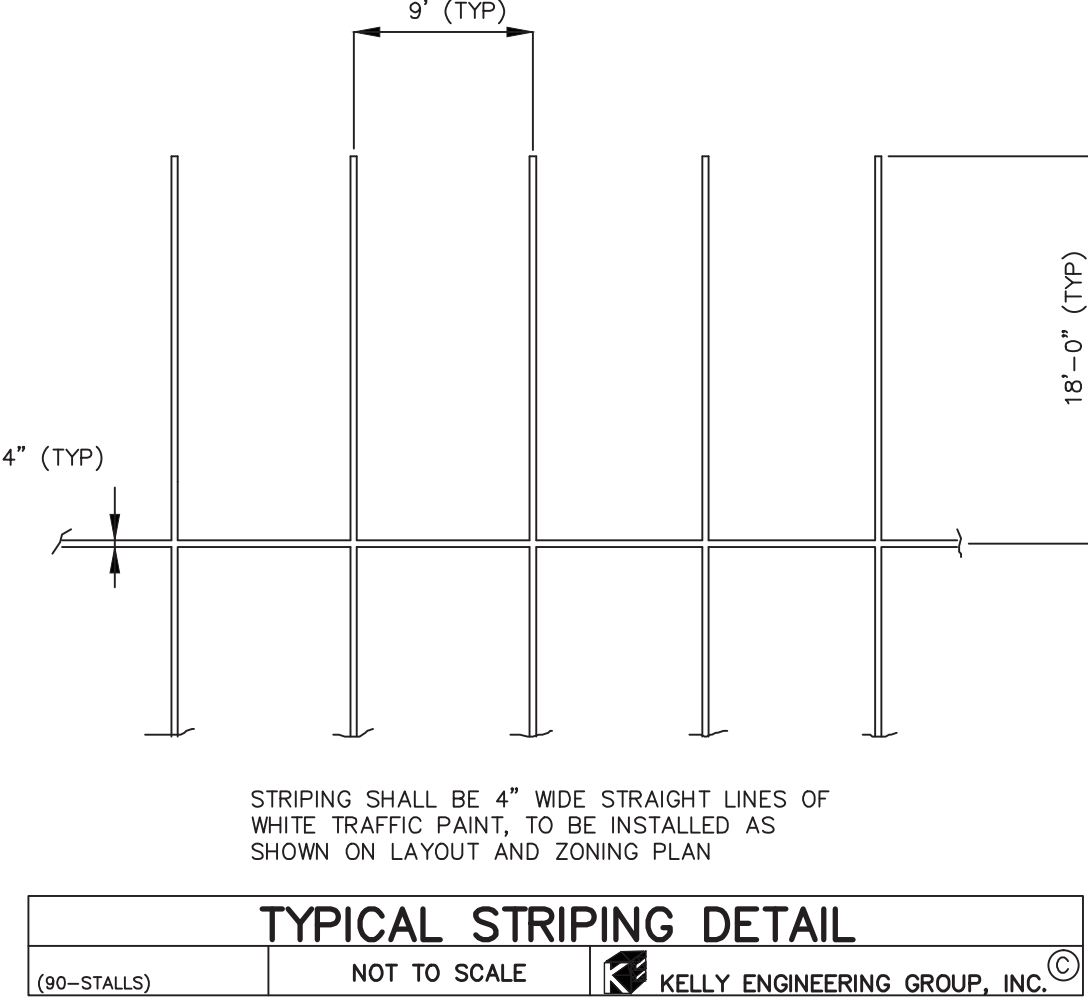
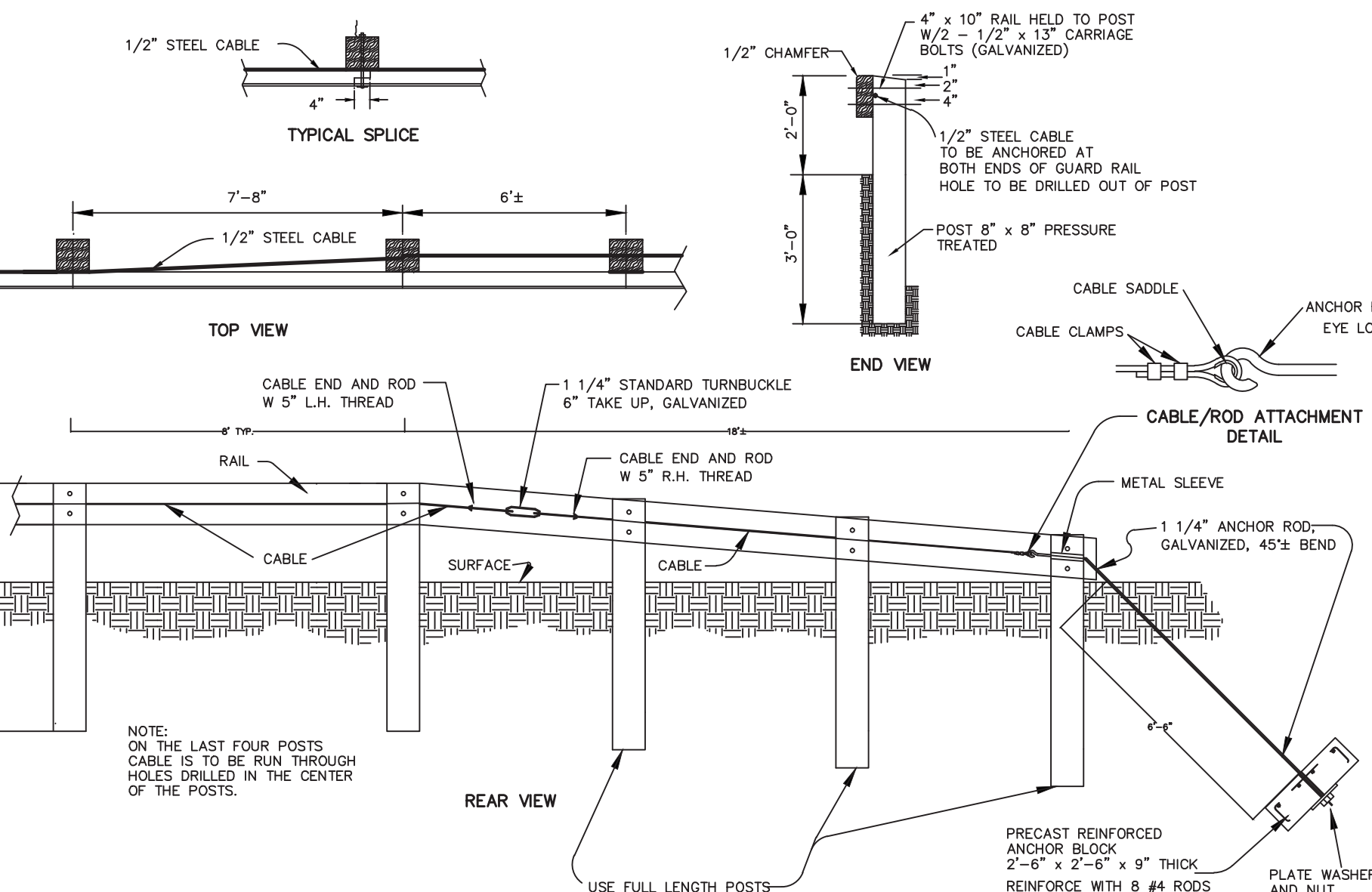
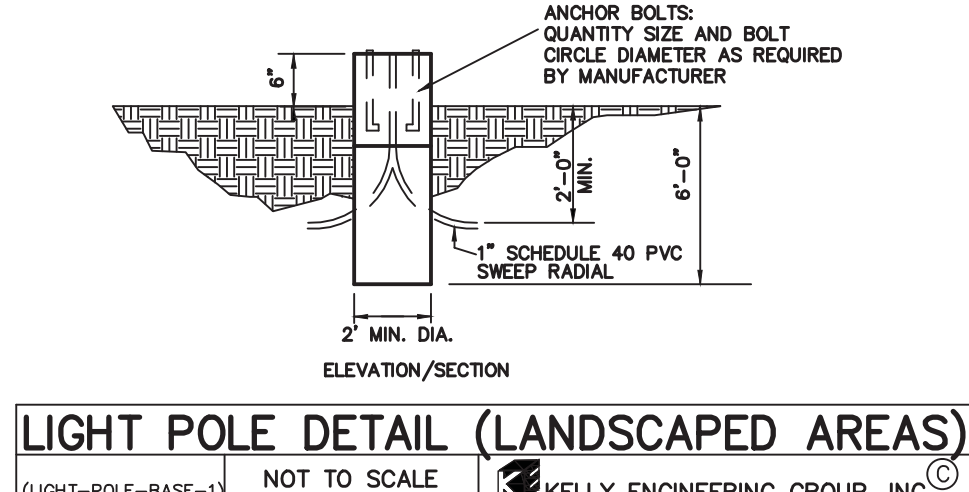
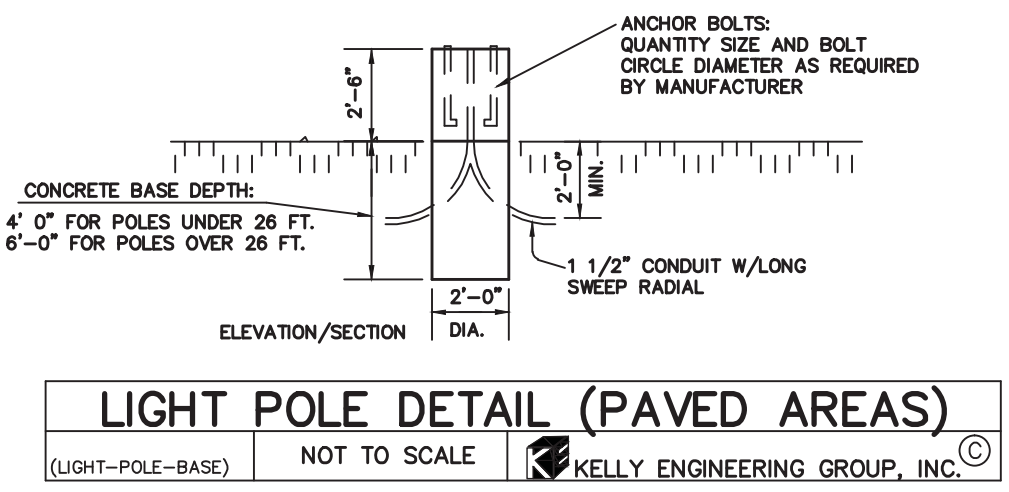
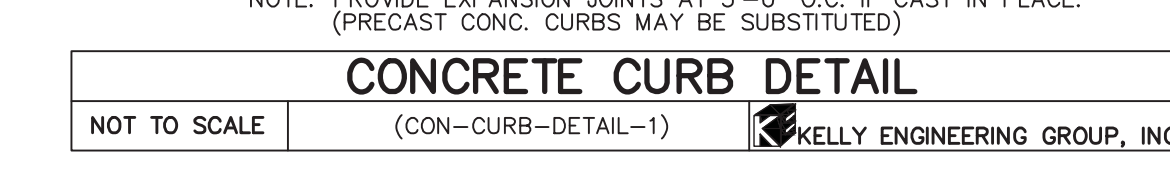
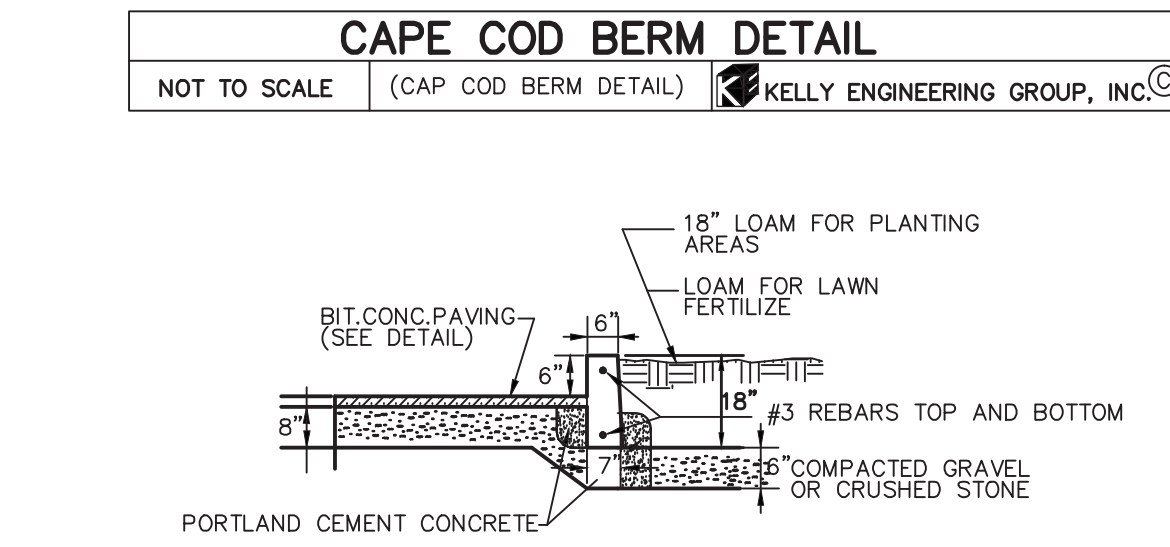
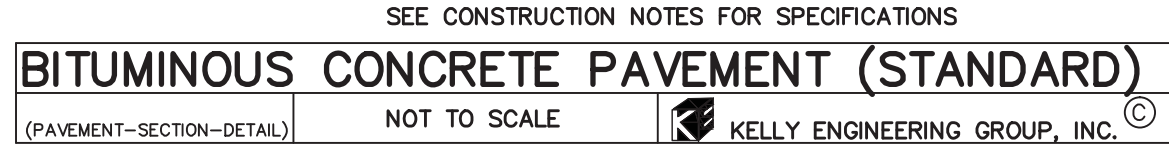
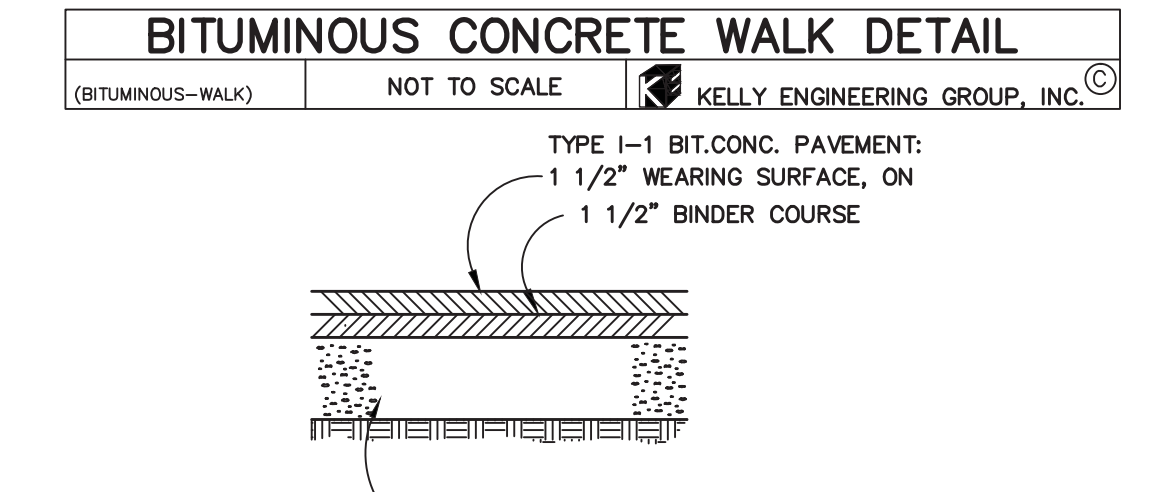
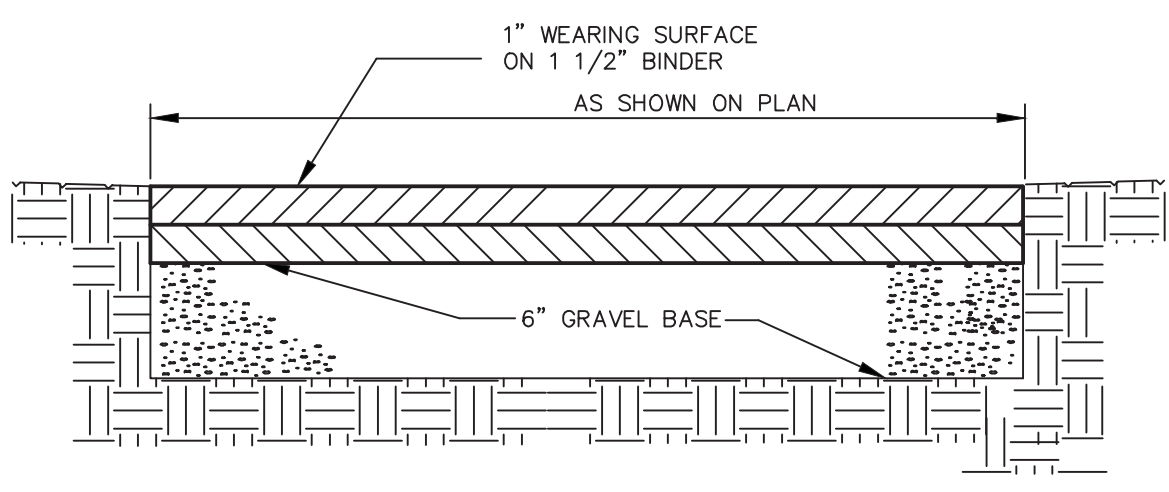
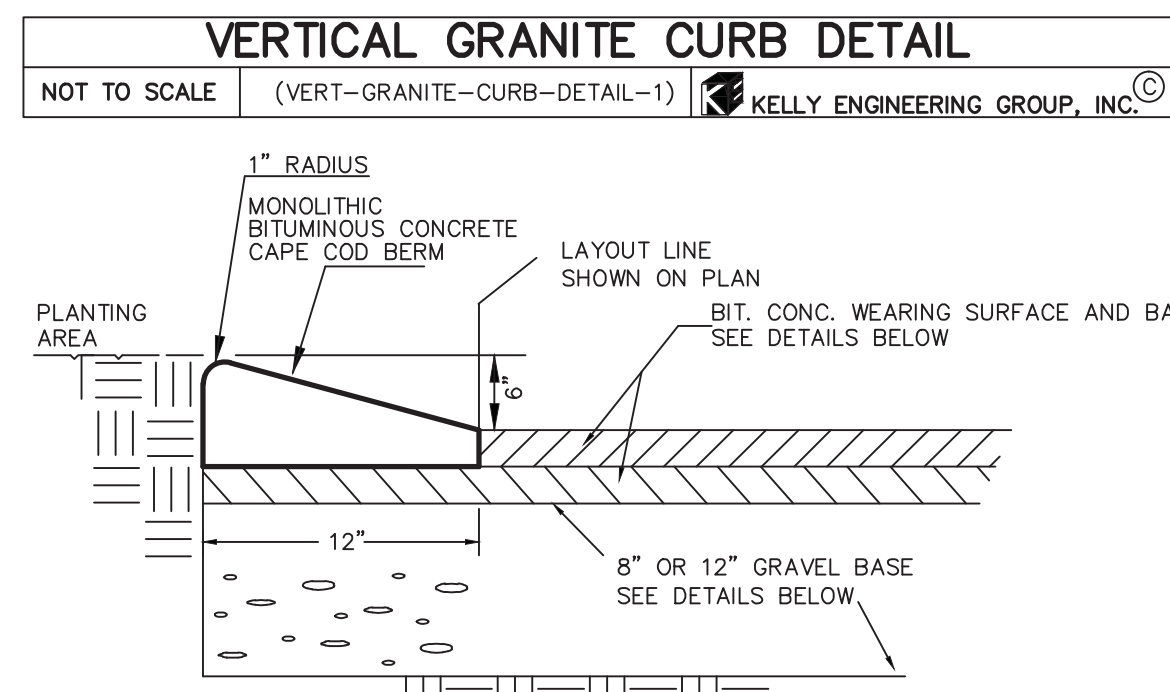
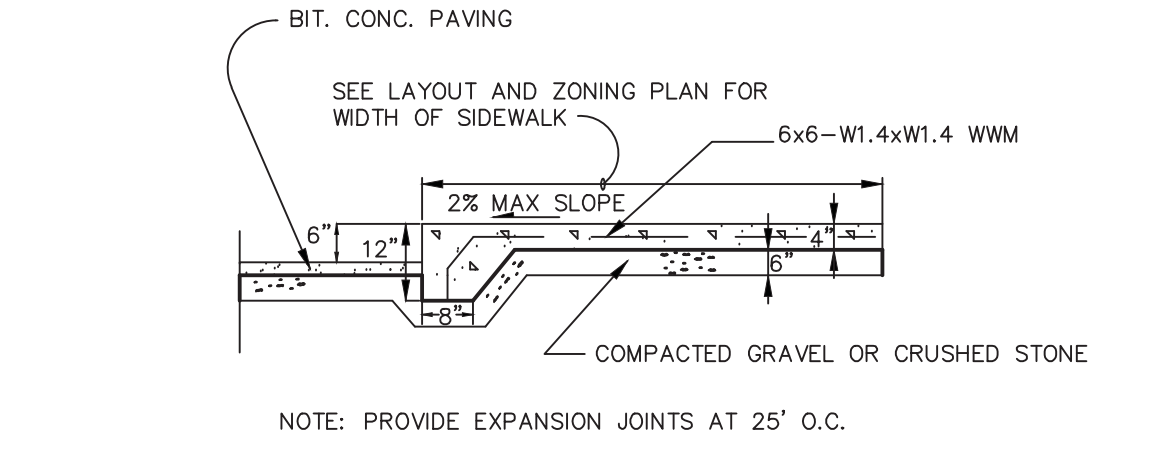
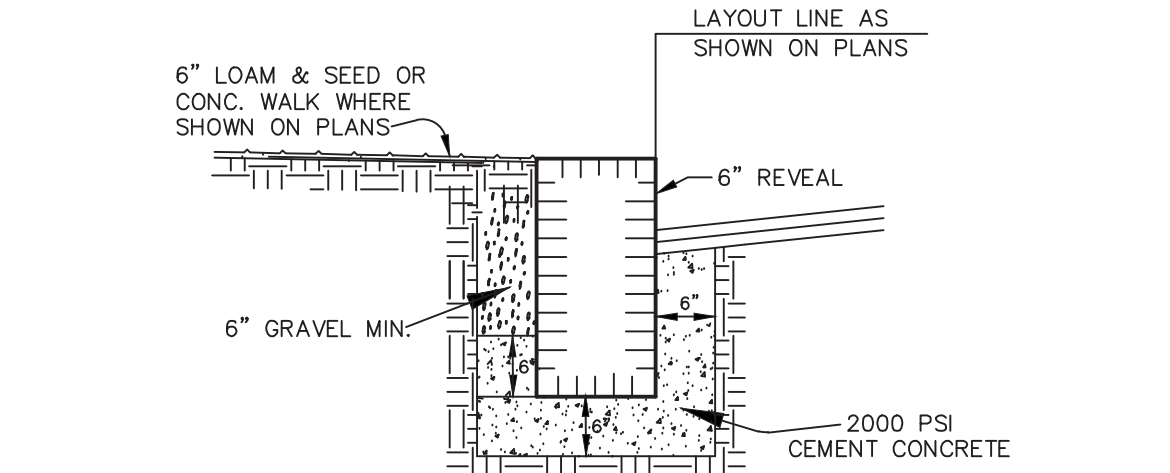
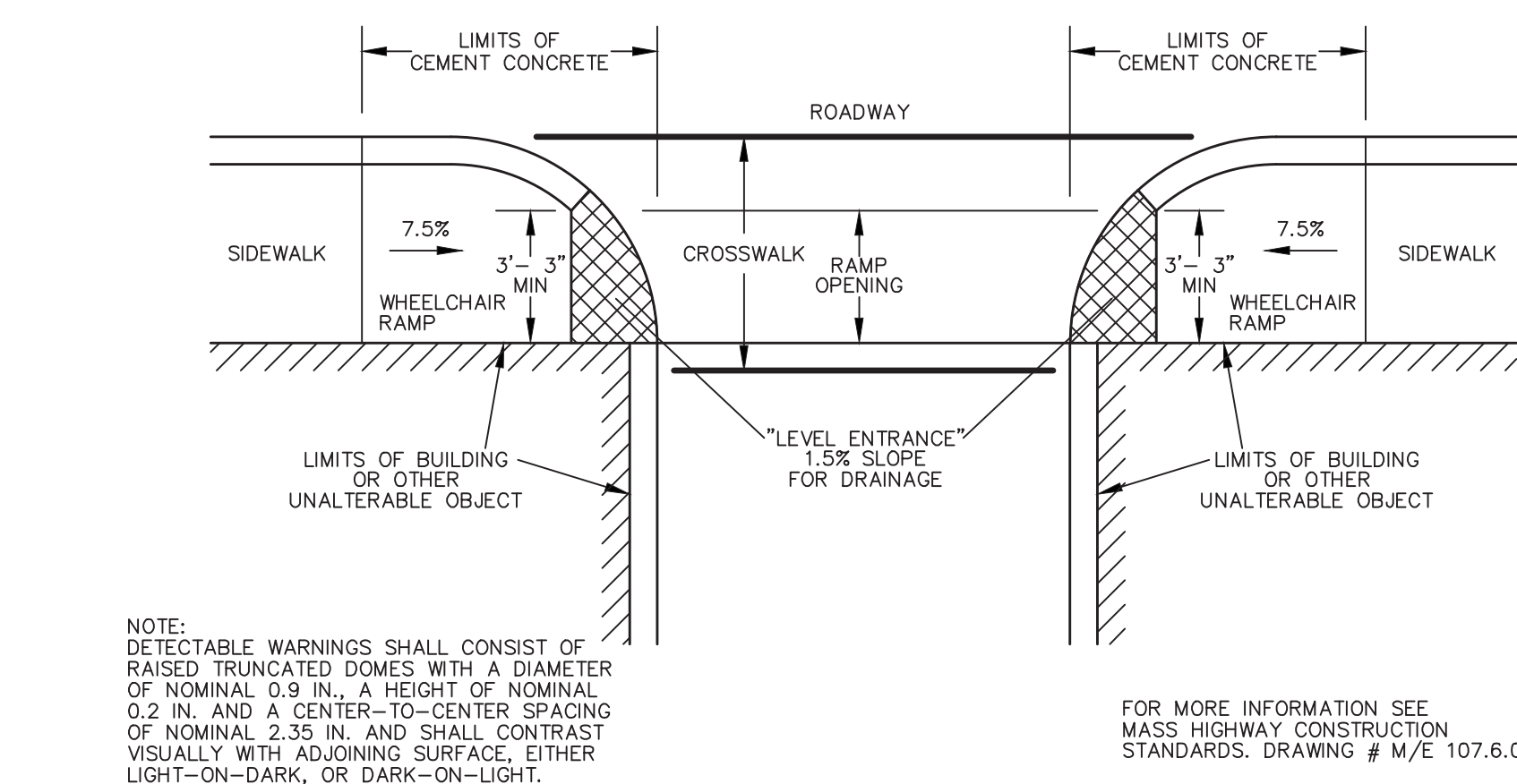


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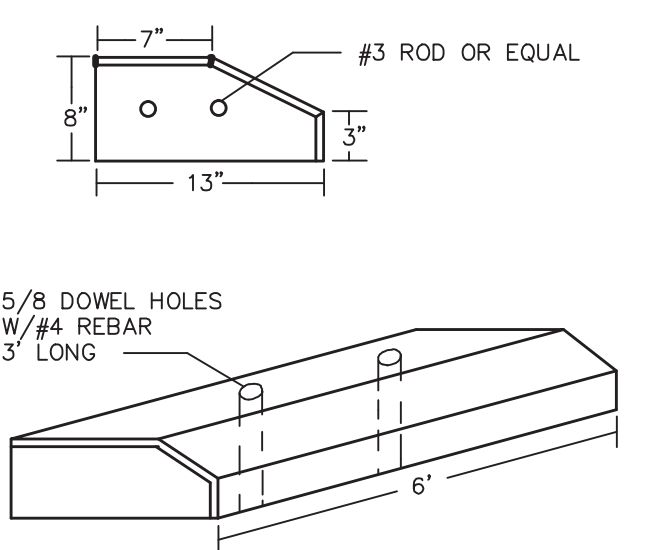
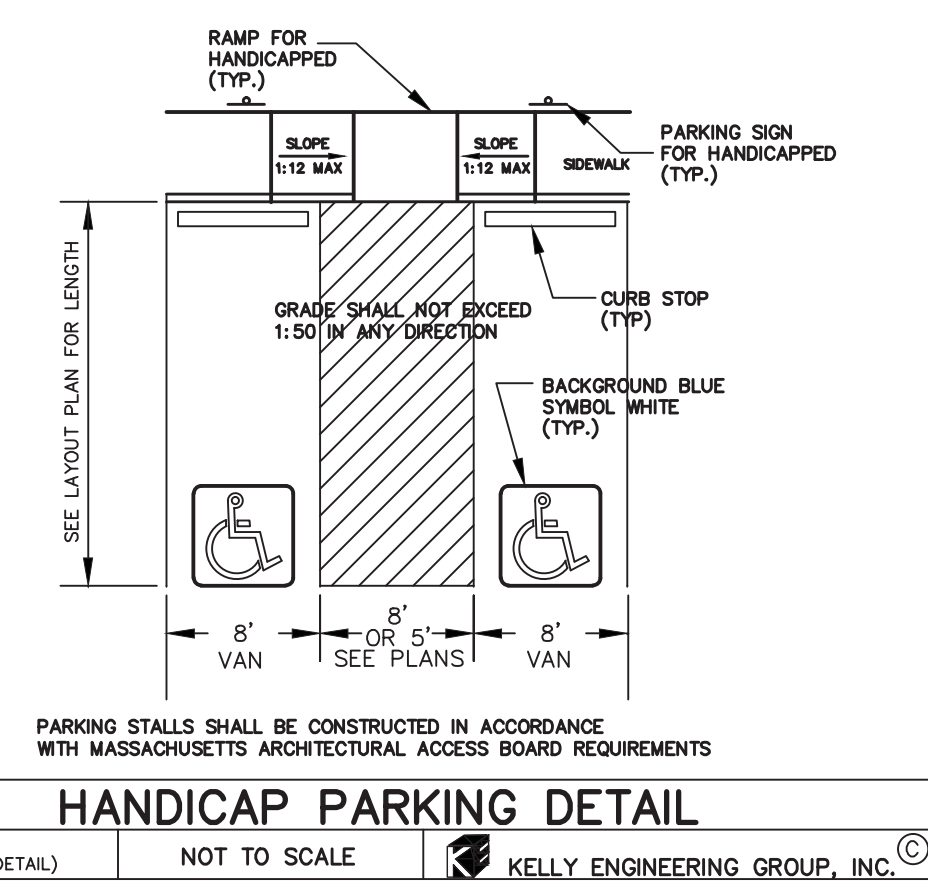
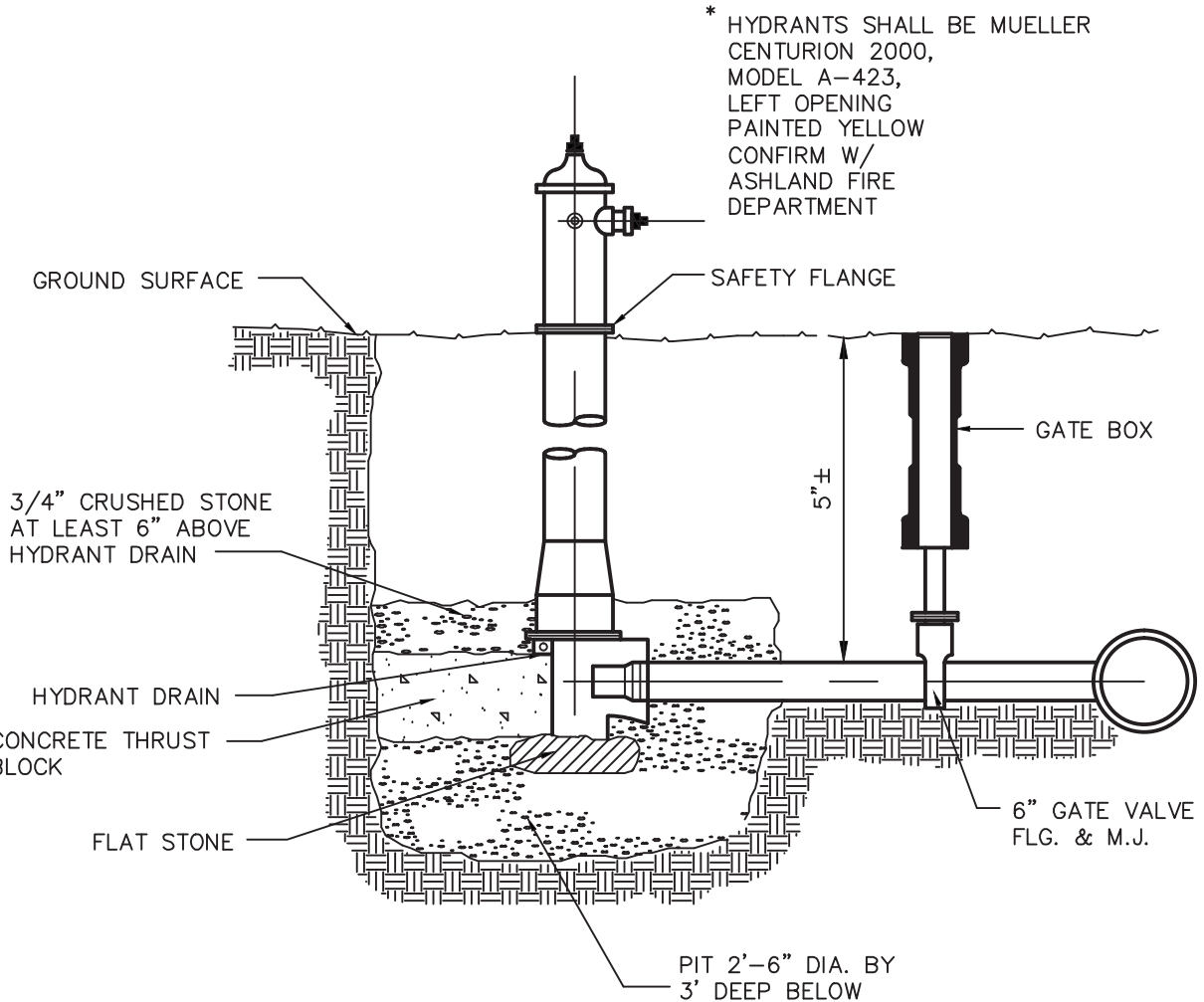
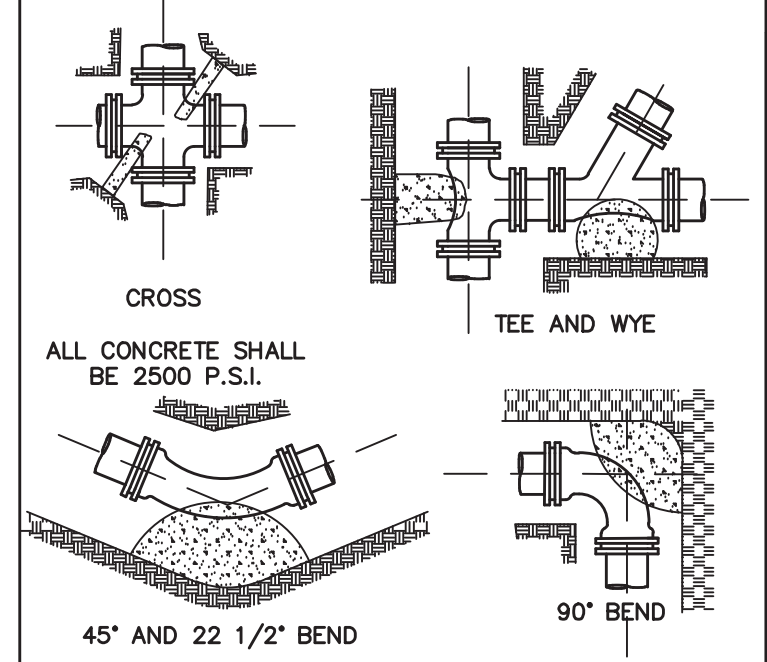
SCALE 1" = 40'	REV	DATE	REVISION	BY
DATE 09/28/15				
SHEET 13 OF 17				
PLAN NO. 2015-042-UT00				
DISK REF NO. F:\P\2015-042				
DRAWN BY C.J.				
CHKD BY DAM				
APPD BY DNK				
ASHLAND RAIL TRANSIT APARTMENTS M.B.T.A. ACCESS DRIVE ASHLAND, MASSACHUSETTS				
UTILITY PLAN				
KELLY ENGINEERING GROUP, INC. CIVIL ENGINEERING CONSULTANTS 0 CAMPANELLI DRIVE • BRAintree, MA • 02184 PHONE: 781 843 4333 FAX: 781 843 0028				
SHEET NO.				13

DAVID NOEL KELLY
NO. 37842
REGISTERED PROFESSIONAL ENGINEER
STATE OF MASSACHUSETTS

CONSTRUCTION NOTES



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



David Noel
Kelly
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-04'00'

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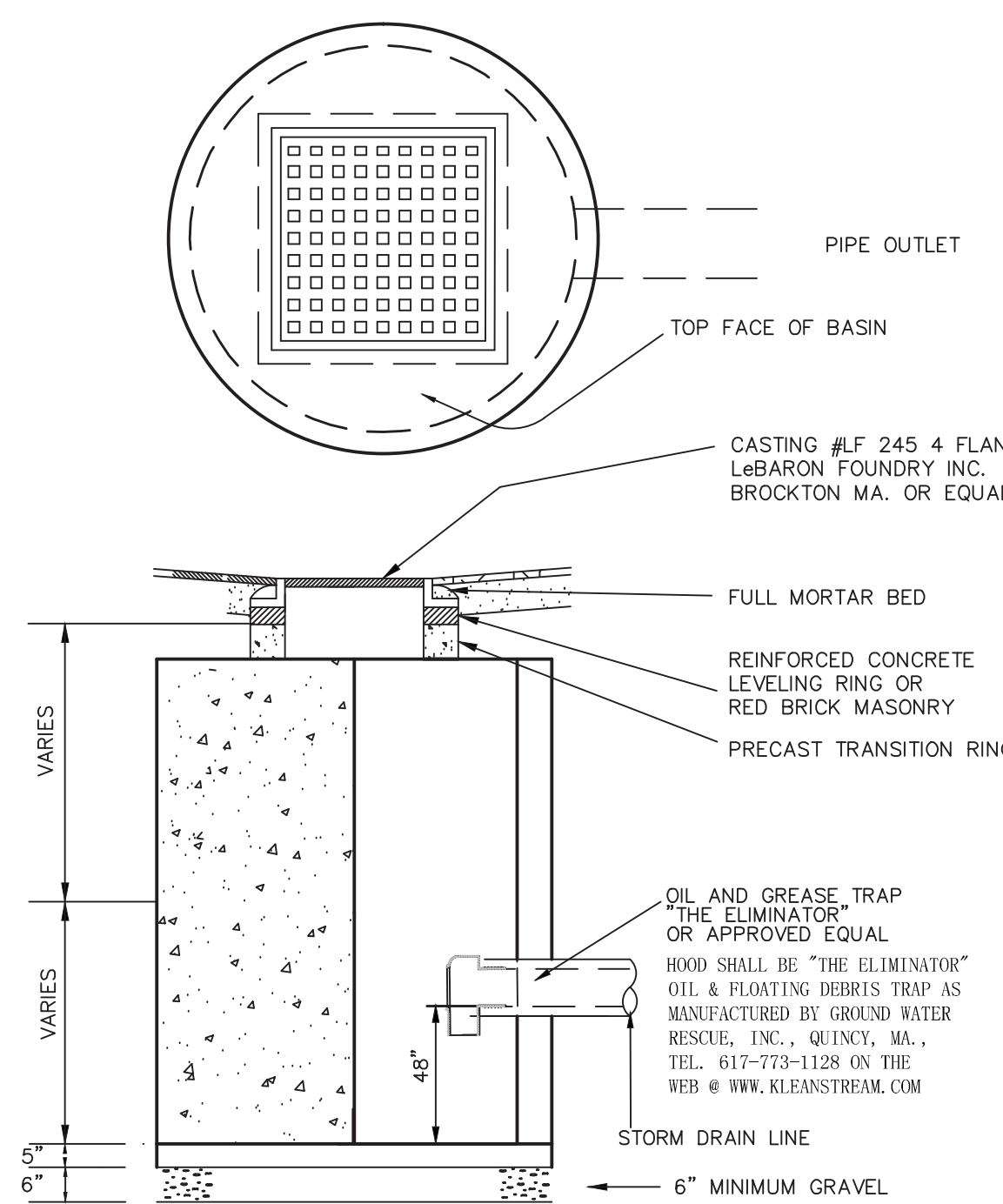
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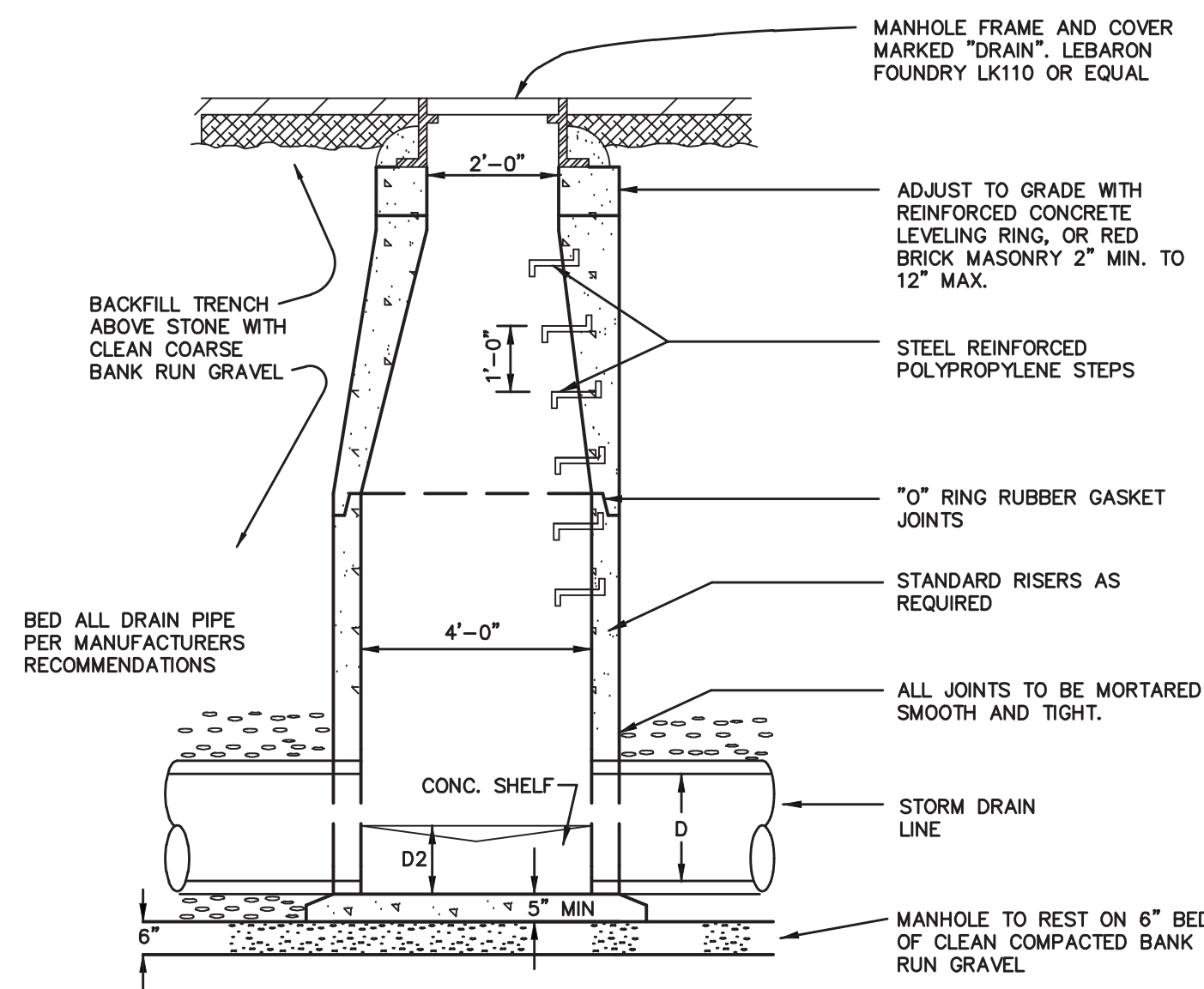
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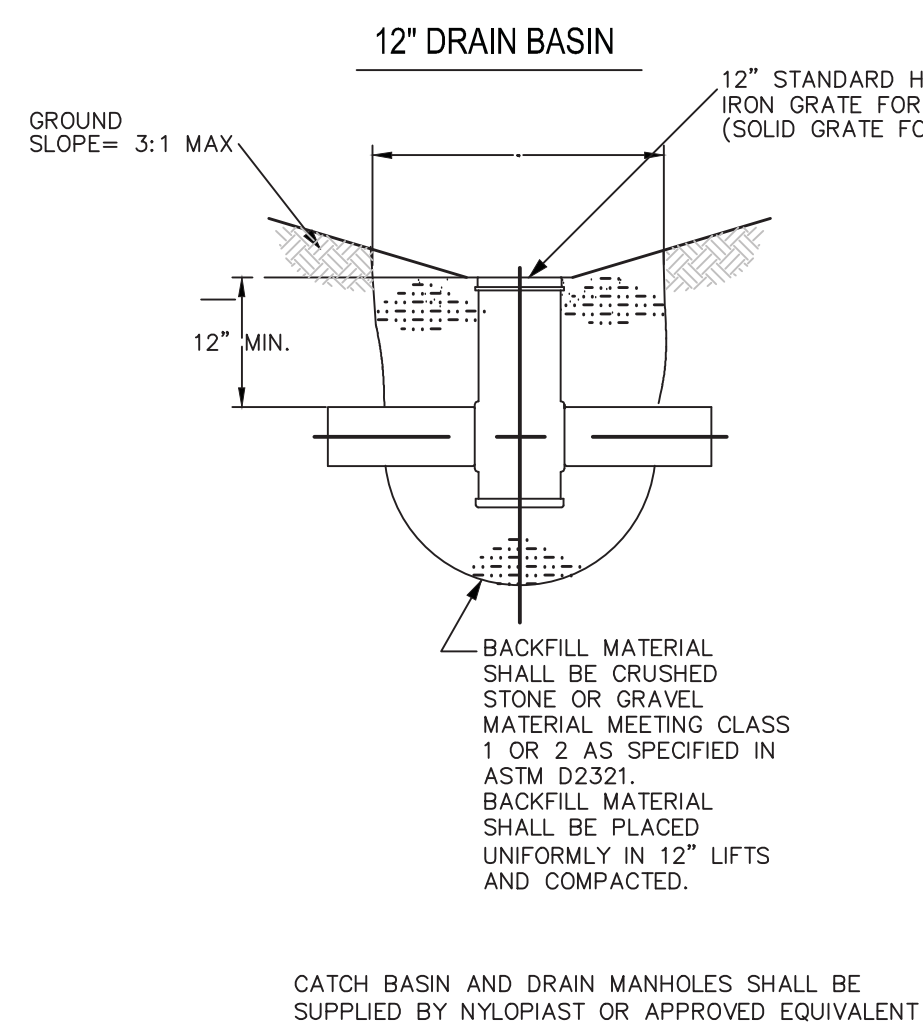
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N/A						
DATE						
06/28/15	REV	DATE	REVISION		BY	
SHEET	ASHLAND RAIL TRANSIT APARTMENTS M.B.T.A. ACCESS ROAD ASHLAND, MASSACHUSETTS					SHEET NO. 14
14 OF 17						
PLAN NO.						
2015-042-0700						
DISK REF NO.	DETAIL					
F:\P\2015-042	SHEET					
DRAWN BY	 KELLY ENGINEERING GROUP, INC. CIVIL ENGINEERING CONSULTANTS					
C&L						
CHKD BY	0 CAMPANELLI DRIVE • BRAINTREE MA • 02184 PHONE: 781 843 4333 FAX: 781 843 0028					
DAM						
APPD BY						
DNK						



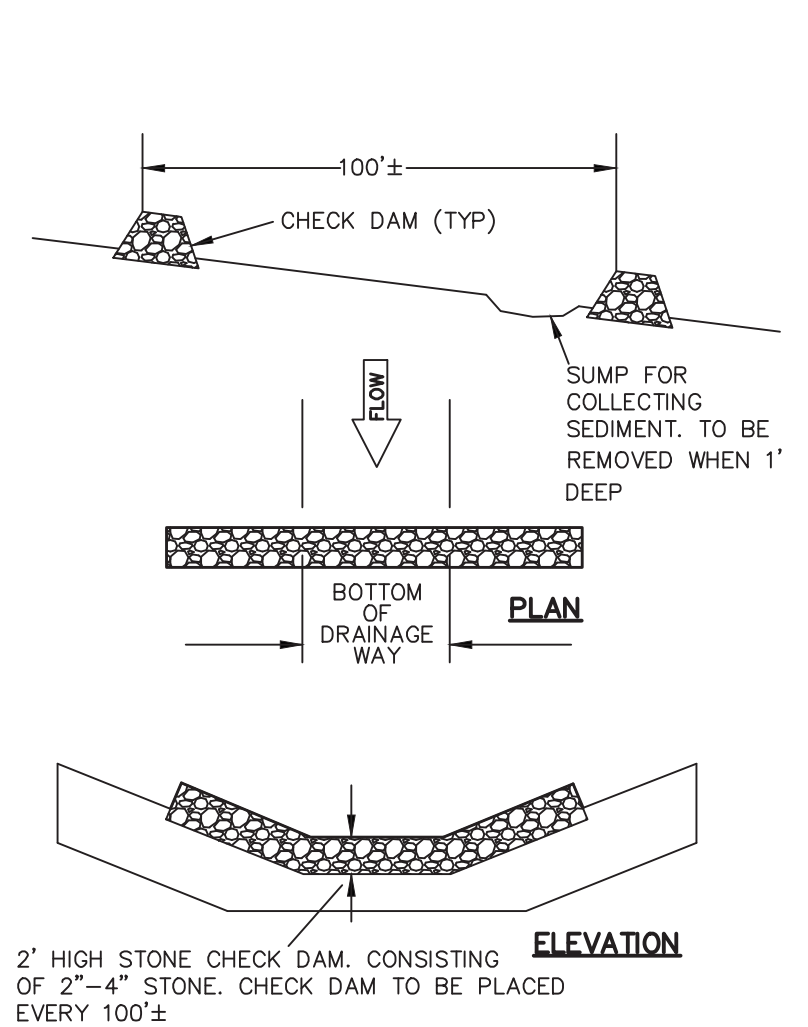
PRECAST CATCH BASIN DETAIL
NOT TO SCALE (PRECAST-CATCH-BASIN-DETAIL) KELLY ENGINEERING GROUP, INC.



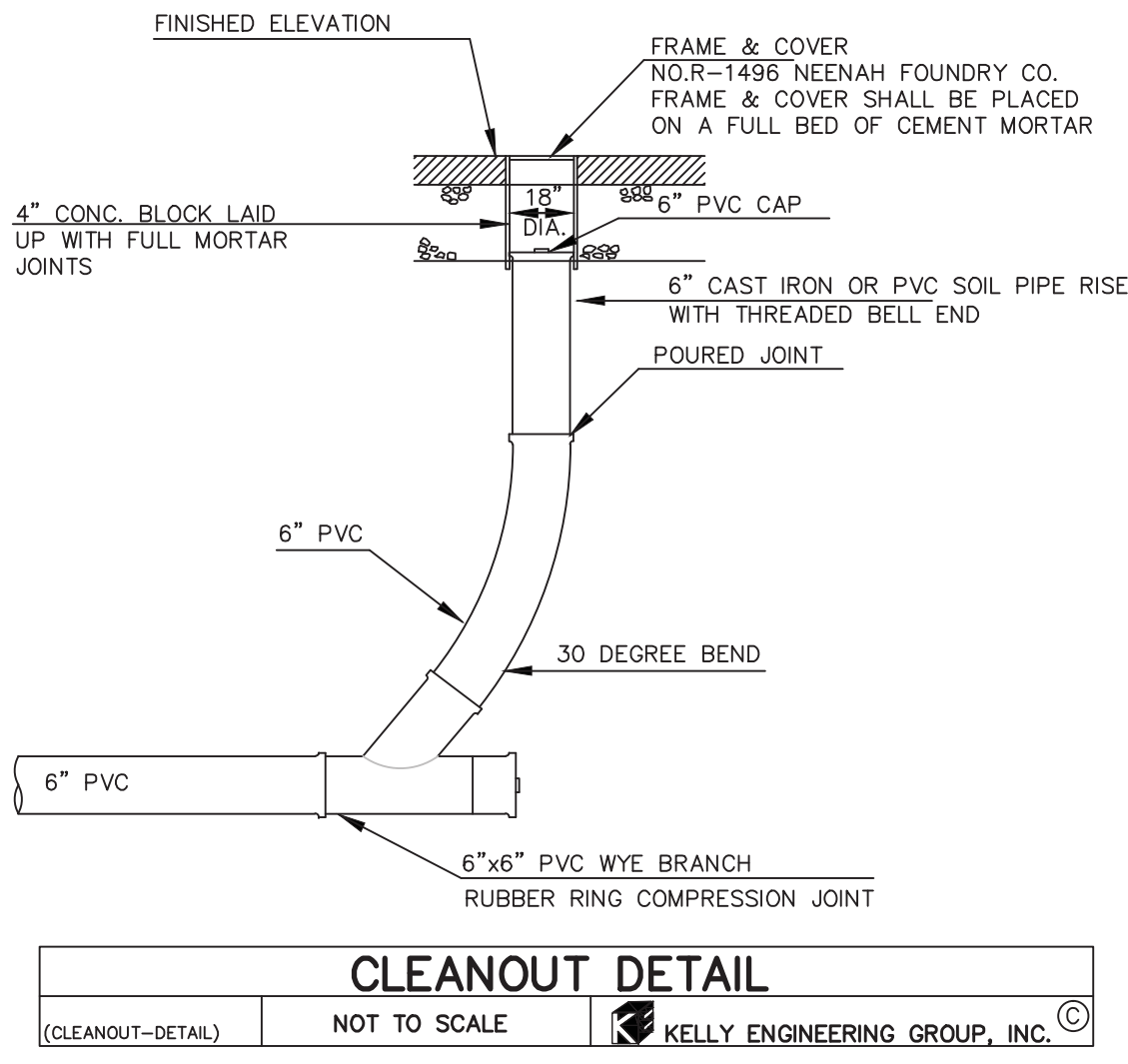
PRECAST DRAIN MANHOLE DETAIL
NOT TO SCALE (PRECAST-DRAIN-MANHOLE) KELLY ENGINEERING GROUP, INC.



YARD DRAIN DETAIL
NOT TO SCALE (AREA-DRAIN-2) KELLY ENGINEERING GROUP, INC.



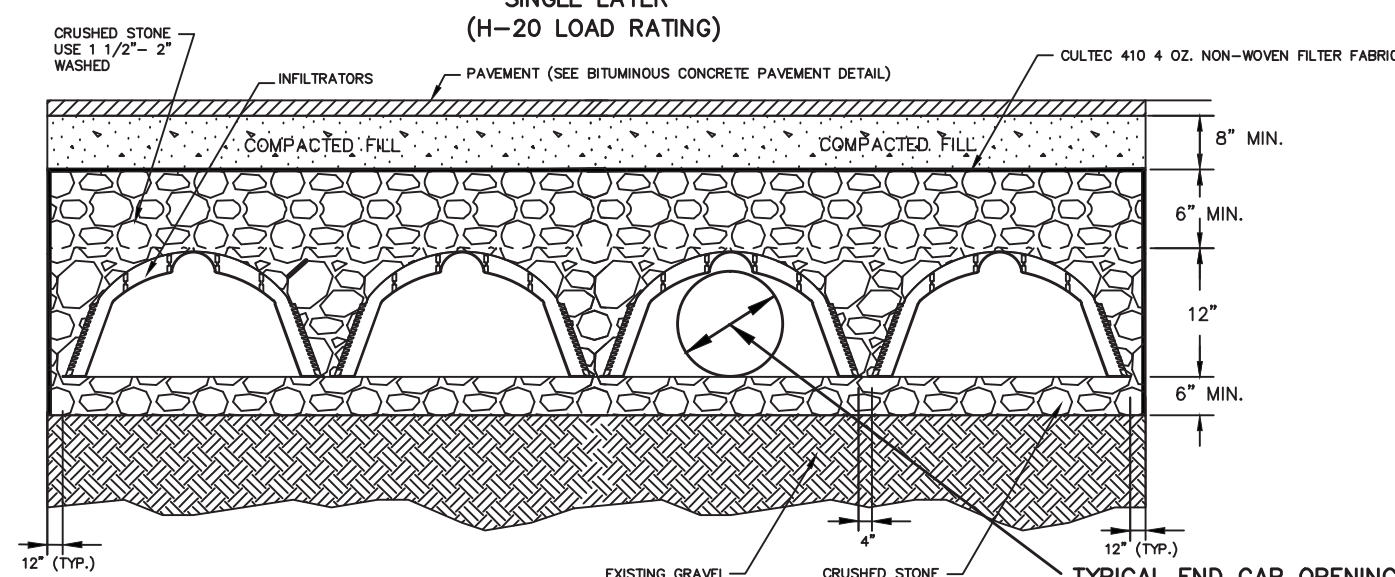
STONE CHECKDAM DETAIL (SEDIMENT DITCH)
NOT TO SCALE KELLY ENGINEERING GROUP, INC.



CLEANOUT DETAIL
NOT TO SCALE KELLY ENGINEERING GROUP, INC.

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

*SEE CULTEC RECHARGER 100HD STORMWATER MANAGEMENT SYSTEM DESIGN FOR INSTALLATION INSTRUCTIONS
PROPRIETARY SHOP DRAWINGS TO BE PROVIDED PRIOR TO INSTALLATION



SECTION 1-1 (PARTIAL)

INFILTRATOR SUBSURFACE DETENTION AREA PLAN VIEW

NOT TO SCALE (INFIL-SUB-DET) KELLY ENGINEERING GROUP, INC.

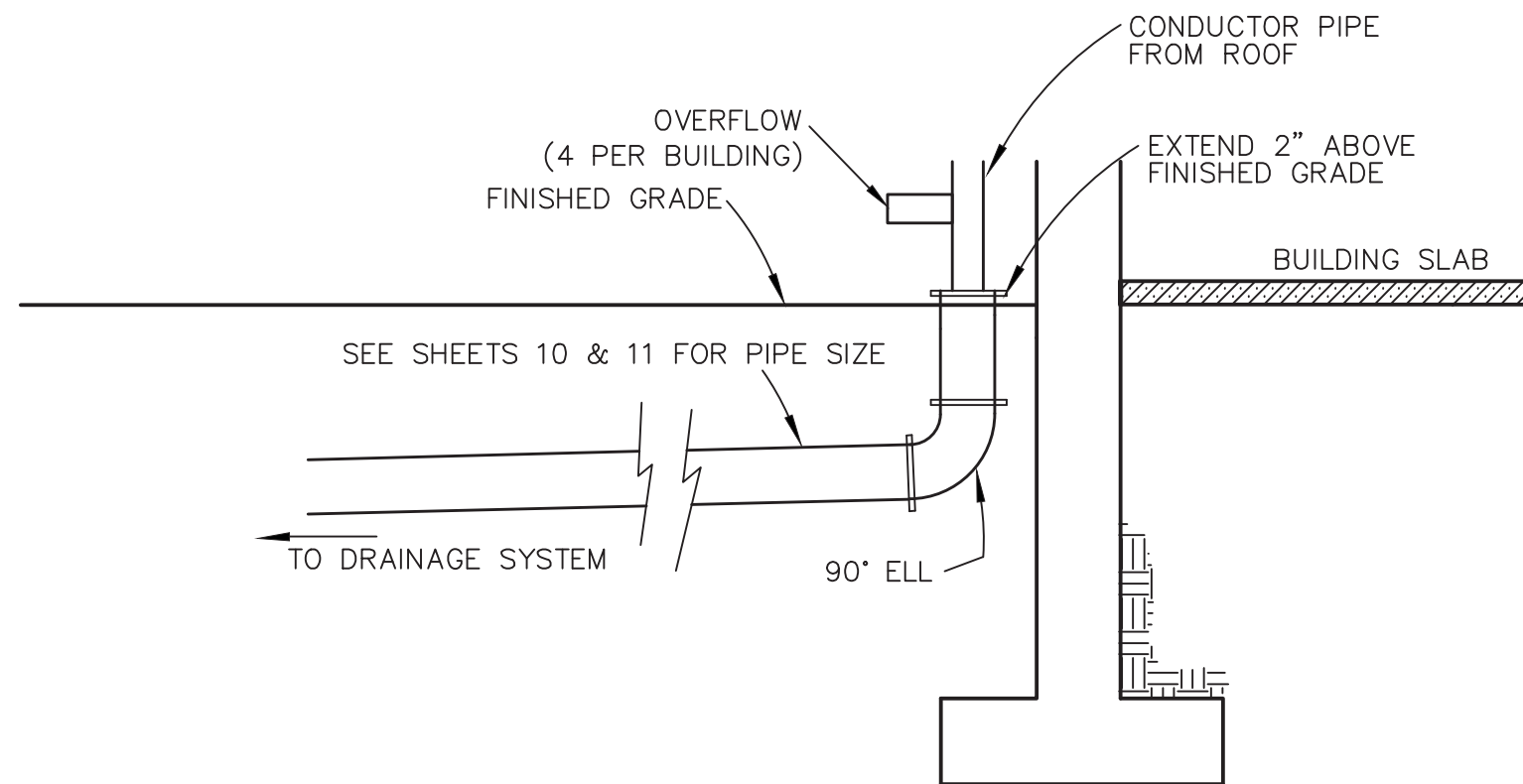
NOTE: EXTREME CARE SHALL BE TAKEN DURING CONSTRUCTION TO AVOID SILTATION DURING THE CONSTRUCTION PROCESS. SILT CAGES AND HAYBALE DIKES SHALL BE INSPECTED DAILY AND REPLACED IF NECESSARY

INSPECTION AND MAINTENANCE SCHEDULE:

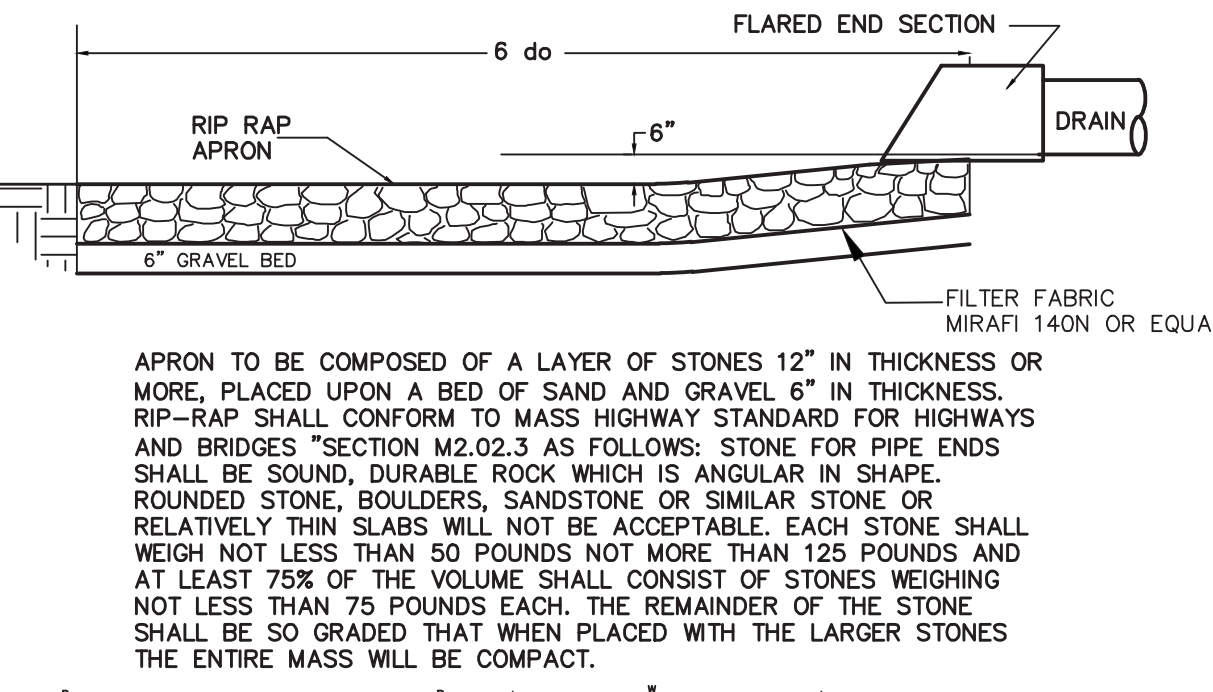
1. WEEKLY INSPECTIONS SHALL BE PERFORMED BY THE APPLICANTS ENGINEER AND A REPRESENTATIVE FROM THE TOWN OF ASHLAND ENGINEERING DEPARTMENT.
2. INSPECTIONS SHALL INCLUDE THE PAVEMENT TO DETERMINE IF ACCUMULATED SEDIMENT IS TO BE REMOVED. OF THE CATCH BASINS TO DETERMINE DEPTH OF SEDIMENTS AND REQUIRED CLEANING.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

MAINTENANCE SCHEDULE:

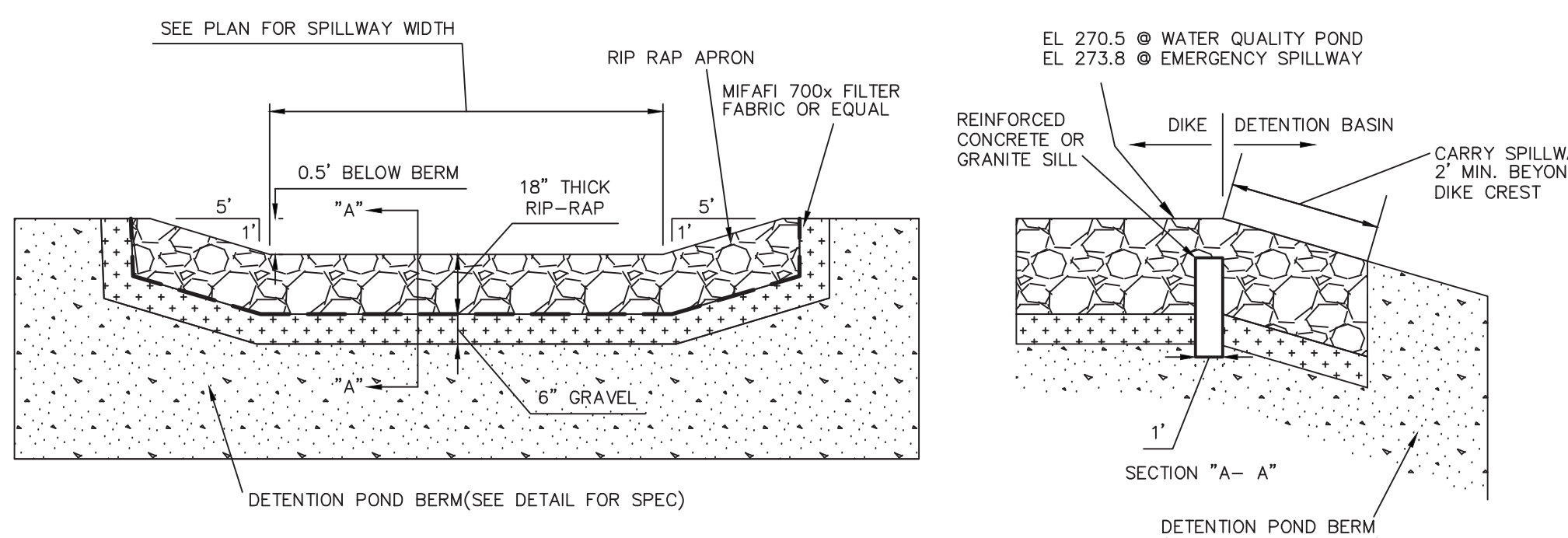
1. WHEN THE BINDER COURSE HAS BEEN INSTALLED THE PAVEMENT SHALL BE KEPT CLEAR OF ACCUMULATED SEDIMENTS. IF ACCUMULATED SEDIMENTS ARE DEPOSITED ON THE PAVEMENT THE SEDIMENT SHALL BE CLEANED IMMEDIATELY. THE PAVEMENT SHALL BE SWEEP AS NECESSARY BASED ON THE WEEKLY INSPECTIONS. THE CONTRACTOR SHALL INSPECT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



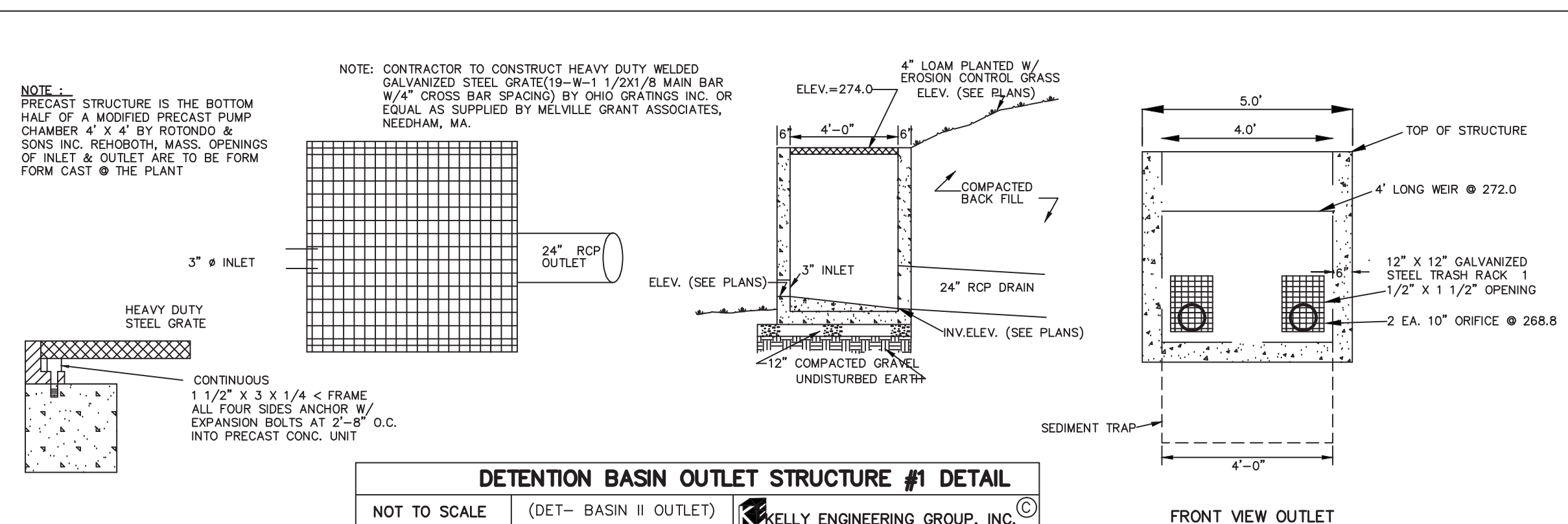
ROOF DRAIN CONNECTION DETAIL
NOT TO SCALE (ROOF-DRAIN-CONNECTION) KELLY ENGINEERING GROUP, INC.



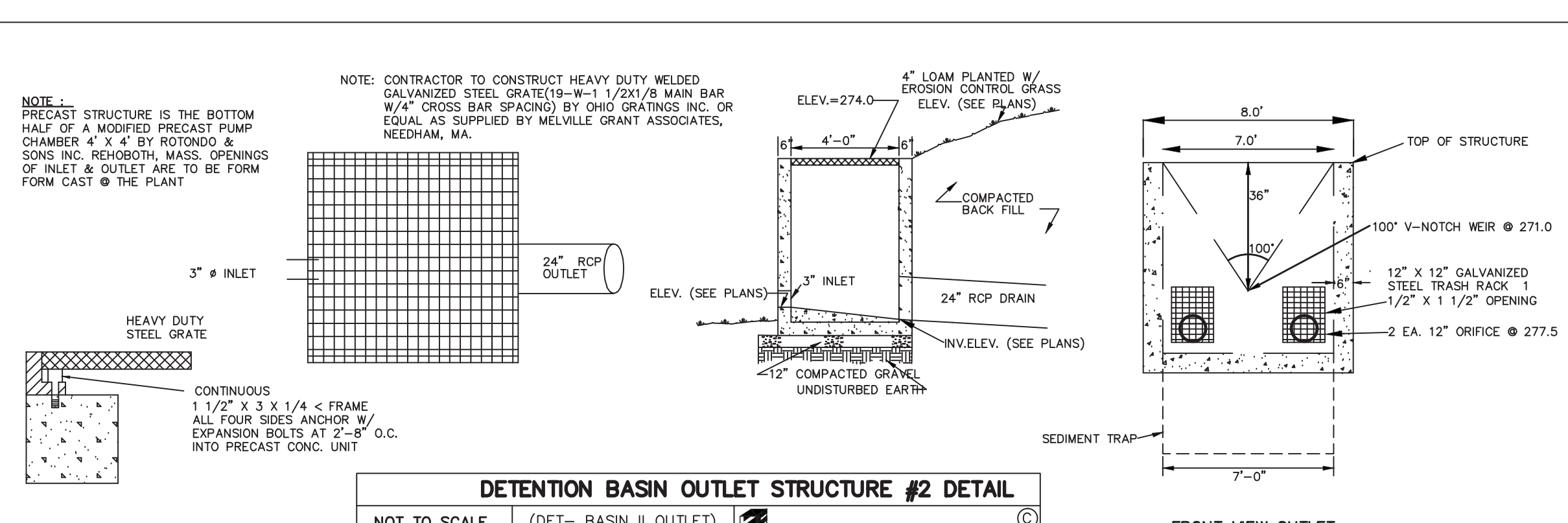
RIP-RAP APRON DETAIL AT F.E.S.
NOT TO SCALE (HEADWALL-DETAIL) KELLY ENGINEERING GROUP, INC.



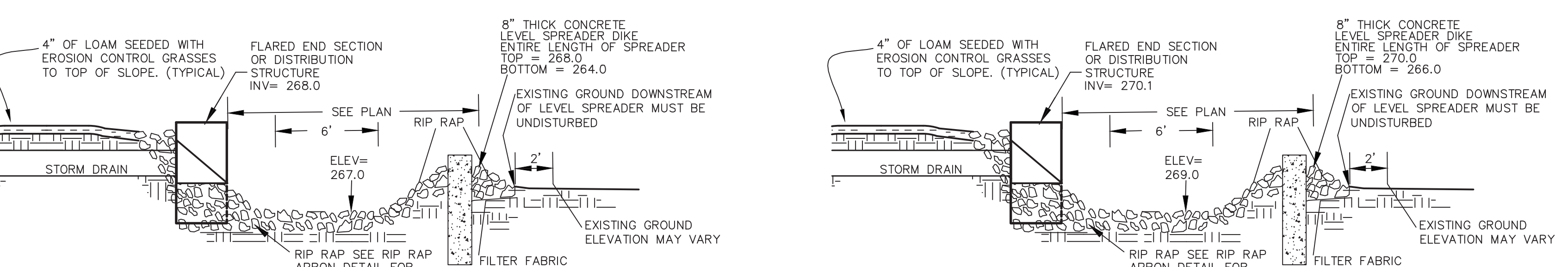
SPILLWAY DETAIL
NOT TO SCALE (HEADWALL-DETAIL-FLARED-END) KELLY ENGINEERING GROUP, INC.



DETENTION BASIN OUTLET STRUCTURE #1 DETAIL
NOT TO SCALE (DET- BASIN II OUTLET) KELLY ENGINEERING GROUP, INC.



DETENTION BASIN OUTLET STRUCTURE #2 DETAIL
NOT TO SCALE (DET- BASIN II OUTLET) KELLY ENGINEERING GROUP, INC.



LEVEL SPREADER DETAIL #1
NOT TO SCALE (LEVEL SPREADER) KELLY ENGINEERING GROUP, INC.

LEVEL SPREADER DETAIL #2
NOT TO SCALE (LEVEL SPREADER) KELLY ENGINEERING GROUP, INC.

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PLAN NO. 2015-042-DT00				
DISK REF NO. F:\P\2015-042				
DRAWN BY C.J.				
CHKD BY DAM				
APPD BY DNK				

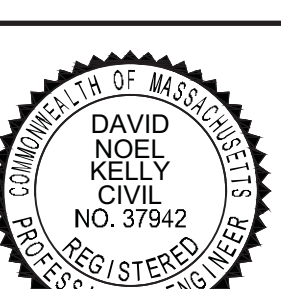
ASHLAND RAIL TRANSIT APARTMENTS
M.B.T.A. ACCESS ROAD
ASHLAND, MASSACHUSETTS

DETAIL SHEET

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CIVIL ENGINEERING CONSULTANTS
0 CAMPANELLI DRIVE • BRAINTREE MA • 02184
PHONE: 781 843 4333 FAX: 781 843 0028

SHEET NO.
15

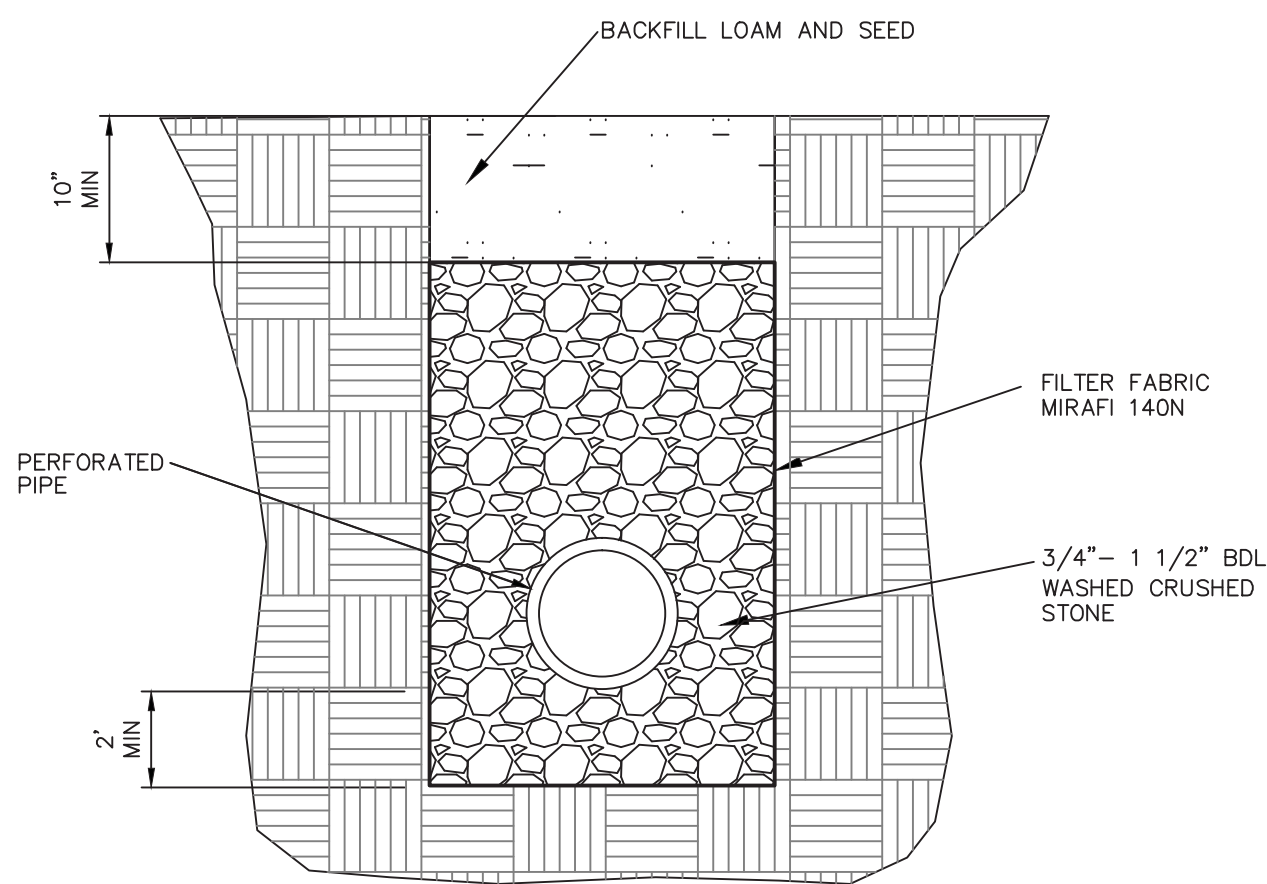
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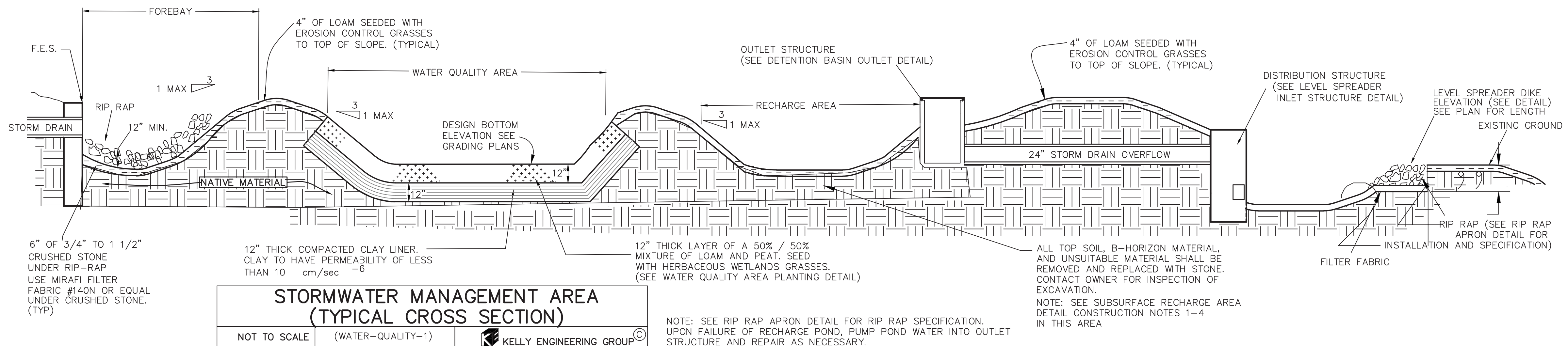
NOTE 1: SEE RIP RAP APRON DETAIL FOR RIP RAP SPECIFICATION. UPON FAILURE OF RECHARGE POND, PUMP POND WATER INTO OUTLET STRUCTURE AND REPAIR AS NECESSARY.

NOTE 2: IF BERM IS CONSTRUCTED IN FILL OR IF UNDERLYING MATERIAL IS PERVIOUS(DEFINED AS HYDROLOGIC GROUP A OR B) THEN AN IMPERVIOUS CORE 5' WIDE SHALL BE INSTALLED FROM THE ELEVATION OF THE LOWEST OUTLET TO 1' BELOW THE LOWEST POND BOTTOM. IMPERVIOUS CORE SHALL BE SOIL HAVING PERMEABILITY OF LESS THAN 10-6 CM/S.

NOTE 3: CONSTRUCTION OF INFILTRATION BASIN SHALL LIMIT SMEARING OR COMPACTING SOILS. NEVER CONSTRUCT THE BASIN IN THE WINTER OR WHEN IT IS RAINING. USE LIGHT EARTH MOVING EQUIPMENT TO EXCAVATE THE INFILTRATION BASIN BECAUSE HEAVY EQUIPMENT COMPACTS THE SOIL THEREFORE REDUCING THE INFILTRATION CAPACITY. SOME COMPACTION OF THE SOIL IS INVERTIBLE DURING CONSTRUCTION. UPON FINAL GRADING DEEPLY TILL THE BASIN FLOOR WITH A ROTARY TILLER OR A DISC HARROW TO A DEPTH OF 12".



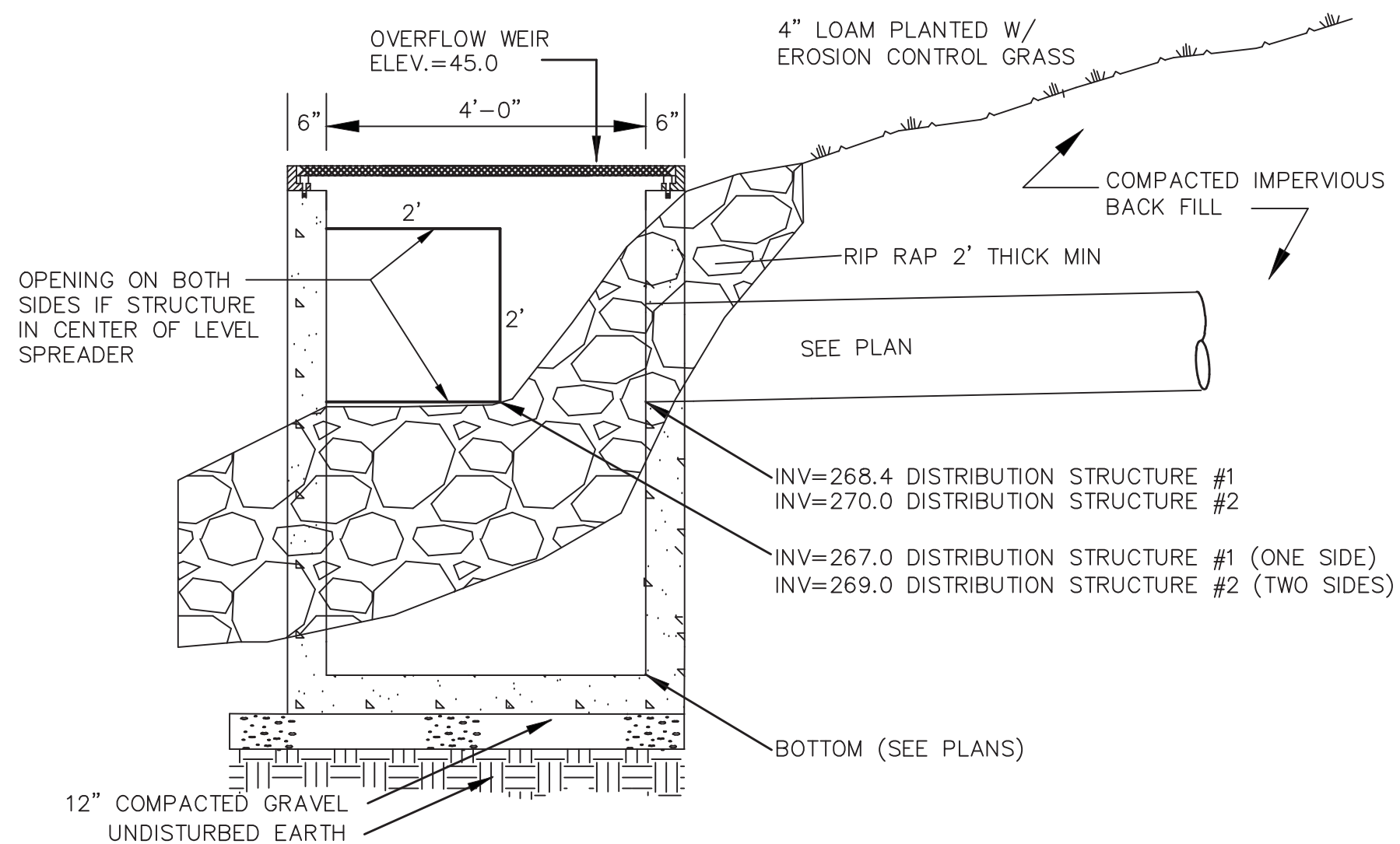
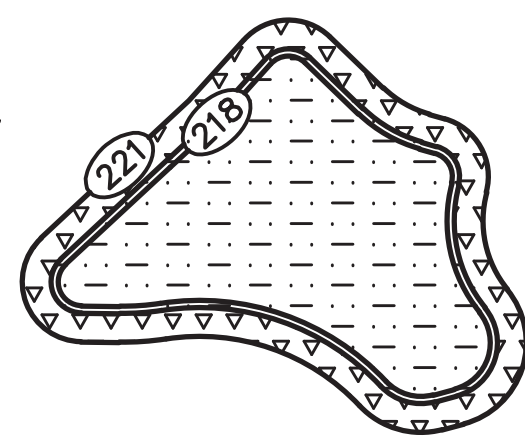
SUBDRAIN DETAIL
NOT TO SCALE (WATER-QUALITY-AREA) KELLY ENGINEERING GROUP, INC.



CATEGORY	SPECIES	SIZE/TYPE	AVERAGE SPACING/DISTRIBUTION
1	PONTERLERIA CORDATA/PICKERELWEED ELEOCHARIS ACICULARIS/SPIKERUSH SCIRPUS ACUTUS/HARD-STEMMED BULLRUSH SCIRPUS FLUVATILIS/THREE-SQUARE RUSH PELTANDRA VIRGINICA/ARROW DRUM	BR OR PEAT POTS BR OR PEAT POTS BR OR PEAT POTS BR OR PEAT POTS BR OR PEAT POTS	PLANTED 2' O.C. IN SAME SPECIES CLUSTERS OF 5-10 PLANTS. CLUSTERS 15' O.C., IN WATER 12-18\"
2	VIBURNUM CASSINIADES/WILD RAISIN CORNUS AMOMUM/SILKY DOGWOOD VACONUM CORMYBOSUM/HIGHBUSH BLUEBERRY SAMBUCUS CANADENSIS/ELDERBERRY ARONIA MELANOCARPA/BLACK CHOKEBERRY WETLAND STABILIZING SEED MIX (FALL BROADCAST SEED MIX-40 LBS/ACRE TOTAL BROADCAST LATE SUMMER OR SPRING ECHINACHOA CRUSGALLI, ARGOSTIS, LOLLUM (EQUAL AMOUNTS OF EACH MULTIFLORUM, OLYGRIA STRIATA, POA TRIVIALIS, TRIFOLIUM PRATENSE CG - CONTAINER GROWN, BB - BAILED AND BURLAPPED, BR - BARE ROOT, PLUGS - SOIL PLUGS FROM NATURAL WETLANDS	24-36\"	SHRUBS AVERAGE 6' O.C., IN SAME SPECIES CLUSTERS OF 5-10 PLANTS, CLUSTERS SPACED 15' O.C.

NOTE: ENTIRE WATER QUALITY AREA SHALL BE LINED WITH 12\"

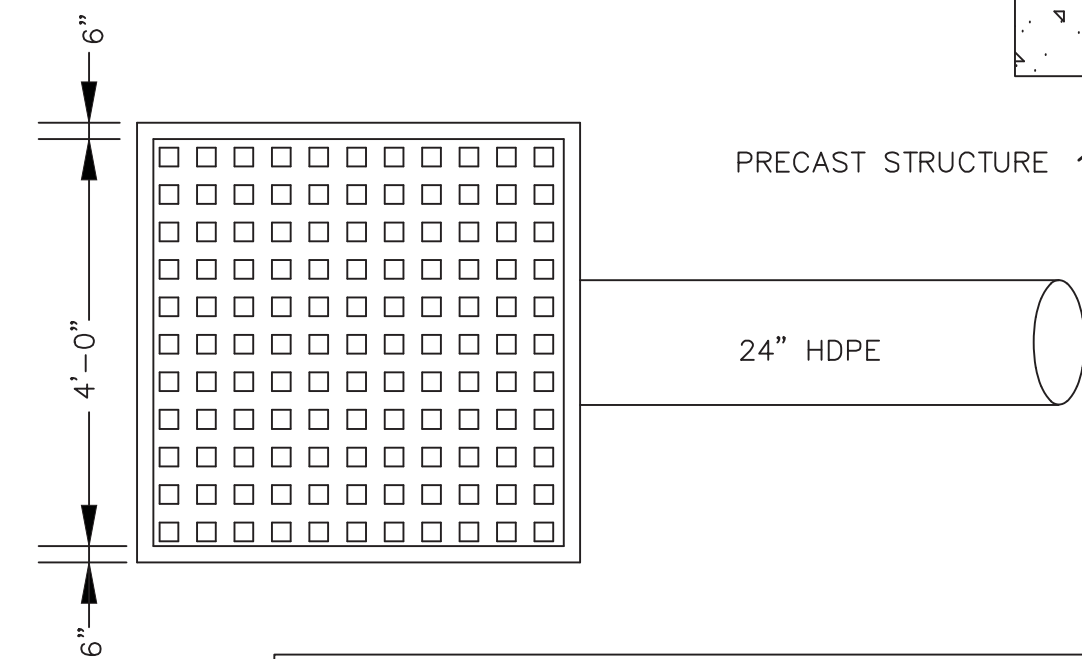
WATER QUALITY AREA PLANTING DETAIL
NOT TO SCALE (WATER-QUALITY-AREA) KELLY ENGINEERING GROUP, INC.



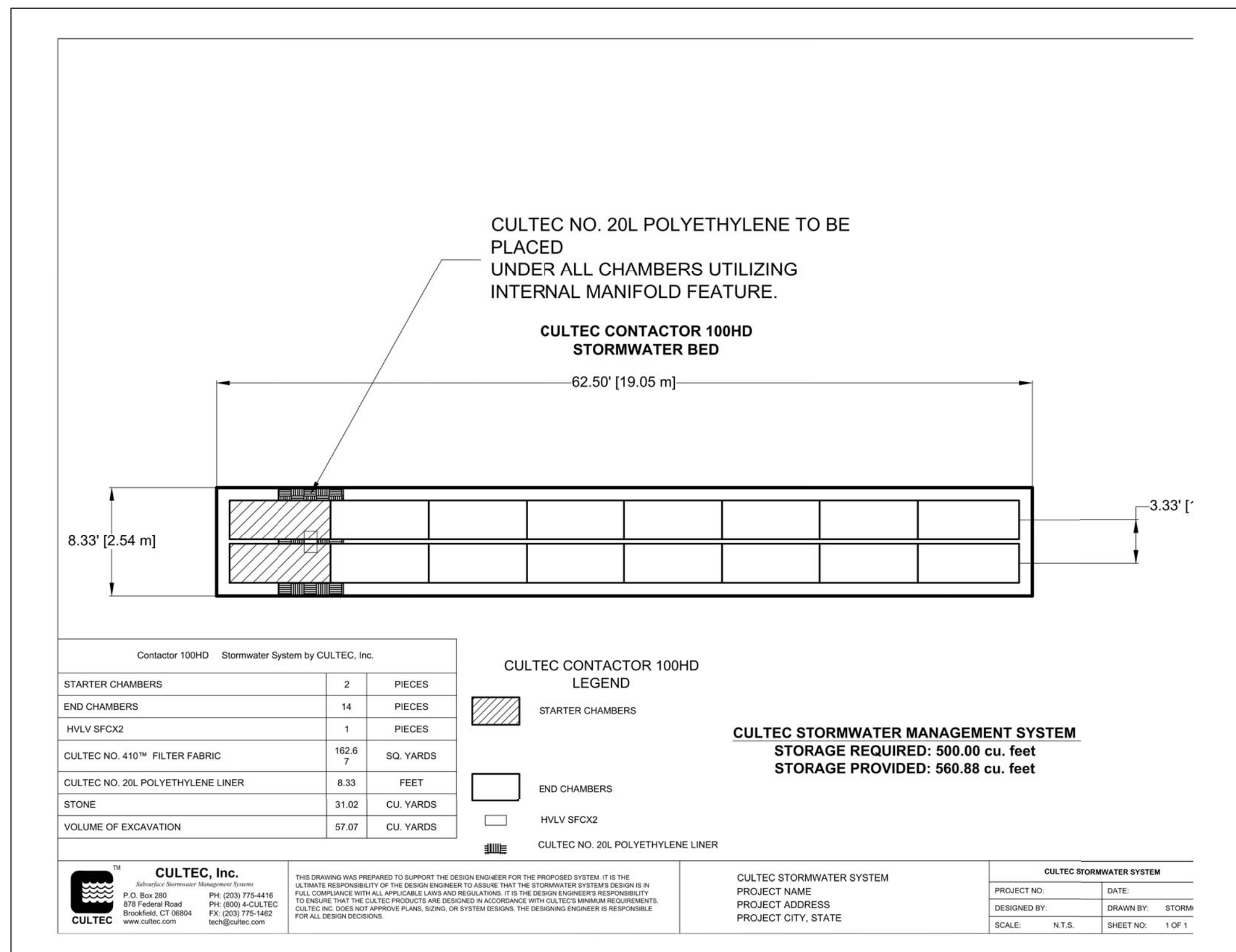
NOTE: CONTRACTOR TO CONSTRUCT HEAVY DUTY WELDED GALVANIZED STEEL GRATE(19-W-4, 1 1/2X1/8 MAIN BAR W/4\"

NOTE: PRECAST STRUCTURE IS THE BOTTOM HALF OF A MODIFIED PRECAST PUMP CHAMBER #PC 4X4 BY ROTONDO & SONS INC. REHOBOTH, MA. OPENINGS OF INLET & OUTLET ARE TO BE FORM CAST AT THE THE PLANT

HEAVY DUTY STEEL GRATE
CONTINUOUS 1 1/2\"



DISTRIBUTION STRUCTURE
NOT TO SCALE (DETEN-BAS-OUT-DT) KELLY ENGINEERING GROUP, INC.

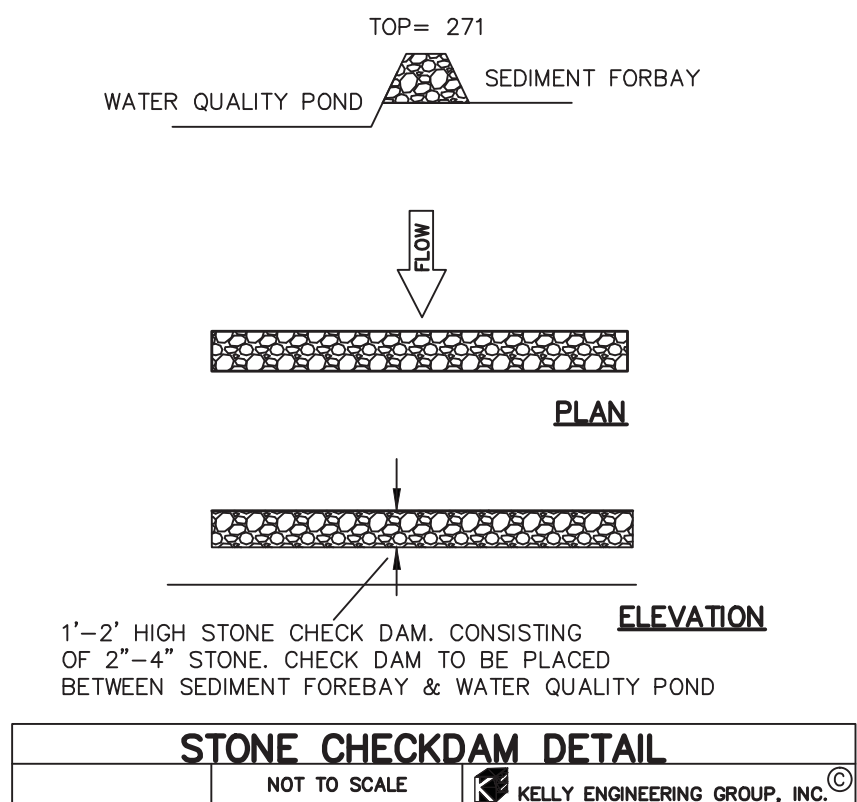


Contactor 100HD Stormwater System by CULTEC, Inc.		
STARTER CHAMBERS	2	PIECES
END CHAMBERS	14	PIECES
H.V.L. SFC2	1	PIECES
CULTEC NO. 410TH FILTER FABRIC	192.6	SQ. YARDS
CULTEC NO. 20L POLYETHYLENE LINER	8.33	FEET
STONE	31.02	CU. YARDS
VOLUME OF EXCAVATION	57.07	CU. YARDS

CULTEC CONTACTOR 100HD LEGEND	
	STARTER CHAMBERS
	END CHAMBERS
	H.V.L. SFC2
	CULTEC NO. 20L POLYETHYLENE LINER

CULTEC STORMWATER MANAGEMENT SYSTEM
STORAGE REQUIRED: 500.00 cu. feet
STORAGE PROVIDED: 560.88 cu. feet

CULTEC, Inc.		CULTEC STORMWATER SYSTEM		CULTEC STORMWATER SYSTEM	
1000 Main Street P.O. Box 200 P.O. Box 200 P.O. Box 200 P.O. Box 200	1000 Main Street P.O. Box 200 P.O. Box 200 P.O. Box 200	PROJECT NO.	DATE:	PROJECT NAME	DATE:
		DESIGNED BY:	DRAWN BY:	PROJECT ADDRESS	STORM
		SCALE:	N.T.S.	PROJECT CITY, STATE	SHEET NO.: 1 OF 1



STONE CHECKDAM DETAIL
NOT TO SCALE KELLY ENGINEERING GROUP, INC.

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DATE	09/28/15
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DISK REF. NO.	F:\P\2015-042
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CHKD BY	DAM
APPD BY	DNK
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SHEET NO.
16

David Noel Kelly
2015.09.29
17:20:24 -04'00'

EJECTOR STATION MANHOLE SECTION
NOT TO SCALE (EJECTOR-STATION-MANHOLE-SEC) KELLY ENGINEERING GROUP ©

STONE CHECKDAM DETAIL (SEDIMENT DITCH)

(HAY-CHECKDAM-DETAIL)	NOT TO SCALE	KELLY ENGINEERING GROUP, INC. ©
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EROSION CONTROL DETAIL AT BOTTOM OF SLOPES		
(HAY-CHECKDAM-DETAIL)	NOT TO SCALE	 KELLY ENGINEERING GROUP, INC.

EJECTOR STATION MANHOLE		
PLAN VIEW		
(EJECTOR-STATION-MANHOLE-1)	NOT TO SCALE	 KELLY ENGINEERING GROUP, INC.®

SILT SOCK LINE DETAIL

SIZE L " X W " X D

INSIDE DROP CONNECTION SEWER MANHOLE DETAIL		
(INSIDE-DROP-SEWER-MH)	NOT TO SCALE	KELLY ENGINEERING GROUP, INC. ©

TOP VIEW
NOT TO SCALE

SANITARY SEWER CLEANOUT DETAIL		
(SAN-SEWER-CLEANOUT)	NOT TO SCALE	KELLY ENGINEERING GROUP, INC. ©

CONSTRUCTION TRACKING PAD		
(TRACKING-PAD)	NOT TO SCALE	 KELLY ENGINEERING GROUP, INC.

TRACKING PAD NOTES:

STONE SIZE - USE 2" CRUSHED STONE

FILTER CLOTH - SHALL BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING OF STONE

SURFACE WATER - ALL SURFACE WATER FLOWING OR DIVERTED TOWARD CONSTRUCTION ENTRANCES SHOULD BE PIPED ACROSS THE ENTRANCE. IF PIPING IS IMPRACTICAL, A MOUNTABLE BERM SHOULD BE PERMITTED.

MAINTENANCE - THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH PREVENTS TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE IF EXCESSIVE DEMAND AND REPAIR OF CLEANING OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT MUST BE REMOVED, WASHED OR TRACKED ONTO PUBLIC RIGHTS-OF-WAY MUST BE REMOVED IMMEDIATELY.