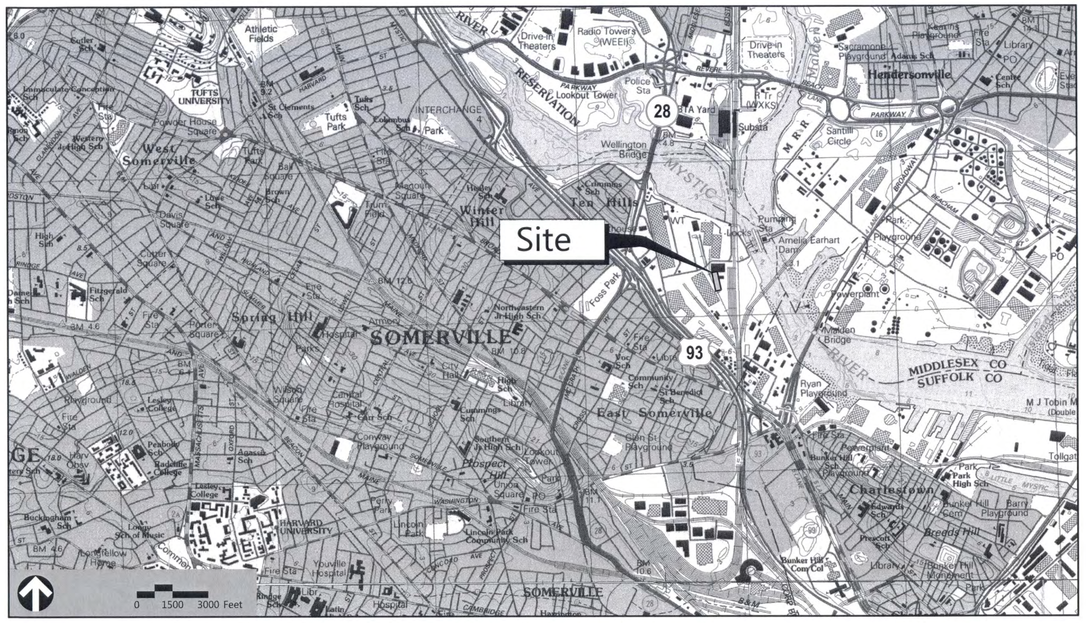
Site Plans

Issued for	Special Permit
Date Issued	August 04, 2016
Latest Issue	August 04, 2016

Assembly Line Park

Assembly Row
Somerville, Massachusetts



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Sheet Index

Reference Drawings

No.	Drawing Title	Latest Issue
Sv-1 - Sv-17	Existing Conditions As Builts	November 6, 2014
58 - 79	Phase 2 Streetscape - Assembly Line Park	August 4, 2016
AA1.1 - BA3.1	Assembly Line Park Architectural Plans	August 4, 2016

COMMONWEALTH OF MASSACHUSETTS
DALE A. HOISAETH II
CIVIL
No. 51903
REGISTERED PROFESSIONAL ENGINEER
8-9-16

VHB Project : 08518.05 Assembly Line Park
Issued for : Special Permit - August 04, 2016

\\VHB\PROJ\WAT-LD\08518.05\CAD\LD\PLANSET\ASSEMBLY LINE PARK SPECIAL PERMIT\00 0851805_ALP_SPECIALPERMIT-00-COV 4 August 2016

GENERAL SYMBOLS

EXISTING	PROPOSED	
		EDGESTONE-TYPE NOTED
		EDGE OF ROAD
		PARKING METER (DOUBLE AND SINGLE HEAD)
		STREET LIGHT POLE TYPE J, B & A-2
MB	MB	MAIL BOX
		HIGHWAY GUARD (TYPE NOTED)
		FENCE (SIZE AND TYPE NOTED)
MHB	SB	HIGHWAY/PROPERTY BOUND (TYPE NOTED)
LABEL/DATE	LABEL/DATE	CITY, TOWN, OR COUNTY LAYOUT
		STATE HIGHWAY LAYOUT (S.H.L.O.)
		EASEMENT LINE
		PROPERTY LINE
NAME		CITY, TOWN, OR COUNTY BOUNDARY
NAME		STATE BOUNDARY
10+00	10+00	CONSTRUCTION BASELINE
		TREE (SEE LANDSCAPE MATERIALS PLANS)
	B-1	BORINGS, PAVEMENT CORES
	TP-1	TEST PIT
		STRAW WATTLE WITH SILT FENCE
		ARCHITECTURAL LIGHT FIXTURE (SEE STREET LIGHTING PLANS)
FB	FB	EMERGENCY FIRE PULL BOX

UTILITY SYMBOLS

EXISTING	PROPOSED	
	HH	CATCH BASIN (OR GUTTER INLET OR LEACHING BASIN)
HH		ELECTRIC HANDHOLE (NUMBER AS NOTED)
E	EMH	ELECTRIC MANHOLE "
T	TMH	TELEPHONE MANHOLE "
S		SEWER MANHOLE "
D		DRAINAGE MANHOLE "
GM	GM	GAS METER
GG	GG	GAS GATE
WV	WV	WATER VALVE
CS	CS	CURB STOP
		SIAMESE CONNECTION
HYD	HYD	HYDRANT
UP		UTILITY POLE
		GUY POLE
		ROOF DRAIN
6"RD	6"RD	DRAIN PIPE
12"D	12"D	
12"S	12"S	SEWER MAIN
E UGE	E UGE	ELECTRIC DUCT
3"G	G	GAS MAIN
6"W	6"W	WATER MAIN
T	T	TELEPHONE DUCT
		WATER FITTING (HORIZONTAL OR VERTICAL)
T	T	ELECTRICAL TRANSFORMER
		LIGHT CONTROL (ELECTRICAL) PANEL
		WEATHERPROOF OUTLET BOX WITH GFI OUTLET
	J	WEATHERPROOF JUNCTION BOX

PAVEMENT MARKINGS AND SIGNING SYMBOLS

EXISTING	PROPOSED	
		PAVEMENT ARROW AND LEGEND
CW	CW	CROSSWALK, 2-12" WHITE LINES (WIDTH NOTED)
SL	SL	STOP LINE, 12" WHITE LINE 4.0' BEHIND CW (TYP)
		YIELD LINE, 24" x 36" WHITE TRIANGLE, 36" O.C.
SWCHL	SWCHL	SOLID WHITE CHANNELIZING LINE-SIZE AS NOTED
SYCHL	SYCHL	SOLID YELLOW CHANNELIZING LINE-SIZE AS NOTED
BWLL	BWLL	BROKEN WHITE LANE LINE - 4"
SWLL	SWLL	SOLID WHITE LANE LINE - 4", UNLESS OTHERWISE NOTED
DYCL	DYCL	DOUBLE YELLOW CENTER LINE - 4"
SYEL	SYEL	SOLID YELLOW EDGE LINE - 4", UNLESS OTHERWISE NOTED
SWEL	SWEL	SOLID WHITE EDGE LINE - 4", UNLESS OTHERWISE NOTED
BYLL	BYLL	BROKEN YELLOW LANE LINE - 4"
DWL	DWL	DOTTED WHITE LINE - 4"
	DYL	DOTTED YELLOW LINE - 4"
	LDWL	LONG DASHED WHITE LINE - 4"
		BICYCLE LANE
		BICYCLE DETECTION LEGEND
Sign		SIGN AND POST
		DELINEATOR
		OVERHEAD SIGN

ABBREVIATIONS

GENERAL

ABAN	ABANDON	MTD	MOUNTED
ADJ	ADJUST	NTS	NOT TO SCALE
APPROX	APPROXIMATE	O.C.	ON CENTER
BB	BITUMINOUS BERM	PCC	PRECAST CONCRETE CURB
BIT	BITUMINOUS	PGL	PROFILE GRADE LINE
BOS	BOTTOM OF SLOPE	PROP	PROPOSED
B.O.	BY OTHERS	PVM'T	PAVEMENT
CCB	CAPE COD BERM	REM	REMOVE
CLF	CHAINLINK FENCE	REMOD	REMODEL
CO	CLEANOUT	RET	RETAIN
CONC	CONCRETE	R.O.W.	RIGHT-OF-WAY
CONT'D	CONTINUED	R&D	REMOVE AND DISCARD
ELEV	ELEVATION	R&R	REMOVE AND RESET
EOP	EDGE OF PAVEMENT	R&S	REMOVE AND STACK
EXIST	EXISTING	RT	RIGHT
FND	FOUNDATION	STA	STATION
GRAN	GRANITE	TEMP	TEMPORARY
HMA	HOT MIX ASPHALT	TOS	TOP OF SLOPE
LA	LANDSCAPE AREA	TYP	TYPICAL
LEN	LENGTH	VGC	VERTICAL GRANITE CURB
LP	LIGHT POLE	W.W.M.	WELDED WIRE MESH
LOAM	LOAM BORROW		
LT	LEFT		
MAX	MAXIMUM		
MIN	MINIMUM		
MASS DOT	MASSACHUSETTS DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION (FORMERLY MASSHIGHWAY)		
MWRA	MASSACHUSETTS WATER RESOURCES AUTHORITY		

UTILITIES

CMP	CORRIGATED METAL PIPE
CAP	CORRUGATED ALUMINUM PIPE
CIP	CAST IRON PIPE
CIT	CHANGE IN TYPE
COND	CONDUIT
DIP	DUCTILE IRON PIPE
FES	FLARED END SECTION
F&C	FRAME AND COVER
F&G	FRAME AND GRATE
GT	GREASE TRAP
HDPE	HIGH DENSITY POLYETHYLENE PIPE
HH	HAND HOLE
HW	HEADWALL
HYD	HYDRANT
INV	INVERT
PVC	POLYVINYLCHLORIDE PIPE
PWW	PAVED WATER WAY
RCP	REINFORCED CONCRETE PIPE
TD	TRENCH DRAIN
TSV	TAPPING SLEEVE AND VALVE BOX
UD	UNDERDRAIN
UP	UTILITY POLE

PROFILES

AD	ALGEBRAIC DIFFERENCE IN RATES OF GRADE
ELEV	ELEVATION
HSD	HORIZONTAL SIGHT DISTANCE
K	RATE OF VERTICAL CURVATURE
PVI	POINT OF VERTICAL INTERSECTION
BVCS	BEGINNING OF VERTICAL CURVE STATION
EVCS	END OF VERTICAL CURVE STATION
BVCE	BEGINNING OF VERTICAL CURVE ELEVATION
EVCE	END OF VERTICAL CURVE ELEVATION
PVRC	POINT OF VERTICAL REVERSE CURVE
PVCC	POINT OF VERTICAL COMPOUND CURVE
SSD	STOPPING SIGHT DISTANCE

ALIGNMENT/GRADING

CC	CENTER OF CURVE
HP	HIGH POINT
LP	LOW POINT
PC	POINT OF CURVE
PD	PREVIOUSLY DESIGNED
PI	POINT OF INTERSECTION
PNT	POINT
PCC	POINT OF COMPOUND CURVE
PRC	POINT OF REVERSE CURVE
PT	POINT OF TANGENT
XX.XX	SPOT ELEVATION

GENERAL NOTES

1. CONTRACTOR TO COORDINATE CONSTRUCTION OF STREETSCAPE AND ROADWAYS WITH CONSTRUCTION OF OWNER AND MBTA.
2. THE EXISTING CONDITIONS SHOWN ON THIS PLAN WERE DEVELOPED FROM A COMBINED EFFORT OF AERIAL PHOTOGRAMMETRIC MAPPING BY COL-EAST, INC, BASED ON AERIAL PHOTOGRAPHS TAKEN IN MARCH 2006, AND AUGMENTED BY AN ON-THE-GROUND SURVEY PERFORMED BY VANASSE HANGEN BRUSTLIN, INC. DURING APRIL 2006, MARCH 2007, OCTOBER 2007, SEPTEMBER 2008, JUNE 2009, AND NOVEMBER 2014.
3. UTILITY IMPROVEMENTS WITHIN THE PROJECT LIMITS HAVE BEEN CONSTRUCTED BY OTHERS IN 2011. THIS WORK WAS PROPOSED UNDER THE "ASSEMBLY ROW AT ASSEMBLY SQUARE - PLANNED UNIT DEVELOPMENT - PHASE 1A - UTILITY INFRASTRUCTURE" PLANS DATED AUGUST 23, 2011.
4. THE PROPERTY LINES SHOWN ON THIS PLAN WERE COMPILED FROM LOCAL ASSESSOR'S PLATS AND FROM PREVIOUS PLANS AND DEEDS OF RECORD. VHB HAS NOT PERFORMED A COMPLETE FIELD SURVEY OF THE PREMISE TO VERIFY ALL THE PROPERTY LINES.
5. ELEVATIONS SHOWN ARE BASED UPON USGS, NATIONAL GEODETIC VERTICAL DATUM OF 1929 AND WERE INITIATED AT BENCHMARK #11000, A MASSACHUSETTS GEODETIC SURVEY DISC.
6. THE WETLANDS SHOWN ON THIS PLAN WERE FLAGGED AND FIELD SURVEYED BY VHB IN APRIL 2006.

GENERAL NOTES CONTINUED

7. THE AREA LIES WITHIN ZONE X SHADED (AREA OF 0.2% ANNUAL CHANCE FLOOD; AREAS OF 1% ANNUAL CHANCE FLOOD WITH AVERAGE DEPTHS OF LESS THAN 1 FOOT OR WITH DRAINAGE AREAS LESS THAN 1 SQUARE MILE; AND AREAS PROTECTED BY LEVEES FROM 1% ANNUAL CHANCE FLOOD) AND ZONE X UNSHADED (AREAS DETERMINED TO BE OUTSIDE OF THE 0.2% ANNUAL CHANCE FLOOD), AS SHOWN ON THE FLOOD INSURANCE RATE MAP FOR THE CITY OF SOMERVILLE, MASSACHUSETTS COMMUNITY PANEL NUMBER 250214 00439 E, EFFECTIVE DATE JUNE 04, 2010.
8. UNDERGROUND UTILITIES SHOWN ON THIS PLAN ARE BASED UPON FIELD OBSERVATIONS AND INFORMATION OF RECORD. THEY ARE NOT WARRANTED TO BE EXACT, NOR IS IT WARRANTED THAT ALL UNDERGROUND UTILITIES OR OTHER STRUCTURES ARE SHOWN ON THIS PLAN. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE STARTING WORK, AND SHALL BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT OCCUR FROM THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.
9. WHERE AN EXISTING UTILITY IS FOUND TO CONFLICT WITH THE PROPOSED WORK, THE LOCATION, ELEVATION AND SIZE OF THE UTILITY SHALL BE ACCURATELY DETERMINED WITHOUT DELAY BY THE CONTRACTOR, AND THE INFORMATION FURNISHED TO THE ENGINEER FOR RESOLUTION OF THE CONFLICT.
10. THE CONTRACTOR SHALL ALTER THE MASONRY OF THE TOP SECTION OF ALL EXISTING MUNICIPAL (DRAINAGE, SEWER, FIRE ALARM, ETC.) STRUCTURES AS NECESSARY FOR CHANGES IN GRADE, AND RESET ALL WATER AND DRAINAGE FRAMES, GRATES AND BOXES TO THE PROPOSED FINISH SURFACE GRADE. REQUIRED NEW MASONRY SHALL BE CLAY BRICK CONFORMING TO M4.05.2.
11. THE CONTRACTOR SHALL MAKE ALL ARRANGEMENTS FOR THE ALTERATION AND ADJUSTMENT OF GAS, ELECTRIC, TELEPHONE AND ANY OTHER PRIVATE UTILITIES BY THE UTILITY COMPANIES.
12. ANY EXISTING UTILITY POLES CALLED OUT AS REMOVED, RESET, OR RELOCATED WILL BE DONE SO BY OTHERS.
13. TREES AND SHRUBS WITHIN THE LIMITS OF GRADING SHALL BE REMOVED ONLY UPON APPROVAL OF THE OWNER, ENGINEER AND LANDSCAPE ARCHITECT. ALL TREES AND SHRUBS RETAINED WITHIN THE LIMITS OF GRADING AND AS SHOWN ON THE PLANS SHALL BE PROTECTED.
14. AREAS OUTSIDE THE LIMITS OF PROPOSED WORK DISTURBED BY THE CONTRACTOR'S OPERATIONS SHALL BE RESTORED BY THE CONTRACTOR TO THEIR ORIGINAL CONDITION AT NO EXPENSE TO THE OWNER.
15. THE TERM "PROPOSED" (PROP) MEANS WORK TO BE CONSTRUCTED USING NEW MATERIALS OR, WHERE APPLICABLE, RE-USING EXISTING MATERIALS IDENTIFIED AS "REMOVE AND RESET" (R&R).
16. UNLESS INDICATED OTHERWISE ON THE DRAWINGS, EXISTING SIGNS WITHIN THE PROJECT LIMITS SHALL BE RETAINED.
17. ALL LATERAL DRAIN PIPES SHALL BE INSTALLED WITH A PITCH OF .01 FOOT PER FOOT (MINIMUM) UNLESS NOTED OTHERWISE ON THE DRAWINGS.
18. EXISTING GRANITE CURB SHALL BE RE-USED IN THE PROPOSED WORK IF IN GOOD CONDITION AS DETERMINED BY THE ENGINEER. CURVED CURB OF A DIFFERENT RADIUS THAN PROPOSED CURB SHALL BE NEW.
19. ALL FIXED FEATURES, SUCH AS SIGNS, SIGNAL POSTS, PARKING METERS, LIGHT POLES, AND STREET FURNITURE, SHALL BE INSTALLED A MINIMUM OF 18 INCHES FROM THE FACE OF CURB.
20. AS BUILT OF PREVIOUS DRAINAGE, UTILITY AND ROADWAY CONSTRUCTION ARE INCLUDED IN PLANS. CONTRACTOR TO ADJUST EXISTING UTILITY AND DRAINAGE STRUCTURES AS NEEDED TO FIT PROPOSED ROADWAY, SIDEWALK AND PARKING LAYOUT AND GRADING.
21. DAMAGE RESULTING FROM CONSTRUCTION LOADS SHALL BE REPAIRED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.
22. EXISTING BOUNDS REMOVED OR DAMAGED SHALL BE RESET IN PLACE AND REPAIRED AS NECESSARY BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.
23. MEAN HIGH WATER (MHW), MEAN SEA LEVEL (MSL) AND MEAN LOW WATER (MLW) ELEVATIONS WERE OBTAINED FROM THE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION (NOAA) TIDES AND CURRENTS WEBSITE; BOSTON HARBOR TIDE GAUGING STATION 8443970 AND CONVERTED TO NGVD 1929 DATUM AT THE AMELIA EARHART DAM.
24. UTILITY PIPE MATERIALS SHALL BE AS FOLLOWS, UNLESS OTHERWISE NOTED ON THE PLAN:
    - A. WATER PIPES SHALL BE POLYETHYLENE ENCASED, CEMENT LINED, DUCTILE IRON, CLASS 52. WATER JOINTS SHALL BE MEGALUG OR EQUIVALENT.
    - B. SANITARY SEWER PIPES SHALL BE POLYVINYL CHLORIDE (PVC) SEWER PIPE.
    - C. STORM DRAINAGE PIPES SHALL BE REINFORCED CONCRETE PIPE (RCP). STORM DRAINAGE PIPES 18 INCHES AND SMALLER SHALL BE CLASS V. LARGER PIPES SHALL BE CLASS III UNLESS OTHERWISE NOTED.
    - D. PIPE INSTALLATION AND MATERIALS SHALL COMPLY WITH THE STATE PLUMBING CODE WHERE APPLICABLE. CONTRACTOR SHALL COORDINATE WITH LOCAL PLUMBING INSPECTOR PRIOR TO BEGINNING WORK.
25. MAINTAIN ALL EXISTING UTILITIES AND ASSOCIATED INFRASTRUCTURE AS SHOWN ON THE SITE PLANS AND DETAILS, UNLESS OTHERWISE NOTED.
26. AREAS DISTURBED DURING CONSTRUCTION AND NOT RESTORED WITH IMPERVIOUS SURFACES (BUILDINGS, PAVEMENTS, WALLS, ETC.) SHALL RECEIVE SIX (6) INCHES OF LOAM AND SEED.
19. CURB RADII ARE TO BE THREE (3) FEET UNLESS OTHERWISE NOTED.
20. CURBING SHALL BE VERTICAL GRANITE CURB (VGC) WITHIN THE PROJECT UNLESS OTHERWISE INDICATED ON THE PLANS.

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Assembly Line Park

Assembly Row
Somerville, Massachusetts

No.	Revision	Date	Appvd.

Designed by DJM | Checked by DH

Issued for: Special Permit — Date: August 04, 2016

Drawing Title: Legend and General Notes

Drawing Number: C-1

Sheet 2 of 13

COMMONWEALTH OF MASSACHUSETTS — DALE A. HORSMAN, II — CIVIL — No. 51903 — REGISTERED PROFESSIONAL ENGINEER — 8-4-16

Project Number: 08518.05

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Somerville, Massachusetts

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Checked by: DH
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Drawing Title
Neighborhood Context Map 1

Drawing Number
C-2.1

Sheet 3 of 13

Project Number
08518.05

COMMONWEALTH OF MASSACHUSETTS
DALE A. HORSMAN, II
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5-4-16

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Date: August 04, 2016

Drawing Title: Neighborhood Context Map 2

Drawing Number: C-2.2

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Project Number: 08518.05

COMMONWEALTH OF MASSACHUSETTS
DALE A. HORSMAN, III
CIVIL
No. 51901
REGISTERED PROFESSIONAL ENGINEER
8-4-16

Parking Summary Chart

Description	Size Required	Size Provided	Office Required	Retail Required	Restaurant Required	Residential Required	Hotel Required	Cinema Required	Health Club Required	Mall Required	Mall Provided
STANDARD SPACES	9' x 18'	9' x 18'	2,763	367	289	1,814	81	57	96	1,038	1,072
STANDARD ACCESSIBLE SPACES*	13' x 18'	14' x 18'	32	6	5	24	3	2	3	17	17
VAN ACCESSIBLE SPACES*	16' x 18'	17' x 18'	7	2	2	5	1	1	1	4	6
TOTAL SPACES			2,802	375	296	1,843	85	60	100	1,059	1,095

* ADA/STATE/LOCAL REQUIREMENTS (MINIMUM)

Mixed Use Area Loading Requirements:

OFFICE:	0 – 10,000 SF	(0)	= 19
	10,001 – 100,000 SF	(1)	
	EACH ADDL. 150,000 SF	(1)	
RETAIL:	0 – 5,000 SF	(0)	= 10
	5,001 – 20,000 SF	(1)	
	20,001 – 35,000 SF	(2)	
	35,001 – 50,000 SF	(3)	
	EACH ADDL. 50,000 SF	(1)	
RESTAURANT:	0 – 4,000 SF	(0)	= 6
	4,001 – 6,000 SF	(1)	
	6,001 – 16,000 SF	(2)	
	16,001 – 40,000 SF	(3)	
	EACH ADDL. 40,000 SF	(1)	
HOTEL:	AS NEEDED		= 1
CINEMA:	AS NEEDED		= 1
HEALTH CLUB:	AS NEEDED		= 1

TOTAL LOADING REQUIRED = 38
TOTAL LOADING PROVIDED = 38

Mixed Use Area Parking Requirements:*

OFFICE	2,801,033 SF x 1 SPACE / 1,000 SF = 2,802
RETAIL	374,707 SF x 1 SPACE / 1,000 SF = 375
RESTAURANT	147,817 SF x 1 SPACE / 500 SF = 296
CINEMA	60,000 SF x 1 SPACE / 1,000 SF = 60
HEALTH CLUB	50,000 SF x 1 SPACE / 500 SF = 100
RESIDENTIAL	1,843 UNITS x 1 SPACE / UNIT = 1,843
HOTEL	170 GUEST ROOMS x 0.5 SPACES/GUEST ROOM = 85

TOTAL PARKING REQUIRED = 5,561
TOTAL PARKING PROVIDED = 8,971

*RETAIL AREA MAY BE RE-ALLOCATED TO OFFICE OR RESIDENTIAL USES AT ANY TIME, SO LONG AS ALSO PERMITTED BY NEW OR MODIFIED APPLICABLE ENTITLEMENTS; NO OTHER USE MAY BE CONVERTED.

RESIDENTIAL AREA MAY BE RE-ALLOCATED TO OFFICE USE AT ANY TIME, SO LONG AS PERMITTED BY NEW OR MODIFIED ENTITLEMENTS; AND

UP TO 400,000 SQUARE FEET OF THE NON-RESIDENTIAL USES (I.E., OFFICE, RETAIL, AND HOSPITALITY) MAY BE RE-ALLOCATED TO RESIDENTIAL USE, BUT NO SOONER THAN 10 YEARS FROM THE DATE THE PUD PLAN IS APPROVED, SO LONG AS PERMITTED BY NEW OR MODIFIED APPLICABLE ENTITLEMENTS.

Mall Parking Requirements:

RETAIL (ZONING)	328,806 SF x 1 SPACE / 1000 SF = 329
BLOCK 10 (MAX. ZONING)	4,500 SF x 1 SPACE / 500 SF = 9
RETAIL (LEASE)	328,806 SF x 3.22 SPACE / 1000 SF = 1,059

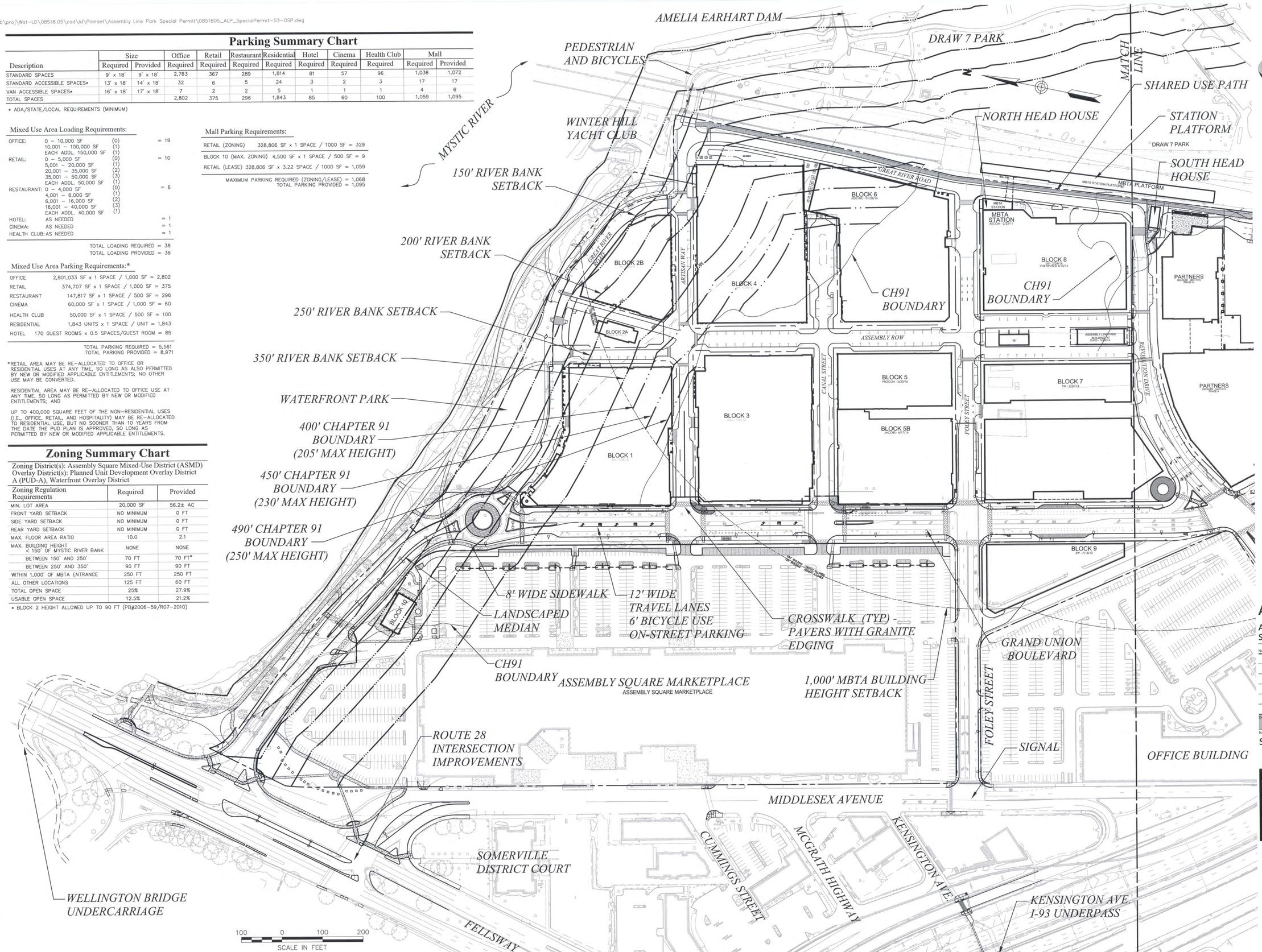
MAXIMUM PARKING REQUIRED (ZONING/LEASE) = 1,068
TOTAL PARKING PROVIDED = 1,095

Zoning Summary Chart

Zoning District(s): Assembly Square Mixed-Use District (ASMD)
Overlay District(s): Planned Unit Development Overlay District A (PUD-A), Waterfront Overlay District

Zoning Regulation Requirements	Required	Provided
MIN. LOT AREA	20,000 SF	56.2± AC
FRONT YARD SETBACK	NO MINIMUM	0 FT
SIDE YARD SETBACK	NO MINIMUM	0 FT
REAR YARD SETBACK	NO MINIMUM	0 FT
MAX. FLOOR AREA RATIO	10.0	2.1
MAX. BUILDING HEIGHT < 150' OF MYSTIC RIVER BANK	NONE	NONE
BETWEEN 150' AND 250'	70 FT	70 FT*
BETWEEN 250' AND 350'	90 FT	90 FT
WITHIN 1,000' OF MBTA ENTRANCE	250 FT	250 FT
ALL OTHER LOCATIONS	125 FT	60 FT
TOTAL OPEN SPACE	25%	27.9%
USABLE OPEN SPACE	12.5%	21.2%

* BLOCK 2 HEIGHT ALLOWED UP TO 90 FT (PB#2006-59/R07-2010)



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Drawing Title: Overall Site Plan 1

Drawing Number: C-3.1

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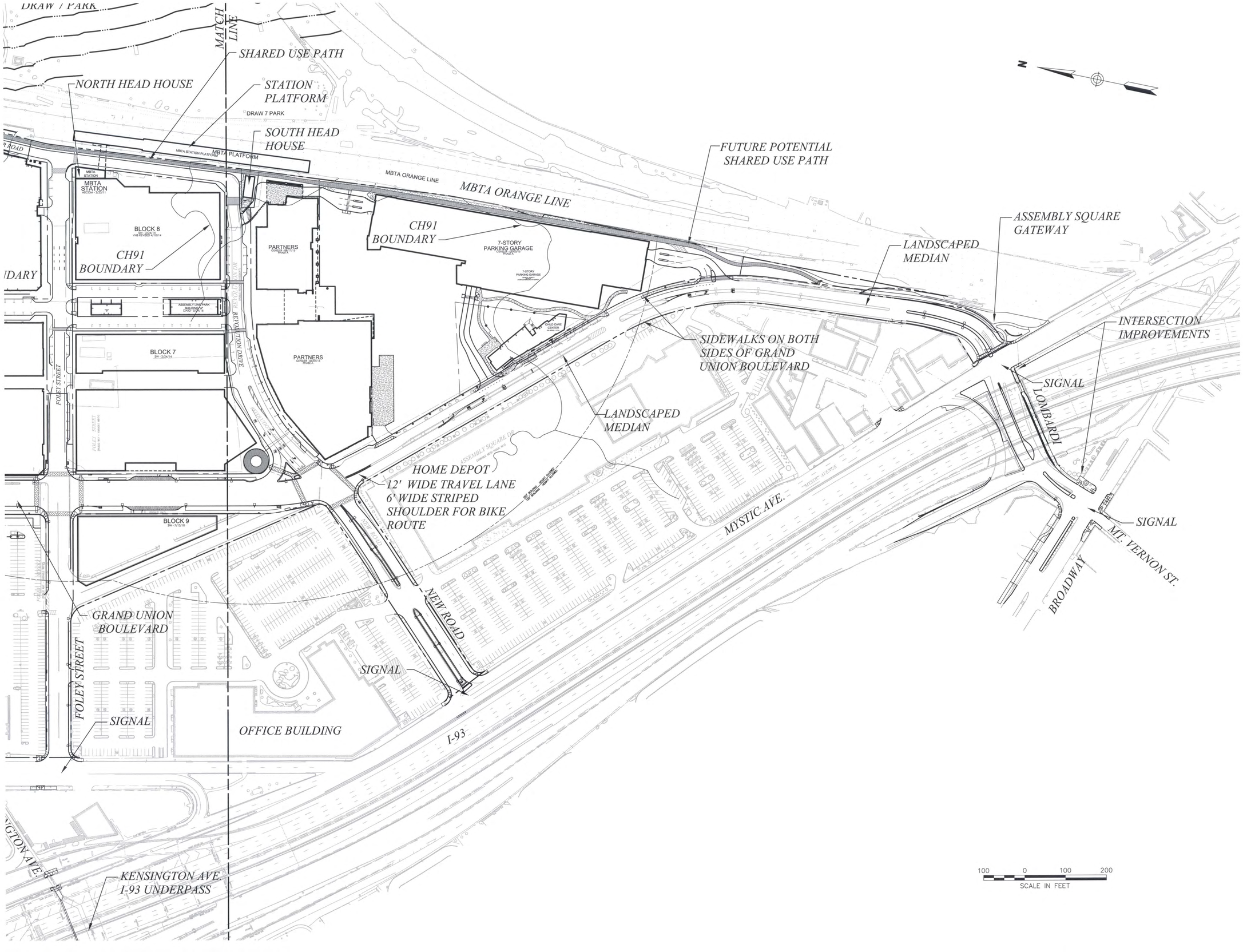
Project Number: 08518.05

DALE A. HORSMAN, II, CIVIL, No. 51093, REGISTERED PROFESSIONAL ENGINEER, COMMONWEALTH OF MASSACHUSETTS
8-4-16



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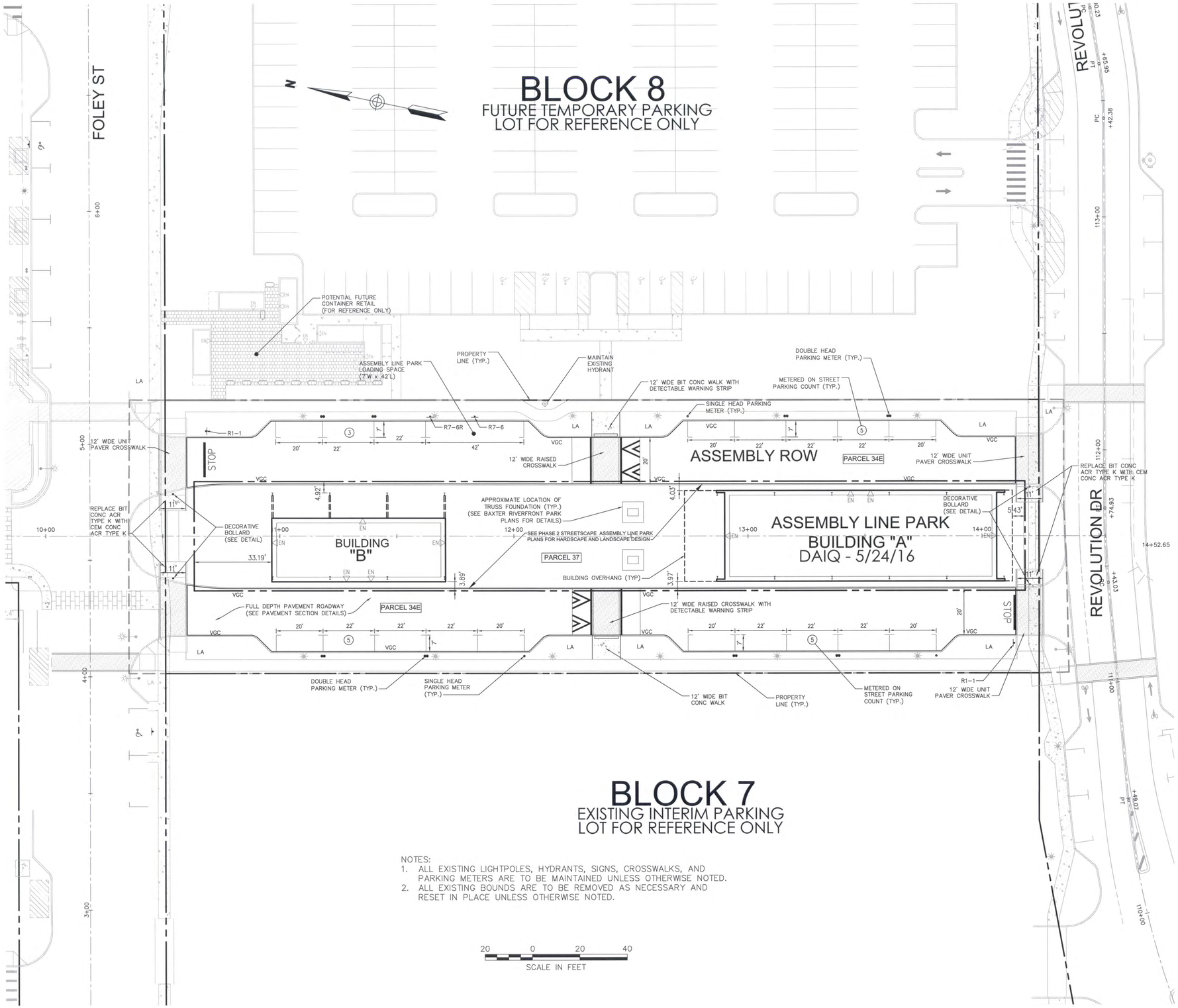
Drawing Title
Overall Site Plan 2

Drawing Number
C-3.2

Sheet 6 of 13

Project Number
08518.05



NOTES:
1. ALL EXISTING LIGHTPOLES, HYDRANTS, SIGNS, CROSSWALKS, AND PARKING METERS ARE TO BE MAINTAINED UNLESS OTHERWISE NOTED.
2. ALL EXISTING BOUNDS ARE TO BE REMOVED AS NECESSARY AND RESET IN PLACE UNLESS OTHERWISE NOTED.

Sign Summary

M.U.T.C.D. Number	Specification Width	Specification Height	Desc.
R1-1	30"	30"	STOP
R7-6	12"	18"	NO PARKING LOADING ZONE
R7-6R	12"	18"	NO PARKING LOADING ZONE

Zoning Summary Chart

Zoning District(s): Assembly Square Mixed-Use District (ASMD)
Overlay District(s): Planned Unit Development Overlay District A (PUD-A)

Zoning Regulation Requirements	Required	Provided
MIN. LOT AREA (PROJECT AREA)	20,000 SF	16,684 SF
FRONTAGE (ASSEMBLY ROW)	–	355 FT
FRONT YARD SETBACK (ASSEMBLY R.)	NO MINIMUM	4.03 FT*
SIDE YARD SETBACK (LEFT)	NO MINIMUM	33.19 FT**
SIDE YARD SETBACK (RIGHT)	NO MINIMUM	5.43 FT*
REAR YARD SETBACK	NO MINIMUM	3.89 FT**
MAX. FLOOR AREA RATIO	10.0	30.7*
BUILDING HEIGHT	250 FT_1	29'-6½"*
TOTAL OPEN SPACE	25%	46.6%$_2$
USABLE OPEN SPACE	12.5%	35.7%$_2$

*BUILDING A
**BUILDING B
1 – WITHIN 1,000' OF MBTA ENTRANCE
2 – BASED ON PARCEL 37

Loading Requirements

RESTUARANT

LOADING REQUIRED — 0 SPACE REQUIRED FOR 0–4,000 S.F. RESTAURANT (BUILDING "B"=2,615 S.F)
1 SPACE REQUIRED FOR 4,001–6,000 S.F. RESTAURANT (BUILDING "A"=5,443 S.F)
TOTAL: 1 LOADING SPACE REQUIRED FOR ASSEMBLY LINE PARK

*LOADING IS PROVIDED IN A 7'W x 42'L SPACE ON STREET. WAIVER REQUESTED FOR LOADING SPACE SIZE

Parking Requirements

RESTUARANT

PARKING REQUIRED — (8,058 SF x 1 SPACE/ 500 SF) = 17 SPACES

*VEHICULAR PARKING IS PROVIDED IN PARKING AREAS ON BLOCK 7 & BLOCK 8

Bicycle Parking Requirements

NON-RESIDENTIAL

PARKING REQUIRED — (17 SPACES x 1 BICYCLE SPACE/ 10 REQ. SPACES) = 2 BICYCLE SPACE

*SIX BICYCLE PARKING SPACES ARE PROVIDED WITHIN ASSEMBLY LINE PARK SITE IMPROVEMENTS

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Assembly Line Park

Assembly Row
Somerville, Massachusetts

No.	Revision	Date	Appvd.

Designed by DJM — Checked by DH
Issued for: Special Permit — Date: August 04, 2016

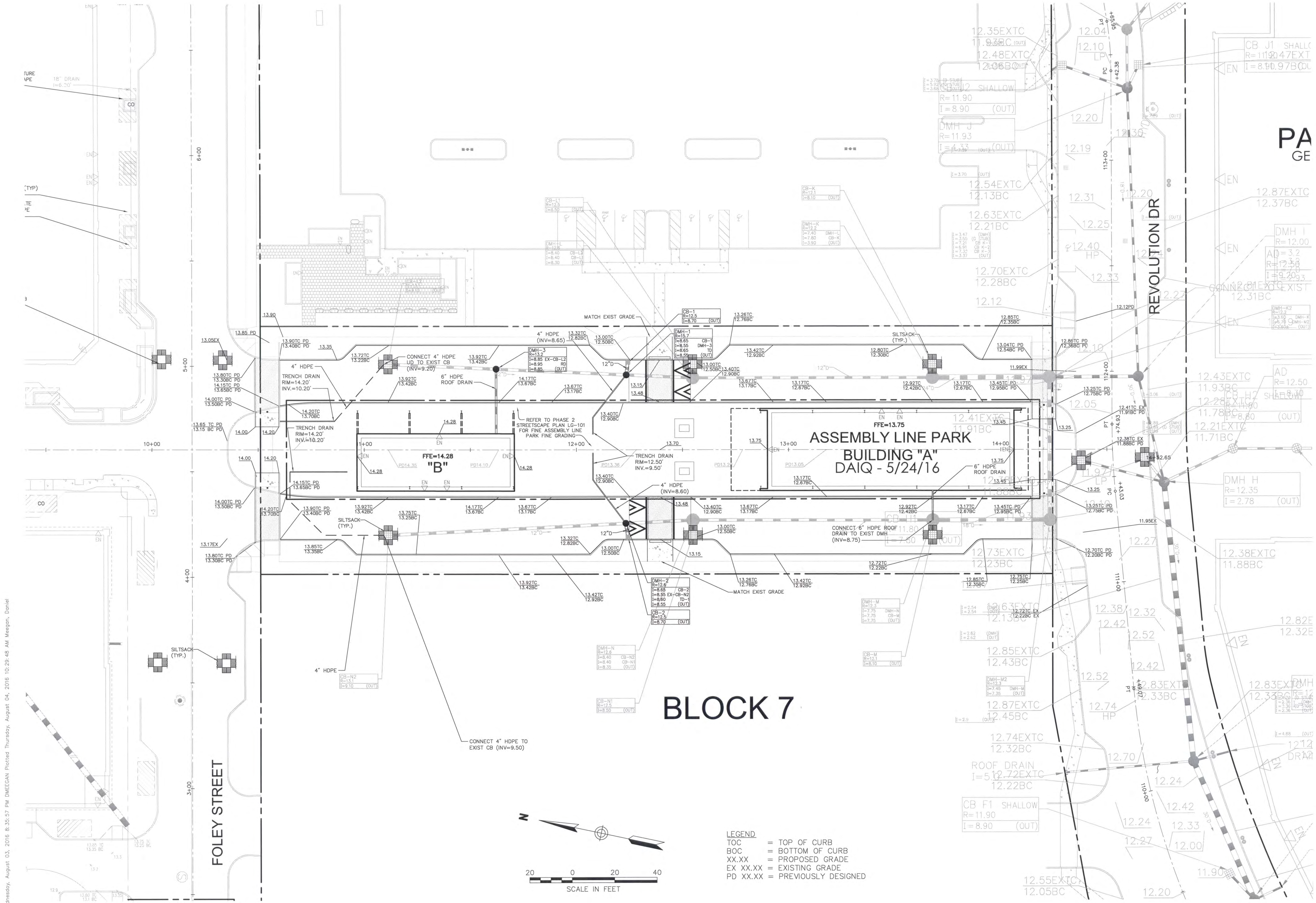
Drawing Title: Layout and Materials

Drawing Number: C-4

Sheet 7 of 13

Project Number: 08518.05

\\vhb\proj\Wat-LD\08518.05\cad\ld\Planset\Assembly Line Park Special Permit\0851805_ALP_SpecialPermit_GD.dwg



ASSEMBLY LINE PARK
BUILDING "A"
DAIQ - 5/24/16
FFE=13.75
"B"
FFE=14.28
BLOCK 7
FOLEY STREET
REVOLUTION DR
MATCH EXIST GRADE
SILTSACK (TYP.)
TRENCH DRAIN RIM=14.20' INV.=10.20'
TRENCH DRAIN RIM=12.50' INV.=9.50'
REFER TO PHASE 2 STREETSCAPE PLAN LG-101 FOR FINE ASSEMBLY LINE PARK FINE GRADING
CONNECT 4" HDPE UD TO EXIST CB (INV=9.20)
CONNECT 4" HDPE TO EXIST CB (INV=9.50)
CONNECT 6" HDPE ROOF DRAIN TO EXIST DMH (INV=8.75)
6" HDPE ROOF DRAIN
4" HDPE (INV=8.65)
4" HDPE (INV=8.60)
LEGEND
TOC = TOP OF CURB
BOC = BOTTOM OF CURB
XX.XX = PROPOSED GRADE
EX XX.XX = EXISTING GRADE
PD XX.XX = PREVIOUSLY DESIGNED
SCALE IN FEET

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No.	Revision	Date	Appvd.

Designed by DJM Checked by DH

Issued for Special Permit Date August 04, 2016

Drawing Title

Grading, Drainage and Erosion Control Plan

Drawing Number C-5

Sheet 8 of 13

Project Number 08518.05

BLOCK 8
FUTURE TEMPORARY PARKING LOT
FOR REFERENCE ONLY

BLOCK 7
TEMPORARY PARKING LOT
FOR REFERENCE ONLY

ASSEMBLY LINE PARK
BUILDING "A"
DAIQ - 5/24/16

FOLEY STREET
REVOLUTION DR

NOTE:
1. ALL EXISTING LIGHTPOLES, HYDRANTS AND ALL OTHER UTILITIES ARE TO BE MAINTAINED UNLESS OTHERWISE NOTED.

SCALE IN FEET
20 0 20 40

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No.	Revision	Date	Appvd.

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Issued for: Special Permit | Date: August 04, 2016

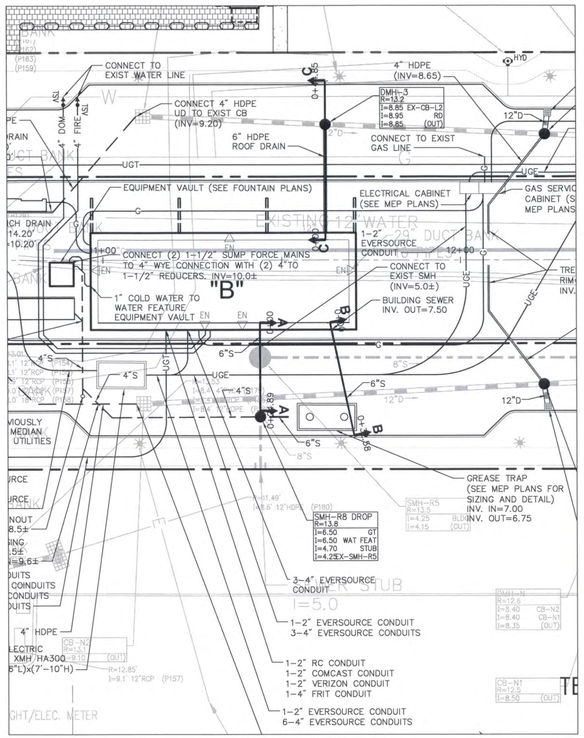
Drawing Title: Utility Plan

Drawing Number: C-6.1

Sheet 9 of 13

DALE A. HORSMAN, II CIVIL No. 51903 REGISTERED PROFESSIONAL ENGINEER COMMONWEALTH OF MASSACHUSETTS
8-4-16

Project Number: 08518.05



INSET 1
SCALE: 1"=20'

Section A-A: Building B Sewer to SMH-R5

Section B-B: Building B to Grease Trap

Section C-C: Building B Roof Drain

Section D-D: Building A G.T. to SMH-R4

INSET 2
SCALE: 1"=20'

Section E-E: Building A to G.T.

Section F-F: Building A Roof Drain

Section G-G: Building A Sewer to SMH-R3

Section H-H: Building A Water Services

*NOTE: 4" FIRE SERVICE AND PROPOSED 4" DOMESTIC SERVICE ARE SHOWN AS ONE PROFILE.

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Issued for Special Permit
Date August 04, 2016

Drawing Title
Utility Plan

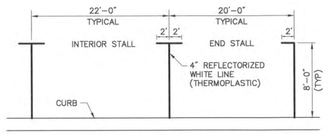
DALE A. HORSMAN II
CIVIL
No. 51003

Dale A. Horsman 8-4-16

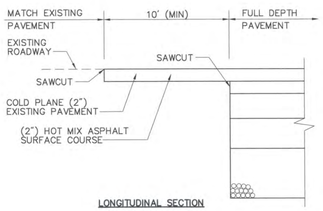
Drawing Number C-6.2

Sheet 10 of 13

Project Number 08518.05

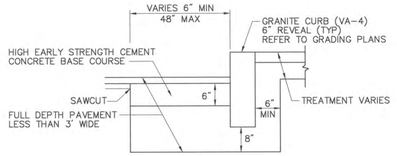


PARKING STALL MARKINGS
SCALE: NOT TO SCALE
DATE: APRIL 2003
DWG: PM-01

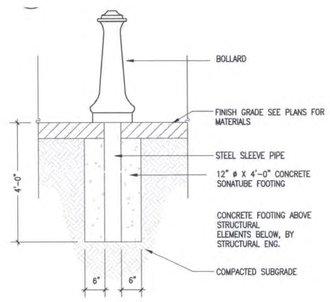


LONGITUDINAL SECTION

FULL DEPTH PAVEMENT TRANSITION
SCALE: NOT TO SCALE
DATE: APRIL 2003
DWG: PVMT-03



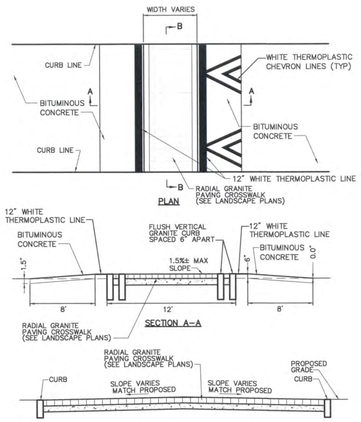
GRANITE CURB IN FULL DEPTH PAVEMENT LESS THAN 4' WIDE
SCALE: NOT TO SCALE
DATE: APRIL 2003
DWG: CURB-06



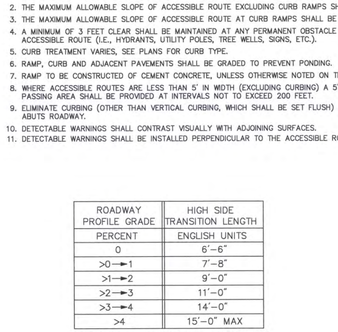
Notes:

DECORATIVE BOLLARDS TO BE MANUFACTURED BY FAIRWEATHER SITE FURNISHINGS, MODEL B-BB SERIES (OR OWNER/ARCHITECT APPROVED EQUIVALENT), WITH A POWDERCOAT FINISH, COLOR TO BE BLACK, AND HAVE AN EMBEDDED MOUNT.

Decorative Bollard
N.T.S. Source: VHB



Raised Crosswalk
N.T.S. Source: VHB 8/10 LD_810



* THIS DIMENSION SHALL BE A MINIMUM OF 5' FOR ACCESSIBLE SIGNAGE.

** THIS DIMENSION SHALL BE A MAXIMUM OF 8' FOR ACCESSIBLE SIGNAGE.

Sign Post - Type 'A'
N.T.S. Source: VHB 4/12 LD_701

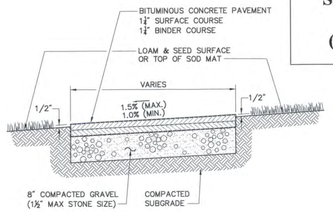
Notes:

1. THE MAXIMUM ALLOWABLE SIDEWALK AND CURB RAMP CROSS SLOPES SHALL BE 1.5 (1% MIN.).
2. THE MAXIMUM ALLOWABLE SLOPE OF ACCESSIBLE ROUTE EXCLUDING CURB RAMPS SHALL BE 5%
3. THE MAXIMUM ALLOWABLE SLOPE OF ACCESSIBLE ROUTE AT CURB RAMPS SHALL BE 7.5%.
4. A MINIMUM OF 3 FEET CLEAR SHALL BE MAINTAINED AT ANY PERMANENT OBSTACLE IN ACCESSIBLE ROUTE (I.E., HYDRANTS, UTILITY POLES, TREE WELLS, SIGNS, ETC.).
5. CURB TREATMENT VARIES, SEE PLANS FOR CURB TYPE.
6. RAMP, CURB AND ADJACENT PAVEMENTS SHALL BE GRADED TO PREVENT PONDING.
7. RAMP TO BE CONSTRUCTED OF CEMENT CONCRETE, UNLESS OTHERWISE NOTED ON THE PLANS.
8. WHERE ACCESSIBLE ROUTES ARE LESS THAN 5' IN WIDTH (EXCLUDING CURBING) A 5' x 5' PASSING AREA SHALL BE PROVIDED AT INTERVALS NOT TO EXCEED 200 FEET.
9. ELIMINATE CURBING (OTHER THAN VERTICAL CURBING, WHICH SHALL BE SET FLUSH) WHERE IT ABUTS ROADWAY.
10. DETECTABLE WARNINGS SHALL CONTRAST VISUALLY WITH ADJOINING SURFACES.
11. DETECTABLE WARNINGS SHALL BE INSTALLED PERPENDICULAR TO THE ACCESSIBLE ROUTE.

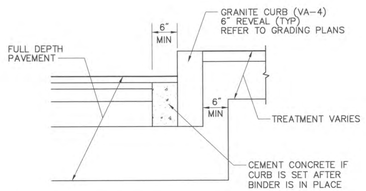
ROADWAY PROFILE GRADE	HIGH SIDE TRANSITION LENGTH
PERCENT	ENGLISH UNITS
0	6'-6"
>0-►1	7'-8"
>1-►2	9'-0"
>2-►3	11'-0"
>3-►4	14'-0"
>4	15'-0" MAX

BASED ON A DESIGN SLOPE OF 7.5% AND A REVEAL OF 6 INCHES.

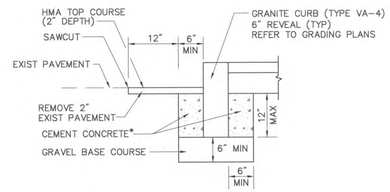
HIGH SIDE TRANSITION LENGTHS FOR WHEELCHAIR RAMPS
SCALE: NOT TO SCALE
DATE: APRIL 2003
DWG: WCR-08



Bituminous Concrete Sidewalk in Landscape Area
N.T.S. Source: VHB 11/12



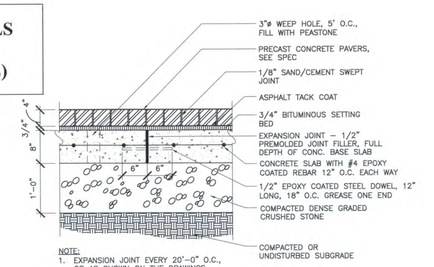
GRANITE CURB IN FULL DEPTH PAVEMENT
SCALE: NOT TO SCALE
DATE: APRIL 2003
DWG: CURB-05



NOTE: TACK COAT SHALL BE APPLIED PRIOR TO PLACEMENT OF HMA TOP COURSE FOR THE ENTIRE WIDTH OF HMA.

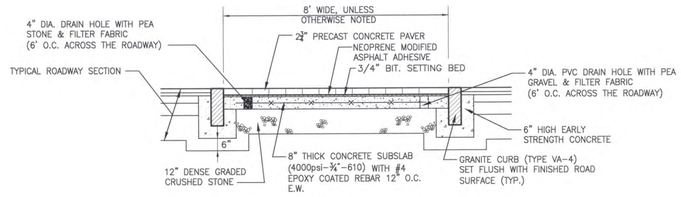
GRANITE CURB IN EXISTING PAVEMENT
SCALE: NOT TO SCALE
DATE: APRIL 2003
DWG: CURB-03

SITE IMPROVEMENT DETAILS FOR REFERENCE ONLY (SEE PHASE 2 STREETSCAPE)

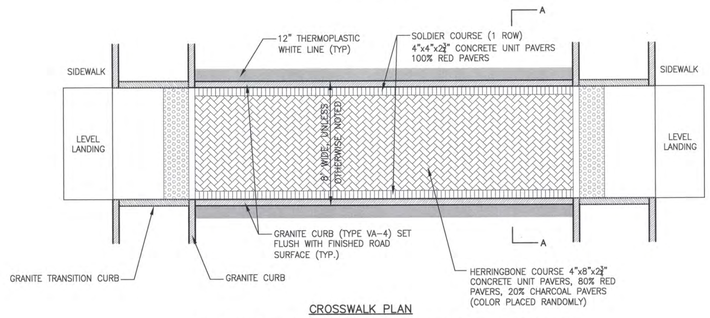


NOTE:
1. EXPANSION JOINT EVERY 20'-0" O.C., OR AS SHOWN ON THE DRAWINGS.

UNIT PAVERS ON VEHICULAR BASE
SCALE: 1"=1'-0"



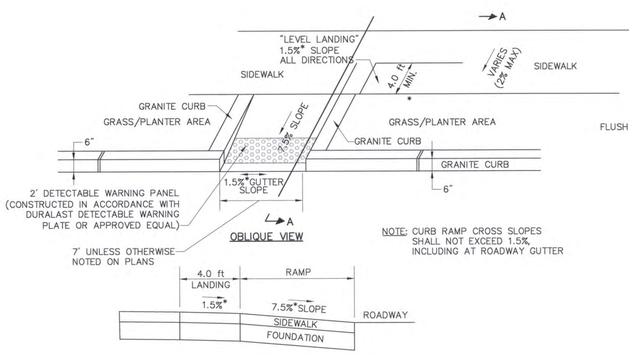
SECTION A-A



CROSSWALK PLAN

NOTE: MINIMUM PAVER THICKNESS SHALL BE 2¾" AND BE RATED FOR VEHICULAR TRAFFIC

CONCRETE UNIT PAVER CROSSWALK
SCALE: NOT TO SCALE
DATE: –
DWG: –

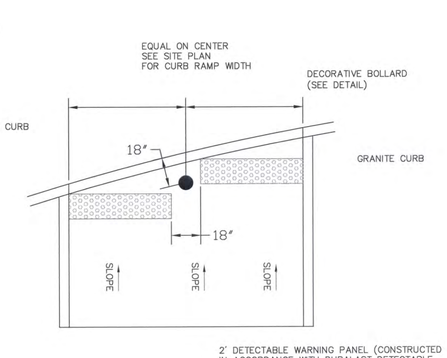


SECTION A-A

NOTE: CURB RAMP CROSS SLOPES SHALL NOT EXCEED 1.5%, INCLUDING AT ROADWAY GUTTER

*ALL SLOPES SHOWN ARE MAXIMUMS, TOLERANCE FOR CONSTRUCTION ±0.5%

ACCESSIBLE CURB RAMP (ACR) TYPE K
SCALE: NOT TO SCALE
DATE: APRIL 2003
DWG: WCR-05



2' DETECTABLE WARNING PANEL (CONSTRUCTED IN ACCORDANCE WITH DURALAST DETECTABLE WARNING PLATE OR APPROVED EQUAL). SET AT BACK OF FLUSH GRANITE CURB PERPENDICULAR TO RAMP SLOPE

BOLLARD IN ACCESSIBLE CURB RAMP
SCALE: NOT TO SCALE
DATE: MARCH 2016
DWG: N/A

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Assembly Row
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No.	Revision	Date	Appvd.

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Issued for: Special Permit — Date: August 04, 2016

Drawing Title: Site Details

Drawing Number: C-7.1

Sheet 11 of 13

Project Number: 08518.05

PROPOSED BITUMINOUS SIDEWALK

SURFACE: 2.5" HOT MIX ASPHALT

FOUNDATION: 6" GRAVEL BORROW, TYPE b

PROPOSED PAVEMENT TOPCOAT

SURFACE: 2" HOT MIX ASPHALT
(SURFACE COURSE TYPE B)

LEVELING COURSE: VARIABLE DEPTH HOT MIX ASPHALT
SURFACE COURSE MATERIAL.

BITUMEN FOR TACK COAT (RS-1) AT
0.07 GAL/SY OVER EXISTING PAVEMENT.

PROPOSED FULL DEPTH PAVEMENT

SURFACE: 4" HOT MIX ASPHALT
(2" SURFACE COURSE TYPE B OVER
OVER 2" INTERMEDIATE COURSE TYPE B).

4" HOT MIX ASPHALT BASE
COURSE MATERIAL PLACED IN ONE COURSE.

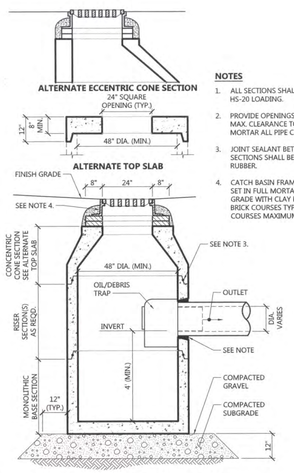
SUBBASE: 4" DENSE GRADED CRUSHED STONE
FOR SUB-BASE OVER

BASE: 8" GRAVEL BORROW, TYPE b.

BITUMEN FOR TACK COAT (RS-1) AT
0.05 GAL/SY OVER BASE & BINDER COURSES.

Pavement Section Details

N.T.S.



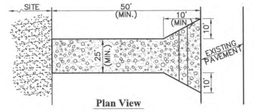
NOTES

1. ALL SECTIONS SHALL BE DESIGNED FOR HS-20 LOADING.
2. PROVIDE OPENINGS FOR PIPES WITH 2" MAX. CLEARANCE TO OUTSIDE OF PIPE. MORTAR ALL PIPE CONNECTIONS.
3. JOINT SEALANT BETWEEN PRECAST SECTIONS SHALL BE PREFORMED BUTYL RUBBER.
4. CATCH BASIN FRAME AND GRATE SHALL BE SET IN FULL MORTAR BED. ADJUST TO GRADE WITH CLAY BRICK AND MORTAR (2 BRICK COURSES TYPICALLY, 5 BRICK COURSES MAXIMUM).

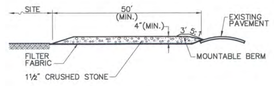
Catch Basin (CB) With Oil/Debris Trap

1/16

N.T.S. Source: VHB LD_101



Plan View



Cross-section

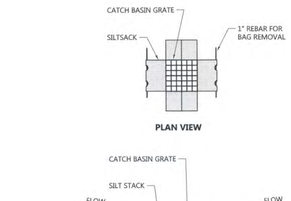
Notes:

1. ENTRANCE WIDTH SHALL BE A TWENTY-FIVE (25) FOOT MINIMUM, BUT NOT LESS THAN THE FULL WIDTH AT POINTS WHERE INGRESS OR EGRESS OCCURS.
2. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH SHALL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHTS-OF-WAY MUST BE REMOVED IMMEDIATELY. BERM SHALL BE PERMITTED. PERIODIC INSPECTION AND MAINTENANCE SHALL BE PROVIDED AS NEEDED.
3. STABILIZED CONSTRUCTION EXIT SHALL BE REMOVED PRIOR TO FINAL FINISH MATERIALS BEING INSTALLED.

Stabilized Construction Exit

6/08

N.T.S. Source: VHB LD_682



SECTION VIEW

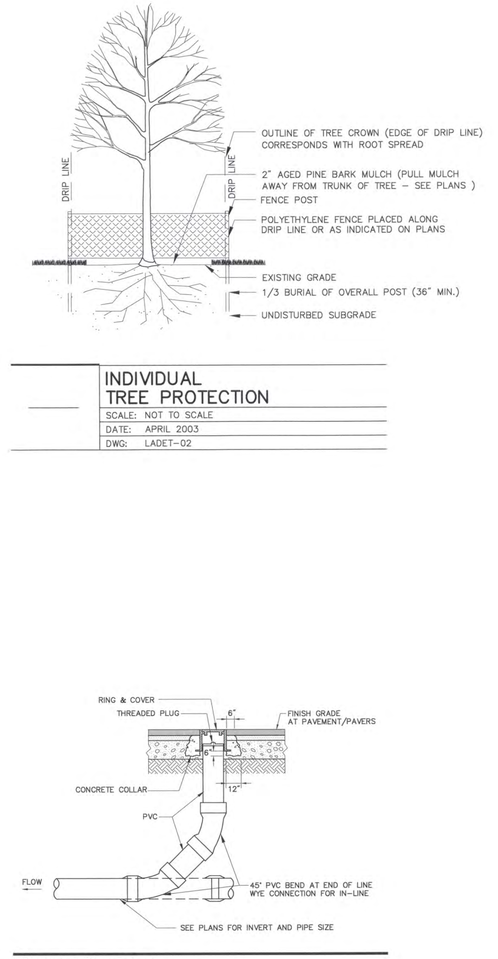
NOTES

1. INSTALL SILTSACK IN ALL CATCH BASINS WHERE INDICATED ON THE PLAN BEFORE COMMENCING WORK OR IN PAVED AREAS AFTER BINDER COURSE IS PLACED AND HAY BALES HAVE BEEN REMOVED.
2. GRATE TO BE PLACED OVER SILTSACK.
3. SILTSACK SHALL BE INSPECTED PERIODICALLY AND AFTER ALL STORM EVENTS AND CLEANING OR REPLACEMENT SHALL BE PERFORMED PROMPTLY AS NEEDED. MAINTAIN UNTIL UPSTREAM AREAS HAVE BEEN PERMANENTLY STABILIZED

Siltsack Sediment Trap

1/16

N.T.S. Source: VHB LD_674



INDIVIDUAL TREE PROTECTION

SCALE: NOT TO SCALE
DATE: APRIL 2003
DWG: LADET-02

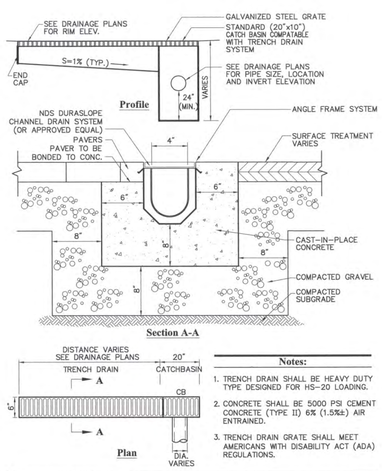
NOTES

1. ALL SECTIONS SHALL BE DESIGNED FOR HS-20 LOADING.
2. PROVIDE OPENINGS FOR PIPES WITH 2" MAX. CLEARANCE TO OUTSIDE OF PIPE. MORTAR ALL PIPE CONNECTIONS.
3. JOINT SEALANT BETWEEN PRECAST SECTIONS SHALL BE PREFORMED BUTYL RUBBER.
4. CATCH BASIN FRAME AND GRATE SHALL BE SET IN FULL MORTAR BED. ADJUST TO GRADE WITH CLAY BRICK AND MORTAR (2 BRICK COURSES TYPICALLY, 5 BRICK COURSES MAXIMUM).

Catch Basin (CB) With Oil/Debris Trap

1/16

N.T.S. Source: VHB LD_101



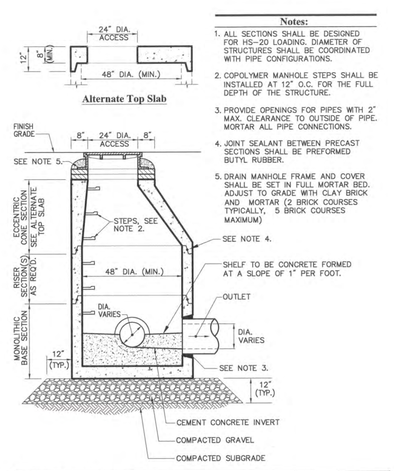
Notes:

1. TRENCH DRAIN SHALL BE HEAVY DUTY TYPE DESIGNED FOR HS-20 LOADING.
2. CONCRETE SHALL BE 5000 PSI CEMENT CONCRETE (TYPE II) 6% (1.5%±) AIR ENTRAINED.
3. TRENCH DRAIN GRATE SHALL MEET AMERICANS WITH DISABILITY ACT (ADA) REGULATIONS.

Trench Drain (Type A)

4/11

N.T.S. Source: VHB REV LD_190-A



Notes:

1. ALL SECTIONS SHALL BE DESIGNED FOR HS-20 LOADING. DIAMETER OF STRUCTURES SHALL BE COORDINATED WITH PIPE CONFIGURATIONS.
2. COPOLYMER MANHOLE STEPS SHALL BE INSTALLED AT 12" O.C. FOR THE FULL DEPTH OF THE STRUCTURE.
3. PROVIDE OPENINGS FOR PIPES WITH 2" MAX. CLEARANCE TO OUTSIDE OF PIPE. MORTAR ALL PIPE CONNECTIONS.
4. JOINT SEALANT BETWEEN PRECAST SECTIONS SHALL BE PREFORMED BUTYL RUBBER.
5. DRAIN MANHOLE FRAME AND COVER SHALL BE SET IN FULL MORTAR BED. ADJUST TO GRADE WITH CLAY BRICK AND MORTAR (2 BRICK COURSES TYPICALLY, 5 BRICK COURSES MAXIMUM)

Drain Manhole (DMH)

4/11

N.T.S. Source: VHB LD_115

Cleanout - Paved Area

5/13

N.T.S. Source: VHB REV LD_303

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Assembly Line Park

Assembly Row
Somerville, Massachusetts

No.	Revision	Date	Appvd.

Designed by | Checked by

Issued for: Special Permit

Date: August 04, 2016

Drawing Title: Site Details

Drawing Number: C-7.2

Sheet 12 of 13

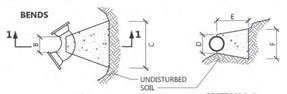
Project Number: 08518.05

TABLE OF DIMENSIONS

BENDS	B	C	D	E	F
6° 11 ¼°	8"	15"	12"	24"	12"
6° 22 ½°	"	19"	"	"	13"
8° 11 ¼°	"	20"	"	"	12"
8° 22 ½°	"	22"	"	"	17"
12° 11 ¼°	"	30"	"	"	15"
12° 22 ½°	"	35"	"	"	25"

BENDS	B	C	D	E	F
6° 45°	8"	30"	12"	24"	14"
6° 90°	"	30"	"	"	27"
8° 45°	"	30"	"	"	24"
8° 90°	"	38"	"	"	36"
12° 45°	"	40"	"	"	40"
12° 90°	"	60"	"	"	52"

BENDS



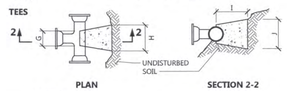
Plan SECTION 1-1

TABLE OF DIMENSIONS

TEES	G	H	I	J
6"X6"X6"	12"	24"	24"	18"
8"X8"X6"	"	"	"	"
8"X8"X8"	"	"	"	24"

TEES	G	H	I	J
12"X12"X6"	12"	24"	24"	18"
12"X12"X8"	"	"	"	24"
12"X12"X12"	"	36"	"	36"

TEES



PLAN SECTION 2-2

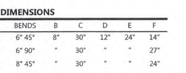
NOTES

1. PROVIDE BLOCKS FOR TAPPING SLEEVES, DEAD ENDS, GATE VALVES, AND VERTICAL BENDS (SAME SIZE AS REQUIRED FOR TEES). PROVIDE ANCHOR RODS AT VERTICAL BENDS AND GATE VALVES.
2. CONCRETE SHALL NOT BE PLACED AGAINST PIPE BEYOND FITTING.
3. CONCRETE SHALL BE 3,000 PSI-TYPE I.

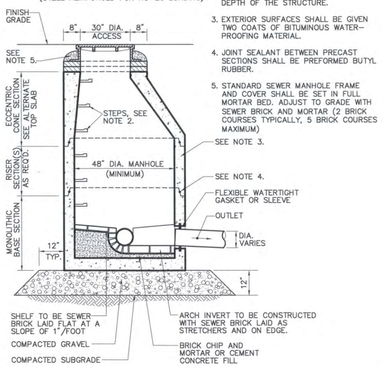
Concrete Thrust Block

1/16

N.T.S. Source: VHB LD_260



Alternate Top Slab
(STEEL REINFORCED FOR HS-20 LOADING)



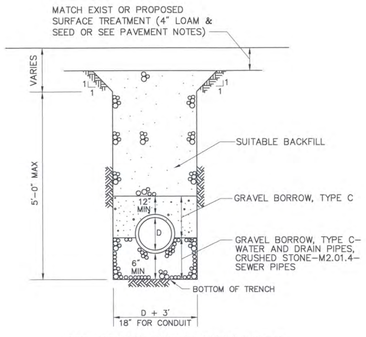
Notes:

1. STRUCTURES SHALL BE PRECAST CONCRETE, DESIGNED FOR HS-20 LOADING.
2. COPOLYMER MANHOLE STEPS SHALL BE INSTALLED AT 12" O.C. FOR THE FULL DEPTH OF THE STRUCTURE.
3. EXTERIOR SURFACES SHALL BE GIVEN TWO COATS OF BITUMINOUS WATER-PROOFING MATERIAL.
4. JOINT SEALANT BETWEEN PRECAST SECTIONS SHALL BE PREFORMED BUTYL RUBBER.
5. STANDARD SEWER MANHOLE FRAME AND COVER SHALL BE SET IN FULL MORTAR BED, ADJUST TO GRADE WITH SEWER BRICK AND MORTAR (2 BRICK COURSES TYPICALLY, 5 BRICK COURSES MAXIMUM)

Sanitary Sewer Manhole (SMH)

6/08

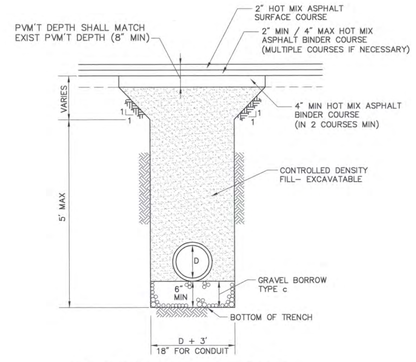
N.T.S. Source: VHB LD_200



NOTE: UNSUITABLE EXCAVATED MATERIAL SHALL BE LEGALLY DISPOSED OF OFF-SITE.

TRENCH DETAIL

SCALE: NOT TO SCALE
DATE: MARCH 2007
DWG: TRENCH-05r



NOTE: UNSUITABLE EXCAVATED MATERIAL SHALL BE LEGALLY DISPOSED OF OFF-SITE.

TRENCH DETAIL IN EXISTING ROADWAY/ COLD PLANE & OVERLAY

SCALE: NOT TO SCALE
DATE: MARCH 2007
DWG: TRENCH-04r

Alternate Top Slab

Notes:

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2. COPOLYMER MANHOLE STEPS SHALL BE INSTALLED AT 12" O.C. FOR THE FULL DEPTH OF THE STRUCTURE
3. EXTERIOR SURFACES SHALL BE GIVEN TWO COATS OF BITUMINOUS WATERPROOFING MATERIAL.
4. JOINT SEALANT BETWEEN PRECAST SECTIONS SHALL BE BUTYL RUBBER.
5. SEWER MANHOLE FRAME AND COVER SHALL BE SET IN FULL MORTAR BED. ADJUST TO GRADE WITH SEWER BRICK AND MORTAR (2 BRICK COURSES TYPICALLY, 5 BRICK COURSES MAXIMUM)
6. MANHOLE DIAMETER SHALL BE VERIFIED BY CONTRACTOR AND MANUFACTURER BASED ON PIPE GEOMETRICS AND SIZES

Bracket Detail

Interior Drop Sewer Manhole (SMH)

6/08

N.T.S. Source: VHB REV LD_205

Notes:

1. PIPE AND FITTING MATERIALS TO BE PVC SDR35, MEETING ASTM 3034 FOR USE WITH SANITARY SEWER SYSTEMS.
2. ADAPTOR TO BE PREMANUFACTURED UNIT FOR CONNECTION OF PIPE TYPES.

Typical Wye Connection Detail (Residential)

6/08

N.T.S. Source: VHB LD_223

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617.924.1770

Assembly Line Park

Assembly Row
Somerville, Massachusetts

No.	Revision	Date	Appvd.

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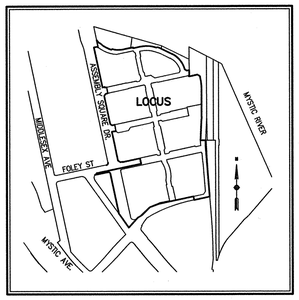
Special Permit — August 04, 2016

Drawing Title
Site Details

Drawing Number
C-7.3

Sheet 13 of 13

Project Number
08518.05



Locus Map
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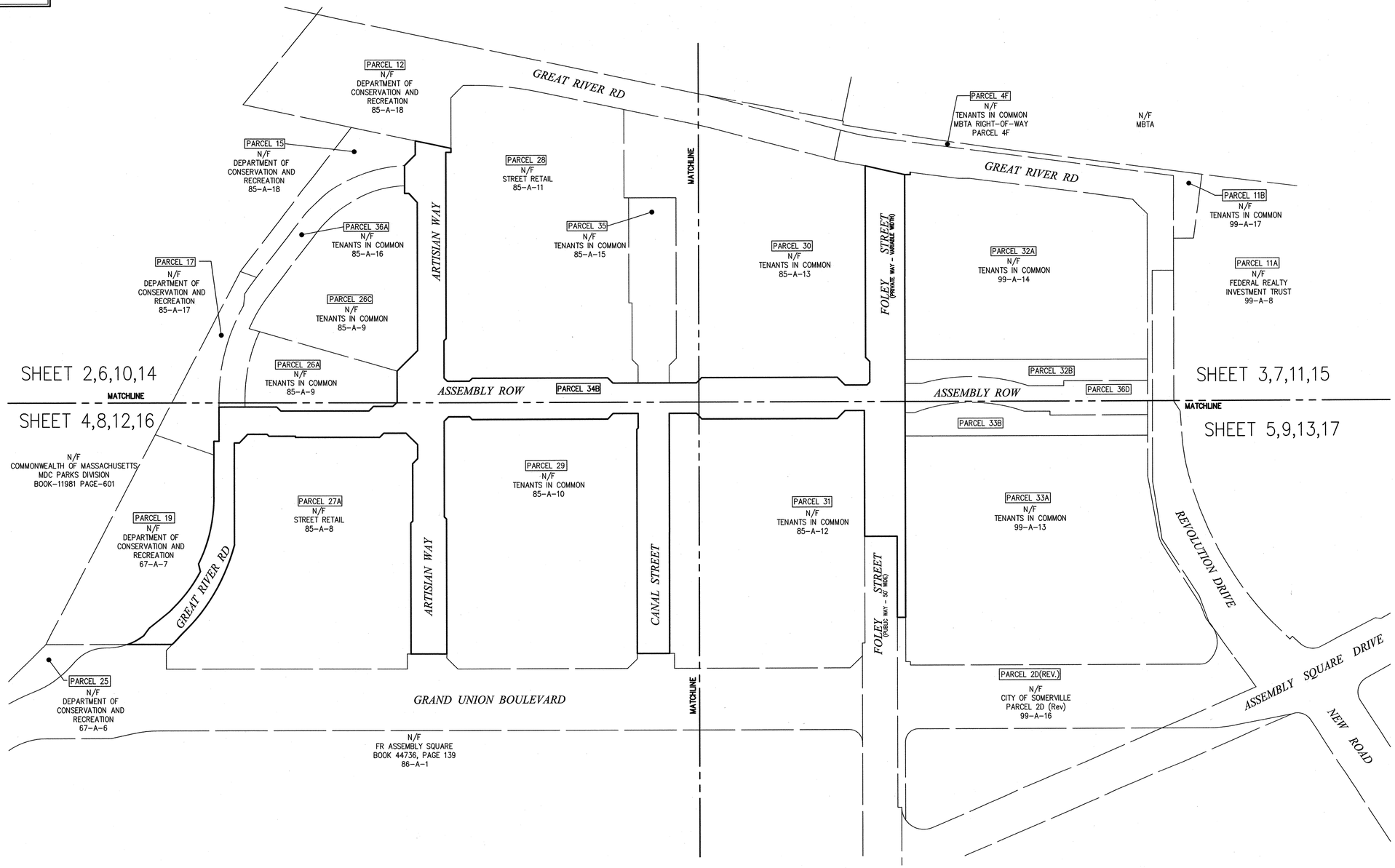

VHB

Vanasse Hangen Brustlin, Inc.

Transportation
Land Development
Environmental Services

101 Walnut Street, P.O. Box 9151
Watertown, Massachusetts 02471-9151
617 924 1770 • FAX 617 924 2286

Legend

- DRAIN MANHOLE
- CATCH BASIN
- SEWER MANHOLE
- ELECTRIC MANHOLE
- TELEPHONE MANHOLE
- MANHOLE
- HH HAND HOLE
- WATER GATE
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- BF1-100' LIMIT OF BANK
- WF1-100' VEGETATED WETLAND BOUNDARY

No.	Revision	Date	Appvd.

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CAD checked by		Approved by
Scale 1"=40'		Date November 6, 2014

Project Title

Assembly Row
Assembly Square
PUD

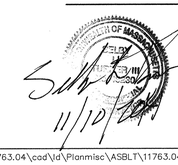
Somerville, Massachusetts

Issued for

As Built

Drawing Title

Key Sheet

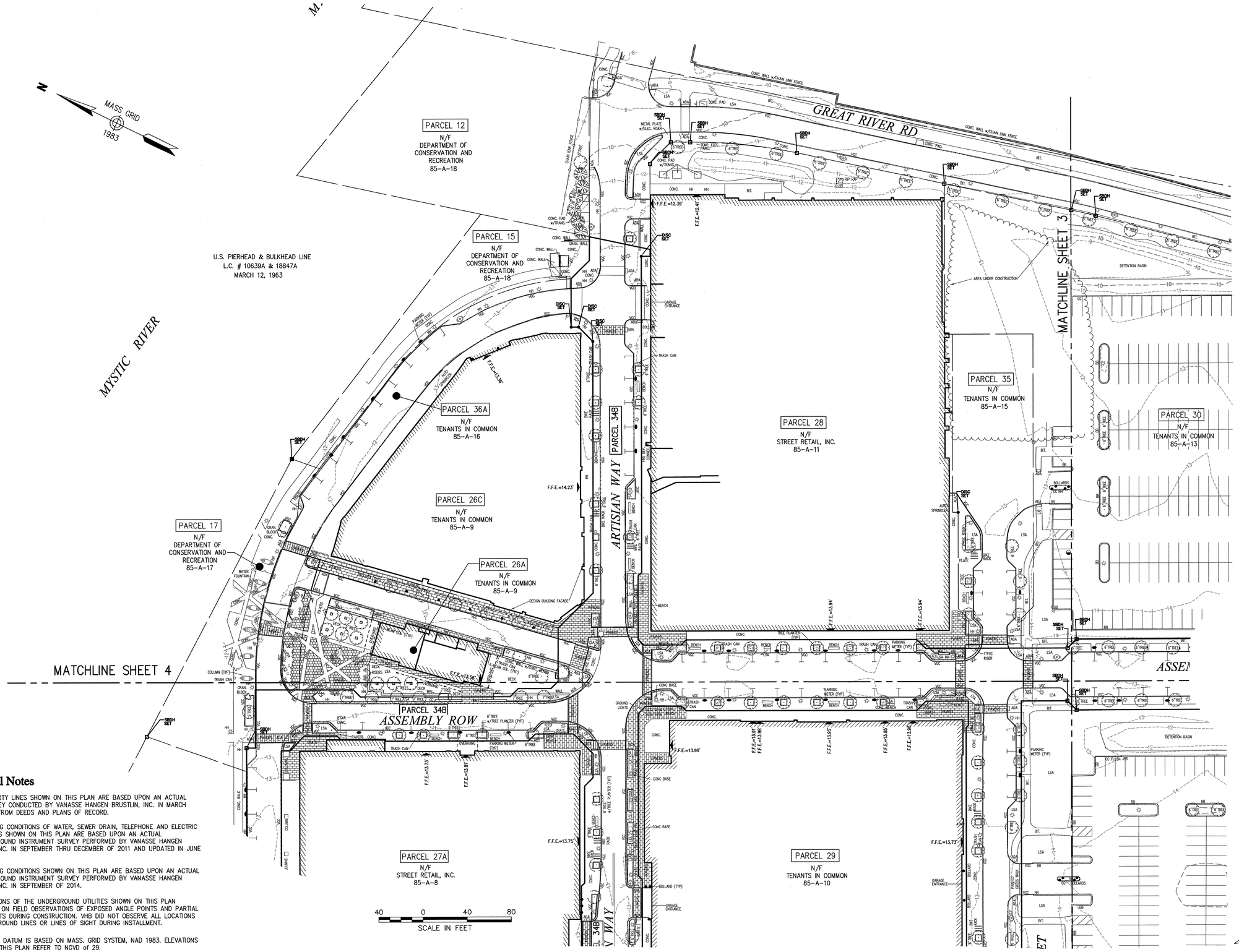


Drawing Number

Sv-1

Sheet 1 of 17

Project Number
11763.04



General Notes

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Transportation
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Environmental Services

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Watertown, Massachusetts 02471-9151
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Legend

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Project Title

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Drawing Title

Roadway As Built

SEAN TURNER III No. 46256 REGISTERED PROFESSIONAL ENGINEER COMMONWEALTH OF MASSACHUSETTS

11/7/2014

Drawing Number

Sv-2

Sheet of
2 17

Project Number
11763.04

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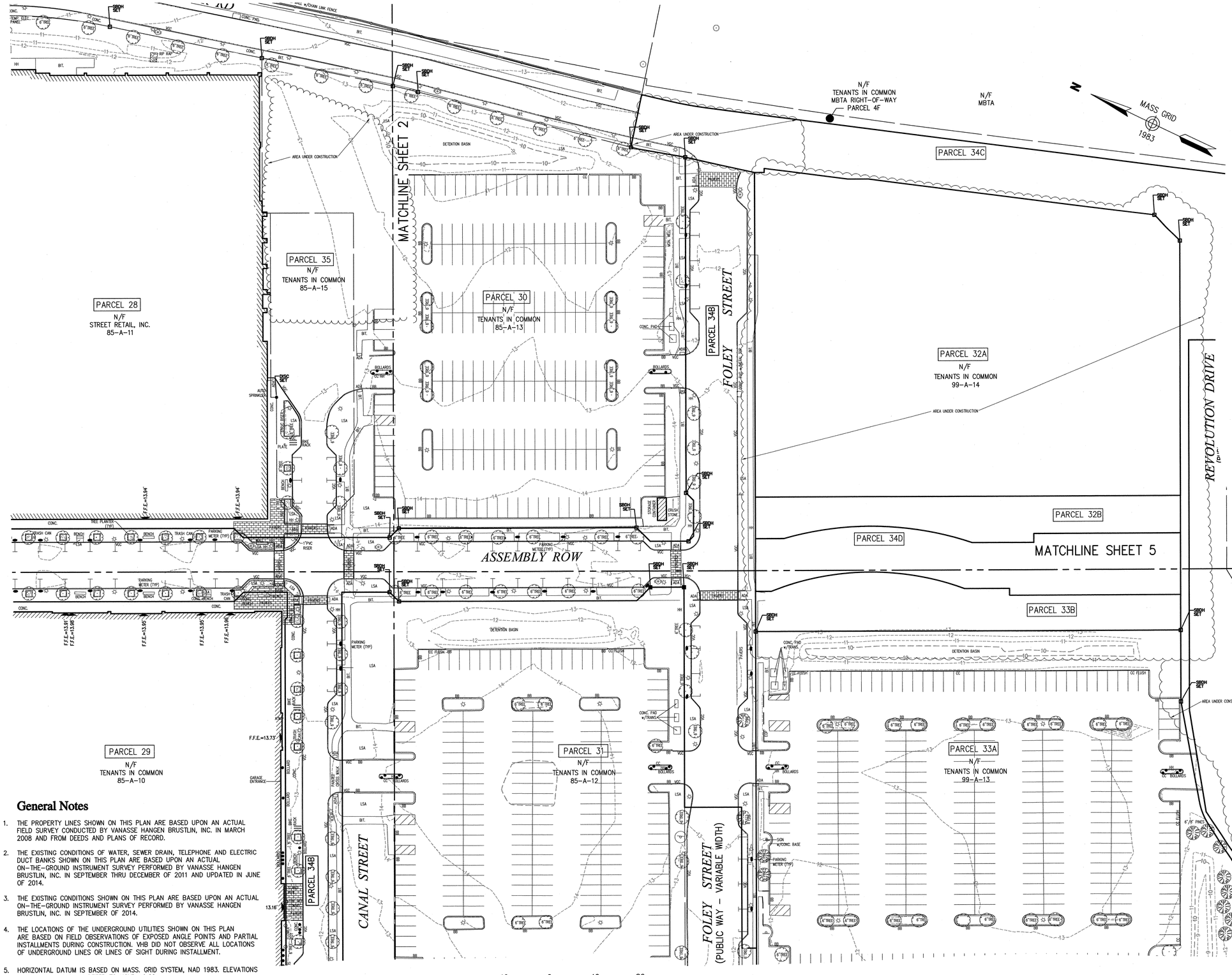

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Project Title

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Drawing Title

Existing Conditions Plan of Land

COMMONWEALTH OF MASSACHUSETTS
SELBY L. TURNER III
No. 49230
PROFESSIONAL LAND SURVEYOR

Drawing Number
Sv-3

Sheet 3 of 17

Project Number
11763.04

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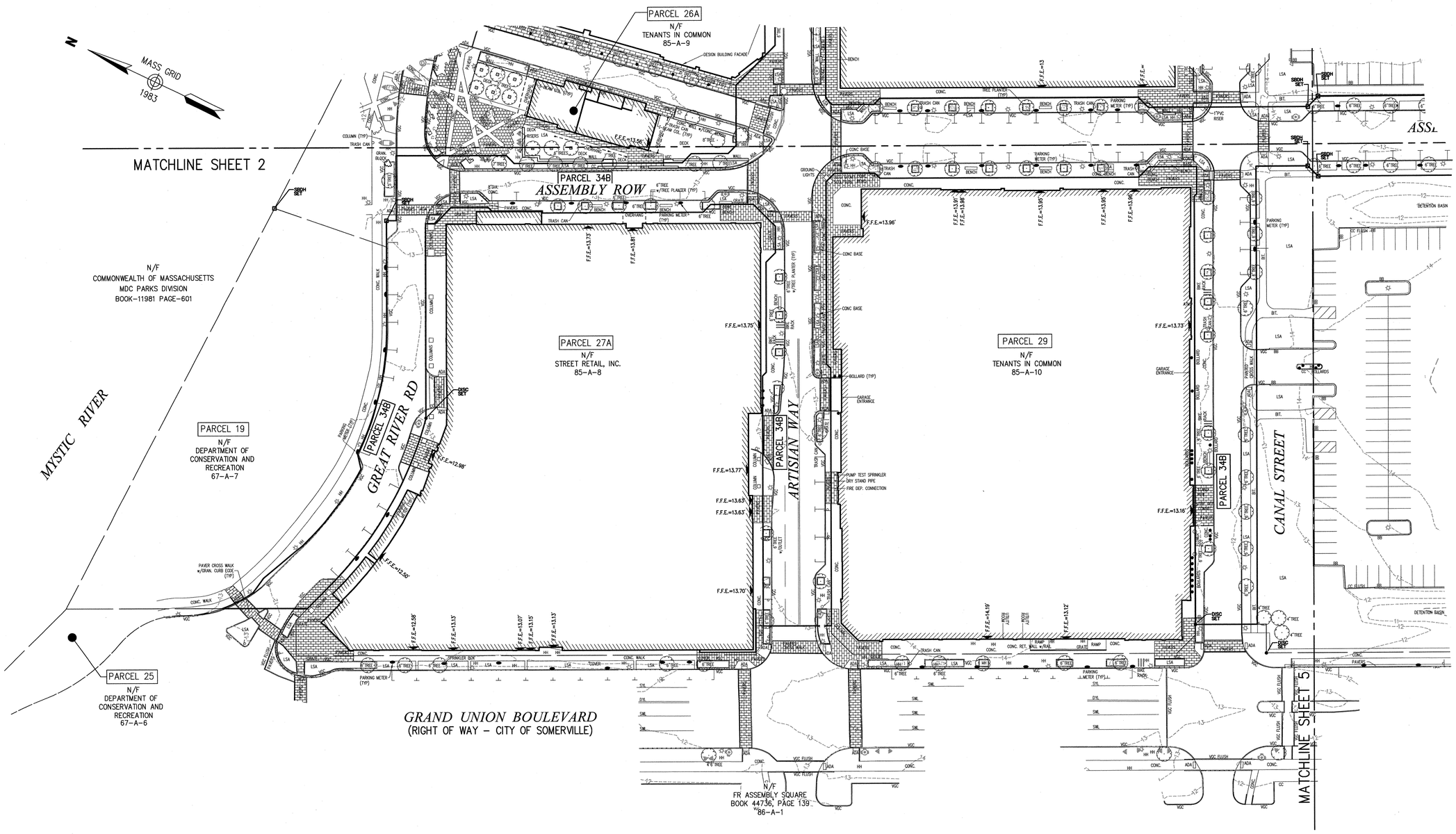

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Environmental Services
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Watertown, Massachusetts 02471-9151
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Project Title
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Somerville, Massachusetts

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Drawing Title
Existing Conditions
Plan of Land

COMMONWEALTH OF MASSACHUSETTS
SELBY C. TURNER, III
No. 49230
REGISTERED
LAND SURVEYOR
11/7/2014

Drawing Number
Sv-4

Sheet 4 of 17

Project Number
11763.04

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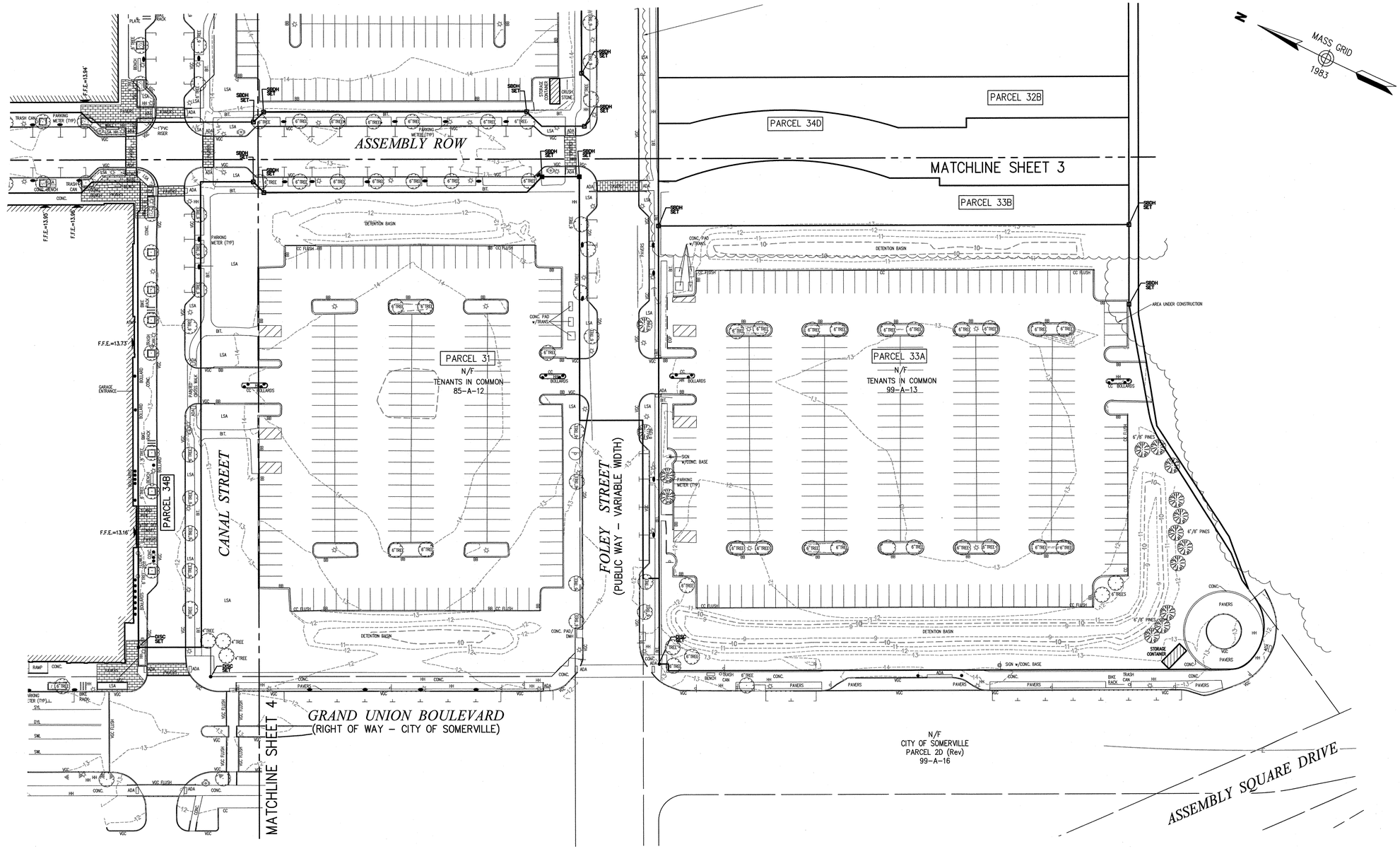

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Legend

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Project Title

Assembly Row
Assembly Square
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Somerville, Massachusetts

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Drawing Title

Existing Condition
Plan of Land

COMMONWEALTH OF MASSACHUSETTS
SELBY L TURNER JR
NO. 49230
REGISTERED LAND SURVEYOR

Drawing Number
Sv-5

Sheet 5 of 17

Project Number
11763.04

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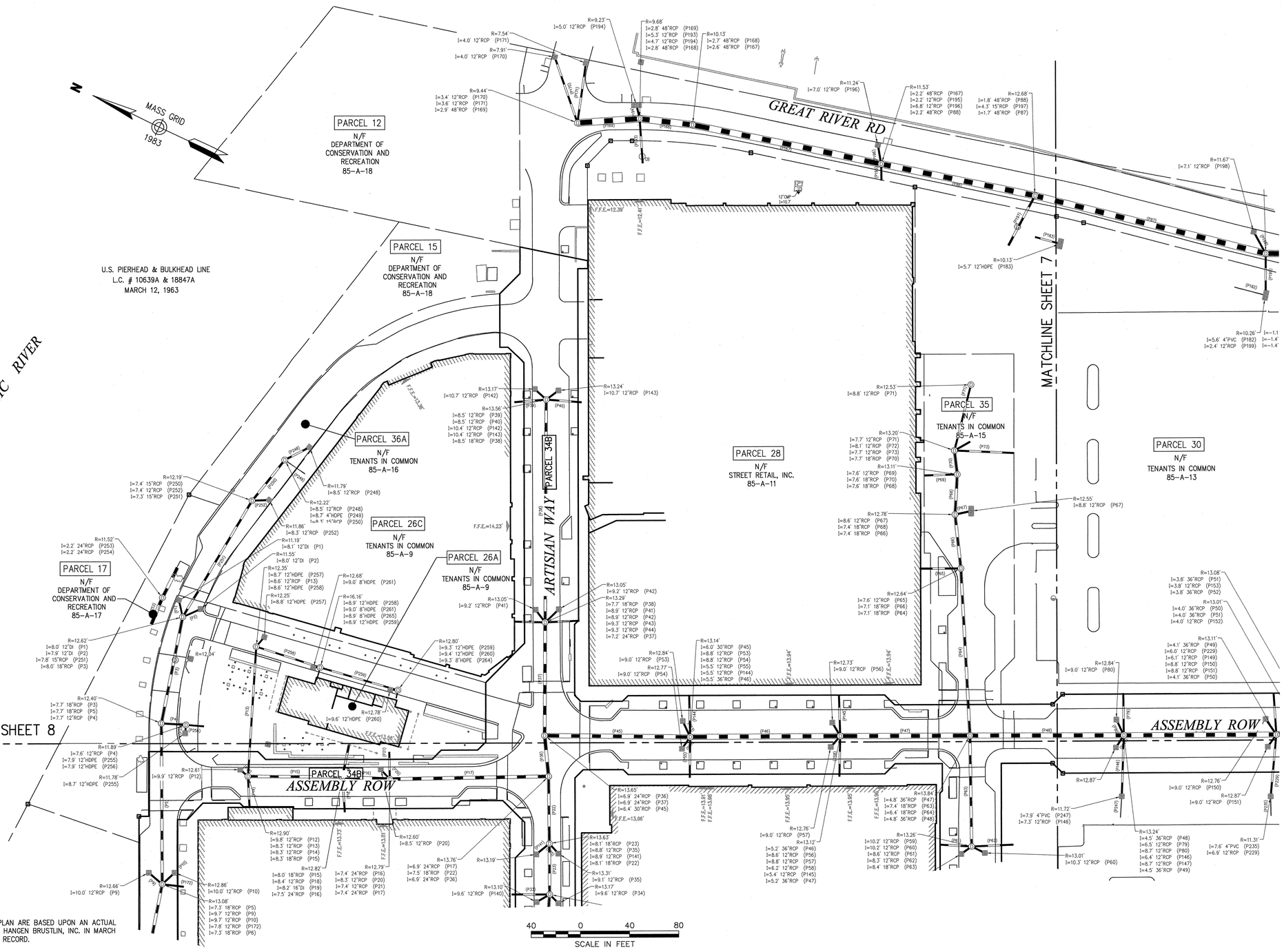

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- EOP EDGE OF PAVEMENT
- CC CONCRETE CURB
- VGC VERTICAL GRANITE CURB
- SGE SLOPED GRANITE EDGE
- BB BITUMINOUS BERM
- BC BITUMINOUS CURB
- GUARD RAIL
- CHAIN LINK FENCE
- DRAINAGE LINE
- SEWER LINE
- OHW OVERHEAD WIRE
- E UNDERGROUND ELECTRIC
- T TELEPHONE LINE
- G GAS LINE
- W WATER LINE
- STONE WALL
- TREE LINE
- 100'BZ 100-FT BUFFER ZONE
- 100'RA 100-FT RIVER FRONT AREA
- 200'RA 200-FT RIVER FRONT AREA
- ELF1-100 LIMIT MEAN ANNUAL HIGH WATER
- BF1-100 LIMIT OF BANK
- WF1-100 VEGETATED WETLAND BOUNDARY

No.	Revision	Date	Appvd.

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Scale 1"=40' | Date November 6, 2014

Project Title

Assembly Row
Assembly Square
PUD

Somerville, Massachusetts

Issued for

As Built

Drawing Title

Drain Asbuilt

COMMONWEALTH OF MASSACHUSETTS
SELBY L. TURNER
No. 46230
REGISTERED PROFESSIONAL ENGINEER
LAND SURVEYOR

Drawing Number

Sv-6

Sheet 6 of 17

Project Number

11763.04

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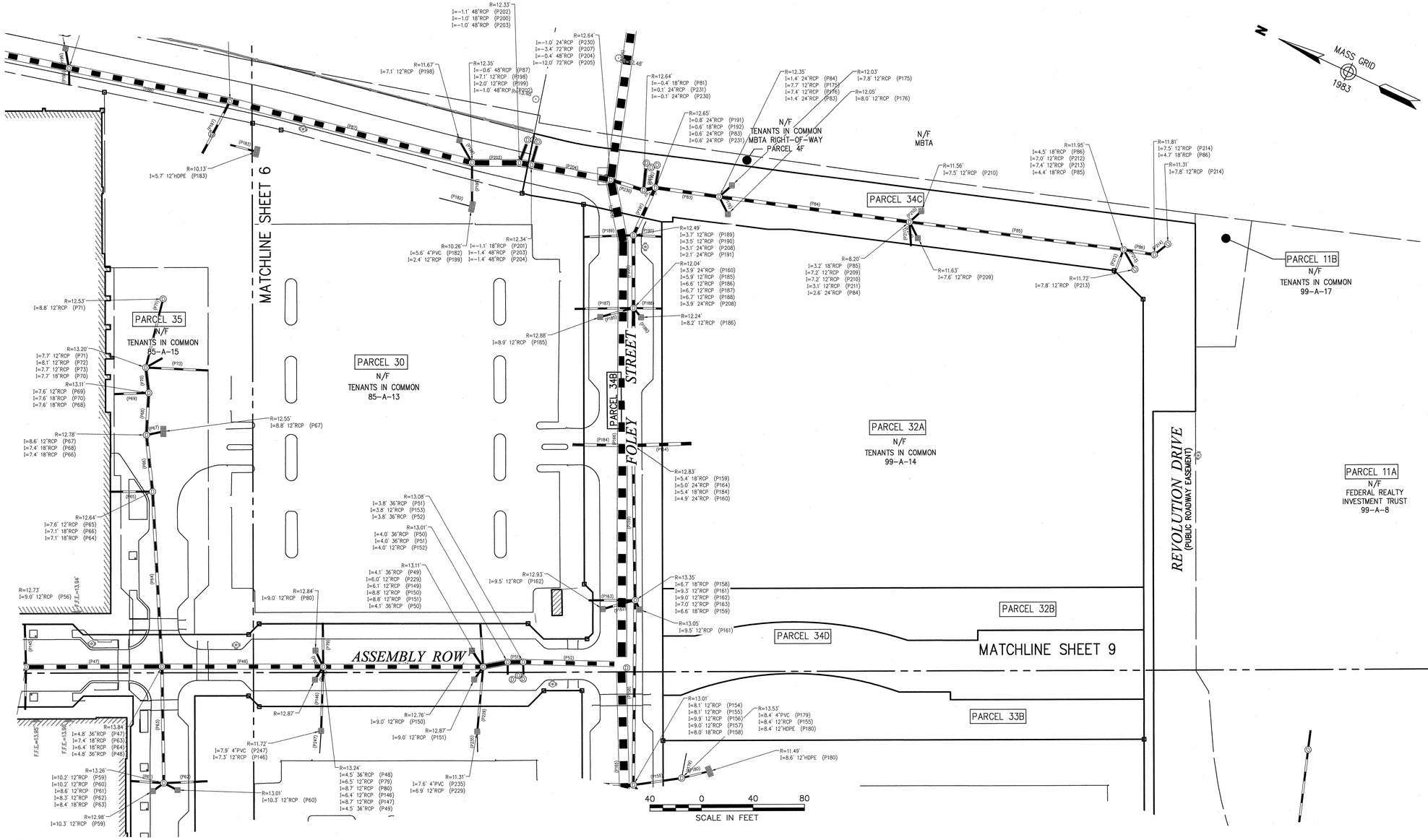

General Notes

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VHB

Vanasse Hangen Brustlin, Inc.

Transportation
Land Development
Environmental Services

101 Walnut Street, P.O. Box 9151
Watertown, Massachusetts 02471-9151
617 924 1770 • FAX 617 924 2286

Legend

- DRAIN MANHOLE
- CATCH BASIN
- SEWER MANHOLE
- ELECTRIC MANHOLE
- TELEPHONE MANHOLE
- MANHOLE
- HH HAND HOLE
- WATER GATE
- FIRE HYDRANT
- GAS GATE
- STREET SIGN
- LIGHT POLE
- UTILITY POLE
- GUY POLE
- GUY WIRE
- MW MONITORING WELL
- FLOOD LIGHT
- W WELL
- CNO COULD NOT OPEN
- NPV NO PIPES VISIBLE
- SBDH STONE BOUND DRILL HOLE
- ADA DETECTABLE WARNING PAD
- LSA LANDSCAPE AREA
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Project Title

Assembly Row
Assembly Square
PUD

Somerville, Massachusetts

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Drawing Title

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COMMONWEALTH OF MASSACHUSETTS
SHELBY L. TURGEON
No. 46290
REGISTERED LAND SURVEYOR

Drawing Number
Sv-7

Sheet 7 of 17

Project Number
11763.04

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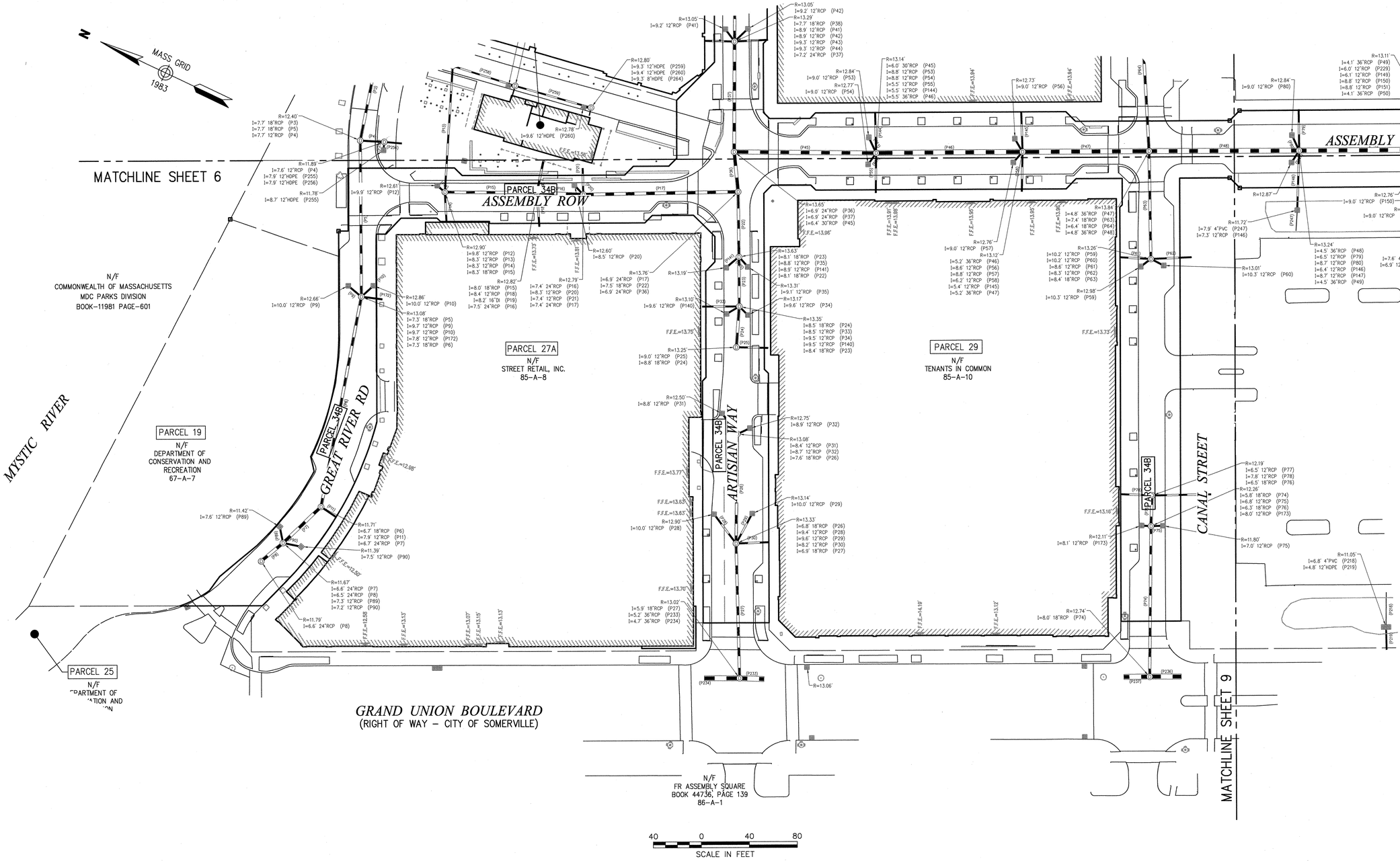

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Transportation
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Environmental Services
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Watertown, Massachusetts 02471-9151
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Legend

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Project Title

Assembly Row Assembly Square PUD

Somerville, Massachusetts

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Drawing Title

Drain Asbuilt

COMMONWEALTH OF MASSACHUSETTS
STEVEN J. TURNER III
No. 40235
REGISTERED PROFESSIONAL ENGINEER

Drawing Number
Sv-8

Sheet 8 of 17

Project Number
11763.04

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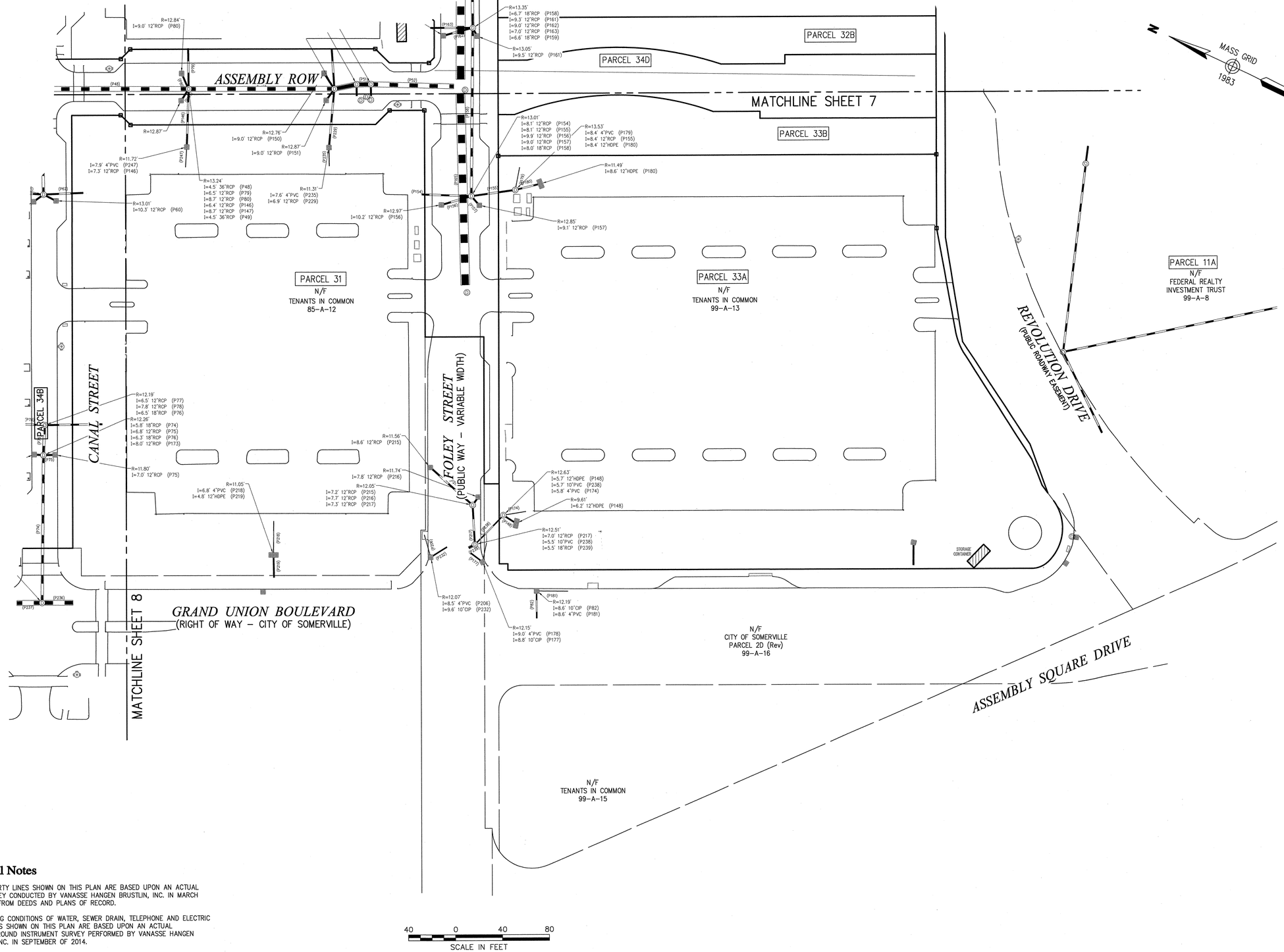

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Transportation
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Legend

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Project Title

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Somerville, Massachusetts

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Drawing Title

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COMMONWEALTH OF MASSACHUSETTS
SELBY L. TURNER JR.
No. 49220
REGISTERED PROFESSIONAL LAND SURVEYOR
11/19/2014

Drawing Number
Sv-9

Sheet 9 of 17

Project Number
11763.04

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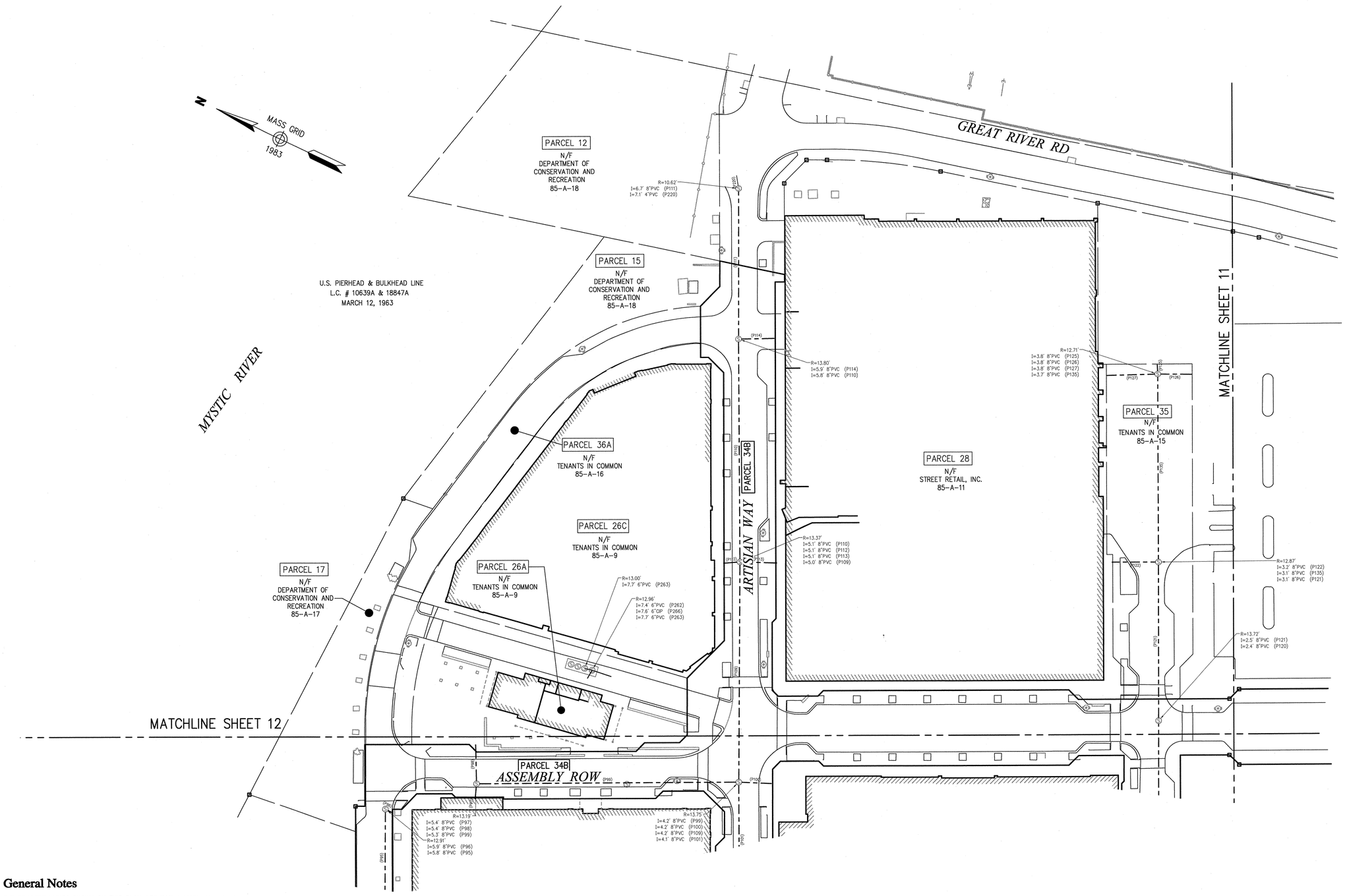

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Transportation
Land Development
Environmental Services
101 Walnut Street, P.O. Box 9151
Watertown, Massachusetts 02471-9151
617 924 1770 • FAX 617 924 2286

Legend

- DRAIN MANHOLE
- CATCH BASIN
- SEWER MANHOLE
- ELECTRIC MANHOLE
- TELEPHONE MANHOLE
- MANHOLE
- HH□ HAND HOLE
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- MHW-100' LIMIT MEAN ANNUAL HIGH WATER
- BH-100 LIMIT OF BANK
- WET-100 VEGETATED WETLAND BOUNDARY

No.	Revision	Date	Appvd.

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Scale 1"=40'	Date November 6, 2014	

Project Title

Assembly Row
Assembly Square
PUD

Somerville, Massachusetts

Issued for

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Drawing Title

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COMMONWEALTH OF MASSACHUSETTS
SELBY L. TURNER III
No. 49230
REGISTERED LAND SURVEYOR

11/7/2014

Drawing Number

Sv-10

Sheet 10 of 17

Project Number

11763.04

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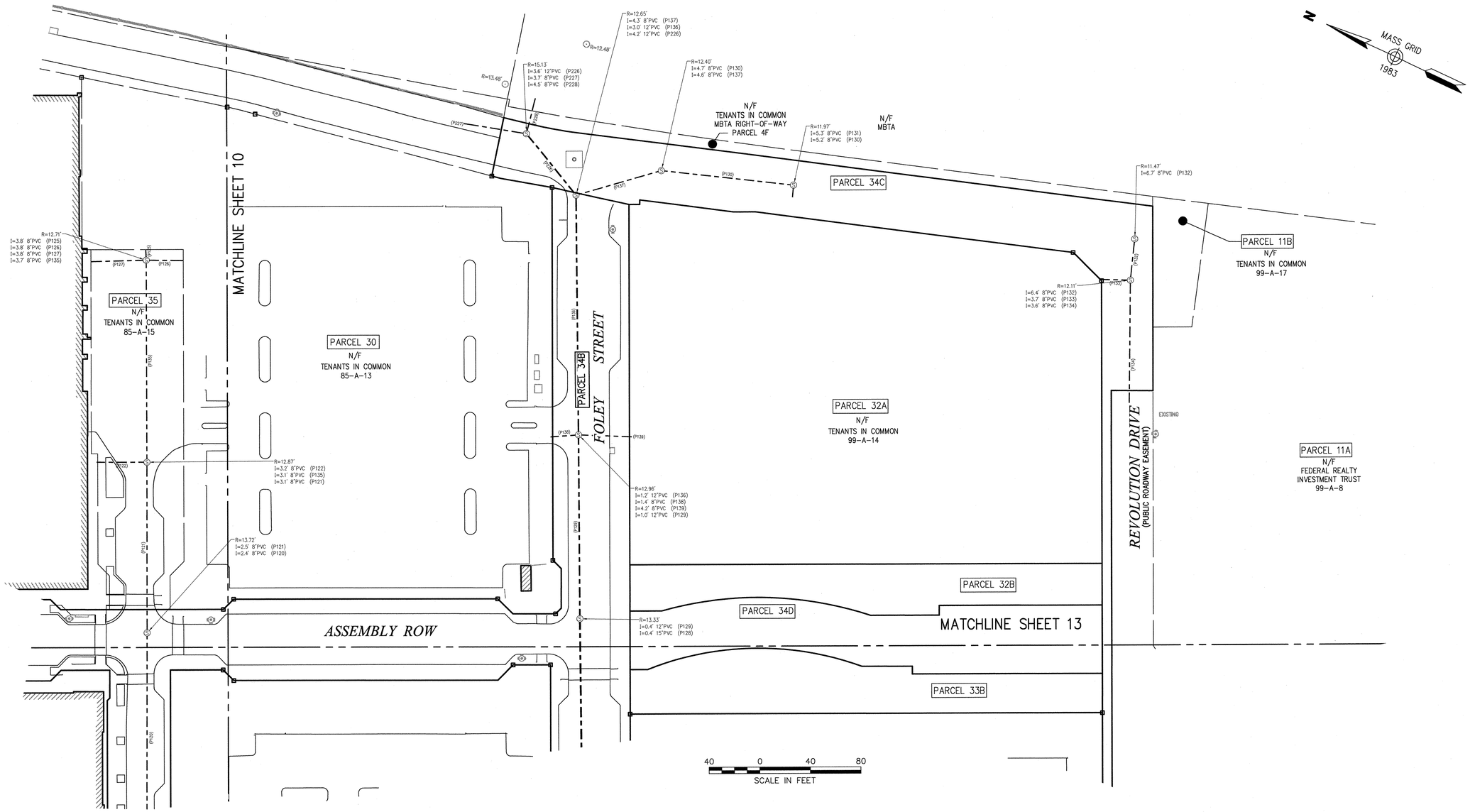

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VHB

Vanasse Hangen Brustlin, Inc.

Transportation
Land Development
Environmental Services

101 Walnut Street, P.O. Box 9151
Watertown, Massachusetts 02471-9151
617 924 1770 • FAX 617 924 2286

Legend

- DRAIN MANHOLE
- CATCH BASIN
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Project Title

Assembly Row
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COMMONWEALTH OF MASSACHUSETTS
KEVIN L. WARNER III
No. 49230
PROFESSIONAL ENGINEER

11/07/14

Drawing Number
Sv-11

Sheet 11 of 17

Project Number
11763.04

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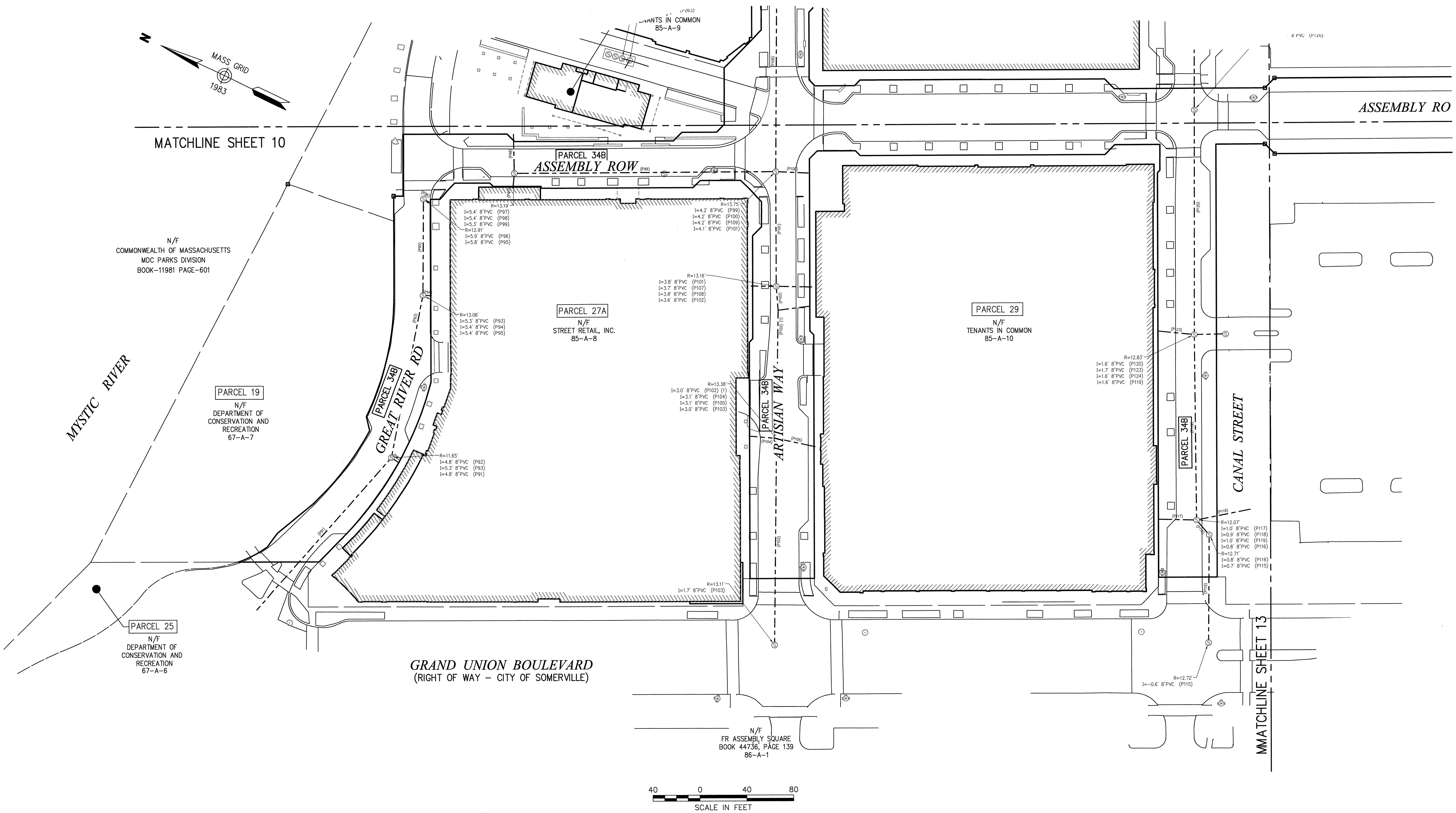

VHB

Vanasse Hangen Brustlin, Inc.

Transportation
Land Development
Environmental Services

101 Walnut Street, P.O. Box 9151
Watertown, Massachusetts 02471-9151
617 924 1770 • FAX 617 924 2286

Legend

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Project Title

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Somerville, Massachusetts

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Drawing Number

Sv-12

Sheet 12 of 17

Project Number

11763.04

General Notes

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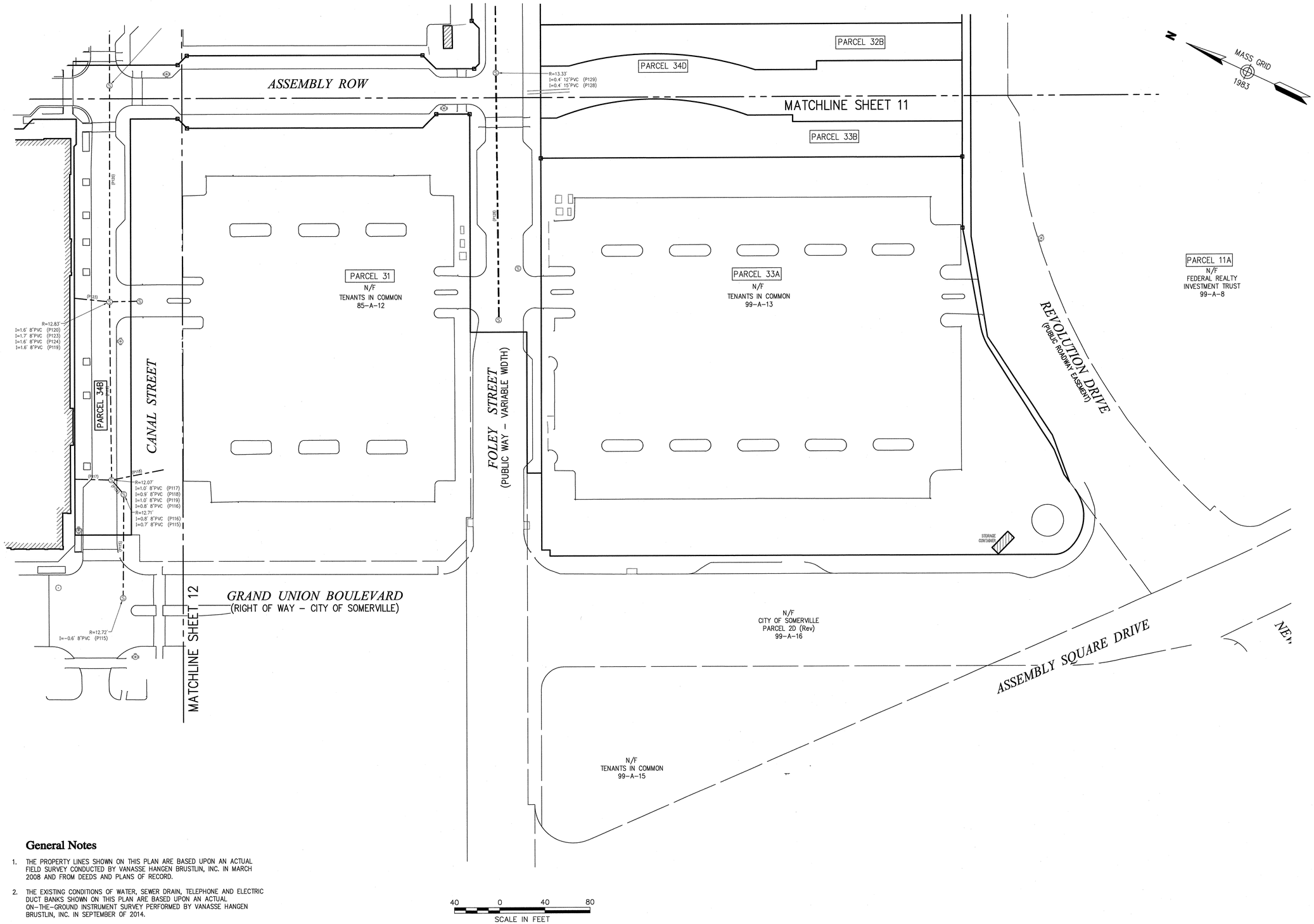

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VHB

Vanasse Hangen Brustlin, Inc.

Transportation
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Watertown, Massachusetts 02471-9151
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Legend

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- 200'RA — 200-FT RIVER FRONT AREA
- APT-100' — LIMIT MEAN ANNUAL HIGH WATER
- BFT-100 — LIMIT OF BANK
- WFT-100 — VEGETATED WETLAND BOUNDARY

No.	Revision	Date	Appvd.

Designed by	Drawn by	Checked by
CAD checked by	Approved by	
Scale 1"=40'	Date November 6, 2014	

Project Title

Assembly Row
Assembly Square
PUD

Somerville, Massachusetts

Issued for

As Built

Drawing Title

Sewer Asbuilt

COMMONWEALTH OF MASSACHUSETTS
STEVEN L. TURNER JR.
No. 49230
REGISTERED LAND SURVEYOR

11/10/2014

Drawing Number

Sv-13

Sheet 13 of 17

Project Number

11763.04

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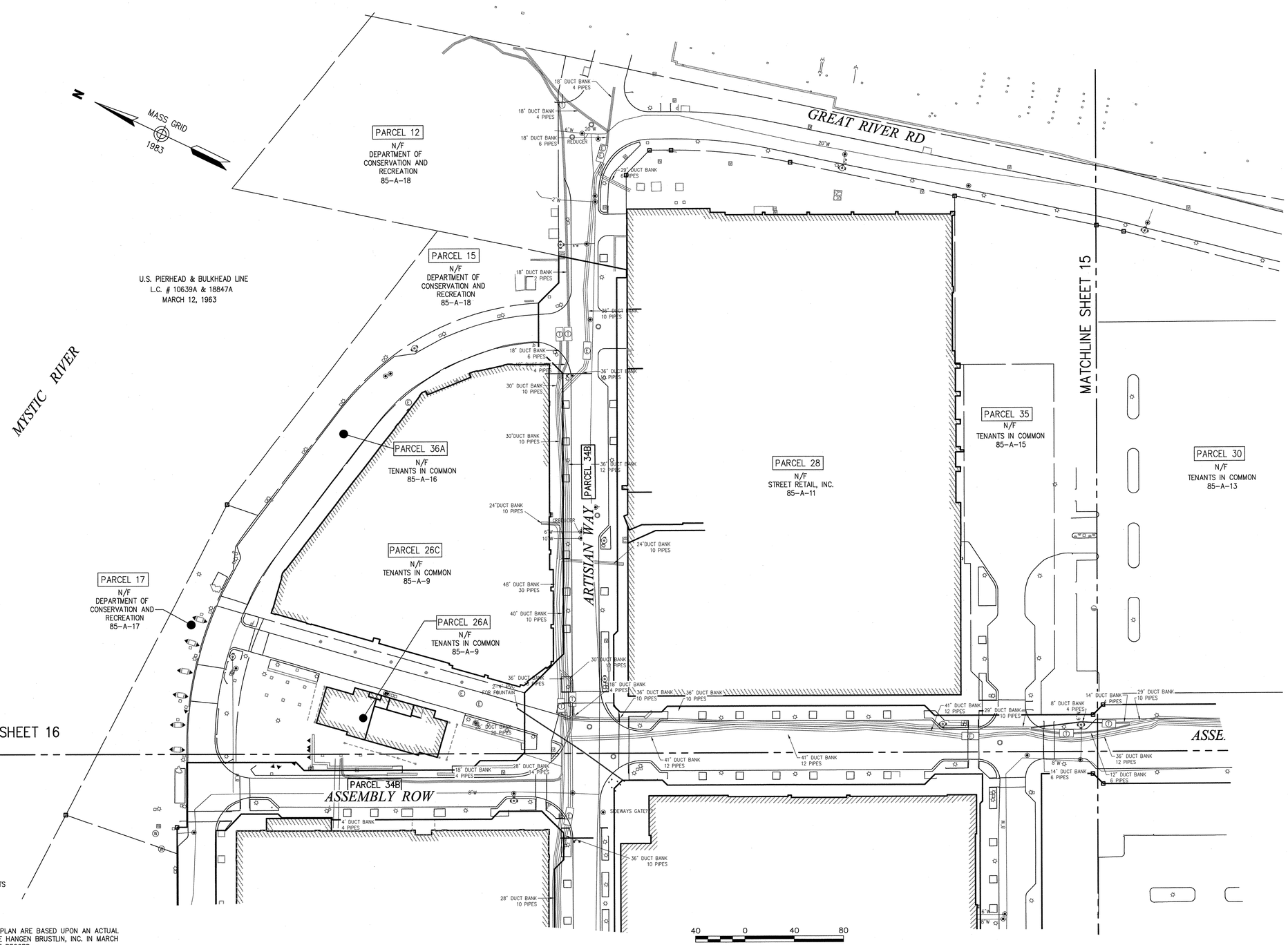

General Notes

1. THE PROPERTY LINES SHOWN ON THIS PLAN ARE BASED UPON AN ACTUAL FIELD SURVEY CONDUCTED BY VANASSE HANGEN BRUSTLIN, INC. IN MARCH 2008 AND FROM DEEDS AND PLANS OF RECORD.
2. THE EXISTING CONDITIONS OF WATER, SEWER DRAIN, TELEPHONE AND ELECTRIC DUCT BANKS SHOWN ON THIS PLAN ARE BASED UPON AN ACTUAL ON-THE-GROUND INSTRUMENT SURVEY PERFORMED BY VANASSE HANGEN BRUSTLIN, INC. IN SEPTEMBER OF 2014.
3. THE LOCATIONS OF THE UNDERGROUND UTILITIES SHOWN ON THIS PLAN ARE BASED ON FIELD OBSERVATIONS OF EXPOSED ANGLE POINTS AND PARTIAL INSTALLMENTS DURING CONSTRUCTION. VHB DID NOT OBSERVE ALL LOCATIONS OF UNDERGROUND LINES OR LINES OF SIGHT DURING INSTALLMENT.
4. HORIZONTAL DATUM IS BASED ON MASS. GRID SYSTEM, NAD 1983. ELEVATIONS SHOWN ON THIS PLAN REFER TO NGVD of 29.

VHB
Vanasse Hangen Brustlin, Inc.
Transportation
Land Development
Environmental Services
101 Walnut Street, P.O. Box 9151
Watertown, Massachusetts 02471-9151
617 924 1770 • FAX 617 924 2286

Legend

- DRAIN MANHOLE
- CATCH BASIN
- SEWER MANHOLE
- ELECTRIC MANHOLE
- TELEPHONE MANHOLE
- MANHOLE
- HH HAND HOLE
- WATER GATE
- FIRE HYDRANT
- GAS GATE
- STREET SIGN
- LIGHT POLE
- UTILITY POLE
- GUY POLE
- GUY WIRE
- MW MONITORING WELL
- FLOOD LIGHT
- W WELL
- CNO COULD NOT OPEN
- NPV NO PIPES VISIBLE
- SBDH STONE BOUND DRILL HOLE
- ADA DETECTABLE WARNING PAD
- LSA LANDSCAPE AREA
- F.F.E.=45.27' FINISHED FLOOR ELEVATION
- EOP EDGE OF PAVEMENT
- CC CONCRETE CURB
- VGC VERTICAL GRANITE CURB
- SGE SLOPED GRANITE EDGE
- BB BITUMINOUS BERM
- BC BITUMINOUS CURB
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- BF1-100 LIMIT OF BANK
- WF1-100 VEGETATED WETLAND BOUNDARY

No.	Revision	Date	Appvd.

Designed by	Drawn by	Checked by
CAD checked by	Approved by	
Scale 1"=40'	Date November 6, 2014	

Project Title

Assembly Row
Assembly Square
PUD

Somerville, Massachusetts

Issued for

As Built

Drawing Title

Utility Asbuilt

COMMONWEALTH OF MASSACHUSETTS
SELBY
TURNER JR.
NO. 46230
REGISTERED
LAND SURVEYOR

11/26/2014

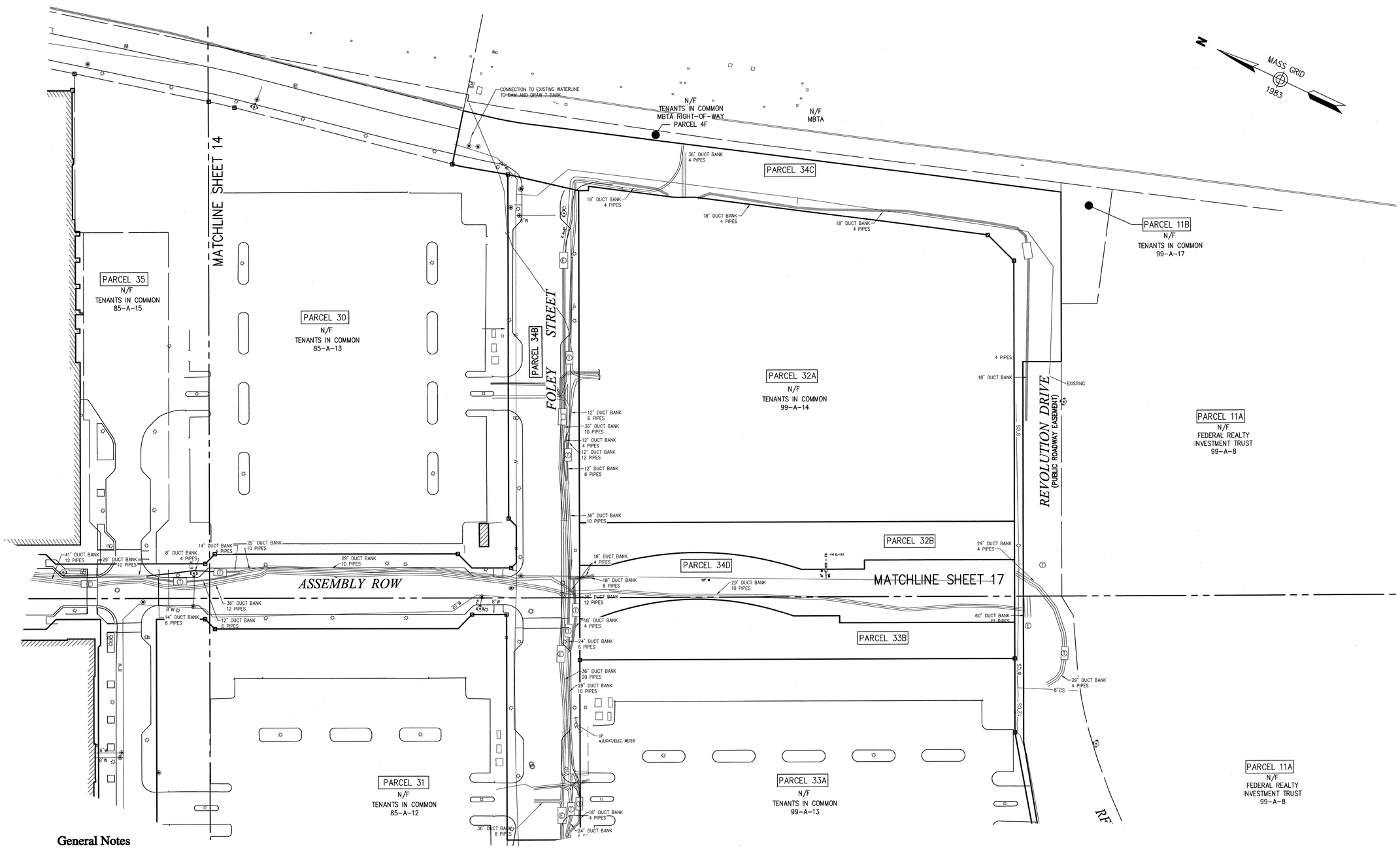
Drawing Number

Sv-14

Sheet 15 of 17

Project Number

11763.04



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Environmental Services
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Watertown, Massachusetts 02471-9151
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Legend

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- BFI-100 LIMIT OF BANK
- WFI-100 VEGETATED WETLAND BOUNDARY

No.	Revision	Date	Appvd.
1	ADDED NSTAR GAS LOCATIONS	4-2-2012	

Designed by	Drawn by	Checked by
CAD checked by	Approved by	
Scale 1"=40'	Date November 6, 2014	

Project Title

Assembly Row
Assembly Square
PUD
Somerville, Massachusetts

Issued for

As Built

Drawing Title

Utility Asbuilt

COMMONWEALTH OF MASSACHUSETTS
JEREMY L. TURNER
No. 49259
REGISTERED PROFESSIONAL LAND SURVEYOR

11/10/2014

Drawing Number
Sv-15

Sheet 14 of 17

Project Number
11763.04

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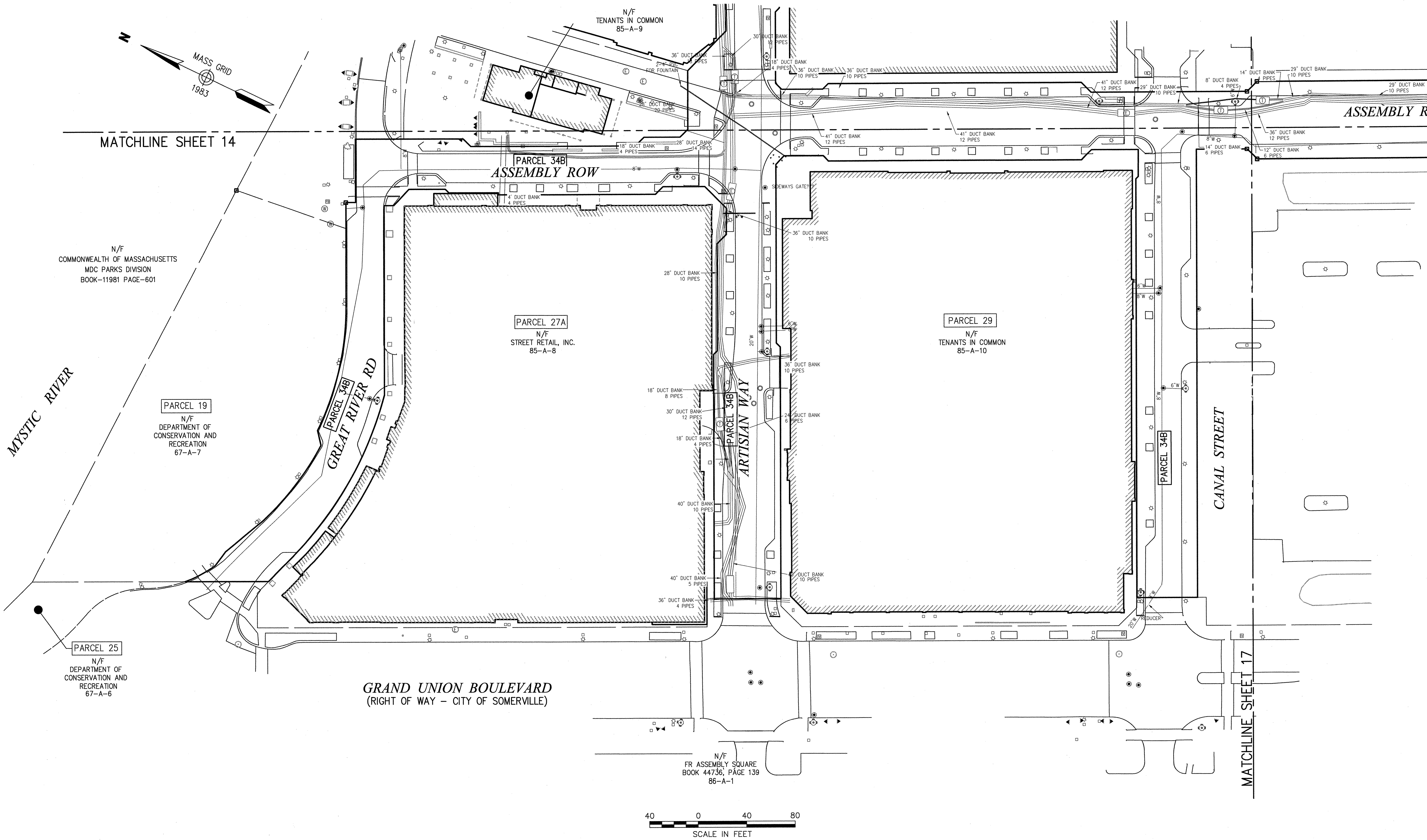

Vanasse Hangen Brustlin, Inc.

Transportation
Land Development
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101 Walnut Street, P.O. Box 9151
Watertown, Massachusetts 02471-9151
617 924 1770 • FAX 617 924 2286

Legend

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No.	Revision	Date	Appvd.

Designed by	Drawn by / Checked by
CAD checked by	Approved by
Scale 1"=40'	Date November 6, 2014

Project Title

Assembly Row
Assembly Square
PUD
Somerville, Massachusetts

Issued for

As Built

Drawing Title

Utility Asbuilt

Drawing Number

Sv-16

Sheet 16 of 17

Project Number
11763.04

COMMONWEALTH OF MASSACHUSETTS SELBY L. TURNER III No. 40289 PROFESSIONAL LAND SURVEYOR

11/10/2014

General Notes

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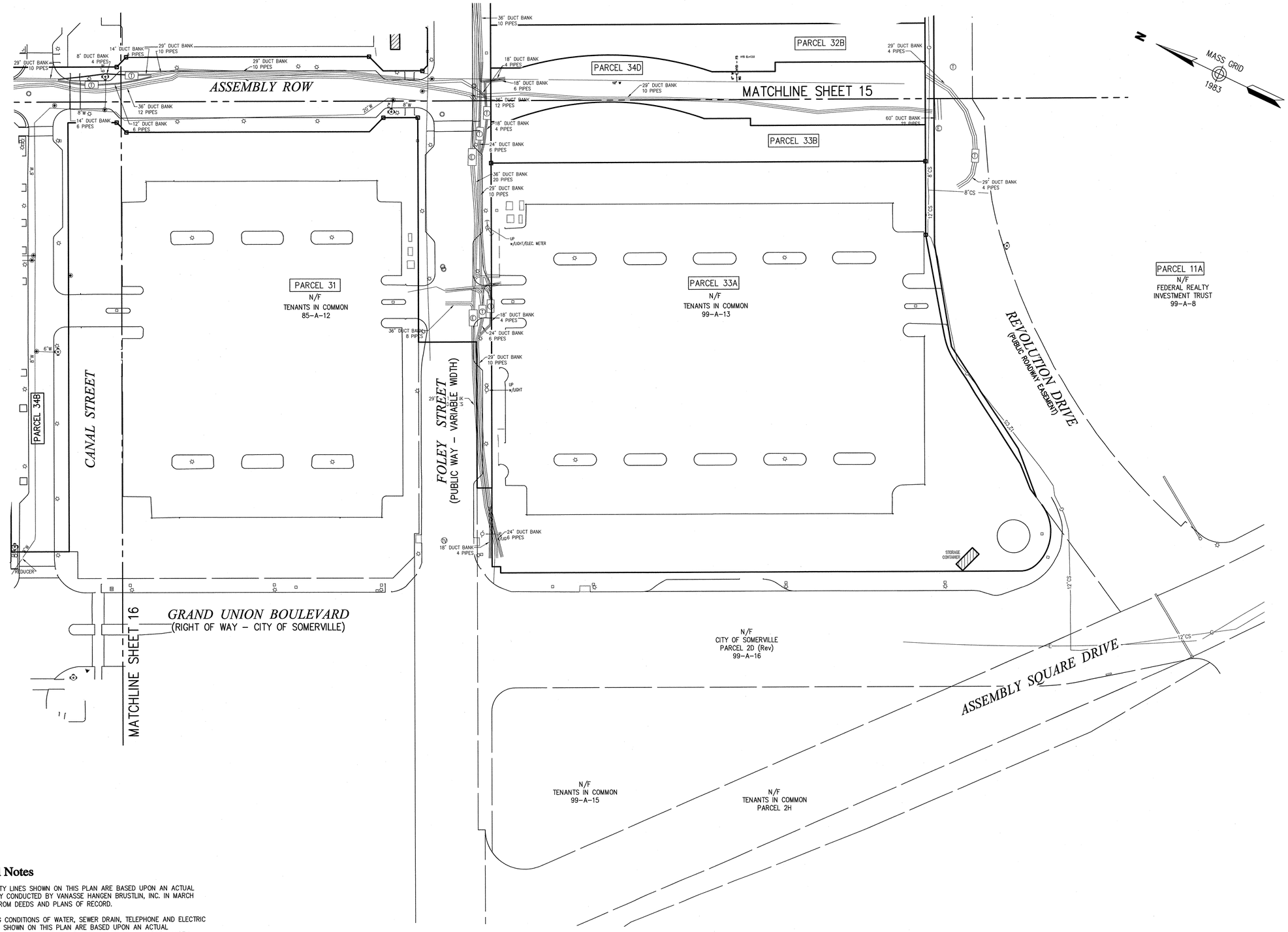

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Transportation
Land Development
Environmental Services
101 Walnut Street, P.O. Box 9151
Watertown, Massachusetts 02471-9151
617 924 1770 • FAX 617 924 2286

Legend

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No.	Revision	Date	Appvd.

Designed by | Drawn by | Checked by
CAD checked by | Approved by
Scale 1"=40' | Date November 6, 2014

Project Title

Assembly Row
Assembly Square
PUD

Somerville, Massachusetts

Issued for

As Built

Drawing Title

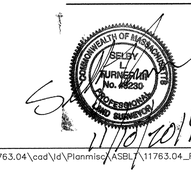
Utility Asbuilt

Drawing Number

Sv-17

Sheet 17 of 17

Project Number 11763.04



11/7/2014

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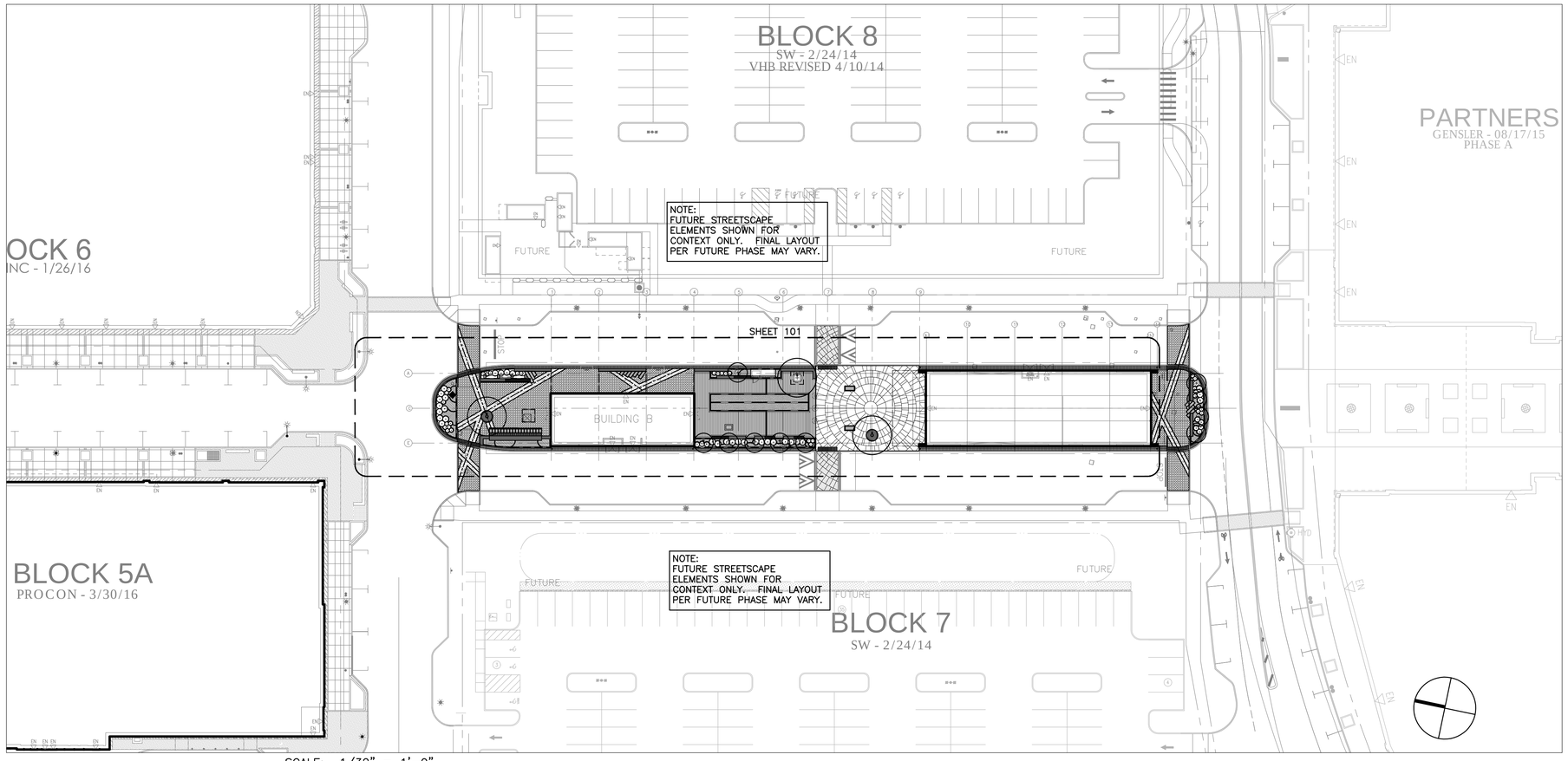


SITE CONTEXT PLAN

ASSEMBLY ROW AT ASSEMBLY SQUARE
PHASE 2 ROADWAY AND STREETSCAPE
ASSEMBLY LINE PARK
SITE CONTEXT PLAN AND NOTES
L-100 SHEET 58 OF 79
REVISION 1 - 08.04.16.

DRAWING LIST

GENERAL NOTES

1. CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS AND DIMENSIONS, AND NOTIFY LANDSCAPE ARCHITECT AT ONCE IN WRITING OF ANY DISCREPANCIES BETWEEN THE EXISTING CONDITIONS AS INDICATED ON THE PLAN AND ACTUAL FIELD CONDITIONS AND RECEIVE WRITTEN INSTRUCTIONS PRIOR TO PROCEEDING.
2. CONTRACTOR SHALL BE RESPONSIBLE FOR CHECKING EXISTING GRADES TO VERIFY THEIR ACCURACY.
3. CONTRACTOR SHALL VERIFY ALL UTILITY LOCATIONS AND ELEVATIONS PRIOR TO EXCAVATION. BEFORE CONSTRUCTION STARTS ALL UTILITY COMPANIES, PUBLIC AND PRIVATE MUST BE CONTACTED INCLUDING THOSE IN CONTROL OF UTILITIES NOT SHOWN ON THIS PLAN. CONTACT "LOCAL DIG SAFE" AND REPORT ANY DISCREPANCIES IN WRITING TO LANDSCAPE ARCHITECT AND RECEIVE WRITTEN INSTRUCTIONS PRIOR TO PROCEEDING.
4. THE CONTRACTOR SHALL ESTABLISH PERMANENT BENCH MARKS. MAINTAIN ALL ESTABLISHED BOUNDS AND BENCH MARKS AND REPLACE AS DIRECTED ANY WHICH ARE DESTROYED OR DISTURBED.
5. CONTRACTOR IS RESPONSIBLE FOR ALL DAMAGE DUE TO OPERATIONS OUTSIDE OF THE CONSTRUCTION LIMIT LINE. CONTRACTOR SHALL MEET LINE AND GRADE OF EXISTING CONDITIONS AT THE CONSTRUCTION LIMIT LINE. SEE SPECIFICATIONS FOR REQUIREMENTS REGARDING THE MAINTENANCE AND PROTECTION OF EXISTING UTILITIES INSIDE AND OUTSIDE THE CONTRACT LIMIT LINE. CONTRACTOR IS RESPONSIBLE FOR ALL DAMAGE DUE TO OPERATIONS INSIDE AND OUTSIDE OF THE CONSTRUCTION LIMIT LINE.
6. PROVIDE EXPANSION JOINTS IN BASE SLABS, AT ALL BUILDINGS, CURBS, WALLS, LIGHT POLE BASES, PULL BOXES, MANHOLES, TRAFFIC CONTROLLER BOXES AND/OR AS SHOWN ON THE DRAWINGS.
7. PROVIDE TREE PROTECTION FENCING AT AROUND ALL TREES TO REMAIN. CONTRACTOR SHALL MEET WITH LANDSCAPE ARCHITECT PRIOR TO REMOVING TREES WITHIN CONSTRUCTION LIMIT LINE.

LAYOUT NOTES

1. CONSULT ALL DRAWINGS AND SPECIFICATIONS FOR COORDINATION REQUIREMENTS BETWEEN ALL TRADES PRIOR TO COMMENCING NEW CONSTRUCTION.
2. CONTRACTOR SHALL VERIFY ALL CONDITIONS IN THE FIELD AND REPORT ANY AND ALL DISCREPANCIES TO THE OWNER'S REPRESENTATIVE. ANY ALTERATIONS TO THESE DRAWINGS MADE IN THE FIELD SHALL BE PROMPTLY REPORTED BY THE CONTRACTOR TO THE OWNER'S REPRESENTATIVE AND RECORDED ON DRAWINGS.
3. EXPANSION JOINTS AT ALL VERTICAL INTERFACES, CHANGES OF MATERIALS, CONCRETE COLORS, EVERY 20' O.C., OR AS SHOWN ON THE DRAWINGS.
4. NO PAVER CUT TO BE LESS THAN 4", LENGTHEN PREVIOUS PAVER IN SEQUENCE IF NECESSARY. PROVIDE SHOP DRAWING SHOWING THIS.

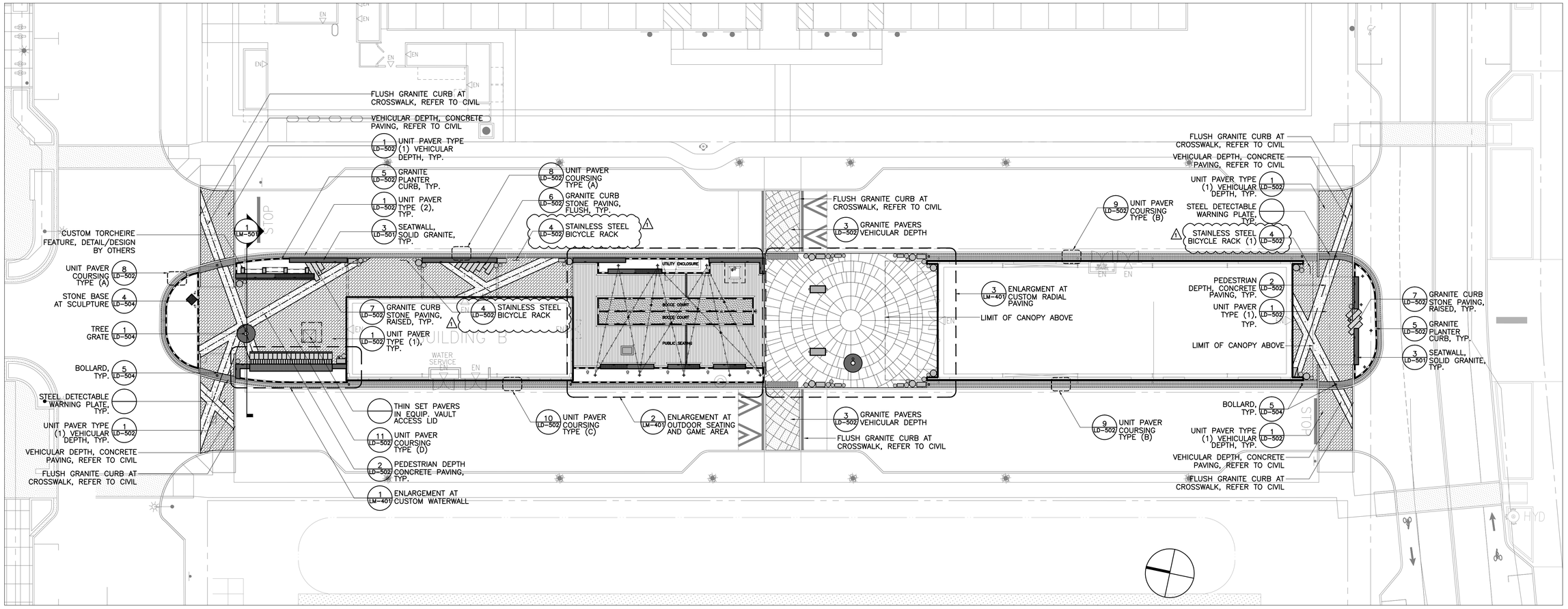
PLANTING NOTES

1. THE CONTRACTOR SHALL SUPPLY ALL PLANT MATERIAL IN QUANTITIES SUFFICIENT TO COMPLETE THE PLANTING SHOWN ON DRAWINGS.
2. ALL PLANT MATERIAL SHALL CONFORM TO THE GUIDELINES ESTABLISHED BY "THE AMERICAN STANDARD FOR NURSERY STOCK", PUBLISHED BY THE AMERICAN ASSOCIATION OF NURSERYMEN.
3. ALL TREES TO BE TAGGED AT AN APPROVED NURSERY BY THE LANDSCAPE ARCHITECT PRIOR TO DELIVERY TO THE SITE.
4. STAKE LOCATION OF ALL PROPOSED PLANT MATERIAL FOR THE APPROVAL OF THE LANDSCAPE ARCHITECT PRIOR TO THE BEGINNING OF PLANTING.
5. ALL TREES AND SHRUBS SHALL BEAR THE SAME RELATIONSHIP TO GRADE AS TO THE ORIGINAL GRADE BEFORE DIGGING.
6. THE CONTRACTOR MUST BE EXTREMELY CAUTIOUS WHILE PLANTING IN ORDER TO AVOID DAMAGING EXISTING OR PROPOSED UTILITIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY SUCH DAMAGE TO UTILITIES.
7. ALL PLANT BEDS FOR MASSED SHRUBS OR GROUNDCOVER PLANTING SHALL RECEIVE A CONTINUOUS OVERALL APPLICATION OF BARK MULCH AS SPECIFIED.
8. ALL DISTURBED AREAS TO RECEIVE LOAM (6" MINIMUM DEPTH) AND SEED UNLESS OTHERWISE INDICATED.
9. ALL NEW PLANT BEDS AND SEEDED GRASS ARE TO RECEIVE A MINIMUM DEPTH OF LOAM.
10. INSTALL EROSION CONTROL MATTING ON ALL SLOPES GREATER THAN 3:1.
11. PLAN SYMBOLS AND AREAS SUPERCEDE SCHEDULE WHEN DISCREPANCIES IN QUANTITY OCCUR.
12. REFER TO SHEET 43 FOR PLANT SCHEDULE.
13. PROVIDE IRRIGATION COVERAGE TO ALL PLANTED AREAS.

GRADING NOTES

1. CONSULT ALL DRAWINGS AND SPECIFICATIONS FOR COORDINATION REQUIREMENTS BETWEEN ALL TRADES BEFORE COMMENCING NEW CONSTRUCTION. CONTRACTOR SHALL NOTIFY OWNER'S REPRESENTATIVE IMMEDIATELY OF ANY AND ALL CONFLICTS BETWEEN PROPOSED SITE WORK AND WORK OF ALL OTHER TRADES.
2. CONTRACTOR SHALL VERIFY ALL CONDITIONS IN THE FIELD AND REPORT ANY DISCREPANCIES TO THE OWNER'S REPRESENTATIVE PRIOR TO COMMENCING WORK. ANY ALTERATIONS TO THESE DRAWINGS MADE IN THE FIELD SHALL BE PROMPTLY REPORTED BY THE CONTRACTOR TO THE OWNER'S REPRESENTATIVE FOR REVIEW AND APPROVAL AND RECORDED ON RECORD DRAWINGS.
3. CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIRING DAMAGE INSIDE AND OUTSIDE THE LIMIT OF WORK LINE DUE TO CONTRACT OPERATIONS. CONTRACTOR SHALL RESTORE DAMAGED AREAS BEYOND CONTRACT LIMITS TO THEIR ORIGINAL CONDITION AT NO ADDITIONAL COST TO THE OWNER.
4. LOCATION OF EXISTING ABOVEGROUND AND UNDERGROUND UTILITIES SHOWN ON THIS PLAN ARE DIAGRAMMATIC ONLY AND DO NOT REPRESENT ACCURATE LOCATIONS. THE CONTRACTOR SHALL CONTACT THE CITY OF BOSTON AND DIGSAFE TO CONFIRM THE LOCATIONS OF ALL EXISTING UTILITES BEFORE COMMENCING WORK. ANY DAMAGE DUE TO THE FAILURE OF THE CONTRACTOR TO CONTACT AUTHORITIES SHALL BE BORN BY THE CONTRACTOR. THE CONTRACTOR SHALL REPAIR ANY DAMAGE INCURRED DURING CONSTRUCTION TO EXISTING UTILITIES SCHEDULED TO REMAIN AT NO COST TO THE OWNER.
5. PITCH EVENLY BETWEEN SPOT GRADES. ALL PAVING AREAS MUST PITCH TO DRAIN AT MIN. PITCH OF 1/8" PER FOOT UNLESS OTHERWISE SHOWN. REPORT ANY DISCREPANCIES BETWEEN EXISTING AND PROPOSED SPOT GRADES THAT DO NOT PITCH ACCORDINGLY TO THE OWNER'S REPRESENTATIVE BEFORE COMMENCING WORK.
6. WHERE NEW PAVING MEETS EXISTING PAVING, MEET LINE AND GRADE OF EXISTING SMOOTHLY WITH NEW CONSTRUCTION.
7. EXCAVATION ADJACENT TO EXISTING AND PROPOSED UTILITY LINES AND EXISTING TREES SHALL BE DONE BY HAND. CONTRACTOR SHALL PROTECT ALL EXPOSED UTILITIES.
8. CONTRACTOR SHALL PROTECT EXISTING UTILITIES, EXISTING STRUCTURES, IMPROVEMENTS, APPURTENANCES AND VEGETATION TO REMAIN. CONTRACTOR SHALL REPAIR ANY DAMAGE INCURRED AT NO COST TO OWNER.
9. CONTRACTOR SHALL COMPLY WITH ALL REQUIREMENTS OF PERMITS AND LICENSEES ISSUED BY THE FEDERAL, STATE AND LOCAL AGENCIES.
10. CONTRACTOR SHALL COORDINATE ALL SITE UTILITY IMPROVEMENTS WITH THE PROPER AUTHORITIES.
11. MAINTAIN A MAXIMUM OF 2.0% CROSS SLOPE ON ALL PAVED PATHWAYS, UNLESS OTHERWISE NOTED.
12. ALL MANHOLES, DRAINAGE STRUCTURES, STEAM MANHOLES, ELECTRIC MANHOLE FRAMES AND COVERS WITHIN THE PROJECT WORK AREA SHALL BE ADJUSTED TO FINISH GRADES UNLESS OTHERWISE NOTED.
13. PROPOSED TOP OF CURB SPOT ELEVATIONS PROVIDED BY CIVIL ENGINEER

ASSEMBLY ROW AT ASSEMBLY SQUARE
PHASE 2 ROADWAY AND STREETSCAPE
ASSEMBLY LINE PARK
MATERIALS PLAN
LM-101 SHEET 59 OF 79



MATERIALS PLAN

SCALE: 1/16" = 1'-0"

32' 16' 8' 0 16' 32'

GENERAL NOTES

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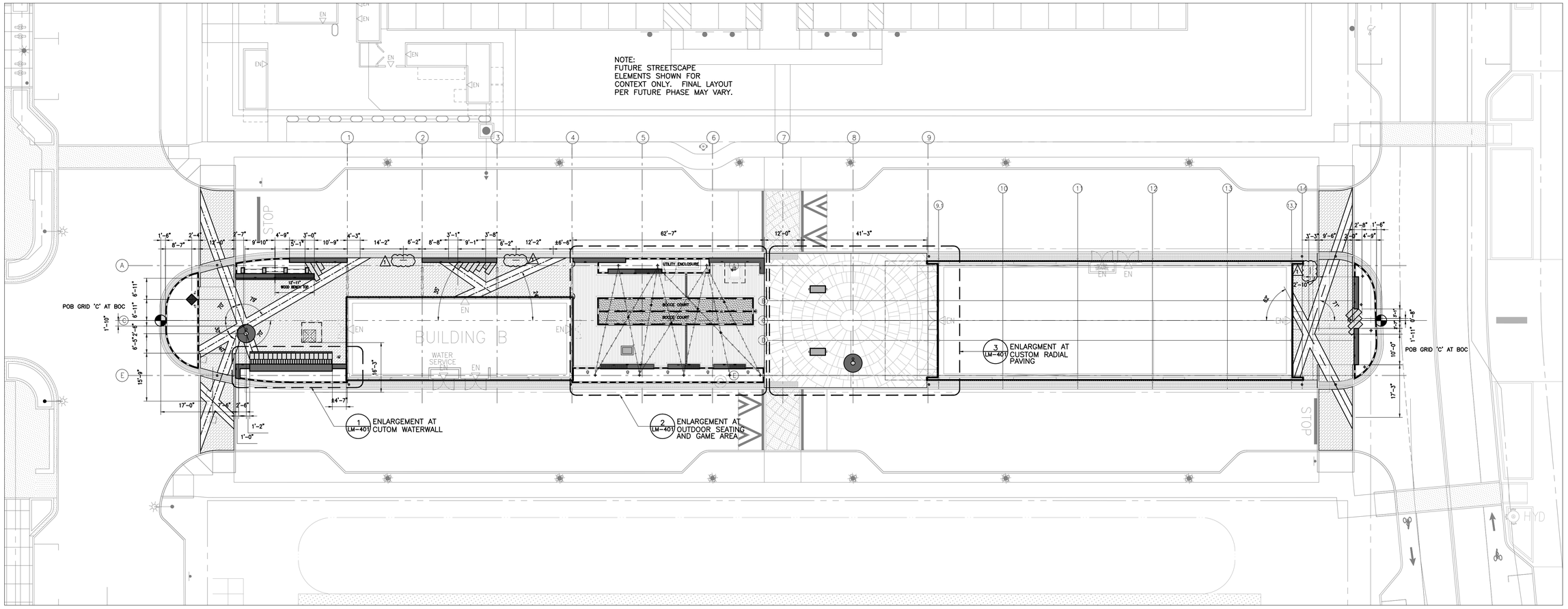
7. PROVIDE TREE PROTECTION FENCING AT AROUND ALL TREES TO REMAIN. CONTRACTOR SHALL MEET WITH LANDSCAPE ARCHITECT PRIOR TO REMOVING TREES WITHIN CONSTRUCTION LIMIT LINE.

MATERIALS LEGEND

- UNIT PAVER TYPE (1)
- UNIT PAVER TYPE (2)
- CONCRETE PAVING
- WOOD DECKING
- ADA DETECTABLE WARNING PLATE
- STONE DUST BOCCE COURT SURFACE AND BASE
- GRANITE CURB STONE PAVING, RAISED
- GRANITE CURB STONE PAVING, FLUSH
- GRANITE PLANTER CURB
- GRANITE CURB AT BOCCE COURT
- SEATWALL, SOLID GRANITE
- SEATWALL, SOLID GRANITE WITH WOOD BENCH TOP ELEMENT
- TREE GRATE
- PLANTERS, (A), (B) AND (C)

ASSEMBLY ROW AT ASSEMBLY SQUARE
PHASE 2 ROADWAY AND STREETSCAPE
ASSEMBLY LINE PARK
MATERIALS PLAN
LL–101 SHEET 60 OF 79



LAYOUT PLAN

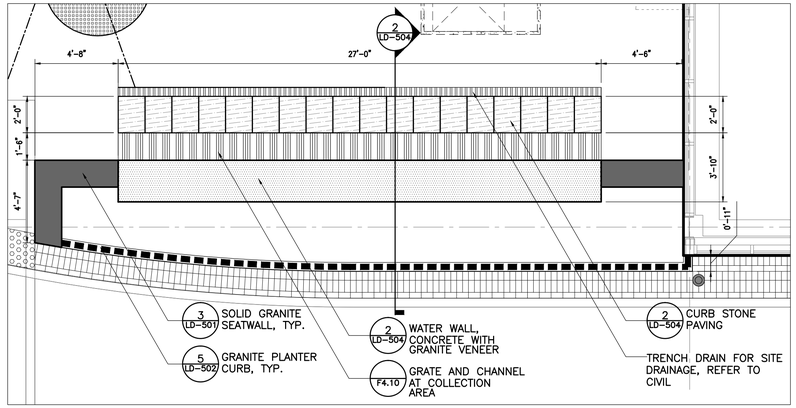
SCALE: 1/16" = 1'–0"

32' 16' 8' 0 16' 32'

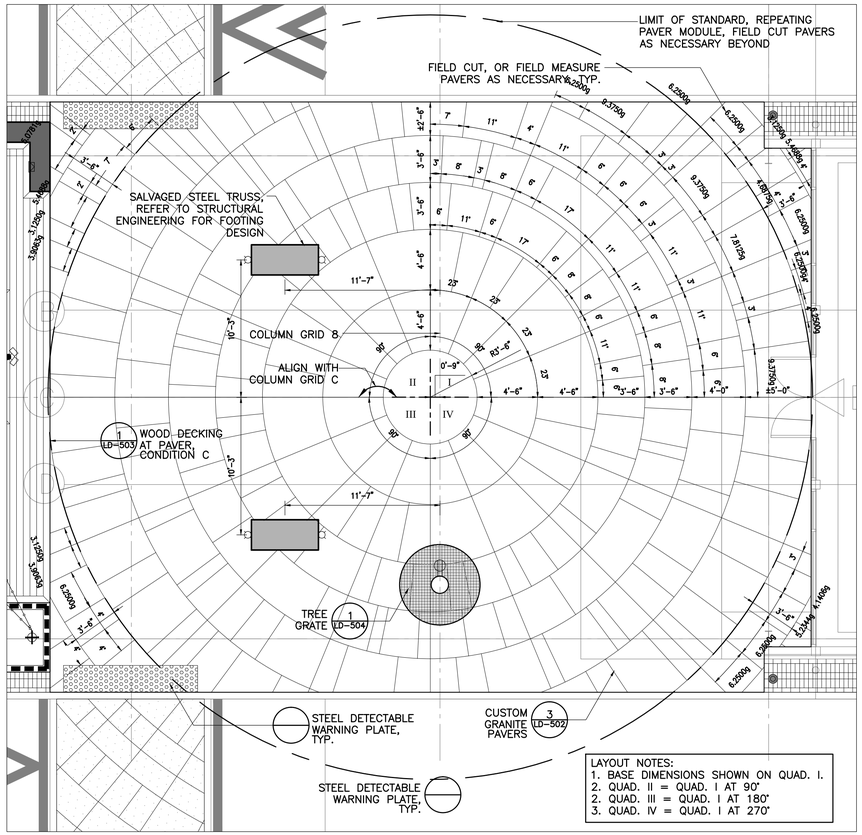
LAYOUT NOTES

1. CONSULT ALL DRAWINGS AND SPECIFICATIONS FOR COORDINATION REQUIREMENTS BETWEEN ALL TRADES PRIOR TO COMMENCING NEW CONSTRUCTION.
2. CONTRACTOR SHALL VERIFY ALL CONDITIONS IN THE FIELD AND REPORT ANY AND ALL DISCREPANCIES TO THE OWNER'S REPRESENTATIVE. ANY ALTERATIONS TO THESE DRAWINGS MADE IN THE FIELD SHALL BE PROMPTLY REPORTED BY THE CONTRACTOR TO THE OWNER'S REPRESENTATIVE AND RECORDED ON DRAWINGS.
3. EXPANSION JOINTS AT ALL VERTICAL INTERFACES, CHANGES OF MATERIALS, CONCRETE COLORS, EVERY 20' O.C., OR AS SHOWN ON THE DRAWINGS.
4. NO PAVER CUT TO BE LESS THAN 4", LENGTHEN PREVIOUS PAVER IN SEQUENCE IF NECESSARY. PROVIDE SHOP DRAWING SHOWING THIS.

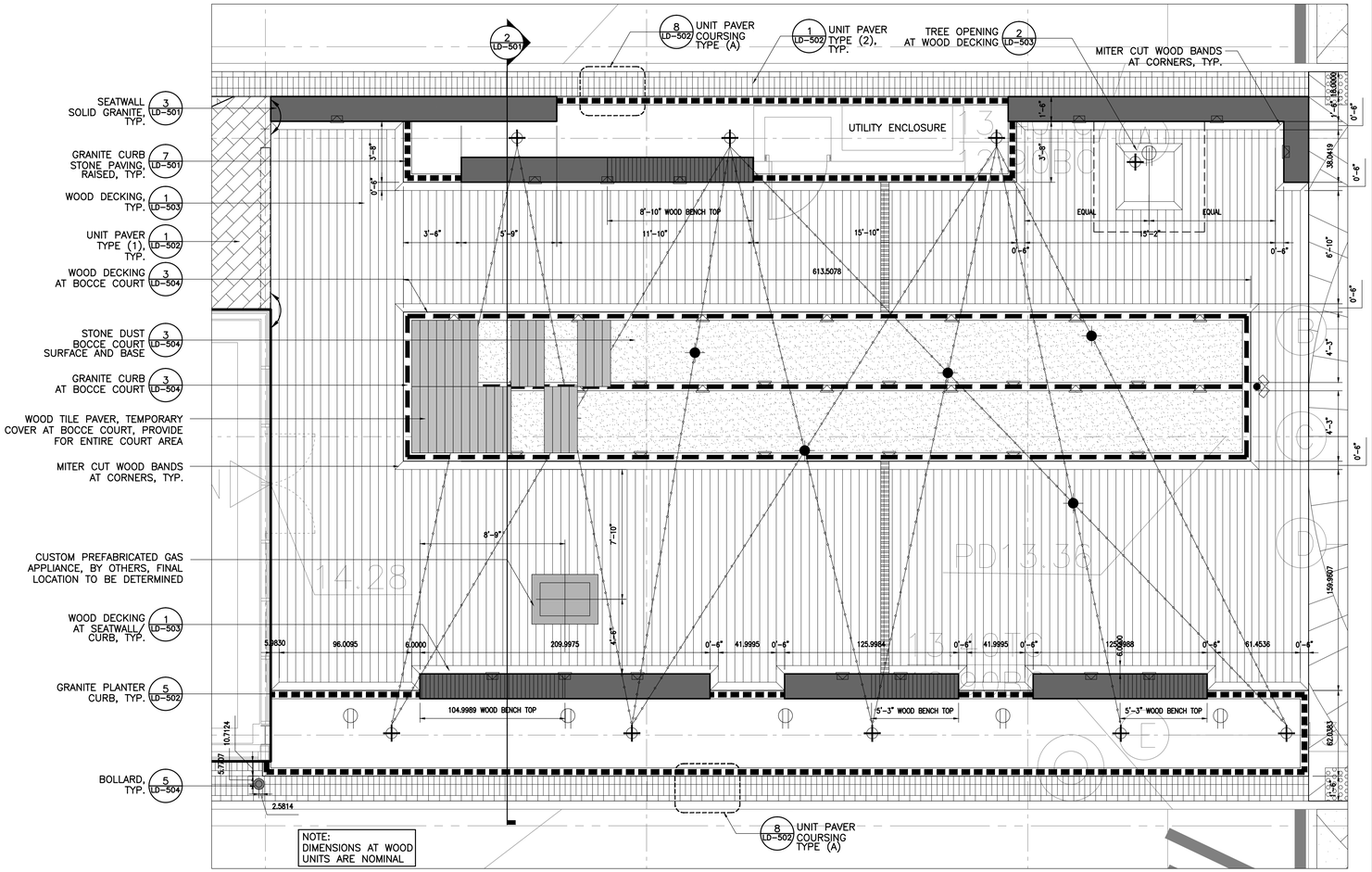
ASSEMBLY ROW AT ASSEMBLY SQUARE
PHASE 2 ROADWAY AND STREETSCAPE
ASSEMBLY LINE PARK
ENLARGEMENT PLANS
LM-401 SHEET 61 OF 79



1 ENLARGEMENT AT CUSTOM WATERWALL
SCALE: 1/4" = 1'-0"
8' 4' 2' 0 4' 8'

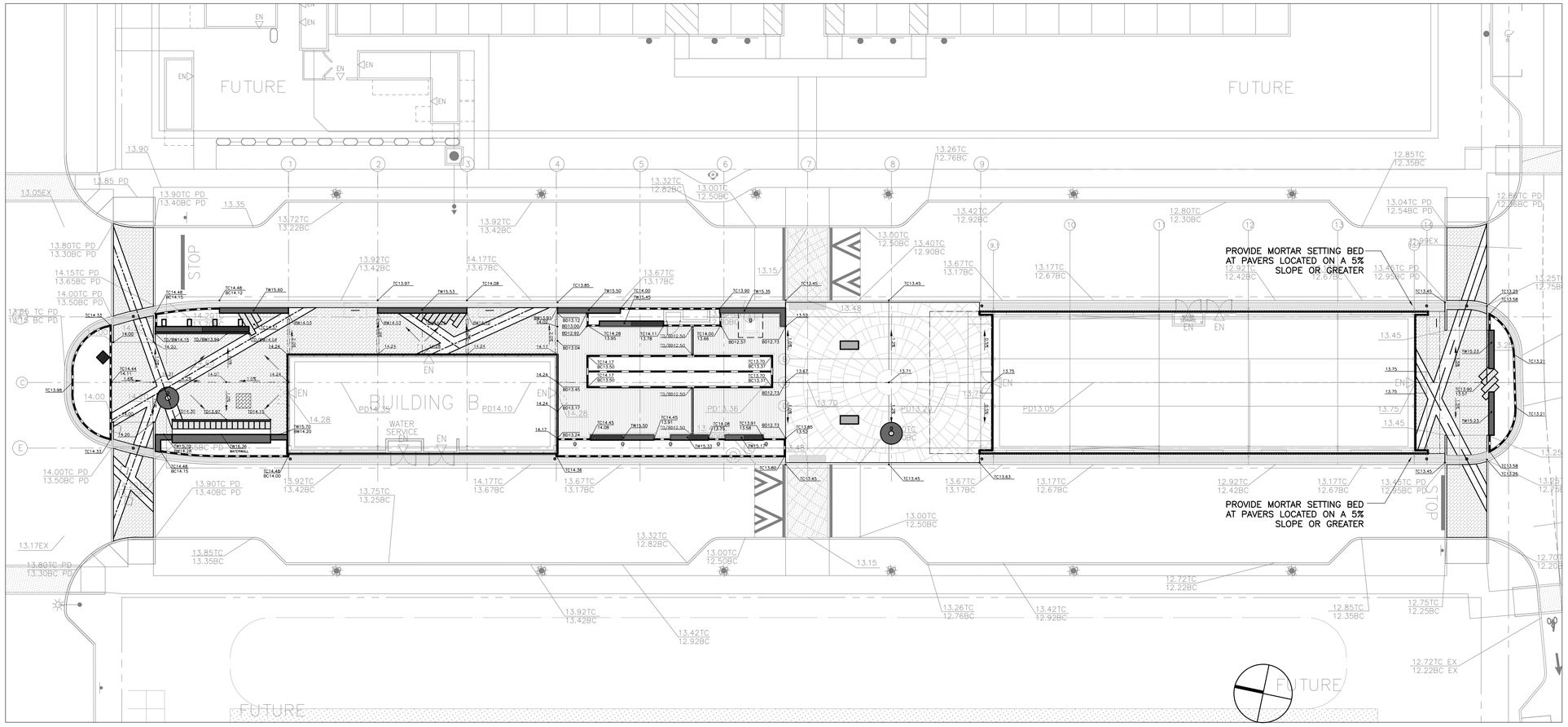


3 ENLARGEMENT CUSTOM RADIAL PAVING
SCALE: 3/16" = 1'-0"



2 ENLARGEMENT AT OUTDOOR SEATING AND GAME AREA
SCALE: 1/4" = 1'-0"
8' 4' 2' 0 4' 8'

ASSEMBLY ROW AT ASSEMBLY SQUARE
PHASE 2 ROADWAY AND STREETSCAPE
ASSEMBLY LINE PARK
FINE GRADING PLAN
LG-101 SHEET 62 OF 79



FINE GRADING PLAN (PRELIMINARY)

SCALE: 1/16" = 1'-0"

32' 16' 8' 0 16' 32'

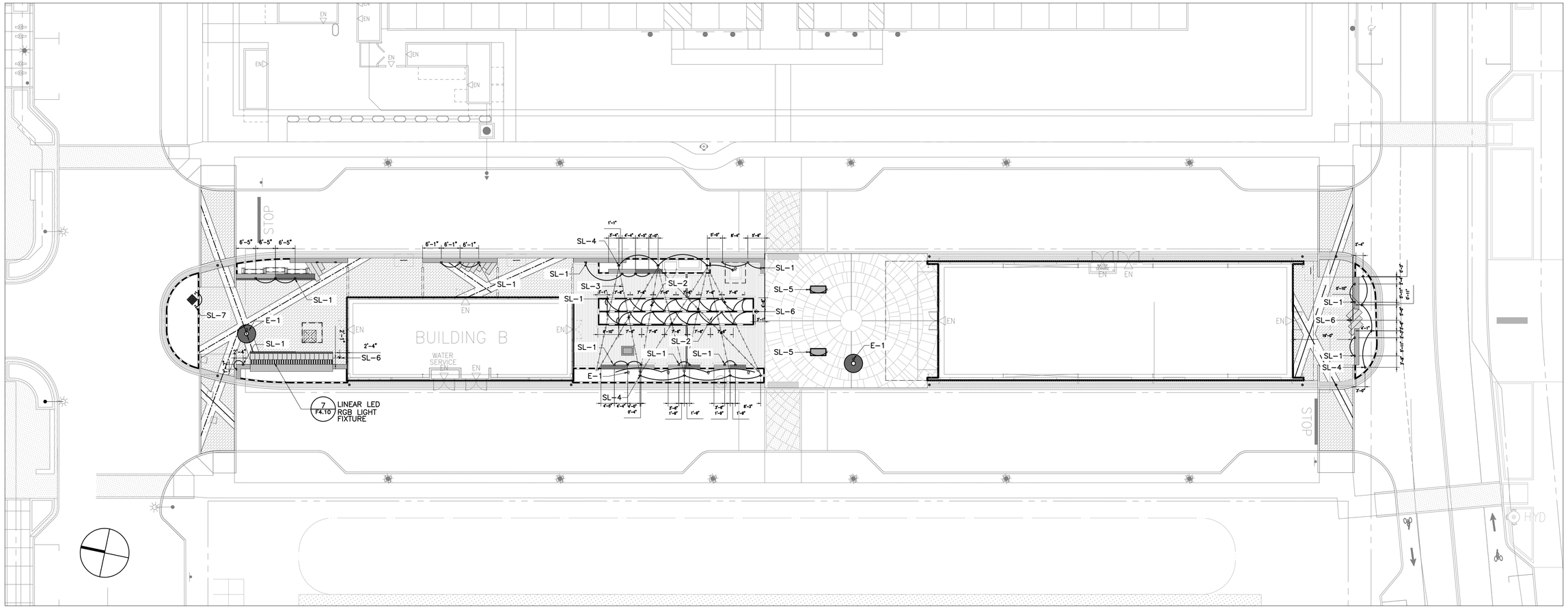
GRADING NOTES

1. CONSULT ALL DRAWINGS AND SPECIFICATIONS FOR COORDINATION REQUIREMENTS BETWEEN ALL TRADES BEFORE COMMENCING NEW CONSTRUCTION. CONTRACTOR SHALL NOTIFY OWNER'S REPRESENTATIVE IMMEDIATELY OF ANY AND ALL CONFLICTS BETWEEN PROPOSED SITE WORK AND WORK OF ALL OTHER TRADES.
2. CONTRACTOR SHALL VERIFY ALL CONDITIONS IN THE FIELD AND REPORT ANY DISCREPANCIES TO THE OWNER'S REPRESENTATIVE PRIOR TO COMMENCING WORK. ANY ALTERATIONS TO THESE DRAWINGS MADE IN THE FIELD SHALL BE PROMPTLY REPORTED BY THE CONTRACTOR TO THE OWNER'S REPRESENTATIVE FOR REVIEW AND APPROVAL AND RECORDED ON RECORD DRAWINGS.
3. CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIRING DAMAGE INSIDE AND OUTSIDE THE LIMIT OF WORK LINE DUE TO CONTRACT OPERATIONS. CONTRACTOR SHALL RESTORE DAMAGED AREAS BEYOND CONTRACT LIMITS TO THEIR ORIGINAL CONDITION AT NO ADDITIONAL COST TO THE OWNER.
4. LOCATION OF EXISTING ABOVEGROUND AND UNDERGROUND UTILITIES SHOWN ON THIS PLAN ARE DIAGRAMMATIC ONLY AND DO NOT REPRESENT ACCURATE LOCATIONS. THE CONTRACTOR SHALL CONTACT THE CITY OF BOSTON AND DIGSAFE TO CONFIRM THE LOCATIONS OF ALL EXISTING UTILITES BEFORE COMMENCING WORK. ANY DAMAGE DUE TO THE FAILURE OF THE CONTRACTOR TO CONTACT AUTHORITIES SHALL BE BORN BY THE CONTRACTOR. THE CONTRACTOR SHALL REPAIR ANY DAMAGE INCURRED DURING CONSTRUCTION TO EXISTING UTILITIES SCHEDULED TO REMAIN AT NO COST TO THE OWNER.
5. PITCH EVENLY BETWEEN SPOT GRADES. ALL PAVING AREAS MUST PITCH TO DRAIN AT MIN. PITCH OF 1/8" PER FOOT UNLESS OTHERWISE SHOWN. REPORT ANY DISCREPANCIES BETWEEN EXISTING AND PROPOSED SPOT GRADES THAT DO NOT PITCH ACCORDINGLY TO THE OWNER'S REPRESENTATIVE BEFORE COMMENCING WORK.
6. WHERE NEW PAVING MEETS EXISTING PAVING, MEET LINE AND GRADE OF EXISTING SMOOTHLY WITH NEW CONSTRUCTION.
7. EXCAVATION ADJACENT TO EXISTING AND PROPOSED UTILITY LINES AND EXISTING TREES SHALL BE DONE BY HAND. CONTRACTOR SHALL PROTECT ALL EXPOSED UTILITIES.
8. CONTRACTOR SHALL PROTECT EXISTING UTILITIES, EXISTING STRUCTURES, IMPROVEMENTS, APPURTENANCES AND VEGETATION TO REMAIN. CONTRACTOR SHALL REPAIR ANY DAMAGE INCURRED AT NO COST TO OWNER.
9. CONTRACTOR SHALL COMPLY WITH ALL REQUIREMENTS OF PERMITS AND LICENSEES ISSUED BY THE FEDERAL, STATE AND LOCAL AGENCIES.
10. CONTRACTOR SHALL COORDINATE ALL SITE UTILITY IMPROVEMENTS WITH THE PROPER AUTHORITIES.
11. MAINTAIN A MAXIMUM OF 2.0% CROSS SLOPE ON ALL PAVED PATHWAYS, UNLESS OTHERWISE NOTED.
12. ALL MANHOLES, DRAINAGE STRUCTURES, STEAM MANHOLES, ELECTRIC MANHOLE FRAMES AND COVERS WITHIN THE PROJECT WORK AREA SHALL BE ADJUSTED TO FINISH GRADES UNLESS OTHERWISE NOTED.
13. PROPOSED TOP OF CURB SPOT ELEVATIONS PROVIDED BY CIVIL ENGINEER

GRADING LEGEND

2% →	DIRECTION OF PROPOSED SLOPE	TC	TOP OF CURB
14	EXISTING CONTOUR (1.0 FOOT CONTOUR)	BC	BOTTOM OF CURB
14	PROPOSED CONTOUR (1.0 FOOT CONTOUR)	TW	TOP OF WALL
X 10.0	EXISTING SPOT ELEVATION	BW	BOTTOM OF WALL
10.00	PROPOSED SPOT ELEVATION	BD	BELOW DECKING
	RIDGE LINE	TD	TRENCH DRAIN, PER CIVIL
		HP	HIGH POINT
		LP	LOW POINT

ASSEMBLY ROW AT ASSEMBLY SQUARE
PHASE 2 ROADWAY AND STREETSCAPE
ASSEMBLY LINE PARK
SITE LIGHTING COORDINATION PLAN
LT–101 SHEET 63 OF 79



MATERIALS PLAN

SCALE: 1/16" = 1'–0"

32' 16' 8' 0 16' 32'

REFLEXLIGHTING

7 Tide Street, Boston MA, 02210 TEL: 617-269-4510 www.reflexlighting.com

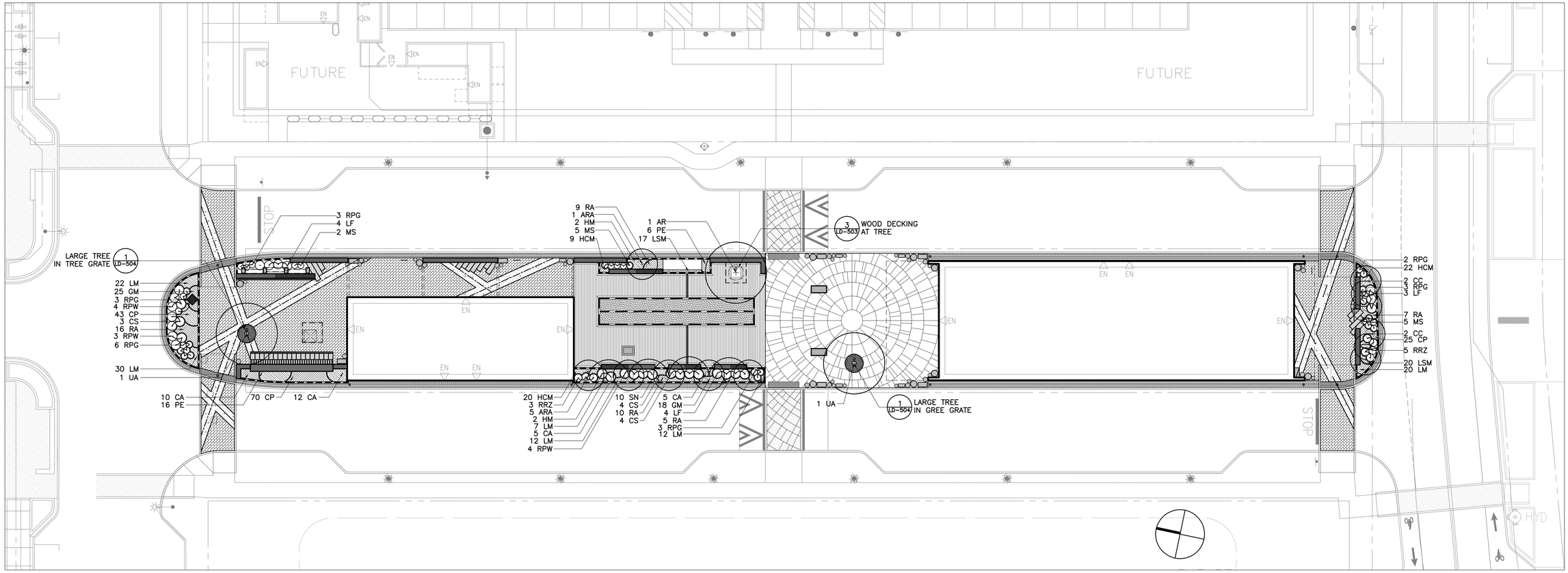
PROJECT: Assembly Row **ARCHITECT: Copley Wolff**
LOCATION: **ENGINEER:**

TYPE	MANUFACTURER	CATALOG NUMBER	LAMPS			MOUNTING	NOTES/REMARKS
			QTY	TYPE	VOLTS		
SL-1	Amerlux	PSLT8-SS-F30	1	3000K LED		Recessed	Step Light
SL-2	Lumiere	213-10LED3041-12-XX	1	3000K LED		Pendant/Hanging	Architect to select finish
SL-3	Tivoli	LSL-B-XX-WW-C-12V-PSU	1	Warm White		Strand Lighting	Architect to select fixture spacing
SL-4	Amerlux	FL1-MFL-30-BLK-EGS-PMBS-2-18-DM	1	3000K LED		Pole Mounted	Flood light under tree canopy. Pole mounted. 2 per pole.
SL-5	Lumiere	3002A-RD-18LED3000K-WFL-CLR-UNV-XX	1	3000K LED		Recessed In-Grade	Architect to select finish. Architect to select glass option
SL-6	Selux	Olivio Series OLM-FM-HO70-3000K-SSX-BK-120	1	3000K LED		Site Lighting	
SL-7	Lumiere	203-10LED3041-12-XX	1	3000K LED		Uplight	Architect to select finish
POLE	ULS	Pole to accommodate Amerlux flood lighting & Tivoli strand lighting					Specify pole height

LIGHT AND ELECTRICAL FIXTURE COORDINATION LEGEND

- FLUSH MOUNT WALL/STEP FIXTURE (SL–1)
- PENDANT FIXTURE, ATTACHED TO STRAND LIGHTING (SL–2)
- STRAND FIXTURE, ATTACHED TO POLE/UP–LIGHT (SL–3)
- POLE/UP–LIGHT FIXTURE (SL–4)
- FLUSH, IN–GRADE FIXTURE (SL–5)
- POLE WITH ARM MOUNT FIXTURE (SL–6)
- UP–LIGHT FIXTURE (SL–7)
- EXTERIOR ELECTRICAL RECEPTACLE (E–1) LOCATE AT TREE

ASSEMBLY ROW AT ASSEMBLY SQUARE
PHASE 2 ROADWAY AND STREETSCAPE
ASSEMBLY LINE PARK
PLANTING PLAN
LP–101 SHEET 64 OF 79



PLANTING PLAN

SCALE: 1/16" = 1'–0"

32' 16' 8' 0 16' 32'

Symbol	Quantity	Scientific Name	Common Name	Size	Comments
Trees					
ARA	6	*Acer rubrum 'Armstrong'*	Armstrong Maple	5" - 5 1/2" Cal	B&B Matched
AR	1	*Acer rubrum'Franksred'*	Red Sunset Maple	4" - 4 1/2" Cal.	B&B Matched
CC	4	*Cercis canadensis*	Eastern Redbud	3 1/2" - 4" Cal.	B&B Matched
UA	2	*Ulmus americana 'Princeton'*	Princeton Elm	5" - 5 1/2" Cal	B&B Matched
Shrubs					
CS	7	*Cornus stolonifera 'Farrow'*	Arctic Fire Dogwood	5 Gal.	36" o.c.
HM	4	*Hydrangea macrophylla 'Bailmer'*	Endless Summer Hydrangea	5 Gal.	36" o.c.
LF	11	*Leucothoe fontanesiana 'Rollisonii'*	Rollison Leucothoe	3 Gal.	36" o.c.
RPG	20	*Rhododendron 'Purple Gem'*	Purple Gem Rhododendron	3 Gal.	24" o.c.
RPW	11	*Rhododendron 'Percy Wiseman'*	Percy Wiseman Rhododendron	3 Gal.	36" o.c.
RRZ	8	*Rosa 'Radrazz'*	Knockout Rose	3 Gal.	30" o.c.
Perennials, grasses, Goundcovers and Vines					
CA	32	*Calamagrostis x acutiflora 'Karl Foerster'*	Foerster's Feather Reed Grass	3 Gal.	18" o.c.
CP	138	*Carex pensylvanica*	Pennsylvania Sedge	1 Gal.	10" o.c.
GM	43	*Geranium species mix*	Geranium Mix		
		Geranium cinereum 'Laurence Flatman'	Grayleaf Geranium	1 Gal.	10" o.c.
		Geranium macroorrhizum 'Bevens Variety'	Bigroot Geranium	1 Gal.	10" o.c.
HCM	51	*Hermerocallis species Mix*	Daylily Mix		
		Hermerocallis 'Happy Returns'	Daylily	1 Gal.	10" o.c.
		Hemerocallis 'Buttered Popcorn'	Daylily	1 Gal.	10" o.c.
		Hemerocallis 'Little Grapette	Daylily	1 Gal.	10" o.c.
LM	103	*Liriope muscari*	Lily Turf	1 Gal.	10" o.c.
LSM	37	*Leucanthemum species Mix*	Shasta Daisy Mix		
		Leucanthemum x superbum 'Broadway Lights'	Shasta Daisy	1 Gal.	10" o.c.
		Leucanthemum x superbum 'Snow Lady'	Shasta Daisy	1 Gal.	10" o.c.
MS	12	*Miscanthus sinensis 'Little Kitten'*	Maiden Grass	3 Gal.	24" o.c.
PE	22	*Pennisetum alopecuriodes 'Hameln'*	Dwarf Fountain Grass	1 Gal.	18" o.c.
RA	47	*Rhus aromatica 'Gro-low'*	Gro-low Sumac	2 Gal.	18" o.c.
SN	10	*Salvia nemorosa 'May Night'*	May Night Meadow Sage	1 Gal.	12" o.c.

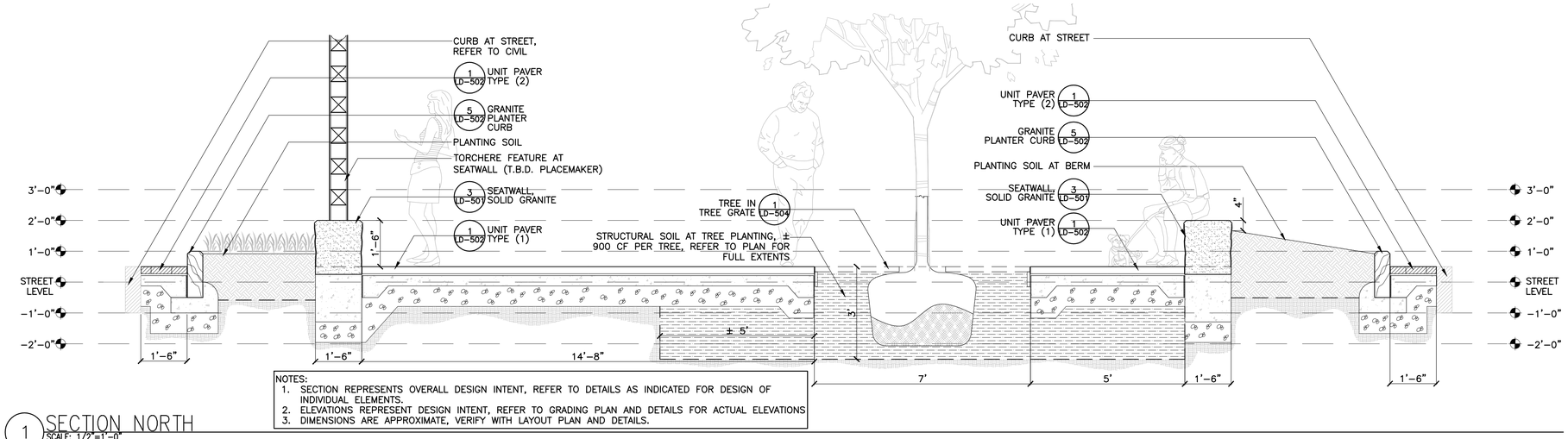
PLANTING LEGEND

- LAWN
- GROUNDCOVER/ PERENNIAL/ORNAMENTAL GRASS
- SHRUB, SIZE VARIES
- CANOPY/SHADE TREE
- EXISTING TREE TO REMAIN

PLANTING NOTES

1. THE CONTRACTOR SHALL SUPPLY ALL PLANT MATERIAL IN QUANTITIES SUFFICIENT TO COMPLETE THE PLANTING SHOWN ON DRAWINGS.
2. ALL PLANT MATERIAL SHALL CONFORM TO THE GUIDELINES ESTABLISHED BY "THE AMERICAN STANDARD FOR NURSERY STOCK", PUBLISHED BY THE AMERICAN ASSOCIATION OF NURSERYMEN.
3. ALL TREES TO BE TAGGED AT AN APPROVED NURSERY BY THE LANDSCAPE ARCHITECT PRIOR TO DELIVERY TO THE SITE.
4. STAKE LOCATION OF ALL PROPOSED PLANT MATERIAL FOR THE APPROVAL OF THE LANDSCAPE ARCHITECT PRIOR TO THE BEGINNING OF PLANTING.
5. ALL TREES AND SHRUBS SHALL BEAR THE SAME RELATIONSHIP TO GRADE AS TO THE ORIGINAL GRADE BEFORE DIGGING.
6. THE CONTRACTOR MUST BE EXTREMELY CAUTIOUS WHILE PLANTING IN ORDER TO AVOID DAMAGING EXISTING OR PROPOSED UTILITIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY SUCH DAMAGE TO UTILITIES.
7. ALL PLANT BEDS FOR MASSED SHRUBS OR GROUNDCOVER PLANTING SHALL RECEIVE A CONTINUOUS OVERALL APPLICATION OF BARK MULCH AS SPECIFIED.
8. ALL DISTURBED AREAS TO RECEIVE LOAM (6" MINIMUM DEPTH) AND SEED UNLESS OTHERWISE INDICATED.
9. ALL NEW PLANT BEDS AND SEEDED GRASS ARE TO RECEIVE A MINIMUM DEPTH OF LOAM.
10. INSTALL EROSION CONTROL MATTING ON ALL SLOPES GREATER THAN 3:1.
11. PLAN SYMBOLS AND AREAS SUPERCEDE SCHEDULE WHEN DISCREPANCIES IN QUANTITY OCCUR.
12. REFER TO SHEET 43 FOR PLANT SCHEDULE.
13. PROVIDE IRRIGATION COVERAGE TO ALL PLANTED AREAS.

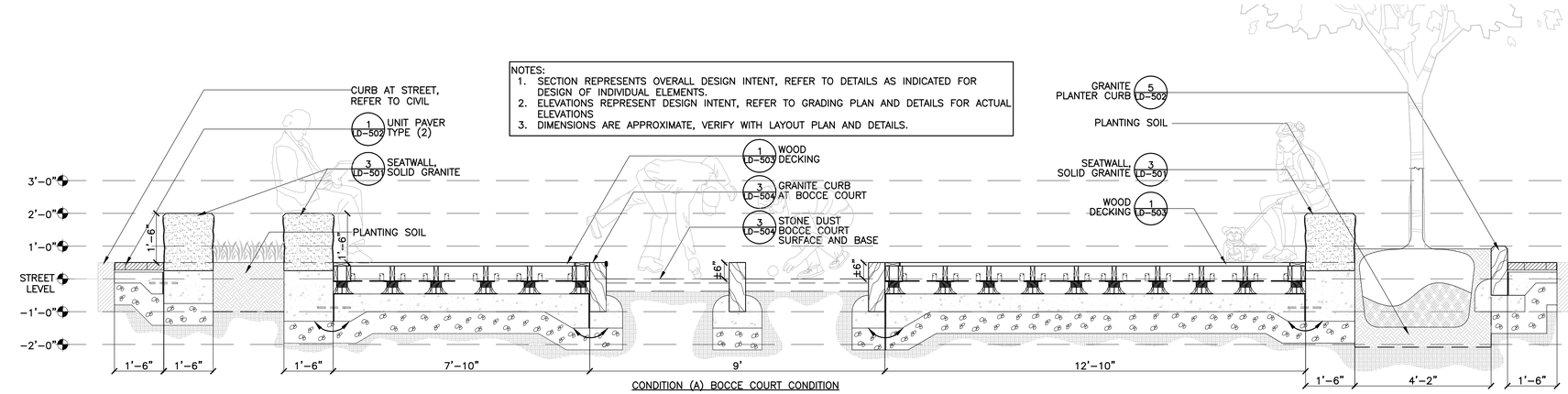
ASSEMBLY ROW AT ASSEMBLY SQUARE
PHASE 2 ROADWAY AND STREETSCAPE
ASSEMBLY LINE PARK
SITE DETAILS
LD–501 SHEET 65 OF 79



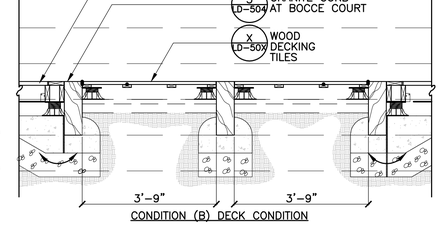
NOTES:
1. SECTION REPRESENTS OVERALL DESIGN INTENT, REFER TO DETAILS AS INDICATED FOR DESIGN OF INDIVIDUAL ELEMENTS.
2. ELEVATIONS REPRESENT DESIGN INTENT, REFER TO GRADING PLAN AND DETAILS FOR ACTUAL ELEVATIONS
3. DIMENSIONS ARE APPROXIMATE, VERIFY WITH LAYOUT PLAN AND DETAILS.

1 SECTION NORTH
SCALE: 1/2"=1'–0"

NOTES:
1. SECTION REPRESENTS OVERALL DESIGN INTENT, REFER TO DETAILS AS INDICATED FOR DESIGN OF INDIVIDUAL ELEMENTS.
2. ELEVATIONS REPRESENT DESIGN INTENT, REFER TO GRADING PLAN AND DETAILS FOR ACTUAL ELEVATIONS
3. DIMENSIONS ARE APPROXIMATE, VERIFY WITH LAYOUT PLAN AND DETAILS.

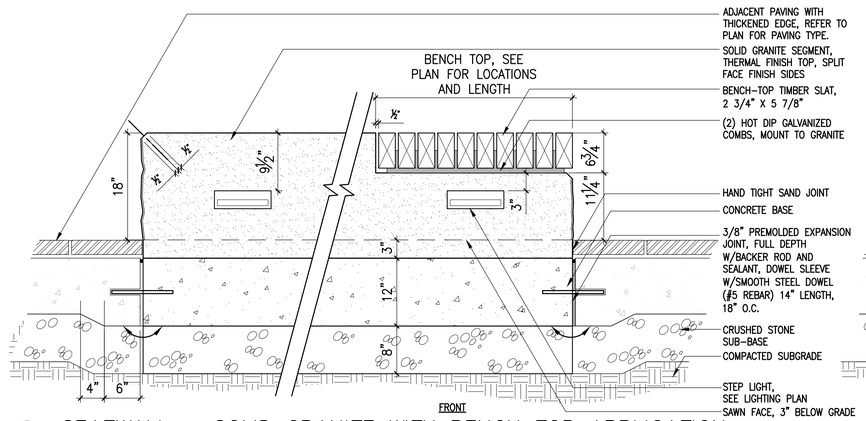


CONDITION (A) BOCCE COURT CONDITION

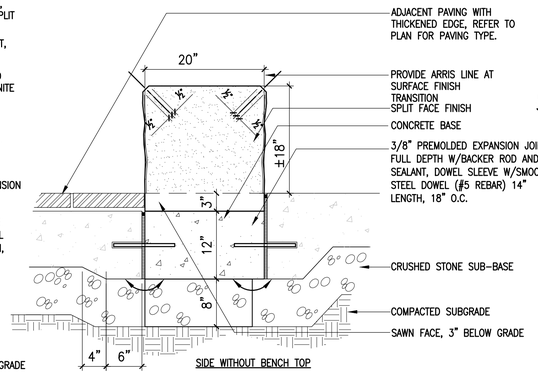


CONDITION (B) DECK CONDITION

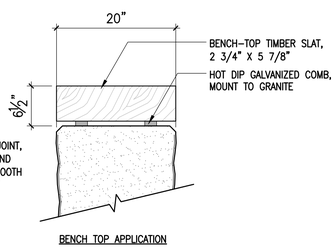
2 SECTION AT OUTDOOR SEATING AND GAME AREA
SCALE: 1/2"=1'–0"



FRONT



SIDE WITHOUT BENCH TOP



BENCH TOP APPLICATION

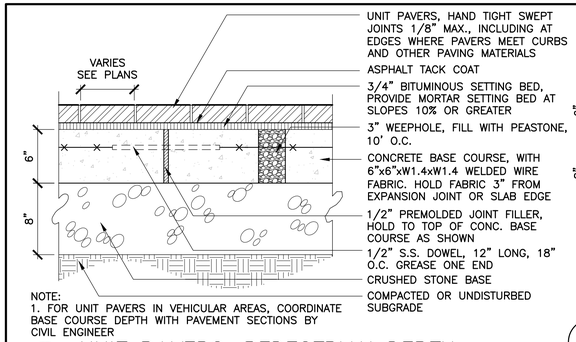
NOTES:
1. CONTRACTOR TO PROVIDE SHOP DRAWINGS AND/OR PRODUCT INFORMATION PRIOR TO CONSTRUCTION FOR REVIEW AND APPROVAL BY LANDSCAPE ARCHITECT.

3 SEATWALL – SOLID GRANITE WITH BENCH TOP APPLICATION
SCALE: 1"=1'–0"

4 BICYCLE RACK MOUNTING
SCALE: 1" = 1'–0"

ASSEMBLY ROW AT ASSEMBLY SQUARE PHASE 2 ROADWAY AND STREETSCAPE ASSEMBLY LINE PARK SITE DETAILS

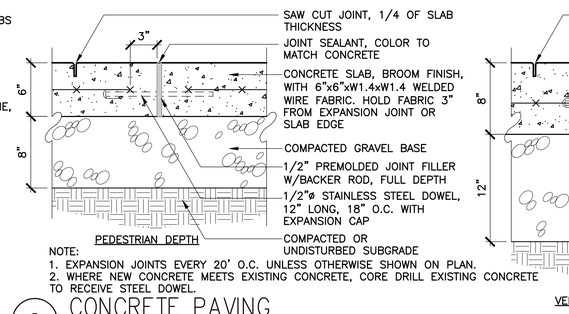
LD-502 SHEET 66 OF 79



NOTE:
1. FOR UNIT PAVERS IN VEHICULAR AREAS, COORDINATE BASE COURSE DEPTH WITH PAVEMENT SECTIONS BY CIVIL ENGINEER

1 UNIT PAVERS, PEDESTRIAN DEPTH

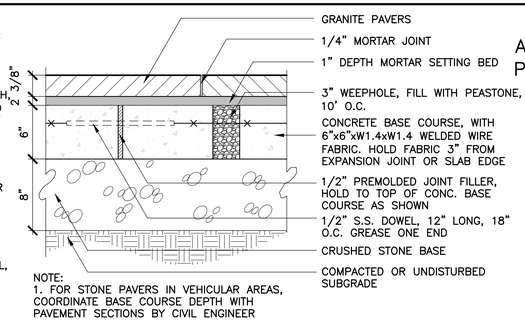
SCALE: 1-1/2"=1'-0"



NOTE:
1. EXPANSION JOINTS EVERY 20' O.C. UNLESS OTHERWISE SHOWN ON PLAN.
2. WHERE NEW CONCRETE MEETS EXISTING CONCRETE, CORE DRILL EXISTING CONCRETE TO RECEIVE STEEL DOWEL.

2 CONCRETE PAVING

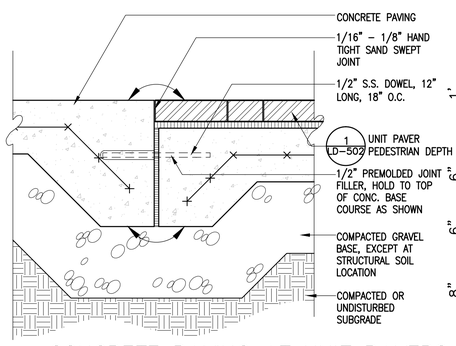
SCALE: 1-1/2"=1'-0"



NOTE:
1. FOR STONE PAVERS IN VEHICULAR AREAS, COORDINATE BASE COURSE DEPTH WITH PAVEMENT SECTIONS BY CIVIL ENGINEER

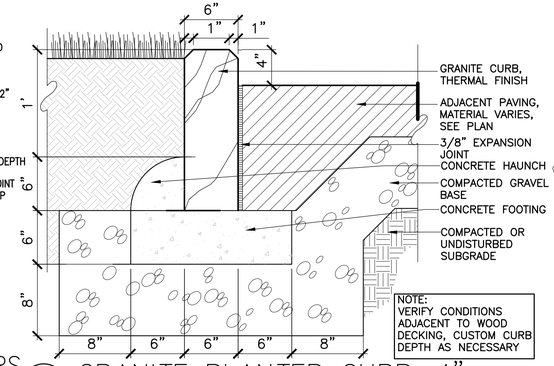
3 CUSTOM SHAPE GRANITE PAVERS, PEDESTRIAN DEPTH

SCALE: 1-1/2"=1'-0"



4 CONCRETE PAVING AT UNIT PAVERS

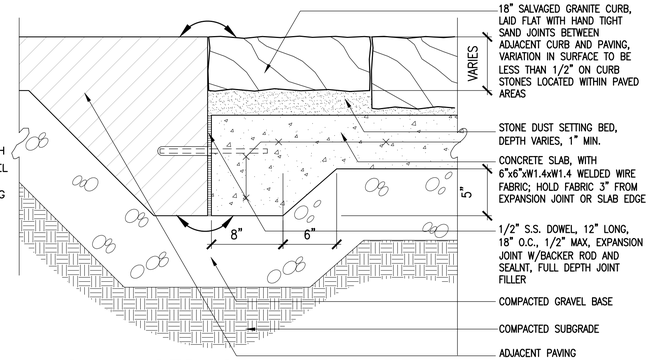
SCALE: 1-1/2" = 1'-0"



NOTE:
VERIFY CONDITIONS ADJACENT TO WOOD DECKING, CUSTOM CURB DEPTH AS NECESSARY

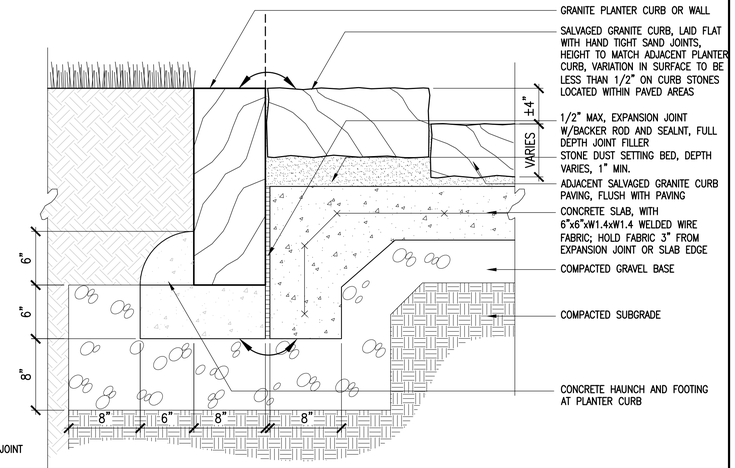
5 GRANITE PLANTER CURB-4"

SCALE: 1-1/2"=1'-0"



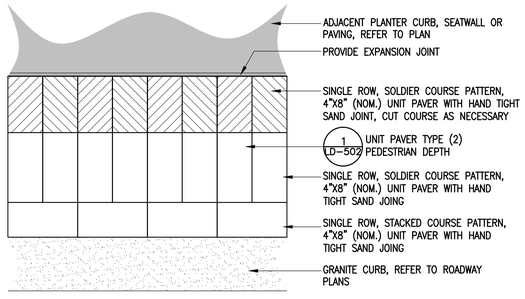
6 SALVAGED GRANITE CURB PAVING

SCALE: 1-1/2" = 1'-0"



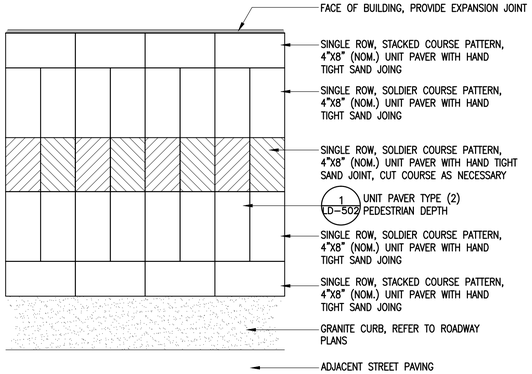
7 SALVAGED GRANITE CURB PAVING, RAISED AT ADJACENT PLANTER CURB OR WALL

SCALE: 1-1/2" = 1'-0"



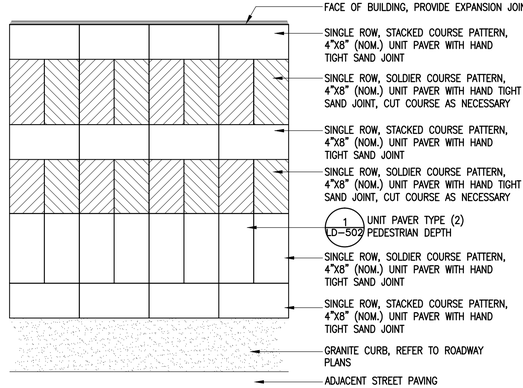
8 UNIT PAVER COURSING PATTERN (A)

SCALE: 1-1/2" = 1'-0"



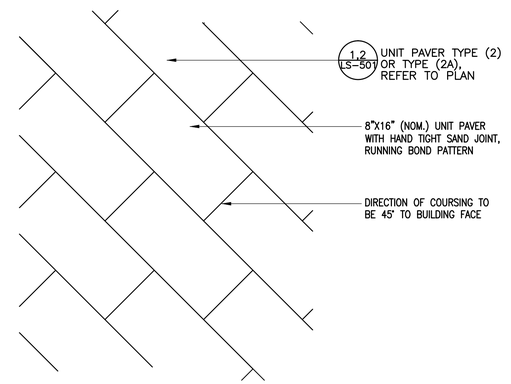
9 UNIT PAVER COURSING PATTERN (B)

SCALE: 1-1/2" = 1'-0"



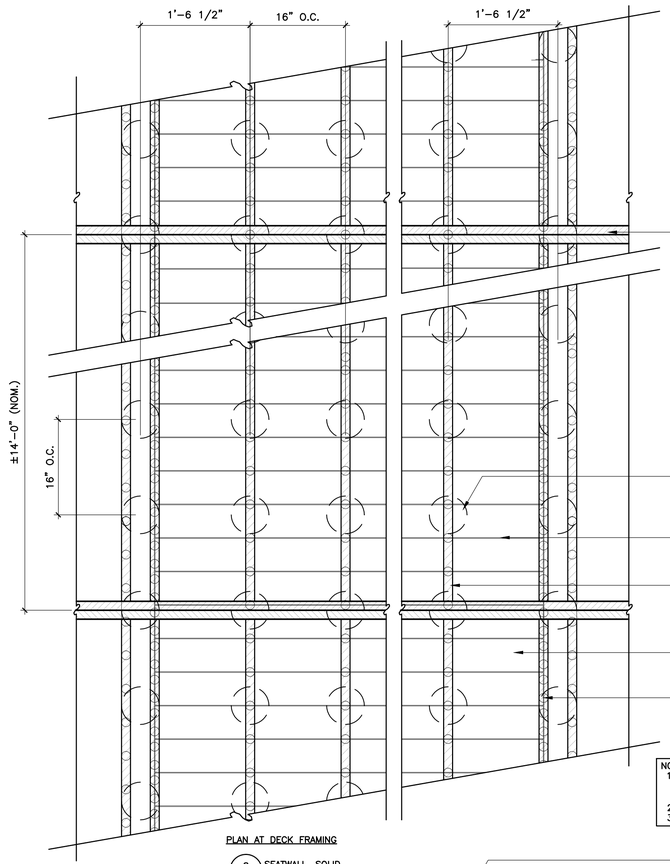
10 UNIT PAVER COURSING PATTERN (C)

SCALE: 1-1/2" = 1'-0"



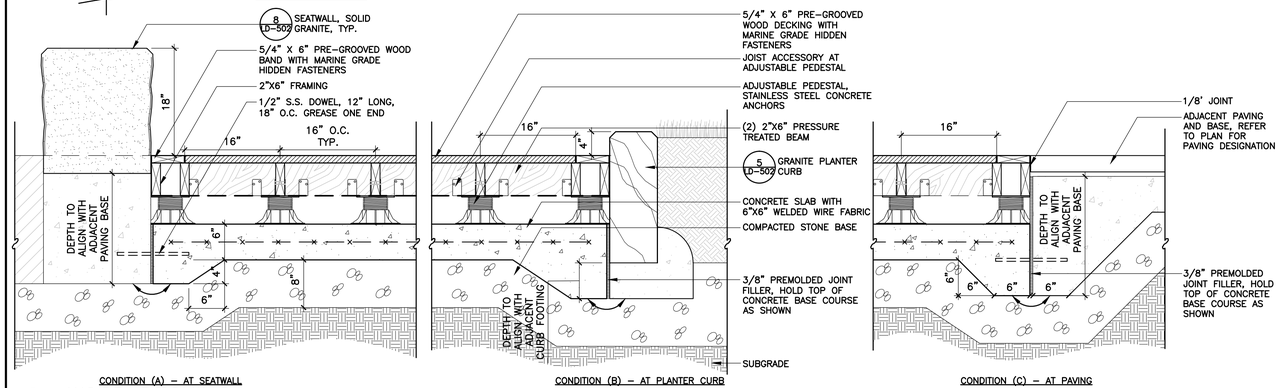
11 UNIT PAVER COURSING PATTERN (D)

SCALE: 1-1/2" = 1'-0"



PLAN AT DECK FRAMING

NOTES:
1. CONTRACTOR TO PROVIDE SHOP DRAWINGS PRIOR TO CONSTRUCTION FOR REVIEW AND APPROVAL BY LANDSCAPE ARCHITECT/ARCHITECT.
2. BRACE PEDESTALS WHEN HEIGHTS EXCEED 18".
3. ALL LUMBER DIMENSIONS ARE NOMINAL.

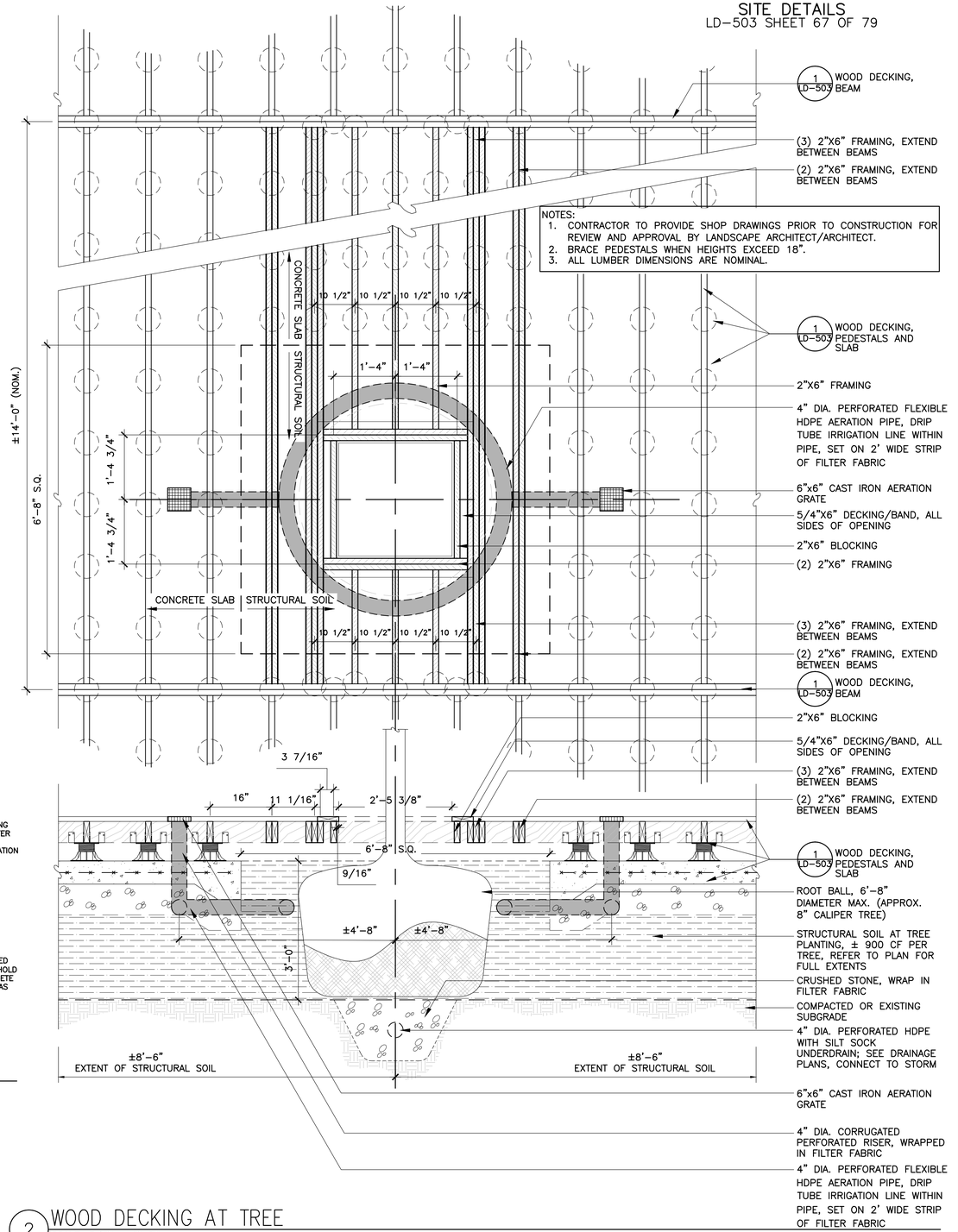


CONDITION (A) – AT SEATWALL

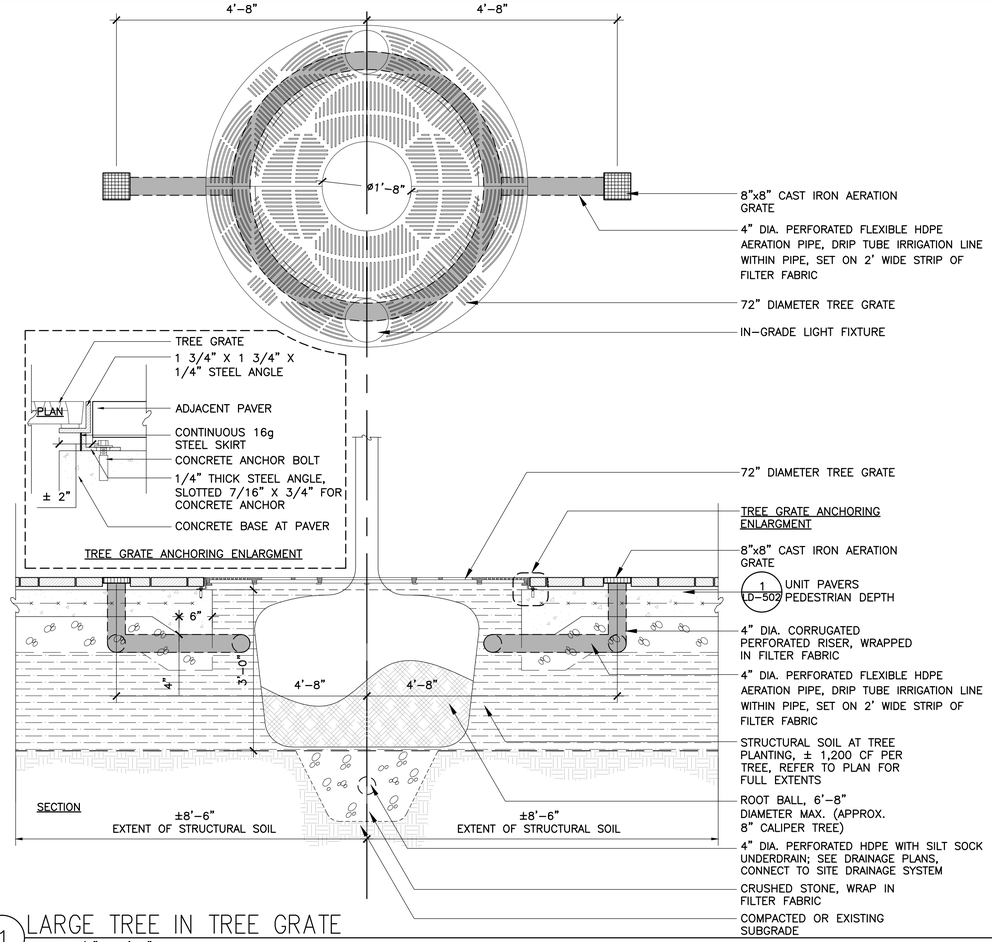
CONDITION (B) – AT PLANTER CURB

CONDITION (C) – AT PAVING

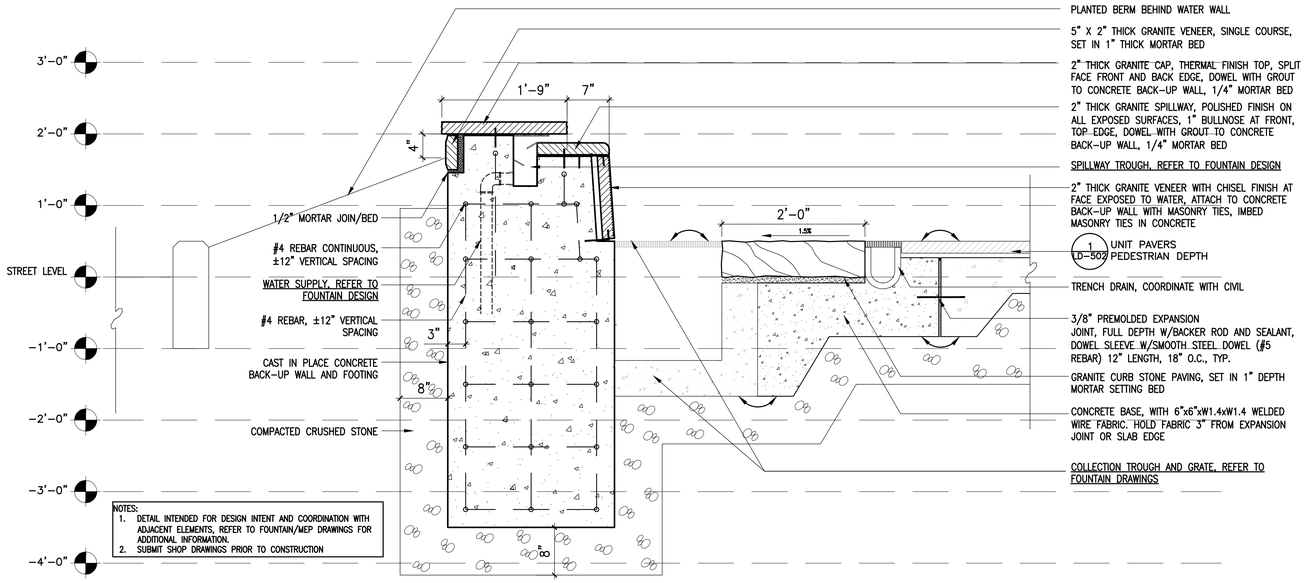
1 WOOD DECKING
SCALE: 1"=1'–0"



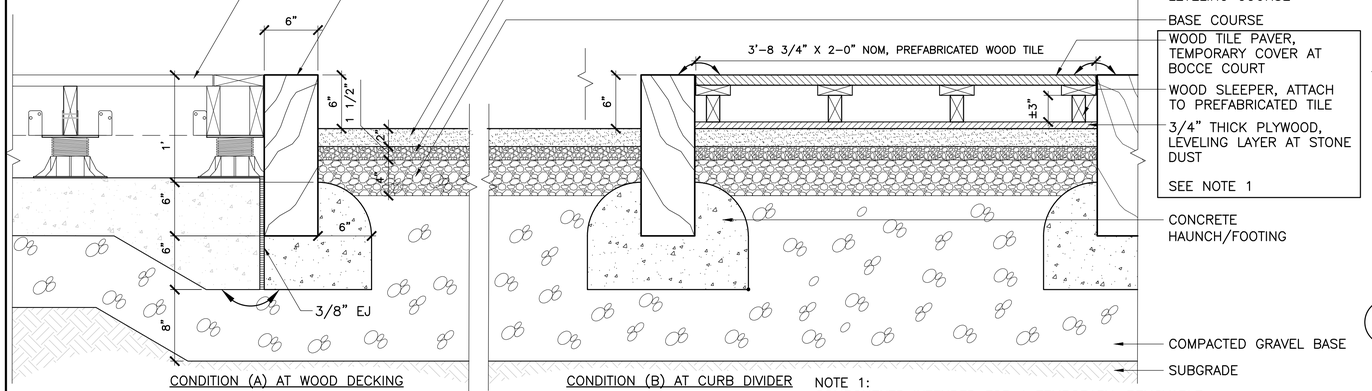
2 WOOD DECKING AT TREE
SCALE: 3/4" = 1'–0"



1 LARGE TREE IN TREE GRATE
SCALE: 3/4" = 1'-0"

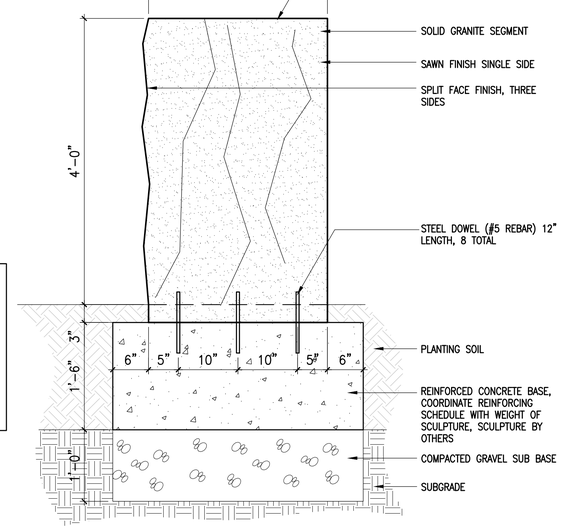


2 WATER WALL - OVERALL SECTION
SCALE: 1"=1'-0"

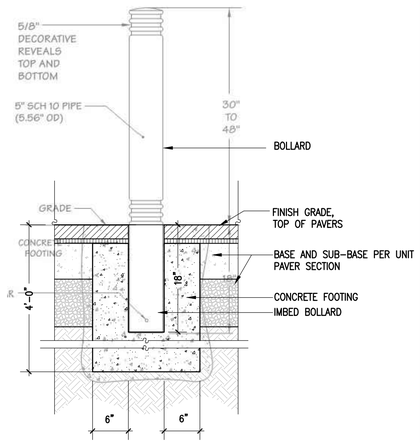


NOTE 1:
COMPONENTS INTENDED FOR A TEMPORARY, REMOVABLE SURFACE ABOVE BOCCE COURT, TO BE FLUSH WITH ADJACENT WOOD DECKING AND TOP OF GRANITE CURBS. PROVIDE SHOP DRAWINGS AND/OR PRODUCT INFORMATION

3 CRUSHED STONE PAVING AT BOCCE COURT
SCALE: 1-1/2"=1'-0"



4 STONE BASE AT SCULPTURE
SCALE: 1"=1'-0"



5 BOLLARD MOUNTING
SCALE: N.T.S.

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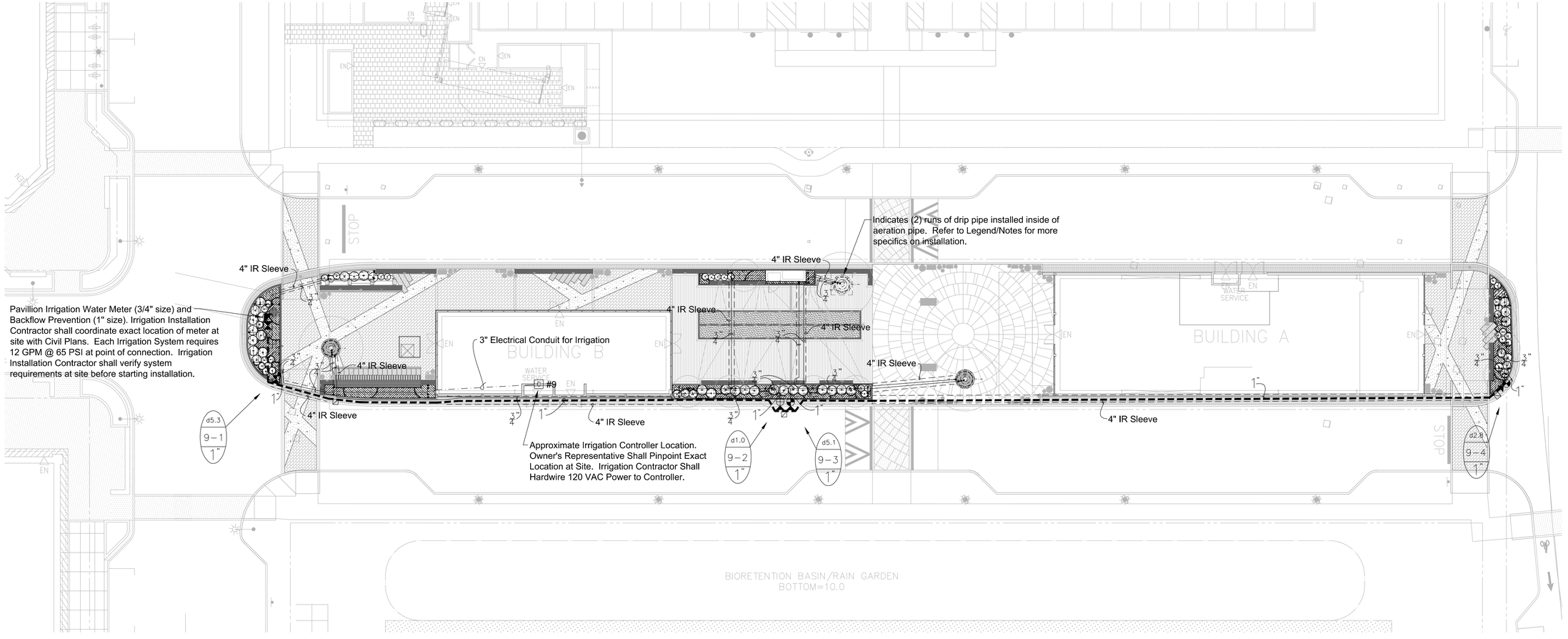
ASSEMBLY ROW AT ASSEMBLY SQUARE
PHASE 2 ROADWAY AND STREETSCAPE
ASSEMBLY LINE PARK
IRRIGATION PLAN



SCALE: 1/16" = 1'-0"

32' 16' 8' 0 16' 32'

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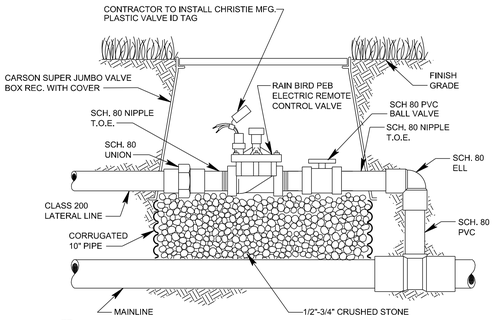
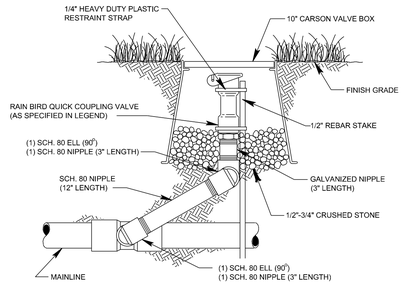
ASSEMBLY ROW AT ASSEMBLY SQUARE
PHASE 2 ROADWAY AND STREETSCAPE
ASSEMBLY LINE PARK
IRRIGATION DETAILS
SHEET 70 OF 79



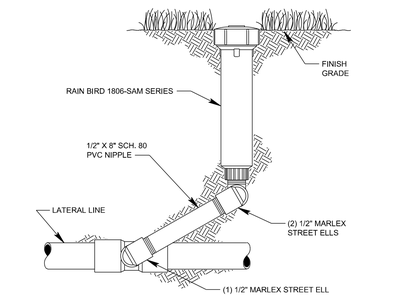
A CONTROL VALVE

NTS



B QUICK COUPLING VALVE

NTS

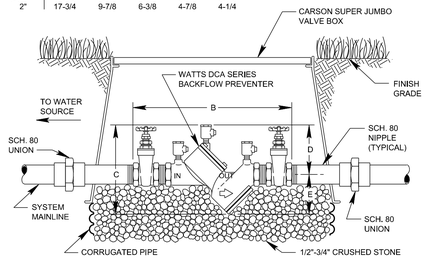


C LAWN SPRAY

NTS

	DIMENSIONS (INCHES)				
	B	C	D	E	WIDTH
1"	12-3/4	6-7/8	4	2-7/8	2-3/4
1-1/2"	13-3/4	6-7/8	4-3/8	2-7/8	2-3/4
2"	16-3/4	9-7/8	5-1/2	4-7/8	4-1/4
	17-3/4	9-7/8	6-3/8	4-7/8	4-1/4

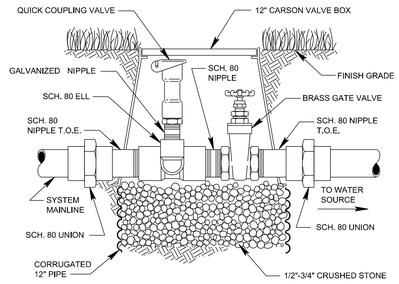
CONTRACTOR TO COMPLY WITH ALL LOCAL CODES AND ORDINANCES IN REFERENCE TO INSTALLATION AND VENTING OF BACKFLOW PREVENTION DEVICE.



F BACKFLOW PREVENTER

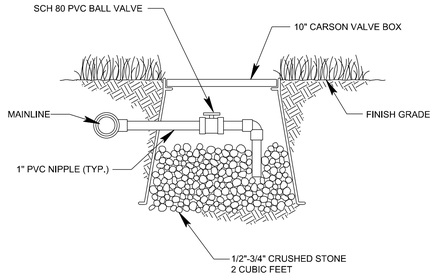
NTS

✳ IRRIGATION CONTACTOR SHALL SUBMIT BACKFLOW DETAIL TO LOCAL AUTHORITIES FOR APPROVAL BEFORE STARTING CONSTRUCTION.



D WINTERIZATION ASSEMBLY

NTS



E MANUAL DRAIN VALVE

NTS

GENERAL NOTES

1. ALL MAINLINES TO HAVE A MINIMUM OF 18" OF COVER. (CLASS 200 PVC PIPE).
2. ALL LATERAL AND SUB-MAIN PIPE TO HAVE A MINIMUM OF 12" OF COVER. (CLASS 200 PVC PIPE).
3. NO ROCKS, BOULDER, OR OTHER EXTRANEOUS MATERIALS TO BE USED IN BACKFILLING OF TRENCH.
4. ALL PIPE TO BE INSTALLED AS PER MANUFACTURERS' SPECIFICATIONS.
5. ALL THREADED JOINTS TO BE COATED WITH TEFLON TAPE OR LIQUID TEFLON.
6. ALL LINES TO BE THOROUGHLY FLUSHED BEFORE INSTALLATION OF SPRINKLER HEADS.
7. SPRINKLER AND RELATED EQUIPMENT TO BE INSTALLED AS PER DETAILS.
8. ALL ELECTRICAL JOINTS TO BE MADE USING WATERPROOF CONNECTIONS AS SHOWN ON DETAILS.
9. ALL EQUIPMENT NOT SPECIFIED IN THE LEGEND SHALL BE DETERMINED AND FURNISHED BY THE CONTRACTOR.
10. NO ELECTRICAL CONNECTIONS SHALL BE MADE IN THE FIELD EXCEPT AT A VALVE CONTROL BOX OR ANOTHER VALVE BOX SPECIFICALLY FOR CONNECTIONS.
11. ANY DISCREPANCY BETWEEN THIS SHEET AND OTHERS IN THIS SET MUST BE REFERRED TO THE IRRIGATION CONSULTANT BY THE CONTRACTOR FOR CLARIFICATION BEFORE PRECEEDING WITH THE WORK.
12. ALL 24 VOLT WIRE SHALL BE #12 UF/UL FOR COMMON WIRE, AND #14 UF/UL FOR CONTROL WIRES. DIRECT BURIAL, SOLID COPPER.
13. CONTRACTOR TO BE RESPONSIBLE FOR PROPER COVERAGE OF AREAS TO BE WATERED. I.E. ADJUST HEADS WITH INSUFFICIENT COVERAGE DUE TO BLOCKAGE BY EXISTING OR PROPOSED SITE FEATURES.
14. CONTRACTOR TO REFER TO LANDSCAPE PLAN TO KEEP SPRINKLER EQUIPMENT AND ACCESSORY MATERIAL FROM INTERFERING WITH PROPER PLANTING, i.e. VERIFY ROOT BALL SIZE FOR PLANTING.
15. CONTRACTOR SHALL PROVIDE EXPANSION COILS AT EACH WIRE CONNECTION IN VALVE BOX (WRAP AROUND 3/4" PIPE 12 TIMES).
16. CONTRACTOR TO UTILIZE APPROPRIATE AUTOMATIC DRAIN DEVICE WHERE LOW HEAD DRAINAGE MAY OCCUR.
17. ALL SPRINKLERS TO BE MOUNTED ON SWING JOINTS - REFER TO DETAILS.
18. CONTRACTOR SHALL UTILIZE VALVE I.D. TAGS ON ALL REMOTE CONTROL VALVES.
19. 24 VOLT WIRE SHALL BE COLOR CODED; COMMON-WHITE, CONTROL-RED.
20. CONTRACTOR SHALL INSTALL MANUFACTURERS' RECOMMENDED GROUNDING EQUIPMENT FOR POWER SUPPLY AND VALVE OUTPUT WITH (2) 5/8" COPPER CLAD GROUND RODS.
21. CONTRACTOR SHALL INSTALL MANUFACTURERS' RECOMMENDATION ON FAULT GROUND AND LIGHTNING PROTECTION.
22. CONTROLLER GROUNDING MUST BE AS PER ASIC REQUIREMENTS
23. ALL MATERIAL TO BE SUPPLIED BY CONTRACTOR TO OWNER:
    A. TWO WRENCHES FOR DISASSEMBLING AND ADJUSTING EACH TYPE OF SPRINKLER HEADS AND VALVE SUPPLIED.
    B. TWO KEYS FOR EACH OF THE AUTOMATIC CONTROLLERS.
    C. TWO QUICK COUPLER KEYS WITH MATCHING HOSE SWIVELS.
24. SYSTEM IS DIAGRAMMATIC TO IMPROVE CLARITY. ALL MAINLINE PIPING ELECTRIC VALVES AND WIRING ARE TO BE INSTALLED IN LANDSCAPE AREAS AND WITHIN PROPERTY BOUNDARIES. CONTRACTOR SHALL REFERENCE THE LANDSCAPE PLAN PRIOR TO THE INSTALLATION OF PIPING TO AVOID CONTACT WITH PLANT MATERIALS EXISTING OR NEW.
25. CONTRACTOR TO ADD EXTENSION RISER TO POP-UP HEADS WHEN NEEDED FOR PROPER COVERAGE.
26. CONTRACTOR SHALL INSTALL SPRINKLER EQUIPMENT 12" FROM FOUNDATIONS. ALSO INSTALL SPRINKLERS 4" FROM CURB OR WALKS.
27. PRIOR TO BID IRRIGATION CONTRACTOR SHALL VERIFY RIGHT-OF-WAY AND BACKFLOW REQUIREMENTS. NO LATER THAN FIVE DAYS BEFORE BID SUBMITTALS CONTRACTOR SHALL NOTIFY CONSULTANT OF ANY CHANGES FROM PLANS AND SPECIFICATIONS.
28. IRRIGATION CONTRACTOR SHALL PROVIDE THE OWNER AND LANDSCAPE ARCHITECT WITH A REPRODUCIBLE CROSS MEASURED AS-BUILT DRAWING OF THE INSTALLED IRRIGATION SYSTEM IN AUTOCAD 2010 FORMAT BEFORE FINAL ACCEPTANCE.
29. A 1-YEAR WARRANTY PERIOD SHALL BE PROVIDED FOR SYSTEM AFTER SUBSTANTIAL COMPLETION IS ACCEPTED. START UP AND ADJUSTING OF SYSTEM IN SPRING TIME SHALL BE INCLUDED IN WARRANTY.
30. PRIOR TO BID, CONTRACTOR SHALL VERIFY THAT ALL MATERIALS, INSTALLATION PARAMETERS AND OPERATIONS CONFORM TO ALL APPLICABLE CODES AND ORDINANCES. NO LATER THAN FIVE DAYS BEFORE BID SUBMITTALS CONTRACTOR SHALL NOTIFY IRRIGATION CONSULTANT/DESIGNER OF ANY CHANGES REQUIRED DUE TO CURRENT CODE OR ORDINANCE DISCREPANCIES. IF CONTRACTOR DOES NOT COMPLY TO THIS NOTIFICATION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL NECESSARY INSTALLATION CHANGE AND REDESIGN COSTS FOR NON-COMPLIANCE.
31. UNLESS OTHERWISE NOTED, THE CONTRACTOR MUST COMPLETE 2 PRESSURE TESTS OF THE IRRIGATION SYSTEM MAINLINE (BOTH TO SHOW NO DROP IN PRESSURE DURING DURATION OF TEST.
    A. 2-HOUR PRESSURE TEST AT 1.5 TIMES THE SYSTEM STATIC PRESSURE
    B. 24-HOUR PRESSURE TEST AT THE SYSTEM STATIC PRESSURE
32. IRRIGATION INSTALLATION CONTRACTOR SHALL PROVIDE OWNER WITH A COLOR-CODED ZONES DIAGRAM PLAN, 8-1/2"X11" LAMINATED SHEET(S), TO IDENTIFY CONTROLLER STATION TO THE CONTROL VALVE NUMBER FOR EACH CONTROLLER. TO BE LOCATED IN ADHESIVE POUCH ATTACHED INSIDE OF CONTROLLER(S).

MAINLINE PIPE: SIZE NOTED ON PLANS (1" FOR SYSTEM #6,#7,#9; 1-1/2" FOR SYSTEM #8). CLASS 200 PVC PIPE UTILIZING SCH 40 PVC FITTINGS..

IRRIGATION SLEEVE: CLASS 200 PVC, REFER TO SLEEVING PLANS. DETAIL-H.

LATERAL LINE PIPE: CLASS 200 PVC, SIZE NOTED.

3" ELECTRICAL CONDUIT SLEEVE.

NOTES:

1. ALL SPRINKLERS WILL BE MOUNTED ON (3) MARLEX STREET ELLS WITH A SCHED. 80 NIPPLE SIZE OF SPRINKLER INLET.
2. CONTRACTOR TO UTILIZE A AUTOMATIC DRAIN CHECK VALVE DEVICE WHERE LOW HEAD DRAINAGE MAY OCCUR.
3. ALL WIRE WILL BE COLOR CODED DIRECT BURIAL UL/UF WIRE: COMMON (WHITE) #12-1, CONTROL (RED) #14-1.
4. ALL PIPING AND WIRING UNDER HARDTOPS WILL BE IN CLASS 200 PVC PIPE SLEEVE.

TYPICAL VALVE INDICATOR

28.5 — GALLONS PER MIN.
10 — STATION NUMBER
1½" — VALVE SIZE

IRRIGATION LEGEND

#8	1" WATER METER, EACH SYSTEM REQUIRES 30 GPM @ 75 PSI. IRRIGATION CONTRACTOR SHALL BE RESPONSIBLE TO VERIFY THE SYSTEM REQUIREMENTS AT SITE BEFORE STARTING CONSTRUCTION. REFER TO CIVIL PLANS FOR EXACT LOCATION OF IRRIGATION WATER METER.
#9	3/4" WATER METER, EACH SYSTEM REQUIRES 12 GPM @ 65 PSI. IRRIGATION CONTRACTOR SHALL BE RESPONSIBLE TO VERIFY THE SYSTEM REQUIREMENTS AT SITE BEFORE STARTING CONSTRUCTION. REFER TO CIVIL PLANS FOR EXACT LOCATION OF IRRIGATION WATER METER.
#6,#7	IRRIGATION BUILDING POINT OF CONNECTION (1" SIZE), EACH SYSTEM REQUIRES 12 GPM @ 65 PSI. IRRIGATION CONTRACTOR SHALL BE RESPONSIBLE TO VERIFY THE SYSTEM REQUIREMENTS AT SITE BEFORE STARTING CONSTRUCTION. INSTALLATION CONTRACTOR SHALL COORDINATE THE EXACT LOCATION OF CONNECTIONS AT SITE WITH MEP CONTRACTOR. BACKFLOW PREVENTION TO BE LOCATED INSIDE OF BUILDING BY MEP CONTRACTOR.
#8	WATTS #007-M1-QT-1-1/2", 1-1/2" DOUBLE CHECK ASSEMBLY BACKFLOW PREVENTER. DETAIL-F.
#9	WATTS #007-M1-QT-1", 1" DOUBLE CHECK ASSEMBLY BACKFLOW PREVENTER. DETAIL-F.
	MANUAL DRAIN VALVE. SCH 80 PVC BALL VALVE. DETAIL-E.
#6-#9	WINTERIZATION ASSEMBLY. DETAIL-E.
#6,#7,#9 C	RAIN BIRD ESP-8-LXME CONTROLLER: 8 STATION, MODULAR CONTROLLER, FOUR PROGRAMS, WALL MOUNTED. DETAIL-J IRRIGATION CONTRACTOR SHALL ALSO INSTALL A WIRELESS MINII CLIK II RAIN SENSOR AND A FREEZE-CLIK DEVICE FOR EACH CONTROLLER.
#8 C	RAIN BIRD ESP-12-LXME CONTROLLER: 12 STATION, MODULAR CONTROLLER, FOUR PROGRAMS, WALL MOUNTED. DETAIL-J IRRIGATION CONTRACTOR SHALL ALSO INSTALL A WIRELESS MINII CLIK II RAIN SENSOR AND A FREEZE-CLIK DEVICE FOR EACH CONTROLLER.
	NOTES: 1. IRRIGATION INSTALLATION CONTRACTOR MUST COORDINATE EXACT LOCATION OF CONTROLLERS AT SITE WITH OWNER'S REPRESENTATIVE. 2. IF WIRELESS SIGNAL CANNOT REACH CONTROLLERS, WIRED RAIN/FREEZE SENSOR MUST BE UTILIZIED.
	RAIN BIRD 150-PEB OR 200-PEB PLASTIC ELECTRIC REMOTE CONTROL VALVE, 11/2" OR 2" SIZE, MOUNTED WITH SCH 80 PVC BALL VALVE, DETAIL-A.
	RAIN BIRD 100-PEB PLASTIC ELECTRIC REMOTE CONTROL VALVE, 1" SIZE, MOUNTED WITH SCH 80 PVC BALL VALVE, DETAIL-A.
	RAIN BIRD 1806-SAM, 6" POP-UP LAWN SPRAY SPRINKLER, 12' RADIUS, FULL-2.0 GPM, HALF-1.0 GPM, QUARTER-0.5 GPM, 30 PSI. DETAIL-C.
	RAIN BIRD 1806-SAM, 6" POP-UP LAWN SPRAY SPRINKLER, 15' RADIUS, FULL-4.0 GPM, HALF-2.0 GPM, QUARTER-1.0 GPM, 30 PSI. DETAIL-C.
	RAIN BIRD 1806-SAM, 6" LAWN POP-UP SIDE STRIP SPRAY SPRINKLER, 9' X 18' RADIUS, 1.5 GPM, 30 PSI. DETAIL-C.
	RAIN BIRD 1806-SAM, 6" LAWN SIDE STRIP SPRAY SPRINKLER, 4' X 30' RADIUS, 1.5 GPM, 30 PSI. DETAIL-C.
	RAIN BIRD 1806-SAM, 6" LAWN END STRIP SPRAY SPRINKLER, 4' X 15' RADIUS, 1.0 GPM, 30 PSI. DETAIL-C.
	RAIN BIRD 1806-SAM WITH 1404 BUBBLER NOZZLE AND PA-80 ADAPTER. 6" POP-UP TREE BUBBLER, 1.0 GPM, DETAIL-C.
	HUNTER INDUSTRIES MP ROTATOR SERIES 3000, MOUNTED ON RAIN BIRD 1806-SAM SPRINKLER IN LAWN, 30' RADIUS, FULL-4.0 GPM, HALF-2.0 GPM, QUARTER-1.0 GPM, 40 PSI, DETAIL-C.
	HUNTER INDUSTRIES MP ROTATOR SERIES 2000, MOUNTED ON RAIN BIRD 1806-SAM SPRINKLER IN LAWN, 20' RADIUS, FULL-2.0 GPM, HALF-1.0 GPM, QUARTER-0.5 GPM, 40 PSI, DETAIL-C.
	RAIN BIRD #5 QUICK COUPLING VALVE 1" SIZE. CONTRACTOR TO SUPPLY TWO QCV KEYS AND MATCHING HOSE SWIVELS. DETAIL-B.
	SCH 80 PVC BALL VALVE, SIZED SAME AS MAINLINE, MOUNTED IN CARSON VALVE BOX, DETAIL-O.
	RAIN BIRD DRIP ZONE ASSEMBLY KIT, MODEL #XCZ-100-PRB-COM OR XCZ-150-PRB-COM. 1" OR 1-1/2" SIZE, SIZE NOTED ON PLANS. DETAIL-L.
	RAIN BIRD DRIP ZONE ASSEMBLY KIT, MODEL #XCZ-LF-100-PRF LOW FLOW (0-3 GPM) VALVE. 1" SIZE DETAIL-L.
	POINT OF CONNECTION - DRIP LINE TUBING TO PVC PIPE, DETAIL-M,N.
	DRIP TUBING: RAIN BIRD XFS DRIPLINE DRIP TUBING, .6 GPH, 12" CENTERS, STAKED EVERY TURN OR EVERY 4', INSTALL NETAFIM AIR RELIEF VALVE KIT IN 10" CIRCULAR VALVE BOX AT HIGH POINT OF EACH ZONE AND NETAFIM DRIP FLUSH VALVE IN 10" CIRCULAR VALVE BOX AT LOW POINTS OF EACH ZONE. DETAIL-M,N,P,Q,R.
	TREE DRIP TUBINGRING : RAIN BIRD XFS DRIPLINE DRIP TUBING, .6 GPH, 12" CENTERS, STAKED EVERY TURN OR EVERY 4', INSTALL NETAFIM AIR RELIEF VALVE KIT IN 10" CIRCULAR VALVE BOX AT HIGH POINT OF EACH ZONE AND NETAFIM DRIP FLUSH VALVE IN 10" CIRCULAR VALVE BOX AT LOW POINTS OF EACH ZONE. DETAIL-M,N,P,Q,R.
	EARATION SYSTEM DRIP TUBING: INSTALL (2) RAIN BIRD XFS DRIPLINE DRIP TUBING INSIDE OF AERATION PIPING, .6 GPH, 12" CENTERS, INSTALL NETAFIM AIR RELIEF VALVE KIT IN 10" CIRCULAR VALVE BOX AT HIGH POINT OF EACH ZONE AND NETAFIM DRIP FLUSH VALVE IN 10" CIRCULAR VALVE BOX AT LOW POINTS OF EACH ZONE. AIR VENT AND FLUSH VALVE TO BE INSTALLED INSIDE OF TREE PLANTER. ALL DRIPLINE CONNECTIONS NEED TO BE MADE EITHER INSIDE OF PLANTER OR DIRECTILY UNDER AERATION GRADE (FOR ACCESS). DETAIL-M,N,P,Q,S.
	NOTE: INSTALL RAIN BIRD DRIP OPERATION INDICATE KIT AT EACH END OF ALL DRIP ZONES.

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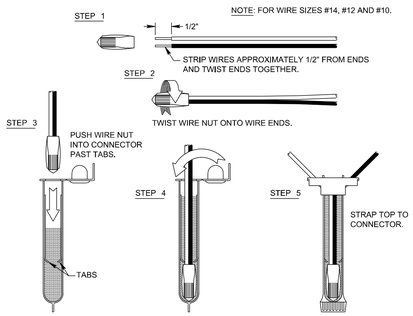
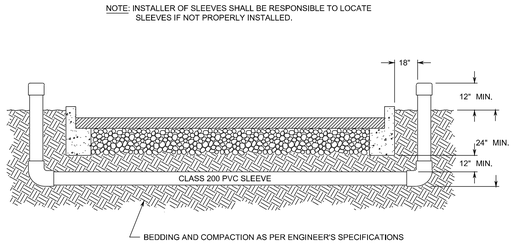
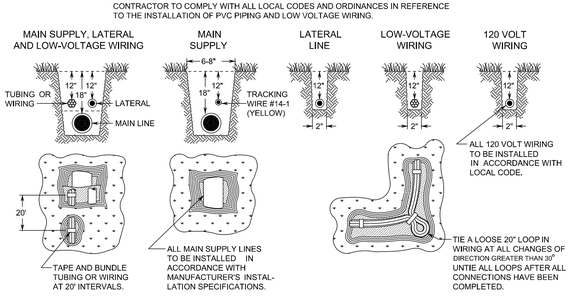
ASSEMBLY ROW AT ASSEMBLY SQUARE
PHASE 2 ROADWAY AND STREETSCAPE
ASSEMBLY LINE PARK
IRRIGATION DETAILS
SHEET 71 OF 79



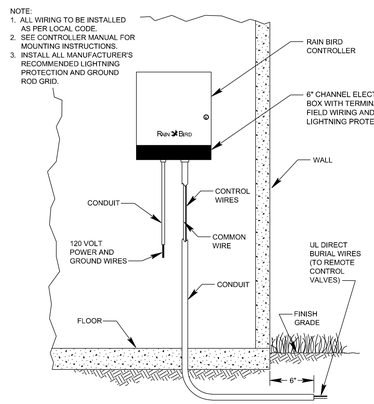
G WIRE CONNECTION
NTS
3M-DBR/Y



H SLEEVING
NTS



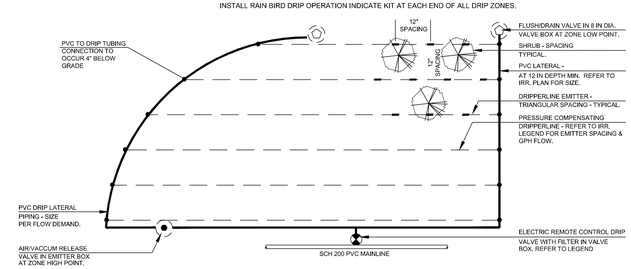
I TRENCHING
NTS



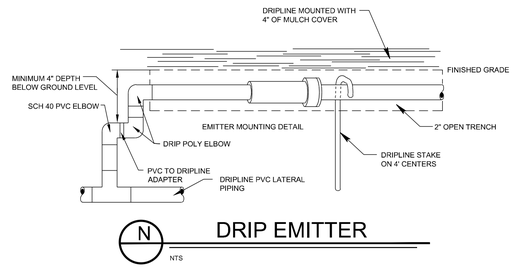
J CONTROLLER
NTS

K RAIN/FREEZE SENSOR
NTS

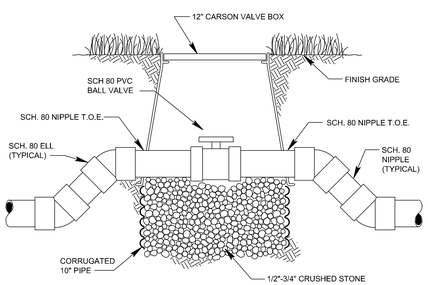
L DRIP ASSEMBLY
NTS



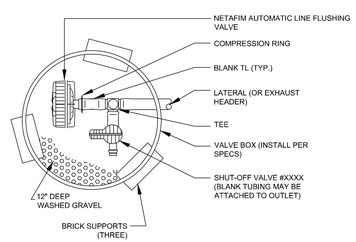
M IRRIGATION DRIPLINE
NTS



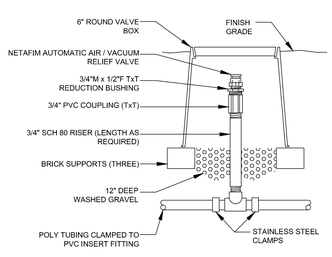
N DRIP EMITTER
NTS



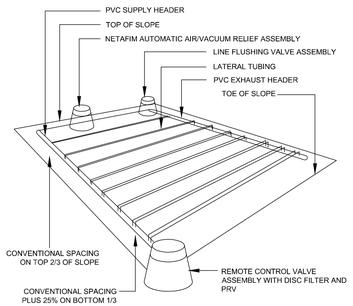
O ISOLATION BALL VALVE
NTS



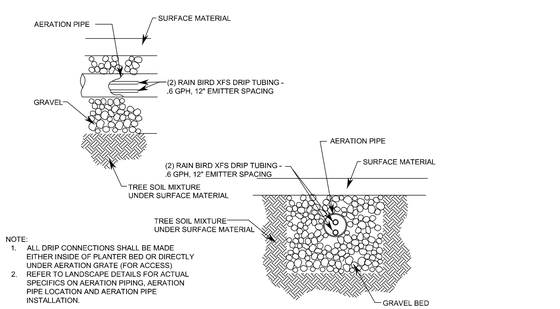
P LINE FLUSHING VALVE
NTS



Q AIR/VACUUM RELIEF
NTS



R DRIP TUBING
NTS
SLOPED FEED LAYOUT



S TREE DRIP TUBING
NTS

DELTA FOUNDATIONS
11494 COLUMBIA PARK DR.
WEST SUITE #4
JACKSONVILLE, FL 32258
ARCHITECTURAL & FLOATING FOUNTAINS
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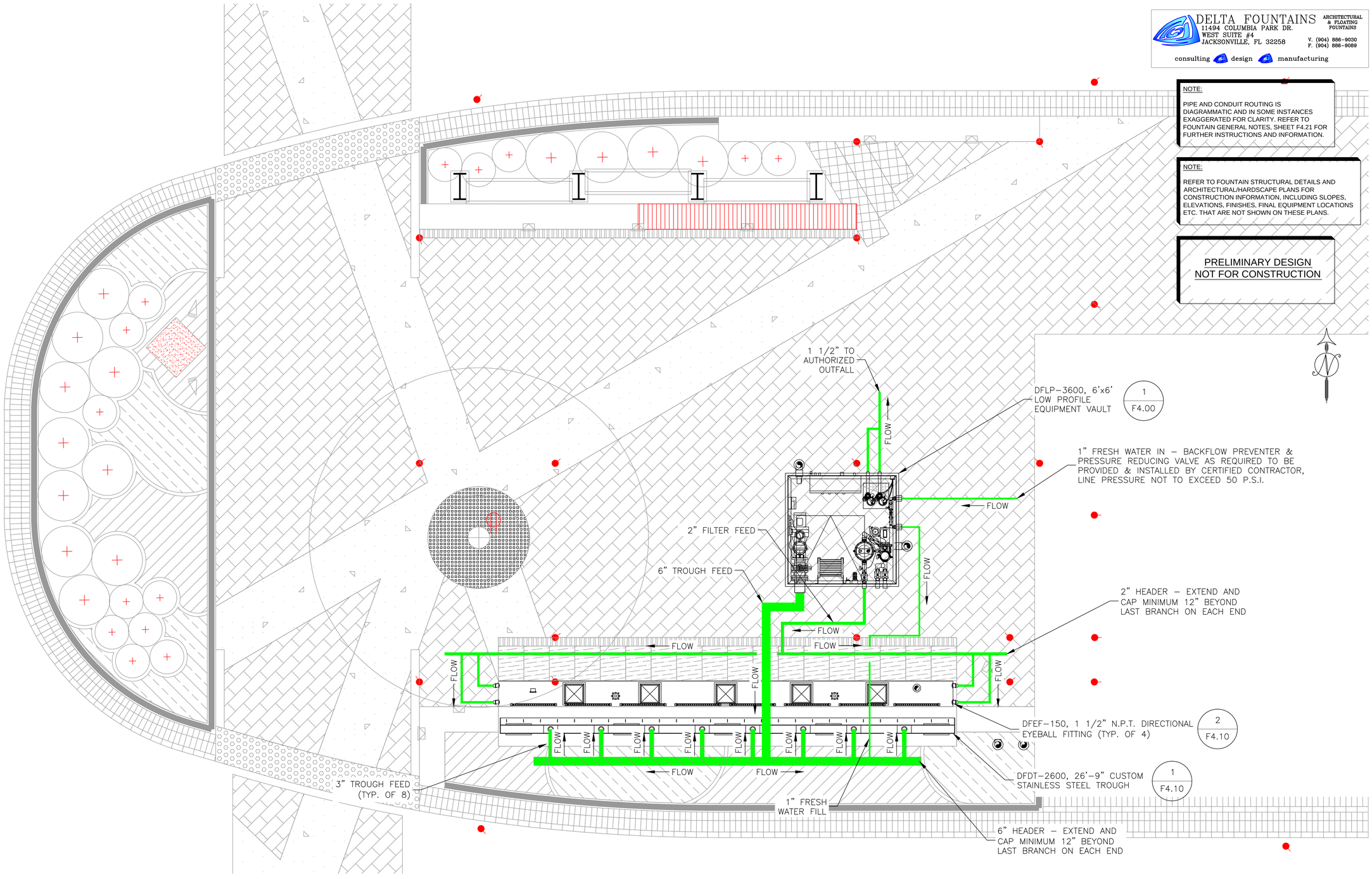
NOTE:

PIPE AND CONDUIT ROUTING IS DIAGRAMMATIC AND IN SOME INSTANCES EXAGGERATED FOR CLARITY. REFER TO FOUNTAIN GENERAL NOTES, SHEET F4.21 FOR FURTHER INSTRUCTIONS AND INFORMATION.

NOTE:

REFER TO FOUNTAIN STRUCTURAL DETAILS AND ARCHITECTURAL/HARDSCAPE PLANS FOR CONSTRUCTION INFORMATION, INCLUDING SLOPES, ELEVATIONS, FINISHES, FINAL EQUIPMENT LOCATIONS ETC. THAT ARE NOT SHOWN ON THESE PLANS.

PRELIMINARY DESIGN
NOT FOR CONSTRUCTION



FEATURE DISCHARGE PIPING SCHEMATIC
SCALE: 3/8" = 1'-0"

ASSEMBLY ROW AT ASSEMBLY SQUARE
PHASE 2 ROADWAY AND STREETSCAPE
ASSEMBLY LINE PARK
F2.00
SHEET 73 OF 79

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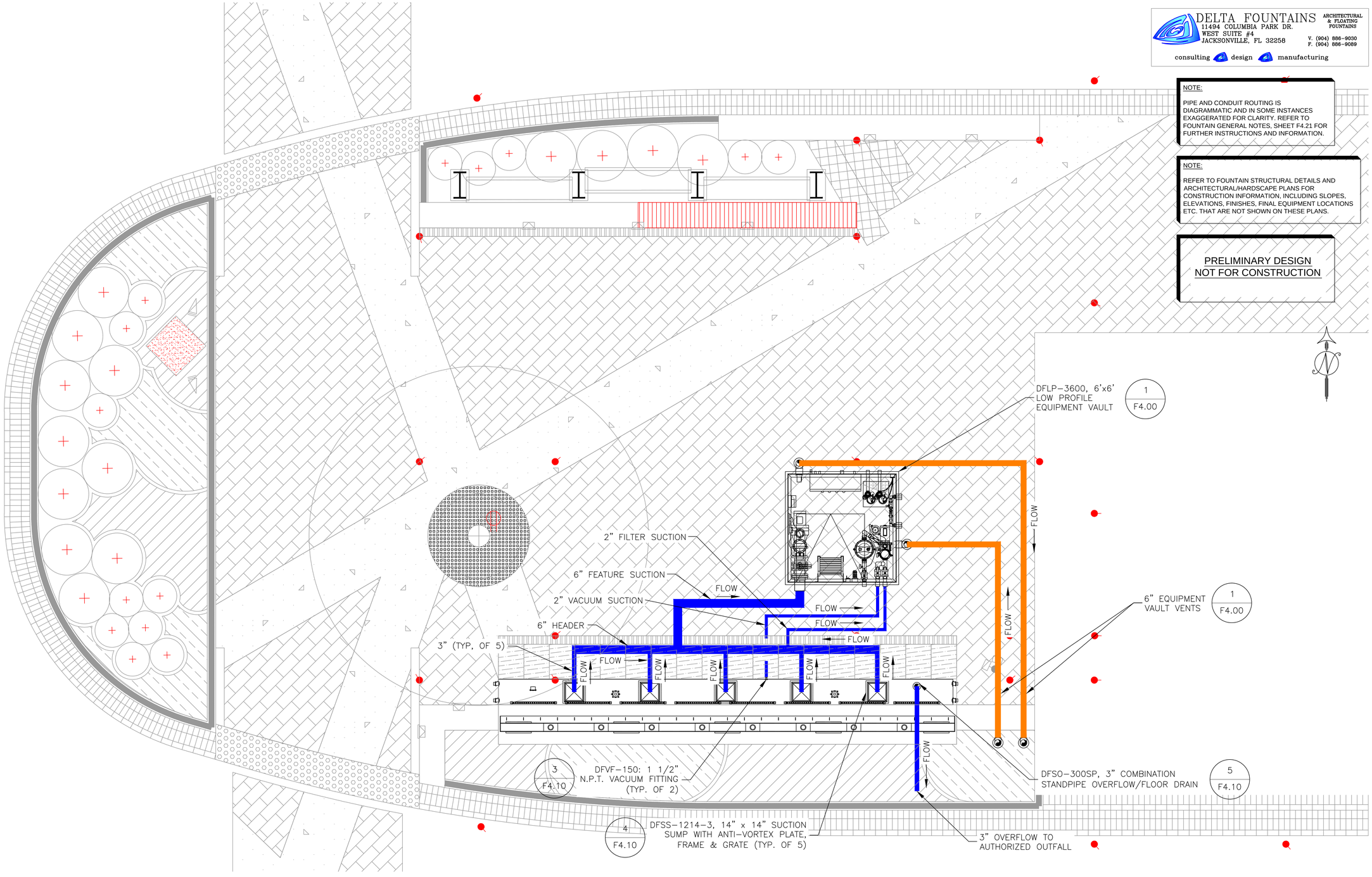

FEATURE SUCTION PIPING SCHEMATIC
SCALE: 3/8" = 1'-0"

ASSEMBLY ROW AT ASSEMBLY SQUARE
PHASE 2 ROADWAY AND STREETSCAPE
ASSEMBLY LINE PARK
F3.00
SHEET 74 OF 79

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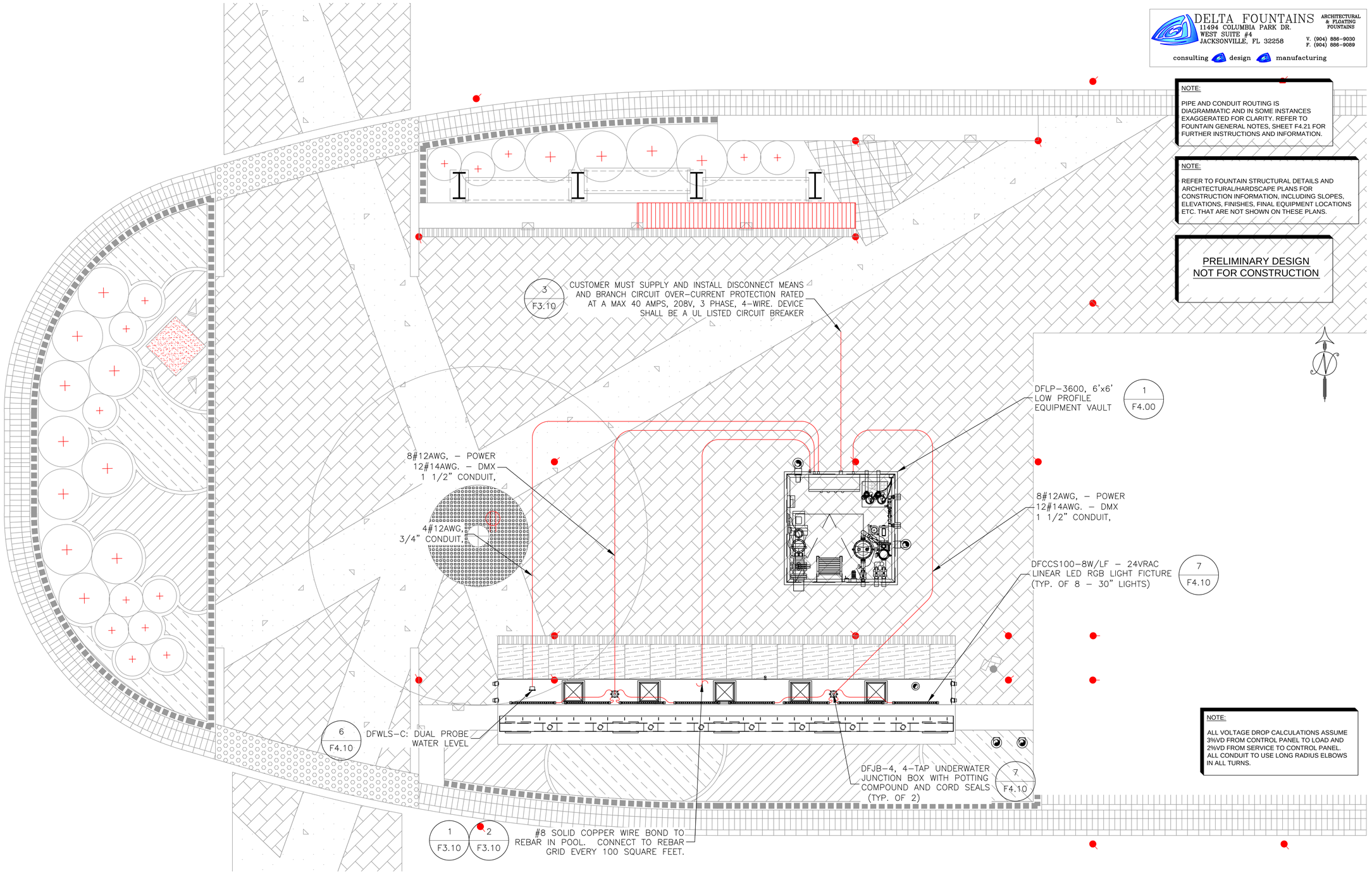


NOTE:

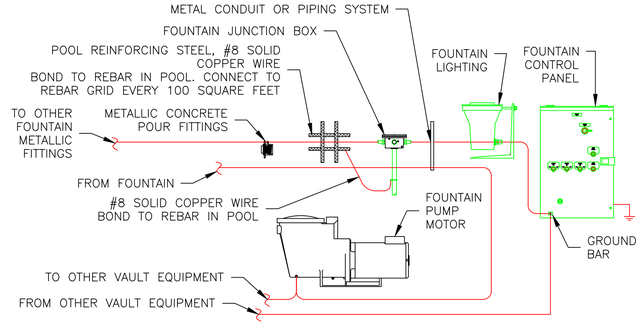
ALL VOLTAGE DROP CALCULATIONS ASSUME 3%VD FROM CONTROL PANEL TO LOAD AND 2%VD FROM SERVICE TO CONTROL PANEL. ALL CONDUIT TO USE LONG RADIUS ELBOWS IN ALL TURNS.

FEATURE ELECTRICAL PIPING SCHEMATIC
SCALE: 3/8" = 1'-0"

GENERAL ELECTRICAL NOTES:

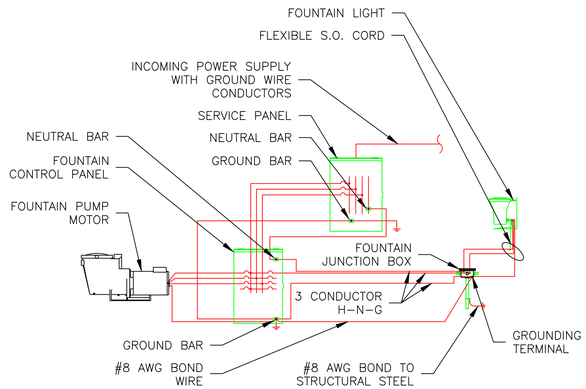
1. THE INSTALLATION OF ELECTRICAL EQUIPMENT AND WIRING IN WATER CAN PRODUCE EXTREME HAZARDS, IT IS THE RESPONSIBILITY OF THE INSTALLING ELECTRICAL CONTRACTOR TO CONSULT & COMPLY WITH THE LATEST EDITION OF THE NATIONAL ELECTRIC CODE (NEC) PUBLISHED BY THE NATIONAL FIRE PROTECTION ASSOCIATION; QUINCY, MASSACHUSETTS AND SAFETY REGULATIONS PRIOR TO INSTALLATION OF ELECTRICAL EQUIPMENT. IN THE EVENT OF CONFLICTING REQUIREMENTS BETWEEN CONTRACT DOCUMENTS AND ANY LOCAL ELECTRIC CODE OR OTHER GOVERNING ORGANIZATIONS FOR THIS LOCATION, THE MOST STRINGENT SHALL GOVERN AND TAKE PRECEDENCE. IN THIS EVENT, THE ARCHITECT SHALL BE NOTIFIED IMMEDIATELY IN WRITING OF SUCH CONFLICT.
2. IT IS THE ELECTRICAL CONTRACTOR'S RESPONSIBILITY TO VERIFY ALL FIELD DIMENSIONS CRITICAL TO FOUNTAIN EQUIPMENT INSTALLATION AND PERFORMANCE AND REPORT ANY DISCREPANCIES, IN WRITING, TO DELTA FOUNTAINS AND THE ENGINEER UPON IMMEDIATE NOTICE.
3. IT IS THE ELECTRICAL CONTRACTOR'S RESPONSIBILITY TO INSURE THAT ALL ELECTRICAL EQUIPMENT IS INSTALLED AND WIRED BY A QUALIFIED, LICENSED ELECTRICIAN EXPERIENCED IN FOUNTAIN SYSTEM WIRING. DELTA FOUNTAINS ASSUMES NO RESPONSIBILITY OR LIABILITY WHATSOEVER FOR INSTALLATIONS NOT CARRIED OUT BY A QUALIFIED, LICENSED, ELECTRICIAN AND IN ACCORDANCE WITH OUR SHOP DRAWINGS, AND ALL PROVISIONS OF THE LATEST EDITION OF NEC IN GENERAL, ARTICLE 680 SPECIFICALLY, AND LOCAL SAFETY REGULATIONS. ALL DELTA FOUNTAINS ELECTRICAL CONTROL PANELS INCLUDE GFCI'S WHEN AND WHERE REQUIRED, WHEN FURNISHED.
4. A CLASS 'A' GROUND FAULT CIRCUIT INTERRUPTER (GFCI) MUST BE INSTALLED IN EACH BRANCH CIRCUIT SUPPLYING SUBMERSIBLE OR UNDERWATER FOUNTAIN EQUIPMENT. EQUIPMENT OPERATING AT 15 VOLTS OR LESS MUST BE PROTECTED BY SUITABLE TRANSFORMER U.L. LISTED AND MARKED FOR THE APPLICATION.
5. SUBMERSIBLE/UNDERWATER LIGHTING FIXTURES MUST BE INSTALLED FOR OPERATION AT 150 VOLTS LESS BETWEEN CONDUCTORS. SUBMERSIBLE PUMPS MUST OPERATE AT 300 VOLTS OR LESS BETWEEN CONDUCTORS.
6. WET/DRY LIGHTING FIXTURES MUST BE INSTALLED WITH THE TOP OF THE FIXTURE LENS BELOW THE GRATE AND MUST HAVE THE LENS ADEQUATELY GUARDED TO PREVENT CONTACT BY ANY PERSON.
7. SUBMERSIBLE LIGHTING FIXTURES MUST BE INSTALLED WITH THE TOP OF THE FIXTURE LENS A MINIMUM OF 2" BELOW THE NORMAL OPERATION WATER LEVEL AND MUST HAVE THE LENS ADEQUATELY GUARDED TO PREVENT CONTACT BY ANY PERSON.
8. ALL ELECTRICAL EQUIPMENT WHICH DEPENDS ON SUBMERSION FOR SAFE OPERATION MUST BE PROTECTED AGAINST OVERHEATING BY AN INDEPENDENT LOW WATER CUTOFF DEVICE IF THE WATER LEVEL DROPS BELOW NORMAL OPERATING LEVELS, OR CONTAIN AN INTERNAL THERMAL BIMETALLIC AMBIENT COMPENSATING OVERLOAD.
9. MAXIMUM LENGTH OF EXPOSED CORD IN FOUNTAIN IS LIMITED TO 9'. NO ADDITIONAL CORD OR SPLICES OTHER THAN THOSE MADE IN A WATERTIGHT JUNCTION BOX, ARE TO BE MADE IN THE FOUNTAIN. CORDS EXTENDING BEYOND FOUNTAIN PERIMETER MUST BE ENCLOSED IN APPROVED WIRING ENCLOSURES.
10. ALL SUBMERSIBLE LIGHTS AND PUMPS MUST HAVE SUFFICIENT CORD LENGTH TO ALLOW REMOVAL FROM THE WATER FOR RE-LAMPING AND NORMAL MAINTENANCE. FIXTURES CANNOT BE PERMANENTLY IMBEDDED IN THE FOUNTAIN STRUCTURE SO THAT THE WATER LEVEL MUST BE REDUCED OR THE FOUNTAIN DRAINED FOR RE-LAMPING, MAINTENANCE, OR INSPECTION.
11. SUBMERSIBLE EQUIPMENT MUST BE INHERENTLY STABLE OR BE SECURELY FASTENED IN PLACE WITH NON-CORROSIVE FASTENERS SUITABLE FOR THE PURPOSE.
12. UNDERWATER JUNCTION BOXES MUST BE FILLED WITH AN APPROVED RE-ENTERABLE ELECTRICAL POTTING COMPOUND (WAX OR PARAFFIN IS NOT ACCEPTABLE) PRIOR TO FILLING FOUNTAIN AND, AFTER ALL CIRCUITS HAVE BEEN CHECKED, TO PREVENT THE ENTRY OF MOISTURE, AND BE FIRMLY ATTACHED TO SUPPORTS OR DIRECTLY TO THE FOUNTAIN SURFACE AND BONDED AS REQUIRED. ALL CONDUIT STUBBED UP THROUGH THE FOUNTAIN FLOOR MUST BE STAINLESS STEEL. PVC, RED BRASS, AND EVERDUR ARE NOT ACCEPTABLE AS A CONDUIT SUPPORT STUB FOR SUBMERSIBLE JUNCTION BOXES. ALL CONDUIT ENTRIES MUST BE COMPLETELY SEALED PRIOR TO POTTING TO PREVENT COMPOUND FROM ENTERING CONDUIT SYSTEM. AFTER TESTING, JUNCTION BOXES SHALL BE SEALED WITH SCOTCH 3M RE-ENTERABLE COMPOUND OR OTHER APPROVED FILLING COMPOUND. CONFIRM POTTING COMPOUND HAS CURED BEFORE INSTALLING LID ON JUNCTION/DECK BOXES.
13. ALL ELECTRICAL CONDUIT AND CONDUIT FITTINGS BETWEEN SUBMERSIBLE LIGHT FIXTURE NICHES, JUNCTION BOXES AND CONTROL PANELS WILL BE U.L. LISTED RIGID, NONMETALLIC, PVC NEMA, TC-2 MAX. 90°C, SUNLIGHT RESISTANT FOR ABOVE AND BELOW GROUND USE. ALL CONDUITS SHALL BE PROTECTED AT ALL TIMES FROM POSSIBLE WATER INGRESS. USE ONLY APPROVED PRIMER AND PVC GLUE SUITABLE FOR JOINING ALL PVC CONDUITS AND FITTINGS PER MANUFACTURER'S INSTRUCTIONS.
14. ALL UNDERWATER JUNCTION BOXES MUST BE EQUIPPED WITH THREADED CONDUIT ENTRIES AND COMPRESSION TYPE CORD CONNECTORS FOR CORD ENTRY. STRAIN RELIEF CONNECTORS SERVING NICHE-MOUNTED UNDERWATER LIGHTS SHALL BE CAPABLE OF SEALING BOTH THE FIXTURE CORD AND AN AWG #8 BARE BONDING WIRE WHICH MAY BE REQUIRED BY SOME LOCAL CODES.
15. ALL ELECTRICAL EQUIPMENT MUST BE PROPERLY BONDED AND GROUNDED FOR SAFETY, PER THE LATEST NEC AND LOCAL CODE REQUIREMENTS. ALL BONDING LUGS SHALL BE PROVIDED BY INSTALLING ELECTRICAL CONTRACTOR. INSTALLING CONTRACTOR SHALL VERIFY ALL NECESSARY REQUIREMENTS OF LOCAL INSPECTOR BEFORE INSTALLING, AND NOTIFY DELTA FOUNTAINS OF ANY REQUIRED DEVIATIONS FROM SPECIFICATIONS OR PLANS AND NOTES, AND RESOLVE ALL CONFLICTS BEFORE INSTALLING EQUIPMENT. CONTRACTOR TO INSURE THAT ALL BONDING CODES ARE COMPLIED WITH FOR EACH METAL FOUNTAIN EQUIPMENT COMPONENT.
16. ALL CONDUIT CONNECTIONS BETWEEN DISSIMILAR METALS MUST BE MADE WITH DIELECTRIC FITTINGS, AND SEALED WITH DIELECTRIC THREAD COMPOUND TO PREVENT GALVANIC DEGRADATION.
17. THE INSTALLING ELECTRICAL CONTRACTOR WILL VERIFY THAT ALL ELECTRICAL EQUIPMENT GROUNDS WILL HAVE THE SAME REFERENCE POTENTIAL AND WILL GIVE EVIDENCE OF SUCH TO DELTA FOUNTAINS BEFORE ANY EQUIPMENT IS INITIALLY ENERGIZED.
18. THE INSTALLING CONTRACTOR SHALL SIZE ALL FEED-WIRES LEADING TO FOUNTAIN CONTROL PANEL FOR NO MORE THAN 2% VOLTAGE DROP, AND SHALL NOTIFY DELTA FOUNTAINS BEFORE THE CONTROL PANEL IS FABRICATED IF WIRE IS UPSIZED SUCH THAT EXTRA LARGE WIRE LUGS ARE REQUIRED. IT IS THE RESPONSIBILITY OF ELECTRICAL CONTRACTOR TO PROVIDE ANY DISCONNECT REQUIRED BY LOCAL CODE REQUIREMENTS.
19. THE FOUNTAIN CONTROL PANEL SHALL BE ADEQUATELY PROTECTED FROM DEBRIS AND STORED PROPERLY DURING CONSTRUCTION AND PRIOR TO INITIAL OPERATION AND SHALL BE VACUUMED CLEAN AND ALL SCREWS FOR TERMINAL CONNECTIONS TIGHTENED.
20. THE ELECTRICAL CONTRACTOR SHALL ENSURE THAT SUPPLY VOLTAGE IS WITHIN 5% OF DESIGN VOLTAGE WHEN ALL EQUIPMENT IS IN OPERATION AND SHALL RE-TAP TRANSFORMER, UP SIZE WIRE, OR SUPPLY A BUCK AND BOOST TRANSFORMER TO GET SUPPLY VOLTAGE TO NECESSARY LEVEL, IF NECESSARY.
21. ANY AND ALL COSTS ASSOCIATED WITH THE ABOVE ARE THE RESPONSIBILITY OF INSTALLING CONTRACTOR.
22. CONDUITS ENTERING FOUNTAIN SYSTEM CONTROL PANELS SHALL BE INSTALLED INTO BOTTOM OF ENCLOSURE IN THE EVENT WATER ENTERS CONDUIT AND FLOWS INTO PANEL THROUGH CONDUIT OPENINGS. A DRAIN OPENING MUST BE MADE IN BOTTOM OF ENCLOSURE PAN TO ALLOW DRAINAGE OF WATER FROM ENCLOSURE IN THE EVENT OF WATER INGRESS. DO NOT MOUNT CONTROL PANEL WHERE IRRIGATION NOZZLES WILL SPRAY DIRECTLY AT PANEL.
23. PULL CORRECT QUANTITY AND SIZE WIRES WITH SEPARATE GROUND THROUGH CONDUIT INTO JUNCTION BOX. MAKE ALL SPLICES AND CONNECTIONS TIGHT AND WELL INSULATED. CONNECT GROUND WIRE TO GROUND LUGS IN JUNCTION BOX. ALL WIRING AND CONDUIT SHALL BE SIZED BY THE ELECTRICAL CONTRACTOR IN ACCORDANCE WITH THE LATEST EDITION OF THE NEC AND ALL ELECTRICAL CODES AND REGULATIONS. WHERE WIRED CONDUIT SIZES ARE SPECIFIED ON THE DRAWINGS, THEY SHALL BE INTERPRETED AS MINIMUM ALLOWABLE SIZES. ALL CONDUCTORS SHALL BE COPPER WITH INSULATION SUITABLE FOR THE PARTICULAR WIRING LOCATION. MINIMUM ACCEPTABLE INSULATION TYPE IS THWN OR BETTER, SUITABLE FOR BOTH DRY AND WET LOCATIONS. CONDUCTOR INSULATION SHALL BE MOISTURE RESISTANT, FLAME RETARDANT THERMOPLASTIC AS APPROVED BY THE NEC. CONDUCTOR SIZING SHALL BE BASED ON AN AMBIENT TEMPERATURE OF 30 DEGREES CELSIUS AND A CONDUCTOR TEMPERATURE RATING OF 75 DEGREES CELSIUS MAX. PER ARTICLE 310 OF THE NEC. ALL UNDERWATER ELECTRICAL CABLE SHALL EITHER BE ENCASED IN WATERPROOF, SEALED PVC CONDUIT OR SHALL BE RATED FOR CONTINUOUS OPERATION IN UNDERWATER, MARINE ENVIRONMENTS.
24. INSERT EACH SUBMERSIBLE CORD THROUGH THE BRASS CORD SEALS PROVIDED ON THE JUNCTION BOX, AND TIGHTEN COMPLETELY.
25. DO NOT OPERATE SUBMERSIBLE LIGHTS OR PUMPS MORE THAN 10 SECONDS UNLESS COMPLETELY SUBMERGED OR DAMAGE WILL RESULT AND WARRANTIES WILL BE VOIDED.
26. ALL CONDUCTORS FOR FEEDERS WHICH EXCEED 200 FEET IN LENGTH SHALL BE INCREASED 1 TRADE SIZE AND INCREASED AN ADDITIONAL 1 TRADE SIZE FOR EACH ADDITIONAL 100 FEET OF FEEDER CABLE LENGTH.
27. THE INFORMATION SUPPLIED IN THESE DRAWINGS SPECIFIES THE GENERAL REQUIREMENTS OF A COMPLETE FUNCTIONING ELECTRICAL POWER DISTRIBUTION AND CONTROL SYSTEM. THE ELECTRICAL SUBCONTRACTOR SHALL COORDINATE ALL ELECTRICAL INSTALLATION ACTIVITIES WITH THE CONSTRUCTION MANAGER, GENERAL CONTRACTOR, ARCHITECT AND (WITH RESPECT TO WORK PHASE) OTHER SEPARATE CONTRACTORS PERFORMING WORK RELATED TO THE FOUNTAIN INSTALLATION.
28. ALL CONDUCTORS SHALL BE RUN IN RIGID CONDUIT SIZED FOR THE NUMBER OF WIRES CONTAINED WITHIN PER NEC REQUIREMENTS. RIGID CONDUIT SHALL BE CORROSION RESISTANT AND EITHER GALVANIZED STEEL OR RIGID PVC. WHEN CONDUIT IS SUBMERGED OR IN OTHER WET LOCATIONS, RIGID PVC SHALL BE REQUIRED. CONDUCTOR SIZING SHALL BE CORRECTED FOR THE NUMBER OF WIRES TO BE RUN IN A SINGLE CONDUIT OR RACEWAY IN ACCORDANCE WITH THE NEC. ALL CONDUIT LOCATIONS AND ROUTING SHALL BE APPROVED BY THE ARCHITECT BEFORE INSTALLATION.
29. THE WORK TO COMPLETE THE INSTALLATION OF THE FOUNTAIN INCLUDES SUCH NECESSARY MATERIAL AND DEVICES OF A MINOR NATURE THAT MAY NOT BE INDICATED ON THE DRAWINGS OR MENTIONED IN THE SPECIFICATIONS, BUT WHICH ARE NECESSARY FOR THE COMPLIANCE WITH CODES AND FOR THE SUCCESSFUL OPERATION OF THE FEATURE. THE CONTRACTOR SHALL BE ALLOWED NO EXTRA COMPENSATION BECAUSE OF THIS REQUIREMENT.
30. THOROUGHLY TEST ALL FIXTURES, SERVICES AND ALL CIRCUITS FOR PROPER OPERATING CONDITIONS AND FREEDOM FROM GROUNDS AND SHORT CIRCUITS BEFORE ACCEPTANCE IS REQUESTED. ALL EQUIPMENT, APPLIANCES AND DEVICES SHALL BE OPERATED UNDER LOAD CONDITIONS.
31. THERMAL OVERLOAD RELAYS SHALL BE SET AT NOT MORE THAN 115% OF MOTOR FULL LOAD CURRENT AND/OR IN ACCORDANCE WITH MANUFACTURER'S REQUIREMENTS.
32. ALL CONNECTIONS MUST BE RECHECKED BEFORE START UP AND ONE MONTH AFTER STARTUP BY A QUALIFIED TECHNICIAN.
33. ALL G.F.C.I. PROTECTED CIRCUITS MUST HAVE A SEPARATE NEUTRAL.
34. ALL G.F.C.I. BREAKERS HAVE PIGTAILS WIRED TO THE NEUTRAL BAR.
35. CONTRACTOR TO ENSURE THAT ALL BONDING CODES ARE COMPLIED WITH FOR EACH METAL FOUNTAIN EQUIPMENT COMPONENT.
36. WIRES FOR WATER LEVEL SENSOR MUST BE RUN IN A SEPARATE CONDUIT FROM THE FOUNTAIN TO THE CONTROL PANEL.
37. ALL CONDUIT PENETRATIONS THROUGH STRUCTURE WALLS INTO OPEN AREAS BELOW FOUNTAIN STRUCTURE MUST HAVE ALLOWANCES MADE FOR SETTLEMENT.
38. ALL CONDUIT INSTALLATION IN TRADE AREAS BELOW THE FOUNTAINS SHALL BE INSTALLED WITH E.M.T. AND IN THE LEVEL BELOW AND WITH E.M.T. STRAPS PER N.E.C. AND SPECIFICATIONS.
39. FLOOR MOUNTED CONTROL CENTERS AND TRANSFORMERS FOR FOUNTAIN RELATED EQUIPMENT SHALL BE INSTALLED ON A 4" CONCRETE HOUSEKEEPING PAD IF INSTALLED IN AN EQUIPMENT ROOM OR A PVC HOUSEKEEPING PAD IF INSTALLED IN A FIBERGLASS EQUIPMENT ROOM.
40. CONTRACTOR INSTALLING FOUNTAIN MANUFACTURER SUPPLIED DECK BOXES IN CONCRETE FOR FOUNTAIN NICHE LIGHTING IS TO ENSURE THAT ALL OPEN CONDUIT PORTS ARE PLUGGED AND ARE WATERTIGHT PRIOR TO SLAB POUR AROUND DECK BOXES.
41. ALL PENETRATIONS THROUGH OUTSIDE WALLS TO BELOW GRADE SHALL BE SEALED PER BUILDING SPECIFICATIONS. USING "EASY-LINK SEALS" IS RECOMMENDED.
42. ALL CONNECTIONS IN THE FOUNTAIN SHALL BE MADE WITH THE ASSISTANCE OF A PLUMBER, USING TEFLON TAPE OR TEFLON PASTE TO ELIMINATE ALL LEAKS. USE ONLY TAPERED (N.P.T.) BRASS OR STAINLESS STEEL FITTINGS OR NIPPLES. THE USE OF GALVANIZED, PVC OR BLACK STEEL IS UNACCEPTABLE.
43. CONDUITS ARE DRAWN FOR CLARITY AND DO NOT NECESSARILY SHOW EXACT ROUTING. CONTRACTOR SHALL INSTALL CONDUITS IN COMPLIANCE WITH NEC CODE, WHICH THERE SHALL BE NO MORE THAN THE EQUIVALENT OF FOUR QUARTER BENDS (360 DEGREES TOTAL) BETWEEN PULL POINTS, E.G., CONDUIT BODIES AND BOXES.
44. CONTRACTOR SHALL OBTAIN ALL NECESSARY INSTALLATION PERMITS AND INSPECTIONS.
45. ALL COMPONENT ITEMS USED IN THE PRODUCTION OF DELTA FOUNTAINS' PRODUCTS ARE U.L. LISTED WHENEVER SUCH LABELING IS AVAILABLE FROM THE SOURCE EQUIPMENT OR MATERIAL.
46. SHOULD ANY PRODUCT REQUIRE A 'THIRD PARTY' LABEL OR CERTIFICATION AS AN ASSEMBLY (E.G., N.E.C., U.L. OR E.T.L. LISTING) SUCH REQUIREMENTS SHALL BE DETERMINED, CONTRACTED FOR, AND PAID BY OTHERS.
47. DELTA FOUNTAINS SHALL NOT BE RESPONSIBLE OR LIABLE IN ANY MANNER WHATSOEVER FOR SPECIAL LABELING OR CERTIFICATION REQUIREMENTS, INCLUDING THIRD PARTY PRODUCT TESTING UNLESS SPECIFICALLY INCLUDED IN ITS PROPOSALS, QUOTATIONS, DRAWING DESCRIPTIONS AND DETAILS, REGARDLESS OF PROJECT SPECIFICATION OR CODE REQUIREMENTS.

1. ALL METAL PARTS WITHIN 5 FEET OF THE INSIDE WALLS OF FOUNTAIN AND ALL METAL PARTS OF ASSOCIATED ELECTRICAL EQUIPMENT MUST BE BONDED TOGETHER PER NEC 680.
2. ALL BONDING CONDUCTORS SHALL BE BARE #8 SOLID COPPER.
3. ALL BONDING SHALL BE CONTINUOUS WITHOUT SPLICES. ALL CONNECTIONS SHALL BE MADE BY EXOTHERMIC WELD OR FITTING APPROVED FOR SUCH USE IN FOUNTAINS AND POOLS.
4. IF EXPOXY COATED REBAR IS SPECIFIED THE CONTRACTOR MUST USE A #8 SOLID COPPER WIRE GRID FOR BONDING IN THE CONCRETE OF ALL AREAS CONTAINING WATER OR COMING IN CONTACT WITH WATER IN THE FOUNTAIN. CONTRACTOR TO CONFORM TO NEC AND LOCAL JURISDICTIONAL CODE REQUIREMENTS FOR THE BONDING.



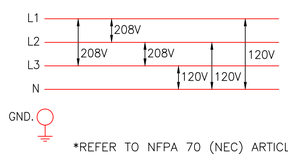
1 F3.00 TYPICAL FOUNTAIN "BONDING" SCHEMATIC NTS

1. ALL METAL PARTS WITHIN 5 FEET OF THE INSIDE WALLS OF FOUNTAIN AND ALL METAL PARTS OF ASSOCIATED ELECTRICAL EQUIPMENT MUST BE BONDED TOGETHER PER NEC 680 (SEE BONDING SCHEMATIC ABOVE).



2 F3.00 TYPICAL FOUNTAIN "GROUNDING" SCHEMATIC NTS

CONTROL SYSTEM POWER REQUIREMENT:
120/208 VOLT, THREE PHASE, 4-WIRE + GND.



*REFER TO NFPA 70 (NEC) ARTICLE 250

3 F3.00 ELECTRICAL POWER SUPPLY OPTIONS NTS

POWER SUPPLY & BONDING DETAILS
SCALE: N.T.S.

ASSEMBLY ROW AT ASSEMBLY SQUARE
PHASE 2 ROADWAY AND STREETSCAPE
ASSEMBLY LINE PARK
F3.10
SHEET 75 OF 79

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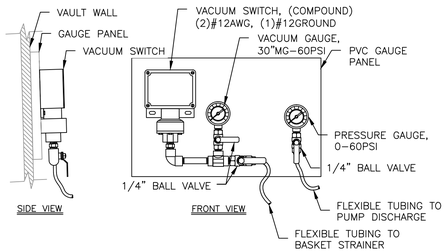
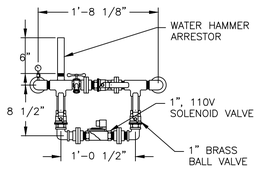
PUMP SCHEDULE										
TAG	FEATURE	MODEL NO.	MANUFACTURER	HP	VOLTAGE	ø	RPM	GPM	'T.D.H.	F.L.A.
P-1	FEATURE	95IX	SPECK	5	208 V.	3	1750	340	30'	15
P-2	FILTER	WFE-2	PENTAIR	1/2	120 V.	1	3450	40	60'	8.8
P-3	EQUIPMENT VAULT SUMP PUMP	SP33-VF	BARNES	1/3	120 V.	1	3450	20	12'	5.8



VACUUM GAUGE PANEL ASSEMBLY DETAIL
NTS



DFWMUA-100-SS, WATER MAKE-UP ASSEMBLY DETAIL
SCALE: 1" = 1'-0"

PRELIMINARY DESIGN NOT FOR CONSTRUCTION

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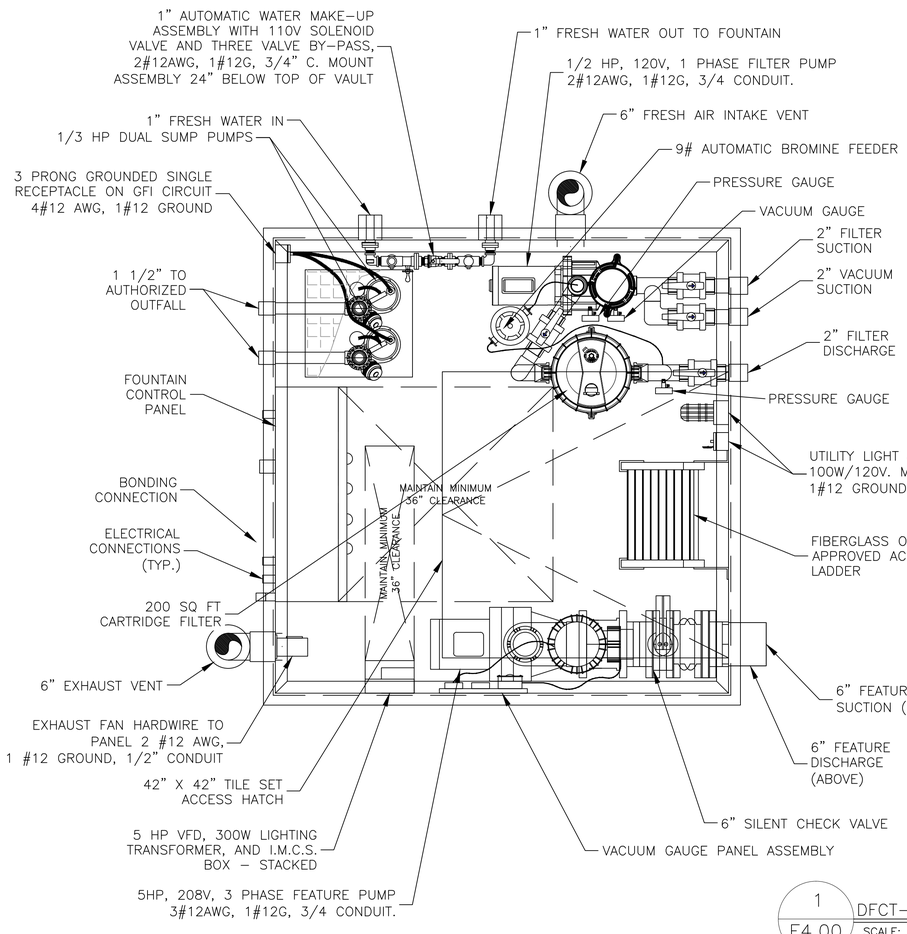
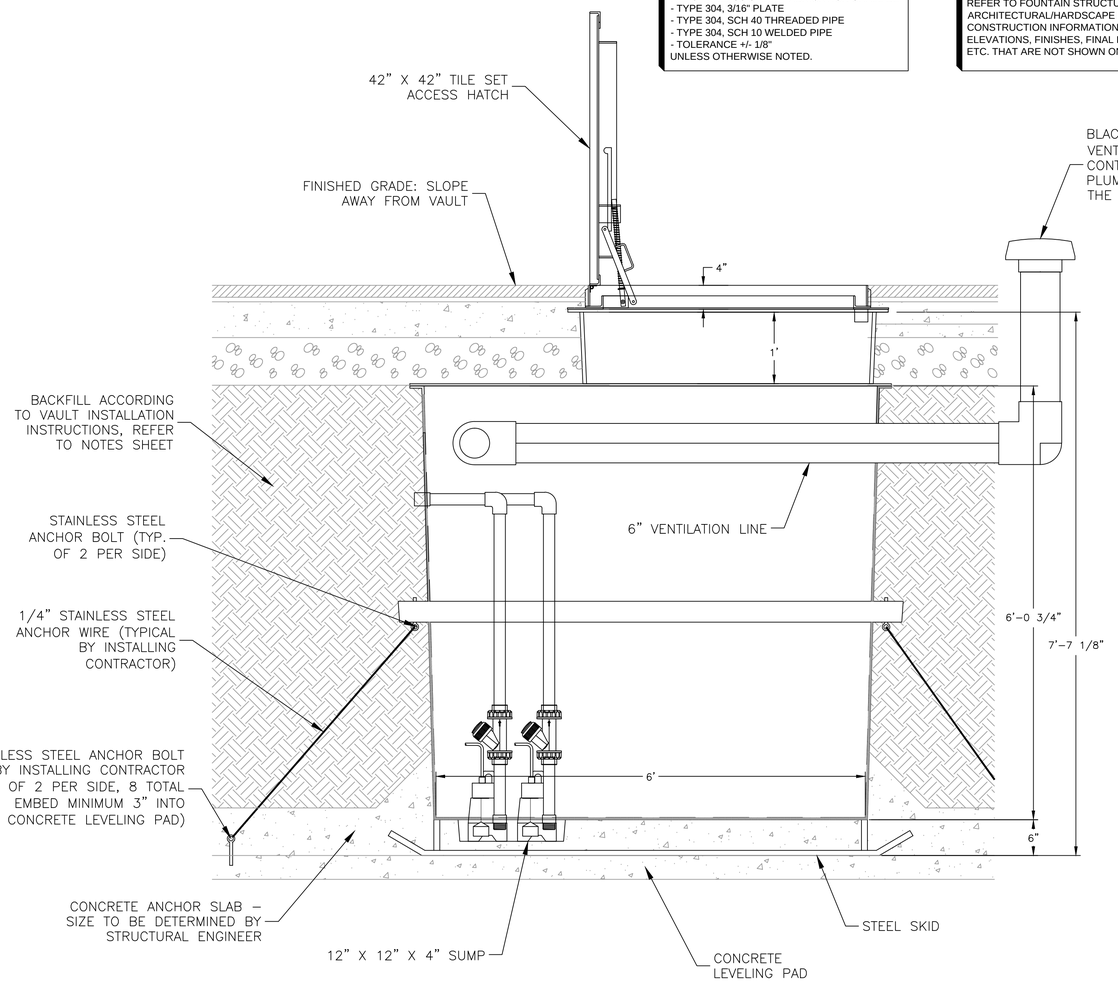
NOTE:
ALL STAINLESS STEEL FABRICATION SHALL BE:
- TYPE 304, 3/16" PLATE
- TYPE 304, SCH 40 THREADED PIPE
- TYPE 304, SCH 10 WELDED PIPE
- TOLERANCE +/- 1/8"
UNLESS OTHERWISE NOTED.

NOTE:
REFER TO FOUNTAIN STRUCTURAL DETAILS AND ARCHITECTURAL/HARDSCAPE PLANS FOR CONSTRUCTION INFORMATION, INCLUDING SLOPES, ELEVATIONS, FINISHES, FINAL EQUIPMENT LOCATIONS ETC. THAT ARE NOT SHOWN ON THESE PLANS.





1 / F4.00 DFCT-3600, 6' X 6' LOW PROFILE EQUIPMENT VAULT - DETAILS
SCALE: 1" = 1'-0"

VAULT AND MECHANICAL DETAILS
SCALE: N.T.S.

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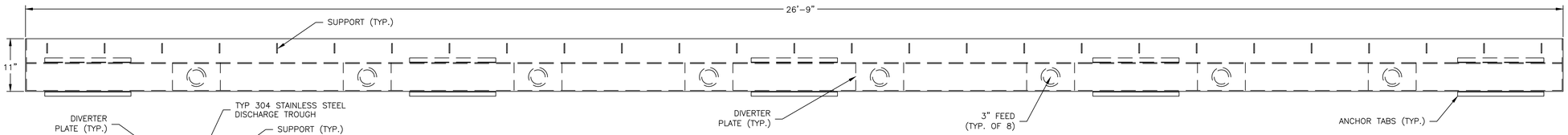
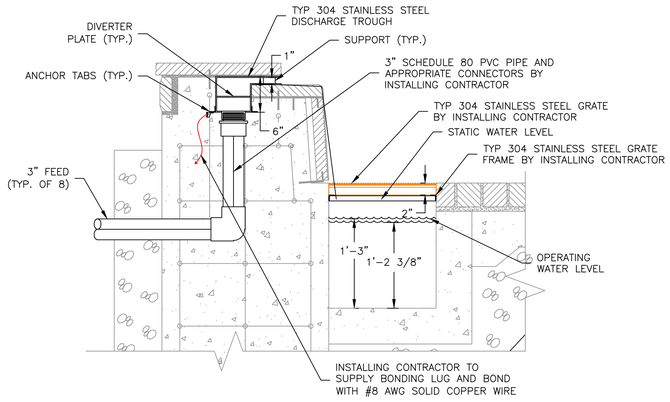
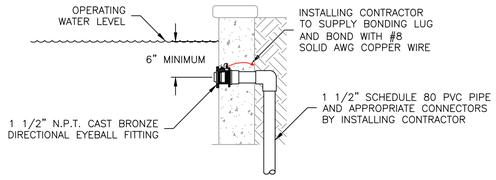
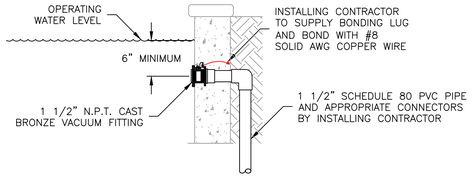




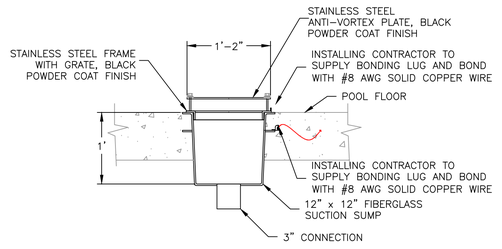
1 F4.10 DFDT-2600, 26'-9" CUSTOM STAINLESS STEEL TROUGH - DETAIL
SCALE: 1" = 1'-0"



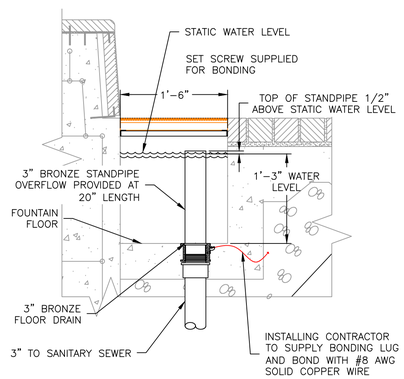
2 F4.10 DFEF-150, 1 1/2" N.P.T. DIRECTIONAL EYEBALL FITTING DETAIL
SCALE: 1" = 1'-0"



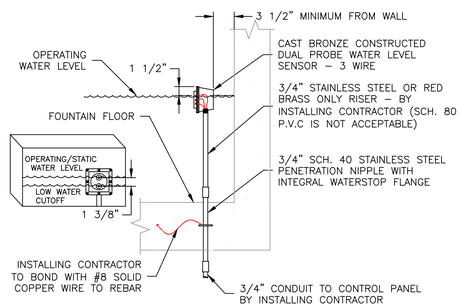
3 F4.10 DFVF-150: 1 1/2" N.P.T. VACUUM FITTING DETAIL
SCALE: 1" = 1'-0"



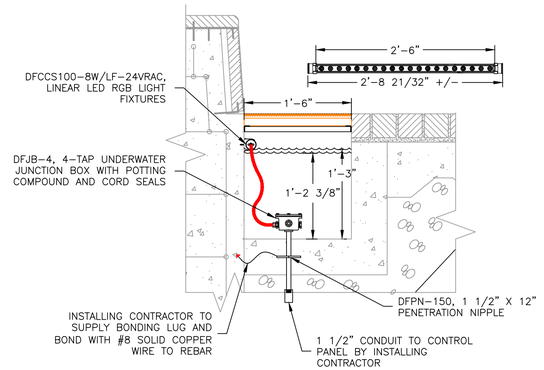
4 F4.10 DFSS-1214-3, 12" x 12" SUCTION SUMP WITH ANTI-VORTEX PLATE, FRAME & GRATE
SCALE: 1" = 1'-0"



5 F4.10 DFSO-300SP, 3" COMBINATION STANDPIPE OVERFLOW/FLOOR DRAIN DETAIL
SCALE: 1" = 1'-0"



6 F3.00 DFWLS-C: DUAL PROBE WATER LEVEL SENSOR DETAIL
SCALE: 1" = 1'-0"



7 F4.10 DFCCS100-8W/LF-24VRAC, LINEAR LED RGB LIGHT FIXTURE - DETAIL
SCALE: 1" = 1'-0" QTY: (8) 2.5' FT FIXTURES

PRELIMINARY DESIGN
NOT FOR CONSTRUCTION

NOTE:
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EQUIPMENT INSTALLATION DETAILS
SCALE: N.T.S.

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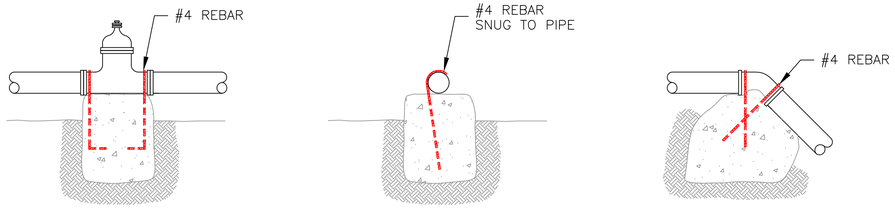
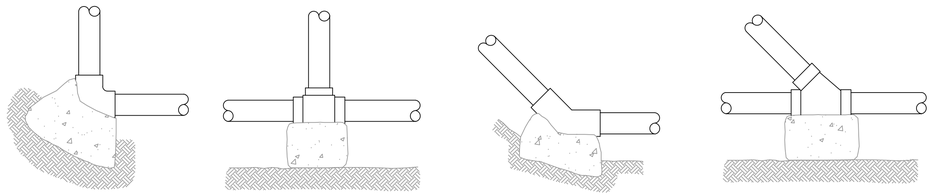
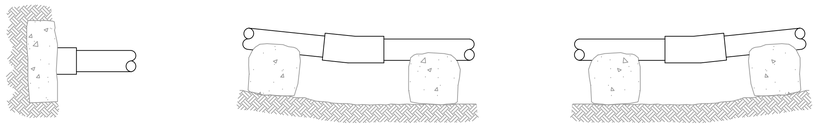


IF THRUSTS DUE TO HIGH PRESSURE ARE EXPECTED, ANCHOR VALVES AS ABOVE. AT VERTICAL BANDS ANCHOR TO RESIST OUTWARD THRUSTS.



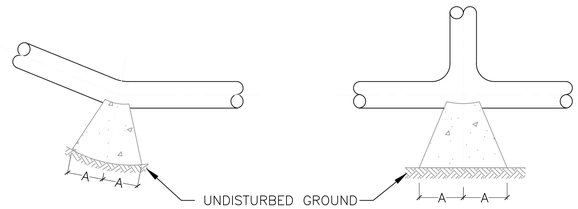
TYPICAL THRUST BLOCK LOCATIONS



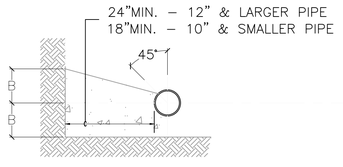
SIDE THRUST BLOCKING – 6" AND 8" DIA. PIPES

MIN. BEARING AREA OF REACTION BACKING (CONCRETE)

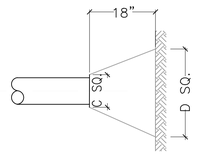
PIPE SIZE	END	TEE	90°	45°	22.5°	VALVE
6"	4.0 SQ. FT.	4.0 SQ. FT.	5.5 SQ. FT.	3.0 SQ. FT.	1.5 SQ. FT.	2.0 SQ. FT.
8"	7.0 SQ. FT.	7.0 SQ. FT.	9.0 SQ. FT.	5.0 SQ. FT.	2.5 SQ. FT.	2.0 SQ. FT.
10"	10.0 SQ. FT.	10.0 SQ. FT.	14.0 SQ. FT.	7.5 SQ. FT.	4.0 SQ. FT.	2.0 SQ. FT.
12"	14.0 SQ. FT.	14.0 SQ. FT.	20.0 SQ. FT.	11.0 SQ. FT.	5.5 SQ. FT.	2.0 SQ. FT.
14"	19.0 SQ. FT.	19.0 SQ. FT.	27.0 SQ. FT.	14.5 SQ. FT.	7.5 SQ. FT.	2.0 SQ. FT.
16"	25.0 SQ. FT.	25.0 SQ. FT.	35.0 SQ. FT.	19.0 SQ. FT.	10.0 SQ. FT.	2.0 SQ. FT.



BENDS TEES



SECTION
(BENDS & TEES)



PLUGS

TYPE	SIZE	90° BENDS		45° BENDS		22.5° BENDS		TEES		PLUGS	
		A	B	A	B	A	B	A	B	C	D
TYPE–I 4000 PSF SOIL	6"	8"	10"	6"	8"	3"	8"	8"	8"	10"	15"
	8"	12"	12"	8"	12"	5"	9"	9"	12"	12"	20"
	10"	16"	14"	10"	12"	6"	10"	11"	14"	14"	25"
	12"	19"	16"	12"	14"	8"	11"	14"	16"	16"	30"
	14"	23"	18"	14"	16"	10"	12"	16"	18"	18"	34"
	16"	26"	20"	16"	18"	11"	13"	18"	20"	20"	38"
TYPE–II 2000 PSF SOIL	6"	16"	10"	9"	10"	6"	8"	10"	12"	10"	21"
	8"	22"	13"	12"	13"	8"	10"	13"	16"	12"	29"
	10"	26"	17"	14"	17"	10"	13"	16"	20"	14"	36"
	12"	29"	21"	16"	21"	11"	16"	18"	24"	16"	41"
	14"	35"	24"	19"	24"	11"	20"	22"	27"	18"	48"
	16"	38"	27"	21"	27"	12"	24"	24"	30"	20"	54"

NOTE: BASED ON 100 PSI STATIC PRESSURE PLUS AWWA HAMMER

THRUST BLOCK DETAILS

SCALE: N.T.S.

Saved Thursday, June 16, 2016 9:40:27 AM DELTA Plotted Thursday, June 16, 2016 9:42:31 AM DELTA

ASSEMBLY ROW AT ASSEMBLY SQUARE
PHASE 2 ROADWAY AND STREETSCAPE
ASSEMBLY LINE PARK
F4.21
SHEET 79 OF 79

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EQUIPMENT VAULT INSTALLATION INSTRUCTIONS:

1. RECEIVING THE VAULT

A. UPON ARRIVAL OF THE VAULT, THE RECEIVING AGENT SHOULD INSPECT THE INTERIOR AND EXTERIOR FOR ANY VISIBLE DAMAGE THAT MAY HAVE OCCURRED DURING SHIPPING. IF ANY DAMAGE IS FOUND, ALL DAMAGES AND SHORTAGES SHALL BE CLEARLY DOCUMENTED ON THE BILL OF LADING AND PACKING SLIP BEFORE THE DELIVERY DRIVER LEAVES THE PREMISES. THE RECEIVING AGENT SHOULD IMMEDIATELY NOTIFY THE FREIGHT LINE, NOTE THE BILL OF LADING AND CONTACT DELTA FOUNTAINS. IF THE EQUIPMENT VAULT IS NOT GOING TO BE INSTALLED AT THE TIME OF DELIVERY, THE VAULT SHOULD BE STORED IN A COVERED AREA SAFE FROM FLOODING.

B. CONTRACTOR SHALL STORE ALL COMPONENTS IN THEIR ORIGINAL PACKAGES AND PROTECT ALL ITEMS FROM DAMAGE UNTIL FINAL PLACEMENT OCCURS. CONTRACTOR SHALL ROTATE ALL MOTOR SHAFTS ¼ TURN EACH AND EVERY MONTH DURING STORAGE UP TO THE TIME OF FIRST PERFORMANCE TO ENSURE MOTOR SHAFT INTEGRITY. TIGHTEN ALL PLUGS, BOLTS, NUTS, AND UNION TYPE FITTINGS AND CLOSE ALL VALVES UNTIL SYSTEM IS READY FOR STARTUP.

C. FIELD VERIFY ALL EQUIPMENT DIMENSIONS PRIOR TO EXCAVATION. DIMENSIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE. ANY DISCREPANCIES SHOULD BE REPORTED, IN WRITING, IMMEDIATELY TO DELTA FOUNTAINS. DELTA FOUNTAINS IS NOT RESPONSIBLE FOR ANY DIMENSIONAL DISCREPANCIES IF THE CONTRACTOR FAILS TO NOTIFY DELTA FOUNTAINS IN A TIMELY MANNER BEFORE INSTALLATION OF THE EQUIPMENT VAULT.

2. EXCAVATION

A. EXCAVATE TO PROPER DEPTH TO RECEIVE THE VAULT AND A MINIMUM CLEAR AREA OF 3'–0" AROUND THE PERIMETER OF THE VAULT.

B. FIELD VERIFY EQUIPMENT DIMENSIONS AND REPORT ANY DISCREPANCIES IN WRITING TO DELTA FOUNTAINS.

C. ALLOW FOR TAPERING OF THE SOIL TO PREVENT CAVE IN AND/OR PROVIDE SOIL SUPPORT PER OSHA GUIDELINES.

D. ADD COMPACTED GRAVEL BASE AND POUR THE CONCRETE ANCHOR SLAB AS INDICATED ON THE DRAWINGS. THE ANCHOR SLAB IS TO BE REINFORCED WITH GRID USING #4 REBAR ON 12" CENTERS.

E. ONE PIECE MOLDED STAINLESS STEEL ANCHOR BOLTS AND ¼" DIAMETER STAINLESS STEEL ANCHOR WIRE ARE TO BE PROVIDED AND INSTALLED BY THE FOUNTAIN CONTRACTOR. THE ANCHOR BOLTS SHOULD BE TIED TO THE REINFORCING GRID.

3. INSTALLING THE VAULT

**ALL OF THE FOLLOWING SHALL BE COMPLETED WITHOUT FAIL ON THE SAME DAY THE PUMP VAULT IS LOWERED DOWN INTO THE DESIGNATED SPACE:

A. CHECK FOR FAVORABLE AND DRY METEOROLOGICAL FORECAST PRIOR TO BEGINNING INSTALLATION OF PUMP VAULT.

B. THE VAULT SHOULD BE RIGGED WITH STRAPS, LIFTING FROM THE BOTTOM OF THE VAULT, NOT THE STEEL SKID SUPPORT. CARE SHOULD BE TAKEN TO POSITION THE STRAPS AWAY FROM ANY PLUMBING CONNECTIONS ON THE SIDE OF THE VAULT. DO NOT USE CHAINS OR CABLES TO LIFT THE VAULT. DO NOT USE THE ANCHOR BOLTS ON THE SIDE OF THE VAULT FOR LIFTING. LOWER THE VAULT ON TO THE ANCHOR SLAB AND ADJUST THE POSITION AS NECESSARY.

C. THE FOUNTAIN CONTRACTOR IS TO SUPPLY AND INSTALL THE STAINLESS STEEL ANCHOR CABLES (¼" DIAMETER MIN. BY CONTRACTOR) FROM THE VAULT EYEHOOKS TO THE ANCHOR BOLTS IN THE SLAB (ANCHOR BOLTS BY CONTRACTOR). REMOVE SLACK FROM THE CABLES AND TIGHTEN. DO NOT OVER TIGHTEN THE CABLE.

D. ONCE THE VAULT IS IN PLACE, IMMEDIATELY CONNECT THE TWO VENTILATION LINES AND ROUTE THEM TO THEIR DESIGNATED LOCATION.

E. PERMANENT POWER IS TO BE PROVIDED TO THE SUMP PUMP IN THE VAULT BY A 24 HOUR/DAY OPERATIONAL 120VAC, 60 HZ, 20A POWER SUPPLY TO THE SUMP PUMP(S). THIS SERVICE CAN BE ROUTED TEMPORARILY THROUGH THE VENTILATION SYSTEM (AIR SUPPLY – CLOSEST LINE TO THE FLOOR).

F. CONNECT THE 1 1/2" OR 2" BACKWASH/SUMP PUMP DISCHARGE LINES TO THE SEWER SYSTEM; EITHER SANITARY OR STORM, PER LOCAL CODES OR AS DESIGNATED ON THE CIVIL/MEP DRAWINGS. CHECK THE BALL VALVE ON THE SUMP PUMP DISCHARGE LINE AND MAKE SURE IT IS OPEN.

G. LIFT THE FLOAT ON THE SUMP PUMP (ONCE POWER CONNECTION IS MADE) TO MAKE SURE THE PUMP OR PUMPS ARE WORKING.

H. WHILE OPERATING UNDER TEMPORARY POWER IN AN UNFINISHED STATE, CHECK THE VAULT DAILY ESPECIALLY BEFORE AND AFTER RAIN.

I. PIPING AND CONDUIT CONNECTIONS MUST BE MADE AS SOON AS POSSIBLE TO PREVENT FLOODING OF THE VAULT. IF PIPING CANNOT BE CONNECTED AT THE TIME OF THE INSTALLATION, THE FOUNTAIN CONTRACTOR MUST CHECK TO MAKE SURE THAT ALL INTERIOR VALVES ARE CLOSED AND ALL CONDUIT CONNECTIONS ARE PLUGGED OR SEALED.

J. POUR ANCHOR SLAB. REFER TO INSTALLATION DETAIL DRAWINGS.

K. INSTALL ADDITIONAL TEMPORARY AUTOMATIC SUMP PUMP OF SUITABLE SIZE OUTSIDE OF THE VAULT IF THE HOLE HAS TO BE LEFT OPEN OVERNIGHT. CONTRACTOR IS RESPONSIBLE TO KEEP THE EXCAVATION AREA AROUND THE VAULT PUMPED AND DRY AT ALL TIMES WHILE AREA IS EXCAVATED.

L. THE ACCESS HATCH ON THE VAULT SHOULD BE CLOSED AND LOCKED AT ALL TIMES WHILE UNATTENDED DURING THE INSTALLATION PERIOD.

WARNING

FLOODING OF THE VAULT THRU THE NEGLIGENCE OF THE CONTRACTOR TO ADHERE TO THESE INSTALLATION SPECIFICATIONS VOIDS THE WARRANTY ON ALL EQUIPMENT IN THE VAULT. REPLACEMENT OF DAMAGED EQUIPMENT WILL BE THE RESPONSIBILITY OF THE INSTALLING CONTRACTOR. THE GUIDELINES OUTLINED ABOVE WILL AID IN THE PREVENTION OF FLOODING. IN ADDITION, CONSULT ALL INSTALLATION DETAILS IN THE CONSTRUCTION DOCUMENTS PROVIDED BY DELTA FOUNTAINS.

4. CONCRETE ANCHOR SLAB

A. POUR 4" – 6" CONCRETE LEVELING SLAB OR USE 4" COMPACTED GRAVEL BASE. STAINLESS STEEL ANCHOR BOLTS SHOULD BE INSERTED IN THE LEVELING SLAB.

B. LEVELING SLAB/COMPACTED GRAVEL BASE SHOULD BE SLOPED SLIGHTLY TO THE CORNER OF THE VAULT WHERE THE SUMP PUMP/GRAVITY DRAIN SUMP IS LOCATED.

C. POUR ANCHOR SLAB IN ACCORDANCE WITH DETAILS ON CONTRACT DOCUMENTS. THE CONCRETE SHOULD BE POURED WITH A MIN. 8" SLUMP TO ENSURE THE CONCRETE ADEQUATELY COVERS THE MOUNTING SKID AND FILLS THE ENTIRE VOID UNDER THE VAULT BETWEEN LEVELING SLAB AND BOTTOM OF VAULT.

5. PIPING AND CONDUIT CONNECTIONS

A. CONNECT ALL PIPING AND CONDUIT AS INDICATED ON THE CONSTRUCTION DOCUMENTS. DO NOT EXTERNALLY LOAD THE VAULT CONNECTIONS OR ALLOW THE CONNECTIONS TO SUPPORT THE WEIGHT OF THE CONNECTED PIPING. IF THE PIPING IS NOT SUPPORTED PROPERLY, SOIL SETTLING CAN RESULT IN EXCESSIVE LOADING ON THE PIPING. THIS CAN RESULT IN BROKEN PIPING AND MISALIGNED CONNECTIONS IN THE VAULT.

B. ALL OPEN CONDUITS CONNECTED TO THE VAULT SHOULD BE SEALED OR PLUGGED TO PREVENT WATER INTRUSION.

C. AFTER ANCHOR SLAB IS POURED, PLACE A 4" OR 6" PERFORATED PIPE LOOP AROUND THE BOTTOM PERIMETER OF THE VAULT AND PIPE TO STORM DRAIN.

D. THE EQUIPMENT VAULT IS PRE–WIRED AT THE FACTORY FOR TESTING PURPOSES. IN THE EVENT THE LOCAL AUTHORITY, HAVING JURISDICTION OVER THE INSTALLATION OF THE VAULT AND FINAL PASS/FAIL INSPECTION, REQUIRES ANY MODIFICATIONS TO THE CONDUIT OR WIRING AS INSTALLED, THE CONTRACTOR WILL BE RESPONSIBLE FOR MAKING THE CHANGES OR MODIFICATIONS AS REQUIRED TO CONFORM TO ALL LOCAL CODES.

WARNING

IF ALL DISCHARGE/SUCTION PIPING, ELECTRICAL CONDUIT CONNECTIONS AND AIR VENTS ARE NOT ROUTED ABOVE GRADE AND CAPPED, FLOODING WILL OCCUR DURING ADVERSE WEATHER CONDITIONS. DELTA RECOMMENDS A ONE DAY INSTALLATION.

6. PRESSURE TESTING

A. PRESSURE TEST ALL PIPING CONNECTED TO THE VAULT TO ENSURE THERE ARE NO LEAKS IN THE SYSTEM. REFER TO THE FOUNTAIN EQUIPMENT SPECIFICATIONS FOR PRESSURE TESTING PROCEDURES OR INSTRUCTIONS BELOW.

7. INTAKE AND EXHAUST VENTS

A. INSTALL AIR INTAKE AND EXHAUST VENTS AS SUPPLIED AND IN ACCORDANCE WITH THE CONSTRUCTION DOCUMENTS. THE VENT CAPS AS PROVIDED SHOULD BE INSTALLED IMMEDIATELY TO PREVENT WATER INTRUSION.

8. BACKFILLING AND COMPACTION

A. PROVIDE ADEQUATE INTERIOR BRACING DURING BACKFILLING TO PREVENT DAMAGE TO THE FIBERGLASS SHELL.

B. ALL OPEN PIPING AND CONDUIT SHOULD BE PROTECTED DURING THE BACKFILL PROCESS. BACKFILL MATERIAL TO BE #57 CRUSHED STONE OR ROUNDED GRAVEL, 3/4" MAX. AND LESS THAN 5% FINES. BACKFILLING AND COMPACTION SHOULD OCCUR IN 6" LIFTS. EACH LIFT IS TO BE HAND TAMPED. DO NOT USE POWER OPERATED COMPACTORS. A MIN. OF 2' OF BACKFILL MATERIAL SHOULD BE PLACED BETWEEN THE VAULT WALLS AND SURROUNDING EARTH. IN SOME GEOGRAPHIC LOCATIONS IT MAY BE NECESSARY TO PROVIDE ADDITIONAL DRAINAGE AROUND THE VAULT.

C. FOR VAULTS IN AREAS OF HIGH GROUND WATER TABLES IT IS RECOMMENDED TO ENCASE THE VAULT IN CONCRETE;

1. BRACE INTERIOR WALLS, IF NECESSARY, WITH 4 EA. 4" X 4" LUMBER AND 2 EA. CROSS MEMBERS.
2. BRACE INSIDE CEILING, IF NECESSARY, WITH 4 EA. 4" X 4" LUMBER AND 2 EA. CROSS MEMBERS.
3. FORM THE OUTER SHELL BY CONVENTIONAL MEANS. THE FIBERGLASS VAULT WILL BE USED AS THE INSIDE FORM.
4. POUR THE CONCRETE IN FOUR SEPARATE AND EQUAL LIFTS.

WARNING DO NOT USE SAND, CLAY OR DIRT FOR BACKFILL.
WARNING GUARD THE VAULT AT ALL TIMES AGAINST CROSSING BY ANY HEAVY MACHINERY OR CONCRETE TRUCKS.

PRESSURE TESTING

1. PERFORM TESTS IN THE PRESENCE OF THE OWNER, ARCHITECT, OR AUTHORIZED REPRESENTATIVE FOR DESIGNATED DURATION WITH NO PRESSURE LOSS OR NOTICEABLE LEAKS.
2. DO NOT INCLUDE EQUIPMENT IN TESTS WHICH COULD BE DAMAGED BY HIGH PRESSURE.
3. FLUSH OUT ALL PIPES WITH CLEAN WATER PRIOR TO PERFORMING LEAK TESTS.
4. PERFORM TESTS AS FOLLOWS:

SYSTEM	TEST PRESSURE	MEDIUM	DURATION
WATER	150 % OF OPERATING PRESSURE	WATER	8 HOURS
DRAINAGE	10FT. OVER HIGHEST PIPE INVERT	WATER	24 HOURS

5. AUTOMATIC MAKE–UP WATER SYSTEMS SHALL BE THOROUGHLY TESTED AND OPERATIVE AT THE TIME OF FINAL OBSERVATION.
6. AFTER THE SYSTEM HAS OPERATED FOR ONE WEEK, CONTRACTOR AND OWNER'S REPRESENTATIVE SHALL INSPECT WATER MAKE–UP RATES AND AGREE THAT WATER USAGE IS APPROPRIATE FOR A SYSTEM OF THIS TYPE, ARE WITHIN LOCAL ORDINANCES OR CODES, AND THAT SUCH RATES ARE NOT INDICATIVE OF EXCESSIVE LEAKAGE FROM SYSTEM. A WATER METER SHALL BE PLACED ON THE FILL LINE FOR THIS PURPOSE, IF NECESSARY TO DOCUMENT PRECISE WATER USAGE.

PVC INSTALLATION NOTES

1. UNLESS ARCHITECTS SPECIFICATIONS INDICATE OTHERWISE, THE SUGGESTED MINIMUM PIPING AND FITTING STANDARD RECOMMENDED FOR THIS INSTALLATION IS TYPE 1. PVC TYPE 1 CELL CLASSIFICATION 12454, CONFORMING TO ASTM STANDARD 1784.
2. USE ONLY PURPLE PVC PRIMER MEETING NSF, UPC, AND ASTM #F–656 STANDARDS FOR SOFTENING AND PREPARING FIELD PIPE AND FITTING SURFACES FOR SOLVENT CEMENTING (IPS CORPORATION "WELD–ON TYPE P–70 OR EQUIVALENT). WELD–ON P–70 PRIMER IS A PURPLE COLORED, NON–BODIED, VERY FAST ACTING, WATER THIN SOLVENT SYSTEM. WHEN USED IN CONJUNCTION WITH APPROPRIATE WELD–ON CEMENTS, WILL MAKE CONSISTENTLY STRONG, WELL–FUSED JOINTS. IT IS ESSENTIAL THAT THE JOINING SURFACES OF PIPE AND FITTINGS BE SOFTENED PRIOR TO ASSEMBLY. THE MAIN FUNCTION OF THIS PRIMER IS TO EXPEDITE THE PENETRATION AND SOFTENING OF THESE SURFACES. ITS RATE OF PENETRATION INTO THE JOINING SURFACES IS MUCH MORE RAPID THAN THAT OF CEMENT ALONE. IT IS SUITABLE FOR USE WITH ALL TYPES, SCHEDULES AND CLASSES OF PVC AND CPVC PIPE AND FITTINGS. FOLLOW ALL DIRECTIONS AND INSTRUCTIONS APPEARING ON PRODUCT LABEL.
3. USE ONLY GREY, HEAVY BODIED, MEDIUM SETTING PVC CEMENT MEETING NSF, UPC, AND ASTM #D–2564, STANDARDS FOR SOLVENT CEMENTING PVC PLASTIC PIPE AND FITTINGS (IPS CORPORATION "WELD–ON" TYPE 711 OR EQUIVALENT). WELD–ON 711 GREY, HEAVY BODIED, MEDIUM SET, HIGH STRENGTH SOLVENT CEMENT FOR CEMENTING ALL SCHEDULES AND CLASSES OF PVC PIPE AND FITTINGS THROUGH 12" INCLUDING SCHEDULE 80. WELD–ON 719 GREY OR WHITE, EXTRA HEAVY BODIED, THIXOTROPIC (PASTE–LIKE), HIGH STRENGTH SOLVENT CEMENT FOR CEMENTING ALL SCHEDULES AND CLASSES OF PVC PIPE AND FITTINGS 4" THROUGH 30" INCLUDING SCHEDULE 80. WELD–ON 711 AND 719 FOR USE ON ALL TYPES OF PVC PLASTIC PIPE APPLICATIONS, TYPE I AND TYPE II. IT IS APPROVED FOR USE WITH POTABLE WATER PRESSURE SYSTEMS, IRRIGATION, TURF IRRIGATION, GAS, CONDUIT, INDUSTRIAL PIPE APPLICATIONS, SEWER AND DRAIN, WASTE AND VENT SYSTEMS. FOLLOW ALL DIRECTIONS AND INSTRUCTIONS ON PRODUCT LABEL.
4. PRESSURE TEST ALL WATER PIPING PRIOR TO COMMENCING BACKFILL OPERATIONS. (SEE #4 IN "PRESSURE TESTING" SECTION ABOVE). HYDROSTATIC (WATER) TESTING SHALL BE THE ONLY APPROVED METHOD. DO NOT PRESSURE TEST WITH COMPRESSED AIR AS SEVERE PIPE DAMAGE AND BODILY INJURY CAN OCCUR. DO NOT EXCEED THE RATED OPERATIONAL PRESSURE OF THE PIPING AND/OR FITTINGS CARRYING THE LOWEST PRESSURE RATING. LOCATE AND REPAIR ANY LEAKS AND RETEST (PER #4 IN "PRESSURE TESTING" SECTION ABOVE) PRIOR TO COMPLETION OF BACKFILL OPERATIONS.
5. CONCRETE "THRUST" BLOCKING IS RECOMMENDED AT ALL DIRECTIONAL CHANGES (TEE'S, ELBOWS, ETC.), REDUCER FITTINGS AND LINE TERMINATIONS (BUSHINGS, END CAPS, PLUGS, ETC.) IN FOUNTAIN DISCHARGE PIPING 6" AND LARGER.
6. PERFORM ADEQUATE TRENCHING AND BACKFILL OPERATIONS WHEN INSTALLING PVC PIPING BELOW GRADE. TRENCH WIDTH SHOULD BE MINIMUM OF "PIPE O.D. PLUS 12 INCHES" AND DEEP ENOUGH TO ALLOW PIPING TO BE BURIED A MINIMUM OF 12" BELOW THE MAXIMUM EXPECTED FROST PENETRATION LINE TO AVOID FREEZE DAMAGE. LAY PIPING IN HORIZONTAL, PARALLEL, AND PERPENDICULAR MANNER. AVOID VERTICAL STACKING OF PIPES. SPACE MINIMUM OF 3" APART ON ALL PARALLEL RUNS.
7. USE ONLY CLEAN, FREE–FLOWING, NON–EXPANSIVE BACKFILL MATERIAL (NATURALLY ROUNDED ¼" PEA GRAVEL, 57 STONE, OR SAND) AND BACKFILL IN 6" LIFTS WITH ADEQUATE AND COMPLETE COMPACTION BETWEEN LIFTS TO 90% OF MAXIMUM DENSITY PER ASTM 1557–70. COMPACTION TO EXCESSIVE LOADS SHALL NOT BE PERMITTED. A SECOND PRESSURE TEST ON THE PIPING SYSTEM MUST BE MADE AT THIS TIME TO INSURE THAT PIPING HAS NOT BEEN DAMAGED DURING BACKFILL OPERATIONS (SEE #4 IN "PRESSURE TESTING" SECTION ABOVE).
8. AVOID LAYING SUCTION PIPING IN A MANNER THAT COULD RESULT IN A SUCTION LOOP BEFORE, DURING, OR AFTER BACKFILLING AND COMPACTION. ALWAYS PITCH PIPE IN A DOWNWARD DIRECTION TO AVOID A SUCTION LOOP THAT WILL CAUSE AIR TO BE PERMANENTLY TRAPPED, CAUSING LOSS IN PERFORMANCE OF THE PIPING SYSTEM DUE TO INCREASED FRICTION AND WORK LOAD DEMAND.
9. ANY AND ALL COSTS ASSOCIATED WITH ABOVE ARE RESPONSIBILITY OF INSTALLER.
10. INTERCONNECTING PIPING AND FITTINGS INSIDE EQUIPMENT VAULT IS SCHEDULE 80 P.V.C.

GENERAL NOTES

1. FINAL NOZZLE INSTALLATION AND ADJUSTMENT FOR POSITIONING AND THROTTLING TO ACHIEVED SPECIFIED PERFORMANCES FOR ALL DISPLAY DISCHARGE POINTS TO BE PERFORMED BY INSTALLING CONTRACTOR.
2. THE EQUIPMENT VAULT LOCATION IS SHOWN IN GENERAL VICINITY ONLY. VERIFY WITH THE ARCHITECTURAL DRAWINGS FOR THE EXACT LOCATION OF THE EQUIPMENT VAULT AND PROPER ELEVATION.
3. PIPE ROUTING ON THE DRAWINGS IS DIAGRAMMATIC AND IN SOME INSTANCES EXAGGERATED FOR CLARITY. THE CONTRACTOR SHALL DETERMINE THE EXACT ROUTING AT THE SITE TO AVOID CONFLICT WITH SITE CONDITIONS. ANY ROUTING WHICH CREATES A TRAPPED CONDITION IN THE PIPING MUST BE CALLED TO THE ATTENTION OF THE FOUNTAIN CONSULTANT BEFORE THE PIPE IS INSTALLED.
4. ALL PIPING SHALL BE INSTALLED TO PREVENT FREEZING. SYSTEM TO BE DRAINED AND WINTERIZED DURING WINTER MONTHS IF FOUNTAIN IS NOT IN OPERATION.
5. ALL PIPING BETWEEN THE WATER FEATURES AND EQUIPMENT VAULT SHALL BE INSTALLED SLOPED TOWARD THE EQUIPMENT VAULT A MINIMUM OF 2% UNLESS OTHERWISE INDICATED ON THE DRAWINGS.
6. THE WORK TO COMPLETE THE INSTALLATION OF THE FOUNTAIN INCLUDES SUCH NECESSARY MATERIAL AND DEVICES OF A MINOR NATURE THAT MAY NOT BE INDICATED ON THE DRAWINGS OR MENTIONED IN THE SPECIFICATIONS, BUT WHICH ARE NECESSARY FOR THE COMPLIANCE WITH CODES AND FOR THE SUCCESSFUL OPERATION OF THE FEATURE. THE CONTRACTOR SHALL BE ALLOWED NO EXTRA COMPENSATION BECAUSE OF THIS REQUIREMENT.
7. THOROUGHLY TEST ALL FIXTURES, SERVICES AND ALL CIRCUITS FOR PROPER OPERATING CONDITIONS AND FREEDOM FROM GROUNDS AND SHORT CIRCUITS BEFORE ACCEPTANCE IS REQUESTED. ALL EQUIPMENT, APPLIANCES AND DEVICES SHALL BE OPERATED UNDER LOAD CONDITIONS.
8. CONTRACTOR SHALL ENSURE THAT INSTALLATION COMPLIES WITH ALL APPLICABLE NATIONAL, LOCAL CODES AND INTERNATIONAL CODES AND PROJECT SPECIFICATIONS.
9. PRIOR TO ANY FINISHING MATERIALS (I.E. LIGHTS, JETS, COVER PLATES ETC.) BEING INSTALLED, ALL FOUNTAINS SHALL BE TESTED FOR LEAKS FOR A MINIMUM OF 72 HOURS AND ALL WATERPROOFING AND TILE WORK SHALL BE COMPLETED.
10. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS.
11. CONSULT ARCHITECTURAL, STRUCTURAL, MECHANICAL, AND ELECTRICAL DRAWINGS FOR ADDITIONAL DETAILS NOT SHOWN ON THESE DRAWINGS.
12. WHERE APPLICABLE, ALL WEIRS SHALL BE INSTALLED WITH AN ACCURACY OF "+" OR "–" 1/16" OVER THE ENTIRE WEIR LENGTH. UNLESS OTHERWISE NOTED, REFER TO THE ARCHITECTURE DRAWINGS FOR WEIR DETAILS.
13. CONTRACTOR SHALL PROVIDE ALL CONCRETE WORK AS REQUIRED BY ALL MECHANICAL AND ELECTRICAL FOUNTAIN EQUIPMENT REQUIREMENTS INCLUDING, BUT NOT LIMITED TO, HOUSEKEEPING PADS, LOCK–DOWN SLABS, AND THRUST BLOCKS WHERE INDICATED.
14. CONTRACTOR SHALL PROVIDE ALL UTILITIES SUCH AS POWER SUPPLIES, WATER SUPPLIES, AND SEWER CONNECTIONS UNDER THE BUILDING CONTRACT UP TO THE FOUNTAIN CONTROLS, EQUIPMENT AND/OR FOUNTAIN FITTINGS WHERE INDICATED.
15. CONTRACTOR SHALL PROVIDE AND IS RESPONSIBLE FOR ALL ELEVATION AND X–Y COORDINATES RELATING TO ALL FOUNTAIN EQUIPMENT INCLUDING VAULTS, FOUNTAIN FLOORS, AND PUMPS.
16. CONTRACTOR/INSTALLER IS RESPONSIBLE FOR CONFIRMING AND CORRELATING ALL DIMENSIONS AT JOBSITE. DELTA FOUNTAINS IS NOT RESPONSIBLE FOR CONSTRUCTION/INSTALLATION MEANS, METHODS, TECHNIQUES, SEQUENCES, STEPS, OR PROCEDURES, OR FOR ANY SAFETY REQUIREMENTS, CODES, PRECAUTIONS, RULES, REGULATIONS, OR PROGRAMS PERTAINING TO THE CONSTRUCTION PROJECT, INCLUDING, BUT NOT LIMITED TO OSHA CONFINED SPACE REQUIREMENTS FOR EQUIPMENT VAULTS.
17. ALL COMPONENT ITEMS USED IN THE PRODUCTION OF OUR PRODUCTS ARE U.L. LISTED WHENEVER SUCH LABELING IS AVAILABLE FROM THE SOURCE EQUIPMENT OR MATERIAL.
18. SHOULD ANY PRODUCT REQUIRE A 'THIRD PARTY' LABEL OR CERTIFICATION AS AN ASSEMBLY (E.G., N.E.C., U.L. OR E.T.L. LISTING) SUCH REQUIREMENTS SHALL BE DETERMINED, CONTRACTED FOR, AND PAID BY OTHERS.
19. DELTA FOUNTAINS SHALL NOT BE RESPONSIBLE OR LIABLE IN ANY MANNER WHATSOEVER FOR SPECIAL LABELING OR CERTIFICATION REQUIREMENTS, INCLUDING THIRD PARTY PRODUCT TESTING UNLESS SPECIFICALLY INCLUDED IN ITS PROPOSALS, QUOTATIONS, DRAWING DESCRIPTIONS AND DETAILS, REGARDLESS OF PROJECT SPECIFICATION OR CODE REQUIREMENTS.
20. EQUIPMENT MANUFACTURED, SUPPLIED AND OTHERWISE FURNISHED BY DELTA FOUNTAINS IS PRIMARILY DESIGNED FOR EMBEDMENT OR CASTING DIRECTLY INTO CONCRETE OR GUNITE STRUCTURAL MATERIAL. IT IS NOT DESIGNED FOR NATURAL OR SYNTHETIC LINER OR MEMBRANE INSTALLATION INCLUDING FIBERGLASS OR METAL LINERS, SHELLS, COVERS, OR CLADDING. ANY SUCH REQUIREMENT FOR LINER OR MEMBRANE INSTALLATION OR ADAPTATION IS THE RESPONSIBILITY OF THE SPECIFIER, PURCHASER AND INSTALLER, INCLUDING BUT NOT LIMITED TO FLANGES, CLAMPING DEVICES, GASKETS, FASTENING DEVICES, COATINGS, ADHESIVES OR BONDING AGENTS.
21. FATAL SUCTION ENTRAPMENT CAN OCCUR IF FOUNTAIN MECHANICAL EQUIPMENT AND PIPING IS NOT INSTALLED CORRECTLY AS SHOWN. ANTI–VORTEX PLATES MUST BE SECURELY FASTENED TO SUMPS AND/OR FOUNTAIN FLOOR USING SUITABLE VANDAL RESISTANT SAFETY FASTENERS AND ANCHORS AT ALL TIMES DURING OPERATION OF FOUNTAIN SYSTEM.
22. NOTWITHSTANDING THE CONTRACT DOCUMENTS, INCLUDING ARCHITECT'S FINAL "FOR CONSTRUCTION" PLANS AND SPECIFICATION DATA, THE FOUNTAIN SYSTEM MUST BE INSTALLED IN ACCORDANCE WITH DELTA FOUNTAINS FINAL AND APPROVED SET OF SHOP/INSTALLATION DRAWINGS AND DETAILS OR FOUNTAIN PRODUCT WARRANTY AND SYSTEM PERFORMANCE GUARANTEE IS VOID.
23. WRITTEN DIMENSIONS SHALL TAKE PRECEDENCE OVER SCALED MEASUREMENTS.
24. DELTA FOUNTAINS RECOMMENDS ALL FOUNTAINS BE PROPERLY WATERPROOFED BY SPECIFIED APPROVED MEANS AND ALL FOUNTAIN COMPONENTS BE PROPERLY SEALED WITH A SUITABLE WATERPROOF CAULKING COMPOUND TO ENSURE A WATERTIGHT FOUNTAIN INSTALLATION.
25. ANY WATERPROOFING DETAILS OR SPECIFICATIONS THAT MAY APPEAR ON DELTA FOUNTAINS PLANS OR EQUIPMENT DETAILS ARE FOR GENERAL REFERENCE ONLY AND SHALL NOT BE INTERPRETED OR RELIED UPON AS A FORMAL SPECIFICATION OR RECOMMENDATION. CONVERSELY, THE ABSENCE OF WATERPROOFING DETAILS OR SPECIFICATION ON DELTA FOUNTAINS PLANS, DETAILS OR PRODUCT SHEETS DO NOT IMPLY THAT WATERPROOFING IS NOT A PROJECT REQUIREMENT.
26. IT IS THE RESPONSIBILITY OF THE PROJECT ARCHITECT/ENGINEER TO SPECIFY ANY AND ALL WATERPROOFING REQUIREMENTS, PRODUCTS, INSTALLATION/APPLICATION MEANS, PROCEDURES, AND OTHER DETAILS AS MAY BE NECESSARY AND REQUIRED FOR THE FOUNTAIN STRUCTURE AND FOUNTAIN COMPONENTS.
27. IT IS THE RESPONSIBILITY OF THE WATERPROOFING CONTRACTOR TO REVIEW THE PROJECT SPECIFICATIONS FOR WATERPROOFING REQUIREMENTS FOR THE FOUNTAIN AND RELATED COMPONENTS AND PROVIDE THE SPECIFIED WATERPROOFING PRODUCTS AND SYSTEMS TO ENSURE WATERPROOF INTEGRITY OR THE FOUNTAIN SYSTEM.
28. IT IS THE RESPONSIBILITY OF THE FOUNTAIN EQUIPMENT INSTALLER TO COORDINATE ALL WATERPROOFING MATERIALS, SYSTEMS, APPLICATIONS, PROCEDURES, MEANS AND METHODS WITH THE WATERPROOFING CONTRACTOR, IN STRICT ACCORDANCE WITH THE PROJECT SPECIFICATIONS.
29. DELTA FOUNTAINS ASSUMES NO RESPONSIBILITY OR LIABILITY WHATSOEVER FOR ANY WATERPROOFING ISSUES RELATED TO ITS DESIGN PACKAGE, SCOPE OF WORK, OR EQUIPMENT SUPPLY UNDER ANY CIRCUMSTANCES. IF THE FOUNTAINS CONTRACTOR/WATERPROOFER HAS QUESTIONS PERTAINING TO WATERPROOFING, THEY SHALL BE DIRECTED TO THE PROJECT ARCHITECT/ENGINEER WHO IS SOLELY RESPONSIBLE FOR SUCH MATTERS.
30. ALL FOUNTAIN SYSTEM EQUIPMENT AND COMPONENTS FURNISHED BY DELTA FOUNTAINS IS DESIGNED AND MANUFACTURED FOR USE IN FRESH WATER APPLICATIONS ONLY. DO NOT INSTALL OR OPERATE ANY EQUIPMENT IN SALT, BRINE, OR BRACKISH WATER OF ANY KIND OR WARRANTY IS VOID.
31. DUE TO OUR CONTINUING PRODUCT IMPROVEMENT, DELTA FOUNTAINS RESERVES THE RIGHT TO CHANGE PRODUCT AND SYSTEM SPECIFICATIONS WITHOUT NOTICE.
32. DELTA FOUNTAINS SHALL NOT BE RESPONSIBLE OR LIABLE FOR ANY CIVIL OR STRUCTURAL DESIGN DRAWINGS, DETAILS, NOTATIONS, OR ANY OTHER ASPECTS OF THE PROJECT REGARDING FOUNTAIN LAYOUT, STRUCTURE OR CONSTRUCTION/BUILDING PRACTICES, INCLUDING, BUT NOT LIMITED TO, SOIL INTEGRITY, CONCRETE DESIGN, SPECIFICATIONS, AND SLAB POUR METHODS, CONCRETE STRUCTURAL WATERPROOFING SPECIFICATIONS, MATERIALS, AND METHODS, ETC. UNLESS OTHERWISE SPECIFICALLY STATED.
33. ANY STRUCTURE DEPICTED OR APPEARING ON OUR PLANS SHALL BE SHOWN SOLELY FOR DIMENSIONAL REFERENCE AND GENERAL STRUCTURAL ORIENTATION IN ORDER TO ADEQUATELY IDENTIFY, COORDINATE, ORIENT, LOCATE AND INSTALL OUR EQUIPMENT PACKAGE, AND SHALL NOT BE RELIED ON FOR ANY OTHER PURPOSES.
34. CLIENT IS ADVISED TO ENLIST THE SERVICES OF A LICENSED PROFESSIONAL ENGINEER FAMILIAR AND EXPERIENCED WITH SUCH WORK WHEN DESIGNING/CONSTRUCTING ANY FOUNTAIN OR EQUIPMENT VAULT STRUCTURE, WHO SHALL ACCEPT COMPLETE RESPONSIBILITY AND LIABILITY FOR ALL STRUCTURAL, GEOTECHNICAL, AND CIVIL ENGINEERING DETAILS PERTAINING TO THE PROJECT.
35. CONTRACTOR IS ADVISED TO ENLIST THE SERVICES OF A LICENSED PROFESSIONAL LANDSCAPE ARCHITECT TO COORDINATE LANDSCAPE, HARDSCAPE, AND TOPOGRAPHICAL ENVIRONMENT SURROUNDING THE FOUNTAIN AREA SO THAT PROPER PLANT MATERIAL AND GROUND COVER IS SPECIFIED TO ENSURE EXCESS DEBRIS WILL BE KEPT AWAY FROM, AND OUT OF THE FOUNTAIN SYSTEM. PROPER SLOPE OF GRADE IS MANDATORY TO KEEP RAIN WATER AND IRRIGATION WATER FROM ENTERING INTO THE FOUNTAIN BASIN AND EQUIPMENT VAULT OR ENCLOSURE.
36. REFER TO MECHANICAL AND ELECTRICAL NOTES ON DRAWINGS FOR FURTHER INFORMATION.

GENERAL PIPING NOTES

1. IT IS THE INSTALLING CONTRACTOR'S RESPONSIBILITY TO VERIFY ALL FIELD DIMENSIONS CRITICAL TO FOUNTAIN EQUIPMENT INSTALLATION AND PERFORMANCE AND REPORT ANY DISCREPANCIES, IN WRITING TO DELTA FOUNTAINS AND THE ARCHITECT UPON DISCOVERY. REFER TO SPECIFICATION SECTION 3.1 "EXAMINATION" FOR FURTHER INSTRUCTION AND CLARIFICATION.
2. IT IS THE RESPONSIBILITY OF THE INSTALLING CONTRACTOR TO CHECK AND COMPLY WITH ALL APPLICABLE NATIONAL AND LOCAL PLUMBING CODES PRIOR TO INSTALLATION OF EQUIPMENT. LOCAL CODES TAKE PRECEDENCE OVER GENERAL NOTES WHERE DISCREPANCIES OR CONFLICTS EXIST.
3. ALL FOUNTAIN PIPING PENETRATIONS THROUGH ANY CONCRETE WALL OR FLOOR MUST BE MADE WITH STAINLESS STEEL PIPE APPROPRIATE FOR THE APPLICATION, AND MUST BE FLASHED OR FITTED WITH A WATERSTOP FLANGE TO PREVENT LEAKAGE. FOR PIPE PENETRATIONS OVER 4" PIPE SIZE USE BACK TO BACK P.V.C. FLANGES WITH STAINLESS STEEL BOLTS AND HARDWARE FOR WATERSTOP.
4. INTERCONNECTING PIPING AND FITTINGS INSIDE EQUIPMENT VAULT IS SCHEDULE 80 P.V.C.
5. INTERCONNECTING PIPING AND FITTINGS BETWEEN THE FEATURE AND EQUIPMENT VAULT IS SCHEDULE 80 P.V.C. OR COPPER AS SUITABLE FOR THE WORKING PRESSURE OF THE SYSTEM SPECIFICATION REQUIREMENTS AND LOCAL CODES. IF STEEL OR CAST IRON PIPING IS SPECIFIED, IT MUST HAVE HOT–DIPPED GALVANIZED OR COAL TAR EPOXY COATING. REFER TO PROJECT SPECIFICATIONS FOR EXCEPTIONS.
6. ALL PIPE CONNECTIONS BETWEEN DISSIMILAR METALS MUST BE MADE WITH DIELECTRIC FITTINGS AND DIELECTRIC THREAD SEALING COMPOUND TO PREVENT GALVANIC DEGRADATION.
7. SUCTION EYE OF PUMP MUST BE LOCATED BELOW FOUNTAIN FLOOR ELEVATION IF FLOODED–END–SUCTION TYPE, AND NOT MORE THAN 4' ABOVE FOUNTAIN FLOOR ELEVATION IF SELF–PRIMING TYPE. ALL REDUCING FITTINGS MUST BE CONCENTRIC TYPE ON DISCHARGE LINE AND ECCENTRIC TYPE ON SUCTION LINE..
8. SUCTION LINE MUST BE A STRAIGHT RUN INTO THE PUMP EYE OF AT LEAST 8 PIPE DIAMETERS WITH NO LOOPS, HIGH POINTS, OR TRAPS.
9. USE LONG RADIUS ELBOWS ON ALL DIRECTIONAL CHANGES ON SUCTION AND DISCHARGE LINES, IN SOME INSTANCES, PIPING DIAGRAMS ARE EXAGGERATED FOR PURPOSES OF CLARITY. MAKE ALL SUCTION AND DISCHARGE PIPE RUNS USING THE MOST DIRECT ROUTES POSSIBLE AND USING THE MINIMUM NUMBER OF FITTINGS POSSIBLE. SLOPE ALL LINES DOWN TO PUMP, IN ALL CASES, WITH NO LOOPS, TRAPS, OR HIGH POINTS.
10. ON SUCTION LINES USE ONLY LUG TYPE BUTTERFLY VALVES, FULL–PORT, OR GATE TYPE VALVES. DO NOT REGULATE OR ADJUST FLOW FROM SUCTION SIDE OF PUMP. USE SUCTION VALVES FOR EQUIPMENT ISOLATION PURPOSES ONLY.
11. ON DISCHARGE LINES USE ONLY LUG TYPE BUTTERFLY, GLOBE, BALL, PLUG OR OTHER LOW LOSS INFINITELY ADJUSTABLE VALVES FOR ISOLATION AND FLOW REGULATION.
12. AN IN–LINE BASKET STRAINER IS RECOMMENDED ON THE SUCTION SIDE OF PUMPS, WITH BASKET PERFORATIONS PROPERLY SIZED TO PROTECT THE PUMP IMPELLER, AND FOUNTAIN NOZZLE/JET ORIFICES.
13. PROVIDE ADEQUATE OVERFLOW DRAIN AND FILL LINE CAPACITY FOR THE FOUNTAIN SYSTEM.
14. THE PIPING SYSTEM SHALL BE WATER PRESSURE TESTED FOR 24 HOURS PRIOR TO BACKFILLING AND SHALL THEN BE BURIED AND/OR SUPPORTED AS REQUIRED TO PROTECT THE INTEGRITY OF MECHANICAL SYSTEM. (REFER TO PVC INSTALLATION NOTES).
15. INSTALLING CONTRACTOR TO INSTALL THRUST BLOCKS AT ALL PIPING INTERSECTIONS ON SUBTERRANEAN PIPING RUNS.
16. INSTALLING CONTRACTOR IS RESPONSIBLE FOR ALL PIPE SUPPORTS AND HANGERS AS REQUIRED. ALL PIPING IN OPEN AREAS BELOW THE FOUNTAIN SHALL BE INSTALLED FREEHANGING FROM THE CEILING IN THE LEVEL BELOW WITH PIPE HANGERS PER LOCAL CODE AND SPECIFICATIONS.
17. INSTALLER SHALL PROVIDE ADEQUATE ACCESS, LIGHTING, DRAINAGE AND VENTILATION IN EQUIPMENT VAULT TO PREVENT FLOODING, CONDENSATION OR OVERHEATING OF EQUIPMENT, AND COMPLY WITH ALL OSHA CONFINED SPACE REGULATIONS AND REQUIREMENTS, BEFORE, DURING AND AFTER SYSTEM INSTALLATION.
18. ANY PRESSURIZED CITY WATER LINES SUPPLYING THE FOUNTAIN SYSTEM SHALL BE OF TYPE K COPPER AND SHALL BE PROTECTED BY AN APPROVED BACKFLOW PREVENTION DEVICE AND PRESSURE REDUCING VALVE SET AT 50 PSI MAXIMUM PRESSURE AND MINIMUM OF 40 PSI.
19. THE INCOMING WATER SUPPLY LINE PRESSURE MUST NOT EXCEED 50 PSI AND IS PART OF THE BUILDING CONTRACT, NOT THE FOUNTAIN.
20. 'P' TRAPS AND VENTS SHALL BE INSTALLED ON ANY DRAIN LINE CONNECTED TO A SANITARY SEWER SYSTEM, WHERE AND WHEN REQUIRED BY PLUMBING CODE, REGARDLESS OF WHETHER SHOWN ON INSTALLATION DRAWINGS.
21. SOIL COMPACTION AROUND SUBTERRANEAN PIPING TO BE COMPACTED IN 6" LIFTS.
22. ALL PIPING TO HAVE MINIMUM 2% SLOPE DOWN FROM FOUNTAIN TO EQUIPMENT VAULT/EQUIPMENT VAULT UNLESS OTHERWISE SPECIFIED ON THE CONTRACT DOCUMENTS.
23. PRESSURE TESTING ON ALL PIPE RUNS BETWEEN THE PUMPING EQUIPMENT AND THE FOUNTAIN BASIN SHALL BE PERFORMED BY THE INSTALLING CONTRACTOR AFTER "ROUGH–INS" (PIPES INSTALLED AND STUBBED UP) ARE COMPLETE AND AGAIN BEFORE ANY CONCRETE IS POURED. IT IS RECOMMEND TO MAINTAIN ALL PIPING UNDER PRESSURE DURING THE CONSTRUCTION PHASE TO DETECT ANY DAMAGE EARLY ON. ALL TESTS SHALL USE WATER, NOT AIR FOR PRESSURE TESTING.
24. ALL PENETRATIONS THROUGH OUTSIDE WALLS TO BELOW GRADE SHALL BE SEALED PER BUILDING SPECIFICATIONS. USING "EASY–LINK SEALS" IS RECOMMENDED.
25. ALL PIPING PENETRATIONS THROUGH STRUCTURE WALLS INTO OPEN AREAS BELOW FOUNTAIN STRUCTURE MUST HAVE ALLOWANCES MADE FOR SETTLEMENT.
26. ANY AND ALL COSTS ASSOCIATED WITH ABOVE ARE RESPONSIBILITY OF INSTALLER.
27. ALL PIPING IS ASSUMED TO BE BURIED BELOW GROUND IN ALL CASES, AND NOT INSTALLED ON OR ABOVE GRADE WHERE AN AIR TRAP, LOOP, OR HIGHPOINT COULD BE CREATED.
28. CONTRACTOR SHALL OBTAIN ALL NECESSARY INSTALLATION PERMITS AND INSPECTIONS.
29. ALL WELDED PVC FITTINGS ABOVE 6" DIAMETER SHALL BE FIBERGLASS REINFORCED AND USED ONLY ON NON–PRESSURIZED LINES.

NOTES

SCALE: N.T.S.