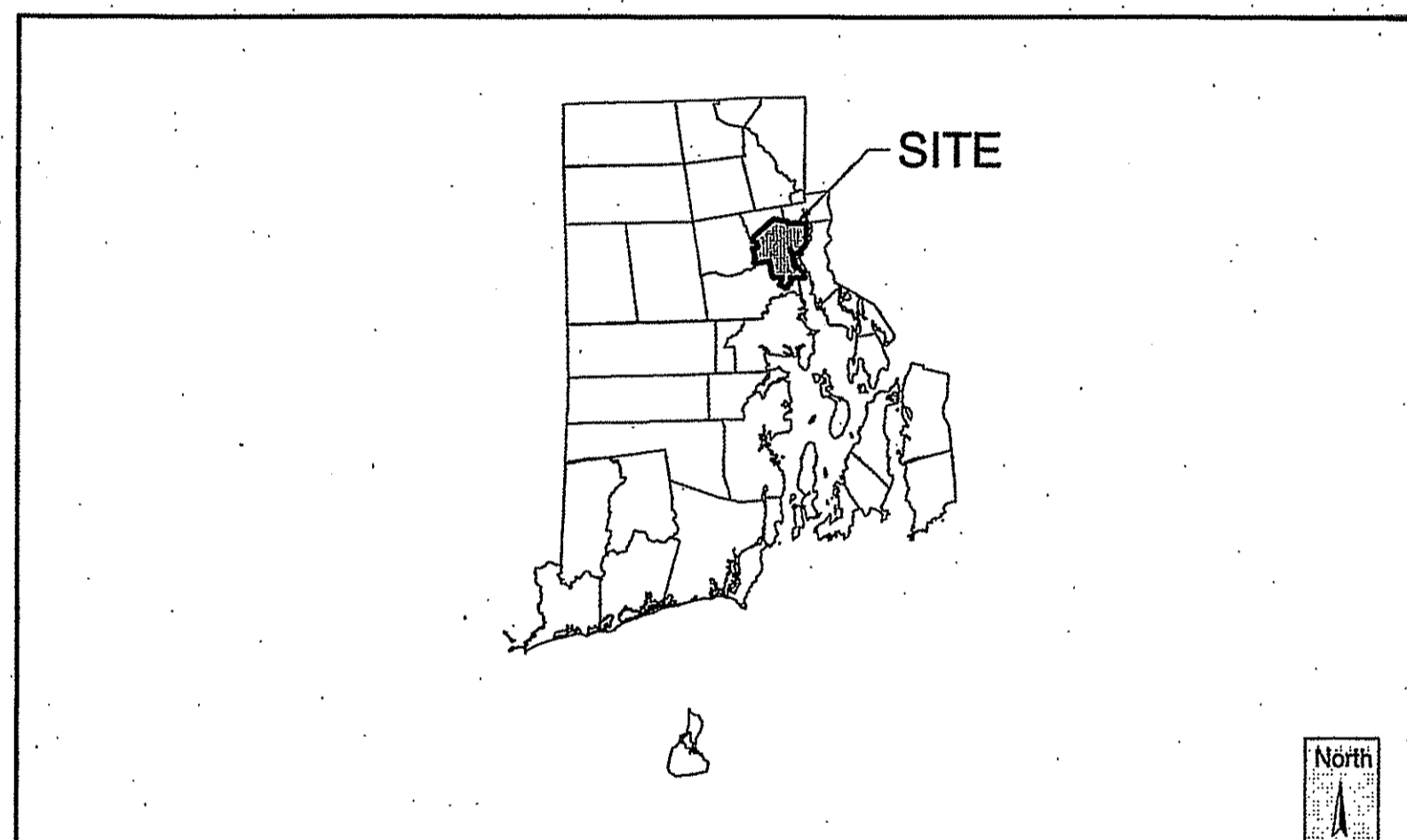


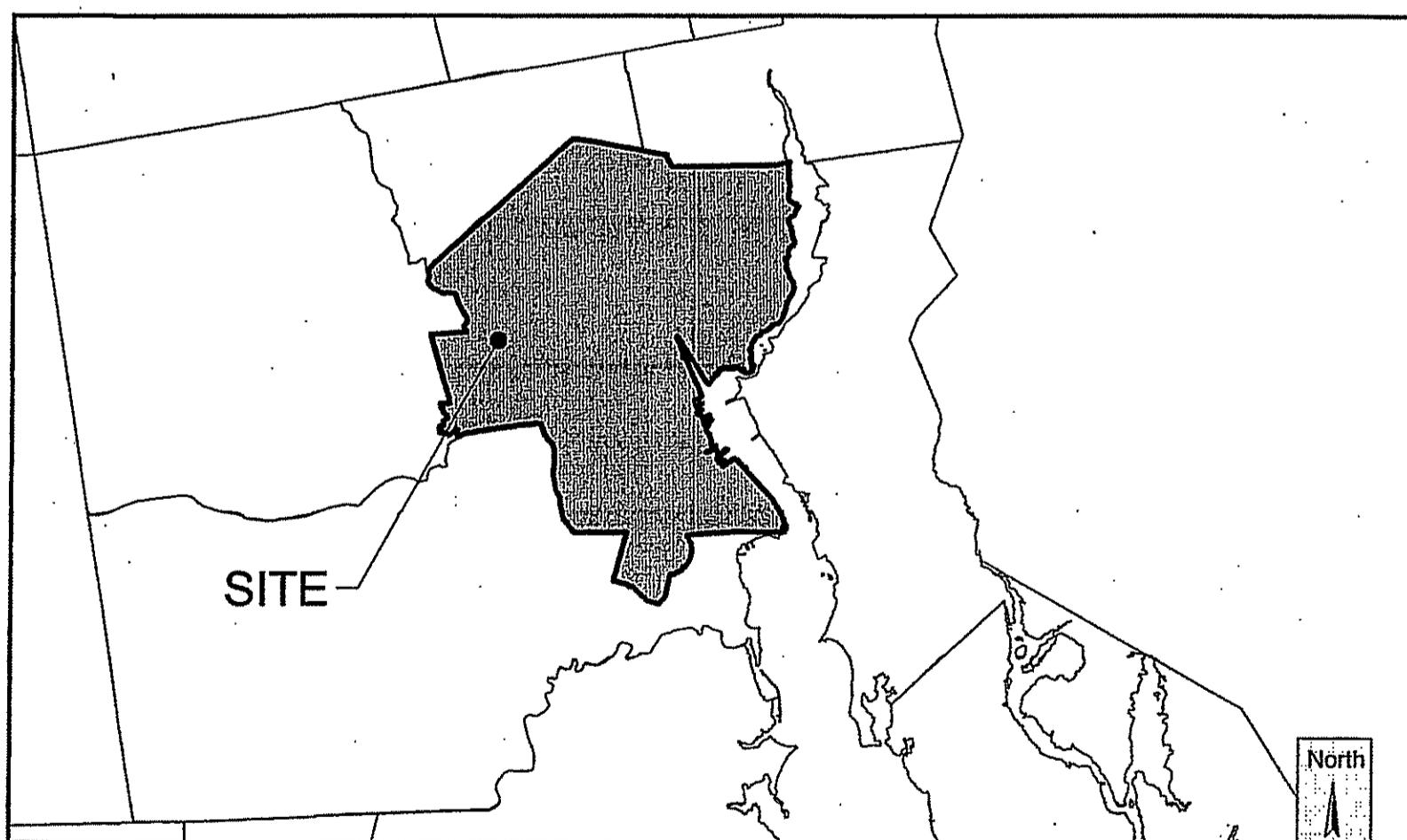
IMPERIAL KNIFE FACTORY REDEVELOPMENT PROJECT PROVIDENCE, RHODE ISLAND

REVISED DECEMBER 21, 2016



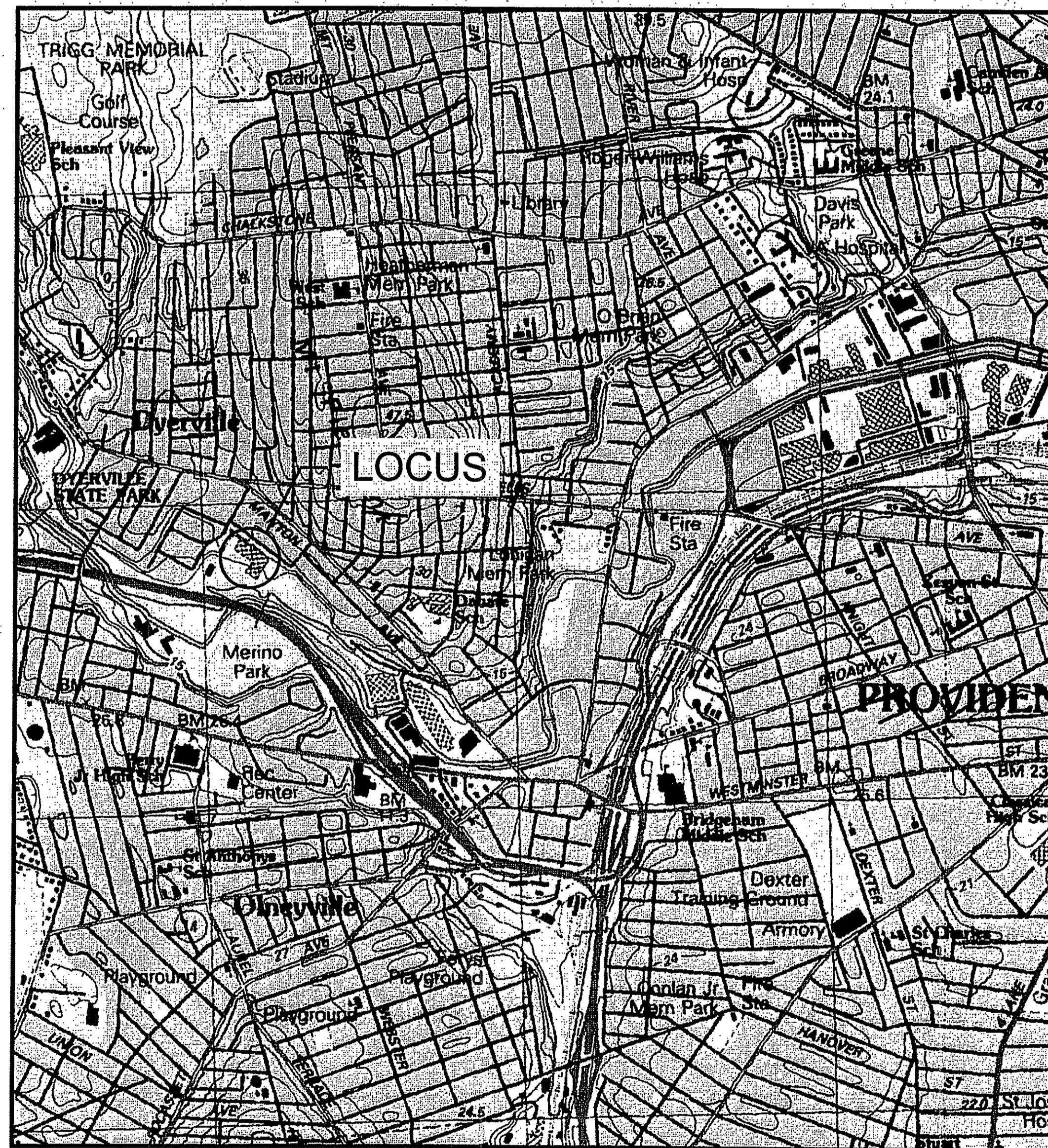
RHODE ISLAND

Graphic Scale
0 80000
SCALE IN FEET
1:80000



PROVIDENCE

Graphic Scale
0 12000
SCALE IN FEET
1:12000



VICINITY MAP

Graphic Scale
1-inch = 1000-feet

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
APPROVED WITH CONDITIONS
AS SPECIFIED IN THE LETTER OF APPROVAL
DATED FEB - 2 2017 FILE # 16-0271
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
APPROVED PLANS MUST BE AT CONSTRUCTION SITE

JAN 12 2017

Sheet List Table	
Sheet Number	Sheet Title
1	COVER SHEET
2	GENERAL CONSTRUCTION NOTES
3	SITE PREPARATION & EROSION CONTROL PLAN
4	SITE LAYOUT AND MATERIALS PLAN
5	GRADING AND DRAINAGE PLAN
6	UTILITY LAYOUT PLAN
7	CONSTRUCTION DETAILS (1)
8	CONSTRUCTION DETAILS (2)
9	CONSTRUCTION DETAILS (3)
10	LANDSCAPE PLAN
11	BIORETENTION PLANTING PLAN
12	LANDSCAPE DETAILS

Plan Set:

IMPERIAL KNIFE FACTORY REDEVELOPMENT PROJECT PROVIDENCE, RHODE ISLAND

Prepared For:

ICON Architecture
101 Summer Street
Boston, MA 02110
(617) 451-3333

Prepared By:

Horsley Witten Group, Inc.
Sustainable Environmental Solutions
www.horsleywitten.com

Headquarters: 90 Route 6A, Sandwich, MA 02563, (508) 833-6600 voice, (508) 833-3150 fax

24 Federal Street, Boston, MA 02110, (857) 263-8193 voice, (617) 574-4789 fax

370 Ives Street, Providence, RI 02906, (401) 272-1717 voice, (401) 439-8368 fax

30 Green Street, Newburyport, MA 01950, (978) 499-0601 voice, (978) 499-0802 fax

Date Issued: DECEMBER 21, 2016

Designed By: JCB/MJC

Drawn By: JEH

Checked By: JCB

Registration: FAT PIU LEE, No. 7984, REGISTERED PROFESSIONAL ENGINEER (CIVIL)

Revisions	
No.	Description

Project Number: 14104

Sheet Number: 1 of 12

Drawing Number: C-1

last modified: 01/09/17 printed: 01/11/17 by ml H:\Projects\2014\14104\ICON Arch_Imperial Knife\Drawings - 14104\14104-CV.dwg

BASE PLAN REFERENCE

- 1. EXISTING CONDITIONS OBTAINED FROM PLAN ENTITLED "EXISTING CONDITIONS PLAN", PREPARED BY KELLY ENGINEERING GROUP, INC. REVISED MAY 22, 2016. ELEVATIONS BASED ON NAVD 88.

GENERAL CONSTRUCTION NOTES

- 1. ALL SITE WORK TO COMPLETE THIS PROJECT AS INDICATED ON THE DRAWINGS AND IN THE SPECIFICATIONS IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
2. UTILIZE ALL PRECAUTIONS AND MEASURES TO ENSURE THE SAFETY OF THE PUBLIC, ALL PERSONNEL AND PROPERTY DURING CONSTRUCTION IN ACCORDANCE WITH OSHA STANDARDS, INCLUDING THE INSTALLATION OF TEMPORARY FENCING BARRIERS, SAFETY LIGHTING, CONES, POLICE DETAIL, AND/OR FLAGMEN AS DETERMINED NECESSARY BY THE CITY OF PROVIDENCE.
3. MAKE ALL NECESSARY CONSTRUCTION NOTIFICATIONS AND APPLY FOR AND OBTAIN ALL NECESSARY CONSTRUCTION PERMITS, PAY ALL FEES INCLUDING POLICE DETAILS AND POST ALL BONDS, IF NECESSARY, ASSOCIATED WITH THE SAME, AND COORDINATE WITH THE OWNER AND THE ENGINEER.
4. ALL EXISTING CONDITIONS SHOWN ARE BASED ON THE BEST INFORMATION AVAILABLE. PRIOR TO THE START OF CONSTRUCTION VERIFY THAT THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS DO NOT CONFLICT WITH ANY KNOWN EXISTING OR OTHER PROPOSED IMPROVEMENTS.
5. THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AND STRUCTURES AS INDICATED ON THE DRAWINGS ARE BASED ON RECORDS OF VARIOUS UTILITY COMPANIES, AND WHEREVER POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD.
6. COORDINATE AND MAKE ALL CONNECTION ARRANGEMENTS WITH UTILITY COMPANIES, AS REQUIRED.
7. THE CONTRACTOR MUST MAINTAIN ALL EXISTING UTILITIES OUTSIDE THE LIMIT OF WORK, IN WORKING ORDER AND FREE FROM DAMAGE DURING THE ENTIRE DURATION OF THE PROJECT.
8. COORDINATE ALL TRENCHING WORK WITH ROADWAYS WITH THE PROPER LOCAL & STATE AGENCY.
9. SAWCUT ALL TRENCH WORK WITHIN EXISTING PAVEMENT AS INDICATED ON THE DRAWINGS.
10. IMPORT ONLY CLEAN MATERIAL. MATERIAL FROM AN EXISTING OR FORMER 21E SITE AS DEFINED BY THE RHODE ISLAND IDEM-DSR-01-93 (RULES AND REGULATIONS FOR THE INSTALLATION AND REMEDIATION OF HAZARDOUS MATERIAL RELEASE DATED NOV. 2011) WILL NOT BE ACCEPTED.
11. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO ESTABLISH AND MAINTAIN ALL CONTROL POINTS AND BENCHMARKS DURING CONSTRUCTION INCLUDING BENCHMARK LOCATIONS AND ELEVATIONS AT CRITICAL AREAS.
12. SITE LAYOUT SURVEY REQUIRED FOR CONSTRUCTION MUST BE PROVIDED BY THE CONTRACTOR AND PERFORMED BY A RHODE ISLAND REGISTERED PROFESSIONAL LAND SURVEYOR.
13. MAINTAIN ALL GRADE STAKES SET BY THE SURVEYOR. GRADE STAKES ARE TO REMAIN UNTIL A FINAL INSPECTION OF THE WORK HAS BEEN COMPLETED BY THE ENGINEER.
14. UNLESS OTHERWISE INDICATED ON THE DRAWINGS AND/OR IN THE SPECIFICATIONS, ALL SITE CONSTRUCTION MATERIALS AND METHODOLOGIES ARE TO CONFORM TO THE MOST RECENT VERSION OF THE RHODE ISLAND DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION.
15. PROVIDE ALL CONSTRUCTION SERVICE IN ACCORDANCE WITH APPLICABLE LAWS AND REGULATIONS REGARDING NOISE, VIBRATION, DUST, SEDIMENTATION, CONTAMINATION, AND TRENCH WORK.
16. COLLECT SOLID WASTES AND STORE IN A SECURED DUMPSTER. THE DUMPSTER MUST MEET ALL LOCAL AND STATE SOLID WASTE MANAGEMENT REGULATIONS.
17. RESTORE ALL SURFACES EQUAL TO THEIR ORIGINAL CONDITION AFTER CONSTRUCTION IS COMPLETE PER SPECIFICATION DETAILS AND NOT DISTURBED BY CONSTRUCTION IN THEIR NATURAL STATE.
18. CONSTRUCT ALL WHEELCHAIR RAMPS IN ACCORDANCE WITH RHODE ISLAND DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE DESIGN AND CONSTRUCTION AND TRAFFIC STANDARD DETAILS (889) DRAWING NUMBER 43.1.0 AND 43.1.1.
19. LEDGE OR BOLLARD EXCAVATION IS NOT ANTICIPATED FOR THIS SITE.
20. REGULARLY INSPECT THE PERIMETER OF THE PROPERTY TO CLEAN UP AND REMOVE LOOSE CONSTRUCTION DEBRIS BEFORE IT LEAVES THE SITE.
21. ALL TRUCKS LEAVING THE SITE MUST BE COVERED.
22. DO NOT WASH ANY CONCRETE TRUCKS ON SITE. REMOVE BY HAND ANY CEMENT OR CONCRETE DEBRIS LEFT IN THE DISTURBED AREA.
23. BURIAL OF ANY STUMPS, SOLID DEBRIS, AND/OR STONES/BOLLARDS ON SITE IS PROHIBITED.
24. IMMEDIATELY CONTACT AND COORDINATE WITH THE ENGINEER AND OWNER IF ANY VARIATION OR ALTERATION OF THE WORK PROPOSED ON THESE DRAWINGS IS REQUIRED.
25. AT THE END OF CONSTRUCTION, REMOVE ALL CONSTRUCTION DEBRIS AND SURPLUS MATERIALS FROM THE SITE. PERFORM A THOROUGH INSPECTION OF THE WORK PERIMETER. COLLECT AND REMOVE ALL MATERIALS AND BLOWN OR WATER CARRIED DEBRIS FROM THE SITE.

GENERAL DEMOLITION NOTES

THIS PLAN SET DOES NOT INCLUDE DETAILS & SPECIFICATIONS FOR ALL DEMOLITION WORK REQUIRED WITHIN THE PROPOSED CONSTRUCTION LIMITS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO COORDINATE WITH THE OWNER, PROJECT ARCHITECT, MECHANICAL ENGINEERS AND OTHER PROJECT ENGINEERS INVOLVED WITH THE PROPOSED NEW CONSTRUCTION TO DEVELOP A SUITABLE DEMOLITION PLAN, WHICH WILL ALLOW THE FACILITIES TO REMAIN IN OPERATION DURING THE ENTIRETY OF CONSTRUCTION.

- 1. UNLESS OTHERWISE NOTED, THE CONTRACTOR IS RESPONSIBLE FOR THE RELOCATION, DEMOLITION, REMOVAL AND DISPOSAL, IN A LOCATION APPROVED BY ALL GOVERNING AUTHORITIES, OF ALL EXISTING SITE ELEMENTS AND STRUCTURES INCLUDING, BUT NOT LIMITED TO, BUILDINGS, ROADWAYS, PARKING AREAS, PARKING ISLANDS, BITUMINOUS CONCRETE, GRAVEL, CURBS, WALKWAYS, SIDEWALKS, BERMS, FENCES, BOLLARDS, POSTS, PLANTING BEDS, TREES, SHRUBS, UTILITIES, DRAINAGE STRUCTURES AND ALL OTHER STRUCTURES SHOWN AND NOT SHOWN WITHIN CONSTRUCTION LIMITS, AND WHERE NECESSARY, TO ALLOW FOR NEW CONSTRUCTION.
2. REMOVE ALL DEBRIS FROM THE SITE AND DISPOSE OF THE DEBRIS IN A PROPER AND LEGAL MANNER.
3. OBTAIN ALL PERMITS REQUIRED FOR DEMOLITION AND DISPOSAL.
4. COORDINATE WITH RESPECTIVE UTILITY COMPANIES PRIOR TO THE REMOVAL AND/OR RELOCATION OF UTILITIES.
5. REFER TO MECHANICAL AND UTILITY PLANS AND SPECIFICATIONS FOR ALL WORK WHICH REQUIRES UTILITIES TO BE REMOVED, RELOCATED OR ABANDONED AND LEFT IN PLACE.
6. PROVIDE NOTICE TO ALL UTILITY COMPANIES REGARDING DESTRUCTION AND REMOVAL OF ALL SERVICE LINES AND CAP ALL UTILITY LINES, AS REQUIRED, BEFORE PROCEEDING WITH THE WORK.
7. MAINTAIN CONTINUOUS ACCESS AND OPERATION FOR SURROUNDING FACILITIES, AS DEEMED BY THE OWNER, AT ALL TIMES DURING DEMOLITION OF THE EXISTING FACILITIES.
8. PRIOR TO DEMOLITION OCCURRING, ALL EROSION CONTROL DEVICES ARE TO BE INSTALLED.

BASIC CONSTRUCTION SEQUENCE

THE FOLLOWING CONSTRUCTION SEQUENCE IS TO BE USED AS A GENERAL GUIDELINE. COORDINATE WITH THE OWNER, ENGINEERS, AND ARCHITECT AND SUBMIT A PROPOSED CONSTRUCTION SEQUENCE FOR REVIEW AND APPROVAL PRIOR TO CONSTRUCTION.

- 1. SURVEY AND STAKE THE PROPOSED LIMIT OF DISTURBANCE AND LIMIT OF SEDIMENTATION BARRIERS.
2. PLACE SEDIMENTATION BARRIERS (STRAWBALES, SILT FENCE, ETC.) AS INDICATED ON DRAWINGS AND STAKED OUT IN THE FIELD.
3. INSTALL TEMPORARY CONSTRUCTION ENTRANCE IN LOCATION INDICATED ON DRAWINGS.
4. BEGIN CLEARING THE SITE AS REQUIRED.
5. STABILIZE GRADES ADJACENT TO RETAINING WALLS IMMEDIATELY.
6. REMOVE PORTIONS OF BUILDING AS INDICATED ON SITE PREPARATION PLAN.
7. REMOVE WATER AND SEWER LINES AS INDICATED ON PLANS.
8. SURVEY AND STAKE CENTERLINE OF THE PROPOSED ACCESS DRIVE, STORMWATER TREATMENT AREAS, AND DRAINAGE LINES.
9. EXCAVATE AND ROUGH GRADE THE PROPOSED STORMWATER TREATMENT AREAS AND ANY ADDITIONAL TEMPORARY BASINS NECESSARY TO CONTROL SITE RUNOFF AND SEDIMENTS.
10. BEGIN CLEARING THE AREAS OF THE DRIVEWAY, PARKING LOT AND STORMWATER TREATMENT AREA.
11. INSTALL TEMPORARY CONVEYANCE DEVICES (CHECK DAMS, SEDIMENT BASINS, ETC.) AS NECESSARY TO CONVEY RUNOFF TO TREATMENT AREAS.
12. BEGIN ROUGH GRADING AREAS FOR DRIVE, PARKING AND PATIOS.
13. BEGIN UTILITY CONSTRUCTION.
14. ROOF DRAINS TO BE SEPARATED FROM SANITARY INSIDE BUILDING.
15. INSTALL AREA DRAINS, DRAINAGE PIPES, DRAINAGE MANHOLES, BIO RETENTION AREAS, AND UNDERGROUND DRAINAGE STRUCTURES.
16. UPON COMPLETION OF UNDERGROUND UTILITIES INSTALLATION, PLACE COMPACTED GRAVEL FOUNDATION AND ROUGH GRADE THE DRIVEWAYS/PARKING AREAS.
17. BEGIN ROAD AND PARKING CONSTRUCTION PER SITE PLANS AND IN ACCORDANCE WITH APPLICABLE STATE AND LOCAL REGULATIONS.
18. FINISH PERMANENT STABILIZATION.
19. COMPLETE ALL REMAINING PLANTING AND SEEDING.

GENERAL GRADING AND DRAINAGE NOTES

- 1. ALL CUT AND FILL SLOPES SHALL BE 3:1 OR FLATTER UNLESS OTHERWISE NOTED.
2. EXISTING GRADE CONTOUR INTERVALS SHOWN AT 2 FOOT.
3. PROPOSED GRADE CONTOUR INTERVALS SHOWN AT 2 FOOT.
4. ADJUST AND/OR CUT EXISTING PAVEMENT AS NECESSARY TO ASSURE A SMOOTH FIT AND CONTINUOUS GRADE.
5. PROVIDE POSITIVE DRAINAGE AWAY FROM BUILDINGS FOR ALL NATURAL AND PAVED AREAS.
6. REFER TO ARCHITECTURAL PLAN AND SPECIFICATIONS FOR EARTHWORK AND COMPACTION REQUIREMENTS FOR ALL SLABS AND BUILDING FOUNDATIONS.
7. PROPOSED ELEVATIONS ARE SHOWN TO FINISH PAVEMENT OR GRADE UNLESS NOTED OTHERWISE.
8. ALL EARTHWORK AND SITE PREPARATION MUST BE DONE IN STRICT ACCORDANCE WITH THE RECOMMENDATIONS OF ANY SUBSURFACE INVESTIGATION OR GEOTECHNICAL REPORTS PREPARED FOR THIS SITE.
9. DO NOT PAVE ROADS AND PARKING AREAS UNTIL THE ENTIRE PERMANENT DRAINAGE SYSTEM HAS BEEN INSTALLED AND ALL PIPE CONNECTIONS COMPLETE.
10. DRAINAGE PIPE: HIGH DENSITY POLYETHYLENE PIPE AND CONFORM TO AASHTO M294 CORRUGATED POLYETHYLENE PIPE.
11. PLACE BACKFILL IN HORIZONTAL LAYERS NOT TO EXCEED SIX INCHES IN THICKNESS AND COMPACTED TO A DENSITY OF 95% OF MAXIMUM DRY DENSITY WITH A MOISTURE CONTENT WITHIN +/- 2% OF OPTIMUM.
12. ALL DRAINAGE STRUCTURES AND PIPES MUST BE CONNECTED TO THE DRAINAGE SYSTEM PRIOR TO THE INSTALLATION OF ANY PAVEMENT.

DEWATERING

- 1. A HIGH WATER TABLE IS NOT ANTICIPATED. HOWEVER, IF THE WATER TABLE IS ENCOUNTERED DURING EXCAVATION, TEMPORARILY LOWER THE WATER TABLE BY PUMPING.
2. PRIOR TO ANY DEWATERING, THE DEWATERING PLAN MUST BE APPROVED BY THE ENGINEER.
3. IF DEWATERING IS NECESSARY DURING CONSTRUCTION, IMPLEMENT THE PROPER ESC MEASURES ON SITE TO PREVENT EROSION OR SEDIMENT RUNOFF.

DEWATERING NOTES

- 1. SUPPLY THE DEWATERING SYSTEMS TO:
A. DEVELOP A SUBSTANTIALLY DRY AND STABLE SUBGRADE FOR THE PROPOSED WORK.
B. PREVENT DAMAGE TO ADJACENT PROPERTIES, BUILDINGS, STRUCTURES, UTILITIES AND RESOURCES AREAS.
C. RETAIN ALL SEDIMENTS ON-SITE WITHIN THE WORK AREA.
D. PREVENT SEDIMENT DISCHARGE AND DEGRADATION OF THE RESOURCE AREA.
E. PREVENT LOSS OF FINES, QUICK CONDITION, OR SOFTENING OF FOUNDATION SUBGRADE.
F. MAINTAIN STABILITY OF SIDES AND BOTTOMS OF EXCAVATIONS AND TRENCHES.
2. LOCATE DEWATERING FACILITIES WHERE THEY WILL NOT INTERFERE WITH CONSTRUCTION WORK OR ABUTTING RESOURCES.
3. MODIFY DEWATERING EQUIPMENT AND PROCEDURES WHEN OPERATIONS THREATEN TO CAUSE DAMAGE TO NEW OR EXISTING FACILITIES OR ADJACENT AREAS NOT WITHIN THE LIMIT OF WORK.
4. PRIOR TO INSTALLATION OF THE DEWATERING SYSTEM, PROVIDE THE ENGINEER WITH A SCHEDULE OF DEWATERING PROCEDURES.
5. FURNISH ALL MATERIALS/PRODUCTS REQUIRED TO ADEQUATELY PROVIDE DEWATERING WITHOUT DAMAGE TO SURROUNDING PROPERTIES, EXISTING UTILITIES, AND/OR RESOURCE AREA.
6. INTERCEPT AND DIVERT SURFACE WATER RUNOFF AWAY FROM EXCAVATIONS THROUGH THE USE OF DIKES, CURB WALLS, DITCHES, PIPES, SUMP, OR OTHER APPROVED MEANS.
7. IF PUMPS ARE USED, THE PUMP INTAKE LINE SHOULD NOT BE ALLOWED TO SETTLE TO THE BOTTOM OF THE EXCAVATION OR DEWATERING SLUMP.
8. PROVIDE AND MAINTAIN HOLDING AREAS/TEMPORARY SETTLING BASINS OF ADEQUATE SIZE TO COLLECT AND PREVENT SURFACE AND SUBSURFACE WATER SEEPAGE FROM ENTERING THE EXCAVATIONS.
9. ACCOMPLISH DEWATERING IN ACCORDANCE WITH THE MEANS AND METHODS SUBMITTED AND APPROVED BY THE ENGINEER.
A. PERFORM DEWATERING OPERATIONS TO LOWER THE GROUNDWATER LEVEL IN EXCAVATIONS AS REQUIRED TO PROVIDE A STABLE, DRY SUBGRADE FOR THE PROSECUTION OF THE PROJECT.
B. MAINTAIN DEWATERING OPERATIONS IN A MANNER THAT PREVENTS BUILDUP OF EXCESSIVE HYDROSTATIC PRESSURE AND DAMAGE TO STRUCTURES, AND THE SUBGRADE.
C. DO NOT ALLOW WATER TO ACCUMULATE IN EXCAVATIONS.
D. DO NOT DISCHARGE WATER TO PROTECTED ENVIRONMENTAL RESOURCES WITHOUT TREATMENT TO REMOVE SUSPENDED SOLIDS AND SEDIMENTS.
E. DO NOT LAY PIPE AND/OR MASONRY IN WATER.

STORMWATER FACILITY OPERATION & MAINTENANCE

THE CONTRACTOR IS RESPONSIBLE FOR THE PROPER INSPECTION AND MAINTENANCE OF ALL STORMWATER MANAGEMENT FACILITIES AS SHOWN BELOW UNTIL SUCH TIME THAT THE DRIVEWAYS AND ASSOCIATED UTILITIES ARE ACCEPTED BY THE OWNER AND THE ENGINEER.

- 1. INSPECT AND RESTORE/CLEAN ALL FACILITIES (INLETS, MANHOLES, BIORETENTION BASINS, ETC.) OF SEDIMENT AND DEBRIS PRIOR TO THE OWNERS ACCEPTANCE.
2. REMOVE AND DISPOSE ALL SEDIMENT AND DEBRIS OF A PRE-APPROVED LOCATION AS APPROVED BY THE CITY OF PROVIDENCE.
3. REFER TO THE STORMWATER POLLUTION PREVENTION PLAN (SWPPP) FOR ADDITIONAL INFORMATION PERTAINING TO STORMWATER FACILITY OPERATION AND MAINTENANCE REQUIREMENTS.
4. INSPECT AFTER EVERY MAJOR RAINFALL EVENT FOR THE ENTIRE DURATION OF THE CONSTRUCTION PROJECT AND THE FIRST 3 MONTHS AFTER CONSTRUCTION TO ENSURE PROPER STABILIZATION AND CONSTRUCTION.
5. SPECIFIC ANNUAL MAINTENANCE REQUIRED AS FOLLOWS:
A. DRAINAGE STRUCTURES (INLETS, MANHOLES & TREATMENT AREAS): ALL DRAINAGE STRUCTURES WILL BE INSPECTED ANNUALLY TO MONITOR FOR PROPER OPERATION, COLLECTION OF LITTER OR TRASH, AND STRUCTURAL DETERIORATION.
B. RIP-RAP SLOPE PROTECTION: INSPECT ANNUALLY AND REPAIR AS NECESSARY.
C. SEDIMENT FOREBAY: INSPECT ANNUALLY TO ENSURE PROPER FUNCTIONING.
D. BIORETENTION AREA: INSPECT TWICE ANNUALLY FOR THE FIRST YEAR OF OPERATION AND ANNUALLY AFTER THE FIRST YEAR.
E. ROUTINE MAINTENANCE: OTHER ROUTINE MAINTENANCE INCLUDES THE REMOVAL OF TRASH AND LITTER FROM PAVED AND PERIMETER AREAS, AND ANNUAL STREET AND PARKING LOT SWEEPING AFTER THE SPRING THAW.

NOTE: OPERATION AND MAINTENANCE CHECKLIST AVAILABLE UPON REQUEST

WATER & SEWER INSTALLATION NOTES

- 1. INSTALL SEWER AND WATER MAINS ACCORDING TO THE FOLLOWING GUIDELINES TO PREVENT FREEZING OF THE MAIN OR SEWER:

Table with 3 columns: UTILITY TYPE, MIN. COVER OVER TOP OF PIPE, MIN. HORIZONTAL DIST. TO DRAIN STRUCTURE. Rows include SANITARY FORCE MAIN, GRAVITY SEWER, WATER MAIN.

- 2. INSULATE SANITARY FORCE MAINS, WATER MAINS, HYDRANT PIPING AND DEAD END WATER LINES WHERE SOIL COVER OR HORIZONTAL SEPARATION TO PRECAST STRUCTURES IS LESS THAN THE DISTANCE SPECIFIED ABOVE AND/OR WHERE SHOWN ON PLANS.
3. INSULATION: 2" THICK POLYURETHANE INSULATION WITH PVC JACKET PLACED AROUND PIPE OR DESIGNER APPROVED EQUAL.
4. WATER AND SEWER SEPARATION IS TYPICALLY 10 FEET MINIMUM HORIZONTAL AND 18 INCHES VERTICAL WITH SEWER MAINS BELOW THE WATER MAINS (SEE DETAIL). IF SITE CONDITIONS REQUIRE LESS, THEN INSTALL UTILITIES AS INDICATED ON DETAILS.

SEWER SYSTEM OPERATION & MAINTENANCE

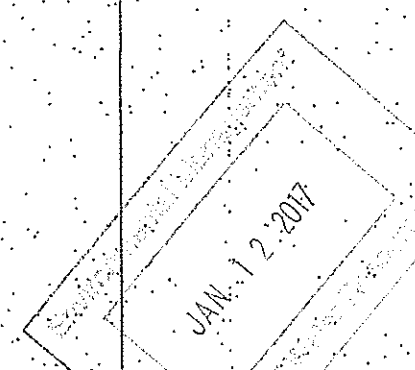
- 1. CLEAN ALL NEWLY INSTALLED FACILITIES, INCLUDING SEWER COLLECTION SYSTEM OF ALL FOREIGN MATERIALS SUCH AS DIRT AND MISCELLANEOUS DEBRIS PRIOR TO SYSTEM TESTING.
2. CONDUCT A LEAKAGE TEST OF ALL SEWER MAINS.
3. TEST SEWER PIPES FOR LEAKAGE WITH THE FOLLOWING PROCEDURE.
4. VACUUM TEST ALL SEWER MANHOLES.
5. MANDREL TEST ALL SEWER MAINS AFTER 30 DAYS.

LEGEND:

Legend table with columns for GENERAL, PROPERTY INFORMATION, UTILITIES, EROSION & SEDIMENT CONTROL, and SYMBOLS. Includes symbols for BEAM, BENCHMARK, BOUNDARY, EXISTING SHRUB, EXISTING TREE, EXISTING EVERGREEN TREE, SPOT GRADE, SEWER MANHOLE, ELECTRIC MANHOLE, TELEPHONE MANHOLE, MANHOLE, METER PIT, DRAIN MANHOLE, CATCH-BASIN, FLARED END OUTLET, RIP-RAP APPROX., INLET PROTECTION, WATER VALVE, SEWER VALVE, GAS VALVE, CURB CUT, CLEAN STOP, STRACKBACK LINE, PIPE STUB, THRUST BLOCK, UTILITY BOX, HYDRANT, POST INDICATOR VALVE, UTILITY POLE WISBY, UTILITY POLE, GUY, LIGHT POST, MONITORING WELL, STRAW WATTLE, TREE PROTECTION.

WATER SYSTEM INSTALLATION NOTES

- 1. CONSTRUCT THE WATER MAIN AND ITS APPURTENANCES IN ACCORDANCE WITH THE LOCAL WATER DEPARTMENT'S STANDARDS AND SPECIFICATIONS AND PAY FOR ALL ASSOCIATED FEES AS REQUIRED BY THE WATER DEPARTMENT.
2. ALL PROPOSED WATER MAIN 4-INCHES AND GREATER IN DIAMETER ARE DUCTILE IRON CLASS 52. ONLY USE HOPE 3408 OR AS INDICATED ON DRAWINGS OR AS APPROVED BY THE ENGINEER.
3. SUPPLY TWO COPIES OF SWORN CERTIFICATES TO PROVE THAT ALL PIPES AND FITTINGS ARE INSPECTED AND TESTED AS REQUIRED BY THE STANDARD SPECIFICATIONS TO WHICH THE MATERIAL IS MANUFACTURED.
4. GATE VALVES: MUELLER (A 2850 SERIES), CLOW (AWWA STANDARD C909 SERIES), AMERICAN DARLING (RESILIENT WEDGE) OR APPROVED EQUAL.
5. PROVIDE GATE VALVES ON ALL HYDRANT BRANCHES AND WATER MAIN. THE GATE VALVE TO TURN TO THE RIGHT TO OPEN (CLOCKWISE). ALL BOLTS AND NUTS MUST BE RUST PROOF STEEL.
6. CLEAR ALL NEWLY INSTALLED WATER SYSTEM COMPONENTS OF ALL FOREIGN MATERIALS SUCH AS DIRT AND MISCELLANEOUS DEBRIS PRIOR TO SYSTEM TESTING.
7. CONTRACTOR IS RESPONSIBLE FOR CONDUCTING A PRESSURE TEST AND DISINFECTION TEST OF ALL WATER MAINS.
8. INSTALL AND REMOVE ALL NECESSARY BLOWOFFS REQUIRED FOR THIS PROJECT AT NO EXTRA COST TO THE OWNER.
9. COLLECT ALL BACTERIOLOGICAL SAMPLES AND PAY FOR ALL RELATED LABORATORY FEES.
10. MAINTAIN UP-TO-DATE AS-BUILT DRAWINGS AND NOTES INDICATING THE HORIZONTAL AND VERTICAL LOCATION WITH TWO TIES OF ALL SYSTEM COMPONENTS INSTALLED.



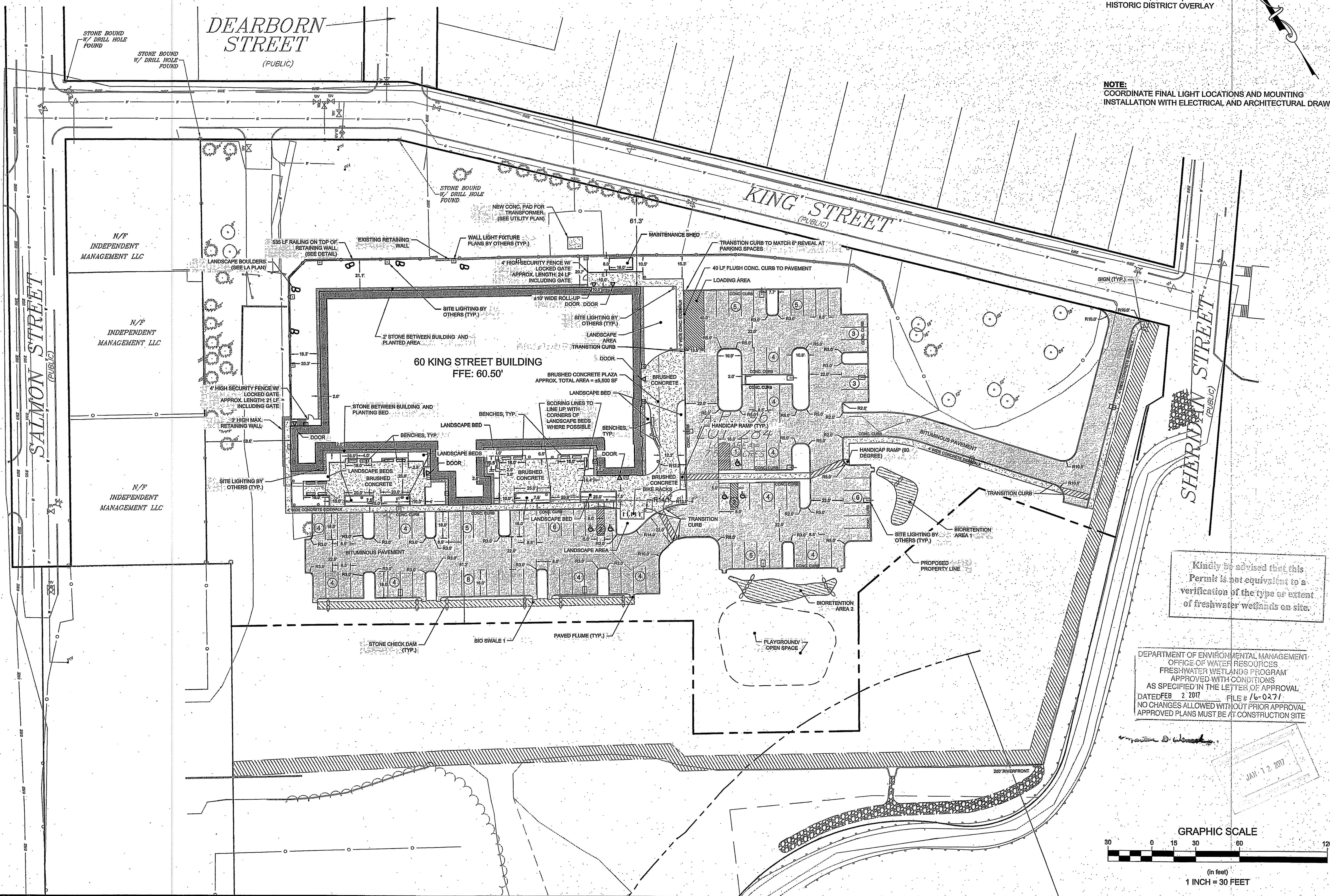
DEPARTMENT OF ENVIRONMENTAL MANAGEMENT OFFICE OF WATER RESOURCES FRESHWATER WETLANDS PROGRAM APPROVED WITH CONDITIONS AS SPECIFIED IN THE LETTER OF APPROVAL DATED FEB 2 2017 FILE # 16-0271 NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL APPROVED PLANS MUST BE AT CONSTRUCTION SITE

Project information block including: Revisions table, Project Name: IMPERIAL KNIFE FACTORY REDEVELOPMENT PROJECT PROVIDENCE, RHODE ISLAND, General Construction Notes, Prepared For: ICON Architecture, 101 Summer Street, Boston, MA 02110, Phone: (617) 467-3333, Fax: (617) 467-3333, Survey Provided By: Kelly Engineering Group, Inc., 10 Cambridge Drive, Braintree, MA 02184, Project Number: 14104, Sheet: 2 of 12, Sheet Number: C-2.

last modified: 01/11/17 printed: 01/11/17 by ml H:\Projects\20141014\104 ICON Arch Imperial Knife Drawings - 14104\14104-DE.dwg

last modified: 01/11/17 by ml H:\Projects\2014\14104 ICON Arch Drawings - 14104\14104-ST.dwg

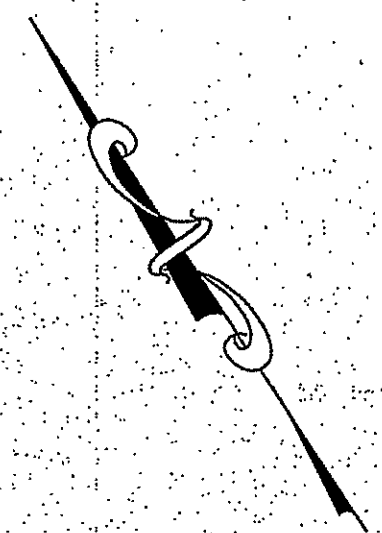
N/F PROVIDENCE AUTHORITY



PARKING:
 8.5' x 18' SPACES: 90
 HANDICAP SPACES: 4
 HANDICAP VAN SPACES: 1
 OUTDOOR BIKE RACKS: 5
TOTAL PARKING SPACES: 95

ZONING DISTRICT
 MIXED USE (M-MU-75)
 HISTORIC DISTRICT OVERLAY

NOTE:
 COORDINATE FINAL LIGHT LOCATIONS AND MOUNTING
 INSTALLATION WITH ELECTRICAL AND ARCHITECTURAL DRAWINGS.



Revisions	Date	By	Description
1	12/21/16	JEB	REVISED COMMENTS
2			
3			
4			
5			

Horsley Witten Group, Inc.
 Sustainable Environmental Solutions
 www.horsleywitten.com
 294 Washington Street, Suite 807
 Boston, MA 02110
 857-262-9193 voice
 817-574-4799 fax

Date: DECEMBER 21, 2016
 Drawn By: JEB
 Checked By: JCB
 Designated By: JCB/MAC

E-ICON ARCHITECTURE
 101 SUMMER ST. BOSTON, MA 02110

**IMPERIAL KNIFE FACTORY
 REDEVELOPMENT PROJECT
 PROVIDENCE, RHODE ISLAND**

Plan Title: **SITE LAYOUT AND MATERIALS PLAN**

Prepared For:
ICON Architecture
 101 Summer Street
 Boston, MA 02110
 Phone: (617) 461-5333
 Fax: _____

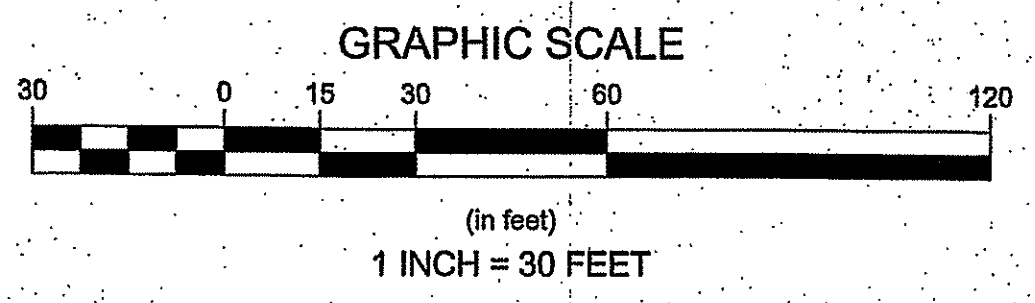
Survey Provided By:
Kelly Engineering Group, Inc.
 10 Campbell Drive
 Braintree, MA 02184
 Phone: 1-781-543-4333
 Fax: _____

Registration:
FAT PIU LEE
 No. 7984
 REGISTERED PROFESSIONAL ENGINEER (CIVIL)

Project Number: 14104
 Sheet: 4 of 12
 Sheet Number: **C - 4**

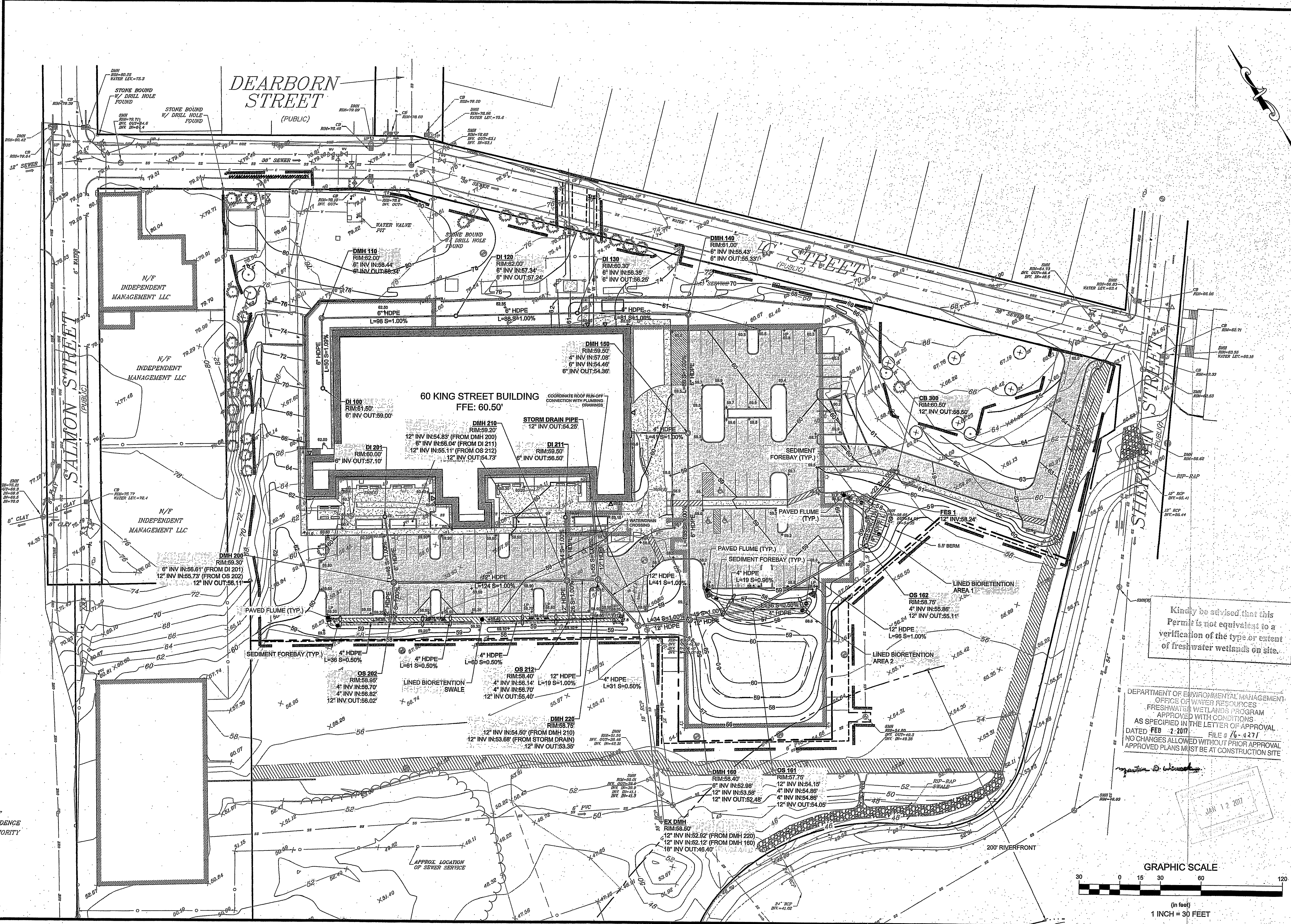
Kindly be advised that this Permit is not equivalent to a verification of the type or extent of freshwater wetlands on site.

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
 OFFICE OF WATER RESOURCES
 FRESHWATER WETLANDS PROGRAM
 APPROVED WITH CONDITIONS
 AS SPECIFIED IN THE LETTER OF APPROVAL
 DATED FEB 2 2017 FILE # 16-0271
 NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
 APPROVED PLANS MUST BE AT CONSTRUCTION SITE



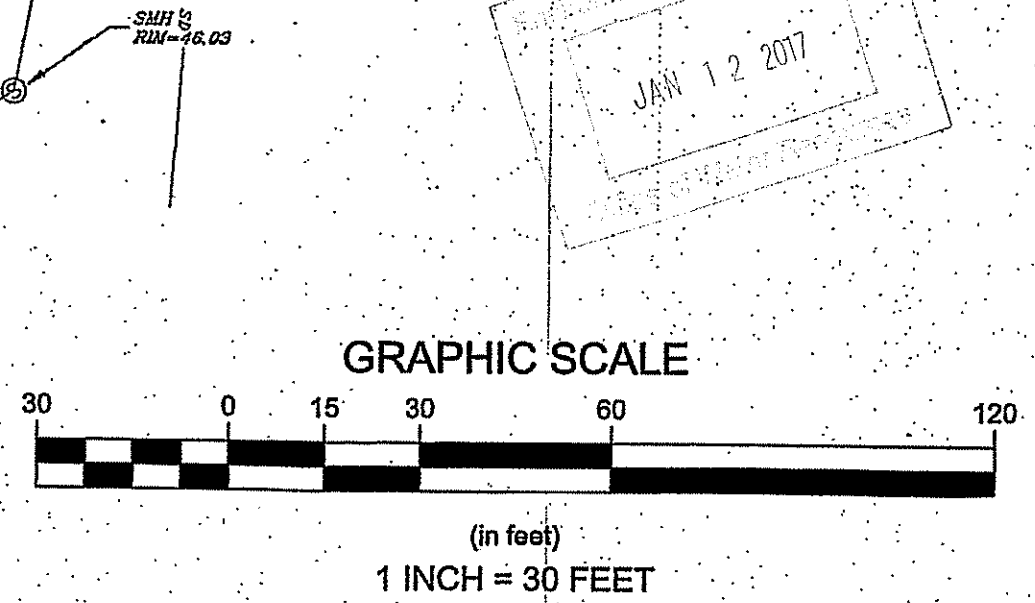
JAN 12 2017

last modified: 01/11/17 by ml H:\Projects\2014\14104 ICON Arch_Imperial Knife Drawings - 14104\14104-GD.dwg



Kindly be advised that this Permit is not equivalent to a verification of the type or extent of freshwater wetlands on site.

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
APPROVED WITH CONDITIONS
AS SPECIFIED IN THE LETTER OF APPROVAL
DATED FEB 2 2017 FILE # 16-4271
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
APPROVED PLANS MUST BE AT CONSTRUCTION SITE



REVISIONS	DATE	BY	DESCRIPTION
1	12/27/16	JEL	IFL FFL
2			
3			
4			
5			
6			
7			
8			
9			
10			

Horsley Witten Group, Inc.
Sustainable Environmental Solutions
www.horsleywitten.com
294 Washington Street, Suite 801
Boston, MA 02110
617-263-9733 voice
617-574-4739 fax

ICON ARCHITECTURE
101 SUMMER ST. BOSTON MA 02110

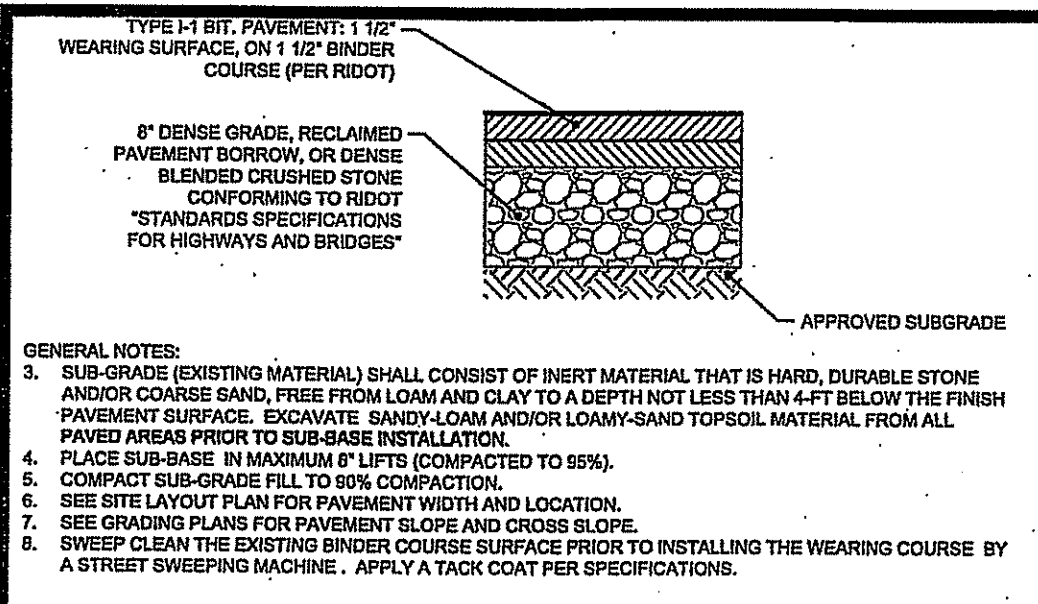
Imperial Knife Factory
Redevelopment Project
Providence, Rhode Island

Prepared For:
ICON Architecture
101 Summer Street
Boston, MA 02110
Phone: (617) 461-3333
Fac: _____

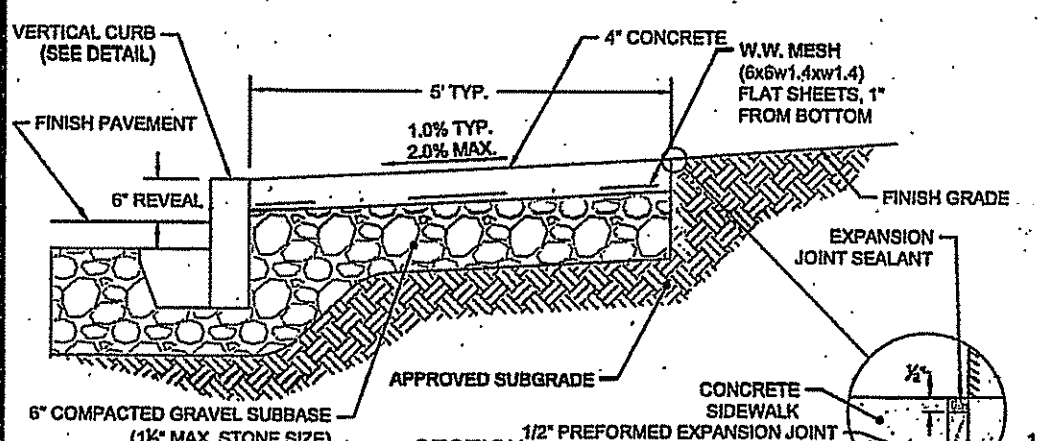
Survey Provided By:
Kelly Engineering Group, Inc.
0 Campwell Drive
Bathinee, MA 02834
Phone: (781) 843-4333
Fac: _____
Dated: _____

Registration:
FAT PIU LEE
No. 7984
REGISTERED PROFESSIONAL ENGINEER (CIVIL)

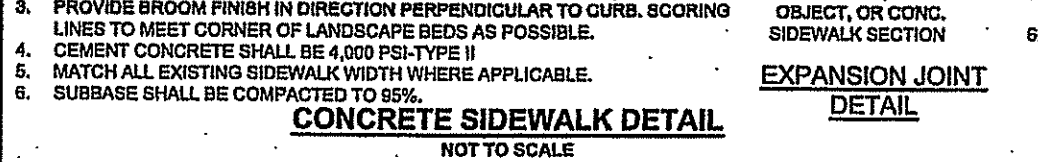
last modified: 01/11/17 by ml H:\Projects\2014114104 ICON Arch Imperial Knife Drawings - 14104114104-DE.dwg



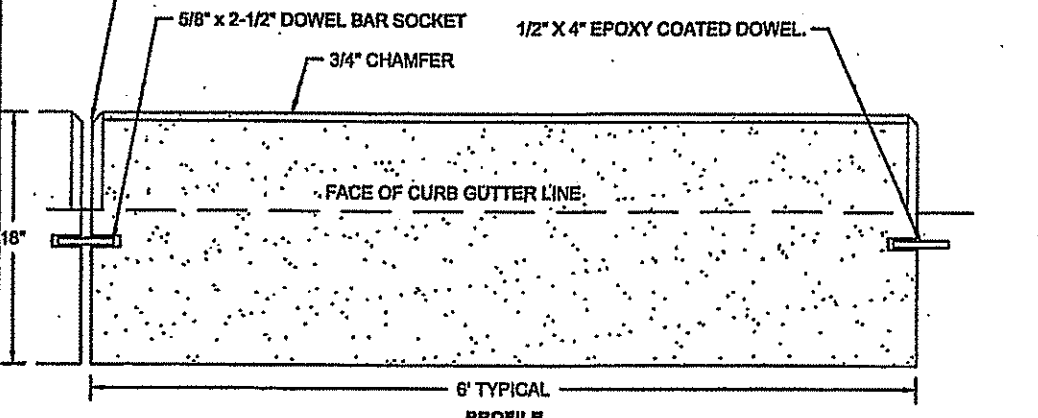
TYPICAL BITUMINOUS PAVEMENT NOT TO SCALE



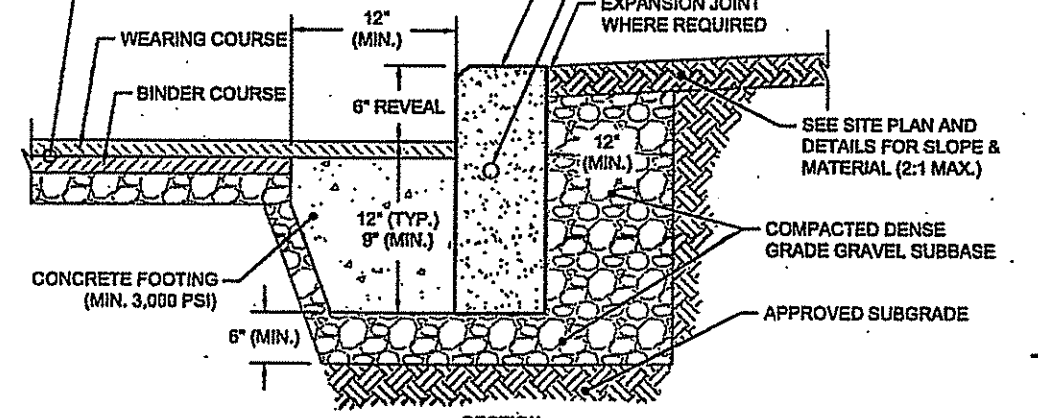
TYPICAL UTILITY TRENCH DETAIL NOT TO SCALE



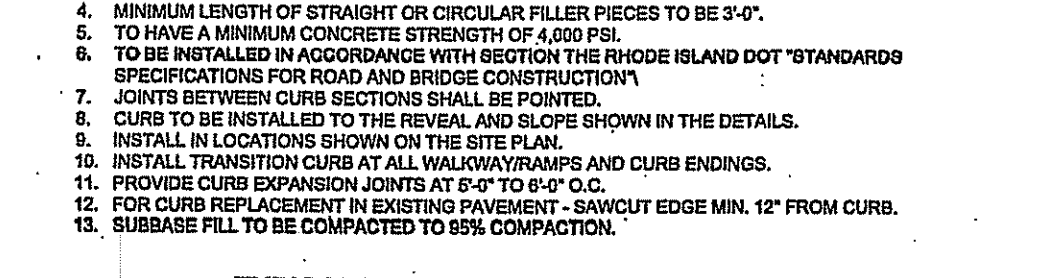
CONNECTION TO CAST IRON OR ASBESTOS CEMENT PIPE NOT TO SCALE



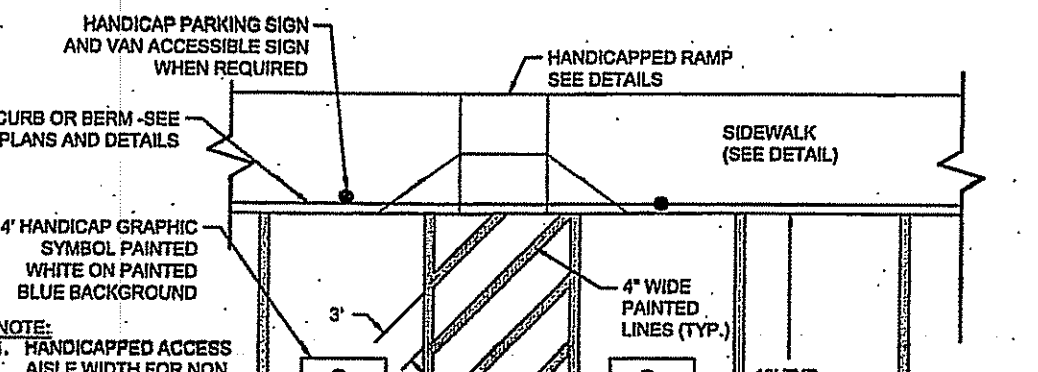
TYPICAL WATER MAIN CAPPING DETAIL NOT TO SCALE



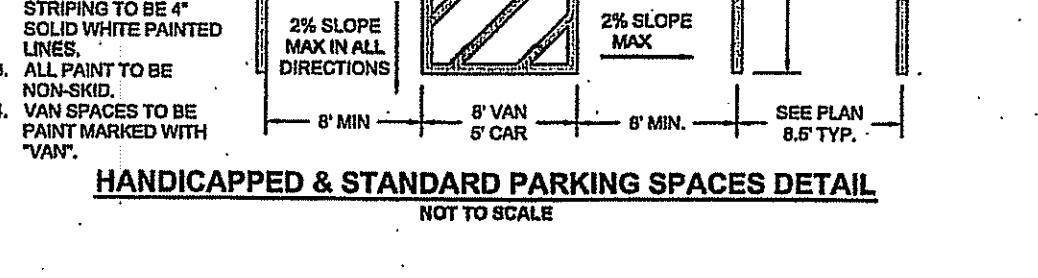
SEWER INTERIOR DROP CONNECTION TO EXISTING SEWER MANHOLE DETAIL NOT TO SCALE



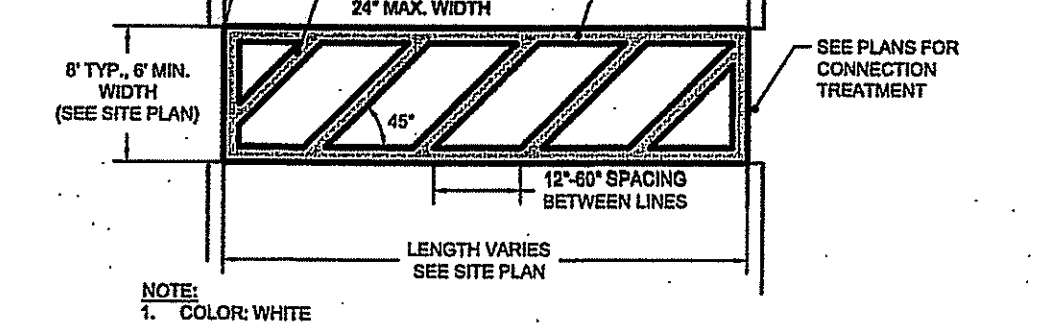
WATER CONNECTION DETAIL NOT TO SCALE



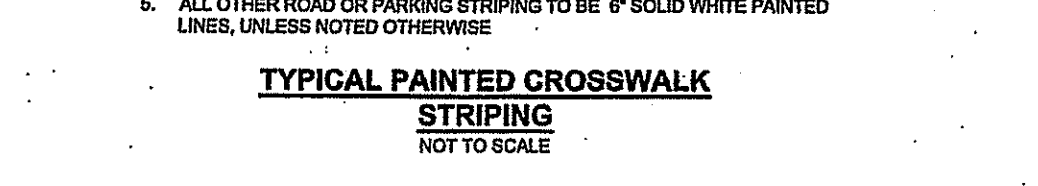
WATER SERVICE / SEWER CROSSING DETAIL NOT TO SCALE



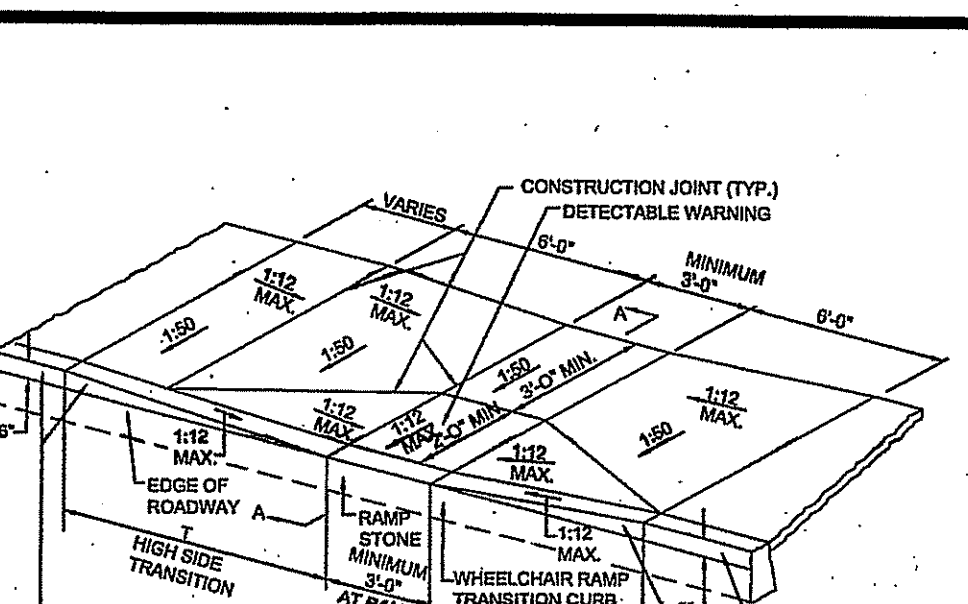
SEWER TRENCH DETAIL NOT TO SCALE



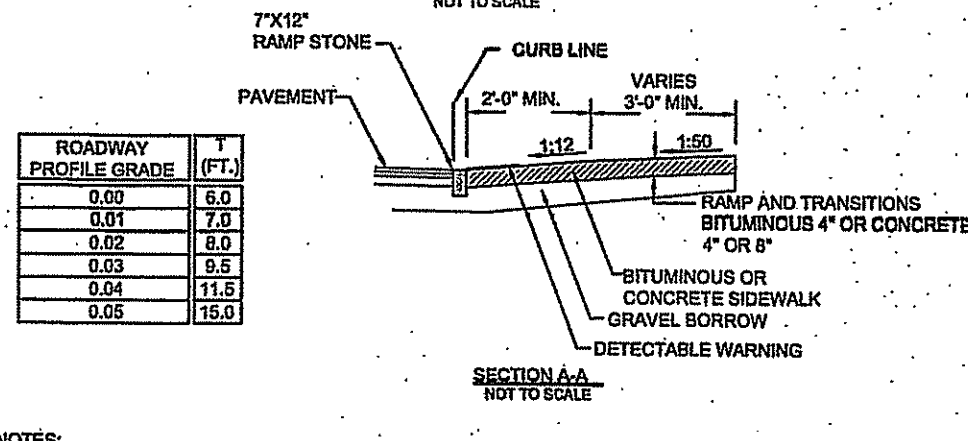
HYDRANT ASSEMBLY DETAIL NOT TO SCALE



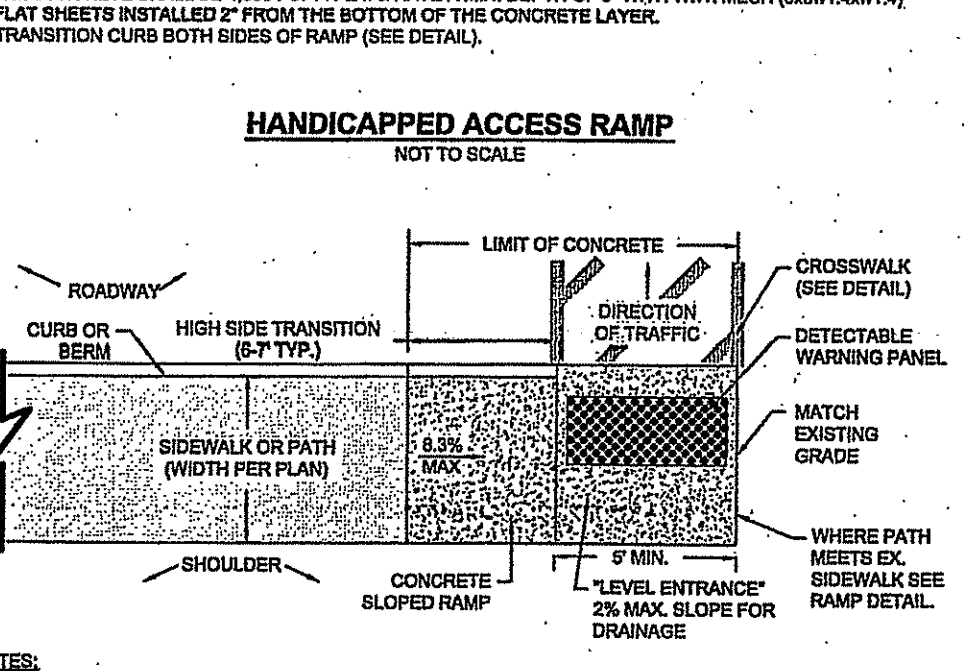
CONCRETE STAIRS NOT TO SCALE



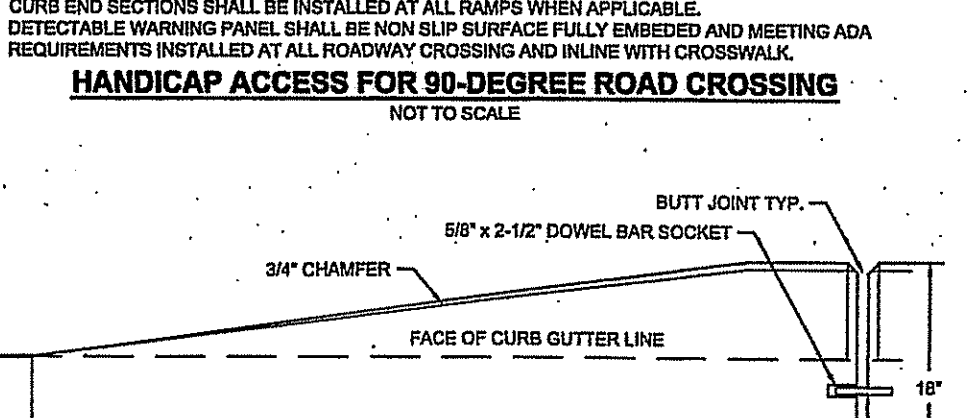
TYPICAL CONCRETE CURB TRANSITION PIECE NOT TO SCALE



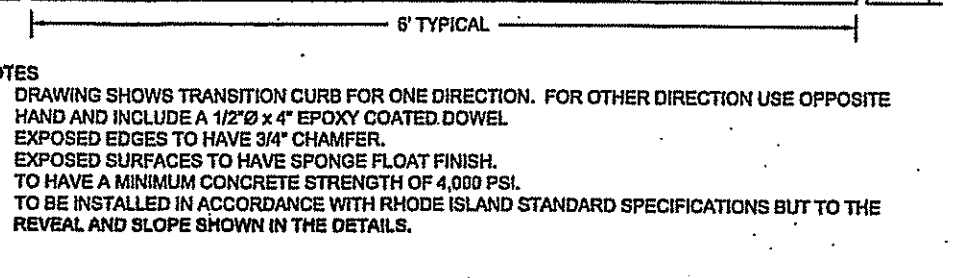
TYPICAL PAINTED CROSSWALK STRIPING NOT TO SCALE



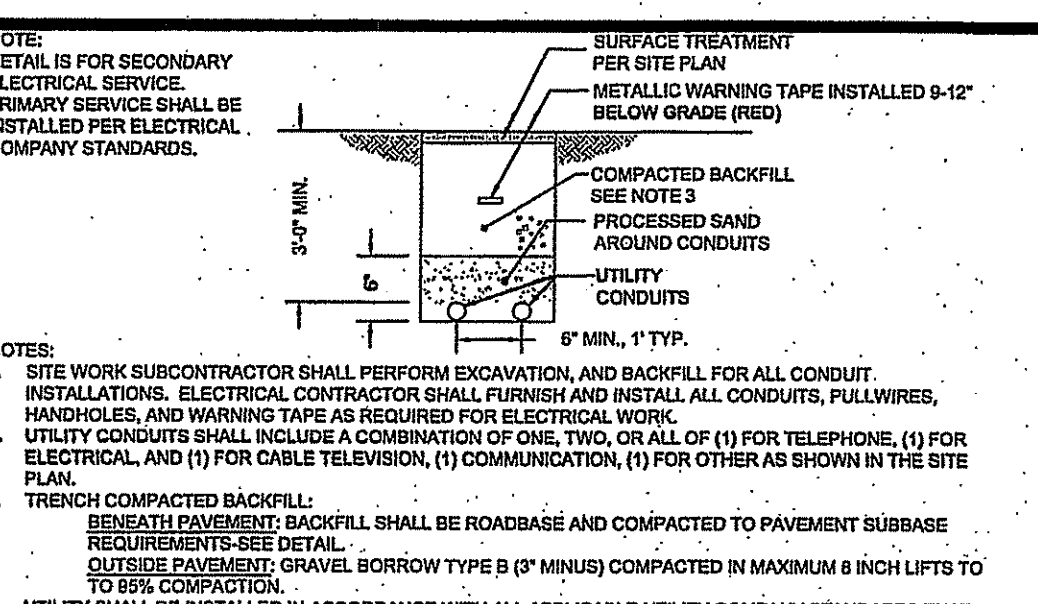
TYPICAL CONCRETE PAD DETAIL NOT TO SCALE



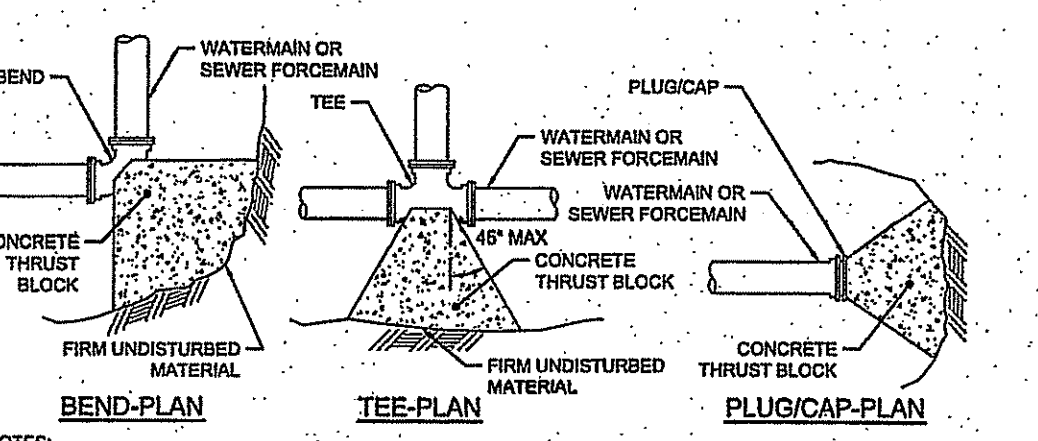
TYPICAL PAVEMENT PATCH DETAIL NOT TO SCALE



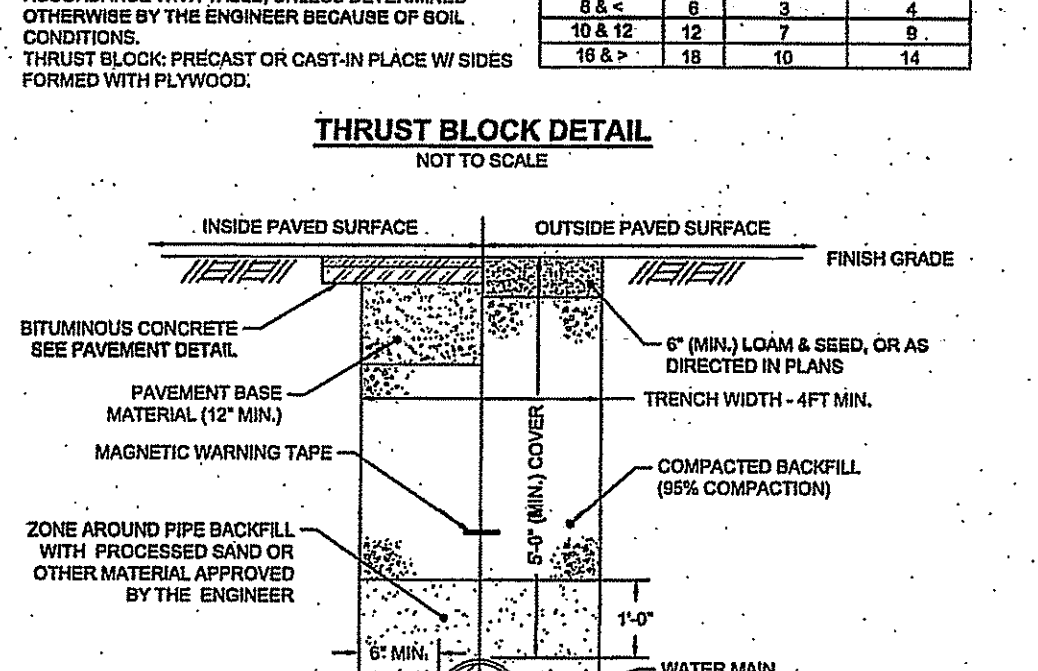
CONCRETE PLAZA DETAIL NOT TO SCALE



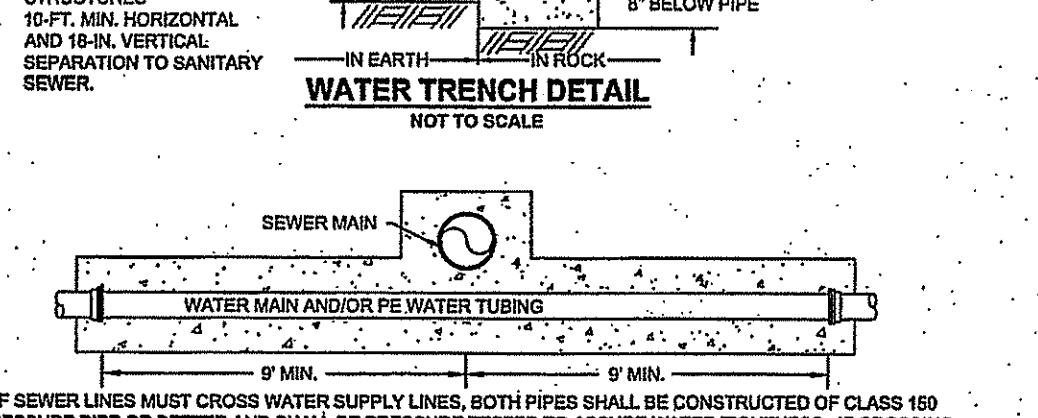
TYPICAL UTILITY TRENCH DETAIL NOT TO SCALE



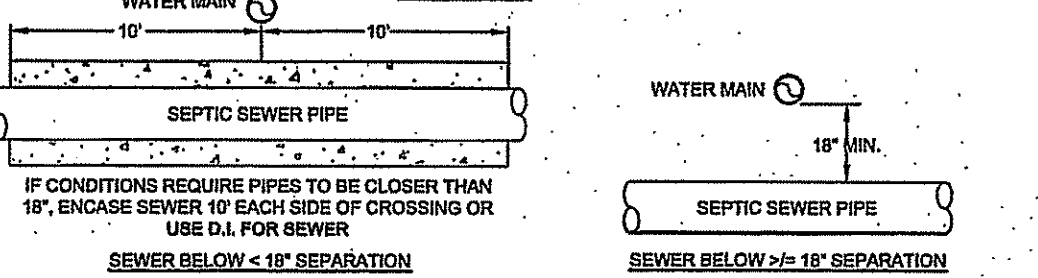
CONNECTION TO CAST IRON OR ASBESTOS CEMENT PIPE NOT TO SCALE



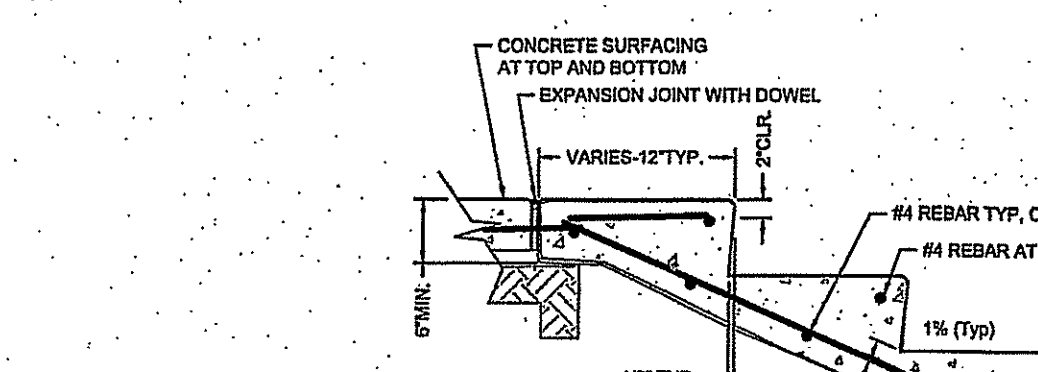
TYPICAL WATER MAIN CAPPING DETAIL NOT TO SCALE



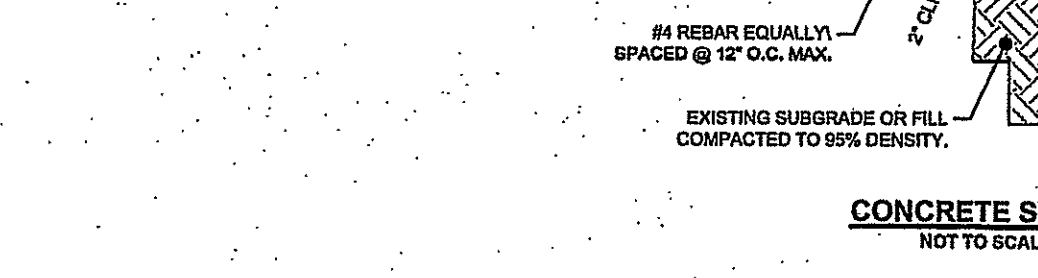
SEWER INTERIOR DROP CONNECTION TO EXISTING SEWER MANHOLE DETAIL NOT TO SCALE



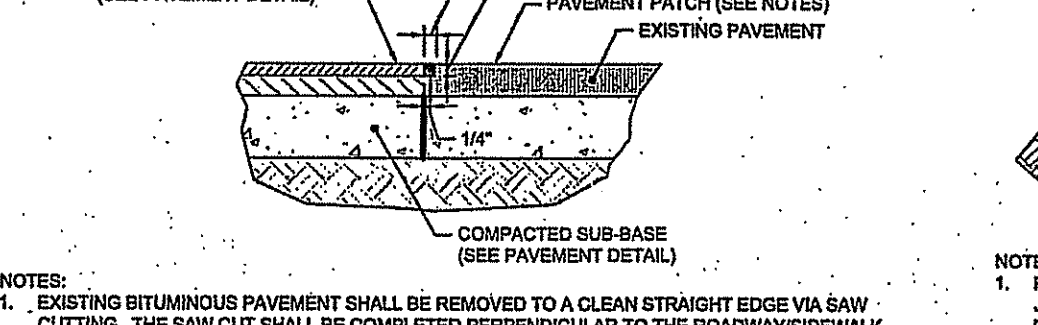
WATER CONNECTION DETAIL NOT TO SCALE



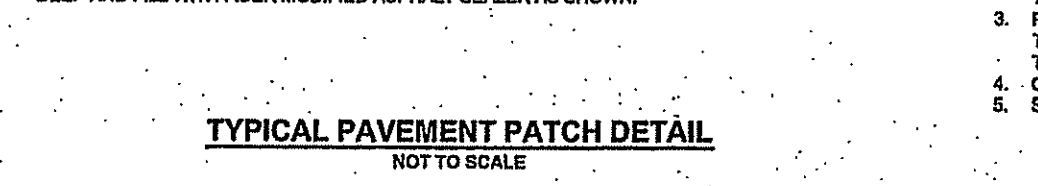
WATER SERVICE / SEWER CROSSING DETAIL NOT TO SCALE



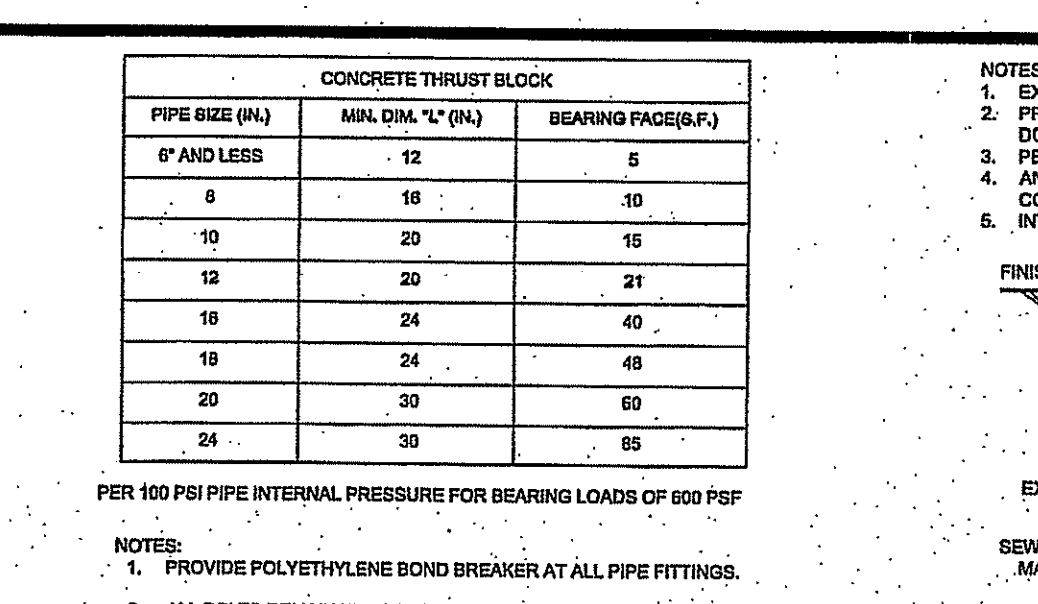
SEWER TRENCH DETAIL NOT TO SCALE



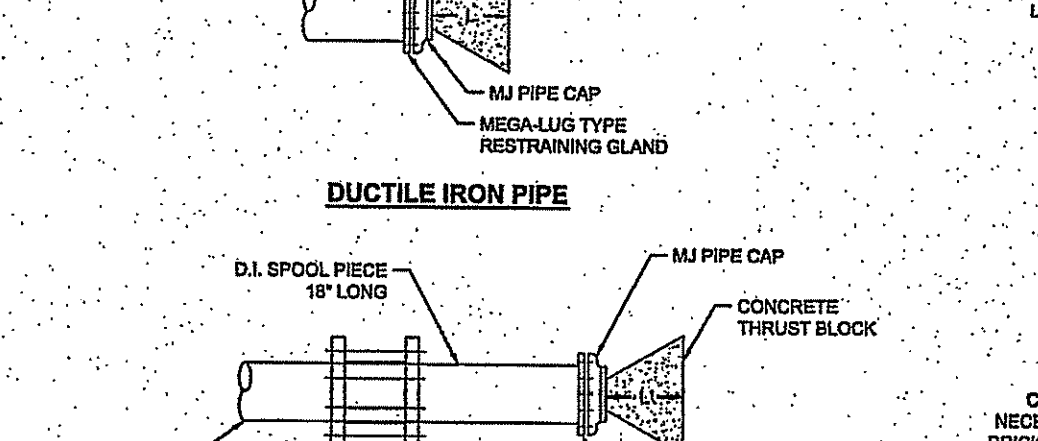
HYDRANT ASSEMBLY DETAIL NOT TO SCALE



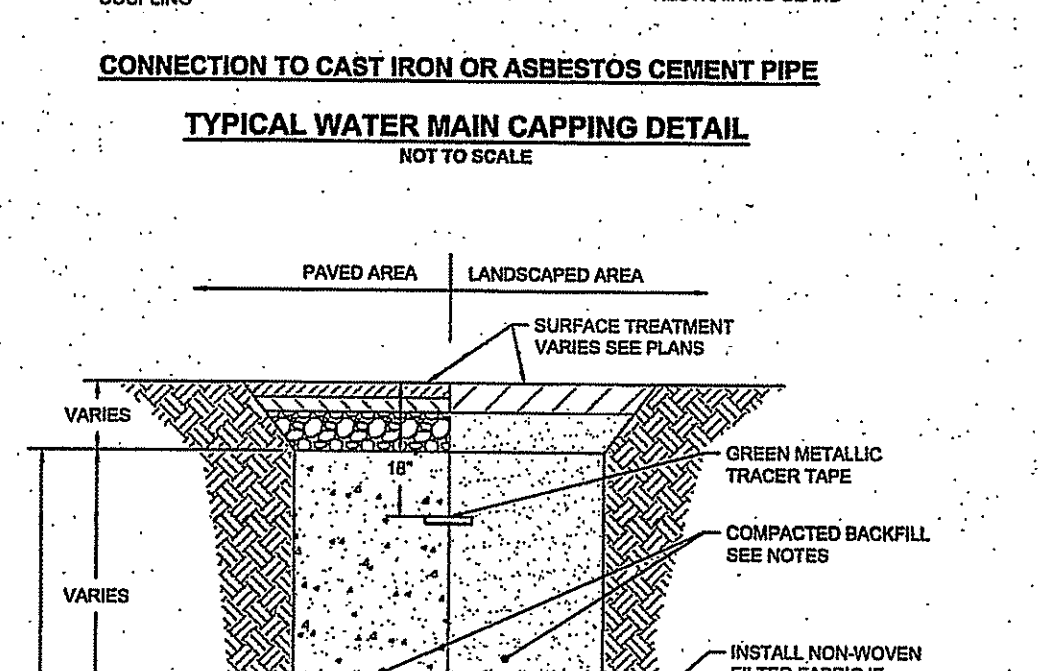
CONCRETE STAIRS NOT TO SCALE



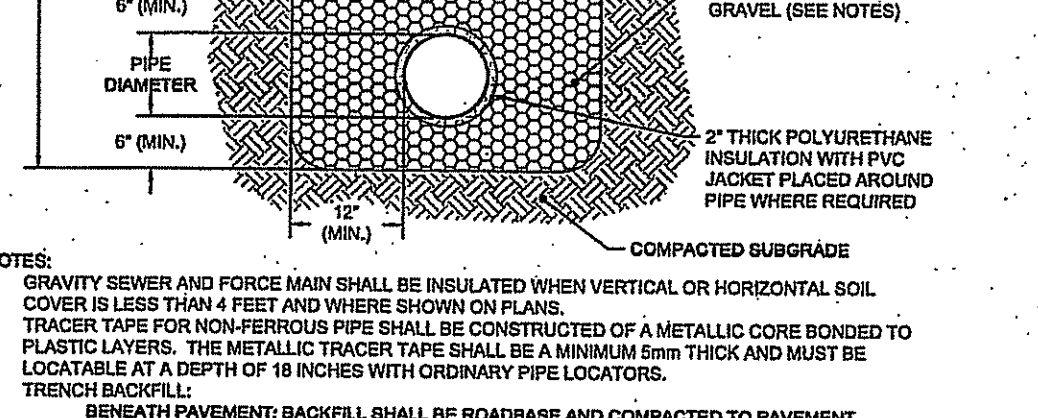
TYPICAL CONCRETE CURB TRANSITION PIECE NOT TO SCALE



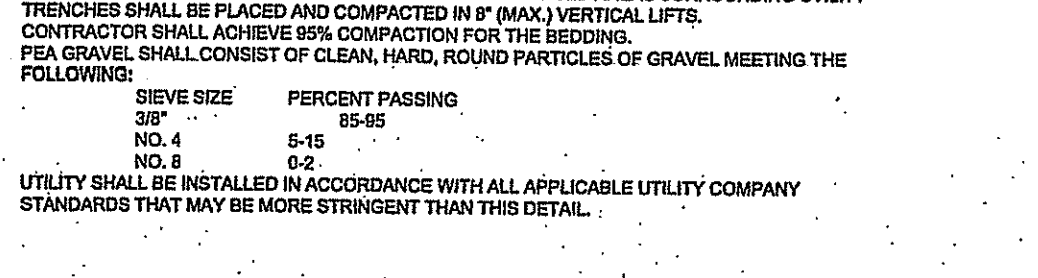
TYPICAL PAINTED CROSSWALK STRIPING NOT TO SCALE



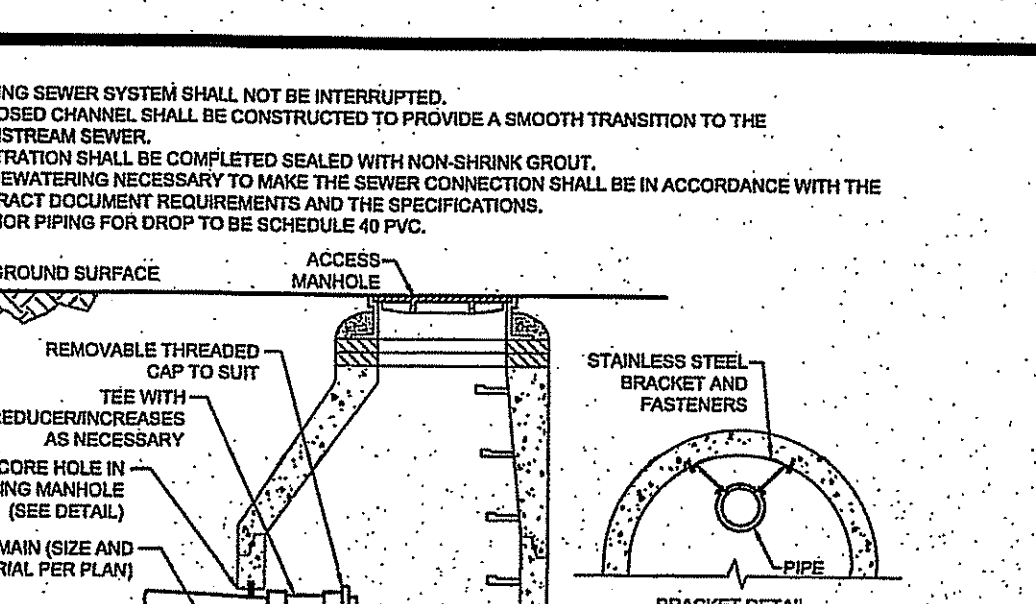
TYPICAL CONCRETE PAD DETAIL NOT TO SCALE



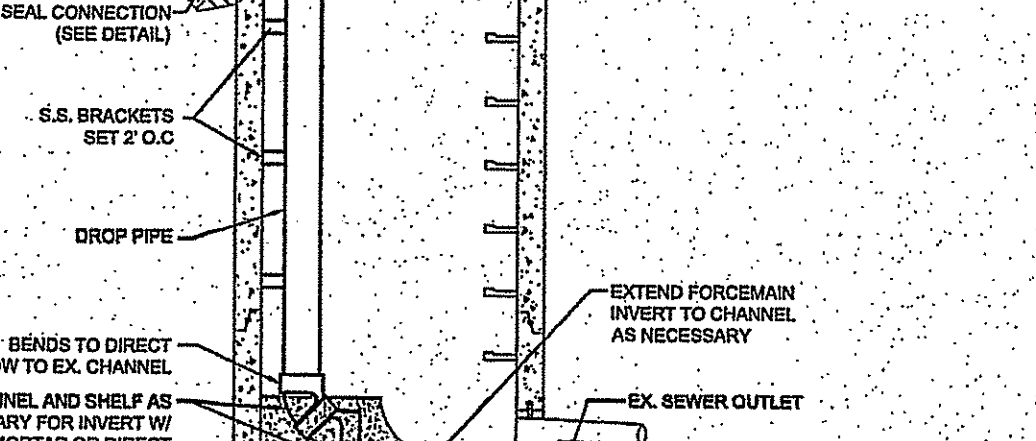
TYPICAL PAVEMENT PATCH DETAIL NOT TO SCALE



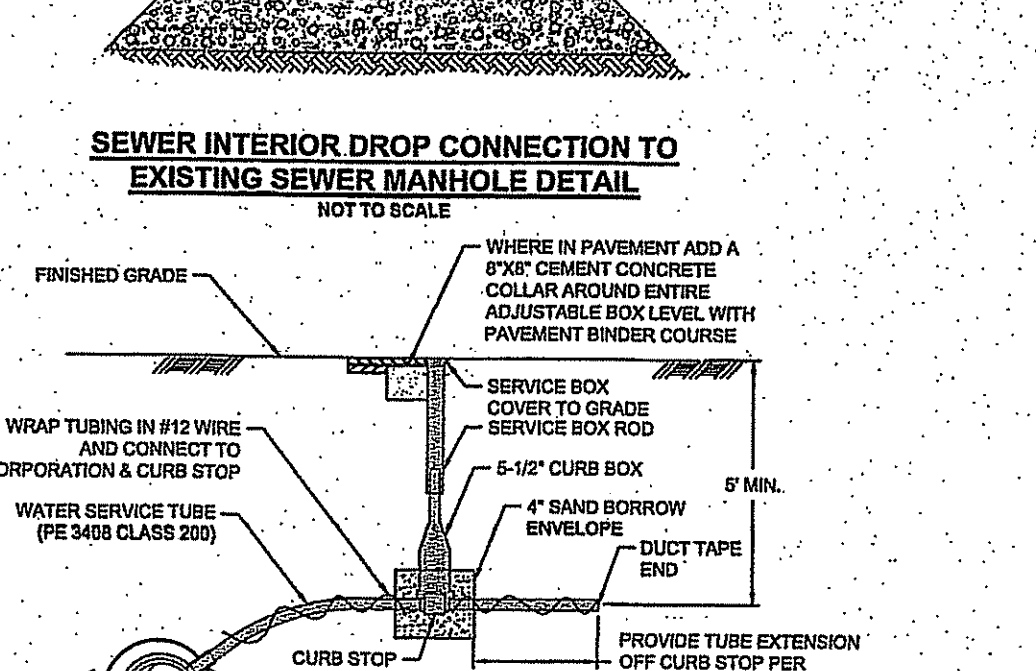
CONCRETE PLAZA DETAIL NOT TO SCALE



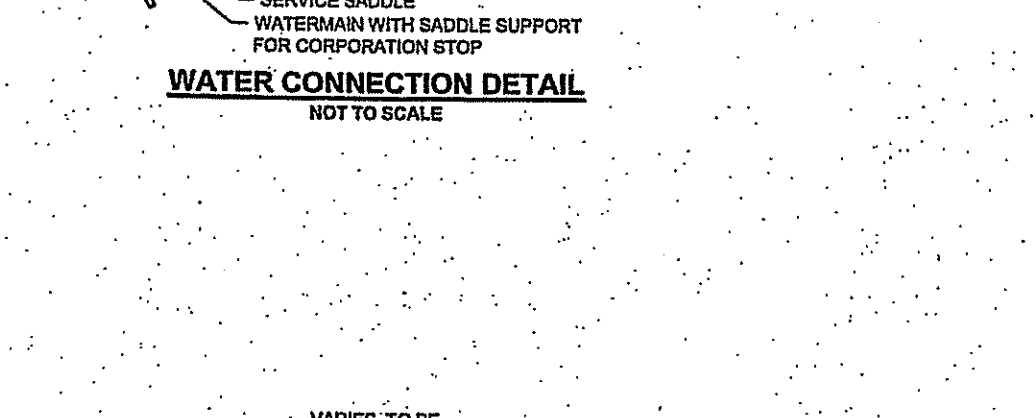
TYPICAL UTILITY TRENCH DETAIL NOT TO SCALE



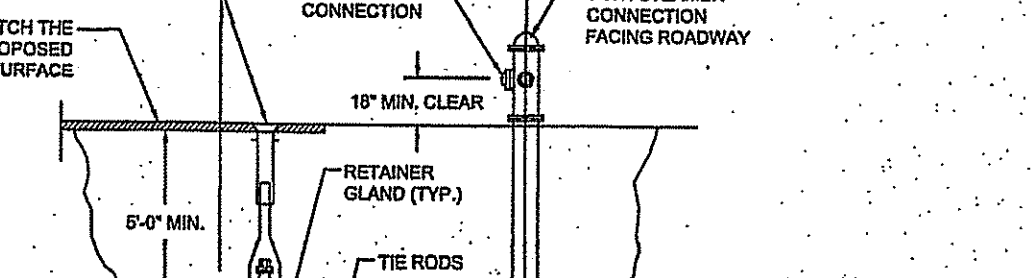
CONNECTION TO CAST IRON OR ASBESTOS CEMENT PIPE NOT TO SCALE



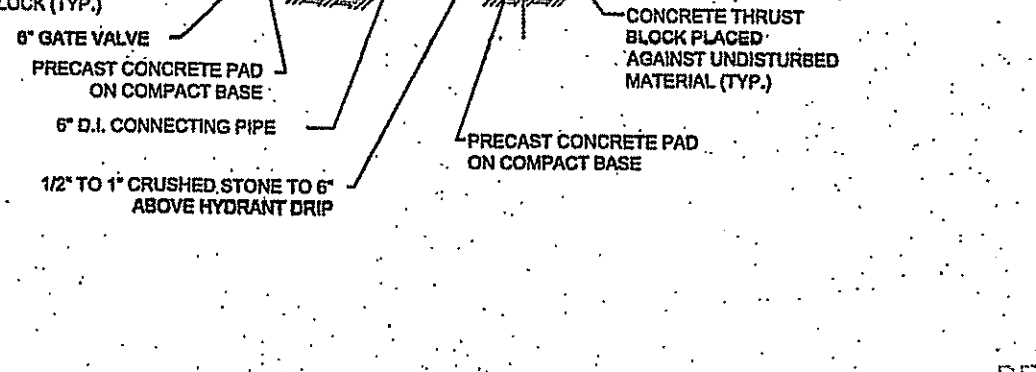
TYPICAL WATER MAIN CAPPING DETAIL NOT TO SCALE



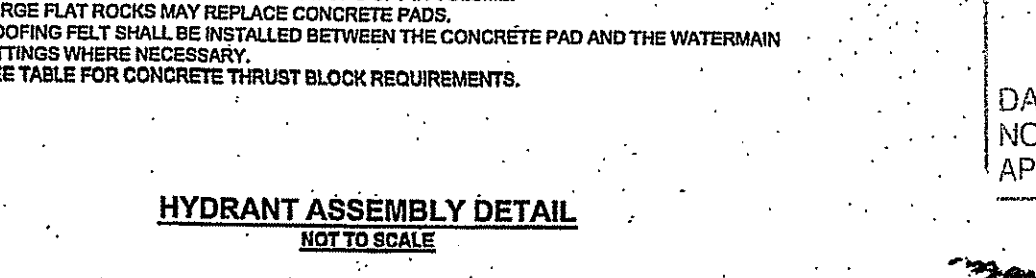
SEWER INTERIOR DROP CONNECTION TO EXISTING SEWER MANHOLE DETAIL NOT TO SCALE



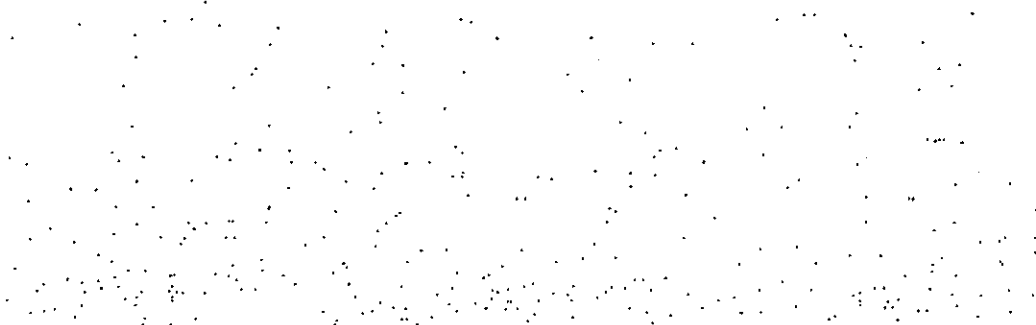
WATER CONNECTION DETAIL NOT TO SCALE



WATER SERVICE / SEWER CROSSING DETAIL NOT TO SCALE



SEWER TRENCH DETAIL NOT TO SCALE



HYDRANT ASSEMBLY DETAIL NOT TO SCALE



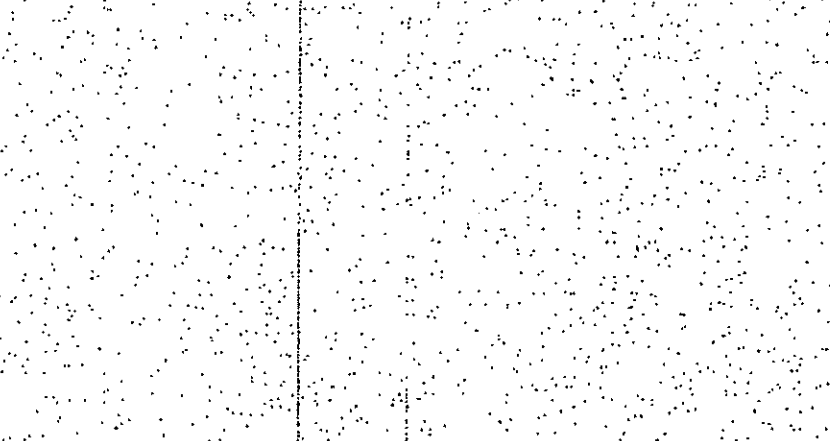
CONCRETE STAIRS NOT TO SCALE

CONCRETE THRUST BLOCK

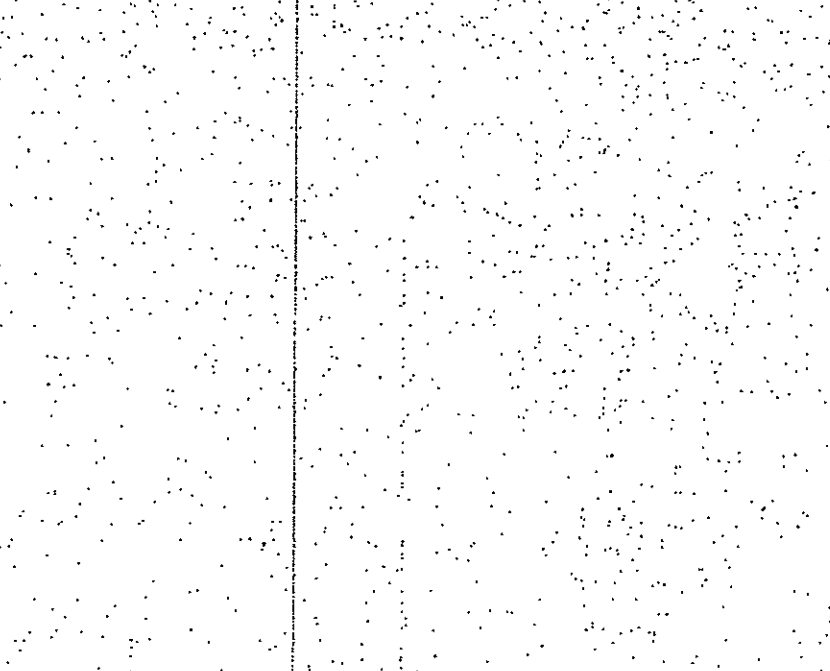
PIPE SIZE (IN)	MIN. DIA. "X" (IN)	BEARING FACE(S)
6" AND LESS	12	5
8	18	10
10	20	15
12	20	21
18	24	40
18	24	48
20	30	60
24	30	85

PER 100 PSI PIPE INTERNAL PRESSURE FOR BEARING LOADS OF 500 PSF

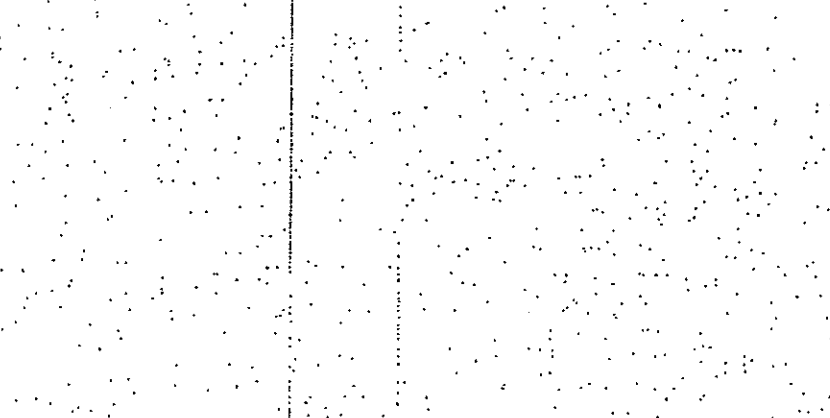
CONCRETE THRUST BLOCK



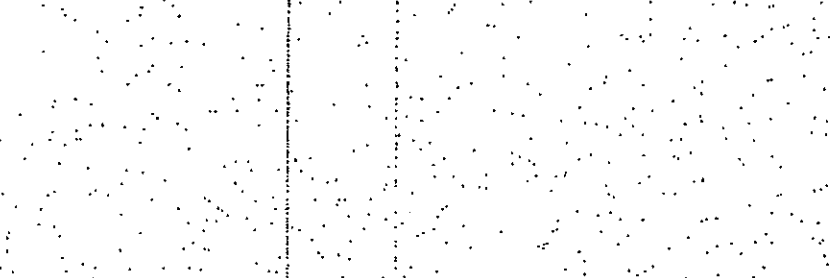
CONNECTION TO CAST IRON OR ASBESTOS CEMENT PIPE NOT TO SCALE



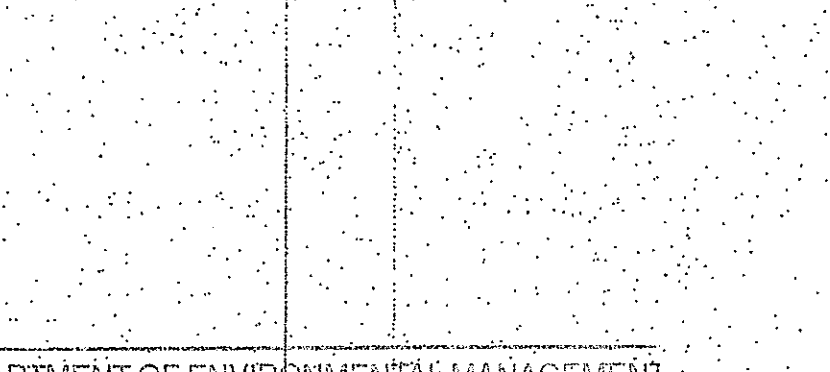
TYPICAL WATER MAIN CAPPING DETAIL NOT TO SCALE



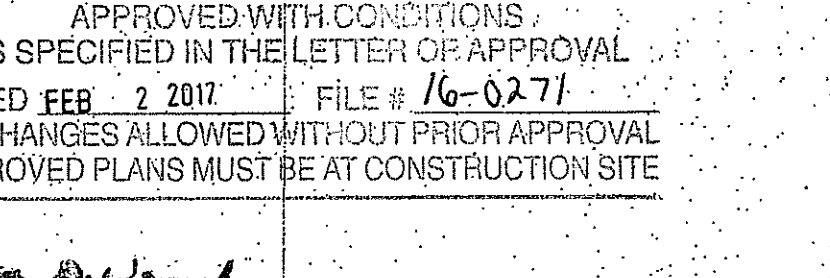
SEWER INTERIOR DROP CONNECTION TO EXISTING SEWER MANHOLE DETAIL NOT TO SCALE



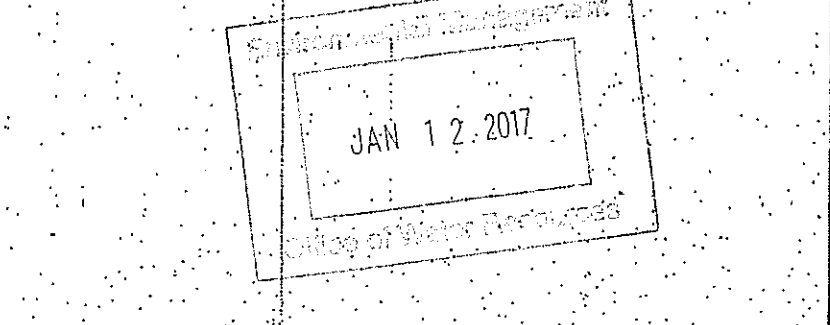
WATER CONNECTION DETAIL NOT TO SCALE



WATER SERVICE / SEWER CROSSING DETAIL NOT TO SCALE



SEWER TRENCH DETAIL NOT TO SCALE



HYDRANT ASSEMBLY DETAIL NOT TO SCALE



CONCRETE STAIRS NOT TO SCALE

REVISIONS

NO.	DATE	BY	DESCRIPTION
1	12/21/16	JGH	REDEM COMMENTS
2			
3			
4			
5			
6			

Horsley Witten Group, Inc.
Sustainable Environmental Solutions
www.horsleywitten.com
101 Summer Street, Suite 807
Boston, MA 02110
857-262-8193 vo/cel
617-574-4788 fax

E-ICON ARCHITECTURE
101 SUMMER STREET, BOSTON, MA 02110

IMPERIAL KNIFE FACTORY
REDEVELOPMENT PROJECT
PROVIDENCE, RHODE ISLAND

Prepared For: ICON Architecture
101 Summer Street
Boston, MA 02110
Phone: (617) 461-3333
Fax: ---

Survey Provided By: Kelly Engineering Group, Inc.
D Campanelli Drive
Brimfield, MA 02754
Phone: 1-781-943-3333
Date: ---

REGISTRATION: FAT PIU LEE
No. 7994
REGISTERED PROFESSIONAL ENGINEER (CIVIL)
Project Number: 14104
Sheet: 7 of 12
Sheet Number: ---

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
APPROVED WITH CONDITIONS
AS SPECIFIED IN THE LETTER OF APPROVAL
DATED FEB 2 2017 FILE # 16-0271
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
APPROVED PLANS MUST BE AT CONSTRUCTION SITE

JAN 12 2017

last modified: 01/11/17 printed: 01/11/17 by ml H:\Projects\2014104\14104 ICON Arch_Imperial Knife Drawings - 14104\14104-DE.dwg

BIORETENTION CONSTRUCTION SEQUENCE

- THE FOLLOWING CONSTRUCTION SEQUENCE IS TO BE USED AS A GENERAL GUIDELINE. COORDINATE WITH THE OWNER, ENGINEERS, AND LANDSCAPE ARCHITECTS AND SUBMIT A PROPOSED CONSTRUCTION SEQUENCE FOR REVIEW AND APPROVAL PRIOR TO CONSTRUCTION.
- CONDUCT A PRE-CONSTRUCTION MEETING.
- CHECK FOR EXISTING UTILITIES PRIOR TO ANY EXCAVATION.
- CLEAR AND GRUB THE PROPOSED BIORETENTION AREA.
- ROUGH GRADE THE BIORETENTION AREA DURING GENERAL CONSTRUCTION.
- DO NOT CONSTRUCT THE BIORETENTION AREA UNTIL ALL DISTURBED AREAS WITHIN THE CONTRIBUTING DRAINAGE AREAS HAVE BEEN GRADED AND STABILIZED.
- INSTALL TEMPORARY EROSION AND SEDIMENT CONTROLS TO DIVERT STORMWATER AWAY FROM THE BIORETENTION AREA.
- EXCAVATE THE BIORETENTION FACILITY TO THE BOTTOM INVERT OF THE SUBDRAIN SYSTEM.
- INSTALL THE FILTER FABRIC ALONG THE EXCAVATION SIDE WALLS. **ENGINEER FIELD VISIT AND REPORT REQUIRED.** SEE NOTE (I) BELOW.
- INSTALL 30 MIL PVC GEOMEMBRANE LINER AS INDICATED IN THE DETAILS.
- RIP THE BOTTOM SOILS TO A DEPTH OF SIX INCHES TO PROMOTE GREATER INFILTRATION.
- INSTALL THE OVERFLOW OUTLET STRUCTURE AS SPECIFIED IN THE DRAWINGS.
- INSTALL UNDERDRAIN AS INDICATED ON DRAWINGS. **ENGINEER FIELD VISIT AND REPORT REQUIRED PRIOR TO CONSTRUCTION.** SEE NOTE (I) BELOW.
- INSTALL PEA GRAVEL LAYER AS INDICATED ON DRAWINGS.
- DELIVER APPROVED BIORETENTION SOIL AND STORE ON ADJACENT IMPERVIOUS AREA OR PLASTIC SHEETING.
- BACKFILL WITH APPROVED BIORETENTION SOIL TO THE DESIGN GRADE (UN-COMPACTED) AS INDICATED ON DRAWINGS. THE CONTRACTOR MUST SUBMIT A SOIL SAMPLE (2 LBS) TO THE ENGINEER PRIOR TO SOIL DELIVERY TO THE SITE.
- STABILIZE ALL REMAINING DISTURBED AREAS AND SIDE SLOPES WITH SEEDING, HYDROSEEDING, AND/OR EROSION CONTROL BLANKETS AS INDICATED ON DRAWINGS. **ENGINEER FIELD VISIT AND REPORT REQUIRED.** SEE NOTE (I) BELOW.
- INSTALL BIORETENTION PLANTINGS AS INDICATED ON DRAWINGS. DO NOT PLANT BEFORE THE REMAINING DISTURBED AREAS SURROUNDING THE FACILITY ARE STABILIZED.
- INSTALL MULCH LAYER AS INDICATED ON DRAWINGS. THE CONTRACTOR MUST SUBMIT A MULCH SAMPLE (1 GALLON) TO THE ENGINEER PRIOR TO DELIVERY TO THE SITE.
- CONDUCT FINAL CONSTRUCTION INSPECTION WITH ENGINEER. **ENGINEER FIELD VISIT AND REPORT REQUIRED.** SEE NOTE (I) BELOW.
- REMOVE REMAINING EROSION AND SEDIMENT CONTROLS ONLY AFTER SURROUNDING DISTURBED AREAS HAVE BEEN PROPERLY STABILIZED.

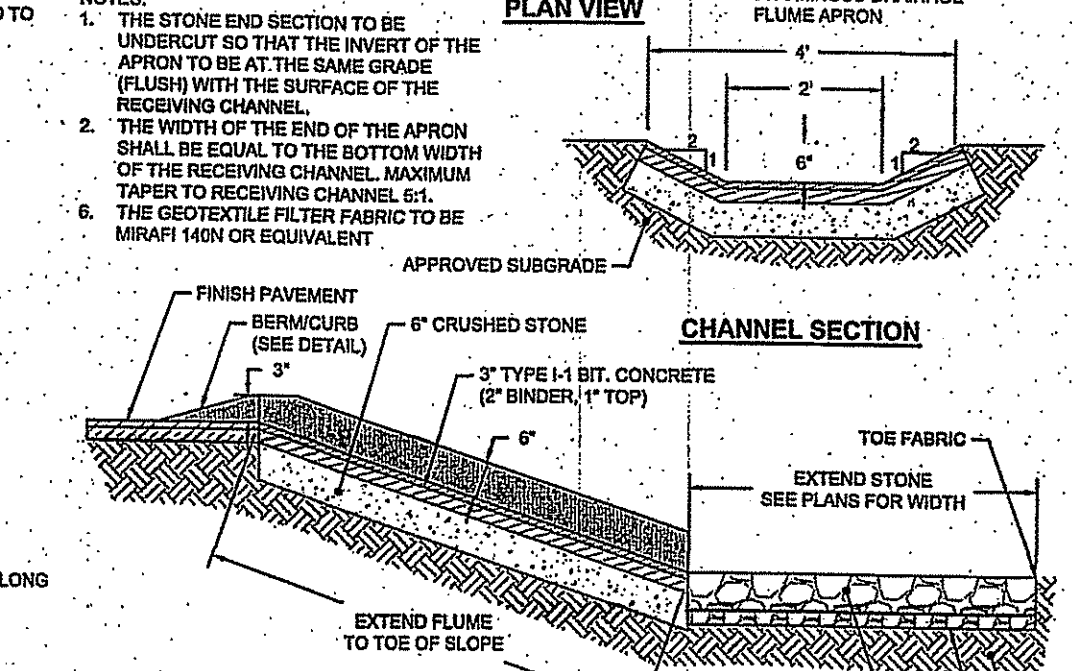
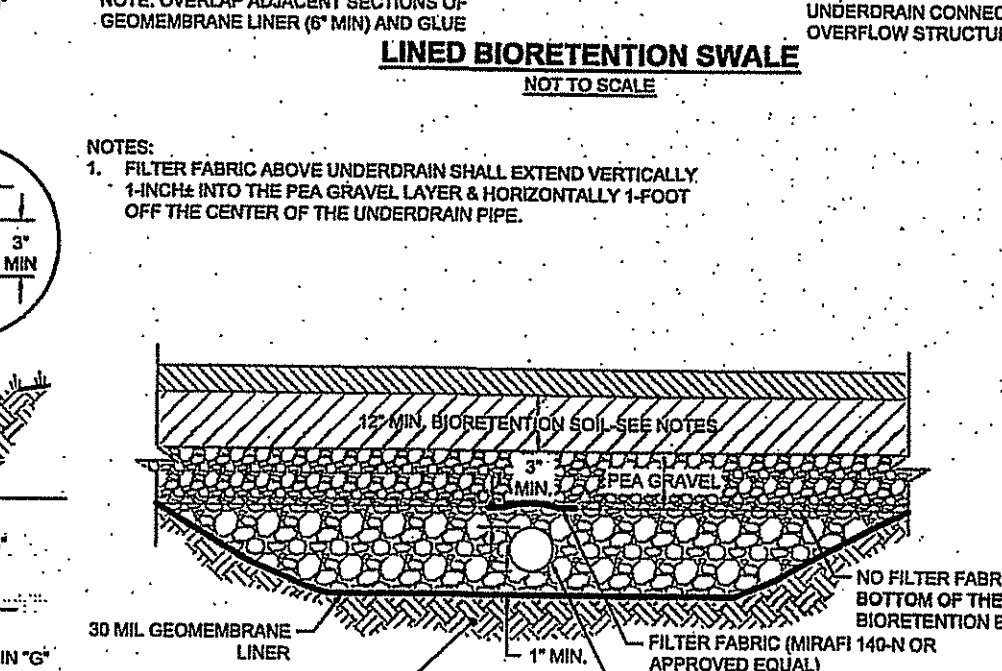
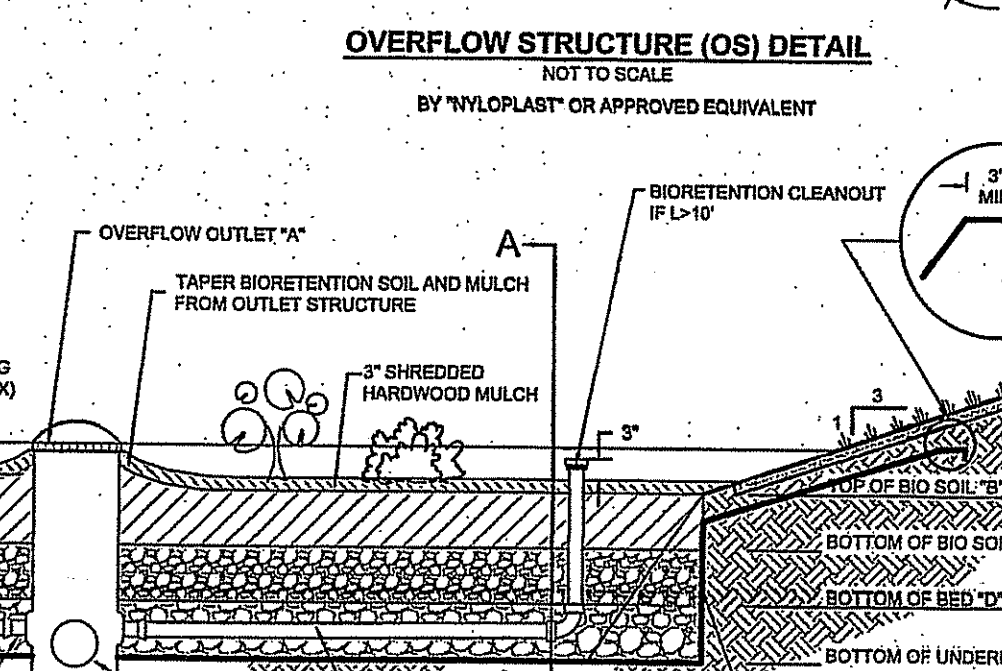
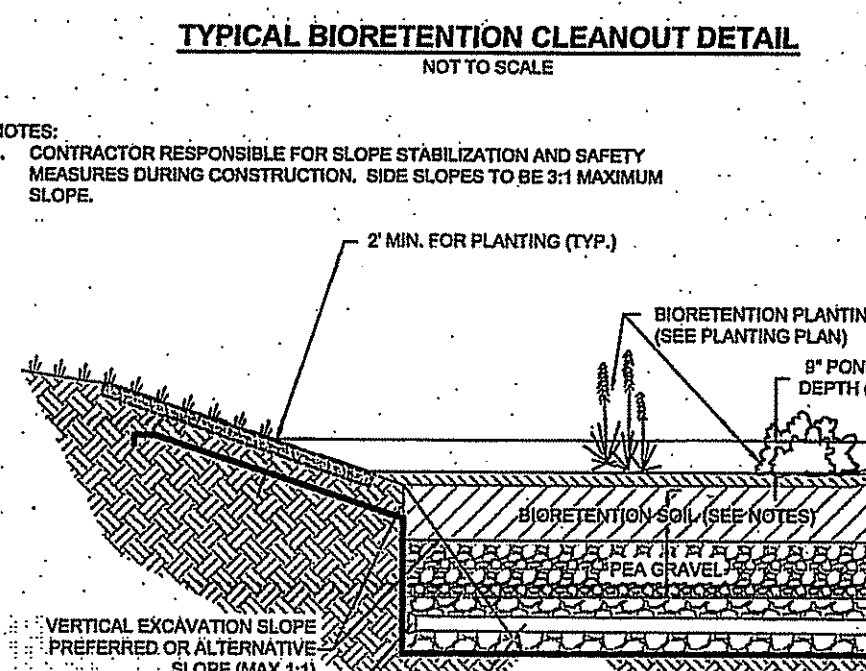
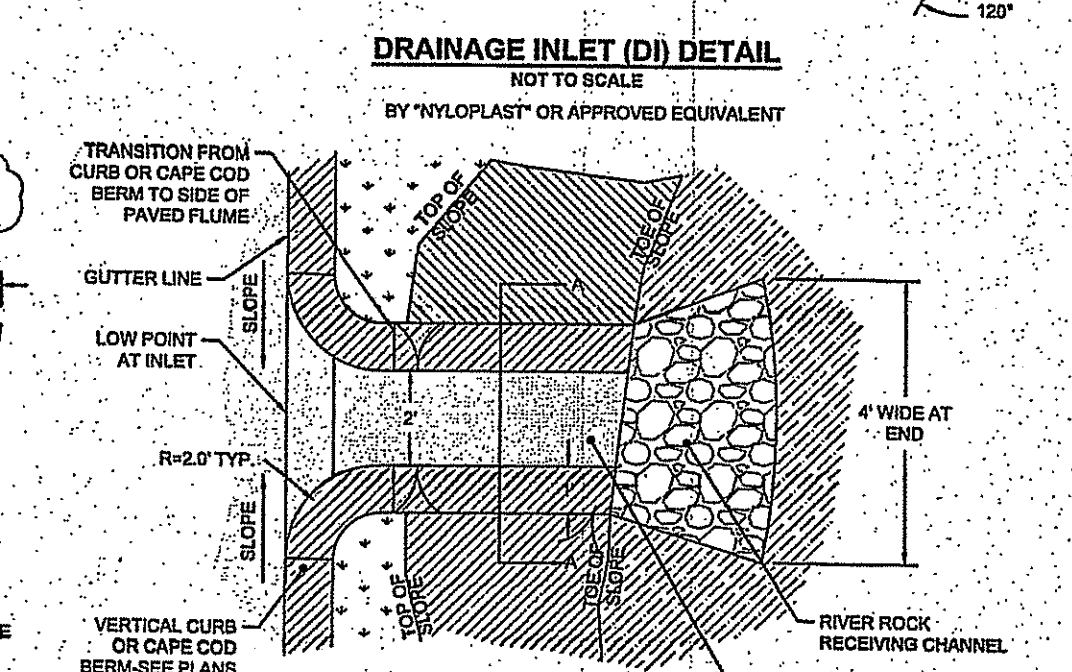
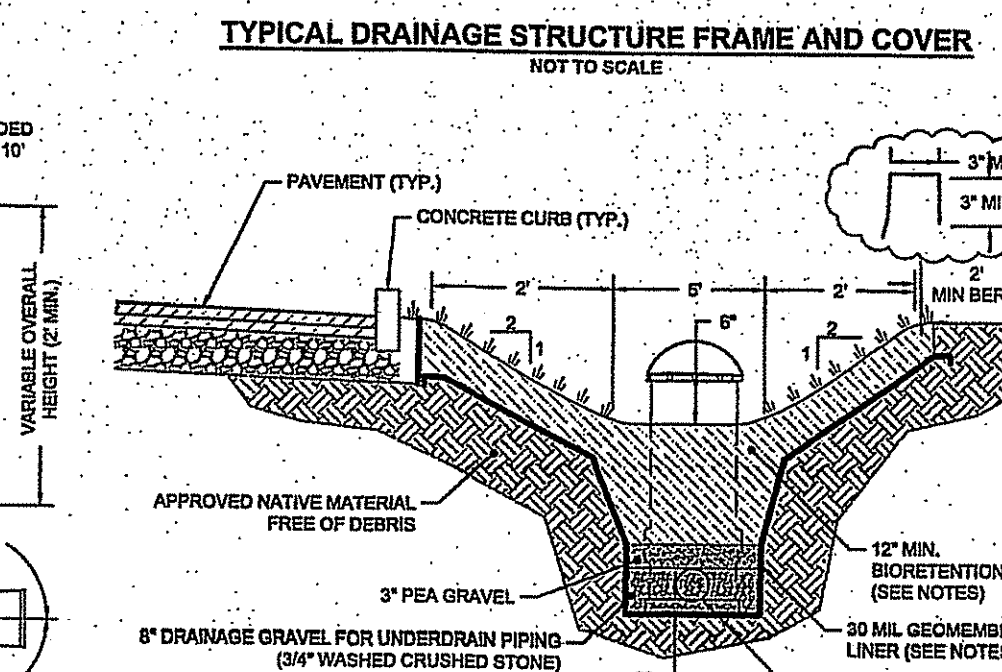
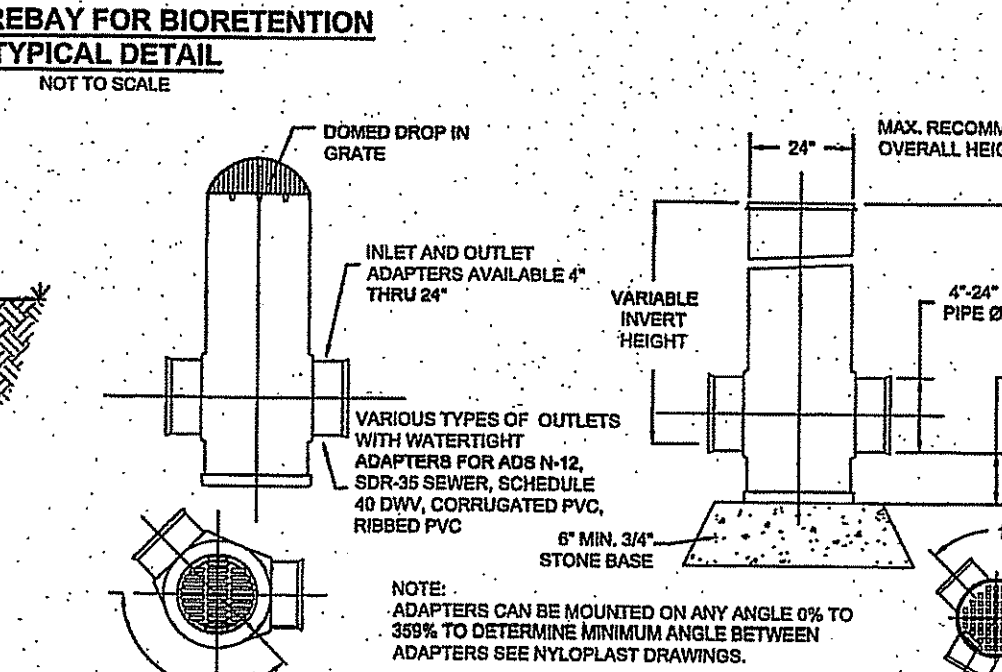
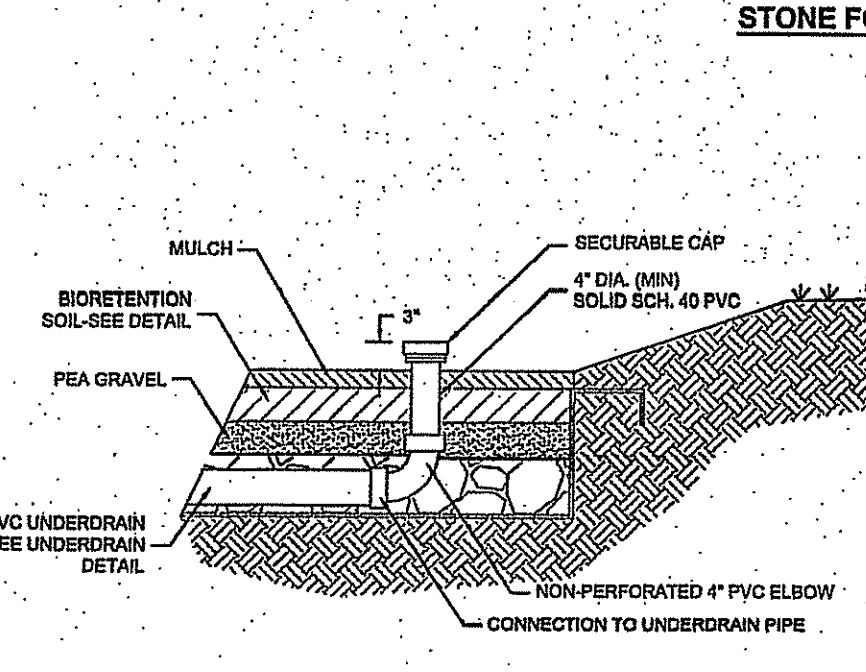
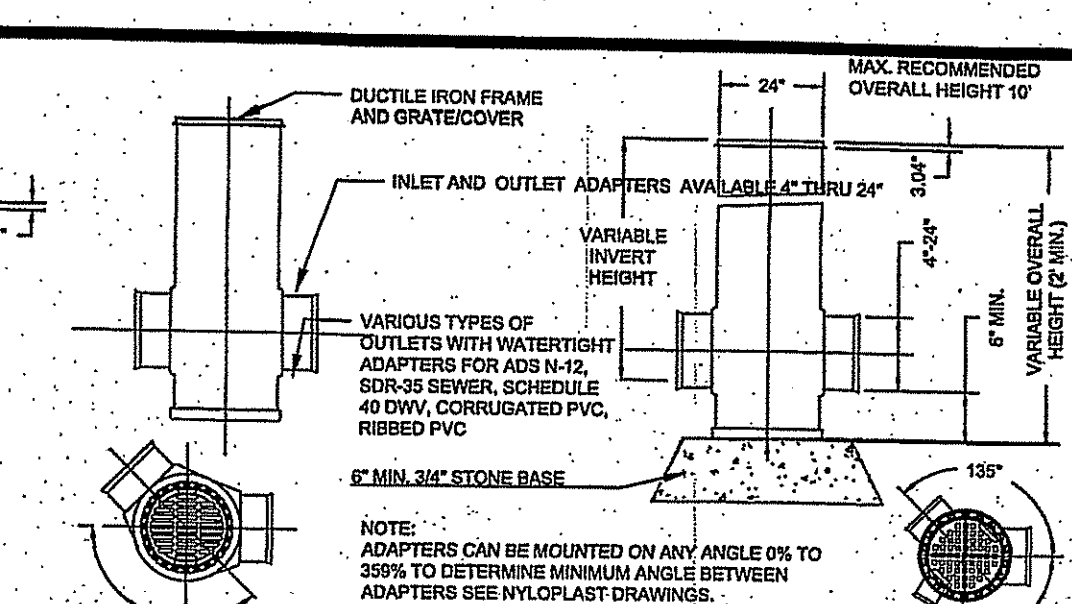
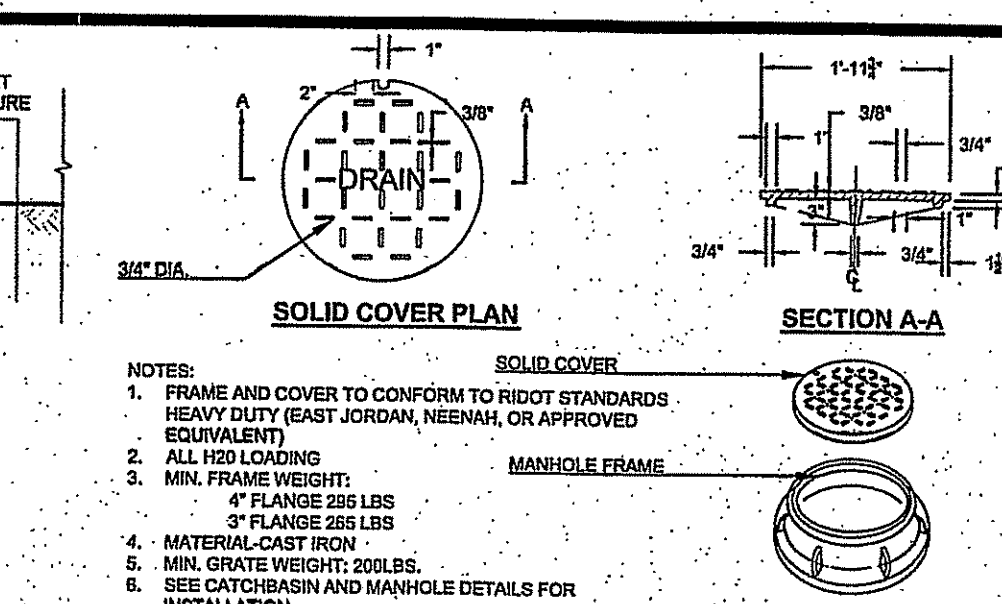
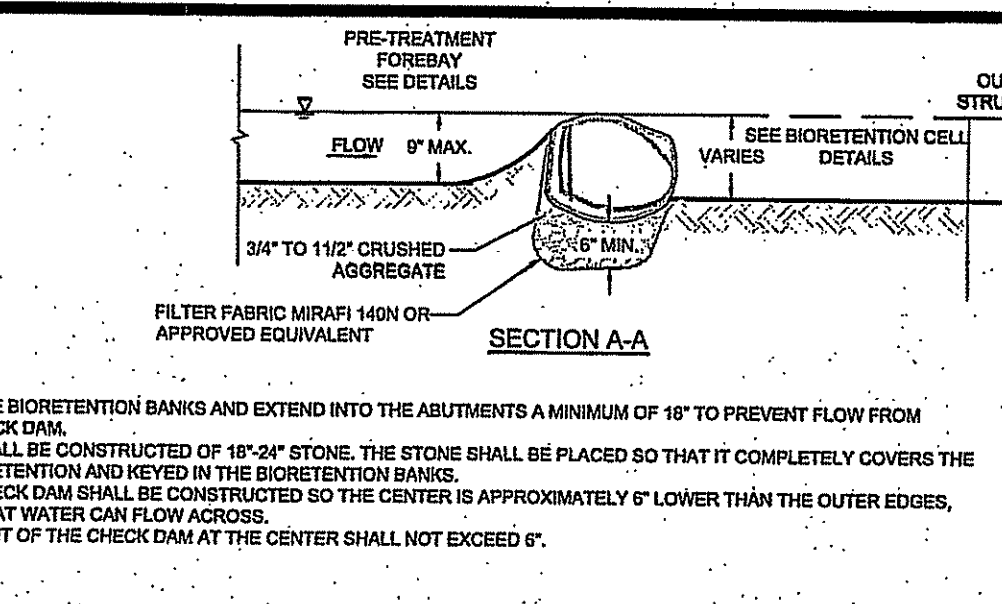
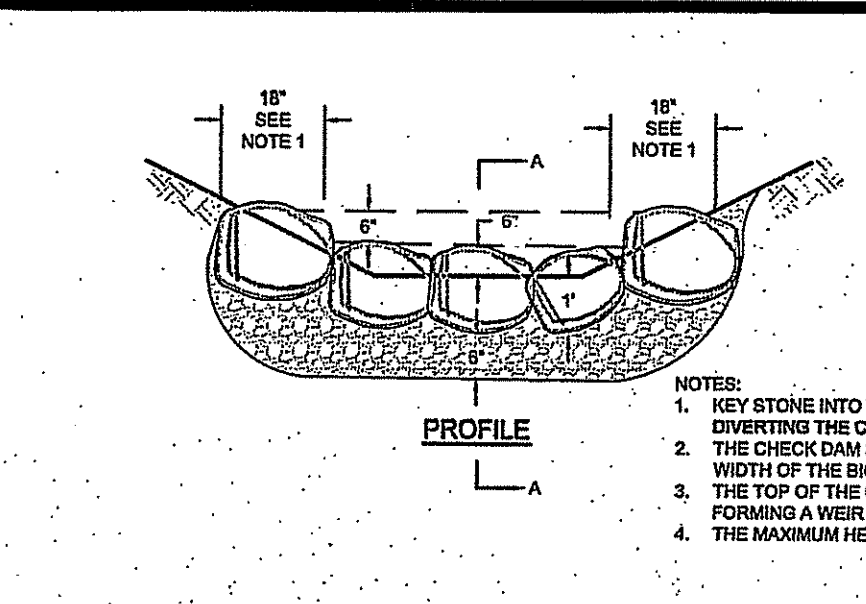
- NOTES:
- SEE GENERAL CONSTRUCTION NOTES FOR OVERALL CONSTRUCTION SEQUENCE.
 - SEE GENERAL NOTES/SPECIFICATIONS/CONSTRUCTION DETAILS FOR DETAILED CONSTRUCTION REQUIREMENTS.
 - MANDATORY NOTIFICATION/APPROVAL OF THE PROJECT ENGINEER IS REQUIRED PRIOR TO PROCEEDING WITH NEXT STAGE. CALL THE ENGINEER (MOBILE/ WITTEN GROUP, INC.) AT 603-832-8800 PRIOR TO 12:00 NOON THE PRECEDING DAY TO ARRANGE FOR ANY REGISTERED FIELD VISITS.

CONSTRUCTION NOTES

- EXAMINATION**
 - VERIFY LAYOUT AND ORIENTATION OF BIORETENTION AREA AND CONNECTIONS.
 - VERIFY EXCAVATION BASE IS READY TO RECEIVE WORK AND EXCAVATIONS, DIMENSIONS, AND ELEVATIONS ARE AS INDICATED ON DRAWINGS.
- PREPARATION**
 - CALL DISSAFE AT 1-888-246-54FE (1-888-344-7233) NOT LESS THAN THREE BUSINESS DAYS BEFORE PERFORMING WORK.
 - REQUEST UNDERGROUND UTILITIES TO BE LOCATED AND MARKED WITHIN AND SURROUNDING CONSTRUCTION AREAS.
 - IDENTIFY REQUIRED LINES, LEVELS, CONTOURS, AND DATUM.
 - CLEAR AND GRUB THE PROPOSED BIORETENTION AREA.
- EXCAVATION**
 - EXCAVATE BIORETENTION AREA IN ACCORDANCE WITH GENERAL NOTES AND SPECIFICATIONS.
 - TO MINIMIZE COMPACTION, WORK EXCAVATORS OR BACKHOES FROM THE SIDES TO EXCAVATE THE BIORETENTION AREA TO ITS APPROPRIATE DESIGN DEPTH AND DIMENSIONS. USE EXCAVATING EQUIPMENT WITH APPROPRIATE REACH TO DO NOT WORK IN THE BIORETENTION AREA. IF APPLICABLE AND PER THE ENGINEERS DIRECTION USE A CELL CONSTRUCTION APPROACH IN LARGER BIORETENTION BASINS, WHEREBY THE BASIN IS SPLIT INTO 300 TO 1000 SQUARE FOOT TEMPORARY CELLS WITH A 2" TO 16" FOOT EARTH BRIDGE IN BETWEEN, SO THAT CELLS CAN BE EXCAVATED FROM THE SIDE.
 - EXCAVATE AND SEAL ANY PRETREATMENT CELLS AND/OR SEDIMENT FOREBAYS FIRST AND SEALED TO TRAP SEDIMENTS FROM THE DRAWINGS.
 - ROUGH GRADE THE BIORETENTION AREA DURING GENERAL CONSTRUCTION. EXCAVATE THE BIORETENTION FACILITIES TO WITHIN 1 FOOT OF UNDERDRAIN BOTTOM.
 - IF THE BIORETENTION AREA IS TO BE USED AS A TEMPORARY DRAINAGE STORAGE BASIN DURING THE EARLY STAGES OF PROJECT CONSTRUCTION, THE SIDE SLOPES SHOULD BE TEMPORARILY STABILIZED AND SILT FENCE INSTALLED ALONG THE TOE OF THE ROUGH GRADED BIORETENTION SLOPES TO MINIMIZE EXCESSIVE SEDIMENTATION OF THE BIORETENTION FLOOR.
- COMPACTION**
 - MINIMIZE COMPACTION OF BOTH THE BASE OF THE BIORETENTION AREA AND THE REQUIRED BACKFILL. COMPACTION WILL SIGNIFICANTLY CONTRIBUTE TO DESIGN FAILURE.
 - USE EXCAVATOR OR BACKHOES TO EXCAVATE THE BIORETENTION AREA.
 - IF THE BIORETENTION AREA IS EXCAVATED USING A LOADER, USE ONLY WIDE TRACK OR MARSH TRACK EQUIPMENT, OR LIGHT EQUIPMENT WITH TIRE TYPE TIRES. USE OF EQUIPMENT WITH NARROW TRACK OR NARROW TIRES, RUBBER TIRES WITH LARGE LUGS, OR HIGH PRESSURE TIRES CAUSE EXCESSIVE COMPACTION RESULTING IN REDUCED INFILTRATION RATES AND STORAGE VOLUMES AND IS NOT ACCEPTABLE.
 - COMPACTION CAN BE ALLEVIATED AT THE BASE OF THE BIORETENTION FACILITY BY USING A PRIMARY TILLING OPERATION SUCH AS A CHISEL, FLOW, RIPPER, OR SUBSOILER. THESE TILLING OPERATIONS ARE PERFORMED TO REFRACTURE THE SOIL PROFILE THROUGH THE 12-IN COMPACTION ZONE. SUBSTITUTE METHODS MUST BE APPROVED BY THE ENGINEER. ROTATORS TYPICALLY DO NOT TILL DEEP ENOUGH TO REDUCE THE EFFECTS OF COMPACTION FROM HEAVY EQUIPMENT.
 - DO NOT COMPACT BIORETENTION SOIL WITH MECHANICAL EQUIPMENT.
- EMBANKMENT/BERM/FILL**
 - CONSTRUCT EMBANKMENT/BERM IN ACCORDANCE WITH SPECIFICATIONS AND AS INDICATED ON DRAWINGS.
- INSTALLATION**
 - DO NOT CONSTRUCT THE BIORETENTION AREA UNTIL ALL DISTURBED AREAS WITHIN THE CONTRIBUTING DRAINAGE AREAS HAVE BEEN GRADED AND STABILIZED.
 - REMOVE SEDIMENT ACCUMULATED ALONG THE EXCAVATION FLOOR DURING SITE CONSTRUCTION PRIOR TO CONTINUING WITH THE BIORETENTION FACILITY CONSTRUCTION.
 - FORM BOTTOM OF EXCAVATION TO CORRECT ELEVATION.
 - IF INFILTRATION IS PROMOTED, THEN RIP THE BOTTOM SOILS TO A DEPTH OF SIX INCHES TO PROMOTE GREATER INFILTRATION.
 - INSTALL THE FILTER FABRIC ALONG THE EXCAVATION SIDE WALLS AS SPECIFIED IN THE DRAWINGS. IF FILTER FABRIC IS TO BE INSTALLED PLACE THE FILTER FABRIC ON THE SIDES OF THE BIORETENTION AREA WITH A MINIMUM SIX INCH OVERLAP AT ALL JOINTS.
 - INSTALL ANY TEMPORARY EROSION AND SEDIMENT CONTROLS TO DIVERT STORMWATER AWAY FROM THE BIORETENTION AREA DURING FINAL CONSTRUCTION AND UNTIL IT IS COMPLETED. SPIRAL PROTECTION MEASURES SUCH AS EROSION CONTROL FABRICS MAY BE NEEDED TO PROTECT VULNERABLE SIDE SLOPES FROM EROSION DURING THE CONSTRUCTION PROCESS.
 - ESTABLISH ELEVATIONS AND PIPE INVERTS FOR INTAKES AND OUTLETS AS INDICATED ON DRAWINGS.
 - INSTALL THE OVERFLOW OUTLET STRUCTURE AS INDICATED ON DRAWINGS.
 - INSTALL UNDERDRAIN, INCLUDING 4 INCH PERFORATED PIPE, GRAVEL AND FILTER FABRIC ON TOP OF THE UNDERDRAIN GRAVEL AS INDICATED ON DRAWINGS. PLACE GRAVEL AROUND THE UNDERDRAIN PIPE AS INDICATED IN THE DETAILS. OBSERVATION WELLS AND/OR CLEAN-OUT PIPES MUST BE PROVIDED (SEE PLANS FOR LOCATION).
 - INSTALL PEA GRAVEL LAYER AS INDICATED ON DRAWINGS.
 - DELIVER APPROVED BIORETENTION SOIL AND STORE ON ADJACENT IMPERVIOUS AREA OR PLASTIC SHEETING.
- BACKFILL**
 - BACKFILL WITH APPROVED BIORETENTION SOIL TO THE DESIGN GRADE AS SPECIFIED IN THE DRAWINGS.
 - PLACE SOIL IN 12 INCH LIFTS UNTIL DESIRED TOP ELEVATION OF BIORETENTION SOIL IS ACHIEVED. DO NOT USE HEAVY EQUIPMENT WITHIN THE BIORETENTION BASIN. HEAVY EQUIPMENT CAN BE USED AROUND THE PERIMETER OF THE BASIN TO SUPPLY SOILS AND SAND. WAIT 3 DAYS TO CHECK FOR SETTLEMENT, AND ADD ADDITIONAL MEDIA AS NEEDED.
 - DO NOT COMPACT BIORETENTION SOIL WITH MECHANICAL EQUIPMENT.
 - GRADE BIORETENTION MATERIALS WITH LIGHT EQUIPMENT SUCH AS A COMPACT LOADER OR A DOZER/LOADER WITH MARSH TRACKS.
 - STABILIZE ALL REMAINING DISTURBED AREAS AND SIDE SLOPES WITH SEEDING, HYDROSEEDING, AND/OR EROSION CONTROL BLANKETS AS INDICATED ON DRAWINGS.
- PLANTING**
 - PLANT BIORETENTION AREA IN ACCORDANCE WITH PLANTING PLANS AND SPECIFICATIONS.
 - THE PRIMARY FUNCTION OF THE BIORETENTION STRUCTURE IS TO IMPROVE WATER QUALITY. DO NOT ADD FERTILIZERS OR OTHER SOIL AMENDMENTS TO THE BIORETENTION SOILS UNLESS INSTRUCTED BY THE ENGINEER. THE PLANTING SOIL SPECIFICATIONS PROVIDE ENOUGH ORGANIC MATERIAL TO ADEQUATELY SUPPLY NUTRIENTS FROM NATURAL CYCLING.
 - INSTALL BIORETENTION PLANTINGS AS INDICATED ON DRAWINGS. WATER DURING WEEKS OF NO RAIN FOR THE FIRST TWO MONTHS.
 - DO NOT PLANT BEFORE THE REMAINING DISTURBED AREAS SURROUNDING THE FACILITY ARE STABILIZED.
 - REMOVE SEDIMENT ACCUMULATED IN THE BIORETENTION AREA DURING THE PLANTING PHASE.
 - IF SUITABLE VEGETATIVE COVER HAS NOT BEEN ESTABLISHED ALONG THE BIORETENTION SIDE SLOPES PRIOR TO PLANTING, INSTALL A SILT FENCE PERIMETER AT THE TOE OF THE BIORETENTION SLOPES AND LEAVE IN PLACE UNTIL AN APPROVED VEGETATIVE COVER HAS BEEN ESTABLISHED.
 - INSTALL MULCH LAYER AS INDICATED ON DRAWINGS. MIX APPROXIMATELY HALF OF THE SPECIFIED MULCH LAYER INTO THE BIORETENTION SOIL TO A DEPTH OF APPROXIMATELY 4 INCHES TO HELP FOSTER A HIGHLY ORGANIC SURFACE LAYER.
 - REMOVE REMAINING EROSION AND SEDIMENT CONTROLS ONLY AFTER SURROUNDING DISTURBED AREAS HAVE BEEN PROPERLY STABILIZED.
 - CONDUCT FINAL CONSTRUCTION INSPECTION WITH ENGINEER.
- CLEAN UP**
 - AFTER COMPLETION OF THE WORK, REMOVE AND PROPERLY DISPOSE ALL DEBRIS, CONSTRUCTION MATERIALS, ETC., FROM THE PROJECT SITE. REPAIR PROPERLY ANY IDENTIFIED DEFICIENCIES AND LEAVE THE PROJECT SITE IN A CLEAN AND SATISFACTORY CONDITION.

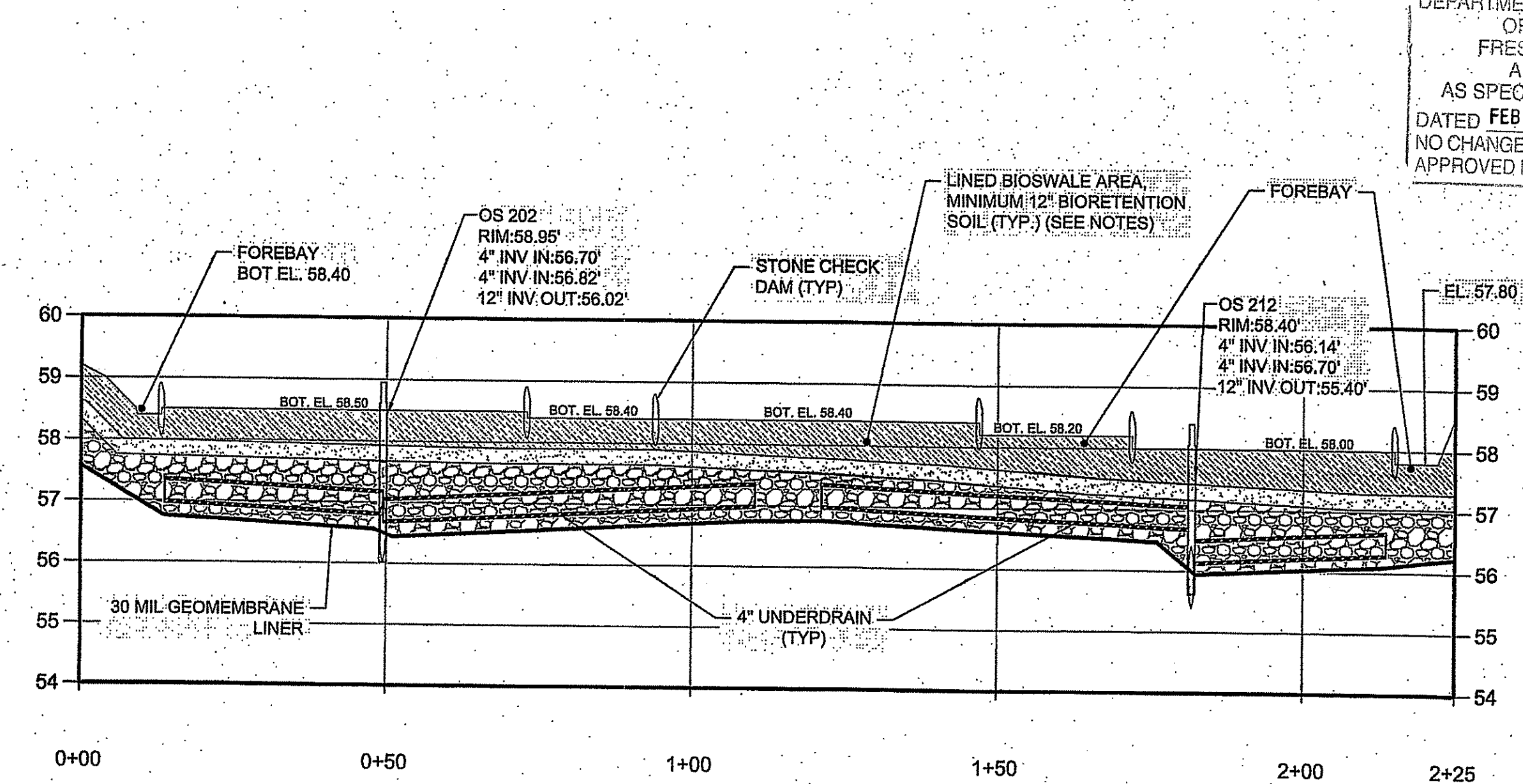
MATERIAL SPECIFICATIONS

- BIORETENTION SOIL**
SUBMIT SOIL SAMPLE (2 LBS) AND TESTING ANALYSIS RESULTS BY A QUALIFIED SOIL TESTING LABORATORY INDICATING AND INTERPRETING TEST RESULTS FOR COMPLIANCE WITH THE FOLLOWING PARAMETER:
 - UNIFORM SOIL MIX, FREE OF NOXIOUS WEEDS AND STONES, STUMPS, ROOTS OR OTHER SIMILAR OBJECTS LARGER THAN 1 INCH.
 - PROVIDE USDA UNIFIED SOIL CLASSIFICATION: LOAMY SAND
 - PROVIDE A TEXTURAL ANALYSIS INCLUDING THE GRADATION AND PERCENTAGES OF SAND, SILT, AND CLAY CONTENT:
 65-85% SAND (< 10% COARSE SAND)
 8-12% SILT AND CLAY (< 2% CLAY)
 - ORGANIC MATTER: 20% (BY VOLUME)
 WELL AGED (8-12 MONTHS), WELL AERATED, LEAF COMPOST OR APPROVED EQUIVALENT
 PH RANGES: 5.5-7.5
 MINIMUM 32 PPM
 PHOSPHOROUS (P2O5): NOT TO EXCEED 60 PPM
 POTASSIUM (K2O): MINIMUM 10 PPM
 SOLUBLE SALTS: NOT TO EXCEED 500 PPM
 IF THE SOIL PH IS NOT WITHIN THE ACCEPTABLE RANGE, AMEND WITH LIME TO RAISE THE PH OR WITH IRON SULFATE TO LOWER THE PH, AS NECESSARY. ALL TESTING SHOULD BE PERFORMED BY THE SAME TESTING FACILITY TO MAINTAIN CONSISTENT RESULTS. SUBMIT THE SOIL SAMPLE RESULTS TO THE ENGINEER FOR REVIEW AND APPROVAL PRIOR TO DELIVERY TO THE PROJECT SITE.
- FILTER MEDIA**
 - FINE SHREDDED WELL AGED (6 MONTH MINIMUM) HARDWOOD MULCH. HARDWOOD MULCH IS PREFERRED TO PREVENT FLOATING. IF HARDWOOD MULCH IS NOT AVAILABLE A FINELY DOUBLE SHREDDED, WELL AGED, ORGANIC DARK PINE MULCH MAY BE ACCEPTABLE ON A CASE BY CASE BASIS FOR SAMPLE SUBMITAL AND ENGINEER REVIEW.
 - MULCH SAMPLE MUST BE SUBMITTED AND APPROVED BY THE ENGINEER PRIOR TO DELIVERY TO THE PROJECT SITE.
- GEOMEMBRANE LINER**
 - IMPERMEABLE 30 MIL HDPE OR APPROVED EQUAL.
- FILTER FABRIC**
 - NON-WOVEN GEOTEXTILE FABRIC WITH FLOW RATE OF > 10 GALLONS PER MINUTE PER SQUARE FOOT.
 - CLASS "C" APPARENT OPENING SIZE (ASTM-D-4751).
 - GRAV TENSILE STRENGTH (ASTM-D-4832) BURST STRENGTH (ASTM-D-4833).
 - PEA GRAVEL.
 - 3/8" WASHED STONE.
 - UNDERDRAIN GRAVEL.
 - 3/4" CRUSHED WASHED STONE, CLEAN AND FREE OF ALL FINES AND MEETING AASHTO M-44.
- PIPE**
 - UNDERDRAIN: 4" RIGID SCHEDULE 40 PVC PIPE, WITH 3/8" PERFORATIONS @ 6" O.C. MEETING ASTM 1785 OR AASHTO M-228.
 - 'S AND 'Y' FITTINGS AS REQUIRED FOR THE UNDERDRAIN CONFIGURATION INDICATED ON DRAWING.
 - CONNECTIONS TO STORM DRAIN SYSTEM.
 - UNDERDRAIN CLEANOUTS: NON PERFORATED SCHEDULE 40 PVC PIPE, PVC ELBOW, CAP, AND ALL ASSOCIATED FITTINGS.
- EROSION CONTROL BLANKET (3/4" SIDE SLOPES ONLY)**
 - WOVEN, 100% BIODEGRADABLE JUTE FIBER 7 TO 10000 GSPF. BIOWE 11600H OR APPROVED EQUIVALENT.
- PLANTS**
 - AS INDICATED ON DRAWINGS.
- SEED (SIDE SLOPES ONLY)**
 - NEW ENGLAND CONSERVATION WILDLIFE/MIX OR APPROVED EQUIVALENT.
 - APPLICATION RATE 25 LBS/ACRES OR PER SEED MANUFACTURER'S REQUIREMENTS.
- OUTLET STRUCTURE**
 - SIZE AS INDICATED ON DRAWINGS.
 - FIBERGLASS REINFORCED PLASTIC MANHOLES OF SIZE INDICATED ON DRAWINGS.



BIORETENTION SCHEDULE:

No.	Bottom Surface Area (sf)	Spillway Elevation (ft)	Design Freeboard (ft)	ELEV. A		ELEV. B		ELEV. C		ELEV. D		ELEV. E		ELEV. F		ELEV. G		
				Bottom of Bio Area (ft)	Overflow Inlet Rim (ft)	Bottom of Bio Area (ft)	Overflow Inlet Rim (ft)	Bottom of Bio Area (ft)	Overflow Inlet Rim (ft)	Bottom of Bio Area (ft)	Overflow Inlet Rim (ft)	Bottom of Bio Area (ft)	Overflow Inlet Rim (ft)	Bottom of Bio Area (ft)	Overflow Inlet Rim (ft)	Bottom of Bio Area (ft)	Overflow Inlet Rim (ft)	Bottom of Bio Area (ft)
BIO 1W1	468	59.00	0.25	58.75	0.75	58.00	OS 162	58.00	1.00	57.00	0.25	56.75	4.00	55.04	0.35	54.69	55.78	54.57
BIO 2W1	772	58.00	0.25	57.75	0.75	57.00	OS 161	57.00	1.00	56.00	0.25	55.75	4.00	55.04	0.35	54.69	54.78	54.57



LINED BIOSWALE PROFILE
HORIZONTAL SCALE: 1" = 20'
VERTICAL SCALE: 1" = 2'

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
APPROVED WITH CONDITIONS
AS SPECIFIED IN THE LETTER OF APPROVAL
DATED FEB 2 2017 FILE # 16-0271
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
APPROVED PLANS MUST BE AT CONSTRUCTION SITE

Revisions

No.	Date	By	Appr.	Description
1	10/21/16	LEH/FP	JRH	ISSUE FOR PERMIT

Horsley Witten Group, Inc.
Sustainable Environmental Solutions
www.horsleywitten.com
294 Washington Street, Suite 607
Boston, MA 02110
617-574-4799 fax

E-ICON ARCHITECTURE
101 SUMNER STREET BOSTON MA 02110

IMPERIAL KNIFE FACTORY REDEVELOPMENT PROJECT
PROVIDENCE, RHODE ISLAND

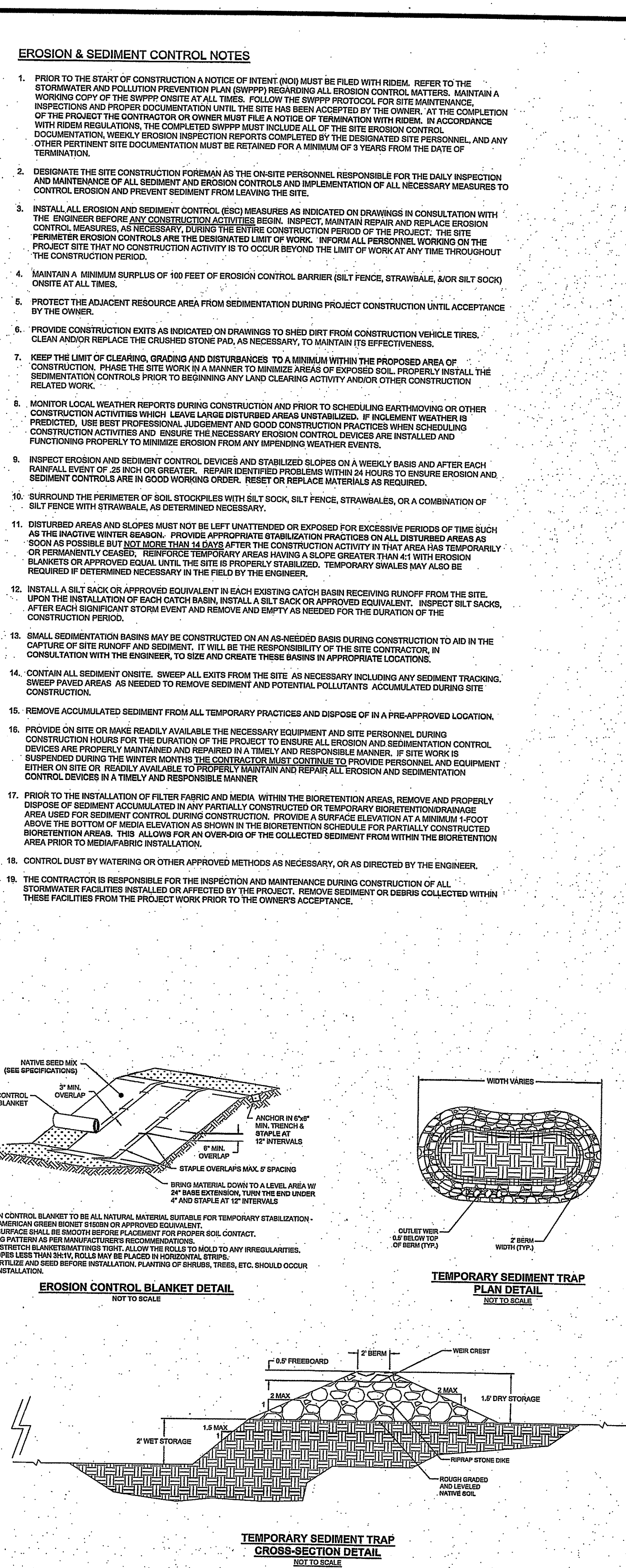
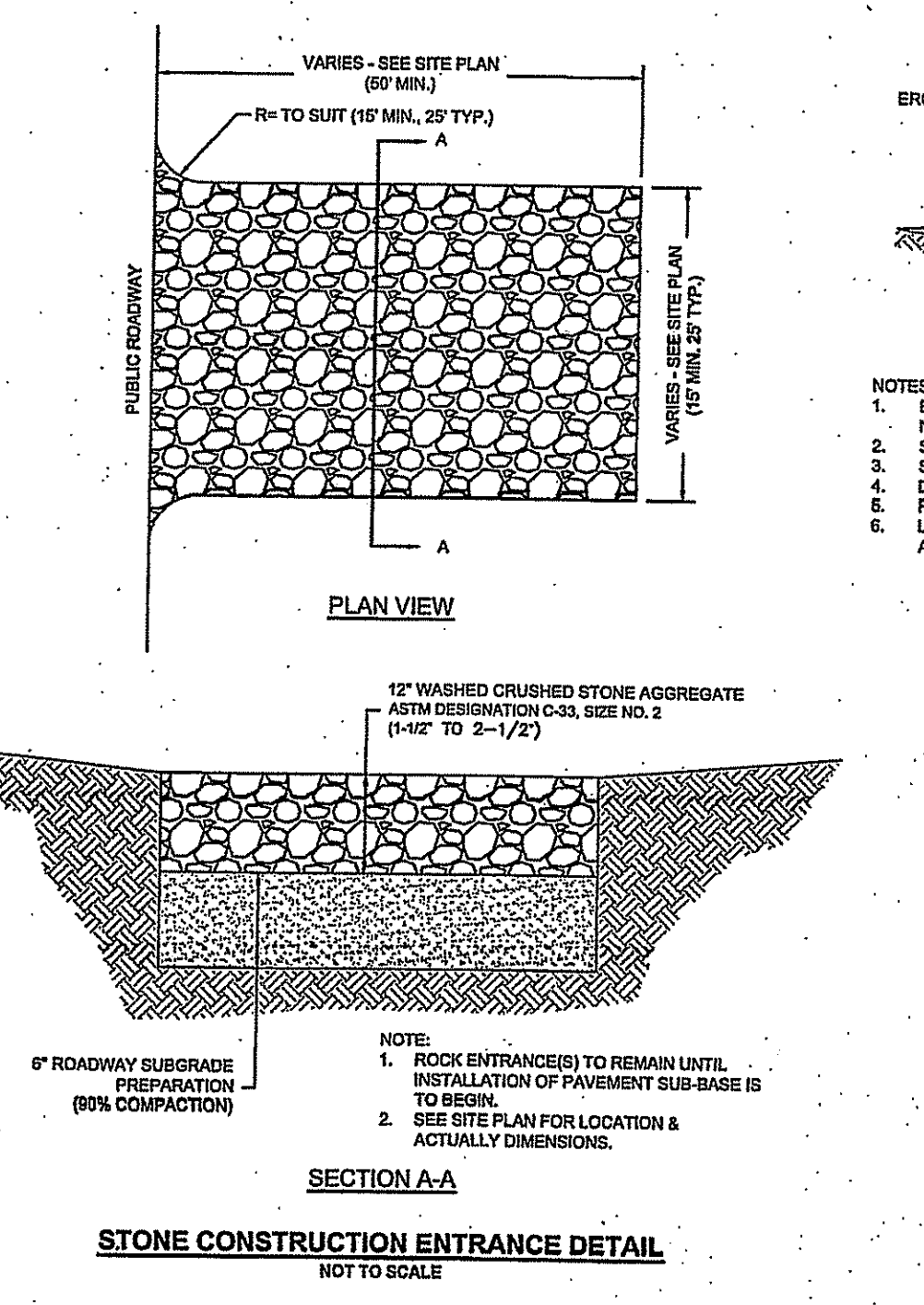
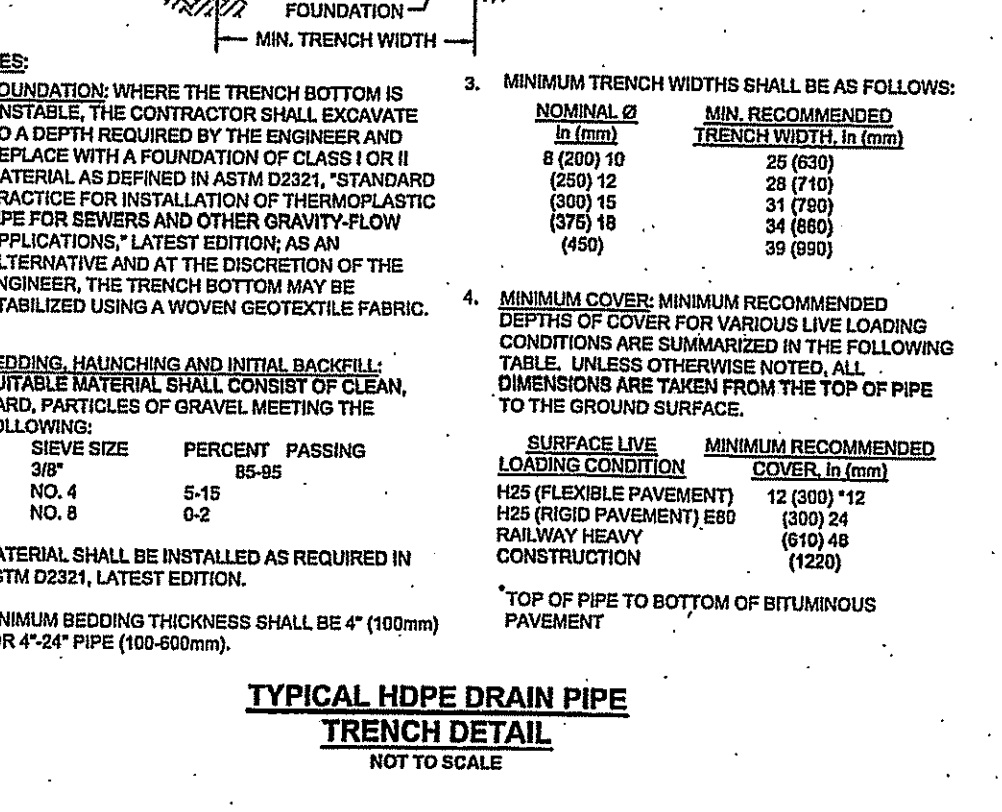
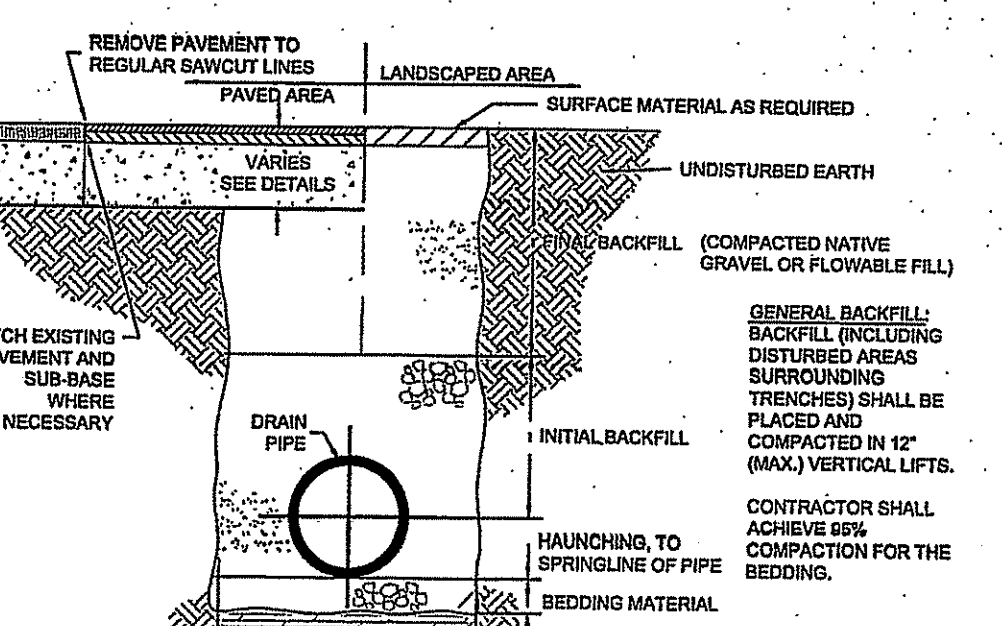
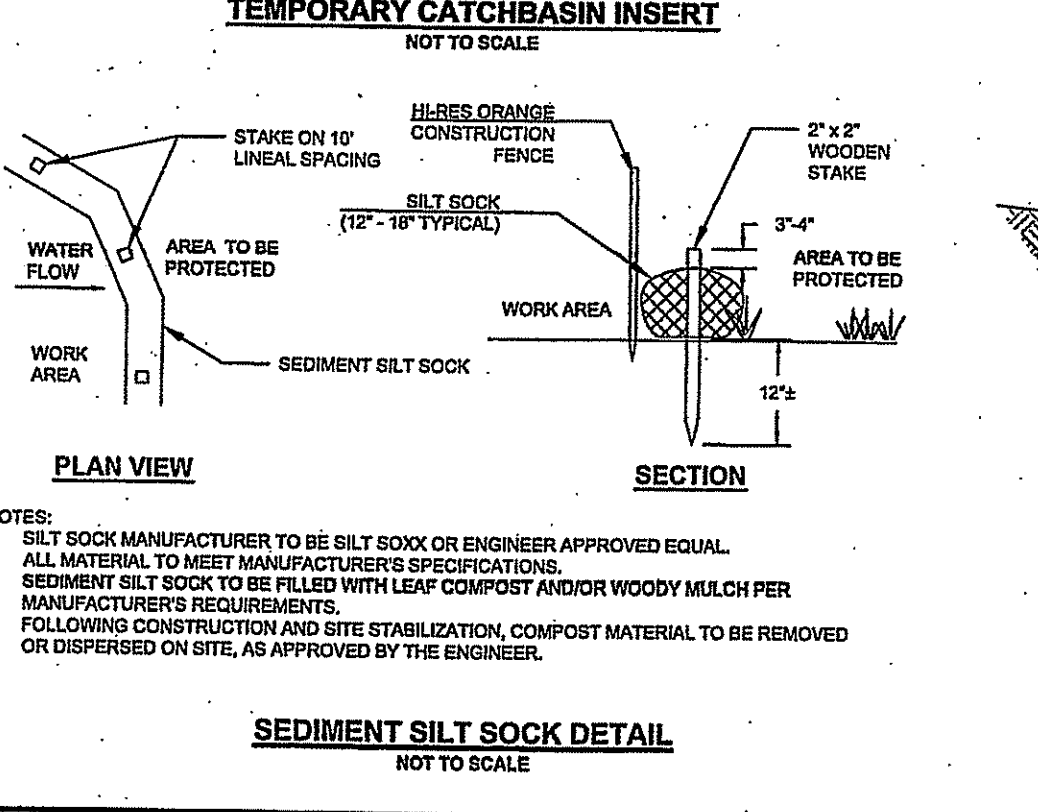
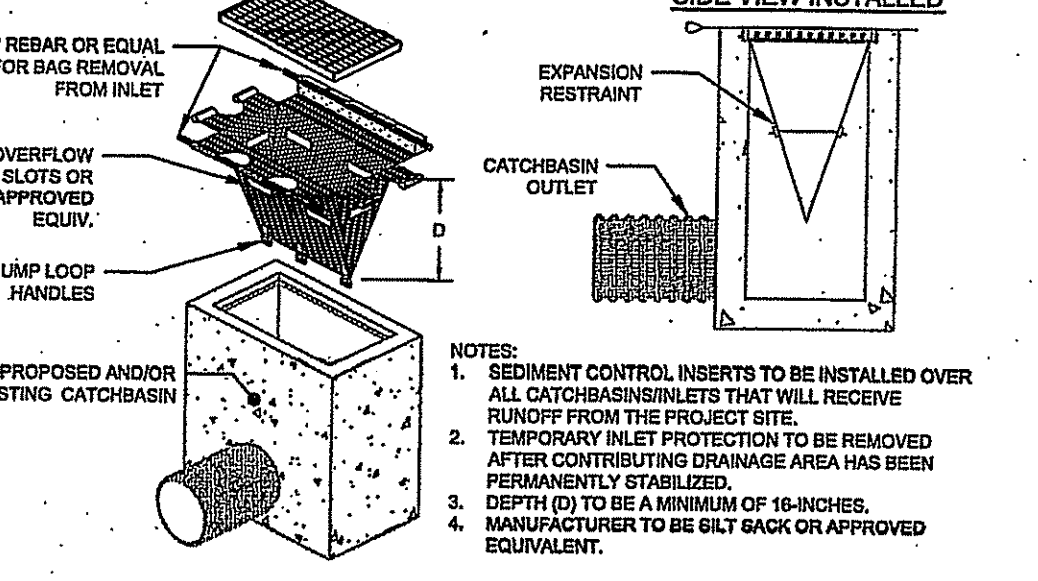
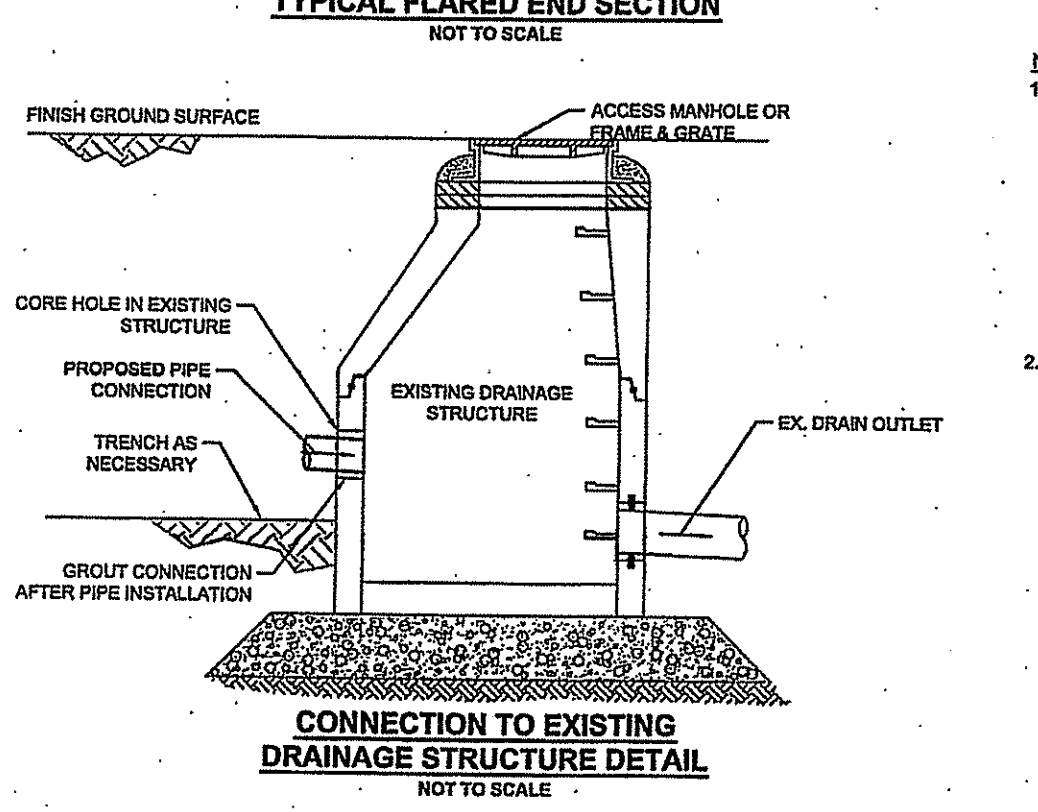
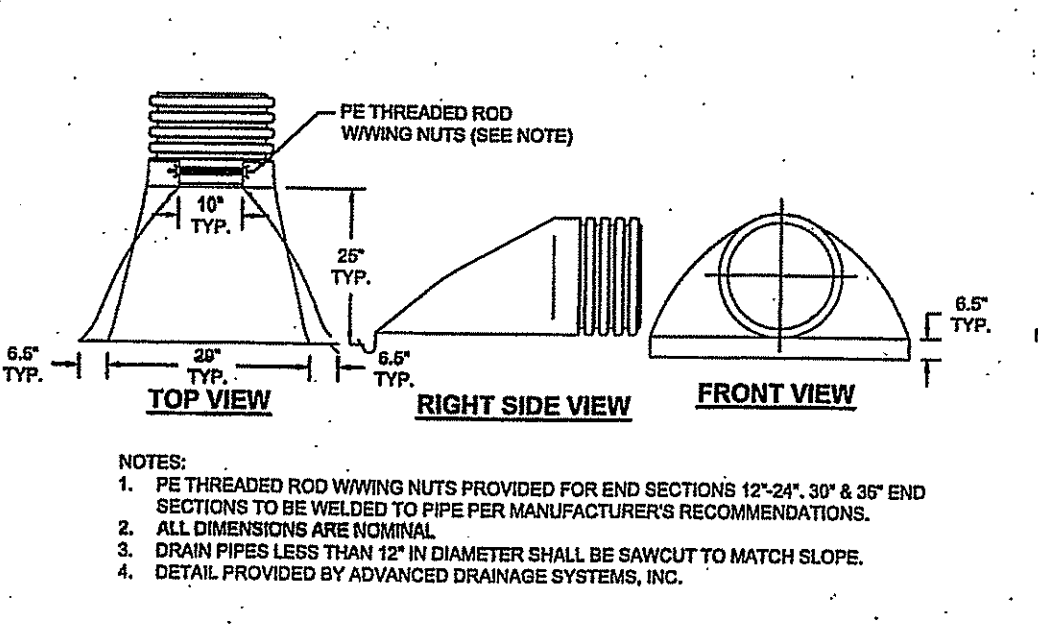
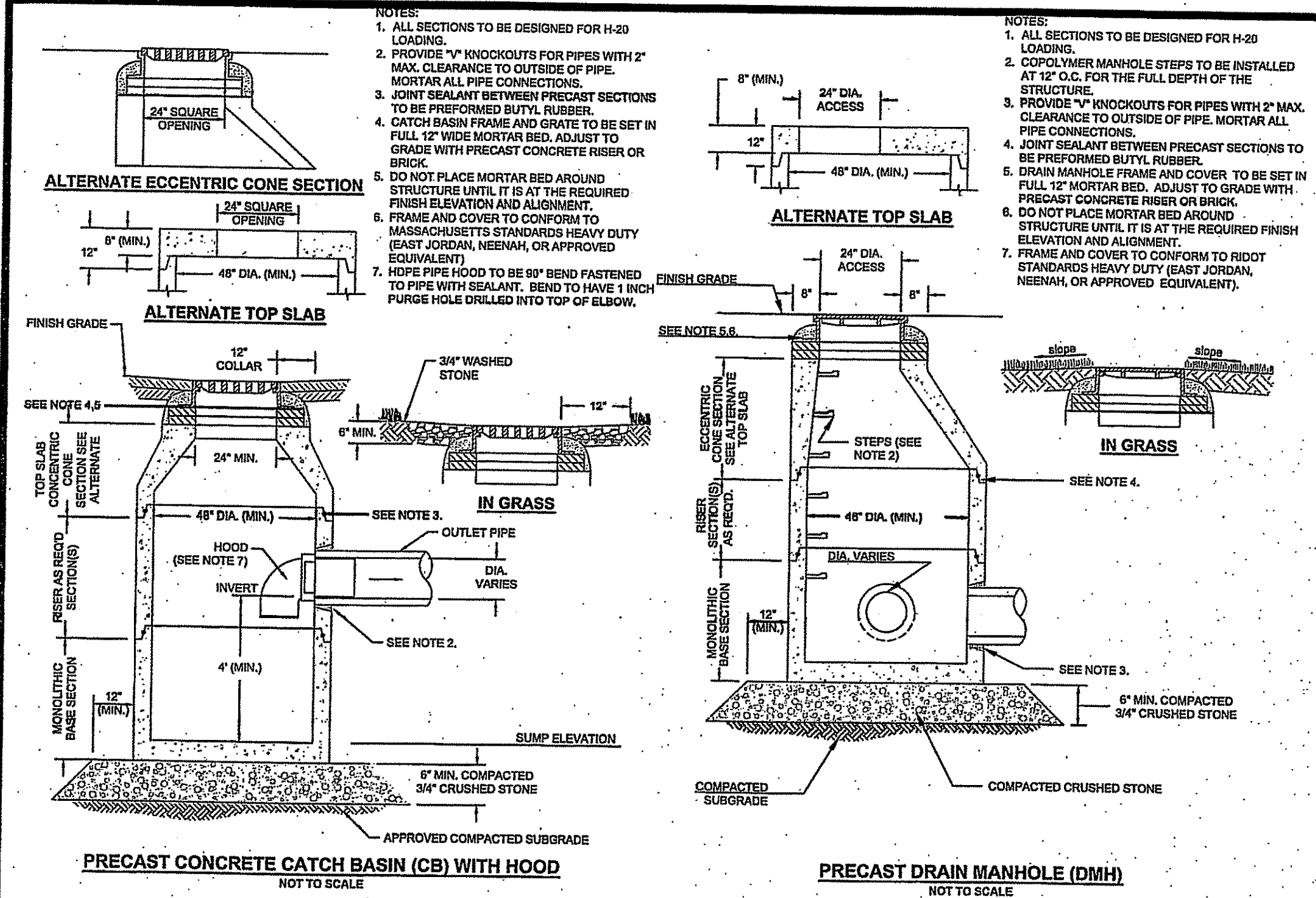
Prepared For:
ICON Architecture
101 Summer Street
Boston, MA 02110
Phone: (617) 461-3333
Fax: _____

Survey Provided By:
Kelly Engineering Group, Inc.
6 Commercial Drive
Baltimore, MA 02184
Phone: 1-781-946-4333
Fax: _____
Date: _____

Registration:
FAT PIU LEE
REGISTERED PROFESSIONAL ENGINEER
7984

Project Number: 14104
Sheet: 8 of 12
Sheet Number: _____

last modified: 01/11/17 by ml H:\Projects\2014\14104\14104-CON Arch. Imperial Knife Drawings - 1410414104-DE.dwg



DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
 OFFICE OF WATER RESOURCES
 FRESHWATER WETLANDS PROGRAM
 APPROVED WITH CONDITIONS
 AS SPECIFIED IN THE LETTER OF APPROVAL
 DATED FEB 2 2017 FILE # 16-0271
 NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
 APPROVED PLANS MUST BE AT CONSTRUCTION SITE

JAN 12 2017

Revisions

NO.	DATE	DESCRIPTION	BY	APP'D
1	12/21/16	LEH	LEH	
2				
3				
4				
5				
6				
7				
8				
9				
10				

Horsley Witten Group, Inc.
 Sustainable Environmental Solutions
 www.horsleywitten.com
 Boston, MA 02111
 Providence, RI 02903
 617-574-4799 fax

CONSTRUCTION DETAILS (3)

IMPERIAL KNIFE FACTORY REDEVELOPMENT PROJECT
 PROVIDENCE, RHODE ISLAND

FAT PIU LEE
 7984
 REGISTERED PROFESSIONAL ENGINEER

Project Number: 14104
 Sheet: 9 of 12
 Sheet Number: C-9

Tree Canopy Coverage
60 King
Design Development Plans
7/19/2016

Existing	≥10 inches	≥20 inches	Canopy Credit (sf)
	15	17	16400
Proposed	small (300 sf)	medium (700 sf)	large (1000 sf)
	3	14	41
Total Canopy Provided:			68,100
Lot Size (minus 56,300 sf for building):			138,800
Required 15% coverage of lot:			20,820

Parking Interior Green Space	
Parking Lot Area	34,886 sq ft
Internal Green Space	3732.8 sq ft
Percentage Green Space	10.70%

PLANTING NOTES:

- SEE SPECIFICATIONS FOR SEED MIXES & APPLICATION RATE.
- DECIDUOUS TREE SIZE PER SCHEDULE. PER THE CITY OF PROVIDENCE, NO DECIDUOUS TREE SMALLER THAN 2" CALIPER WILL BE ALLOWED
- EVERGREEN TREE SIZE PER SCHEDULE, NO EVERGREEN TREE SMALLER THAN 6" HEIGHT WILL BE ALLOWED
- IN HATCHED AREAS OF MIXED PERENNIALS & GRASSES, GROUP THE SAME SPECIES IN GROUPS OF 3 IN SMALL AREAS AND AT LEAST 5 IN LARGE AREAS

SOIL ENCAPSULATION NOTES:

- ALL PLANTING AREAS ARE TO BE COORDINATED WITH ENCAPSULATION PLAN. PROPER PLANTING SOIL DEPTHS ARE TO BE PROVIDED DURING CAP INSTALLATION, PRIOR TO PLANTING, AS INDICATED AS FOLLOWS:
 TREE PLANTINGS: MINIMUM OF 3' PLANTING SOIL
 SHRUB PLANTINGS: MINIMUM OF 2' OF PLANTING SOIL
 PERENNIAL PLANTINGS: MINIMUM OF 1' OF PLANTING SOIL
 LOAM & SEED: 6" PLANTING SOIL & 6" APPROVED SUBSOIL
- SEE SPECIFICATIONS FOR SOIL REQUIREMENTS

Plant Schedule for Plazas & Foundation

Key	Botanical Name	Common Name	Size	Spacing	Notes
Trees					
HV	3 <i>Hamamelis x intermedia</i> 'Arnold Promise'	Arnold Promise Witchhazel	2.5-3' B&B	As Shown	
QPG	3 <i>Quercus palustris</i> 'Green Pillar'	Green Pillar Pin Oak	2-2.5' Cal.	As Shown	
Shrubs					
CD	12 <i>Calliandra dichotoma</i>	Purple Beautyberry	#3	As Shown	
HPO	49 <i>Hydrangea paniculata</i> 'Little Lime'	Panicle Hydrangea	#3	As Shown	
HQ	13 <i>Hydrangea quercifolia</i> 'Ruby Slippers'	Oakleaf Hydrangea	#3	As Shown	
IG	5 <i>Ilex glabra</i>	Inkberry	#3	As Shown	
IGC	26 <i>Ilex glabra</i> 'Compacta'	Compact Inkberry	#3	As Shown	
DM	3 <i>Ilex x meserveae</i>	Meserve Holly	#5	As Shown	
ITVH	16 <i>Itea virginica</i> 'Henry's Garnet'	Henry's Garnet Virginia Sweetspire	#3	As Shown	
Ground Cover/Grasses/Perennials					
GT	59 <i>Gillenia trifoliata</i>	Bowman's Root	#3	24" O.C.	
HOSE	12 <i>Hosta</i> 'Elephant Ears'	Elephant Ears Hosta	#1	24" O.C.	
HOSG	24 <i>Hosta</i> 'Guacamole'	Guacamole Hosta	#1	18" O.C.	
LSP	98 <i>Liatris spicata</i>	Blazing Star	#1	24" O.C.	
NR	42 <i>Nepeta racemosa</i> 'Walker's Low'	Catmint	#1	18" O.C.	
PVC	17 <i>Panicum virgatum</i> 'Shenandoah'	Shenandoah Switch grass	#1	30" O.C.	
SH	112 <i>Sporobolus heterolepis</i>	Prairie Dropseed	#1	24" O.C.	
SB	18 <i>Stachys byzantina</i>	Lamb's Ears	#1	18" O.C.	
SN	52 <i>Salvia nemorosa</i> 'Caradonna'	Meadow Sage	#1	18" O.C.	
WT	352 <i>Waldsteinia temata</i>	Barren Strawberry	#1	12" O.C.	

Plant Schedule for Parking Lot Islands

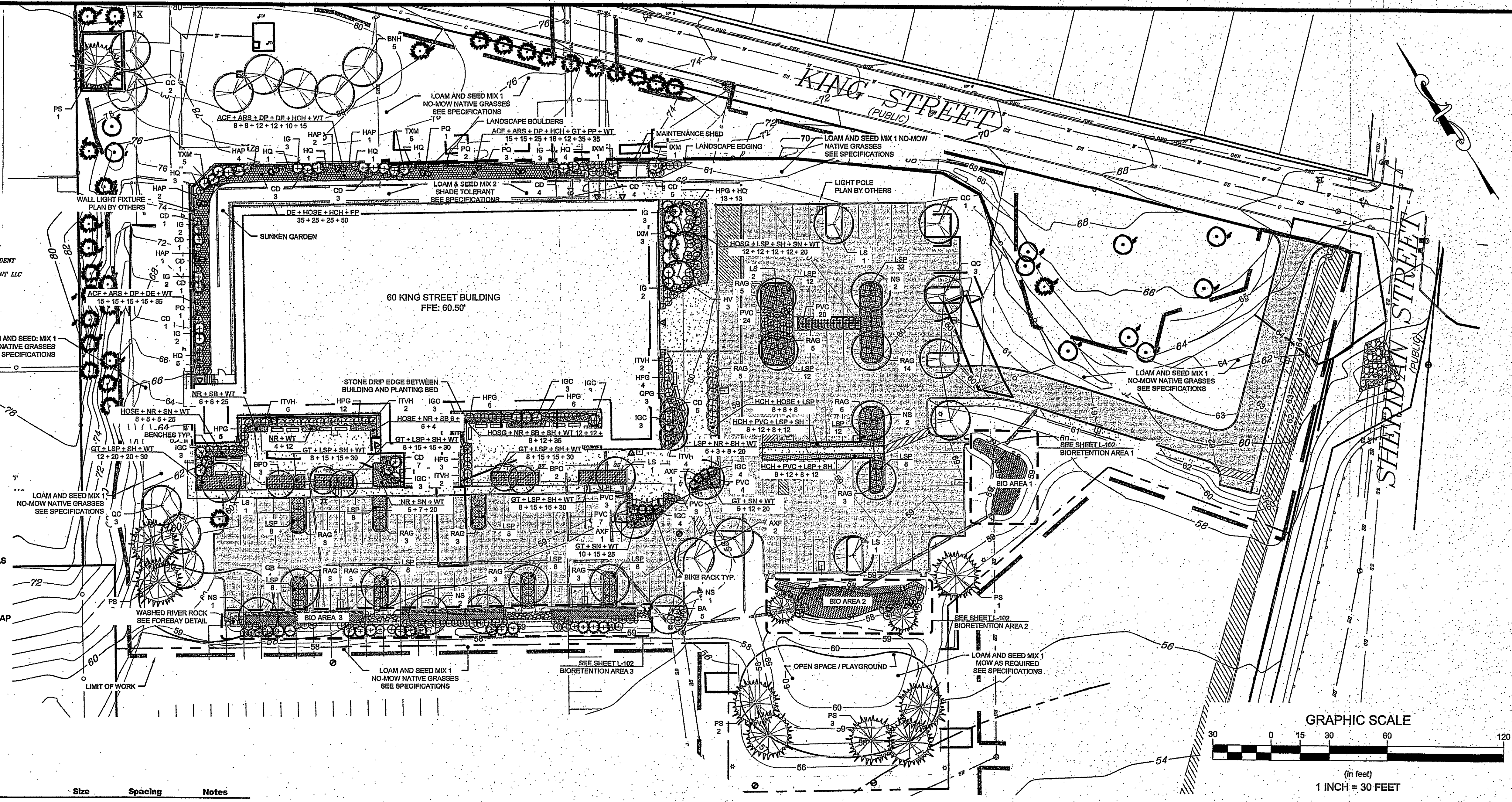
Key	Botanical Name	Common Name	Size	Spacing	Notes
Shrubs					
RAG	58 <i>Rhus aromatica</i> 'Gro-Low'	Gro-Low Fragrant sumac	#3	As Shown	
Ground Cover/Grasses/Perennials					
HCH	24 <i>Hemerocallis</i> 'Happy Returns'	Daylilies Yellow	Plugs	18" O.C.	
HOSE	8 <i>Hosta</i> 'Elephant Ears'	Elephant Ears Hosta	#1	24" O.C.	
LSP	156 <i>Liatris spicata</i>	Blazing Star	#1	24" O.C.	
PVC	68 <i>Panicum virgatum</i> 'Shenandoah'	Shenandoah Switch grass	#1	30" O.C.	
SH	24 <i>Sporobolus heterolepis</i>	Prairie Dropseed	#1	30" O.C.	

Proposed Tree List

Key	Botanical Name	Common Name	Size	Spacing	Notes
Trees					
AXF	4 <i>Acer x freemanii</i> 'Autumn Blaze'	Autumn Blaze Freeman Maple	2.5"-3"	As Shown	
BNH	5 <i>Betula nigra</i> 'Heritage'	Heritage River Birch	10/12' B&B	As Shown	Multi/Single Stem
BPO	5 <i>Betula populifolia</i>	Gray Birch	3-5' h.	As Shown	Multi/Single Stem
GB	4 <i>Ginkgo biloba</i> 'Autumn Gold'	Autumn Gold Ginkgo	2-2.5' cal.	As Shown	Male Only
LS	6 <i>Liquidambar styraciflua</i>	Sweet Gum	2-2.5' cal.	As Shown	
NS	8 <i>Nyssa sylvatica</i>	Tupelo	2-2.5' cal.	As Shown	
QC	9 <i>Quercus coccinea</i>	Scarlet Oak	2.5-3' cal.	As Shown	
Evergreen Trees					
AC	2 <i>Abies concolor</i>	White Fir	7-8' B&B	As Shown	
PS	9 <i>Pinus strobus</i>	Eastern White Pine	8-10' h	As Shown	

Plant Schedule for Bioretention Areas

Key	Botanical Name	Common Name	Size	Spacing	Notes
Shrubs					
MP	15 <i>Myrica pensylvanica</i>	Northern Bayberry	#5	As Shown	
Ground Cover/Grasses/Perennials					
BA	53 <i>Baptisia australis</i>	Blue False Indigo	#1	36" O.C.	
CL	99 <i>Chasmanthium latifolium</i>	Northern Sea Oats	#1	3' O.C.	
HCH	152 <i>Hemerocallis</i> 'Happy Returns'	Daylilies Yellow	Plugs or #1	18" O.C.	
IVE	114 <i>Iris versicolor</i>	Blue Flag	#1	18" O.C.	
LSP	100 <i>Liatris spicata</i>	Blazing Star	#1	24" O.C.	
PVHM	85 <i>Panicum virgatum</i> 'Heavy Metal'	Heavy metal Switch Grass	#1	30" O.C.	
PVC	82 <i>Panicum virgatum</i> 'Shenandoah'	Shenandoah Switch grass	#1	30" O.C.	
PD	24 <i>Penstemon digitalis</i> 'Husker Red'	Husker Red Beardtongue	#1	18" O.C.	



Kindly be advised that this Permit is not equivalent to a verification of the type or extent of freshwater wetlands on site.

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
APPROVED WITH CONDITIONS
AS SPECIFIED IN THE LETTER OF APPROVAL
DATED FEB. 2 2017. FILE # 16-0271
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
APPROVED PLANS MUST BE AT CONSTRUCTION SITE

Plant Schedule for the Sunken Garden

Key	Botanical Name	Common Name	Size	Spacing	Notes
Shrubs					
CD	24 <i>Calliandra dichotoma</i>	Purple Beautyberry	#3	As Shown	
HQ	16 <i>Hydrangea quercifolia</i>	Oakleaf Hydrangea	#3	As Shown	
IG	12 <i>Ilex glabra</i>	Inkberry	#3	As Shown	
DM	2 <i>Ilex x meserveae</i>	Blue Holly	#5	As Shown	Males & Females
TAM	10 <i>Taxus x media</i> 'Hicksii'	Hicks Yew	2 1/2' B&B	As Shown	
Ground Cover/Grasses/Perennials					
ARS	38 <i>Astilbe</i> 'Red Sentinel'	Astilbe Red Sentinel	Plugs	18" O.C.	
ACF	38 <i>Astilbe</i> 'Color Flash'	Astilbe Color Flash	Plugs	18" O.C.	
DP	52 <i>Desmodium punctilobula</i>	Hay Scented Fern	Plugs	18" O.C.	
DE	62 <i>Dryopteris erythrosora</i>	Aurumn Fern	Plugs	18" O.C.	
HCH	53 <i>Hemerocallis</i> 'Happy Returns'	Daylilies Yellow	Plugs	18" O.C.	
HOSE	25 <i>Hosta</i> 'Elephant Ears'	Elephant Ears Hosta	#1	24" O.C.	
PP	85 <i>Pachysandra procumbens</i>	Allegheny Pachysandra	4" Pot	18" O.C.	
WT	85 <i>Waldsteinia temata</i>	Barren Strawberry	4" Pot	12" O.C.	
Vines					
HAP	10 <i>Hydrangea anomala</i> ssp. <i>Peltolaris</i>	Climbing Hydrangea	#1	As Shown	
PQ	7 <i>Parthenocissus quinquefolia</i>	Virginia Creeper	#1	As Shown	

Revisions

No.	Date	By	Description
1	1/22/16	LEI	REVISION COMMENTS

Horsley Witten Group, Inc.
Sustainable Environmental Solutions
www.horsleywitten.com
101 Summer Street, Suite 807
Providence, RI 02903
Tel: 401-451-3333
Fax: 401-451-3333

ICON ARCHITECTURE
101 SUMMER ST. BOSTON MA 02110

IMPERIAL KNIFE FACTORY REDEVELOPMENT PROJECT
PROVIDENCE, RHODE ISLAND

LANDSCAPE PLAN

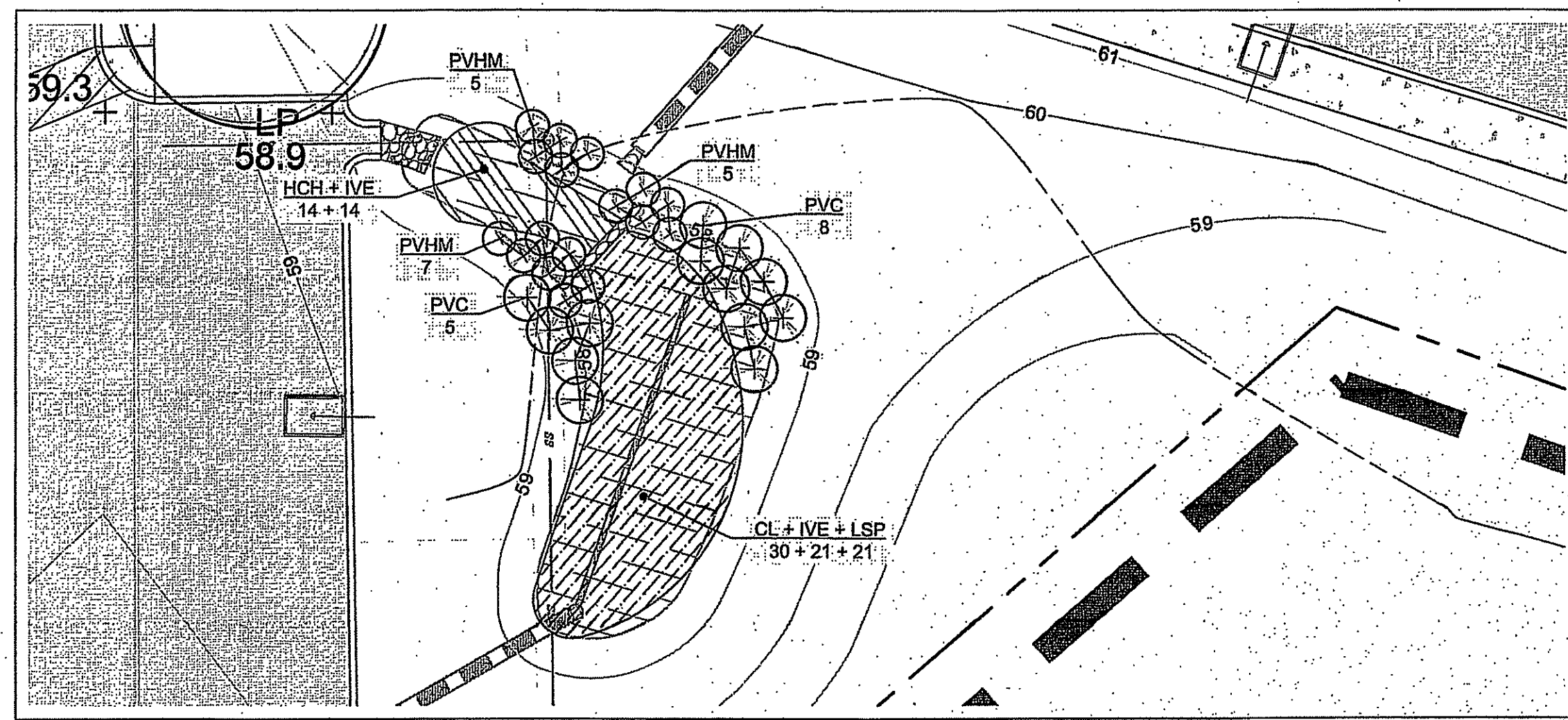
Prepared For: **ICON Architecture**
101 Summer Street
Boston, MA 02110
Phone: (617) 451-3333
Fax: (617) 451-3333

Survey Provided By: **Kelly Engineering Group, Inc.**
10 Campbell Drive
Burrhead, MA 02154
Phone: (617) 845-4333
Fax: (617) 845-4333
Date: 1/11/17

Registration:

Project Number: 14104
Sheet: 10 of 12
Sheet Number: C-10

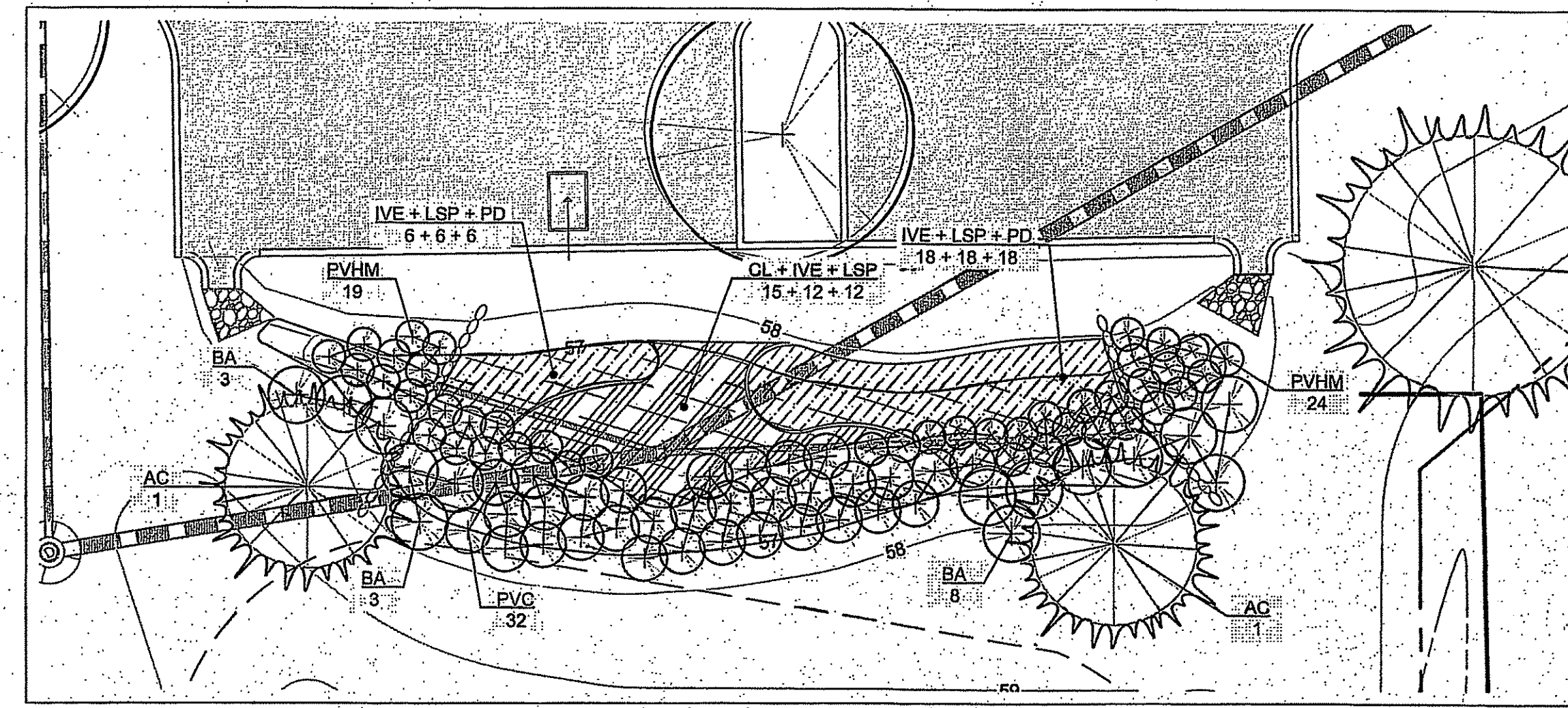
last modified: 01/10/17 printed: 01/10/17 by jh H:\Projects\2014\14104 ICON Arch. Imperial Knife Drawings - 14104\14104-LA.dwg



BIORETENTION AREA 1
SCALE: 1" = 10'

Plant Schedule for Bioretention Area 1

Key	Botanical Name	Common Name	Size	Spacing	Notes
Ground Cover/Grasses/Perennials					
CL	30 <i>Chasmanthum latifolium</i>	Northern Sea Oats	#1	36" O.C.	
HCH	14 <i>Heemerocallis 'Happy Returns'</i>	Daylilies Yellow	Plugs or #1	18" O.C.	
IVE	35 <i>Iris versicolor</i>	Blue Flag	#1	18" O.C.	
LSP	21 <i>Liatris spicata</i>	Blazing Star	#1	24" O.C.	
PVHM	17 <i>Panicum virgatum 'Heavy Metal'</i>	Heavy metal Switch Grass	#1	24" O.C.	
PVC	13 <i>Panicum virgatum 'Shenandoah'</i>	Shenandoah Switch grass	#1	30" O.C.	



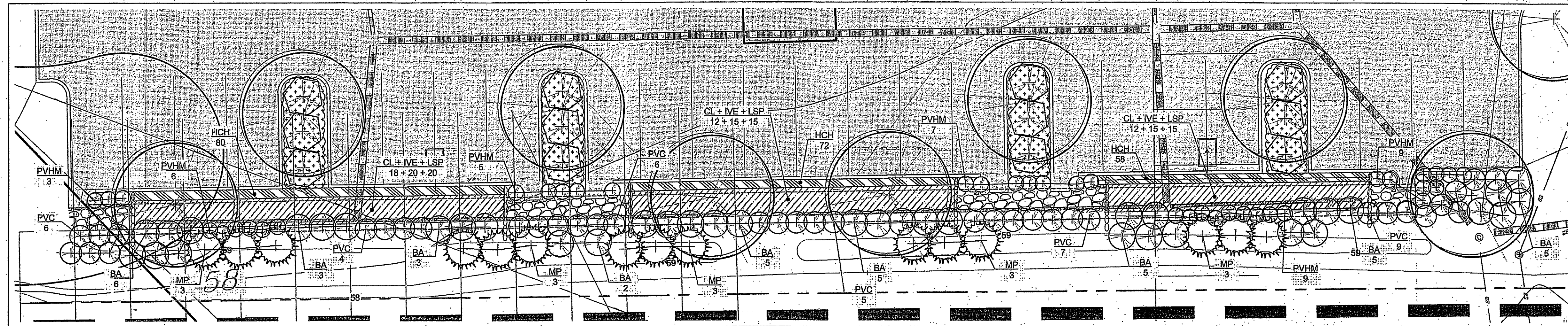
BIORETENTION AREA 2
SCALE: 1" = 10'

Plant Schedule for Bioretention Area 2

Key	Botanical Name	Common Name	Size	Spacing	Notes
Evergreen Trees					
AC	2 <i>Abies concolor</i>	White Fir	7-8 B&B	As Shown	
Ground Cover/Grasses/Perennials					
BA	14 <i>Baptisia australis</i>	Blue False Indigo	#1	36" O.C.	
CL	15 <i>Chasmanthum latifolium</i>	Northern Sea Oats	#1	36" O.C.	
IVE	36 <i>Iris versicolor</i>	Blue Flag	#1	18" O.C.	
LSP	36 <i>Liatris spicata</i>	Blazing Star	#1	24" O.C.	
PVHM	43 <i>Panicum virgatum 'Heavy Metal'</i>	Heavy metal Switch Grass	#1	24" O.C.	
PVC	32 <i>Panicum virgatum 'Shenandoah'</i>	Shenandoah Switch grass	#1	30" O.C.	
PD	24 <i>Penstemon digitalis 'Husker Red'</i>	Husker Red Beardtongue	#1	18" O.C.	

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
APPROVED WITH CONDITIONS
AS SPECIFIED IN THE LETTER OF APPROVAL
DATED FEB 2 2017 FILE # 16-0271
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
APPROVED PLANS MUST BE AT CONSTRUCTION SITE

Signature



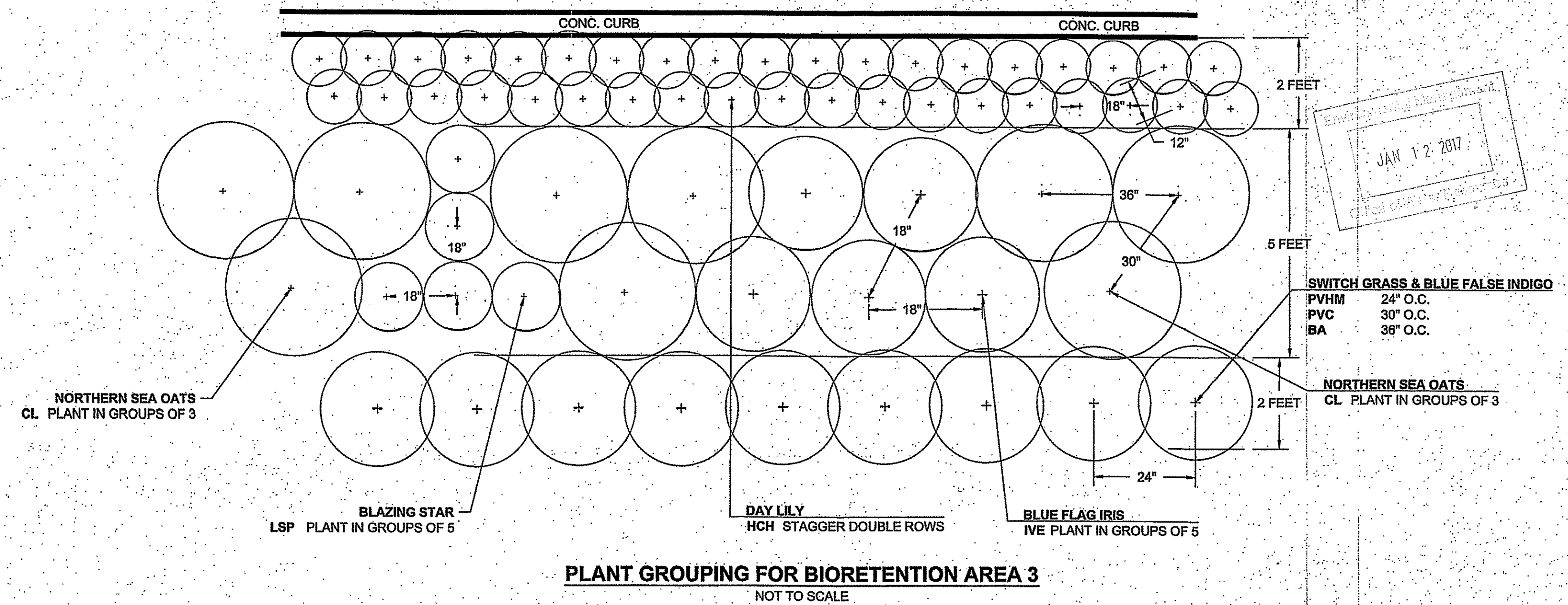
BIORETENTION AREA 3
SCALE: 1" = 10'

Plant Schedule for Bioretention Area 3

Key	Botanical Name	Common Name	Size	Spacing	Notes
Shrubs					
MP	15 <i>Myrica pensylvanica</i>	Northern Bayberry	#5	As Shown	
Ground Cover/Grasses/Perennials					
BA	39 <i>Baptisia australis</i>	Blue False Indigo	#1	36" O.C.	
CL	42 <i>Chasmanthum latifolium</i>	Northern Sea Oats	#1	36" O.C.	
HCH	210 <i>Heemerocallis 'Happy Returns'</i>	Daylilies Yellow	Plugs or #1	18" O.C.	
IVE	50 <i>Iris versicolor</i>	Blue Flag	#1	18" O.C.	
LSP	50 <i>Liatris spicata</i>	Blazing Star	#1	24" O.C.	
PVHM	39 <i>Panicum virgatum 'Heavy Metal'</i>	Heavy metal Switch Grass	#1	24" O.C.	
PVC	37 <i>Panicum virgatum 'Shenandoah'</i>	Shenandoah Switch grass	#1	30" O.C.	

NOTES FOR BIORETENTION AREA 3:

- PLANT DAYLILIES AS A STAGGERED DOUBLE BORDER ON 2:1 SLOPE.
- PLANT BLUE FLAG IRIS AND BLAZING STAR IN GROUPS OF 5.
- PLANT NORTHERN SEA OATS IN GROUPS OF 3.



PLANT GROUPING FOR BIORETENTION AREA 3
NOT TO SCALE

Revisions

Rev	Date	By	Appr	Description
1	12/21/16	JEH	BRH	ROBERT COMMENTS

Horsley Witten Group, Inc.
Sustainable Environmental Solutions
www.horsleywitten.com
204 Washington Street, Suite 801
Boston, MA 02110
617-574-4789 fax

Checked By: JEH
Drawn By: JEH
Designed By: JEH
Date: December 21, 2016

ICON ARCHITECTURE
101 SUMMER ST., BOSTON, MA 02110

IMPERIAL KNIFE FACTORY REDEVELOPMENT PROJECT PROVIDENCE, RHODE ISLAND
Plan Title: BIORETENTION PLANTING PLAN

Prepared For: **ICON Architecture**
101 Summer Street
Boston, MA 02110
Phone: (617) 451-3333
Fax: _____

Survey Provided By: **Kelly Engineering Group, Inc.**
10 Commercial Drive
Burlington, MA 02184
Phone: 1(781) 648-4833
Fax: _____
Date: _____

Registration:

Project Number: 14104
Sheet: 11 of 12
Sheet Number: C-11

last modified: 01/10/17 printed: 01/10/17 by ml H:\Projects\2014\14104 ICON Arch Imperial Knife Drawings - 14104\14104-LA.dwg

GENERAL PLANTING NOTES: (SEE SPECIFICATIONS)

- THE FOLLOWING NOTES ARE PROVIDED AS GENERAL PLANTING GUIDELINES ONLY. THOROUGHLY REVIEW THE PROJECT SPECIFICATIONS FOR ALL LANDSCAPE REQUIREMENTS PRIOR TO THE COMMENCEMENT OF ANY LANDSCAPE WORK. SUBMIT IN WRITING TO THE LANDSCAPE ARCHITECT ANY QUESTIONS OR CLARIFICATIONS REQUIRED AT A MINIMUM OF 30 DAYS PRIOR TO ORDERING ANY MATERIALS OR BEGINNING ANY LANDSCAPE CONSTRUCTION.
- SUBMIT TO THE LANDSCAPE ARCHITECT FOR REVIEW AND APPROVAL ALL REQUIRED LANDSCAPE SUBMITTALS AS DESCRIBED IN THE SPECIFICATIONS INCLUDING A PLANT LIST WITH PLANT SIZE AND QUANTITIES TO BE ORDERED PRIOR TO DELIVERY TO THE PROJECT SITE.
- FURNISH AND INSTALL ALL PLANTS AS SHOWN ON THE DRAWINGS AND IN THE SIZE AND QUANTITIES SPECIFIED ON THE PLANTING SCHEDULE. PLANT SUBSTITUTION SELECTION MUST BE APPROVED BY LANDSCAPE ARCHITECT PRIOR TO INSTALLATION.
- ALL PLANTS TO COMPLY WITH APPLICABLE REQUIREMENTS OF ANSI Z60.1 "AMERICAN STANDARD FOR NURSERY STOCK" LATEST EDITION, PUBLISHED BY THE AMERICAN NURSERY AND LANDSCAPE ASSOCIATION INC.
- PLANTS TO BE GROWN UNDER CLIMATIC CONDITIONS SIMILAR TO THOSE IN THE LOCALITY OF THE PROJECT. FOR AT LEAST TWO (2) YEARS. USE HEALTHY NURSERY GROWN PLANTS WITH A WELL DEVELOPED ROOT SYSTEM, FREE OF DISEASE, INSECTS, EGGS OR LARVAE.
- INSTALL PLANTS WITHIN ONE (1) WEEK OF PURCHASE. IF PLANTS ARE TO BE STORED AT THE SITE PRIOR TO PLANTING, IT IS THE CONTRACTOR'S RESPONSIBILITY TO ENSURE THEY ARE PROPERLY MAINTAINED, WATERED, AND REMAIN HEALTHY.
- PROCEED WITH PLANTING ONLY WHEN EXISTING AND FORECASTED WEATHER CONDITIONS PERMIT. SUBMIT TO THE LANDSCAPE ARCHITECT IN WRITING THE PROPOSED PLANTING SCHEDULE. OBTAIN APPROVAL OF PLANTING SCHEDULE FROM THE LANDSCAPE ARCHITECT PRIOR TO PERFORMING ANY WORK.
- SEASONS FOR PLANTING:

SPRING:	DECIDUOUS:	APRIL 1 TO JUNE 15
	EVERGREEN:	APRIL 1 TO JUNE 15
	PERENNIALS:	APRIL 15 TO JUNE 1
	GROUNDCOVERS:	APRIL 15 TO JUNE 1
FALL:	DECIDUOUS:	SEPTEMBER 15 TO NOVEMBER 15
	EVERGREEN:	SEPTEMBER 15 TO NOVEMBER 15
	PERENNIALS:	SEPTEMBER 15 TO NOVEMBER 15
	GROUNDCOVERS:	SEPTEMBER 15 TO NOVEMBER 15
- PLANTING UNDER FROZEN CONDITIONS IN EITHER THE SPRING OR FALL WILL NOT BE PERMITTED. PLANTING BEFORE OR AFTER THE ABOVE REFERENCED PLANTING DATES WILL INCREASE THE LIKELIHOOD OF PLANT ESTABLISHMENT FAILURE. ANY DEVIATION FROM THE ABOVE REFERENCED PLANTING DATES IS UNDERTAKEN AT THE RISK OF THE CONTRACTOR AND IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO PROVIDE ANY ADDITIONAL MAINTENANCE AND WATERING WHICH MAY BE REQUIRED TO ENSURE SATISFACTORY PLANT ESTABLISHMENT.
- FURNISH ONE YEAR MANUFACTURER WARRANTY FOR TREES, PLANTS, AND GROUND COVER AGAINST DEFECTS INCLUDING DEATH AND UNSATISFACTORY GROWTH, EXCEPT FOR DEFECTS RESULTING FROM LACK OF ADEQUATE MAINTENANCE, NEGLIGENCE, OR ABUSE BY OWNER OR ABNORMAL WEATHER CONDITIONS UNUSUAL FOR WARRANTY PERIOD. THE DATE OF FINAL ACCEPTANCE OF ALL COMPLETED PLANTING WORK ESTABLISHES THE END OF INSTALLATION AND INITIAL MAINTENANCE PERIOD AND THE COMMENCEMENT OF THE GUARANTEE PERIOD.
- ALL TREES WITHIN 5'-0" OF WALKWAYS AND SIDEWALKS TO HAVE A 6"-8" STANDARD BRANCHING HEIGHT.
- INSPECT ALL AREAS TO BE PLANTED OR SEEDBED PRIOR TO STARTING ANY LANDSCAPE WORK. REPORT ANY DEFECTS SUCH AS INCORRECT GRADING, INCORRECT SUBGRADE ELEVATIONS OR DRAINAGE PROBLEMS, ETC. TO THE LANDSCAPE ARCHITECT AND ENGINEER PRIOR TO BEGINNING WORK. COMMENCEMENT OF WORK INDICATES ACCEPTANCE OF SUBGRADE AREAS TO BE PLANTED, AND THE LANDSCAPE CONTRACTOR ASSUMES RESPONSIBILITY FOR ALL LANDSCAPE WORK.
- PROVIDE PROPER PREPARATION OF ALL PROPOSED PLANTED AND SEEDBED AREAS PER THE NOTES AND SPECIFICATIONS.
- ALL PLANT LAYOUT AND ACTUAL PLANTING LOCATIONS ARE TO BE FIELD VERIFIED BY LANDSCAPE ARCHITECT PRIOR TO PLANTING. NOTIFY THE LANDSCAPE ARCHITECT AT A MINIMUM OF 48 HOURS IN ADVANCE PRIOR TO SCHEDULING ANY FIELD INSPECTIONS.
- BALL AND BURLAP: REMOVE BURLAP AND WIRE BASKETS FROM TOPS OF BALLS AND FROM TOP HALF OF ROOTBALL AS INDICATED ON DRAWINGS. REMOVE PALLETS, IF ANY, BEFORE SETTING.
- POTTED PLANTS: REMOVE THE PLANT FROM THE POT AND LOOSEN OR SCORE THE ROOTS BEFORE PLANTING TO PROMOTE OUTWARDS ROOT GROWTH INTO THE SOIL.
- DIG THE PLANTING HOLE TO THE SAME DEPTH AS THE ROOT BALL AND TWO TO THREE TIMES WIDER. SCORE ALL SIDES OF THE HOLE. PLACE THE PLANT IN THE HOLE SO THE TOP OF ROOT BALL IS EVEN WITH SOIL SURFACE. FILL THE HOLE HALF WAY AND THEN ADD WATER ALLOWING IT TO SEEP INTO BACK FILLED MATERIAL. BE SURE TO REMOVE ALL AIR POCKETS FROM BACK FILLED SOIL. DO NOT SPREAD SOIL ON TOP OF THE ROOTBALL. IF SOIL IS EXTREMELY POOR, REPLACE BACK FILL WITH GOOD QUALITY TOP SOIL. AMEND THE SOIL, AS NECESSARY.
- CREATE A 2" TO 4" BERM AROUND THE EDGE OF PLANTING HOLE WITH REMAINING SOIL TO RETAIN WATER.
- REMOVE ALL PLANT TAGS AND FLAGS FROM THE PLANTS.
- MULCH ALL PLANTING BEDS AS INDICATED ON DRAWINGS. UNLESS NOTED OTHERWISE, ALL PLANTS TO RECEIVE 2-3 INCHES OF MULCH. DO NOT PILE OR MOUND MULCH AROUND THE PLANT STEMS OR TRUNK.
- TRIM BROKEN AND DEAD BRANCHES FROM TREES AND SHRUBS AFTER PLANTING. NEVER CUT A LEADER.
- PLANTING BEDS ALL MIXED WITH PERENNIALS, SHRUBS AND TREES TO RECEIVE AT LEAST 2 FEET OF THE PREPARED PLANTING SOIL MIXTURE. ONLY SEEDBED AREAS WILL NOT RECEIVE AT LEAST 2 FEET OF NEW SOIL AND WILL THEREFORE HAVE A FABRIC CAP INSTALLED 1 FOOT DOWN, WITH 1 FOOT OF NEW PLANTING SOIL ON TOP. SEE SOIL ENCAPSULATION PLAN.

GENERAL SEEDING NOTES:

- SEND A REPRESENTATIVE SAMPLE OF THE TOPSOIL TO A TESTING LABORATORY FOR STANDARD SOIL ANALYSIS AS DESCRIBED IN THE SPECIFICATIONS. SUBMIT TO THE LANDSCAPE ARCHITECT AND ENGINEER TEST RESULTS WITH RECOMMENDED SOIL TREATMENTS TO PROMOTE PLANT AND GRASS GROWTH. CORRECT DEFICIENCIES IN THE LOAM AND STOCKPILED TOPSOIL AS DIRECTED BY THE TESTING AGENCY.
- ALL AREAS THAT ARE DISTURBED AND/OR GRADED DURING CONSTRUCTION ARE TO BE BROUGHT TO FINISHED GRADE WITH AT LEAST 6" MINIMUM DEPTH OF GOOD QUALITY LOAM AND SEEDED WITH A QUICK GERMINATING GRASS SEED SUCH AS NEW ENGLAND EROSION CONTROL RESTORATION MIX OR AS SPECIFIED ON THE PLANS.
- PRIOR TO THE PLACEMENT OF TOP SOIL, LOOSEN THE SUBGRADE OF ALL PROPOSED SEEDBED AREAS TO A DEPTH OF 6" AND RAKE TO REMOVE STONES LARGER THAN 1 INCH, STICKS, ROOTS, RUBBISH AND OTHER EXTRANEOUS MATTER AND LEGALLY DISPOSE TO AN OFF SITE LOCATION.
- DO NOT SPREAD TOPSOIL IF THE SUBGRADE IS FROZEN, EXCESSIVELY WET, COMPACTED OR NOT PROPERLY PREPARED PER THE NOTES AND SPECIFICATIONS.
- SEASONS FOR SEEDING:

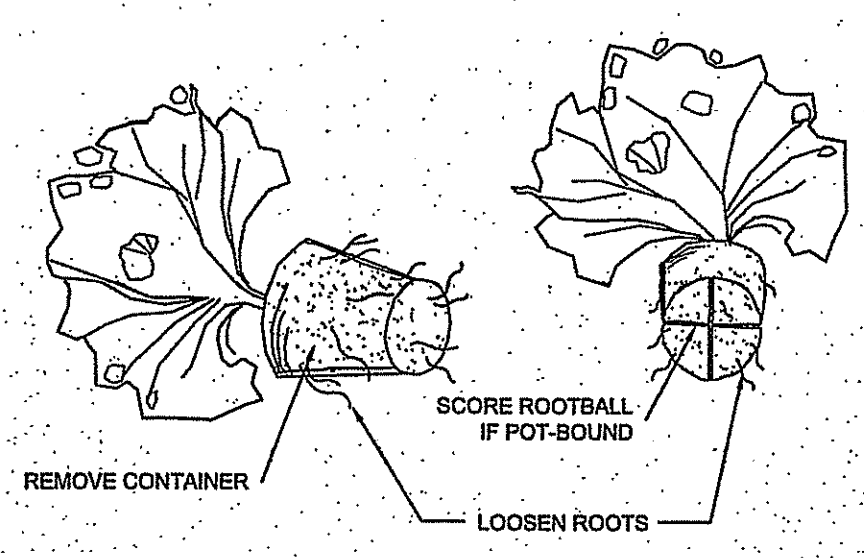
SHADE LAWN MIX:	SPRING:	GROUND THAW TO JUNE 1
	FALL:	AUGUST 15 TO SEPTEMBER 15
NATIVE GRASSES SEED MIX:	SPRING:	GROUND THAW TO JUNE 1
	FALL:	AUGUST 15 TO SEPTEMBER 30
	DORMANT:	LAST WEEK OF NOVEMBER TO GROUND FREEZE

WATERING NOTES:

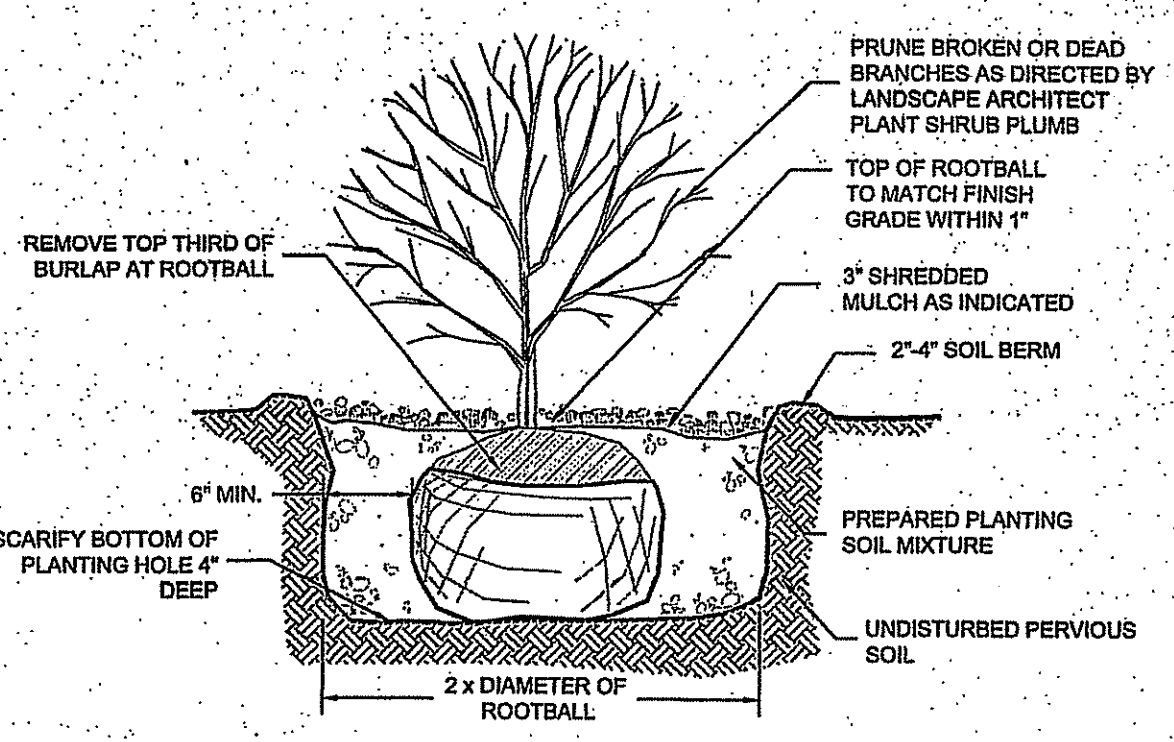
- PROVIDE PROPER PLANT CARE, MAINTENANCE AND WATERING ON SITE UNTIL SUCH TIME AS THE LANDSCAPING IS ACCEPTED BY THE PROPERTY OWNER AS SATISFACTORY PER THE SPECIFICATIONS OR AS DETERMINED BY ANY WRITTEN AGREEMENTS BETWEEN THE CONTRACTOR AND PROPERTY OWNER.
- ESTABLISH AN APPROPRIATE WATERING SCHEDULE FOR ALL PLANT MATERIAL BASED UPON PLANT SPECIES REQUIREMENTS AND PROVIDE IN WRITING TO THE LANDSCAPE ARCHITECT AND OWNER FOR REVIEW AND APPROVAL. ADHERE TO THE APPROVED SCHEDULE UNTIL PLANTS ARE FULLY ESTABLISHED.

Total Plant Count

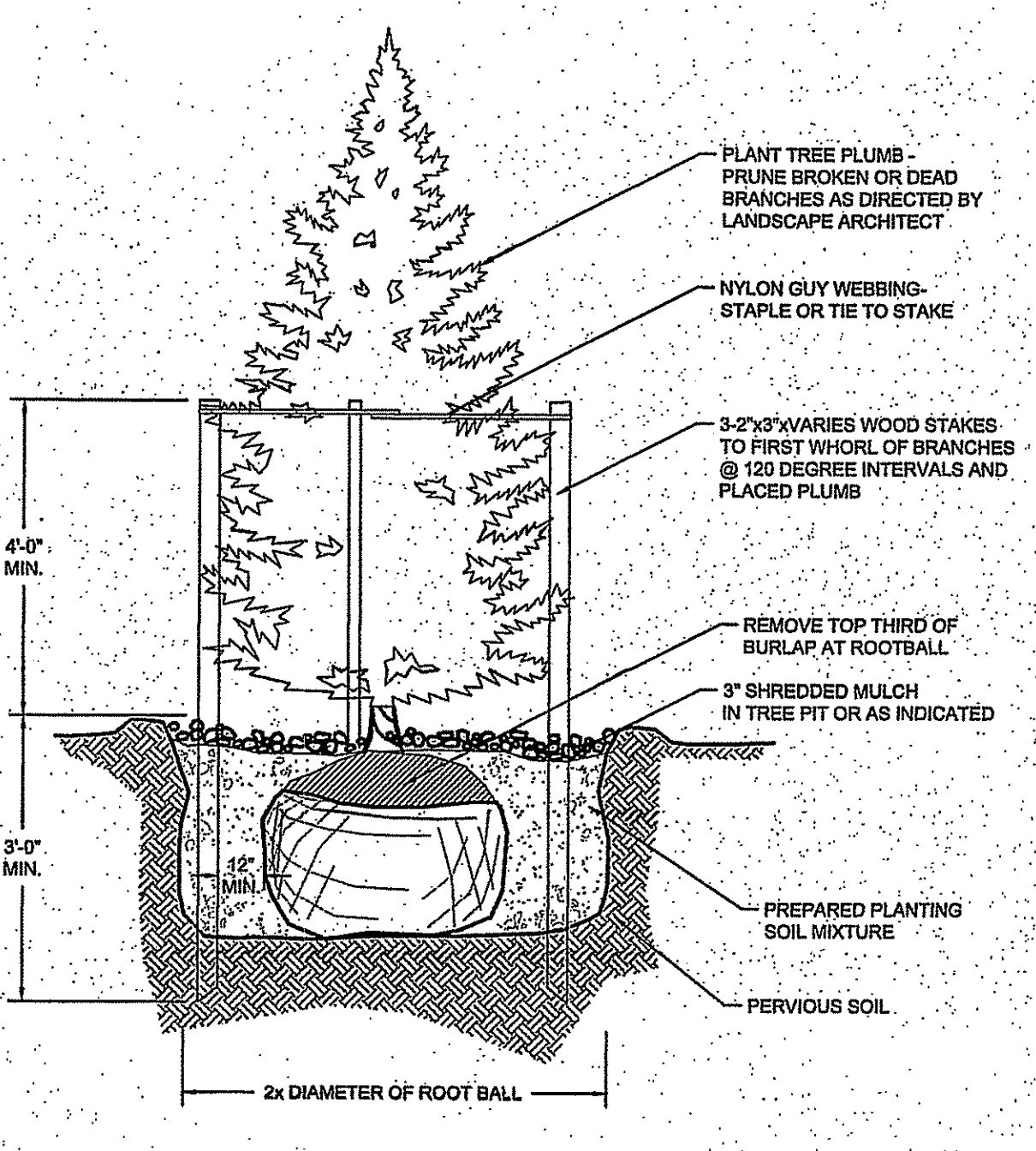
Botanical Name	Common Name	Size
Trees		
4 <i>Acer x freemanii</i> 'Autumn Blaze'	Autumn Blaze Freeman Maple	2.5'-3'
5 <i>Betula nigra</i> 'Heritage'	Heritage River Birch	10'12' B&B
5 <i>Betula populifolia</i>	Gray Birch	3-5' h.
4 <i>Quercus falcata</i> 'Autumn Gold'	Autumn Gold Chinko	2.5'-5' cal
3 <i>Hamelia x intermedia</i> 'Amoril Promise'	Amoril Promise Witehazel	2.5'-5' B&B
6 <i>Liquidambar styraciflua</i>	Sweet Gum	22.5' cal
6 <i>Myrica spicata</i>	Tupelo	22.5' cal
0 <i>Quercus bicolor</i>	Swain White Oak	2.5'-5' cal
0 <i>Quercus coccinea</i>	Scarlet Oak	2.5'-5' cal
0 <i>Quercus palustris</i> 'Green Pillar'	Green Pillar Pin Oak	2.5' Cal
Evergreen Trees		
0 <i>Abies concolor</i>	White Fir	7'-8' B&B
9 <i>Pinus strobus</i>	Eastern White Pine	6-10' h
Shrubs		
36 <i>Callicarpa dichotoma</i>	Purple Beautyberry	#3
49 <i>Hydrangea paniculata</i> 'Little Lime'	Panicle Hydrangea	#3
29 <i>Hydrangea quercifolia</i> 'Ruby Slipper'	Oxfield Hydrangea	#3
17 <i>Ilex glabra</i>	Iceberry	#3
26 <i>Ilex glabra</i> 'Compacta'	Compact Iceberry	#3
5 <i>Ilex x meserveae</i>	Meserve Holly	#5
16 <i>Itea virginica</i> 'Henry's Garnet'	Henry's Garnet Virginia Sweetgum	#3
15 <i>Myrica pensylvanica</i>	Northern Bayberry	#5
59 <i>Rhus aromatica</i> 'Gro-Low'	Gro-Low Fragrant sumac	#1
10 <i>Taxus x media</i> 'Hickel'	Hicks Yew	2 1/2' B&B
Ground Covers/Grasses/Perennials		
38 <i>Asilbe 'Red Sentinel'</i>	Red Sentinel Asilbe	Plugs
36 <i>Asilbe 'Color Flash'</i>	Color Flash Asilbe	Plugs
63 <i>Baptisia australis</i>	Blue False Indigo	#1
67 <i>Chamaenerium latifolium</i>	Northern Sea Oats	#1
62 <i>Dermisodium punctulata</i>	Hay Scented Fern	Plugs
62 <i>Dryopteris erythrosora</i>	Autumn Fern	Plugs
59 <i>Galium aparine</i>	Downy Yellow	#3
50 <i>Hemerocallis 'Happy Returns'</i>	Daylily	Plugs or #1
45 <i>Hosta 'Euphorbia Eyes'</i>	Euphorbia Eyes Hosta	#1
24 <i>Hosta 'Gambair'</i>	Gambair Hosta	#1
42 <i>Iris versicolor</i>	Blue Flag	#1
38 <i>Liatris spicata</i>	Blazing Star	#1
42 <i>Najasa racemosa</i> 'Walker's Low'	Catmint	#1
85 <i>Pachysandra procumbens</i>	Allegheny Pachysandra	4" Pot
59 <i>Panicum virgatum</i> 'Heavy Metal'	Heavy Metal Switch Grass	#1
167 <i>Panicum virgatum</i> 'Shenandoah'	Shenandoah Switch grass	#1
24 <i>Panstermon digitalis</i> 'Husker Red'	Husker Red Beardtongue	#1
196 <i>Sporobolus heterolepis</i>	Prairie Dropseed	#1
18 <i>Stachys byzantina</i>	Lamb's Ears	#1
62 <i>Salvia nemorosa</i> 'Caradonna'	Messiah Sage	#1
437 <i>Waldsteinia ternata</i>	Barren Strawberry	4" Pot
Vines		
10 <i>Hydrangea anomala</i> ssp. <i>Peloidaris</i>	Climbing Hydrangea	#1
7 <i>Parthenocissus quinquefolia</i>	Virginia Creeper	#1



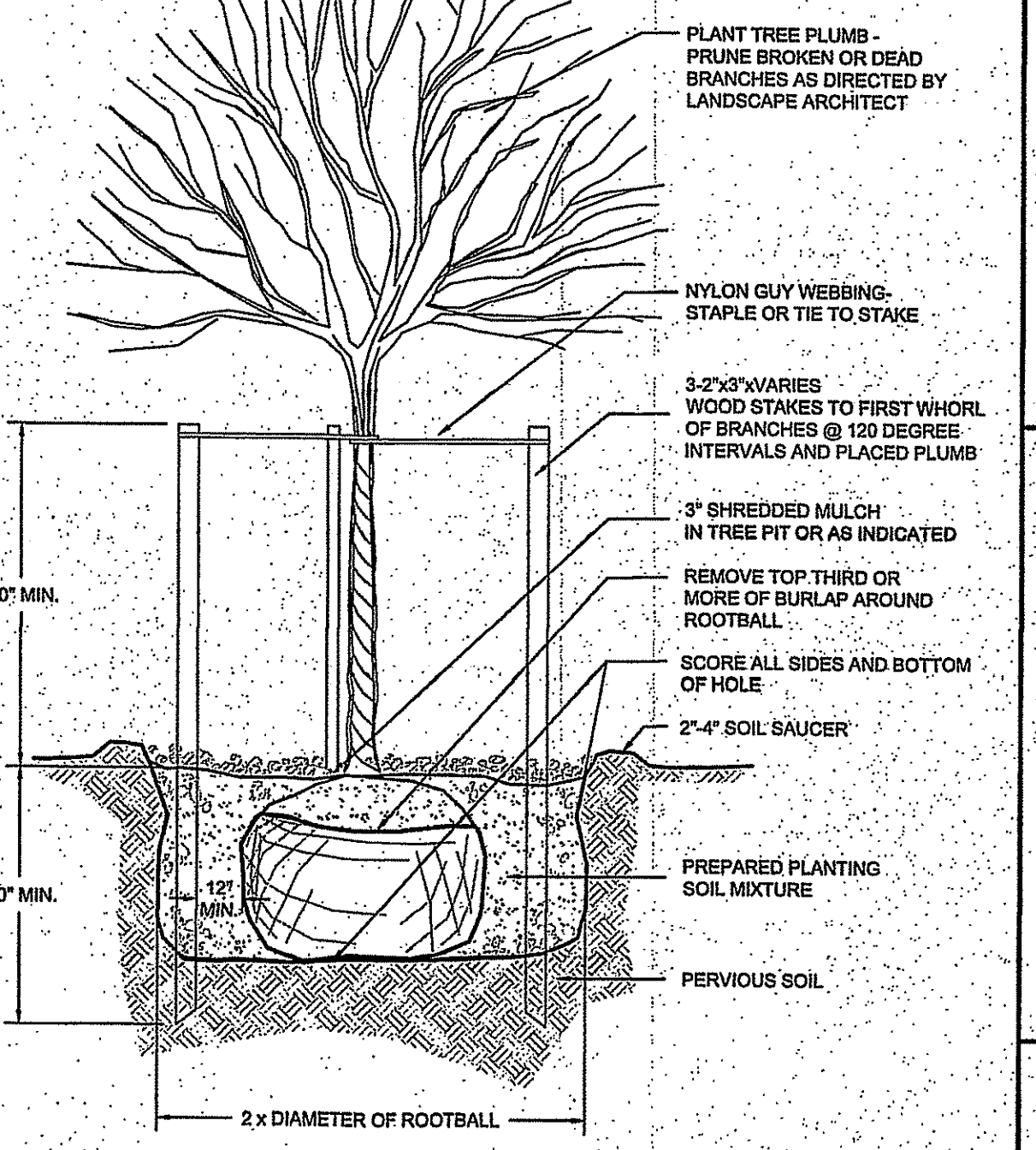
CONTAINER PLANT ROOTBALL TREATMENT
NOT TO SCALE



SHRUB PLANTING DETAIL
NOT TO SCALE

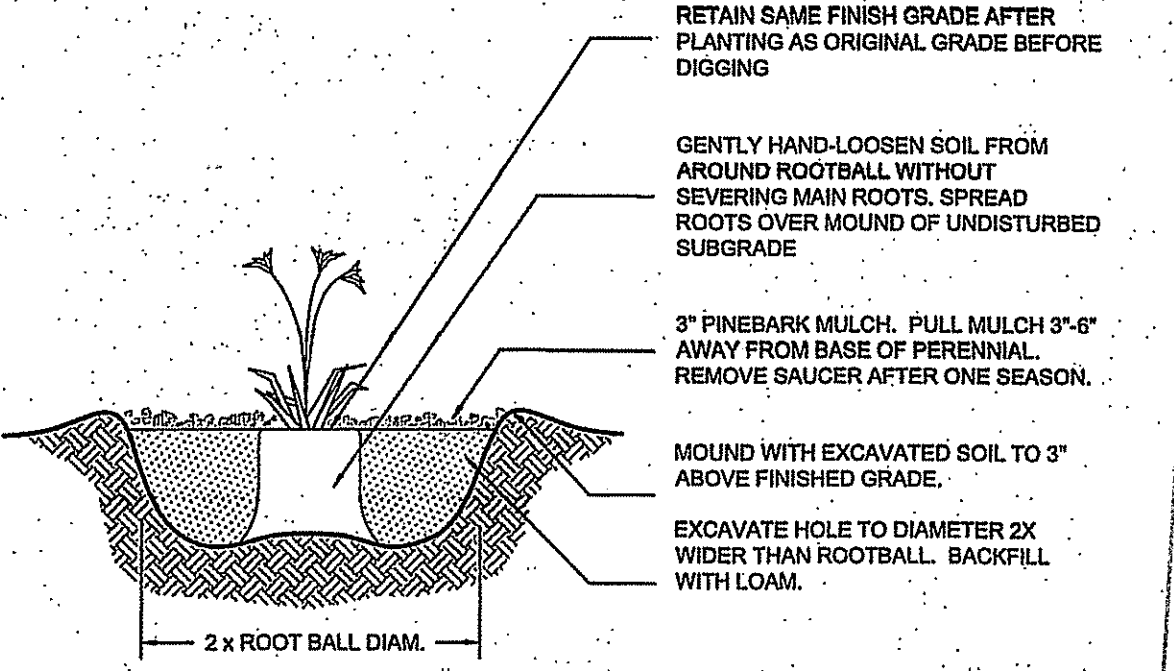


EVERGREEN TREE PLANTING DETAIL
NOT TO SCALE

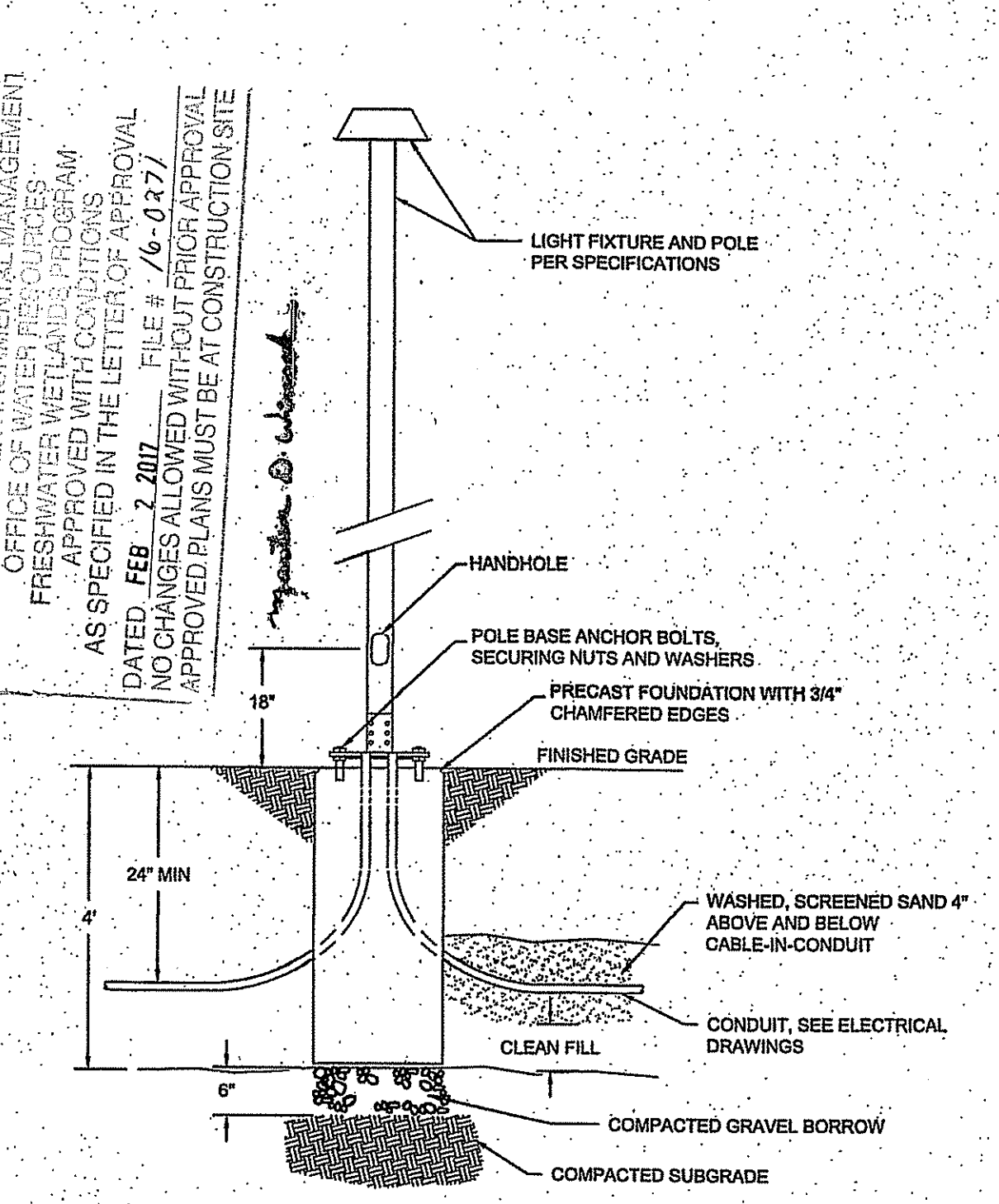


TREE PLANTING DETAIL
NOT TO SCALE

NOTE: FOR PLANTING ON A SLOPE, CREATE A FIRM SOIL SAUCER ON DOWNHILL SIDE OF PLANTING HOLE. DO NOT PILE SOIL ON TOP OF ROOT BALL.

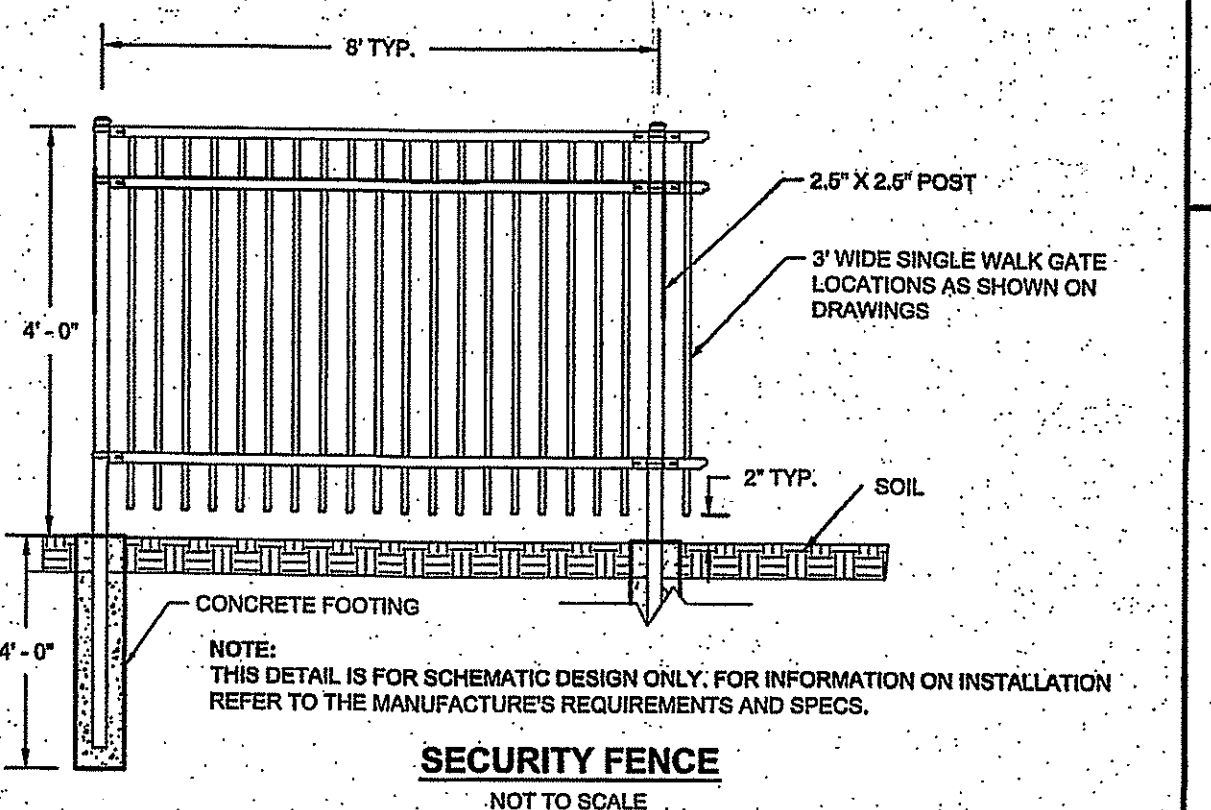


PERENNIAL PLANTING DETAIL
NOT TO SCALE

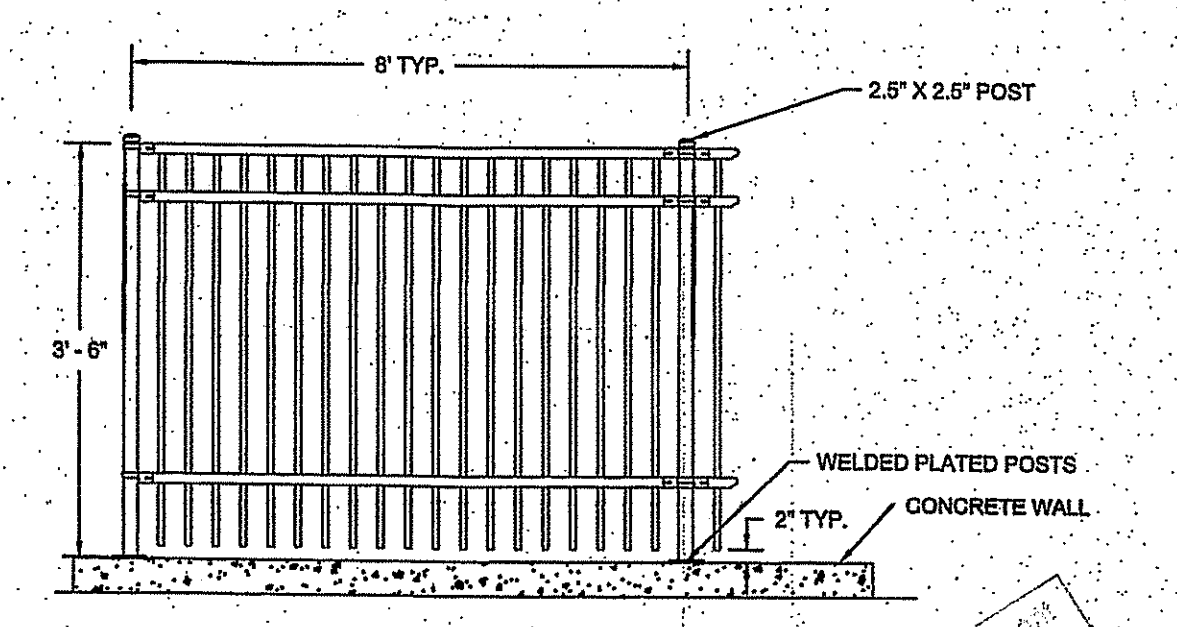


TYPICAL LIGHT POLE DETAIL
NOT TO SCALE

NOTE: THIS DETAIL IS A SCHEMATIC ONLY AND FINAL DESIGN AND SPECIFICATIONS FOR LUMINAIRES, POLE, BASE, CONDUIT AND WIRING SHALL BE PER THE MANUFACTURER'S REQUIREMENTS AND ELECTRICAL DRAWINGS.

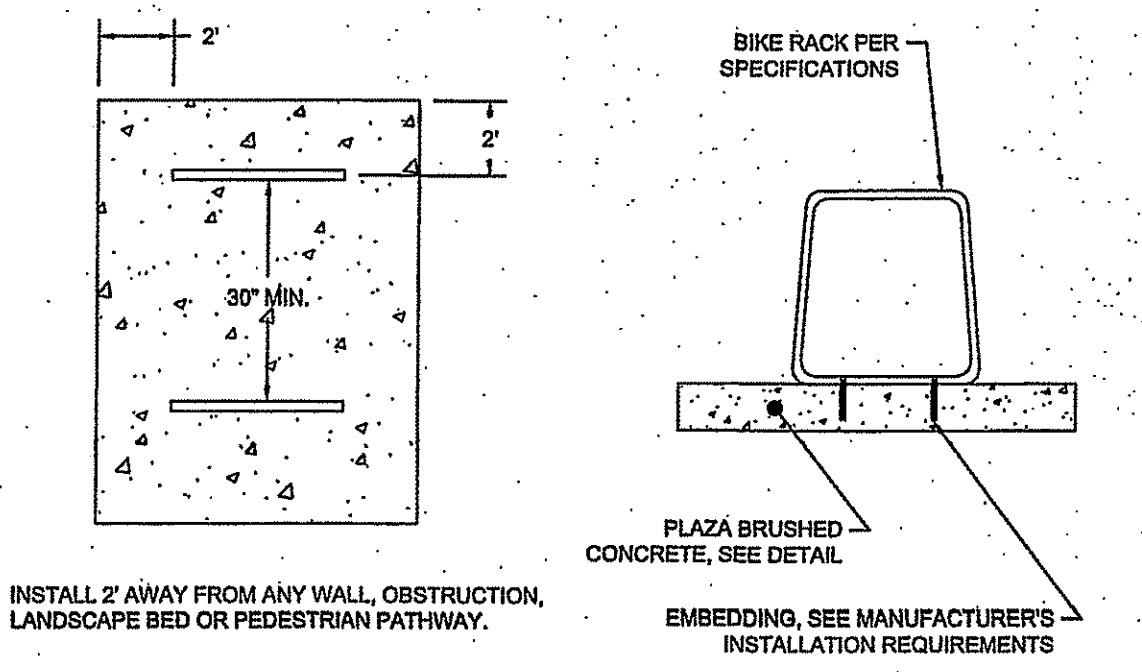


SECURITY FENCE
NOT TO SCALE

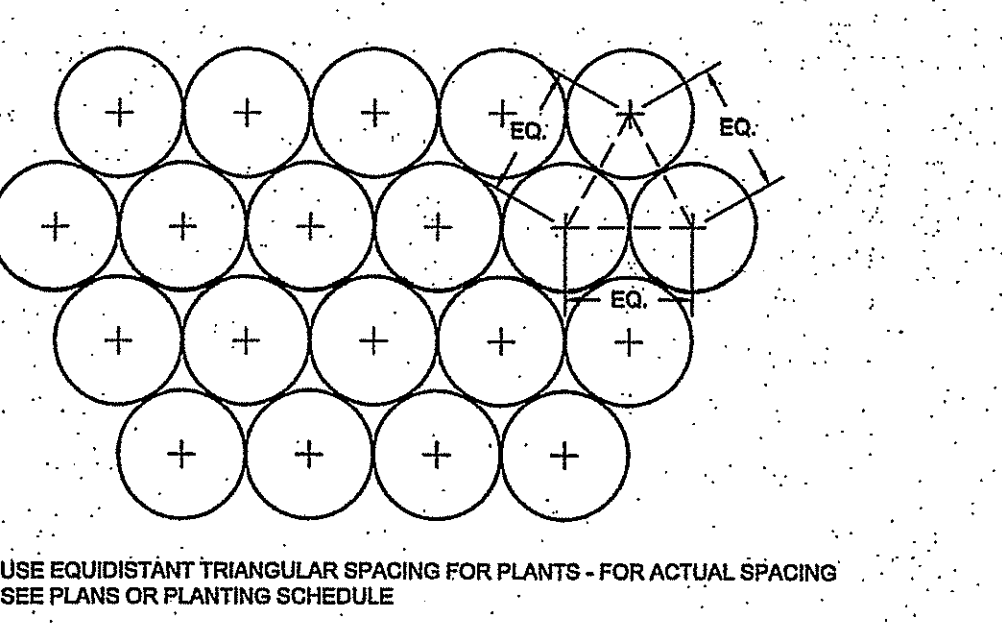


RAILING ON WALL
NOT TO SCALE

NOTE: THIS DETAIL IS FOR SCHEMATIC DESIGN ONLY. FOR INFORMATION ON INSTALLATION REFER TO THE MANUFACTURER'S REQUIREMENTS AND SPECS.

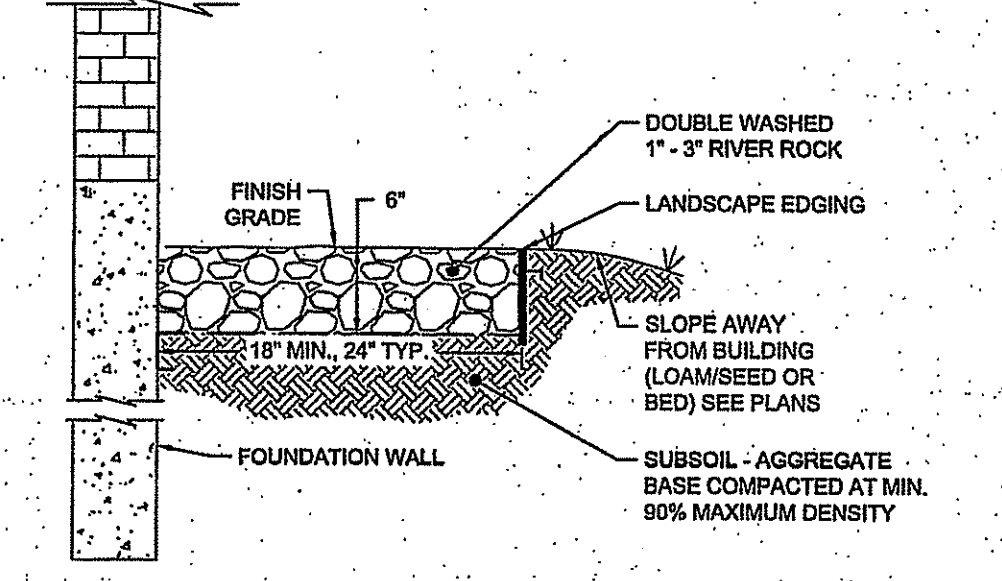


TYPICAL BIKE RACK DETAIL
NOT TO SCALE

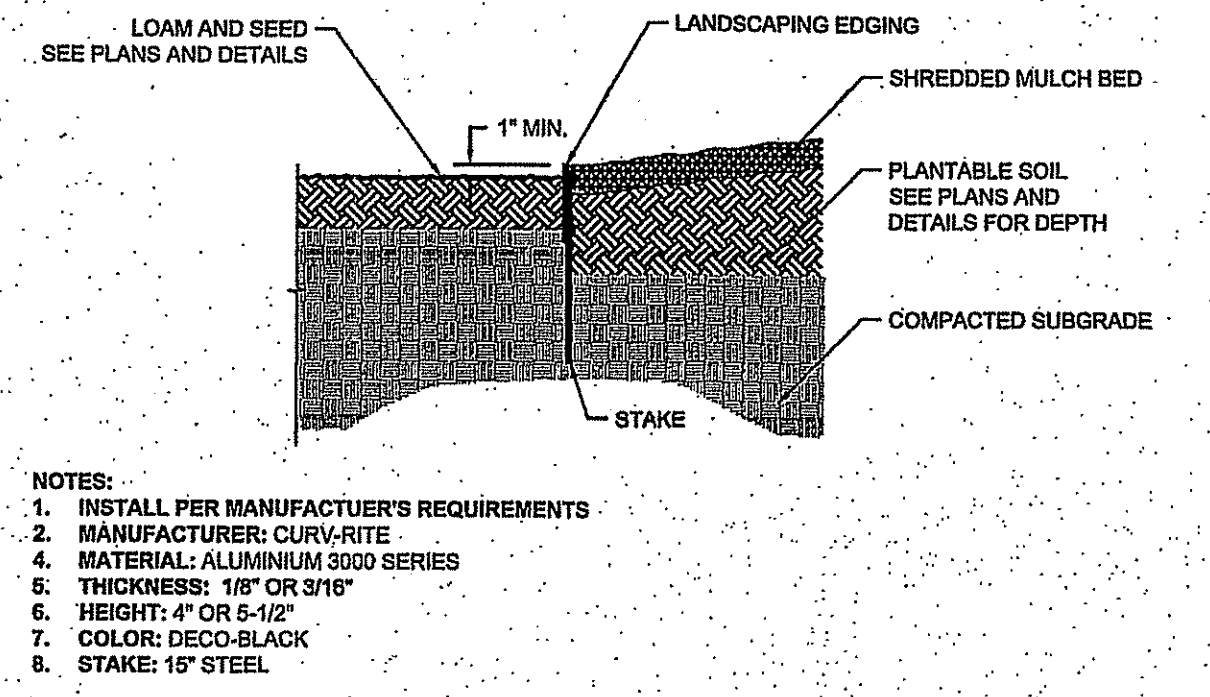


PLANTING SPACING DETAIL
NOT TO SCALE

- NOTES:
- WEED BARRIER SHALL BE TENCATE NICOLON GROUNDCOVER FABRIC OR EQUAL.
 - ANCHOR FABRIC MIN. 6" INTO SOIL. NO EXPOSED FABRIC.
 - STONE SURFACING AROUND BUILDINGS SHALL BE A CONSISTENT WIDTH.

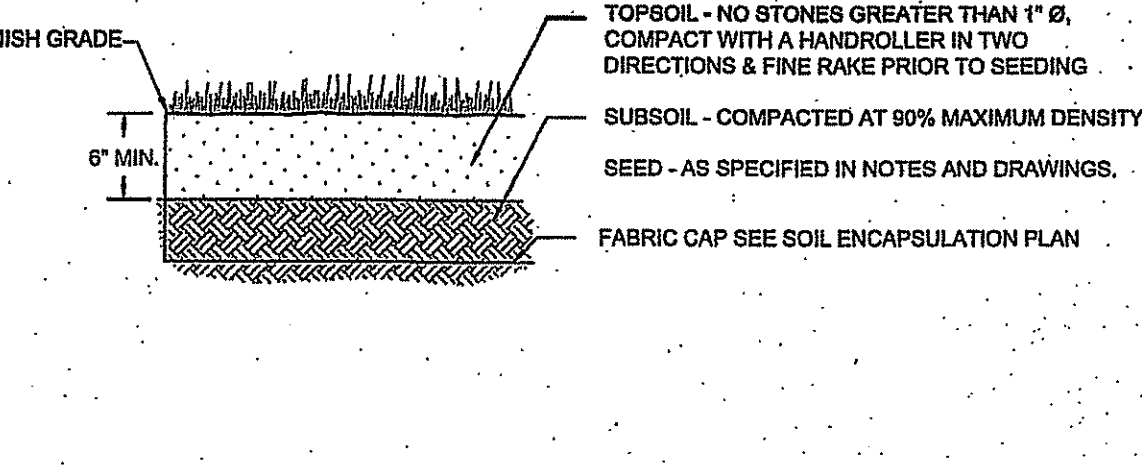


BUILDING DRIP EDGE DETAIL
NOT TO SCALE

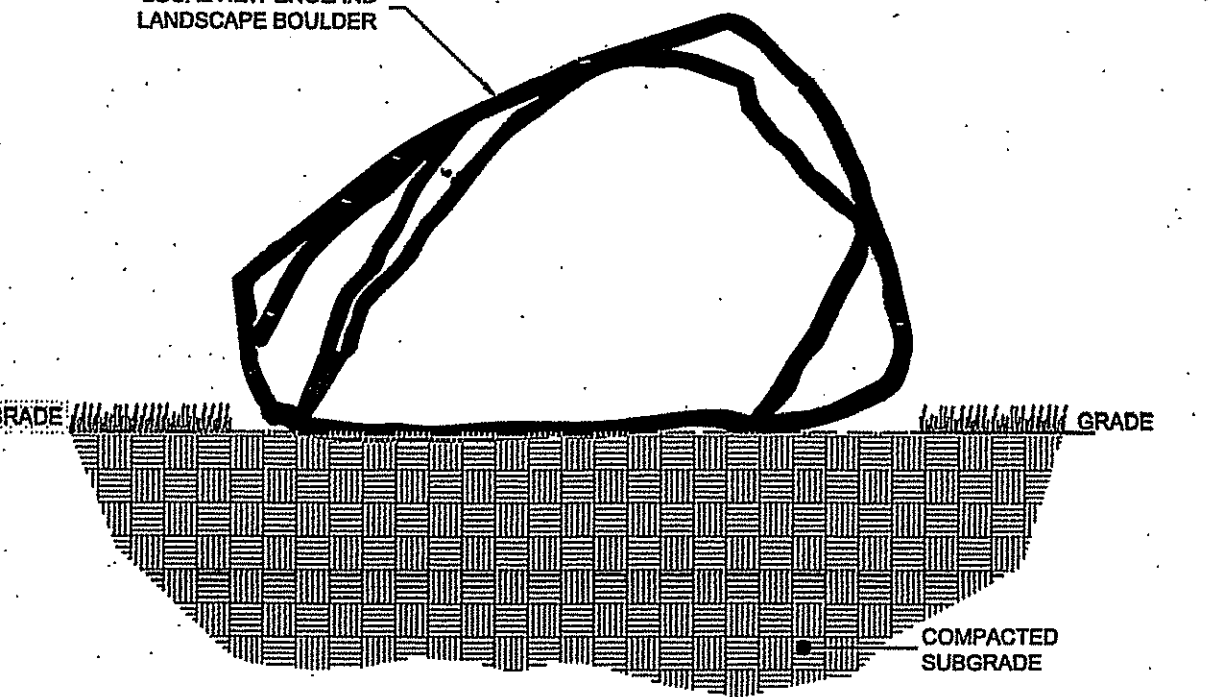


LANDSCAPE EDGING DETAIL
NOT TO SCALE

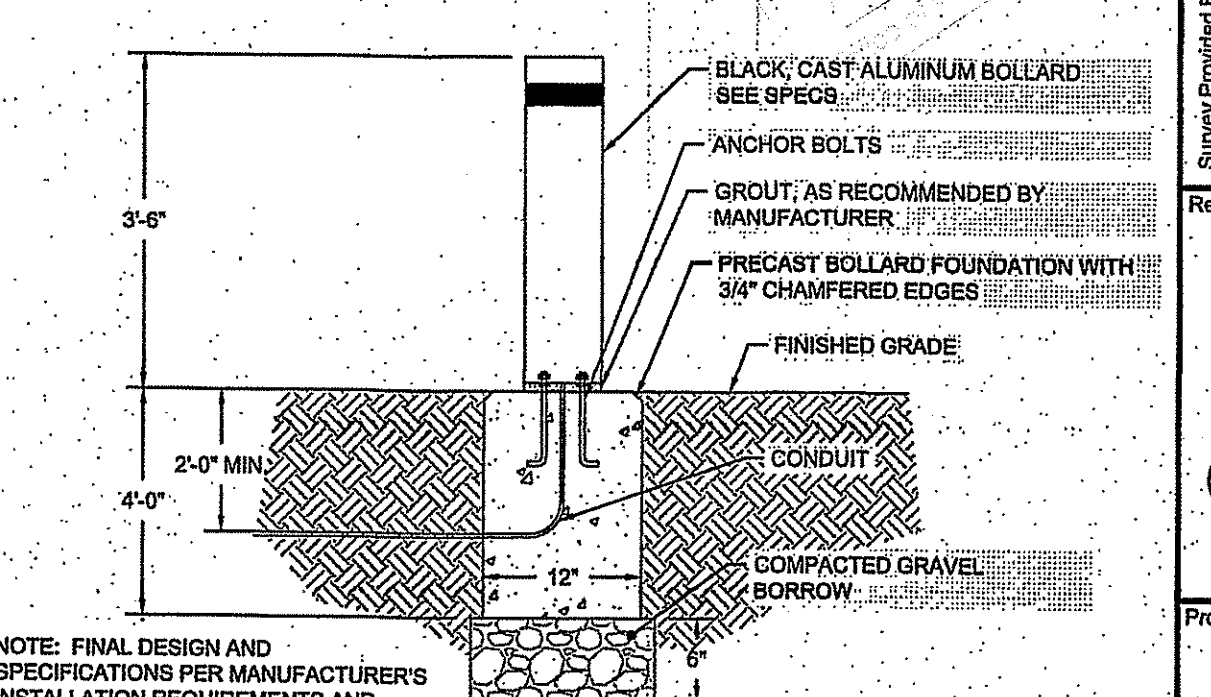
- NOTES:
- INSTALL PER MANUFACTURER'S REQUIREMENTS
 - MANUFACTURER: CURV-RITE
 - MATERIAL: ALUMINUM 5000 SERIES
 - THICKNESS: 1/8" OR 3/16"
 - HEIGHT: 4" OR 5-1/2"
 - COLOR: DECO-BLACK
 - STAKE: 1/2" STEEL



LOAM AND SEED DETAIL
NOT TO SCALE



BOULDER SET ON GRADE DETAIL
NOT TO SCALE



BOLLARD INSTALLATION DETAIL
NOT TO SCALE

NOTE: FINAL DESIGN AND SPECIFICATIONS PER MANUFACTURER'S INSTALLATION REQUIREMENTS AND ELECTRICAL DRAWINGS

Revisions	Date	By	Description
1	12/21/16	JEB	REVISION COMMENTS

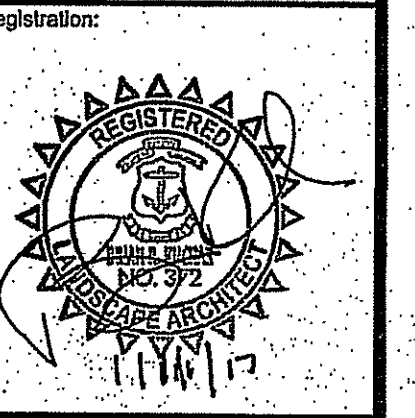
Horsley Witten Group, Inc.
Sustainable Environmental Solutions
294 Washington Street, Suite 607
Boston, MA 02110
617-263-8193 voice
617-574-4799 fax

E-ICON
ARCHITECTURE
101 SUMMER ST. BOSTON, MA 02110

IMPERIAL KNIFE FACTORY
REDEVELOPMENT PROJECT
PROVIDENCE, RHODE ISLAND
LANDSCAPE DETAILS

ICOM Architecture
101 Summer Street
Boston, MA 02110
Phone: (617) 451-3393
Fax: _____

Kelly Engineering Group, Inc.
0 Cambridge Drive
Burlington, MA 02184
Phone: 1-081-948-4893
Fax: _____



last modified: 01/10/17 printed: 01/10/17 by ml H:\Projects\2014\14104 ICON Arch Imperial Knife Drawings - 14104\14104-LA.dwg