

# CHILDREN'S ZOO

ROGER WILLIAMS PARK ZOO  
PROVIDENCE, RHODE ISLAND

## RIDEM PRELIMINARY DETERMINATION

JUNE 2, 2010

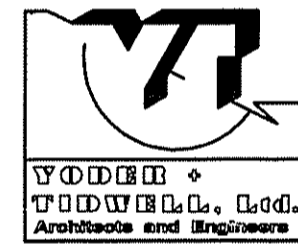
### PROJECT CONTACTS:

#### OWNER/APPLICANT

RHODE ISLAND ZOOLOGICAL SOCIETY

RONALD PATALANO DEPUTY ZOO DIRECTOR  
RHODE ISLAND ZOOLOGICAL SOCIETY  
1000 ELMWOOD AVENUE  
PROVIDENCE, RI 02907  
401-785-3510

#### ARCHITECT



DAVID TIDWELL, AIA  
JESSY JAKULEVICIUS  
YODER & TIDWELL LTD.  
14 IMPERIAL PLACE  
PROVIDENCE, RI 02903  
401-751-2460

PRESIDENT/PRINCIPAL ARCHITECT  
PROJECT ARCHITECT

#### CIVIL ENGINEER

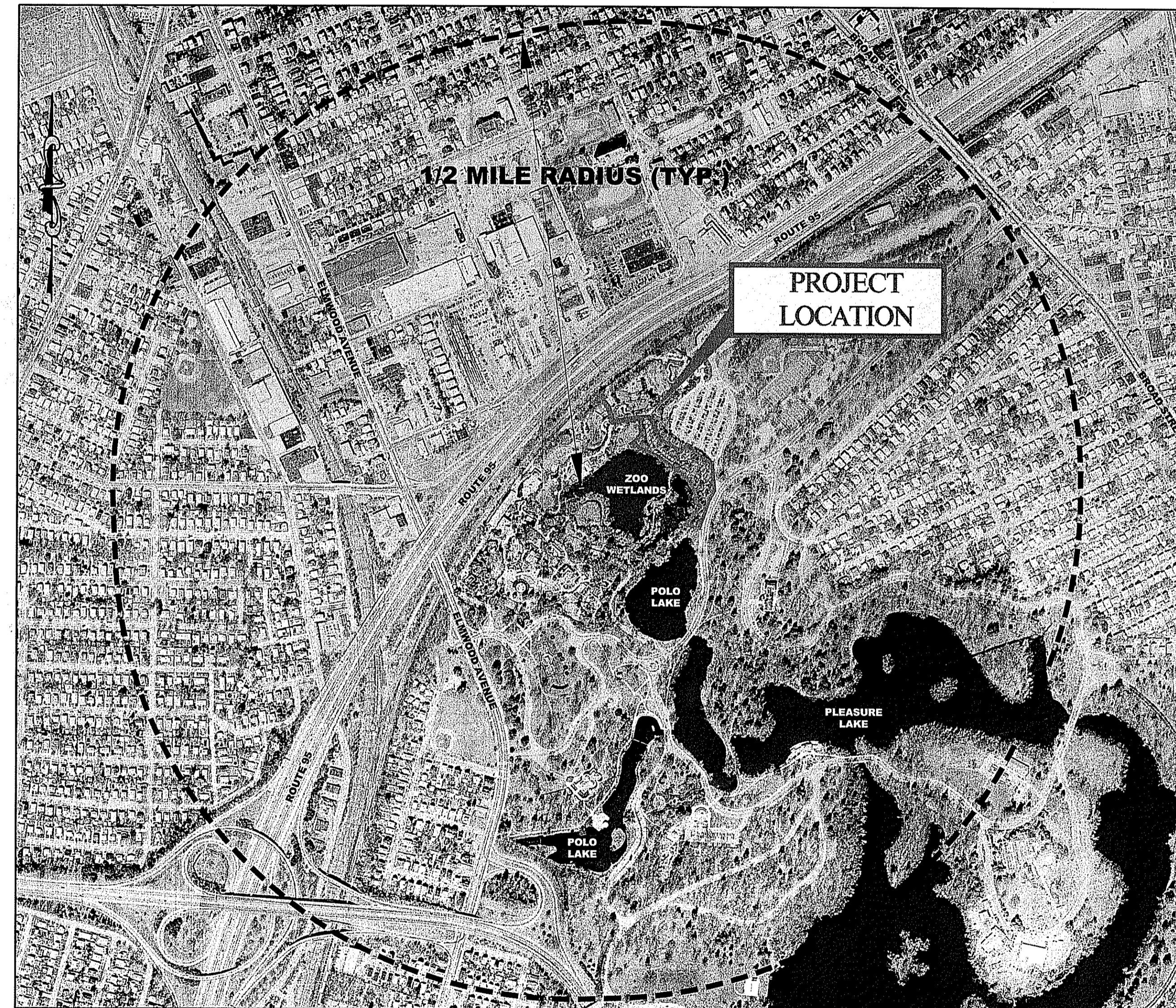


SHAWN M. MARTIN, P.E.  
FUSS & O'NEILL, INC.  
317 IRON HORSE WAY SUITE 204  
PROVIDENCE, RI 02908  
401-861-3070

PROJECT MANAGER

#### WETLANDS BIOLOGIST

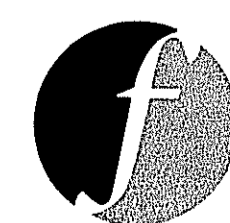
APPLIED BIO-SYSTEMS, INC.  
P.O. BOX 985  
WEST KINGSTON, RI 02892  
P: 401-783-6740; F: 401-284-2004



LOCATION MAP

SCALE: 1" = 500'

PREPARED FOR:  
RHODE ISLAND ZOOLOGICAL SOCIETY  
1000 ELMWOOD AVENUE  
PROVIDENCE, RI 02907  
401-785-3510



PREPARED BY:  
FUSS & O'NEILL  
Disciplines to Deliver

317 IRON HORSE WAY, SUITE 204  
PROVIDENCE, RI 02908  
401.861.3070  
www.FondC.com

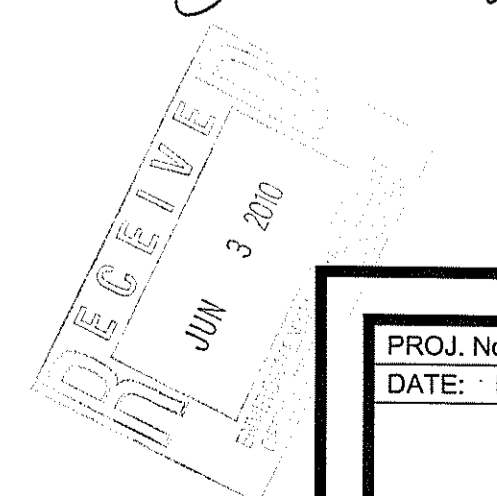
### SHEET INDEX

SHEET No.	SHEET TITLE
C0.1	COVER SHEET
C1.1	NOTES & LEGEND
C2.1 - C2.2	EXISTING CONDITIONS PLAN
C3.1 - C3.2	SITE DEMOLITION PLAN
C4.1 - C4.2	SITE PLAN
C5.1 - C5.2	GRADING & DRAINAGE PLAN
C6.1 - C6.2	SITE UTILITY PLAN
C7.1 - C7.2	SOIL EROSION & SEDIMENTATION CONTROL PLAN
C8.1 - C8.3	DETAILS
L1.1 - L1.2	ENLARGED SITE PLAN AND PLANTING DETAILS

Kindly be advised that this  
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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 JUL 16 2010 FILE # 10-011  
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL.  
APPROVED PLANS MUST BE AT CONSTRUCTION SITE.

*J. Joseph Conroy*



PROJ. No.: 20050645.A40  
DATE: MAY 28, 2010

C  
0.1





TODD &  
TODD, L.L.C.  
Architects and Engineers

14 GENERAL PLACE PROVIDENCE, RI 02902  
PHONE 401-848-7200 FAX 401-848-7207

REVISIONS	
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# CHILDREN'S ZOO

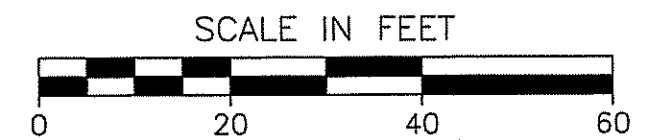
ROGER WILLIAMS PARK ZOO  
1000 ELMWOOD AVENUE  
PROVIDENCE, RI 02907

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*W. Joseph Cooney*



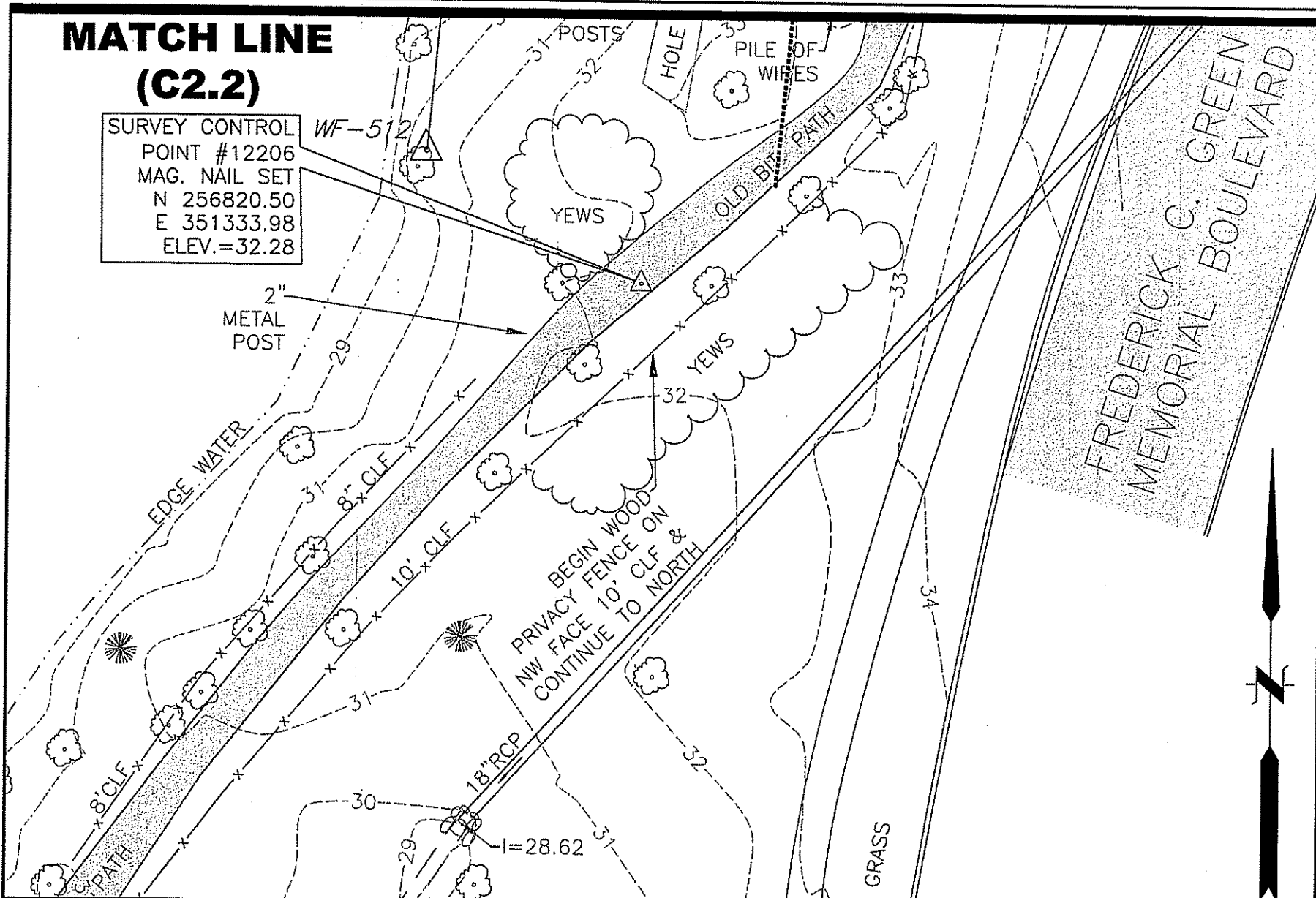
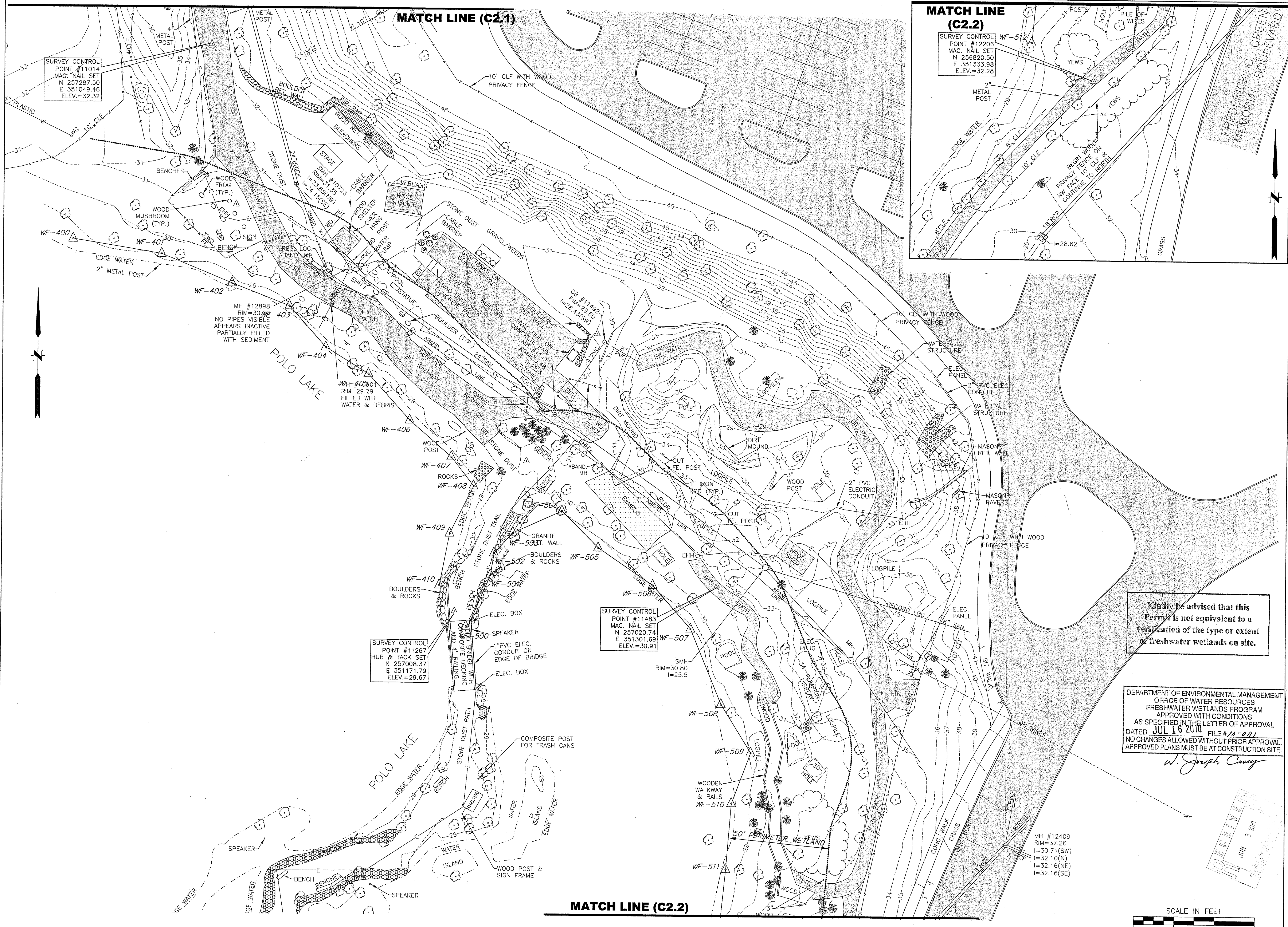
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06/02/2010	ISSUED FOR PERMITTING

DATE	ISSUED FOR
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PROJECT: CHILDREN'S ZOO  
DRAWING TITLE: EXISTING CONDITIONS PLAN  
SCALE: AS NOTED  
DRAWN BY: JJ/GR  
CHECKED BY: DPT  
JOB #: 2807

SHAWN M. MARTIN  
No. 7487  
REGISTERED PROFESSIONAL ENGINEER (CIVIL)  
SHEET NO.: C 2.1

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**YODER + TODD & Co., Ltd.**  
Architects and Engineers  
14 CAPITAL PLAZA PROUDHOPE RD. SUITE 200  
PROVIDENCE, RI 02907

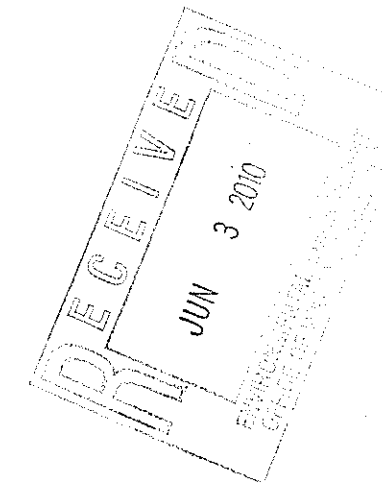
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*W. Joseph Casey*



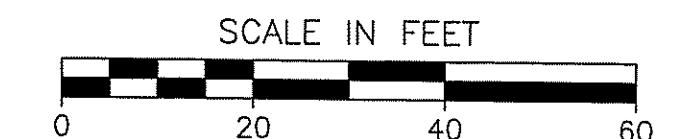
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SHAWN M. MARTIN  
No. 7487  
REGISTERED PROFESSIONAL ENGINEER (CIVIL)

SHEET NO.:

**C 2.2**





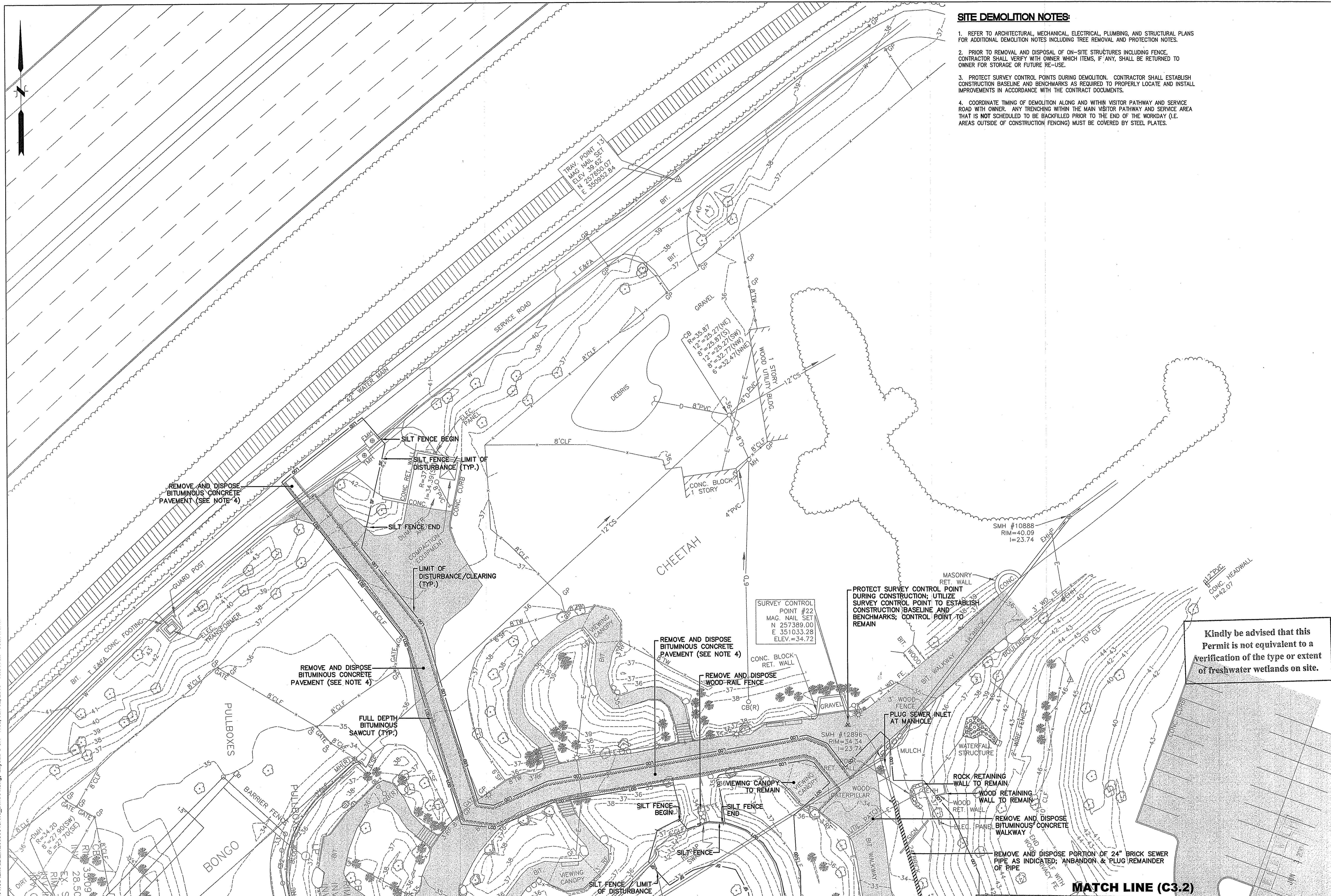
TODD & Co. Architects and Engineers

14 FEDERAL PLACE PROVIDENCE, RI 02903  
PHONE 401-761-6440 FAX 401-874-7617

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**SITE DEMOLITION NOTES:**

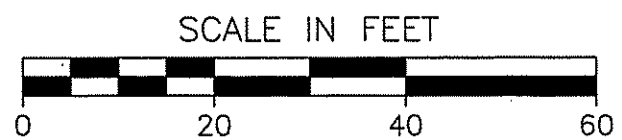
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2. PRIOR TO REMOVAL AND DISPOSAL OF ON-SITE STRUCTURES INCLUDING FENCE, CONTRACTOR SHALL VERIFY WITH OWNER WHICH ITEMS, IF ANY, SHALL BE RETURNED TO OWNER FOR STORAGE OR FUTURE RE-USE.
3. PROTECT SURVEY CONTROL POINTS DURING DEMOLITION. CONTRACTOR SHALL ESTABLISH CONSTRUCTION BASELINE AND BENCHMARKS AS REQUIRED TO PROPERLY LOCATE AND INSTALL IMPROVEMENTS IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
4. COORDINATE TIMING OF DEMOLITION ALONG AND WITHIN VISITOR PATHWAY AND SERVICE ROAD WITH OWNER. ANY TRENCHING WITHIN THE MAIN VISITOR PATHWAY AND SERVICE AREA THAT IS NOT SCHEDULED TO BE BACKFILLED PRIOR TO THE END OF THE WORKDAY (I.E. AREAS OUTSIDE OF CONSTRUCTION FENCING) MUST BE COVERED BY STEEL PLATES.



**CHILDREN'S ZOO**  
 ROGER WILLIAMS PARK ZOO  
 1000 ELMWOOD AVENUE  
 PROVIDENCE, RI 02907

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 FRESHWATER WETLANDS PROGRAM  
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 DATED JUL 16 2010 FILE # 10-211  
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DATE	NO.	BY	FOR
06/09/2010	1	JU/GR	DPT

SITE DEMOLITION PLAN  
 AS NOTED  
 DRAWN BY: JU/GR  
 CHECKED BY: DPT  
 2807

NOT FOR CONSTRUCTION  
 SHAWN M. MARTIN  
 No. 7487  
 REGISTERED PROFESSIONAL ENGINEER (CIVIL)

SHEET NO.:

**C**  
**3.1**

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W. Joseph Casey

REVISIONS	DATE

# CHILDREN'S ZOO

ROGER WILLIAMS PARK ZOO  
1000 ELMWOOD AVENUE  
PROVIDENCE, RI 02907

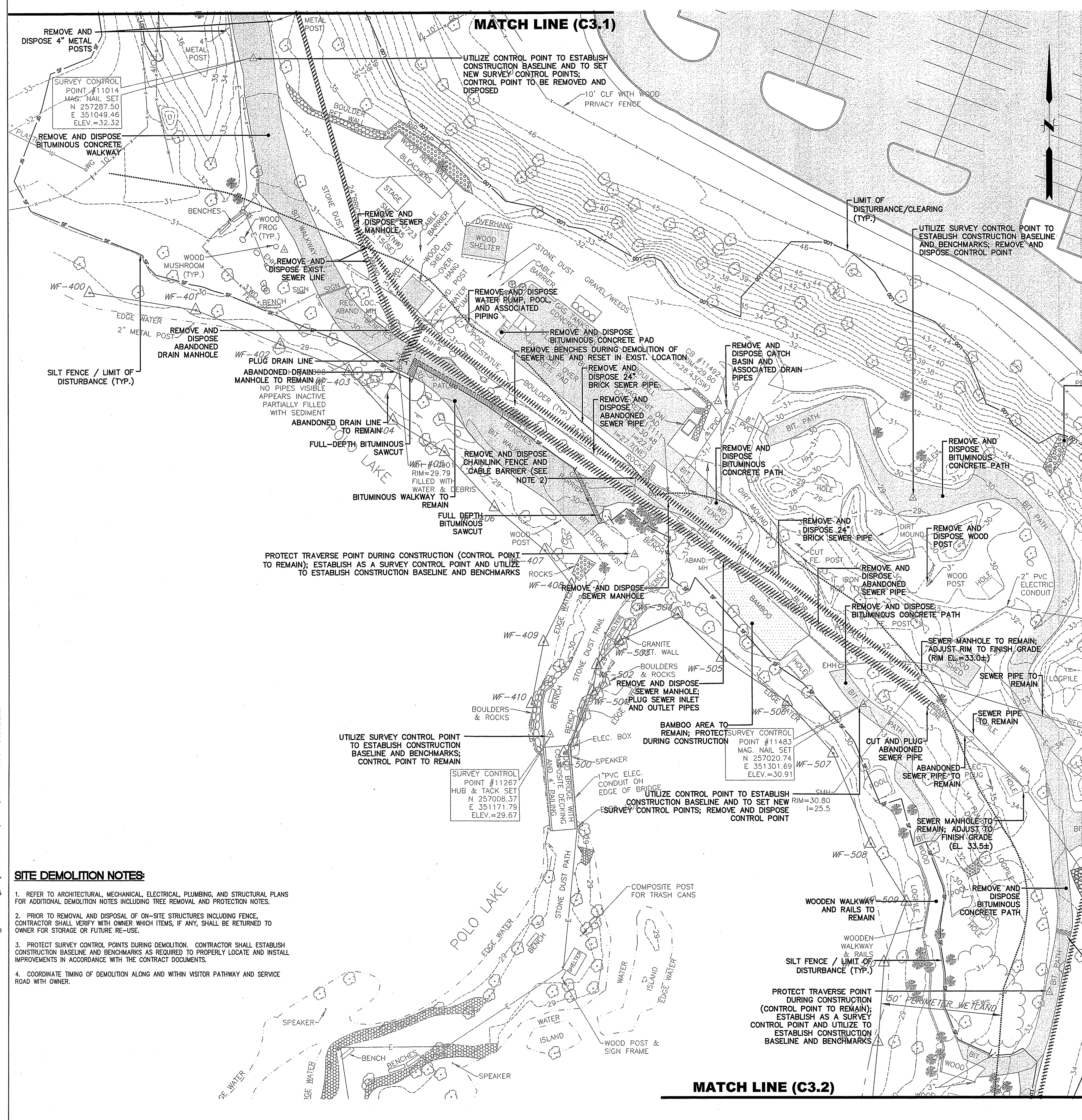
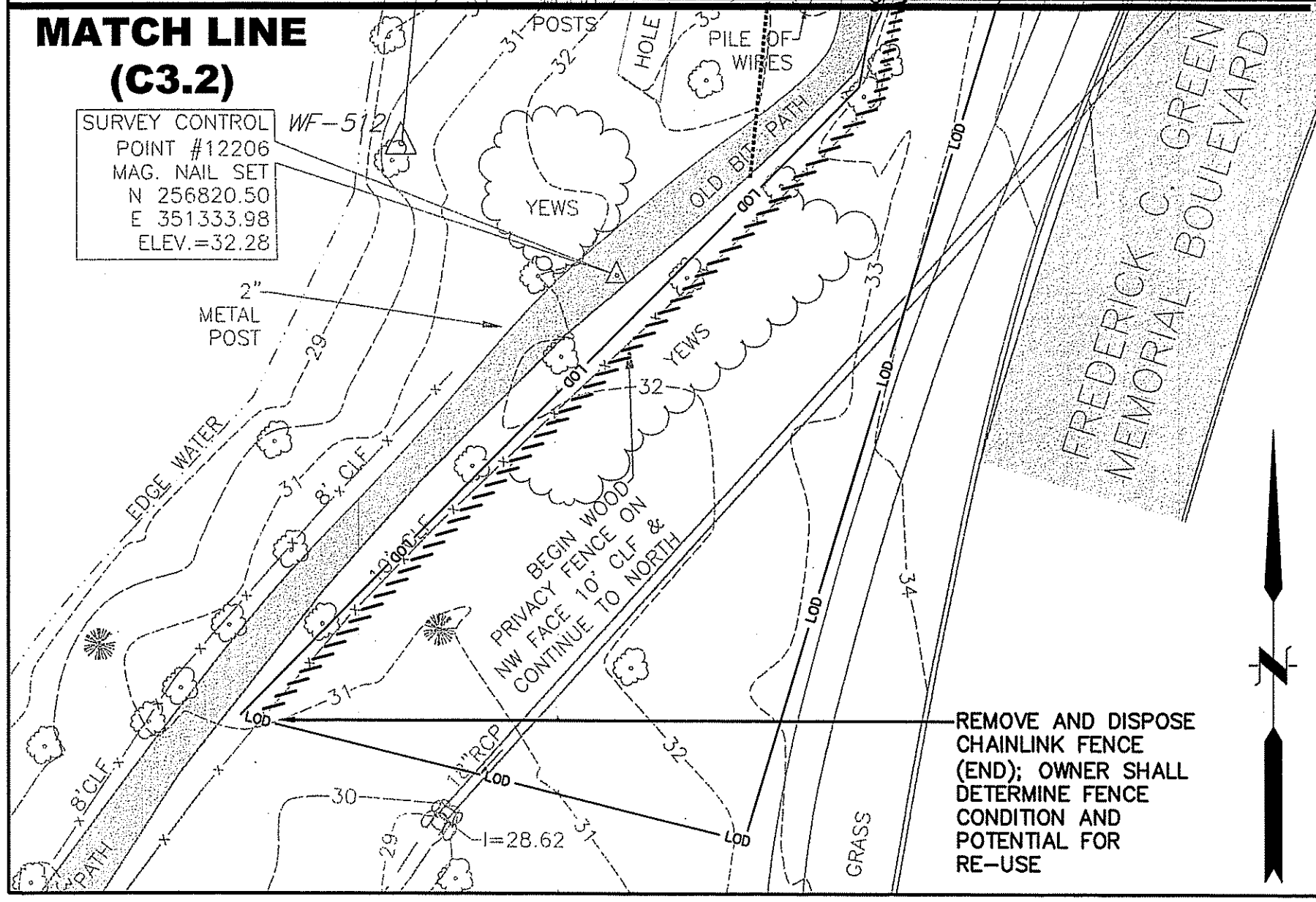
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NO.:	
DRAWING TITLE:	SITE DEMOLITION PLAN
SCALE:	AS NOTED
DRAWN BY:	JJ/GR
CHECKED BY:	DPT
JOB #:	2807

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
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DATED **JUL 16 2010** FILE # **10-211**  
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*W. Joseph Conroy*

SHAWN R. MARTIN  
No. 487  
REGISTERED PROFESSIONAL ENGINEER (CIVIL)

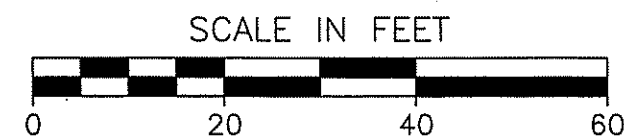
JUN 3 2010



- SITE DEMOLITION NOTES:**
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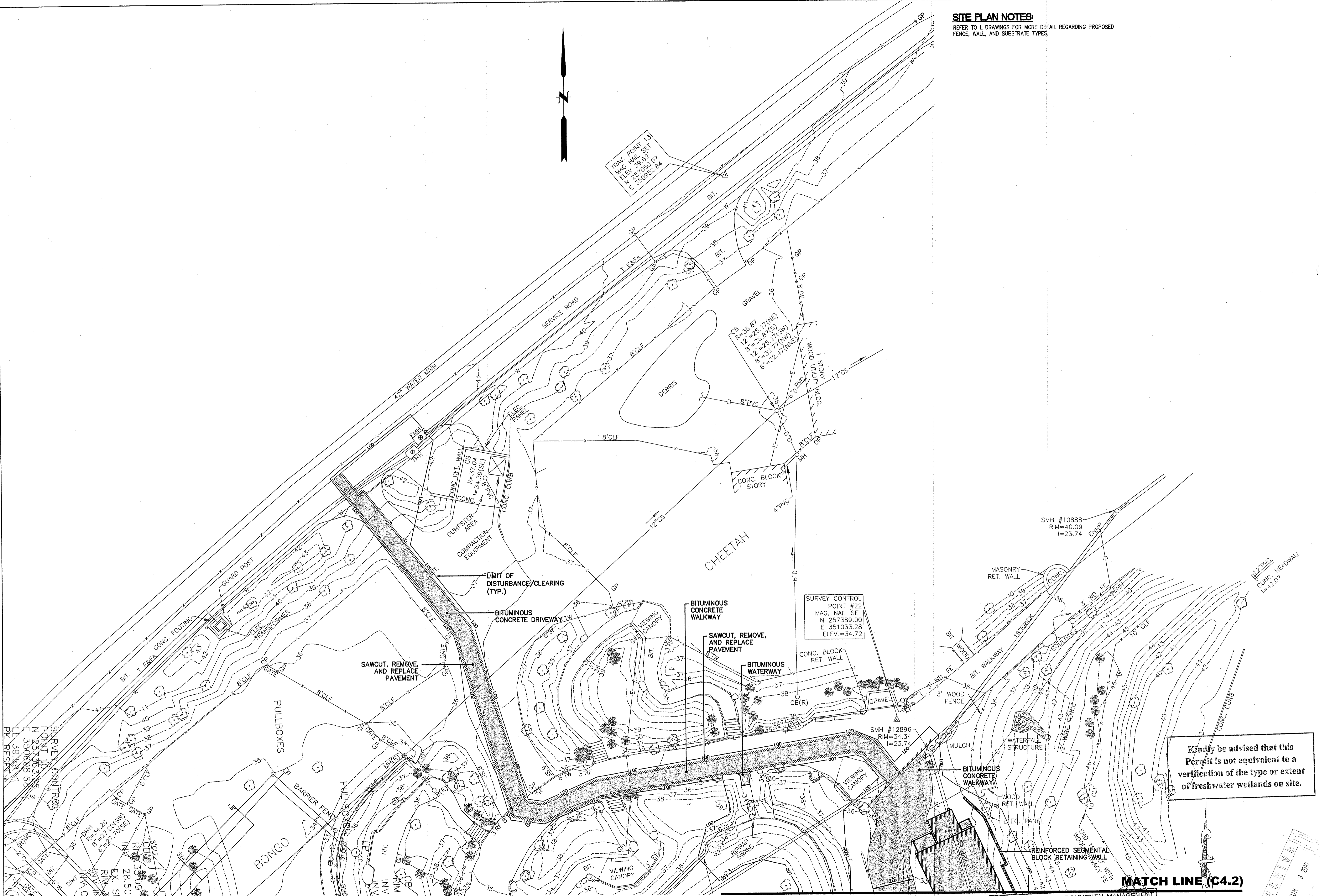
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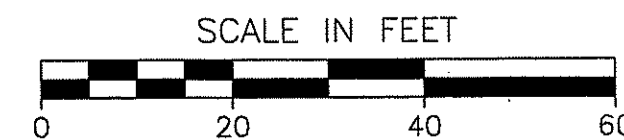


**SITE PLAN NOTES:**  
REFER TO L DRAWINGS FOR MORE DETAIL REGARDING PROPOSED FENCE, WALL, AND SUBSTRATE TYPES.



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DATED JUL 16 2010 FILE # 10-2111  
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**YODER & TODD, L.L.C.**  
Architects and Engineers  
14 GENERAL PLACE PROVIDENCE, RI 02907  
PHONE: 401-846-7100 FAX: 401-846-7101

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**CHILDREN'S ZOO**  
ROGER WILLIAMS PARK ZOO  
1000 ELMWOOD AVENUE  
PROVIDENCE, RI 02907

ISSUE	DATE	ISSUED FOR
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DRAWING TITLE: **SITE PLAN**  
SCALE: AS NOTED  
DRAWN BY: JAJ/GR CHECKED BY: JMB # 2807

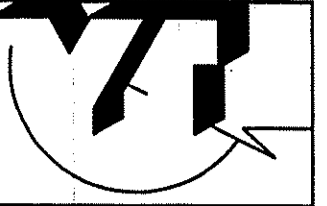
NOT FOR CONSTRUCTION  
**SHAWN M. MARTIN**  
No. **7487**  
REGISTERED PROFESSIONAL ENGINEER (CIVIL)

SHEET NO.: **C 4.1**  
JUN 3 2010









TODD & TODD  
Architects and Engineers  
14 IMPERIAL PLACE PROVIDENCE RI 02907  
PHONE 401-761-8400 FAX 401-761-7907

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# CHILDREN'S ZOO

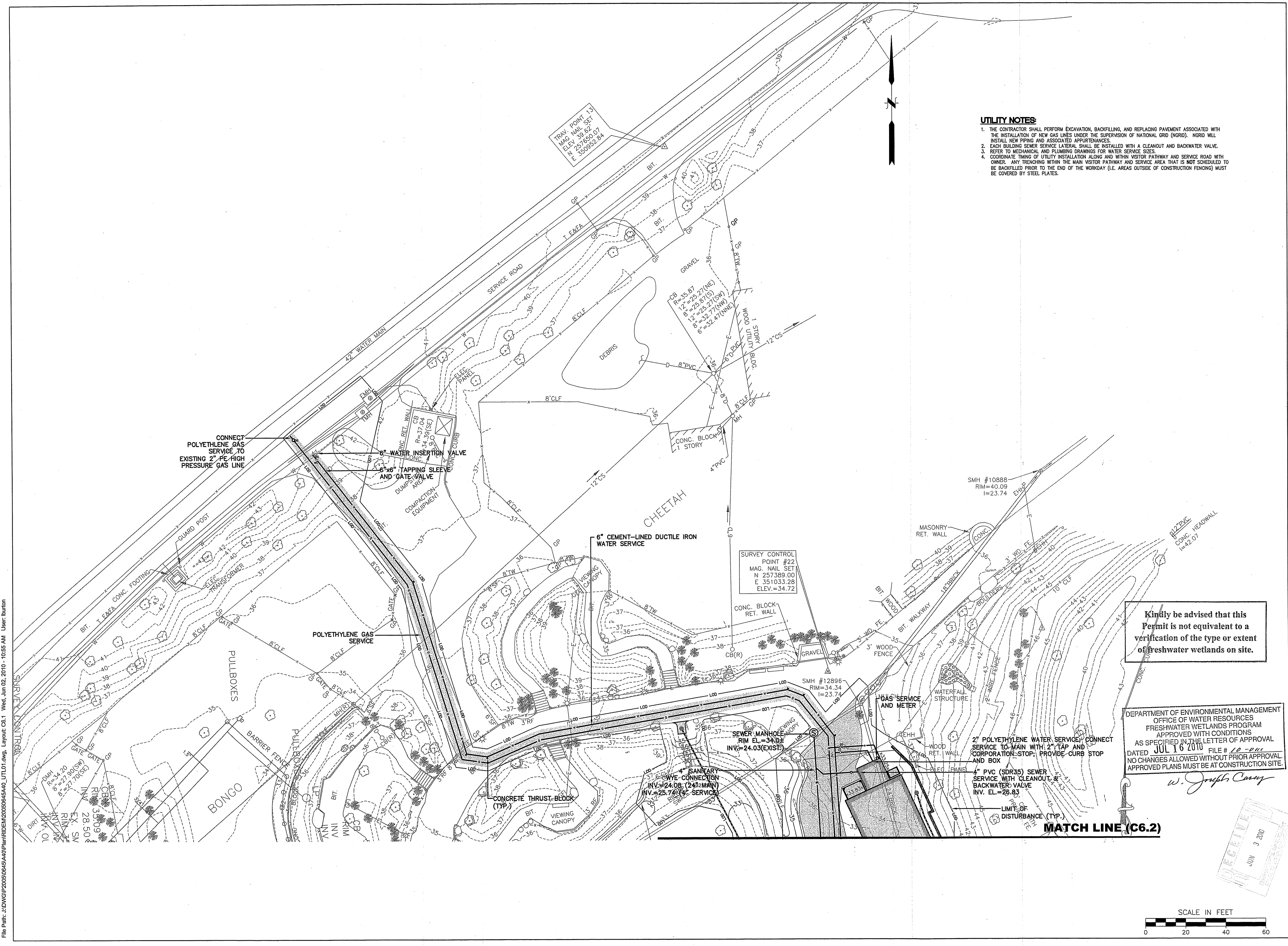
ROGER WILLIAMS PARK ZOO  
1000 ELMWOOD AVENUE  
PROVIDENCE, RI 02907

ISSUED FOR	DATE
1. 06/07/2010	ISSUED FOR PERMITTING

DATE	NO.	DESCRIPTION
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NOT FOR CONSTRUCTION

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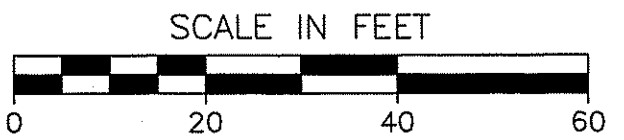
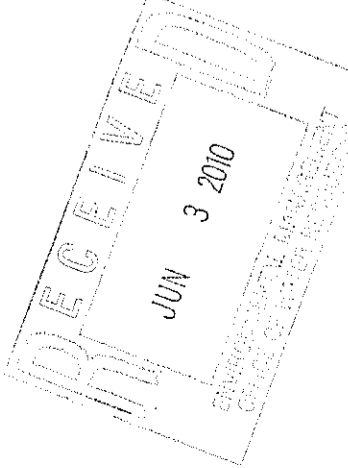


- UTILITY NOTES:**
1. THE CONTRACTOR SHALL PERFORM EXCAVATION, BACKFILLING, AND REPLACING PAVEMENT ASSOCIATED WITH THE INSTALLATION OF NEW GAS LINES UNDER THE SUPERVISION OF NATIONAL GRID (NGRID). NGRID WILL INSTALL NEW PIPING AND ASSOCIATED APPURTENANCES.
  2. EACH BUILDING SEWER SERVICE LATERAL SHALL BE INSTALLED WITH A CLEANOUT AND BACKWATER VALVE.
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*W. Joseph Conroy*



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 PROVIDENCE, RI 02907

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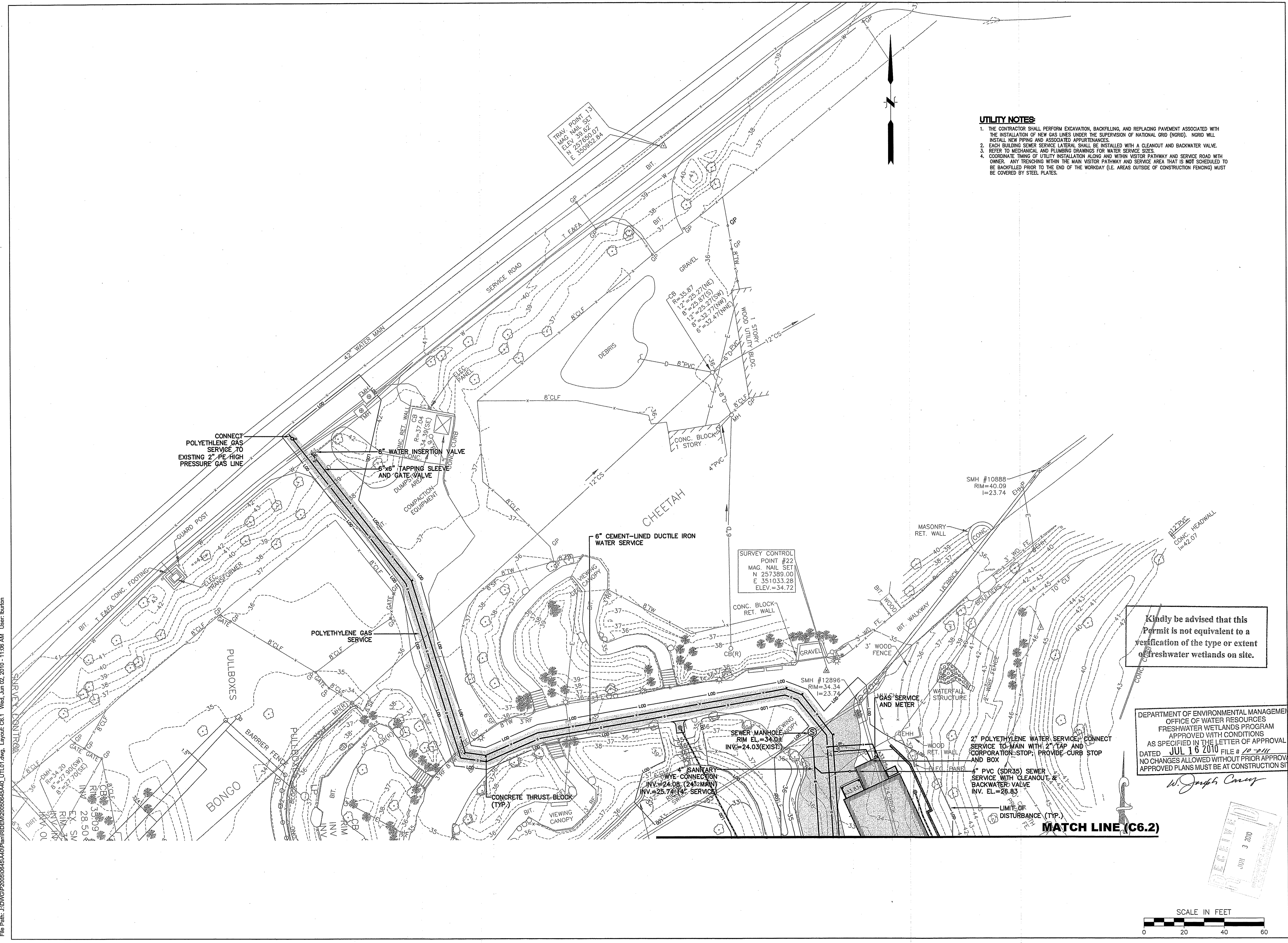
*W. Joseph Conroy*

SHAWN M. MARTIN  
 REGISTERED PROFESSIONAL ENGINEER (CIVIL)  
 No. 7487

**C 6.1**

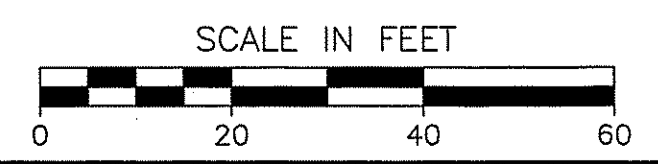
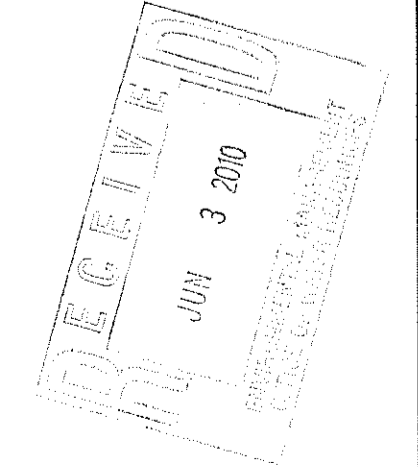
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MATCH LINE (C6.1)

MATCH LINE (C6.2)

SURVEY CONTROL POINT #12206  
MAG. NAIL SET  
N 256820.50  
E 351333.98  
ELEV.=32.28



WOOD + TODD & Co., Ltd.  
Architects and Engineers  
14 BROADWAY, PROVIDENCE, RI 02907  
PHONE 402-761-8400 FAX 402-761-7017

REVISIONS	
MARK	DATE

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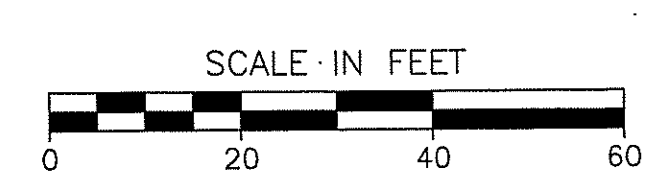
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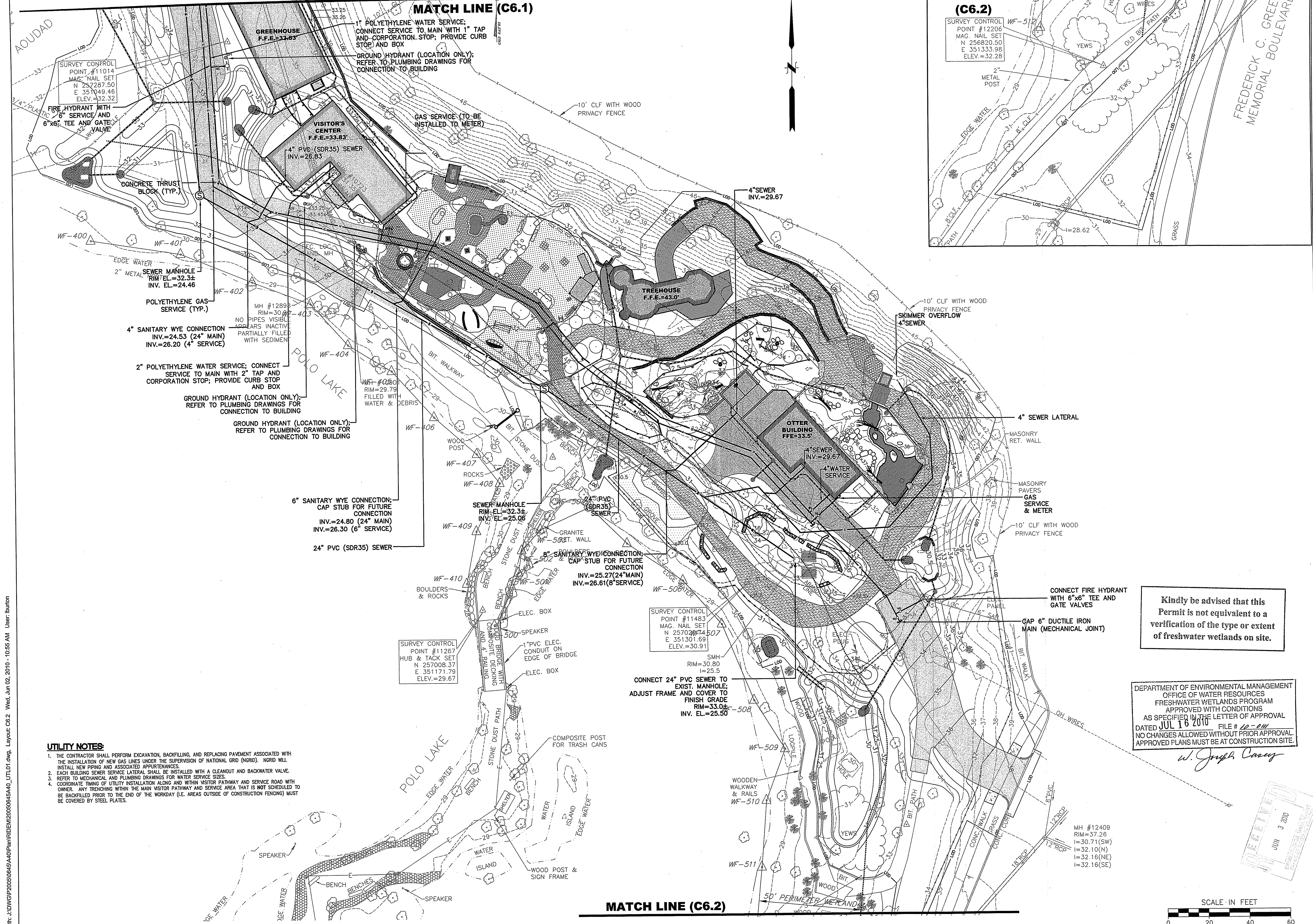
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SHAWN M. MARTIN  
No. 7487  
REGISTERED PROFESSIONAL ENGINEER (CIVIL)



MATCH LINE (C6.2)

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  4. COORDINATE TIMING OF UTILITY INSTALLATION ALONG AND WITHIN VISITOR PATHWAY AND SERVICE ROAD WITH OWNER. ANY TRENCHING WITHIN THE MAIN VISITOR PATHWAY AND SERVICE AREA THAT IS NOT SCHEDULED TO BE BACKFILLED PRIOR TO THE END OF THE WORKDAY (I.E. AREAS OUTSIDE OF CONSTRUCTION FENCING) MUST BE COVERED BY STEEL PLATES.

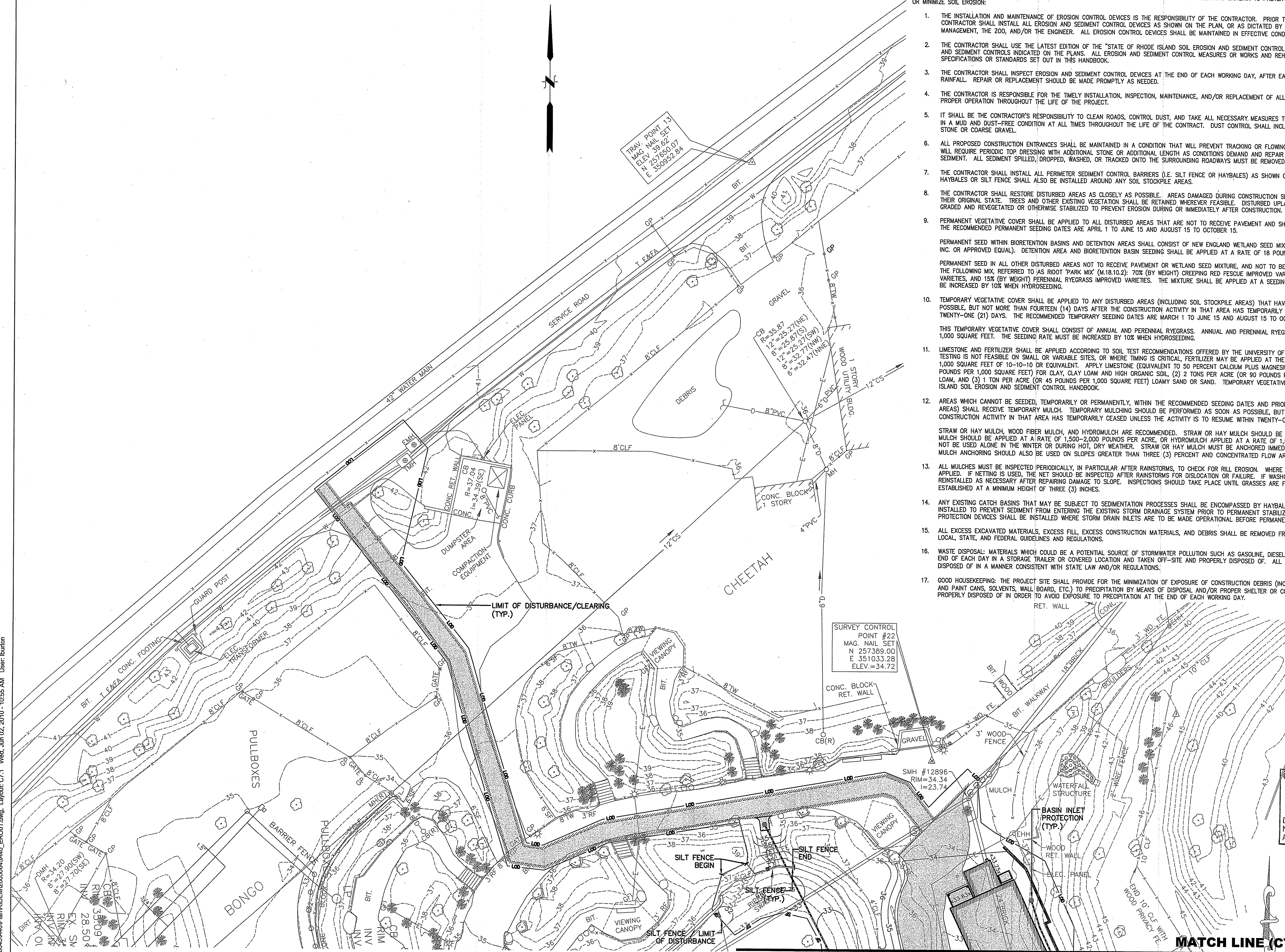


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**EROSION CONTROL NOTES**

DISTURBANCE OF SOIL SURFACES IS REGULATED BY STATE LAW. ALL WORK SHALL COMPLY WITH THE FOLLOWING CRITERIA TO PREVENT OR MINIMIZE SOIL EROSION:

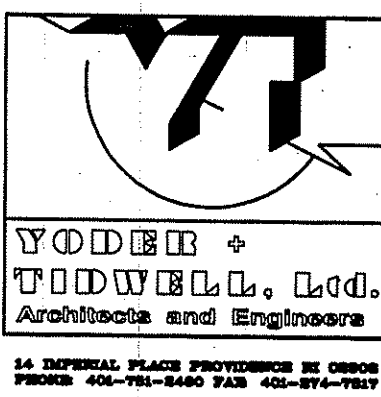
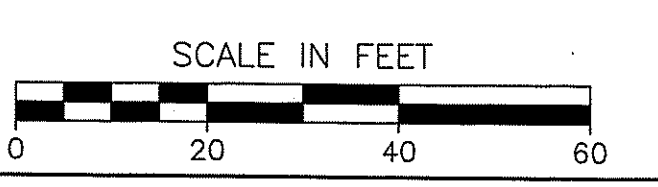
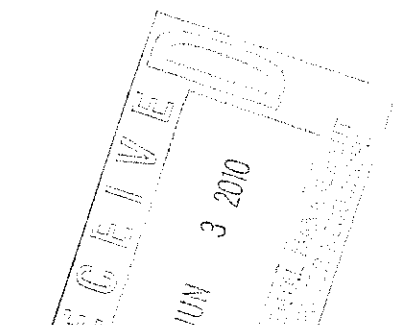
1. THE INSTALLATION AND MAINTENANCE OF EROSION CONTROL DEVICES IS THE RESPONSIBILITY OF THE CONTRACTOR. PRIOR TO THE COMMENCEMENT OF CONSTRUCTION ACTIVITIES, THE CONTRACTOR SHALL INSTALL ALL EROSION AND SEDIMENT CONTROL DEVICES AS SHOWN ON THE PLAN, OR AS DICTATED BY THE RHODE ISLAND DEPARTMENT OF ENVIRONMENTAL MANAGEMENT, THE ZOO, AND/OR THE ENGINEER. ALL EROSION CONTROL DEVICES SHALL BE MAINTAINED IN EFFECTIVE CONDITION DURING CONSTRUCTION.
2. THE CONTRACTOR SHALL USE THE LATEST EDITION OF THE "STATE OF RHODE ISLAND SOIL EROSION AND SEDIMENT CONTROL HANDBOOK" AS A GUIDE IN CONSTRUCTING THE EROSION AND SEDIMENT CONTROLS INDICATED ON THE PLANS. ALL EROSION AND SEDIMENT CONTROL MEASURES OR WORKS AND REHABILITATION MEASURES MUST CONFORM TO OR EXCEED THE SPECIFICATIONS OR STANDARDS SET OUT IN THIS HANDBOOK.
3. THE CONTRACTOR SHALL INSPECT EROSION AND SEDIMENT CONTROL DEVICES AT THE END OF EACH WORKING DAY, AFTER EACH STORM EVENT, AND AT LEAST DAILY DURING PROLONGED RAINFALL. REPAIR OR REPLACEMENT SHOULD BE MADE PROMPTLY AS NEEDED.
4. THE CONTRACTOR IS RESPONSIBLE FOR THE TIMELY INSTALLATION, INSPECTION, MAINTENANCE, AND/OR REPLACEMENT OF ALL TEMPORARY EROSION CONTROL DEVICES TO ENSURE PROPER OPERATION THROUGHOUT THE LIFE OF THE PROJECT.
5. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO CLEAN ROADS, CONTROL DUST, AND TAKE ALL NECESSARY MEASURES TO ENSURE THAT THE SITE AND ALL ROADS BE MAINTAINED IN A MUD AND DUST-FREE CONDITION AT ALL TIMES THROUGHOUT THE LIFE OF THE CONTRACT. DUST CONTROL SHALL INCLUDE, BUT IS NOT LIMITED TO, WATER AND/OR CRUSHED STONE OR COARSE GRAVEL.
6. ALL PROPOSED CONSTRUCTION ENTRANCES SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO THE SURROUNDING ROADWAYS. THIS WILL REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE OR ADDITIONAL LENGTH AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DROPPED, WASHED, OR TRACKED ONTO THE SURROUNDING ROADWAYS MUST BE REMOVED IMMEDIATELY.
7. THE CONTRACTOR SHALL INSTALL ALL PERIMETER SEDIMENT CONTROL BARRIERS (I.E. SILT FENCE OR HAYBALES) AS SHOWN ON THE SITE DEVELOPMENT PLANS. A ROW OF STAKED HAYBALES OR SILT FENCE SHALL ALSO BE INSTALLED AROUND ANY SOIL STOCKPILE AREAS.
8. THE CONTRACTOR SHALL RESTORE DISTURBED AREAS AS CLOSELY AS POSSIBLE. AREAS DAMAGED DURING CONSTRUCTION SHALL BE RESODED, RESEED, OR OTHERWISE RESTORED TO THEIR ORIGINAL STATE. TREES AND OTHER EXISTING VEGETATION SHALL BE RETAINED WHEREVER FEASIBLE. DISTURBED UPLANDS ADJACENT TO THE CONSTRUCTION SITE SHALL BE GRADED AND REVEGETATED OR OTHERWISE STABILIZED TO PREVENT EROSION DURING OR IMMEDIATELY AFTER CONSTRUCTION.
9. PERMANENT VEGETATIVE COVER SHALL BE APPLIED TO ALL DISTURBED AREAS THAT ARE NOT TO RECEIVE PAVEMENT AND SHALL REMAIN UNIMPACTED DURING PHASE 2 CONSTRUCTION. THE RECOMMENDED PERMANENT SEEDING DATES ARE APRIL 1 TO JUNE 15 AND AUGUST 15 TO OCTOBER 15.  
 PERMANENT SEED WITHIN BIORETENTION BASINS AND DETENTION AREAS SHALL CONSIST OF NEW ENGLAND WETLAND SEED MIX (WETLAND SEED MIX PER NEW ENGLAND WETLAND PLANTS, INC. OR APPROVED EQUAL). DETENTION AREA AND BIORETENTION BASIN SEEDING SHALL BE APPLIED AT A RATE OF 18 POUNDS PER ACRE.  
 PERMANENT SEED IN ALL OTHER DISTURBED AREAS NOT TO RECEIVE PAVEMENT OR WETLAND SEED MIXTURE, AND NOT TO BE IMPACTED DURING PHASE 2 CONSTRUCTION, SHALL RECEIVE THE FOLLOWING MIX, REFERRED TO AS RIDOT "PARK MIX" (M.18.10.2): 70% (BY WEIGHT) CREEPING RED FESCUE IMPROVED VARIETIES, 15% (BY WEIGHT) KENTUCKY BLUEGRASS IMPROVED VARIETIES, AND 15% (BY WEIGHT) PERENNIAL RYEGRASS IMPROVED VARIETIES. THE MIXTURE SHALL BE APPLIED AT A SEEDING RATE OF 150 LBS. PER ACRE. THE SEEDING RATE MUST BE INCREASED BY 10% WHEN HYDROSEEDING.  
 THIS TEMPORARY VEGETATIVE COVER SHALL CONSIST OF ANNUAL AND PERENNIAL RYEGRASS. ANNUAL AND PERENNIAL RYEGRASS SHALL BE PLANTED AT A RATE OF 1.75 POUNDS PER 1,000 SQUARE FEET. THE SEEDING RATE MUST BE INCREASED BY 10% WHEN HYDROSEEDING.
10. TEMPORARY VEGETATIVE COVER SHALL BE APPLIED TO ANY DISTURBED AREAS (INCLUDING SOIL STOCKPILE AREAS) THAT HAVE NOT YET REACHED FINISHED GRADE AS SOON AS POSSIBLE, BUT NOT MORE THAN FOURTEEN (14) DAYS AFTER THE CONSTRUCTION ACTIVITY IN THAT AREA HAS TEMPORARILY CEASED, UNLESS THE ACTIVITY IS TO RESUME WITHIN TWENTY-ONE (21) DAYS. THE RECOMMENDED PERMANENT SEEDING DATES ARE MARCH 1 TO JUNE 15 AND AUGUST 15 TO OCTOBER 1.  
 PERMANENT SEED IN ALL OTHER DISTURBED AREAS NOT TO RECEIVE PAVEMENT OR WETLAND SEED MIXTURE, AND NOT TO BE IMPACTED DURING PHASE 2 CONSTRUCTION, SHALL RECEIVE THE FOLLOWING MIX, REFERRED TO AS RIDOT "PARK MIX" (M.18.10.2): 70% (BY WEIGHT) CREEPING RED FESCUE IMPROVED VARIETIES, 15% (BY WEIGHT) KENTUCKY BLUEGRASS IMPROVED VARIETIES, AND 15% (BY WEIGHT) PERENNIAL RYEGRASS IMPROVED VARIETIES. THE MIXTURE SHALL BE APPLIED AT A SEEDING RATE OF 150 LBS. PER ACRE. THE SEEDING RATE MUST BE INCREASED BY 10% WHEN HYDROSEEDING.
11. LIMESTONE AND FERTILIZER SHALL BE APPLIED ACCORDING TO SOIL TEST RECOMMENDATIONS OFFERED BY THE UNIVERSITY OF RHODE ISLAND SOIL TESTING LABORATORY. IF SOIL TESTING IS NOT FEASIBLE ON SMALL OR VARIABLE SITES, OR WHERE TIMING IS CRITICAL, FERTILIZER MAY BE APPLIED AT THE RATE OF 300 POUNDS PER ACRE OR 7.5 POUNDS PER 1,000 SQUARE FEET OF 10-10-10 OR EQUIVALENT. APPLY LIMESTONE (EQUIVALENT TO 50 PERCENT CALCIUM PLUS MAGNESIUM OXIDE) AS FOLLOWS: (1) 3 TONS PER ACRE (OR 135 POUNDS PER 1,000 SQUARE FEET) FOR CLAY, CLAY LOAM AND HIGH ORGANIC SOIL, (2) 2 TONS PER ACRE (OR 90 POUNDS PER 1,000 SQUARE FEET) FOR SANDY LOAM, LOAM, OR SILT LOAM, AND (3) 1 TON PER ACRE (OR 45 POUNDS PER 1,000 SQUARE FEET) LOAMY SAND OR SAND. TEMPORARY VEGETATIVE COVER SHALL BE INSTALLED AS OUTLINED IN THE RHODE ISLAND SOIL EROSION AND SEDIMENT CONTROL HANDBOOK.
12. AREAS WHICH CANNOT BE SEED, TEMPORARILY OR PERMANENTLY, WITHIN THE RECOMMENDED SEEDING DATES AND PRIOR TO WINTER SHUTDOWN (INCLUDING ANY SOIL STOCKPILE AREAS) SHALL RECEIVE TEMPORARY MULCH. TEMPORARY MULCHING SHOULD BE PERFORMED AS SOON AS POSSIBLE, BUT NOT MORE THAN FOURTEEN (14) DAYS AFTER THE CONSTRUCTION ACTIVITY IN THAT AREA HAS TEMPORARILY CEASED UNLESS THE ACTIVITY IS TO RESUME WITHIN TWENTY-ONE (21) DAYS.  
 STRAW OR HAY MULCH, AND HYDROMULCH ARE RECOMMENDED. STRAW OR HAY MULCH SHOULD BE APPLIED AT A RATE OF 2 TONS PER ACRE. WOOD FIBER MULCH SHOULD BE APPLIED AT A RATE OF 1,500-2,000 POUNDS PER ACRE, OR HYDROMULCH APPLIED AT A RATE OF 1,500 POUNDS PER ACRE. WOOD FIBER MULCH SHOULD NOT BE USED ALONE IN THE WINTER OR DURING HOT, DRY WEATHER. STRAW OR HAY MULCH MUST BE ANCHORED IMMEDIATELY AFTER SPREADING TO PREVENT WINDBLOWING. MULCH ANCHORING SHOULD ALSO BE USED ON SLOPES GREATER THAN THREE (3) PERCENT AND CONCENTRATED FLOW AREAS SUCH AS DIVERSION AND WATERWAY CHANNELS.
13. ALL MULCHES MUST BE INSPECTED PERIODICALLY, IN PARTICULAR AFTER RAINSTORMS, TO CHECK FOR RILL EROSION. WHERE EROSION IS OBSERVED, ADDITIONAL MULCH MUST BE APPLIED. IF NETTING IS USED, THE NET SHOULD BE INSPECTED AFTER RAINSTORMS FOR DISLOCATION OR FAILURE. IF WASHOUTS OR BREAKAGE OCCUR, THE NET MUST BE REINSTALLED AS NECESSARY AFTER REPAIRING DAMAGE TO SLOPE. INSPECTIONS SHOULD TAKE PLACE UNTIL GRASSES ARE FIRMLY ESTABLISHED. GRASS IS CONSIDERED TO BE FIRMLY ESTABLISHED AT A MINIMUM HEIGHT OF THREE (3) INCHES.
14. ANY EXISTING CATCH BASINS THAT MAY BE SUBJECT TO SEDIMENTATION PROCESSES SHALL BE ENCOMPASSED BY HAYBALE INLET PROTECTION AND/OR SILT SACKS INSTALLED TO PREVENT SEDIMENT FROM ENTERING THE EXISTING STORM DRAINAGE SYSTEM PRIOR TO PERMANENT STABILIZATION OF THE DISTURBED SITE. THE PROPER INLET PROTECTION DEVICES SHALL BE INSTALLED WHERE STORM DRAIN INLETS ARE TO BE MADE OPERATIONAL BEFORE PERMANENT STABILIZATION OF ANY DISTURBED DRAINAGE AREA.
15. ALL EXCESS EXCAVATED MATERIALS, EXCESS FILL, EXCESS CONSTRUCTION MATERIALS, AND DEBRIS SHALL BE REMOVED FROM THE SITE AND DISPOSED OF IN ACCORDANCE WITH LOCAL, STATE, AND FEDERAL GUIDELINES AND REGULATIONS.
16. WASTE DISPOSAL: MATERIALS WHICH COULD BE A POTENTIAL SOURCE OF STORMWATER POLLUTION SUCH AS GASOLINE, DIESEL FUEL, HYDRAULIC OIL, ETC., SHALL BE STORED AT THE END OF EACH DAY IN A STORAGE TRAILER OR COVERED LOCATION AND TAKEN OFF-SITE AND PROPERLY DISPOSED OF. ALL TYPES OF WASTE GENERATED AT THIS SITE SHALL BE DISPOSED OF IN A MANNER CONSISTENT WITH STATE LAW AND/OR REGULATIONS.
17. GOOD HOUSEKEEPING: THE PROJECT SITE SHALL PROVIDE FOR THE MINIMIZATION OF EXPOSURE OF CONSTRUCTION DEBRIS (INCLUDING, BUT NOT LIMITED TO, INSULATION, WIRING, PAINTS AND PAINT CANS, SOLVENTS, WALL BOARD, ETC.) TO PRECIPITATION BY MEANS OF DISPOSAL AND/OR PROPER SHELTER OR COVER. IN ADDITION, CONSTRUCTION WASTE MUST BE PROPERLY DISPOSED OF IN ORDER TO AVOID EXPOSURE TO PRECIPITATION AT THE END OF EACH WORKING DAY.



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 JUL 16 2010 FILE # 10-211  
 NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL.  
 APPROVED PLANS MUST BE AT CONSTRUCTION SITE.

*W. Joseph Conroy*



REVISIONS	
MARK	DATE
▲	
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**CHILDREN'S ZOO**  
 ROGER WILLIAMS PARK ZOO  
 1000 ELMWOOD AVENUE  
 PROVIDENCE, RI 02907

DATE	ISSUED FOR
09/02/2010	ISSUED FOR PERMITTING

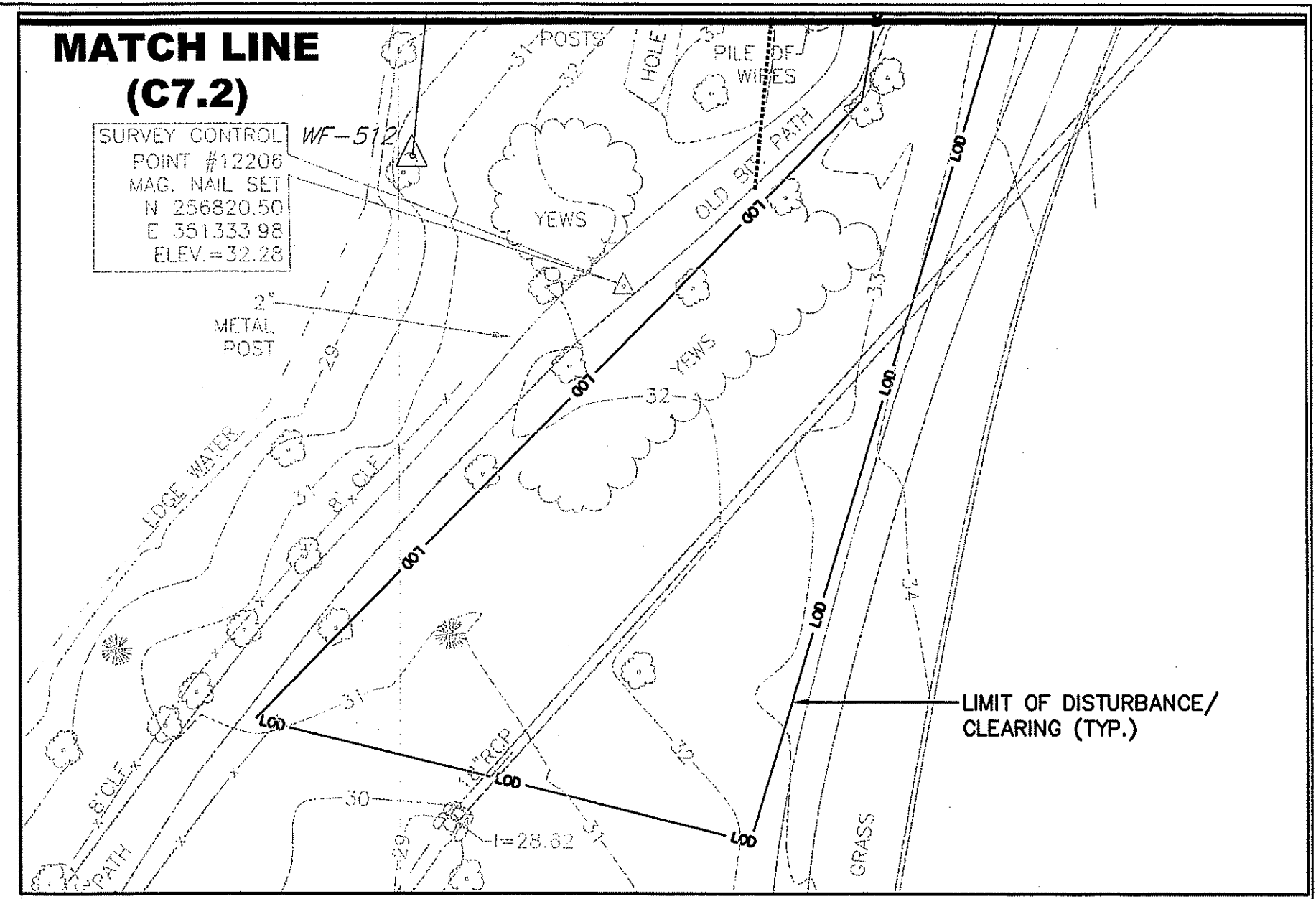
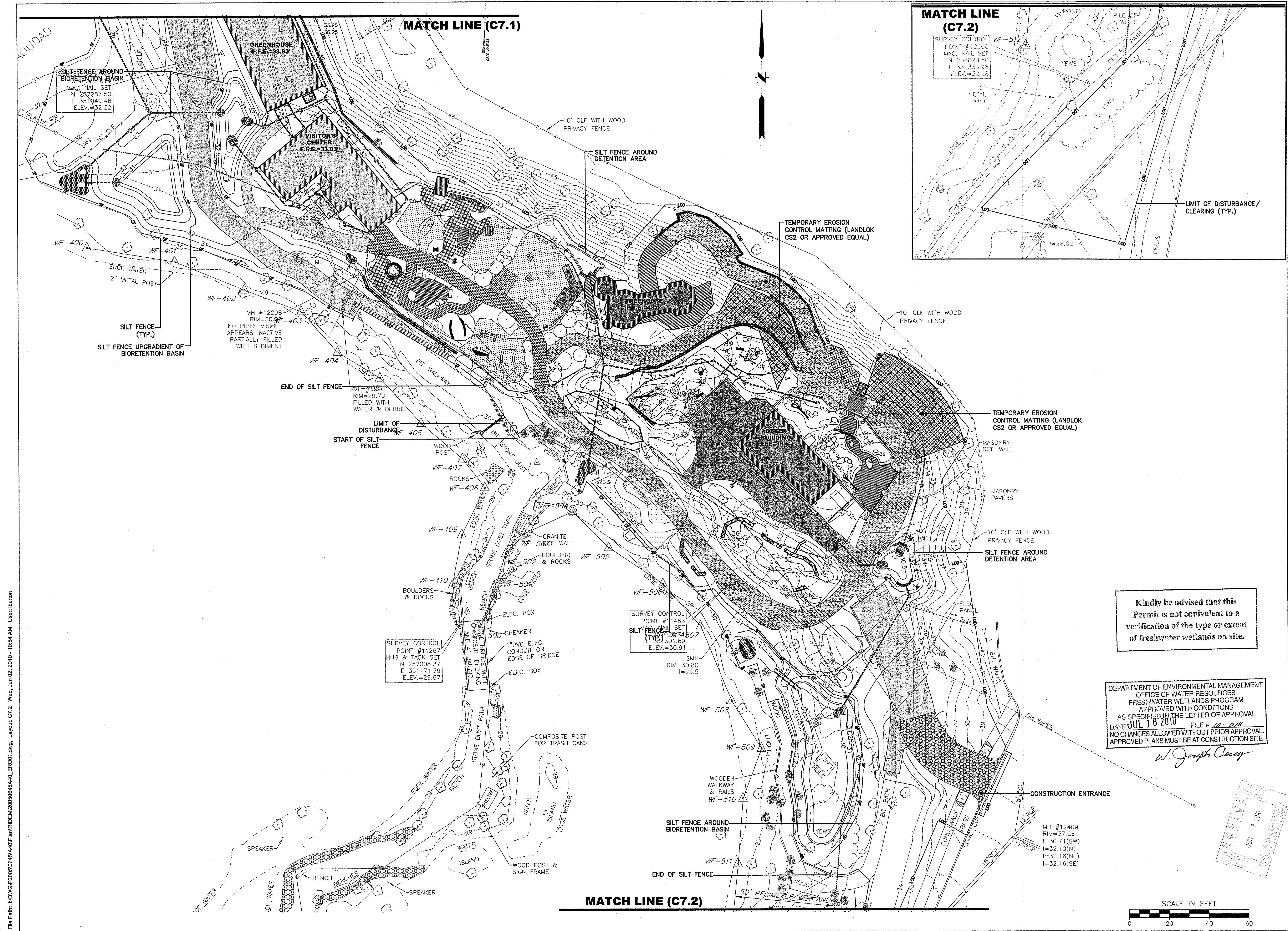
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 DRAWN BY: JAJ/GR CHECKED BY: JOB # 2807

NO. 7487  
 REGISTERED PROFESSIONAL ENGINEER (CIVIL)

**C 7.1**

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**WOODS**  
**TODD & Co., Ltd.**  
 Architects and Engineers  
 14 GENERAL PLACE PROVISIONS IN GREEN  
 PROVIDENCE 02907-2400 FAX 02907-7017

REVISIONS	
MARK	DATE

# CHILDREN'S ZOO

ROGER WILLIAMS PARK ZOO  
 1000 ELMWOOD AVENUE  
 PROVIDENCE, RI 02907

ISSUE NO.	DATE	ISSUED FOR PERMITTING

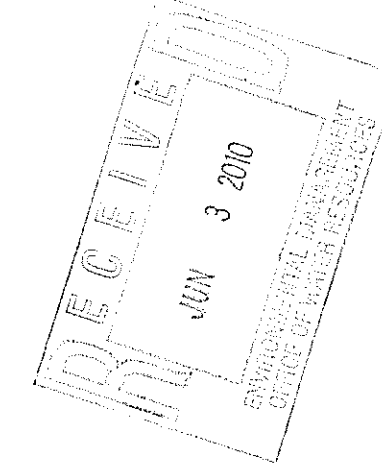
Kindly be advised that this Permit is not equivalent to a verification of the type or extent of freshwater wetlands on site.

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
 OFFICE OF WATER RESOURCES  
 FRESHWATER WETLANDS PROGRAM  
 APPROVED WITH CONDITIONS  
 AS SPECIFIED IN THE LETTER OF APPROVAL  
 DATE: JUL 16 2010 FILE # 12-011  
 NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL.  
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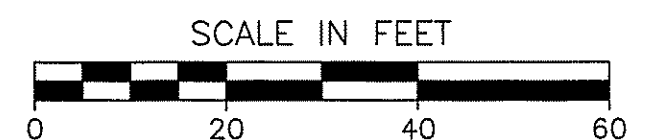
*W. Joseph Conroy*

DRAWING TITLE	SCALE
SOIL EROSION AND SEDIMENT CONTROL PLAN	AS NOTED

NOT FOR CONSTRUCTION  
**SHAWN M. MARTIN**  
 No. 7487  
 REGISTERED PROFESSIONAL ENGINEER (CIVIL)



MATCH LINE (C7.2)



REVISIONS	
MARK	DATE

**CHILDREN'S ZOO**  
 ROGER WILLIAMS PARK ZOO  
 1000 ELMWOOD AVENUE  
 PROVIDENCE, RI 02907

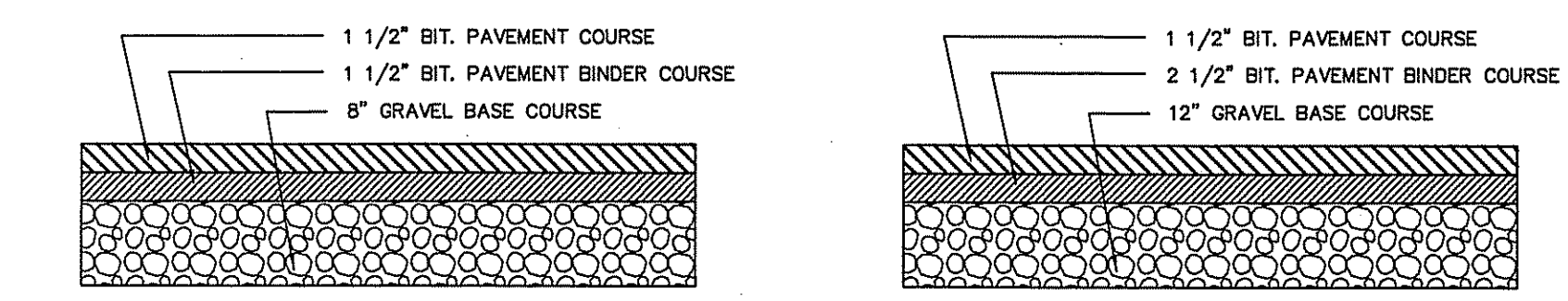
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DETAILS

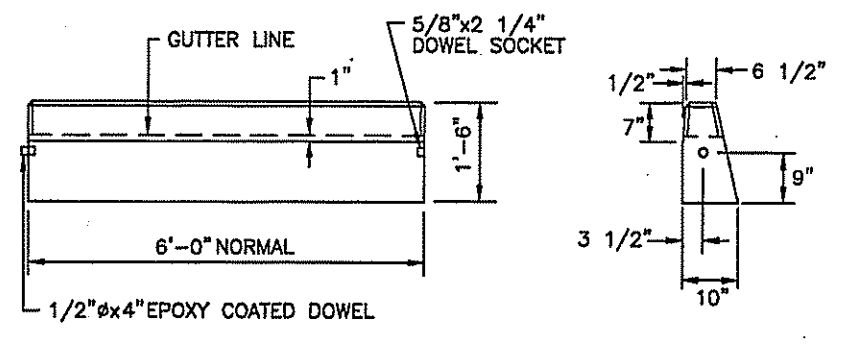
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DRAWN BY: JJ/GR    CHECKED BY: JOB # 2807  
 DPT

**SHAWN M. MARTIN**  
 No. 7487  
 REGISTERED PROFESSIONAL ENGINEER (CIVIL)



**TYPICAL BITUMINOUS CONCRETE WALKWAY AND DRIVEWAY CROSS-SECTIONS**  
 NOT TO SCALE

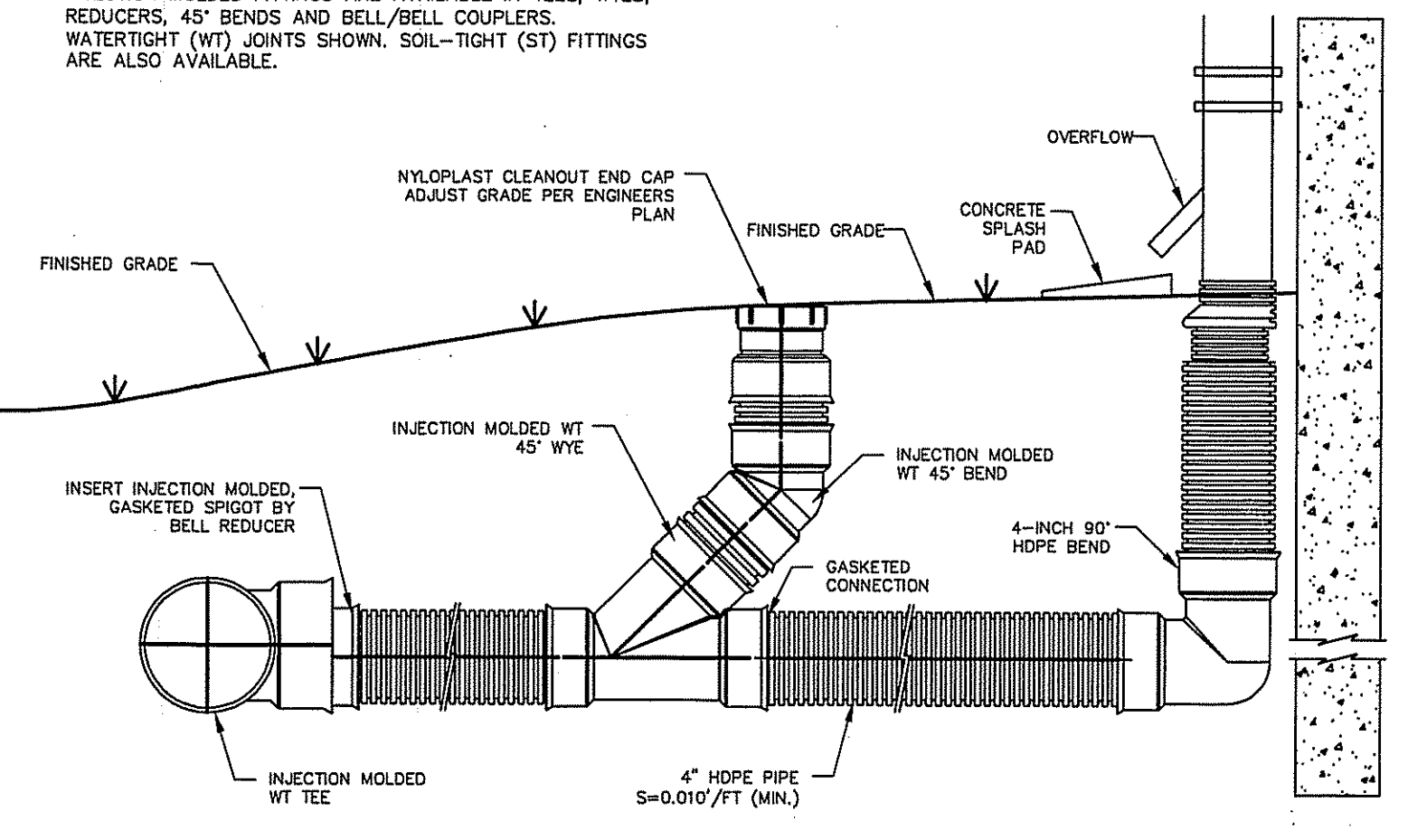


CIRCULAR CURB

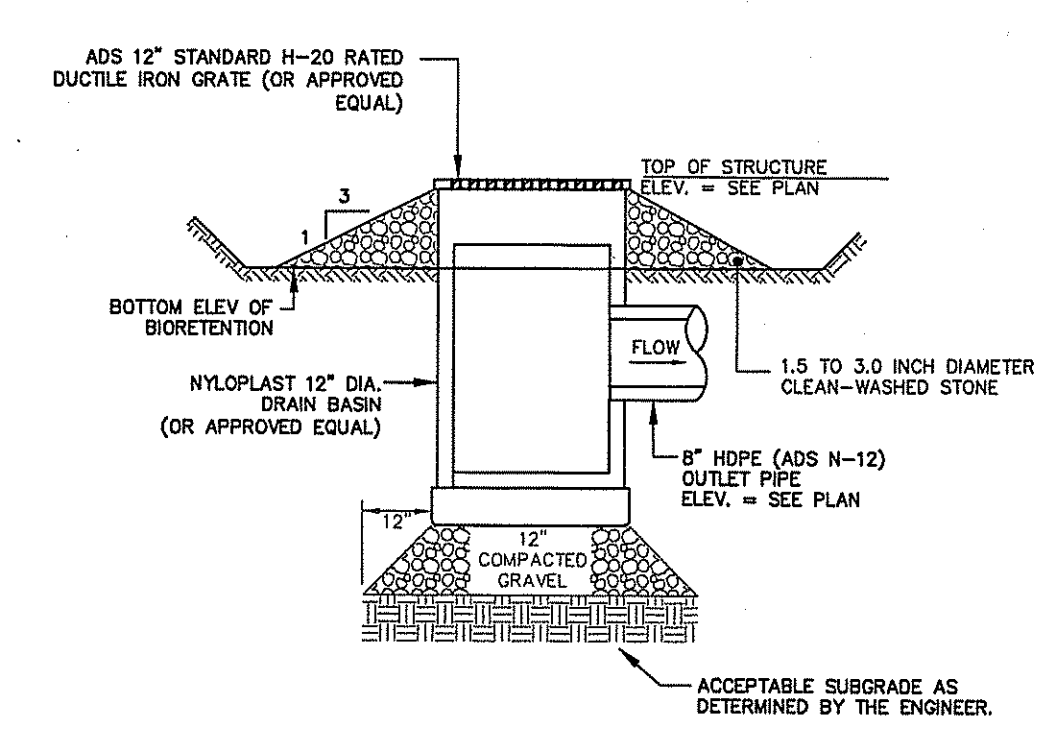
- NOTES:  
 1. SHALL BE IN ACCORDANCE WITH SECTION 906 OF THE R.I. STANDARD SPECIFICATIONS.  
 2. MINIMUM LENGTH OF STRAIGHT OR CIRCULAR FILLER PIECES TO BE 3'-0".  
 3. EXPOSED SURFACES TO HAVE A SMOOTH FLOAT FINISH.  
 4. CIRCULAR CURB IS REQUIRED ON CURVES WITH RADIUS OF 160'-0" OR LESS. STRAIGHT CURB TO BE USED ON CURVES OF MORE THAN 160'-0" RADIUS.  
 5. EXPOSED EDGES TO HAVE A 3/4" CHAMFER.

**PRECAST CONCRETE CURB**  
 (R.I. STD. 7.1.0)  
 NOT TO SCALE

- NOTE:  
 INJECTION MOLDED FITTINGS ARE AVAILABLE IN TEES, WYES, REDUCERS, 45° BENDS AND BELL/BELL COUPLERS. WATER-TIGHT (WT) JOINTS SHOWN. SOIL-TIGHT (ST) FITTINGS ARE ALSO AVAILABLE.

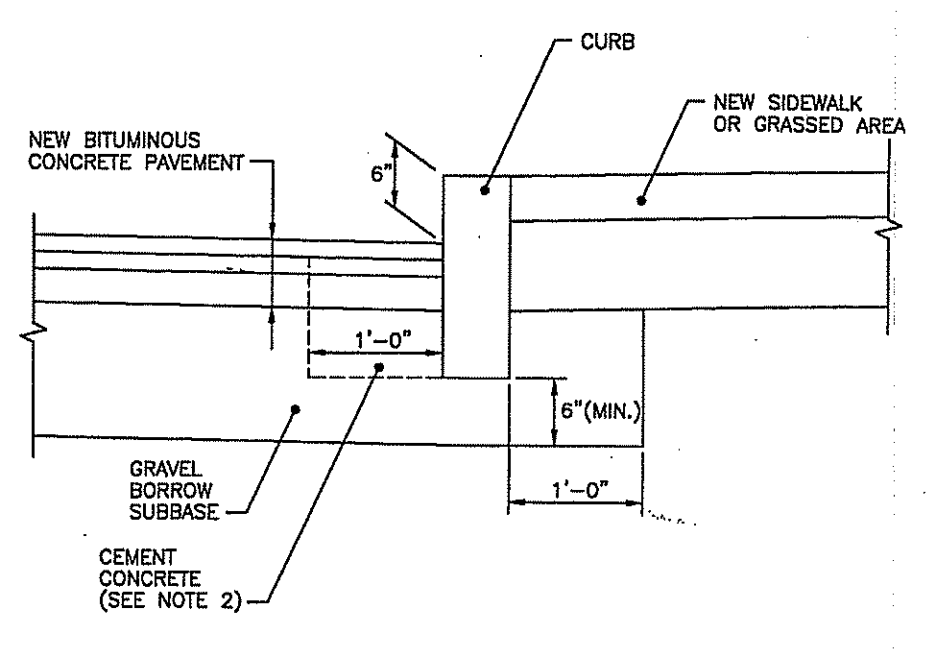
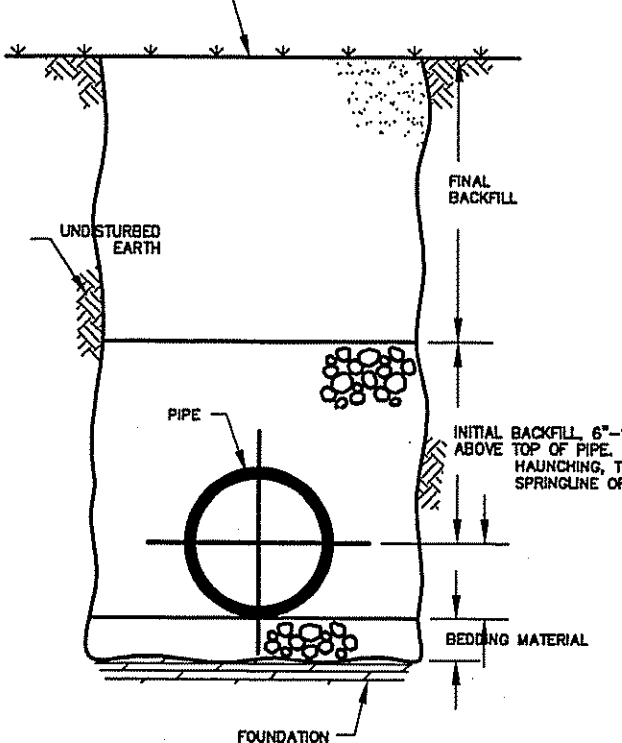


**BIORETENTION BASIN OUTLET STRUCTURE**  
 NOT TO SCALE

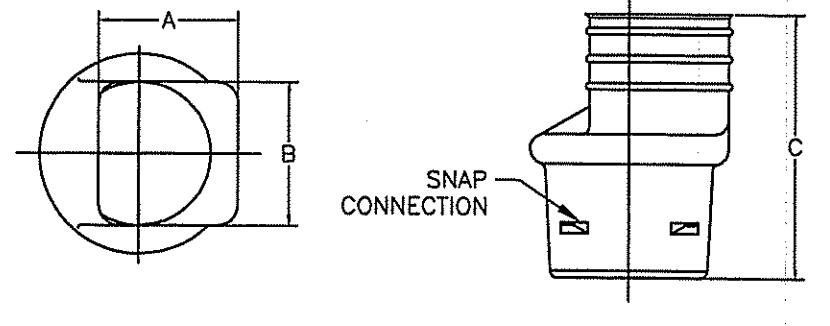


- NOTES:  
 1. FOUNDATIONS WHERE THE TRENCH BOTTOM IS UNSTABLE. THE CONTRACTOR SHALL EXCAVATE TO A DEPTH REQUIRED BY THE ENGINEER AND REPLACE WITH A FOUNDATION OF CLASS I OR II MATERIAL AS DEFINED IN ASTM D2321, "STANDARD PRACTICE FOR INSTALLATION OF THERMOPLASTIC PIPE FOR SEWERS AND OTHER GRAVITY-FLOW APPLICATIONS," LATEST EDITION, AS AN ALTERNATIVE AND AT THE DISCRETION OF THE ENGINEER. THE TRENCH BOTTOM MAY BE STABILIZED USING A WOVEN GEOTEXTILE FABRIC.  
 2. BEDDING: SUITABLE MATERIAL SHALL BE CLASS I OR II AND INSTALLED AS REQUIRED IN ASTM D2321, LATEST EDITION, UNLESS OTHERWISE SPECIFIED BY THE ENGINEER. MINIMUM BEDDING THICKNESS SHALL BE 4"(100mm) FOR 4"-24" (100-600mm) HDPE (ADS N-12) PIPE.  
 3. HAUNCHING AND INITIAL BACKFILL: SUITABLE MATERIAL SHALL BE CLASS I OR II AND INSTALLED AS REQUIRED IN ASTM D2321, LATEST EDITION.  
 4. UNLESS OTHERWISE SPECIFIED BY THE ENGINEER, MINIMUM TRENCH WIDTHS SHALL BE AS FOLLOWS:
- | NOMINAL # | MIN. RECOMMENDED TRENCH WIDTH, IN (mm) | IN (mm)  |
|-----------|--|----------|
| 4 (100)   | 21 (530)                               | 23 (580) |
| 6 (150)   | 23 (580)                               | 25 (630) |
| 8 (200)   | 25 (630)                               | 28 (710) |
| 10 (250)  | 28 (710)                               | 31 (790) |
| 12 (300)  | 31 (790)                               |          |

**STORM DRAIN TRENCH**  
 NOT TO SCALE

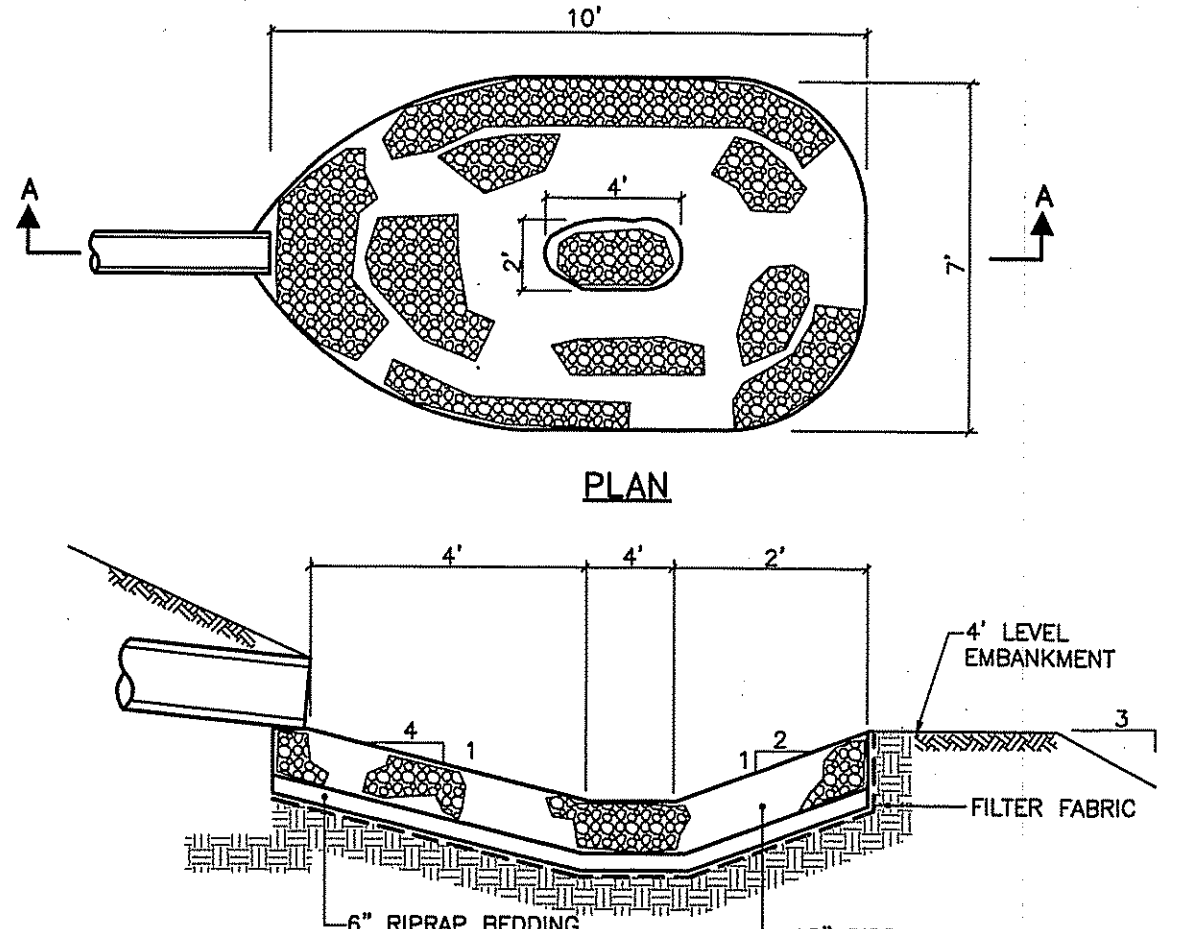


- NOTES:  
 1. SHALL BE IN ACCORDANCE WITH SECTION 906 OF THE R.I. STANDARD SPECIFICATIONS.  
 2. CEMENT CONCRETE SHALL BE USED ONLY WHEN THE CURB IS SET AFTER THE BASE AND/OR BINDER COURSES ARE IN PLACE. OTHERWISE THE CEMENT CONCRETE WILL BE ELIMINATED AND THE GRAVEL BROUGHT UP TO BOTTOM OF THE BASE COURSE.

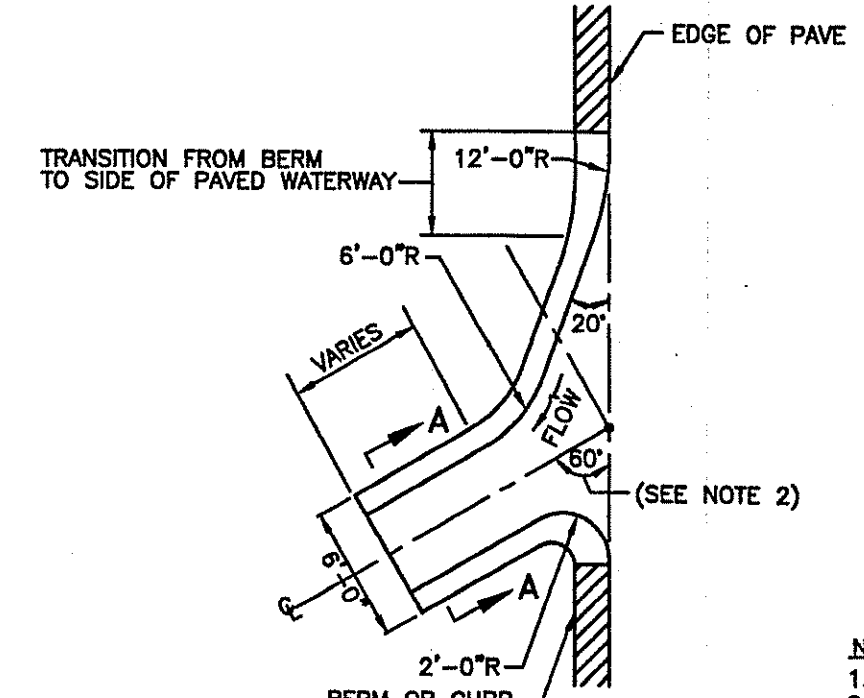


PART #	PIPE SIZE	A	B	C
0465AA	4"	3.25"	4.5"	5"

**DOWNSPOUT ADAPTER**  
 NOT TO SCALE

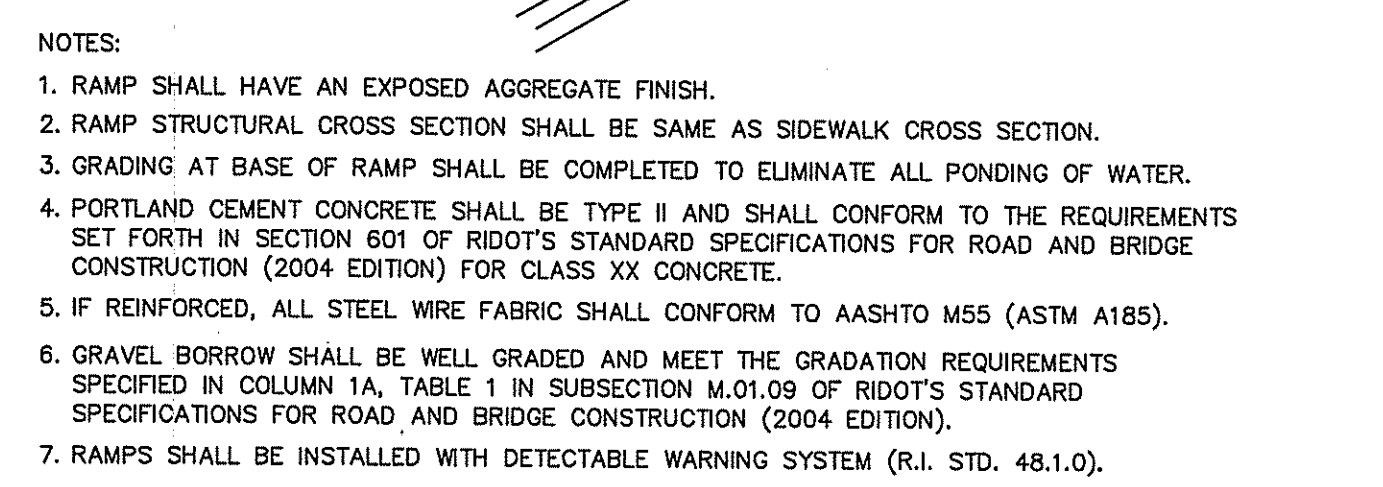


**BITUMINOUS WATERWAY (R.I. STD. 8.4.0)**  
 NOT TO SCALE

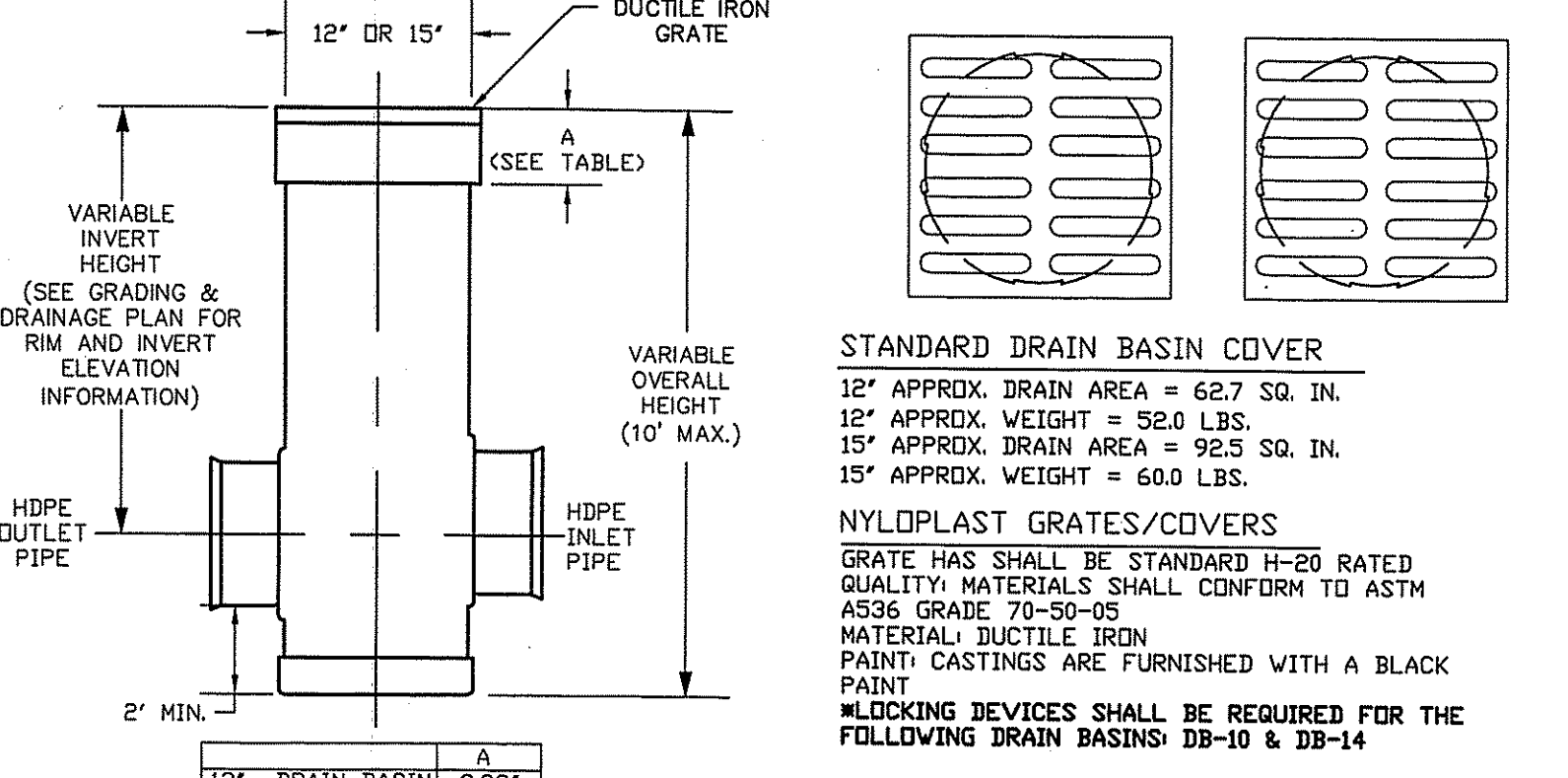


- NOTES:  
 1. SHALL BE IN ACCORDANCE WITH SECTION 711 OF THE R.I. STANDARD SPECIFICATIONS.  
 2. WHEN PAVED WATERWAY IS USED AT A LOW POINT THIS ANGLE SHALL BE 30°.

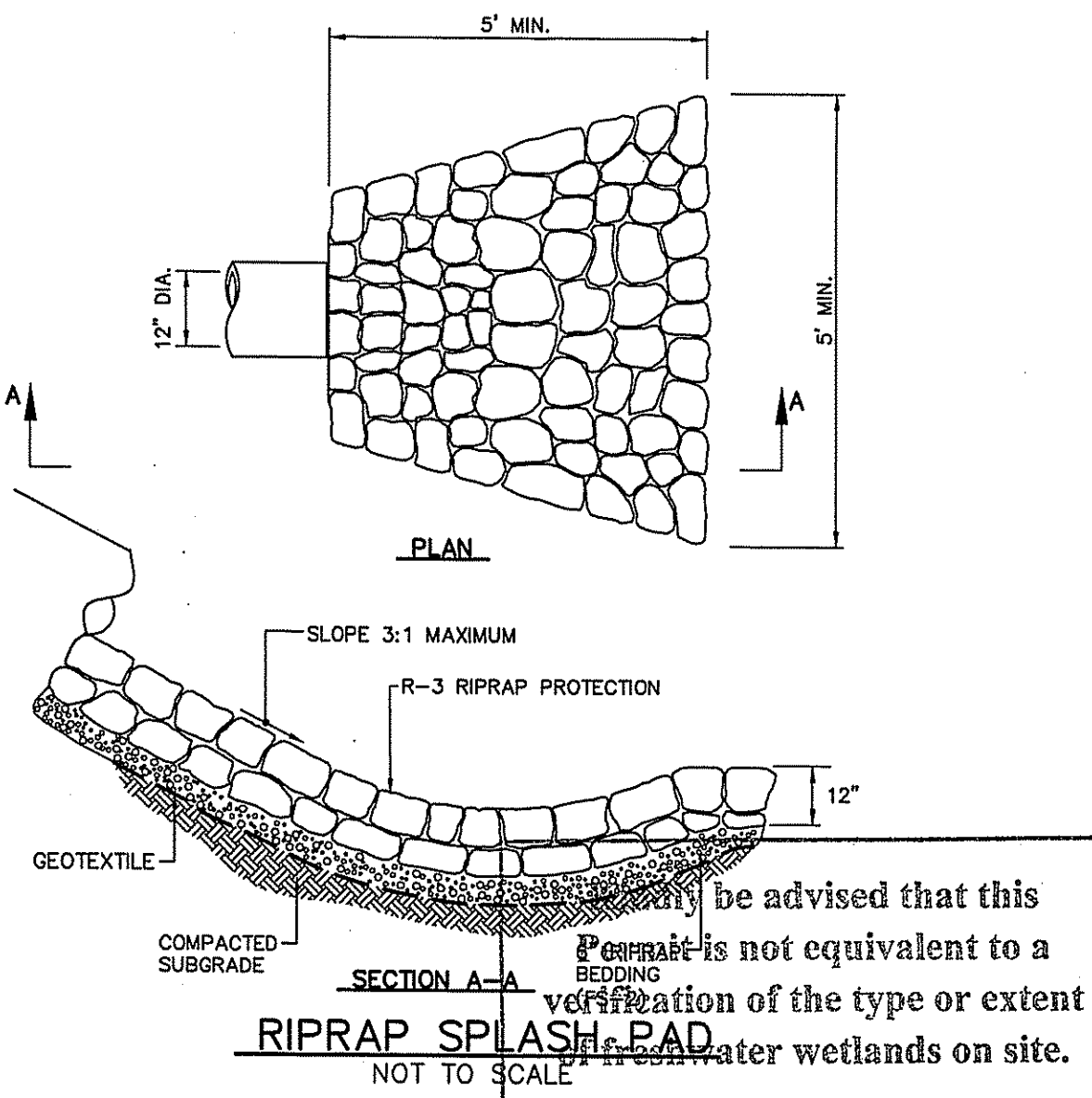
**CONCRETE WHEELCHAIR RAMP**  
 NOT TO SCALE



**CONCRETE WHEELCHAIR RAMP**  
 NOT TO SCALE



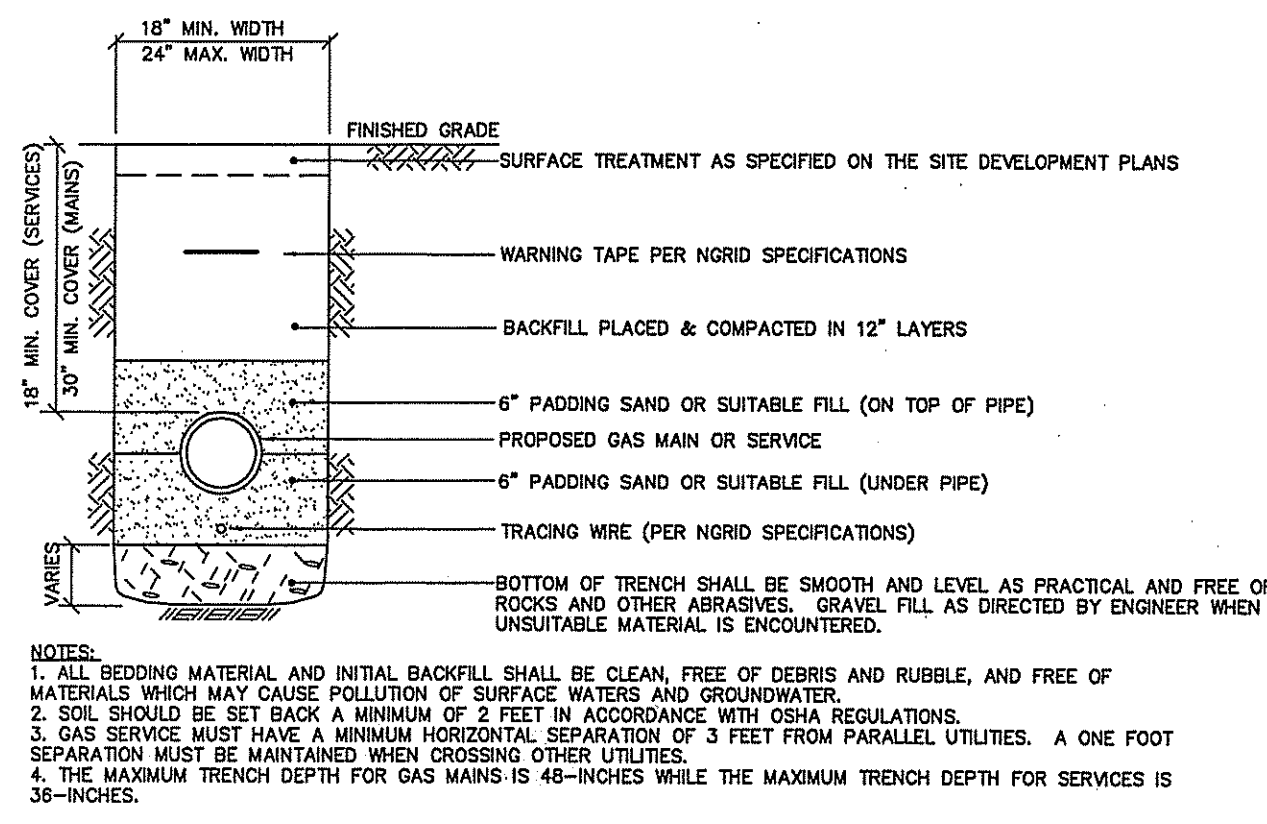
- STANDARD DRAIN BASIN COVER**  
 12" APPROX. DRAIN AREA = 62.7 SQ. IN.  
 12" APPROX. WEIGHT = 52.0 LBS.  
 15" APPROX. DRAIN AREA = 92.5 SQ. IN.  
 15" APPROX. WEIGHT = 60.0 LBS.
- NYLOPLAST GRATES/COVERS**  
 GRATE HAS SHALL BE STANDARD H-20 RATED QUALITY MATERIALS SHALL CONFORM TO ASTM A536 GRADE 70-50-05 MATERIAL DUCTILE IRON PAINT CASTINGS ARE FURNISHED WITH A BLACK PAINT. LOCKING DEVICES SHALL BE REQUIRED FOR THE FOLLOWING DRAIN BASINS: DB-10 & DB-14



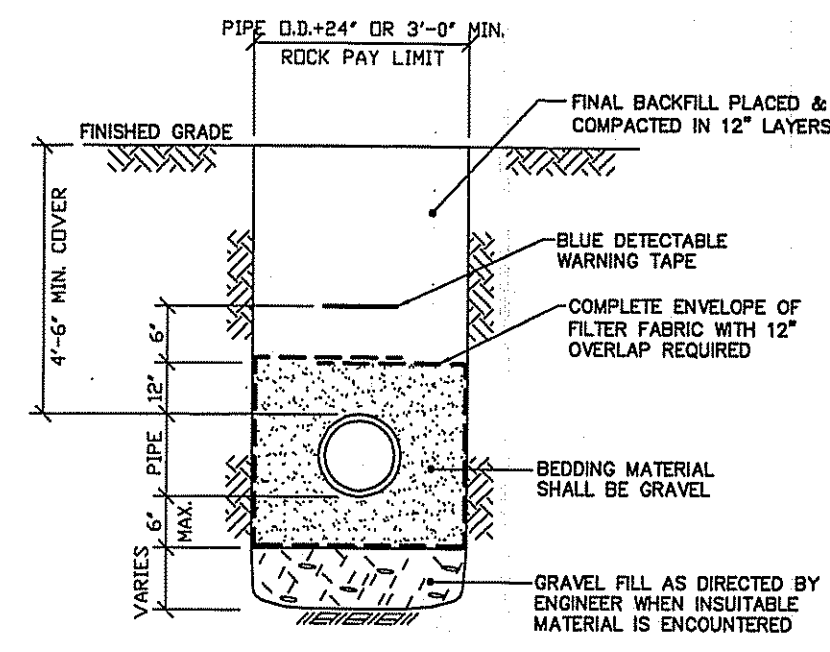
be advised that this verification of the type or extent of riprap splash pad is not equivalent to a verification of the type or extent of riprap splash pad on water wetlands on site.

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
 OFFICE OF WATER RESOURCES  
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 JUL 16 2010 FILE # 10-011  
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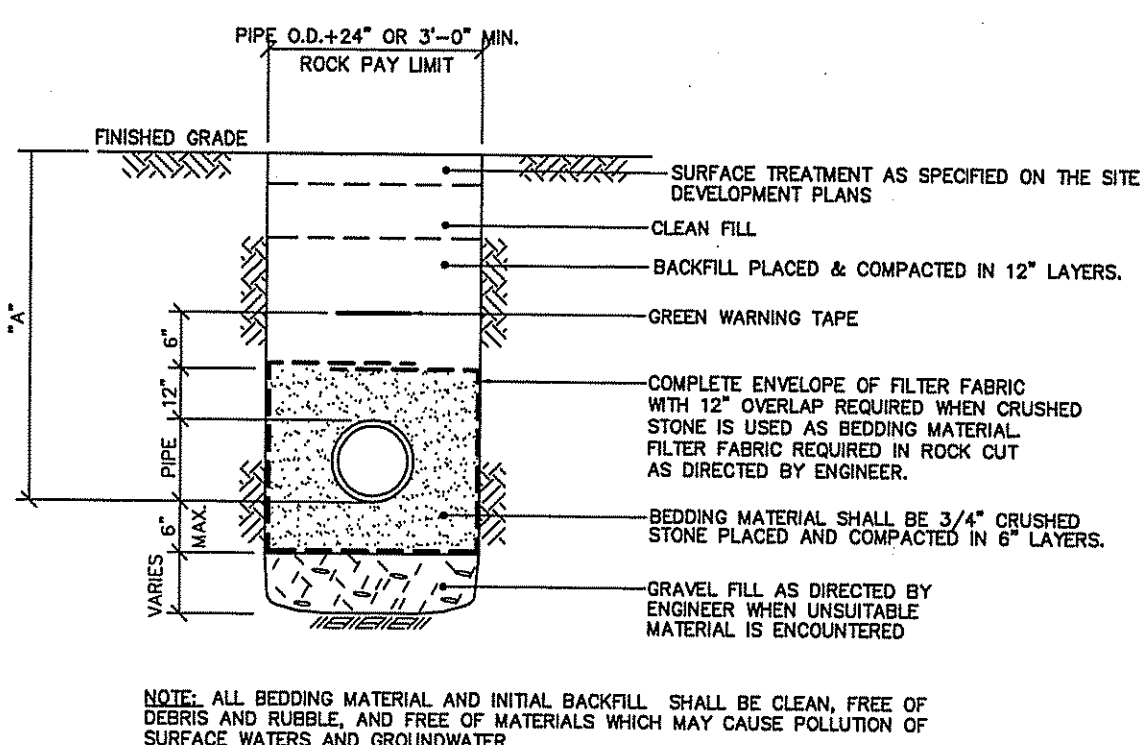
W. Joseph Conroy



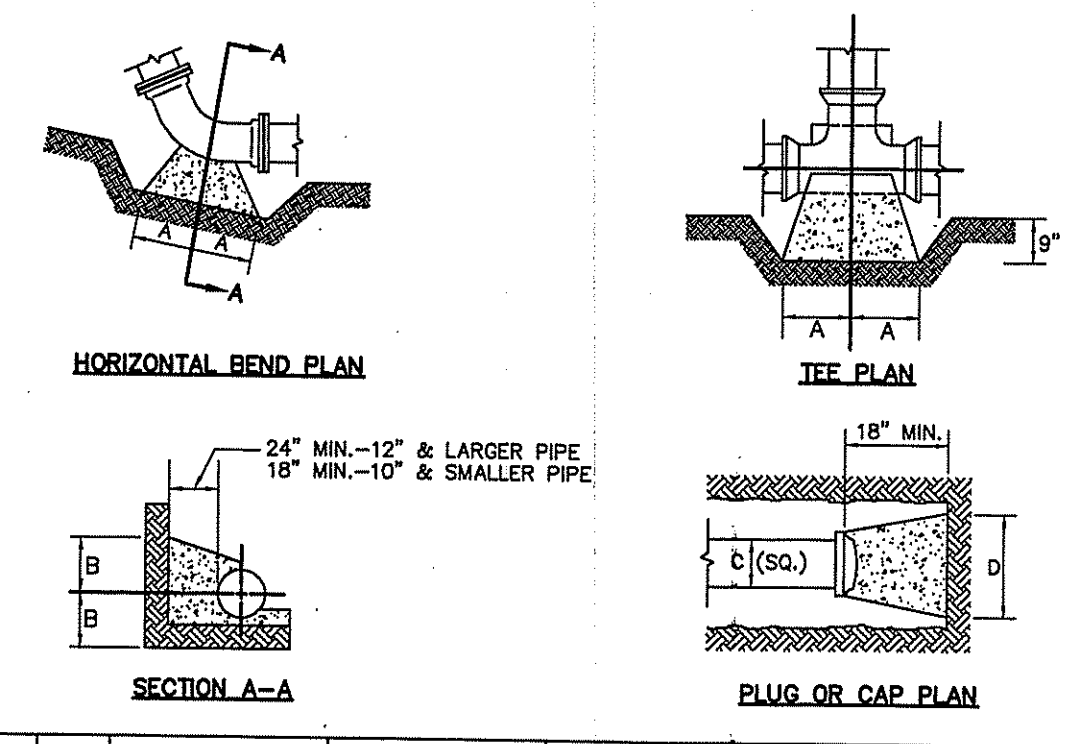
**GAS UTILITY TRENCH**  
NOT TO SCALE



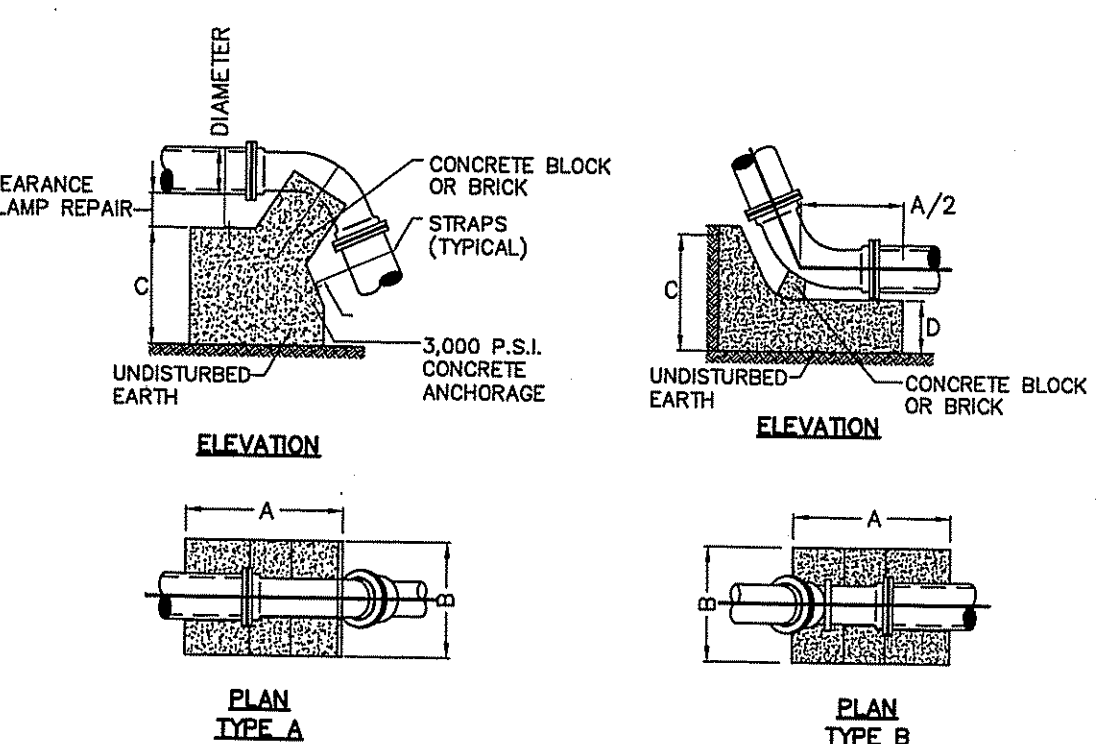
**WATER TRENCH**  
NOT TO SCALE



**SEWER TRENCH**  
NOT TO SCALE



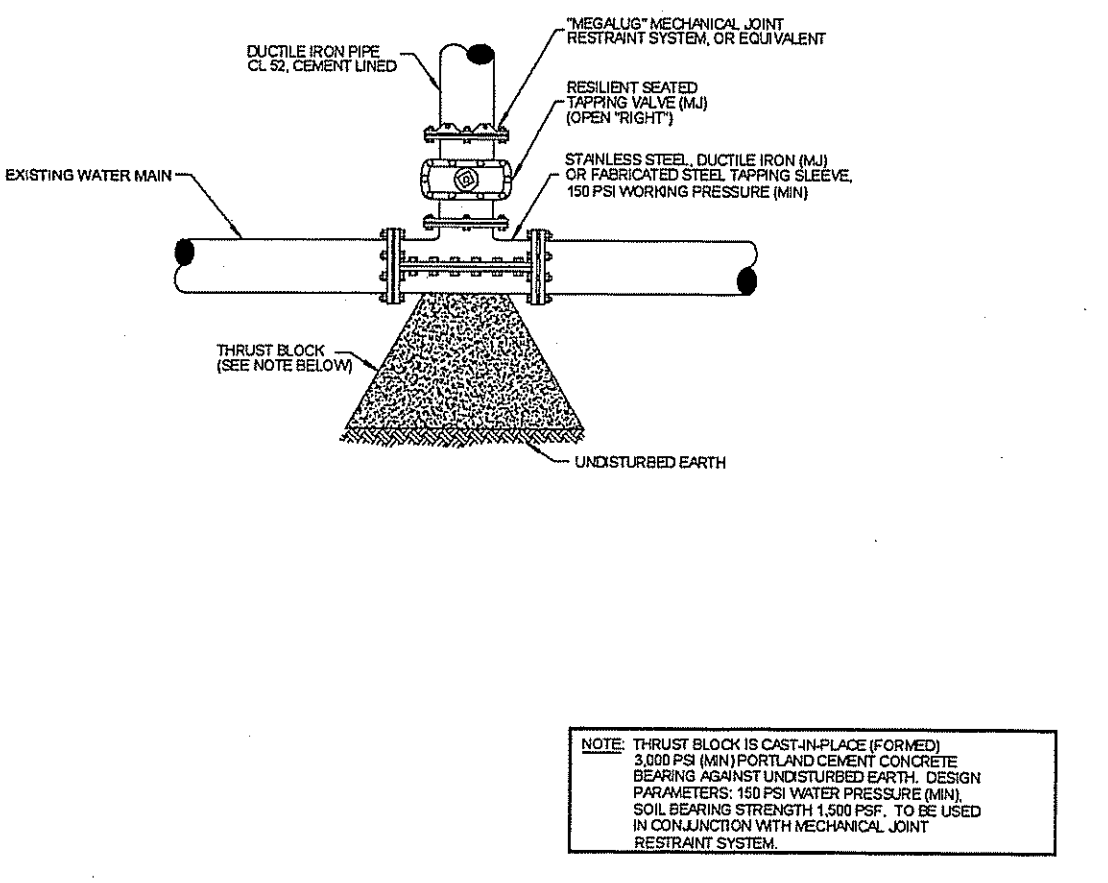
TYPE	SIZE	90° BENDS		45° BENDS		22-1/2° & 11-1/4° BENDS		TEES		PLUGS	
		A	B	A	B	A	B	A	B	C	D
2000 P.S.F. SOIL	6"	18"	11"	10"	11"	6"	9"	11"	13"	10"	24"
	8"	25"	14"	14"	14"	9"	11"	15"	17"	12"	32"
	12"	33"	23"	18"	23"	12"	18"	21"	25"	16"	47"



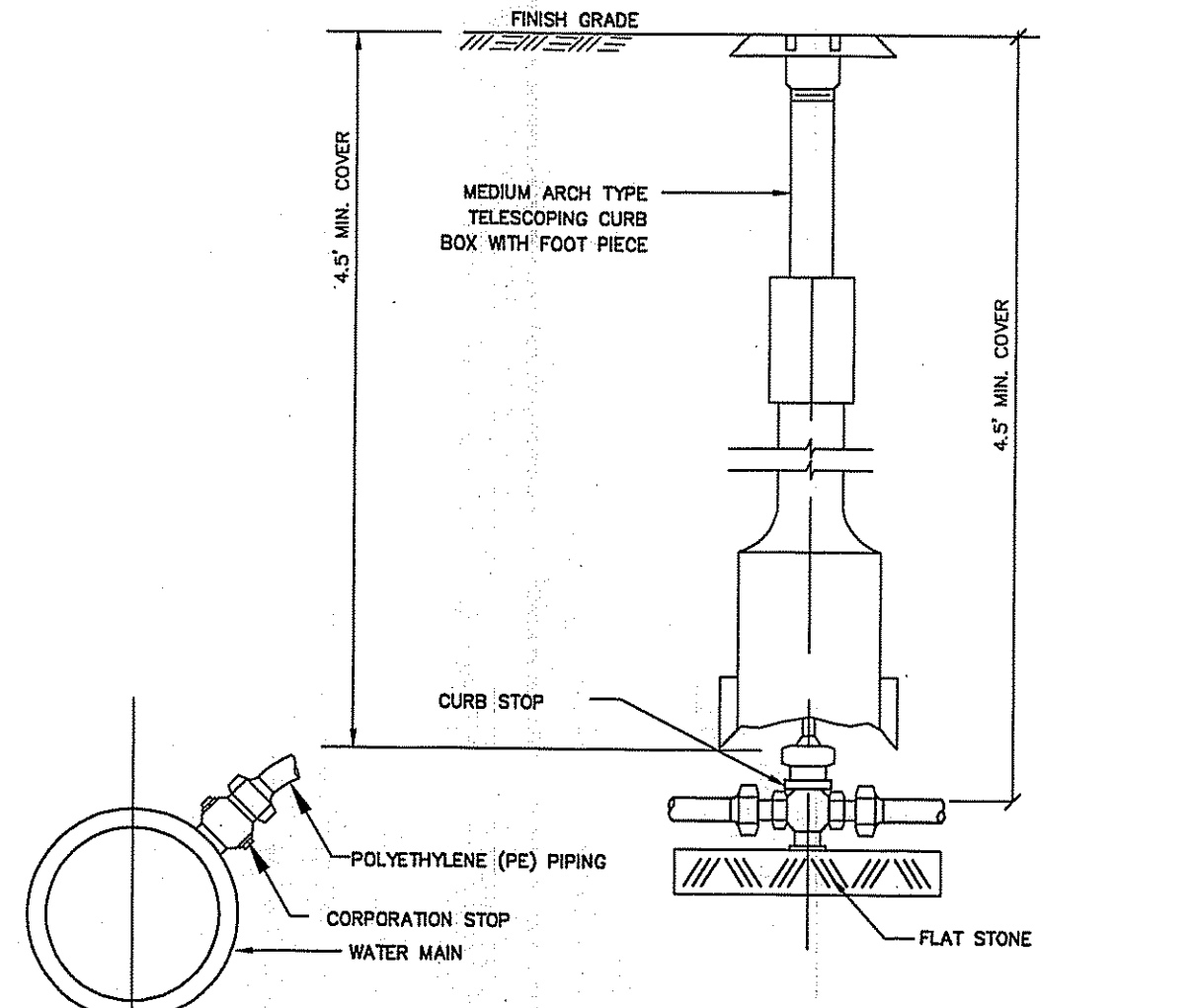
TYPE	SIZE	TYPE A				TYPE B				STRAPS	STRAPS	L <sub>1</sub>
		A	B	C	D	A	B	C	D			
2000 P.S.F. SOIL	6"	38"	32"	27"	27"	27"	27"	16"	1/4" x 1-1/8"	5/8"	1'-0"	
	8"	44"	38"	27"	30"	30"	30"	18"	1/4" x 1-1/8"	5/8"	1'-0"	
	12"	57"	51"	40"	41"	41"	40"	21"	1/4" x 1-1/4" (2)	5/8"	1'-0"	

**HORIZONTAL BENDS**  
 1. ALL CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3,000 P.S.I. AFTER 28 DAYS. TRUST BLOCKS SHALL BE CONSTRUCTED IN PLACE USING PORTLAND CEMENT CONCRETE (R.I.D.O.T. CLASS "B").  
 2. THRUST BLOCK DIMENSIONS SHOWN ARE MINIMUM.  
 3. BASED ON 150 P.S.I. STATIC PRESSURE PLUS A.W.W.A. WATER HAMMER. ALL BEARING SURFACES TO BE CARRIED TO UNDISTURBED GROUND. ALL STRAPS, BOLTS AND ANCHORS SHALL BE MADE OF GALVANIZED STEEL AND SHALL CONFORM TO ASTM A123 AND A153.  
 4. VERTICAL FITTINGS SHALL BE ANCHORED TO THRUST BLOCKS USING AT LEAST TWO (2) #5 (1/2-INCH MINIMUM), GRADE 60, DEFORMED STEEL REBARS.

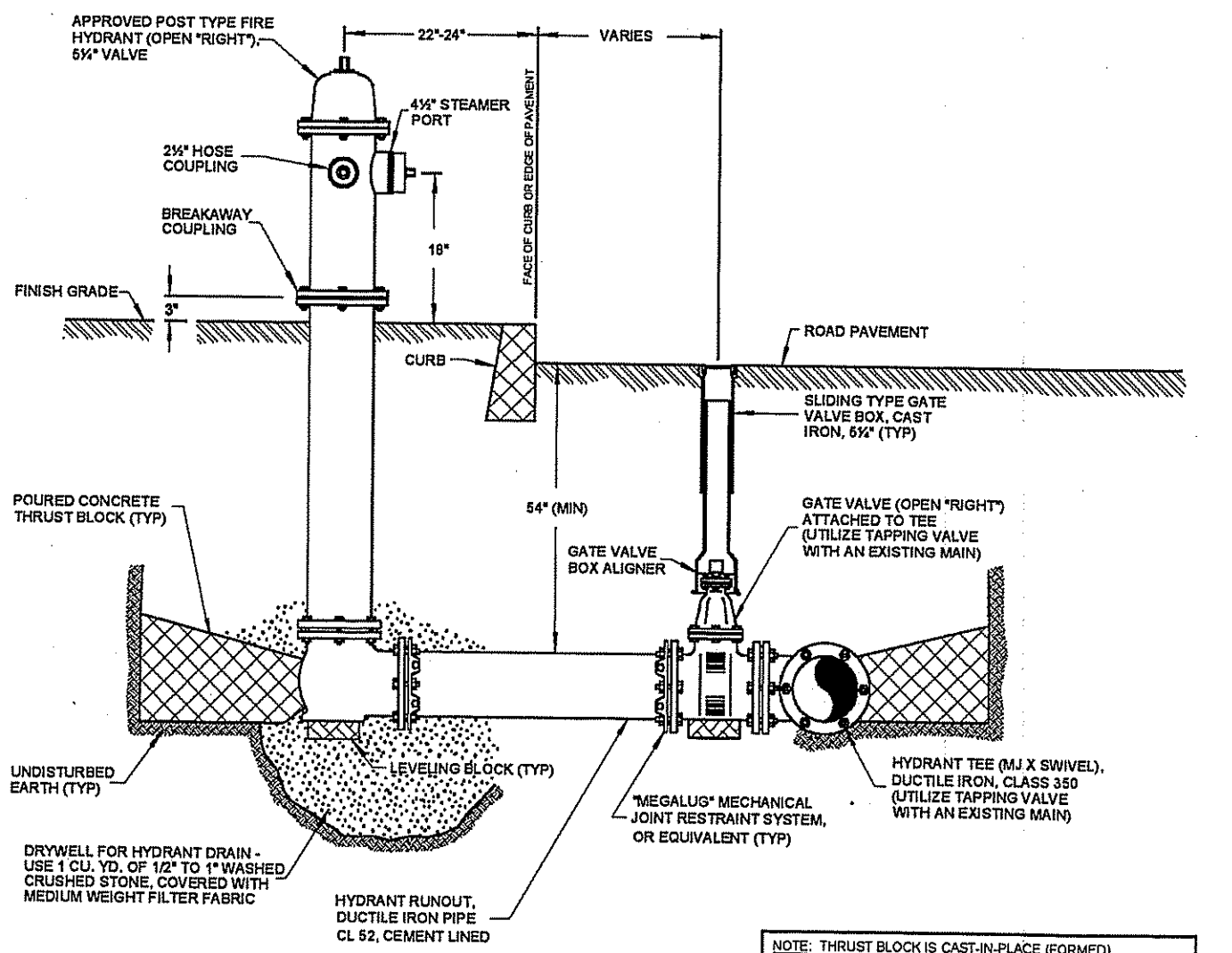
**CONCRETE THRUST BLOCKS**  
NOT TO SCALE



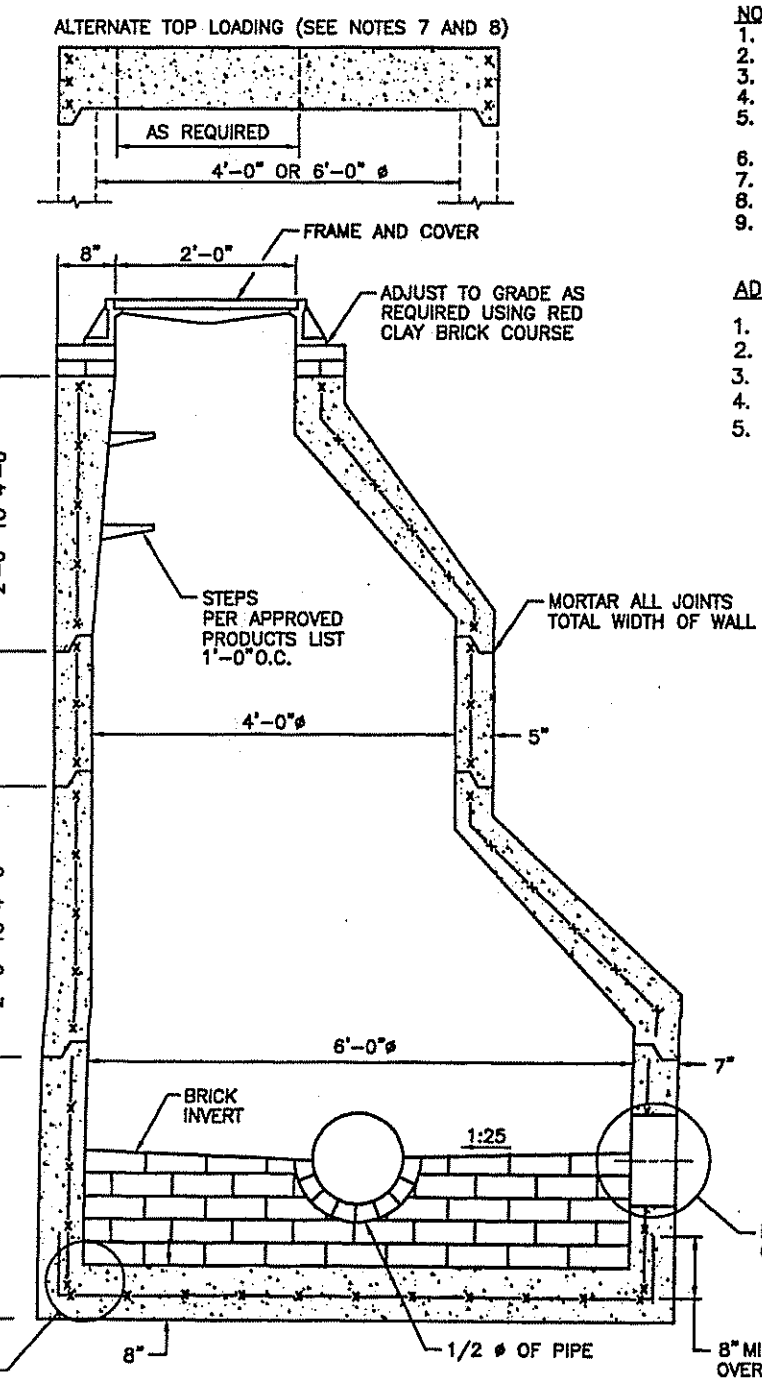
**WATER MAIN TAPPING SLEEVE AND VALVE**  
NOT TO SCALE



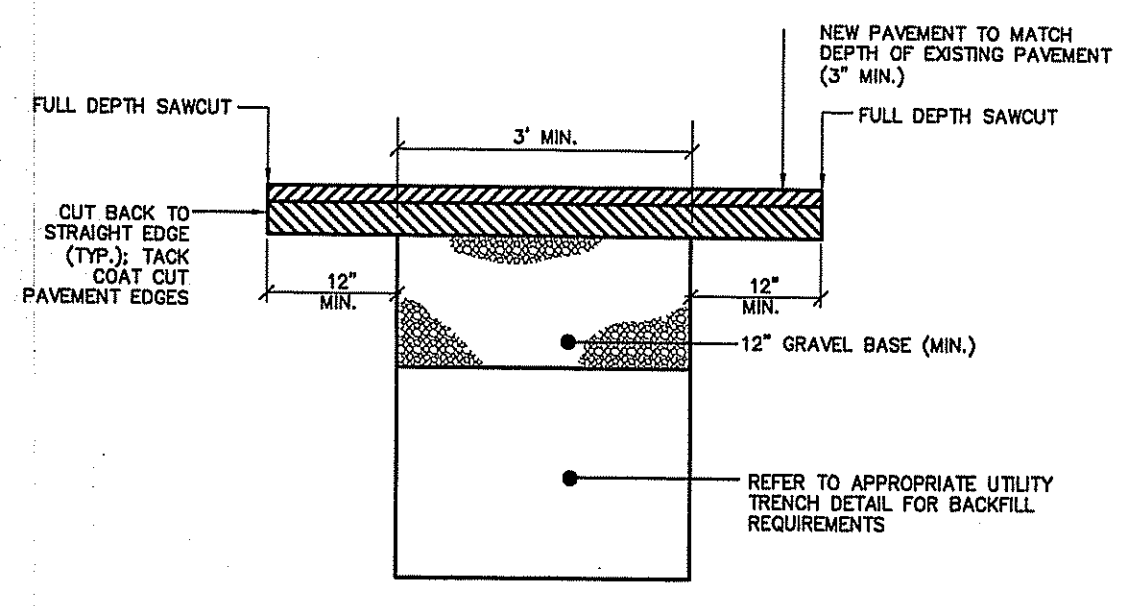
**WATER SERVICE TAP CONNECTION**  
NOT TO SCALE



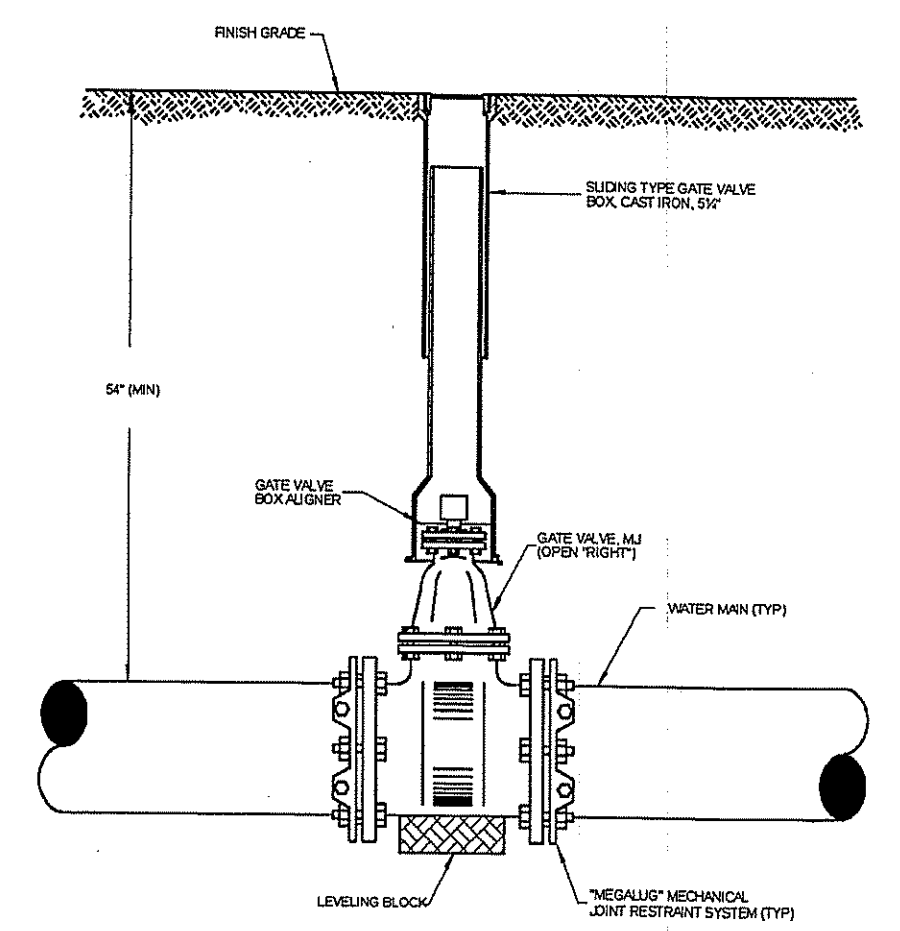
**FIRE HYDRANT AND CONNECTION**  
NOT TO SCALE



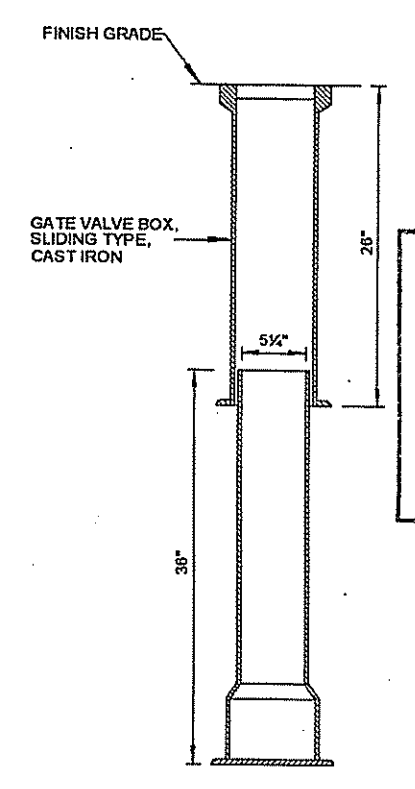
**PRECAST 6' DIA. SEWER MANHOLE (R.I. STD. 4.2.2)**  
NOT TO SCALE



**ROADWAY PAVEMENT REPAIR (FOR UTILITY CONNECTIONS)**  
NOT TO SCALE



**GATE VALVE**  
NOT TO SCALE



**GATE VALVE BOX**  
NOT TO SCALE

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
 OFFICE OF WATER RESOURCES  
 FRESHWATER WETLANDS PROGRAM  
 APPROVED WITH CONDITIONS  
 AS SPECIFIED IN THE LETTER OF APPROVAL  
 DATED JUL 16 2010 FILE # 10-011  
 NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL.  
 APPROVED PLANS MUST BE AT CONSTRUCTION SITE.

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

**CHILDREN'S ZOO**  
 ROGER WILLIAMS PARK ZOO  
 1000 ELMWOOD AVENUE  
 PROVIDENCE, RI 02907

REGISTERED PROFESSIONAL ENGINEER (CIVIL)  
 No. 7487

RECEIVED JUN 3 2010

FILE # 10-011

DATE: 06/02/2010

ISSUED FOR PERMITTING

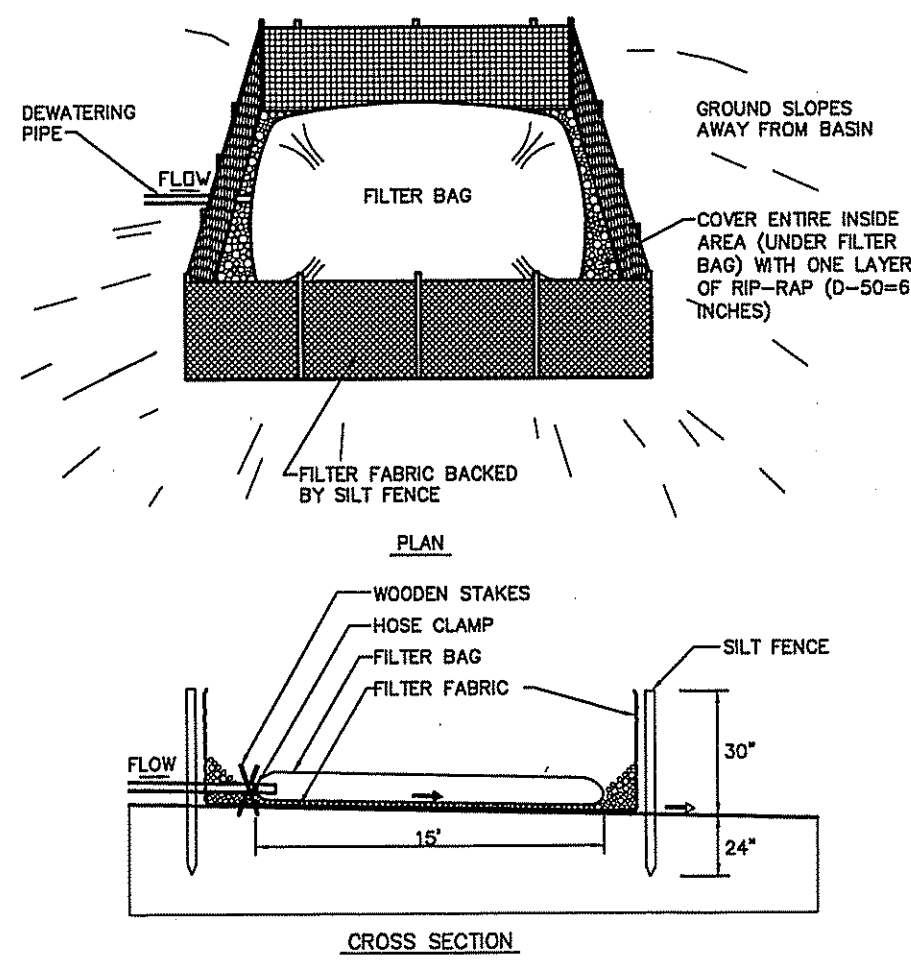
SCALE: AS NOTED

DRAWN BY: JJ/GR DPT 2807

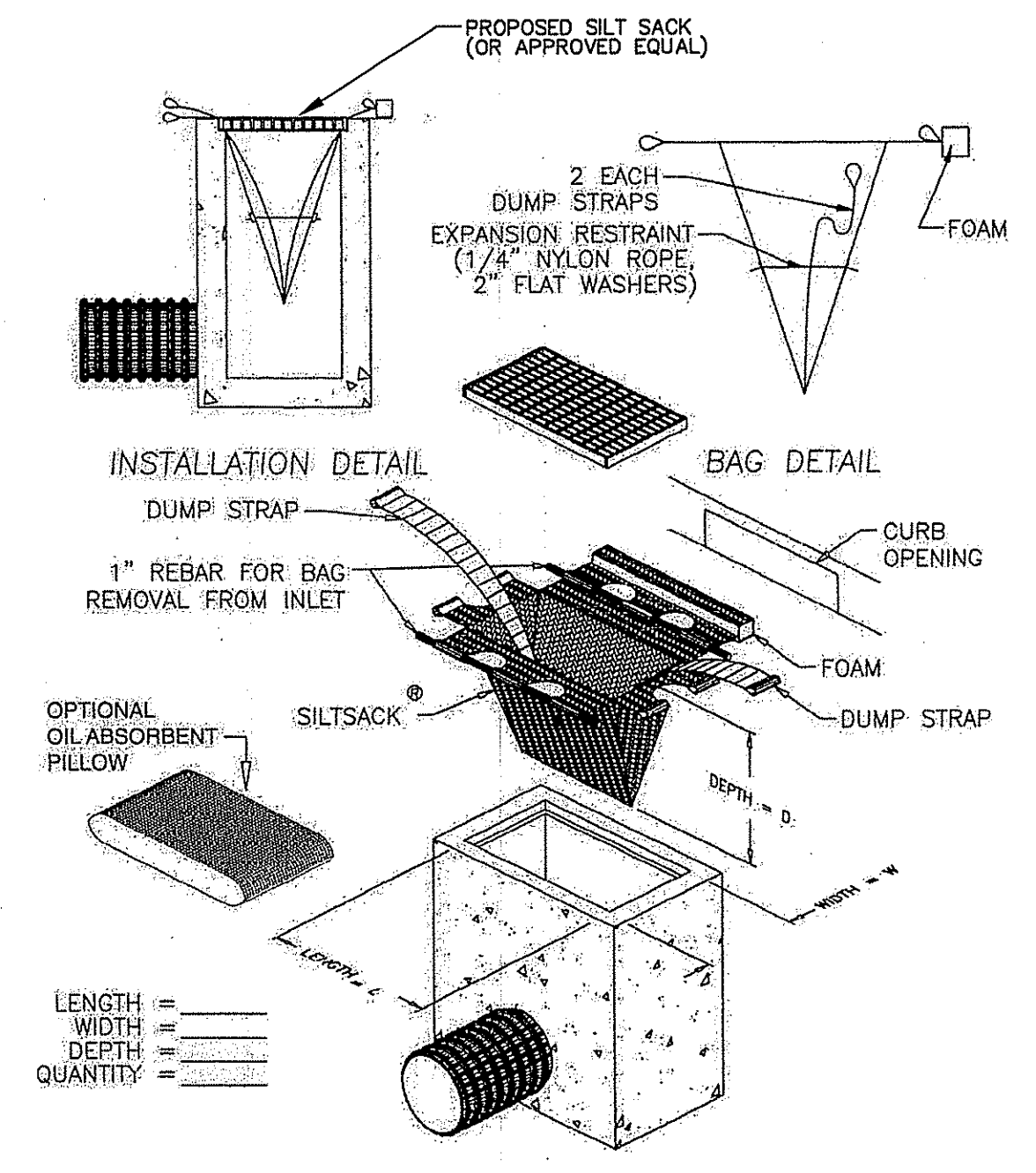
SHEET NO. C 8.2

**CHILDREN'S ZOO**  
 ROGER WILLIAMS PARK ZOO  
 1000 ELMWOOD AVENUE  
 PROVIDENCE, RI 02907

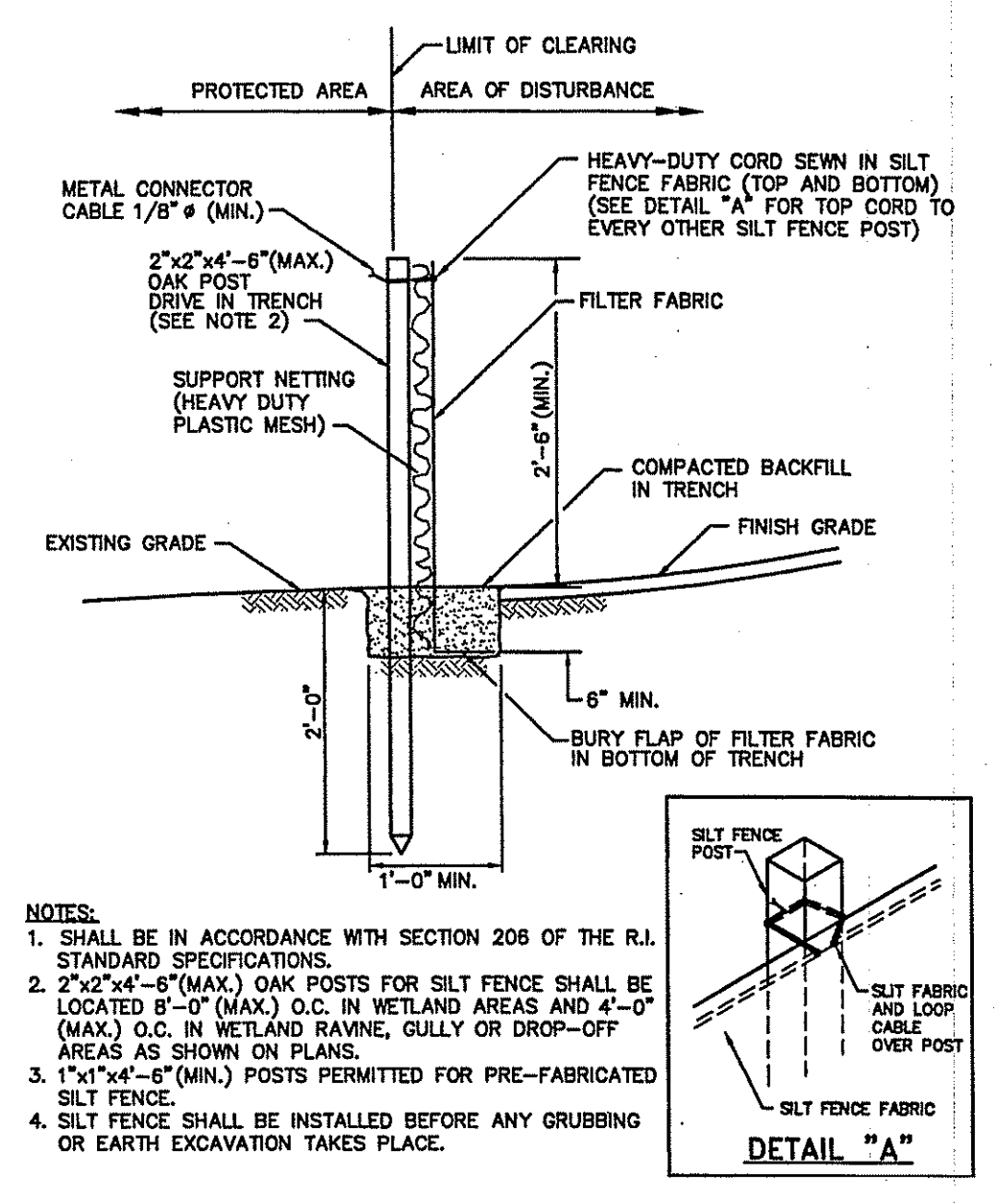
PROJECT:	
ISSUED FOR PERMITTING	
ISSUED FOR PERMITTING	
DATE: 06/02/2010	
ISSUE NO. 1	
ISSUE NO. 2	
ISSUE NO. 3	
ISSUE NO. 4	
DRAWING TITLE:	DETAILS
SCALE:	AS NOTED
DRAWN BY: JJ/GR	CHECKED BY: DPT
JOB #	2807
REGISTERED PROFESSIONAL ENGINEER (CIVIL)	SHAWN M. MARTIN
No.	7487
SHEET NO.:	C 8.3



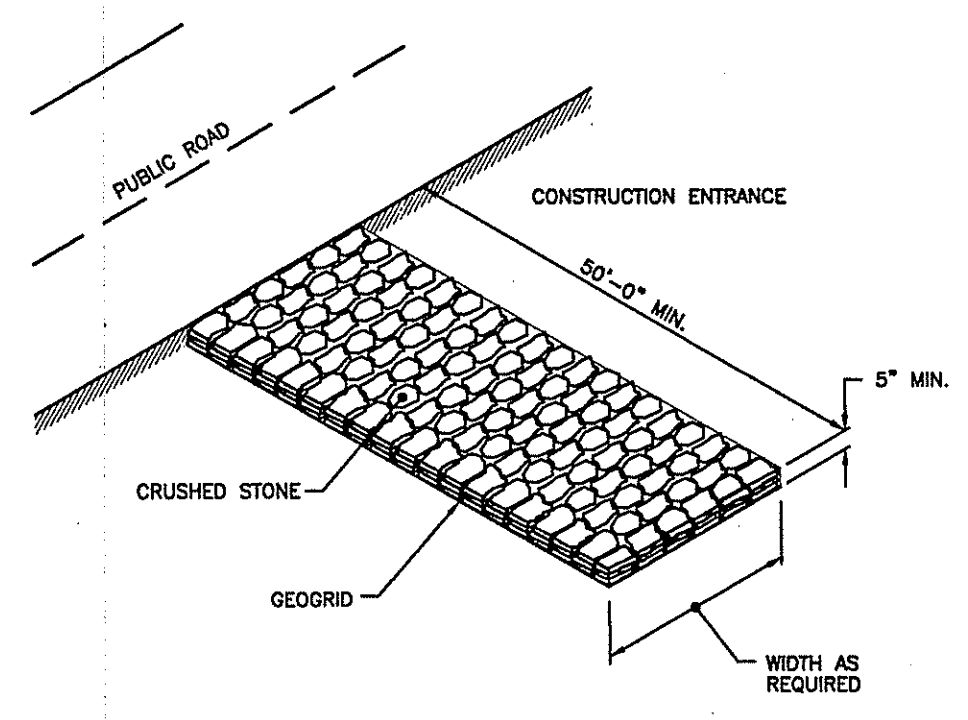
**TEMPORARY DEWATERING AREA**  
 NOT TO SCALE



**CATCH BASIN INLET PROTECTION**  
 NOT TO SCALE



**SILT FENCE (R.I. STD. 9.2.0)**  
 NOT TO SCALE



**CONSTRUCTION ENTRANCE (R.I. STD. 9.9.0)**  
 NOT TO SCALE

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 OFFICE OF WATER RESOURCES  
 FRESHWATER WETLANDS PROGRAM  
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 AS SPECIFIED IN THE LETTER OF APPROVAL  
 DATED JUL 16 2010 FILE # 12-011  
 NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL.  
 APPROVED PLANS MUST BE AT CONSTRUCTION SITE.  
*W. Joseph Casey*

REVISIONS

MARK	DATE
▲	
▲	
▲	

# CHILDREN'S ZOO

## PHASE 1

ROGER WILLIAMS PARK ZOO  
1000 ELMWOOD AVENUE  
PROVIDENCE, RI 02907

PROJECT:

ISSUED FOR:

DATE	ISSUE NO.	BID DOCUMENTS	CONSTRUCTION DOCUMENTS
03/01/10	1		
05/24/10	2		
	3		
	4		

DRAWING TITLE:  
ENLARGED SITE PLAN AND PLANTING DETAILS

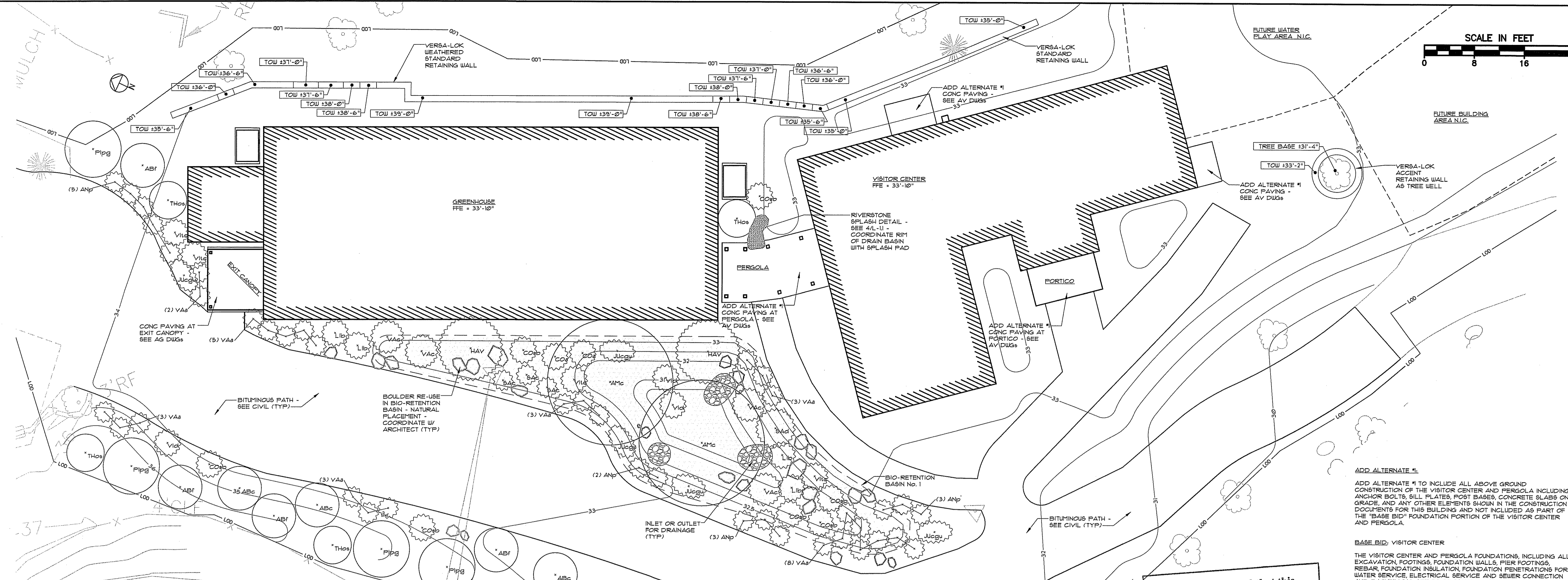
SCALE:  
AS NOTED

DRAWN BY: J4/GR/SB  
CHECKED BY: DPT  
2807

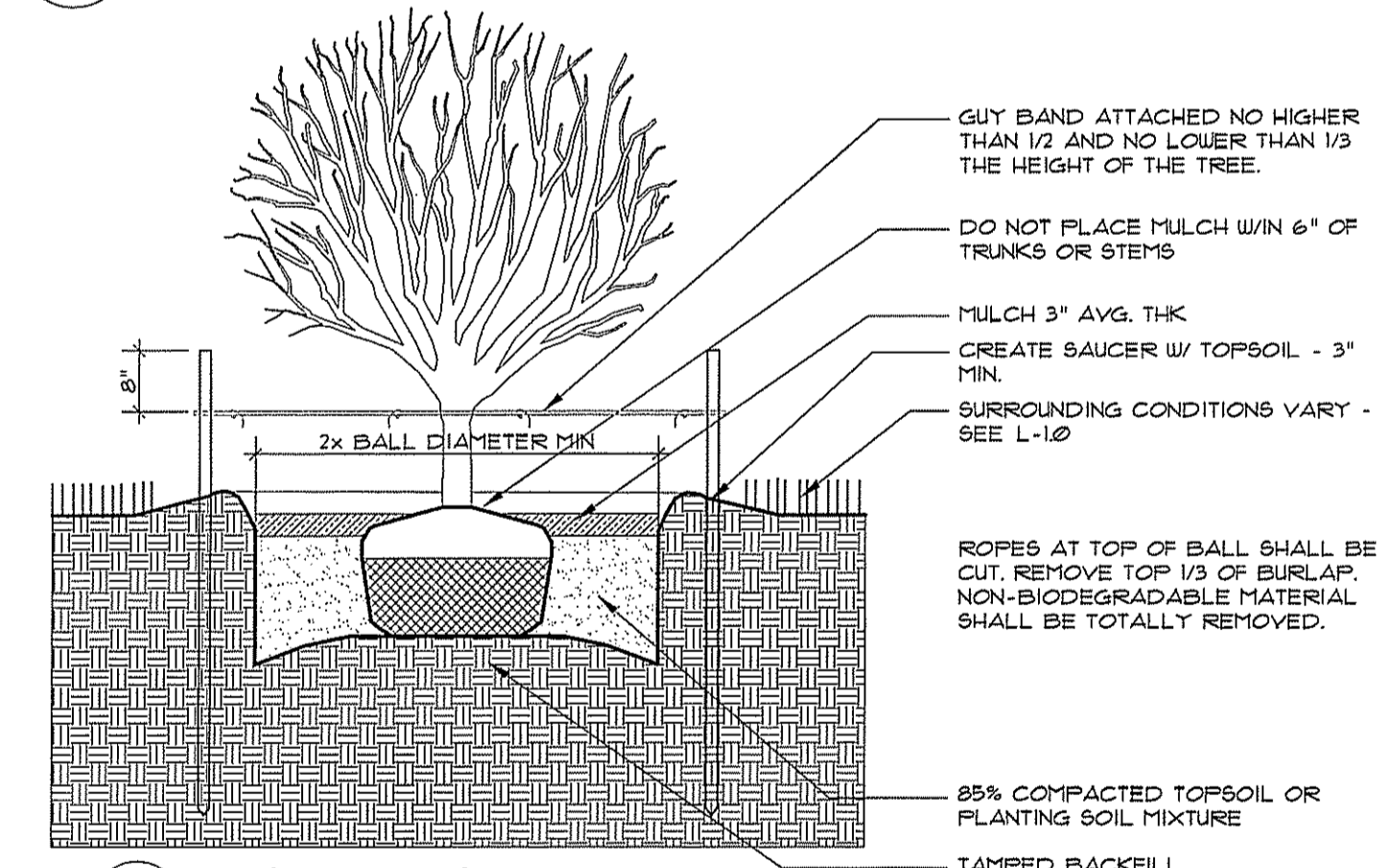
FOR CONSTRUCTION

SHEET NO.:

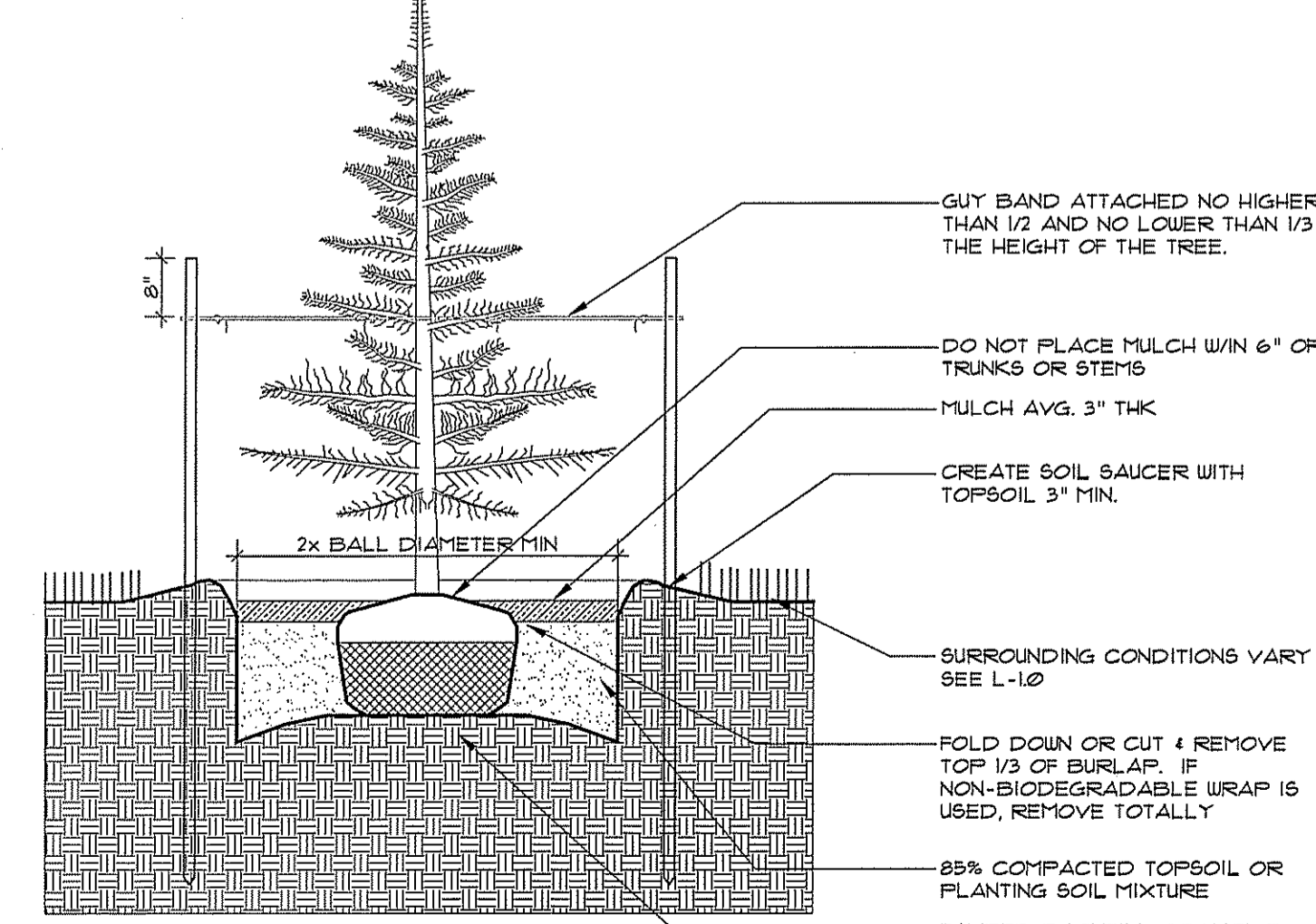
**L**  
**1.1**



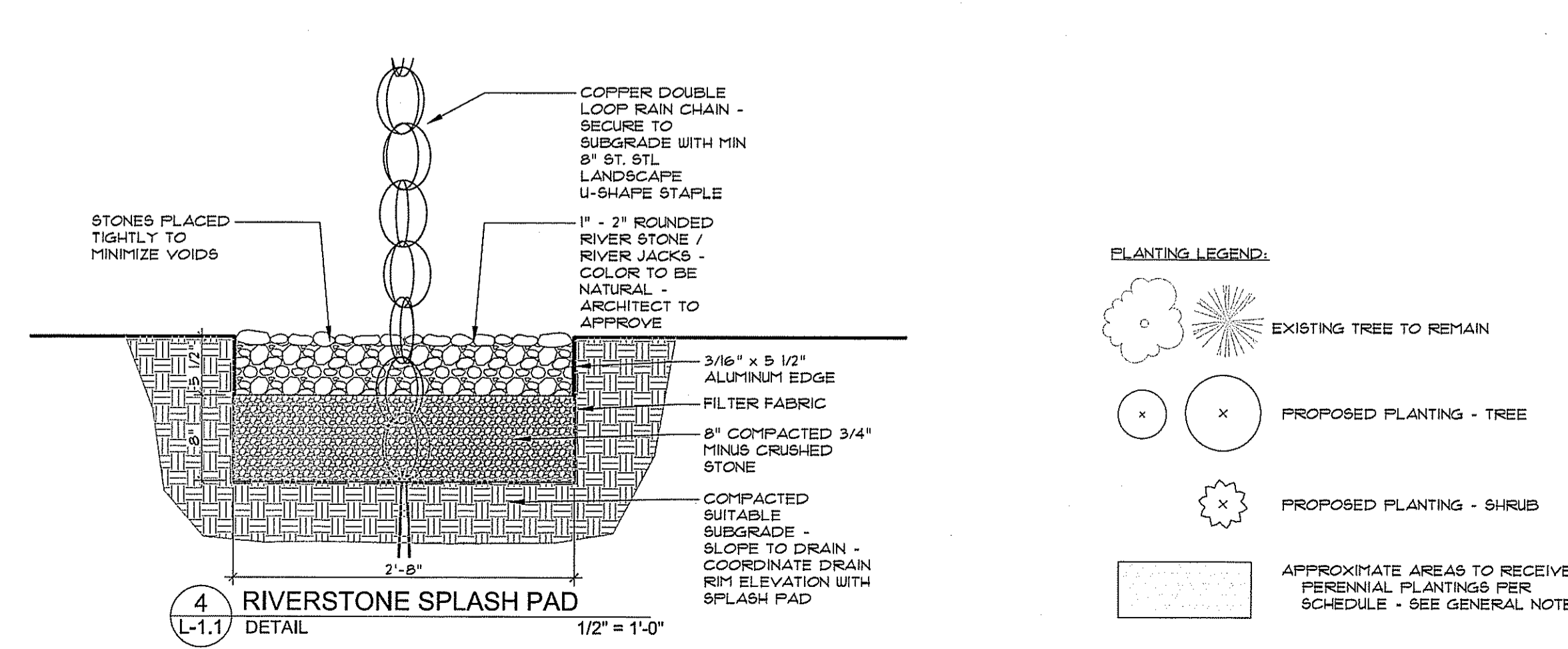
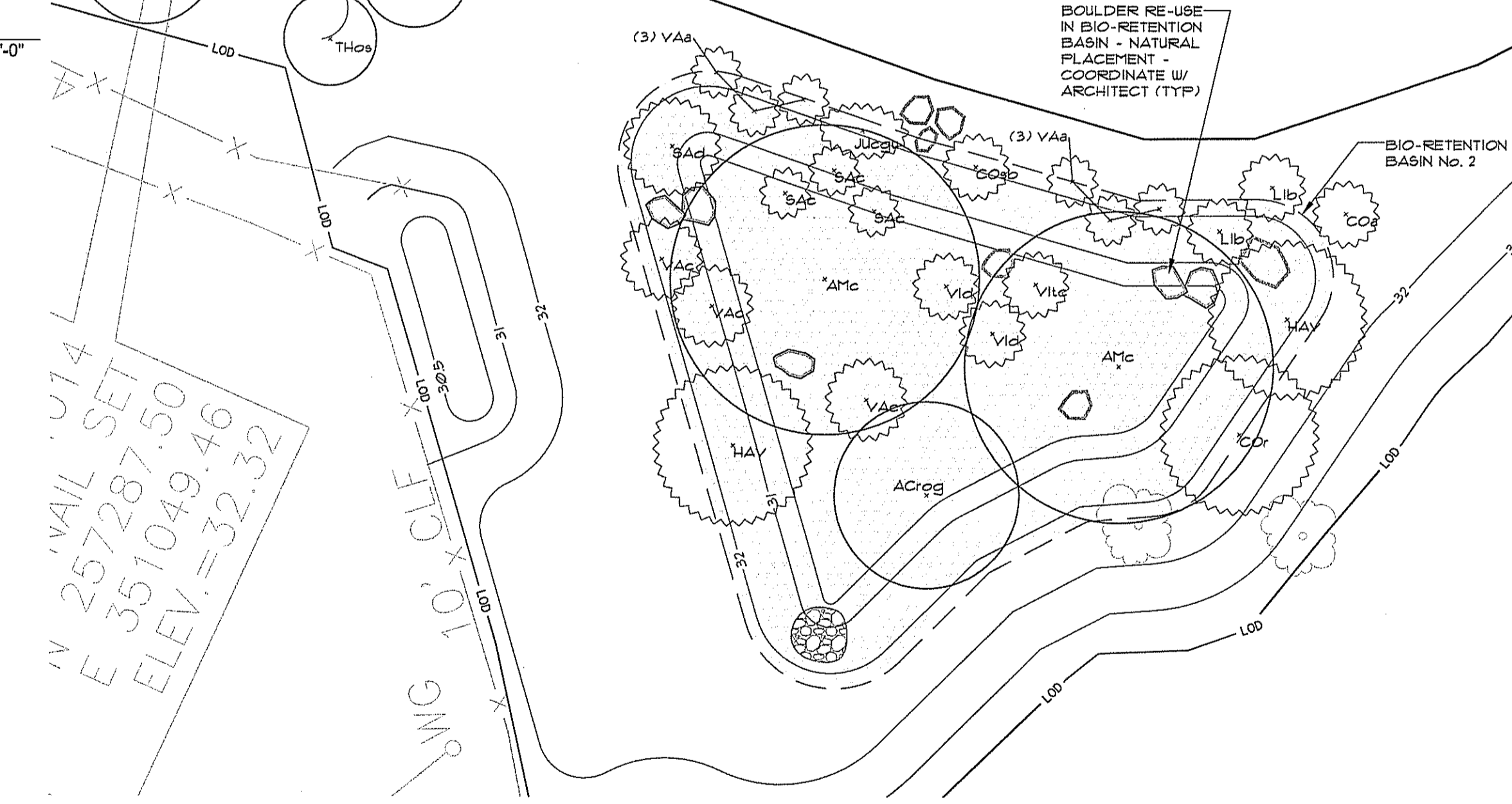
1 ENLARGED PLAN DETAIL  
L-1.1 GREENHOUSE AND VISITOR CENTER  
1/8" = 1'-0"



2 TYPICAL DETAIL  
L-1.1 TREE/SHRUB PLANTING  
N.T.S.



3 TYPICAL DETAIL  
L-1.1 CONIFER PLANTING  
N.T.S.



4 RIVERSTONE SPLASH PAD  
L-1.1 DETAIL  
1/2" = 1'-0"

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DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
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FRESHWATER WETLANDS PROGRAM  
APPROVED WITH CONDITIONS  
AS SPECIFIED IN THE LETTER OF APPROVAL  
DATED JUL 16 2010 FILE # 12-2111  
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL.  
APPROVED PLANS MUST BE AT CONSTRUCTION SITE.  
*W. Joseph Conroy*

TREE SCHEDULE

KEY	QNTY	BOTANICAL NAME	COMMON NAME	SIZE	COND	REMARKS	HEIGHT	SPREAD	YEARLY GROWTH
Abc	3	Abies concolor	WHITE FIR	6'-11" ht	B 4 B	EVERGREEN, PYRAMIDAL	30'-50'	15'-20'	SLOW 6-9"
ABF	4	Abies fraseri	FRASER FIR	5'-6" ht	B 4 B	EVERGREEN, PYRAMIDAL	30'-40'	10'-15'	SLOW
ACrop	4	Acer rubrum 'October Glory'	RED MAPLE	4-5' cal	B 4 B	FALL COLOR, ROUNDED	40'-60'	-	MEDIUM 12-15"
AMc	5	Amelanchier canadensis	SHADBLOW SERVICEBERRY	8-10' ht	B 4 B	WHITE SPRING FLOWERS	6-20'	20'	MEDIUM
Pfpg	4	Picea pungens 'Glauca'	COLORADO SPRUCE	8-10' ht	B 4 B	EVERGREEN, CONICAL, BLUE	30'-60'	10'-20'	SLOW 8-12"
Pls	7	Pinus strobus	EASTERN WHITE PINE	4-5' ht	B 4 B	EVERGREEN	20'-40'	20'-40'	FAST 12-15"
THos	5	Tsuga occidentalis 'Smaragd'	AMERICAN ARBORVITAE	6'-11" ht	B 4 B	EVERGREEN, CYLINDRICAL	40'-60'	10'-15'	SLOW 8-10"

SHRUB SCHEDULE

KEY	QNTY	BOTANICAL NAME	COMMON NAME	SIZE	COND	REMARKS	HEIGHT	SPREAD	YEARLY GROWTH
ANp	13	Andromeda polifolia	BOG ROSEMARY	1 gal	CG	SLOW GROWING, EVERGREEN	1-2'	2-3'	
COa	8	Cornus anomum	SILKY DOGWOOD	2 gal	CG	PALE YELLOW FLOWERS	6-10'	6-10'	
COc	3	Cornus racemosa	GRAY DOGWOOD	2 gal	CG	ADEQUATE SPACE NEEDED	10'-15'	10'-15'	
COsb	10	Cornus sericea 'Bailey'	RED OSIER DOGWOOD	* 3	CG	RED PURPLE FALL COLOR	6-9'	6-9'	
HAV	8	Hamelalis virginiana	COMMON WITCH HAZEL	2-3' ht	CG	FRAGRANT YELLOW FLOWERS	15'-20'	15'-20'	
Jucgc	6	Juniperus chinensis 'Gold Coast'	CHINESE JUNIPER	* 2 15-18"	CG	GOLD NEW FOLIAGE, EVERGRN	1-3'	6-8"	
Lilb	10	Lindera benzoin	SPICE BUSH	2 gal	CG	GREEN FLOWERS, RED FRUIT	6-12'	6-12'	
SAd	5	Salix discolor	FUSSY WILLOW	2-3' ht	CG	SILVER FLOWERS	15'	12'	
SAC	10	Sambucus canadensis	AMERICAN ELDERBERRY	2 gal	CG	WHITE FLOWERS, PURPLE FRUIT	9'		
VAS	34	Vaccinium angustifolium	LOW BUSH BLUEBERRY	1 gal	CG	WHITE FLOWER, FRUIT	6" - 2"	2"	
VAC	9	Vaccinium corymbosum	HIGH BUSH BLUEBERRY	* 2	CG	SONG BIRDS	6-12'	8-12'	
Vid	7	Viburnum dentatum	NORTHERN ARROWWOOD	* 3	CG		6-8'	6-15'	
Vitc	5	Viburnum trilobum 'compactum'	HIGHBUSH CRANBERRY	* 3	CG	FLOWER, FRUIT INTEREST	6'	8-12'	

PERENNIAL SCHEDULE

KEY	QNTY	BOTANICAL NAME	COMMON NAME	SIZE	COND	REMARKS	HEIGHT	SPREAD	YEARLY GROWTH
AQC	40	Aquilegia canadensis	WILD COLUMBINE	2 qt	CG				
CO	40	Cosmos sp.	COSMOS	2 qt	CG				
ECP	40	Echinacea purpurea	PURPLE CONEFLOWER	2 qt	CG				
ONs	40	Oenothera sensibilis	SENSITIVE FERN	* 1	CG				
OCc	40	Ornithoglossum cinnamomea	CINNAMON FERN	* 1	CG				
ORr	40	Ornithoglossum regalis	ROYAL FERN	* 1	CG				
REN	40	Reobeckia hirta	BLACK-EYED SUSAN	2 qt	CG				

