

RHODE ISLAND RECYCLED METALS CONSTRUCTION PERIOD SWPPP SITE PLANS

434 ALLENS AVENUE
PROVIDENCE, RHODE ISLAND 02903

SURVEYING

ECOLOGICAL SERVICES

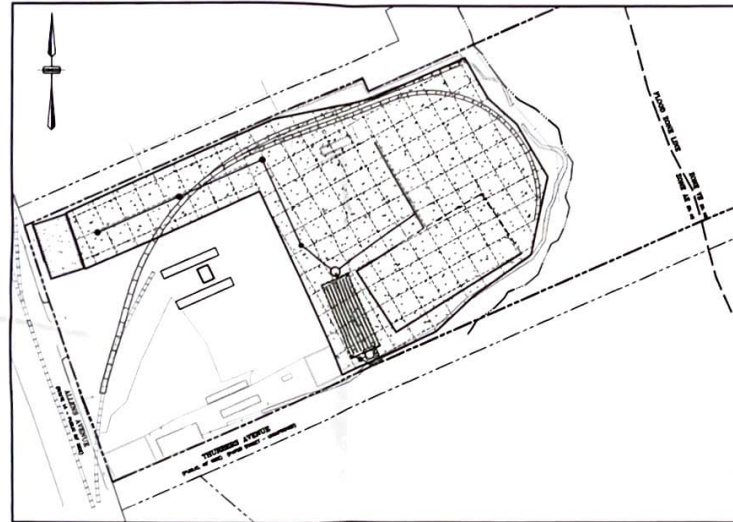
ENVIRONMENTAL CONSULTING

CIVIL ENGINEERING

CONSTRUCTION



RI GIS 2005 AERIAL PHOTO
SCALE: 1 INCH = 1,000 FEET



SCALE: 1 INCH = 80 FEET

PREPARED FOR:

ACR REALTY, LLC.
15 BRANCH PIKE
SMITHFIELD, RHODE ISLAND 02917



4 FIRST STREET, BRIDGEWATER, MASSACHUSETTS 02324
PHONE: 508.697.3191 • FAX: 508.697.5996 • E-MAIL: admin@coneco.com
WEBSITE: <http://www.coneco.com>

PREPARED ON:
FEBRUARY 2, 2012
REVISED DECEMBER 28, 2012

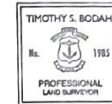
ENGINEER:
DAVID A. HARRINGTON, P.E.
CONECO ENGINEERS & SCIENTISTS
BRIDGEWATER, MA 02324



RHODE ISLAND REGISTERED PROFESSIONAL ENGINEER #9214

DATE: 12/28/12

SURVEYOR:
TIMOTHY S. BODAH, P.L.S.
CONECO ENGINEERS & SCIENTISTS
BRIDGEWATER, MA 02324



RHODE ISLAND REGISTERED PROFESSIONAL LAND SURVEYOR #1985

DATE: 12-29-12

DESCRIPTION

- COVER SHEET
- EXISTING CONDITIONS
- PROPOSED SITE LAYOUT
- PROPOSED SITE GRADING & DRAINAGE
- CONSTRUCTION SEQUENCING & EROSION CONTROL PLAN
- SITE CONSTRUCTION DETAILS

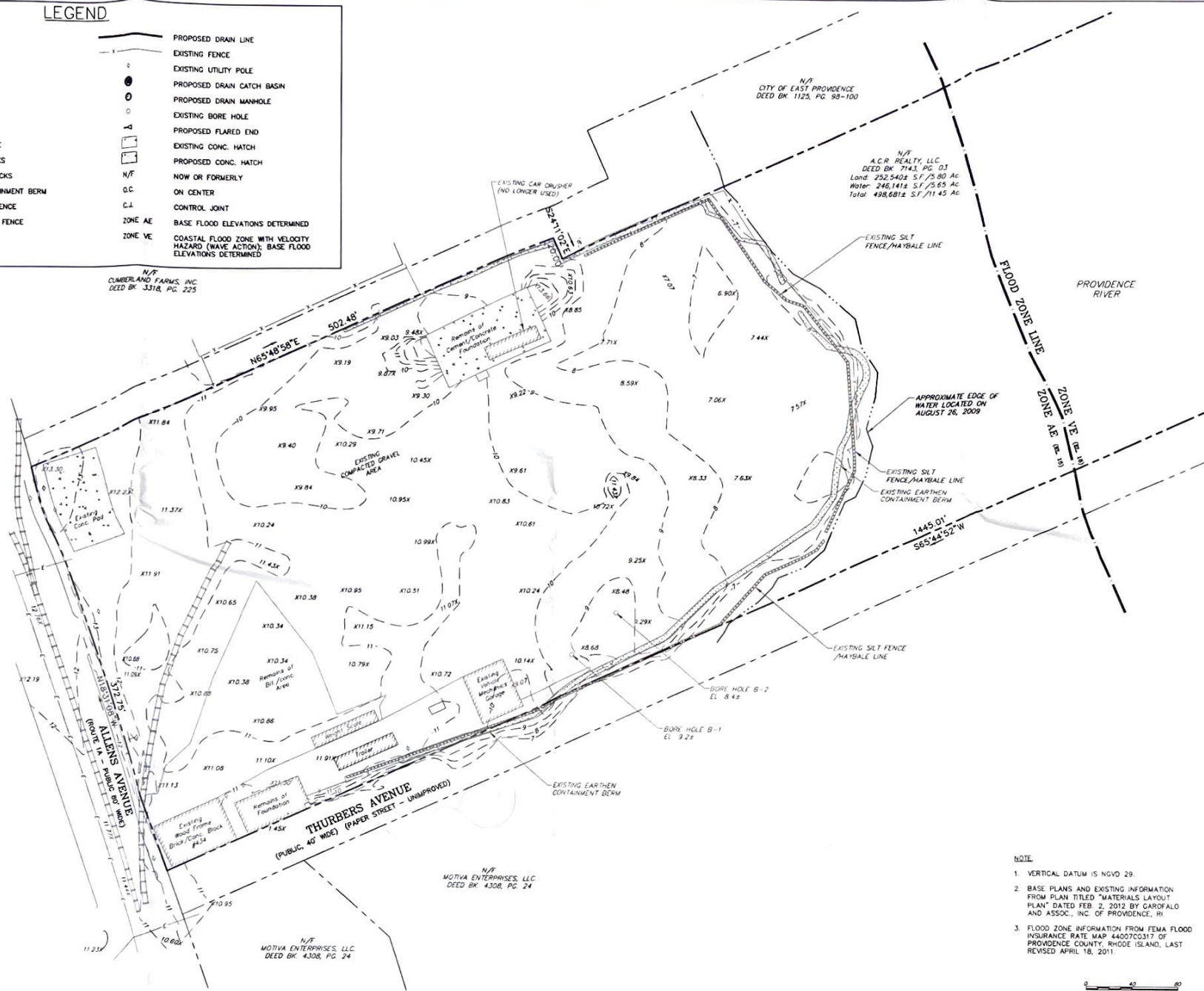
SHEET

- 1
- 2
- 3
- 4
- 5
- 6-8

NO.		DATE	REVISIONS
1	8/23/12	OWR COMMENT REVISIONS, REVISED DRAINAGE COMPONENTS	
2	12/28/12	OWR COMMENT LETTER REVISIONS	

LEGEND

- PROPERTY LINE ABUTTER
- PROPERTY LINE LOCUS
- EDGE OF WATER
- FLOOD ZONE BOUNDARY
- EXISTING BUILDING
- PROPOSED BUILDING
- EXISTING CONTOUR LINE
- PROPOSED CONTOUR LINE
- EXISTING RAILROAD TRACKS
- PROPOSED RAILROAD TRACKS
- EXISTING EARTHEN CONTAINMENT BERM
- EXISTING HAYBALE SILT FENCE
- PROPOSED HAYBALE SILT FENCE
- PROPOSED DRAIN LINE
- EXISTING FENCE
- EXISTING UTILITY POLE
- PROPOSED DRAIN CATCH BASIN
- PROPOSED DRAIN MANHOLE
- EXISTING BORE HOLE
- PROPOSED FLARED END
- EXISTING CONC. HATCH
- PROPOSED CONC. HATCH
- N/F NOW OR FORMERLY
- O.C. ON CENTER
- C.L. CONTROL JOINT
- ZONE AE BASE FLOOD ELEVATIONS DETERMINED
- ZONE VE COASTAL FLOOD ZONE WITH VELOCITY HAZARD (WAVE ACTION); BASE FLOOD ELEVATIONS DETERMINED



REVISIONS	
NO.	DATE
1	8/23/12

ACR REALTY, LLC
15 BRANCH PIKE
SMITHFIELD, RHODE ISLAND 02917

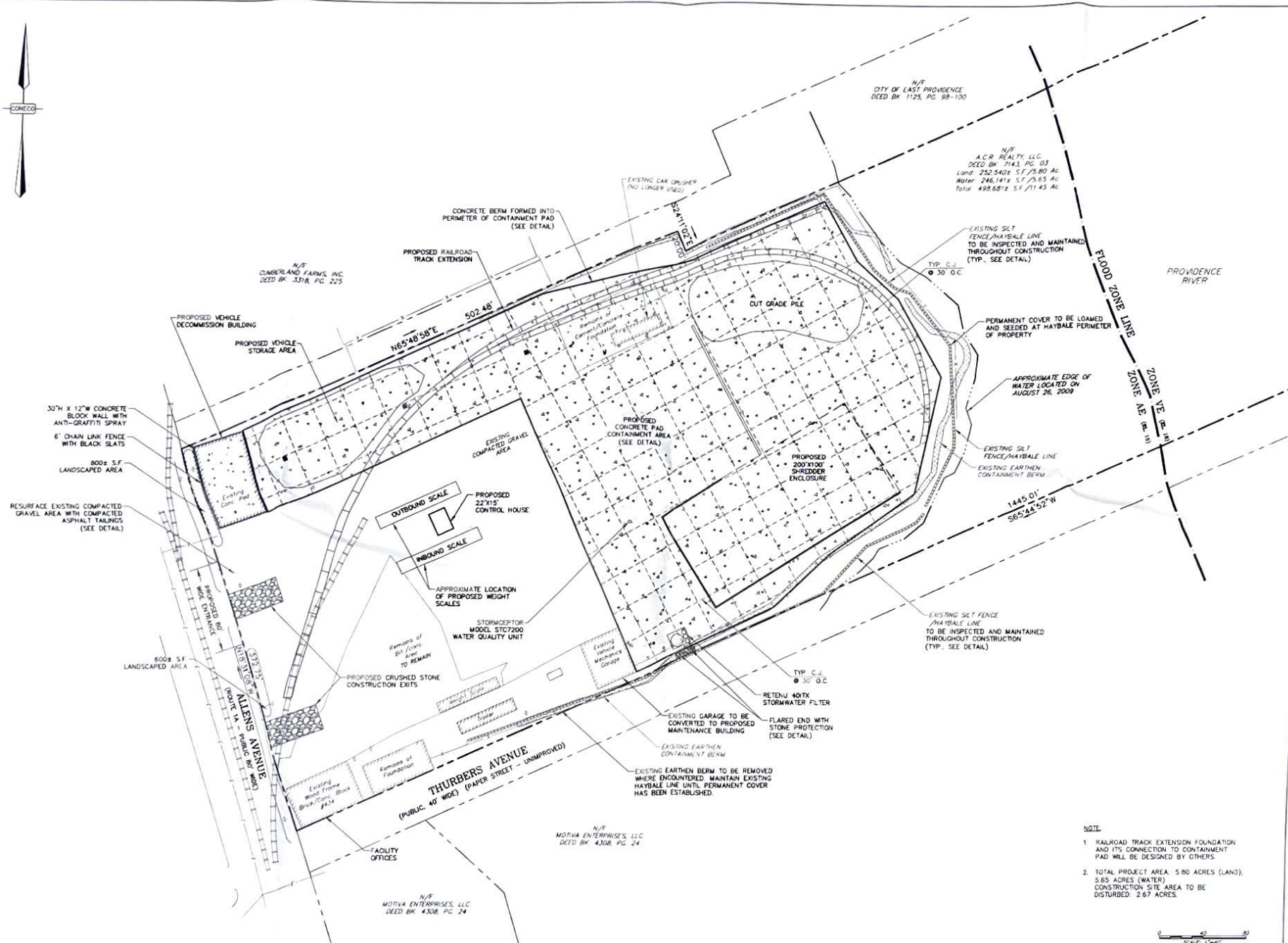
RHODE ISLAND RECYCLED METALS
CONSTRUCTION PERIOD SWPPP
434 ALLENS AVENUE
PROVIDENCE, RHODE ISLAND 02903

CONECO
Engineers, Scientists & Surveyors
4 FIRST STREET, BOSTON, MASSACHUSETTS 02334
PHONE: 617-252-2370 FAX: 617-252-2371
WWW.CONECO.COM

DATE:	08/15/2012
DRAWN/CHECK:	DMG/SMO
SCALE:	1" = 40'
PROJECT #:	7400.0
SHEET NO.:	2 OF 08

- NOTE**
- VERTICAL DATUM IS NGVD 29.
 - BASE PLANS AND EXISTING INFORMATION FROM PLAN TITLED "MATERIALS LAYOUT PLAN" DATED FEB. 2, 2012 BY GAROFALO AND ASSOC., INC. OF PROVIDENCE, RI
 - FLOOD ZONE INFORMATION FROM FEMA FLOOD INSURANCE RATE MAP 44007C0317 OF PROVIDENCE COUNTY, RHODE ISLAND, LAST REVISED APRIL 18, 2011.





DAVID A. HARRINGTON
 No. 9214
 REGISTERED PROFESSIONAL ENGINEER
 STATE OF RHODE ISLAND

NO.	DATE	REVISIONS
1	8/27/12	DRW COMMENTS, REVISION DRAINAGE
2	12/28/12	GRAVE PARKING AREA, REVISION DRAINAGE

ACR REALTY, LLC
 15 BRANCH PIKE
 SMITHFIELD, RHODE ISLAND 02917

RHODE ISLAND RECYCLED METALS
 CONSTRUCTION PERIOD SWPPP
 434 ALLENS AVENUE
 PROVIDENCE, RHODE ISLAND 02903

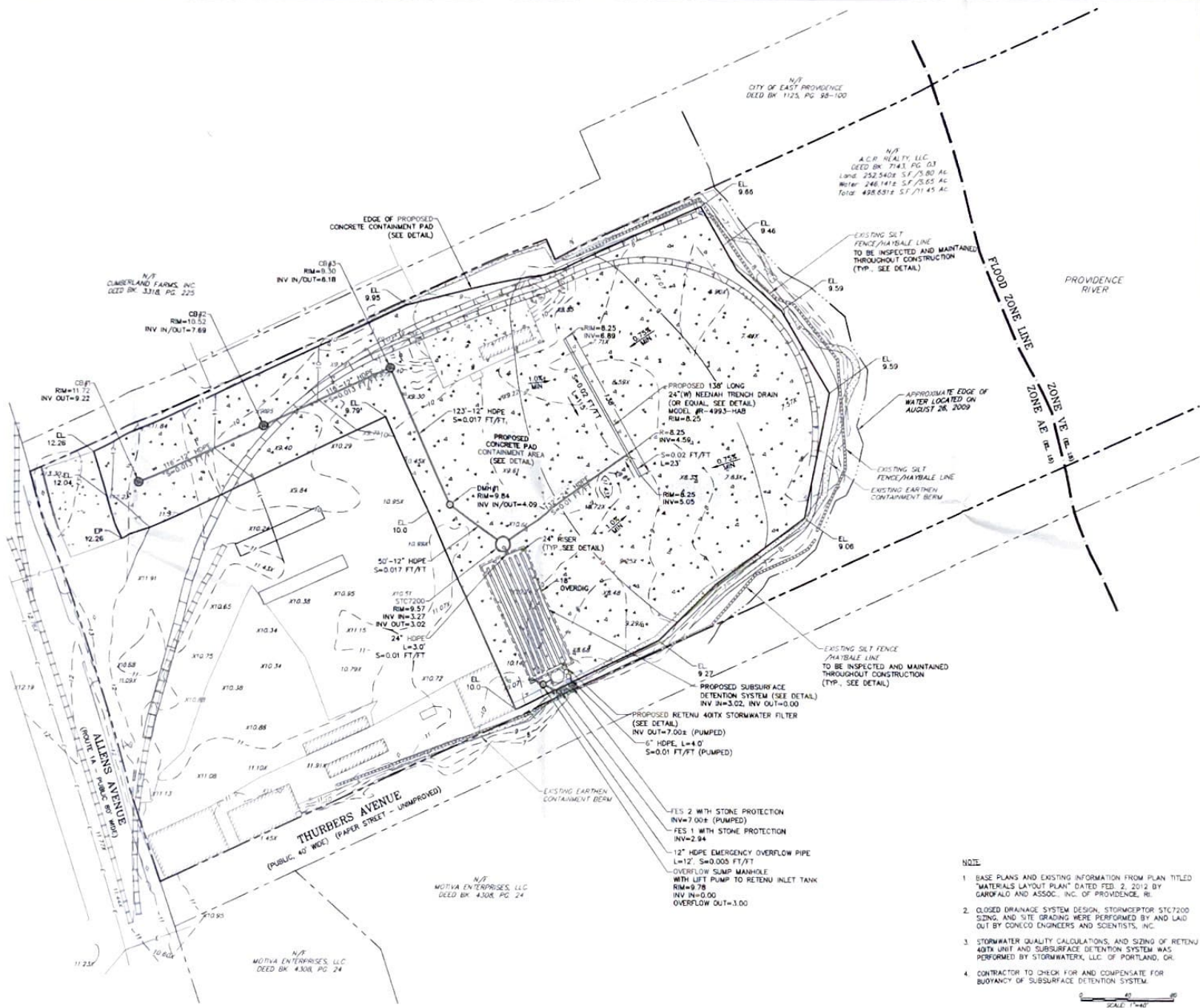
CONECO
 Engineers, Scientists & Surveyors
 1 FIRST STREET, BROADVIEW, MASSACHUSETTS 02524
 PHONE: 617-899-8300 FAX: 617-899-8300
 EMAIL: Admin@coneconet.com Web: www.coneconet.com

DATE: 08/15/2012
 DRAWN/CHECK: DMG/SMO
 SCALE: 1" = 40'
 PROJECT #: 7400.0
 SHEET NO.

3
 OF 08

- NOTE
- RAILROAD TRACK EXTENSION FOUNDATION AND ITS CONNECTION TO CONTAINMENT PAD WILL BE DESIGNED BY OTHERS.
 - TOTAL PROJECT AREA: 5.80 ACRES (LAND), 5.65 ACRES (WATER). CONSTRUCTION SITE AREA TO BE DISTURBED: 2.67 ACRES.





DAVID A HARRINGTON
 No. 17
 9214
 PROFESSIONAL ENGINEER

NO.	DATE	REVISIONS
1	8/23/12	NEW COMMENTS, REVISED DRAINAGE
2	12/17/12	CONFORM MANHOLE, DRAINAGE EDITS

ACR REALTY, LLC
 15 BRANCH PIKE
 SMITHFIELD, RHODE ISLAND 02917

PROPOSED SITE GRADING
 & DRAINAGE

RHODE ISLAND RECYCLED METALS
 CONSTRUCTION PERIOD SWPPP
 434 ALLENS AVENUE
 PROVIDENCE, RHODE ISLAND 02903

CONSTRUCTION PERIOD
 SWPPP SITE PLANS

CONECO
 Engineers, Scientists & Surveyors
 1 FORD STREET, PROVIDENCE, RHODE ISLAND 02903
 PHONE: 402-887-2319 • FAX: 402-887-2316
 EMAIL: Admin@coneco.com • WEB SITE: http://www.coneco.com

DATE: 08/15/2012
 DRAWN/CHECK: DMG/SMG
 SCALE: 1" = 40'
 PROJECT #: 7400.0
 SHEET NO. **4**
 OF 08

- NOTE**
1. BASE PLANS AND EXISTING INFORMATION FROM PLAN TITLED "MATERIALS LAYOUT PLAN" DATED FEB. 2, 2012 BY GAROFALO AND ASSOC., INC. OF PROVIDENCE, RI.
 2. CLOSED DRAINAGE SYSTEM DESIGN, STORMWATER STC7200 SIZING, AND SITE GRADING WERE PERFORMED BY AND LAID OUT BY CONECO ENGINEERS AND SCIENTISTS, INC.
 3. STORMWATER QUALITY CALCULATIONS, AND SIZING OF RETENU 40TH UNIT AND SUBSURFACE DETENTION SYSTEM WAS PERFORMED BY STORMWATER, LLC OF PORTLAND, OR.
 4. CONTRACTOR TO CHECK FOR AND COMPENSATE FOR BUOYANCY OF SUBSURFACE DETENTION SYSTEM.





N/A
CITY OF EAST PROVIDENCE
DEED BK 1125, PG. 98-100

N/A
ACR REALTY, LLC
DEED BK 7143, PG. 03
Land: 252,540± SF / 5.80 AC
Water: 246,141± SF / 5.63 AC
Total: 498,681± SF / 11.43 AC

N/A
CLIMBRIAND FARMS, INC.
DEED BK 3378, PG. 225

PROPOSED CATCH BASIN
SEDIMENT TRAP
(TYP. SEE DETAIL)

PROPOSED ADDITIONAL
SILTENCE/HAYBALE BARRIER
(TYP. SEE DETAIL)

PROVIDENCE
RIVER

PROPOSED ADDITIONAL
SILTENCE/HAYBALE BARRIER
(TYP. SEE DETAIL)

ALLEN'S AVENUE
(PUBLIC 40' WIDE)

THURBERS AVENUE
(PAPER STREET - UNIMPROVED)
(PUBLIC 40' WIDE)

N/A
MOTIVA ENTERPRISES, LLC
DEED BK 4308, PG. 24

N/A
MOTIVA ENTERPRISES, LLC
DEED BK 4308, PG. 24

CONSTRUCTION SEQUENCING LEGEND:

1. DRILLING AND INSTALLATION OF SUPPORT PILES FOR SHREDDER ENCLOSURE
2. CONSTRUCTION OF SHREDDER ENCLOSURE FOUNDATION
3. CONSTRUCTION OF SHREDDER ENCLOSURE BUILDING
4. INSTALLATION OF GRAVITY-FED STORMWATER TREATMENT COMPONENTS AND PIPING
5. INSTALLATION OF PUMPED STORMWATER FILTER, ARMORED FLARED END OUTLET AND PIPING
6. FORMING AND POURING OF CONCRETE CONTAINMENT PAD
7. CONSTRUCTION AND INSTALLATION OF NEW WEIGHT SCALES AND CONTROL HOUSE
8. CONSTRUCTION OF LANDSCAPING, PARKING RESURFACING, WALL AND FENCE AT FRONT OF SITE
9. INSTALLATION OF LANDSCAPING, PARKING RESURFACING, WALL AND FENCE AT FRONT OF SITE

NOTES:

1. REFER TO CONSTRUCTION-PERIOD STORMWATER POLLUTION PREVENTION PLAN FOR A MORE DETAILED CONSTRUCTION SCHEDULE.



DAVID A. HARRINGTON
No. 0214
PROFESSIONAL ENGINEER
LICENSE NO. 00000000

REVISIONS	
NO.	DATE
1	8/23/22
2	12/28/22

PROJECT NO.
ACR REALTY, LLC
15 BRANCH FIRE
SMITHFIELD, RHODE ISLAND 02817

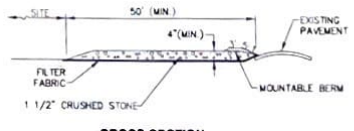
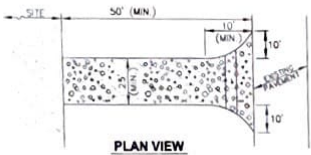
SHEET NO.
CONSTRUCTION SEQUENCING AND
EROSION CONTROL PLAN

PROJECT NO.
RHODE ISLAND RECYCLED METALS
CONSTRUCTION PERIOD SWPPP
434 ALLEN AVENUE
PROVIDENCE, RHODE ISLAND 02903

SHEET NO.
CONSTRUCTION PERIOD
SWPPP SITE PLANS

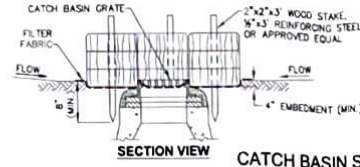
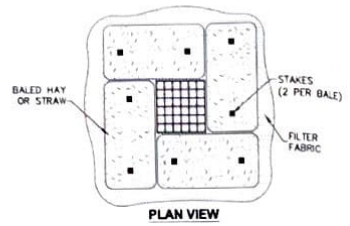
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4 FIRST STREET, WINDSOR, RHODE ISLAND 02891
PHONE: 401-987-3181 • FAX: 401-987-3286
DETAIL: david@coneco.com • WEB SITE: http://www.coneco.com

DATE	08/15/2012
DRAWN/ CHECK	DMG/SMO
SCALE	1" = 40'
PROJECT #	7400.0
SHEET NO.	5 OF 08



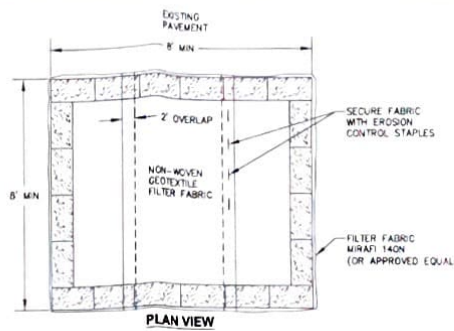
- NOTES**
- ENTRANCE WIDTH SHALL BE A TWENTY-FIVE (25) FOOT MINIMUM, BUT NOT LESS THAN THE FULL WIDTH AT POINTS WHERE INGRESS OR EGRESS OCCURS.
 - THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH SHALL PREVENT TRACKING OF FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAYS. THIS MAY REQUIRE PERIODIC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

STABILIZED CONSTRUCTION EXIT
N.T.S.



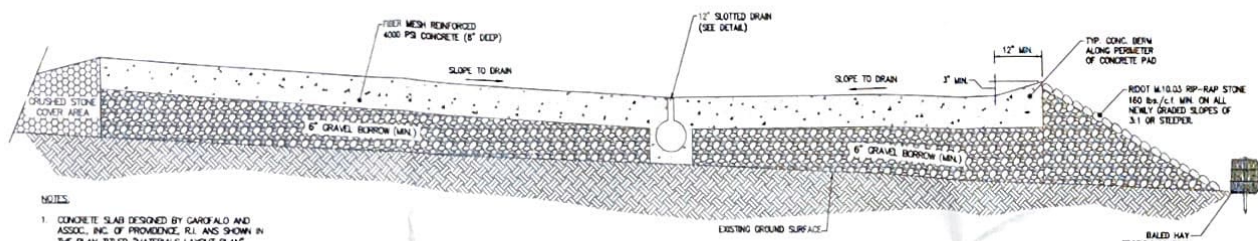
- NOTES**
- ENCLOSE STRUCTURE WITH HAYBALES IMMEDIATELY AFTER CATCH BASIN CONSTRUCTION. MAINTAIN UNTIL CONCRETE PAVING IS COMPLETE OR A PERMANENT STAND OF GRASS HAS BEEN ESTABLISHED.
 - IF GRATE IS AGAINST EXISTING CURB THEN HAYBALES ARE TO BE PLACED AROUND THREE SIDES OF GRATE ONLY.
 - WHEN STAKES MUST BE DRIVEN INTO PAVEMENT THE CONTRACTOR SHALL USE REINFORCING STEEL STAKES OR DRILL HOLES.
 - GRATE TO BE PLACED OVER FILTER FABRIC.
 - HALES SHALL BE INSPECTED PERIODICALLY AND AFTER ALL STORM EVENTS AND REPAIR OR REPLACEMENT SHALL BE PERFORMED PROMPTLY AS NEEDED.

CATCH BASIN SEDIMENT TRAP
N.T.S.



- NOTES**
- NUMBER OF BALES MAY VARY DEPENDING ON SITE CONDITIONS.
 - EQUIPMENT WASH OFF BASIN TO BE USED AS NECESSARY.
 - KEEP AS FAR FROM WETLANDS AS PRACTICAL.
 - CLEAN AND REMOVE AS SOON AS PRACTICAL.

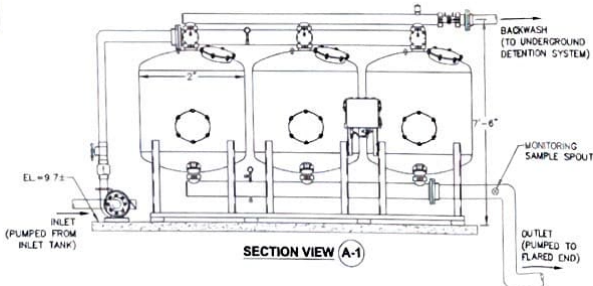
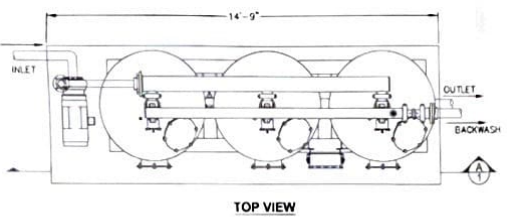
TYPICAL WASHOFF HAYBALE BASIN
N.T.S.



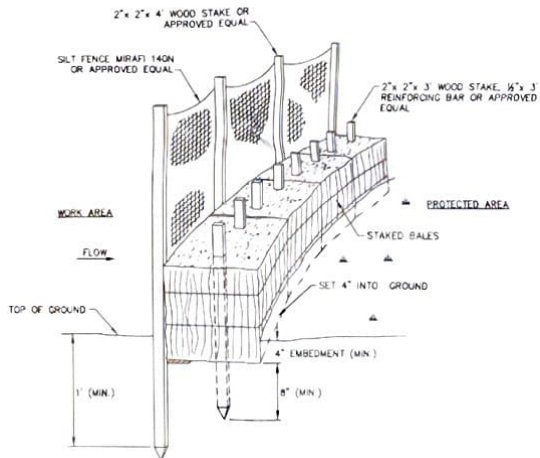
- NOTES**
- CONCRETE SLAB DESIGNED BY GAROFALO AND ASSOC. INC. OF PROVIDENCE, RI AND SHOWN IN THE PLAN TITLED "MATERIALS LAYOUT PLAN" DATED FEB. 2, 2012.

STANDARD CONCRETE COVER SECTION

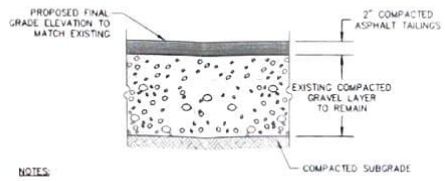
- GENERAL NOTES**
- RETENU BASIC FILTRATION SYSTEM BY STORMWATERX LLC - PORTLAND, OREGON - 800 880 3543
 - RETENU MODEL 40 HAS AN OPERATING RANGE OF 200 GPM TO 480 GPM WHICH IS BASED ON POLLUTANT LOADING CONDITIONS. RETENU AVAILABLE IN FOLLOWING CONFIGURATIONS: I.TX, ITX AND IXT. MODEL 40 INCLUDES 20 HP END SUCTION PUMP & CONTROL PANEL AND THREE SKID MOUNTED PRESSURE FILTER VESSELS. ADDITIONAL COMPONENTS LISTED BELOW.
 - INTERNAL APPURTENANCES BY STORMWATERX INCLUDE INTERCONNECTING PIPING, 304 SS UNDERDRAIN, 50 PRESSURE GAUGES, INLET AND OUTLET SAMPLE PORTS, BACKWASH FLOW CONTROL VALVE (SET AT 180 GPM), AND SYSTEM CONTROLLER (ADVANCED SOLID STATE AUTOMATION WITH ELAPSED TIME AND PRESSURE DIFFERENTIAL CONTROL). DRAIN DOWN FROM BACKWASH TANK WILL OUTLET BACK TO SUBSURFACE DETENTION SYSTEM.
 - SKID MOUNTED FILTER VESSELS AND INLET/BACKWASH TANKS REQUIRE A CONCRETE LEVEL PAD WITH LOAD BEARING CAPACITY OF 20,000 LBS FOR FILTER VESSEL AND 145,000 LBS FOR EACH 10,000 GAL. TANK. FILTER VESSELS AND HOPPER TANKS ONLY TO BE MOVED WHEN SYSTEM IS EMPTY (EMPTY VESSEL WEIGHT 3,000 LBS. EMPTY TANK WEIGHT 2,260 LBS).
 - RETENU REQUIRES 120V, 5 AMP SERVICE TO SYSTEM CONTROLLER AND THREE PHASE POWER TO PUMP CONTROL PANEL (200V/60A OR 480V/30A).
 - INLET AND OUTLET PIPING CONNECTIONS SPECIFIED BY STORMWATERX AND PROVIDED BY OTHERS. MODELS ITX, IXT AND IXT INCLUDE INTERCONNECTING PIPING BETWEEN FILTER VESSELS AND TANKS.
 - DETAIL PROVIDED AND FILTER DESIGNED AND SIZED, BY STORMWATERX LLC OF PORTLAND, OR.



STORMWATERX RETENU 40ITX INDUSTRIAL STORMWATER FILTER
N.T.S.



SILT FENCE / HAYBALE BARRIER
N.T.S.



- NOTES**
- TOP 2" OF EXISTING COMPACTED GRAVEL SHALL BE STRIPPED FROM PARKING AREA.
 - PROPOSED ASPHALT TAILINGS COURSE SHALL BE COMPACTED TO 95% DENSITY.
 - FINAL GRADE OF PARKING AREA SHALL REMAIN THE SAME FROM EXISTING TO PROPOSED CONDITION.

PROPOSED PARKING AREA RESURFACING SECTION
N.T.S.

DAVID A. HARRINGTON
No. 9214
PROJ. NO. 15-0000

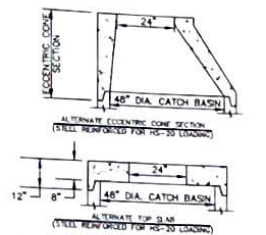
NO.	DATE	DESCRIPTION	BY	CHKD.
1	8/23/20	DATE		
2	12/28/21	REVISION		

ACR REALTY, LLC
15 BRANCH PIKE
SMITHFIELD, RHODE ISLAND 02917

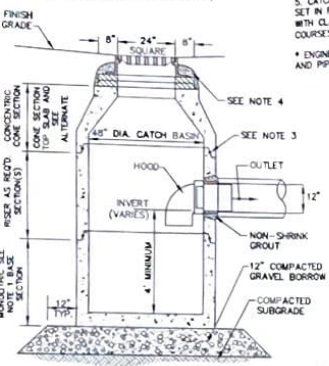
RHODE ISLAND RECYCLED METALS
CONSTRUCTION PERIOD SWPPP
434 ALLEN AVE
PROVIDENCE, RHODE ISLAND 02903

CONECO
Engineers, Scientists & Architects
1000 W. MAIN ST., SUITE 200
PROV. RI 02903
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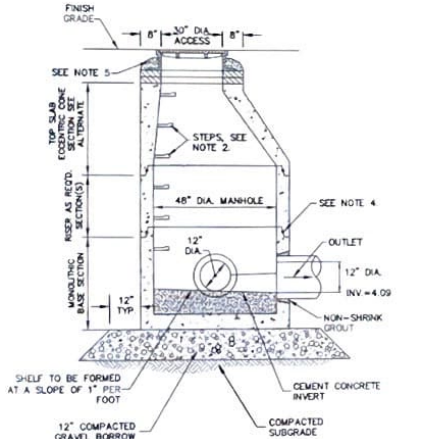
DATE:	08/15/2012
DRAWN/CHECK:	DMG/SMD
SCALE:	AS NOTED
PROJECT #:	7400.D
SHEET NO.:	6



- NOTES:
 1. ALL SECTIONS SHALL BE DESIGNED FOR HS-20 LOADING.
 2. COPOLYMER MANHOLE STEPS SHALL BE INSTALLED AT 12" O.C. FOR THE FULL DEPTH OF THE STRUCTURE.
 3. PROVIDE "V" KNOCKOUTS FOR PIPES WITH 2" MAX. CLEARANCE TO OUTSIDE OF PIPE. MORTAR ALL PIPE CONNECTIONS.
 4. JOINT SEALANT BETWEEN PRECAST SECTIONS SHALL BE PERFORMED BUTYL RUBBER.
 5. CATCH BASIN FRAME AND GRATE SHALL BE SET IN FULL MORTAR BED. ADJUST TO GRADE WITH CLAY BRICK AND MORTAR (2 BRICK COURSES TYPICALLY, 5 BRICK COURSES MAXIMUM).
 * ENGINEER TO COORDINATE FRAME & COVER AND PIPE TYPE.

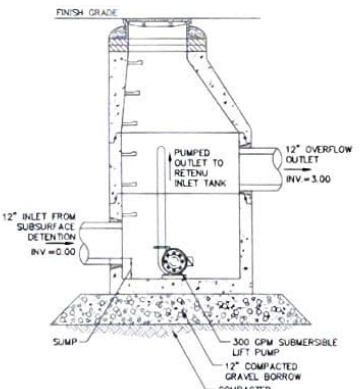


CATCH BASIN (CB) WITH TRAP
N.T.S.



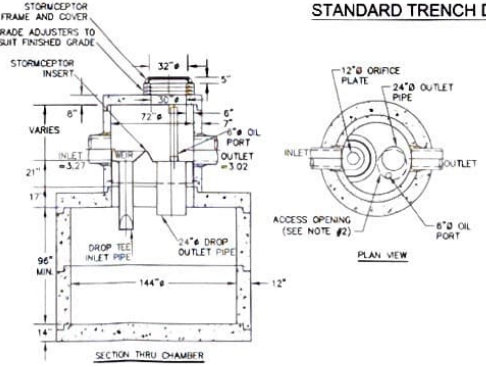
- NOTES:
 1. ALL SECTIONS SHALL BE DESIGNED FOR HS-20 LOADING.
 2. COPOLYMER MANHOLE STEPS SHALL BE INSTALLED AT 12" O.C. FOR THE FULL DEPTH OF THE STRUCTURE.
 3. PROVIDE "V" KNOCKOUTS FOR PIPES WITH 2" MAX. CLEARANCE TO OUTSIDE OF PIPE. MORTAR ALL PIPE CONNECTIONS.
 4. JOINT SEALANT BETWEEN PRECAST SECTIONS SHALL BE PERFORMED BUTYL RUBBER.
 5. DRAIN MANHOLE FRAME AND COVER SHALL BE SET IN FULL MORTAR BED. ADJUST TO GRADE WITH CLAY BRICK AND MORTAR (2 BRICK COURSES TYPICALLY, 5 BRICK COURSES MAXIMUM).
 * ENGINEER TO COORDINATE FRAME & COVER AND PIPE TYPE.

DRAIN MANHOLE (DMH)
N.T.S.



- NOTES:
 1. REFER TO DRAIN MANHOLE DETAIL FOR GENERAL CONSTRUCTION GUIDELINES.
 2. SUBMERSIBLE PUMP AND SUMP DEPTH TO BE DESIGNED BY STORMWATER.
 * ENGINEER TO COORDINATE FRAME & COVER AND PIPE TYPE.

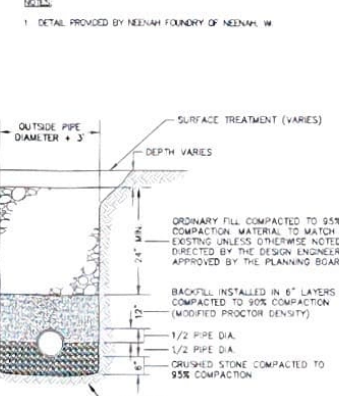
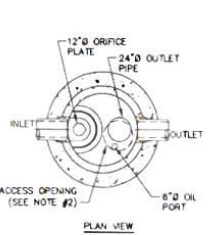
OVERFLOW SUMP MANHOLE
N.T.S.



- NOTES:
 1. THE USE OF FLEXIBLE CONNECTION IS RECOMMENDED AT THE INLET AND OUTLET WHERE APPLICABLE.
 2. THE COVER SHOULD BE POSITIONED OVER THE OUTLET DROP PIPE AND THE OIL PORT.
 3. THE STORMCEPTOR SYSTEM IS PROTECTED BY ONE OR MORE OF THE FOLLOWING U.S. PATENTS: #4885148, #5498331, #5725760, #5753515, #5849181, #6068765, #6371690.
 * DETAIL PROVIDED BY RINKER MATERIALS CORPORATION OF HOUSTON, TX.

RINKER STORMCEPTOR STC7200 WATER QUALITY UNIT
N.T.S.

STANDARD TRENCH DRAIN DETAIL
N.T.S.



- NOTES:
 1. AT WATER/SEWER CROSSINGS WHEN SEWER IS ABOVE OR WITHIN 18" OF WATER, THE DEEPER UTILITY SHALL BE ENCASED IN 6" OF CONCRETE, EXTENDING 10' IN EITHER DIRECTION.

TYPICAL UTILITY TRENCH DETAIL FOR RCP/HDPDE
N.T.S.

Note: The suggested forming procedures shown in this catalog are general suggestions to qualified professionals and may not be appropriate for every installation.

R-4993 & R-4994 Superior Durability Frame Series for Airports, Ports, Industrial Sites and Roads

Superior Duty Frames

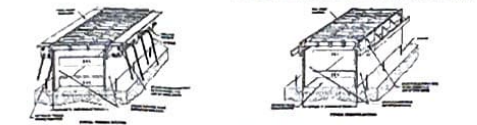
Designers have the option to utilize either of these new frames in locations where it is deemed that traditional angle frames could break due to concrete due to extraordinary conditions. A few examples of such conditions are braking forces of ultra heavy vehicles, lateral forces due to turning aircraft and container port vehicles, heavy aircraft and industrial applications, highway tunnels, certain highway applications. Neenah offers two frame choices each with its own unique benefits. Items are furnished standard with grate BOLTED to frames.



Illustrating R-4993 with Type B Frame

Illustrating R-4994 with Type S Frame

- * 212 square inches of masonry contact surface per foot
- * 120 square inches of masonry bearing surface per foot
- * 48 square inches of masonry bearing surface per foot
- * Frame top surface provides traction platform and set of printing marks.
- * Perimeter for bracing assumes frame maximum height.
- * Provides significant anchoring for stability.
- * Steel tubes are drilled clear through reinforced steel and will not sag under load.
- * 212 square inches of masonry contact surface per foot
- * 120 square inches of masonry bearing surface per foot
- * 48 square inches of masonry bearing surface per foot
- * Frame top surface provides traction platform and set of printing marks.
- * Perimeter for bracing assumes frame maximum height.
- * Provides significant anchoring for stability.
- * Steel tubes are drilled clear through reinforced steel and will not sag under load.



Note: Typical "L" shaped angle frame has about 120 inches of masonry contact surface per foot and about 54 inches of masonry bearing surface per foot.

Type A	Type B	Type C	Dimensions in inches										
			A	B	C	E	Type A	Type C	Type D	Type E	Type L	Type P	Type O
Heavy Duty													
R-4993-AB	R-4994-AB	11	11.0	8	19 1/4	4	18	x	x	x	x	x	x
R-4993-DB	R-4994-DB	10	11.0	8	21 1/4	4	18	x	x	x	x	x	x
R-4993-EB	R-4994-EB	12	11.0	10	23 1/4	4	18	x	x	x	x	x	x
R-4993-GB	R-4994-GB	14	11.0	12	25 1/4	10	24	x	x	x	x	x	x
R-4993-LB	R-4994-LB	17	11.2	15	28 1/4	13	27	x	x	x	x	x	x
R-4993-EB	R-4994-EB	20	11.0	18	31 1/4	18	30	x	x	x	x	x	x
R-4993-GB	R-4994-GB	23	11.0	21	34 1/4	23	33	x	x	x	x	x	x
R-4993-LB	R-4994-LB	24	11.2	24	37 1/4	27	36	x	x	x	x	x	x
R-4993-JB	R-4994-JB	30	2	28	41 1/4	33	40	x	x	x	x	x	x
R-4993-KB	R-4994-KB	33	2	31	44 1/4	36	43	x	x	x	x	x	x
R-4993-LB	R-4994-LB	36	2	34	47 1/4	39	46	x	x	x	x	x	x
R-4993-MB	R-4994-MB	39	2	37	50 1/4	42	49	x	x	x	x	x	x
R-4993-NB	R-4994-NB	45	2	43	56 1/4	48	55	x	x	x	x	x	x
R-4993-OB	R-4994-OB	61	2	60	82 1/4	67	81	x	x	x	x	x	x
Airport, Port, Industrial Loads													
R-4993-AB	R-4994-AB	8	2	8	19 1/4	4	18	x	x	x	x	x	x
R-4993-DB	R-4994-DB	10	2	10	21 1/4	4	18	x	x	x	x	x	x
R-4993-EB	R-4994-EB	12	2	12	23 1/4	4	18	x	x	x	x	x	x
R-4993-FAB	R-4994-FAB	14	2	14	25 1/4	4	18	x	x	x	x	x	x
R-4993-SAB	R-4994-SAB	17	2	17	28 1/4	13	27	x	x	x	x	x	x
R-4993-TAB	R-4994-TAB	20	2	20	31 1/4	18	30	x	x	x	x	x	x
R-4993-UAB	R-4994-UAB	26	2	26	37 1/4	24	36	x	x	x	x	x	x
R-4993-VAB	R-4994-VAB	34	2	34	45 1/4	32	44	x	x	x	x	x	x
R-4993-WAB	R-4994-WAB	61	2	60	82 1/4	67	81	x	x	x	x	x	x

x - Indicates availability

Note: The suggested forming procedures shown in this catalog are general suggestions to qualified professionals and may not be appropriate for every installation.

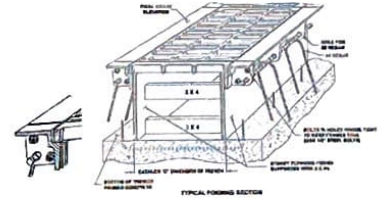
Forming Procedures R-4993 & R-4994 Bolted Trench Series

Bolted frames and gratings are furnished assembled, and therefore require different forming procedures than unbolted frames. AT NO TIME SHOULD THE UNITS BE DISASSEMBLED DURING INSTALLATION. VERIFY THAT THE 3/16" PER SIDE MAXIMUM GAP BETWEEN FRAME AND LID HAS NOT CHANGED DURING TRANSPORT. WHEN SATISFIED THE GAP IS CORRECT, TORQUE BOLTS TO ASSURE THE PIECES REMAIN IN THAT ORIENTATION.

R-4993 Forming Procedures

Follow forming procedures for bolted trench on page 268. The following exceptions apply:

- * Use Figure 6 as a guide.
- * Frame pieces can be bolted together making sure that bolts are only finger tight.
- * Reinforcing bar can be installed per Figure 6.



R-4994 Forming Procedures

Follow forming procedures for bolted trench on page 268. The following exceptions apply:

- * Use Figure 7 as a guide.
- * The frame seal for the R-4994 series cantilevers over the trench opening. This requires the distance between sidewalk to be set accordingly. In this case, loaded assemblies are set upon the sidewalk forms with the contact area being the top of the form and the underside of the cantilever seal. (See Figure 6 on previous page).
- * The inside distance between concrete sidewalks corresponds with the CB dimension shown on page 268 of the catalog.
- * Frame pieces can be bolted together making sure that bolts are only finger tight.
- * Reinforcing bar can be installed per Figure 7.

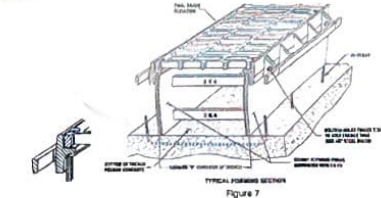


Figure 7
N.T.S.

NO.	DATE	DESCRIPTION	BY	CHECKED
1	8/20/72	CONVERTED MANHOLE DETAIL		
2	12/18/72	OVERFLOW MANHOLE DETAIL		

REVISIONS
 ACR REALTY, LLC
 15 BRANCH PINE
 SMITHFIELD, RHODE ISLAND 02917

DETAIL SHEET
 RHODE ISLAND RECYCLED METALS
 CONSTRUCTION PERFORMING GROUP
 PROVIDENCE, RHODE ISLAND 02903

CONSTRUCTION PERIOD
 SWPPP SITE PLANS
 CONECCO
 Engineers, Scientists & Surveyors
 11000 WEST 13TH AVENUE, SUITE 200
 DENVER, CO 80202
 PHONE: 303-697-3411 FAX: 303-697-3498
 E-MAIL: info@conecco.com
 WWW: www.conecco.com

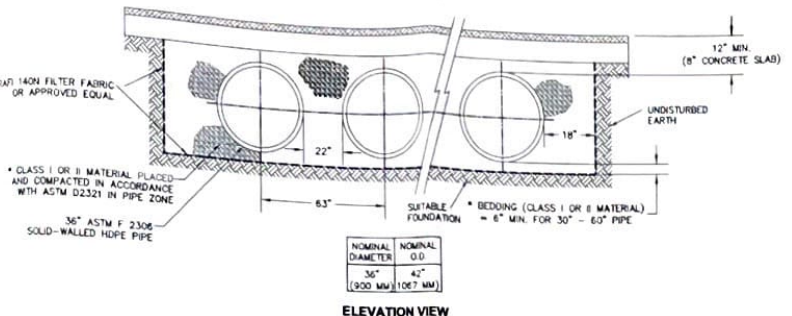
NO.	DATE	DESCRIPTION
1	02/27/15	IMP. COMMENTS, REVISED DRAINAGE DETENTION IN FLOW DET. 15
2	02/28/15	

ACR REALTY, LLC
15 BRANCH PIKE
SMITHFIELD, RHODE ISLAND 02917

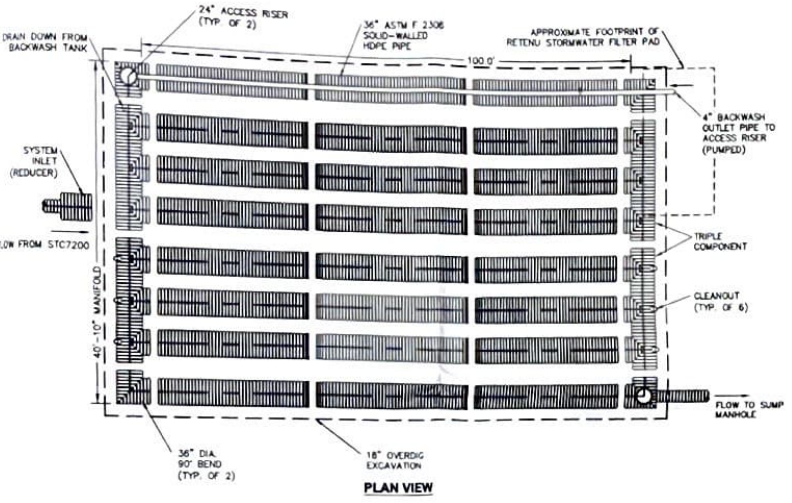
RHODE ISLAND RECYCLED METALS
CONSTRUCTION PERIOD SWPPP
434 ALEANS AVENUE
PROVIDENCE, RHODE ISLAND 02903

CONSTRUCTION PERIOD
SWPPP SITE PLANS

DATE: 08/15/2012
DRAWN/CHECK: DMG/SMD
SCALE: AS NOTED
PROJECT #: 7400.0
SHEET NO: 8 OF 08



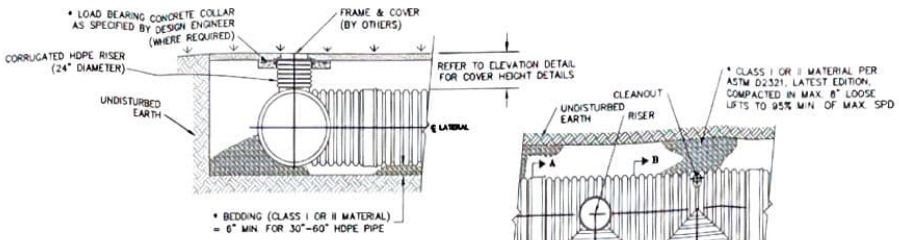
ELEVATION VIEW



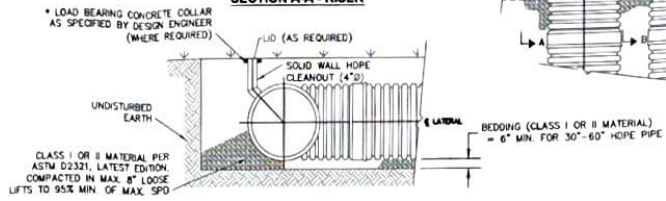
NOTES:

- ALL REFERENCES TO CLASS I OR II MATERIAL ARE PER ASTM D2321 "STANDARD PRACTICE FOR UNDERGROUND INSTALLATION OF THERMOPLASTIC PIPE FOR SEWERS AND OTHER GRAVITY FLOW APPLICATIONS", LATEST EDITION.
- ALL RETENTION AND DETENTION SYSTEMS SHALL BE INSTALLED IN ACCORDANCE WITH ASTM D2321, LATEST EDITION AND THE MANUFACTURER'S PUBLISHED INSTALLATION GUIDELINES.
- MEASURES SHOULD BE TAKEN TO PREVENT THE MIGRATION OF NATIVE FINES INTO THE BACKFILL MATERIAL, WHEN REQUIRED. SEE ASTM D2321.
- FILTER FABRIC: MIRAFI 140N FILTER FABRIC, OR AN APPROVED EQUAL, SHALL BE USED TO PREVENT THE MIGRATION OF FINES FROM THE NATIVE SOIL INTO THE SELECT BACKFILL MATERIAL.
- FOUNDATION: WHERE THE TRENCH BOTTOM IS UNSTABLE, THE CONTRACTOR SHALL EXCAVATE TO A DEPTH REQUIRED BY THE ENGINEER AND REPLACE WITH SUITABLE MATERIAL AS SPECIFIED BY THE ENGINEER, AS AN ALTERNATIVE AND AT THE DISCRETION OF THE DESIGN ENGINEER, THE TRENCH BOTTOM MAY BE STABILIZED USING A GEOTEXTILE MATERIAL.
- BEDDING: SUITABLE MATERIAL SHALL BE CLASS I OR II. THE CONTRACTOR SHALL PROVIDE DOCUMENTATION FOR MATERIAL SPECIFICATION TO ENGINEER, UNLESS OTHERWISE NOTED BY THE ENGINEER. MINIMUM BEDDING THICKNESS SHALL BE 6" (150mm) FOR 30"-60" (750mm-900mm) DIAMETER PIPE.
- INITIAL BACKFILL: SUITABLE MATERIAL SHALL BE CLASS I OR II IN THE PIPE ZONE EXTENDING NOT LESS THAN 6" ABOVE CROWN OF PIPE. THE CONTRACTOR SHALL PROVIDE DOCUMENTATION FOR MATERIAL SPECIFICATION TO ENGINEER. MATERIAL SHALL BE INSTALLED AS REQUIRED IN ASTM D2321, LATEST EDITION.
- MINIMUM COVER: MINIMUM COVER OVER ALL RETENTION/DETENTION SYSTEMS IN NON-TRAFFIC APPLICATIONS (GRASS OR LANDSCAPE AREAS) IS 12" FROM TOP OF PIPE TO GROUND SURFACE. ADDITIONAL COVER MAY BE REQUIRED TO PREVENT FLOATION, FOR TRAFFIC APPLICATIONS, MINIMUM COVER IS 12" UP TO 36" DIAMETER PIPE AND 24" OF COVER FOR 42" - 60" DIAMETER PIPE, MEASURED FROM TOP OF PIPE TO BOTTOM OF FLEXIBLE PAVEMENT OR TO TOP OF RIGID PAVEMENT.
- DETAIL PROVIDED BY ADS INC., 3300 RIVERSIDE DRIVE, COLUMBUS OH 43221.

ADS SUBSURFACE DETENTION AREA
N.T.S.



SECTION A-A - RISER

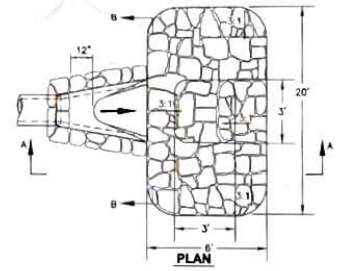


SECTION B-B - CLEANOUT

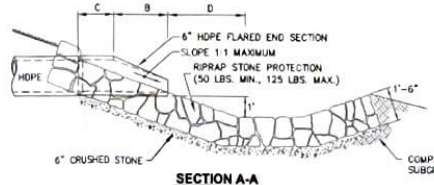
NOTES:

- CLASS I BACKFILL REQUIRED AROUND 60" DIAMETER FITTINGS.
- LOAD BEARING CONCRETE COLLAR SHALL BE CONSTRUCTED IN TRAFFIC AREAS SUCH THAT THE LIVE LOAD IS TRANSMITTED TO THE SURROUNDING SOIL AND NOT DIRECTLY TO THE RISER.
- DETAIL PROVIDED BY ADS INC., 3300 RIVERSIDE DRIVE, COLUMBUS OH 43221.

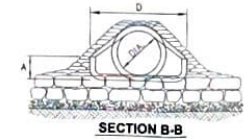
ADS SUBSURFACE DETENTION RISER/CLEANOUT DETAILS
N.T.S.



PIPE DIA.	DIMENSIONAL TABLE					
	A	B	C	D	E	R
6"-12"	4"	2'-0"	4'-0"	2'-0"	2"	9"
15"	6"	2'-3"	3'-10"	2'-6"	2"	11"
18"	9"	2'-3"	3'-10"	3'-0"	2"	12"
24"	9"	3'-7"	2'-6"	4'-0"	3"	14"
30"	12"	4'-6"	1'-7"	5'-0"	3"	15"
36"	15"	5'-3"	2'-10"	6'-0"	4"	20"
42"	21"	5'-3"	2'-11"	6'-6"	4"	22"
48"	24"	6'-0"	2'-2"	7'-0"	5"	22"
54"	27"	5'-5"	2'-11"	7'-6"	5"	24"
60"	30"	5'-0"	3'-3"	8'-0"	6"	24"



SECTION A-A



NOTES:

- THE FLARED END SECTION PIPE JOINT SHALL BE SIMILAR TO THE MAIN RUN OF PIPE JOINTS.
- FLARED END SECTIONS SHALL CONFORM AS SHOWN IN THE TABLE OR AS APPROVED BY THE ENGINEER.

FLARED END SECTION WITH STONE PROTECTION
N.T.S.