

# TOWN OF ORLEANS, MA SITE IMPROVEMENTS AT SKAKET BEACH PARKING LOT CONTRACT No: 2013-WQ-01

NOTE: THE SKAKET BEACH STORMWATER DESIGN PROJECT, DESIGNED BY GHD, INC. IS IDENTIFIED AS A NON PARTICIPATING COMPONENT OF THE SKAKET BEACH SEWAGE TREATMENT DESIGN DESIGNED BY RYDER AND WILCOX. THE ENGINEER SEAL OF BILL HALL, JR. P.E. (MA LIC NO. 31937) IS FOR THE DESIGN OF THE SKAKET BEACH STORMWATER DESIGN PROJECT ONLY AS IDENTIFIED IN THE SHEET INDEX.

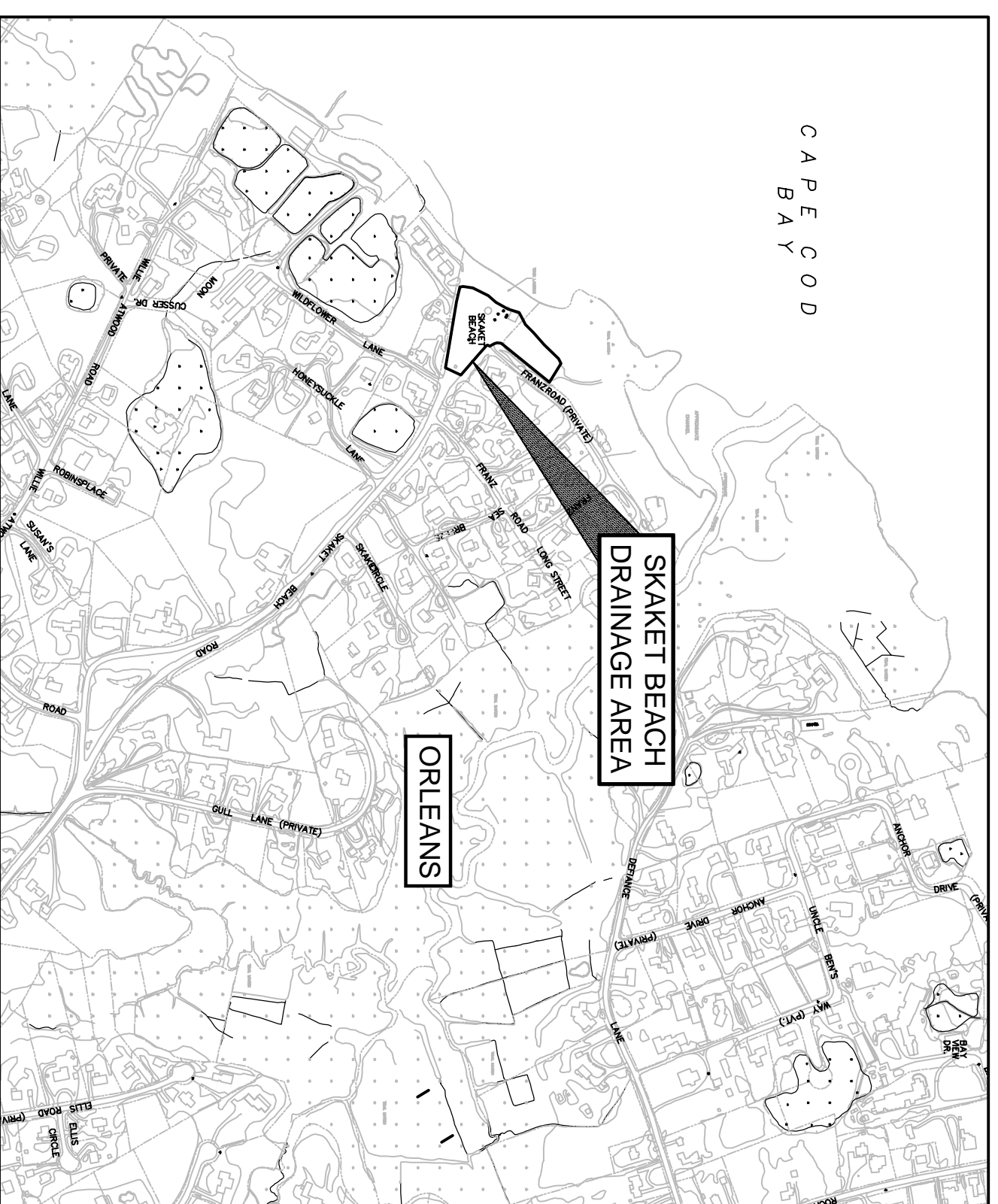
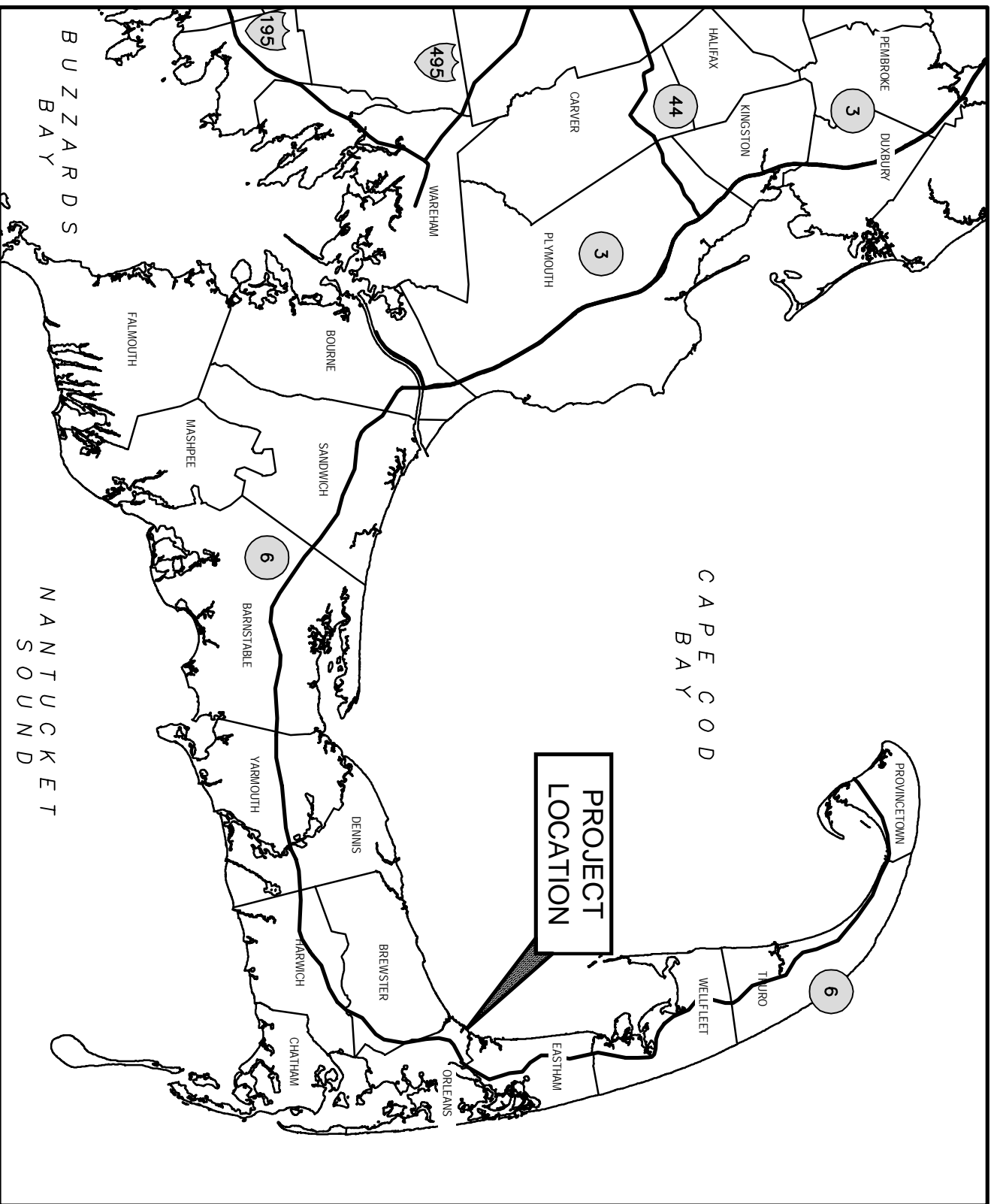
THE LANDOWNER IS RESPONSIBLE FOR VERIFYING THE EXISTENCE AND LOCATIONS OF UTILITIES, AND IS LIABLE FOR ANY DAMAGE BY CONSTRUCTION ACTIVITY. UTILITY LOCATIONS, IF SHOWN ON THE DRAWINGS, ARE ONLY APPROXIMATE. ADDITIONAL UTILITIES MAY EXIST EVEN THOUGH NOT SHOWN.

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## DRAWING LIST

DRG. No.	DRAWING TITLE
86-15149-G001	GENERAL
86-15149-G002	COVER SHEET, LOCUS & DRAWING LIST
86-15149-G002	LEGENDS, NOTES & DETAILS
	CIVIL
86-15149-C001	SEWAGE TREATMENT DESIGN - SITE PLAN NOTES, LEGEND AND DETAILS
86-15149-C002	SEWAGE TREATMENT DESIGN - PROFILES
86-15149-C003	STORMWATER DESIGN - SITE PLANS & NOTES
86-15149-C004	STORMWATER DESIGN - MISCELLANEOUS DETAILS



No.	Revision	Name	Indicates signatures on original issue of drawing or last revision of drawing	Drawn	Job Manager	Project Director	Date
1	RE-ISSUED FOR CONSTRUCTION (PROJECT # 8615149)	JJO		NCW	WRH	WRH	02.13.13
0	ISSUED FOR CONSTRUCTION (PROJECT # 86-14572)	JDF		RHK	WRH	WRH	8.25.11

Client	JJO	Designer	JPJ
Project	JDF	Design Check	WRH
Approved (Project Director)	Bill Hall	Date	8.25.11
Scale	AS SHOWN	This Drawing shall not be used for Construction unless Signed and Sealed by the Designer.	

Original Size	ANSI D	Drawing No:	86-15149-G001	Rev:	1
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Ryder & Wilcox, Inc.	Professional Seal P.O. Box 439 5th, Orleans, MA, 02654 Tel: (508) 355-8312 Fax: (508) 240-2306
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Seal of William F. Hall, Jr.	Professional Seal No. 31937 P.E. Seal of the State of Massachusetts
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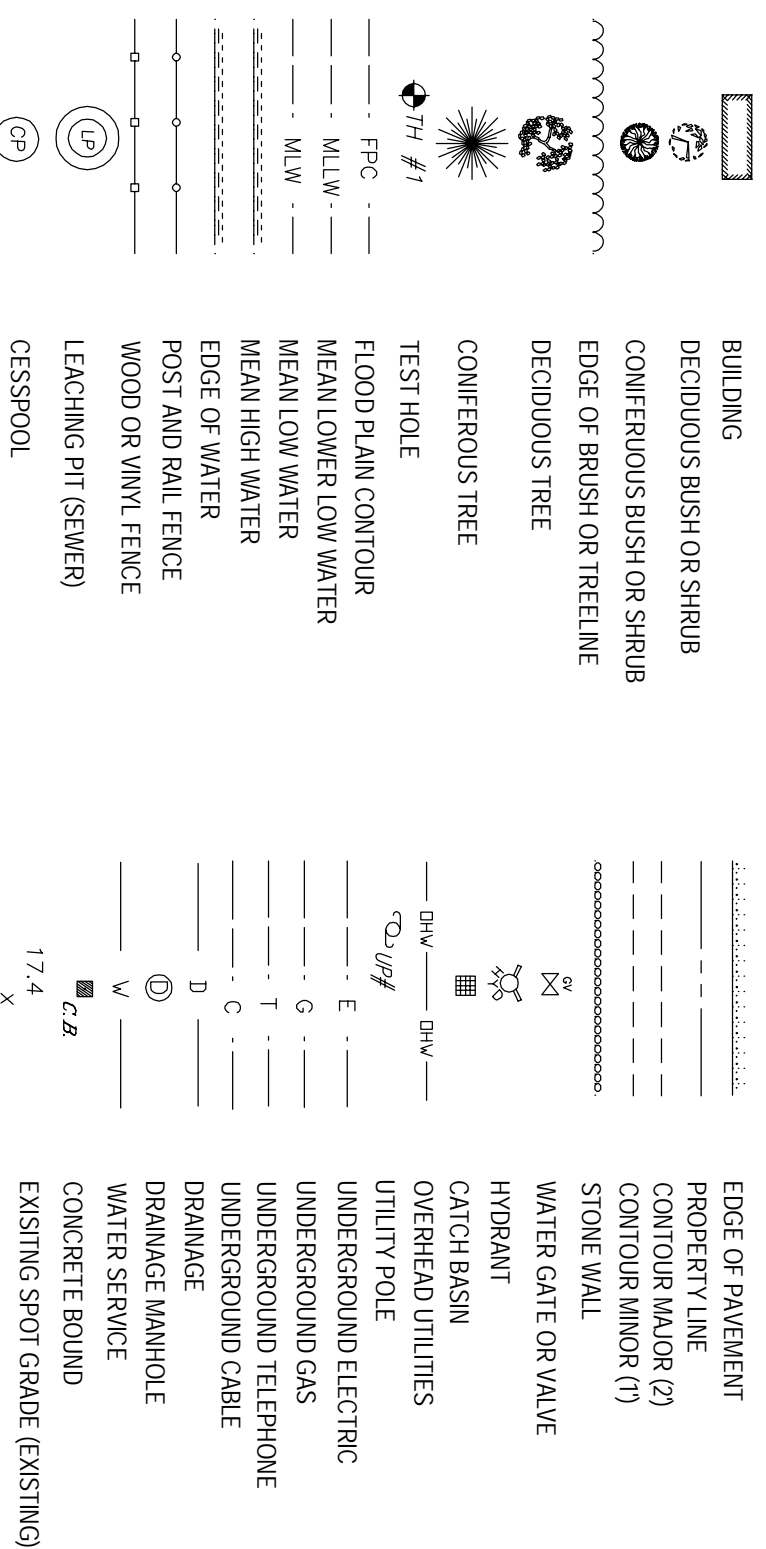
  

Print Date:	19 March 2013 - 11:58 AM	Printed by:	James O'Brien
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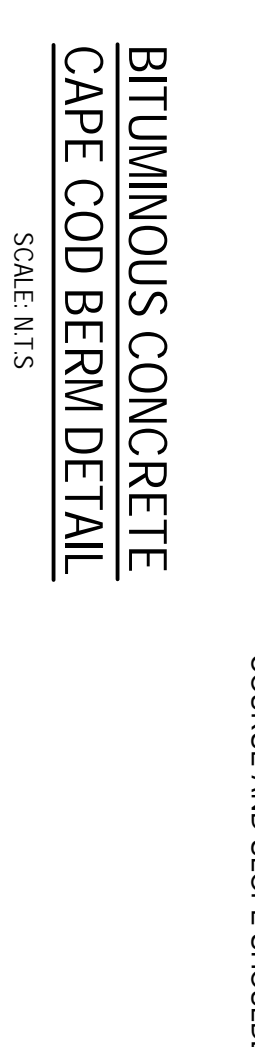
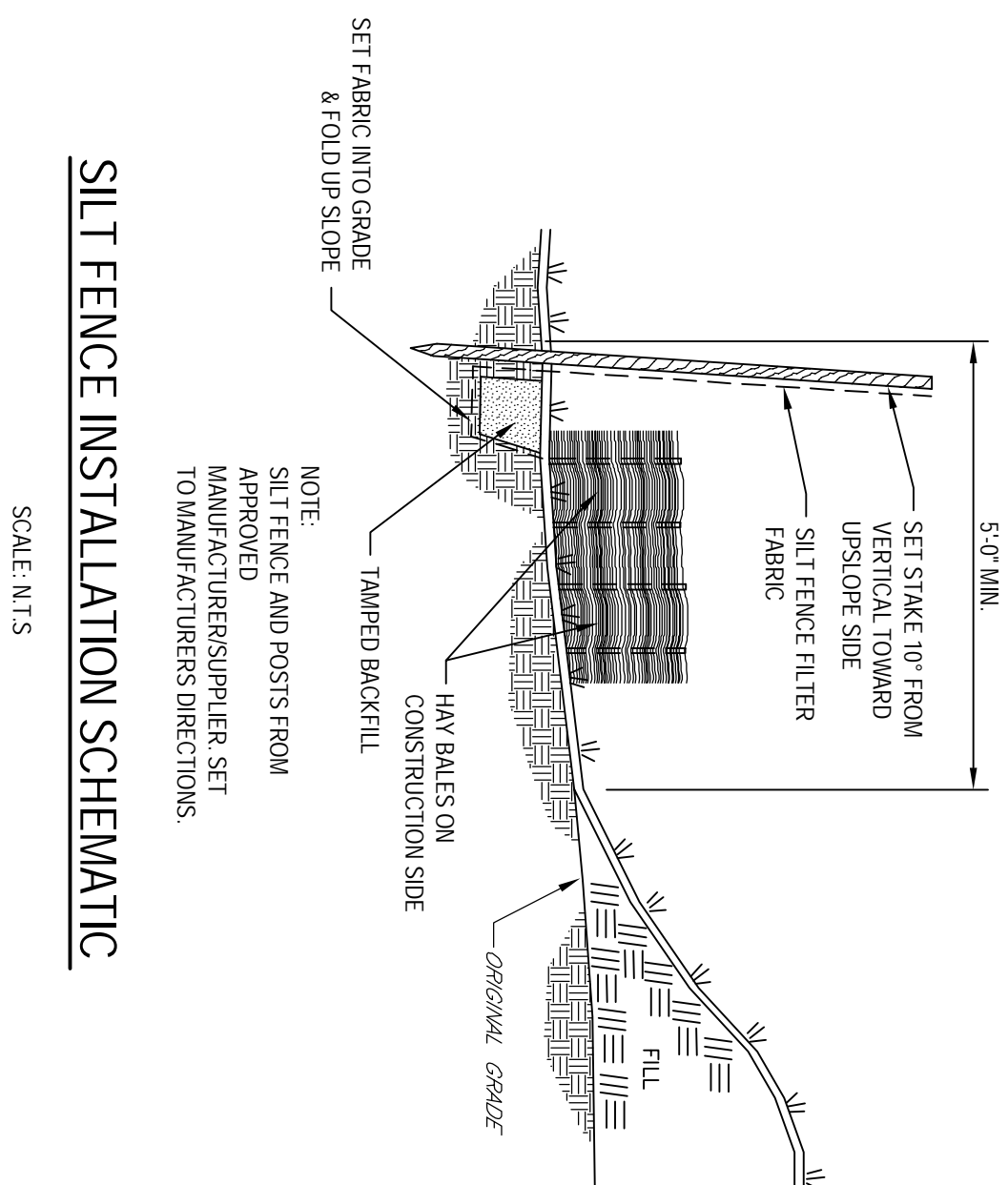
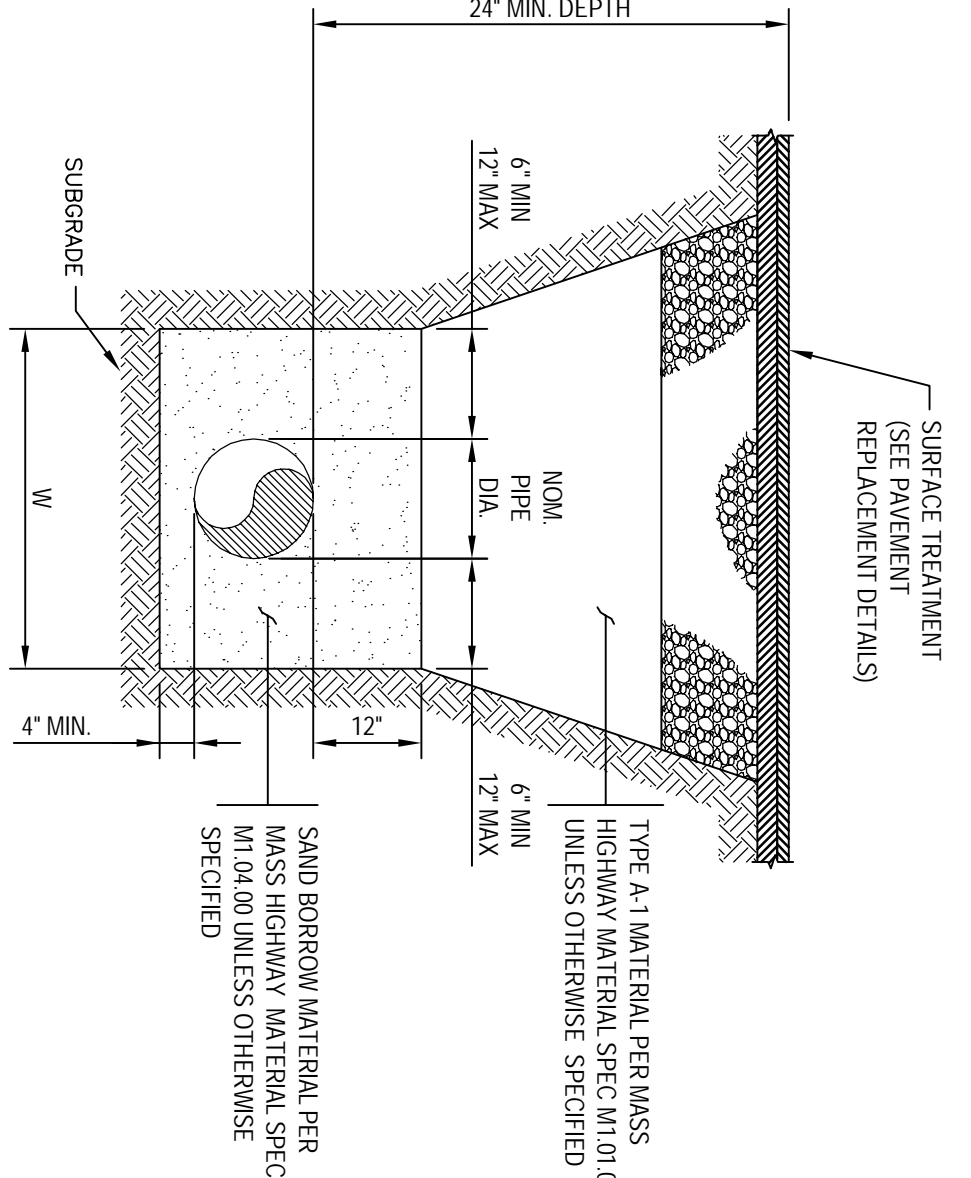
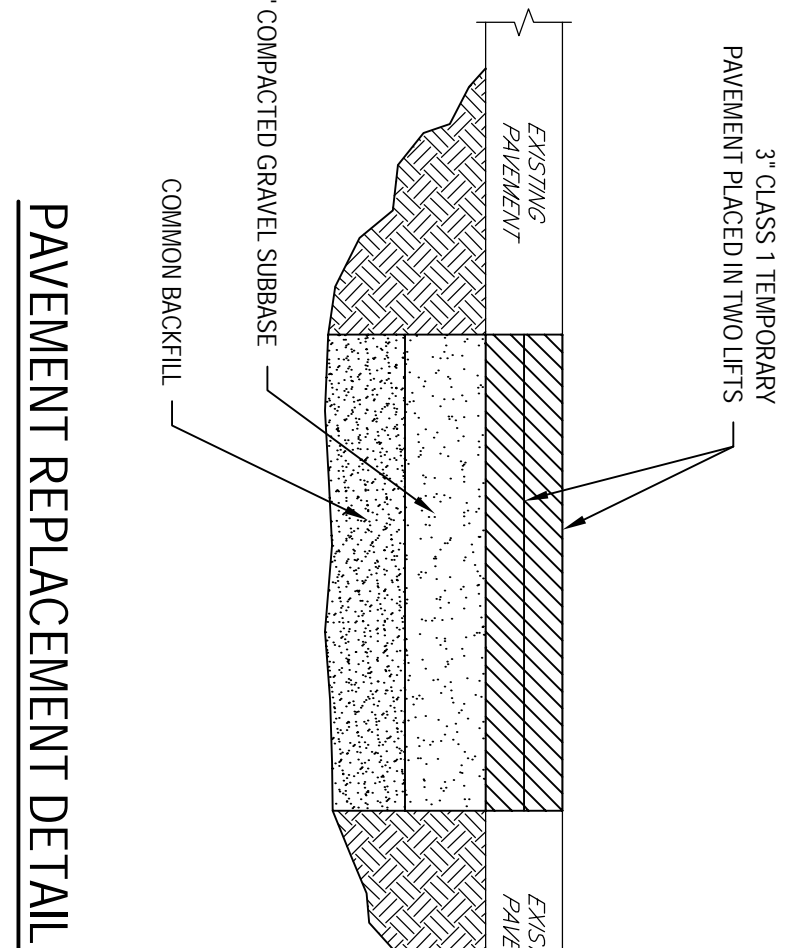
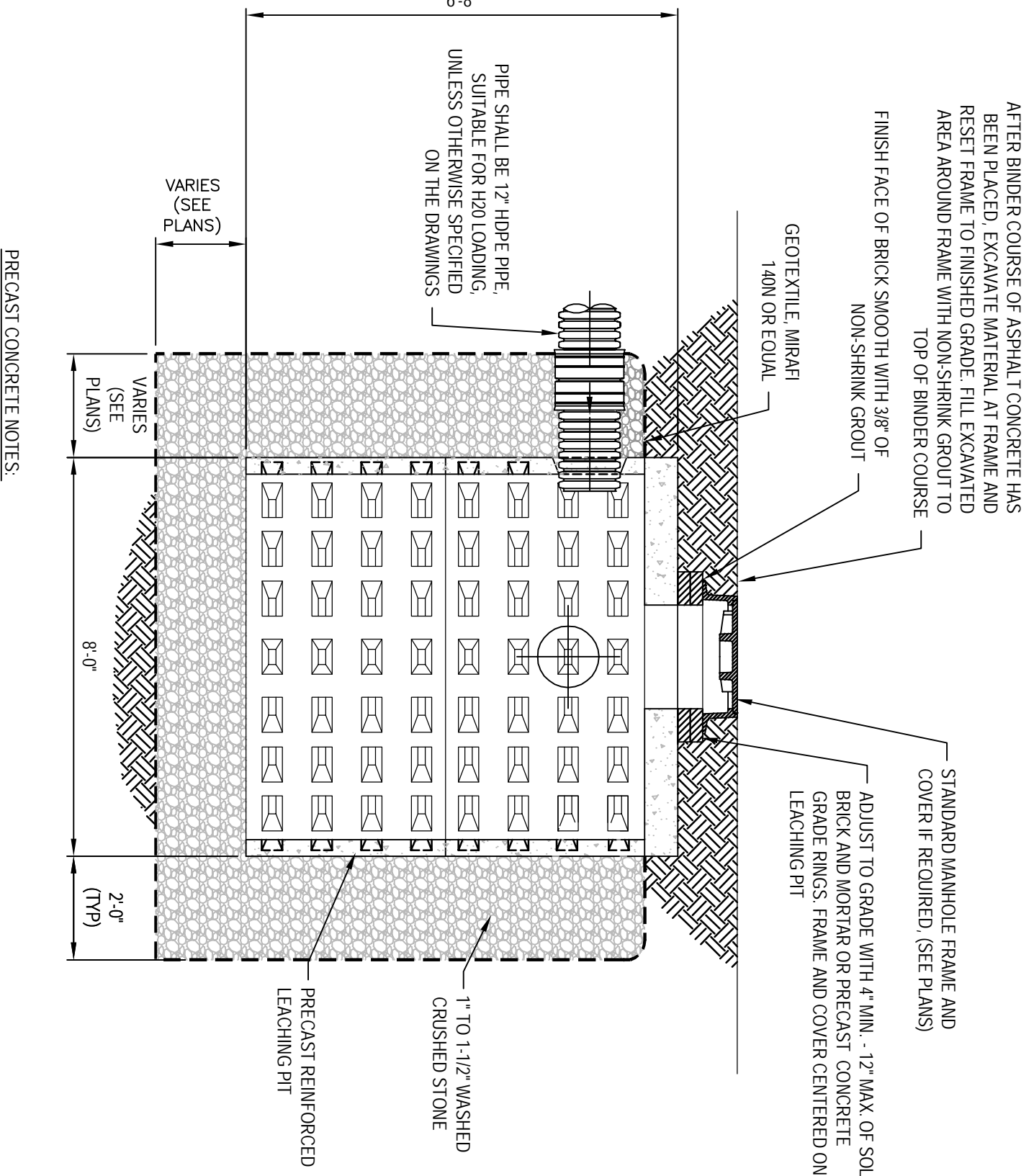
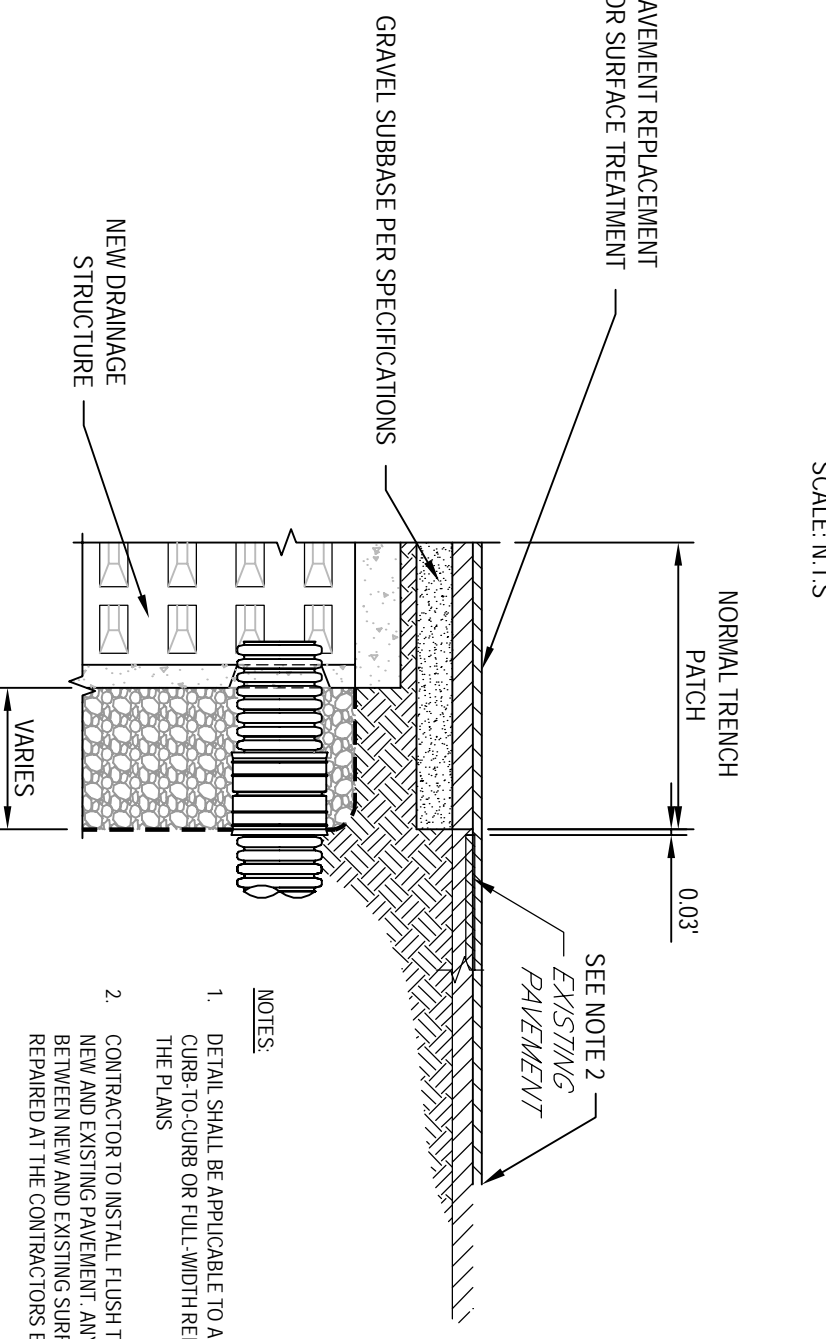
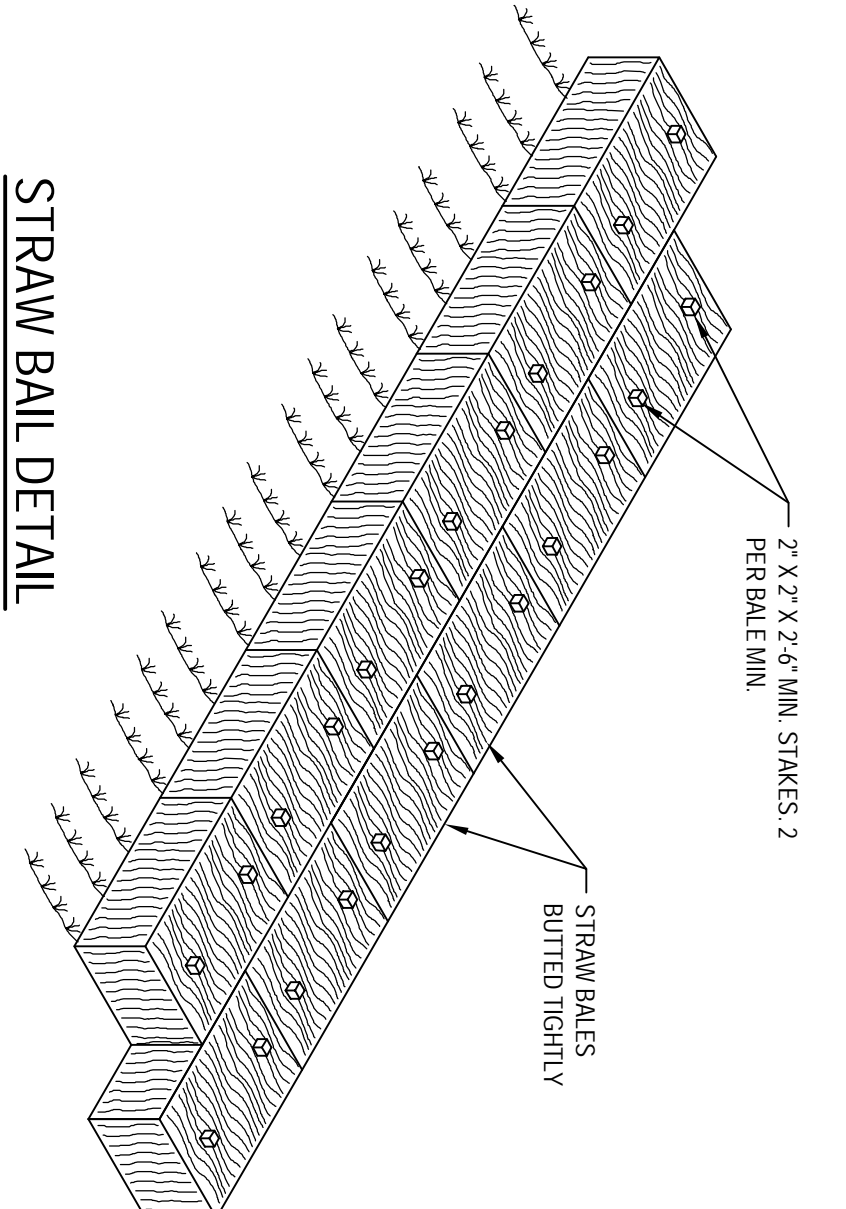
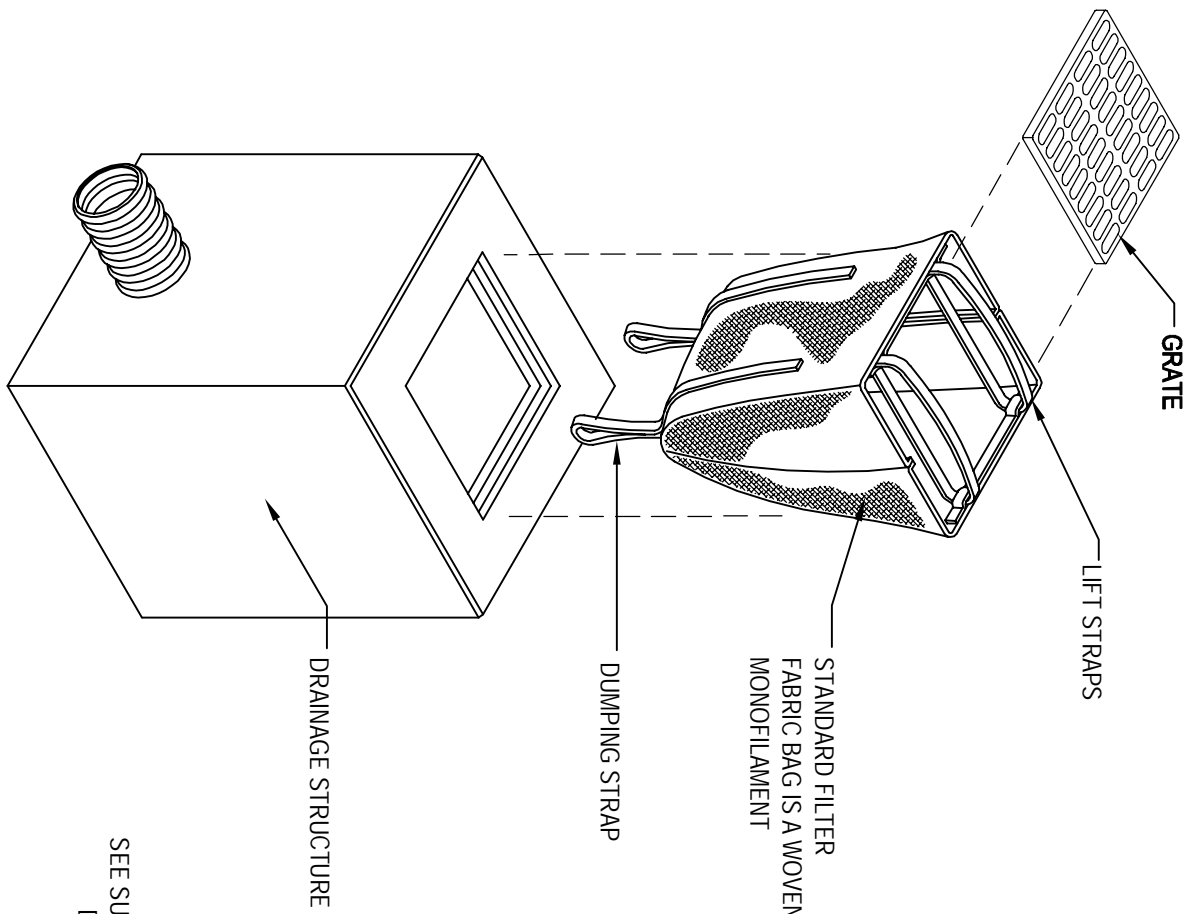
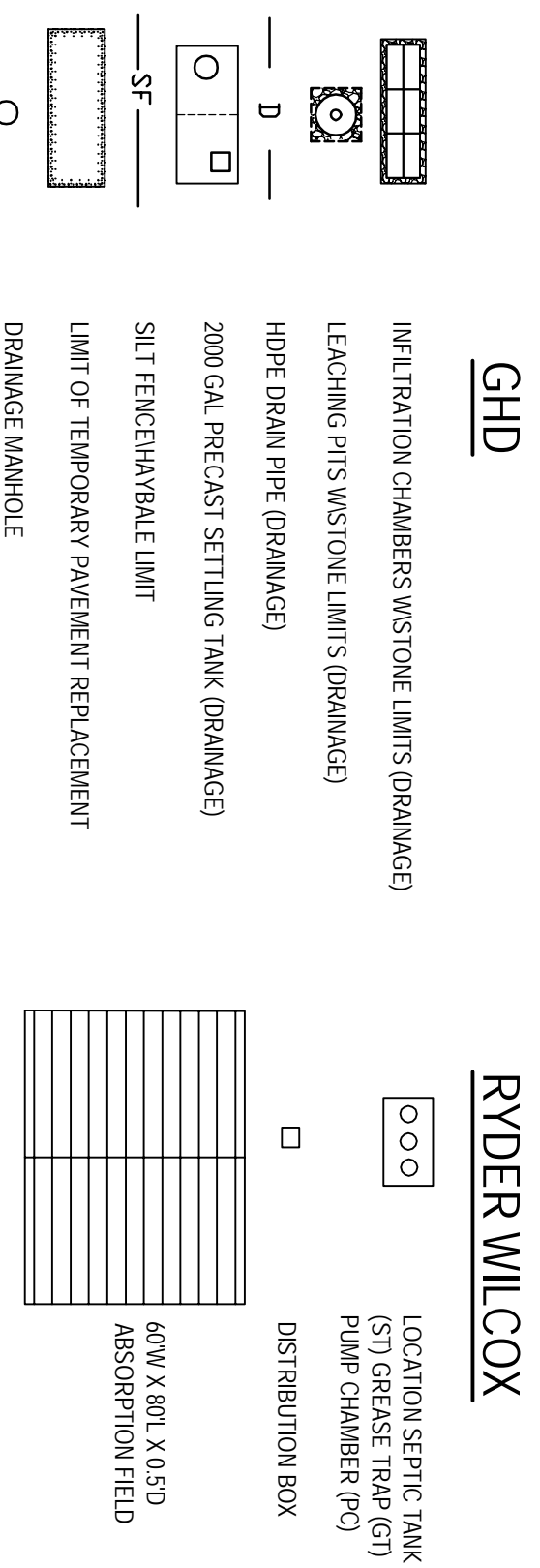
**DRAINAGE DESIGN NOTES:**

- THE LOCATIONS OF EXISTING CONDITIONS WERE TAKEN FROM FIELD SURVEY PERFORMED BY ROPER & WILCOX INC. SURVEYORS, DATED JANUARY 28 2009. GIS INFORMATION PROVIDED BY THE TOWN OF ORLEANS, MA, VERTICAL AND HORIZONTAL CONTROL IS ASSUMED. ALL UNDERGROUND UTILITIES ARE LOCATED AS MARKED BY DIG-SAFE.
- LIMIT OF WORK SHALL BE WITHIN THE PUBLIC RIGHT OF WAY. NO WORK SHALL BE CONDUCTED ON PRIVATE PROPERTY UNLESS NOTED OTHERWISE ON THE CONTRACT DRAWINGS.
- CONTRACTORS SHALL RETURN ALL AREAS TO ORIGINAL CONDITION INCLUDING, BUT NOT LIMITED TO, ROADWAYS, BITUMINOUS CONCRETE, AND CURBING.
- THE MASSACHUSETTS HIGHWAY DEPARTMENT STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES ARE INCORPORATED INTO THESE PLANS BY REFERENCE. THE TERM "MASS HIGHWAY" OR "SPECIFICATION" SHALL MEAN THE MASSACHUSETTS HIGHWAY DEPARTMENT STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES, DATED 1988 UNLESS OTHERWISE INDICATED. ALL MATERIALS AND METHODS SHALL BE IN CONFORMANCE WITH MASS HIGHWAY SPECIFICATIONS.
- PROPOSED CONDITIONS SHOWN HEAVY. EXISTING CONDITIONS SHOWN LIGHT.
- STORMWATER IMPROVEMENTS ARE BASED ON DESIGN GUIDELINES ESTABLISHED IN THE MASSACHUSETTS DEP & CMA STORMWATER MANAGEMENT STANDARDS VOL. 1 AND 2 DATED MARCH 1997 AND THE MASSACHUSETTS DEPARTMENT OF PUBLIC WORKS HIGHWAY DESIGN MANUAL.
- ALL DRAINAGE PIPING SHALL BE 12" INSIDE DIAMETER CORRUGATED HDPE TYPE N-12 PIPE MANUFACTURED BY AOS SUITABLE FOR H-20 LOADING AT MINIMUM BURIED DEPTH OF 24". PIPE SHALL BE SUPPLIED IN 20 FT LENGTHS. JOINTS SHALL BE SOIL TIGHT PUSH ON JOINTS.
- CATCH BASINS SHALL BE PROVIDED WITH SINGLE GRATE INLETS PER MASS HIGHWAY STANDARDS, UNLESS OTHERWISE NOTED.
- FINAL LOCATION OF ALL LEACHING PITS AND CATCH BASINS TO BE COORDINATED WITH RESIDENT PROJECT REPRESENTATIVE PRIOR TO STARTING WORK.
- PIPE SHALL BE SLOPED AT A MINIMUM OF 1.0% UNLESS OTHERWISE NOTED.
- CONTRACTORS IS RESPONSIBLE FOR VERIFYING ALL UTILITIES PRIOR TO EXCAVATION. INCLUDING UTILITIES NOT MARKED BY DIG-SAFE, NOT SHOWN ON THE SURVEY, OR NOT MARKED BY ORLEANS HIGHWAY DEPARTMENT. CONTRACTOR IS RESPONSIBLE FOR ANY AND ALL DAMAGES TO AN UNDERGROUND UTILITY IS DAMAGED DURING THE COURSE OF WORKS HEREON.
- IN THE EVENT THAT ANY UTILITY, UNDERGROUND OR OVERHEAD, IS DAMAGED DURING CONSTRUCTION, CONTRACTOR SHALL IMMEDIATELY NOTIFY ENGINEER, ORLEANS HIGHWAY DEPARTMENT, AND THE APPROPRIATE UTILITY COMPANY.
- ALL PAVEMENT TO BE SAW-CUT.
- ALL CONNECTIONS BETWEEN PRECAST CONCRETE SECTIONS SHALL BE SEALED WITH NON-SHRINK GROUT.
- LEACHING PITS, MANHOLES, SETTLING TANKS, AND INLETS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE MASSACHUSETTS HIGHWAY DEPARTMENT STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES, UNLESS OTHERWISE NOTED.
- UNDER PRECAST CONCRETE STRUCTURES AND ALL PIPES WITHIN PRECAST CONCRETE STRUCTURE EXCAVATION, BACKFILL WITH GRUSHER RUN STONE PER MTD.1. BEDDING TO UNDISTURBED EARTH AND COMPACT TO 95 MODIFIED METHOD D, UNLESS OTHERWISE NOTED.
- ALL PRECAST CONCRETE STRUCTURES SHALL BE RATED FOR AASHTOH-20 LOADING.
- ALL MULTIPLE LEACHING STRUCTURES SHALL BE SET AT THE SAME INVERT UNLESS OTHERWISE NOTED.

**LEGEND (EXISTING)**



**LEGEND (PROPOSED)**



No.	Revision	Name	Indicates signatures on original issue of drawing or last revision of drawing	Drawn	Job Manager	Project Director	Date
1	RE-ISSUED FOR CONSTRUCTION (PROJECT # 8615149)	JJO		JDF	RHK	WRH	02.13.13
0	ISSUED FOR CONSTRUCTION (PROJECT # 86-14572)	JDF		RHK	WRH	8/23/11	

Plot Date: 19 March 2013 - 11:40 AM  
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 Cad File No.: G:\8615149\CADD\Drawings\86-15149-G002.dwg



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Drawn	JJO	Designer	JPJ
Drafting Check	JDF	Design Check	WRH
Approved (Project Director)	<i>William F. Hall, Jr.</i>	Date	8/23/11

Scale: AS SHOWN  
 This Drawing shall not be used for Construction unless Signed and Sealed by the Contractor.

Client: **TOWN OF ORLEANS, MASSACHUSETTS**  
 Project: **SITE IMPROVEMENTS AT SKAKET BEACH PARKING LOT**  
 Title: **LEGENDS, NOTES & DETAILS**  
 Original Size: **A11**  
 Drawing No.: **86-15149-G002**  
 Rev: **1**



**DOSING CALCULATIONS:**

3381 GPD : 8 DOSES/DAY = 423 GAL/DOSE  
 PIPE VOLUME = 142 GAL.  
 565 GAL/DOSE REQ'D.  
 DOSE VOLUME: 6.5' x 16' x 9' x 7.48 GAL/CF = 383 GAL.  
 STORAGE VOLUME: 3.21' x 16' x 9' x 7.48 GAL/CF = 3,456 GAL.

**BUOYANCY CALCULATIONS:**

**7,000-GAL SEPTIC TANK**  
 (deepest chamber)  
 BUOYANCY FORCE OF DISPLACED WATER:  
 17' x 10' x 3.43' x 62.4 LB/CF = 36,385 LBS.  
 WEIGHT OF TANK = 66,680 LBS.

**DESIGN DATA**

Estimated daily effluent: 3,382 gpd  
 Average daily effluent:  
 Total leaching area as proposed:  
 Bottom: L x W (80' L x 60' W) 4,800 SF  
 Leaching Capacity as proposed:  
 (Effluent loading rate = 0.74 GPD/SF)  
 Bottom: 3552  
 TOTAL = 3,552  
 C/DAY  
 Bathhouse 4 yr. ave. ± 200% = 3,239.6 gpd  
 Snack bar 5 yr. ave. ± 200% = 141.8 gpd

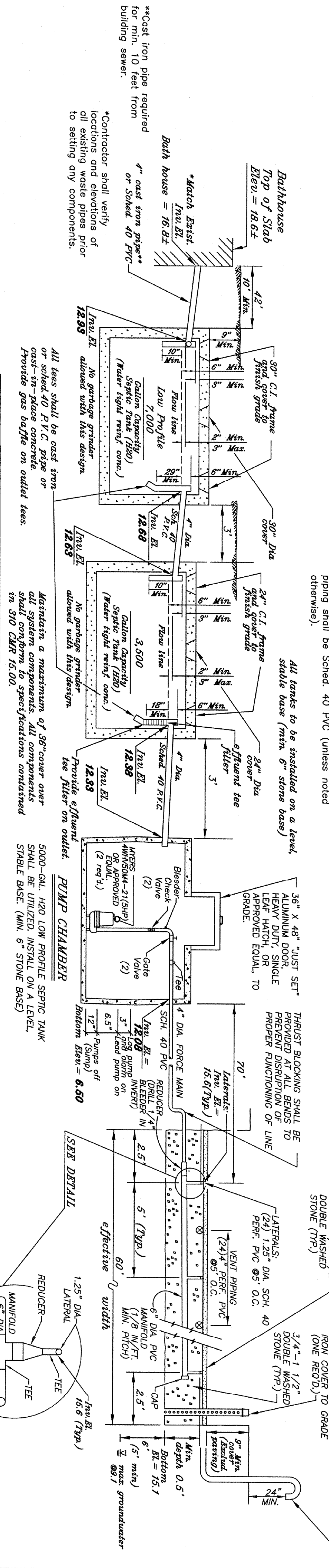
All tanks shall be H20 rated as manufactured by SHORRE<sup>®</sup> (or approved equal). Tanks shall be made watertight with watertight sealant or polyethylene tank liner on exterior. All piping shall be Sched. 40 PVC (unless noted otherwise).

All tanks to be installed on a level, stable base (min. 6" stone base).

- PUMP SPECIFICATIONS:**
- PUMPS SHALL BE "WET-ROTOR" 4HP/50M4-21 (3 HP) OR APPROVED EQUAL, AND SHALL BE CAPABLE OF PASSING AT LEAST 1 1/4" SOLIDS AT A DISCHARGE RATE OF 382.0 GPM @ 21.2' TDH.
  - PUMPS SHALL BE INSTALLED IN STRICT CONFORMANCE WITH MANUFACTURER'S SPECIFICATIONS.
  - PUMP CONTROLS SHALL BE MOISTURE PROOF AND OPERATE IN THE FOLLOWING SEQUENCE:  
 A) PUMP OFF  
 B) PRIMARY (LEAD) PUMP ON  
 C) BACKUP (LAG) PUMP ON AND ALARM ON  
 D) PUMPS MUST ALTERNATE

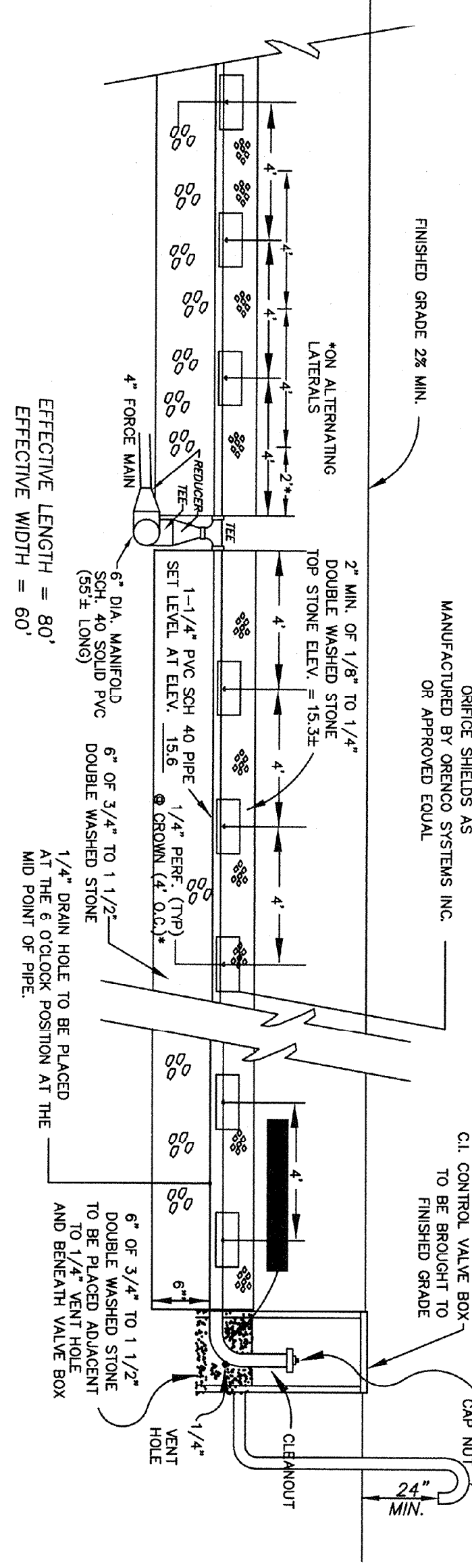
**TYPICAL SYSTEM PROFILE**

Not to scale



**ABSORPTION FIELD DETAIL**

NOT TO SCALE



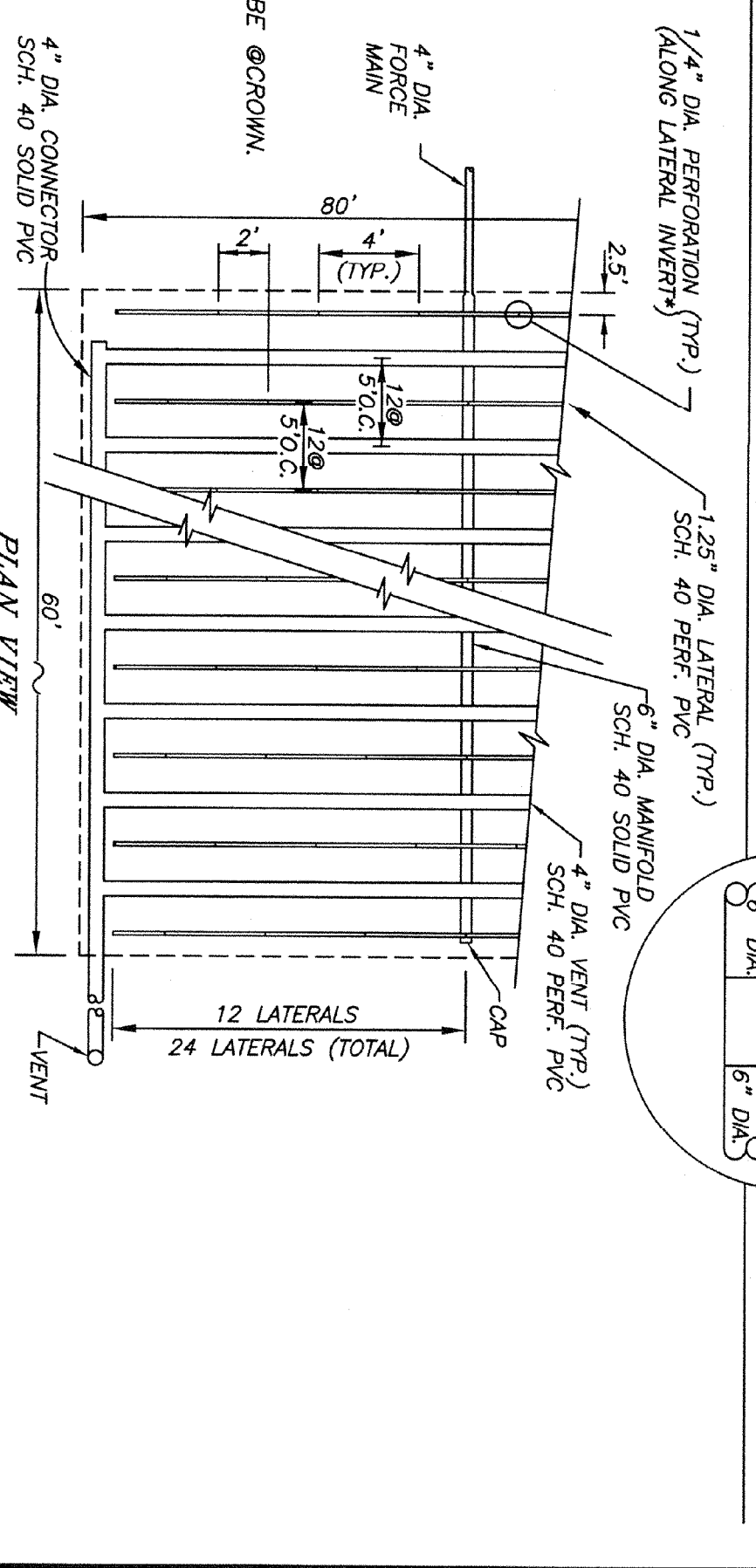
Tailings from perforations shall be removed by flushing the piping prior to installing in field. It is strongly recommended that the perforated pipe be prepared in a shop under controlled conditions to insure uniformity.

**PROPOSED ON-SITE SEWAGE TREATMENT AND DISPOSAL SYSTEM**

Prepared for: **TOWN OF ORLEANS**  
**SKAKET BEACH BATHHOUSE**  
**192 END OF SKAKET BEACH, ORLEANS, MA**

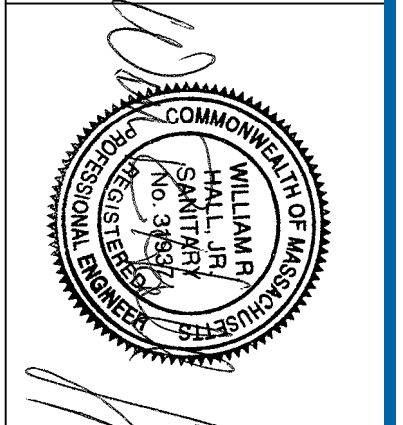
Ryder & Wilcox, Inc., P.E. & P.L.S.  
 3 Caddissh Hall Rd.  
 P.O. Box 439  
 So. Orleans, MA, 02862  
 Tel: (508) 255-8312 Date - January 28, 2009  
 Fax: (508) 240-2806  
 Rev.: February 25, 2009 - tank location  
 Rev.: March 23, 2009 - raise field  
 Rev.: February 16, 2011 - Myers pump  
 Rev.: January 25, 2013 - grease trap notes  
 Rev.: February 26, 2013 - tank elevations

**PLAN VIEW**



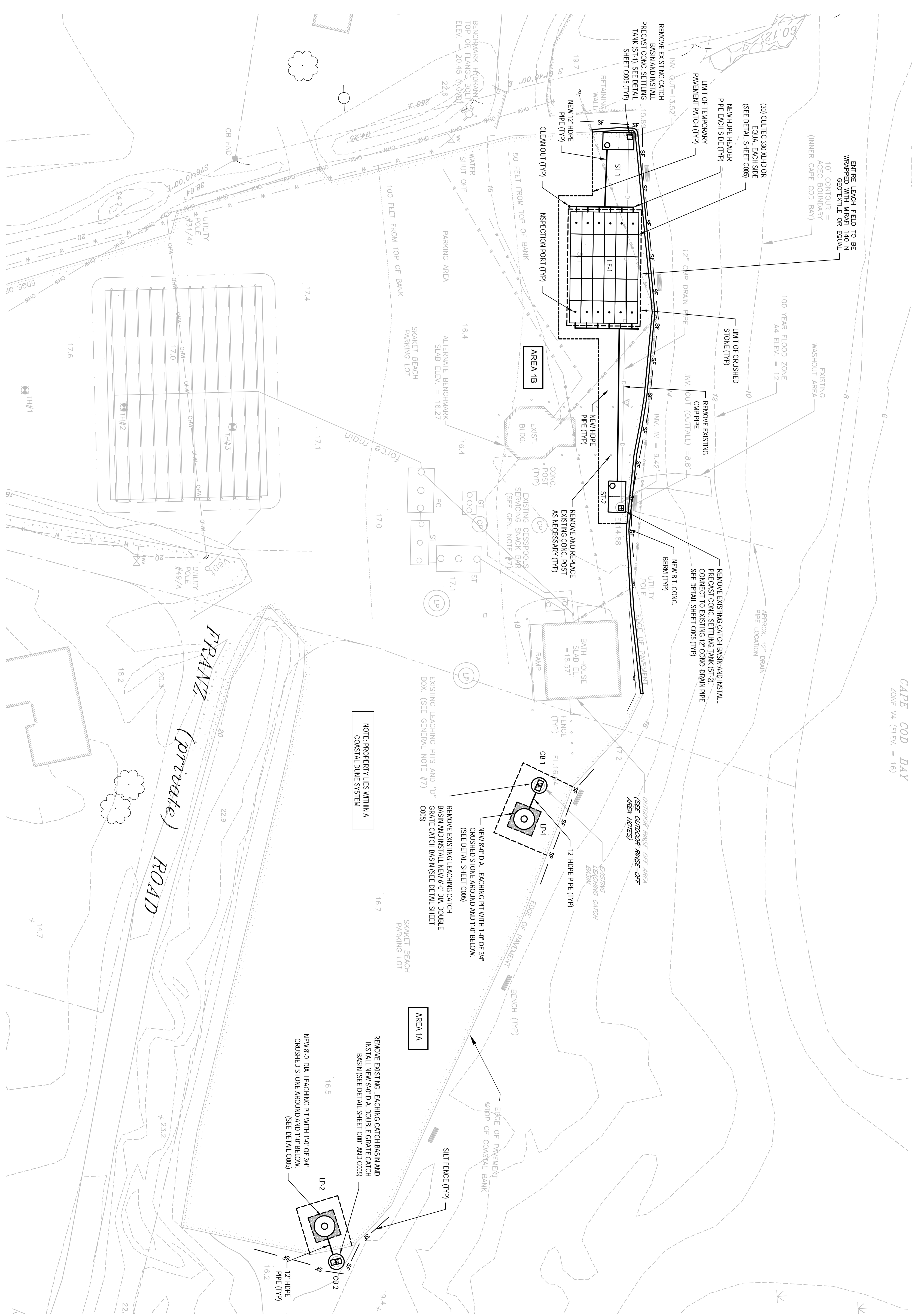
No.	Revision	Name	Date
1	RE-ISSUED FOR CONSTRUCTION-ADDENDUM # 2 (PR. # 8615149)	JZB	NCW
0	ISSUED FOR CONSTRUCTION (PROJECT # 86-14572)	JZB	RHK
			WRH
			2/2/11

Drawn	JZB
Checked	JDF
Design	NCW
Project	Client
Title	TOWN OF ORLEANS, MASSACHUSETTS
	SITE IMPROVEMENTS AT SKAKET BEACH PARKING LOT
	SEWAGE TREATMENT DESIGN - PROFILES



Drawn	JZB	Designer	RYDER WILCOX
Checked	JDF	Design	NCW
Approved	W. Ryder	Project	Client
Date	2/2/11	Title	TOWN OF ORLEANS, MASSACHUSETTS
Scale	AS SHOWN		SITE IMPROVEMENTS AT SKAKET BEACH PARKING LOT
			SEWAGE TREATMENT DESIGN - PROFILES

Original Size  
 Drawing No: **86-15149-C002**  
 Sheet 2 of 2  
 Job No. 104022  
 Rev: 1



CAPE COD BAY  
ZONE V4 (ELEV. = 16)

ENTIRE LEACH FIELD TO BE WRAPPED WITH MIRAF 140 N GEOTEXTILE OR EQUAL  
10' CONTOUR = AGEIC BOUNDARY (INNER CAPE COD BAY)

100 YEAR FLOOD ZONE AA ELEV. = 12

APPROX. 12" DRAIN PIPE LOCATION

REMOVE EXISTING CATCH BASIN AND INSTALL PRECAST CONC. SETTING TANK (ST-2) CONNECT TO EXISTING 12" CONC. DRAIN PIPE. SEE DETAIL SHEET C005 (TYP)

NEW BIT CONC. BERM (TYP)

OUTDOOR RINSE-OFF AREA (SEE OUTDOOR RINSE-OFF AREA NOTES)

EXISTING CATCH BASIN

12" HDPE PIPE (TYP)

NEW 8'-0" DIA. LEACHING PIT WITH 1'-0" OF 3/4" CRUSHED STONE AROUND AND 1'-0" BELOW. (SEE DETAIL SHEET C005)

REMOVE EXISTING LEACHING CATCH BASIN AND INSTALL NEW 8'-0" DIA. DOUBLE RAMP ON CATCH BASIN. (SEE DETAIL SHEET C005)

EXISTING LEACHING PITS AND "D" BOX. (SEE GENERAL NOTE #7)

REMOVE EXISTING LEACHING CATCH BASIN AND INSTALL NEW 8'-0" DIA. DOUBLE RAMP ON CATCH BASIN. (SEE DETAIL SHEET C005)

REMOVE EXISTING LEACHING CATCH BASIN AND INSTALL NEW 8'-0" DIA. DOUBLE RAMP ON CATCH BASIN. (SEE DETAIL SHEET C005)

NOTE: PROPERTY LIES WITHIN A CONSTITUTIONAL DUNE SYSTEM

REMOVE EXISTING LEACHING CATCH BASIN AND INSTALL NEW 8'-0" DIA. DOUBLE RAMP ON CATCH BASIN. (SEE DETAIL SHEET C005)

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**DRAINAGE NOTES:**

1. DRAINAGE AREA BASED ON FIELD DETERMINATION BY GHD. TOTAL IMPERVIOUS AREA = 67,646 FT<sup>2</sup> (0.1727) = 5697 FT<sup>3</sup> @ 2.168 GPM
2. 1/2" OF RINSE-OFF = 27083 GAL
3. TOTAL STORAGE NEEDED FOR 1/2" VOLUME OF STORMWATER = 21,083 GAL
3. TOTAL STORAGE AMOUNT OF NEW STORMWATER FACILITIES = 20,204 GAL

**OUTDOOR RINSE-OFF AREA NOTES:**

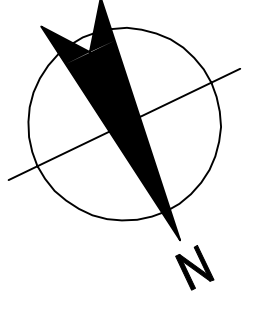
1. CONTRACTOR SHALL NEATLY SAWCUT AND REMOVE AN AREA OF PAVEMENT OR CONCRETE 4FT X 4FT SQUARE CENTERED AROUND THE RINSE STATION POLE. THE EXACT LOCATION SHALL BE DETERMINED BY THE OWNER.
2. CONTRACTOR SHALL EXCAVATE APPROXIMATELY 1'-0" FOOT OF EXISTING MATERIAL FROM THE 4' X 4' OPENING. FURNISH AND INSTALL MIRAF 140 N GEOTEXTILE OR EQUAL WITH IN THE BOTTOM OF THE EXCAVATION. FURNISH AND INSTALL 3/4" WASHED CRUSHED STONE TO WITHIN 2" OF THE TOP OF PAVEMENT. FINAL ELEVATION SHALL BE 2" BELOW EXISTING PAVEMENT GRADE TO ACCOMMODATE FINAL SURFACE RESTORATION (FINAL SURFACE RESTORATION TO BE PERFORMED BY OTHERS).

**ELECTRICAL CONDUIT NOTES (ADD ALTERNATE):**

1. THESE NOTES SHALL BE REFERENCED IF THE OWNER SELECTS THE ADD ALTERNATE TO INSTALL COMMUNICATION CONDUITS TO THIS CONTRACT
2. FURNISH AND INSTALL ELECTRICAL CONDUIT CONSISTING OF TWO (2) 2" DIAMETER PVC CONDUIT SLEEVES SUITABLE FOR DIRECT BURIAL AND H-20 LOADING AND OUTFITTED WITH PULL STRINGS.
3. CONDUIT STUB SHALL BE 6" ABOVE GRADE ALONG THE ADMINISTRATION BUILDINGS (BATH HOUSE) WEST FACE AND ALONG THE GUARD BOOTHS NORTH FACE. THE GUARD BOOTH IS SHOWN ON SHEET C-002.
4. THE CONDUIT SHALL BE INSTALLED IN ACCORDANCE WITH CURRENT ELECTRICAL CODE.
5. THE FINAL LOCATION OF THE CONDUIT SHALL BE DETERMINED IN THE FIELD BY THE CONTRACTOR.
6. CONTRACTOR IS RESPONSIBLE FOR ALL TRENCHING AND PAVEMENT RESTORATION.

**PROPOSED DRAINAGE SYSTEM SITE PLAN**

SCALE: 1"=20'



No	Revision	Note	Drawn	Job Manager	Project Director	Date
1	RE-ASSUED FOR CONSTRUCTION (PROJECT # 8615149)		JJO	NCW	WRH	02.13.13
0	ISSUED FOR CONSTRUCTION (PROJECT # 86-14572)		JDF	RHK	WRH	8.22.11

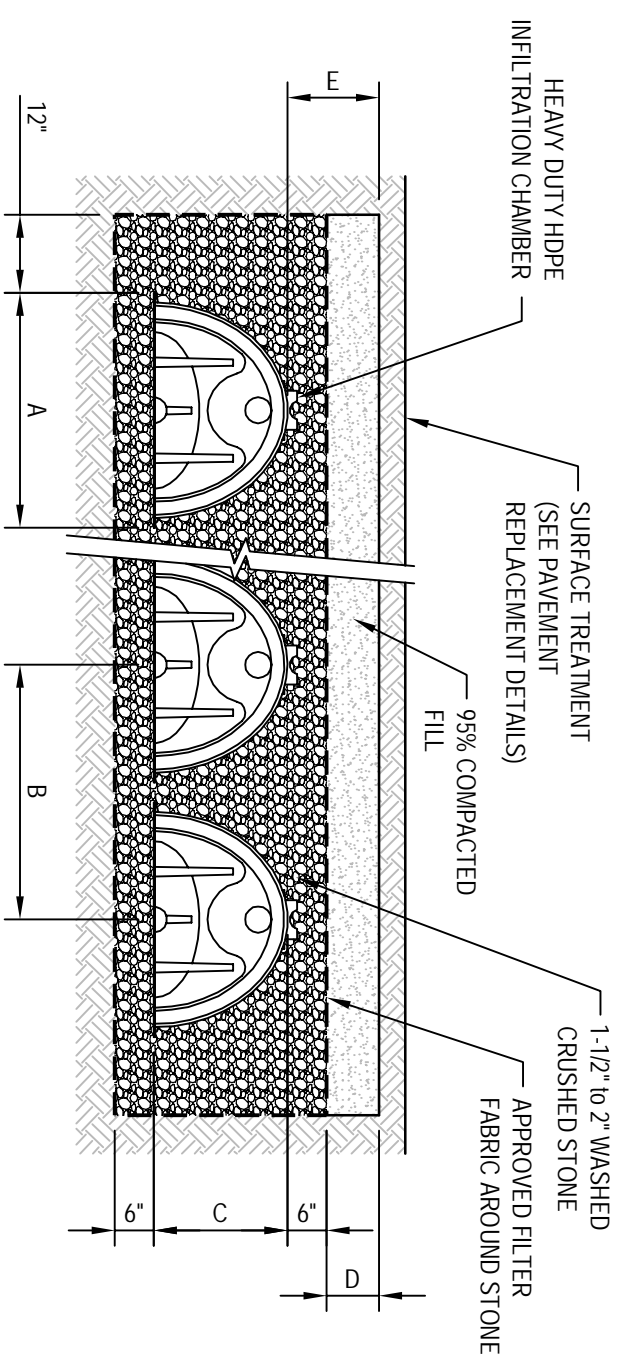
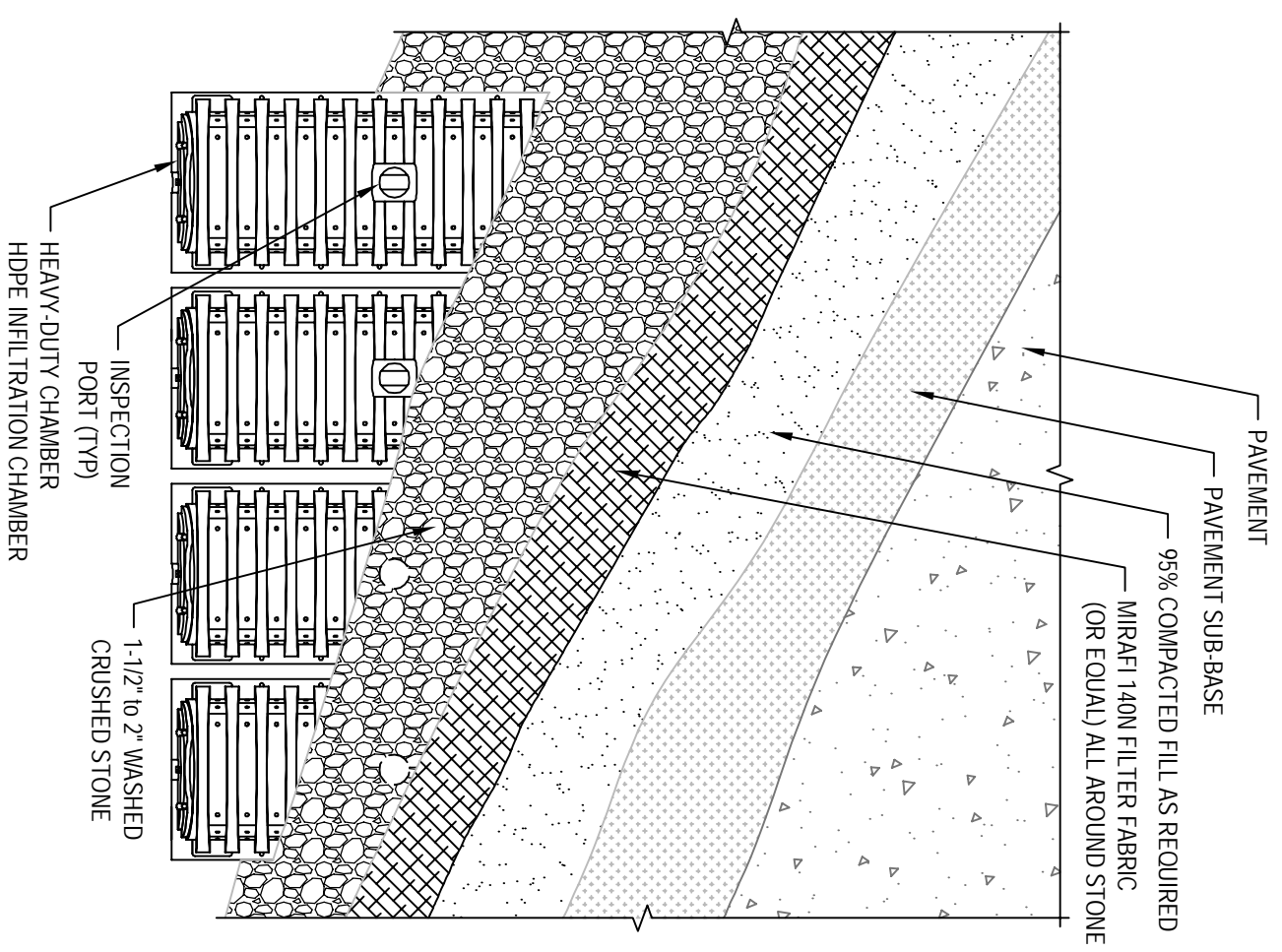
Client	TOWN OF ORLEANS, MASSACHUSETTS
Project	SITE IMPROVEMENTS AT SKAKET BEACH PARKING LOT
Title	STORMWATER DESIGN SITE PLAN & NOTES
Original Size	A11 D
Drawing No:	86-15149-C003
Rev:	1



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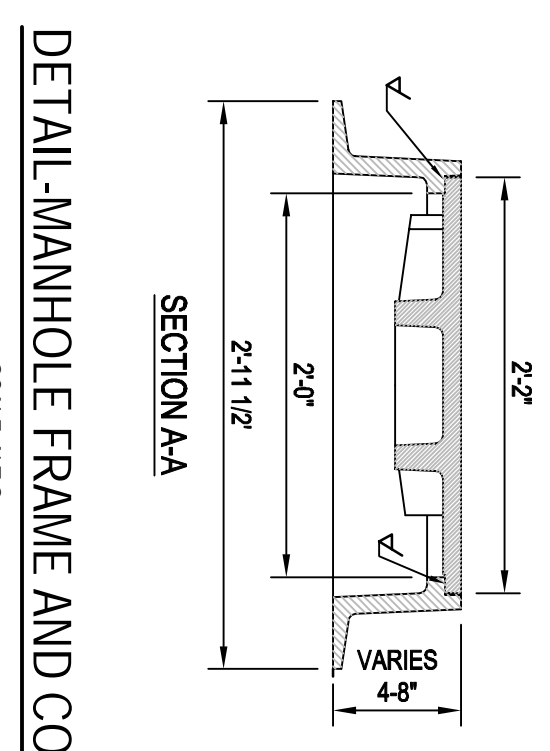
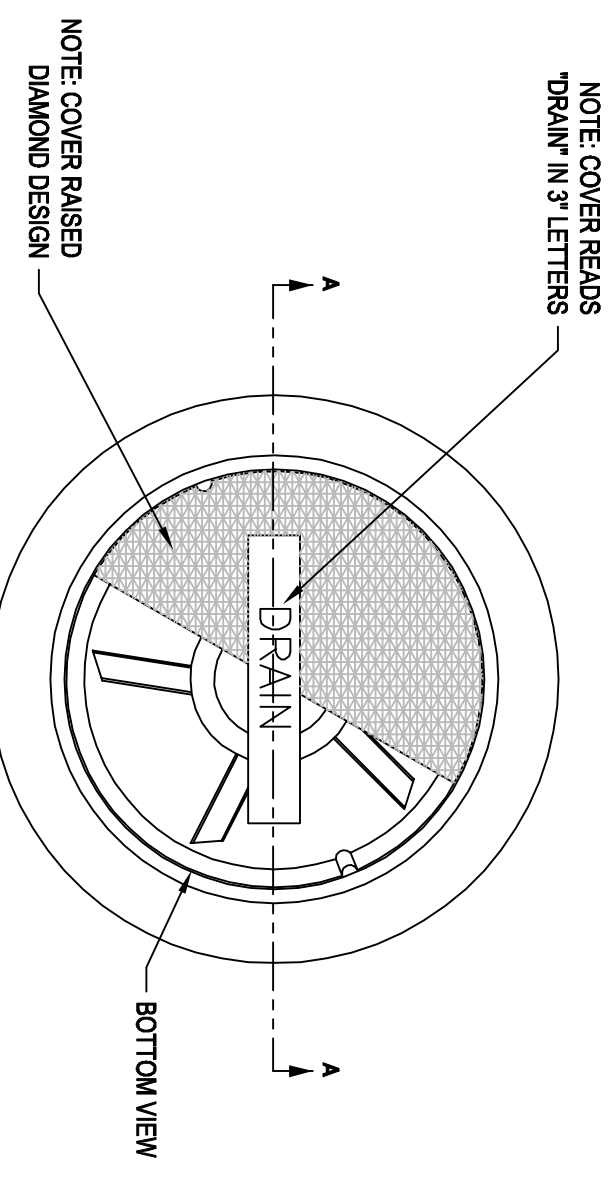
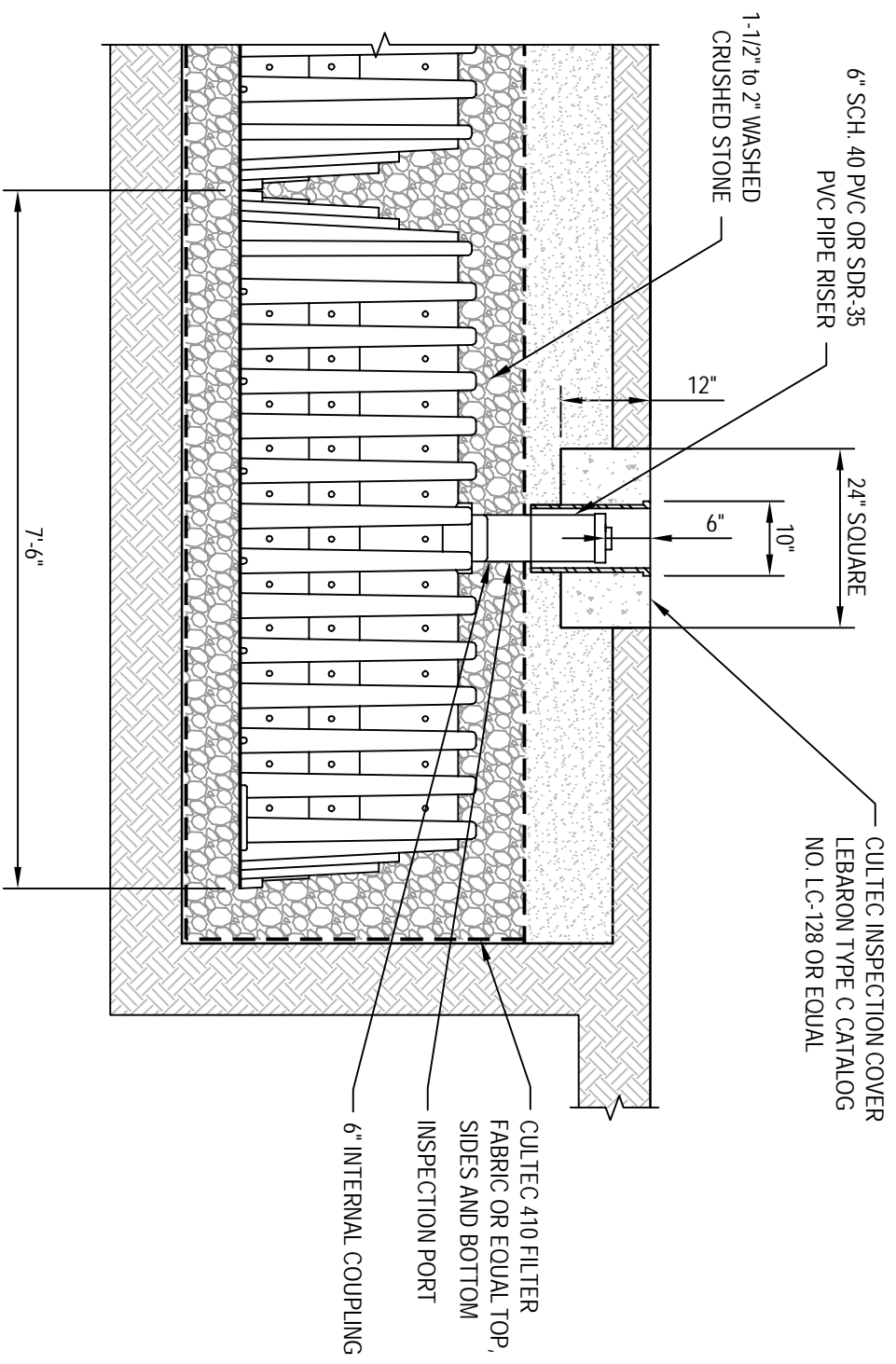
Drawn	JJO	Designer	JPJ
Drafting	JDF	Design	NCW
Check		Check	
Approved (Project Director)	<i>William R. Hall, Jr.</i>		
Date	8.22.11		
Scale	AS SHOWN		

This Drawing shall not be used for Construction unless Signed and Sealed by the Designer.



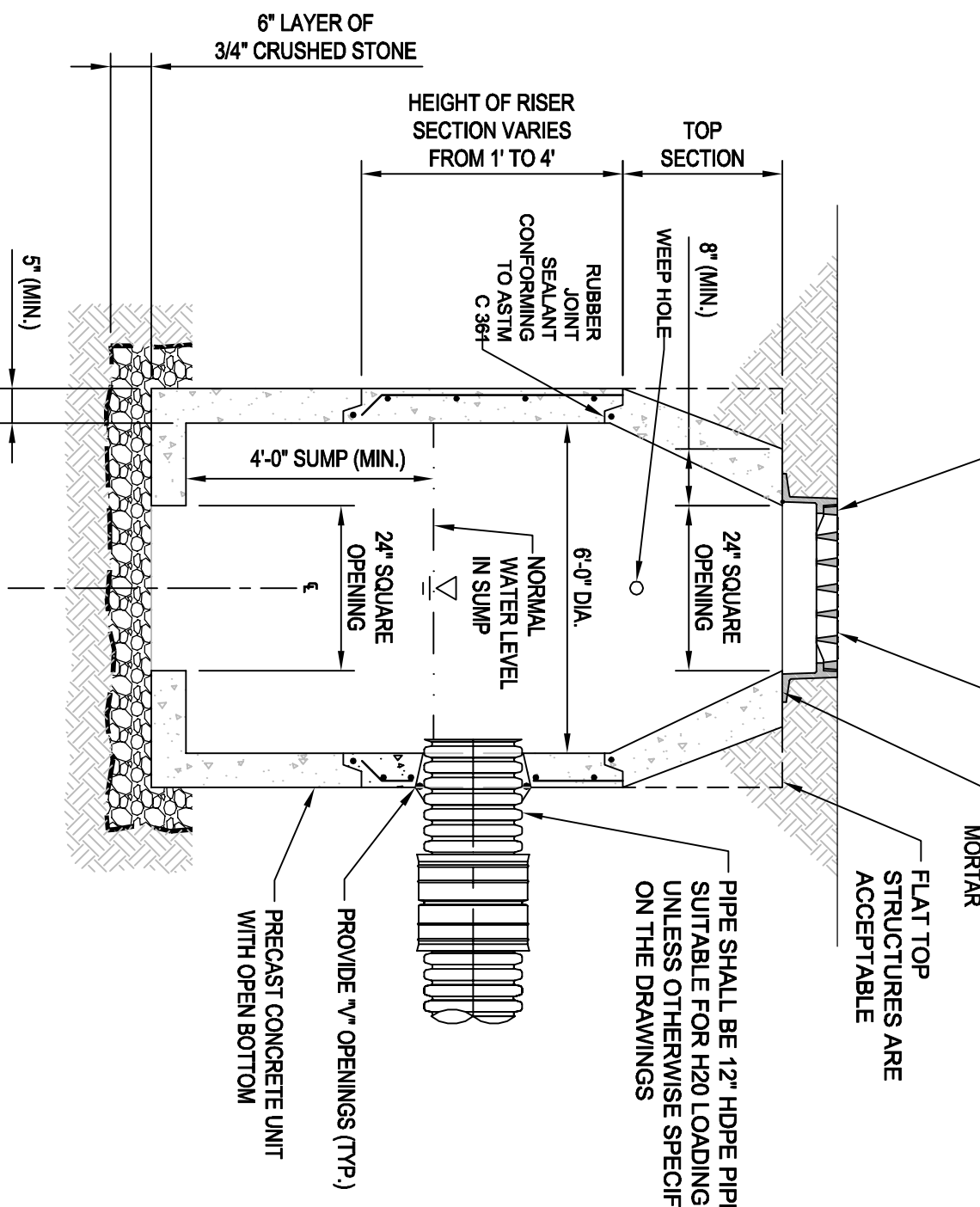
**CULTEC SIZING CHART**

	100 HD	180 HD	330 HD
A	36"	36"	52"
B	40"	39"	58"
C	12.5'	20.5'	30.5'
D	8"	8"	10"
E	14" MIN	14" MIN	16" MIN
F	90°	88°	90°
G	89°	76°	75°
STORAGE (CUFT)	3.84	5.59	11.32



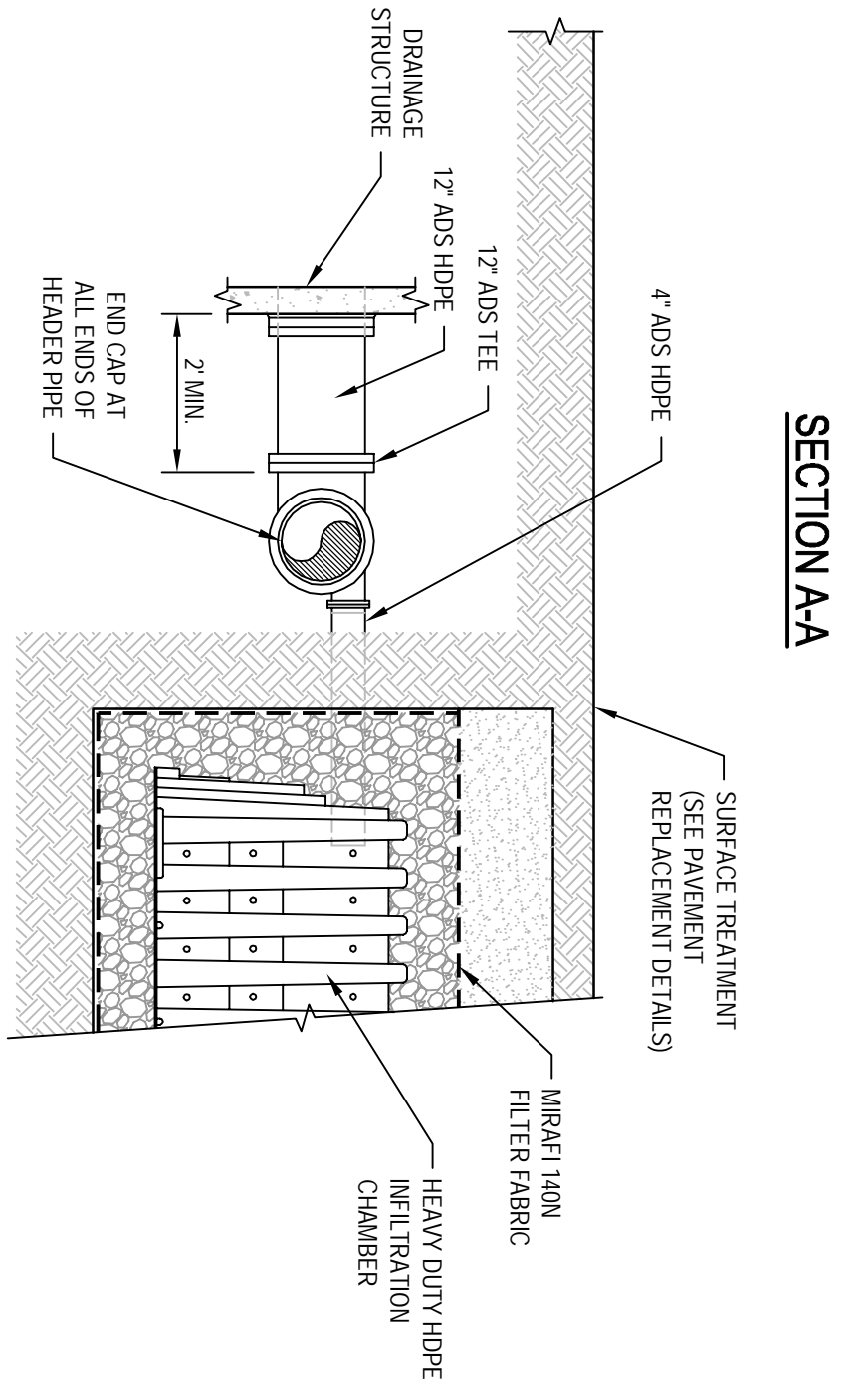
AFTER BINDER COURSE OF ASPHALT CONCRETE HAS BEEN PLACED, EXCAVATE MATERIAL AT FRAME AND RESET FRAME TO FINISHED GRADE. FILL EXCAVATED AREA AROUND FRAME WITH NON-SHRINK GROUT TO TOP OF BINDER COURSE

STANDARD CAST IRON CATCH BASIN FRAME AND GRATE UNLESS OTHERWISE NOTED. HEIGHT OF FRAME SHALL BE 4\"/>



- NOTES:**
1. EXTERIOR SURFACES TO BE SEALED WITH COLD APPLIED BITUMINOUS SEALER.
  2. REINFORCEMENT SHALL BE MIN. 0.12 SQ. IN. PER VERTICAL FOOT, PLACED IN ACCORDANCE WITH PLASTIC DESIGNATION M-198.
  3. CONCRETE SHALL BE 4000 PSI.
  4. FACE OF CURB FLUSH ON TOP OF PROJECT MORE THAN 4 IN. FROM FACE OF ALL CURBS CENTERLINE OF PIPE.
  5. ENTIRE STRUCTURE SHALL BE DESIGNED TO SUPPORT HS-20 LOADING.

**HEADER PIPE DETAIL**

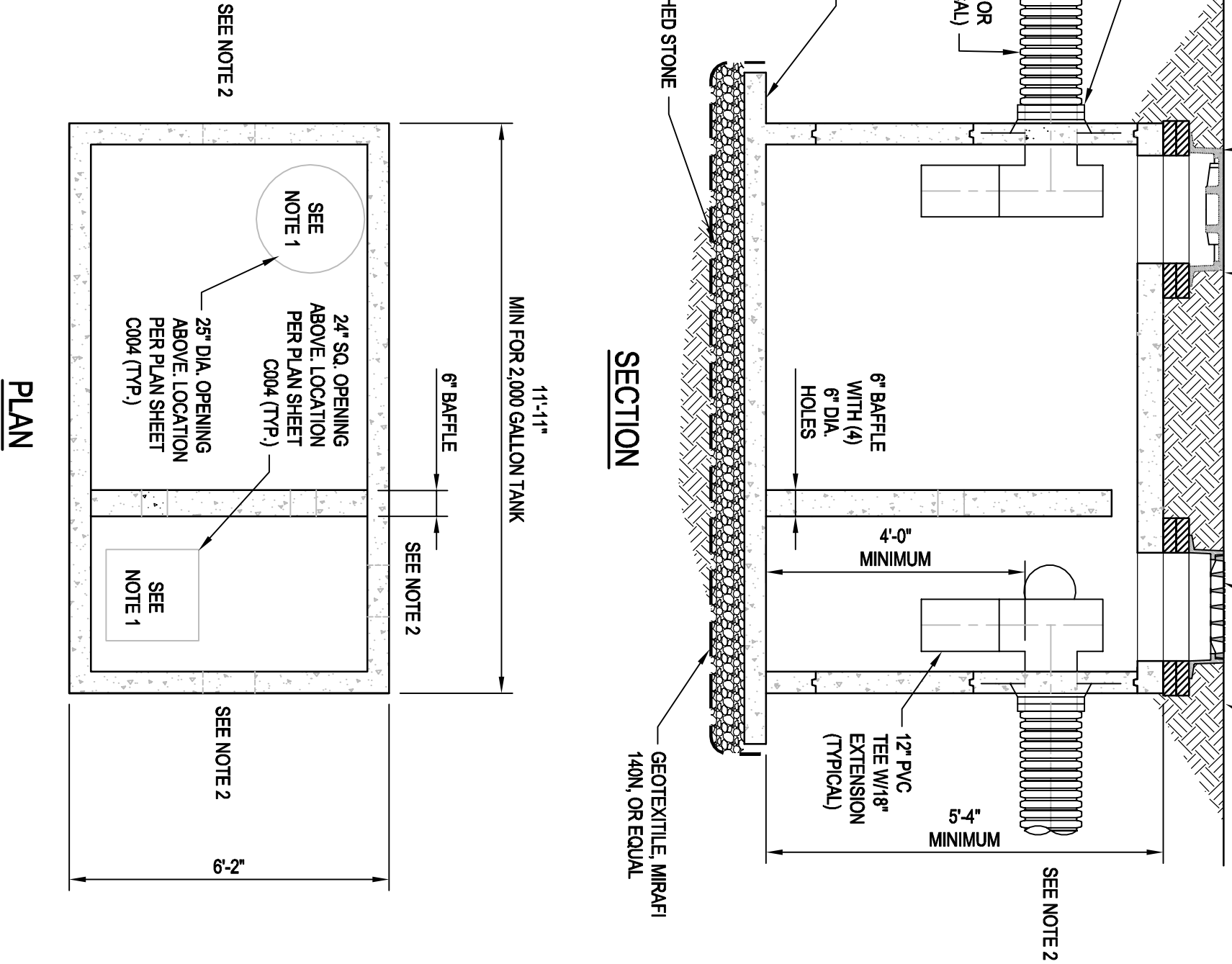


SCALE: N.T.S.

**2000-GAL PRECAST CONCRETE PRIMARY SETTLING TANK**

SCALE: N.T.S.

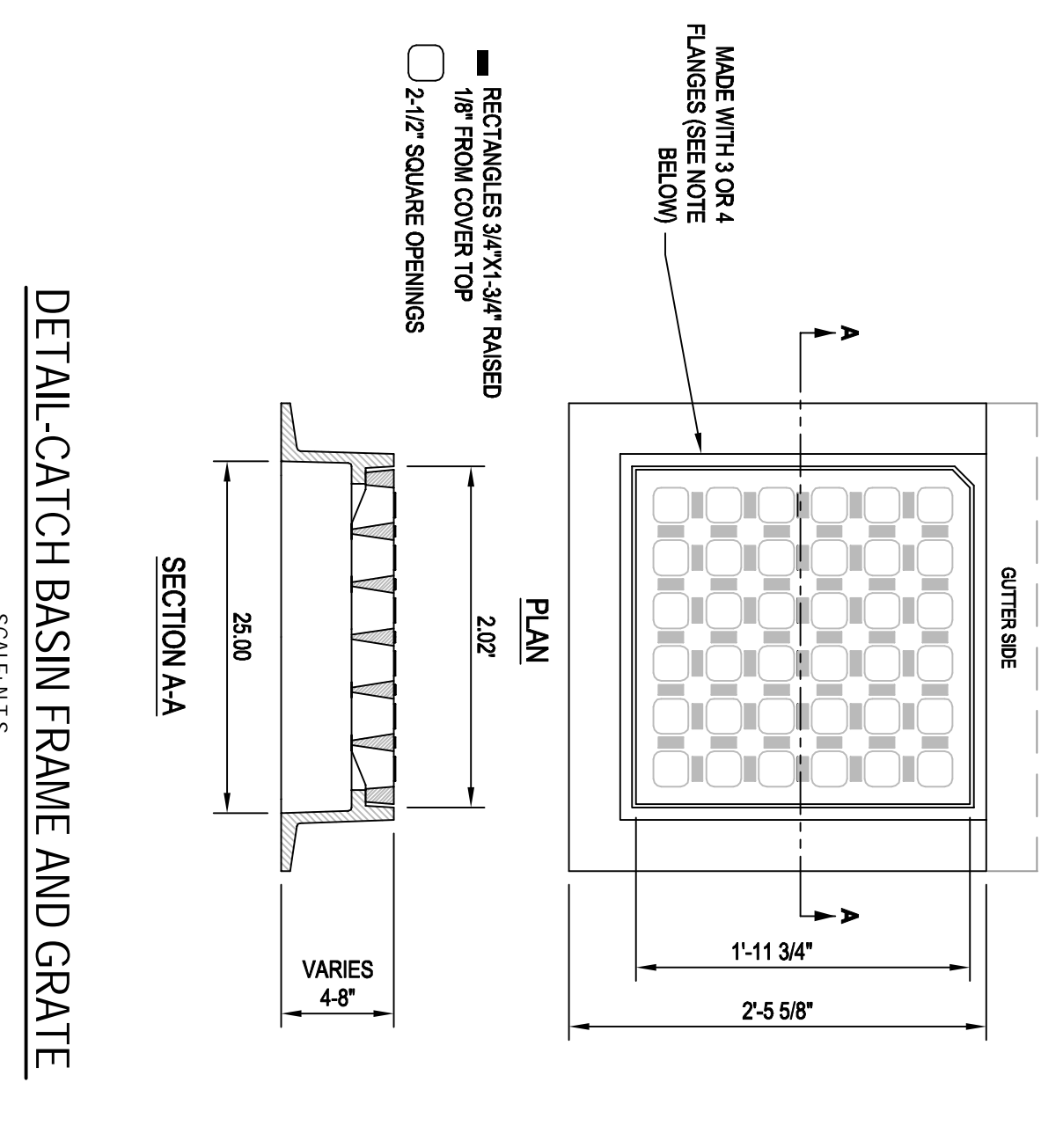
- NOTE:**
1. REFER TO PLAN FOR FRAME AND GRATE/MANHOLE LOCATIONS, FRAMES AND GRATES SHALL BE OFFSET OVER TEES FOR MAINTENANCE PURPOSES.
  2. KNOCKOUTS AS NEEDED. REFER TO PLAN FOR INLET AND OUTLET PIPE LOCATIONS.



**TOWN OF ORLEANS, MASSACHUSETTS SITE IMPROVEMENTS AT SKAKET BEACH PARKING LOT STORMWATER DESIGN MISCELLANEOUS DETAILS**

SCALE: N.T.S.

- NOTE:**
- RECTANGLES 3/4\"/>
  - 2-1/2\"/>



No.	Revision	Name	Description	Drawn	Checked	Project Director	Date
1		JJO	NCW	WRH	02.13.13		
0		JDF	RHK	WRH	8/25/11		

Job	Project	Job	Project
1545 Varnough Road, Hyannis, Massachusetts 02601 USA	Town of Orleans, Massachusetts	1545 Varnough Road, Hyannis, Massachusetts 02601 USA	Town of Orleans, Massachusetts

**GHD Inc.**  
 1545 Varnough Road, Hyannis, Massachusetts 02601 USA  
 T: 508 362 2680 F: 508 362 2684  
 E: jparnell@ghd.com W: www.ghd.com

**Client:** TOWN OF ORLEANS, MASSACHUSETTS  
**Project:** SITE IMPROVEMENTS AT SKAKET BEACH PARKING LOT  
**Title:** STORMWATER DESIGN MISCELLANEOUS DETAILS

Original Size: **ANSI D**  
 Drawing No: **86-15149-C004**  
 Rev: **1**



PROJECT NAME: Site Improvements at Skaket Beach Parking Lot  
 CONTRACT NO.: 2013-WQ-01  
 TITLE: N/A  
 JOB NO.: 8615149

**CANVASS OF BIDS**

RECEIVED FOR: Office of the Town Administrator, Town of Orleans, MA  
 BIDS OPENED: March 8, 2013 at 3:00 p.m.

CONTRACT NO. 2013-WQ-01

Item No.	Bid Item Description	Est. Qty.	Units	Bortolotti Construction 45 Industry Road Marstons Mills, MA 02648		M.C.E. Dirtworks, Inc. <sup>(3)</sup> 28 Lowell Drive Orleans, MA 02653		PKM Contractors, Inc. <sup>(4)</sup> 313 Hokum Rock Road E. Dennis, MA 02641		Dandel Construction Inc. <sup>(5)</sup> 365 Concord Street Rockland, MA 02370		Robert B. Our Co. Inc. <sup>(6)</sup> 24 Great Western Road Harwich, MA 02645		Northern Sealcoating & Paving, Inc. PO Box 995 Dennisport, MA 02639	
				Rate	Total	Rate	Total	Rate	Total	Rate	Total	Rate	Total	Rate	Total
<b>Schedule A: Lump Sum Bid Items</b>															
A-1	Furnish and Install Mobilization, Demobilization, Erosion and Sedimentation Control, Traffic Maintenance, Utility Relocation and Miscellaneous	1	LS	-	\$ 4,000.00	-	\$ 10,000.00	-	\$ 8,000.00	-	\$ 18,800.00	-	\$ 6,025.00	-	\$ 17,000.00
A-2	Furnish Construction Photographs and Pre-Construction Video	1	LS	-	\$ 1,000.00	-	\$ 2,000.00	-	\$ 1.00	-	\$ 1,000.00	-	\$ 500.00	-	\$ 2,000.00
A-3	Furnish Record Drawings (Stipulated Rate)	1	LS	Stipulated Rate	\$ 2,000.00	Stipulated Rate	\$ 2,000.00	Stipulated Rate	\$ 2,000.00	Stipulated Rate	\$ 2,000.00	Stipulated Rate	\$ 2,000.00	Stipulated Rate	\$ 2,000.00
A-4	Furnish and Install On-Site Sewage Treatment and Disposal System	1	LS	-	\$ 121,050.00	-	\$ 125,000.00	-	\$ 125,500.00	-	\$ 118,500.00	-	\$ 126,500.00	-	\$ 128,000.00
A-5	Furnish and Install Stormwater Improvements	1	LS	-	\$ 56,075.00	-	\$ 61,000.00	-	\$ 59,500.00	-	\$ 53,800.00	-	\$ 56,760.00	-	\$ 62,000.00
A-6	Furnish and Install Temporary Paving and Bituminous Concrete Cape Cod Berm	1	LS	-	\$ 51,000.00	-	\$ 40,000.00	-	\$ 46,500.00	-	\$ 49,850.00	-	\$ 59,265.00	-	\$ 68,000.00
<b>Subtotal (Sum of Items A-1 through A-6):</b>					<b>\$ 235,125.00</b>		<b>\$ 240,000.00</b>		<b>\$ 241,501.00</b>		<b>\$ 243,950.00</b>		<b>\$ 251,050.00</b>		<b>\$ 279,000.00</b>
<b>Schedule B: Additive Alternates:<sup>(2)</sup></b>															
B-1	Furnish and Install Dual Communication Conduits	1	LS	-	\$ 12,500.00	-	\$ 5,000.00	-	\$ 1,000.00	-	\$ 2,000.00	-	\$ 13,585.00	-	\$ 5,500.00
B-2	Furnish and Install Grease Trap	1	LS	-	\$ 9,500.00	-	\$ 5,000.00	-	\$ 4,500.00	-	\$ 4,000.00	-	\$ 4,275.00	-	\$ 8,000.00
<b>Subtotal (Sum of Items B-1 and B-2):</b>					<b>\$ 22,000.00</b>		<b>\$ 10,000.00</b>		<b>\$ 5,500.00</b>		<b>\$ 6,000.00</b>		<b>\$ 17,860.00</b>		<b>\$ 13,500.00</b>
<b>Total Bid Price<sup>(1):</sup></b>					<b>\$ 235,125.00</b>		<b>\$ 240,000.00</b>		<b>\$ 241,501.00</b>		<b>\$ 243,950.00</b>		<b>\$ 251,050.00</b>		<b>\$ 279,000.00</b>

Notes:

- Determination of the apparent low Bidder shall be based on the Total Bid Price determined as Schedule A Total (Lump Sum Bid Items A-1 through A-6).
- Additive Alternate(s) represent the total cost to the Owner to incorporate additional work not included in the Total Bid Price.
- Bidder hand wrote in "and B-1 thru B-2)" under Section C and listed the Total Bid Price as \$250,000.
- Bidder subtotal under Schedule B was listed as \$6,500 (math error); the subtotal should read \$5,500.
- Bidder wrote the Schedule A Total (Lump Sum Bid Items A-1 through A-6) as \$243,950 and the Total Bid Price as \$249,950.
- Bidder subtotal under Schedule A and on Section C as the Total Bid Price was \$251,100 (math error); the subtotal and Total Bid Price should read \$251,050.

**Skaket Beach Site Improvement Project      Budget updated 5-24-13**

#	Item	Bid / Budget	Fund Amount	Account Number	Budget updated 5-24-13	
					Actual	Estimate
Bid	Design GHD - Design	\$ 24,900.00	\$ 24,900.00	01421062 - 580005	\$ 24,900.00	
budget	Design and Bid Document Printing and Mailing	\$ 300.00	\$ 300.00	01421062 - 580005		\$ 300.00
A-1	Mobilization	4,000.00	\$ 4,000.00	01421062 - 580005	\$ 4,000.00	
A-2	Construction Photos and Video	\$ 1,000.00	\$ 1,000.00	01421062 - 580005	\$ 1,000.00	
A-3	Record Drawings	\$ 2,000.00	\$ 2,000.00	01650003 - 584000	\$ 2,000.00	
A-4	Sewage Treatment and Disposal	\$ 121,050.00	\$ 121,050.00	01650003 - 584000	\$ 121,050.00	
A-5a	Stormwater Improvements	\$ 56,075.00	\$ 6,000.00	01421062 - 580005	\$ 56,075.00	
A-5b	Stormwater Improvements	inc.	\$ 50,075.00	01421063 - 580009	inc.	
A-6	Temporary Paving and CC Berm	\$ 51,000.00	\$ 51,000.00	01421062 - 580008	\$ 51,000.00	
B-2	Grease Trap	\$ 9,500.00	\$ 9,500.00	01650003 - 584000	\$ 9,500.00	
budget	Rinse Station Drainage Mods - Material	\$ 500.00	\$ 500.00	01650003 - 584000		\$ 200.00
budget	Building - New 200 Amp Service	\$ 2,000.00	\$ 2,000.00	01650003 - 584000	\$ 2,734.94	
budget	Building - New Backboard & Misc Bldg Supplies	\$ 200.00	\$ 200.00	01650003 - 584000		\$ 50.00
budget	Building - NSTAR 200amp Service Upgrade Cost ?	TBD	TBD	No cost	\$ -	
budget	Change Order Allotment	\$ 5,000.00	\$ 2,500.00	01421062 - 580005	\$ 918.05	
budget	Change Order Allotment	inc.	\$ 2,500.00	01650003 - 584000	\$ 973.08	
budget	R Collins' Time	\$ 2,500.00	\$ 2,500.00	01650003 - 584000	\$ 2,920.00	\$ 300.00
				Act. & Est.Totals	\$ 277,071.07	\$ 850.00
	<b>Total Project Amount =</b>	<b>\$ 280,025.00</b>	<b>\$ 280,025.00</b>	<b>Budget as of 5-24-13 =</b>	<b>\$ 277,921.07</b>	

Breakdown by Department and Account		
H.way	01421062 - 580005	\$ 38,700.00
H.way	01421063 - 580009	\$ 50,075.00
H.way	01421062 - 580008	\$ 51,000.00
Septic	01650003 - 584000	\$ 140,250.00
	<b>Total Project Amount =</b>	<b>\$ 280,025.00</b>

R Collins' Time		Account Number
5/24/2013	1.00	01650003 - 584000
5/23/2013	1.50	01650003 - 584000
5/22/2013	1.50	01650003 - 584000
5/21/2013		01650003 - 584000
5/20/2013		
5/17/2013	1.00	01650003 - 584000
5/16/2013	2.00	01650003 - 584000
5/15/2013	1.00	01650003 - 584000
5/14/2013	1.00	01650003 - 584000
5/13/2013	1.00	01650003 - 584000
5/11/2013	7.50	01650003 - 584000
5/10/2013	4.00	01650003 - 584000
5/9/2013	4.50	01650003 - 584000
5/8/2013	5.00	01650003 - 584000
5/7/2013	4.00	01650003 - 584000
5/6/2013	2.50	01650003 - 584000
5/3/2013	3.00	01650003 - 584000
5/2/2013	1.50	01650003 - 584000
5/1/2013	1.00	01650003 - 584000
4/30/2013	1.00	01650003 - 584000
4/29/2013	1.50	01650003 - 584000
4/26/2013	2.00	01650003 - 584000
4/25/2013	2.00	01650003 - 584000
4/24/2013	1.00	01650003 - 584000
4/23/2013	2.00	01650003 - 584000
4/22/2013	1.00	01650003 - 584000
4/19/2013	2.50	01421063 - 580009
4/18/2013	0.50	01421063 - 580009
4/17/2013	2.00	01421063 - 580009
4/16/2013	1.00	01421063 - 580009
4/15/2013	0.00	01421063 - 580009
4/12/2013	0.50	01421063 - 580009
4/11/2013		01421063 - 580009
4/10/2013		01421063 - 580009
4/9/2013	0.50	01421063 - 580009

<b>4/8/2013</b>	<b>0.50</b>	01421063 - 580009
<b>4/5/2013</b>		
<b>4/4/2013</b>	<b>1.00</b>	01421063 - 580009
<b>4/3/2013</b>	<b>1.00</b>	01421063 - 580009
<b>4/2/2013</b>	<b>1.00</b>	01421063 - 580009
<b>4/1/2013</b>	<b>2.00</b>	01421063 - 580009
<b>3/29/2013</b>	<b>0.50</b>	01421062 - 580005
<b>3/28/2013</b>		01421062 - 580005
<b>3/27/2013</b>	<b>1.00</b>	01421062 - 580005
<b>3/26/2013</b>	<b>1.50</b>	01421062 - 580005
<b>3/25/2013</b>	<b>2.00</b>	01421062 - 580005
<b>3/22/2013</b>		
<b>3/21/2013</b>	<b>2.00</b>	01421062 - 580005
<b>3/20/2013</b>		
<b>3/19/2013</b>		
<b>3/18/2013</b>		
<b>Total Hours</b>	<b>73.00</b>	
<b>Cost</b>	<b>\$ 2,920.00</b>	