

BEAVER DAM LAKE MANAGEMENT DISTRICT

NEURER TREATMENT BASIN

CUMBERLAND, BARRON CO., WI

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07-08	DETAILS

THIS PLAN SET CONTAINS 8 PLAN SHEETS

GOVERNING SPECIFICATIONS

THE 2012 EDITION OF THE WISCONSIN DEPARTMENT OF TRANSPORTATION
STANDARD SPECIFICATIONS FOR CONSTRUCTION SHALL GOVERN
ALL TRAFFIC CONTROL DEVICES AND SIGNING SHALL CONFORM TO WISCONSIN
MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

EXISTING UTILITIES

THE LOCATION OF UNDERGROUND FACILITIES AND/OR STRUCTURES AS SHOWN ON THE PLANS ARE BASED ON AVAILABLE RECORD AT THE TIME THE PLANS WERE PREPARED AND ARE NOT GUARANTEED TO BE COMPLETE OR CORRECT. THE SUBSURFACE UTILITY INFORMATION SHOWN IS UTILITY QUALITY LEVEL D AS DETERMINED USING THE GUIDELINES OF "IASCSE 98-92 STANDARD GUIDELINES FOR THE COLLECTION AND DEPICTION OF EXISTING SUBSURFACE UTILITY DATA." THE CONTRACTOR IS RESPONSIBLE FOR CONTACTING ALL UTILITIES 72 HOURS PRIOR TO CONSTRUCTION TO DETERMINE THE EXACT LOCATION OF ALL FACILITIES AND TO PROVIDE ADEQUATE PROTECTION OF SAID UTILITIES DURING THE COURSE OF WORK.

CONSTRUCTION NOTE

CONTRACTOR SHALL TAKE ALL NECESSARY MEASURES TO MAINTAIN OPERATION OF EXISTING UTILITIES THROUGHOUT THE DURATION OF THE PROJECT. IN THE EVENT THAT AN INTERRUPTION OF SERVICE IS UNAVOIDABLE IN ORDER TO COMPLETE THE WORK, CONTRACTOR SHALL PROVIDE ADEQUATE NOTIFICATION TO ALL AFFECTED BUSINESSES A MINIMUM OF 3 WORKING DAYS IN ADVANCE OF ANY INTERRUPTION.

DIGGERS HOTLINE

WISCONSIN STATUTE 182.0775 REQUIRES EVERY EXCAVATOR AND EVERYONE RESPONSIBLE FOR PLANNING NON-EMERGENCY EXCAVATIONS TO PROVIDE ADVANCE NOTICE OF AT LEAST THREE BUSINESS DAYS TO THE ONE CALL SYSTEM. SEE THE STATE STATUTE FOR THE DEFINITION OF EXCAVATION. DIGGERS HOTLINE NEEDS TO BE CONTACTED PRIOR TO EXCAVATION AND PLANNING AN EXCAVATION IN ORDER TO COMPLY WITH THE STATE STATUTE.

DIGGERS HOTLINE SHOULD ALSO BE USED TO OBTAIN INFORMATION ON SAFE WORKING CLEARANCES FROM OVERHEAD LINES. OSHA REQUIRES THAT YOU STAY AT LEAST 10 FEET AWAY FROM DISTRIBUTION LINES AND UP TO 16 FEET AWAY FROM TRANSMISSION LINES WITH EXCAVATORS, BACKHOES, WHEEL LOADERS, DIGGER DERRICKS USED FOR AUGURING HOLES, AND SETTING POLES IN TELECOMMUNICATIONS AND ELECTRICAL WORK, ETC. THE 2010 OSHA CRANE STANDARD REQUIRES ADDITIONAL RESTRICTIONS FOR OTHER TYPES OF CRANES OR HOISTING DEVICES.

SEE THE EXCAVATOR'S GUIDE TO DIGGERS HOTLINE FOR ADDITIONAL INFORMATION.

CONTACTING DIGGERS HOTLINE

BY PHONE: DIGGERS HOTLINE IS AVAILABLE 24 HOURS A DAY, 7 DAYS A WEEK, 366 DAYS A YEAR BY CALLING THE THREE-DIGIT CODE 811 OR BY CALLING (800) 242-8511, TDD USERS MAY CALL (800) 542-2289.

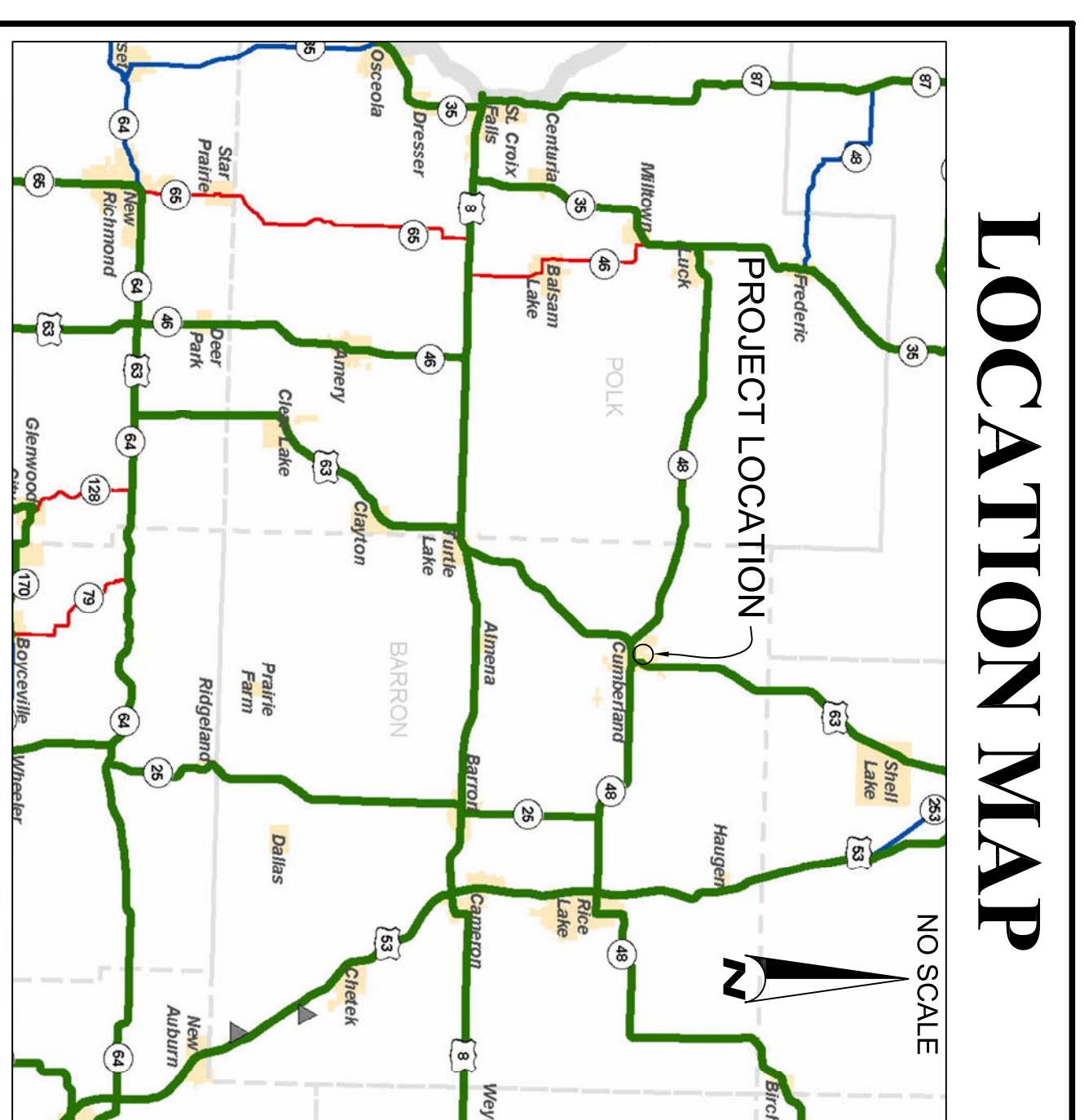
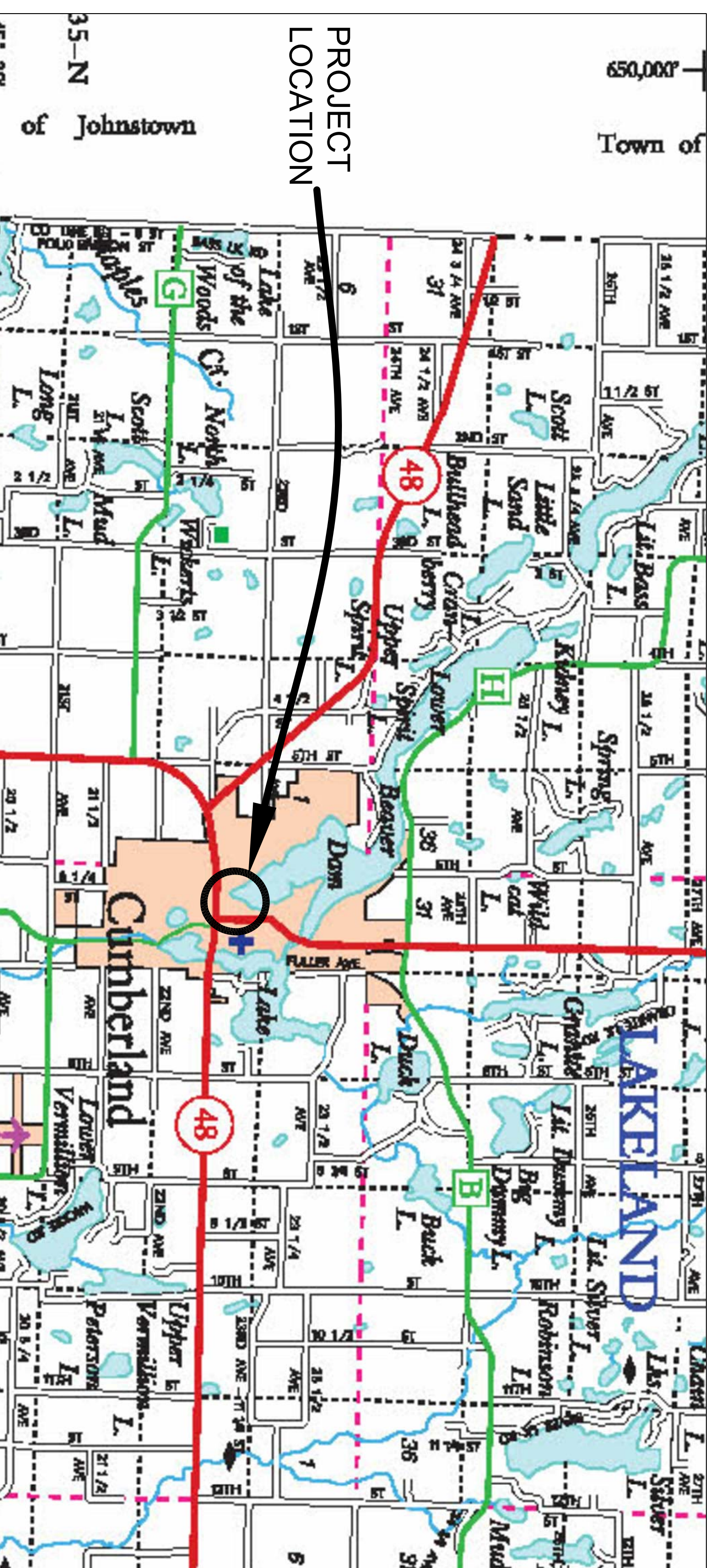
BY EMAIL: ON THE DIGGERS HOTLINE WEBSITE, WWW.DIGGERSHOTLINE.COM, YOU CAN EMAIL LOCATE REQUESTS TO THE CALL CENTER, TO ACCESS THE ONLINE EMAIL FORM, GO TO DIGGERS HOTLINE WEBSITE, WWW.DIGGERSHOTLINE.COM.

CLIENT

BEAVER DAM LAKE MANAGEMENT DISTRICT
P.O. BOX 232
CUMBERLAND, WISCONSIN 54829

ENGINEER

EMMONS & OLIVIER RESOURCES, INC.
651 HALE AVENUE NORTH
DAKDALE, MINNESOTA 55128-7534
TELEPHONE: (651) 770-8448
FAX: (651) 770-2552
eoirinc.com



LEGEND

FEATURE	EXISTING	PROPOSED
SILT FENCE	---	---
CONSTRUCTION FENCE	---	---
DELINEATED WETLAND	W0-----W0	W0-----W0
WATERLINE/SHORELINE	-----	-----
OVERHEAD ELECTRIC LINES	E-O-----	E-O-----
BURIED ELECTRIC LINES	E-U-----	E-U-----
FIBER OPTIC LINES	F-O-----	F-O-----
GAS LINES	G-----	G-----
PIPELINE	P-----	P-----
OVERHEAD TELEPHONE	T-O-----	T-O-----
BURIED TELEPHONE	T-U-----	T-U-----
TELEPHONE MANHOLE	T-U-----	T-U-----
TELEPHONE CABLE PEDESTAL	T-U-----	T-U-----
OVERHEAD CABLE TV	T-U-O-----	T-U-O-----
BURIED CABLE TV	T-U-U-----	T-U-U-----
TV CABLE PEDESTAL	T-U-U-----	T-U-U-----
BARBED WIRE FENCE	-----	-----
CHAIN LINK FENCE	-----	-----
STOCKADEWOOD FENCE	-----	-----
GUARD RAIL	-----	-----
CENTER LINE ROADWAY	-----	-----
CENTER LINE RAILROAD	-----	-----
SANITARY SEWER LINE	-----	-----
SANITARY SEWER FORCEMAIN	-----	-----
SANITARY SEWER MANHOLE	-----	-----
STORM SEWER LINE	-----	-----
STORM SEWER CULVERT	-----	-----
STORM SEWER FORCEMAIN	-----	-----
STORM SEWER MANHOLE	-----	-----
WATERMAIN	-----	-----
WATERMAIN MANHOLE	-----	-----
HYDRANT	-----	-----
WATER VALVE	-----	-----

LOCATION MAP

NO SCALE

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1	JULY 30, 2012	DRJ	PLAN REVISIONS						
	DATE	BY	REVISION						

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF WISCONSIN.
Derek R. Lash
DEREK R. LASH
DATE: 07/20/2012 LICENSE # 40938-006

SUBMISSION DATE: 08/21/2012
DESIGN BY: JRH
DRAWN BY: JRH
EOR PROJECT NO: 00909-0004

FOR Emmons & Olivier Resources, Inc.
651 Hale Avenue North
Oakdale, MN 55128
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CUMBERLAND, WISCONSIN 54829

NEURER TREATMENT BASIN
CUMBERLAND, BARRON CO., WI
STATE PROJECT NO.
CITY PROJECT NO.

TITLE SHEET
SHEET 01 OF 08 SHEETS

Neuer Treatment Basin Bid Tabulation

Item No.	Item	Units	Quantity	Unit Price	Cost
Part 1 - General/Erosion Control					
1	Mobilization	LS	1	\$	\$
2	Heavy Duty Silt Fence	LF	400	\$	\$
3	Erosion Control Revegetative Mat - Class 1 Type A	SY	240	\$	\$
4	Erosion Control Revegetative Mat - Class 1 Type B	SY	800	\$	\$
5	Tree Protection Fencing	LF	90	\$	\$
Total Part 1 - General/Erosion Control					
Part 2 - Removals					
6	Remove Sewer Pipe (Storm) - 12" CMP	LF	107	\$	\$
7	Remove Sewer Pipe (Storm) - 15" RCP/CMP	LF	278	\$	\$
8	Remove Sewer Pipe (Storm) - 15" CMP	LF	131	\$	\$
9	Remove Sewer Pipe (Storm) - 15" RCP	LF	90	\$	\$
10	Remove Manhole or Catch Basin	EA	3	\$	\$
11	Remove Flared End Section - 12" CMP	EA	1	\$	\$
12	Remove Flared End Section - 15" RCP	EA	2	\$	\$
13	Remove Flared End Section - 15" CMP	EA	1	\$	\$
14	Remove Flared End Section - 18" HDPE	EA	1	\$	\$
15	Abandon Sewer Pipe (Storm) In Place, Fill Pipe w/Sand And Bulkhead Openings - 18" HDPE	LF	18	\$	\$
16	Bulkhead Opening In Existing CB	EA	1	\$	\$
17	Sawcut Bituminous Pavement (For 12" CMP Removal)	LF	77	\$	\$
18	Remove Bituminous Pavement (For 12" CMP Removal)	SY	147	\$	\$
19	Sawcut Concrete Curb & Gutter	LF	10	\$	\$
20	Remove Concrete Curb & Gutter	LF	80	\$	\$
21	Remove Erosion and Sediment Control Devices	LS	1	\$	\$
Total Part 2 - Removals					
Part 3 - Grading					
22	Mass Grading	CY	600	\$	\$
23	Biofiltration Planting Medium Scarification of Biofiltration Cell Subgrade (18-Inches)	CY	118	\$	\$
24	Total Part 3 - Grading	SF	2,130	\$	\$
Part 4 - Storm Sewer					
25	12" HDPE Storm Sewer ECOFLOW WT@	LF	29	\$	\$
26	15" HDPE Storm Sewer ECOFLOW WT@	LF	405	\$	\$
27	18" HDPE Storm Sewer ECOFLOW WT@	LF	118	\$	\$
28	48" Diameter Catchbasin/Manhole	EA	1	\$	\$
29	Manhole Cap for Riser Pipe	EA	2	\$	\$
30	Catch Basin (2x3)	EA	1	\$	\$
31	R-4733 Frame and Grate	EA	3	\$	\$
32	R-3067 Frame and Grate	EA	1	\$	\$
33	Princo SWCU 6020A	EA	1	\$	\$
34	15" Steel Apron w/Trashguard	EA	2	\$	\$
35	18" Steel Apron w/Trashguard	EA	1	\$	\$
36	Connection to Existing Catchbasin/Manhole	EA	3	\$	\$
37	Granular Material (Backfill/Bedding) - HDPE Storm Sewer Pipe	CY	173	\$	\$
38	Granular Material (Backfill/Bedding) - SWCU	CY	26	\$	\$
39	Aggregate Material (Base) - Catchbasin/Manhole	CY	2	\$	\$
40	Medium Rip-Rap	CY	61	\$	\$
41	Geotextile - Type HR	SY	178	\$	\$
Total Part 4 - Storm Sewer					
Part 5 - Restoration					
42	Seed Mix - WI CRP Mix, CP-25 Wet Prairie	SF	2150	\$	\$
43	Seed Mix - WI CRP Mix, CP-25 Mesic Prairie	SF	8150	\$	\$
44	Seed Mix - WI DOT Mix, 40	SF	7200	\$	\$
45	Supplement Seed w/ DOT Mix, 40 with Cover Crop	SF	7200	\$	\$
46	48" Wide Sod Row	SY	107	\$	\$
47	2.25-Inch Plug - Native Plants (Forts)	EA	2097	\$	\$
48	#5 Containter - Native Shrubs	EA	19	\$	\$
49	8" Tail - Native Trees	EA	2	\$	\$
50	2-Inch Caliper - Native Trees	EA	1	\$	\$
51	Vegetation Establishment	LS	1	\$	\$
52	Bituminous Asphalt (3" Compacted) + Tack Coat	SY	147	\$	\$
53	Aggregate Road Base (8" Compacted)	SY	147	\$	\$
54	Curb and Gutter	LF	80	\$	\$
Total Part 5 - Restoration					
Overall Project Total					

GENERAL SITE WORK NOTES

- CONTRACTOR TO VERIFY THE LOCATION OF ALL UNDERGROUND UTILITIES PRIOR TO BEGINNING ANY CONSTRUCTION BY CALLING DIGGERS HOTLINE 1-800-242-8511.
- VERIFY HORIZONTAL LOCATION AND ELEVATION WHERE A CONNECTION TO EXISTING PAVEMENT, STRUCTURE, PIPE OR OTHER SITE FEATURE IS TO BE MADE. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER OF ANY DISCREPANCIES OR VARIATIONS FROM THE PLANS.
- REFERENCE TO W/DOT SPECIFICATIONS SHALL MEAN THE 2012 SPECIFICATIONS FOR CONSTRUCTION.
- BENCHMARK LOCATIONS TNH=1242.67/SAN MH RE=1243.21.
- ALWAYS VERIFY BENCHMARK ELEVATIONS BETWEEN TWO BENCHMARKS.
- SITE ACCESS IS ONLY OFF SORENSON STREET.
- SEE SITE RESTORATION PLAN FOR TURF RESTORATION REQUIREMENTS.
- TOPOGRAPHIC INFORMATION PER AVAILABLE GIS DATA.
- CONTRACTOR SHALL INSTALL, INSPECT, MAINTAIN AND REMOVE THE NECESSARY SIGNAGE FOR LANE CLOSURES. ALL TRAFFIC CONTROL DEVICES AND SIGNING SHALL CONFORM TO THE WAUJTD. ONE 11 FOOT MINIMUM WIDTH LANE IN EACH DIRECTION SHALL BE PROVIDED AT ALL TIMES.

GENERAL UTILITY NOTES

- CONTRACTOR SHALL CONTACT 'DIGGERS HOTLINE' (1-800-242-8511) BY AT LEAST THREE BUSINESS DAYS PRIOR TO EXCAVATION/CONSTRUCTION FOR UTILITY LOCATIONS.
- PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL FIELD VERIFY ALL EXISTING UTILITY LOCATIONS AND INVERTS, SHOWN OR NOT SHOWN. ANY DISCREPANCY BETWEEN PLANS AND FIELD CONDITIONS SHALL BE REPORTED TO THE OWNER IMMEDIATELY.
- ALL UTILITY WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE CITY OF CUMBERLAND SPECIFICATIONS AND BUILDING PERMIT REQUIREMENTS.
- CONTRACTOR WILL BE RESPONSIBLE FOR OBTAINING THE APPROPRIATE SEWER, WATER AND PLUMBING PERMITS FROM THE CITY OF CUMBERLAND.
- UTILITY TRENCHES SHALL BE COMPACTED TO 95% STANDARD PROCTOR MAXIMUM DRY DENSITY (ASTM D698/78 OR AASHTO T-99) FROM THE PIPE ZONE TO WITHIN THREE FEET OF THE GROUND SURFACE AND 100% STANDARD PROCTOR IN THE UPPER THREE FEET.
- FIELD ADJUST ALL CASTINGS TO MATCH FINAL GRADES.
- CONNECTION TO THE EXISTING SANITARY SEWER, STORM CUMBERLAND.
- CONTRACTOR SHALL NOTIFY THE CITY OF CUMBERLAND 48 HOURS IN ADVANCE OF WORKING WITHIN THE EXISTING RIGHT OF WAY. CITY INSPECTORS MUST OBSERVE ALL WORK COMPLETED WITHIN THE EXISTING RIGHT OF WAY INCLUDING REMOVAL OF EXISTING BITUMINOUS PAVEMENT, EXCAVATION OF TRENCHES, PLACEMENT OF WATER MAIN AND SANITARY SEWER, UTILITY CONNECTIONS TO EXISTING LINES, BACKFILLING AND PLACEMENT OF BITUMINOUS PAVEMENT.

SITE REMOVAL NOTES

- BITUMINOUS PAVEMENT REMOVALS ARE TO BE MADE TO A VERTICAL SAW CUT OR TO A NEAT MILLED EDGE IN ACCORDANCE WITH W/DOT SPECIFICATIONS.
- CONCRETE PAVEMENT, SIDEWALK, CURB & GUTTER AND OTHER POLYMER CONCRETE ITEMS ARE TO BE REMOVED TO AN EXISTING EXPANSION JOINT. SAW CUT AS NECESSARY FOR A NEAT EDGE OF REMOVAL.
- SALVAGED SEWER CASTINGS AND MANHOLE SECTIONS SHALL BE CLEANED AND INSPECTED FOR DAMAGE PRIOR TO REINSTALLATION.
- SALVAGED WATER MAIN PIPE, FITTINGS, VALVES, HYDRANTS OR OTHER APPURTENANCES SHALL BE INSPECTED TO DETERMINE SUITABILITY FOR REUSE. ALWAYS REPLACE GASKETS, BOLTS AND NUTS, AND RETAINING GLANDS WHEN REINSTALLING.
- ALL REMOVAL ITEMS SHALL BECOME THE PROPERTY OF THE CONTRACTOR UNLESS SPECIFIED OTHERWISE AND SHALL BE DISPOSED OF OFF-SITE IN A MANNER MEETING ALL APPLICABLE REGULATIONS.

STORM SEWER NOTES

- STORM SEWER CONSTRUCTION IS IN ACCORDANCE WITH W/DOT SPECIFICATIONS.
- STORM SEWER SHALL BE DUAL WALL ECOFLOW 100WT AS MANUFACTURED BY PRINCO OR APPROVED EQUAL.
- CATCH BASINS SHALL BE PRECAST REINFORCED CONCRETE. CASTING SHALL BE AS SPECIFIED ON THE PLANS OR APPROVED EQUAL.
- MANHOLES SHALL BE PRECAST REINFORCED CONCRETE IN ACCORDANCE WITH ASTM C478. CASTING SHALL BE NEENAH R-1733. MANHOLES SHALL HAVE A MINIMUM OF 2 ADJUSTMENT RINGS AND MORTAR AND A MAXIMUM OF 12" OF ADJUSTMENT RINGS AND MORTAR.
- CONNECTIONS TO EXISTING MANHOLES SHALL BE MADE BY CORE DRILLING OR SAW CUTTING THE EXISTING MANHOLE AT THE PROPOSED INVERT ELEVATION. GROUT IN THE NEW PIPE AND REFORM THE INVERT.
- PIPE LENGTHS ON THE PLAN INCLUDE THE APRON SECTION.
- THE LAST THREE STORM SEWER PIPE JOINTS AT ALL APRON SECTIONS.
- STORM SEWER CASTINGS IN THE CURB AND GUTTER SHALL BE STAKED FOR LOCATION AT THE CENTER OF CASTING AT BACK OF CURB, WITH REFERENCE STAKES ON EACH SIDE OF THE STRUCTURE AT THE BACK OF CURB. THE CONTRACTOR WILL LOCATE THE MANHOLE OR CATCH BASIN STRUCTURE AS NECESSARY FROM THESE REFERENCE POINTS. PIPE ALIGNMENTS ARE STAKED TO CENTER OF CASTING AT BACK OF CURB - CONTRACTOR WILL ADJUST THE ALIGNMENT TO FIT THE ACTUAL STRUCTURES INSTALLED.

GRADING & EROSION CONTROL NOTES

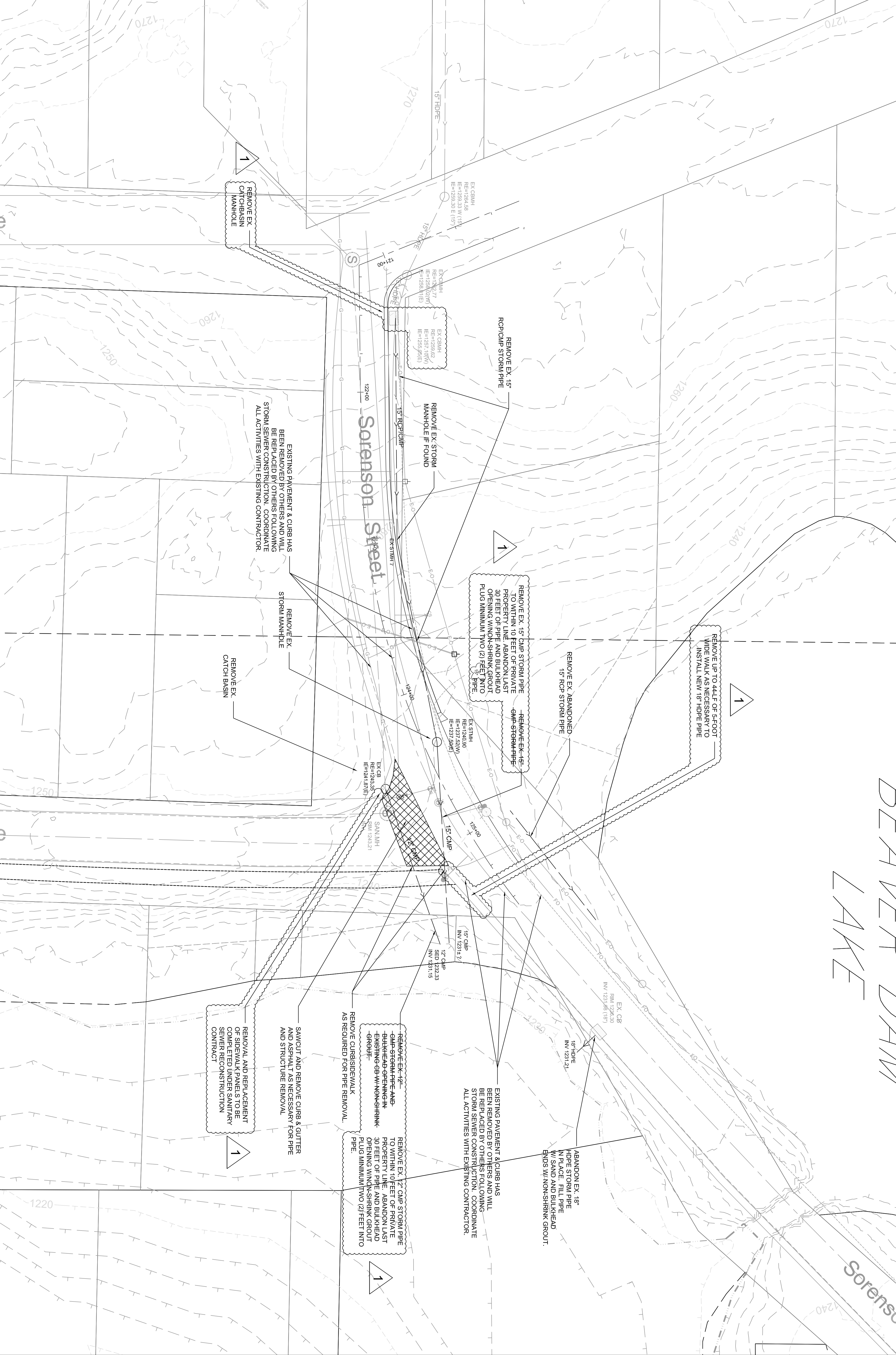
- CONTRACTOR SHALL CONTACT 'DIGGERS HOTLINE' (1-800-242-8511) BY AT LEAST THREE BUSINESS DAYS PRIOR TO EXCAVATION/CONSTRUCTION FOR UTILITY LOCATIONS.
- CONTRACTOR SHALL FIELD VERIFY THE LOCATIONS AND ELEVATIONS OF EXISTING UTILITIES AND TOPOGRAPHIC FEATURES PRIOR TO START OF SITE GRADING. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE PROJECT ENGINEER OF ANY DISCREPANCIES OR VARIATIONS.
- CONTRACTOR SHALL BE RESPONSIBLE FOR ALL HORIZONTAL AND VERTICAL CONTROL.
- INSTALL PERMETER EROSION CONTROL AND TREE PROTECTION MEASURES BEFORE BEGINNING SITE GRADING ACTIVITIES. SOME EROSION CONTROL SUCH AS BALE CHECKS AND TEMPORARY SILT FOUNDS MAY BE INSTALLED AS GRADING OCCURS IN THE SPECIFIC AREA. MAINTAIN EROSION CONTROLS THROUGHOUT THE GRADING PROCESS AND REMOVE WHEN TURF HAS BEEN ESTABLISHED.
- THE CONTRACTOR SHALL CONSTRUCT DRAINAGE BASINS PRIOR TO GENERAL SITE GRADING.
- CONTRACTOR TO ADHERE TO ALL REQUIREMENTS OF THE WISCONSIN DNR N.P.D.E.S. PERMIT, INCLUDING THE REQUIREMENT TO MINIMIZE THE AREA DISTURBED BY GRADING AT ANY GIVEN TIME AND TO COMPLETE TURF RESTORATION WITHIN THE TIME REQUIRED BY THE PERMIT AFTER COMPLETION OF GRADING OF AN AREA.
- ALL EXPOSED SOIL AREAS WITHIN 100 FEET OF A WATER OF THE STATE OR ANY STORMWATER CONVEYANCE SYSTEM WHICH IS CONNECTED TO A WATER OF THE STATE MUST BE STABILIZED WITHIN 7 DAYS (STEEPER THAN 3:1 SLOPES), 14 DAYS (10:1 TO 3:1 SLOPES), OR 21 DAYS (FLATTER THAN 10:1).
- ALL CONSTRUCTION ENTRANCES SHALL BE SURFACED WITH CRUSHED ROCK ACROSS FULL WIDTH FROM ENTRANCE POINT TO 50 FEET INTO THE CONSTRUCTION ZONE. SEE DETAIL.
- INLET PROTECTION IS TO BE USED DURING CONSTRUCTION. SEE W/DOT SPECIFICATIONS.
- ALL EROSION CONTROL MEASURES SHALL BE INSTALLED AND MAINTAINED IN ACCORDANCE WITH CITY, COUNTY, STATE AND N.P.D.E.S. PERMITS.
- THE CONTRACTOR SHALL MAINTAIN ALL EROSION CONTROL MEASURES, INCLUDING THE REMOVAL OF ACCUMULATED SILT IN FRONT OF SILT FENCES DURING THE DURATION OF THE CONSTRUCTION.
- MAINTAIN EXISTING EROSION CONTROL AND TREE PROTECTION MEASURES. RE-ESTABLISH ANY EXISTING EROSION CONTROL DISTURBED BY CONSTRUCTION.
- CONTRACTOR SHALL PROVIDE ADDITIONAL TEMPORARY EROSION CONTROL MEASURES AS REQUIRED FOR CONSTRUCTION.
- ANY EXCESS SEDIMENT IN PROPOSED BASINS SHALL BE REMOVED BY THE CONTRACTOR.
- REMOVE ALL EROSION CONTROL MEASURES AFTER VEGETATION IS ESTABLISHED.
- THE CONTRACTOR SHALL REMOVE ALL SOILS AND SEDIMENT TRACKED ONTO EXISTING STREETS AND PAVED AREAS.
- IF BLOWING DUST BECOMES A NUISANCE, THE CONTRACTOR SHALL APPLY WATER FROM A TANK TRUCK TO ALL CONSTRUCTION AREAS.
- SWEEP ADJACENT STREETS IN ACCORDANCE WITH CITY REQUIREMENTS.
- INSPECT EROSION CONTROL DEVICES AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL. IMMEDIATELY REPAIR FAILED OR FAILING EROSION CONTROL DEVICES.

BIOINFILTRATION CELL CONSTRUCTION SEQUENCING NOTES

- THE FOLLOWING RECOMMENDED CONSTRUCTION SEQUENCING HAS BEEN ESTABLISHED TO PROTECT THE INFILTRATION INTERIOR OF THE BIOINFILTRATION BASIN. ANY AND ALL DEVIATIONS FROM THE PROPOSED SCHEDULE MUST BE PRE-APPROVED BY THE PROJECT ENGINEER, ABSOLUTELY NO STOCKING, SMILING, OR TRAFFIC IS PERMITTED WITHIN THE BIOINFILTRATION BASIN AT ANY TIME.
- THE FOLLOWING INSTALLATIONS SHALL TAKE PLACE PRIOR TO THE COMMENCEMENT OF ANY WORK ON-SITE:
 - PERMETER SILT FENCE
 - CONSTRUCTION ENTRANCE
 - BIOINFILTRATION CONSTRUCTION FENCE ENCLOSURE (ONLY REQUIRED IF MASS GRADING OPERATIONS TAKE PLACE AFTER SUBGRADE IS EXPOSED) FOLLOWING THE COMPLETION AND ACCEPTANCE OF THESE ACTIVITIES, MASS GRADING MAY COMMENCE.
- MASS GRADE SITE AND EXCAVATE BIOINFILTRATION BASIN TO WITHIN FINISHED GRADE. DO NOT SUBCUT THE BIOINFILTRATION BASIN AT THIS TIME. NOTE: EARTH-MOVING EQUIPMENT TO PREVENT COMPACTION TO THE UNDERLYING SOILS. SMALL TRACKED DOZERS AND SKID-STEEERS WITH RUBBER TRACKS ARE REQUIRED.
- IMMEDIATELY FOLLOWING MASS GRADING, INSTALL RIPRAP AT OVERFLOW LOCATIONS.
- PROJECT ENGINEER TO APPROVE SUBGRADE OF BIOINFILTRATION BASIN PRIOR TO INSTALLATION OF PLANTING MEDIUM.

Project No.	00909-0004
Contract No.	6/21/2012
<p>HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF WISCONSIN.</p> <p>DEBEEK R. LASH DATE: 07/20/2012</p>	
<p>LICENSE # 40938-006</p>	
<p>SUBMISSION DATE: 08/21/2012</p> <p>DESIGN BY: DRAWN BY: JRH JAH</p> <p>FOR PROJECT NO. 00909-0004</p>	
<p>FOR Resources, Inc. 651 Hale Avenue North Oakdale, MN 55128 Tel: 651.770.8448 www.forinc.com</p>	
<p>BEAVER DAM LAKE MANAGEMENT DISTRICT P.O. BOX 232 CUMBERLAND, WISCONSIN 54829</p>	
<p>NEURER TREATMENT BASIN CUMBERLAND, BARRON CO., WI</p>	
<p>STATE PROJECT NO. CITY PROJECT NO.</p>	
<p>SHEET 02 OF 08 SHEETS</p>	





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1	JULY 30, 2012 DRL PLAN REVISIONS
	DATE BY
	REVISION

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF WISCONSIN.
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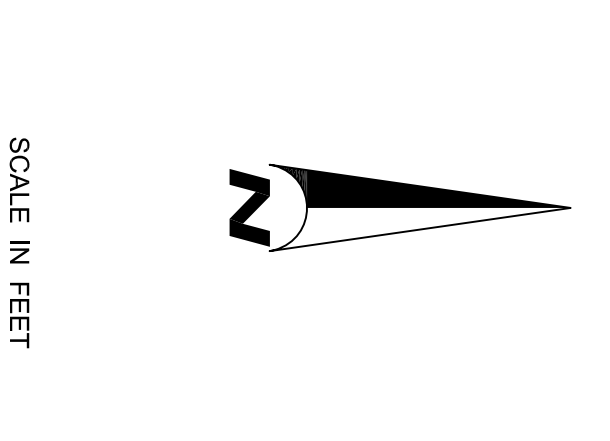
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FOR Emmons & Olivier Resources, Inc.
651 Hale Avenue North
Oakdale, MN 55128
ecology
community
w w w . e o r i n c . c o m
Tel: 651.770.8448

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CUMBERLAND, WISCONSIN 54829

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CUMBERLAND, BARRON CO., WI
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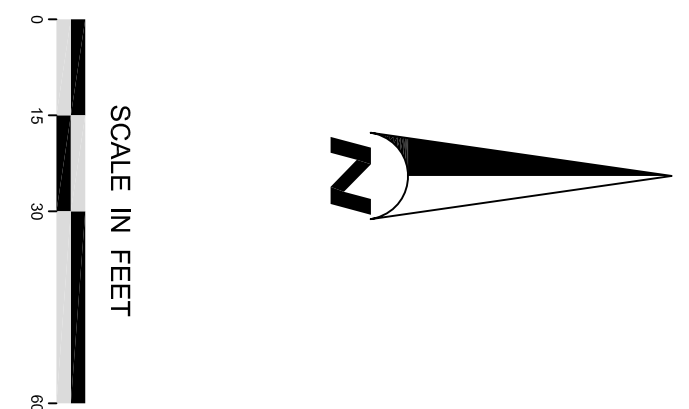
EXISTING CONDITIONS & REMOVALS PLAN
SHEET 03 OF 08 SHEETS



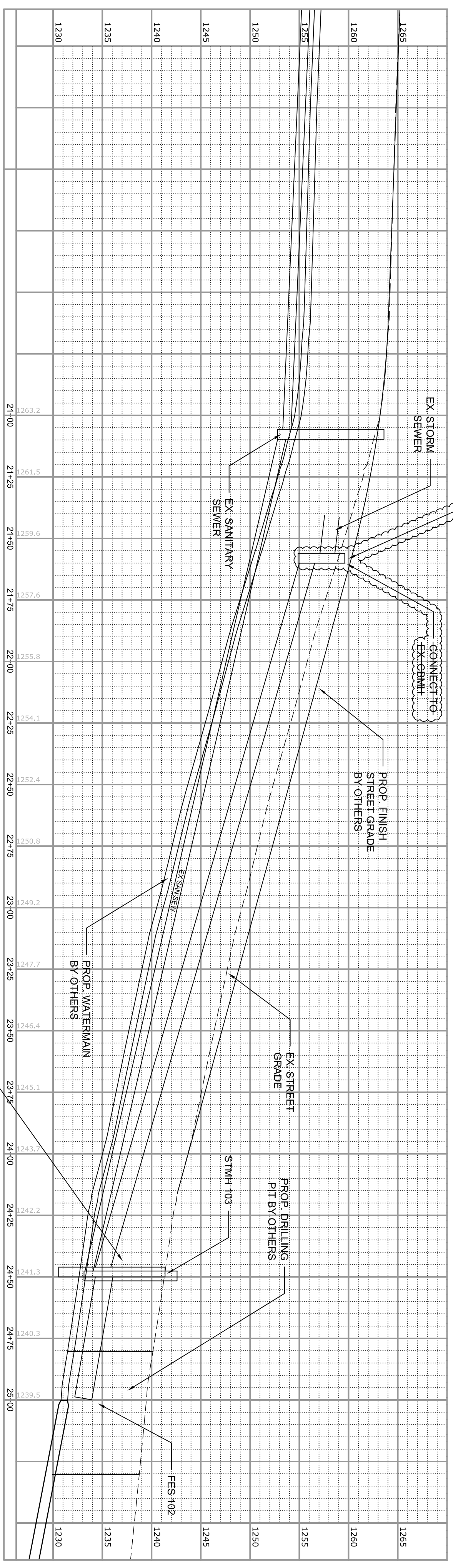
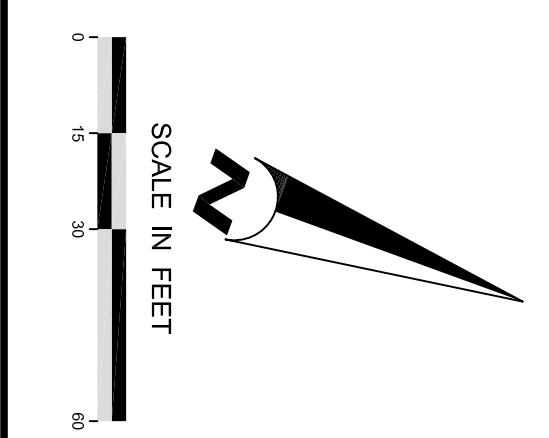
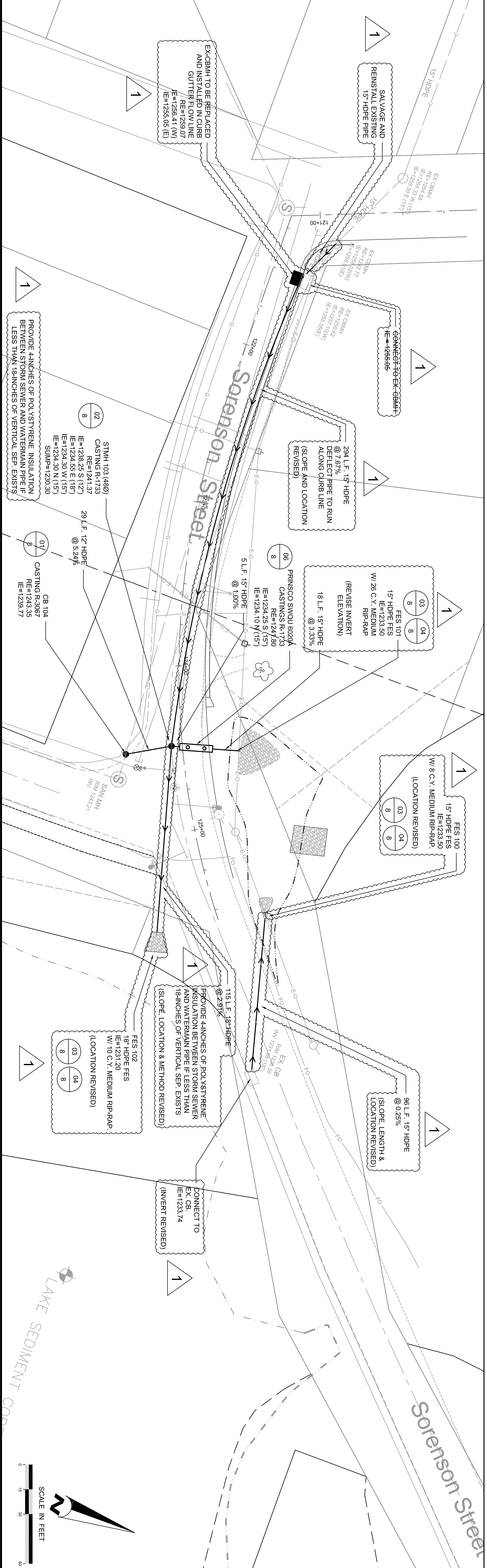
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				STATE PROJECT NO.		CITY PROJECT NO.	
				GRADING & EROSION CONTROL PLAN SHEET 04 OF 08 SHEETS			



PROVIDE 4 INCHES OF POLYSTYRENE INSULATION BETWEEN STORM SEWER AND WATERMAIN PIPE IF LESS THAN 18 INCHES OF VERTICAL SEP. EXISTS

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1	JULY 30, 2012	DRL	PLAN REVISIONS
	DATE	BY	REVISION

DEBER R. LASH
 DATE: 07/30/2012
 LICENSE # 40938-006

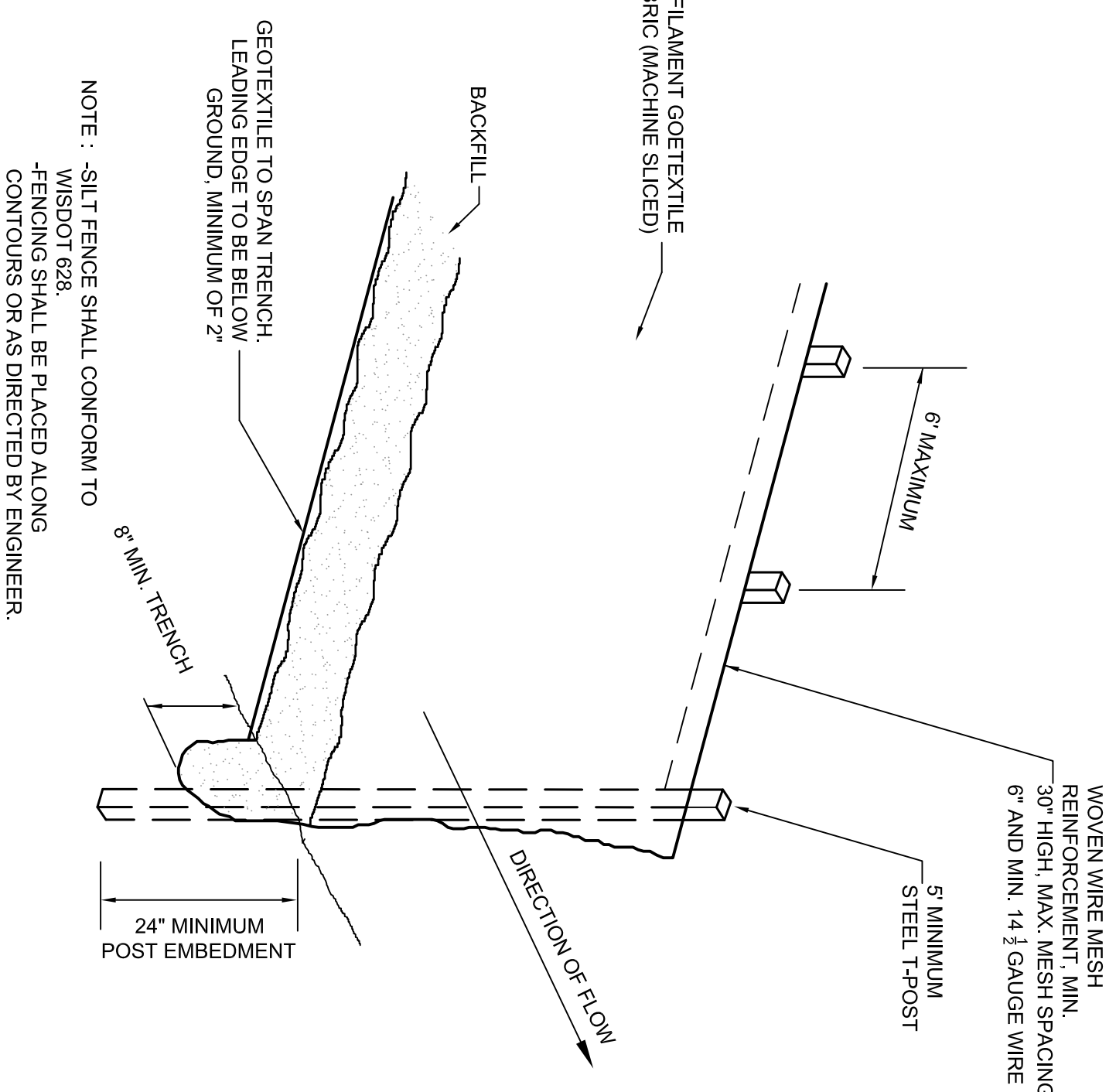
SUBMISSION DATE:
 08/21/2012
 DESIGN BY: JRH
 DRAWN BY: JRH
 EOR PROJECT NO.: 00909-0004

BEAVER DAM LAKE
 MANAGEMENT DISTRICT
 P.O. BOX 232
 CUMBERLAND, WISCONSIN 54829

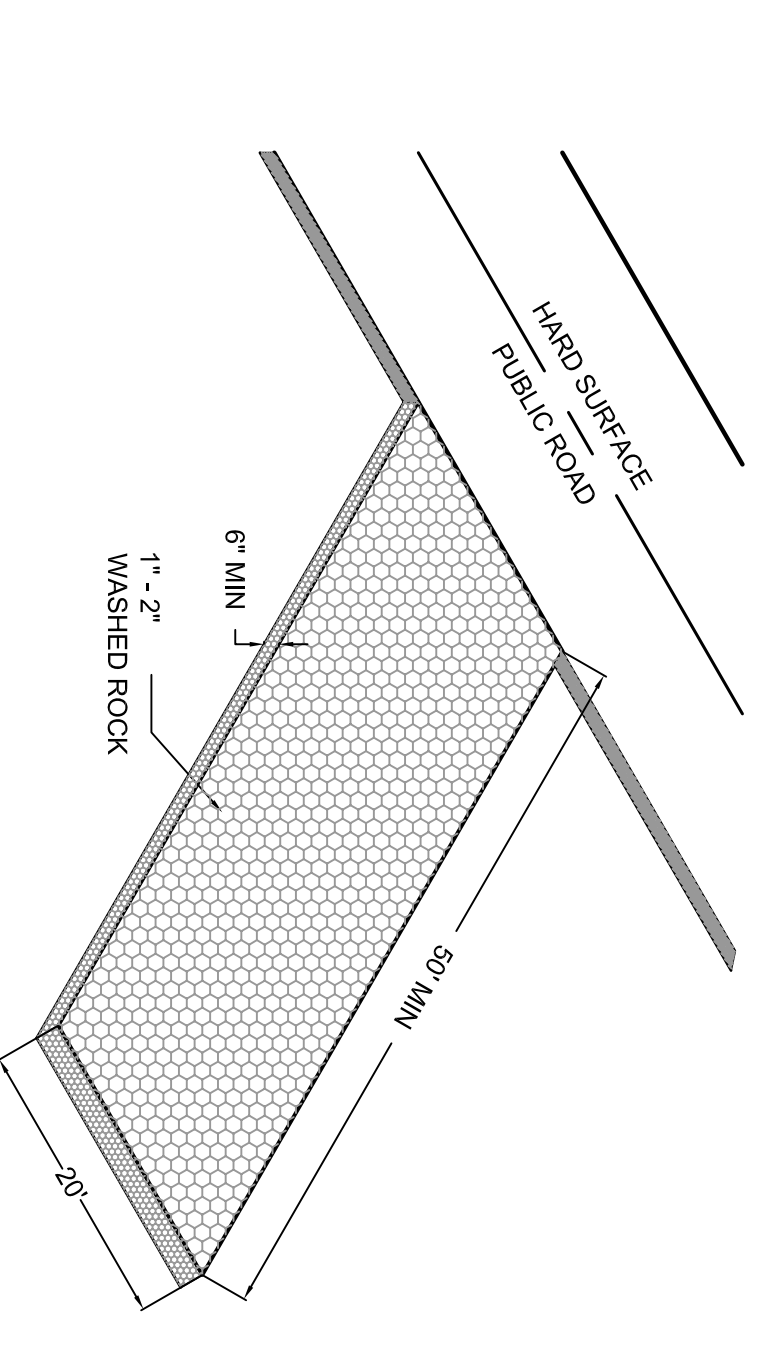
NEURER TREATMENT BASIN
 CUMBERLAND, BARRON CO., WI
 STATE PROJECT NO.:
 CITY PROJECT NO.:

STORM SEWER PLAN & PROFILE
 SHEET 05 OF 08 SHEETS

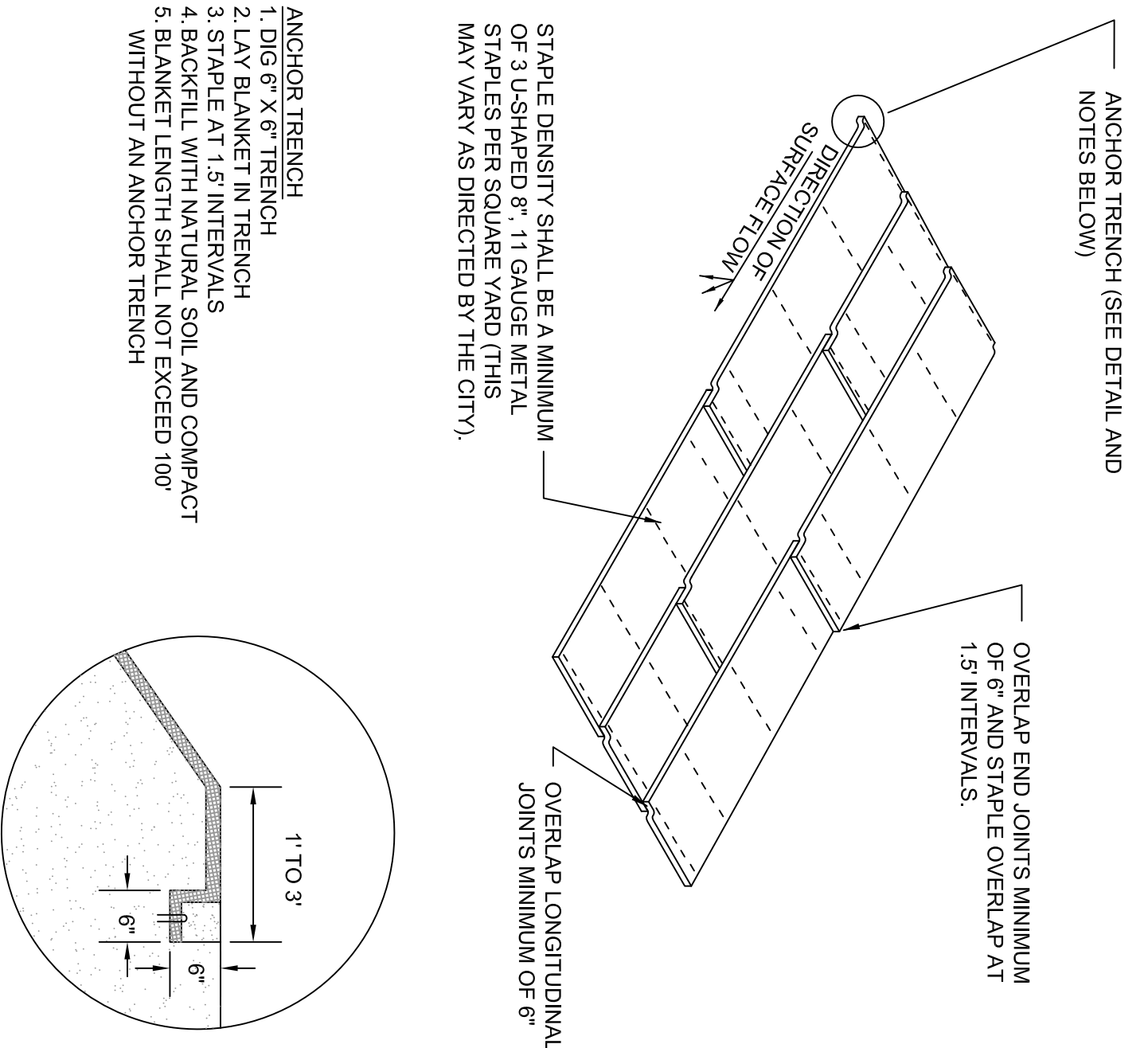
I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF WISCONSIN.



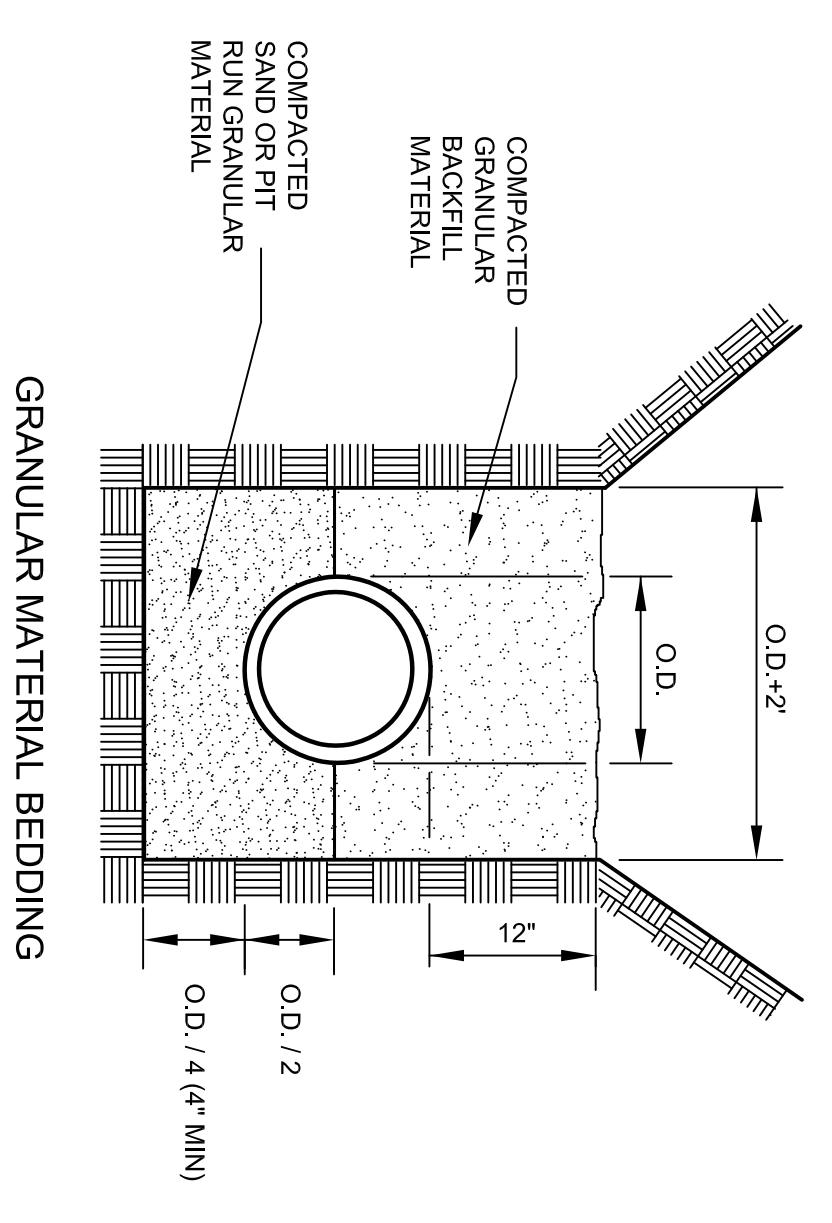
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7
SILT FENCE (HEAVY-DUTY)
(NOT TO SCALE)



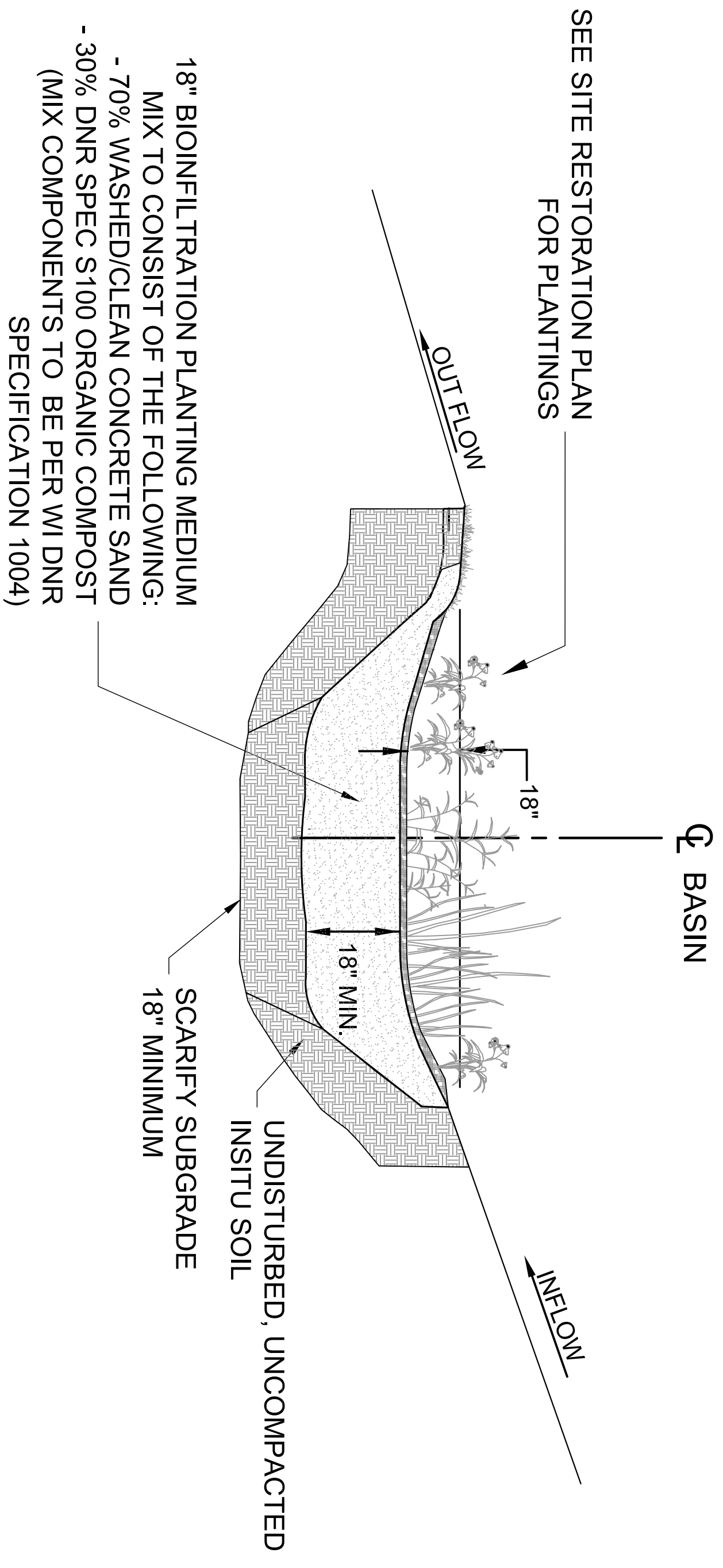
02
7
CONSTRUCTION ENTRANCE
(NOT TO SCALE)



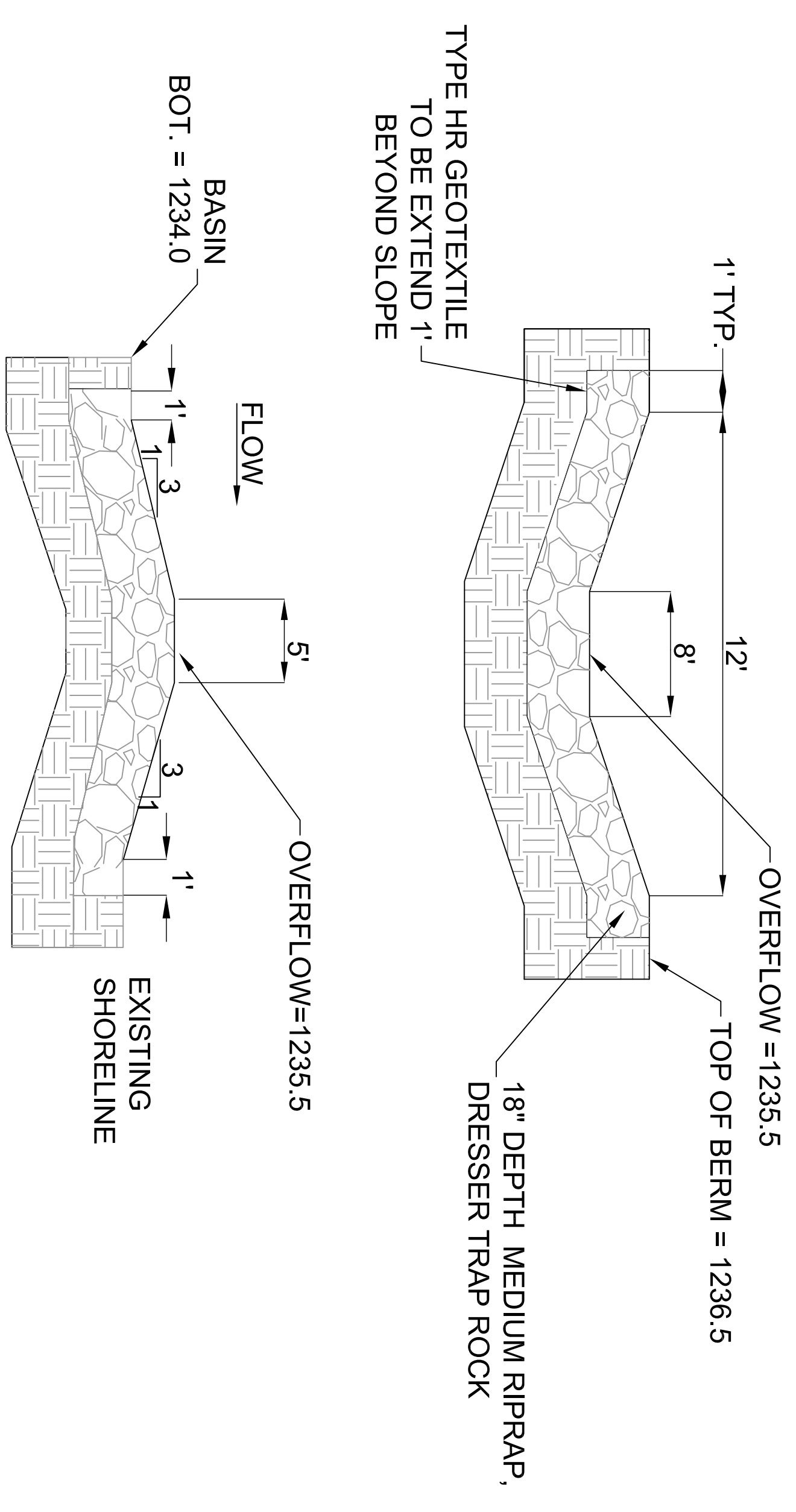
03
7
EROSION CONTROL REVEGETATIVE MAT INSTALLATION
(NOT TO SCALE)



04
7
HDPE PIPE BEDDING & BACKFILL
(NOT TO SCALE)



05
7
TYPICAL BASIN SECTION
(NOT TO SCALE)



06
7
BIO-INFILTRATION BASIN OUTFALL
(NOT TO SCALE)

6					
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4					
3					
2					
1	JULY 30, 2012	DRL	PLAN REVISIONS		
	DATE	BY	REVISION		

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DEREK R. LASH
DATE: 07/20/2012

SUBMISSION DATE: 08/21/2012
DESIGN BY: JRH
DRAWN BY: JRH
EOR PROJECT NO.: 00909-0004

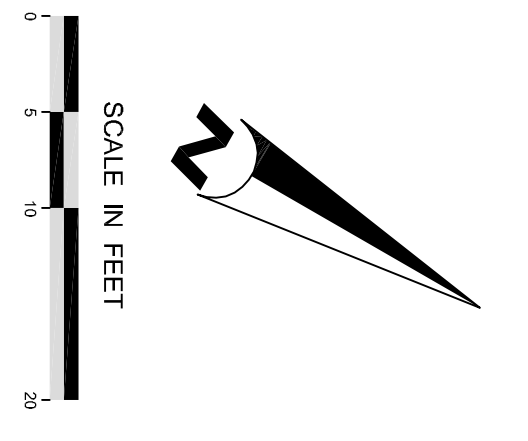
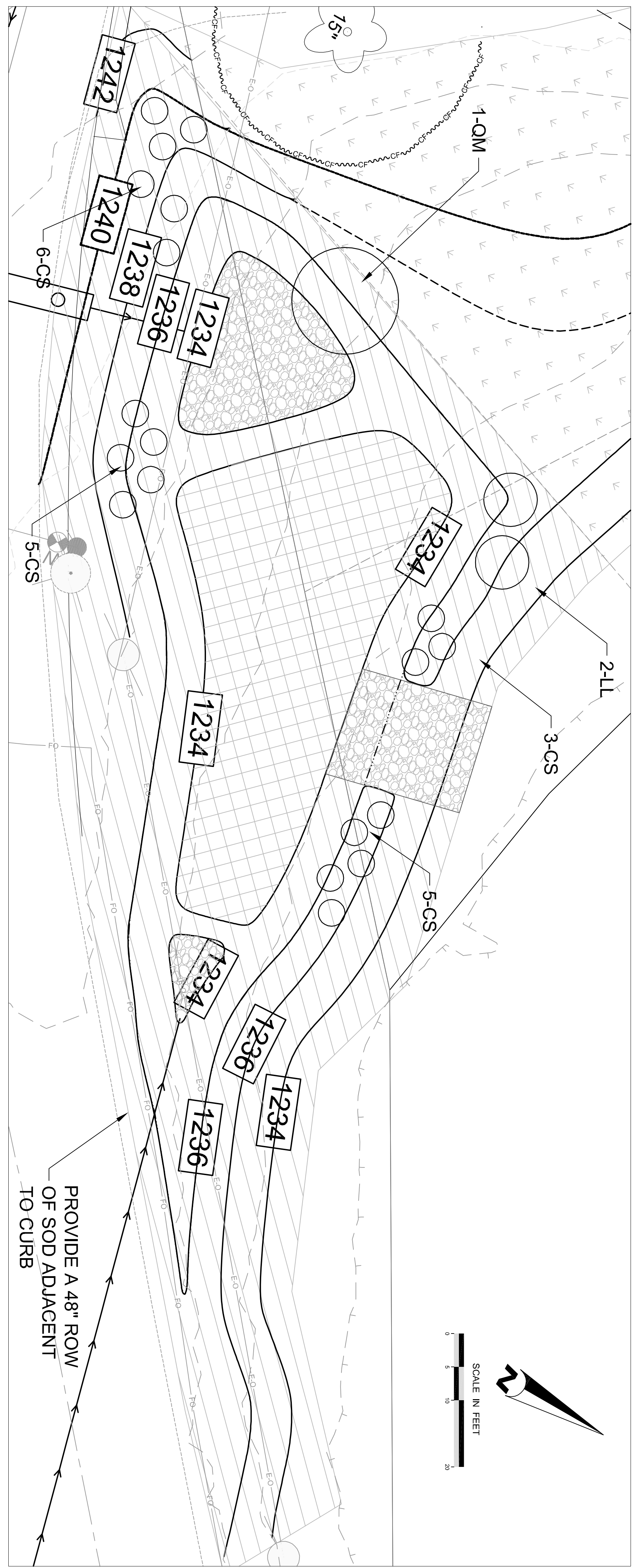
FOR Emmons & Olivier Resources, Inc.
651 Hale Avenue North
Oakdale, MN 55128
Tel: 651.770.8448
www.eorinc.com

BEAVER DAM LAKE MANAGEMENT DISTRICT
P.O. BOX 232
CUMBERLAND, WISCONSIN 54829

NEURER TREATMENT BASIN
CUMBERLAND, BARRON CO., WI

STATE PROJECT NO. CITY PROJECT NO.

DETAILS 1
SHEET 07 OF 08 SHEETS



- VEGETATION RESTORATION LEGEND**
- REVEGETATION ZONE 'A'
 - REVEGETATION ZONE 'B'
 - REVEGETATION ZONE 'C'
 - DECIDUOUS SHRUBS - CS
 - CONIFER TREES - LL
 - DECIDUOUS TREES - QM

VEGETATION RESTORATION SCHEDULES

REVEGETATION ZONE A (SQ-FT): 1800
 SEED MIX - Wisconsin CRP Mix CP-25 Wet Prairie
 FORBS (35% coverage)

SCIENTIFIC NAME	COMMON NAME	% OF ZONE	DENSITY/ GROUPING	SIZE	QUANTITY
<i>Asclepia incarnata</i>	Marsh milkweed	5%			28
<i>Aster laevis</i>	Swamp aster	15%			84
<i>Liatris ligulistylis</i>	Meadow blazingstar	10%			56
<i>Phytolacca virginiana</i>	Occident plant	5%	16" O.C.	2.25"	28
<i>Veronicastrum virginicum</i>	Culver's root	15%	Group of 15-	Plug	84
<i>Calamagrostis canadensis</i>	Canada blue-joint grass	20%			112
<i>Carex crinita</i>	Caterpillar sedge	20%			112
<i>Carex lanuginosa</i>	Woolly sedge	10%			56

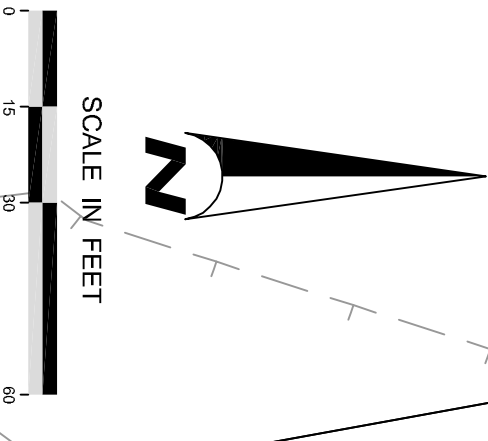
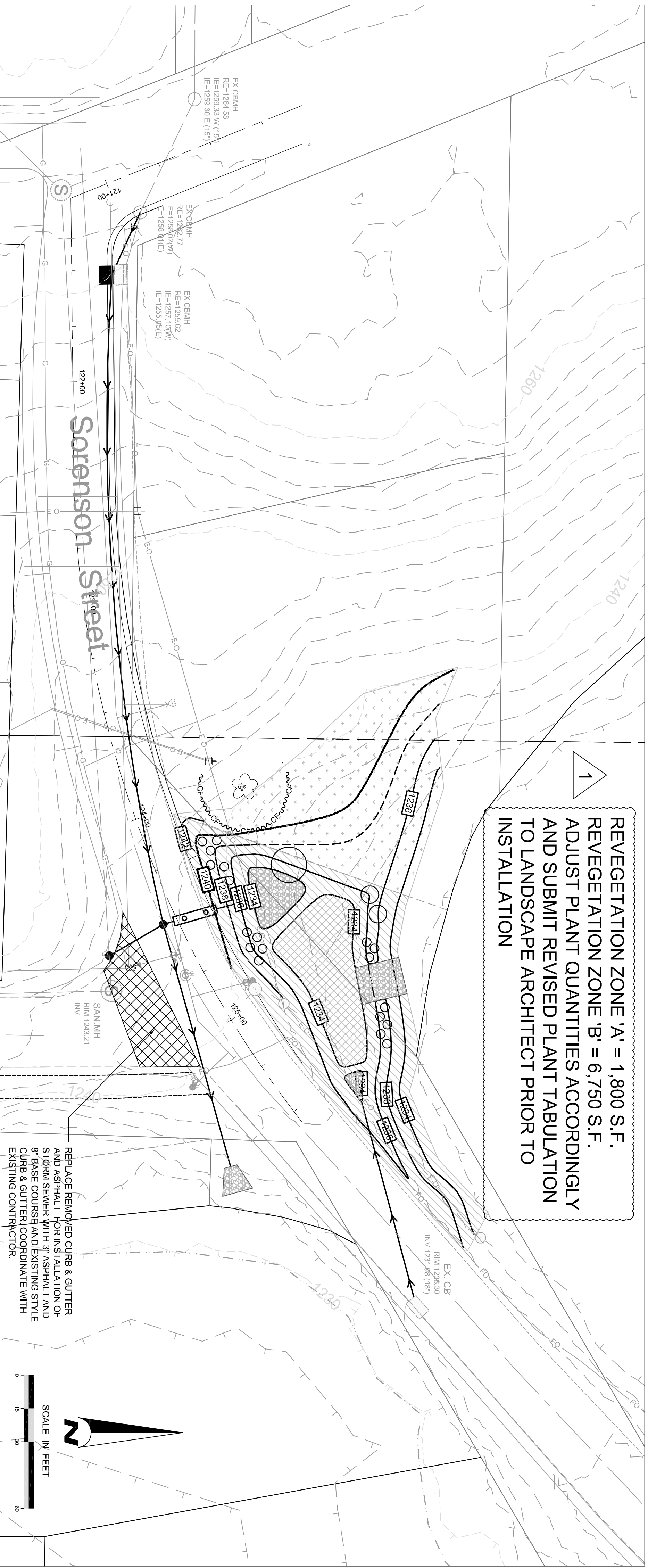
REVEGETATION ZONE B (SQ-FT): 6750
 SEED MIX - Wisconsin CRP Mix CP-25 Mesic Prairie
 FORBS (25% coverage)

SCIENTIFIC NAME	COMMON NAME	% OF ZONE	DENSITY/ GROUPING	SIZE	QUANTITY
<i>Schizachyrium scoparium</i>	Little Blue Stem	5%			150
<i>Sorghastrum nutans</i>	Indian Grass	15%	16" O.C.	2.25"	450
<i>Agastache foeniculum</i>	Fragrant giant hyssop	10%	Group of 15-	Plug	300
<i>Monarda fistulosa</i>	Wild bergamot	5%			150
<i>Rudbeckia hirta</i>	Black-eyed Susan	15%			450

REVEGETATION ZONE C (SQ-FT): 6000
 SEED MIX - Wisconsin DOT Mix 40

SHRUBS & TREES	SCIENTIFIC NAME	COMMON NAME	% OF ZONE	DENSITY/ GROUPING	SIZE	QUANTITY
CS	<i>Cornus stolonifera</i>	Red-twigged Dogwood		5' O.C.	8" Cont	41
LL	<i>Larix laricina</i>	Tamarack			8'	1
QM	<i>Quercus macrocarpa</i>	Bur Oak			2" cal	2

NOTE: NATIVE/CRP SEED MIXES SHALL INCLUDE AN ADDITIONAL ANNUAL COVER CROP SEEDING.
 48-inch wide Row of Sod (SQ-YD): 107



6			
5			
4			
3			
2	SEPT. 13, 2012	DRI	PLANT QUANTITIES
1	JULY 30, 2012	DRI	PLANNING REVISIONS
DATE	BY	REVISION	

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED REGISTERED LANDSCAPE ARCHITECT UNDER THE LAWS OF THE STATE OF WISCONSIN.

KEVIN BEHN
 DATE: 09/13/2012 LICENSE # 623-014

SUBMISSION DATE:	08/21/2012
DESIGN BY:	JRH
DRAWN BY:	JRH
FOR PROJECT NO.:	00909-0004

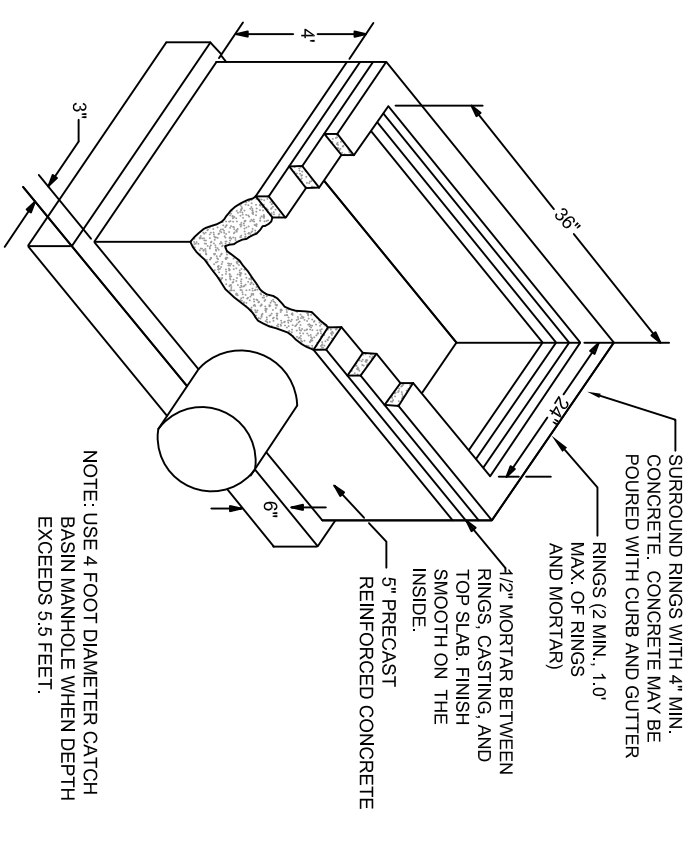
FOR Emmons & Olivier Resources, Inc.
 651 Hale Avenue North
 Oakdale, MN 55128
 Tel: 651.770.8448
 www.eorinc.com

BEAVER DAM LAKE
 MANAGEMENT DISTRICT
 P.O. BOX 232
 CUMBERLAND, WISCONSIN 54829

NEURER TREATMENT BASIN
 CUMBERLAND, BARRON CO., WI

LANDSCAPING & SITE RESTORATION
 SHEET 06 OF 08 SHEETS



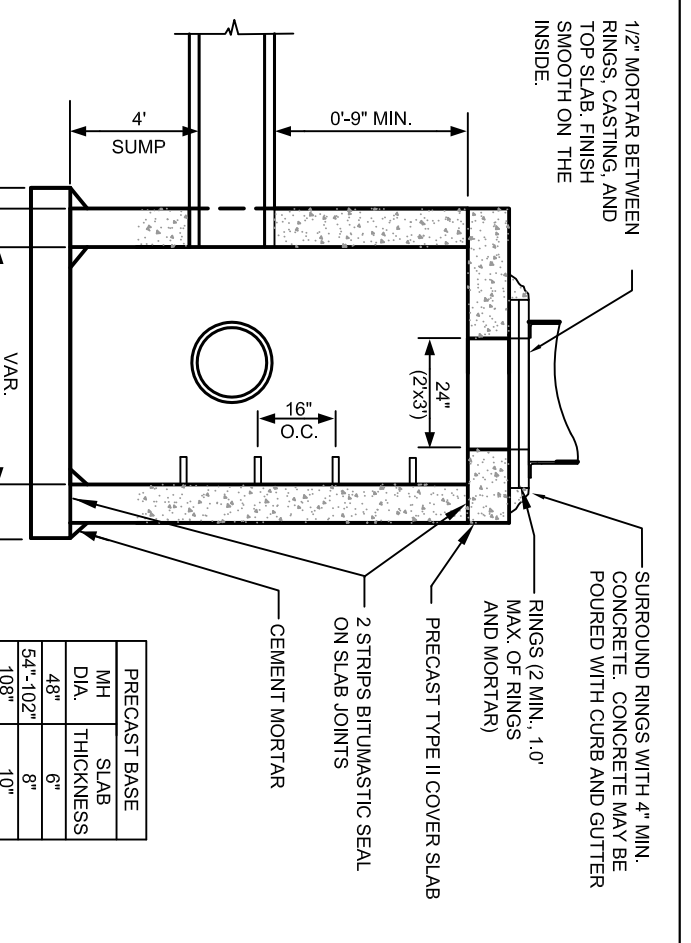


NOTES: NO WOOD SHALL BE USED FOR ADJUSTING CASTING. CASTING MORTAR ONLY.
 PRECAST REINFORCED CONCRETE BASE SLAB PER ASTM C94.
 ALL OPENING REINFORCEMENT AND MANHOLE WALL WITH CEMENT MORTAR. MORTAR SURFACE SHALL BE FINISHED SMOOTH.
 ALL WORK SHALL CONFORM TO ASTM C918 AND MEET THE REQUIREMENTS OF MOST SPECIFICATIONS.
 DOORHOUSE SHALL BE GROUTED ON BOTH THE OUTSIDE AND INSIDE.
 MAXIMUM DIAMETER FOR STAINLESS STEEL PIPE IS 17" ON THE SHORT SIDE AND 19" ON THE LONG SIDE OF CATCH BASIN.
 GROUT INVERT TO INCLUDE A 2" MINIMUM SLUMP BELOW OUTLET ELEVATION.
 PROVIDE MINIMUM WHICH AGGREGATE BASE PER MOST SPECIFICATIONS.

FOR Resources, Inc.
 651 High Avenue North
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 Fax: 651.770.8448
 www.forinc.com

Revision Date: 09/20/09
 Standard Drawing No.
 1605

01
 2' X 3' CATCHBASIN
 (NOT TO SCALE)
 8

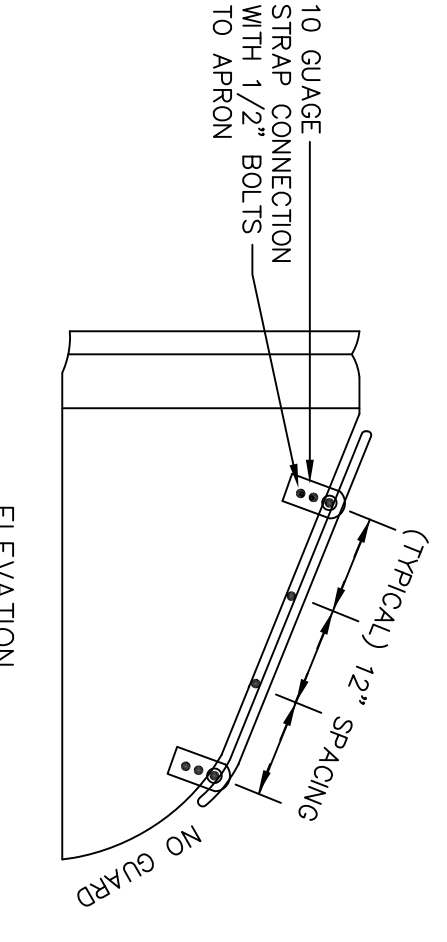
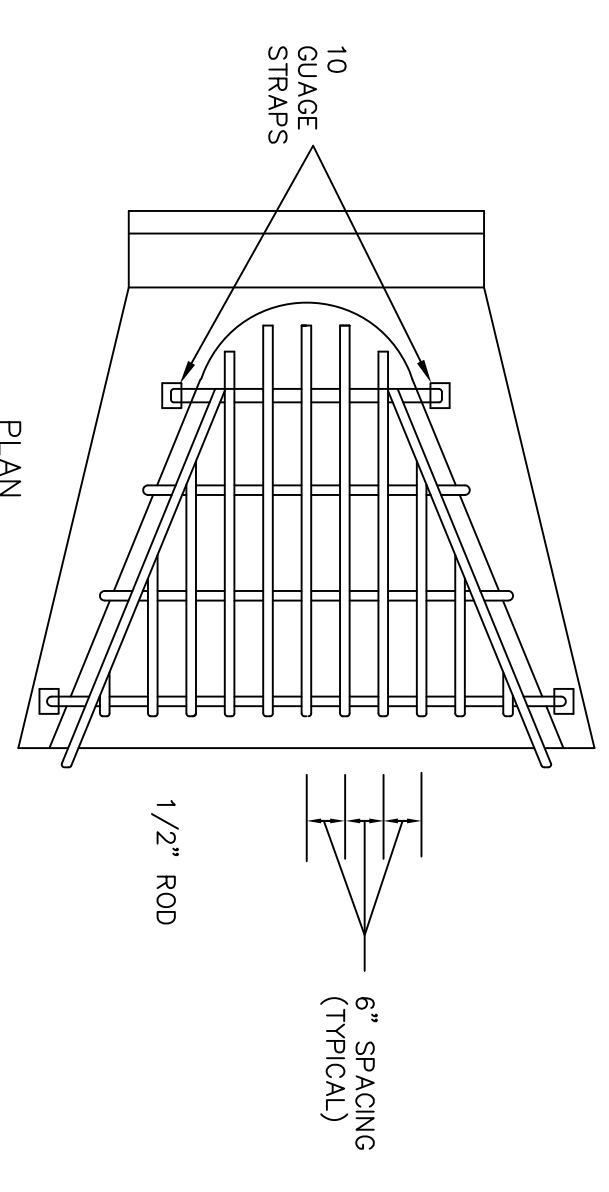


NOTES: NO WOOD SHALL BE USED FOR ADJUSTING CASTING. CASTING MORTAR ONLY.
 CAST FROM FORMS & GROUT CASTINGS TYPE SOAKING (10) UNLESS OTHERWISE APPROVED BY THE ENGINEER.
 MANHOLE STEPS SHALL BE CAST FROM ALUMINA OR STEEL REINFORCED PLASTER PER ASTM C94. LOCATION SHALL BE EQUAL ACCESSIBLE.
 PRECAST REINFORCED CONCRETE BASE SLAB & COVER SLAB PER ASTM C94.
 PRECAST REINFORCED CONCRETE MANHOLE SECTIONS PER ASTM C94. FINISHED WITH CURING PROTECT & SLOPE COAT.
 ALL WORK SHALL CONFORM TO ASTM C918 AND MEET THE REQUIREMENTS OF MOST SPECIFICATIONS.
 PROVIDE MINIMUM WHICH AGGREGATE BASE PER MOST SPECIFICATIONS.

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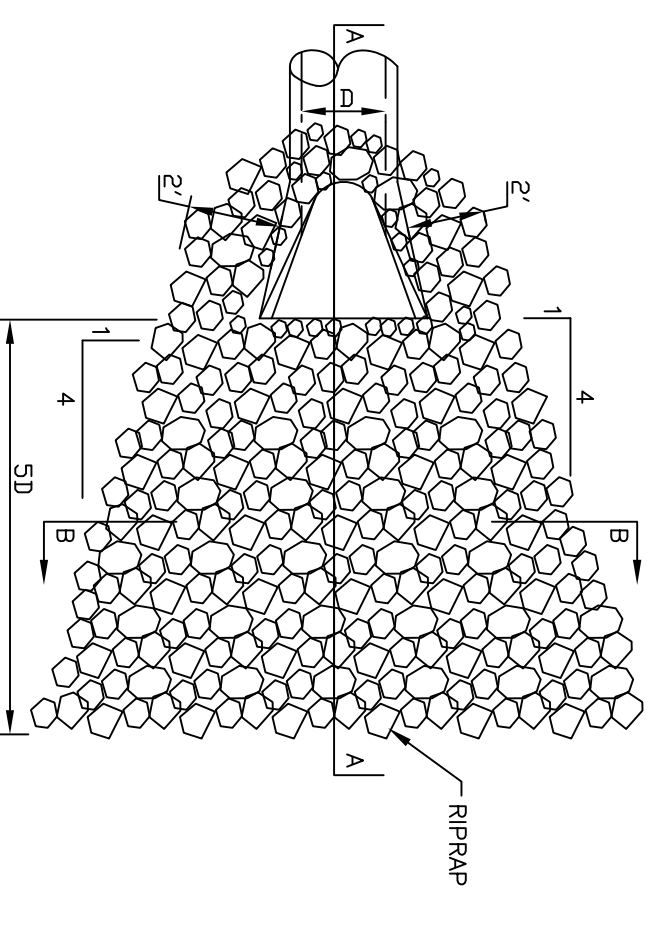
Revision Date: 07/20/08
 Standard Drawing No.
 1625

02
 CATCHBASIN/MANHOLE
 (NOT TO SCALE)
 8



NOTES:
 1. TRASH GUARD TO BE GALVANIZED AFTER FABRICATION.
 2. THE SIZE OF EACH TRASH GUARD WILL VARY TO FIT APRON.

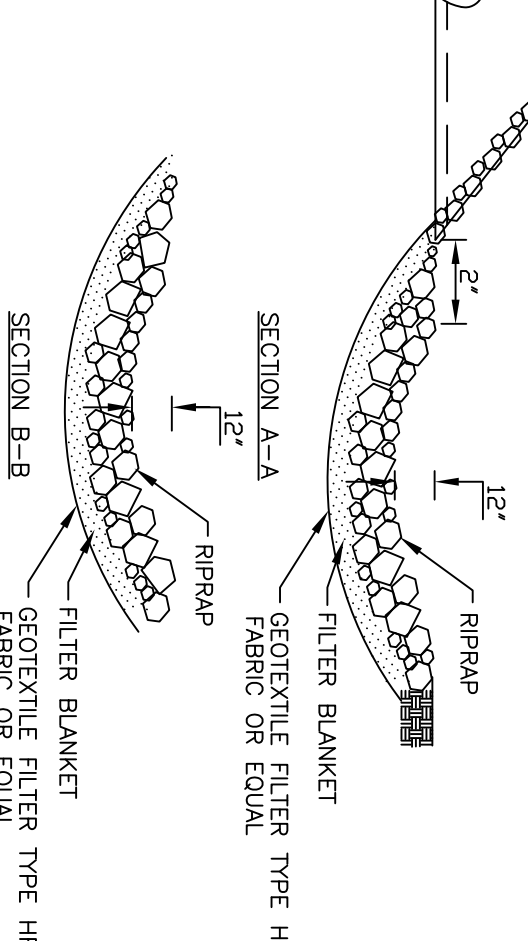
03
 FLARED END SECTION
 (NOT TO SCALE)
 8



RIP RAP REQUIREMENTS
 RIP RAP MATERIAL TO BE DRESSER TRAP ROCK OR APPROVED EQUAL.

PIPE DIA.	QUANTITY	TYPE
12" TO 24"	8 to 12 CY	MEDIUM RIPRAP
24" TO 36"	14 to 20 CY	MEDIUM RIPRAP
36" TO 48"	23 to 38 CY	MEDIUM RIPRAP
54" AND UP	62 CY and up	HEAVY RIPRAP

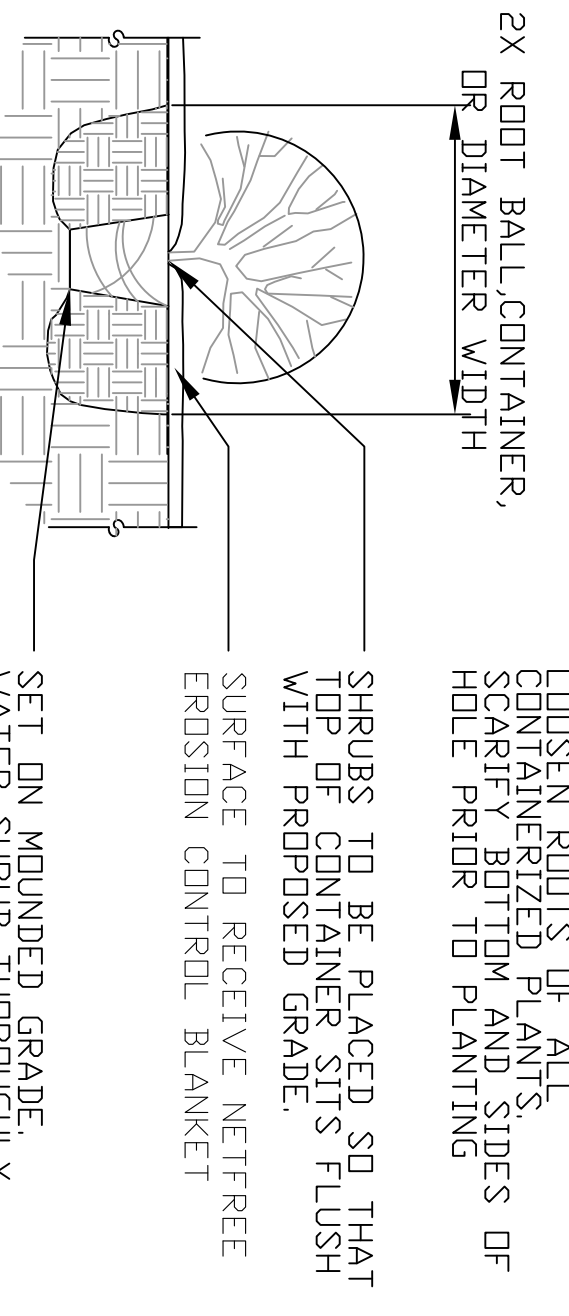
 (ONE CUBIC YARD IS APPROXIMATELY 2,800 LBS.)



04
 RIP RAP AT PIPE OUTLET
 (NOT TO SCALE)
 8

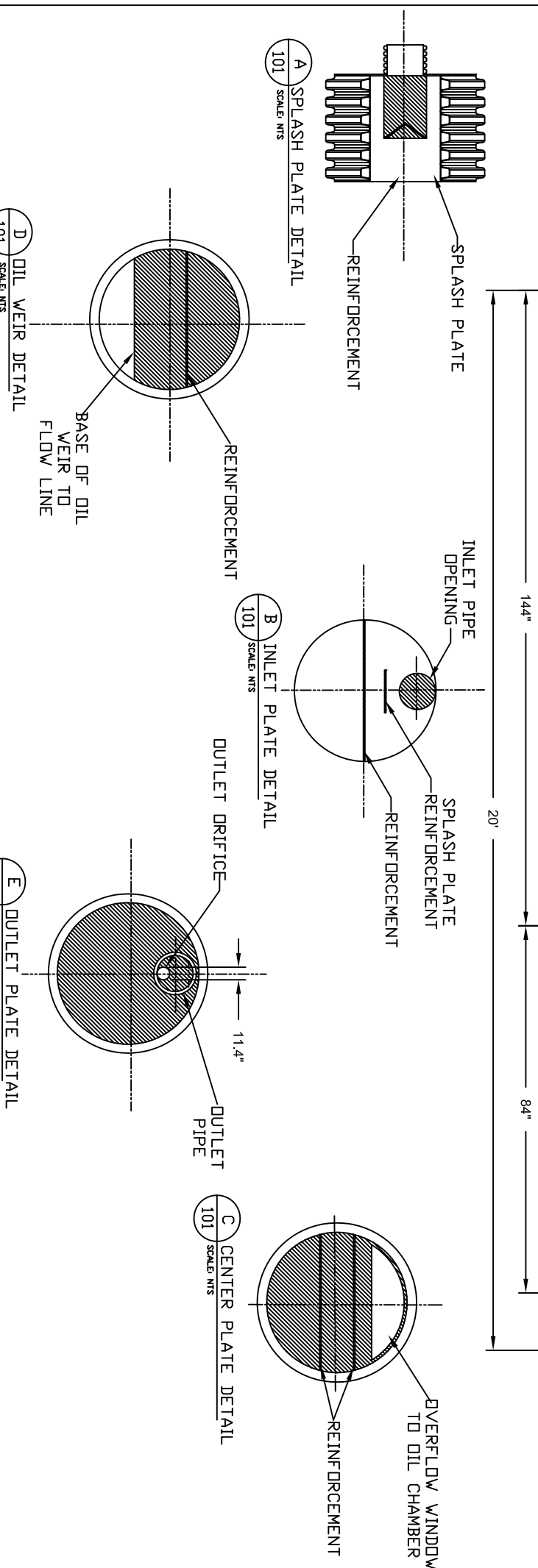
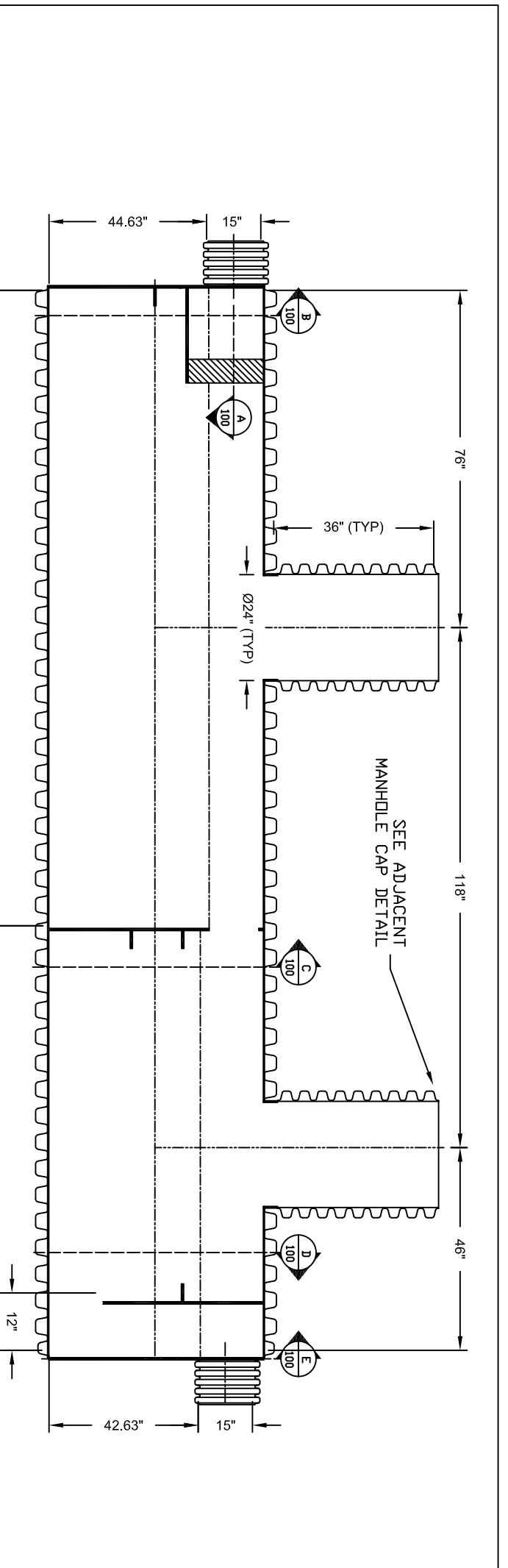


FORBS
 SURFACE TO RECEIVE NETFREE EROSION CONTROL BLANKET
 BIOFILTRATION PLANTING MEDIUM (SEE DETAIL 04)
 LOOSEN ROOTS OF PLANT MATERIAL PRIOR TO PLANTING



SHRUBS
 2X ROOT BALL CONTAINER, OR DIAMETER WIDTH
 LOOSEN ROOTS OF ALL CONTAINER SIZED PLANTS. SCARIFY BOTTOM AND SIDES OF HOLE PRIOR TO PLANTING.
 SHRUBS TO BE PLACED SO THAT TOP OF CONTAINER SITS FLUSH WITH PROPOSED GRADE.
 SURFACE TO RECEIVE NETFREE EROSION CONTROL BLANKET
 SET ON MOUNDDED GRADE. WATER SHRUB THOROUGHLY AFTER PLANTING.

05
 PLANTING DETAILS
 (NOT TO SCALE)
 8



THIS DETAIL DEPICTS RECOMMENDED INSTALLATION PRACTICES AND IS NOT INTENDED TO SUPERSEDE ANY OTHER RELEVANT CODES, REGULATIONS, OR STANDARDS. THE DESIGN ENGINEER SHALL BE RESPONSIBLE FOR ANY ALTERATIONS, REVISION AND/OR DEVIATION FROM THIS STANDARD DETAIL. PRINSCO HAS NOT REVIEWED THESE DETAILS FROM TO CONSTRUCTION TO BEER "SAFELY". PRINSCO, INC.

PRINSCO
 ENGINEERED WITH INTEGRITY
 1717 16TH ST. NE, 3RD FLOOR, WILLMAR, MN 56201

SWQU 6020A PRODUCT DETAIL

REV	DATE	DESCRIPTION
1	08/11/09	ISSUE

06
 PRINSCO SWQU 6020A
 (NOT TO SCALE)
 8

NO.	DATE	BY	REVISION
1	JULY 30, 2012	DRL	PLAN REVISIONS
2			
3			
4			
5			
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DEBBE R. LASH
 DATE: 07/20/2012
 LICENSE # 40938-006

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 Oakdale, MN 55128
 Tel: 651.770.8448
 Fax: 651.770.8448
 www.forinc.com

Submission Date: 08/21/2012
 Design By: DRAVON BY JRH
 EOR PROJECT NO. 00909-0004

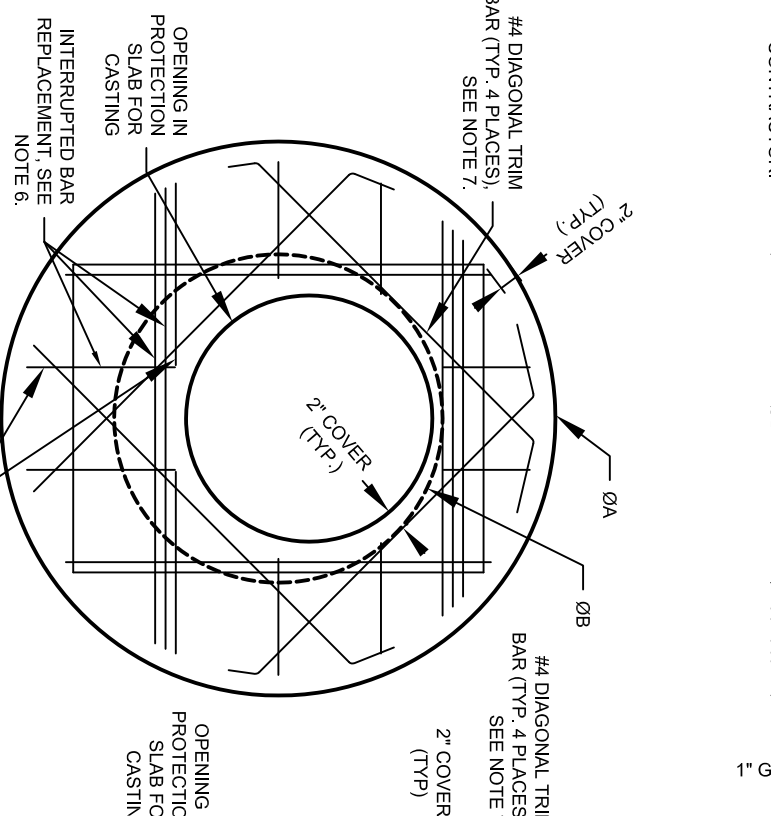
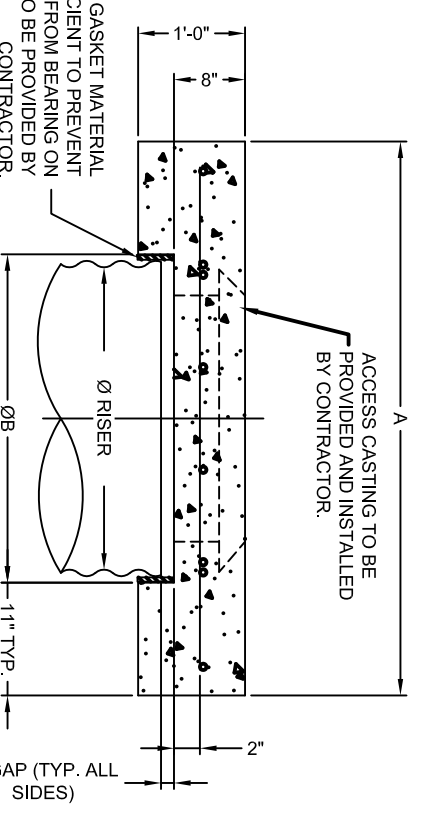
BEAVER DAM LAKE MANAGEMENT DISTRICT
 P.O. BOX 232
 CUMBERLAND, WISCONSIN 54829

STATE PROJECT NO. CITY PROJECT NO.

NEURER TREATMENT BASIN
 CUMBERLAND, BARRON CO., WI

MANHOLE CAP DETAIL

DETAILS 2
 SHEET 08 OF 08 SHEETS



REINFORCING TABLE

Ø CMP RISER	A	Ø B	REINFORCING	**BEARING PRESSURE (PSF)
24"	0.4'	25"	#5 @ 12" OC HW	2,410
30"	0.4'	32"	#5 @ 12" OC HW	1,780
36"	0.5'	38"	#5 @ 12" OC HW	2,120
42"	0.5'	44"	#5 @ 12" OC HW	1,880
48"	0.5'	50"	#5 @ 12" OC HW	1,530
54"	0.5'	56"	#5 @ 12" OC HW	1,880
60"	0.5'	62"	#5 @ 12" OC HW	1,270
66"	0.5'	68"	#5 @ 12" OC HW	1,410
72"	0.5'	74"	#5 @ 12" OC HW	1,800
78"	0.5'	80"	#5 @ 12" OC HW	1,150

** ASSUMED SOIL BEARING CAPACITY

NOTES:
 1. DESIGN IN ACCORDANCE WITH AASHTO, 17TH EDITION.
 2. DESIGN LOAD HS25.
 3. EARTH COVER = 1' MAX.
 4. CONCRETE STRENGTH = 3,500 PSI
 5. REINFORCING STEEL = ASTM A615, GRADE 60.
 6. PROVIDE ADDITIONAL REINFORCING AROUND OPENINGS EQUAL TO THE BARS INTERRUPTED THE SAME SLAB.
 7. TRIM OPENING WITH DIAGONAL #4 BARS EXTEND BARS A MINIMUM OF 12" BEYOND OPENING. BEND BARS AS REQUIRED TO MAINTAIN BAR COVER.
 8. PROTECTION SLAB AND ALL MATERIALS TO BE PROVIDED AND INSTALLED BY CONTRACTOR.
 9. PROVIDE MINIMUM 12" COMPACTED AGGREGATE BASE BELOW TOP SLAB