DANE COUNTY DEPT. OF PUBLIC WORKS, HIGHWAY & TRANSPORTATION

1919 Alliant Energy Center Way
Madison, Wisconsin 53713
Office: 608/266-4018 ◊ Fax: 608/267-1533
Public Works Engineering Division
Public Works Solid Waste Division

ADDENDUM

APRIL 25, 2018

ATTENTION ALL REQUEST FOR BID (RFB) HOLDERS

RFB NO. 317049 - ADDENDUM NO. 2

BIOGAS FACILITY CONSTRUCTION

BIDS DUE: MAY 10, 2018, 2:00 PM. DUE DATE AND TIME **ARE** CHANGED BY THIS ADDENDUM.

This Addendum is issued to modify, explain or clarify the original Request for Bid (RFB) and is hereby made a part of the RFB. Please attach this Addendum to the RFB.

PLEASE MAKE THE FOLLOWING CHANGES:

1. **Section 31 12 16**
   Updated to correct nomenclature typo (changed section number from 31 82 16 to 32 12 16 in the footer) and replaced ’82-34 performance graded asphalt binder’ with ‘58-28 performance graded asphalt binder’ in Paragraph 2.1.B. Changes have been highlighted in gray.

2. **Pre-Engineered Metal Buildings**
   Foremost Buildings is an approved equal for pre-engineered metal buildings.

3. **Sheet G02**
   Updated Revision Numbers in the Master Sheet Index.

4. **Sheet C102**
   Updated to include concrete apron for Compressor Building overhead door.

5. **Sheet C103**
   Updated surface water control devices to meet requirements for oil and grease collection.

6. **Sheet C121**
   Updated to include a note that all water, condensate and effluent piping must be heat traced and insulated above the frost line.

7. **Sheet C122**
   Updated to include notes that all water, condensate and effluent piping must be heat traced and insulated above the frost line, and that a concrete pad for the MG&E natural gas meter may be required.

8. **Sheet C508**
   Updated to show heat trace and insulation below grade on Condensate Pump Station CS-3

9. **Sheet C509**
   Updated to show heat trace and insulation below grade on Condensate Pump Stations CS-1 and CS-2

10. **Sheet C516**
    Updated surface water control device details to meet requirements for oil and grease collection.

11. **Sheet M101**
    Updated to include off spec gas piping and flow meters 5 and 6.

12. **Sheet M300**
    Updated to include off spec gas piping and flow meters 5 and 6, changed 'CR' pipe label to 'RNG'.

PLEASE NOTE THE FOLLOWING CONTRACTOR SUBMITTED QUESTIONS:

Q1: The Public Work Construction Contract currently shown as SAMPLE includes provision for liquidated damages as well as a bonus for timely completion. Section 3D does not include a cap on liquidated damages. We are requested that this language be added not to exceed 10% of the value of the contract.
A1: Addendum #1 updates to the Public Works Sample Construction Contract clarified that liquidated damages for failing to timely attain Substantial Completion and Final Completion shall be capped at 10% of the total contract amount.

Q2: Please confirm that all process equipment NOT provided by BIOFerm as part of their contract is provided to the Contractor by Owner.
A2: This assumption is correct.

Q3: Specification 01 11 00 Section 1.4C.1 seems to mention that concrete slabs for all equipment are provided by Owner. Please confirm this only applies to the BIOFerm (i.e. Gas Cleaning Equipment) covered under separate contract. The drawings would seem to indicate that the other concrete slabs are intended to be provided by this contract.
A3: Addendum #1 updates to Section 01 11 00 Summary of Work clarified that all equipment and site work including concrete slabs inside of the Gas Cleaning Equipment footprint is supplied by the Owner. Concrete slabs for all equipment outside of the Gas Cleaning Equipment footprint is supplied by the Contractor.

Q4: Please provide vendor drawings for the Owner-furnished RNG handling equipment, even if preliminary.
A4: Attachment 3 contains preliminary vendor drawings for Trailer Offload Station equipment.

Q5: Communications subcontractors have indicated there are conflicts on drawing T600 between couple of camera related schedules vs the plan. Please review and update via addendum as appropriate.
A5: A review of drawing T600 and the corresponding plan did not identify any errors. Additional clarification is required in order to address this question.

Q6: Page C506 Detail 7 calls out the use of 24" 16 gauge galvanized corrugated steel pipe as a casing for road crossings. The use of Corrugated metal pipe as a casing is non traditional. It is recommended to use an 8" bare steel casing with casing spacers every 10'-15' and link seals for both ends. Vent pipes are also often used for casings. Can it be confirmed that Corrugated pipe used as a casing pipe is indeed what will be required for road crossings?
A6: Corrugated pipe, as outlined on Sheet C506 Detail 7, is to be used as casing pipe for road crossings.

Q7: What is your anticipated cathodic protection plan for the steel piping to ANR pipeline?
A7: Cathodic protection for the steel piping to ANR pipeline must meet the requirements outlined in Specification Sections TES-CP-CR, TES-CP-MS and TES-CP-CS.

Q8: In regards to the steel pipe that leads to the ANR pipeline, it is recommended a higher grade pipe to be used to produce SMYS levels below 20%. This may minimize the transmission gas main O&M requirements into the future pending classification. Can the grade of pipe to be used be confirmed?
A8: Owner was not able to obtain an answer from ANR in time for inclusion in this Addendum.

Q9: Are the A333 steel pipe and fitting ANR requirements required for any portion of the 4" HP steel line that connects to ANR?
A9: Owner was not able to obtain an answer from ANR in time for inclusion in this Addendum.

Q10: Has the A106 pipe material been approved by ANR for the 4" steel pipe that connects to ANR?
A10: Owner was not able to obtain an answer from ANR in time for inclusion in this Addendum.

Q11: Are the special -50 deg F welding requirements required for any portion of the 4" line that connects to ANR?
A11: Owner was not able to obtain an answer from ANR in time for inclusion in this Addendum.

Q12: Are any of the ANR field applied coating specs required to be used for any portion of the 4" HP pipe that connects to ANR?
A12: Owner was not able to obtain an answer from ANR in time for inclusion in this Addendum.

Q13: On page C507, Details 3 and 5 all show HDPE gas pipe coming above ground before transitioning to Stainless Steel. HDPE pipe cannot be above ground, this is not in accordance with the code of federal regulations 192.321. Can it be confirmed that HDPE pipe above ground is what is expected for these details?
A13: The transition from HDPE gas pipe to stainless steel is to occur aboveground, as shown on Sheet C507, Details 3 and 5.

Q14: Can you submit an RFI for the Compressor Building. The plan view on M101 doesn't match the P&ID. The plan is missing OSG piping, flow meters 5,6 & 7? On the section view on M300 the lines from flow meters 1, 2 & 3 are labeled CR, but there isn't a CR line type?
A14: Sheet M101 has been revised to include the missing off spec gas piping and flow meters 5 and 6. Flow meter 7 can be found on Sheet C122 (6" flow meter adjacent to the heat exchanger).

Q15: Can you verify what material type the underground glycol pipes are supposed to be?
A15: Glycol supply and return lines are to be carbon steel with polyurethane foam insulation combined with a durable watertight jacket. Specifications for this pipe and insulation can be found in Attachment 4. Contractor can use this supplier or an approved equal.

If any additional information about this Addendum is needed, please call John Welch at 608/516-4154, Welch@countyofdane.com.

Sincerely,
John Welch
Project Manager

Enclosures:
- Attachment #1 – Updated Specifications
- Attachment #2 – Updated Drawings
- Attachment #3 – Trailer Offload Station Equipment Preliminary Drawings
- Attachment #4 – Glycol Line Specification

Attachment #1 – Updated Specifications

SECTION 32 12 16

ASPHALT PAVING

PART 1 - GENERAL

1.1 Section Includes

A. Mixing, spreading, compacting, and finishing of bituminous pavements for base, leveling, and surface courses on roads, parking lots, and other areas.

1.2 Quality Assurance

A. Perform work in accordance with the State of Wisconsin Department of Transportation — Standard Specifications for Highway and Structure Construction, 2018 Edition, hereinafter referred to as "WISDOT Specifications." Measurements and payments portions of those WISDOT Specifications do not apply to work performed under this contract. B. Mixing Plant: Comply with requirements of WISDOT Specifications.

C. Qualifications of Asphaltic Concrete Producer: Use only materials which are finished by a bulk asphaltic concrete producer regularly engaged in production of hot-mix, hot-laid asphaltic concrete.

1.3 Paving Quality Requirements

A. General: In addition to other specified conditions, comply with the following minim requirements.

1. Test in-place asphaltic concrete courses for compliance with requirements for density, thickness, and surface smoothness.
2. Provide final surfaces or uniform texture, complying with required grades and crosssections.
3. Take not less than 4-inch diameter pavement specimens for each completed course, from locations as directed by the testing agency.
4. Repair holes from test specimens as specified for patching defective work.

B. Density

1. Compare density of in-place material against laboratory specimens of same asphaltic concrete mixture, when subjected to 50 blows of standard Marshall Hammer on each side of specimen.
2. Minimum acceptable density of in-place course material is 96% of the recorded laboratory specimen density.

1.4 Regulatory Requirements

A. Comply with all applicable local standards, codes, and ordinances for paving work on public property.

1.5 Submittals

A. Samples: Provide samples of materials for laboratory testing and job-mix design as required by OWNERs Representative.

B. In lieu of laboratory test reports, CONTRACTOR may provide certificates signed by the asphaltic concrete producer and CONTRACTOR certifying that materials comply with all specification requirements.

1.6 Environmental Requirements

A. Do not place asphalt when the base surface temperature is less than 40°F.

B. Do not apply materials when substrate is wet or contains sufficient moisture to prevent uniform distribution and proper penetration.

PART 2 - PRODUCTS 2.1

Materials

A. Tack Coat: Emulsified asphalt SS-1, diluted with equal parts of water.

B. Asphalt Cement: AASHTO M320-10, 58-28 performance graded asphalt binder.

C. Stone Base: Dense graded base course in accordance with WISDOT Specification Sections 301 and 305.

1. Coarse aggregate: 3 inch
2. Fine aggregate: 1 1/4 inch

D. Mineral Filler: Shall meet the requirements of AASHTO M17 finely ground particles of limestone, hydrated lime, Portland cement, or other approved mineral dust, free from foreign matter.

2.2 Asphalt Paving Mix

A. Use dry materials to avoid foaming. Mix uniformly.

B. Mix designation: WISDOT Specification Sections as follows:

1. Asphaltic Concrete Surface Course: Section 460, LT bituminous with grading No. 5
2. Binder Course: Section 460, LT bituminous with grading No. 4

C. The pavement shall be constructed in accordance with the Wisconsin State DOT Standard Specifications for Highway and Structure Construction, latest edition, including supplemental specifications and Wisconsin Asphalt Pavement Association 2016 Asphalt Pavement Design Guide.

PART 3 - EXECUTION 3.1

Inspection

A. Verify compacted sub-grade is dry and ready to support paving and imposed loads.

B. Verify gradients and elevations of base are correct.

C. Beginning of installation means acceptance of substrate.

3.2 Preparation

A. Prepare mix materials and place of deposit in accordance with referenced WISDOT specifications. B. Tack Coat:

1. Apply tack coat only when the air temperature is 32°F or more unless the otherwise approved by ENGINEER. Before applying tack coat ensure that the surface is reasonably free of loose dirt, dust, or other foreign matter. Do not apply to surfaces with standing water. Do not apply if weather or surface conditions are unfavorable or before impending rains.
2. Apply tack coat to contact surfaces of concrete items, which abut pavement.
3. Apply to contact surfaces of existing asphalt or concrete pavement at the rate of 0.050 – 0.070 gallons per square yard of surface. ENGINEER may adjust application rate based on surface conditions. Limit application each day to the area the contractor expects to pave during that day.

C. Frames and subsurface structures:

1. Coat Surfaces of new and existing frames with oil to prevent bond with asphalt paving.
2. Set to be flush with finish surface and surround with a ring of compacted asphaltic concrete to one inch below top of frame. Adjust as required to meet paving.
3. Provide temporary covers over openings until completion of rolling operations.

3.3 Placing Asphalt Pavement

A. Place materials in accordance with referenced WISDOT Specifications.

B. Place, spread, and strike-off to compacted thickness indicated with paving machine, except that inaccessible and small areas may be placed by hand.

C. Place topping course within 2 hours of placing and compacting binder course.

D. Compact pavement by rolling. Do not displace or extrude pavement from position. Hand compact area inaccessible to rolling equipment. 1. Average relative density: Minimum of 96%

2. Individual relative density: Minimum of 92%

E. Develop rolling with consecutive passes to achieve even and smooth finish of uniform texture, without roller marks.

F. Make joints between successive days work, or between old and new pavements in accordance with referenced State Highway Specification. Ensure a continuous bond is attained.

3.4 Tolerances

A. Flatness: ± 0.25 inch measured with a 10-foot straight edge.

B. Compacted scheduled thickness: ± 0.15 inch of design thickness.

C. Variation from true elevation: 0.05 feet.

3.5 Patching

A. Remove defective or deficient areas for full depth of course.

1. Cut sides parallel and perpendicular to direction of traffic with edges vertical.
2. Apply tack coat to exposed surfaces and place asphalt on prepared surfaces as specified above.

3.6 Field Quality Control

A. Field inspection and testing will be performed by OWNER as described under provisions of these Specifications and the CQA Plan.

3.7 Protection

A. Immediately after placement, protect pavement from mechanical injury for 7 days.

B. Cover openings of substrate structures in paved area until permanent coverings are placed.

3.8 Schedule of Pavement Sections

A. Place and compact materials to the thickness called for on the Construction Drawings.

* * * END OF SECTION * * *

Attachment #2 – Updated Drawings

RFB NO. 317049

CONSTRUCTION PLAN SET

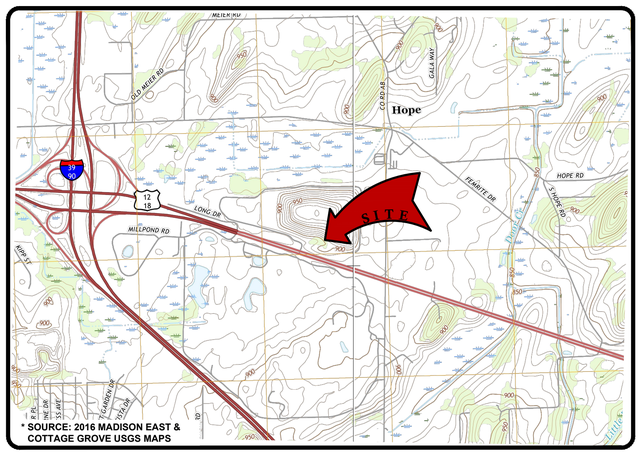
DANE COUNTY NO. 2 (RODEFELD) LANDFILL BIOGAS FACILITY CONSTRUCTION

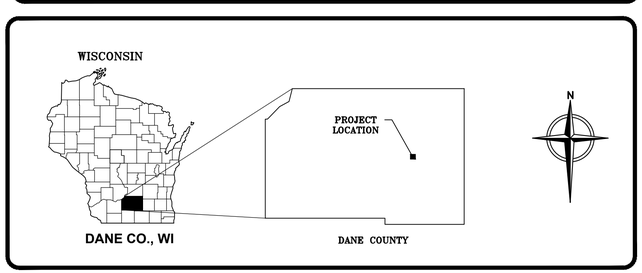
PREPARED FOR:

DANE COUNTY DEPARTMENT OF PUBLIC WORKS SOLID WASTE DIVISION

MADISON, WISCONSIN

PROJECT ADDRESS:
7102 US HWY 12/18
MADISON, WI 53718





LOCATION MAP

MARCH 2018

PREPARED BY:

cornerstone
A TETRA TECH COMPANY

8413 EXCELSIOR DRIVE
SUITE 160
MADISON, WISCONSIN, 53717
Tel: (877) 633-5520

ISSUED FOR BID

REV	DATE	DESCRIPTION	DWN BY	DES BY	CHK BY	APP BY
2	4/23/18	ADDENDUM 2	SRC	BB	CLD	MJT
1	4/17/18	ADDENDUM 1	SRC	BB	BB	MJT
0	3/27/18	IFB RELEASE	SRC	BB	CLD	MJT

1" 1/2" 0" 1"

ABBREVIATIONS

ABC	AGGREGATE BASE COURSE
AC	ASPHALT CONCRETE
AD	ALGEBRAIC DIFFERENCE
BVCE	BEGIN VERTICAL CURVE ELEVATION
BVCS	BEGIN VERTICAL CURVE STATION
CHDPE	CORRUGATED HIGH DENSITY POLYETHYLENE
CMP	CORRUGATED METAL PIPE
°, DEG.	DEGREE
△	DELTA
ø, DIA	DIAMETER
DWG	DRAWING
EL, ELEV	ELEVATION
E	EASTING
EOP, EP	EDGE OF PAVEMENT
EVCE	END VERTICAL CURVE ELEVATION
EVCS	END VERTICAL CURVE STATION
EG	PRE-CONSTRUCTION GRADE
FT	FEET
FNPT	FEMALE NATIONAL PIPE THREAD
FFE	FINISHED FLOOR ELEVATION
FG	FINAL GRADE
FL	FLOWLINE ELEVATION
FML	FLEXIBLE MEMBRANE LINER
GCCS	GAS COLLECTION CONTROL SYSTEM
GCL	GEOSYNTHETIC CLAY LINER
HDPE	HIGH DENSITY POLYETHYLENE
HP	HIGH POINT
IE, INV	INVERT ELEVATION
K	RATE OF VERTICAL CURVATURE
LFG	LANDFILL GAS
LCRS	LEACHATE COLLECTION AND REMOVAL SYSTEM
LT	LEFT
L	LENGTH
LOC	LIMITS OF CONSTRUCTION
MNPT	MALE NATIONAL PIPE THREAD
MAX	MAXIMUM
MIN	MINIMUM
MSL	MEAN SEA LEVEL
N	NORTHING
(NIC)	NOT IN CONTRACT
NTS	NOT TO SCALE
%	PERCENT
PERF	PERFORATED
PC	POINT OF CURVE
PE	POLYETHYLENE
PT	POINT OF TANGENT
PVI	POINT OF VERTICAL INTERSECTION
PVC	POLYVINYL CHLORIDE
R	RADIUS
RCB	REINFORCED CONCRETE BOX
RCP	REINFORCED CONCRETE PIPE
RT	RIGHT
R/W, ROW	RIGHT OF WAY
SHT	SHEET
S	SLOPE
S.S.	STAINLESS STEEL
SDR	STANDARD DIMENSION RATIO
STA	STATION
SG	SUBGRADE
SY	SQUARE YARD
TAN	TANGENT
TOC	TOP OF CURB
TC	TOP OF CONCRETE
TW	TOP OF WALL
(TYP)	TYPICAL
VC	VERTICAL CURVE
TOP	TOP OF PIPE

NOTES:

1. THE LANDFILL PROPERTY BOUNDARY FOR THE EASTERN, NORTHERN AND NORTHEAST LIMITS IS FROM A CAD FILE SUPPLIED BY TRC (NOVEMBER 15, 2017). THE SOUTHERN AND SOUTHEAST BOUNDARY WAS SUPPLIED BY AYRES ASSOCIATES (NOVEMBER 30, 2017).
2. TOPOGRAPHIC FEATURES ARE FROM CAD FILES PROVIDED BY TRC AND A SUPPLEMENTAL GROUND SURVEY OF THE PROJECT AREA BY AYRES ASSOCIATES ON NOVEMBER 2, 2017.
3. FIBER OPTICS (COMMUNICATION) AND NATURAL GAS PIPES OUTSIDE OF THE NOVEMBER 2, 2017 SURVEYED AREA ARE FROM PDFs OF THE CROSSROAD CAMPUS & SANITARY LANDFILL FIBER CONNECTION AS-BUILT (3/21/2016) PROVIDED BY DANE COUNTY. ORIGINAL PLANS BY SRE CONSULTING GROUP.
4. TOPOGRAPHIC FEATURES PRIOR TO THE NOVEMBER 2, 2017 SURVEY MAY HAVE BEEN ON A LOCAL GRID SYSTEM. LOCAL GRID SYSTEM IS A TRUNCATED STATE PLANE COORDINATE SYSTEM; TRUNCATION IS LISTED BELOW:
   ΔN 300,000
   ΔE 2,000,000
5. EXISTING AND DESIGN FEATURES ARE ON NAD 27 WISCONSIN STATE PLANES, SOUTH ZONE, US FOOT AS STATED ON THE PLAN OF OPERATION - EASTERN EXPANSION BY TRC (FEBRUARY 2014).
6. VERTICAL DATUM IS REFERENCED TO NATIONAL GEODETIC VERTICAL DATUM (NGVD) AS STATED ON THE PLAN OF OPERATION - EASTERN EXPANSION BY TRC (FEBRUARY 2014).

Master Sheet Index

Sheet No.	Sheet Title	Rev.	Revision Comments
G01	COVER SHEET	1	ISSUED FOR BID
G02	GENERAL NOTES & SHEET INDEX	2	ISSUED FOR BID
G03	SHEET LOCATOR MAP	0	ISSUED FOR BID
G100	EXISTING CONDITIONS	1	ISSUED FOR BID
C101	OVERALL PROJECT LAYOUT	0	ISSUED FOR BID
C102	SITE PLAN	2	ISSUED FOR BID
C103	EROSION CONTROL PLAN AND STORMWATER MANAGEMENT PLAN	2	ISSUED FOR BID
C110	SITE GRADING PLAN	1	ISSUED FOR BID
C111	SITE GRADING PLAN (WEST)	1	ISSUED FOR BID
C112	SITE GRADING PLAN (EAST)	1	ISSUED FOR BID
C121	SITE PLAN WITH PIPING (WEST)	2	ISSUED FOR BID
C122	SITE PLAN WITH PIPING (EAST)	2	ISSUED FOR BID
C123	SITE PLAN WITH PIPING (MAINTENANCE BUILDING)	0	ISSUED FOR BID
C131	PAVEMENT MARKING, SIGNAGE & PARKING PLAN	1	ISSUED FOR BID
C221	GAS HEADER PLAN & PROFILE	1	ISSUED FOR BID
C222	GAS HEADER PLAN & PROFILE	1	ISSUED FOR BID
C223	GAS HEADER PLAN & PROFILE	0	ISSUED FOR BID
C501	CIVIL DETAIL SHEET 1	0	ISSUED FOR BID
C502	CIVIL DETAIL SHEET 2	0	ISSUED FOR BID
C503	CIVIL DETAIL SHEET 3	1	ISSUED FOR BID
C504	CIVIL DETAIL SHEET 4	1	ISSUED FOR BID
C505	CIVIL DETAIL SHEET 5	0	ISSUED FOR BID
C506	CIVIL DETAIL SHEET 6	1	ISSUED FOR BID
C507	CIVIL DETAIL SHEET 7	1	ISSUED FOR BID
C508	CIVIL DETAIL SHEET 8	2	ISSUED FOR BID
C509	CIVIL DETAIL SHEET 9	2	ISSUED FOR BID
C510	CIVIL DETAIL SHEET 10	1	ISSUED FOR BID
C511	CIVIL DETAIL SHEET 11	1	ISSUED FOR BID
C512	CIVIL DETAIL SHEET 12	1	ISSUED FOR BID
C513	CIVIL DETAIL SHEET 13	0	ISSUED FOR BID
C514	CIVIL DETAIL SHEET 14	0	ISSUED FOR BID
C515	CIVIL DETAIL SHEET 15	1	ISSUED FOR BID
C516	CIVIL DETAIL SHEET 16	1	ISSUED FOR BID
C517	CIVIL DETAIL SHEET 17	0	ISSUED FOR BID
E000	ELECTRICAL COVER SHEET	1	ISSUED FOR BID
E050	SITE PLAN - ELECTRIC	1	ISSUED FOR BID
E051	SITE PLAN - GROUNDING	0	ISSUED FOR BID
E100	BLOWER BUILDING PLAN - LIGHTING	1	ISSUED FOR BID
E101	COMPRESSION BUILDING PLAN - LIGHTING	0	ISSUED FOR BID
E102	BOILER BUILDING PLAN - LIGHTING	0	ISSUED FOR BID
E103	MAINTENANCE BUILDING PLAN - LIGHTING	1	ISSUED FOR BID
E110	BLOWER BUILDING PLAN - POWER	1	ISSUED FOR BID
E111	COMPRESSION BUILDING PLAN - POWER	1	ISSUED FOR BID
E112	BOILER BUILDING PLAN - POWER	1	ISSUED FOR BID
E113	MAINTENANCE BUILDING PLAN - POWER	1	ISSUED FOR BID
E300	CONDUIT SITE PLAN - POWER	0	ISSUED FOR BID
E301	CONDUIT SITE PLAN - CONTROL	0	ISSUED FOR BID
E400	ELECTRICAL DETAILS	1	ISSUED FOR BID
E401	ELECTRICAL DETAILS	0	ISSUED FOR BID
E500	ELECTRICAL ONE-LINE DIAGRAMS	1	ISSUED FOR BID
E600	ELECTRICAL SCHEDULES	1	ISSUED FOR BID
E700	ELECTRICAL PANEL SCHEDULES	1	ISSUED FOR BID
M000	COMBINED MECHANICAL COVERSHEET	0	ISSUED FOR BID
M001	PIPING AND INSTRUMENTATION DIAGRAM	1	ISSUED FOR BID
M050	OVERALL SITE HAZARDOUS IDENTIFICATION PLAN	1	ISSUED FOR BID
M100	BLOWER BUILDING PLAN - MECHANICAL	1	ISSUED FOR BID
M101	COMPRESSION BUILDING PLAN - MECHANICAL	1	ISSUED FOR BID
M102	BOILER BUILDING PLAN - MECHANICAL	1	ISSUED FOR BID
M103	MAINTENANCE BUILDING PLAN - MECHANICAL	1	ISSUED FOR BID
M300	MECHANICAL DETAILS	0	ISSUED FOR BID
M400	MECHANICAL DETAIL	0	ISSUED FOR BID
M500	MECHANICAL DIAGRAMS	0	ISSUED FOR BID
M550	PROCESS FLOW DIAGRAM	1	ISSUED FOR BID

Master Sheet Index

Sheet No.	Sheet Title	Rev.	Revision Comments
M600	MECHANICAL SCHEDULES	1	ISSUED FOR BID
M650	MECHANICAL SCHEDULES	1	ISSUED FOR BID
A101	1ST FLR PLAN	0	ISSUED FOR BID
S000	STRUCTURAL GENERAL NOTES	0	ISSUED FOR BID
S001	STRUCTURAL SYMBOLS AND ABBREVIATIONS	0	ISSUED FOR BID
S100	BLOWER BUILDING FOUNDATION PLAN	1	ISSUED FOR BID
S101	COMPRESSION BUILDING FOUNDATION PLAN	0	ISSUED FOR BID
S102	BOILER BUILDING AND DECANT FOUNDATION PLAN	0	ISSUED FOR BID
S103	MAINTENANCE BUILDING FOUNDATION PLAN	0	ISSUED FOR BID
S110	BLOWER BUILDING FRAMING PLAN	1	ISSUED FOR BID
S111	COMPRESSION BUILDING FRAMING PLAN	0	ISSUED FOR BID
S112	BOILER BUILDING FRAMING PLAN	0	ISSUED FOR BID
S113	MAINTENANCE BUILDING FRAMING PLAN	0	ISSUED FOR BID
S200	BLOWER BUILDING ELEVATIONS	0	ISSUED FOR BID
S201	COMPRESSION BUILDING ELEVATIONS	1	ISSUED FOR BID
S202	BOILER BUILDING ELEVATIONS	1	ISSUED FOR BID
S203	MAINTENANCE BUILDING ELEVATIONS	0	ISSUED FOR BID
S204	MAINTENANCE BUILDING ELEVATIONS	1	ISSUED FOR BID
S300	FOUNDATION DETAILS	0	ISSUED FOR BID
S301	FOUNDATION DETAILS	0	ISSUED FOR BID
S400	DOOR DETAILS AND SCHEDULE	0	ISSUED FOR BID
S500	FRAMING DETAILS	1	ISSUED FOR BID
S501	FRAMING DETAILS	0	ISSUED FOR BID
T000	TECHNOLOGY COVER SHEET	0	ISSUED FOR BID
T050	SITE PLAN - TECHNOLOGY	0	ISSUED FOR BID
T100	BLOWER BUILDING PLAN - TECHNOLOGY	0	ISSUED FOR BID
T101	COMPRESSION BUILDING PLAN - TECHNOLOGY	0	ISSUED FOR BID
T102	BOILER BUILDING PLAN - TECHNOLOGY	0	ISSUED FOR BID
T103	MAINTENACE BUILDING PLAN - TECHNOLOGY	0	ISSUED FOR BID
T300	ENLARGED PLANS - TECHNOLOGY	0	ISSUED FOR BID
T400	TECHNOLOGY DETAILS	0	ISSUED FOR BID
T500	TECHNOLOGY DIAGRAMS	0	ISSUED FOR BID
T501	TECHNOLOGY DIAGRAMS	0	ISSUED FOR BID
T600	TECHNOLOGY SCHEDULES	0	ISSUED FOR BID
T601	TECHNOLOGY SCHEDULES	1	ISSUED FOR BID
L101	LANDSCAPING PLAN	0	ISSUED FOR BID
L102	LANDSCAPE DETAILS	0	ISSUED FOR BID

⚠1 4/17/2018 ADDENDUM 1 UPDATES
NEW SHEETS: C123, C516, C517, A101, M300
ELIMINATED SHEET: C520

⚠2 4/23/2018 ADDENDUM 2 UPDATES
REVISION 1 FOR SHEET C516

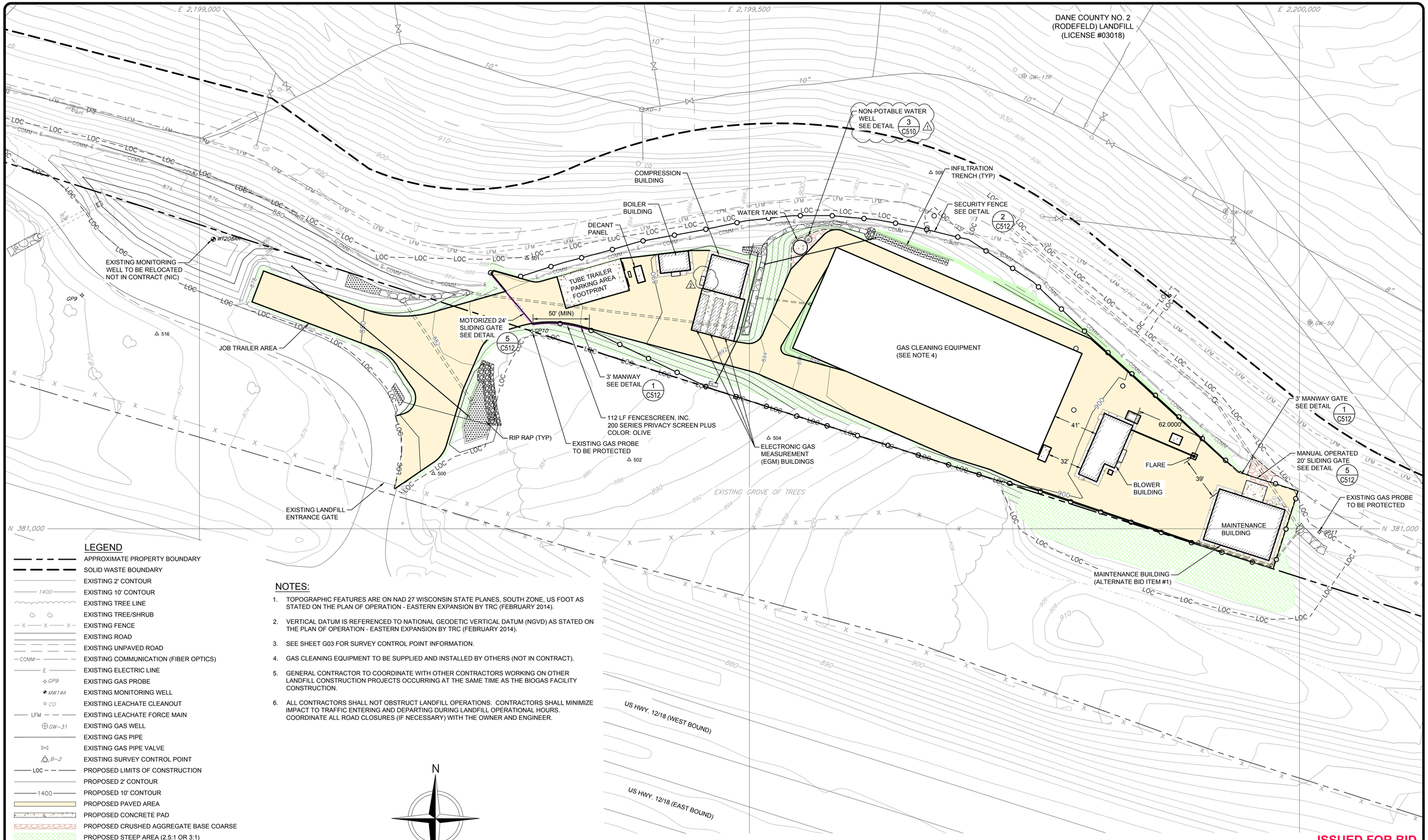
ISSUED FOR BID

REV	DATE	DESCRIPTION	DWN BY	DES BY	CHK BY	APP BY
2	4/23/18	ADDENDUM 2	SRC	BB	CLD	MJT
1	4/17/18	ADDENDUM 1	SRC	BB	BB	MJT

DATE OF ISSUE 03/27/2018 | DRAWN BY SRC | DESIGNED BY SRC/BB | CHECKED BY CLD | APPROVED BY MJT

COUNTY OF DANE, DEPT. OF PUBLIC WORKS
RODEFELD LANDFILL
DANE COUNTY, WISCONSIN
DANE COUNTY NO. 2 (RODEFELD) LANDFILL
BIOGAS FACILITY CONSTRUCTION
GENERAL NOTES & SHEET INDEX

SHEET NO. **G02**
PROJECT NO. 170651



LEGEND

- APPROXIMATE PROPERTY BOUNDARY
- SOLID WASTE BOUNDARY
- EXISTING 2' CONTOUR
- EXISTING 10' CONTOUR
- EXISTING TREE LINE
- EXISTING TREE/SHRUB
- EXISTING FENCE
- EXISTING ROAD
- EXISTING UNPAVED ROAD
- EXISTING COMMUNICATION (FIBER OPTICS)
- EXISTING ELECTRIC LINE
- EXISTING GAS PROBE
- EXISTING MONITORING WELL
- EXISTING LEACHATE CLEANOUT
- EXISTING LEACHATE FORCE MAIN
- EXISTING GAS WELL
- EXISTING GAS PIPE
- EXISTING GAS PIPE VALVE
- EXISTING SURVEY CONTROL POINT
- PROPOSED LIMITS OF CONSTRUCTION
- PROPOSED 2' CONTOUR
- PROPOSED 10' CONTOUR
- PROPOSED PAVED AREA
- PROPOSED CONCRETE PAD
- PROPOSED CRUSHED AGGREGATE BASE COARSE
- PROPOSED STEEP AREA (2.5:1 OR 3:1)
- PROPOSED FENCE
- PROPOSED FENCE WITH PRIVACY SCREENING
- PROPOSED GAS PIPE
- PROPOSED STORM WATER PIPE
- PROPOSED RIP RAP
- PROPOSED INFILTRATION TRENCH
- SOIL BORING

NOTES:

1. TOPOGRAPHIC FEATURES ARE ON NAD 27 WISCONSIN STATE PLANES, SOUTH ZONE, US FOOT AS STATED ON THE PLAN OF OPERATION - EASTERN EXPANSION BY TRC (FEBRUARY 2014).
2. VERTICAL DATUM IS REFERENCED TO NATIONAL GEODETIC VERTICAL DATUM (NGVD) AS STATED ON THE PLAN OF OPERATION - EASTERN EXPANSION BY TRC (FEBRUARY 2014).
3. SEE SHEET G03 FOR SURVEY CONTROL POINT INFORMATION.
4. GAS CLEANING EQUIPMENT TO BE SUPPLIED AND INSTALLED BY OTHERS (NOT IN CONTRACT).
5. GENERAL CONTRACTOR TO COORDINATE WITH OTHER CONTRACTORS WORKING ON OTHER LANDFILL CONSTRUCTION PROJECTS OCCURRING AT THE SAME TIME AS THE BIOGAS FACILITY CONSTRUCTION.
6. ALL CONTRACTORS SHALL NOT OBSTRUCT LANDFILL OPERATIONS. CONTRACTORS SHALL MINIMIZE IMPACT TO TRAFFIC ENTERING AND DEPARTING DURING LANDFILL OPERATIONAL HOURS. COORDINATE ALL ROAD CLOSURES (IF NECESSARY) WITH THE OWNER AND ENGINEER.

N

0 40 80

SCALE IN FEET

ISSUED FOR BID

REV	DATE	DESCRIPTION	DWN BY	DES BY	CHK BY	APP BY
2	4/23/18	OVERHEAD DOOR CONCRETE APRON	SRC	BB	CLD	MJT
1	4/17/18	GATE SIZE, RELOCATED WELL	SRC	SRC	BB	MJT

DATE OF ISSUE 03/27/2018 | DRAWN BY SRC | DESIGNED BY SRC/BB | CHECKED BY CLD | APPROVED BY MJT

cornerstone
A TETRA TECH COMPANY

COUNTY OF DANE, DEPT. OF PUBLIC WORKS
RODEFELD LANDFILL
DANE COUNTY, WISCONSIN
DANE COUNTY NO. 2 (RODEFELD) LANDFILL
BIOGAS FACILITY CONSTRUCTION
SITE PLAN

SHEET NO. **C102**
PROJECT NO. 170651

File: X:\PROJECTS\DANE COUNTY\170651 - RNG ENGINEERING SERVICES_Plan Set\05-MXD\CL-S-SP_C102.dwg Layout: C102 User: shaun.cummings Apr 24, 2018 - 1:22pm

1" 1" 1/2" 0"

DANE COUNTY NO. 2
(RODEFELD) LANDFILL
(LICENSE #03018)

E 2,199,000 | E 2,199,500 | E 2,200,000 | N 381,000

STONE DITCH CHECK (TYP.) SEE DETAIL 4/C502
OUTLET CONTROL STRUCTURE SEE DETAIL 2/C503
SOUTH STORMWATER BASIN (SW-4)
EXISTING 30" CULVERT INVERT ELEV. 870.0
RELOCATE EXISTING MONITORING WELL (NIC)
EXISTING GROVE OF TREES
EXISTING ENDWALL (OUTLET A) SEE DETAIL 3/C502
SILT FENCE (TYP) SEE DETAIL 1/C501
SURFACE WATER CONTROL DEVICE A2 290 SF TOP OF STONE EL 4' STONE DEPTH 1/C516
SURFACE WATER CONTROL DEVICE A1 SEE DETAIL 3/C516
STONE TRACKING PAD SEE DETAIL 2/C502
EXISTING LANDFILL ENTRANCE GATE
US HWY. 12/18 (WEST BOUND LANE)

18"Ø APRON ENDWALL OUTLET C
N 381,214.8, E 2,199,242.9
IE = 881.10
SEE DETAIL 3/C502

80 LF RIP RAP CHANNEL SEE DETAIL 3/C503
24"Ø APRON ENDWALL OUTLET B
N 381,208.8, E 2,199,184.5
IE = 875.50
SEE DETAIL 3/C502
116 LF 24"Ø ADS N-12 STORM PIPE @ 1.29% SLOPE SEE DETAIL 1/C502
74 SY RIP RAP 1' DEPTH
SURFACE WATER CONTROL DEVICE B1 SEE DETAIL 4/C516
24"Ø APRON ENDWALL
N 381,113.8, E 2,199,249.0
IE = 877.00
6"Ø APRON ENDWALL
N 381,133.0, E 2,199,469.5
IE = 886.10
4'x12' RIP RAP ON GEOTEXTILE FILTER FABRIC

FOR PLANTING SCHEDULE SEE DETAIL 2/C504
258 LF 18"Ø RCP CL III STORM PIPE @ 3.06% SLOPE SEE DETAIL 1/C502
EXISTING GAS PROBE TO BE PROTECTED
130 LF 6"Ø ADS N-12 STORM PIPE @ 0.50% SLOPE

6"Ø APRON ENDWALL
N 381,240.6, E 2,199,514.4
IE = 890.10
SURFACE WATER CONTROL DEVICE C1 SEE DETAIL 1/C516
192 LF RIP RAP CHANNEL SEE DETAIL 3/C503
SURFACE WATER CONTROL DEVICE C2 SEE DETAIL 2/C516
BOILER
DECANT
COMPRESSOR BUILDING
8"Ø APRON ENDWALL
N 381,210.4, E 2,199,505.7
IE = 889.00
18"Ø APRON ENDWALL
N 381,181.6, E 2,199,496.9
IE = 889.00
50 LF 8"Ø ADS N-12 STORM PIPE @ 12.0% SLOPE SEE DETAIL 1/C502
103 LF 6"Ø ADS N-12 STORM PIPE @ 4.5% SLOPE
STORM INLET #4
24" Ø PRECAST CONC. MH
SOLID LID
N 381,204.4, E 2,199,555.1
RIM EL. = 899.50
SUMP EL. = 894.00
W 8" PIPE IE = 895.00
E 4" PIPE IE = 895.50
CLASS III, TYPE D, EROSION CONTROL REVEGETATIVE MAT SEE DETAIL 1/C503
GAS CLEANING EQUIPMENT AREA

24"Ø APRON ENDWALL
N 381,275.4, E 2,199,735.0
IE = 903.50
30 SY RIP RAP GEOTEXTILE FILTER FABRIC, TYPE HR
CLASS III, TYPE D, EROSION CONTROL REVEGETATIVE MAT SEE DETAIL 1/C503
BYPASS STORM PIPE SEE DETAIL 1/C502
245 LF 24"Ø ADS N-12 STORM PIPE @ 1.67% SLOPE
STORM INLET #1
48" Ø PRECAST CONC. MH
NEENAH R4342 DITCH GRATE, STOOL TYPE
N 381,117.1, E 2,199,922.8
RIM EL. = 902.41
SUMP EL. = 898.30
NW 24" PIPE IE = 899.40
SE 24" PIPE IE = 899.30
STORM DRAIN INLET PROTECTION (TYP.) SEE DETAIL 1/C504
141 LF 24"Ø ADS N-12 STORM PIPE @ 1.77% SLOPE SEE DETAIL 1/C502
24"Ø APRON ENDWALL OUTLET D.1
N 380,999.3, E 2,200,000.8
IE = 896.80
SEE DETAIL 3/C502
12"Ø APRON ENDWALL OUTLET D.2
N 380,996.9, E 2,199,998.6
IE = 896.80
SEE DETAIL 3/C502
CLASS II, TYPE B, EROSION CONTROL REVEGETATIVE MAT SEE DETAIL 1/C503
STORM INLET #2
24" Ø PRECAST CONC. MH
NEENAH R-4030-24 GRATE
N 380,988.0, E 2,199,908.0
RIM EL. = 899.70
SUMP EL. = 896.96
8" PIPE IE = 897.96
68 LF 8"Ø ADS N-12 STORM PIPE @ 1.0% SLOPE SEE DETAIL 1/C502
STORM INLET #3
36" Ø PRECAST CONC. MH
SOLID LID
N 380,967.0, E 2,199,974.2
RIM EL. = 900.30
SUMP EL. = 896.18
W 8" PIPE IE = 897.28
NE 8" PIPE IE = 897.18
38 LF 12"Ø ADS N-12 STORM PIPE @ 1.0% SLOPE SEE DETAIL 1/C502
EXISTING GAS PROBE TO BE PROTECTED

LEGEND

- APPROXIMATE PROPERTY BOUNDARY
- SOLID WASTE BOUNDARY
- EXISTING 2' CONTOUR
- 1400 EXISTING 10' CONTOUR
- EXISTING TREE LINE
- EXISTING TREE/SHRUB
- EXISTING FENCE
- EXISTING ROAD
- EXISTING UNPAVED ROAD
- COMM EXISTING COMMUNICATION (FIBER OPTICS)
- E EXISTING ELECTRIC LINE
- GP9 EXISTING GAS PROBE
- MW14A EXISTING MONITORING WELL
- CO EXISTING LEACHATE CLEANOUT
- LFM EXISTING LEACHATE FORCE MAIN
- GW-31 EXISTING GAS WELL
- EXISTING GAS PIPE
- EXISTING GAS PIPE VALVE
- B-2 EXISTING SURVEY CONTROL POINT
- LOC PROPOSED LIMITS OF CONSTRUCTION
- PROPOSED 2' CONTOUR
- 1400 PROPOSED 10' CONTOUR
- PROPOSED PAVED AREA
- PROPOSED CONCRETE PAD
- PROPOSED CRUSHED AGGREGATE BASE COARSE
- PROPOSED CLASS II, TYPE B, ECRM (SEE NOTE 1)
- PROPOSED CLASS III, TYPE D, ECRM (SEE NOTE 1)
- PROPOSED FENCE
- PROPOSED GAS PIPE
- PROPOSED STORM WATER PIPE
- PROPOSED RIP RAP
- PROPOSED CONSTRUCTION ENTRANCE
- SF PROPOSED SILT FENCE

NOTES:

1. ECRM CLASSIFICATION IS FROM THE EROSION CONTROL PRODUCT ACCEPTABILITY LIST (PAL) CREATED BY THE WISCONSIN DEPARTMENT OF TRANSPORTATION.
2. INSTALL EROSION CONTROL REVEGETATIVE MAT (ECRM) IN AREAS WHERE THE SLOPE WILL BE 4 (HORIZONTAL) TO 1 (VERTICAL) OR STEEPER.
3. ECRM SHALL BE INSTALLED AFTER ALL TOPSOILING, FERTILIZING, LIMING AND SEEDING IS COMPLETE.
4. ECRM SHALL BE IN FIRM AND INTIMATE CONTACT WITH SOIL. IT SHALL BE INSTALLED AND ANCHORED PER THE MANUFACTURER'S RECOMMENDATIONS.
5. DOCUMENT THE MANUFACTURER AND ECRM TYPE BY RETENTION OF MATERIAL LABEL'S AND INSTALLATION INSTRUCTIONS. RETAIN UNTIL SITE HAS BEEN STABILIZED.
6. SEDIMENT TRACKED ONTO LANDFILL AND PUBLIC ROADS BY CONTRACTOR SHALL BE CLEANED UP AND REMOVED BY THE END OF EACH WORKING DAY USING PROPER CLEANING AND DISPOSAL METHODS.

GENERAL SITE DEVELOPMENT SEQUENCING

1. DANE COUNTY TO INSTALL SILT FENCE, AS NEEDED.
2. CLEAR & GRUB VEGETATION WITHIN THE LIMITS OF CONSTRUCTION.
3. DANE COUNTY TO PERFORM ROUGH GRADING.
4. GENERAL CONTRACTOR TO REPLACE EXISTING SILT FENCE IF DAMAGED AND INSTALL NEW SILT FENCE, AS NEEDED. MAINTAIN SILT FENCE UNTIL SITE IS STABILIZED.
5. INSTALL STONE TRACKING PAD. MAINTAIN TRACKING PAD UNTIL THE SITE IS STABILIZED.
6. INSTALL 'BYPASS' PIPING TO DIVERT SURFACE WATER RUNOFF FROM LANDFILL.
7. REMOVE TOPSOIL AND STOCKPILE. STOCKPILE SHALL HAVE EROSION CONTROL MEASURES TO ARREST ESCAPING SEDIMENT. MAINTAIN STOCKPILE EROSION CONTROL MEASURES.
8. EXCAVATE STORM WATER BASIN AND DIRECT SURFACE WATER RUNOFF FROM EXPOSED SOIL TO BASIN. CLEAN BASIN IF SEDIMENT REACHES ELEVATION 874.
9. EARTHWORK GRADING.
10. INSTALL STONE DITCH CHECKS.
11. APPLY STRAW MULCH TO DISTURBED AREAS AT A RATE OF 1.5 TONS/ACRE BEFORE MAY 18, 2018.
12. INSTALL PIPING & UTILITIES.
13. INSTALL STORM DRAIN INLET PROTECTION
14. CONSTRUCT BUILDINGS AND STRUCTURES.
15. RESTORE TOPSOIL, SEED AND FERTILIZE TO DISTURBED AREAS BEFORE SEPTEMBER 16, 2018.
16. INSTALL EROSION CONTROL REVEGETATIVE MAT (ECRM). MAINTAIN UNTIL SITE IS STABILIZED.
17. PAVE DESIGNATED AREAS AND REMOVE STONE TRACKING PAD.
18. CONSTRUCT INFILTRATION TRENCH.
19. INSTALL PERMANENT FENCING.
20. REMOVE SILT FENCING WHEN SITE BECOMES STABILIZED.
21. RESTORE BASIN TO DESIGN GRADES.

N

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SCALE IN FEET

ISSUED FOR BID

REV	DATE	DESCRIPTION	DWN BY	DES BY	CHK BY	APP BY
2	4/23/18	SURFACE WATER CONTROL DEVICES	SRC	BB	CLD	MJT
1	4/17/18	INFILTRATION DEVICES, OUTLET CONTROL, EROS. MAT	SRC	SRC	BB	MJT

DATE OF ISSUE 03/27/2018
DRAWN BY SRC
DESIGNED BY SRC/BB
CHECKED BY CLD
APPROVED BY MJT

cornerstone
A TETRA TECH COMPANY

COUNTY OF DANE, DEPT. OF PUBLIC WORKS
RODEFELD LANDFILL
DANE COUNTY, WISCONSIN
DANE COUNTY NO. 2 (RODEFELD) LANDFILL
EROSION CONTROL AND STORM WATER MANAGEMENT PLAN

SHEET NO. **C103**
PROJECT NO. 170651

1" 1/2" 0" 1"

EXISTING LANDFILL PERIMETER ROAD

6"Ø STEEL WATER WELL WITH 15 GPM (MIN.) PUMP. WELL SHALL BE INSTALLED IN ACCORDANCE WITH WDNR AND LOCAL REQUIREMENTS. SEE DETAIL 3 C510

16LF 2"Ø SDR-11 HDPE PIPE

OFF-SPEC GAS CONDENSATE BLOW-OUT TRAP SEE DETAIL 4 C511

2"Ø HDPE NON-POTABLE WATER PIPE SEE DETAIL 2 C511

CONNECT TO EXISTING LEACHATE FORCE MAIN

48"Ø CONDENSATE MANHOLE (MH-2)
N 381,284.6, E 2,199,667.9
RIM EL. = 904.0
EXIST. INV. EL. = 902.0
(FIELD VERIFY)
SEE DETAIL 1 C510

3" SDR-11 x6" SDR-17 DUAL CONTAINED HDPE CONDENSATE FORCE MAIN SEE DETAIL 2 C510

CAUTION

BOLLARD (TYP.) SEE SHEET C131

6"Ø SDR-11 HDPE OFF-SPEC. GAS PIPE

10,000 GALLON STEEL WATER TANK SEE DETAILS 1 C511

BOILER BUILDING

COMPRESSION BUILDING

TUBE TRAILER UNLOADING STATION

DECANT

GLYCOL LINES

120LF 4"Ø CS SCH 40 SA-106 GRADE B SEAMLESS GAS PIPE SEE DETAIL 3 C506

TRANSITION FROM ABOVE GROUND TO BELOW GROUND. SEE MECHANICAL DRAWINGS FOR ABOVE GROUND PIPING DETAIL.

STORMWATER PIPE (SEE STORMWATER MANAGEMENT PLAN, TYPICAL)

1/4" STAINLESS STEEL PIPE 1" CONDUIT SEE DETAIL 1 C507

NATURAL GAS SUPPLY LINE

METERING DUAL BUILDINGS SKID

METERING DUAL BUILDINGS SKID

METERING DUAL BUILDINGS SKID

TO ANR PIPE

4"Ø CS SCH 40 SA-106 GRADE B SEAMLESS PROCESSED GAS PIPE (ALTERNATE BID ITEM #2) SEE SHEETS C221 & C222

FIRE HYDRANT SEE DETAIL 3 C511

540LF 6"Ø SDR-11 HDPE OFF-SPEC. GAS PIPE (FROM DECANT TO FLARE) SEE DETAIL 1 C506

BIOFERM PROCESSED GAS CONNECTION
N 381218.7 ,E 2199562.8
SEE DETAIL 4 C507

70 LF 4"Ø CS SCH 40 SA-106 GRADE B SEAMLESS GAS PIPE SEE DETAIL 1 C506

90LF 6"Ø DUCTILE IRON NON-POTABLE WATER PIPE SEE DETAIL 2 C511

MATCHLINE SEE SHEET C122

GAS CLEANING EQUIPMENT AREA

1/4" STAINLESS STEEL PIPE 1" CONDUIT SEE DETAIL 1 C507

BOLLARD (TYP)

280LF 2"Ø HDPE NON-POTABLE WATER PIPE TO BIOFERM SEE DETAIL 2 C511

1/2" STAINLESS STEEL PIPE 1 1/2" CONDUIT SEE DETAIL 1 C507

NATURAL GAS SUPPLY LINE

MATCHLINE SEE SHEET C122

LEGEND

- APPROXIMATE PROPERTY BOUNDARY
- SOLID WASTE BOUNDARY
- EXISTING 2' CONTOUR
- EXISTING 10' CONTOUR
- EXISTING LEACHATE FORCE MAIN
- EXISTING COMMUNICATION (FIBER OPTICS)
- EXISTING ELECTRIC LINE
- PROPOSED NATURAL GAS LINE
- PROPOSED FENCE
- PROPOSED PAVED AREA
- PROPOSED CONCRETE PAD
- PROPOSED CRUSHED AGGREGATE BASE COARSE
- PROPOSED STEEP AREA (4:1 OR STEEPER)
- PROPOSED ELECTRIC LINE
- PROPOSED GLYCOL LINE
- PROPOSED OFF-SPEC GAS LINE
- PROPOSED RNG PIPE LINE
- PROPOSED PROCESSED GAS LINE
- PROPOSED CONDENSATE PIPE LINE
- PROPOSED NON-POTABLE WATER PIPE LINE
- PROPOSED STAINLESS STEEL IN CONDUIT
- PROPOSED GAS CONTROL VALVE
- PROPOSED WATER WELL
- PROPOSED HYDRANT
- PROPOSED STORMWATER PIPE
- PROPOSED RIP RAP
- PROPOSED INFILTRATION TRENCH
- PROPOSED BOLLARD

NOTES:

1. TOPOGRAPHIC FEATURES ARE ON NAD 27 WISCONSIN STATE PLANES, SOUTH ZONE, US FOOT AS STATED ON THE PLAN OF OPERATION - EASTERN EXPANSION BY TRC (FEBRUARY 2014).
2. VERTICAL DATUM IS REFERENCED TO NATIONAL GEODETIC VERTICAL DATUM (NGVD) AS STATED ON THE PLAN OF OPERATION - EASTERN EXPANSION BY TRC (FEBRUARY 2014).
3. BIOFERM HORIZONTAL CONNECTION LOCATIONS ARE BASED ON A DRAWING PROVIDED BY BIOFERM ENERGY SYSTEMS TO CORNERSTONE ENVIRONMENTAL GROUP ON MARCH 8, 2018.
4. SEE SPECIFICATION SECTIONS TES-CP-CR, TES-CP-MS, AND TES-CP-CS FOR CATHODIC PROTECTION REQUIREMENTS.
2. 5. HEAT TRACE AND INSULATE ALL WATER, CONDENSATE AND EFFLUENT PIPING ABOVE THE FROST LINE.

N

0 10 20
SCALE IN FEET

ISSUED FOR BID

REV	DATE	DESCRIPTION	DWN BY	DES BY	CHK BY	APP BY
2	4/23/18	NOTE 5	SRC	BB	CLD	MJT
1	4/17/18	RELOCATED WELL, GAS PIPE FROM DECANT, NOTE 4	SRC	SRC	BB	MJT

DATE OF ISSUE 03/27/2018 | DRAWN BY SRC | DESIGNED BY SRC/BB | CHECKED BY CLD | APPROVED BY MJT

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A TETRA TECH COMPANY

COUNTY OF DANE, DEPT. OF PUBLIC WORKS
RODEFELD LANDFILL
DANE COUNTY, WISCONSIN
DANE COUNTY NO. 2 (RODEFELD) LANDFILL
BIOGAS FACILITY CONSTRUCTION
SITE PLAN WITH PIPING (WEST)

SHEET NO. **C121**
PROJECT NO. 170651

1" 1/2" 0" 1"

NOTES:

1. TOPOGRAPHIC FEATURES ARE ON NAD 27 WISCONSIN STATE PLANES, SOUTH ZONE, US FOOT AS STATED ON THE PLAN OF OPERATION - EASTERN EXPANSION BY TRC (FEBRUARY 2014).
2. VERTICAL DATUM IS REFERENCED TO NATIONAL GEODETIC VERTICAL DATUM (NGVD) AS STATED ON THE PLAN OF OPERATION - EASTERN EXPANSION BY TRC (FEBRUARY 2014).
3. SEE SPECIFICATION SECTIONS TES-CP-CR, TES-CP-MS, AND TES-CP-CS FOR CATHODIC PROTECTION REQUIREMENTS.
4. HEAT TRACE AND INSULATE ALL WATER, CONDENSATE AND EFFLUENT PIPING ABOVE THE FROST LINE. (2)

DANE COUNTY NO. 2
(RODEFELD) LANDFILL
(LICENSE #03018)

MATCHLINE SEE SHEET C121

MATCHLINE SEE SHEET C121

GAS CLEANING EQUIPMENT OFF-SPEC. GAS
N 381207.7, E 2199690.7
SEE DETAIL 3/C507

NATURAL GAS SUPPLY LINE

6"Ø SDR-11 HDPE OFF-SPEC. GAS PIPE
SEE DETAIL 1/C506

174LF 3" SDR-11 x6" SDR-17 DUAL CONTAINED HDPE CONDENSATE FORCE MAIN
SEE DETAIL 2/C510

EXISTING LANDFILL PERIMETER ROAD

18" LANDFILL GAS PIPE
SEE SHEET C223

52LF 3"x6" DUAL CONTAINED HDPE CONDENSATE PIPE
SEE DETAIL 2/C510

GAS CLEANING EQUIPMENT AREA (NIC)

CONDENSATE PUMP STATION (CS-3)
SEE DETAIL 1/C508

62LF 3"x6" DUAL CONTAINED HDPE CONDENSATE PIPE
SEE DETAIL 2/C510

STORMWATER PIPE
(SEE STORMWATER MANAGEMENT PLAN, TYP)

CAUTION

18" LANDFILL GAS PIPE
SEE SHEET C223

TRANSITION FROM UNDERGROUND TO ABOVE GROUND

12" FLOW METER

2LF 2"Ø SDR-11 HDPE PIPE

CONDENSATE KNOCKOUT (CS-1)
N 381,129.9, E 2,199,839.4
SEE DETAIL 1/C509

CONDENSATE TRAP BLOW-OUT
SEE DETAIL 4/C511

2"Ø HDPE NON-POTABLE WATER PIPE TO BIOFERM
SEE DETAIL 2/C511

1/2" STAINLESS STEEL PIPE 1 1/2" CONDUIT
SEE DETAIL 1/C507

12" LANDFILL GAS PIPE CONNECTION TO BIOFERM PIPING
N 381113.4, E 2199782.5
SEE DETAIL 5/C507

TP1

CONDENSATE KNOCKOUT (CS-2)
N 381,108.0, E 2,199,794.8
SEE DETAIL 2/C509

TRANSITION FROM UNDERGROUND TO ABOVE GROUND

6" FLOW METER

NATURAL GAS SUPPLY LINE

36LF 12" SDR-17 HDPE GAS PIPE
SEE DETAIL 1/C506

HEAT EXCHANGER
SEE DETAIL 2/C517

6" PRESSURE REGULATING VALVE

12" SDR-17 HDPE PIPE

12" FLOW METER

2,500 kW TRANSFORMER CONCRETE PAD

BLOWER BUILDING

12" PRESSURE REGULATING VALVE

FLARE

ELEVATED PIPE WITH SUPPORTS
SEE DETAIL 2/C507

BIOFERM WATER SUPPLY CONNECTION
N 381068.4, E 2199760.8
SEE DETAIL 6/C507

(2) CONCRETE PAD FOR MG&E METER MAY BE REQUIRED

ELECTRIC SUPPLY LINE (MG&E)(NIC)

OFFICE

GAS METER (NIC)

NATURAL GAS SUPPLY LINE (MG&E)(NIC)

BUILDING ENTRANCE (TYP.)

NATURAL GAS SUPPLY LINE

CONDENSING UNIT
SEE SHEET M100

PROPOSED BOLLARD (TYP.)
SEE SHEET C131

LEGEND

- APPROXIMATE PROPERTY BOUNDARY
- SOLID WASTE BOUNDARY
- EXISTING 2' CONTOUR
- 1400 EXISTING 10' CONTOUR
- LFM EXISTING LEACHATE FORCE MAIN
- COMM EXISTING COMMUNICATION (FIBER OPTICS)
- E EXISTING ELECTRIC LINE
- G PROPOSED NATURAL GAS LINE (MG&E)
- E PROPOSED ELECTRIC LINE (MG&E)
- PROPOSED FENCE
- PROPOSED PAVED AREA
- PROPOSED CONCRETE PAD
- PROPOSED CRUSHED AGGREGATE BASE COARSE
- PROPOSED STEEP AREA (4:1 OR STEEPER)
- PROPOSED LANDFILL GAS LINE
- OSG PROPOSED OFF-SPEC GAS LINE
- CON PROPOSED CONDENSATE PIPE LINE
- PROPOSED GAS CONTROL VALVE
- PROPOSED STORM WATER PIPE
- PROPOSED CHECK VALVE
- PROPOSED FLOW METER
- PROPOSED BOLLARD
- PROPOSED PIPE SUPPORT

N

0 10 20
SCALE IN FEET

ISSUED FOR BID

REV	DATE	DESCRIPTION	DWN BY	DES BY	CHK BY	APP BY
2	4/20/18	NOTE 4, CONC PAD NOTE	SRC	BB	CLD	MJT
1	4/17/18	REMOVED GAS PIPES, NOTE 3, VALVE	SRC	SRC	BB	MJT

DATE OF ISSUE 03/27/2018
DRAWN BY SRC
DESIGNED BY SRC/BB
CHECKED BY CLD
APPROVED BY MJT

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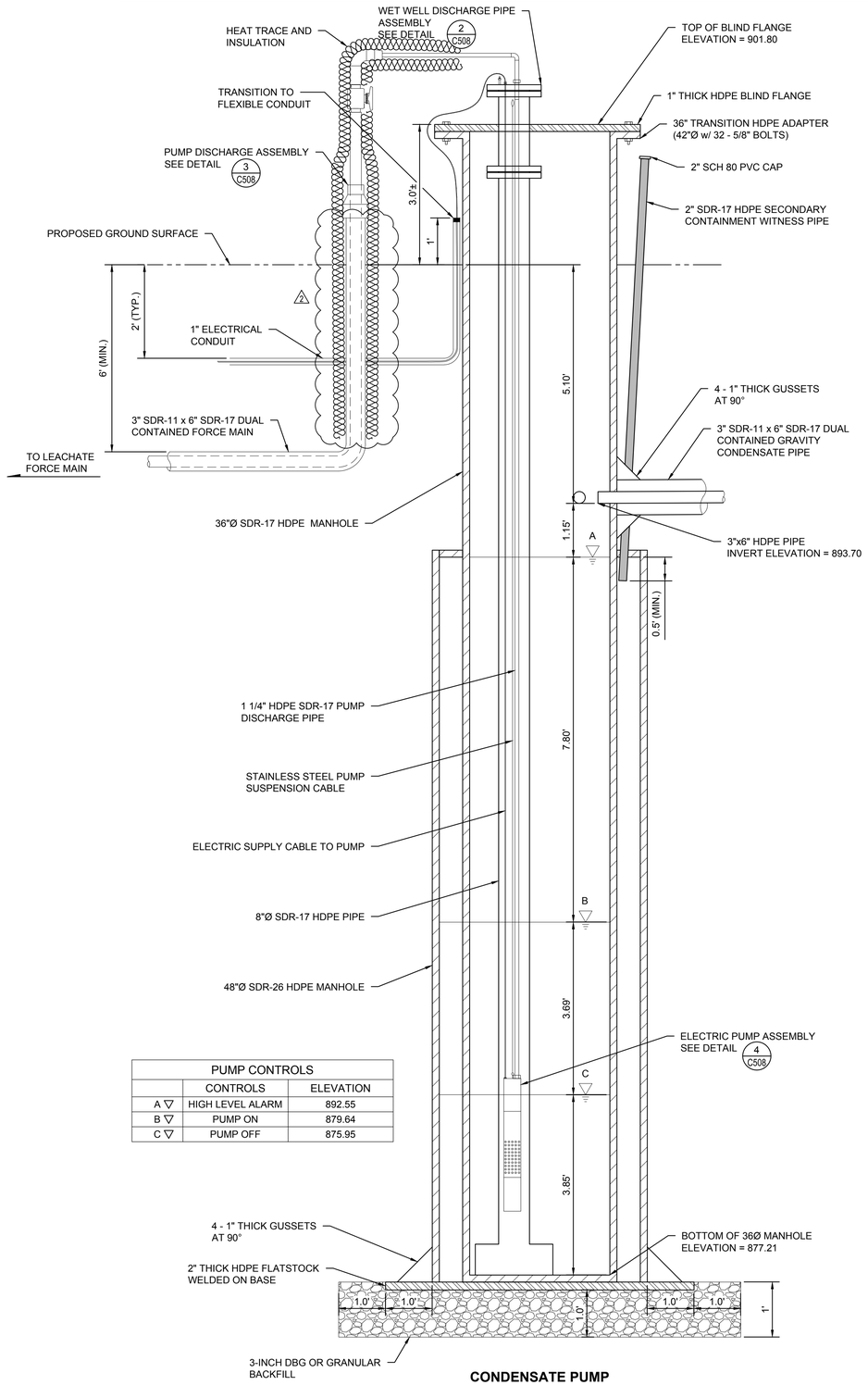
A TETRA TECH COMPANY

COUNTY OF DANE, DEPT. OF PUBLIC WORKS
RODEFELD LANDFILL
DANE COUNTY, WISCONSIN
DANE COUNTY NO. 2 (RODEFELD) LANDFILL
BIOGAS FACILITY CONSTRUCTION
SITE PLAN WITH PIPING (EAST)

SHEET NO. **C122**
PROJECT NO. 170651

1" 1/2" 0" 1"



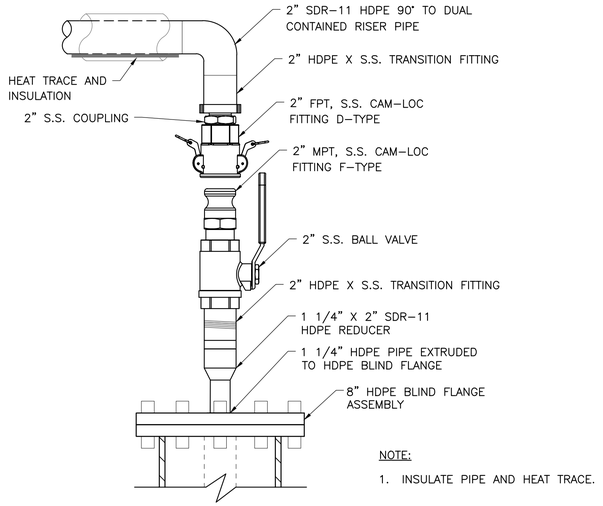
PUMP CONTROLS		
	CONTROLS	ELEVATION
A ▽	HIGH LEVEL ALARM	892.55
B ▽	PUMP ON	879.64
C ▽	PUMP OFF	875.95

CONDENSATE PUMP STATION (CS-3)

DETAIL 1 C508
SCALE: NOT TO SCALE

NOTES:

1. LEVEL CONTROLS SHALL BE INSTALLED FOR "PUMP ON", "PUMP OFF" AND "HIGH LEVEL".

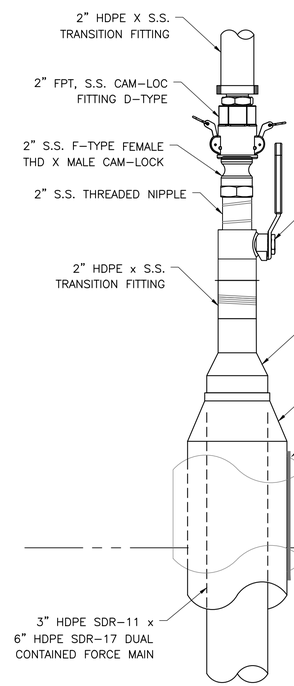


NOTE:

1. INSULATE PIPE AND HEAT TRACE.

WET WELL DISCHARGE PIPE ASSEMBLY

DETAIL 2 C508
SCALE: NOT TO SCALE

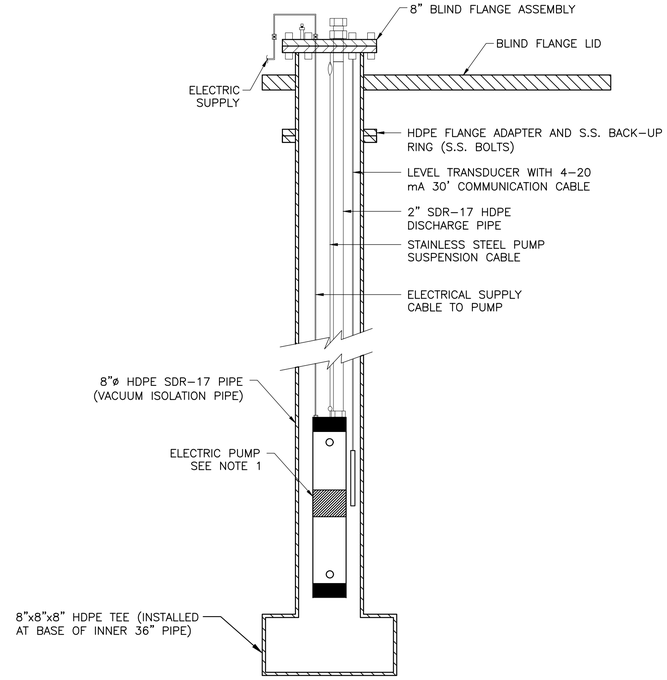


NOTES:

1. NOT SHOWN IS THE 2"ø SDR-17 HDPE DISCHARGE PIPE BETWEEN TOP OF THE 8" FLANGE AND PUMP DISCHARGE.
2. ASSEMBLY IS TO BE HEAT TRACED AND INSULATED. INSULATION SHALL EXTEND TO A DEPTH OF 4'.

TYPICAL PUMP DISCHARGE ASSEMBLY TO FORCE MAIN

DETAIL 3 C508
SCALE: NOT TO SCALE



ELECTRIC PUMP ASSEMBLY FOR CONDENSATE KNOCKOUT

DETAIL 4 C508
SCALE: NOT TO SCALE

NOTES:

1. NEW CONDENSATE KNOCKOUT INCLUDES ELECTRIC PUMP 1/2 HP (MAXIMUM) 230-V THREE PHASE, 60-HZ., 1650 RPM AT FULL LOAD ALONG WITH STAINLESS STEEL PULL OUT CABLE, WITH 0-7 PSI, 4-20mA TRANSDUCER AND ELECTRICAL CORD.
2. PUMP SHALL BE AN EPG SERIES 3 SUREPUMP MODEL 3-4; 20 GAL./MIN., 55-FT. HEAD OR EQUIVALENT.

ISSUED FOR BID

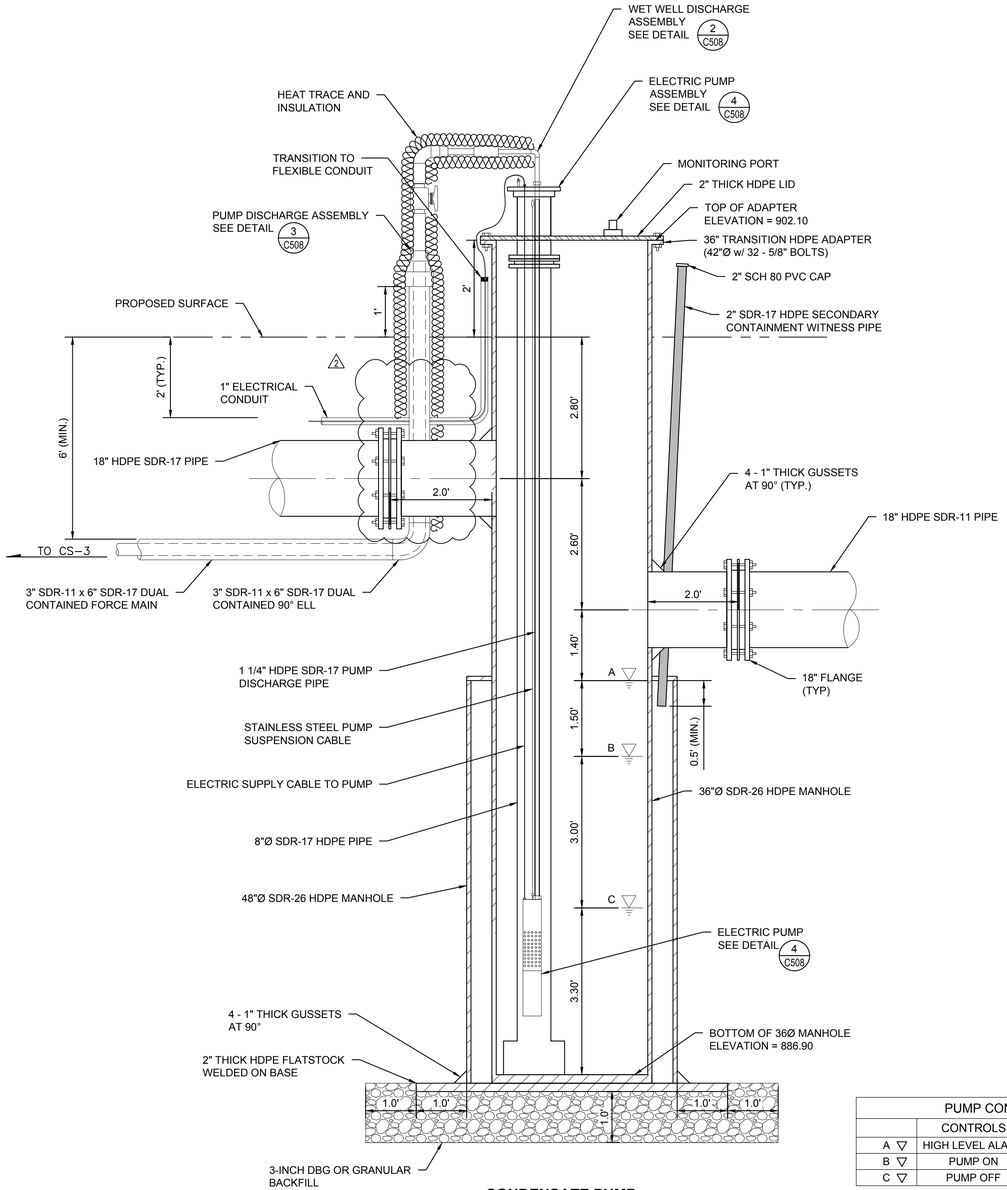
REV	DATE	DESCRIPTION	DWN BY	DES BY	CHK BY	APP BY
2	4/23/18	EXTENDED INSULATION	SRC	BB	CLD	MJT
1	4/17/18	HEAT TRACE & INSULATION	SRC	SRC	BB	MJT

DATE OF ISSUE 03/27/2018
DRAWN BY SRC
DESIGNED BY SRC/BB
CHECKED BY CLD
APPROVED BY MJT

COUNTY OF DANE, DEPT. OF PUBLIC WORKS
RODEFELD LANDFILL
DANE COUNTY, WISCONSIN

DANE COUNTY NO. 2 (RODEFELD) LANDFILL
CIVIL DETAIL SHEET 8

SHEET NO. **C508**
PROJECT NO. 170651



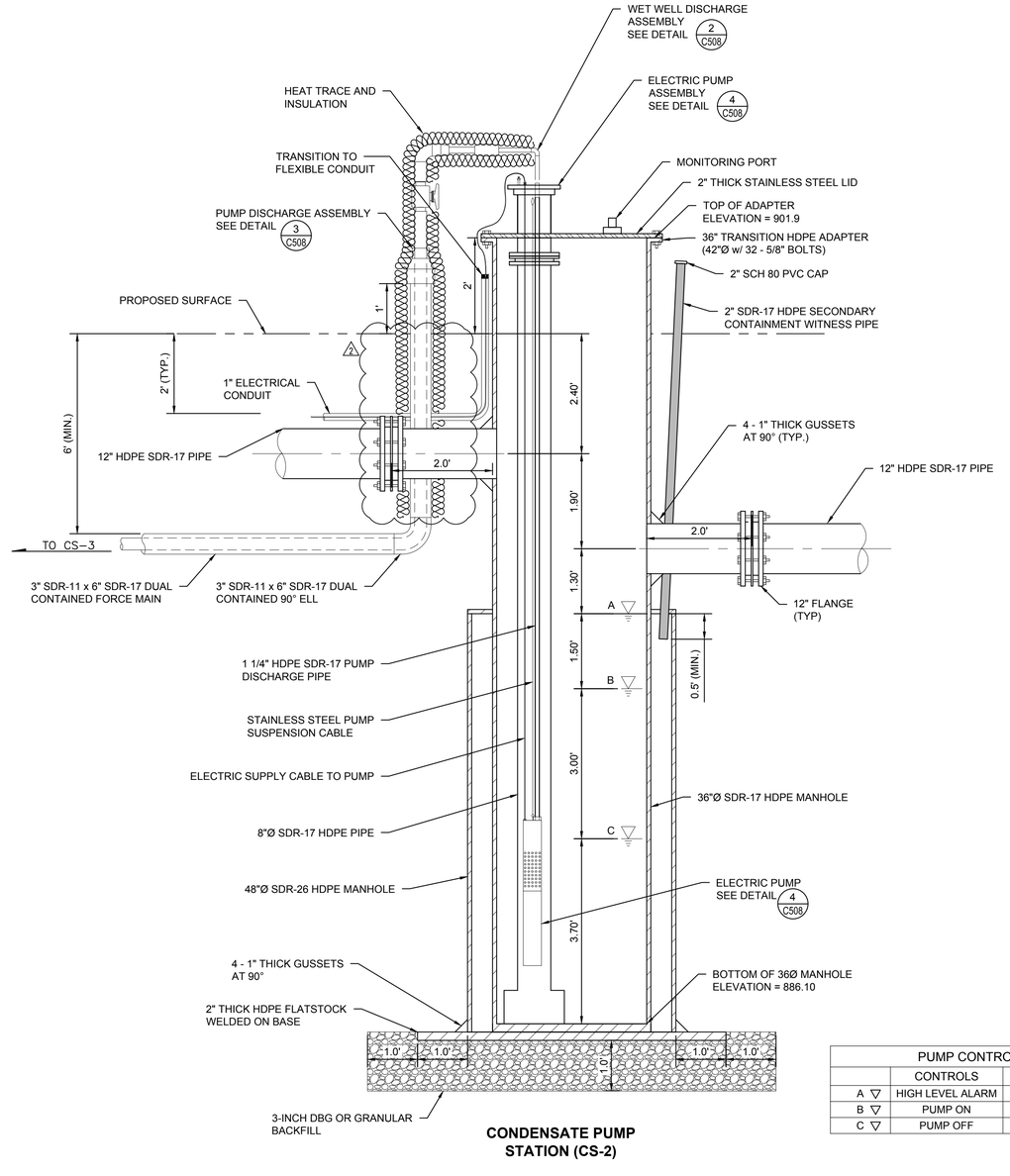
CONDENSATE PUMP STATION (CS-1)

DETAIL 1 C509
SCALE: NOT TO SCALE

PUMP CONTROLS		
	CONTROLS	ELEVATION
A ▽	HIGH LEVEL ALARM	893.3
B ▽	PUMP ON	891.8
C ▽	PUMP OFF	888.8

NOTES:

1. LEVEL CONTROLS SHALL BE INSTALLED FOR "PUMP ON", "PUMP OFF" AND " HIGH LEVEL".



CONDENSATE PUMP STATION (CS-2)

DETAIL 2 C509
SCALE: NOT TO SCALE

PUMP CONTROLS		
	CONTROLS	ELEVATION
A ▽	HIGH LEVEL ALARM	894.3
B ▽	PUMP ON	892.8
C ▽	PUMP OFF	889.8

NOTES:

1. LEVEL CONTROLS SHALL BE INSTALLED FOR "PUMP ON", "PUMP OFF" AND " HIGH LEVEL".

ISSUED FOR BID

REV	DATE	DESCRIPTION	DWN BY	DES BY	CHK BY	APP BY
2	4/23/18	EXTENDED INSULATION	SRC	BB	CLD	MJT
1	4/17/18	HEAT TRACE & INSULATION	SRC	SRC	BB	MJT

DATE OF ISSUE 03/27/2018
DRAWN BY SRC
DESIGNED BY SRC/BB
CHECKED BY CLD
APPROVED BY MJT

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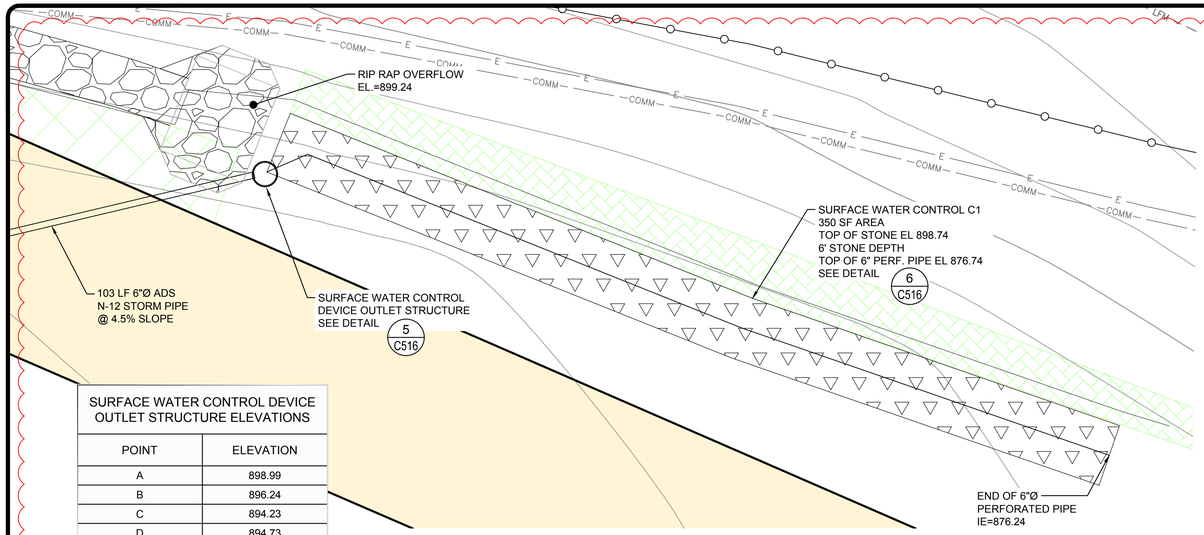
DANE COUNTY, WISCONSIN

DANE COUNTY NO. 2 (RODEFELD) LANDFILL
CIVIL DETAIL SHEET 9

SHEET NO. **C509**
PROJECT NO. 170651

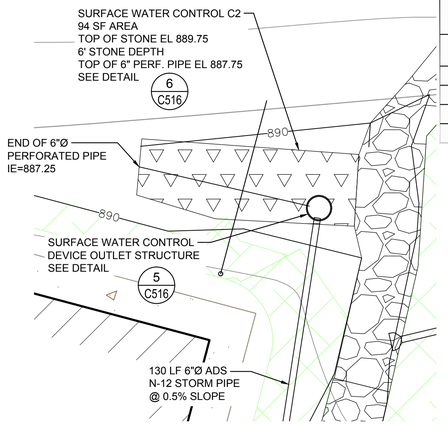
1" 1/2" 0" 1"



SURFACE WATER CONTROL DEVICE OUTLET STRUCTURE ELEVATIONS	
POINT	ELEVATION
A	898.99
B	896.24
C	894.23
D	894.73

SURFACE WATER CONTROL DEVICE C1

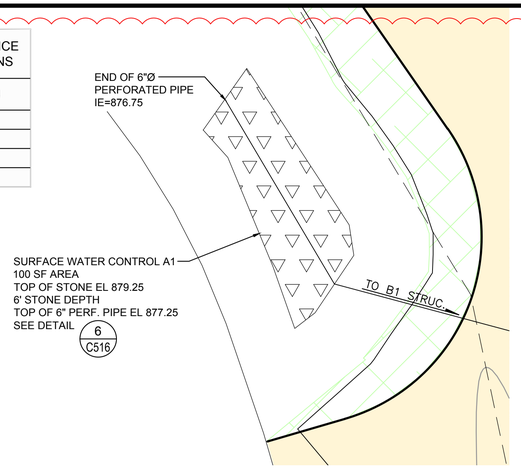
DETAIL — SCALE: NOT TO SCALE — 1 / C516



SURFACE WATER CONTROL DEVICE OUTLET STRUCTURE ELEVATIONS	
POINT	ELEVATION
A	890.25
B	887.50
C	886.15
D	886.65

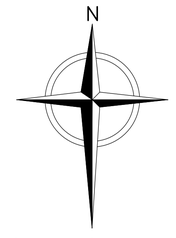
SURFACE WATER CONTROL DEVICE C2

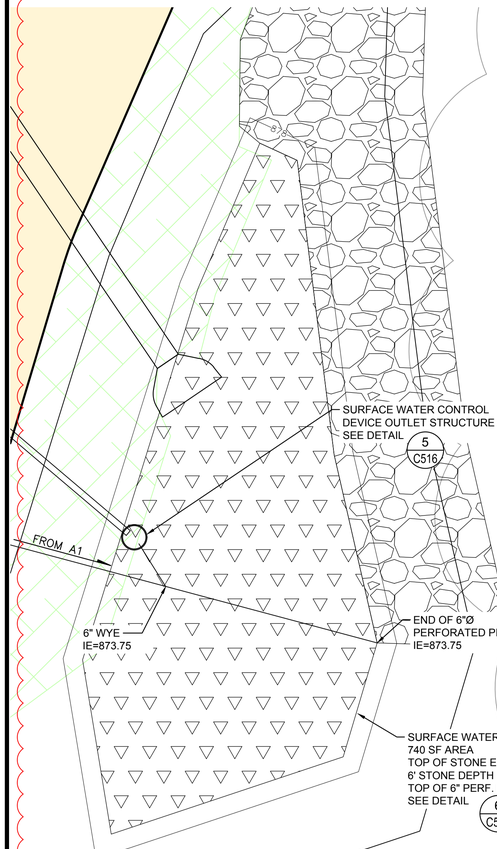
DETAIL — SCALE: NOT TO SCALE — 2 / C516



SURFACE WATER CONTROL DEVICE A1

DETAIL — SCALE: NOT TO SCALE — 3 / C516

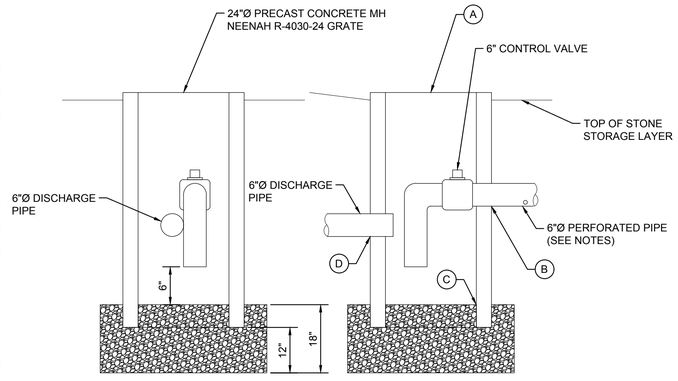




INFILTRATION DEVICE OUTLET STRUCTURE ELEVATIONS	
POINT	ELEVATION
A	877.25
B	873.75
C	872.75
D	873.60

SURFACE WATER CONTROL DEVICE B1

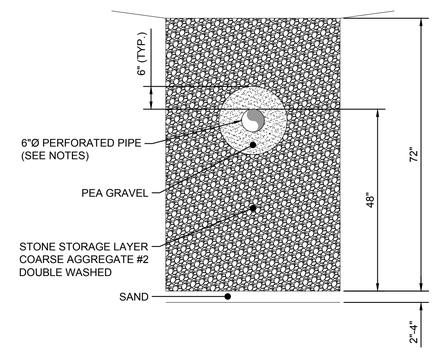
DETAIL — SCALE: NOT TO SCALE — 4 / C516



SURFACE WATER CONTROL DEVICE OUTLET STRUCTURE

DETAIL — SCALE: NOT TO SCALE — 5 / C516

NOTES:
1. PERFORATED PIPE SHALL BE IN A FILTER SOCK.
2. PERFORATED PIPE SHALL BE ENCASED BY 6" OF PEA GRAVEL.



SURFACE WATER CONTROL DEVICE TYPICAL SECTION

DETAIL — SCALE: NOT TO SCALE — 6 / C516

ISSUED FOR BID

REV	DATE	DESCRIPTION	DWN BY	DES BY	CHK BY	APP BY
1	4/23/18	SURFACE WATER CONTROL DEVICE	SRC	BB	CLD	MJT

DATE OF ISSUE 3/26/2018 — DRAWN BY SRC — DESIGNED BY SRC/BB — CHECKED BY CLD — APPROVED BY CLD

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COUNTY OF DANE, DEPT. OF PUBLIC WORKS
RODEFELD LANDFILL
DANE COUNTY, WISCONSIN
DANE COUNTY NO. 2 (RODEFELD) LANDFILL

CIVIL DETAIL SHEET 16

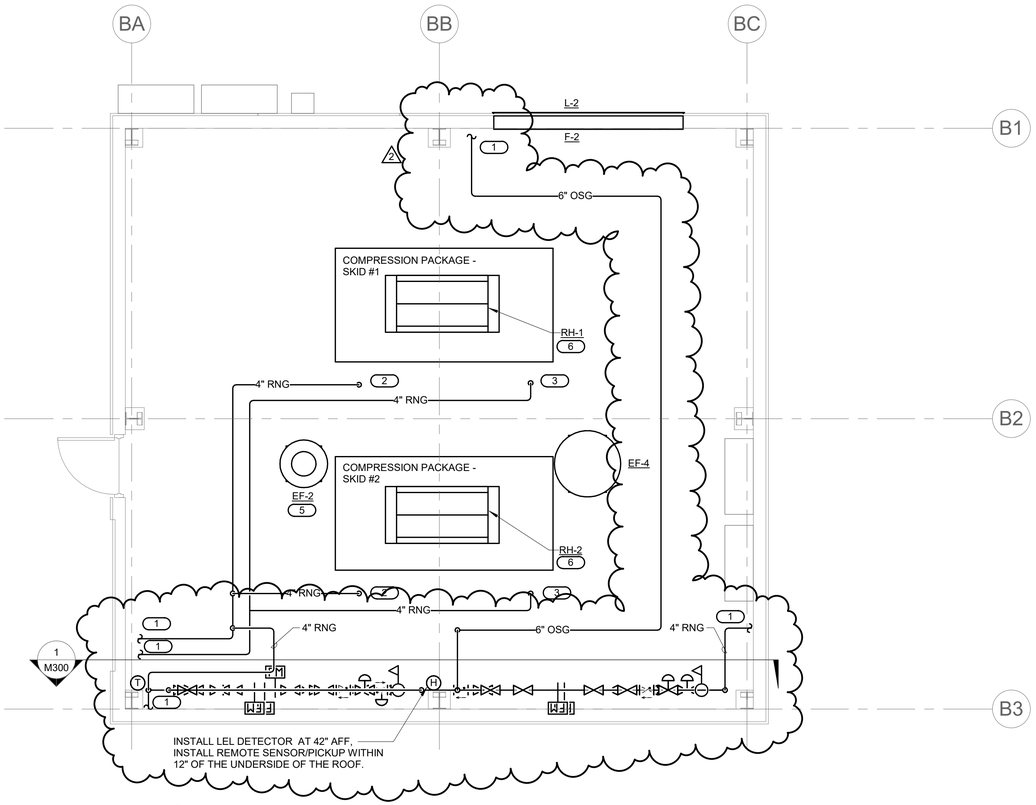
SHEET NO. **C516**

PROJECT NO. 170651

File: X:\PROJECTS\DANE COUNTY\170651 - RNG ENGINEERING SERVICES_Plan Set\V1-44x30\L_5-05_C516.dwg Layout: C516 User: ahaun.cummings Apr 23, 2018 - 4:09pm

KEYNOTES: (#)

1. CONNECT TO RNG PIPING BY OTHERS FROM THE BUILDING EXTERIOR. CONNECTION POINT TO BE INTERIOR TO THE COMPRESSOR BUILDING, NO MORE THAN 2 FEET FROM THE EXTERIOR WALL.
2. CONNECT RNG PIPING TO COMPRESSION PACKAGE GAS DISCHARGE CONNECTION. COORDINATE FINAL CONNECTION LOCATION AND SIZE WITH COMPRESSION PACKAGE SUPPLIER.
3. CONNECT RNG PIPING TO COMPRESSION PACKAGE INLET CONNECTION. COORDINATE FINAL CONNECTION LOCATION AND SIZE WITH COMPRESSION PACKAGE SUPPLIER.
4. NOT USED.
5. FAN INLET SHALL TERMINATE A MAXIMUM OF 12" BELOW THE BOTTOM OF THE ROOF DECK WITH AN OPEN ENDED DUCT COVERED IN A 1/4" BIRD SCREEN.
6. PROVIDE DUCT FROM COMPRESSION SKID FAN OUTLET TO RELIEF HOOD. COORDINATE DUCT CONNECTION TO COMPRESSION SYSTEM WITH COMPRESSION SYSTEM SUPPLIER.



1 COMPRESSION BUILDING PLAN - MECHANICAL

1/4" = 1'-0"

NORTH

ISSUED FOR BID

IMEG
1800 DEMING WAY, SUITE 200
MIDDLETON, WI 53562
608.223.9600 FAX: 608.836.0415
www.imegcorp.com
PROJECT # 17002439.00

REFERENCE SCALE IN INCHES
0 1 2 3

REV.	DATE	DESCRIPTION	DWN. BY	DES. BY	CHK. BY	APP. BY
2	04/23/18	Addendum 2				
1	04/17/18	Addendum 1				

DATE OF ISSUE 3/27/2018
DRAWN BY SCOWIL
DESIGNED BY SCOWIL
CHECKED BY
APPROVED BY

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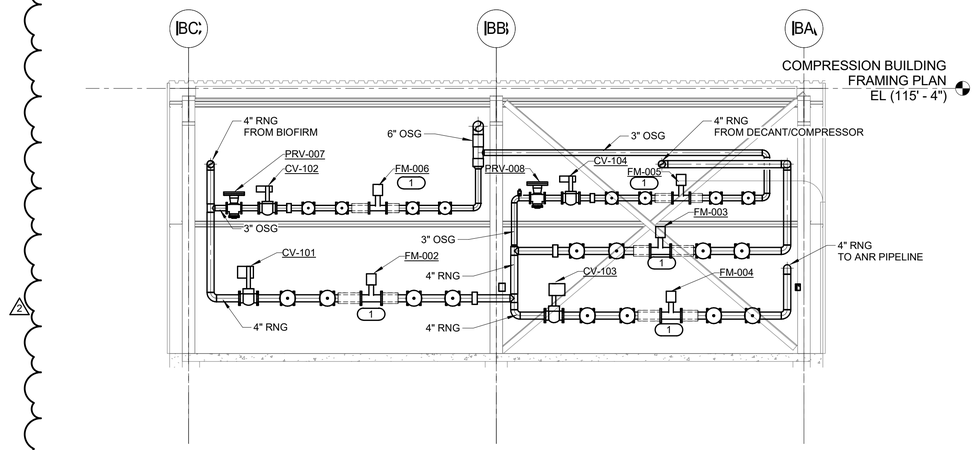
COUNTY OF DANE, DEPT. OF PUBLIC WORKS
RODEFELD LANDFILL
DANE COUNTY, WISCONSIN
DANE COUNTY NO. 2 (RODEFELD) LANDFILL
BIOGAS FACILITY CONSTRUCTION
COMPRESSION BUILDING PLAN - MECHANICAL

SHEET NO.
M101
PROJECT NO.
170651

1" 1/2" 0" 1"



1 COMPRESSION BUILDING PLAN- MECHANICAL SECTION

1/4" = 1'-0"

KEYNOTES: (#)

2 1. ANCHOR PIPING IMMEDIATELY UPSTREAM AND DOWNSTREAM OF FLOW METER TO ELIMINATE EXPANSION FORCES FROM THE PIPING FROM BEING TRANSMITTED TO THE FLOW METER. REFER TO FLOW METER MANUFACTURER RECOMMENDATIONS.

ISSUED FOR BID

IMEG
1800 DEMING WAY, SUITE 200
MIDDLETON, WI 53562
608.223.9600 FAX: 608.836.0415
www.imegcorp.com
PROJECT # 17002439.00

REFERENCE SCALE IN INCHES
0 1 2 3

REV	DATE	DESCRIPTION	DWN BY	DES BY	CHK BY	APP BY
2	04/23/18	Addendum 2				
1	04/17/18	Addendum 1				

DATE OF ISSUE 3/27/2018
DRAWN BY SCOWIL
DESIGNED BY SCOWIL
CHECKED BY
APPROVED BY

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COUNTY OF DANE, DEPT. OF PUBLIC WORKS
RODEFELD LANDFILL
DANE COUNTY, WISCONSIN

DANE COUNTY NO. 2 (RODEFELD) LANDFILL
BIOGAS FACILITY CONSTRUCTION

MECHANICAL DETAILS

SHEET NO.
M300

PROJECT NO.
170651

1" 1/2" 0" 1"

Attachment #3 – Trailer Offload Station Equipment Preliminary Drawings

NOTES:

1. DIMENSIONS AND TOLERANCES IN ACCORDANCE WITH ASME Y14.5M-2009.
2. DESIGNED, TESTED, AND BUILT IN ACCORDANCE WITH ASME B31.3, LATEST EDITION
3. APPROXIMATE WEIGHT: 1000 LBS.
4. ITEM NOT BALLOONED.

ITEM	QTY	NAME	DESCRIPTION
1	3	130-07369	HOSE ASSY-1x16' PARKER W/1" SEAL LOK SWIVEL ENDS 5000#
2	1	B01-90-189	SUPPORT-DECANT/FILL TRAILER W/RAILS FOR HEADER PIPE AND VENT
3	1	K01-90-022	DECANT/FILL TUBE TRAILER MANIFOLD ASSEMBLY 2" CL2500
4	3	N50-30-070	NOZZLE ASSY-OASIS 1" COUPLER 4500# 1"MNPTx1"FACESEAL CONNECTION TO CONNECT HOSE

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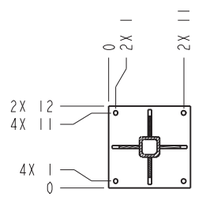
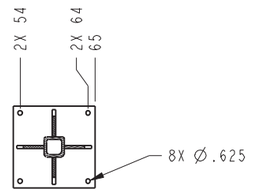
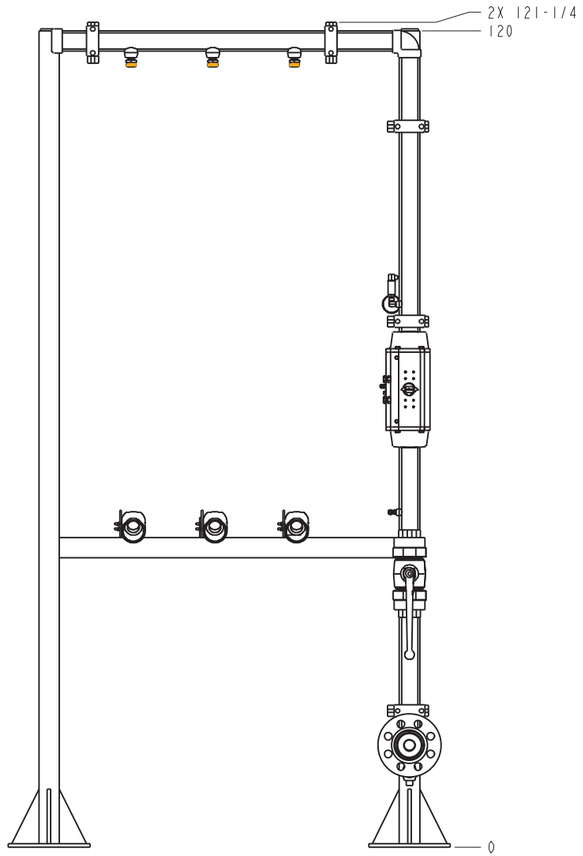
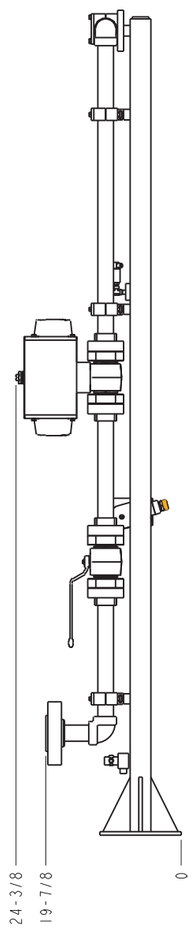
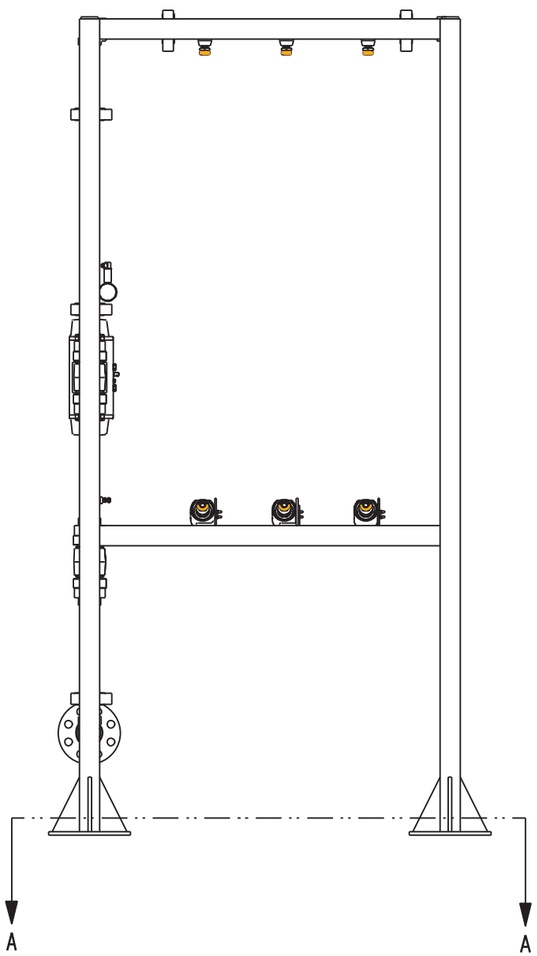


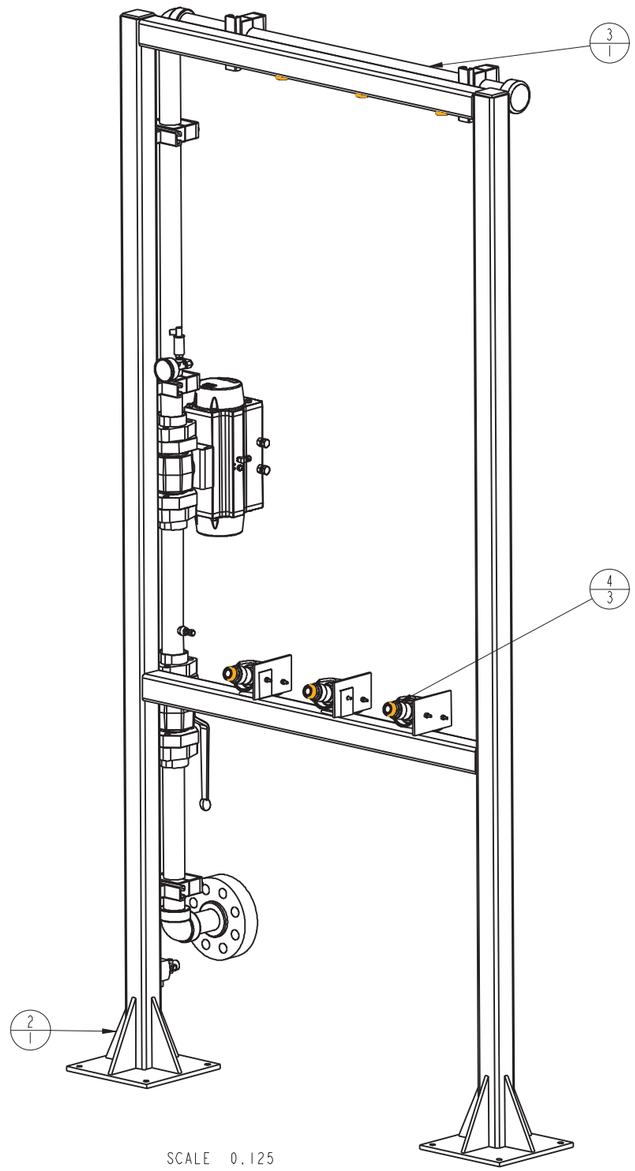
SECTION A-A
MOUNTING DETAIL











SCALE 0.125

REV	DATE	APPROVED	DESCRIPTION
.	.	.	.

ANGI ENERGY SYSTEMS
305 W DELAVAN DR
JANESVILLE, WI 53546
PH: 608-563-2800
www.angienergy.com

UNLESS OTHERWISE SPECIFIED
BREAK SHARP EDGES .005 - .015
ALL DIMENSIONS IN INCHES
FRACTIONAL ± 1/8
TWO PLACE DECIMAL ± .010
THREE PLACE DECIMAL ± .005
ANGLES ± 1°

TITLE	DECANT/FILL TUBE TRAILER ASSY W/STEEL SUPPORT
CUSTOMER	PROJECT NO.
SHEET 1 of 1	SCALE 0.094
DRAWN BY TPH	DATE 8/27/2014
DRAWING NO.	A30-11-002
REV.	-

DECANTER DATA:

WEIGHT: 21,000 LBS (APPROXIMATE).

CLEARANCE: ALLOW 36" MINIMUM ON ALL SIDES FOR ACCESS UNLESS OTHERWISE INDICATED.

MOUNTING: REQUIRES FOUR(4) 1" DIAMETER ANCHOR BOLTS (NOT PROVIDED). LOCATION TOLERANCE IS ±1/8".

SHIPPING: VENT STACKS TO BE REMOVED FOR SHIPPING.

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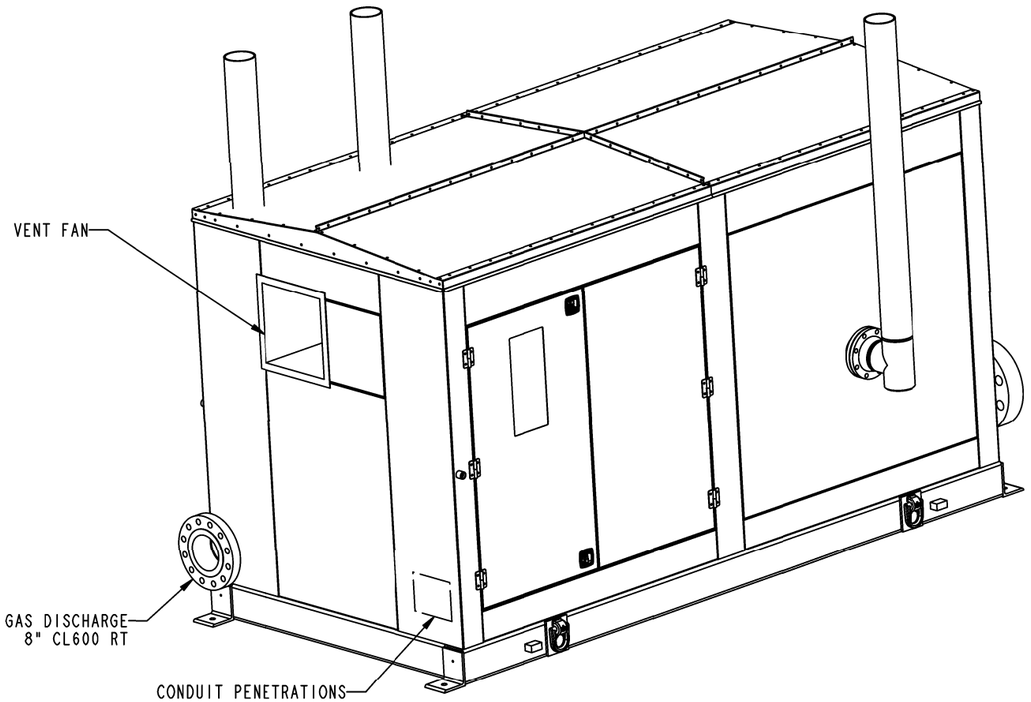

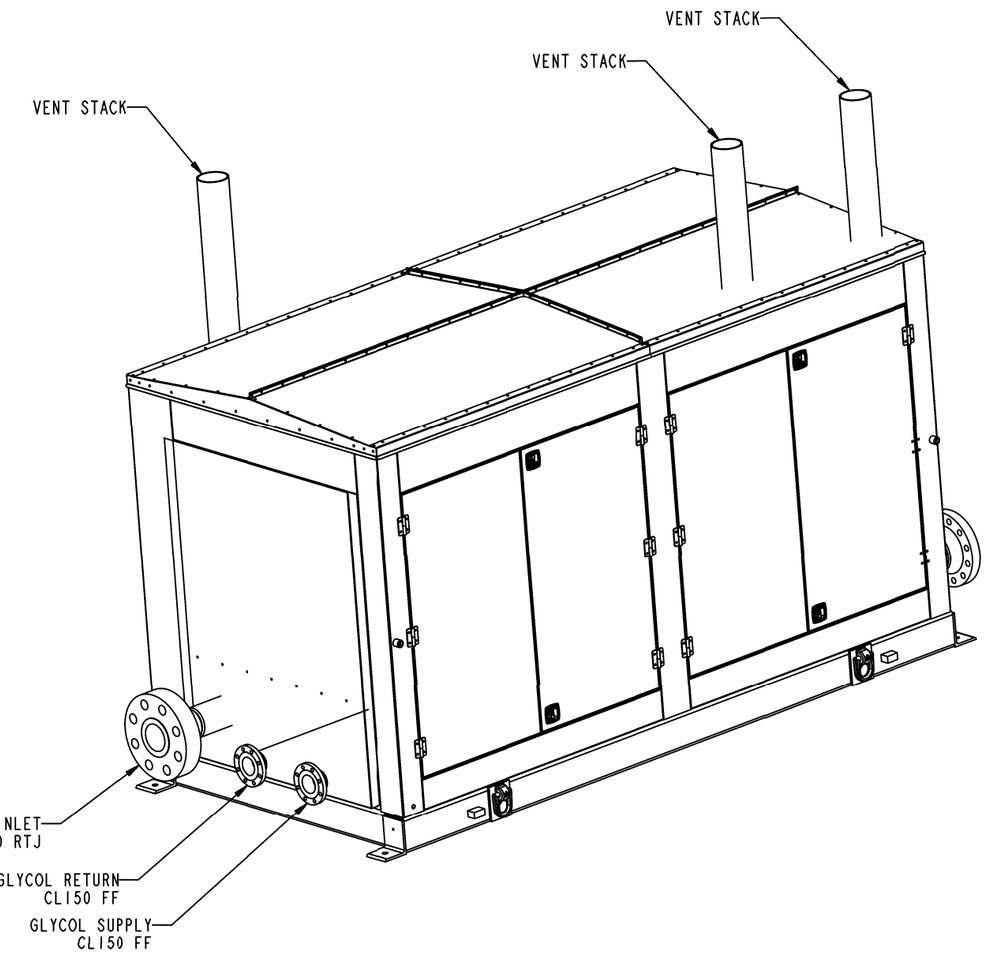

REV	DATE	APPROVED	DESCRIPTION
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JANESVILLE, WI 53546
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ALL DIMENSIONS IN INCHES
BREAK SHARP EDGES .005 -.015
FRACTIONAL ± 1/8
TWO PLACE DECIMAL ±.010
THREE PLACE DECIMAL ±.005
ANGLES ± 1°

TITLE: EQUIPMENT LAYOUT-DECANTER WM 25SCFE
CUSTOMER
PROJECT NO
SHEET: 1 of 4
SCALE: 0.026
DRAWING NO: A30-12-50417
REV: -
DRAWN BY: j.wray
DATE: 07/22/2016

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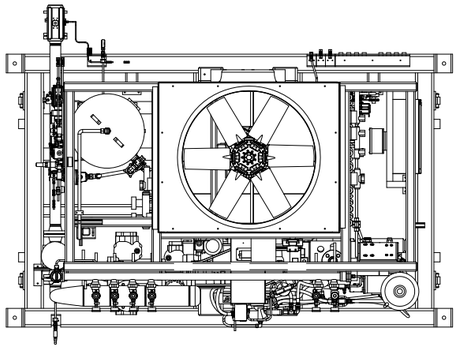

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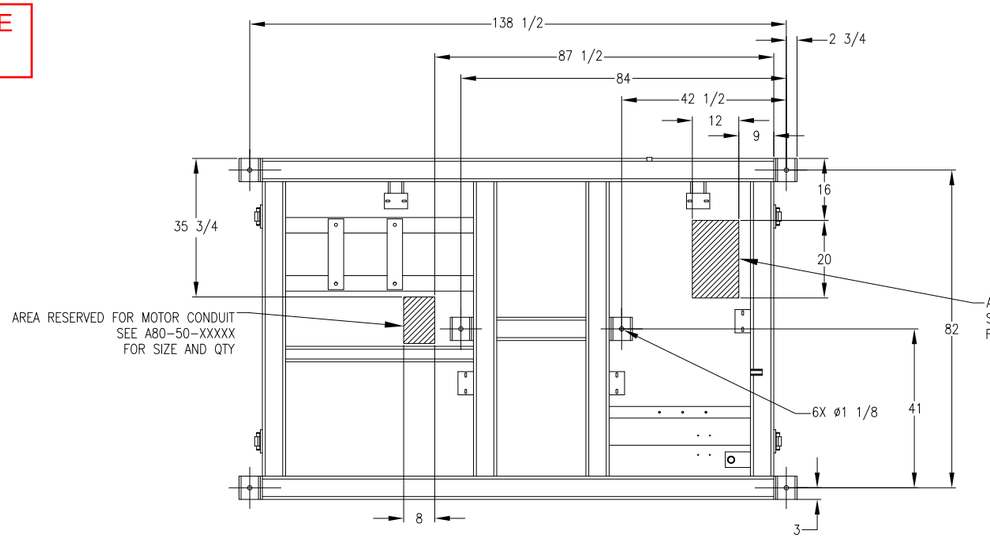


ANCHOR BOLT LOCATIONS
AND
CONDUIT PENETRATION LOCATIONS
(IF SIDE PENETRATION SEE SEPERATE DRAWING)

COMPRESSOR DATA

WEIGHT: 15,000 LBS.

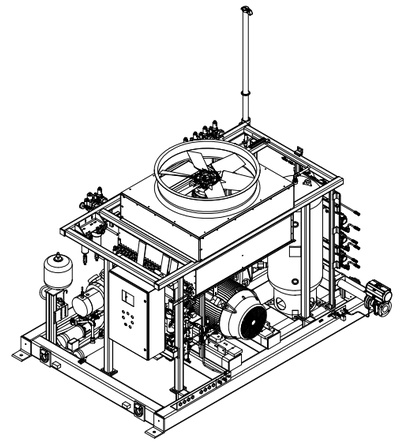
TYPE: ARIEL RECIPROCATING COMPRESSOR, CYLINDERS MAY VARY FROM THOSE SHOWN.

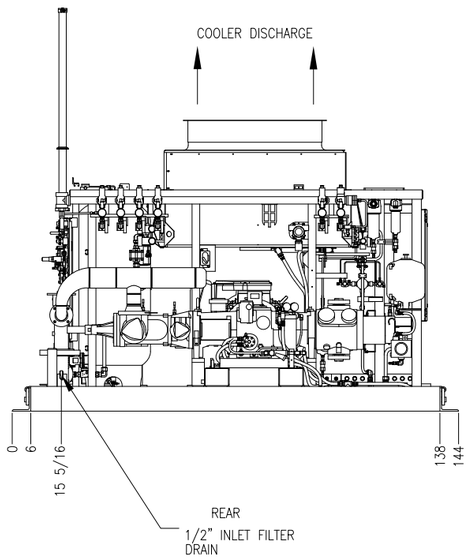
CLEARANCE: ALLOW 36" MINIMUM ON ALL SIDES FOR ACCESS UNLESS OTHERWISE INDICATED.

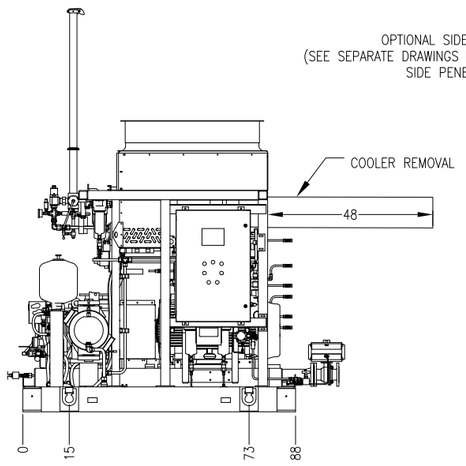
MOUNTING: REQUIRES SIX (6) 1" DIAMETER ANCHOR BOLTS (NOT PROVIDED BY ANGI). GROUTING THE COMPRESSOR TO THE CONCRETE PAD IS NOT RECOMMENDED.

LIFTING: FOR SPREADER BAR SIZING, SEE A05-13-NG300E.

SHIPPING: VENT STACK, INLET VALVE, AND 1/4" ACTUATOR TUBING ARE REMOVED FOR SHIPPING.







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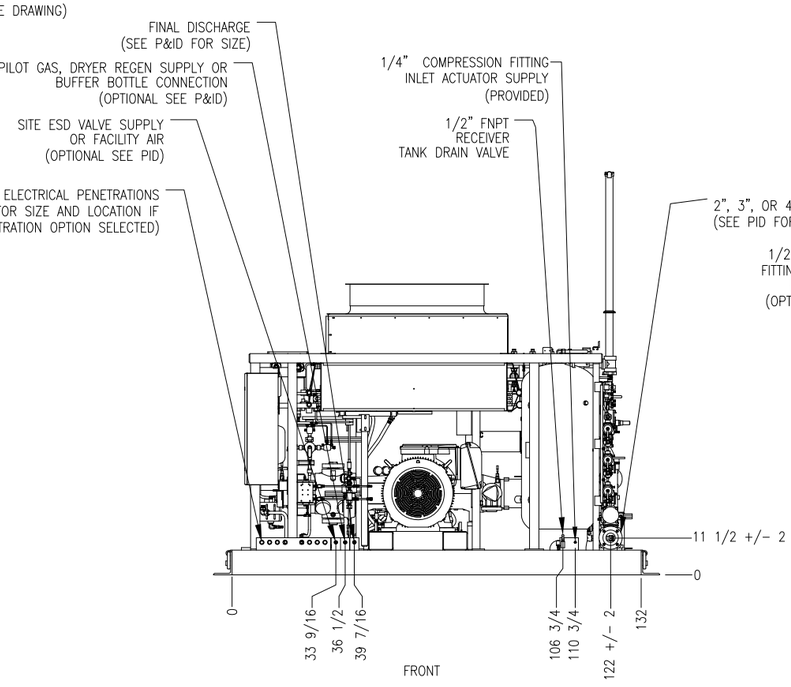
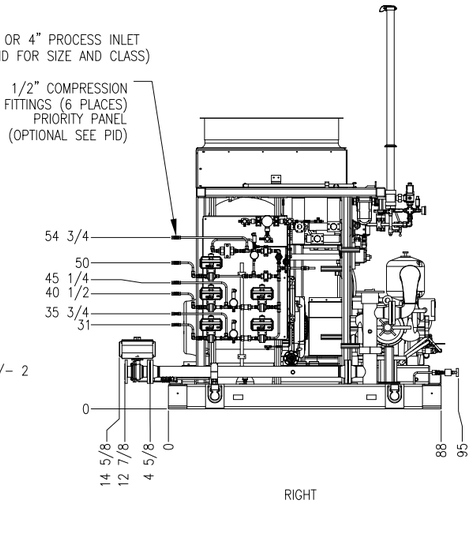


FRONT



RIGHT

REV	DATE/BY	DESCRIPTION	REV	DATE/BY	DESCRIPTION

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305 W DELAVAN DR
JANESVILLE, WI 53546
PH: 608-563-2800
www.angienergy.com

UNLESS OTHERWISE SPECIFIED
BREAK SHARP EDGES .005-.015
ALL DIMENSIONS IN INCHES

FRACTIONAL	± 1/8
TWO PLACE DECIMAL	±.010
THREE PLACE DECIMAL	±.005
ANGLES	±1°

TITLE: GENERAL LAYOUT - NG300E SIMPLEX W/O ENLC

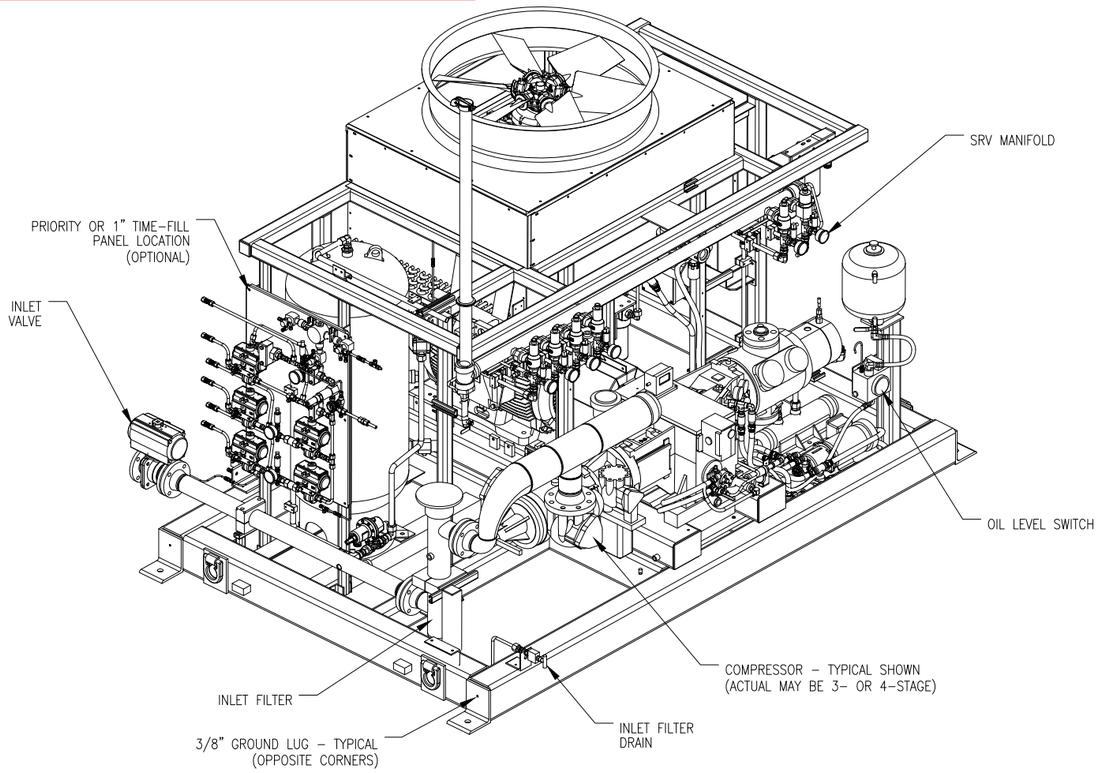
CUSTOMER

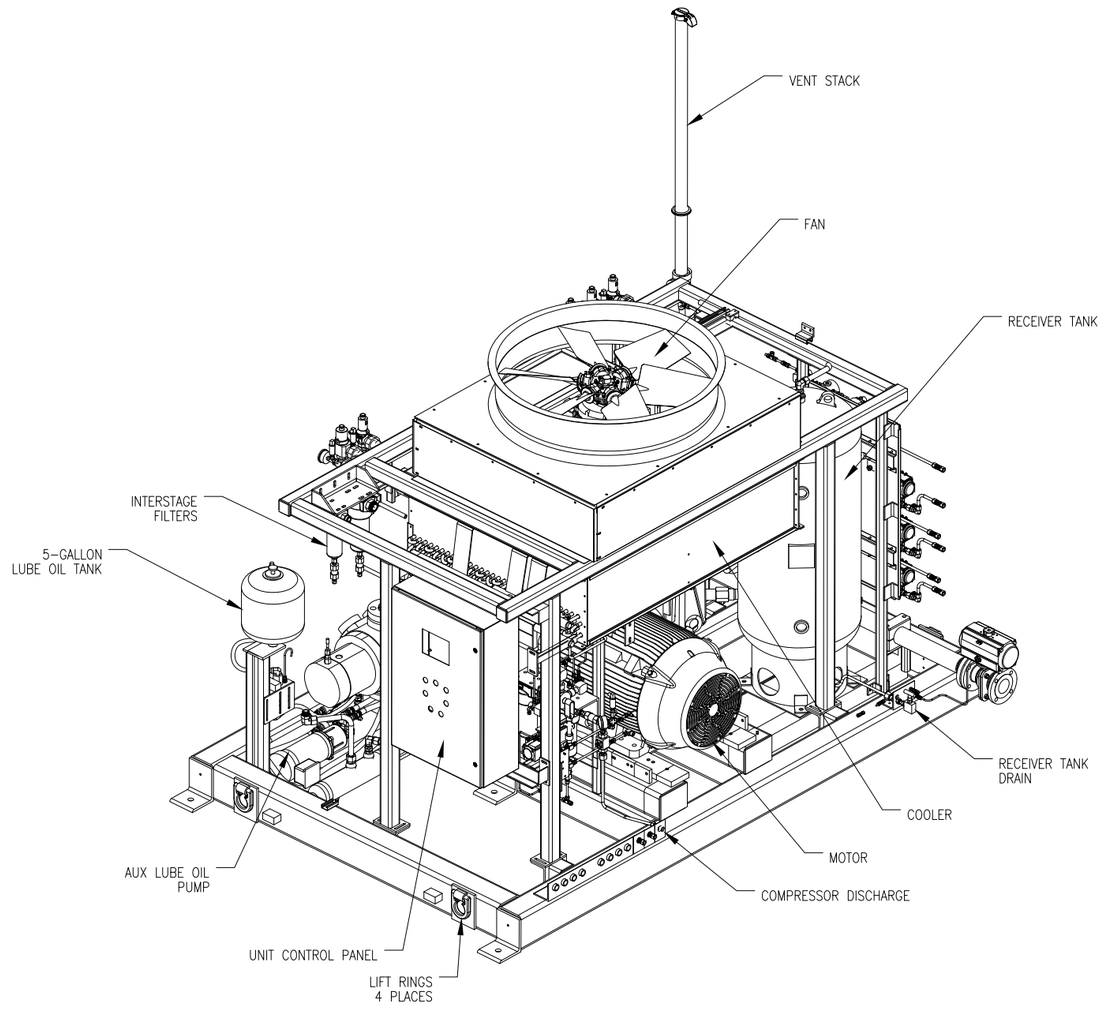
PROJECT NO.

DRN	DATE	SCALE	DRAWING NO.	REV.
MCW	07/14/15	NTS	A05-10-ES-E0	-
CHK ADM	DATE 07/14/15	SHT 1 / TOT 2		

AUTOCAD WINDCHILL

PRELIMINARY ONLY SUBJECT TO CHANGE
DO NOT MANUFACTURE TO THIS PRINT





ANGI ENERGY SYSTEMS
305 W DELAVAN DR
JANESVILLE, WI 53546
PH: 608-563-2800
www.angienergy.com

UNLESS OTHERWISE SPECIFIED
BREAK SHARP EDGES .005-.015
ALL DIMENSIONS IN INCHES

FRACTIONAL	± 1/8
TWO PLACE DECIMAL	±.010
THREE PLACE DECIMAL	±.005
ANGLES	±1°

TITLE: GENERAL LAYOUT - NG300E SIMPLEX W/O ENLC

CUSTOMER

PROJECT NO.

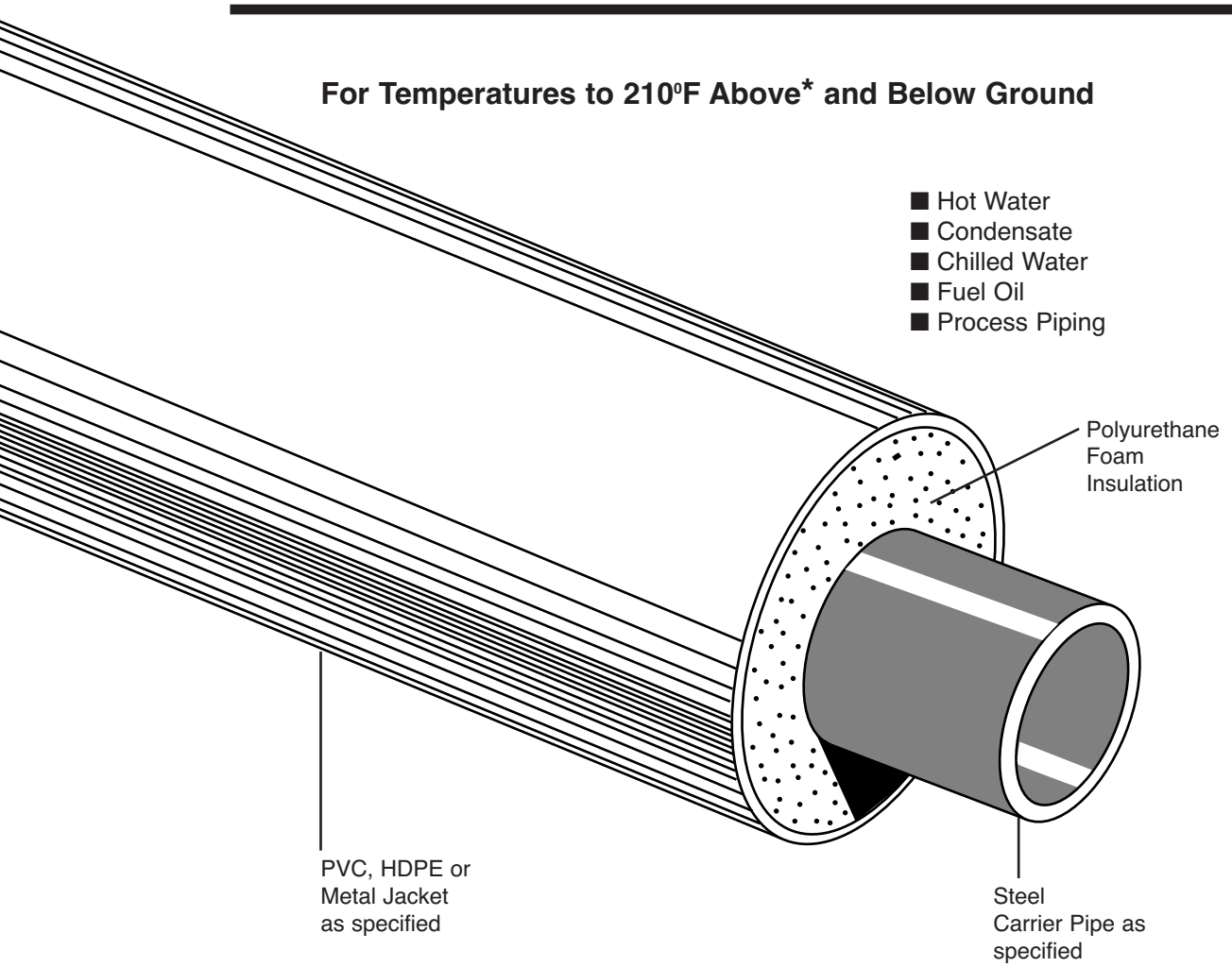
DRN	DATE	SCALE	DRAWING NO.	REV.
MCW	07/14/15	NTS	A05-10-ES-E0	-
CHK ADM	DATE 07/14/15	SHT 2	TOT 2	

AUTOCAD WINDCHILL

Attachment #4 – Glycol Line Specification

Rovanco Steel System

For Temperatures to 210°F Above* and Below Ground



Rovanco's Steel System is designed for piping systems above or below ground suitable for inside or outside applications. High quality polyurethane foam insulation combined with a durable watertight jacket supplied in 20' or 40' random lengths, means an economical, high-quality system.

Rovanco's Steel System is provided with jacketing of either PVC, HDPE, spiral lock-seam aluminum or galvanized steel which can be supported from the outside with maximum support spans. Fittings can be either field insulated or factory fabricated as specified.

The Steel System comes complete with joint insulation materials and jacketing to make the installation completely watertight for applications of process fluids, hot water, low pressure steam, pumped condensate, chilled water, etc.

To find out more about Rovanco's Steel System, you can visit our factory, phone us (815)741-6700, fax us (815)741-4229, visit our web site at www.rovanco.com or e-mail us at marketing@rovanco.com.

*For higher temperatures, consult factory.

SPECIFICATION DATA SHEET

Steel Piping System For Low Pressure Steam, Condensate, Chilled or Hot Water, Fuel Oil, and Process Piping Applications

Carrier Pipe:
A-53 Grade B ERW in Schedule (40) or (80). Pipe 10” and above will be standard weight .375 wall or extra heavy .500 wall.

Insulation:
Carrier pipe insulation is hi-temp foam insulation K factor of .165 density of 2 PCF, closed cell content of 90%, compressive strength of 35 PSI, and carrier temperature of 300ºF and shall conform to ASTM standard D1621, 1622, 1623, 2126, 2842, 2856, and C518-91 completely filling the annular space between the carrier pipe and jacketing. Minimum insulation thickness shall be in accordance with Table 1.

Jacketing Material:
High impact, seamless Polyvinylchloride (PVC) Class 12454-B compound conforming to ASTM 1784, Type 1, Grade 1, through 14" diameter. Above 16”, use high density, polyethylene (HDPE) minimum thickness 150 mils per ASTM D1248 and D3350 for Type III, Category 5, Class C and Grade P23 & P34. No FRP overwrap or sprayed jacketing will be allowed. Minimum jacket thickness shall be in accordance with Table 1.

Table 1:

Nominal Pipe Size in Inches	Minimum Insulation Thickness in Inches	Jacket Size in Inches	Jacket Thickness in Mills
1/2	1.58	4	60
3/4	1.48	4	60
1	1.34	4	60
1 1/4	1.17	4	60
1 1/2	1.05	4	60
2	1.81	6	70
2 1/2	1.56	6	70
3	1.25	6	70
4	1.75	8	80
5	2.22	10	100
6	1.68	10	100
8	1.68	12	120
10	1.64	14	140
12	1.46	16	175
14	1.72	18	200
16	1.70	20	200
18	1.89	22	200
20	2.24	24	225

*Larger pipe sizes are available upon request.

Joining Method:
Straight lengths of pipe will be joined by welding.

Fittings:
All fittings will conform to pipe type and will be insulated and jacketed with materials supplied by the system supplier and as per manufacturers' standard procedures.

End Seals:
Each length of pre-insulated pipe will be fitted with a watertight mastic end seal at jacket and pipe surfaces. All field cuts will be sealed with a field applied end seal.

Insulation of Straight Joints:
After welding and testing, all joints shall be insulated and sealed as per manufacturer's standard procedures.

Anchors:
1/2" thick steel anchor plate is attached to internal pipe and sealed to pipe jacketing as per system supplier's recommendations.

Backfill: (if below ground)
Should be tamped compactly in place so as to assure a stable surface. No rock should be used in the first foot of backfill. 24 inches, top of pipe to grade, of compacted fill shall meet H-20 Highway Loading.

Manufacturer’s Assistance:
Rovanco will provide a field service man on-site to properly train the installing personnel in all phases of installation. (if required)

Approved Vendors:
Steel Pipe System by Rovanco, Joliet, Illinois or approved equal. Any alternate supplier must submit their technical data to the engineer ten days prior to bid date to be approved in writing as an equal.

Contact Your Rovanco® Representative

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FAX (815) 741-4229