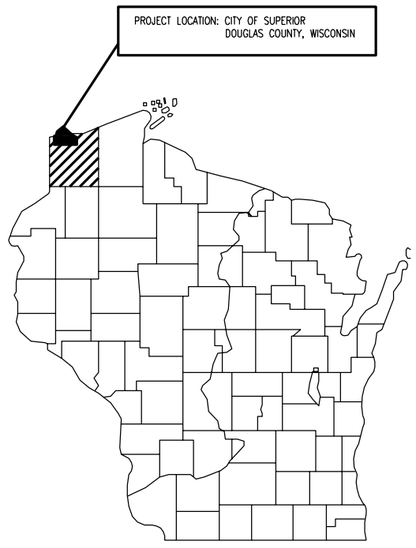
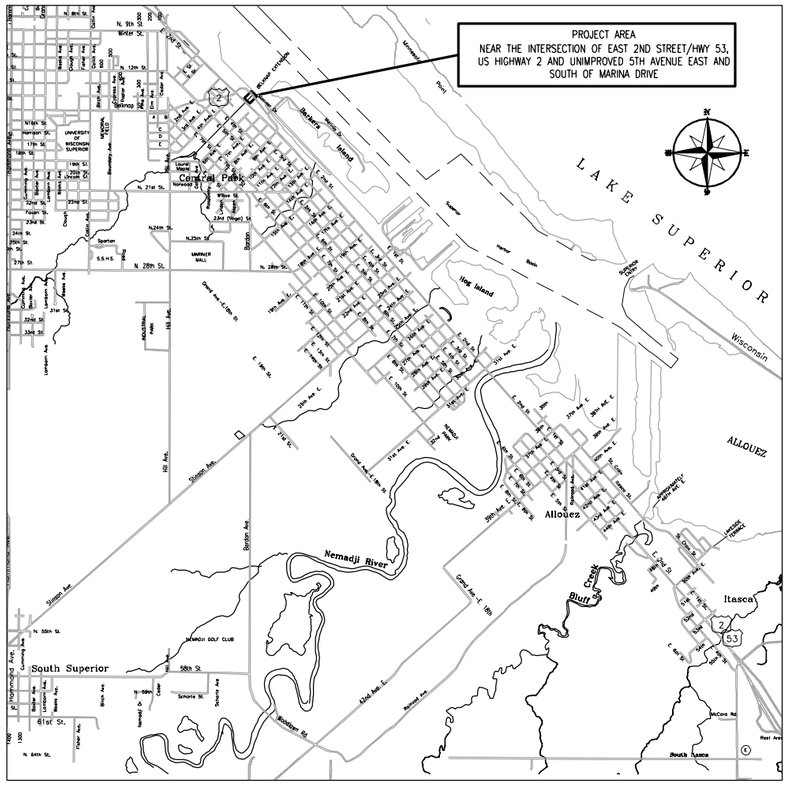
# CITY OF SUPERIOR
# EAST 2ND STREET
# RELIEF SEWER CONTROL STRUCTURE

## SUPERIOR, WISCONSIN
## JULY 2012




WISCONSIN




001–GENERAL

| | | |
|---|---|---|
| 1 | | COVER SHEET |

002– SITE DEVELOPMENT

| | | |
|---|---|---|
| | CIVIL | |
| 2 | 002–CFP–1 | FACILITIES AND PIPING PLAN |
| 3 | 002–EN–1 | ELECTRICAL SITE PLAN AND DETAILS |

007– ELECTRICAL DISTRIBUTION

| | | |
|---|---|---|
| | ELECTRICAL | |
| 4 | 007–E–1 | ONE–LINE, PANEL & CONDUIT SCHEDULE, SECTION, AND DETAIL |

100– VALVE AND METER VAULT

| | | |
|---|---|---|
| | STRUCTURAL | |
| 5 | 100–S–1 | PLANS AND SECTION |
| | MECHANICAL– PROCESS | |
| 6 | 100–M–1 | PLAN, SECTION AND DETAILS |
| | ELECTRICAL/INSTRUMENTATION & CONTROLS | |
| 7 | 100–EN–1 | PLANS AND DETAILS |

999– STANDARD DETAILS

| | | |
|---|---|---|
| | CIVIL | |
| 8 | 999–C–1 | STANDARD DETAILS |
| | STRUCTURAL | |
| 9 | 999–S–1 | STANDARD DETAILS |
| | ELECTRICAL/INSTRUMENTATION & CONTROLS | |
| 10 | 999–EN–1 | STANDARD DETAILS |
| 11 | 999–EN–2 | STANDARD DETAILS |

RECORD DRAWING

REVISED TO CONFORM TO CONSTRUCTION RECORDS PROVIDED BY CONTRACTOR

BY: MIKE JENSEN DATE: 08/28/2014

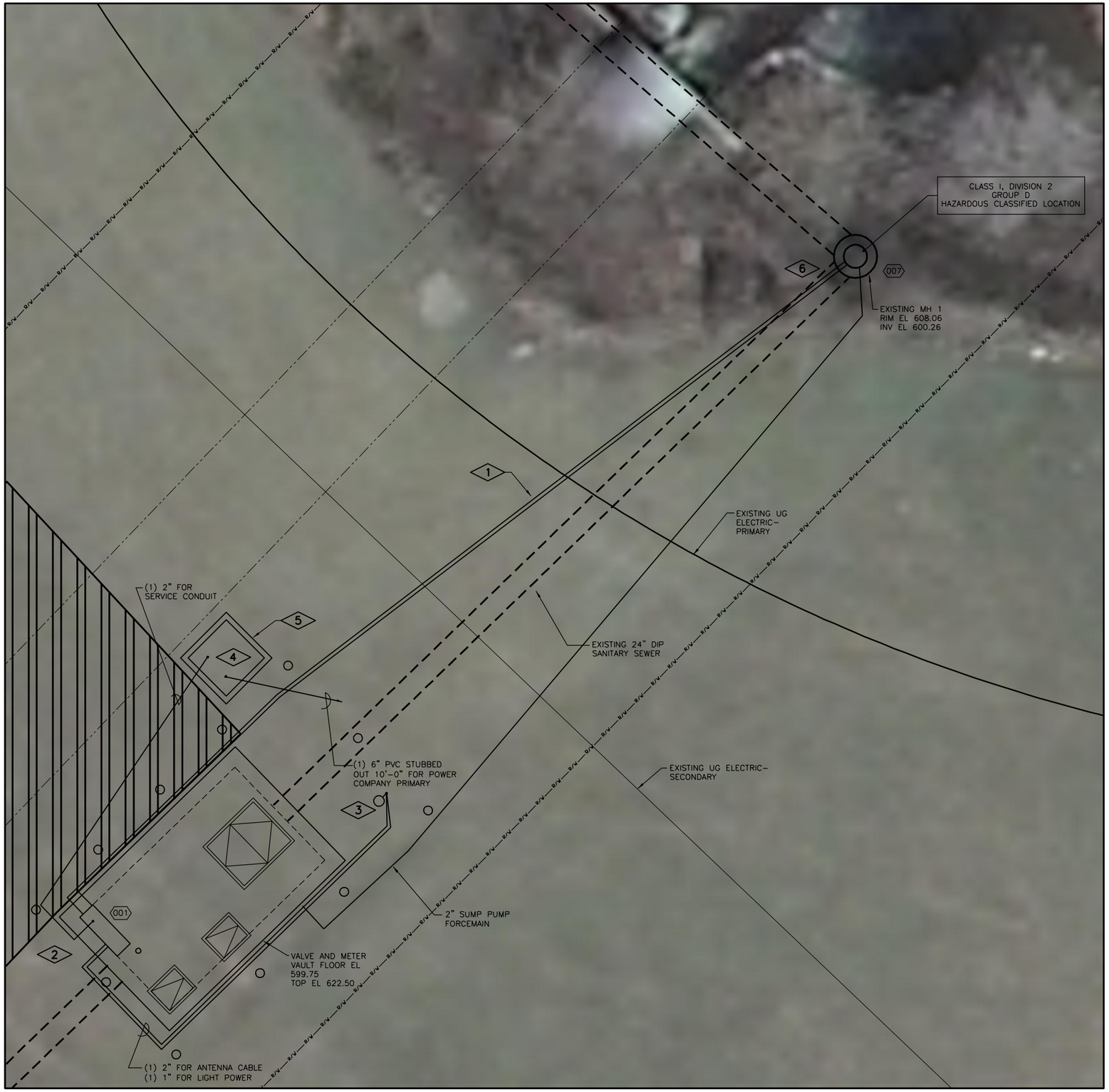
PREPARED FOR

CITY OF SUPERIOR
1316 NORTH 14TH STREET
SUPERIOR, WI 54880


PREPARED BY

DONOHUE & ASSOCIATES

3311 WEEDEN CREEK ROAD
SHEBOYGAN, WISCONSIN 53081
920–208–0296



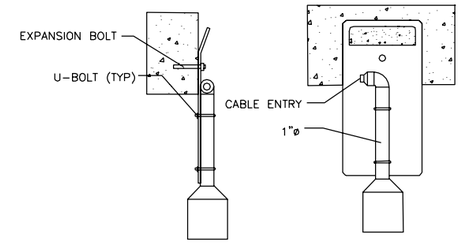

## GENERAL NOTES:

1. CONTRACTOR SHALL COORDINATE WITH ELECTRIC UTILITY TO BRING IN PRIMARY FEED TO UTILITY TRANSFORMER. CONTRACTOR SHALL COORDINATE COST FOR INSTALLATION OF UTILITY TRANSFORMER AND ASSOCIATED CONDUIT AND CONDUCTORS WITH UTILITY COMPANY.
2. COORDINATE BURIED CONDUIT TO NOT INTERFERE WITH BOLLARD LOCATIONS.

## PLAN NOTES:

1. CONDUIT FROM VALVE VAULT TO EXISTING MANHOLE NO. 1. SEE DRAWING 007-E-1 FOR CONDUIT DETAIL. PITCH CONDUIT TOWARD MANHOLE.
2. CONTROL PANEL.
3. LIGHT POLE. SEE DETAIL (E999) ON DRAWING 999-EN-1.
4. ELECTRIC UTILITY TRANSFORMER 240/120V, 3ø, 4W SECONDARY. CONTRACTOR SHALL COORDINATE CONDUIT RUN TO UTILITY TRANSFORMER WITH UTILITY.
5. TRANSFORMER EQUIPMENT PAD SHALL BE IN ACCORDANCE WITH ELECTRIC UTILITY REQUIREMENTS.
6. LEVEL SENSOR LOCATION AT MANHOLE. SEE DETAIL (N275) FOR INSTALLATION GUIDELINES. RUN FOUR SHIELDED PAIR CABLES FROM SENSOR TO CONTROL PANEL AT VALVE VAULT. CORE DRILL MANHOLE AT TOP OF MANHOLE BELOW GRADE. CONTRACTOR SHALL INSTALL EXPLOSION PROOF SEAL OFFS ON CONDUITS GOING FROM MANHOLE TO PANEL.

0 5'




ULTRASONIC LEVEL MOUNTING DETAIL
NO SCALE

**ULTRASONIC LEVEL MOUNTING DETAIL N275**
NTS

INSTRUMENTATION & CONTROL – FIELD WIRING REQUIREMENTS

| ID | TAG NAME | DETAIL | WIRING | DESTINATION | ID | COMMENTS |
|---|---|---|---|---|---|---|
| 001 | 100-LCP | E061 | 120 VAC | 100-LP | 002 | |
| 007 | 100-LE/LT | MNFC | 4 SH.PR. | 100-LCP (PLC) | 001 | SEE DETAIL ON 100-EN-1 |

**RECORD DRAWING**

REVISED TO CONFORM TO CONSTRUCTION RECORDS PROVIDED BY CONTRACTOR

BY: MIKE JENSEN DATE: 08/28/2014

| Revision Number | Revision Description | Drawn By | Checked By | Date |
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|---|---|
| Designed By | MRS/CRP |
| Drawn By | MRS/CRP |
| Checked By | JAB/MLM |
| Approved By | ESN |
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| Project No. | 11699 |
| Project Date | JULY 2012 |

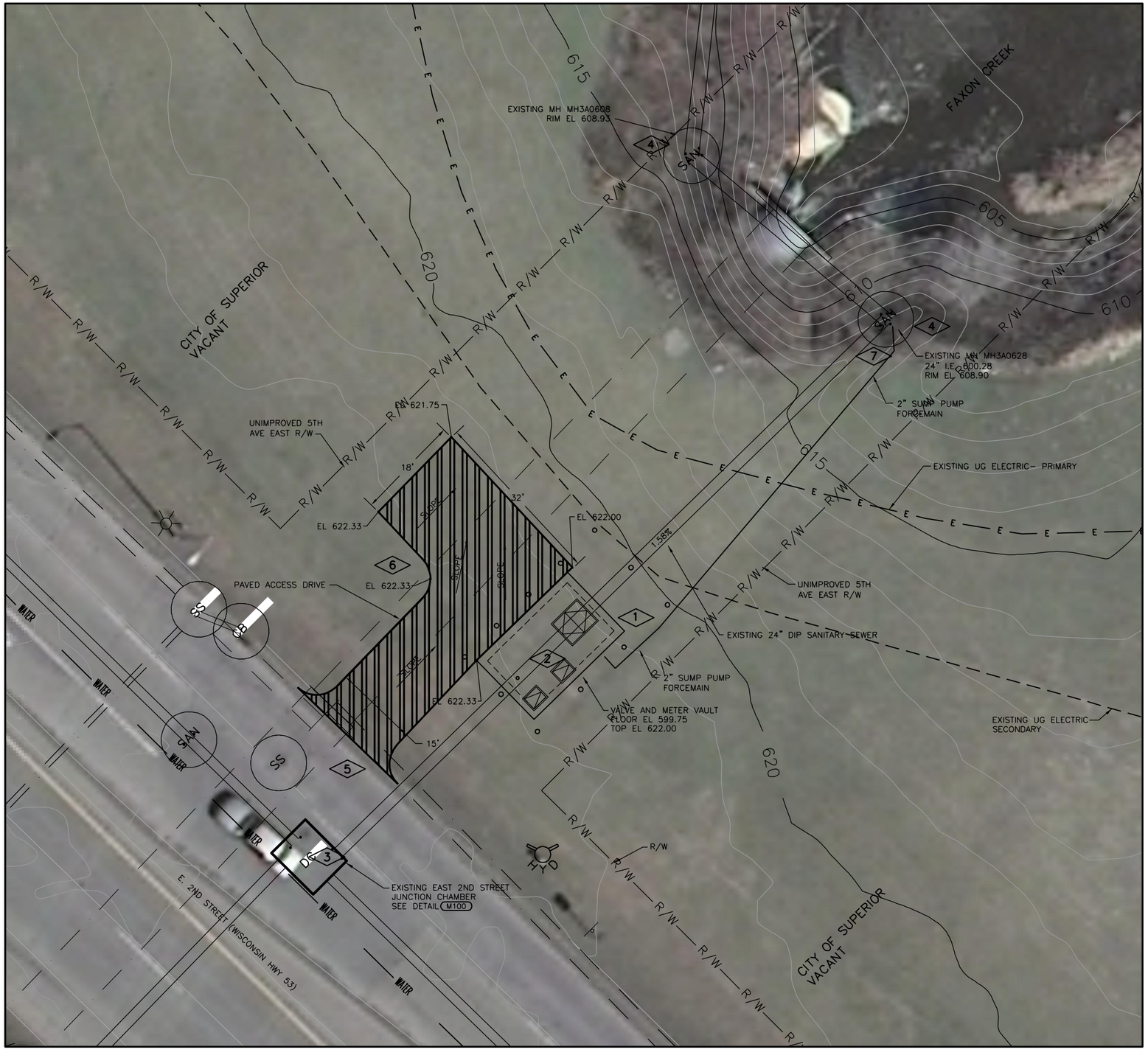
CITY OF SUPERIOR, WISCONSIN
EAST 2ND STREET
RELIEF SEWER CONTROL STRUCTURE
SUPERIOR, WISCONSIN

**ELECTRICAL SITE PLAN AND DETAILS**

DONOHUE & ASSOCIATES

Sheet No. 3

Drawing No. **002-EN-1**




## PLAN NOTES:

1. MATCH EXISTING GRADE
2. CLASS I, DIVISION 2
   HAZARDOUS CLASSIFIED LOCATION
3. CLASS I, DIVISION 1
   GROUP D
   HAZARDOUS CLASSIFIED LOCATION
4. MANHOLE MAY BE USED FOR LOCAL BENCHMARK.
5. SAWCUT AND REMOVE 25' OF CURB AND GUTTER FOR DRIVEWAY ACCESS. INSTALL A 10' CONCRETE APRON PER DETAIL (C200).
6. INSTALL ASPHALT PAVEMENT TO LIMITS SHOWN PER DETAIL (C200).
7. CONNECT 2" SUMP PUMP FORCEMAIN TO EXISTING MANHOLE. CORE DRILL AT ℄ EL 603.00 AND SEAL WITH TWO STAINLESS STEEL MECHANICAL SEALS.

0 10'

## GENERAL NOTES:

1. DIMENSIONS TAKE PRECEDENCE OVER SCALE. CONTRACTOR TO VERIFY ALL DIMENSIONS AND COORDINATES IN THE FIELD FOR PROPER FIT AND ALIGNMENT.
2. THE CONTRACTOR SHALL CONTACT THE WISCONSIN ONE-CALL SYSTEM, AT 1-800-242-8511 A MINIMUM OF 72 HOURS PRIOR TO PERFORMING ANY EARTH MOVING OR EXCAVATION ACTIVITIES. THE CONTRACTOR SHALL ALSO CONTACT ANY OTHER UTILITIES WHICH MAY BE PRESENT WHICH ARE NOT PART OF THE ONE CALL SYSTEM. NOTIFY PLANT STAFF ONE WEEK IN ADVANCE OF PLANT UTILITY LOCATION NEEDS TO ALLOW ADEQUATE RESPONSE TIME FOR PLANT STAFF.
3. EXISTING BURIED UTILITIES SHOWN ON THE DRAWINGS ARE INDICATED IN ACCORDANCE WITH THE AVAILABLE RECORDS AND FIELD INFORMATION AVAILABLE TO THE ENGINEER. OTHER UTILITIES MAY ALSO BE PRESENT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING FROM THE OWNERS OF THE EXISTING UTILITIES THE LOCATION OF THEIR BURIED FACILITIES. ANY UTILITIES DAMAGED OR DESTROYED BY THE CONTRACTOR'S OPERATIONS WHETHER SHOWN ON THE DRAWINGS OR NOT, SHALL BE REPLACED OR REPAIRED TO THE UTILITY'S SATISFACTION AT NO COST TO THE OWNER.
4. IF UTILITY FACILITIES OTHER THAN THOSE SHOWN ARE LOCATED, OR IF UTILITIES ARE LOCATED WHICH ARE NOT IN ACCORDANCE WITH THE LOCATION SHOWN ON THE DRAWINGS, THE ENGINEER SHALL BE NOTIFIED TO DETERMINE IF PLAN REVISIONS ARE NEEDED. CONTRACTOR IS REQUIRED TO FIELD LOCATE ALL CROSSING UTILITIES SUFFICIENTLY IN ADVANCE OF CONSTRUCTION ACTIVITIES TO ALLOW ENGINEER TO REVISE LOCATIONS OF NEW FACILITIES TO AVOID CONFLICTS WITHOUT ADDITIONAL COST TO OWNER.
5. ACCESS CONSTRAINTS TO BE PLACED ON THE CONTRACTOR FOR THE PROJECT ARE SPECIFIED IN SECTION 01110 OF THE SPECIFICATIONS.
6. CONTRACTOR SHALL MAINTAIN ACCESS TO ALL SITE FACILITIES DURING CONSTRUCTION. CONTRACTOR SHALL PLAN HIS WORK SEQUENCE AND ACTIVITIES TO ENSURE THAT HIS WORK DOES NOT INTERFERE WITH PUBLIC NEEDS OR PUBLIC FACILITIES OPERATIONS, DELIVERIES, PICKUPS OR OTHER ACCESS NEEDS.
7. THE CONTRACTOR SHALL COORDINATE THE ACTIVITIES OF HIS PERSONNEL, SUBCONTRACTORS, AND UTILITIES PERFORMING WORK ON THIS PROJECT. THE CONTRACTOR SHALL ALSO COORDINATE WITH ANY OTHER CONTRACTORS WORKING IN OR NEAR THE PROJECT AREA.
8. ELEVATIONS CALLED OUT ON THE CIVIL DRAWINGS ARE TYPICALLY AT THE "INVERT" OR BOTTOM OF PIPES AND STRUCTURES, ALONG THE FLOW LINE IN GUTTERS AND SWALES, AND AT THE "RIM" OR TOP (FINISHED GRADE) OF THE FRAME AND COVERS. OTHER ELEVATIONS ARE SPECIFICALLY NOTED.
9. UNLESS NOTED OTHERWISE RESTORATION OF EXISTING SANITARY SEWERS AND SERVICE LINES, WATER MAINS AND SERVICE LINES, STORM SEWERS, OTHER UTILITIES, SIDEWALKS, CURBS, DRIVEWAYS, STREETS OR OTHER IMPROVEMENTS NOT SHOWN AS BEING REMOVED, REPLACED OR MODIFIED BY THE PROJECT IS REQUIRED ONLY TO THE EXTENT THEY ARE DAMAGED OR DISTURBED BY CONSTRUCTION ACTIVITIES. THE CONTRACTOR SHALL RESTORE ALL DAMAGED AND DISTURBED IMPROVEMENTS TO THE IMPROVEMENT OWNERS AND ENGINEERS SATISFACTION.
10. WHERE NEW WORK ABUTS EXISTING CURBS, SIDEWALK, DRIVES, OR OTHER PAVEMENTS WHICH ARE TO REMAIN IN PLACE, THE CONTRACTOR SHALL PROVIDE NEAT SAWCUTS, FULL DEPTH AT THE LIMIT OF CONSTRUCTION.
11. CONTRACTOR SHALL PROVIDE SUPPORT AND SHALL MAINTAIN SERVICE TO ALL ABOVE AND BELOW GRADE UTILITIES INCLUDING POLES, CABLES, WIRES, WATER, GAS, STORM , AND SANITARY FACILITIES, OR WITH THE WRITTEN CONCURRENCE OF THE UTILITY OWNER, MAY REMOVE, STORE, REINSTALL AND REPLACE AS NECESSARY.
12. THE CONTRACTOR SHALL MAKE PROVISIONS TO MAINTAIN FLOWS IN ALL SANITARY, STORM, COMBINED SEWERS AND OVERFLOWS AT ALL TIMES. BYPASS PUMPING MAY BE REQUIRED AND SHALL BE SUFFICIENT TO CONVEY THE FLOWS UNDER ALL CONDITIONS INCLUDING WET WEATHER OR ALTERNATE PROVISIONS ARE MADE FOR FLOW CONTROL.
13. CONTRACTOR IS RESPONSIBLE FOR SITE SAFETY DURING CONSTRUCTION OF THE PROJECT.
14. THE CONTRACTOR SHALL PROTECT ALL PROPERTY PINS (STEEL REBARS, PIPES, CAPPED PINS, ETC.) WHETHER SHOWN ON THE PLANS OR ENCOUNTERED DURING CONSTRUCTION FROM BEING DAMAGED, DESTROYED OR MOVED. IF PROPERTY PINS ARE DAMAGED, DESTROYED OR MOVED, THE CONTRACTOR SHALL PROVIDE THE SERVICES OF A REGISTERED WISCONSIN LAND SURVEYOR TO REPLACE THEM AT NO COST TO THE OWNER.
16. CONTRACTOR SHALL ACCESS THE SITE FROM WISCONSIN STATE HIGHWAY 53. CONTRACTOR SHALL PROVIDE AND MAINTAIN TRACKING PADS AT THE ACCESS SITE.
17. CONTRACTOR SHALL PROTECT EXISTING UTILITIES, STORM SEWERS, WATERWAYS AND WETLANDS.
18. SEE K-STREET STORM SEWER RECONSTRUCTION DRAWINGS FOR OTHER UTILITIES IN THE WORKING AREA, STAGING AREA AND SITE RESTORATION.

**RECORD DRAWING**

REVISED TO CONFORM TO CONSTRUCTION RECORDS PROVIDED BY CONTRACTOR

BY: MIKE JENSEN DATE: 08/28/2014

| Revision Number | Revision Description | Drawn By | Checked By | Date |
|---|---|---|---|---|
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| Designed By | EJM |
| Drawn By | EJM |
| Checked By | ESN |
| Approved By | ESN |
| Filename | 002CFP1.DWG |
| Project No. | 11699 |
| Project Date | JULY 2012 |

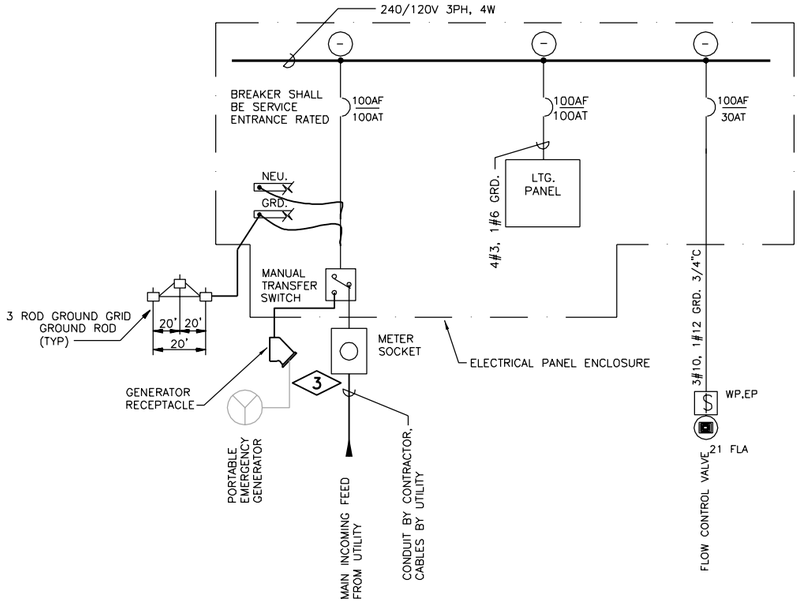
CITY OF SUPERIOR, WISCONSIN
EAST 2ND STREET
RELIEF SEWER CONTROL STRUCTURE
SUPERIOR, WISCONSIN

**FACILITIES AND PIPING PLAN**

DONOHUE & ASSOCIATES

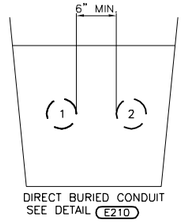
Sheet No. 2

Drawing No. 002-CFP-1




## DUCTBANK SCHEDULE

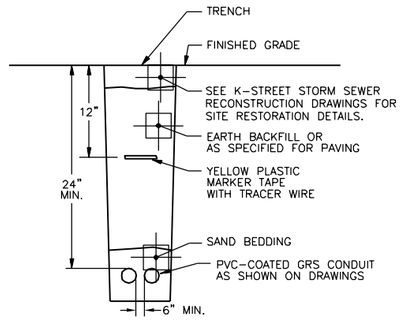
| NUMBER | SIZE | FROM | TO | CONTENTS | REMARKS |
|---|---|---|---|---|---|
| 1 | 2" | VALVE VAULT PANEL | EXIST. MH NO. 1 | CONTROL | LEVEL ELEMENT, 4 SHIELDED PAIR |
| 2 | 2" | VALVE VAULT PANEL | EXIST. MH NO. 1 | SPARE | – |




**CONDUIT SECTION A**

NTS

002-EN-1




**UNDERGROUND CONDUIT DETAIL E210**

NTS

## LIGHTING PANEL 100LP-1 SCHEDULE

120/240 V, 3 PHASE, 4 WIRE
RATING 22,000 A.I.C.

100A MAIN BREAKER
100A MAIN BUS
100A GRD. BUS

| CKT. NO. | TRIP/P | DESCRIPTION | PHASE A | PHASE B | PHASE C | DESCRIPTION | TRIP/P | CKT. NO. | |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 100/3 | MAIN BREAKER | • | | | GFCI OUTLET NON-INTRINSICALLY SAFE | 20/1 | 2 | 1 |
| 3 | | | | • | | GFCI OUTLET NON-INTRINSICALLY SAFE | 20/1 | 4 | 1 |
| 5 | | | | | • | PLC CONTROL POWER | 20/1 | 6 | |
| 7 | 20/1 | MAIN PANEL HEATER | • | | | VALVE VAULT LIGHT FIXTURE | 20/1 | 8 | |
| 9 | 20/1 | 100-LCP CONTROLS CABINET | | • | | GFCI OUTLET - SUMP PUMP | 20/1 | 10 | 2 |
| 11 | 20/1 | SITE LIGHTING | | | • | SPARE | 20/1 | 12 | |
| 13 | 30/1 | SPARE | • | | | SPARE | 20/1 | 14 | |
| 15 | | SPACE | | • | | SPACE | | 16 | |
| 17 | | SPACE | | | • | SPACE | | 18 | |
| | | TOTALS: | – | – | – | | | | |

## PLAN NOTES:

1. OUTLET SHALL BE MOUNTED INSIDE OF PANEL. CIRCUITS 2 AND 4 MUST HAVE MEANS TO SIMULTANEOUSLY DISCONNECT PER NEC 210.7-B. THESE CIRCUITS ARE ON THE SAME YOKE. VERIFY WITH NEC CODE
2. INTRINSICALLY SAFE OUTLET SHALL BE MOUNTED INSIDE VAULT FOR SUMP PUMP. VERIFY BREAKER SIZE WITH PUMP MANUFACTURER RECOMMENDATIONS. VERIFY RECEPTACLE CONFIGURATION WITH SUMP PUMP MANUFACTURER.
3. PROVIDE GENERATOR RECEPTACLE IN ELECTRICAL ENCLOSURE. PRIOR TO ENCLOSURE CONSTRUCTION, COORDINATE THE TYPE OF GENERATOR RECEPTACLE COMPATIBLE WITH THE OWNER'S GENERATOR EQUIPMENT. CONTRACTOR SHALL WIRE RECEPTACLE TO MANUAL TRANSFER SWITCH INSIDE ELECTRICAL PANEL. SEE E061 ON PAGE 999-EN-1 FOR RECEPTACLE AND MANUAL TRANSFER SWITCH LOCATIONS.

**RECORD DRAWING**

REVISED TO CONFORM TO CONSTRUCTION RECORDS PROVIDED BY CONTRACTOR

BY: MIKE JENSEN DATE: 08/28/2014

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| Designed By | MRS |
| Drawn By | MRS |
| Checked By | JAB |
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| Project No. | 11699 |
| Project Date | JULY 2012 |

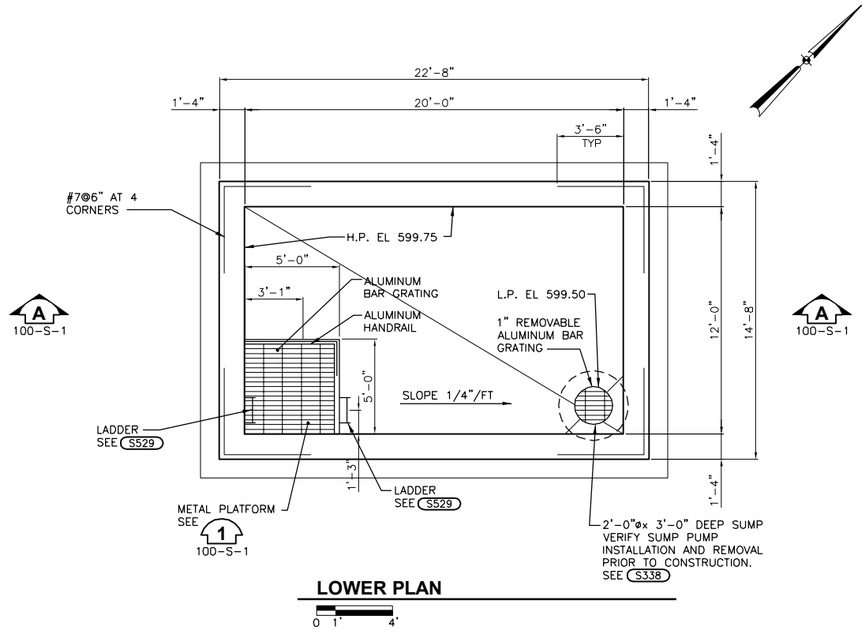
CITY OF SUPERIOR, WISCONSIN
EAST 2ND STREET
RELIEF SEWER CONTROL STRUCTURE
SUPERIOR, WISCONSIN

**ELECTRICAL**
**ONE-LINE, PANEL & CONDUIT SCHEDULE, SECTION, & DETAIL**

DONOHUE & ASSOCIATES

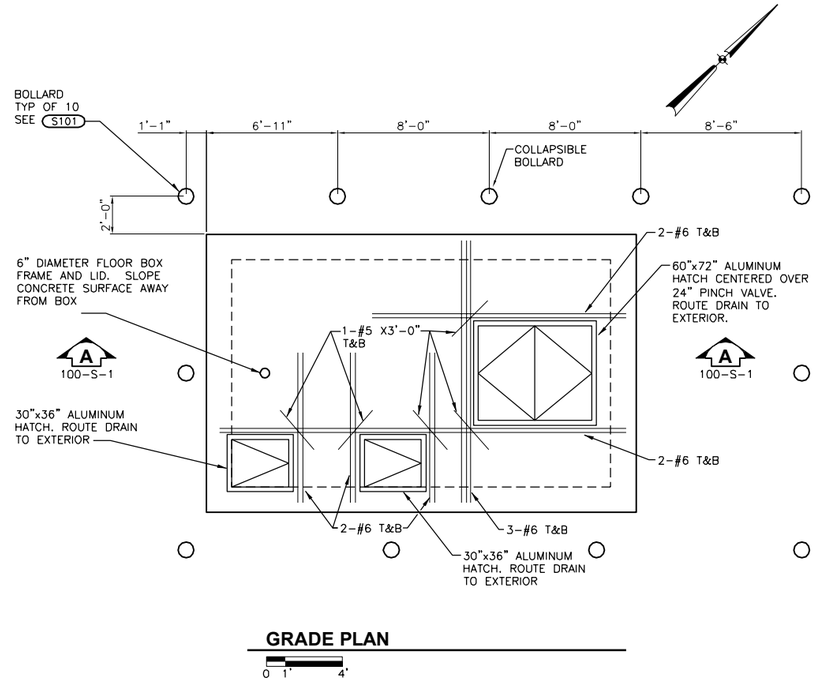
Sheet No. 4

Drawing No. 007-E-1



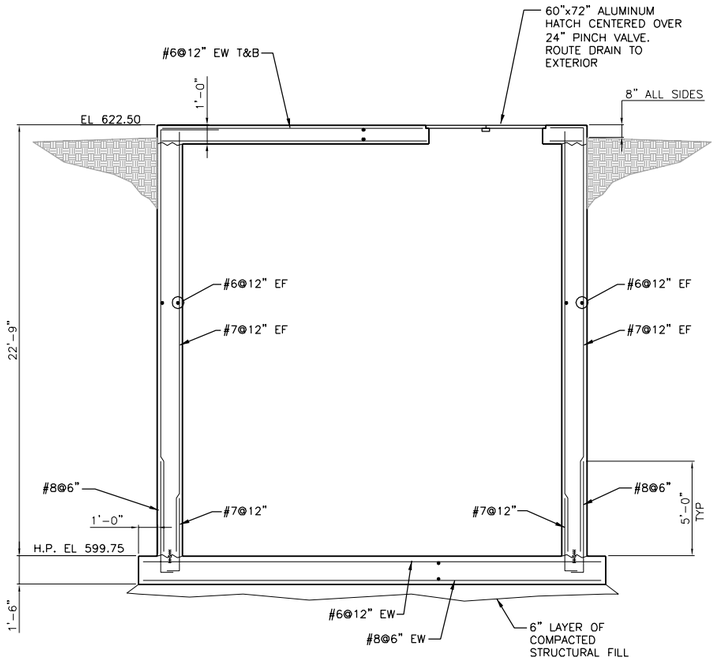

## LOWER PLAN

0 1" 4'



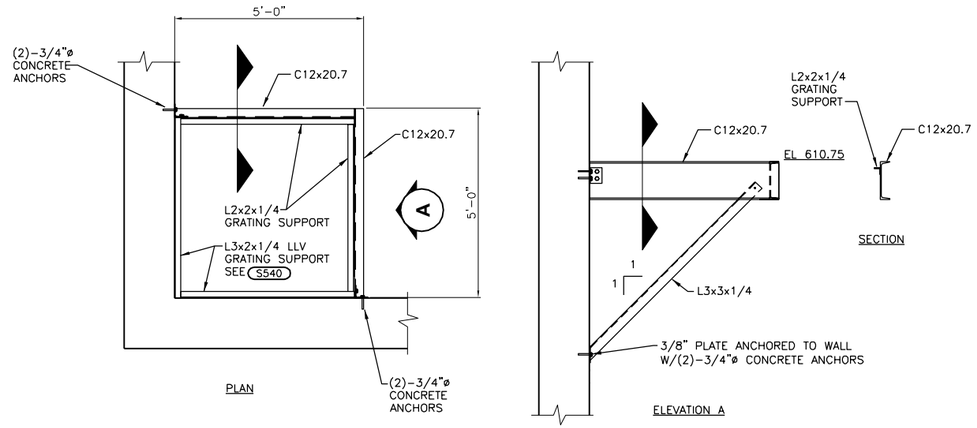

## GRADE PLAN

0 1" 4'




## SECTION A

0 1" 4'




NOTE: HOT-DIP GALVANIZE ALL STRUCTURAL STEEL

## METAL PLATFORM DETAIL 1

100-S-1

0 1" 4'

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| Designed By | AJT |
| Drawn By | AJT |
| Checked By | PJE |
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| Project Date | JULY 2012 |

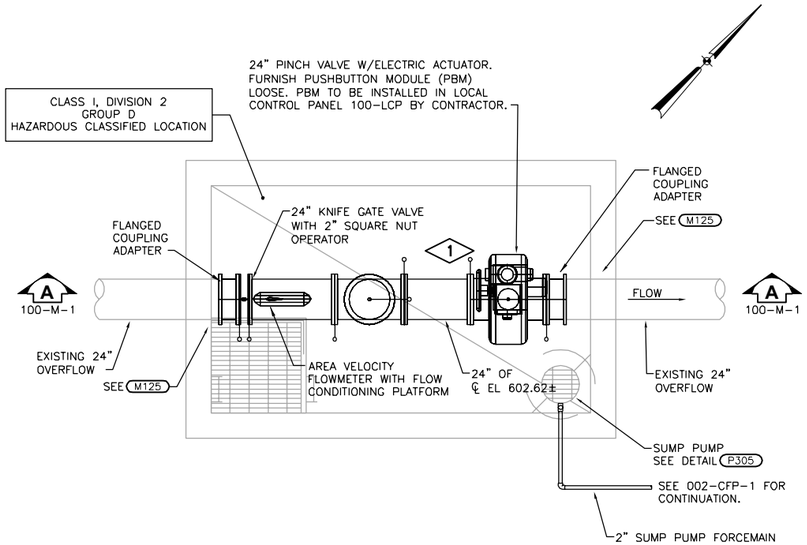
CITY OF SUPERIOR, WISCONSIN
EAST 2ND STREET
RELIEF SEWER CONTROL STRUCTURE
SUPERIOR, WISCONSIN

**PLANS AND SECTION**

DONOHUE & ASSOCIATES

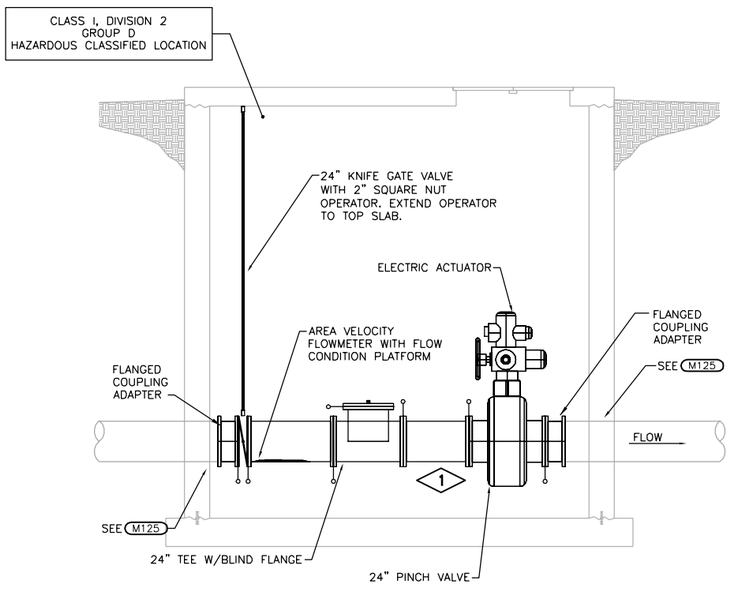
Sheet No. 5

Drawing No. 100-S-1




**LOWER PLAN**

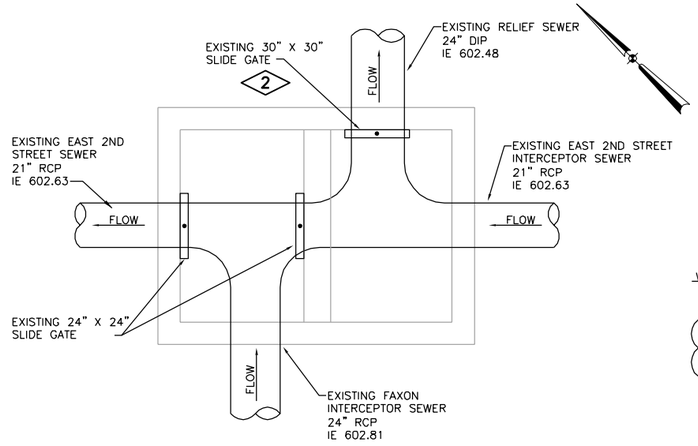
0 1' 4'




**SECTION A**

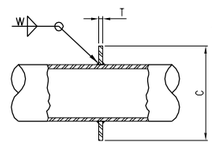
100-M-1

0 1' 4'




**EXISTING EAST STREET JUNCTION CHAMBER DETAIL M100**

NTS

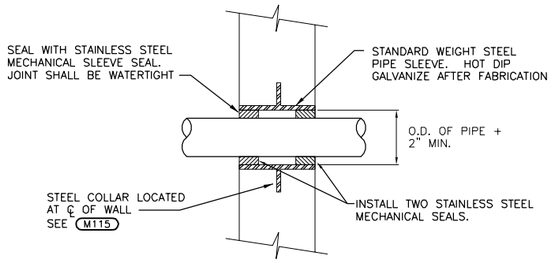



MINIMUM DIMENSIONS

| NOMINAL PIPE DIA (INCHES) | T THICKNESS (INCHES) | C DIAMETER (INCHES) | W WELD SIZE (INCHES) |
|---|---|---|---|
| 4 | 0.375 | 8.00 | 3/16 |
| 6 | 0.375 | 10.00 | 3/16 |
| 8 | 0.375 | 12.50 | 3/16 |
| 10 | 0.375 | 14.50 | 3/16 |
| 12 | 0.375 | 16.50 | 3/16 |
| 14 | 0.50 | 19.50 | 1/4 |
| 16 | 0.50 | 21.75 | 1/4 |
| 18 | 0.50 | 23.75 | 1/4 |
| 20 | 0.50 | 25.75 | 1/4 |
| 24 | 0.50 | 30.25 | 1/4 |
| 30 | 0.75 | 36.50 | 5/16 |
| 36 | 0.75 | 43.00 | 5/16 |
| 42 | 0.75 | 49.50 | 5/16 |
| 48 | 1.25 | 56.50 | 5/16 |
| 54 | 1.50 | 63.00 | 5/16 |

**STEEL WALL AND FLOOR PIPE COLLAR DIMENSION DETAIL M115**

NTS




**WALL SLEEVE DETAIL M125**

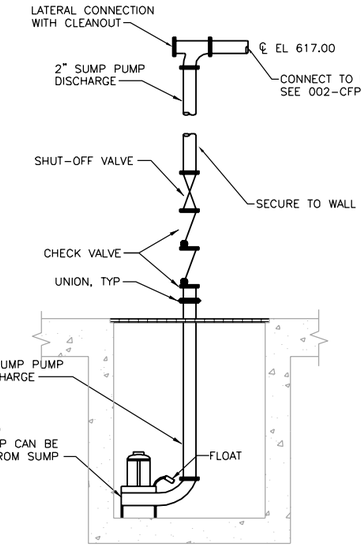
NTS

## GENERAL NOTES:

1. CONTRACTOR SHALL VERIFY DIMENSIONS, ELEVATIONS AND LOCATIONS PRIOR TO WORK.

## PLAN NOTES:

1. SUPPORT VALVE AND PIPE AS REQUIRED.
2. EXISTING 30" X 30" SLIDE GATE TO REMAIN FULLY OPEN AT THE CLOSE OF THE PROJECT. CONDITION OF SLIDE GATE IS UNKNOWN. CONTRACTOR MAY UTILIZE SLIDE GATE FOR ISOLATION OF 24" RELIEF SEWER DURING DRY WEATHER FLOW CONDITIONS AND OWNER'S APPROVAL.




**SUBMERSIBLE SUMP PUMP DETAIL P305**

NTS

**RECORD DRAWING**

REVISED TO CONFORM TO CONSTRUCTION RECORDS PROVIDED BY CONTRACTOR

BY: MIKE JENSEN DATE: 08/28/2014

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| Designed By | EJM |
| Drawn By | EJM |
| Checked By | ESN |
| Approved By | ESN |
| Filename | 100MP1.DWG |
| Project No. | 11699 |
| Project Date | JULY 2012 |

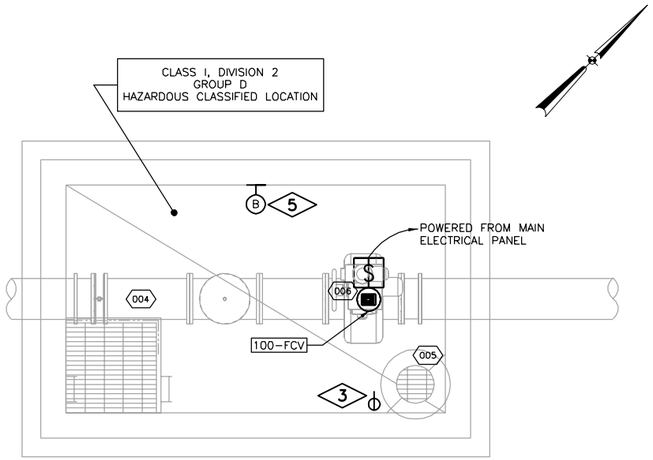
CITY OF SUPERIOR, WISCONSIN
EAST 2ND STREET
RELIEF SEWER CONTROL STRUCTURE
SUPERIOR, WISCONSIN

**PLAN, SECTION AND DETAILS**

DONOHUE & ASSOCIATES

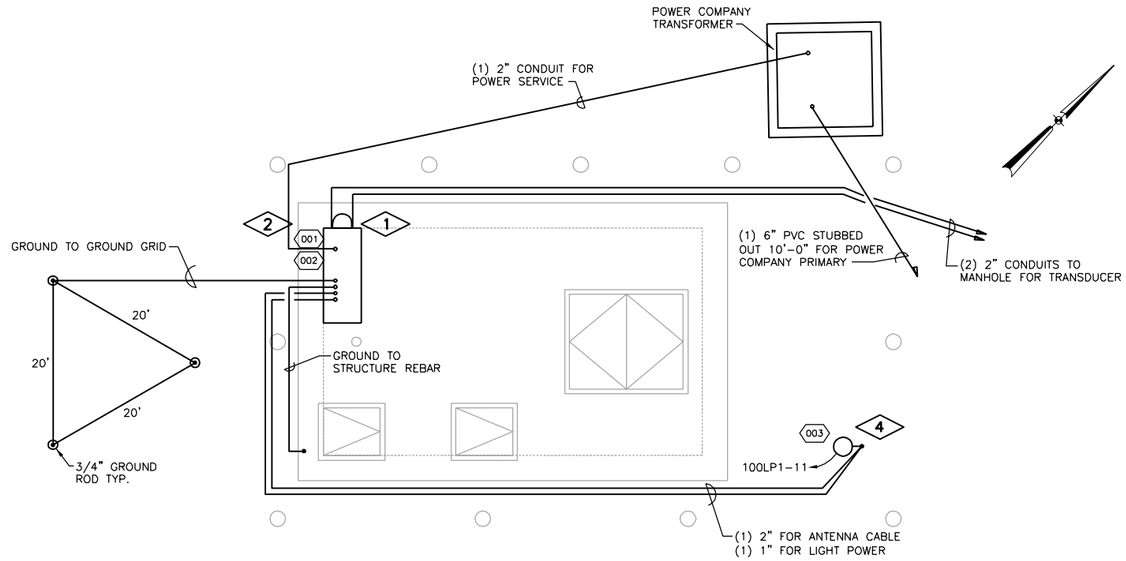
Sheet No. 6

Drawing No. 100-M-1




## LOWER PLAN

0 1' 4'




## GRADE PLAN

0 1' 4'

INSTRUMENTATION & CONTROL – FIELD WIRING REQUIREMENTS

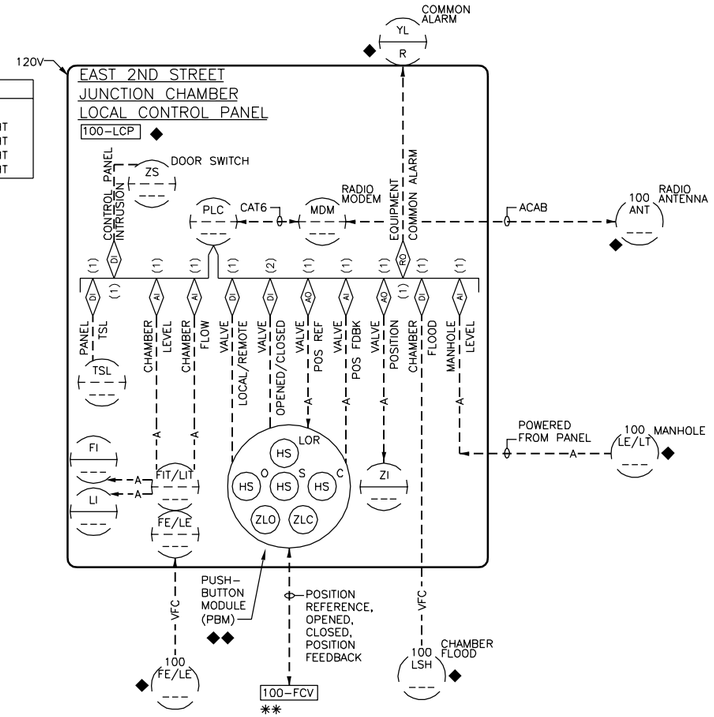
| ID | TAG NAME | DETAIL | WIRING | DESTINATION | ID | COMMENTS |
|---|---|---|---|---|---|---|
| 001 | 100-LCP | E061 | 120VAC | 100-LP | 002 | |
| 003 | 100-ANT | E061 | 1 ACAB | 100-LCP (MDM) | 001 | SEE DETAIL AT RIGHT |
| 004 | 100-FE/LE | N322 | 1 VFC | 100-LCP (FE/LE) | 001 | SEE DETAIL AT RIGHT |
| 005 | 100-LSH | N270 | 1 VFC | 100-LCP (PLC) | 001 | SEE DETAIL AT RIGHT |
| 006 | 100-FCV | MNFC | 6#14 | 100-LCP (HS) | 001 | SEE DETAIL AT RIGHT |

## INSTRUMENTATION & CONTROL GENERAL NOTES

1. TABLE ABOVE SHOWS CONTROL, SIGNAL AND ASSOCIATED SINGLE PHASE POWER WIRING REQUIREMENTS.
2. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL WIRING, WHETHER SHOWN OR NOT, NECESSARY FOR A COMPLETE AND OPERABLE SYSTEM.
3. SHIELDED AND UNSHIELDED CONDUCTORS SHALL BE RUN IN CONDUIT. SHIELDED CONDUCTORS SHALL NOT BE COMBINED WITH UNSHIELDED CONDUCTORS IN ANY CONDUIT. NEITHER SHIELDED NOR UNSHIELDED CONDUCTORS SHALL BE INCLUDED IN THE SAME CONDUIT AS POWER WIRING.
4. CONDUCTORS SHALL NOT BE SPLICED EXCEPT AT TERMINALS OR AS DESIGNATED BY ENGINEER.
5. ONLY REQUIRED CONDUCTORS ARE SHOWN ON PLAN. SPARE CONDUCTORS NOT SHOWN.
6. FOR EACH CONDUIT CONTAINING MORE THAN TWO CONDUCTORS, PROVIDE A MINIMUM OF TWO CONDUCTORS OR 10% OF TOTAL CONDUCTORS IN CONDUIT, WHICHEVER IS GREATER AS SPARES. TAG BOTH ENDS OF EACH SPARE. TERMINATE EACH END OF SPARE CONDUCTOR AT TERMINALS WHENEVER POSSIBLE.
7. CONDUIT SHALL BE SIZED TO ACCOMODATE REQUIRED CONDUCTORS AND ANTICIPATED SPARES.
8. THIS DRAWING DOES NOT SHOW CONDUIT SYSTEMS. PROVIDE, AS A MINIMUM, PULL BOXES AS RECOMMENDED BY CONDUCTOR MANUFACTURER. CONDULETS SHALL NOT BE USED AS PULL BOXES.
9. PROVIDE EXPLOSION-PROOF SEAL-OFF FITTINGS ON ALL CONDUIT EXITING CLASSIFIED OR RATED LOCATIONS. FITTINGS SHALL BE INSTALLED IN THE CLASSIFIED OR RATED LOCATION.

## INSTRUMENTATION & CONTROL LEGEND

| | |
|---|---|
| 120VAC | I&C POWER WIRING, SIZED BY CONTRACTOR |
| ( ) #14 | (QUANTITY) #14 THWN CONDUCTORS – CONTROL |
| ( ) SH.PR. | (QUANTITY) #16 SHIELDED PAIR CABLE – ANALOG |
| ( ) CAT6 | (QUANTITY) DATA HIGHWAY CABLE |
| ( ) ACAB | (QUANTITY) ANTENNA CABLE SPECIFIC TO RADIO TYPE |
| ( ) VFC | (QUANTITY) VENDOR FURNISHED CABLE |
| MNFC | MANUFACTURER DIRECTED MOUNTING |
| N/A | NOT APPLICABLE |




◆ PROVIDE COMPONENT IN ACCORDANCE WITH DIVISION 13.

◆◆ FURNISHED AS PART OF A MANUFACTURER'S OR VENDOR'S EQUIPMENT PACKAGE TO BE INSTALLED IN ACCORDANCE WITH DIVISION 13.

** FURNISHED AS PART OF A MANUFACTURER'S OR VENDOR'S EQUIPMENT PACKAGE, TO BE INSTALLED IN ACCORDANCE WITH DIVISION 11 AND DIVISION 15.

## PROCESS & INSTRUMENTATION DETAIL N100

## PLAN NOTES:

1. OUTDOOR ELECTRICAL CONNECTION POINT. REFER TO SHEET 999-EN-1 FOR MOUNTING DETAILS. REFER TO SHEET 007-E-1 FOR SCHEDULES. COORDINATE UTILITY CONDUIT AND CABLE WITH LOCAL UTILITY. ENSURE SERVICE RATED CONNECTION. INTERIOR OF VAULT IS CLASS 1 DIVISION 2 RATED, PROVIDE AIR GAP OR SEAL ALL CONNECTIONS AND INTERIOR OF CONDUITS AS REQUIRED BY NEC.
2. PERFORM RADIO PATH STUDY FOR DETERMINING ANTENNA REQUIREMENTS.
3. INSTALL EXPLOSION PROOF DUPLEX OUTLET WHICH IS CLASS 1 DIVISION 2 FOR SUMP PUMP. POWERED FROM 100LP1-10.
4. ANTENNA SHALL BE MOUNTED TO LIGHT POLE AS SHOWN ON DRAWING 999-EN-1 DETAIL (E999).
5. WALL MOUNTED LIGHT FIXTURE SHALL BE POWERED FROM 100LP1-8. SEE DETAIL (E500)

**RECORD DRAWING**

REVISED TO CONFORM TO CONSTRUCTION RECORDS PROVIDED BY CONTRACTOR

BY: MIKE JENSEN DATE: 08/28/2014

| Revision Number | Revision Description | Drawn By | Checked By | Date |
|---|---|---|---|---|
| | | | | |

| | |
|---|---|
| Designed By | MRS/CRP |
| Drawn By | MRS/CRP |
| Checked By | JAB/MLM |
| Approved By | SLY |
| Filename | 100ENP1.DWG |
| Project No. | 11699 |
| Project Date | JULY 2012 |

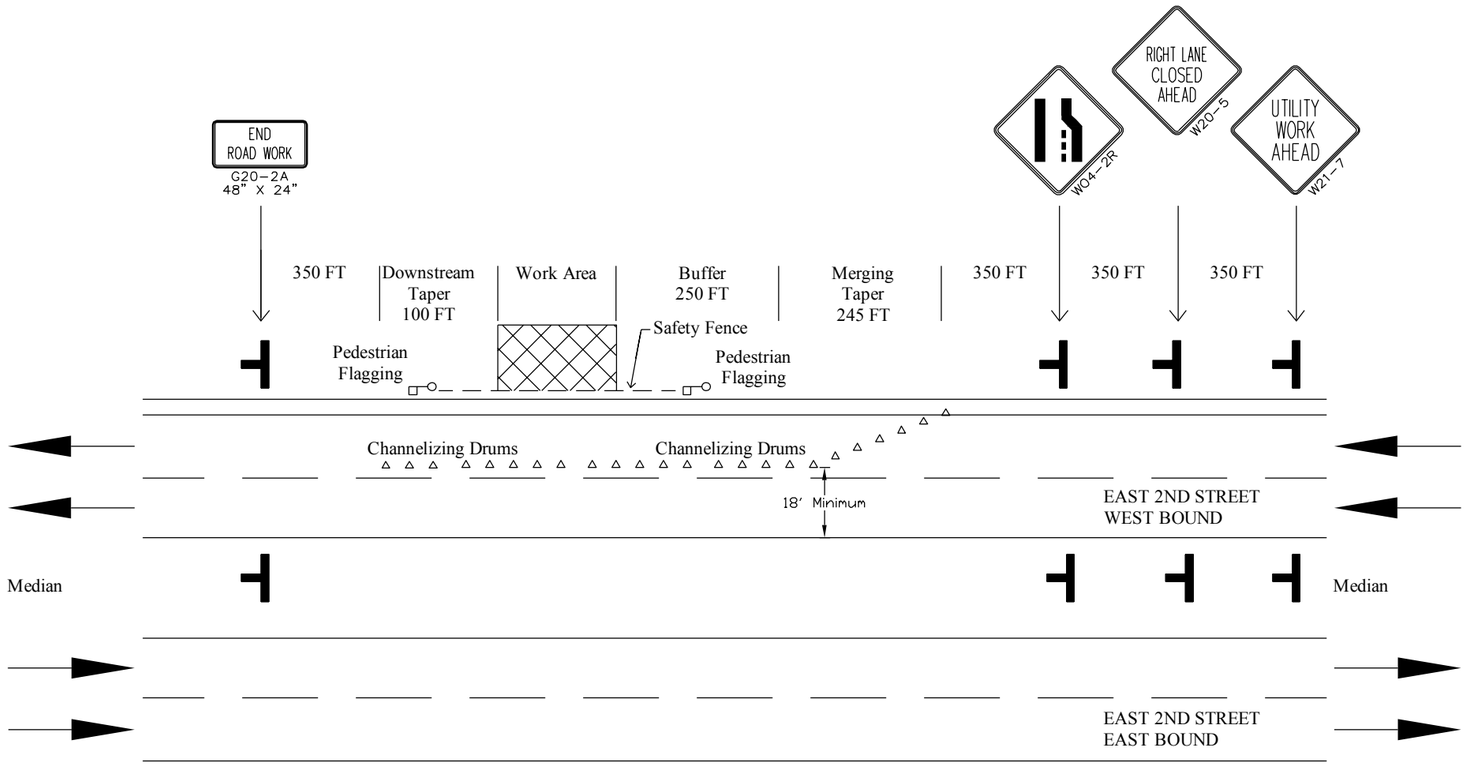
CITY OF SUPERIOR, WISCONSIN
EAST 2ND STREET
RELIEF SEWER CONTROL STRUCTURE
SUPERIOR, WISCONSIN

**PLANS AND DETAILS**

DONOHUE & ASSOCIATES

Sheet No. 7

Drawing No. **100-EN-1**



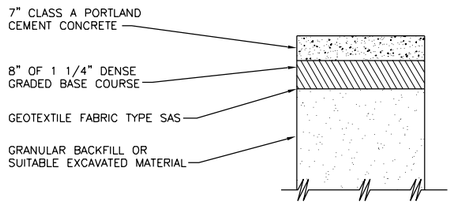

## SAMPLE TRAFFIC AND PEDESTRIAN CONTROL PLAN

NTS

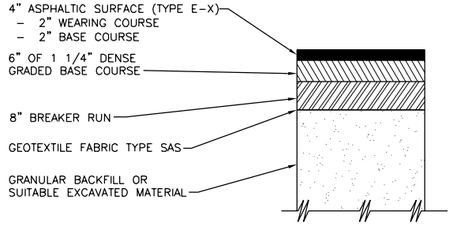
## GENERAL NOTES:

1. THIS SAMPLE TRAFFIC AND PEDESTRIAN CONTROL PLAN IS FOR REFERENCE ONLY. CONTRACTOR SHALL SUBMIT TRAFFIC AND PEDESTRIAN CONTROL PLAN AS OUTLINED IN SPECIFICATION SECTION 01550.
2. CONTRACTOR SHALL PROVIDE VEHICULAR AND PEDESTRIAN TRAFFIC CONTROL PLANS TO THE WISCONSIN DEPARTMENT OF TRANSPORTATION (MORRIS LUKE (715) 392-7886) 21 DAYS PRIOR TO LANE CLOSURE.
3. VEHICULAR AND PEDESTRIAN TRAFFIC CONTROL PLANS MUST BE APPROVED PRIOR TO LANE CLOSURE.
4. ALL TRAFFIC AND PEDESTRIAN CONTROL DEVICES, SIGNS AND PLACEMENT SHALL CONFORM TO THE DOT MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.
5. ALL LANES SHALL REMAIN OPEN AFTER 5PM DAILY AND ALL DAY EVERY SATURDAY AND SUNDAY

## CONCRETE CEMENT APRON & SIDEWALK REPLACEMENT SURFACE DETAIL




## ASPHALT ALLEY & DRIVEWAY SURFACE DETAIL




## RESURFACING DETAILS C200

NTS

**RECORD DRAWING**

REVISED TO CONFORM TO CONSTRUCTION RECORDS PROVIDED BY CONTRACTOR

BY: MIKE JENSEN DATE: 08/28/2014

| Revision Number | Revision Description | Drawn By | Checked By | Date |
|---|---|---|---|---|
| | | | | |

| | |
|---|---|
| Designed By | EJM |
| Drawn By | EJM |
| Checked By | ESN |
| Approved By | ESN |
| Filename | 999CD1.DWG |
| Project No. | 11699 |
| Project Date | JULY 2012 |

CITY OF SUPERIOR, WISCONSIN
EAST 2ND STREET
RELIEF SEWER CONTROL STRUCTURE
SUPERIOR, WISCONSIN

**CIVIL**
**STANDARD DETAILS**

DONOHUE & ASSOCIATES

Sheet No. 8

Drawing No. 999-C-1

## GENERAL STRUCTURAL NOTES

GENERAL

1. THE GENERAL STRUCTURAL NOTES AND STANDARD STRUCTURAL DETAILS APPLY TO THE ENTIRE PROJECT UNLESS SPECIFICALLY NOTED OTHERWISE.

DESIGN CRITERIA

1. DESIGN AND CONSTRUCT IN CONFORMANCE WITH THE LATEST INTERNATIONAL BUILDING CODE WITH WISCONSIN AMENDMENTS

2. SUPERIMPOSED DESIGN LOADS

| | |
|---|---|
| A. SNOW LOAD (GROUND): | 30 PSF + DRIFT |
| B. MECHANICAL EQUIPMENT: | VERIFY WITH EQUIPMENT SUPPLIER |
| C. VALVE VAULT TOP SLAB | H-20 LOAD RATED |

FOUNDATIONS

1. GEOTECHNICAL INVESTIGATION BY BRAUN INTERTEC. GEOTECHNICAL EVALUATION REPORT AVAILABLE UPON REQUEST.
2. NET SOIL BEARING CAPACITIES PER GEOTECHNICAL INVESTIGATION: 3000 PSF
3. PLACE FOOTINGS ON NATURAL UNDISTURBED EARTH OR STRUCTURAL FILL.
4. PLACE FILL SIMULTANEOUSLY ON BOTH SIDES OF FREE-STANDING STRUCTURES.
5. PLACE FILL AGAINST FOUNDATION WALLS ENCLOSING INTERIOR SPACES AFTER CONSTRUCTION SUCH AS CROSS WALLS, BEAMS, OR SLABS ARE IN PLACE TO BRACE WALL AND SUCH CONSTRUCTION HAS REACHED ITS DESIGN STRENGTH.
6. TO MINIMIZE LATERAL FORCES AGAINST THE STRUCTURE DUE TO WEDGING ACTION OF THE SOIL, BEGIN COMPACTION OF EACH LAYER AT THE STRUCTURE WALL.

REINFORCEMENT

1. REINFORCING STEEL
   A. DEFORMED BARS: ASTM A615 - GRADE 60
2. UNLESS NOTED OTHERWISE PROVIDE CLEAR COVER FOR REINFORCEMENT AS FOLLOWS:
   A. CAST AGAINST
      1. EARTH: 3 INCHES
   B. EXPOSED TO EARTH, WEATHER, OR WATER
      1. WALLS AND SLABS
         A. #5 BARS OR SMALLER: 1 1/2 INCHES
         B. #6 THROUGH #11 BARS: 2 INCHES
3. PLACE DOWELS BEFORE PLACING CONCRETE.
4. DO NOT FIELD WELD OR FIELD BEND REINFORCING BARS.

CONCRETE

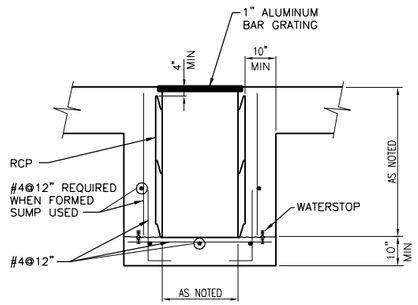
1. DESIGN STRENGTH
   A. ALL LOCATIONS
      CLASS A: F'c = 4000 PSI
2. PROVIDE WATERSTOP IN CONSTRUCTION JOINTS IN
   A. WALLS AND SLABS SEPARATING DRY INTERIOR FROM EARTH OR LIQUID.
   B. OTHER LOCATIONS SHOWN.
3. UNLESS NOTED OTHERWISE, CONSTRUCTION JOINTS SHOWN ARE OPTIONAL. CONSTRUCTION JOINTS NOT SHOWN SHALL BE APPROVED BY ENGINEER.
4. BEFORE CONCRETE IS PLACED, CONSTRUCTION JOINTS SHALL BE CLEANED, LAITANCE REMOVED, AND SURFACE WETTED. REMOVE STANDING WATER.
5. CONSTRUCTION JOINTS SHALL HAVE KEYS OR ROUGHENED SURFACES. WHERE ROUGHENED SURFACE USED, SURFACE SHALL HAVE AMPLITUDE OF 1/4 IN. MIN.
6. PROVIDE 3/4 IN. CHAMFER ON EXTERNAL CORNERS OF EXPOSED CONCRETE WALLS, BEAMS, COLUMNS, EQUIPMENT BASES AND EXPOSED EDGES OF CONSTRUCTION JOINTS.

METALS

1. STEEL
   A. SHAPES AND PLATES: ASTM A36 OR A992
2. ALUMINUM
   A. SHAPES AND PLATES: ALLOY 6061-T6 OR 6063-T6
3. WELD ALUMINUM IN ACCORDANCE WITH AWS AND AA REQUIREMENTS.
4. COAT ALUMINUM SURFACES IN CONTACT WITH CONCRETE IN ACCORDANCE WITH AA REQUIREMENTS. UNDER NO CIRCUMSTANCES SHALL ALUMINUM CONTACT DISSIMILAR METALS.

MISCELLANEOUS

1. VERIFY PERTINENT EXISTING CONDITIONS AND DIMENSIONS BEFORE STARTING CONSTRUCTION AND/OR FABRICATION.
2. FOR ADDITIONAL OPENINGS, ANCHORS, AND EMBEDDED ITEMS SEE PROCESS, PLUMBING, MECHANICAL, AND ELECTRICAL DRAWINGS.



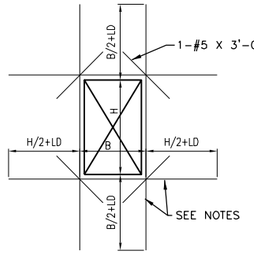

NOTES:
1. FORMED SUMP OPTIONAL.

**SUMP DETAIL S338**
NTS

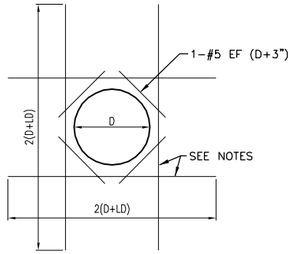
## MINIMUM REINFORCEMENT BAR SPLICE AND ANCHORAGE LENGTH (INCHES) S010

| BAR SIZE | LAPPED SPLICE LENGTH | | EMBEDMENT LENGTH | | COMPRESSION LAP LENGTH |
|---|---|---|---|---|---|
| | TOP BARS | OTHERS | TOP BARS | OTHERS | |
| 3 | 18 | 16 | 14 | 12 | 12 |
| 4 | 24 | 19 | 19 | 15 | 15 |
| 5 | 30 | 23 | 23 | 18 | 19 |
| 6 | 36 | 28 | 28 | 22 | 23 |
| 7 | 43 | 33 | 33 | 26 | 26 |
| 8 | 57 | 44 | 44 | 34 | 30 |
| 9 | 72 | 56 | 56 | 43 | 34 |
| 10 | 92 | 70 | 70 | 54 | 38 |
| 11 | 112 | 86 | 86 | 67 | 42 |

NOTES:
1. TOP BARS ARE HORIZONTAL BARS SO PLACED THAT MORE THAN 12" OF CONCRETE IS CAST IN THE MEMBER BELOW THE BAR.
2. FOR BARS SPACED LESS THAN 6 BAR DIAMETER OC INCREASE LENGTH BY 25%.
3. WHEN LAPPING TWO DIFFERENT SIZE BARS USE THE LAP LENGTH OF THE SMALLER BAR UNLESS NOTED OTHERWISE.
4. EMBEDMENT LENGTH IS MINIMUM LENGTH OF EMBEDMENT FOR STRAIGHT DOWELS WHERE END HOOK IS NOT SHOWN, UNLESS OTHERWISE NOTED.
5. COMPRESSION LAP LENGTH FOR VERICAL COLUMN BARS ONLY.
6. HOOKS SHALL BE ACI STANDARD UNLESS OTHERWISE NOTED.
7. FOR EPOXY COATED REINFORCEMENT, INCREASE LENGTH BY 20% FOR TOP BARS AND 50% FOR OTHERS.



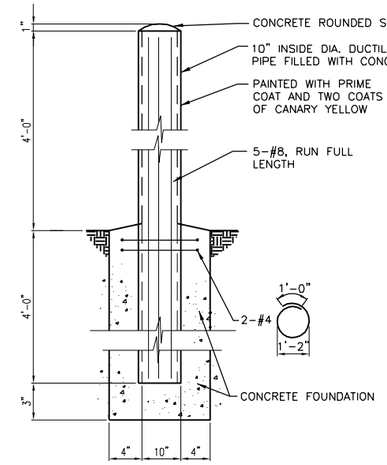

RECTANGULAR OPENING




CIRCULAR OPENING

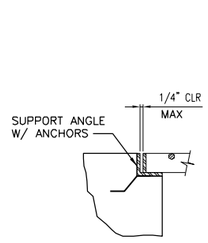
NOTES:
1. THESE DETAILS APPLY TO ALL OPENINGS IN CONCRETE WALLS AND SLABS WHEN THE LARGEST OPENING DIMENSION IS GREATER THAN TWO TIMES SECTION THICKNESS OR GREATER THAN REINFORCING SPACING IN THE SECTION, UNLESS OTHERWISE INDICATED IN THE DRAWINGS.
2. THE AREA OF ADDITIONAL REINFORCING REQUIRED IN EACH FACE ON EACH SIDE OF AN OPENING SHALL EQUAL OR EXCEED ONE-HALF OF THE AREA OF THE INTERCEPTED BARS IN EACH FACE, IN EACH DIRECTION, RESPECTIVELY WITH A MINIMUM OF 1-#5 BAR EACH FACE.
3. PLACE THE ADDED BARS IN THE SAME LAYERS AS THE WALL OR SLAB REINFORCING.
4. LD = EMBEDMENT LENGTH. SEE (S010)

**ADDITIONAL REINFORCEMENT AT OPENINGS IN WALLS AND SLABS DETAIL S020**
NTS



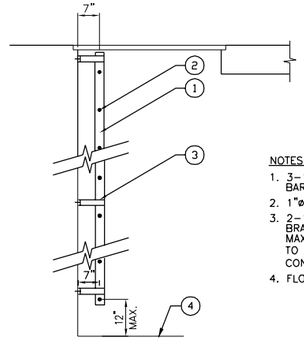

SECTION

**BOLLARD DETAIL S101**
NTS



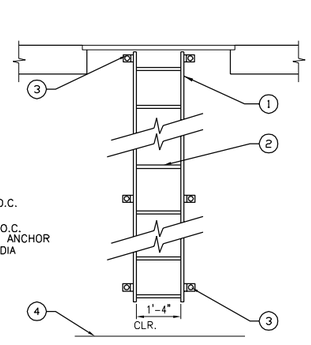

NOTES:
1. SUPPORT MATERIAL TO MATCH GRATING MATERIAL UNLESS OTHERWISE NOTED.
2. PROVIDE GRATING SUPPORTS ALL AROUND OPENING UNLESS OTHERWISE NOTED.
3. GRATING MAY BE CONTINUOUS OVER INTERIOR SUPPORT UNLESS OTHERWISE NOTED.

**GRATING SUPPORT DETAIL S540**
NTS




SIDE VIEW

NOTES:
1. 3-1/2" X 3/8" BAR STRINGERS.
2. 1"ø RUNGS AT 12" O.C.
3. 2-1/2" X 1/4" BRACKETS AT 5'-0" O.C. MAXIMUM VERTICALLY. ANCHOR TO WALL WITH 5/8" DIA CONCRETE ANCHORS
4. FLOOR




FRONT VIEW

**LADDER DETAIL S529**
NTS

**RECORD DRAWING**

REVISED TO CONFORM TO CONSTRUCTION RECORDS PROVIDED BY CONTRACTOR

BY: MIKE JENSEN DATE: 08/28/2014

| Revision Number | Revision Description | Drawn By | Checked By | Date |
|---|---|---|---|---|
| | | | | |

| | |
|---|---|
| Designed By | AJT |
| Drawn By | AJT |
| Checked By | PJE |
| Approved By | ESN |
| Filename | 999SD1.DWG |
| Project No. | 11699 |
| Project Date | JULY 2012 |

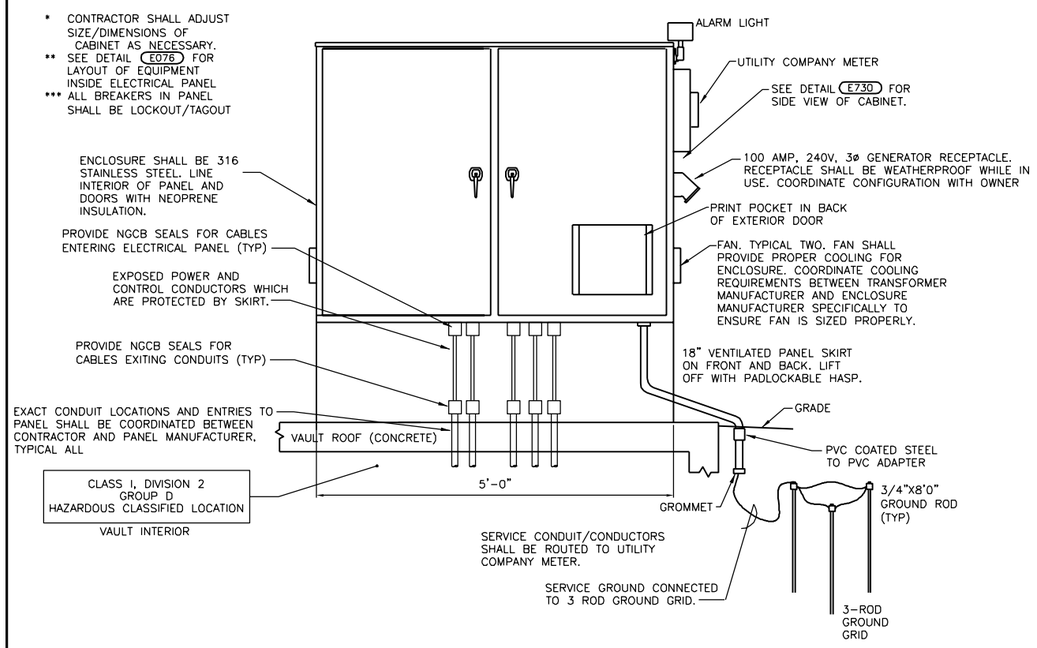
CITY OF SUPERIOR, WISCONSIN
EAST 2ND STREET
RELIEF SEWER CONTROL STRUCTURE
SUPERIOR, WISCONSIN

**STRUCTURAL STANDARD DETAILS**

DONOHUE & ASSOCIATES

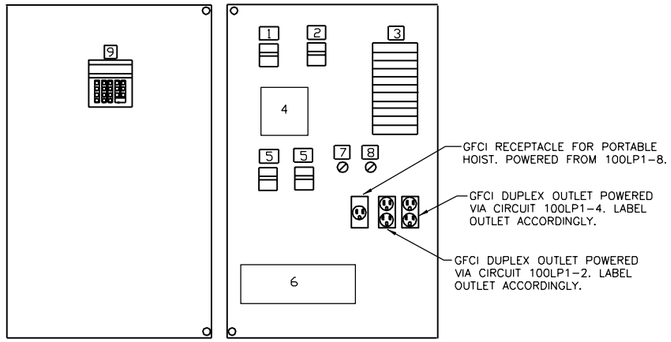
Sheet No. 9

Drawing No. 999-S-1




## EQUIPMENT MOUNTING DETAIL OUTSIDE ELECTRICAL ENCLOSURE E061

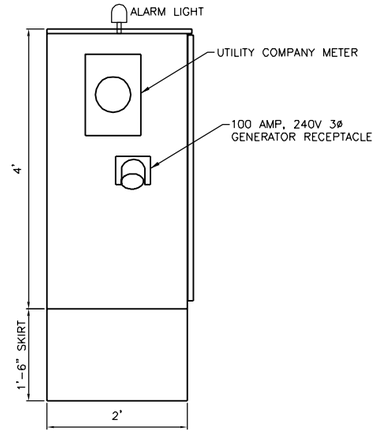
NTS




| | NAMEPLATE SCHEDULE |
|---|---|
| 1 | MAIN DISCONNECT, 100A, 240V BREAKER |
| 2 | DISCONNECT FOR LIGHTING PANEL TRANSFORMER |
| 3 | LIGHTING PANEL |
| 4 | MANUAL TRANSFER SWITCH |
| 5 | LOCATION FOR BREAKERS |
| 6 | PLC |
| 7 | OPEN-CLOSE-AUTO LIGHT SWITCH |
| 8 | ON-OFF LIGHT SWITCH |
| 9 | OPERATOR INTERFACE |

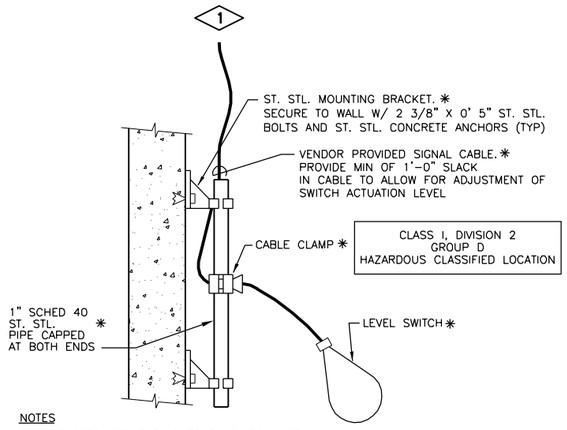
## EQUIPMENT MOUNTING DETAIL INSIDE ELECTRICAL ENCLOSURE E076

NTS




## SIDE VIEW OF ELECTRICAL ENCLOSURE E730

NTS




NOTES

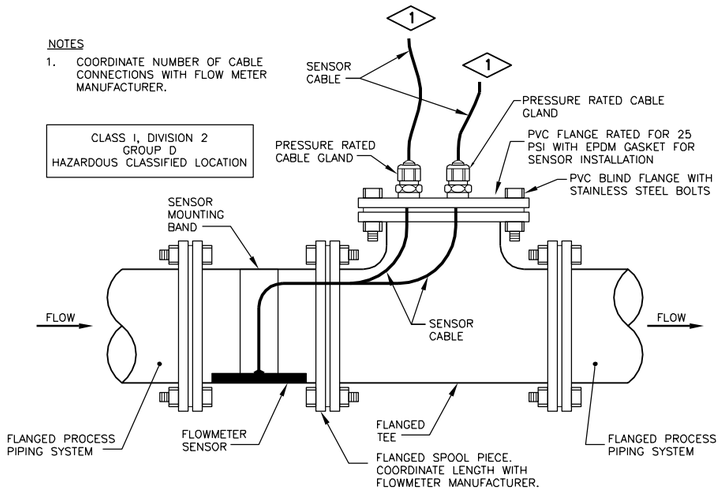
1. * DENOTES ITEM FURNISHED BY SWITCH MFR.
2. INSTALL FLOAT SWITCH ON 1" SCHED 40 ST. STL. PIPE. PIPE SHALL EXTEND 6" MIN ABOVE THE HIGHEST SWITCH ACTUATION LEVEL & AT FINISHED FLOOR BELOW THE LOWEST SWITCH ACTUATION LEVEL. PROVIDE SUFFICIENT SLACK IN SWITCH CABLE TO RAISE CABLE CLAMP ABOVE THE ACTUATION LEVEL.
3. COORDINATE FLOAT LEVEL SWITCH ELEVATIONS WITH OWNER.

## BALL FLOAT ON FIXED ARM N270

NTS

NOTES

1. COORDINATE NUMBER OF CABLE CONNECTIONS WITH FLOW METER MANUFACTURER.




## AREA VELOCITY FLOWMETER PIPE MOUNT N322

NTS

## PLAN NOTES:

1. TERMINATE VENDOR PROVIDED SENSOR CABLE AT THE PLC CABINET.

**RECORD DRAWING**

REVISED TO CONFORM TO CONSTRUCTION RECORDS PROVIDED BY CONTRACTOR

BY: MIKE JENSEN DATE: 08/28/2014

| Revision Number | Revision Description | Drawn By | Checked By | Date |
|---|---|---|---|---|
| | | | | |

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|---|---|
| Designed By | MRS/CRP |
| Drawn By | MRS/CRP |
| Checked By | JAB/MLM |
| Approved By | ESN |
| Filename | 999EN1.DWG |
| Project No. | 11699 |
| Project Date | JULY 2012 |

CITY OF SUPERIOR, WISCONSIN
EAST 2ND STREET
RELIEF SEWER CONTROL STRUCTURE
SUPERIOR, WISCONSIN

**ELECTRICAL AND INSTRUMENTATION DETAILS**

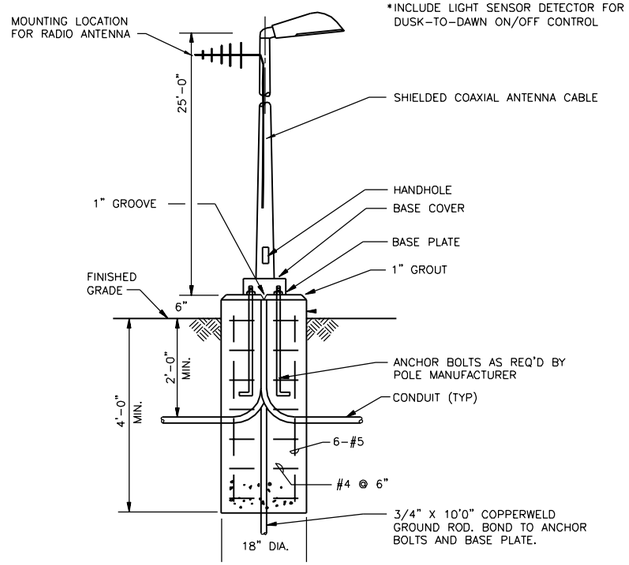
DONOHUE & ASSOCIATES

Sheet No. 10

Drawing No. 999-EN-1

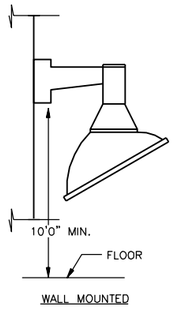
# FIXTURE SCHEDULE

| TYPE | DESCRIPTION | NO. OF LEDS | DRIVE CURRENT | COLOR TEMPURATURE | VOLTAGE | HOUSING COLOR | MOUNTING | OPTICS | OPTONS AND ACCESSORIES | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|
| A | ROADWAY LED 120 LED MOUNTED ON 25' POLE | 120 | 350 mA EXTENDED LIFE DRIVER | 5,000 K CCT ±250K | AUTO SENSING | GRAY | 25' POLE | TYPE III WIDE ASYMETRIC | P2 TENON ADAPTER, DTL SOLID-STATE LIGHTING PHOTOCONTROL, NEMA TWIST-OFF PHOTOCONTROL RECEPTACLE | INCLUDE MANUFACTURER INSTALLED PHOTOCELL LIGHT SHALL BE WIRED TO SWITCH TO BYPASS PHOTOCELL. LOCATE SWITCH IN CONTROL PANEL. |
| B | WET LOCATION LED LIGHTING | 98 | 350 mA EXTENDED LIFE DRIVER | 5,000 K CCT ±250K | 120 VOLT | GRAY | WALL | TYPE 5, HIGH ANGLE GLASS | CORROSION RESISTANT GRAY LUMINAIRE COLOR, 40C MAXIMUM AMBIENT | |




**SITE LIGHTING** **E999**

NTS




WALL MOUNTED

**FIXTURE MOUNTING DETAIL** **E500**

NTS

**RECORD DRAWING**

REVISED TO CONFORM TO CONSTRUCTION RECORDS PROVIDED BY CONTRACTOR

BY: MIKE JENSEN DATE: 08/28/2014

| Revision Number | Revision Description | Drawn By | Checked By | Date |
|---|---|---|---|---|
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|---|---|
| Designed By | MRS/CRP |
| Drawn By | MRS/CRP |
| Checked By | JAB/MLM |
| Approved By | ESN |
| Filename | 999EN1.DWG |
| Project No. | 11699 |
| Project Date | JULY 2012 |

CITY OF SUPERIOR, WISCONSIN
EAST 2ND STREET
RELIEF SEWER CONTROL STRUCTURE
SUPERIOR, WISCONSIN

**ELECTRICAL AND INSTRUMENTATION DETAILS**

DONOHUE & ASSOCIATES

Sheet No. 11

Drawing No. **999-EN-2**