CITY OF SUPERIOR
DEPARTMENT OF PUBLIC WORKS

JEFF VITO, DIRECTOR, PUBLIC WORKS
DAN ROMANS, ADMINISTRATOR, WASTEWATER DIVISION
STEVE ROBERTS, TECHNICAL COORDINATOR, WASTEWATER DIVISION

LIFT STATION NO. 6, COLLECTION SYSTEM AND STORAGE IMPROVEMENTS

FEBRUARY 2004

PREPARED BY:
RMA ENGINEERING COMPANY
DULUTH, MN

LOCATION MAP

SCALE - MILES

0 1/2 1

SCALE:

LIST OR CONTRACT DRAWINGS

SHEET NO.	TITLE
	COVER SHEET
G-1	LOCATION MAP AND DRAWING INDEX
G-2	HYDRAULIC PROFILE
G-3	PIPE AND EQUIPMENT SCHEDULES
G-4	REAL ESTATE PLAN
C-1	SITE PLAN
C-2	EARTHWORK PLAN AND CROSS SECTIONS
C-3	UNDERDRAIN PLAN AND SECTIONS
C-4	SEWER LINE MODIFICATIONS, PLAN AND PROFILE
C-5	MISCELLANEOUS DETAILS
S-1	STRUCTURAL PLAN
S-2	SETTLING BASIN SECTIONS
S-3	LIFT STATION SECTIONS
S-4	STORAGE POND RETAINING WALL SECTIONS
S-5	ACCESS LOT RETAINING WALL
S-6	STRUCTURAL DETAILS-1
S-7	STRUCTURAL DETAILS-2
S-8	STRUCTURAL NOTES
M-1	LIFT STATION PLANS
M-2	LIFT STATION SECTION
M-3	DIVERSION BOX AND GATES
M-4	LIFT STATION #6 DRAIN SUMP AND LIFT STATIONS #5 AND #7 MECHANICAL IMPROVEMENTS
E-1	ELECTRICAL PLAN
E-2	ELECTRICAL DETAILS

REVISIONS

NUMBER	DATE	MADE BY:	CHECKED BY:	DESCRIPTION

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME AND THAT I AM A DULY REGISTERED ENGINEER IN THE STATE OF WISCONSIN

REG. NO. 25488 DATE: AUGUST 4, 2003

DRAWN BY: RMA & JDC

CHECKED BY: RMA

DEPT. CHECK: _____

SCALE: _____

RMA ENGINEERING COMPANY
CONSULTING ENGINEERS

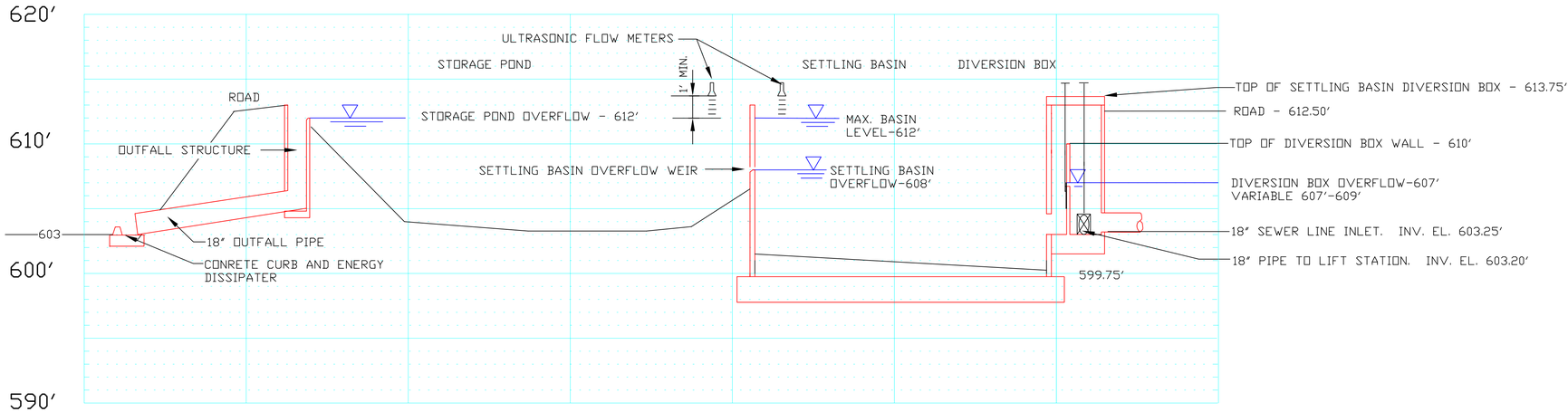
CITY OF SUPERIOR,
DEPARTMENT OF PUBLIC WORKS

LIFT STATION #6, COLLECTION SYSTEM AND STORAGE IMPROVEMENTS

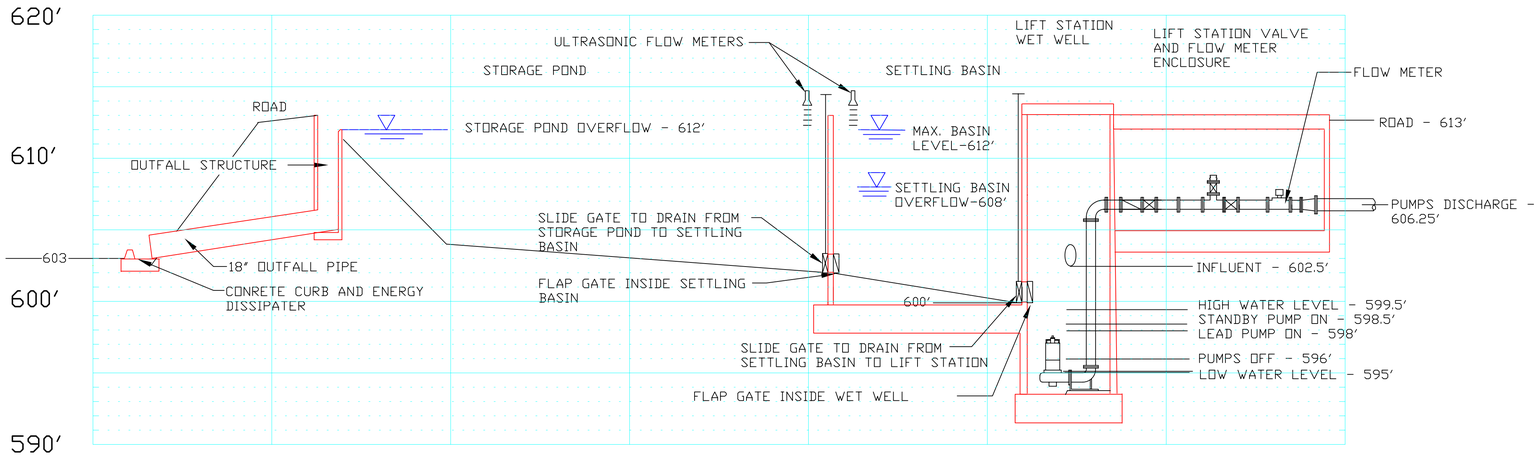
LOCATION MAP AND DRAWING INDEX

PROJ. JOB NO. _____

SHEET NO. G-1



SECTION 1 - FLOW INTO SETTLING BASIN AND STORAGE POND



SECTION 2 - DRAIN FROM STORAGE POND THROUGH SETTLING BASIN TO LIFT STATION

STORAGE VOLUMES CUBIC FEET

ELEVATION	SETTLING BASIN	STORAGE POND	TOTAL
608′	25,200	103,500	128,700
612′	39,600	223,300	262,900

LIFT STATION NO. 6 HYDRAULIC PROFILE

NO HORIZONTAL SCALE
VERTICAL SCALE 1″ = 5′

REVISIONS

NUMBER	DATE	MADE BY:	CHECKED BY:	DESCRIPTION
1	02/18/04	RMA		SUPERIOR REVIEW REVISIONS
2	12/08/04	RMA		ADDENDUM NO. 1

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SCALE: AS SHOWN

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CITY OF SUPERIOR, DEPARTMENT OF PUBLIC WORKS

LIFT STATION #6 AND STORAGE IMPROVEMENTS

HYDRAULIC PROFILE

PROJ. JOB NO. _____

SHEET NO. G-2

MANHOLE SCHEDULE

STRUCTURE NO.	TYPE	DIAMETER FEET	TOP OF COVER ELEVATION	INVERT ELEVATION FT	INLET PIPE	OUTLET PIPE	SHEET NO.
MH070087	SANITARY SEWER	4	626.0		20" RCP	8" DI	C-5
MH070002	SANITARY SEWER	4	626.1	607.75	18" PVC	18" PVC	C-4, C-5
MH070001	SANITARY SEWER	4	625.0	607.41	18" PVC	30" STEEL CASING 18" PVC CARRIER	C-4
MH070001A	SANITARY SEWER	4	617.1	606.30	30" STEEL CASING 18" PVC CARRIER	18" PVC	C-4
MH070001B	SANITARY SEWER	4	612.5	603.4	18" PVC	18" RCP	C-4
MH070001C	SANITARY SEWER	4	612.5	602.7	18" RCP	18" RCP	C-4
	STORM WATER	4	613.5	603.5	24" RCP	24" RCP	C-1
	DRAIN PUMP WET WELL	5	612.5	592.0	4" PVC	3" DI	C-3, M-4
	DRAIN PUMP VALVE MH	4	612.5	604.0	3" DI	3" DI	C-3, M-4

UNDERGROUND PIPE SCHEDULE

FUNCTION	MATERIAL	DIAMETER ID, INCHES	LENGTH FEET	SHEET NO.
GRAVITY SEWER PIPE	PVC, SDR 35	18	606	C-4
GRAVITY SEWER PIPE	RCP, CLASS 3	18	35	C-4
GRAVITY SEWER PIPE	D.I., CLASS 50	8	20	C-5
SEWER FORCE MAIN	D.I., CLASS 50	6	38	M-1, M-2
SEWER FORCE MAIN	D.I., CLASS 50	8	145	C-4
SEWER FORCE MAIN	HDPE, SDR 11	8	2,033	C-4
CASING PIPE	STEEL	30	190	C-4
GRAVITY STORM WATER PIPE	RCP, CLASS 3	24	165	C-1
GRAVITY STORM WATER PIPE	RCP, CLASS 3	12	60	C-1
PERFORATED UNDERDRAIN PIPE	PERFORATED PVC, SDR 35	4	2,110	C-3
UNDERDRAIN PIPE	PVC, SDR 35	4	60	C-3
PERFORATED DRAIN PIPE WRAPPED WITH GEOTEXTILE FABRIC	PERFORATED PVC, SDR 35	4	950	C-3
PERFORATED UNDERDRAIN PIPE	PERFORATED PVC, SDR 35	10	265	C-3
DRAIN WATER FORCE MAIN	DI, CLASS 50	3	142	C-3
STORAGE POND OVERFLOW PIPE	RCP, CLASS 3	18	69	C-1
WET WELL VENT	SCH. 40 STEEL	6	30	M-1, M-2, M-4
VALVE PIT DRAIN	SCH. 40 STEEL	3	13	M-1, M-2

VALVE SCHEDULE

LOCATION/FUNCTION	TYPE	NO.	SIZE IN.	MATERIAL	SHEET NO.
PUMP FORCE MAIN	PLUG	3	6	CAST IRON	M-1, M-2
QUICK DISCONNECT	PLUG	1	4	CAST IRON	M-2
PUMP FORCE MAIN	CHECK	2	6	CAST IRON	M-1, M-2
VALVE PIT DRAIN	BACKWATER PREVENTER	1	3	PVC	M-1, M-2
DRAIN PUMP FORCEMAIN	CHECK	1	3	CAST IRON	M-4
POND DRAIN PIPE	PRESSURE RELIEF	3	4	CAST IRON	C-3

DAVIT CRANE

EQUIP. NO.	NUMBER	MODEL	MANUFACTURER	REMARKS
	1	571	THERN	TAKE-UP MODEL: M431 IP B-A PEDESTAL BASE

PUMP SCHEDULE

EQUIPMENT NO.	NUMBER OF UNITS	NAME	LOCATION	TYPE	RATING POINT				MIN. SUCTION/ DISCHARGE SIZE (IN.)	PUMP RPM MAX.	SEAL TYPE	MOTOR DATA			DRIVE TYPE	REMARKS
					CAPACITY (GPM)	HEAD (FEET)	MIN. EFF. %	SHUTOFF HEAD (FT.)				HP	RPM (MAX.)	ENCL. TYPE		
	2	WASTEWATER PUMPS	LS#6 WET WELL	WET-PIT SUBMERSIBLE	800	64	60	98	6	1750	MECH SEAL	25	1750	SUBMERSIBLE EXPL. PROOF	CLOSE COUPLED	FLYGT MODEL CP-3152, IMPELLER 454 (ONE PUMP SHALL HAVE THE FLYGT MIX VALVE INSTALLED)
	2	DRAIN PUMP	DRAIN SUMP	WET-PIT SUBMERSIBLE	140	40	50	58	2	1840	MECH SEAL	4	1840	SUBMERSIBLE	CLOSE COUPLED	FLYGT MODEL CP-3068, IMPELLER 255. ONE PUMP IS INSTALLED, THE SECOND PUMP IS A SPARE.

GATE SCHEDULE

EQUIPMENT NO.	NUMBER OF UNITS	LOCATION	GATE TYPE	GATE SIZE W(IN.) X H(IN.)	REMARKS	SHEET NO.
WG-300	1	DIVERSION BOX	WEIR	72 X 24	FONTAINE: MODEL 422-72X42-L-CW	M-3
SG-300	1	DIVERSION BOX	SLIDE	20 X 20	FONTAINE: MODEL 222-24X24-L-CW	M-3
SG-301	1	WET WELL	SLIDE	24 X 24	FONTAINE: MODEL 223-24X24-L-CW	M-2
SG-302	1	SETTLING BASIN	SLIDE	24 X 24	FONTAINE: MODEL 223-24X24-L-CW	M-3
FG-301	1	WET WELL	FLAP	24 X 24	FONTAINE	M-2
FG-300	1	SETTLING BASIN	FLAP	24 X 24	FONTAINE	M-3

ALUMINUM ACCESS DOORS

LOCATION	HATCH SIZE INCHES	LOADING CAPACITY	REMARKS	SHEET NO.
WET WELL	36 X 24 36 X 48 36 X 36	300 P.S.F LIVE LOAD		M-1
VALVE PIT	24 X 36	H-20 WHEEL LOADING		M-1
VALVE PIT	24 X 24	H-20 WHEEL LOADING		M-1
DIVERSION BOX	24 X 24	300 P.S.F. LIVE LOAD		M-3
DIVERSION BOX	24 X 24	300 P.S.F. LIVE LOAD		M-3

NOTES

1. UNDERGROUND PIPE SCHEDUALS DO NOT INCLUDE PIPE FITTINGS, BENDS OR MISCELLANEOUS CONNECTORS TO BE PROVIDED AS SHOWN ON THE PLANS.

REVISIONS

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1	12/8/03	RMA		SCHEDULE REVISIONS
2	02/18/04	RMA		SUPERIOR REVIEW REVISIONS
3	10/27/04	RMA		REVIEW REVISIONS
4	12/08/04	RMA		ADDENDUM NO. 1

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SCALE: _____

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CONSULTING ENGINEERS

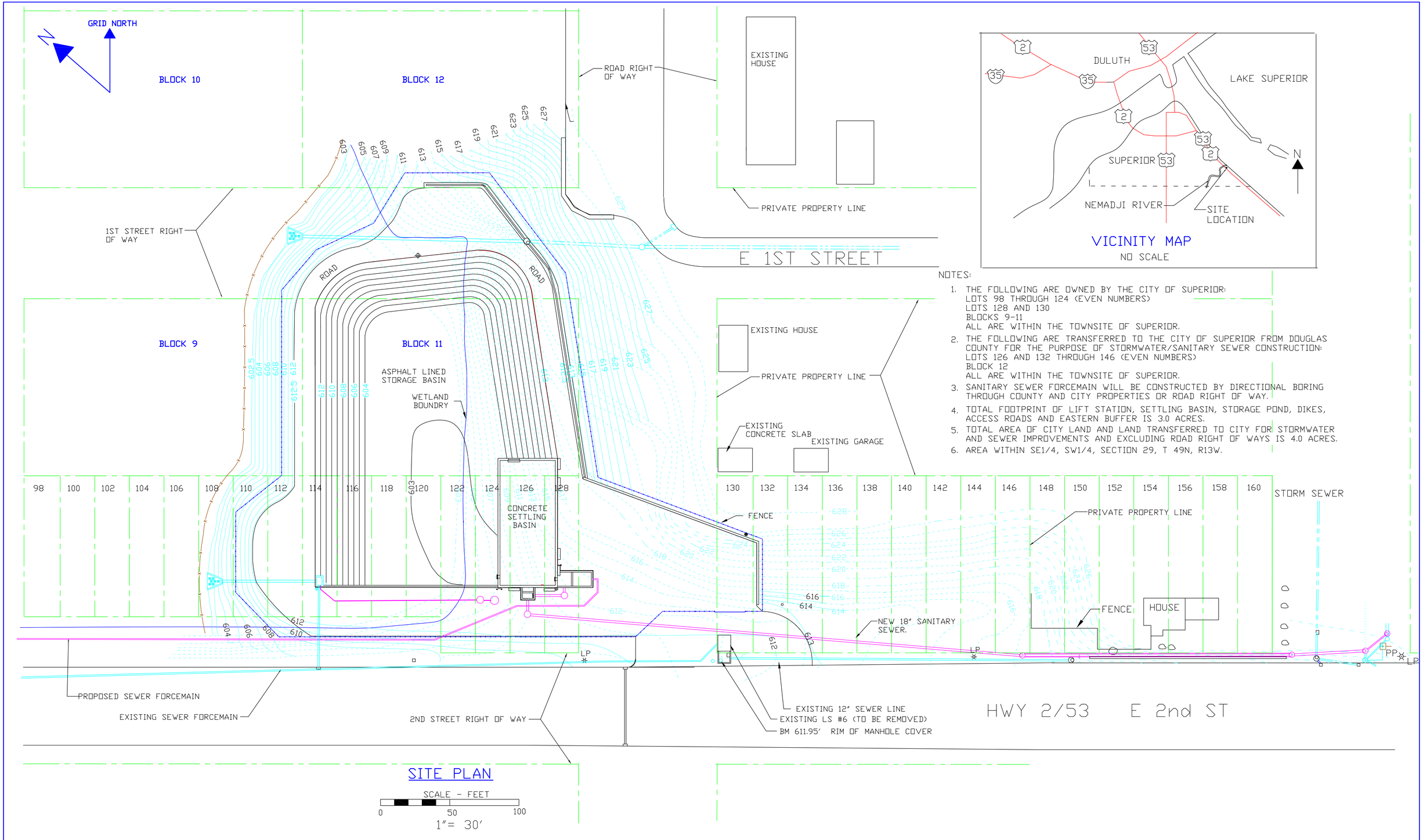
CITY OF SUPERIOR, DEPARTMENT OF PUBLIC WORKS

LIFT STATION #6, COLLECTION SYSTEM AND STORAGE IMPROVEMENTS

PIPE AND EQUIPMENT SCHEDULES

PROJ. JOB NO. _____

SHEET NO. G-3



VICINITY MAP

NO SCALE

NOTES:

1. THE FOLLOWING ARE OWNED BY THE CITY OF SUPERIOR:
   LOTS 98 THROUGH 124 (EVEN NUMBERS)
   LOTS 128 AND 130
   BLOCKS 9-11
   ALL ARE WITHIN THE TOWNSITE OF SUPERIOR.
2. THE FOLLOWING ARE TRANSFERRED TO THE CITY OF SUPERIOR FROM DOUGLAS COUNTY FOR THE PURPOSE OF STORMWATER/SANITARY SEWER CONSTRUCTION:
   LOTS 126 AND 132 THROUGH 146 (EVEN NUMBERS)
   BLOCK 12
   ALL ARE WITHIN THE TOWNSITE OF SUPERIOR.
3. SANITARY SEWER FORCEMAIN WILL BE CONSTRUCTED BY DIRECTIONAL BORING THROUGH COUNTY AND CITY PROPERTIES OR ROAD RIGHT OF WAY.
4. TOTAL FOOTPRINT OF LIFT STATION, SETTLING BASIN, STORAGE POND, DIKES, ACCESS ROADS AND EASTERN BUFFER IS 3.0 ACRES.
5. TOTAL AREA OF CITY LAND AND LAND TRANSFERRED TO CITY FOR STORMWATER AND SEWER IMPROVEMENTS AND EXCLUDING ROAD RIGHT OF WAYS IS 4.0 ACRES.
6. AREA WITHIN SE1/4, SW1/4, SECTION 29, T 49N, R13W.

SITE PLAN

SCALE - FEET

0 50 100

1"= 30'

REVISIONS

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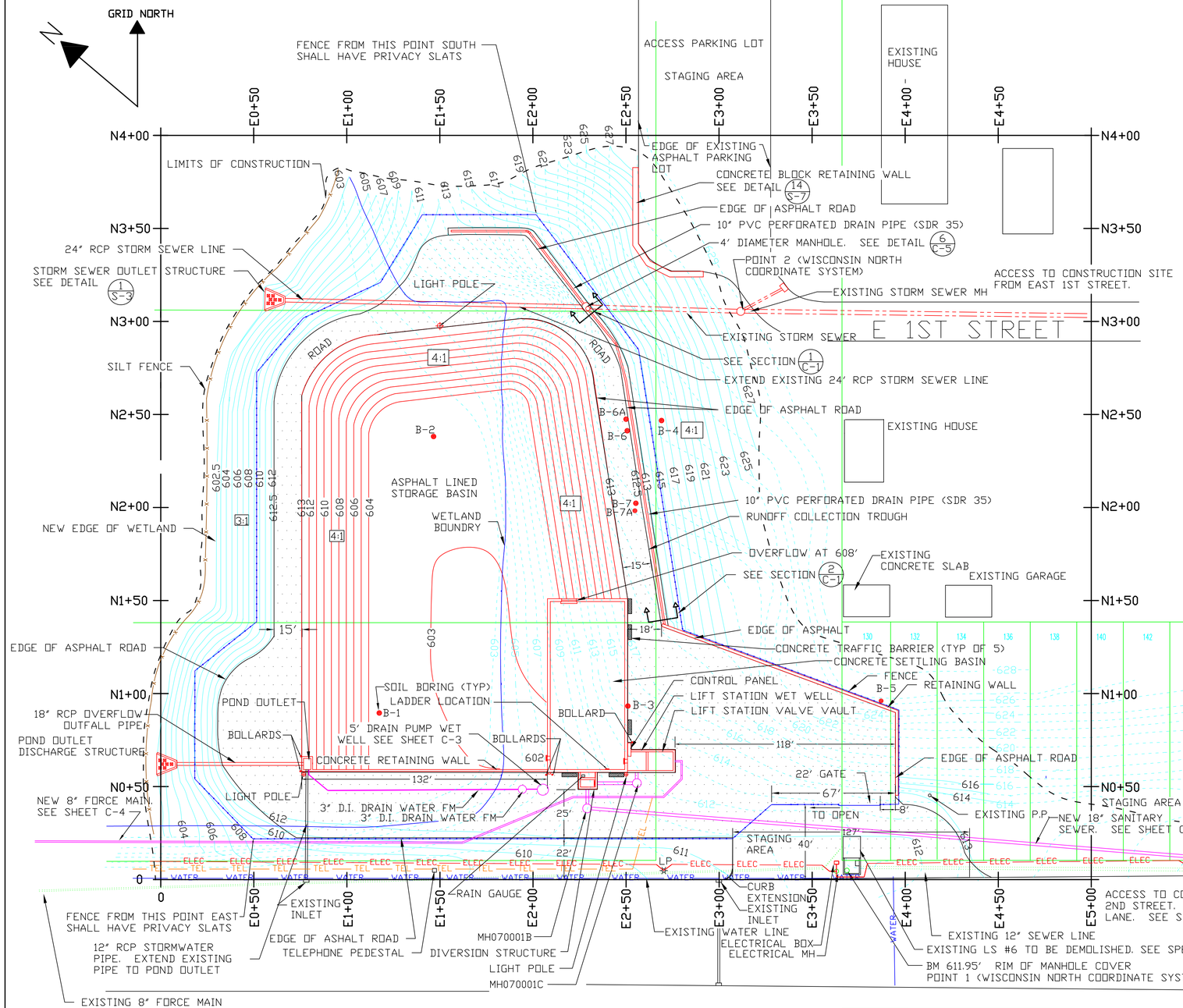
DEPARTMENT OF PUBLIC WORKS

LIFT STATION #6, COLLECTION SYSTEM AND STORAGE IMPROVEMENTS

REAL ESTATE PLAN

PROJ. JOB NO. _____

SHEET NO. G-4

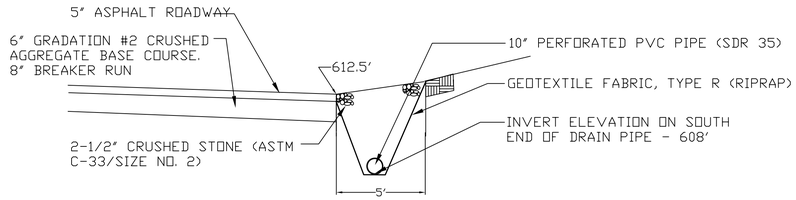


SITE PLAN

SCALE - FEET
0 50 100
1"= 30'

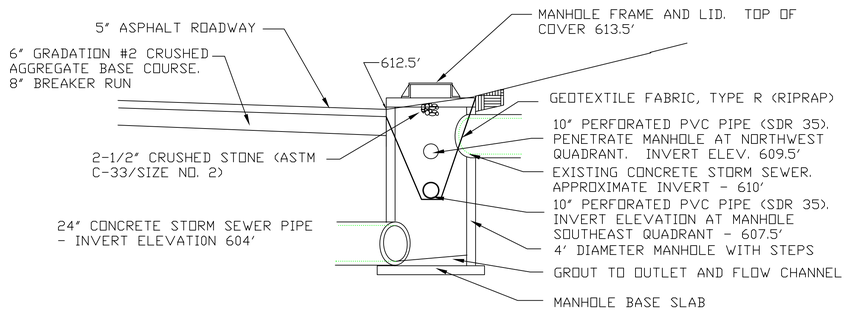
ASPHALT ROAD AREA

EXISTING UTILITIES LEGEND
WATER
TEL TEL
ELEC
GAS



SECTION 2/C-1

SCALE 1/4" = 1'



SECTION 1/C-1

SCALE 1/4" = 1'

EROSION CONTROL NOTES:

1. THE CONTRACTOR IS RESPONSIBLE FOR EROSION AND SEDIMENT CONTROL ON THIS PROJECT. CONTRACTOR SHALL CONSTRUCT OR INSTALL EROSION CONTROL AND SEDIMENT CONTAINMENT DEVICES TO PREVENT THE RUNOFF, TRACKING OR LOSS OF SEDIMENT FROM DISTURBED AREAS ON THE PROJECT SITE. EXPOSED AREAS SHALL DRAIN TO PROTECTED BASINS OR SILT FENCE.
2. SEDIMENT AND EROSION CONTROL DEVICES SHALL BE IN PLACE BEFORE SITE IS DISTURBED.
3. IF ANY STOCKPILLING IS TO REMAIN IN PLACE FOR MORE THAN 3 DAYS, EROSION CONTROL AND SEDIMENT CONTAINMENT DEVICES SHALL BE INSTALLED AND SHALL BE INCIDENTAL.
4. THE CONTRACTOR SHALL TAKE PRECAUTIONS TO PREVENT SOIL TRACKING ONTO ROADWAYS. ALL DEBRIS TRACKED ONTO PAVED SURFACES SHALL BE REMOVED PRIOR TO THE END OF THE WORKING DAY.
5. STABILIZED CONSTRUCTION ENTRANCES SHALL BE REMOVED AND AREA RESTORED AFTER GRADING IS COMPLETE.
6. THE CONTRACTOR SHALL MAINTAIN THE SEDIMENT AND EROSION CONTROL DEVICES UNTIL THE SITE IS STABILIZED.
7. THE CONTRACTOR SHALL REMOVE SEDIMENT DEPOSITS AFTER COMPLETION OF CONSTRUCTION.

WISCONSIN NORTH COORDINATE SYSTEM

POINT NO.	NORTHING	EASTING
1	563152.65	1459131.8
2	563388.25	1459326.51

GENERAL NOTES

1. TRAFFIC BARRIERS - FINISH CONCRETE SMOOTH AND PAINT YELLOW.
2. BOLLARDS - FINISH CONCRETE SMOOTH AND PAINT YELLOW.
3. CONCRETE LIGHT PEDESTALS - FINISH CONCRETE SMOOTH AND PAINT YELLOW.

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3	11/01/04	RMA		SUPERIOR REVIEW REVISIONS

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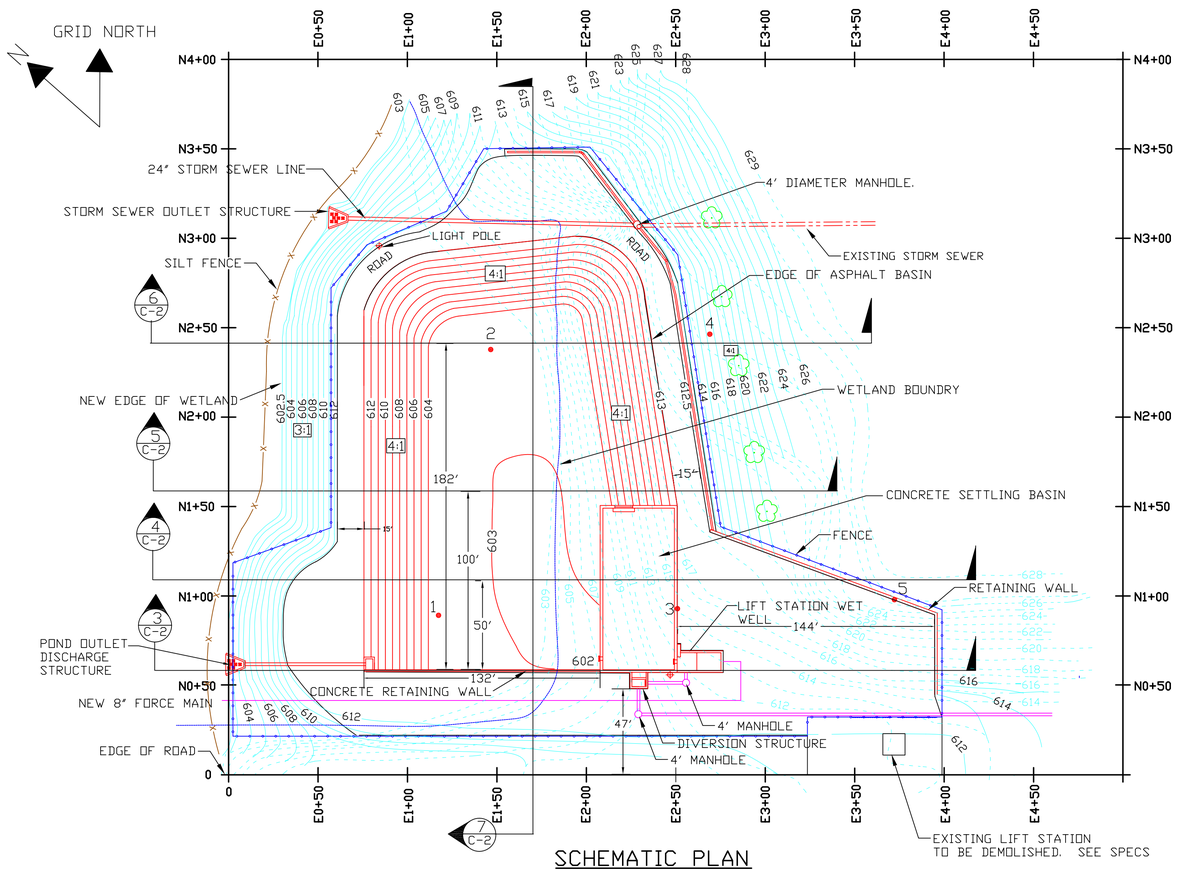
LIFT STATION #6, COLLECTION SYSTEM AND STORAGE IMPROVEMENTS

SITE PLAN

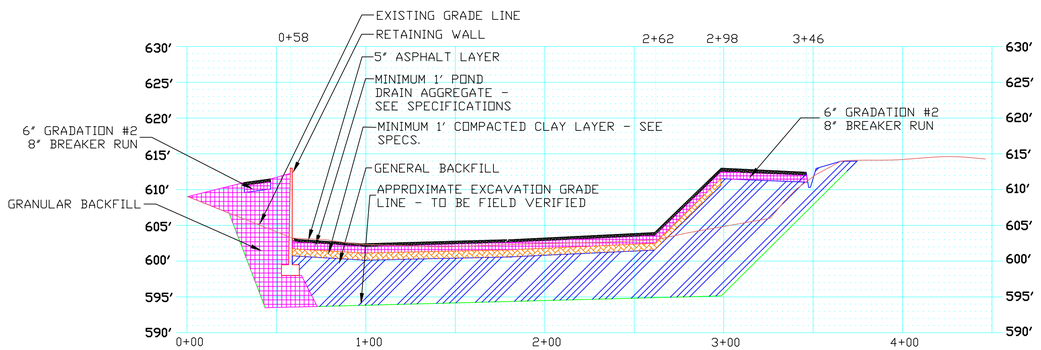
PROJ. JOB NO.

SHEET NO. C-1



SCHEMATIC PLAN

SCALE 1"=40'



SECTION 7 C-2

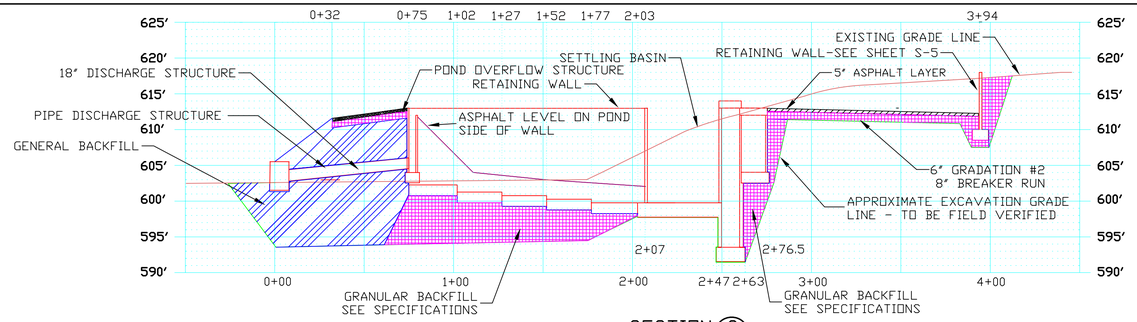
SCALE - FEET

0 50 100

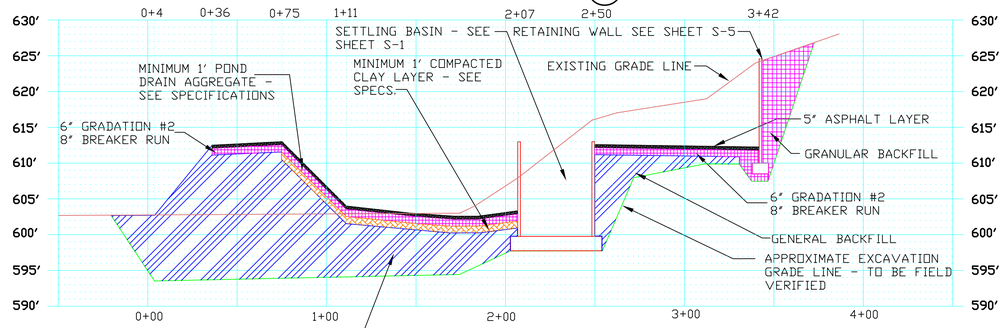
HORIZONTAL SCALE ON CROSS SECTIONS 1" = 40'

VERTICAL SCALE ON CROSS SECTIONS 1" = 10'

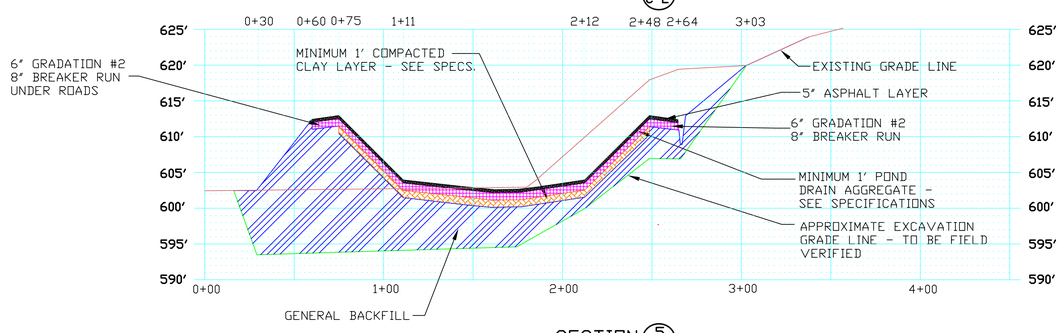
NOTE: MATERIAL NOTED AS GENERAL BACKFILL WILL BE USED AS FILL MATERIAL FOR UNSUITABLE SOILS REMOVED FROM THE SITE. THE INITIAL TWO FEET OF THE FILL SHALL BE GRANULAR MATERIAL TO PROVIDE A GOOD BASE AND TO PROVIDE DRAINAGE TO FACILITATE DEWATERING. GRANULAR MATERIAL SHALL CONFORM TO GRANULAR BACKFILL LISTED IN THE SPECIFICATIONS. SUITABLE BACKFILL CAN BE USED FOR THE REMANDER OF THE FILL. PROVIDE COMPACTION IN ACCORDANCE WITH THE SPECIFICATIONS.



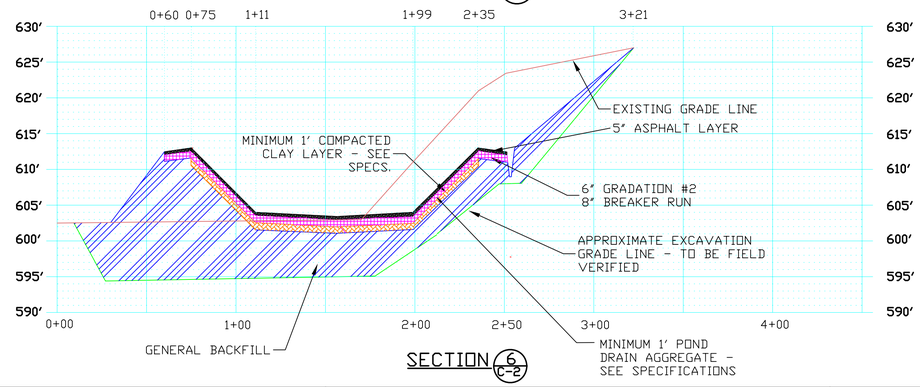
SECTION 3 C-2



SECTION 4 C-2



SECTION 5 C-2



SECTION 6 C-2

REVISIONS

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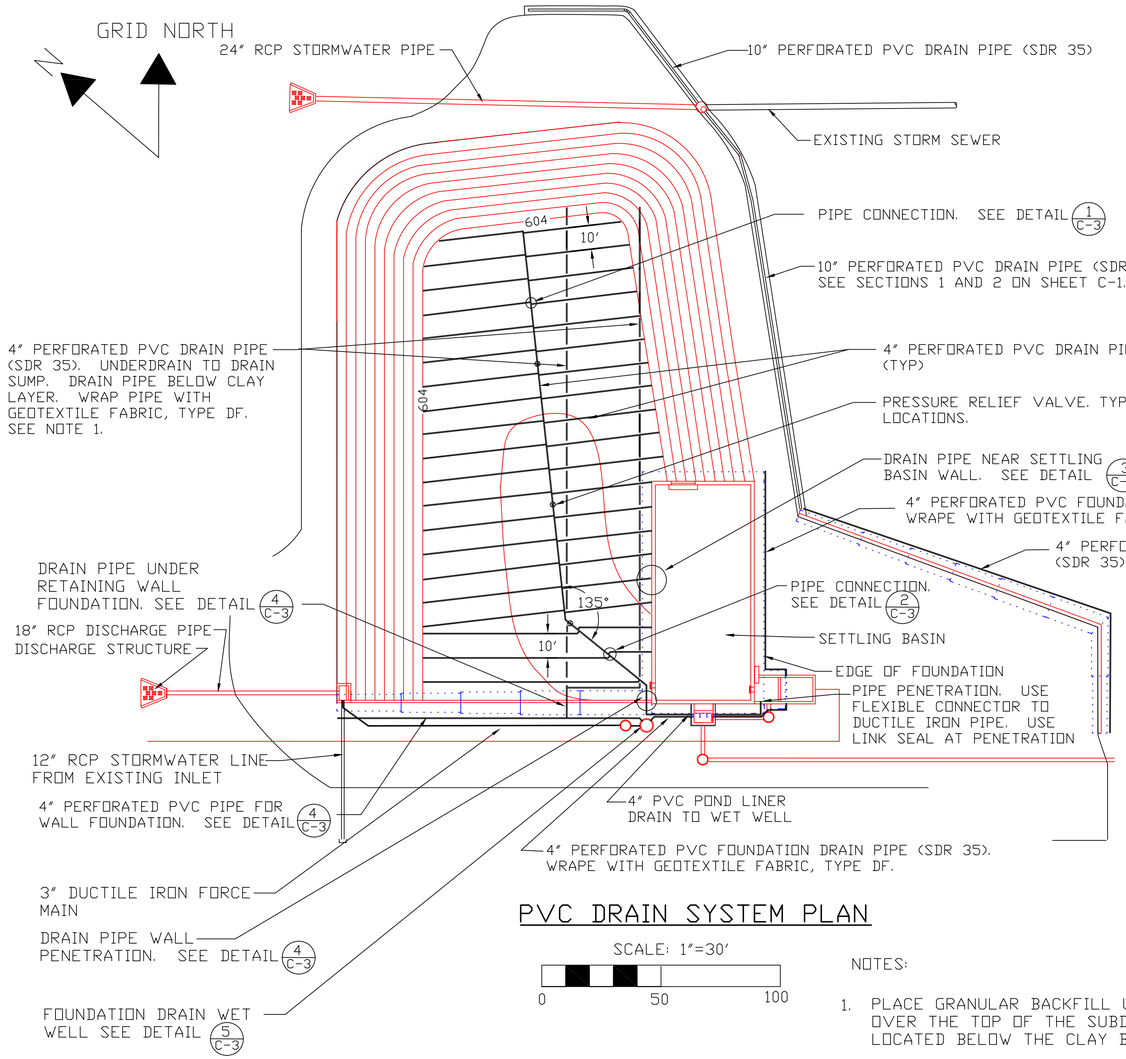
LIFT STATION #6, COLLECTION SYSTEM AND STORAGE IMPROVEMENTS

EARTHWORK PLAN AND CROSS SECTIONS

PROJ. JOB NO. _____

SHEET NO. C-2



PVC DRAIN SYSTEM PLAN

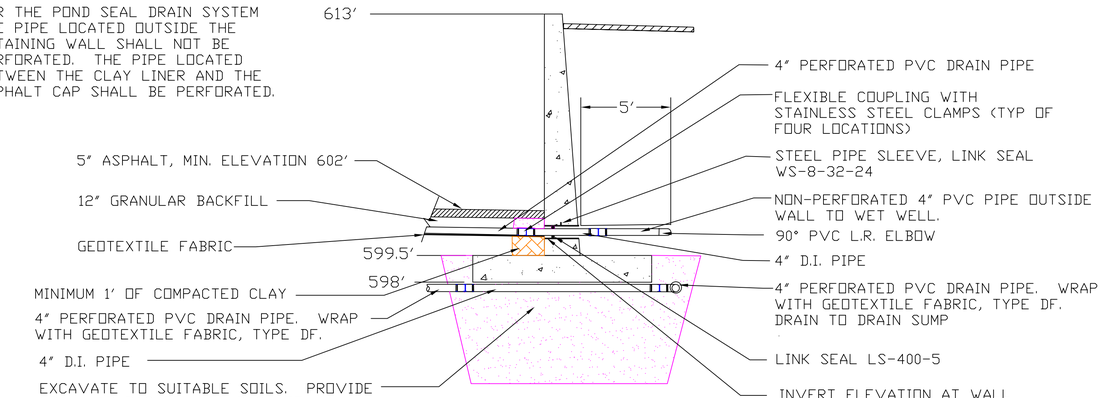
SCALE: 1"=30'

0 50 100

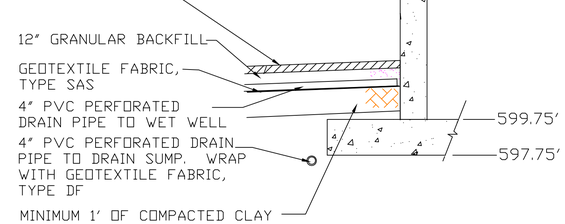
NOTES:

1. PLACE GRANULAR BACKFILL UP TO AND OVER THE TOP OF THE SUBDRAIN PIPE LOCATED BELOW THE CLAY BARRIER.

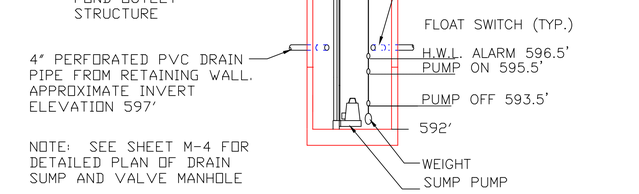
FOR THE POND SEAL DRAIN SYSTEM THE PIPE LOCATED OUTSIDE THE RETAINING WALL SHALL NOT BE PERFORATED. THE PIPE LOCATED BETWEEN THE CLAY LINER AND THE ASPHALT CAP SHALL BE PERFORATED.



DETAIL 4/C-3
SCALE 1/4"=1'



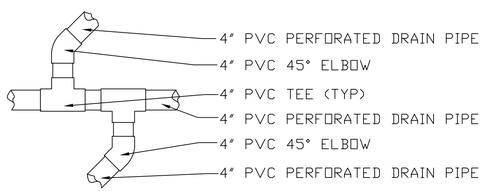
DETAIL 3/C-3
SCALE 1/4"=1'



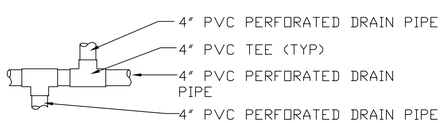
DRAIN PUMP WET WELL

NTS

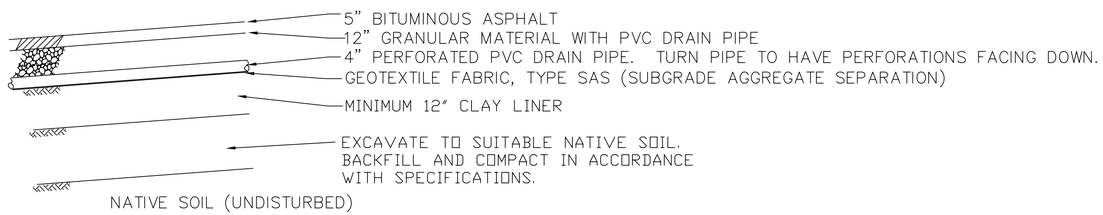
DETAIL 5/C-3



DETAIL 2/C-3



DETAIL 1/C-3



TYPICAL POND CROSS SECTION

REVISIONS

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CONSULTING ENGINEERS

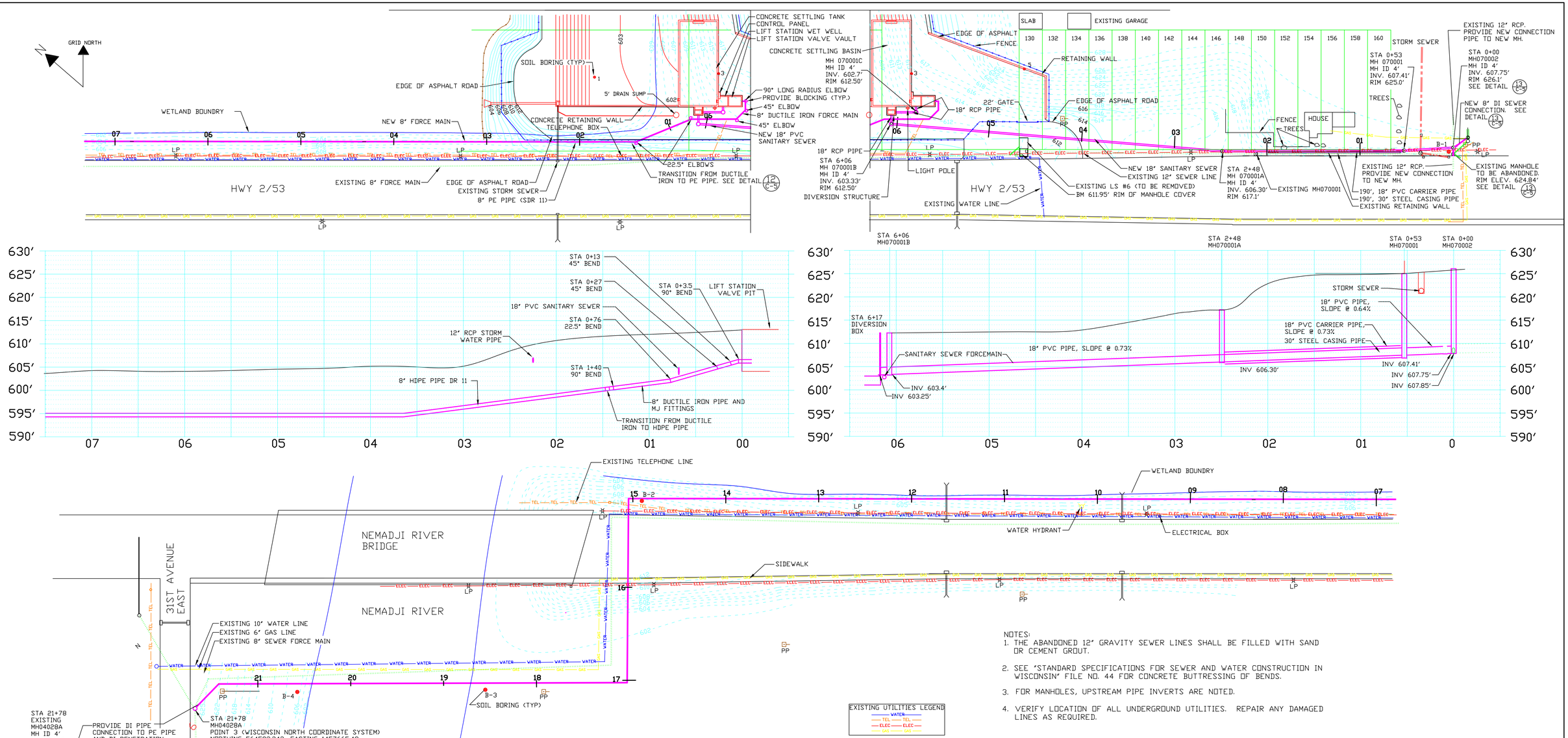
CITY OF SUPERIOR, DEPARTMENT OF PUBLIC WORKS

LIFT STATION #6, COLLECTION SYSTEM AND STORAGE IMPROVEMENTS

UNDERDRAIN PLAN AND SECTIONS

PROJ. JOB NO.

SHEET NO. C-3



NOTES:
1. THE ABANDONED 12" GRAVITY SEWER LINES SHALL BE FILLED WITH SAND OR CEMENT GROUT.
2. SEE "STANDARD SPECIFICATIONS FOR SEWER AND WATER CONSTRUCTION IN WISCONSIN" FILE NO. 44 FOR CONCRETE BUTTRESSING OF BENDS.
3. FOR MANHOLES, UPSTREAM PIPE INVERTS ARE NOTED.
4. VERIFY LOCATION OF ALL UNDERGROUND UTILITIES. REPAIR ANY DAMAGED LINES AS REQUIRED.

REVISIONS		
NUMBER	DATE	DESCRIPTION
1	12/8/03	DNR REVIEW REVISIONS
2	01/13/04	GENERAL REVISIONS
3	10/27/04	SUPERIOR REVIEW REVISIONS

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME AND THAT I AM A DULY REGISTERED ENGINEER IN THE STATE OF WISCONSIN

REG. NO. 25488 DATE: AUGUST 4, 2003

RMA ENGINEERING COMPANY
CONSULTING ENGINEERS

DRAWN: RMA & JDC
DESIGNED: RMA

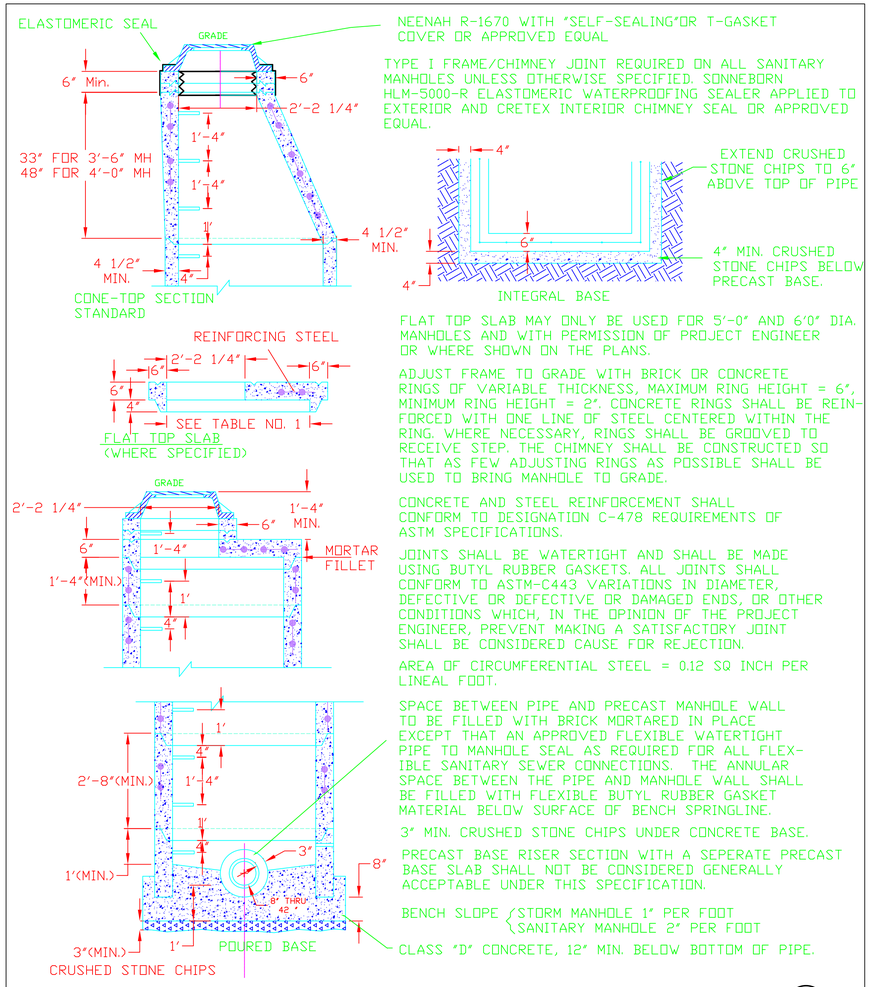
SCALE: HORZ. 1"=50'
VERT. 1"=10'

CITY OF SUPERIOR
DEPARTMENT OF PUBLIC WORKS

SEWER LINE MODIFICATIONS
PLAN AND PROFILE

LIFT STATION #6, COLLECTION SYSTEM AND STORAGE IMPROVEMENTS

SHEET NO. C-4

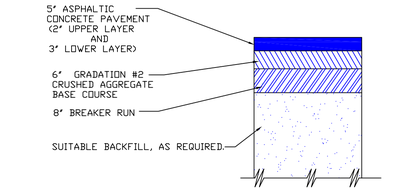


PRECAST MANHOLE DETAIL (6 / C-5)

SCALE 1" = 2'

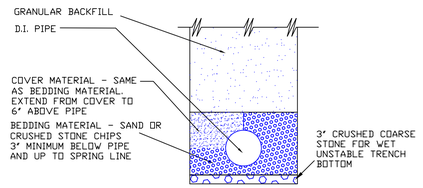
TABLE NO. 1

PIPE DIA	MANHOLE DIA	WALL THICKNESS
8" THRU 30"	4'-0"	5"
36"	5'-0"	6"
42"	6'-0"	7"



ASPHALT ROADWAY DETAIL (7 / C-5)

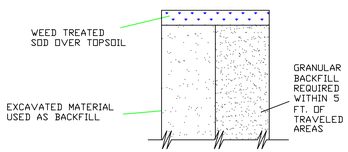
NO SCALE



DETAIL (8 / C-5)

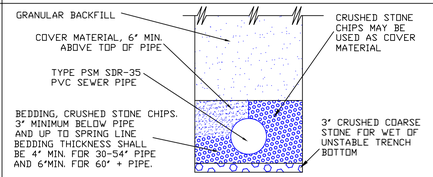
TRENCH FOR DUCTILE IRON PIPE

NO SCALE



LAWN REPLACEMENT DETAIL (9 / C-5)

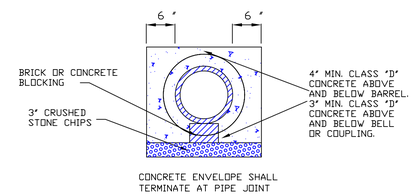
NO SCALE



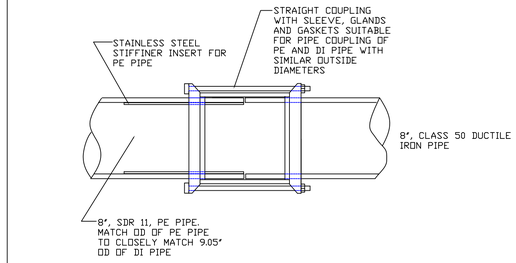
DETAIL (10 / C-5)

TRENCH FOR CONCRETE AND PVC PIPE

NO SCALE



CONCRETE ENVELOP DETAIL (11 / C-5)



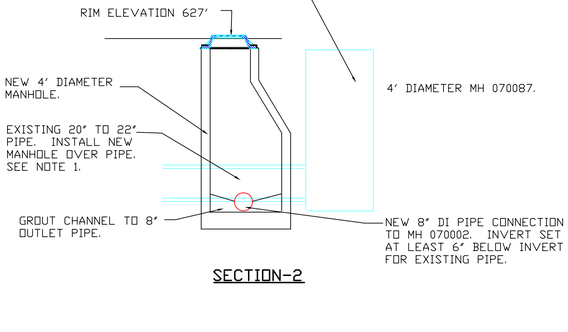
DETAIL (12 / C-5)

CONNECTION OF PE AND DI PIPE

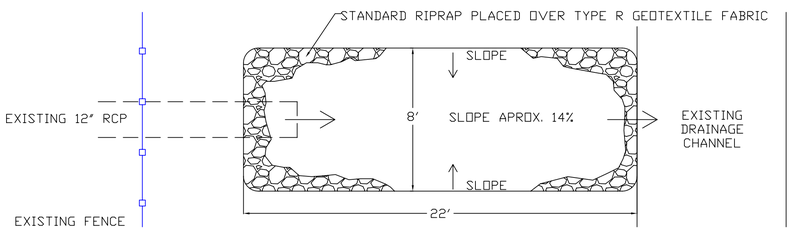
NO SCALE

NOTES:

1. PLACE MANHOLE OVER EXISTING PIPE. SEAL MANHOLE SIDES AROUND PIPE. FOR FINAL CONNECTION, CUT OUT EXISTING PIPE AND GROUT CHANNEL TO OUTLET PIPE. PLUG OUTLET SIDE OF EXISTING PIPE.
2. FOR ABANDONED MANHOLES REMOVE TOP THREE FEET AND FILL WITH SAND.
3. SUBMIT PLAN FOR CONNECTION OF EXISTING SEWER LINES TO NEW SEWER LINES. TEMPORARY PLUGGING OF SEWER LINES AT UPSTREAM MANHOLES AND BYPASS PUMPING MAY BE REQUIRED.
4. VERIFY LOCATION OF ALL UNDERGROUND UTILITIES BEFORE DIGGING. REPAIR OR REPLACE LINES AS NEEDED.

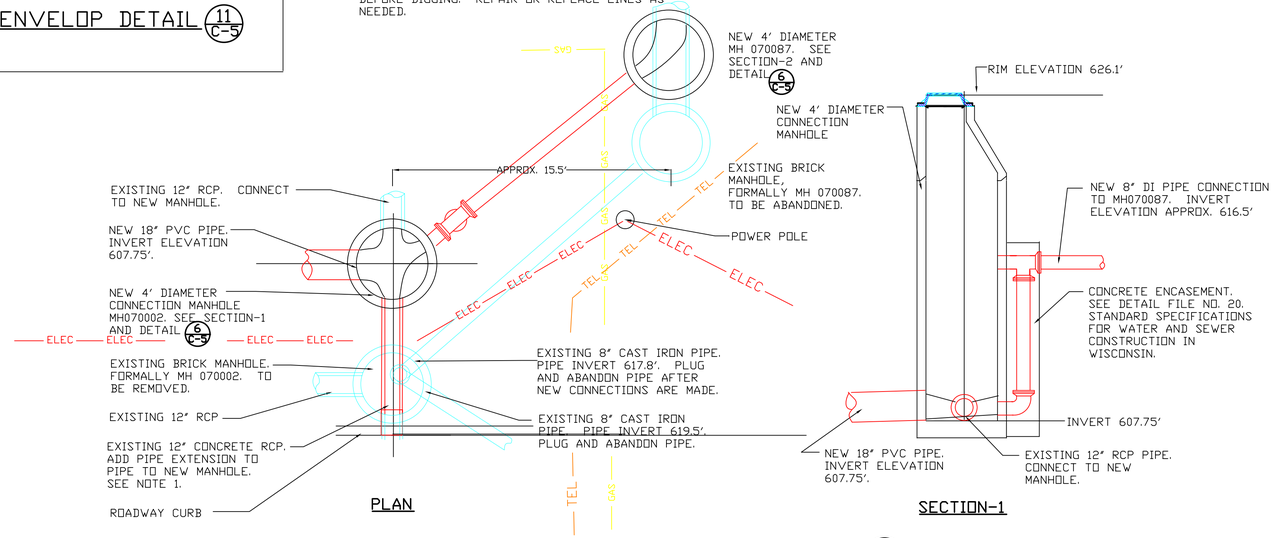


SECTION-2



LIFT STATION #5 DISCHARGE EROSION CONTROL

SCALE 1/4" = 1'



NEW SEWER CONNECTION MANHOLE DETAIL (13 / C-5)

SCALE 1/4" = 1'

REVISIONS

NUMBER	DATE	MADE BY:	CHECKED BY:	DESCRIPTION
1	12/8/03	RMA		DNR REVIEW REVISIONS
2	01/13/04	RMA		GENERAL REVISIONS
3	02/18/04	RMA		SUPERIOR REVIEW COMMENTS
4	10/26/04	RMA		REVIEW COMMENTS

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME AND THAT I AM A DULY REGISTERED ENGINEER IN THE STATE OF WISCONSIN

REG. NO. 25488 DATE: AUGUST 4, 2003

DRAWN BY: RMA & JDC

CHECKED BY: RMA

DEPT. CHECK: _____

SCALE: AS SHOWN

RMA ENGINEERING COMPANY
CONSULTING ENGINEERS

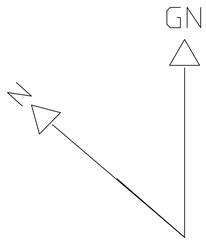
CITY OF SUPERIOR, DEPARTMENT OF PUBLIC WORKS

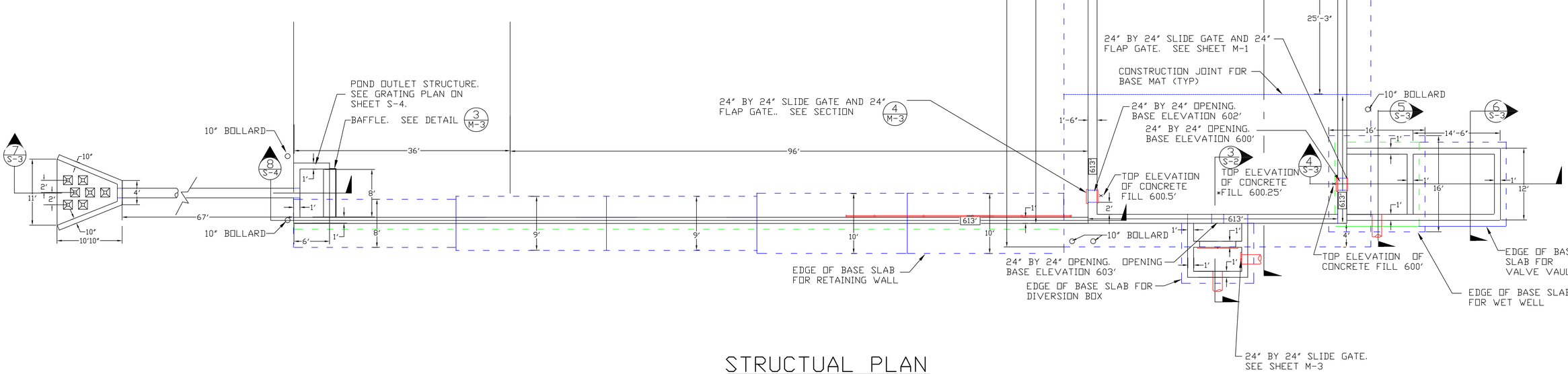
LIFT STATION #6, COLLECTION SYSTEM AND STORAGE IMPROVEMENTS

MISCELLANEOUS DETAILS

PROJ. JOB NO. _____

SHEET NO. C-5





STRUCTUAL PLAN

SCALE 1/8"=1'

REVISIONS				
NUMBER	DATE	MADE BY:	CHECKED BY:	DESCRIPTION
1	12/8/03	RMA		GENERAL REVISIONS
2	02/18/04	RMA		SUPERIOR REVIEW REVISIONS
3	12/08/04	RMA		ADDENDUM NO. 1

CERTIFY THAT THIS PLAN WAS PREPARED BY ME AND THAT I AM A DULY REGISTERED ENGINEER IN THE STATE OF WISCONSIN

REG. NO. 25488 DATE: _____

DRAWN BY: _____

CHECKED BY: _____

DEPT. CHECK: _____

SCALE: _____

RMA ENGINEERING COMPANY
CONSULTING ENGINEERS

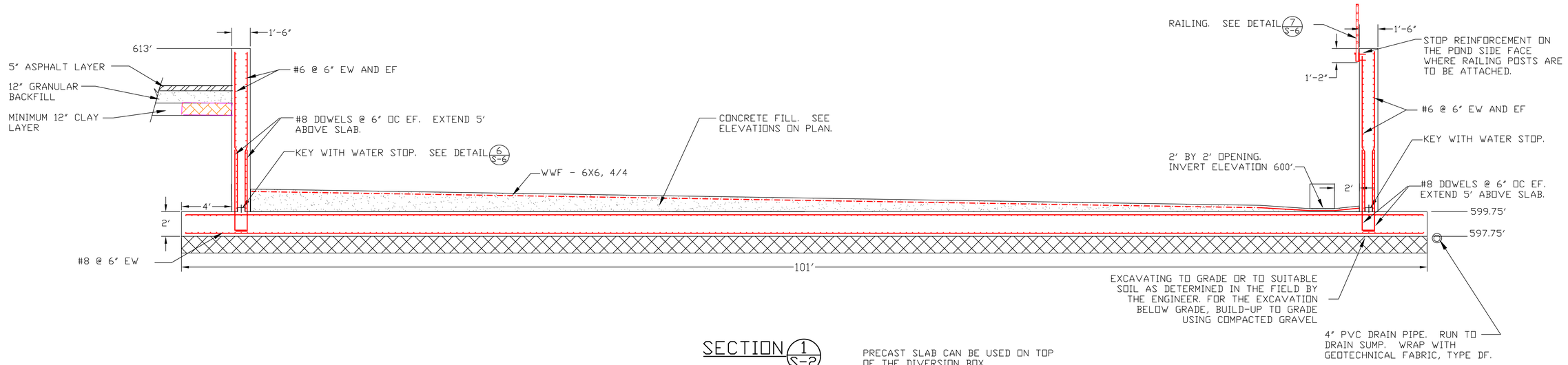
CITY OF SUPERIOR, DEPARTMENT OF PUBLIC WORKS

LIFT STATION #6, COLLECTION SYSTEM AND STORAGE IMPROVEMENTS

STRUCTURAL PLAN

PROJ. JOB NO. _____

SHEET NO. S-1



SECTION 1 S-2

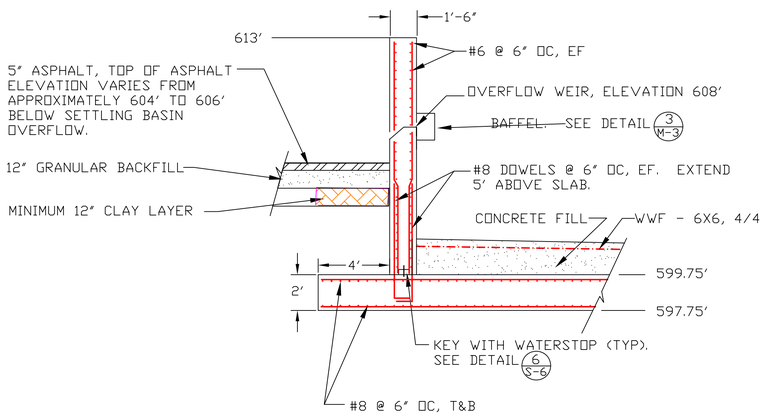
SCALE 1/4"=1'

PRECAST SLAB CAN BE USED ON TOP OF THE DIVERSION BOX. LOCATION OF OPENINGS ARE SHOWN ON SHEET M-3. STRUCTURAL LOADINGS ON SLAB SHALL BE:

LIVE LOAD: 300 PSF

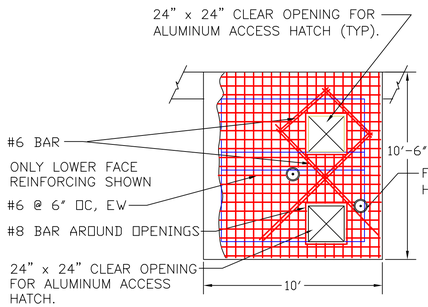
LOADINGS ALSO INCLUDE WEIGHT OF CONCRETE, ATTACHMENTS AND SNOW LOAD.

SUBMIT SHOP DRAWINGS FOR APPROVAL OF ALL SLABS.



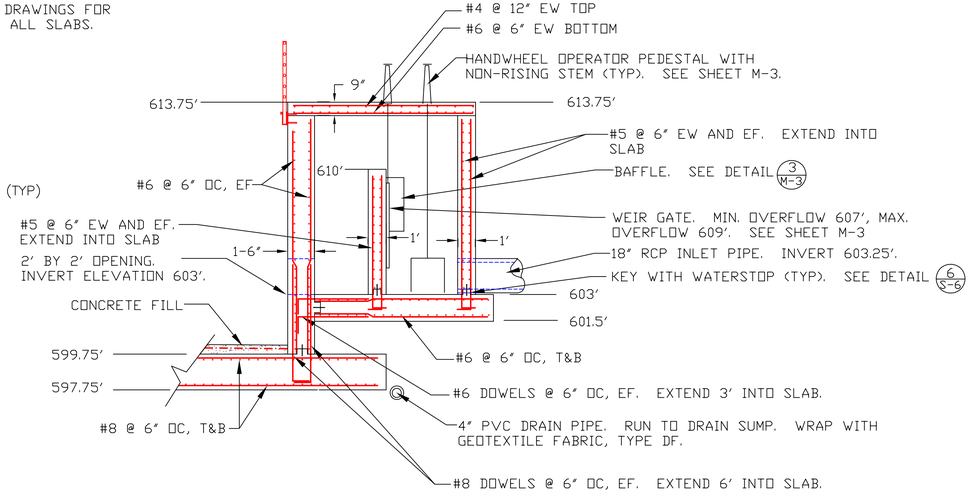
SECTION 2 S-2

SCALE 1/4"=1'



DIVERSION BOX COVER PLAN

SCALE 1/4"=1'



SECTION 3 S-2

SCALE 1/4"=1'

REVISIONS

NUMBER	DATE	MADE BY:	CHECKED BY:	DESCRIPTION
1	12/8/03	RMA		GENERAL REVISIONS
2	10/26/04	RMA		GENERAL REVISIONS
3	12/08/04	RMA		ADDENDUM NO. 1

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REG. NO. 25488 DATE: AUGUST 4, 2003

DRAWN BY: RMA & JDC

CHECKED BY: RMA

DEPT. CHECK: _____

SCALE: 1/4"=1'

RMA ENGINEERING COMPANY
CONSULTING ENGINEERS

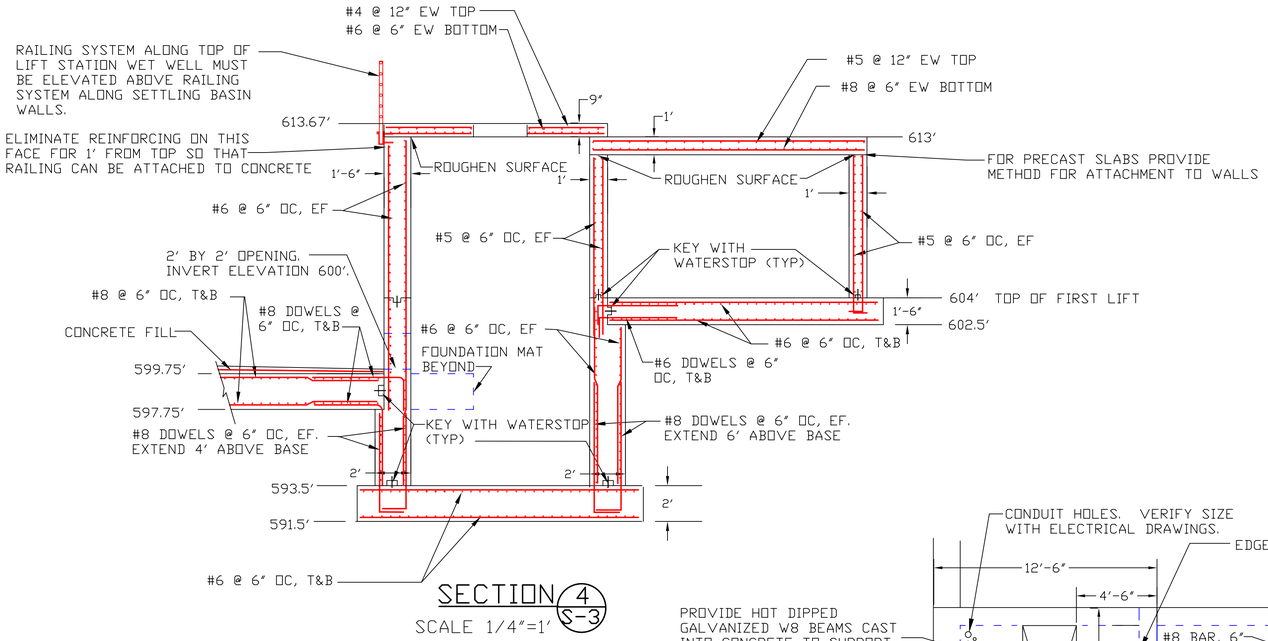
CITY OF SUPERIOR, DEPARTMENT OF PUBLIC WORKS

LIFT STATION #6, COLLECTION SYSTEM AND STORAGE IMPROVEMENTS

SETTLING BASIN SECTIONS

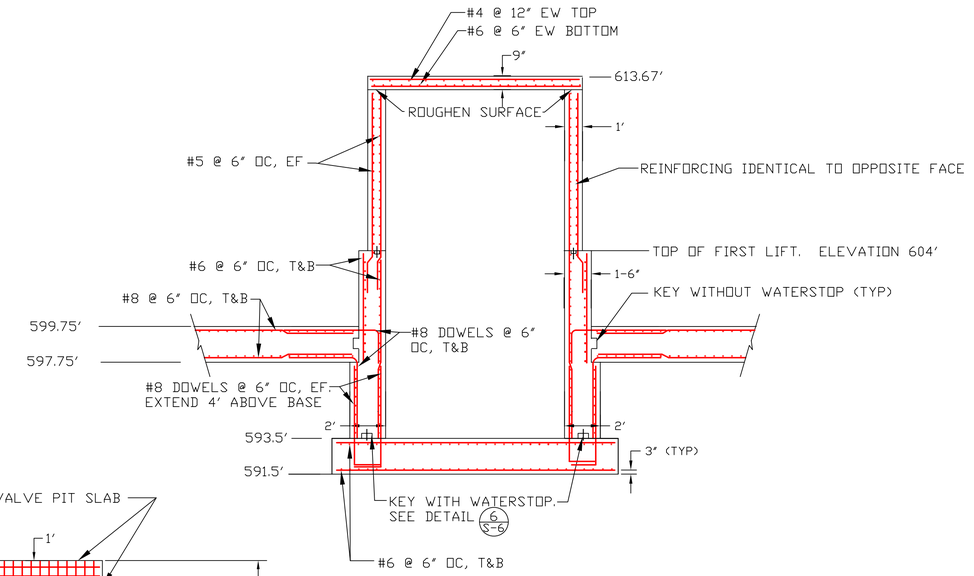
PROJ. JOB NO. _____

SHEET NO. S-2



SECTION 4/S-3

SCALE 1/4"=1'



SECTION 5/S-3

SCALE 1/4"=1'

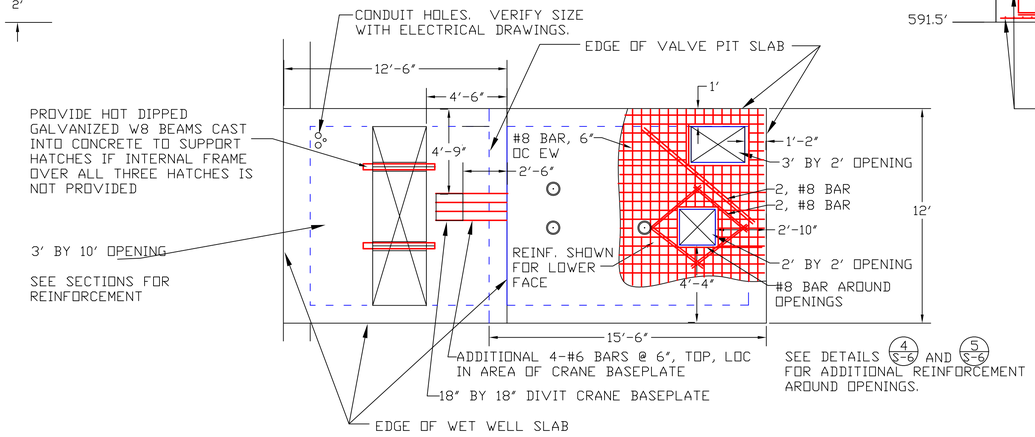
PRECAST SLABS CAN BE USED ON TOP OF THE WET WELL AND VALVE PIT. STRUCTURAL LOADINGS ON SLABS SHALL BE:

WET WELL:
LIVE LOAD: 300 PSF
LOAD AT DAVIT CRANE: 2,000 LBS

VALVE PIT:
WHEEL/AXLE LOAD: H-20

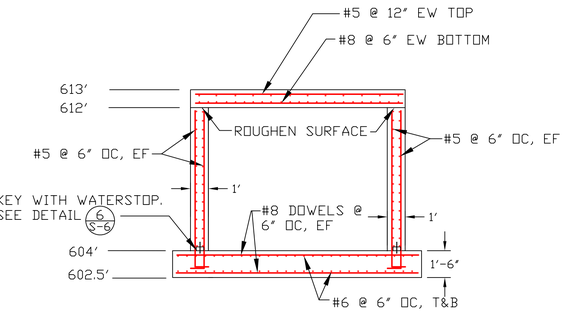
LOADINGS ALSO INCLUDE WEIGHT OF CONCRETE, ATTACHMENTS AND SNOW LOAD.

SUBMIT SHOP DRAWINGS FOR APPROVAL FOR ALL SLABS.



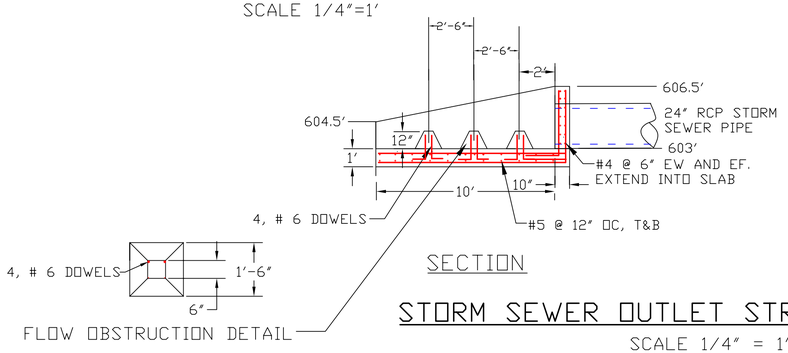
TOP SLAB PLAN

SCALE 1/4"=1'



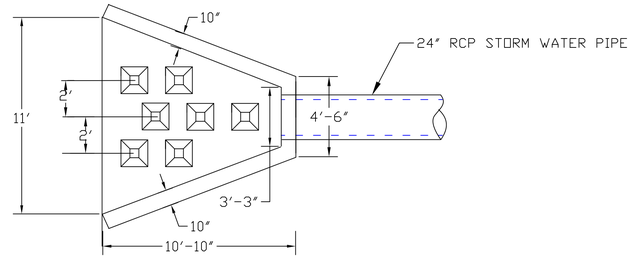
SECTION 6/S-3

SCALE 1/4"=1'



FLOW OBSTRUCTION DETAIL

SECTION



PLAN

STORM SEWER OUTLET STRUCTURE DETAIL 1/S-3

SCALE 1/4" = 1'

REVISIONS				
NUMBER	DATE	MADE BY:	CHECKED BY:	DESCRIPTION
1	12/8/03	RMA		GENERL REVISIONS
2	02/18/04	RMA		SUPERIOR REVIEW REVISIONS
3	10/26/04	RMA		REVIEW REVISIONS
4	12/08/04	RMA		ADDENDUM NO. 1

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REG. NO. 25488 DATE: AUGUST 4, 2003

DRAWN BY: RMA & JDC
CHECKED BY: RMA
DEPT. CHECK:

SCALE: 1/4"=1'

RMA ENGINEERING COMPANY
CONSULTING ENGINEERS

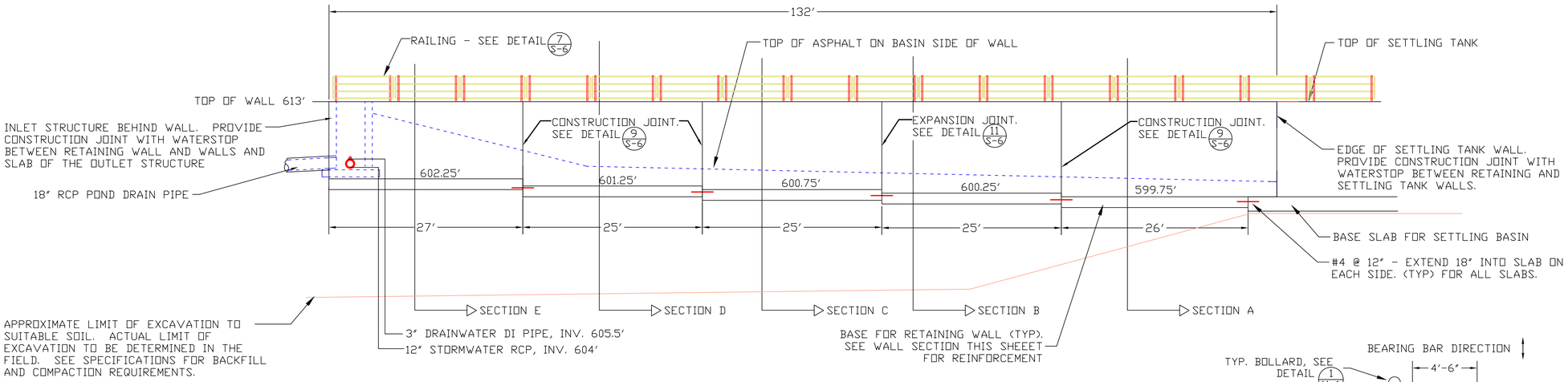
CITY OF SUPERIOR, DEPARTMENT OF PUBLIC WORKS

LIFT STATION #6, COLLECTION SYSTEM AND STORAGE IMPROVEMENTS

LIFT STATION SECTIONS

PROJ. JOB NO.

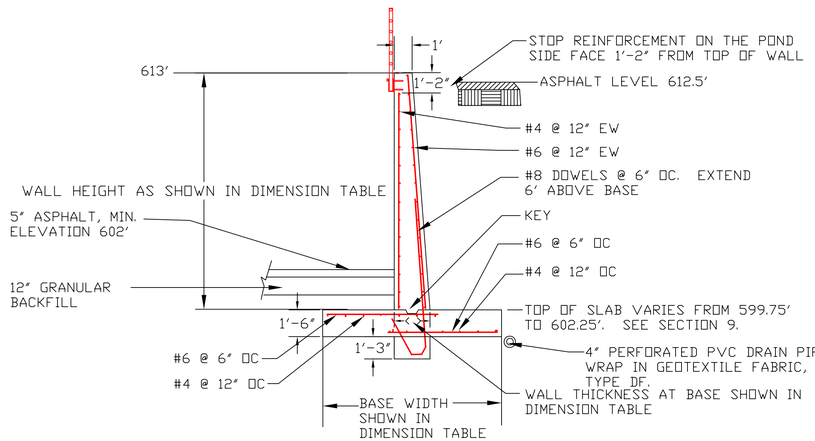
SHEET NO. S-3



SECTION 8 S-4

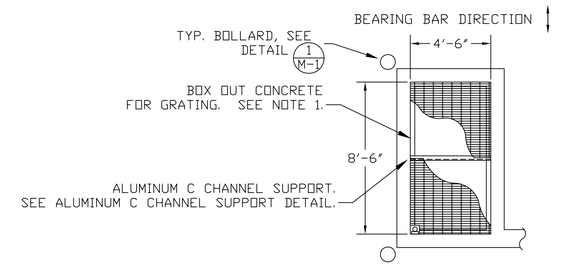
SCALE 1/8"=1'

RETAINING WALL DIMENSION TABLE			
SECTION	BASE WIDTH	WALL THICKNESS	WALL HEIGHT
A	10 FEET	2' - 0"	13.25 FEET
B	10 FEET	1' - 11.5"	12.75 FEET
C	9 FEET	1' - 11"	12.25 FEET
D	9 FEET	1' - 10.5"	11.75 FEET
E	8 FEET	1' - 9.5"	10.75 FEET



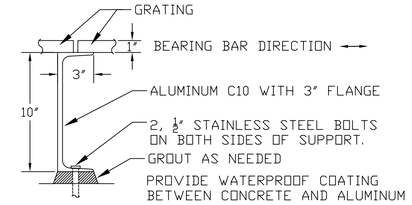
TYPICAL RETAINING WALL SECTION

SCALE 1/4"=1'



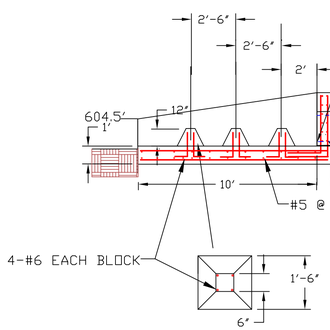
GRATING PLAN

SCALE 1/4"=1'

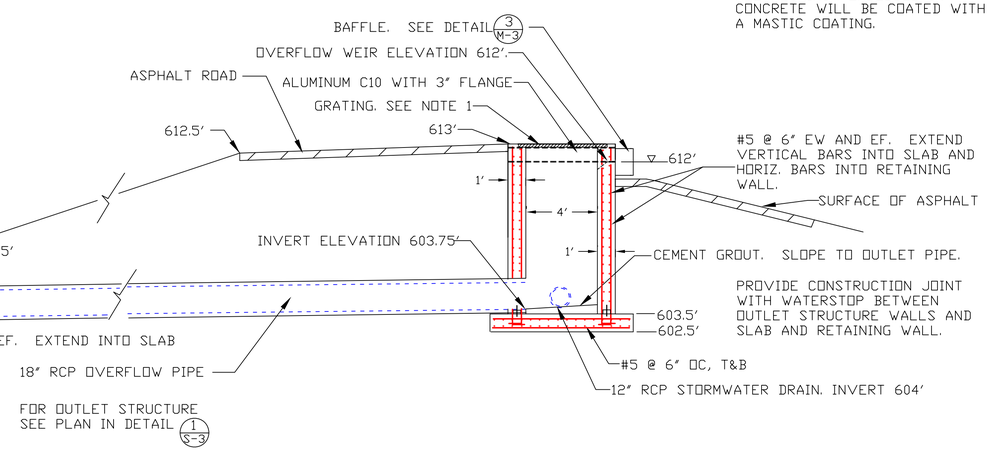


ALUMINUM C CHANNEL SUPPORT DETAIL

NO SCALE



FLOW OBSTRUCTION DETAIL



SECTION 7 S-4

SCALE 1/4"=1'

NOTE:
ALL ALUMINUM EMBEDDED IN CONCRETE WILL BE COATED WITH A MASTIC COATING.

NOTES:
1. PROVIDE ALUMINUM GRATING WITH MIN. 1" BEARING BARS. GRATING AREA 4'-6" BY 8'-6". PROVIDE GRATING IN TWO SECTIONS. WHEN FORMING FOR CONCRETE, BOX OUT CONCRETE SO THAT TOP OF GRATING IS FLUSH WITH TOP WALLS. ALLOWABLE LOADING ON THE GRATING IS 300 P.S.F. CUT OUT AREA IN GRATING FOR RAILING POST.

REVISIONS

NUMBER	DATE	MADE BY:	CHECKED BY:	DESCRIPTION
1	12/8/03	RMA		GENERAL REVISIONS

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME AND THAT I AM A DULY REGISTERED ENGINEER IN THE STATE OF WISCONSIN

REG. NO. 25488 DATE: AUGUST 4, 2003

DRAWN BY: RMA & JDC
CHECKED BY: RMA
DEPT. CHECK: _____

SCALE: AS SHOWN

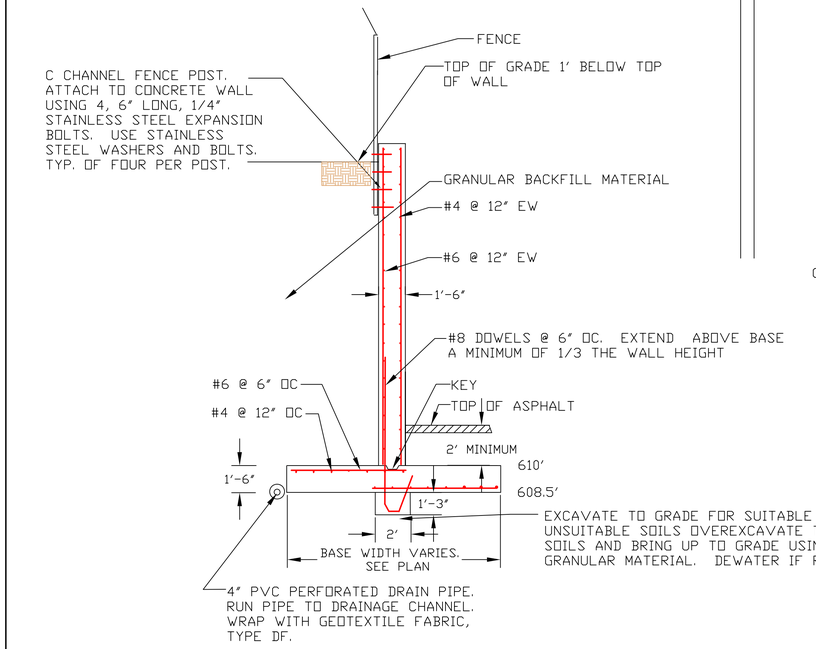
RMA ENGINEERING COMPANY
CONSULTING ENGINEERS

CITY OF SUPERIOR, DEPARTMENT OF PUBLIC WORKS

LIFT STATION #6, COLLECTION SYSTEM AND STORAGE IMPROVEMENTS
STORAGE POND RETAINING WALL SECTIONS

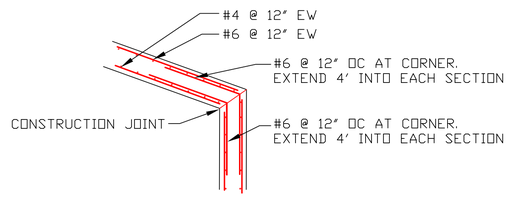
PROJ. JOB NO. _____

SHEET NO. S-4



CORNER DETAIL

SCALE 1/4"= 1'

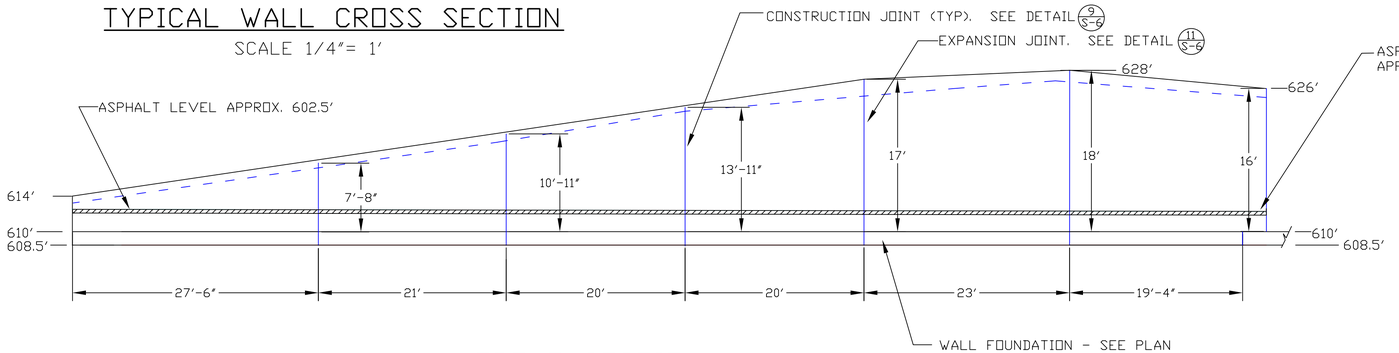


RETAINING WALL PLAN

SCALE 1/8"= 1'

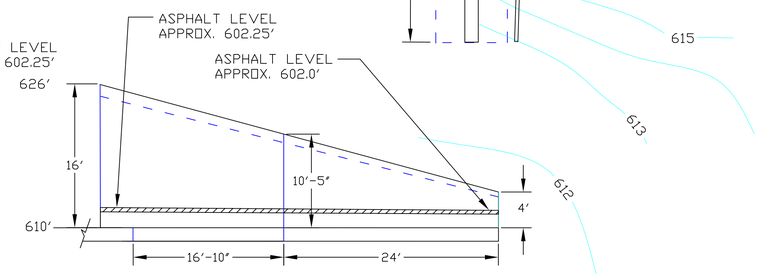
TYPICAL WALL CROSS SECTION

SCALE 1/4"= 1'



FRONT SECTION 1

SCALE 1/8"= 1'



FRONT SECTION 2

SCALE 1/8"= 1'

REVISIONS				
NUMBER	DATE	MADE BY:	CHECKED BY:	DESCRIPTION
1	12/8/03	RMA		GENERAL REVISIONS
2	02/18/04	RMA		SUPERIOR REVIEW REVISIONS
3	10/26/04	RMA		SUPERIOR REVISIONS

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REG. NO. 25488 DATE: AUGUST 4, 2003

DRAWN BY: RMA & JDC

CHECKED BY: RMA

DEPT. CHECK: _____

SCALE: AS SHOWN

RMA ENGINEERING COMPANY
CONSULTING ENGINEERS

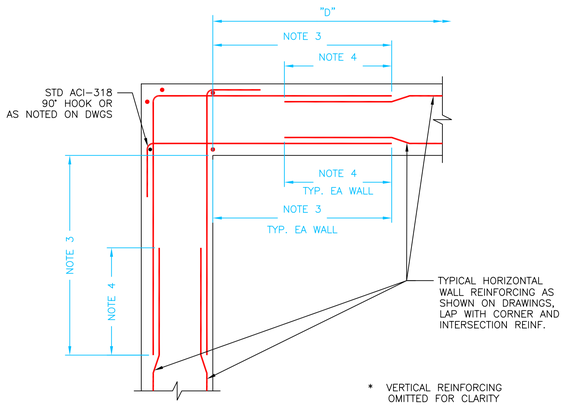
CITY OF SUPERIOR, DEPARTMENT OF PUBLIC WORKS

LIFT STATION #6, COLLECTION SYSTEM AND STORAGE IMPROVEMENTS

ACCESS LOT RETAINING WALL

PROJ. JOB NO. _____

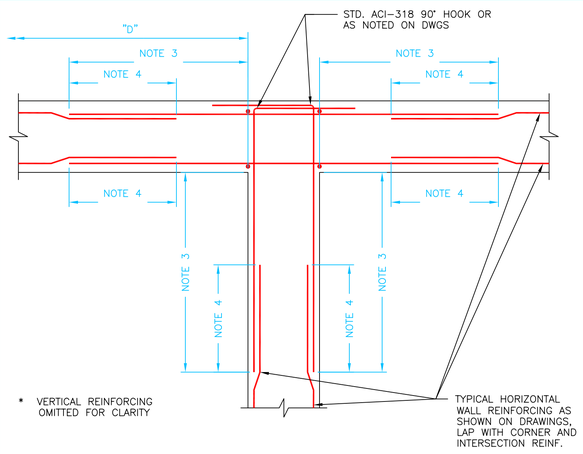
SHEET NO. S-5



NOTES:

1. TYPICAL HORIZONTAL WALL CORNER REINFORCING LAYOUT IS SHOWN TO AVOID CONGESTION AND PERMIT PROPER PLACEMENT. FOR SIZE AND SPACING, SEE PLANS. ALL HORIZONTAL REINFORCING AT CORNERS AND INTERSECTIONS SHALL BE FABRICATED AND INSTALLED WITH SPLICES LOCATED WHERE SHOWN REGARDLESS OF BAR SIZE AND SPACING.
2. D = LENGTH OF WALL PARALLEL TO BAR LENGTH IN QUESTION.
3. EXCEPT WHERE OTHERWISE SHOWN ON THE DRAWINGS, THE LENGTH INDICATED AS "NOTE 3" SHALL BE THE LESSER OF D/4, 10 FEET, OR 1.0 TIMES THE HEIGHT OF THE WALL, EXCEPT THAT IN NO CASE SHALL IT BE LESS THAN 2.0 FEET.
4. EXCEPT WHERE OTHERWISE SHOWN ON THE DRAWINGS, THE LENGTH INDICATED AS "NOTE 4" SHALL BE 40 BAR DIAMETERS MINIMUM. USE THE LAP LENGTH AS REQUIRED FOR THE SMALLER OF THE TWO REINFORCING BARS BEING SPLICED.

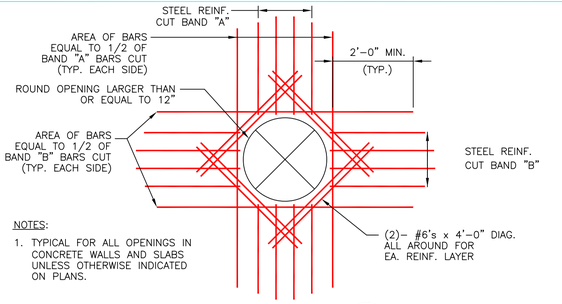
DETAIL 2 S-6
NOT TO SCALE



NOTES:

1. TYPICAL HORIZONTAL WALL INTERSECTION REINFORCING LAYOUT IS SHOWN TO AVOID CONGESTION AND PERMIT PROPER PLACEMENT. FOR SIZE AND SPACING, SEE PLANS. ALL HORIZONTAL REINFORCING AT CORNERS AND INTERSECTIONS SHALL BE FABRICATED AND INSTALLED WITH SPLICES LOCATED WHERE SHOWN REGARDLESS OF BAR SIZE AND SPACING.
2. D = LENGTH OF WALL PARALLEL TO BAR LENGTH IN QUESTION.
3. EXCEPT WHERE OTHERWISE SHOWN ON THE DRAWINGS, THE LENGTH INDICATED AS "NOTE 3" SHALL BE THE LESSER OF D/4, 10 FEET, OR 1.0 TIMES THE HEIGHT OF THE WALL, EXCEPT THAT IN NO CASE SHALL IT BE LESS THAN 2.0 FEET.
4. EXCEPT WHERE OTHERWISE SHOWN ON THE DRAWINGS, THE LENGTH INDICATED AS "NOTE 4" SHALL BE 40 BAR DIAMETERS MINIMUM. USE THE LAP LENGTH AS REQUIRED FOR THE SMALLER OF THE TWO REINFORCING BARS BEING SPLICED.

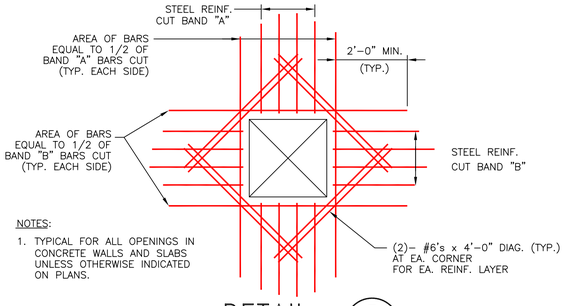
DETAIL 3 S-6
NOT TO SCALE



NOTES:

1. TYPICAL FOR ALL OPENINGS IN CONCRETE WALLS AND SLABS UNLESS OTHERWISE INDICATED ON PLANS.

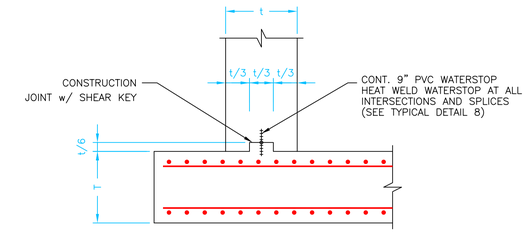
DETAIL 4 S-6
SCALE: 1/2"=1'-0"



NOTES:

1. TYPICAL FOR ALL OPENINGS IN CONCRETE WALLS AND SLABS UNLESS OTHERWISE INDICATED ON PLANS.

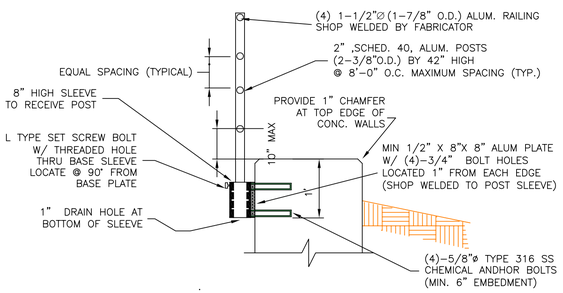
DETAIL 5 S-6
SCALE: 1/2"=1'-0"

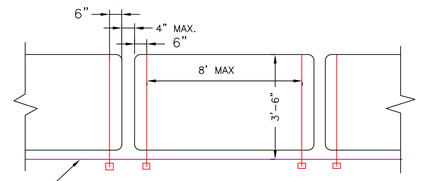


NOTES:

1. T = FOOTING THICKNESS AS DETAILED.
2. t = WALL THICKNESS.

DETAIL 6 S-6
NOT TO SCALE

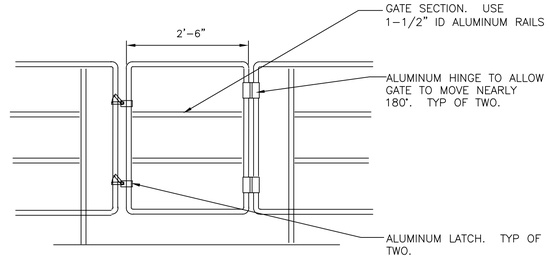




RAIL SECTION SCHEMATIC
NOT TO SCALE

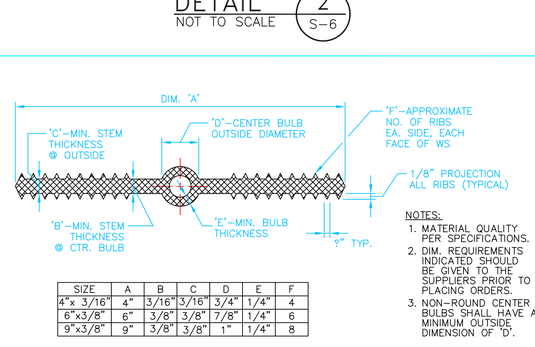
RAILING POSTS ALONG WET WELL ARE TO BE 8" HIGHER TO ALLOW FOR HIGHER SLAB.

ALL BOLTS, NUTS AND WASHERS USED FOR THE RAILING SYSTEM SHALL BE STAINLESS STEEL



GATE DETAIL
NOT TO SCALE

DETAIL 7 S-6
NOT TO SCALE

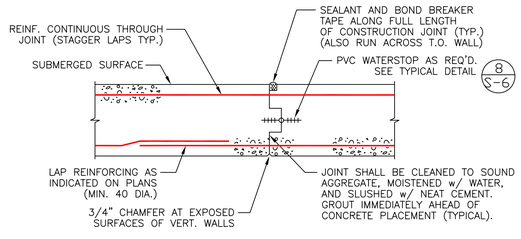


NOTES:

1. MATERIAL QUALITY PER SPECIFICATIONS.
2. DIM. REQUIREMENTS INDICATED SHOULD BE GIVEN TO THE SUPPLIERS PRIOR TO PLACING ORDERS.
3. NON-ROUND CENTER BULBS SHALL HAVE A MINIMUM OUTSIDE DIMENSION OF 'D'.

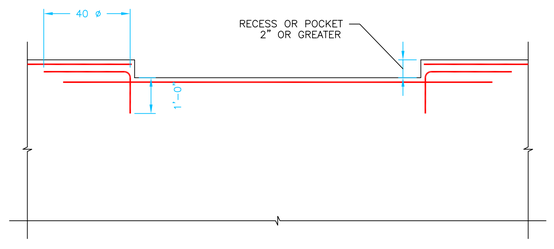
SIZE	A	B	C	D	E	F
4"x 3/16"	4"	3/16"	3/16"	3/4"	1/4"	4
6"x3/8"	6"	3/8"	3/8"	7/8"	1/4"	6
9"x3/8"	9"	3/8"	3/8"	1"	1/4"	8

PVC WATERSTOP DETAIL 8 S-6
NOT TO SCALE

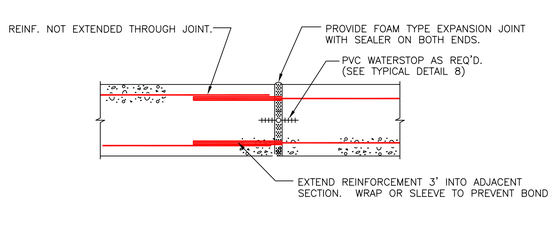


[PLAN @ WALL, SECTION @ MAT SLAB]

CONSTRUCTION JOINT DETAIL 9 S-6
NOT TO SCALE

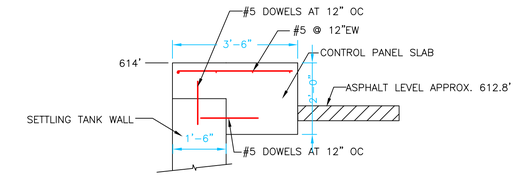


RECESSED WALL DETAIL 10 S-6
NOT TO SCALE

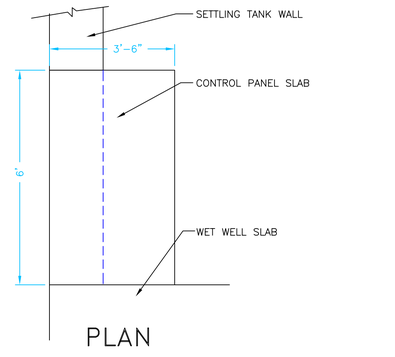


[PLAN @ WALL, SECTION @ MAT SLAB]

EXPANSION JOINT DETAIL 11 S-6
NOT TO SCALE



SECTION



PLAN

CONTROL PANEL SLAB DETAIL 12 S-6
SCALE: 1/2" = 1'

REVISIONS				
NUMBER	DATE	MADE BY:	CHECKED BY:	DESCRIPTION

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME AND THAT I AM A DULY REGISTERED ENGINEER IN THE STATE OF WISCONSIN

REG. NO. 25488 DATE: AUGUST 4, 2003

DRAWN BY: RMA & JDC
CHECKED BY: RMA
DEPT. CHECK: _____

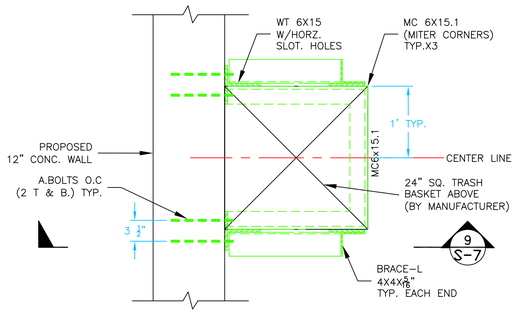
SCALE: AS SHOWN

RMA ENGINEERING COMPANY
CONSULTING ENGINEERS

CITY OF SUPERIOR, DEPARTMENT OF PUBLIC WORKS

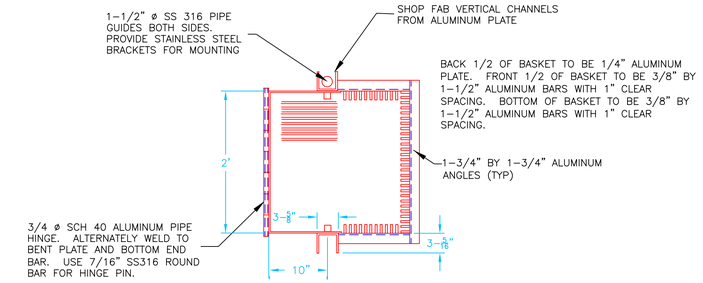
LIFT STATION #6, COLLECTION SYSTEM AND STORAGE IMPROVEMENTS
STRUCTURAL DETAILS-1

PROJ. JOB NO. _____
SHEET NO. S-6



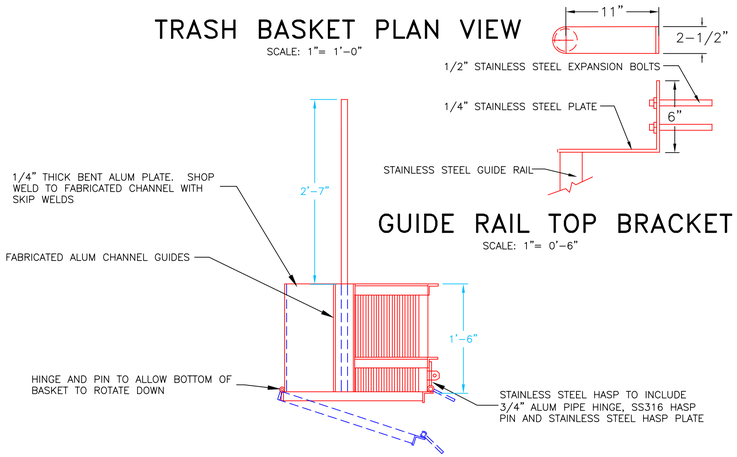
TRASH SUPPORT PLAN

SCALE: 1"= 1'-0"



TRASH BASKET PLAN VIEW

SCALE: 1"= 1'-0"

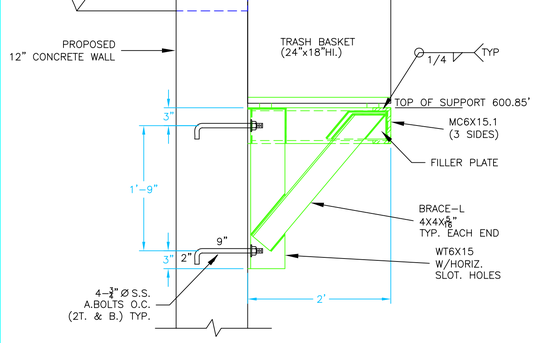


GUIDE RAIL TOP BRACKET

SCALE: 1"= 0'-6"

TRASH BASKET SIDE VIEW

SCALE: 1"= 1'-0"

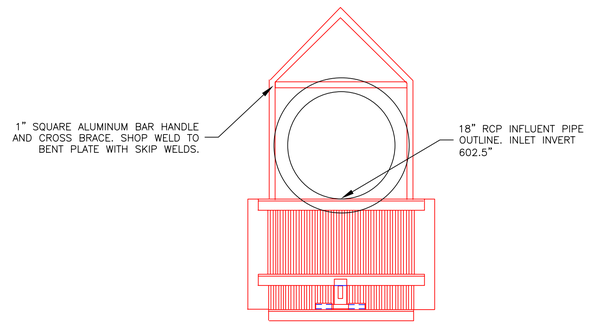


NOTES:
1. EACH SUPPORT TO BE SHOP FABRICATED, FULLY WELDED AND SHIPPED IN ONE PIECE.
2. ALL STEEL MEMBERS TO BE HOT-DIPPED GALVANIZED.
3. COORDINATE W/G.C. OR BASKET MANUFACTURE FOR SIZES BEFORE FABRICATION.

SECTION 9/S-7

SCALE: 1"= 1'-0"

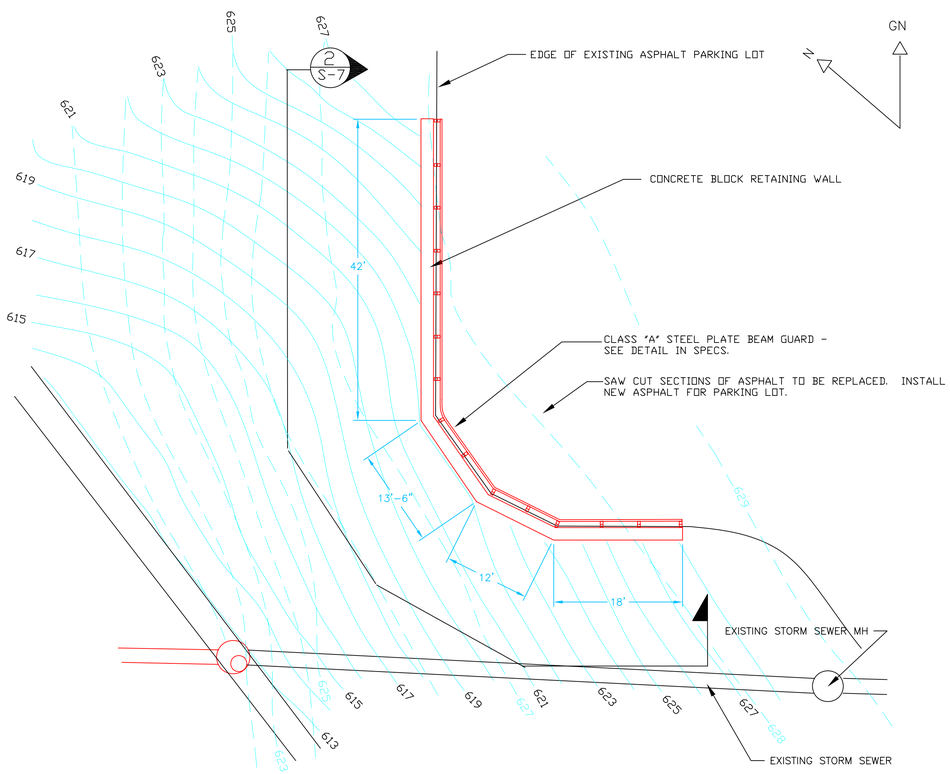
SEE MECH. DRAWING M-1



TRASH BASKET FRONT VIEW

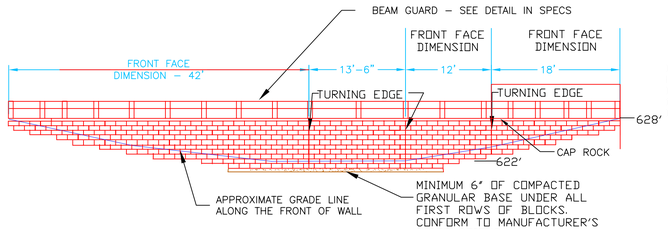
SCALE: 1"= 1'-0"

TRASH BASKET DETAIL 13/S-7



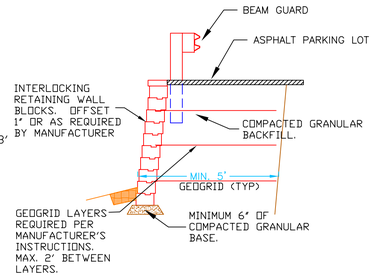
PLAN
RETAINING WALL BLOCKS

SCALE 1" = 10'



SECTION 2/S-7
RETAINING WALL BLOCKS

SCALE 1" = 10'



TYPICAL WALL SECTION

SCALE 1/4" = 1'

RETAINING WALL BLOCKS DETAIL 14/S-7

SCALE AS SHOWN

REVISIONS

NUMBER	DATE	MADE BY:	CHECKED BY:	DESCRIPTION
1	12/10/03	RMA		GENERAL REVISIONS
2	10/26/04	RMA		GENERAL REVISIONS

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME AND THAT I AM A DULY REGISTERED ENGINEER IN THE STATE OF WISCONSIN

REG. NO. 25488 DATE: AUGUST 4, 2003

DRAWN BY: _____
CHECKED BY: _____
DEPT. CHECK: _____

SCALE: _____

RMA ENGINEERING COMPANY
CONSULTING ENGINEERS

CITY OF SUPERIOR,
DEPARTMENT OF PUBLIC
WORKS

LIFT STATION #6, COLLECTION SYSTEM
AND STORAGE IMPROVEMENTS

STRUCTURAL DETAILS-2

PROJ. JOB NO. _____

SHEET NO. S-7

STRUCTURAL ABBREVIATIONS

AL	ALUMINUM	HORZ	HORIZONTAL
ALT	ALTERNATE	IF	INSIDE FACE
BOT	BOTTOM	LONG.	LONGITUDINAL
BOF	BOTTOM OF FOOTING	MAX	MAXIMUM
BM	BEAM	MIN	MINIMUM
BRG	BEARING	NTS	NOT TO SCALE
CJ	CONSTRUCTION JOINT	OC	ON CENTER
℄	CENTER LINE	OF	OUTSIDE FACE
CLR	CLEARANCE	RC	REINFORCED CONCRETE
COL	COLUMN	SIM	SIMILIAR
CONC	CONCRETE	SPECS	SPECIFICATIONS
CONN	CONNECTION	SQ	SQUARE
DIA	DIAMETER	T&B	TOP AND BOTTOM
EA	EACH	TOC	TOP OF CONCRETE
EF	EACH FACE	TRANSV	TRANSVERSE
EL	ELEVATION	TOS	TOP OF STEEL
EW	EACH WAY	TOW	TOP OF WALL
EXP JT	EXPANSION JOINT	TYP	TYPICAL
FDN	FOUNDATION	VERT	VERTICAL
FTG	FOOTING	WS	WATERSTOP
GALV	GALVANIZE (HOT DIPPED)	WWF	WELDED WIRE FABRIC

STRUCTURAL LEGEND

℄ —— INDICATES CENTER LINE

602.00 —— INDICATES BOTTOM OF FOOTING ELEVATION

612.00 —— INDICATES TOP OF WALL ELEVATION

NOTE:
CONTRACTOR SHALL PROTECT ALL STRUCTURES FROM BOUYANCY DURING CONSTRUCTION UNTIL ENTIRE STRUCTURE IS COMPLETED AND BACKFILLED AS DIRECTED.

SPECIAL BOUYANCY COMPENSATION IS REQUIRED DURING CONSTRUCTION AND FUTURE MODIFICATIONS SEE GENERAL NOTES.

GEOTECHNICAL DESIGN CRITERIA EARTH AND HYDROSTATIC PRESSURES

1. AT REST ABOVE GROUNDWATER TABLE (GWT) EQUIVALENT FLUID PRESSURE (EFP) . . . = 55 PCF
2. AT REST BELOW GWT; EFP . . . . . = 100 PCF
3. SOIL WEIGHT . . . . . = 115 PCF
4. SOIL BEARING PRESSURE . . . . . = 1500 PSF
5. K_o . . . . . = 0.35
6. DESIGN 100 YEAR FLOOD ELEVATION . . . = 604'

STRUCTURAL NOTES

GENERAL

1. DESIGN IS IN ACCORDANCE WITH, AND CONSTRUCTION SHALL CONFORM TO REQUIREMENTS OF THE WISCONSIN ADMINISTRATIVE CODE.
2. INFORMATION REGARDING EXISTING CONSTRUCTION AND CONDITIONS IS BASED ON FIELD INSPECTION, AND IS INCLUDED TO ASSIST THE CONTRACTOR. THE ENGINEER ASSUMES NO RESPONSIBILITY FOR ITS ACCURACY OR COMPLETENESS.
3. THE CONTRACTOR SHALL NOTIFY THE ENGINEER WHEN UNANTICIPATED OR APPARENTLY DANGEROUS CONDITIONS ARE UNCOVERED DURING CONSTRUCTION OR DEMOLITION.
4. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS ON THE JOB. DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER BEFORE PROCEEDING WITH THE PORTION OF THE WORK.
5. OPENINGS LESS THAN 12" MAXIMUM DIMENSION IN SLABS AND WALLS ARE GENERALLY NOT SHOWN ON STRUCTURAL DRAWINGS. SEE MECHANICAL, ELECTRICAL AND PLUMBING DRAWINGS (IF ANY) FOR LOCATIONS AND DIMENSIONS OF CHASES, INSERTS, SLEEVES; OPENINGS AND OTHER PROJECT REQUIREMENTS NOT SHOWN ON STRUCTURAL DRAWINGS.
6. DETAILS NOT SPECIFICALLY SHOWN SHALL BE SIMILAR TO THOSE FOR MOST NEARLY SIMILAR CONDITION AS DETERMINED BY THE ENGINEER.
7. THE CONTRACTOR SHALL SHORE, BRACE, SHEETPILE OR OTHERWISE SUPPORT THE STRUCTURE AS REQUIRED TO MAINTAIN STRUCTURAL INTEGRITY AT ALL TIMES.
8. HEADERS SHALL BE PLACED ACROSS TOP OF SHORING POSTS AND SHALL BE TIGHT AGAINST UNDERSIDE OF STRUCTURE ABOVE.
9. SHORING SHALL BEAR ON SLEEPERS TO PREVENT DAMAGE TO STRUCTURE BELOW.
10. TEMPORARY SHORES SHALL BE DESIGNED, ERECTED, MANUFACTURED BY SIKA CORP. OR ENGINEER APPROVED EQUIVALENT APPLY PER MANUFACTURED RECOMMENDATION. MAINTAINED BY THE CONTRACTOR TO SUPPORT SAFELY ALL DEAD LOADS PRESENTLY CARRIED BY THE STRUCTURAL WORK BEING SHORED, AND ANY CONSTRUCTION LIVE LOADS.
11. NEW STRUCTURAL SYSTEMS SHALL BE COMPLETELY INSTALLED AND CAPABLE OF SUPPORTING DESIGN LOADS BEFORE SHORES ARE REMOVED. SHORES SHALL BE RELEASED GRADUALLY.

DESIGN LOADS (EXCEPT AS NOTED):

SNOW – (ZONE 1):
LIVE LOAD . . . . . 40 PSF

STRUCTURAL SLAB – WET WELL
LIVE LOAD . . . . . 300 PSF
DAVIT CRANE . . . . . 2,000 LBS

STRUCTURAL SLAB – VALVE PIT
WHEEL/ AXLE LOAD H–20

STRUCTURAL SLAB – DIVERSION BOX
LIVE LOAD . . . . . 300 PSF

SLAB LOADINGS ALSO INCLUDE THE WEIGHT OF CONCRETE AND ATTACHMENTS.

FOUNDATIONS

1. BASE SLABS HAVE BEEN DESIGNED BASED UPON A PRESUMPTIVE BEARING CAPACITY OF: 1500 PSF

   THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY IF UNSUITABLE BEARING MATERIALS EXIST.

2. THE ENGINEER ASSUMES NO RESPONSIBILITY FOR THE VALIDITY OF SUBSURFACE CONDITIONS WHERE DESCRIBED ON DRAWINGS, SPECIFICATIONS, TEST BORINGS OR TEST PITS. THESE DATA ARE INCLUDED ONLY TO ASSIST THE CONTRACTOR DURING CONSTRUCTION, AND REPRESENT CONDITIONS ONLY AT THESE SPECIFIC LOCATIONS AT THE PARTICULAR TIME THEY WERE PERFORMED.
3. THE FOUNDATION DESIGN IS BASED ON INFORMATION PROVIDED IN GEOTECHNICAL REPORT. "SUBSURFACE EXPLORATION FOR THE PROPOSED WASTEWATER OVERFLOW STORAGE BASIN IN SUPERIOR, WISCONSIN, DATED 6/22/01, PREPARED BY GME CONSULTANTS, INC., DULUTH, MN.
4. UNSUITABLE BEARING MATERIALS, SUCH AS MISCELLANEOUS FILL AND ORGANIC SOILS MAY EXIST IN AREAS OF NEW FOUNDATIONS. EXISTING UNSUITABLE MATERIALS SHALL BE EXCAVATED TO 1'–0"MIN. AS DIRECTED OR AS INDICATED ON THE DRAWINGS AND SHALL BE FOLLOWED BY PLACEMENT OF COMPACTED GRAVEL FILL OR CRUSHED STONE AS SPECIFIED.
5. WHERE ROCK IS ENCOUNTERED, IT SHALL BE EXCAVATED TO 1'–0" BELOW BOTTOMS OF FOOTINGS AND SLABS AND REPLACED WITH A 1'–0" LAYER OF COMPACTED GRAVEL OR SAND.
6. NO FOUNDATION CONCRETE SHALL BE PLACED IN WATER OR ON FROZEN SOIL.
7. BACKFILL UNDER ANY PORTION OF THE STRUCTURE SHALL BE COMPACTED IN 6" LIFTS.
8. COMPACT SOIL TO 95% OF MAX. DRY DENSITY UNDER FOOTINGS AND SLABS ACCORDING TO ASTM D–1557.
9. PLACE CONSTRUCTION JOINTS AND P.V.C. WATERSTOPS IN SLABS AND FOUNDATION WALLS IN ACCORDANCE WITH DETAILS AND AT LOCATIONS INDICATED ON DRAWINGS.
10. FOUNDATION WALLS ENCLOSING BELOW GRADE AREAS SHALL BE BRACED OR HAVE ROOF SLABS OR FRAMING SECURELY IN PLACE PRIOR TO BACKFILLING. CONCRETE SHALL REACH 75% OF THE DESIGN STRENGTH PRIOR TO BACKFILLING.
11. BACKFILL SHALL BE PLACED AND COMPACTED SIMULTANEOUSLY ON BOTH SIDES OF FOUNDATION WALLS WHEREVER POSSIBLE.
12. CONTRACTOR SHALL MAINTAIN CONTINUOUS CONTROL OF SURFACE AND SUBSURFACE WATER DURING CONSTRUCTION SO THAT WORK IS DONE UNDER DRY CONDITIONS ON UNDISTURBED SUBGRADE MATERIAL OR COMPACTED FILL, AS APPLICABLE. IT IS ANTICIPATED THAT SHEETING & DEWATERING WILL BE REQUIRED.
13. ALL EMBANKMENTS AND BACKFILL AROUND STRUCTURES SHALL BE COMPACTED TO 90% MODIFIED PROCTOR DENSITY.
14. ALL BELOW GRADE CONCRETE WALLS SHALL BE COATED WITH A BITUMINOUS BASED DAMPPROOFING MATERIAL.
15. STRUCTURES ARE DESIGNED FOR GROUNDWATER ELEVATIONS UP TO 604' MSL.
16. ALL EXCAVATIONS MUST COMPLY WITH THE REQUIREMENTS OF OSHA 29 CFR, PART 1926, SUBPART P, "EXCAVATIONS AND TRENCHES."

STRUCTURAL NOTES, CONT.

CONCRETE

1. CONCRETE WORK SHALL CONFORM TO LATEST EDITIONS OF "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE" (ACI 318) AND "SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS" (ACI 301), AND ACI 350 "ENVIRONMENTAL ENGINEERING CONCRETE STRUCTURES".
2. CONCRETE SHALL BE PROPORTIONED, MIXED AND PLACED UNDER THE SUPERVISION OF THE APPROVED TESTING AGENCY.
3. CONCRETE SHALL HAVE A MINIMUM 28–DAY COMPRESSIVE STRENGTH OF 4000 PSI, UNLESS OTHERWISE NOTED.
4. ALL CONCRETE SHALL BE AIR–ENTRAINED.
5. CONCRETE SHALL BE CURED FOR A MINIMUM OF (7) SEVEN DAYS BEFORE ANY LOADS ARE APPLIED THERETO.
6. CONSTRUCTION JOINTS SHALL BE PLACED AS SHOWN ON THE DRAWINGS. CHANGES SHALL NOT BE MADE WITHOUT APPROVAL OF THE ENGINEER.
7. CONCRETE SHALL BE PLACED SO THAT SLAB THICKNESS IS AT NO POINT LESS THAN THAT INDICATED ON DRAWINGS.
8. CONCRETE SLABS AND WALLS SHALL BE CAST ALTERNATELY OR IN A CHECKERBOARD PATTERN SO THAT SECTIONS ARE PLACED NO SOONER THAN 3 DAYS APART.
9. PROVIDE A SMOOTH RUBBED SURFACE, FREE FROM BURRS, TIE HOLES, HONEYCOMBING, ETC. ON EXPOSED CONCRETE WALLS.
10. PROVIDE A STEEL TROWELED FINISH FOR SLABS AT PITS AND A BROOM FINISH FOR EXPOSED SLABS.
11. AT OPENINGS IN FOUNDATION WALLS LESS THAN 12 INCHES SQUARE, PROVIDE 2–#6 BARS AT EACH EDGE OF OPENING.
12. PORTLAND CEMENT TYPE II SHALL BE USED FOR ALL CONCRETE AND MAXIMUM W/C (WATER CEMENT RATIO) SHALL BE 0.45 AND A MAXIMUM WATER SOLUBLE CHLORIDE–CONCENTRATION IN HARDENED CONCRETE OF 0.15% BY WEIGHT OF CEMENT.
13. AT ALL CONSTRUCTION JOINTS EPOXY NEW CONCRETE TO HARDENED CONCRETE WITH SIKADUR 32, HI–MOD MANUFACTURED BY SIKA CORP. OR ENGINEER APPROVED EQUIVALENT APPLY PER MANUFACTURED RECOMMENDATION.
14. ELASTOMERIC SEALANT SHALL BE 'SIKA FLEX 1A' AS MANUFACTURED BY SIKA CORP. OR ENGINEER APPROVED EQUIVALENT.
    SUNNEBORNE HLM–5000R FOR ELASTOMERIC CHIMNEY SEALER.
15. ALL EXPOSED CONCRETE EDGES SHALL HAVE A 3/4" CHAMFER (TYP.)
16. ALL CONCRETE SHALL BE PLACED IN THE DRY CONDITION.
17. WHERE CONSTRUCTION JOINTS ARE NOT SHOWN, OR WHEN ALTERNATE LOCATIONS ARE PROPOSED, DRAWINGS SHOWING LOCATION OF CONSTRUCTION AND CONTROL JOINTS AND CONCRETE PLACING SEQUENCE SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PRIOR TO PREPARATION OF THE REINFORCEMENT SHOP DRAWINGS.
18. PROCESS AND ELECTRICAL DRAWINGS IDENTIFY AND LOCATE ALL EMBEDDED ITEMS (PIPES, SLEEVES, EQUIPMENT BOLTS, RAILINGS, LIFTING RINGS, FRAMES, ETC.) AND ARE TO BE USED IN CONJUNCTION WITH STRUCTURAL DRAWINGS DURING CONSTRUCTION.
19. ALL EQUIPMENT ANCHOR BOLTS FURNISHED BY EQUIPMENT MANUFACTURER TO BE INSTALLED BY GENERAL CONTRACTOR, AND SHALL BE STAINLESS STEEL.

REINFORCING STEEL

1. REINFORCING STEEL SHALL BE GRADE 60 NEW BILLET STEEL, CONFORMING TO ASTM A615. WELDED WIRE FABRIC SHALL BE ASTM A185.
2. DETAILING, FABRICATION AND ERECTION OF REINFORCEMENT SHALL CONFORM TO LATEST EDITIONS OF "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE" (ACI 318) AND "MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES" (ACI 315).
3. MINIMUM LAP OF REINFORCING BARS SHALL BE 40 DIAMETERS, UNLESS SHOWN OTHERWISE.
4. REINFORCEMENT SHALL BE CONTINUOUS THROUGH CONSTRUCTION JOINTS.
5. INSTALLATION OF REINFORCEMENT SHALL BE COMPLETED AT LEAST 24 HOURS PRIOR TO SCHEDULED CONCRETE PLACEMENT, UNLESS OTHERWISE APPROVED BY ENGINEER.
6. MINIMUM CONCRETE COVER FOR REINFORCEMENT, UNLESS NOTED OTHERWISE, SHALL BE AS FOLLOWS:
   A. CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH . . . . . 3.0"
   B. CONCRETE EXPOSED TO EARTH OR WEATHER
      #6 THROUGH #18 BARS . . . . . 2.0"
      #5 BAR W31 OR D31 WIRE, AND SMALLER . . 1.5"
   C. CONCRETE NOT EXPOSED TO WEATHER OR IN CONTACT WITH GROUND
      #14 AND #18 BARS, SLABS, WALLS, JOISTS . . 1.5"
      #11 BAR AND SMALLER . . . . . 1.0"
   D. BEAMS, COLUMNS:
      PRIMARY REINFORCEMENT, TIES,
      STIRRUPS, SPIRALS . . . . . 2.0"
7. PROVIDE AND SCHEDULE ON SHOP DRAWINGS THE NECESSARY ACCESSORIES TO HOLD REINFORCEMENT SECURELY IN POSITION. MINIMUM REQUIREMENTS SHALL BE HIGH CHAIRS, 4'–0" O.C. WITH CONTINUOUS #5 SUPPORT BAR, SLAB BOLSTERS, CONTINUOUS AND 3'–6" O.C.; BEAM BOLSTERS, 5'–0" O.C. ALL CHAIRS SHALL BE GALVANIZED AND SHALL BE USED AGAINST ALL FORMS (SLABS, WALLS, PILASTERS, ETC.)
8. WHERE CONTINUOUS REINFORCEMENT IS CALLED FOR IT SHALL BE EXTENDED CONTINUOUS AROUND CORNERS AND LAPPED AT NECESSARY SPLICES OR HOOKED AT DISCONTINUOUS ENDS. LAPS SHALL BE CLASS B TENSION LAP SPLICES UNLESS NOTED OTHERWISE.
9. WHERE REINFORCEMENT IS REQUIRED IN SECTION, REINFORCEMENT IS CONSIDERED TYPICAL WHEREVER THE SECTION APPLIES.
10. WELDED WIRE FABRIC SHALL LAP 6" OR ONE SPACE, WHICHEVER IS LARGER, AND SHALL BE WIRED TOGETHER.
11. REINFORCEMENT SHALL NOT BE TACK WELDED.

STRUCTURAL NOTES, CONT.

STEEL

1. STRUCTURAL STEEL IS DESIGNED IN ACCORDANCE WITH AND WORK SHALL CONFORM TO THE LATEST EDITIONS OF "SPECIFICATIONS FOR DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS" (AISC), "CODE OF STANDARD PRACTICE FOR STEEL BUILDINGS AND BRIDGES" (AISC) AND "STRUCTURAL WELDING CODE– STEEL (AWS.) STRUCTURAL STEEL SHALL BE NEW STEEL CONFORMING TO ASTM A36, FY =36 KSI, UNLESS OTHERWISE NOTED.
2. TUBE STEEL SECTIONS SHALL BE ASTM A500 GRADE B, FY = 46 KSI.
3. CONNECTIONS:
   A. BEAM CONNECTIONS SHALL BE TYPE–3 "SEMI–RIGID FRAMING" (PARTIAL RESTRAINED), UNLESS NOTED OTHERWISE. REFER TO AISC SPECIFICATIONS AND PROVIDE DETAILS FOR REVIEW AND APPROVAL.
   B. CONNECTIONS SHALL BE BOLTED OR WELDED OR BOTH, AND FABRICATOR SHALL SUBMIT PROPOSED CONNECTION DETAILS FOR APPROVAL PRIOR TO FABRICATION.
   C. BOLTED CONNECTIONS SHALL BE MADE WITH 3/4" DIAMETER 316 STAINLESS STEEL OR A325 HOT DIP GALVANIZED AS NOTED IN DETAIL.
   D. WELDED CONNECTIONS SHALL BE MADE BY A CERTIFIED WELDER IN ACCORDANCE WITH AWS D.1.1, USING CLASS E70 SERIES ELECTRODES. WELDS SHALL DEVELOP THE FULL STRENGTH OF THE MATERIALS BEING WELDED.
   E. COLUMN ANCHOR BOLTS SHALL BE STAINLESS STEEL TYPE 316.
4. ALL STEEL COMPONENTS AND FITTINGS EXPOSED TO WEATHER IN THEIR FINAL STATE SHALL BE HOT DIPPED GALVANIZED.
5. ANCHOR BOLTS AND BEARING PLATES SHALL BE LOCATED BY TEMPLATES OR SIMILAR METHOD. PLATES SHALL BE SET IN FULL BEDS OF NON–SHRINK GROUT. BOTTOM OF BASE PLATES SHALL BE SET APPROXIMATELY 3/4" ABOVE TOP OF BEARING. RESULTING SPACE SHALL BE FILLED WITH DRY PACKED NON–SHRINK GROUT.
6. STEEL FRAMING SHALL BE TRUED AND PLUMB BEFORE CONNECTIONS ARE PERMANENTLY BOLTED OR WELDED.
7. TEMPORARY ERECTION BRACING AND SUPPORTS SHALL BE PROVIDED TO HOLD STRUCTURAL STEEL FRAMING SECURELY IN POSITION. SUCH TEMPORARY BRACING AND SUPPORTS SHALL NOT BE REMOVED UNTIL PERMANENT BRACING HAS BEEN INSTALLED AND FLOOR SLABS HAVE ATTAINED 75% OF SPECIFIED CONCRETE STRENGTH.
8. MILLED STIFFENERS SHALL BE PROVIDED UNDER ALL LOAD CONCENTRATIONS ON SUPPORTING MEMBERS OVER ALL COLUMNS AND WHERE SHOWN ON THE DRAWINGS.
9. AT THE DESCRETION OF THE ENGINEER WELDING SHALL BE INSPECTED IN THE FIELD BY QUALIFIED WELDING INSPECTORS UNDER THE SUPERVISION OF AN APPROVED TESTING AGENCY.
10. FIELD CUTTING OR ANY OTHER FIELD MODIFICATIONS OF STRUCTURAL STEEL SHALL NOT BE MADE WITHOUT APPROVAL FROM ENGINEER FOR EACH SPECIFIC CASE.
11. ALL EXPOSED STRUCTURAL STEEL SHALL BE HOT DIPPED GALVANIZED (2 OZ/ SQ. FT.) AFTER FABRICATION IN COMPLIANCE WITH ASTM–123, A153 OR A386 AS APPLICABLE. GALVANIZER SHALL FURNISH, TO ENGINEER A NOTARIZED CERTIFICATE OF COMPLIANCE WITH THESE SPECIFICATIONS.

REVISIONS

NUMBER	DATE	MADE BY:	CHECKED BY:	DESCRIPTION
1	2/19/04	RMA		SUPERIOR REVIEW REVSIONS
2	10/27/04	RMA		REVIEW REVSIONS

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME AND THAT I AM A DULY REGISTERED ENGINEER IN THE STATE OF WISCONSIN

REG. NO. 25488 DATE: AUGUST 4, 2003

DRAWN BY: RMA & JDC
CHECKED BY: RMA
DEPT. CHECK: _____

SCALE: NO SCALE

RMA ENGINEERING COMPANY
CONSULTING ENGINEERS

CITY OF SUPERIOR,
DEPARTMENT OF PUBLIC WORKS

LIFT STATION #6, COLLECTION SYSTEM AND STORAGE IMPROVEMENTS

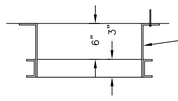
STRUCTURAL NOTES

PROJ. JOB NO. _____

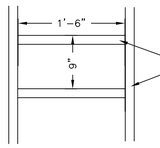
SHEET NO. S-8

PROVIDE ALUMINUM BRACKET AT THE FOLLOWING LADDERS TO HOOK A SEALED SELF RETAINING LIFELINE:
LS#6 VALVE PIT (1 LADDER)
LS#6 SETTLING BASIN (1 LADDER)
LS#5 SETTLING BASINS (2 LADDERS)
LS#7 SETTLING BASIN (1 LADDER)

PROVIDE ONE SEALED SELF RETAINING LIFELINE. THE LIFELINE SHALL BE A DBI SALA, PART 3403401 MANUFACTURED BY DB INDUSTRIES. PROVIDE TWO SAFETY HARNESSES, PART # 1102010



TOP VIEW



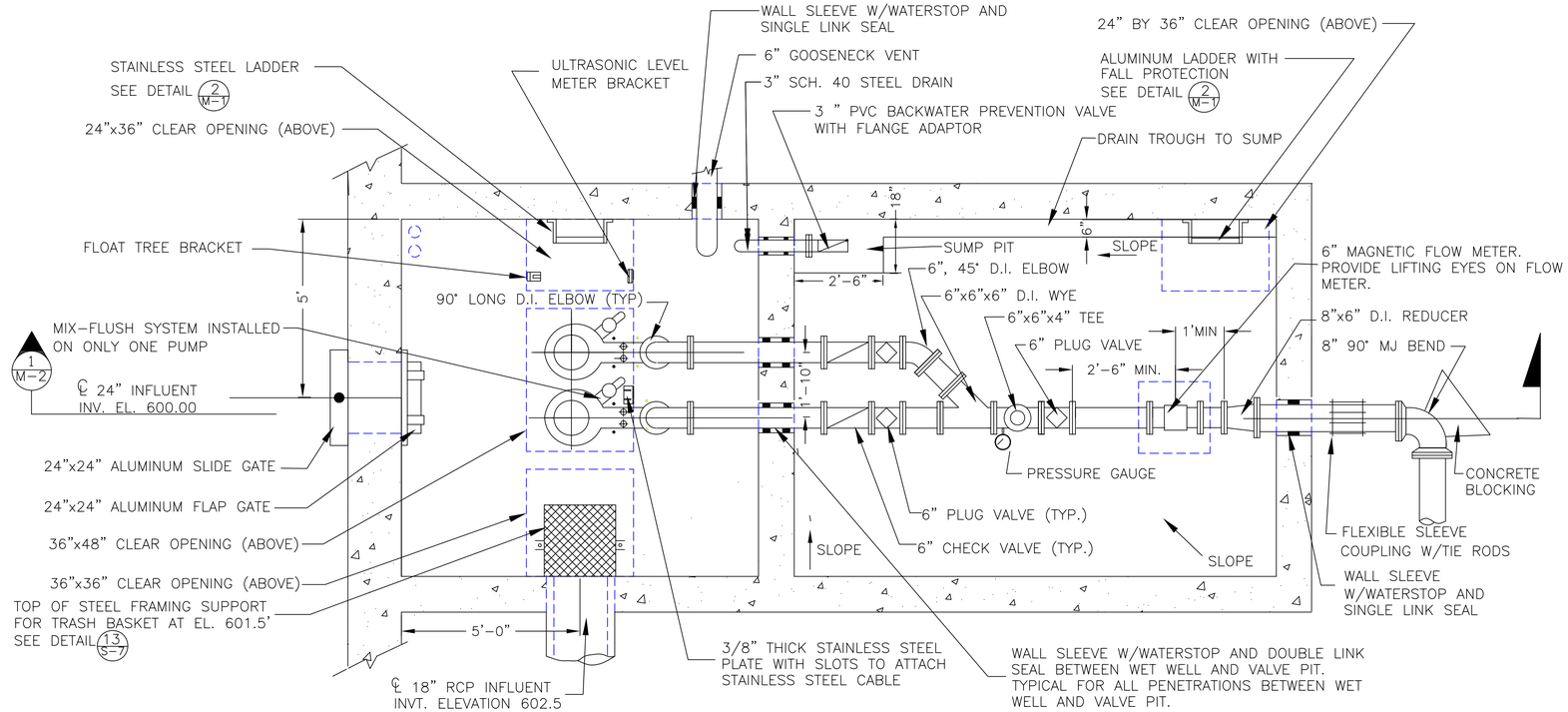
FRONT VIEW

STAINLESS STEEL (WET WELL) AND ALUMINUM (VALVE PIT AND SETTLING BASIN) BRACKETS FOR LADDER ATTACHMENT. BRACKETS AT 4' INTERVALS. USE TWO 5/16" STAINLESS STEEL ANCHOR BOLTS FOR EACH BRACKET.

3" CHANNEL FOR STEPS AND FRAME. USE ALUMINUM FOR VALVE PIT AND SETTLING BASIN AND STAINLESS STEEL FOR WET WELL.

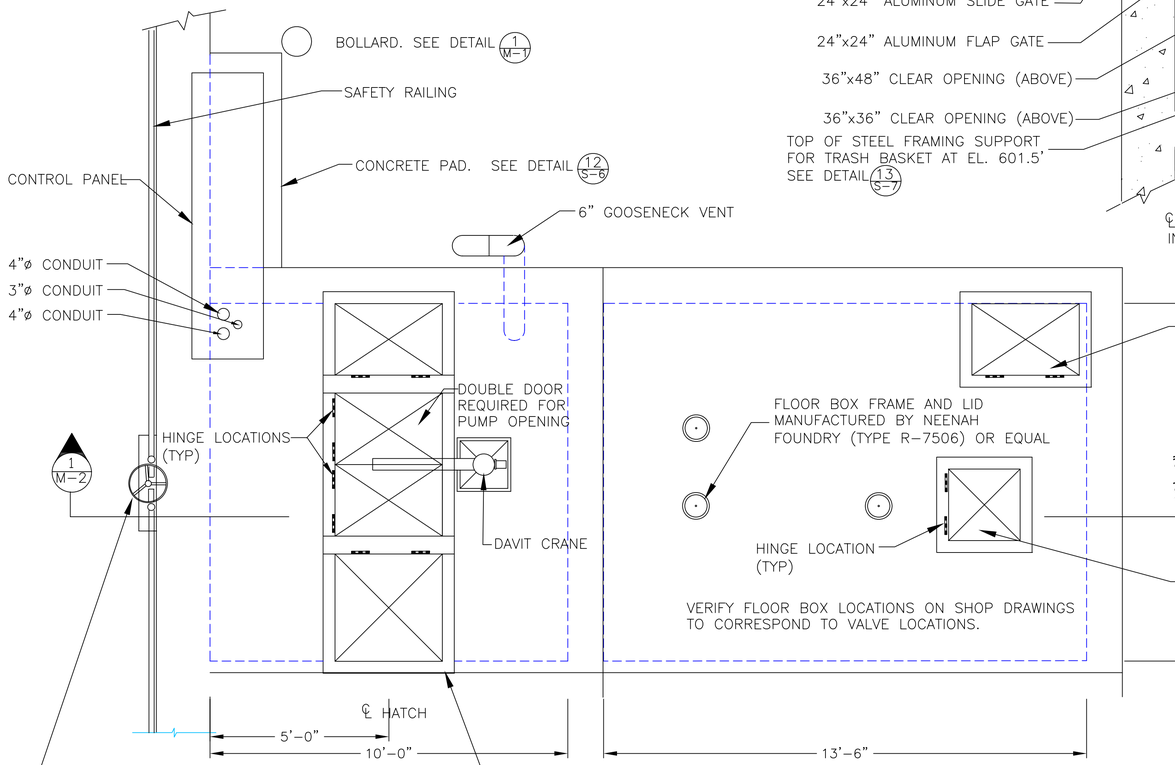
FOR LADDERS LOCATED IN BASINS EXTEND FRAME AT LEAST 3'-6" ABOVE TOP OF TANK

LADDER DETAIL (2/M-1)



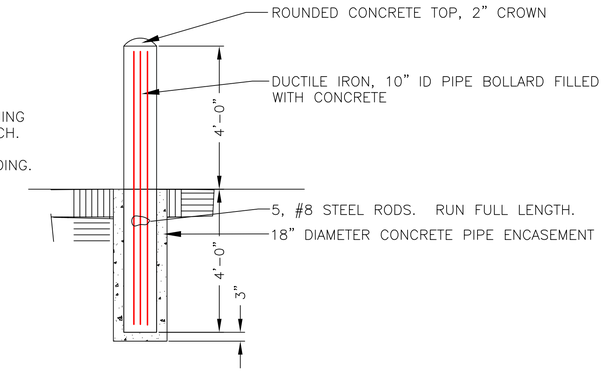
LIFT STATION NO. 6 LOWER PLAN

SCALE: 1/2"=1'-0"



LIFT STATION NO. 6 UPPER PLAN

SCALE: 1/2"=1'-0"



BOLLARD DETAIL (1/M-1)

GRID NORTH

NOTES:

1. PAINT ALL BOLLARDS AND VENT PIPING YELLOW.
2. PROVIDE CONCRETE RESTRAINTS AS SHOWN IN ACCORDANCE WITH "STANDARD SPECIFICATIONS FOR SEWER AND WATER CONSTRUCTION IN WISCONSIN, FILE NO. 44"

REVISIONS

NUMBER	DATE	MADE BY:	CHECKED BY:	DESCRIPTION
1	12/10/03	RMA		DNR REVIEW REVISIONS

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME AND THAT I AM A DULY REGISTERED ENGINEER IN THE STATE OF WISCONSIN

REG. NO. 25488 DATE: AUGUST 4, 2003

DRAWN BY: RMA & JDC
CHECKED BY: RMA
DEPT. CHECK: _____

SCALE: AS SHOWN

RMA ENGINEERING COMPANY
CONSULTING ENGINEERS

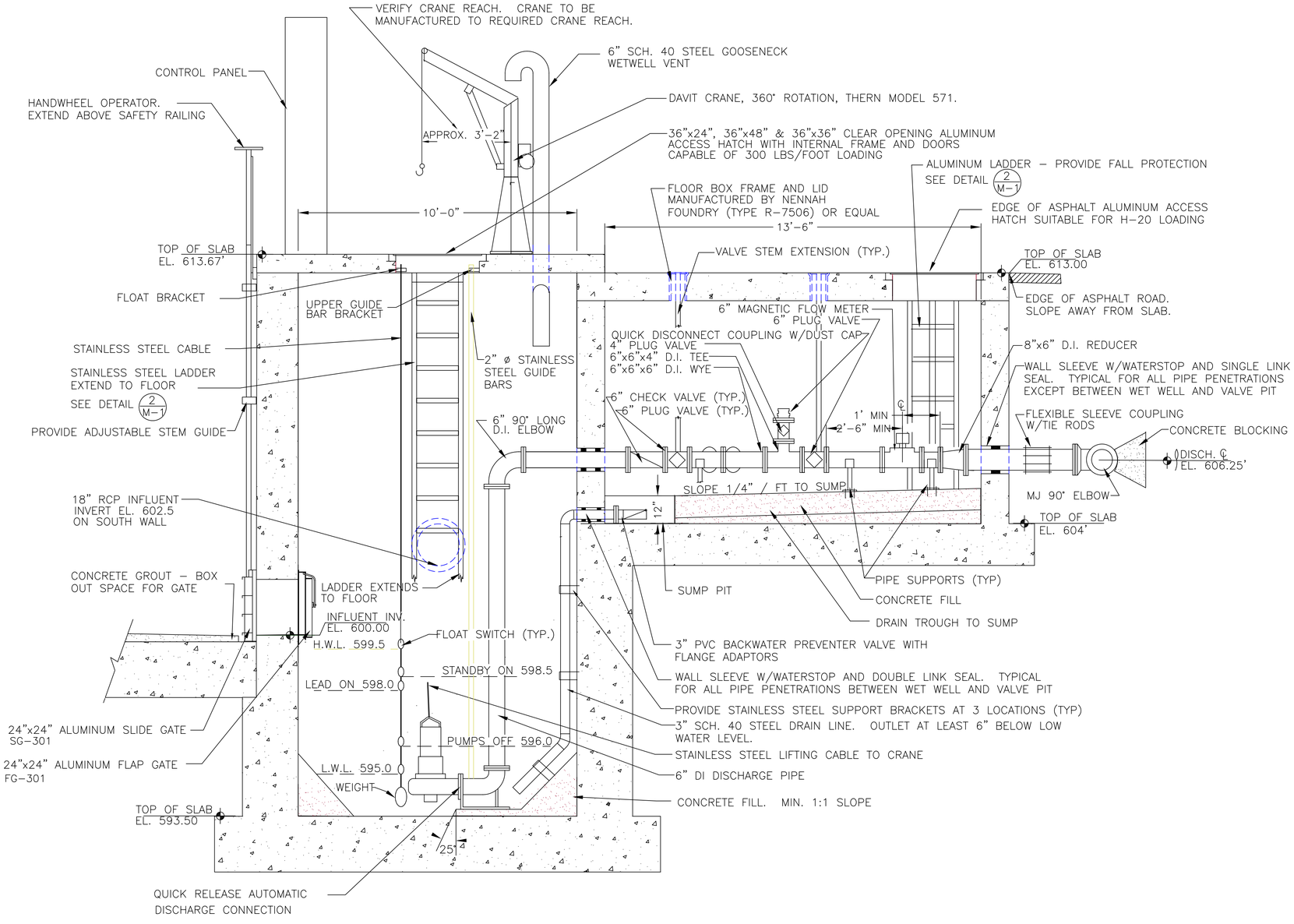
CITY OF SUPERIOR, DEPARTMENT OF PUBLIC WORKS

LIFT STATION #6, COLLECTION SYSTEM AND STORAGE IMPROVEMENTS

LIFT STATION PLANS

PROJ. JOB NO. _____

SHEET NO. M-1



SECTION 1 M-2

SCALE: 1/2"=1'-0"

ALIGN FORCE MAIN DOWNSTREAM OF 90° ELBOW TO MAINTAIN A MINIMUM OF 7' OF COVER ABOVE CROWN.

GENERAL NOTES:

1. DIMENSIONS TO SUIT EQUIPMENT MANUFACTURER'S AND ENGINEER'S RECOMMENDATIONS.
2. CONTRACTOR TO PROVIDE PROPER SUPPORT FOR PIPING BOTH DURING AND AFTER CONSTRUCTION.
3. VALVE PIT LADDER TO BE ALUMINUM.
4. WET WELL LADDER SHALL BE 316 GRADE L STAINLESS STEEL. FALL PROTECTION IS NOT TO BE PROVIDED.
5. WET WELL NOT DESIGNED TO HANDLE VEHICULAR TRAFFIC.
6. PROVIDE 6" DISCHARGE CONNECTIONS SUITABLE FOR SPECIFIED WASTEWATER PUMPS. PUMP DISCONNECTS TO BE SUPPLIED BY PUMP MANUFACTURER.
7. STAINLESS STEEL LIFTING CABLE TO BE LOAD RATED FOR ONE TON AND SUFFICIENTLY LONG FOR ATTACHMENT TO CABLE HOIST OF DAVIT CRANE AND TO TRUCK MOUNTED CRANE. CABLE LENGTH SHALL BE SUBJECT TO APPROVAL BY THE CITY. PROVIDE UPPER STAINLESS STEEL BRACKET TO HOLD CABLE IN PLACE. THE DAVIT CRANE IS TO BE FITTED WITH A SQUARE NUT TO ALLOW FOR ADDITIONAL USE OF THE MILWAUKEE POWER DRILL FOR LIFTING PUMPS. THE DRIVE IS 2-1/16" BY 2-1/16".
8. GUIDE RAIL FOR PUMP AND TRASH BASKETS TO BE 316 GRADE L STAINLESS STEEL.
9. WET WELL IS A CLASS 1, DIVISION 2 AREA.
10. ONE SPARE T-HANDLE TO BE PROVIDED AND STORED IN THE VALVE PIT.
11. DAVIT CRANE TO BE MANUFACTURED TO HAVE THE REQUIRED REACH. MOUNT CRANE IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
12. MAGNETIC FLOW METER SHALL INCLUDE:
    - -LIFTING EYES
    - -FLANGED DI SPOOL PIECE
    - -TEFLON GASKETS BETWEEN PIPE AND FLOW METER FLANGES
13. ALL CABLES SHALL BE TIED OFF SO THEY DO NOT LOOP INTO WASTEWATER.
14. CONCRETE BLOCKING/RESTRAINTS SHALL CONFORM TO "STANDARD SPECIFICATIONS FOR SEWER AND WATER CONSTRUCTION IN WISCONSIN, FILE NO. 44"

REVISIONS

NUMBER	DATE	MADE BY:	CHECKED BY:	DESCRIPTION
1	12/11/03	RMA		DNR REVIEW REVISIONS
2	02/19/04	RMA		SUPERIOR REVIEW REVISIONS
3	10/27/04	RMA		SUPERIOR REVIEW REVISIONS

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME AND THAT I AM A DULY REGISTERED ENGINEER IN THE STATE OF WISCONSIN

REG. NO. 25488 DATE: AUGUST 4, 2003

DRAWN BY: RMA & JDC
CHECKED BY: RMA
DEPT. CHECK: _____

SCALE: AS SHOWN

RMA ENGINEERING COMPANY
CONSULTING ENGINEERS

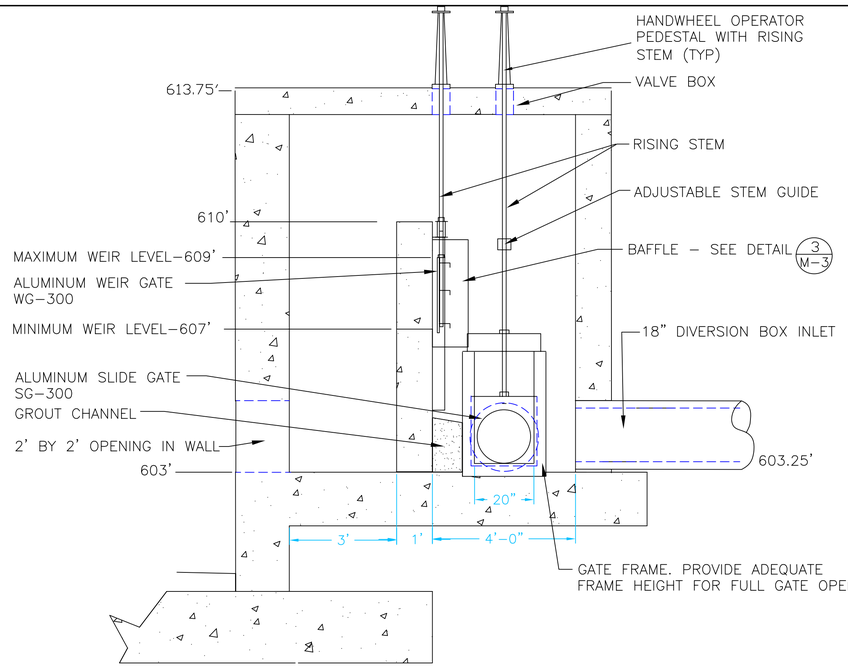
CITY OF SUPERIOR, DEPARTMENT OF PUBLIC WORKS

LIFT STATION #6 AND STORAGE IMPROVEMENTS

LIFT STATION SECTION

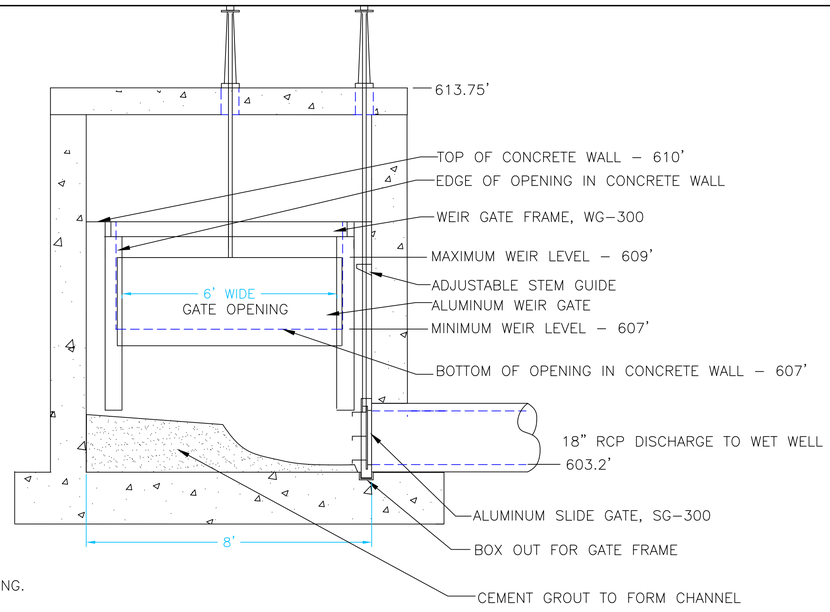
PROJ. JOB NO. _____

SHEET NO. M-2



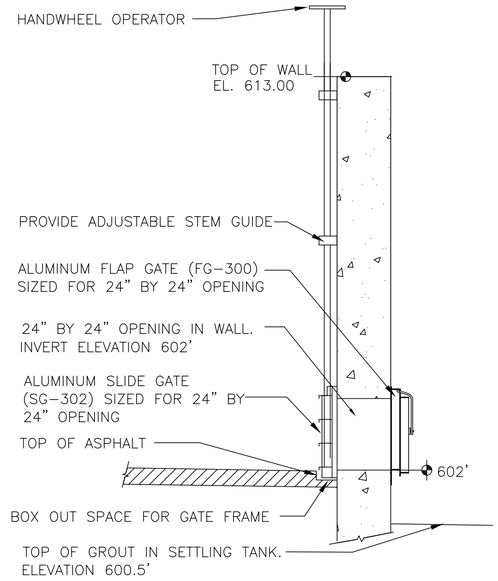
SECTION 3/M-3

SCALE: 1/2"=1'

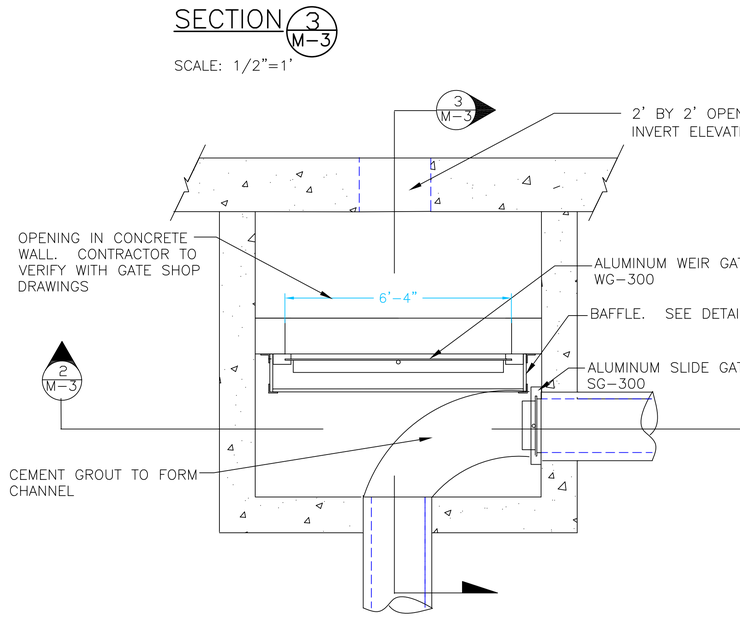


SECTION 2/M-3

SCALE: 1/2"=1'

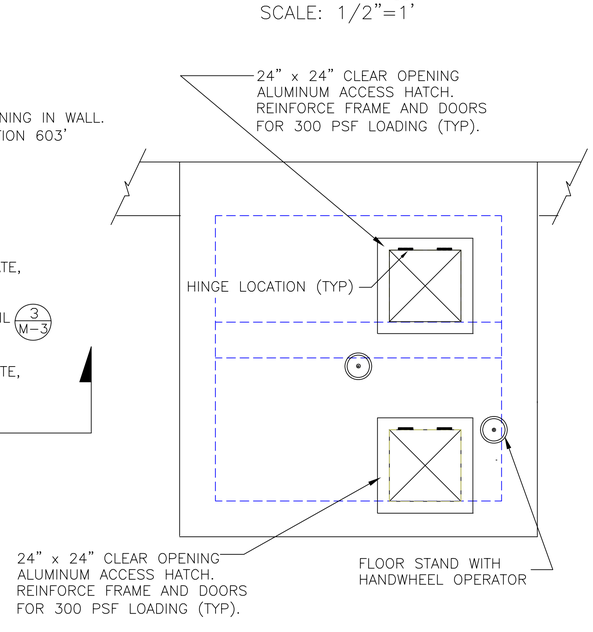


SECTION AT SW CORNER OF SETTLING TANK 4/M-3



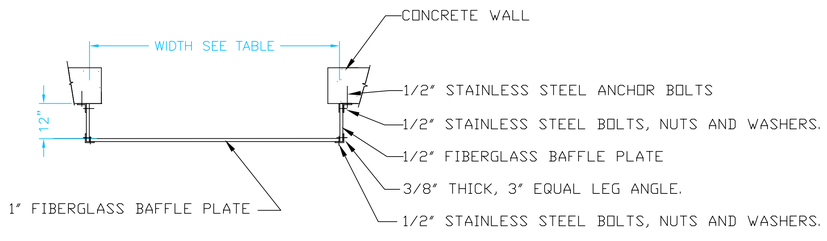
DIVERSION BOX LOWER PLAN

SCALE: 1/2"=1'

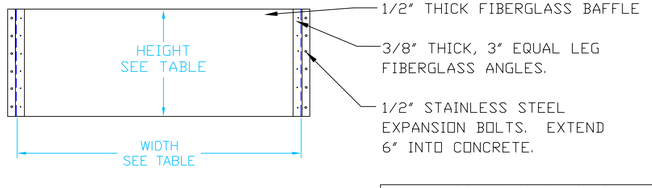


DIVERSION BOX UPPER PLAN

SCALE: 1/2"=1'



TOP VIEW



FRONT VIEW

BAFFLE DETAIL 3/M-3

BAFFEL DIMENSIONS			
LOCATION	SHEET REFERENCE	WIDTH	HEIGHT
DIVERSION BOX	S-1, S-2, M-2	7'	3'
SETTLING BASIN OVERFLOW	S-1, S-2	9'	1'
POND OUTLET STRUCTURE	S-1, S-3	9'	1'

REVISIONS

NUMBER	DATE	MADE BY:	CHECKED BY:	DESCRIPTION
1	10/27/04	RMA		SUPERIOR REVIEW COMMENTS

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME AND THAT I AM A DULY REGISTERED ENGINEER IN THE STATE OF WISCONSIN

REG. NO. 25488 DATE: AUGUST 4, 2003

DRAWN BY: RMA & JDC

CHECKED BY: RMA

DEPT. CHECK: _____

SCALE: 1/2"=1'

RMA ENGINEERING COMPANY
CONSULTING ENGINEERS

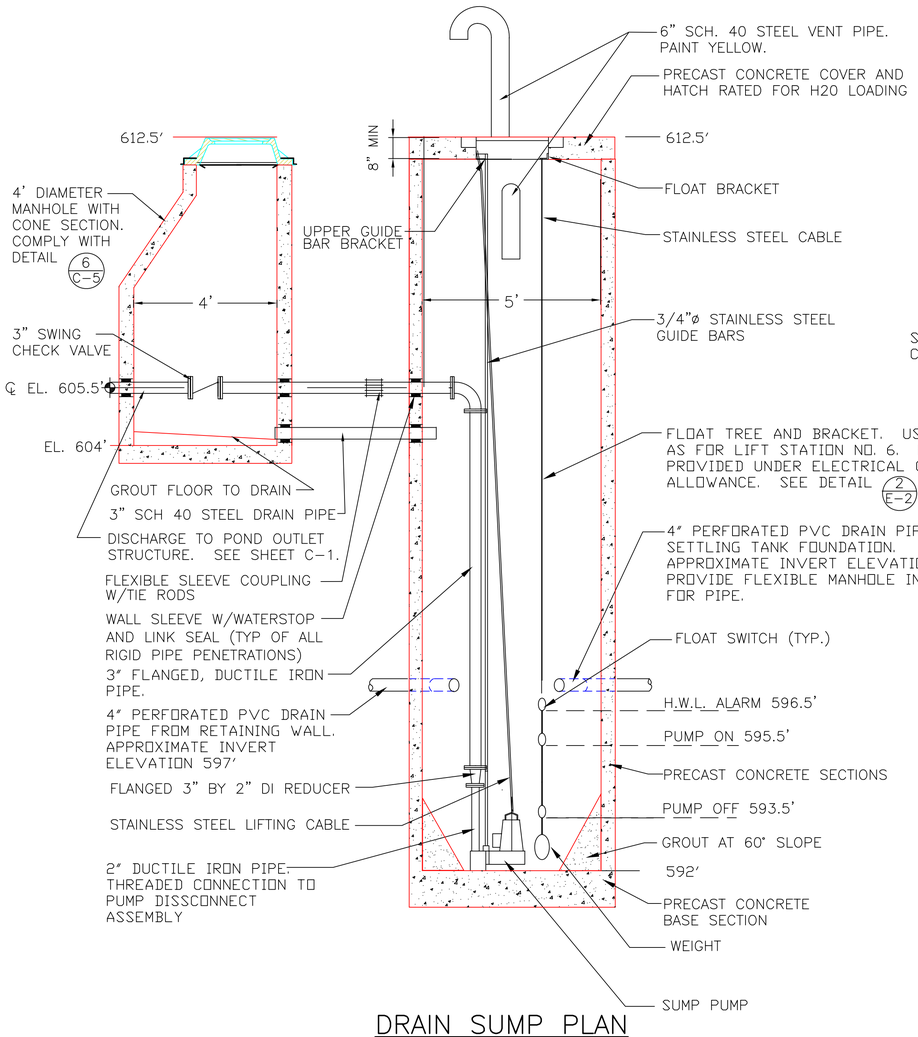
CITY OF SUPERIOR, DEPARTMENT OF PUBLIC WORKS

LIFT STATION #6, COLLECTION SYSTEM AND STORAGE IMPROVEMENTS

DIVERSION BOX AND GATES

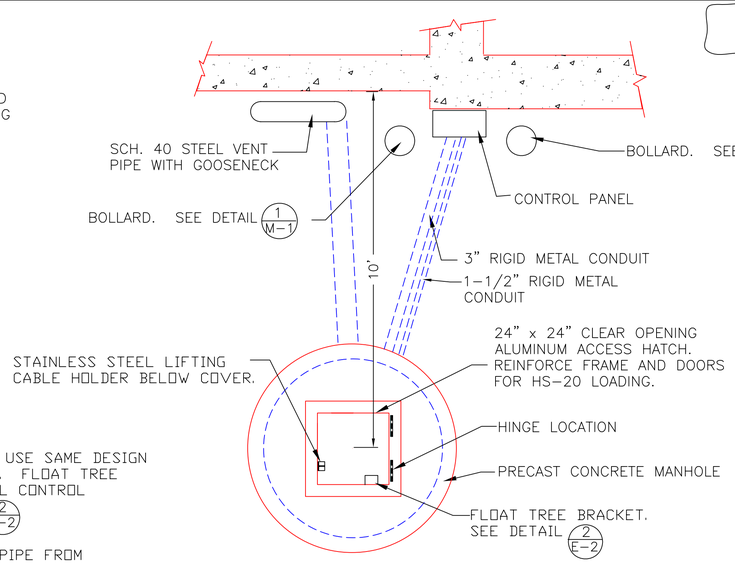
PROJ. JOB NO. _____

SHEET NO. M-3



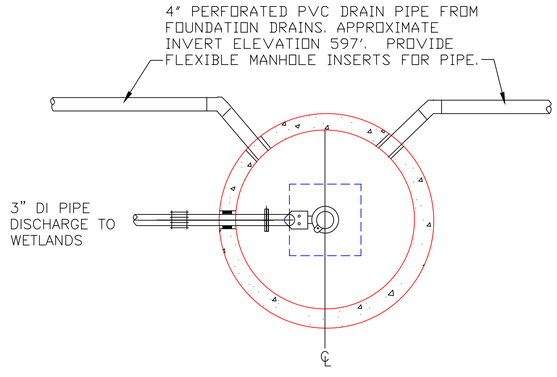
DRAIN SUMP PLAN

SCALE: 1/2"=1'



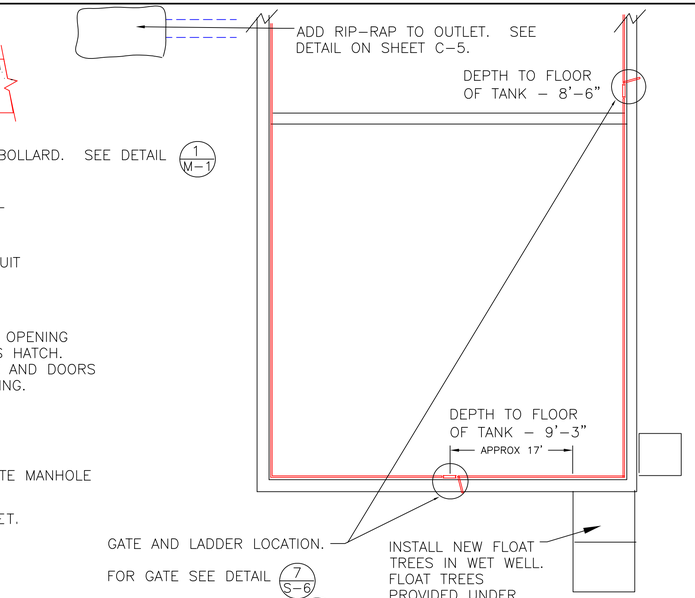
DRAIN SUMP UPPER SECTION

SCALE: 1/2"=1'



DRAIN SUMP LOWER SECTION

SCALE: 1/2"=1'



LIFT STATION NO. 5 LADDER PLAN

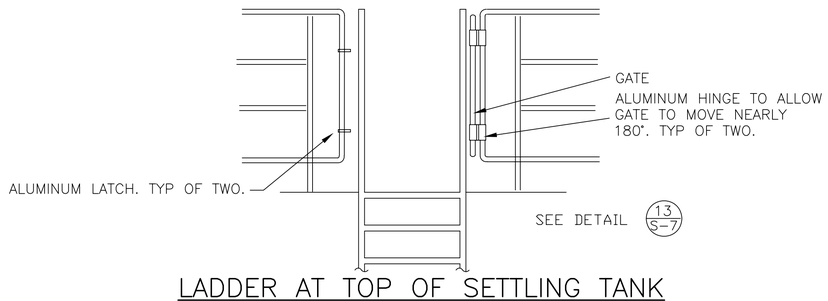
N.T.S.

LIFT STATION NO. 7 LADDER PLAN

N.T.S.

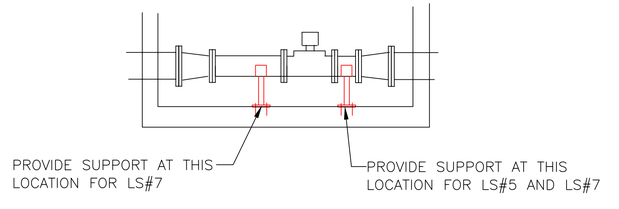
GENERAL NOTES:

1. DIMENSIONS TO SUIT EQUIPMENT MANUFACTURER'S AND ENGINEER'S RECOMMENDATIONS.
2. CONTRACTOR TO PROVIDE PROPER SUPPORT FOR PIPING BOTH DURING AND AFTER CONSTRUCTION.
3. DISCONNECT ASSEMBLY SHALL BE COMPATABLE WITH SUMP PUMP AND BE PROVIDED BY SUMP PUMP SUPPLIER
4. STAINLESS STEEL LIFTING CABLE TO BE LOAD RATED FOR ONE TON AND SUFFICIENTLY LONG FOR ATTACHMENT TO HOIST ON SERVICE TRUCK. CABLE LENGTH SHALL BE SUBJECT TO APPROVAL BY THE CITY. PROVIDE UPPER STAINLESS STEEL BRACKET TO HOLD CABLE IN PLACE.
5. GUIDE RAIL FOR PUMP TO BE 316 GRADE L STAINLESS STEEL.



LADDER AT TOP OF SETTLING TANK

NO SCALE



EXISTING FLOW METER SUPPORT (LS#5 AND LS#7)

N.T.S.

REVISIONS

NUMBER	DATE	MADE BY:	CHECKED BY:	DESCRIPTION
1	12/11/03	RMA		DNR REVIEW REVISIONS
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3	10/27/04	RMA		SUPERIOR REVIEW REVISIONS

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REG. NO. 25488 DATE: AUGUST 4, 2003

DRAWN BY: _____
CHECKED BY: _____
DEPT. CHECK: _____

SCALE: 1/2"=1'

RMA ENGINEERING COMPANY
CONSULTING ENGINEERS

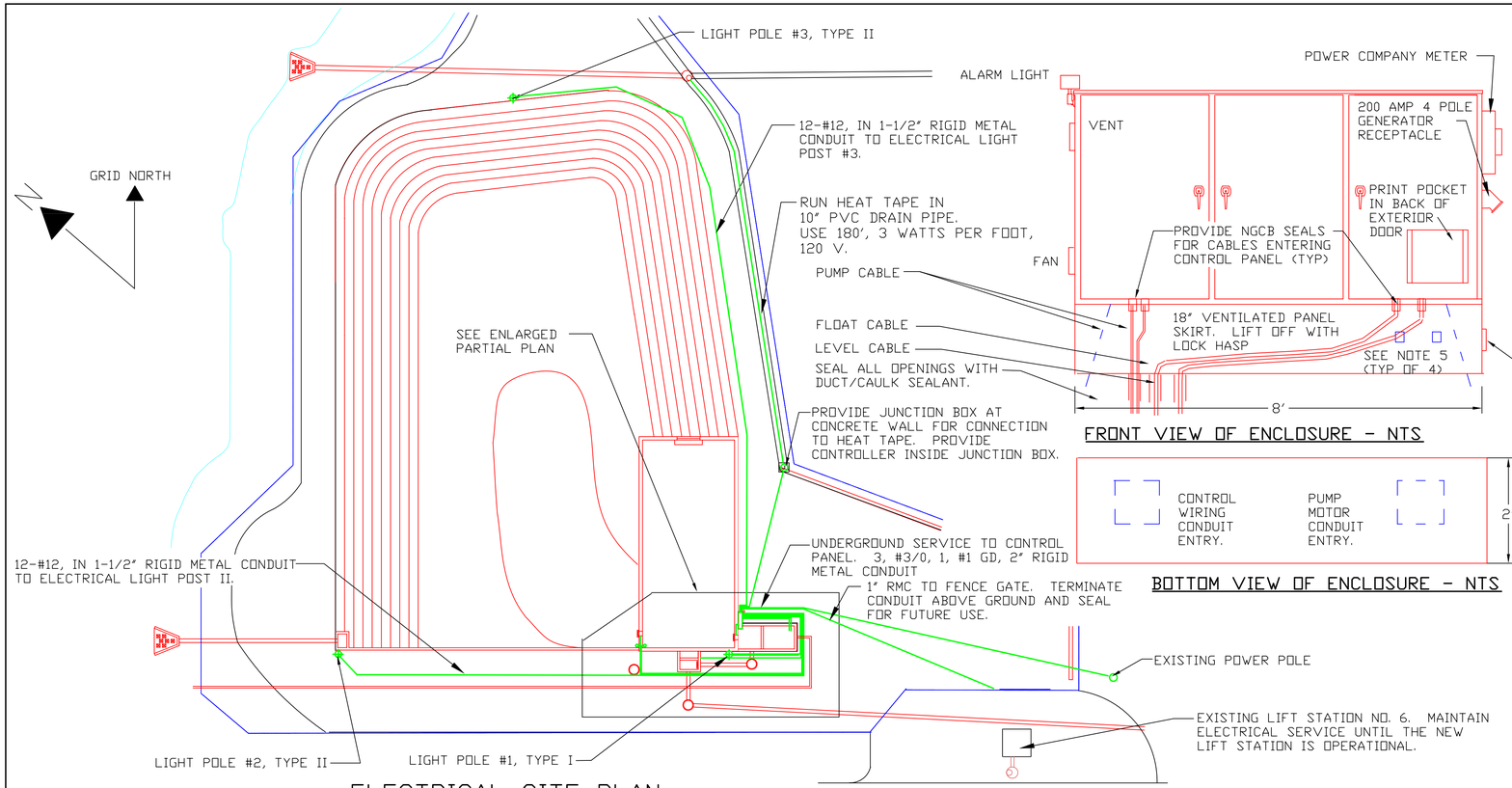
CITY OF SUPERIOR, DEPARTMENT OF PUBLIC WORKS

LIFT STATION #6, COLLECTION SYSTEM AND STORAGE IMPROVEMENTS

LIFT STATION #6 DRAIN SUMP AND LIFT STATIONS #5 AND #7 MECHANICAL IMPROVEMENTS

PROJ. JOB NO. _____

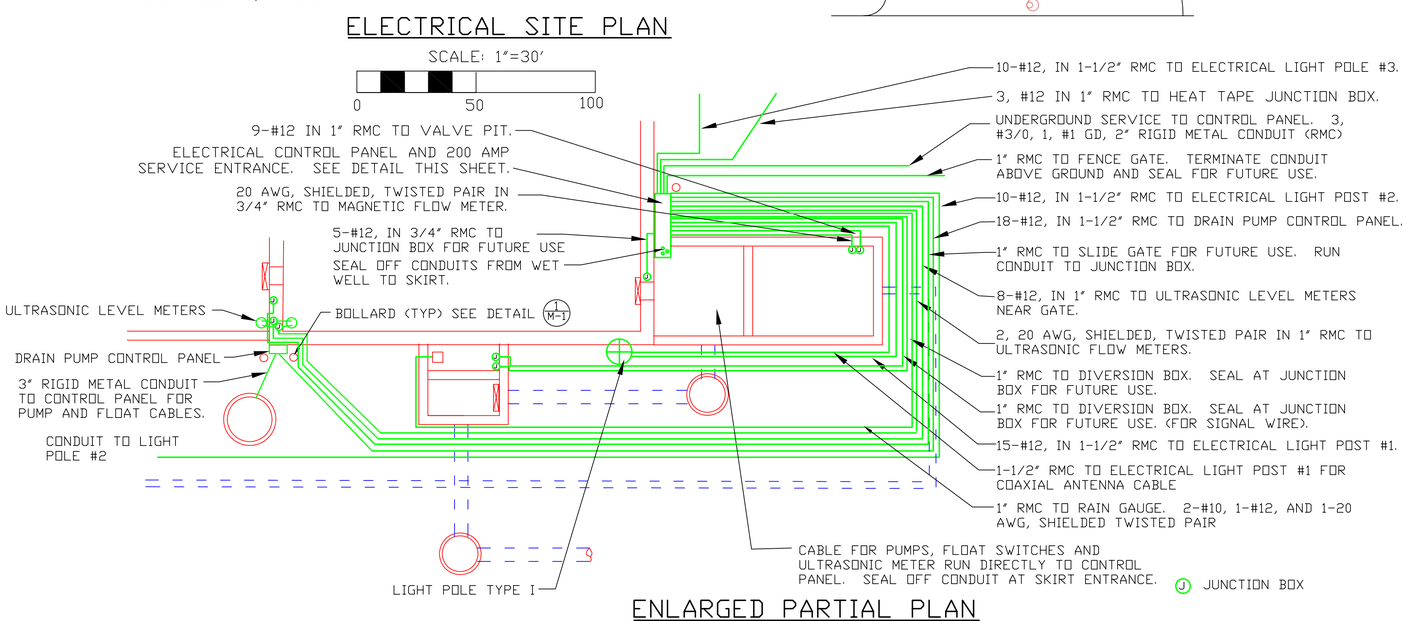
SHEET NO. M-4



ELECTRICAL SITE PLAN

SCALE: 1"=30'

0 50 100

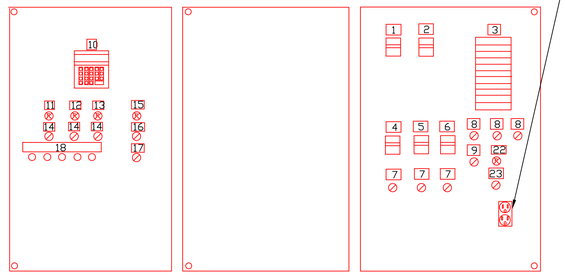


ENLARGED PARTIAL PLAN

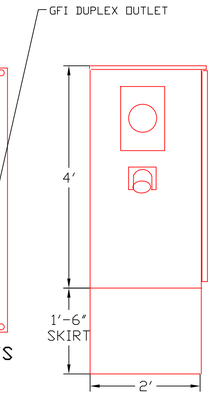
SCALE: 1/8"=1'

FRONT VIEW OF ENCLOSURE - NTS

BOTTOM VIEW OF ENCLOSURE - NTS

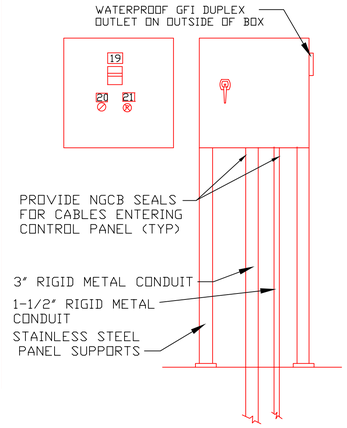


ALUMINUM HINGED DEAD FRONT INNER DOORS - NTS



SIDE VIEW OF ENCLOSURE - NTS

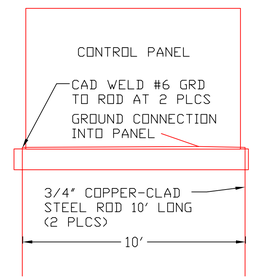
NAMEPLATE SCHEDULE	1ST LINE/2ND LINE//3RD LINE
1	MAIN DISCONNECT CB
2	GENERATOR CB
3	LIGHTING PANEL
4	PUMP NO. 1/ CB
5	PUMP NO. 2/ CB
6	DRAIN PUMP/ CB
7	OVERLOAD RESET
8	ON-OFF-AUTO LIGHT SWITCH FOR LIGHT POLE #1, #2 #3
9	ON-OFF LIGHT SWITCH FOR LIGHT POLE #1
10	OPERATOR INTERFACE
11	PUMP NO. 1/ RUNNING
12	PUMP NO. 2/ RUNNING
13	DRAIN PUMP/ RUNNING
14	HAND OFF(RESET) AUTO
15	FLOAT BACKUP SYSTEM / IN OPERATION
16	FLOAT BACKUP SYSTEM / AUTO OFF(RESET)
17	FLOAT BACKUP SYSTEM / PUMP SEQUENCE // 1-2 2-1
18	FLOAT TEST / LLA - HLA - OFF FLOAT - STAGE 1 - STAGE 2
19	DRAIN PUMP DISCONNECT
20	DRAIN PUMP LOCAL-OFF-REMOTE SWITCH
21	DRAIN PUMP RUNNING
22	HEAT TAPE ON
23	ON-OFF HEAT TAPE SWITCH



DRAIN PUMP CONTROL PANEL - NTS

NOTES:

1. ENCLOSURE IS NEMA 3R, 304 BRUSHED STAINLESS STEEL WITH TAMPERPROOF HARDWARE. STAINLESS STEEL PIANO TYPE HINGES, HANDLE PADLOCK ATTACHMENTS ON MAIN CIRCUIT BREAKER.
2. MAIN BREAKER IS 200 AMP 120/240V, 3 PHASE, 4 WIRE SERVICE ENTRANCE RATED, 10KACI SHORT CIRCUIT RATING.
3. ENCLOSURE IS UL LISTED AND SERVICE ENTRANCE RATED.
4. METER SOCKET FURNISHED AND WIRED BY CONTRACTOR.
5. (REAR) SKIRT IS VENTILATED AND HAS 4 TIE OFF HOOKS FOR PUMP AND FLOAT CABLES.
6. MAIN CONTROL PANEL ALSO INCLUDES MOTOR STARTERS, PLC/INTERFACE, CONTACTORS, PANEL HEATER, PANEL FAN, THERMOSTATS, SURGE CAPACITOR, AND SURGE ARRESTOR.
7. UL 508.
8. PROVIDE PUMP CONTROL MODULES FOR OPERATION OF PUMPS FROM FLOAT SWITCHES FOR BOTH DRAIN AND WASTEWATER PUMPS.
9. PROVIDE GROUNDING CONNECTION FOR CONTROL PANEL. SEE DETAIL THIS SHEET.
10. PUMP CABLE LENGTH HAS TO BE APPROVED BY THE CITY.
11. INCLUDE LIGHTS INSIDE MAIN CONTROL PANEL AND DRAIN PANEL.
12. SEE SPECIFICATIONS FOR ITEMS TO BE FURNISHED UNDER HE ELECTRICAL CONTROL ALLOWANCE.



GROUND CONNECTION - NTS

REVISIONS

NUMBER	DATE	MADE BY:	CHECKED BY:	DESCRIPTION
1	12/11/03	RMA		DNR REVIEW REVISIONS
2	02/18/04	RMA		SUPERIOR REVIEW REVISIONS
3	11/01/04	RMA		SUPERIOR REVIEW REVISIONS
4	12/08/04	RMA		ADDENDUM NO. 1

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME AND THAT I AM A DULY REGISTERED ENGINEER IN THE STATE OF WISCONSIN

REG. NO. 25488 DATE: AUGUST 4, 2003

DRAWN BY: RMA & JDC

CHECKED BY: RMA

DEPT. CHECK: _____

SCALE: AS SHOWN

RMA ENGINEERING COMPANY
CONSULTING ENGINEERS

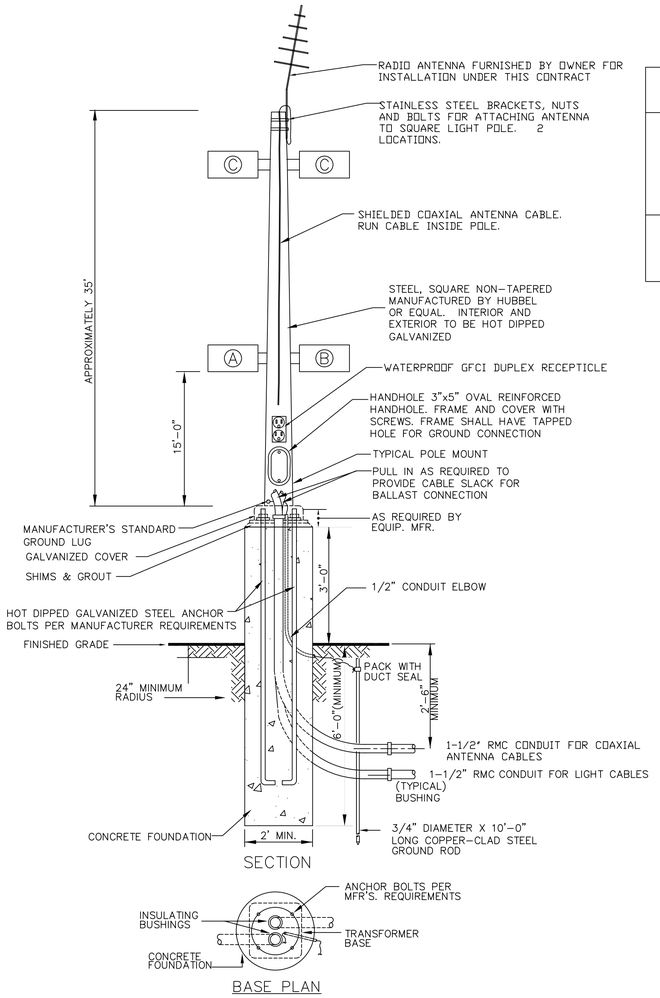
CITY OF SUPERIOR, DEPARTMENT OF PUBLIC WORKS

LIFT STATION #6 AND STORAGE IMPROVEMENTS

ELECTRICAL PLAN

PROJ. JOB NO. _____

SHEET NO. E-1



SECTION

BASE PLAN

TYPICAL POLE FOUNDATION DETAIL (1 / E-2)

NO SCALE

LIGHTING POLE TYPE	EQUIPMENT REQUIREMENTS		
	FIXTURE TYPE	QUANTITY	CONTROL
I	Ⓐ	1	PHOTO CONTROL
	Ⓑ	1	CONTROL PANEL INTERIOR SWITCH
	Ⓒ	3	CONTROL PANEL INTERIOR SWITCH
II	Ⓒ	2	CONTROL PANEL INTERIOR SWITCH

Ⓐ 150 WATT HIGH PRESSURE SODIUM WITH PHOTO CONTROL, AS MANUFACTURED BY HUBBELL MODEL NO. MHS-0150S-268, OR APPROVED EQUAL.

Ⓑ 400 WATT METAL HALIDE SWITCHED, WITH TYPE IV REFLECTOR AS MANUFACTURED BY HUBBEL MODEL NO. MSQ-A400H-HT8 OR APPROVED EQUAL.

Ⓒ 400 WATT HIGH PRESSURE SODIUM SWITCHED, WITH TYPE III REFLECTOR AS MANUFACTURED BY HUBBEL MODEL NO. MSQ-A400S-HP8/, OR EQUAL.

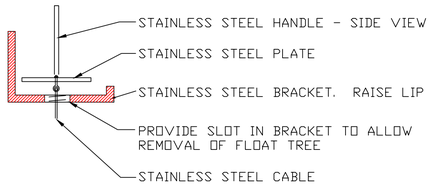
NUMBER OF FIXTURES REQUIRED AS DESCRIBED IN LIGHTING FIXTURE TYPE SCHEDULE.

PROVIDE NECESSARY MOUNTING BRACKETS AND ARMS.

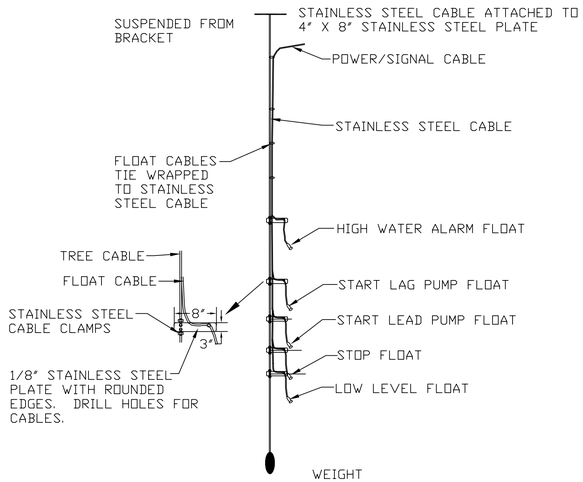
COLOR TO BE DETERMINED BY OWNER.

POLE – 35 FEET SQUARE STEEL NON-TAPERED AS MANUFACTURED BY HUBBEL MODEL NO. SSP SERIES. POLES SHALL BE HOT DIPPED GALVANIZED.

1. THE VOLTAGE FOR ALL FIXTURES SHALL BE 240 VOLT.
2. SWITCHES MOUNTED IN CONTROL PANEL SHALL BE 20 AMP.
3. MINIMUM WIRE SIZE SHALL BE #12 AWG, THHN. CALCULATE VOLTAGE DROP AND RESIZE WIRE AS NECESSARY.
4. INCLUDE ALL WIRE, CONDUIT, MOUNTING EQUIPMENT AND ALL APPURTENANCES NECESSARY FOR A COMPLETE INSTALLATION.
5. PRIOR TO ORDERING CONSULT WITH OWNER ON DIRECTION AND ANGLE OF FIXTURE MOUNTS.
6. ALL POLES MUST BE FACTORY DRILLED FOR THE FIXTURES SPECIFIED.
7. VERIFY MODEL NUMBERS WITH MANUFACTURER PRIOR TO BIDDING. REMARKS
8 PROVIDE SMOOTH CONCRETE FINISH TO LIGHT POLE PEDESTAL. PAINT YELLOW



FLOAT TREE PLATE AND BRACKET

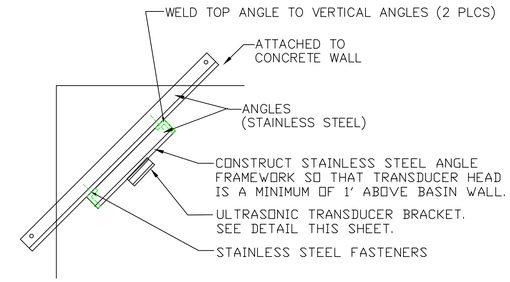


WETWELL FLOAT SUPPORT

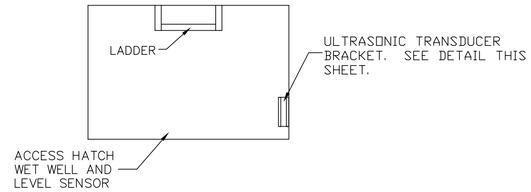
FLOAT TREE AND BRACKET DETAIL (2 / E-2)

NO SCALE

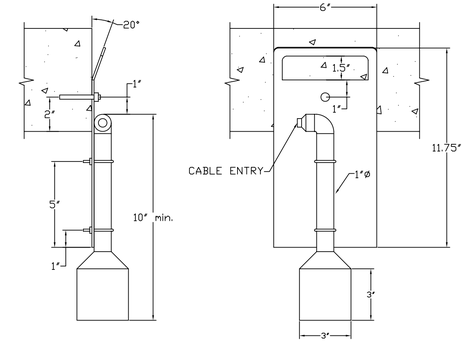
ULTRASONIC LEVEL METER



EXTERIOR BRACKET
(SETTLING AND STORAGE BASINS)



INTERIOR BRACKET (WET WELL)



NOTE: 1. DIMENSIONS NOT SHOWN MAY VARY.
2. MOUNTING PLATE IS STAINLESS STEEL 1/8" THICK.
3. ALL U-BOLTS, NUTS, WASHERS, AND ANCHORS SHALL BE STAINLESS STEEL.
4. U-BOLTS ARE TO BE 1/8" AND THE ANCHOR BOLTS ARE TO BE 5/16".
5. ROUND OFF THE CORNERS OF THE BRACKET HANDLE.

BRACKET- ULTRASONIC LEVEL TRANSDUCER

TRANSDUCER LEVEL MOUNTING DETAIL (3 / E-2)

NO SCALE

FEEDER/BRANCH CIRCUIT SCHEDULE

ITEM	VOLTAGE	PH	MOTOR HP	AMPERE	WIRE SIZE	CONDUIT SIZE, IN.	REMARKS
SERVICE ENTRANCE	240/120	3		200	3/0	2	LOCATION AS REQUIRED
CONTROL PANEL	240	3		200	3/0	2	
PUMP MOTOR NO. 1	240	3	23	58			CABLE FURNISHED BY PUMP SUPPLIER
PUMP MOTOR NO. 2	240	3	23	58			CABLE FURNISHED BY PUMP SUPPLIER
DRAIN PUMP CONTROL PANEL	240	3	2	6	12	1	
DRAIN PUMP	240	3	2	6			CABLE FURNISHED BY PUMP SUPPLIER
LIGHT PANEL	240/120	1		100	3	1	18 CIRCUIT LIGHTING PANEL, SEE SCHEDULE

LIGHT SWITCH SCHEDULE

LIGHT POLE	LIGHT SWITCH	VOLTAGE	PH	LIGHT TYPE	NO. OF LIGHTS	REMARKS
LIGHT POLE #1	ON-OFF-AUTO	240	1	Ⓒ	3	PHOTO CONTROL ON AUTO
	ON-OFF	240	1	Ⓑ	1	
			1	Ⓐ	1	PHOTO CONTROL, NO SWITCH
LIGHT POLE #2	ON-OFF-AUTO	240	1	Ⓒ	2	PHOTO CONTROL ON AUTO
LIGHT POLE #3	ON-OFF-AUTO	240	1	Ⓒ	2	PHOTO CONTROL ON AUTO

120/240 V LIGHTING PANEL

ITEM	VOLTAGE	PH	AMPERE	REMARKS
MAIN	240/120	1	100	
LIGHT POLE, TYPE I	240	1	20	
LIGHT POLE, TYPE II	240	1	20	
LIGHT POLE, TYPE II	240	1	20	
INSIDE CFI OUTLET, MAIN PANEL	120	1	20	
GFI OUTLET, MAIN PANEL	120	1	20	
GFI OUTLET AND HEATER, DRAIN PANEL	120	1	20	
GFI OUTLET, LIGHT POLE #1	120	1	20	
GFI OUTLET, LIGHT POLE #2	120	1	20	
GFI OUTLET, LIGHT POLE #3	120	1	20	
MAGNETIC FLOW METER POWER	120	1	20	
PLC CONTROL POWER	120	1	20	
MAIN PANEL HEATER	120	1	20	
HEAT TAPE FOR DRAIN LINE	120	1	20	

REVISIONS

NUMBER	DATE	MADE BY:	CHECKED BY:	DESCRIPTION
1	12/11/03	RMA		GENERAL REVISIONS
2	02/18/04	RMA		SUPERIOR REVIEW REVISIONS
3	10/27/04	RMA		SUPERIOR REVIEW REVISIONS

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LIFT STATION #6, COLLECTION SYSTEM AND STORAGE IMPROVEMENTS
ELECTICAL DETAILS

PROJ. JOB NO.

SHEET NO. E-2