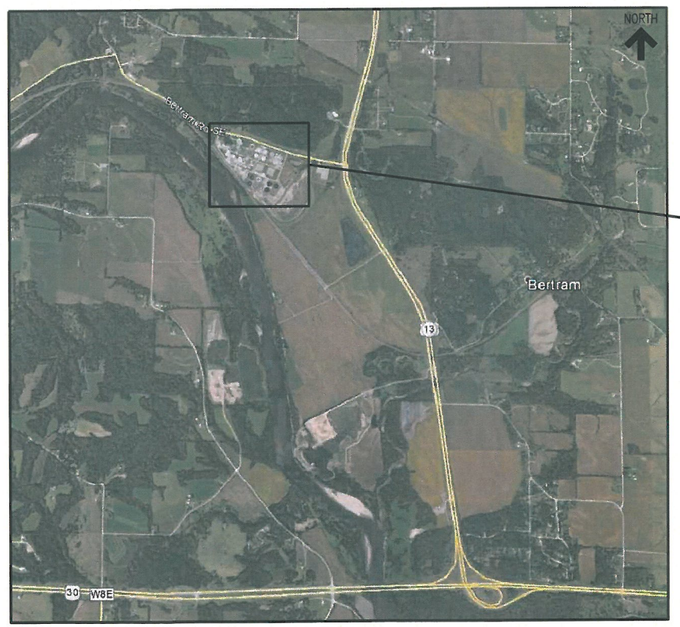
ATTACHMENT E

CITY OF CEDAR RAPIDS - CEDAR RAPIDS IOWA

LPO REACTOR WALKWAYS



LOCATION MAP

CEDAR RAPIDS
WATER POLLUTION CONTROL DIVISION
WATER TREATMENT PLANT

DRAWING INDEX		
SHEET NUMBER	SHEET TITLE	REVISION
G1	COVER SHEET	0
G2	GENERAL NOTES AND LEGEND SHEET	0
G3	MATERIAL SPECIFICATIONS	0
G4	SOLIDS DEWATERING INCINERATION AND GRIT BUILDING EXISTING PLAN	0
S1	FRAMING PLAN	0
S2	TYPICAL DETAILS	0

LICENSED PROFESSIONAL ENGINEER
LARRY H. BADTRAM
08516
IOWA

I HEREBY CERTIFY THAT REVISION 0 TO THIS ENGINEERING DOCUMENT WAS PREPARED BY ME OR UNDER MY DIRECT PERSONAL SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF IOWA.

Larry Badtram 10-27-15

LARRY H. BADTRAM 10-27-15

LICENSE NUMBER: 08516
MY LICENSE RENEWAL DATE IS 12-31-16.
PAGES OR SHEETS COVERED BY THIS SEAL:
G1-G4, S1,S2

NO.	REVISIONS	DSGN	CHKD	APVD	DATE

Stanley Consultants INC.
225 Iowa Avenue, Muscatine, Iowa 52761-3764
www.stanleyconsultants.com

CEDAR RAPIDS
City Of Five Seasons

CITY OF CEDAR RAPIDS
LPO REACTOR WALKWAYS
CEDAR RAPIDS, IOWA

COVER SHEET

DESIGNED	JM CASE
DRAWN	N VEGA
CHECKED	JM CASE
APPROVED	LH BADTRAM
APPROVED	
DATE	OCTOBER 27, 2015

SCALE: NONE
NO. 26302.01
REV. 0
G1

CADD D3-R4

SYMBOLS

REVISION IDENTIFICATION SYMBOL:
THE NUMBER IN THE TRIANGLE INDICATES THE REVISION NUMBER IDENTIFIED. THE LETTER "A" IMMEDIATELY TO THE RIGHT OF THE TRIANGLE INDICATES THE REVISION IS PART OF A CONTRACT ADDENDUM. WHEN REVISIONS INVOLVE LESS THAN ENTIRE DRAWING, PRINCIPAL ASPECTS OF REVISIONS ARE "CLOUDED".

COLUMN IDENTIFICATION:
SUBSTITUTE LETTER OR NUMBER FOR ASTERISK

EL 100'-0" — ELEVATION DESIGNATION

EXISTING OBJECT LINE

EXISTING OBJECT TO BE REMOVED OR RELOCATED

OUTLINE OF NEW OR RELOCATED OBJECT

OUTLINE OF FUTURE OBJECT

CENTER LINE

HIDDEN LINE

SURFACE BREAK LINE

MATERIAL BREAK LINE

MATCH LINE

OPENING OR DEPRESSION IN SLAB OR WALL

CONCRETE

STEEL (IN SECTION)

GUARDRAIL

SLOPE — SLOPE ARROW

ADHESIVE ANCHOR (AA)

VIEW MARKERS

A-SF1 — DESIGNATES CUTTING PLANE OF SECTION

B-SF1 — DESIGNATES DIRECTION FROM WHICH PLAN OR ELEVATION IS VIEWED

C-SF1 — DESIGNATES LOCATION OF DETAIL

SECTION A-SF1 / SF1,SF2

ELEVATION B-SF1 / SF1,SF2

DETAIL C-SF1 / SF1,SF2

VIEW IDENTIFICATION NUMBER

DRAWING NUMBER(S) ON WHICH VIEW IS CALLED OUT

DIMENSIONS AND SCALE

DIMENSIONS AND/OR ELEVATIONS MARKED THUS (±) ARE ASSUMED AND SHALL BE VERIFIED OR MODIFIED AS REQUIRED BY THE CONTRACTOR TO SUIT EQUIPMENT FURNISHED. FINAL DIMENSIONS ARE SUBJECT TO THE REVIEW OF THE ENGINEER.

DIMENSIONS AND/OR ELEVATIONS MARKED THUS (+/-) MUST BE VERIFIED IN THE FIELD BY THE CONTRACTOR.

DIMENSIONS ARE GENERALLY TO SCALE, BUT SHOULD NOT BE SCALED. USE DIMENSIONS SHOWN. NTS (NOT TO SCALE) IS SHOWN ONLY WHERE DIMENSION IS OBVIOUSLY OUT OF SCALE.

NUMERIC SCALE VALUES (1/4"=1'-0", ETC) APPLY ONLY AT FULL SIZE.

ALL SYMBOLS AND ABBREVIATIONS SHOWN ON THIS LEGEND MAY NOT APPEAR ON THIS SET OF DRAWINGS.

FIELD MEASUREMENT NOTES:

1. ALL DIMENSIONS OF EXISTING CONSTRUCTION ARE APPROXIMATE; CONTRACTOR SHALL MAKE ALL NECESSARY FIELD MEASUREMENTS OF EXISTING STRUCTURES, AND EQUIPMENT TO VERIFY DIMENSIONS SHOWN ON DRAWINGS AND TO PROVIDE DIMENSIONS NOT SHOWN, PRIOR TO FABRICATION. COSTS FOR MODIFICATIONS OF NEW CONSTRUCTION, DUE TO LACK OF CONFIRMATION OF DIMENSIONS BY FIELD MEASUREMENTS SHALL BE BORNE BY CONTRACTOR.

2. CONTRACTOR'S STRUCTURAL STEEL DETAILER SHALL MAKE NECESSARY FIELD MEASUREMENTS OF EXISTING STRUCTURAL STEEL CONNECTIONS TO ENSURE NEW CONNECTION DETAILS SHOWN ON SHOP DRAWINGS ARE COMPATIBLE WITH EXISTING CONNECTIONS AND ARE CONSTRUCTIBLE AS DETAILED.

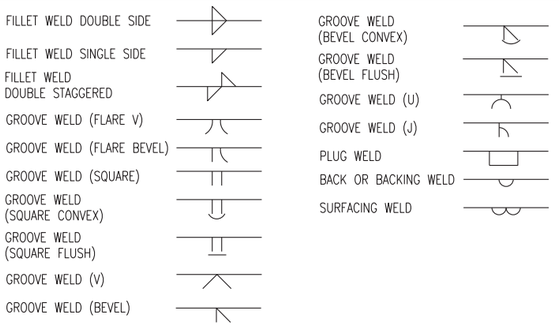
ABBREVIATIONS

ABBREVIATION	TERM
A	AMPERE
AA	ADHESIVE ANCHOR
AB	ANCHOR BOLT(S)
ACI	AMERICAN CONCRETE INSTITUTE
AL	ALUMINUM
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE
APPROX	APPROXIMATE
ARCH	ARCHITECTURE; ARCHITECTURAL
ASCE	AMERICAN SOCIETY OF CIVIL ENGINEERS
ASTM	AMERICAN SOCIETY FOR TESTING MATERIALS
BLDG	BUILDING
BLW	BELOW
BOS	BOTTOM OF STEEL
BTU	BRITISH THERMAL UNIT
BTWN	BETWEEN
C	CELSIUS; CHANNEL
CLR	CLEAR
CMU	CONCRETE MASONRY UNIT
COL	COLUMN
CONST	CONSTRUCTION
CTR	CENTER
CU FT	CUBIC FOOT
CU IN	CUBIC INCH
DBL	DOUBLE
DEG	DEGREES
DIM	DIMENSION(S)
DIA	DIAMETER
DWG	DRAWING(S)
EL	ELEVATION
EQ	EQUAL
EQL SP	EQUALLY SPACED
EW	EACH WAY
FLG	FLANGE(S)
FT	FEET; FOOT
GA	GAUGE (GAGE)
GALV	GALVANIZE(D)
KPL	KICK PLATE
LB	POUND(S)
LF	LINEAL FEET
LLH	LONG LEG HORIZONTAL
LLV	LONG LEG VERTICAL
MIN	MINIMUM
MISC	MISCELLANEOUS
PL	PLATE; PROPERTY LINE
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
REQD	REQUIRED
SC	SLIP-CRITICAL
SQ	SQUARE
SQ FT	SQUARE FEET
SQ IN	SQUARE INCHES
SST	STAINLESS STEEL; SOLID STATE TRIP
STL	STEEL
TOM	TOP OF MASONRY
TOS	TOP OF STEEL
UNO	UNLESS NOTED OTHERWISE
W	WATER; WEST; WIDE; WIDE FLANGE
WF	WIDE FLANGE

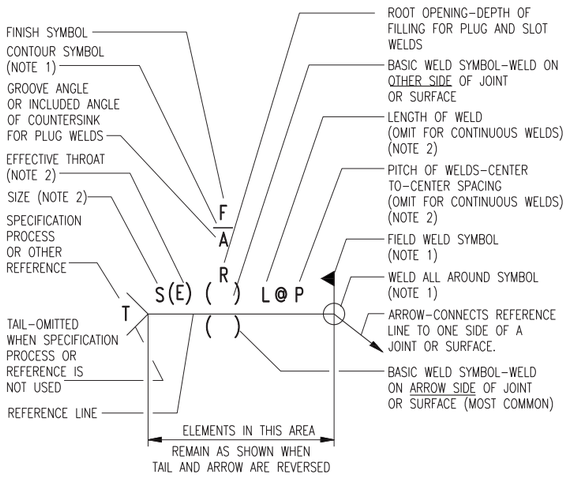
STRUCTURAL DESIGN CRITERIA:

1. BUILDING CODE: INTERNATIONAL BUILDING CODE (IBC) 2012; PUBLISHED BY INTERNATIONAL CODE COUNCIL, INC.
2. ASCE 7-10 MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHER STRUCTURES; PUBLISHED BY AMERICAN SOCIETY OF CIVIL ENGINEERS.
3. STEEL DESIGN CODE: AISC 360-10 SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS, ALLOWABLE STRESS DESIGN (ASD) PUBLISHED BY THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION.
4. CONCRETE DESIGN CODE: BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE, ACI 318-11; PUBLISHED BY AMERICAN CONCRETE INSTITUTE.
5. STRUCTURAL STEEL: SEE MATERIAL SPECIFICATION SHEET
6. CATWALK LIVE LOADS:
   A. UNIFORM LIVE LOAD: 40 PSF
   B. CONCENTRATED LOAD: 300 LB
7. ROOF LIVE LOADS: 20 PSF
8. SYSTEMS AND COMPONENTS REQUIRING SPECIAL INSPECTION:
   A. STRUCTURAL STEEL -SPECIAL INSPECTION FOR STRUCTURAL STEEL SHALL BE IN ACCORDANCE WITH THE QUALITY ASSURANCE INSPECTION REQUIREMENTS OF CHAPTER N OF AISC 360.

WELD SYMBOLS



LOCATION OF ELEMENTS OF A WELDING SYMBOL



NOTES:
(1) SUPPLEMENTARY SYMBOL.
(2) SHOWN ON SAME SIDE OF REFERENCE LINE AS THE WELD SYMBOL. IF "WELD BOTH SIDES", DIMENSIONS ARE REQUIRED ON BOTH SYMBOLS, EVEN IF SAME DIMENSIONS.

STEEL NOTES:

1. DIMENSIONS: TO CENTERLINES OF COLUMNS, BEAMS AND PIPES; BACKS OF CHANNELS AND ANGLES; TOP SURFACES OF BEAMS AND TUBES, UNLESS SHOWN OTHERWISE.
2. ELEVATIONS: REFER TO TOP SURFACE OF FLANGE OF MEMBER (AND CENTERLINE OF PIPES) UNLESS SHOWN OTHERWISE.
3. FRAMING MEMBERS NOTED BY DEPTH AND WEIGHT SHALL CONFORM TO THE AISC SPECIFICATION. FRAMING MEMBERS NOTED BY DEPTH ONLY ARE FULLY SIZED ON ANOTHER PLAN OR ELEVATION.
4. PROVIDE GUARDRAIL AND KICK PLATE AROUND ALL NEW AND MODIFIED PLATFORMS.
5. COORDINATE NEW GUARDRAIL, PLATFORMS, AND CONNECTIONS WITH EXISTING PRIOR TO FABRICATION. MAKE FIELD MEASUREMENTS AND MINOR MODIFICATIONS WHERE CONFLICTS OCCUR.
6. ALL KICK PLATES SHALL EXTEND A MINIMUM OF 4 INCHES ABOVE WALKING SURFACE.
7. WELD SYMBOLS SHOWN MAY NOT DISTINGUISH BETWEEN FIELD AND SHOP WELDING. CONTRACTOR SHALL PROVIDE AS MUCH WELDING AS PRACTICAL IN THE SHOP. CONTRACTOR'S SHOP DRAWINGS SHALL SHOW ALL WELDING AND DISTINGUISH BETWEEN FIELD AND SHOP WELDING.
8. WHERE FILLET WELD SIZES ARE NOT NOTED ON DRAWINGS, PROVIDE MINIMUM SIZE IN ACCORDANCE WITH AWS D1.1, 5.14. ALL OTHER TYPE WELDS NOT SIZED ON DRAWINGS SHALL DEVELOP FULL STRENGTH OF MEMBERS ATTACHED.
9. WELDING WILL BE ALLOWED ONLY AT SCHEDULED TIMES AND IN LOCATIONS CONSISTENT WITH OWNER'S PLANT OPERATIONS.
10. PROVIDE GALVANIZED FASTENERS FOR ALL BOLTED CONNECTIONS WHERE ONE OR MORE MEMBERS OR ELEMENTS ARE GALVANIZED MATERIAL.
11. PROVIDE MISCELLANEOUS STEEL AS REQUIRED FOR SUPPORT OF GRATING.
12. PROVIDE SLOTTED OR OVERSIZE HOLES WHERE REQUIRED TO FACILITATE INSTALLATIONS TO EXISTING MEMBERS. USE SLIP CRITICAL BOLTS FOR THESE CONNECTIONS.
13. FIELD DRILL HOLES FOR CONNECTION TO EXISTING STEEL; WELDING TO EXISTING STEEL WILL BE PERMITTED ONLY WHERE INDICATED OR SPECIFICALLY APPROVED BY ENGINEER.
14. ALL WELDING SHALL BE DONE IN ACCORDANCE WITH AWS D1.1 ALL WELDING SHALL BE DONE BY WELDERS CERTIFIED IN ACCORDANCE WITH AWS FOR THE TYPE OF WELDING REQUIRED.
15. STEEL FABRICATOR SHALL BE AN AISC CERTIFIED PLANT, CATAGORY BU.
16. CONTRACTOR SHALL SUBMIT COPIES OF WELDER AND FABRICATOR CERTIFICATION TO OWNER'S REPRESENTATIVE FOR APPROVAL BEFORE STEEL FABRICATION BEGINS.
17. CONTRACTOR SHALL SUBMIT STEEL SHOP DRAWINGS TO OWNER'S REPRESENTATIVE FOR APPROVAL.
18. CONTRACTOR'S QUALITY CONTROL PROGRAM SHALL MEET THE QUALITY CONTROL REQUIREMENTS OF AISC 360 CHAPTER N.

NO.	REVISIONS	DSGN	CHKD	APVD	DATE

Stanley Consultants INC.
225 Iowa Avenue, Muscatine, Iowa 52761-3764
www.stanleyconsultants.com

CEDAR RAPIDS
City Of Five Seasons

CITY OF CEDAR RAPIDS
LPO REACTOR WALKWAYS
CEDAR RAPIDS, IOWA

GENERAL NOTES AND LEGEND SHEET

DESIGNED	JM CASE	SCALE: NONE	
DRAWN	NVEGA	NO. 26302.01	REV. 0
CHECKED	JM CASE	G2	
APPROVED	LH BADTRAM		
APPROVED			
DATE	OCTOBER 27, 2015		

CADD D3-R4

MATERIAL SPECIFICATIONS:

1. STRUCTURAL STEEL
   A. MATERIAL: ASTM A36.
   B. HOT DIP GALVANIZED AFTER FABRICATION ASTM A123.
   C. AFTER ERECTION, REPAIR HOT-DIP GALVANIZED COATINGS IN ACCORDANCE WITH ASTM A780. THIS INCLUDES SURFACES WHERE SHOP-APPLIED GALVANIZED COATINGS HAVE BEEN DAMAGED, REMOVED, OR OMITTED.

2. ADHESIVE ANCHORS
   A. THREADED RODS ANCHORED IN CONCRETE WITH 2-COMPONENT BLEND OF RESIN AND HARDENER. FILLER MATERIAL MAY BE MIXED WITH RESIN AND HARDENER IN ACCORDANCE WITH MANUFACTURER'S DIRECTIONS.
   B. ANCHOR ROD SYSTEM SHALL HAVE ICC APPROVAL FOR USE IN CRACKED CONCRETE AND FOR SEISMIC CONDITIONS AND SHALL HAVE PASSED MANDATORY CREEP TESTS REQUIREMENTS OF AC 308.
   C. THREADED ROD TYPE:
      1. ALL-THREADED.
      2. STANDARD: ASTM A36/A36M, GALVANIZED. USE UNLESS INDICATED OTHERWISE ON DRAWINGS.
      3. HIGH-STRENGTH: ASTM A193/A193M, GRADE B7, GALVANIZED.
      4. STAINLESS STEEL: ASTM F593 (AISI 304).
   D. MANUFACTURER: "HIT-HY 200 SAFE SET SYSTEM" BY HILTI, OR EQUAL.
   E. INSTALL IN STRICT ACCORDANCE WITH MANUFACTURER'S WRITTEN INSTRUCTIONS.
   F. PERFORM WORK USING MANUFACTURER'S STANDARD EQUIPMENT INCLUDING ADHESIVE CARTRIDGES, DISPENSING GUNS, MIXER TUBES AND EXTENSIONS, BRUSH, AND AIR NOZZLE FOR COMPRESSED AIR CLEANING OF HOLES. CONTRACTOR SHALL POSSESS EQUIPMENT AT SITE PRIOR TO START OF INSTALLATION AND WORKERS SHALL DEMONSTRATE KNOWLEDGE OF PROCEDURE FOR INSTALLING ANCHORS PRIOR TO INSTALLATION.
   G. USE HAMMER DRILL EXCEPT WHERE HOLES ARE WITHIN 6" (150 MM) OF EDGE OF CONCRETE CORE DRILL HOLES.
   H. INSPECT EXISTING CONCRETE AT ANCHOR LOCATIONS FOR SOUNDNESS. REPORT TO OWNER'S REPRESENTATIVE CRACKED, DETERIORATED OR WEAK CONCRETE DETECTED FROM DRILLING OPERATION OR FROM INSPECTION.

3. STEEL HANDRAILS AND GUARDRAILS
   A. MATERIAL: ASTM A53/A53M, GRADE B OR ASTM A501.
   B. USE STEEL PIPE FOR RAILS AND UPRIGHTS.
   C. CONNECTIONS: WELD AND GRIND SMOOTH.
   D. CONFORM TO DETAILS SHOWN ON DRAWINGS.

4. GRIP STRUT WALKWAY GRATING
   A. PROVIDE FABRICATED WALKWAY SECTIONS WITH INTEGRAL KICK PLATES AND SERRATED WALKING SURFACE.
   B. MATERIAL: GALVANIZED STEEL
   C. USE SERRATED GRIP STRUT GRATING
   D. THICKNESS: 12-GAGE (2.7 MM) MINIMUM.
   E. PROVIDE MANUFACTURER'S RECOMMENDED FASTENERS FOR EACH SECTION OF WALKWAY SUPPORTED ON STRUCTURAL MEMBERS.
   F. PROVIDE MANUFACTURER'S SPLICE PLATES AND OTHER REQUIRED ACCESSORIES.
   G. PROVIDE EDGE BINDING AT EXPOSED EDGES AND AS REQUIRED TO STIFFEN IRREGULAR SECTIONS.
   H. SECURELY FASTEN EACH SECTION OF WALKWAY TO STRUCTURAL STEEL.
   I. MANUFACTURER: McNICHOLS HEAVY DUTY GRIP STRUT WALKWAY OR EQUAL.

5. EXPANDED METAL GRATING
   A. MATERIAL: CARBON STEEL
   B. STYLE: 6.25#, MIN.
   C. SURFACE: STANDARD, SLIP RESISTANT.
   D. STYLE: GALVANIZED.
   E. MANUFACTURER: McNICHOLS EXPANDED METAL GRATING OR EQUAL.
   F. CLEAR SPAN: 5'-0" MIN.
   G. SECURELY FASTEN EACH SECTION OF METAL GRATING TO STRUCTURAL STEEL IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

6. HIGH STRENGTH BOLT ASSEMBLIES
   A. BOLTS: ASTM A325, HEAVY HEX
   B. NUTS: ASTM A563, HEAVY HEX
   C. WASHERS: ASTM FY36
   D. HOT DIP GALVANIZED, ASTM A153 AND A143

NO.	REVISIONS	DSGN	CHKD	APVD	DATE

Stanley Consultants INC.
225 Iowa Avenue, Muscatine, Iowa 52761-3764
www.stanleyconsultants.com

CEDAR RAPIDS
City Of Five Seasons

CITY OF CEDAR RAPIDS
LPO REACTOR WALKWAYS
CEDAR RAPIDS, IOWA

MATERIAL SPECIFICATIONS

DESIGNED	JM CASE
DRAWN	NVEGA
CHECKED	JM CASE
APPROVED	LH BADTRAM
APPROVED	
DATE	OCTOBER 27, 2015

SCALE: NONE
NO. 26302.01
REV. 0
G3

CADD D3-R4

NOTE:
ALL W8×15 BEAMS TO BE REMOVABLE

LINE OF FNDN.

ROOF FRAMING PLAN @ EL. 771'-0" (4)
SCALE: 1/8"=1'-0"

ROOF DECK EL. 763'-10"

FOR ROOF FRAMING IN THIS AREA, SEE PLAN (4)

FACE OF MASONRY

ROOF SLOPE

12" SPAN DECK 12 H 48 H

WORK AREA
SEE FRAMING PLAN
ON SHEET S1

ROOF DECK EL. 763'-2"

ROOF DECK EL. 763'-10"

SEE PLAN (2/S-7) Z FOR DETAILS IN THIS AREA

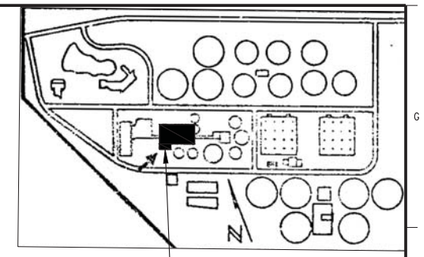
SEE PLAN (6/S-7) E FOR DETAILS IN THIS AREA

ALL WELDED STEEL SADDLE FRAME

NOTE:
VERIFY WITH HEATING AND VENTILATING DRAWINGS FOR OPENINGS IN ROOF DECK.

ROOF FRAMING PLAN (1)
SCALE: 1/8"=1'-0"

ROOF PLAN TAKEN FROM BUILDING ORIGINAL CONSTRUCTION DRAWINGS, AND IS INCLUDED HERE ONLY TO SHOW WORK LOCATION. THIS DRAWING FOR REFERENCE ONLY.



SOLIDS DEWATERING INCINERATION AND GRIT BUILDING

NO.	REVISIONS	DSGN	CHKD	APVD	DATE

Stanley Consultants INC.
225 Iowa Avenue, Muscatine, Iowa 52761-3764
www.stanleyconsultants.com

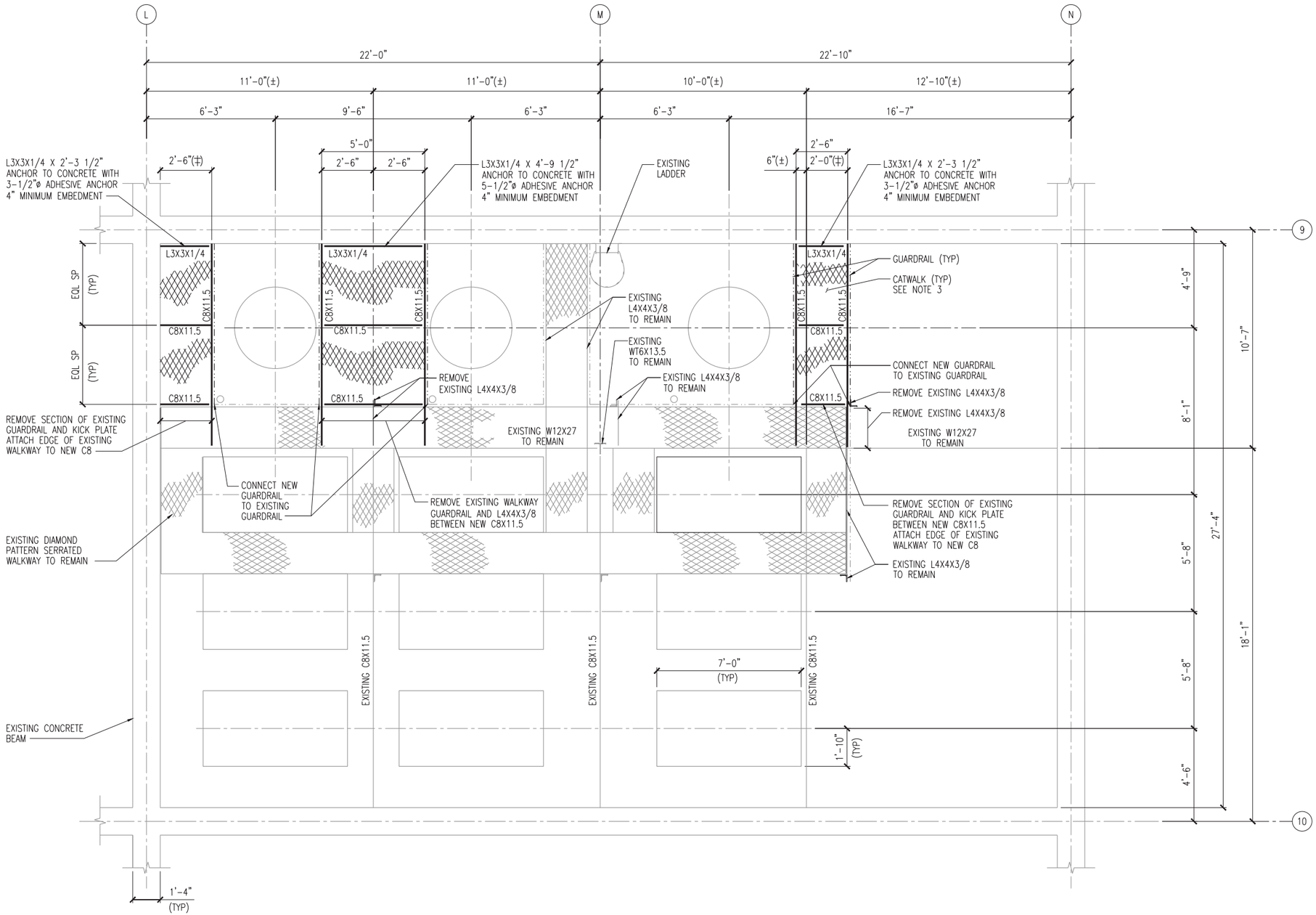
CEDAR RAPIDS
City Of Five Seasons

CITY OF CEDAR RAPIDS
LPO REACTOR WALKWAYS
CEDAR RAPIDS, IOWA

SOLIDS DEWATERING INCINERATION AND GRIT BUILDING EXISTING PLAN

DESIGNED	JM CASE
DRAWN	N VEGA
CHECKED	JM CASE
APPROVED	LH BADTRAM
APPROVED	
DATE	OCTOBER 27, 2015

SCALE: NONE
NO. 26302.01
REV. 0
G4



NOTES:

1. SET TOP OF STEEL ELEVATION OF NEW STEEL SO THAT TOP OF NEW CATWALK GRATING MATCHES TOP OF EXISTING CATWALK GRATING.
2. SET TOP OF GRATING LEVEL WITHIN THE FOLLOWING TOLERANCES: SLOPE OF NEW WALKWAY SHALL NOT BE MORE THAN 1/2" OVER THE LENGTH OF THE WALKWAY AND SHALL NOT BE MORE THAN 1/4" TRANSVERSE TO LONG DIMENSION OF NEW WALKWAY.
3. USE GRIPS STRUT WALKWAYS WITH INTEGRAL KICK PLATES FOR 2'-6" WIDE CATWALKS. USE EXPANDED METAL GRATING FOR 5'-0" WIDE CATWALK.

FRAMING PLAN AT ELEVATION 762'-7 1/4"

SCALE: 1/4" = 1'-0"

NO.	REVISIONS	DSGN	CHKD	APVD	DATE

Stanley Consultants INC.
225 Iowa Avenue, Muscatine, Iowa 52761-3764
www.stanleyconsultants.com

CEDAR RAPIDS
City Of Five Seasons

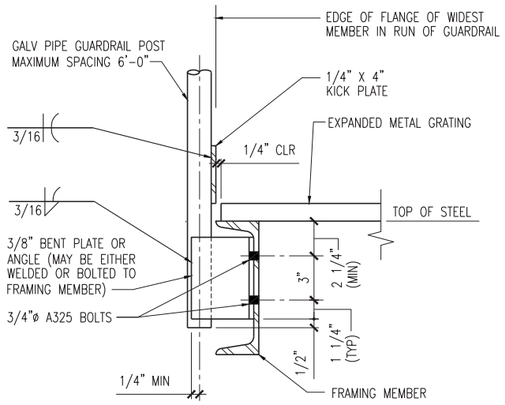
CITY OF CEDAR RAPIDS
LPO REACTOR WALKWAYS
CEDAR RAPIDS, IOWA

FRAMING PLAN

DESIGNED	JM CASE
DRAWN	N VEGA
CHECKED	JM CASE
APPROVED	LH BADTRAM
APPROVED	
DATE	OCTOBER 27, 2015

SCALE: AS NOTED

NO. 26302.01	REV.
S1	0

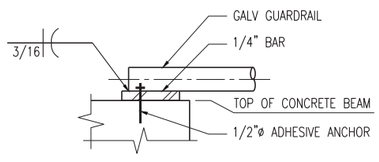


NOTES:

1. TOP GUARDRAIL 2'-6" ABOVE WALKWAY SURFACE. MIDDLE GUARDRAIL HEIGHT TO MATCH EXISTING.
2. GUARDRAILS AND POSTS SHALL BE 1 1/2" DIAMETER STANDARD WEIGHT STEEL PIPE ASTM A53. GRADE B OR ASTM A501.
3. OMIT KICK PLATE WHERE KICK PLATE IS INTEGRAL WITH METAL GRATING WALKWAY.

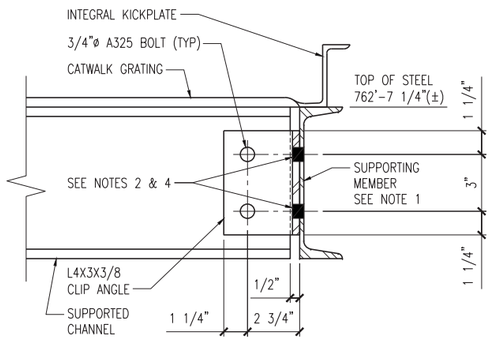
TYPICAL GUARDRAIL AND KICK PLATE DETAIL

SCALE: NONE



ALTERNATE MIDDLE GUARDRAIL ATTACHMENT TO CONCRETE DETAIL

SCALE: NONE

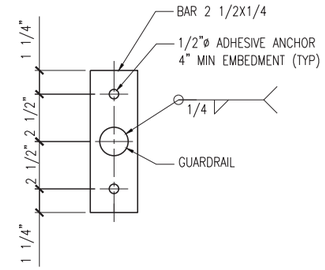


NOTES:

1. CONNECTION TYPICAL FOR CHANNEL TO CHANNEL, CHANNEL TO EXISTING W12X27 AND CHANNEL TO EXISTING CONCRETE BEAM CONNECTIONS. CHANNEL TO CHANNEL CONNECTION SHOWN.
2. FOR CONNECTION OF CHANNEL TO EXISTING W12X27 AND CONNECTION OF CHANNELS, CLIP ANGLE MAY BE BOLTED OR WELDED TO W12X27 OR SUPPORTING CHANNEL AT CONTRACTOR'S OPTION. FOR BOLTED CONNECTIONS USE 3/4" DIAMETER A325 BOLTS FOR EACH MEMBER AS SHOWN.
3. COPE TOP OF C8 AS NEEDED WHEN FRAMING INTO EXISTING W12X27 TO MAINTAIN SAME TOP OF GRATING ELEVATION WITH EXISTING CONSTRUCTION.
4. FOR CONNECTION OF CHANNEL TO EXISTING CONCRETE BEAM USE TWO 1/2" STEEL THREADED ROD ADHESIVE ANCHORS WITH 4" MINIMUM EMBEDMENT. SEE MATERIAL NOTES FOR ADHESIVE ANCHOR REQUIREMENTS.

TYPICAL BEAM CONNECTION DETAIL

SCALE: 3"=1'-0"



GUARDRAIL ATTACHMENT TO CONCRETE DETAIL

SCALE: 3"=1'-0"

NO.	REVISIONS	DSGN	CHKD	APVD	DATE

Stanley Consultants INC.
225 Iowa Avenue, Muscatine, Iowa 52761-3764
www.stanleyconsultants.com

CEDAR RAPIDS
City Of Five Seasons

CITY OF CEDAR RAPIDS
LPO REACTOR WALKWAYS
CEDAR RAPIDS, IOWA

TYPICAL DETAILS

DESIGNED	JM CASE
DRAWN	NVEGA
CHECKED	JM CASE
APPROVED	LH BADTRAM
APPROVED	
DATE	OCTOBER 27, 2015

SCALE: AS NOTED

NO. 26302.01 | REV.

S2 | 0

CADD D3-R4