OGDEN CITY

OGDEN WATER TREATMENT PLANT UPGRADES 2023
OGDEN CANYON RD, OGDEN UTAH

OGDEN CITY

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BART BLAIR	COUNCIL MEMBER
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CALEB DOTTEN, E.I.T.	CIVIL DESIGNER

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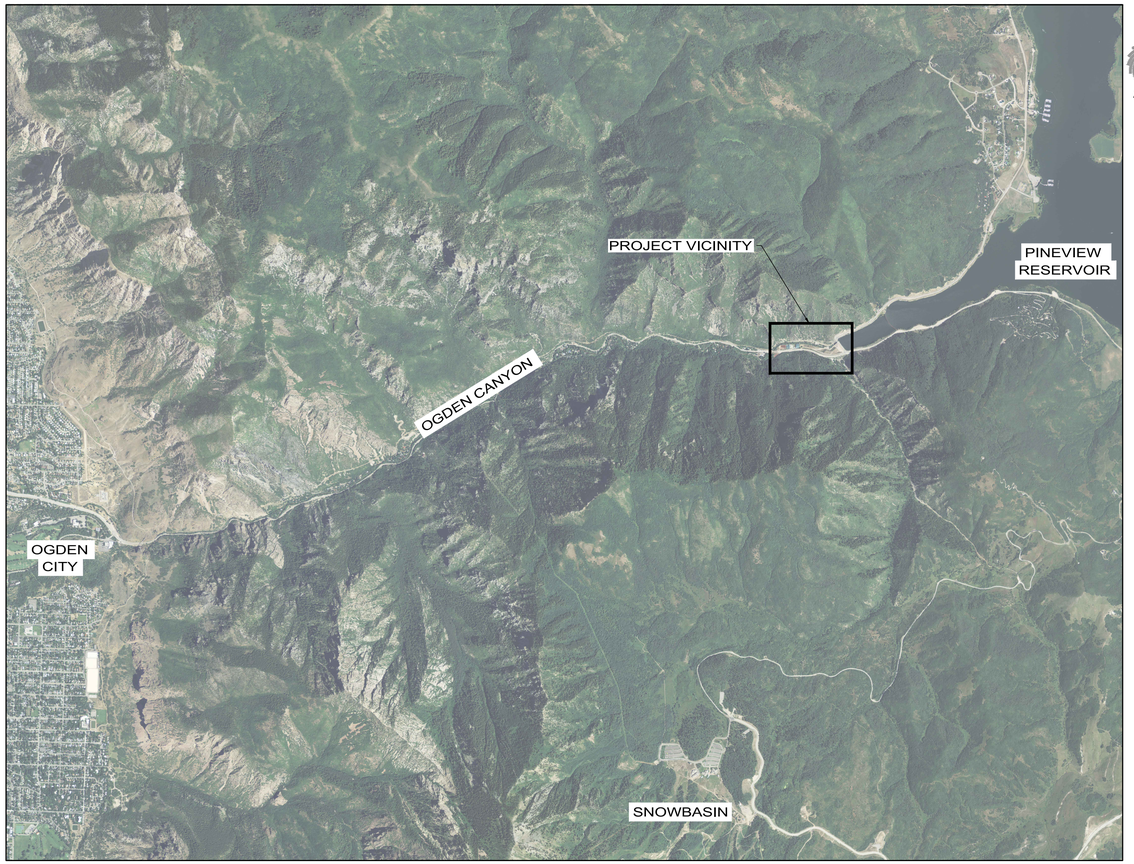
PROJECT AREA MAP

NOT TO SCALE



PROJECT LOCATION MAP

NOT TO SCALE

SHEET INDEX		
SHEET NUMBER	SHEET TITLE	DRAWING NAME
1 – GENERAL		
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2	G–2	AREA MAP, VICINITY MAP
3	G–3	GENERAL NOTES–LEGEND
2 – CIVIL SHEETS		
4	C–1	DEMOLITION PLAN
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6	C–3	CONVEYOR PLAN
7	D–1	DETAILS
3 – STRUCTURAL		
8	ST1	STRUCTURAL SPECIFICATIONS
9	ST2	STRUCTURAL SPECIFICATIONS
10	ST3	FOOTING/FOUNDATION PLAN
11	ST4	CMU PLAN
12	ST5	ROOF PLAN

REV NO.	COMMENT	DATE

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2023 WATER SYSTEM IMPROVEMENTS

AREA MAP, VICINITY MAP

SEI NO.	DESIGNED	DRAWN	CHECKED	SHEET NO.	
09955	EL	EL	SH	2 of 12	G-2

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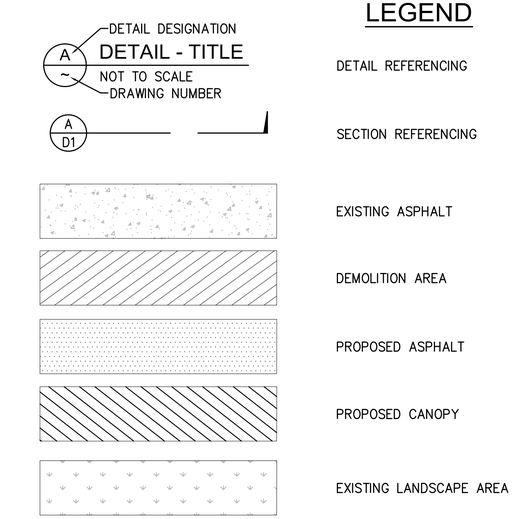
DESIGN CRITERIA

1. LOCATIONS AND DEPTHS OF ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE PROJECT DRAWINGS AND SPECIFICATIONS.THE CONTRACTOR SHALL NOT MOVE THE ALIGNMENT OR LOCATION OF ANY OF THE SHOWN OR INTENDED IMPROVEMENTS WITHOUT THE WRITTEN CONSENT OF THE OWNER. THE OWNER WILL COORDINATE WITH THE CONTRACTOR TO RELOCATE PLANNED IMPROVEMENTS WHICH CONFLICT WITH ACTUAL SITE CONDITIONS.
2. THE CONTRACTOR SHALL NOTIFY THE OWNER OF ANY DISCREPANCIES, OMISSIONS OR CONFLICTS BETWEEN THE VARIOUS ELEMENTS OF THE DRAWINGS AND/OR SPECIFICATIONS BEFORE PROCEEDING WITH THE RELATED WORK.
3. CONSTRUCTION TO BE COORDINATED WITH OGDEN CITY.
4. CONSTRUCTION STAKING FOR THE SITE SHALL BE PROVIDED BY THE CONTRACTOR USING DATA AVAILABLE IN THE DRAWINGS.
5. CONSTRUCTION AND STAGING AREAS TO BE SECURELY FENCED AND SCREENED FOR THE DURATION OF CONSTRUCTION.
6. CONSTRUCTION TO PROVIDE ON-SITE PORTA-POTTY.
7. ANY DEBRIS RESULTING FROM THE PROJECT SHALL BE DISPOSED OF BY THE CONTRACTOR. THE CONTRACTOR SHALL MAKE ARRANGEMENTS FOR DISPOSAL SITES AT WHICH DEBRIS MAY BE LAWFULLY WASTED.
8. FINAL GRADING OF DISTURBED AREAS IS SUBJECT TO THE OWNER'S APPROVAL AND SHALL BE COMPLETED IN A NEAT WORKMANLIKE MANNER.
9. STAGING AREA TO BE RESTORED TO EXISTING CONDITION BY BROADCASTING SPECIFIED SEED WITHIN DISTURBED AREA. PROTECT EXISTING CURB AND GUTTER WITH SECURED DUNNAGE AND PROTECT EXISTING SIDEWALKS AND PAVMENT FROM CRACKING WITHIN VEHICLE CROSS AREA. REPLACEMENT OF DAMAGED SIDEWALK, CURB, OTHER PAVEMENT, IRRIGATION, LANDSCAPING, ETC. IS INCIDENTAL TO THE PROJECT.
10. NO CONSTRUCTION WORK WILL BE ALLOWED OUTSIDE DAYLIGHT HOURS OR ON SUNDAYS, OR HOLIDAYS OBSERVED BY THE OWNER UNLESS OTHERWISE PERMITTED IN WRITING BY THE OWNER.
11. THE CONTRACTOR SHALL BE RESPONSIBLE TO ACQUIRE ANY NECESSARY ENCROACHMENT, ROAD CUT, OR OTHER TEMPORARY PERMITS FOR THIS PROJECT.
12. THE OWNER SHALL BE RESPONSIBLE FOR ACQUIRING ANY BUILDING PERMITS FOR THIS PROJECT.
13. WORK INTENDED BY THE DRAWINGS AND SPECIFICATIONS BUT NOT SPECIFICALLY IDENTIFIED IN A PARTICULAR BID ITEM SHALL BE CONSIDERED INCIDENTAL TO THE OTHER BID ITEMS.
14. THE CONTRACTOR SHALL PROVIDE MEANS OF MANAGING ANY STORM WATER, GROUND WATER, OR NUISANCE SURFACE WATER WHICH MAY INTERFERE WITH THE WORK.
15. THE CONTRACTOR SHALL NOTIFY THE OWNER OF ANY DISCREPANCIES, OMISSIONS OR CONFLICTS BETWEEN THE VARIOUS ELEMENTS OF THE DRAWINGS AND/OR SPECIFICATIONS BEFORE PROCEEDING WITH THE RELATED WORK.
16. DUST CONTROL AND WATERING SHALL BE PROVIDED BY THE CONTRACTOR AND SHALL BE CONSIDERED INCIDENTAL TO CONSTRUCTION.
17. THE CONTRACTOR RECOGNIZES THAT TIME IS OF THE ESSENCE WITH THIS PROJECT AND SHALL SELECT AND UTILIZE LABOR, EQUIPMENT, AND MATERIALS THAT MINIMIZE THE CONSTRUCTION TIMELINE. CONSTRUCTION SCHEDULE TO BE SUBMITTED AT PRE-CONSTRUCTION CONFERENCE. THE CONTRACTOR SHALL ALSO REGULARLY APPRISE THE OWNER OF ELEMENTS REQUIRING LONG LEAD, INSTALLATION, OR CURING TIMES.
18. CONTRACTOR IS RESPONSIBLE TO VERIFY TIE-IN POINTS TO EXISTING IMPROVEMENTS PRIOR TO CONSTRUCTION. CONTRACTOR SHALL NOTIFY THE ENGINEER 5 WORKING DAYS PRIOR TO CONSTRUCTION IF THE EXISTING CONDITIONS ARE DIFFERENT FROM WHAT IS SHOWN ON THESE PLANS.
19. CONTRACTOR MAY PREPARE AND MAINTAIN CONSTRUCTION ACCESS AS NECESSARY TO ACCOMMODATE HIS CONSTRUCTION METHODS AND SEQUENCES, BUT SHALL RESTORE ALL SURFACE IMPROVEMENTS & EXISTING UTILITIES TO THEIR PRE-CONSTRUCTION CONDITION OR BETTER.
20. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO ENSURE THAT ALL OSHA REGULATIONS AND STANDARDS ARE COMPLIED WITH ON THE PROJECT SITE DURING THE CONSTRUCTION PERIOD.
21. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING EXISTING UTILITIES, FACILITIES AND IMPROVEMENTS IN PLACE. WHERE DAMAGE IS CAUSED BY THE CONTRACTOR, THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIRING OR REPLACING DAMAGED ITEMS TO AN EQUAL OR BETTER CONDITION AT HIS SOLE EXPENSE.
22. ALL WORK SHALL BE COMPLETED IN ACCORDANCE WITH THE PROJECT SPECIFICATION AND LOCAL, STATE, AND FEDERAL CODES, AND SHALL OTHERWISE BE COMPLETED IN A NEAT, WORKMANLIKE MANNER.
23. CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING A DETAILED SET OF RECORD DRAWINGS FOR REVIEW AND ACCEPTANCE BY THE ENGINEER FOLLOWING PROJECT COMPLETION. RECORD DRAWINGS SHALL CONTAIN DETAILED INFORMATION CONCERNING ANY DEVIATIONS FROM PLANS.

EQUIPMENT NOTES

1. ALL EQUIPMENT AND MATERIALS TO BE SUPPLIED BY THE SUPPLIER ARE SHOWN ON THE DRAWINGS (NOTED IN THE VARIOUS EQUIPMENT SCHEDULES). THE CONTRACTOR IS REQUIRED TO INSTALL ALL OF THE EQUIPMENT AND MATERIALS SUPPLIED BY THE SUPPLIER. ALL OTHER EQUIPMENT AND MATERIALS REQUIRED TO PROVIDE A COMPLETE AND FUNCTIONING ASSEMBLY AS SHOWN IN THESE PLANS ARE THE RESPONSIBILITY OF THE CONTRACTOR TO FURNISH AND INSTALL.
2. THE CONTRACTOR IS REQUIRED TO COORDINATE DELIVERIES OF THE EQUIPMENT WITH THE SUPPLIER. THE CONTRACTOR IS RESPONSIBLE FOR: THE REQUEST FOR DELIVERY; UNLOADING AND STORAGE OF ALL MATERIALS FURNISHED AND SUPPLIED BY THE SUPPLIER; AND ANY LOSS OR DAMAGE TO SAID MATERIALS AFTER THEY HAVE BEEN DELIVERED. ALL DELIVERIES SHALL ALSO BE COORDINATED WITH THE ENGINEER AND IN ACCORDANCE WITH THE CONTRACTOR'S CONSTRUCTION SCHEDULE (AS SUBMITTED AT THE START OF THE PROJECT).
3. THE CONTRACTOR SHALL BECOME FAMILIAR WITH ALL PARTS OF THE PLANS AND SPECIFICATIONS AND eNSURE THAT ALL SUBCONTRACTORS ARE FAMILIAR WITH THE SECTIONS PERTAINING TO THEIR AREA OF WORK. NO DEVIATIONS FROM THE DRAWINGS WILL BE ALLOWED UNLESS AGREED UPON BY ALL PARTIES IN WRITING PRIOR TO CONSTRUCTION AND/OR FABRICATION.
4. THE CONTRACTOR IS RESPONSIBLE TO COORDINATE ALL WORK BETWEEN THE VARIOUS TRADES REQUIRED OF THE TREATMENT PLANT FACILITIES AND APPURTENANT SITE WORK IMPROVEMENTS.
5. ANY OMISSIONS OR CONFLICTS BETWEEN THE PLANS AND THE ACTUAL CONDITIONS ENCOUNTERED IN THE VARIOUS ELEMENTS OF THE PROJECT SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER AND RESOLVED BY THE SAME BEFORE PROCEEDING WITH ANY WORK INVOLVED.
6. ALL CONSTRUCTION, WORKMANSHIP, AND MATERIALS SHALL CONFORM TO THE LATEST EDITIONS OF THE INTERNATIONAL BUILDING CODE, PLUMBING CODE, ELECTRICAL CODE, AND PROJECT SPECIFICATIONS.
7. THE CONTRACTOR IS RESPONSIBLE TO VERIFY AND COORDINATE ALL DIMENSIONS, ELEVATIONS AND CONDITIONS AT THE SITE WITH THE CONSTRUCTION DRAWINGS.

LEGEND



DETAIL REFERENCING

SECTION REFERENCING

EXISTING ASPHALT

DEMOLITION AREA

PROPOSED ASPHALT

PROPOSED CANOPY

EXISTING LANDSCAPE AREA

PROPOSED MAJOR CONTOUR

PROPOSED MINOR CONTOUR'

EXISTING MAJOR CONTOUR

EXISTING MINOR CONTOUR

REV NO.	COMMENT	DATE
1		

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OGDEN CITY

2023 WATER SYSTEM IMPROVEMENTS

GENERAL NOTES – LEGEND

SEI NO.	DESIGNED	DRAWN	CHECKED	SHEET NO.	
09955	EL	EL	SH	3 of 12	G-3

SCALE
0 5 10
HORIZ: 1" = 5' :22X34
1" = 10' :11X17

NORTH

EXISTING
DEWATERING
BUILDING

30"bw
10"rww
10"sl
42"w

PROTECT EXISTING
COLUMN IN PLACE

PROTECT EXISTING
COLUMN IN PLACE

PROTECT EXISTING
COLUMN IN PLACE

PROTECT EXISTING
42" WATER LINE
IN PLACE

OGDEN CANYON ROAD

CONSTRUCTION NOTES

1. REMOVE EXISTING GATE POSTS AND CONCRETE
2. DEMO & REMOVE EXISTING ABANDONED 30" PIPE AS NEEDED
3. DEMO & REMOVE EXISTING ABANDONED 10" PIPE AS NEEDED

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2023 WATER SYSTEM IMPROVEMENTS
DEMOLITION PLAN

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EXISTING DEWATERING BUILDING

EXISTING BELT PRESS

SCALE
0 5 10
HORIZ: 1" = 5' : 22X34
1" = 10' : 11X17

NORTH

41'

34'

24.5'
27.3'
29'

ELECTRIC TO GATE BY OTHERS

OGDEN CANYON ROAD

CONSTRUCTION NOTES

1. INSTALL AUTOMATIC FOLDING GATE AND POSTS (A / D-1)
2. NEW CONVEYOR LAYOUT – SEE SHEET C3
3. PROPOSED CANOPY – SEE SHEET ST3 – ST5
4. CANOPY COLUMN – SEE SHEETS ST3 – ST5
5. CANOPY COLUMN FOOTING
6. CONCRETE AROUND GATE COLUMNS

PROPOSED CANOPY

PROPOSED CONCRETE

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2023 WATER SYSTEM IMPROVEMENTS

SITE PLAN

SEI NO.	DESIGNED	DRAWN	CHECKED	SHEET NO.	
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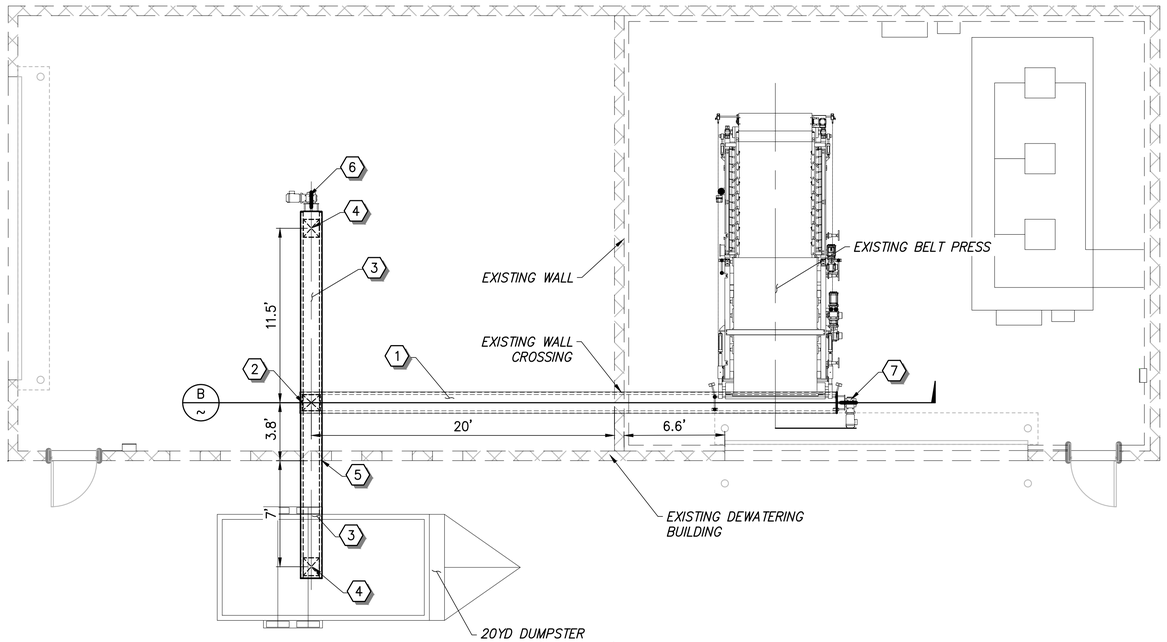


A ~ CONVEYOR LAYOUT PLAN VIEW

SCALE 1" = 5'

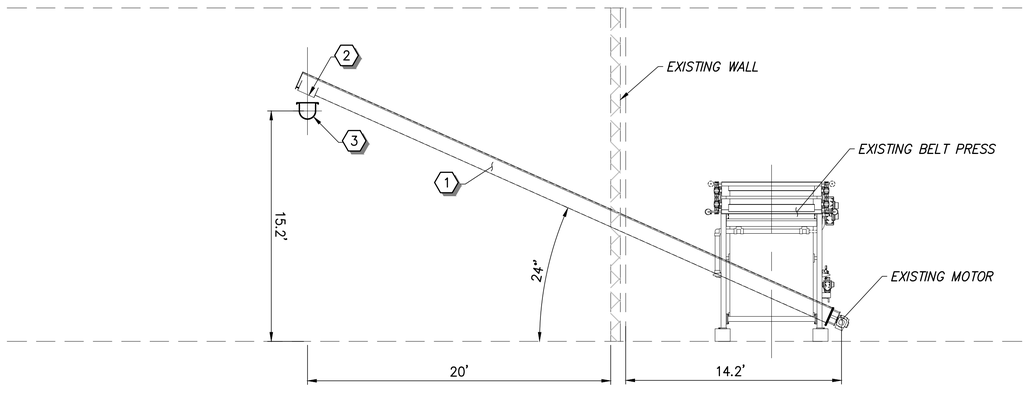
SCALE
0 5 10
HORIZ: 1" = 5' : 22X34
1" = 10' : 11X17
VERT: 1" = 5' : 22X34
1" = 10' : 11X17

NOTES

1. UPSIZE TO 12" CONVEYOR
2. LOAD OUT INLET PER SEMA STANDARDS
3. 12" TWO WAY LOAD OUT CONVEYOR
4. DISCHARGE
5. PROPOSED WALL PENETRATION SEE SHEET ST4
6. MOTOR WITH REVERSING MOTOR STARTER BY CONVEYOR MANUFACTOR
7. UPGRADE INCLINED CONVEYOR MOTOR TO XX HP MOTOR

EQUIPMENT NOTES

1. CONVEYOR SYSTEM TO BE DESIGNED FOR HEAVIEST, WET SLUDGE IN COORDINATION WITH OGDEN CITY OPERATORS.
2. REMOVAL OF EXISTING CONVEYOR AND EQUIPMENT TO BE COMPLETED OGDEN CITY.
3. CONVEYOR EQUIPMENT TO BE PROVIDED BY SPIRAC, JIM MEYERS AND SONS (JMS) OR JDV EQUIPMENT
4. CONVEYOR ASSEMBLY TO BE DESIGNED BY APPROVED SUPPLIER AS LISTED IN NOTE (2) ABOVE.
5. CONVEYOR SUPPORTS TO BE DESIGNED BY APPROVED SUPPLIER AS LISTED IN NOTE (2) ABOVE.
6. CONVEYOR EQUIPMENT TO MEET ALL APPLICABLE SEMA STANDARDS.
7. CONTRACTOR IS RESPONSIBLE FOR ANY REWIRING REQUIRED TO PROVIDE APPROPRIATE POWER SUPPLY FOR UPSIZED MOTORS.
8. CONTRACTOR TO COORDINATE WITH OGDEN CITY TO MODIFY EXISTING CONTROL PANEL TO ALLOW FOR REVERSING MOTOR STARTER.



B ~ CONVEYOR LAYOUT PROFILE VIEW

SCALE: 1"=5'

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2023 WATER SYSTEM IMPROVEMENTS

CONVEYOR PLAN

SET NO.	DESIGNED	DRAWN	CHECKED	SHEET NO.	
09955	SA	SA	SH	# of 12	C-3

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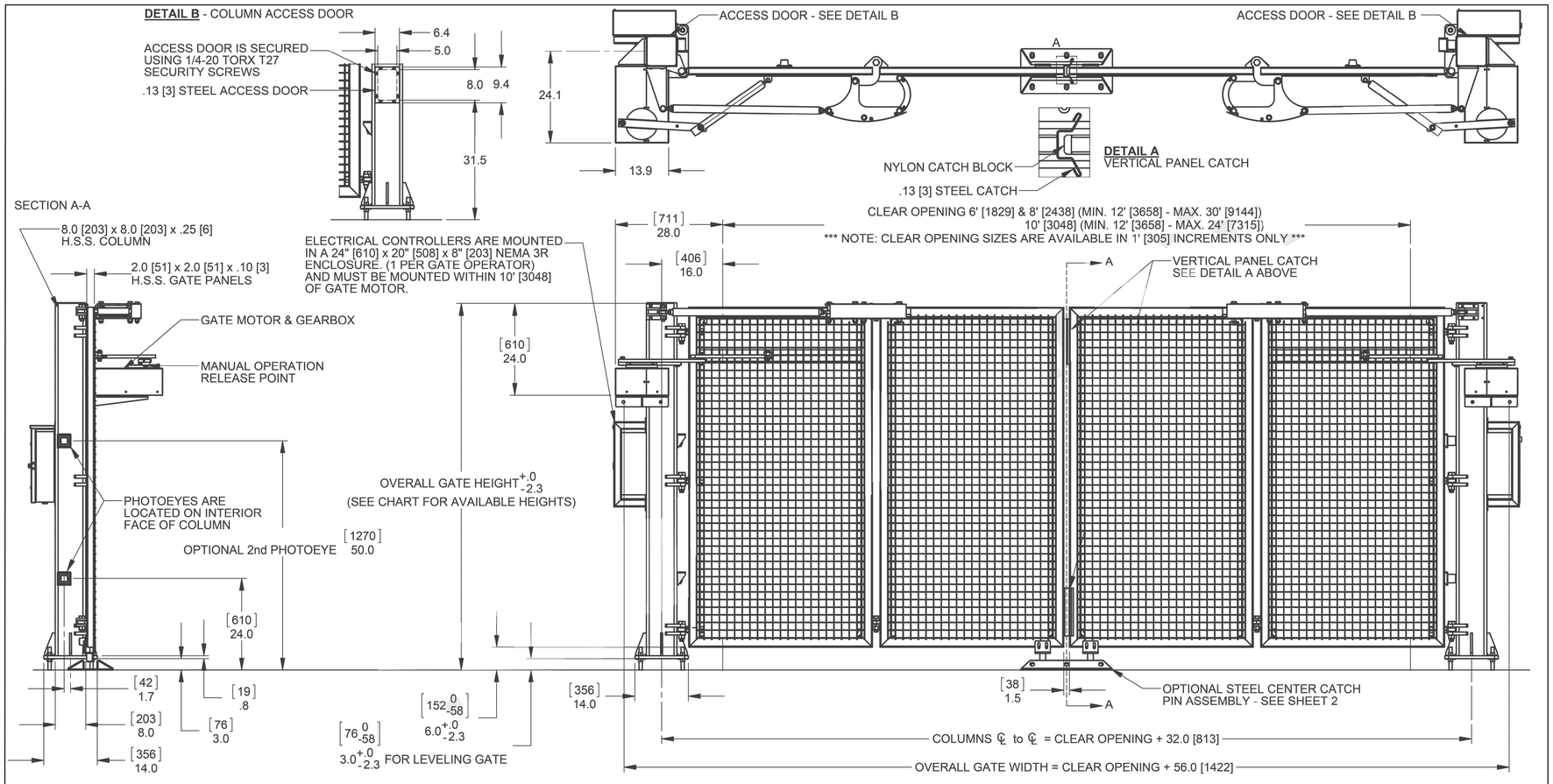

DRIVE THRU HEIGHTS	
6ft	72" [1829]
8ft	96" [2438]
10ft	120" [3048]

SEE NOTE BELOW

NOTE: 10' HEIGHT HAS PANEL EXTENSIONS TO ACHIEVE DESIRED GATE HEIGHT SEE SHEET 4 FOR INFO.

FINISH NOTES

STANDARD FINISH: HOT DIPPED GALVANIZED ON ALL STEEL COMPONENTS

OPTIONAL FINISH: POWDER COAT PAINT, CUSTOM COLORS AVAILABLE
RAL # MUST BE SPECIFIED AT TIME OF ORDER

A - AUTOMATIC FOLDING GATE
NTS

GENERAL NOTES:

1) ELECTRONICALLY CONTROLLED GATES SHALL BE EQUIPPED WITH A KNOX KEY SWITCH

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DETAILS

SEI NO.	DESIGNED	DRAWN	CHECKED	SHEET NO.	
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STRUCTURAL SPECIFICATIONS & REQUIREMENTS

A. DESIGN CRITERIA:

1. BUILDING CODES:
   2021 INTERNATIONAL BUILDING CODE
   ACI 318-19 "BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE AND COMMENTARY"
   ASCE 7-16 "MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHER STRUCTURES"
   MASONRY STRUCTURES TMS 402-16/ACI 530-16/ASCE 5-16
   2018 NATIONAL DESIGN SPECIFICATION for WOOD CONSTRUCTION WITH COMMENTARY
2. RISK CATEGORY III PER IBC TABLE 1604.5
3. DESIGN DEAD LOADS:
   ROOF DL = 15 PSF
4. LIVE LOAD:
   ROOF LL = 20 PSF
5. SNOW LOAD: PER ASCE 7-16
   IMPORTANCE FACTOR Is = 1.10
   GROUND SL = 51 PSF
   FLAT/SLOPED ROOF SL USED FOR DESIGN = 41 PSF
6. WIND LOADING: PER ASCE 7-16
   BASIC WIND SPEED V = 109 MPH, IMPORTANCE FACTOR Iw = 1.00
   KD = 0.85
   EXPOSURE CATEGORY = C
   TOPOGRAPHIC FACTOR KZT = 1.00
   GUST EFFECT FACTOR G = 0.85
   BUILDING = OPEN
   FOR WIND PRESSURES USED IN DESIGN, SEE CALCULATIONS
7. SEISMIC LOADING: PER ASCE 7-16
   SITE CLASS C "STIFF SOIL", SEISMIC IMPORTANCE FACTOR Ie = 1.25
   S_S = 0.9870g
   S_1 = 0.3550g
   S_{DS} = 0.7900g
   S_{D1} = 0.3550g
   SEISMIC DESIGN CATEGORY PER ASCE 7-16 TABLE 11.6-2

B. GENERAL REQUIREMENTS:

1. DIMENSIONS: CONTRACTOR TO VERIFY ALL DIMENSIONS ON SITE PRIOR TO CONSTRUCTION AND REPORT ANY DISCREPANCIES TO THE ENGINEER OF RECORD.
2. THE CONTRACTOR MUST SUBMIT IN WRITING ANY REQUESTS FOR MODIFICATIONS TO THE PLANS AND SPECIFICATIONS. SHOP DRAWINGS SUBMITTED TO THE STRUCTURAL ENGINEER FOR REVIEW DO NOT CONSTITUTE "IN WRITING" UNLESS IT IS CLEARLY NOTED THAT SPECIFIC CHANGES ARE BEING REQUESTED.
3. LOADS FROM CONSTRUCTION MATERIALS SHALL BE SPREAD OUT IF PLACED ON FRAMED FLOORS OR ROOFS. CONSTRUCTION LOADS SHALL NOT EXCEED THE DESIGN LIVE LOAD PER SQUARE FOOT LISTED IN THE DESIGN CRITERIA. CONTRACTOR SHALL PROVIDE ADEQUATE SHORING AND OR BRACING WHERE STRUCTURE HAS NOT ATTAINED DESIGN STRENGTH.
4. THESE DOCUMENTS HAVE BEEN PREPARED USING STANDARDS OF PROFESSIONAL CARE AND COMPLETENESS AS REQUIRED FOR THIS OR SIMILAR LOCALITIES. THEY ASSUME THAT THE WORK DEPICTED WILL BE PERFORMED BY AN EXPERIENCED CONTRACTOR AND/OR WORKMEN WHO HAVE A WORKING KNOWLEDGE OF THE APPLICABLE CODE STANDARDS AND REQUIREMENTS AND OF INDUSTRY ACCEPTED STANDARD GOOD PRACTICE. AS NOT EVERY CONDITION OR ELEMENT IS (OR CAN BE) EXPLICITLY SHOWN ON THESE DRAWINGS, THE CONTRACTOR SHALL USE INDUSTRY ACCEPTED STANDARD GOOD PRACTICE FOR MISCELLANEOUS WORK NOT EXPLICITLY SHOWN.
5. THESE DRAWINGS REPRESENT THE FINISHED STRUCTURE. THEY DO NOT INDICATE THE METHOD OF CONSTRUCTION. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, PROCEDURES, LAGGING, SHORING, BRACING, FORM-WORK, ETC. AS REQUIRED FOR THE PROTECTION OF LIFE AND PROPERTY DURING CONSTRUCTION.

C. FOUNDATION REQUIREMENTS:

1. FOUNDATIONS FOR THE STRUCTURES SHOWN IN THE PLANS WERE DESIGNED BASED ON THE GEOTECHNICAL INVESTIGATION REPORT "PROPOSED WATER TREATMENT PLANT AND STORAGE TANK", DATED SEPTEMBER 26, 2012. LOAD-BEARING VALUES OF THE SOILS ARE PROVIDED IN THE REPORT. CONTINUOUS AND SPREAD FOOTINGS DESIGNED FOR ALLOWABLE BEARING PRESSURE OF 2,500 PSF PER THE SOILS REPORT. IF SOIL CONDITIONS ARE FOUND TO BE DIFFERENT THAN THE TYPES LISTED ABOVE OR OF UNUSUAL MAKE-UP, OR SUB-STANDARD, PLEASE CONTACT THE ENGINEER OF RECORD.

D. CONCRETE REQUIREMENTS:

1. ALL CONCRETE CONSTRUCTION SHALL BE PERFORMED IN ACCORDANCE WITH ACI 318 AND ACI 301, EXCEPT AS MODIFIED BY THE CONSTRUCTION DOCUMENTS.
2. CONCRETE SHALL HAVE THE FOLLOWING COMPRESSIVE STRENGTHS:

CONCRETE	MIN. f'c (28 DAYS)	SLUMP	W/C RATIO	CLASS
FOUNDATIONS	4500 PSI	3" TO 5"	0.45	F2
INT. SLAB-ON-GRADE	4000 PSI	3" TO 5"	0.45	F2
CONCRETE NOT NOTED	4500 PSI	3" TO 5"	0.45	F2

   SLUMP: CONCRETE w/ ADMIXTURES SHALL HAVE A MAXIMUM SLUMP OF 5".

3. ADMIXTURES:
   3.1. AIR ENTRAINMENT ASTM C-260
   3.2. CALCIUM CHLORIDE NOT PERMITTED
   3.3. ALUMINUM PRODUCTS NOT PERMITTED

D. CONCRETE REQUIREMENTS CONTINUED:

4. CONCRETE MIXES SHALL BE DESIGNED BY A CERTIFIED LABORATORY, STAMPED BY AN APPROPRIATELY LICENSED SPECIALTY ENGINEER, AND APPROVED BY THE ENGINEER OF RECORD. MIX DESIGNS SHALL INCLUDE THE PROJECT NAME AND INDICATE THEIR USE WITHIN THE STRUCTURE. MIX DESIGNS SHALL BE PROPORTIONED TO MINIMIZE SHRINKAGE AND HAVE PROVEN SHRINKAGE CHARACTERISTICS OF 0.05% OR LESS BASED ON TESTING PER ASTM C157.
5. IF USED, EARLY STRENGTH CONCRETE SHALL BE PROPORTIONED TO DEVELOP THE 28 DAY COMPRESSIVE STRENGTH AT THE AGE REQUIRED BY THE CONTRACTOR. CONTRACTOR SHALL SUBMIT TEST DATA FOR REVIEW BY THE STRUCTURAL ENGINEER TO SUBSTANTIATE THE CONCRETE STRENGTH AT THE REQUIRED AGE.
6. ALL CONCRETE SHALL BE NORMAL WEIGHT OF 145 POUNDS PER CUBIC FOOT USING HARD ROCK AGGREGATES CONFORMING TO ASTM C33 U.N.O. WHERE LIGHTWEIGHT CONCRETE IS SPECIFIED, CONCRETE SHALL BE 110 POUNDS PER CUBIC FOOT USING AGGREGATES CONFORMING TO ASTM C330. LARGEST NOMINAL AGGREGATE SIZE SHALL BE 1-1/2" OR GREATER FOR SLABS ON GRADE AND 3/4" OR GREATER FOR ALL OTHER CONCRETE U.N.O.
7. PORTLAND CEMENT SHALL CONFORM TO ASTM C150. TYPE V CEMENT SHALL BE USED FOR CONCRETE IN CONTACT WITH EARTH. TYPE II CEMENT MAY BE USED ELSEWHERE. CEMENT SHALL BE TYPE V WITH POZZOLAN WHERE CONCRETE IS IN CONTACT WITH SOIL CONTAINING VERY SEVERE SULFATE EXPOSURE.
8. FLY ASH MAY BE USED IN CONCRETE, SUBJECT TO APPROVAL BY THE ARCHITECT AND ENGINEER, PROVIDED THE FOLLOWING CONDITIONS ARE MET:
   8.1. FLY ASH SHALL COMPLY WITH ASTM C618.
   8.2. CEMENT CONTENT SHALL BE REDUCED A MINIMUM OF 15 PERCENT UP TO A MAXIMUM OF 25 PERCENT WHEN COMPARED TO AN EQUIVALENT CONCRETE MIX DESIGN WITHOUT FLY ASH. FLY ASH CONTENT SHALL NOT COMPRISE MORE THAN 35 PERCENT OF THE TOTAL CEMENTITIOUS CONTENT. THE WATER-CEMENT RATIO SHALL BE CALCULATED BASED ON THE TOTAL CEMENTITIOUS MATERIAL IN THE MIX.
   8.3. CLASS F FLY ASH SHALL BE USED IN SULFATE RESISTANT CONCRETE WITH f'c EQUAL TO OR GREATER THAN 4000 PSI. CLASS C FLY ASH MAY BE USED ELSEWHERE.
9. WATER SOLUBLE CHLORIDE ION CONCENTRATIONS IN CONCRETE SHALL BE LIMITED PER ACI 318, SECTION 4.4.
10. ALL CONCRETE EXPOSED TO FREEZE/THAW CYCLES OR DEICING CHEMICALS SHALL CONFORM TO ACI 318, SECTION 4.2.
11. TIME BETWEEN CONCRETE BATCHING AND PLACEMENT SHALL BE IN ACCORDANCE WITH ASTM C94.
12. CONCRETE MIXING, PLACEMENT, AND QUALITY SHALL BE PER IBC SECTION 1905. MECHANICALLY VIBRATE ALL CONCRETE WHEN PLACED. SLABS ON GRADE NEED TO BE VIBRATED ONLY AROUND AND UNDER FLOOR DUCTS OR SIMILAR ELEMENTS. REMOVE ALL DEBRIS FROM FORMS BEFORE PLACING CONCRETE. CONCRETE SHALL NOT BE DROPPED THROUGH REINFORCING STEEL SO AS TO CAUSE SEGREGATION OF AGGREGATES. UNCONFINED FALL OF CONCRETE SHALL NOT EXCEED 5 FEET.
13. PROTECT CONCRETE FROM DAMAGE OR REDUCED STRENGTH DUE TO COLD OR HOT WEATHER IN ACCORDANCE WITH ACI 305 AND 306. CONTRACTOR SHALL TAKE SPECIAL CURING PRECAUTIONS TO MINIMIZE SHRINKAGE CRACKING OF CONCRETE SLABS.
14. ALL REINFORCING STEEL SHALL BE SET AND TIED IN PLACE PRIOR TO POURING OF CONCRETE, EXCEPT VERTICAL DOWELS FOR MASONRY WALL REINFORCING MAY BE "FLOATED" IN PLACE. DO NOT FIELD BEND BARS PARTIALLY EMBEDDED IN HARDENED CONCRETE UNLESS SPECIFICALLY INDICATED OR APPROVED BY THE ENGINEER OF RECORD.
15. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PLACEMENT AND LOCATION OF ANY AND ALL EMBED ITEMS INCLUDING PLATES, BOLTS, AND OTHER INSERTS SPECIFIED IN THE DRAWINGS.
16. ALL ITEMS TO BE CAST IN CONCRETE SUCH AS REINFORCEMENT, DOWELS, BOLTS, ANCHORS, SLEEVES, ETC., SHALL BE SECURELY POSITIONED IN THE FORMS.
17. MECHANICAL, ELECTRICAL, AND PLUMBING PENETRATIONS / EMBEDDED CONDUITS SHALL COMPLY WITH THE FOLLOWING:
   17.1. ELECTRICAL CONDUITS MAY BE EMBEDDED IN STRUCTURAL CONCRETE ONLY AS NOTED IN TYPICAL DETAILS FOR WALLS AND CAST-IN-PLACE ELEVATED SLABS (EMBEDDED CONDUITS IN CONCRETE OVER STEEL DECK ARE NOT PERMITTED) OR WHERE SPECIFICALLY APPROVED IN WRITING BY THE ENGINEER. PIPING SHALL NOT BE EMBEDDED IN STRUCTURAL CONCRETE U.N.O. EMBEDDED ITEMS SHALL NOT IMPAIR THE STRENGTH OF THE MEMBER.
   17.2. REFER TO TYPICAL DETAILS FOR ACCEPTABLE CONDUIT, PIPING, AND DUCT PENETRATIONS THRU SLABS AND WALLS. DO NOT CUT ANY REINF. THAT MAY INTERFERE WITH PERMITTED PENETRATIONS. OPENINGS SHALL NOT BE CORED WITHOUT PRIOR WRITTEN APPROVAL OF ENGINEER. PENETRATIONS THRU BEAMS AND COLUMNS ARE PERMITTED ONLY WHERE SPECIFICALLY DETAILED.
   17.3. CONTRACTOR SHALL SUBMIT SHOP DRAWING SHOWING SIZES AND DIMENSIONED LOCATIONS OF ALL PENETRATIONS AND EMBEDDED CONDUITS IN WALLS AND ELEVATED SLABS. SHOP DRAWING MUST BE APPROVED BY ENGINEER PRIOR TO CONCRETE PLACEMENT. PENETRATIONS AND EMBEDDED CONDUITS NOT SHOWN ON APPROVED SHOP DRAWING WILL NOT BE PERMITTED UNLESS SPECIFICALLY APPROVED IN WRITING BY THE ENGINEER.
18. FORMWORK, SHORING, AND RESHORING SHALL BE DESIGNED PER ACI 347 RECOMMENDATIONS BY AN APPROPRIATELY LICENSED SPECIALTY ENGINEER EXPERIENCED IN THIS TYPE OF WORK AND SHALL BE SUBMITTED TO ENGINEER OF RECORD FOR REVIEW. FOR MULTISTORY CONSTRUCTION, SHORING/RESHORING DESIGN SHALL DEMONSTRATE THAT SHORES/RESHORES WILL BE PROVIDED FOR A SUFFICIENT NUMBER OF FLOORS TO DISTRIBUTE IMPOSED CONSTRUCTION LOADS TO SEVERAL SLAB LEVELS WITHOUT CAUSING EXCESSIVE STRESSES AND SLAB DEFLECTIONS. FOR PURPOSES OF SHORING/RESHORING CALCULATIONS, MAGNITUDES OF REDUCED LIVE LOADS SHALL BE TAKEN TO BE 60% OF VALUES INDICATED IN BASIS FOR DESIGN U.N.O.

D. CONCRETE REQUIREMENTS CONTINUED:

19. CONSTRUCTION JOINTS OR POUR JOINTS IN STRUCTURAL ELEMENTS (BEAMS, COLUMNS, ELEVATED SLABS, ETC.) NOT SPECIFICALLY SHOWN OR NOTED ON THE DRAWINGS REQUIRE PRIOR APPROVAL OF THE ENGINEER. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS SHOWING PROPOSED JOINTS TO ENGINEER FOR APPROVAL.
20. CONSTRUCTION JOINT SURFACES SHALL BE CLEANED AND LAITANCE REMOVED. HORIZONTAL JOINT SURFACES SHALL BE ROUGHENED TO 1/4" AMPLITUDE. THOROUGHLY WET ALL JOINT SURFACES AND REMOVE STANDING WATER IMMEDIATELY PRIOR TO NEW CONCRETE PLACEMENT.
21. CONCRETE SHALL BE CURED IN ACCORDANCE WITH ACI 318, SECTIONS 5.11.1 OR 5.11.2, WHICHEVER IS APPLICABLE, UNLESS ALTERNATE METHODS HAVE BEEN APPROVED BY THE ARCHITECT AND ENGINEER. WHERE CURING COMPOUNDS HAVE BEEN APPROVED FOR SLAB CURING, CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING COMPATIBILITY OF COMPOUNDS WITH ANTICIPATED FLOOR FINISH (e.g., RESILIENT TILE) PRIOR TO CURING COMPOUND APPLICATION.
22. CONCRETE FINISH DESIGNATION:
   F1 - AS CAST FORM FINISH
   F2 - ROUGH FINISH
   F3 - SMOOTH FINISH
   F4 - SMOOTH RUBBED FINISH
   F5 - GROUT CLEANED RUBBED FINISH
   F6 - CORK FLOATED RUBBED FINISH
   F7 - UNFORMED FINISH
   F8 - BLASTED FINISH
   F9 - ARCHITECTURAL FINISH
   F10 - TOOLED FINISH
   S1 - FLOATED FINISH
   S2 - TROWEL FINISH
   S3 - BROOM FINISH
   S4 - EXPOSED AGGREGATE FINISH
   S5 - CHEMICAL HARDENER FINISH

E. REINFORCING STEEL REQUIREMENTS:

1. REINFORCING STEEL SHALL BE DETAILED AND PLACED IN ACCORDANCE WITH ACI 318 AND CRSI'S MANUAL OF STANDARD PRACTICE.
2. REINFORCING STEEL SHALL CONFORM TO ASTM A615 OR ASTM A706 (A706 REQUIRED FOR ALL REINFORCING TO BE WELDED) AND SHALL BE GRADE 60 (fy = 60 KSI) DEFORMED BARS U.N.O. REINFORCING IN SLABS ON GRADE MAY BE GRADE 40 (fy = 40 KSI) DEFORMED BARS FOR ALL BARS #4 AND SMALLER U.N.O. ON PLANS OR DETAILS.
3. ALL DIMENSIONS SHOWING THE LOCATION OF REINFORCING STEEL NOT NOTED AS "CLEAR" OR "CLR." ARE TO CENTER OF STEEL. CLEAR COVER FOR NON-PRESTRESSED CONCRETE REINFORCING SHALL BE AS NOTED BELOW, U.N.O. ON PLANS OR DETAILS. CLEAR COVER FOR PRESTRESSED CONCRETE AND FOR PRECAST CONCRETE MANUFACTURED UNDER PLANT CONTROL CONDITIONS SHALL BE PER ACI 318, SECTIONS 7.7.2 AND 7.7.3, RESPECTIVELY.

EXPOSURE CONDITION:	COVER:
CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH	3"
EXPOSED TO WEATHER (INCLUDES SLABS ON GRADE)	
NO. 5 AND SMALLER	1 1/2"
NO. 6 AND LARGER	2"
NOT EXPOSED TO WEATHER OR IN CONTACT WITH GROUND STRUCTURAL SLABS, WALLS, JOISTS	
NO. 11 AND SMALLER	3/4"

4. LAP SPLICES OF REINFORCING STEEL SHALL CONFORM TO TYPICAL REBAR LAP SCHEDULE U.N.O. NO TACK WELDING OF REINFORCING BARS ALLOWED. LATEST ACI CODE AND DETAILING MANUAL APPLY. AT WALLS AND FOOTINGS, PROVIDE BENT CORNER BARS TO MATCH AND LAP WITH HORIZ. BARS AT ALL CORNERS AND INTERSECTIONS U.N.O. VERT. WALL BARS SHALL BE SPLICED AT OR NEAR FLOOR LINES. SPLICE TOP BARS AT CENTER LINE OF SPAN AND BOTTOM BARS AT THE SUPPORT IN SPANDRELS, BEAMS, GRADE BEAMS, ETC., U.N.O. ON PLANS OR DETAILS.
5. MECHANICAL SPLICE COUPLERS SHALL HAVE CURRENT ICC APPROVAL AND SHALL BE CAPABLE OF DEVELOPING 125% OF THE SPLICED BAR'S YIELD STRENGTH.
6. ALL REINFORCING SHALL BE BENT COLD. BARS SHALL NOT BE UN-BENT AND RE-BENT. FIELD BENDING OF REBAR SHALL NOT BE ALLOWED UNLESS SPECIFICALLY NOTED.
7. WELDING OF REINFORCING BARS, METAL INSERTS, AND CONNECTIONS SHALL BE MADE ONLY AT LOCATIONS SHOWN ON PLANS OR DETAILS. SEE WELDING SECTION OF G.S.N. FOR ADDITIONAL REQUIREMENTS.
8. REINFORCING BAR SPACINGS SHOWN ON PLANS ARE MAX. ON CENTER DIMENSIONS. DOWEL ALL VERT. REINFORCING TO FOUNDATION. SECURELY TIE ALL BARS IN LOCATION BEFORE PLACING CONCRETE. MIN. CLEAR SPACING BETWEEN PARALLEL REINFORCEMENT SHALL BE THE LARGER OF 1-1/2 TIMES NOMINAL BAR DIA. OR 1-1/3 TIMES MAX. AGGREGATE SIZE OR 1-1/2". CLEAR SPACING LIMITATION APPLIES ALSO TO CLEAR DISTANCE BETWEEN A CONTACT LAP SPLICE AND ADJACENT SPLICES OR BARS.
9. MIN. REINFORCING AT EDGES OF CONCRETE WALL OPENINGS SHALL BE (2) #5 BARS. EXTEND THE GREATER OF THE DEVELOPMENT LENGTH OF THE BAR PER TYPICAL REBAR LAP SCHEDULE OR 24" MIN. PAST EDGES OF OPENING U.N.O. HOOK ENDS AT INTERFERENCE WITH EXTENSION.

H. MASONRY REQUIREMENTS:

1. MASONRY SHALL HAVE THE FOLLOWING MATERIALS UNLESS NOTED OTHERWISE:
   1.1. CONCRETE MASONRY UNITS (CMU): f'm = 2,000 psi (MIN. UNIT STRENGTH OF 2,000 psi)
   1.2. MORTAR: TYPE "S" (MIN. COMP. STRENGTH OF 1,800 psi)
   1.3. GROUT: MIN. COMP. STRENGTH OF 2,000 psi AT 28 DAYS
   1.4. REINFORCING STEEL: ASTM A-615 GRADE 60 (Fy = 60 ksi)
   1.5. DEFORMED BAR ANCHORS (DBA): ASTM A-496
   1.6. HEADED STUD ANCHORS (HAS): ASTM A-108
   1.7. ANCHOR BOLTS:
   1.7.a. GRAVITY BOLTS: ASTM F-1554
   1.8. HEAVY HEX NUTS & WASHERS: ASTM A-563
2. UNLESS NOTED OTHERWISE, THE FOLLOWING MINIMUM COVER SHALL BE PROVIDED FOR REINFORCEMENT:
   2.1. MASONRY EXPOSED TO THE SOIL: 1 1/2"
   2.2. TYPICAL MASONRY: ONE BAR DIAMETER OR 3/4" MINIMUM
3. MASONRY CONSTRUCTION SHALL CONFORM TO THE REQUIREMENTS OF THE "SPECIFICATIONS FOR MASONRY STRUCTURES (ACI 530).
4. UNLESS NOTED OTHERWISE, ALL WALLS SHALL BE LAID IN A RUNNING BOND. BOND CORNERS AND INTERSECTIONS OF LOAD-BEARING WALLS, AND OTHER WALLS INDICATED IN THE CONTRACT DOCUMENTS. ALL UNITS SHALL BE LAID WITH A FULL MORTAR BEDS ON THE FACE SHELLS. CELLS, WHICH ARE TO BE GROUTED, SHALL HAVE FULL HEAD JOINTS. HEAD JOINTS SHALL BE FILLED SOLIDLY WITH MORTAR FOR A DISTANCE IN FROM THE FACE OF THE UNITS NOT LESS THAN THE THICKNESS OF THE LONGITUDINAL FACE SHELL.
5. FILL ALL BOND BEAMS, REINFORCING CELLS, ANCHOR BOLTS, EMBEDS, ETC. SOLIDLY WITH GROUT PLACED BY MECHANICAL VIBRATION AT THE TIME OF PLACEMENT AND REVIBRATED AFTER EXCESS MOISTURE HAS BEEN ABSORBED BUT BEFORE WORKABILITY HAS BEEN LOST. PUDDLING OR RODDING OF GROUT IS NOT PERMITTED.
6. HORIZONTAL BOND BEAMS WITH CONTINUOUS VERTICAL REINFORCING AS INDICATED SHALL TERMINATE AT CONTROL JOINTS, EXCEPT FOR BOND BEAMS AT BEARING ELEVATIONS AT TOP AND BOTTOM OF WALL, AND AT BOND BEAMS USED FOR CHORDS. INTERMEDIATE BOND BEAMS SHALL BE PROVIDED AS SHOWN IN THE PLANS.
7. PROVIDE BOND BEAM LINTELS AND BRICK SHELF ANGLES ABOVE ALL WALL OPENINGS AS SPECIFIED IN THE CONTRACT DOCUMENTS. CONSULT THE ARCHITECTURAL DRAWINGS FOR WINDOW AND DOOR OPENINGS.
8. PROVIDE MASONRY CONTROL JOINTS AS INDICATED IN THE ARCHITECTURAL DRAWINGS, WITH ADDITIONAL JOINTS SUCH THAT THE SPACING BETWEEN JOINTS DO NOT EXCEED A SPACING OF 3 x THE WALL HEIGHT (35'-0" O.C. MAXIMUM). WHERE BEAMS OR LINTELS BEAR AT MASONRY CONTROL JOINTS CONSULT THE ARCHITECT/ ENGINEER FOR THE NEW LOCATION OF THE JOINT.
9. GROUT POURS SHALL BE LIMITED TO 5'-3" LIFTS UNLESS HIGH LIFT GROUTING PROCEDURES ARE FOLLOWED. CONTACT THE ARCHITECT & ENGINEER PRIOR TO ANY HIGH LIFT GROUTING PROCEDURES TO DISCUSS QUALIFICATIONS AND PROCEDURES.
10. ALL MASONRY LOCATED BELOW GRADE SHALL BE GROUTED SOLIDLY.
11. WHERE WALLS ARE NOT GROUTED SOLID, EACH GROUT POUR SHALL BE TERMINATE FLUSH WITH THE TOP OF THE GROUT POUR EXCEPT WHERE THE VERTICAL REINFORCEMENT OR OTHER GROUTED CELLS SHALL CONTINUE UP. THESE CELLS SHOULD HAVE THE GROUT TERMINATE 1 1/2" BELOW THE TOP OF THE POUR TO PROVIDE A CONSTRUCTION KEY IN THE WALL.
12. VERTICAL CELLS TO BE FILLED WITH GROUT SHALL HAVE VERTICAL ALIGNMENT SUFFICIENT TO MAINTAIN A CLEAR, UNOBSTRUCTED VERTICAL CELL NOT LESS THAN 2" BY 3". ALL STEEL REINFORCEMENT SHALL BE LOCATED WITH AN APPROVED LOCATOR AT 10'-0" O.C. MAXIMUM INTERVALS OR AT BAR SPLICE LOCATIONS. ALL VERTICAL WALL REINFORCING SHALL BE LOCATED AT THE CENTER OF THE WALL UNLESS NOTED OTHERWISE.
13. ALL VERTICAL REINFORCING SHALL TERMINATE IN THE SAME VERTICAL CELL FOR WHICH IT BEGAN IN. STEPPING REINFORCEMENT IS NOT PERMITTED. PROVIDE REBAR DOWELS FROM THE FOUNDATIONS TO MATCH THE VERTICAL REINFORCEMENT SIZE AND SPACINGS. FOUNDATION DOWELS SHALL HAVE STANDARD 90-DEGREE HOOKS AND LAP WITH THE FIRST LIFT REINFORCING.

REV NO.	COMMENT	DATE

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5/13/2024
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OGDEN CITY

2023 WATER SYSTEM IMPROVEMENTS
STRUCTURAL SPECIFICATIONS & REQUIREMENTS

SEI NO.	DESIGNED	DRAWN	CHECKED	SHEET NO.	
09955	EL	EL	SH	8 of 12	ST1

P:\Ogden City\09955 Ogden Water Treatment Plant Upgrades 2023\Civil Design Drawings\Sheets\OWTP2023-S.dwg May 10, 2024 3:30pm Emma.lyon

STRUCTURAL SPECIFICATIONS & REQUIREMENTS CONTINUED...

H. MASONRY REQUIREMENTS CONTINUED:

14. REINFORCING BARS SHALL NOT BE WELDED OR SUBSTITUTED FOR ANY OTHER FORM OF REINFORCING WITH OUT WRITTEN CONSENT FROM THE ENGINEER.

15. ALL EMBED PLATES AND CHANNELS SHALL BE PLACED FLUSH WITH THE FACE OF THE WALL THEY ARE BEING PLACED IN. ANCHOR BOLTS AND HEADED STUD ANCHORS SHALL BE PLACED SUCH THAT THE SHANK OF THE BOLT OR STUD IS SET WITH A 1" OF SOLID GROUT SURROUNDS THE SHANK. ALL BOLTS AND STUDS SHALL BE PLACED IN SOLID GROUTED CELLS.

16. DETAIL ALL MASONRY REINFORCING SUCH THAT ALL LAP SPLICES ARE AS INDICATED IN THE REINFORCING BAR LAP SPLICE SCHEDULE. HORIZONTAL REINFORCEMENT SHALL BE CONTINUOUS AT ALL INTERSECTING WALLS AND CORNERS. CORNER BARS SHALL BE PROVIDED AT STANDARD LAP LENGTHS TO MAKE WALLS CONTINUOUS. VERTICAL REINFORCEMENT SHALL START AND STOP ABOVE AND BELOW OPENINGS AS SHOWN IN THE CONTRACT DOCUMENTS. VERTICAL JAMB COLUMNS SHALL EXTEND PAST THE TOP OF THE OPENING UP THRU THE NEXT SUPPORTING FLOOR OR ROOF BEARING BOND BEAM. HORIZONTAL REINFORCEMENT ABOVE AND BELOW OPENINGS SHALL EXTEND 48 BAR DIAMETERS PAST THE OPENING WERE POSSIBLE. WHERE NOT POSSIBLE TERMINATE HORIZONTAL REINFORCEMENT IN A STANDARD ACI 90 DEGREE HOOK.

17. HORIZONTAL WALL REINFORCING SHALL TERMINATE AT ALL OPENINGS, CONTROL JOINTS (EXCEPT AT FLOORS AND ROOF LEVELS), LINTELS, BEAMS AND AT THE TOP OF THE PARAPETS IN A STANDARD 180–DEGREE HOOK PLUS 6 BAR DIAMETER EXTENSION WITH A 4" MINIMUM EXTENSION.

18. ALL MASONRY COLUMN TIES SHALL TERMINATE IN A 135 DEGREE HOOK PLUS 6 BAR DIAMETERS (4" MINIMUM).

19. MASONRY STRENGTH f'm SHALL BE VERIFIED USING THE UNIT STRENGTH METHOD PER THE IBC 2018 CODE SECTION 2105.3.2.2.1 AND AS DESCRIBED BELOW:

19.1. PRIOR TO CONSTRUCTION, THE SUPPLIERS CERTIFICATE OF STRENGTH OF THE MASONRY UNITS AND GROUT SHALL BE SUBMITTED.
19.2. THE GROUT AND MORTAR SHALL BE TESTED, DURING CONSTRUCTION, FOR EVERY 5,000 SQUARE FEET OF MASONRY CONSTRUCTED.

20. THE CONTRACTOR HAS THE OPTION OF USING THE "MASONRY PRISM TEST METHOD" AS SPECIFIED IN SECTION 2105.2.2.2 OF THE IBC 2021 CODE IN LIEU OF THE "UNIT STRENGTH METHOD".

L. STRUCTURAL STEEL REQUIREMENTS:

1. STRUCTURAL STEEL SHALL HAVE THE FOLLOWING MATERIALS UNLESS NOTED OTHERWISE:

WIDE FLANGE SECTIONS	ASTM A992 (50 ksi)
OTHER ROLLED SHAPES AND PLATES	ASTM A36
HEADED STUD ANCHORS (HAS)	ASTM A307 WITH ASTM A563 HEAVY HEX
DEFORMED BAR ANCHORS (DBA)	ASTM A496
BOLTED CONNECTIONS	ASTM A325
THREADED ROD	ASTM A36, A193 GR. B7
ANCHOR BOLTS	ASTM F1554 GR. 36 OR 55
NUTS	ASTM A563 (HEAVY HEX)
WASHERS	ASTM F436 GRADE A (HARDENED) OR A36 AT ANCHOR RODS

2. THE FABRICATION AND CONSTRUCTION OF ALL STRUCTURAL STEEL SHALL COMPLY WITH THE LATEST EDITION OF THE FOLLOWING CODES:

IBC 2021 SECTION 2205
AISC SPECIFICATIONS FOR THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL BUILDINGS.
AISC CODE OF STANDARD PRACTICE EXCLUDING SECTIONS 3.4, 4.4, AND 4.4.1.
AISC SPECIFICATIONS FOR STRUCTURAL JOINTS.
AWS WELDING CODE.
AISC SEISMIC PROVISIONS FOR STRUCTURAL STEEL BUILDINGS.
PROVIDE SHOP DRAWINGS FOR REVIEW PRIOR TO FABRICATION. ALL SHOP FABRICATION BE BY AISC–APPROVED FABRICATORS.

3. ALL STRUCTURAL WELDING SHALL CONFORM WITH THE FOLLOWING SPECIFICATIONS:

WELDING RODS	E–70 XX (typical) E–60 XX (roof decks)
STRUCTURAL WELDING	AWS D1.1 (performed by AWS certified welder)
STRUCTURAL CUTTING	AWS CERTIFIED WELDER
HSA's/DBA's	MANUFACTURERS SPECIFICATIONS
REINFORCING BARS (REBAR)	DO NOT WELD REBAR
ANCHOR BOLTS	DO NOT WELD ANCHOR BOLTS (including tack welds)

4. ANY SUBSTITUTION OF ANY MEMBERS SHALL BE AT THE WRITTEN CONSENT OF THE STRUCTURAL ENGINEER.

5. ANY CONNECTIONS OF INTERSECTING STEEL MEMBERS SHALL BE A FILLET WELD AND SHALL BE SIZED BY SUBTRACTING 1/16" LESS THAN THE THINNEST CONNECTING MEMBER WITH A MINIMUM OF A 3/16" FILLET WELD. ALL WELDS SHALL BE FULL SURFACE WELDS. WHEN IN DOUBT CONTACT THE ENGINEER.

6. ALL STRUCTURAL CONNECTIONS, SHOWN IN THE PLANS, SHALL BE BOLTED WITH A MINIMUM OF A 3/4" DIAMETER ASTM A325N BOLT, UNLESS NOTED OTHERWISE AND SHALL BE TIGHTENED TO A SNUG TIGHT FIT, AS DEFINED BY AISC SPECIFICATIONS.

7. HARDENED WASHERS SHALL BE PROVIDED AT ALL TURNED ELEMENTS OF BOLTED CONNECTIONS. IF THE CONNECTION IS SLOPED OR SKEWED THEN PROVIDE BEVELED WASHERS AS REQUIRED. PROVIDE WASHERS THAT COMPLETELY COVER ANY OVERSIZED HOLES OR SLOTS ER ASTM F–436.

L. STRUCTURAL STEEL REQUIREMENTS CONTINUED:

8. TIGHTEN ALL SLIP–CRITICAL BOLTS, MOMENT FRAME BOLTS AND BOLTS INSTALLED IN OVERSIZED OR SLOTTED HOLES BY THE "TURN OF THE NUT" OR THE "DIRECT TENSION" METHOD. PROVIDE HARDENED WASHERS UNDER ALL TURNED ELEMENTS.

9. WHERE ASTM A490 OR STRONGER BOLTS ARE SPECIFIED IN THE DRAWINGS, BOTH THE BOLT HEAD AND THE NUT SHALL HAVE A HARDENED WASHER BETWEEN IT AND THE BASE STEEL AND REQUIRED IN AISC SPECIFICATIONS.

10. BOLTS MUST BE LONG ENOUGH FOR THREADS TO BE FLUSH WITH THE OUTSIDE FACE OF THE NUT AFTER TIGHTENING. NO MORE THAN 5 THREADS OF "STICKOUT" ARE PERMITTED. THE "TURN OF THE NUT" METHOD IS DESCRIBED BELOW (THIS IS FOR PERPENDICULAR SURFACES ONLY):

10.1. THE TURN OF THE NUT METHOD IS NOT TO BE USED FOR BOLTS LONGER THEN 12 BOLT DIAMETERS. TIGHTEN ALL BOLTS IN THE CONNECTION TO THE SNUG, TIGHT CONDITION. FROM THE SNUG, TIGHT CONDITION, TIGHTEN EACH BOLT AS SPECIFIED BELOW:

BOLT LENGTH:	AMOUNT OF TURN APPLIED TO NUT:
UP TO AND INCLUDING 4 DIAMETERS	1/3 TURN OF THE NUT
OVER 4 DIAMETERS BUT NOT EXCEEDING 8 DIAMETERS	1/2 TURN OF THE NUT
OVER 8 DIAMETERS BUT NOT EXCEEDING 12 DIAMETERS	2/3 TURN OF THE NUT

11. DO NOT REUSE BOLTS, NUTS OR WASHERS.

12. FITTED STIFFENER PLATES SHALL BE PROVIDED AT ALL BEARING LOCATIONS AND SHALL MEET THE FOLLOWING REQUIREMENTS UNLESS NOTED OTHERWISE IN THE DRAWINGS:

FLANGE WIDTH	STIFFENER PLATE THICKNESS	FILLET WELD THICKNESS
UP TO 8"	3/8"	1/4"
8" to 12"	3/8"	1/4"
12" to 16"	1/2"	5/16"
16" AND BIGGER	5/8"	3/8"

13. HOLES IN STEEL SHALL BE DRILLED OR PUNCHED. ALL SLOTTED HOLES SHALL BE PROVIDED WITH SMOOTH EDGES. BURNING OF HOLES AND TORCH CUTTING AT THE SITE IS NOT PERMITTED.

14. THE STRUCTURAL STEEL ERECTOR SHALL PROVIDE ANY REQUIRED TEMPORARY GUYING AND BRACING REQUIRED. COLUMNS, ANCHOR BOLTS, BASE PLATES, ETC. HAVE BEEN DESIGNED FOR THE FINAL COMPLETED CONDITION AND HAVE NOT BEEN INVESTIGATED FOR POTENTIAL LOADINGS ENCOUNTERED DURING STEEL ERECTION AND CONSTRUCTION. ANY INVESTIGATION OF THE COLUMNS, ANCHOR BOLTS, BASE PLATES, ETC... FOR ADEQUACY DURING THE STEEL ERECTION AND CONSTRUCTION PROCESS IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR.

15. REFER TO THE "SPECIAL INSPECTION" SECTION OF THE GENERAL STRUCTURAL NOTES FOR ANY INSPECTION REQUIREMENTS.

M. QUALITY CONTROL AND INSPECTION REQUIREMENTS:

1. QUALITY CONTROL AND INSPECTIONS SHALL BE PERFORMED AS REQUIRED IN IBC 2021 CHAPTER 17. AS STATED IN IBC 2021 1704.2.1, "THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE AND ENGINEERS OF RECORD INVOLVED IN THE DESIGN OF THE PROJECT ARE PERMITTED TO ACT AS THE APPROVED AGENCY AND THEIR PERSONNEL ARE PERMITTED TO ACT AS THE SPECIAL INSPECTORS FOR THE WORK DESIGNED BY THEM, PROVIDED THEY QUALIFY AS SPECIAL INSPECTORS."

N. SPECIAL INSPECTION REQUIREMENTS:

1. SPECIAL INSPECTION AND QUALITY ASSURANCE, AS REQUIRED BY SECTION 1705 OF THE IBC, SHALL BE PROVIDED BY AN INDEPENDENT AGENCY EMPLOYED BY THE OWNER UNLESS WAIVED BY THE BUILDING OFFICIAL. THE CONTRACTOR SHALL COORDINATE AND COOPERATE WITH THE REQUIRED INSPECTIONS. ALL TESTING AND INSPECTION REPORTS SHALL BE SENT TO THE ENGINEER OF RECORD FOR REVIEW. ITEMS REQUIRING SPECIAL INSPECTION AND QUALITY ASSURANCE ARE SHOWN IN THIS SECTION.

2. SOILS PER IBC SECTION 1705.6 AND TABLE 1705.6 BELOW:

2.1. SPECIAL INSPECTION SHALL BE PROVIDED PRIOR TO POURING CONCRETE FOOTINGS.
2.2. SPECIAL INSPECTION SHALL BE PROVIDED PRIOR TO PLACEMENT OF FILL AND DURING PLACEMENT OF FILL.

TABLE 1705.6
REQUIRED SPECIAL INSPECTIONS AND TESTS OF SOILS

TYPE OF INSPECTION OR TEST	CONTINUOUS SPECIAL INSPECTION	PERIODIC SPECIAL INSPECTION
1. VERIFY MATERIALS BELOW SHALLOW FOUNDATIONS ARE ADEQUATE TO ACHIEVE THE DESIGN BEARING CAPACITY.	–	X
2. VERIFY EXCAVATIONS ARE EXTENDED TO PROPER DEPTH AND HAVE REACHED PROPER MATERIAL.	–	X
3. PERFORM CLASSIFICATION AND TESTING OF COMPACTED FILL MATERIALS.	–	X
4. VERIFY USE OF PROPER MATERIALS, DENSITIES AND LIFT THICKNESSES DURING PLACEMENT AND COMPACTION OF COMPACTED FILL.	X	–
5. PRIOR TO PLACEMENT OF COMPACTED FILL, INSPECT SUBGRADE AND VERIFY THAT SITE HAS BEEN PREPARED PROPERLY.	–	X

3. CONCRETE CONSTRUCTION PER IBC SECTION 1705.3:

3.1. SPECIAL INSPECTIONS NOT REQ'D. PER SECTION 1705.3, EXCEPTION 2.3 (STRUCTURAL DESIGN OF FOUNDATIONS IS BASED ON COMPRESSIVE STRENGTH f'_c = 2,500 psi)

4. STRUCTURAL STEEL CONSTRUCTION PER IBC SECTION 1705.2.1

4.1. WELDING PER AISC 360–16 SECTION N5.4 AND TABLES N5.4–1, N5.4–2 & N5.4–3 BELOW:

N. DEFERRED SUBMITTAL REQUIREMENTS:

1. SHOP DRAWINGS OR REPORTS FOR THE FOLLOWING ITEMS SHALL BE SUBMITTED TO THE STRUCTURAL ENGINEER OF RECORD PRIOR TO FABRICATION OR CONSTRUCTION (AS APPLICABLE) U.N.O.

CONCRETE CYLINDER TESTS
REINFORCING STEEL
CONCRETE MIX DESIGN
STRUCTURAL STEEL
ROOF DECK

2. CONTRACTOR SHALL REVIEW AND STAMP SHOP DRAWINGS PRIOR TO SUBMITTING. CONTRACTOR'S REVIEW SHALL CHECK FOR COMPLETENESS/COMPLIANCE WITH CONTRACT DOCUMENTS.

3. SHOP DRAWINGS ARE REVIEWED BY ENGINEER ONLY FOR GENERAL COMPLIANCE WITH THE STRUCTURAL DRAWINGS. RESPONSIBILITY FOR CORRECTNESS SHALL REST WITH THE CONTRACTOR. SHOP DRAWINGS DO NOT SUPERSEDE OR REPLACE THE CONTRACT DRAWINGS OR SPECIFICATIONS. CHANGES, SUBSTITUTIONS, OR DEVIATIONS FROM CONTRACT DRAWINGS AND/OR SPECIFICATIONS WILL NOT BE ACCEPTED VIA SHOP DRAWING REVIEW. ALL SUCH MODIFICATIONS SHALL BE SUBMITTED SEPARATELY FOR ENGINEER'S REVIEW.

4. PREFABRICATED COMPONENTS, SPECIALTY ITEMS, OR DESIGN–BUILD ELEMENTS NOTED ON THE STRUCTURAL DRAWINGS, BUT WHICH REQUIRE THE MFR. OR SUPPLIER TO PROVIDE THE DESIGN, SHALL BE SUBMITTED BY THE CONTRACTOR TO THE ARCHITECT AND/OR ENGINEER FOR REVIEW AS A DEFERRED SUBMITTAL. DEFERRED SUBMITTALS REQ'D. BY THE STRUCTURAL ENGINEER OF RECORD SHALL INCLUDE, BUT NOT BE LIMITED TO, THE FOLLOWING:

STEEL JOISTS/JOIST GIRDERS
STEEL RAILING

5. DEFERRED SUBMITTALS SHALL INCLUDE CALCULATIONS AND DRAWINGS PREPARED AND STAMPED BY AN APPROPRIATELY LICENSED ENGINEER (SPECIALTY ENGINEER) SHOWING LOCATION AND MAGNITUDE OF LOADS, CONFIGURATION AND SIZE OF MEMBERS, AND COMPATIBILITY OF SUBMITTAL ITEM WITH THE PRIMARY STRUCTURAL SYSTEM.

6. THE PURPOSE OF THE STRUCTURAL ENGINEER'S REVIEW OF DEFERRED SUBMITTALS SHALL BE LIMITED TO DETERMINING THAT THE DRAWINGS AND CALCULATIONS HAVE BEEN PROPERLY SEALED, THAT THE LOAD CRITERIA IS IN GENERAL CONFORMANCE WITH THE CONTRACT DOCUMENTS AND WITH THE REFERENCED BUILDING CODE, THAT CONNECTIONS TO THE PRIMARY STRUCTURE ARE COMPATIBLE WITH THE PRIMARY DESIGN, AND THAT THE PRIMARY STRUCTURE IS CAPABLE OF SUPPORTING THE IMPOSED LOADS.

7. THE STRUCTURAL ENGINEER WILL RELY UPON THE SPECIALTY ENGINEER'S SEAL AS CERTIFICATION THAT THE ITEMS DESIGNED BY THE SPECIALTY ENGINEER COMPLY WITH THE CRITERIA SET FORTH IN THE CONTRACT DOCUMENTS AND APPLICABLE CODES AND STANDARDS. THE STRUCTURAL ENGINEER SHALL NOT BE RESPONSIBLE FOR THE ADEQUACY OF DESIGNS PROVIDED BY OTHERS.

8. FOR ALL SUBMITTALS, ANY CORRECTIONS NOTED WILL BE MARKED ON ONE (1) COPY SET ONLY AND RETURNED. ADDITIONAL COPIES OF ANY SUBMITTAL WILL BE RETURNED UNMARKED. CONTRACTOR SHALL BE RESPONSIBLE FOR REPRODUCING ENGINEER'S CORRECTIONS ON ADDITIONAL COPIES REQ'D. ONE COPY SET MAY BE RETAINED FOR THE ENGINEER'S RECORDS. ALLOW FIVE (5) TO TEN (10) WORKING DAYS FOR THE ENGINEER'S REVIEW.

9. REFER TO APPLICABLE G.S.N. SECTIONS FOR FURTHER REQUIREMENTS SPECIFIC TO INDIVIDUAL SUBMITTALS.

ABBREVIATIONS

A.C.I.	AMERICAN CONCRETE INSTITUTE	L.L.V.	LONG LEG VERTICAL
BOT.	BOTTOM	L.L.H.	LONG LEG HORIZONTAL
C.M.U.	CONCRETE MASONRY UNIT	K.S.	KING STUD
CLR.	CLEAR	MAX.	MAXIMUM
C.F.S.	COLD FORMED STEEL	MIN.	MINIMUM
COL.	COLUMN	N/A	NOT APPLICABLE
CONC.	CONCRETE	NO.	NUMBER
CONT.	CONTINUOUS	O.C.	ON CENTER
D.B.A.	DEFORMED BAR ANCHORS	O.M.F.	ORDINARY MOMENT FRAME
DIA.	DIAMETER	REINF.	REINFORCING
DBL.	DOUBLE	R.S.	ROUGH SAWN
D.F.	DOUGLAS FIR/LARCH	S.E.I.	SUNRISE ENGINEERING
E.F.	EACH FACE	SIM.	SIMILAR
E.W.	EACH WAY	S.M.F.	SPECIAL MOMENT FRAME
EXT.	EXTERIOR	S.O.G.	SLAB–ON–GRADE
GA.	GAUGE	STRUCT'L	STRUCTURAL
GLB.	GLU–LAMINATED BEAM	T.S.	TRIMMER STRUD
G.S.N.	STRUCTURAL REQUIREMENTS AND SPECIFICATIONS (GENERAL STRUCTURAL NOTES)	TYP.	TYPICAL
		U.N.O.	UNLESS NOTED OTHERWISE
H.S.A.	HEADED STUD ANCHORS	V.I.F.	VERIFY IN FIELD
HORIZ.	HORIZONTAL	WT.	WEIGHT
I.M.F.	INTERMEDIATE MOMENT FRAME	W/	WITH
IN.	INCHES	W/C	WATER TO CEMENT RATIO
I.C.C.	INTERNATIONAL CODE COUNCIL	(E)	EXISTING
L.F.R.S.	LATERAL FORCE RESISTING SYSTEM	(N)	NEW

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OGDEN CITY

2023 WATER SYSTEM IMPROVEMENTS
STRUCTURAL SPECIFICATIONS
& REQUIREMENTS CONTINUED

SEI NO.	DESIGNED	DRAWN	CHECKED	SHEET NO.	
09955	EL	EL	SH	9 of 12	ST2

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FOOTING SCHEDULE

MARK	WIDTH	LENGTH	THICKNESS	BOTTOM REINF.	TOP REINF.
F1	3'-4"	6'-4"	12"	#5 @ 12" O.C., BOTH WAYS	NONE

CONCRETE WALL SCHEDULE

LABEL	THICKNESS (IN.)	HEIGHT (FT.)	EXTERIOR REINF.	INTERIOR REINF.	NOTES
CW1	16	6'-0"	#5 VERT. AT (4) CORNERS AND AT 16" O.C. #4 TIES HORIZ. @ 16" O.C.	NONE	NONE

FOUNDATION REQUIREMENTS

F1. VERIFY LOCATION AND SIZE OF ALL INSERTS AND OPENINGS IN SLAB, WALLS, AND FLOORS WITH ARCH'L, MECH, PLUMBING, AND ELECT. PRIOR TO CONSTRUCTION.

F2. ALL FOOTINGS AND SLABS SHALL BE PLACED ON STRUCTURAL FILL AS DEFINED IN THE GEOTECHNICAL REPORT. THE MOISTURE CONTENT OF STRUCTURAL FILL SHOULD BE CONDITIONED TO NEAR OPTIMUM WATER CONTENT, PLACED IN UNIFORM LIFTS NOT EXCEEDING 8 INCHES IN LOOSE THICKNESS, AND COMPACTED PER REQUIREMENTS OF THE GEOTECHNICAL REPORT.

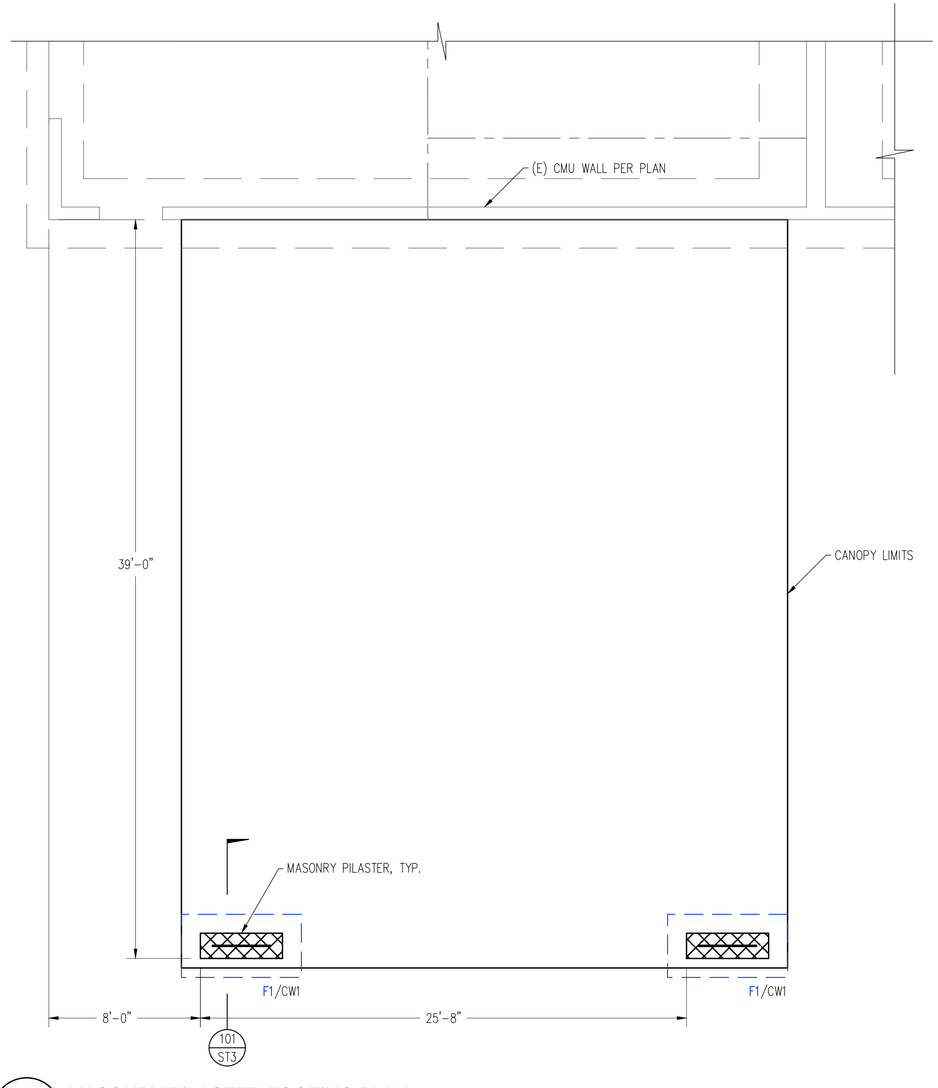
F3. ALL STANDARD WALL FOOTINGS SHALL EXTEND TO AT LEAST 30 INCHES BELOW FINISHED GRADE FOR FROST PROTECTION.

F4. F1, F2, F3, ETC... DENOTES FOOTING PER FOOTING SCHEDULE ON THIS SHEET.

F5. CW1, CW2, CW3, ETC... DENOTES CONCRETE WALL PER CONCRETE WALL SCHEDULE ON THIS SHEET.

F6. CONCRETE CONTRACTOR TO REFER TO SHEET ST4 FOR REQUIRED REINFORCEMENT TO MATCH MASONRY REINFORCEMENT.

F7. CONCRETE LAP SPLICE REQUIREMENTS PER DETAIL 102 ON SHEET ST3



A ~ MASONRY PILASTER FOOTING PLAN

SCALE: 1/4" = 1'-0" (22x34)
1/8" = 1'-0" (11x17)

CONCRETE LAP AND DEVELOPMENT SCHEDULE

F'c = 2500 PSI				
	TENSION			
BAR SIZE (#)	LTE TOP ⟨1⟩	LTE OTHER	LTS TOP ⟨1⟩	LTS OTHER
#3	18	9	24	18
#4	24	12	32	24
#5	30	15	39	30
#6	36	18	47	36

ALL TABULATED VALUES ARE IN UNITS OF INCHES U.N.O.

AT CONTRACTOR'S OPTION, MECHANICAL SPLICE COUPLERS PER G.S.N. MAY BE USED IN LIEU OF LAP SPLICES

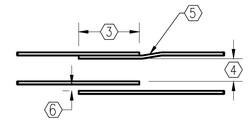
SEE G.S.N. FOR ACTUAL CONCRETE SPECIFICATIONS AND MIN. CLR. COVER / CLR. SPACING REQUIREMENTS

SCHEDULED VALUES ARE BASED ON CLASS "B" TENSION LAP SPLICES U.N.O., NORMAL WT. CONCRETE, AND UNCOATED GRADE 60 REINF. FOR OTHER CONDITIONS NOTED BELOW, MODIFY TABULATED VALUES AS INDICATED:

E.1. FOR DEVELOPMENT LENGTH AND CLASS "A" LAP SPLICES, WHERE SPECIFICALLY NOTED ON PLANS OR DETAILS, DIVIDE TABULATED VALUES BY 1.3. CLASS "A" SPLICES SHALL BE LOCATED SUCH THAT NO MORE THAN 1/2 OF THE TOTAL REINF. IS LAPPED WITHIN THE REQUIRED LAP LENGTH
E.2. FOR LIGHTWEIGHT CONCRETE, MULTIPLY TABULATED VALUES BY 1.3
E.3. FOR EPOXY COATED REBAR, MULTIPLY TABULATED VALUES BY 1.5
E.4. FOR GRADE 75 REINF., MULTIPLY TABULATED VALUES BY 1.25

LCE = COMPRESSION EMBEDMENT LENGTH
LCS = COMPRESSION LAP SPLICE LENGTH
LTE = TENSION EMBEDMENT LENGTH
LTS = TENSION LAP SPLICE LENGTH

"TOP" BARS ARE HORIZONTAL BARS PLACED SUCH THAT MORE THAN 12 IN. OF FRESH CONCRETE IS CAST BELOW BAR. ALL BARS THAT ARE NOT "TOP" BARS ARE "OTHER" BARS UNLESS NOTED OTHERWISE ALL HOOKS SHALL EXTEND TO THE FAR FACE (LESS 2" COVER)



CONCRETE LAP AND DEVELOPMENT NOTES

⟨1⟩ TOP BARS ARE HORIZ. BARS PLACED SUCH THAT MORE THAN 12" OF FRESH CONCRETE IS CAST IN MEMBER BELOW SPLICE

⟨2⟩ WHERE BARS OF UNEQUAL SIZE LAP ONE ANOTHER, USE TABULATED LAP LENGTH FOR SMALLER BAR U.N.O.

⟨3⟩ LAP SPLICE LENGTH PER SCHEDULE

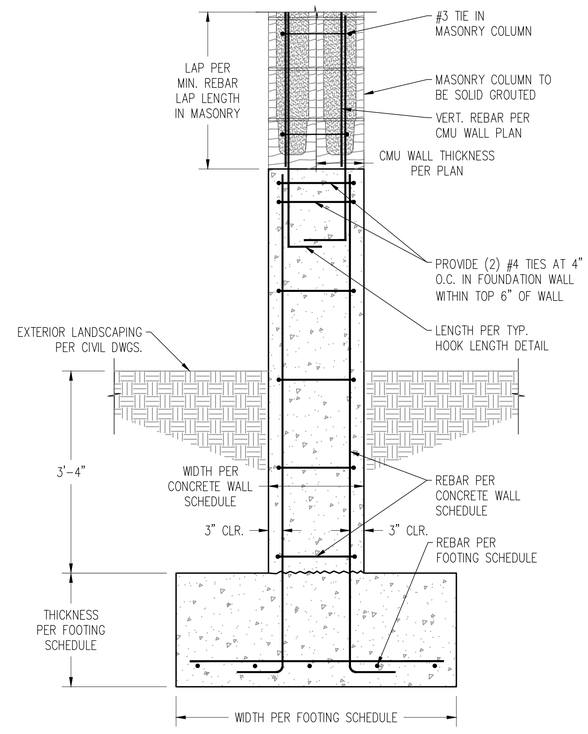
⟨4⟩ CLEAR DISTANCE BETWEEN ADJACENT BARS OR SPLICES TO BE USED IN DETERMINING APPLICABLE LAP LENGTH FROM SCHEDULE

⟨5⟩ OPTIONAL OFFSET. SEE STANDARD REBAR BEND DETAILS FOR OFFSET REQUIREMENTS

⟨6⟩ FOR NON-CONTACT LAP SPLICES, MIN. CLEAR DISTANCE BETWEEN SPLICED BARS SHALL BE PER GENERAL STRUCTURAL NOTES. MAX. CLEAR DISTANCE SHALL BE 1/5 THE TABULATED LAP LENGTH OR (6"- "DB"), WHICHEVER IS LESS, WHERE "DB" = BAR DIA.

102 ~ CONC. LAP/DEVELOPMENT SCHED.

NTS



101 ~ ISOLATED FOUNDATION / FOOTING

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OGDEN CITY

2023 WATER SYSTEM IMPROVEMENTS

PILASTER FOOTING/FOUNDATION PLAN & DETAILS

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09955	EL	EL	SH	10 of 12	ST3

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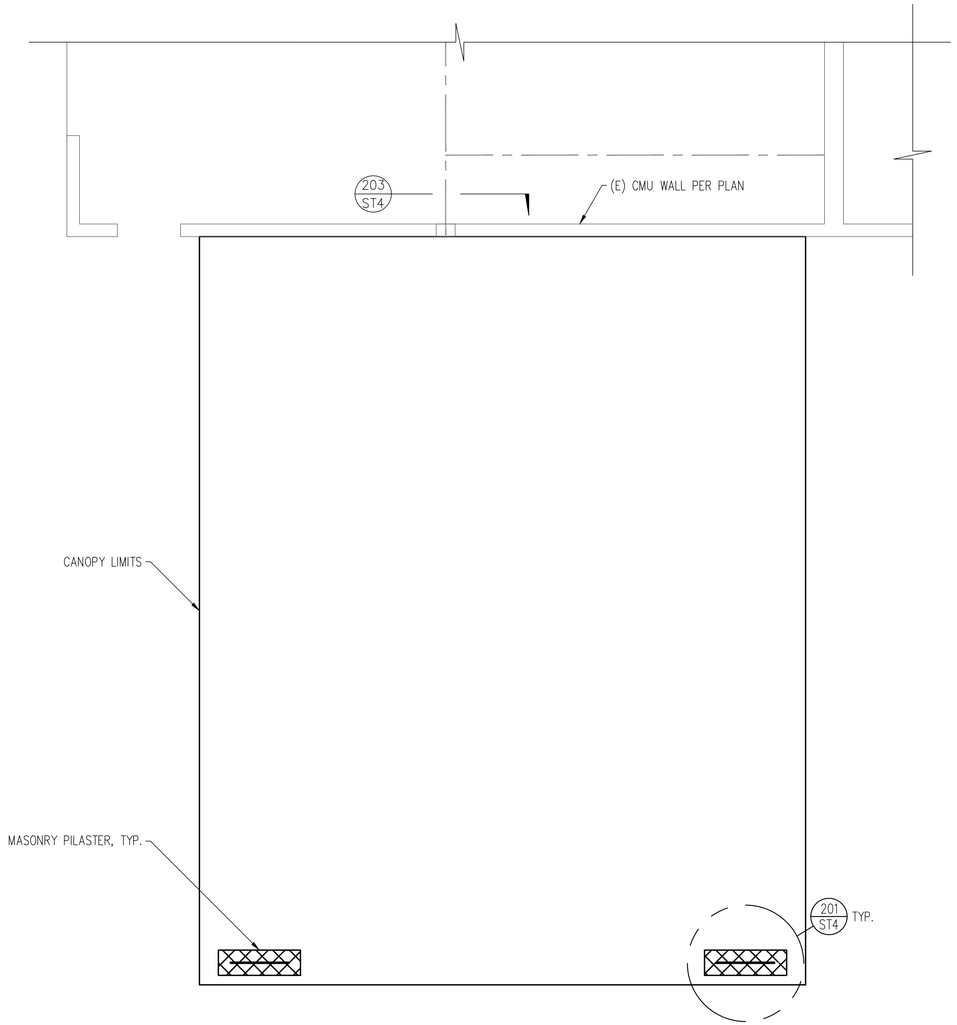
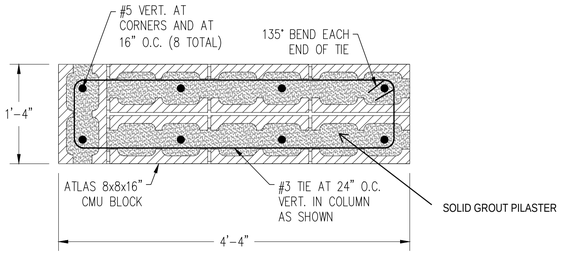


A ~ MASONRY WALL PLAN

SCALE: 1/4" = 1'-0" (22x34)
1/8" = 1'-0" (11x17)



201 ~ MASONRY COLUMN AT CANOPY

NTS

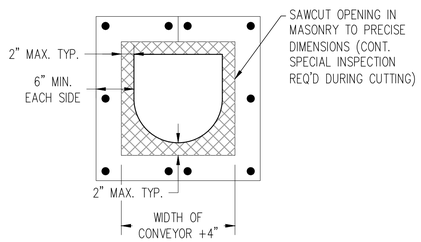
* MASONRY REINFORCING SPLICE SCHEDULE
MIN. LAP SPLICE LENGTH, IN. BASED ON:

BAR SIZE	BAR CENTERED IN WALL			K	
	8 IN.	10 IN.	12 IN.	1.5 IN.	2.0 IN.
3	16	16	16	19	16
4	21	21	21	34	26
5	26	26	26	53	40
6	43	40	40	99	74
7	60	46	46	134	101
8	NP	71	61	202	151

K IS DEFINED AS THE MINIMUM OF:
A) THE MIN MASONRY COVER
B) CLEAR SPACING BETWEEN ADJACENT REINFORCING SPLICES
C) 9db

202 ~ MASONRY REINF. SPLICE SCHEDULE

NTS



203 ~ WALL PENETRATION FOR AUGER

NTS

MASONRY REQUIREMENTS

M1. VERIFY ALL DIMENSIONS, ELEVATIONS, SLOPES, ETC. W/ ARCHITECTURAL AND/OR CIVIL PLANS PRIOR TO CONSTRUCTION. RESOLVE DISCREPANCIES AND CONFLICTS WITH ENGINEER OF RECORD.

M2. REINFORCING IN MASONRY WALL SHALL BE LAPPED WITH REINFORCEMENT FROM CONCRETE WALL BELOW AS OCCURS.

M3. MASONRY UNITS SHALL BE ATLAS STRUCTURAL BRICK

M4. MATCH COLOR TO EXISTING BUILDING

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2023 WATER SYSTEM IMPROVEMENTS

PILASTER CMU PLAN

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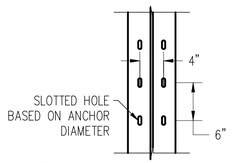
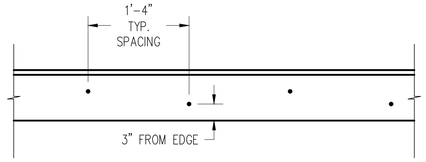
BEAM SCHEDULE		
MARK	TYPE	SIZE
B1	A992 STEEL	L8x6x¾
B2	A992 STEEL	W18x55

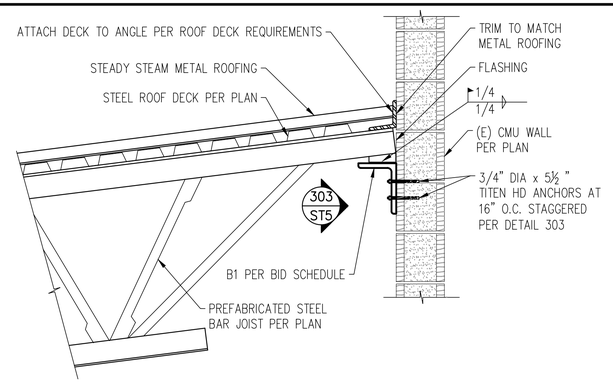
ALL STEEL MEMBERS SHALL BE PRIMED AND EPOXY COATED. COLOR SHALL MATCH EXISTING ROOFING ON DEWATERING BUILDING



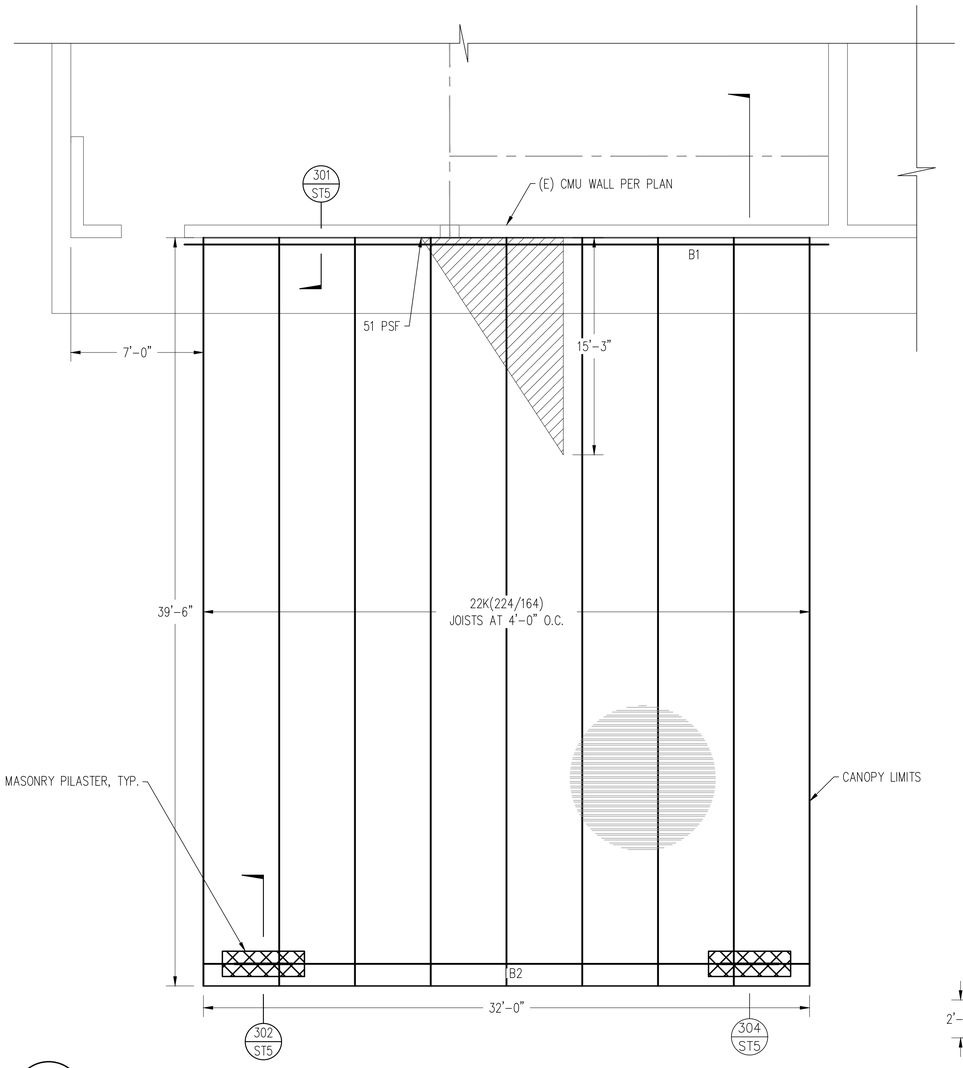
306 ~ BOLT SPACING ON BEAM
NTS



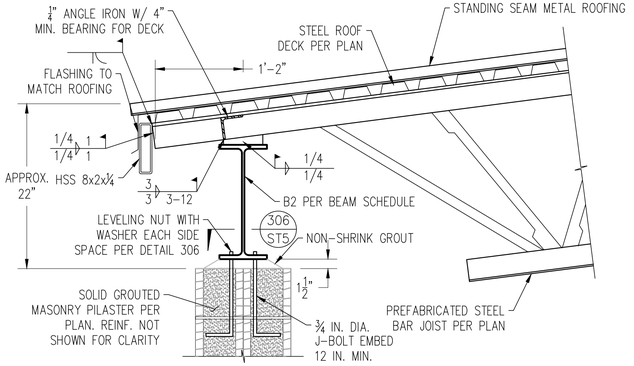
303 ~ ANCHOR SPACING ON LEDGE
NTS



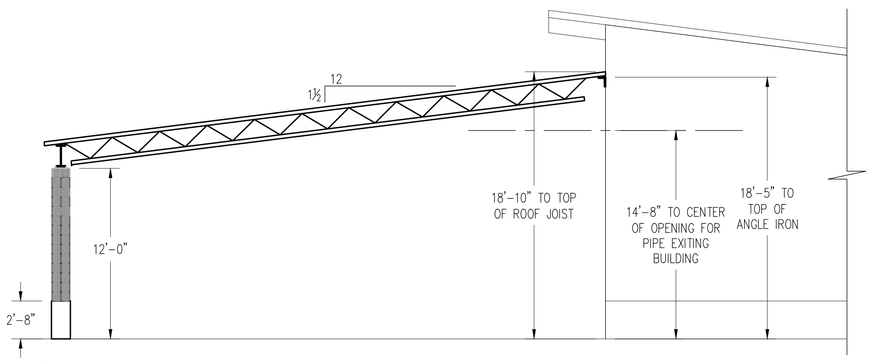
301 ~ JOIST SUPPORT AT (E) WALL
NTS



A ~ CANOPY ROOF PLAN
SCALE: 1/4" = 1'-0" (22x34)
1/8" = 1'-0" (11x17)



302 ~ JOIST SUPPORT AT (N) PILASTER
NTS



304 ~ CANOPY ELEVATION VIEW
SCALE: 3/16" = 1'-0" (22x34)
3/32" = 1'-0" (11x17)

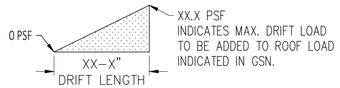
ROOF JOIST REQUIREMENTS:

RJ1. JOIST MFR SHALL DESIGN ALL JOISTS TO MEET OR EXCEED THE DEFLECTION CRITERIA SHOWN IN THE PLANS OR AS SPECIFIED IN THE G.S.N.

RJ2. JOIST MFR. SHALL DESIGN ALL JOISTS FOR 300 LB AXIAL LOAD (WIND/SEISMIC FORCES AT WORKING STRESS LEVEL, TENSION AND COMPRESSION) AT TOP CHORD IN APPROPRIATE LOAD COMBINATIONS.

RJ3. JOIST MFR. SHALL DESIGN ALL ROOF JOISTS FOR 34 PSF NET UPLIFT (WIND) AND SHALL PROVIDE ADDITIONAL BRIDGING AS REQUIRED.

RJ4. DRIFT LOADS SHALL BE AS INDICATED ON THE PLANS USING SYMBOLS AND NOTATION AS FOLLOWS:



RJ5. LOADS SHOWN ARE TOTAL LOAD/LIVE OR SNOW) AND ARE UNFACTORED AND DO NOT INCLUDE SELF WEIGHT OF JOISTS.

RJ6. NO MECHANICAL LOADS ON ROOF JOISTS.

RJ7. JOISTS SHALL BE HOT-DIPPED GALVANIZED.

ROOF DECK REQUIREMENTS:

RD1. ROOF DECK SHALL BE 1 1/2" X 20 GAUGE VERCO PLB-36, VERCO HSB-36 OR APPROVED EQUAL.

RD2. ATTACHMENT AT PERPENDICULAR SUPPORTS SHALL BE (4) PUDDLE WELDS PER SHEET.

RD3. ATTACHMENT AT PARALLEL SUPPORTS SHALL BE PUDDLE WELD AT 12" O.C.

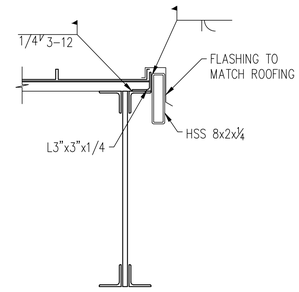
RD4. SIDE SEAM CONNECTIONS SHALL BE VERCO SIDELAP CONNECTION (VSG) AT 12" O.C. FOR PLB-36 DECK OR 1 1/2" TOP SEAM WELD (TSW) AT 12" O.C.

RD5. ROOF DECK SHALL BE CONTINUOUS OVER 2 OR MORE SPANS.

RD6. BEARING LENGTH AT SUPPORTS SHALL BE 2" MIN.

RD7. END LAPS AT SUPPORTS SHALL BE 3" MIN.

NOTE: STANDING SEAM METAL ROOFING AND FACIA SHALL MATCH COLOR OF EXISTING BUILDING



305 ~ JOIST SUPPORT AT EDGE
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2023 WATER SYSTEM IMPROVEMENTS

ROOF PLAN

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09955	EL	EL	SH	12 of 12	ST5

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