

City of Petaluma, California

FILTER ADDITION AND MISCELLANEOUS IMPROVEMENTS PROJECT ELLIS CREEK WATER RECYCLING FACILITY

C66401416
VOLUME 2 OF 2



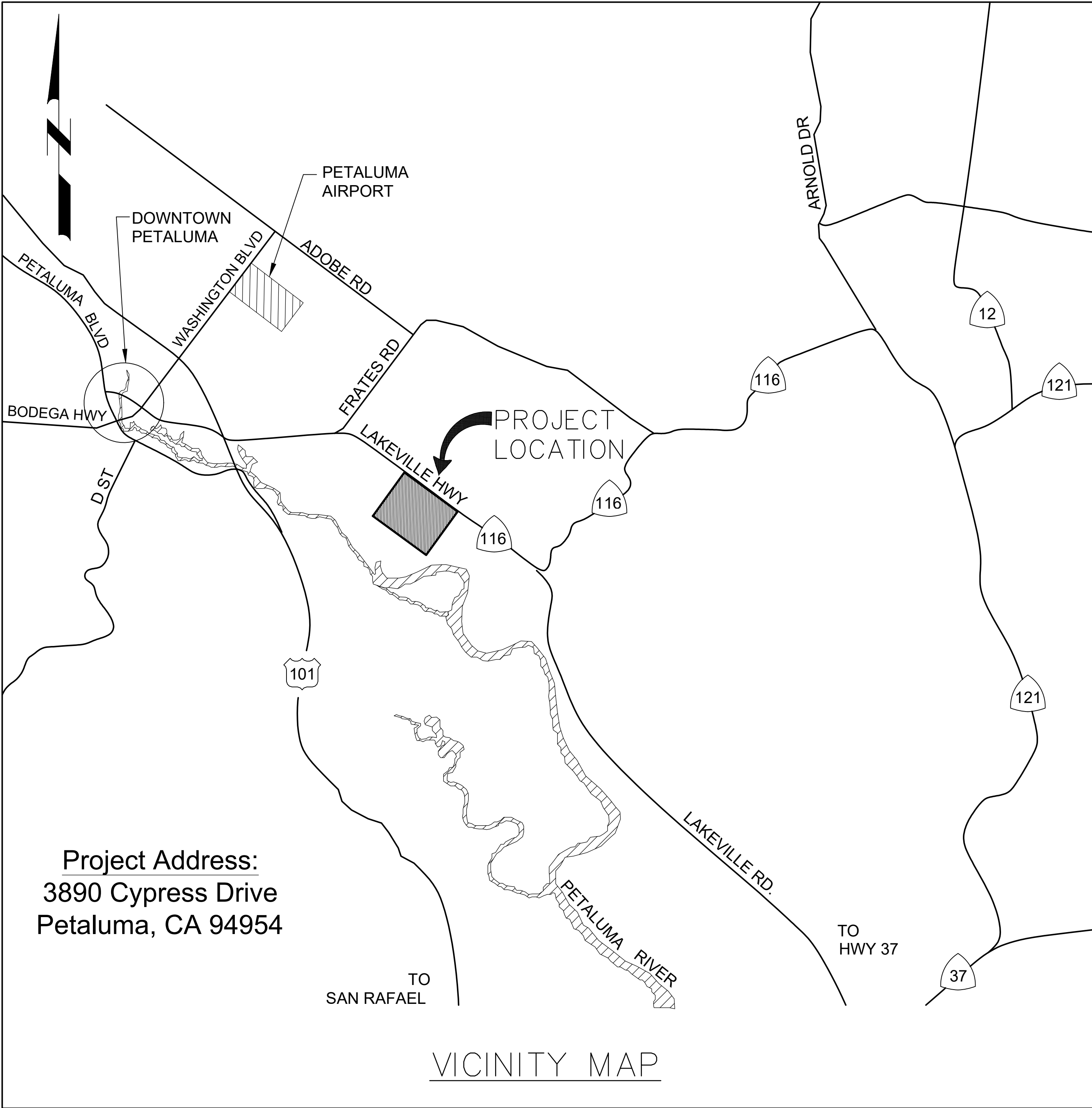
APRIL 2023

MAYOR
Kevin McDonnell

COUNCIL MEMBERS
Brian Barnacle
Janice Cader Thompson
Mike Healy
Karen Nau
John Shribbs
Dennis Pocekay

CITY MANAGER
Peggy Flynn

DIRECTOR OF PUBLIC WORKS & UTILITIES
Christopher Bolt, P.E.



Digitally signed by Douglas W. Wing
Contact Info: Douglas@wingpe.com
Date: 2023.04.28 10:36:07-0700

APPROVED BY:
Josh Minshall
JOSH MINSHALL
DATE: 4/28/23

DESIGNED BY:
D. Wing
DOUGLAS WING P.E. C38950
PROJECT MANAGER

DATE: JANUARY 2023
DESIGNED BY: CE
DRAWN BY: CE
CHECKED BY: CE

PROJECT NO.
C66401416

CITY OF PETALUMA
PUBLIC WORKS & UTILITIES
202 N. McDowell Blvd., PETALUMA, CALIFORNIA, 94954
PH. 707-778-4546 FAX. 707-778-4508

CITY OF PETALUMA
FILTER ADDITION AND MISCELLANEOUS
IMPROVEMENTS PROJECT
TITLE SHEET, LOCATION MAP AND SIGNATURES

SHEET
G01C
1 OF 130

Plot Date: 03-APR-2023 5:42:57 PM

User: svcPW

PlotScale: 1:1

Model: Layout1 ColorTable: gshade.ctb DesignScript: Carollo_Std_Pen_v0905.pen

LAST SAVED BY: luy

1	2	3	4	5	6	7	8	9	10	11	12	13
SHEET NUMBER	DRAWING NUMBER	DESCRIPTION			SHEET NUMBER	DRAWING NUMBER	DESCRIPTION			SHEET NUMBER	DRAWING NUMBER	DESCRIPTION
<u>GENERAL DRAWINGS</u>						<u>STRUCTURAL</u>			<u>INSTRUMENTATION & CONTROLS</u>			
1	G01C	COVER SHEET AND MAP			53	06S01	TERTIARY FILTERS - KEY PLAN			112	GN01C	SYMBOLS AND ABBREVIATIONS - I
2	G02C	DRAWING INDEX			54	06S02	TERTIARY FILTERS 6 & 7 - FOUNDATION/ FLOOR PLAN			113	GN02C	SYMBOLS AND ABBREVIATIONS - II
3	G03C	DESIGN CRITERIA			55	06S03	TERTIARY FILTERS 6 & 7 - TOP PLAN			114	GN03C	SYMBOLS AND ABBREVIATIONS - III
4	G04C	OVERALL SITE PLAN			56	06S04	TERTIARY FILTERS 6 & 7 - SECTIONS			115	GN04C	SYMBOLS AND ABBREVIATIONS - IV
5	G05C	PLANT FLOW SCHEMATIC - LIQUID PROCESS			57	06S05	TERTIARY FILTERS 6 & 7 - SECTIONS			116	00N01C	NETWORK DIAGRAM
6	G06C	TERTIARY PROCESS HYDRAULIC PROFILE			58	06S06	TERTIARY FILTERS 6 & 7 - SECTION			117	00N02C	NETWORK I/O TABLES
7	G07C	ABBREVIATIONS			59	06S07	TERTIARY FILTERS 6 & 7 - SECTIONS AND DETAILS			118	06DN01	DEMO TERTIARY FEED PUMP STATION - I
8	G08C	GENERAL NOTES AND SYMBOLOGY			60	06S08	FLOCCULATION TANK - PLAN & SECTION			119	06DN02	DEMO TERTIARY FEED PUMP STATION - II
9	G09C	CIVIL SYMBOLOGY			61	22S01	MAINTENANCE AND STORAGE BUILDINGS - KEY PLAN			120	06N01	TERTIARY PUMP STATION - I
10	G10C	GENERAL STRUCTURAL NOTES - I			62	22S02	STORAGE BUILDING - FOUNDATION PLAN			121	06N02	TERTIARY PUMP STATION - II
11	G11C	GENERAL STRUCTURAL NOTES - II			63	22S03	STORAGE BUILDING - ROOF PLAN			122	06N03	TERTIARY FILTER NO. 6 - INLET AND OUTLET
12	G12C	GENERAL MECHANICAL SYMBOLOGY			64	22S04	STORAGE BUILDING - FOUNDATION SECTIONS			123	06N04	TERTIARY FILTER NO. 6
13	G13C	MECHANICAL AND CIVIL NOTES			65	22S05	STORAGE BUILDING - ELEVATIONS			124	06N05	TERTIARY FILTER NO. 6 - BACKWASH PUMPS
14	G14C	HVAC SYMBOLOGY AND NOTES			66	22S06	WASTE OIL STORAGE CANOPY - PLANS AND SECTION			125	06N06	TERTIARY FILTER NO. 7 - INLET AND OUTLET
<u>TYPICAL DETAILS</u>						<u>MECHANICAL</u>						
15	TA01C	TYPICAL ARCHITECTURAL DETAILS			67	06M01	TERTIARY PUMP STATION - PLAN AND SECTIONS			126	06N07	TERTIARY FILTER NO. 7
16	TA02C	TYPICAL ARCHITECTURAL DETAILS			68	06M02	TERTIARY FILTERS NO. 6 & 7 - PLAN			127	06N08	TERTIARY FILTER NO. 7 - BACKWASH PUMPS
17	TA03C	TYPICAL ARCHITECTURAL DETAILS			69	06M03	TERTIARY FILTERS NO. 6 & 7 - SECTIONS			128	06N09	TERTIARY FILTER CELL 1-5 MODIFICATIONS
18	TA04C	TYPICAL ARCHITECTURAL DETAILS			70	06M04	TERTIARY FILTERS NO. 6 & 7 - SECTIONS			129	07N01	FILTER SUPPORT BUILDING HVAC
19	TA05C	TYPICAL ARCHITECTURAL DETAILS			71	06M05	TERTIARY FILTERS NOS. 1-5 - PLAN			130	22N01	MAINTENANCE BUILDING HVAC
20	TA06C	TYPICAL ARCHITECTURAL DETAILS			72	06M06	TERTIARY FILTERS NOS. 1-5 - SECTIONS					
21	TC01C	TYPICAL CIVIL DETAILS						<u>HVAC</u>				
22	TC02C	TYPICAL CIVIL DETAILS			73	GH01C	GENERAL NOTES, ABBREVIATIONS AND SYMBOLS					
23	TC03C	TYPICAL CIVIL DETAILS			74	GH02C	EQUIPMENT SCHEDULES					
24	TE01C	TYPICAL ELECTRICAL DETAILS			75	07H01	FILTER SUPPORT BUILDING - HVAC SYSTEM AIR FLOW SCHEMATIC					
25	TE02C	TYPICAL ELECTRICAL DETAILS			76	07H02	FILTER SUPPORT BUILDING - FLOOR PLAN					
26	TE03C	TYPICAL ELECTRICAL DETAILS			77	22H01	STORAGE BUILDING - AIRFLOW SCHEMATIC					
27	TE04C	TYPICAL ELECTRICAL DETAILS			78	22H02	STORAGE BUILDING - FLOOR PLAN					
28	TE05C	TYPICAL ELECTRICAL DETAILS			79	22H03	STORAGE BUILDING - SECTION					
29	TE06C	TYPICAL ELECTRICAL DETAILS						<u>ELECTRICAL</u>				
30	TH01C	TYPICAL HVAC DETAILS			80	GE01C	LEGEND					
31	TM01C	TYPICAL MECHANICAL DETAILS			81	GE02C	ABBREVIATIONS					
32	TN01C	TYPICAL INSTRUMENTATION DETAILS			82	GE03C	SCHEMATIC SYMBOLS					
33	TN02C	TYPICAL INSTRUMENTATION DETAILS			83	E01C	OVERALL SITE PLAN					
34	TP01C	TYPICAL PIPING DETAILS			84	E02C	PARTIAL SITE PLAN - I					
35	TP02C	TYPICAL PIPING DETAILS			85	E03C	PARTIAL SITE PLAN - II					
36	TP03C	TYPICAL PIPING DETAILS			86	E04C	PARTIAL SITE PLAN - III					
37	TS01C	TYPICAL STRUCTURAL DETAILS			87	E05C	DUCT BANK SECTIONS - I					
38	TS02C	TYPICAL STRUCTURAL DETAILS			88	E06C	07-MCC-A ELEVATION MODIFICATION					
39	TS03C	TYPICAL STRUCTURAL DETAILS			89	E07C	07-MCC-A ONE-LINE DIAGRAM - I MODIFICATION					
40	TS04C	TYPICAL STRUCTURAL DETAILS			90	E08C	07-MCC-A ONE-LINE DIAGRAM - II MODIFICATION					
41	TS05C	TYPICAL STRUCTURAL DETAILS			91	E09C	09-MCC-A ELEVATION MODIFICATION					
<u>DEMOLITION</u>						92	E10C	09-MCC-A ONE-LINE DIAGRAM - I MODIFICATION				
42	D01C	OVERALL SITE PLAN			93	E11C	09-MCC-A ONE-LINE DIAGRAM - II MODIFICATION					
43	D02C	PARTIAL SITE PLAN - I			94	E12C	20-MCC-A ELEVATION MODIFICATION					
44	D03C	PARTIAL SITE PLAN - II			95	E13C	20-MCC-A ONE-LINE DIAGRAM - I MODIFICATION					
45	06D01	TERTIARY PUMP STATION - PLAN, SECTION, AND PHOTOS			96	E14C	20-MCC-A ONE-LINE DIAGRAM - II MODIFICATION					
46	06D02	TERTIARY FILTERS 1-5 - PLAN AND PHOTO			97	E15C	CONTROL SCHEMATICS - I					
47	07D01	FILTER SUPPORT BUILDING - HVAC PLAN			98	E16C	CONTROL SCHEMATICS - II					
48	22D01	STORAGE BUILDING - PLAN AND SECTION			99	E17C	PANELBOARD PULL BOX AND LUMINAIRE SCHEDULE					
<u>CIVIL</u>						100	05E02C	MANHOLE AND HANDHOLE SCHEDULE				
49	C01C	OVERALL SITE PLAN			101	06E01C	TERTIARY PUMP STATION - POWER AND CONTROL PLAN					
50	C02C	YARD PIPING - PARTIAL PLAN			102	06E02C	TERTIARY FILTERS - OVERALL PLAN					
51	C03C	GRADING AND DRAINAGE - PARTIAL PLAN			103	06E03C	TERTIARY FILTERS NO. 6 & 7 - PLAN					
<u>ARCHITECTURAL</u>						104	06E04C	TERTIARY FILTERS NO. 6 & 7 - PUMP AREA DETAIL				
52	22A01	MAINTENANCE AND STORAGE BUILDINGS - DOOR SCHEDULE, PLAN, & ELEVATION			105	06E05C	TERTIARY FILTERS LIGHTING, RECEPTACLES AND GROUNDING PLAN					
					106	06E06C	TERTIARY FILTERS NO. 6 & 7 - SECTION					
					107	07E01C	FILTER SUPPORT BUILDING - POWER AND CONTROL PLAN					
					108	09E01C	09-MCC-A BUILDING POWER GROUNDING AND LIGHTING PLAN					
					109	19E01C	OPERATIONS AND MAINTENANCE BUILDING - POWER AND CONTROL PLAN					
					110	20E01C	MAIN ELECTRICAL SERVICE BUILDING - POWER AND CONTROL PLAN					
					111	22E01C	STORAGE BUILDING - POWER AND LIGHTING PLAN					

REV	DATE	BY	DESCRIPTION

DESIGNED PK
DRAWN DPF
CHECKED DWW
DATE JANUARY 2023



Digitally signed by Douglas W. Wing
 Contact Info: Carollo Engineers, Inc.
 Date: 2023.04.03 10:34:07 -0700



CITY OF PETALUMA
 FILTER ADDITION AND MISC. IMPROVEMENTS PROJECT
 GENERAL
 DRAWING INDEX

VERIFY SCALES
 BAR IS ONE INCH ON ORIGINAL DRAWING
 0 1" IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

JOB NO.
7310L.10
DRAWING NO.
G02C
SHEET NO.
2 OF 130

Plot Date: 03-APR-2023 5:50:10 PM
 User: svcPW
 Model: Layout1 ColorTable: gshade.ctb DesignScript: Carollo_Sig_Pen_v0905.pen PlotScale: 1:1
 LAST SAVED BY: lumadhy

KEY NOTES:

1 BASED ON ORIGINAL DESIGN CRITERIA 2005.

2 BASED ON AVERAGE AND MAXIMUM TSS OF 10 MG/L AND 15 MG/L, RESPECTIVELY.

	UNITS	EXISTING QUANTITY	NEW QUANTITY		UNITS	EXISTING QUANTITY	NEW QUANTITY	FUTURE BUILDOUT
INFLUENT CHARACTERISTICS				TERTIARY FILTERS 1 - 5				
FLOW				1 TYPE -- CONTINUOUS BACKWASH -- --				
AVERAGE DRY WEATHER FLOW (ADWF)	MGD	6.7	6.7	1 FILTER CELLS -- 5 -- --				
AVERAGE ANNUAL FLOW (AAF)	MGD	8	8	MODULES/CELL -- 3 -- --				
AVERAGE DAY MAXIMUM MONTH FLOW (ADMFM)	MGD	12	12	SIZE OF MODULES SF 50 -- --				
PEAK HOUR WET WEATHER FLOW (PHWWF)	MGD	36	36	TOTAL FILTER AREA SF 750 -- --				
AVERAGE ANNUAL BOD				HYDRAULIC LOADING				
LOAD	PPD	18,348	26,021	AVERAGE DAY @ 2.0 MGD GPM/SF 1.9 -- --				
CONCENTRATION	MG/L	275	390	MAXIMUM DAY @ 5.2 MGD GPM/SF 4.8 -- --				
AVERAGE ANNUAL TSS				AIR CONSUMPTION SCFM 45 -- --				
LOAD	PPD	18,348	18,682	BACKWASH (BW)				
CONCENTRATION	MG/L	275	280	AVERAGE BW RATE @ 2.0 MGD % 10 -- --				
TITLE 22 REUSE FLOW				MAXIMUM BW RATE @ 5.2 MGD % 15 -- --				
MINIMUM	MGD	0.5	0.5	TERTIARY FILTERS 6 & 7				
AVERAGE DAY	MGD	2	4	TYPE -- -- CLOTH MEDIA DISK -- --				
MAXIMUM DAY	MGD	5.2	7.8	FILTER CELLS -- -- 2 -- --				
RECYCLED WATER TREATMENT AND PUMPING				DISK PER FILTER -- -- 16 -- 20				
TERTIARY PUMP STATION				FILTER AREA PER DISK SF -- -- 53.8 -- 53.8				
TERTIARY PUMP STATION				TOTAL FILTER AREA SF -- -- 1722 -- 2152				
TYPE	--	SUBMERSIBLE	SUBMERSIBLE	DESIGN FLOWS				
NUMBER	--	2	4	AVERAGE DAY MGD -- -- 4.0 -- --				
HIGH FLOW	--	1	1	MAXIMUM DAY MGD -- -- 7.6 -- --				
LOW FLOW	--	1	1	HYDRAULIC LOADING (BOTH UNITS ONLINE)				
CAPACITY, EACH	MGD	2@2.6, 1@1.3	4@2.6, 1@1.3	AVERAGE DAY @ 4.0 MGD GPM/SF -- -- 1.6 -- --				
MOTOR SIZE	HP	2@40, 1@5	4@40, 1@5	MAXIMUM DAY @ 7.6 MGD GPM/SF -- -- 3.1 -- --				
PRETREATMENT				2 SOLIDS LOADING (BOTH UNITS ONLINE)				
FLASH MIX				AVERAGE DAY @ 4.0 MGD PPD/SF -- -- 0.29 -- --				
FLASH MIX				MAXIMUM DAY @ 7.6 MGD PPD/SF -- -- 0.55 -- --				
TYPE	--	VERTICAL IMPELLER	VERTICAL IMPELLER					
DETENTION TIME	SEC	10	10					
BASIN DIMENSIONS	FT	4 x 4	4 x 4					
SWD	FT	4 - 6	4 - 6					
MIXING GRADIENT	G	600	600					
MIXING POWER	HP	1.5	1.5					
FLOCCULATION - STAGE 1								
TYPE	--	VERTICAL IMPELLER	VERTICAL IMPELLER					
DETENTION TIME	MIN	7	7					
BASIN DIMENSIONS	FT	12 x 12	12 x 12					
SWD	FT	16 - 18	16 - 18					
MIXING GRADIENT	G	60 - 110	60 - 110					
MIXING POWER	HP	2	2					
FLOCCULATION - STAGE 2								
TYPE	--	VERTICAL IMPELLER	VERTICAL IMPELLER					
DETENTION TIME	MIN	7	7					
BASIN DIMENSIONS	FT	12 x 12	12 x 12					
SWD	FT	16 - 18	16 - 18					
MIXING GRADIENT	G	20 - 60	20 - 60					
MIXING POWER	HP	1	1					

REV	DATE	BY	DESCRIPTION

DESIGNED
PK

DRAWN
CE

CHECKED
DWW

DATE
JANUARY 2023



Digitally signed by Douglas W. Wang
 Contact Info: Carollo Engineers, Inc.
 Date: 2023.04.03 09:34:07 -0700



CITY OF PETALUMA

FILTER ADDITION AND MISC. IMPROVEMENTS PROJECT

GENERAL

DESIGN CRITERIA

VERIFY SCALES

BAR IS ONE INCH ON ORIGINAL DRAWING

0 1"

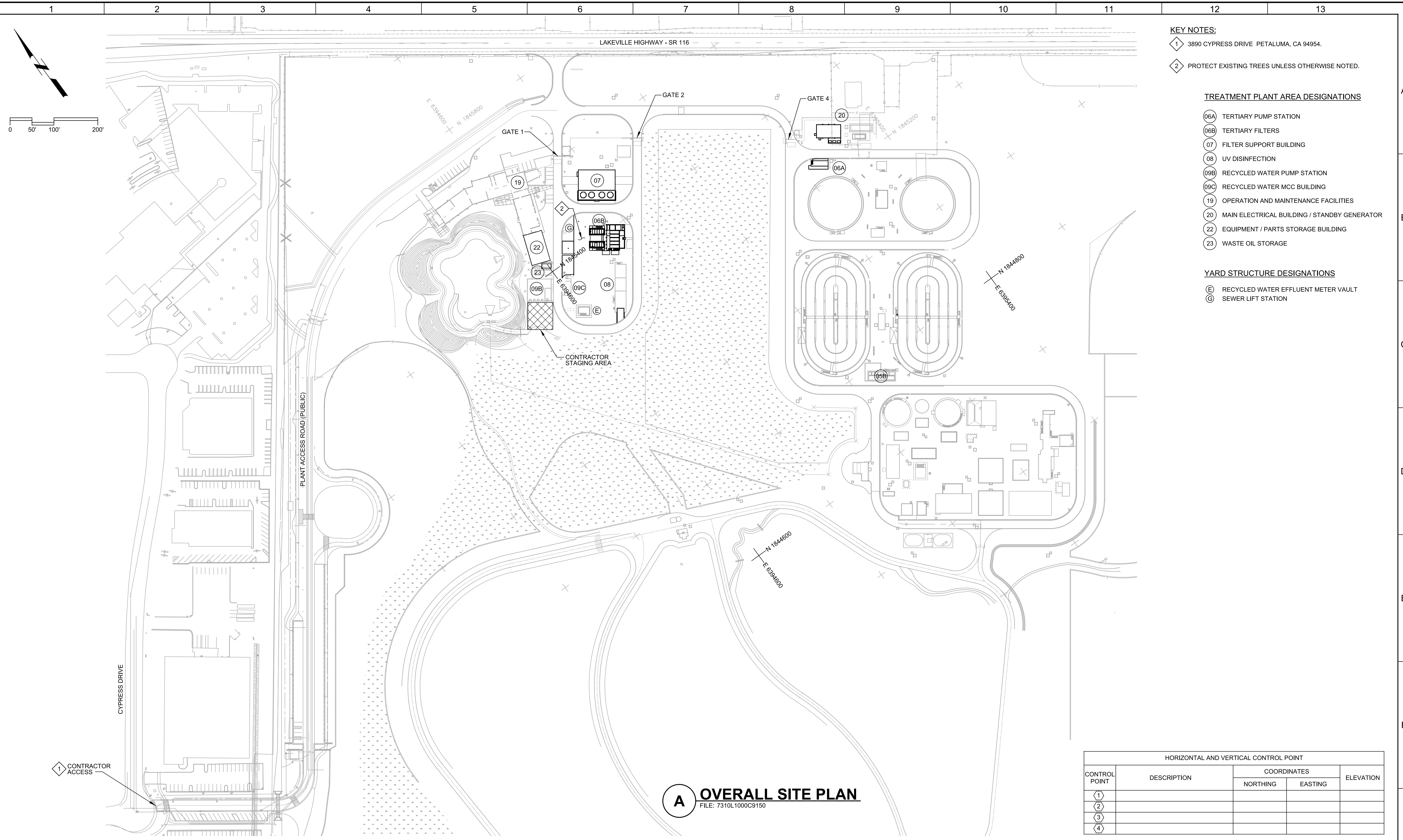
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

JOB NO.
7310L.10

DRAWING NO.
G03C

SHEET NO.
3 OF 130

Plot Date: 03-APR-2023 5:43:36 PM
 User: svcPW
 Model: Layout1 ColorTable: gshade.ctb DesignScript: Carollo_Sld_Pen_v0905.pen PlotScale: 1:1
 LAST SAVED BY: luy



HORIZONTAL AND VERTICAL CONTROL POINT				
CONTROL POINT	DESCRIPTION	COORDINATES		ELEVATION
		NORTHING	EASTING	
1				
2				
3				
4				

REV	DATE	BY	DESCRIPTION
1			
2			

DESIGNED PK
 DRAWN JBR
 CHECKED DWW
 DATE JANUARY 2023



Digitally signed by Douglas W. Winkler
 Contact Info: Carollo Engineers, Inc.
 Date: 2023.04.03 09:30:07Z



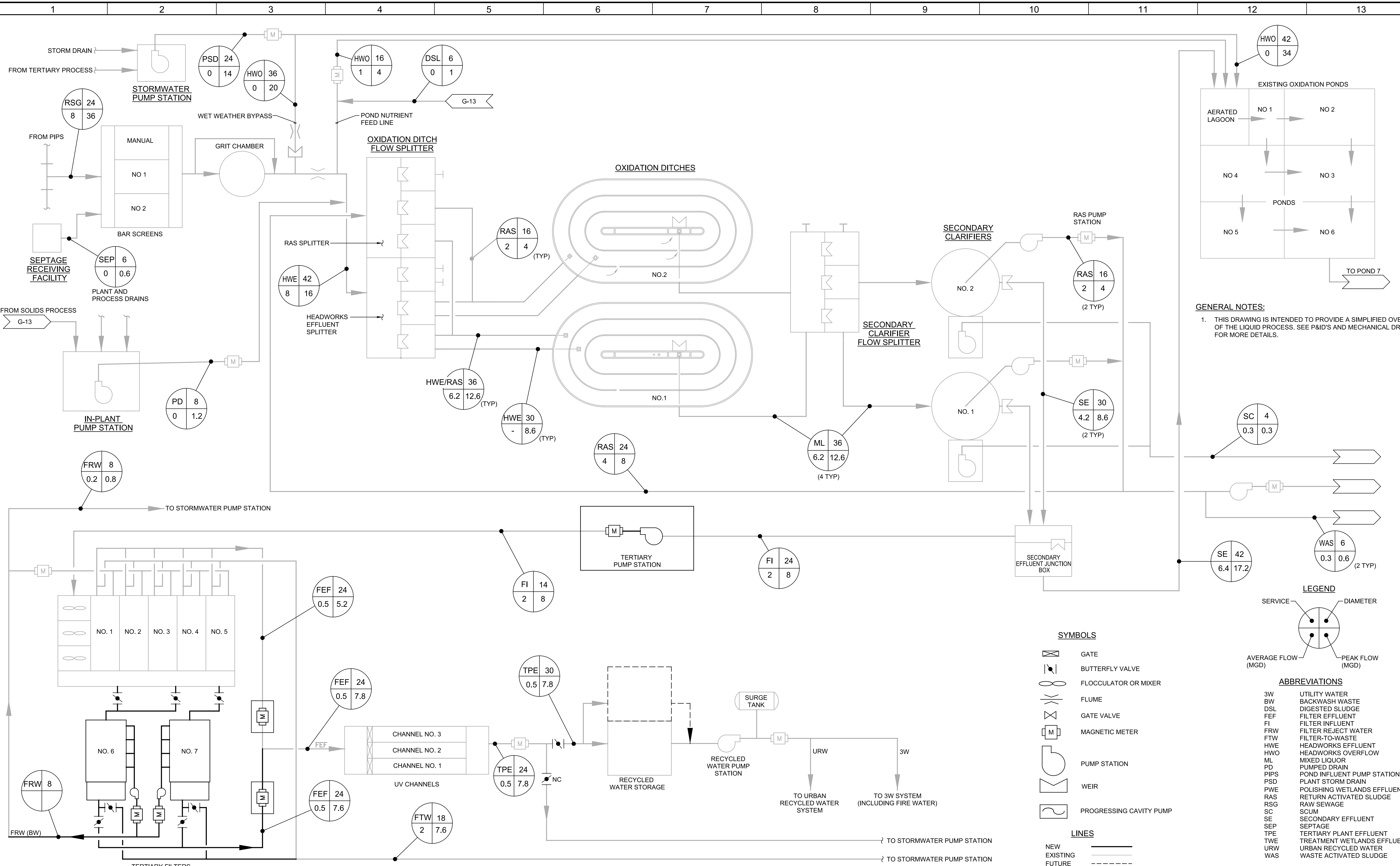
CITY OF PETALUMA
 FILTER ADDITION AND MISC. IMPROVEMENTS PROJECT
 GENERAL
OVERALL SITE PLAN

VERIFY SCALES
 BAR IS ONE INCH ON ORIGINAL DRAWING
 0 1"

IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

JOB NO. 7310L.10
 DRAWING NO. G04C
 SHEET NO. 4 OF 130

Plot Date: 03-APR-2023 5:39:39 PM
 User: svcPW
 Model: Layout1 ColorTable: gshade.ctb DesignScript: Carollo_Sld_Pen_v0905.pen PlotScale: 1:1
 LAST SAVED BY: lumadhay



GENERAL NOTES:
 1. THIS DRAWING IS INTENDED TO PROVIDE A SIMPLIFIED OVERVIEW OF THE LIQUID PROCESS. SEE P&ID'S AND MECHANICAL DRAWINGS FOR MORE DETAILS.

- SYMBOLS**
- GATE
 - BUTTERFLY VALVE
 - FLOCCULATOR OR MIXER
 - FLUME
 - GATE VALVE
 - MAGNETIC METER
 - PUMP STATION
 - WEIR
 - PROGRESSING CAVITY PUMP
- LINES**
- NEW
 - EXISTING
 - FUTURE

- LEGEND**
- SERVICE
 DIAMETER
- ABBREVIATIONS**
- | | |
|------|-----------------------------|
| 3W | UTILITY WATER |
| BW | BACKWASH WASTE |
| DSL | DIGESTED SLUDGE |
| FEF | FILTER EFFLUENT |
| FI | FILTER INFLUENT |
| FRW | FILTER REJECT WATER |
| FTW | FILTER-TO-WASTE |
| HWE | HEADWORKS EFFLUENT |
| HWO | HEADWORKS OVERFLOW |
| ML | MIXED LIQUOR |
| PD | PUMPED DRAIN |
| PIPS | POND INFLUENT PUMP STATION |
| PSD | PLANT STORM DRAIN |
| PWE | POLISHING WETLANDS EFFLUENT |
| RAS | RETURN ACTIVATED SLUDGE |
| RSG | RAW SEWAGE |
| SC | SCUM |
| SE | SECONDARY EFFLUENT |
| SEP | SEPTAGE |
| TPE | TERTIARY PLANT EFFLUENT |
| TWE | TREATMENT WETLANDS EFFLUENT |
| URW | URBAN RECYCLED WATER |
| WAS | WASTE ACTIVATED SLUDGE |

REV	DATE	BY	DESCRIPTION

DESIGNED PK
 DRAWN DPF
 CHECKED DWW
 DATE JANUARY 2023



Digitally signed by Douglas W. Wing
 DN: cn=Douglas W. Wing, o=Carollo, ou=Carollo, email=Douglas.W.Wing@carollo.com, c=US
 Date: 2023.04.03 14:07:07 -0700



CITY OF PETALUMA
 FILTER ADDITION AND MISC. IMPROVEMENTS PROJECT
 GENERAL
 PLANT FLOW SCHEMATIC
 LIQUID PROCESS

VERIFY SCALES
 BAR IS ONE INCH ON ORIGINAL DRAWING
 0 1"
 IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

JOB NO. 7310L.10
 DRAWING NO. G05C
 SHEET NO. 5 OF 130

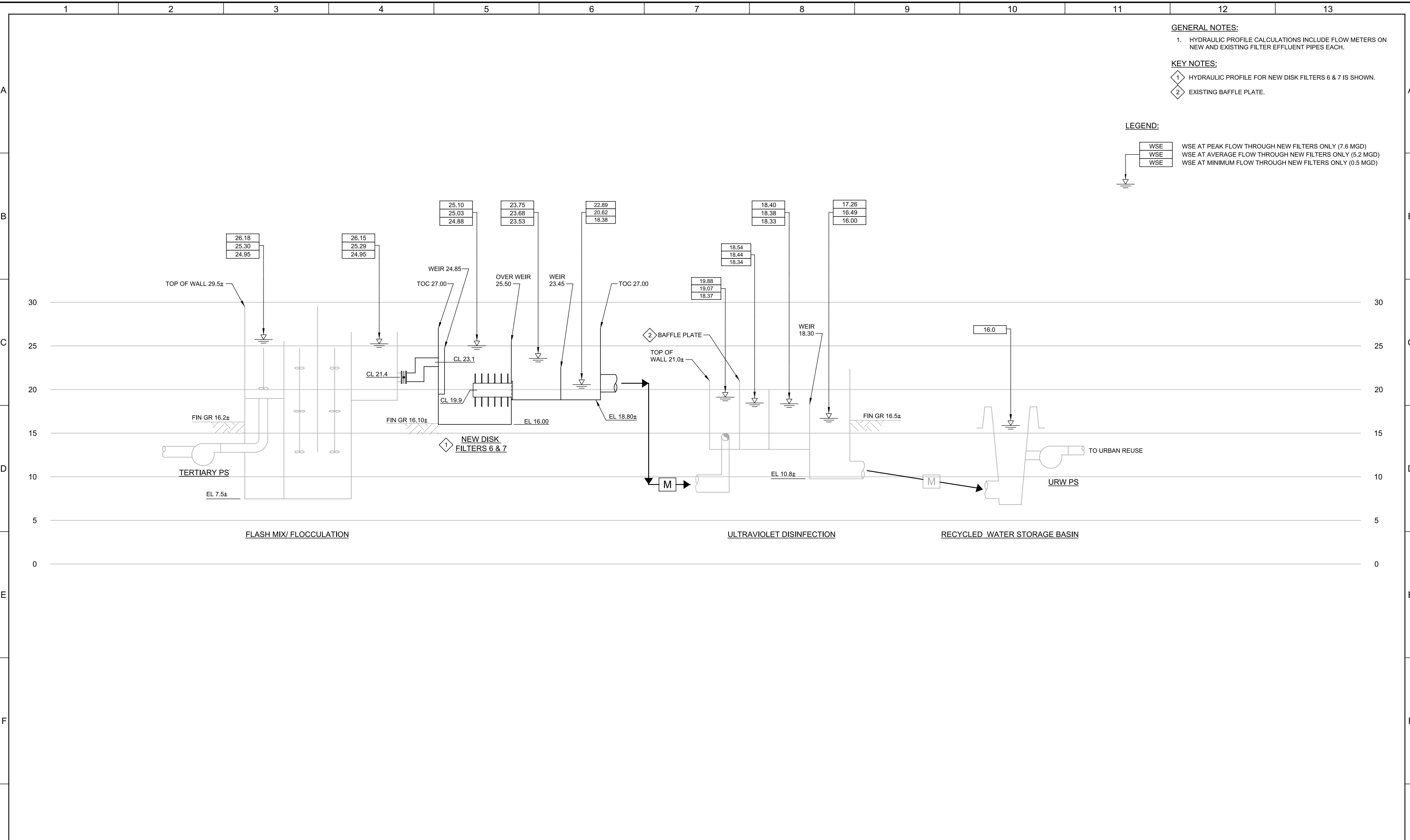
Plot Date: 03-APR-2023 4:45:31 PM

User: svcPW

PlotScale: 1:1

Model: Layout1 ColorTable: gshade.ctb DesignScript: Carollo_Sid_Pen_v0905.pen

LAST SAVED BY: lumadhay



GENERAL NOTES:

- HYDRAULIC PROFILE CALCULATIONS INCLUDE FLOW METERS ON NEW AND EXISTING FILTER EFFLUENT PIPES EACH.

KEY NOTES:

- HYDRAULIC PROFILE FOR NEW DISK FILTERS 6 & 7 IS SHOWN.
- EXISTING BAFFLE PLATE.

LEGEND:

	WSE	WSE AT PEAK FLOW THROUGH NEW FILTERS ONLY (7.6 MGD)
	WSE	WSE AT AVERAGE FLOW THROUGH NEW FILTERS ONLY (5.2 MGD)
	WSE	WSE AT MINIMUM FLOW THROUGH NEW FILTERS ONLY (0.5 MGD)

REV	DATE	BY	DESCRIPTION
1			
2			
3			

DESIGNED
PK

DRAWN
DPF

CHECKED
DWW

DATE
JANUARY 2023



Digitally signed by Douglas W. Wang
Contact Info: Carollo Engineers, Inc.
Date: 2023.04.03 16:45:31 -0700



CITY OF PETALUMA

FILTER ADDITION AND MISC. IMPROVEMENTS PROJECT

GENERAL

TERTIARY PROCESS HYDRAULIC PROFILE

VERIFY SCALES

BAR IS ONE INCH ON ORIGINAL DRAWING

0 1"

IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

JOB NO.
7310L.10

DRAWING NO.
G06C

SHEET NO.
6 OF 130

Plot Date: 03-APR-2023 5:45:45 PM User: svcpw Model: Layout1 ColorTable: gshade.ctb DesignScript: Carollo_Std_Pen_v0905.pen PlotScale: 1:1 LAST SAVED BY: tumadhay

Table with 13 columns and 13 rows containing abbreviations and their corresponding full names. Columns are labeled 1-13 and rows are labeled A-G. The table lists various engineering terms such as 'ANCHOR BOLT', 'CONCRETE', 'ELECTRIC UNIT HEATER', etc.

Table with 4 columns: REV, DATE, BY, DESCRIPTION. It contains a single row with the date 'JANUARY 2023' and a blank description.

DESIGNED: PK, DRAWN: JBR, CHECKED: DWW, DATE: JANUARY 2023. Includes a professional engineer seal for Douglas W. Wilk, No. 38950, State of California.

Carollo logo and seal. Text: 'Carollo' logo, 'REGISTERED PROFESSIONAL ENGINEER', 'DOUGLAS W. WILK', 'No. 38950', 'CIVIL', 'STATE OF CALIFORNIA'.

CITY OF PETALUMA logo and seal. Text: 'CITY OF PETALUMA', '1858'.

Project title and scales. Text: 'CITY OF PETALUMA', 'JOB NO. 7310L.10', 'FILTER ADDITION AND MISC. IMPROVEMENTS PROJECT', 'GENERAL ABBREVIATIONS', 'VERIFY SCALES', 'BAR IS ONE INCH ON ORIGINAL DRAWING', '0 1\"/>

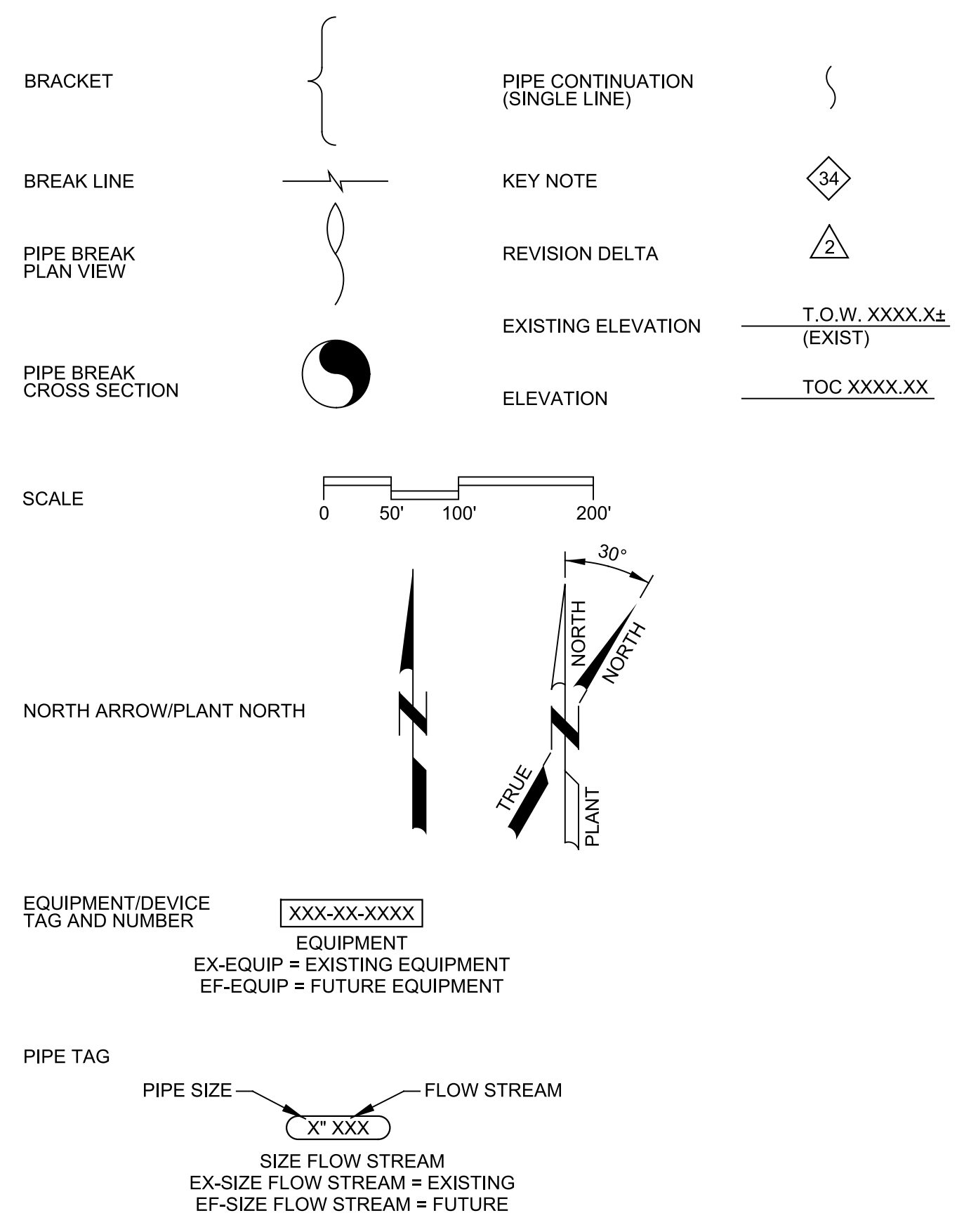
Table with 2 columns: SHEET NO., JOB NO. Text: 'SHEET NO. 7 OF 130', 'JOB NO. 7310L.10'.

User: svcPW
 Plot Date: 04-APR-2023 9:17:04 AM
 Model: Layout1 ColorTable: gshade.ctb DesignScript: Carollo_Sig_Pen_v0905.pen PlotScale: 1:1
 LAST SAVED BY: tvelich

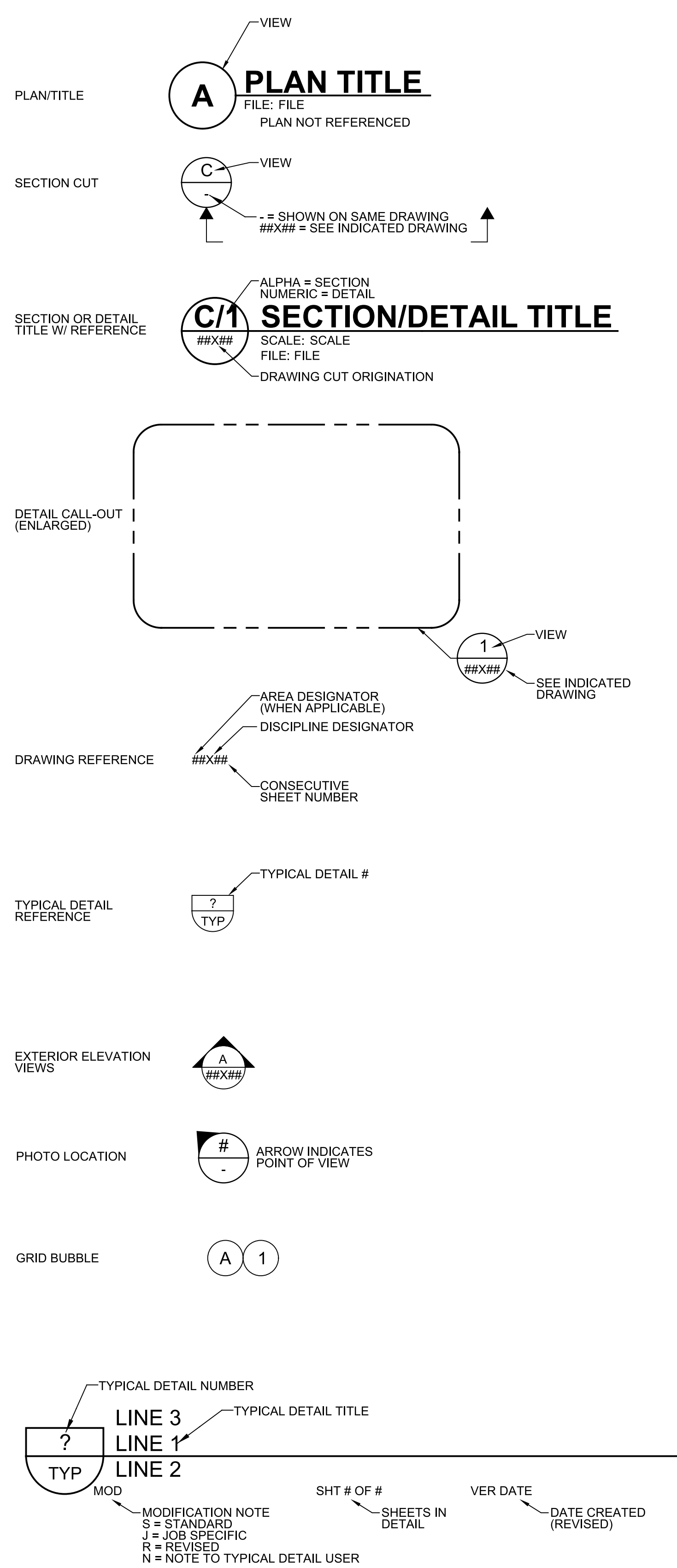
GENERAL NOTES

- FOLLOWING NOTES ARE GENERAL AND APPLY TO ALL SHEETS OF THESE CONTRACT DOCUMENTS AS IF THEY WERE WRITTEN IN THEIR ENTIRETY ON EACH SHEET.
- CONTRACTOR SHALL VERIFY ALL DIMENSIONS BEFORE STARTING WORK AND SHALL IMMEDIATELY NOTIFY THE ENGINEER OF ANY DISCREPANCIES. CONTRACTOR SHALL BE RESPONSIBLE FOR FIELD VERIFYING ALL EXISTING CONDITIONS INCLUDING LOCATION AND DIMENSIONS OF ALL EXISTING CONSTRUCTION AND UTILITIES. CONTRACTOR SHALL NOTIFY ENGINEER IF THERE IS A CONFLICT BETWEEN THE CONTRACT DOCUMENTS AND EXISTING CONSTRUCTION BEFORE PROCEEDING WITH WORK.
- UNLESS DETAILED, SPECIFIED, OR OTHERWISE INDICATED ON THE DRAWINGS, CONSTRUCTION SHALL BE AS INDICATED IN THE APPLICABLE TYPICAL DETAILS AND GENERAL NOTES. TYPICAL DETAILS SHALL APPLY EVEN THOUGH NOT REFERENCED AT SPECIFIC LOCATIONS ON DRAWINGS.
- WHERE NO CONSTRUCTION DETAILS ARE SHOWN OR NOTED FOR ANY PART OF WORK. DETAILS SHALL BE IN THE SAME AS FOR OTHER SIMILAR WORK.
- CONTRACTOR SHALL COMPLY WITH STATE AND LOCAL CONSTRUCTION STORM WATER AND SANITARY DISCHARGE REGULATIONS AND REQUIREMENTS.
- PRIOR TO EXCAVATION FOR NEW STRUCTURES, ELECTRICAL CONDUIT, FABRICATION OF NEW PIPING AND/OR OTHER PROPOSED UTILITIES, CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE LOCATION OF ALL EXISTING PIPING AND UTILITIES IN THE CONSTRUCTION AREA. THE CONTRACTOR SHALL TEMPORARILY RELOCATE CONFLICTING EXISTING UTILITIES AT TIE-IN CONNECTION LOCATIONS AND REINSTALL THEM AS REQUIRED TO ELIMINATE THE CONFLICT AT NO ADDITIONAL COST TO THE OWNER.
- ALL PIPELINES 12" AND LARGER SHALL HAVE A MINIMUM COVER OF 36" UNLESS THE COVER DEPTH IS SPECIFICALLY INDICATED ON THE DRAWINGS. PIPE SMALLER THAN 12" SHALL HAVE A MINIMUM COVER OF 30" UNLESS NOTED OTHERWISE. PIPES SHALL BE ROUTED AS SHOWN UNLESS MINOR REVISIONS ARE NECESSARY TO MISS EXISTING PIPES, STRUCTURES, ETC. CONTRACTOR SHALL BE RESPONSIBLE FOR FURNISHING ALL FITTINGS AND ADAPTERS REQUIRED TO MAKE THE ROUTING CHANGES AT NO ADDITIONAL COST TO THE OWNER. CONTRACTOR SHALL INCLUDE COST FOR THIS IN THE BID.
- EXISTING FACILITY AND UTILITY INFORMATION SHOWN ON THE DRAWINGS WAS OBTAINED FROM AVAILABLE RECORDS OR ELECTRONIC FILES. NEITHER THE OWNER NOR ENGINEER ASSUMES ANY RESPONSIBILITY FOR FACILITIES AND UTILITIES NOT SHOWN OR NOT IN THE LOCATION SHOWN. THE CONTRACTOR SHALL FIELD VERIFY ALL LOCATIONS, SIZES, MATERIAL TYPES, AND ELEVATIONS SHOWN AROUND OR NEAR AREAS OF NEW CONSTRUCTION PRIOR TO START OF CONSTRUCTION.
- THE CONTRACTOR SHALL TAKE ALL PRECAUTIONARY MEASURES NECESSARY TO PROTECT FROM DAMAGE EXISTING FACILITIES AND UTILITIES SHOWN OR NOT SHOWN THAT ARE TO REMAIN IN PLACE. ALL FACILITIES DAMAGED BY THE CONTRACTOR'S OPERATIONS SHALL BE EXPEDITIOUSLY REPAIRED OR RECONSTRUCTED TO THE ORIGINAL OR BETTER CONDITION AT THE CONTRACTOR'S EXPENSE WITHOUT ADDITIONAL COMPENSATION.
- CONTRACTOR SHALL MAKE CONNECTIONS TO EXISTING PIPE, EQUIPMENT, ETC. AS REQUIRED AND SHALL PROVIDE ALL FITTINGS, ADAPTERS, AND APPURTENANCES REQUIRED TO MAKE THE CONNECTIONS. PROVIDE ALL SUPPORTS REQUIRED FOR A RIGIDLY SUPPORTED COMPLETE AND WORKING SYSTEM.
- ADJUST ALL VALVE BOXES, VAULTS, PULL BOXES, AND MANHOLES TO FINISHED GRADE UNLESS OTHERWISE SHOWN OR DIRECTED. MANHOLES IN OPEN FIELDS SHALL BE SET TWELVE INCHES ABOVE FINISHED GRADE AND VAULTS SHALL BE SIX INCHES ABOVE FINISHED GRADE.
- THE CONTRACTOR SHALL CONTACT THE PROPER UTILITY REPRESENTATIVE AS FOLLOWS FOR QUESTIONS OR COORDINATION OF CONSTRUCTION RELATED TO EXISTING UTILITIES.
- CONTRACTOR SHALL VERIFY THAT PIPING SHOWN TO BE ABANDONED OR AS ABANDONED PREVIOUSLY IS NO LONGER IN SERVICE. LINES IN SERVICE SHALL BE MAINTAINED UNTIL NO LONGER REQUIRED BY THE PLANT.
- ALL EXISTING PIPES THAT ARE TO BE ABANDONED IN PLACE OR REMOVED MAY NOT BE SHOWN. WHERE PIPING IS TO BE ABANDONED AND MUST REMAIN IN SERVICE UNTIL COMPLETION OF OTHER PHASES OF WORK, AND IT CONFLICTS WITH NEW PIPING, TEMPORARILY RELOCATE PIPING AS REQUIRED TO MAINTAIN SERVICE BY THE PLANT.
- CONTRACTOR SHALL REROUTE THE EXISTING PIPING IF REQUIRED TO MISS THE PROPOSED STRUCTURES. THE EXISTING PIPE SHALL REMAIN IN SERVICE UNTIL NEW PIPING IS READY TO BE PLACED INTO SERVICE. DOWNTIME SHALL BE A MAXIMUM OF 2 HOURS, UNLESS SPECIFIED OR SHOWN OTHERWISE.
- ALL SIDEWALKS TO BE 4'-0" WIDE UNLESS SHOWN OTHERWISE.
- THE CONTRACTOR SHALL TAKE SPECIAL PRECAUTIONS IN THE VICINITY OF ANY OVERHEAD ELECTRIC LINES. CONTRACTOR SHALL ABIDE BY THE NATIONAL ELECTRIC CODE AND ANY REQUIREMENT BY THE OWNER OF THE ELECTRIC LINES.
- PROVIDE ALL SHEETING/SHORING REQUIRED TO PROTECT EXISTING STRUCTURES, PIPES AND FACILITIES.
- CONTRACTOR SHALL VERIFY LOCATION OF ALL ARCHITECTURAL, MECHANICAL, AND ELECTRICAL ITEMS BEFORE PLACING ANY STRUCTURAL STEEL OR CONCRETE. ALSO, STRUCTURAL DIMENSIONS AND OPENINGS CONTROLLED BY ARCHITECTURAL, MECHANICAL, OR ELECTRICAL EQUIPMENT SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION.
- MECHANICAL AND ELECTRICAL EQUIPMENT SUPPORTS, ANCHORAGES, OPENINGS, RECESSES, AND REVEALS NOT SHOWN ON THE STRUCTURAL DRAWINGS, THAT ARE REQUIRED BY OTHER CONTRACT DRAWINGS, SHALL BE PROVIDED PRIOR TO CASTING CONCRETE.
- CONTRACTOR SHALL FOLLOW SPECIFICATION SECTION 01140 REGARDING NOTIFICATION AND COMMUNICATION WITH OWNER AND FACILITY OPERATIONS STAFF FOR START/STOP/TESTING AND INTERRUPTION OF SERVICE.

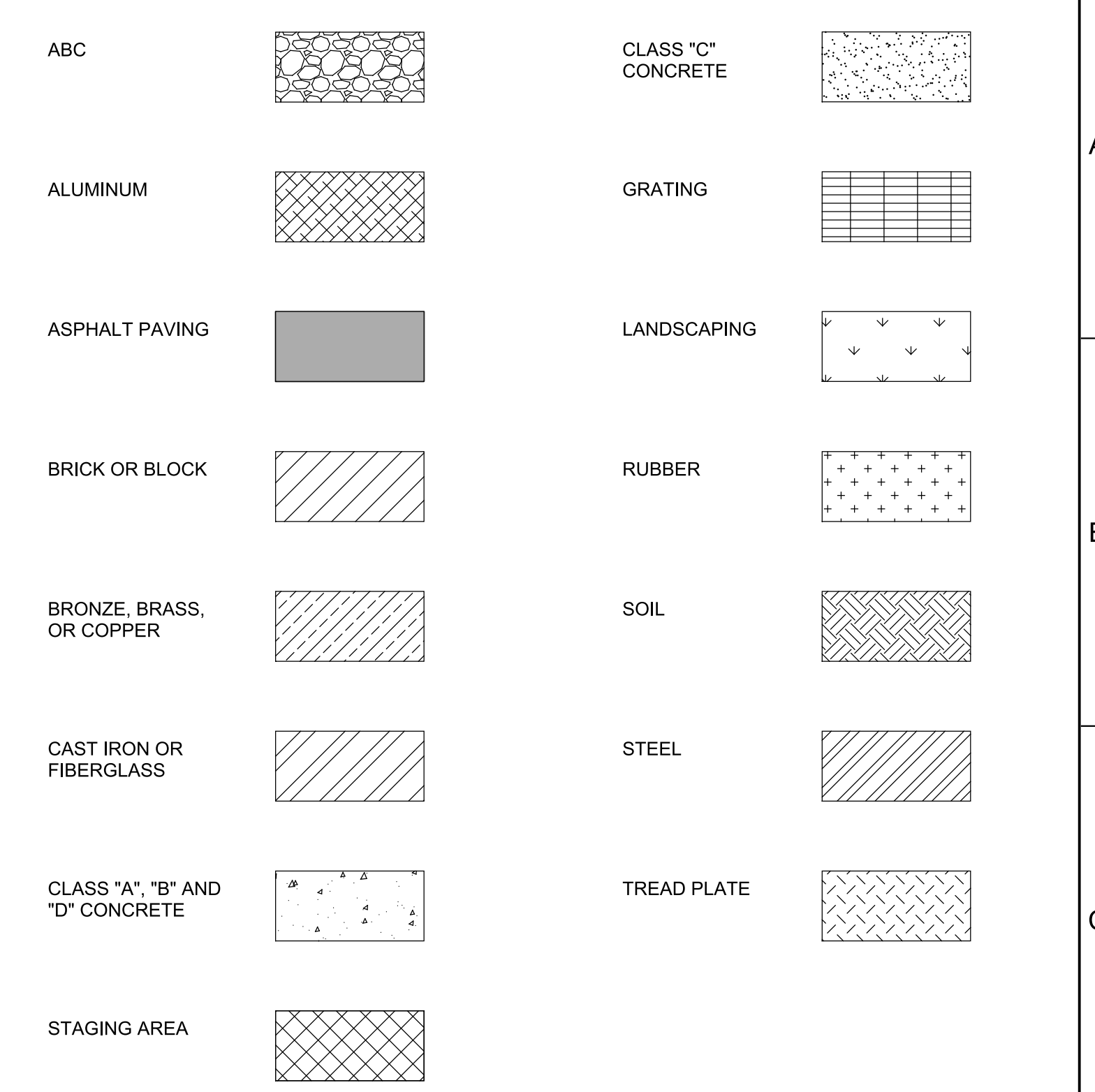
SYMBOLS



DETAIL REFERENCES

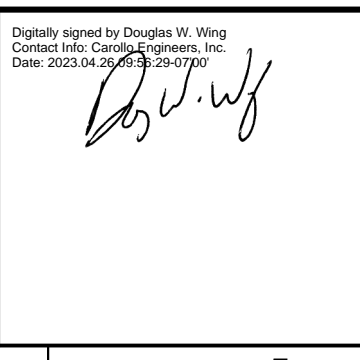


HATCH PATTERNS

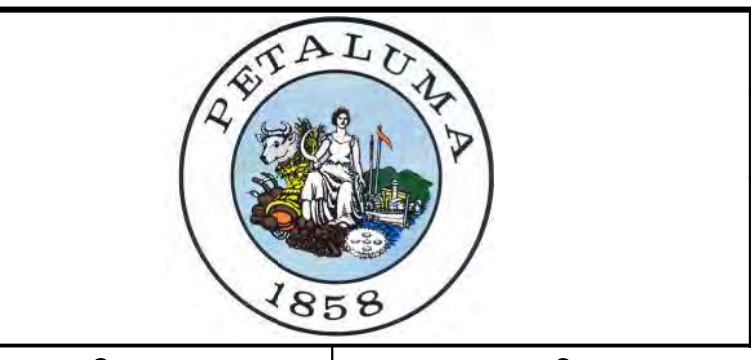


REV	DATE	BY	DESCRIPTION

DESIGNED PK
DRAWN JBR
CHECKED DWW
DATE JANUARY 2023



Digitally signed by Douglas W. Wing
 Contact Info: Carollo Engineers, Inc.
 Date: 2023.04.19 09:59:29 -0700



CITY OF PETALUMA
FILTER ADDITION AND MISC. IMPROVEMENTS PROJECT
 GENERAL
GENERAL NOTES AND SYMBOLOGY

VERIFY SCALES
 BAR IS ONE INCH ON ORIGINAL DRAWING
 0 1"

IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

JOB NO. 7310L.10
DRAWING NO. G08C
 SHEET NO. 8 OF 130

Plot Date: 04-APR-2023 9:21:59 AM
 User: svcPW
 Model: Layout1 ColorTable: gshade.ctb DesignScript: Carollo_Sld_Pen_v0905.pen PlotScale: 1:1
 LAST SAVED BY: tvelch

NOTES	
GENERAL PIPELINE NOTES	
1.	DIMENSIONS TO STRUCTURES, REFERENCED PIPING, PAVING, AND OTHER IMPROVEMENTS IS APPROXIMATE. THE CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS AND CONDITIONS 14 DAYS BEFORE THE CONSTRUCTION BEGINS.
2.	CONTRACTOR SHALL MAINTAIN A MINIMUM CLEARANCE OF 10 FEET HORIZONTAL AND 3 FEET VERTICAL BETWEEN THE SEWER LINES AND EXISTING WATER LINES.
3.	THE CONTRACTOR SHALL MAINTAIN ACCESS TO ALL PROPERTIES ADJACENT TO THE WORK, THROUGHOUT THE CONSTRUCTION PERIOD.
4.	ALL OPEN TRENCHES, WORK AREAS AND SHAFTS SHALL HAVE A SHORING SYSTEM IN ACCORDANCE WITH OSHA, STATE AND LOCAL REQUIREMENTS.
5.	THE CONTRACTOR SHALL COMPLY WITH ALL FEDERAL, STATE, COUNTY, AND LOCAL LAWS AND ORDINANCES RELATING TO THE SAFETY AND CHARACTER OF WORK, EQUIPMENT AND PERSONNEL. THIS INCLUDES BUT IS NOT LIMITED TO SHEETING, SHORING, BRACING, VENTILATION, CONFORMANCE WITH TRAFFIC CONTROL AND MAINTENANCE OF BARRICADES AND WARNING DEVICES.
6.	CONTRACTOR SHALL TAKE ALL PRACTICAL PRECAUTIONS TO MINIMIZE DISTURBANCES TO STREAMS, VEGETATION, TREES AND CROP LANDS. WHEREVER PRACTICAL LEAVE EXISTING TREES AND VEGETATED AREAS UNDISTURBED.
UTILITY NOTES	
1.	EXISTING UTILITIES IN THE PROJECT MAY BE IN A FRAGILE CONDITION. THE CONTRACTOR SHALL EXERCISE NECESSARY CAUTION WHEN WORKING NEAR EXISTING UTILITIES.
2.	PLAN LOCATIONS AND ELEVATIONS OF EXISTING UTILITIES ARE BASED ON RECORD DRAWINGS, POTHOLING AND SURVEY INFORMATION AND ARE CONSIDERED APPROXIMATE ONLY. WHERE NO ELEVATIONS ARE SHOWN, NO INFORMATION WAS AVAILABLE DURING THE DESIGN PERIOD.
3.	SOME UTILITY SERVICES MAY NOT BE SHOWN ON THESE DRAWINGS. THE CONTRACTOR SHALL TAKE NECESSARY MEASURES TO LOCATE AND PROTECT SERVICE DURING CONSTRUCTION.
4.	THE LOCATION, SIZE, AND MATERIALS OF EXISTING UNDERGROUND UTILITIES SHOWN ON THESE DRAWINGS ARE APPROXIMATE AND ARE SHOWN FOR BIDDING PURPOSES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR POT-HOLING TO CONFIRM BURIED PIPING LOCATION / ELEVATION PRIOR TO ANY EXCAVATION ACTIVITIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTION OF EXISTING UTILITIES.
EARTHWORK NOTES	
1.	CLEAR THE CONSTRUCTION AREA OF NATURAL OBSTRUCTIONS EXISTING FOUNDATIONS, BUILDINGS, FENCES, LUMBER, WALLS, STUMPS, BRUSH, WEEDS, RUBBISH, TREES, BOULDERS, AND ANY OTHER ITEMS WHICH INTERFERES WITH CONSTRUCTION OPERATIONS OR ARE DESIGNATED FOR REMOVAL.
2.	GRUB OUT AND DISPOSE OF TREE TRUNKS AND ROOT MATERIAL BELOW THE GROUND SURFACE REMAINING AFTER CLEARING.
3.	STRIP AND STOCKPILE THE TOPSOIL. THE DEPTH OF STRIPPING SHALL BE ESTIMATED TO BE 12-INCHES BUT WILL BE DETERMINED IN THE FIELD AS SOIL CONDITIONS DICTATE.
4.	REPLACE STOCKPILED SOIL AND RESTORE SITE AS SPECIFIED.
5.	ROCK AND AGGREGATE STORAGE AREAS SHALL BE RESTORED BY EXCAVATING ANY SOILS CONTAINING ROCK OR AGGREGATE AND BACKFILLING WITH TOPSOIL. SOIL REMOVED MAY BE USED FOR TRENCH BACKFILL ABOVE THE PIPE ZONE AND 3 FEET BELOW FINISHED GRADE.
6.	PROTECT TREES AND LANDSCAPING UNLESS OTHERWISE NOTED.

LINE WORK	
NEW STRUCTURES	
EXISTING STRUCTURES (SCREENED)	
NEW PIPING (TRIPLE LINES)	
NEW PIPING (SINGLE LINE)	
EXISTING PIPING (TRIPLE LINES) (SCREENED)	
EXISTING PIPING (SINGLE LINE) (SCREENED)	
HIDDEN LINE	
CENTER, MONUMENT, OR SURVEY LINE	
GUARDRAIL	
EXISTING CONTOURS (SCREENED)	
NEW CONTOURS (MAJOR)	
NEW CONTOURS (MINOR)	
NEW FENCE	
EXISTING FENCE (SCREENED)	
REMOVE OR ABANDONED (CROSS HATCHING: FENCE SHOWN AS EXAMPLE)	
POWER POLE & LINE	
PROPERTY LINE OR RIGHT OF WAY	
EDGE OF PAVEMENT	
SLOPE	
NEW ROAD	
FUTURE ROAD	
EXISTING ROAD (SCREENED)	
CURB & GUTTER	
CURB	
ROAD CENTERLINE SWALE (3' WIDE)	
ROAD CROSS GUTTER (10' WIDE)	
FLOWLINE	
FUTURE IMPROVEMENTS	
FUTURE CONSTRUCTION	
GATE	
MATCH LINE	

COORDINATES	
PLANT COORDINATES AT STRUCTURES (OUTSIDE FACE AT FINISHED GRADE)	
COORDINATES (IN FEET)	
ELEVATION/SLOPES	
CONTROL POINT	
SPOT ELEVATION (AT PAVEMENT)	
SPOT ELEVATION (AT DIRT)	
SPOT ELEVATION (AT FLOWLINE)	
SPOT ELEVATION (AT HIGH POINT)	
SPOT ELEVATION (AT TOP CURB)	
SPOT ELEVATION (FINISH ELEV)	
ELEVATION	
SLOPE CALLOUT	
SURFACE SLOPE	
ROADWAY GRADE	
DRAINAGE DITCH OR CHANNEL GRADE	

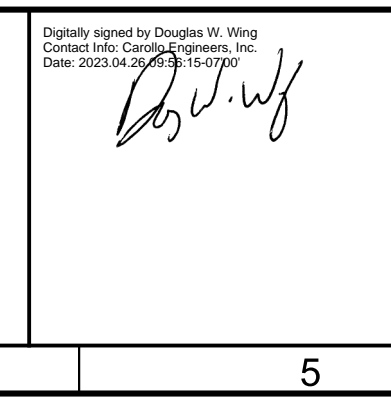
ROADWAY/PIPE CURVES	
ROADWAY/PIPE CURVE	
(SEE TABLE ON EACH GRADING & PAVING OR CIVIL PIPING DWG WITH ROADWAY/PIPE CURVES.)	

SYMBOLS					
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	BENCH MARK		TRANSIT POINT		FLANGE
	VERTICAL CONTROL POINT		ANCHOR POINT		VALVE
	MONUMENT		PARSHALL FLUME		CLOSED VALVE
	SOIL BORING LOCATIONS		GUARD POST		VALVE W/ CONNECTION
	TEST BORING LOCATIONS		HEADWALL		CLOSED VALVE W/ CONNECTION
	PERCOLATION TEST LOCATIONS		ROCK WALL		OPERATOR/ OPERATOR CLOSED
	POTHOLE/ POTHOLE NUMBER		RIP RAP		VALVE W/ OPERATOR
	IRON PIN		SHRUB/HEDGE		CLOSED VALVE W/ OPERATOR
	IRON ROD		TREE		VALVE W/ OPERATOR AND CONNECTION
	DATUM POINT		SIGN/SIGN POST		CLOSED VALVE W/ OPERATOR AND CONNECTION
	LIGHT		LIGHT POLE		VALVE W/ TWO CONNECTIONS
	HIGH LIGHT POLE		TRAFFIC LIGHT POLE		VALVE W/ OPERATOR AND TWO CONNECTIONS
	FLOW ARROW		TRAFFIC LIGHT POLE		CLOSED VALVE W/ OPERATOR AND TWO CONNECTIONS
	FLOW/SLOPE DIRECTION		SINGLE TRAFFIC LIGHT POLE		GATE VALVE W/ BLIND FLANGE AND CONNECTION
	DIRECTION ARROW		GUYED LIGHT POLE		PLUG VALVE
	PROPERTY HOOK		UTILITY POLE		CLOSED PLUG VALVE
	MANHOLE (PLAN)		UTILITY POLE GUY WIRE		PIPE CAP OR CONNECTION
	MANHOLE (PROFILE)		POWER POLE		CAP OR TURN DOWN
	CURB MANHOLE		PA SPEAKER		CROSS
	CATCH BASIN (SQUARE)		2 WAY PA SPEAKER		REDUCER
	CATCH BASIN (ROUND)		3 WAY PA SPEAKER		REDUCER W/ CONNECTION
	DROP INLET		4 WAY PA SPEAKER		REDUCER W/ CONNECTION
	DROP MANHOLE		FIRE HYDRANT - 2 WAY		REDUCER FLANGED
	ELECTRICAL MANHOLE AND PULL BOX		FIRE HYDRANT - 3 WAY		REDUCER W/ FLANGE AND CONNECTION
	PULL BOX		YARD HYDRANT		REDUCER W/ TWO CONNECTIONS
	TELEPHONE PEDESTAL		CLEANOUT		FLANGED TEE
	CABLE TV		AIR RELEASE VALVE		TEE W/ CONNECTIONS
	X JUNCTION BOX		BLOW OFF VALVE		TEE W/ FLANGE AND CONNECTIONS
	I JUNCTION BOX		HOSE BIBB		BURIED VALVE
	POWER TOWER		SERVICE CONNECTION		GAS VALVE OPEN/CLOSED
	GATE		GAS METER		GAS METER

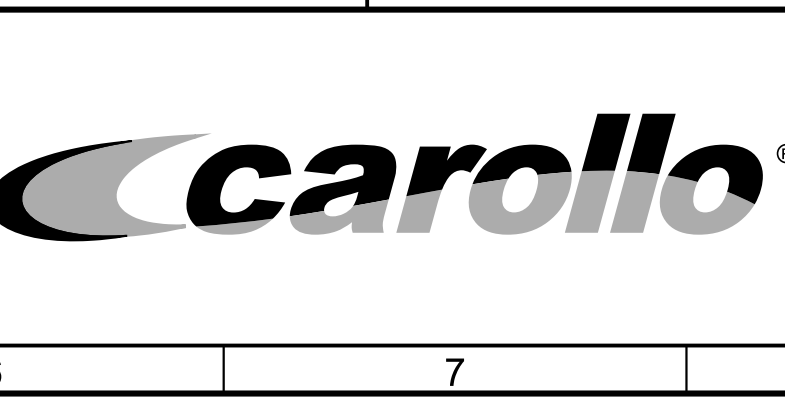
*** ALL SYMBOLS SHOWN AS NEW. EXISTING SYMBOLS ARE SCREENED.

REV	DATE	BY	DESCRIPTION

DESIGNED PK
DRAWN JBR
CHECKED DWW
DATE JANUARY 2023



Digitally signed by Douglas W. Wing
 Contact info: Carollo@carollo.com
 Date: 2023.04.04 09:59:30 -0700



CITY OF PETALUMA		VERIFY SCALES	JOB NO. 7310L.10
FILTER ADDITION AND MISC. IMPROVEMENTS PROJECT		BAR IS ONE INCH ON ORIGINAL DRAWING	DRAWING NO. G09C
GENERAL		0 1"	SHEET NO. 9 OF 130
GENERAL CIVIL SYMBOLOGY		IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY	

Plot Date: 21-APR-2023 8:12:19 AM User: svcpw Model: Layout1 ColorTable: gshade.ctb DesignScript: Carollo_Std_Pen_v0905.pen PlotScale: 1:1 LAST SAVED BY: luy

GENERAL NOTES:

- USE STRUCTURAL DRAWINGS IN CONJUNCTION WITH PROJECT DRAWINGS BY OTHER DISCIPLINES AND WITH THE SPECIFICATIONS.
 - UNLESS DETAILED, SPECIFIED, OR INDICATED OTHERWISE, CONSTRUCTION SHALL BE AS INDICATED IN THE GENERAL NOTES AND TYPICAL DETAILS.
 - PRESENTATION CONVENTIONS FOR STRUCTURAL DRAWINGS:
 - SCREENED LINE WORK INDICATES EXISTING CONDITIONS.
 - WRITTEN DIMENSIONS TAKE PRECEDENCE OVER SCALED SIZES.
 - PLANS ARE TREATED AS HORIZONTAL SECTIONS. (I.E.: "PLAN AT ELEVATION 110" SHOWS CONSTRUCTION AT AND BELOW ELEVATION 110.)
 - VERIFY DIMENSIONS AND CONDITIONS BEFORE BEGINNING WORK. ADVISE ENGINEER IMMEDIATELY OF DISCREPANCIES BETWEEN EXISTING CONDITIONS AND DIMENSIONS, AND INFORMATION SHOWN ON THESE DRAWINGS. CONFIRM THE FOLLOWING BEFORE PREPARATION AND SUBMITTAL OF SHOP DRAWINGS:
 - DIMENSIONS AND WEIGHTS FOR EQUIPMENT SELECTED.
 - SIZES AND LOCATIONS OF EQUIPMENT PADS FOR EQUIPMENT SELECTED.
 - TYPICAL DETAILS ARE INCLUDED ON THE "TS" DRAWINGS.
 - TYPICAL DETAILS ARE INTENDED TO APPLY AT LOCATIONS DESCRIBED BY THEIR TITLES, EVEN WHEN NOT SPECIFICALLY REFERENCED ON THE DRAWINGS.
 - IN STRUCTURAL TYPICAL DETAILS, ORIENTATION OF BARS IN EACH MAT OF REINFORCEMENT (WHETHER "LINES" OR "DOTS" ARE CLOSER TO THE FACE OF THE CONCRETE) IS GENERALLY ARBITRARY. SEE DRAWINGS OF EACH STRUCTURE FOR ORIENTATION REQUIRED AT THAT STRUCTURE.
 - SEE CIVIL DRAWINGS FOR STRUCTURE COORDINATES. POINTS ON THE STRUCTURES TO WHICH SITE COORDINATES REFER ARE SHOWN ON THE STRUCTURAL PLANS.
 - DRAWINGS PREPARED BY OTHER DISCIPLINES INCLUDE OPENINGS, ANCHORS, PIPES, CONDUITS, AND OTHER ITEMS THAT ARE EMBEDDED INTO OR PASS THROUGH STRUCTURES.
 - CONFIRM SIZE AND LOCATIONS OF OPENINGS, PENETRATIONS AND EMBEDMENT FOR ITEMS AND EQUIPMENT FURNISHED.
 - IN GENERAL, OPENINGS, EMBEDMENTS, AND PENETRATIONS LESS THAN 12 INCHES IN DIAMETER ARE NOT SHOWN ON THE STRUCTURAL DRAWINGS.
 - SEE MECHANICAL DRAWINGS FOR DETAILS OF PIPE PENETRATIONS, PIPE SUPPORTS, AND ASSOCIATED STRUCTURAL REQUIREMENTS.
 - SEE MECHANICAL DRAWINGS FOR EQUIPMENT PADS AND PIPE SUPPORTS.
 - SEE ARCHITECTURAL DRAWINGS FOR LOCATIONS AND SIZES OF DOOR AND WINDOW OPENINGS.
- STRUCTURAL DESIGN CRITERIA - GENERAL:**
- SEE DRAWINGS OF INDIVIDUAL STRUCTURES FOR SPECIFIC DESIGN CRITERIA BASED ON THESE OVERALL CRITERIA FOR THE SITE.
- BUILDING CODE:
 - 2022 CALIFORNIA BUILDING CODE (CBC 2022) WITH ASCE 7-16 W/ SUPPLEMENTS 1, 2 AND 3.
 - STRUCTURE RISK CATEGORY: III
 - DEAD LOADS: CALCULATED FOR STRUCTURE SELF-WEIGHT.
 - LIVE LOADS:
 - FLOOR LIVE LOAD: SEE PLANS.
 - GRATING, GRATING PLANKS AND CHECKERED PLATE: 100 PSF (UNO).
 - ROOF LIVE LOAD: SEE PLANS (20 PSF MINIMUM).
 - EQUIPMENT LOADS: SEE PLANS.
 - CONCENTRATED AND IMPACT LOADS: SEE PLANS.
 - FLUID PRESSURE LOADS: 63 PSF/FT (UNO).
 - WIND DESIGN DATA:
 - SPECIAL WIND REGION: NO
 - WIND-BORNE DEBRIS REGION: NO
 - BASIC WIND SPEED (3 SEC GUST, 33 FEET ABOVE GROUND): 99 MPH.
 - EXPOSURE CATEGORY: C.
 - EARTHQUAKE DESIGN DATA:
 - SITE CLASS: D.
 - SEISMIC IMPORTANCE FACTOR, Ie: 1.25
 - SEISMIC DESIGN CATEGORY: D.
 - MAPPED SPECTRAL RESPONSE ACCELERATIONS: S_s = 1.78 g S₁ = 0.677 g
 - SITE COEFFICIENTS: F_a = 1.0 F_v = 1.7**
 - MAXIMUM CONSIDERED ACCELERATIONS: S_{ms} = 1.78 g S_{m1} = 1.151**
 - DESIGN SPECTRAL RESPONSE ACCELERATIONS: S_{ds} = 1.187 g S_{d1} = 0.767**
 - (* 5% DAMPED) (** F_v, S_{m1} AND S_{d1} FOR USE IN CALCULATING T_s ONLY. INCREASE S_{m1} AND S_{d1} BY 50% FOR ALL OTHER APPLICATIONS PER ASCE 7-16 §11.4.8)
 - LONG-PERIOD TRANSITION PERIOD, T_L: 8 SEC.
 - FLOOD LOADS:
 - FLOOD HAZARD AREA: NO
 - RAIN LOADS:
 - DESIGN RAINFALL INTENSITY: i = 1.32 INCHES / HOUR. (100 YEAR/1 HOUR EVENT)
 - CONSTRUCTION LOADS: STRUCTURES HAVE BEEN DESIGNED FOR OPERATING LOADS ON COMPLETED FACILITIES. UNTIL CONSTRUCTION IS COMPLETE AND MEMBERS HAVE ACHIEVED THEIR DESIGN STRENGTH, PROTECT STRUCTURES AS REQUIRED BY SHORING, BRACING, AND BALANCING.

GEOTECHNICAL REPORT / FOUNDATION DESIGN CRITERIA:

- GEOTECHNICAL INVESTIGATION REPORT:

TITLE: PROPOSED TERTIARY PROCESS UPGRADES
 PREPARED BY: KLEINFELDER
 REPORT NO: 20193762.004A DATED: APRIL 23rd, 2020.
 - FOUNDATION DESIGNS ARE BASED ON RECOMMENDATIONS IN THE GEOTECHNICAL INVESTIGATION REPORT.
 - NET ALLOWABLE BEARING PRESSURE SEE PLANS.
 - LATERAL EARTH PRESSURE (UNO):

	ABOVE GW	BELOW GW
ULTIMATE ACTIVE (PSF/FT):	45	85
ALLOWABLE PASSIVE (PSF/FT):	250*	125*

ALLOWABLE COEFFICIENT OF FRICTION: 0.25*
 *1/3 INCREASE FOR LOAD COMBINATIONS INCLUDING SEISMIC OR WIND
 - GROUNDWATER
 DESIGN EL: 10.50
 SEISMIC/ WIND DESIGN EL: 5.50
- TYPICAL STRUCTURAL MATERIALS:**
- MATERIALS SHALL CONFORM TO THE FOLLOWING REQUIREMENTS UNLESS OTHERWISE INDICATED ON THE DRAWINGS.
 - SEE PROJECT SPECIFICATIONS AND NOTES ON DRAWINGS OF SPECIFIC STRUCTURES FOR DETAILED AND LOCATION-SPECIFIC REQUIREMENTS.
- REINFORCING STEEL (FOR CONCRETE AND MASONRY):**
- DEFORMED BARS:
 - TYPICAL: ASTM A615, GRADE 60.
 - WHERE INDICATED ON THE DRAWINGS: ASTM A706.
 - WELDED WIRE FABRIC: ASTM A1064.
- CONCRETE:**
- NORMAL DENSITY.
 - MINIMUM SPECIFIED CONCRETE COMPRESSIVE STRENGTH, f_c (AT 28 DAYS UNO).
 - STRUCTURES: "CLASS A" OR "CLASS B" f_c = 4000 PSI.
 - FILL: "CLASS C" f_c = 2500 PSI.
 - ELECTRICAL DUCT ENCASEMENT: "CLASS CE" f_c = 2500 PSI.
- STRUCTURAL STEEL:**
- SECTIONS:
 - SHAPES W, WT: ASTM A992 (F_y = 50 KSI)
 - SHAPES S, ST, M, MT, C, MC, L: ASTM A36 (F_y = 36 KSI)
 - SHAPES HP: ASTM A572, GRADE 50 (F_y = 50 KSI)
 - PLATES AND BARS: ASTM A36 (F_y = 36 KSI)
 - PIPES: ASTM A53, GRADE B (F_y = 35 KSI)
 - HOLLOW STRUCTURAL SECTIONS:
 - ROUND: ASTM A500, GRADE C (F_y = 46 KSI)
 - SQUARE AND RECTANGULAR: ASTM A500, GRADE C (F_y = 50 KSI)
 - CONNECTIONS:
 - BOLTS - STEEL TO STEEL:
 - ASTM F3125 GRADE A325 HIGH-STRENGTH BOLTS, WITH LOAD INDICATOR WASHERS.
 - BOLTS - STEEL TO CONCRETE OR MASONRY:
 - ANCHOR BOLTS WITH HEX FORGED HEAD. ASTM F593, STAINLESS TYPE 316 (304)
 - ASTM F1554, GRADE 36 GALVANIZED.
 - WELDS - SHIELDED METAL ARC PROCESS USING E70-XX ELECTRODES.
- STAINLESS STEEL:**
- ANSI TYPE 316/316L EXCEPT WHERE TYPE 304/304L IS INDICATED ON THE DRAWINGS.
 - SECTIONS: SHAPES AND BARS: ASTM A276.
 - BOLTED CONNECTIONS - BOLTS AND ANCHOR BOLTS:
 - MATCH ALLOY OF THE STRUCTURAL MEMBERS CONNECTED.
 - TYPE 316/316L: ASTM F593, GRADE B8M, CLASS 1, HEAVY HEX.
 - TYPE 304/304L: ASTM F593, GRADE B8, CLASS 1, HEAVY HEX.
 - WELDED CONNECTIONS:
 - TYPE 316L: E316L-XX ELECTRODES.
 - TYPE 308L: E308L-XX ELECTRODES.
- STRUCTURAL ALUMINUM:**
- SECTIONS:
 - SHAPES: ASTM B308, ALLOY 6061-T6.
 - SHEET AND PLATE: ASTM B209, ALLOY 6061-T6.
 - BOLTED CONNECTIONS - BOLTS AND ANCHOR BOLTS:
 - STAINLESS STEEL - TYPE 316, ASTM A193, GRADE B8M, CLASS 1, HEAVY HEX.
 - WELDED CONNECTIONS:
 - GAS METAL ARC (MIG) OR GAS TUNGSTEN ARC (TIG) PROCESS USING FILLER ALLOY 4043 ELECTRODES.

CONSTRUCTION:

- CONFORM TO THE FOLLOWING REQUIREMENTS UNLESS OTHERWISE INDICATED ON THE DRAWINGS.
- EXCAVATION AND BACKFILLING:**
- EXPOSE AND PREPARE SUBGRADE AS SHOWN ON THE DRAWINGS AND SPECIFIED. OBTAIN GEOTECHNICAL ENGINEER'S OBSERVATION OF SUBGRADE SURFACES, AS EXPOSED AND AS PREPARED, BEFORE PROCEEDING WITH FOUNDATION CONSTRUCTION.
 - DO NOT PLACE BACKFILL AGAINST WALLS UNTIL STRUCTURES SUPPORTING THE TOP OF THE WALL ARE IN PLACE, ARE COMPLETE, AND (IN THE CASE OF CONCRETE) HAVE CURED TO THEIR MINIMUM SPECIFIED 28-DAY COMPRESSIVE STRENGTH.
 - WHERE BACKFILL MUST BE PLACED AGAINST WALLS BEFORE STRUCTURES ABOVE ARE COMPLETE, PROVIDE BRACING FOR WALLS. KEEP BRACING IN PLACE UNTIL THE STRUCTURE ABOVE IS COMPLETE AND (IN THE CASE OF CONCRETE) HAS CURED TO ITS MINIMUM SPECIFIED 28-DAY COMPRESSIVE STRENGTH.
- CONCRETE:**
- SEE S101/TYP FOR CONCRETE NOTES, INCLUDING CLEAR COVER AND LAP SPlice LENGTH REQUIREMENTS FOR REINFORCING.
 - SUBMIT LOCATIONS OF CONSTRUCTION JOINTS NOT SHOWN ON THE DRAWINGS FOR ACCEPTANCE BY THE ENGINEER BEFORE FORM LAYOUT.
 - PROVIDE CHAMFER AT EXPOSED EDGES OF CAST-IN-PLACE CONCRETE. SEE SPECIFICATION 03102 FOR CHAMFERS.
 - PROVIDE REINFORCING:
 - AT CORNERS AND JUNCTIONS - AS INDICATED IN S144/TYP, SUPPLEMENT WITH ADDED BARS WHERE INDICATED ON THE DRAWINGS.
 - AT OPENINGS - AS INDICATED IN S180/TYP.
 - WELDING OF REINFORCING IS NOT PERMITTED UNLESS DETAILED ON THE DRAWINGS OR ACCEPTED IN ADVANCE BY THE ENGINEER.
 - MAINTAIN MINIMUM 3 INCHES CLEAR CONCRETE COVER BETWEEN REINFORCING AND EMBEDMENTS.
 - FINISH CONCRETE AS SPECIFIED IN SECTION 03366.
 - CONCRETE PADS
 - EQUIPMENT PAD SEE S302/TYP.
 - HOUSEKEEPING PAD FOR ELECTRICAL EQUIPMENT SEE S350/TYP.
- STEEL, STAINLESS STEEL, AND ALUMINUM - CONNECTIONS:**
- BOLTED:
 - MADE USING 3/4-INCH DIAMETER BOLTS.
 - HAVING A MINIMUM OF 2 BOLTS, SPACED NOT CLOSER THAN 3 INCHES ON CENTER.
 - WITH A DISTANCE OF AT LEAST 1 1/2 INCHES FROM CENTER OF BOLT TO ANY EDGE OF A PLATE OR STRUCTURAL ELEMENT.
 - WELDED:
 - FILLET WELDS: PER AWS CODE BASED ON THE THICKNESS OF THE MATERIALS BEING JOINED, AND FULL LENGTH OF THE JOINT.
 - INTERFACE BETWEEN MATERIALS:
 - AT BOLTED CONNECTIONS THAT INCLUDE DIFFERENT METALS (E.G.: STEEL AND STAINLESS STEEL, OR ALUMINUM AND STAINLESS STEEL) PROVIDE ISOLATING SLEEVES AND WASHERS AS SPECIFIED IN SECTION 05190.
 - WHERE ALUMINUM IS IN CONTACT WITH MASONRY OR CONCRETE, COAT ALUMINUM SURFACES AS SPECIFIED IN SECTION 09960.
 - POST-INSTALLED ANCHORS IN CONCRETE AND MASONRY:
 - INSTALL IN FULL COMPLIANCE WITH ACCEPTED BUILDING CODE EVALUATION REPORT AND MANUFACTURER'S INSTRUCTIONS.
 - DO NOT CUT, DAMAGE, OR INTERRUPT EXISTING REINFORCEMENT TO INSTALL ANCHORS. USE NON-DESTRUCTIVE TESTING EQUIPMENT TO IDENTIFY LOCATIONS OF REINFORCEMENT IN MEMBERS BEFORE DRILLING HOLES FOR ANCHORS.
- METAL FABRICATIONS:**
- HANDRAILS AND GUARDRAILS:
 - ALUMINUM, EXCEPT WHERE OTHER MATERIALS ARE NOTED.
 - GRATING AND GRATING PLANKS:
 - ALUMINUM WITH TYPE 316 STAINLESS STEEL FASTENERS, UNLESS OTHERWISE NOTED.
 - GRATING AND ITS SEATS OR SUPPORTS SHALL BE OF THE SAME MATERIAL.
 - UNLESS INDICATED ON THE DRAWINGS AS "REMOVABLE GRATING", SECURELY FASTEN GRATING TO SUPPORTS AS INDICATED IN S559/TYP.

PRE-ENGINEERED METAL BUILDING SYSTEMS

- THE PRE-ENGINEERED METAL BUILDING/CANOPY SHALL BE DESIGNED IN ACCORDANCE WITH SPECIFICATION SECTION 13122. LOAD CRITERIA SHALL BE AS INDICATED IN THE GENERAL STRUCTURAL NOTES, DRAWINGS, AND IN THE SPECIFICATIONS.
 - THE COLLATERAL LOAD LISTED IN THE SPECIFICATION INCLUDES SPRINKLERS, DUCTS, LIGHTING, AND MISCELLANEOUS ELECTRICAL/PIPING; IT DOES NOT INCLUDE ANY OF THE ROOF MEMBERS, ROOF PANELS, METAL DECK, LINER PANELS, INSULATION, ETC., NOR DOES IT INCLUDE SPECIFIC POINT LOADS FROM PIPE OR EQUIPMENT SUPPORTS SHOWN ON THE DRAWINGS.
 - PRE-ENGINEERED METAL BUILDING/CANOPY MANUFACTURER SHALL SUBMIT A COMPLETE SET OF FACTORED AND UNFACTORED LOADS (AND LOAD COMBINATIONS) IMPARTED TO THE FOUNDATION SYSTEMS BASED ON THE DESIGN OF THE METAL BUILDING.
 - ALL STRUCTURAL STEEL WHICH CONNECTS TO OR INTERFACES WITH THE METAL BUILDING/CANOPY SHALL BE PROVIDED AS PART OF THE METAL BUILDING SYSTEM.
 - THE MANUFACTURER SHALL PLACE ROOF AND VERTICAL CROSS BRACING WHERE SHOWN ON THE DRAWINGS AND SO IT WILL NOT INTERFERE WITH ACCESS OPENINGS.
 - ANCHOR BOLTS SHALL BE DESIGNED BY THE CONTRACTOR TO RESIST ALL LOADS TRANSFERRED FROM THE METAL BUILDING/CANOPY TO THE FOUNDATION. BOLTS SHALL BE DESIGNED IN ACCORDANCE WITH ACI 318 CHAPTER 17.
 - REFER TO AISC STEEL DESIGN GUIDE SERIES 3 "SERVICEABILITY DESIGN CONSIDERATIONS FOR STEEL BUILDINGS".
 - METAL BUILDING/CANOPY SHALL BE DESIGNED TO LIMIT THE MAXIMUM OVERALL LATERAL BUILDING DRIFT IN ANY DIRECTION TO H/100 FOR LOAD COMBINATIONS INCLUDING SEISMIC AND H/500 FOR LOAD COMBINATIONS INCLUDING WIND UNLESS INDICATED OTHERWISE ON THE DRAWINGS, WHERE 'H' IS THE MAXIMUM HEIGHT OF THE BUILDING/CANOPY.
 - MINOR VARIATIONS IN THE METAL BUILDING/CANOPY MAY BE SUBMITTED FOR APPROVAL IF REQUIRED TO CONFORM TO THE METAL BUILDING SYSTEM SUPPLIER'S STANDARD SHAPES OR SIZES. THE CLEAR HEIGHT AND OTHER CLEAR DIMENSIONS SHALL NOT BE REDUCED.
 - THE FOUNDATION SHALL NOT BE POURED UNTIL THE METAL BUILDING SYSTEM, INCLUDING ANCHOR BOLTS, IS APPROVED BY THE ENGINEER.
- SPECIAL INSPECTION:**
- SPECIAL INSPECTION IS REQUIRED FOR THE FOLLOWING STRUCTURAL MATERIALS AND CONSTRUCTION. SEE SPECIFICATION SECTION 01455 FOR DETAILS.
 - DIVISION 2 SITE CONSTRUCTION (EARTHWORK)
 - EXCAVATION DEPTH.
 - ADEQUACY OF EXPOSED SURFACE TO PROVIDE REQUIRED SUPPORT.
 - PREPARATION OF SOILS/SURFACES SUPPORTING CONSTRUCTION.
 - FILL AND BACKFILL.
 - DIVISION 3 CONCRETE:
 - LOCATIONS.
 - FORMWORK AND MEMBER SIZES.
 - REINFORCING STEEL.
 - ANCHORS: CAST-IN AND POST-INSTALLED.
 - CONCRETE MIX AND PLACEMENT.
 - PROTECTION AND CURING PROCEDURES.
 - DIVISION 4 METALS
 - GENERAL ALL METALS:
 - MEMBER LOCATIONS.
 - MEMBER SIZES/TYPES.
 - ANCHORS - CAST-IN AND BUILT-IN ANCHOR BOLTS.
 - ANCHORS - POST-INSTALLED MECHANICAL AND ADHESIVE.
 - STRUCTURAL ALUMINUM.
 - BOLTING.
 - WELDING.
- STRUCTURAL SYMBOLS:**
- SEE SHEET G08 FOR KEY TO DRAWING TITLES AND SECTION CUTS, AND FOR DEFINITION OF MATERIALS SHADING (HATCH) PATTERNS.
 - WELDING: SYMBOLS: IN ACCORDANCE WITH AMERICAN WELDING SOCIETY (AWS) A2.4.

STRUCTURAL ABBREVIATIONS:

- SEE SHEET G07 FOR GENERAL LIST OF ABBREVIATIONS USED ON DRAWINGS.
 - ABBREVIATIONS FOR NAMES OF TECHNICAL GROUPS MAY BE FOUND IN THE PROJECT SPECIFICATIONS.
 - STRUCTURAL MEMBERS:
 - STEEL: ABBREVIATIONS AND DESIGNATIONS ARE IN ACCORDANCE WITH THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION'S STEEL CONSTRUCTION MANUAL, CURRENT EDITION.
 - ALUMINUM: ABBREVIATIONS AND DESIGNATIONS ARE IN ACCORDANCE WITH THE ALUMINUM ASSOCIATION'S ALUMINUM DESIGN MANUAL, CURRENT EDITION.
 - ABBREVIATIONS FOR STRUCTURAL DRAWINGS: WHEN USED ON THE STRUCTURAL DRAWINGS, THE FOLLOWING ABBREVIATIONS HAVE THE MEANINGS LISTED.

REINFORCEMENT:		OTHER:	
B.O.	BOTTOM OF	L	ANGLE
EF	EACH FACE	PL	PLATE
I.F.	INSIDE FACE	CJ	CONSTRUCTION JOINT
O.F.	OUTSIDE FACE	T&B	TOP AND BOTTOM
T.O.	TOP OF	EW	EACH WAY
#	NUMBER	AL	ALUMINUM
(REINFORCING BAR SIZE)			
- DEFERRED DESIGN SUBMITTALS**
- AS DEFINED IN THE CALIFORNIA BUILDING CODE, DEFERRED DESIGN SUBMITTALS ARE PORTIONS OF THE DESIGN THAT ARE NOT SUBMITTED AT THE TIME OF PERMIT APPLICATION, AND THAT ARE TO BE REVIEWED BY THE REGISTERED DESIGN PROFESSIONAL AND SUBSEQUENTLY SUBMITTED TO THE BUILDING OFFICIAL.
- | DEFERRED SUBMITTALS | |
|---------------------------------------|---------------------|
| ITEM | SPECIFICATION |
| EQUIPMENT ANCHORAGE | 01612, 01614, 05190 |
| CONCRETE MIX DESIGN | 03300 |
| GRATING AND PLANK GRATING | 05500 |
| GUARDRAIL | 05500 |
| PRE-ENGINEERED METAL BUILDING SYSTEMS | 13122 |

REV	DATE	BY	DESCRIPTION

DESIGNED
EJW

DRAWN
JG

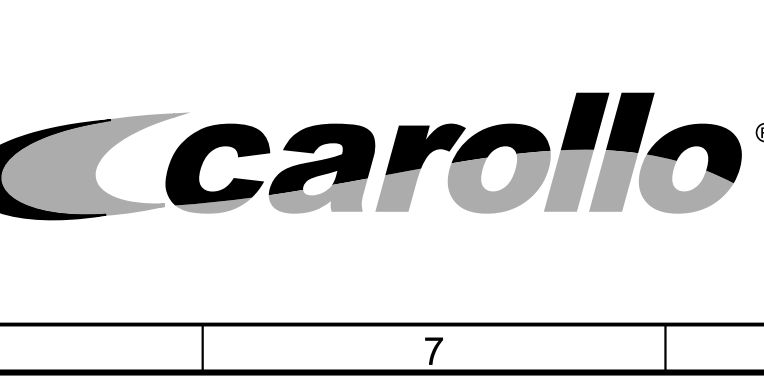
CHECKED
JAD

DATE
JANUARY 2023

Quality approved by Eric J. Wilkins
 Contact Info: Carollo Engineers, Inc.
 Date: 1/24/2023 07:00:00 AM

Eric Wilkins

REGISTERED PROFESSIONAL ENGINEER
 ERIC J. WILKINS
 No. 6370
 STRUCTURAL
 STATE OF CALIFORNIA



CITY OF PETALUMA

FILTER ADDITION AND MISC. IMPROVEMENTS PROJECT

GENERAL

GENERAL STRUCTURAL NOTES - I

VERIFY SCALES

BAR IS ONE INCH ON ORIGINAL DRAWING

0 1"

IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

JOB NO.
7310L.10

DRAWING NO.
G10C

SHEET NO.
10 OF 130

Plot Date: 03-APR-2023 4:51:28 PM
 User: svcPW
 Model: Layout1 ColorTable: gshade.ctb DesignScript: Carollo_Std_Pen_v0905.pen PlotScale: 1:1
 LAST SAVED BY: lweilch

SPECIAL INSPECTION:

1. SPECIAL INSPECTION SHALL BE IN ACCORDANCE WITH THE CALIFORNIA BUILDING CODE CHAPTER 17. SPECIAL INSPECTION IS REQUIRED FOR THE FOLLOWING STRUCTURAL MATERIALS AND CONSTRUCTION. SEE SPECIFICATION SECTION 01455 FOR DETAILS.

2. SPECIAL INSPECTION TABLES:

A: REQUIRED SPECIAL INSPECTIONS AND TESTS OF CONCRETE CONSTRUCTION

TYPE	CONTINUOUS SPECIAL INSPECT	PERIODIC SPECIAL INSPECT	REFERENCED STANDARD (NOTE 1)	IBC REFERENCE
1. INSPECT REINFORCEMENT, INCLUDING PRESTRESSING TENDONS, AND VERIFY PLACEMENT.	-	X	ACI 318 CH. 20, 25.2, 25.3, 26.6.1 - 26.6.3	1908.4
2. REINFORCING BAR WELDING: A. VERIFY WELDABILITY OF REINFORCING BARS OTHER THAN ASTM A706; B. INSPECT SINGLE-PASS FILLET WELDS, MAXIMUM 5/16"; C. INSPECT ALL OTHER WELDS.	- X	X X	AWS D1.4 ACI 318: 26.6.4	-
3. INSPECT ANCHORS CAST IN CONCRETE.	-	X	ACI 318: 17.8.2	-
4. INSPECT ANCHORS POST-INSTALLED IN HARDENED CONCRETE MEMBER (NOTE 2). A. ADHESIVE ANCHORS INSTALLED IN HORIZONTALLY OR UPWARDLY INCLINED ORIENTATIONS TO RESIST SUSTAINED TENSION LOADS. B. MECHANICAL ANCHORS AND ADHESIVE ANCHORS NOT DEFINED IN 4. A.	X	X	ACI 318: 17.8.2.4 ACI 318: 17.8.2	-
5. VERIFY USE OF REQUIRED DESIGN MIX.	-	X	ACI 318: CH. 19, 26.4.3, 26.4.4	1904.1, 1904.2, 1908.2, 1908.3
6. PRIOR TO CONCRETE PLACEMENT, FABRICATE SPECIMENS FOR STRENGTH TESTS, PERFORM SLUMP AND AIR CONTENT TESTS, AND DETERMINE THE TEMPERATURE OF THE CONCRETE.	X	-	ASTM C172 ASTM C31 ACI 318: 26.5, 26.12	1908.10
7. INSPECT CONCRETE AND SHOTCRETE PLACEMENT FOR PROPER APPLICATION TECHNIQUES.	X	-	ACI 318: 26.5	1908.6, 1908.7, 1908.8
8. VERIFY MAINTENANCE OF SPECIFIED CURING TEMPERATURE AND TECHNIQUES.	-	X	ACI 318: 26.5.3 - 26.5.5	1908.9
9. INSPECT PRESTRESSED CONCRETE FOR: A. APPLICATION OF PRESTRESSING FORCES; B. GROUTING OF BONDED PRESTRESSING TENDONS.	X X	- -	ACI 318: 26.10	-
10. INSPECT ERECTION OF PRECAST CONCRETE MEMBERS.	-	X	ACI 318: CH. 26.9	-
11. VERIFY IN-SITU CONCRETE STRENGTH, PRIOR TO STRESSING OF TENDONS IN POST-TENSIONED CONCRETE AND PRIOR TO REMOVAL OF SHORES AND FORMS FROM BEAM AND STRUCTURAL SLABS.	-	X	ACI 318: 26.11.2	-
12. INSPECT FORMWORK FOR SHAPE, LOCATIONS, AND DIMENSIONS OF THE CONCRETE MEMBER BEING FORMED.	-	X	ACI 318: 26.11.1 (NOTE 2)	-

NOTES:

(1) WHERE APPLICABLE, SEE ALSO CBC SECTION 1705.12, SPECIAL INSPECTION FOR SEISMIC RESISTANCE.

(2) SPECIFIC REQUIREMENTS FOR SPECIAL INSPECTION SHALL BE INCLUDED IN THE RESEARCH REPORT FOR THE ANCHOR ISSUED BY AN APPROVED SOURCE IN ACCORDANCE WITH 17.8.2 IN ACI 318 OR OTHER QUALIFICATION PROCEDURES. WHERE SPECIFIC REQUIREMENTS ARE NOT PROVIDED, SPECIAL INSPECTION REQUIREMENTS SHALL BE SPECIFIED BY THE REGISTERED DESIGN PROFESSIONAL AND SHALL BE APPROVED BY THE BUILDING OFFICIAL PRIOR TO THE COMMENCEMENT OF THE WORK.

B: ESSENTIAL ARCHITECTURAL, MECHANICAL AND ELECTRICAL INSPECTION SCHEDULE

VERIFICATION AND INSPECTION	REFERENCE STANDARD	FREQUENCY OF INSPECTION	
		CONTINUOUS DURING TASK LISTED	PERIODIC DURING TASK LISTED
1. ANCHORAGE OF ELECTRICAL EQUIPMENT FOR EMERGENCY STANDBY POWER.	-	-	X
2. ANCHORAGE OF OTHER ELECTRICAL OR MECHANICAL EQUIPMENT OVER 1,000 LBS. ON FLOORS OR ROOFS.	-	-	X
3. ANCHORAGE OF DUCTS GREATER THAN 6 S.F. IN CROSS-SECTION.	-	-	X
4. ANCHORAGE OF PIPELINES GREATER THAN 8" IN DIAMETER.	-	-	X
5. STEEL STORAGE RACKS SUPPORTING PIPELINES.	-	-	X

C: REQUIRED SPECIAL INSPECTIONS AND TESTS OF SOIL

TYPE	CONTINUOUS SPECIAL INSPECTION	PERIODIC SPECIAL INSPECTION
1. VERIFY MATERIALS BELOW 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 CONTROLLED FILL, INSPECT SUBGRADE AND VERIFY THAT SITE HAS BEEN PREPARED PROPERLY.	-	X

REV	DATE	BY	DESCRIPTION

DESIGNED
EJW
DRAWN
JG
CHECKED
JAD
DATE
JANUARY 2023



Digitally signed by Eric J. Wilkins
Contact Info: Carollo Engineers, Inc.
Date: 2023.04.07 09:51:02-0700

Eric Wilkins



CITY OF PETALUMA
FILTER ADDITION AND MISC. IMPROVEMENTS PROJECT
GENERAL
GENERAL STRUCTURAL NOTES - II

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1" 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

JOB NO.
7310L.10
DRAWING NO.
G11C
SHEET NO.
11 OF 130

Plot Date: 04-APR-2023 9:23:09 AM

User: svcPW

Model: Layout1 ColorTable: gshade.ctb DesignScript: Carollo_Std_Pen_v0905.pen PlotScale: 1:1

LAST SAVED BY: iweilch

PIPING SYMBOLS

MECHANICAL SYMBOLS

FLOW STREAM IDENTIFIER

DOUBLE LINE	SINGLE LINE	DESCRIPTION	DOUBLE LINE	SINGLE LINE	DESCRIPTION
		WELDED JOINT			GATE VALVE
		GROOVED END JOINT			KNIFE GATE VALVE
		FLANGED JOINT			BUTTERFLY VALVE
		HUB & SPIGOT JOINT (RUBBER GASKET)			CHARACTERIZED BALL CONTROL VALVE
		PUSH-ON JOINT (RESTRAINED)			BALL VALVE
		ADAPTER SIDE GROOVED END ADAPTER FLANGE			GLOBE VALVE
		FLANGED COUPLING ADAPTER			3-WAY GLOBE TYPE MIXING VALVE
		FLANGED COUPLING ADAPTER WITH THRUST TIES			DIAPHRAGM VALVE
		FLEXIBLE COUPLING			PLUG VALVE
		FLEXIBLE COUPLING WITH THRUST TIES			LUBRICATED PLUG VALVE
		METAL BELLOWS EXP JOINT			ECCENTRIC PLUG VALVE
		ELASTOMER BELLOWS EXP JOINT			SWING CHECK VALVE
		FLEXIBLE COUPLING ADAPTER			WAFER CHECK VALVE
		DISMANTLING JOINT			PINCH VALVE
		RESTRAINED FLEX COUPLING			BALL CHECK VALVE
		EXPANSION COMPENSATOR			DUAL CHECK VALVE
		ELBOW UP			SILENT CHECK VALVE
		ELBOW DOWN			MUD VALVE (PLAN VIEW)
		TEE UP			NEEDLE VALVE
		TEE DOWN			CHECK BACKFLOW PREVENTER
		LATERAL UP			PIPE MATERIAL CHANGE
		LATERAL DOWN			
		CONCENTRIC REDUCER			
		ECCENTRIC REDUCER TF, BF			
		UNION			
		CAP			
		ANCHOR			
		ELBOW, 90 DEGREE			
		CROSS			
		TEE			
		ELBOW, 45 DEGREE			
		ELBOW, 22.5 DEGREE			
		ELBOW, 11.25 DEGREE			
		LATERAL			

SINGLE LINE	DESCRIPTION	SINGLE LINE	DESCRIPTION	SINGLE LINE	DESCRIPTION
	AIR OR CHEMICAL DIFFUSER		PRIMARY LEVEL ELEMENT: RADAR		STRAINER: WYE TYPE WITH BLOWOFF
	QUICK DISCONNECT HIGH PRESSURE AIR OR FLUSHING		PRIMARY LEVEL ELEMENT: ULTRASONIC		THERMOMETER
	BATCHMETER		PRIMARY FLOW ELEMENT: FLUME		VALVE: ANGLE
	AIR VENT		PRIMARY FLOW ELEMENT: X = C - CORIOLIS X = M - MAGNETIC X = P - PROPELLER X = PT - PITOT TUBE X = R - ROTAMETER X = T - TURBINE X = TH - THERMAL X = U - ULTRASONIC X = D - DENSITY		VALVE: AIR RELIEF
	BASKET STRAINER		PRIMARY FLOW ELEMENT: ORIFICE PLATE		VALVE: BALL
	BLOWER		PRIMARY FLOW ELEMENT: VENTURI TUBE		VALVE: BALL CHECK
	CALIBRATION COLUMN		PRIMARY FLOW ELEMENT: WEIR		VALVE: BUTTERFLY
	COMPRESSOR/TURBINE		PULSATION DAMPENER		VALVE: CONE
	COMPRESSOR: RECIPROCATING		PUMP: CENTRIFUGAL		VALVE: DIAPHRAGM
	DIAPHRAGM SEAL		PUMP: DIAPHRAGM		VALVE: FLAPPER CHECK
	DRAIN		PUMP: METERING		VALVE: FOUR WAY
	EJECTOR OR EDUCTOR		PUMP: PLUNGER		VALVE: GATE
	ELECTRIC MOTOR		PUMP: PERISTALTIC TUBE METERING		VALVE: GLOBE
	EQUIPMENT DRAIN		PUMP: PROGRESSIVE CAVITY		VALVE: HOSE
	EXPANSION JOINT, FLEXIBLE VIBRATION JOINT		PUMP: RECIPROCATING		VALVE: NEEDLE
	FAN: EXHAUST/SUPPLY		PUMP: ROTARY		VALVE: PINCH
	FILTER		PUMP: SCREW		VALVE: PLUG CONCENTRIC
	FIRE HYDRANT		PUMP: SUBMERSIBLE		VALVE: PLUG ECCENTRIC
	FLAME ARRESTER		PUMP: VERTICAL LIFT		VALVE: PRESSURE RELIEF PRESSURE-REDUCING REGULATOR
	FLAME ARRESTER WITH THERMALLY OPERATED VALVE		PIPE REDUCER: CONCENTRIC		VALVE: SWING CHECK
	FLOOR DRAIN		PIPE REDUCER: ECCENTRIC		VALVE: TELESCOPING
	FLOW SWITCH		ROTARY CHEMICAL FEEDER		VALVE: THREE WAY AIR OPERATED
	GAUGE: PRESSURE		RUPTURE DISK		VALVE: THREE WAY MOTOR OPERATED
	GAUGE: DIFFERENTIAL PRESSURE		SAMPLE PORT		VALVE: THREE WAY SOLENOID OPERATED
	WEIR		SIGHT GLASS		VALVE: VACUUM
	MIXER		SLIDE GATE		BACKPRESSURE REGULATOR SELF-CONTAINED
	OIL OR MOISTURE TRAP		SLUICE GATE		BACKPRESSURE REGULATOR W/ EXTERNAL PRESSURE TAP
	PRIMARY LEVEL ELEMENT: BUBBLER		STRAINER: WYE TYPE		PRESSURE-REDUCING REGULATOR SELF-CONTAINED
	PRIMARY LEVEL ELEMENT: ELECTRODE				PRESSURE-REDUCING REGULATOR W/ EXTERNAL PRESSURE TAP
	PRIMARY LEVEL ELEMENT: FLOAT SWITCH				
	PRIMARY LEVEL ELEMENT: FLUID				
	PRIMARY LEVEL ELEMENT: INVERTED COLUMN				

ABBREVIATION	SERVICE
AL	ALUM
CD	CHEMICAL DRAIN
D	DRAIN
FBA	FILTER BACKWASH AIR
FE	FINAL EFFLUENT
FEF	FILTER EFFLUENT
FI	FILTER INFLUENT
FI	FILTRATE
FRW	FILTER REJECT WATER
FTW	FILTER TO WASTE
HCS	HYPOCHLORITE SOLUTION
HPA	HIGH PRESSURE AIR
LPA	LOW PRESSURE AIR
PD	PLANT DRAIN
POL	POLYMER
POLS	POLYMER SOLUTION
PSD	PLANT STORM DRAIN
SA	SAMPLE
TPE	TERTIARY PLANT EFFLUENT
2W	NON-POTABLE WATER
3W	UTILITY WATER

REV	DATE	BY	DESCRIPTION

DESIGNED PK
DRAWN JBR
CHECKED DWW
DATE JANUARY 2023

Digitally signed by Douglas W. Wieg
Contact Info: CarolloImprovements, Inc.
Date: 2023.04.04 09:23:09 -0700



CITY OF PETALUMA
FILTER ADDITION AND MISC. IMPROVEMENTS PROJECT
 GENERAL
GENERAL MECHANICAL SYMBOLOGY

VERIFY SCALES
 BAR IS ONE INCH ON ORIGINAL DRAWING
 0 1" 1"
 IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

JOB NO. 7310L.10
DRAWING NO. G12C
 SHEET NO. 12 OF 130

Plot Date: 04-APR-2023 9:23:04 AM
User: svcPW
Model: Layout1 ColorTable: gshade.ctb DesignScript: Carollo_Std_Pen_v0905.pen PlotScale: 1:1
LAST SAVED BY: ivelich

1	2	3	4	5	6	7	8	9	10	11	12	13
GENERAL MECHANICAL NOTES: 1. GENERAL MECHANICAL NOTES APPLY TO ALL MECHANICAL DRAWINGS. 2. THE EXISTING PUMP AND PIPING LAYOUT IS APPROXIMATE AND HAS BEEN MODIFIED SUBSEQUENT TO THE GENERATION OF THE BACKGROUND DRAWINGS. CONTRACTOR SHALL VERIFY ALL EQUIPMENT AND PIPING CONFIGURATIONS AND SIZES. 3. NOT ALL REQUIRED FITTINGS ARE SHOWN ON THE DRAWINGS. THE CONTRACTOR SHALL PROVIDE ALL THE FITTINGS SHOWN ON THE DRAWINGS AND ADDITIONAL FITTINGS AS REQUIRED FOR PIPING ARRANGEMENTS SHOWN ON THE DRAWINGS AND PER EQUIPMENT FURNISHED. 4. SUCTION AND DISCHARGE PIPING OF EQUIPMENT SHALL BE INSTALLED AND SUPPORTED IN SUCH A MANNER SO THAT THEY SHALL NOT IMPART STRAIN ON PUMPS AND PUMP BASE. 5. PIPING IS SHOWN DIAGRAMMATICALLY ON THE DRAWINGS. NOT EVERY OFFSET AND FITTING OR STRUCTURAL DIFFICULTY THAT MAY BE ENCOUNTERED HAS BEEN SHOWN ON THE DRAWINGS. THE CONTRACTOR SHALL MAKE MODIFICATIONS TO PIPING ALIGNMENT WHERE NECESSARY. MODIFICATIONS SHALL BE DONE AT NO ADDITIONAL COST TO THE OWNER AND SHALL BE DONE AFTER OWNER'S APPROVAL. 6. NOT ALL ITEMS ARE SHOWN IN ALL PLANS, SECTIONS, DETAILS, SCHEMATICS, ISOMETRICS, AND P&ID DRAWINGS. THE CONTRACTOR SHALL PROVIDE ALL THE ITEMS EVEN IF THEY ARE SHOWN AT ANY ONE LOCATION ON THE DRAWINGS OR SPECIFIED IN THE SPECIFICATIONS ONLY. 7. THE CONTRACTOR SHALL PROVIDE ALL THE ITEMS REQUIRED PER SPECIFICATIONS WHETHER OR NOT THEY ARE SHOWN ON THE DRAWINGS. 8. IN CASE OF A CONFLICT BETWEEN THE DRAWINGS, THE MOST STRINGENT REQUIREMENTS SHALL GOVERN UNLESS SPECIFICALLY APPROVED OTHERWISE BY THE ENGINEER. 9. SIZES OF EQUIPMENT PADS INDICATED ON THE DRAWINGS ARE APPROXIMATE. EXACT DIMENSIONS SHALL BE DETERMINED BY THE CONTRACTOR FOR THE EQUIPMENT. ALL FLOOR MOUNTED EQUIPMENT SHALL BE SET ON CONCRETE PADS AS SHOWN ON THE STRUCTURAL DRAWINGS. 10. OVERALL PHYSICAL SIZE OF THE EQUIPMENT SELECTED BY THE CONTRACTOR SHALL NOT EXCEED THE SIZE SHOWN ON THE DRAWINGS OR SPECIFIED IN THE SPECIFICATIONS. CLEARANCES, DIMENSIONS, OR SCALED DISTANCES SHOWN ON THE DRAWINGS SHALL BE MAINTAINED. ALL PROPOSED CHANGES AND ADDITIONS SHALL BE SUBMITTED FOR OWNER'S REVIEW AND SHALL BE DONE ONLY IF APPROVED BY OWNER AND AT NO ADDITIONAL COST TO THE OWNER. THE CONTRACTOR SHALL BEAR ALL COSTS OF THE ASSOCIATED CHANGES AND ADDITIONS INCLUDING CHANGES TO BUILDINGS AND STRUCTURE SIZES AND OWNER'S ENGINEERING COSTS. 11. WARNING SIGNS SHALL BE PROVIDED PER SPECIFICATIONS ON FRONT AND BACK OF ALL REMOTELY CONTROLLED EQUIPMENT. 12. SEE STRUCTURAL DRAWINGS FOR ALL EQUIPMENT BASE DETAILS. 13. PIPING JOINTS SHALL BE PER PIPE SCHEDULE AND IN ACCORDANCE WITH THE SPECIFICATIONS. 14. REFER TO SPECIFICATION SECTION 01140 AND OTHER APPLICABLE SECTIONS FOR WORK RESTRICTIONS AND CONSTRAINTS. 15. VERIFY LOCATIONS, SIZES, AND CONNECTION MATERIALS OF EXISTING PIPING AND EQUIPMENT BEFORE FABRICATING NEW PIPE. 16. ALL PIPING UNDER STRUCTURES OR CONCRETE SLABS SHALL BE CONCRETE ENCASED BELOW THE STRUCTURE AND BEYOND THE EDGE OF FOOTING TO A DIMENSION EQUAL TO THE DISTANCE FROM BOTTOM OF FOOTING TO TOP OF PIPE, UNLESS NOTED OTHERWISE, PER TYPICAL DETAIL CP119/TYP, WHETHER SHOWN OR NOT. 17. ALL FLEXIBLE COUPLINGS SHALL BE RESTRAINED PER APPLICABLE TYPICAL DETAILS P110/TYP, UNLESS SPECIFICALLY NOTED OTHERWISE. 18. THE FIRST PIPE JOINT OUT OF STRUCTURES OR OUT OF CONCRETE ENCASEMENTS SHALL BE AT THE EDGE OF WALL OR WITHIN TWO (2) FEET FROM EDGE OF WALL OR END OF CONCRETE ENCASEMENT. THE NEXT TWO (2) JOINTS SHALL BE MAXIMUM OF FOUR (4) FEET ON CENTER UNLESS NOTED OTHERWISE. 19. WHETHER SHOWN ON THE DRAWINGS OR NOT, PROVIDE PIPE INSULATION PER INSULATION SCHEDULE. 20. PLUG VALVE INSTALLATION: FOR ORIENTATION OF SEAT AND VALVE STEM, REFER TO SPECIFICATIONS. 21. ALL STAINLESS STEEL SHALL BE TYPE 316 OR TYPE 316L UNLESS SPECIFICALLY NOTED OTHERWISE. 22. UNLESS SPECIFICALLY NOTED OTHERWISE, PROVIDE STAINLESS STEEL PIPE SUPPORTS THAT ARE PICKLED AND PASSIVATED FOR STAINLESS STEEL PIPING. 23. REFER TO P&ID DRAWINGS FOR INSTALLATION OF INSTRUMENTS. REFER TO CIVIL DRAWINGS FOR CATHODIC PROTECTION NOTES. CATHODIC PROTECTION NOTES APPLY TO ALL MECHANICAL AND HVAC DRAWINGS.			GENERAL CIVIL NOTES: 1. TYPES, LOCATIONS, SIZES, AND DEPTHS OF EXISTING UNDERGROUND FACILITIES AS SHOWN ON THESE PLANS WERE OBTAINED FROM SOURCES OF VARYING RELIABILITY. A REASONABLE EFFORT HAS BEEN MADE TO LOCATE AND DELINEATE ALL KNOWN UNDERGROUND FACILITIES. HOWEVER, OWNER AND ENGINEER CAN ASSUME NO RESPONSIBILITY FOR COMPLETENESS OR ACCURACY OF DELINEATION OF SUCH UNDERGROUND FACILITIES, NOR FOR EXISTENCE OF OTHER BURIED OBJECTS OR FACILITIES WHICH ARE ENCOUNTERED BUT WHICH ARE NOT SHOWN ON THESE PLANS. CONTRACTOR IS RESPONSIBLE FOR DETERMINING EXACT LOCATION OF THOSE FACILITIES SHOWN AND ANY WHICH MAY EXIST AND ARE NOT SHOWN PRIOR TO COMMENCEMENT OF ANY WORK. CONTRACTOR SHALL EXPOSE ALL UNDERGROUND FACILITIES THAT ARE TO BE CONNECTED TO OR THAT ARE IN THE PATH OF PROPOSED IMPROVEMENTS FOR VERIFICATION OF LOCATION AND ELEVATION. CONTRACTOR SHALL DETERMINE LOCATION OF CONFLICTS, IF ANY, PRIOR TO COMMENCING CONSTRUCTION OF THAT PORTION OF WORK THAT WOULD BE AFFECTED BY A CONFLICT WITH EXISTING FACILITIES. MINOR CHANGES (<5 FT HORIZONTAL, <1 FT VERTICAL), IN ACTUAL LOCATION, DEPTH, AND CONFIGURATION OF EXISTING PIPING SYSTEMS DOES NOT CONSTITUTE A CHANGED SITE CONDITION AND THEREFORE NO EXTRA PAYMENT WILL BE ALLOWED. 2. ALL PIPING BEYOND THE LIMITS OF EXCAVATION FOR STRUCTURES SHALL BE TRENCHED PER DETAIL CP111/TYP AND SPECIFICATIONS. 3. UNLESS SHOWN OTHERWISE, THE MINIMUM COVER OR BURY FROM FINISH GRADE TO TOP OF PIPING SHALL BE 36". 4. UNLESS OTHERWISE INDICATED ON THE DRAWINGS, ALL PIPING SHALL HAVE A MINIMUM OF 12" CLEARANCE FROM NEAREST PIPELINE. 5. WARNING TAPE OVER BURIED PIPING SHALL BE PROVIDED IN ACCORDANCE WITH SPECIFICATION SECTION 15076. 6. LOCATION SHOWN FOR ALL NEW PIPING AND CONNECTIONS TO EXISTING PIPING IS APPROXIMATE AND DEPENDS ON LOCATION OF EXISTING PIPING AND OTHER IMPROVEMENTS. CONTRACTOR IS REQUIRED TO FOLLOW ALIGNMENT SHOWN AS CLOSELY AS POSSIBLE AFTER DETERMINING EXACT LOCATION OF EXISTING FACILITIES. 7. COORDINATE ALL PIPING WITH SITE ELECTRICAL WORK. DO NOT START PIPING UNTIL ELECTRICAL CONDUITS AND DUCT BANKS ARE LOCATED. 8. ALL PAVING, LANDSCAPING, PIPING, AND OTHER EXISTING FACILITIES NOT DESIGNATED FOR REMOVAL/DEMOLITION DURING CONSTRUCTION OF NEW FACILITIES TO BE PROTECTED IN PLACE OR REPLACED IN KIND. 9. SELECT CONSTRUCTION EQUIPMENT TO MINIMIZE DAMAGE TO EXISTING PAVEMENT AT PROJECT SITE AND AT ALL ROADS USED TO MOVE MATERIAL AND EQUIPMENT TO AND FROM PROJECT. REPLACE DAMAGED ASPHALT CONCRETE PAVEMENT IN ACCORDANCE WITH CONTRACT DOCUMENTS. ALL PAVEMENT, INCLUDING ASPHALT CONCRETE (AC) AND PORTLAND CEMENT CONCRETE (PCC) PAVING, SHALL BE SAW CUT PRIOR TO INSTALLATION OF PAVEMENT PATCH. ROUGH EDGES THAT DEVELOP DURING CONSTRUCTION SHALL BE SAW CUT PRIOR TO INSTALLATION OF PAVEMENT PATCH. 10. COMPLY WITH ALL STATE AND COUNTY LAWS AND ORDINANCES RELATING TO SAFETY AND CHARACTER OF WORK, EQUIPMENT, AND LABOR PERSONNEL. THIS SHALL INCLUDE, BUT NOT LIMITED TO, SHORING OF TRENCHES, VENTILATION OF CONFINED SPACES, CONFORMANCE TO TRAFFIC CONTROL REQUIREMENTS, INCLUDING PROVISION AND MAINTENANCE OF BARRICADES AND PREPARATION AND IMPLEMENTATION OF TRAFFIC CONTROL PLANS AS REQUIRED. 11. ARRANGE FOR ALL REQUIRED INSPECTION. PRESENCE OR ABSENCE OF AN INSPECTOR WILL NOT RELIEVE CONTRACTOR OF FULL RESPONSIBILITY FOR PROPER PERFORMANCE OF WORK. CONTRACTOR WILL BE REQUIRED TO UNCOVER WORK PERFORMED WITHOUT PROPER INSPECTION. 12. SHOWN WORK TO BE RESTRICTED TO LIMITS OF OWNERS PROPERTY, TEMPORARY CONSTRUCTION EASEMENTS, PERMANENT EASEMENTS, AND RIGHTS-OF-WAYS. 13. CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING MATERIAL. 14. WHEN EXCAVATION IS REQUIRED AROUND EXISTING UTILITIES, THOSE EXISTING UTILITIES SHALL BE SUPPORTED USING STEEL BEAMS OR OTHER SUITABLE SUPPORTS. 15. ALL STANDARD STREET MONUMENTS, LOT CORNER PIPES, AND OTHER PERMANENT MONUMENTS DISTURBED DURING THE PROCESS OF CONSTRUCTION SHALL BE REPLACED AND A RECORD OF SURVEY OR CORNER RECORD PER SECTION 8771 OF THE PROFESSIONAL LAND SURVEYOR'S ACT FILED BEFORE ACCEPTANCE OF THE IMPROVEMENTS BY THE CITY. COPIES OF ANY RECORD OF SURVEY OR CORNER RECORDS SHALL BE SUBMITTED TO THE CITY. 16. CONTRACTOR SHALL KEEP UP-TO-DATE A COMPLETE RECORD SET OF PRINTS OF THE CONTRACT DRAWINGS SHOWING EVERY CHANGE FROM THE ORIGINAL DRAWINGS MADE DURING THE COURSE OF CONSTRUCTION INCLUDING EXACT LOCATION, SIZES, MATERIALS, AND EQUIPMENT. A COMPLETE SET OF CORRECTED AND COMPLETED RECORD DRAWING PRINTS SHALL BE SUBMITTED TO THE ENGINEER PRIOR TO FINAL ACCEPTANCE FOR REVIEW AND APPROVAL BY THE ENGINEER. CONTRACTOR TO PROVIDE AS-BUILTS IN ELECTRONIC PDF OR CADD FORMAT WITH ALL CHANGES NOTED. 17. CONTRACTOR SHALL COORDINATE UTILITY INFORMATION SHOWN ON THE PLANS WITH INSTALLATION OF PG&E, CABLE, TELEPHONE, AND/OR JOINT TRENCH LAYOUT AND DETAILS. 18. IT IS THE CONTRACTOR'S RESPONSIBILITY TO POT HOLE AND/OR UNCOVER AND EXPOSE EXISTING UTILITIES AT CROSSING LOCATIONS. CONTRACTOR TO PROTECT ALL EXISTING UTILITIES AND SERVICE LATERALS FROM DAMAGE DUE TO CONTRACTOR'S OPERATIONS. ANY AND ALL UTILITY SERVICE LATERALS THAT ARE DAMAGED DURING CONSTRUCTION SHALL BE REPLACED TO THE SATISFACTION OF THE CITY ENGINEER. 19. IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY THE LOCATION OF ALL EXISTING UTILITIES WITH THE APPROPRIATE AGENCIES. 20. THE EXISTING UTILITIES CROSSING NEW PIPELINES ARE SHOWN ACCORDING TO THE BEST AVAILABLE INFORMATION. THE CONTRACTOR SHALL VERIFY THE TYPE, SIZE, LOCATION, AND DEPTH OF ALL THE UTILITY CROSSINGS (BOTH MAINS AND LATERALS) ARE CORRECT AS SHOWN. NO GUARANTEE IS MADE THAT ALL EXISTING UTILITIES (BOTH - MAINS AND LATERALS) ARE SHOWN. 21. CONTRACTOR SHALL FAMILIARIZE HIMSELF WITH THE STATE OF CALIFORNIA BEST MANAGEMENT PRACTICES HANDBOOK FOR APPLICABLE EROSION CONTROL MEASURES AND EMPLOY ITS PROVISIONS THROUGHOUT ALL CONSTRUCTION. 22. ALL CONSTRUCTION MATERIALS, EQUIPMENT, STORAGE, STOCKPILING, AND STAGING MUST BE DONE ON-SITE AND THE PUBLIC RIGHT-OF-WAY/STREET MUST BE KEPT CLEAR AND FREE OF DEBRIS.			GENERAL CIVIL NOTES (CONT) : 23. ALL STATIONING SHOWN IS APPROXIMATE. CONTRACTOR SHALL VERIFY LENGTHS IN FIELD PRIOR TO FABRICATION OF PIPING AND SUBMIT SHOP DRAWINGS FOR REVIEW. 24. ALL CLEAN OUTS SHALL BE CONSTRUCTED PER DETAIL CP411/TYP. RESTRAINED JOINTS SHALL BE PROVIDED INSTEAD OF THRUST BLOCKS. USE TYPE 1, 2, OR 3 AS REQUIRED, UNLESS NOTED OTHERWISE ON THE DRAWING. 25. REFER TO SPECIFICATION SECTION 01140 AND OTHER APPLICABLE SECTIONS FOR WORK RESTRICTIONS AND CONSTRAINTS. 26. TIE-IN TO EXISTING SYSTEMS SHALL BE MADE WITHOUT INTERRUPTION OF EXISTING SERVICE, UNLESS NOTED OTHERWISE. CONTRACTOR SHALL REFER TO SPECIFICATION SECTION 01140 AND SUBMIT A PROPOSED SCHEDULE OF INTERRUPTION OF SERVICE IN ACCORDANCE WITH THE SPECIFICATIONS. 27. THE CONTRACTOR SHALL REPLACE IN KIND, OR REPAIR EXISTING ITEMS DAMAGED BY THE CONTRACTOR'S ACTIVITIES. NOT ALL THE EXISTING ITEMS ARE SHOWN ON THE DRAWINGS. THE DRAWINGS OF THE EXISTING ITEMS ARE AVAILABLE FROM THE OWNER ON REQUEST. SUBMISSION OF A BID SHALL BE CONSIDERED PROOF THE CONTRACTOR HAS REVIEWED THE DRAWING OF ALL THE EXISTING ITEMS. 28. THE CONTRACTOR SHALL AT ALL TIMES MAINTAIN ADEQUATE DRAINAGE AT THE SITE. WATER SHALL NOT BE ALLOWED TO POND OR STAND DUE TO THE CONTRACTORS ACTIVITIES. 29. REPLACE SIGNS, POSTS AND MARKERS REMOVED OR DISTURBED DURING CONSTRUCTION TO THEIR ORIGINAL LOCATION AND CONDITIONS.						

DESIGNED PK						CITY OF PETALUMA						VERIFY SCALES	JOB NO. 7310L.10
DRAWN JBR						FILTER ADDITION AND MISC. IMPROVEMENTS PROJECT						BAR IS ONE INCH ON ORIGINAL DRAWING	DRAWING NO. G13C
CHECKED DWW			GENERAL						0  1"	IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY	SHEET NO. 13 OF 130		
DATE			GENERAL MECHANICAL AND CIVIL NOTES										
REV	DATE	BY	DESCRIPTION										
1													
2													
3													
4													
5													
6													
7													
8													
9													
10													
11													
12													
13													

Plot Date: 03-APR-2023 4:45:58 PM

User: svcPW

PlotScale: 1:1

Model: Layout1 ColorTable: gshade.ctb DesignScript: Carollo_Std_Pen_v0905.pen

LAST SAVED BY: mvelch

HVAC NOTES

- SIZES OF EQUIPMENT PADS INDICATED ON THE DRAWINGS ARE APPROXIMATE. EXACT DIMENSIONS SHALL BE DETERMINED BY THE CONTRACTOR FOR THE EQUIPMENT FURNISHED. ALL FLOOR MOUNTED EQUIPMENT SHALL BE SET ON CONCRETE PADS CONFORMING TO DETAILS SHOWN ON THE TYPICAL STRUCTURAL DRAWINGS.
- DIELECTRIC COUPLINGS, FLANGES OR UNIONS SHALL BE INSTALLED AT ALL CONNECTIONS OF COPPER PIPE TO OTHER TYPES OF METALLIC PIPING.
- HVAC PIPING AND DUCTWORK DRAWINGS DO NOT SHOW ALL DRAINS, VENTS, OFFSETS AND FITTINGS ETC. REQUIRED FOR THE COMPLETE SYSTEM. SMALL PIPING IS SHOWN APPROXIMATELY TO SCALE BUT NOT EVERY FITTING AND OFFSET IS SHOWN. THE CONTRACTOR SHALL FURNISH, INSTALL AND TEST ALL HVAC SYSTEMS TO PROVIDE THE COMPLETE SYSTEM.
- UNLESS OTHERWISE SHOWN ON THE DRAWINGS ALL FLOOR SLAB AND WALL PENETRATIONS SHALL BE AS SHOWN ON THE TYPICAL DETAILS.
- NOT ALL AND ONLY CERTAIN TYPES OF SUPPORTS ARE SHOWN ON THE HVAC DRAWINGS. UNLESS OTHERWISE DETAILED ON THE DRAWINGS ALL PIPE AND DUCT SUPPORTS SHALL BE DESIGNED, FURNISHED AND INSTALLED BY THE CONTRACTOR AS SPECIFIED.
- THIS IS A GENERAL LIST OF SYMBOLS. NOT ALL ITEMS SHOWN HERE APPEAR ON CONTRACT DRAWINGS.
- TYPICAL DETAILS SHALL BE USED FOR ALL PERMANENT WORK EVEN THOUGH THEY ARE NOT CALLED OUT AT ALL LOCATIONS WHERE THEY APPLY.
- PROVIDE TURNING VANES IN ALL ELBOWS. (SHOWN OR NOT)
- INSTALL HEATING, VENTILATING AND AIR CONDITIONING EQUIPMENT AND DUCTWORK TO AVOID INTERFERENCES WITH STRUCTURE, PIPING, EQUIPMENT, CONDUIT, LIGHTING, ETC. UNLESS OTHERWISE INDICATED WITH A BOTTOM OF DUCT ELEVATION, ALL DUCTWORK SHALL BE ROUTED AS DIRECTED BY OWNER. MINIMUM HEIGHT SHALL BE 8'-0" ABOVE FINISHED FLOOR UNLESS OTHERWISE INDICATED ON THE DRAWINGS. SHOP DRAWINGS SHALL INCLUDE DUCT LAYOUT AND VERIFICATION THAT COORDINATION HAS BEEN PERFORMED WITH OTHER TRADES.
- DUCTWORK SHALL BE FABRICATED, REINFORCED, SUPPORTED, AND SEALED FOR OPERATING PRESSURES INDICATED IN SCHEDULES FOR THE EQUIPMENT IT SERVES. ALL DUCTWORK SHALL HAVE A MINIMUM SMACNA PRESSURE CLASSIFICATION OF TWO INCHES UNLESS NOTED OTHERWISE.
- DUCT SIZES INDICATED ARE CLEAR DIMENSIONS INSIDE THE DUCT OR DUCT LINING.
- AIRTIGHT ACCESS DOORS SHALL BE PROVIDED TO ALLOW INSPECTION OF ALL CONTROL DAMPERS AND FILTERS. THE ACCESS DOOR SHALL BE OF A SIZE SUITABLE FOR THE DUCTWORK DIMENSIONS AND SHALL NOT BE LESS THAN 12"x12" UNLESS OTHERWISE INDICATED.
- THE LOCATION OF PIPING AND VALVES TO THE AIR HANDLING EQUIPMENT SHALL NOT INTERFERE WITH FILTER REMOVAL OR AIR HANDLING EQUIPMENT SERVICING.
- DUCT CONNECTIONS TO EQUIPMENT AND PIPING SIZES TO EQUIPMENT SUPPORTS SHALL BE VERIFIED AND ADJUSTED TO MATCH ACTUAL EQUIPMENT AT NO ADDITIONAL COST TO OWNER.

DUCTWORK SYMBOLS

FEATURE	SYMBOL
DIRECTION OF FLOW	
DUCT SIZE- FIRST NUMBER IS SIDE SHOWN	
ROUND DUCT	
DUCT SECTION, POSITIVE PRESS FIRST NUMBER IS TOP	
DUCT SECTION, NEGATIVE PRESS FIRST NUMBER IS TOP	
SIDE MOUNT DEVICE	
ELEVATION CHANGE (R) RISE, (D) DROP	
ACCESS DOOR	
BOTTOM MOUNT DEVICE REGISTER, GRILLE, DIFFUSER OR DUCT TAKEOFF	
FLEXIBLE CONNECTION	
FLEXIBLE DUCT	
DUCT INSULATION	
TURNING VANES	
RECTANGULAR TO RECTANGULAR TRANSITION	
RECTANGULAR TO ROUND TRANSITION	
POSITIVE PRESSURE DUCT - ELBOW TURNED UP (USE ONE DIAGONAL FOR NEGATIVE PRESSURE)	
POSITIVE PRESSURE DUCT - ELBOW TURNED DOWN (USE ONE DIAGONAL FOR NEGATIVE PRESSURE)	
SMOKE DETECTOR CONFIRM ORIENTATION OF INSTALLATION	
DAMPERS	
BACKDRAFT	
BALANCING	
FIRE W/ ACCESS DOOR	
MOTORIZED	
SMOKE CONFIRM ORIENTATION OF INSTALLATION	
COMBINATION SMOKE AND FIRE CONFIRM ORIENTATION OF INSTALLATION	

EQUIPMENT SYMBOLS

FEATURE	SYMBOL
A/C OR HEAT PUMP COMPRESSOR	
CENTRIFUGAL FAN	
CONTROL PANEL	
COOLING COIL	
DIRECT EXPANSION COIL	
DUCT SMOKE DETECTOR	
ELECTRIC HEATER	
FILTER	
AIR FLOW SWITCH	
GAS HEATER	
HUMIDISTAT	
INLINE/AXIAL FAN	
MOTOR OPERATED VALVE	
ROOF/SIDEWALL FAN	
ROOF VENT OR ROOF FAN	
SOLENOID VALVE	
THERMOSTAT 60" ABOVE FINISH FLOOR	
UNIT HEATER (HORIZONTAL TYPE)	
UNIT HEATER (VERTICAL TYPE)	
PRESSURE DIFFERENTIAL SWITCH	

REGISTERS, GRILLES & LOUVERS SYMBOLS

FEATURE	SYMBOL
LOUVER - PLAN	
LOUVER - SECTION	
TRANSFER GRILLE	
TO SPACE	
FROM SPACE	
SUPPLY DIFFUSER OR GRILLE ARROWS INDICATE FLOW DIRECTION	
RETURN DIFFUSER OR GRILLE ARROWS INDICATE FLOW DIRECTION	
EXHAUST DIFFUSER OR GRILLE ARROWS INDICATE FLOW DIRECTION	

LEGEND FOR REGISTERS & GRILLES

TYPE OF REGISTER OR GRILLE (AS DESCRIBED IN SPECIFICATIONS)

BOOT (IF REQ'D)

NECK SIZE

SR-1(B)/12x12

400/4

CFM

FLOW PATTERN; SIDEWALL-ADJUSTABLE; C-CORNER

	SUPPLY	RETURN	EXHAUST
DUCT THRU ROOF OR FLOOR			
DUCT UP			
DUCT DOWN			

NOTE: THIS IS A GENERAL LIST OF SYMBOLS AND ABBREVIATIONS. NOT ALL ITEMS SHOWN HERE APPEAR ON THE CONTRACT DRAWINGS.

ABBREVIATIONS

A	@	AT ABOVE FINISHED FLOOR
	AF	AIR FLOW SWITCH
B	BD	BALANCING DAMPER
	BDD	BACKDRAFT DAMPER
	BOD	BOTTOM OF DUCT
C	CO	CARBON MONOXIDE DETECTOR
D	DG	DOOR GRILLE
E	EA	EXHAUST AIR
F	FA	FOUL AIR
	FD	FIRE DAMPER
N	NC	NORMALLY CLOSED
	NO	NORMALLY OPEN
O	OA	OUTSIDE AIR
R	RA	RETURN AIR
	RR	RETURN REGISTER OR GRILLE
S	SA	SUPPLY AIR
	SD	SMOKE DAMPER OR SMOKE DETECTOR
	SFD	SMOKE & FIRE DAMPER COMBINATION
	SR	SUPPLY REGISTER, GRILLE OR DIFFUSER

REV	DATE	BY	DESCRIPTION

DESIGNED	DWW
DRAWN	DPF
CHECKED	CAG
DATE	JANUARY 2023



Digitally signed by Douglas W. Wifong
 DN: cn=Douglas W. Wifong, o=Carollo Engineering, Inc., ou=Carollo Engineering, Inc., email=Douglas.W.Wifong@carollo.com, c=US
 Date: 2023.04.10 16:07:59 -0700



CITY OF PETALUMA
 FILTER ADDITION AND MISC. IMPROVEMENTS PROJECT
 GENERAL
 GENERAL HVAC SYMBOLOGY AND NOTES

VERIFY SCALES
 BAR IS ONE INCH ON ORIGINAL DRAWING
 0 1" 1"
 IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

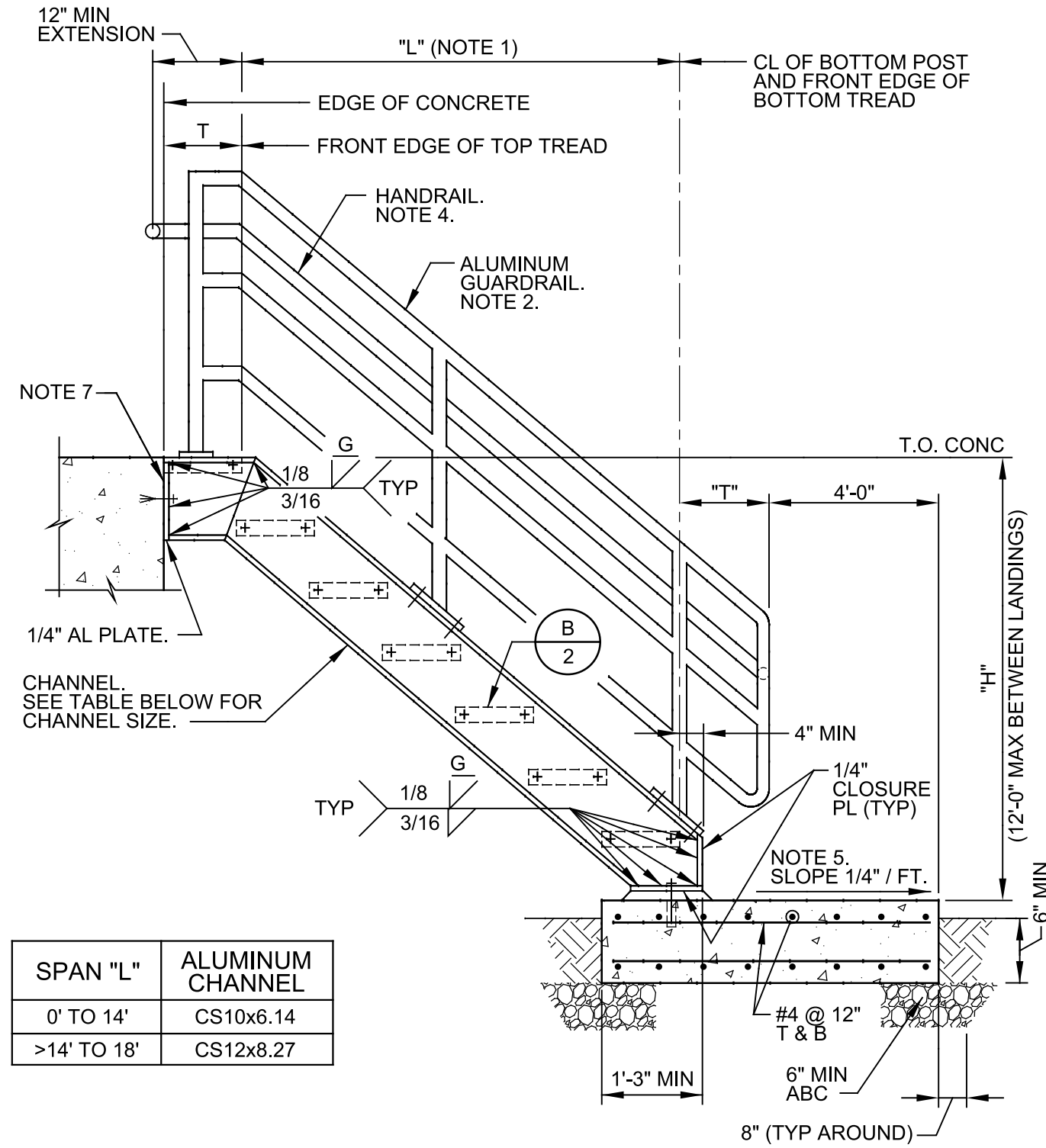
JOB NO. 7310L.10
 DRAWING NO. G14C
 SHEET NO. 14 OF 130

Plot Date: 03-APR-2023 9:38:39 AM

User: svcPW

Model: Layout1 ColorTable: gshade.ctb DesignScript: Carollo_Std_Pen_v0905.pen PlotScale: 1:1

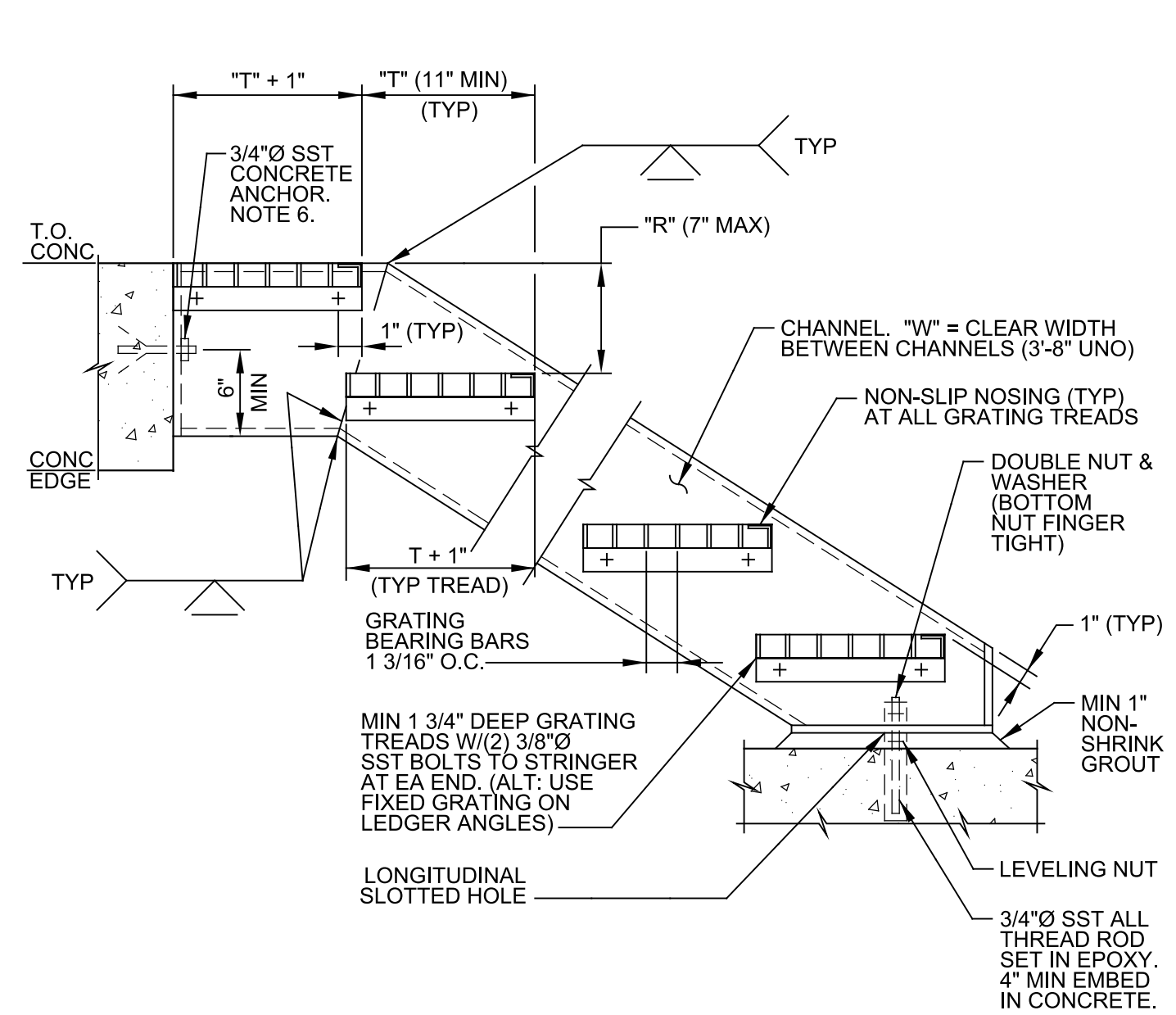
LAST SAVED BY: mvelch



(A) ELEVATION - STAIRS

AC101 STAIRS - ALUMINUM - FLUSH TOP - THREE RAIL

TYP NS SHEET 1 OF 3 06/21/19



(B) SECTION - STAIR TREADS

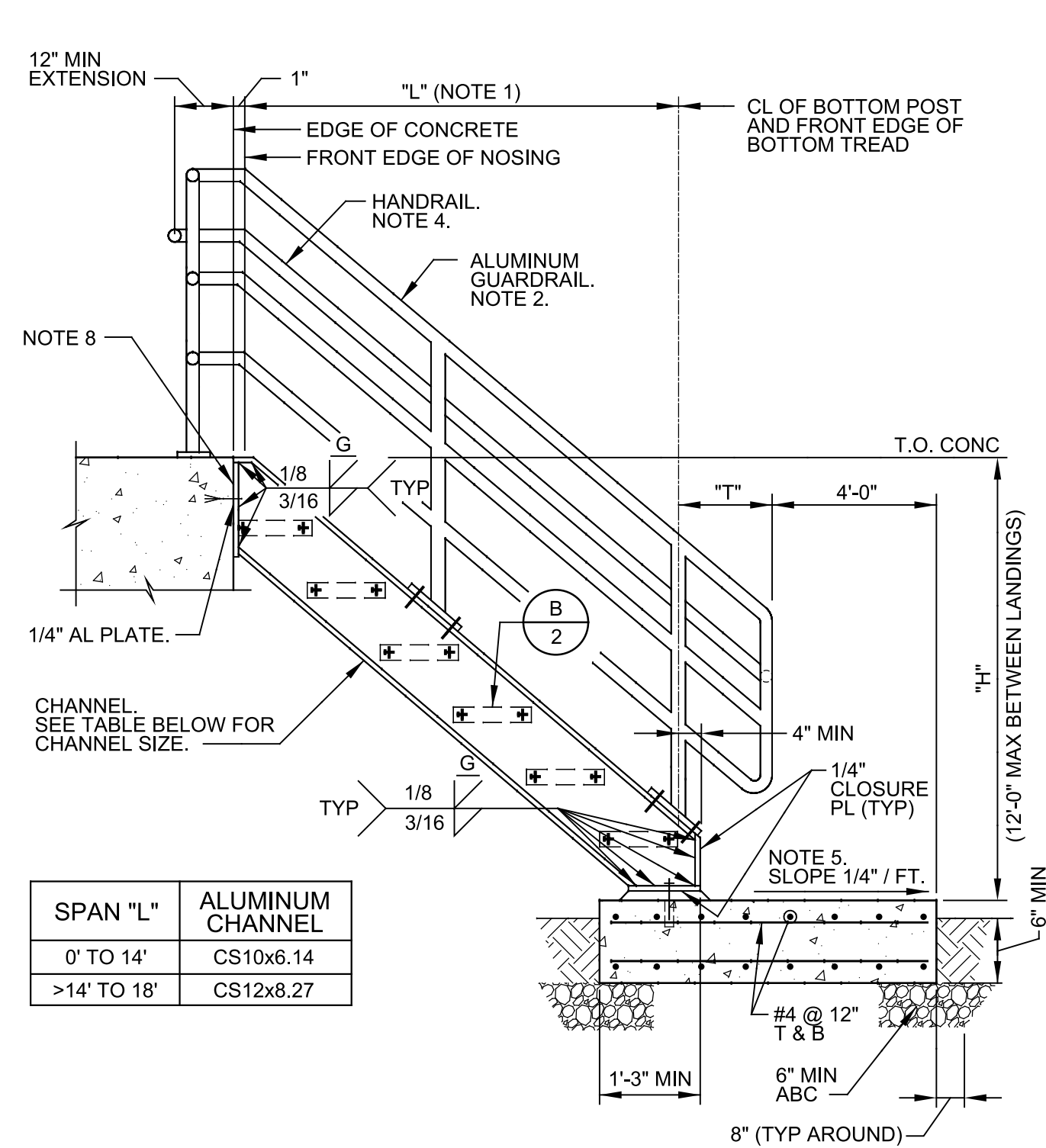
AC101 STAIRS - ALUMINUM - FLUSH TOP - THREE RAIL

TYP NS SHEET 2 OF 3 06/21/19

- NOTES:
- SEE DRAWINGS FOR DIMENSIONS "H", "L", "R", "T" AND "W".
 - SEE DETAIL AC500/TYP FOR ALUMINUM GUARDRAIL NOTES AND DETAIL AC504/TYP FOR ALUMINUM GUARDRAIL DETAILS.
 - COAT ALUMINUM SURFACES IN CONTACT WITH CONCRETE, AND INSTALL ISOLATION SLEEVES AND WASHERS BETWEEN DISSIMILAR METALS AS SPECIFIED.
 - PROVIDE HANDRAIL EXTENSIONS AS SHOWN AT BOTH SIDES OF STAIR, UNLESS HANDRAIL IS CONTINUOUS (AS AT SWITCHBACK STAIR).
 - AT EXTERIOR STAIRS, PROVIDE CONCRETE SLAB ON GRADE UNLESS OTHERWISE INDICATED ON THE DRAWINGS. MINIMUM CONCRETE SLAB WIDTH = STAIR CLEAR WIDTH ("W") PLUS 2'-0" (12" EACH SIDE). EDGE TOP CORNERS OF SLAB TO 1/4" RADIUS.
 - INSTALL CONCRETE ANCHORS MIN 6" FROM BOTTOM AND 6" FROM SIDES/EDGES OF CONCRETE.
 - CONNECTION TO CONCRETE SHOWN.
 - FOR PROJECTS LOCATED IN CALIFORNIA, PROVIDE WARNING STRIPS FOR THE TOP AND BOTTOM TREAD ON INTERIOR STAIRS, AND FOR ALL TREADS ON EXTERIOR STAIRS. STRIPS SHALL BE OF CLEARLY CONTRASTING COLOR AT LEAST 2" WIDE. PLACE STRIP PARALLEL TO AND NOT MORE THAN 1" FROM THE NOSE OF THE STEP OR LANDING TO ALERT THE VISUALLY IMPAIRED.

AC101 STAIRS - ALUMINUM - FLUSH TOP - THREE RAIL

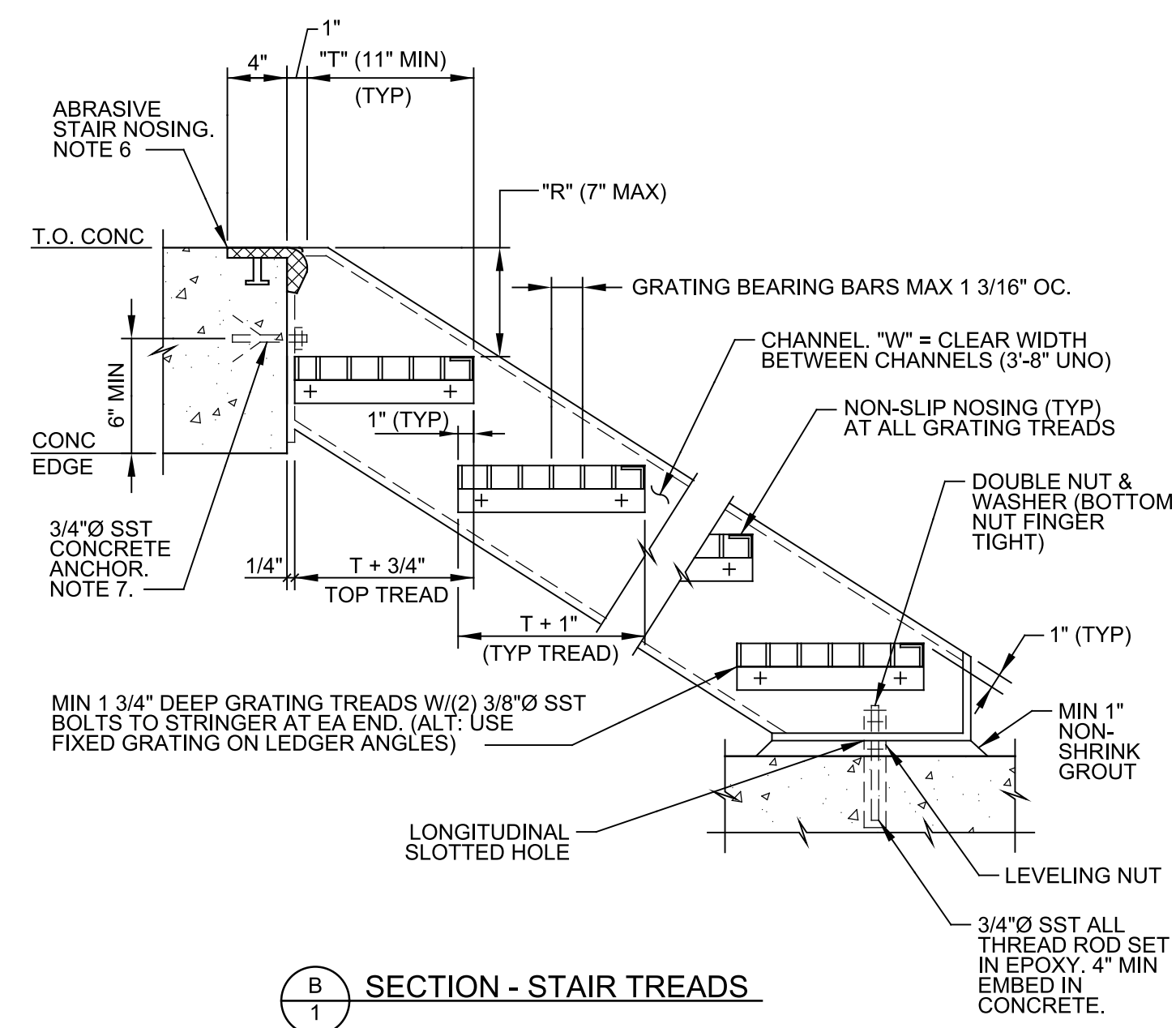
TYP NS SHEET 3 OF 3 06/21/19



(A) ELEVATION - STAIRS

AC111 STAIRS - ALUMINUM - THREE RAIL

TYP NS SHEET 1 OF 3 06/21/19



(B) SECTION - STAIR TREADS

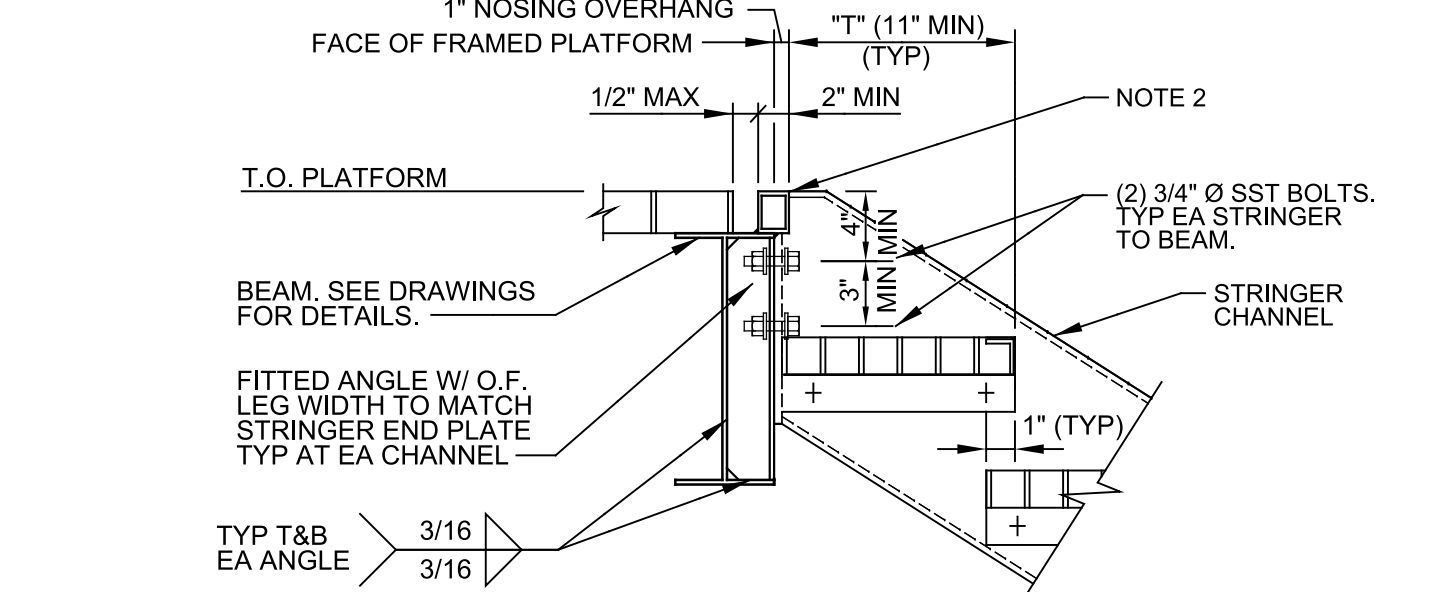
AC111 STAIRS - ALUMINUM - THREE RAIL

TYP NS SHEET 2 OF 3 06/21/19

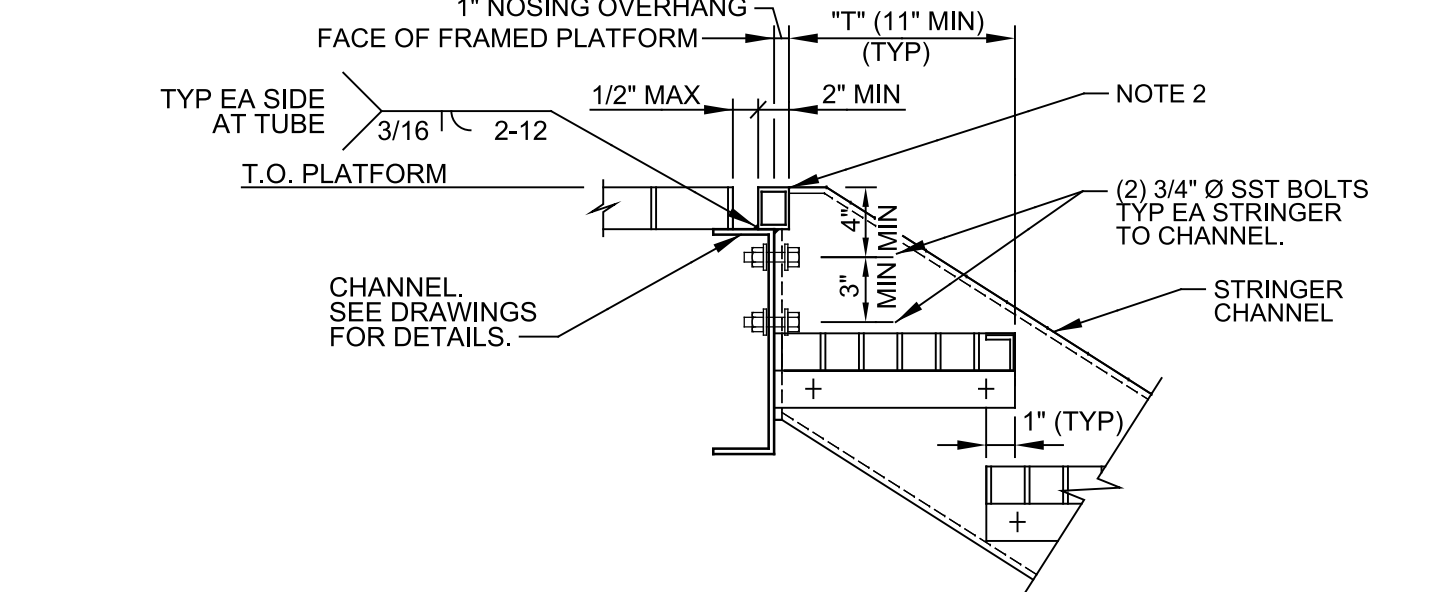
- NOTES:
- SEE DRAWINGS FOR DIMENSIONS "H", "L", "R", "T" AND "W".
 - SEE DETAIL AC500/TYP FOR ALUMINUM GUARDRAIL NOTES AND DETAIL AC504/TYP FOR ALUMINUM GUARDRAIL DETAILS.
 - COAT ALUMINUM SURFACES IN CONTACT WITH CONCRETE, AND INSTALL ISOLATION SLEEVES AND WASHERS BETWEEN DISSIMILAR METALS AS SPECIFIED.
 - PROVIDE HANDRAIL EXTENSIONS AS SHOWN AT BOTH SIDES OF STAIR, UNLESS HANDRAIL IS CONTINUOUS (AS AT SWITCHBACK STAIR).
 - AT EXTERIOR STAIRS, PROVIDE CONCRETE SLAB ON GRADE UNLESS OTHERWISE INDICATED ON THE DRAWINGS. MINIMUM CONCRETE SLAB WIDTH = STAIR CLEAR WIDTH ("W") PLUS 2'-0" (12" EACH SIDE). EDGE TOP CORNERS OF SLAB TO 1/4" RADIUS.
 - ABRASIVE STAIR NOSING: PROVIDE 2" CLEAR BETWEEN END OF STAIR NOSING AND VERTICAL INSIDE FACE OF STAIR STRINGER. TOOL A GROOVE, 1/8" WIDE BY FULL WIDTH AND THICKNESS OF NOSING AT EACH END OF NOSING. CONTINUE TOOLED JOINT DOWN VERTICAL FACE OF NOSING AT RISER. FILL TOOLED GROOVE WITH SYNTHETIC RUBBER SEALING COMPOUND.
 - INSTALL CONCRETE ANCHORS MINIMUM 6" FROM BOTTOM AND 6" FROM SIDES/EDGES OF CONCRETE.
 - CONNECTION TO CONCRETE SHOWN. SEE DETAIL AC121/TYP FOR CONNECTION AT METAL FRAMING.
 - FOR PROJECTS LOCATED IN CALIFORNIA, PROVIDE WARNING STRIPS FOR THE TOP AND BOTTOM TREAD ON INTERIOR STAIRS, AND FOR ALL TREADS ON EXTERIOR STAIRS. STRIPS SHALL BE OF CLEARLY CONTRASTING COLOR AT LEAST 2" WIDE. PLACE STRIP PARALLEL TO AND NOT MORE THAN 1" FROM THE NOSE OF THE STEP OR LANDING TO ALERT THE VISUALLY IMPAIRED.

AC111 STAIRS - ALUMINUM - THREE RAIL

TYP NS SHEET 3 OF 3 06/21/19



(A) CONNECTION TO BEAM



(B) CONNECTION TO CHANNEL

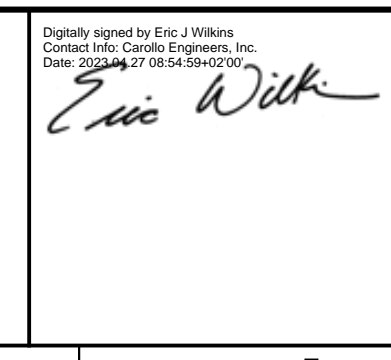
- NOTES:
- INSTALL ISOLATION SLEEVES AND DIELECTRIC BREAKS BETWEEN DISSIMILAR METALS. SEE SPECIFICATIONS.
 - TUBE NOSING: TUBE LENGTH = WIDTH BETWEEN CHANNELS MINUS 1/2" EACH END ("W"-1"). WELD TO TOP AND VERTICAL FACE OF BEAM OR CHANNEL. COAT TOP AND VERTICAL OUTSIDE FACE OF TUBE WITH NON-SLIP ABRASIVE.

AC121 STAIRS - ALUMINUM - TOP

TYP NS SHEET 1 OF 3 06/21/19

REV	DATE	BY	DESCRIPTION
1			
2			
3			

DESIGNED
CE
DRAWN
CE
CHECKED
DWW
DATE
JANUARY 2023



Digitally signed by Eric J. Wilk
Contact Info: Carollo Engineers, Inc.
Date: 2023.04.07 09:54:50 -0700

Eric Wilk



CITY OF PETALUMA
FILTER ADDITION AND MISC. IMPROVEMENTS PROJECT
TYPICALS
TYPICAL ARCHITECTURAL DETAILS

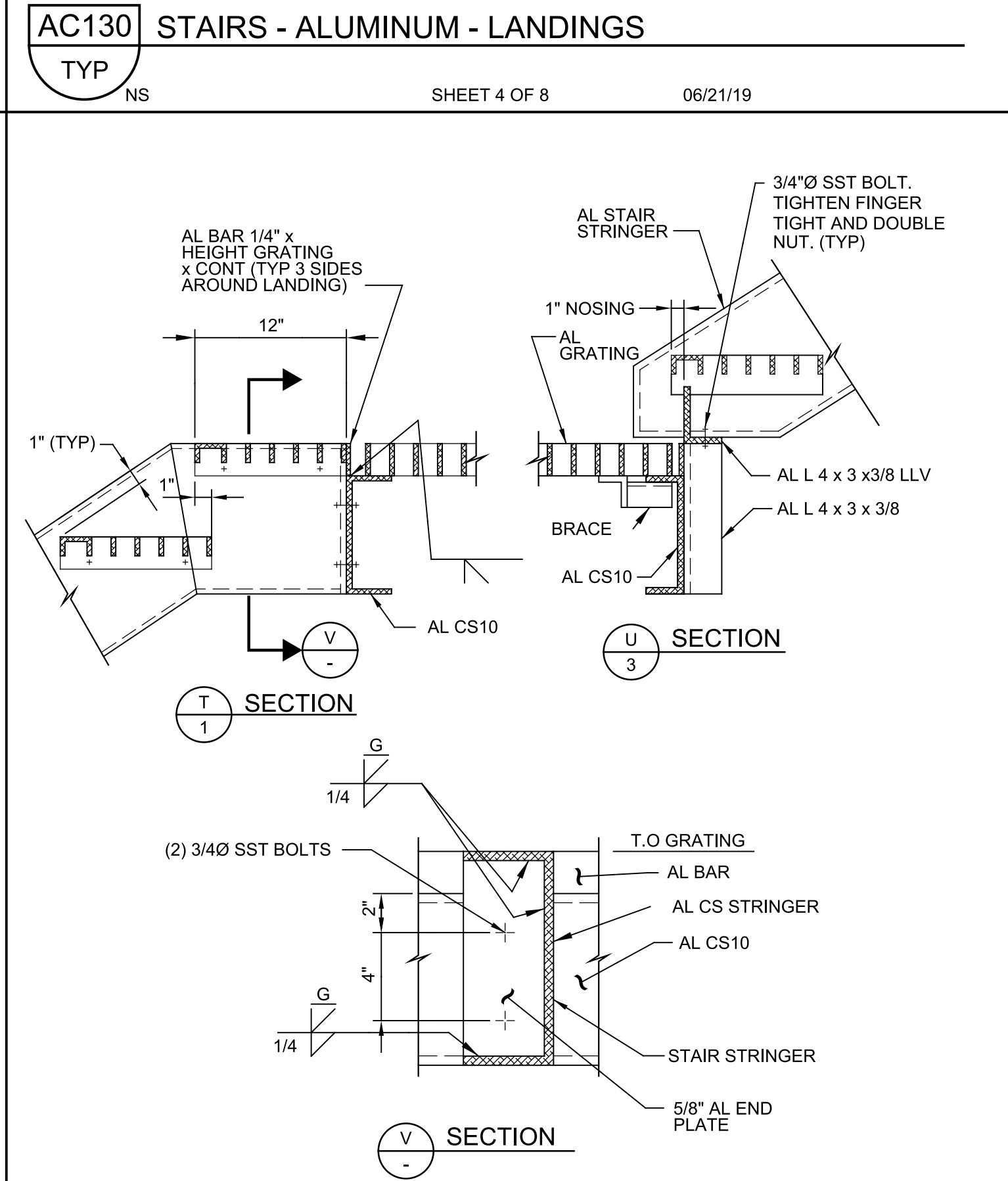
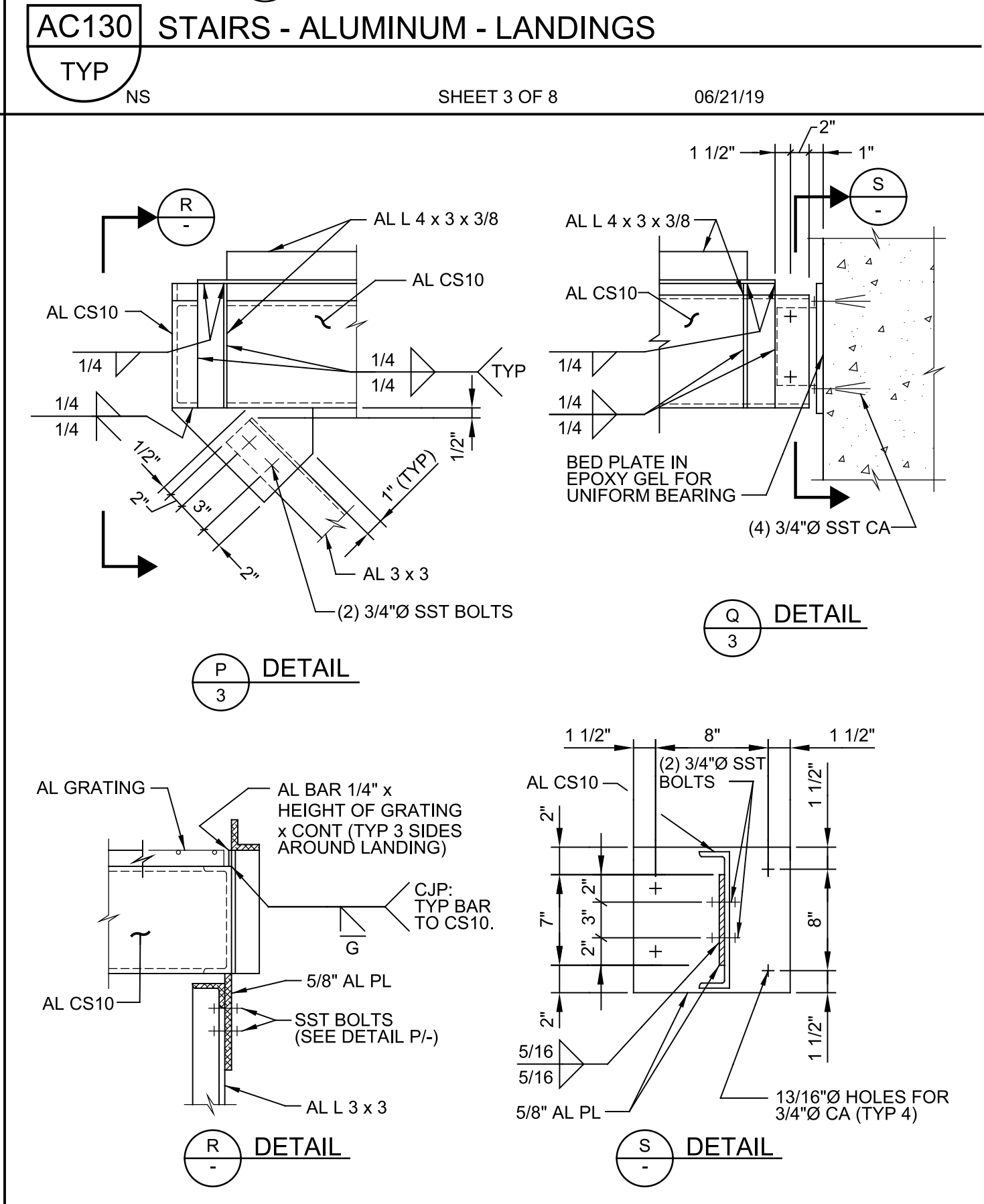
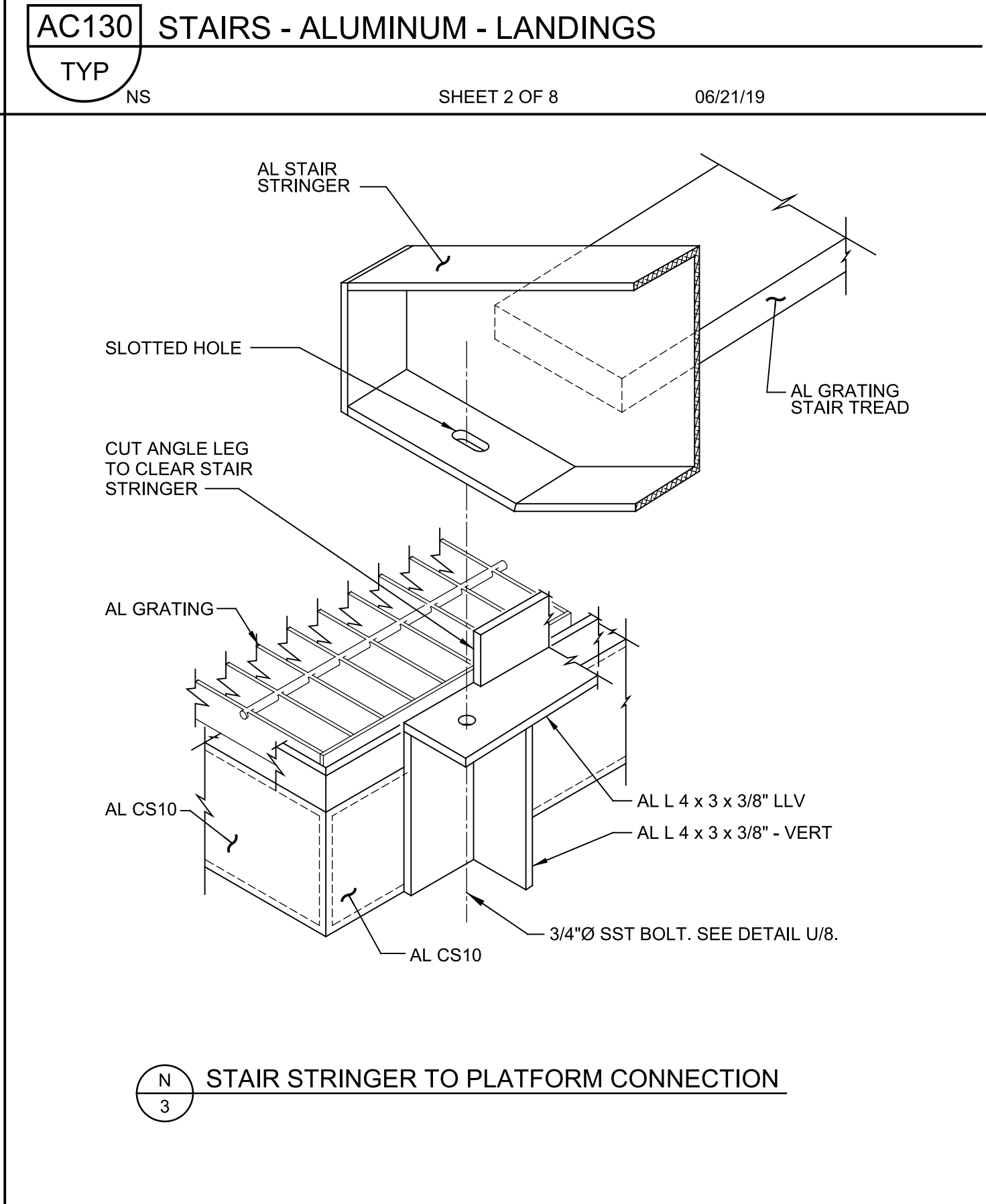
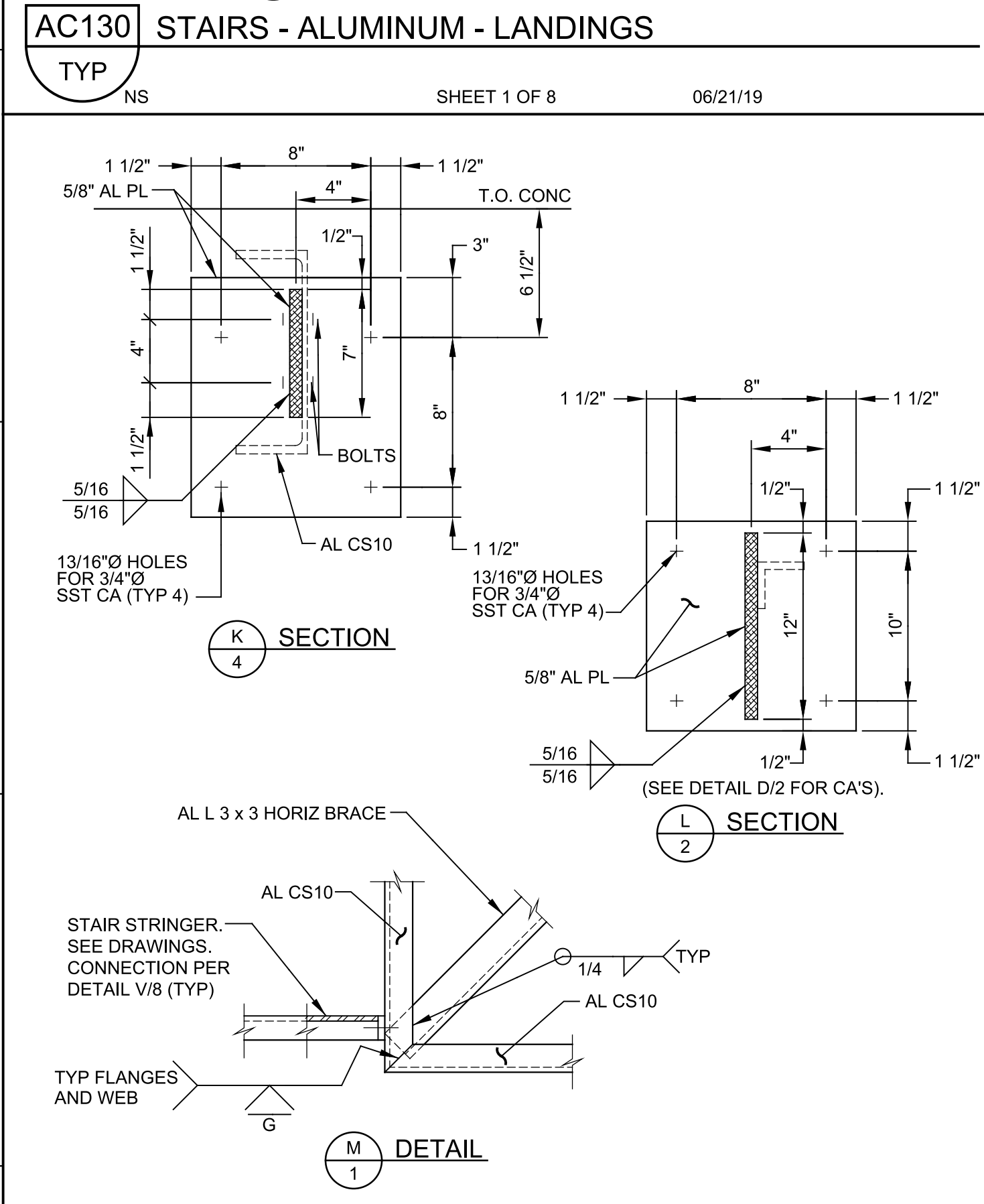
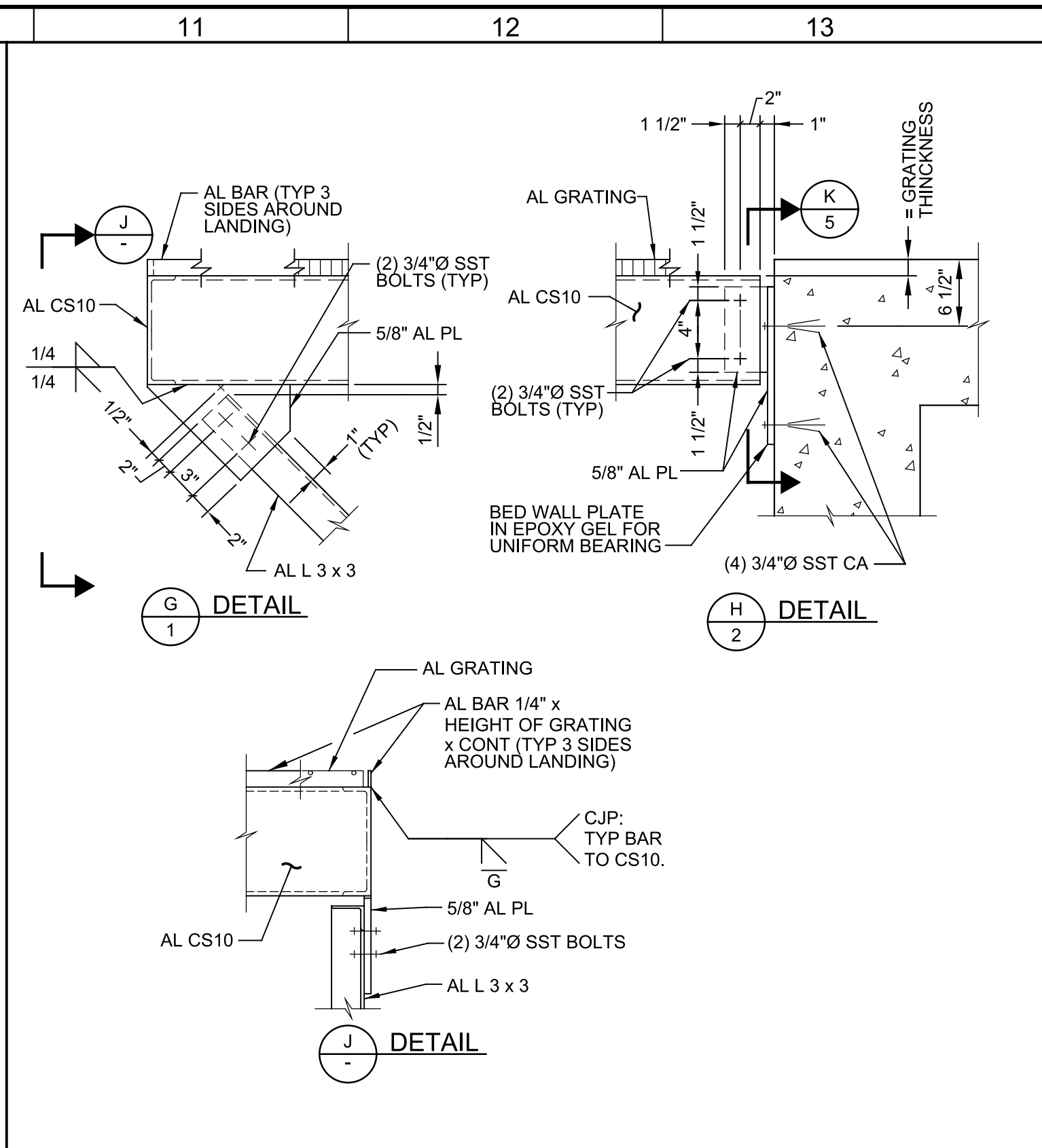
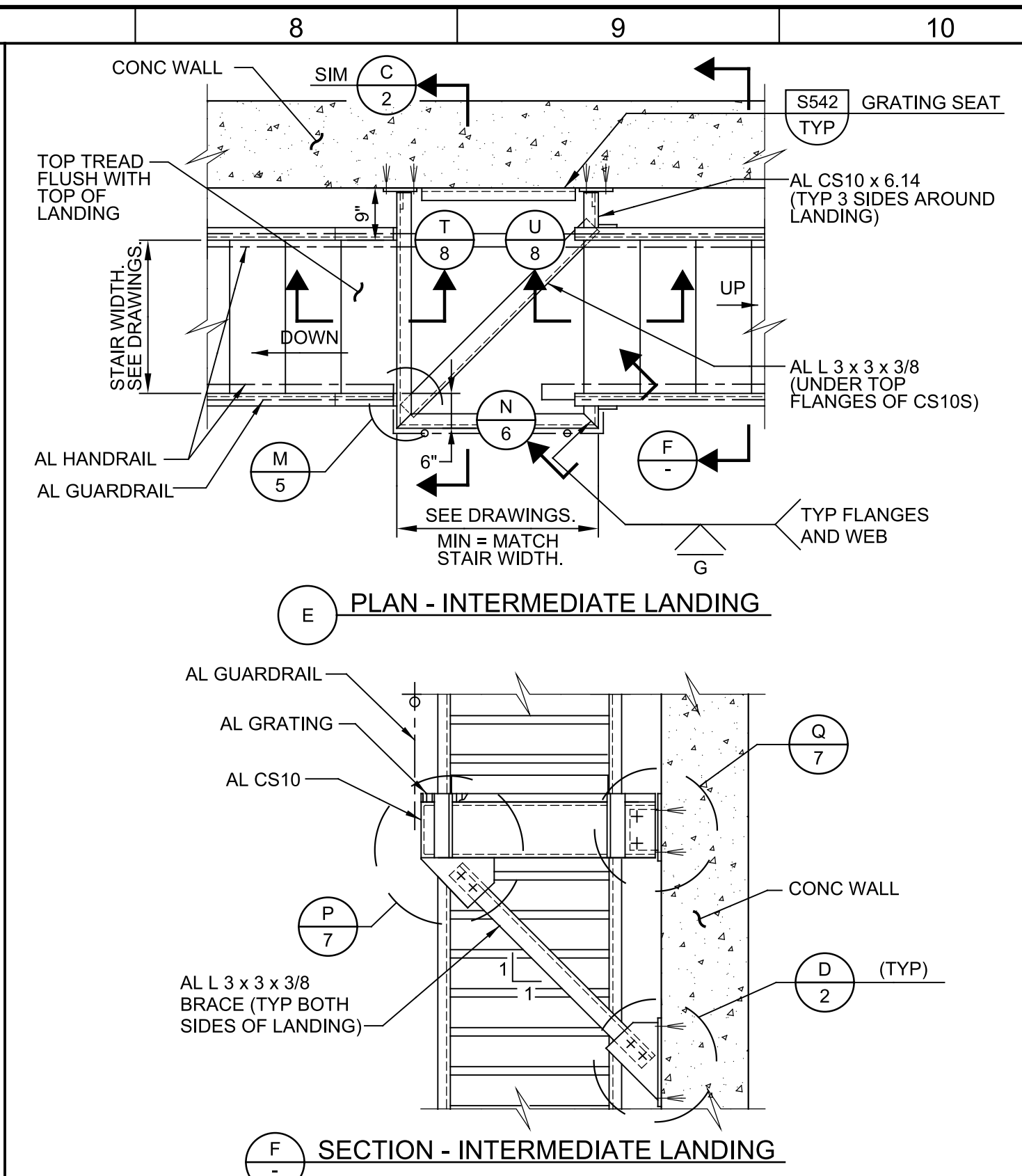
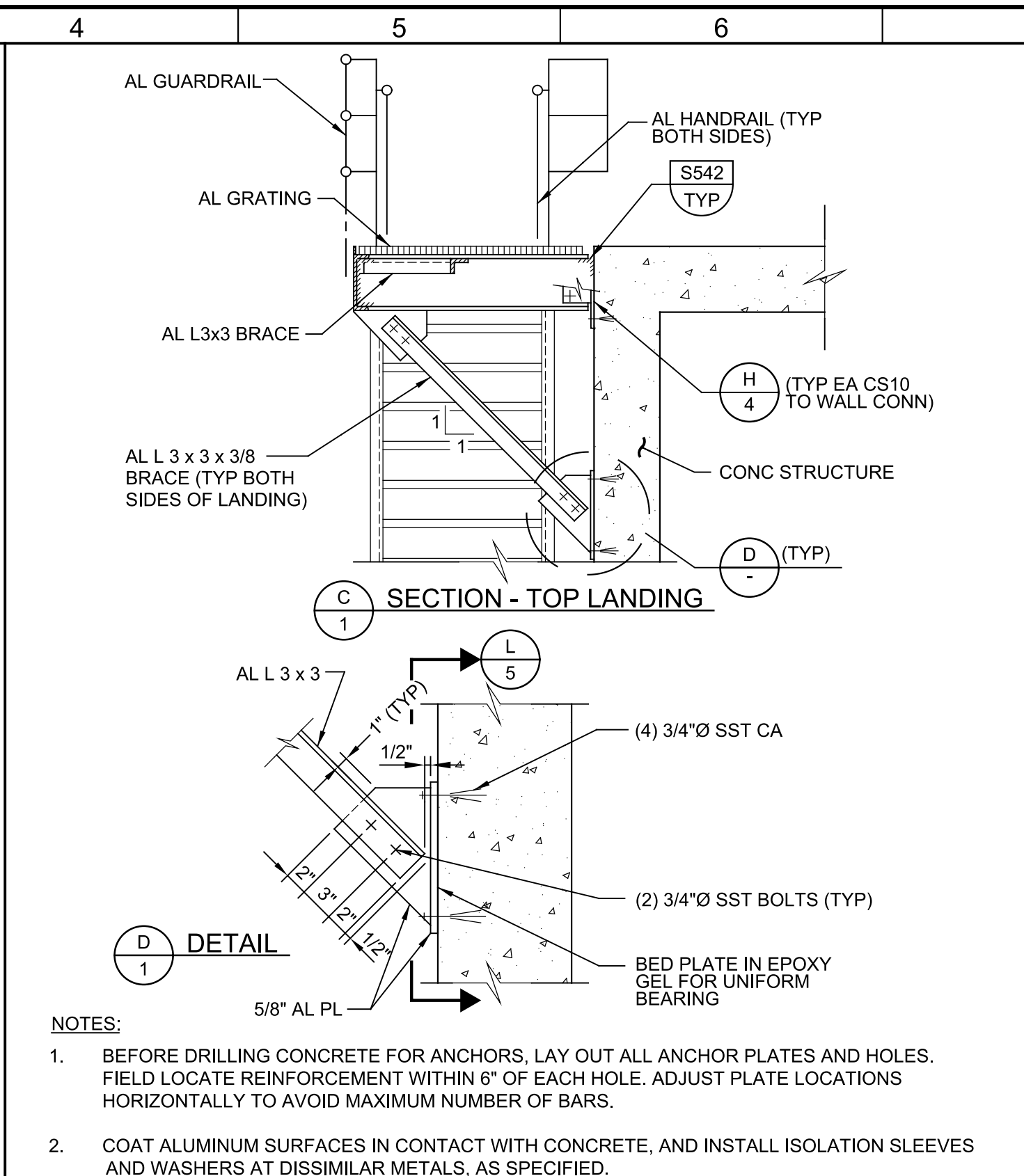
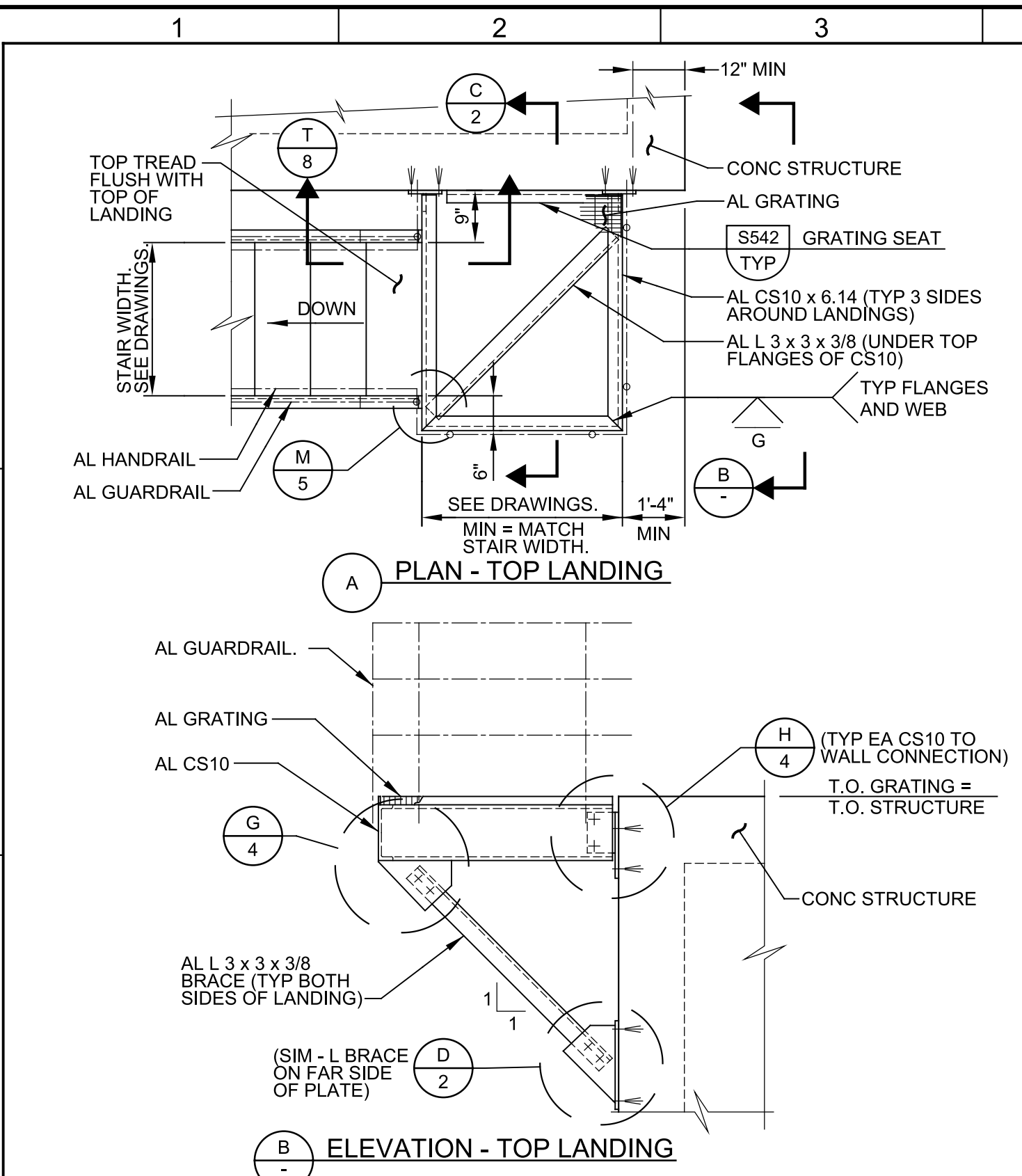
VERIFY SCALES BAR IS ONE INCH ON ORIGINAL DRAWING 0 1"	JOB NO. 7310L.10 DRAWING NO. TA01C SHEET NO. 15 OF 130
--	---

Plot Date: 03-APR-2023 9:39:46 AM

User: svcpw

Model: Layout1 ColorTable: gshade.ctb DesignScript: Carollo_Std_Pen_v0905.pen PlotScale: 1:1

LAST SAVED BY: mvelch



DESIGNED CE			
DRAWN CE			
CHECKED DWW			
DATE JANUARY 2023			
REV	DATE	BY	DESCRIPTION
1			
2			
3			

Digitally signed by Eric J. Wilkins
Contact Info: Carollo Engineers, Inc.
Date: 2023.04.07 09:39:46 -0700

Eric Wilkins

carollo

CITY OF PETALUMA
FILTER ADDITION AND MISC. IMPROVEMENTS PROJECT
TYPICALS
TYPICAL ARCHITECTURAL DETAILS

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1" 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

JOB NO. 7310L.10
DRAWING NO. TA02C
SHEET NO. 16 OF 130

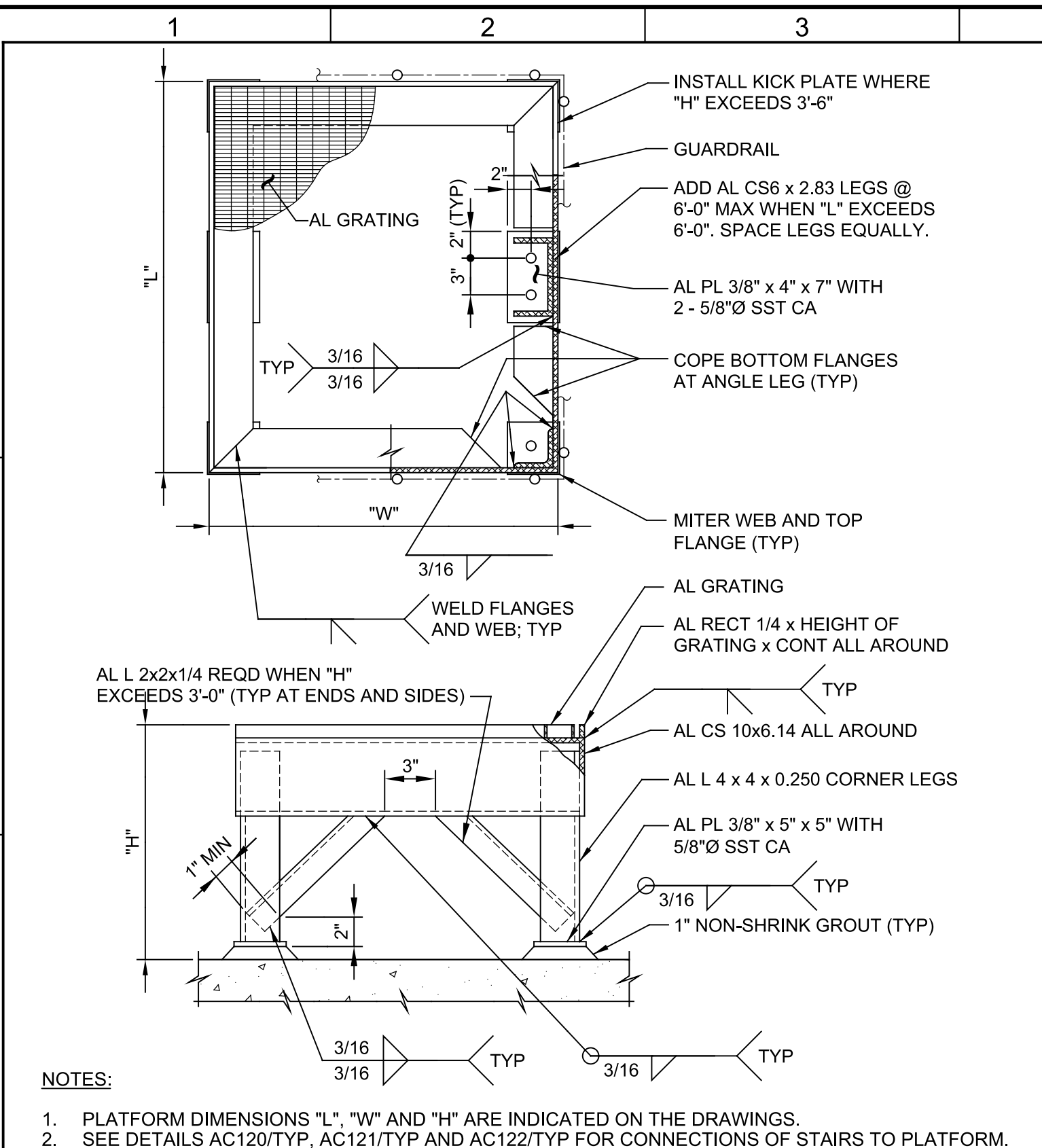
Plot Date: 24-APR-2023 12:07:50 PM

User: svcPW

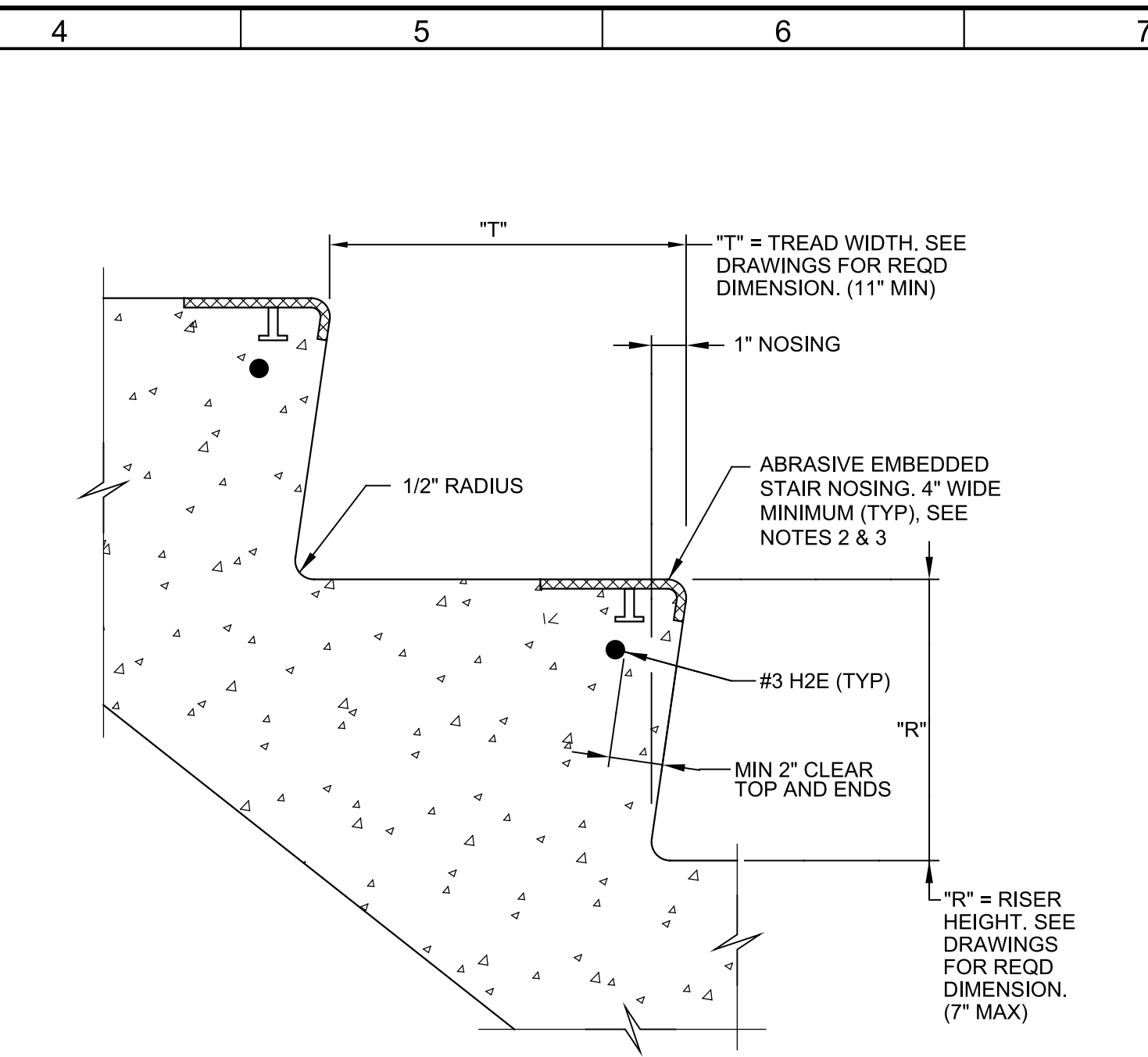
PlotScale: 1:1

Model: Layout1 ColorTable: gshade.ctb DesignScript: Carollo_Std_Pen_v0905.pen

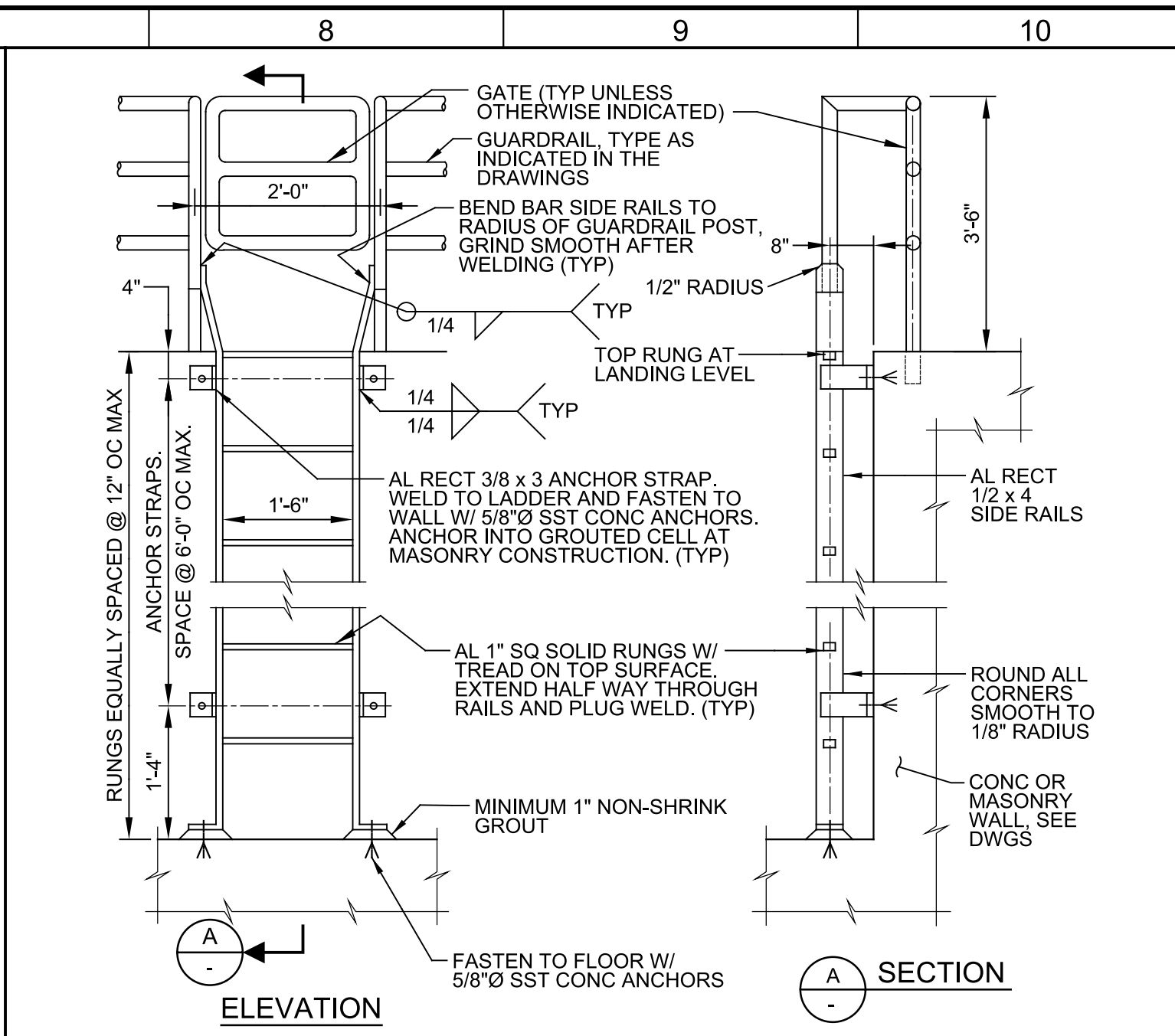
LAST SAVED BY: luy



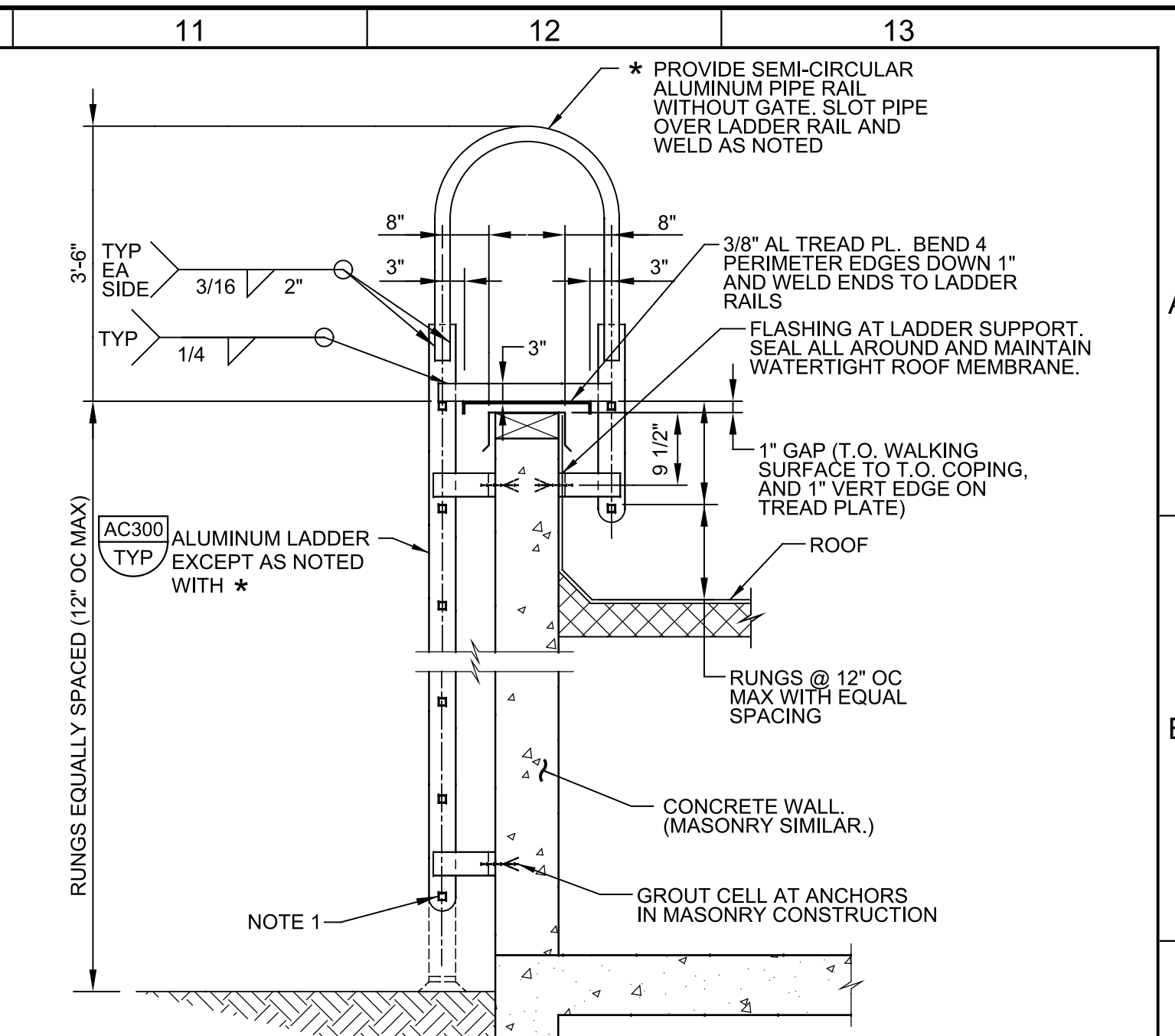
AC132 STAIRS - ALUMINUM - PLATFORM
TYP R 12/16/20



AC146 STAIRS - CONCRETE - STEP
TYP S 06/21/19



AC300 LADDER - ALUMINUM - WALL
TYP S 06/21/19



AC310 LADDER - ALUMINUM - PARAPET
TYP S 06/21/19

- AC500** GUARDRAIL - HANDRAIL - NOTES
TYP NS 06/21/19
- NOTES:
1. PROVIDE GUARDRAILS AT STAIRS AND AT OPEN SIDED WALKING SURFACES THAT ARE ELEVATED MORE THAN 30" ABOVE GRADE OR ADJACENT CONSTRUCTION.
 2. WHERE EQUIPMENT IS LOCATED LESS THAN 10' FROM EDGE OF ROOF AND ELEVATED MORE THAN 30" ABOVE GRADE OR ADJACENT CONSTRUCTION, PROVIDE 42" HIGH GUARDRAIL FORMING A PROTECTIVE BARRIER. PARAPET WALL 42" OR MORE IN HEIGHT MAY BE THE GUARDRAIL AT ROOF LOCATIONS.
 3. SEE DRAWINGS AND SPECIFICATIONS FOR GUARDRAIL MATERIAL TYPE(S).
 4. PROVIDE HANDRAIL AT BOTH SIDES OF EVERY STAIR HAVING 2 OR MORE RISERS.
 5. PROVIDE CONTINUOUS HANDRAIL GRIPPING SURFACES FOR THE FULL LENGTH OF THE STAIR.
 6. PROVIDE HANDRAIL EXTENSIONS AT BOTH SIDES OF STAIRS AT TOP AND BOTTOM. HANDRAIL EXTENSION ON STAIR MOUNTED GUARDRAIL MAY BE OMITTED WHERE IT IS PERPENDICULAR TO AND IMPEDES EXIT FLOW.
 7. MAKE INSIDE HANDRAIL ON SWITCHBACK STAIRS CONTINUOUS.
 8. FOR WALL MOUNTED HANDRAILS, PROVIDE SINGLE RAIL WITH TOP OF RAIL AT 2'-10" HEIGHT ABOVE LANDINGS OR TREAD NOSINGS. PROVIDE MATCHING HANDRAIL ON OPPOSITE SIDE.
 9. GUARDRAIL SHALL BE FIXED UNLESS OTHERWISE INDICATED ON THE DRAWINGS.
 10. PLACE CENTER OF EMBEDDED POSTS 6" FROM EDGE OF CONCRETE AND 6" FROM FRONT EDGE OF CONCRETE STAIR NOSINGS UNLESS OTHERWISE INDICATED ON THE DRAWINGS.
 11. PLACE GUARDRAIL POSTS OPPOSITE EACH OTHER WHERE RAILINGS ARE PARALLEL.
 12. FOR GUARDRAIL POSTS MOUNTED TO BEAM OR STAIR CHANNEL, PROVIDE MANUFACTURERS REINFORCED CONNECTION FROM POST TO PLATE. PLATE AND REINFORCED INSERTS SHALL BE ALUMINUM OR STAINLESS STEEL.
 13. PROVIDE SLIDING JOINTS AT 24" MAX SPACING FOR EXPANSION OF RAIL AND KICKPLATE. LOCATE SLIDING JOINTS NEAR FACE OF POST. GAP AT TIME OF INSTALLATION SHALL BE BASED ON TEMPERATURE OF GUARDRAIL, PROVIDE 1/4" GAP AT 100°F AND 5/8" GAP AT 0°F. INTERPOLATE GAP FOR OTHER INSTALLATION TEMPERATURES. AT CONCRETE EXPANSION JOINTS, PROVIDE MINIMUM 1" GAP IN SLIDING JOINTS BUT NOT LESS THAN WIDTH OF CONCRETE EXPANSION JOINT. MAKE INSERT SLEEVES IN RAILS LONG ENOUGH TO ALLOW FOR THE FULL RANGE OF MOVEMENT.
 14. MATERIAL FOR KICKPLATE CHANNEL SLIDING JOINT PLATES, SHALL BE OF THE SAME MATERIAL AS THE GUARDRAIL.
 15. JOINTS FOR STAINLESS STEEL GUARDRAIL AND HANDRAIL SHALL BE COPED, WELDED, AND GROUND SMOOTH.
 16. PROVIDE KICKPLATE AT ALL LOCATIONS EXCEPT AT SLOPING GUARDRAIL ON STAIRS AND WHERE GUARDRAIL IS MOUNTED ON A 4" MIN CURB. KICKPLATE MAY BE EXTRUDED OR BENT PLATE AND SHALL BE ATTACHED WITH SST BOLTS IN 5/16" x 3/4" SLOTTED HOLES. BOLT KICKPLATE TO POST WITH BOTTOM 1/4" CLEAR ABOVE FLOOR. FOR SIDE MOUNTED GUARDRAIL, PROVIDE STANDARD SPACER BLOCK BETWEEN POST AND KICKPLATE TO MAINTAIN 1/4" MAX CLEAR SPACING. HAND TIGHTEN AND CENTER PUNCH BOLT THREADS TO LOCK.
 17. COAT SURFACES OF ALUMINUM IN CONTACT WITH CONCRETE AS SPECIFIED. PROVIDE NEOPRENE GASKET BETWEEN ALUMINUM AND STEEL.

AC500 GUARDRAIL - HANDRAIL - NOTES
TYP NS 06/21/19

REV	DATE	BY	DESCRIPTION

DESIGNED CE
DRAWN CE
CHECKED DWW
DATE JANUARY 2023

Digitally signed by Eric J. Wilkins
Contact Info: Carollo Engineers, Inc.
Date: 2023.04.27 08:54:30-0700

CITY OF PETALUMA
JOB NO. 7310L.10
DRAWING NO. TA03C
SHEET NO. 17 OF 130

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

FILTER ADDITION AND MISC. IMPROVEMENTS PROJECT
TYPICALS
TYPICAL ARCHITECTURAL DETAILS

CITY OF PETALUMA
JOB NO. 7310L.10
DRAWING NO. TA03C
SHEET NO. 17 OF 130

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

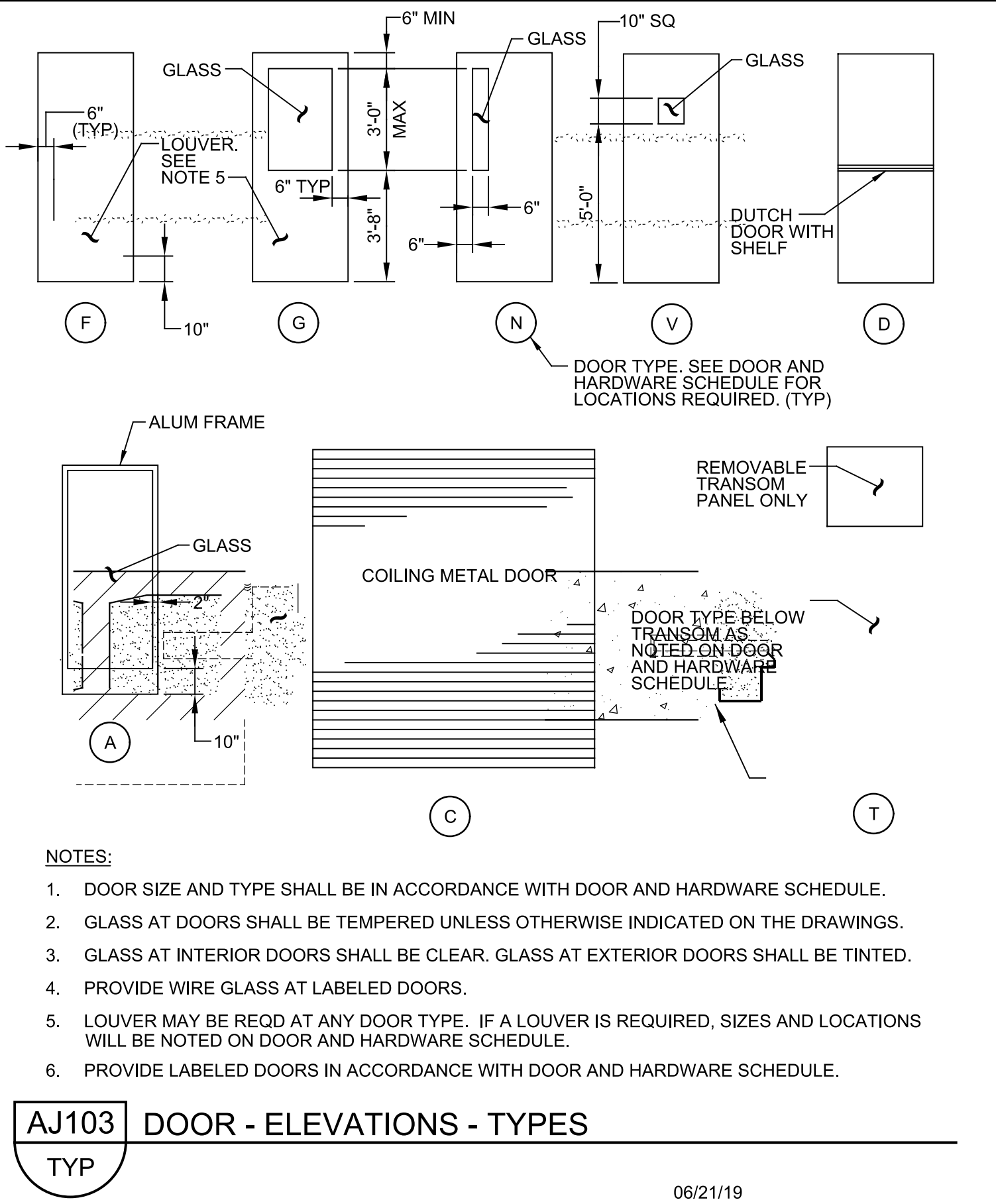
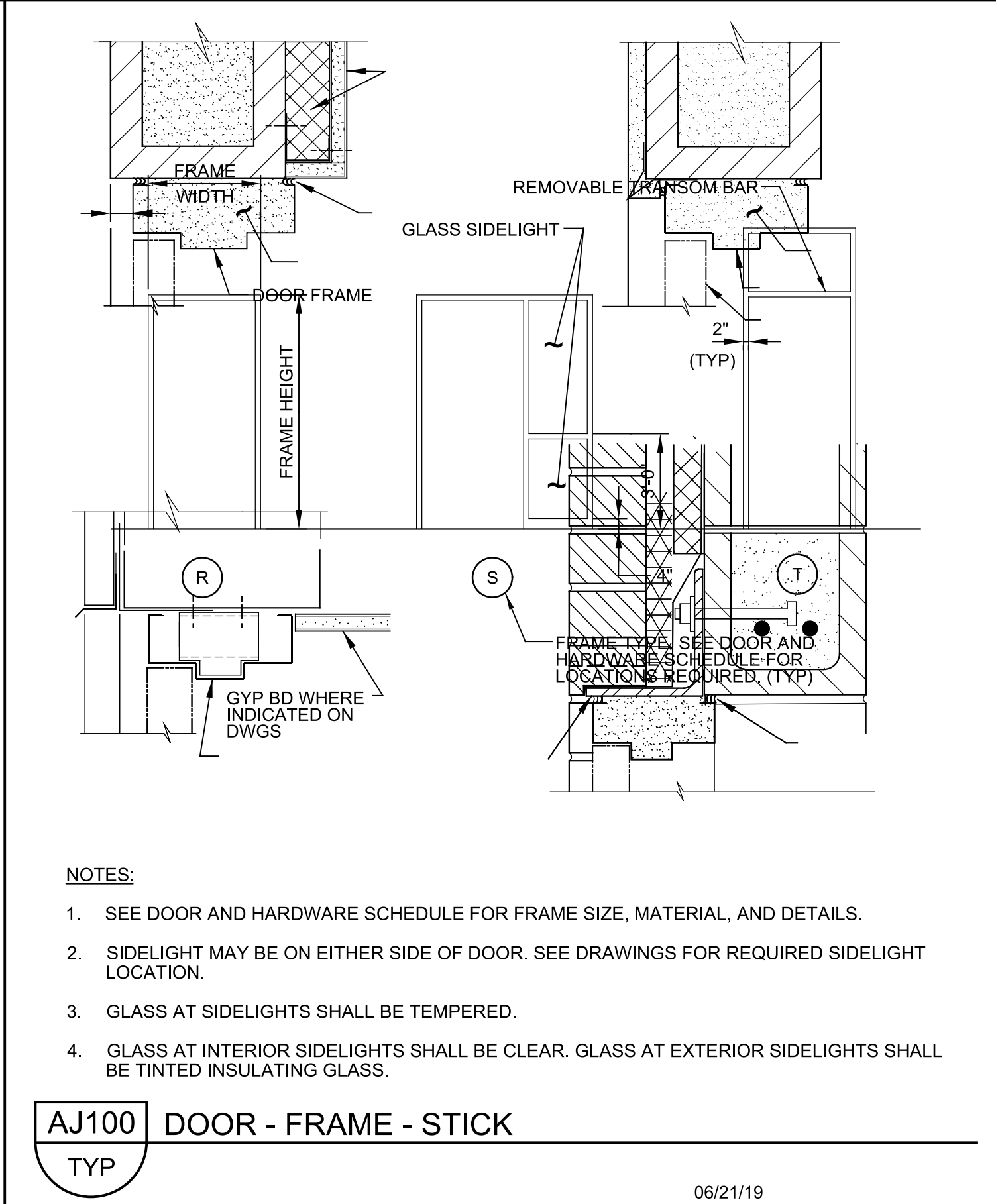
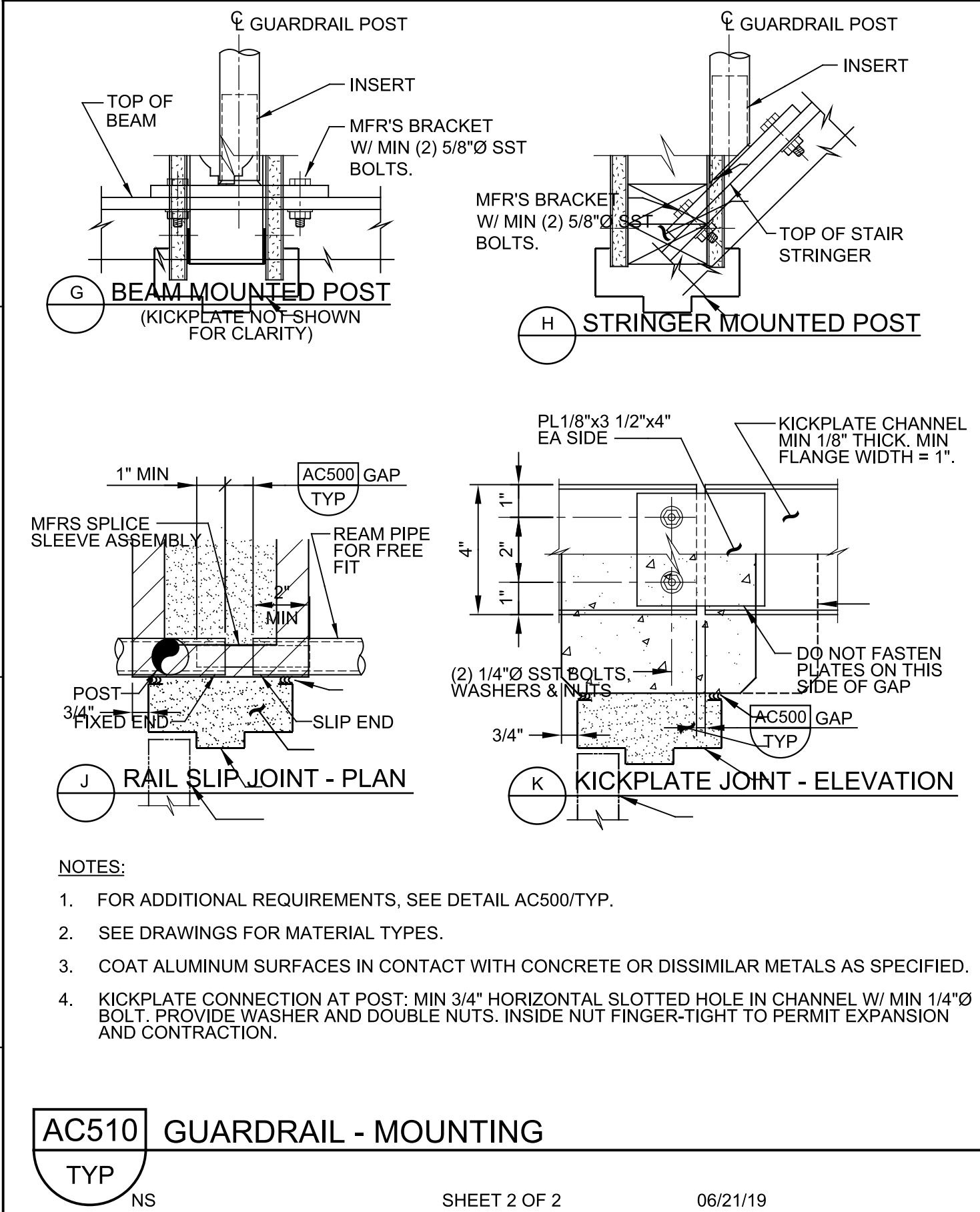
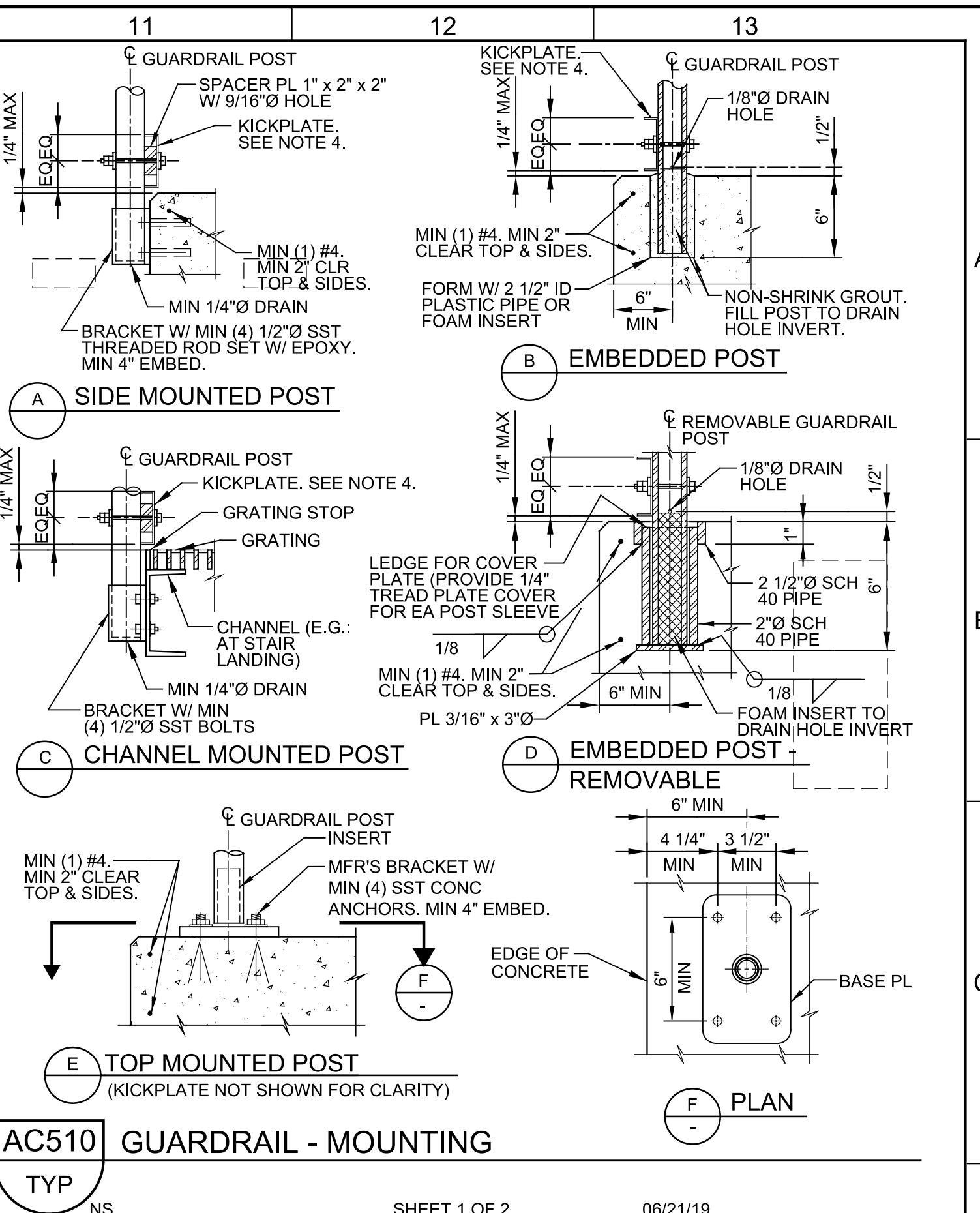
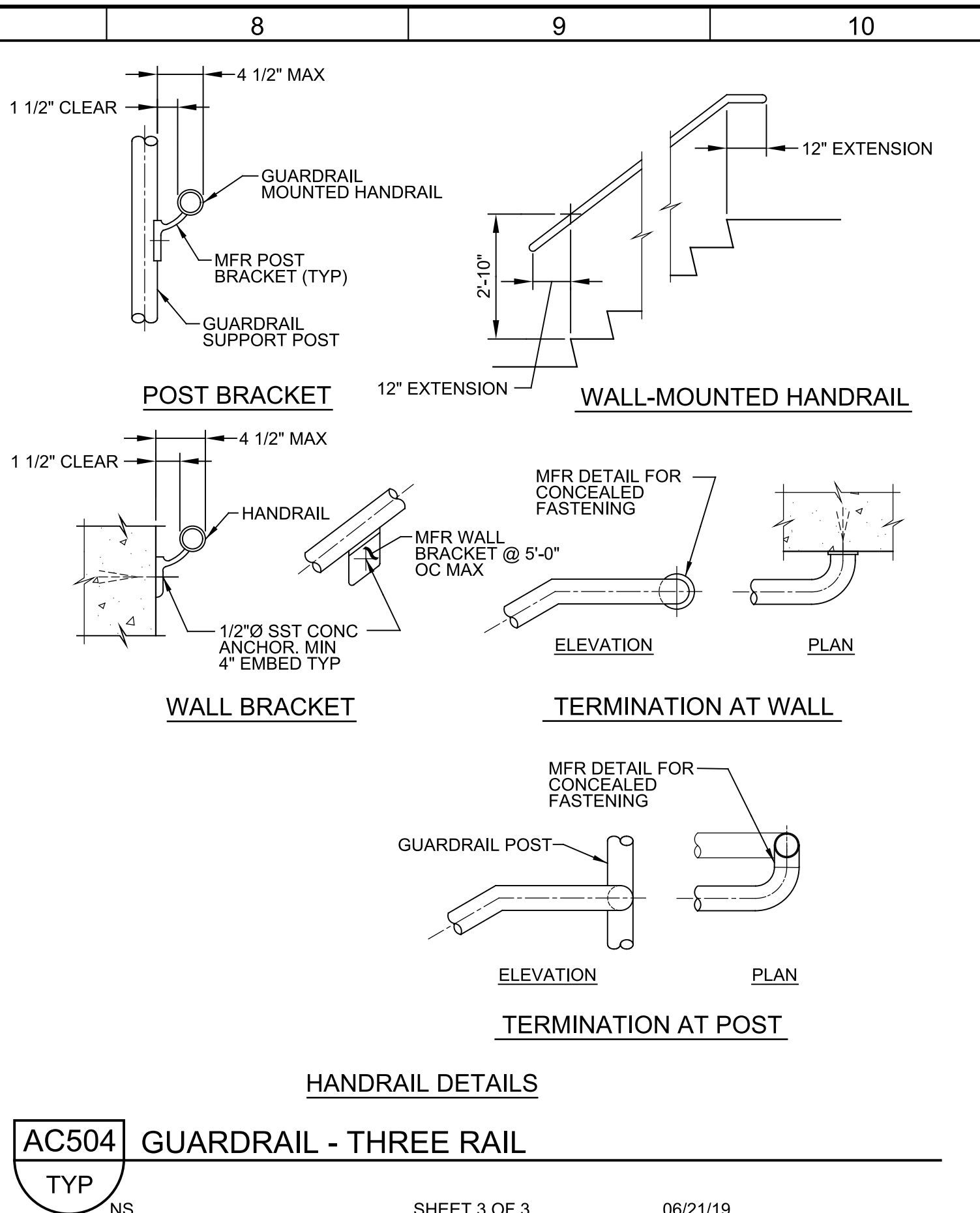
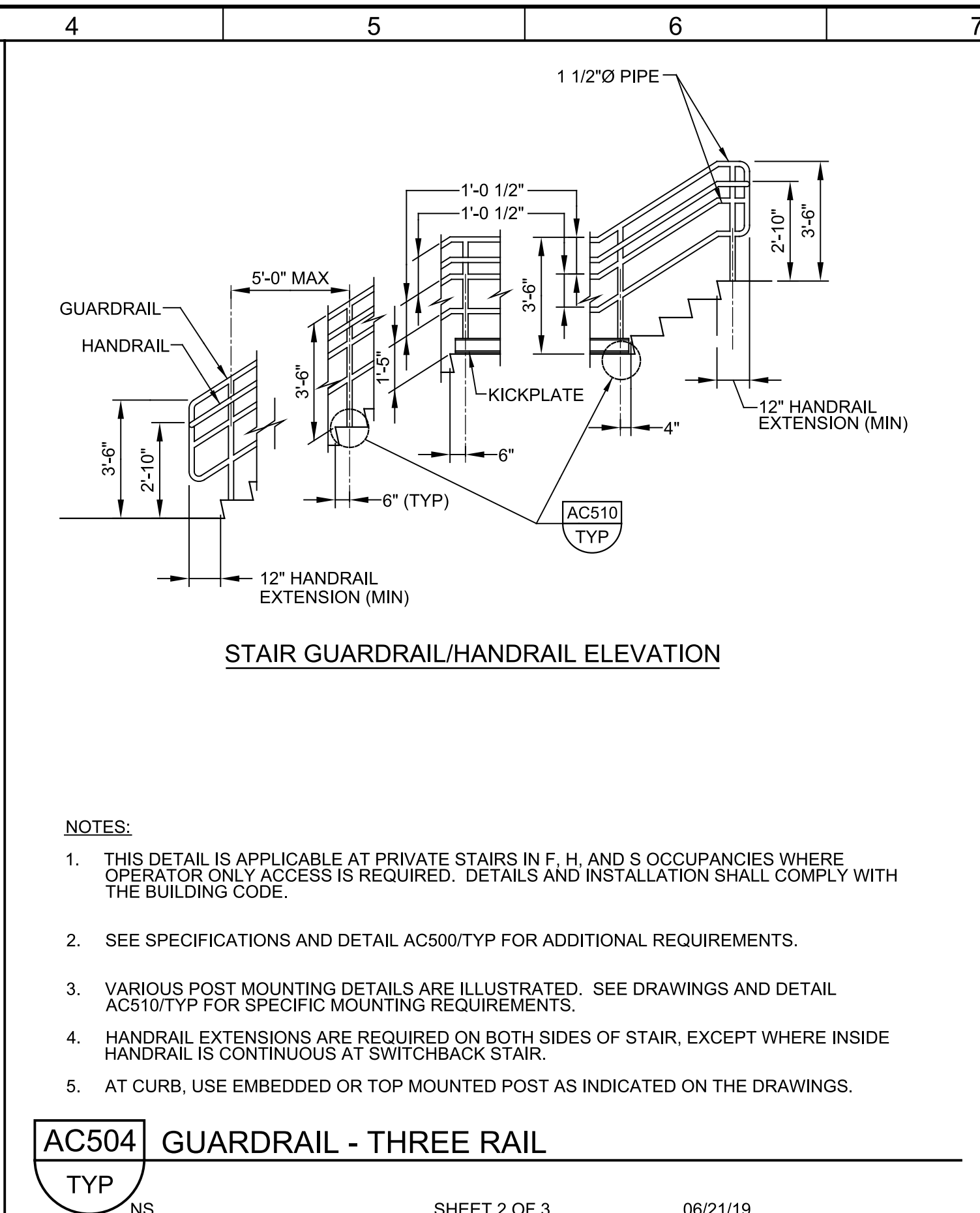
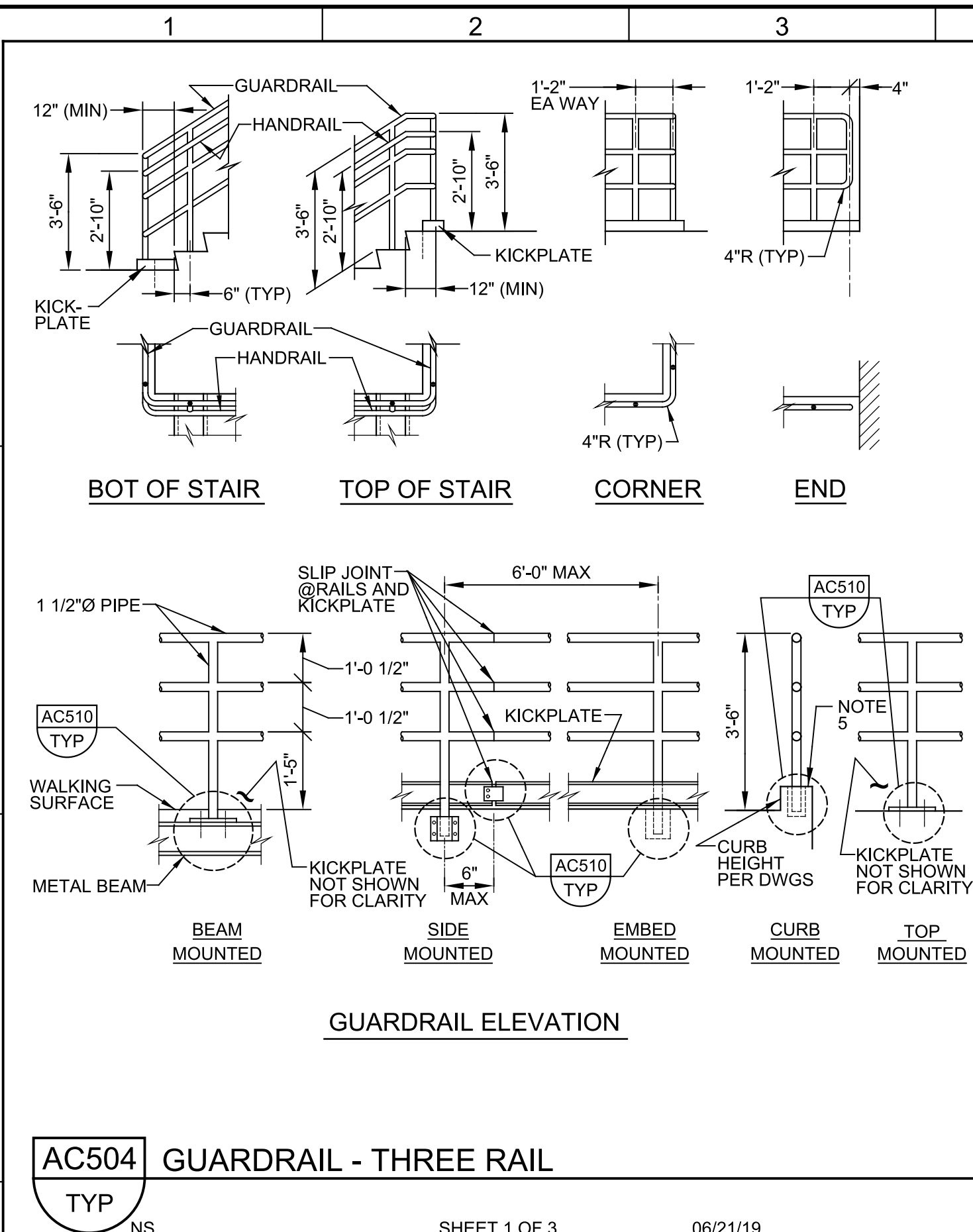
FILTER ADDITION AND MISC. IMPROVEMENTS PROJECT
TYPICALS
TYPICAL ARCHITECTURAL DETAILS

Plot Date: 24-APR-2023 12:07:44 PM

User: svcpw

Model: Layout1 ColorTable: gshade.ctb DesignScript: Carollo Std Pen_v0905.pen PlotScale: 1:1

LAST SAVED BY: luy



REV	DATE	BY	DESCRIPTION
1			
2			
3			

DESIGNED CE
DRAWN CE
CHECKED DW
DATE JANUARY 2023

REGISTERED PROFESSIONAL ENGINEER
ERIC J. WILKINS
No. 6370
STRUCTURAL
STATE OF CALIFORNIA

Digitally signed by Eric J. Wilkins
Contact Info: Carollo Engineers, Inc.
Date: 2023.01.07 09:53:04 -0800

Eric Wilkins

carollo

PETALUMA
1858

CITY OF PETALUMA
FILTER ADDITION AND MISC. IMPROVEMENTS PROJECT
TYPICALS
TYPICAL ARCHITECTURAL DETAILS

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

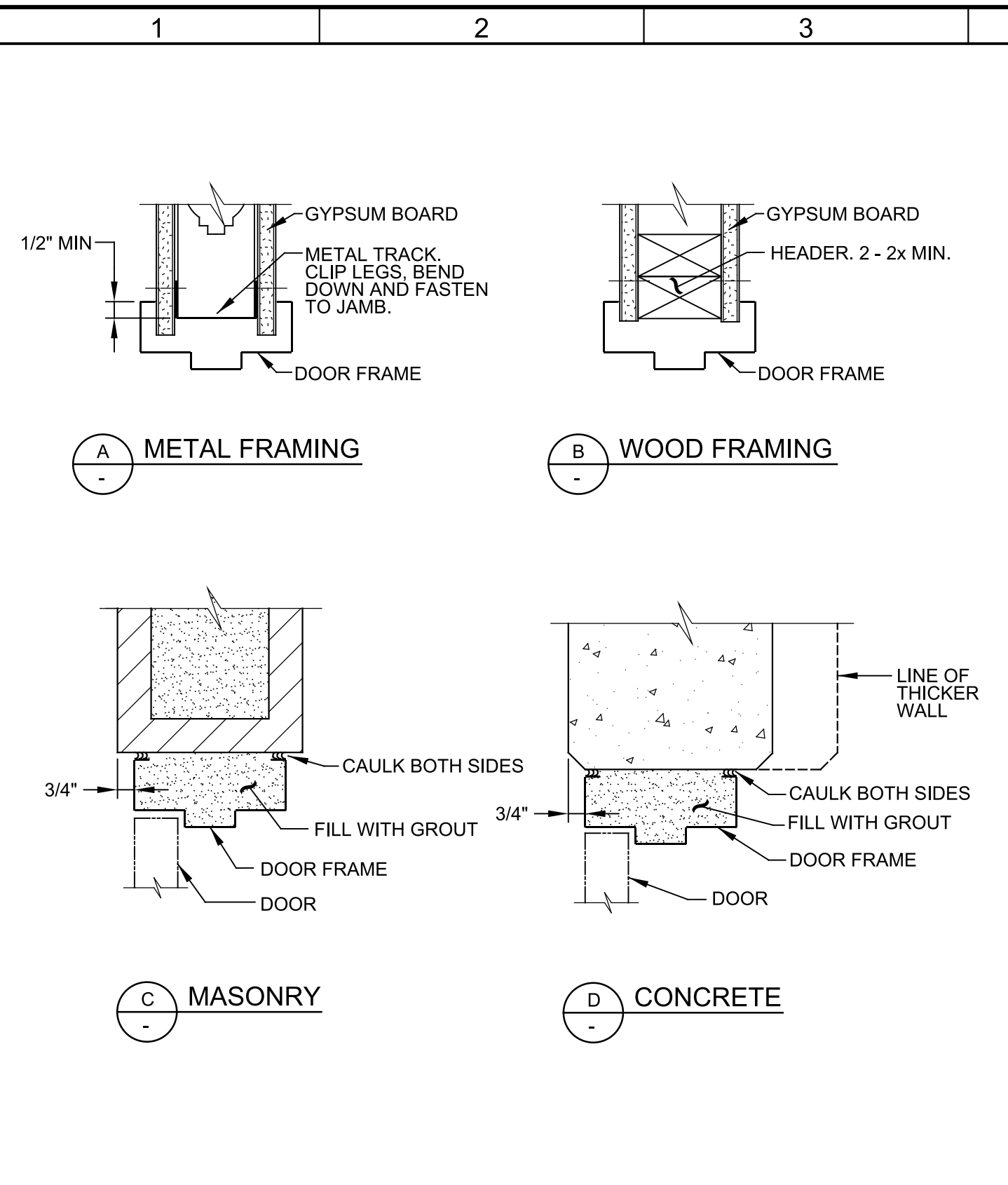
JOB NO. 7310L.10
DRAWING NO. TA04C
SHEET NO. 18 OF 130

Plot Date: 24-APR-2023 12:07:55 PM

User: svcRW

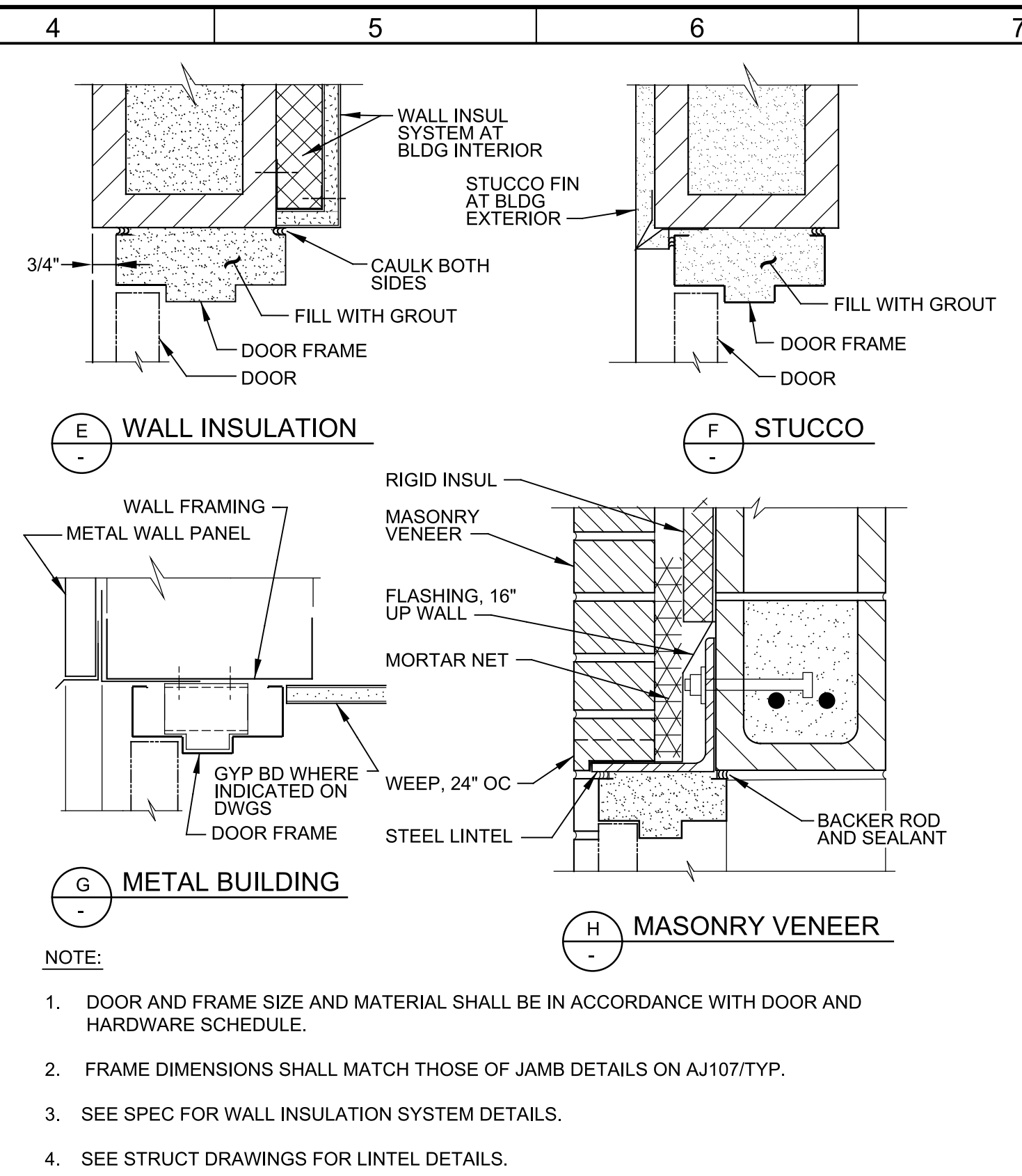
Model: Layout1 ColorTable: gshade.ctb DesignScript: Carollo Std Pen_v0905.pen PlotScale: 1:1

LAST SAVED BY: luy



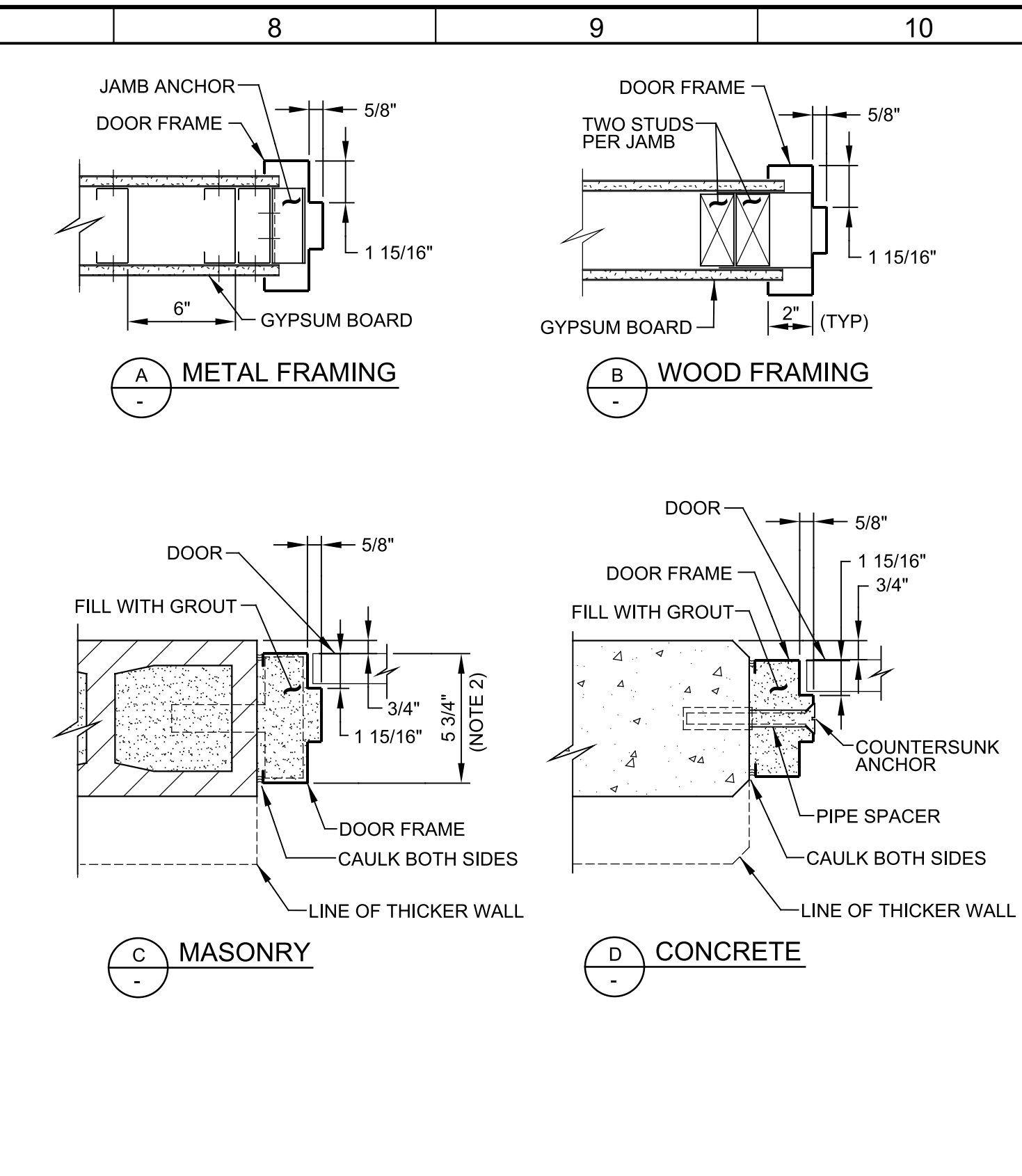
AJ105 DOOR - HEAD - DETAILS
TYP

SHEET 1 OF 2 06/21/19



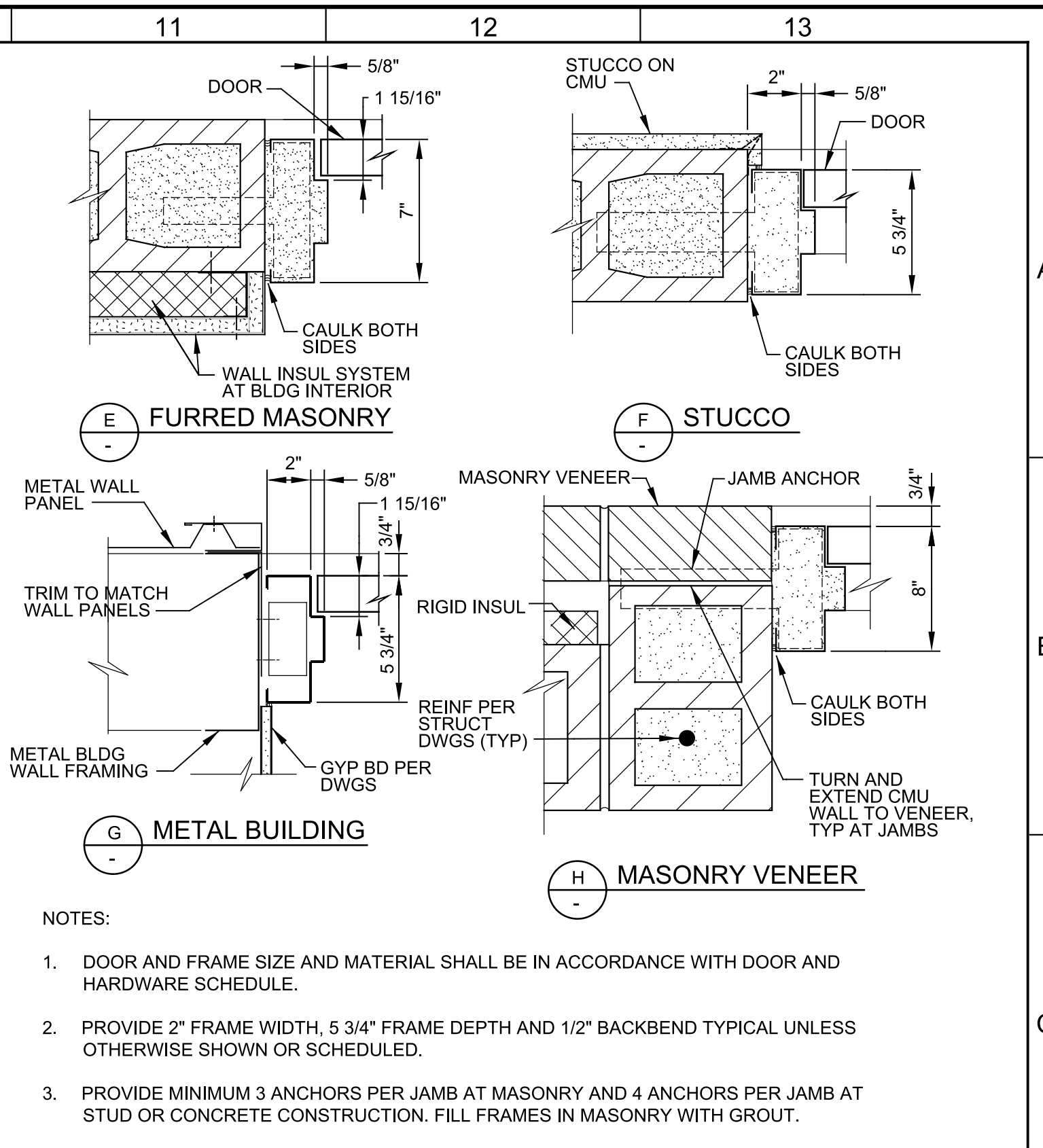
AJ105 DOOR - HEAD - DETAILS
TYP

SHEET 2 OF 2 06/21/19



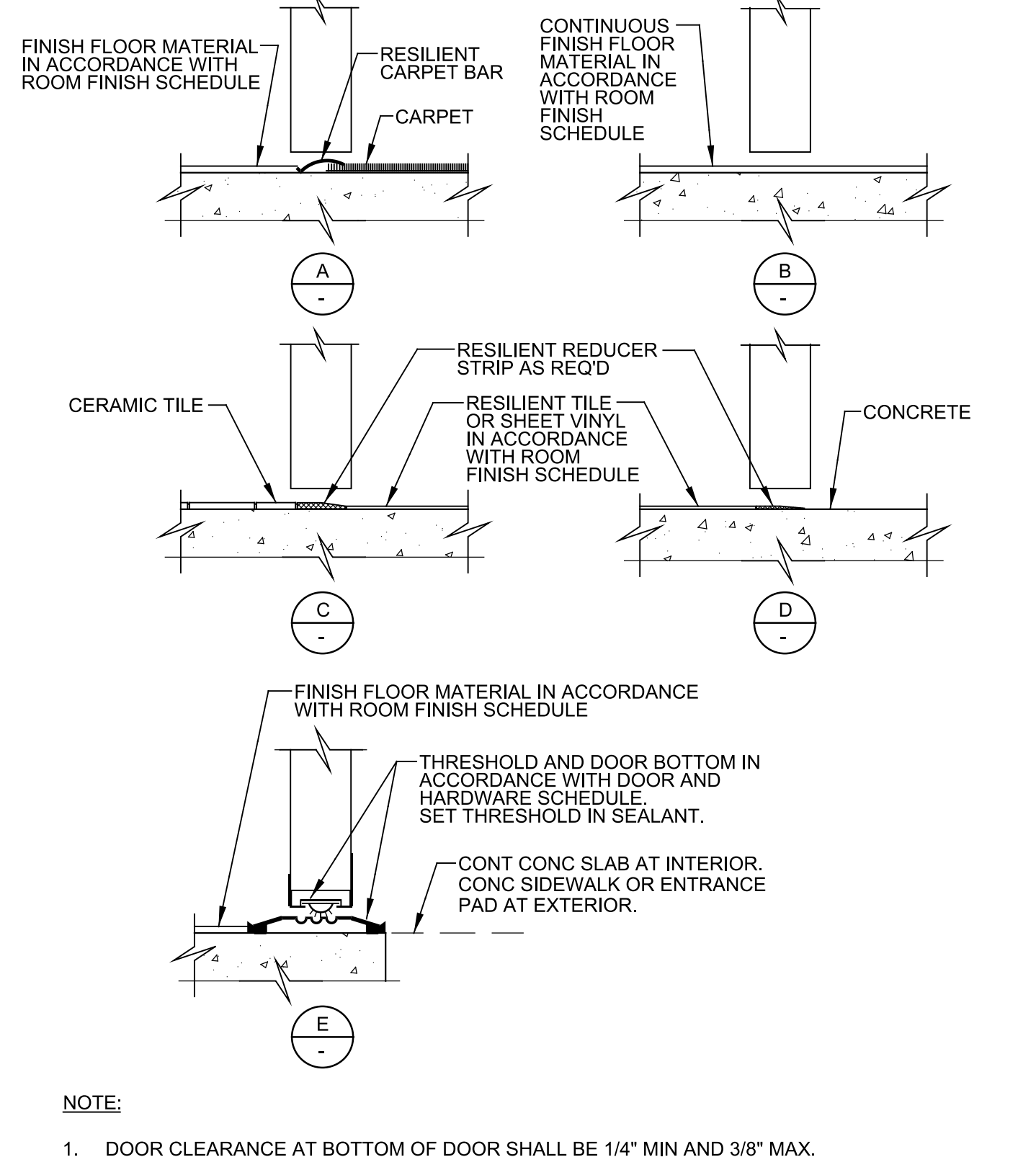
AJ107 DOOR - JAMB - DETAILS
TYP

SHEET 1 OF 2 06/21/19



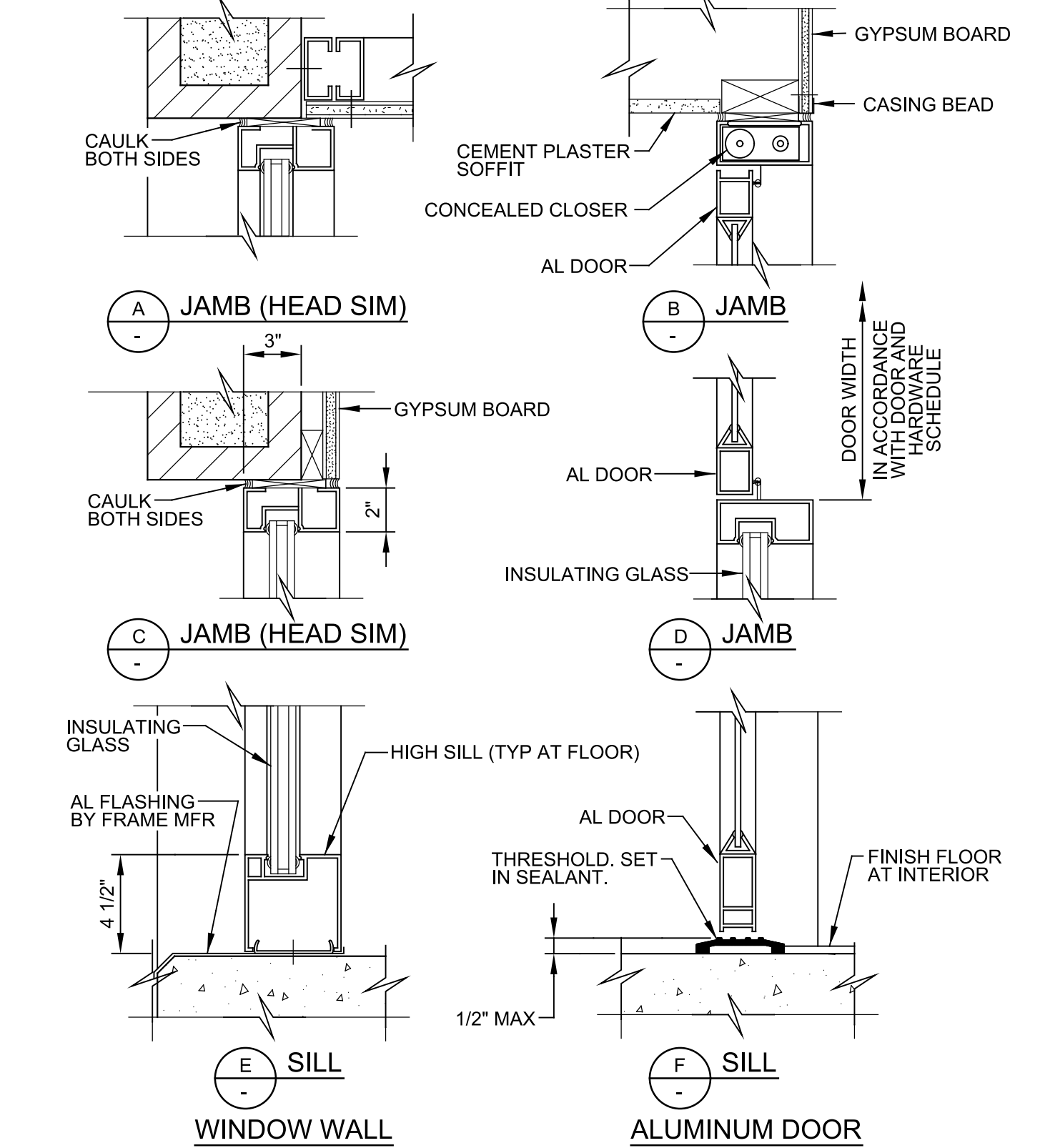
AJ107 DOOR - JAMB - DETAILS
TYP

SHEET 2 OF 2 06/21/19



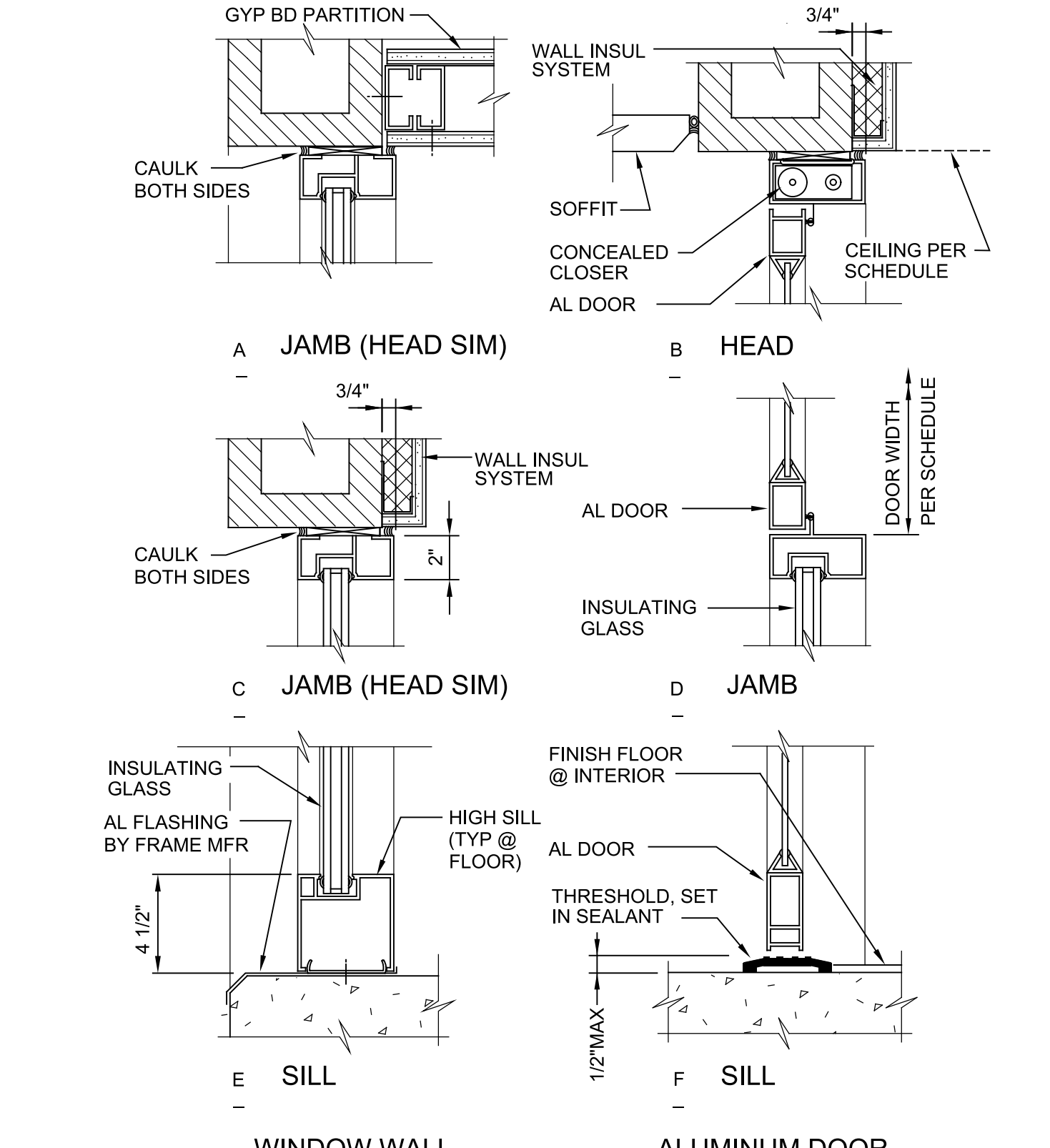
AJ109 DOOR - SILL - DETAILS
TYP

06/21/19



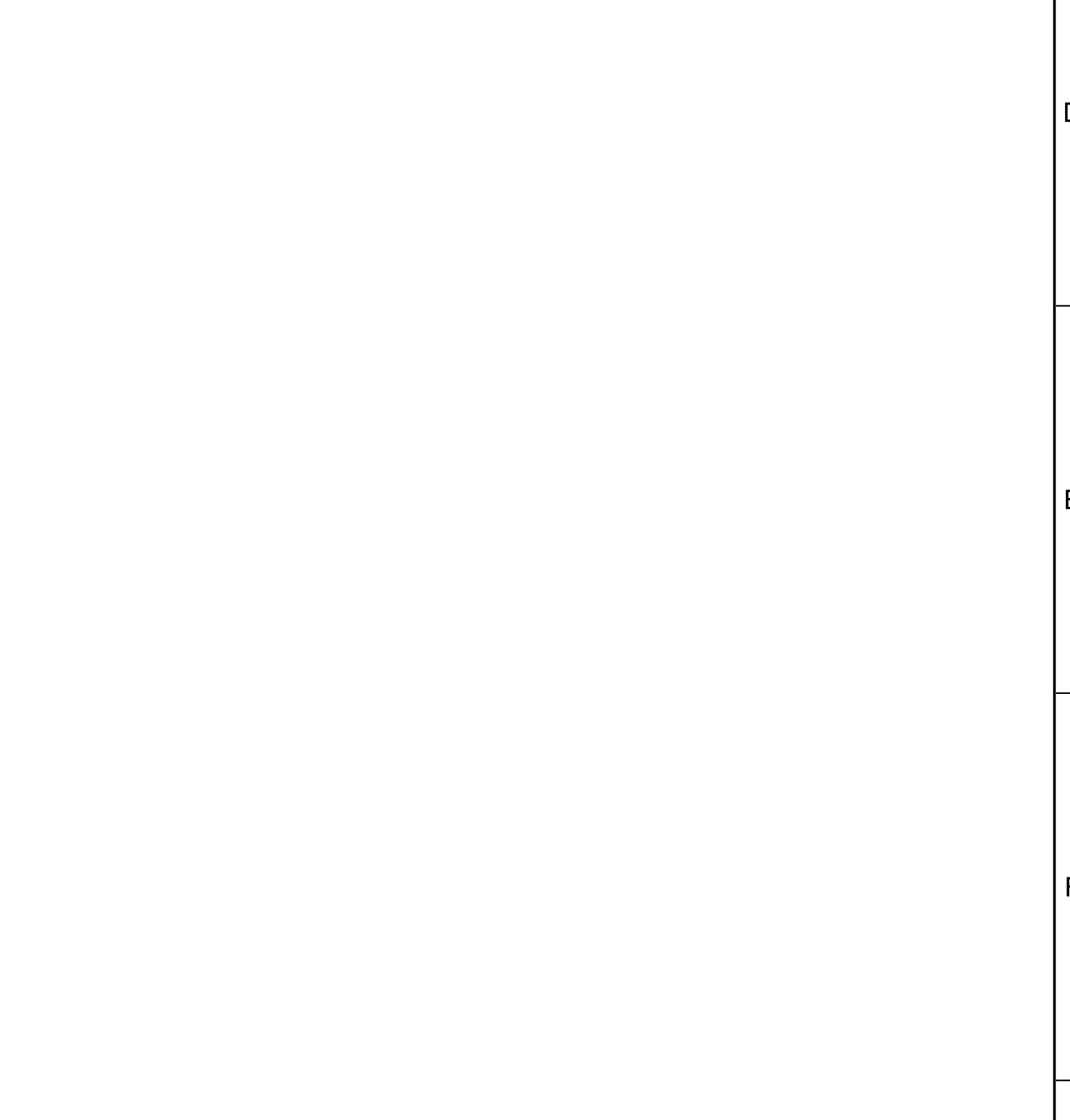
AJ350 ENTRANCES AND STOREFRONTS ALUMINUM-FRAMED
TYP

SHEET 1 OF 2 06/21/19



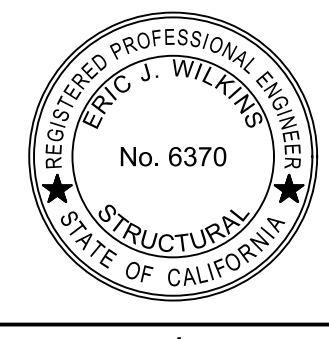
AJ350 ENTRANCES AND STOREFRONTS ALUMINUM-FRAMED
TYP

SHEET 2 OF 2 06/21/19



AJ350 ENTRANCES AND STOREFRONTS ALUMINUM-FRAMED
TYP

SHEET 2 OF 2 06/21/19



Digitally signed by Eric J Wilkins
Contact Info: Carollo Engineers, Inc.
Date: 2023.04.27 09:56:13-0700

Eric Wilkins



CITY OF PETALUMA
FILTER ADDITION AND MISC. IMPROVEMENTS PROJECT
TYPICALS
TYPICAL ARCHITECTURAL DETAILS

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

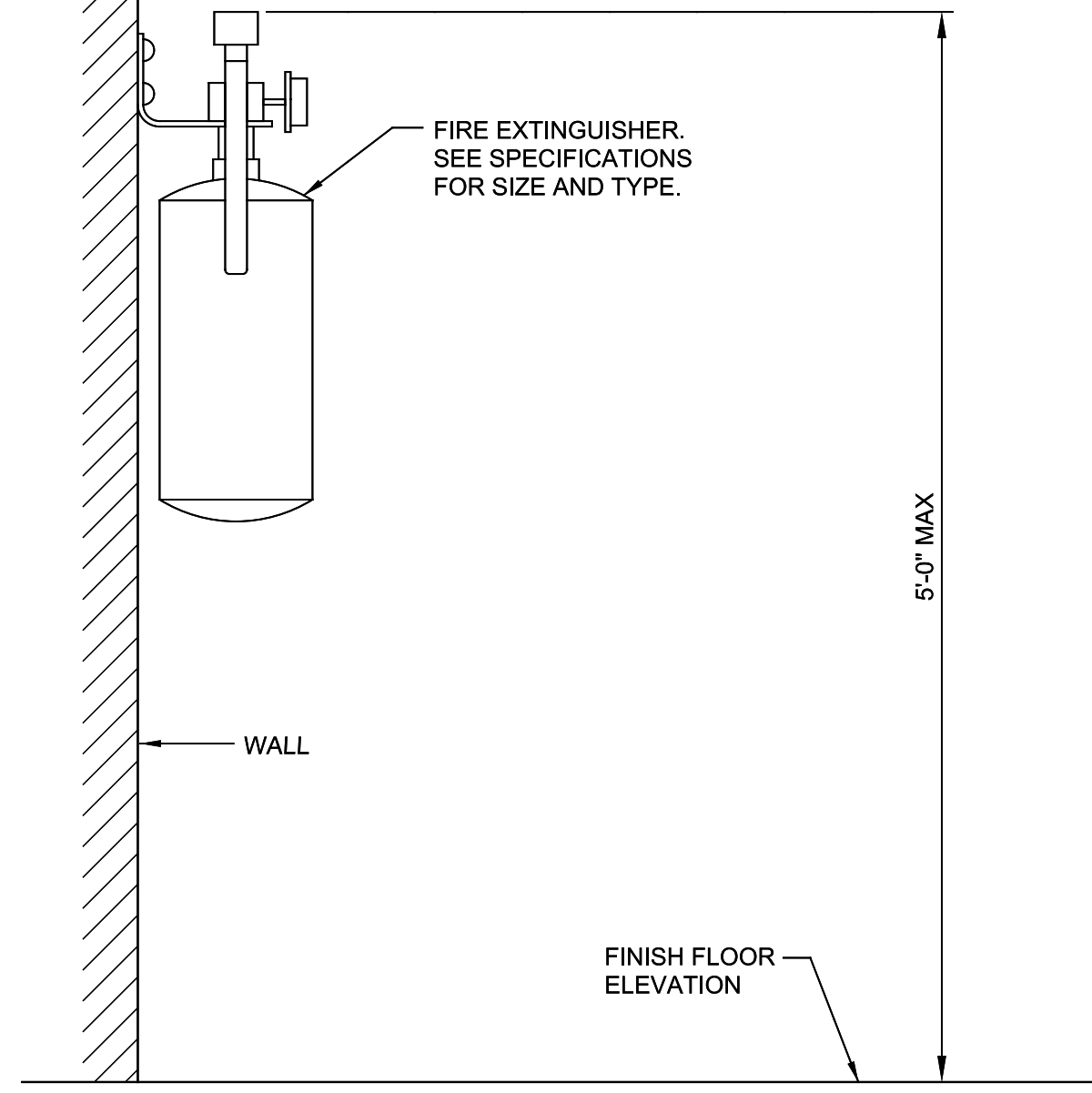
JOB NO. 7310L.10
DRAWING NO. TA05C
SHEET NO. 19 OF 130

Plot Date: 24-APR-2023 12:07:59 PM

User: svcPW

Model: Layout1 ColorTable: gshade.ctb DesignScript: Carollo_Sig_Pen_v0905.pen PlotScale: 1:1

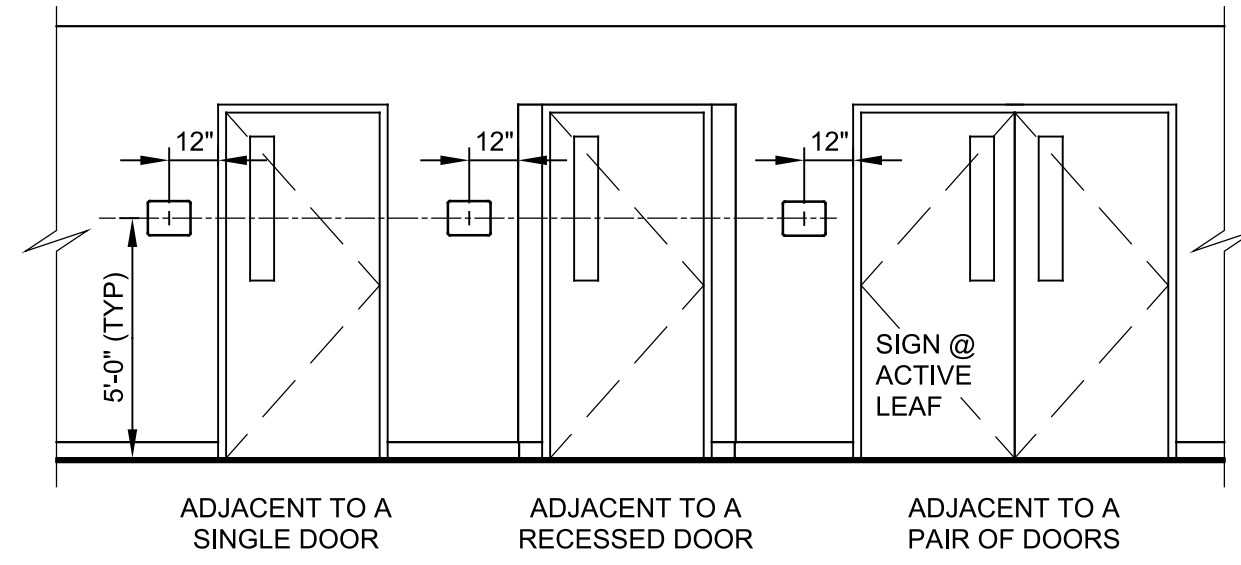
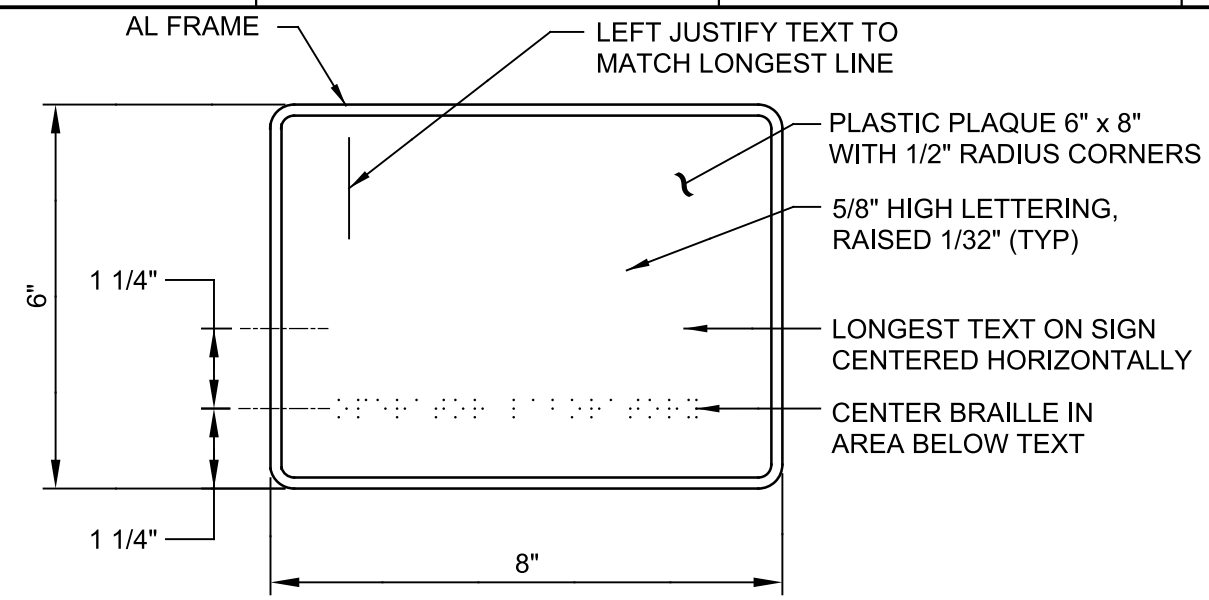
LAST SAVED BY: luy



- NOTES:**
- MOUNT TO WALL WITH NUMBER AND SIZE OF ANCHORS TO MATCH BRACKET. USE CONCRETE ANCHORS FOR MASONRY OR CONCRETE WALLS. AT MASONRY INSTALL AT GROUDED CELL. MOUNT TO STUD WITH LAG BOLTS, OR WOOD SCREWS FOR WOOD PARTITION WALL.
 - SEE SPECIFICATIONS FOR SIGNAGE REQUIREMENTS ABOVE FIRE EXTINGUISHERS.

AN400 FIRE EXTINGUISHER
WALL-MOUNTED
TYP

06/21/19

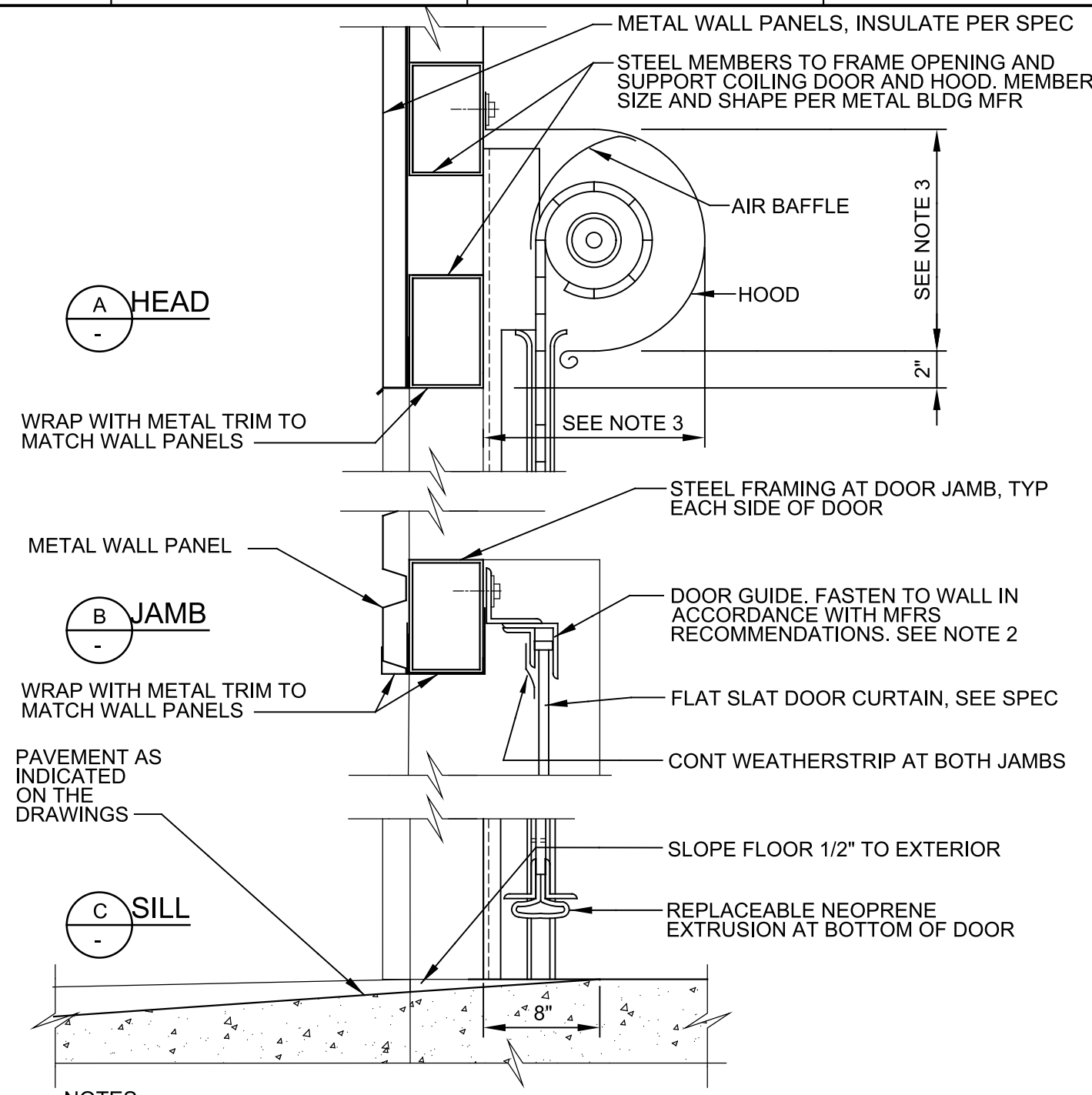


TYPICAL SIGN LOCATIONS

- NOTES:**
- ALL PERMANENT SIGNAGE ON THE ACCESSIBLE ROUTE SHALL MEET ADA REQUIREMENT 4.30.
 - FOR SIGN QUANTITIES, SEE SIGN SCHEDULE.
 - LOCATE SIGNS AT LATCH SLIDE OF DOOR. AT DOUBLE DOORS AND WHERE THERE IS NO WALL SPACE ADJACENT TO THE DOOR, PLACE SIGNS ON NEAREST ADJACENT WALL.

AN500 SIGNAGE - INTERIOR - PLASTIC
TYP

06/21/19



- NOTES:**
- SEE DRAWINGS FOR OPERATOR TYPE AND LOCATION.
 - PROVIDE NECESSARY STEEL FRAMING THREE SIDES OF DOOR OPENING, TO SUPPORT COILING DOOR AND DOOR GUIDES.
 - DOOR DIMENSIONS VARY WITH MFR. SEE SHOP DWGS FOR ACTUAL DOOR SIZE.

AT100 METAL BUILDING - DOOR - OHCD DETAILS
TYP

06/21/19

REV	DATE	BY	DESCRIPTION

DESIGNED
CE
DRAWN
CE
CHECKED
DWW
DATE
JANUARY 2023



Digitally signed by Eric J. Wilkins
Contact Info: Carollo Engineers, Inc.
Date: 2023.04.27 08:54:00-0700

Eric Wilkins

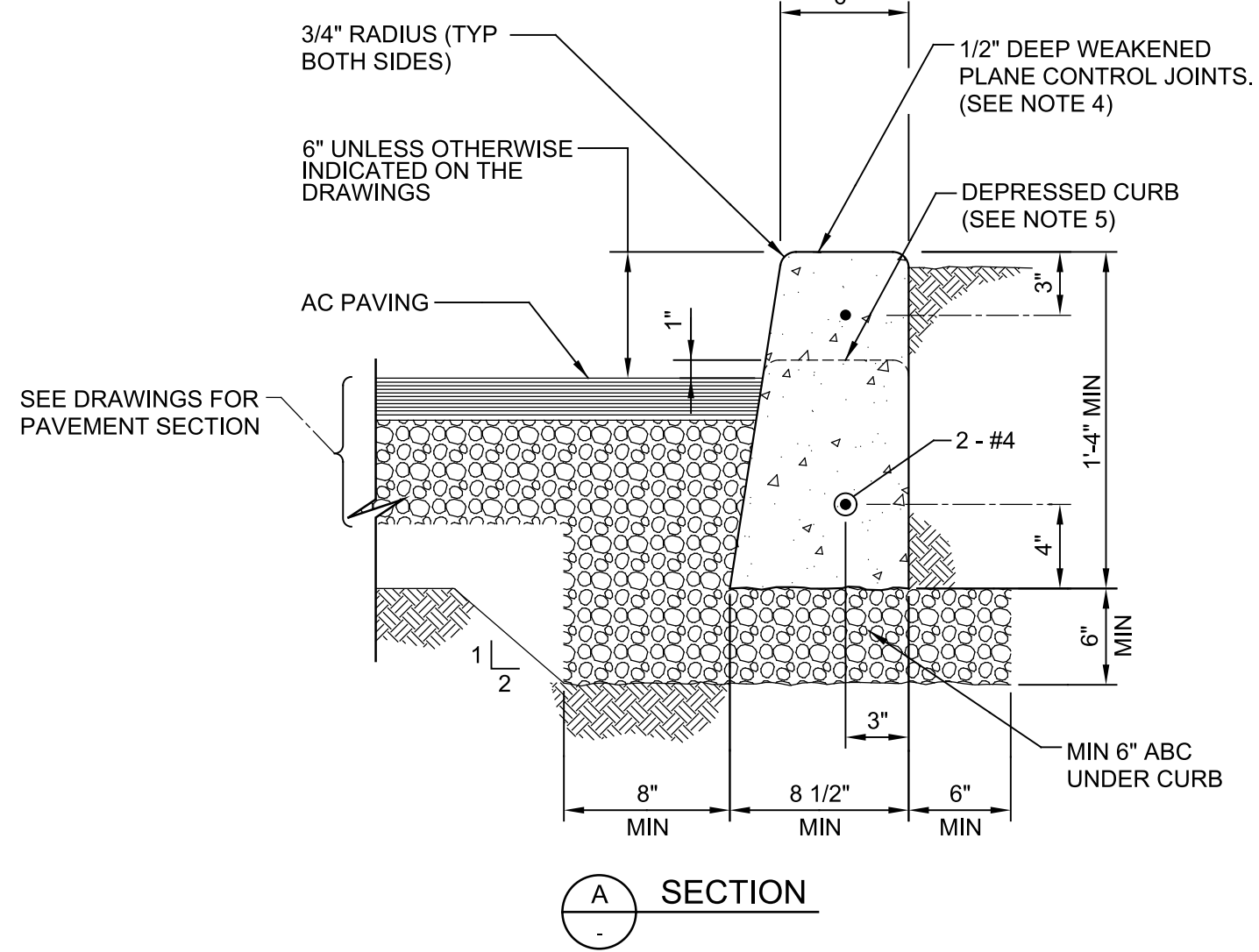


CITY OF PETALUMA
FILTER ADDITION AND MISC. IMPROVEMENTS PROJECT
TYPICALS
TYPICAL ARCHITECTURAL DETAILS

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

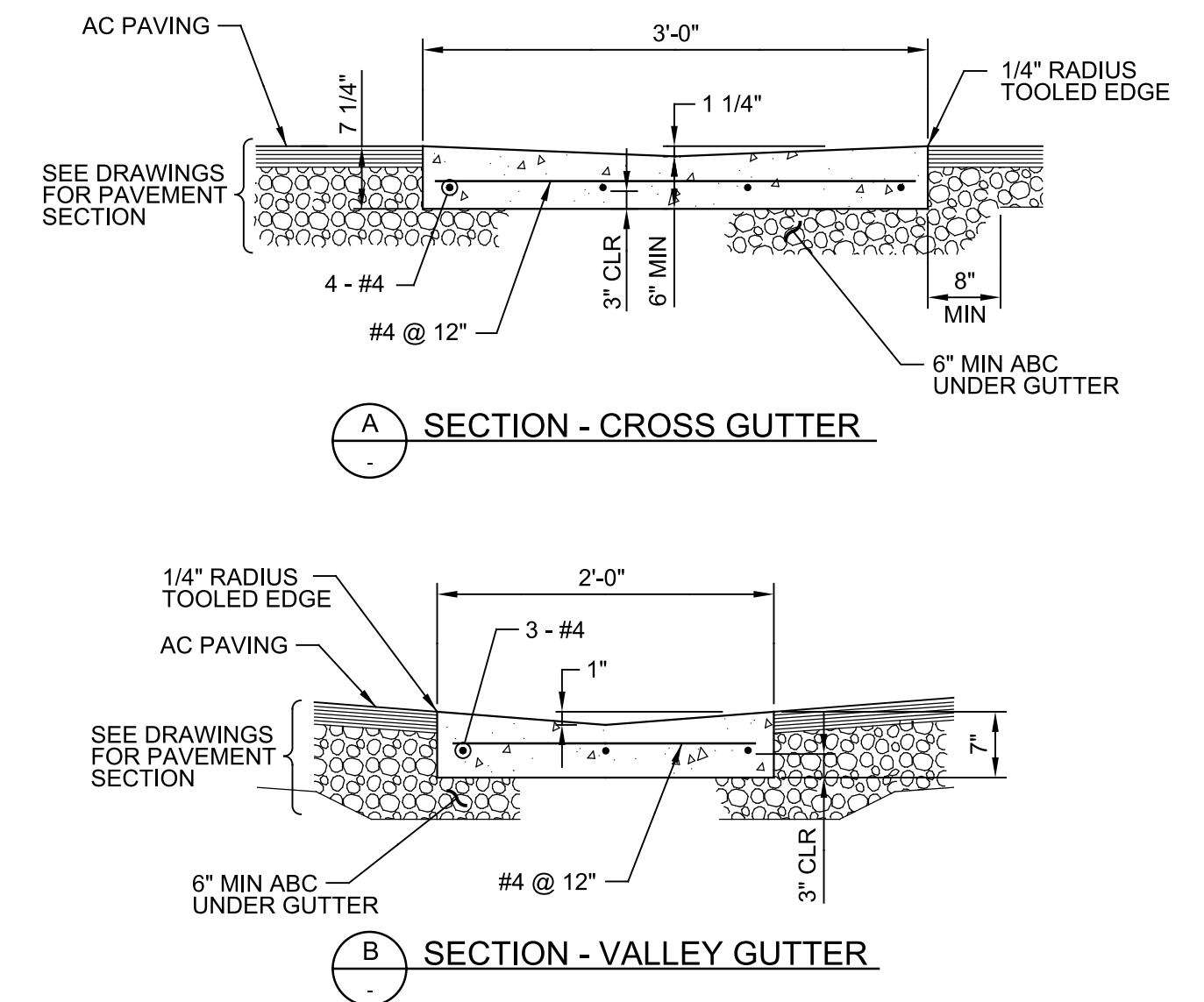
JOB NO.
7310L.10
DRAWING NO.
TA06C
SHEET NO.
20 OF 130

Plot Date: 03-APR-2023 9:41:09 AM
 User: svcPW
 Model: Layout1 ColorTable: gshade.ctb DesignScript: Carollo Std Pen_v0905.pen PlotScale: 1:1
 LAST SAVED BY: tvelch



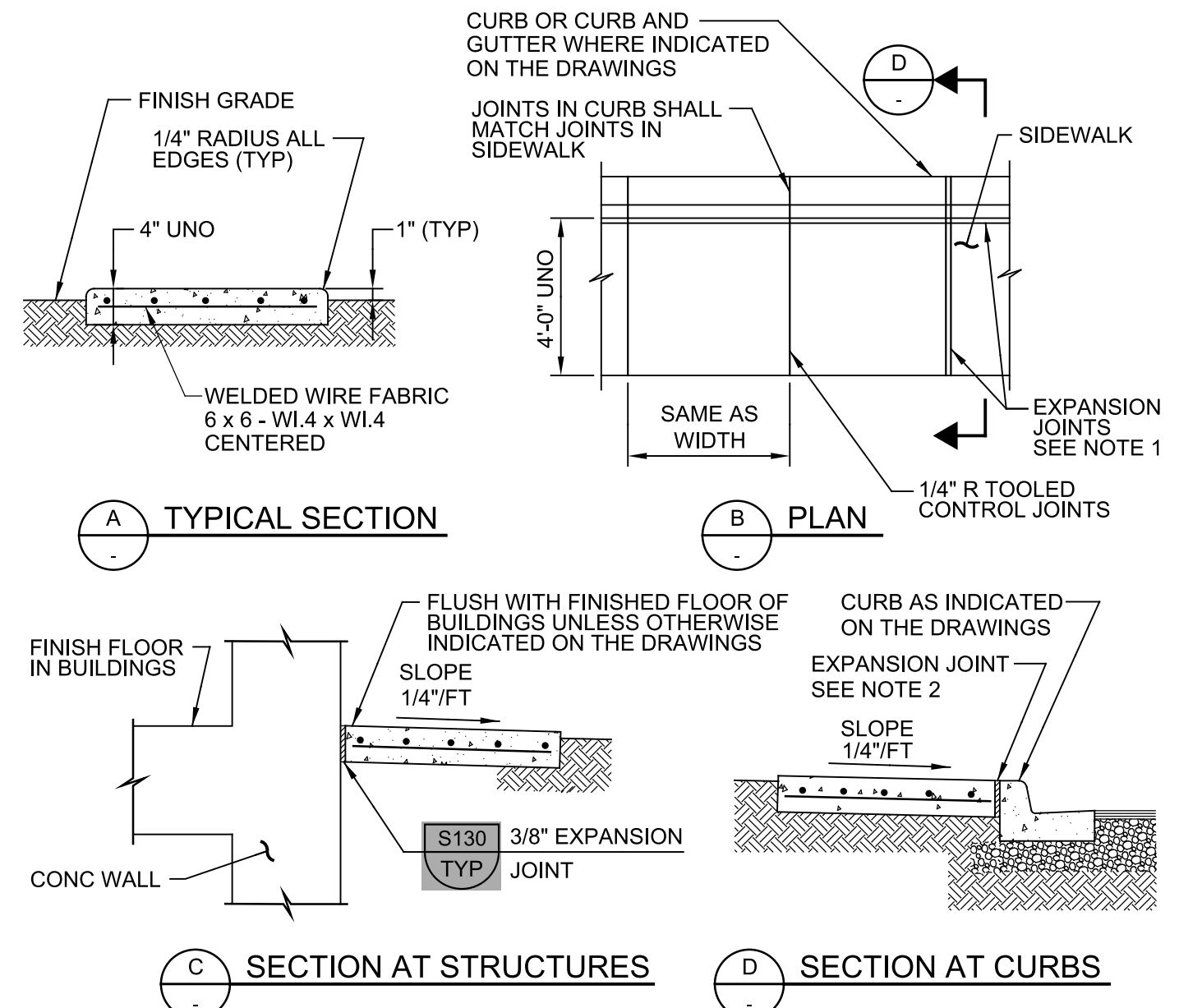
- NOTES:**
1. FINISH CURB ON TOP, 8" DOWN FRONT FACE, AND 2" DOWN BACK.
 2. PROVIDE 3/4" EXPANSION JOINTS AT ENDS OF CONCRETE PLACEMENT, AT POINTS OF CURVATURE, AT BOTH SIDES OF DRIVEWAYS AND WALKWAYS, AT CURB RETURNS, AT STRUCTURES, AND AT MAXIMUM SPACING OF 30 FEET. EXPANSION JOINTS SHALL BE 3/4" WIDE WITH 1/4" RADIUS CONCRETE EDGES AT BOTH SIDES OF JOINT. USE BITUMINOUS FIBER EXPANSION JOINT MATERIAL.
 3. DO NOT PASS REINFORCING BARS THROUGH EXPANSION JOINTS.
 4. PROVIDE WEAKENED PLANE JOINTS AT 10 FEET OC MAXIMUM. AT FRONT, TOP AND BACK FACES, PROVIDE 1/2" RADIUS EDGE EACH SIDE AT JOINTS.
 5. DEPRESS CURB AT DRIVEWAYS, ROADWAYS, SIDEWALKS FOR HANDICAPPED ACCESS, AND WHERE INDICATED ON THE DRAWINGS.

C100 YARD CURBING
TYP



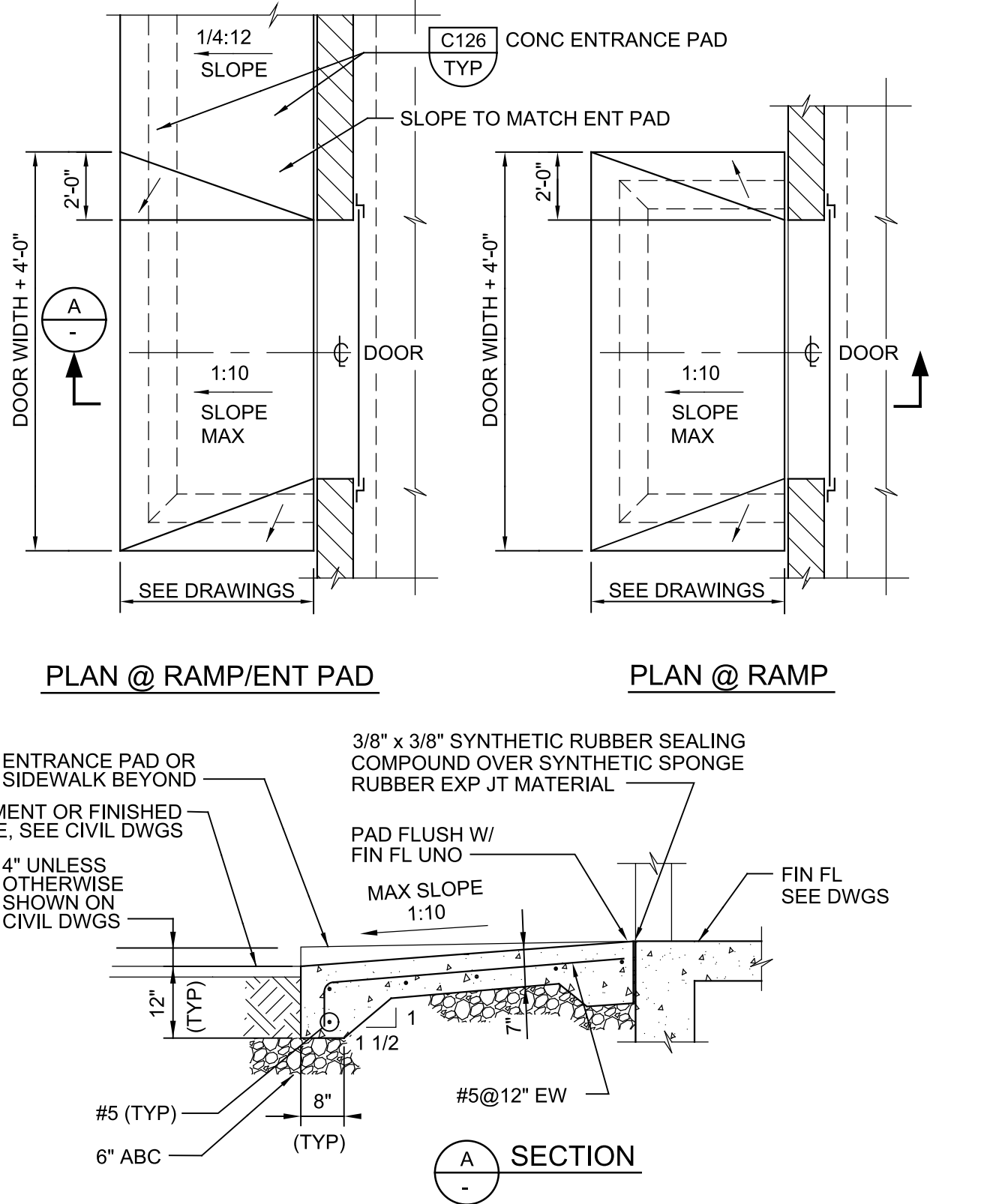
- NOTES:**
1. PROVIDE 3/4" EXPANSION JOINTS AT ENDS OF CONCRETE PLACEMENT, AT POINTS OF CURVATURE, AT INTERSECTIONS, AND AT MAXIMUM SPACING OF 30 FEET. EXPANSION JOINTS SHALL BE 3/4" WIDE WITH 1/4" RADIUS CONCRETE EDGES AT BOTH SIDES OF JOINT. USE BITUMINOUS FIBER EXPANSION JOINT MATERIAL.
 2. DO NOT PASS REINFORCING BARS THROUGH EXPANSION JOINTS.
 3. PROVIDE WEAKENED PLANE JOINTS AT 10 FEET OC MAXIMUM. AT FRONT, TOP AND BACK FACES, PROVIDE 1/2" RADIUS EDGE EACH SIDE AT JOINTS.

C104 CROSS GUTTER AND VALLEY GUTTER
TYP

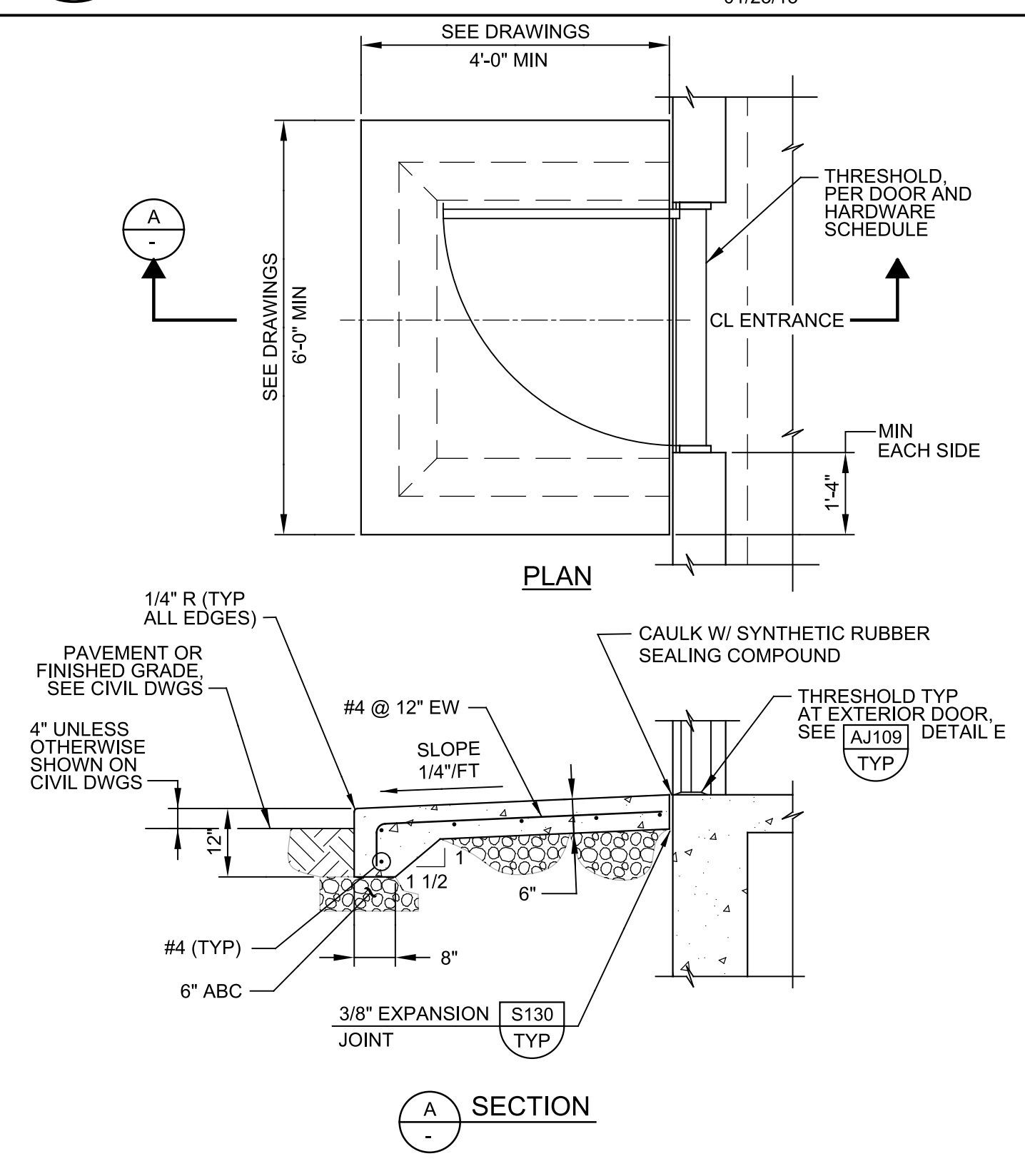


- NOTES:**
1. PROVIDE 3/4" EXPANSION JOINTS AT ENDS OF CONCRETE PLACEMENT, AT POINTS OF CURVATURE, AT BOTH SIDES OF DRIVEWAYS, AT INTERSECTIONS, AT STRUCTURES, AND AT MAXIMUM SPACING OF 30 FEET. EXPANSION JOINTS SHALL BE 3/4" WIDE WITH 1/4" RADIUS CONCRETE EDGES AT EACH SIDE OF JOINT. USE BITUMINOUS FIBER EXPANSION JOINT MATERIAL.
 2. EXPANSION JOINT: 3/8" WIDE WITH 1/4" RADIUS CONCRETE EDGES EACH SIDE. USE BITUMINOUS FIBER EXPANSION JOINT MATERIAL.
 3. PROVIDE WEAKENED PLANE JOINTS AT 10 FEET OC MAXIMUM. AT FRONT, TOP AND BACK FACES, PROVIDE 1/2" RADIUS EDGE EACH SIDE AT JOINTS.
 4. ELEVATIONS AS INDICATED ON THE DRAWINGS.

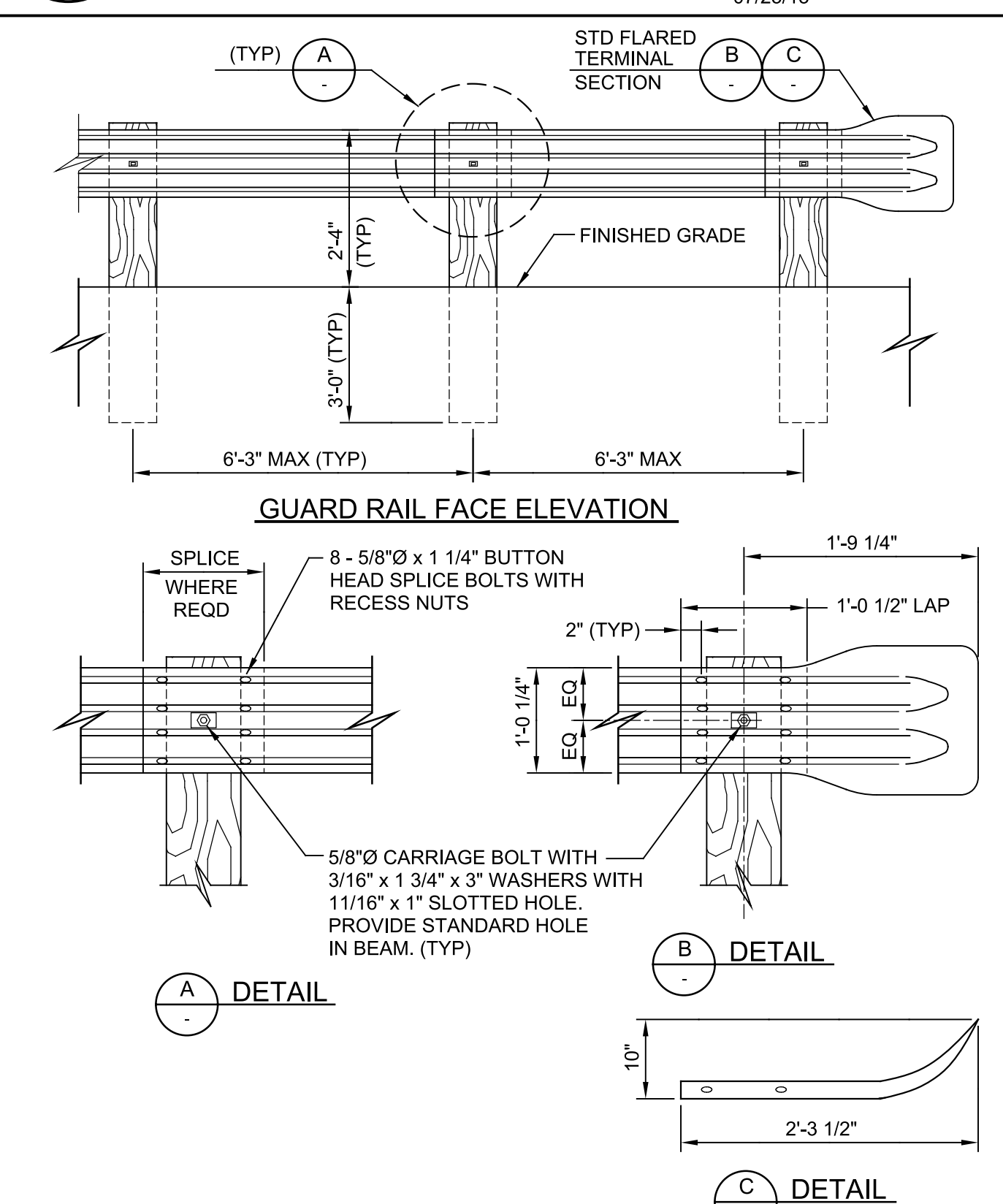
C120 SIDEWALK
TYP



C124 SIDEWALK - RAMP AT COILING DOOR
TYP



C126 SIDEWALK ENTRANCE PAD
TYP



C150 SINGLE FACE GUARD RAIL
TYP

SHEET 1 OF 2 08/01/05

REV	DATE	BY	DESCRIPTION



Digitally signed by Douglas W. Wink
 Contact Info: Carollo Engineers, Inc.
 Date: 2023.04.19 09:39:07 -0700



CITY OF PETALUMA
 FILTER ADDITION AND MISC. IMPROVEMENTS PROJECT
 TYPICALS
TYPICAL CIVIL DETAILS

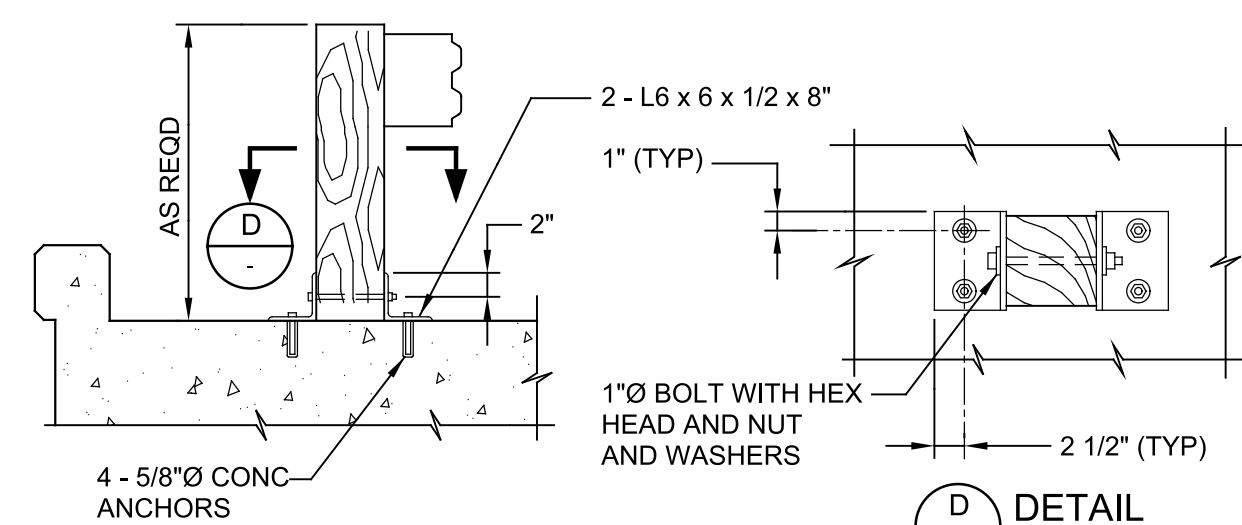
VERIFY SCALES BAR IS ONE INCH ON ORIGINAL DRAWING 0 1"	JOB NO. 7310L.10
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY	DRAWING NO. TC01C
	SHEET NO. 21 OF 130

Plot Date: 03-APR-2023 9:40:04 AM

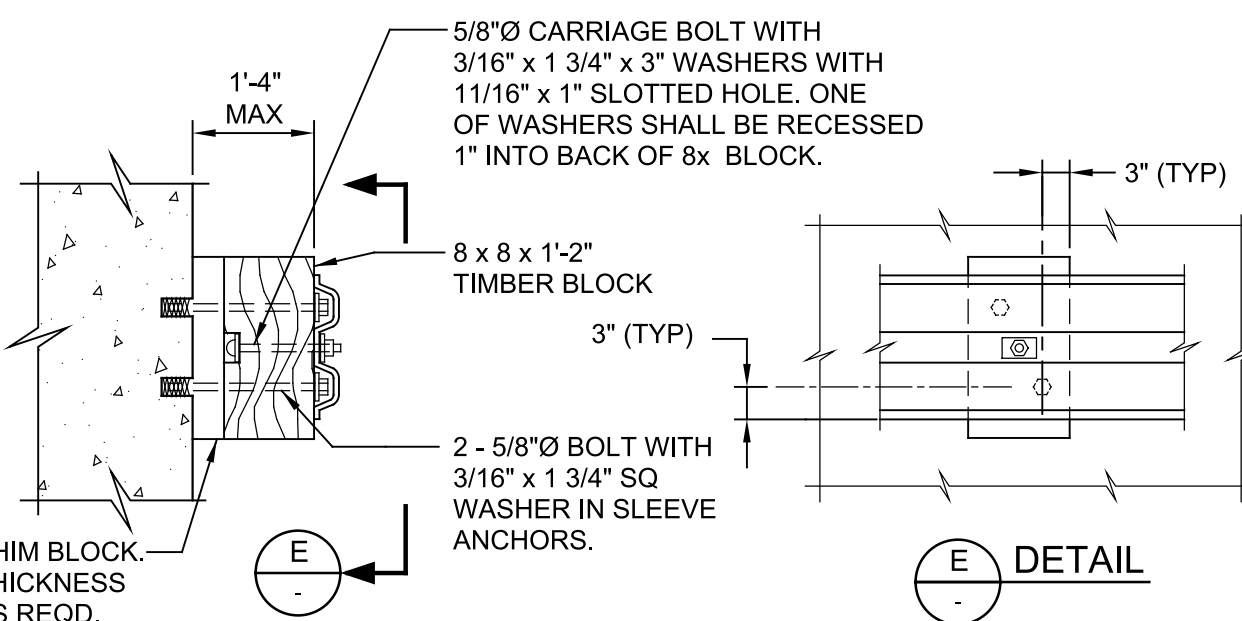
User: svcPW

Model: Layout1 ColorTable: gshade.ctb DesignScript: Carollo Std Pen_v0905.pen PlotScale: 1:1

LAST SAVED BY: mvelch



GUARD RAIL INSTALLATION ON STRUCTURES

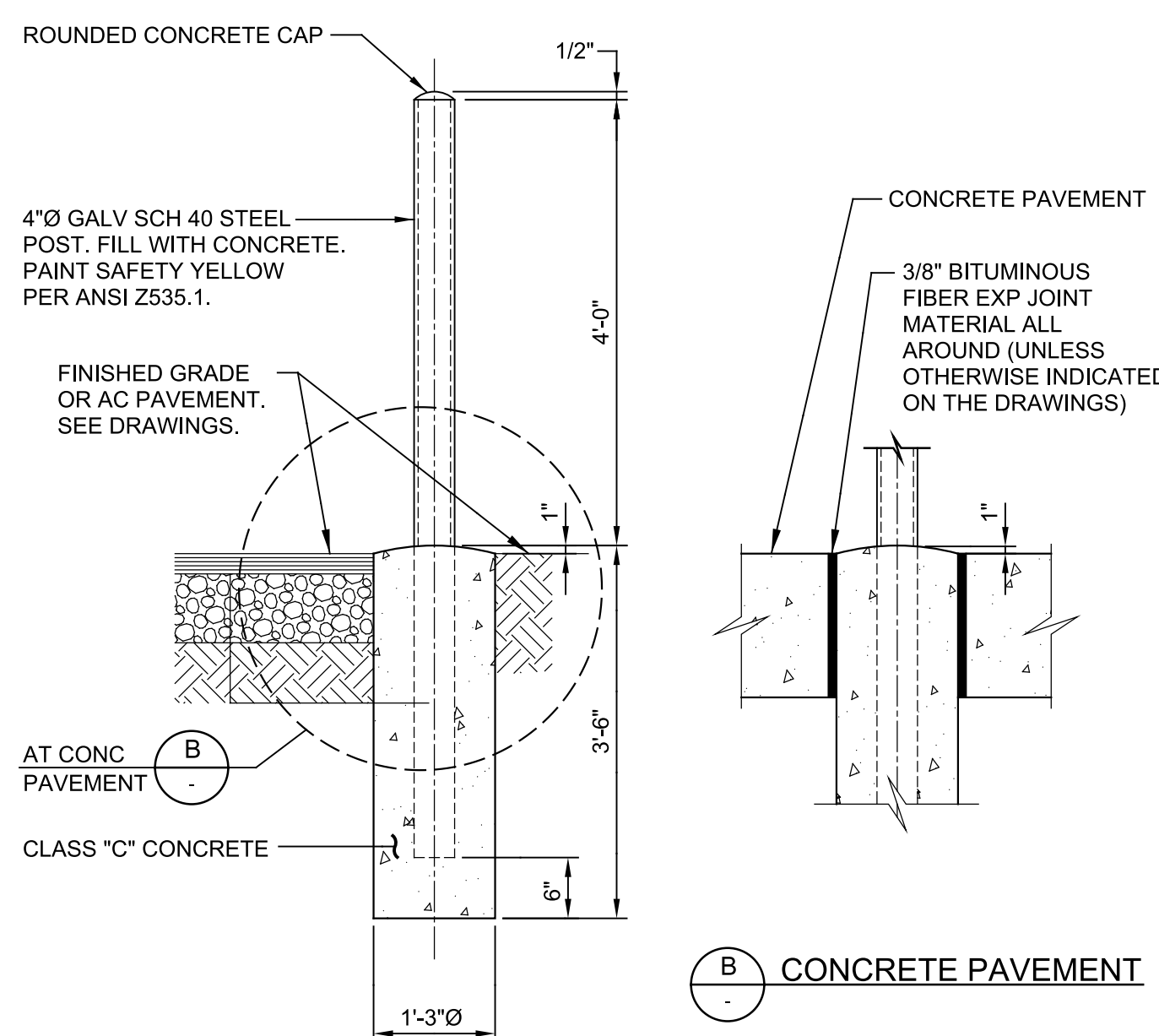


ATTACHMENT OF GUARD RAIL TO STRUCTURE WALL

- NOTES:
- POSTS AND BLOCKS SHALL BE NOMINAL 8 x 8 ROUGH AND UNPAINTED. PRESSURE TREAT AFTER HOLES ARE DRILLED.
 - ALL GUARD RAIL, FITTINGS, AND HARDWARE SHALL BE HOT-DIP GALV.

C150 SINGLE FACE GUARDRAIL
TYP

SHEET 2 OF 2 08/01/05

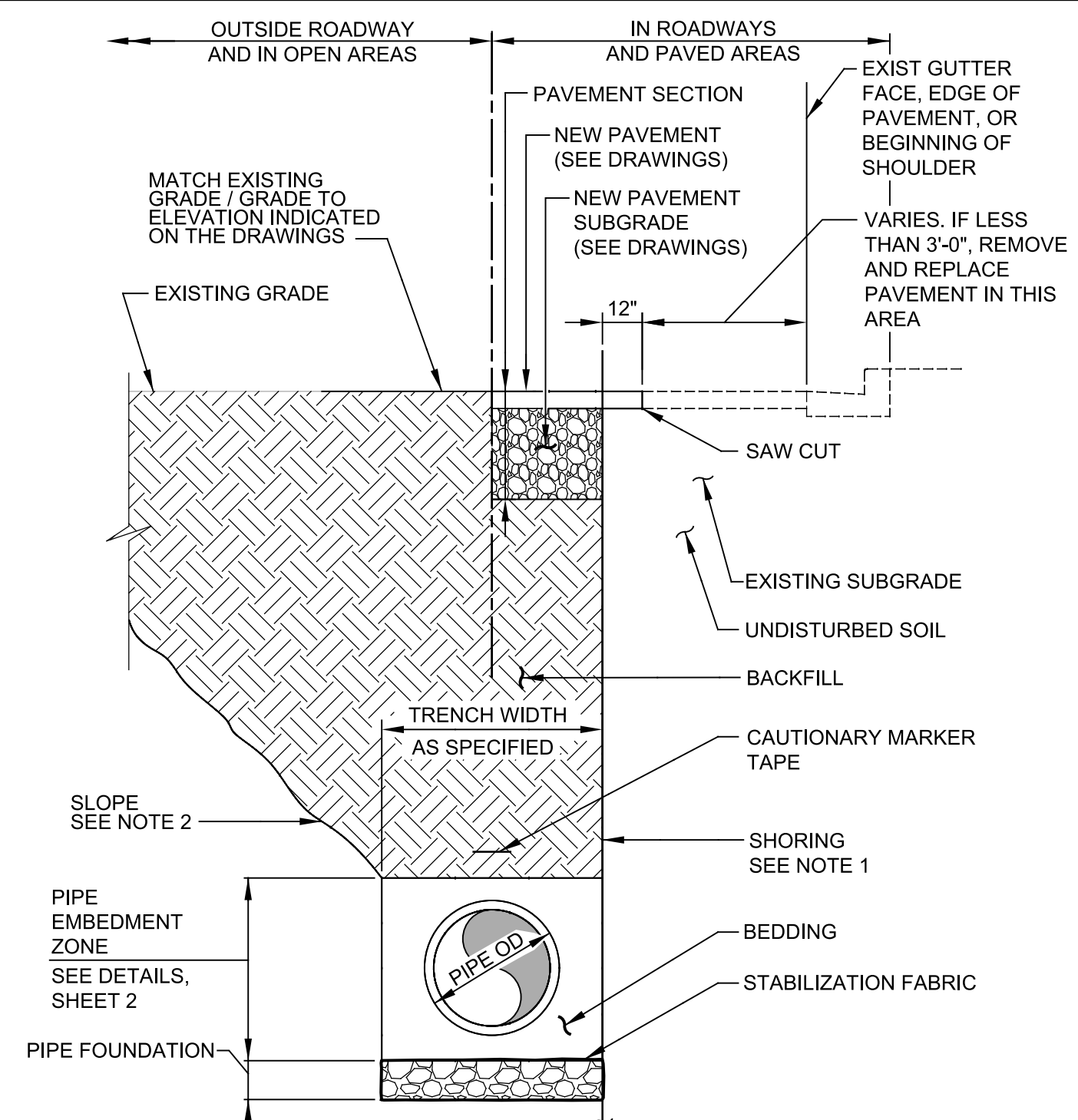


A AC PAVEMENT OR FINISHED GRADE

B CONCRETE PAVEMENT

C160 GUARD POST
TYP

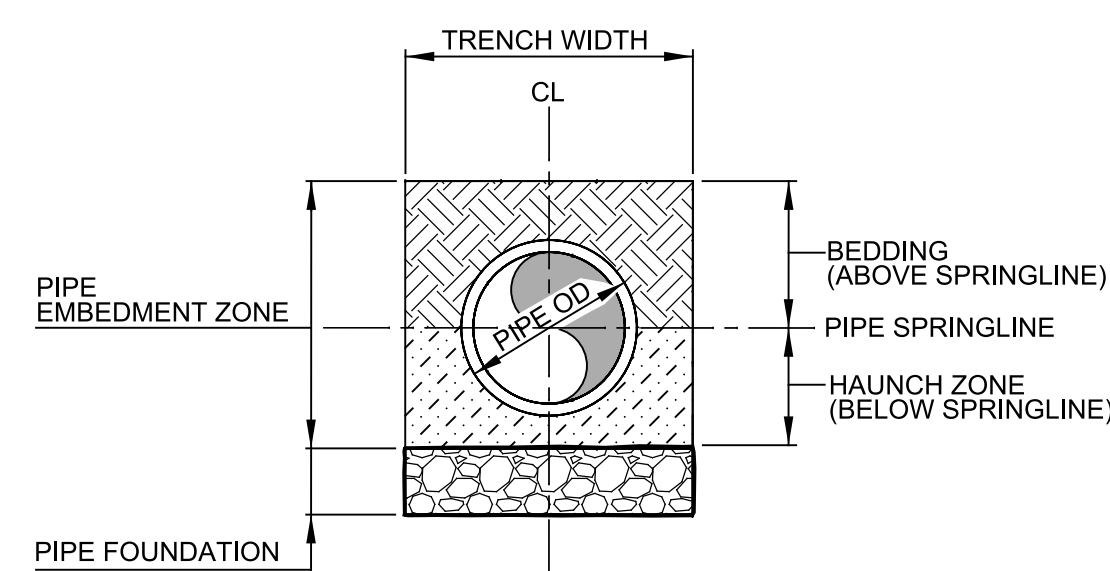
01/13/14



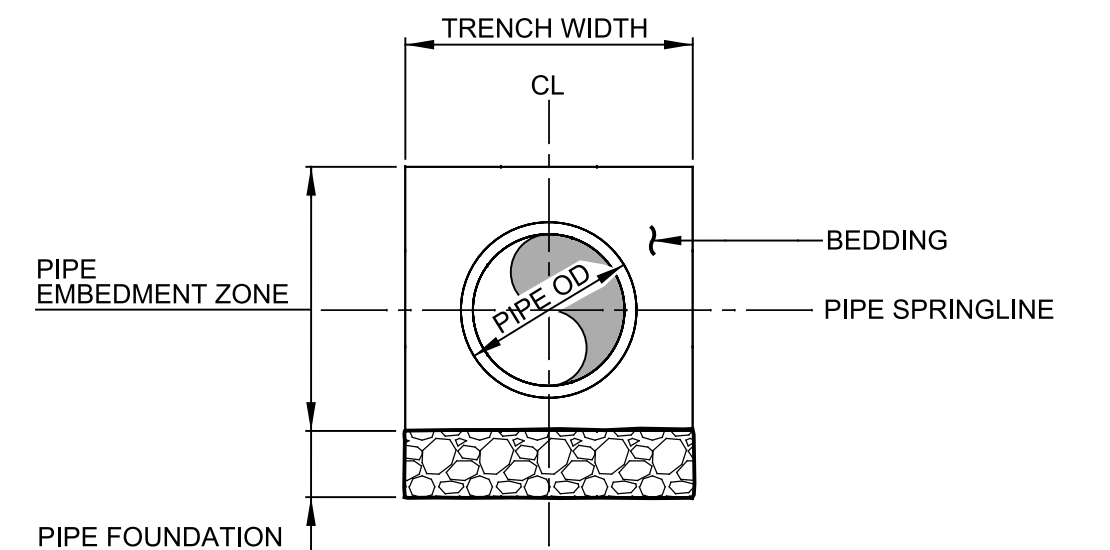
- NOTES:
- SEE SPECIFICATIONS FOR SHORING REQUIREMENTS.
 - SEE SPECIFICATIONS FOR SLOPE REQUIREMENTS.
 - SEE SPECIFICATIONS FOR DEPTH AND WIDTH REQUIREMENTS.

CP111 PIPE TRENCH
TYP

SHEET 1 OF 2 5/20/19



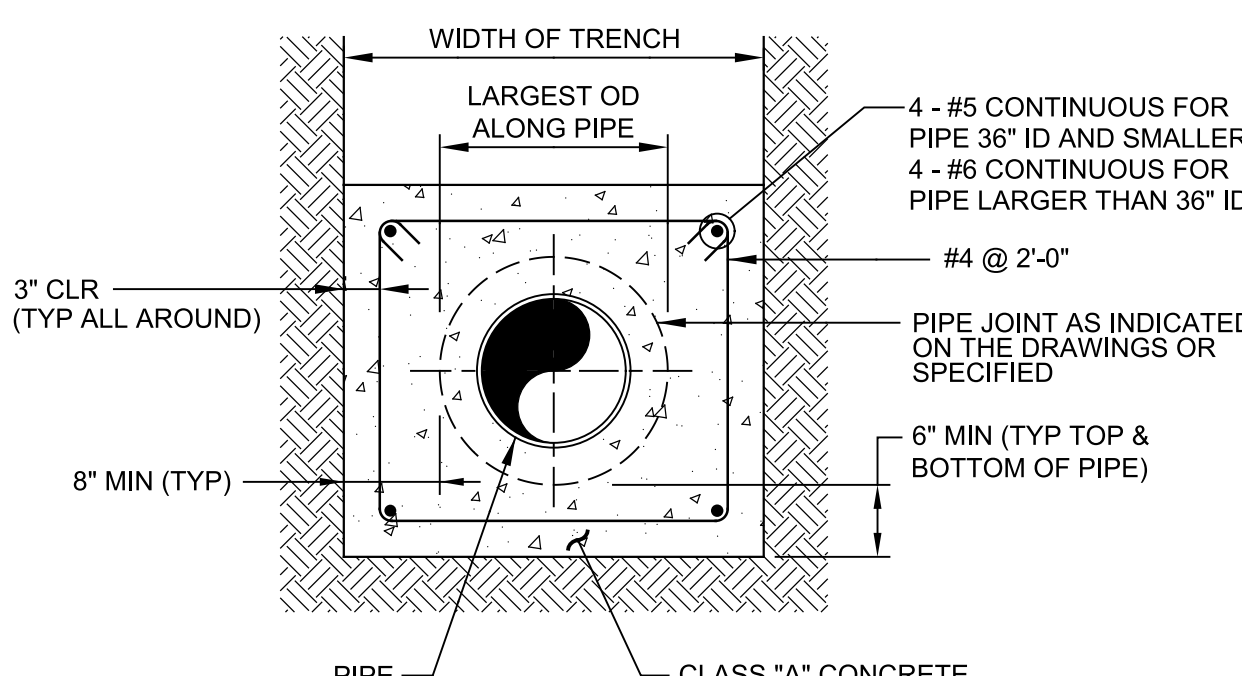
A RIGID PIPE



B FLEXIBLE PIPE

CP111 PIPE ZONE EMBEDMENT
TYP

SHEET 2 OF 2 5/22/19

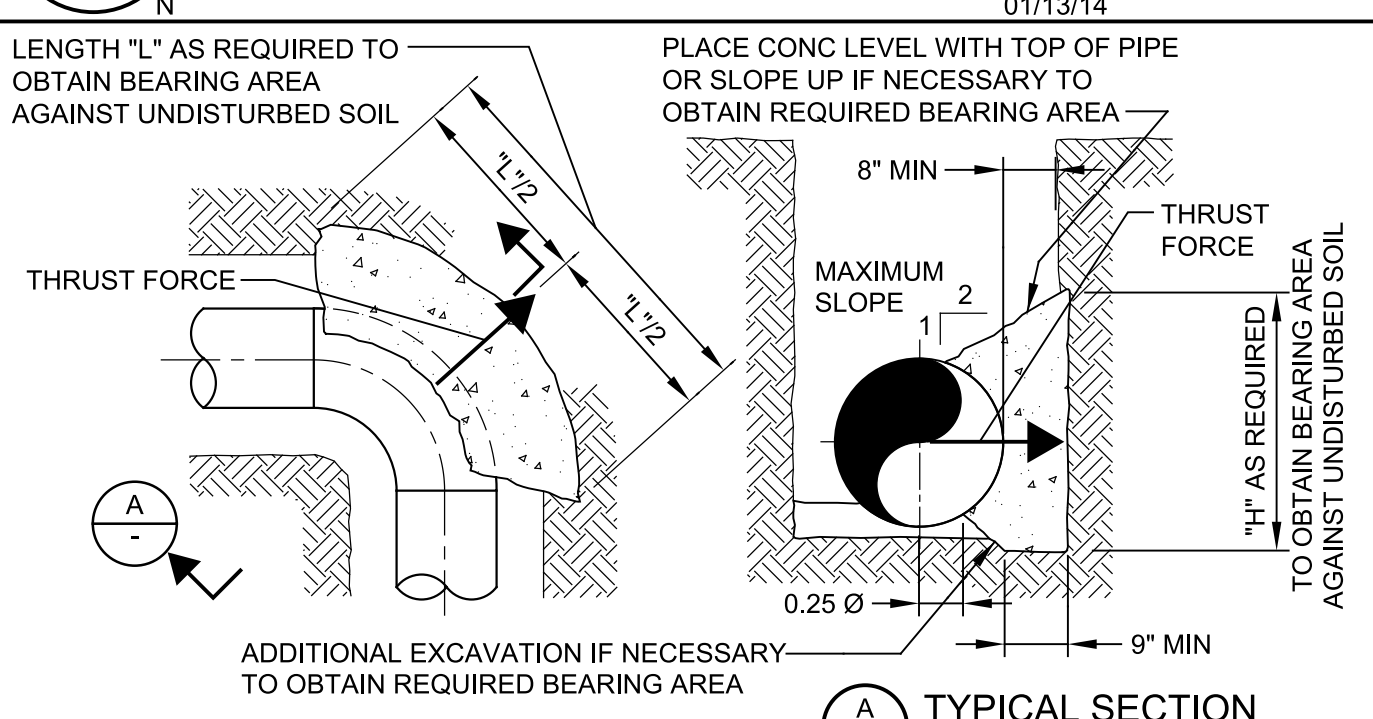


SECTION

- NOTE:
- TYPE OF PIPE AND TYPE OF PIPE JOINT OR COUPLER AS INDICATED ON THE DRAWINGS.
 - SEE MP100 - MP199 FOR DETAILS OF PIPE ENCASEMENT CONNECTIONS TO STRUCTURES.

CP119 CONCRETE PIPE ENCASEMENT
TYP

SHEET 1 OF 1 10/20/20



TYPICAL SECTION

- NOTES:
- BEARING AREA IS THE AREA REQUIRED TO OBTAIN A MAXIMUM PRESSURE NOT GREATER THAN 1500 PSF AT THE TOP OF THRUST BLOCK WHEN THE PIPE IS SUBJECTED TO ITS TEST PRESSURE, OR BEARING AREA INDICATED ON THE DRAWINGS USING A PASSIVE RESISTANCE OF 200 PSF/FT DEPTH.
 - CONCRETE SHALL BE CLASS "A" OR "C".
 - THRUST BLOCK SHALL BEAR ON UNDISTURBED SOIL.

CP131 THRUST RESTRAINT - BURIED THRUST BLOCK
TYP

SHEET 1 OF 1 02/08/2019

REV	DATE	BY	DESCRIPTION
1			
2			
3			

DESIGNED	CE
DRAWN	CE
CHECKED	
DATE	JANUARY 2023



Digitally signed by Douglas W. Wilk
 Contact Info: Carollo Engineers, Inc.
 Date: 2023.04.19 10:29:00 -0700



CITY OF PETALUMA
 FILTER ADDITION AND MISC. IMPROVEMENTS PROJECT
 TYPICALS
 TYPICAL CIVIL DETAILS

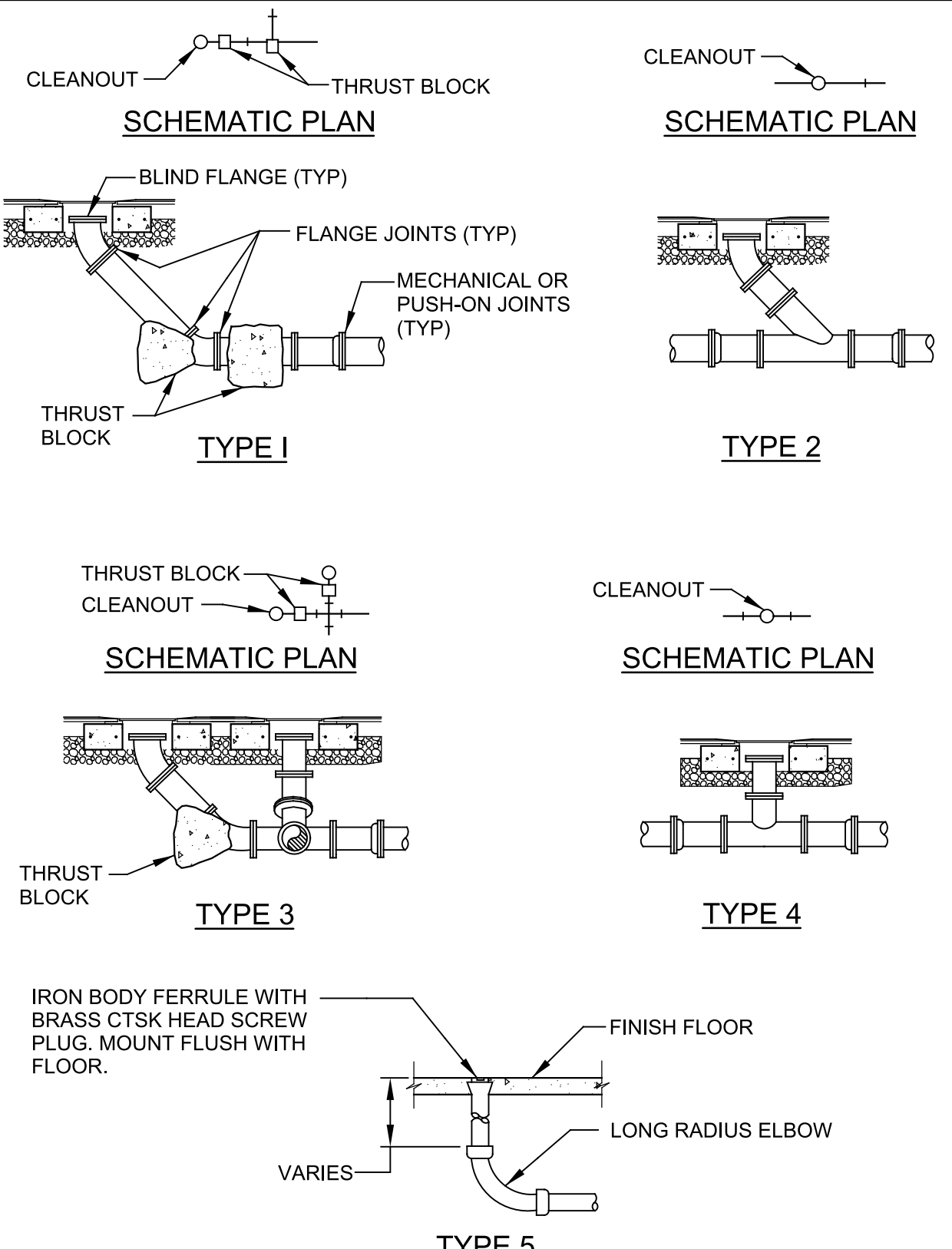
VERIFY SCALES	JOB NO. 7310L.10
BAR IS ONE INCH ON ORIGINAL DRAWING	DRAWING NO. TC02C
0 1"	SHEET NO. 22 OF 130
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY	

Plot Date: 03-APR-2023 9:41:12 AM

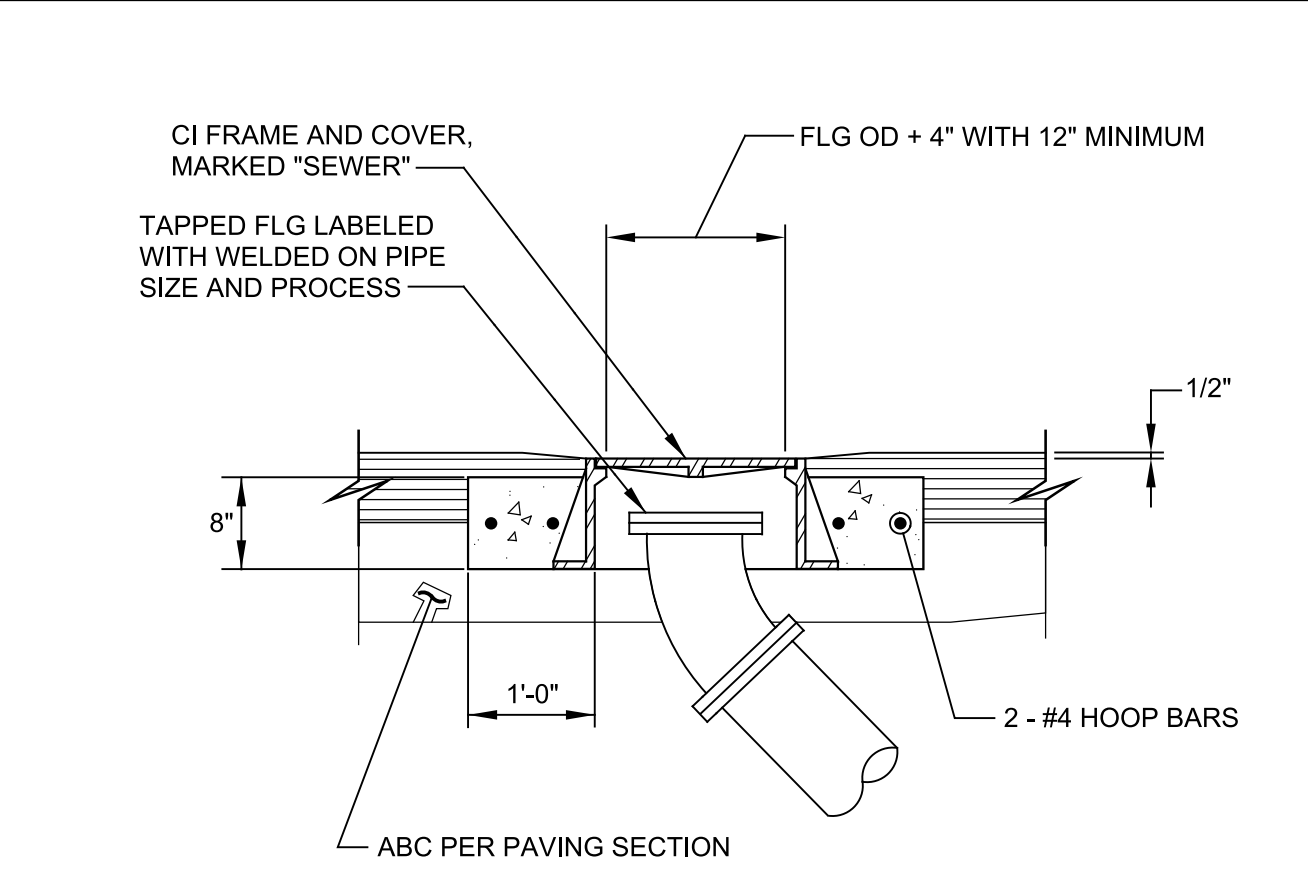
User: svcPW

Model: Layout1 ColorTable: gshade.ctb DesignScript: Carollo_Std_Pen_v0905.pen PlotScale: 1:1

LAST SAVED BY: iweilch



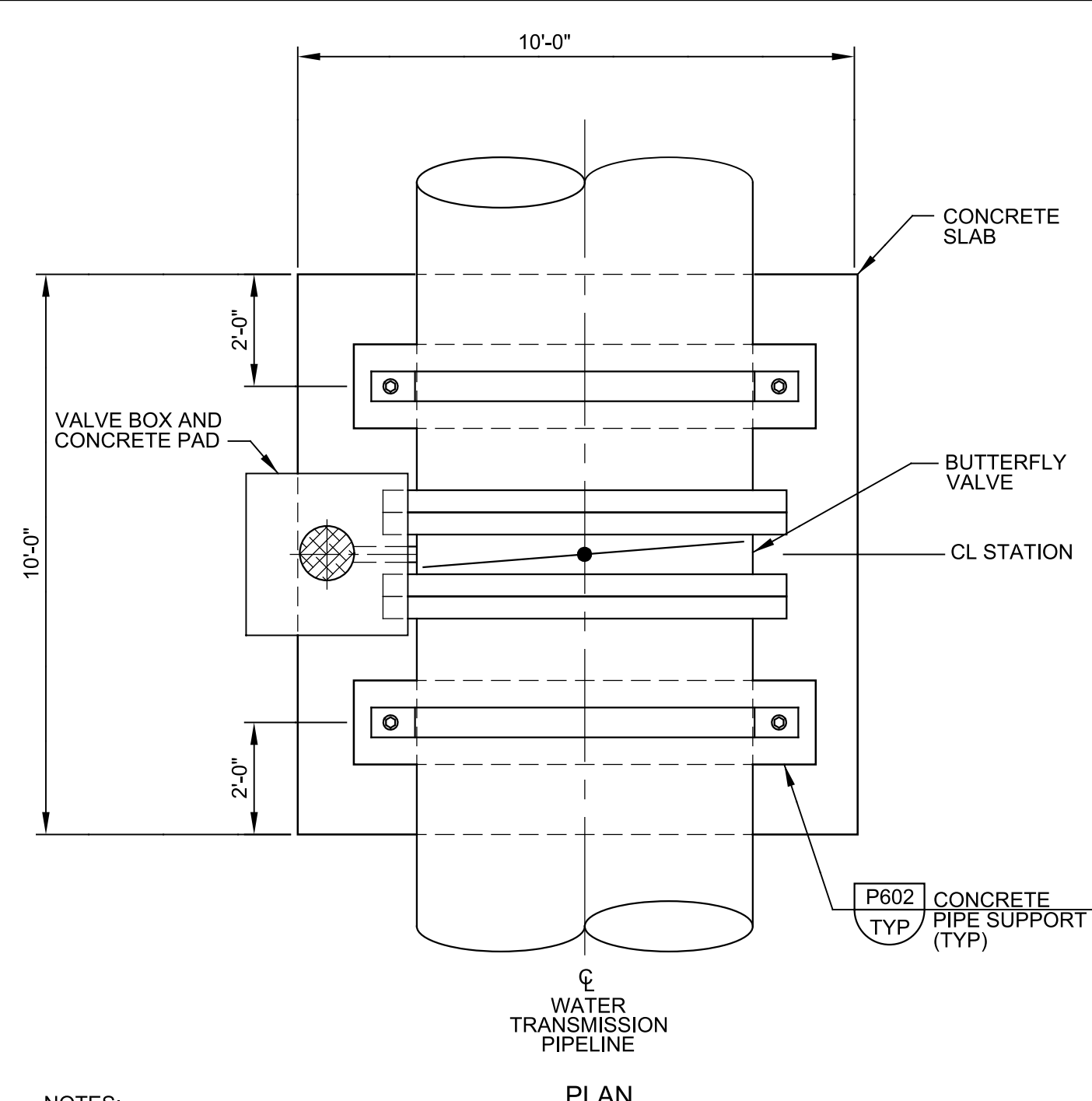
CP411 CAST IRON SOIL PIPE - CLEANOUTS
TYP



TERMINATION IN PAVEMENT
ALL TYPES FOR 4"Ø TO 12"Ø

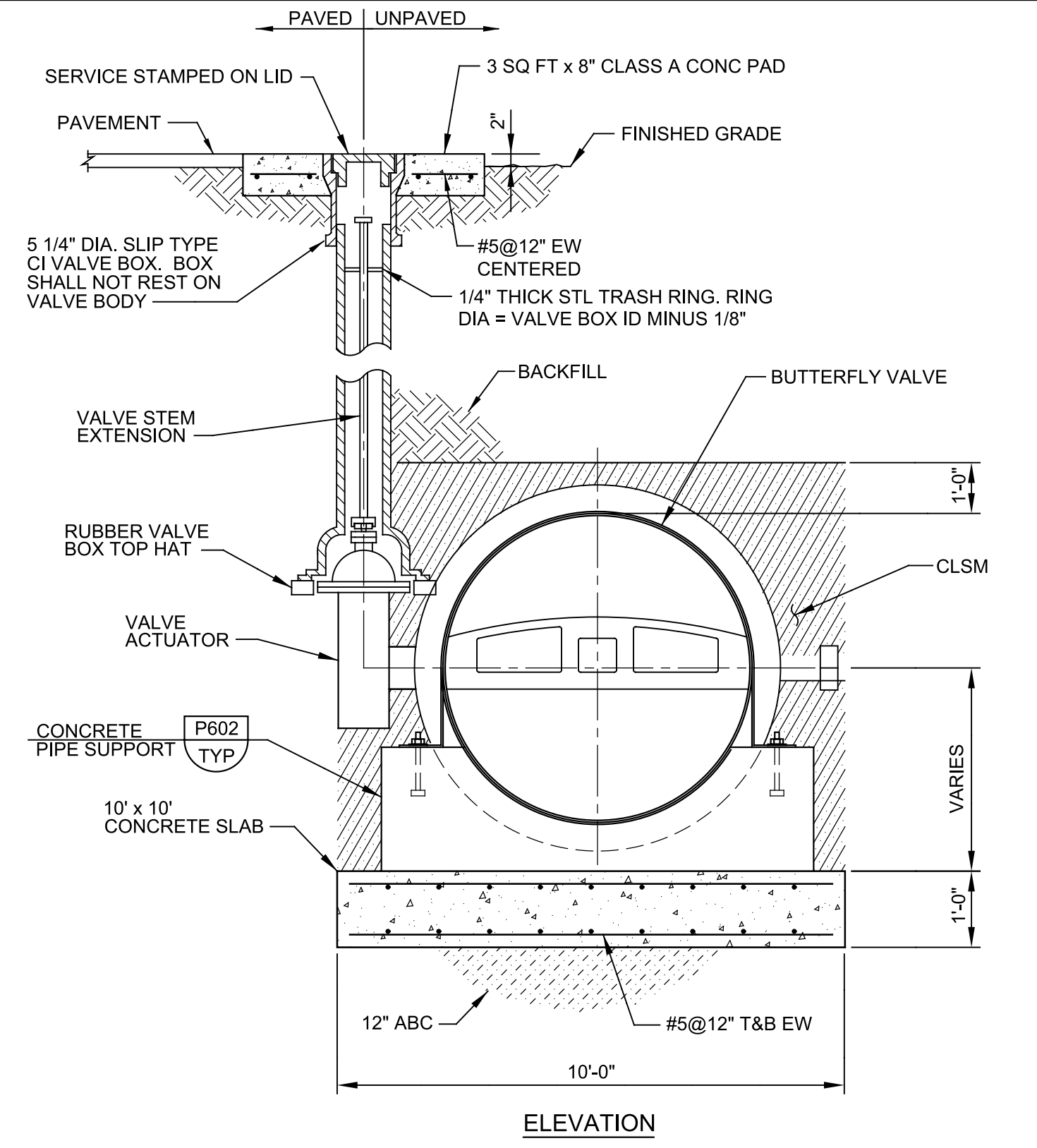
- NOTES:**
1. ALL THRUST BLOCKS SHALL BE PLACED PER TYPICAL DETAIL CP131.
 2. CONCRETE RING SHALL BE PLACED AFTER PAVEMENT PLACEMENT.
 3. ALL FLANGES SHALL BE TAPPED TO ALLOW THE INSTALLATION OF BLIND FLANGES WITH BOLTS.
 4. CLEANOUT PIPE SHALL BE SAME SIZE AS LINE PIPE.
 5. FOR CLEANOUTS IN YARD AREA, PLACE 12" SQUARE BY 4" THICK CONCRETE PAD.

CP411 CAST IRON SOIL PIPE - CLEANOUTS
TYP

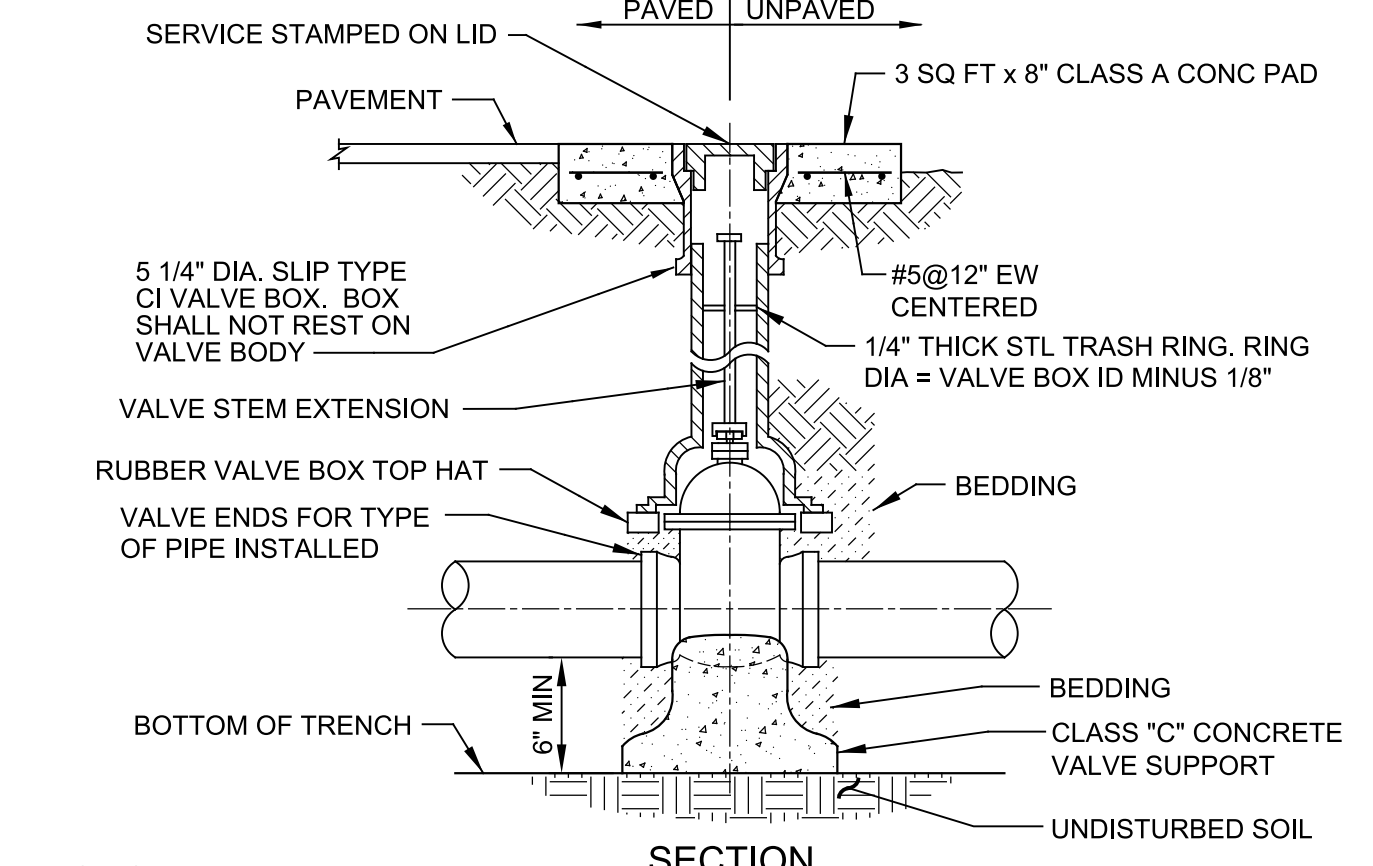
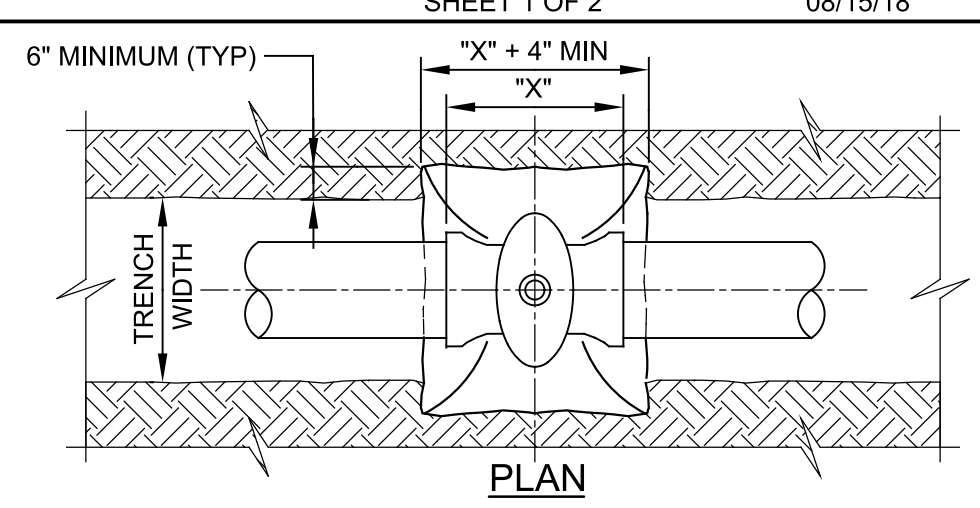


- NOTES:**
1. ALL BURIED VALVES SHALL BE PROVIDED WITH EXTENSION STEM OPERATOR WITH 2" SQUARE AWWA NUT WITHIN 36" OF VALVE BOX COVER. INDICATE ON NUT DIRECTION OF ROTATION TO OPEN VALVE.
 2. COAT BURIED PIPE AND VALVE BOX PER SPECIFICATIONS.
 3. CLEAN VALVE BOX OF ALL DEBRIS AND SOIL.

CP715 BUTTERFLY VALVE - DIRECT BURY
TYP



CP715 BUTTERFLY VALVE - DIRECT BURY
TYP

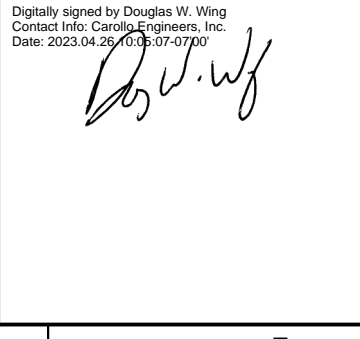


- NOTES:**
1. ALL BURIED VALVES SHALL BE PROVIDED WITH EXTENSION STEM OPERATION WITH 2" SQUARE AWWA NUT WITHIN 36" OF VALVE BOX COVER. NUT IS TO INDICATE DIRECTION OF ROTATION TO OPEN VALVE.
 2. COAT BURIED PIPE AND VALVE BOX AS SPECIFIED.
 3. CLEAN VALVE BOX OF ALL DEBRIS AND SOIL.
 4. VALVE TYPE AS INDICATED ON THE DRAWINGS.

CP716 GATE VALVE - DIRECT BURY
TYP

REV	DATE	BY	DESCRIPTION

DESIGNED
CE
DRAWN
CE
CHECKED
DATE
JANUARY 2023



CITY OF PETALUMA
FILTER ADDITION AND MISC. IMPROVEMENTS PROJECT
TYPICALS
TYPICAL CIVIL DETAILS

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

JOB NO. 7310L.10
DRAWING NO. TC03C
SHEET NO. 23 OF 130

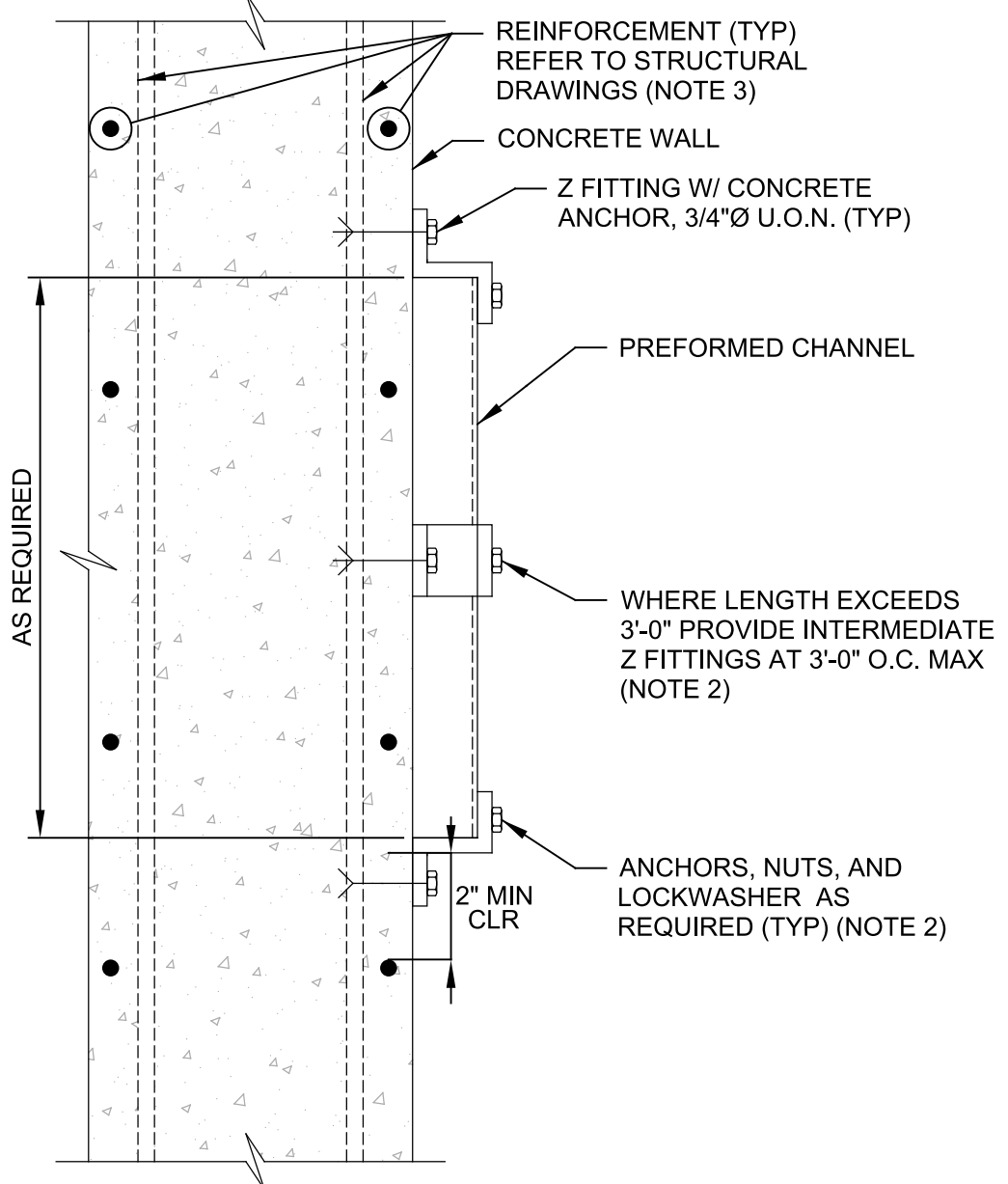
Plot Date: 03-APR-2023 9:38:56 AM

User: svcPW

Plot Scale: 1:1

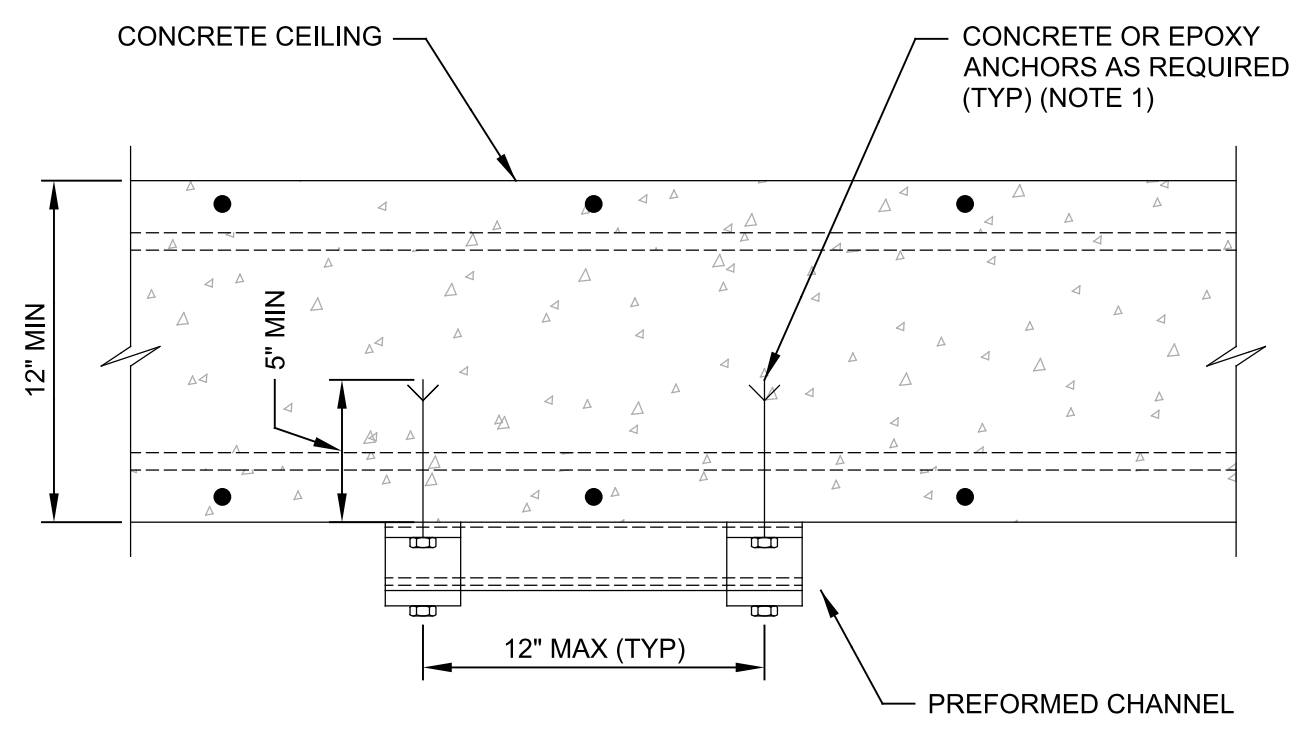
Model: Layout1 ColorTable: gshade.ctb DesignScript: Carollo Std Pen_v0905.pen

LAST SAVED BY: iweilch



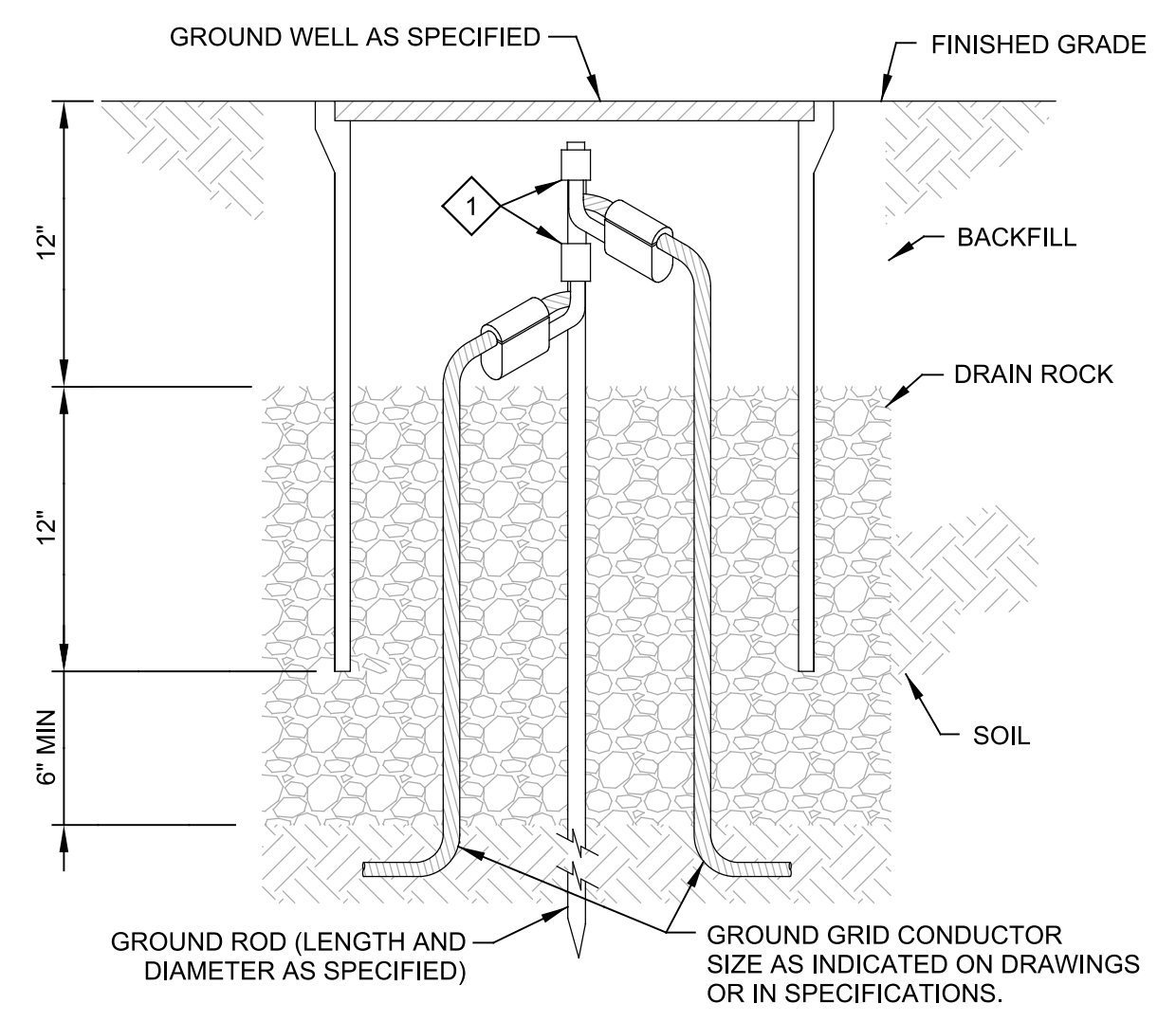
- NOTES:**
1. THIS DETAIL TYPICAL FOR BOTH VERTICAL AND HORIZONTAL MOUNTING.
 2. SUPPORTS TO BE SPACED IN ACCORDANCE WITH NEC REQUIREMENTS. CONCRETE ANCHORS SHALL BE PER THE SPECIFICATIONS.
 3. REFER TO STRUCTURAL DRAWINGS FOR ORIENTATION OF REINFORCEMENT AND BARS.

EA070 PREFORMED CHANNEL ATTACHMENT TO CONCRETE WALL
TYP



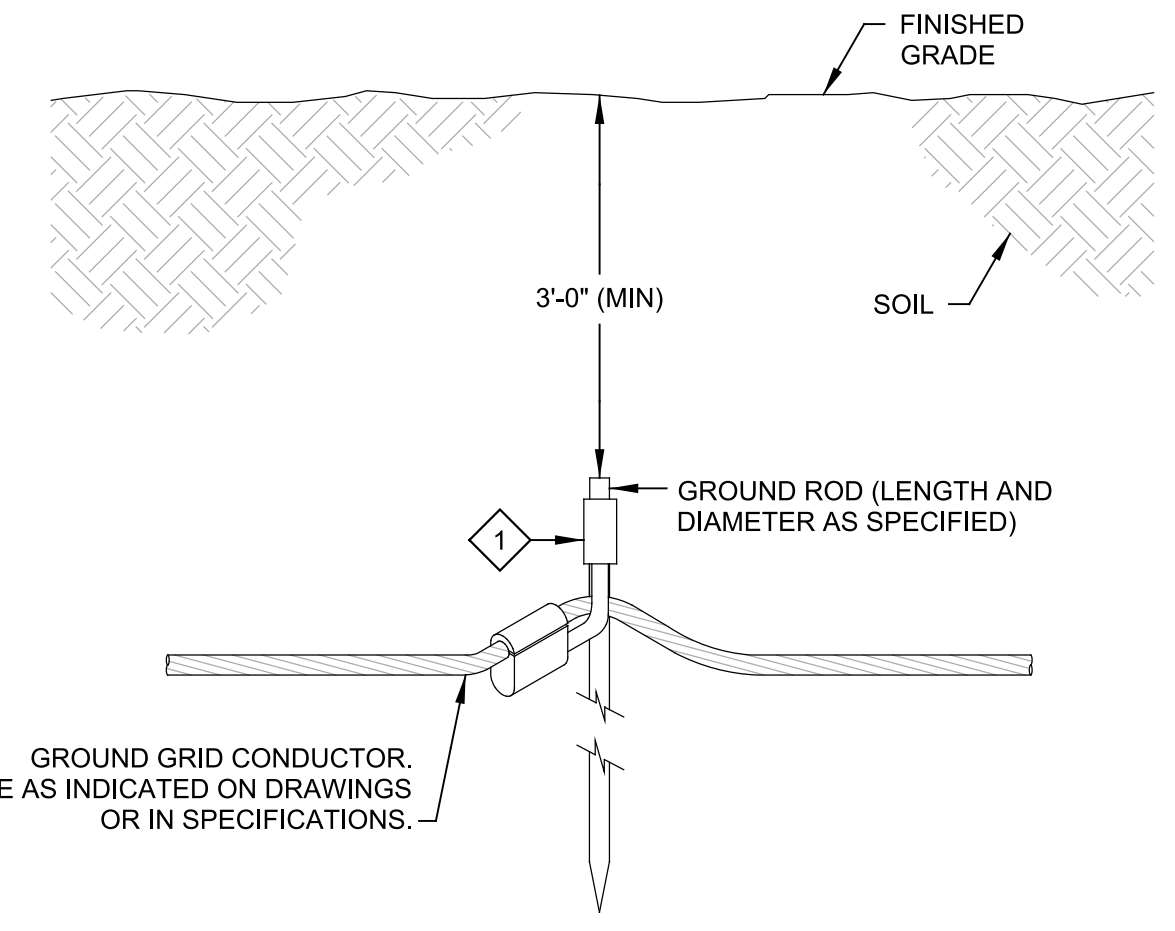
- NOTES:**
1. A FOOT UNISTRUT SUPPORT WITH TWO CONCRETE OR EPOXY ANCHORS 12" APART IS RATED FOR 500 LBS.
 2. EACH EXTENSION WITH ADDITIONAL ANCHORS AT 12" INCREMENTS INCREASES THE LOADING CAPACITY BY 500 LBS.
 3. SUBMIT ANCHORAGE CALCULATIONS WHEN LOAD EXCEEDS 500 LBS. REFER TO THE SPECIFICATIONS.

EA075 PREFORMED CHANNEL ATTACHMENT TO CONCRETE CEILING
TYP



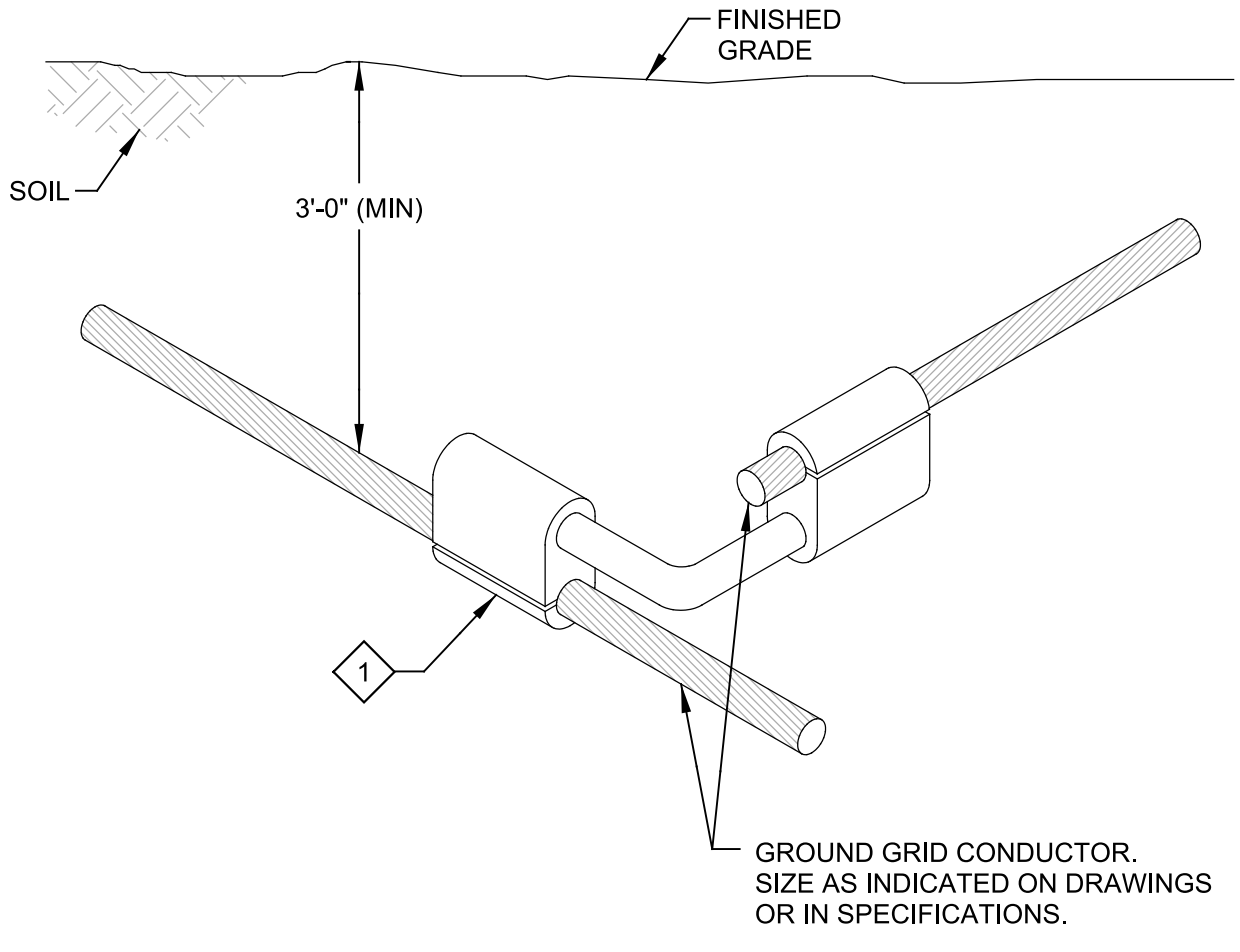
- KEY NOTES:**
1. GROUND ROD TO GROUND GRID CROSS CONNECTOR. SIZE FOR ROD AND CABLE PER CONNECTOR MANUFACTURERS GUIDELINES.

EG001 GROUND ROD AND GROUNDWELL COMPRESSION CONNECTION
TYP



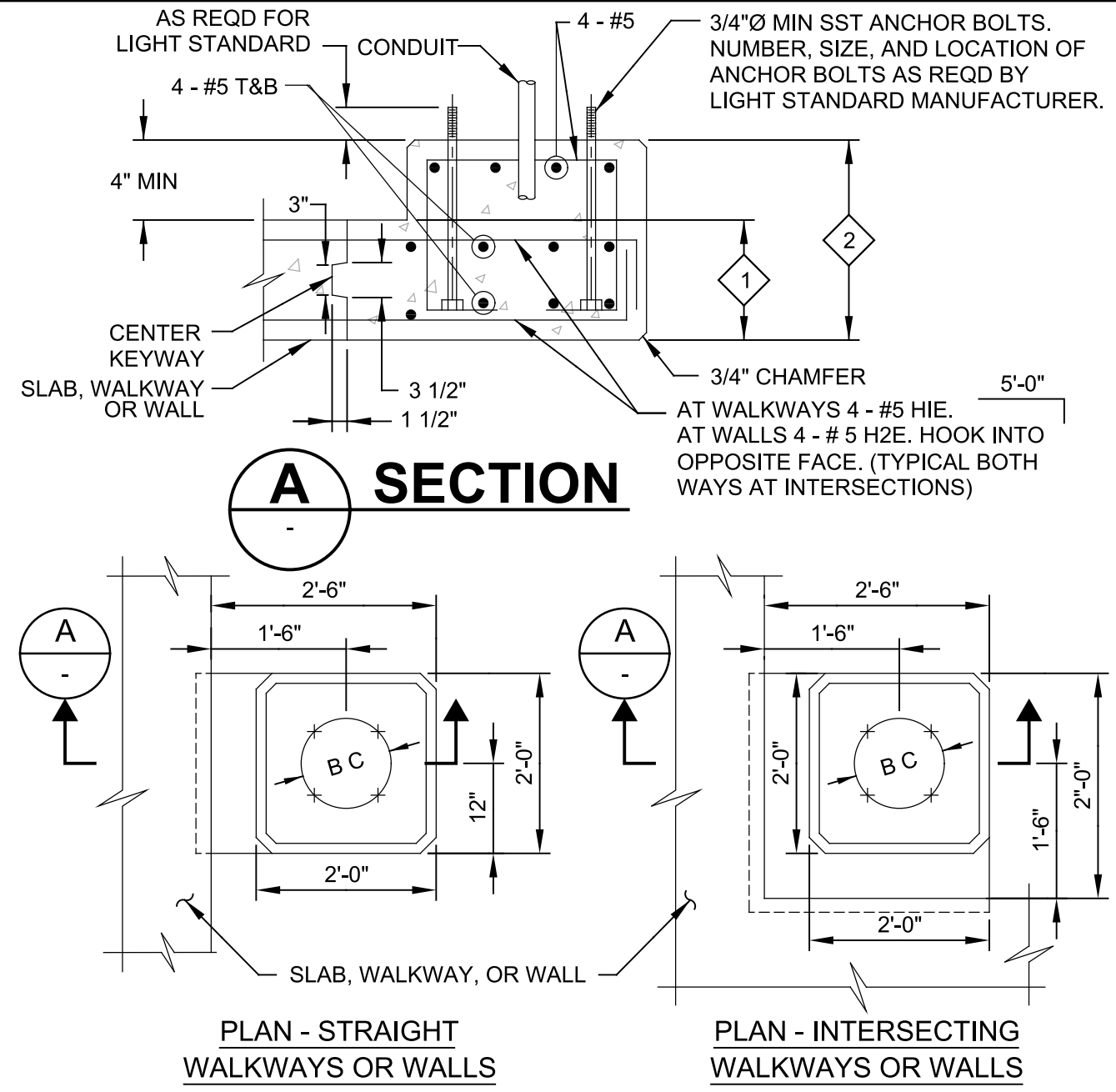
- KEY NOTES:**
1. GROUND ROD TO GROUND GRID CROSS CONNECTOR. SIZE FOR ROD AND CABLE PER CONNECTOR MANUFACTURERS GUIDELINES.

EG002 GROUND ROD COMPRESSION CONNECTION
TYP



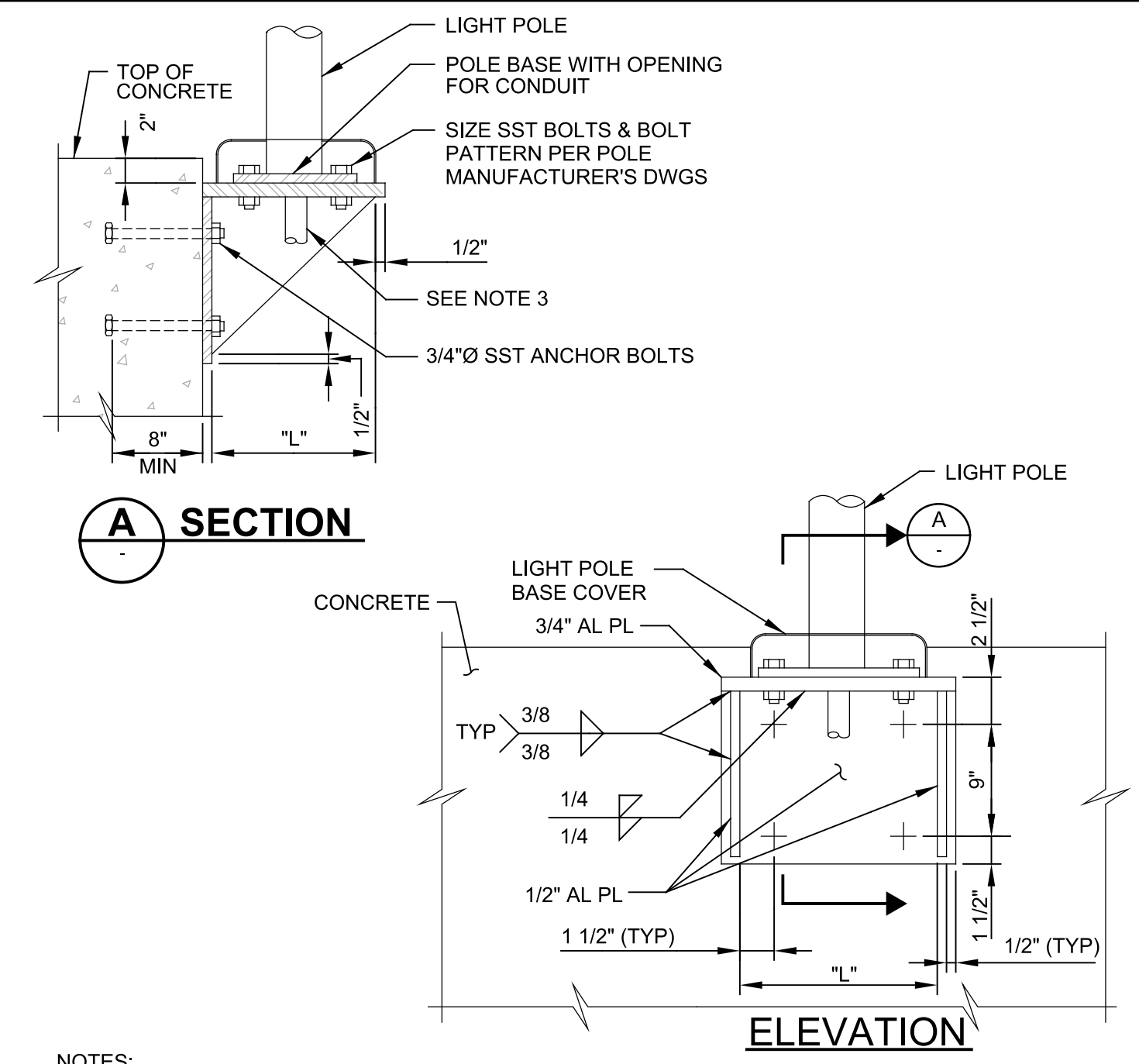
- KEY NOTES:**
1. GROUND GRID CROSS CONNECTOR. SIZE FOR CABLE PER CONNECTOR MANUFACTURERS GUIDELINES.

EG101 COPPER GROUNDING CABLE CONNECTION COMPRESSION CONNECTION
TYP



- NOTES:**
1. SEE ELECTRICAL DRAWINGS FOR CONDUIT ROUTING.
 2. B C: BOLT CIRCLE.
- KEY NOTES:**
1. MATCH SLAB OR WALKWAY THICKNESS.
 2. THICKNESS IS EQUAL TO ANCHOR BOLT EMBEDMENT PLUS 4".

EL503 LIGHTING STANDARD MOUNTED ON CONCRETE
TYP



- NOTES:**
1. COAT AL SURFACES IN CONTACT WITH CONCRETE PER SPECIFICATIONS.
 2. "L" = LARGER OF OD OF LIGHT POLE BASE + 2", OD OF LIGHT POLE BASE COVER + 1", OR 12".
 3. CONDUIT. SEE ELECTRICAL DRAWINGS FOR CONDUIT ROUTING. PROVIDE HOLE IN BRACKET TOP PLATE WITH HOLE DIAMETER EQUAL TO CONDUIT OD + 1/2".

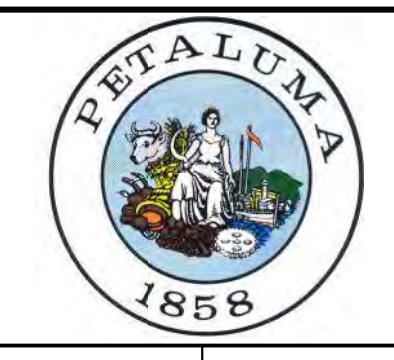
EL505 LIGHT POLE BRACKET ON CONCRETE
TYP

REV	DATE	BY	DESCRIPTION

DESIGNED CAC
DRAWN MNH
CHECKED JB
DATE JANUARY 2023



Digitally signed by Christopher Alan Corvato
Contact Info: Carollo Engineers, Inc.
Date: 2023.04.06 12:24:09-0700



CITY OF PETALUMA
FILTER ADDITION AND MISC. IMPROVEMENTS PROJECT
ELECTRICAL
TYPICAL ELECTRICAL DETAILS

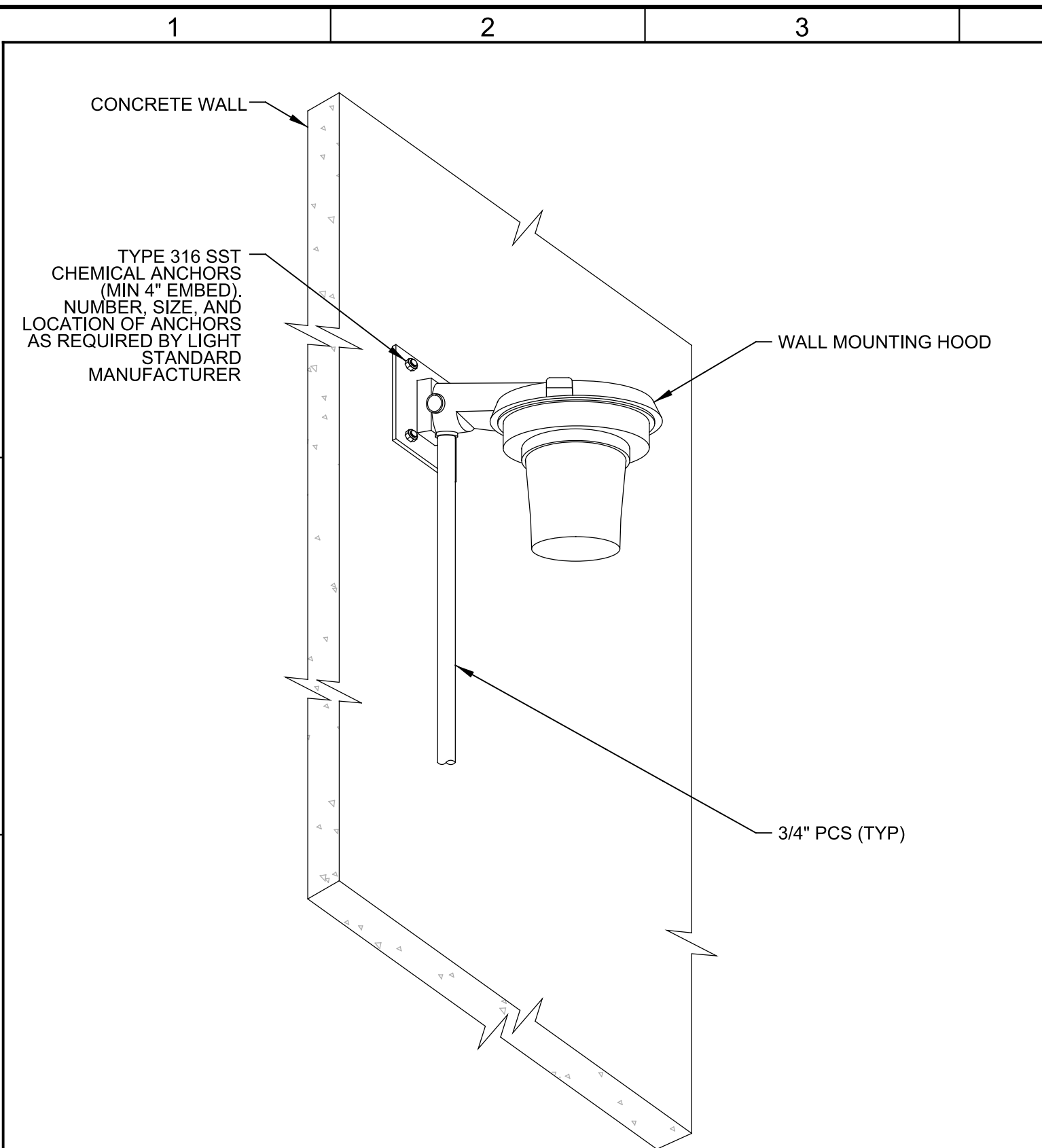
VERIFY SCALES BAR IS ONE INCH ON ORIGINAL DRAWING 0 1"	JOB NO. 7310L.10
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY	DRAWING NO. TE01C
	SHEET NO. 24 OF 130

Plot Date: 03-APR-2023 9:41:20 AM

User: svcPW

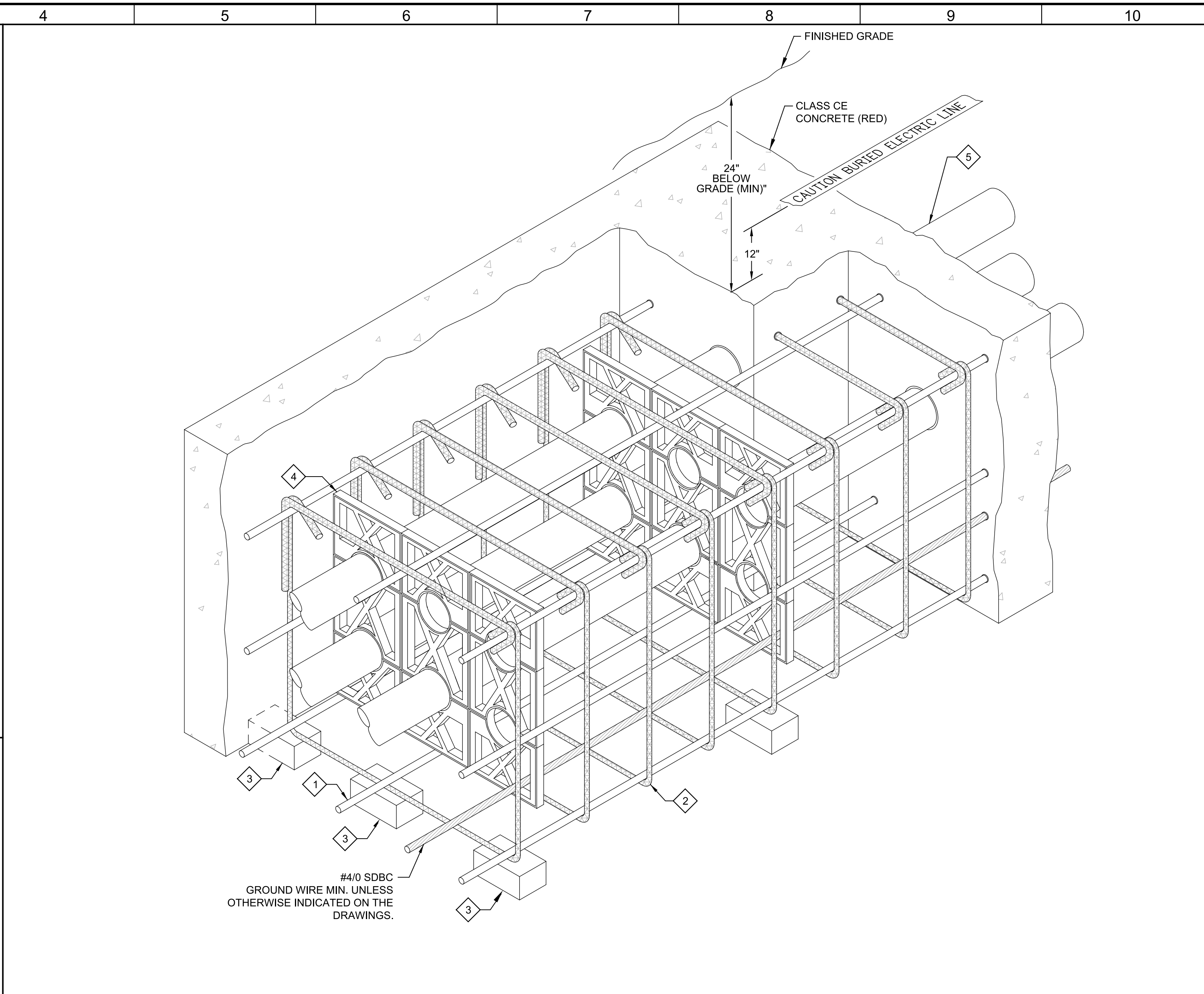
Model: Layout1 ColorTable: gshade.ctb DesignScript: Carollo_Std_Pen_v0905.pen PlotScale: 1:1

LAST SAVED BY: mvelch



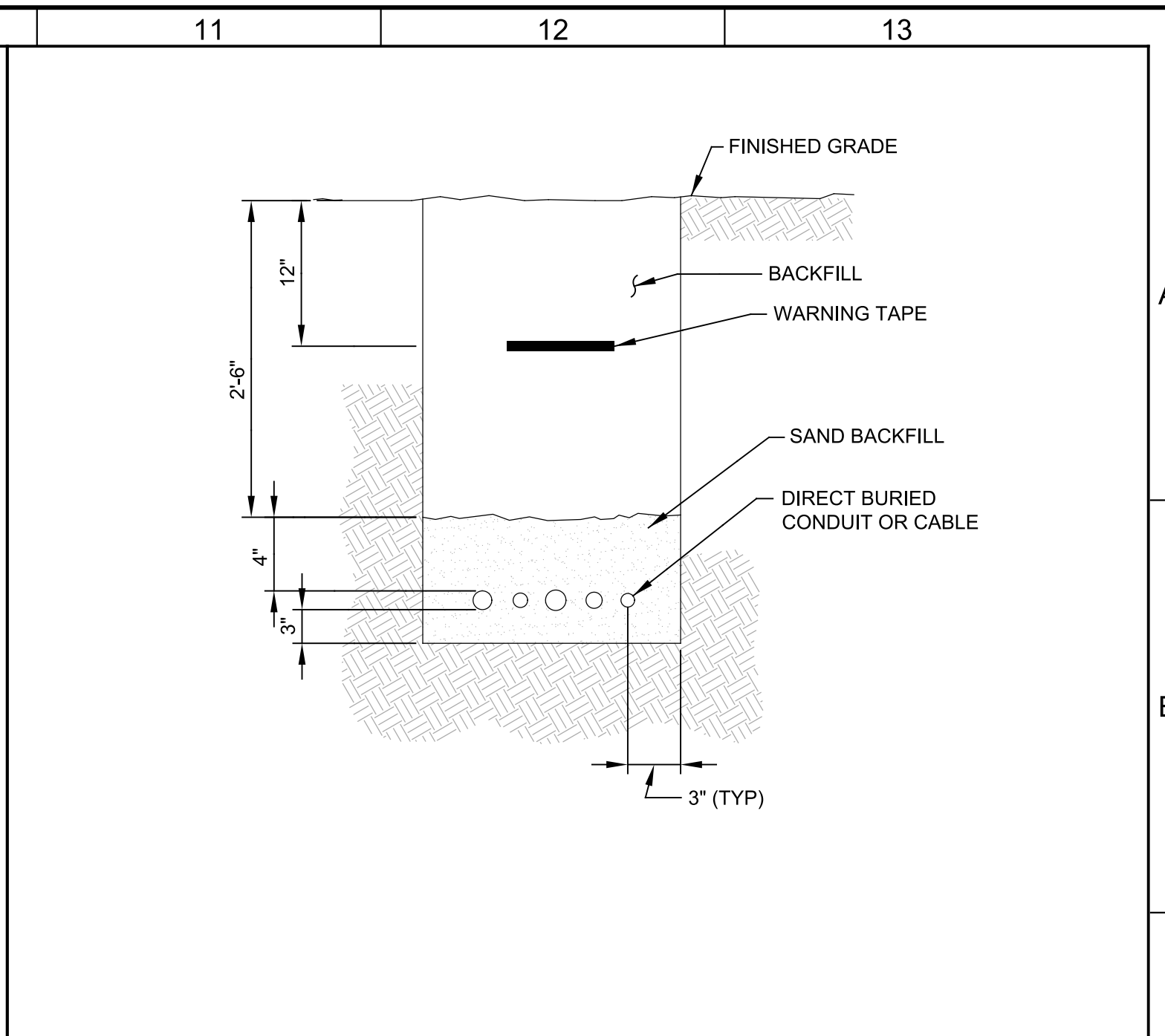
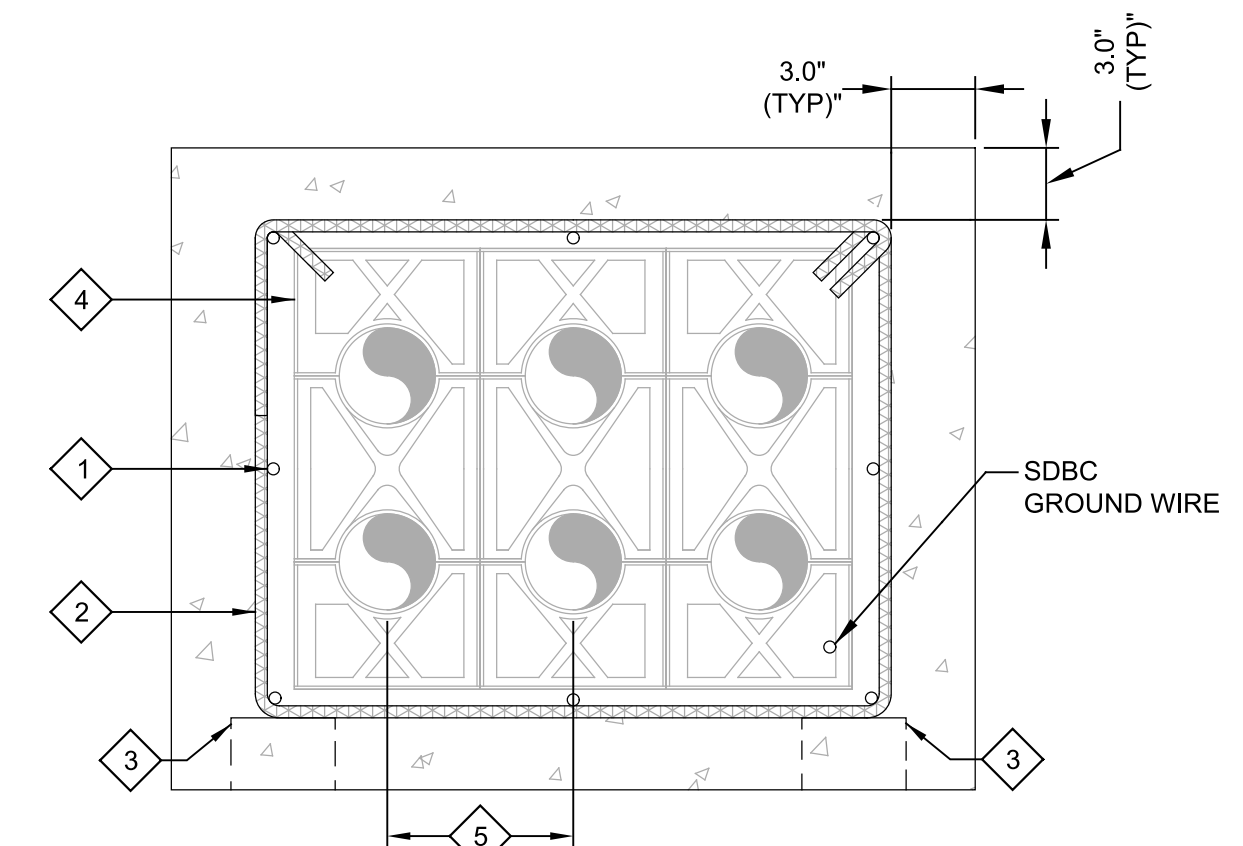
EL903 LUMINAIRE MOUNTING TO CONCRETE WALL
TYP

4/14/2016



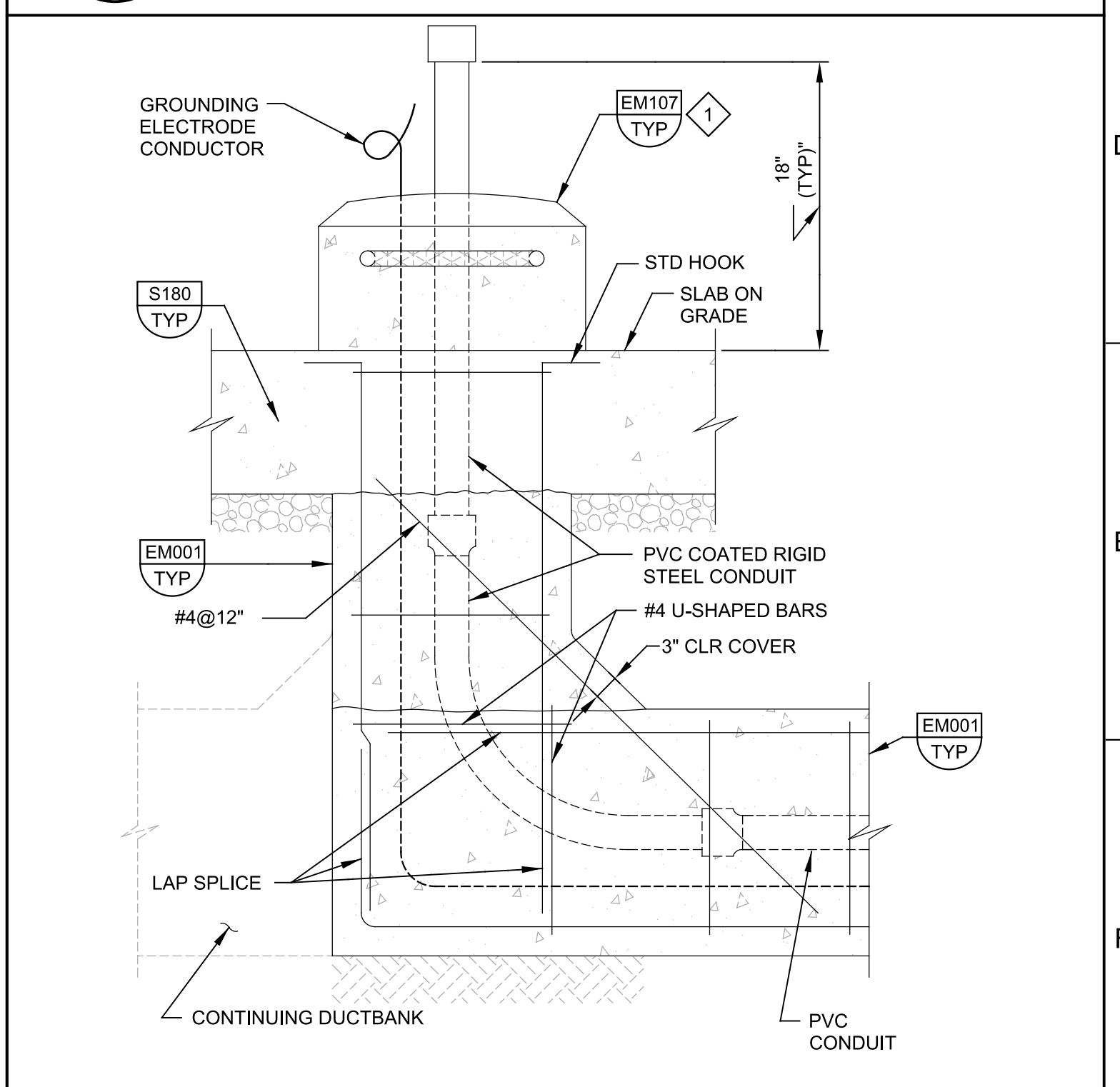
- NOTES:**
- DIMENSIONS SHOWN ARE MINIMUM.
 - ADJUST SIZE OF DUCT BANK BASED UPON THESE GUIDELINES AND THE DUCT BANK SPECIFICATION TO ACCOMMODATE ACTUAL NUMBER OF CONDUITS WITHIN DUCT BANK. REFER TO DUCT BANK SECTIONS, AND CONDUIT SCHEDULE FOR NUMBER AND SIZE OF CONDUITS.
 - MAKE PROVISIONS TO PREVENT CONDUIT FLOTATION DURING CONCRETE PLACEMENT & CURING.
- KEY NOTES:**
- #4 REINFORCING STEEL 12" MAXIMUM ON CENTER AROUND ENTIRE PERIMETER OF DUCT BANK.
 - #4 REINFORCING STEEL STIRRUPS MAXIMUM 24" ON CENTER ALONG LENGTH OF DUCT BANK.
 - MINIMUM OF TWO PRECAST CONCRETE BAR SUPPORTS PLACED UNDER A STIRRUP AT EACH PVC CONDUIT SPACER ALONG LENGTH OF DUCT BANK. PROVIDE PRECAST BAR SUPPORTS AT INTERVALS OF 24" TO REDUCE DEFLECTION.
 - PVC CONDUIT SPACERS ON 8'-0" CENTERS (MAXIMUM) LOCATE 12" FROM STIRRUPS.
 - REFER TO DUCT BANK SECTIONS AND CONDUIT SCHEDULES FOR CONDUIT REQUIREMENTS.

EM001 REINFORCED CONCRETE DUCT BANK
TYP



- NOTES:**
- ALL DIMENSIONS ARE MINIMUM UNLESS OTHERWISE INDICATED ON THE DRAWINGS.
 - REFER TO THE SPECIFICATIONS FOR TRENCH BACKFILL REQUIREMENTS.

EM015 DIRECT BURIED CONDUIT OR CABLE
TYP



- KEY NOTES:**
- PROVIDE CONDUIT HOUSE KEEPING CURB AT ALL LOCATIONS WHERE THE CONDUIT IS NOT PROTECTED BY AN EQUIPMENT PAD.

EM033 RISER FROM DUCTBANK
TYP
SLAB ON GRADE

REV	DATE	BY	DESCRIPTION

DESIGNED
CAC
DRAWN
MNH
CHECKED
JB
DATE
JANUARY 2023



Digitally signed by Christopher Alan Corvato
Contact Info: Carollo Engineers, Inc.
Date: 2023.04.08 12:24:49-0700



CITY OF PETALUMA
FILTER ADDITION AND MISC. IMPROVEMENTS PROJECT
ELECTRICAL
TYPICAL ELECTRICAL DETAILS

VERIFY SCALES
JOB NO. 7310L.10
DRAWING NO. TE02C
SHEET NO. 25 OF 130

Plot Date: 03-APR-2023 9:38:01 AM

User: svcPW

PlotScale: 1:1

Model: Layout1 ColorTable: gshade.ctb DesignScript: Carollo_Std_Pen_v0905.pen PlotScale: 1:1

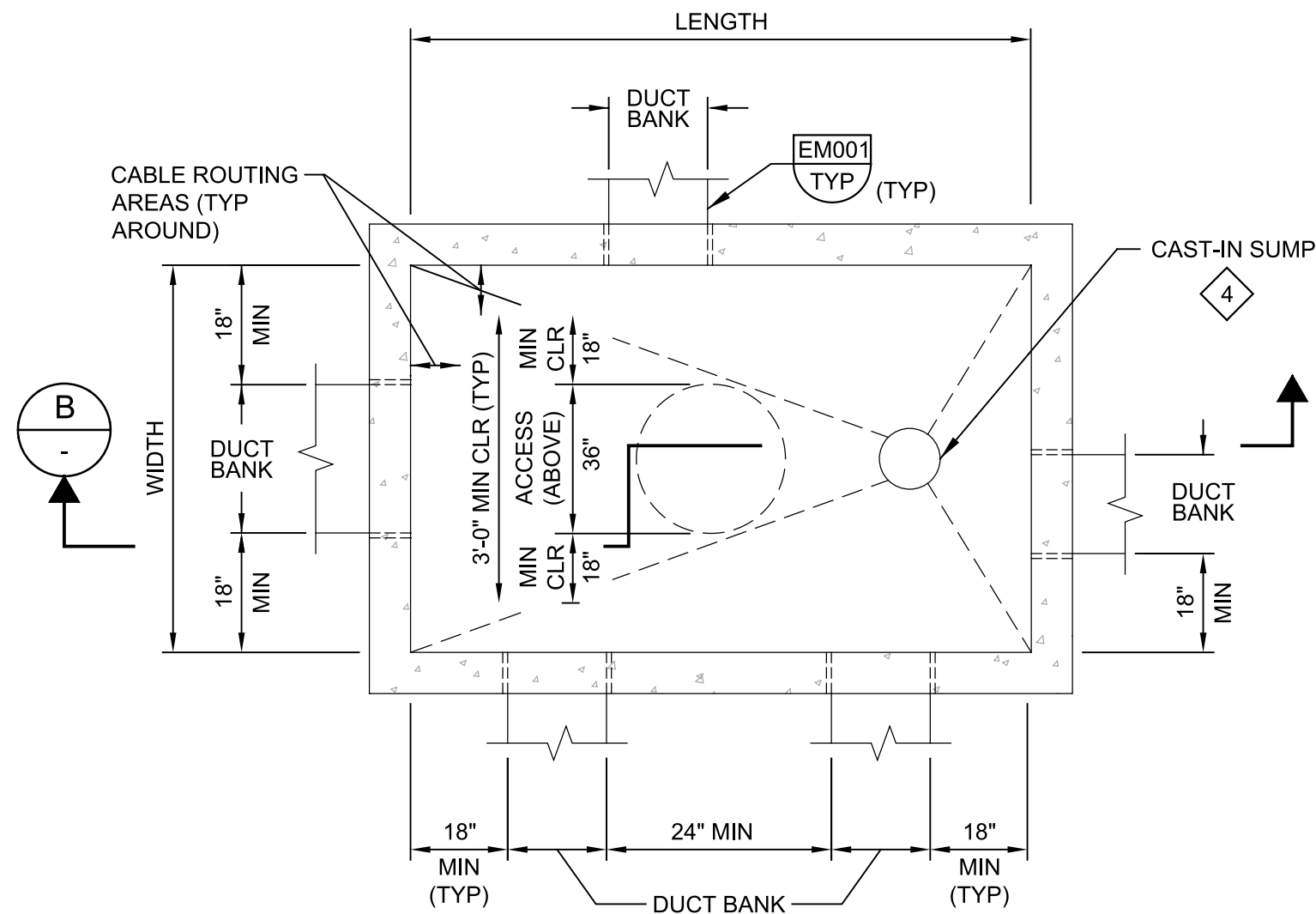
LAST SAVED BY: iweilch

NOTES:

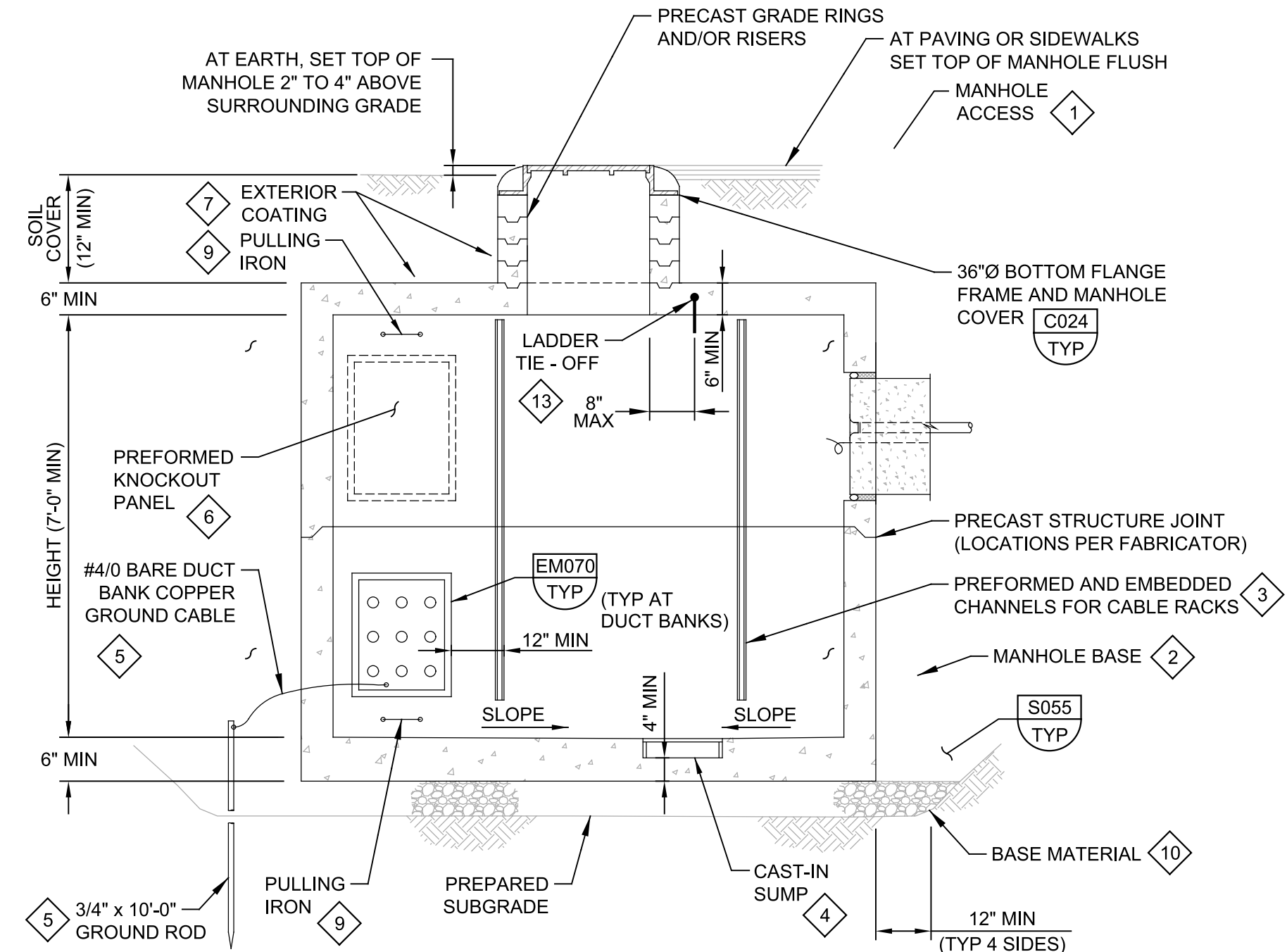
1. PROVIDE MINIMUM INTERIOR DIMENSIONS AS SHOWN IN THE ELECTRICAL HANDHOLE AND MANHOLE SCHEDULE.
2. PROVIDE MANHOLE ALTERNATES (TOP OR BASE) AS SHOWN IN THE HANDHOLE AND MANHOLE SCHEDULE.
3. BOND ALL METALLIC ITEMS INSIDE MANHOLE TO GROUND ROD USING #4 AWG BARE COPPER CABLE.
4. SEE DRAWINGS FOR ORIENTATION, NUMBER, AND SIZE OF DUCT BANKS AND PENETRATIONS AT EACH MANHOLE.
5. RACK MEDIUM VOLTAGE CABLES USING PORCELAIN INSULATOR CLAMPS PER TYPICAL DETAIL EM076.

KEY NOTES:

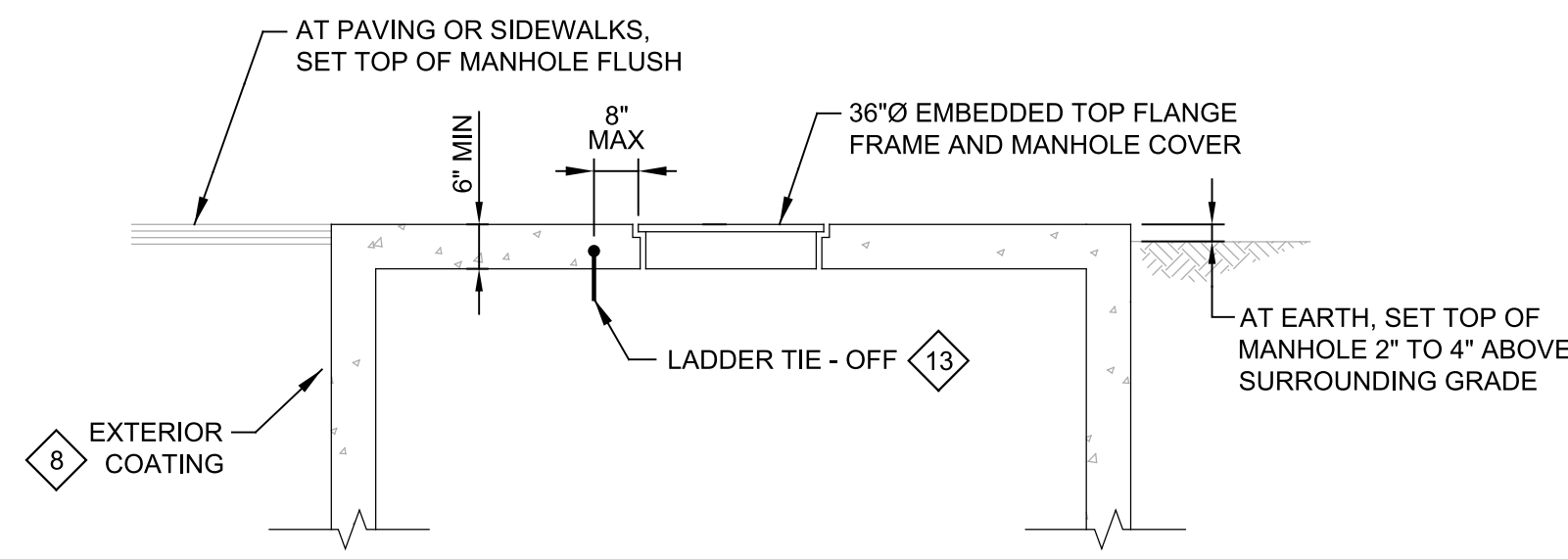
1. MANHOLE ACCESS FOR BURIED MANHOLE SHOWN IN SECTION B. FOR MANHOLES WITH EXPOSED TOP SLAB, SEE SECTION C (ALTERNATE 1).
2. STANDARD MANHOLE BASE SHOWN. FOR MANHOLES WITH DEEPER SUMP OR CONCRETE BALLAST TO RESIST FLOTATION, SEE SECTION D (ALTERNATE 2).
3. SPACE EMBEDDED CHANNELS TO CLEAR DUCT BANK KNOCKOUTS AND MAXIMUM 24" ON CENTER AROUND PERIMETER OF MANHOLE.
4. MINIMUM 12" DIAMETER x MIN 2" DEEP SUMP WITH REMOVABLE SLOTTED COVER. LOCATE SUMP OUTSIDE VERTICAL ACCESS CORRIDOR BELOW MANHOLE COVER.
5. BOND DUCT BANK AND INTERIOR GROUND CABLE TO GROUND ROD. SEE SPECIFICATIONS FOR CONNECTION REQUIREMENTS.
6. INSTALL DUCT BANKS ONLY THROUGH BLOCKOUTS, WINDOWS OR PREFORMED KNOCKOUT PANELS. PROVIDE KNOCKOUTS ON EACH WALL AROUND MANHOLE.
7. COAT EXTERIOR WALLS AND BURIED TOP SLAB OF MANHOLE WITH BITUMINOUS DAMP PROOFING.
8. COAT EXTERIOR WALLS OF MANHOLE WITH BITUMINOUS DAMP PROOFING. LEAVE EXPOSED TOP SLAB UNCOATED.
9. PROVIDE ONE PULLING IRON ON EACH WALL ABOVE OR BELOW EACH DUCT BANK PENETRATION.
10. PROVIDE MIN 12" COMPACTED AGGREGATE BASE COURSE.
11. MINIMUM 12" DIAMETER SUMP WITH REMOVABLE SLOTTED COVER. LOCATE SUMP OUTSIDE VERTICAL CORRIDOR BELOW MANHOLE COVER.
12. SEE SPECIFICATIONS FOR CAST-IN-PLACE CONCRETE FULL MIXING, PLACING, FINISHING AND CURING REQUIREMENTS.
13. AT ONE SIDE OF MANHOLE ACCESS, PROVIDE LADDER TIE - OFF PER DETAIL E.



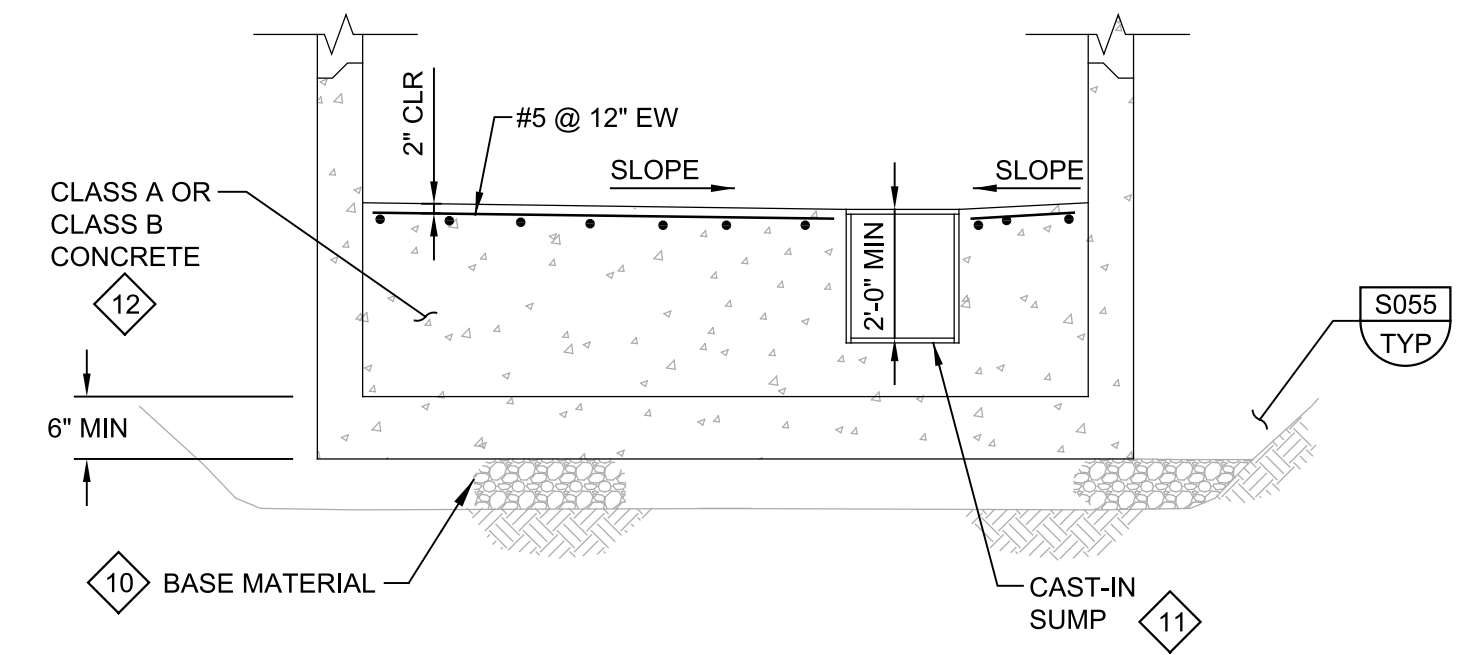
A PLAN - LAYOUT



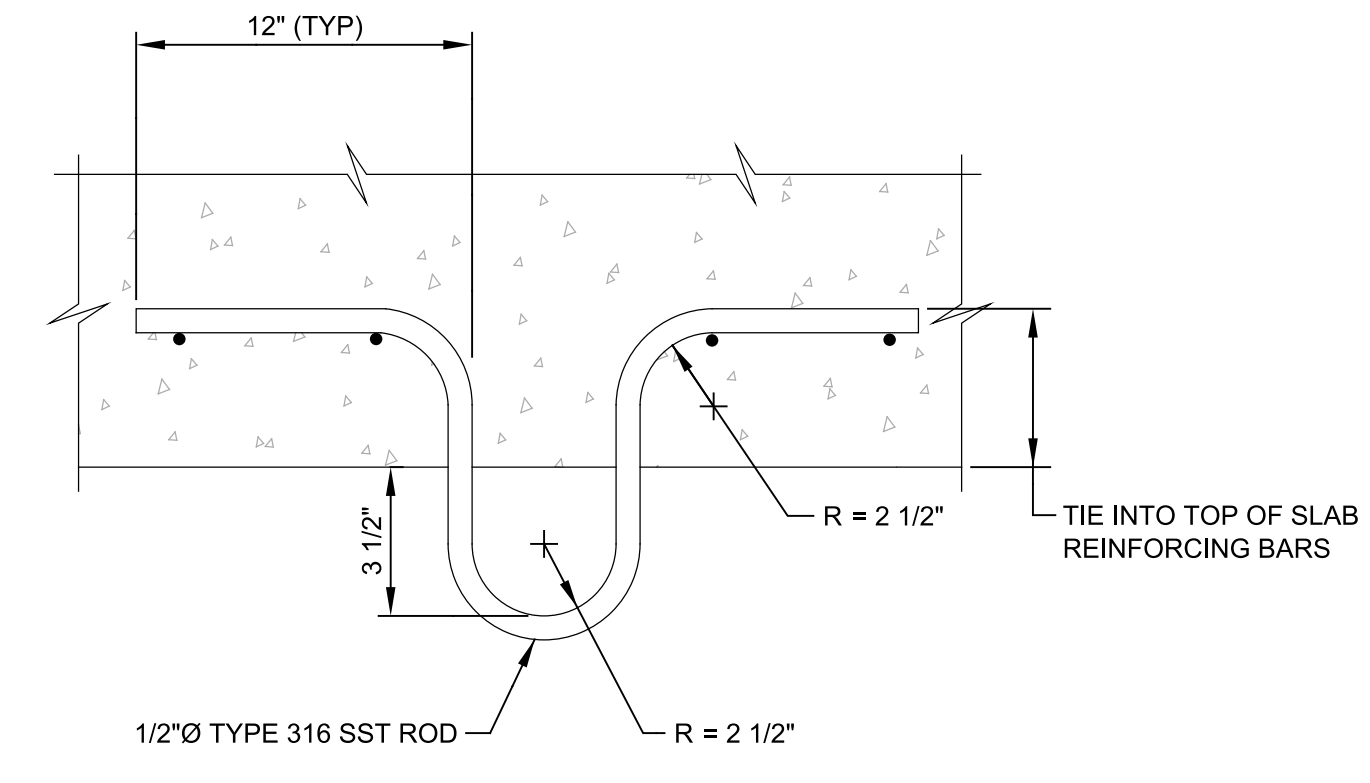
B SECTION



C ALTERNATE 1: SECTION EXPOSED TOP SLAB



D ALTERNATE 2: SECTION BASE WITH SUMP OR BALLAST



E LADDER TIE-OFF

EM062 ELECTRICAL MANHOLE: TYP PRECAST CONCRETE

REV	DATE	BY	DESCRIPTION
1			
2			
3			

DESIGNED CAC
 DRAWN MNH
 CHECKED JB
 DATE JANUARY 2023



Digitally signed by Christopher Alan Corvato
 Contact Info: Carollo Engineers, Inc.
 Date: 2023.04.06 12:24:59-0700

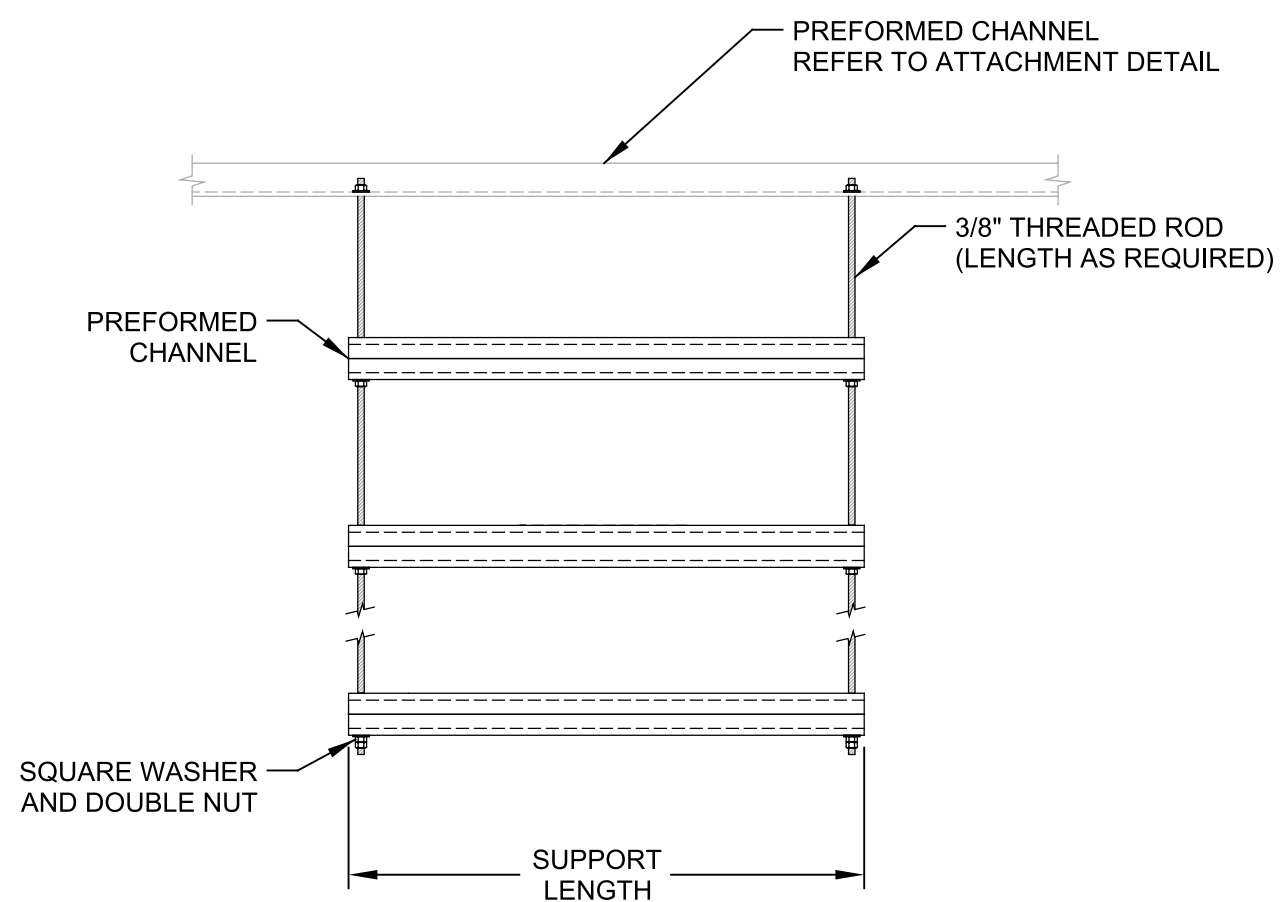


CITY OF PETALUMA
 FILTER ADDITION AND MISC. IMPROVEMENTS PROJECT
 ELECTRICAL
 TYPICAL ELECTRICAL DETAILS

VERIFY SCALES
 BAR IS ONE INCH ON ORIGINAL DRAWING
 0 1"
 IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

JOB NO. 7310L.10
 DRAWING NO. TE03C
 SHEET NO. 26 OF 130

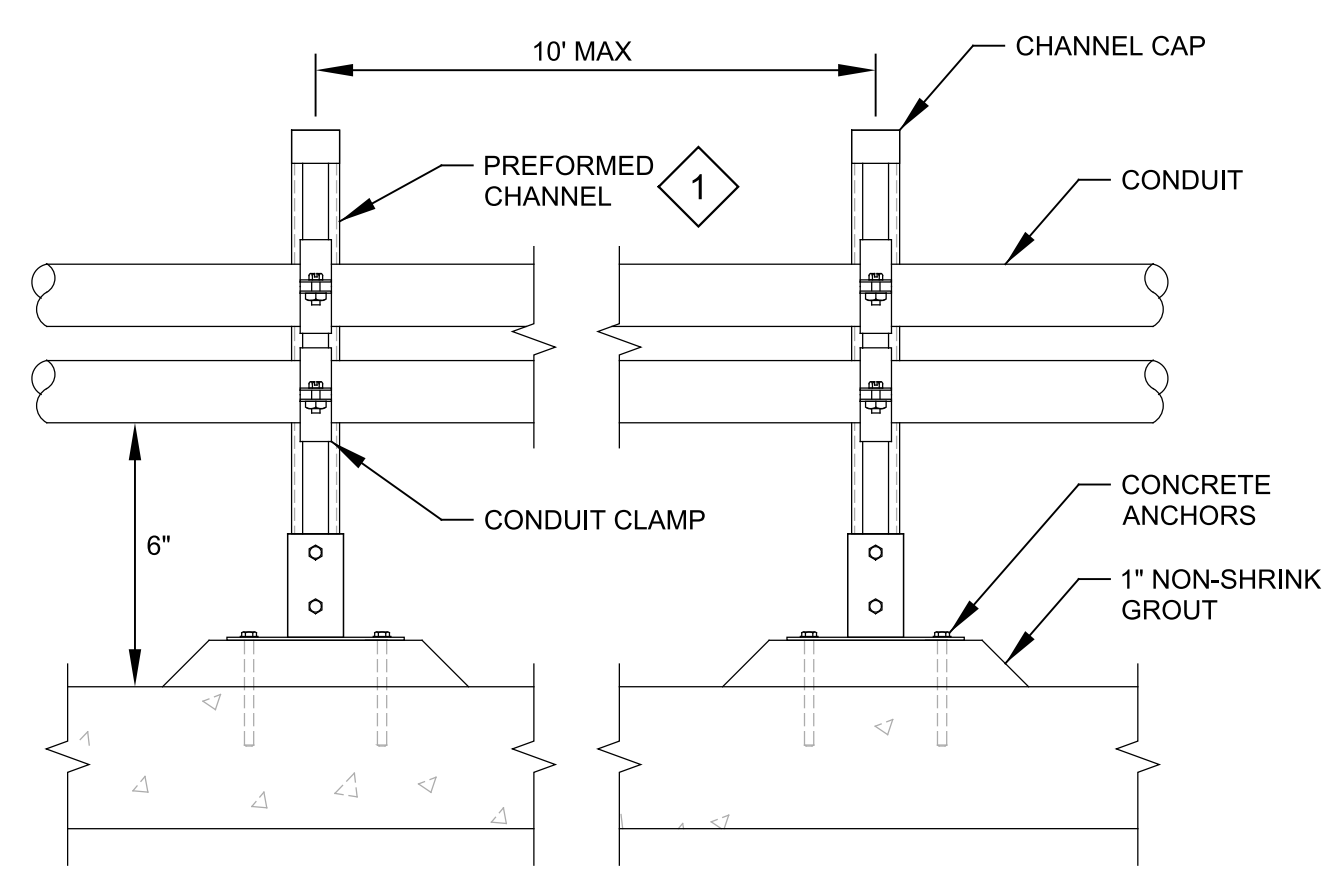
Plot Date: 03-APR-2023 9:40:11 AM
 User: svcPW
 Model: Layout1 ColorTable: gshade.ctb DesignScript: Carollo Std Pen_v0905.pen PlotScale: 1:1
 LAST SAVED BY: iweilch



NOTES:

1. PROVIDE NUMBER AND LENGTH OF PREFORMED CHANNEL SUPPORTS AS REQUIRED BY EQUIPMENT AND MATERIALS TO BE INSTALLED.
2. PROVIDE SEISMIC BRACING PER THE SPECIFICATIONS.
3. REFER TO SPECIFICATIONS FOR MATERIAL REQUIREMENTS.

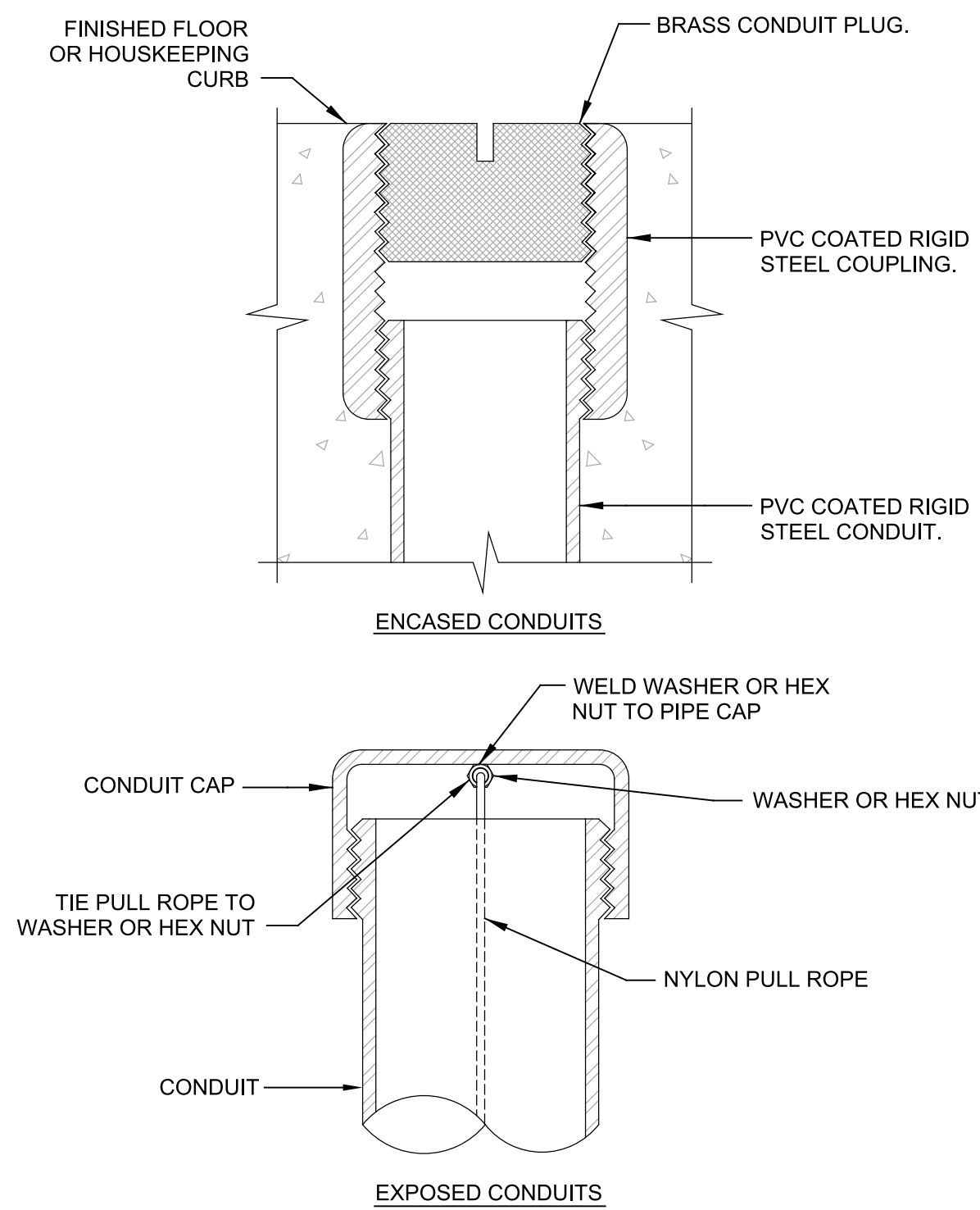
EM102 TRAPEZE SUPPORT
TYP



KEY NOTES:

1. SIZE PREFORMED CHANNEL FOR CONDUITS INDICATED ON THE DRAWINGS.

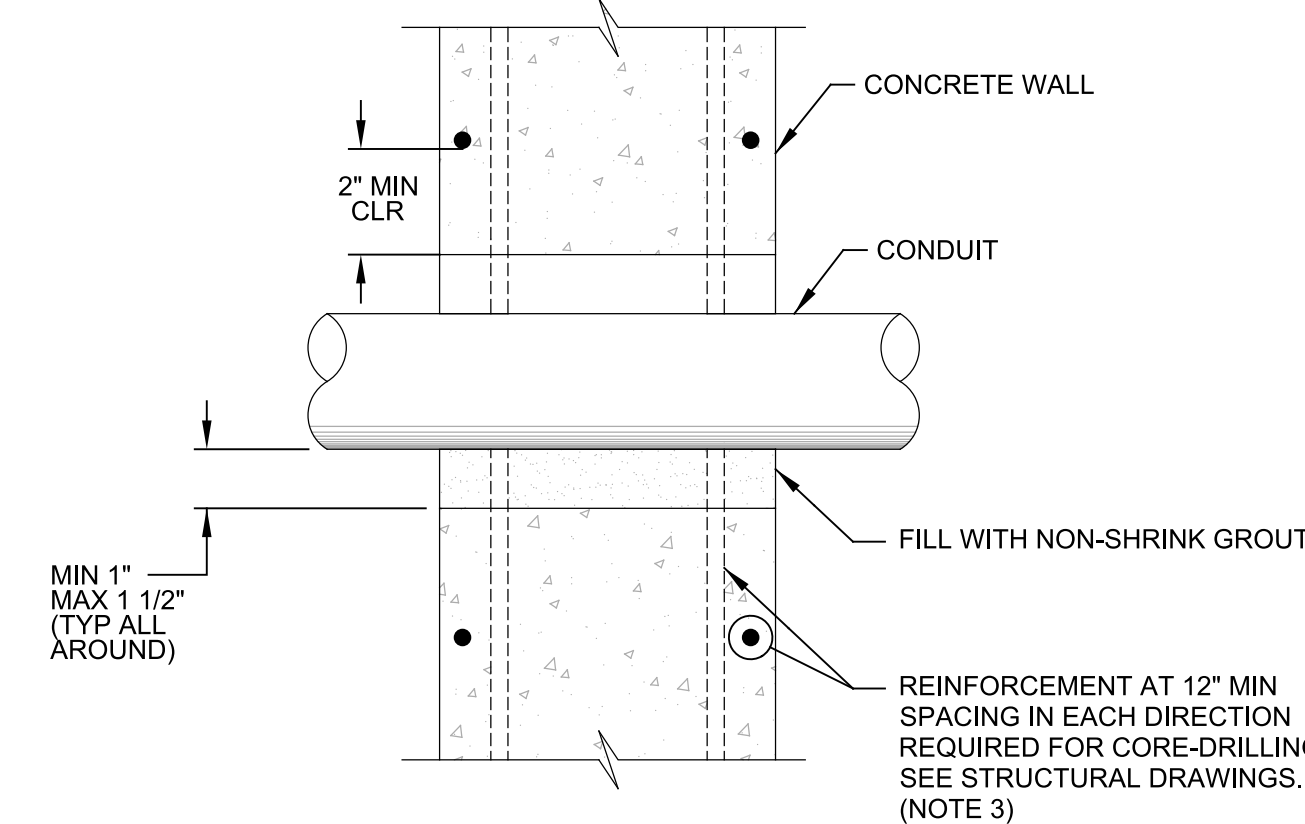
EM104 CONDUIT FLOOR SUPPORT FOR ELECTRICAL CONDUITS
TYP



NOTES:

1. PROVIDE 2" MIN CLEAR BETWEEN ADJACENT CONDUITS

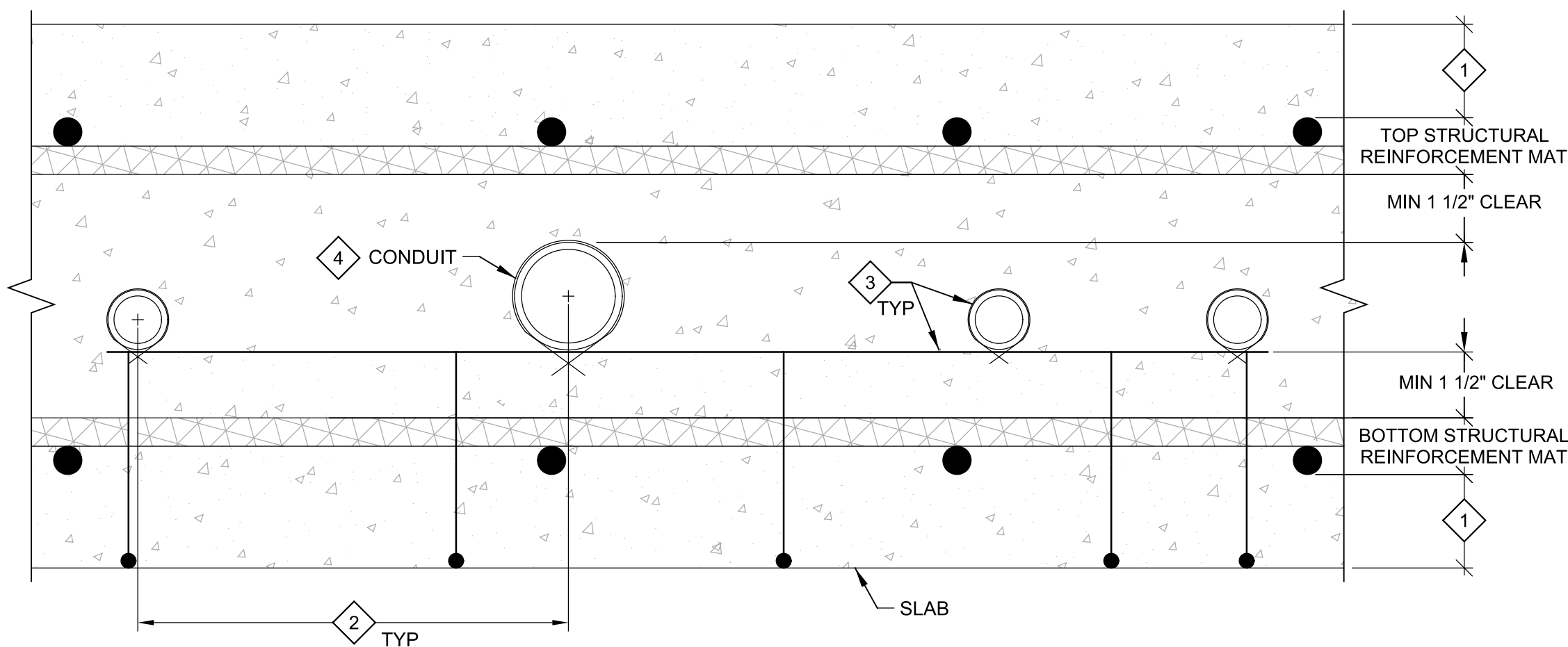
EM105 SPARE CONDUIT DETAIL
TYP



NOTES:

1. PROVIDE NON-DESTRUCTIVE TESTING TO DETERMINE LOCATIONS OF REINFORCEMENT. MAINTAIN MIN 2" CLEAR BETWEEN CORE DRILLED OPENING AND REINFORCEMENT.
2. APPLY EPOXY CEMENT BONDING AGENT PRIOR TO GROUTING.
3. PROVIDE CAST-IN SLEEVE FOR PENETRATIONS IN WALLS WITH REINFORCEMENT SPACING LESS THAN 2" IN EACH DIRECTION. REFER TO STRUCTURAL DRAWINGS.

EM163 CORE DRILLED PENETRATION CONCRETE WALL
TYP



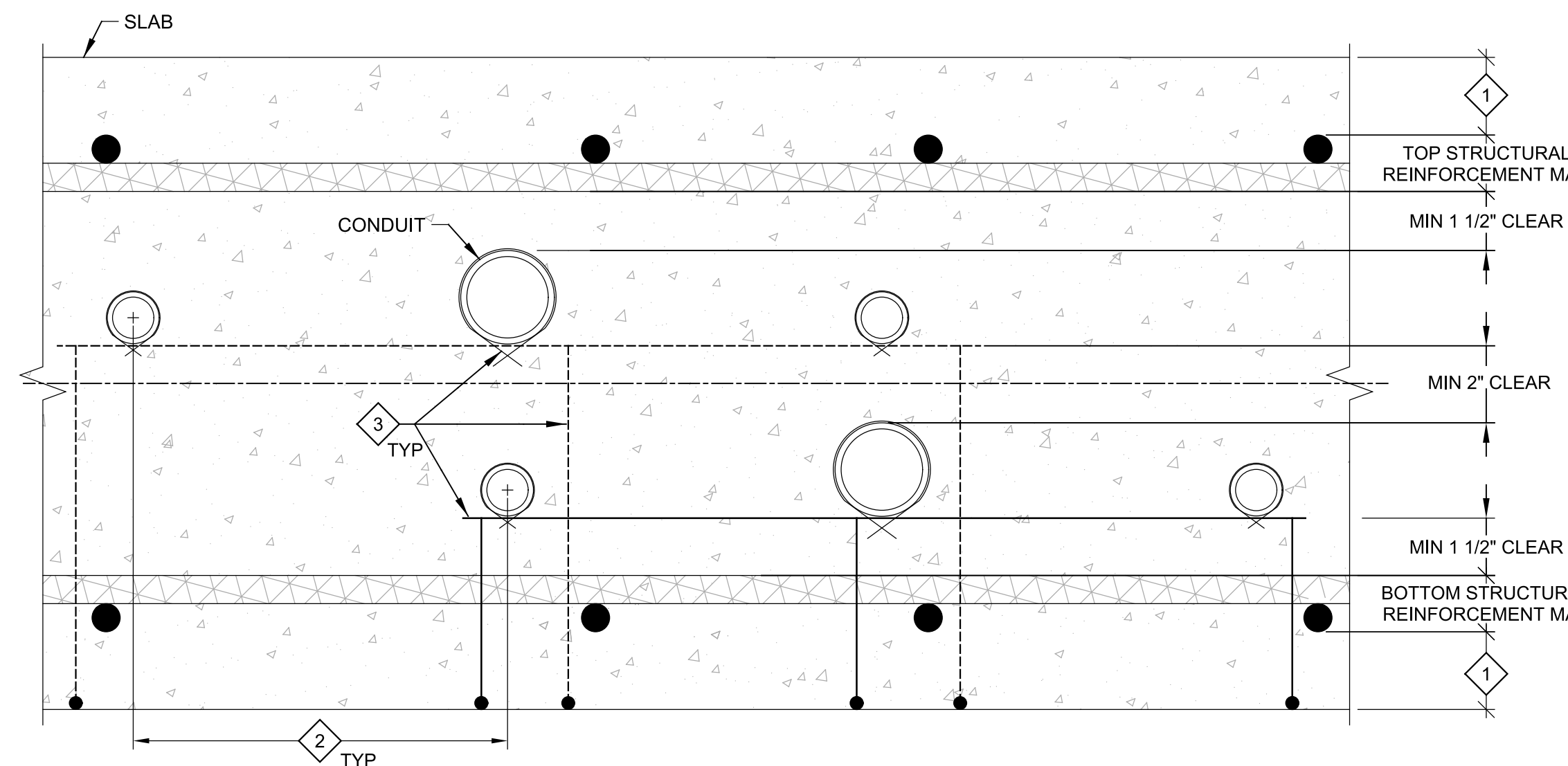
NOTES:

1. MOVE CONDUITS TO AVOID CONFLICTS WITH WATERSTOPS. WHERE HORIZONTAL & VERTICAL CLEARANCES CANNOT BE MAINTAINED, CONTACT ENGINEER FOR INSTRUCTION'S BEFORE PLACING CONCRETE.

KEY NOTES:

1. FOR REQUIRED TOP AND BOTTOM COVER OVER REINFORCEMENT SEE DETAIL S101 TYP
2. MINIMUM ON CENTER HORIZONTAL SPACING OF PARALLEL CONDUITS = 4X OUTSIDE DIAMETER OF THE LARGER CONDUIT.
3. SUPPORT CONDUITS ON ADDED REINFORCEMENT CHAIRS OR BOLSTERS. TIE CONDUITS TO SUPPORTS & ANCHOR TO PREVENT FLOTATION.
4. CENTER LARGEST DIAMETER CONDUIT BETWEEN TOP AND BOTTOM REINFORCEMENT MATS.

EM115 EMBEDDED CONDUIT IN CONCRETE SLAB SINGLE RUN
TYP



NOTES:

1. MOVE CONDUITS TO AVOID CONFLICTS WITH WATERSTOPS. WHERE HORIZONTAL & VERTICAL CLEARANCES CANNOT BE MAINTAINED, CONTACT ENGINEER FOR INSTRUCTION'S BEFORE PLACING CONCRETE.

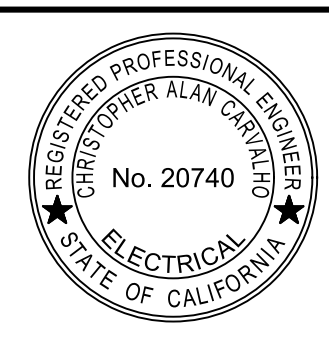
KEY NOTES:

1. FOR REQUIRED TOP AND BOTTOM COVER OVER REINFORCEMENT SEE DETAIL S101 TYP
2. MINIMUM ON CENTER HORIZONTAL SPACING OF PARALLEL CONDUITS = 4X OUTSIDE DIAMETER OF THE LARGER CONDUIT.
3. SUPPORT CONDUITS ON ADDED REINFORCEMENT CHAIRS OR BOLSTERS. TIE CONDUITS TO SUPPORTS & ANCHOR TO PREVENT FLOTATION.
4. WHERE MORE THAN 2 RUNS ARE STACKED, PROVIDE HORIZONTAL & VERTICAL SPACING SHOWN BETWEEN EACH PAIR.

EM116 EMBEDDED CONDUIT IN CONCRETE SLAB STACKED RUNS
TYP

REV	DATE	BY	DESCRIPTION

DESIGNED
CAC
 DRAWN
MNH
 CHECKED
JB
 DATE
JANUARY 2023



Digitally signed by Christopher Alan Carrollo
 Contact Info: Carollo Engineers, Inc.
 Date: 2023.04.06 12:21:09-0800

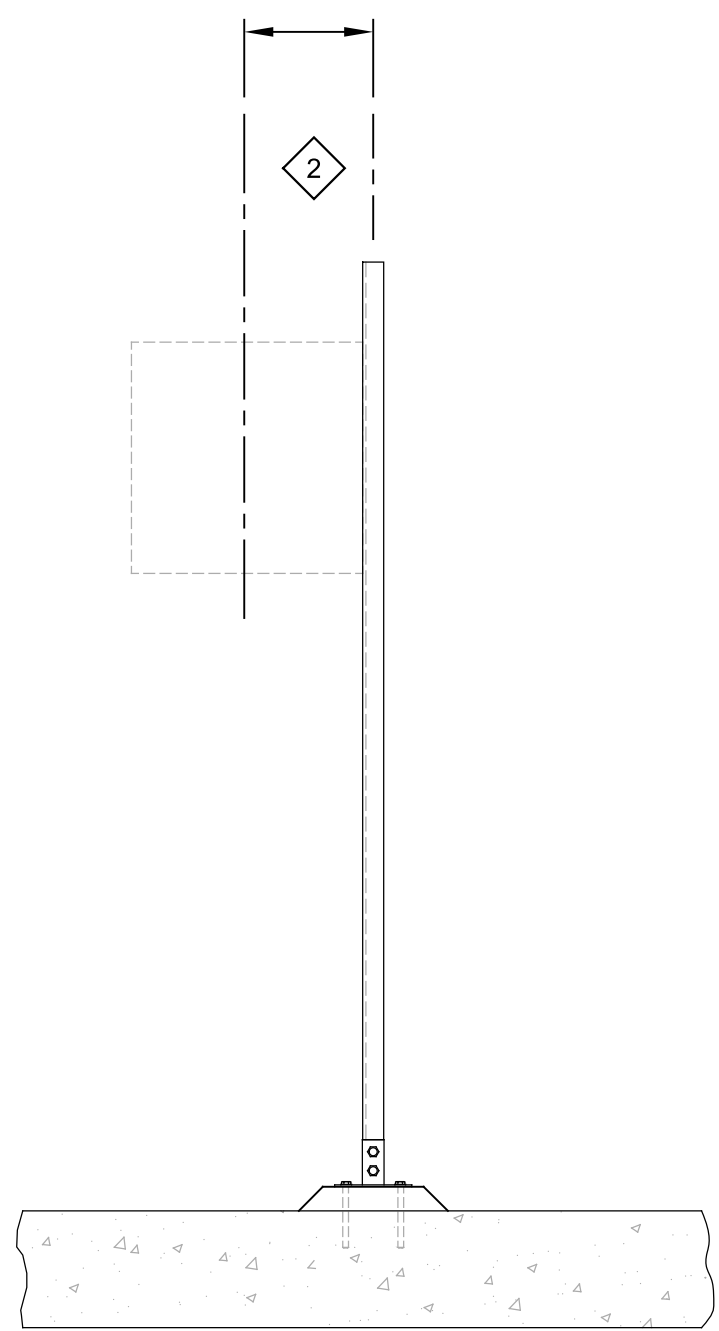
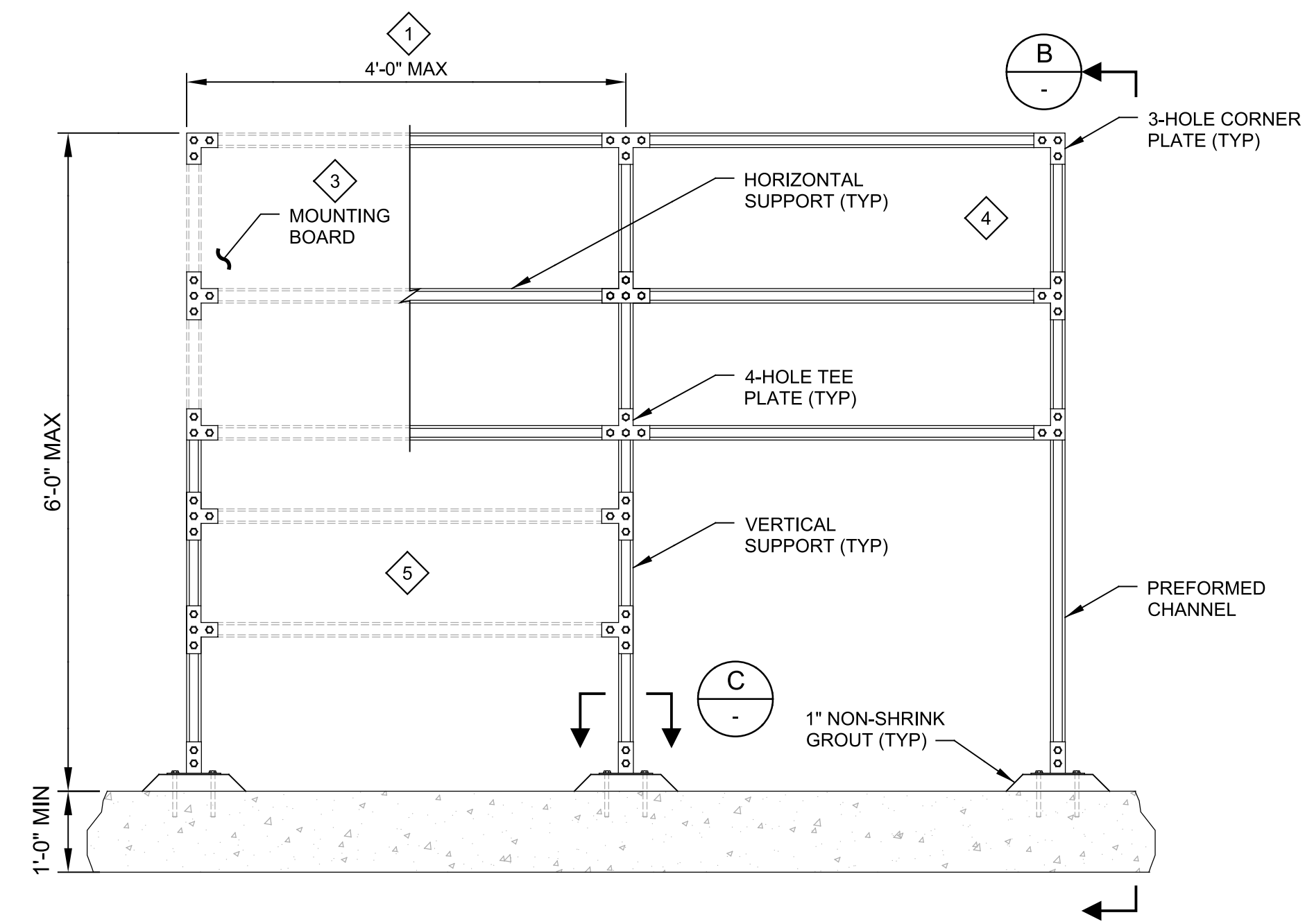


CITY OF PETALUMA
 FILTER ADDITION AND MISC. IMPROVEMENTS PROJECT
 ELECTRICAL
 TYPICAL ELECTRICAL DETAILS

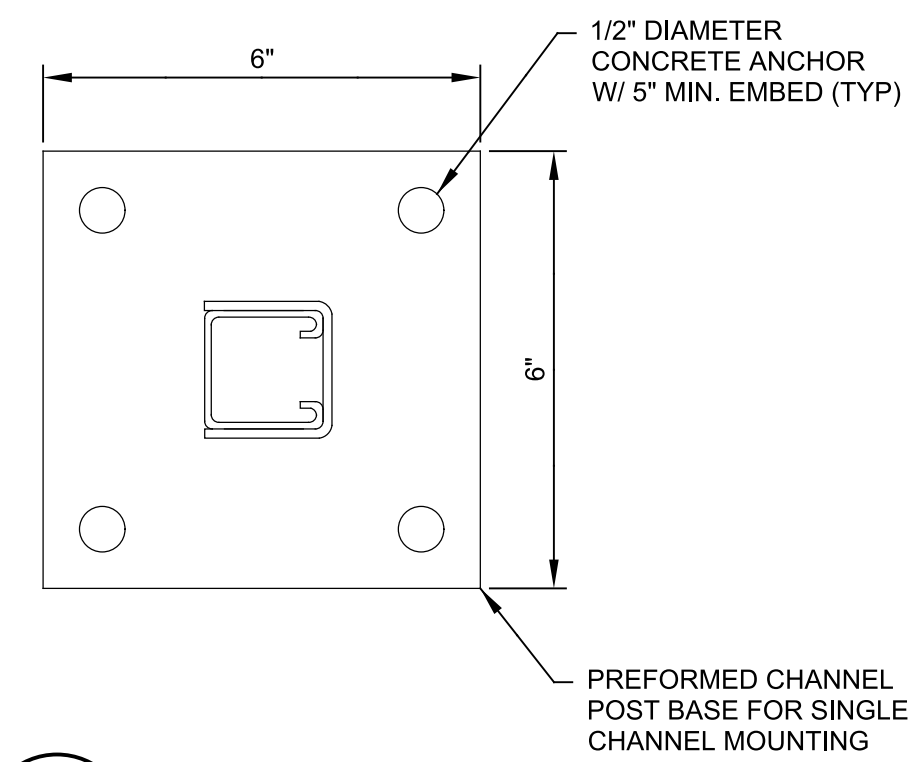
VERIFY SCALES
 BAR IS ONE INCH ON ORIGINAL DRAWING
 0 1"

JOB NO.
7310L.10
 DRAWING NO.
TE04C
 SHEET NO.
27 OF 130

Plot Date: 03-APR-2023 9:40:19 AM
 User: svcPW
 Model: Layout1 ColorTable: gshade.ctb DesignScript: Carollo_Std_Pen_v0905.pen PlotScale: 1:1
 LAST SAVED BY: iweilch



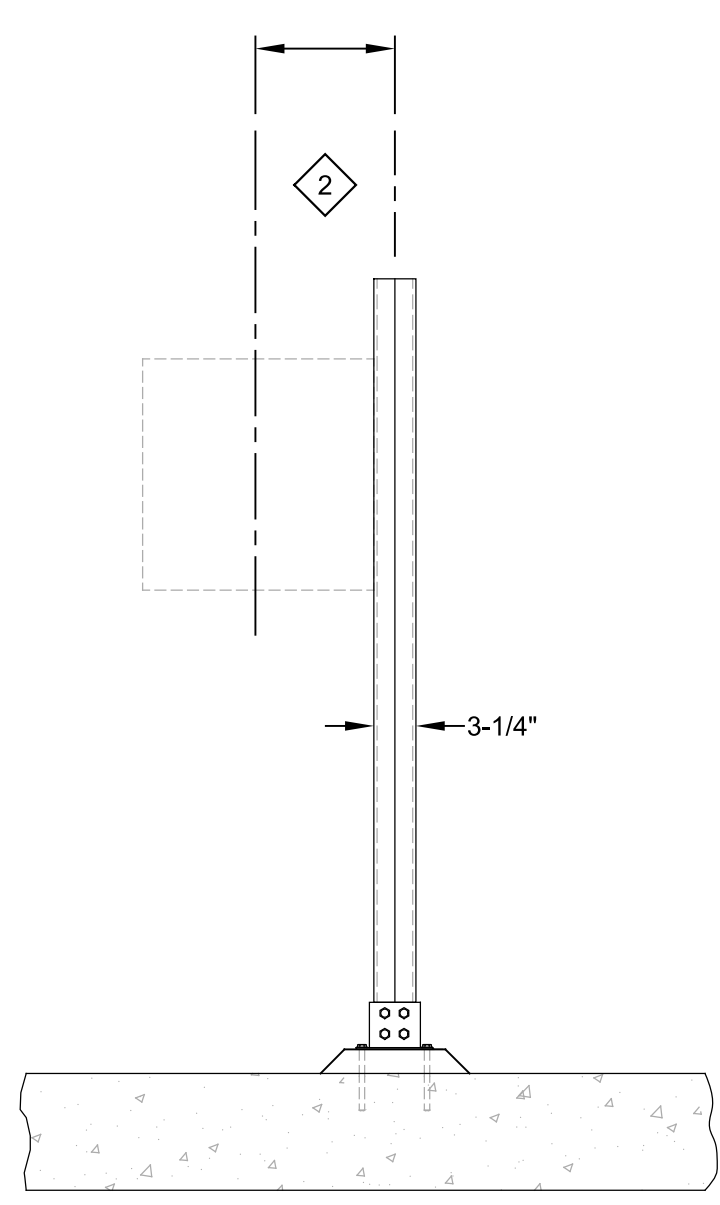
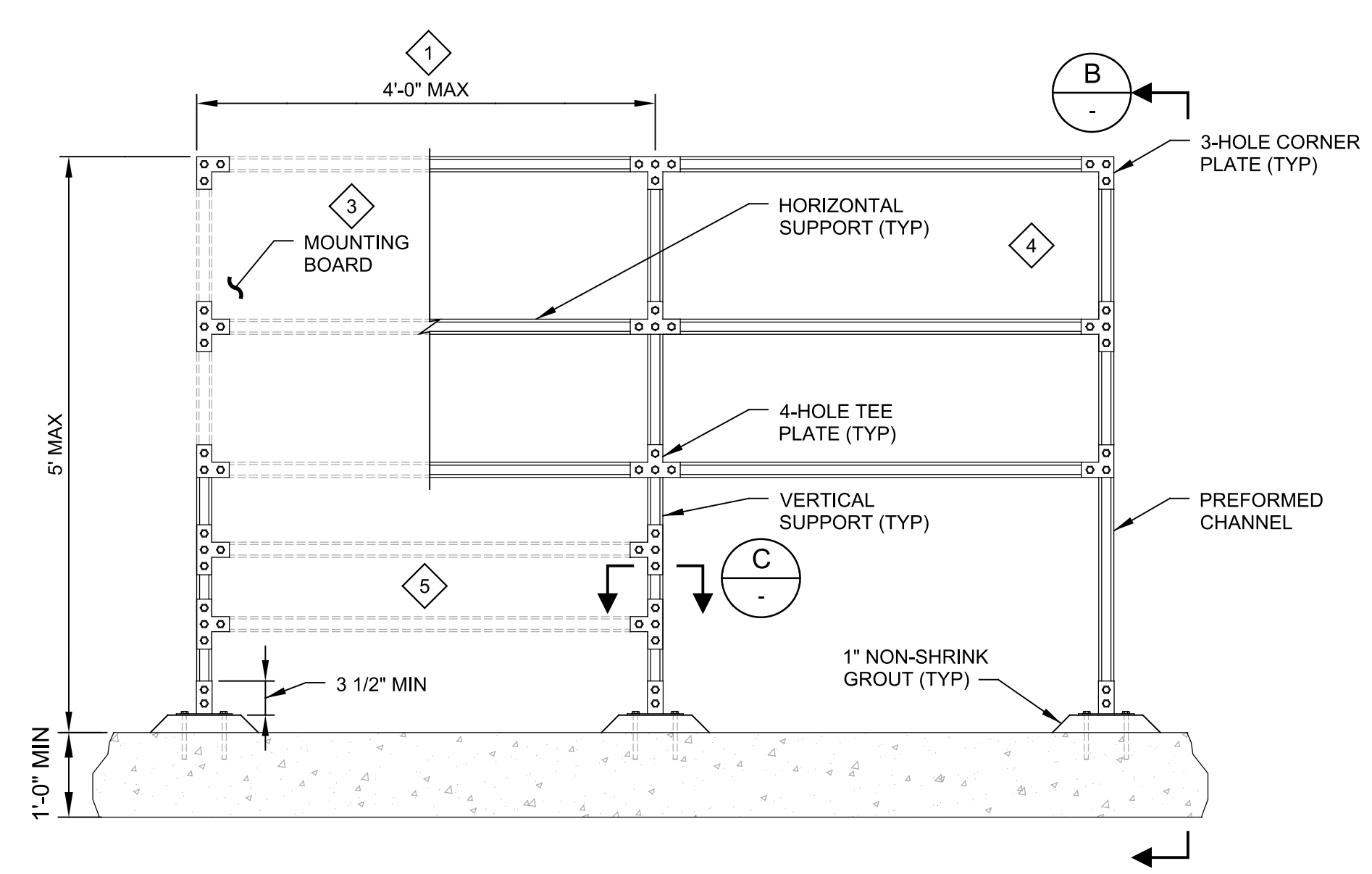
B SECTION



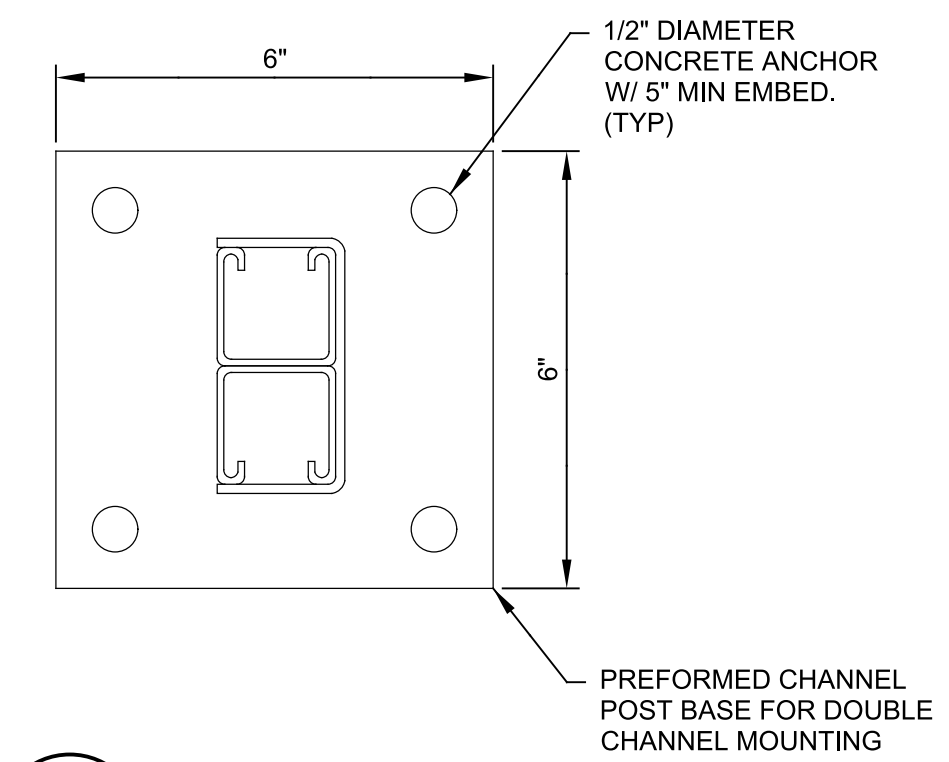
C POST BASE

- NOTES:**
- AS SHOWN, THE MOUNTING STAND IS SUITABLE FOR THE FOLLOWING DESIGN CRITERIA:
 - STAINLESS STEEL OR HOT-DIPPED GALVANIZED PREFORMED CHANNEL
 - SEISMIC DESIGN CATEGORY: A THROUGH D
 - RISK CATEGORY: III AND IV
 - MAXIMUM EQUIPMENT LOAD OF 100 LBS PER VERTICAL SUPPORT
 - REFER TO THE SPECIFICATIONS FOR MATERIAL REQUIREMENTS.

- KEY NOTES:**
- FOR MOUNTING STANDS WIDER THAN 4 FEET PROVIDE EQUALLY SPACED VERTICAL SUPPORTS AT 4 FOOT MAXIMUM SPACING.
 - MAXIMUM OFFSET TO THE CENTERLINE OF EQUIPMENT OR ENCLOSURES IS 1'-6".
 - PROVIDE A MOUNTING BOARD FOR INSTRUMENTS AND DEVICES WEIGHING LESS THAN 20 POUNDS THAT CANNOT BE MOUNTED DIRECTLY TO PREFORMED CHANNEL. EQUIPMENT ANCHORAGE TO THE MOUNTING BOARD SHALL BE DESIGNED BY THE CONTRACTOR.
 - PROVIDE ADDITIONAL PREFORMED CHANNEL SUPPORTS FOR ENCLOSURES THAT CAN BE MOUNTED DIRECTLY TO THE PREFORMED CHANNEL.
 - OPTIONAL HORIZONTAL SUPPORTS AND AVAILABLE SPACE FOR JUNCTION BOXES.



B SECTION



C POST BASE

- NOTES:**
- AS SHOWN, THE MOUNTING STAND IS SUITABLE FOR THE FOLLOWING DESIGN CRITERIA:
 - STAINLESS STEEL OR HOT-DIPPED GALVANIZED PREFORMED CHANNEL
 - BASIC WIND SPEED (3 SECOND GUST, 33 FEET ABOVE GROUND) : 120 MPH
 - WIND EXPOSURE CATEGORY: C
 - NON-SPECIAL WIND REGIONS
 - SEISMIC DESIGN CATEGORY: A THROUGH D
 - RISK CATEGORY: III AND IV
 - MAXIMUM EQUIPMENT LOAD OF 100 LBS PER VERTICAL SUPPORT
 - THE TOTAL SURFACE AREA OF ALL EQUIPMENT AND MOUNTING BOARDS SHALL NOT EXCEED 12 SQUARE FEET PER VERTICAL SUPPORT.
 - REFER TO THE SPECIFICATIONS FOR MATERIAL REQUIREMENTS.

- KEY NOTES:**
- FOR MOUNTING STANDS WIDER THAN 4 FEET PROVIDE EQUALLY SPACED VERTICAL SUPPORTS AT 4 FOOT MAXIMUM SPACING.
 - MAXIMUM OFFSET TO THE CENTERLINE OF EQUIPMENT OR ENCLOSURES IS 1'-6".
 - PROVIDE A MOUNTING BOARD FOR INSTRUMENTS AND DEVICES WEIGHING LESS THAN 20 POUNDS THAT CANNOT BE MOUNTED DIRECTLY TO PREFORMED CHANNEL. EQUIPMENT ANCHORAGE TO THE MOUNTING BOARD SHALL BE DESIGNED BY THE CONTRACTOR.
 - PROVIDE ADDITIONAL PREFORMED CHANNEL SUPPORTS FOR ENCLOSURES THAT CAN BE MOUNTED DIRECTLY TO THE PREFORMED CHANNEL.
 - OPTIONAL HORIZONTAL SUPPORTS AND AVAILABLE SPACE FOR JUNCTION BOXES.

EM210 INDOOR EQUIPMENT MOUNTING STAND
TYP

EM211 OUTDOOR EQUIPMENT MOUNTING STAND
TYP

REV	DATE	BY	DESCRIPTION

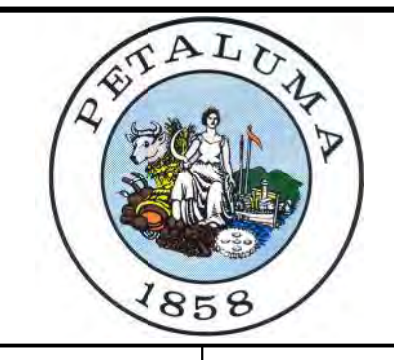
DESIGNED
CAC

DRAWN
MNH

CHECKED
JB

DATE
JANUARY 2023

Digitally signed by Christopher Alan Carullo
Contact Info: Carollo Engineers, Inc.
Date: 2023.04.06 13:21:04-0800



CITY OF PETALUMA
 FILTER ADDITION AND MISC. IMPROVEMENTS PROJECT
 ELECTRICAL
 TYPICAL ELECTRICAL DETAILS

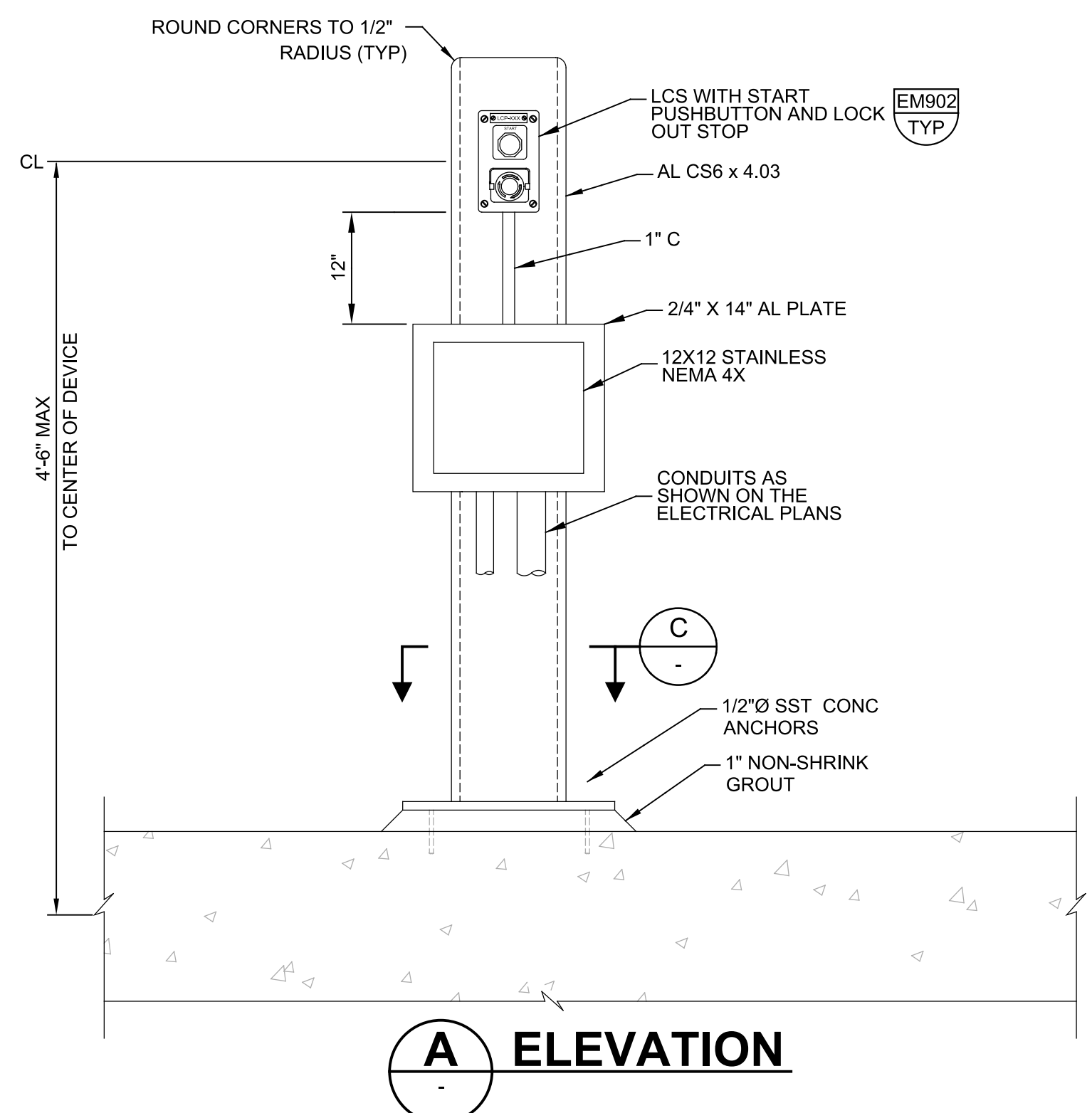
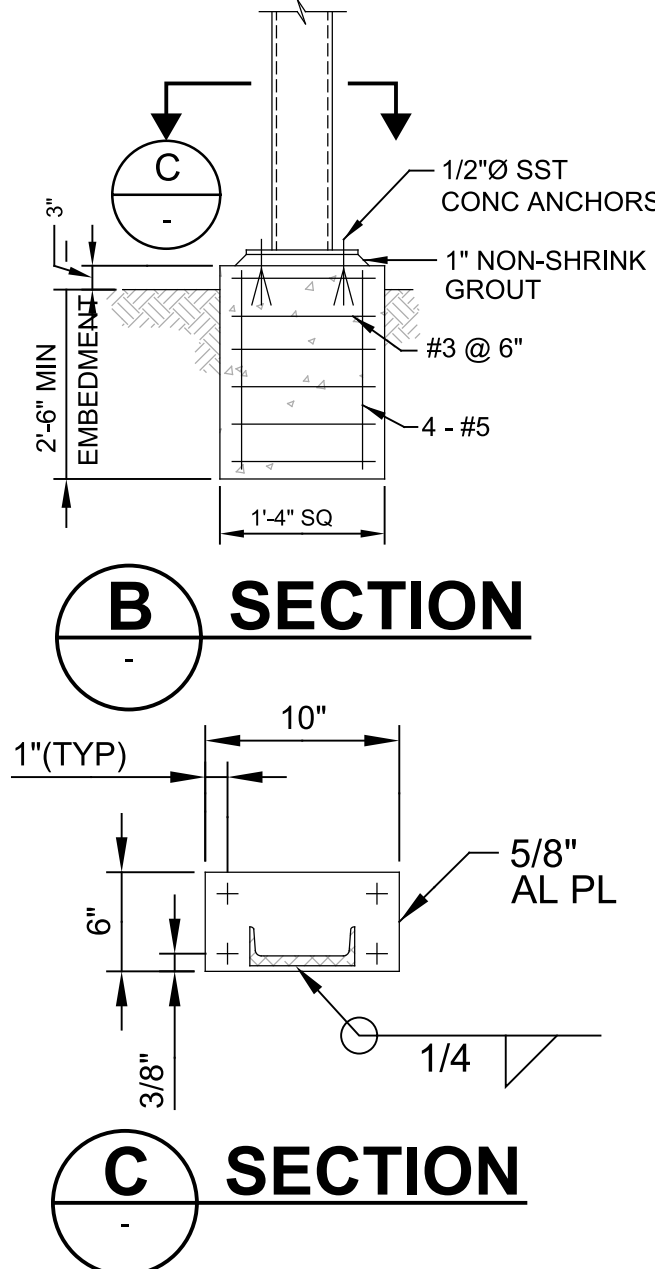
VERIFY SCALES BAR IS ONE INCH ON ORIGINAL DRAWING 0 1"	JOB NO. 7310L.10
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY	DRAWING NO. TE05C
	SHEET NO. 28 OF 130

Plot Date: 03-APR-2023 9:40:21 AM

User: svcPW

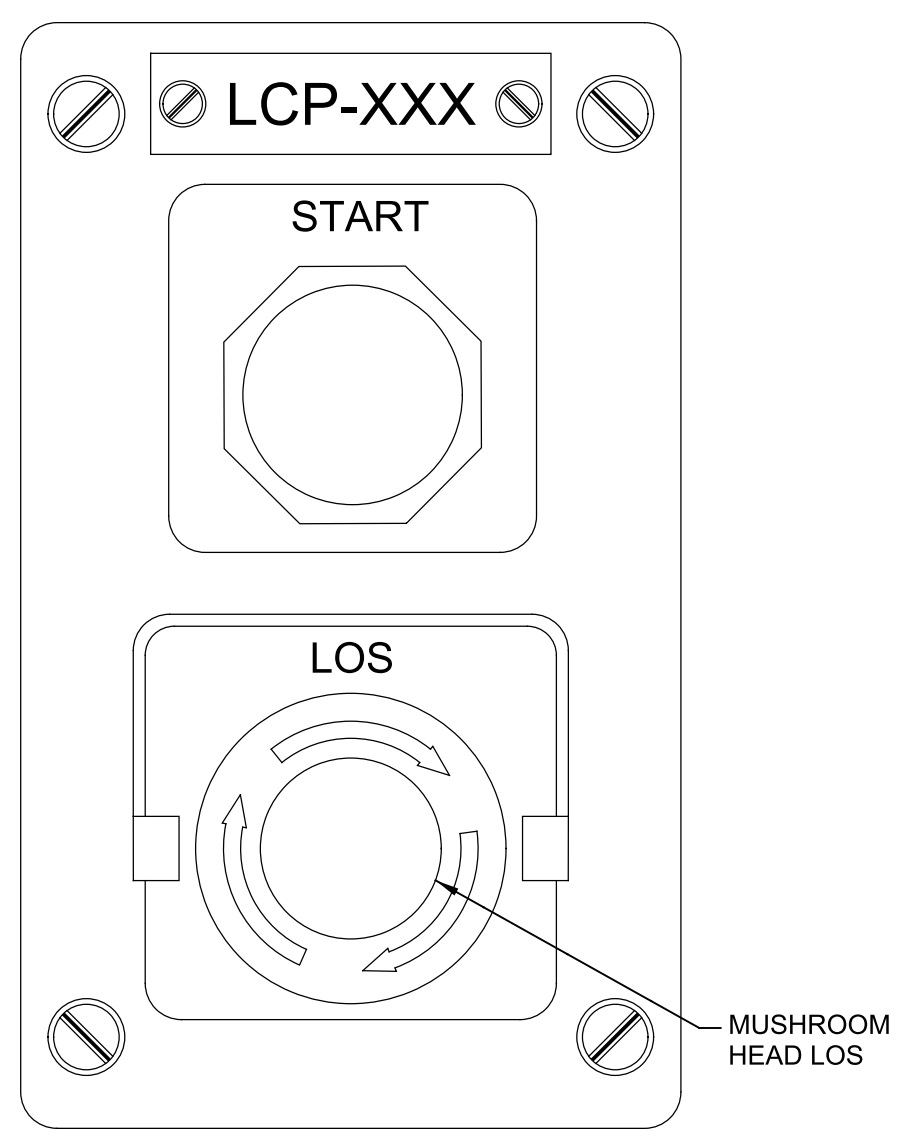
Model: Layout1 ColorTable: gshade.ctb DesignScript: Carollo_Sld_Pen_v0905.pen PlotScale: 1:1

LAST SAVED BY: iweilch

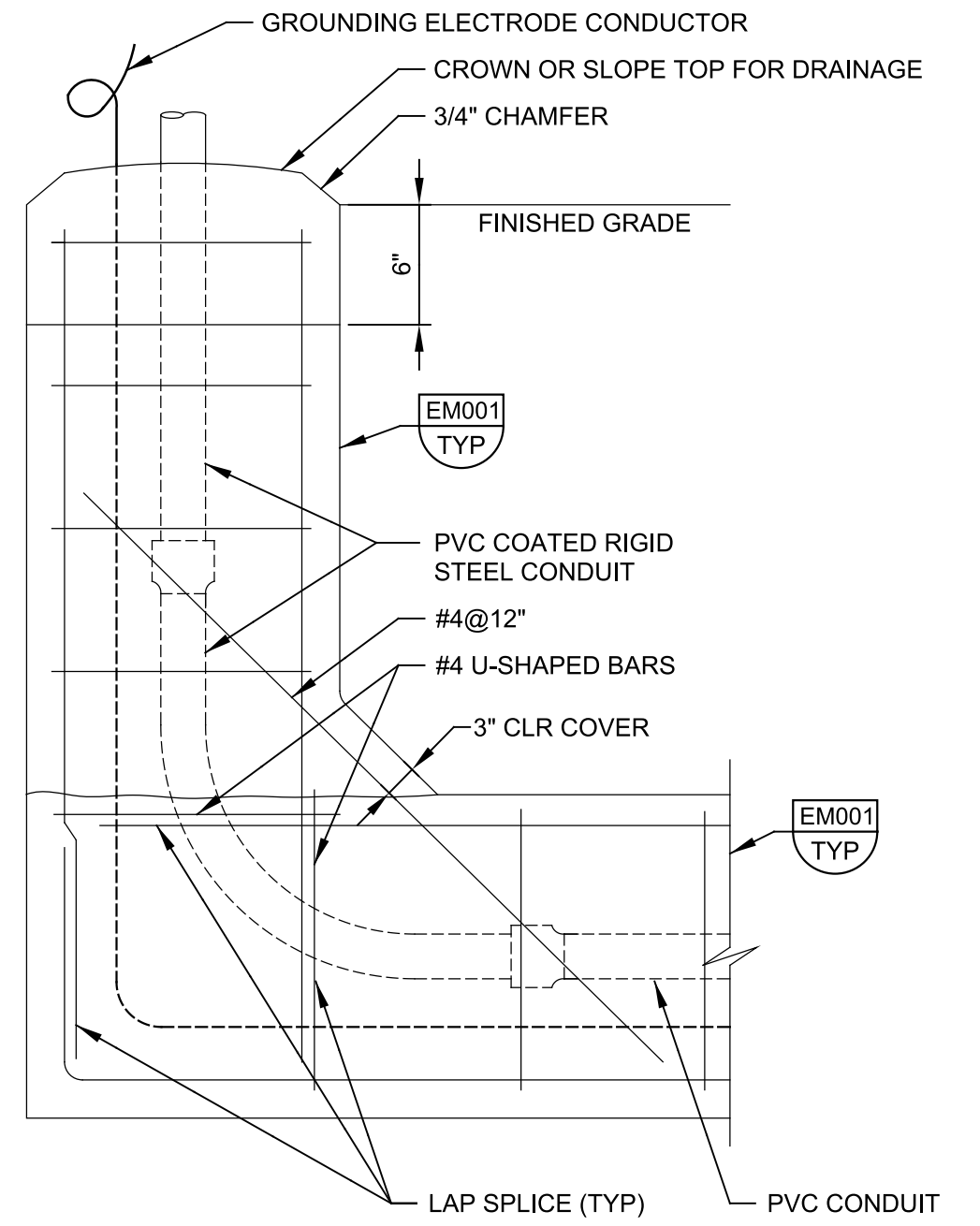
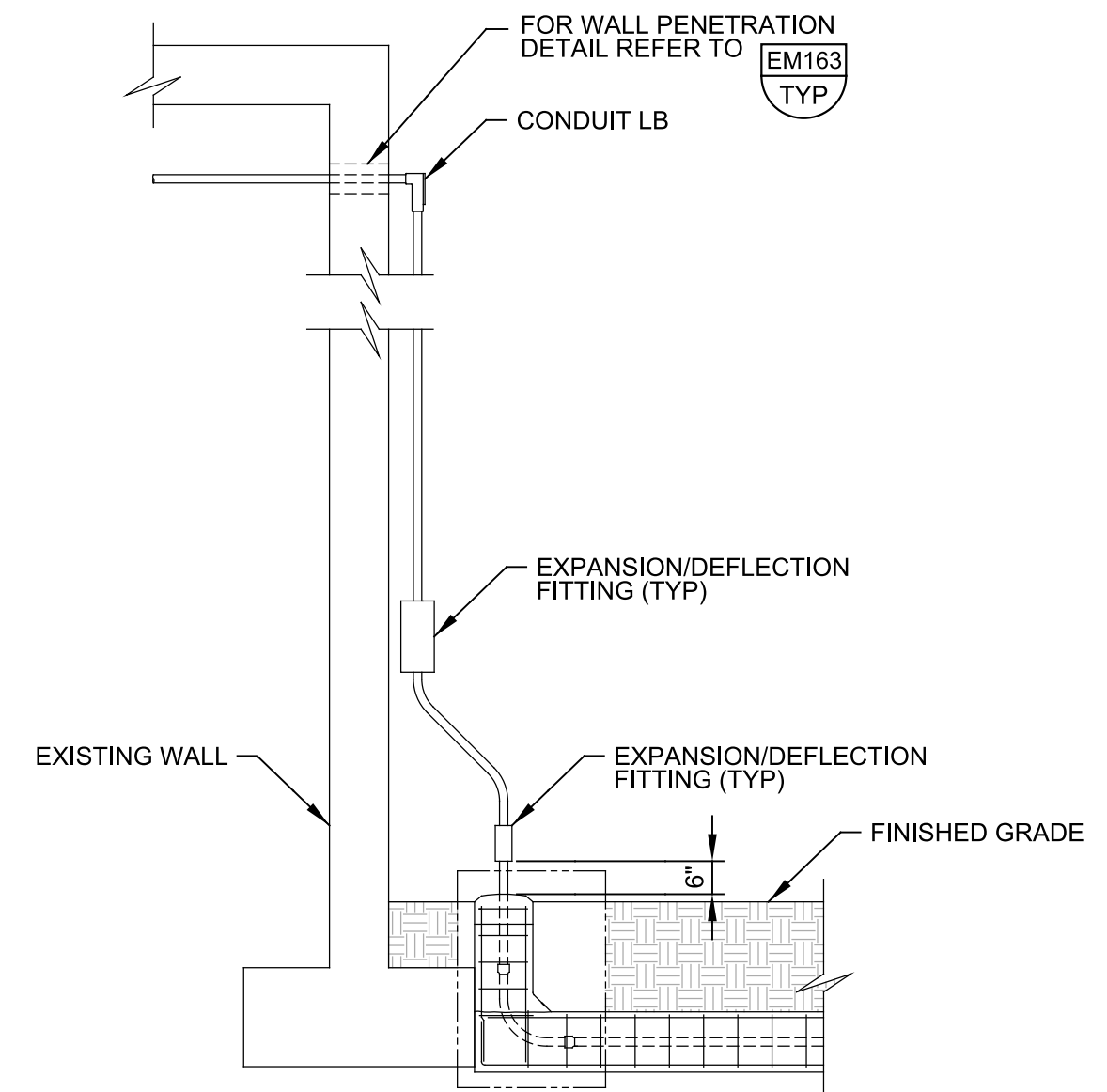


- NOTES:
- WHERE SEPARATE FOUNDATION IS REQUIRED, SEE SECTION B.
 - COAT ALUMINUM SURFACES IN CONTACT WITH CONCRETE PER SPECIFICATIONS.
 - USE STAINLESS STEEL FASTENERS FOR MOUNTING DEVICES.
 - WEIGHT OF DEVICE(S) SHALL NOT EXCEED 100 POUNDS.

EM901 CONTROL AND JUNCTION BOX MOUNTING
TYP
3/15/2016



EM902 LCP WITH START PUSHBUTTON AND LOCKOUT STOP
TYP
3/15/2016



- NOTES:
- PROVIDE SHOWN EXPANSION/DEFLECTION FITTING BELOW FIRST CONDUIT SUPPORT CONNECTED TO THE STRUCTURE.

EM905 RISER FROM DUCT BANK AT STRUCTURE
TYP
4/18/2016

REV	DATE	BY	DESCRIPTION
1			
2			
3			

DESIGNED
CAC
DRAWN
MNH
CHECKED
JB
DATE
JANUARY 2023



Digitally signed by Christopher Alan Carrollo
Contact Info: Carollo Engineers, Inc.
Date: 2023.04.06 13:23:09 -0700

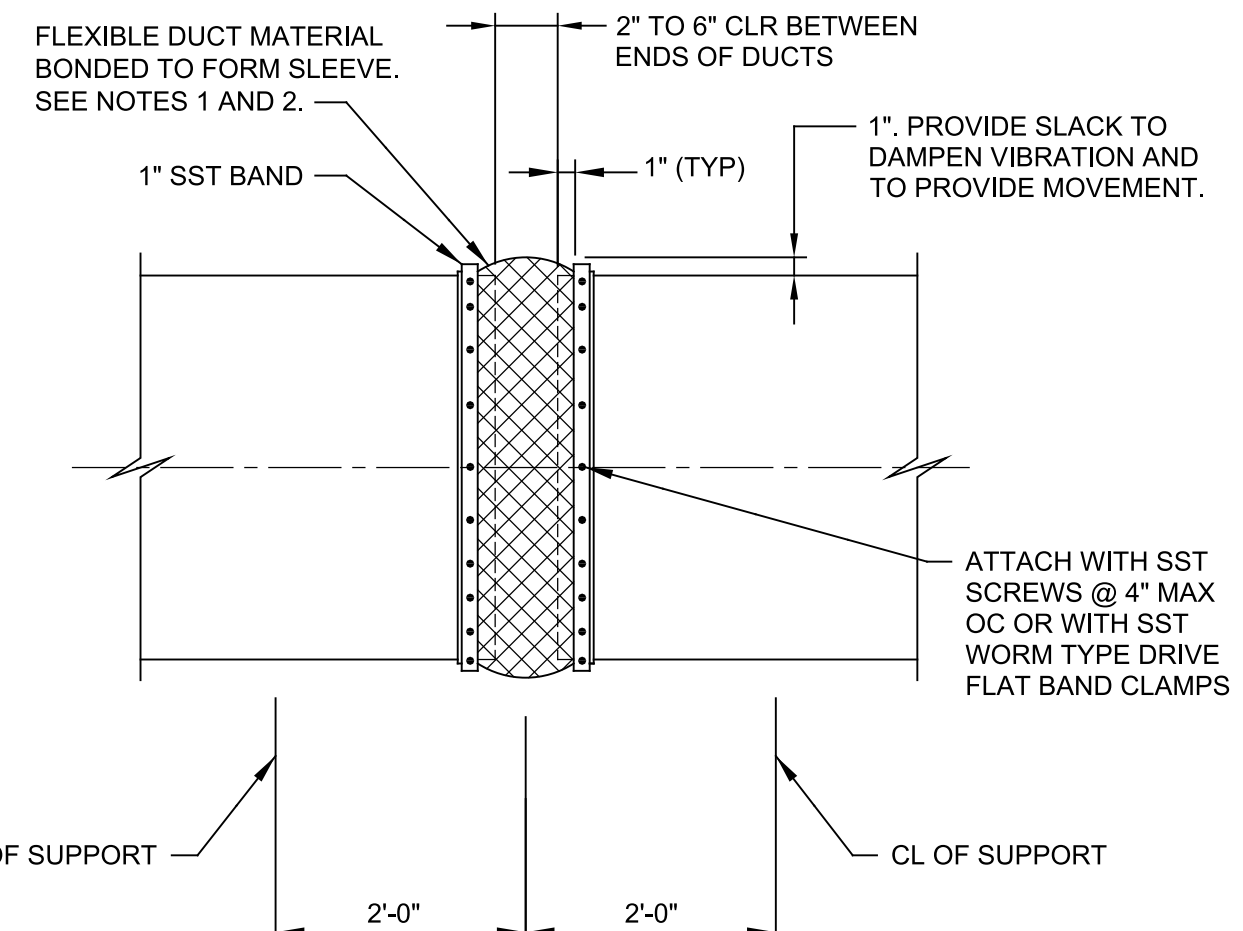


CITY OF PETALUMA
FILTER ADDITION AND MISC. IMPROVEMENTS PROJECT
ELECTRICAL
TYPICAL ELECTRICAL DETAILS

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

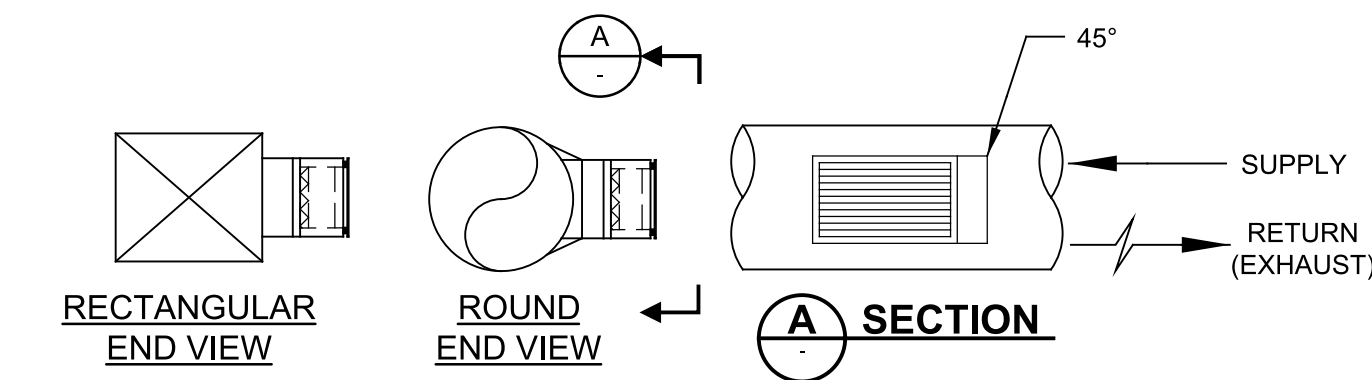
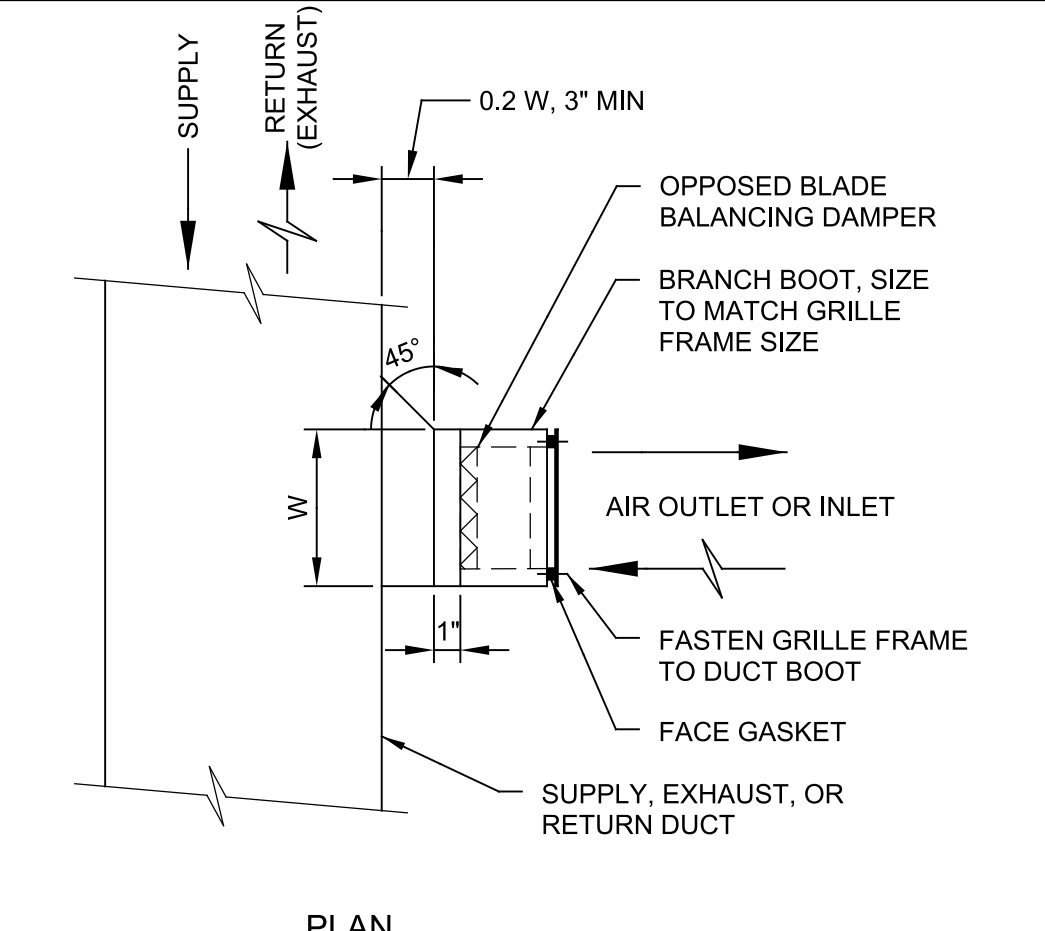
JOB NO.
7310L.10
DRAWING NO.
TE06C
SHEET NO.
29 OF 130

Plot Date: 03-APR-2023 9:39:33 AM
 User: svcPW
 Model: Layout1 ColorTable: gshade.ctb DesignScript: Carollo_Std_Pen_v0905.pen PlotScale: 1:1
 LAST SAVED BY: mvelch

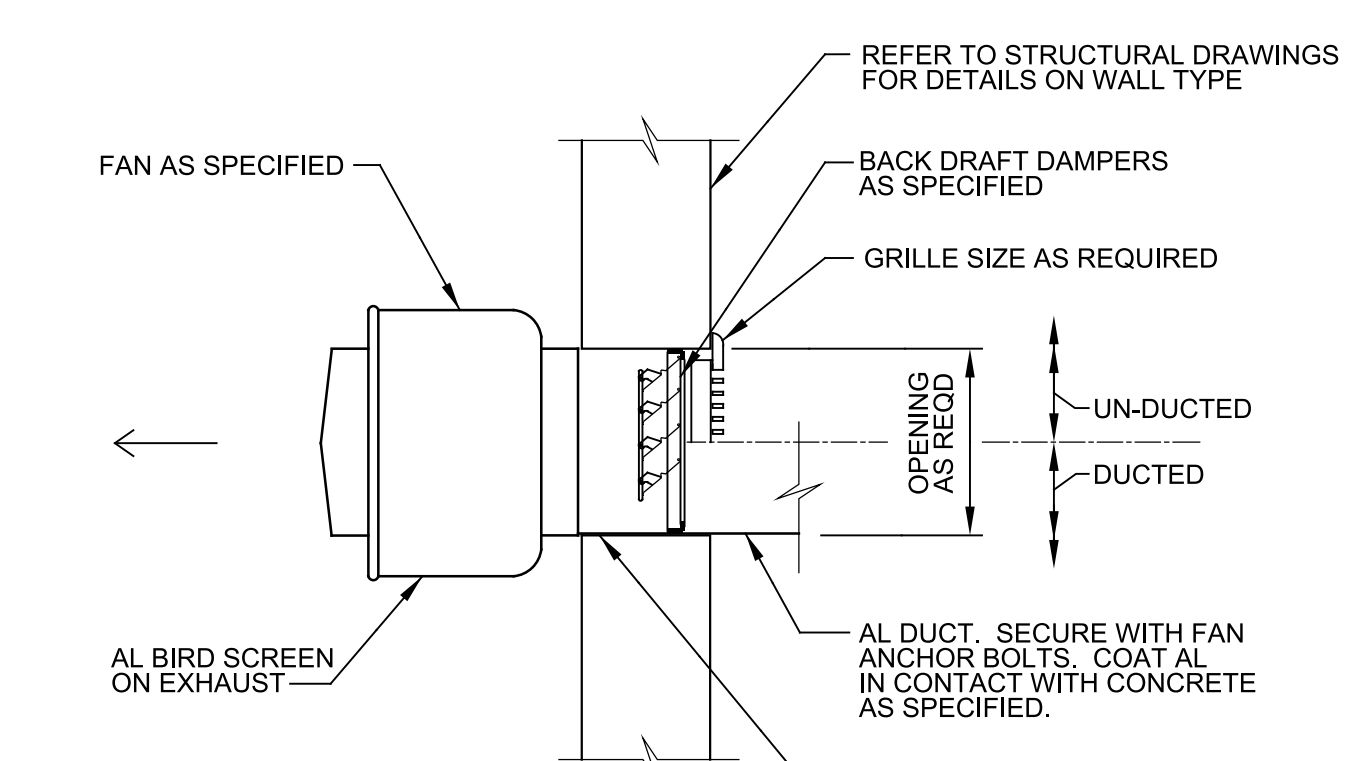


- NOTES:**
- BOND LONGITUDINAL JOINT PER MANUFACTURER'S RECOMMENDATION.
 - FOR FLEXIBLE CONNECTOR TYPE FL-1 OR FL-2 ONLY.
 - FOR EXTERIOR LOCATIONS, PROVIDE SHEET METAL COVER.

HA120 CONNECTION - FLEXIBLE FOR METAL DUCTS (FL-1 OR FL-2)
 TYP S 5/17/18

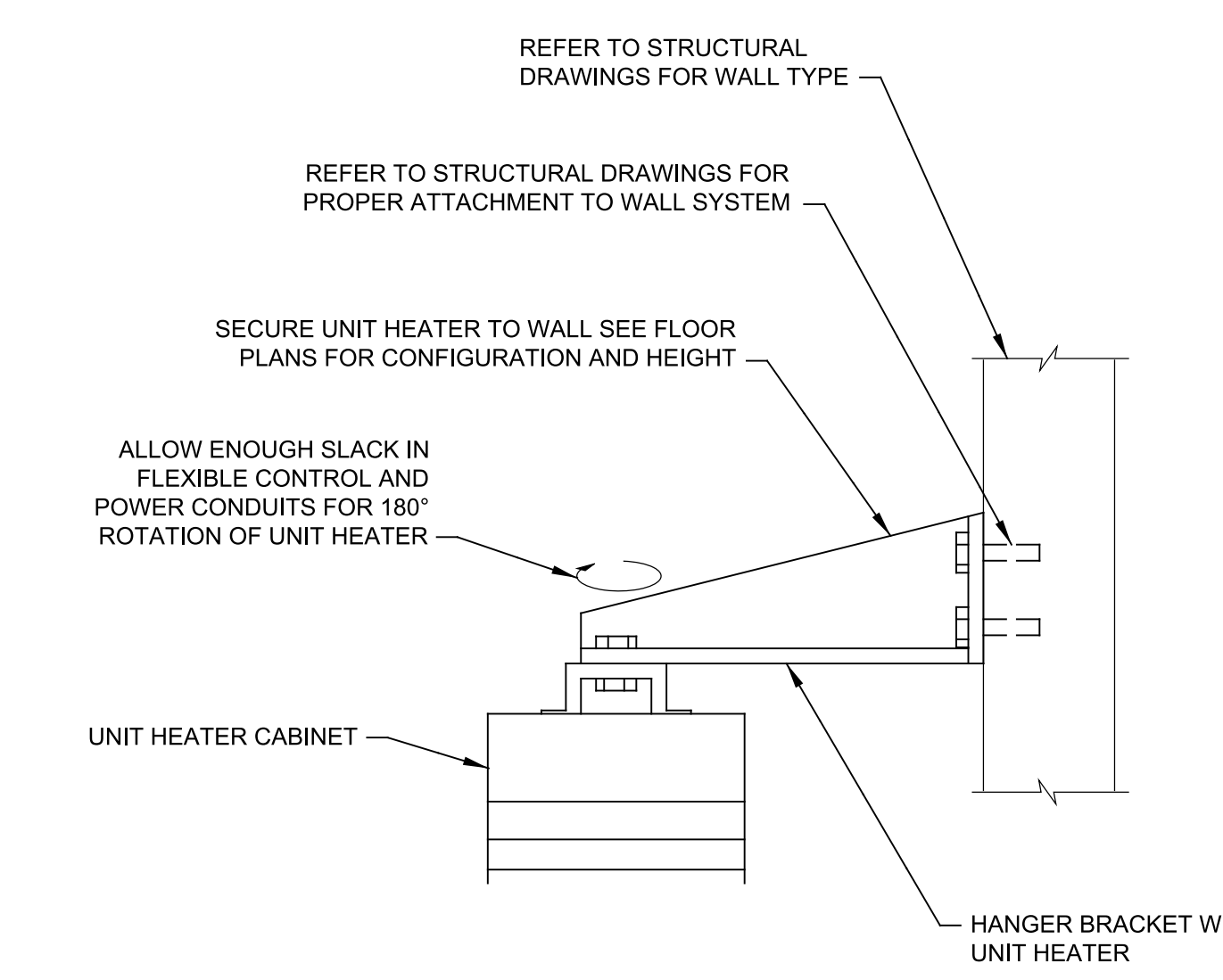


HA520 GRILLE - SUPPLY/RETURN/EXHAUST - METAL
 TYP S 11/13/18

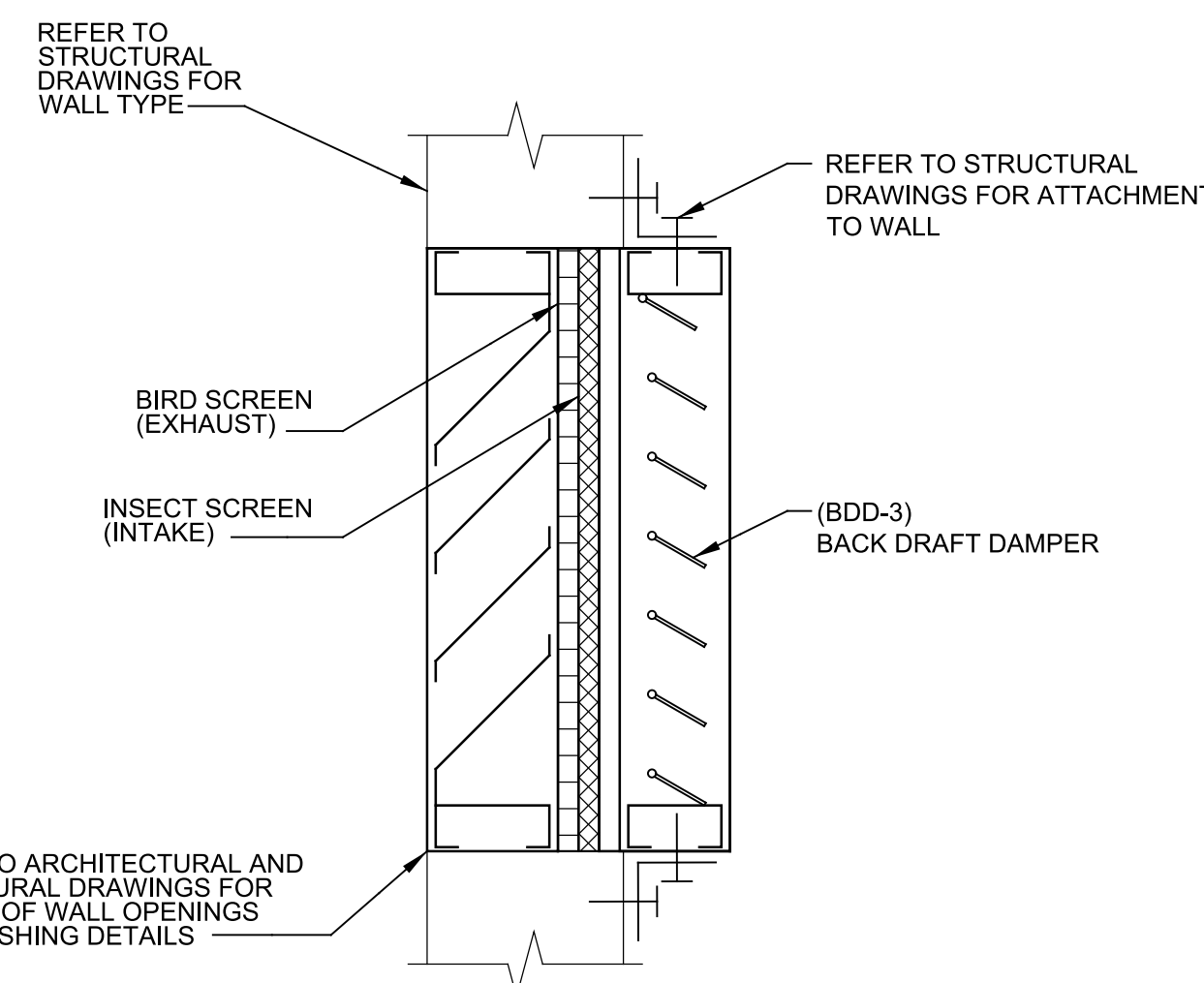


- NOTES:**
- MOUNT ON WALL WITH STAINLESS STEEL CONCRETE ANCHORS.
 - ANCHOR TYPE/SIZE TO BE PROVIDED BY MFR/CONTRACTOR PER PROJECT SITE DESIGN CRITERIA.
 - FOR SPLIT-FACE BLOCK, GRIND OR GROUT FACE TO PROVIDE A SMOOTH, PLANAR MOUNTING SURFACE.

HE172 FAN - WALL MOUNTED CENTRIFUGAL EXHAUST
 TYP S 5/23/18

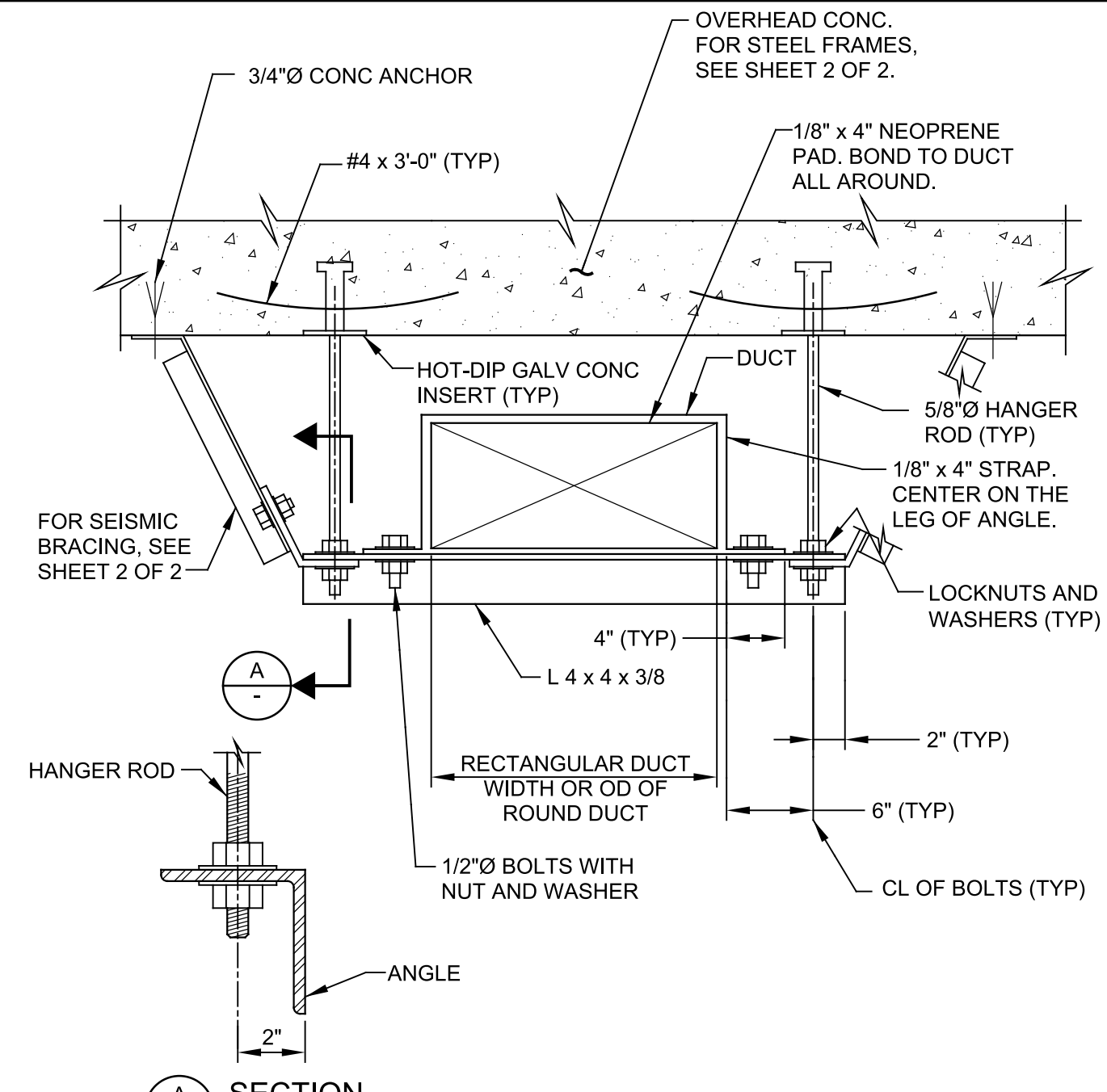


HE350 UNIT HEATER - WALL MOUNT - ELECTRIC
 TYP S 5/23/18



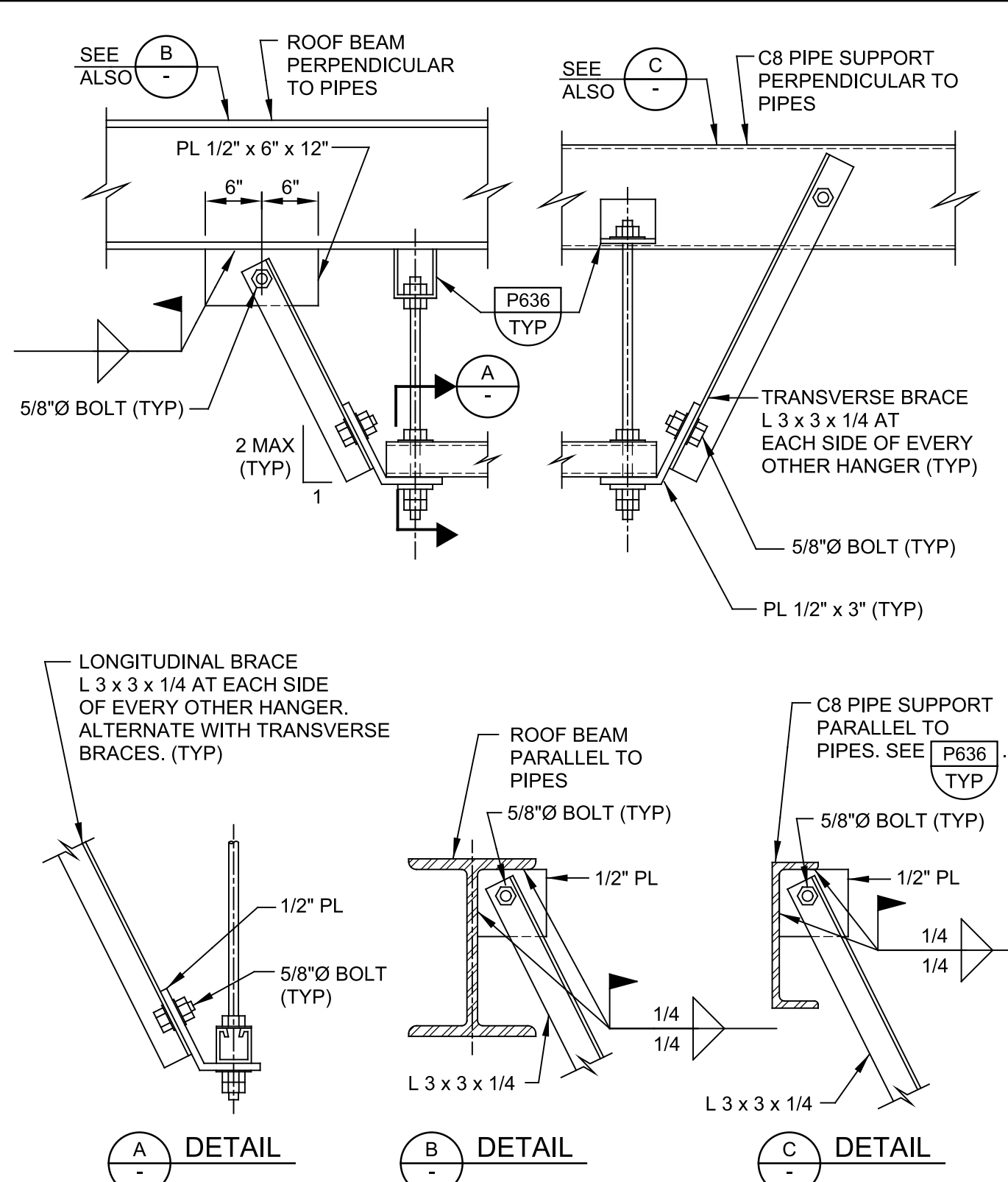
- NOTES:**
- ALL FASTENERS SHALL BE STAINLESS STEEL.
 - REFER TO MANUFACTURE RECOMMENDATIONS FOR INSTALLATION.
 - COORDINATE THE SEQUENCE OF INSTALLATION OF DAMPERS AND LOUVERS WITH THE STRUCTURAL BRACING AND EXTERIOR WALL.

HE520 LOUVER - STATIONARY - INTAKE/EXHAUST
 TYP S 12/28/18



- NOTES:**
- ALL METAL SHALL BE HOT-DIP GALV STEEL UNLESS OTHERWISE INDICATED ON THE DWGS.
 - SEE DRAWINGS FOR THE SIZE OF DUCT.
 - TO APPLY TO ALL RECTANGULAR DUCTS & ALL ROUND DUCTS 18\"/>

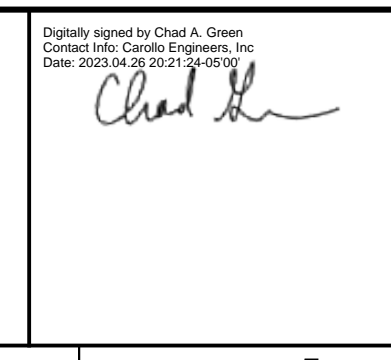
HS184 DUCT SUPPORT FOR RECTANGULAR/ROUND DUCT - TRAPEZE FROM OVERHEAD
 TYP S SHEET 1 OF 2 9/14/18



HS184 DUCT SUPPORT FOR RECTANGULAR/ROUND DUCT - TRAPEZE FROM OVERHEAD
 TYP S SHEET 2 OF 2 9/14/18

REV	DATE	BY	DESCRIPTION

DESIGNED
CE
DRAWN
CE
CHECKED
CAG
DATE
JANUARY 2023



Digitally signed by Chad A. Green
 Contact Info: Carollo Engineers, Inc
 Date: 2023.04.06 09:21:40 -0700



CITY OF PETALUMA
 FILTER ADDITION AND MISC. IMPROVEMENTS PROJECT
 TYPICALS
 TYPICAL HVAC DETAILS

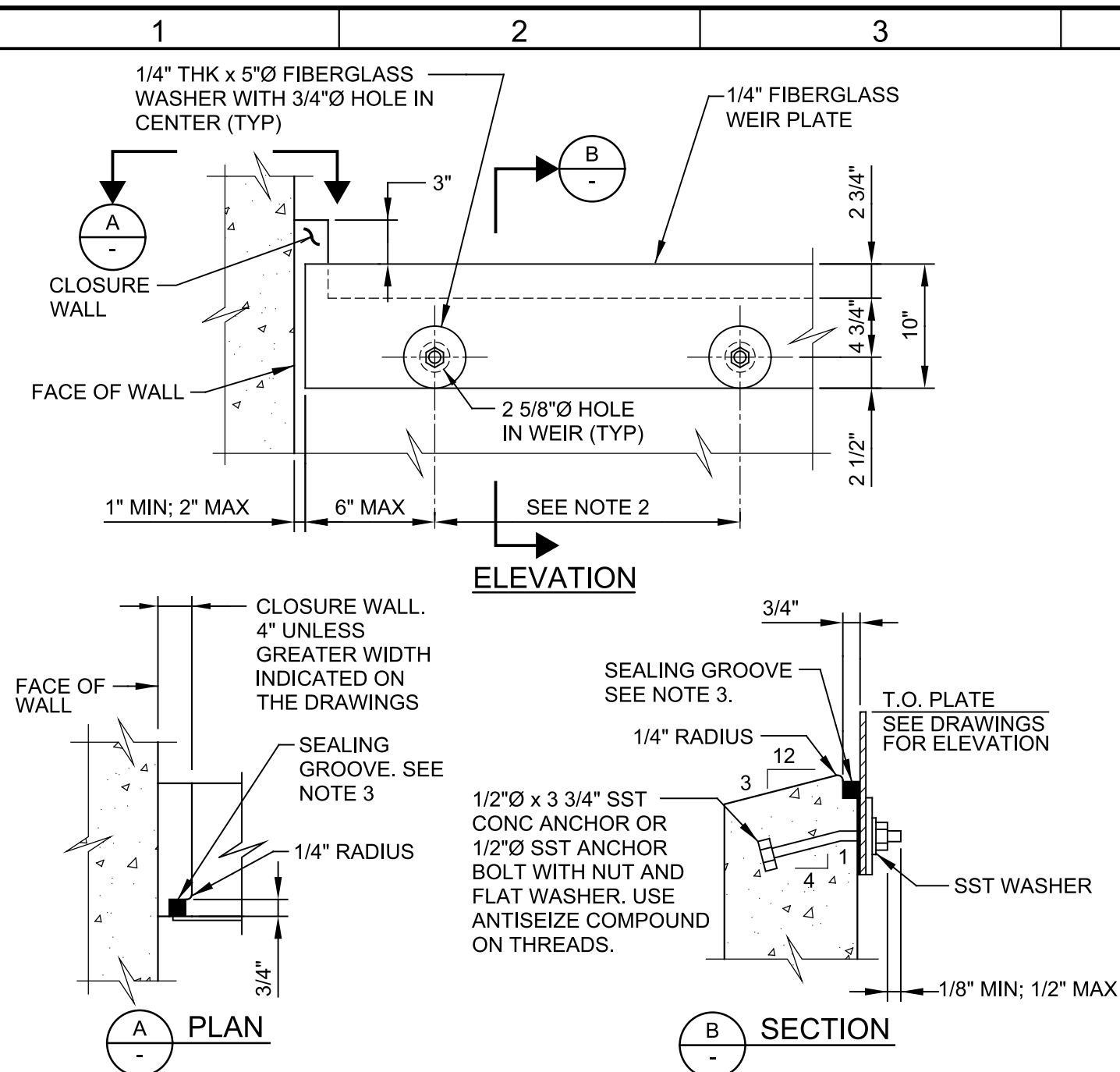
VERIFY SCALES BAR IS ONE INCH ON ORIGINAL DRAWING 0 1"	JOB NO. 7310L.10
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY	DRAWING NO. TH01C
	SHEET NO. 30 OF 130

Plot Date: 03-APR-2023 9:38:17 AM

User: svcPW

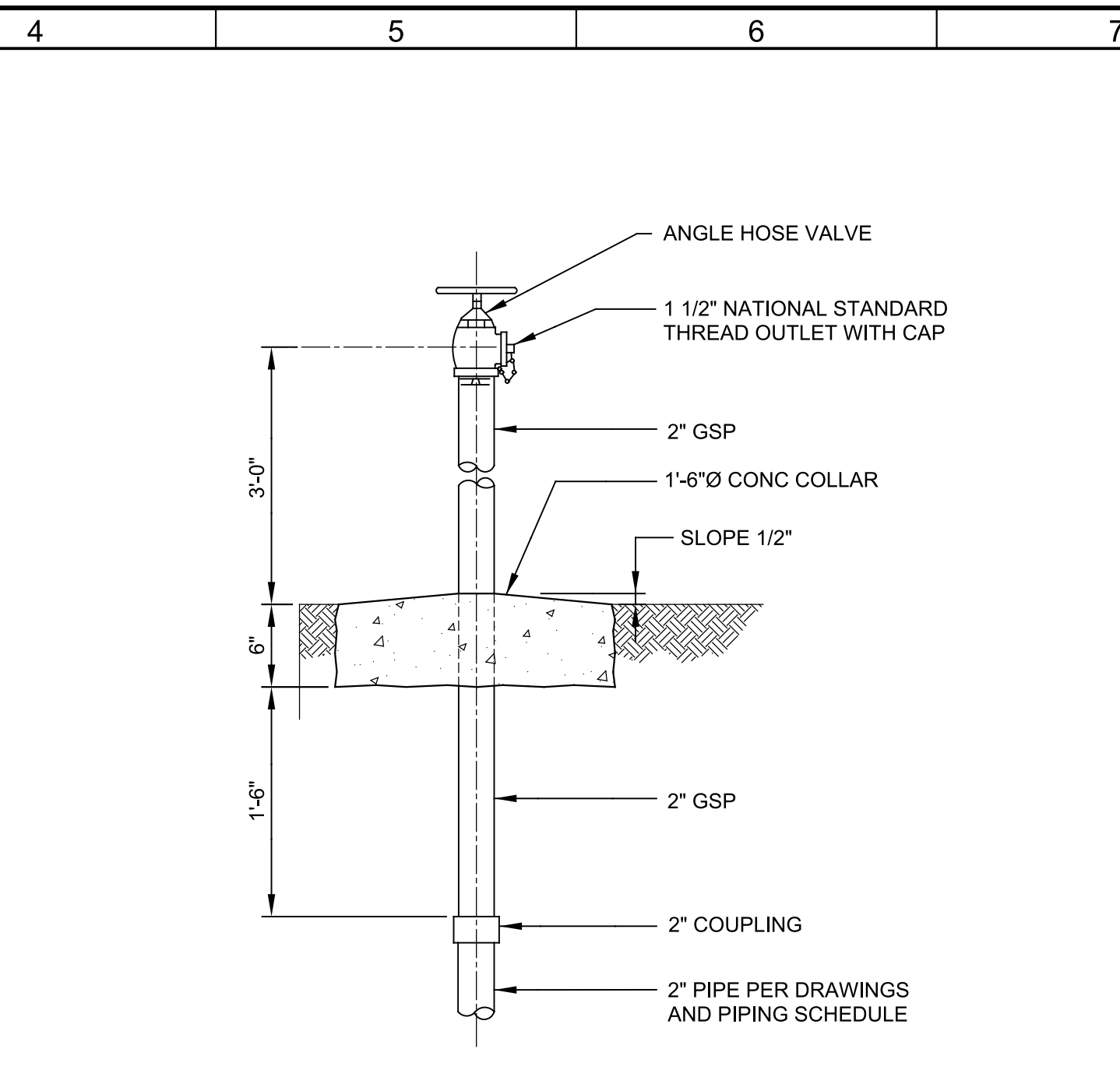
Model: Layout1 ColorTable: gshade.ctb DesignScript: Carollo Std Pen_v0905.pen PlotScale: 1:1

LAST SAVED BY: lumadhay



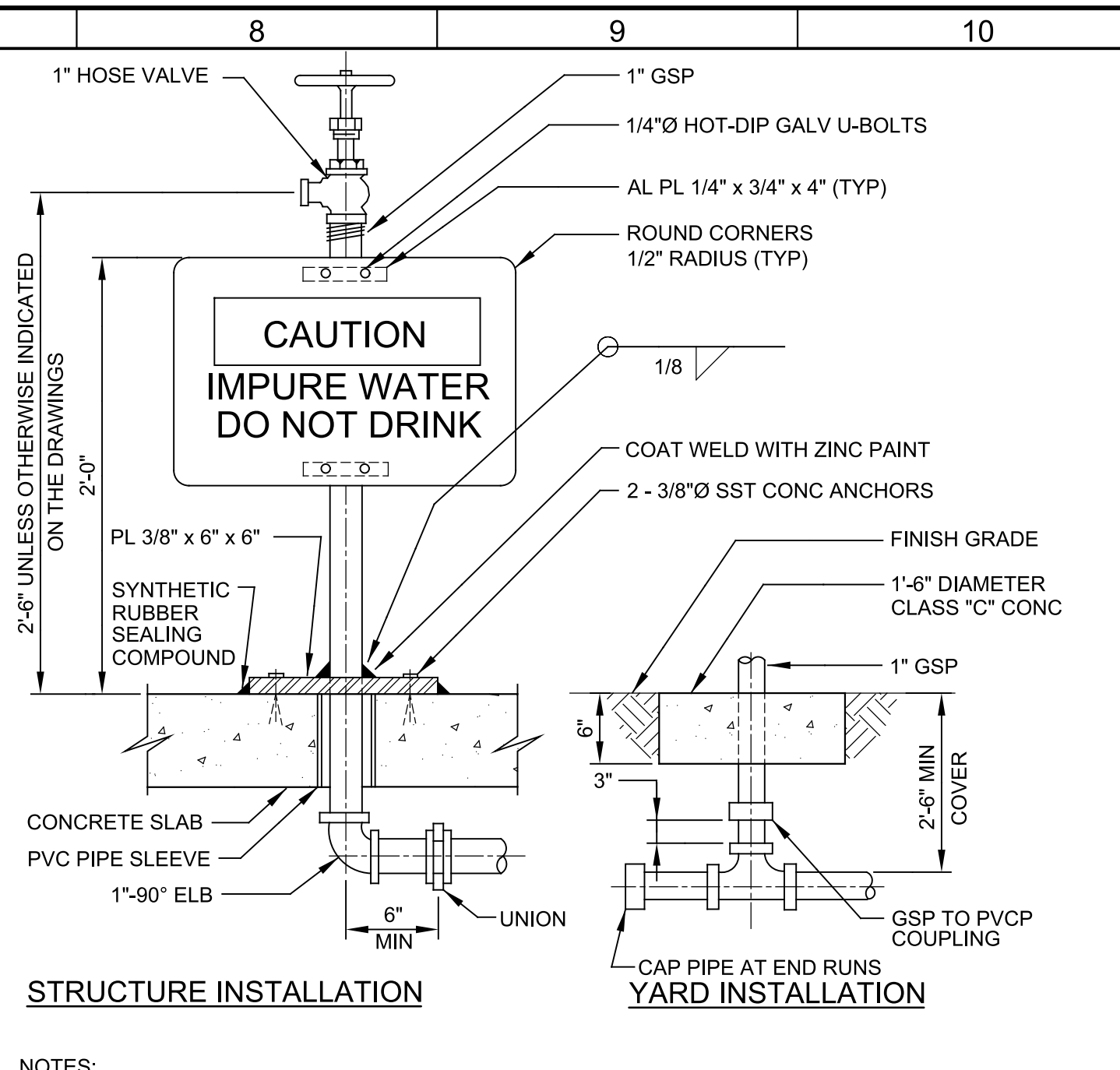
- NOTES:**
1. ALL EDGES, VOIDS, AND SPLICES SHALL BE SEALED WATERTIGHT WITH SYNTHETIC RUBBER SEALING COMPOUND.
 2. ANCHOR BOLT SPACING = 12" OC MAX FOR STRAIGHT WEIRS AND 2'-0" OC MAX FOR CIRCULAR WEIRS.
 3. AT BOTTOM AND ENDS OF CONCRETE OPENING FOR WEIR, CONSTRUCT 1" DEEP x 3/4" WIDE SEALING GROOVE. PLACE BOND BREAK TAPE ON BOTTOM (HORIZONTAL) AND BACK (VERTICAL) FACES OF GROOVE. FILL GROOVE WITH 3/4" DEEP SYNTHETIC RUBBER SEALING COMPOUND TO BOTTOM RADIUS CORNERS.

M214 PLAIN WEIR
TYP
NS 08/05/13



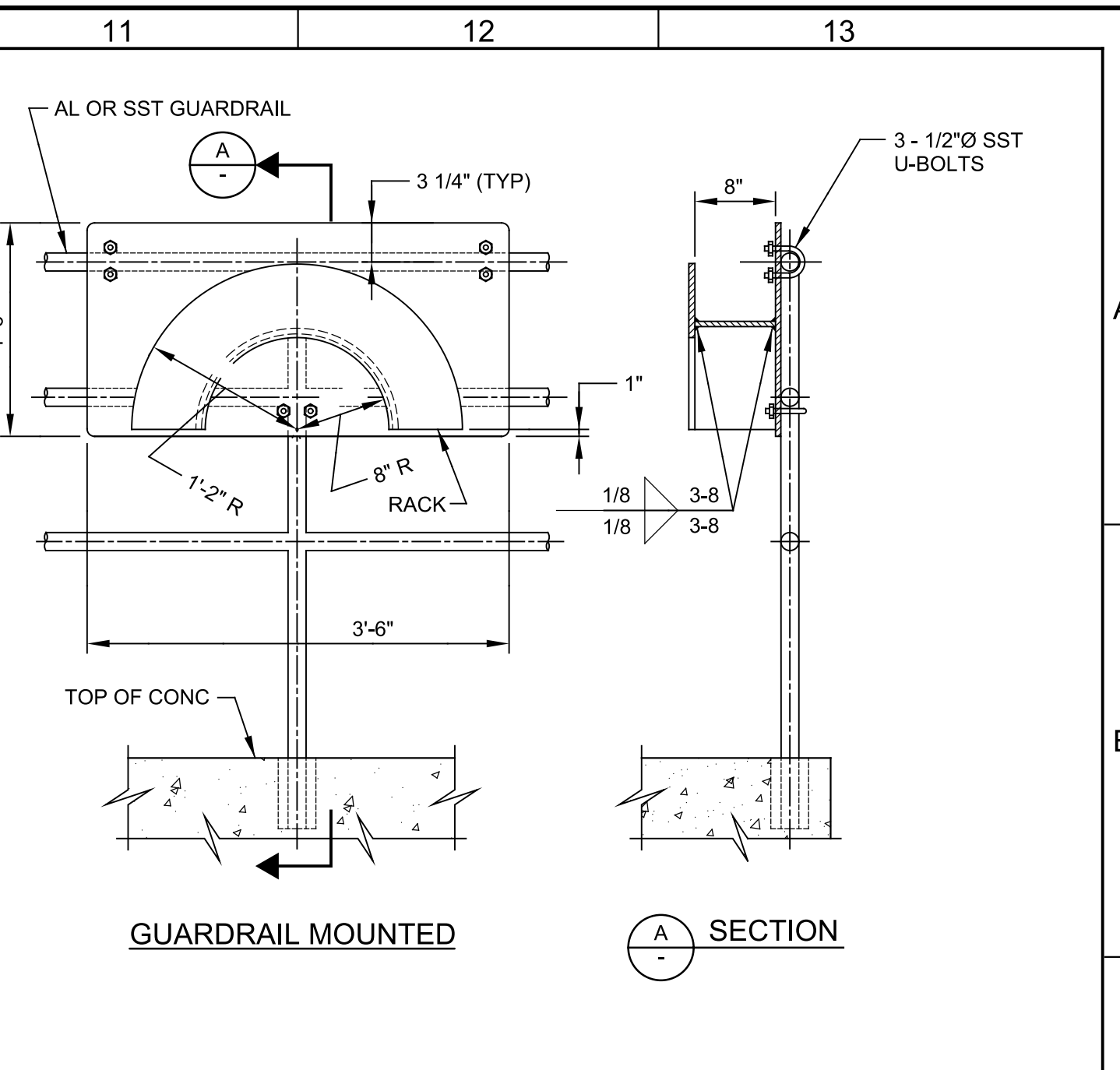
- NOTE:**
1. PAINT PIPE ABOVE GROUND AND VALVE ANSI RED.

M275 FREEZELESS YARD HYDRANT AND SIGN
TYP
SN 08/22/22



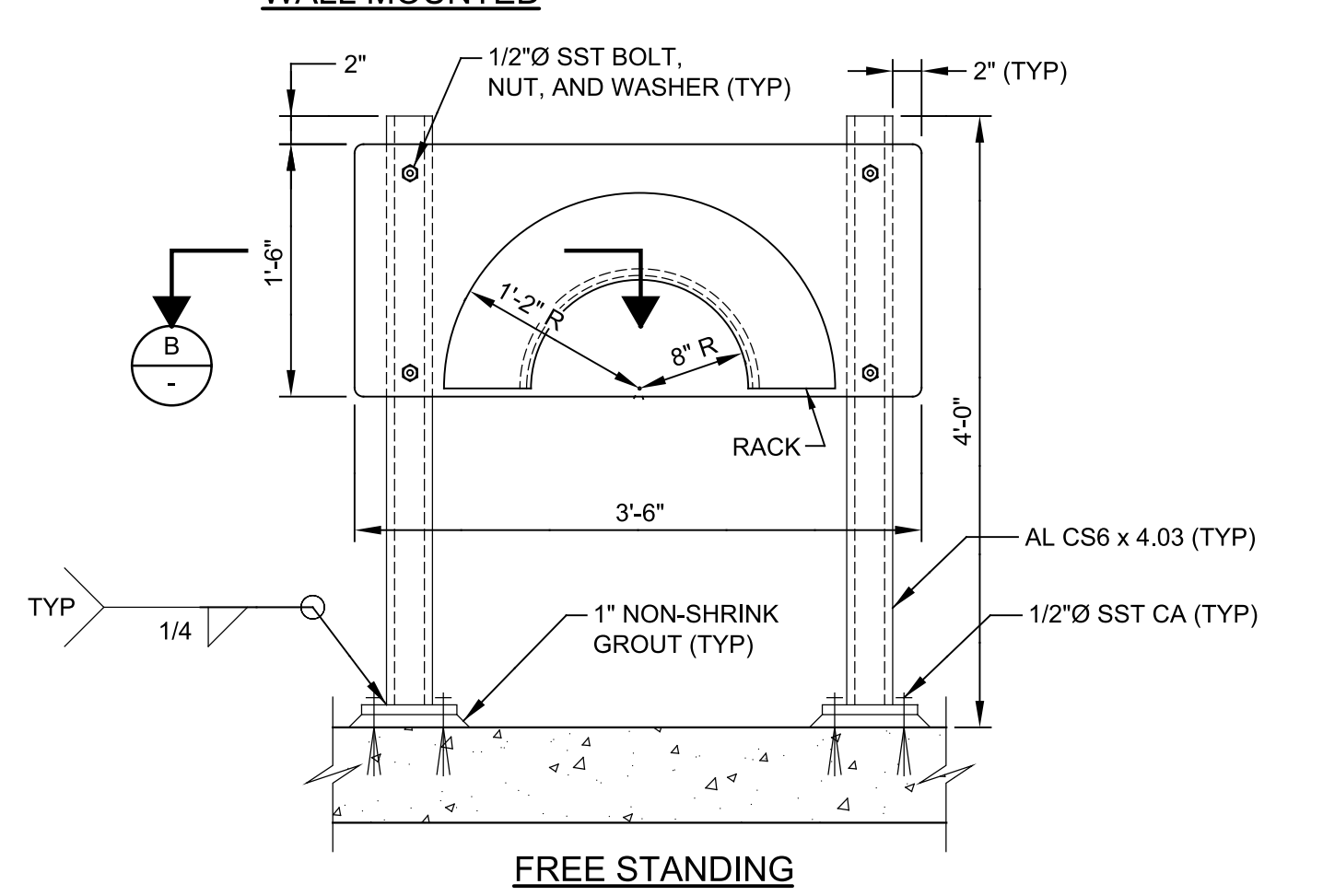
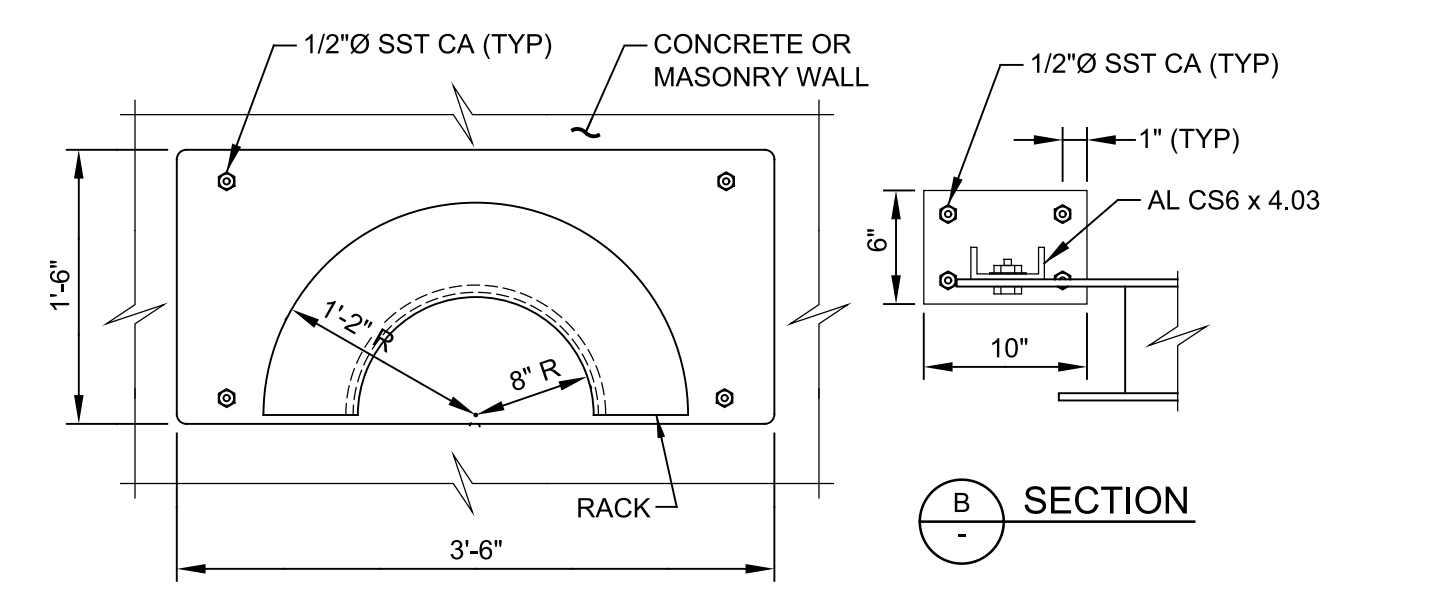
- NOTES:**
1. SIGN SHALL BE 3/8" THICK PLASTIC RESISTANT TO SUNLIGHT (ULTRAVIOLET) DETERIORATION.
 2. SIGN SHALL BE 7" x 10" AND SHALL CONFORM TO THE SPECIFICATIONS.
 3. SIGN AS SHOWN IS ROTATED 90° OFF TRUE POSITION. SIGN SHALL BE MOUNTED TO PERMIT EASY READING.
 4. INSTALL HOSE RACK (M280) AT EACH HOSE VALVE.

M276 1" HOSE VALVE AND SIGN
TYP
NS 08/01/05

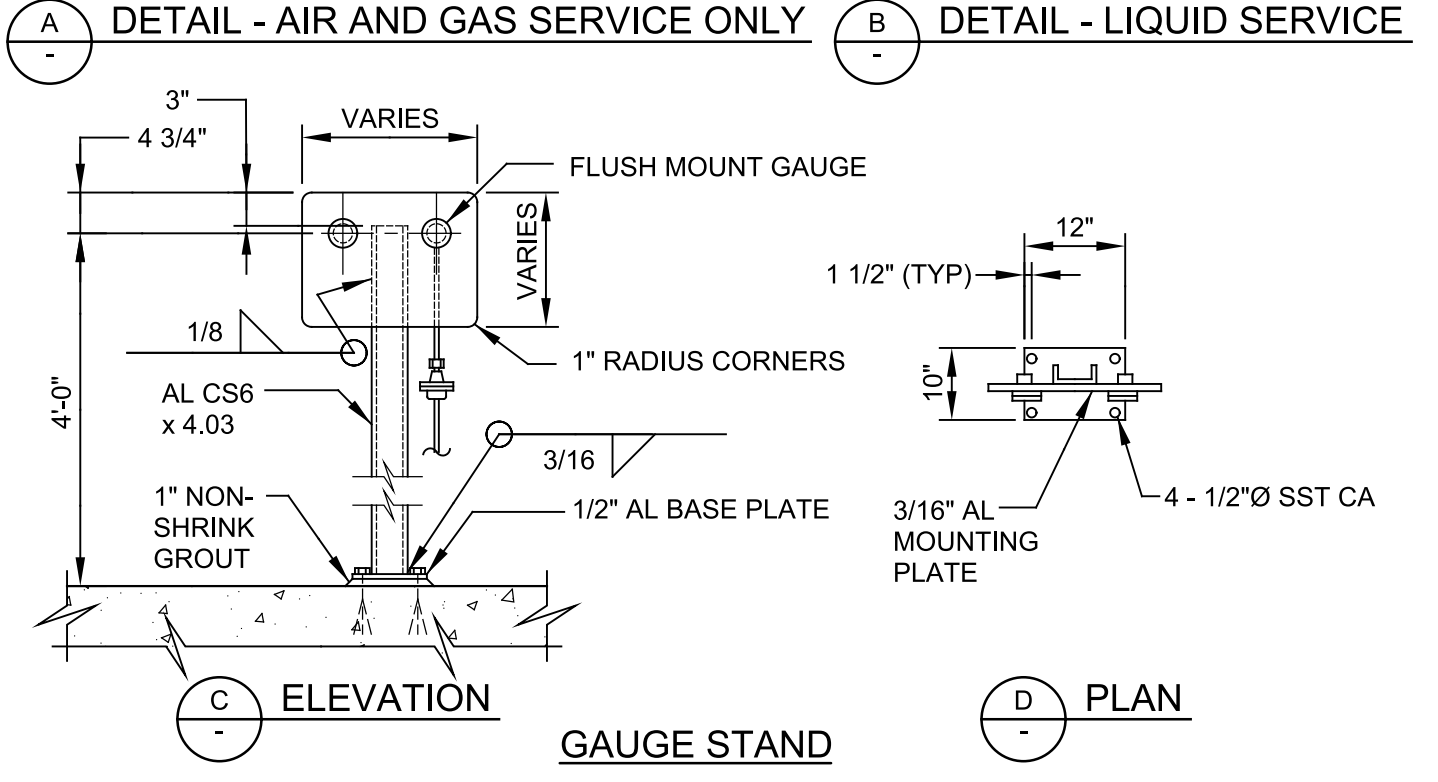
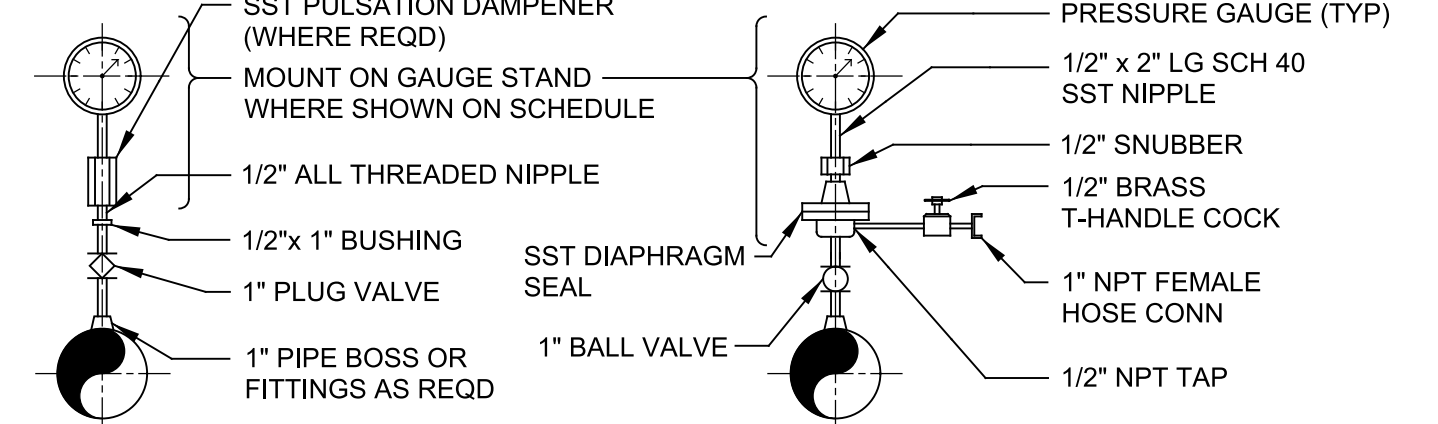


- NOTES:**
1. HOSE RACK SHALL BE FABRICATED FROM 3/16" ALUMINUM PLATE. ROUND ALL EDGES SMOOTH.
 2. HOSE RACKS INSTALLED IN YARD LOCATIONS SHALL BE FREESTANDING. EMBED IN A 4'-6" LONG x 2'-0" WIDE x 8" DEEP CONCRETE PAD WITH #5@12" EW CENTERED.
 3. WALL MOUNTED HOSE RACKS ON MASONRY WALL SHALL BE FASTEN TO GROUTED CELLS.

M280 HOSE RACK
TYP
S SHEET 1 OF 2 09/30/07



M280 HOSE RACK
TYP
S SHEET 2 OF 2 09/30/07

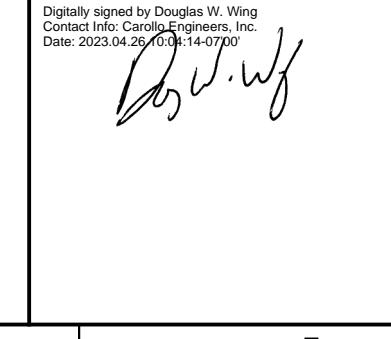


- NOTES:**
1. ALL GAUGES SHALL BE DUAL SCALE. SCALES ON THE GAUGE FACE SHALL BE MARKED IN PSIG AND FEET OF WATER (FOR POSITIVE READINGS) OR INCHES OF MERCURY (FOR VACUUM READINGS).
 2. MOUNTING PLATE DIMENSIONS VARY ACCORDING TO SIZE AND NUMBER OF GAUGES REQUIRED.
 3. AT GAUGE STAND, DIAPHRAGM SHALL BE LOCATED BELOW THE MOUNTING PLATE. ONE INCH PIPE SHALL BE ROUTED BETWEEN DIAPHRAGM AND SERVICE PIPE PLUG VALVE. CROSSES WITH THREADED PLUGS SHALL BE USED IN LIEU OF 90° ELBOWS, WITH AT LEAST ONE UNION PER CROSS.
 4. COAT ALUMINUM IN CONTACT WITH CONCRETE AS SPECIFIED.

M294 PRESSURE GAUGE DETAILS
TYP
R 12/08/20

REV	DATE	BY	DESCRIPTION

DESIGNED
CE
DRAWN
CE
CHECKED
DWW
DATE
JANUARY 2023



Digitally signed by Douglas W. Wirth
Contact Info: Carollo Engineers, Inc.
Date: 2023.04.26 09:59:30 -0700



CITY OF PETALUMA
FILTER ADDITION AND MISC. IMPROVEMENTS PROJECT
TYPICALS
TYPICAL MECHANICAL DETAILS

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

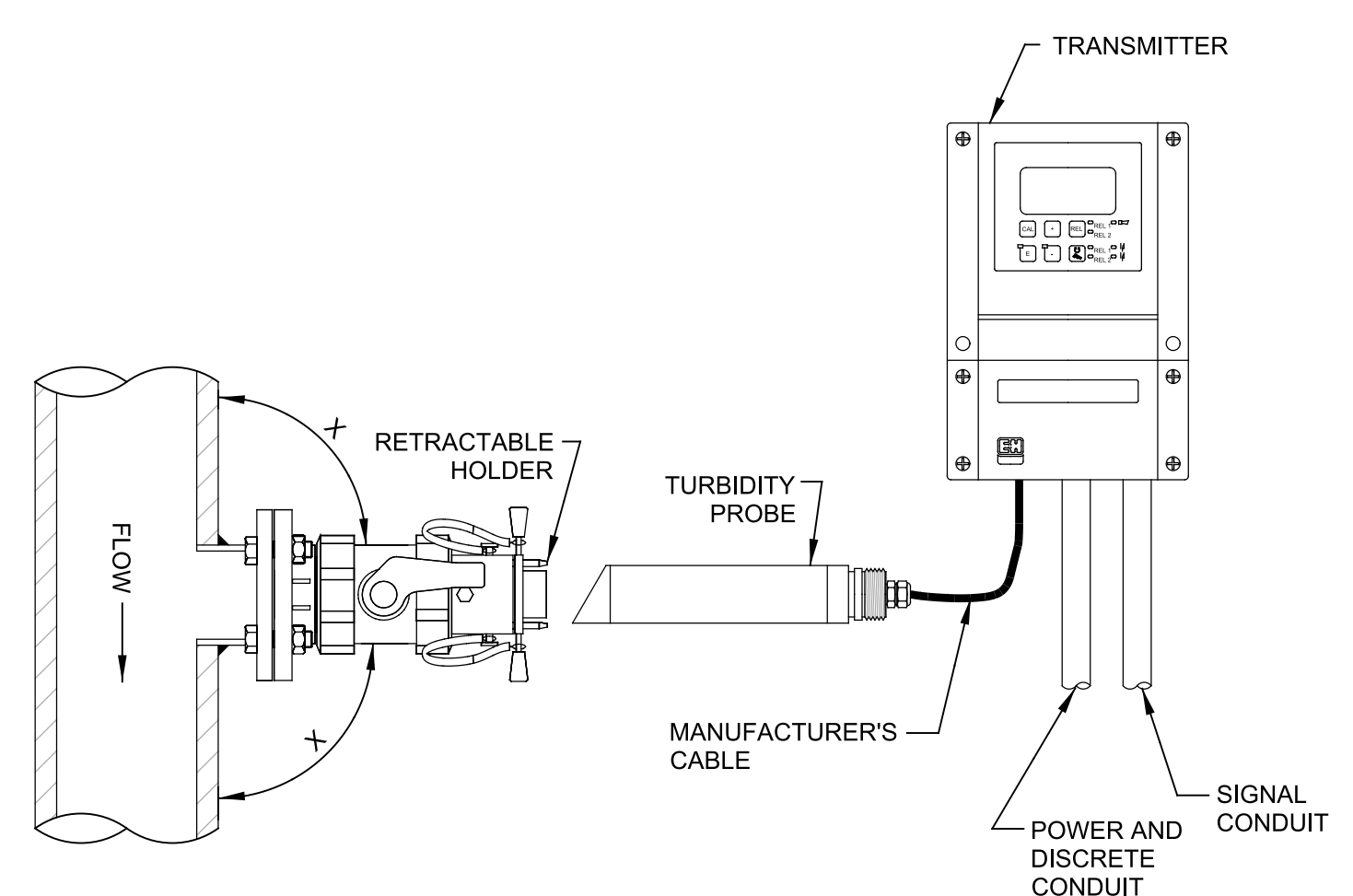
JOB NO.
7310L.10
DRAWING NO.
TM01C
SHEET NO.
31 OF 130

Plot Date: 03-APR-2023 9:40:24 AM

User: svcPW

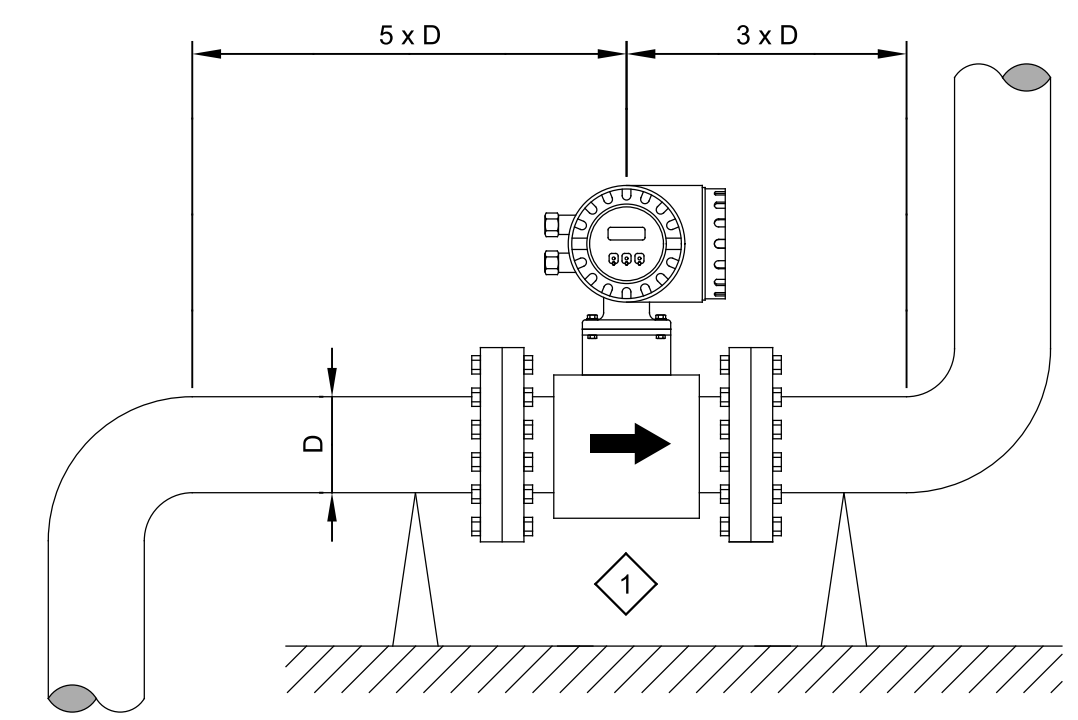
Model: Layout1 ColorTable: gshade.ctb DesignScript: Carollo_Sig_Pen_v0905.pen PlotScale: 1:1

LAST SAVED BY: lumadhay



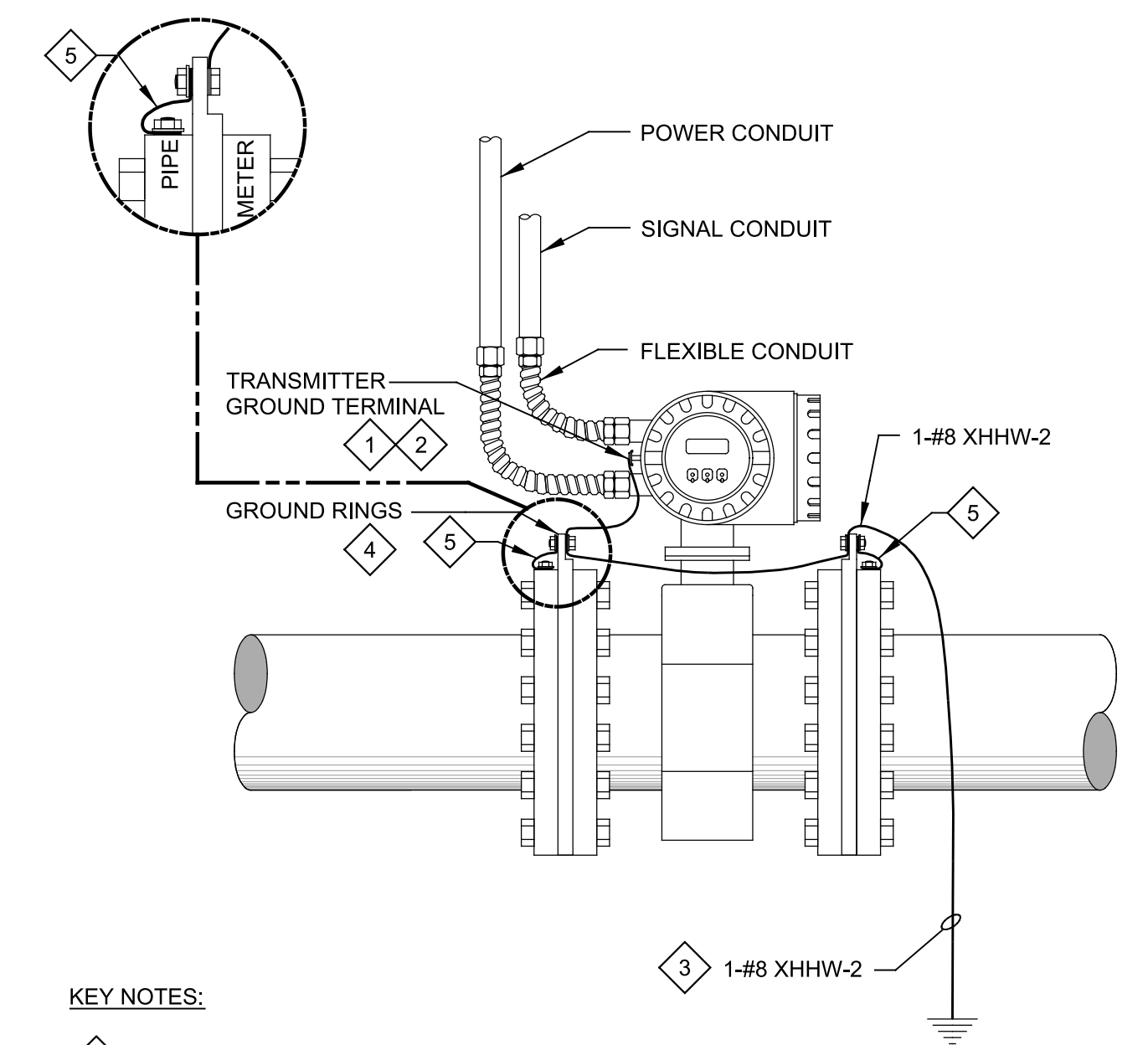
- NOTES:**
1. INSTALL THE RETRACTABLE HOLDER IN A PROCESS LINE WHERE THERE IS CONSTANT FLOW AND THE MIN. PIPE DIAMETER IS 3 IN.
 2. DO NOT INSTALL THE ASSEMBLY AT PLACES WHERE AIR CUSHIONS OR FOAM BUBBLES CAN BE FORMED.
 3. DEPENDING ON MANUFACTURER MODEL NO. THE ORIENTATION MAY VARY.

NA032 TURBIDITY ANALYZER WITH
HOT TAP MOUNTING DETAIL
TYP S



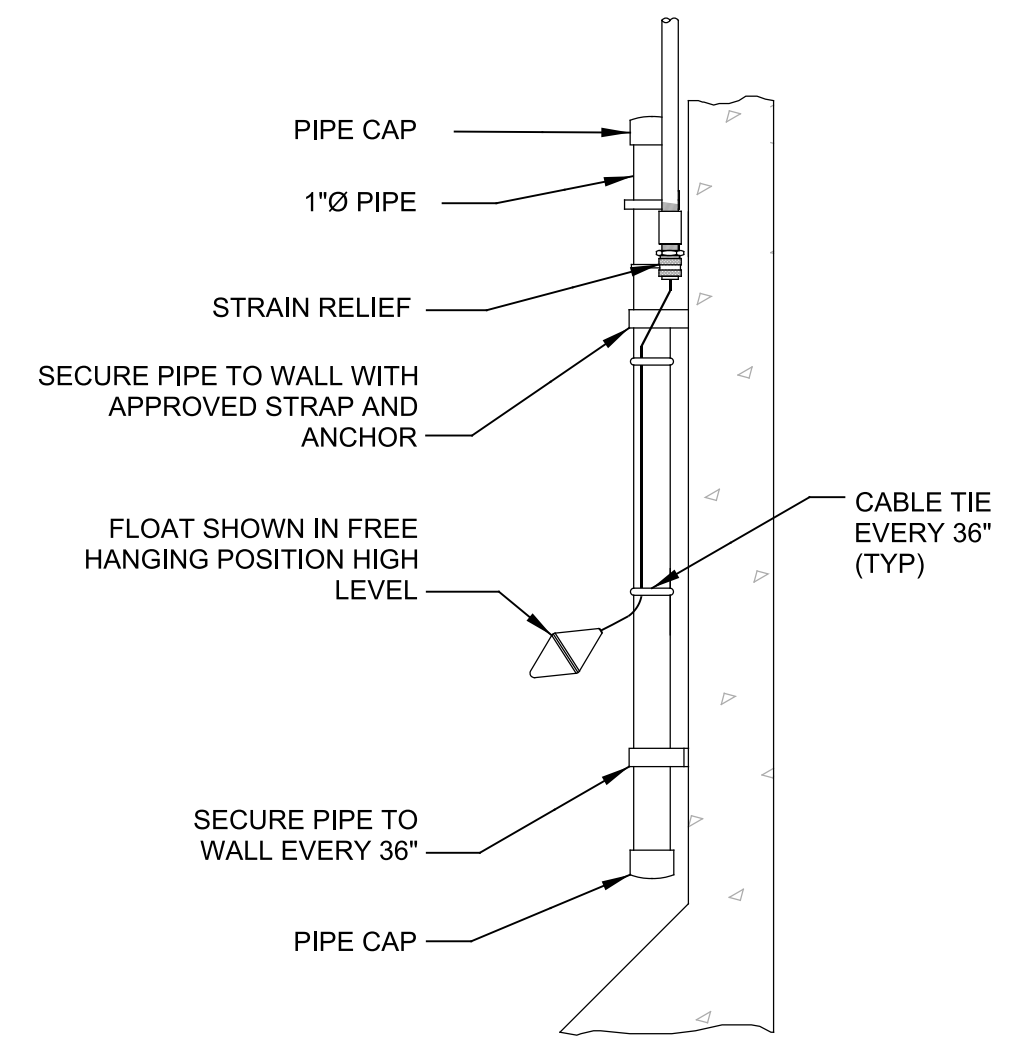
- NOTES:**
1. FOLLOW MANUFACTURER'S RECOMMENDED MAXIMUM TORQUE SETTINGS. DO NOT OVER-TORQUE FLANGE BOLTS. OVERTIGHTENING THE FASTENERS WILL DEFORM SEALING FACES OR DAMAGE THE LINE.
 2. ALWAYS TIGHTEN FLANGE BOLTS UNIFORMLY AND IN DIAGONALLY OPPOSITE SEQUENCE.
 3. MOUNT METER SO THAT IT REMAINS FULLY FLOODED.
 4. INSTALL METER SUCH THAT THERE ARE NO PIPE BENDS FOR 5 PIPE DIAMETERS UPSTREAM AND 3 PIPE DIAMETERS DOWNSTREAM OF THE METER.
- KEY NOTES:**
1. PIPE SUPPORTS BY MECHANICAL CONTRACTOR. NO SUPPORTS SHALL BE INSTALLED AT THE METER HOUSING.

NF130 MAGNETIC FLOW MOUNTING DETAIL
TYP S

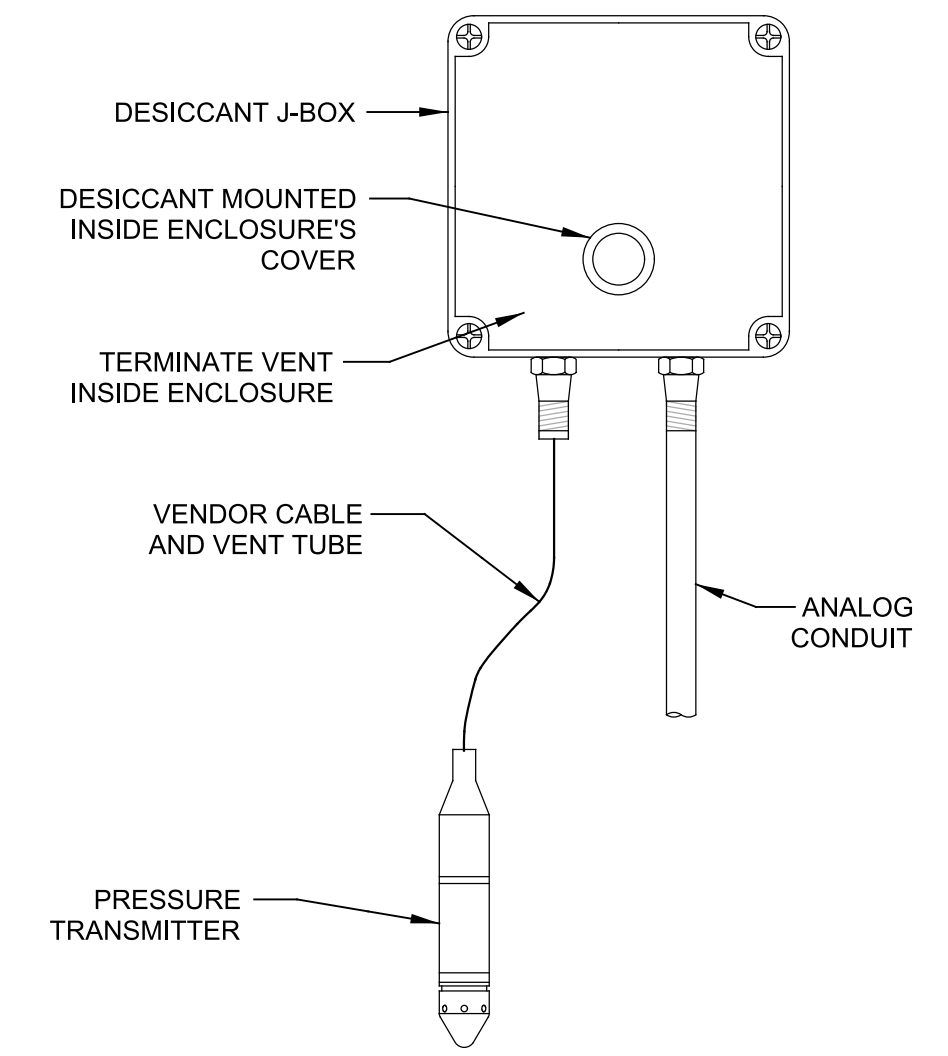


- KEY NOTES:**
1. CONTRACTOR SHALL VERIFY ZERO POTENTIAL BETWEEN FLOW TUBE, EARTH GROUND AND TRANSMITTER GROUND TERMINAL.
 2. CONNECT TRANSMITTER GROUND TERMINAL TO GROUND RINGS.
 3. CONNECT METER BODY TO EARTH GROUND POTENTIAL.
 4. EQUALIZE POTENTIAL VIA GROUND RINGS BETWEEN FLUID AND MAGMETER.
 5. PROVIDE BONDING JUMPER ON CONDUCTIVE PIPES.

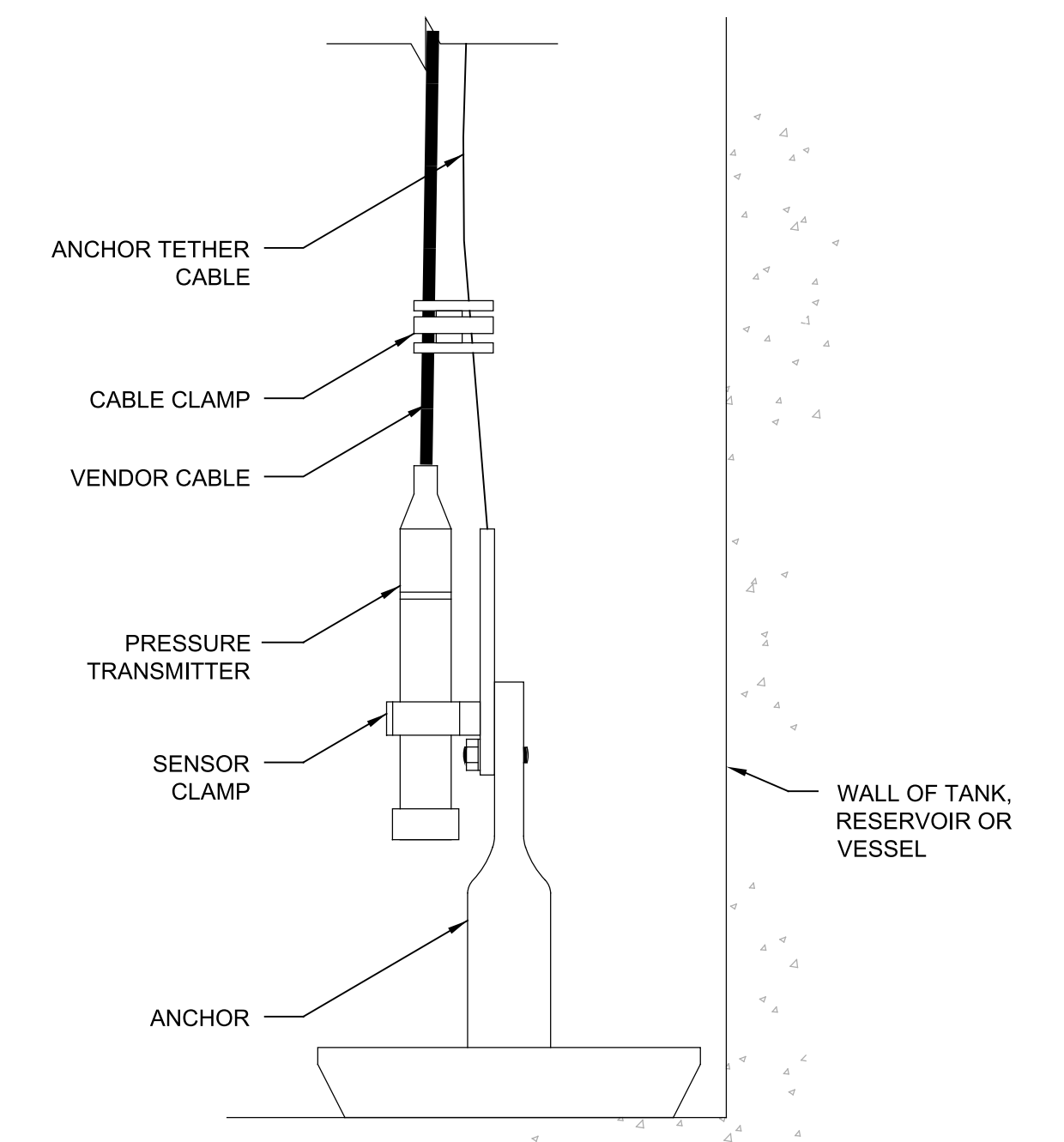
NF136 INTEGRAL MAGNETIC FLOWMETER
GROUNDING DETAIL
TYP S



NL101 FLOAT SWITCH INSTALLATION
TYP S



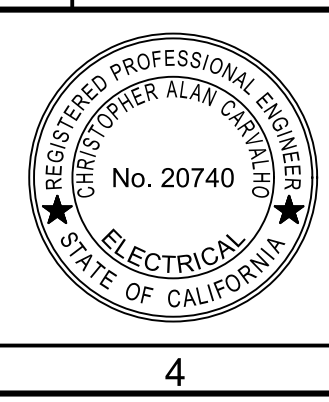
NL132 DROP-IN PRESSURE TRANSMITTER DESICCANT
J-BOX DETAIL
TYP S



NL133 PRESSURE TRANSDUCER
ANCHOR WEIGHT DETAIL
TYP S

REV	DATE	BY	DESCRIPTION
1			
2			
3			

DESIGNED
CE
DRAWN
CE
CHECKED
DJC
DATE
JANUARY 2023



Digitally signed by Christopher Alan Corvato
Contact Info: Carollo Engineers, Inc.
Date: 2023.04.06 12:23:59-0800
Christopher Alan Corvato



CITY OF PETALUMA
FILTER ADDITION AND MISC. IMPROVEMENTS PROJECT
INSTRUMENTATION
TYPICAL INSTRUMENTATION DETAILS

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

JOB NO.
7310L.10
DRAWING NO.
TN01C
SHEET NO.
32 OF 130