

# ORANGE COUNTY OC PUBLIC WORKS

SANTA ANA, CALIFORNIA SHANE L. SILSBY, DIRECTOR



PLANS FOR THE CONSTRUCTION OF

PEDESTRIAN BRIDGE DEMOLITION AND TRAFFIC SIGNAL SYSTEM INSTALLATION AT COAST HIGHWAY (34680 COAST HIGHWAY, DANA POINT, CA) W.O. # ER09348

**JUNE 2016** 

As-Built Plans

FUNDED BY: ROAD FUND POST PROJECT OWNERSHIP & MAINTENANCE:

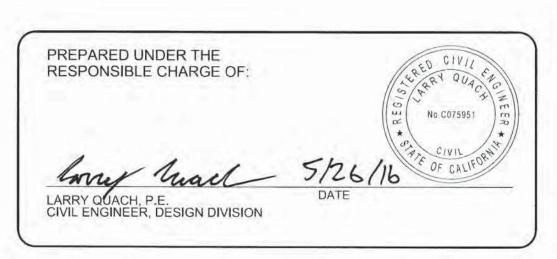
- TRAFFIC SIGNAL: CITY OF DANA POINT

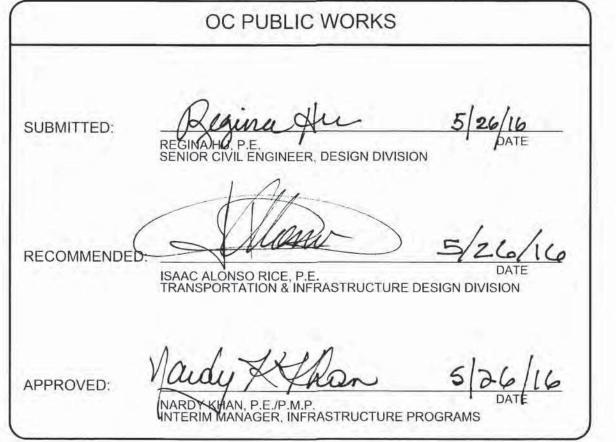
- BRIDGE: COUNTY OF ORANGE

Resident Engineer: Hamid Abedzadeh

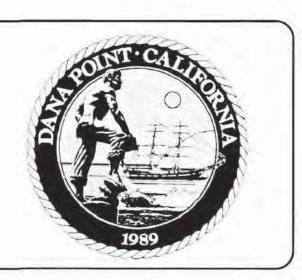
Inspector: Amit Verma

Contractor: Excel Paving





PLANS REVIEWED BY: CITY OF DANA POINT, PUBLIC WORKS & ENGINEERING SERVICES 33282 GOLDEN LANTERN DANA POINT, CA 92629 5/26/16 MATTHEW V. SINACORI, CITY ENGINEER RCE #59239 EXP. 06/30/17 THIS PLAN IS SIGNED BY THE CITY ENGINEER FOR SCOPE AND ADHERENCE TO CITY STANDARDS AND REQUIREMENTS, CITY CODES, AND OTHER GENERAL ENGINEERING AND REGULATORY REQUIREMENTS ONLY. THE CITY ENGINEER IS NOT RESPONSIBLE FOR DESIGN, ASSUMPTIONS, OR ACCURACY.



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-1	TITLE SHEET
2	GENERAL PLAN
2A	CURB RAMP DETAILS
3	ELEVATION AND CROSS SECTION
4	SIGNING AND STRIPING
5	TRAFFIC SIGNAL
6	DETAILS SHEET
7	CROSS SECTIONS AND PROFILE
8	CABLE FENCING DETAIL
9-13	ELECTRICAL PLANS

DESCRIPTION

UTILITY OWNER	PHONE NO.	CONTACT
CITY OF DANA POINT	(949) 248-3574	MATTHEW SINACORI
COX COMMUNICATIONS	(949) 546-2819	STEVE DEMORA
SOUTH COAST WATER DISTRICT	(949) 499-4555	LANA REMINGTON
AT&T	(714) 237-6165	BOB FLEISCHER
SAN DIEGO GAS & ELECTRIC	(949) 361-8047	PATTI GOOD
SOUTHERN CALIFORNIA GAS COMP TRANSMISSION	ANY, (818) 701-4546	ROSALYN SQUIRES
UNDERGROUND SERVICE ALERT	(800) 422-4133	
CITY OF SAN CLEMENTE WATER & SEWER SERVICES	(949) 361-6130	DAVID REBENSDORF
SOUTHERN CALIFORNIA GAS COMP DISTRIBUTION	ANY, (714) 634-3061	BRAD MORRISON
VERIZON BUSINESS	(909) 421-3316	DANIEL GARDEN
OCTA	(714) 560-5966	GERALD SMITH
RAILROAD (METROLINK/SCRRA)	(909) 392-8463	CHRISTOS SOURMELIS

#### SCOPE OF WORK

Demolition of the existing pedestrian bridge over Coast Highway and the installation of an at-grade signalized crosswalk just north of the existing pedestrian bridge. Minor maintenance and rehabilitation of the remaining section of the pedestrian bridge over the OCTA/Metrolink right-of-way will also be completed as part of the project.

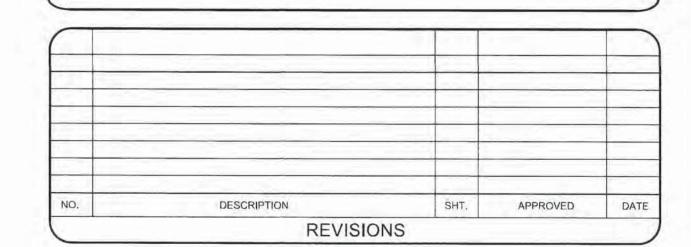
Traffic signals shall be installed and working prior to demolishing the pedestrial bridge overcrossing Coast Highway. Pedestrian ramps shall be installed to meet current disabled access standards and the asphalt pavement shall be

#### BENCH MARK:

DESCRIBED BY OCS 2003-FOUND 3 3/4" OCS ALUMINUM BENCHMARK DISK STAMPED "3B-50-68". SET IN THE SOUTHERLY END OF A CONCRETE HEADWALL FOR A 24 IN. CULVERT. MONUMENT IS LOCATED ALONG THE SOUTHWESTERLY SIDE OF PACIFIC COAST HIGHWAY, 0.55 MILES SOUTHERWESTERLY OF THE CENTERLINE OF DEL OSBISPO, 0.05 MILES NORTHERLY ALONG PCH FROM A PEDESTRIAN BRIDGE AND 40.4 FT. WESTERLY OF THE CENTERLINE OF PCH. MONUMENT IS SET LEVEL WITH THE TOP OF WALL. (ELEV. = 16.995' (LEVELED 1989) NAVD88 DATUM)

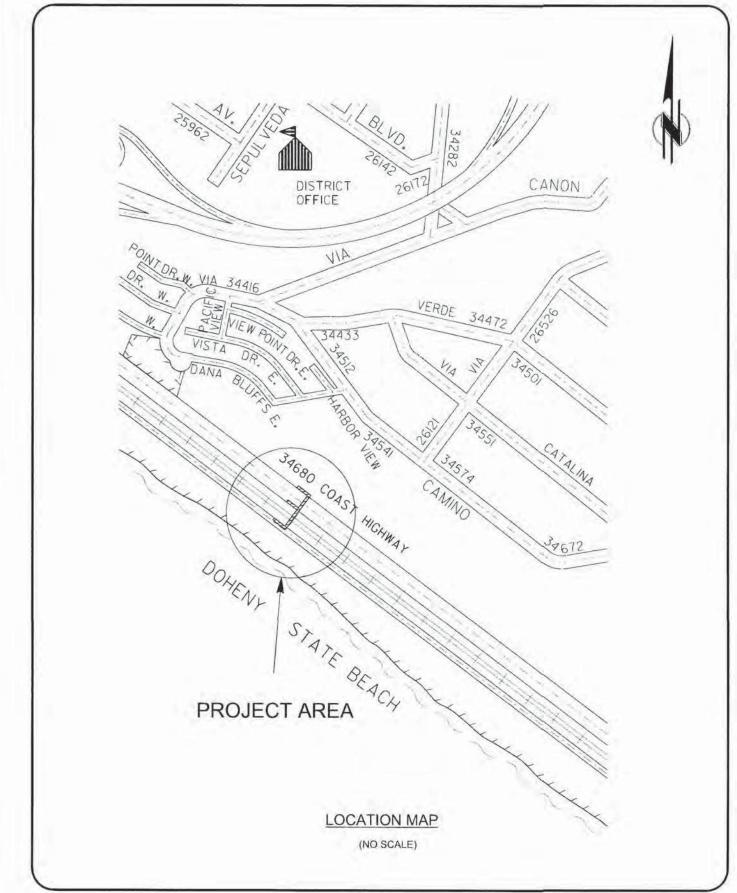
#### BASIS OF BEARINGS:

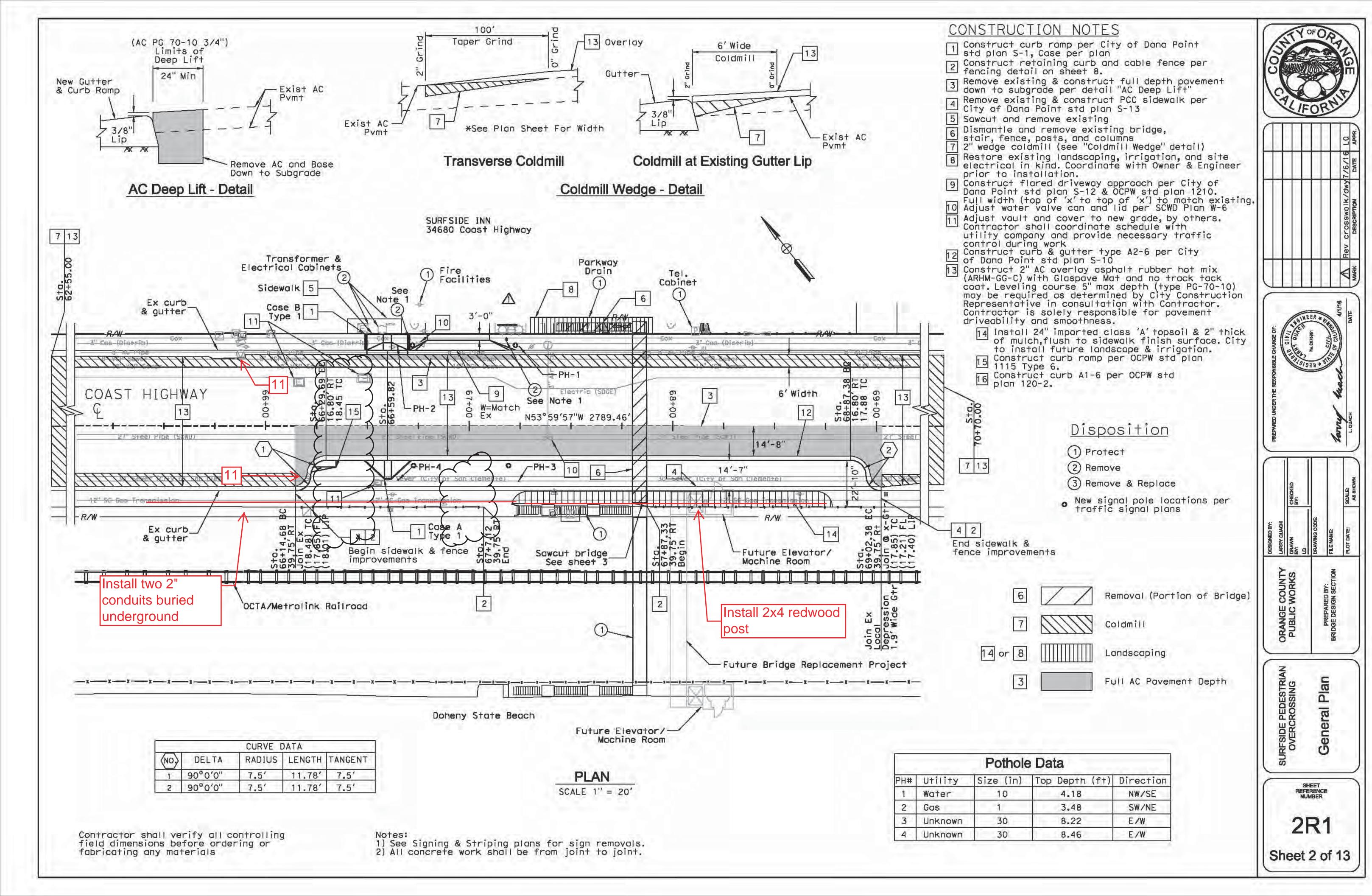
THE BASIS OF BEARING OF THIS DRAWING IS BASED ON THE CALIFORNIA STATE PLANE COORDINATE SYSTEM (NAD83), ZONE 6, 2007.00 EPOCH PER THE ORANGE COUNTY PUBLIC WORKS HORIZONTAL CONTROL DATA SHEET BETWEEN STATIONS "GPS #4431R1" AND "GPS #4430" BEING N52°30'47"W. DISTANCES SHOWN HEREON ARE IN "GRID" DISTANCES". TO CONVERT TO GROUND DISTANCES, PLEASE SCALE BY THE COMBINATION SCALE FACTOR OF 1.000043612.

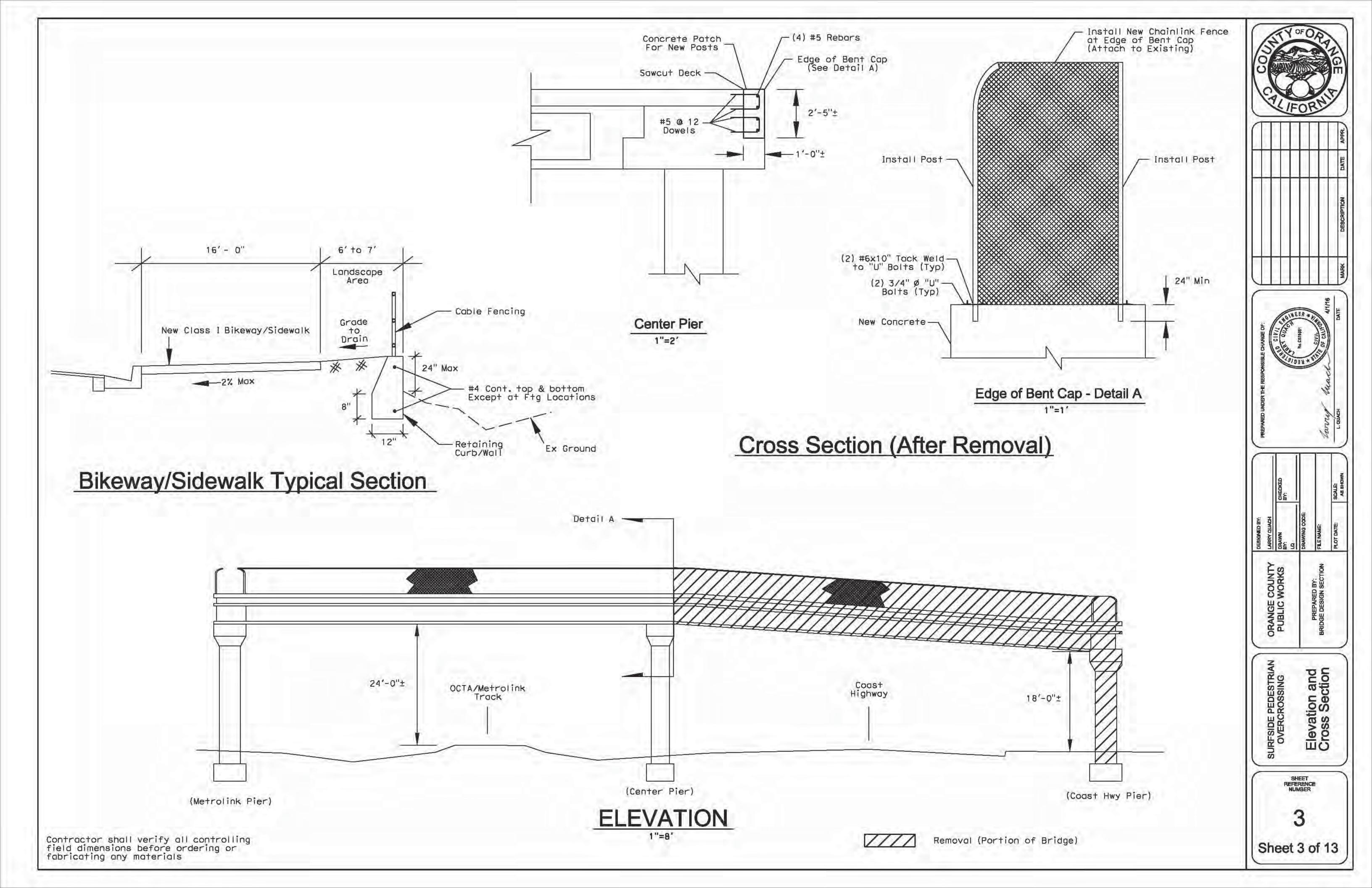


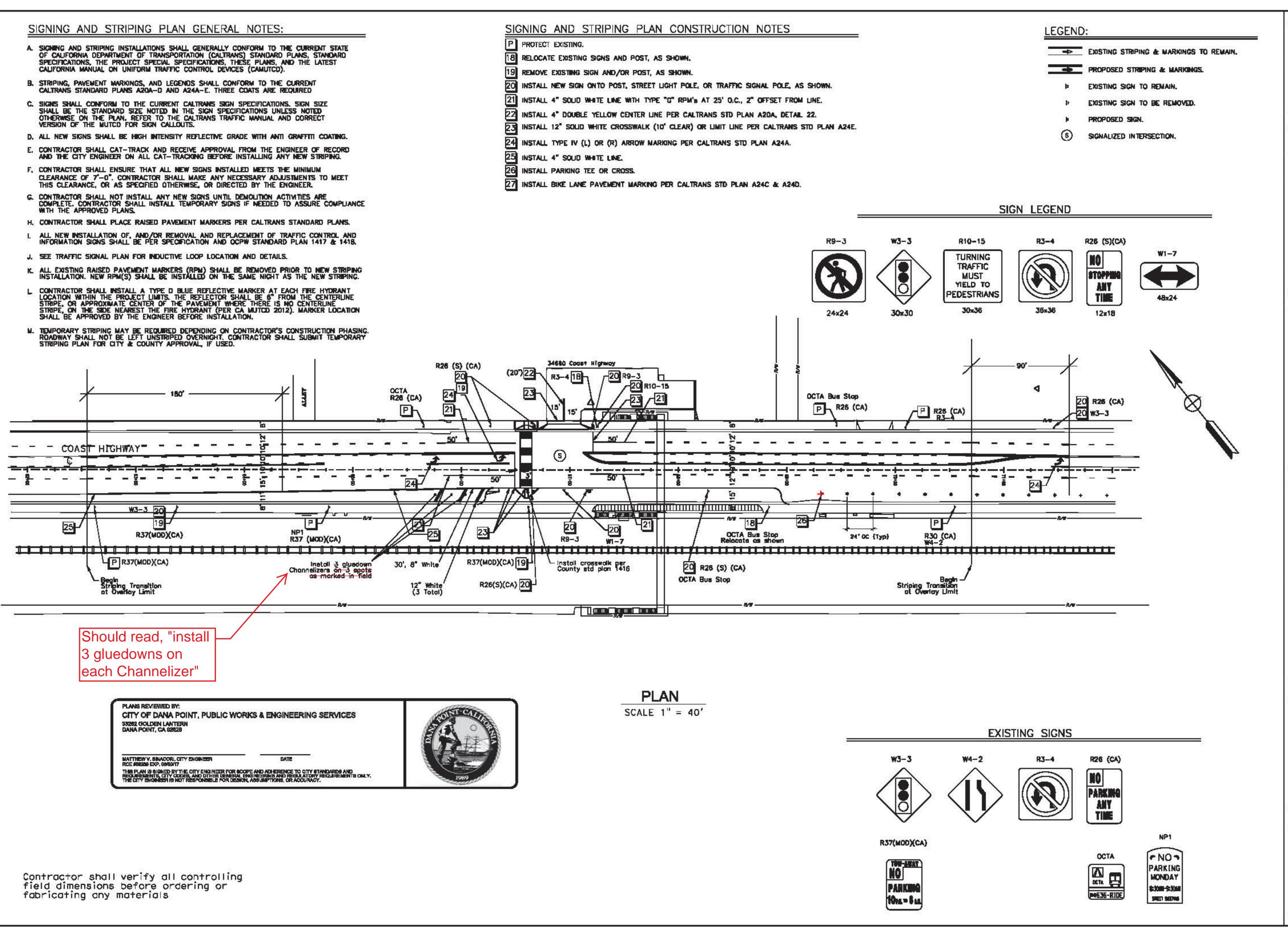
W. O. NO. XXXXXX DWG. NO. XXXXXX

SHEET 1 OF 13









COLLEGE BEST

DESCRIPTION DATE APPR

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ORKS DRAWN GRECKED

140

DRAWNG CODE

SECTION
PLOT DATE

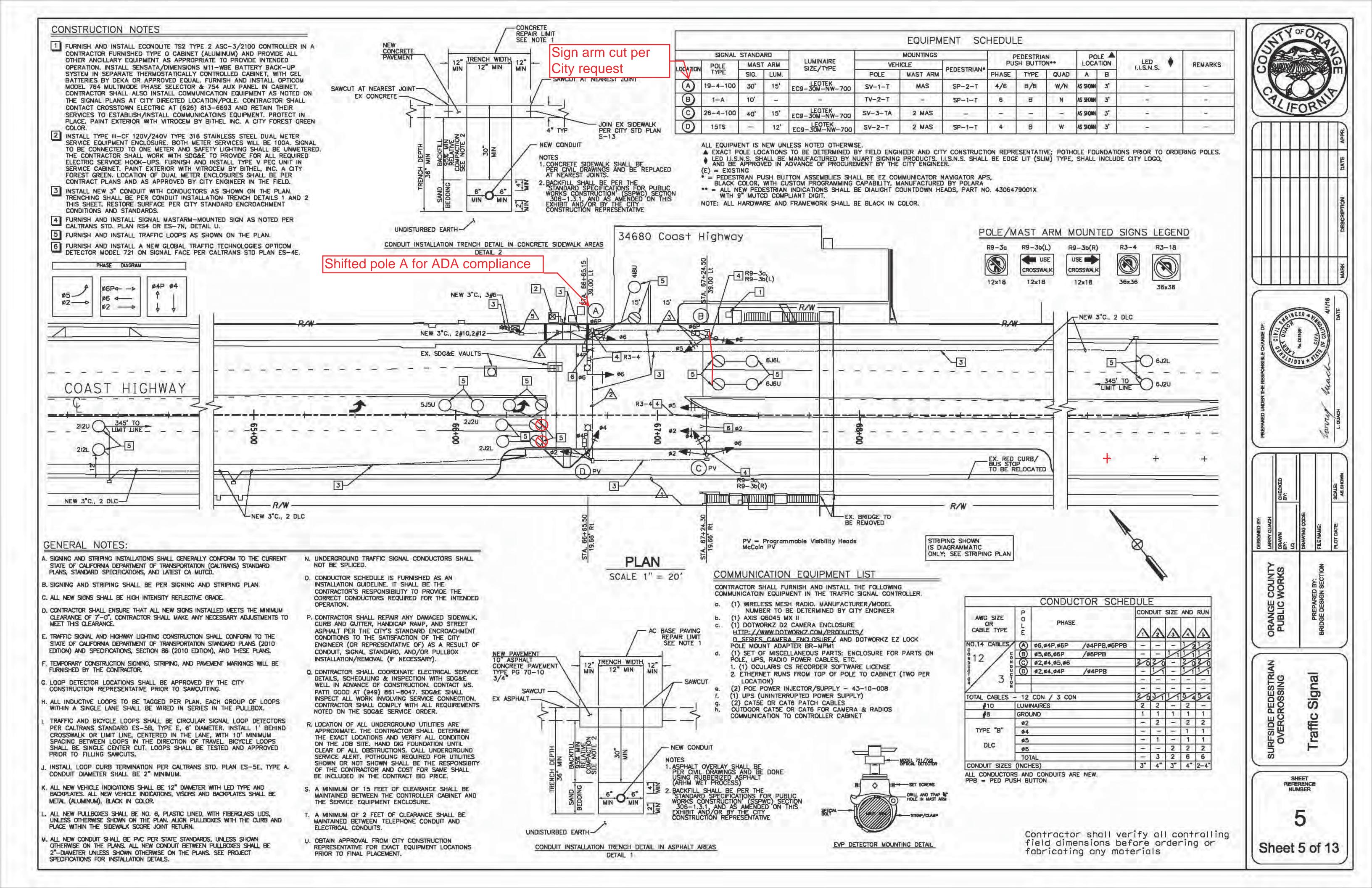
SCALE:

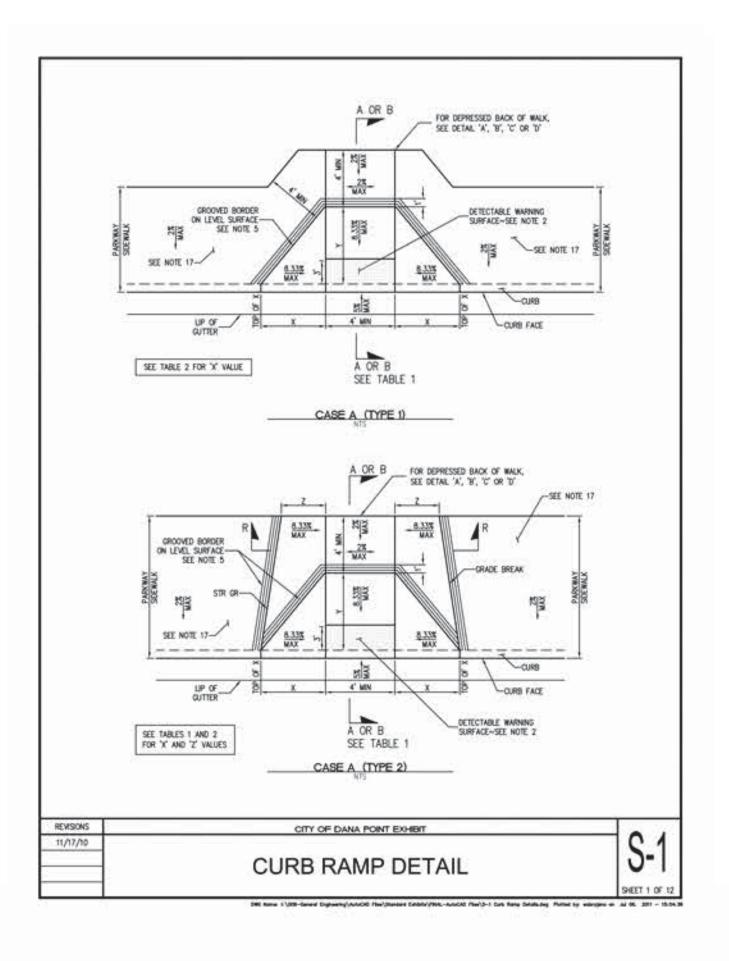
ORANGE COUNTY PUBLIC WORKS

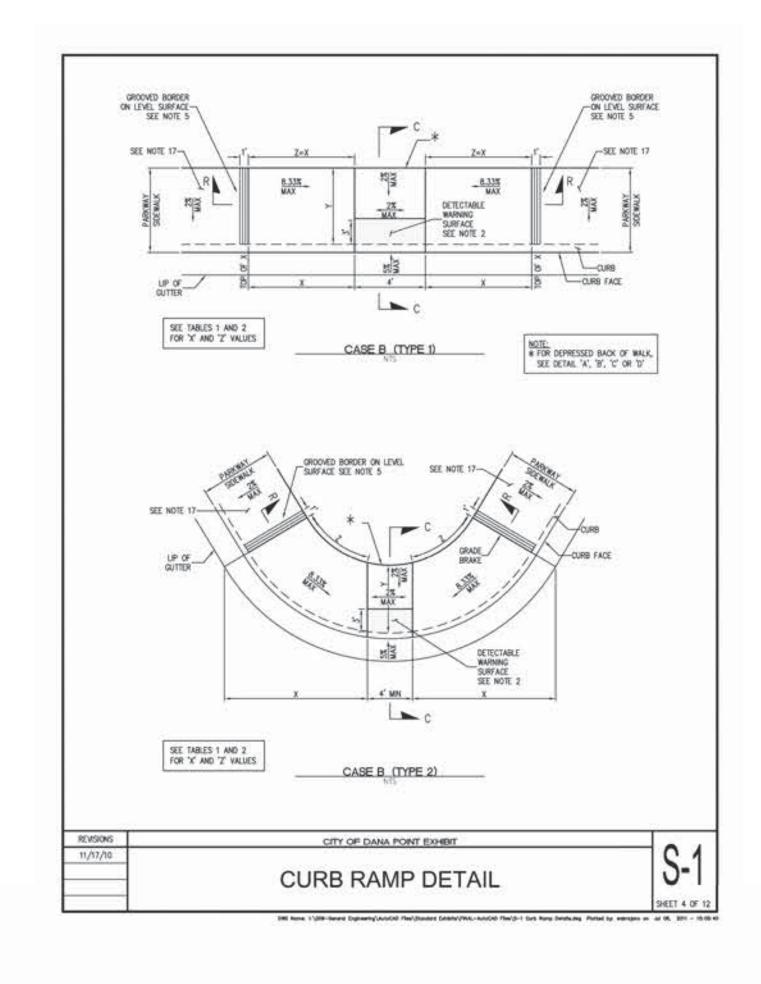
Signing and Striping

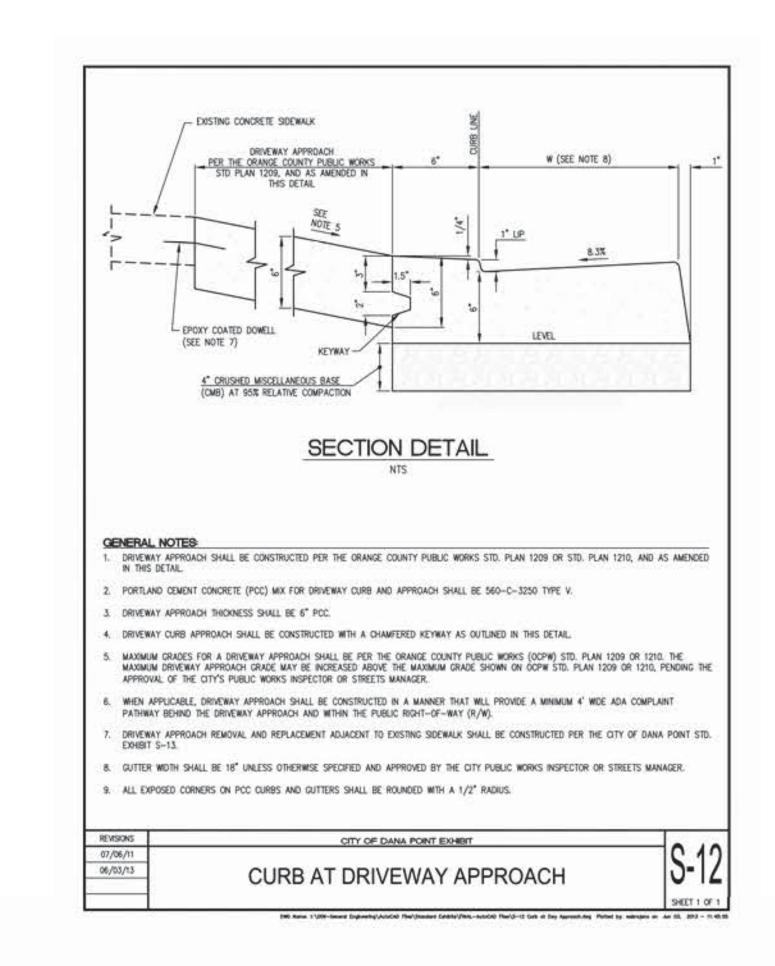
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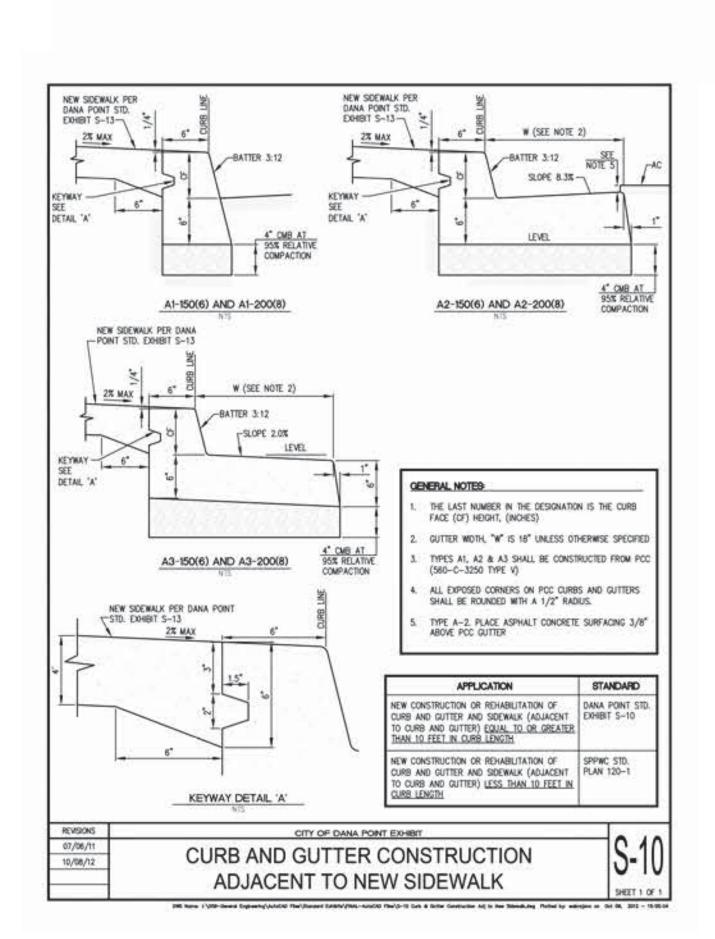
Sheet 4 of 13

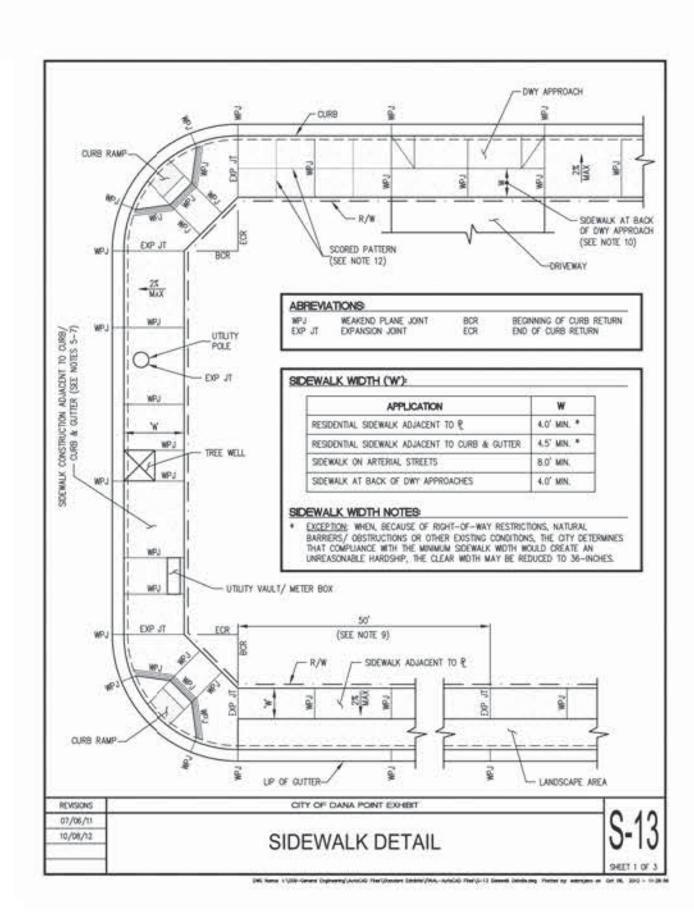


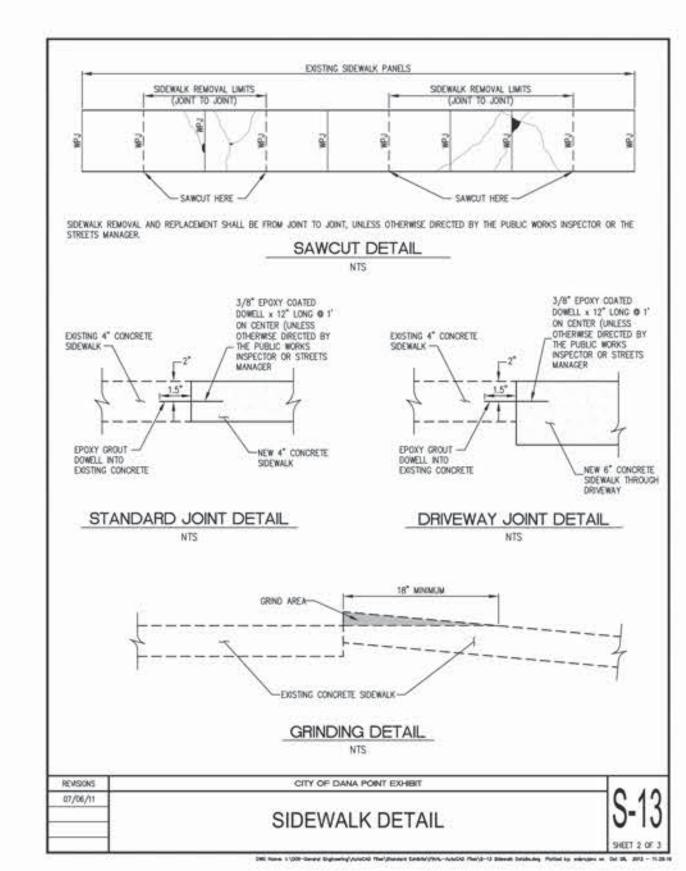


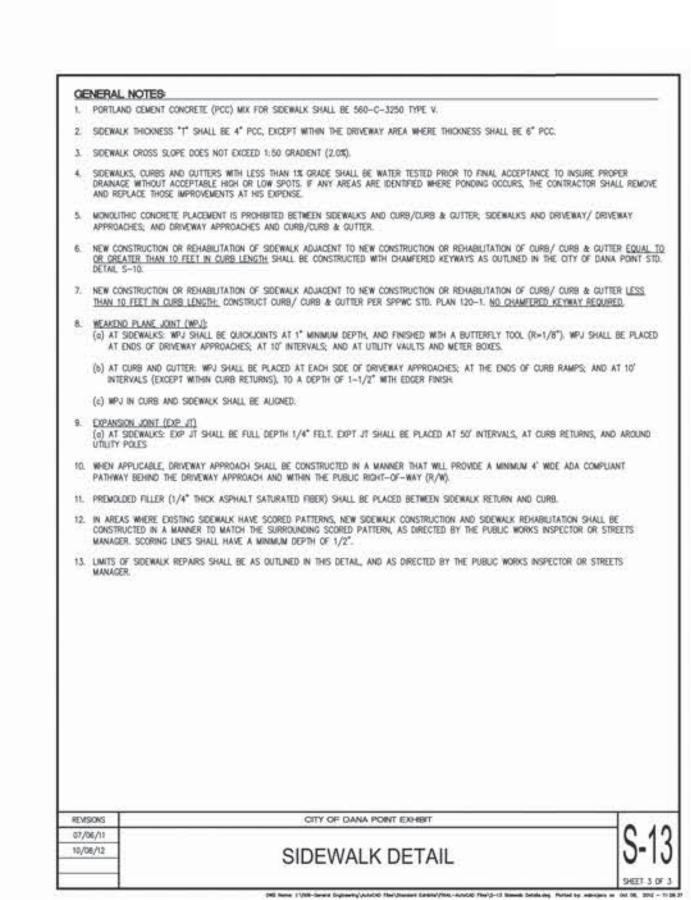


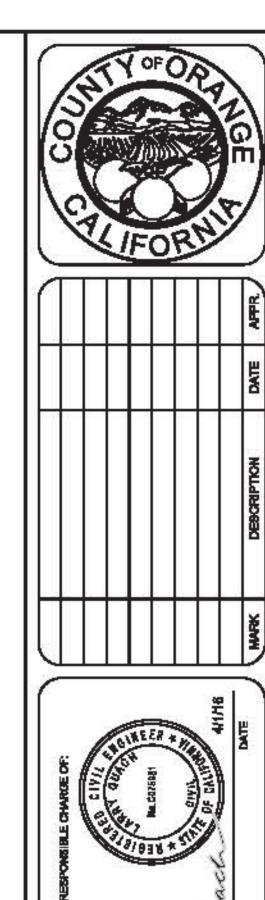














ORANGE COUNTY
PUBLIC WORKS
BY:
I.O.
I.O.
IRANING CODE:
REPARED BY:
BRIDGE DESIGN SECTION
PLOTONIE ROLL

PROPERTY GLACH
BY:
BY:
CHENNER
PROPERTY OF CHENNER

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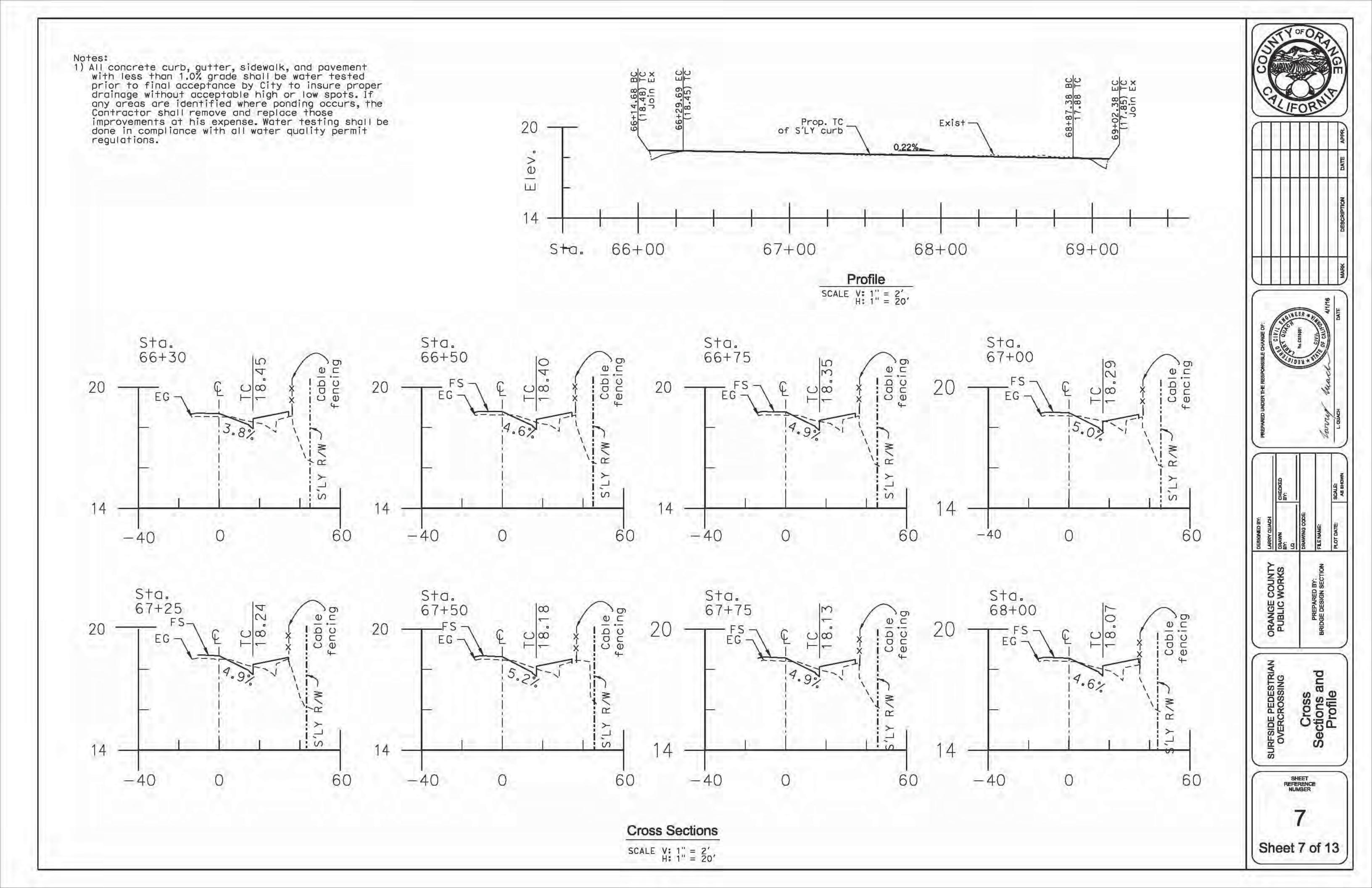
PROPER

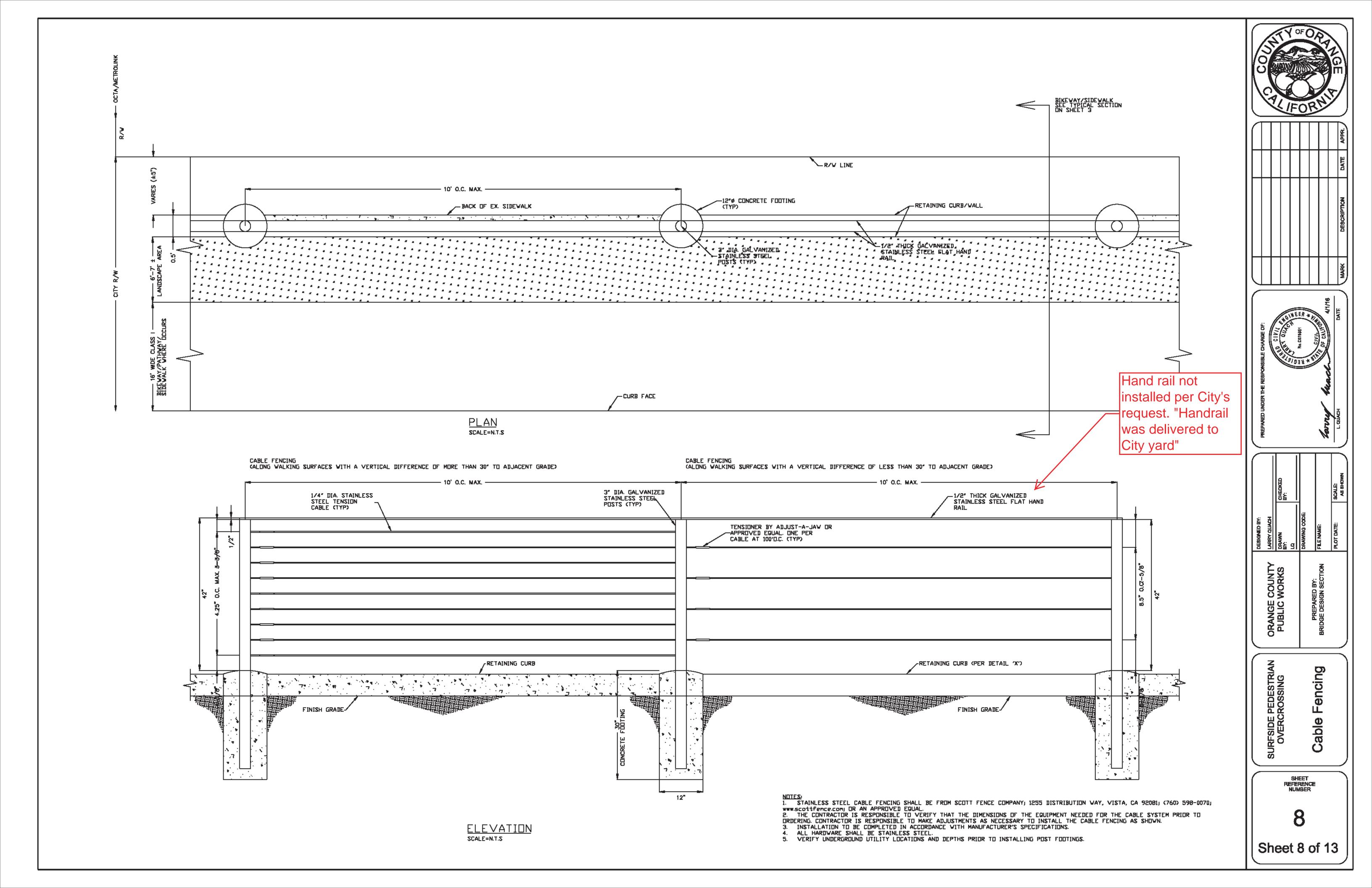
OVERCHOSSING

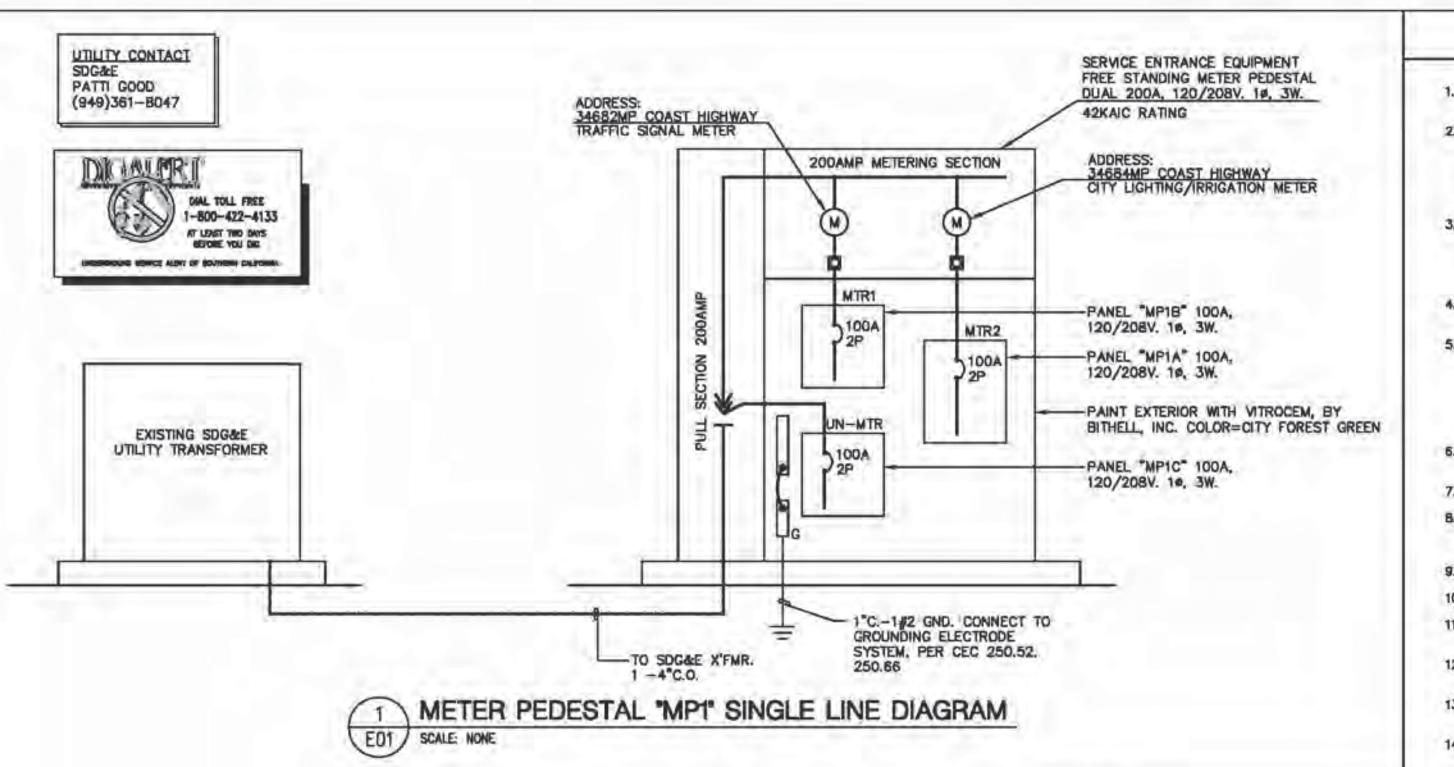
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6

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DUAL METER WIRING DIAGRAM

## CONSTRUCTION NOTES

- THE CONTRACTOR SHALL PROTECT PROPERTY AND FACILITIES ADJACENT TO THE CONSTRUCTION AREA AND ALL PROPERTY AND FACILITIES WITHIN THE CONSTRUCTION AREA.
- THE CONTRACTOR SHALL RESTORE ALL PUBLIC OR PRIVATELY OWNED IMPROVEMENTS AND FACILITIES (I.E., LANDSCAPING, FENCES, STRUCTURES, IRRIGATION/SPRINKLERS, MAIL BOXES, ETC.) TO THEIR ORIGINAL CONDITION PRIOR TO PROJECT COMPLETION AS DIRECTED BY THE CITY CONSTRUCTION REPRESENTATIVE. THE CONTRACTOR SHALL RESTORE THESE ITEMS AT HIS OWN EXPENSE. IN THE EVENT IMPROVEMENTS OR FACILITIES ARE DAMAGED, THEY SHALL BE REPLACED WITH NEW MATERIALS EQUAL TO THE ORIGINAL
- THE CONTRACTOR SHALL PROTECT ANY EXISTING IRRIGATION SYSTEM IN PLACE WHERE POSSIBLE IF THE LOCATION OF IRRIGATION LINES IS IN CONFLICT WITH THE PROPOSED LIGHTING FIXTURE, CONCRETE BASE/FOOTING, THE CONTRACTOR SHALL REROUTE ALL EFFECTED LINES AS DIRECTED BY THE CITY CONSTRUCTION REPRESENTATIVE. ALL IRRIGATION RESTORATION SHALL BE PERFORMED BY A LICENSED LANDSCAPE CONTRACTOR.
- IN AREAS WHERE EXISTING PAVEMENT IS TO BE REPLACED, TRENCHING INSTALLATION SHALL BE COMPLETED PRIOR TO PLACING FINAL PAVEMENT LAYER.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO EXISTING UTILITIES AS A RESULT OF HIS OPERATIONS. THE LOCATION OF EXISTING UTILITIES, AS SHOWN ON THE PLANS, WAS OBTAINED FROM A SEARCH OF AVAILABLE RECORDS. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO NOTIFY UNDERGROUND SERVICE ALERT TO DETERMINE EXACT FIELD LOCATION OF ALL UTILITIES SHOWN OR NOT SHOWN ON THE PLANS WHICH MAY CONFLICT WITH HIS OPERATIONS, POT HOLING OF EXISTING UTILITIES WILL BE REQUIRED TO DETERMINE EXACT DEPTH AND FIELD LOCATIONS AND SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
- THE CONTRACTOR SHALL EXPOSE ALL UTILITIES FAR ENOUGH IN ADVANCE OF HIS OPERATIONS TO ALLOW FOR ANY NECESSARY ADJUSTMENTS IN GRADE TO CLEAR THESE UTILITIES.
- ROAD SURFACES, DAMAGED OR REMOVED, SHALL BE REPLACED TO CITY STANDARD.
- SIDEWALK AND PLANTED AREAS WHERE NEW PULL BOXES ARE INSTALLED SHALL BE REPLACED PER CITY STANDARD, AS OUTLINED IN THE CONTRACT DOCUMENTS, AND AS DIRECTED BY CITY CONSTRUCTION REPRESENTATIVE.
- 9. ALL TRENCHING SHALL BE DONE IN THE STRAIGHTEST AND SHORTEST ROUTE POSSIBLE.
- 10. ALL ELECTRICAL WORK TO BE DONE BY C-10 LICENSEE ONLY.
- 11. FIELD INSPECTOR SHALL VERIFY THAT PULLBOX HAS BEEN PLACED ON BED OF ROCK AS SHOWN, PRIOR TO FINAL ACCEPTANCE.
- 12. CONTRACTOR SHALL ADHERE TO ALL STANDARD ENCROACHMENT PERMIT CONDITIONS AND ALL ASSOCIATED REQUIREMENTS, INCLUDING TRAFFIC CONTROL
- 13. COMPLY WITH THE 2010 CBC, CMC, CPC AND CEC, 2008 T-24 ENERGY CONSERVATION REGULATIONS AND CITY ORDINANCE
- 14. ALL LANDSCAPE AND IRRIGATION RESTORATION SHALL BE PERFORMED BY A LICENSED LANDSCAPE CONTRACTOR ONLY.

## **ELECTRICAL NOTES & SYMBOLS**

ALL UNDERGROUND OUTSIDE BRANCH CIRCUIT AND FEEDER CIRCUITS ARE TO BE RUN IN NONMETALLIC CONDUIT SCHEDULE 40, UNLESS OTHERWISE INDICATED, USTED FOR UNDERGROUND INSTALLATIONS, UL LISTED AND RATED FOR 90' CONDUCTORS, ALL ELECTRICAL CONDUCTORS RUN EXPOSED, SHALL BE RUN IN EMT CONDUIT SUPPORTED AT 10' INTERVALS AND WITHIN 3" OF TERMINATIONS OR BOXES.

ALL WORK TO BE DONE IN ACCORDANCE WITH CALIFORNIA ELECTRICAL CODE 2010 EDITION.

- J. ALL ELECTRICAL SYMBOLS PER ANSI Y32.9 1972. REAFFIRMED 1989.
- ALL TERMINATIONS AND SPLICES SHALL UTILIZE WATER TIGHT WIRE NUTS.
- ALL NEW ELECTRICAL CONDUCTORS ARE TO BE COPPER. INSULATION FOR #12 TO #1 SHALL BE THWN, #1/0 THROUGH #4/0 SHALL BE TYPE XHHW 65mile GROUNDING CONDUCTOR SHALL BE THWN.
- UTILITIES AND LIGHTING EQUIPMENT ARE SHOWN DIAGRAMMATICALLY. SCALED DIMENSIONS ARE APPROXIMATE ONLY. BEFORE PROCEEDING WITH WORK, CAREFULLY CHECK AND VERIFY DIMENSIONS IMMEDIATELY NOTIFY ENGINEER OF DISCREPANCIES BETWEEN DRAWINGS OF SPECIFICATIONS AND ACTUAL CONDITIONS ALTHOUGH SIZES AND LOCATIONS OF EQUIPMENT ARE DRAWN TO SCALE WHEREVER POSSIBLE, IT IS NOT WITHIN SCOPE OF THE DRAWINGS TO SHOW NECESSARY OFFSETS, OBSTRUCTIONS, OR SITE CONDITIONS. THE CONTRACTOR WILL BE RESPONSIBLE TO INSTALL WORK IN SUCH A MANNER THAT IT WILL CONFORM TO SITE CONDITIONS, COMPLETE AND IN GOOD WORKING ORDER.
- ALL BRANCH CIRCUITS AND FEEDERS CIRCUITS SHALL HAVE A GROUNDING CONDUCTOR PULLED WITH THEM, REF. A.C. BREAKER ASSIGNMENTS & LIGHT AND POWER LAYOUTS FOR SIZE OF GROUNDING CONDUCTOR. THIS COPPER GROUNDING CONDUCTOR SHALL BE TERMINATED TO GROUNDING TERMINALS OF ALL RECEPTACLES & ALL NONCURRENT-CARRYING CONDUCTIVE SURFACES OF FIXED ELECTRIC EQUIPMENT LIKELY TO BECOME ENERGIZED THAT ARE SUBJECT TO PERSONAL CONTACT.
- 8. ALL REMOVED LANDSCAPE WATERIALS MUST BE REPLACED TO ORIGINAL CONDITION.
- ANY CUT SEWER OR SPRINKLER MUST BE REPLACED BY CONTRACTOR AT HIS EXPENSE.
- 10. WITH REFERENCE TO TELEPHONE AND ELECTRICAL UTILITIES THIS IS A PRELIMINARY PLAN ONLY, AND IS NOT BE USED FOR CONSTRUCTION PURPOSES.
- CONTRACTOR IS TO PRIME AND PAINT ALL NEW EXPOSED CONDUIT, AND BOXES, TO MATCH COLOR OF SURFACE MOUNTED TO. ALL EXPOSED CONDUIT SWEEPS AND LB CONDUIT BODIES ARE TO BE KEPT TO MINIMUM POSSIBLE SIZE.

REFERENCES & ABBREVIATIONS

EXISTING TO BE REMOVED

GROUND FAULT INTERRUPTER

MAIN CIRCUIT BREAKER

FULL LOAD AMPS





OMB ELECTRICAL ENGINEERS, INC 8825 Research Drive Subs. CA \$2818 (849) 753-7353 Fox (649) 753-1062 E-Molt: mol@embingra.com

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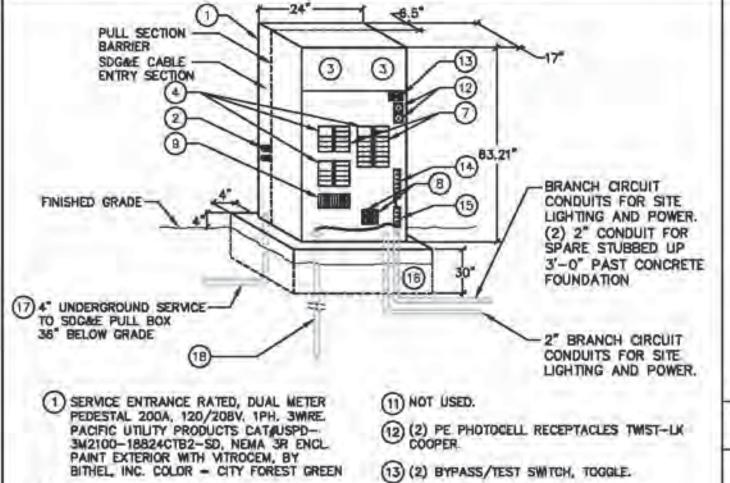
COVER SHEET

REFERENCE

E0.1

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## METER PEDESTAL ELEVATION DETAIL



- PACIFIC UTILITY PRODUCTS CATAUSPD— 3M2100-18824CTB2-SD, NEMA 3R ENCL PAINT EXTERIOR WITH VITROCEM, BY BITHEL, INC. COLOR CITY FOREST GREEN
- (2) LANDING LUGS #250KCMIL PER PHASE. (3) (2) MTR KT 200A 4-JAW W/TEST BLKS.
- (15) GROUND BAR. (4) (3) MAIN CB 100A, 2P 120-208VAC BRHH2100.
- (5) (2) INTERIOR, BCKT 120/208V. 1PH. (6) (1) INTERIOR, 24CKT 120/208V. 1PH.
- BRANCH CIRCUIT DISTRIBUTION. SEE RESPECTIVE.
- (8) (2) LTG CONTACTORS 30A, 2P EH 120V. COIL. (1) LTG CONTACTOR 20A, 10P EH 120V. COIL (18) 5/8"DIA. 10' LONG CU. GROUND ROD.
- 10 NOT USED.

ELECTRICAL SYMBOLS, LEGEND, GENERAL NOTES, ABBREVIATIONS & DETAILS PANEL SCHEDULES

ELECTRICAL PLAN DETAILS 3 E1.0

4 E2.0 5 E3.0 SPECIFICATIONS

# SHEET INDEX

(14) INSULATED NEUTRAL BUS.

(16) PROVIDE CONCRETE FOUNDATION PER

MANUFACTURER'S SPECIFICATIONS, VERIFY EXACT SIZE OF FOUNDATION WITH MANUFACTURER AND

STRUCTURAL ENGINEER PRIOR TO ROUGH-IN.
PROVIDE PAD MOUNTED BASE WITH ANCHOR
BOLTS EMBEDDED IN CONCRETE SUPPLIED WITH

(17) CONTRACTOR TO VERIFY EXACT SDEAF SERVICE CONNECTION POINTS PRIOR TO INSTALLATION.

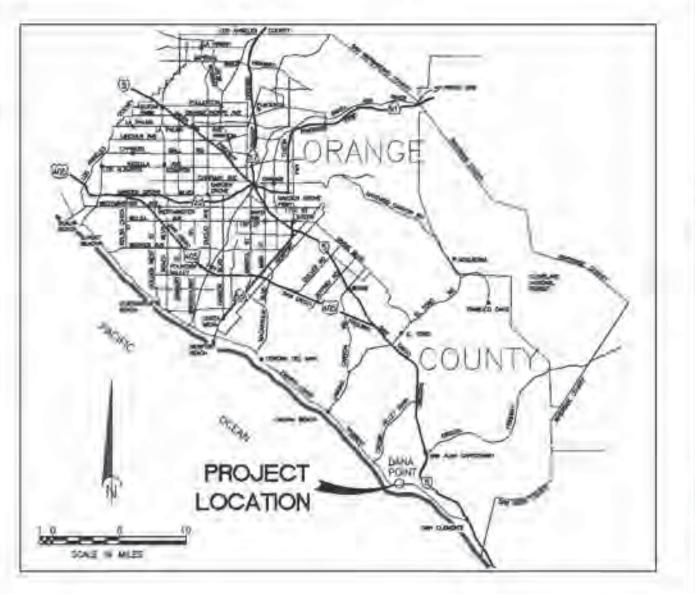
CONDUIT ONLY W/PULL ROPE MAIN LUGS ONLY ON CENTER EXISTING TO REMAIN UNLESS OTHERWISE NOTED VOLTS WEATHERPROOF VERIFY LOCATION (F) FUTURE VICINITY MAP

LIGHTING FIXTURE DESIGNATION

DETAIL REFERENCE

CONDUIT

KEYNOTE REFERENCE

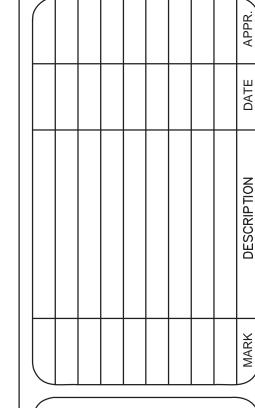


MOUNTING: SURFACE-NEMA 3R							P	ANE	L	MP1	В									MAIN: _	100A			
A.I.C. RATING : <u>42,000</u>						208 ,	/ 120	VOL	_TS,	1 PF	IASE,	3 WII	RE							BUS: _	100A			
DESCRIPTION	Volt-Amps	Ltg	RECHVISCI	Vire Len						Ckt Brk	1		Wire Size	Misc	Rec	Ltg	Volt	-Amps			DE	SCRIPTIO	N	
100A MAIN CIRCUIT BREAKER 100A MAIN CIRCUIT BREAKER			1		-	100	1 3			15/1 15/1	-	. ,				1	100	100		PE CONTROL ISNS				
SPARE SPARE					-	20/1	5		6	15/1 20/1	-						100			ISNS SPARE				
SPARE					-	20/1	9			20/1	-									SPARE				
PANEL CALCULATION					-	20/1	11	+	12	20/1	-									SPARE				
CONNECTED LOAD		CONNECTED LOAD:  CONNECTED BALANCED LINE (						INE C						00	00 VA 300 VA HIGH LINE CURRENT = 1.7 A									
DEMAND LOAD				С	EMAN	ID BAL	ANCE	D LIN	IE CU	RREN	T = 1.5	Α									HIGH LIN	NE CURRE	NT = 1.9 A	

MOUNTING : SURFACE-NEMA 3R								PANE	1	MP1	<u></u>									4 A INI:	100A			
MOUNTING . SURFACE-NEIMA SK								PANE	L	IVIF	C								I	_				
A.I.C. RATING : <u>42,000</u>						208	/ 120	) VO	LTS,	1 PH	ASE,	3 W	IRE							BUS: _	100A			
DESCRIPTION	Volt-Amps	l ta Doo	Mia a Wir	e Len	VD	Ckt	Ckt		Ckt	Ckt	VD	Len	Wire Size	Miss	Dag	l to	Volt	-Amps	Τ		DEG	SCRIPTION		<u> </u>
DESCRIPTION		Ltg Rec	Siz	e (ft)	%	Brk	No		No	Brk	%	(ft)	Size	IVIISC	Rec	Lig			1		DES	SCRIP HON	1	ON CONTRACT
100A MAIN CIRCUIT BREAKER			1		-	100	1		2	1	-								SPACE	"DO NO	OT REMOVE	"		
100A MAIN CIRCUIT BREAKER						/ 2	3	<b>1</b>	4		-								SPACE	"DO NO	OT REMOVE	"		
SPACE "DO NOT REMOVE"					-	ĺ	5	<b>1</b> → ↓	- 6	30/	-					3	375		STREE	T LIGH	ΓING			
SPACE "DO NOT REMOVE"					-		7	1 →	- 8									375						
PANEL CALCULATION																								
CONNECTED LOAD				CC	DNNEC	TED L	OAD	:						375	VA			375	VA				750 VA	
CONNECTED LOAD				CO	NNEC	TED B	ALAN	ICED L	INE (	CURRE	NT = 3	3.1 A									HIGH LIN	E CURREN	NT = 3.1 A	
DEMAND LOAD				D	PEMAN	ID BAL	ANC	ED LIN	IE CU	JRREN	Γ = 3.9	Α									HIGH LIN	E CURREN	NT = 3.9 A	





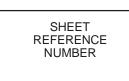




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ORANGE COUNTY
PUBLIC WORKS
PREPARED BY:
BRIDGE DESIGN SECTION

SURFSIDE PEDESTRIAN OVERCROSSING
PANEL
SCHEDULES



E0.2

Sheet 10 of 13

BRANCH	<b>FFFDFR</b>	SCHEDULE
		COLLEGE

SYMBOL	RACEWAY & CONDUCTORS
(A)	1-4"C.O, FEEDERS SIZE PER SDG&E.
(B)	1-3"C.O, 2-2"C.O, & 1-3"C, WITH 8#8 & 3#10GND
(0)	2-2*C.O.
(D)	1-3"C,O.
(E)	1-2"C.O.

NOTES:

1. ALL WIRE TYPE DUAL RATED THWN, 90C., 600V, CU.
2. ALL CONDUITS SHALL BE PROVIDED WITH PULL ROPE.
3. ALL CONDUITS SHALL BE PVC SCHEDULE 40 U.N.O.

#### **GENERAL NOTES**

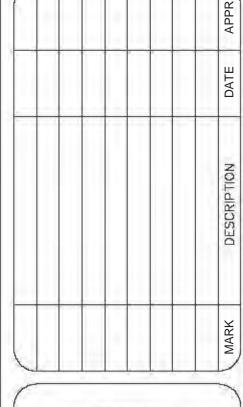
- 1. ALL ELECTRICAL WORK SHALL BE FULLY COORDINATED WITH THE COUNTY AND CITY OF DANA POINT CONSTRUCTION REPRESENTATIVES, CIVIL ENGINEER DRAWINGS AND UTILITY COMPANIES, PRIOR TO START ANY ELECTRICAL WORK INCLUDING TRENCHING AND OTHER WORK ASSOCIATED TO ELECTRICAL.
- 2. ELECTRICAL CONTRACTOR SHALL MARK OUT/POTHOLE EXISTING UTILITIES, AND NEW UNDERGROUND UTILITY STRUCTURES (IN COORDINATION WITH CIVIL ENGINEER DRAWINGS) PRIOR TO START OF ANY WORK AND TAKE THE NECESSARY MEASURES DURING THE WORK.
- 3. ALL HANDHOLES AND PULL BOXES INSTALLED IN SIDEWALKS SHALL BE ALIGNED WITH THE CURB, AND PLACED WITHIN THE SIDEWALK SCORE JOINT RETURN AS DIRECTED BY THE CITY OF DANA POINT CONSTRUCTION REPRESENTATIVE.
- 4. ELECTRICAL WORK SHALL BE INSPECTED BY THE COUNTY OF ORANGE AND CITY OF DANA POINT CONSTRUCTION REPRESENTATIVES. CONTRACTOR SHALL SECURE ALL NECESSARY PERMITS, AND COMPLY WITH ALL ASSOCIATED REQUIREMENTS, INCLUDING SCHEDULING REQUIRED INSPECTIONS BY CITY BUILDING DEPARTMENT DURING THE COURSE OF THE WORK.
- ELECTRICAL CONTRACTOR SHALL VERIFY EXISTING UNDERGROUND UTILITIES AND CAREFULLY TRENCH AND HAND DIG AS NECESSARY TO AVOID DISTURBING OR BREAKING EXISTING UNDERGROUND UTILITY LINES.
- 6. COORDINATE WITH COUNTY OF ORANGE FOR ALL REQUIRED PATCHING AND RE-PAVING REQUIREMENTS AND PROVIDE ACCORDINGLY.

#### **KEY NOTES**

- PROVIDE C9E CONCRETE PULL BOX WITH PEDESTRIAN RATED LID LABELED "CITY ELECTRICAL". EXACT LOCATION TO BE COORDINATED WITH CITY OF DANA POINT CONSTRUCTION REPRESENTATIVE.
- STUB OUT UNDERGROUND 2"C. PVC SCHEDULE 40, CAPPED AND MARKED FOR FUTURE USE.
- 3 STUB UP BRANCH CIRCUIT CONDUCTORS SHALL BE INDIVIDUALLY CAPPED TO PREVENT WATER INTRUSION.
- STUB OUT UNDERGROUND 2"C.O. PVC SCHEDULE 40, CAPPED AND MARKED FOR PEDESTRIAN CROSS WALK SIGNAL PER TRAFFIC SIGNAL PLANS.
- PROVIDE N36 CONCRETE PULL BOX WITH PEDESTRIAN RATED LID LABELED "CITY ELECTRICAL". EXACT LOCATION TO BE COORDINATED WITH CITY OF DANA POINT CONSTRUCTION REPRESENTATIVE.
- STUB OUT UNDERGROUND 2"C.O. PVC SCHEDULE 40, CAPPED AND MARKED FOR FUTURE IRRIGATION CONTROLLER, COORDINATE EXACT LOCATION WITH CITY OF DANA POINT CONSTRUCTION REPRESENTATIVE.
- 57 STUB OUT UNDERGROUND 1"C.O. PVC SCHEDULE 40, CAPPED AND MARKED FOR FUTURE 20A, 125V GFCI WEATHER PROOF RECEPTACLE WITH COVER BOX, MOUNT RECEPTACLE TO RETAINING CURB/WALL. SEE SHEET E3.0 DETAIL #7. COORDINATE EXACT LOCATION WITH CITY OF DANA POINT CONSTRUCTION REPRESENTATIVE
- STUB OUT UNDERGROUND 1"C.O. PVC SCHEDULE 40, CAPPED AND MARKED FOR FUTURE BOLLARD LIGHT FIXTURE, SEE SHEET E3.0 DETAIL #7. COORDINATE EXACT LOCATION WITH CITY OF DANA POINT CONSTRUCTION REPRESENTATIVE.
- existing meter pedestal serving the existing bridge lighting, to be replaced with c9e pull box with pedestrian rated lid labeled "City electrical", intercept bridge lighting circuits and connect new meter pedestal panel MP1a, extend circuits as required.











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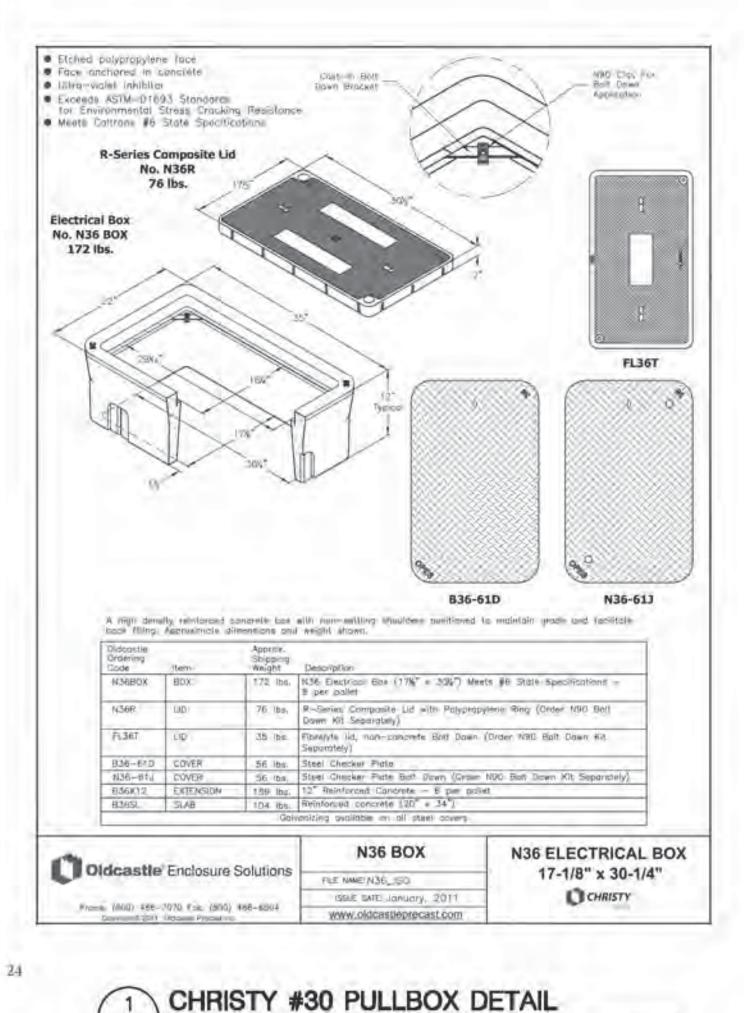
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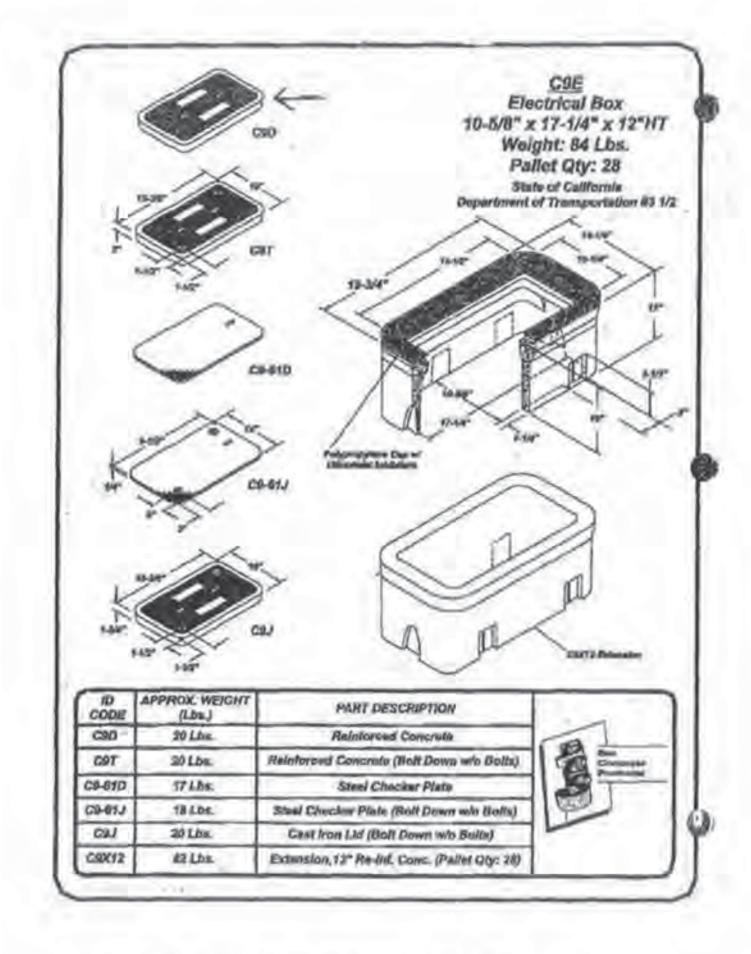
OVERCROSSING ELECTRICAL PLAN

SHEET REFERENCE NUMBER

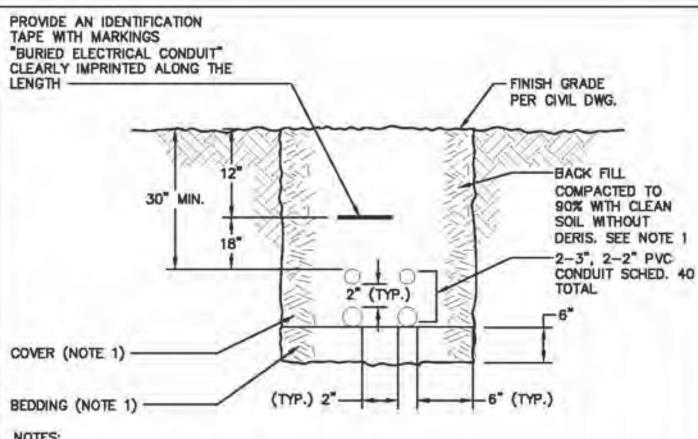
E1.0

Sheet 11 of 13





CHRISTY #9 PULLBOX DETAIL SCALE: NONE



NOTES: BEDDING AND COVER SHALL BE SAND, SELECT BACKFILL SHALL BE SOIL WITH ALL SHARP OBJECTS AND ROCKS REMOVED. COMPACTION SHALL BE TO SITE SPECIFICATIONS. CONCRETE ENCASEMENT OF CONDUIT ACROSS ROADWAY PER CITY REQUIREMENT. CONDUITS SHALL BE PROVIDED WITH PULL ROPE.

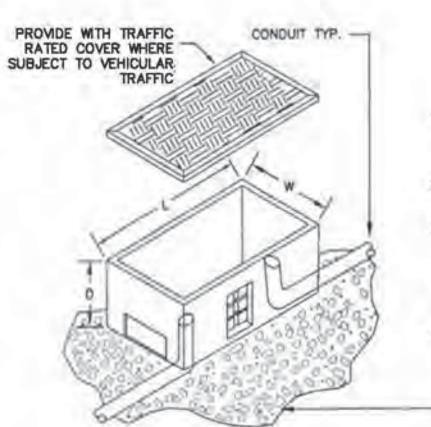
U/G CONDUIT TRENCH DETAIL

SCALE: NONE

2' LANDSCAPE AREA -FENCING (F) PATHWAY BOLLARD -LIGHT FIXTURE - 1"C.O. TERMINATE AT NEW GFCI PULL BOX -RECEPTACLE CURB AND -(SIZE PER PLAN) GUTTER LIGHT FIXTURE RETAINING 3/4" CRUSH GRAVEL -CURB/WALL 12" BOLLARD CONCRETE BASE

> 7 PULL BOX/BOLLARD SECTION DETAIL E3.0 SCALE: NONE

W.P. W/COVER BOX 1°C. FOR (F) BOLLARD



1. REFERENCE SPECIFICATIONS FOR ADDITIONAL INFORMATION ON PULLBOX.

- 2. REFERENCE ELECTRICAL SITE PLAN FOR SIZE OF CONDUITS.
- 3. DIMENSIONS SHOWN FOR PULLBOX ARE TO BE AS SHOWN ON ELECTRICAL SYMBOLS UNLESS NOTED OTHERWISE ON ELECTRICAL SITE PLAN KEYNOTES.
- 4. PROVIDE SCHEDULE 80 SWEEPS INTO PULLBOX WHERE SWEEPS ARE REQUIRED.

BED OF 3/4" CRUSHED ROCK GRAVEL 12" DEEP A 6" OUT FROM ALL SIDES OF PULLBOX

Working space from

face of panel regid.

Factory Installed

See Note 2

and cover 36" MIN.

17"MIN

See Notes working and 2 space regid

Pull section

1-1/2" - 3/4"MIN

-- W ---

FIG. 4

UTILITY TERMINATION SECTION

TABLE 1 - MIN. DIMENSIONS

SERVICE W

3PHASE | 12-1/2"

10-1/2"

1PHASE

See page 692.1 for Notes and

See page 692,2 Foundation Details

LOAD | LINE

FIG 2

SIDE VIEW (TYPICAL)

3" MIN.

5"MAX

PROVIDE LOCKING COVERS FOR PULL BOXES

COMMERCIAL METER PEDESTALS SERVICE 0-200 AMPS

FOR ALTERNATE TO PEDESTALS, SEE NOTE

FIG. This Fig.

FRONT VIEW (SINGLE)

- 24" MIN --

-110-1/2" -

Section

400 omps

Single-Phase is

acceptable for m

duct pedestols

Philipping El 3 , company

FRONT VIEW (DUAL)

NOTE:

NOTE: The pull section

service may be

located on the

front, back or

side of a meter

for utility

pedestal,

depending

manufacturer.

48"

REVISION

DATE 12-13-06

APPEN BRE

AHN

PULLBOX DETAIL (TYPICAL INSTALLATION) SCALE: NONE

Meter Section

See Note 6

Hinged Cover with Attached

sides

Handle

Sides, See Note 4

for fixed top and

Hinged Demand Reset Cover

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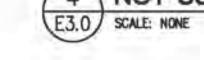
SDG&E SERVICE STANDARDS & CUIDE

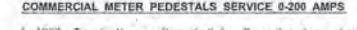
ELECTRIC SERVICE AND METERING EQUIPMENT

COMMERCIAL METER PEDESTALS

Indicates Latest Revision | Completely Revised | New Page | Information Mamowell

NOT USED





- Utility Termination section shall be dimensioned as shown in Figure 4. These dimensions are the minimum access openings allowed for these types of termination sections. The depth of the wireway shall accept a minimum 3 inch. conduit, and the cover shall be equipped with a lifting handle.
- 2. Service conductors are to terminate on lunding lugs. The Service Termination lugs shall be #6 through 250fCMIL pressure-type, CU-AL listed, insulated cable or been shall be installed between the landing lugs and the test-bypass facilities.
- 3. Pedestals serving both metered and unmetered loads, i.e. traffic signals and street lighting, must have landing lugs, with customer wire from lugs to bypasses (metered load) and from lugs to breakers (unmetered loads):
- 4. The meter shall be enclosed and the enclosing cover shall: Be hinged to allow the top, front, and sides to rotate back exposing the
- metering compartment in order to provide clearances. 5. Internal equipment attached to the outer walls of the englosure shall be secured in place with devices that may not be loosened from the outside. Screws or bolts regulring special tools for installation or removal are not acceptable.
- 6. A protective metallic barrier (16 gauge minimum) shall be installed between the utility termination section and the customer distribution section. There shall be a 1/4" minimum clearance between the customer section and protective barrier to prevent screws and balts from protruding into the termination section.
- . Test-bypass blocks with rigid insulating barrier shall be furnished, installed and wired or bussed to the meter socket by the manufacturer. Connection sequence is LINE-LOAD from left to right. Each line and load position shall be clearly identified by 3/4" minimum block letter labeling. Test-bypass cover ponels shall be sealable and filted with a lifting handle. All panels exceeding 16 inches in width shall require two lifting handles.
- All utility compartment (meter cover, demand reset cover, and pull section) shall be sealable and padiockable.
- D. For identification purposes, the numeric portlan of the address must be pointed with weatherproof point or reflective decals on the exterior face of the partion of the pedestal facing the street or driveable surface in numbers at least 1 inch high.
- Plastic Pads are acceptable, provided the supporting pull box is filled with gravel or earth compacted to 90% minimum. For other structural mounting and support of the pedestal consult SOG&E.
- 11. Residential type pediastals are not acceptable for temporary construction power for commercial/industrial premises. To serve commercial temporary power, a meter pedental with test-bypasses, or a properly mounted safety socket can is required. Reference pages 614.1, Figure 1.
- 12. Photoelectric cells are not permitted in the utility area. (pull section/meter section)
- 13. SDG&E will no longer supply 2w, 120 volt service or metering to pedestals. Single phase service will be three wire regardless of the voltage. i.e. 120/208, 120/240, or 240/460 Volta. Reference page 692.3 and 692.4 for field replacement of existing 120-volt meter pedestal.
- 14. Fa maintain a safe, clear, and level working space for new or existing non-residential meter pedestals when a housekeeping pad has not been installed, a concrete slab, apphalt, or other non-removable suitable surface acceptable to the utility inspector is required. Concrete pads for pedestals, unless poured to cover all required working space, are not to extend further than 3 inches beyond the face of the equipment. This requirement is for pedestals on private property and does not apply to pedestals installed in parkway areas of the street.

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X India	otes Listeel Revision	Completely Revised	New Pirgs	Information Removed

692,1 ELECTRIC SERVICE AND METERING EQUIPMENT

DATE 2-28-07

METER PEDESTAL DETAIL SCALE: NONE

692





BY: SEC PREPARED GE DESIGN ( ANGE UBLIC V

SIDE

SHEET REFERENCE

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E2.0

Sheet 12 of 13

5033\cad\Phase 2\15033E-20.dw 3\15033\cad\Phase 2\15033E nt 24x36 G:\Team-3\1 anht 24x36 G:\Team-

E3.0

SCALE: NONE

#### GENERAL REQUIREMENTS

#### 1. WORK INCLUDED:

PROVIDE ALL LABOR, MATERIALS, APPLIANCES, TOOLS, EQUIPMENT, FACILITIES, TRANSPORTATION, AND SERVICES NECESSARY FOR AND INCIDENTAL TO PERFORMING ALL OPERATIONS IN CONNECTION WITH FURNISHING, INSTALLATION, AND MAKING FULLY OPERATIONAL THE WORK OF THIS DIVISION, COMPLETE, AND AS SHOWN AND/OR SPECIFIED HEREIN.

- A. EXCEPT SUCH MATERIAL OR EQUIPMENT SPECIFICALLY INDICATED AS FURNISHED BY THE OWNER, OR BY OTHERS.
- B. PRIOR TO COMMENCING THE WORK, CONTRACTOR SHALL INSPECT THE SITE AND BY SUBMITTING A BID FOR THE WORK, SHALL BE DEEMED TO HAVE VERIFIED ALL EXISTING CONDITIONS AND ACCEPTS SAME AS TRUE AND COMPLETE.

#### C. RELATED SECTIONS AND ASSOCIATED WORK:

- DIVISION 1 AND THE GENERAL CONDITIONS OF THE CONTRACT APPLY TO ALL WORK HEREIN SPECIFIED. ADDITIONALLY, THIS SPECIFICATION SUPPLEMENTS THE APPLICABLE REQUIREMENTS OF OTHER DIVISIONS.
- 2) EQUIPMENT, DEVICES AND WIRING FURNISHED UNDER DIVISION 22 AND 23 AND INDICATED FOR INSTALLATION UNDER THIS DIVISION SHALL BE INSTALLED IN ACCORDANCE WITH DIVISION 22 AND 23 AND ASSOCIATED DRAWINGS.
- 3) CUTTING, DRILLING, AND PATCHING SHALL BE DONE IN ACCORDANCE WITH THE APPLICABLE SECTIONS OF THE SPECIFICATIONS.
- ROUGH— AND FINISHED-CONCRETE WORK REQUIRED SHALL BE ACCOMPLISHED IN ACCORDANCE WITH THE APPLICABLE SECTIONS OF THE SPECIFICATIONS.

#### 2. SUBMITTALS.

SUBMIT WRITTEN INFORMATION TO THE OWNER FOR APPROVAL, AS FOLLOWS:

- A. PRODUCT DATA AND SHOP DRAWINGS: THREE COPIES WITHIN FIVE (5) DAYS OF THE AWARD OF CONTRACT. EQUIPMENT AND MATERIALS FOR WHICH SUBMITTALS ARE REQUIRED SHALL INCLUDE: WIRING DEVICES; SWITCHBOARDS; DISCONNECT SWITCHES; TRANSFORMERS; PANELBOARDS; MOTOR CONTROLLERS; LIGHT FIXTURES AND LIGHTING SYSTEM—ASSOCIATED CONTROL SYSTEM COMPONENTS, POLES AND MOUNTING BASES. (SUBMITTALS FOR REINFORCED CONCRETE BASES FOR LIGHTING POLES SHALL INCLUDE FOUNDATION DESIGN/INSTALLATION DRAWINGS SIGNED BY A STRUCTURAL ENGINEER CURRENTLY REGISTERED IN THE STATE OF CALIFORNIA.)
- 1) SUBSTITUTIONS: MANUFACTURER AND CATALOG NUMBERS INDICATED ARE FOR THE PURPOSE OF ESTABLISHING STANDARDS OF QUALITY, ALLOWABLE SIZE OF COMPONENTS, AND TYPE OF MATERIALS TO BE USED. PRODUCTS BY OTHER MANUFACTURERS WILL BE CONSIDERED IF THE SUBMITTAL ASSOCIATED WITH THAT ITEM IS CLEARLY MARKED "THIS ITEM IS A SUBSTITUTION", AND IT COMPLIES WITH THE FOLLOWING: (1) QUALITY AND CAPACITY ARE EQUAL TO OR BETTER THAN THE SPECIFIED ITEM, AND (2) COMPONENTS FIT IN THE ALLOWED SPACES AND ARE SIMILAR IN APPEARANCE. NO SUBSTITUTION ITEMS MAY BE FURNISHED OR INSTALLED WITHOUT WRITTEN APPROVAL OF THE OWNER.
- B. OPERATIONS AND MAINTENANCE MANUALS: THREE COPIES OF OPERATING AND MAINTENANCE DATA FOR ALL ELECTRICAL EQUIPMENT, BOUND IN A HARDCOVER THREE—RING PLASTIC BINDER WITH A TABLE OF CONTENTS.
- C. RECORD DRAWINGS: DURING THE WORK, MAINTAIN A SET OF AS-BUILT DRAWINGS AT THE SITE BY NOTING ON THEM IN WRITING (IN A CLEAR, NEAT AND THOROUGH MANNER) ALL CHANGES TO THE CONTRACT. ANNOTATIONS SHALL BE CURRENT WITH ALL WORK PERFORMED. SUBMIT THESE RECORD DRAWINGS UPON COMPLETION OF THE WORK.

#### 3. COORDINATION.

PROVIDE NECESSARY COORDINATION WITH SERVING UTILITY COMPANIES TO ESTABLISH SERVICE ENTRANCE FACILITIES, AND TO MEET OTHER REQUIREMENTS FOR A COMPLETE AND OPERABLE INSTALLATION. VERIFY SIZE AND ORIENTATION OF EQUIPMENT TO BE INSTALLED IN INTERIOR SPACES WITH THE MANUFACTURER OF THAT EQUIPMENT TO ENSURE ADEQUATE WORKING CLEARANCE AND VENTILATION. COORDINATE THE WORK OF OTHER TRADES, VERIFYING REQUIRED WORKING CLEARANCES, SLEEVES, SUPPORTS, DOOR SWINGS, AND OTHER ITEMS AFFECTING THE WORK OF THIS SECTION. VERIFY THE METHODS OF INSTALLING AND CONNECTING EQUIPMENT, OUTLETS, AND OTHER ITEMS.

#### 4. QUALITY ASSURANCE

ALL MATERIALS AND THE MANNER IN WHICH THEY ARE APPLIED AND INSTALLED SHALL BE IN COMPLIANCE WITH THE LATEST RULES AND REGULATIONS OF THE CALIFORNIA CODE OF REGULATIONS TITLE 24, PART 3 "CALIFORNIA ELECTRICAL CODE"; THE NATIONAL ELECTRICAL CODE; AND OTHER APPLICABLE STATE— AND LOCAL—LAWS AND REGULATIONS.

#### 6. PERMITS, FEES, AND INSPECTIONS.

OBTAIN AND PAY FOR COUNTY OF ORANGE AND CITY OF DANA POINT PERMITS AND LICENSES REQUIRED FOR THE WORK. OBTAIN PERMITS PRIOR TO COMMENCING ANY WORK. ARRANGE FOR AND SCHEDULE REQUIRED INSPECTIONS. PAY UTILITY FEES AND CHARGES REQUIRED TO ESTABLISH PERMANENT SERVICE, AND ANY OTHER UTILITY FEES.

#### 6. PROTECTION AND CLEANING.

ALL PARTS OF EQUIPMENT AND MATERIALS SHALL BE THOROUGHLY CLEANED. PROTECT ALL WORK, MATERIALS AND EQUIPMENT FROM DAMAGE FROM ANY CAUSE AND PROVIDE ADEQUATE AND PROPER STORAGE FACILITIES DURING THE PROGRESS OF THE WORK. PROVIDE FOR THE SAFETY AND GOOD CONDITION OF ALL THE WORK UNTIL FINAL ACCEPTANCE BY THE OWNER; REPLACE ALL DAMAGED OR DEFECTIVE WORK, MATERIALS AND EQUIPMENT PRIOR TO REQUESTING FINAL ACCEPTANCE. PROVIDE AND MAINTAIN SUITABLE BARRIERS, WARNING SIGNS, LIGHTS, ETC., WHERE REQUIRED FOR PROTECTION OF THE PUBLIC AND OCCUPANTS ABOUT THE SITE. AT THE CONCLUSION OF EACH WORKDAY. THE PREMISES SHALL BE LEFT FREE FROM DEBRIS INCIDENTAL TO THE WORK, AND IN A CONDITION ACCEPTABLE TO THE OWNER OR TENANT.

#### 7. QUARANTEES

PROVIDE A ONE YEAR MINUMUM WRITTEN GUARANTEE (IN A MANNER ACCEPTABLE TO THE OWNER) AGAINST DEFECTS IN WORKMANSHIP OR MATERIALS.

#### BASIC MATERIALS AND METHODS (SECTION 26001R1)

#### 1. GENERAL

- A, GROUNDING AND BONDING: GROUNDING AND BONDING SHALL BE PROVIDED IN COMPLIANCE WITH ALL APPLICABLE CODES AND REGULATIONS, BOTH OF THE STATE OF CALIFORNIA AND THE AUTHORITIES HAVING JURISDICTION.
- B. ELECTRICAL IDENTIFICATION: PROVIDE NAMEPLATES FOR SWITCHBOARDS, PANELBOARDS, DISCONNECT SWITCHES, CONTACTORS/RELAYS, TERMINAL CABINETS/BACKBOARDS, MOTOR CONTROLLERS, INDIVIDUALLY-MOUNTED CIRCUIT BREAKERS, PULL BOXES, CONTROL PANELS, TIME CLOCKS, AND FOR ANY OTHER CONTROL DEVICE OR MAJOR ITEM OF ELECTRICAL EQUIPMENT:

NAMEPLATES SHALL BE BLACK-ON-WHITE LAMINATED PLASTIC, ATTACHED WITH MACHINE SCREWS. LETTERING SHALL BE 1/4" HIGH MINIMUM, CORRESPONDING TO THE DESIGNATION (OR ADDITIONAL INFORMATION) SHOWN,

#### C. PRELIMINARY OPERATION AND TESTING:

- ALL WIRING AND CONNECTIONS SHALL BE TESTED FOR CONTINUITY (OPENS AND SHORTS) AND PROPER GROUNDING IN ACCORDANCE WITH THE REQUIREMENTS OF THE NEC.
- 2) ALL MOTOR-DRIVEN EQUIPMENT SHALL BE EXAMINED FOR COMPLETION OF ALL CONNECTIONS, AND TESTED FOR CORRECT ROTATION.

#### 2. HACEWAY AND BOXES.

THE APPLICATION AND INSTALLATION OF RACEWAY AND BOXES SHALL BE IN COMPLIANCE WITH NEC REQUIREMENTS. WHERE THE SIZE OF RACEWAY OR BOXES ARE NOT INDICATED, THE CONTRACTOR SHALL SIZE THESE ITEMS AS REQUIRED FOR THE INSTALLATION. MINIMUM CONDUIT SIZE SHALL BE 3/4". PROVIDE GALVANIZED PRESSED STEEL OUTLET BOXES OF PROPER SIZE AND TYPE AS REQUIRED BY THE BUILDING CONDITIONS FOR ALL INTERIOR OUTLETS FOR RECEPTACLES, SWITCHES, LIGHTING, VOICE/DATA COMMUNICATIONS SYSTEM JACKS, AND OTHER EQUIPMENT/DEVICES WHICH REQUIRE POWER SUPPLY OR CONTROL/SIGNAL CABLING CONNECTIONS. OUTLETS FOR WALL—MOUNTED SWITCHES SHALL BE INSTALLED ADJACENT TO THE TRIM ON THE STRIKING SIDE OF THE DOOR, REGARDLESS OF THE LOCATION SHOWN — THEREFORE, CONFIRM ALL DOOR SWINGS PRIOR TO ROUGH—IN OF OUTLETS AND RACEWAY. ALL RACEWAY INSTALLED AT THIS TIME BUT LEFT EMPTY FOR FUTURE WORK (THAT IS, SHOWN AS CONDUIT ONLY, OR CO) SHALL BE PROVIDED WITH A 1/8" DIAMETER POLYPROPYLENE PULL ROPE FROM END—TO—END.

- A. WIRING METHOD SHALL BE AS FOLLOWS, EXCEPT AS OTHERWISE INDICATED
- 1) EXTERIOR, EXPOSED: RIGID GALVANIZED STEEL. FOR CONNECTION TO VIBRATING EQUIPMENT, USE LIQUIDTIGHT FLEXIBLE METAL CONDUIT.
- EXTERIOR, CONCEALED: RIGID GALVANIZED STEEL. FOR CONDUIT IN SLAB OR UNDERGRADE, USE PVC SCHEDULE 40 (PROVIDE CONCRETE ENCASEMENT AS INDICATED).
- INTERIOR, EXPOSED: RIGID GALVANIZED STEEL; OR EMT AS ALLOWED BY THE NEC. FOR CONNECTION TO VBRATING EQUIPMENT (INCLUDING MOTOR—DRIVEN EQUIPMENT AND TRANSFORMERS), USE LIQUIDTIGHT FLEXIBLE METAL CONDUIT, 18 INCHES MAXIMUM LENGTH. FOR CONNECTION TO LIGHTING FIXTURES ABOVE SUSPENDED ACOUSTICAL OR METAL CEILINGS, USE FLEXIBLE METAL CONDUIT, 72 INCHES MAXIMUM LENGTH.
- 4) INTERIOR, CONCEALED: ELECTRICAL METALLIC TUBING. FOR CONDUIT IN SLAB OR UNDER SLAB ON GRADE, USE PVC SCHEDULE 40 (PROVIDE CONCRETE ENCASEMENT AS INDICATED).

#### B. RACEWAY TYPES:

#### METALLIC CONDUIT:

RIGID GALVANIZED STEEL (RGS): ANSI C80.1: ANSI/NEMA FB 1. UL 6/514B. THREADED STEEL TYPE, INSIDE AND OUTSIDE SURFACES ZINC-COATED BY HOT-DIP PROCESS.

ELECTRICAL METALLIC TUBING (EMT): ANSI C80.3; UL 5148/797. WELDED ELECTRO—GALVANIZED STEEL TUBING, COUPLINGS AND CONNECTORS SHALL BE COMPRESSION TYPE.

- 2) NONMETALLIC CONDUIT: NEMA TC-2/TC 3; UL 514B/651. PVC SCHEDULE 40, HEAVY-WALL, HIGH-IMPACT RIGID, RATED AND LABELED FOR USE WITH 90 DEGREE C-RATED CONDUCTORS.
- FLEXIBLE CONDUIT: UL 1. HOT DIP GALVANIZED STEEL INTERLOCKING, SINGLE-STRIP TYPE, MINIMUM INTERMEDIATE GRADE,
- 4) LIQUIDTIGHT FLEXIBLE METAL CONDUIT: ANSI/NEMA FB 1; UL 360. HOT-DIP GALVANIZED STEEL STRIP CORE WITH EXTRUDED LIQUIDTIGHT POLYVINYL

#### C. RACEWAY INSTALLATION:

- 1) ALL EXPOSED CONDUIT SHALL BE RUN PARALLEL TO, OR AT RIGHT ANGLES TO, BUILDING WALLS OR STRUCTURAL MEMBERS.
- 2) SECURELY AND RIGIDLY SUPPORT ALL RACEWAY FROM THE BUILDING STRUCTURE. SECURE BY MEANS OF APPROVED PIPE CLAMPS OR STRAPS. PROVIDE SUPPORTS AT INTERVALS NOT EXCEEDING 1D FEET, AND WITHIN 3 FEET OF TERMINATIONS AND CHANGES IN DIRECTION.
- A) INDIVIDUAL SUSPENDED RACEWAYS ABOVE CEILINGS SHALL BE SUPPORTED BY MEANS OF HANGER RODS AND PIPE CLAMPS, MULTIPLE SUSPENDED RACEWAYS SHALL BE SUPPORTED BY MEANS OF TRAPEZE TYPE HANGERS ("C" CHANNELS OR "UNISTRUT") AND PIPE CLAMPS.
- B) INDIVIDUAL RACEWAY PLACED AGAINST CONCRETE, MASONRY OR BRICK WALLS OR SLABS SHALL BE SECURED WITH PIPE CLAMPS AND EXPANSION SHIELDS. ATTACHMENT TO DRYWALL OR PLASTER CONSTRUCTION SHALL BE BY MEANS OF PIPE CLAMPS AND SCREWS FASTENED TO STUDS OR OTHER STRUCTURAL MEMBERS. PROVIDE "C" CHANNEL SUPPORTS FOR ALL MULTIPLE RACEWAY RUNS SECURED TO WALLS OR SLABS.
- j) CONDUIT RISERS LEAVING A CONCRETE SLAB SHALL BE RIGID GALVANIZED STEEL CONDUIT.

- D. OUTLET BOXES: NEMA OS 1; UL 50/514A/514B. ONE PIECE GALVANIZED STEEL KNOCKOUT TYPE, WITH CONDUIT ENTRANCES SIZED TO MATCH. PROVIDE BOXES OF THE PROPER CODE SIZE FOR THE NUMBER OF WIRES OR CONDUITS PASSING THROUGH OR TERMINATING THEREIN, WITH MINIMUM SIZE 4 INCHES SQUARE BY 2-1/8 INCHES DEEP. FOR EXTERIOR LOCATIONS, AND WHERE INDICATED (WEATHERPROOF) USE CAST FERROUS FS TYPE WITH THREADED HUBS.
- E. PULL BOXES AND JUNCTION BOXES FOR INTERIOR OR EXTERIOR ABOVE-GRADE LOCATIONS: ASTM 123/167; NEMA 250/ICS 6/OS 1; UL 50/514A/514B. SHEET STEEL, WITH BOLT-ON COVERS, AS FOLLOWS:
- 1) EXTERIOR OR WET LOCATIONS, AND WHERE INDICATED (WEATHERPROOF): HOT—DIP GALVANIZED AFTER CONSTRUCTION, WITH TWO COATS OF RUST-RESISTANT PAINT (GRAY COLOR). COVERS SHALL BE EQUIPPED WITH NEOPRENE GASKETS, AND SHALL BE INSTALLED WITH STAINLESS STEEL SCREWS. TO ENSURE WEATHERTIGHTNESS, SEAL CONDUIT ENTRANCES WITH SILICONE SEALANT.
- INTERIOR DRY LOCATIONS: FINISH BOX SURFACES WITH PRIMER, AND PRIMER SEALER.
- F. PULL BOXES AND JUNCTION BOXES FOR EXTERIOR AT-GRADE OR BELOW-GRADE LOCATIONS: NEMA 250/ICS 6; UL 50/514A/514B. PRECAST CONCRETE, WITH PEDESTRIAN RATED STEEL CHECKER PLATE BOLT DOWN COVER LABELED "CITY ELECTRIC" AS APPLICABLE, EXCEPT AS OTHERWISE SHOWN BY JENSEN PRECAST, OLDCASTLE, OR EQUAL PRODUCTS. INSTALL ON 6 INCH BED OF PEA GRAVEL.
- NONMETALLIC BOXES, AT LOCATIONS SHOWN: NEMA OS 2; UL 514C. CAST PVC, WITH GASKETED BOLT-ON COVER USING STAINLESS STEEL SCREWS.
- G. CABINETS: CABINETS FOR PANELBOARDS, WIRING TERMINATIONS/MANAGEMENT, AND CONTROL EQUIPMENT SHALL BE FLUSH— OR SURFACE—MOUNTED AS SHOWN. CONSTRUCTION SHALL BE OF CODE—GAUGE ZINC—COATED SHEET STEEL BEARING THE UL LABEL. CABINET DOORS SHALL HAVE FLUSH CATCHES AND PIN TUMBLER LOCKS. WIRING GUTTERS OR SPACES SHALL BE PROVIDED AT TOP AND BOTTOM (MINIMUM DIMENSION 6 INCHES), AND ALONG THE SIDES (MINIMUM DIMENSION 4 INCHES). PROVIDE TERMINAL AND CONTROL CABINETS MADE BY THE MANUFACTURER OF THE PANELBOARDS, AND WITH THE SAME KEYING AND FINISH AS THE PANELBOARDS.

#### 3. WIRE AND CABLE

PROJECT SPECIFICATIONS: ELECTRICAL

NEMA/ICEA WC-5; UL 83. CONDUCTOR SIZE AS SHOWN. CONDUCTOR SHALL BE SOFT-DRAWN COPPER, MINIMUM 98% CONDUCTIVITY. MINIMUM INSULATION RATING SHALL BE 600 V, TYPE THHN/THWN 75 DEGREE C RATING, OR TYPE XHHW 90 DEGREES C RATING. MINIMUM SIZE SHALL BE NO. 12 AWG. ALL WIRE NO. 8 AWG AND LARGER SHALL BE STRANDED.

- A. PROVIDE WIRE AND CABLE MANUFACTURED WITHIN ONE YEAR OF DATE OF DELIVERY TO THE JOBSITE. DELIVER WIRE AND CABLE TO SITE IN THEIR ORIGINAL UNBROKEN PACKAGES, OR ON THEIR ORIGINAL CABLE REELS. PACKAGES AND CABLE REELS SHALL BE MARKED AND TAGGED PLAINLY WITH ULLABEL, AWG OR CIRCULAR MIL SIZE, VOLTAGE RATING, INSULATION TYPE, CONDUCTOR TYPE AND TYPE OF STRANDING, MANUFACTURER'S NAME, TRADE NAME, AND MONTH AND DATE OF MANUFACTURE.
- B. USE ONLY PLATED COPPER ALLOY CONNECTORS OR LUGS, ALUMINUM CONNECTORS OR LUGS ARE NOT ACCEPTABLE. THE FOLLOWING CONNECTORS ARE APPROVED FOR COPPER CONDUCTORS:
- 1) WIRE NO. 10 AND SMALLER: 3M "SCOTCHLOK" OR IDEAL "SUPERNUT".
- WIRE NO. 8 AND LARGER: SOLDERLESS CONNECTORS BY OZ GEDNEY, OR THE EQUIVALENT BY BUCHANAN, KEARNEY, OR THOMAS & BETTS.
- C TAPE CONNECTIONS MADE WITH NON-INSULATED TYPE CONNECTORS WITH RUBBER TAPE, MINIMUM 150 PERCENT THE THICKNESS OF THE CONDUCTOR INSULATION, THEN COVERED WITH SCOTCH NO. 33 TAPE, OR EQUAL.
- D. COLOR CODE ALL WIRE WITH INSULATION/JACKET (FACTORY-APPLIED) COLOR FOR PHASE IDENTIFICATION (CONTINUOUS FOR CIRCUIT FROM OUTLET-TO-OUTLET, PULL BOX, OR CABINET) AS FOLLOWS:

	SYSTEM \	OLTAGE
PHASE	208Y/120	480Y/277
A	BLACK	BROWN
В	RED	ORANGE
C	BLUE	YELLOW
NEUTRAL	WHITE	GRAY
GROUND	GREEN	GREEN

#### 4. WIRING DEVICES.

NEMA WD 1, WD 6; UL 20, UL 486A, ALL WIRING DEVICES SHALL BE SPECIFICATION GRADE. COLORS SHALL BE AS SELECTED BY OWNER. TYPES SHALL BE AS FOLLOWS, EXCEPT AS DTHERWISE INDICATED:

- A. RECEPTACLES: DUPLEX, THREE-WIRE GROUNDING TYPE, RATED ZOA AT 125V, NEMA CONFIGURATION 5-20R. PROVIDE GFI (SELF-CONTAINED) TYPE AT LOCATIONS SHOWN. FOR EXTERIOR LOCATIONS, PROVIDE WITH WEATHERPROOF BOX, AND ALUMINUM GASKETED SPRING-SHUT COVER. HUBBELL 53XX-SERIES, OR EQUAL FROM PASS & SEYMOUR OR LEVITON.
- B. SWITCHES: TOGGLE TYPE, NUMBER OF POLES AS SHOWN, QUIET TYPE, RATED 20A AT 120/2777. HUBBELL HBL 12XX—SERIES, OR EQUAL FROM PASS & SEYMOUR OR LEVITON.
- 1) INCANDESCENT DIMMER TYPE, AT LOCATIONS SHOWN: MODULAR SOLID-STATE TYPE, RATING AND NUMBER OF SWITCH POLES AS SHOWN, WITH CONTINUOUSLY-ADJUSTABLE ROTARY KNOB OR TOGGLE, ANODIZED ALUMINUM FACE, WITH SOFT-TAP OR OTHER QUIET ON-OFF SWITCH. HUBBELL AR-SERIES, OR EQUAL BY LEVITON.
- C. PLATES: WALL PLATES SHALL BE PROVIDED FOR EVERY SWITCH, RECEPTACLE, OUTLET AND JUNCTION BOX, TELEPHONE JACK, ETC. PROVIDE PLATES WHICH MATE AND MATCH WITH THE WIRING DEVICE(S) TO WHICH THEY ARE ATTACHED. EXCEPT AS OTHERWISE SHOWN, WALL PLATES FOR INTERIOR AREAS (EXCEPT FOR FOOD—PREPARATION AREAS) SHALL BE SMOOTH HIGH—IMPACT RESISTANT PLASTIC; WALL PLATES FOR EXTERIOR AREAS SHALL BE GALVANIZED STEEL, PAINTED TO MATCH ADJACENT SURFACES; AND WALL PLATES FOR FOOD PREPARATION AREAS SHALL BE STAINLESS STEEL.

#### 5. SWITCHBOARDS (SEE SINGLE LINE DIAGRAM).

NEMA PB 2; UL 891. RATED AS SHOWN. COPPER BUS. SQUARE-D, SIEMENS, OR EQUAL BY GE OR CUTLER-HAMMER.

#### 5. DISCONNECT SWITCHES,

NEMA KS 1, UL 98, UL 198C AND 198E. RATED AS SHOWN, HEAVY DUTY TYPE, EXTERNALLY-OPERATED, QUICK-MAKE QUICK-BREAK TYPE, THREE-POLE EXCEPT AS OTHERWISE SHOWN. FOR FUSIBLE TYPE, PROVIDE DUAL-ELEMENT TIME-DELAY CLASS RK-1 CURRENT-LIMITING FUSES. FOR EXTERIOR LOCATIONS, AND WHERE INDICATED, PROVIDE NEMA 3R ENCLOSURES. SQUARE-D, SIEMENS, OR EQUAL BY GE OR CUTLER-HAMMER.

#### 7. TRANSFORMERS

NEMA ST 20, UL 1561. DRY TYPE GENERAL PURPOSE, 150 DEGREE C RISE AT FULL LOAD WITH 220 DEGREE C INSULATION SYSTEM. PROVIDE NEMA 3R ENCLOSURE WITH RAIN SHIELD FOR EXTERIOR APPLICATION. SQUARE—D, SIEMENS, OR EQUAL BY GE OR CUTLER—HAMMER.

#### 8. PANELBOARDS (SEE SINGLE LINE DIAGRAM AND PANEL SCHEDULES).

NEMA PB 1. PB 1.1. AND AB 1; UL 67. PROVIDE AS FOLLOWS, EXCEPT AS OTHERWISE INDICATED: COPPER BUS, WITH FULLY-RATED NEUTRAL; BOLT-ON MOLDED CASE CIRCUIT BREAKERS; NEMA 3R ENCLOSURE FOR OUTDOOR APPLICATION; WITH TYPEWRITTEN BRANCH CIRCUIT DIRECTORY. ALL MULTIPLE POLE CIRCUIT BREAKERS SHALL BE EQUIPPED WITH A COMMON TRIP HANDLE. SQUARE-D, SIEMENS, OR EQUAL BY GE OR WESTINGHOUSE.

#### 9. MOTOR CONTROLLERS

NEMA ICS 2/ICS 6/250/AB 1/FU 1/KS 1; UL 98/198C/198E/489/508. PROVIDE MANUAL MOTOR CONTROLLERS FOR SINGLE—PHASE MOTORS RATED BELOW 2 HP, AND COMBINATION MOTOR CONTROLLERS AS SHOWN.

- A. MANUAL MOTOR CONTROLLERS: MANUAL MOTOR STARTING SWITCH WITH INTEGRAL THERMAL TYPE OVERLOAD PROTECTION, TOGGLE LEVER TYPE, ALLEN-BRADLEY BULLETIN 609, OR EQUAL BY SQUARE-D, SIEMENS, GE OR CUTLER-HAMMER.
- B. COMBINATION MOTOR CONTROLLERS: ENCLOSED COMBINATION STARTER, FUSIBLE DISCONNECT SWITCH TYPE, ALLEN-BRADLEY BULLETIN 512, OR EQUAL BY SQUARE-D, SIEMENS, GE DR CUTLER-HAMMER.

#### 10. LIGHTING (SEE LIGHTING FIXTURE SCHEDULE).

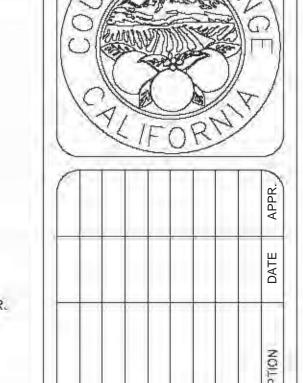
PROVIDE ALL LIGHTING EQUIPMENT AND SYSTEMS SHOWN. ALL LIGHTING FIXTURES SHALL BE PROVIDED WITH LAMPS.

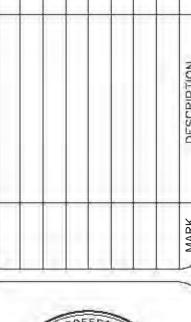
- A. TIME SWITCHES: PROVIDE WITH THE FOLLOWING RATINGS AND FEATURES, AS A MINIMUM: (1) NUMBER OF POLES: AS SHOWN, PLUS AT LEAST ONE SPARE; (2) 24 HOUR DIAL, WITH 3 HOUR MINIMUM SETTING; (3) MOTOR AND CONTACT VOLTAGES AS REQUIRED; (4) CONTACTS: SINGLE THROW. CONTACT RATING: 1HP AT 120VAC AND 40A AT 277VAC, EXCEPT CONTACTS MAY BE RATED A MINIMUM OF 10A IF RELAYS OR CONTACTORS ARE CONTROLLED; (5) POWER RESERVE FEATURE: 8 HOUR SPRING-DRIVEN AUTO REWIND RESERVE POWER. PARAGON. TORK, SANGAMO, OR INTERMATIC.
- B. PHOTOELECTRIC CONTROLLERS: RATED FOR CONNECTED LOAD, 20A MINIMUM. PARAGON, TORK, SANGAMO, OR EQUAL.
- C. LIGHTING CONTACTORS AND RELAYS: PROVIDE MINIMUM RATING AND NUMBER OF POLES AS SHOWN (IN ADDITION, WHERE INDIVIDUAL BRANCH CIRCUITS ARE CONTROLLED, PROVIDE ONE SPARE POLE). SQUARE—D, OR EQUAL BY GE OR CUTLER—HAMMER.

#### 11. TELEPHONE SYSTEM

PROVIDE TELEPHONE SYSTEM AS FOLLOWS, EXCEPT AS OTHERWISE SHOWN:

- A. SERVICE ENTRANCE FACILITY: PROVIDE WALL-MOUNTED 3/4" X 4' X 8' TREATED PLYWOOD "MAIN TELEPHONE BACKBOARD" AT THE LOCATION SHOWN, WITH (1) A DEDICATED 20A/120V BRANCH CIRCUIT/QUADRAPLEX POWER RECEPTACLE AND (2) A GROUNDING ELECTRODE PIGTAIL (#2 AWG BARE STRANDED COPPER CABLE ROUTED IN 1" CONDUIT DIRECTLY TO FACILITY GROUNDING ELECTRODE AND CONNECTED THEREON), AT THE TELEPHONE BACKBOARD LOCATION.
- B. VOICE DROFS AND CABLING FATHWAYS: PROVIDE FLUSH MOUNTED 4" SQUARE BOX/WALLPLATE WITH TELEPHONE JACK AT EACH OF THE LOCATIONS SHOWN. INCLUDING 3/4" CONDUIT (WITH PULLROPE) CONTINUOUS TO THE TELEPHONE BACKBOARD LOCATION AT THE SERVICE ENTRANCE FACILITY.
- C. TELEPHONE JACKS SHALL BE PROVIDED AS SPECIFIED BY OWNER. CABLING AND ENTRANCE FACILITY TELEPHONE EQUIPMENT/CROSS—CONNECT FRAMES/NETWORK INTERFACE DEVICES WILL BE PROVIDED BY OWNER.









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BY:
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LQ
DRAWING CODE:
PLOT DATE:
RSCALE:
04/14/2016
AS SHOWN

ORANGE COUNTY
PUBLIC WORKS
PREPARED BY:
BRIDGE DESIGN SECTION

SURFSIDE PEDESTRIAN OVERCROSSING
SPECIFICATIONS

SHEET REFERENCE

E3.0

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