SEAWALL 321
PARKING LOT ELECTRICAL SERVICE PROJECT

SYMBOLS

ABBREVIATIONS

AC	ABOVE COUNTER
AFF	ABOVE FINISHED FLOOR
C	CONDUIT
CB	CIRCUIT BREAKER
CKT	CIRCUIT
CO	CONDUIT ONLY
DEMO	DEMOLISH
DWG	DRAWING
E	EXISTING
EP	EXPLOSION PROOF
E.W.	EACH WAY
(F)	FUTURE
GFI	GROUND FAULT CIRCUIT INTERRUPTER
GND	GROUND
HP	HORSEPOWER
LP	LIGHTING PANEL
LTG	LIGHTING
MCC	MOTOR CONTROL CENTER
MH	MOUNTING HEIGHT, MANHOLE
MISC.	MISCELLANEOUS
NEC	NATIONAL ELECTRICAL CODE
NEMA	NATIONAL ELECTRICAL MANUFACTURERS ASSOC.
N	NEW
NIC	NOT IN CONTRACT
NL	NIGHT LIGHT
PB	PULL BOX
PH	PHOTOELECTRIC SWITCH
PP	POWER PANEL
O.C.	ON CENTER
RP	RECEPTACLE PANEL
TYP	TYPICAL
UG U	NDERGROUND
UON	UNLESS OTHERWISE NOTED
WP	WEATHER PROOF

WIRING

1-3"C, 3-4/0, #2G — QUANTITY OF RACEWAYS; NUMBER OF CONDUCTORS IN RACEWAY; GROUND CONDUCTOR; CONDUCTOR SIZE; CONDUIT SIZE

UNDERGROUND CABLE OR DUCT; TYPE, SIZE, CONDUCTORS, AND ARRANGEMENT BY NOTATION OR SCHEDULE.

WIRING RUN EXPOSED

CONDUIT CAPPED

PANELS AND MISC.

H20 RATED HANDHOLE

1 / E-1 — DETAIL NUMBER / DRAWING NUMBER

C3 — RELAY COIL

RELAY CONTACT

PHOTOCELL

POLE MOUNTED LED FIXTURE

CIRCUIT BREAKER (RATING AND POLES AS INDICATED)

UTILITY TRANSFORMER

CT

WM — UTILITY METER

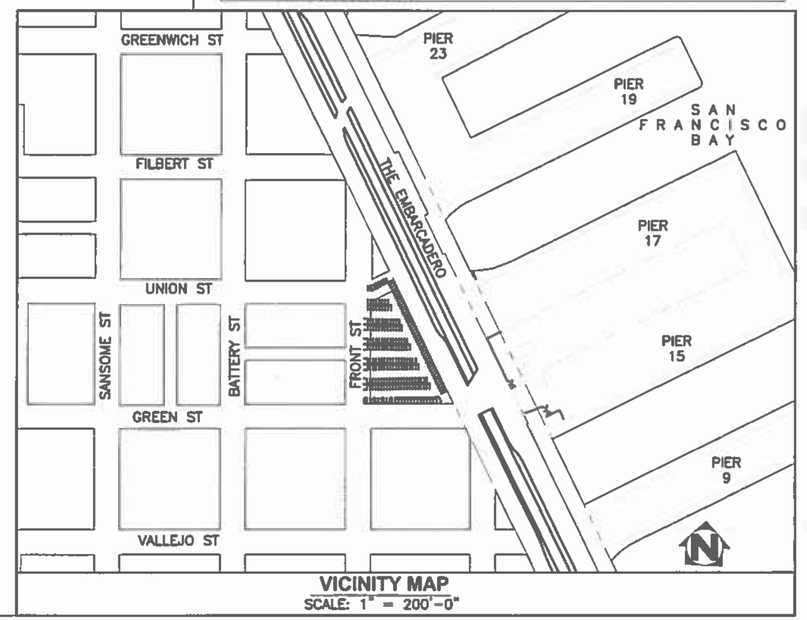
GENERAL ELECTRICAL NOTES

1. ALL WORK IS TO BE PERFORMED IN STRICT COMPLIANCE WITH THE 2013 CA ELECTRICAL CODE, 2013 PORT BUILDING CODE, AND THE NATIONAL ELECTRIC CODE, STATE LAWS, AND ALL OTHER REGULATIONS GOVERNING WORK OF THIS NATURE.
2. THE CONTRACTOR IS RESPONSIBLE FOR ALL WORK, MATERIAL, AND LABOR TO SATISFY A COMPLETE AND WORKING SYSTEM WHETHER SPECIFIED OR IMPLIED.
3. CONTRACTOR SHALL SECURE ALL CCSF/SFDPW PERMITS OR APPLICATIONS AND PAY ANY AND ALL FEES AS REQUIRED – PORT WILL OBTAIN PORT ENCROACHMENT PERMIT AND PROVIDE TO CONTRACTOR, WHO WILL ASSUME ROLE & RESPONSIBILITY OF APPLICANT.
4. CONTRACTOR TO CONFIRM EXACT LOCATION OF EXISTING AND NEW EQUIPMENT WITH OWNERS AGENTS.
5. CONDUIT RUNS ARE DIAGRAMMATICALLY SHOWN ON THE DRAWINGS. FINAL ROUTING OF THE CONDUITS SHALL BE DETERMINED BY THE ELECTRICAL CONTRACTOR.
6. THE TYPE OF CONDUIT SHALL BE AS FOLLOWS FOR ALL FEEDERS AND DISTRIBUTION CIRCUITS, UNLESS OTHERWISE SPECIFIED:

APPLICATION	TYPE OF CONDUIT
BURIED IN CONCRETE OR MASONRY, DIRECT BURIED OR OUTDOORS	PVC SHEDULE 40
STUB-UPS AND ELBOWS AT DISTRIBUTION EQUIPMENT AND MAIN HANDHOLES	GALV. RIGID STEEL WITH CORROSION PROTECTION WRAP WITH GROUNDING BUSHINGS
BRANCH CIRCUITS AT PULL BOXES OR LIGHT POLES	PVC SHEDULE 40 WITH BELL ENDS

7. THE CONTRACTOR SHALL FURNISH AND INSTALL ALL GROUNDING SYSTEMS (AS REQUIRED) IN ACCORDANCE WITH THE NATIONAL ELECTRIC CODE.
8. ALL ELECTRIC MATERIALS AND EQUIPMENT FOR THE PROJECT SHALL BE NEW AND U.L. OR EQUALLY APPROVED.
9. CONTRACTOR TO CONFIRM EXACT LOCATION OF METERS WITH ELECTRIC UTILITY.
10. ALL EQUIPMENT AND WIRING SHALL BE WEATHERPROOF.
11. CABLE TRENCH SHALL BE 24" DEEP FROM THE TOP OF THE CONDUIT MINIMUM WITH 4" SAND BEDDING AND 6" SAND COVER INSTALLED OVER CABLE BEFORE BACKFILLING. SEE DETAIL A/E-4.
12. CABLE RUNS SHALL BE MARKED WITH RED DETECTABLE MARKING TAPE INSTALLED IN THE TRENCH ONE FOOT BELOW SURFACE.
13. BACKFILL SHALL BE FREE OF ROCKS AND OTHER OBJECTS WHICH MIGHT DAMAGE THE CABLE.
14. SCHEDULING OF THE TRENCHING AND INSTALLATION OF CABLE SHALL BE COORDINATED WITH OTHER EXISTING UNDERGROUND UTILITIES AND APPROVED BY THE PORT.
15. CONTRACTOR TO COORDINATE ELECTRICAL SERVICE INSTALLATION & ACTIVATION WITH SFPUC & PG&E
    - SFPUC CONTACT & PHONE #: MR. BHASKER GOSWAMI @ (415) 554-3135
    - PG&E CONTACT & PHONE #: MR. SEAN SANDERS @ (415) 695-3597
16. THE CONTRACTOR SHALL NOTIFY UTILITY COMPANIES AT LEAST THREE (3) WORKING DAYS IN ADVANCE OF CONSTRUCTION TO FIELD LOCATE UTILITIES. CALL UNDERGROUND SERVICE ALERT (U.S.A.) AT (800) 227-2600. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO DETERMINE THE EXISTENCE AND LOCATION OF THOSE UTILITIES SHOWN ON THESE PLANS OR INDICATED IN THE FIELD BY LOCATING SERVICES. ADDITIONAL COST INCURRED AS A RESULT OF CONTRACTOR'S FAILURE TO VERIFY LOCATIONS OF EXISTING UTILITIES PRIOR TO BEGINNING OF CONSTRUCTION IN THEIR VICINITY SHALL BE BORNE BY THE CONTRACTOR AND INCLUDED AND MERGED IN THE CONTRACT UNIT PRICE.

DRAWING LIST



VICINITY MAP
SCALE: 1" = 200'-0"

NO.	DATE	DESCRIPTION	BY	APP

TABLE OF REVISIONS
CHECK WITH TRACING TO SEE IF YOU HAVE LATEST REVISION

REFERENCE INFORMATION & FILE NO. OF SURVEYS

SAN FRANCISCO PORT COMMISSION
PORT OF SAN FRANCISCO
DEPARTMENT OF ENGINEERING

REGISTERED PROFESSIONAL ENGINEER — BRANDON M YEE — No. — ELECTRICAL — STATE OF CALIFORNIA

DESIGNED:	DATE:	05/06/16
BY		
DRAWN:	DATE:	05/06/16
BY		
CHECKED:	DATE:	05/06/16
GC		

APPROVED BY SAN FRANCISCO PORT COMMISSION
DATE: 11/1/16
CHIEF HARBOR ENGINEER

SCALE: NONE
REV. NO. 01

SEAWALL 321
PARKING LOT ELECTRICAL SERVICE PROJECT

COVER SHEET
ELECTRICAL SYMBOLS,
GENERAL ELECTRICAL NOTES & DRAWING LIST

CONTRACT NO. 2773
DRAWING NO. 18270-321-E
E-0
1 OF 6

G:\01 PROJECTS\SEA WALL LOTS\SWL 321\SWL321 - Electrical Service Project\1 Design\1.1 Contract Documents\1.1.1 Drawings\SWL321 Dwgs\SWL321_ParkingLotElectSvcProject -07_18_2016.dwg

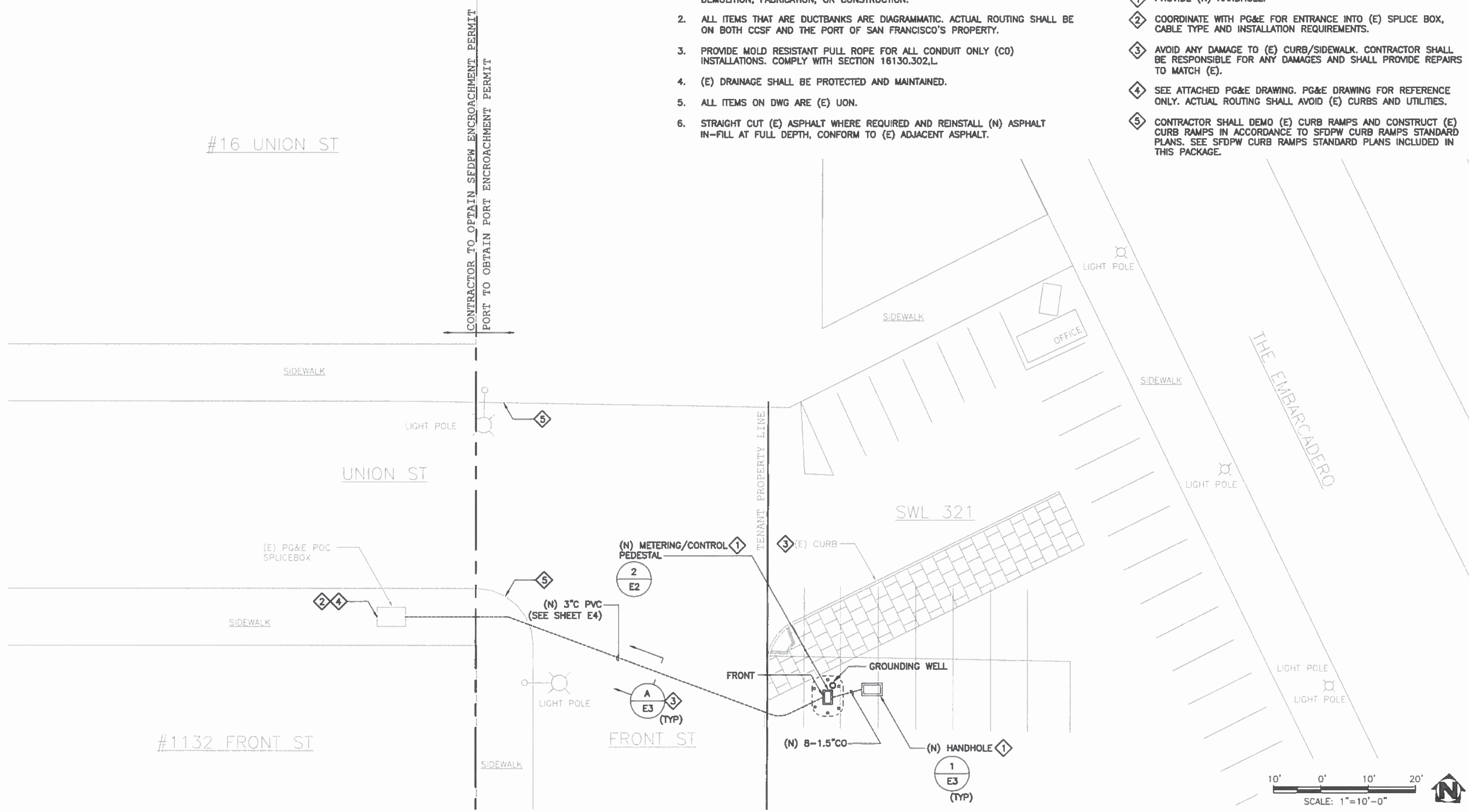
Drawing Path: C:\Users\Paul\appdata\local\temp\AcPublish_2120\SWL321_ParkingLotElectSvcProject -10_05_2016.dwg
Plot Time: Tue, 25 Oct 2016 - 10:03am
Measurement Units are English Units: Feet

GENERAL NOTES:

1. CONTRACTOR SHALL VERIFY ALL FIELD CONDITIONS BEFORE ANY MODIFICATIONS, DEMOLITION, FABRICATION, OR CONSTRUCTION.
2. ALL ITEMS THAT ARE DUCTBANKS ARE DIAGRAMMATIC. ACTUAL ROUTING SHALL BE ON BOTH CCSF AND THE PORT OF SAN FRANCISCO'S PROPERTY.
3. PROVIDE MOLD RESISTANT PULL ROPE FOR ALL CONDUIT ONLY (CO) INSTALLATIONS. COMPLY WITH SECTION 16130.302,L.
4. (E) DRAINAGE SHALL BE PROTECTED AND MAINTAINED.
5. ALL ITEMS ON DWG ARE (E) UON.
6. STRAIGHT CUT (E) ASPHALT WHERE REQUIRED AND REINSTALL (N) ASPHALT IN-FILL AT FULL DEPTH, CONFORM TO (E) ADJACENT ASPHALT.

SHEET NOTES:

1. PROVIDE (N) HANDHOLE.
2. COORDINATE WITH PG&E FOR ENTRANCE INTO (E) SPLICE BOX, CABLE TYPE AND INSTALLATION REQUIREMENTS.
3. AVOID ANY DAMAGE TO (E) CURB/SIDEWALK. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGES AND SHALL PROVIDE REPAIRS TO MATCH (E).
4. SEE ATTACHED PG&E DRAWING. PG&E DRAWING FOR REFERENCE ONLY. ACTUAL ROUTING SHALL AVOID (E) CURBS AND UTILITIES.
5. CONTRACTOR SHALL DEMO (E) CURB RAMPS AND CONSTRUCT (E) CURB RAMPS IN ACCORDANCE TO SFDPW CURB RAMPS STANDARD PLANS. SEE SFDPW CURB RAMPS STANDARD PLANS INCLUDED IN THIS PACKAGE.



NO.	DATE	DESCRIPTION	BY	APP.

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SAN FRANCISCO PORT COMMISSION
PORT OF SAN FRANCISCO
DEPARTMENT OF ENGINEERING

DESIGNED: BY	DATE: 05/06/16
DRAWN: BY	DATE: 05/06/16
CHECKED: GC	DATE: 05/06/16

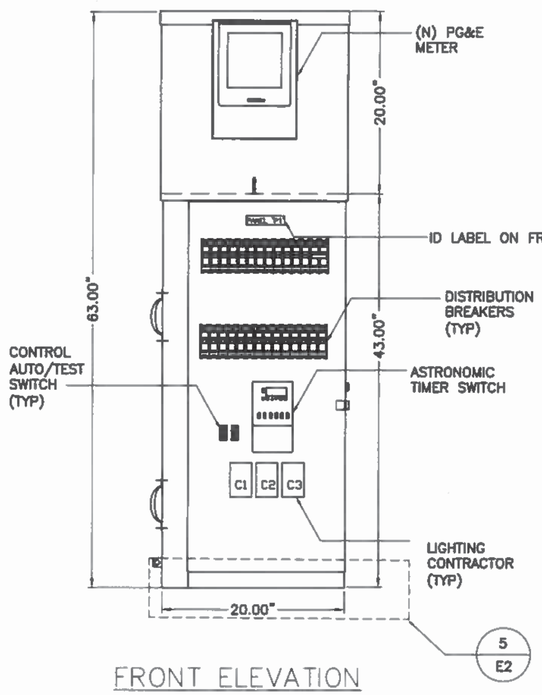
APPROVED BY SAN FRANCISCO PORT COMMISSION
DATE: 11/1/16
CHIEF HARBOR ENGINEER

SCALE: 1"=20'-0"
REV. NO. 01

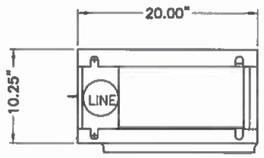
SEAWALL 321
PARKING LOT ELECTRICAL SERVICE PROJECT
POWER PLAN

CONTRACT NO. 2773
DRAWING NO. 18272-321-E
E-1
2 OF 6

G:\01 PROJECTS\SEA WALL LOTS\SWL 321\SWL321 - Electrical Service Project\1. Design\1.1 Contract Documents\1.1.1 Drawings\SWL321 Dwgs\SWL321_ParkingLotElectSvcProject -07_18_2016.dwg

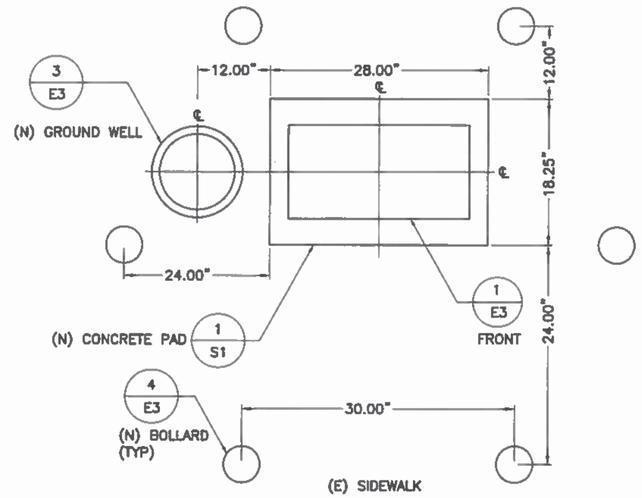


FRONT ELEVATION

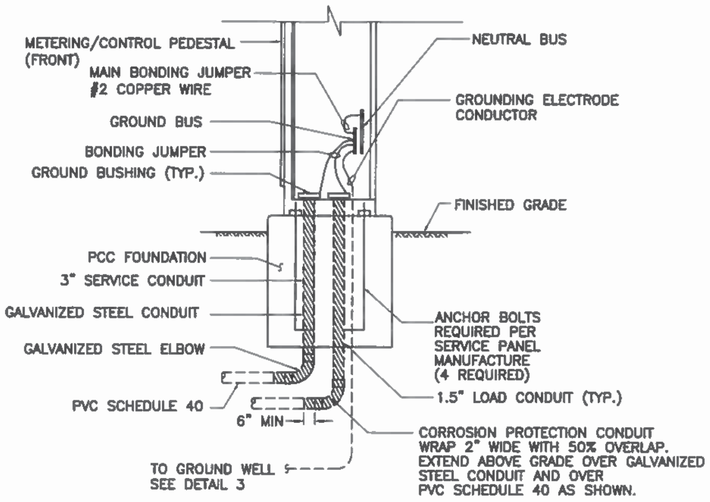


PLAN

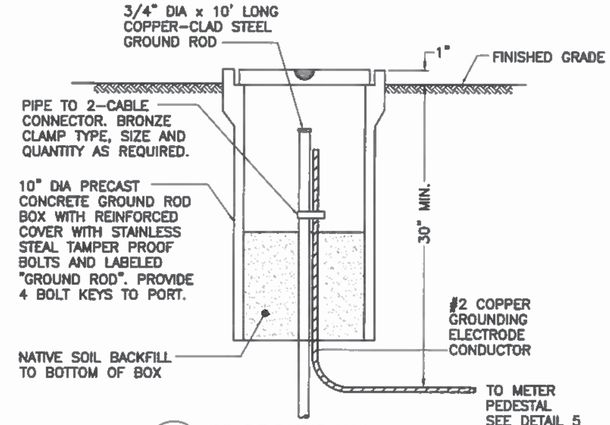
1 E2 **(N) METERING/CONTROL PEDESTAL DETAIL**
AS SHOWN



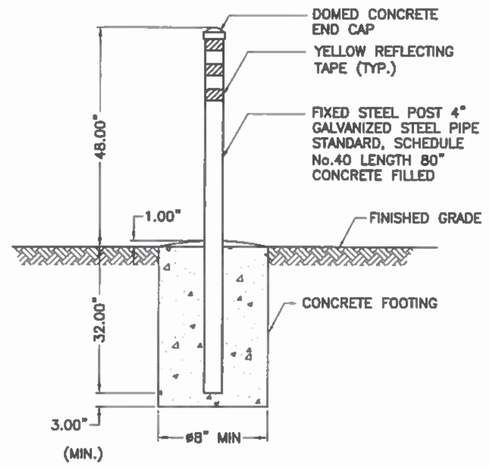
2 E2 **(N) METERING/CONTROL PEDESTAL LAYOUT**
AS SHOWN



5 E2 **(N) GROUNDING DETAIL**
AS SHOWN



3 E2 **(N) GROUND WELL DETAIL**
AS SHOWN



4 E2 **(N) BOLLARD DETAIL**
AS SHOWN

NO.	DATE	DESCRIPTION	BY	APP.

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PORT OF SAN FRANCISCO

SAN FRANCISCO PORT COMMISSION
PORT OF SAN FRANCISCO
DEPARTMENT OF ENGINEERING

REGISTERED PROFESSIONAL ENGINEER — BRANDON M. LEE — No. EE19341 — ELECTRICAL — STATE OF CALIFORNIA

DESIGNED:	DATE:
BY	05/06/16
DRAWN:	DATE:
BY	05/06/16
CHECKED:	DATE:
GC	05/06/16

APPROVED BY SAN FRANCISCO PORT COMMISSION
DATE: 11/1/16
CHIEF HARBOR ENGINEER

SCALE: NONE

REV. NO. 01

SEAWALL 321
PARKING LOT ELECTRICAL SERVICE PROJECT

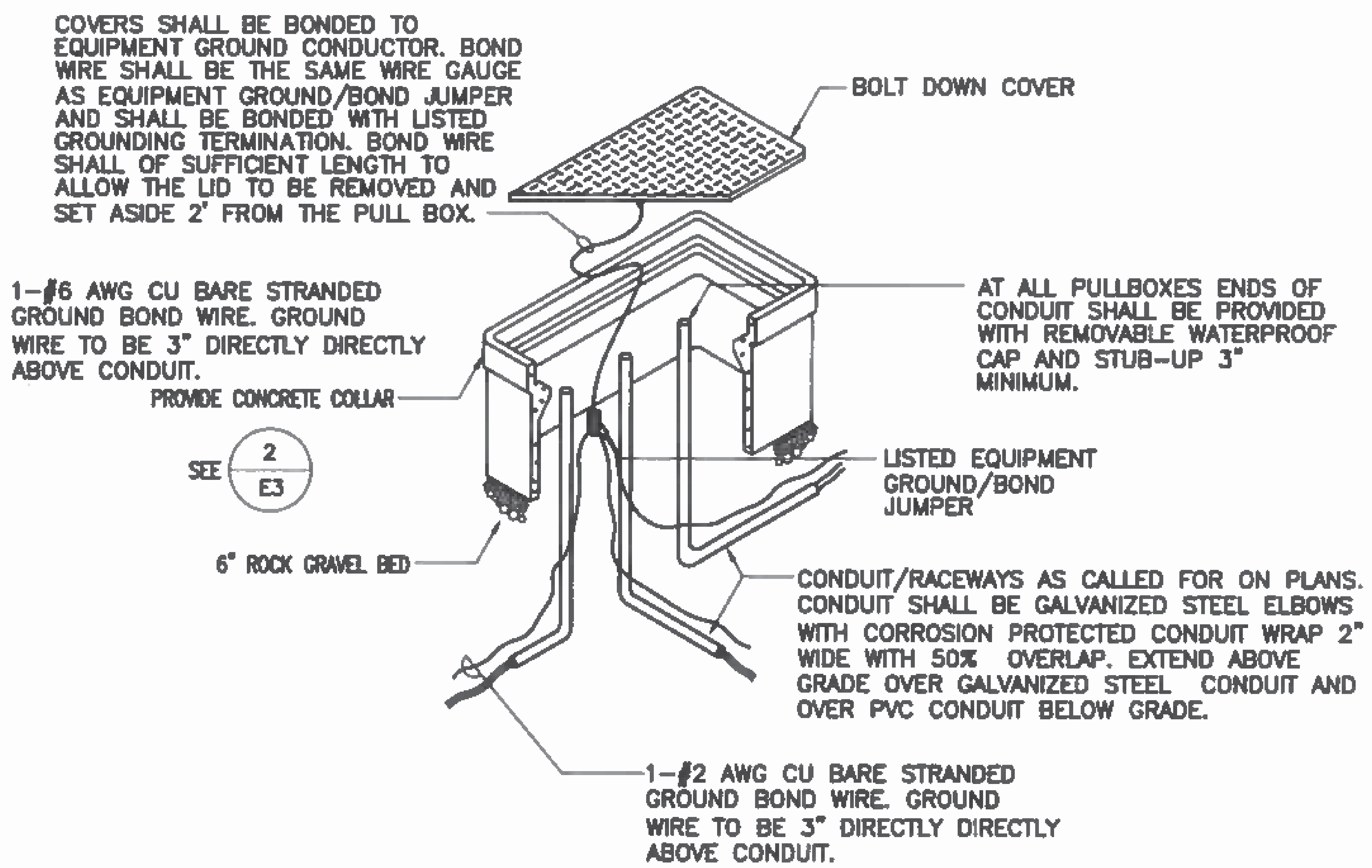
METERING/CONTROL PEDESTAL & MISC. DETAILS

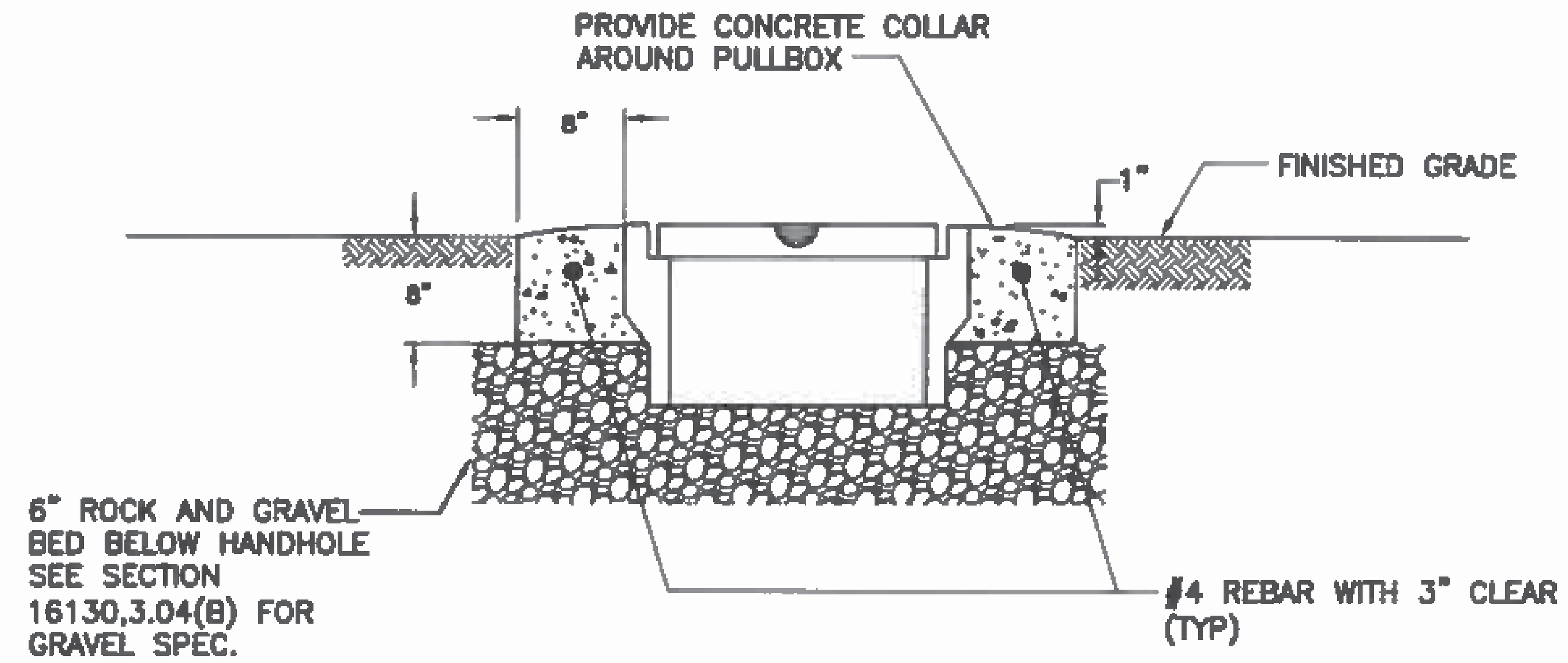
CONTRACT NO. 2773
DRAWING NO. 18274-321-E

E-2
3 OF 6

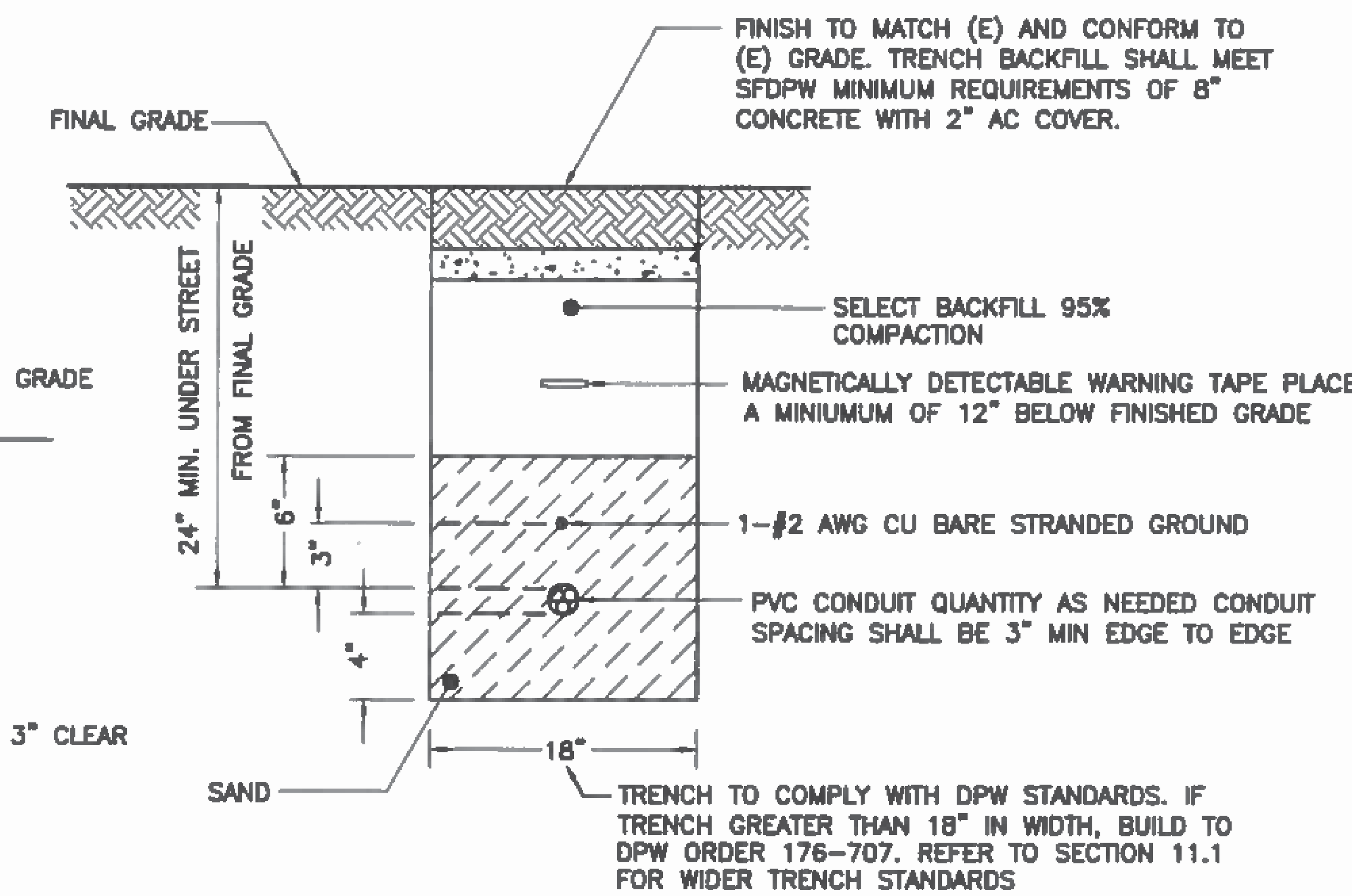
G:\01 PROJECTS\SEA WALL LOTS\SWL 321\SWL321 - Electrical Service Project\1. Design\1.1 Contract Documents\1.1.1 Drawings\SWL321 Dwgs\SWL321_ParkingLotElectSvcProject -07_18_2016.dwg

Drawing Path: C:\Users\Paul\appdata\local\temp\AcPublish_2120\SWL321_ParkingLotElectSvcProject -10_05_2016Dwg.dwg
Plot Time: Tue, 25 Oct 2016 - 10:03am
Measurement Units are Engineer Units: Feet





2 E3 **(N) ELECTRICAL HANDHOLE COLLAR**
AS SHOWN



A E3 **(N) TRENCH DETAIL**

NOTES:

1) INSIDE DIMENSIONS TO BE: 14" x 24" MIN UON
2) PROVIDE TRAFFIC RATED UTILITY BOXES.
3) PROVIDE EXTENSIONS AS REQUIRED.
4) PULLBOX TO BE PRECAST H-20 RATED.
5) COVER SHALL BE PROVIDED WITH STAINLESS STEEL VANDAL PROOF BOLTS WITH TWO SETS OF SPECIALTY KEYS. LOCATED BOLT KEYS IN METERING/CONTROL PEDESTAL.

1 E3 **(N) ELECTRICAL HANDHOLE DETAIL**
AS SHOWN

NO.	DATE	DESCRIPTION	BY	APP.

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PORT OF SAN FRANCISCO

SAN FRANCISCO PORT COMMISSION
PORT OF SAN FRANCISCO
DEPARTMENT OF ENGINEERING

REGISTERED PROFESSIONAL ENGINEER BRANDON M. YEE No. E18284 ELECTRICAL STATE OF CALIFORNIA

DESIGNED: BY 05/06/16
DRAWN: BY 05/06/16
CHECKED: GC 05/06/16

APPROVED BY SAN FRANCISCO PORT COMMISSION
DATE: 11/1/16
CHIEF HARBOR ENGINEER

SCALE: NONE
REV. NO. 01

SEAWALL 321
PARKING LOT ELECTRICAL SERVICE PROJECT

TRENCH DETAILS AND ELECTRICAL HANDHOLE DETAILS

CONTRACT NO. 2773
DRAWING NO. 18273-321-E
E-3
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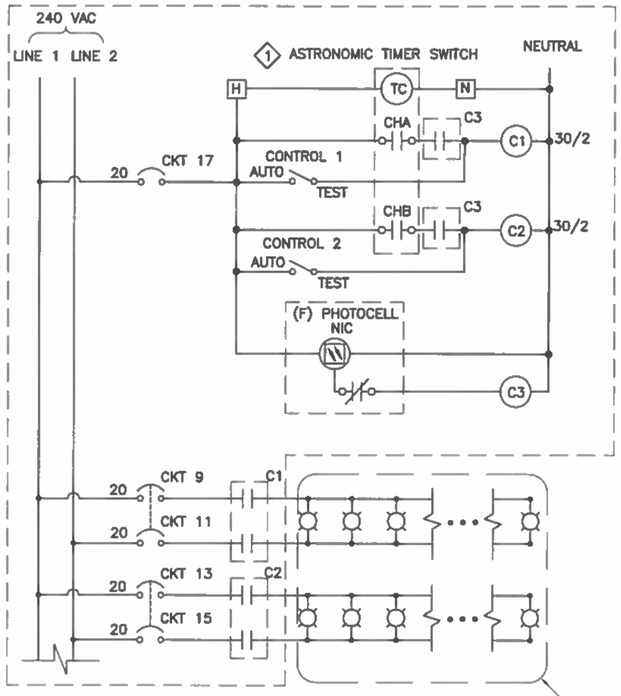
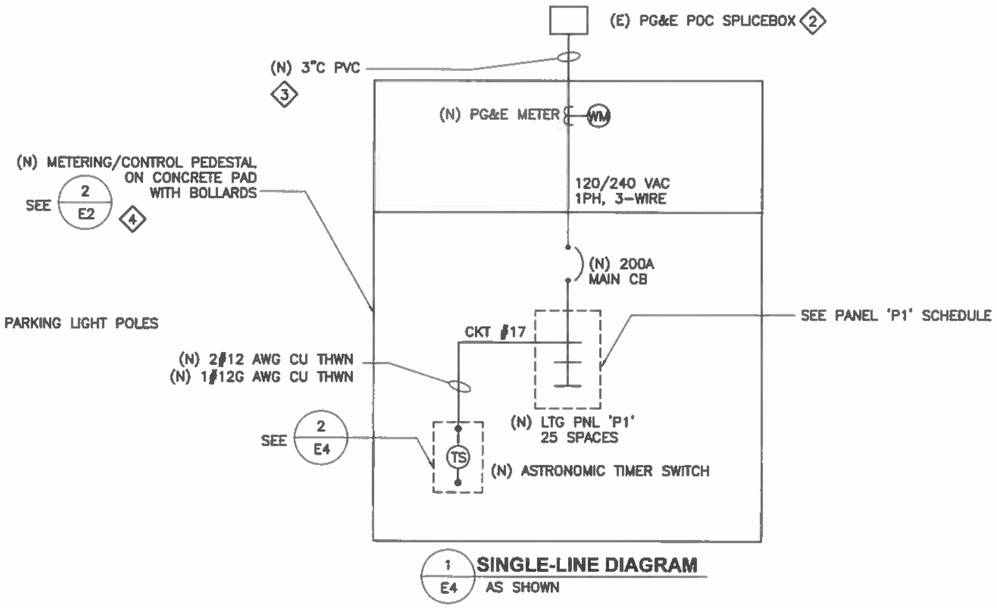


2 / E4 **ASTRONOMIC TIMER SWITCH WIRING DETAILS**
AS SHOWN

		PANEL:	PANEL 'P1'			VOLTAGE:		240/120 VAC		
		BUS:	200A			KAIC:		10		
		MAIN:	200A			LOCATION:		(N) METERING/CONTROL PEDESTAL		
		PHASE:	1PH, 3W			MOUNTING:		FLUSH		
		NEMA:	NEMA 3R			REMARKS:		INCORPORATED INTO METERING PEDESTAL		
PH A VA	PH B VA	DESCRIPTION	CB/ POLE	TYPE	CKT	TYPE	CB/ POLE	DESCRIPTION	PH A VA	PH B VA
3150		(F) TENANT BOOTH 1	20/1	V	01 02	C	40/2	(F) 32A CAR CHARGERS	3840	
	3150	(F) TENANT BOOTH 1	20/1	V	03 04	C		(DUAL PORT CHARGER)		3840
3150		(F) TENANT BOOTH 2	20/1	V	05 06	C	40/2	(F) 32A CAR CHARGERS	3840	
	3150	(F) TENANT BOOTH 2	20/1	V	07 08	C		(DUAL PORT CHARGER)		3840
260		(F) PARKING LIGHTS POLES	20/2	L	09 10	C	40/2	(F) 32A CAR CHARGERS	3840	
	260			L	11 12	C		(DUAL PORT CHARGER)		3840
260		(F) PARKING LIGHTS POLES	20/2	L	13 14	S	20/1	SPARE	1000	
	260			L	15 16	S	20/1	SPARE		1000
600		ASTRONOMIC TIMER SWITCH	20/1	V	17 18	S	20/1	SPARE	1000	
	1000	SPARE	20/1	S	19 20			SPACE		
		SPACE			21 22			SPACE		
		SPACE			23 24			SPACE		
		SPACE			25					

Type		Connected (VA)	Demand (VA)	Ph.	Load (VA)
C	CHARGERS	23,040	23,040	A	20,940
H	HVAC UNIT	–	–	B	20,340
M	MOTORS	–	–		
S	SPARE	4,000	4,000		
L	LIGHTING	1,040	1,300		
V	VARIOUS	13,200	9,900		
R	RECEPT.	–	–		
	TOTAL	41,280	38,240 = 159 Amps		

5 **(N) PANEL 'P1' SCHEDULE**



1 / E4 **SINGLE-LINE DIAGRAM**
AS SHOWN

SHEET NOTES:

1. CONTRACTOR SHALL TEST ASTRONOMIC TIMER CONTROLER AND RELAYS. PROVIDE TEMPORARY SWITCH TO POWER RELAY C3 COIL FOR TESTING. CONTRACTOR SHALL REPLACE ANY ITEMS THAT DO NOT FUNCTION AS DESIGNED.
2. COORDINATE WITH PG&E SERVICE PLANNING FOR NEW ELECTRICAL SERVICE.
3. COORDINATE WITH PG&E FOR CABLE, CABLE INSTALLATION AND CABLE TERMINATIONS.
4. PROVIDE (N) TESCO TYPE 27-100 (OR EQUAL), 120/240V, 1PH, 3-WIRE, 316 STAINLESS STEEL, METERING/CONTROL PEDESTAL WITH 200A PG&E APPROVED METERING SECTION, 25 CIRCUIT DISTRIBUTION SECTION, LIGHTING CONTRACTORS, TWO CHANNEL ASTRONOMIC TIMER SWITCH AND IN A OUTDOOR STAINLESS STEEL ENCLOSURE WITH VANDAL RESISTANT PAD LOCKABLE DOOR.
5. FUTURE LOADS SHOWN ARE FOR REFERENCE ONLY. PARKING OPERATOR SHALL APPLY LOADS TO CIRCUITS AS REQUIRED WITH (N) SCHEDULE.

NO.	DATE	DESCRIPTION	BY	APP.

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REFERENCE INFORMATION & FILE NO. OF SURVEYS

SAN FRANCISCO PORT COMMISSION
PORT OF SAN FRANCISCO
DEPARTMENT OF ENGINEERING

REGISTERED PROFESSIONAL ENGINEER BRANDON M. YEE No. E018356 ELECTRICAL STATE OF CALIFORNIA

DESIGNED:	DATE:
BY	05/06/16
DRAWN:	DATE:
BY	05/06/16
CHECKED:	DATE:
GC	05/06/16

APPROVED BY SAN FRANCISCO PORT COMMISSION
DATE: 11/1/16
CHIEF HARBOR ENGINEER

SCALE: NONE
REV. NO. 01

SEAWALL 321
PARKING LOT ELECTRICAL SERVICE PROJECT

SINGLE-LINE DIAGRAM,
TIMER SWITCH WIRING DETAIL &
PANEL'P1' SCHEDULE

CONTRACT NO. 2773
DRAWING NO. 18275-321-E
E-4
5 OF 6

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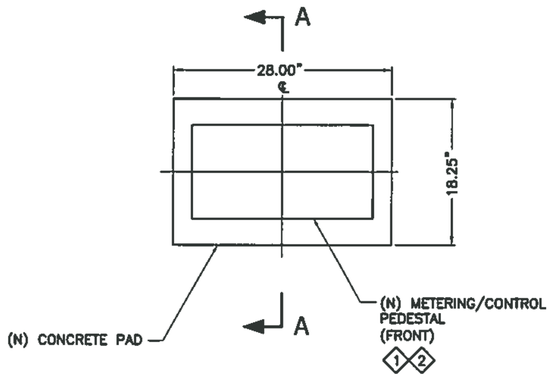

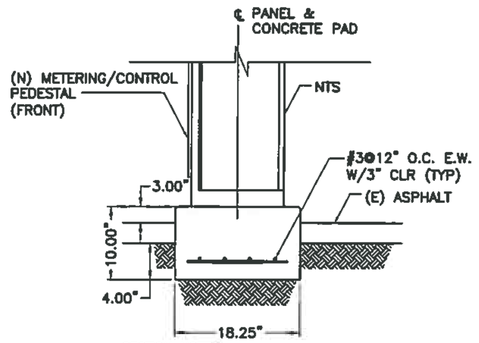

SECTION NOTES:

1. CUT AND RESTORE (E) ASPHALT AS REQUIRED TO INSTALL (N) PAD
2. REINFORCING STEEL ASTM A615, GR. 60.
3. CONCRETE MIX SHALL HAVE COMPRESSIVE STRENGTH OF 3 ksi, 3/4" MAX AGGREGATE, AND 4" MAX SLUMP

A-A

SHEET NOTES:

1. CONTRACTOR SHALL CONFIRM THAT SERVICE PEDESTAL IS CENTERED ON CONCRETE PAD WITH 4" CLEARANCE FROM EDGE OF PEDESTAL TO EDGE OF PAD ON ALL SIDES.
2. CONTRACTOR SHALL PROVIDE ANCHORAGE FOR SERVICE PEDESTAL PER MANUFACTURER'S RECOMMENDATIONS.

1/S1 (N) METERING/CONTROL PEDESTAL CONCRETE PAD

AS SHOWN

REGISTERED PROFESSIONAL ENGINEER
WINNIE LO LEE
No. C-66751
Exp. 9-30-18
CIVIL
STATE OF CALIFORNIA

NO.	DATE	DESCRIPTION	BY	APP.

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SAN FRANCISCO PORT COMMISSION
PORT OF SAN FRANCISCO
DEPARTMENT OF ENGINEERING

DESIGNED: WL	DATE: 11/19/15	
DRAWN: BY	DATE: 11/19/15	
CHECKED: GC	DATE: 11/--/15	

APPROVED BY SAN FRANCISCO PORT COMMISSION
DATE: 11/16/16
CHIEF HARBOR ENGINEER

SCALE: NONE
REV. NO. 01

SEAWALL 321
PARKING LOT ELECTRICAL SERVICE PROJECT

CONCRETE PAD

CONTRACT NO. 2773
DRAWING NO. 18276-321-E
S-1
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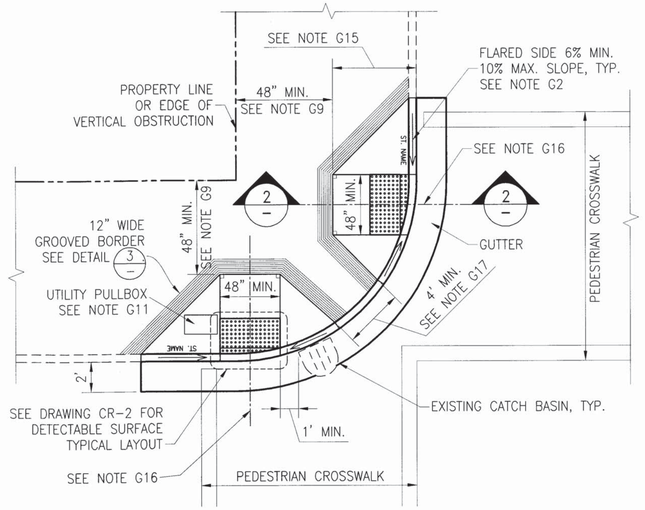
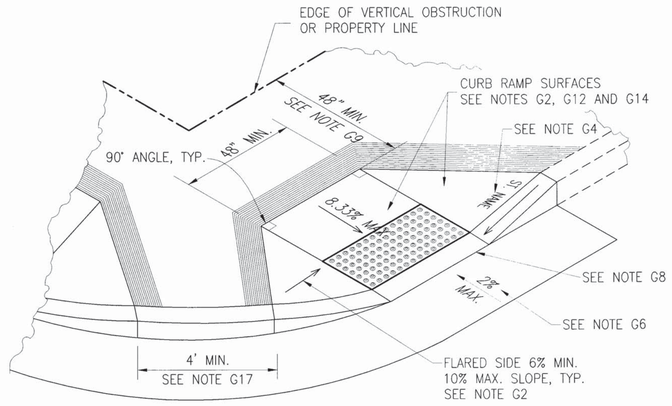
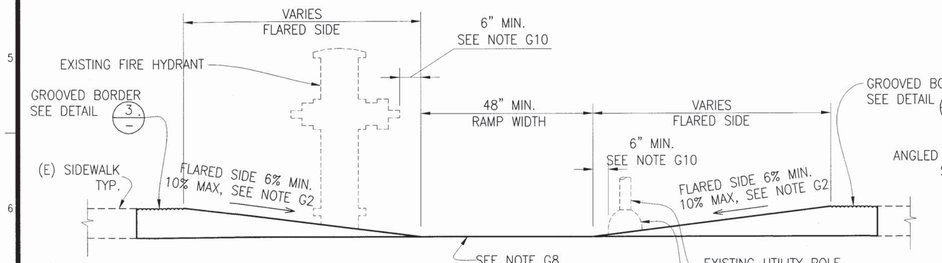


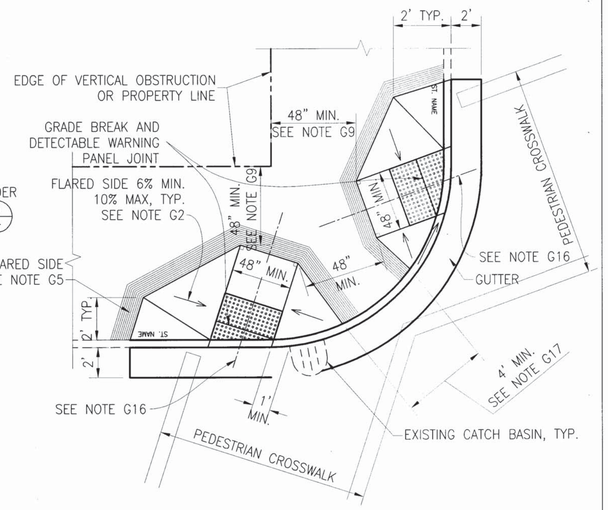
STANDARD CURB RAMP PLAN A
TYPICAL NORMAL LAYOUT



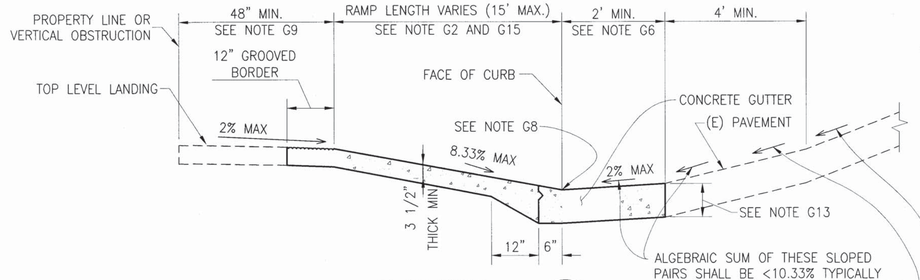
PARTIAL ISOMETRIC B
TYPICAL NORMAL LAYOUT



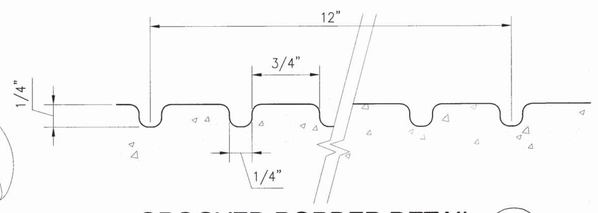
FRONT ELEVATION 1



STANDARD CURB RAMP PLAN C
TYPICAL DIAGONAL LAYOUT



SECTION 2



GROOVED BORDER DETAIL 3

APPROVED: Kevin W. Jensen 6/18/2013
DPW DISABILITY ACCESS COORDINATOR DATE:
EFFECTIVE DATE: 6/24/13

GENERAL NOTES

G1. THE STANDARD CURB RAMP DRAWINGS FILE NO. 55,017 REV.4 AND 55,018 REV.4 SUPERSEDE ALL PREVIOUS DRAWINGS. DRAWING FILE NO. 55,017.1 SHALL BE PART OF THE NEW CURB RAMP STANDARD DRAWINGS. ALL WORK SHALL CONFORM TO SFDPW STANDARD PLANS AND SPECIFICATIONS, LATEST VERSIONS.

G2. A "CURB RAMP" IS DEFINED AS THE ENTIRE CONCRETE SURFACE AREA WHICH INCLUDES THE RAMP AND THE FLARED SIDES. THE "RAMP" IS DEFINED AS THE 4-FOOT WIDE CENTER PORTION INCLUDING THE DETECTABLE SURFACE, AND SHALL LIE IN A SLOPED PLANE OF 8.33% (1:12) MAXIMUM AND CROSS SLOPE NOT TO EXCEED 2%. THE "FLARED SIDE" IS DEFINED AS THE AREA ON EITHER SIDE OF THE RAMP AND SHALL LIE ON A SLOPED PLANE OF 6% MINIMUM AND 10% (1:10) MAXIMUM MEASURED PERPENDICULAR TO THE RAMP. THE CURB RAMP SURFACES SHALL HAVE A SURFACE FLATNESS TOLERANCE OF 1/4 INCH PER 10-FOOT STRAIGHT EDGE MAXIMUM. ALL SURFACES SHALL BE GENERALLY PLANAR WITH A MINIMUM DEGREE OF WARPING.

G3. THE STANDARD CURB RAMP LAYOUT SHALL BE USED WHENEVER POSSIBLE. ANY DEVIATION FROM THE STANDARD CURB RAMP PLANS SHALL BE APPROVED BY THE CITY ENGINEER, DPW DISABILITY ACCESS COORDINATOR, OR THEIR DESIGNEE ON A CASE BY CASE BASIS AND WHEN ADEQUATE DOCUMENTATION FOR EVIDENCE OF HARDSHIP IS PROVIDED.

G4. THE STREET NAME SHALL BE STAMPED IN BOLD UPPERCASE LETTERS 4-INCH HIGH AND 1/2-INCH DEEP ON THE FLARED SIDE PORTION OF THE CURB RAMP FARTHEST FROM ANGULAR CORNER OR ON AN ADJACENT SIDEWALK FLAG AS DIRECTED BY THE ENGINEER.

G5. WHEN VERTICAL OBSTRUCTIONS ARE PRESENT NEAR THE CURB AT THE END OF THE FLARED SIDE, OR WHEN THE CURB RAMP IS DIAGONAL TO THE CURB THAT WILL RESULT IN AN EXTREMELY LONG FLARED SIDE SURFACE, THEN THE AFFECTED FLARED SIDE MAY BE TRUNCATED, PROVIDED THAT THE REQUIRED SLOPE IS ACHIEVED ON EACH OF THE RESULTING PLANES.

G6. A LEVEL LANDING CONCRETE GUTTER OF 2 FEET MINIMUM DEPTH, 2% MAXIMUM CROSS SLOPE, SHALL BE PROVIDED AT THE LOWER END OF THE RAMP AND OVER THE FULL WIDTH OF THE RAMP TO ALLOW SAFE EGRESS. THE ALGEBRAIC SUM OF THE OPPOSING SLOPES BETWEEN TWO ADJACENT SURFACES SHALL NOT EXCEED 10.33%.

G7. THE CURB RAMP SHALL BE BOUNDED BY A 12-INCH WIDE GROOVED BORDER SEE DRAWING CR-1, DETAIL 3.

G8. THE BOTTOM OF THE RAMP SHALL BE FLUSH WITH THE LOWER LANDING (NO LIP).

G9. A LEVEL LANDING 4 FEET DEEP MINIMUM, 2% MAXIMUM SLOPE EACH DIRECTION, SHALL BE PROVIDED AT THE UPPER END OF EACH CURB RAMP TO ALLOW SAFE EGRESS FROM THE RAMP SURFACE. THE WIDTH OF THE LEVEL LANDING SHALL BE AT LEAST AS WIDE AS THE WIDTH OF THE RAMP.

G10. EXISTING VERTICAL OBSTRUCTIONS, UTILITY POLES OR STREET FURNITURE MAY BE INCORPORATED INTO THE FLARED SIDES IF NECESSARY. THE VERTICAL OBSTRUCTION SHALL BE A MINIMUM OF 6 INCHES AWAY FROM THE EDGE OF THE RAMP. FOR FIRE HYDRANTS, THE 6-INCH CLEARANCE SHALL BE REFERENCED FROM THE NEAREST PROTRUDING PARTS OF THE HYDRANT. PEDESTRIAN CROSSWALK PUSH BUTTON POLES, FIRE AND POLICE DEPARTMENT CALL BOX POLES, AND OTHER POLES WITH PEDESTRIAN ACTIVATED DEVICES MAY NOT BE PLACED IN THE CURB RAMP AT ANY TIME. NO NEW VERTICAL OBSTRUCTIONS MAY BE LOCATED IN THE CURB RAMP OR GROOVED BORDER. SEE DRAWING CR- .

G11. EXISTING UTILITY BOXES AND COVERS SHALL BE ADJUSTED TO CONFORM FLUSH WITH THE CURB RAMP SURFACE AND SHALL NOT STRADDLE ANY CHANGE IN PLANE OR MATERIAL. SUBJECT TO THE APPROVAL OF THE UTILITY BOX OWNER, EXISTING UTILITY BOX FRAMES AND COVERS WITHIN THE DETECTABLE SURFACE AREA SHALL BE RELOCATED OUTSIDE THE DETECTABLE SURFACE AREA. NEW UTILITY BOXES SHALL NOT BE PLACED WITHIN THE GROOVED BORDER OR THE RAMP. SEE DPW ORDER 175,387.

G12. THE SURFACE OF THE CURB RAMP AND DETECTABLE SURFACE MATERIAL SHALL BE STABLE, FIRM AND SLIP RESISTANT. THE CONCRETE CURB RAMP SURFACE SHALL BE BROOM FINISHED TRANSVERSE TO THE AXIS OF THE RAMP AND SHALL BE SLIGHTLY ROUGHER THAN THE FINISH ON THE ADJACENT SIDEWALK SURFACE. ALL CURB RAMP SURFACES SHALL BE SLIP RESISTANT, INCLUDING CONCRETE OR OTHER APPROVED SURFACE MATERIALS, AND THE DETECTABLE WARNING MATERIAL MEASURED AT THE TOP OF DOMES SURFACES AND THE SURFACE BETWEEN DOMES. SLIP RESISTANCE SHALL BE MEASURED IN ACCORDANCE WITH DPW ORDER 176,112 AND ASTM 8303.

G13. THE DEPTH OF THE COMBINED CONCRETE CURB AND GUTTER SHALL BE EQUAL TO THE DEPTH OF THE EXISTING PAVEMENT STRUCTURAL SECTION OR 8 INCHES, WHICHEVER IS GREATER.

G14. ALL CURB RAMPS SHALL BE POURED SEPARATELY FROM, AND SHALL CONTRAST VISUALLY WITH ADJACENT SIDEWALK SURFACES, INCORPORATING A MINIMUM 70% COLOR CONTRAST OF EITHER DARK ON LIGHT OR LIGHT ON DARK. FOR CITY STANDARD SIDEWALKS AS DEFINED IN SECTION 204 OF DPW STANDARD SPECIFICATIONS, THE CURB RAMPS SHALL BE POURED USING A DARK CONCRETE COLOR; FOR SIDEWALKS WITHIN THE DOWNTOWN STREETSCAPE PLAN (C-3 DISTRICTS), AS DEFINED IN DPW ORDER NO. 172,596, THE CURB RAMPS SHALL BE POURED USING THE AFOREMENTIONED CITY STANDARD SIDEWALK SPECIFICATION AND COLOR. TO OBTAIN THE APPROVED DARK COLOR, THE FOLLOWING, OR APPROVED EQUAL, MANUFACTURERS AND COLOR TYPES SHALL BE USED: (1) L.M. SCOFIELD "C-24 CHARCOAL GRAY"; (2) QC INTEGRAL COLORS "IC-3 ASH GRAY"; (3) SOLOMON COLORS "CHARCOAL 920".

G15. THE DEPTH OF THE CURB RAMP SHALL BE CONSTRUCTED UP TO 15 FEET LONG TO ACHIEVE THE SLOPE REQUIREMENTS. IF THE MAX. SLOPE OF 8.33% CANNOT BE ACHIEVED DUE TO THE SLOPE OF THE EXISTING SIDEWALK OR ROADWAY, THE LENGTH OF OF THE CURB RAMP SHALL NOT BE REQUIRED TO BE LONGER THAN 15 FEET REGARDLESS OF THE RESULTING RAMP SLOPE.

G16. THE RAMP CENTER LINE AND PATH OF TRAVEL MUST BE PARALLEL TO THE CROSSWALK. THE FULL WIDTH OF THE RAMP SHALL LIE WITHIN THE CROSSWALK AREA AND ENTIRELY WITHIN THE CROSSWALK MARKINGS. IT IS DESIRABLE THAT THE LOCATION OF THE RAMP BE AS CLOSE AS POSSIBLE TO THE CENTER OF THE CROSSWALK.

G17. THE 4-FOOT MINIMUM DISTANCE BETWEEN FLARED SIDES OF TWO ADJACENT CURB RAMPS MAY BE REDUCED WITH DOCUMENTATION OF HARDSHIP INDICATING LEGAL AND OR PHYSICAL CONSTRAINTS PROVIDED TO THE CITY ENGINEER, DPW DISABILITY ACCESS COORDINATOR, OR THEIR DESIGNEE. SEE SHEET CR-4, NOTE 4.

G18. THE CONTRACTOR SHALL REFERENCE AND PRESERVE ANY EXISTING MONUMENTS WITHIN THE LIMITS OF WORK. A CORNER RECORD OR RECORD OF SURVEY SHALL BE FILED WITH THE COUNTY SURVEYOR PURSUANT TO THE CALIFORNIA BUSINESS AND PROFESSIONS CODE, SECTION 8771, PRIOR TO ANY WORK COMMENCING. IF ANY MONUMENT IS DESTROYED, DAMAGED, COVERED, OR OTHERWISE OBLITERATED, THE CONTRACTOR SHALL RESET SAID MONUMENT AS REQUIRED AND MANDATED IN DPW DOCUMENT "MONUMENT PRESERVATION." A COPY OF THIS DOCUMENT MAY BE OBTAINED FROM THE OFFICE OF THE COUNTY SURVEYOR, 1155 MARKET STREET, 3RD FLOOR, SAN FRANCISCO, CA 94103, TELEPHONE: 415-554-5810.

G19. CURB HEIGHT WITHIN CROSSWALK AREA SHOULD BE IN ACCORDANCE WITH DPW STANDARD PLANS (6-INCH HIGH TYPICAL). WHERE NECESSARY, TO PROVIDE CURB RAMPS., CURB HEIGHT MAY BE 4 TO 7-INCHES WITHIN CROSSWALK AREA.

NO.	DATE	DESCRIPTION	BY	APP.
4	06/13	SUPERCEDES PLAN # 55,017 REV. # 3	EK	
3	12/02	SUPERCEDES PLAN # 55,017 REV. # 2	PR	
2	12/94	SUPERCEDES PLAN # 55,017 CH. 1	RJF	
1	06/91	SUPERCEDES PLAN # LL48,809	RJF	

TABLE OF REVISIONS

REFERENCE INFORMATION & FILE NO. OF SURVEYS

INFRASTRUCTURE DIVISION
DEPARTMENT OF PUBLIC WORKS
CITY AND COUNTY OF SAN FRANCISCO

REGISTERED PROFESSIONAL ENGINEER — FERNANDO L. CISNEROS — No. C054900 — EXP. 6/30/14 — CIVIL — STATE OF CALIFORNIA — 6/24/13

DESIGNED: DPW	DATE: 06/13
DRAWN: DPW	DATE: 06/13
CHECKED: DPW	DATE: 06/13

APPROVED
SECTION MANAGER DATE: 6/18/13
DEPUTY DIVISION MANAGER DATE: 6/18/13
DIVISION MANAGER DATE: 6/24/13

SCALE: NOT TO SCALE
SHEET OF SHEETS: 1 OF

STANDARD CURB RAMPS
STANDARD CURB RAMP PLANS AND GENERAL NOTES

CONTRACT NO. NONE
DRAWING NO. CR-1
FILE NO. 55,017
REV. NO. 4

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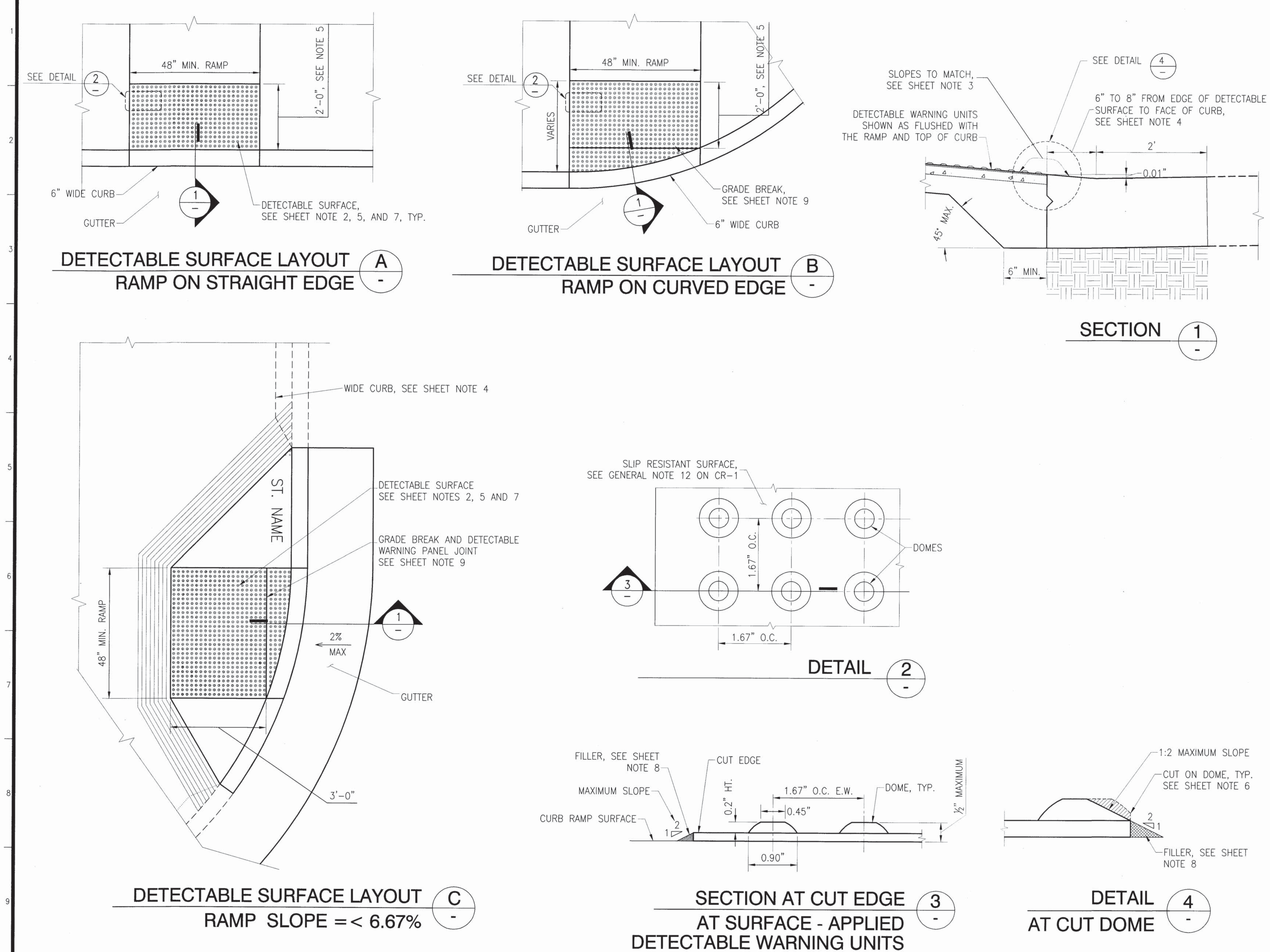


SHEET NOTES

1. SEE DRAWING FILE NO. 55,017, STANDARD CURB RAMPS, REV. 4, FOR ALL GENERAL NOTES AND DETAILS THAT APPLY TO THIS DRAWING.

2. THE DETECTABLE SURFACE DOMES SHALL BE ORIENTED SUCH THAT THE ROWS ARE PARALLEL WITH THE DIRECTION OF THE RAMP. WHEN MULTIPLE TILES REGARDLESS OF SIZE ARE USED, THEN THE DETECTABLE SURFACE DOMES SHALL BE ALIGNED BETWEEN THE TILES AND THROUGHOUT THE ENTIRE DETECTABLE SURFACE INSTALLATION.

3. THE SLOPE OF THE CURB PORTION OF THE RAMP SHALL MATCH THE SLOPE OF THE ADJACENT RAMP SURFACE.

4. WHEN THE CURB IS WIDER THAN 8 INCHES, THE CURB WITHIN THE CURB RAMP SHALL BE 6" MINIMUM, 8 INCHES MAXIMUM. THE WIDE CURB OUTSIDE SHALL TRANSITION THROUGH THE GROOVED BORDER AS SHOWN ON THE DRAWING.

5. WHEN THE MAXIMUM SLOPE OF THE RAMP IS LESS THAN OR EQUAL TO 6.67% (1:15), A DETECTABLE SURFACE THAT IS THREE FEET DEEP SHALL BE INSTALLED THAT IS 3'-0" LONG, MEASURED ON THE SHORTEST SIDE.

6. WHEN A DETECTABLE SURFACE DOME IS CUT, THE REMAINING DOME SHALL BE BEVELED TO A MAXIMUM SLOPE OF 1:2. COLOR MATCH CUT OR GROUND SURFACES WITH COATING IN ACCORDANCE WITH DETECTABLE WARNING MANUFACTURER.

7. DETECTABLE SURFACE SHALL BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS ON NEW AND RETROFITTED CURB RAMPS. THE COLOR OF THE DETECTABLE SURFACE SHALL CONFORM TO FEDERAL STANDARD 595B TABLE IV, COLOR#33538. CURB RAMP CONSTRUCTION SHALL BE PROVIDED WITH DPW APPROVED UNITS THAT ARE CAST-IN-PLACE PER MANUFACTURER'S INSTRUCTIONS.

8. THE EDGE OF THE DETECTABLE SURFACE SHALL HAVE A BEVELED EDGE SLOPED AT 1:2 MAXIMUM. WHEN THE DETECTABLE SURFACE EDGE IS CUT AND THE RESULTING EDGE IS NOT FLUSH WITH THE SURFACE OF THE CURB RAMP, THE EDGE SHALL BE BEVELED OR CONFORMED WITH AN APPROVED FILLER AT 1:2 MAXIMUM SLOPE, IN ACCORDANCE WITH THE APPROVED DETECTABLE SURFACE MANUFACTURER'S REQUIREMENTS.

9. GRADE BREAK ACROSS THE DETECTABLE SURFACE SHALL BE PROVIDED WHEN NECESSARY TO MEET GUTTER ELEVATIONS AND TO LIMIT CROSS-SLOPE ON THE RAMP TO ≤2%.

10. REFERENCE DPW STANDARD SPECIFICATIONS FOR THE INSTALLATION OF CONCRETE OR PLASTIC DETECTABLE SURFACE TILES AND FOR THE CONSTRUCTION OF CONCRETE SIDEWALK, CURB, AND GUTTER.

APPROVED: [signature] 6/18/2013
DPW DISABILITY ACCESS COORDINATOR DATE:
EFFECTIVE DATE: 6/24/13

Xrefs: S:\SH\Curb_Ramp_Group\CR presentation\TBD.dwg

Drawing Path: S:\SH\Curb_Ramp_Group\CR presentation\Rev Standard Plans\city-std2 -061713.dwg, Login: pcaylao Dimension Scale: 10 Model Units: Feet Measurement Units are English

NO.	DATE	DESCRIPTION	BY	APP.
1	06/13	SUPERCEDES PLAN # 83,237	EK	

TABLE OF REVISIONS

REFERENCE INFORMATION & FILE NO. OF SURVEYS

INFRASTRUCTURE DIVISION
DEPARTMENT OF PUBLIC WORKS
CITY AND COUNTY OF SAN FRANCISCO

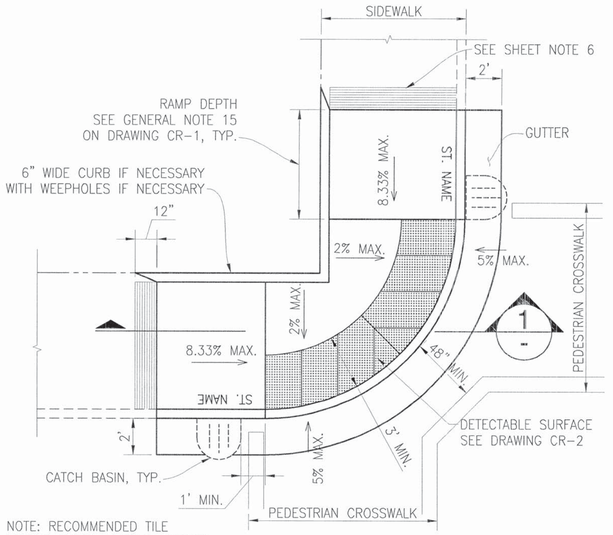
DESIGNED: DPW	DATE: 06/13	APPROVED [signature] 6/18/13 SECTION MANAGER DATE:
DRAWN: DPW	DATE: 06/13	[signature] 6/18/13 DEPUTY DIVISION MANAGER DATE:
CHECKED: DPW	DATE: 06/13	[signature] 6/24/13 DIVISION MANAGER DATE:

SCALE: NOT TO SCALE
SHEET OF SHEETS: 2 OF

STANDARD CURB RAMPS

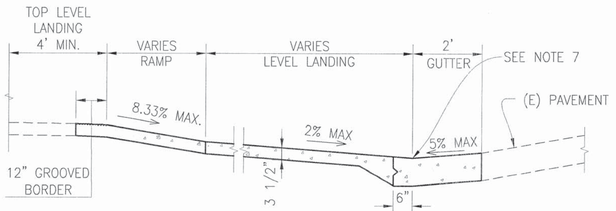
DETECTABLE SURFACE LAYOUT DETAILS AND NOTES

CONTRACT NO. NONE
DRAWING NO. CR-2
FILE NO. 55,017.1
REV. NO. 1



NOTE: RECOMMENDED TILE LAYOUT SHOWN. ACTUAL LAYOUT MAY VARY DUE TO CURB RETURN ANGLE AND RADIUS.

ALTERNATE CURB RAMP A -
BLENDED TRANSITION
CATCH BASIN OUTSIDE OF CURB RETURN



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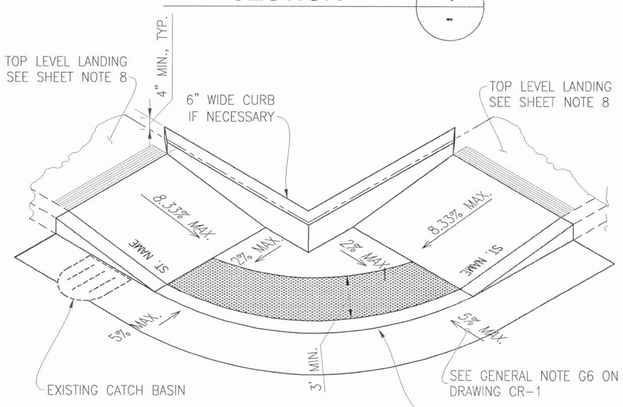
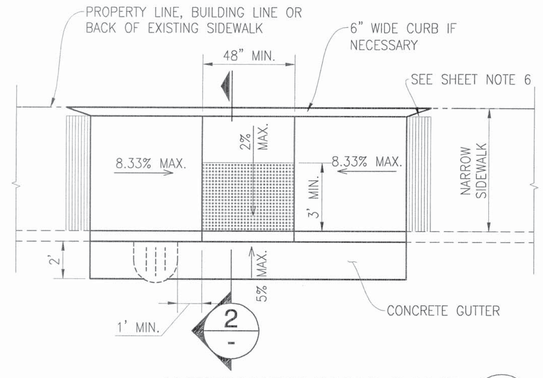
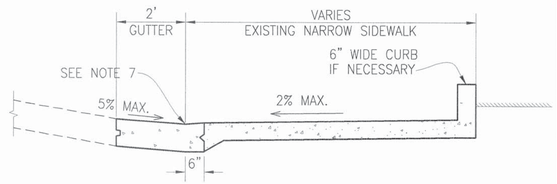


NOTE: TILE LAYOUT NOT SHOWN.

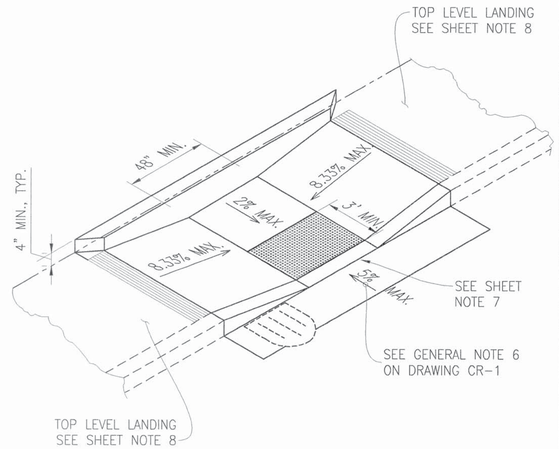
ISOMETRIC



ALTERNATE CURB RAMP B -
PARALLEL RAMP



SECTION 2 -



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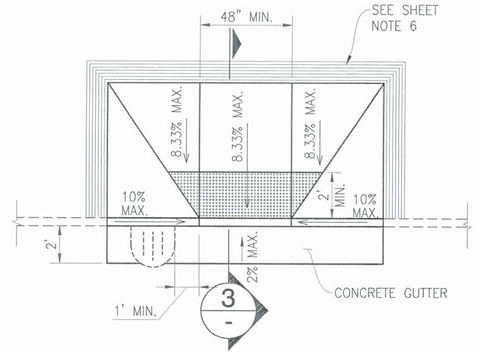
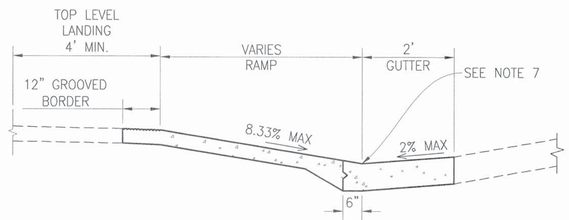
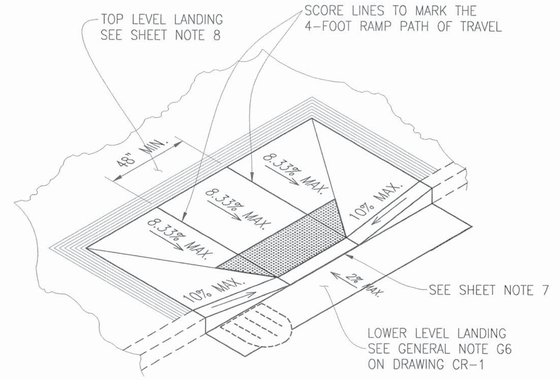


ALTERNATE CURB RAMP C -
RECTANGULAR RAMP



SECTION 3 -



ISOMETRIC

APPROVED: _____ 1/12/04
DPW DISABILITY ACCESS COORDINATOR DATE:

EFFECTIVE DATE: _____

SHEET NOTES

1. THE ALTERNATE CURB RAMPS SHOWN ON THIS DRAWING SHALL BE USED ONLY WITH PRIOR APPROVAL FROM THE CITY ENGINEER, DPW DISABILITY ACCESS COORDINATOR, OR THEIR DESIGNEE AND UPON PROPER DOCUMENTATION OF HARDSHIP INDICATING LEGAL AND OR PHYSICAL CONSTRAINTS.

2. ALL GENERAL NOTES ON DRAWING CR-1, FILE NUMBER 55,017, STANDARD CURB RAMPS, REV. 3, SHALL APPLY TO THIS SHEET. FOR DETECTABLE SURFACE DETAILS AND NOTES, SEE DRAWING CR-2, FILE NUMBER 55,017.1.

3. ALTERNATE "A" CURB RAMP SHALL BE USED WHEN THE SIDEWALK IS NOT WIDE ENOUGH AND THE STANDARD CURB RAMP LAYOUT AND EXCEPTIONS ARE NOT TECHNICALLY FEASIBLE.

4. ALTERNATE "B" CURB RAMP SHALL BE USED ON SIDEWALKS AT MID-BLOCK LOCATIONS WHERE THE STANDARD CURB RAMP LAYOUT IS NOT FEASIBLE. A 6-INCH CURB SHALL BE INSTALLED ALONG THE EDGE OF THE BACK OF SIDEWALK, ONLY WHEN NECESSARY.

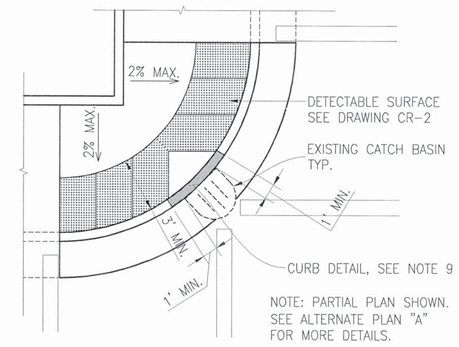
5. ALTERNATE "C" CURB RAMP SHALL BE USED AS A VARIATION OF A STANDARD CURB RAMP FOR MID-BLOCK LOCATIONS WHERE THERE IS ENOUGH ROOM FOR TOP LEVEL LANDING. SCORE LINES ORIENTED PARALLEL TO THE PATH OF TRAVEL SHALL BE USED TO MARK THE 4-FOOT WIDE RAMP.

6. GROOVED BORDERS SHALL BE INSTALLED AS SHOWN ON THE DRAWINGS, IN ACCORDANCE WITH THE DETAILS SHOWN FOR STANDARD CURB RAMPS ON DRAWING CR-1.

7. THE BOTTOM OF THE RAMP SHALL BE FLUSH WITH THE LOWER LANDING (NO HALF-INCH LIP).

8. PROVIDE A LEVEL LANDING AT THE TOP OF THE RAMP WHICH SHALL BE AS WIDE AS THE RAMP AND 48" DEEP MINIMUM, WITH SLOPES AT 2% MAXIMUM, BOTH DIRECTIONS.

9. A CATCH BASIN AT THE CENTER OF A BLENDED TRANSITION CURB RAMP SHALL BE AVOIDED AS MUCH AS FEASIBLE. OTHER OPTIONS SHALL BE CONSIDERED FIRST, SUCH AS, RELOCATING THE CATCH BASIN OUTSIDE OF THE CURB RETURN, OR USE OF EXCEPTION CURB RAMPS. WHEN ALL OTHER OPTIONS ARE NOT FEASIBLE, THE CATCH BASIN WITHIN THE BLENDED TRANSITION SHALL REMAIN, AND THE CURB WITHIN THE CATCH BASIN, PLUS ONE FOOT ON EITHER SIDE, SHALL BE PAINTED RED, OR TREATED IN A MANNER APPROVED OR RECOMMENDED BY THE CITY ENGINEER, DPW DISABILITY ACCESS COORDINATOR, OR THEIR DESIGNEE. THE CURB HEIGHT AT THE CATCH BASIN SHALL BE 4 INCHES MINIMUM.



NOTE: PARTIAL PLAN SHOWN. SEE ALTERNATE PLAN "A" FOR MORE DETAILS.

ALTERNATE CURB RAMP A1 -
BLENDED TRANSITION
CATCH BASIN AT CURB RETURN

NO.	DATE	DESCRIPTION	BY	APP.
3	12/02	SUPERCEDES PLAN # 55,018 REV. # 2	PR	
2	12/94	SUPERCEDES PLAN # 55,018 CH. 1	RJF	
1	06/91	SUPERCEDES PLAN # LL48,809	RJF	

TABLE OF REVISIONS
CHECK WITH TRACING TO SEE IF YOU HAVE LATEST REVISION

REFERENCE INFORMATION & FILE NO. OF SURVEYS

BUREAU OF ENGINEERING
DEPARTMENT OF PUBLIC WORKS
CITY AND COUNTY OF SAN FRANCISCO

REGISTERED PROFESSIONAL ENGINEER PATRICK G. RIVERA No. C051181 Exp. 9-30-05 CIVIL STATE OF CALIFORNIA 1-14-04

	DATE
DESIGNED: DPW	11/02
DRAWN: DPW	11/02
CHECKED: DPW	11/02

APPROVED
SECTION MANAGER DATE: 1-14-04
DEPUTY BUREAU MANAGER DATE: 1/15/04
CITY ENGINEER DATE: 1/16/04

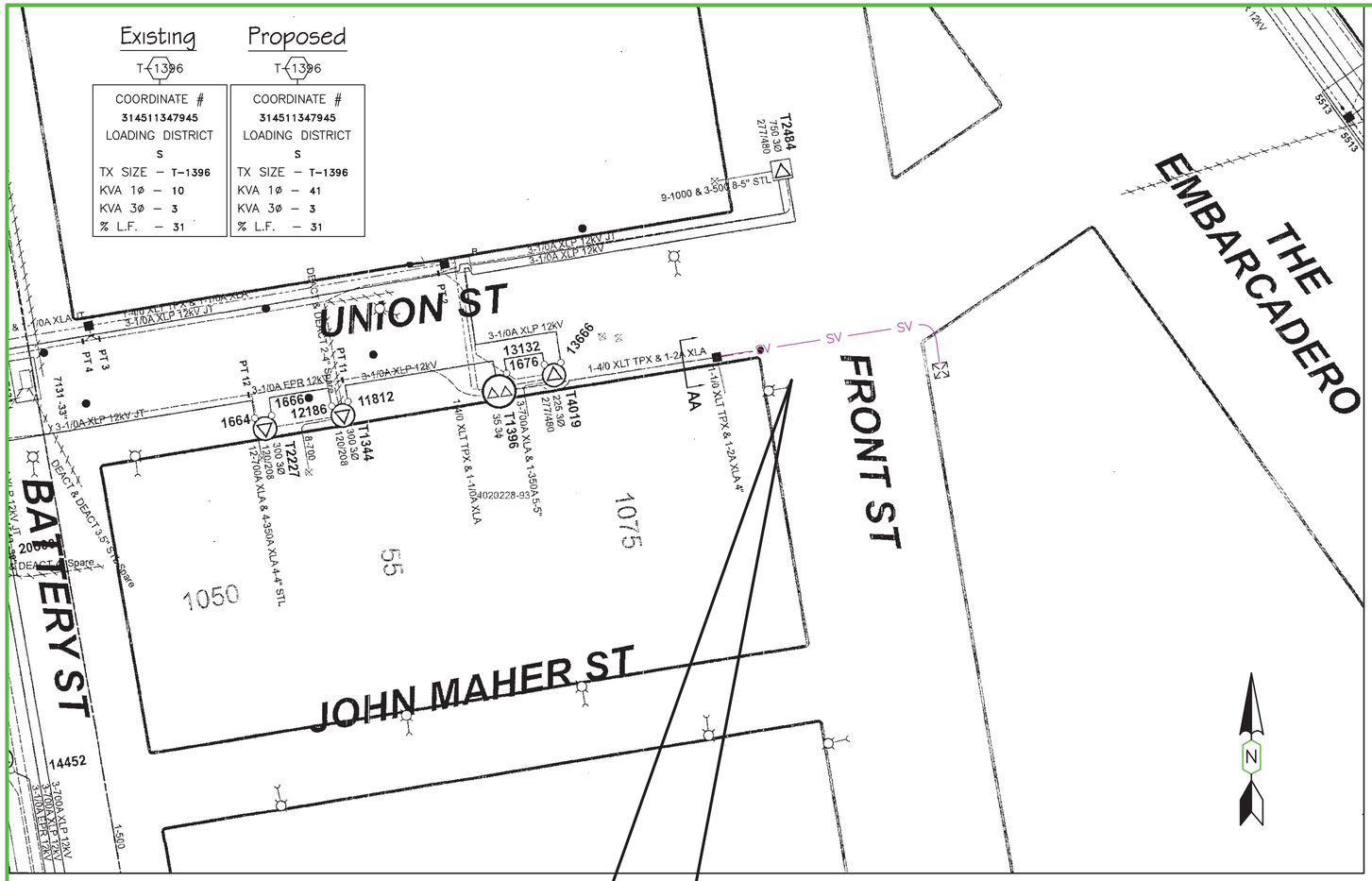
SCALE: NOT TO SCALE
SHEET OF SHEETS OF

CURB RAMP PLANS
ALTERNATE CURB RAMPS

SPECIFICATION NO. SPEC NUMBER
DRAWING NO. CR-3
FILE NO. 55,018
REV. NO. 3

Xrefs: SF-SEAL.dwg
Dimension Scale: 10
Model Units: Feet
Measurement Units are English
Plot Time: Mon, 15 Dec 2003 - 5:35pm

Existing	Proposed
T-1396	T-1396
COORDINATE # 314511347945	COORDINATE # 314511347945
LOADING DISTRICT S	LOADING DISTRICT S
TX SIZE – T-1396	TX SIZE – T-1396
KVA 1Ø – 10	KVA 1Ø – 41
KVA 3Ø – 3	KVA 3Ø – 3
% L.F. – 31	% L.F. – 31

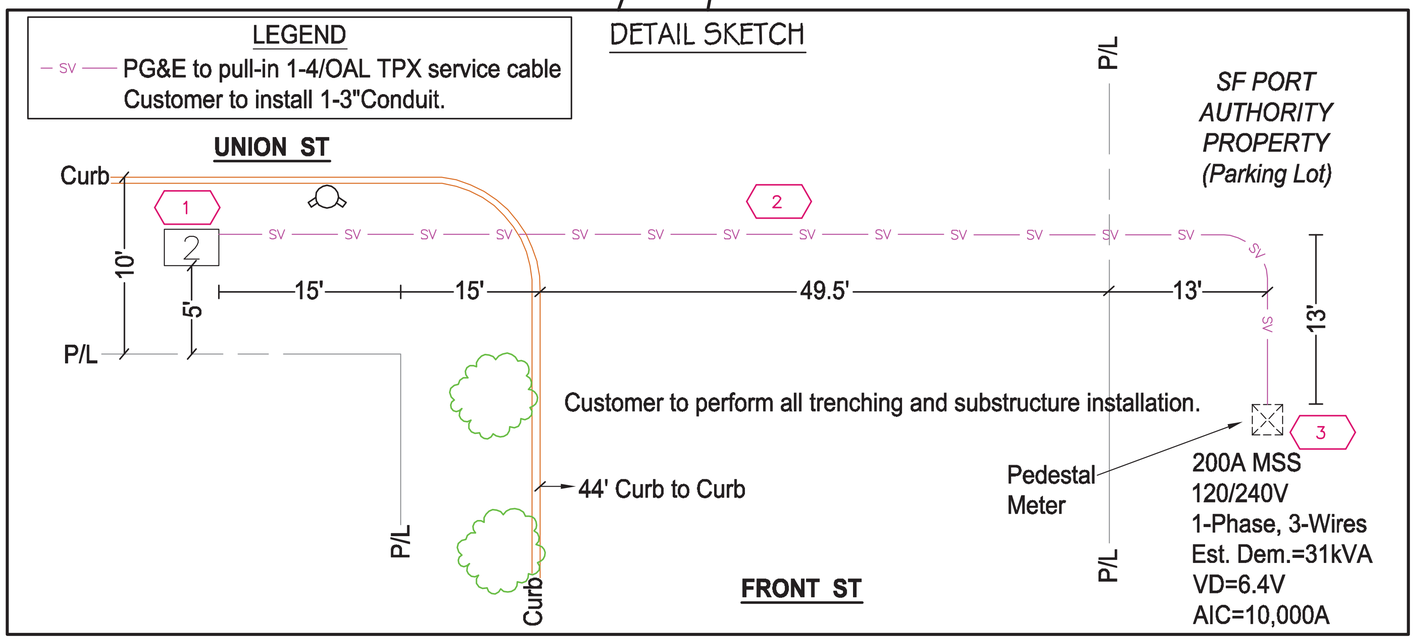


On Union St. Looking East - AA

LEGEND

SV — PG&E to pull-in 1-4/OAL TPX service cable
Customer to install 1-3"Conduit.

DETAIL SKETCH



CONSTRUCTION SKETCH
FRONT ST. & UNION ST.
SAN FRANCISCO

EST: Simon Lee	415-695-7541	NOTIF: 110384609	JPA#:
ADE: Simon Lee	415-695-7541	SCALE: NTS	DATE:04/14/16
SUPV: David Lee	415-695-3489	REP: Sean Sanders	415-695-3497
PLNR: N/A		N/A	
PM: 31156727		SHEET:1 OF1	REV. 1

NO ENVIRONMENTAL ISSUES

PG&E

811 Know what's below. Call before you dig.

NEAR LOC:

GAS CONFLICT:

GAS MAP:

PRIMARY VOLTAGE: 12 kV		VOLTAGE AREA: 3	
CKT. MAP:		ELEC.MAP:	
SOURCE SIDE DEVICE: 11812			
SUB & CIRCUIT: 287–1114			
DSGN SAG:		RAPTOR ZONE: No	
LOADING AREA: No		ARRESTER DIST:	
CORROSION AREA: AA		INSULATION DIST:	
EXEMPT EQUIP. INST:		FIRE AREA:	