

FLEXIBLE SEDIMENT BARRIER SPACING TABLE

SLOPE OF ROADWAY (PERCENT)	0 to 0.9	1 to 1.9	2 to 2.9	3 to 4	5+
INTERVAL BETWEEN BARRIERS	50'	35'	30'	25'	20'
ANGLE FROM FACE OF CURB	70°	70°	70°	45°	45°
SUGGESTED BARRIER LENGTH	6'	6'	6'	6'	6'

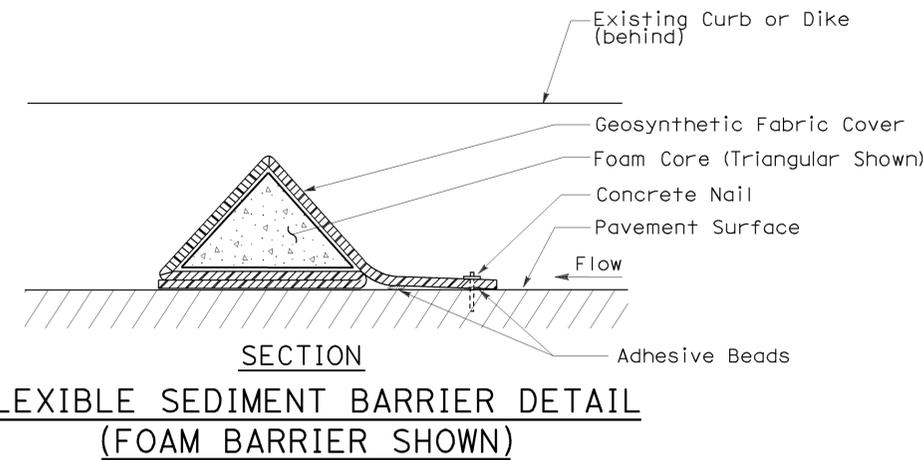
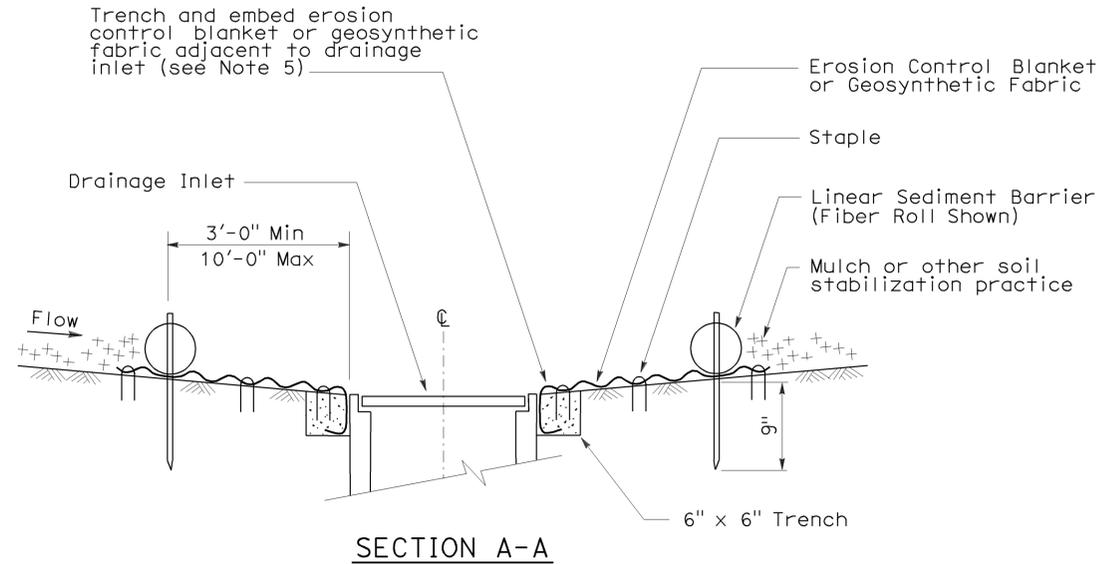
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
08	SBd	10	12.0/19.8	301	319

Robert B. Schott
LICENSED LANDSCAPE ARCHITECT

August 15, 2008
PLANS APPROVAL DATE

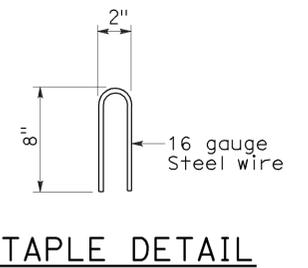
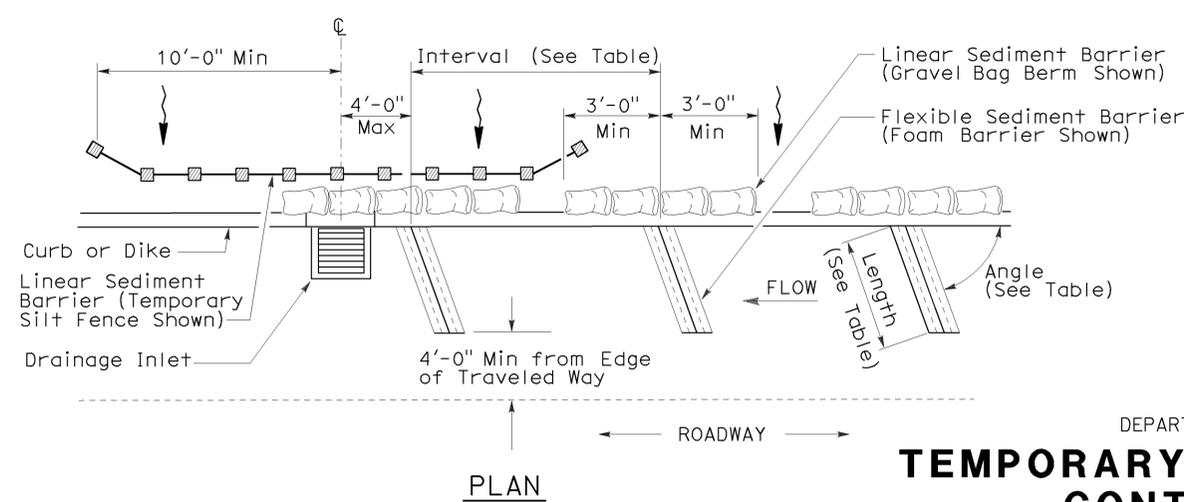
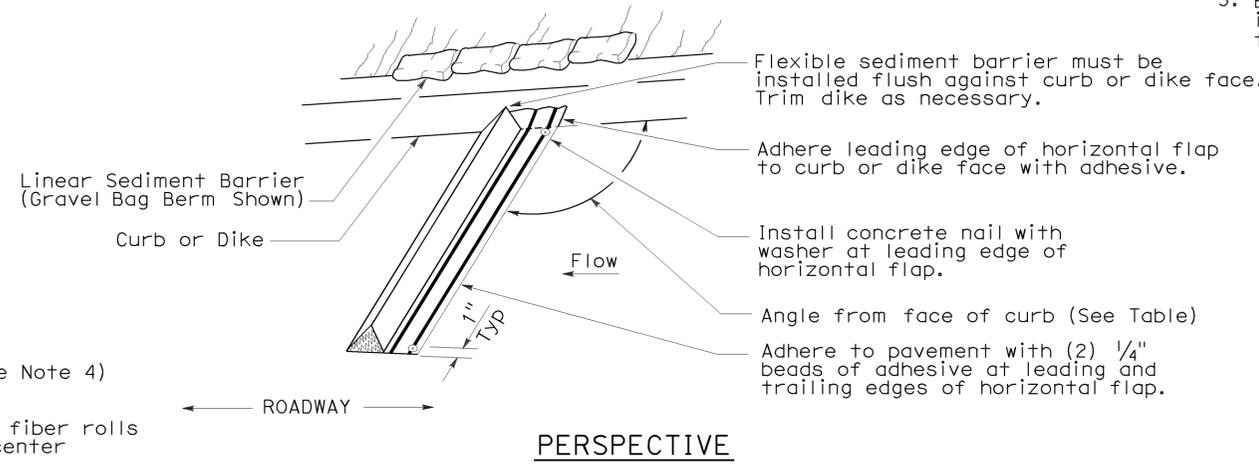
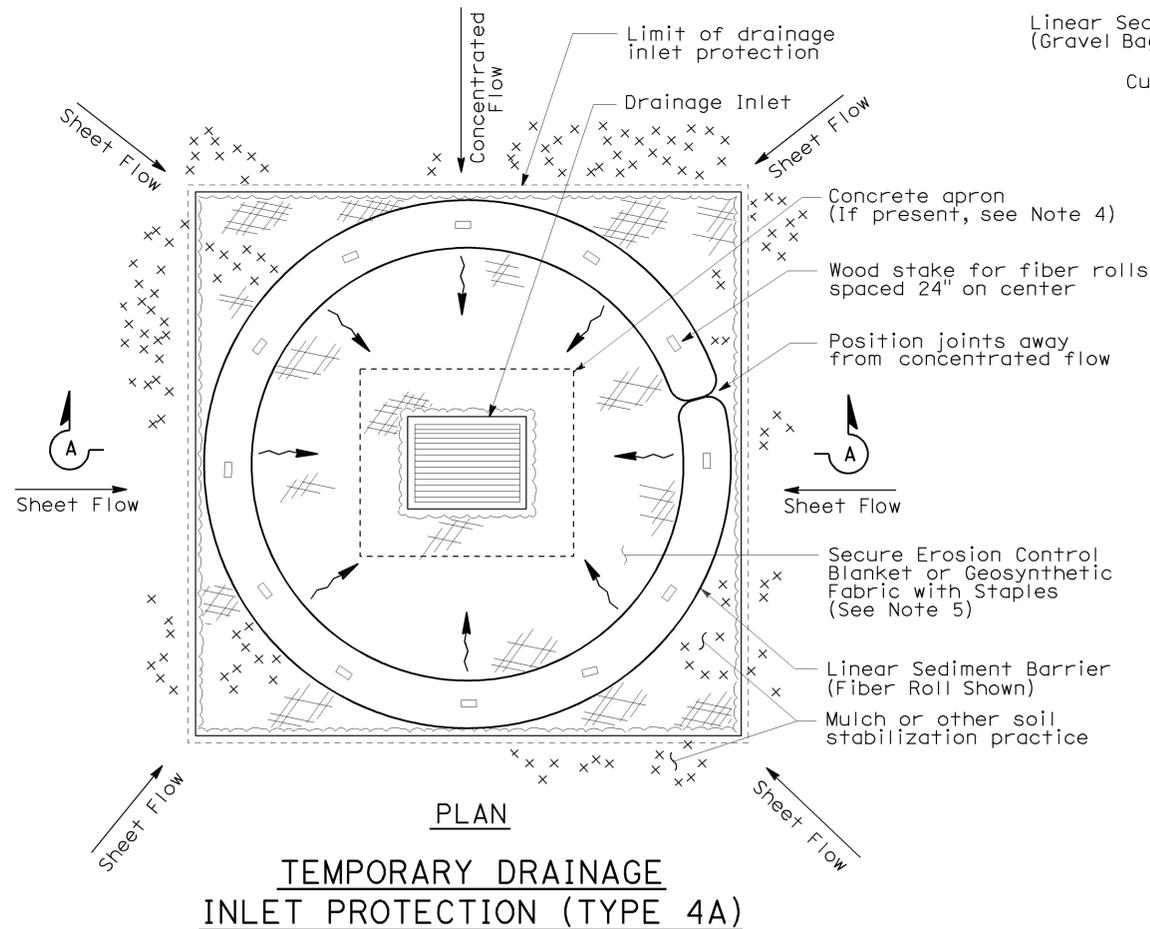
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To accompany plans dated 8-3-09



NOTES:

1. See Standard Plan T51 for Temporary Silt Fence.
2. Dimensions may vary to fit field conditions.
3. Install a minimum of 3 flexible sediment barriers upstream of each drainage inlet to be protected.
4. Position erosion control blanket or geosynthetic fabric at edge of concrete apron and secure in trench.
5. Erosion control blanket or geosynthetic fabric is not required if the area adjacent to the drainage inlet is vegetated.



STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

TEMPORARY WATER POLLUTION CONTROL DETAILS (TEMPORARY DRAINAGE INLET PROTECTION)

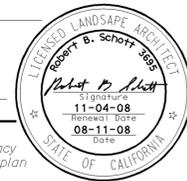
NO SCALE
NSP T63 DATED AUGUST 15, 2008 SUPPLEMENTS THE STANDARD PLANS BOOK DATED MAY 2006.

NEW STANDARD PLAN NSP T63

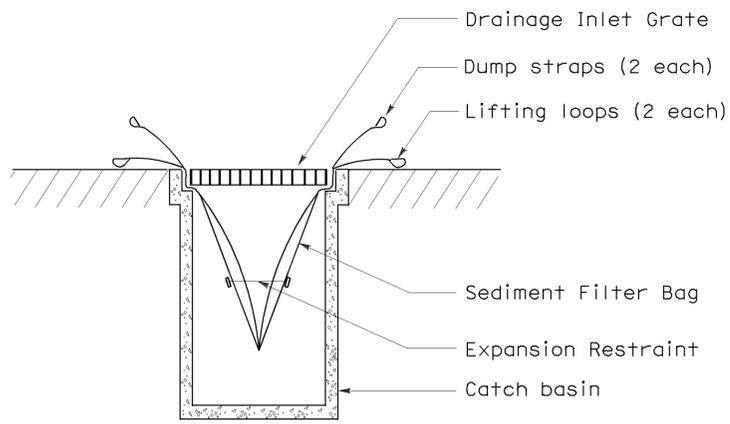
2006 NEW STANDARD PLAN NSP T63

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08	SBd	10	12.0/19.8	302	319

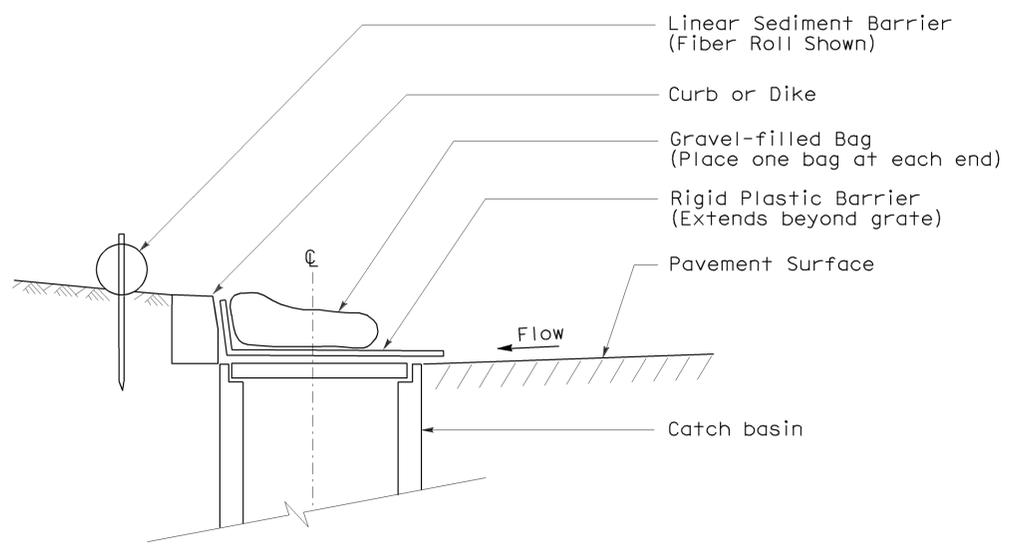
Robert B. Schott
 LICENSED LANDSCAPE ARCHITECT
 August 15, 2008
 PLANS APPROVAL DATE
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To accompany plans dated 8-3-09



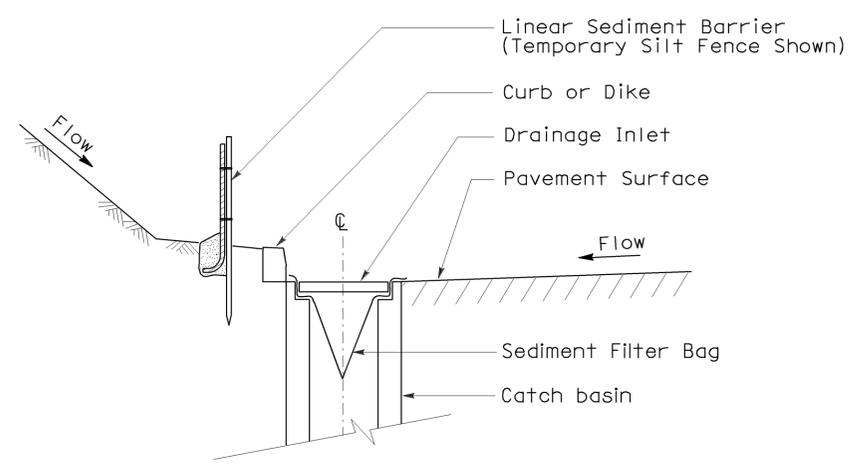
SECTION B-B
SEDIMENT FILTER BAG DETAIL



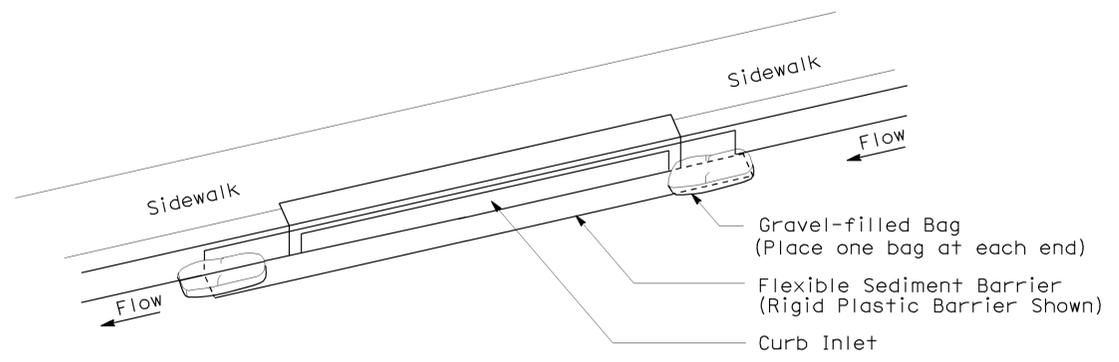
SECTION
TEMPORARY DRAINAGE
INLET PROTECTION (TYPE 6A)
(CATCH BASIN WITH GRATE)

NOTES:

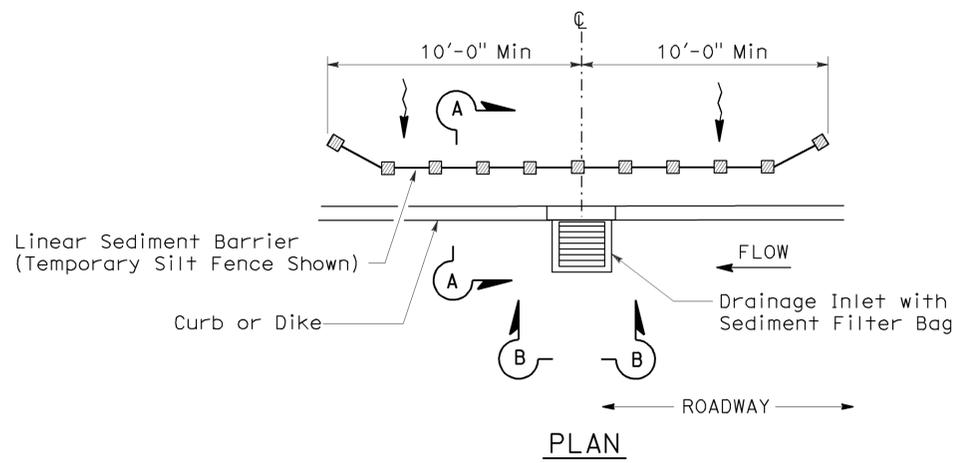
1. See Standard Plan T51 for Temporary Silt Fence.
2. Dimensions may vary to fit field conditions.



SECTION A-A



PERSPECTIVE
TEMPORARY DRAINAGE
INLET PROTECTION (TYPE 6B)
(CURB INLET WITHOUT GRATE)



PLAN
TEMPORARY DRAINAGE
INLET PROTECTION (TYPE 5)
(SEDIMENT FILTER BAG)

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
TEMPORARY WATER POLLUTION
CONTROL DETAILS
(TEMPORARY DRAINAGE
INLET PROTECTION)

NO SCALE
NSP T64 DATED AUGUST 15, 2008 SUPPLEMENTS
THE STANDARD PLANS BOOK DATED MAY 2006.

2006 NEW STANDARD PLAN NSP T64

ELECTROLIERS

STANDARD TYPES		
15, 15D		High mast light pole
15 STRUCTURE		Double Arm lighting standard
21, 21D STRUCTURE		Existing electrolier
30		Electrolier foundation (Future installation)
31		
32		
35		
36-20A		

NOTES:

- Luminaires shall be 310 W HPS when installed on Type 21, 21D, 30, 31, 32, 35 and 36-20A Standards, unless otherwise specified. Luminaires shall be 200 W HPS when installed on other type standards or poles, unless otherwise specified.
- Luminaires shall be the cutoff type, ANSI Type III medium cutoff lighting distribution, unless otherwise specified.
- Variations noted adjacent to symbol on project plans.

- Electrolier (see project notes or project plans)
- Luminaire on wood pole

STANDARD NOTES:

- AB** Abandon. If applied to conduit, remove conductors.
- BC** Install pull box in existing conduit run.
- BP** Pedestrian barricade, type as indicated on plan.
- CB** Install conduit into existing pull box.
- CC** Connect new and existing conduit. Remove existing conductors and install conductors as indicated.
- CF** Conduit to remain for future use. Remove conductors. Install pull wire or rope.
- DH** Detector handhole.
- FA** Foundation to be abandoned.
- IS** Install sign on signal mast arm.
- NS** No slip base on standard.
- PEC** Photoelectric control.
- PEU** Photoelectric unit.
- RC** Equipment or material to be removed and become the property of the Contractor.
- RE** Remove electrolier, fuses and ballast. Tape ends of conductors.
- RL** Relocate equipment.
- RR** Remove and reuse equipment.
- RS** Remove and salvage equipment.
- SC** Splice new to existing conductors.
- SD** Service disconnect.
- SF** Standard to remain for future use. Remove luminaire, pole conductors, fuses and ballast.
- TSP** Telephone service point.

ABBREVIATIONS AND EQUIPMENT DESIGNATIONS

PROPOSED EXISTING

BBS	bbs	Battery backup system
BC	bc	Bolt circle
C	C	Conduit
CCTV	cctv	Closed circuit television
CKT	ckt	Circuit
CMS	cms	Changeable message sign
DLC	dlc	Loop detector lead-in cable
EMS	ems	Extinguishable message sign
EVC	evc	Emergency vehicle cable
EVD	evd	Emergency vehicle detector
FB	fb	Flashing beacon
FBCA	fbca	Flashing beacon control assembly
FBS	fbs	Flashing beacon with slip base
FO	fo	Fiber optic
G	G	Ground (Equipment Grounding Conductor)
GFCI	GFCI	Ground fault circuit interrupt
HAR	har	Highway advisory radio
HEX	hex	Hexagonal
HPS	hps	High pressure sodium
IISNS	iisns	Internally illuminated street name sign
ISL	isl	Induction sign lighting
LED	led	Light emitting diode
LMA	lma	Luminaire mast arm
LPS	lps	Low pressure sodium
LTG	ltg	Lighting
LUM	lum	Luminaire
MAT	mat	Mast arm mounting vehicle signal faces, top attachment
MAS	mas	Mast arm mounting vehicle signal faces, side attachment
MAS-4A	mas-4A	Mast arm mounting vehicle signal faces, side attachment - 4 signal section
MAS-4B	mas-4B	
MAS-4C	mas-4C	
MAS-5A	mas-5A	Mast arm mounting vehicle signal faces, side attachment - 5 signal section
MAS-5B	mas-5B	
MC	mc	Mercury contactor
M/M	m/m	Multiple to multiple transformer
MT	mt	Conduit with pull wire or rope only
MTG	mtg	Mounting
	mv	Mercury vapor lighting fixture
N	N	Neutral (Grounded Conductor)
NC	NC	Normally closed
NO	NO	Normally open
PB	pb	Pull box
PEC	pec	Photoelectric control (Type I, II, III, IV or V as shown)
PED	ped	Pedestrian
PEU	peu	Photoelectric unit
PPB	ppb	Pedestrian push button
RL		Relocated equipment
RM	rm	Ramp metering
SB	sb	Slip base
SIC	sic	Signal interconnect cable
SIG	sig	Signal
SMA	sma	Signal mast arm
SNS	sns	Street name sign
SP	sp	Service point
TDC	tdc	Telephone demarcation cabinet
TMS	tms	Traffic monitoring station
TOS	tos	Traffic Operations System
VEH	veh	Vehicle
XFMR	xfmr	Transformer
COMM	comm	Communication
RWIS	rwis	Roadway weather information system

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
08	SBd	10	12.0/19.8	303	319

Jeffery G. McRae
REGISTERED ELECTRICAL ENGINEER

October 5, 2007
PLANS APPROVAL DATE

Jeffery G. McRae
REGISTERED PROFESSIONAL ENGINEER
No. E14512
Exp. 6-30-08
ELECTRICAL
STATE OF CALIFORNIA

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To accompany plans dated 8-3-09

SOFFIT AND WALL MOUNTED LUMINAIRES

- Pendant, 70 W HPS unless otherwise specified.
- Flush, 70 W HPS unless otherwise specified.
- Wall surface, 70 W HPS unless otherwise specified.
- Existing soffit or wall luminaire to remain unmodified.
- Existing soffit or wall luminaire to be modified as specified.

NOTE:

Arrow indicates "street side" of luminaire.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

ELECTRICAL SYSTEMS (SYMBOLS AND ABBREVIATIONS)

NO SCALE

RSP ES-1A DATED OCTOBER 5, 2007 SUPERSEDES STANDARD PLAN ES-1A
DATED MAY 1, 2006 - PAGE 400 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP ES-1A

2006 REVISED STANDARD PLAN RSP ES-1A

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
08	SBd	10	12.0/19.8	304	319

Jeffery G. McRae
 REGISTERED ELECTRICAL ENGINEER
 No. E14512
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 STATE OF CALIFORNIA

October 5, 2007
 PLANS APPROVAL DATE

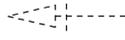
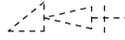
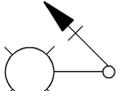
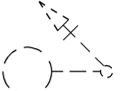
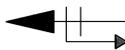
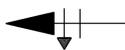
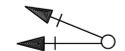
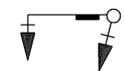
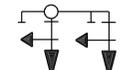
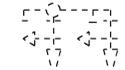
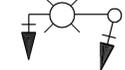
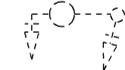
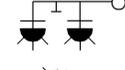
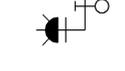
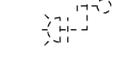
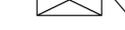
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To accompany plans dated 8-3-09

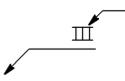
CONDUIT

PROPOSED	EXISTING	
---	---	Lighting Conduit, unless otherwise indicated or noted
---	---	Traffic signal conduit
-C-	-c-	Communication conduit
-T-	-t-	Telephone conduit
-F-	-f-	Fire alarm conduit
-FO-	-fo-	Fiber optic conduit
---	---	Conduit termination 
		Conduit riser in/on structure or service pole

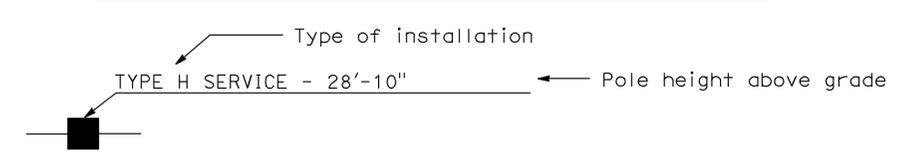
SIGNAL EQUIPMENT

PROPOSED	EXISTING	
		Pedestrian signal face
		Pedestrian push button post
		Pedestrian barricade
		Vehicle signal face (with backplate, 3-Section: red, yellow and green)
		Vehicle signal face with angle visors
		Modifications of basic symbols: "L" indicates all non-arrow sections louvered "LG" indicates louvered green section only "PV" indicates 12" programmed visibility sections "8" indicates all 8" sections (only when specified)
		Type 15TS and Vehicle signal face
		Vehicle signal face with red, yellow and green left arrow sections
		Vehicle signal face with red and yellow sections and up green arrow
		Vehicle signal face (5 Section) with red, yellow and green sections and yellow and green right arrows
		Type 1 Standard and attached vehicle signal faces
		Standard with signal mast arm only and attached vehicle signal faces and internally illuminated street name sign
		Type 33 Standard, Left-turn vehicle signal face and sign
		Standard with luminaire and signal mast arms and attached vehicle signal faces
		Cantilever flashing beacon Type 9 Frame, with a sign unless otherwise specified or indicated
		Type 15-FBS Standard with two vehicle signal face sections with lens, backplate and visor with a sign
		Flashing beacon. One vehicle signal face section with lens, backplate and visor. "R" indicates red indication, "Y" indicates yellow indication
		Controller assembly. Door indicates front of cabinet

SERVICE EQUIPMENT

PROPOSED	EXISTING	
---OH---	---oh---	Overhead lines
		Wood pole "U" indicates utility owned
		Pole guy with anchor
		Utility transformer - ground mounted
		Service equipment enclosure type
		Service equipment enclosure door indicates front of enclosure
		Telephone demarcation cabinet

POLE-MOUNTED SERVICE DESIGNATION



ILLUMINATED OVERHEAD SIGN

PROPOSED	EXISTING	
		Overhead sign - Single post
		Overhead sign - Two post
		Overhead sign - Mounted on structure
		Overhead sign with electrolier

SIGNAL EQUIPMENT Cont

PROPOSED	EXISTING	
		Guard post
		Type 1 Standard with "Meter On" sign
		Emergency Vehicle detector

NOTES:

- All signal sections shall be 12" unless shown otherwise.
- Signal heads shall be provided with backplates unless shown otherwise.
- Signal indication shall be LED.

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION
**ELECTRICAL SYSTEMS
 (SYMBOLS AND ABBREVIATIONS)**
 NO SCALE

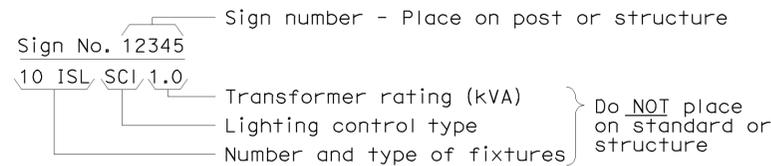
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 DATED MAY 1, 2006 - PAGE 401 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP ES-1B

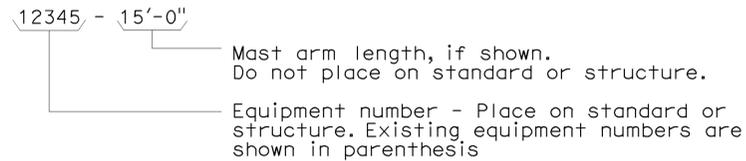
2006 REVISED STANDARD PLAN RSP ES-1B

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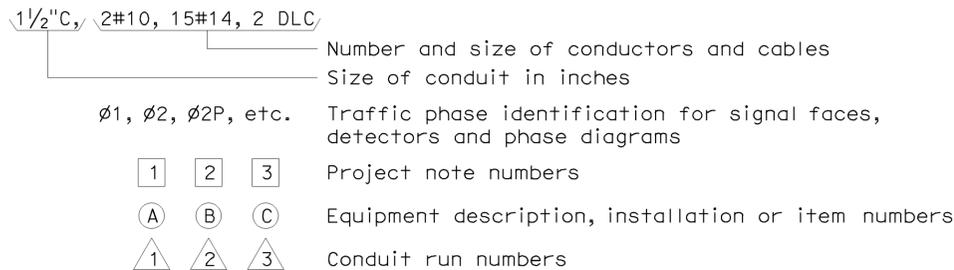
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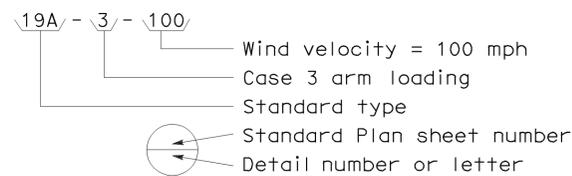
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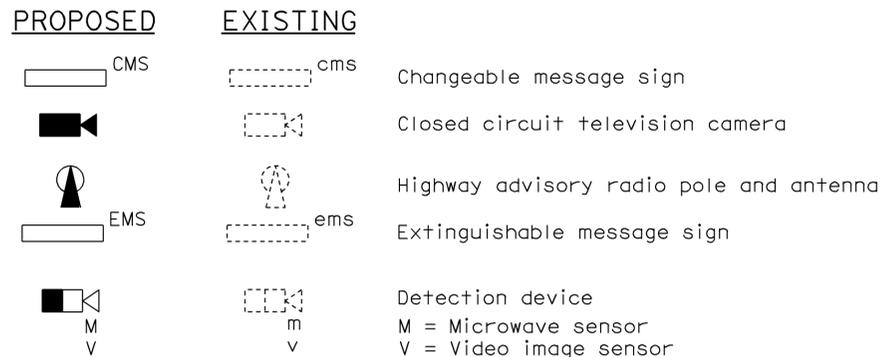
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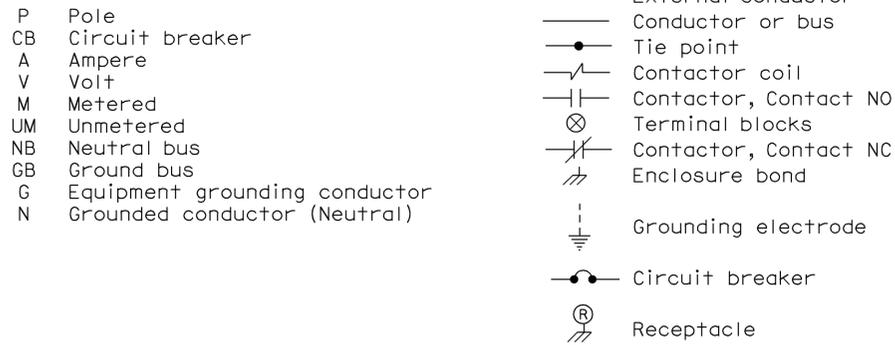
SIGNAL AND LIGHTING STANDARD (TYPICAL DESIGNATION):



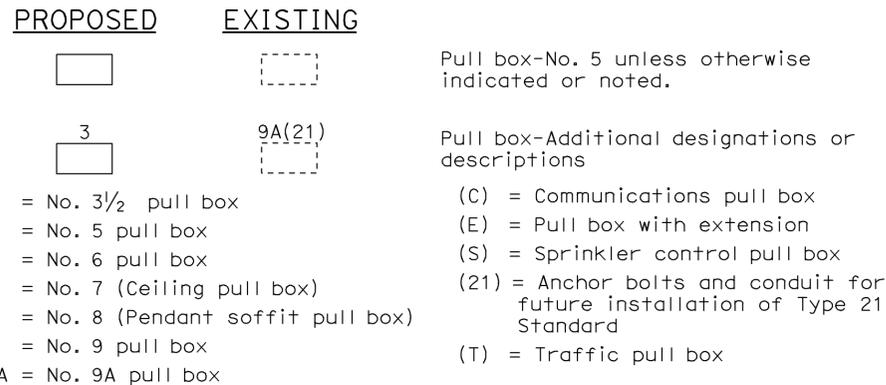
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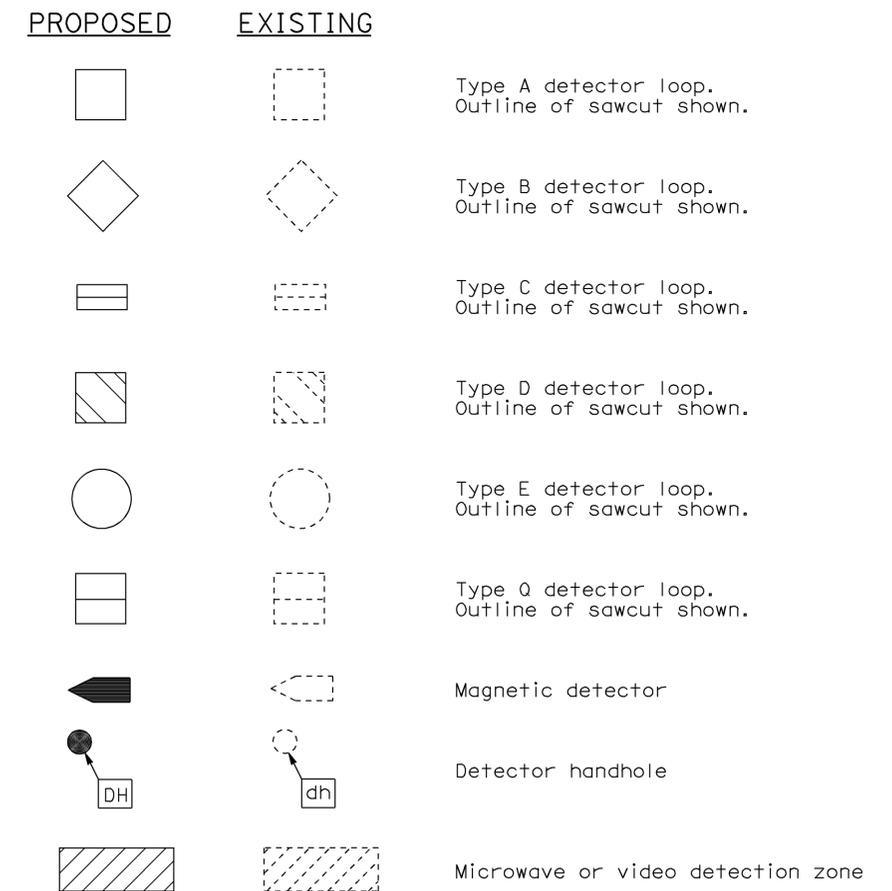
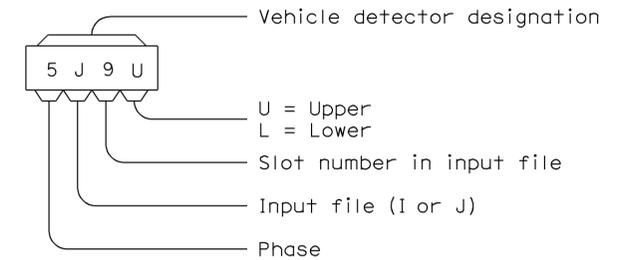
WIRING DIAGRAM LEGEND



PULL BOXES



VEHICLE DETECTORS



STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION

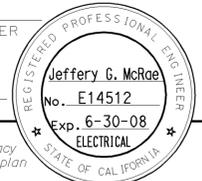
ELECTRICAL SYSTEMS (SYMBOLS AND ABBREVIATIONS)

NO SCALE

RSP ES-1C DATED OCTOBER 5, 2007 SUPERCEDES STANDARD PLAN ES-1C
 DATED MAY 1, 2006 - PAGE 402 OF THE STANDARD PLANS BOOK DATED MAY 2006.

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Jeffery G. McRae
 REGISTERED ELECTRICAL ENGINEER
 October 5, 2007
 PLANS APPROVAL DATE



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To accompany plans dated 8-3-09

NOTES-TYPE III SERVICE EQUIPMENT ENCLOSURES:

1. Service equipment enclosure and metering equipment shall meet the requirements of the service utility. The meter area shall have a sealable, lockable, weathertight cover that can be removed without the use of tools.
2. Service equipment enclosures shall be factory wired and conform to NEMA standards.
3. Dimensions of service equipment enclosures shall meet the requirements of the service utility.
4. The dead front panels on Type III service equipment enclosures shall have a continuous stainless steel or aluminum piano hinge. The panel in front of the breakers shall be secured with a latch or captive screws. No live parts shall be mounted on the dead front panel.
5. The exterior door shall have provisions for padlocking. The padlock hole shall be a minimum diameter of $\frac{7}{16}$ ".
6. Enclosures housing transformers of more than one kVA shall have effective screened ventilation louver of not less than 50 square inches. Screen shall be stainless steel No. 304, with a No. 10 size mesh. Framed screen shall be secured with at least four bolts.
7. Fasteners on the exterior of the enclosure shall be vandal-resistant and shall not be removable from the exterior. Exterior screws, nuts, bolts and washers shall be stainless steel.
8. Landing lugs for incoming service conductors shall be compatible with either copper or aluminum conductors sized to suit the conductors shown on the plan. Landing lugs shall be copper or tin-plated aluminum. Neutral bus shall be rated for 125 A and be suitable for copper or aluminum conductors unless otherwise specified. The terminal shall include but not be limited to:
 - a) Incoming terminals (landing lugs)
 - b) Neutral lugs
 - c) Solid neutral terminal strip
9. At least 6 standard single pole circuit breaker spaces, $\frac{3}{4}$ " nominal, shall be provided for branch circuits. Circuit breaker interiors shall be copper. Interiors of enclosure shall accept plug-in or cable-in/cable-out circuit breakers.
10. Control wiring shall be 600 V, 14 stranded machine tool wire. Where subject to flexing, 19 strand wire shall be used.
11. Main bus shall be rated for 125 A and shall be tin-plated copper.
12. A plastic laminated wiring diagram shall be provided with brass mounting eyelets and attached to the inside of the enclosure and the wiring diagram shall be affixed to the interior with a UL or ETL approved method.

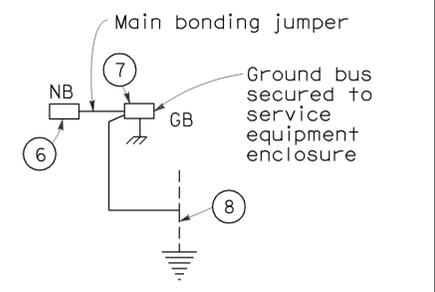
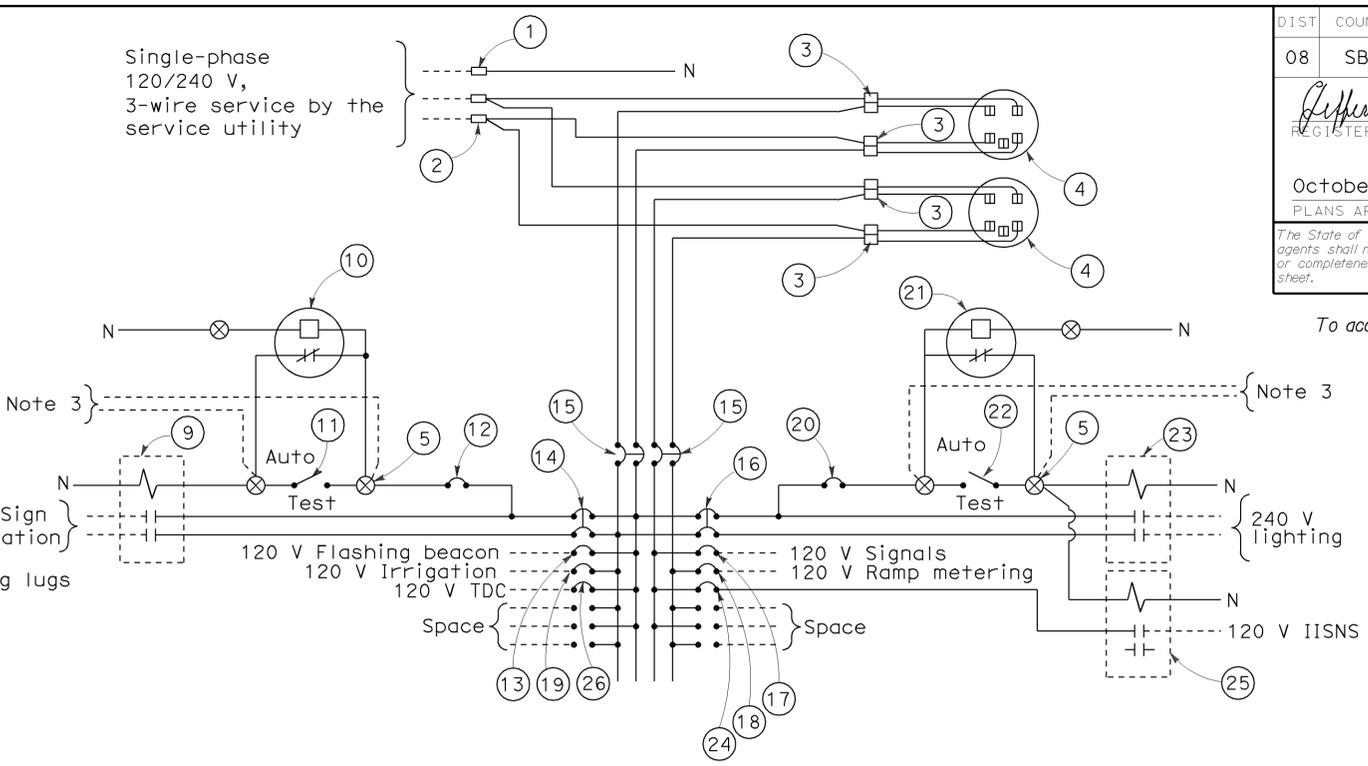
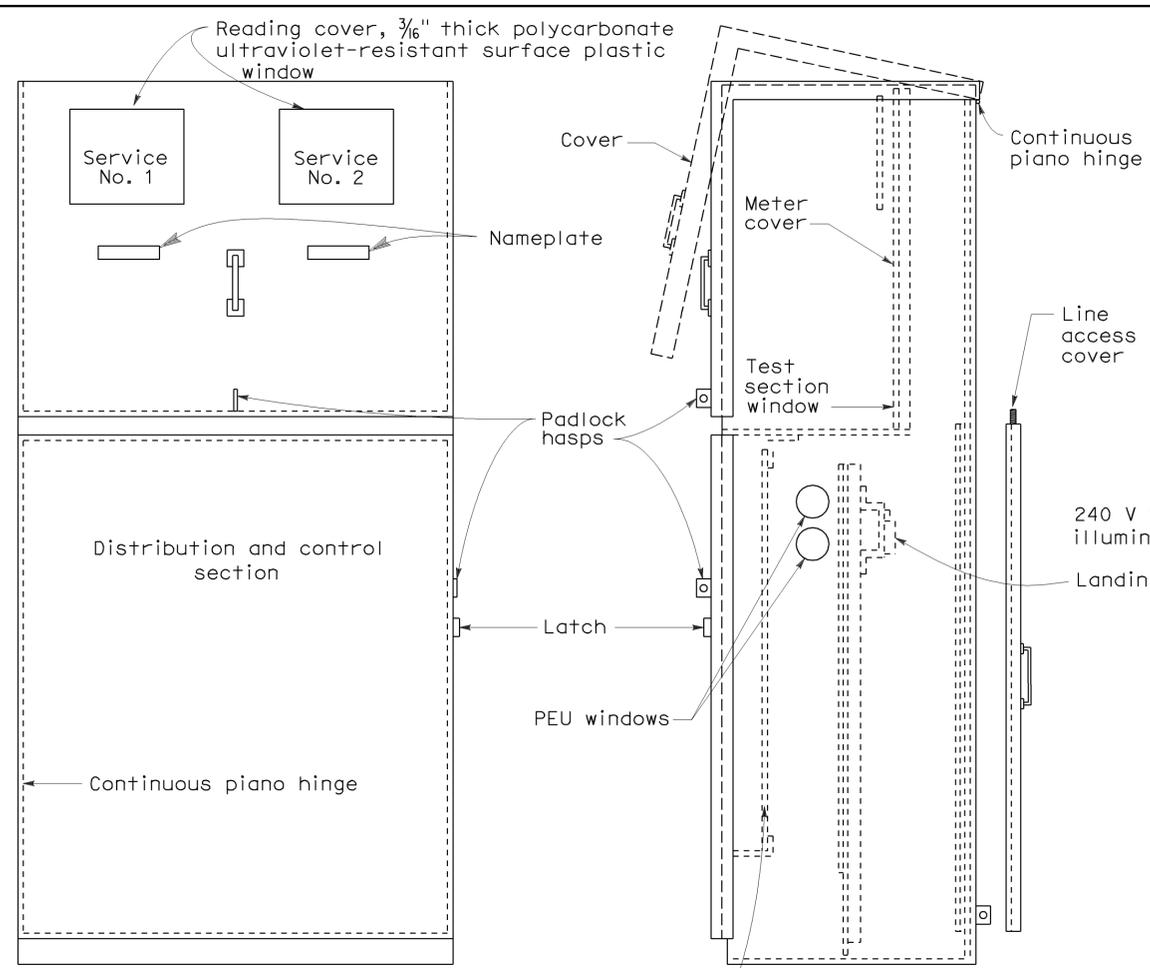
13. An engraved phenolic nameplate on the dead front panel indicating the function of each circuit or device shall be installed with stainless steel rivets or stainless steel screws:
 - a) Adjacent to the breaker or device with character size a minimum of $\frac{1}{8}$ ".
 - b) At the top of the exterior door panel indicating State system number, voltage level and number of phases with character size a minimum of $\frac{3}{16}$ ".
14. The plan shows the approximate location of devices within the enclosure. Components may be rearranged, however, the "working" clearances within the service equipment enclosure shall be maintained.
15. In unpaved areas a raised portland cement concrete pad 2'-0" x 4" x width of foundation shall be constructed in front of new service equipment enclosure installation. Pad shall be set to elevation of foundation.
16. Foundation shall extend 2" minimum beyond edge of service equipment enclosure.
17. Internal bus, where shown, is typical only. Alternative design of proposed service equipment enclosure shall be submitted to the Engineer for approval.
18. Plug-in circuit breakers may be mounted in the vertical or horizontal position. Cable-in/cable-out circuit breakers shall be mounted in the vertical position.
19. Type III-AF and Type III-BF service equipment enclosures shall have the meter viewing windows located on the front side of the service equipment enclosures.
20. Type III-AR and Type III-BR service equipment enclosures shall be similarly constructed as Type III-AF and Type III-BF respectively, except the meter viewing windows shall be located on the back side of the service equipment enclosures.
21. Minimum clearance shall be required for front and back of service equipment enclosure per National Electrical Code, Article 110.26, "Spaces About Electric Equipment (600 Volts, Nominal, or Less)."

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION
**ELECTRICAL SYSTEMS
 (SERVICE EQUIPMENT NOTES
 TYPE III SERIES)**
 NO SCALE

RSP ES-2C DATED OCTOBER 5, 2007 SUPERCEDES STANDARD PLAN ES-2C
 DATED MAY 1, 2006 - PAGE 405 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP ES-2C

2006 REVISED STANDARD PLAN RSP ES-2C



120/240 V SERVICE WIRING DIAGRAM (TYPICAL)

TYPE III-CF SERVICE EQUIPMENT ENCLOSURE WITH PROVISIONS FOR TWO 100 A METERS (TYPICAL)

TYPE III-C SERVICE (120/240 V) EQUIPMENT LEGEND

ITEM No.	COMPONENT	NAME PLATE DESCRIPTION	ITEM No.	COMPONENT	NAME PLATE DESCRIPTION
1	Neutral lug		14	30 A, 240 V, 2P, CB	Sign Illumination
2	Landing lug (Note 6)		15	100 A, 240 V, 2P, CB	Main Breaker
3	Test bypass facility		16	30 A, 240 V, 2P, CB	Lighting
4	Meter socket and support		17	50 A, 120 V, 1P, CB	Signals
5	Terminal blocks		18	30 A, 120 V, 1P, CB	Ramp Metering
6	Neutral bus		19	20 A, 120 V, 1P, CB	Irrigation
7	Ground bus		20	15 A, 120 V, 1P, CB	Lighting Control
8	Grounding electrode		21	Photoelectric unit (Note 7)	
9	30 A, 2PNO, Contactor	Sign Illumination	22	15 A, 1P, Test switch	Lighting Control
10	Photoelectric unit (Note 7)		23	60 A, 2PNO Contactor	Lighting
11	15 A, 1P, Test switch	Sign Illumination Test Switch	24	15 A, 120 V, 1P, CB	IISNS
12	15 A, 120 V, 1P, CB	Sign Illumination Control	25	30 A, 2PNO Contactor	IISNS
13	15 A, 120 V, 1P, CB	Flashing Beacon	26	20 A, 120 V, 1P, CB	Telephone Demarcation Cabinet

NOTES: (FOR SERVICE EQUIPMENT ENCLOSURE)

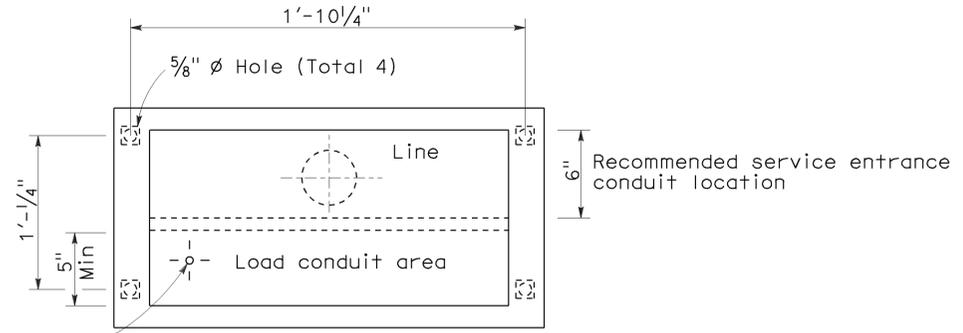
- Voltage ratings of service equipment shall conform to the service voltages indicated on the plans.
- Unless otherwise indicated on the plans, service equipment items shall be provided for each service equipment enclosure as shown.
- Connect to remote test switch mounted on lighting standards, sign post or structure when required.
- Items No. 1 and 6 shall be isolated from the service equipment enclosure.
- Meter sockets shall be 5 clip type.
- The landing lug shall be suitable for multiple conductors.
- Type I photoelectric control shall be used unless otherwise indicated on the plans.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

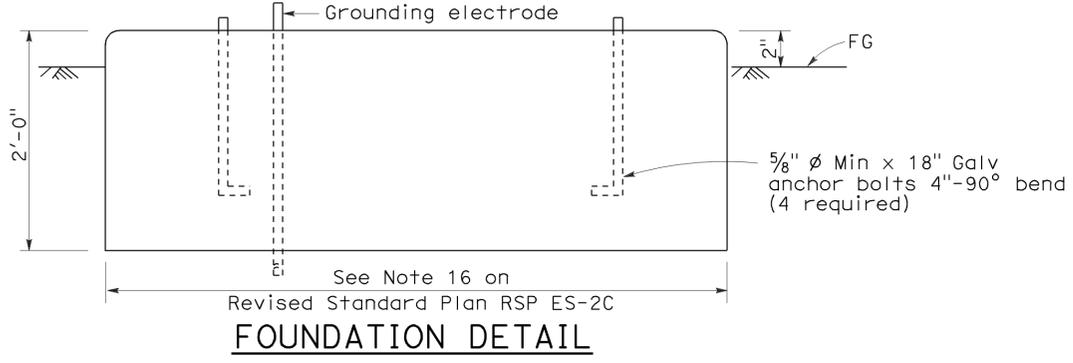
ELECTRICAL SYSTEMS (SERVICE EQUIPMENT AND TYPICAL WIRING DIAGRAM TYPE III-C SERIES)

NO SCALE

RSP ES-2F DATED OCTOBER 5, 2007 SUPERCEDES STANDARD PLAN ES-2F DATED MAY 1, 2006 - PAGE 408 OF THE STANDARD PLANS BOOK DATED MAY 2006.



BASE FOR TYPE III-C SERVICE EQUIPMENT ENCLOSURE



FOUNDATION DETAIL

2006 REVISED STANDARD PLAN RSP ES-2F

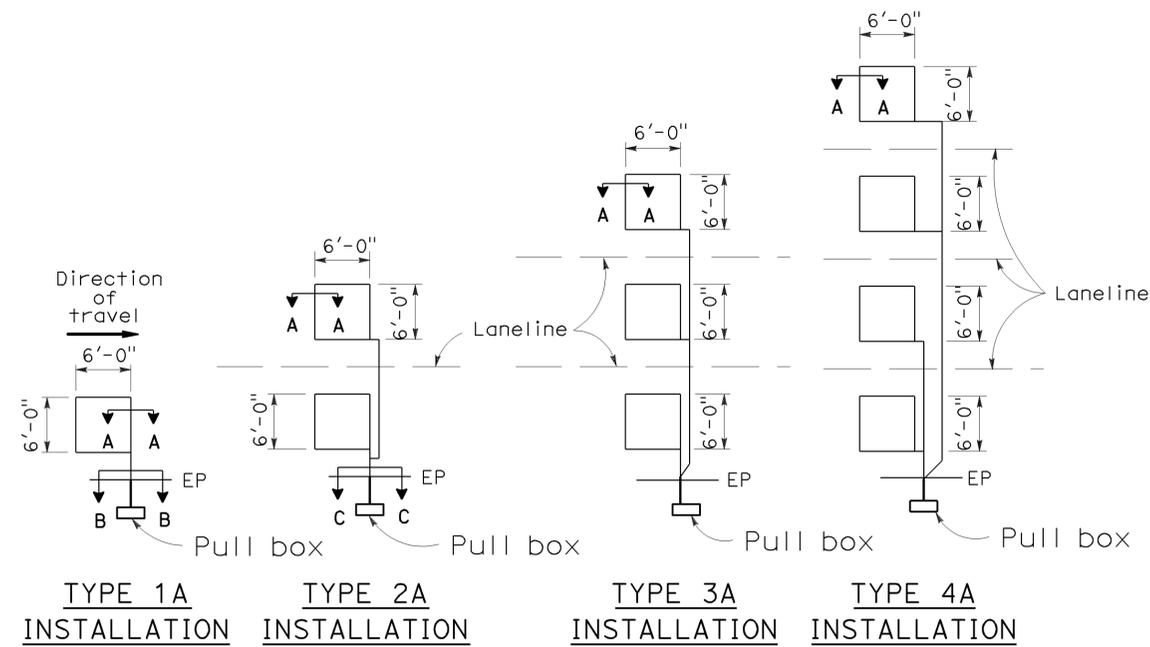
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
08	SBd	10	12.0/19.8	308	319

Jeffery G. McRae
 REGISTERED ELECTRICAL ENGINEER
 October 5, 2007
 PLANS APPROVAL DATE
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REGISTERED PROFESSIONAL ENGINEER
Jeffery G. McRae
 No. E14512
 Exp. 6-30-08
 ELECTRICAL
 STATE OF CALIFORNIA

LOOP INSTALLATION PROCEDURE

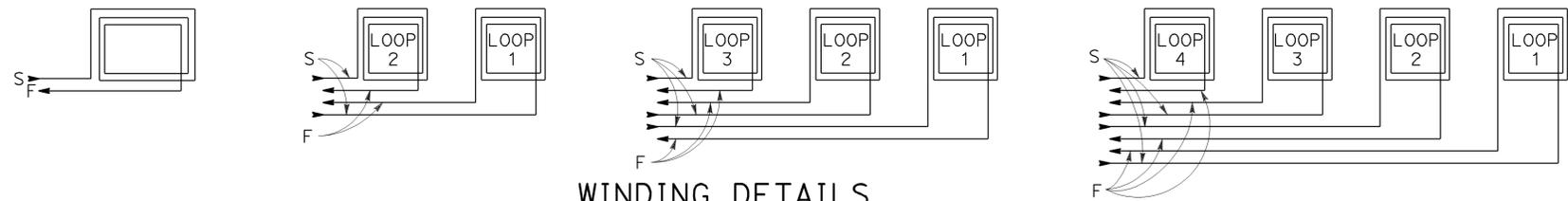
- Loops shall be centered in lanes.
- Saw slots in pavement for loop conductors as shown in details.
- Distance between side of loop and a lead-in saw cut from adjacent detectors shall be 2'-0" minimum. Distance between lead-in saw cuts shall be 6" minimum.
- Bottom of saw slot shall be smooth with no sharp edges.
- Slots shall be washed until clean, blown out and thoroughly dried before installing loop conductors.
- Adjacent loops on the same sensor unit channel shall be wound in opposite directions.
- Identify and tag loop circuit pairs in the pull box with loop number, start (S) and finish (F) of conductor. Identify and tag lead-in-cable with sensor number and phase.
- Install loop conductor in slot using a 3/16" to 1/4" thick wood paddle. Hold loop conductors with wood paddles (at the bottom of the sawed slot) during sealant placement.
- No more than 2 twisted pairs shall be installed in one sawed slot.
- Allow additional 5'-0" of slack length of conductor for the lead-in run to pull box.
- The additional length of each conductor for each loop shall be twisted together into a pair (6 turns per 3'-4" minimum) before being placed in the slot and conduit leading to pull box.
- Test each loop circuit for continuity, circuit resistance and insulation resistance at the pull box before filling slots.
- Fill slots as shown in details.
- Splice loop conductors to lead-in-cable. Splices shall be soldered.
- End of lead-in-cable and Type 2 loop conductor shall be waterproofed prior to installing in conduit to prevent moisture from entering the cable.
- Lead-in-cable shall not be spliced between the pull box and the controller cabinet terminals.
- Test each loop circuit for continuity, circuit resistance and insulation resistance at the controller cabinet location.
- Where loop conductors are not to be spliced to a lead-in-cable, the ends of the conductors shall be taped and waterproofed with electrical insulating coating.



SAWCUT DETAILS

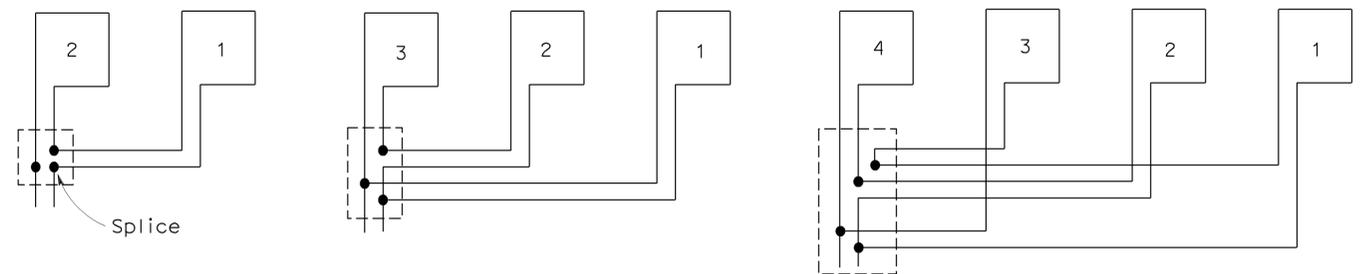
(Type A loop detector configurations illustrated)

- 1A thru 4A = 1 Type A loop configuration in each lane.
 - 1B thru 4B = 1 Type B loop configuration in each lane.
 - 1C = 1 Type C loop configuration entering lanes as required.
 - 1D thru 4D = 1 Type D loop configuration in each lane.
 - 1E thru 4E = 1 Type E loop configuration in each lane.
 - 1Q thru 4Q = 1 Type Q loop configuration in each lane.
- (Use Type A, B, C, D, E or Q loop detector configurations only when specified or shown on plans)



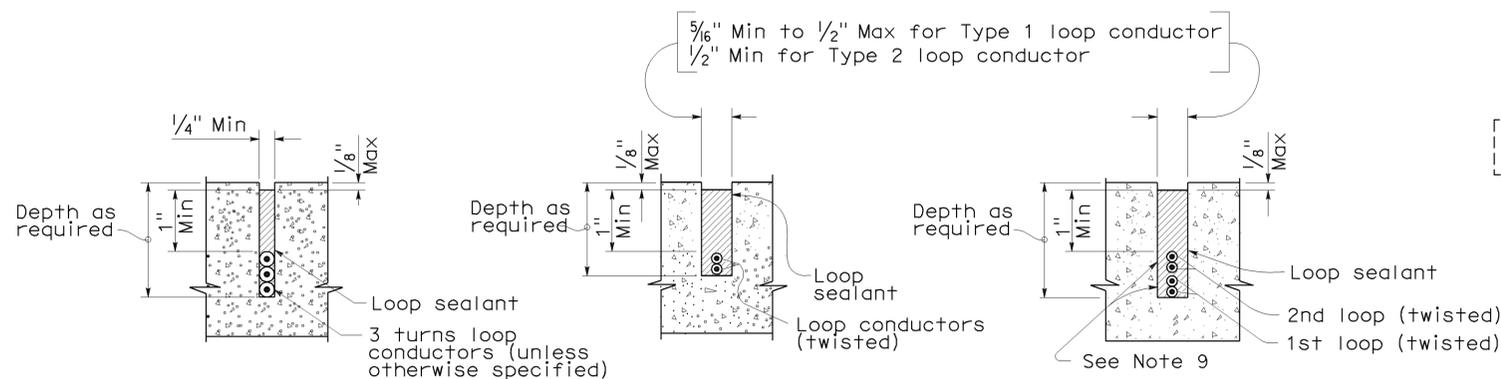
WINDING DETAILS

See Notes 6 and 7



TYPICAL LOOP CONNECTIONS

(Dashed lines represent the pull box)



SECTION A-A SECTION B-B SECTION C-C
 SLOT DETAILS - TYPE 1 AND TYPE 2 LOOP CONDUCTOR

ELECTRICAL SYSTEMS (DETECTORS)

NO SCALE

RSP ES-5A DATED OCTOBER 5, 2007 SUPERCEDES STANDARD PLAN ES-5A DATED MAY 1, 2006 - PAGE 423 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP ES-5A

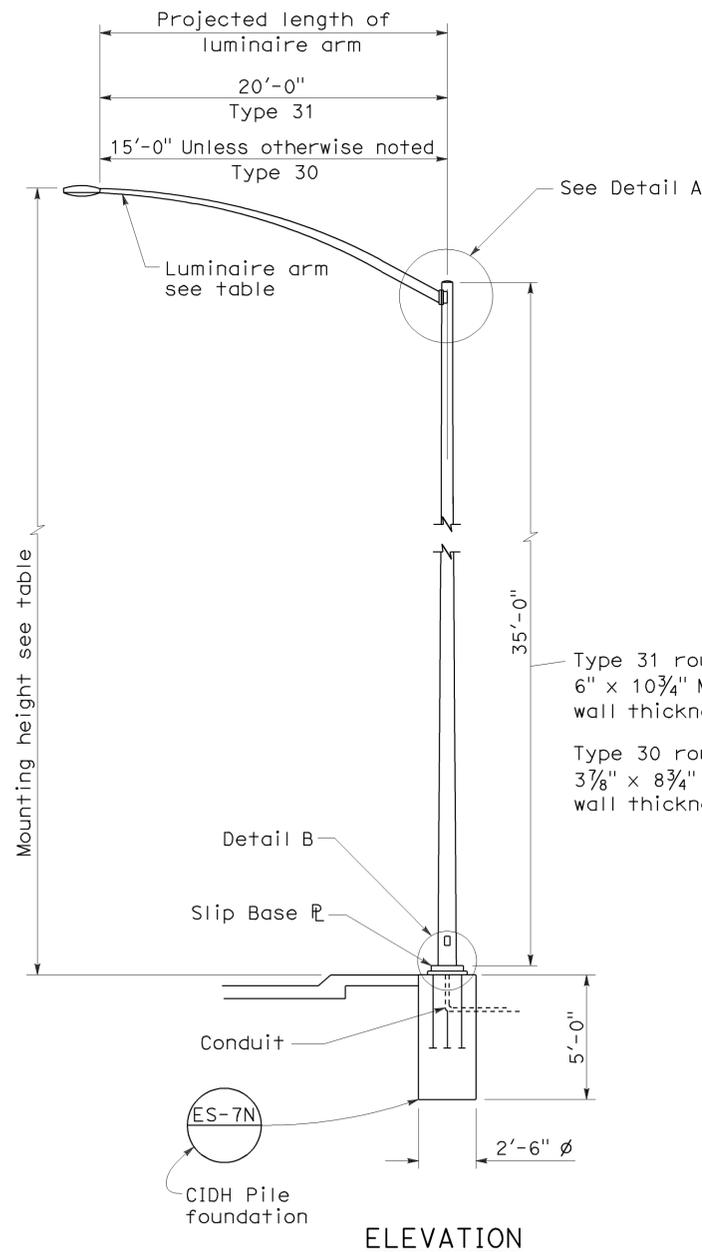
2006 REVISED STANDARD PLAN RSP ES-5A

To accompany plans dated 8-3-09

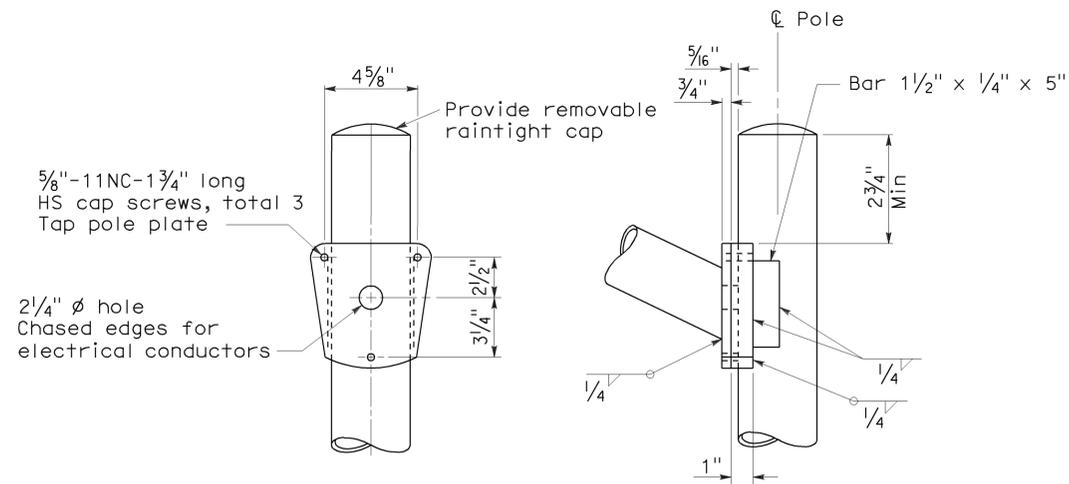
LUMINAIRE ARM DATA

PROJECTED LENGTH	THICKNESS	MINIMUM OD @ POLE	MOUNTING HEIGHT
* 6'-0"	0.1196"	3/4"	36'-9"±
8'-0"		3/2"	37'-3"±
10'-0"		3 3/4"	38'-0"±
12'-0"		3 3/4"	39'-0"±
15'-0"		4 1/4"	39'-6"±
** 20'-0"	0.1793"	5"	37'-0"±

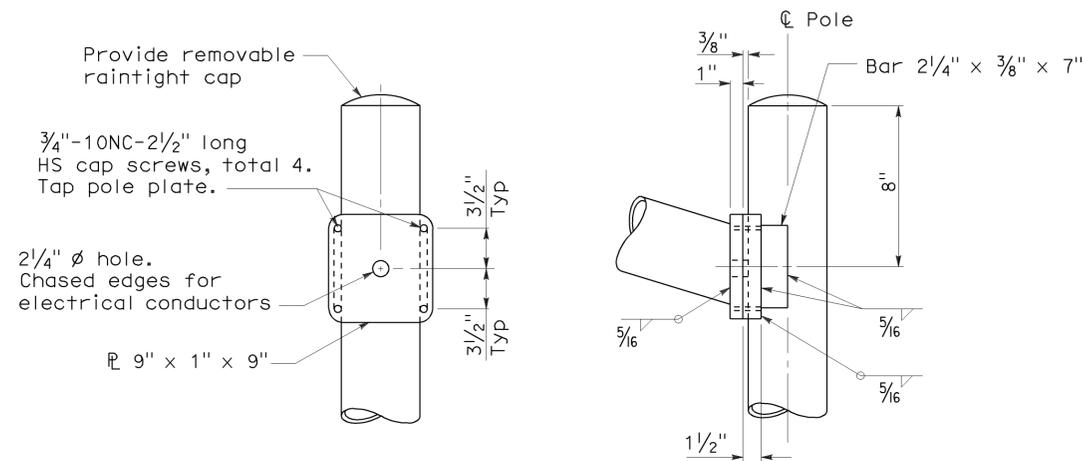
* Type 30 - arm length 6'-0" - 15'-0" maximum
 ** Type 31 - arm lengths 20'-0"



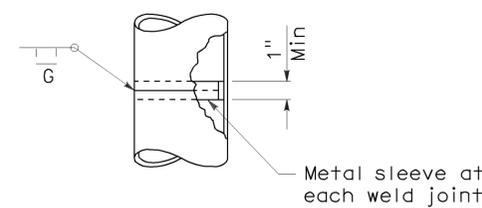
ELEVATION



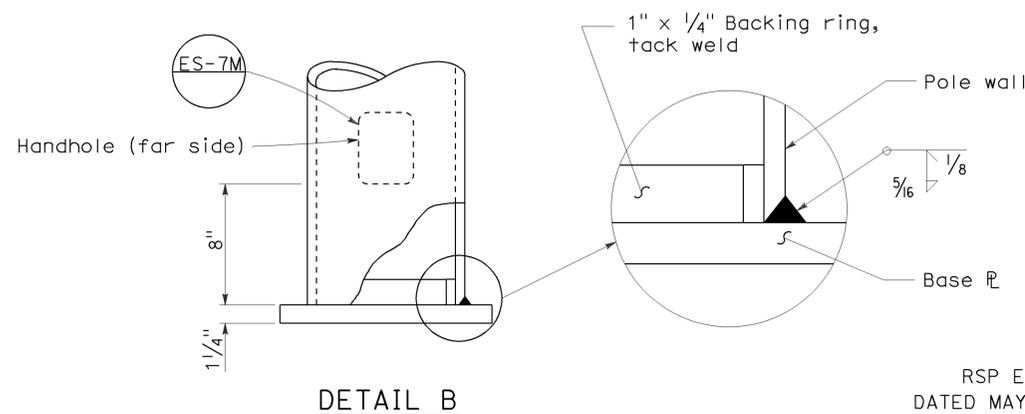
DETAIL A - TYPE 30



DETAIL A - TYPE 31



POLE SPLICE



DETAIL B

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
08	SBD	10	12.0/19.8	309	319

Stanley P. Johnson
 REGISTERED CIVIL ENGINEER
 No. C57793
 Exp. 03-31-08
 CIVIL
 STATE OF CALIFORNIA

January 18, 2008
 PLANS APPROVAL DATE

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To accompany plans dated 8-3-09

NOTES:

- Sheet steel shall have a minimum yield of 48,000 psi.
- For slip base details see Standard Plan ES-6F.
- For Type 30 fixed base use Type 15 base plate, and foundation shown on Revised Standard Plan RSP ES-6A. Use 1 1/4" Dia x 3'-6" x 4" anchor bolts.
- For Type 31 fixed base use Type 32 base plate, anchor bolts and foundation on Standard Plan ES-6G.
- Handhole shall be located on downstream side of traffic unless noted otherwise on plans.
- For additional general notes refer to Standard Plan ES-7M.

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION
**ELECTRICAL SYSTEMS
 (LIGHTING STANDARD
 TYPES 30 AND 31)**

NO SCALE

RSP ES-6E DATED JANUARY 18, 2008 SUPERCEDES STANDARD PLAN ES-6E
 DATED MAY 1, 2006 - PAGE 430 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP ES-6E

2006 REVISED STANDARD PLAN RSP ES-6E

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
08	SBd	10	12.0/19.8	310	319

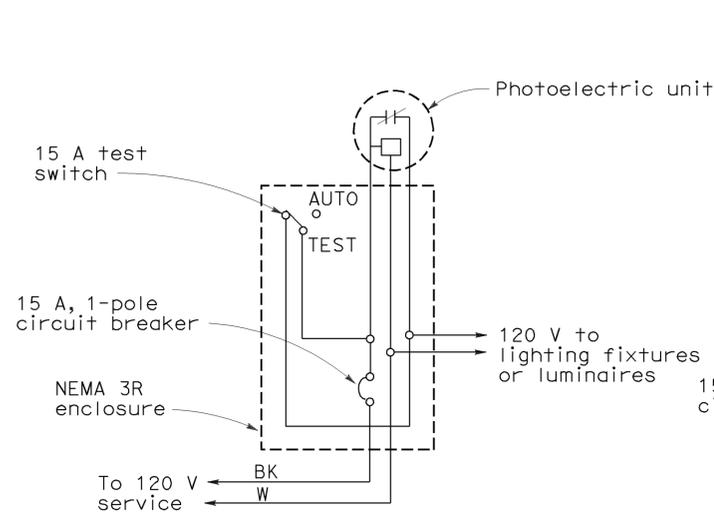
Jeffery G. McRae
 REGISTERED ELECTRICAL ENGINEER
 October 5, 2007
 PLANS APPROVAL DATE
 No. E14512
 Exp. 6-30-08
 ELECTRICAL
 STATE OF CALIFORNIA

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NOTES: (FOR LIGHTING AND SIGN ILLUMINATION CONTROL)

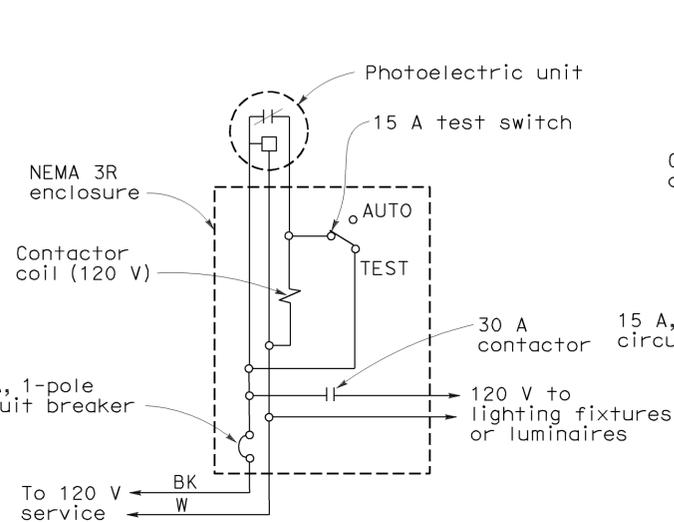
1. The ballast voltages of lighting fixtures and luminaires shall match line service voltages.
2. Voltage rating of photoelectric controls shall conform to the service voltage indicated on the plans.
3. Terminal strip shall be provided for wiring to fixtures.
4. Type SC1A, SC2A, SC3A controls are similar to Types SC1, SC2 and SC3 controls respectively except test switch and wiring are not required.

To accompany plans dated 8-3-09



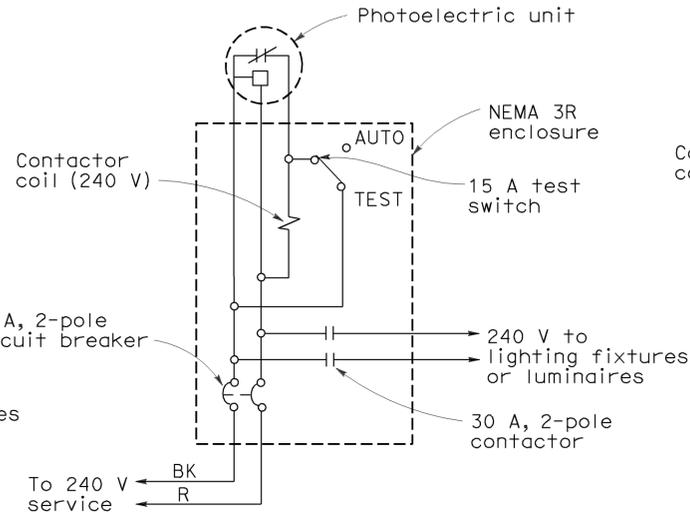
TYPE LC1 CONTROL

For 120 V unswitched circuit with no more than 800 W load.



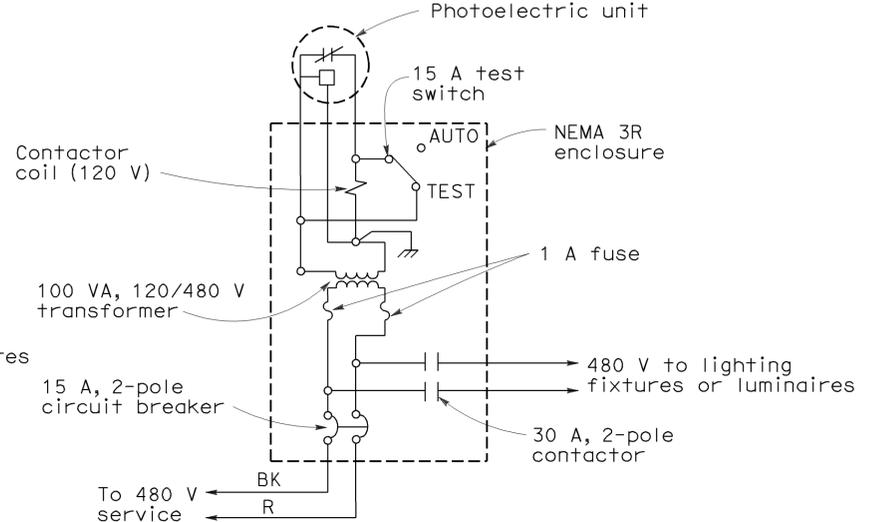
TYPE LC2 CONTROL

For 120 V unswitched circuit



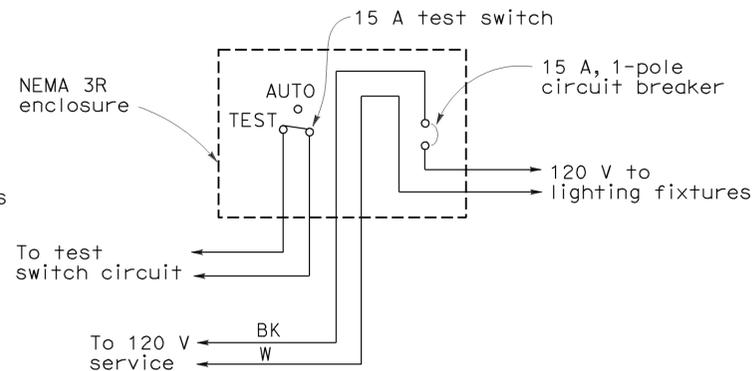
TYPE LC3 CONTROL

For 240 V and 480 V unswitched circuits



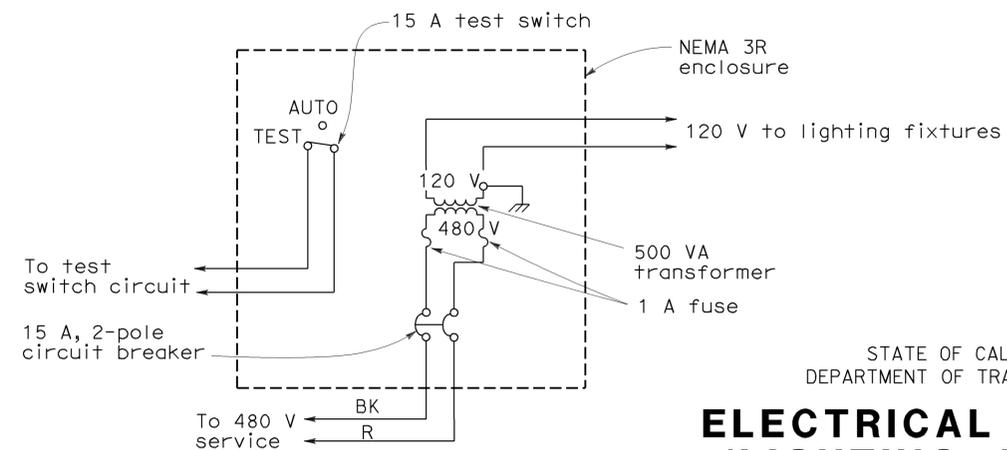
TYPE SC1 CONTROL

For 240 V or 480 V switched circuit, see Note 4 for Type SC1A



TYPE SC2 CONTROL

For 120 V switched circuit, see Note 4 for Type SC2A



TYPE SC3 CONTROL

For 480 V switched sign circuit, see Note 4 for Type SC3A

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION
**ELECTRICAL SYSTEMS
 (LIGHTING AND SIGN
 ILLUMINATION CONTROL)**

NO SCALE

RSP ES-15D DATED OCTOBER 5, 2007 SUPERCEDES STANDARD PLAN ES-15D DATED MAY 1, 2006 - PAGE 472 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP ES-15D

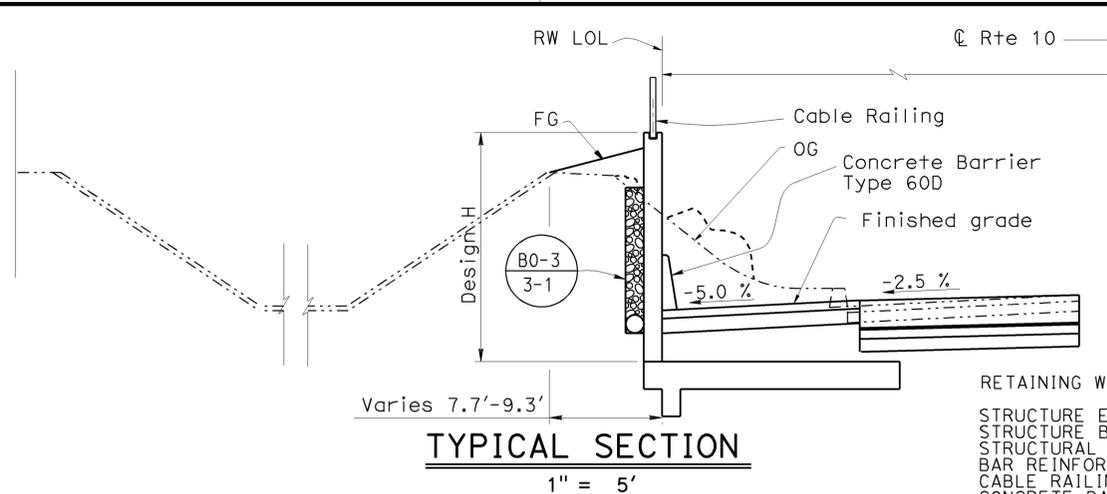
2006 REVISED STANDARD PLAN RSP ES-15D

STANDARD PLANS DATED MAY 2006

- A10A-A10B Acronyms and Abbreviations
- A10C-A10D Symbols
- A62B Limits of Payments for Excavation and and Backfill Bridge Surcharge and Wall
- RSP A76A Concrete Barrier Type 60
- BO-3 Bridge Details
- B3-8 Retaining Wall Details No. 1
- B11-47 Cable Railing

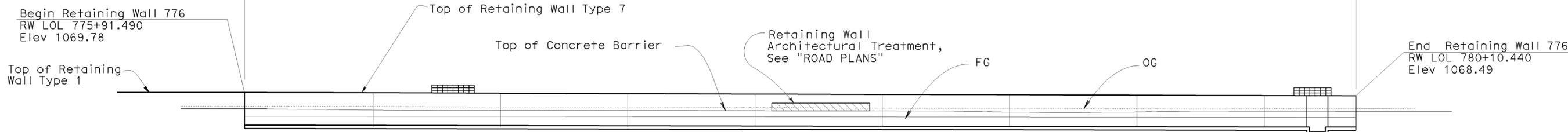
INDEX TO PLANS

- 1 GENERAL PLAN
- 2 FOUNDATION PLAN
- 3 STRUCTURE PLAN No. 1
- 4 STRUCTURE PLAN No. 2
- 5 RETAINING WALL TYPE 7, H=4-12 ft
- 6 LOG OF TEST BORINGS NO. 1
- 7 LOG OF TEST BORINGS NO. 2
- 8 LOG OF TEST BORINGS NO. 3
- 9 LOG OF TEST BORINGS NO. 4



RETAINING WALL TYPE 7	QUANTITIES	BR NO	RW #7
STRUCTURE EXCAVATION (RETAINING WALL)		1,335	CY
STRUCTURE BACKFILL (RETAINING WALL)		610	CY
STRUCTURAL CONCRETE, (RETAINING WALL)		445	CY
BAR REINFORCING STEEL (RETAINING WALL)		50,950	LB
CABLE RAILING		419	LF
CONCRETE BARRIER (TYPE 60D)		419	LF

Retaining Wall Type 7 Total Length = 418'- 19/20 " (Measured along "RW LOL")

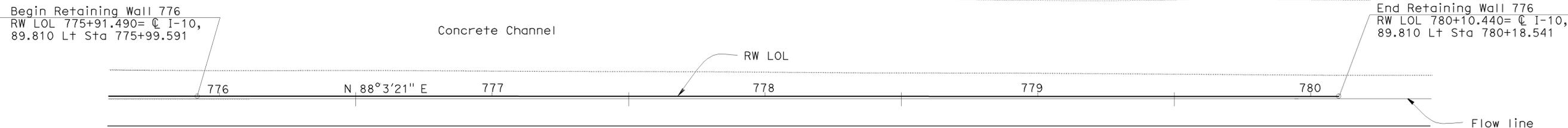


Datum Elevation 1040

+50 776 +50 777 +50 778 +50 779 +50 780

ELEVATION

1" = 20'



← TO ONTARIO

776 C RTE 10 777 778 N 88°3'21" E 779 780

PLAN

1" = 20'

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
08	SBd	10	12.0/19.8	311	319

David P. Murray
REGISTERED CIVIL ENGINEER
DATE 2-4-09

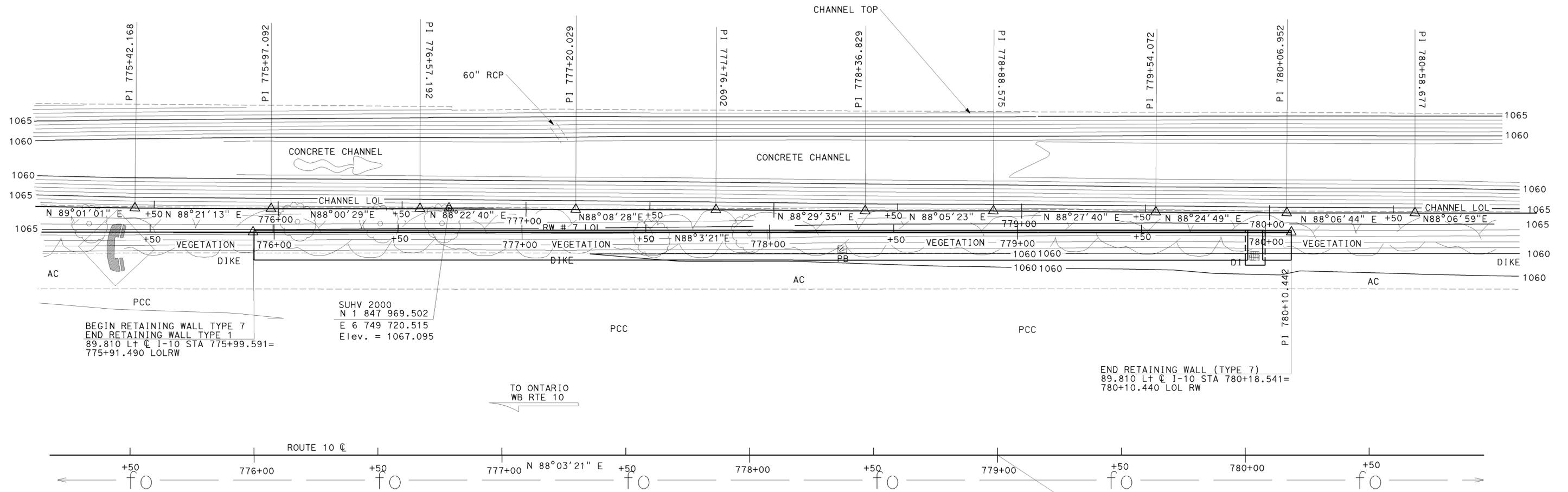
8-3-09
PLANS APPROVAL DATE

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<p>MICHAEL POPE DESIGN ENGINEER</p>	DESIGN	BY David P. Murray	CHECKED Michael Pope	LOAD & RESISTANCE FACTOR DESIGN	LIVE LOADING: HL93 W/"LOW-BOY"; PERMIT DESIGN VEHICLE	<p>STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION</p>	<p>DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 18</p>	BRIDGE NO.	<p>RETAINING WALL 776 GENERAL PLAN</p>					
	DETAILS	BY Farideh Rashedi	CHECKED David P. Murray	LAYOUT	BY David P. Murray			CHECKED Michael Pope						POST MILE
	QUANTITIES	BY Michael Pope	CHECKED David P. Murray	SPECIFICATIONS	BY Theresa Nedwick			PLANS AND SPECS COMPARED Theresa Nedwick						19.5
ORIGINAL SCALE IN INCHES FOR REDUCED PLANS						0 1 2 3	CU 08 EA 497501	DISREGARD PRINTS BEARING EARLIER REVISION DATES	11-19-08 12-04-08	REVISION DATES	SHEET 1 OF 9			

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
08	SBd	10	12.0/19.8	312	319
David P. Murray REGISTERED CIVIL ENGINEER			2-4-09 DATE		
8-3-09 PLANS APPROVAL DATE			The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.		
To get to the Caltrans web site, go to: http://www.dot.ca.gov					



BEGIN RETAINING WALL TYPE 7
 END RETAINING WALL TYPE 1
 89.810 Lt. C I-10 STA 775+99.591=
 775+91.490 LOLRW

SUHV 2000
 N 1 847 969.502
 E 6 749 720.515
 Elev. = 1067.095

END RETAINING WALL (TYPE 7)
 89.810 Lt. C I-10 STA 780+18.541=
 780+10.440 LOL RW

SURVEY CONTROL
 SUHV 2000
 Fnd PK/Wshr. BM 10-19.5
 99.414' Lt. C Rte 10
 Sta. 775+85.911
 N 1 847 969.502
 E 6 749 720.515
 Elev. = 1067.095
 SUHV 55161 (NOT SHOWN)
 Fnd PK
 78.484' Lt. C Rte 10
 Sta. 783+17.479
 N 1 847 970.010
 E 6 750 352.430
 Elev. = 1059.610

NOTES:
 UNDERGROUND UTILITIES AS SHOWN ARE APPROXIMATE

PRELIMINARY INVESTIGATION SECTION				DESIGN	BY David P. Murray	CHECKED Michael Pope	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 18	BRIDGE NO.	54E0034	RETAINING WALL 776 FOUNDATION PLAN			
SCALE	VERT. DATUM	NGVD 29	PHOTOGRAMMETRY AS OF: X	DETAILS	BY Farideh Rashedi	CHECKED David P. Murray			POST MILE	19.5				
1"=20'	HORZ. DATUM	NAD 83	SURVEYED	BY C. Stewart 05/08	CHECKED	BY L. Manabo 05/08								
ALIGNMENT TIES DIST TRAV SHEET				DRAFTED	BY M. Sadaghiani 06/08	CHECKED	BY L. Manabo 06/08	QUANTITIES	BY Michael Pope	CHECKED	DAVID P. MURRAY	REVISION DATES	SHEET 2	OF 9
STRUCTURES FOUNDATION PLAN SHEET (ENGLISH) (REV. 10/25/05)				ORIGINAL SCALE IN INCHES FOR REDUCED PLANS				CU 08 EA 497501	DISREGARD PRINTS BEARING EARLIER REVISION DATES		06/26/08 12/09/08			

USERNAME => H:\lenard DATE PLOTTED => 06-AUG-2009 TIME PLOTTED => 10:35

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
08	SBd	10	12.0/19.8	313	319

David P. Murray 2-4-09
REGISTERED CIVIL ENGINEER DATE

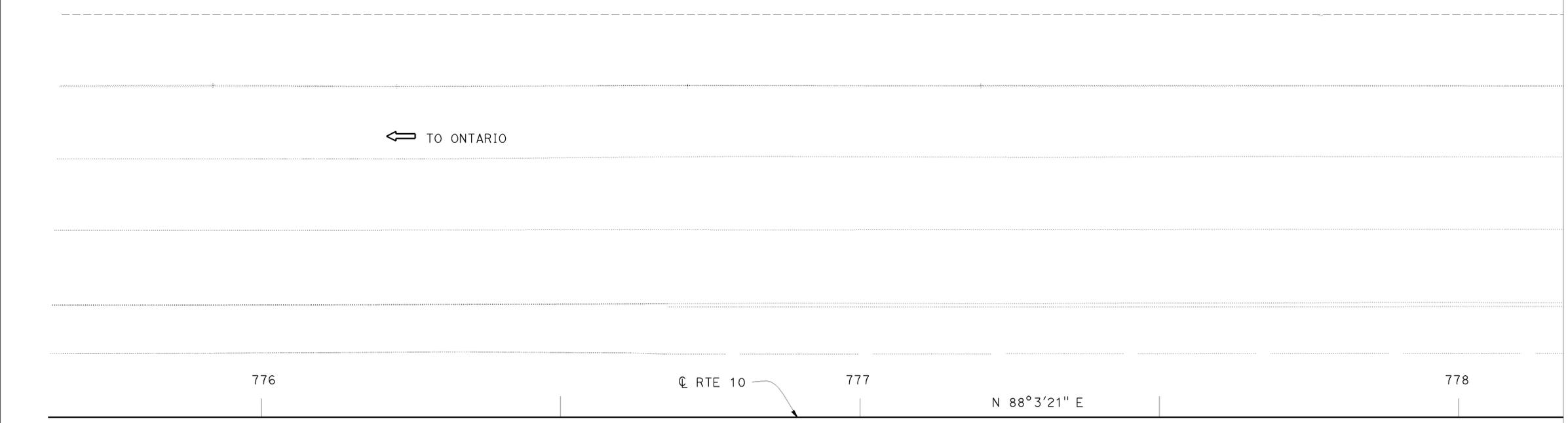
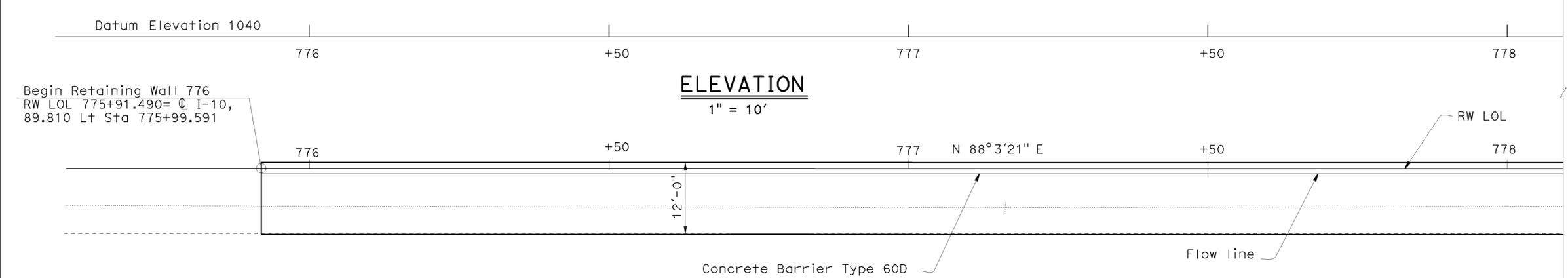
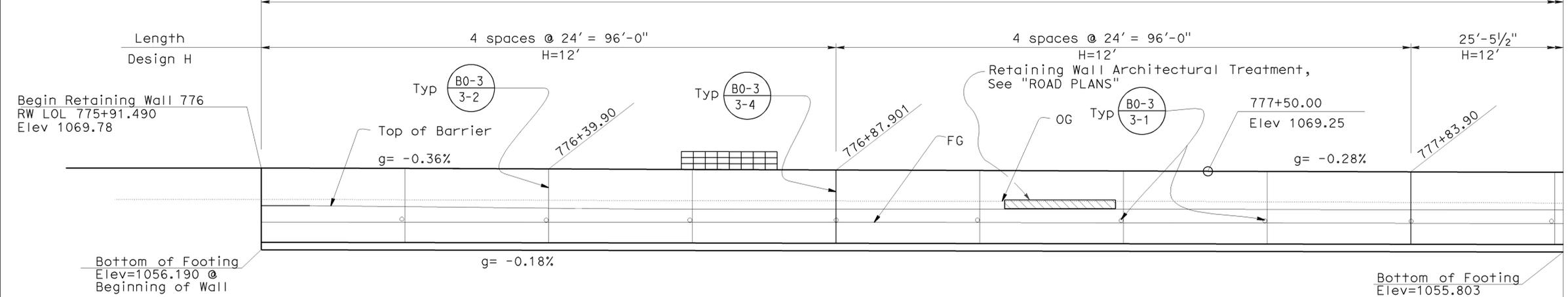
8-3-09
PLANS APPROVAL DATE

David P. Murray
No. C71259
Exp. 12/31/2009
CIVIL
STATE OF CALIFORNIA

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Retaining Wall Type 7 Total Length = 418'-19/20" (Measured along "RW LOL")



Match Line Sta 778+9.354

← TO ONTARIO



DESIGN BY David P. Murray CHECKED Michael Pope DETAILS BY Farideh Rashedi CHECKED David P. Murray QUANTITIES BY Michael Pope CHECKED David P. Murray	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 18	BRIDGE NO. 54E0034	RETAINING WALL 776 STRUCTURE PLAN NO. 1
			POST MILE 19.5	
			DISREGARD PRINTS BEARING EARLIER REVISION DATES 12-04-08	
STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 10/25/05)	ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3	CU 08 EA 497501	SHEET 3 OF 9	

USERNAME => h1lenard DATE PLOTTED => 06-AUG-2009 TIME PLOTTED => 10:35

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
08	SbD	10	12.0/19.8	314	319

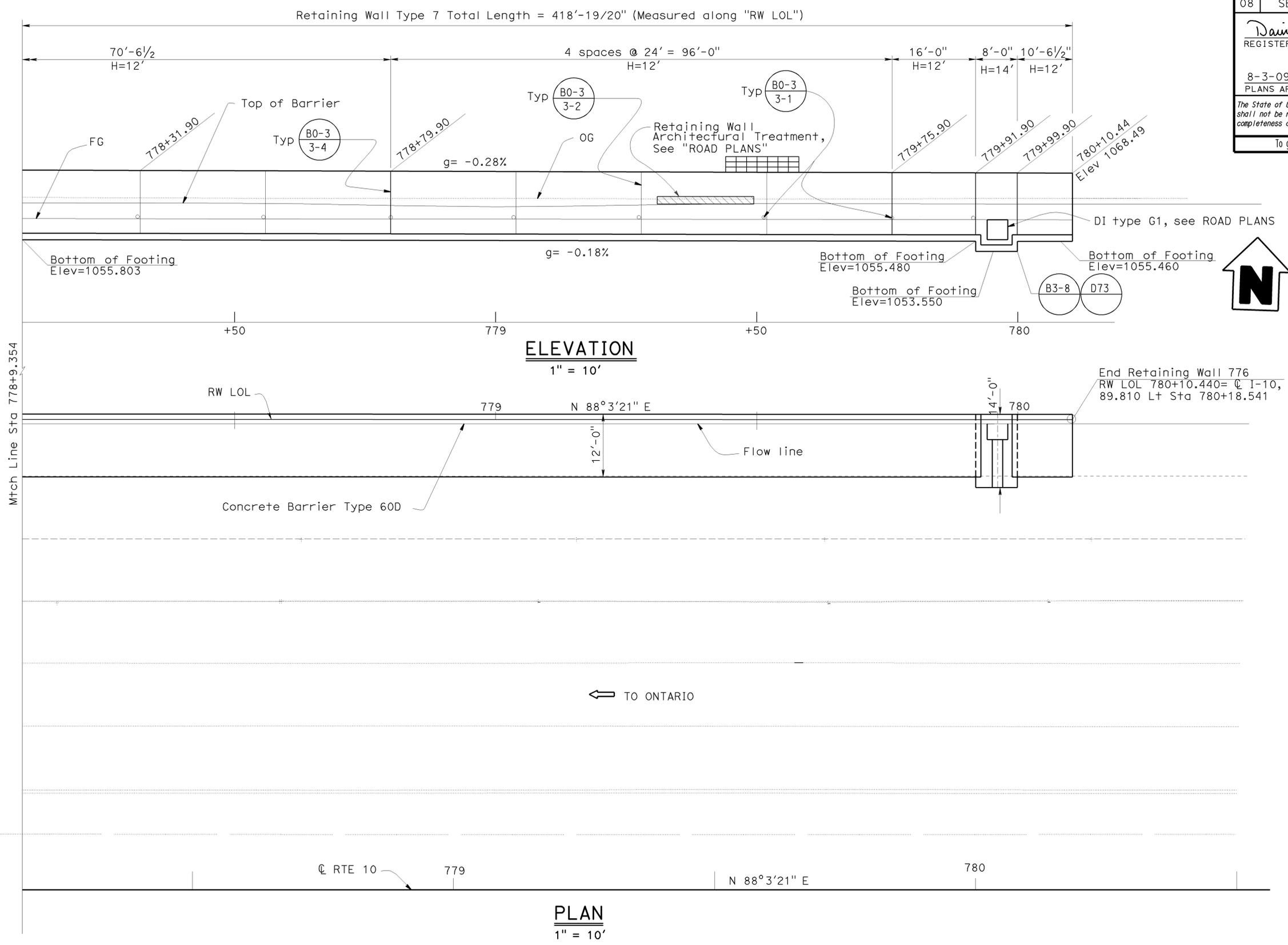
David P. Murray 2-4-09
REGISTERED CIVIL ENGINEER DATE

8-3-09
PLANS APPROVAL DATE

David P. Murray
No. C71259
Exp. 12-31-2009
CIVIL
STATE OF CALIFORNIA

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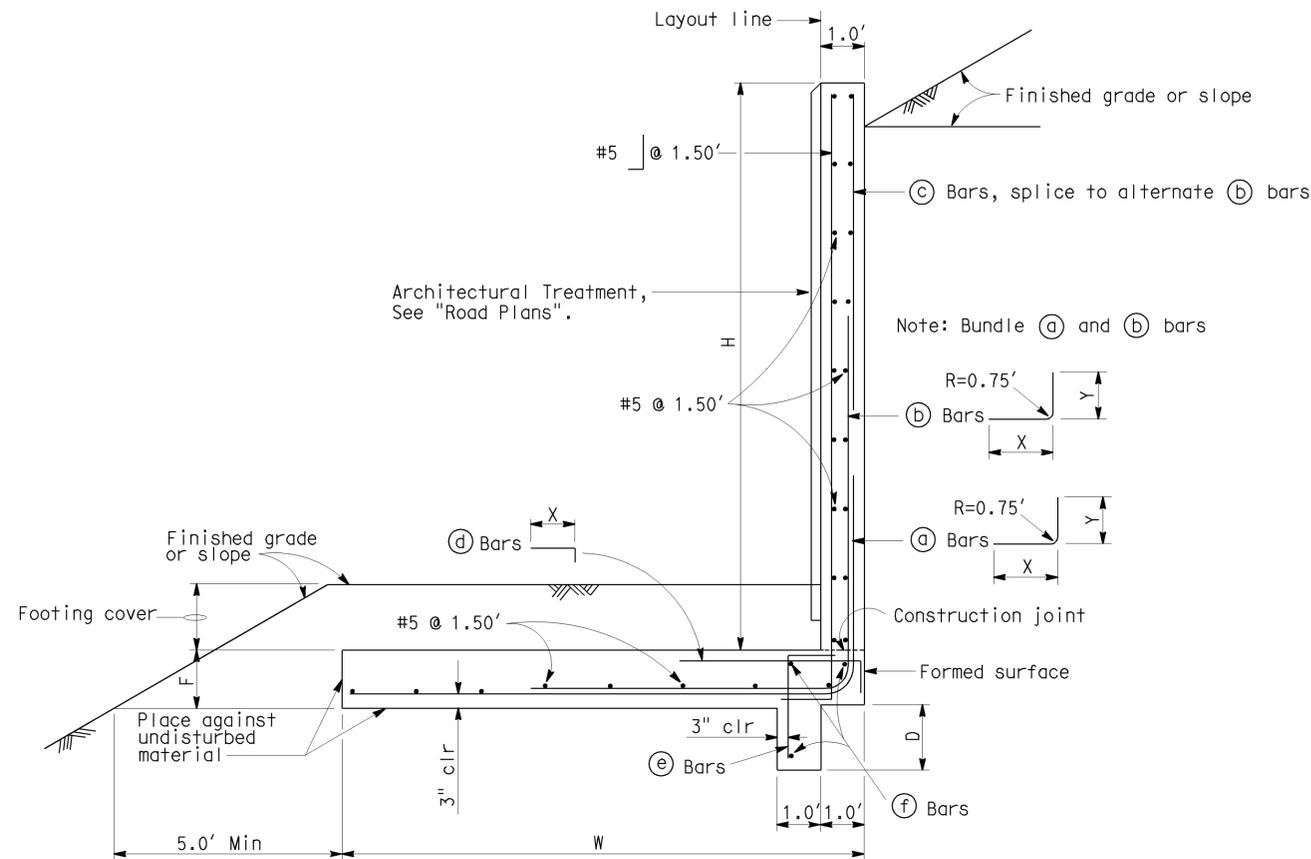
DESIGN	BY David P. Murray	CHECKED Michael Pope
DETAILS	BY Farideh Rashedi	CHECKED David P. Murray
QUANTITIES	BY Michael Pope	CHECKED David P. Murray

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES
STRUCTURE DESIGN
DESIGN BRANCH 18

BRIDGE NO.	54E0034
POST MILE	19.5

RETAINING WALL 776
STRUCTURE PLAN NO. 2



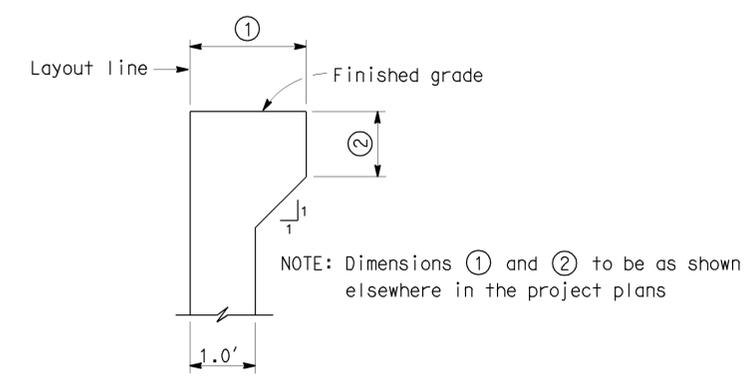
TYPICAL SECTION

Note: For details not shown, see B3-8

TABLE OF DIMENSIONS AND REINFORCING STEEL

DESIGN H (Ft)	4.0	6.0	8.0	10.0	12.0	14.0
W (Ft)	4.0	5.25	7.25	9.25	12.0	14.0
F (Ft)	1.0	1.0	1.25	1.25	1.25	1.5
D (Ft)	.75	.75	.75	1.5	1.5	1.5
FOOTING COVER (Ft)	1.0 min	1.0 min	1.5 min	1.5 min	1.5 min	1.5 min
(a) Bars	#5 @ 1.5	#5 @ 1.0	#6 @ 1.0	#6 @ 1.0	#6 @ 9 in	#7 @ 9 in
X	Cont	Cont	Cont	Cont	Cont	Cont
Y	Cont	Cont	Cont	5.0	5.0	6.0
(b) Bars				#6 @ 1.0	#6 @ 9 in	#7 @ 9 in
X				5.25	7.25	9.25
Y				Cont	8.25	10.0
(c) Bars					#5 @ 1.5	#5 @ 1.5
(d) Bars				#5 @ 1.0	#5 @ 1.0	#5 @ 1.0
X				4.0	4.0	6.0
(e) Bars				#5 @ 1.0	#5 @ 1.0	#5 @ 1.0
(f) Bars				3-#5	3-#5	3-#5

Cont = Continuous



HAUNCH FOR CONCRETE BARRIER

GENERAL NOTES

Design: Service load design
 Loading case:
 1. Level slope with 240 psf surcharge
 2. 2:1 unlimited slope
 Concrete: $n=9$, $f'_c=3600$ psi, $f = 1450$ psi
 Reinforcing steel: $f_y=60,000$ psi $f_s=24,000$ psi
 Soil:
 Backfill: $\phi=34^\circ$, $\gamma=120$ pcf
 Foundation: $\phi=34^\circ$, $c=200$ psf, $\gamma=120$ pcf
 Minimum allowable bearing pressure=2.0 ksf
 Lateral earth pressure: Coulomb's theory with $S=0^\circ$
 Seismic:
 1. Level slope, $k_h=0.3g$
 2. 2:1 unlimited slope, $k_h=0.1g$

NO SCALE

STANDARD DRAWING			
RELEASE DATE	DESIGN BY	CHECKED	RELEASED BY
9/22/93	J.C. MOESE	O. HOR	
FILE NO.	DETAILS BY	CHECKED	
xs14-010	R. YEE	O. HOR	
	SUBMITTED BY	DRAWING DATE	OFFICE CHIEF
	J.C. MOESE	10/92	

Detail Added
 ORIGINAL SCALE IN MILLIMETERS FOR REDUCED PLANS

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION
 DIVISION OF ENGINEERING SERVICES

BRIDGE NO. 54E0034
 KILOMETER POST 19.5
 RETAINING WALL 776
 RETAINING WALL TYPE 7, H = 4.0-12.0 Ft

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
08	Sbd	10	12.0/19.8	316	319

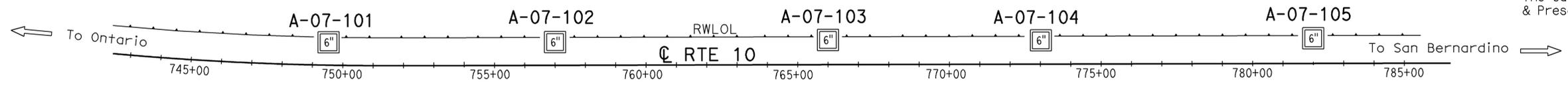
Brian Gutierrez 2-25-09
REGISTERED CIVIL ENGINEER

8-3-09
PLANS APPROVAL DATE

Brian Gutierrez
No. C66258
Exp. 06-30-10
CIVIL
STATE OF CALIFORNIA

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This LOTB sheet was prepared in accordance with the Caltrans Soil & Rock Logging, Classification, & Presentation Manual (June 2007).

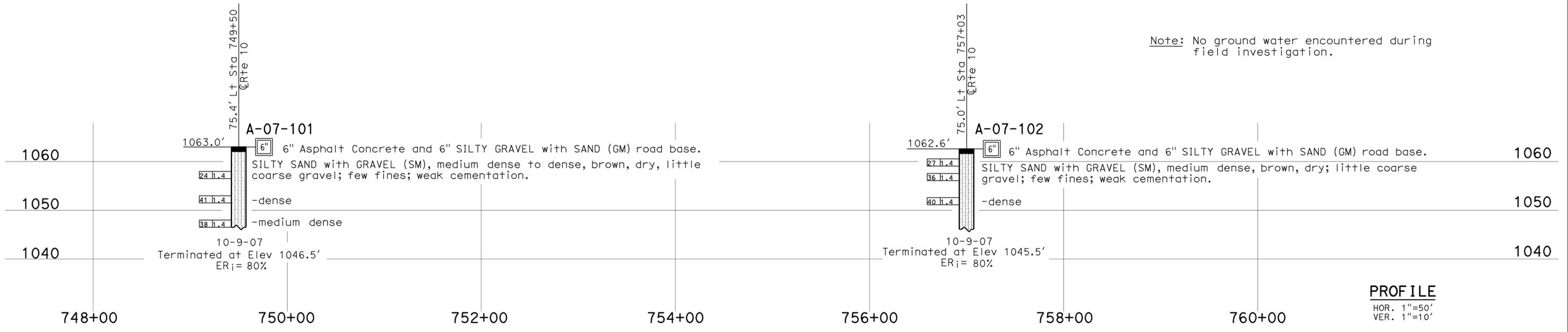


PLAN
1" = 200'

BENCH MARK

SURVEY CONTROL
SUHV 2000
Fnd PK/Wshr. BM 10-19.5
99.414' Lt. C Rte 10
Sta. 775+85.911
N 1 847 969.502
E 6 749 720.515
Elev. = 1067.095

SUHV 55161(sheet 2)
Fnd PK
78.484' Lt. C Rte 10
Sta. 783+17.479
N 1 847 970.010
E 6 750 352.430
Elev. = 1059.610



PROFILE
HOR. 1"=50'
VER. 1"=10'

ENGINEERING SERVICES		GEOTECHNICAL SERVICES		STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH	BRIDGE NO. 54E0034	LANE RETAINING WALL LOG OF TEST BORINGS 1 OF 4
FUNCTIONAL SUPERVISOR NAME: S. Wei	DRAWN BY: F. Nguyen 12/07 CHECKED BY: M. Wilson	FIELD INVESTIGATION BY: B. Gutierrez				POST MILES 17.8/18.9	
065 CIVIL LOG OF TEST BORINGS SHEET				ORIGINAL SCALE IN INCHES FOR REDUCED PLANS	CU 08 EA 497501	DISREGARD PRINTS BEARING EARLIER REVISION DATES	01-24-08 06-18-08 02-23-09 02-25-09

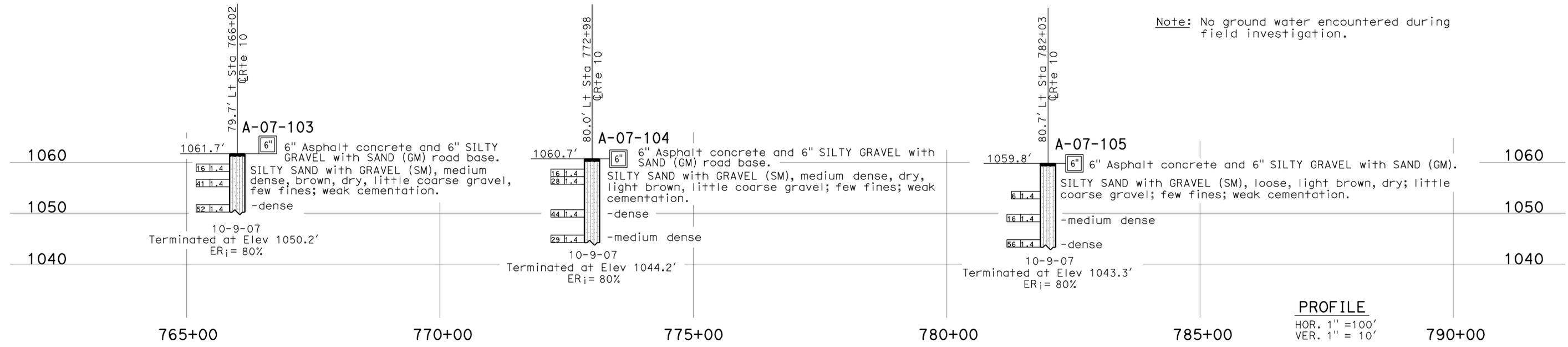
USERNAME => h1tenard DATE PLOTTED => 06-AUG-2009 TIME PLOTTED => 10:43

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
08	SBd	10	12.0/19.8	317	319

Brian Gutierrez 2-25-09
 REGISTERED CIVIL ENGINEER
 8-3-09
 PLANS APPROVAL DATE
 No. C66258
 Exp. 06-30-10
 CIVIL
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FOR PLAN VIEW, SEE
 "LOG OF TEST BORINGS 1 OF 4"



ENGINEERING SERVICES		GEOTECHNICAL SERVICES		STATE OF CALIFORNIA		DIVISION OF ENGINEERING SERVICES		BRIDGE NO.		RETAINING WALL	
FUNCTIONAL SUPERVISOR		DRAWN BY: F. Nguyen 12/07		DEPARTMENT OF TRANSPORTATION		STRUCTURE DESIGN		54E0034		LOG OF TEST BORINGS 2 OF 4	
NAME: S. Wei		CHECKED BY: M. Wilson		B. Gutierrez		DESIGN BRANCH		POST MILES			
065 CIVIL LOG OF TEST BORINGS SHEET		ORIGINAL SCALE IN INCHES FOR REDUCED PLANS		0 1 2 3		CU 08 EA 497501		17.8/18.9		REVISION DATES	
								DISREGARD PRINTS BEARING EARLIER REVISION DATES		SHEET 7 OF 9	

Brian Gutierrez 2-25-09
 REGISTERED CIVIL ENGINEER
 No. C66258
 Exp. 06-30-10
 CIVIL
 STATE OF CALIFORNIA

8-3-09
 PLANS APPROVAL DATE

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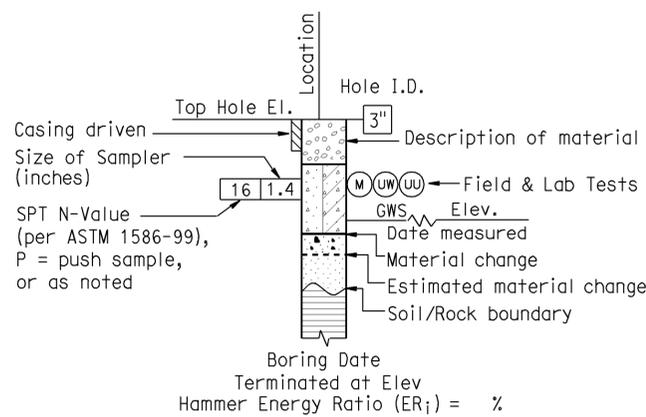
CEMENTATION	
Description	Criteria
Weak	Crumbles or breaks with handling or little finger pressure.
Moderate	Crumbles or breaks with considerable finger pressure.
Strong	Will not crumble or break with finger pressure.

CONSISTENCY OF COHESIVE SOILS				
Description	Unconfined Compressive Strength (tsf)	Pocket Penetrometer Measurement (tsf)	Torvane Measurement (tsf)	Field Approximation
Very Soft	< 0.25	< 0.25	< 0.12	Easily penetrated several inches by fist
Soft	0.25 to 0.50	0.25 to 0.50	0.12 to 0.25	Easily penetrated several inches by thumb
Medium Stiff	0.50 to 1.0	0.50 to 1.0	0.25 to 0.50	Penetrated several inches by thumb with moderate effort
Stiff	1 to 2	1 to 2	0.50 to 1.0	Readily indented by thumb but penetrated only with great effort
Very Stiff	2 to 4	2 to 4	1.0 to 2.0	Readily indented by thumbnail
Hard	> 4.0	> 4.0	> 2.0	Indented by thumbnail with difficulty

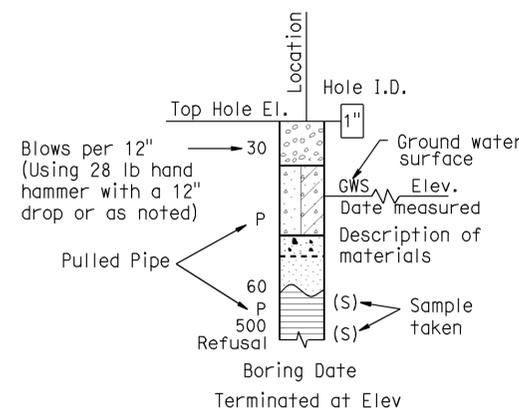
BOREHOLE IDENTIFICATION		
Symbol	Hole Type	Description
	A	Auger Boring
	R	Rotary drilled boring
	P	Rotary percussion boring (air)
	R	Rotary drilled diamond core
	HD	Hand driven (1-inch soil tube)
	HA	Hand Auger
	D	Dynamic Cone Penetration Boring
	CPT	Cone Penetration Test (ASTM D 5778-95)
	O	Other

Note: Size in inches.

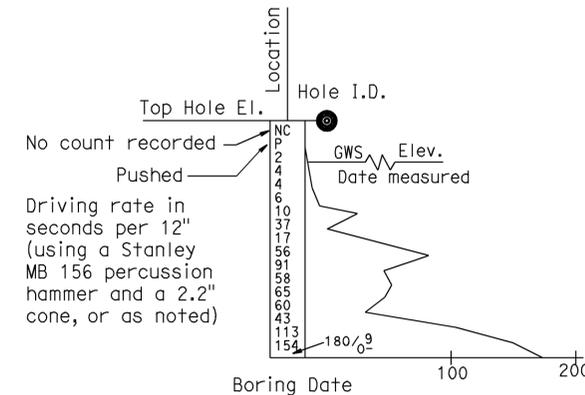
PLASTICITY OF FINE-GRAINED SOILS	
Description	Criteria
Nonplastic	A 1/8-inch thread cannot be rolled at any water content.
Low	The thread can barely be rolled and the lump cannot be formed when drier than the plastic limit.
Medium	The thread is easy to roll and not much time is required to reach the plastic limit. The thread cannot be rerolled after reaching the plastic limit. The lump crumbles when drier than the plastic limit.
High	It takes considerable time rolling and kneading to reach the plastic limit. The thread can be rerolled several times after reaching the plastic limit. The lump can be formed without crumbling when drier than the plastic limit.



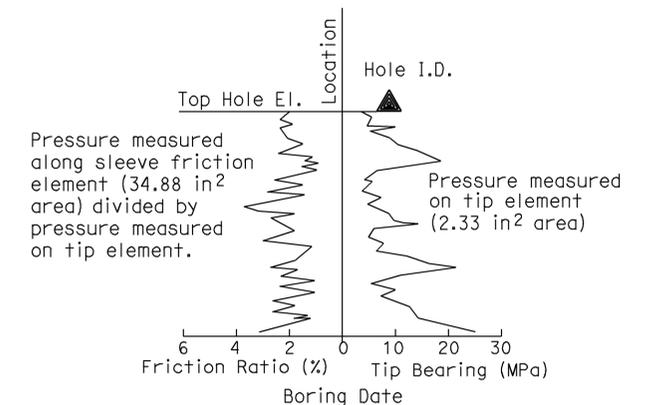
ROTARY BORING



HAND BORING



DYNAMIC CONE PENETRATION BORING



CONE PENETRATION TEST (CPT) SOUNDING

ENGINEERING SERVICES	GEOTECHNICAL SERVICES	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH	BRIDGE NO. 54E0034	RETAINING WALL LOG OF TEST BORINGS 3 OF 4
	PREPARED BY: F. Nguyen 12/07			POST MILE 17.8/18.9	
GS LOT8 SOIL LEGEND	ORIGINAL SCALE IN INCHES FOR REDUCED PLANS	CU 08 EA 497501	DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES	SHEET 8 OF 9

USERNAME => h1tenard DATE PLOTTED => 06-AUG-2009 TIME PLOTTED => 10:43

Brian Gutierrez 2-25-09
 REGISTERED CIVIL ENGINEER
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GROUP SYMBOLS AND NAMES			
Graphic/Symbol	Group Names	Graphic/Symbol	Group Names
	GW Well-graded GRAVEL		CL Lean CLAY Lean CLAY with SAND Lean CLAY with GRAVEL SANDY lean CLAY SANDY lean CLAY with GRAVEL GRAVELLY lean CLAY GRAVELLY lean CLAY with SAND
	GP Poorly graded GRAVEL Poorly graded GRAVEL with SAND		
	GW-GM Well-graded GRAVEL with SILT Well-graded GRAVEL with SILT and SAND		CL-ML SILTY CLAY SILTY CLAY with SAND SILTY CLAY with GRAVEL SANDY SILTY CLAY SANDY SILTY CLAY with GRAVEL GRAVELLY SILTY CLAY GRAVELLY SILTY CLAY with SAND
	GW-GC Well-graded GRAVEL with CLAY (or SILTY CLAY) Well-graded GRAVEL with CLAY and SAND (or SILTY CLAY and SAND)		
	GP-GM Poorly graded GRAVEL with SILT Poorly graded GRAVEL with SILT and SAND		ML SILT SILT with SAND SILT with GRAVEL SANDY SILT SANDY SILT with GRAVEL GRAVELLY SILT GRAVELLY SILT with SAND
	GP-GC Poorly graded GRAVEL with CLAY (or SILTY CLAY) Poorly graded GRAVEL with CLAY and SAND (or SILTY CLAY and SAND)		
	GM SILTY GRAVEL SILTY GRAVEL with SAND		OL ORGANIC lean CLAY ORGANIC lean CLAY with SAND ORGANIC lean CLAY with GRAVEL SANDY ORGANIC lean CLAY SANDY ORGANIC lean CLAY with GRAVEL GRAVELLY ORGANIC lean CLAY GRAVELLY ORGANIC lean CLAY with SAND
	GC CLAYEY GRAVEL CLAYEY GRAVEL with SAND		
	GC-GM SILTY, CLAYEY GRAVEL SILTY, CLAYEY GRAVEL with SAND		OL ORGANIC SILT ORGANIC SILT with SAND ORGANIC SILT with GRAVEL SANDY ORGANIC SILT SANDY ORGANIC SILT with GRAVEL GRAVELLY ORGANIC SILT GRAVELLY ORGANIC SILT with SAND
	SW Well-graded SAND Well-graded SAND with GRAVEL		
	SP Poorly graded SAND Poorly graded SAND with GRAVEL		CH Fat CLAY Fat CLAY with SAND Fat CLAY with GRAVEL SANDY fat CLAY SANDY fat CLAY with GRAVEL GRAVELLY fat CLAY GRAVELLY fat CLAY with SAND
	SW-SM Well-graded SAND with SILT Well-graded SAND with SILT and GRAVEL		
	SW-SC Well-graded SAND with CLAY (or SILTY CLAY) Well-graded SAND with CLAY and GRAVEL (or SILTY CLAY and GRAVEL)		MH Elastic SILT Elastic SILT with SAND Elastic SILT with GRAVEL SANDY elastic SILT SANDY elastic SILT with GRAVEL GRAVELLY elastic SILT GRAVELLY elastic SILT with SAND
	SP-SM Poorly graded SAND with SILT Poorly graded SAND with SILT and GRAVEL		
	SP-SC Poorly graded SAND with CLAY (or SILTY CLAY) Poorly graded SAND with CLAY and GRAVEL (or SILTY CLAY and GRAVEL)		OH ORGANIC fat CLAY ORGANIC fat CLAY with SAND ORGANIC fat CLAY with GRAVEL SANDY ORGANIC fat CLAY SANDY ORGANIC fat CLAY with GRAVEL GRAVELLY ORGANIC fat CLAY GRAVELLY ORGANIC fat CLAY with SAND
	SM SILTY SAND SILTY SAND with GRAVEL		
	SC CLAYEY SAND CLAYEY SAND with GRAVEL		OH ORGANIC elastic SILT ORGANIC elastic SILT with SAND ORGANIC elastic SILT with GRAVEL SANDY ORGANIC elastic SILT SANDY ORGANIC elastic SILT with GRAVEL GRAVELLY ORGANIC elastic SILT GRAVELLY ORGANIC elastic SILT with SAND
	SC-SM SILTY, CLAYEY SAND SILTY, CLAYEY SAND with GRAVEL		
	PT PEAT		OL/OH ORGANIC SOIL ORGANIC SOIL with SAND ORGANIC SOIL with GRAVEL SANDY ORGANIC SOIL SANDY ORGANIC SOIL with GRAVEL GRAVELLY ORGANIC SOIL GRAVELLY ORGANIC SOIL with SAND

FIELD AND LABORATORY TESTING	
(C)	Consolidation (ASTM D 2435)
(CL)	Collapse Potential (ASTM D 5333)
(CP)	Compaction Curve (CTM 216)
(CR)	Corrosivity Testing (CTM 643, CTM 422, CTM 417)
(CU)	Consolidated Undrained Triaxial (ASTM D 4767)
(DS)	Direct Shear (ASTM D 3080)
(EI)	Expansion Index (ASTM D 4829)
(M)	Moisture Content (ASTM D 2216)
(OC)	Organic Content-% (ASTM D 2974)
(P)	Permeability (CTM 220)
(PA)	Particle Size Analysis (ASTM D 422)
(PI)	Plasticity Index (AASHTO T 90) Liquid Limit (AASHTO T 89)
(PL)	Point Load Index (ASTM D 5731)
(PM)	Pressure Meter
(PP)	Pocket Penetrometer
(R)	R-Value (CTM 301)
(SE)	Sand Equivalent (CTM 217)
(SG)	Specific Gravity (AASHTO T 100)
(SL)	Shrinkage Limit (ASTM D 427)
(SW)	Swell Potential (ASTM D 4546)
(TV)	Pocket Torvane
(UC)	Unconfined Compression-Soil (ASTM D 2166) Unconfined Compression-Rock (ASTM D 2938)
(UU)	Unconsolidated Undrained Triaxial (ASTM D 2850)
(UW)	Unit Weight (ASTM D 4767)
(VS)	Vane Shear (AASHTO T 223)

APPARENT DENSITY OF COHESIONLESS SOILS	
Description	SPT N ₆₀ (Blows / 12 inches)
Very loose	0 - 4
Loose	5 - 10
Medium Dense	11 - 30
Dense	31 - 50
Very Dense	> 50

MOISTURE	
Description	Criteria
Dry	Absence of moisture, dusty, dry to the touch
Moist	Damp but no visible water
Wet	Visible free water, usually soil is below water table

PERCENT OR PROPORTION OF SOILS	
Description	Criteria
Trace	Particles are present but estimated to be less than 5%
Few	5 to 10%
Little	15 to 25%
Some	30 to 45%
Mostly	50 to 100%

PARTICLE SIZE		
Description	Size	
Boulder	> 12"	
Cobble	3" to 12"	
Gravel	Coarse	3/4" to 3"
	Fine	No. 4 to 3/4"
Sand	Coarse	No. 10 to No. 4
	Medium	No. 40 to No. 10
	Fine	No. 200 to No. 40